

# Blackmagic MultiView



# Languages

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## Welcome

Thank you for purchasing Blackmagic MultiView!

We hope you share our dream for the television industry to become truly creative by allowing anyone to have access to the highest quality video. By using MultiView 16 with today's affordable Ultra HD televisions, you get the equivalent of up to 16 independent broadcast monitors. MultiView 16 gives you true broadcast level multi source monitoring at a fraction of the cost!

Blackmagic MultiView 4 is perfect for smaller or mobile productions, letting you monitor up to four sources on a HD or Ultra HD screen. You can even combine MultiViews by routing the output of one MultiView into another to really customise your monitoring setup!

This instruction manual contains all the information you'll need to install your Blackmagic MultiView, although it's always a good idea to ask a technical assistant for help if you are not sure what IP addresses are, or if you're unsure about computer networks. Blackmagic MultiView can be controlled using Videohub Control software which is easy to install, however there are a few slightly technical preferences you will need to set after you install it.

Please check our web site at [www.blackmagicdesign.com](http://www.blackmagicdesign.com) and visit the support page to download the latest updates to this manual and software. Lastly, please register your Blackmagic MultiView when downloading software updates so we can keep you updated when new software is released. We are constantly working on new features and improvements, so we would love to hear from you!

We hope you get years of use from your Blackmagic MultiView and have lots of fun viewing your video inputs in wonderful Ultra HD!

A handwritten signature in black ink that reads "Grant Petty". The signature is written in a cursive, flowing style.

**Grant Petty**

CEO Blackmagic Design

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# Getting Started

Getting started with your Blackmagic MultiView is as easy as plugging in power, connecting your SDI video sources, and plugging your monitors and televisions into the HDMI or SDI outputs. This section of the manual will show you everything you need to know to get started using your Blackmagic MultiView.

## Plugging in Power

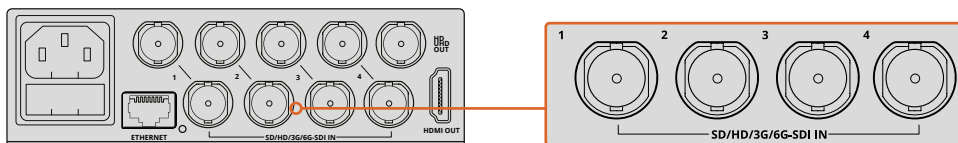
To power your Blackmagic MultiView, simply plug a standard IEC power cord into the 110-240V AC power input on the rear panel.

**TIP** Blackmagic MultiView 4 can also accept Power over Ethernet Plus, which means you only need to plug it into an Ethernet switch capable of supplying PoE+. If you have both AC power and PoE+ connected to your MultiView 4, it will automatically switch to the remaining power supply if one is unplugged or fails.

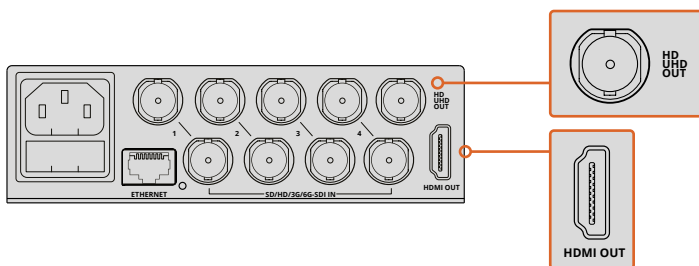
To power Blackmagic MultiView 4 HD, plug the supplied power adapter into the 6-36 V DC input. A screw thread housing is provided so you can secure power to the unit and prevent accidental disconnection.

## Connecting SDI Sources and Monitors

Plug your SDI sources into any of your Blackmagic MultiView's SDI video inputs. The video format will be automatically detected and the video will be displayed in the multi view output. To see the output, simply connect a monitor to the SDI or HDMI multi view outputs.



Connect the video sources to your Blackmagic MultiView's SDI video inputs

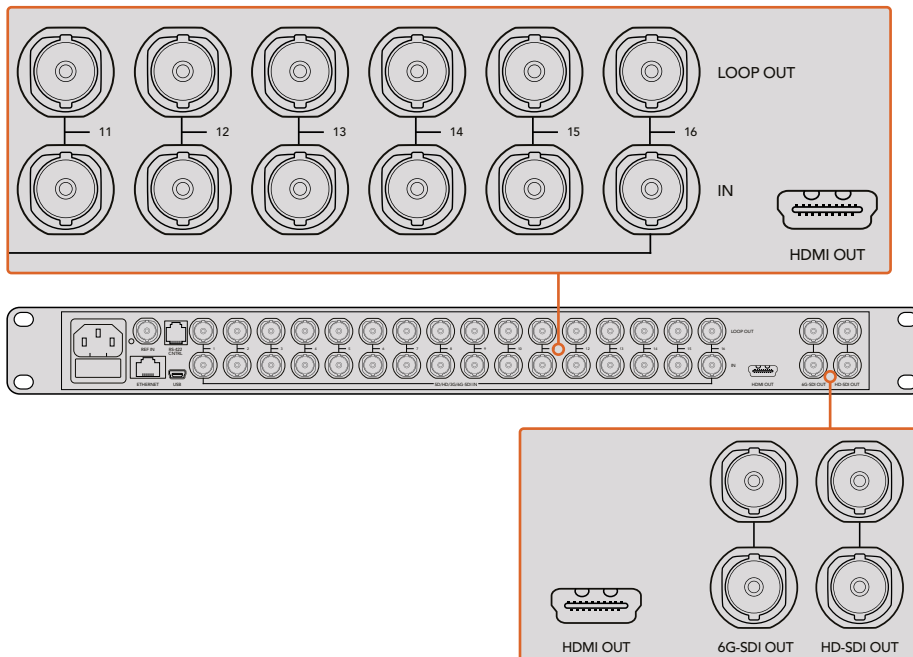


Connect monitors to your Blackmagic MultiView's HDMI or SDI multi view outputs

When connecting an HDMI monitor to the HDMI output, your Blackmagic MultiView will automatically detect whether the monitor supports Ultra HD or HD and switch the multi view output accordingly.

**TIP** On Blackmagic MultiView 16 you can output the multi view via dedicated HD-SDI outputs, or up to Ultra HD via the 6G-SDI and HDMI outputs.

Blackmagic MultiView 4 and MultiView 16 has loop outputs above each input so you can also connect each source to other video equipment.



**TIP** All of Blackmagic MultiView 16's SDI and HDMI outputs can be used simultaneously for Ultra HD and HD multi view monitoring. On Blackmagic MultiView 4, you can select between Ultra HD or HD multi view output settings using the built in switches, an optional Teranex Mini Smart Panel, or via the Blackmagic MultiView Setup utility software.

## Setting your Multi View Layout

The multi view layout can be changed to suit your needs. For example, Blackmagic MultiView 4 and Blackmagic MultiView 4 HD can be set to 2x2 or solo. Blackmagic MultiView 16 can be set to a combination of views such as 2x2, 3x3, 4x4 or solo.

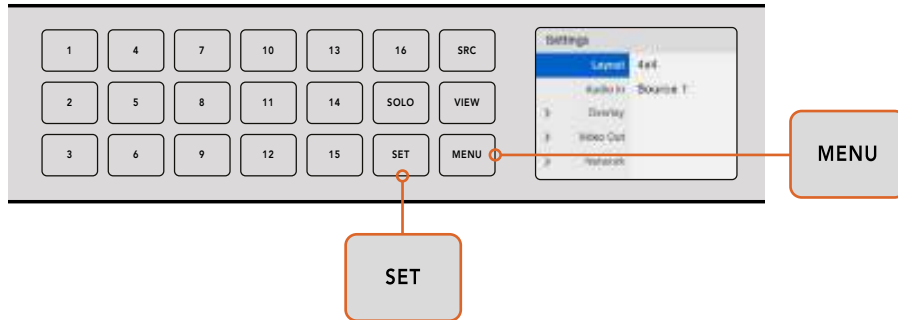
### Setting your layout on Blackmagic MultiView 16

To change the layout on Blackmagic MultiView 16, use the control buttons, rotary knob and LCD on the built in control panel. You can also monitor any view in full screen mode by pressing the 'solo' button, then selecting your chosen input by pressing one of the source buttons.

- 1 Press the 'menu' button on the front control panel to open the settings screen on the LCD.
- 2 Layout is the first setting in the menu, so it is always highlighted when you first enter the settings menu. Press the 'set' button to edit the setting.

- 3 Select 4x4 from the layout setting by turning the rotary knob on the front control panel. 4x4 lets you see all 16 source views on one screen. Whenever a setting changes, you'll notice the 'set' button and the 'menu' button will start flashing. This means a setting has changed and you can either confirm the setting change by pressing the 'set' button, or cancel by pressing the 'menu' button.
- 4 Press the set button to confirm your setting.

You can also set the layout using the Blackmagic MultiView 16 setup software using the configure control panel.

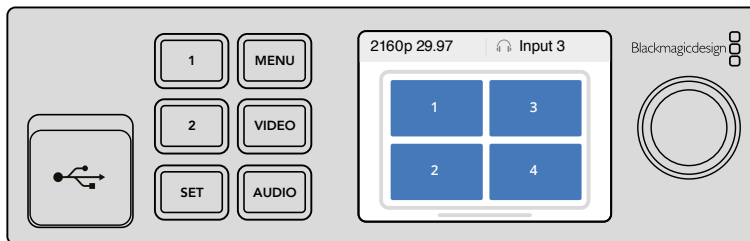


To set your Blackmagic MultiView 16's view layout, press 'menu', select your layout using the rotary knob, then press 'set'. 4x4 lets you see all 16 views on one monitor

### Setting your layout on Blackmagic MultiView 4

The default view on your Blackmagic Multiview 4 is the 2x2 layout. To change the layout on your Blackmagic MultiView 4 to 'solo', use the control button marked as '1' on your Teranex Mini Smart Panel and press button '2' to change it back to 2x2 display mode.

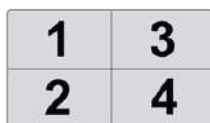
You can also set the layout using the 'configure' settings in the setup software.



Press '1' for solo view or press '2' for 2x2 view

### Setting your layout on Blackmagic MultiView 4 HD

The first time you use your MultiView 4 HD, it defaults to a 2x2 layout with inputs 1 and 3 on the top row and inputs 2 and 4 across the bottom. To change to solo mode, set the built in switch 6 'Solo on' to ON.



MultiView 4 HD 2x2 layout of four SDI inputs.

Refer to the 'Switch Settings for Blackmagic MultiView 4 HD' section for more information.

## Connecting to a Network

Your Blackmagic MultiView supports the Blackmagic Videohub Ethernet Protocol so if your unit is installed in a rack with limited access, you can easily control it remotely using a Blackmagic Videohub control panel, such as Blackmagic Smart Control and Master Control. Once connected to your network via Ethernet, your Blackmagic MultiView will be visible to other computers and Videohub panels connected to the network. These devices can then control the unit remotely.

To connect Blackmagic MultiView to your network:

- 1 Power your Blackmagic MultiView
- 2 Use a standard RJ45 Ethernet cable to connect your Blackmagic MultiView to a network or computer.

Once you have connected to a network, you'll need to make sure your Blackmagic MultiView's IP address is different to the other equipment on your network. On Blackmagic MultiView 16 and when using MultiView 4 with a Teranex Mini Smart Panel installed, you can change the network settings via the control panel's LCD menu. You can also plug your Blackmagic MultiView into a computer via USB and change network settings using Blackmagic MultiView Setup. For more information on changing network settings refer to the 'changing settings' section in this manual.

## Connecting Serial Control

Third party router controllers can control Blackmagic MultiView 16 using the RS-422 serial connection. For more information on serial control, see the section 'changing settings using Blackmagic MultiView Setup' in this manual.

## Rack Installation

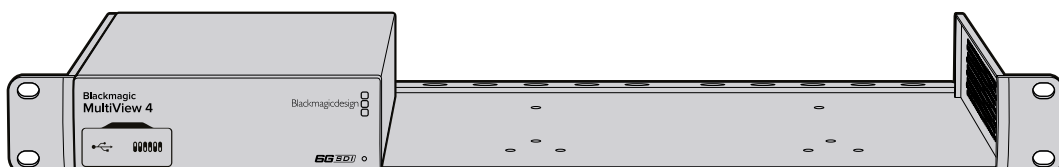
Blackmagic MultiView 16 is 1 rack unit high so fits perfectly into any broadcast rack or road case.

Blackmagic MultiView 4 is much smaller and can be used in mobile productions where you may not be using a broadcast rack. However, even though your MultiView 4 is designed to be small and portable, you can still use it in a rack environment. The Blackmagic Teranex Mini Rack Shelf is designed to let you mount up to three units side by side in a 1 rack unit space so you can easily connect them to each other and build as many source views as you need.

Installing Blackmagic MultiView 4 into a Teranex Mini Rack Shelf is as easy as removing the unit's rubber feet, if installed, and screwing the unit into the base of the shelf using the mounting holes on the bottom. The Teranex Mini Rack Shelf ships with two original blank panels which you can use to cover gaps if you don't need to install additional MultiView 4's.

For more information check the Blackmagic Design website at [www.blackmagicdesign.com](http://www.blackmagicdesign.com)

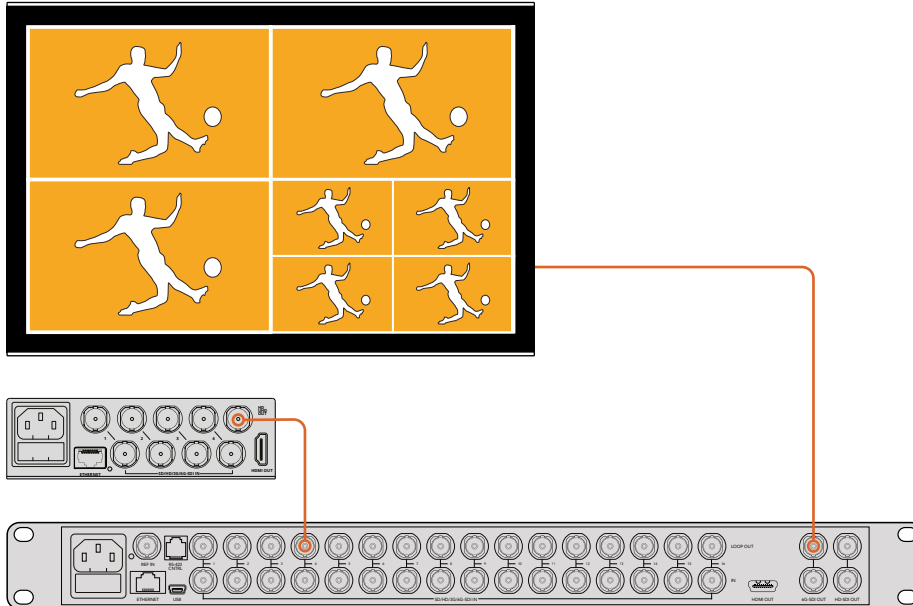
When installed in the rack shelf, all connectors are accessed from the rear of the unit as normal.





## Using Multiple MultiViews

You can use multiple BlackMagic MultiViews in combination to create custom monitoring setups. This is helpful if you need to add more view sources to your multi view output. Simply plug the output from one MultiView into the input of another to add more source views to your multi view output. It is highly recommend that the upstream multi view output is connected to an Ultra HD monitor for maximum clarity.



By routing the output of one MultiView into the input of another, you can add more views to your multi view layout

That's all there is to getting started. Keep reading the next sections of the manual to find more information about how to get the most from your Blackmagic MultiView, such as changing settings, naming your views and more.

## Changing Settings

There are several ways you can change settings on your Blackmagic MultiView.

- **Front Control Panel** – Blackmagic MultiView 16 has a built in control panel and LCD so you can easily change settings from the front of the unit.
- **Switches** – The small switches on Blackmagic MultiView 4's front panel and Blackmagic MultiView 4 HD's side panel let you change settings instantly using the tip of a pen. To access the switches on Blackmagic MultiView 4, open the rubber dust cover on the front panel. A switch settings legend is printed on the base of these units so you can easily see the settings for each switch.
- **Teranex Mini Smart Panel** – You can replace the original front panel of Blackmagic MultiView 4 with an optional Teranex Mini Smart Panel so you can use the built in control buttons, rotary knob and LCD. This functions in a very similar way to the front control panel of Blackmagic MultiView 16 and gives you easy and intuitive local control.
- **Blackmagic MultiView Setup** – The setup software lets you change settings via USB or Ethernet using your computer. Refer to the 'Blackmagic MultiView Setup' section for more information.

- **Videohub Control software** – When your Blackmagic MultiView 16 or Blackmagic MultiView 4 is connected to a network, you can use Blackmagic Videohub Control software to route sources, change views, and select the audio input source. Refer to the ‘Using Videohub Software Control’ section for more information.

## Blackmagic MultiView 16’s Front Control Panel

Blackmagic MultiView 16’s front control panel makes it very easy to change any of the settings.

When first powering your Blackmagic MultiView 16 you’ll see the ‘home’ screen displayed on the built in LCD. The home screen is the default display showing a convenient overview of settings, such as:

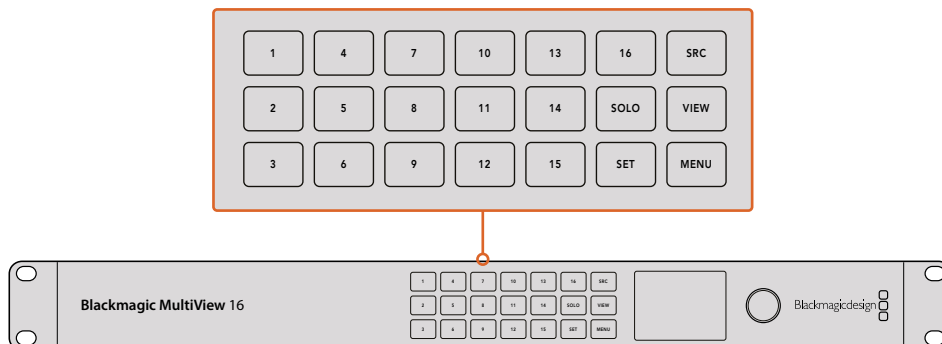
- **Multi view output frame rate** – Located in the upper left corner, this displays the selected frame rate for your Ultra HD SDI multi view output.
- **Audio input** – This information is located next to the multi view output frame rate and displays which SDI input is being used for embedded audio in the HDMI and SDI multi view output signal.
- **Multi view layout** – This displays your selected multi view layout.



The ‘home’ screen is the default display on Blackmagic MultiView 16’s control panel LCD. This screen displays your selected multi view layout, the frame rate for the multi view SDI output, and the selected SDI input used to embed audio into the multi view output.

## Control Panel Buttons

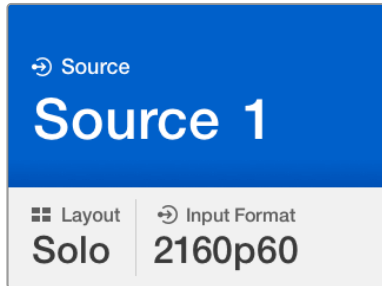
The illuminated buttons on Blackmagic MultiView 16’s control panel make it very easy to adjust settings and set your sources and views.



Blackmagic MultiView 16’s control panel buttons let you easily change settings and switch views from the front of the unit

## Solo Button

You can monitor a view in full screen by pressing the 'solo' button. Now press any view button on the control panel to monitor that view in full screen mode. Press solo again to return to the multi view layout.



The solo feature lets you monitor a view in full screen mode

## Menu Button

Press the 'menu' button to open the settings screen. Change a setting using the rotary knob and set button, then press the menu button again to return to the 'home' screen.

## Set Button

Press the 'set' button to select a setting to adjust. After changing a setting, press the set button again to confirm the change.

## Source and View buttons

These buttons let you select which input source you want to display in a desired view. When navigating settings menus, the source and view buttons can also be used to move up and down through setting options.

## Rotary Knob

Use the rotary knob to scroll through settings, or to select menu items on the settings screen. If you're unhappy with a selection, you can return to a previously selected setting by pressing the rotary knob.

Turn the rotary knob clockwise or counter clockwise to select between two options in a menu. Settings can also be turned on or off by pressing the knob.

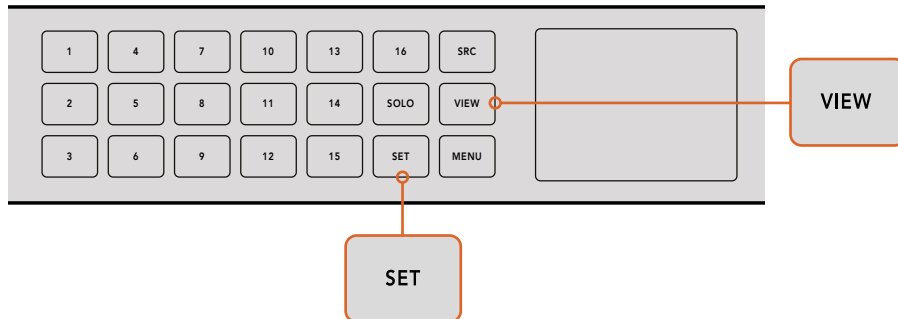
## Setting your Sources and Views on Blackmagic MultiView 16

One of the key features of Blackmagic MultiView 16 is the ability to assign your connected SDI sources to different views. By adjusting these settings you can easily change the arrangement of your views. For example, you may want SDI input 5 to appear on view 1.

To set which source appears on a desired view:

- 1 Press the 'view' button on the front control panel to open the view selection screen. The view selection will be highlighted with a blue background.
- 2 Press a numbered view button to select your desired view. Alternatively, you can use the rotary knob to scroll through the views. Confirm your setting by pressing the 'set' button.
- 3 Press the 'src' button. The source section of the LCD will be highlighted.

- 4 Press a numbered view button on the control panel to select your desired input. Alternatively, you can use the rotary knob to scroll through your inputs on the LCD.
- 5 Press the 'set' button to confirm your setting.



To set a source to a view, press the 'view' button to enter the view setting, make your selection, then press the 'set' button to confirm your setting

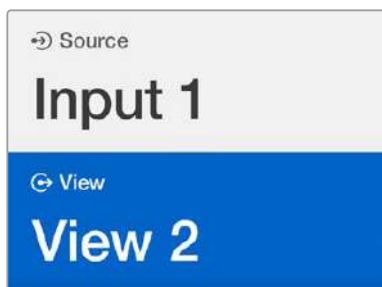
## Setting your Layout on Blackmagic MultiView 16

On Blackmagic MultiView 16, you can select the number of views that appear on your multi view output. For example, if you have 4 inputs connected, you can easily select the 2x2 layout which displays four views in a vertical x horizontal grid. For optimum monitoring of your inputs, select the view layout to suit the number of inputs connected.

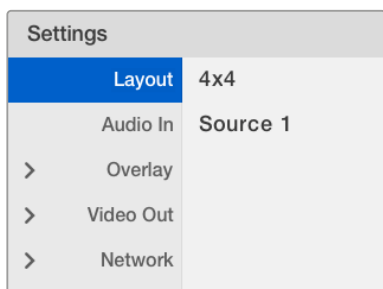
There are four multi view layouts you can choose from:

- **2x2** displays 4 views. If you have an Ultra HD monitor connected, each source will be displayed in native HD resolution.
- **3x3** displays 9 views.
- **4x4** displays all 16 views.

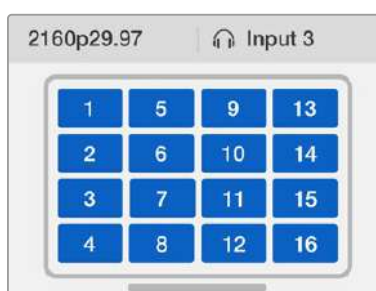
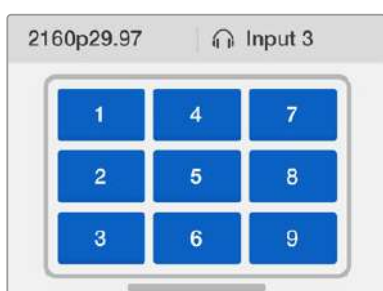
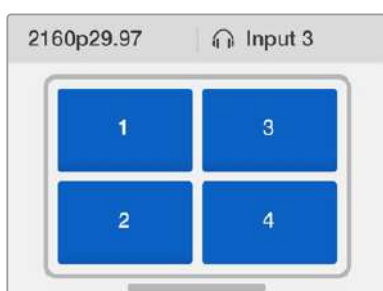
**TIP** You can also monitor a view in full screen mode by pressing the 'solo' button on Blackmagic MultiView 16's control panel, then selecting a view button. On Blackmagic MultiView 4, press the solo button marked '1' on the Teranex Mini Smart Panel.



Select your view you wish to assign a source to using the rotary knob or view buttons



Highlight the menu item you wish to adjust and press “set” to open its settings



You can choose from 3 different multi view layouts to best suit the number of inputs you have connected

## Audio In

This setting is used to select the SDI input from which audio will be taken and embedded into the multi view outputs.

## Overlay

This submenu lets you change the appearance of your multi view by turning overlay features on or off.

Overlay features are:

- **Borders** – Lets you separate each view in a grid like pattern.
- **Labels** – Makes ‘view’ labels visible or hidden. Labels can be changed using Blackmagic MultiView Setup.
- **Audio Meters** – Turns audio VU meters on or off for all the views. The first 2 channels embedded in each SDI signal are displayed in each view, which means you can monitor audio levels together with the picture.
- **SDI Tally** – When Blackmagic MultiView 16 has an ATEM switcher’s program SDI output connected to input 16, you can view tally borders around a view when its source is switched to air. You can turn this feature on or off using the SDI tally overlay setting.

For tally to work properly, make sure you connect your Blackmagic MultiView 16's inputs so they match the input numbers on your ATEM switcher or tally may be displayed on the wrong view.

## Video Out

The 'video out' settings let you control output options on your Blackmagic MultiView 16.

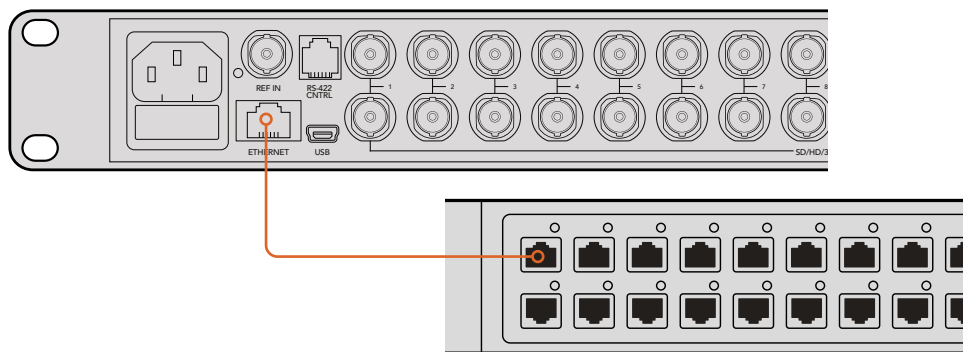
- **Video Format** – Use this setting to change your Ultra HD multi view output frame rate to 2160p29.97 or 2160p25. The HD multi view output frame rate will conform to the Ultra HD output. Press the rotary knob if you want to cancel the setting change, or return to the previous menu.
- **HD Output** – Select interlaced or progressive for the HD multi view output. If 2160p29.97 is the selected video format the HD output can be either 1080p29.97 or 1080i59.94. Similarly when 2160p25 is selected the HD output can be either 1080p25 or 1080i50.

## Network

The 'network' settings let you set the IP, Subnet and Gateway addresses for your Blackmagic MultiView 16 when connecting to a network.

To set your Blackmagic MultiView 16's IP address:

- 1 Press the 'menu' button on the front control panel and use the rotary knob to highlight the 'networking' tab on the LCD menu.
- 2 Press the 'set' button to enter the network settings screen.
- 3 Turn the rotary knob to select the "IP address" tab.
- 4 Press the 'set' button to highlight the first field of the IP address. Use the rotary knob to change values.
- 5 Press 'set' to confirm the first field, then repeat the above step for the next three fields. If you need to assign the subnet and gateway address, they can be set using the same method.
- 6 Press the menu button twice to return to the home screen.



Connecting Blackmagic MultiView 16 to an Ethernet network will allow you to control the unit from another location

Network Settings	
IP Address	192.168.10.160
Subnet	255.255.255.0
Gateway	192.168.10.1

Use the rotary knob or the view buttons on Blackmagic MultiView 16's control panel to assign values to your network settings

## Teranex Mini Smart Panel

The Teranex Mini Smart Panel mounts to the front of your Blackmagic MultiView 4 and replaces the original basic panel. You get fast access to your settings using buttons, a rotary knob and built in LCD.

### Installing Teranex Mini Smart Panel

Installing your optional Smart Panel is easy and because the panels are hot swappable you don't even need to turn off your Blackmagic MultiView 4 when installing it.

- 1 Remove the two M3 screws on each side of your Blackmagic MultiView 4's basic front panel using a Pozidriv 2 screwdriver and gently pull the panel away from the front of the unit.
- 2 On the inside of the basic panel, you'll notice a small clear plastic tube attached to the bottom corner. This tube directs light from the LED inside the unit to illuminate the status indicator on the basic panel. This tube should stay attached to the basic front panel.

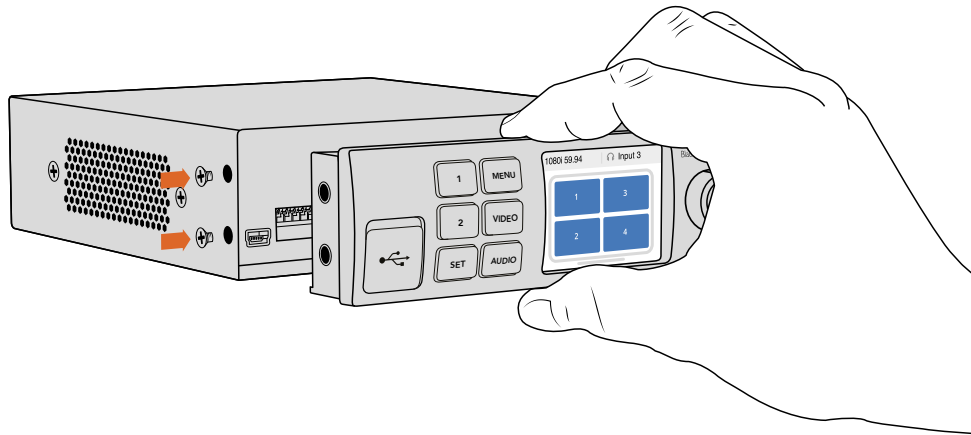
**TIP** If reattaching the basic front panel, make sure the light pipe for the power indicator is aligned with the slot in the front of the unit.

- 3 Align the connector on the rear of the Smart Panel with the adjoining connector on the face of your Blackmagic MultiView 4 and gently push the Smart Panel towards the unit until the connectors are firmly seated. The Smart Panel should make a firm connection and fit neatly inside the face of your Blackmagic MultiView 4.
- 4 Re-insert the M3 screws from the original panel.

If your Blackmagic MultiView 4 is installed in a Teranex Mini Rack Shelf, you will need to remove the unit from the rack shelf to access the front panel screws.

See the 'Rack Installation' section for more information.

Your Blackmagic MultiView 4's USB port is still accessible with the Smart Panel attached. To access the port, simply open the rubber USB dust cover. With the Smart Panel installed, the front panel small switches are covered up and no longer used. This is because all settings can now be changed via the LCD menus.



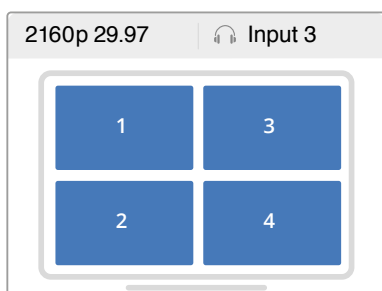
When installing the Teranex Mini Smart Panel to your Blackmagic MultiView 4, holding the panel with your fingers and thumb aligned with the panel's rear connector will help guide it into place

**TIP** The original basic panel is very strong, so if you need to mount your Blackmagic MultiView 4 in the back of a rack system or in areas where there are lots of cables or activity, you can always reinstall the original basic panel.

## Teranex Mini Smart Panel Features

The features of the Smart Panel are similar to the MultiView 16's built in control panel. The home screen is the first feature you'll see on the LCD and is the default display showing a convenient overview of settings, such as:

- **Multi view output frame rate** – Located in the upper left corner, this displays the selected frame rate for your Ultra HD SDI multi view output.
- **Audio input** – This information is located next to the multi view output frame rate and displays which SDI input is being used for embedded audio in the HDMI and SDI multi view output signal.
- **Multi view layout** – This displays the 2x2 multi view layout.



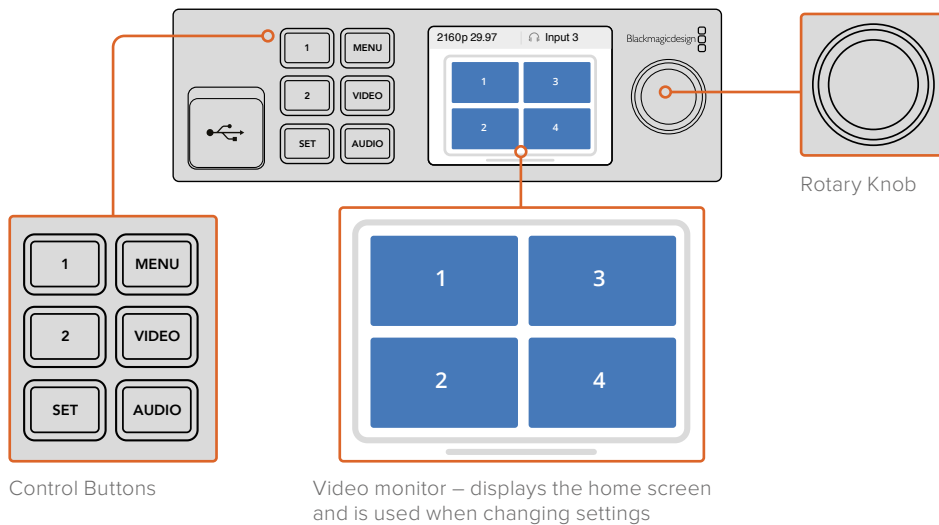
The 'home' screen is the default display on Teranex Mini Smart Panel's LCD

## Control Buttons and Rotary Knob

Your Teranex Mini Smart Panel has a set of buttons and a rotary knob that are used to navigate your Blackmagic MultiView 4's settings menu.



- **1 and 2 buttons** – Press these buttons to increase or decrease numeric setting values, or to move up or down through menu settings.
- **Set** – After changing a setting using the 1 and 2 buttons, press the ‘set’ button to confirm your setting.
- **Menu** – Press to enter the settings menu for your Blackmagic MultiView 4. You can also press the menu button to step back through menu items all the way to the home screen.
- **Video and Audio Buttons** – These buttons are specific to Teranex Mini converters and are not used with Blackmagic MultiView 4.
- **Rotary Knob** – Turn the rotary knob clockwise or counter clockwise to navigate through the menu settings and adjust numeric setting values.



## Changing Settings using Teranex Mini Smart Panel

Changing settings using the Teranex Mini Smart Panel is more convenient and you can immediately confirm your settings visually on the LCD.

To enter your Blackmagic MultiView 4’s setup menu, press the ‘menu’ soft button on the Teranex Mini Smart Panel. Here you can access the following settings.

Settings	
Audio In	Source 1
Video Format	2160p25
> Overlay	
> Network	

Highlight the menu item you wish to adjust and press “set” to select it. Scroll through the settings using the rotary knob

### Audio In

This setting is used to select the SDI input from which audio will be taken and embedded into the multi view outputs.

## Video Format

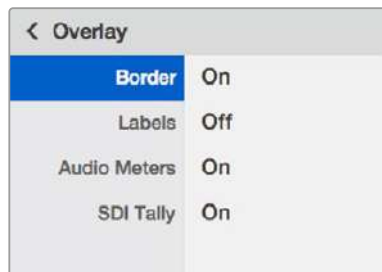
Your Blackmagic MultiView 4 can be set to Ultra HD or HD output at either 29.97 or 25 frames per second. Use this setting to cycle through the available resolution and frame rate options.

## Overlay

The overlay submenu lets you set the appearance of overlay features on or off.

Overlay features are:

- **Borders** – Lets you separate each view in a grid like pattern.
- **Labels** – Makes ‘view’ labels visible or hidden. Labels can be changed using Blackmagic MultiView Setup.
- **Audio Meters** – Turns audio VU meters on or off for all the views. The first 2 channels embedded in each SDI signal are displayed in each view, which means you can monitor audio levels together with the picture.

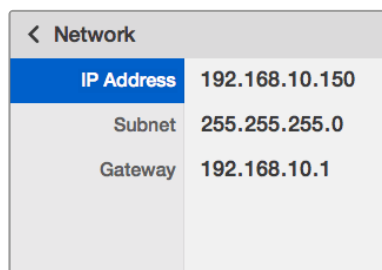


## Network

The ‘network’ settings let you set the IP, Subnet and Gateway addresses for your Blackmagic MultiView 4 when connecting to a network.

To set your Blackmagic MultiView 4’s IP address:

- 1 Press the ‘menu’ button on the front control panel and use the rotary knob to highlight the ‘networking’ tab on the LCD menu.
- 2 Press the ‘set’ button to enter the network settings screen.
- 3 Turn the rotary knob to select the “IP address” tab.
- 4 Press the ‘set’ button to highlight the first field of the IP address. Use the rotary knob to change values.
- 5 Press ‘set’ to confirm the first field, then repeat the above step for the next three fields. If you need to assign the subnet and gateway address, they can be set using the same method.
- 6 Press the menu button twice to return to the home screen.

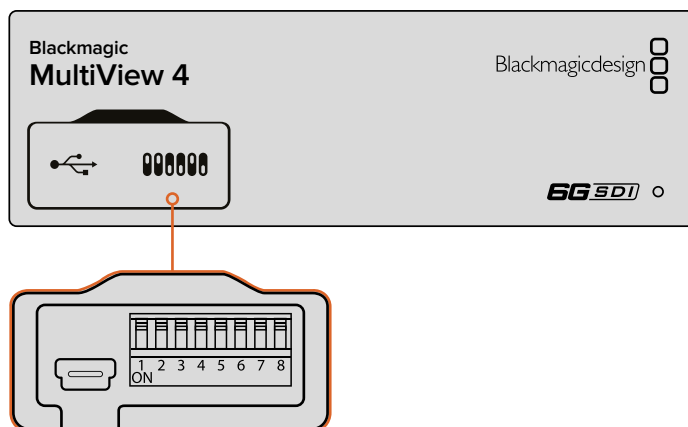


Use the rotary knob or the “1” and “2” buttons on Teranex Mini Smart Panel to assign values to your Blackmagic MultiView 4 network settings

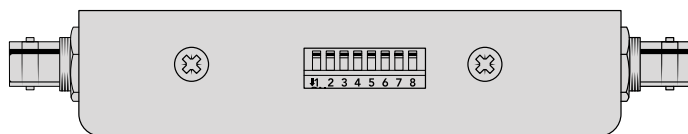
## Changing Settings using Switches

On Blackmagic MultiView 4 and MultiView 4 HD, there are small built in switches to let you change settings. On the Blackmagic MultiView 4, the switches are on the front panel, behind a rubber dust cap.

On Blackmagic MultiView 4 HD, the switches are on the side of the unit.



Change settings by adjusting the switches with a pen



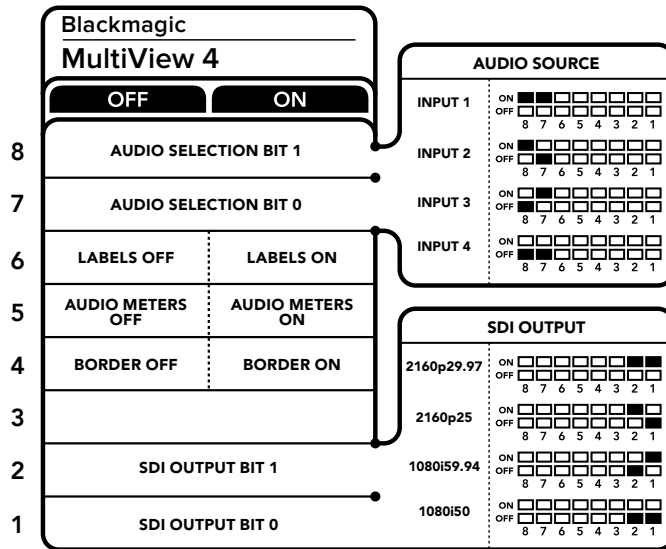
On Blackmagic MultiView 4 HD, the small switches are located on the rear side panel

### Built in Switches

You'll find a switch settings diagram printed on the base of the unit. Ensure your switch settings correspond to the legend by observing the switch numbers from 8 to 1, left to right.

**TIP** Even though switch settings are printed on the base of the unit, new features in later updates can add new settings so it's worth checking the latest version of this manual for the most up to date information. You can download the latest version from the Blackmagic Design support center at [www.blackmagicdesign.com/support](http://www.blackmagicdesign.com/support)

## Switch Settings for Blackmagic MultiView 4



Switch settings of Blackmagic MultiView 4

Blackmagic MultiView 4's switches let you change the following settings:

### Switch 8 and 7 – Audio Selection

Switches 8 and 7 are represented as bits 1 and 0 respectively. This means that by setting various on/off combinations of switches 8 and 7 you can select which SDI input is being used for embedded audio in the HDMI and SDI multi view output signal.

#### Audio Selection Table

Audio Source	Switch 8	Switch 7	Switch Diagram
Input 1	ON	ON	ON <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Input 2	ON	OFF	ON <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Input 3	OFF	ON	ON <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Input 4	OFF	OFF	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

### Switch 6 – Labels

Set switch 6 to 'on' to display labels for each window in your multi view output signal. These labels can be set using Blackmagic MultiView setup as detailed later in this manual. Set switch 6 to 'off' to hide labels.

### Switch 5 – Audio Meters

Set switch 5 to 'on' to display audio meters for each window in your multi view output signal. Set switch 5 to 'off' to hide audio meters.

### Switch 4 – Borders

Set switch 4 to 'on' to display borders between each MultiView window. Set switch 4 to 'off' to hide borders.

## Switch 2 and 1

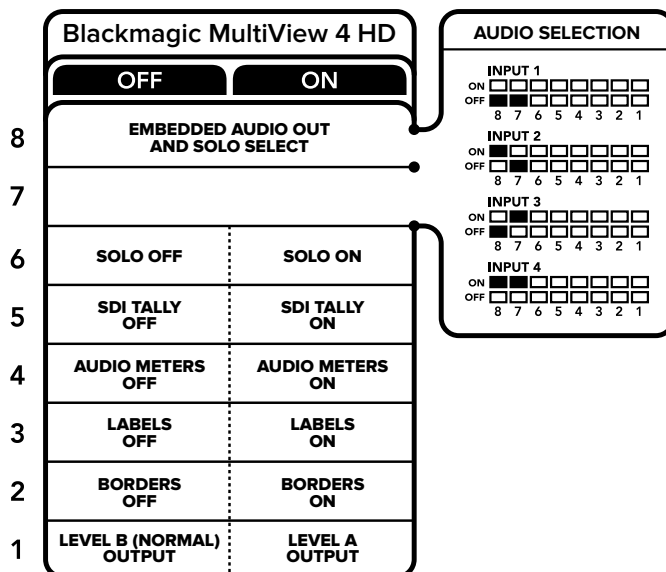
Switches 2 and 1 are represented as bits 1 and 0 respectively. This means that by setting various on/off combinations of switches 2 and 1 you can select the output format of your MultiView 4's SDI signal.

### SDI Output Selection Table

SDI Output	Switch 2	Switch 1	Switch Diagram
2160p29.97	ON	ON	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
2160p25	ON	OFF	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
1080i59.94	OFF	ON	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
1080i50	OFF	OFF	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

**NOTE** When using the optional Teranex Mini Smart Panel, the switch settings will be overridden by the Smart Panel settings. Your Blackmagic MultiView 4 will retain its last settings whether applied via switch, Smart Panel or Blackmagic MultiView Setup software. If reverting to switch control after removing the Smart Panel or updating your Blackmagic MultiView 4's settings via software, you may need to toggle individual switches for new settings to take effect.

## Switch Settings for Blackmagic MultiView 4 HD



The switch legend on the base of the Blackmagic MultiView 4 HD gives you all the information you need to change settings.

Blackmagic MultiView 4 HD's switches let you change the following settings:

### Switch 8 and 7 – SDI Audio Embed and Solo Select

Switches 8 and 7 are grouped together to provide 4 ON/OFF combinations. Having four different combinations allows the audio from any one of the four SDI inputs to be embedded into the multi view output. In solo mode, audio follows video, so you can use these switches to select the view source and audio source.

#### Audio Selection Table

Audio Source	Switch 8	Switch 7	Switch Diagram
Input 1	OFF	OFF	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 8 7 6 5 4 3 2 1
Input 2	ON	OFF	ON <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 8 7 6 5 4 3 2 1
Input 3	OFF	ON	ON <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 8 7 6 5 4 3 2 1
Input 4	ON	ON	ON <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 8 7 6 5 4 3 2 1

### Switch 6 – Solo View

Set switch 6 to ON to display solo view. This lets you monitor a single view full screen. Set switch 6 to OFF to monitor the 2x2 multi view layout.

The audio embedded in the solo view output matches your view source selection automatically. Use switch 7 and 8 to select a combined audio and view source for the solo layout. In 2x2 multi view layout, switch 7 and 8 select the audio input.

### Switch 5 – Tally

Set switch 5 to ON to display tally borders on the views. Set to OFF to hide tally borders.

All additional data including ATEM SDI camera control, time code and closed captions pass through unaltered when in solo mode.

**TIP** The input number for each view can be set using Blackmagic MultiView Setup software. Make sure the view number matches the input number set on your switcher so tally displays correctly. Refer to the 'Tally Configuration' section for more information.

### Switch 4 – Audio Meters

Set switch 4 to ON to display audio meters on the views. Set to OFF to hide audio meters.

### Switch 3 – View Labels

Set switch 3 to ON to display labels on each view. Set to OFF to turn labels off.

### Switch 2 – Borders

Set switch 2 to ON to display the view borders, and to OFF to turn borders off.

### Switch 1 – Level A and Level B 3G-SDI

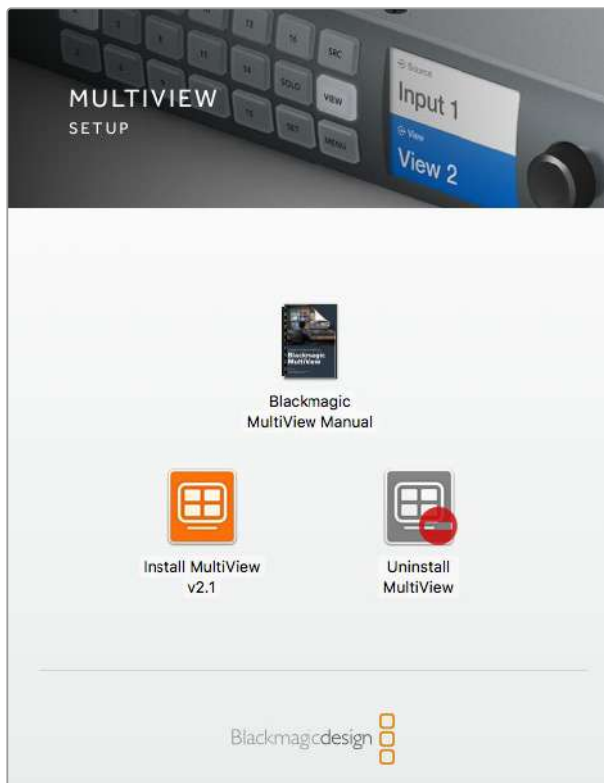
Set switch 1 to OFF to select level B 3G-SDI output, or to ON to select level A 3G-SDI. This lets you change the 3G-SDI output level for compatibility with other SDI equipment.

# Using Blackmagic MultiView Setup

Blackmagic MultiView Setup lets you easily configure your Blackmagic MultiView from any Mac or Windows PC, as well as update the unit's internal software. The utility is intuitive and easy to use, plus if you have Blackmagic MultiView 4 connected to a network, you can even change settings via Ethernet so you don't have to plug in via USB.

## Installing Blackmagic MultiView Setup

Blackmagic MultiView Setup runs on 64-bit versions of Windows and on the latest Sierra and High Sierra versions of macOS.



To install the Blackmagic MultiView setup, double click the installer and follow the prompts

### Windows installation

- 1 Double click the installer file from the supplied media or from your downloads folder if you downloaded the software from the Blackmagic Design website.
- 2 Follow the install prompts and accept the terms in the license agreement and Windows will automatically install the software.

Click the Windows 'start' button and then All Programs>Blackmagic Design>MultiView. The multi view folder contains the Blackmagic MultiView setup application.

## Mac OS X installation

- 1 Double click the installer file from the supplied media or from your downloads folder if you downloaded the software from the Blackmagic Design website.
- 2 Follow the install prompts and Mac OS X will automatically install the software.

A folder called “Blackmagic MultiView” will be created within your applications folder, containing the Blackmagic MultiView Setup application.

## Blackmagic MultiView Setup Home Page

The first thing you will see after launching Blackmagic MultiView Setup is the software home page. If you have multiple Blackmagic MultiView connected to your network, you can select them by clicking on the arrows on the left and right side of the home page.

To access settings for your Blackmagic MultiView, click on the circular settings icon underneath the product image, or you can click on the image itself.



Blackmagic MultiView Setup lets you change your Blackmagic MultiView settings from a computer when connected via Ethernet or USB

## Changing Settings using Blackmagic MultiView Setup

Click on the settings icon to open the setup settings for your Blackmagic MultiView. In the settings window you will see three tabs named ‘sources’, ‘views’ and ‘configure’. On Blackmagic MultiView 4 and MultiView 4 HD, the ‘views’ setting is not required as views are not adjustable via the Videohub Control software. Blackmagic MultiView 4 HD also has a ‘tally’ menu for changing tally settings.

**TIP** Make sure your network settings on the unit matches that on your computer for sources to be displayed.





Use Blackmagic MultiView Setup to customize input labels so you can quickly identify each source within the multi view layout

- **Sources** – Lets you customize your input labels. This changes how your sources are labelled on your multi view display.
- **Views** – This tab is only relevant when controlling Blackmagic MultiView 16 via Videohub Control software. By changing the name of the views, you can make them easier to identify within the destinations panel in the Videohub Control software.
- **Video Output** – Lets you customize the video format and SD output aspect ratio from Blackmagic MultiView 4 HD.
- **Configure** – The 'configure' tab gives you control over settings such as device name customization, video output and overlay settings, plus network settings and serial control adjustments.

## Sources

### Customizing Input Labels

Labeling your sources lets you quickly identify each source within the multi view layout. You can also save and load label sets, so if you regularly use your Blackmagic MultiView for different applications, you can quickly load labels without the need to re-enter them.

Labels are visible in the Videohub Control software and also to networked Videohub control panels.

To customize your input labels:

- 1 Click on the 'sources' tab.
- 2 Click the text box for the input source name you want to change and enter a new label name.
- 3 Click 'save' to confirm your setting.

## Views

### Customizing View Labels

On Blackmagic MultiView 16, you can change the labels of the views so they are easier to identify as destinations when controlling your MultiView 16 via Videohub Control software.

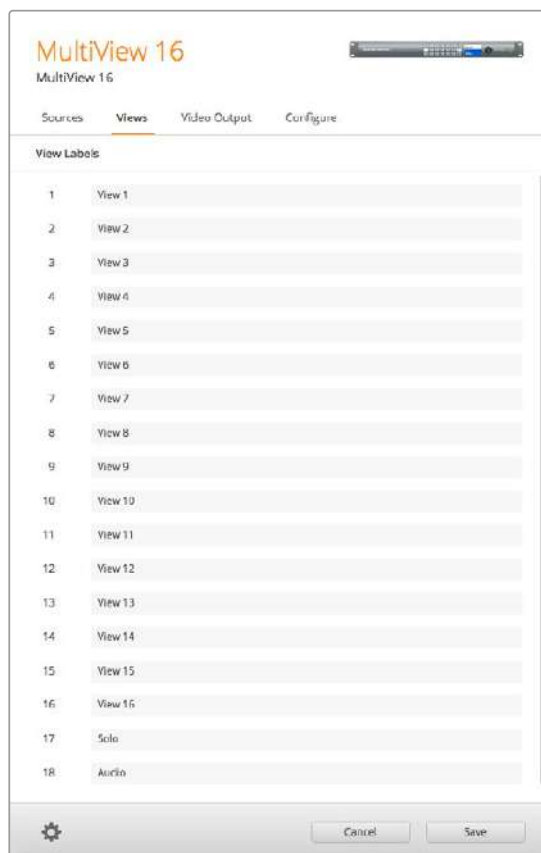
To customize the view labels:

- 1 Click on the 'views' tab.
- 2 In the 'output labels' setting, click the text box for the view you want to change and enter a new label name.
- 3 Click 'save' to confirm your setting.

When the 'view' labels are at their default state, you will notice output 17 is labelled 'solo' and output 18 is labelled 'audio'.

Output 17 lets you change the software label for the 'solo' setting which is controlled using your Blackmagic MultiView 16's front panel. This is beneficial when controlling your MultiView 16 using Blackmagic Videohub Control software. Customizing the 'solo' output label in Blackmagic MultiView Setup lets you change how it appears in Blackmagic Videohub Control.

Output 18 relates to the 'audio in' setting in your Blackmagic MultiView 16's LCD menu, which routes the audio you wish to embed in your multi view output. Similar to the 'solo' output label, you can change the view label so you can customize its appearance when controlling Blackmagic MultiView 16 using Blackmagic Videohub Control.



The inclusion of the "solo" and "audio" output labels let you change their names so you can customize how they appear when controlling your Blackmagic MultiView 16 using Blackmagic Videohub Control

## Video Output

### Video Format and HD Output

Video format settings differ slightly between Blackmagic MultiView models.

Blackmagic MultiView 16 can output HD and Ultra HD video simultaneously. You can also choose the video frame rate you want to output. For example if you want to output a signal that conforms to the format commonly used in the USA, select 2160p29.97 and the HD output will automatically match the frame rate.

In this example, if 2160p29.97 is selected as the video format, you can set the HD output to 1080p29.97 or 1080i59.94 to suit your video requirements.



The radio buttons in the 'video output' tab for MultiView 16 are used to set the view layout, Ultra HD video format, HD output and SD aspect ratio

On Blackmagic MultiView 4 you can choose whether to output Ultra HD or HD video via the SDI output, as well as set the frame rate. These settings are available in the 'video format' dropdown menu.



The 'video output' tab for Blackmagic MultiView 4 contains a dropdown list of video format options that covers both resolution and frame rate

On Blackmagic MultiView 4 HD, you can use the 'video format' menu to select the HD frame rate and whether to output video as interlaced or progressive scan. You can also set the SD aspect ratio for your Blackmagic MultiView 4 HD to 16:9 or 4:3.



The 'video output' tab for Blackmagic MultiView 4 HD lets you set the output HD resolution and frame rate, plus set it to interlaced or progressive scan

## Changing the Multi View Layout

Similar to the 'layout' settings on Blackmagic MultiView 16's control panel LCD menu, you can also change the layout using the setup software. Choose the layout setting you wish to use by clicking on the desired layout icon in the 'details' settings.



Set the screen layout for MultiView 16 in the 'video output' tab.

## Tally Configuration

On Blackmagic MultiView 4 HD, you can set the tally configuration to tally override, or flag as sent by a Blackmagic camera, or by camera number when sent from the ATEM switcher to input 4 of the MultiView 4 HD.



Tally options on the 'Tally' menu of the MultiView setup utility.

When selecting tally to correspond to the switcher input you can enter the camera number from 1 to 99 into the text field for inputs 1 to 4.

## Tally Override

Tally signals are generally provided by the program return feed connected to the last SDI input on your MultiView. However, there may be times when you want to have all your cameras connected to all the views.

If you are using Blackmagic Design cameras connected to an ATEM switcher, or to another SDI switcher with a third party tally system, you can enable tally override. With tally override selected, your MultiView 4 HD will now look for tally signals embedded in each SDI input signal. This means all views receive their tally signal independently, rather than a collective tally signal via the program return on the unit's last input.

**TIP** ‘Tally override’ mode works with Blackmagic URSA Mini, URSA Mini 4K, URSA Mini Pro, and URSA Broadcast cameras that are connected to a Blackmagic ATEM switcher or Blackmagic Camera Fiber Converter. For information on how to connect a third party switcher or third party tally, refer to the Blackmagic 3G-SDI Shield for Arduino manual.

## SD Aspect Ratio

If 4:3 SD video is connected to your Blackmagic MultiView, check the ‘set to 4:3’ checkbox. This ensures your 4:3 video displays using the correct aspect ratio.

If 16:9 SD video is connected, check the ‘set to 16:9’ checkbox to display the image correctly in its view.

When you input an SD source to Blackmagic MultiView 4 HD, you can switch between a 16:9 and 4:3 output using the setup utility. On the ‘Video Output’ menu, select an option for the SD aspect ratio.



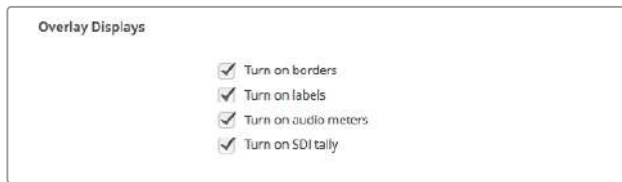
SD aspect ratio options on the ‘Video Output’ menu of the MultiView setup utility.

## Overlay Display

Blackmagic MultiView 16 and Blackmagic MultiView 4 have checkboxes in the ‘overlay’ settings to enable each feature on your Blackmagic MultiView.

Overlay features are:

- **Borders:** Lets you separate each view in a grid like pattern.
- **Labels:** Makes ‘view’ labels visible or hidden. Labels can be changed using Blackmagic MultiView Setup.
- **Audio Meters:** Turns audio VU meters on or off for all the views. The first 2 channels embedded in each SDI signal are displayed in each view, which means you can monitor audio levels together with the picture.
- **SDI Tally:** When your Blackmagic MultiView has an ATEM switcher’s program SDI output connected to input 16 on Blackmagic MultiView 16, or input 4 on Blackmagic MultiView 4 models, you can view tally borders around a view when its source is switched to air. The tally feature can be enabled by selecting the ‘turn on SDI tally’ checkbox in the overlay settings. Deselect to disable the feature. An input number can be assigned in the setup software utility so tally displays correctly.



On Blackmagic MultiView 16 and Blackmagic MultiView 4, the overlay settings in the 'configure' tab lets you turn overlay features on or off such as borders, view labels, audio meters, or even SDI tally borders

**TIP** For tally to work properly, make sure you connect all your Blackmagic MultiView inputs so they match the input numbers on your ATEM switcher or tally may be displayed on the wrong view.

## Configure

### Naming your Blackmagic MultiView

The 'Configure' tab differs between Blackmagic MultiView models.

The 'Configure' tab for a Blackmagic MultiView 16 or Blackmagic MultiView 4 has groups of settings for 'Details', 'Overlay', and 'Network settings'. For Blackmagic MultiView 4 HD, it shows the label and software version number and has no settings.

To name your Blackmagic MultiView 16 or Blackmagic MultiView 4 so it's easy to identify when used remotely:

- 1 Click on the 'configure' tab.
- 2 In the 'details' setting, click the 'name' text box and enter a new label for your Blackmagic MultiView.
- 3 Click 'save'.



Use Blackmagic MultiView Setup to name your Blackmagic MultiView 16 so it's easy for network users to identify

## Network and Serial Control Settings

Network and serial control settings can be set using Blackmagic MultiView Setup when your Blackmagic MultiView 16 is connected to your computer via USB. You can also change these settings using the front control panel LCD menu. When configuring Blackmagic MultiView 4, only network settings are available.

To change network settings, simply click in the text box and enter the values with your keyboard, or check the desired checkbox.



The screenshot shows a configuration window with two sections. The top section, titled "Network Settings", contains three text input fields: "IP Address" with the value "192.168.10.160", "Subnet Mask" with "255.255.255.0", and "Gateway" with "192.168.10.1". The bottom section, titled "Serial Control", features a "Leitch protocol:" label followed by two radio button options: "Leitch Client" (which is unselected) and "Leitch Server" (which is selected).

When connecting to a network, you may need to change your MultiView 16's 'network settings' to suit. 'Serial control' settings lets you set your MultiView 16 for Leitch client or server configuration based on your RS-422 remote control setup requirements

To set up serial control, connect Blackmagic MultiView 16 to your computer via USB and follow the steps below:

- 1 Launch Blackmagic MultiView setup and select your Blackmagic MultiView 16 by clicking on the product image or the settings icon below it.
- 2 Click on the 'configure' tab and set the "Leitch Protocol" switch to "Leitch Client" if your Blackmagic MultiView 16 is to act as a client of a connected control panel, or "Leitch Server" if your unit is to be controlled from an automation system or third party router control system.
- 3 Click on the 'save' tab to confirm your setting.



The screenshot shows the "Serial Control" section of the configuration window. It includes the "Leitch protocol:" label and two radio button options: "Leitch Client" (unselected) and "Leitch Server" (selected).

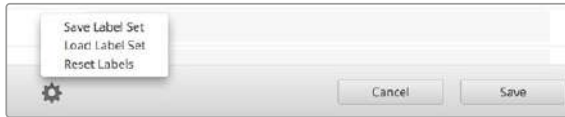
Select either 'client' or 'server' when using RS-422 serial control

## Saving and Loading Label Sets

If you are regularly using a set of labels for a recurring project, you can easily save them to a file and load them later.

To save your labels, click on the gear icon in Blackmagic MultiView setup to open the 'label set' settings and select "save label set". Choose a location to store the file and click 'save'.

To load your labels, click on the gear icon to open the 'label set' settings and select "load label set". Navigate to your saved label set file and click 'load'.



Use Blackmagic MultiView setup to save and load labels

## Updating the Internal Software

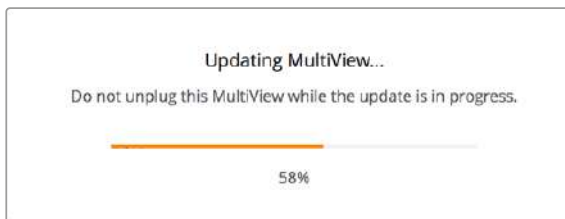
Occasionally, the internal software in your Blackmagic MultiView will need to be updated. Updates to internal software can provide new features, compatibility with new hardware, and support for new formats.

To update your Blackmagic MultiView internal software:

- 1 Connect your Blackmagic MultiView to your computer via USB or Ethernet.
- 2 Launch Blackmagic MultiView setup and it will automatically display any Blackmagic MultiViews that are connected to your network.
- 3 Select your Blackmagic MultiView by clicking on the product image or the settings icon below the product name.
- 4 Blackmagic MultiView setup will inform you if an update is required.
- 5 If an update is required, click the 'update' button and allow the software to install. Make sure your Blackmagic MultiView is not unplugged while the update is in progress.
- 6 Click the 'close' button when the update is finished.



Click the 'update' button to install new internal software



Make sure your Blackmagic MultiView is not unplugged while the update is in progress



## Using Videohub Control Software

When you have Blackmagic MultiView 16 connected to a network, you can use Blackmagic Videohub Control on a Mac or Windows computer to route Blackmagic MultiView 16's video inputs to different views within your multi view layout. Your Blackmagic MultiView's SDI inputs appear as pushbuttons within the 'sources' panel, while the views appear as pushbuttons within the 'destinations' panel. The Videohub Control application is part of the Videohub software installer which can be downloaded from the Blackmagic Design support center at [www.blackmagicdesign.com/support](http://www.blackmagicdesign.com/support).

**NOTE** You can use Videohub Control software to route sources to views on Blackmagic MultiView 16, plus other settings such as selecting the view for solo mode, or the audio source for the multi view output. On Blackmagic MultiView 4, you can use Videohub Control software to change the solo source and audio source for the multi view output.

### Select your MultiView 16

After launching the Videohub Control software, click on the gear icon to open the 'settings' pop up menu, and choose "select Videohub". Select your Blackmagic MultiView 16's name from the list of connected devices.

If your inputs are labelled, the names you assigned will appear within the Videohub Control software. If they are not labelled they will display as Input 1, Input 2, Input 3, etc.



You can use Blackmagic Videohub Control to route Blackmagic MultiView 16's sources to different views

## Viewing your Inputs

To see which of your Blackmagic MultiView 16's video inputs is routed to a particular view, click a view pushbutton in the destinations panel. The destination, or view, button will illuminate. In the 'sources' panel, the pushbutton of the routed video input will also illuminate, making it clear which input, or source, is routed to the view.

## Routing Inputs to Views

To route a video input to a view, click a view pushbutton from the destination panel, then click an input pushbutton in the sources panel to immediately route that input to the view.

## Solo Input

Use the "solo input" pushbutton to determine which input is displayed full screen when the "solo" button is enabled on the Blackmagic MultiView 16's front panel. Simply click on the "solo input" pushbutton in the Videohub Control destinations panel, then click an input pushbutton in the sources panel.

## Audio Input

On Blackmagic MultiView 16 and Blackmagic MultiView 4 you can use the "audio input" pushbutton in Videohub Control software to determine which SDI input's audio is routed to the multi view output. Simply click on the "audio input" pushbutton in the Videohub Control destinations panel, then click an input pushbutton in the sources panel to immediately route that input's audio to the multi view output.



The "solo input" and "audio input" pushbuttons allow you to change these settings using Videohub Control

# Developer Information

## Blackmagic Videohub Ethernet Protocol v2.3

### Summary

Your Blackmagic MultiView is compatible with the Blackmagic Videohub Ethernet Protocol. It is text based and is accessed by connecting to your Blackmagic MultiView's IP address and TCP port 9990.

**NOTE** Controlling your MultiView via Ethernet is available on Blackmagic MultiView 16 and Blackmagic MultiView 4, however, most features are relevant to Blackmagic MultiView 16. On Blackmagic MultiView 4, you can change the solo source and audio source for the multi view output.

The multi view sends information in blocks which each have an identifying header in all caps, followed by a full colon. A block spans multiple lines and is terminated by a blank line. Each line in the protocol is terminated by a newline character.

Lines sent to the Blackmagic MultiView 16 can be terminated with line feed, carriage return or both.

Upon connection, the multi view sends a complete dump of the state of the device. After the initial status dump, status updates are sent every time the multi view status changes.

To be resilient to future protocol changes, clients should ignore blocks they do not recognize, up to the trailing blank line. Within existing blocks, clients should ignore lines they do not recognize.

### Protocol Preamble

The first block sent by the multi view is always the protocol preamble:

```
PROTOCOL PREAMBLE:↵  
Version: 2.3↵  
↵
```

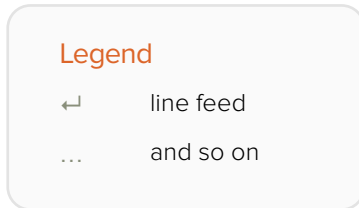
The version field indicates the protocol version. When the protocol is changed in a compatible way, the minor version number will be updated. If incompatible changes are made, the major version number will be updated.

### Device Information

The next block contains general information about the connected Blackmagic MultiView 16 device. If a device is connected, the multi view will report the attributes of the Blackmagic MultiView 16:

```
MULTIVIEW DEVICE:↵  
Device present: true↵  
Model name: Blackmagic MultiView 16↵  
Video inputs: 16↵  
Friendly name:  
Unique ID:  
Video processing units: 0↵  
Video outputs: 16↵  
Video monitoring outputs: 0↵  
Serial Ports:  
↵
```

This example is for the Blackmagic MultiView 16 which has 16 sources and 18 views including solo which is view 16 and audio which is view 17, referred to here as outputs.



Version 2.3 of the Blackmagic Videohub Ethernet Protocol was released with Videohub 4.9.1 software

### Initial Status Dump

The next two blocks enumerate the labels assigned to the input and output ports.

```
INPUT LABELS:↵
0 VTR 1↵
1 VTR 2↵
...
↵

OUTPUT LABELS:↵
0 Output feed 1↵
1 Output feed 2↵
...
↵
```

Note: Input and Output labels are always numbered starting at zero in the protocol which matches port one on the chassis.

The next three blocks describe the routing of the view ports.

```
VIDEO OUTPUT ROUTING:↵
0 5↵
1 3↵
...
↵
```

The next block describes the locking status of the views. Each port has a lock status of “O” for ports that are owned by the current client (i.e., locked from the same IP address), “L” for ports that are locked from a different client, or “U” for unlocked.

```
VIDEO OUTPUT LOCKS:↵
0 U↵
1 U↵
...
↵
```

The last block is the configuration block.

```
Layout: SOLO or 2x2 or 3x3 or 4x4
Output format: 50i or 50p or 60i or 60p
Solo enabled: True or False
Widescreen SD enable: True or False
Display border: True or False
Display labels: True or False
Display audio meters: True or False
Display SDI tally: True or False
```

## Status Updates

When any route, label, or lock is changed on the multi view by any client, the multi view resends the applicable status block, containing only the items that have changed.

If multiple items are changed, multiple items may be present in the update:

```
OUTPUT LABELS:↵
7 New output 8 label↵
10 New output 11 label↵
↵
```

## Requesting Changes

To update a label, lock or route, the client should send a block of the same form the multi view sends when its status changes. For example, to change the route of output port 8 to input port 3, the client should send the following block:

```
VIDEO OUTPUT ROUTING:↵
7 2↵
↵
```

The block must be terminated by a blank line. On receipt of a blank line, the multi view will either acknowledge the request by responding:

```
ACK↵
↵
```

or indicate that the request was not understood by responding:

```
NAK↵
↵
```

After a positive response, the client should expect to see a status update from the MultiView showing the status change. This is likely to be the same as the command that was sent, but if the request could not be performed, or other changes were made simultaneously by other clients, there may be more updates in the block, or more blocks. Simultaneous updates could cancel each other out, leading to a response that is different to that expected.

For MultiView 16 the client can change the solo source and the audio source to embed on the output.

Solo mode needs to be enabled either from the front panel or by sending the block:

```
CONFIGURATION:↵
Solo enabled: true↵
↵
```

Once enabled the following block will change the SOLO source to input 11:

```
Video Output Routing:↵
16 10↵
↵
```

This is not available on MultiView 4.

The following block will send embedded audio from input 1 to the MultiView 16 output:

```
Video Output Routing:↵
17 0↵
↵
```

The following block will send embedded audio from input 1 to the MultiView 4 output:

```
Video Output Routing:↵
5 0↵
↵
```

In the absence of simultaneous updates, the dialog expected for a simple label change is as follows:

```
OUTPUT LABELS:↵
6 new output label seven↵
↵
ACK↵
↵
OUTPUT LABELS:↵
6 new output label seven↵
↵
```

The asynchronous nature of the responses means that a client should never rely on the desired update actually occurring and must simply watch for status updates from the MultiView and use only these to update its local representation of the server state.

### Requesting a Status Dump

The client may request that the MultiView resend the complete state of any status block by sending the header of the block, followed by a blank line. In the following example, the client requests the MultiView resend the output labels:

```
OUTPUT LABELS:↵
↵
ACK↵
↵
OUTPUT LABELS:↵
0 output label 1↵
1 output label 2↵
2 output label 3↵
...
↵
```

### Checking the Connection

While the connection to the MultiView is established, a client may send a special no-operation command to check that the MultiView is still responding:

```
PING:↵
↵
```

If the MultiView is responding, it will respond with an ACK message as for any other recognized command.

## Blackmagic MultiView 16 RS-422 Protocol

### General

The RS-422 protocol can be used to control Blackmagic MultiView 16 as a slave device from third party routers and automation systems.

The “Leitch Server” mode implements the router (server) side of the Leitch Serial Pass Through Protocol as specified in section 4 of Leitch document SPR-MAN revision D. In “Leitch Client” mode, the Blackmagic MultiView 16 implements the controller (client) side of the Leitch terminal protocol. Set the desired leitch mode in the ‘configure’ settings in the Blackmagic MultiView Setup software.

This document describes the commands and parameters in the protocol that are relevant and supported by Blackmagic MultiView 16. Other commands and parameters specified in the Leitch protocol are accepted but ignored.

The RS-422 serial port is configured as 9600 N81:

9600 is the line speed, or baud rate, at 9600 bits/sec.

N represents no parity check, or 'none'.

8 is the data length.

1 is for stop bits.

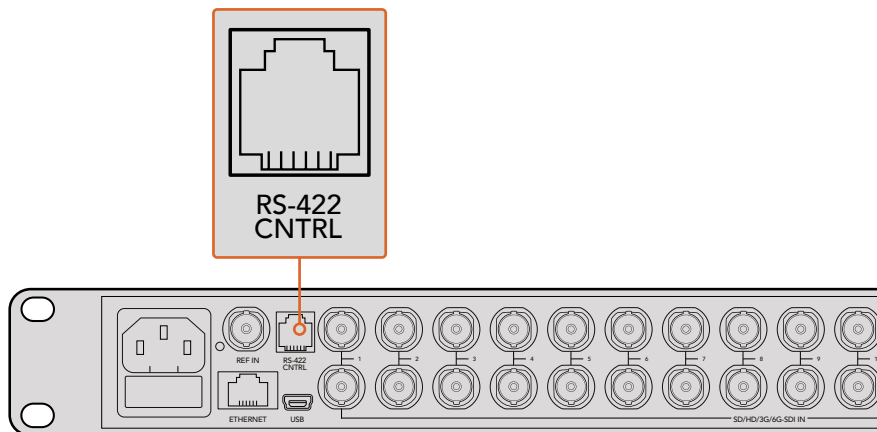
To summarize N81, data without a parity check begins with 1 start bit, includes 8 true data bits, and 1 stop bit. There are 10 bits in total.

The protocol is line oriented, with a maximum length of 250 characters per command. Each command from the client should be terminated with a carriage return (\r). Each response from the server will be terminated with a carriage return and line feed (\r\n).

Sources, destinations and levels are always specified in base-16, numbered from zero. Levels are always between 0 and 15 ("F") . Blackmagic MultiView 16 only has one valid level – level zero.

On connecting to the serial port, the client should send a carriage return. Blackmagic MultiView 16 will respond with a > character prompt, which is not followed by a carriage return or line feed. Receiving the prompt indicates that a connection has been established. The same prompt will be issued after each command received by the MultiView.

In the following documentation, commands in orange and values in blue must be typed literally, including any spaces. In the following example of an immediate command using destination port 7 and source port 3, @ X:0/destination,source would be entered as: @ X:0/6,2

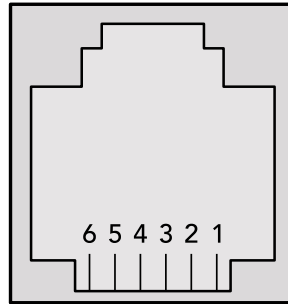


The RS-422 serial port lets you control Blackmagic MultiView 16 from third party routers and automation systems. The connector is an RJ11 connector, the same used in many landline telephone connections. By modifying an RS-422 to USB adapter cable terminated with an RJ11 connector, you can control Blackmagic MultiView 16 using external controllers via USB.



An RS-422 to USB adapter cable and RJ11 connector can be purchased from electronics stores such as Digi-Key.com. Refer to the pinout diagram below for help wiring the RJ11 connector to the adapter cable.

Pin No.	Function
Pin 1	TX +
Pin 2	TX -
Pin 3	GND
Pin 4	GND
Pin 5	RX -
Pin 6	RX +



Pinout diagram for the RJ11 connector

### Notifications

Once connected, if status reporting is enabled, the client will receive a notification message when a route changes on the MultiView. The notifications take one of two forms:

**S:0destination,source** Routing change

This message indicates that the specified source port is now routed to the specified destination.

**V:0destination,source** Preset routing notification

This message indicates that the current preset includes a route from the specified source to the specified destination.

### Global Commands

All pass through commands are preceded by an @ symbol and a space.

The following client commands are supported:

@ !     disable status reporting  
Status reporting is disabled by default.

@ ?     enable status reporting  
Status reporting is enabled.

@ Z:    reset routing table

Routing is reset so that the first source is routed to all destinations.

### Immediate Commands

@ X:0/destination,source   change route

@ X:0/destination,source/destination-2,source-2...   change multiple routes  
The specified source ports are routed to the specified destinations.  
Any routing changes will trigger S: notifications

@ X?0destination   request individual route status  
The source routed to the specified destination will be returned as an S: notification.

@ S?0   request all ports route status  
Each source and destination port pair will be returned as S: notifications



## Salvo Commands

- @ P:0/destination,source queue route change
- @ P:0/destination,source/destination-2,source-2... queue multiple route changes  
The specified routing changes are added to the current salvo for later execution.
- @ P?0destination request individual port status in salvo  
If a routing change for the specified destination port is queued, the route will be returned as a V: notification.
- @ V?0 request all ports status in salvo  
Each queued routing change in the salvo is reported as a V: notification.
- @ B:C clear salvo
- @ B:R clear salvo  
Any queued changes are discarded and the salvo is reset.
- @ B:E execute salvo  
Any queued changes are executed and each routing change will be returned as an S: notification.

# Help

## Getting Help

The fastest way to obtain help is to go to the Blackmagic Design online support pages and check the latest support material available for your Blackmagic MultiView.

### Blackmagic Design Online Support Pages

The latest manual, software and support notes can be found at the Blackmagic Design support center at [www.blackmagicdesign.com/support](http://www.blackmagicdesign.com/support).

### Blackmagic Design Forum

The Blackmagic Design forum on our website is a helpful resource you can visit for more information and creative ideas. This can also be a faster way of getting help as there may already be answers you can find from other experienced users and Blackmagic Design staff which will keep you moving forward. You can visit the forum at <https://forum.blackmagicdesign.com>

### Contacting Blackmagic Design Support

If you can't find the help you need in our support material, or on the forum, please click the "Send us an email" button on the support page to email a support request. Alternatively, click on the "Find your local support team" button and call your nearest Blackmagic Design support office.

### Checking the Software Version Currently Installed

To check which version of Blackmagic MultiView software is installed on your computer, open the Blackmagic MultiView application. From the "Blackmagic MultiView" menu, select "About MultiView" and note the version number.

### How to get the latest updates

After checking the version of your Blackmagic MultiView on your computer, please visit the Blackmagic Design support center at [www.blackmagicdesign.com/support](http://www.blackmagicdesign.com/support) to check for the latest updates. While it is usually a good idea to run the latest updates, it is a wise practice to avoid updating any software if you are in the middle of an important project.

# Regulatory Notices and Safety Information

## Regulatory Notices

### **Disposal of waste of electrical and electronic equipment within the European union.**



The symbol on the product indicates that this equipment must not be disposed of with other waste materials. In order to dispose of your waste equipment, it must be handed over to a designated collection point for recycling. The separate collection and recycling of your waste equipment at the time of disposal will help conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city recycling office or the dealer from whom you purchased the product.



This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this product in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at personal expense.

Operation is subject to the following two conditions:

- 1 This device may not cause harmful interference.
- 2 This device must accept any interference received, including interference that may cause undesired operation.

Connection to HDMI interfaces must be made with high quality shielded HDMI cables.

## Safety Information

This equipment must be connected to a mains socket outlet with a protective earth connection.

To reduce the risk of electric shock, do not expose this equipment to dripping or splashing.

This equipment is suitable for use in tropical locations with an ambient temperature of up to 40°C.

Ensure that adequate ventilation is provided around the product and is not restricted.

When rack mounting, ensure the ventilation is not restricted by adjacent equipment.

No operator serviceable parts inside. Refer servicing to your local Blackmagic Design service centre.



Use only at altitudes not more than 2000m above sea level.

# Warranty

## Limited Warranty

Blackmagic Design warrants that Blackmagic MultiView will be free from defects in materials and workmanship for a period of 12 months from the date of purchase including connectors, cables, cooling fans, fuses, LCD display and buttons. If a product proves to be defective during this warranty period, Blackmagic Design, at its option, either will repair the defective product without charge for parts and labor, or will provide a replacement in exchange for the defective product.

In order to obtain service under this warranty, you the Customer, must notify Blackmagic Design of the defect before the expiration of the warranty period and make suitable arrangements for the performance of service. The Customer shall be responsible for packaging and shipping the defective product to a designated service center nominated by Blackmagic Design, with shipping charges pre paid. Customer shall be responsible for paying all shipping charges, insurance, duties, taxes, and any other charges for products returned to us for any reason.

This warranty shall not apply to any defect, failure or damage caused by improper use or improper or inadequate maintenance and care. Blackmagic Design shall not be obligated to furnish service under this warranty: a) to repair damage resulting from attempts by personnel other than Blackmagic Design representatives to install, repair or service the product, b) to repair damage resulting from improper use or connection to incompatible equipment, c) to repair any damage or malfunction caused by the use of non Blackmagic Design parts or supplies, or d) to service a product that has been modified or integrated with other products when the effect of such a modification or integration increases the time or difficulty of servicing the product. THIS WARRANTY IS GIVEN BY BLACKMAGIC DESIGN IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED. BLACKMAGIC DESIGN AND ITS VENDORS DISCLAIM ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. BLACKMAGIC DESIGN'S RESPONSIBILITY TO REPAIR OR REPLACE DEFECTIVE PRODUCTS IS THE WHOLE AND EXCLUSIVE REMEDY PROVIDED TO THE CUSTOMER FOR ANY INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES IRRESPECTIVE OF WHETHER BLACKMAGIC DESIGN OR THE VENDOR HAS ADVANCE NOTICE OF THE POSSIBILITY OF SUCH DAMAGES. BLACKMAGIC DESIGN IS NOT LIABLE FOR ANY ILLEGAL USE OF EQUIPMENT BY CUSTOMER. BLACKMAGIC IS NOT LIABLE FOR ANY DAMAGES RESULTING FROM USE OF THIS PRODUCT. USER OPERATES THIS PRODUCT AT OWN RISK.

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# Blackmagic MultiView





## ようこそ

このたびはBlackmagic MultiViewをお買い求めいただき誠にありがとうございました。

私たちは、誰もが最高品質の映像を使用できるようにすることで、テレビ業界を真にクリエイティブな業界にするという夢を、ユーザーの皆様と共有できればと考えています。MultiView 16は、今日市場に出回っている低価格のUltra HDテレビと使用することで、最大16台の独立した放送用モニターと同等の働きをします。MultiView 16はわずかな費用で真の放送局レベルのマルチソースモニタリングを実現できるのです！

HD、Ultra HDスクリーンで最大4系統のモニタリングが可能なBlackmagic MultiView 4は、小規模、あるいは移動型のプロダクションに最適です。1台のMultiViewからの出力を別のMultiViewにルーティングして組み合わせることで、独自のモニタリング設定をカスタマイズすることもできます！

このマニュアルには、Blackmagic Multiviewをインストールする際に必要な情報がすべて記載されています。しかし、IPアドレスやコンピューターネットワークに関してあまり詳しくない場合は、技術アシスタントに協力を求めた方が良いでしょう。Blackmagic MultiViewは、Videohub Controlソフトウェアでコントロールできます。Videohub Controlソフトウェアは簡単にインストールできますが、インストール後にやや技術的な環境設定がいくつか必要となります。

弊社のウェブサイト [www.blackmagicdesign.com/jp](http://www.blackmagicdesign.com/jp) のサポートページで、同マニュアルおよびソフトウェアの最新バージョンをダウンロードしてください。最後に、ソフトウェア・アップデートをダウンロードする際にお手元のBlackmagic MultiViewを登録いただければ、新しいソフトウェアのリリース時にお客様にお知らせいたします。私たちは、常に新機能の開発および製品の改善に努めていますので、ユーザーの皆様からご意見をいただければ幸いです。

Blackmagic MultiViewを長年にわたってご使用いただき、Ultra HDの映像をお楽しみいただけることを願っています。

Blackmagic Design CEO

グラント・ペティ

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# はじめに

Blackmagic MultiViewは、電源を入れてSDIビデオソースを接続し、モニターやテレビをHDMI/SDI出力に接続するだけで簡単に使用できます。同セクションでは、Blackmagic MultiViewの使用を開始するために必要なすべての項目を説明します。

## 電源の接続

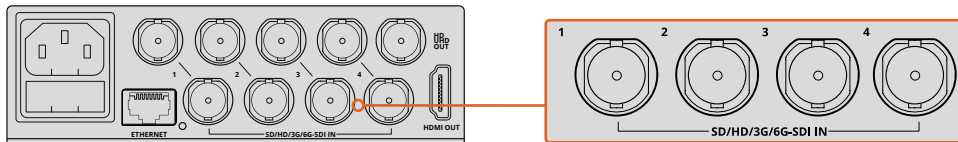
Blackmagic MultiViewに電源を供給するには、リアパネルの110-240V AC電源入力に標準IEC電源コードを差し込みます。

**作業のこつ** Blackmagic MultiView 4はPoE+をサポートしているため、PoE+に対応したイーサネットスイッチに接続するだけで使用できます。

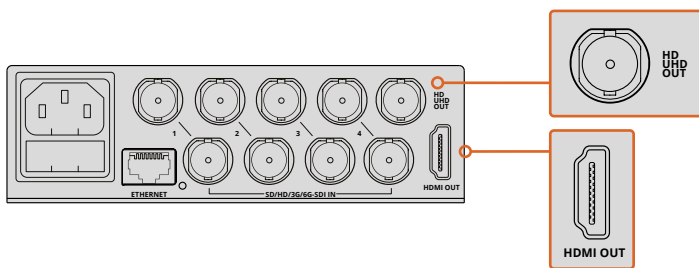
Blackmagic MultiView 4 HDは、同梱の電源アダプターを6-36V DC入力に接続するだけで電源を入れることができます。ネジ止め可能なハウジングが付いているため、電源をユニットに固定でき、誤って電源の接続が外れることを防ぎます。

## SDIソースおよびモニターの接続

SDIソースをBlackmagic MultiViewのいずれかのSDIビデオ入力に接続します。ビデオフォーマットが自動検出され、ビデオはマルチビュー出力に表示されます。出力を確認するには、モニターをSDI/HDMIマルチビュー出力に接続します。



ビデオソースをBlackmagic MultiViewのSDIビデオ入力に接続。



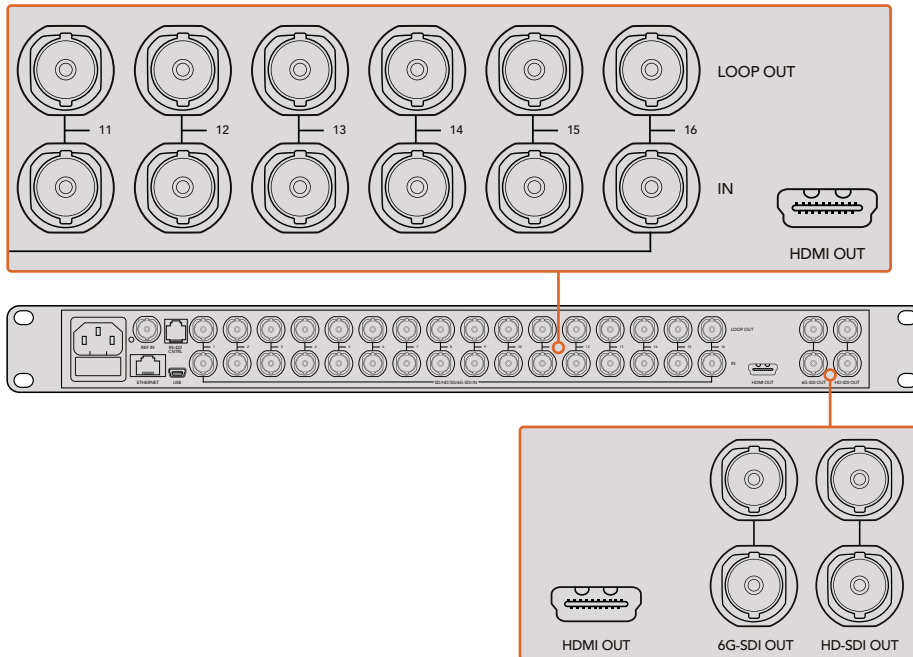
モニターをBlackmagic MultiViewのHDMIあるいはSDIマルチビュー出力に接続。

HDMIモニターをHDMI出力に接続すると、Blackmagic MultiViewはモニターがUltra HDあるいはHDをサポートしているかを自動的に検出し、それに従いマルチビュー出力を切り替えます。



**作業のこつ** Blackmagic MultiView 16では、マルチビューを専用HD-SDI出力から、Ultra HDを6G-SDIおよびHDMI出力から出力できます。

Blackmagic MultiView 4およびMultiView 16は、各入力の上にループ出力を搭載しているため、各ソースを他のビデオ機器に接続することも可能です。



**作業のこつ** Blackmagic MultiView 16に搭載されたSDI/HDMI出力は、Ultra HDおよびHDのマルチビューモニタリング用にすべて同時に使用できます。Blackmagic MultiView 4では、内蔵スイッチ、オプションのTeranex Mini Smart Panel、またはBlackmagic MultiView Setupユーティリティソフトウェアを使用して、マルチビュー出力をUltra HDまたはHDで切り替えられます。

## マルチビューレイアウトの設定

必要に応じてマルチビューレイアウトを変更できます。例えば、Blackmagic MultiView 4は、2x2あるいはソロビューに設定可能です。Blackmagic MultiView 16は、2x2、3x3、4x4、そしてソロビューに設定可能です。

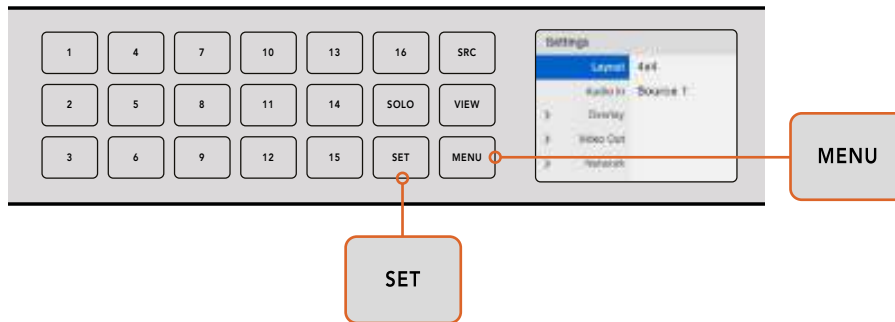
### Blackmagic MultiView 16でレイアウトを設定

マルチビューレイアウトは、必要に応じて変更できます。例えば、Blackmagic MultiView 4およびBlackmagic MultiView 4 HDは、2x2またはソロビューに設定可能です。Blackmagic MultiView 16は、2x2、3x3、4x4、ソロビューに設定できます。

- 1 フロントコントロールパネルの「MENU」ボタンを押し、LCDで「Settings」スクリーンを開きます。
- 2 「Settings」メニューの最初の設定は「Layout」です。したがってこの設定は「Settings」メニューに進むと常にハイライトされています。「SET」ボタンを使用して設定を変更します。

- 3 「Layout」設定でフロントコントロールパネルの回転ノブを使用し、「4x4」を選択します。4x4の設定では、1つのスクリーンで16系統のソースビューを確認できます。設定を変更すると、「SET」ボタンと「MENU」ボタンが点滅し始めます。設定の変更を確認するには「SET」ボタンを、キャンセルするには「MENU」ボタンを押します。
- 4 「SET」ボタンを押して設定を決定します。

Blackmagic MultiView 16 Setupソフトウェアの「Configure Control Panel」でレイアウトを設定することも可能です。

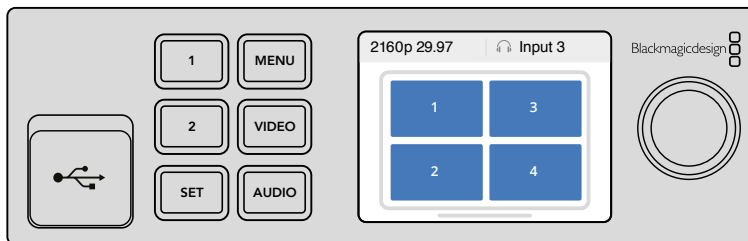


Blackmagic MultiView 16のビューレイアウトを設定するにはまず「MENU」を押して、次に回転ノブを使ってレイアウトを選択し、「SET」ボタンを押します。4x4の設定では、1つのスクリーンで16ビューを確認できます。

### Blackmagic MultiView 4でレイアウトを設定

Blackmagic Multiview 4のデフォルトビューは2x2レイアウトです。Blackmagic MultiView 4でレイアウトを「Solo」に変更するには、Teranex Mini Smart Panelにある「1」のコントロールボタンを押します。2x2のディスプレイモードに戻すには「2」ボタンを押します。

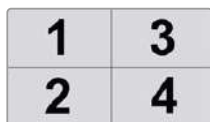
Setupソフトウェアの「Configure」設定を使用してレイアウトを設定することも可能です。



ソロビューは「1」ボタン、2x2ビューは「2」を押します。

### Blackmagic MultiView 4 HDでレイアウトを設定

初めてMultiView 4 HDを使用する際は、デフォルト表示の2x2レイアウト（上段に入力1と3、下段に入力2と4）が適用されます。ソロモードに変更するには、内蔵スイッチ6「SOLO ON」をONにします。



MultiView 4 HDで4つのSDI  
入力を2x2レイアウト表示

詳細は、「Blackmagic MultiView 4 HDのスイッチ設定」セクションを参照してください。

## ネットワークに接続

Blackmagic MultiViewは、Blackmagic Videohub Ethernet Protocolをサポートしています。したがって、直接アクセスしにくい場所にユニットをインストールしている場合でも、Blackmagic Smart ControlやMaster ControlなどのBlackmagic Videohubコントロールパネルから簡単にリモートコントロールできます。イーサネット経由でネットワークに接続すると、Blackmagic MultiViewは同ネットワークに接続された他のコンピューターやVideohubからも認識できるようになります。これらのデバイスからBlackmagic MultiView 16をリモートコントロールできます。

Blackmagic MultiViewをネットワークに接続する：

- 1 Blackmagic MultiViewに電源を入れます。
- 2 標準RJ45イーサネットケーブルを使用して、Blackmagic MultiViewをネットワークあるいはコンピューターに接続します。

ネットワークに接続したら、Blackmagic MultiViewのIPアドレスがネットワーク上の他の機器と異なっていることを確認します。Blackmagic MultiView 16、あるいはTeranex Mini Smart Panelを取り付けたMultiView 4を使用している場合、ネットワーク設定をコントロールパネルのLCDメニューから変更できます。またBlackmagic MultiViewをUSB経由でコンピューターに接続し、Blackmagic MultiView Setupを使ってネットワーク設定を変更することもできます。ネットワーク設定変更に関する詳細は、同マニュアルの「設定の変更」セクションを参照してください。

## シリアルコントロール接続

サードパーティ製のルーターコントローラーでも、RS-422シリアル接続を使用してBlackmagic MultiView 16をコントロールできます。シリアルコントロールに関する詳細は、同マニュアルの「Blackmagic MultiView Setupを使用して設定を変更」セクションを参照してください。

## ラックにインストール

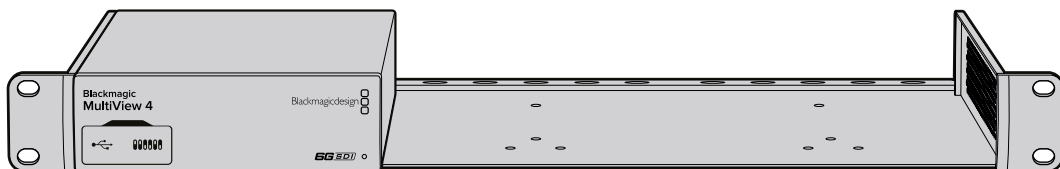
Blackmagic MultiView 16は、1Uラックサイズなので、あらゆる放送用ラック、ロードケースに収納できます。

これに対し、小型のBlackmagic MultiView 4は放送用ラックなどを使用しない移動型プロダクションでも使用できます。MultiView 4は小型で可搬性に優れた設計になっていますが、ラックに収納することも可能です。Blackmagic Teranex Mini Rack Shelfは、1Uのスペースに3台までのユニットを並べてマウントできるよう設計されているので、ユニットを簡単に接続して必要な数だけソースビューを構築できます。

Teranex Mini Rack ShelfへのBlackmagic MultiView 4のインストールは非常に簡単です。ゴム製の足部を取り外し、底のマウントホールを使ってTeranex Mini Rack Shelfの底にユニットをネジで取り付けます。Teranex Mini Rack Shelfには、オリジナルのカバーパネルが2つ含まれており、MultiView 4を1台だけ使用している場合でもラックの隙間を埋めることができます。

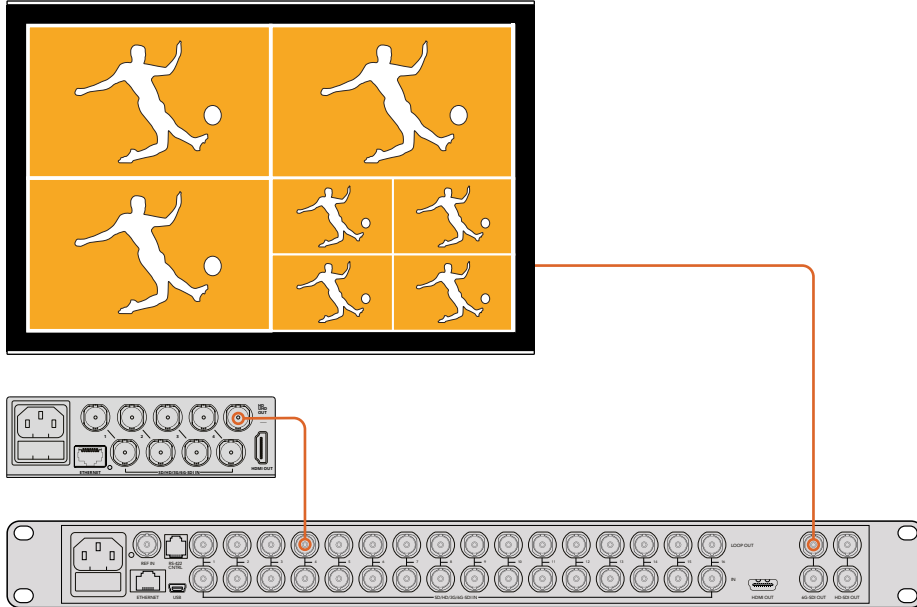
詳細は、Blackmagic Designウェブサイト[www.blackmagicdesign.com/jp](http://www.blackmagicdesign.com/jp)を参照してください。

Teranex Mini Rack Shelfに取り付けたら、すべてのコネクタは通常通りユニットの後部からアクセスできます。



## 複数のMultiViewを使用

複数のBlackmagic MultiViewsを組み合わせることで、独自のモニタリング設定を実現できます。これは、マルチビュー出力にさらにビューソースを追加したい場合に役立ちます。1台のMultiViewの出力をもう1台の入力に接続することで、マルチビュー出力にソースビューを追加できます。アップストリームのマルチビュー出力は、クリアなイメージを得るため、Ultra HDモニターに接続することを推奨します。



1台のMultiViewの出力をもう1台の入力にルーティングすることで、マルチビューレイアウトにビューを追加できます。

MultiViewの使用を開始するのに必要な作業はこれだけです。設定の変更、ビューの名称設定など、Blackmagic MultiViewの活用に関する詳細は、同マニュアルの次のセクションを読み進めてください。

## 設定の変更

Blackmagic MultiViewの設定を変更するにはいくつかの方法があります。

- **フロントコントロールパネル** – Blackmagic MultiView 16はコントロールパネルおよびLCDを内蔵しているので、ユニットの正面から簡単に設定を変更できます。
- **スイッチ** – Blackmagic MultiView 4のフロントパネル、またはBlackmagic MultiView 4 HDの側面にある小さなスイッチは、ペンを使用して即座に設定を変更できます。Blackmagic MultiView 4のスイッチにアクセスするには、フロントパネルのゴム製のダストカバーを開きます。スイッチ設定の図は、ユニット底面に記載されているので、各スイッチの設定を簡単に確認できます。
- **Teranex Mini Smart Panel** – Blackmagic MultiView 4のオリジナルのフロントパネルをオプションのTeranex Mini Smart Panelに置き換えると、内蔵コントロールボタン、回転ノブ、LCDを使用できるようになります。これは、Blackmagic MultiView 16のフロントコントロールパネルとほぼ同じように機能し、簡単かつ直感的なローカルコントロールが可能です。
- **Blackmagic MultiView Setup** – このセットアップソフトウェアを使用すると、USBあるいはイーサネット経由でコンピューターを使用して設定を変更できます。詳細は、「Blackmagic MultiView Setup」セクションを参照してください。

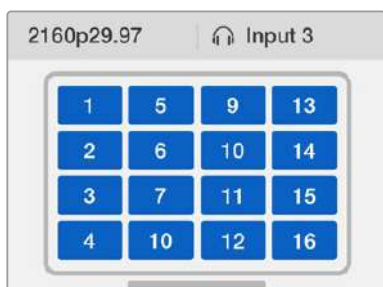
- **Videohub Controlソフトウェア** – Blackmagic MultiView 16またはBlackmagic MultiView 4がネットワークに接続されている場合、Blackmagic Videohub Software Controlを使用してソースのルーティング、ビューの変更、オーディオ入力ソースの選択が可能です。詳細は「Videohub Software Controlの使用」セクションを参照してください。

## Blackmagic MultiView 16のフロントコントロールパネル

Blackmagic MultiView 16のフロントコントロールパネルを使用すれば、非常に簡単に設定を変更できます。

Blackmagic MultiView 16に電源を入れると、内蔵LCDにホームスクリーンが表示されます。ホームスクリーンはデフォルト表示で、以下を含む設定項目の概要を確認できます：

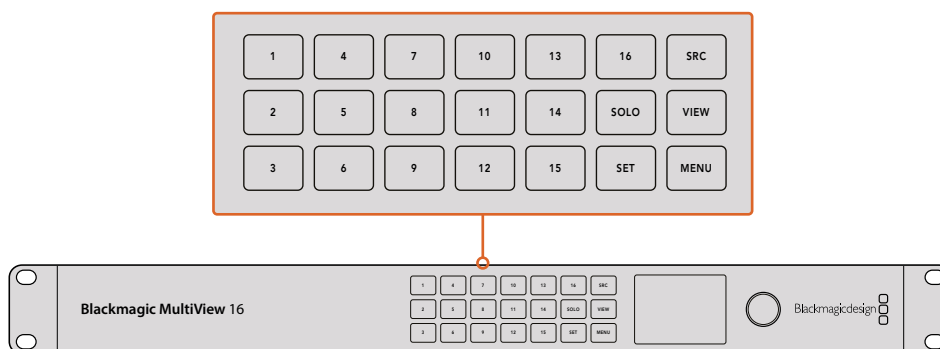
- **マルチビュー出力フレームレート** – スクリーン左上にあります。Ultra HD SDIマルチビュー出力に選択されているフレームレートが表示されます。
- **オーディオ入力** – マルチビュー出力フレームレートの隣です。HDMI/SDIマルチビュー出力信号のエンベデッドオーディオ用に使用しているSDI入力が表示されます。
- **マルチビューレイアウト** – 選択しているマルチビューレイアウトが表示されます。



ホームスクリーンは、Blackmagic MultiView 16コントロールパネルLCDのデフォルト表示です。このスクリーンディスプレイは、選択したマルチビューレイアウト、マルチビューSDI出力のフレームレート、マルチビュー出力用のエンベデッドオーディオに選択したSDI入力を表示します。

## コントロールパネルボタン

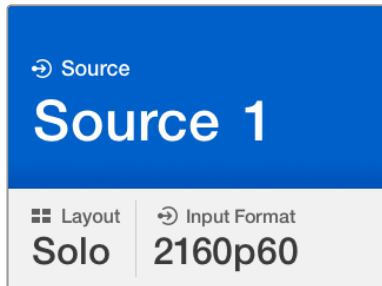
Blackmagic MultiView 16のコントロールパネルの発光ボタンを使用すれば、簡単に設定の調整や、ソース/ビューの設定が可能です。



Blackmagic MultiView 16のコントロールパネルボタンを使えば、ユニットの正面から簡単に設定変更、ビューの切り替えが可能。

## SOLOボタン

1つのビューをフルスクリーンで表示するには、「SOLO」ボタンを押します。次にコントロールパネルのビューボタンを押すと、選択したビューがフルスクリーンモードになります。もう一度「SOLO」ボタンを押すと、マルチビューレイアウトに戻ります。



「SOLO」機能を使い、フルスクリーンモードでモニタリング。

## MENUボタン

「MENU」ボタンを押すと、設定スクリーンが開きます。回転ノブと設定ボタンを使って設定を変更します。再度「MENU」ボタンを押してホームスクリーンに戻ります。

## SETボタン

設定を調整するには「SET」ボタンを押します。設定を変更したら、もう一度「SET」ボタンを押して変更を確認します。

## 「SRC/VIEW」ボタン

これらのボタンを使用して、ビューに表示する入力ソースを選択します。設定メニューをナビゲートする際は、「SRC/VIEW」ボタンを使用して設定オプションを上下に移動することも可能です。

## 回転ノブ

回転ノブは、設定項目のスクロールや、設定スクリーンのアイテム選択などに使用できます。選択を誤ってしまった場合は、回転ノブを押して前の設定に戻ります。

回転ノブを時計回り/反時計回りに回して、メニュー内の2つのオプションから選択します。回転ノブを押すと、設定のオン/オフを切り替えられます。

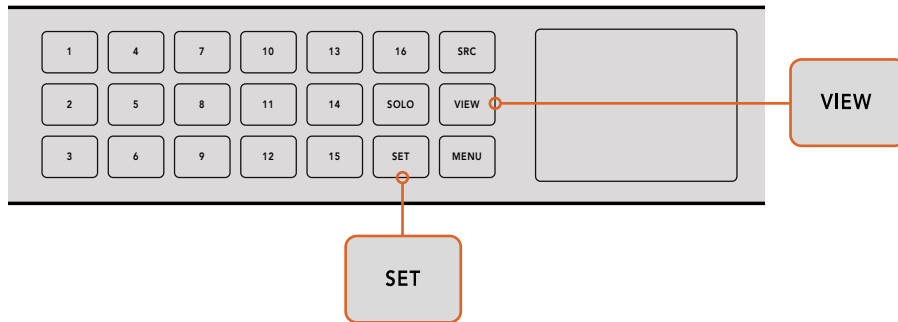
## Blackmagic MultiView 16のソースとビューの設定

Blackmagic MultiView 16の重要な機能のひとつに、接続したSDIソースを様々なビューに割り当てられる機能があります。これらの設定を調整することで、ビューの配置を簡単に変更できます。例えば、SDI入力5をビュー1に配置したいという場合です。

ソースをビューに割り当てる：

- 1 フロントコントロールパネルの「VIEW」ボタンを押して、ビュー選択スクリーンを開きます。ビュー選択がブルーでハイライトされます。
- 2 数字付きビューボタンを押してビューを選択します。または、回転ノブを使用してビューをスクロールします。「SET」ボタンを押して設定を確定します。
- 3 「SRC」ボタンを押します。LCDのソース選択がハイライトされます。

- 4 コントロールパネルの数字付きビューボタンを押して入力を選択します。または、回転ノブを使用してLCDの入力オプションをスクロールします。
- 5 「SET」ボタンを押して設定を確認します。



ソースをビューに配置するには、「VIEW」ボタンを押してビュー設定を開き、選択します。  
次に「SET」ボタンを押して設定を確認します。

### Blackmagic MultiView 16でレイアウトを設定

Blackmagic MultiView 16は、マルチビュー出力に表示するビューの数を選択できます。例えば、4系統の入力を接続している場合は、「2x2」レイアウトを選択するだけで、縦横方向のグリッドに4つのビューすべてを表示できます。接続している入力の数に応じたビューレイアウトを選択し、最適なモニタリング環境を設定しましょう。

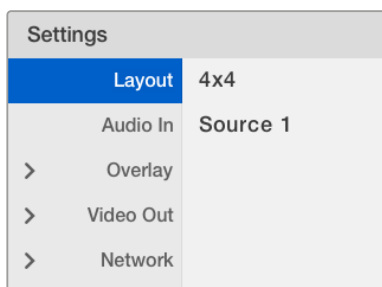
マルチビューのレイアウトは4種類から選択できます：

- **2x2** 4系統のビューを表示します。Ultra HDモニターを接続している場合、各ソースはネイティブHD解像度で表示されます。
- **3x3** 9系統のビューを表示します。
- **4x4** 16系統のビューを選択します。

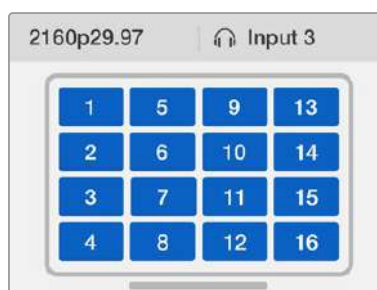
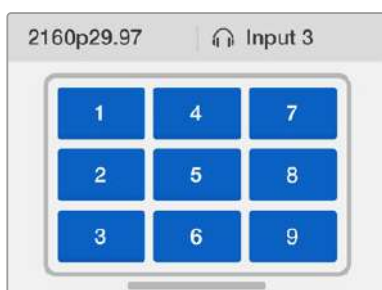
**作業のこつ** 1系統のビューをフルスクリーンモードで表示するには、Blackmagic MultiView 16のコントロールパネルで「SOLO」ボタンを押し、さらにビューボタンを選択します。Blackmagic MultiView 4では、Teranex Mini Smart Panelで「1」と表記されたソロボタンを押します。



回転ノブあるいはビューボタンを使って、ソースを配置したいビューを選択します。



調整したいメニューアイテムをハイライトし、「SET」を押して設定を開きます。



接続している入力系統の数に応じて、3種類のマルチビューレイアウトから選択できます。

## オーディオ入力(Audio In)

この設定は、マルチビュー出力にエンベッドするオーディオを取り込むSDI入力を選択する際に使用します。

## オーバーレイ(Overlay)

このサブメニューでは、オーバーレイのオン/オフを切り替えて、マルチビューの外観を変更します。

### オーバーレイに含まれる機能：

- **Borders** – 各ビューをグリッド状のパターンで分割します。
- **Labels** – 各ビューの名前ラベルの表示/非表示を切り替えます。ラベルは、Blackmagic MultiView Setupを使用して変更できます。
- **Audio Meters** – すべてのビューのオーディオVUメーターのオン/オフを切り替えます。各SDI信号にエンベッドされた最初の2チャンネルがそれぞれのビューに表示されます。これにより、映像と併せてオーディオレベルをモニタリングできます。
- **SDI Tally** – Blackmagic MultiView 16の入力16に、ATEMスイッチャーのプログラムSDI出力を接続している場合、そのソースがオンエアされた際にビューの周りにタリーボーダーが表示されます。この機能のオン/オフは、SDIタリーオーバーレイ設定を使用して切り替えられます。



タリーを正しく動作させるには、Blackmagic MultiView 16の入力がATEMスイッチャーの入力番号と合うように接続してください。接続が正しくないと、タリーが誤ったビューに表示されます。

## ビデオ出力(Video Out)

「Video Out」設定では、Blackmagic MultiView 16の出力オプションをコントロールできます。

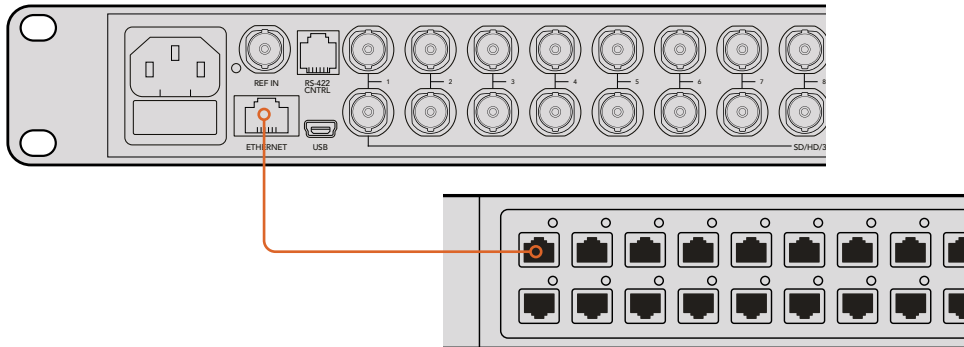
- **Video Format** – この設定を使用して、Ultra HDマルチビュー出力のフレームレートを「2160p29.97」または「2160p25」に変更できます。HDマルチビュー出力のフレームレートは、Ultra HD出力と同じです。設定の変更をキャンセルしたい場合や前のメニューに戻りたい場合は、回転ノブを押します。
- **HD Output** – HDマルチビュー出力を、インターレース/プログレッシブから選択します。ビデオフォーマットに「2160p29.97」を選択している場合は、HD出力を「1080p29.97」または「1080i59.94」に設定できます。同様に「2160p25」の場合は、HD出力を「1080p25」または「1080i50」に設定できます。

## ネットワーク(Network)

「Network」設定では、Blackmagic MultiView 16をネットワークに接続する際のIP、サブネット、ゲートウェイアドレスを設定できます。

Blackmagic MultiView 16のIPアドレスを設定する：

- 1 フロントコントロールパネルで「MENU」ボタンを押し、回転ノブを使用してLCDメニューの「Networking」タブをハイライトします。
- 2 「SET」ボタンを押し「Network Settings」スクリーンに進みます。
- 3 回転ノブを回して「IP Address」タブを選択します。
- 4 「SET」ボタンを押し、IPアドレスの最初のフィールドをハイライトします。回転ノブを使用して値を変更します。
- 5 「SET」を押して最初のフィールドを確認したら、上記のステップを繰り返して他の3つのフィールドを設定します。サブネットおよびゲートウェイアドレスを割り当てる必要がある場合も、同じ方法で実行できます。
- 6 「MENU」ボタンを2回押すとホームスクリーンに戻ります。



Blackmagic MultiView 16をイーサネットネットワークに接続すると、ユニットを別の場所からコントロールできます。

Network Settings	
IP Address	192.168.10.160
Subnet	255.255.255.0
Gateway	192.168.10.1

Blackmagic MultiView 16のコントロールパネルの回転ノブ、あるいはビューボタンを使って、ネットワーク設定に数値を割り当てます。

## Teranex Mini Smart Panel

オリジナルのパネルを取り外して、Teranex Mini Smart PanelをBlackmagic MultiView 4にマウントできます。ボタン、回転ノブ、内蔵LCDを使用することで各設定にすばやくアクセスできます。

### Teranex Mini Smart Panelの装着

オプションのSmart Panelの装着は簡単です。ホットスワップに対応しているため、取り付けの際にBlackmagic MultiView 4の電源をオフにする必要はありません。

- 1 ポジドライブ2ドライバーを使用して、Blackmagic MultiView 4のオリジナルフロントパネルの両側面にある2つのM3ネジを取り外し、ユニット前面からパネルをゆっくりと外します。
- 2 オリジナルパネルの内側の下隅に透明のプラスチックチューブが付いています。この部品は、ユニット内部のLEDからの光がオリジナルパネルのステータス情報を照らすようにするものです。この部品はオリジナルパネルから取り除かないでください。

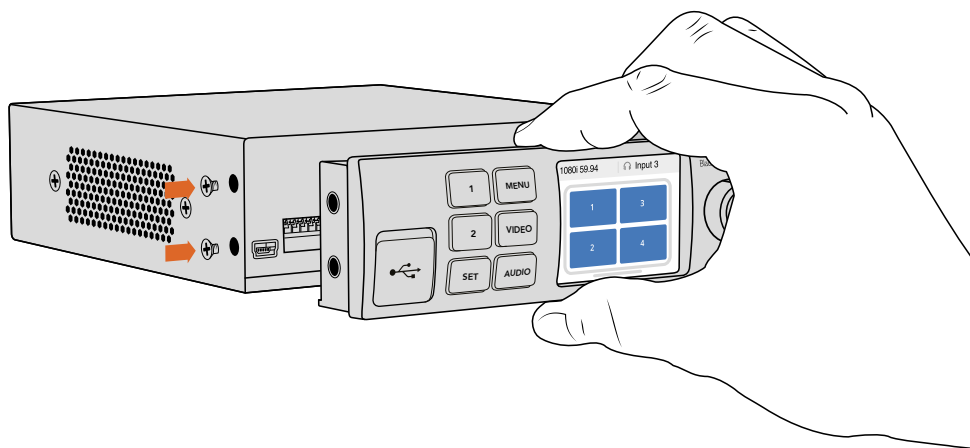
**作業のこつ** オリジナルのベーシックパネルを再度取り付ける場合は、電源インジケータ用のライトチューブがユニット前面のスロットと揃うようにしてください。

- 3 Smart Panel背面のコネクターとBlackmagic MultiView 4前面のコネクターを合わせ、Smart Panelをユニットに向かってコネクターが固定されるまでゆっくりと押します。Smart Panelがしっかりと固定され、Blackmagic MultiView 4の前面にきれいに収まります。
- 4 オリジナルパネルで使用していた2つのM3ネジでSmart Panelを固定します。

Blackmagic MultiView 4をTeranex Mini Rack Shelfにマウントしている場合、ネジを取り外すにはTeranex Miniをラックから取り外す必要があります。

詳細は「ラックへのインストール」セクションを参照してください。

Blackmagic MultiView 4のUSBポートは、Smart Panelを取り付けている状態でも使用できます。USBポートは、ゴム製のダストカバーを開くだけでアクセスできます。Smart Panelを装着している場合、フロントパネルのミニスイッチは覆われて使用できなくなりますが、すべての設定をLCDメニューで変更できます。



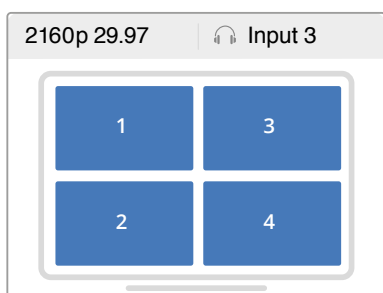
Teranex Mini Smart PanelをBlackmagic MultiView 4にインストールする際は、Smart Panel背面のコネクターに沿ってパネルを持ってください。正しい位置に取り付けやすくなります。

**作業のこつ** オリジナルのベーシックパネルはとても頑丈です。Teranex Miniをラックシステムの後ろやケーブルやアクセスの多い場所にマウントしたい場合は、オリジナルのベーシックパネルをいつでも取り付けられます。

## Teranex Mini Smart Panelの機能

Smart Panelの機能は、MultiView 16の内蔵コントロールパネルに類似しています。LCDのホームスクリーンはデフォルト表示で、以下を含む設定項目の概要を確認できます：

- ・ **マルチビュー出力フレームレート** – スクリーン左上にあります。Ultra HD SDIマルチビュー出力に選択されているフレームレートが表示されます。
- ・ **オーディオ入力** – マルチビュー出力フレームレートの隣です。HDMI/SDIマルチビュー出力信号のエンベデッドオーディオ用に使用しているSDI入力が表示されます。
- ・ **マルチビューレイアウト** – 2x2マルチビューレイアウトが表示されます。

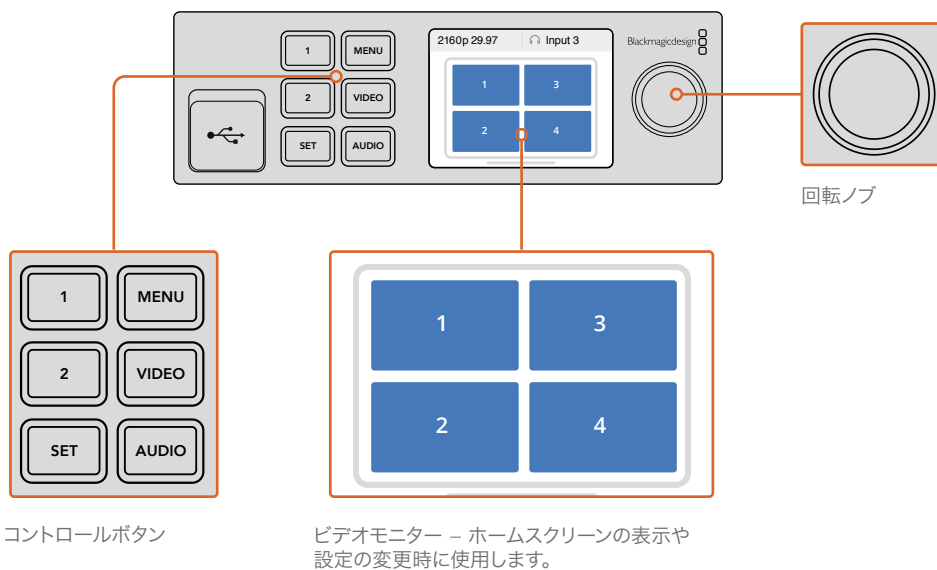


ホームスクリーンは、Teranex Mini Smart PanelのLCDのデフォルト表示です。

## コントロールボタンと回転ノブ

Teranex Mini Smart Panelに搭載された一連のボタンと回転ノブを使用して、Blackmagic MultiView 4の設定メニューをナビゲートできます。

- **1/2ボタン** – 設定の数値を増減します。これらのボタンはメニュー項目のスクロールにも使用できます。
- **SET** – 1/2ボタンで設定を変更した後は、「SET」ボタンで押して設定を確定します。
- **MENU** – Blackmagic MultiView 4の設定メニューに移動します。メニューを遡ってホームスクリーン画面に戻る場合も「MENU」ボタンを使用できます。
- **「Video/Audio」ボタン** – これらのボタンは、Teranex Miniコンバーターでのみ使用します。Blackmagic MultiView 4では使用しません。
- **回転ノブ** – 回転ノブを時計回り/反時計回りに回して、メニュー設定のナビゲートや設定数値の増減が可能です。



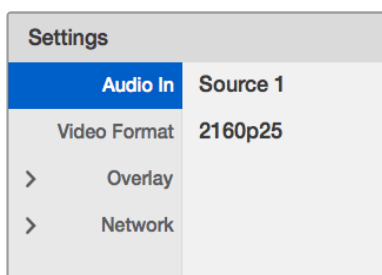
コントロールボタン

ビデオモニター – ホームスクリーンの表示や設定の変更時に使用します。

## Teranex Mini Smart Panelを使用して設定を変更

Teranex Mini Smart Panelを使った設定変更はより便利で、直ぐにLCDで設定を視覚的に確認できます。

Blackmagic MultiView 4の設定メニューへ行くには、Teranex Mini Smart Panelの「MENU」ソフトボタンを押します。ここから以下の設定にアクセスできます。



調整したいメニューアイテムをハイライトし、「SET」を押して選択します。回転ノブを使って設定をスクロールします。

### オーディオ入力 (Audio In)

この設定は、マルチビュー出力にエンベッドするオーディオを取り込むSDI入力を選択する際に使用します。

## ビデオフォーマット (Video Format)

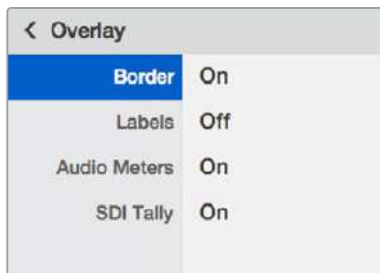
Blackmagic MultiView 4は、29.97/25fpsのUltra HDあるいはHD出力に設定できます。この設定を使用して、使用可能な解像度およびフレームレートのオプションを切り替えられます。

## オーバーレイ (Overlay)

オーバーレイのサブメニューで、オーバーレイ表示のオン/オフを設定できます。

オーバーレイに含まれる機能：

- **ボーダー (Borders)** : 各ビューをグリッド状のパターンで分割します。
- **ラベル (Labels)** : 各ビューの名前ラベルの表示/非表示を切り替えます。ラベルは、Blackmagic MultiView Setupを使用して変更できます。
- **オーディオメーター (Audio Meters)** : すべてのビューのオーディオVUメーターのオン/オフを切り替えます。各SDI信号にエンベッドされた最初の2チャンネルがそれぞれのビューに表示されます。これにより、映像と併せてオーディオレベルをモニタリングできます。

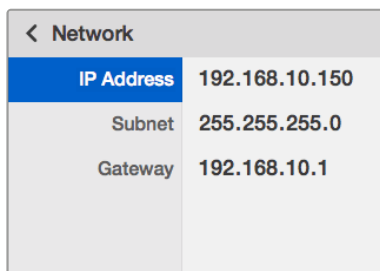


## ネットワーク (Network)

「Network」設定では、Blackmagic MultiView 4をネットワークに接続する際のIP、サブネット、ゲートウェイアドレスを設定できます。

Blackmagic MultiView 4のIPアドレスを設定する：

- 1 フロントコントロールパネルで「MENU」ボタンを押し、回転ノブを使用してLCDメニューの「Networking」タブをハイライトします。
- 2 「SET」ボタンを押して「Network Settings」スクリーンに進みます。
- 3 回転ノブを回して「IP Address」タブを選択します。
- 4 「SET」ボタンを押して、IPアドレスの最初のフィールドをハイライトします。回転ノブを使用して値を変更します。
- 5 「SET」を押して最初のフィールドを確認したら、上記のステップを繰り返して他の3つのフィールドを設定します。サブネットおよびゲートウェイアドレスを割り当てる必要がある場合も、同じ方法で実行できます。
- 6 「MENU」ボタンを2回押すとホームスクリーンに戻ります。

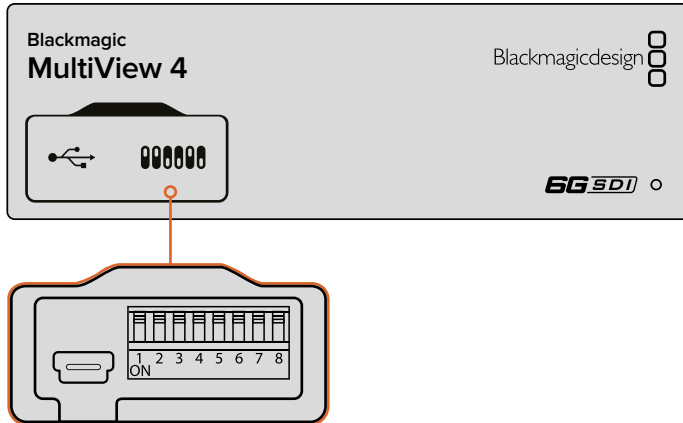


Teranex Mini Smart Panelの回転ノブ、あるいは「1」、「2」ボタンを使って、Blackmagic MultiView 4 ネットワーク設定に数値を割り当てます。

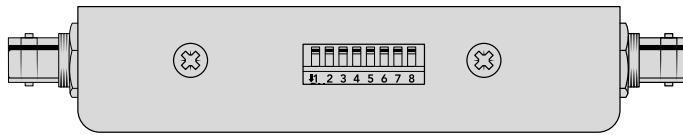
## スイッチを使用して設定を変更

Blackmagic MultiView 4およびMultiView 4 HDでは、小さな内蔵スイッチを使用して設定を変更できます。Blackmagic MultiView 4では、スイッチはフロントパネルに搭載されており、ゴム製のダストキャップが付いています。

Blackmagic MultiView 4 HDでは、スイッチはユニットの側面に搭載されています。



設定を変更する際は、ペンを使用してスイッチを切り替えてください。



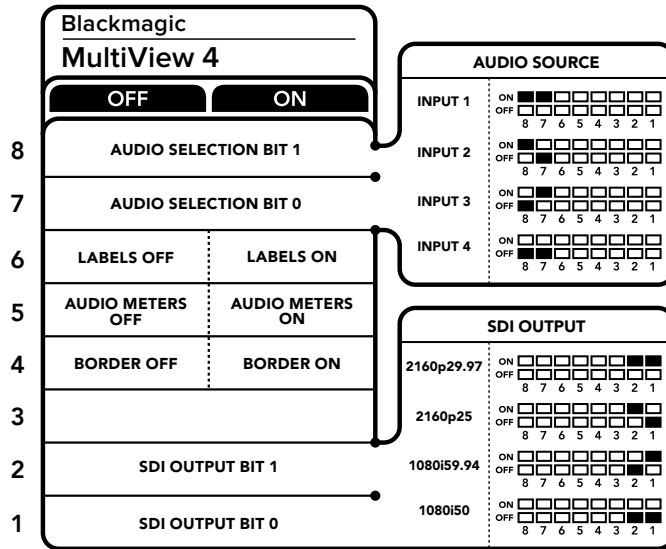
Blackmagic MultiView 4 HDでは、スイッチはリアサイドパネルにあります。

### 内蔵スイッチ

スイッチ設定の図はユニットの底面にプリントされています。スイッチ番号8~1をチェックして、スイッチ設定が図と合っていることを確認してください。

**作業のこつ** スイッチ設定はユニットの底面にプリントされていますが、後のアップデートによる新機能で新しい設定が追加されることがあります。常に最新の情報を得るために、このマニュアルの最新バージョンを定期的に確認することをお勧めします。最新バージョンのマニュアルは、Blackmagic Designサポートセンター ([www.blackmagicdesign.com/jp/support](http://www.blackmagicdesign.com/jp/support)) でダウンロードできます。

## Blackmagic MultiView 4のスイッチ設定



Blackmagic MultiView 4のスイッチ設定

Blackmagic MultiView 4のスイッチでは以下の設定が変更できます：

### スイッチ 8、7 – オーディオ選択

スイッチ 8、7 は、それぞれBIT 1、0と表示されています。つまり、スイッチ 8、7を様々なオン/オフのコンビネーションに設定することで、HDMI/SDIマルチビュー出力信号のエンベデッドオーディオに、どのSDI入力のオーディオを使用するかを選択できます。

#### オーディオ選択表

オーディオソース	スイッチ 8	スイッチ 7	スイッチダイアグラム
入力 1	ON	ON	ON <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
入力 2	ON	OFF	ON <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
入力 3	OFF	ON	ON <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
入力 4	OFF	OFF	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

### スイッチ 6 – ラベル

スイッチ 6を「ON」にするとマルチビュー出力信号の各ウィンドウにラベルを表示します。これらのラベルは、Blackmagic MultiView Setupを使用して変更できます。詳細は同マニュアルに後述されています。スイッチ 6を「OFF」にするとラベルを非表示にします。

### スイッチ 5 – オーディオメーター

スイッチ 5を「ON」にするとマルチビュー出力信号の各ウィンドウにオーディオメーターを表示します。スイッチ 5を「OFF」にするとオーディオメーターを非表示にします。

### スイッチ 4 – ボーダー

スイッチ 4を「ON」にするとマルチビューウィンドウ間のボーダーを表示します。スイッチ 4を「OFF」にするとボーダーを非表示にします。

## スイッチ 2、1

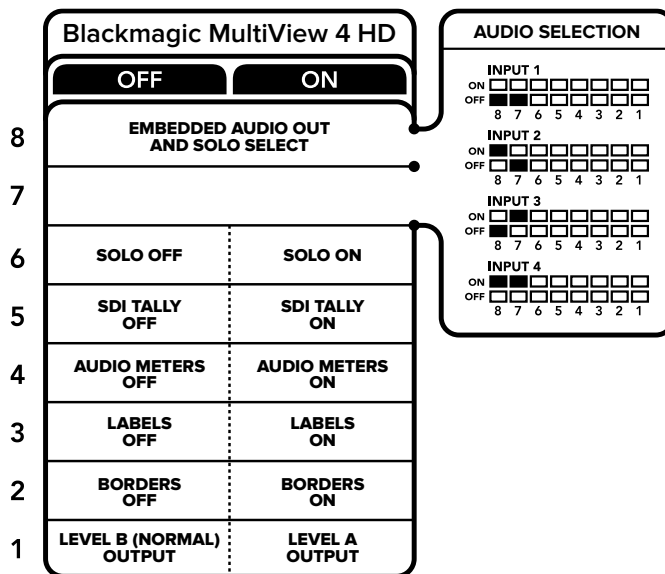
スイッチ 2、1 は、それぞれBIT 1、0と表示されています。つまり、スイッチ 2、1を様々なオン/オフのコンビネーションに設定することで、MultiView 4のSDI信号の出力フォーマットを選択できます。

### SDI出力選択表

SDI出力	スイッチ 2	スイッチ 1	スイッチダイアグラム
2160p29.97	ON	ON	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 8 7 6 5 4 3 2 1
2160p25	ON	OFF	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 8 7 6 5 4 3 2 1
1080i59.94	OFF	ON	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 8 7 6 5 4 3 2 1
1080i50	OFF	OFF	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> 8 7 6 5 4 3 2 1

**メモ** オプションのTeranex Mini Smart Panelを使用している場合、スイッチ設定はSmart Panelで行う設定によってオーバーライドされます。Blackmagic MultiView 4は、スイッチ、Smart Panel、Blackmagic MultiView 4 Setupソフトウェアで行った最後の設定を保持します。Smart Panelを取り外した後や、ソフトウェアでBlackmagic MultiView 4の設定をアップデートした後にスイッチコントロールに戻す場合は、新しい設定を有効にするために各スイッチを切り替える必要があります。

## Blackmagic MultiView 4 HDのスイッチ設定



Blackmagic MultiView 4 HDの底面の図には、設定変更に必要な情報がすべて記載されています。



Blackmagic MultiView 4 HDのスイッチでは以下の設定が変更できます：

### スイッチ 8、7 - SDIオーディオのエンベッドおよびソロ選択

スイッチ 8と7はグループ化されており、オン/オフで4パターンのコンビネーションを設定できます。4パターンの組み合わせを設定できるため、4つのSDI入力のうち1つのオーディオをマルチビュー出力にエンベッドできます。ソロモードでは、オーディオはビデオに追従するため、表示するソースとオーディオソースをこれらのスイッチで選択できます。

#### オーディオ選択表

オーディオソース	スイッチ 8	スイッチ 7	スイッチの図
入力 1	OFF	OFF	
入力 2	ON	OFF	
入力 3	OFF	ON	
入力 4	ON	ON	

### スイッチ 6 - ソロビュー

スイッチ 6をONにすると、ソロビュー表示になります。これにより、フルスクリーンで単一のソースをモニタリングできます。スイッチ 6をOFFにすると、2x2マルチビュー表示になります。

ソロビュー出力にエンベッドされるオーディオは、表示するソースと自動的にマッチします。スイッチ 7と8で、ソロレイアウトで表示するソースとオーディオの組み合わせを設定します。2x2レイアウトでは、スイッチ 7と8でオーディオ入力を選択します。

### スイッチ 5 - タリー

スイッチ 5をONにすると、タリーポーターが表示されます。OFFにするとタリーポーターが非表示になります。

ソロモードでは、ATEM SDIカメラコントロール、タイムコード、クローズドキャプションを含む、すべての追加データはそのままパススルーされます。

**作業のこつ** 各ビューの入力番号は、Blackmagic MultiView Setupソフトウェアで設定できます。その際には、タリーを正しく表示するために、ビューの番号とスイッチャーの入力番号が必ず一致するようにしてください。詳細は「タリーの設定」セクションを参照してください。

### スイッチ 4 - オーディオメーター

スイッチ 4をONにすると、オーディオメーターが表示されます。OFFにするとオーディオメーターが非表示になります。

### スイッチ 3 - ラベル

スイッチ 3をONにすると、各ビューのラベルが表示されます。OFFにするとラベルが非表示になります。

### スイッチ 2 - ボーダー

スイッチ 2をONにするとボーダーが表示され、OFFにすると非表示になります。

### スイッチ 1 - Level AおよびLevel Bの3G-SDI

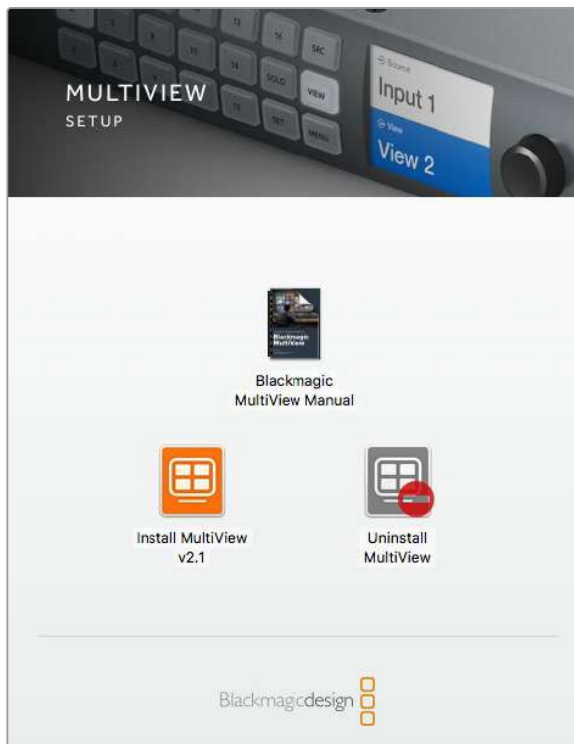
スイッチ 1をOFFにするとLevel Bの3G-SDI、ONにするとLevel Aの3G-SDIになります。このスイッチで3G-SDI出力レベルを切り替えることで、他のSDI機器との互換性を得られます。

# Blackmagic MultiView Setupの使用

Blackmagic MultiView Setupを使用することで、Blackmagic MultiViewの設定や内部ソフトウェアのアップデートをMacやWindows PCで実行できます。Blackmagic MultiView Setupは簡単かつ直感的に使用できます。ネットワークにBlackmagic MultiView 4を接続している場合はイーサネット経由で設定を変更できるため、USBを接続する必要はありません。

## Blackmagic MultiView Setupのインストール

Blackmagic MultiView Setupは、Windowsの64-bitバージョン、macOSの最新バージョンのSierraおよびHigh Sierraで起動します。



Blackmagic MultiView Setupをインストールするには、インストーラーをダブルクリックして画面の指示に従います。

### Windowsにインストール

- 1 同梱のメディアに含まれるインストーラーファイルをダブルクリックします。ソフトウェアをBlackmagic Designウェブサイトからダウンロードした場合は、ダウンロードフォルダーでインストーラーファイルを選択します。
- 2 インストール表示に従い、「License Agreement」で規約に同意します。Windowsがソフトウェアを自動でインストールします。

Windowsの「START」ボタンを押し、「All Programs」>「Blackmagic Design」>「MultiView」の順に選択します。MultiViewフォルダーに、Blackmagic MultiView Setupアプリケーションが含まれています。

## Mac OS Xにインストール

- 1 同梱のメディアに含まれるインストーラーファイルをダブルクリックします。ソフトウェアをBlackmagic Designウェブサイトからダウンロードした場合は、ダウンロードフォルダーでインストーラーファイルを選択します。
- 2 インストール表示に従います。Mac OS Xがソフトウェアを自動でダウンロードします。

アプリケーションフォルダー内に、Blackmagic MultiView Setupアプリケーションを含む「Blackmagic MultiView」フォルダーが作成されます。

## Blackmagic MultiView Setupのホームページ

Blackmagic MultiView Setupを起動すると、最初に同ソフトウェアのホームページが表示されます。ネットワークに複数のBlackmagic MultiViewを接続している場合は、ホームページの左右にある矢印をクリックして選択できます。

Blackmagic MultiViewの設定にアクセスするには、製品イメージの下にある丸い設定アイコンをクリックするか、あるいは製品イメージをクリックします。



Blackmagic MultiView Setupでは、Blackmagic MultiViewの設定をコンピューターからイーサネットまたはUSB経由で変更できます。

## Blackmagic MultiView Setupを使用して設定を変更

設定アイコンをクリックして、Blackmagic MultiViewの設定ウィンドウを開きます。設定ウィンドウには「Sources」、「Views」、「Configure」の3つのタブがあります。Blackmagic MultiView 4およびMultiView 4 HDでは、Videohub Software Controlでビューを変更できないため「View」設定は必要ありません。Blackmagic MultiView 4 HDは、「Tally」メニューも搭載しており、タリー設定が変更できます。

**作業のこつ** ソースを表示させるために、ユニットのネットワーク設定がコンピューターの設定と一致していることを確認してください。



Blackmagic MultiView Setupで入カラベルをカスタマイズできるので、マルチビューレイアウトの各ソースを簡単に識別できます。

- **Sources** – 各入力のリベルをカスタマイズできます。マルチビューディスプレイに表示されるそれぞれのソースのリベルに適用されます。
- **Views** – このタブは、Blackmagic MultiView 16をVideohub Controlソフトウェアでコントロールする場合のみ使用します。ビューの名前を変更することで、Videohub Controlソフトウェアの「Destination」パネルでの識別が簡単になります。
- **Video Output** – Blackmagic MultiView 4 HDからビデオフォーマットおよびSDI出力アスペクトレシオをカスタマイズできます。
- **Configure** – デバイス名のカスタマイズ、ビデオ出力およびオーバーレイ設定、ネットワーク設定、シリアルコントロール調整などをコントロールできます。

## ソース (Sources)

### 入カラベルのカスタマイズ

ソースに名前を付けることで、マルチビューレイアウト時に各ソースをすばやく識別できます。ラベルは保存/ロードも可能です。Blackmagic MultiViewを頻繁に異なる作業で使用するユーザーもラベルをすばやくロードできるため、再入力の必要がありません。

ラベルは、Videohub Controlソフトウェア、さらにネットワークに接続されたVideohubコントロールパネルで確認できます。

入カラベルをカスタマイズする：

- 1 「Sources」タブをクリックします。
- 2 名前を変更したい入力ソースのボックスをクリックし、新しいラベル名を入力します。
- 3 「Save」をクリックして設定を確定します。

## ビュー (Views)

### ビューラベルのカスタマイズ

Blackmagic MultiView 16では、ビューのラベルを変更することで、MultiView 16をVideohub Controlソフトウェアでコントロールする際に信号の送信先としてビューを識別しやすくなります。

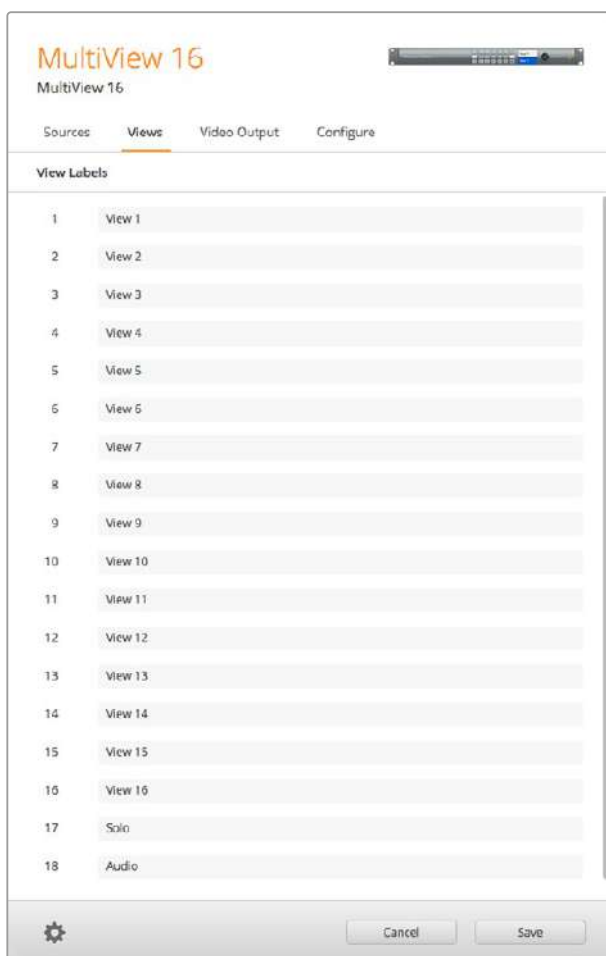
ビューのラベルをカスタマイズする：

- 1 「Views」タブをクリックします。
- 2 「Output Labels」設定で、名前を変更したい入力ソースのボックスをクリックし、新しいラベル名を入力します。
- 3 「Save」をクリックして設定を確定します。

「Views」ラベルのデフォルト設定では、出力17が「Solo」、出力18が「Audio」となっています。

出力17では、Blackmagic MultiView 16のフロントパネルでコントロールする「Solo」設定のソフトウェアラベルを変更できます。これは、MultiView 16をBlackmagic Videohub Controlソフトウェアでコントロールする際に役立ちます。Blackmagic MultiView Setupで「Solo」出力ラベルをカスタマイズすることで、Blackmagic Videohub Control上での表示を変更できます。

出力18は、Blackmagic MultiView 16のLCDメニューの「Audio In」設定と関連しており、マルチビュー出力にエンベッドするオーディオをルーティングします。「Solo」出力ラベルと同様にビューラベルを変更できるため、Blackmagic Videohub Controlを使用してBlackmagic MultiView 16をコントロールする際の表示をカスタマイズできます。



「Solo」または「Audio」出力ラベルを変更すると、Blackmagic MultiView 16をBlackmagic Videohub Controlでコントロールする際にそれらが表示される名前が変わります。

## ビデオ出力 (Video Output)

### ビデオフォーマットとHD出力

ビデオフォーマット設定は、Blackmagic MultiViewのモデル間で少し異なります。

Blackmagic MultiView 16はHDとUltra HDを同時に出力できます。出力するビデオのフレームレートを選択することも可能です。例えば、信号をアメリカで一般的に使用されているフォーマットで出力したい場合、2160p29.97を選択すると、HD出力のフレームレートも自動的にそれにマッチします。

この例では、ビデオフォーマットに2160p29.97を選択している場合、HD出力を1080p29.97または1080i59.94に設定できます。



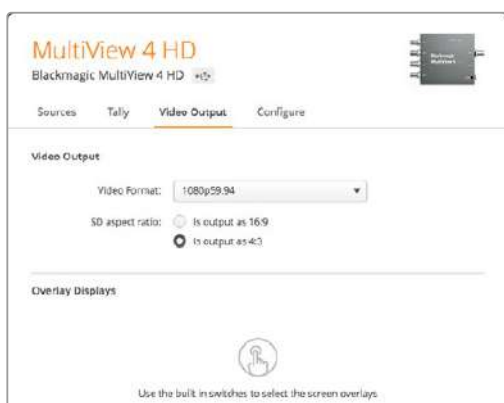
MultiView 16の「Video Output」のタブにあるボタンで、ビューレイアウト、Ultra HDビデオフォーマット、HD出力、SDアスペクトレシオが設定できます。

Blackmagic MultiView 4では、SDI出力からのビデオの出力をUltra HD/HDから選択したり、フレームレートの設定が行えます。これらの設定は「Video Format」のドロップダウンメニューにあります。



Blackmagic MultiView 4の「Video Output」タブで、解像度およびフレームレートを設定できます。

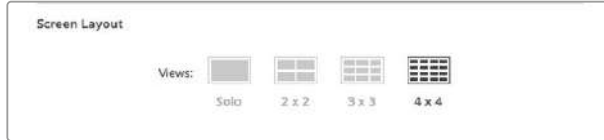
Blackmagic MultiView 4 HDでは、「Video Format」メニューでHDのフレームレート、およびビデオ出力のインターレース/プログレッシブの選択が可能です。Blackmagic MultiView 4 HDのSDアスペクトレシオを16:9または4:3に設定することも可能です。



Blackmagic MultiView 4 HDの「Video Output」タブでは、出力のHD解像度およびフレームレートの設定、インターレース/プログレッシブの選択が可能です。

## マルチビューレイアウトの変更

Blackmagic MultiView 16のコントロールパネルLCDメニューに含まれる「Layout」設定と同様に、Setupソフトウェアでもレイアウトを変更できます。「Details」設定で目的に合ったレイアウトのアイコンをクリックし、レイアウト設定を選択できます。



MultiView 16の「Video Output」タブでスクリーンレイアウトを設定します。

## タリーの設定

Blackmagic MultiView 4 HDでは、タリー設定をタリーオーバーライドに設定したり、BlackmagicカメラまたはATEMスイッチャーからMultiView 4 HDの入力4に送信されている際にはカメラ番号でフラグ付けできます。



MultiView Setup Utilityの「Tally」メニューのオプション

「Input」の1~4のフィールドにカメラ番号を1~99の範囲内で入力して、スイッチャー入力に対応するタリーを選択できます。

## タリーオーバーライド

タリー信号は、通常、MultiViewの最後のSDI入力に接続されたプログラムリターンフィードから供給されます。しかし、すべてのビューにすべてのカメラを接続したい場合もあるでしょう。

Blackmagic DesignカメラをATEMスイッチャーに接続している場合、あるいはサードパーティのタリーシステムを使用してその他のSDIスイッチャーに接続している場合、「Tally Override」を有効にできます。

「Tally Override」を選択すると、MultiView 4 HDは各SDI入力信号にエンベッドされたタリー信号を探すようになります。つまり、ユニットの最後のプログラムリターン経路の一本化されたタリー信号ではなく、すべてのビューは個別にタリー信号を受信するようになります。

**作業のこつ** 「Tally Override」モードは、Blackmagic ATEMスイッチャーまたはBlackmagic Camera Fiber Converterに接続した、Blackmagic URSA Mini、URSA Mini 4K、URSA Mini Pro、URSA Broadcastカメラで使用できます。サードパーティ製スイッチャーやサードパーティのタリーの接続に関する詳細は、Blackmagic 3G-SDI Shield for Arduinoのマニュアルを参照してください。

## SDアスペクトレシオ

4:3 SDビデオがBlackmagic MultiView 16に接続されている場合は、「Set to 4:3」チェックボックスを選択してください。これにより、4:3ビデオが正しいアスペクトレシオで表示されます。

16:9 SDビデオが接続されている場合は、「Set to 16:9」チェックボックスを選択するとイメージを正しく表示できます。

SDソースをBlackmagic MultiView 4 HDの入力に送信する際に、Setup Utilityを使用して出力を16:9または4:3に切り替えられます。「Video Output」メニューの「SD aspect ratio」で、アスペクトレシオのオプションを選択できます。



MultiView Setup Utilityの「Video Output」メニューのSDアスペクトレシオオプション

## オーバーレイの表示 (Overlay Display)

Blackmagic MultiView 16およびBlackmagic MultiView 4の「Overlay」メニューのチェックボックスを選択して、Blackmagic MultiViewの各機能を有効にできます。

オーバーレイに含まれる機能：

- ・ **ボーダー (Borders)** : 各ビューをグリッド状のパターンで分割します。
- ・ **ラベル (Labels)** : 各ビューの名前ラベルの表示/非表示を切り替えます。ラベルは、Blackmagic MultiView Setupを使用して変更できます。
- ・ **オーディオメーター (Audio Meters)** : すべてのビューのオーディオVUメーターのオン/オフを切り替えます。各SDI信号にエンベッドされた最初の2チャンネルがそれぞれのビューに表示されます。これにより、映像と併せてオーディオレベルをモニタリングできます。
- ・ **SDIタリー (Display SDI Tally)** : Blackmagic MultiViewの入力 (Blackmagic MultiView 16は入力16、Blackmagic MultiView 4モデルは入力4) にATEMスイッチャーのプログラムSDI出力が接続されている場合、ソースがオンエアに切り替わるとビューの周囲にタリーボーダーが表示されます。タリー機能は「Overlay Displays」の「Turn on SDI tally (SDIタリーをオン)」を選択すると有効になります。選択を外すと無効になります。正しいタリーを表示するために、Setup Utilityで入力番号を割り当てられます。





Blackmagic MultiView 16およびBlackmagic MultiView 4では、「Configure」タブの「Overlay」設定で、ボーダー、ビューラベル、オーディオメーター、SDIタリーなど、オーバーレイ機能のオン/オフを切り替えられます。

**作業のコツ** タリーを正しく動作させるには、Blackmagic MultiViewのすべての入力があるATEMスイッチャーの入力番号と合うように接続してください。接続が正しくないと、タリーが誤ったビューに表示されます。

## コンフィギュレーション (Configure)

### Blackmagic MultiViewに名前をつける

「Configure」タブは、Blackmagic MultiViewのモデルによって異なります。

Blackmagic MultiView 16またはBlackmagic MultiView 4の「Configure」タブは、「Details」、「Overlay」、「Network Settings」があります。Blackmagic MultiView 4 HDにはラベルとソフトウェアのバージョンが表示されますが、設定はありません。

Blackmagic MultiView 16またはBlackmagic MultiView 4に名前をつけることで、リモート操作する際の識別が簡単になります。

- 1 「Configure」タブをクリックします。
- 2 「Details」設定で、「Name」テキストボックスをクリックし、Blackmagic MultiViewの新しいラベルを入力します。
- 3 「Save」 をクリックします。



Blackmagic MultiView SetupでBlackmagic MultiView 16 の名前を変更することで、ネットワーク上のユーザーが識別しやすくなります。

## ネットワーク設定とシリアルコントロール設定 (Network Settings、Serial Control)

ネットワークおよびシリアルコントロールの設定は、Blackmagic MultiView 16とコンピューターがUSBで接続されている際に、Blackmagic MultiView Setupを使用して実行できます。これらの設定は、フロントコントロールパネルのLCDメニューでも変更できます。Blackmagic MultiView 4のコンフィギュレーションでは、ネットワーク設定のみ可能です。

ネットワーク設定を変更するには、テキストボックスをクリックしてキーボードで値を入力するか、チェックボックスをチェックします。



The screenshot displays two sections: 'Network Settings' and 'Serial Control'. Under 'Network Settings', there are three input fields: 'IP Address' with the value '192.168.10.160', 'Subnet Mask' with '255.255.255.0', and 'Gateway' with '192.168.10.1'. Below this, the 'Serial Control' section features a 'Leitch protocol:' label followed by two radio button options: 'Leitch Client' (which is unselected) and 'Leitch Server' (which is selected).

ネットワークに接続する際は、MultiView 16の「Network Settings」の変更が必要な場合があります。「Serial Control」設定では、MultiView 16をRS-422リモートコントロールのセットアップ要件に応じて「Leitch Client」または「Leitch Server」に設定できます。

シリアルコントロールを設定するには、Blackmagic Multiview 16とコンピューターをUSBで接続し、次のステップに従ってください：

- 1 Blackmagic MultiView Setupを起動し、製品イメージまたはその下の設定アイコンをクリックしてBlackmagic MultiView 16を選択します。
- 2 次に「Configure」タブをクリックします。Blackmagic MultiView 16を、接続されたコントロールパネルのクライアントとして動作させたい場合は「Leitch Protocol」スイッチを「Leitch Client」に、オートメーションシステムやサードパーティ製ルーターコントロールシステムから制御したい場合は同スイッチを「Leitch Server」に設定します。
- 3 「Save」タブをクリックして設定を確定します。



This screenshot shows the 'Serial Control' section of the configuration menu. It features the 'Leitch protocol:' label and two radio button options: 'Leitch Client' (unselected) and 'Leitch Server' (selected).

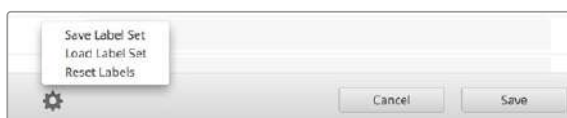
RS-422シリアルコントロールを使用する場合は「Leitch Client」または「Leitch Server」を選択します。

## ラベルの保存とロード

頻繁に行うプロジェクトで一定のラベルのセットを繰り返し使用する場合は、それらをファイルに保存して必要な時にロードできます。

ラベルを保存するには、Blackmagic MultiView Setupのギアアイコンをクリックしてラベル設定を開き、「Save Label Set」を選択します。ファイルの保存先を選択して「Save」をクリックします。

ラベルをロードするには、ギアアイコンをクリックしてラベル設定を開き、「Load Label Set」を選択します。保存してあるラベルセットを選択して「Load」をクリックします。



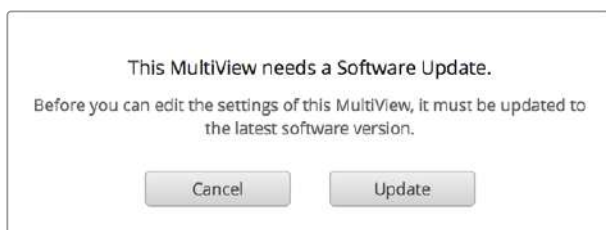
Blackmagic MultiView Setupでラベルを保存/ロードできます。

## 内部ソフトウェアのアップデート

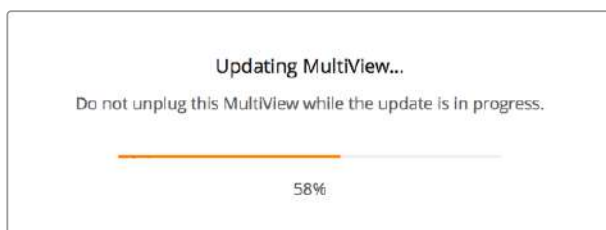
Blackmagic MultiViewの内部ソフトウェアは、アップデートが必要な場合があります。内部ソフトウェアをアップデートすることで、新機能、新しい機器との互換性、新しいフォーマットのサポートなどが追加されます。

Blackmagic MultiViewの内部ソフトウェアをアップデートする：

- 1 Blackmagic MultiViewとコンピューターをUSBまたはイーサネットで接続します。
- 2 Blackmagic MultiView Setupを起動します。ネットワークに接続されているすべてのBlackmagic MultiViewが自動的に表示されます。
- 3 製品イメージまたは製品名の下にある設定アイコンをクリックして、Blackmagic MultiViewを選択します。
- 4 Blackmagic MultiView Setupが、アップデートの必要の有無をお知らせします。
- 5 アップデートが必要な場合は、「Update」ボタンをクリックしてソフトウェアをインストールします。アップデート中はBlackmagic MultiViewを接続したままにしてください。
- 6 アップデートが完了したら「Close」ボタンをクリックします。



「Update」ボタンをクリックして内部ソフトウェアをインストールします。



アップデート中はBlackmagic MultiViewを接続したままにしてください。

## Videohub Controlソフトウェアの使用

Blackmagic MultiView 16をネットワークに接続している場合は、Mac/WindowsコンピュータでBlackmagic Videohub Controlを使用して、Blackmagic MultiView 16のビデオ入力をマルチビューレイアウト内の異なるビューにルーティングできます。Blackmagic MultiViewのSDI入力は「Sources」パネルに、ビューは「Destinations」パネルに、それぞれプッシュボタンとして表示されます。Videohub Controlアプリケーションは、Videohubソフトウェアインストーラーの一部です。Videohubソフトウェアインストーラーは、Blackmagic Designサポートセンター ([www.blackmagicdesign.com/jp/support](http://www.blackmagicdesign.com/jp/support)) でダウンロードできます。

**メモ** Videohub Controlソフトウェアを使用して、Blackmagic MultiView 16の各ビューにソースをルーティングできます。ソロモードの選択、マルチビュー出力用のオーディオソースの選択などの設定も可能です。Blackmagic MultiView 4では、Videohub Controlソフトウェアを使用してマルチビュー出力へのソロ/オーディオソースを変更できます。

### MultiView 16の選択

Videohub Controlソフトウェアを起動したら、ギアアイコンをクリックして設定メニューを開き、「Select Videohub」を選択します。接続されたデバイスのリストから、Blackmagic MultiView 16の名前を選択します。

各入力にラベルをつけている場合は、それらの名前がVideohub Controlソフトウェアで表示されます。ラベルをつけていない場合は、Input 1、Input 2、Input 3 (以下同) と表示されます。



Blackmagic Videohub Controlを使用して、Blackmagic MultiView 16のソースをそれぞれのビューにルーティングできます。

## 入力の確認

特定のビューに対し、どのBlackmagic MultiView 16のビデオ入力ルーティングされているのかを確認するには、「Destinations」パネルのビューボタンを押します。送信先（ビュー）のボタンが点灯します。また、「Sources」パネルでもルーティングされたビデオ入力ボタンが点灯するため、そのビューにルーティングされている入力（ソース）を確認できます。

## 各ビューへの入力のルーティング

ビデオ入力をビューにルーティングするには、「Destinations」パネルでビューのボタンをクリックし、「Sources」パネルの入力ボタンをクリックします。これで、入力を即座にビューにルーティングできます。

## ソロ入力(Solo Input)

「Solo Input」ボタンでは、Blackmagic MultiView 16のフロントパネルで「SOLO」ボタンを有効にした際にフルスクリーン表示する入力システムを指定できます。Videohub Controlの「Destinations」パネルで「Solo Input」ボタンをクリックして、「Sources」パネルで入力のボタンをクリックします。

## オーディオ入力(Audio Input)

Blackmagic MultiView 16およびBlackmagic MultiView 4では、Video Controlソフトウェアの「Audio Input」プッシュボタンを使用して、マルチビュー出力にルーティングするSDI入力を指定できます。Videohub Controlの「Destinations」パネルで「Audio Input」ボタンをクリックして、「Sources」パネルで入力のボタンをクリックします。これで、入力オーディオを即座にマルチビュー出力にルーティングできます。



これらの設定はVideohub Controlの「Solo Input」および「Audio Input」プッシュボタンで選択できます。

# Developer Information

## Blackmagic Videohub Ethernet Protocol v2.3

### Summary

Your Blackmagic MultiView is compatible with the Blackmagic Videohub Ethernet Protocol. It is text based and is accessed by connecting to your Blackmagic MultiView's IP address and TCP port 9990.

✖ Controlling your MultiView via Ethernet is available on Blackmagic MultiView 16 and Blackmagic MultiView 4, however, most features are relevant to Blackmagic MultiView 16. On Blackmagic MultiView 4, you can change the solo source and audio source for the multi view output.

The multi view sends information in blocks which each have an identifying header in all caps, followed by a full colon. A block spans multiple lines and is terminated by a blank line. Each line in the protocol is terminated by a newline character.

Lines sent to the Blackmagic MultiView 16 can be terminated with line feed, carriage return or both.

Upon connection, the multi view sends a complete dump of the state of the device. After the initial status dump, status updates are sent every time the multi view status changes.

To be resilient to future protocol changes, clients should ignore blocks they do not recognize, up to the trailing blank line. Within existing blocks, clients should ignore lines they do not recognize.

### Protocol Preamble

The first block sent by the multi view is always the protocol preamble:

```
PROTOCOL PREAMBLE:↵
Version: 2.3↵
↵
```

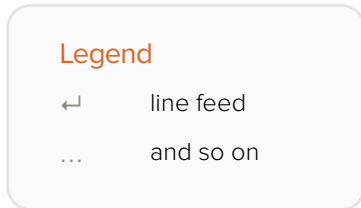
The version field indicates the protocol version. When the protocol is changed in a compatible way, the minor version number will be updated. If incompatible changes are made, the major version number will be updated.

### Device Information

The next block contains general information about the connected Blackmagic MultiView 16 device. If a device is connected, the multi view will report the attributes of the Blackmagic MultiView 16:

```
MULTIVIEW DEVICE:↵
Device present: true↵
Model name: Blackmagic MultiView 16↵
Video inputs: 16↵
Friendly name:
Unique ID:
Video processing units: 0↵
Video outputs: 16↵
Video monitoring outputs: 0↵
Serial Ports:
↵
```

This example is for the Blackmagic MultiView 16 which has 16 sources and 18 views including solo which is view 16 and audio which is view 17, referred to here as outputs.



Version 2.3 of the Blackmagic Videohub Ethernet Protocol was released with Videohub 4.9.1 software

### Initial Status Dump

The next two blocks enumerate the labels assigned to the input and output ports.

```
INPUT LABELS:↵
0 VTR 1↵
1 VTR 2↵
...
↵

OUTPUT LABELS:↵
0 Output feed 1↵
1 Output feed 2↵
...
↵
```

Note: Input and Output labels are always numbered starting at zero in the protocol which matches port one on the chassis.

The next three blocks describe the routing of the view ports.

```
VIDEO OUTPUT ROUTING:↵
0 5↵
1 3↵
...
↵
```

The next block describes the locking status of the views. Each port has a lock status of “O” for ports that are owned by the current client (i.e., locked from the same IP address), “L” for ports that are locked from a different client, or “U” for unlocked.

```
VIDEO OUTPUT LOCKS:↵
0 U↵
1 U↵
...
↵
```

The last block is the configuration block.

```
Layout: SOLO or 2x2 or 3x3 or 4x4
Output format: 50i or 50p or 60i or 60p
Solo enabled: True or False
Widescreen SD enable: True or False
Display border: True or False
Display labels: True or False
Display audio meters: True or False
Display SDI tally: True or False
```

## Status Updates

When any route, label, or lock is changed on the multi view by any client, the multi view resends the applicable status block, containing only the items that have changed.

If multiple items are changed, multiple items may be present in the update:

```
OUTPUT LABELS:↵
7 New output 8 label↵
10 New output 11 label↵
↵
```

## Requesting Changes

To update a label, lock or route, the client should send a block of the same form the multi view sends when its status changes. For example, to change the route of output port 8 to input port 3, the client should send the following block:

```
VIDEO OUTPUT ROUTING:↵
7 2↵
↵
```

The block must be terminated by a blank line. On receipt of a blank line, the multi view will either acknowledge the request by responding:

```
ACK↵
↵
```

or indicate that the request was not understood by responding:

```
NAK↵
↵
```

After a positive response, the client should expect to see a status update from the MultiView showing the status change. This is likely to be the same as the command that was sent, but if the request could not be performed, or other changes were made simultaneously by other clients, there may be more updates in the block, or more blocks. Simultaneous updates could cancel each other out, leading to a response that is different to that expected.

For MultiView 16 the client can change the solo source and the audio source to embed on the output.

Solo mode needs to be enabled either from the front panel or by sending the block:

```
CONFIGURATION:↵
Solo enabled: true↵
↵
```

Once enabled the following block will change the SOLO source to input 11:

```
Video Output Routing:↵
16 10↵
↵
```

This is not available on MultiView 4.

The following block will send embedded audio from input 1 to the MultiView 16 output:

```
Video Output Routing:↵
17 0↵
↵
```

The following block will send embedded audio from input 1 to the MultiView 4 output:

```
Video Output Routing:↵
5 0↵
↵
```



In the absence of simultaneous updates, the dialog expected for a simple label change is as follows:

```
OUTPUT LABELS:↵
6 new output label seven↵
↵
ACK↵
↵
OUTPUT LABELS:↵
6 new output label seven↵
↵
```

The asynchronous nature of the responses means that a client should never rely on the desired update actually occurring and must simply watch for status updates from the MultiView and use only these to update its local representation of the server state.

### Requesting a Status Dump

The client may request that the MultiView resend the complete state of any status block by sending the header of the block, followed by a blank line. In the following example, the client requests the MultiView resend the output labels:

```
OUTPUT LABELS:↵
↵
ACK↵
↵
OUTPUT LABELS:↵
0 output label 1↵
1 output label 2↵
2 output label 3↵
...
↵
```

### Checking the Connection

While the connection to the MultiView is established, a client may send a special no-operation command to check that the MultiView is still responding:

```
PING:↵
↵
```

If the MultiView is responding, it will respond with an ACK message as for any other recognized command.

## Blackmagic MultiView 16 RS-422 Protocol

### General

The RS-422 protocol can be used to control Blackmagic MultiView 16 as a slave device from third party routers and automation systems.

The “Leitch Server” mode implements the router (server) side of the Leitch Serial Pass Through Protocol as specified in section 4 of Leitch document SPR-MAN revision D. In “Leitch Client” mode, the Blackmagic MultiView 16 implements the controller (client) side of the Leitch terminal protocol. Set the desired leitch mode in the ‘configure’ settings in the Blackmagic MultiView Setup software.

This document describes the commands and parameters in the protocol that are relevant and supported by Blackmagic MultiView 16. Other commands and parameters specified in the Leitch protocol are accepted but ignored.

The RS-422 serial port is configured as 9600 N81:

9600 is the line speed, or baud rate, at 9600 bits/sec.

N represents no parity check, or 'none'.

8 is the data length.

1 is for stop bits.

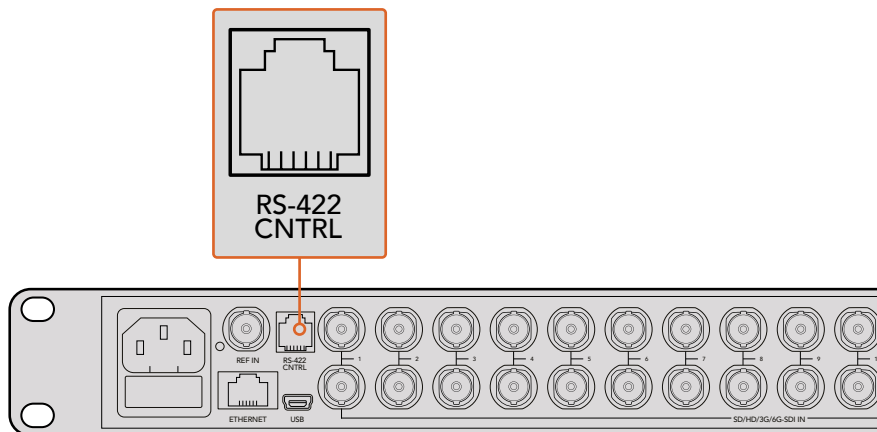
To summarize N81, data without a parity check begins with 1 start bit, includes 8 true data bits, and 1 stop bit. There are 10 bits in total.

The protocol is line oriented, with a maximum length of 250 characters per command. Each command from the client should be terminated with a carriage return (\r). Each response from the server will be terminated with a carriage return and line feed (\r\n).

Sources, destinations and levels are always specified in base-16, numbered from zero. Levels are always between 0 and 15 ("F") . Blackmagic MultiView 16 only has one valid level – level zero.

On connecting to the serial port, the client should send a carriage return. Blackmagic MultiView 16 will respond with a > character prompt, which is not followed by a carriage return or line feed. Receiving the prompt indicates that a connection has been established. The same prompt will be issued after each command received by the MultiView.

In the following documentation, commands in orange and values in blue must be typed literally, including any spaces. In the following example of an immediate command using destination port 7 and source port 3, @ X:0/destination,source would be entered as: @ X:0/6,2

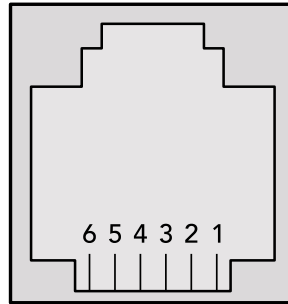


The RS-422 serial port lets you control Blackmagic MultiView 16 from third party routers and automation systems. The connector is an RJ11 connector, the same used in many landline telephone connections. By modifying an RS-422 to USB adapter cable terminated with an RJ11 connector, you can control Blackmagic MultiView 16 using external controllers via USB.



An RS-422 to USB adapter cable and RJ11 connector can be purchased from electronics stores such as Digi-Key.com. Refer to the pinout diagram below for help wiring the RJ11 connector to the adapter cable.

Pin No.	Function
Pin 1	TX +
Pin 2	TX -
Pin 3	GND
Pin 4	GND
Pin 5	RX -
Pin 6	RX +



Pinout diagram for the RJ11 connector

### Notifications

Once connected, if status reporting is enabled, the client will receive a notification message when a route changes on the MultiView. The notifications take one of two forms:

**S:0destination,source** Routing change

This message indicates that the specified source port is now routed to the specified destination.

**V:0destination,source** Preset routing notification

This message indicates that the current preset includes a route from the specified source to the specified destination.

### Global Commands

All pass through commands are preceded by an @ symbol and a space.

The following client commands are supported:

@ !     disable status reporting  
Status reporting is disabled by default.

@ ?     enable status reporting  
Status reporting is enabled.

@ Z:    reset routing table

Routing is reset so that the first source is routed to all destinations.

### Immediate Commands

@ X:0/destination,source   change route

@ X:0/destination,source/destination-2,source-2...   change multiple routes  
The specified source ports are routed to the specified destinations.  
Any routing changes will trigger S: notifications

@ X?0destination   request individual route status  
The source routed to the specified destination will be returned as an S: notification.

@ S?0   request all ports route status  
Each source and destination port pair will be returned as S: notifications

## Salvo Commands

@ P:0/destination,source queue route change

@ P:0/destination,source/destination-2,source-2... queue multiple route changes  
The specified routing changes are added to the current salvo for later execution.

@ P?0destination request individual port status in salvo  
If a routing change for the specified destination port is queued, the route will be returned as a V: notification.

@ V?0 request all ports status in salvo  
Each queued routing change in the salvo is reported as a V: notification.

@ B:C clear salvo

@ B:R clear salvo  
Any queued changes are discarded and the salvo is reset.

@ B:E execute salvo  
Any queued changes are executed and each routing change will be returned as an S: notification.

# ヘルプ

## ヘルプライン

すぐに情報が必要な方は、Blackmagic DesignオンラインサポートページでBlackmagic MultiViewの最新サポート情報を確認できます。

### Blackmagic Designオンラインサポートページ

最新のマニュアル、ソフトウェア、サポートノートは、[www.blackmagicdesign.com/jp/support](http://www.blackmagicdesign.com/jp/support)のBlackmagicサポートセンターで確認できます。

### Blackmagic Designフォーラム

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### Blackmagic Designサポートへの連絡

サポートページやフォーラムで必要な情報を得られなかった場合は、サポートページの「メールを送信」ボタンをクリックして、サポートのリクエストをメール送信してください。あるいは「お住まいの地域のサポートオフィス」をクリックして、お住まいの地域のBlackmagic Designサポートオフィスに電話でお問い合わせください。

### 現在インストールされているソフトウェアのバージョンを確認

コンピューターにインストールされているBlackmagic MultiViewのソフトウェアバージョンを確認するには、Blackmagic MultiViewアプリケーションを開いてください。「Blackmagic MultiView」メニューで「About MultiView」を選択すると、バージョン番号が確認できます。

### 最新のソフトウェアを入手する

コンピューターにインストールされたBlackmagic MultiView 16のバージョンを確認した後、Blackmagicサポートセンター ([www.blackmagicdesign.com/jp/support](http://www.blackmagicdesign.com/jp/support)) で最新のソフトウェア・アップデートをチェックしてください。常に最新のソフトウェアを使用することを推奨しますが、重要なプロジェクトの実行中は、ソフトウェアのアップデートは行わない方がよいでしょう。

# 規制に関する警告および安全情報

## 規制に関する警告

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動作は次の2つを条件とします：

- 1 本機は、有害な干渉を起こさない。
- 2 本機は希望しない動作を発生しかねない干渉を含む、いかなる受信干渉も受け入れる必要がある。

HDMIインターフェースへの接続は、必ず高品質のシールドHDMIケーブルを使用する必要があります。

## 安全情報

この機器は、必ず保護接地のあるコンセントに接続してください。

感電のリスクを減らすため、水が跳ねたり、滴るような場所には置かないでください。

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# 保証

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# Blackmagic MultiView







## Bienvenue

Nous vous remercions d'avoir fait l'acquisition d'un Blackmagic MultiView !

Nous espérons que vous partagez le même rêve que nous : faire de l'industrie audiovisuelle un lieu créatif où chacun a accès à des équipements vidéo de grande qualité. Utiliser le MultiView 16 avec un téléviseur Ultra HD abordable équivaut à disposer de 16 moniteurs broadcast indépendants. Le MultiView 16 vous offre donc un monitoring multisources professionnel à moindre coût !

Le Blackmagic MultiView 4 est idéal pour les productions plus petites ou mobiles, car il vous permet de contrôler jusqu'à quatre sources sur un écran HD ou Ultra HD. Vous pouvez également relier plusieurs MultiView en routant la sortie du premier appareil vers le deuxième afin de personnaliser votre solution de monitoring.

Ce manuel d'utilisation contient toutes les informations dont vous avez besoin pour installer le Blackmagic MultiView. Il est toutefois recommandé de faire appel à du personnel qualifié en cas de doute sur ce qu'est une adresse IP ou si vous souhaitez davantage d'informations sur les réseaux d'ordinateurs. Le Blackmagic MultiView peut être contrôlé à l'aide du logiciel Blackmagic Videohub qui est facile à installer. Certaines préférences techniques devront sans doute être configurées après l'installation.

Veuillez consulter notre site Internet [www.blackmagicdesign.com/fr](http://www.blackmagicdesign.com/fr) et notre page d'assistance pour télécharger les dernières mises à jour de ce manuel et du logiciel. Enfin, veuillez enregistrer votre équipement lors du téléchargement du logiciel afin que nous puissions vous tenir informés des dernières mises à jour. Nous souhaitons continuellement améliorer nos produits, n'hésitez donc pas à nous faire part de vos commentaires !

Nous espérons que vous profiterez de votre Blackmagic MultiView pendant des années et que vous aurez plaisir à regarder vos entrées vidéo en Ultra HD !

A handwritten signature in a cursive script, reading "Grant Petty". The signature is written in black ink on a white background.

**Grant Petty**

PDG de Blackmagic Design

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## Mise en route

Pour mettre en route votre Blackmagic MultiView, il suffit de le brancher à une source d'alimentation, de connecter les sources vidéo SDI et de connecter les moniteurs et les télévisions aux sorties HDMI ou SDI. Cette section du manuel vous donne toutes les informations nécessaires à la mise en route du Blackmagic MultiView.

### Brancher l'alimentation

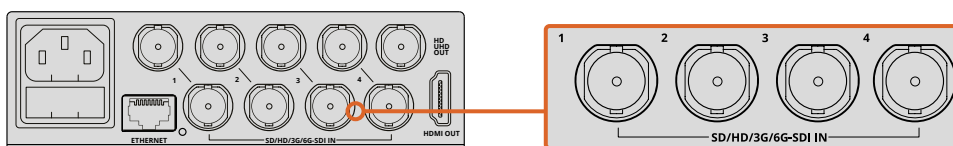
Pour alimenter le Blackmagic MultiView, il suffit de brancher un cordon d'alimentation CEI standard à l'entrée d'alimentation AC 110-240V située sur la face arrière de l'appareil.

**CONSEIL** Le Blackmagic MultiView 4 prend également en charge le PoE+, il suffit donc de le brancher à un commutateur Ethernet compatible avec le PoE+. Si vous connectez une alimentation AC et PoE+ au MultiView 4, l'appareil bascule automatiquement sur l'alimentation restante en cas de dysfonctionnement ou de déconnexion d'une des sources d'alimentation.

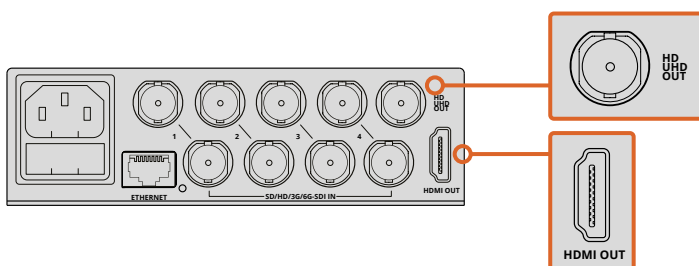
Pour alimenter le Blackmagic MultiView 4 HD, il suffit de brancher l'adaptateur à l'entrée DC 6-36V. Vous trouverez un connecteur fileté pour sécuriser la connexion et empêcher une déconnexion accidentelle.

### Connecter des sources SDI et des moniteurs

Connectez les sources SDI aux entrées vidéo SDI du Blackmagic MultiView. Le format vidéo est automatiquement détecté et la vidéo s'affiche sur la sortie multivue. Pour visualiser la sortie, il suffit de connecter un moniteur aux sorties multivues SDI ou HDMI.



Connectez les sources vidéo aux entrées vidéo SDI du Blackmagic MultiView.

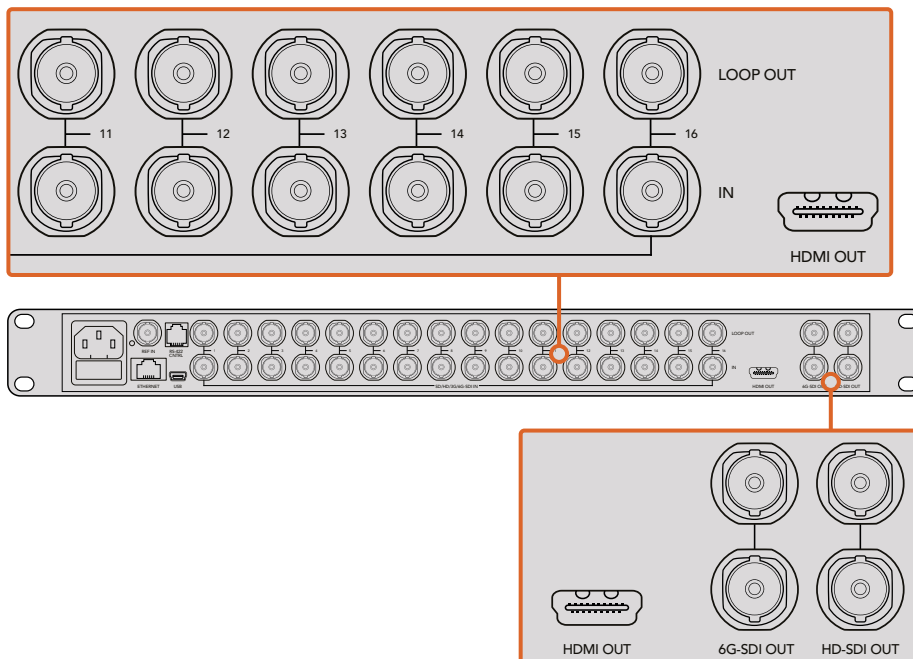


Connecter des moniteurs aux sorties multivues HDMI ou SDI du Blackmagic MultiView.

Lorsque vous connectez un moniteur HDMI à la sortie HDMI, le Blackmagic MultiView détecte automatiquement si le moniteur prend en charge l'Ultra HD ou la HD et fait commuter la sortie multivue en conséquence.

**CONSEIL** Sur le Blackmagic MultiView 16, vous pouvez acheminer le multivue via les sorties HD-SDI dédiées, ou en Ultra HD via les sorties 6G-SDI et HDMI.

Sur le MultiView 4 et le MultiView 16, vous pouvez également connecter vos sources à d'autres équipements vidéo via les sorties en boucle situées au-dessus de chaque entrée.



**CONSEIL** Toutes les sorties SDI et HDMI du Blackmagic MultiView 16 peuvent être utilisées simultanément pour le monitoring multivue Ultra HD et HD. Sur le Blackmagic MultiView 4, vous pouvez choisir entre des paramètres de sortie multivue Ultra HD ou HD à l'aide des interrupteurs intégrés, du Teranex Mini Smart Panel en option ou du logiciel Blackmagic Multi View Setup.

## Configurer les fenêtres multivues

L'affichage multivue peut être modifié selon vos besoins. Par exemple, le Blackmagic MultiView 4 et le Blackmagic MultiView 4 HD peuvent être réglés sur un affichage 2x2 ou plein écran. Le Blackmagic MultiView 16 peut, quant à lui, être réglé sur un affichage 2x2, 3x3, 4x4 ou plein écran.

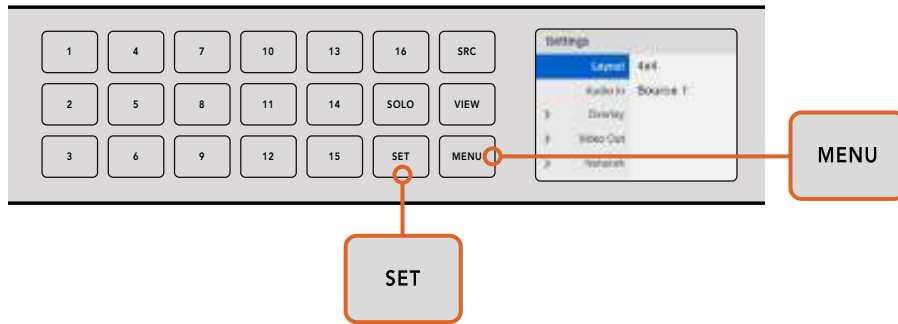
### Configurer l'affichage du Blackmagic MultiView 16

Pour modifier l'affichage du Blackmagic MultiView 16, utilisez les boutons, la molette et l'écran LCD situés sur le panneau de contrôle intégré. Vous pouvez également afficher une fenêtre en mode plein écran en appuyant sur le bouton **Solo**, puis en sélectionnant l'entrée désirée en appuyant sur un des boutons source.

- 1 Appuyez sur le bouton **Menu** situé sur le panneau avant pour ouvrir l'écran de paramétrage sur le LCD.
- 2 **Layout** est le premier paramètre affiché dans le menu, il est donc toujours en surbrillance lorsque vous accédez au menu de paramétrage. Appuyez sur le bouton **Set** pour modifier ce paramètre.

- 3 Sélectionnez 4x4 sous le paramètre **Layout** en tournant la molette située sur le panneau de contrôle. 4x4 vous permet d'afficher les 16 fenêtres sources sur un seul écran. Lorsqu'un paramètre est modifié, vous remarquerez que les boutons **Set** et **Menu** clignotent. Cela indique qu'un paramètre a été modifié, confirmez le changement en appuyant sur le bouton **Set**, ou annulez-le en appuyant sur le bouton **Menu**.
- 4 Appuyez sur le bouton Set pour confirmer la sélection.

Vous pouvez également configurer l'affichage à l'aide du panneau de contrôle du logiciel d'installation Blackmagic MultiView 16.

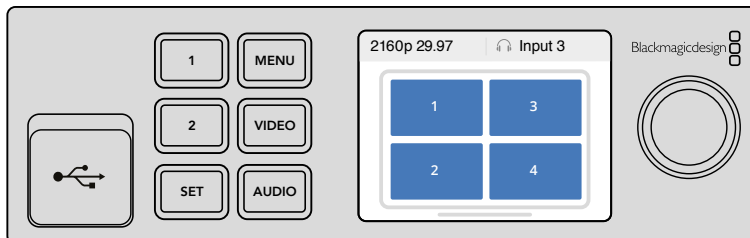


Pour configurer l'affichage du Blackmagic MultiView 16, appuyez sur **Menu**, sélectionnez l'affichage désiré à l'aide de la molette, puis appuyez sur **Set**. 4x4 vous permet d'afficher les 16 fenêtres sur un seul écran.

### Configurer l'affichage du Blackmagic MultiView 4

L'affichage 2x2 est l'affichage par défaut du Blackmagic MultiView 4. Pour passer à un affichage plein écran, utilisez le bouton de contrôle **1** sur le Teranex Mini Smart Panel. Appuyez sur le bouton **2** pour revenir à un affichage 2x2.

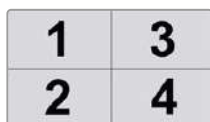
Vous pouvez également configurer l'affichage à l'aide des paramètres **Configure** du logiciel d'installation.



Appuyez sur **1** pour un affichage solo ou **2** pour un affichage 2x2.

### Configurer l'affichage du Blackmagic MultiView 4 HD

La première fois que vous utilisez le MultiView 4 HD, il sera réglé sur son affichage par défaut, c'est-à-dire 2x2, avec les entrées 1 et 3 sur la rangée supérieure et les entrées 2 et 4 sur la rangée inférieure. Pour changer l'affichage en mode plein écran, réglez l'interrupteur intégré **6 Solo On** sur ON.



L'affichage 2x2 du MultiView 4 HD avec quatre entrées SDI.

Pour plus d'informations, consultez la section « Paramètres des interrupteurs pour le Blackmagic MultiView 4 HD » de ce manuel.

## Connexion à un réseau

Le Blackmagic MultiView prend en charge le protocole Ethernet Blackmagic Videohub, donc si votre appareil est installé sur un rack inaccessible, vous pouvez facilement le contrôler à distance à l'aide d'un panneau de contrôle Blackmagic Videohub, tel que le Blackmagic Smart Control et le Blackmagic Master Control. Une fois connecté à votre réseau via Ethernet, le Blackmagic MultiView apparaît sur les autres ordinateurs et sur les panneaux de contrôle Videohub connectés au réseau. Ces appareils peuvent alors le contrôler l'unité à distance.

Pour connecter le Blackmagic MultiView à votre réseau :

- 1 Allumez le Blackmagic MultiView
- 2 Utilisez un câble Ethernet RJ45 standard pour connecter le Blackmagic MultiView à un réseau ou à un ordinateur.

Une fois le Blackmagic MultiView connecté au réseau, veillez à ce que son adresse IP diffère de celle des autres équipements sur le réseau. Vous pouvez modifier les paramètres réseau via le menu de l'écran LCD du Blackmagic MultiView 16 et du MultiView 4 lorsque vous l'utilisez avec un Teranex Mini Smart Panel. Vous pouvez également brancher le Blackmagic MultiView au port USB de votre ordinateur et modifier les paramètres réseau à l'aide du Blackmagic MultiView Setup. Pour obtenir de plus amples informations sur le réglage des paramètres réseau, consultez la section « Réglage des paramètres » de ce manuel.

## Connexion du contrôle série

Les panneaux de contrôle pour grille de commutation tiers peuvent contrôler le Blackmagic MultiView 16 à l'aide du port série RS-422. Pour obtenir plus d'informations sur le contrôle série, consultez la section « Modifier les paramètres à l'aide du Blackmagic MultiView Setup ».

## Installation sur rack

Le Blackmagic MultiView 16 mesure 1 unité de rack, il s'installe donc parfaitement dans un rack ou une caisse de transport broadcast.

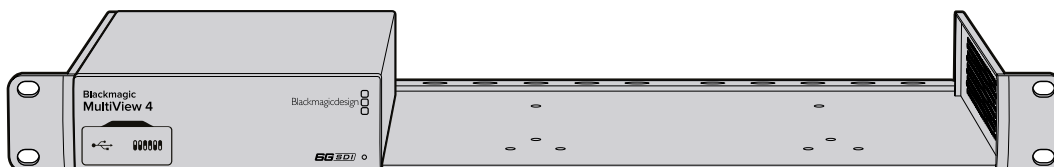
Le Blackmagic MultiView 4 est beaucoup plus petit et peut être utilisé lors de productions mobiles où vous n'utilisez pas forcément de rack broadcast. Bien que le boîtier du MultiView 4 soit petit et portable, vous pouvez quand même l'installer sur rack si besoin est. Le Blackmagic Teranex Mini Rack Shelf vous permet de monter jusqu'à trois appareils côte à côte sur un seul rack. Vous pouvez ainsi facilement les relier entre eux et créer autant de fenêtres source que vous le souhaitez.

L'installation du MultiView 4 sur le Teranex Mini Rack Shelf est extrêmement rapide, il suffit de retirer les pieds en caoutchouc de l'appareil et de le visser sur le rack en vous servant des pas de vis fournis à cet effet. Le Teranex Mini Rack Shelf dispose de deux panneaux d'origine que vous pouvez utiliser pour couvrir la partie du rack qui n'est pas utilisée par les MultiView 4.

Pour plus d'informations, consultez le site Internet de Blackmagic Design : [www.blackmagicdesign.com/fr](http://www.blackmagicdesign.com/fr).

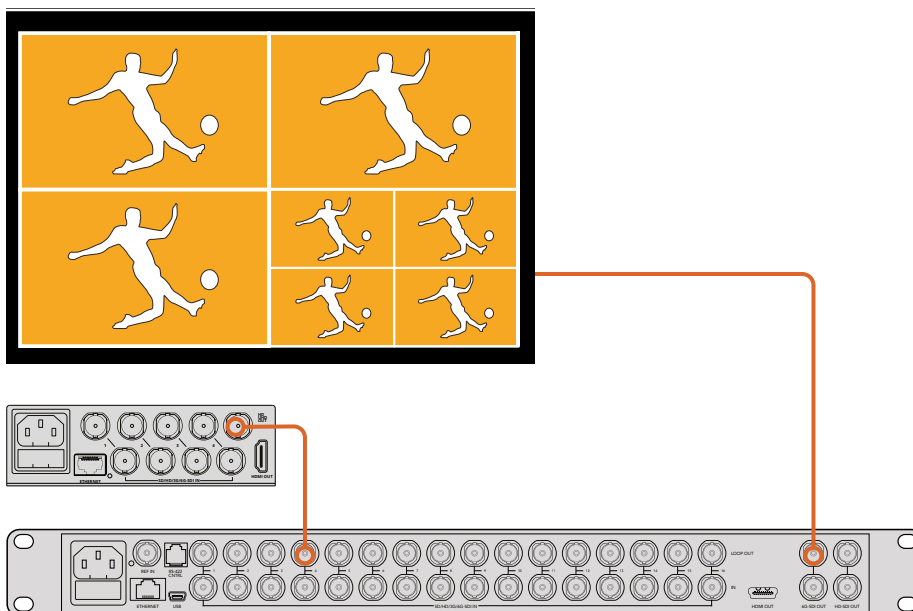
Veillez à ce que le MultiView 4 soit installé sur rack par du personnel qualifié, car les caractéristiques électriques situées sur la face inférieure de l'appareil seront couvertes. Une fois installé, toutes les connexions sont accessibles à l'arrière de l'appareil.

Une fois installé, toutes les connexions sont accessibles à l'arrière de l'appareil.



## Plusieurs solutions multivues

Vous pouvez relier plusieurs BlackMagic MultiView pour créer des solutions de monitoring personnalisées. C'est très pratique lorsque vous devez ajouter plus de sources à la sortie multivue. Pour ce faire, il suffit de brancher la sortie d'un MultiView à l'entrée d'un autre appareil MultiView. Nous vous recommandons de connecter la sortie multivue en amont à un moniteur Ultra HD pour obtenir un maximum de clarté.



En routant la sortie d'un Multi View vers l'entrée d'un autre appareil MultiView, vous pouvez ajouter des fenêtres à votre configuration multivue.

C'est tout ce que vous devez savoir pour démarrer ! Consultez les sections suivantes de ce manuel pour découvrir toutes les fonctionnalités du Blackmagic MultiView, notamment la modification des paramètres, l'ajout de libellés et autres.

## Réglage des paramètres

Il y a plusieurs façons de modifier les paramètres du Blackmagic MultiView.

- **Panneau de contrôle sur la face avant** - Le Blackmagic MultiView 16 est doté d'un panneau de contrôle et d'un écran LCD pour vous permettre de modifier facilement les paramètres à l'avant de l'appareil.
- **Interrupteurs** - Les petits interrupteurs situés sur le panneau avant du Blackmagic MultiView 4 et le panneau latéral du Blackmagic MultiView 4 HD permettent de modifier instantanément les paramètres à l'aide de la pointe d'un stylo. Pour accéder aux interrupteurs du Blackmagic MultiView 4, il suffit de soulever la protection en caoutchouc située sur le panneau avant. Le schéma fonctionnel imprimé sous ces appareils vous donne des informations sur le réglage de chaque interrupteur.
- **Teranex Mini Smart Panel** - Vous pouvez remplacer le panneau avant d'origine du Blackmagic MultiView 4 avec un Teranex Mini Smart Panel vendu en option afin de modifier les paramètres à l'aide des boutons, de la molette et de l'écran LCD. Ce panneau fonctionne de la même façon que le panneau de contrôle du Blackmagic MultiView 16 et vous offre un contrôle aisé et intuitif.
- **Blackmagic MultiView Setup** - Ce logiciel vous permet de modifier les paramètres via le port USB de votre ordinateur ou sur le réseau Ethernet. Pour plus d'informations, consultez la section « Blackmagic MultiView Setup » de ce manuel.

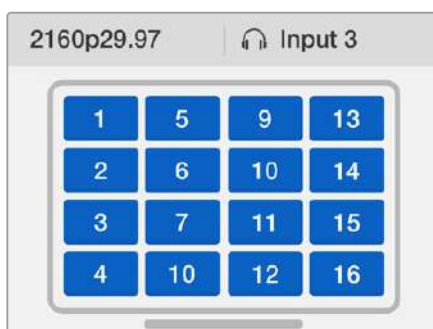
- **Logiciel Videohub Control** - Lorsque le Blackmagic MultiView 16 ou le Blackmagic MultiView 4 est connecté à un réseau, vous pouvez utiliser le logiciel Blackmagic Videohub Control pour router les sources, modifier l'affichage et sélectionner les entrées audio. Pour plus d'informations, consultez la section « Utiliser le Videohub Software Control » de ce manuel.

## Panneau de contrôle du Blackmagic MultiView 16

Le panneau de contrôle situé sur la face avant du Blackmagic MultiView 16 facilite la modification de tous les paramètres.

Lorsque vous allumez votre Blackmagic MultiView 16 pour la première fois, l'écran d'accueil s'affiche sur le LCD intégré. Cet écran affiché par défaut vous donne un aperçu des paramètres suivants :

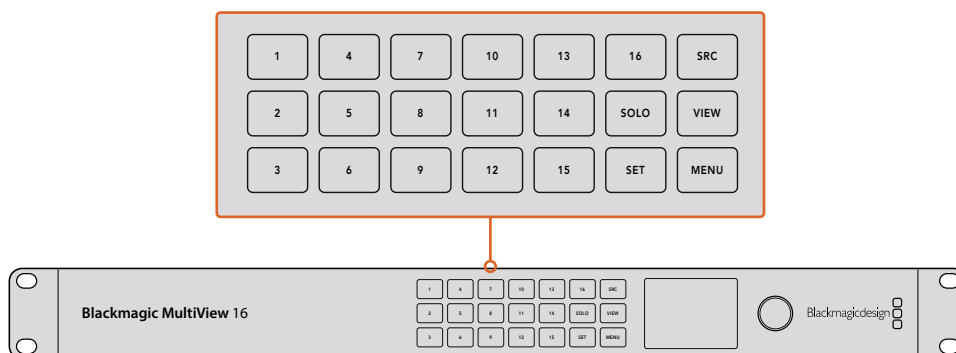
- **Fréquence d'images de la sortie multivue** - La fréquence d'images sélectionnée pour la sortie multivue Ultra HD SDI est située en haut à gauche de l'écran.
- **Entrée audio** - Ce paramètre est situé à côté de la fréquence d'images de la sortie multivue. Il indique quelle entrée SDI est utilisée pour l'audio intégré au signal de sortie multivue HDMI et SDI.
- **Configuration multivue** - Affiche la configuration des fenêtres multivue.



L'écran d'accueil s'affiche par défaut sur le panneau de contrôle du Blackmagic MultiView 16. Cet écran affiche la configuration multivue, la fréquence d'image de la sortie SDI multivue et l'entrée SDI sélectionnée pour intégrer l'audio à la sortie multivue.

### Boutons du panneau de contrôle

Les boutons lumineux situés sur le panneau de contrôle du Blackmagic MultiView 16 facilitent la modification des paramètres et le réglage des sources et de l'affichage.

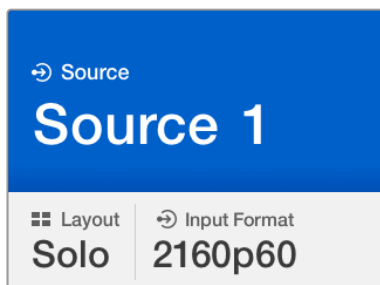


Ces boutons vous permettent de modifier facilement les paramètres et les fenêtres à partir de la face avant de l'appareil.



## Bouton Solo

Vous pouvez afficher une fenêtre en mode plein écran en appuyant sur le bouton **Solo**. Appuyez sur le bouton représentant la fenêtre de votre choix sur le panneau de contrôle pour la visualiser en mode plein écran. Appuyez à nouveau sur **Solo** pour revenir à la configuration multivue.



La fonction Solo vous permet d'afficher une fenêtre en mode plein écran.

## Bouton Menu

Appuyez sur le bouton **Menu** pour afficher l'écran de paramétrage. Modifiez le paramètre souhaité à l'aide de la molette et du bouton Set, puis appuyez sur le bouton Menu pour revenir à l'écran d'accueil.

## Bouton Set

Appuyez sur le bouton **Set** pour sélectionner le paramètre que vous souhaitez modifier. Une fois le paramètre modifié, appuyez à nouveau sur le bouton **Set** pour confirmer le changement.

## Boutons SRC et View

Ces deux boutons vous permettent de sélectionner la source d'entrée que vous souhaitez afficher dans une fenêtre. Lorsque vous naviguez entre les menus de paramétrage, les boutons SRC et View peuvent également être utilisés pour passer d'un paramètre à l'autre.

## Molette de défilement

Utilisez la molette pour faire défiler les paramètres, ou pour sélectionner des éléments sur l'écran de paramétrage. Si vous n'êtes pas satisfait de votre sélection, vous pouvez retourner au paramètre préalablement sélectionné en appuyant sur la molette.

Tournez la molette de défilement vers la gauche ou vers la droite pour passer d'une option à l'autre au sein d'un menu. Les paramètres peuvent également être activés ou désactivés en appuyant sur la molette.

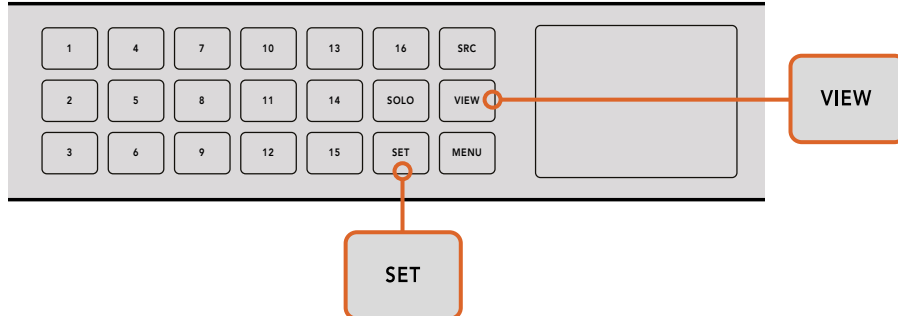
## Régler les sources et les fenêtres sur le Blackmagic MultiView 16

Une des caractéristiques essentielles du Blackmagic MultiView 16 est de pouvoir assigner les sources SDI connectées à des fenêtres différentes. En modifiant ces paramètres, vous pouvez aisément changer la configuration des fenêtres. Par exemple, vous pouvez afficher l'entrée 5 dans la fenêtre 1.

Pour afficher une source dans une fenêtre particulière :

- 1 Appuyez sur le bouton **View** situé sur le panneau de contrôle pour ouvrir l'écran de sélection des fenêtres. La sélection des fenêtres s'affiche sur un fond bleu lumineux.
- 2 Appuyez sur un bouton numéroté pour sélectionner la fenêtre désirée. Vous pouvez également utiliser la molette pour passer d'une fenêtre à l'autre. Appuyez sur le bouton **Set** pour confirmer la sélection.
- 3 Appuyez sur le bouton **SRC**. La section source de l'écran LCD s'allume.

- 4 Appuyez sur un bouton numéroté sur le panneau de contrôle pour sélectionner l'entrée désirée. Vous pouvez également utiliser la molette pour passer d'une entrée à l'autre sur l'écran.
- 5 Appuyez sur le bouton **Set** pour confirmer la sélection.



Pour assigner une source à une fenêtre particulière, appuyez sur le bouton **View** pour accéder au paramètre View, faites votre choix et appuyez sur le bouton **Set** pour le confirmer.

### Configurer l'affichage du Blackmagic MultiView 16

Sur le Blackmagic MultiView 16, vous pouvez sélectionner le nombre de fenêtres que vous souhaitez faire apparaître sur la sortie multivue. Par exemple, si 4 entrées sont connectées, vous pouvez facilement choisir la configuration 2x2 qui affiche deux fenêtres verticales et deux fenêtres horizontales. Pour un monitoring optimal des entrées, choisissez le nombre de fenêtres qui correspond au nombre d'entrées connectées.

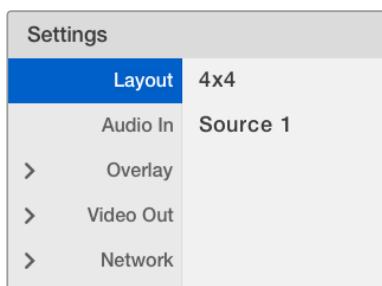
Il existe 4 configurations différentes :

- **2x2** affiche 4 fenêtres. Si vous disposez d'un écran HD, chaque source sera affichée en résolution HD native.
- **3x3** affiche 9 fenêtres.
- **4x4** affiche 16 fenêtres.

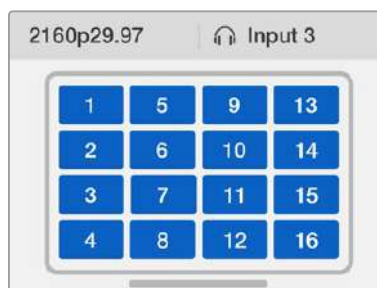
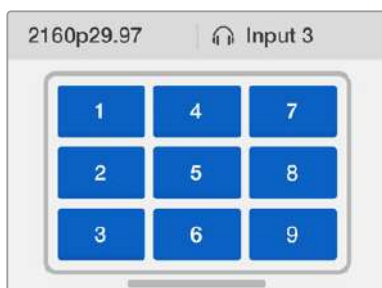
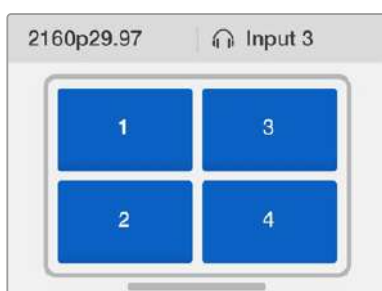
**CONSEIL** Vous pouvez également les visualiser en mode plein écran en appuyant sur le bouton **Solo** situé sur le panneau de contrôle du Blackmagic MultiView 16, puis en sélectionnant le bouton numéroté. Pour le Blackmagic MultiView 4, appuyez sur le bouton 1 du Teranex Mini Smart Panel.



Sélectionnez la fenêtre à laquelle vous souhaitez assigner une source à l'aide de la molette ou des boutons numérotés.



Choisissez l'élément de menu que vous souhaitez modifier et appuyez sur **Set** pour ouvrir ses paramètres.



Faites votre choix entre 3 affichages multivue différents selon le nombre d'entrées connectées.

## Entrée audio

Le paramètre Audio In permet de sélectionner l'entrée SDI dont l'audio va être intégré aux sorties multivue.

## Paramètre Overlay

Ce sous-menu vous permet de modifier l'apparence du multivue en activant et en désactivant les fonctions suivantes :

Les fonctionnalités du Overlay sont :

- **Bordures** - Divise les fenêtres sous forme de grille.
- **Libellés** - Masque ou affiche les libellés des fenêtres. Les libellés peuvent être modifiés sur le Blackmagic MultiView Setup.
- **Vumètres** - Active ou désactive les vumètres pour toutes les fenêtres. Les deux premiers canaux intégrés à chaque signal SDI sont affichés sur chaque fenêtre, vous pouvez donc vérifier les niveaux audio et l'image simultanément.
- **Tally SDI** - Lorsque la dernière entrée du Blackmagic MultiView est connectée à la sortie de programme SDI d'un mélangeur ATEM, par exemple l'entrée 16 du Blackmagic MultiView 16, ou l'entrée 4 du Blackmagic MultiView 4, une bordure tally s'affiche autour de la fenêtre lorsque sa source passe à l'antenne. Vous pouvez activer ou désactiver l'affichage de cette fonction à l'aide du paramètre Tally dans le menu Overlay.

Pour que le tally entoure la bonne fenêtre, veillez à faire correspondre les entrées du Blackmagic MultiView 16 à celles du mélangeur ATEM.

## Sortie vidéo

Les paramètres du menu **Video Out** permettent de contrôler les options de sortie sur votre Blackmagic MultiView 16.

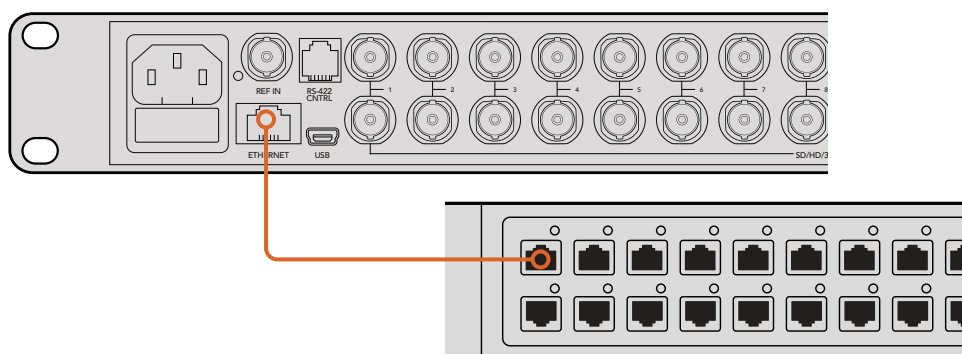
- **Format vidéo** - Utilisez le paramètre **Video Format** pour changer la fréquence d'images de la sortie multivue Ultra HD à 2160p29.97 ou 2160p25. La fréquence d'images de la sortie multivue HD se conformera à la sortie Ultra HD. Appuyez sur la molette si vous souhaitez annuler le changement de paramètre ou revenir au menu précédent.
- **Sortie HD** - Sélectionnez une sortie multivue HD entrelacée ou progressive. Si le format vidéo sélectionné est de 2160p29.97, choisissez entre une sortie HD 1080p29.97 et 1080i59.94. De même, lorsque le format sélectionné est de 2160p25, choisissez entre 1080p25 et 1080i50.

## Réseau

Les paramètres du menu **Network** permettent de régler l'adresse IP, le sous-réseau et la passerelle pour votre Blackmagic MultiView 16 lorsque vous êtes connecté à un réseau.

Régler l'adresse IP du Blackmagic MultiView 16 :

- 1 Appuyez sur le bouton **Menu** situé sur la face avant de l'appareil et utilisez la molette pour mettre l'onglet **Networking** en surbrillance sur le menu de l'écran LCD.
- 2 Appuyez sur le bouton **Set** pour accéder à l'écran **Network Settings**.
- 3 Tournez la molette pour sélectionner l'onglet IP address.
- 4 Appuyez sur le bouton **Set** pour afficher le premier champ de l'adresse IP en surbrillance. Utilisez la molette pour modifier la valeur du champ.
- 5 Appuyez sur **Set** pour confirmer le premier champ, puis répétez l'étape précédente pour les trois champs suivants. Si vous devez assigner un sous-réseau et une passerelle, procédez de la même façon.
- 6 Appuyez sur le bouton **Menu** pour revenir au menu principal.



En connectant le Blackmagic MultiView 16 à un réseau Ethernet, vous pourrez contrôler l'appareil à partir d'un autre emplacement.

Network Settings	
IP Address	192.168.10.160
Subnet	255.255.255.0
Gateway	192.168.10.1

Utilisez la molette ou les boutons numérotés sur le panneau de contrôle du Blackmagic MultiView 16 pour assigner des valeurs à vos paramètres réseau.

## Teranex Mini Smart Panel

Le Teranex Mini Smart Panel s'installe à l'avant du Blackmagic MultiView 4 et remplace le panneau d'origine. Les boutons, la molette de défilement et l'écran LCD vous offrent un accès rapide aux paramètres.

### Installation du Teranex Mini Smart Panel

L'installation du Smart Panel en option est simple, et comme il est échangeable à chaud, vous n'avez même pas besoin d'éteindre le Blackmagic MultiView 4 pour l'installer.

- 1 À l'aide d'un tournevis Pozidriv 2, dévissez les deux vis M3 placées de chaque côté du panneau d'origine du MultiView 4 et retirez-le doucement.
- 2 À l'intérieur du panneau d'origine, dans un coin de la base, vous trouverez un petit tube en plastique transparent. Ce tube permet de diriger la lumière de la LED située à l'intérieur de l'appareil et d'allumer le voyant sur le panneau d'origine. Ce tube doit rester attaché au panneau avant d'origine.

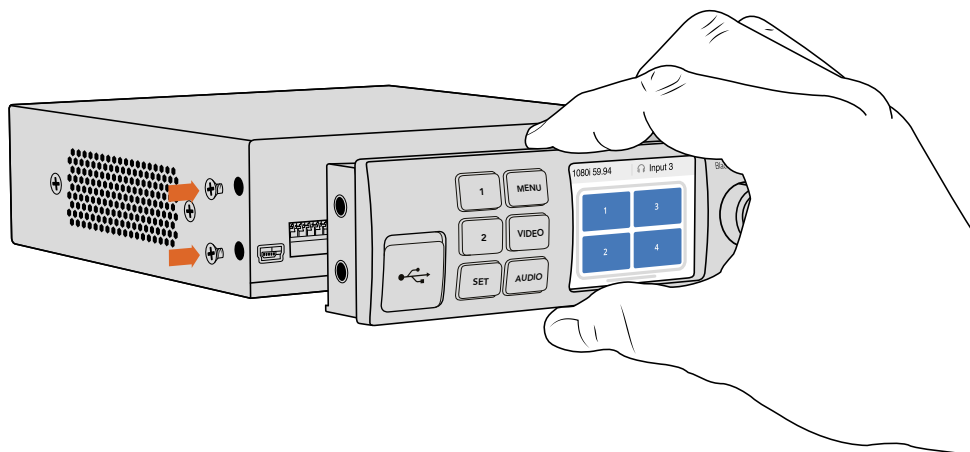
**CONSEIL** Lorsque vous rattachez le panneau avant d'origine, veillez à ce que le conduit de lumière du voyant d'alimentation soit aligné avec la fente située sur l'avant de l'appareil.

- 3 Aligned le connecteur situé sur la face arrière du Smart Panel avec le connecteur correspondant sur la face avant du Blackmagic MultiView 4 et poussez doucement le Smart Panel vers l'appareil jusqu'à ce que les connecteurs soient fermement enfoncés. Le Smart Panel doit être correctement aligné avec le Blackmagic MultiView 4 et être fermement enfoncé.
- 4 Vissez de nouveau les vis M3 du panneau d'origine.

Si le Blackmagic MultiView 4 est monté sur le Teranex Mini Rack Shelf, l'appareil devra être retiré du rack avant de retirer les vis.

Pour plus d'informations, consultez la section « Installation sur rack » de ce manuel.

Le port USB du Blackmagic MultiView 4 est accessible même lorsque le Smart Panel est installé. Pour y accéder, soulevez simplement le volet en caoutchouc. Une fois le Smart Panel installé, les petits interrupteurs sont cachés et ne sont plus utiles. En effet, vous pouvez maintenant effectuer tous les paramétrages directement via les menus LCD.



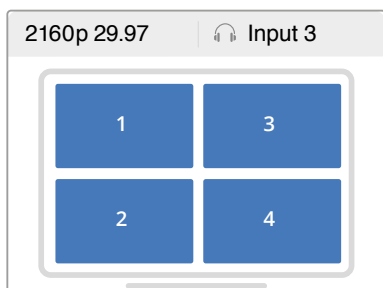
Pour installer correctement le Teranex Mini Smart Panel sur le Blackmagic MultiView 4, tenez le panneau entre vos doigts et votre pouce afin d'aligner le Smart Panel à la façade du Blackmagic MultiView 4.

**CONSEIL** Le panneau d'origine est extrêmement résistant, donc si vous choisissez d'installer le Blackmagic MultiView 4 dans un rack ou dans des endroits bondés pleins de câbles, vous pouvez toujours réinstaller le panneau d'origine.

## Fonctionnalités du Teranex Mini Smart Panel

Les fonctionnalités du Smart Panel sont similaires à celles du panneau de contrôle du MultiView 16. L'écran d'accueil affiché par défaut sur le LCD vous donne un aperçu des paramètres suivants :

- **Fréquence d'images de la sortie multivue** - La fréquence d'images sélectionnée pour la sortie multivue Ultra HD SDI est située en haut à gauche de l'écran.
- **Entrée audio** - Ce paramètre est situé à côté de la fréquence d'images de la sortie multivue. Il indique quelle entrée SDI est utilisée pour l'audio intégré au signal de sortie multivue HDMI et SDI.
- **Configuration multivue** - Affiche la configuration multivue 2x2.

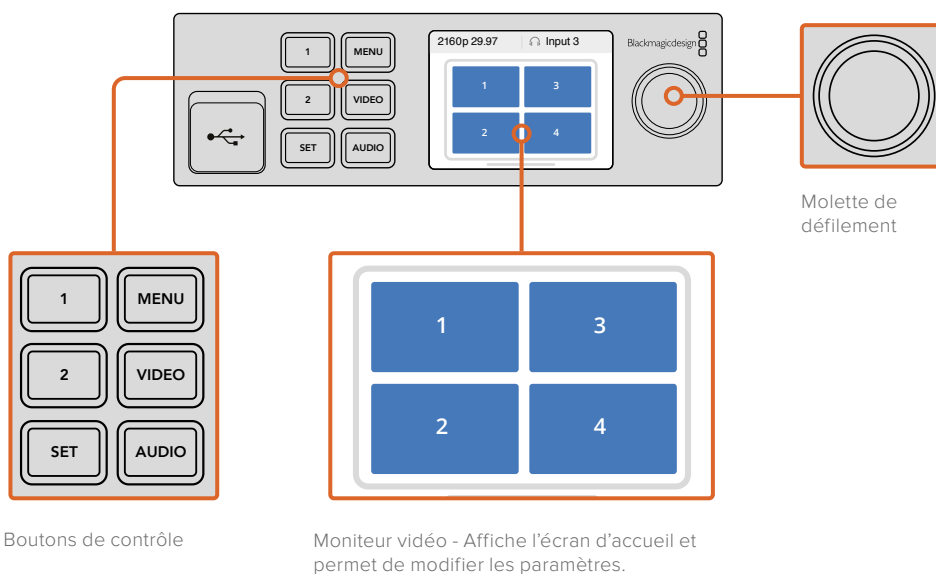


L'écran d'accueil est affiché par défaut sur l'écran LCD du Teranex Mini Smart Panel.

## Boutons de contrôle et molette de défilement

Le Teranex Mini Smart Panel dispose de boutons de contrôle et d'une molette de défilement qui servent à naviguer au sein des menus du Blackmagic MultiView 4.

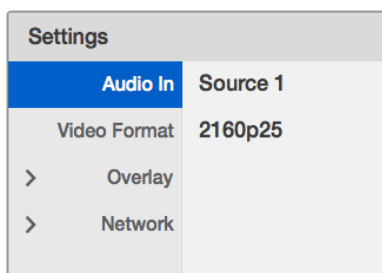
- **Boutons 1 et 2** - Appuyez sur ces boutons pour augmenter ou diminuer les valeurs numériques des paramètres ou pour faire défiler les options du menu.
- **SET** - Après avoir réglé les paramètres à l'aide des boutons 1 et 2, appuyez sur le bouton **Set** pour confirmer votre sélection.
- **MENU** - Appuyez sur ce bouton pour ouvrir le menu de paramétrage de votre Blackmagic MultiView 4. Vous pouvez également appuyer sur le bouton MENU pour revenir en arrière et accéder à l'écran d'accueil.
- **Boutons VIDEO et AUDIO** - Ces boutons fonctionnent avec les convertisseurs Teranex Mini et ne sont pas utilisés avec le Blackmagic MultiView 4.
- **Molette de défilement** - Tournez la molette de défilement vers la gauche ou vers la droite pour naviguer dans les différents menus et régler les valeurs numériques.



## Réglage des paramètres à l'aide du Teranex Mini Smart Panel

Il est très pratique de régler les paramètres à l'aide du Teranex Mini Smart Panel, car vous pouvez immédiatement les confirmer sur l'écran LCD.

Pour accéder au menu de configuration du Blackmagic MultiView 4, appuyez sur le bouton multifonction **Menu** du Teranex Mini Smart Panel. Vous pourrez ainsi accéder aux paramètres suivants :



Choisissez l'élément de menu que vous souhaitez modifier et appuyez sur Set pour le sélectionner. Faites défiler les paramètres à l'aide de la molette.

### Entrée audio

Le paramètre Audio In permet de sélectionner l'entrée SDI dont l'audio va être intégré aux sorties multivue.

## Format vidéo

Le Blackmagic MultiView 4 peut être réglé sur une sortie HD ou Ultra HD à 29.97 ou à 25 images par seconde. Utilisez ce paramètre pour passer en revue toutes les options relatives à la résolution et à la fréquence d'images.

## Paramètre Overlay

Ce sous-menu vous permet d'activer ou de désactiver les fonctions suivantes :

Les fonctionnalités du Overlay sont :

- **Borders** : Divise les fenêtres sous forme de grille.
- **Labels** : Masque ou affiche les libellés des fenêtres. Les libellés peuvent être modifiés sur le Blackmagic MultiView Setup.
- **Audio Meters** : Active et désactive l'affichage des vumètres sur toutes les fenêtres. Les deux premiers canaux intégrés à chaque signal SDI sont affichés sur chaque fenêtre, vous pouvez donc vérifier les niveaux audio et l'image simultanément.

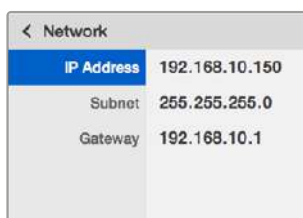


## Réseau

Les paramètres du menu **Network** permettent de régler l'adresse IP, le sous-réseau et la passerelle pour votre Blackmagic MultiView 4 lorsque vous êtes connecté à un réseau.

Régler l'adresse IP du Blackmagic MultiView 4 :

- 1 Appuyez sur le bouton **Menu** situé sur la face avant de l'appareil et utilisez la molette pour mettre l'onglet **Networking** en surbrillance sur le menu de l'écran LCD.
- 2 Appuyez sur le bouton **Set** pour accéder à l'écran **Network Settings**.
- 3 Tournez la molette pour sélectionner l'onglet IP address.
- 4 Appuyez sur le bouton **Set** pour afficher le premier champ de l'adresse IP en surbrillance. Utilisez la molette pour modifier la valeur du champ.
- 5 Appuyez sur **Set** pour confirmer le premier champ, puis répétez l'étape précédente pour les trois champs suivants. Si vous devez assigner un sous-réseau et une passerelle, suivez la même méthode.
- 6 Appuyez sur le bouton **Menu** pour revenir au menu principal.



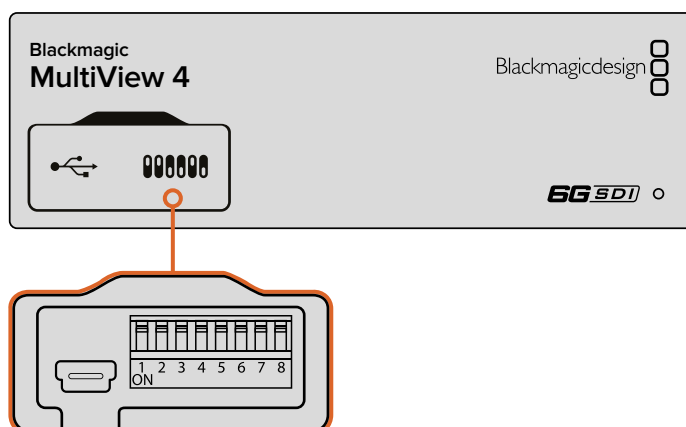
Utilisez la molette ou les boutons 1 et 2 du Teranex Mini Smart Panel pour assigner des valeurs aux paramètres réseau du Blackmagic MultiView 4.



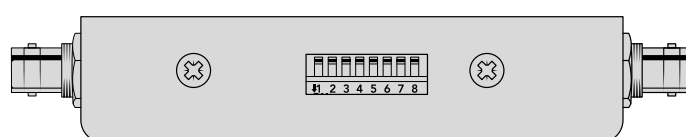
# Réglage des paramètres à l'aide des interrupteurs

Les petits interrupteurs situés sur le Blackmagic MultiView 4 et le Blackmagic MultiView 4 HD permettent de modifier les paramètres. Sur le Blackmagic MultiView 4, les interrupteurs sont situés sur le panneau avant, sous une protection en caoutchouc.

Sur le Blackmagic MultiView 4 HD, les interrupteurs sont situés sur la face latérale de l'appareil.



Réglez les paramètres en changeant la position des interrupteurs avec un stylo.



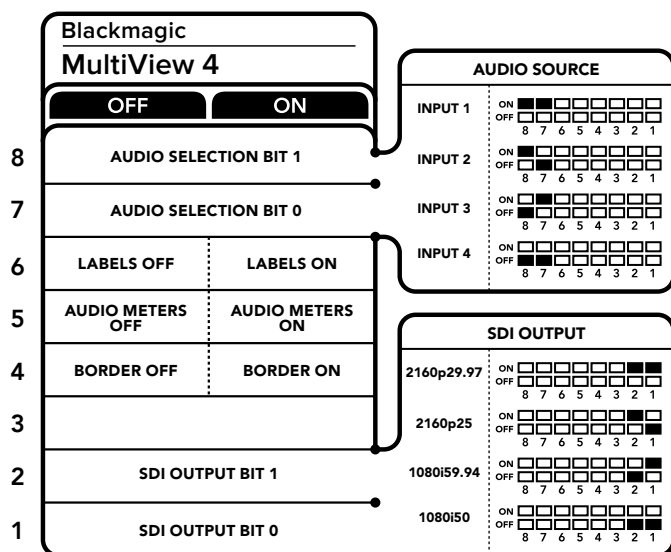
On Blackmagic MultiView 4 HD, the small switches are located on the rear side panel

## Interrupteurs intégrés

Un schéma fonctionnel est imprimé sur la base de l'appareil. Veillez à ce que la position des interrupteurs corresponde au schéma. La lecture du schéma s'effectue de 8 à 1 et de gauche à droite.

**CONSEIL** Même si un schéma fonctionnel est imprimé sur la base de l'appareil, de nouvelles fonctionnalités peuvent être ajoutées au fur et à mesure des mises à jour. N'hésitez pas à vérifier les dernières versions du manuel pour obtenir les informations les plus récentes. Téléchargez la dernière version de ce manuel sur la page d'assistance de Blackmagic Design [www.blackmagicdesign.com/fr/support](http://www.blackmagicdesign.com/fr/support)

## Paramètres des interrupteurs pour le Blackmagic MultiView 4



Paramètres des interrupteurs pour le Blackmagic MultiView 4

Les interrupteurs du Blackmagic MultiView 4 permettent de modifier les paramètres suivants :

### Interrupteurs 8 et 7 - Sélection audio

Les interrupteurs 8 et 7 représentent respectivement les unités binaires 1 et 0. Cela signifie que lorsque vous réglez les interrupteurs 8 et 7 sur différentes combinaisons On/Off, vous pouvez choisir l'entrée SDI utilisée pour intégrer l'audio au signal de sortie multivue HDMI et SDI.

#### Tableau de sélection de l'audio

Source audio	Interrupteur 8	Interrupteur 7	Schéma
Entrée 1	ON	ON	ON <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Entrée 2	ON	OFF	ON <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Entrée 3	OFF	ON	ON <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Entrée 4	OFF	OFF	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

### Interrupteur 6 - Libellés

Réglez l'interrupteur 6 sur **On** pour afficher les libellés sur toutes les fenêtres du signal de sortie multivue. Les libellés peuvent être réglés à l'aide du Blackmagic MultiView Setup, comme décrit ultérieurement dans ce manuel. Réglez l'interrupteur 6 sur **Off** pour masquer les libellés.

### Interrupteur 5 - Vumètres

Réglez l'interrupteur 5 sur **On** pour afficher les vumètres de toutes les fenêtres du signal de sortie multivue. Réglez l'interrupteur 5 sur **Off** pour masquer les vumètres.

### Interrupteur 4 - Bordures

Réglez l'interrupteur 4 sur **On** pour afficher les bordures entre chaque fenêtre multivue. Réglez l'interrupteur 4 sur **Off** pour masquer les bordures.

## Interrupteur 2 et 1

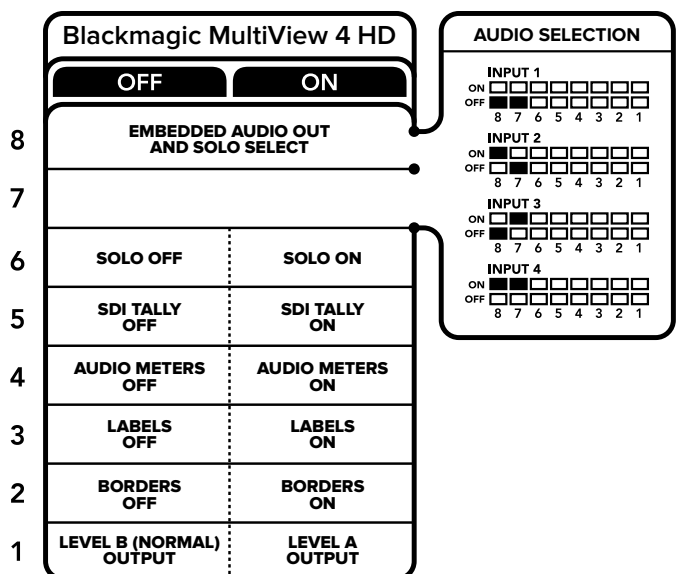
Les interrupteurs 2 et 1 représentent respectivement les unités binaires 1 et 0. Cela signifie que lorsque vous réglez les interrupteurs 2 et 1 sur différentes combinaisons On/Off, vous pouvez sélectionner le format de sortie du signal SDI du MultiView 4.

Tableau de sélection de la sortie SDI

Sortie SDI	Interrupteur 2	Interrupteur 1	Schéma
2160p29.97	ON	ON	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> OFF <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 8 7 6 5 4 3 2 1
2160p25	ON	OFF	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> OFF <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 8 7 6 5 4 3 2 1
1080i59.94	OFF	ON	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> OFF <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 8 7 6 5 4 3 2 1
1080i50	OFF	OFF	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> OFF <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 8 7 6 5 4 3 2 1

**REMARQUE** Si vous installez le Teranex Mini Smart Panel en option, les paramètres choisis avec ce dernier primeront sur la position des interrupteurs. Le Blackmagic MultiView 4 garde en mémoire les derniers paramètres choisis, qu'ils aient été réglés via les interrupteurs, le Smart Panel ou le logiciel Blackmagic MultiView Setup. Si vous utilisez le contrôle par interrupteur après avoir retiré le Smart Panel ou mis à jour les paramètres du Blackmagic MultiView 4 via le logiciel, il se peut que vous deviez ajuster certains interrupteurs pour activer les nouveaux paramètres.

## Paramètres des interrupteurs pour le Blackmagic MultiView 4 HD






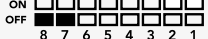
La légende située sur la base du Blackmagic MultiView 4 HD vous donne toutes les informations nécessaires pour modifier les paramètres.

Les interrupteurs du Blackmagic MultiView 4 HD permettent de modifier les paramètres suivants :

### Interrupteurs 8 et 7 - Intégrer l'audio SDI et sélectionner le mode plein écran

Les interrupteurs 8 et 7 sont regroupés pour fournir 4 combinaisons ON/OFF. Grâce à ces quatre combinaisons, l'audio d'une des quatre entrées SDI peut être intégré à la sortie multivue. En mode plein écran, l'audio suit la vidéo. Vous pouvez donc utiliser ces interrupteurs pour sélectionner la source vidéo et la source audio.

#### Tableau de sélection de l'audio

Source audio	Interrupteur 8	Interrupteur 7	Schéma
Entrée 1	OFF	OFF	
Entrée 2	ON	OFF	
Entrée 3	OFF	ON	
Entrée 4	ON	ON	

### Interrupteur 6 - Affichage en mode Solo

Réglez l'interrupteur 6 sur ON pour un affichage en mode Solo. Ce mode affiche une fenêtre en plein écran. Réglez cet interrupteur sur OFF pour un affichage multivue 2x2.

L'audio intégré à l'affichage plein écran correspond automatiquement à la source vidéo sélectionnée. Utilisez les interrupteurs 7 et 8 pour sélectionner une source audio et une source vidéo pour l'affichage plein écran. En mode 2x2, les interrupteurs 7 et 8 permettent de sélectionner l'entrée audio.

### Interrupteur 5 - Tally

Réglez l'interrupteur 5 sur ON pour afficher les bordures tally sur les fenêtres. Réglez-le sur OFF pour masquer les bordures.

Les données supplémentaires, telles que le contrôle des caméras SDI ATEM, le timecode et le sous-titrage codé ne seront pas modifiées en mode Solo.

**CONSEIL** Le numéro d'entrée de chaque fenêtre peut être réglé à l'aide du logiciel Blackmagic MultiView Setup. Veillez à ce que le numéro de la fenêtre corresponde au numéro de l'entrée réglé sur le mélangeur afin que le tally s'affiche correctement. Pour plus d'informations, consultez la section « Configurer le tally » de ce manuel.

### Interrupteur 4 - Vumètres

Réglez l'interrupteur 4 sur ON pour afficher les vumètres sur les fenêtres. Réglez-le sur OFF pour les masquer.

### Interrupteur 3 - Afficher les libellés

Réglez l'interrupteur 3 sur ON pour afficher les libellés sur chaque fenêtre. Réglez-le sur OFF pour les masquer.

### Interrupteur 2 - Bordures

Réglez l'interrupteur 2 sur ON pour afficher les bordures des fenêtres, et sur OFF pour les masquer.

### Interrupteur 1 - 3G-SDI de niveau A et de niveau B

Réglez l'interrupteur 1 sur OFF pour sélectionner une sortie 3G-SDI de niveau B, ou sur ON pour sélectionner une sortie 3G-SDI de niveau A. Ce paramètre vous permet de modifier le niveau de la sortie 3G-SDI pour maintenir une compatibilité avec d'autres équipements SDI.

# Utiliser le Blackmagic MultiView Setup

Le Blackmagic MultiView Setup vous permet de configurer facilement le Blackmagic MultiView à partir d'un ordinateur Mac ou Windows et de mettre à jour le logiciel interne de l'appareil. Cet utilitaire est intuitif et facile à utiliser. Si votre Blackmagic MultiView 4 est connecté à un réseau, vous pouvez même modifier ses paramètres via Ethernet, vous n'avez donc pas besoin de brancher l'appareil via USB.

## Installer le Blackmagic MultiView Setup

Le programme d'installation Blackmagic MultiView Setup est compatible avec les versions 64 bits de Windows et les versions Sierra et High Sierra de macOS.



Double-cliquez sur le programme d'installation et suivez les instructions à l'écran pour installer le Blackmagic MultiView Setup.

### Installation sous Windows

- 1 Double-cliquez sur le programme d'installation à partir du média fourni ou du dossier qui contient les téléchargements, si vous avez téléchargé le logiciel sur le site Internet Blackmagic Design.
- 2 Suivez les instructions relatives à l'installation et acceptez les conditions du contrat de licence d'utilisation pour que Windows installe automatiquement le logiciel.

Cliquez sur le bouton **Démarrer** de Windows puis allez sur Tous les programmes>Blackmagic Design>MultiView. Le dossier MultiView contient l'application Blackmagic MultiView Setup.

## Installation sous Mac OS X

- 1 Double-cliquez sur le programme d'installation à partir du média fourni ou du dossier qui contient les téléchargements, si vous avez téléchargé le logiciel sur le site Internet Blackmagic Design.
- 2 Suivez les instructions relatives à l'installation, Mac OS X installera alors le logiciel automatiquement.

Un dossier intitulé **Blackmagic MultiView** contenant l'application Blackmagic MultiView Setup sera créé au sein du dossier Applications.

## Page d'accueil du Blackmagic MultiView Setup

La page d'accueil du logiciel s'affiche dès l'ouverture du Blackmagic MultiView Setup. Si plusieurs Blackmagic MultiView sont connectés à votre réseau, vous pouvez les sélectionner en cliquant sur les flèches situées sur les côtés gauche et droit de la page d'accueil.

Pour accéder aux paramètres de votre Blackmagic MultiView, cliquez sur l'icône circulaire située au-dessous de l'image du produit.

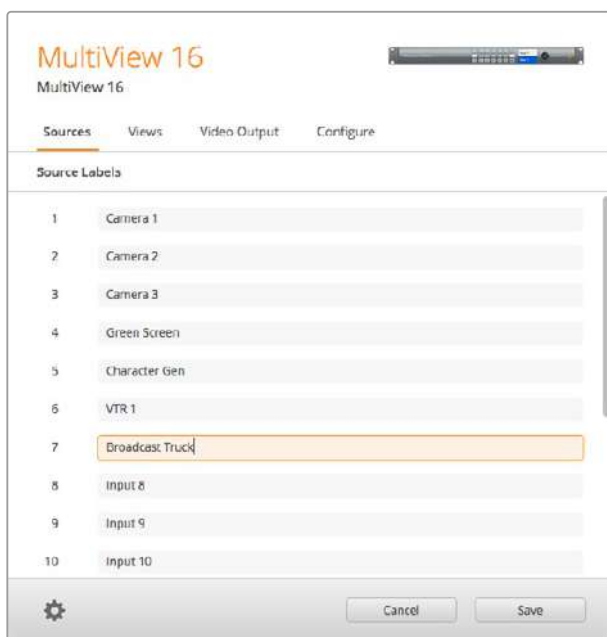


Le Blackmagic MultiView Setup vous permet de changer les paramètres du utBlackmagic MultiView via le port USB de votre ordinateur ou sur le réseau Ethernet.

## Modifier les paramètres à l'aide du Blackmagic MultiView Setup

Cliquez sur l'icône circulaire pour ouvrir le menu de paramétrage de votre Blackmagic MultiView. Dans la fenêtre de paramétrage, vous verrez trois onglets intitulés **Sources**, **Views** et **Configure**. Le paramètre **Views** n'apparaît pas sur le MultiView 4 et sur le MultiView 4 HD, car les fenêtres ne peuvent pas être ajustées avec le logiciel Videohub Control. Le Blackmagic MultiView 4 HD possède également un menu **Tally** pour modifier les paramètres du tally.

**CONSEIL** Veillez à ce que les paramètres réseau de l'appareil correspondent à ceux de l'ordinateur afin que les sources s'affichent.



Utilisez le Blackmagic MultiView Setup pour personnaliser les libellés représentant les entrées et ainsi identifier rapidement chaque source au sein de la configuration multivue.

- **Sources** - Permet de personnaliser les libellés représentant les entrées. Cela modifie les libellés des sources sur l'écran multivue.
- **Views** - Cet onglet s'applique uniquement lors du contrôle du Blackmagic MultiView 16 via le logiciel Videohub Control. Renommer les fenêtres permet de les identifier rapidement au sein du panneau représentant les destinations sur le logiciel Videohub Control
- **Video Output** - Permet de personnaliser le format vidéo et le format de l'image de la sortie SD depuis le Blackmagic MultiView 4 HD.
- **Configure** - Permet de personnaliser les paramètres, tels que le nom de l'appareil, la sortie vidéo, les informations affichées à l'écran, les paramètres du réseau et le contrôle série.

## Onglet Sources

### Personnaliser les libellés représentant les entrées

Renommer les sources permet de les identifier rapidement au sein de la configuration multivue. Vous pouvez également sauvegarder et charger des groupes de libellés. Ainsi, si vous utilisez régulièrement le Blackmagic MultiView sur différentes installations, vous pouvez rapidement charger les libellés sans avoir à les saisir une nouvelle fois.

Les libellés apparaissent sur le logiciel Blackmagic Videohub ainsi que sur les panneaux de contrôle Videohub connectés au réseau.

Personnaliser les libellés représentant les entrées :

- 1 Cliquez sur l'onglet **Sources**.
- 2 Cliquez dans la zone de texte d'une des sources et saisissez un nouveau nom.
- 3 Cliquez sur **Save** pour confirmer le changement.

## Onglet Views

### Personnaliser les libellés représentant les sorties

Sur le Blackmagic MultiView 16, il est possible de modifier les libellés représentant les fenêtres afin de pouvoir facilement les identifier en tant que destinations lorsque vous contrôlez le MultiView 16 via le logiciel Videohub Control.

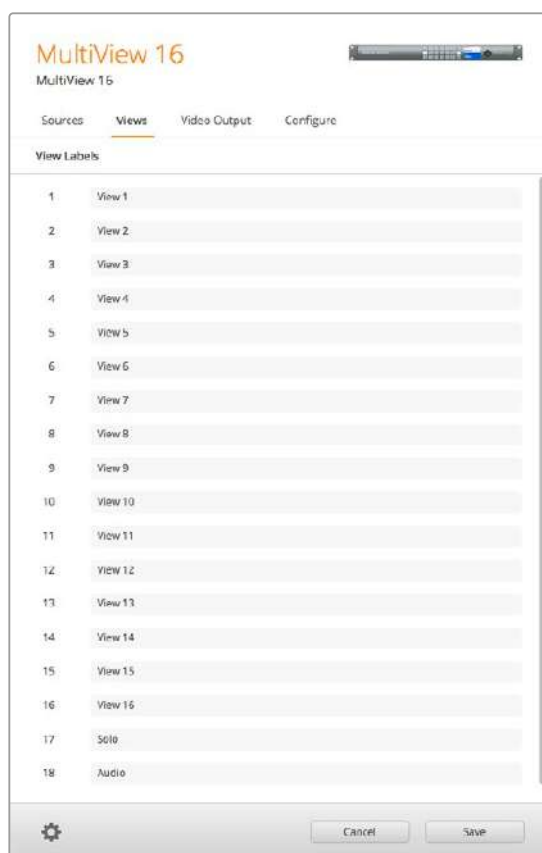
Personnaliser les libellés représentant les fenêtres :

- 1 Cliquez sur l'onglet **Views**.
- 2 Sous le paramètre **Output Labels**, cliquez dans la zone de texte de l'une des sorties et saisissez un nouveau nom.
- 3 Cliquez sur **Save** pour confirmer le changement.

Par défaut, la sortie 17 est nommée **Solo** et la sortie 18 **Audio**.

La sortie 17 vous permet de modifier le libellé du paramètre **Solo** qui est contrôlé à l'aide du panneau avant du Blackmagic MultiView 16. C'est très pratique lorsque vous contrôlez le MultiView 16 à l'aide du logiciel Blackmagic Videohub. Lorsque vous personnalisez le libellé correspondant à la sortie **Solo** au sein du Blackmagic MultiView Setup, le changement apparaîtra sur le logiciel Blackmagic Videohub.

La sortie 18 correspond au paramètre **Audio In** du menu à l'écran de votre Blackmagic MultiView 16. Elle vous permet de router l'audio que vous souhaitez intégrer à la sortie multivue. À l'instar du libellé **Solo**, le libellé **Audio** peut être renommé afin d'apparaître sur le logiciel Blackmagic Videohub et ainsi disposer d'un contrôle personnalisé du Blackmagic Multiview 16.



Vous pouvez changer le nom des libellés correspondant aux sorties **Solo** et **Audio** pour qu'ils apparaissent sur le Blackmagic Videohub Control et ainsi disposer d'un contrôle personnalisé u Blackmagic Multiview 16.



## Onglet Video Output

### Format vidéo et sortie HD

Les paramètres relatifs au format vidéo sont légèrement différents selon le modèle de Blackmagic MultiView utilisé.

Le Blackmagic MultiView 16 peut acheminer de la vidéo HD et Ultra HD simultanément. Vous pouvez également choisir la fréquence d'images que vous souhaitez acheminer. Par exemple, si vous souhaitez acheminer un signal conforme au format communément utilisé aux États-Unis, sélectionnez 2160p29.97. La sortie HD correspondra alors automatiquement à la fréquence d'images.

Par exemple, lorsque 2160p29.97 est sélectionné, vous pouvez régler la sortie HD sur 1080p29.97 ou sur 1080i59.94, selon vos besoins.



Les boutons de l'onglet **Video Output** du MultiView 16 permettent de régler l'affichage, le format vidéo Ultra HD, la sortie HD et le format de l'image SD.

Sur le Blackmagic MultiView 4, vous pouvez choisir d'acheminer de la vidéo Ultra HD ou HD via la sortie SDI, ainsi que régler la fréquence d'images. Ces paramètres sont disponibles dans le menu déroulant **Video Format**.



L'onglet **Video Output** du Blackmagic MultiView 4 contient un menu déroulant qui comprend un choix de formats vidéo offrant différentes résolutions et fréquences d'images.

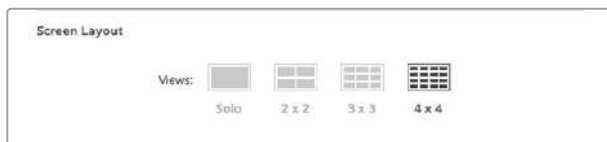
Sur le Blackmagic MultiView 4 HD, vous pouvez utiliser le menu **Video Format** pour sélectionner la fréquence d'images HD et le mode entrelacé ou progressif. Il est également possible de régler le format de l'image SD de votre Blackmagic MultiView 4 HD sur 16:9 ou sur 4:3.



L'onglet **Video Output** du Blackmagic MultiView 4 HD vous permet de régler la résolution HD et la fréquence d'images de la sortie ainsi que le mode entrelacé ou progressif.

## Changer la configuration de l'affichage multivue

La configuration du Blackmagic MultiView 16 peut s'effectuer à l'aide de l'écran LCD du panneau de contrôle ou sur le logiciel d'installation. Choisissez la configuration désirée en cliquant sur une des icônes dans la section **Details**.



Réglez l'agencement de l'écran du MultiView 16 dans l'onglet **Video Output**.

## Configuration du tally

Sur le Blackmagic MultiView 4 HD, vous pouvez configurer le tally sur le mode Tally override, ou indiquer qu'il est acheminé par une caméra Blackmagic, ou encore choisir un numéro de caméra lorsque le tally est envoyé à l'entrée 4 du MultiView 4 HD depuis le mélangeur ATEM.



Options du menu **Tally** de l'utilitaire MultiView Setup.

Pour sélectionner un tally qui corresponde à l'entrée du mélangeur, saisissez un numéro de caméra entre 1 et 99 dans le champ de texte des entrées 1 à 4.

## Tally override

Les signaux tally sont en général fournis par la voie de retour connectée à la dernière entrée SDI du MultiView. Toutefois, il se peut que vous vouliez que toutes les caméras soient connectées à une fenêtre.

Si vous utilisez des caméras Blackmagic Design connectées à un mélangeur ATEM, ou à un autre mélangeur SDI doté d'un système tally tiers, vous pouvez activer le mode Tally override. Lorsque ce mode est sélectionné, le MultiView 4 HD cherchera les signaux tally intégrés à chaque signal d'entrée SDI. De cette façon, toutes les fenêtres reçoivent leur signal tally indépendamment, au lieu de recevoir un signal tally collectif via la voie de retour de la dernière entrée de l'appareil.

**CONSEIL** Le mode **Tally override** fonctionne avec les caméras Blackmagic URSA Mini, URSA Mini 4K, URSA Mini Pro et URSA Broadcast qui sont connectées à un mélangeur ATEM ou à un Blackmagic Camera Fiber Converter. Pour plus d'informations sur la façon de connecter un mélangeur ou un tally tiers, consultez le manuel Blackmagic 3G-SDI Shield for Arduino.

## Paramètre SD Aspect Ratio

Si une vidéo SD 4:3 est connectée à votre Blackmagic MultiView 16, cochez la case **Set to 4:3** afin que la vidéo soit affichée au bon format.

Si de la vidéo SD 16:9 est connectée, cochez la case **Set to 16:9** pour afficher le bon format d'image.

Lorsque vous connectez une source SD au Blackmagic MultiView 4 HD, vous pouvez basculer entre une sortie 16:9 et une sortie 4:3 à l'aide de l'utilitaire. Dans le menu **Video Output**, sélectionnez une option pour le paramètre **SD Aspect Ratio**.



Options **SD Aspect Ratio** du menu **Video Output** de l'utilitaire MultiView Setup.

## Affichage du paramètre Overlay

Sur le Blackmagic MultiView 16 et sur le Blackmagic MultiView 4, cochez les cases du paramètre **Overlay** pour activer chaque fonctionnalité sur le Blackmagic MultiView.

Les fonctionnalités du Overlay sont :

- **Borders** : Divise les fenêtres sous forme de grille.
- **Labels** : Masque ou affiche les libellés des fenêtres. Les libellés peuvent être modifiés sur le Blackmagic MultiView Setup.
- **Audio Meters** : Active et désactive l'affichage des vumètres sur toutes les fenêtres. Les deux premiers canaux intégrés à chaque signal SDI sont affichés sur chaque fenêtre, vous pouvez donc vérifier les niveaux audio et l'image simultanément.
- **SDI Tally** : Lorsque la sortie de programme SDI d'un mélangeur ATEM est connectée à l'entrée 16 du Blackmagic MultiView 16, ou à l'entrée 4 des modèles Blackmagic MultiView 4, une bordure tally s'affiche autour de la fenêtre lorsque sa source passe à l'antenne. La fonction tally peut être activée en sélectionnant la case **Turn on SDI Tally** du paramètre **Overlay**. Désélectionnez la case pour désactiver cette fonction. Un numéro d'entrée peut être attribué dans l'utilitaire afin que le tally s'affiche correctement.



Sur le Blackmagic MultiView 16 et sur le Blackmagic MultiView 4, le paramètre Overlay situé sous l'onglet **Configure** vous permet d'activer ou de désactiver les bordures, les libellés, les vumètres et les bordures tally SDI.

**CONSEIL** Pour que le tally entoure la bonne fenêtre, veillez à faire correspondre les entrées du Blackmagic MultiView à celles du mélangeur ATEM.

## Onglet Configure

### Renommer le Blackmagic MultiView

L'onglet **Configure** est différent selon les modèles Blackmagic MultiView.

L'onglet **Configure** du Blackmagic MultiView 16 ou du Blackmagic MultiView 4 comprend des groupes de paramètres pour les sections **Details**, **Overlay** et **Network Settings**. Sur le Blackmagic MultiView 4 HD, il affiche le libellé et le numéro de version du logiciel et ne possède pas de paramètre.

Renommer le Blackmagic MultiView 16 ou le Blackmagic MultiView 4 afin de l'identifier facilement au sein d'une utilisation à distance :

- 1 Cliquez sur l'onglet **Configure**.
- 2 Sous le paramètre **Details**, cliquez sur la zone de texte **Name** puis saisissez un nouveau nom pour votre Blackmagic MultiView.
- 3 Cliquez sur **Save**.



Utilisez le Blackmagic MultiView Setup pour renommer le Blackmagic MultiView 16 afin de pouvoir l'identifier facilement.

## Paramètres Network et Serial Control

Les paramètres Network et Serial Control peuvent être configurés avec le Blackmagic MultiView Setup si le Blackmagic MultiView 16 est connecté au port USB de votre ordinateur. Il est également possible de modifier ces paramètres sur le menu à l'écran du panneau avant. Lorsque vous configurez le Blackmagic MultiView 4, seuls les paramètres réseau (Network) sont disponibles.

Pour modifier les paramètres réseau, cliquez simplement sur la zone de texte et saisissez les valeurs ou cochez la case de votre choix.



The screenshot shows a configuration window with two sections. The top section, titled "Network Settings", contains three input fields: "IP Address" with the value "192.168.10.160", "Subnet Mask" with "255.255.255.0", and "Gateway" with "192.168.10.1". The bottom section, titled "Serial Control", has a label "Leitch protocol:" followed by two radio button options: "Leitch Client" (which is unselected) and "Leitch Server" (which is selected).

Lorsque vous vous connectez à un réseau, il sera peut-être nécessaire de modifier les paramètres réseau du MultiView 16. Le paramètre **Serial Control** vous permet de régler le MultiView 16 sur **Leitch Client** ou **Leitch Server** selon les besoins d'installation du contrôle à distance RS-422.

Pour configurer le contrôle série, connecter le Blackmagic MultiView 16 au port USB de votre ordinateur et suivez ces étapes :

- 1 Lancez le programme d'installation Blackmagic MultiView Setup et sélectionnez Blackmagic MultiView 16 en cliquant sur l'image du produit ou sur l'icône circulaire située sous l'image.
- 2 Cliquez sur l'onglet **Configure** et réglez le paramètre **Leitch Protocol** sur **Leitch Client** pour que le Blackmagic MultiView 16 agisse comme appareil client. Réglez ce paramètre sur **Leitch Server** si vous souhaitez contrôler votre appareil à partir d'un système d'automatisation ou à partir du système de commande d'une grille de commutation tierce.
- 3 Cliquez sur l'onglet **Save** pour confirmer la sélection.



The screenshot shows the "Serial Control" section of the configuration window. It features the label "Leitch protocol:" and two radio button options: "Leitch Client" (unselected) and "Leitch Server" (selected).

Sélectionnez **Leitch Client** ou **Leitch Server** lorsque vous utilisez le contrôle série RS-422.

## Sauvegarder et charger des groupes de libellés

Si vous utilisez souvent les mêmes groupes de libellés pour un projet récurant, vous pouvez facilement les sauvegarder et les charger quand vous en avez besoin.

Pour sauvegarder des libellés, cliquez sur la roue dentée dans le logiciel Blackmagic MultiView Setup pour ouvrir le paramètre **Label Set** et sélectionnez **Save Label Set**. Choisissez un emplacement pour sauvegarder le fichier et appuyez sur **Save**.

Pour charger des libellés, cliquez sur la roue dentée pour ouvrir les paramètres **Label Set** et sélectionnez **Load Label Set**. Recherchez le fichier comportant le groupe de libellés et cliquez sur **Load**.



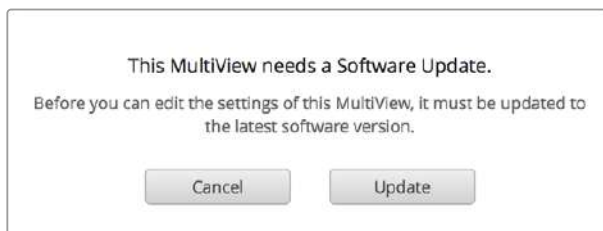
Les libellés peuvent être sauvegardés et chargés à l'aide du Blackmagic MultiView Setup.

## Mettre à jour le logiciel interne

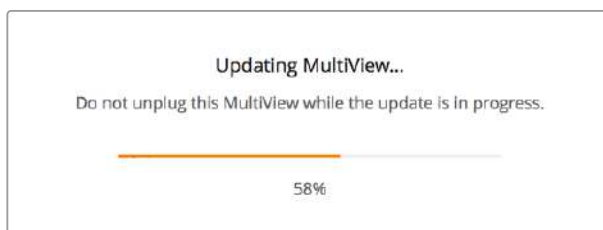
Occasionnellement, le logiciel interne du Blackmagic MultiView doit être mis à jour. Ces mises à jour offrent de nouvelles fonctionnalités, une compatibilité avec de nouveaux appareils, la correction de bugs et la prise en charge de nouveaux formats.

Pour mettre à jour le logiciel interne du Blackmagic MultiView :

- 1 Connectez Blackmagic MultiView au port USB de votre ordinateur ou sur le réseau Ethernet.
- 2 Lancez le Blackmagic MultiView Setup. Il affiche alors automatiquement les périphériques Blackmagic MultiView connectés au réseau.
- 3 Cliquez sur l'image du Blackmagic MultiView de votre choix pour le sélectionner ou sur l'icône située sous le nom de l'appareil.
- 4 Le Blackmagic MultiView Setup vous informe si une mise à jour est requise.
- 5 Si une mise à jour est nécessaire, cliquez sur le bouton **Update** pour procéder à l'installation. Veillez à ce que le Blackmagic MultiView soit branché lors de la mise à jour.
- 6 Cliquez sur le bouton **Close** lorsque la mise à jour est terminée.



Cliquez sur le bouton **Update** pour installer le nouveau logiciel interne.



Veillez à ce que le Blackmagic MultiView soit utbranché lors de la mise à jour.

# Utilisation du logiciel Videohub Control

Lorsqu'un Blackmagic MultiView 16 est connecté à un réseau, vous pouvez utiliser le Blackmagic Videohub Control sur Mac ou Windows pour acheminer les entrées vidéo du Blackmagic MultiView 16 vers différentes fenêtres. Les entrées SDI du Blackmagic MultiView apparaissent sous la section **Sources**, et les fenêtres apparaissent sous la section **Destinations**. Le logiciel Videohub Control est inclus dans le programme d'installation du logiciel Videohub qui peut être téléchargé sur la page d'assistance technique de Blackmagic Design : [www.blackmagicdesign.com/fr/support](http://www.blackmagicdesign.com/fr/support).

**REMARQUE** Vous pouvez utiliser le logiciel Videohub Control pour router les sources vers les fenêtres du Blackmagic MultiView 16, ainsi que pour sélectionner une fenêtre en mode solo, ou une source audio pour la sortie multivue. Sur le Blackmagic MultiView 4, utilisez le logiciel Videohub Control pour modifier la source solo et la source audio acheminées vers la sortie multivue.

## Sélectionner un MultiView 16

Après avoir lancé le logiciel Videohub Control, cliquez sur la roue dentée pour ouvrir le menu **Settings** et choisissez **Select Videohub**. Sélectionnez le Blackmagic MultiView 16 que vous souhaitez utiliser dans la liste des appareils connectés.

Si les entrées sont renommées, les nouveaux noms apparaissent sur le logiciel Videohub Control. Si elles n'ont pas été renommées, les noms Input 1, Input 2, Input 3, etc., apparaissent.



Vous pouvez utiliser le logiciel Blackmagic Videohub Control pour router les sources du Blackmagic MultiView 16 vers différentes fenêtres.

## Visualiser les signaux d'entrée

Pour voir quel signal d'entrée vidéo du Blackmagic MultiView 16 commute vers une fenêtre en particulier, cliquez sur la fenêtre de votre choix dans le panneau de destination. La fenêtre, dans le panneau **Destination**, et l'entrée vidéo routée, dans le panneau **Sources** s'allument. Dans le panneau **Sources**, le bouton de l'entrée vidéo commutée s'allume également, cela permet de savoir clairement quelle entrée, ou source, commute vers quelle fenêtre.

## Router les entrées vers les fenêtres

Pour router automatiquement une entrée vidéo vers une fenêtre, cliquez sur une fenêtre dans le panneau **Destination**, puis cliquez sur une entrée dans le panneau **Sources**.

## Solo Input

Quand le bouton **Solo Input** est activé sur le panneau avant du Blackmagic MultiView 16, utilisez ce bouton pour savoir quelle entrée est affichée en plein écran. Cliquez sur le bouton **Solo Input** dans le panneau **Destination** du Videohub Control, puis cliquez sur une entrée dans le panneau **Sources**.

## Audio Input

Sur les modèles Blackmagic MultiView 16 et Blackmagic MultiView 4, vous pouvez utiliser le bouton **Audio Input** au sein du logiciel Videohub Control pour choisir quelle entrée audio SDI est routée vers la sortie multivue. Cliquez sur le bouton **Audio Input** dans le panneau **Destination** du Videohub Control, puis cliquez sur une entrée dans le panneau **Sources** pour router automatiquement cette entrée audio vers la sortie multivue.



Les boutons **Solo Input** et **Audio Input** vous permettent de modifier ces paramètres à l'aide du Videohub Control.



# Information pour les développeurs

## Protocole Ethernet Blackmagic Videohub v2.3

### Summary

Your Blackmagic MultiView is compatible with the Blackmagic Videohub Ethernet Protocol. It is text based and is accessed by connecting to your Blackmagic MultiView's IP address and TCP port 9990.

**NOTE** Controlling your MultiView via Ethernet is available on Blackmagic MultiView 16 and Blackmagic MultiView 4, however, most features are relevant to Blackmagic MultiView 16. On Blackmagic MultiView 4, you can change the solo source and audio source for the multi view output.

The multi view sends information in blocks which each have an identifying header in all caps, followed by a full colon. A block spans multiple lines and is terminated by a blank line. Each line in the protocol is terminated by a newline character.

Lines sent to the Blackmagic MultiView 16 can be terminated with line feed, carriage return or both.

Upon connection, the multi view sends a complete dump of the state of the device. After the initial status dump, status updates are sent every time the multi view status changes.

To be resilient to future protocol changes, clients should ignore blocks they do not recognize, up to the trailing blank line. Within existing blocks, clients should ignore lines they do not recognize.

### Protocol Preamble

The first block sent by the multi view is always the protocol preamble:

```
PROTOCOL PREAMBLE:↵  
Version: 2.3↵  
↵
```

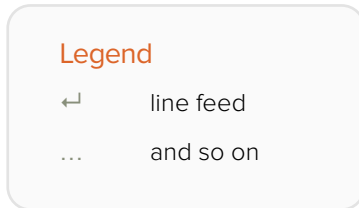
The version field indicates the protocol version. When the protocol is changed in a compatible way, the minor version number will be updated. If incompatible changes are made, the major version number will be updated.

### Device Information

The next block contains general information about the connected Blackmagic MultiView 16 device. If a device is connected, the multi view will report the attributes of the Blackmagic MultiView 16:

```
MULTIVIEW DEVICE:↵  
Device present: true↵  
Model name: Blackmagic MultiView 16↵  
Video inputs: 16↵  
Friendly name:  
Unique ID:  
Video processing units: 0↵  
Video outputs: 16↵  
Video monitoring outputs: 0↵  
Serial Ports:  
↵
```

This example is for the Blackmagic MultiView 16 which has 16 sources and 18 views including solo which is view 16 and audio which is view 17, referred to here as outputs.



Version 2.3 of the Blackmagic Videohub Ethernet Protocol was released with Videohub 4.9.1 software

### Initial Status Dump

The next two blocks enumerate the labels assigned to the input and output ports.

```
INPUT LABELS:↵
0 VTR 1↵
1 VTR 2↵
...
↵

OUTPUT LABELS:↵
0 Output feed 1↵
1 Output feed 2↵
...
↵
```

Note: Input and Output labels are always numbered starting at zero in the protocol which matches port one on the chassis.

The next three blocks describe the routing of the view ports.

```
VIDEO OUTPUT ROUTING:↵
0 5↵
1 3↵
...
↵
```

The next block describes the locking status of the views. Each port has a lock status of “O” for ports that are owned by the current client (i.e., locked from the same IP address), “L” for ports that are locked from a different client, or “U” for unlocked.

```
VIDEO OUTPUT LOCKS:↵
0 U↵
1 U↵
...
↵
```

The last block is the configuration block.

```
Layout: SOLO or 2x2 or 3x3 or 4x4
Output format: 50i or 50p or 60i or 60p
Solo enabled: True or False
Widescreen SD enable: True or False
Display border: True or False
Display labels: True or False
Display audio meters: True or False
Display SDI tally: True or False
```

## Status Updates

When any route, label, or lock is changed on the multi view by any client, the multi view resends the applicable status block, containing only the items that have changed.

If multiple items are changed, multiple items may be present in the update:

```
OUTPUT LABELS:↵
7 New output 8 label↵
10 New output 11 label↵
↵
```

## Requesting Changes

To update a label, lock or route, the client should send a block of the same form the multi view sends when its status changes. For example, to change the route of output port 8 to input port 3, the client should send the following block:

```
VIDEO OUTPUT ROUTING:↵
7 2↵
↵
```

The block must be terminated by a blank line. On receipt of a blank line, the multi view will either acknowledge the request by responding:

```
ACK↵
↵
```

or indicate that the request was not understood by responding:

```
NAK↵
↵
```

After a positive response, the client should expect to see a status update from the MultiView showing the status change. This is likely to be the same as the command that was sent, but if the request could not be performed, or other changes were made simultaneously by other clients, there may be more updates in the block, or more blocks. Simultaneous updates could cancel each other out, leading to a response that is different to that expected.

For MultiView 16 the client can change the solo source and the audio source to embed on the output.

Solo mode needs to be enabled either from the front panel or by sending the block:

```
CONFIGURATION:↵
Solo enabled: true↵
↵
```

Once enabled the following block will change the SOLO source to input 11:

```
Video Output Routing:↵
16 10↵
↵
```

This is not available on MultiView 4.

The following block will send embedded audio from input 1 to the MultiView 16 output:

```
Video Output Routing:↵
17 0↵
↵
```

The following block will send embedded audio from input 1 to the MultiView 4 output:

```
Video Output Routing:↵
5 0↵
↵
```

In the absence of simultaneous updates, the dialog expected for a simple label change is as follows:

```
OUTPUT LABELS:↵
6 new output label seven↵
↵
ACK↵
↵
OUTPUT LABELS:↵
6 new output label seven↵
↵
```

The asynchronous nature of the responses means that a client should never rely on the desired update actually occurring and must simply watch for status updates from the MultiView and use only these to update its local representation of the server state.

### Requesting a Status Dump

The client may request that the MultiView resend the complete state of any status block by sending the header of the block, followed by a blank line. In the following example, the client requests the MultiView resend the output labels:

```
OUTPUT LABELS:↵
↵
ACK↵
↵
OUTPUT LABELS:↵
0 output label 1↵
1 output label 2↵
2 output label 3↵
...
↵
```

### Checking the Connection

While the connection to the MultiView is established, a client may send a special no-operation command to check that the MultiView is still responding:

```
PING:↵
↵
```

If the MultiView is responding, it will respond with an ACK message as for any other recognized command.

## Blackmagic MultiView 16 RS-422 Protocol

### General

The RS-422 protocol can be used to control Blackmagic MultiView 16 as a slave device from third party routers and automation systems.

The “Leitch Server” mode implements the router (server) side of the Leitch Serial Pass Through Protocol as specified in section 4 of Leitch document SPR-MAN revision D. In “Leitch Client” mode, the Blackmagic MultiView 16 implements the controller (client) side of the Leitch terminal protocol. Set the desired leitch mode in the ‘configure’ settings in the Blackmagic MultiView Setup software.

This document describes the commands and parameters in the protocol that are relevant and supported by Blackmagic MultiView 16. Other commands and parameters specified in the Leitch protocol are accepted but ignored.

The RS-422 serial port is configured as 9600 N81:

9600 is the line speed, or baud rate, at 9600 bits/sec.

N represents no parity check, or 'none'.

8 is the data length.

1 is for stop bits.

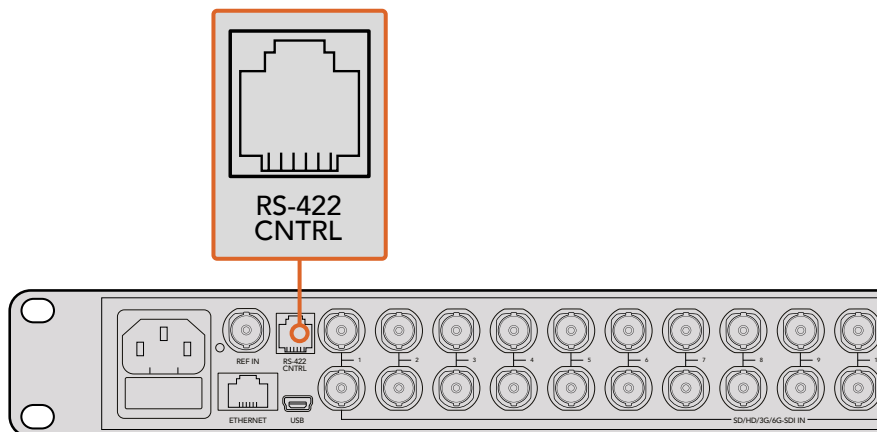
To summarize N81, data without a parity check begins with 1 start bit, includes 8 true data bits, and 1 stop bit. There are 10 bits in total.

The protocol is line oriented, with a maximum length of 250 characters per command. Each command from the client should be terminated with a carriage return (\r). Each response from the server will be terminated with a carriage return and line feed (\r\n).

Sources, destinations and levels are always specified in base-16, numbered from zero. Levels are always between 0 and 15 ("F") . Blackmagic MultiView 16 only has one valid level - level zero.

On connecting to the serial port, the client should send a carriage return. Blackmagic MultiView 16 will respond with a > character prompt, which is not followed by a carriage return or line feed. Receiving the prompt indicates that a connection has been established. The same prompt will be issued after each command received by the MultiView.

In the following documentation, commands in orange and values in blue must be typed literally, including any spaces. In the following example of an immediate command using destination port 7 and source port 3, @ X:0/destination,source would be entered as: @ X:0/6,2

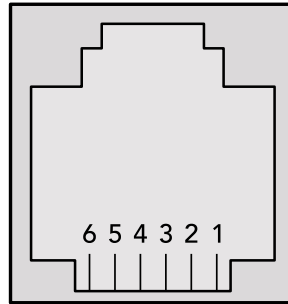


The RS-422 serial port lets you control Blackmagic MultiView 16 from third party routers and automation systems. The connector is an RJ11 connector, the same used in many landline telephone connections. By modifying an RS-422 to USB adapter cable terminated with an RJ11 connector, you can control Blackmagic MultiView 16 using external controllers via USB.



An RS-422 to USB adapter cable and RJ11 connector can be purchased from electronics stores such as Digi-Key.com. Refer to the pinout diagram below for help wiring the RJ11 connector to the adapter cable.

Pin No.	Function
Pin 1	TX +
Pin 2	TX -
Pin 3	GND
Pin 4	GND
Pin 5	RX -
Pin 6	RX +



Pinout diagram for the RJ11 connector

### Notifications

Once connected, if status reporting is enabled, the client will receive a notification message when a route changes on the MultiView. The notifications take one of two forms:

**S:0destination,source** Routing change

This message indicates that the specified source port is now routed to the specified destination.

**V:0destination,source** Preset routing notification

This message indicates that the current preset includes a route from the specified source to the specified destination.

### Global Commands

All pass through commands are preceded by an @ symbol and a space.

The following client commands are supported:

**@ !** disable status reporting  
Status reporting is disabled by default.

**@ ?** enable status reporting  
Status reporting is enabled.

**@ Z:** reset routing table

Routing is reset so that the first source is routed to all destinations.

### Immediate Commands

**@ X:0/destination,source** change route

**@ X:0/destination,source/destination-2,source-2...** change multiple routes  
The specified source ports are routed to the specified destinations.  
Any routing changes will trigger **S:** notifications

**@ X?0destination** request individual route status  
The source routed to the specified destination will be returned as an **S:** notification.

**@ S?0** request all ports route status  
Each source and destination port pair will be returned as **S:** notifications

## Salvo Commands

- @ P:0/destination,source queue route change
- @ P:0/destination,source/destination-2,source-2... queue multiple route changes  
The specified routing changes are added to the current salvo for later execution.
- @ P?0destination request individual port status in salvo  
If a routing change for the specified destination port is queued, the route will be returned as a V: notification.
- @ V?0 request all ports status in salvo  
Each queued routing change in the salvo is reported as a V: notification.
- @ B:C clear salvo
- @ B:R clear salvo  
Any queued changes are discarded and the salvo is reset.
- @ B:E execute salvo  
Any queued changes are executed and each routing change will be returned as an S: notification.

# Assistance

## Obtenir de l'assistance

Le moyen le plus rapide d'obtenir de l'aide est d'accéder aux pages d'assistance en ligne de Blackmagic Design et de consulter les dernières informations de support technique concernant votre Blackmagic MultiView.

### Pages d'assistance en ligne de Blackmagic Design

Les dernières versions du manuel, du logiciel et des notes d'assistance peuvent être consultées sur la page d'assistance technique de Blackmagic Design : [www.blackmagicdesign.com/fr/support](http://www.blackmagicdesign.com/fr/support).

### Forum Blackmagic Design

Le forum Blackmagic Design est une source d'information utile qui offre des idées innovantes pour vos productions. Cette plate-forme d'aide vous permettra également d'obtenir des réponses rapides à vos questions, car un grand nombre de sujets peuvent avoir déjà été abordés par d'autres utilisateurs. Pour vous rendre sur le forum : <https://forum.blackmagicdesign.com>

### Contactez le service d'assistance de Blackmagic Design

Si vous ne parvenez pas à trouver l'aide dont vous avez besoin sur la page d'assistance ou sur notre forum, veuillez utiliser l'option « Envoyez-nous un email », accessible sur la page d'assistance pour envoyer une demande d'aide par email. Vous pouvez également cliquer sur le bouton « Trouver un support technique » et contacter ainsi le centre d'assistance technique Blackmagic Design le plus proche de chez vous.

### Vérification du logiciel actuel

Pour vérifier quelle version du logiciel Blackmagic MultiView est installée sur votre ordinateur, ouvrez le logiciel Blackmagic MultiView. Sélectionnez À propos de MultiView dans le menu Blackmagic MultiView et notez le numéro de version.

### Comment obtenir les dernières mises à jour

Après avoir vérifié quelle version du logiciel Blackmagic MultiView 16 est installée sur votre ordinateur, veuillez consulter la page d'assistance technique Blackmagic Design à l'adresse suivante : [www.blackmagicdesign.com/fr/support](http://www.blackmagicdesign.com/fr/support) pour vérifier les dernières mises à jour. Même s'il est généralement conseillé d'exécuter les dernières mises à jour, il est prudent d'éviter d'effectuer une mise à jour logicielle au milieu d'un projet important.



# Avertissements et informations de sécurité

## Avertissements

### Élimination des déchets d'équipements électriques et électroniques au sein de l'Union européenne.



Le symbole imprimé sur ce produit indique qu'il ne doit pas être jeté avec les autres déchets. Cet appareil doit être déposé dans un point de collecte agréé pour être recyclé. La collecte individuelle et le recyclage de votre équipement permettra de préserver les ressources naturelles et garantit un recyclage approprié afin d'éviter la contamination de l'environnement par des substances dangereuses pour la santé. Pour plus d'informations quant aux lieux d'éliminations des déchets d'équipements électriques, vous pouvez contacter votre mairie ou le service local de traitement des ordures ménagères.



Cet équipement a été testé et déclaré conforme aux limites imposées aux appareils numériques de classe A, en vertu du chapitre 15 des règles de la FCC. Ces limites ont pour objectif d'assurer une protection suffisante contre les interférences nuisibles lorsque l'équipement est utilisé dans un environnement commercial. Cet équipement génère, utilise et peut dégager de l'énergie de radiofréquence et, s'il n'est pas installé et utilisé conformément au manuel d'utilisation, peut provoquer un brouillage préjudiciable aux communications radio. L'utilisation de cet équipement en zone résidentielle est susceptible de provoquer des interférences nuisibles, auquel cas il sera demandé à l'utilisateur de corriger ces interférences à ses frais.

L'utilisation de cet appareil est soumise aux deux conditions suivantes :

- 1 Cet appareil ne doit pas causer d'interférences nuisibles.
- 2 Cet appareil doit accepter toute interférence reçue, notamment celles pouvant entraîner un dysfonctionnement.

Les connexions aux interfaces HDMI doivent être effectuées avec des câbles HDMI blindés d'excellente qualité.

## Informations de sécurité

Cet appareil doit être connecté à une prise secteur équipée d'un conducteur de protection.

Afin de réduire le risque de décharge électrique, ne pas éclabousser ou renverser de liquide sur cet appareil.

Cet appareil peut être utilisé dans un climat tropical lorsque la température ambiante n'excède pas 40°C.

Veillez à ce que l'espace autour du produit soit suffisant afin de ne pas compromettre la ventilation.

Lorsque vous installez l'appareil sur rack, veillez à ce que la ventilation ne soit pas compromise par les autres équipements.

Les pièces de cet appareil ne sont pas réparables par l'opérateur. Toute réparation/opération d'entretien doit être effectuée par un centre de service Blackmagic Design.



Cet appareil ne peut être utilisé qu'à une altitude inférieure à 2000 mètres.

# Garantie

## Garantie limitée

Par la présente, Blackmagic Design garantit que ce Blackmagic MultiView sera exempt de défauts matériels et de fabrication pendant une durée d'un an à compter de la date d'achat. Cela inclut les connecteurs, les câbles, les ventilateurs, les fusibles, l'écran LCD et les boutons. Si un produit s'avère défectueux pendant la période de garantie, Blackmagic Design peut, à sa seule discrétion, réparer le produit défectueux sans frais pour les pièces et la main-d'œuvre, ou le remplacer.

Pour se prévaloir du service offert en vertu de la présente garantie, il vous incombe d'informer Blackmagic Design de l'existence du défaut avant expiration de la période de garantie, et de prendre les mesures nécessaires pour l'exécution des dispositions de ce service. Le consommateur a la responsabilité de s'occuper de l'emballage et de l'expédition du produit défectueux au centre de service nommément désigné par Blackmagic Design, en frais de port prépayé. Il incombe au consommateur de payer l'intégralité des frais de transport, d'assurance, des droits de douane et taxes et toutes autres charges relatives aux produits qui nous auront été retournés, et ce quelle que soit la raison.

La présente garantie ne saurait en aucun cas s'appliquer à des défauts, pannes ou dommages causés par une utilisation inappropriée ou un entretien inadéquat ou incorrect. Blackmagic Design n'a en aucun cas l'obligation de fournir un service en vertu de la présente garantie : a) pour réparer les dommages résultant de tentatives de réparations, d'installations ou tous services effectués par du personnel non qualifié par Blackmagic Design, b) pour réparer tout dommage résultant d'une utilisation inadéquate ou d'une connexion à du matériel incompatible, c) pour réparer tout dommage ou dysfonctionnement causés par l'utilisation de pièces ou de fournitures n'appartenant pas à la marque de Blackmagic Design, d) pour examiner un produit qui a été modifié ou intégré à d'autres produits quand l'impact d'une telle modification ou intégration augmente les délais ou la difficulté d'examiner ce produit. CETTE GARANTIE REMPLACE TOUTE GARANTIE EXPLICITE OU IMPLICITE. BLACKMAGIC DESIGN ET SES REVENDEURS DÉCLINENT EXPRESSÉMENT TOUTE GARANTIE IMPLICITE DE COMMERCIALISATION OU D'ADAPTATION DANS QUELQUE BUT QUE CE SOIT. LA RESPONSABILITÉ DE BLACKMAGIC DESIGN POUR RÉPARER OU REMPLACER UN PRODUIT S'AVÉRANT DÉFECTUEUX CONSTITUE LA TOTALITÉ ET LE SEUL RECOURS EXCLUSIF PRÉVU ET FOURNI AU CONSOMMATEUR POUR TOUT DOMMAGE INDIRECT, SPÉCIFIQUE, ACCIDENTEL OU CONSÉCUTIF, PEU IMPORTE QUE BLACKMAGIC DESIGN OU SES REVENDEURS AIENT ÉTÉ INFORMÉS OU SE SOIENT RENDU COMPTE AU PRÉALABLE DE L'ÉVENTUALITÉ DE CES DOMMAGES. BLACKMAGIC DESIGN NE PEUT ÊTRE TENU POUR RESPONSABLE DE TOUTE UTILISATION ILLICITE OU ABUSIVE DU MATÉRIEL PAR LE CONSOMMATEUR. BLACKMAGIC DESIGN N'EST PAS RESPONSABLE DES DOMMAGES RÉSULTANT DE L'UTILISATION DE CE PRODUIT. LE CONSOMMATEUR MANIPULE CE PRODUIT À SES SEULS RISQUES.

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# Blackmagic MultiView





## Willkommen

Vielen Dank, dass Sie sich zum Kauf eines Blackmagic MultiView entschieden haben!

Wir träumen davon, die Fernsehbranche in eine echte Kreativbranche zu verwandeln, die jedermann Zugriff auf Video in Höchstqualität gewährt. Wir hoffen, Sie teilen diesen Traum mit uns. Setzen Sie den MultiView 16 mit modernen und erschwinglichen Ultra-HD-Fernsehgeräten ein und verschaffen Sie sich auf diese Weise eine Monitoring-Lösung, die mit bis zu 16 eigenständigen Broadcast-Monitoren vergleichbar ist. Der MultiView 16 bietet das Monitoring von mehreren Quellen in echter Broadcast-Qualität – zu einem Bruchteil der Kosten!

Darüber hinaus eignet sich der Blackmagic MultiView 4 für kleinere und ortsunabhängige Produktionen und ermöglicht das Monitoring von bis zu vier Quellen auf einem HD- oder Ultra-HD-Bildschirm. Sie können selbst mehrere Router kombinieren, indem Sie zwei MultiView Geräte über ihre Ausgänge miteinander verbinden und so Ihre eigene Monitoring-Lösung gestalten.

Diese Bedienungsanleitung enthält alle nötigen Informationen zur Installation Ihres Blackmagic MultiView. Sollten Sie Fragen zu Ihrer IP-Adresse oder zu Computer-Netzwerken haben, wenden Sie sich bitte an einen technischen Berater. Der Blackmagic MultiView ist mithilfe der Videohub Control Software steuer- und bedienbar. Sie ist einfach zu installieren, allerdings sind anschließend einige Voreinstellungen vorzunehmen, die technisch etwas anspruchsvoller sind.

Besuchen Sie auf unserer Website unter [www.blackmagicdesign.com/de/support](http://www.blackmagicdesign.com/de/support) die Support-Seiten und laden Sie dort die neueste Version dieses Handbuchs und der Software herunter. Bitte registrieren Sie beim Herunterladen der Software Ihren Blackmagic MultiView, damit wir Sie über neue Software-Aktualisierungen informieren können. Da wir ständig an neuen Features und Verbesserungen arbeiten, würden wir gerne von Ihnen hören!

Wir hoffen, dass Sie Ihren Blackmagic MultiView viele Jahre lange einsetzen werden und wünschen Ihnen viel Vergnügen beim Betrachten Ihrer Videoinhalte in grandiosem Ultra HD.

A handwritten signature in black ink that reads "Grant Petty". The signature is fluid and cursive, with a long horizontal stroke at the end.

**Grant Petty**

CEO, Blackmagic Design

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# Erste Schritte

Die erste Inbetriebnahme Ihres Blackmagic MultiView ist einfach. Schließen Sie ihn ans Stromnetz an und verbinden Sie Ihre SDI-Videoquellen. Koppeln Sie dann Ihre Monitore und Fernsehgeräte an die HDMI- und SDI-Ausgänge. Der folgende Abschnitt dieser Anleitung enthält alle nötigen Informationen, um die ersten Arbeitsschritte mit Ihrem Blackmagic MultiView auszuführen.

## Anschließen an das Stromnetz

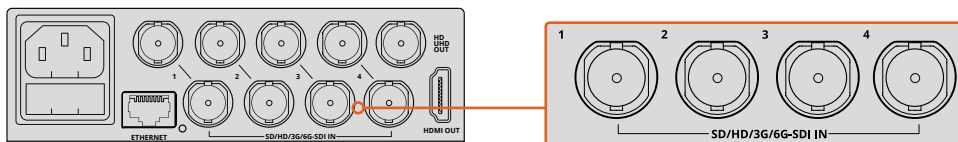
Stecken Sie einfach ein IEC-Norm-konformes Stromkabel in die 110–240V-Wechselstrombuchse am Geräterücken, um Ihren Blackmagic MultiView mit Strom zu versorgen.

**TIPP** Der Blackmagic MultiView 4 ist mit Power-over-Ethernet-Plus kompatibel. Das bedeutet, dass Sie ihn lediglich an einen PoE+-fähigen Ethernet-Switch anschließen müssen. Wenn Ihr MultiView 4 an das Stromnetz und an PoE+ angeschlossen ist, schaltet er automatisch zur verbleibenden Stromquelle um, sollte eine Quelle getrennt werden oder versagen.

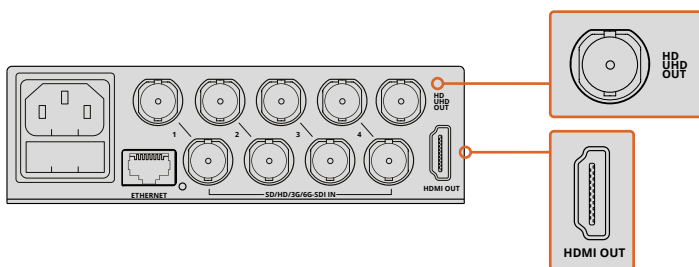
Versorgen Sie den Blackmagic MultiView 4 HD mit Strom, indem Sie das mitgelieferte Netzteil an den 6–36 V DC-Eingang anschließen. Das Kabel lässt sich über das Schraubgewinde sichern. Das verhindert die versehentliche Unterbrechung der Stromzufuhr.

## Anschließen von SDI-Quellen und -Monitoren

Koppeln Sie Ihre SDI-Quellen an einen beliebigen SDI-Videoeingang Ihres Blackmagic MultiView. Das Videoformat wird automatisch erkannt und das Video selbst in der Mehrfachansicht auf Ihrem Zielgerät eingeblendet. Um Ihre Ausgabe zu sehen, schließen Sie einfach einen Monitor an einen der SDI- oder HDMI-Ausgänge Ihres MultiView an.



Koppeln Sie Ihre Videoquellen an die SDI-Videoeingänge Ihres Blackmagic MultiView

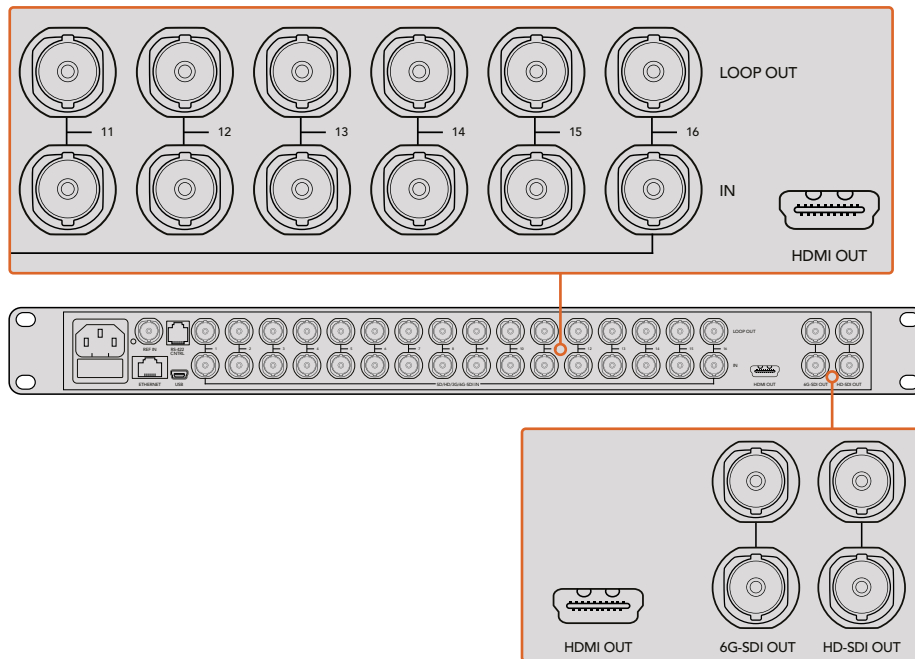


Schließen Sie für die Mehrfachansicht Monitore an die HDMI- oder SDI-Ausgänge Ihres Blackmagic MultiView

Wenn Sie einen HDMI-Monitor an den HDMI-Ausgang anschließen, erkennt Ihr Blackmagic MultiView automatisch, ob dieser Ultra HD oder HD unterstützt und nimmt für diesen Ausgang die entsprechende Umschaltung vor.

**TIPP** Auf dem Blackmagic MultiView 16 können Sie die Mehrfachansicht über die dedizierten HD-SDI-Ausgänge ausgeben oder – bei Auflösungen in Ultra HD – über die 6G-SDI- und HDMI-Ausgänge.

Der Blackmagic MultiView 4 und der MultiView 16 verfügen oberhalb eines jeden Eingangs über Durchschleifausgänge. Darüber lässt sich jede Quelle an weiteres Video-Equipment ausgeben.



**TIPP** Alle SDI- und HDMI-Ausgänge des Blackmagic MultiView 16 können zeitgleich für das Monitoring in Ultra HD und HD eingesetzt werden. Auf dem Blackmagic MultiView 4 können Sie zwischen Ultra HD und HD wählen. Verwenden Sie für die Einstellungen zur Ausgabe die Minischalter, ein optionales Teranex Mini Smart Panel oder das Blackmagic MultiView Setup Dienstprogramm.

## Vorgeben des Layouts für die Mehrfachansicht

Das Mehrfachansichts-Layout kann nach Ihren Anforderungen modifiziert werden. Beispielsweise lassen sich der Blackmagic MultiView 4 und der Blackmagic MultiView 4 HD auf die Ansicht 2x2 oder den Vollbildmodus „Solo“ einstellen. Auf dem Blackmagic MultiView 16 kann man verschiedene Anordnungen wie 2x2, 3x3, 4x4 oder den Vollbildmodus „Solo“ vorgeben.

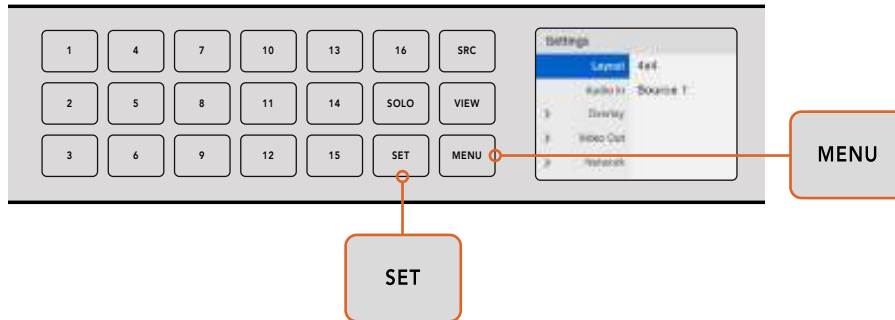
### Vorgeben des Layouts auf Ihrem Blackmagic MultiView 16

Verwenden Sie Steuertasten, Drehregler und LCD auf der integrierten Frontblende, um das Layout auf dem Blackmagic MultiView 16 zu ändern. Die Bildkontrolle ist zudem im Vollbildmodus möglich. Drücken Sie dazu die SOLO-Taste und wählen Sie dann den gewünschten Eingang, indem Sie eine der Quellentasten drücken.

- 1 Um das Einstellungsmenü auf dem LCD aufzurufen, drücken Sie die MENU-Taste an der Frontblende.

- 2 Als erster Menüpunkt erscheint die Option „Layout“. Wenn Sie das Einstellungsmenü öffnen, ist diese Option immer ausgewählt. Drücken Sie die SET-Taste, um die Layout-Vorgabe zu ändern.
- 3 Wählen Sie die Anordnung 4x4 in den „Layout“-Einstellungen mithilfe des Drehreglers an der Frontblende aus. Im 4x4-Layout können Sie alle 16 Quellen auf einem Bildschirm betrachten. Mit jeder Einstellungsänderung beginnen die SET- und MENU-Tasten zu blinken. Das Blinken weist auf eine geänderte Einstellung hin, die es mit der SET-Taste zu bestätigen oder mit der MENU-Taste abzulehnen gilt.
- 4 Drücken Sie auf die SET-Taste, um Ihre Vorgabe zu bestätigen.

Alternativ können Sie das Layout mithilfe der Software MultiView 16 Setup über das Konfigurationsbedienfeld vorgeben.

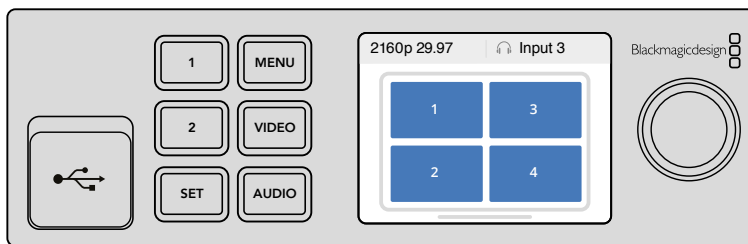


Um das Layout für Ihren Blackmagic MultiView 16 vorzugeben, drücken Sie auf die MENU-Taste. Wählen Sie Ihr Layout mit dem Drehregler und drücken Sie anschließend auf die SET-Taste. Das Layout 4x4 ermöglicht die Ansicht von 16 Quellen auf einem Monitor

### Vorgeben des Layouts auf Ihrem Blackmagic MultiView 4

Die Standardeinstellung auf Ihrem Blackmagic MultiView 4 ist das 2x2-Layout. Um das Layout für Ihren Blackmagic MultiView 4 vorzugeben, drücken Sie auf Ihrem Teranex Mini Smart Panel die mit „1“ gekennzeichnete Taste. Drücken Sie Taste „2“, um wieder in den 2x2-Ansichtsmodus zu wechseln.

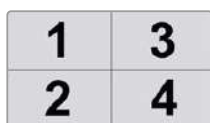
Alternativ können Sie das Layout in der Setup-Software über die „Configure“-Einstellungen vorgeben.



Drücken Sie Taste „1“ für den Vollbild- bzw. Taste „2“ für den 2x2-Modus

### Vorgeben des Layouts auf Ihrem Blackmagic MultiView 4 HD

Wenn Sie den MultiView 4 HD zum ersten Mal in Betrieb nehmen, wird als Standardeinstellung das 2x2-Layout angezeigt. Hierbei werden Eingänge 1 und 3 in der oberen Reihe und Eingänge 2 und 4 in der unteren Reihe angezeigt. Um in den Solo-Modus zu wechseln, stellen Sie den eingebauten Switch 6 „Solo On“ auf ON.



MultiView 4 HD im 2x2-Layout mit vier SDI-Eingaben

Weitere Informationen finden Sie im Abschnitt „Switch-Einstellungen am Blackmagic MultiView 4 HD“.



## Anschließen an ein Netzwerk

Der Blackmagic MultiView 16 unterstützt das Blackmagic Videohub Ethernet Protocol. Ist Ihr MultiView 16 also an schwer zugänglicher Stelle in einem Rack installiert, lässt er sich aus der Ferne steuern. Dies erfolgt über ein Blackmagic Videohub Bedienpult wie das Blackmagic Smart Control und Master Control. Ist Ihr Blackmagic MultiView per Ethernet an Ihr Netzwerk gekoppelt, ist er auf anderen angeschlossenen Computern und externen Bedienpulten der Produktfamilie Videohub sichtbar. Diese Geräte können den Router aus der Ferne steuern.

So schließen Sie den Blackmagic MultiView an Ihr Netzwerk an:

- 1 Schalten Sie Ihren Blackmagic MultiView ein.
- 2 Schließen Sie den Blackmagic MultiView mit einem normgerechten RJ45-Ethernet-Kabel an ein Netzwerk oder einen Computer an.

Ist die Verbindung zu Ihrem Netzwerk hergestellt, achten Sie darauf, dass sich die IP-Adresse Ihres MultiView von den IP-Adressen anderer Geräte in Ihrem Netzwerk unterscheidet. Auf dem Blackmagic MultiView 16 können Sie Netzwerkeinstellungen über das LCD-Menü des Bedienpanels ändern. Auf dem Blackmagic MultiView 4 ist dies ebenfalls möglich, wenn dieser mit einem Teranex Mini Smart Panel ausgerüstet ist. Sie können Ihren Blackmagic MultiView via USB auch mit einem Computer verbinden und so Netzwerkeinstellungen mithilfe des Dienstprogramms „Blackmagic MultiView Setup“ vornehmen. Näheres zur Änderung von Einstellungen finden Sie im Abschnitt „Einstellungen ändern“ in diesem Handbuch.

## Anschließen der seriellen Steuerung

Steuerungsgeräte für Router von Fremdherstellern können den Blackmagic MultiView 16 über den seriellen RS-422-Anschluss steuern. Näheres zur seriellen Steuerung finden Sie im Abschnitt „Einstellungen mithilfe des Blackmagic MultiView Setup ändern“ in diesem Handbuch.

## Installation in einem Geräte-Rack

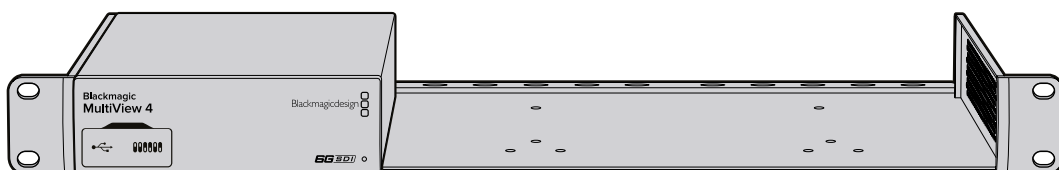
Der Blackmagic MultiView 16 passt in eine Rack-Höheneinheit und damit in ein Broadcast-Rack oder Roadcase.

Der Blackmagic MultiView 4 ist um einiges kleiner und lässt sich gut für ortsunabhängige Produktionen verwenden, die ohne Broadcast-Racks auskommen. Obwohl Ihr MultiView 4 klein und handlich ist, kann er auch in Arbeitsumgebungen mit Racks eingesetzt werden. Die Rack-Wanne für Blackmagic Teranex Mini Konverter wurde gezielt konzipiert, um bis zu drei Geräte nebeneinander in einer einzigen Rack-Höheneinheit unterzubringen. Auf diese Weise lassen sie sich miteinander verbinden und Sie können für Ihre Quellen so viele Ansichten wie nötig einrichten.

Um mehrere Blackmagic MultiView 4 Router in einer Teranex Mini Rack-Wanne zu installieren, brauchen Sie nur, falls vorhanden, die Gummifüße zu entfernen und das Gerät an den unteren Montagelöchern auf die Trägerplatte der Rack-Wanne festzuschrauben. Im Lieferumfang der Teranex Mini Rack-Wanne sind zwei Zierblenden enthalten, mit denen Sie Lücken abdecken können, wenn Sie keine weiteren MultiView 4 Router installieren müssen.

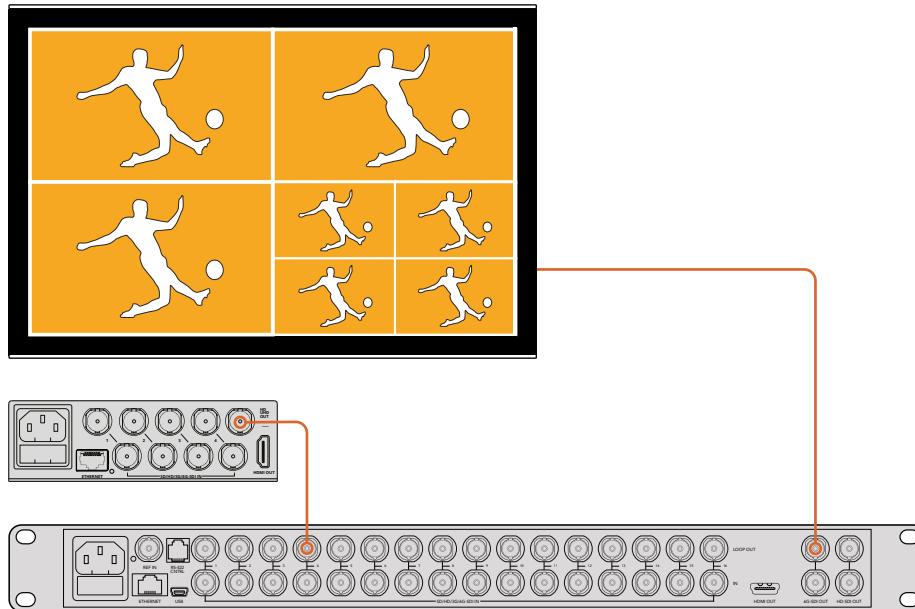
Einzelheiten zu Preisen und Verfügbarkeit finden Sie auf der Blackmagic Design Website unter [www.blackmagicdesign.com/de](http://www.blackmagicdesign.com/de)

Nach erfolgter Installation in der Rackwanne kann auf die Anschlüsse wie gehabt von der Rückseite des Geräts zugegriffen werden.



## Verwendung mehrerer MultiView Router

Sie können mehrere Blackmagic MultiViews gemeinsam verwenden, um Ihre maßgeschneiderte Monitoring-Lösung zu kreieren. Dies ist nützlich, wenn Sie Ihre Multiview-Ausgabe mit weiteren Ansichten versehen möchten. Stellen Sie eine Verbindung zwischen dem Ausgang eines MultiView und dem Eingang eines weiteren her, um zusätzliche Quellen in Ihrer Mehrfachansicht zu sehen. Es empfiehlt sich, den Upstream-Multiview-Ausgang an einen Ultra-HD-Monitor anzuschließen, um eine maximale Bildschärfe zu erzielen.



Indem Sie zwei MultiView Geräte über ihre Aus- bzw. Eingänge miteinander verbinden, verschaffen Sie sich zusätzliche Ansichten für Ihr Multiview-Layout

Für den Einstieg war das schon alles. Lesen Sie auch die nächsten Abschnitte, um soviel wie möglich über den Umgang mit Ihrem Blackmagic MultiView zu erfahren, nämlich wie Sie Einstellungen ändern, Ansichten mit Kennungen versehen und mehr.

## Einstellungen ändern

Einstellungen auf Ihrem Blackmagic MultiView können auf unterschiedliche Weise geändert werden.

- **Frontblende** – Der Blackmagic MultiView 16 verfügt über ein integriertes Bedienpanel mit LCD. Hierüber können Sie Einstellungen bequem von der Gerätefront aus vornehmen.
- **Switches** – Die kleinen Switches an der Frontblende des Blackmagic MultiView 4 und an der Seite des Blackmagic MultiView 4 HD lassen Sie Einstellungen mithilfe einer Stiftspitze im Handumdrehen ändern. Um auf die Switches am Blackmagic MultiView 4 zuzugreifen, öffnen Sie die Gummiabdeckung an der Frontblende. Eine Schalterlegende, die Ihnen die Einstellungen für jeden Switch anzeigt, befindet sich jeweils am Geräteboden.
- **Teranex Mini Smart Panel** – Sie können die Standardblende Ihres Blackmagic MultiView 4 durch ein optionales Teranex Mini Smart Panel ersetzen und die eingebauten Bedientasten, den Drehregler sowie das LCD verwenden. Das Teranex Mini Smart Panel ähnelt in seiner Funktionsweise der Frontblende des Blackmagic MultiView 16 und sorgt für eine einfache und intuitive Bedienung.
- **Blackmagic MultiView Setup** – Über die Setup Software können Sie Einstellungen über Ihren Computer via USB oder Ethernet vornehmen. Weitere Informationen finden Sie im Abschnitt „Blackmagic MultiView Setup“.

- **Videohub Control Software** – Wenn Ihr Blackmagic MultiView 16 oder Blackmagic MultiView 4 an ein Netzwerk angeschlossen ist, können Sie mit der Blackmagic Videohub Control Software Quellen zuweisen, Ansichten ändern sowie die Audioeingabequelle auswählen. Weitere Informationen finden Sie im Abschnitt „Einsatz der Videohub Control Software“.

## Die Frontblende des Blackmagic MultiView 16

Über die Frontblende des Blackmagic MultiView 16 ist das Ändern von Einstellungen ein Kinderspiel.

Wenn Sie Ihren Blackmagic MultiView 16 zum ersten Mal einschalten, erscheint der Homescreen auf dem integrierten LCD. Der Homescreen versteht sich als Standard-Display mit praktischer Übersicht über folgende Einstellungen:

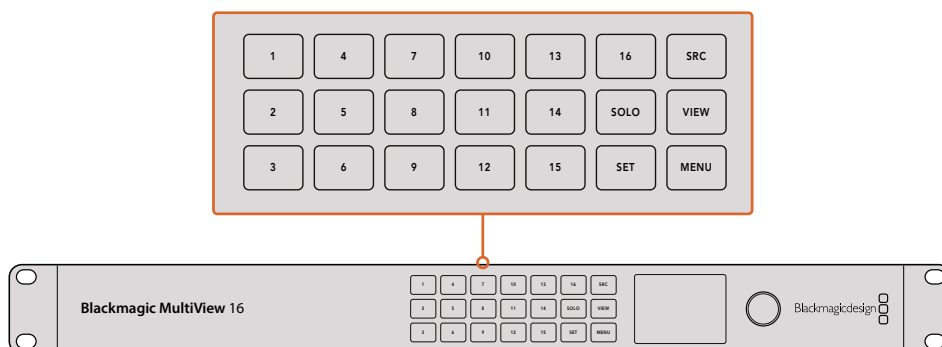
- **Framerate des Multiview-Ausgangs** – Blendet die selektierte Framerate für den Ultra-HD-SDI-Ausgang Ihres MultiView in der oberen linken Ecke ein.
- **Audio Input** – Diese Information befindet sich neben der Framerate für den Multiview-Ausgang. Sie zeigt an, über welchen SDI-Eingang Audio in den Multiview-HDMI- und SDI-Ausgang eingebettet wird.
- **Layout der Mehrfachansicht** – Zeigt das ausgewählte Layout für Ihre Mehrfachansicht an.



Der Homescreen wird beim Blackmagic MultiView 16 standardmäßig auf dem LCD angezeigt. Es zeigt das ausgewählte Layout für die Mehrfachansicht, die Framerate des Multiview-SDI-Ausgangs und den SDI-Eingang für die Einbettung von Audio in den Multiview-Ausgang an

## Bedientasten

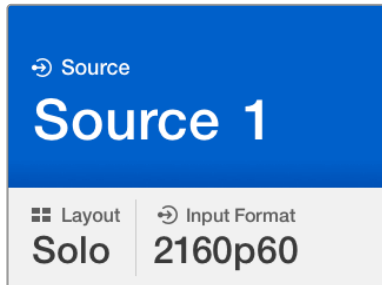
Die beleuchteten Tasten an der Frontblende des Blackmagic MultiView 16 erleichtern das Anpassen von Einstellungen und das Festlegen der Quellen und Ansichten.



Über die Bedientasten des Blackmagic MultiView 16 können Sie Einstellungen und Ansichten von der Gerätefront aus mühelos ändern

## SOLO-Taste

Drücken Sie die SOLO-Taste, um das Monitoring im Vollbildmodus zu aktivieren. Drücken Sie nun eine der nummerierten Ansichtstasten an der Frontblende, um diese Ansicht im Vollbildmodus zu erhalten. Drücken Sie die SOLO-Taste erneut, um zum Mehrfachansichts-Layout zurückzukehren.



Über die SOLO-Funktion können Sie eine Ansicht im Vollbildmodus anzeigen

## MENU-Taste

Drücken Sie die MENU-Taste, um die Einstellungen zu öffnen. Ändern Sie eine Einstellung mithilfe des Drehreglers und der SET-Taste. Drücken Sie dann die MENU-Taste, um zum Homescreen zurückzukehren.

## SET-Taste

Drücken Sie die SET-Taste, um eine Einstellung auszuwählen, die Sie ändern möchten. Nachdem eine Einstellung geändert wurde, drücken Sie die SET-Taste erneut, um die Änderung zu bestätigen.

## SRC- und VIEW-Tasten

Mit diesen Tasten geben Sie vor, in welcher Ansicht eine eingehende Quelle dargestellt wird. Navigieren Sie durch Ihr Einstellungsmenü, indem Sie mit den SRC- und VIEW-Tasten (Quelle und Ansicht) auf- und abwärts durch die verschiedenen Optionen scrollen.

## Drehregler

Mit dem Drehregler scrollen Sie durch die Einstellungen auf dem LCD oder wählen dort Menübefehle aus. Sind Sie mit einer Auswahl unzufrieden, drücken Sie auf den Drehregler, um zu einer vorherigen Einstellung zurückzukehren.

Drehen Sie den Drehregler im oder gegen den Uhrzeigersinn, um in einem Menü zwischen zwei Optionen zu wählen. Einstellungen können auch ein- oder ausgeschaltet werden, indem der Drehregler gedrückt wird.

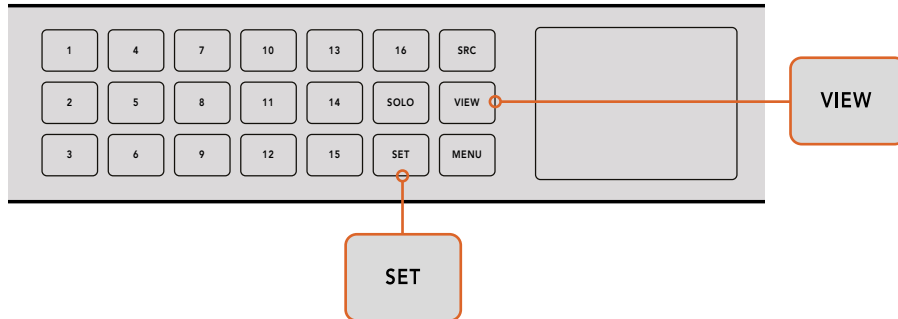
## Einstellen der Quellen und Ansichten auf dem Blackmagic MultiView 16

Zu den Hauptfunktionen des Blackmagic MultiView 16 gehört es, Ihre angeschlossenen SDI-Quellen verschiedenen Ansichten zuordnen zu können. Mithilfe der Einstellungen können Sie die Anordnung Ihrer Ansichten mühelos ändern. Vielleicht möchten Sie ja, dass das Signal von SDI-Eingang 5 in Ansicht 1 erscheint.

So ordnen Sie eine Quelle einer bestimmten Ansicht zu:

- 1 Drücken Sie die VIEW-Taste an der Frontblende, um das LCD mit der Auswahl der Ansichten aufzurufen. Auf dem LCD wird die Option „View“ blau markiert.
- 2 Drücken Sie auf eine der nummerierten Ansichtstasten, um Ihre gewünschte Ansicht auszuwählen. Alternativ können Sie mit dem Drehregler durch Ihre Ansichten scrollen. Drücken Sie auf die SET-Taste, um Ihre Einstellung zu bestätigen.
- 3 Drücken Sie auf die SRC-Taste. Auf dem LCD wird die Option „Source“ markiert.

- 4 Drücken Sie auf eine der nummerierten Ansichtstasten an der Frontblende, um Ihre gewünschte Eingabe auszuwählen. Alternativ können Sie auf dem LCD mit dem Drehregler durch Ihre Eingaben scrollen.
- 5 Drücken Sie auf die SET-Taste, um Ihre Einstellung zu bestätigen.



Wenn Sie eine Quelle einer Ansicht zuzuordnen möchten, drücken Sie die VIEW-Taste, um eine Ansichtseinstellung vorzugeben. Treffen Sie Ihre Auswahl und drücken Sie anschließend die SET-Taste, um Ihre Einstellungen zu bestätigen

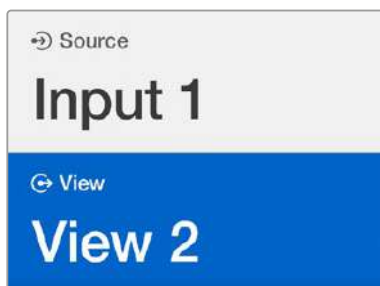
## Vorgabe des Layouts auf Ihrem Blackmagic MultiView 16

Auf dem Blackmagic MultiView 16 können Sie die Anzahl der Ansichten auswählen, die in Ihrer Multiview-Ausgabe erscheinen. Wenn Sie bspw. vier Eingaben angeschlossen haben, können Sie unbesorgt das Layout 2x2 vorgeben, das jeweils zwei horizontale und zwei vertikale Ansichten in Form eines Rasters darstellt. Um Ihre Eingaben optimal zu kontrollieren, wählen Sie das Ansichten-Layout entsprechend der angeschlossenen Eingaben.

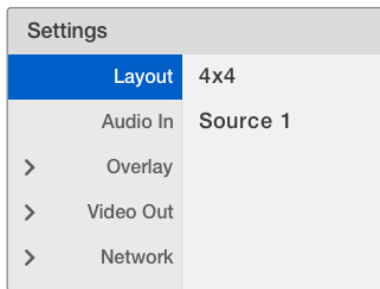
Für die Mehrfachansicht stehen vier Layouts zur Wahl:

- **2x2** stellt vier Ansichten dar. Bei Anschluss eines Ultra-HD-Monitors wird jede Quelle in nativer HD-Auflösung dargestellt.
- **3x3** stellt neun Ansichten dar.
- **4x4** stellt alle 16 Ansichten dar.

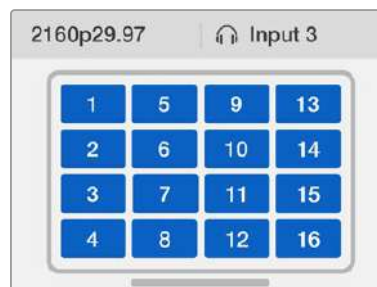
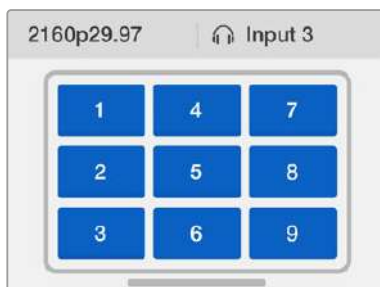
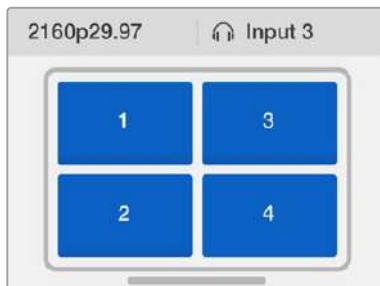
**TIPP** Die Bildkontrolle ist auch im Vollbildmodus möglich. Drücken Sie dafür die SOLO-Taste auf dem Frontpanel des Blackmagic MultiView 16 und wählen Sie dann eine Ansichtstaste aus. Drücken Sie beim Blackmagic MultiView 4 am Teranex Mini Smart Panel die mit „1“ gekennzeichnete Taste.



Wählen Sie mithilfe des Drehreglers oder den Ansichtstasten die Ansicht aus, der sie eine Quelle zuordnen wollen



Markieren Sie die Menüoption, die Sie anpassen möchten, und drücken Sie die SET-Taste, um in die Einstellungen zu gelangen



Sie können zwischen drei verschiedenen Multiview-Layouts wählen, je nachdem, wie viele Eingaben Sie angeschlossen haben

## Audio In

Mit dieser Einstellung geben Sie den SDI-Eingang vor, über den Audio in den Multiview-Ausgang eingebettet wird.

## Overlay

In diesem Untermenü können Sie die Darstellung Ihrer Mehrfachansicht verändern, indem Sie die Overlay-Funktion ein- oder ausschalten.

Folgende Overlay-Features stehen zur Verfügung:

- **Borders** – Diese Funktion trennt einzelne Ansichten mit Rasterlinien voneinander.
- **Labels** – Diese Funktion blendet Kennungen (Labels) für die Ansichten ein oder aus. Labels können über das Dienstprogramm „Blackmagic MultiView Setup“ geändert werden.
- **Audio Meters** – Diese Feature schaltet Audio-VU-Meter für alle Ansichten ein oder aus. Die ersten beiden in jedes SDI-Signal eingebetteten Kanäle werden in jeder Ansicht mit eingeblendet. D. h. Sie können Audiopegel und Bild gemeinsam kontrollieren.
- **SDI Tally** – Wird die SDI-Programmausgabe von einem ATEM Mischer an Eingang 16 Ihres Blackmagic MultiView 16 angeschlossen, so ist die Ansicht der derzeit auf Sendung geschalteten Quelle mit einer Tally-Umrandung versehen. Diese Feature lässt sich in den SDI-Tally-Overlay-Einstellungen ein- oder ausschalten.

Werden die Signalquellen des ATEM Mischers einzeln mit den Eingängen des MultiView 16 verbunden, dann funktioniert Tally nur einwandfrei, wenn die Nummerierung der Eingänge auf beiden Geräten miteinander übereinstimmt. Sonst wird Tally u. U. in der falschen Ansicht eingeblendet.

## Video Out

Mit dieser Einstellung kontrollieren Sie Ausgabeoptionen auf Ihrem Blackmagic MultiView 16.

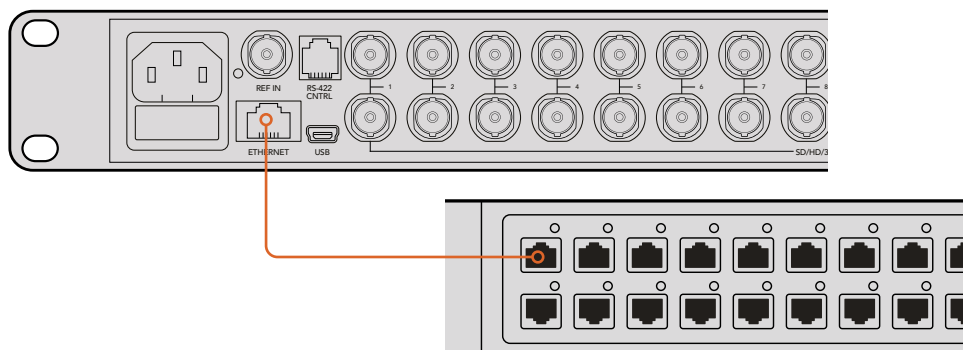
- **Video Format** – Setzen Sie mit dieser Einstellung die Framerate für den Multiview-Ausgang für Ultra HD auf 2160p/29,97 oder 2160p/25. Die Framerate des HD-Multiview-Ausgangs wird der des Ultra-HD-Ausgangs entsprechen. Drücken Sie den Drehregler, wenn Sie die veränderte Einstellung widerrufen oder zum vorherigen Menü zurückkehren möchten.
- **HD Output** – Geben Sie für den HD-Multiview-Ausgang entweder Halbbild-Abtastung (interlaced) oder progressives HD vor. Liegt das selektierte Videoformat in einer Framerate von 2160p/29,97 vor, kann die HD-Ausgabe in 1080p/29,97 oder 1080i/59,94 erfolgen. Ebenso können HD-Inhalte in 1080p/25 oder 1080i/50 ausgegeben werden, wenn die Framerate in 2160p/25 vorliegt.

## Network

In den Netzwerkeinstellungen („Network“) geben Sie IP-, Subnet- und Gateway-Adressen vor, wenn Sie Ihren Blackmagic MultiView 16 an ein Netzwerk anschließen.

So geben Sie die IP-Adresse für Ihren Blackmagic MultiView 16 ein:

- 1 Drücken Sie die MENU-Taste an der Frontblende und markieren Sie mit dem Drehregler den Tab „Network“ (Netzwerk) im LCD-Menü.
- 2 Drücken Sie die SET-Taste, um zu den Netzwerkeinstellungen zu gelangen.
- 3 Bedienen Sie den Drehregler, um den Tab „IP Address“ (IP-Adresse) auszuwählen.
- 4 Drücken Sie die SET-Taste, um das erste Feld der IP-Adresse zu markieren. Verändern Sie die Zahlenwerte mithilfe des Drehreglers.
- 5 Drücken Sie SET, um das erste Feld zu bestätigen und wiederholen Sie diesen Vorgang für die nächsten drei Felder. Die Subnet- und Gateway-Adressen werden auf die gleiche Weise zugewiesen.
- 6 Drücken Sie die MENU-Taste zweimal, um zum Homescreen zurückzukehren.



Wenn Sie Ihren Blackmagic MultiView 16 in ein Ethernet-Netzwerk einbinden, haben Sie die Möglichkeit, das Gerät von einem anderen Ort aus zu bedienen

Network Settings	
IP Address	192.168.10.160
Subnet	255.255.255.0
Gateway	192.168.10.1

Benutzen Sie den Drehregler und die Ansichtstasten an der Frontblende Ihres Blackmagic MultiView 16, um Ihren Netzwerkeinstellungen Werte zuzuweisen

## Teranex Mini Smart Panel

Das Teranex Mini Smart Panel lässt sich an der Vorderseite Ihres Blackmagic MultiView 4 anbringen und ersetzt die Standard-Frontblende. Das Smart Panel bietet mittels Tasten, einem Drehregler und dem eingebauten LCD schnellen Zugriff auf Einstellungen.

### Installieren eines Teranex Mini Smart Panels

Die Installation Ihres optionalen Smart Panels ist einfach. Panel und Frontblende sind während des Betriebs austauschbar, d. h. Ihr Blackmagic MultiView 4 braucht während der Installation nicht ausgeschaltet zu werden.

- 1 Entfernen Sie die zwei M3-Schrauben auf beiden Seiten der Standard-Frontblende Ihres Blackmagic MultiView 4 mithilfe eines PZ-Schraubendrehers der Größe 2. Nehmen Sie die Blende vorsichtig von der Vorderseite Ihres Geräts ab.
- 2 An der Innenseite der Standardblende befindet sich in der unteren Ecke ein kleines Plastikröhrchen. Dieses Röhrchen leitet das Licht der LED im Inneren des Geräts an den Statusindikator der Standardblende weiter und erleuchtet diesen. Belassen Sie das Röhrchen daher an der Standardblende.

**TIP** Sollten Sie die Standardfrontblende erneut anbringen, vergewissern Sie sich, dass das Lichtröhrchen auf den Schlitz an der Vorderseite des Geräts ausgerichtet ist.

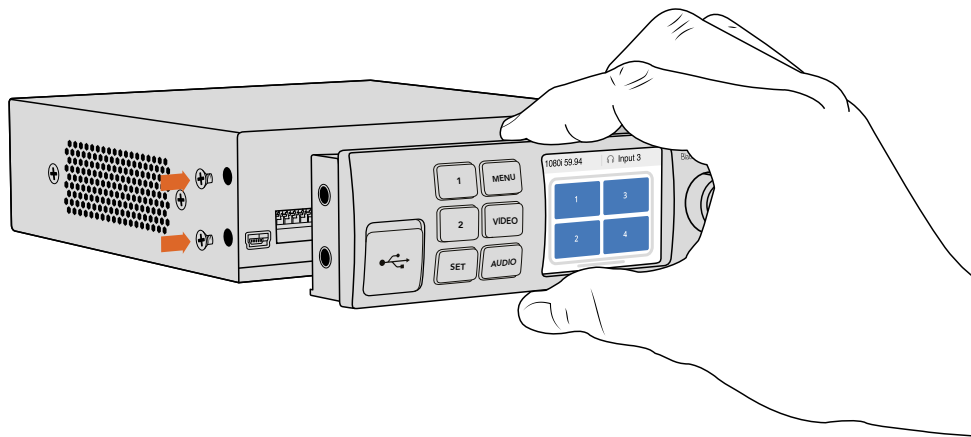
- 3 Richten Sie die Verbinder an der Rückseite des Smart Panels auf deren Gegenstücke an der Front Ihres Blackmagic MultiView 4 aus. Drücken Sie das Smart Panel leicht gegen das Gerät, bis die Verbinder fest sitzen. Das Smart Panel ist präzise anzulegen, sodass es auf der Vorderseite Ihres Blackmagic MultiView 4 fest einrastet.
- 4 Setzen Sie die vorhandenen M3-Schrauben der Standard-Frontblende wieder ein.

Wenn Ihr Blackmagic MultiView 4 in einer Teranex Mini Rack-Wanne installiert ist, nehmen Sie ihn aus dem Rack heraus, um an die Schrauben der Frontblende zu gelangen.

Weitere Informationen finden Sie im Abschnitt „Installation in einem Geräte-Rack“.

Der USB-Port Ihres Blackmagic MultiView 4 ist auch mit installiertem Smart Panel zugänglich. Öffnen Sie einfach die USB-Gummiabdeckung, um auf den Port zuzugreifen. Die kleinen Minischalter an der Frontblende werden vom Smart Panel überdeckt und sind dann nicht länger verwendbar. Das ist aber auch nicht notwendig, da nun alle Einstellungen über das LCD-Menü geändert werden können.





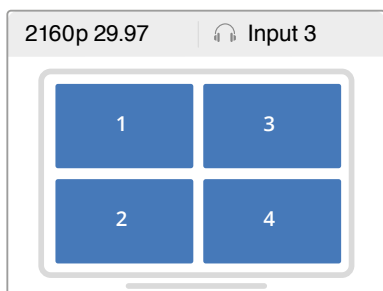
Halten Sie das Teranex Mini Smart Panel zur Installation zwischen Finger und Daumen und richten Sie es auf den Verbinder am Rücken des Panels aus. So lässt sich das Panel leicht aufsetzen

**TIPP** Die originale Frontblende ist sehr robust. Wenn Sie Ihren Blackmagic MultiView 4 also hinten in einem Racksystem oder in Umgebungen mit vielen Kabeln oder viel Trubel installieren müssen, können Sie jederzeit wieder auf diese originale Frontblende zurückgreifen.

## Funktionen des Teranex Mini Smart Panels

Die Funktionen des Smart Panels ähneln jenen der Frontblende des MultiView 16. Die erste Feature, die Sie auf dem LCD sehen werden, ist der Homescreen. Dieser fungiert als Standardanzeige und bietet einen praktischen Überblick über Einstellungen wie:

- **Framerate des Multiview-Ausgangs** – Blendet die selektierte Framerate für den Ultra-HD-SDI-Ausgang Ihres MultiView in der oberen linken Ecke ein.
- **Audio Input** – Diese Information befindet sich neben der Framerate für den Multiview-Ausgang. Sie zeigt an, über welchen SDI-Eingang Audio in den Multiview-HDMI- und SDI-Ausgang eingebettet wird.
- **Layout der Mehrfachansicht** – Zeigt die 2x2-Mehrfachansicht an.

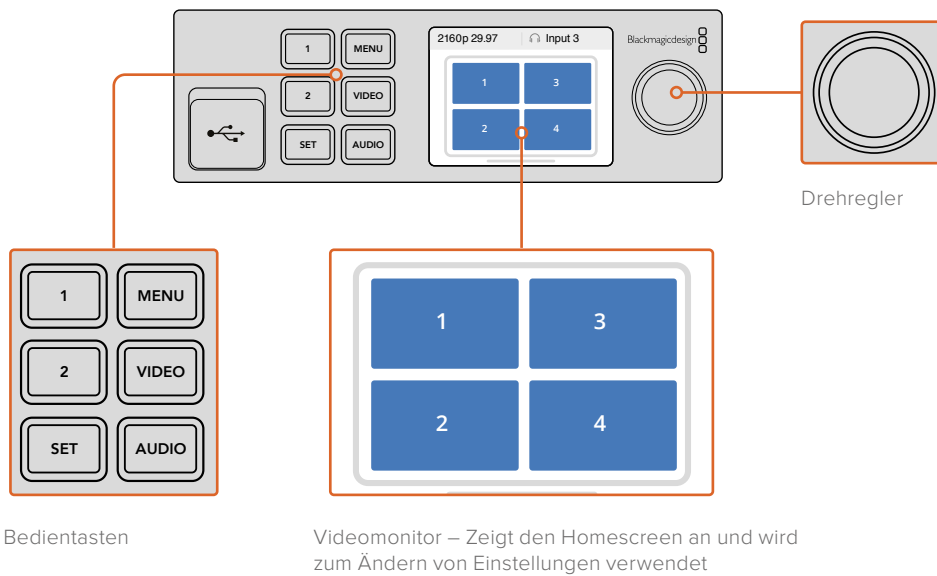


Der Homescreen ist die Standardanzeige auf dem LCD des Teranex Mini Smart Panels

## Bedientasten und Drehregler

Ihr Teranex Mini Smart Panel verfügt über einen Tastensatz und einen Drehregler, mit denen Sie zwischen den Einstellungen im Menü Ihres Blackmagic MultiView 4 navigieren können.

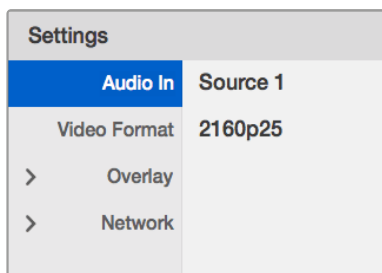
- **Tasten 1 und 2** – Drücken Sie diese Tasten, um numerische Einstellungen zu vergrößern oder zu verkleinern. Alternativ bewegen Sie sich mit diesen Tasten auf- und abwärts durch die Menüeinstellungen.
- **SET** – Nachdem Sie eine Einstellung mit den Tasten 1 und 2 vorgenommen haben, drücken Sie zur Bestätigung SET.
- **MENU** – Drücken Sie diese Taste, um das Einstellungsmenü Ihres Blackmagic MultiView 4 zu öffnen. Alternativ dient die MENU-Taste dazu, zurück zu den vorherigen Menüoptionen und schließlich zum Homescreen zu gelangen.
- **Tasten VIDEO und AUDIO** – Diese Tasten werden ausschließlich für den Betrieb von Teranex Mini Konvertern gebraucht und haben für den Blackmagic MultiView 4 keine Funktion.
- **Drehregler** – Bewegen Sie den Drehregler im oder gegen den Uhrzeigersinn, um durch die Menüeinstellungen zu navigieren und numerische Einstellungen anzupassen.



## Einstellungen mit dem Teranex Mini Smart Panel ändern

Einstellungen über das Teranex Mini Smart Panel zu ändern ist bequemer und Sie können diese auf dem LCD sofort visuell bestätigen.

Um ins Blackmagic MultiView 4 Einrichtungsmenü zu gelangen, drücken Sie die MENU-Taste am Teranex Mini Smart Panel. Von dort aus können Sie auf die folgenden Einstellungen zugreifen.



Markieren Sie die Menüoption, die Sie anpassen möchten, und drücken Sie die SET-Taste, um diese auszuwählen. Benutzen Sie den Drehregler, um durch die Einstellungen zu scrollen

### Audio In

Mit dieser Einstellung geben Sie den SDI-Eingang vor, über den Audio in den Multiview-Ausgang eingebettet wird.

## Video Format

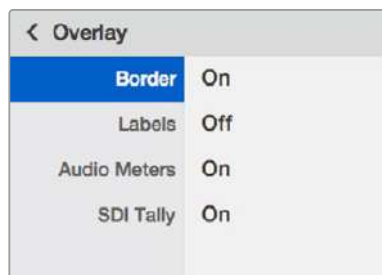
Der Blackmagic MultiView 4 kann für die Ausgabe in Ultra HD oder HD bei entweder 29,97 oder 25 Frames pro Sekunde eingestellt werden. Nutzen Sie diese Einstellung, um durch die verfügbaren Optionen für Auflösung und Bildwechselfrequenz zu navigieren.

## Overlay

Über das Untermenü „Overlay“ können Sie die Einblendung von Overlay-Features ein- oder ausschalten.

Folgende Overlay-Features stehen zur Verfügung:

- **Borders** – Diese Funktion trennt einzelne Ansichten mit Rasterlinien voneinander.
- **Labels** – Diese Funktion blendet Kennungen (Labels) für die Ansichten ein oder aus. Labels können über das Dienstprogramm „Blackmagic MultiView Setup“ geändert werden.
- **Audio Meters** – Diese Feature schaltet Audio-VU-Meter für alle Ansichten ein oder aus. Die ersten beiden in jedes SDI-Signal eingebetteten Kanäle werden in jeder Ansicht mit einblendend. D. h. Sie können Audiopegel und Bild gemeinsam kontrollieren.

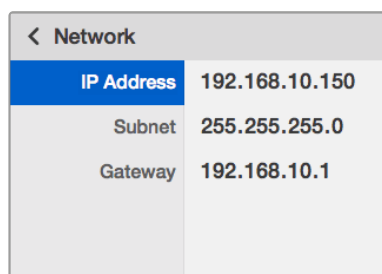


## Network

In den Netzwerkeinstellungen „Network“ geben Sie IP-, Subnet- und Gateway-Adressen vor, wenn Sie Ihren Blackmagic MultiView 4 an ein Netzwerk anschließen.

So geben Sie die IP-Adresse für Ihren Blackmagic MultiView 4 ein:

- 1 Drücken Sie die MENU-Taste an der Frontblende und markieren Sie mit dem Drehregler den Tab „Network“ im LCD-Menü.
- 2 Drücken Sie die SET-Taste, um zu den Netzwerkeinstellungen zu gelangen.
- 3 Bedienen Sie den Drehregler, um den Tab „IP Address“ auszuwählen.
- 4 Drücken Sie die SET-Taste, um das erste Feld der IP-Adresse zu markieren. Verändern Sie die Zahlenwerte mithilfe des Drehreglers.
- 5 Drücken Sie SET, um das erste Feld zu bestätigen und wiederholen Sie diesen Vorgang für die nächsten drei Felder. Die Subnet- und Gateway-Adressen werden auf die gleiche Weise zugewiesen.
- 6 Drücken Sie die MENU-Taste zweimal, um zum Homescreen zurückzukehren.

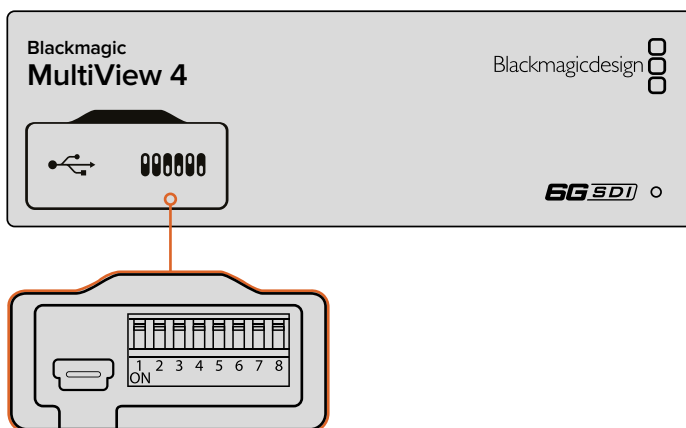


Benutzen Sie den Drehregler oder die Tasten 1 und 2 an Ihrem Teranex Mini Smart Panel, um den Netzwerkeinstellungen Ihres Blackmagic MultiView 4 Werte zuzuweisen

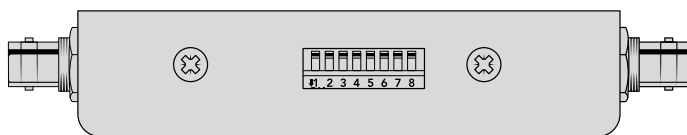
## Einstellungen über die Switches ändern

Der Blackmagic MultiView 4 und der MultiView 4 HD verfügen über kleine integrierte Switches anhand derer sich Einstellungen ändern lassen. Um auf die Switches am Blackmagic MultiView 4 zuzugreifen, öffnen Sie die Gummiabdeckung an der Frontblende.

Am Blackmagic MultiView 4 HD befinden sich die Switches an der Geräteseite.



Einstellungen durch Umlegen der Switches mit einem Stift ändern



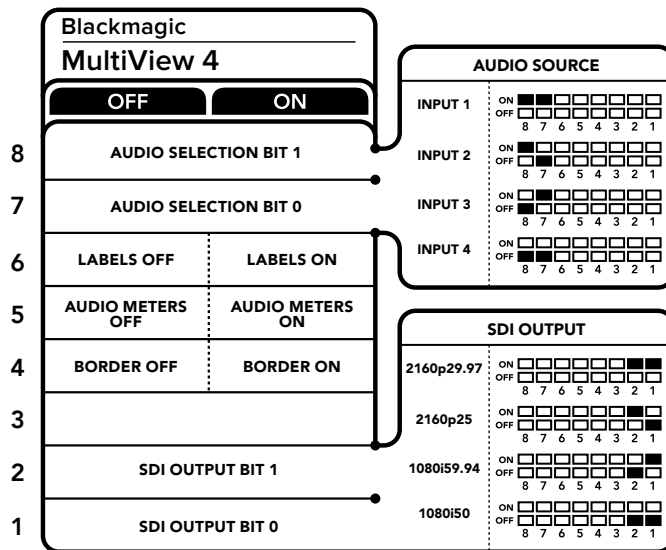
Am Blackmagic MultiView 4 HD befinden sich die kleinen Switches an der Seite

## Eingebaute Switches

Ein Einstellungsdiagramm für die Minischalter ist am Boden Ihres Geräts abgedruckt. Stellen Sie sicher, dass Ihre Einstellungen mit der Legende übereinstimmen, indem Sie die Switch-Nummern 8 bis 1 von links nach rechts beachten.

**TIPP** Obwohl die Switch-Einstellungen als Diagramm am Boden Ihres Geräts aufgedruckt sind, empfiehlt es sich, in der aktuellsten Version dieses Handbuchs nach der neuesten Version zu schauen. Künftige Updates beinhalten nämlich ggf. neue Features und neue Einstellungen. Die aktuellste Version steht im Blackmagic Design Support Center unter [www.blackmagicdesign.com/de/support](http://www.blackmagicdesign.com/de/support) zum Download bereit.

## Switch-Einstellungen für den Blackmagic MultiView 4



Switch-Einstellungen für den Blackmagic MultiView 4

Die Minischalter des Blackmagic MultiView 4 ermöglichen die folgenden Einstellungen:

### Switch 8 und 7 – AUDIO SELECTION

Minischalter 8 und 7 repräsentieren jeweils Bit 1 und 0. Das bedeutet, dass Sie mit den unterschiedlichen ON/OFF-Kombinationen der Minischalter 8 und 7 auswählen können, welcher SDI-Eingang für eingebettetes Audio im HDMI- und SDI-Multiview-Ausgabesignal benutzt wird.

### Auswahltabelle für Audio

Audioquelle	Switch 8	Switch 7	Schaltdiagramm
Input 1	ON	ON	ON <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Input 2	ON	OFF	ON <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Input 3	OFF	ON	ON <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Input 4	OFF	OFF	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

### Switch 6 – LABELS

Stellen Sie Switch 6 auf ON, um die Labels für jedes Fenster in Ihrem Multiview-Ausgabesignal einzublenden. Die Labels können mit Blackmagic MultiView Setup eingestellt werden. Eine genauere Beschreibung dazu finden Sie weiter hinten in diesem Handbuch. Stellen Sie Switch 6 auf OFF, um die Labels zu verbergen.

### Switch 5 – AUDIO METERS

Stellen Sie Switch 5 auf ON, um die Audiopegelmesser für jedes Fenster in Ihrem Multiview-Ausgabesignal einzublenden. Stellen Sie Switch 5 auf OFF, um die Audiopegelmesser zu verbergen.

### Switch 4 – BORDERS

Stellen Sie Switch 4 auf ON, um die Rasterlinien zwischen den einzelnen Multiview-Ansichten einzublenden. Stellen Sie Switch 4 auf OFF, um die Rasterlinien zu verbergen.

## Switch 2 und 1

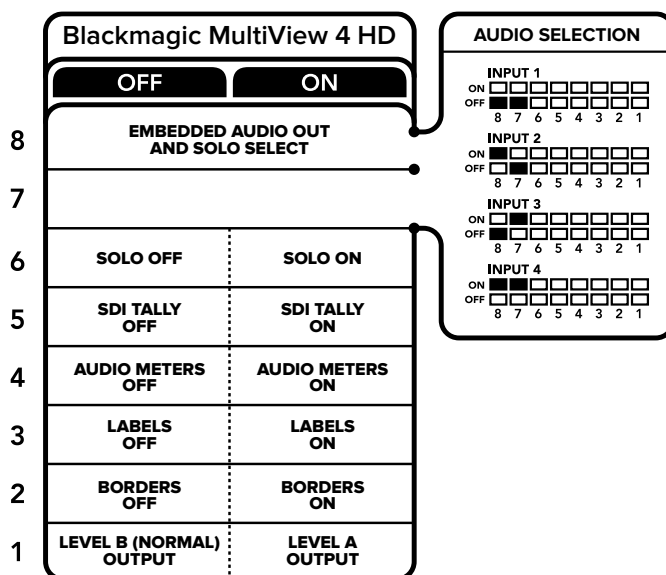
Minischalter 2 und 1 repräsentieren jeweils Bit 1 und 0. Das bedeutet, dass Sie mit den unterschiedlichen ON/OFF-Kombinationen der Minischalter 2 und 1 das Ausgabeformat des SDI-Signals Ihres Blackmagic MultiView 4 auswählen können.

### Auswahltabelle für den SDI-Ausgang

SDI-Ausgang	Switch 2	Switch 1	Schaltdiagramm
2160p/29,97	ON	ON	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 8 7 6 5 4 3 2 1
2160p/25	ON	OFF	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> 8 7 6 5 4 3 2 1
1080i/59,94	OFF	ON	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 8 7 6 5 4 3 2 1
1080i/50	OFF	OFF	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> 8 7 6 5 4 3 2 1

**HINWEIS** Bei Gebrauch des optionalen Teranex Mini Smart Panels werden die Switch-Einstellungen durch die Einstellungen per Smart Panel außer Kraft gesetzt. Ihr Blackmagic MultiView 4 behält die letzten Einstellungen bei, unabhängig davon, ob sie via Switch, Smart Panel oder über Blackmagic MultiView Setup ausgeführt wurden. Wenn Sie das Smart Panel entfernt oder die Einstellungen des Blackmagic MultiView 4 über die Software geändert haben und zur Switch-Steuerung zurückkehren, müssen Sie die einzelnen Schalter unter Umständen hin und her bewegen, um die neuen Einstellungen anzuwenden.

## Switch-Einstellungen für den Blackmagic MultiView 4 HD



Die Schalterlegende am Boden Ihres Blackmagic MultiView 4 HD gibt Ihnen alle erforderlichen Informationen zum Ändern von Einstellungen

Die Minischalter des Blackmagic MultiView 4 HD ermöglichen die folgenden Einstellungen:

### Switch 8 und 7 – EMBEDDED AUDIO OUT AND SOLO SELECT

Switches 8 und 7 wurden zusammengefasst, um 4 ON/OFF-Kombinationen zu ermöglichen. Dank der vier unterschiedlichen Kombinationen lässt sich der Ton von jeweils einer der vier SDI-Eingaben in die Multiview-Ausgabe einbetten. Im Solomodus folgt Audio dem Video. Anhand der Schalter wählen Sie also die Anzeige- und die Tonquelle.

#### Auswahltabelle für Audio

Audioquelle	Switch 8	Switch 7	Schaltdiagramm
Input 1	OFF	OFF	
Input 2	ON	OFF	
Input 3	OFF	ON	
Input 4	ON	ON	

### Switch 6 – SOLO

Stellen Sie Switch 6 auf ON, um den Solo-Modus zu aktivieren. Auf diese Weise können Sie eine einzelne Ansicht im Vollbildmodus ansehen. Stellen Sie Switch 6 auf OFF, um das 2x2-Multiview-Layout zu aktivieren.

Der in die Solo-Ausgabe eingebettete Ton passt sich der ausgewählten Anzeigequelle automatisch an. Wählen Sie mit Switch 7 und 8 eine Kombination aus Ton- und Anzeigequelle für das Solo-Layout. Im 2x2-Multiview-Layout wird mit Switch 7 und 8 die Audioeingabe gewählt.

### Switch 5 – TALLY

Stellen Sie Switch 5 auf ON, um Tally-Umrandungen in den Ansichten einzublenden. Stellen Sie ihn auf OFF, um die Tally-Umrandungen zu verbergen.

Im Solo-Modus werden zusätzliche Daten wie ATEM SDI-Kamerasteuerungssignale, Timecode und Closed Captions unverändert weitergeleitet.

**TIPP** Die Eingangsnummer für jede Ansicht kann in der Blackmagic MultiView Setup Software festgelegt werden. Vergewissern Sie sich, dass die Nummer der Ansicht mit der auf Ihrem Mischer eingestellten Eingangsnummer übereinstimmt, damit Tally korrekt angezeigt werden kann. Weitere Informationen finden Sie im Abschnitt „Tally“.

### Switch 4 – AUDIO METERS

Stellen Sie Switch 4 auf ON, um Audiopegelmesser in den Ansichten einzublenden. Stellen Sie ihn auf OFF, um die Audiopegelmesser zu verbergen.

### Switch 3 – VIEW LABELS

Stellen Sie Switch 3 auf ON, um Labels für jede Ansicht einzublenden. Stellen Sie ihn auf OFF, um die Labels zu verbergen.

### Switch 2 – BORDERS

Stellen Sie Switch 2 auf ON um Ansichtsumrandungen einzublenden. Stellen Sie ihn auf OFF, um die Umrandungen zu verbergen.

### Switch 1 – LEVEL A/LEVEL B OUTPUT

Stellen Sie Switch 1 auf OFF, um die Level-B-3G-SDI-Ausgabe zu wählen oder auf ON für Level-A-3G-SDI. Hiermit ändern Sie das 3G-SDI-Ausgabelevel für Kompatibilität mit anderem SDI-Equipment.

# Blackmagic MultiView Setup im Einsatz

Über das Dienstprogramm Blackmagic MultiView Setup können Sie Ihren Blackmagic MultiView von jedem Mac- oder Windows-Computer aus mühelos konfigurieren und die Produktsoftware des Geräts aktualisieren. Das Dienstprogramm ist intuitiv und leicht bedienbar. Und wenn Sie Ihren Blackmagic MultiView 4 an ein Netzwerk angeschlossen haben, können Sie Einstellungen sogar über Ethernet ändern. So müssen Sie ihn nicht über USB verbinden.

## Installation von Blackmagic MultiView Setup

Blackmagic MultiView Setup läuft auf 64-Bit-Versionen unter Windows und auf den aktuellsten Sierra- und High Sierra-Versionen unter macOS.



Um das Blackmagic MultiView Setup Dienstprogramm zu installieren, doppelklicken Sie auf das Installationsprogramm und folgen Sie den Anweisungen

### Installation unter Windows

- 1 Doppelklicken Sie in den mitgelieferten Medien oder, wenn Sie die Software von der Blackmagic Design Website heruntergeladen haben, in Ihrem Downloads-Ordner auf die Installationsdatei.
- 2 Folgen Sie den Anweisungen und akzeptieren Sie die Bedingungen der Lizenzvereinbarung. Daraufhin installiert Windows die Software automatisch.

Klicken Sie auf den Start-Button in Windows und dann auf „Alle Programme > Blackmagic Design > MultiView“. Im MultiView-Ordner finden Sie die Applikation Blackmagic MultiView Setup.



## Installation unter Mac OS X

- 1 Doppelklicken Sie in den mitgelieferten Medien oder, wenn Sie die Software von der Blackmagic Design Website heruntergeladen haben, in Ihrem Downloads-Ordner auf die Installationsdatei.
- 2 Folgen Sie den Anweisungen, woraufhin Mac OS X die Software automatisch installiert.

Ein Ordner namens „Blackmagic MultiView“ wird in Ihrem Programme-Ordner angelegt. Darin finden Sie die Applikation Blackmagic MultiView Setup.

## Die Homepage des Blackmagic MultiView Setup

Beim ersten Starten von Blackmagic MultiView Setup wird die Homepage der Software angezeigt. Wenn mehrere Blackmagic MultiView Geräte an Ihr Netzwerk angeschlossen sind, klicken Sie auf die Pfeile rechts und links auf der Homepage, um einzelne Geräte auszuwählen.

Um zu den Einstellungen Ihres Blackmagic MultiView zu gelangen, klicken Sie auf das runde Einstellungssymbol unter der Produktabbildung oder direkt auf die Abbildung.



Über Blackmagic MultiView Setup können Sie die Einstellungen Ihres Blackmagic MultiView von einem Computer aus ändern, wenn diese über Ethernet oder USB verbunden sind

## Einstellungen mit Blackmagic MultiView Setup ändern

Klicken Sie auf das Einstellungssymbol, um die Konfigurationseinstellungen für Ihren Blackmagic MultiView zu öffnen. Im Einstellungsfenster erscheinen die drei Tabs „Sources“ (Quellen), „Views“ (Ansichten) und „Configure“ (Konfigurieren). Für den Blackmagic MultiView 4 und den MultiView 4 HD entfällt die Einstellung „Views“, da die Ansichten bei diesen Modellen nicht über die Videohub Control Software anpassbar sind. Für den Blackmagic MultiView 4 HD gibt es darüber hinaus ein „Tally“-Menü zum Ändern der Tally-Einstellungen.

**TIPP** Vergewissern Sie sich, dass für anzuzeigende Quellen die Netzwerkeinstellungen am Gerät mit denen Ihres Computers übereinstimmen.



Mit Blackmagic MultiView Setup können Sie Labels nach Wunsch definieren, damit Sie jede einzelne Quelle in der Mehrfachansicht schnell identifizieren können

- **Sources** – Hier können Sie Labels für Ihre Quellen individuell vorgeben. Dadurch ändern sich die Labels der Quellen in der Mehrfachansicht.
- **Views** – Dieser Tab ist nur für den Betrieb eines Blackmagic MultiView 16 relevant, wenn dieser über die Videohub Control Software gesteuert wird. Wenn Sie die Namen der Ansichten ändern, sind diese im Zielpanel „Destinations“ in der Videohub Control Software einfacher zu identifizieren.
- **Video Output** – Hier können Sie das Videoformat und das Bildseitenverhältnis für die SD-Ausgabe des Blackmagic MultiView 4 HD vorgeben.
- **Configure** – Der Tab „Configure“ (Konfigurieren) gibt Ihnen Kontrolle über folgende Einstellungen: benutzerdefinierte Gerätebezeichnung, Videoausgabe und Overlay-Einstellungen sowie Netzwerkeinstellungen und Anpassungen der seriellen Steuerung.

## Sources

### Benutzerdefinierte Labels für Quellen

Durch die Erstellung von Labels für Quellen ist jede Quelle schnell im Multiview-Layout identifizierbar. Es lassen sich sogar ganze Label-Sätze speichern und laden. Wenn Sie den Blackmagic MultiView also regelmäßig für diverse Anwendungen einsetzen, können Sie Labels zugänglich laden, ohne sie neu eingeben zu müssen.

Labels sind innerhalb der Videohub Control Software sowie auf angeschlossenen Videohub Bedienpanels sichtbar.

So definieren Sie Labels für Quellen:

- 1 Klicken Sie auf den Tab „Sources“.
- 2 Klicken Sie in das Textfeld der Quelle, die Sie ändern möchten, und definieren Sie dort ein neues Label.
- 3 Klicken Sie auf „Save“ (Speichern), um Ihre Einstellung zu bestätigen.

## Views

### Benutzerdefinierte Labels für Ansichten

Wenn Sie Ihren Blackmagic MultiView 16 über die Videohub Control Software steuern, können Sie die Labels der Ansichten ändern, damit sie leichter zu identifizieren sind.

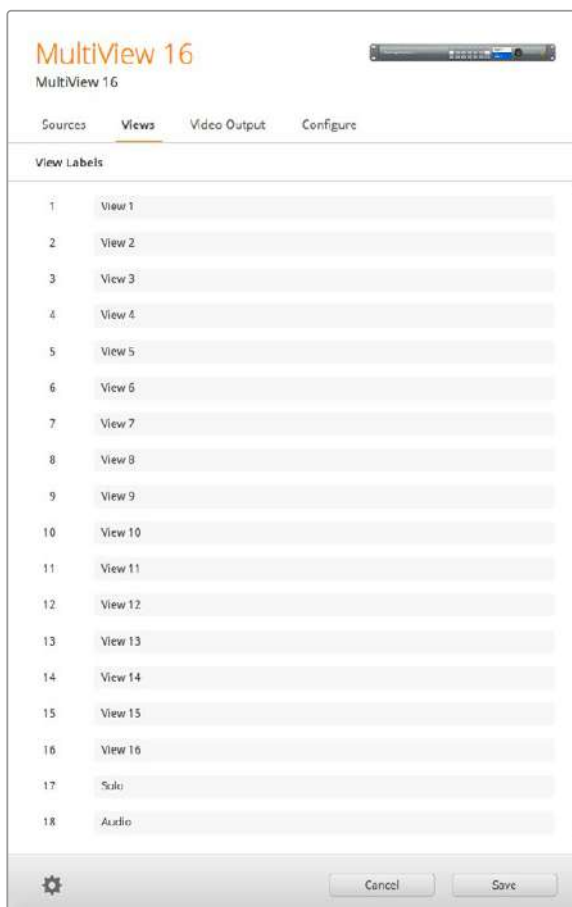
So definieren Sie Labels für Ansichten:

- 1 Klicken Sie auf den Tab „Views“.
- 2 Klicken Sie in den Einstellungen „Output Labels“ (Ausgabekennungen) in das Textfeld der Ansicht, die Sie ändern möchten und definieren Sie dort ein neues Label.
- 3 Klicken Sie auf „Save“ (Speichern), um Ihre Einstellung zu bestätigen.

Standardmäßig sind „View“-Labels Nr. 17 und 18 mit „Solo“ bzw. „Audio“ gekennzeichnet.

Über Ausgabe 17 können Sie das Software-Label für die „Solo“-Einstellung ändern, die über die Frontblende Ihres Blackmagic MultiView 16 gesteuert wird. Dies ist hilfreich, wenn Sie Ihren MultiView 16 mit der Blackmagic Videohub Control Software bedienen. Individualisieren Sie das Label für die „Solo“-Ausgabe im Blackmagic MultiView Setup, um vorzugeben, wie diese Kennzeichnung in der Blackmagic Videohub Control zu sehen ist.

Ausgabe 18 bezieht sich auf die Einstellung der Audioeingabe („Audio In“) im LCD-Menü Ihres Blackmagic MultiView 16. Mit dieser Einstellung werden Audioinhalte verteilt, die Sie in Ihren Multiview-Ausgang einbetten möchten. Wie bei der „Solo“-Ausgabe lassen sich auch die Labels für Ansichten ändern und ihre Darstellung bestimmen, wenn Sie den Blackmagic MultiView 16 mit der Videohub Control Software steuern.



Die Einbeziehung der Ausgabe-Labels „Solo“ und „Audio“ gibt Ihnen die Möglichkeit, ihre Namen zu ändern, damit Sie entscheiden können, wie sie angezeigt werden, wenn Sie Ihren Blackmagic MultiView 16 über Blackmagic Videohub Control steuern

## Video Output

### Video Format und HD Output

Die Videoformateinstellungen unterscheiden sich bei den Blackmagic MultiView Modellen leicht.

Der Blackmagic MultiView 16 kann HD- und Ultra-HD-Video simultan ausgeben. Er lässt Sie auch die Framerate für das auszugebende Video auswählen. Wenn Sie bspw. ein für den Einsatz in den USA konformes Signal ausgeben wollen, wählen Sie 2160p/29,97. Dann wird die HD-Ausgabe automatisch dieser Bildwechselrate angeglichen.

Wenn wie in diesem Beispiel als Videoformat 2160p/29,97 ausgewählt ist, können Sie für die HD-Ausgabe je nach Bedarf 1080p/29,97 oder 1080i/59,94 vorgeben.



Die Vorgabe von Layout, Videoformat, HD-Ausgabe und SD-Seitenverhältnis erfolgt beim MultiView 16 über die Optionsfelder unter dem Tab „Video Output“

Beim Blackmagic MultiView 4 können Sie auswählen, ob Sie Video über den SDI-Ausgang in Ultra HD oder HD ausgeben möchten und die Bildwechselrate vorgeben. Diese Einstellungen finden Sie im Dropdown-Menü „Video Format“.



Hinter dem Tab „Video Output“ des Blackmagic MultiView 4 verbirgt sich eine Dropdown-Liste mit Videoformatoptionen, die sowohl die Auflösung als auch die Framerate beinhalten

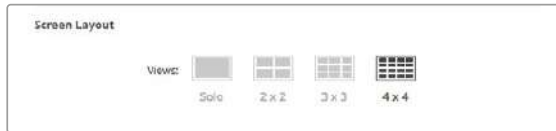
Beim Blackmagic MultiView 4 HD können Sie im Menü „Video Format“ die HD-Framerate auswählen und festlegen, ob Video mit Vollbildern oder Halbbildern ausgegeben werden soll. Zudem lässt sich als SD-Bildseitenverhältnis für den Blackmagic MultiView 4 HD 16:9 oder 4:3 vorgeben.



Auf dem Tab „Video Output“ des Blackmagic MultiView 4 HD lässt sich die HD-Ausgabeauflösung und Framerate sowie das Zeilensprungverfahren bzw. die progressive Abtastung vorgeben

## Ändern des Layouts für die Mehrfachansicht

Ähnlich wie mit den „Layout“-Einstellungen am Bedienfeld-LCD des MultiView 16, können Sie das Layout auch mit der Setup-Software ändern. Wählen Sie die gewünschte Einstellung für Ihr Layout, indem Sie in den „Details“-Einstellungen auf das passende Layout-Symbol klicken.



Geben Sie das Bildschirm-Layout für Ihren MultiView 16 über den Tab „Video Output“ vor

## Tally

Auf dem Blackmagic MultiView 4 HD können Sie in den „Tally“-Einstellungen die Option „Tally override“ vorgeben oder als von einer Blackmagic Kamera oder Kameranummer versendet markieren, wenn das Signal von einem ATEM Mischer an Eingang 4 des MultiView 4 HD gesendet wird.



Tally-Optionen im „Tally“-Menü des MultiView Setup Dienstprogramms

Wenn Sie „Tally“ so einstellen, dass es mit dem Mischereingang korrespondiert, können Sie eine Kameranummer zwischen 1 und 99 in das jeweilige Textfeld für die Eingänge 1 bis 4 eingeben.

## Tally Override

Tally-Signale werden in der Regel vom Return-Feed bereitgestellt, der an den letzten SDI-Eingang Ihres MultiView gekoppelt ist. Manchmal möchte man jedoch, dass alle Kameras mit allen Ansichten verbunden sind.

Wenn Sie Blackmagic Design Kameras verwenden, die an einen ATEM Mischer oder einen anderen SDI-Mischer mit dem Tally-System eines Fremdanbieters gekoppelt sind, können Sie „Tally override“ aktivieren. Ist „Tally override“ aktiviert, sucht der MultiView 4 HD jedes SDI-Eingabesignal nach eingebetteten Tally-Signalen ab. Das bedeutet, dass alle Ansichten ihr Tally-Signal unabhängig voneinander empfangen, statt eines kollektiven Tally-Signals über den Programm-Return-Feed.

**TIPP** Der Modus „Tally override“ funktioniert mit Blackmagic URSA Mini, URSA Mini 4K, URSA Mini Pro und URSA Broadcast Kameras, die mit einem Blackmagic ATEM Mischer oder Blackmagic Camera Fiber Converter verbunden sind. Informationen zum Anschließen eines Fremdhersteller-Mischers oder -Tally-Systems finden Sie im Blackmagic 3G-SDI Shield for Arduino Handbuch.

## SD Aspect Ratio

Wenn Sie SD-Video mit einem Seitenverhältnis von 4:3 an Ihren Blackmagic MultiView 16 angeschlossen haben, wählen Sie das Kontrollkästchen „Set to 4:3“ (4:3 vorgeben). Dies sorgt dafür, dass Ihr 4:3-Video im korrekten Seitenverhältnis angezeigt wird.

Wenn SD-Video mit einem Seitenverhältnis von 16:9 angeschlossen ist, wählen Sie die Option „Set to 16:9“ (16:9 vorgeben), um die korrekte Bildanzeige zu gewährleisten.

Wenn Sie den Blackmagic MultiView 4 HD mit einer SD-Quelle speisen, können Sie im Setup-Dienstprogramm zwischen einer 16:9- und 4:3-Ausgabe wählen. Wählen Sie im Menü „Video Output“ eine Option für das SD-Bildseitenverhältnis.



Optionen für das SD-Bildseitenverhältnis im Menü „Video Output“ des MultiView Setup Dienstprogramms

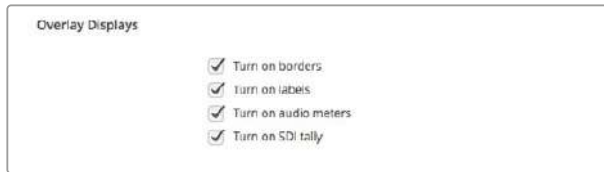
## Overlay Displays

Der Blackmagic MultiView 16 und der Blackmagic MultiView 4 verfügen in den „Overlay“-Einstellungen über Kontrollkästchen, um eine gewünschte Funktion Ihres Blackmagic MultiView zu aktivieren.

Folgende Overlay-Features stehen zur Verfügung:

- **Borders** – Diese Funktion trennt einzelne Ansichten mit Rasterlinien voneinander.
- **Labels** – Diese Funktion blendet Kennungen (Labels) für die Ansichten ein oder aus. Labels können über das Blackmagic MultiView Setup Dienstprogramm geändert werden.
- **Audio Meters** – Diese Feature schaltet Audio-VU-Meter für alle Ansichten ein oder aus. Die ersten beiden in jedes SDI-Signal eingebetteten Kanäle werden in jeder Ansicht mit eingeblendet. D. h. Sie können Audiopegel und Bild gemeinsam kontrollieren.
- **SDI Tally** – Wenn die Programm-SDI-Ausgabe eines ATEM Mischers an einen Eingang Ihres Blackmagic MultiView angeschlossen ist – bspw. Eingang 16 des Blackmagic MultiView 16 oder Eingang 4 der Blackmagic MultiView 4 Modelle – wird Ihnen eine Tally-Umrandung um die jeweilige Ansicht angezeigt, sobald die dazugehörige Quelle auf Sendung geschaltet wird. Die Tally-Funktion lässt sich aktivieren, indem Sie in den „Overlay“-Einstellungen das Kontrollkästchen „Turn on SDI tally“ mit einem Häkchen versehen. Um die Funktion

auszuschalten, entfernen Sie das Häkchen. Im Setup-Dienstprogramm kann eine Eingangsnummer zugewiesen werden, damit Tally korrekt angezeigt wird.



Auf dem Blackmagic MultiView 16 und Blackmagic MultiView 4 können Sie unter dem Tab „Configure“ (Konfigurieren) in den „Overlay“-Einstellungen Overlay-Funktionen wie Rasterlinien, Labels, Audiopegelmesser oder sogar SDI-Tally-Umrandungen ein- und ausschalten

**TIPP** Damit das Tally einwandfrei funktioniert, müssen die Nummern der angeschlossenen Eingänge Ihres Blackmagic MultiView mit den Eingangsnummern des ATEM Mixers übereinstimmen. Andernfalls wird das Tally u. U. in der falschen Ansicht eingeblendet.

## Configure

### Benennung Ihres Blackmagic MultiView

Der Tab „Configure“ variiert bei den unterschiedlichen Blackmagic MultiView Modellen.

So verfügt der „Configure“-Tab beim Blackmagic MultiView 16 und Blackmagic MultiView 4 über die Einstellungen „Details“, „Overlay“ und „Network Settings“. Beim Blackmagic MultiView 4 HD zeigt er das Label sowie die Softwareversion an, bietet aber keine Einstellungsmöglichkeiten.

Benennen Sie Ihren Blackmagic MultiView 16 oder Blackmagic MultiView 4, um ihn beim Einsatz in der Ferne mühelos zu identifizieren:

- 1 Klicken Sie auf Den Konfigurations-Tab „Configure“.
- 2 Klicken Sie in den „Details“-Einstellungen in das Textfeld „Name“ und geben Sie eine neue Bezeichnung für Ihren Blackmagic MultiView ein.
- 3 Zum Speichern klicken Sie auf „Save“.



Verwenden Sie Blackmagic MultiView Setup, um Ihren Blackmagic MultiView 16 zu benennen. So kann er mühelos von Netzwerknutzern identifiziert werden

## Einstellungen für das Netzwerk und die serielle Steuerung

Einstellungen für Netzwerke und serielle Steuerungen können mit Blackmagic MultiView Setup vorgenommen werden, wenn der Blackmagic MultiView 16 per USB an Ihren Computer angeschlossen ist. Auf diese Einstellungen können Sie auch über das LCD-Menü an der Frontblende zugreifen. Bei der Konfiguration des Blackmagic MultiView 4 sind nur die Netzwerkeinstellungen verfügbar.

Ändern Sie Netzwerkeinstellungen, indem Sie in das Textfeld klicken und Werte mit Ihrer Tastatur eingeben. Oder setzen Sie in das entsprechende Kontrollkästchen ein Häkchen.



The screenshot shows a configuration window with two sections. The top section, titled "Network Settings", contains three input fields: "IP Address" with the value "192.168.10.160", "Subnet Mask" with "255.255.255.0", and "Gateway" with "192.168.10.1". The bottom section, titled "Serial Control", has a label "Leitch protocol:" followed by two radio button options: "Leitch Client" (which is unselected) and "Leitch Server" (which is selected with a black dot).

Wenn Sie Ihren Blackmagic MultiView 16 mit einem Netzwerk verbinden möchten, müssen Sie ggf. die Netzwerkeinstellungen des Geräts ändern. Über die Einstellungen „Serial Control“ können Sie Ihren Blackmagic MultiView 16 gemäß den Anforderungen Ihres RS-422-Setups für die Fernsteuerung als Leitch-Client oder -Server konfigurieren

Um die serielle Steuerung einzurichten, schließen Sie den Blackmagic MultiView 16 per USB an Ihren Computer an und nehmen Sie folgende Schritte vor:

- 1 Starten Sie Blackmagic MultiView Setup und wählen Sie Ihren Blackmagic MultiView 16 aus, indem Sie auf die Produktabbildung oder das Einstellungssymbol darunter klicken.
- 2 Klicken Sie auf den Tab „Configure“ (Konfigurieren). Geben Sie für „Leitch Protocol“ die Option „Leitch Client“ vor, wenn Ihr Blackmagic MultiView 16 als Client einer angeschlossenen Steuerkonsole agieren soll. Wählen Sie „Leitch Server“, wenn Ihr Gerät von einem automatisierten System oder von einem Router-Steuerungssystem von Fremdherstellern gesteuert werden soll.
- 3 Klicken Sie auf „Save“, um Ihre Einstellung zu speichern.



The screenshot shows the "Serial Control" section of the configuration window. It features the label "Leitch protocol:" and two radio button options: "Leitch Client" (unselected) and "Leitch Server" (selected with a black dot).

Wählen Sie entweder „Client“ oder „Server“, wenn Sie von einer seriellen RS-422-Steuerung Gebrauch machen

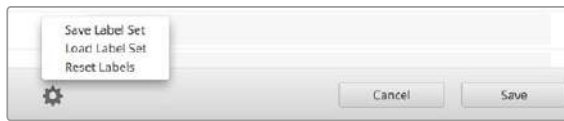
## Label-Sätze speichern und laden

Wenn Sie für ein wiederkehrendes Projekt regelmäßig mit einem Label-Satz arbeiten möchten, können Sie ihn einfach in einer Datei abspeichern und zu einem späteren Zeitpunkt laden.

Klicken Sie auf das Zahnradsymbol unten links in Ihrem Blackmagic MultiView Setup, um die Einstellungen „Label Set“ zu öffnen. Wählen Sie dann „Save Label Set“ (Label-Satz speichern). Wählen Sie einen Speicherort und klicken Sie auf „Save“ (speichern).



Um Ihre Labels zu laden und die Einstellungen für Ihren Label-Satz zu öffnen, klicken Sie auf das Zahnradsymbol und wählen Sie „Load Label Set“ (Label-Satz laden). Navigieren Sie zur Datei, die Ihren gespeicherten Label-Satz enthält und klicken Sie auf „Load“ (Laden).



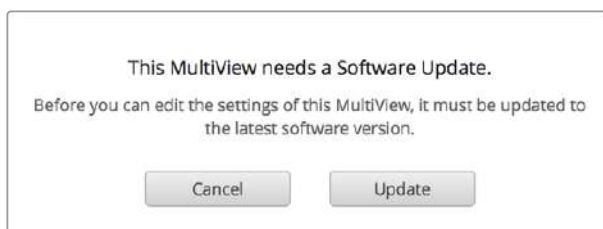
Speichern und laden Sie Labels mit Blackmagic MultiView Setup

## Aktualisierung der Produktsoftware

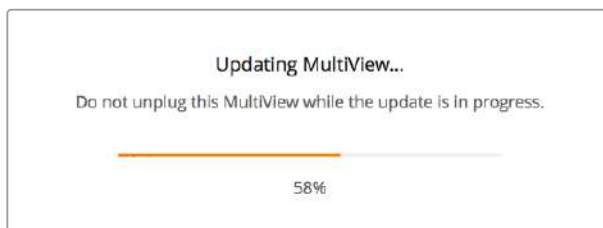
Hin und wieder muss die Produktsoftware Ihres Blackmagic MultiView zu aktualisiert werden. Updates für die Produktsoftware bieten u. a. neue Funktionen, Kompatibilität mit neuer Hardware und Support für neue Formate.

So aktualisieren Sie die Produktsoftware Ihres Blackmagic MultiView:

- 1 Schließen Sie Ihren Blackmagic MultiView per USB oder Ethernet an einen Computer an.
- 2 Starten Sie Blackmagic MultiView Setup. Das Dienstprogramm zeigt alle an Ihr Netzwerk angeschlossenen Blackmagic MultiView Geräte automatisch an.
- 3 Markieren Sie Ihren Blackmagic MultiView, indem Sie auf das Produktbild oder das Einstellungssymbol unter dem Produktnamen klicken.
- 4 Blackmagic MultiView Setup setzt Sie über notwendige Aktualisierungen in Kenntnis.
- 5 Ist ein Update nötig, klicken Sie auf die Schaltfläche „Update“, woraufhin die Software installiert wird. Während des Updates muss Ihr Blackmagic MultiView mit Strom versorgt bleiben und darf nicht ausgeschaltet werden.
- 6 Klicken Sie nach erfolgreicher Aktualisierung auf „Close“ (Schließen).



Klicken Sie zur Installation der neuen Produktsoftware auf den Button „Update“



Während des Updates muss Ihr Blackmagic MultiView mit Strom versorgt bleiben und darf nicht ausgeschaltet werden

# Einsatz der Videohub Control Software

Ist der Blackmagic MultiView 16 an Ihr Netzwerk angeschlossen, können Sie mithilfe der Blackmagic Videohub Control Software auf einem Mac- oder Windows-Computer Videoeingaben verschiedenen Ansichten in der Mehrfachansicht Ihres Blackmagic MultiView 16 zuweisen. Die SDI-Eingaben Ihres Blackmagic MultiView sind in der Videohub Control Software im Quell-Panel „Sources“ in Form von Schaltflächen zu sehen. Entsprechend sind die Ansichten als Schaltflächen im Ziel-Panel „Destinations“ sichtbar. Videohub Control ist Teil des Installationsprogramms der Videohub Software, das im Blackmagic Design Support Centre unter [www.blackmagicdesign.com/de/support](http://www.blackmagicdesign.com/de/support) heruntergeladen werden kann.

**HINWEIS** Mit der Videohub Control Software lassen sich Quellen auf dem Blackmagic MultiView 16 Ansichten zuordnen. Auch andere Einstellungen können hierüber vorgenommen werden, darunter: Auswahl des Solo-Modus oder der Audioquelle für den Multiview-Ausgang. Auf dem Blackmagic MultiView 4 können mithilfe der Videohub Control Software die Solo-Quelle und die Audioquelle für den Multiview-Ausgang geändert werden.

## Auswahl Ihres MultiView 16

Starten Sie die Videohub Control Software, klicken Sie auf das Zahnradsymbol, um die Einstellungen im Popup-Menü zu öffnen, und wählen Sie „Select Videohub“ (Videohub auswählen). Wählen Sie aus der Liste angeschlossener Geräte den Namen Ihres Blackmagic MultiView 16.

Sind Ihre Eingaben mit Labels versehen, so erscheinen die von Ihnen zugewiesenen Namen innerhalb der Videohub Control Software. Ohne Labels werden die Eingaben mit den Bezeichnungen „Input 1“, „Input 2“, „Input 3“ usw. dargestellt.



Mithilfe von Blackmagic Videohub Control können Sie die Quellen des Blackmagic MultiView 16 unterschiedlichen Ansichten zuweisen

## Ansicht Ihrer Eingaben

Um zu sehen, welche Videoeingaben auf Ihrem Blackmagic MultiView 16 einer bestimmten Ansicht zugeordnet sind, klicken Sie auf eine „View“-Schaltfläche im Ziel-Panel „Destinations“. Die entsprechende Ziel- bzw. Ansichtsschaltfläche leuchtet auf. Im Quell-Panel „Sources“ leuchtet die entsprechende Schaltfläche der gerouteten Videoeingabe ebenfalls auf. Dies macht deutlich, welche Eingabe bzw. Quelle einer bestimmten Ansicht zugewiesen ist.

## Eingaben an Ansichten routen

Um eine Videoeingabe einer Ansicht zuzuweisen, klicken Sie auf eine „View“-Schaltfläche im Ziel-Panel „Destinations“ und anschließend auf eine Eingabeschaltfläche im Quell-Panel „Sources“. Die Eingabe wird direkt einer Ansicht zugewiesen.

## Solo Input

Verwenden Sie die Schaltfläche „Solo Input“, um vorzugeben welche Eingabe im Vollbildmodus angezeigt wird. Dies setzt voraus, dass die SOLO-Taste auf der Frontblende des Blackmagic MultiView 16 aktiviert ist. Klicken Sie einfach auf „Solo Input“ im Ziel-Panel der Videohub Control Software und anschließend auf eine Eingabeschaltfläche im Quell-Panel.

## Audio Input

Auf dem Blackmagic MultiView 16 und Blackmagic MultiView 4 legen Sie mit der Schaltfläche „Audio Input“ in der Videohub Control Software fest, welche SDI-Audioeingaben an den Multiview-Ausgang geroutet werden. Klicken Sie einfach auf die Schaltfläche „Audio Input“ im Ziel-Panel „Destinations“ der Videohub Control Software und anschließend auf eine Eingabeschaltfläche im Quell-Panel „Sources“, um das Audiosignal dieser Eingabe direkt an den Multiview-Ausgang zu routen.



Die Schaltflächen „Solo Input“ und „Audio Input“ geben Ihnen die Möglichkeit, diese Einstellungen mithilfe der Videohub Control zu ändern

# Informationen für Entwickler

## Blackmagic Videohub Ethernet Protocol v2.3

### Zusammenfassung

Der Blackmagic MultiView ist mit dem Ethernet-Protokoll der Blackmagic Videohub kompatibel. Das Protokoll ist textbasiert. Zugriff erhalten Sie, indem Sie eine Verbindung zur IP-Adresse und zum TCP-Port 9990 Ihres Blackmagic MultiView herstellen.

**HINWEIS** Sowohl der Blackmagic MultiView 16 als auch der Blackmagic MultiView 4 ist über Ethernet steuerbar. Die meisten Features beziehen sich jedoch auf den Blackmagic MultiView 16. Auf dem Blackmagic MultiView 4 können Sie die Solo-Quelle und die Audioquelle für den Multiview-Ausgang ändern.

Der MultiView sendet Anweisungen in Form von Blöcken. Jedem Block geht eine eigene Kopfzeile in Großbuchstaben gefolgt von einem Doppelpunkt voraus. Ein Block besteht aus mehreren Zeilen und endet mit einer Leerzeile. Jede Zeile im Protokoll endet mit einem Zeilenumbruchzeichen.

An den Blackmagic MultiView 16 gesendete Zeilen können mit einem Zeilenvorschub, einem Zeilenumbruch oder mit beiden beendet werden.

Nach erfolgter Verbindung sendet der MultiView einen kompletten Status-Dump des Geräts. Diesem ersten Dump folgen weitere Status-Updates, wenn sich der Status des MultiView erneut ändert.

Um für zukünftige Protokolländerungen vorbereitet zu sein, sollten Nutzer Blöcke, die sie nicht erkennen, bis zur abschließenden Leerzeile ignorieren. Auch innerhalb von Blöcken sollten Anwender ihnen unbekannte Zeilen ignorieren.

### Protokoll-Präambel

Der erste vom MultiView gesendete Block ist immer die Protokoll-Präambel:

```
PROTOCOL PREAMBLE:↵  
Version: 2.3↵  
↵
```

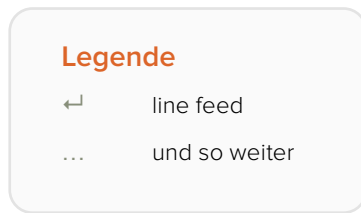
Das Feld „Version“ zeigt die Protokollversion an. Wird das Protokoll kompatibel verändert, wird die Nummer der Unterversion aktualisiert. Sind die vorgenommenen Änderungen nicht kompatibel, wird die Hauptversionsnummer aktualisiert.

### Geräteinformation

Der nächste Block enthält allgemeine Informationen über den angeschlossenen Blackmagic MultiView 16. Bei Anschluss eines Blackmagic MultiView 16 sendet das Gerät einen Bericht mit Attributen:

```
MULTIVIEW DEVICE:↵  
Device present: true↵  
Model name: Blackmagic MultiView 16↵  
Video inputs: 16↵  
Friendly name:  
Unique ID:  
Video processing units: 0↵  
Video outputs: 16↵  
Video monitoring outputs: 0↵  
Serial Ports:  
↵
```

Dieses Beispiel bezieht sich auf den Blackmagic MultiView 16, der über 16 Quellen und 18 Ansichten verfügt. Hinzu kommen die Funktionen „Solo“ auf Ansicht 16 und „Audio“ auf Ansicht 17, die hier als Ausgänge bezeichnet werden.



Die Version 2.3 des Blackmagic Videohub Ethernet Protocols wurde mit der Videohub 4.9.1 Software veröffentlicht

### Erster Status-Dump

Die nächsten beiden Blöcke erfassen die den I/O-Ports zugewiesenen Labels.

```
INPUT LABELS:←  
0 VTR 1←  
1 VTR 2←  
...  
←  
OUTPUT LABELS:←  
0 Output feed 1←  
1 Output feed 2←  
...  
←
```

Hinweis: Die Nummerierung für die Labels der Ein- und Ausgänge innerhalb des Protokolls beginnt stets bei Null, was Port 1 am Gerätegehäuse entspricht.

Die nächsten drei Blöcke beschreiben die Signalverteilung der Ports für die Ansichten.

```
VIDEO OUTPUT ROUTING:←  
0 5←  
1 3←  
...  
←
```

Der nächste Block beschreibt den Sperrstatus der Ansichten. Jeder Port hat einen Sperrstatus „O“ für Ports, die im Besitz des aktuellen Anwenders sind (d. h. sie sind von derselben IP-Adresse aus gesperrt). Sperrstatus „L“ gilt für Ports, die von einem anderen Anwender gesperrt sind und „U“ steht für freigegeben.

```
VIDEO OUTPUT LOCKS:←  
0 U←  
1 U←  
...  
←
```

Der letzte Block ist der Konfigurationsblock.

```
Layout: SOLO or 2x2 or 3x3 or 4x4  
Output format: 50i or 50p or 60i or 60p  
Solo enabled: True or False  
Widescreen SD enable: True or False  
Display border: True or False  
Display labels: True or False  
Display audio meters: True or False  
Display SDI tally: True or False
```

## Status-Updates

Werden das Routing, Labels oder eine Sperrung von einem beliebigen Anwender auf dem MultiView verändert, sendet das Gerät den gültigen Statusblock zurück, der ausschließlich die veränderten Elemente enthält.

Werden mehrere Änderungen vorgenommen, können auch mehrere Elemente im Update vorkommen.

```
OUTPUT LABELS:↵  
7 New output 8 label↵  
10 New output 11 label↵  
↵
```

## Änderungen anfordern

Um Labels, Sperrungen oder das Routing zu aktualisieren, sollte der Anwender einen Block im gleichen Format senden wie die vom MultiView gesendeten Status-Updates. Um bspw. die Signalverteilung von Ausgangsport 8 an Eingangsport 3 zu ändern, sollte der Anwender folgenden Block formulieren:

```
VIDEO OUTPUT ROUTING:↵  
7 2↵  
↵
```

Der Block muss mit einer Leerzeile beendet werden. Mit dem Erhalt der Leerzeile bestätigt der MultiView die Anfrage entweder mit der Antwort:

```
ACK↵  
↵
```

oder zeigt an, dass die Anfrage nicht verstanden wurde:

```
NAK↵  
↵
```

Ist die Rückmeldung positiv, müssten Anwender ein vom MultiView gesendetes Status-Update mit den entsprechenden Änderungen sehen. Wahrscheinlich ist dieser mit dem gesendeten Befehl identisch. Konnte der Befehl nicht ausgeführt werden oder wurden Änderungen zeitgleich von anderen Nutzern vorgenommen, könnten innerhalb des Blocks weitere Updates oder ganz neue Blöcke erscheinen. Gleichzeitig vorgenommene Änderungen können sich gegenseitig aufheben und eine andere Rückmeldung erzeugen als erwartet.

Für den MultiView 16 kann der Nutzer die Solo-Quelle und die Audioquelle ändern, die in die Ausgabe eingebettet werden soll.

Der Solo-Modus muss entweder über die Frontblende oder durch Senden des folgenden Blocks aktiviert werden:

```
CONFIGURATION:↵  
Solo enabled: true↵  
↵
```

Ist der Modus aktiviert, ändert der folgende Block die Solo-Quelle zu Eingang 11:

```
Video Output Routing:↵  
16 10↵  
↵
```

Diese Option ist für den MultiView 4 nicht verfügbar.

Der folgende Block sendet eingebettetes Audio von Eingang 1 zum Ausgang des MultiView 16:

```
Video Output Routing:↵  
17 0↵  
↵
```

Der folgende Block sendet eingebettetes Audio von Eingang 1 zum Ausgang des MultiView 4:

```
Video Output Routing:↵  
5 0↵  
↵
```

Ohne simultane Updates sieht der zu erwartende Dialog für eine einfache Label-Änderung wie folgt aus:

```
OUTPUT LABELS:↵
6 new output label seven↵
↵
ACK↵
↵
OUTPUT LABELS:↵
6 new output label seven↵
↵
```

Da die Antworten einen asynchronen Charakter haben, sollten Anwender nie automatisch annehmen, dass ihr Update auch ausgeführt wird. Nur mit den vom MultiView gesendeten Status-Updates ist die lokale Repräsentation des Server-Status zu aktualisieren.

### Einen Status-Dump anfordern

Der Anwender kann einen kompletten Bericht eines beliebigen Statusblocks vom MultiView anfordern, indem er die in Blockschrift dargestellte Kopfzeile mit einer nachfolgenden Leerzeile sendet. Im folgenden Beispiel fordert der Nutzer den MultiView auf, die Ausgabe-Label erneut zu senden.

```
OUTPUT LABELS:↵
↵
ACK↵
↵
OUTPUT LABELS:↵
0 output label 1↵
1 output label 2↵
2 output label 3↵
...
↵
```

### Verbindung überprüfen

Während einer bestehenden Verbindung zum MultiView kann ein Anwender den folgenden Leerbefehl senden, um die Reaktionsfähigkeit des MultiView zu überprüfen:

```
PING:↵
↵
```

Ist der MultiView antwortbereit, reagiert er wie gehabt mit dem Befehl „ACK“ für erkannte Befehle.

## Das RS-422-Protokoll für den Blackmagic MultiView 16

### Allgemeines

Das RS-422-Protokoll kommt dann zum Einsatz, wenn ein Blackmagic MultiView 16 als Slave-Gerät von Fremdhersteller-Routern und automatisierten Systemen gesteuert wird.

Im „Leitch Server“-Modus agiert der MultiView 16 als Router (Server) innerhalb des Leitch Serial Pass Through Protokolls, wie in Abschnitt 4 des Dokuments Leitch SPR-MAN, Überarbeitung D beschrieben. Im „Leitch Client“ Modus agiert der MultiView 16 als Steuerung (Client) innerhalb des Leitch Terminal Protokolls. Geben Sie den gewünschten Leitch-Modus in den Konfigurations-Einstellungen („Configure“) in Blackmagic MultiView Setup vor.

In diesem Dokument werden die für den Blackmagic MultiView 16 relevanten und von ihm unterstützten Befehle und Parameter des Protokolls beschrieben. Andere im Leitch-Protokoll definierte Befehle und Parameter werden zwar angenommen, jedoch nicht beantwortet.

Der serielle RS-422-Port ist als 9600 N81 konfiguriert:

9600 repräsentiert die Symbol- bzw. Baudrate bei 9600 Bit/s.

N steht für „keine Paritätsprüfung“ („no parity“) oder „keine“ („none“).

8 bezieht sich auf die Datenlänge.

1 steht für Stoppbits.

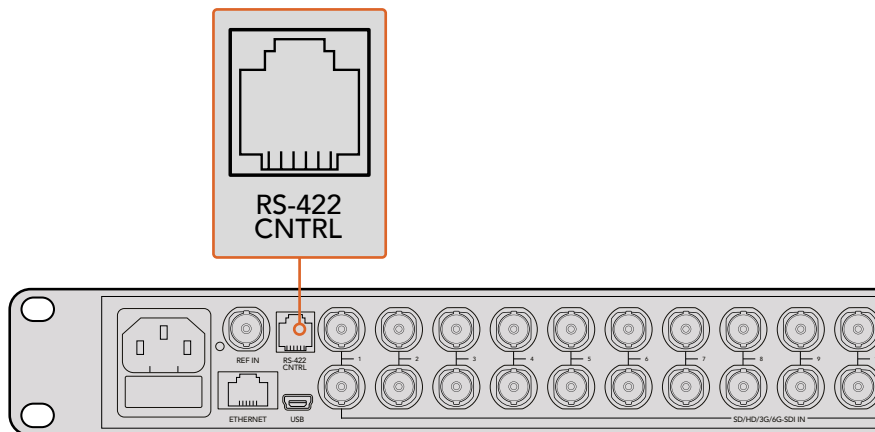
Die Konfiguration N81 setzt sich wie folgt zusammen: Daten ohne Paritätsprüfung beginnen mit einem (1) Startbit, enthalten acht (8) echte Datenbits und ein (1) Stoppbit. Es gibt insgesamt 10 Bits.

Das Protokoll ist zeilenorientiert und besteht aus maximal 250 Zeichen pro Befehl. Nutzer sollten jeden Befehl mit einem Zeilenumbruch abschließen (`\r`). Jede Antwort vom Server wird mit einem Zeilenumbruch und einem Zeilenvorschub beendet (`\r\n`).

Quellen, Ziele und Nummern sind stets durch Basis 16 – von 0 auf durchnummeriert – bestimmt. Die Werte für Ebenen liegen stets zwischen 0 bis 15 („F“). Der Blackmagic MultiView 16 verfügt über nur eine gültige Nummer – die Zahl 0.

Wird eine Verbindung mit dem seriellen Port aufgebaut, sollte der Nutzer ein Zeilenumbruchzeichen senden. Der Blackmagic MultiView 16 antwortet mit einem Prompt-Befehl `>`, dem kein Zeilenumbruch oder Zeilenvorschub folgt. Mit dem Erhalt dieses Prompts wird die erfolgreiche Verbindung bestätigt. Dieser Prompt wird immer dann erteilt, wenn der MultiView einen Befehl erhält.

Die auf den folgenden Seiten aufgeführten Befehle in orange und Werte in blau müssen wortgetreu inklusive aller Leerzeichen eingegeben werden. Das folgende Beispiel eines direkten Befehls mit Ziel-Port 7 und Quellen-Port 3@ `X:0/destination,source` wäre wie folgt einzugeben: `@ X:0/6,2`



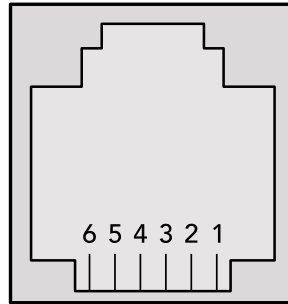
Über den seriellen RS-422-Port können Sie den Blackmagic MultiView 16 von Fremdhersteller-Routern und Automationssystemen steuern. Der Stecker ist ein RJ11-Verbinder, der auch für viele Festnetztelefonverbindungen verwendet wird. Über ein modifiziertes RS-422 zu USB Adapterkabel mit einem RJ11-Verbinder können Sie den Blackmagic MultiView 16 mit externen Controllern via USB steuern



Sowohl ein RS-422 zu USB Adapterkabel als auch der RJ11-Verbinder sind in Elektrofachgeschäften wie Digi-Key.com erhältlich. Die Pinbelegung unten gibt Ihnen eine Hilfestellung zum Anschluss eines RJ11-Verbinders an das Adapterkabel



Pin-Nr.	Funktion
Pin 1	TX +
Pin 2	TX -
Pin 3	GND
Pin 4	GND
Pin 5	RX -
Pin 6	RX +



Pinbelegung für den RJ11-Verbinder

### Meldungen

Ist eine Verbindung hergestellt und der Statusbericht aktiviert, so erhält der Nutzer über jede geänderte Routing-Vorgabe auf dem MultiView eine Meldung. Diese Meldungen werden auf zweierlei Weise dargestellt:

**S:0destination,source** Routing-Änderung

Diese Meldung zeigt an, dass der aktuell vorgegebene Quellen-Port nun dem jeweiligen Ziel-Port zugewiesen ist.

**V:0destination,source** Meldung zum voreingestellten Routing

Diese Meldung zeigt an, dass die bestehende Voreinstellung das Routing von einer bestimmten Quelle an ein bestimmtes Ziel beinhaltet.

### Globale Befehle

Allen durchgeleiteten Befehlen gehen ein @-Symbol und eine Leerstelle voraus.

Folgende Nutzerbefehle werden unterstützt:

@ ! Statusbericht deaktivieren  
Statusbericht ist automatisch deaktiviert.

@ ? Statusbericht aktivieren  
Statusbericht ist automatisch aktiviert.

@ Z: Routingtabelle zurücksetzen

Das Routing wird zurückgesetzt, sodass die erste Quelle an alle Ziele verteilt wird.

### Direkte Befehle

@ X:0/destination,source Routing ändern

@ X:0/destination,source/destination-2,source-2... Mehrere Routing-Vorgaben ändern  
Bestimmte Quellen-Ports werden bestimmten Ziel-Ports zugewiesen.  
Alle geänderten Routing-Vorgaben erzeugen S:-Meldungen.

@ X?0destination Individuellen Routing-Status anfordern  
Die an ein vorgegebenes Ziel geroutete Quelle wird als Meldung S: zurückgesendet.

@ S?0 Routing-Status für alle Ports anfordern  
Jedes Port-Paar für Quellen und Ziele wird als S:-Meldung zurückgesendet.

## Salvo-Befehle

- @ P:0/destination,source Routing-Änderung zur Warteschleife hinzufügen
- @ P:0/destination,source/destination-2,source-2... Mehrere Routing-Änderungen zur Warteschleife hinzufügen  
Vorgegebene Routing-Änderungen werden der aktuellen Salvo-Liste für die spätere Ausführung hinzugefügt.
- @ P?0destination Einzelne Statusberichte in Salvo anfordern  
Wenn eine Routing-Änderung für einen vorgegebenen Ziel-Port in die Warteschleife eingereicht ist, wird die Routing-Vorgabe als V:-Meldung zurückgesendet.
- @ V?0 Statusbericht für alle Ports in Salvo anfordern  
Jede in die Warteschleife der Salvo eingereichte Routing-Änderung wird als V:-Meldung zurückgesendet.
- @ B:C Salvo löschen
- @ B:R Salvo löschen  
Alle in der Warteschleife vorhandenen Änderungen werden gelöscht und die Salvo-Liste zurückgesetzt.
- @ B:E Salvo ausführen  
Alle in der Warteschleife vorhandenen Änderungen werden ausgeführt und alle Routing-Änderungen werden als S:-Meldung zurückgesendet.

# Hilfe

## So erhalten Sie Hilfe

Am schnellsten erhalten Sie Hilfe online über die Support-Seiten der Website von Blackmagic Design. Sehen Sie dort nach dem aktuellsten Support-Material für Ihren Blackmagic MultiView.

### Blackmagic Design Online-Support-Seiten

Die aktuellsten Versionen der Bedienungsanleitung, Produktsoftware und Support-Hinweise finden Sie im Blackmagic Support Center unter [www.blackmagicdesign.com/de/support](http://www.blackmagicdesign.com/de/support).

### Blackmagic Design Forum

Das Blackmagic Design Forum auf unserer Website ist eine praktische Ressource, die Sie für mehr Information und kreative Ideen aufsuchen können. Manchmal finden Sie dort schnellere Lösungen, da möglicherweise bereits Antworten auf ähnliche Fragen von anderen erfahrenen Anwendern und Blackmagic Design Mitarbeitern vorliegen, die Ihnen weiterhelfen. Das Forum finden Sie unter <http://forum.blackmagicdesign.com>.

### Kontaktaufnahme mit Blackmagic Design Support

Wenn unser Support-Material oder das Forum Ihnen nicht wie gewünscht hilft, gehen Sie bitte auf unsere Support-Seite und schicken Sie uns Ihre Anfrage über „Senden Sie uns eine E-Mail“. Oder klicken Sie auf „Finden Sie Ihr lokales Support-Team“ und rufen Sie Ihre nächstgelegene Blackmagic Design Support-Stelle an.

### Überprüfen der aktuell installierten Softwareversion

Um zu prüfen, welche Version der Blackmagic MultiView Software auf Ihrem Computer installiert ist, öffnen Sie die Blackmagic MultiView Anwendung. Wählen Sie im Menü „Blackmagic MultiView“ die Option „About MultiView“ (Über MultiView) und notieren Sie die Versionsnummer.

### So holen Sie sich die aktuellsten Updates

Prüfen Sie zunächst die Versionsnummer der auf Ihrem Computer installierten Blackmagic MultiView 16 Applikation. Sehen Sie dann im Blackmagic Design Support Center unter [www.blackmagicdesign.com/de/support](http://www.blackmagicdesign.com/de/support) nach den neuesten Aktualisierungen. Es empfiehlt sich in der Regel die aktuellsten Updates zu installieren. Nehmen Sie Ihre Softwareaktualisierungen jedoch vorsichtshalber nicht mitten in einem wichtigen Projekt vor.

# Gesetzliche Vorschriften und Sicherheitshinweise

## Gesetzliche Vorschriften

Entsorgung von elektrischen und elektronischen Geräten innerhalb der Europäischen Union.



Das auf dem Produkt abgebildete Symbol weist darauf hin, dass dieses Gerät nicht zusammen mit anderen Abfallstoffen entsorgt werden darf. Altgeräte müssen daher zur Wiederverwertung an eine dafür vorgesehene Sammelstelle übergeben werden. Mülltrennung und Wiederverwertung von Altgeräten tragen zum nachhaltigen Umgang mit natürlichen Ressourcen bei. Gleichzeitig wird sichergestellt, dass die Wiederverwertung nicht zulasten der menschlichen Gesundheit und der Umwelt geht. Weitere Informationen zur Entsorgung von Altgeräten sowie zu den Standorten der zuständigen Sammelstellen erhalten Sie von Ihren örtlichen Müllentsorgungsbetrieben sowie vom Händler, bei dem Sie dieses Produkt erworben haben.



Dieses Gerät wurde geprüft und entspricht den Grenzwerten für Digitalgeräte der Klasse A gemäß Abschnitt 15 der FCC-Bestimmungen für Funkstörung. Diese Grenzwerte dienen dem angemessenen Schutz gegen schädliche Störungen bei Betrieb des Geräts in einer kommerziellen Einrichtung. Geräte dieser Art erzeugen und verwenden Hochfrequenzen und können diese auch ausstrahlen. Bei Nichteinhaltung der Installations- und Gebrauchsvorschriften können sie zu Störungen beim Rundfunkempfang führen. Der Betrieb solcher Geräte im Wohnbereich führt mit großer Wahrscheinlichkeit zu Funkstörungen. In diesem Fall kann vom Betreiber verlangt werden, selbst für die Beseitigung solcher Störungen aufzukommen.

Der Betrieb unterliegt den folgenden zwei Bedingungen:

- 1 Dieses Gerät darf keine schädigenden Störungen hervorrufen.
- 2 Dieses Gerät muss alle Störungen annehmen, einschließlich Störungen, die einen unerwünschten Betrieb zur Folge haben.

Verbindungen zu HDMI-Schnittstellen müssen über hochwertige abgeschirmte HDMI-Kabel hergestellt werden.

## Sicherheitshinweise

Dieses Gerät muss an ein vorschriftsmäßig geerdetes Stromnetz angeschlossen werden.

Um das Risiko eines elektrischen Schlages zu verringern, setzen Sie das Gerät weder Tropfen noch Spritzern aus.

Das Gerät eignet sich für den Einsatz in tropischen Gebieten mit einer Umgebungstemperatur von bis zu 40 °C.

Achten Sie auf eine ausreichende Luftzufuhr um das Gerät herum, sodass die Belüftung nicht eingeschränkt wird.

Achten Sie bei der Installation im Rack darauf, dass die Luftzufuhr nicht durch andere Geräte eingeschränkt wird.

Es befinden sich keine durch den Anwender zu wartenden Teile im Inneren des Gehäuses. Wenden Sie sich für die Wartung an ein Blackmagic Design Service Center in Ihrer Nähe.



Nicht in Höhen von über 2000 m über dem Meeresspiegel einsetzen.

# Garantie

## Eingeschränkte Garantie

Für den Blackmagic MultiView gewährt die Firma Blackmagic Design eine Garantie auf Material- und Verarbeitungsfehler einschließlich Anschlüsse, Kabel, Kühllüfter, Sicherungen, LC-Display und Tasten von 12 Monaten ab dem Kaufdatum. Sollte sich ein Produkt innerhalb dieser Garantiezeit als fehlerhaft erweisen, wird die Firma Blackmagic Design nach ihrem Ermessen das defekte Produkt entweder ohne Kostenerhebung für Teile und Arbeitszeit reparieren oder Ihnen das defekte Produkt ersetzen.

Zur Inanspruchnahme der Garantieleistungen müssen Sie als Kunde Blackmagic Design über den Defekt innerhalb der Garantiezeit in Kenntnis setzen und die entsprechenden Vorkehrungen für die Leistungserbringung treffen. Es obliegt dem Kunden, für die Verpackung und den bezahlten Versand des defekten Produkts an ein spezielles von Blackmagic Design benanntes Service Center zu sorgen und hierfür aufzukommen. Sämtliche Versandkosten, Versicherungen, Zölle, Steuern und sonstige Ausgaben im Zusammenhang mit der Rücksendung von Waren an uns, ungeachtet des Grundes, sind vom Kunden zu tragen.

Diese Garantie gilt nicht für Mängel, Fehler oder Schäden, die durch unsachgemäße Handhabung oder unsachgemäße oder unzureichende Wartung und Pflege verursacht wurden. Blackmagic Design ist im Rahmen dieser Garantie nicht verpflichtet, die folgenden Serviceleistungen zu erbringen: a) Behebung von Schäden infolge von Versuchen Dritter, die Installation, Reparatur oder Wartung des Produkts vorzunehmen, b) Behebung von Schäden aufgrund von unsachgemäßer Handhabung oder Anschluss an nicht kompatible Geräte, c) Behebung von Schäden oder Störungen, die durch die Verwendung von nicht Blackmagic-Design-Ersatzteilen oder -Verbrauchsmaterialien entstanden sind, d) Service für ein Produkt, das verändert oder in andere Produkte integriert wurde, sofern eine solche Änderung oder Integration zu einer Erhöhung des Zeitaufwands oder zu Schwierigkeiten bei der Wartung des Produkts führt. ÜBER DIE IN DIESER GARANTIEERKLÄRUNG AUSDRÜCKLICH AUFGEFÜHRTE ANSPRÜCHE HINAUS ÜBERNIMMT BLACKMAGIC DESIGN KEINE WEITEREN GARANTIEN, WEDER AUSDRÜCKLICH NOCH STILLSCHWEIGEND. DIE FIRMA BLACKMAGIC DESIGN UND IHRE HÄNDLER LEHNEN JEGLICHE STILLSCHWEIGENDEN GARANTIEN IN BEZUG AUF AUSSAGEN ZUR MARKTGÄNGIGKEIT UND GEBRAUCHSTAUGLICHKEIT FÜR EINEN BESTIMMTEN ZWECK AB. DIE VERANTWORTUNG VON BLACKMAGIC DESIGN, FEHLERHAFTEN PRODUKTEN ZU REPARIEREN ODER ZU ERSETZEN, IST DIE EINZIGE UND AUSSCHLIESSLICHE ABHILFE, DIE GEGENÜBER DEM KUNDEN FÜR ALLE INDIREKTEN, SPEZIELLEN, NEBEN- ODER FOLGESCHÄDEN ZUR VERFÜGUNG GESTELLT WIRD, UNABHÄNGIG DAVON, OB BLACKMAGIC DESIGN ODER DER HÄNDLER VON DER MÖGLICHKEIT SOLCHER SCHÄDEN ZUVOR IN KENNTNIS GESETZT WURDE. BLACKMAGIC DESIGN IST NICHT HAFTBAR FÜR JEGLICHE WIDERRECHTLICHE VERWENDUNG DER GERÄTE DURCH DEN KUNDEN. BLACKMAGIC HAFTET NICHT FÜR SCHÄDEN, DIE SICH AUS DER VERWENDUNG DES PRODUKTS ERGEBEN. NUTZUNG DES PRODUKTS AUF EIGENE GEFAHR.

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Enero 2022

# Manual de instalación y funcionamiento

Blackmagicdesign

# Blackmagic MultiView



Blackmagic MultiView



## Bienvenido

Gracias por haber adquirido este producto.

Ojalá compartas nuestro sueño de transformar la industria televisiva en un sector verdaderamente creativo, donde todos tengan acceso a la mejor calidad en materia de imagen. Gracias al modelo MultiView 16, hoy es posible reunir 16 monitores profesionales en un solo televisor UHD moderno y económico. Este dispositivo ofrece una extraordinaria solución para supervisar diversas señales a una fracción del precio de otros equipos profesionales.

Por otro lado, la versión Blackmagic MultiView 4 es ideal para unidades de producción móviles o más pequeñas y brinda la posibilidad de monitorizar hasta cuatro fuentes en definición HD o UHD. Incluso pueden utilizarse varias unidades en simultáneo, conectando la salida de una a la otra, según las necesidades de cada caso.

Este manual de instrucciones contiene toda la información necesaria para instalar ambos dispositivos. Sin embargo, siempre es aconsejable consultar a un técnico si no estás seguro de qué es una dirección IP, o si no tienes suficientes conocimientos sobre redes informáticas. Este equipo puede controlarse mediante el programa Videohub Control, que se instala fácilmente. De todas formas, hay algunas configuraciones técnicas que es preciso ajustar luego de la instalación.

En la página de soporte técnico de nuestro sitio web [www.blackmagicdesign.com/es](http://www.blackmagicdesign.com/es) encontrarás la versión más reciente de este manual y el software para los dispositivos. Por último, no olvides registrar este producto al descargar actualizaciones para que podamos mantenerte informado sobre nuevos lanzamientos. Trabajamos constantemente para desarrollar herramientas innovadoras y superarnos, de modo que nos encantaría conocer tu opinión.

Esperamos que aproveches al máximo las prestaciones que ofrece este equipo.

**Grant Petty**

Director ejecutivo de Blackmagic Design

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# Primeros pasos

Para comenzar a utilizar el dispositivo, solo es necesario conectar el cable de alimentación, una fuente de video SDI y monitores o televisores a las salidas HDMI o SDI. Esta sección incluye toda la información necesaria.

## Conexión del cable de alimentación

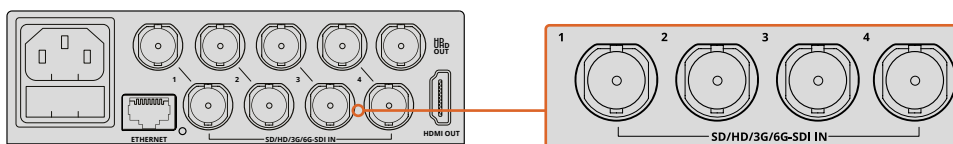
Para suministrar energía eléctrica al dispositivo, simplemente conecte un cable de alimentación IEC estándar a la entrada para corriente alterna de 110-240 V, situada en el panel trasero.

**SUGERENCIA:** El modelo MultiView 4 es compatible con la tecnología PoE+, es decir que solo es necesario conectarlo a un conmutador Ethernet para suministrarle energía eléctrica. Si el dispositivo también se encuentra conectado a una toma de corriente, ante una interrupción en el suministro, comenzará a utilizar automáticamente la fuente de alimentación que permanece activa.

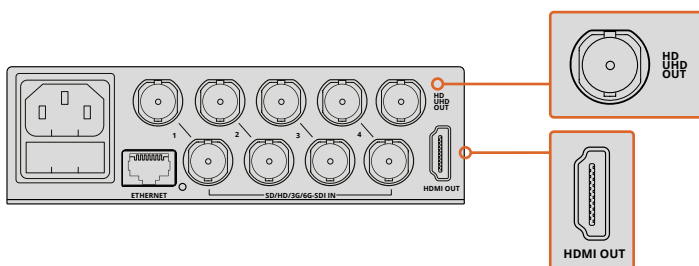
A efectos de alimentar el modelo MultiView 4 HD, conecte el transformador suministrado a la entrada de 6-36 V para corriente continua. Esta incluye una rosca que permite sujetar el cable a la unidad para evitar que se desconecte accidentalmente.

## Conexión de monitores y fuentes SDI

Conecte las fuentes SDI a cualquiera de las entradas correspondientes en la unidad. El dispositivo detectará el formato automáticamente y lo indicará en la pantalla. Para ver la señal transmitida, basta con conectar un monitor a las salidas SDI o HDMI.



Conecte las fuentes a las entradas SDI.

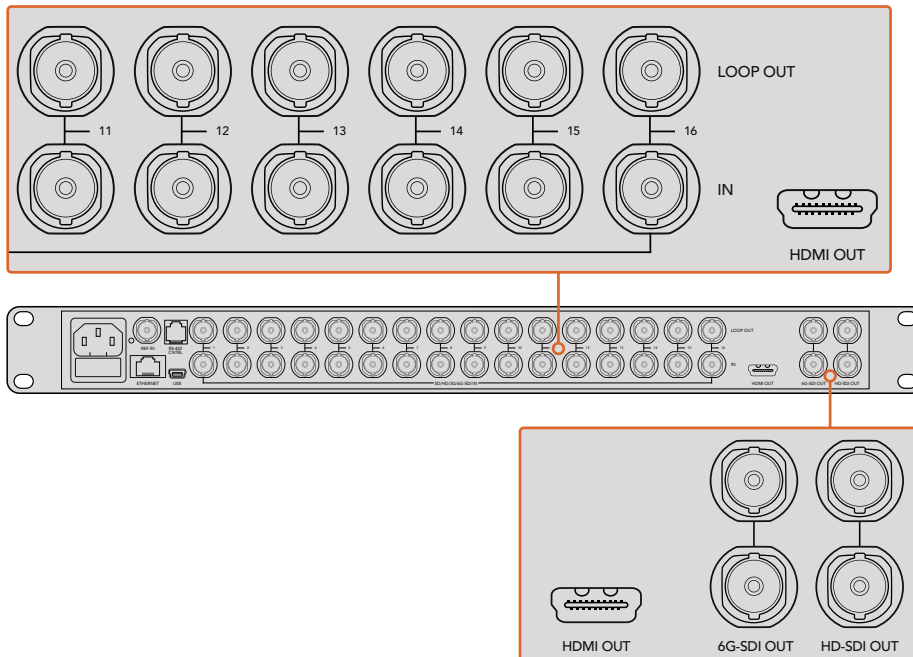


Conecte los monitores a las salidas SDI o HDMI.

Al conectar un monitor con tecnología HDMI a la salida correspondiente, el dispositivo detectará automáticamente las resoluciones compatibles y ajustará las imágenes de manera conveniente.

**SUGERENCIA:** El modelo MultiView 16 permite transmitir señales en distintas definiciones mediante las salidas SDI HD/6G y HDMI.

Los modelos Blackmagic MultiView 4 y MultiView 16 disponen de salidas derivadas arriba de cada entrada que permiten conectarlos a otros equipos audiovisuales.



**SUGERENCIA:** En el modelo MultiView 16, todas las conexiones SDI y HDMI permiten monitorizar imágenes en definición HD y UHD simultáneamente. El modelo MultiView 4 brinda la posibilidad de seleccionar el formato de salida (UHD o HD) mediante los interruptores integrados, el panel inteligente opcional o el programa Blackmagic MultiView Setup.

## Selección del modo de visualización

Es posible cambiar el modo de visualización según las necesidades del usuario. Por ejemplo, los modelos Blackmagic MultiView 4 y Blackmagic MultiView 4 HD permiten ver cuatro señales distintas en una cuadrícula de 2x2 o una sola imagen en pantalla completa, mientras que la versión Blackmagic MultiView 16 ofrece opciones adicionales, tales como 3x3 o 4x4.

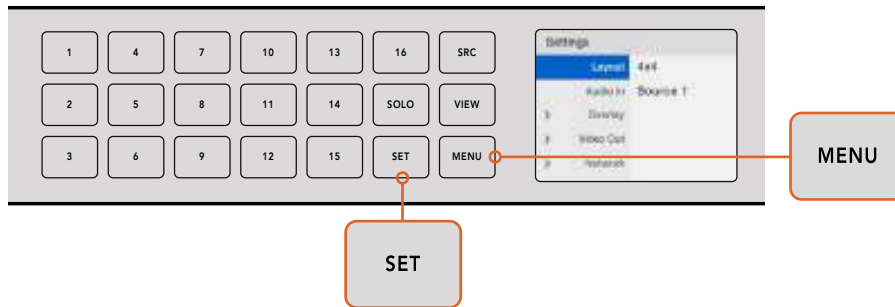
### Blackmagic MultiView 16

Utilice los botones, el mando giratorio y la pantalla del panel frontal para cambiar el modo de visualización en este modelo. También es posible supervisar las imágenes en pantalla completa presionando el botón **SOLO** y, a continuación, seleccionando la entrada.

- 1 Presione el botón **MENU** en el panel de control frontal para acceder al menú de ajustes en la pantalla del dispositivo.
- 2 La primera opción disponible es **Layout**. Esta siempre aparece destacada al ingresar al menú. Presione el botón **SET** para realizar cambios.

- 3 Seleccione la opción 4x4 moviendo el mando giratorio en el panel de control frontal, a fin de ver 16 fuentes en una misma pantalla. Al modificar un ajuste, los botones **SET** y **MENU** se encienden en forma intermitente. Esto significa que se han realizado cambios. Para confirmarlos, presione el botón **SET** nuevamente. Para cancelar, presione **MENU**.
- 4 Presione **SET** para confirmar.

También es posible cambiar el modo de visualización desde la opción de configuración en el programa utilitario del dispositivo.

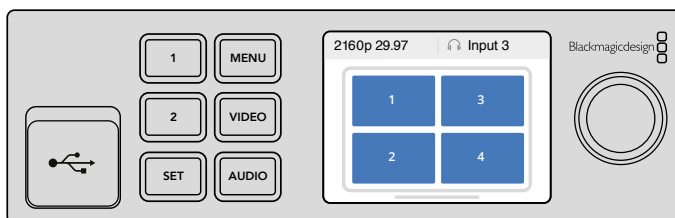


Presione **MENU** para modificar el modo de visualización en el modelo MultiView 16. Utilice el mando giratorio para seleccionar una opción y, a continuación, presione **SET**. La opción 4x4 permite ver 16 fuentes en una misma pantalla.

## Blackmagic MultiView 4

La opción por defecto en este modelo es 2x2. Para ver la imagen en pantalla completa, presione el botón 1 en el panel inteligente instalado en el dispositivo. Para volver al modo predeterminado, pulse el botón 2.

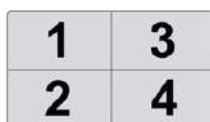
También es posible cambiar el modo de visualización desde la opción de configuración en el programa utilitario del dispositivo.



Presione 1 para ver la imagen en pantalla completa o 2 para seleccionar el modo 2x2.

## Selección del modo de visualización en el modelo MultiView 4 HD

El modo de visualización predeterminado de este modelo es una cuadrícula de 2x2 que muestra las señales correspondientes a las entradas 1 y 3 en la fila superior, y aquellas correspondientes a las entradas 2 y 4 en la inferior. Para ver la imagen en pantalla completa, coloque el interruptor 6 en la posición **ON**.



Modo de visualización 2x2 en el modelo MultiView 4 HD con cuatro señales SDI

Consulte el apartado *Configuración de interruptores en el modelo Blackmagic MultiView 4 HD* para obtener más información al respecto.

## Conexión a redes

Todos los modelos MultiView son compatibles con el protocolo de Ethernet para equipos Blackmagic Videohub. Esto brinda la posibilidad de controlarlos a distancia, a través de paneles de control para dispositivos Videohub, cuando se encuentran instalados en lugares de difícil acceso. Por ejemplo, pueden emplearse unidades Blackmagic Smart Control y Master Control. Una vez conectado a la red, el equipo MultiView podrá comunicarse con los demás dispositivos que forman parte de esta. A su vez, esto facilita su manejo a distancia.

Para conectar el equipo a una red, siga los pasos descritos a continuación:

- 1 Encienda el dispositivo.
- 2 Conecte la unidad a una red o un equipo informático mediante un cable RJ45.

Una vez conectada, deberá verificar que la dirección IP sea diferente a la de los demás equipos que forman parte de la red. La configuración de red puede modificarse desde el menú que figura en la pantalla del modelo MultiView 16 o a través del panel inteligente para equipos Teranex Mini, al instalarlo en la versión MultiView 4. Alternativamente, este procedimiento puede realizarse mediante el programa Blackmagic MultiView Setup al conectar el dispositivo a un equipo informático mediante un puerto USB. Para obtener más información al respecto, consulte el apartado *Modificación de ajustes*.

## Conexiones de control serial

El puerto RS-422 brinda la posibilidad de controlar el dispositivo mediante equipos de otros fabricantes. Para obtener más información al respecto, consulte el apartado *Configuración mediante el programa Blackmagic MultiView Setup*.

## Instalación en bastidores

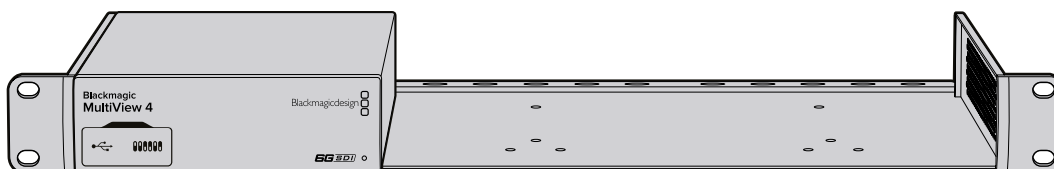
El modelo MultiView 16 cuenta con una altura de 1 U, por lo que cabe cómodamente en bastidores o baúles de transporte.

Por otro lado, la versión MultiView 4 es más compacta, de manera que resulta útil para unidades móviles con espacio reducido, aunque también puede instalarse en bastidores. El estante para bastidores especialmente diseñado para dispositivos Teranex Mini cuenta con capacidad para un máximo de tres convertidores y ocupa un espacio de 1 U, por lo que brinda la posibilidad de conectar varios equipos en serie y añadir tantas fuentes como sean necesarias.

Para su instalación, si el dispositivo cuenta con soportes de goma, quítelos y sujételo al estante atornillándolo mediante los orificios en la base. Asimismo, el estante incluye dos paneles sin controles para cubrir los espacios no utilizados, si no es necesario instalar unidades adicionales.

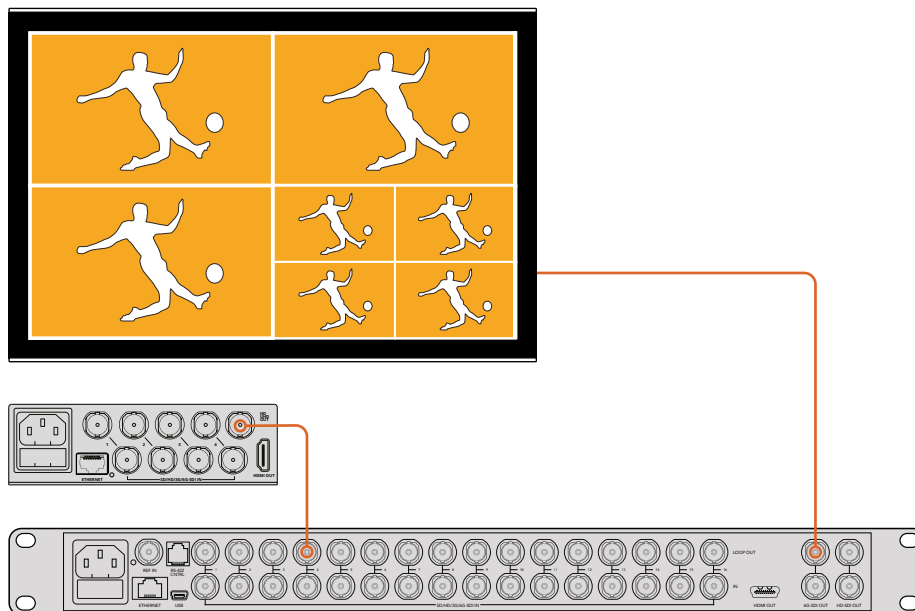
Visite el sitio web de Blackmagic Design para obtener más información al respecto.

Cuando el equipo se coloca en el estante, es posible acceder a los conectores desde la parte trasera de la unidad.



## Uso de varios dispositivos MultiView

Es posible combinar varias unidades para crear una solución personalizada. Esto es particularmente útil en los casos en los que se requiere supervisar fuentes adicionales. Simplemente conecte la salida de uno de los equipos a la entrada de otro para agregar más fuentes. Se recomienda conectar la salida de la unidad principal a un monitor UHD para conseguir una mayor nitidez.



Al conectar varios dispositivos en serie, es posible monitorizar una mayor cantidad de contenidos.

Esto es todo lo que necesita saber para comenzar a utilizar el dispositivo. Para obtener más información sobre otras prestaciones, consulte las secciones correspondientes en este manual.

## Modificación de ajustes

Existen varias maneras de cambiar la configuración del dispositivo.

- **Panel de control frontal** – El modelo MultiView 16 cuenta con un panel de control integrado y una pantalla LCD que permiten cambiar los ajustes de configuración.
- **Interruptores** – Los pequeños interruptores situados en el panel frontal del modelo Blackmagic MultiView 4 y en el lateral de la versión Blackmagic MultiView 4 HD permiten modificar ajustes moviéndolos con la punta de un bolígrafo. Para acceder a ellos en el modelo Blackmagic MultiView 4, abra la cubierta protectora de goma. En la base de cada unidad, se incluye una leyenda a fin poder identificarlos fácilmente.
- **Panel de control inteligente de Teranex Mini** – El modelo MultiView 4 brinda la posibilidad de intercambiar el módulo frontal por el panel inteligente para convertidores Teranex Mini, que cuenta con botones de control, un mando giratorio y una pantalla LCD. Este modelo ofrece comandos de control intuitivos y funciona de manera similar al panel de control del equipo MultiView 16.
- **Blackmagic MultiView Setup** – Este programa permite cambiar los ajustes de configuración mediante una red Ethernet o un puerto USB. Consulte el apartado *Uso del programa Blackmagic MultiView Setup* para obtener más información al respecto.

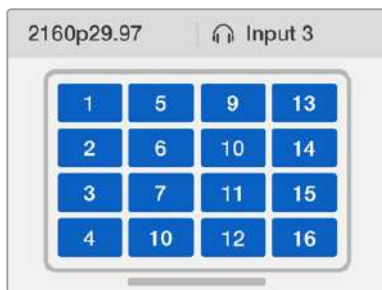
- **Programa Videohub Control** – Este programa brinda la posibilidad de distribuir las señales y seleccionar distintos modos de visualización o la fuente de audio cuando los dispositivos Blackmagic MultiView 4 y Blackmagic MultiView 16 están conectados a una red. Consulte el apartado *Uso del programa Videohub Control* para obtener más información al respecto.

## Panel de control frontal en el modelo Blackmagic MultiView 16

El panel de control frontal de este modelo ofrece una alternativa sencilla para configurar el dispositivo.

Al encenderlo, se verá la pantalla de inicio. Esta proporciona información general según se describe a continuación:

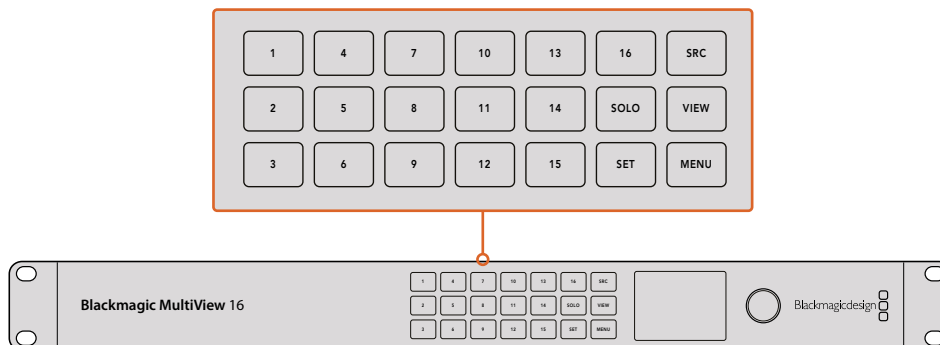
- **Frecuencia de imagen de salida** – La frecuencia de imagen de la señal transmitida al monitor mediante la salida SDI aparece en la esquina superior izquierda de la pantalla.
- **Fuente de audio** – La fuente de audio integrada en la señal SDI o HDMI que se transmite al monitor se muestra al lado de la frecuencia de imagen.
- **Disposición de las señales** – Indica el modo de visualización seleccionado.



Por defecto, el modelo MultiView 16 muestra la pantalla de inicio en el monitor LCD frontal. Esta incluye información sobre la disposición de los contenidos visualizados, la frecuencia de imagen de la señal transmitida mediante la salida SDI y la fuente utilizada para integrar canales de audio en dicha señal.

### Botones del panel de control

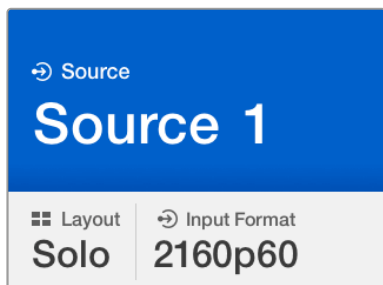
Los botones iluminados del panel de control frontal simplifican la modificación de diversos ajustes, así como la selección de fuentes y modos de visualización.



Los botones del panel frontal del modelo MultiView 16 permiten modificar ajustes y cambiar el modo de visualización fácilmente.

## Botón SOLO

Permite supervisar imágenes en modo de pantalla completa. Seleccione la fuente que desea visualizar presionando uno de los botones numerados en el panel frontal. Para volver a la pantalla anterior, presione el botón **SOLO** nuevamente.



La función **SOLO** permite visualizar las fuentes en modo de pantalla completa.

## Botón MENU

Presione este botón para acceder al menú de ajustes. Para cambiar la configuración, utilice el mando giratorio y el botón **SET**. A continuación, vuelva a oprimir **MENU** para regresar a la pantalla de inicio.

## Botón SET

Presione este botón para seleccionar el ajuste que desea modificar. Luego de realizar un cambio, presiónelo nuevamente para confirmar.

## Botones SRC y VIEW

Estos botones se utilizan para seleccionar las fuentes que se desean visualizar. Asimismo, permiten desplazarse hacia arriba o abajo por las distintas opciones de un menú.

## Mando giratorio

El mando giratorio se utiliza para seleccionar las diferentes opciones disponibles en un menú. Al presionarlo, permite regresar a la pantalla anterior.

Gírelo hacia la izquierda o la derecha para seleccionar una de las dos opciones disponibles en un menú. También permite activar o desactivar ciertas funciones al presionarlo una vez.

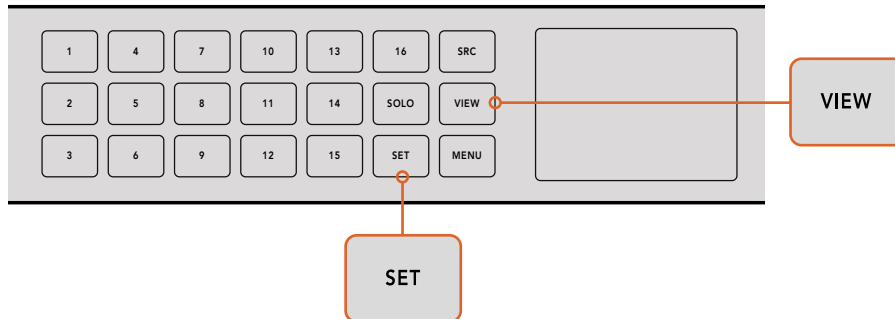
## Asignación de fuentes a las distintas ventanas en el modelo MultiView 16

Una de las ventajas más importantes que ofrece este dispositivo es la posibilidad de asignar las fuentes conectadas a diferentes ventanas. A su vez, es posible cambiar la forma en que se visualizan de manera sencilla. Por ejemplo, puede resultar necesario ver la señal correspondiente a la entrada 5 en la ventana 1.

Para determinar qué fuente se visualiza en cada ventana, siga los pasos descritos a continuación:

- 1 Presione el botón **VIEW** en el panel de control frontal. La pantalla mostrará la ventana asignada con un fondo de color azul.
- 2 Presione uno de los botones numerados para seleccionar la ventana correspondiente. De manera alternativa, es posible utilizar el mando giratorio para cambiar de una opción a otra. Oprima el botón **SET** para confirmar.
- 3 Presione el botón **SRC**. La fuente aparecerá destacada en la pantalla del dispositivo.

- 4 Presione uno de los botones numerados en el panel de control para seleccionar la entrada correspondiente. De manera alternativa, es posible utilizar el mando giratorio para cambiar de una opción a otra.
- 5 Presione el botón **SET** para confirmar.



Para asignar una fuente a una ventana, oprima el botón **VIEW** y luego **SET** para confirmar la selección.

### Selección del modo de visualización en el modelo MultiView 16

Es posible determinar la cantidad de señales que se muestran en la pantalla del monitor. Por ejemplo, el modo 2x2 permite ver en forma simultánea las imágenes provenientes de cuatro fuentes conectadas al dispositivo. Seleccione un modo de visualización adecuado según la cantidad de equipos conectados.

Existen cuatro opciones disponibles:

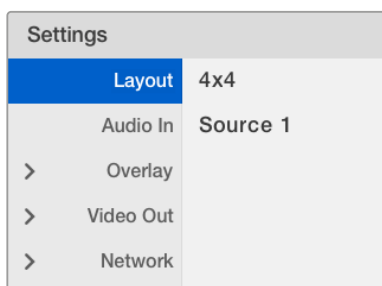
- **2x2** – Divide la pantalla en 4 partes iguales. En caso de conectar un monitor UHD, cada fuente se visualizará en alta definición.
- **3x3** – Divide la pantalla en 9 partes iguales.
- **4x4** – Divide la pantalla en 16 partes iguales.

**SUGERENCIA:** También es posible ver las imágenes en pantalla completa. Para ello, presione el botón **SOLO** en el panel de control y luego seleccione la fuente que desea supervisar. En el modelo Blackmagic Multiview 4, oprima el botón 1 del panel frontal.

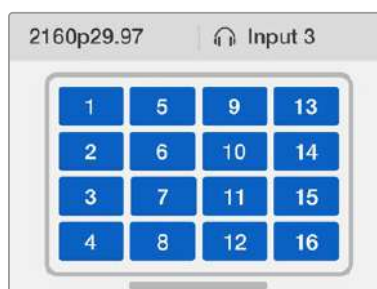
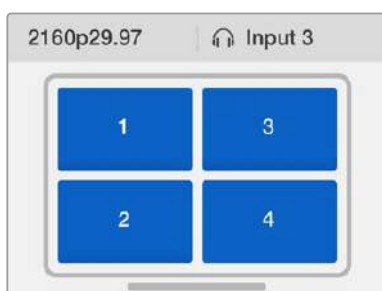


Para asignar una fuente a una ventana, utilice el mando giratorio o el botón **VIEW**.





Seleccione el elemento que desea modificar y presione **SET** para abrir la ventana de ajustes.



Seleccione entre los tres modos de visualización disponibles según la cantidad de equipos conectados.

## Entrada para audio

Esta opción permite seleccionar la entrada a través de la cual se recibe el audio que se integra en la señal transmitida.

## Información en pantalla

El menú **Overlay** permite activar o desactivar ciertas funciones que se muestran en la pantalla del monitor.

Opciones disponibles:

- **Borders** – Permite separar las ventanas mediante bordes.
- **Labels** – Permite ver u ocultar los nombres de las fuentes. Estos pueden modificarse desde el programa Blackmagic MultiView Setup.
- **Audio Meters** – Permite ver u ocultar los vúmetros digitales correspondientes a cada fuente. Se muestran los dos primeros canales integrados en cada señal SDI, lo cual brinda la posibilidad de controlar la intensidad del volumen junto con las imágenes.
- **SDI Tally** – Al conectar la salida principal de un mezclador ATEM a la entrada 16 del dispositivo, es posible visualizar un borde alrededor de la imagen que indica si dicha fuente se encuentra al aire. Esta función se puede activar o desactivar.

Para evitar errores, las conexiones de entrada del equipo deben coincidir con los números de las entradas en el mezclador. De lo contrario, es posible que el borde se visualice en una ventana que no corresponde.

## Opciones de salida

El menú **Video Out** permite determinar las preferencias para las señales transmitidas por el dispositivo.

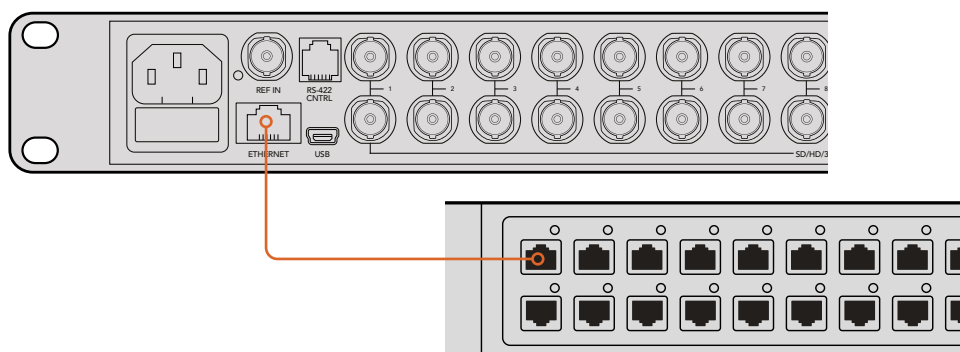
- **Video Format** – Esta opción brinda la posibilidad de modificar la frecuencia de imagen de la señal UHD transmitida a 2160p29.97 o 2160p25. En el caso de las imágenes en alta definición, dicho parámetro se ajusta según el valor seleccionado para la salida UHD. Presione el mando giratorio para cancelar los cambios o regresar al menú anterior.
- **HD Output** – Seleccione el modo entrelazado o progresivo para las imágenes transmitidas mediante la salida HD. Para señales en formato 2160p29.97, las opciones disponibles son 1080p29.97 o 1080i59.94. Del mismo modo, al seleccionar una resolución de 2160p25, es posible elegir entre 1080p25 o 1080i50.

## Red

El menú **Network** permite determinar los valores para la dirección IP, la máscara de subred y la puerta de enlace cuando el dispositivo se conecta a una red.

Para establecer la dirección IP del dispositivo MultiView 16, siga los pasos descritos a continuación:

- 1 Presione el botón **MENU** en el panel de control frontal y utilice el mando giratorio para seleccionar la opción **Networking**.
- 2 Presione el botón **SET** para acceder al menú **Network Settings**.
- 3 Utilice el mando giratorio para seleccionar la opción **IP Address**.
- 4 Presione el botón **SET** para seleccionar el primer octeto de la dirección. Utilice el mando giratorio para cambiar el valor.
- 5 Presione **SET** para confirmar el primer octeto. Luego repita este procedimiento para los demás. Las direcciones de la subred y la puerta de enlace pueden asignarse de la misma manera.
- 6 Presione el botón **MENU** dos veces para regresar a la pantalla de inicio.



Al conectar el equipo a una red Ethernet, podrá controlarlo a distancia.

Network Settings	
IP Address	192.168.10.160
Subnet	255.255.255.0
Gateway	192.168.10.1

Utilice el mando giratorio o el botón **VIEW** del panel de control para modificar los valores de la dirección IP.

## Panel inteligente

El modelo MultiView 4 ofrece la posibilidad de reemplazar el panel frontal básico por la versión Teranex Mini Smart Panel, a fin de facilitar el acceso a los distintos parámetros mediante los botones, el mando giratorio y la pantalla LCD integrada.

### Instalación del panel inteligente

La instalación es sencilla y los paneles pueden intercambiarse sin necesidad de apagar la unidad.

- 1 Utilice un destornillador Pozidriv 2 para quitar los cuatro tornillos M3 situados en los laterales del panel original y quítelo con cuidado.
- 2 Notará que hay un pequeño tubo de plástico transparente en la cara interna del panel original. Este dirige la luz proveniente del led en el interior de la unidad, a fin de iluminar el indicador situado en la parte exterior, y debe permanecer sujeto al panel.

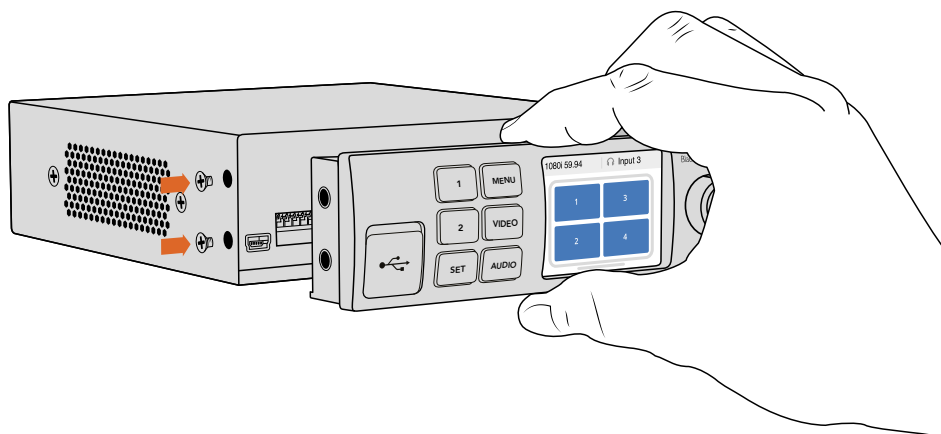
**SUGERENCIA:** Al colocar nuevamente el panel básico, compruebe que el tubo transparente quede alineado con la ranura en la parte frontal de la unidad.

- 3 Compruebe que el conector situado en la parte posterior del panel inteligente y el conector correspondiente en la parte frontal del equipo estén alineados. A continuación, empuje el panel suavemente hasta que calce en su lugar. Este debería encajar perfectamente en la parte frontal del dispositivo.
- 4 Vuelva a colocar los tornillos M3 del panel original.

Si el dispositivo se encuentra instalado en un estante para bastidores, es necesario quitarlo para poder acceder a los tornillos del panel frontal.

Consulte el apartado *Instalación en bastidores* para obtener más información al respecto.

Cabe señalar que, en el modelo Blackmagic MultiView 4, es posible acceder al puerto USB aun cuando el panel inteligente está instalado. Para ello, basta con retirar la cubierta de goma que cubre la conexión. Aunque el panel inteligente tapa los interruptores de la unidad, no es necesario utilizarlos, puesto que todos los ajustes pueden modificarse directamente desde la pantalla frontal.



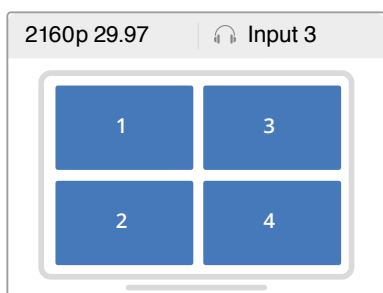
Al instalar el panel inteligente, se recomienda sostenerlo de manera que el pulgar y los demás dedos estén alineados con el conector situado en el panel posterior, a modo de facilitar el montaje.

**SUGERENCIA:** El panel básico original es sumamente resistente y se puede instalar nuevamente en el dispositivo si es necesario protegerlo en entornos de mucha actividad o en los que hay una gran cantidad de cables.

## Herramientas del panel inteligente

Este panel de control ofrece prestaciones similares a las del modelo MultiView 16. Por defecto, el monitor LCD mostrará la pantalla de inicio con información general, según se describe a continuación:

- **Frecuencia de imagen transmitida** – La frecuencia de imagen de la señal transmitida al monitor mediante la salida SDI aparece en la esquina superior izquierda de la pantalla.
- **Fuente de audio** – La fuente de audio integrada en la señal SDI o HDMI que se transmite al monitor se muestra al lado de la frecuencia de imagen.
- **Disposición de las señales** – Muestra el modo de visualización 2x2.

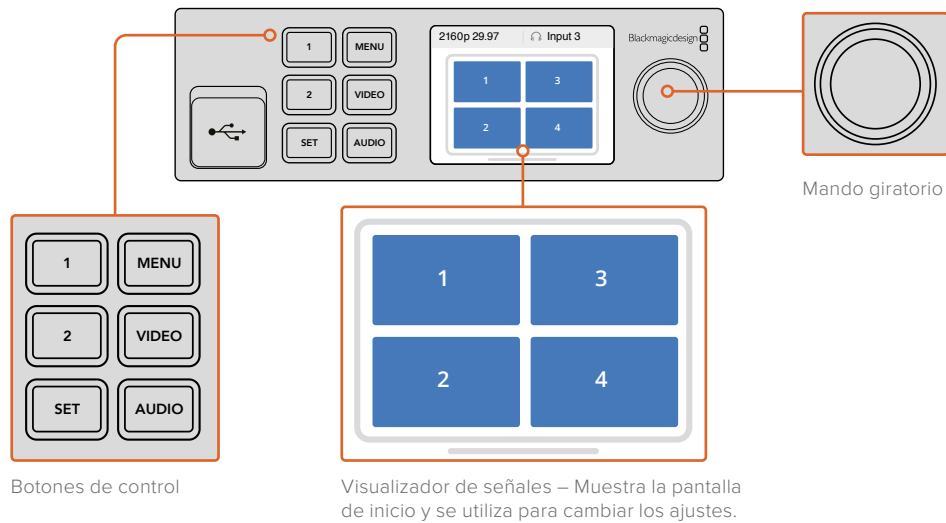


Por defecto, se muestra la pantalla de inicio en el monitor LCD frontal del panel de control inteligente.

## Botones de control y mando giratorio

El panel inteligente cuenta con un mando giratorio y varios botones que permiten seleccionar diferentes opciones en el menú de ajustes del modelo MultiView 4.

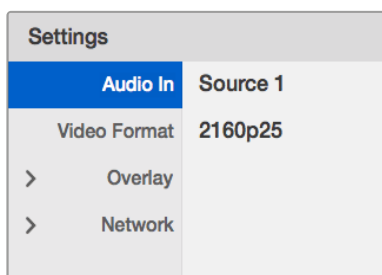
- **Botones 1 y 2** – Pueden utilizarse para aumentar o disminuir valores numéricos o desplazarse dentro del menú.
- **SET** – Permite confirmar la opción seleccionada después de modificar un ajuste mediante los botones 1 y 2.
- **MENU** – Permite acceder al menú de ajustes del dispositivo o regresar a las opciones previas.
- **Botones VIDEO y AUDIO** – Son de uso exclusivo en el conversor Teranex Mini y no ofrecen prestaciones para el equipo MultiView 4.
- **Mando giratorio** – Se puede girar hacia la izquierda o la derecha para ajustar valores numéricos y seleccionar distintas opciones en cada menú.



## Configuración mediante el panel inteligente

El panel de control inteligente brinda la posibilidad de configurar el dispositivo de manera conveniente y confirmar los cambios a través de la pantalla LCD.

Para acceder al menú de configuración en el modelo MultiView 4, presione el botón **Menú**. Allí podrá modificar los parámetros que se describen a continuación.



Seleccione el elemento que desea modificar y presione **SET** para navegar por los ajustes de configuración. Utilice el mando giratorio para acceder a las distintas opciones.

### Entrada para audio

Esta opción permite seleccionar la entrada a través de la cual se recibe el audio que se integra en la señal transmitida.

## Formato

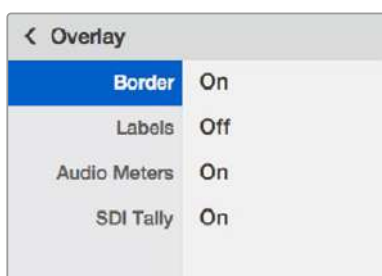
Es posible seleccionar entre formatos de salida UHD o HD a 29.97 o 25 f/s. Utilice este ajuste para ver las resoluciones y frecuencias de imagen disponibles.

## Información en pantalla

El submenú **Overlay** permite activar o desactivar ciertas funciones que se muestran en la pantalla del monitor.

Las opciones disponibles son:

- **Borders:** Permite separar las ventanas mediante bordes.
- **Labels:** Permite ver u ocultar los nombres de las fuentes. Estos pueden modificarse desde el programa Blackmagic MultiView Setup.
- **Audio Meters:** Permite ver u ocultar los vúmetros digitales correspondientes a cada fuente. Se muestran los dos primeros canales integrados en cada señal SDI, lo cual brinda la posibilidad de controlar la intensidad del volumen junto con las imágenes.

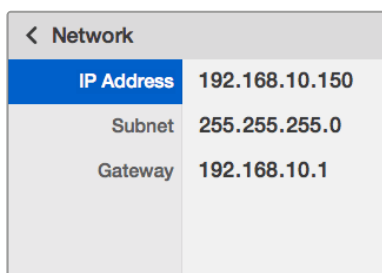


## Red

El menú **Network** permite determinar los valores para la dirección IP, la máscara de subred y la puerta de enlace cuando el dispositivo se conecta a una red.

Para establecer la dirección IP del dispositivo MultiView 4, siga los pasos descritos a continuación:

- 1 Presione el botón **MENU** en el panel de control frontal y utilice el mando giratorio para seleccionar la opción **Networking**.
- 2 Presione el botón **SET** para acceder al menú **Network Settings**.
- 3 Utilice el mando giratorio para seleccionar la opción **IP Address**.
- 4 Presione el botón **SET** para seleccionar el primer octeto de la dirección. Utilice el mando giratorio para cambiar el valor.
- 5 Presione **SET** para confirmar el primer octeto. Luego repita este procedimiento para los demás. Las direcciones de la subred y la puerta de enlace pueden asignarse de la misma manera.
- 6 Presione el botón **MENU** dos veces para regresar a la pantalla de inicio.

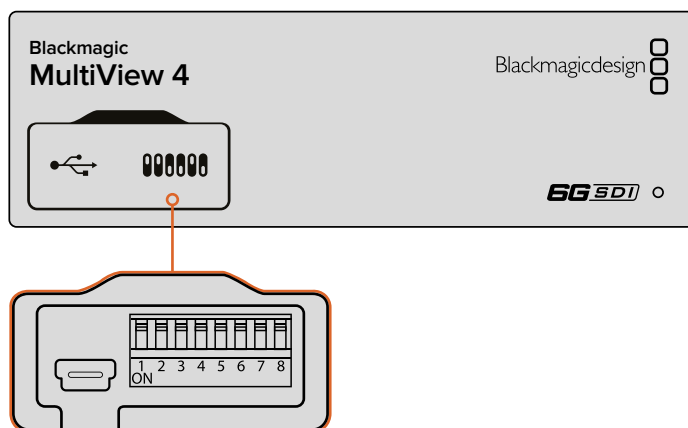


Utilice el mando giratorio o los botones 1 y 2 del panel inteligente para ingresar los valores en los ajustes de red.

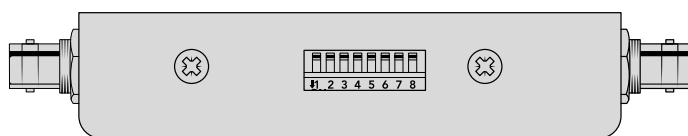
## Configuración mediante interruptores

Los modelos Blackmagic MultiView 4 y MultiView 4 HD incluyen pequeños interruptores que permiten modificar los ajustes. En la versión Blackmagic MultiView 4, estos se encuentran en el panel frontal, detrás de la cubierta protectora de goma.

En el modelo Blackmagic MultiView 4 HD, estos se encuentran en el lateral de la unidad.



Utilice la punta de un bolígrafo para cambiar la posición de los interruptores.



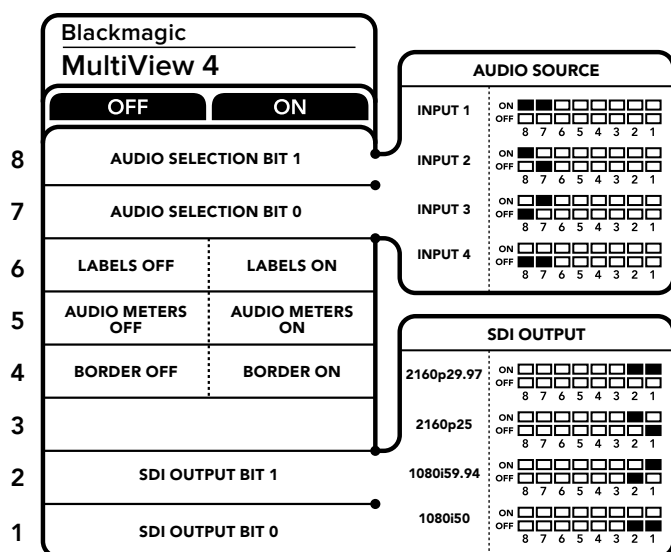
En el modelo Blackmagic MultiView 4 HD, estos se encuentran en el lateral de la unidad.

## Interruptores

En la parte inferior del dispositivo se proporciona un diagrama de los interruptores. Compruebe que los ajustes coincidan con dicho esquema observando los números correspondientes a cada interruptor del 1 al 8, de izquierda a derecha.

**SUGERENCIA:** La configuración de los interruptores se explica en la base de cada dispositivo. No obstante, al actualizar el sistema operativo interno, se añaden nuevas prestaciones. Por tal motivo, recomendamos consultar la versión más reciente de este manual para obtener más información al respecto. Esta se encuentra disponible en nuestra página de soporte técnico: [www.blackmagicdesign.com/es/support](http://www.blackmagicdesign.com/es/support).

## Configuración de interruptores en el modelo Blackmagic MultiView 4



Configuración de interruptores en el modelo Blackmagic MultiView 4

Los interruptores de este modelo ofrecen las siguientes posibilidades:

### Interruptores 8 y 7 – Selección de audio

Los interruptores 8 y 7 se representan mediante los bits 1 y 0 respectivamente. Según la posición en la que se encuentren, es posible elegir qué canales de audio se integran en la señal transmitida a través de las salidas SDI o HDMI.

#### Tabla de referencia para la selección de audio

Fuente de audio	Interruptor 8	Interruptor 7	Diagrama
Entrada 1	ON	ON	
Entrada 2	ON	OFF	
Entrada 3	OFF	ON	
Entrada 4	OFF	OFF	

### Interruptor 6 – Rótulos

Coloque este interruptor en la posición **ON** para ver los rótulos en cada una de las ventanas. Estos pueden modificarse desde el programa Blackmagic MultiView Setup. Colóquelo en la posición **OFF** para ocultarlos.

### Interruptor 5 – Vúmetros

Colóquelo este interruptor en la posición **ON** para ver los vúmetros digitales en cada ventana. Muévelo a la posición **OFF** para ocultarlos.

### Interruptor 4 – Bordes

Coloque este interruptor en la posición **ON** para ver bordes entre las ventanas. Muévelo a la posición **OFF** para ocultarlos.



## Interruptores 2 y 1

Los interruptores 2 y 1 se representan mediante los bits 1 y 0, respectivamente. Según la posición en la que se encuentren, es posible elegir el formato de la señal SDI transmitida.

## Interruptores 2 y 1

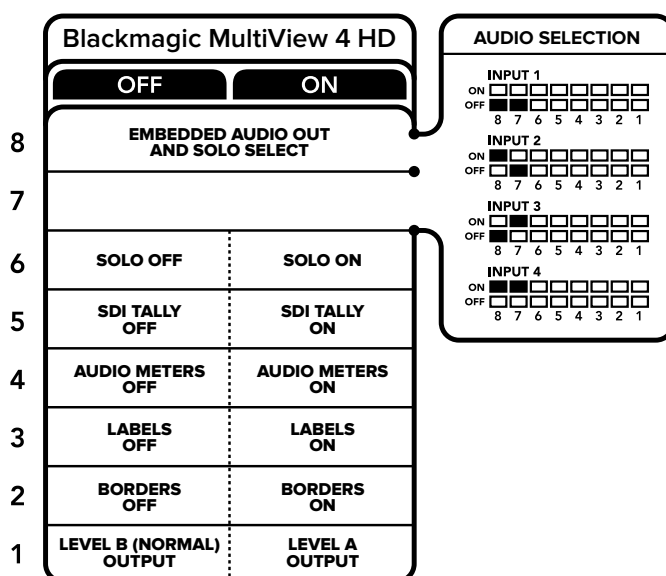
Los interruptores 2 y 1 se representan mediante los bits 1 y 0, respectivamente. Según la posición en la que se encuentren, es posible elegir el formato de la señal SDI transmitida.

### Tabla de referencia para la salida SDI

Salida SDI	Interruptor 2	Interruptor 1	Diagrama
2160p29.97	ON	ON	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
2160p25	ON	OFF	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
1080i59.94	OFF	ON	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
1080i50	OFF	OFF	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

**NOTA:** La instalación del panel inteligente anula la configuración de la unidad efectuada mediante los interruptores. El dispositivo Blackmagic MultiView 4 mantendrá los últimos ajustes realizados a través de cualquiera de las opciones disponibles para ello. Al quitar el panel o actualizar el equipo, es posible que sea necesario mover los interruptores individualmente para aplicar la nueva configuración.

## Configuración de interruptores en el modelo Blackmagic MultiView 4 HD



El diagrama situado en la base del dispositivo proporciona toda la información necesaria para modificar su configuración.

Los interruptores de este modelo ofrecen las siguientes posibilidades:

### Interruptores 8 y 7 – Integrar audio SDI y ver en pantalla completa

Estos interruptores ofrecen varias combinaciones que permiten integrar el audio proveniente de cualquier entrada en la señal transmitida. En el modo de pantalla completa, el sonido acompaña a las imágenes, de forma que es posible emplear los interruptores para seleccionar las fuentes.

**Tabla de referencia para canales de audio**

Fuente de audio	Interruptor 8	Interruptor 7	Diagrama
Entrada 1	OFF	OFF	
Entrada 2	ON	OFF	
Entrada 3	OFF	ON	
Entrada 4	ON	ON	

### Interruptor 6 – Ver en pantalla completa

Coloque este interruptor en la posición **ON** para ver la imagen en pantalla completa. Muévelo a la posición **OFF** para regresar a la cuadrícula de 2x2.

El audio en el modo de pantalla completa corresponde a la fuente visualizada. Utilice los interruptores 7 y 8 para combinar fuentes de audio y video en este modo, o para seleccionar la entrada de audio en el modo 2x2.

### Interruptor 5 – Indicadores

Coloque este interruptor en la posición **ON** para ver los bordes indicadores alrededor de cada imagen. Muévelo a la posición **OFF** para ocultarlos.

Cabe destacar que todos los datos adicionales, incluidos el código de tiempo, los subtítulos opcionales y los comandos de control de la cámara, se transmiten sin modificaciones al seleccionar el modo de pantalla completa.

**SUGERENCIA:** Es posible configurar el número de entrada para cada ventana mediante el programa Blackmagic MultiView Setup. Compruebe que este coincida con el número indicado en el mezclador, a fin de que los bordes se muestren correctamente. Consulte el apartado *Configuración de indicadores* para obtener más información al respecto.

### Interruptor 4 – Vúmetros

Coloque este interruptor en la posición **ON** para ver los vúmetros digitales en cada imagen. Muévelo a la posición **OFF** para ocultarlos.

### Interruptor 3 – Rótulos

Coloque este interruptor en la posición **ON** para ver los rótulos en cada imagen. Muévelo a la posición **OFF** para ocultarlos.

### Interruptor 2 – Bordes

Coloque este interruptor en la posición **ON** para ver las líneas que dividen las imágenes. Muévelo a la posición **OFF** para ocultarlas.

### Interruptor 1 – SDI 3G nivel A o B

Coloque este interruptor en la posición **ON** u **OFF** para transmitir señales nivel A o B, respectivamente. Esto brinda compatibilidad con otros equipos SDI.

# Uso del programa

## Blackmagic MultiView Setup

Este programa brinda la posibilidad de actualizar el software interno y configurar todos los modelos Blackmagic MultiView desde cualquier equipo informático con sistema operativo Mac o Windows. Es muy intuitivo y fácil de usar. Además, si el modelo MultiView 4 se encuentra conectado a una red, es posible modificar los ajustes mediante una conexión Ethernet, sin necesidad de recurrir al puerto USB.

### Instalación

El programa Blackmagic MultiView Setup es compatible con Windows (64 bits) o con las versiones Sierra y High Sierra del sistema operativo macOS.



Para instalar el programa Blackmagic MultiView Setup haga doble clic en el instalador y siga las instrucciones que aparecen en la pantalla.

### Instalación en Windows

- 1 Haga clic dos veces en el archivo de instalación proporcionado con el dispositivo o situado en la carpeta de descargas si ha obtenido el programa desde el sitio web de Blackmagic Design.
- 2 Siga las instrucciones y acepte los términos de la licencia para que Windows instale el programa automáticamente.

Haga clic en el botón de inicio y a continuación seleccione **All Programs > Blackmagic Design > MultiView**. El programa Blackmagic MultiView Setup se encuentra dentro de esta carpeta.

## Instalación en Mac OS X

- 1 Haga clic dos veces en el archivo de instalación proporcionado con el dispositivo o situado en la carpeta de descargas si ha obtenido el programa desde el sitio web de Blackmagic Design.
- 2 Siga las instrucciones para que el sistema operativo instale el programa automáticamente.

Se creará una carpeta en **Aplicaciones** denominada **Blackmagic MultiView** que contiene el programa.

## Pantalla de inicio

Al ejecutar el programa, se abrirá una ventana que muestra la pantalla de inicio. Si hay varias unidades MultiView conectadas a la red, es posible seleccionarlas haciendo clic en las flechas situadas en los márgenes.

Para acceder a las opciones de configuración, haga clic en la imagen del producto o en el ícono circular situado debajo de esta.



El programa Blackmagic MultiView Setup permite cambiar la configuración del dispositivo mediante una conexión a una red Ethernet o un puerto USB.

## Configuración mediante el programa Blackmagic MultiView Setup

Haga clic en el ícono de ajustes para abrir la ventana correspondiente. La pantalla de configuración incluye tres pestañas denominadas **Sources**, **Views** y **Configure**. En los modelos Blackmagic MultiView 4 y MultiView 4 HD, la segunda opción no está disponible, dado que no es posible modificar el modo de visualización mediante el programa Videohub Control. Por otra parte, la opción **Tally** permite configurar los indicadores en el modelo Blackmagic MultiView 4 HD.

**SUGERENCIA:** Compruebe que los ajustes de red en la unidad coincidan con los del equipo informático para poder ver las fuentes.



Utilice el programa Blackmagic MultiView Setup para asignar nombres a las fuentes, a modo de poder identificarlas rápidamente en pantalla.

- **Sources** – Permite modificar el nombre que identifica a cada entrada. Estos cambios se reflejan en los rótulos de las fuentes visualizadas en el monitor.
- **Views** – Esta función solo cobra relevancia al controlar el modelo MultiView 16 mediante el programa Videohub Control. Al cambiar el nombre de las fuentes, podrá identificarlas rápidamente en el panel de destino de este programa.
- **Video Output** – Esta opción permite seleccionar el formato y la relación de aspecto para señales en definición estándar en el modelo Blackmagic MultiView 4 HD.
- **Configure** – Permite modificar ciertos ajustes relativos al nombre del dispositivo, el formato de las señales salientes y la información visualizada en la pantalla, además de otros parámetros correspondientes a la red y la conexión serial.

## Fuentes

### Rótulos identificatorios

Es conveniente asignar nombres a las fuentes para poder identificarlas rápidamente en la pantalla del monitor. También es posible guardar y aplicar conjuntos de rótulos para utilizarlos en distintos proyectos sin tener que volver a ingresar el nombre correspondiente a cada entrada.

Los nombres se visualizan en la interfaz del programa Videohub Control y en los paneles conectados a la misma red.

Para modificar el nombre de una entrada, siga los pasos descritos a continuación:

- 1 Haga clic en la pestaña **Sources**.
- 2 En la lista **Input Labels**, haga clic en el nombre de la fuente que desea modificar e ingrese uno nuevo en el cuadro de texto.
- 3 Haga clic en **Save** para confirmar.

## Salidas

### Rótulos identificatorios

El modelo MultiView 16 brinda la posibilidad de cambiar los rótulos de las ventanas de visualización para facilitar su reconocimiento en el programa Videohub Control.

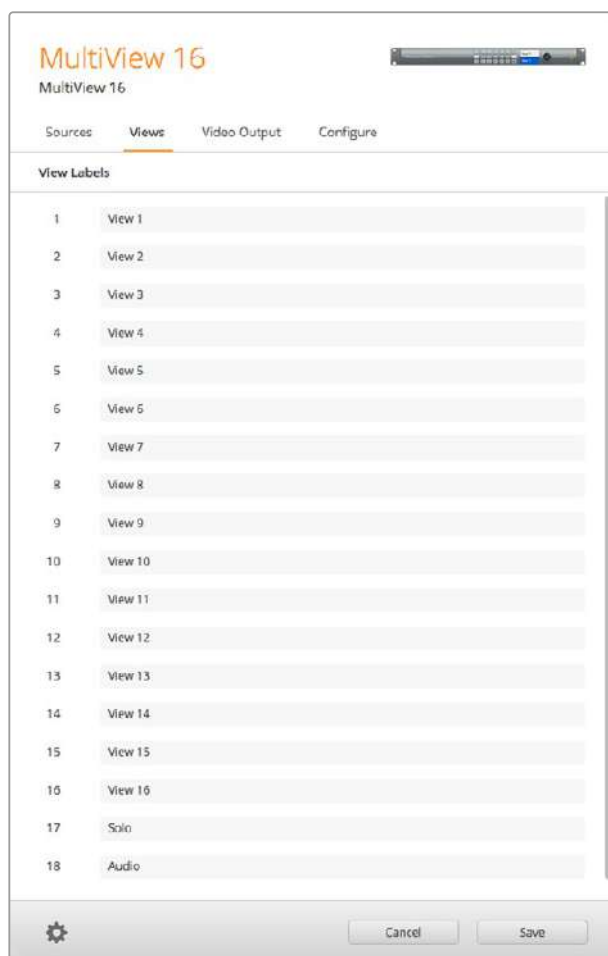
Para modificar los rótulos de las ventanas de visualización, siga los pasos descritos a continuación:

- 1 Haga clic en la pestaña **Views**.
- 2 Haga clic en el nombre de la fuente que desea modificar y escriba uno nuevo en el cuadro de texto.
- 3 Haga clic en **Save** para confirmar.

Si los nombres no han sido modificados, notará que la salida 17 se denomina **Solo**, mientras que la 18 está designada como **Audio**.

Es posible cambiar el nombre asignado a la salida 17. Esta corresponde al modo de visualización **Solo** que se activa desde el panel frontal del dispositivo. De este modo, se facilita su identificación cuando el equipo se controla mediante el programa Blackmagic Videohub Control. Dicha modificación se verá reflejada en la interfaz gráfica de la aplicación.

La salida 18 está vinculada a la opción **Audio In**, que permite integrar el audio en la señal saliente. Al igual que en el caso anterior, es posible modificar este rótulo para identificarla fácilmente cuando el dispositivo se maneja a través del programa Blackmagic Videohub Control.



En el modelo MultiView 16, es posible personalizar los nombres de las opciones **Solo** y **Audio** al manejar el dispositivo desde el programa Blackmagic Videohub Control.

## Salida de video

### Formato y salida en HD

Los formatos disponibles difieren levemente según el modelo empleado.

El modelo Blackmagic MultiView 16 permite transmitir en definición HD y UHD simultáneamente. También es posible seleccionar la frecuencia de imagen. Por ejemplo, para emitir una señal en el formato que generalmente se utiliza en Estados Unidos, seleccione la opción 2160p29.97.

En este ejemplo, al elegir el formato 2160p29.97, las opciones disponibles para la señal HD son 1080p29.97 o 1080i59.94.



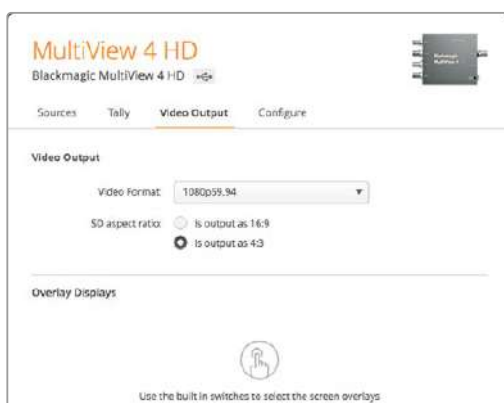
Los botones de opción para el modelo MultiView 16 en la pestaña **Video Output** permiten elegir el modo de visualización, el formato UHD, la salida HD y la relación de aspecto para señales en SD.

Por el contrario, el modelo MultiView 4 solo permite establecer la definición de la señal saliente (UHD o HD) y la frecuencia de imagen. Estas opciones están disponibles en el menú desplegable **Video Format**.



En el modelo MultiView 4, la pestaña **Video Output** incluye un menú desplegable con opciones para la resolución y la frecuencia de imagen.

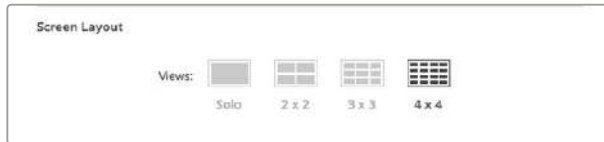
En la versión Blackmagic MultiView 4 HD, el menú **Video Format** permite seleccionar la frecuencia de imagen para señales en alta definición y el modo de exploración (progresivo o entrelazado). Asimismo, se brindan las opciones **16:9** o **4:3** para la relación de aspecto de las señales en definición estándar.



La pestaña **Video Output** permite seleccionar la resolución, la relación de aspecto y el modo de exploración en el modelo Blackmagic MultiView 4 HD.

## Selección del modo de visualización

Al igual que el menú **Layout** en la pantalla del modelo MultiView 16, el programa utilitario permite cambiar el modo de visualización de las fuentes en el monitor. Haga clic en una de las opciones disponibles para seleccionarla.



La pestaña **Video Output** permite seleccionar el modo de visualización.

## Configuración de los indicadores

El modelo Blackmagic MultiView 4 HD ofrece distintas opciones para la configuración de los bordes indicadores.



Opciones de la pestaña **Tally** en el programa MultiView Setup.

Al elegir que el indicador corresponda a la entrada del mezclador, es posible introducir el número de cámara (1 a 99) en el campo de texto respectivo para las entradas 1-4.

## Cancelar sistema de señalización

Las señales de los indicadores que muestran si una imagen está al aire se transmiten mediante la señal de retorno recibida a través de la última entrada del dispositivo MultiView. Sin embargo, en ocasiones puede resultar necesario que todas las cámaras estén asociadas a todas las ventanas de visualización.

Al emplear cámaras de Blackmagic con un mezclador ATEM u otro dispositivo SDI similar fabricado por terceros, es posible anular el sistema de señalización. De esta forma, el modelo MultiView 4 HD intentará determinar la presencia de estas señales en cada fuente SDI. Esto significa que el sistema de señalización se procesa independientemente para cada entrada, y no a través de la señal de retorno principal.



**SUGERENCIA:** El modo **Tally Override** funciona en cámaras URSA Mini, URSA Mini 4K, URSA Mini Pro y URSA Broadcast conectadas a un mezclador ATEM o a un dispositivo Blackmagic Camera Fiber Converter. Consulte el manual de la tarjeta Blackmagic 3G-SDI Shield for Arduino para obtener más información sobre cómo utilizar mezcladores o sistemas de señalización diseñados por otros fabricantes.

## Relación de aspecto en señales SD

Al emplear una fuente en formato SD 4:3, compruebe que la opción **Set to 4:3** esté marcada. Esto permite garantizar que las imágenes se muestren con una relación de aspecto adecuada.

En el caso de señales en formato SD 16:9, marque la opción **Set to 16:9** para visualizar las imágenes correctamente.

Al conectar una fuente en definición estándar al modelo Blackmagic MultiView 4 HD, es posible elegir entre las opciones **16:9** y **4:3** para la relación de aspecto. Seleccione una de ellas en la pestaña **Video Output**.



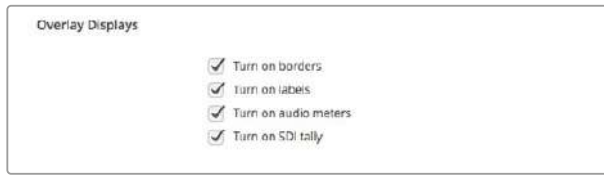
Opciones para la relación de aspecto en la pestaña **Video Output** del programa MultiView Setup.

## Información en pantalla

En los modelos Blackmagic MultiView 16 y Blackmagic MultiView 4, marque las casillas en la pestaña **Overlay** para activar las distintas funciones según sea necesario.

Opciones disponibles:

- **Borders:** Permite separar las ventanas mediante bordes.
- **Labels:** Permite ver u ocultar los nombres de las fuentes. Estos pueden modificarse desde el programa Blackmagic MultiView Setup.
- **Audio Meters:** Permite ver u ocultar los vúmetros digitales correspondientes a cada fuente. Se muestran los dos primeros canales integrados en cada señal SDI, lo cual brinda la posibilidad de controlar la intensidad del volumen junto con las imágenes.
- **Indicador de señal al aire:** Al conectar la salida principal de un mezclador ATEM a la entrada 16 del modelo Blackmagic MultiView 16, es posible ver un borde alrededor de la imagen que indica si se encuentra al aire. Esta función puede activarse marcando la opción **Turn on SDI tally** en la sección **Overlay Displays**. Para desactivarla, basta con desmarcar dicha casilla. Asigne un número de entrada mediante el programa utilitario para garantizar que el indicador se muestre correctamente.



En los modelos Blackmagic MultiView 16 y Blackmagic MultiView 4, es posible activar o desactivar diversas opciones a través del menú **Overlay** en la pestaña **Configure**.

**SUGERENCIA:** Para evitar errores, las conexiones de entrada del equipo deben coincidir con los números de las entradas en el mezclador. De lo contrario, es posible que el borde se visualice en una ventana que no corresponde.

## Configuración

### Nombre del dispositivo

La pestaña **Configure** varía según el modelo del dispositivo.

En el caso de las versiones Blackmagic MultiView 16 y Blackmagic MultiView 4, incluye las opciones **Details**, **Overlay** y **Network Settings**. En el modelo Blackmagic MultiView 4 HD, muestra el rótulo y la versión del sistema operativo interno de la unidad, pero no contiene ajustes.

Para cambiar el nombre del dispositivo en el modelo Blackmagic MultiView 16 o Blackmagic MultiView 4, a fin de facilitar su identificación al controlar la unidad a distancia, siga los pasos descritos a continuación:

- 1 Haga clic en la pestaña **Configure**.
- 2 En la opción **Details**, haga clic sobre el cuadro de texto correspondiente al nombre e ingrese uno nuevo.
- 3 Haga clic en **Save**.



Para cambiar el nombre del dispositivo a fin de facilitar su identificación en la red, utilice el programa Blackmagic MultiView Setup.

## Opciones para redes y conexiones seriales

Estos ajustes pueden modificarse desde el programa Blackmagic MultiView Setup cuando el dispositivo se encuentra conectado a un equipo informático a través del puerto USB. Asimismo, es posible realizar cambios mediante los menús en la pantalla del panel de control frontal. En el modelo MultiView 4, solo están disponibles los ajustes de red.

Para modificarlos, haga clic en el cuadro de texto e ingrese los valores con el teclado o marque la casilla correspondiente.



The image shows two screenshots of the Blackmagic MultiView Setup software interface. The top screenshot is titled "Network Settings" and contains three input fields: "IP Address" with the value "192.168.10.160", "Subnet Mask" with "255.255.255.0", and "Gateway" with "192.168.10.1". The bottom screenshot is titled "Serial Control" and shows the "Leitch protocol:" section with two radio button options: "Leitch Client" (which is unselected) and "Leitch Server" (which is selected).

Al conectarse a una red, es posible que sea necesario cambiar los ajustes correspondientes en el modelo MultiView 16. La sección **Serial Control** permite seleccionar entre las opciones **Leitch Client** o **Leitch Server**, según los requisitos de configuración del puerto RS-422.

Para configurar esta función, conecte la unidad a un equipo informático a través de un cable USB y siga los pasos descritos a continuación:

- 1 Ejecute el programa Blackmagic MultiView Setup y haga clic en la imagen del producto o en el ícono de configuración a fin de seleccionar el dispositivo.
- 2 Haga clic en el botón **Configure** y elija **Leitch Client** en la opción **Leitch Protocol** para que el dispositivo actúe como cliente de un panel de control conectado, o **Leitch Server** para controlar la unidad desde un sistema de automatización o otro conmutador de control.
- 3 Haga clic en el botón **Save** para confirmar los cambios.



The image shows a screenshot of the "Serial Control" configuration window. It features the "Leitch protocol:" label followed by two radio button options: "Leitch Client" (unselected) and "Leitch Server" (selected).

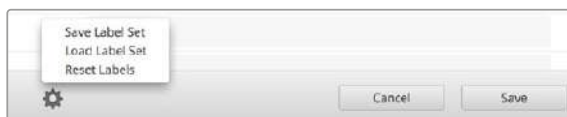
Al utilizar el puerto serial de control RS-422, seleccione **Client** o **Server**.

## Cómo guardar y aplicar rótulos en conjunto

Si se utilizan determinados rótulos con frecuencia, es posible guardarlos en un archivo para poder aplicarlos en cualquier momento.

Para guardar un conjunto de rótulos, haga clic en el ícono de configuración a fin de acceder a la opción **Label Set** y seleccione **Save Label Set**. Elija una ubicación para el archivo y luego haga clic en **Save**.

Para aplicar un conjunto de rótulos, haga clic en el ícono de configuración a fin de acceder a la opción **Label Set** y seleccione **Load Label Set**. Busque el archivo guardado y haga clic en **Load**.



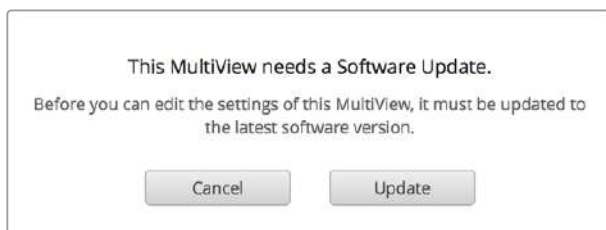
Utilice el programa Blackmagic MultiView Setup para guardar y aplicar rótulos.

## Actualización del software interno

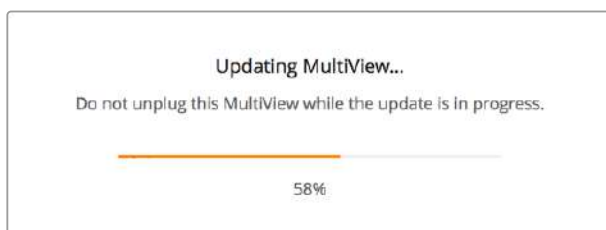
En ocasiones es necesario actualizar el software interno del dispositivo, a modo de obtener prestaciones innovadoras o una mayor compatibilidad con formatos nuevos y equipos modernos.

Para actualizar el software interno, siga los pasos descritos a continuación:

- 1 Conecte el dispositivo a un equipo informático mediante el puerto USB o una red Ethernet.
- 2 Ejecute el programa Blackmagic MultiView Setup para ver la lista de dispositivos conectados a la red.
- 3 Haga clic en la imagen del producto o en el ícono de configuración para seleccionar el dispositivo.
- 4 El programa le informará si es necesario instalar una nueva versión del software interno.
- 5 En caso afirmativo, haga clic en el botón **Update**. Esto dará inicio al proceso de actualización. No desconecte el dispositivo durante este procedimiento.
- 6 Haga clic en el botón **Close** al finalizar la actualización.



Haga clic en el botón **Update** para comenzar la actualización.



No desconecte el dispositivo durante este procedimiento.

## Uso del programa Videohub Control

Al instalar este programa en equipos informáticos con sistema operativo Mac o Windows, es posible seleccionar la ventana en la cual se visualiza una determinada fuente cuando el dispositivo se encuentra conectado a una red. Las fuentes aparecen en el panel **Sources** de la interfaz gráfica, mientras que las ventanas figuran en el panel **Destinations**. El programa Videohub Control forma parte del instalador Videohub, que se encuentra disponible en la página de soporte técnico de Blackmagic Design: <https://www.blackmagicdesign.com/es/support>.

**NOTA:** El modelo Blackmagic MultiView 16 permite utilizar el programa Videohub Control para asignar fuentes a las ventanas de visualización, seleccionar del modo de pantalla completa o integrar canales de audio en la señal saliente, entre otros ajustes. En el modelo Blackmagic MultiView 4, dicho programa permite cambiar la fuente de audio integrada en la señal transmitida.

### Selección del modelo MultiView 16

Luego de ejecutar el programa, haga clic en el ícono de configuración para acceder al menú emergente **Settings** y escoja la opción **Select Videohub**. Seleccione el dispositivo en la lista de equipos conectados.

Si se han asignado nombres a las fuentes, estos aparecerán en la interfaz gráfica. De lo contrario, figurarán como Input 1, Input 2, Input 3, etc.



Selección de fuentes para las distintas ventanas del dispositivo MultiView 16 mediante el programa Videohub Control.

## Visualización de fuentes

Para ver qué fuente se ha asignado a una determinada ventana, haga clic en una de las opciones disponibles en el panel **Destinations**. Esta se destacará mediante un recuadro, al igual que la fuente correspondiente en el panel **Sources**, lo cual permite determinar claramente la vinculación entre ambas.

## Asignación de fuentes a ventanas

Seleccione una ventana en el panel **Destinations** y luego haga clic sobre una de las fuentes disponibles en el panel **Sources** para asignarla en forma inmediata.

## Entrada «Solo»

Es posible seleccionar una fuente para visualizarla en modo de pantalla completa, al presionar el botón **SOLO** en el panel frontal del dispositivo. Para ello, haga clic en **Solo Input** y luego seleccione una de las opciones disponibles en el panel **Sources**.

## Entrada de audio

En los modelos Multiview 4 y Multiview 16, es posible utilizar el botón **Audio Input** del programa Videohub Control para seleccionar la señal SDI cuyo audio se desea transmitir a través de la salida para visualización múltiple del dispositivo. Para ello, haga clic en **Audio Input** y luego seleccione una de las opciones disponibles en el panel **Sources**.



En el programa Videohub Control, es posible utilizar los botones **Audio Input** y **Solo** para cambiar dichos ajustes.

# Información para desarrolladores

## Protocolo Blackmagic Videohub 2.3 para redes Ethernet

### Resumen

El dispositivo es compatible con el protocolo Blackmagic Videohub para redes Ethernet. Se accede al mismo mediante la dirección IP del equipo y el puerto TCP 9990.

**NOTA:** Los modelos Blackmagic MultiView 4 y Blackmagic MultiView 16 brindan compatibilidad con redes Ethernet. Sin embargo, la mayoría de las funciones solo están disponibles en este último. En el modelo Blackmagic MultiView 4, es posible cambiar la fuente de audio integrada en la señal transmitida.

El dispositivo envía la información en bloques que contienen un encabezado en mayúsculas seguido de dos puntos. Cada uno de estos está formado por varias líneas y termina con una línea en blanco. A su vez, cada línea concluye con un carácter que indica el comienzo de otra.

Las líneas que se envían al dispositivo pueden finalizar con un salto de línea, un retorno de carro o ambos.

Una vez conectado, el dispositivo transmite un volcado inicial completo con información sobre su estado, y posteriormente se envían actualizaciones cada vez que ocurre un cambio.

A fin de evitar problemas debidos a futuras modificaciones en el protocolo, el cliente debe ignorar los bloques no reconocidos que figuren antes de la línea en blanco final. Asimismo, es preciso ignorar las líneas que no es posible identificar en cada bloque.

### Preámbulo

El primer bloque que envía el dispositivo es el preámbulo del protocolo.

```
PROTOCOL PREAMBLE:↵  
Version: 2.3↵  
↵
```

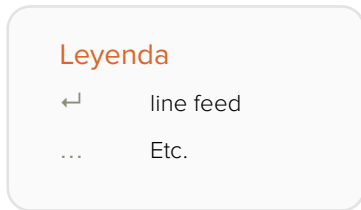
El número indica la versión del protocolo. Cuando se realizan cambios compatibles, se actualiza el dígito secundario. En caso de efectuar modificaciones incompatibles, se actualiza el dígito principal.

### Información del dispositivo

El bloque siguiente contiene información sobre el dispositivo conectado. En este caso, se muestran las características del equipo:

```
MULTIVIEW DEVICE:↵  
Device present: true↵  
Model name: Blackmagic MultiView 16↵  
Video inputs: 16↵  
Friendly name:  
Unique ID:  
Video processing units: 0↵  
Video outputs: 16↵  
Video monitoring outputs: 0↵  
Serial Ports:  
↵
```

En este ejemplo, se trata del modelo Blackmagic MultiView 16, que cuenta con la misma cantidad de entradas y salidas.



La versión 2.3 del protocolo Ethernet para dispositivos Videohub se publicó con la versión 4.9.1. del programa interno.

### Volcado inicial

Los dos bloques siguientes brindan información sobre los nombres asignados a las entradas y salidas.

```
INPUT LABELS:↵
0 VTR 1↵
1 VTR 2↵
...
↵
```

```
OUTPUT LABELS:↵
0 Output feed 1↵
1 Output feed 2↵
...
↵
```

NOTA: Las conexiones siempre se numeran a partir de 0, de modo que la entrada 0 en el protocolo corresponde a la conexión 1 del dispositivo.

Los tres bloques siguientes indican la ventana asignada a cada fuente.

```
VIDEO OUTPUT ROUTING:↵
0 5↵
1 3↵
...
↵
```

El siguiente bloque describe el estado de sincronización de las señales visualizadas en cada una de las ventanas. La letra O (owned) determina los puertos utilizados por el cliente activo (es decir, con la misma dirección IP), mientras que la L (locked) designa aquellos correspondientes a otros clientes. Los puertos disponibles se indican mediante un U (unlocked).

```
VIDEO OUTPUT LOCKS:↵
0 U↵
1 U↵
...
↵
```

El último bloque es el de configuración.

```
Layout: SOLO or 2x2 or 3x3 or 4x4
Output format: 50i or 50p or 60i or 60p
Solo enabled: True or False
Widescreen SD enable: True or False
Display border: True or False
Display labels: True or False
Display audio meters: True or False
Display SDI tally: True o False
```



### Actualizaciones de estado

Cuando se cambia alguno de los parámetros del dispositivo, este envía nuevamente un bloque de estado que solo contiene los elementos modificados.

Si se realizan varios cambios, la actualización incluirá múltiples elementos:

```
OUTPUT LABELS:↵  
7 New output 8 label↵  
10 New output 11 label↵  
↵
```

### Solicitud de cambios

Para realizar modificaciones, es necesario enviar un bloque similar al que transmite el dispositivo cuando ocurre un cambio. Por ejemplo, para asignar la entrada 3 a la salida 8, es necesario enviar el siguiente bloque:

```
VIDEO OUTPUT ROUTING:↵  
7 2↵  
↵
```

El bloque debe finalizar con una línea en blanco. A continuación, el dispositivo responderá del siguiente modo para confirmar la solicitud:

```
ACK↵  
↵
```

O bien, indicará que se no ha comprendido la solicitud y responderá:

```
NAK↵  
↵
```

Cada vez que se obtenga una respuesta positiva, el servidor debería mostrar una actualización con el cambio de estado. Esta probablemente sea igual al comando enviado. No obstante, si la solicitud no fue comprendida o si otros clientes efectuaron cambios simultáneamente, es posible que el bloque contenga actualizaciones adicionales. Cabe destacar que una modificación podría anular el efecto de otra realizada al mismo tiempo, lo cual generaría una respuesta diferente a la esperada.

En el modelo MultiView 16, el cliente puede cambiar la fuente utilizada en el modo «Solo» y los canales de audio que se integran en la señal transmitida.

Para ello, dicho modo debe activarse desde el panel frontal o enviando el siguiente bloque:

```
CONFIGURATION:↵  
Solo enabled: true↵  
↵
```

Una vez activado, el siguiente bloque asignará la fuente SOLO a la entrada 11:

```
Video Output Routing:↵  
16 10↵  
↵
```

Esta función no está disponible en el modelo MultiView 4.

El siguiente bloque enviará el audio integrado de la entrada 1 a la salida en el modelo MultiView 16

```
Video Output Routing:↵  
17 0↵  
↵
```

El siguiente bloque enviará el audio integrado de la entrada 1 a la salida en el modelo MultiView 4

```
Video Output Routing:↵  
5 0↵  
↵
```

Si no existen actualizaciones simultáneas, el diálogo correspondiente a un simple cambio en el rótulo de una conexión sería el siguiente:

```
OUTPUT LABELS:↵
6 new output label seven↵
↵
ACK↵
↵
OUTPUT LABELS:↵
6 new output label seven↵
↵
```

Debido a que las respuestas no son sincrónicas, se aconseja no dar por sentado que la actualización se llevó a cabo. Es preciso que el cliente se base en las notificaciones de estado recibidas del servidor para actualizar la información.

### Solicitud de volcado

Para solicitar al servidor que vuelva a proporcionar datos sobre el estado completo de cualquier bloque, es preciso enviar el encabezado seguido de una línea en blanco. En el siguiente ejemplo, se le pide al servidor que brinde información sobre los rótulos de las salidas:

```
OUTPUT LABELS:↵
↵
ACK↵
↵
OUTPUT LABELS:↵
0 output label 1↵
1 output label 2↵
2 output label 3↵
...
↵
```

### Verificación de la conexión

Una vez que se establece una conexión con el dispositivo, es posible enviar un comando especial de no operación para comprobar si este aún responde.

```
PING:↵
↵
```

En caso afirmativo, responderá **ACK** al igual que con cualquier otro comando reconocido.

## Protocolo RS-422

### Descripción general

Este protocolo puede emplearse para controlar el dispositivo mediante conmutadores y sistemas de automatización diseñados por otros fabricantes.

El modo **Leitch Server** corresponde al protocolo serial del conmutador (servidor) según se especifica en la sección 4 del documento SPR-MAN (versión D). Seleccione la opción deseada en la pestaña **Configure** del programa Blackmagic MultiView Setup.

Este documento describe los comandos y parámetros del protocolo pertinentes o compatibles con el dispositivo. Los restantes se ignoran, a pesar de que pueden aceptarse.

Configuración para el puerto serial RS-422: 9600 N81

9600 es la velocidad de transmisión en baudios (9600 bits/s).

N significa que no hay una comprobación de paridad.

8 hace referencia a la longitud de los datos.

1 representa la cantidad de bits de parada.

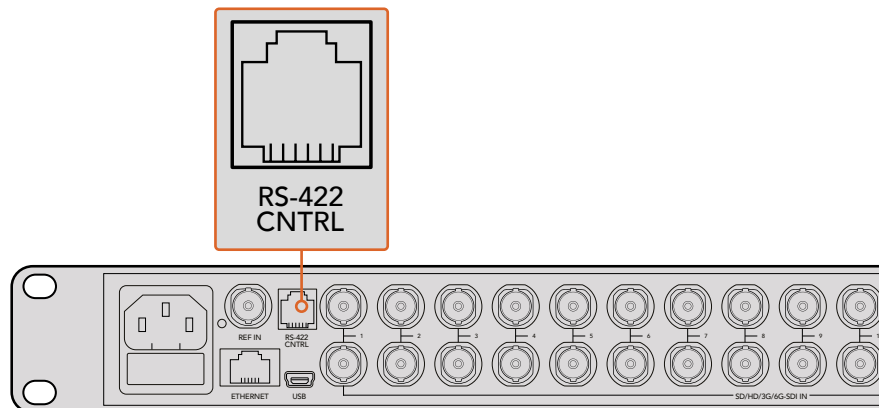
Resumiendo, N81 significa que los datos sin comprobación de paridad comienzan con un bit inicial, incluyen 8 bits de información propiamente dicha, y finaliza con 1 bit de parada. Hay un total de 10 bits.

El protocolo presenta una estructura lineal con una máximo de 250 caracteres por comando. Cada comando del cliente debe finalizar con un retorno de carro (\r). A su vez, cada respuesta del servidor acaba con un retorno de carro y un salto de línea (\r\n).

Las fuentes, los destinos y los niveles siempre se representan mediante el sistema hexadecimal y se numeran a partir de cero. Los niveles siempre se sitúan entre 0 y 15 (F). En el caso del modelo Blackmagic MultiView 16, solo existe un nivel válido (cero).

Al conectarse al puerto serial, el cliente debería enviar un retorno de carro. El dispositivo responderá con el carácter >, lo cual indica que se ha establecido la conexión. Esta respuesta es la misma cada vez que el dispositivo recibe un comando.

En lo sucesivo, los comandos en **naranja** y los valores en **azul** deben ingresarse tal como se indica, incluidos los espacios. En el siguiente ejemplo de un comando inmediato donde se emplean conexión de salida 7 y el puerto de entrada 3, @ X:0/destination,source se ingresaría de la siguiente manera: @ X:0/6,2



Este protocolo puede emplearse para controlar el dispositivo mediante conmutadores y sistemas de automatización diseñados por otros fabricantes. El conector RJ11 se utiliza en la mayoría de las conexiones para líneas telefónicas. El modelo MultiView 16 puede controlarse a través del puerto USB, reemplazando uno de los extremos de un cable adaptador RS-422/USB por un conector RJ11.



Tanto el cable como el adaptador pueden adquirirse en cualquier tienda de insumos electrónicos, por ejemplo, Digi-Key.com. Consulte el diagrama que figura a continuación para obtener más información al respecto.

Pin No.	Función
Pin 1	TX +
Pin 2	TX -
Pin 3	TIERRA
Pin 4	TIERRA
Pin 5	RX -
Pin 6	RX -

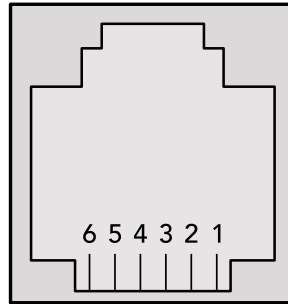


Diagrama de pines para el conector RJ11

### Notificaciones

Luego de haberse establecido la conexión, el cliente recibirá notificaciones cada vez que ocurra un cambio en la asignación de las señales, si la función de informe de estado se encuentra activada. Dichas notificaciones pueden adoptar dos formas:

**S:0destination,source** Cambio en la asignación de la señal

Este mensaje indica que la fuente ha sido asignada a un destino diferente.

**V:0destination,source** Asignación predeterminada

Este mensaje indica que, según la configuración actual, la fuente especificada se asigna al destino mencionado.

### Comandos generales

Todos los comandos de conexión van precedidos de una arroba y un espacio.

El dispositivo es compatible con los siguientes comandos:

- @ !      desactivar informes de estado  
Por defecto, esta opción se encuentra inhabilitada.
- @ ?      activar informes de estado  
Por defecto, esta opción se encuentra habilitada.
- @ Z:     restablecer tabla de asignación

Se restablece la asignación de señales, de modo que la primera fuente se retransmite a todos los destinos.

### Comandos inmediatos

@ X:0/destination,source cambiar asignación

@ X:0/destination,source/destination-2,source-2... cambiar distribución de múltiples señales

Las fuentes indicadas se retransmiten a los destinos especificados. Cualquier cambio en la distribución se notifica.

@ X?0destination solicitar estado de asignación individual

Se envía una notificación con la fuente asignada al destino indicado.

@ S?0 solicitar estado de asignación general

Se envían notificaciones con cada par de fuentes y destinos vinculados.

### Comandos «salvo»

@ P:0/*destination*,*source* agregar a cola de procesamiento

@ P:0/*destination*,*source*/*destination-2*,*source-2*... agregar múltiples cambios a cola de procesamiento

Los cambios en la distribución de señales se agregan a una lista para procesarlos con posterioridad.

@ P?0*destination* solicitar estado de asignación individual en lista

Se envía una notificación con el cambio programado en una asignación específica.

@ V?0 solicitar estado de asignación general en lista

Se envía una notificación para cada cambio programado.

@ B:C borrar salvo

@ B:R borrar salvo

Se descartan todos los cambios programados en la lista.

@ B:E ejecutar salvo

Se ejecutan los cambios programados y se envían las notificaciones correspondientes.

# Ayuda

## Cómo obtener ayuda

Visite la página de soporte técnico en el sitio web de Blackmagic Design a fin de obtener ayuda rápidamente y acceder al material de apoyo más reciente para los productos descritos en este manual.

### Página de soporte técnico

Las versiones más recientes de este manual, los distintos programas mencionados y el material de apoyo se encuentran disponibles en la página [www.blackmagicdesign.com/es/support](http://www.blackmagicdesign.com/es/support).

### Foro

El foro de Blackmagic Design permite compartir ideas creativas y constituye un recurso útil para obtener más información sobre nuestros productos. Por otra parte, brinda la posibilidad de encontrar rápidamente respuestas suministradas por usuarios experimentados o por el personal de Blackmagic Design. Para acceder al foro, ingrese a la página <http://forum.blackmagicdesign.com>.

### Cómo ponerse en contacto con Blackmagic Design

Si no encuentra la ayuda que necesita en el material de apoyo o el foro, solicite asistencia mediante el botón **Enviar correo electrónico**, situado en la parte inferior de nuestra página de soporte técnico. De manera alternativa, haga clic en el botón **Soporte técnico local** para acceder al número telefónico del centro de atención más cercano.

### Cómo comprobar la versión del software instalada

Ejecute el programa Blackmagic MultiView Setup para comprobar la versión instalada en su equipo. En el menú **Blackmagic MultiView**, seleccione la opción **About MultiView** para ver el número de versión.

### Cómo obtener las actualizaciones más recientes

Luego de verificar la versión del programa instalada en el equipo, visite el centro de soporte técnico en [www.blackmagicdesign.com/es/support](http://www.blackmagicdesign.com/es/support) para comprobar si existen actualizaciones disponibles. Aunque generalmente es recomendable ejecutar las últimas actualizaciones, evite realizar modificaciones en el sistema operativo interno si se encuentra en medio de un proyecto importante.

# Información sobre normativas y seguridad

## Normativas

### Tratamiento de desechos de equipos eléctricos y electrónicos en la Unión Europea:



Este símbolo indica que el dispositivo no debe desecharse junto con otros residuos domésticos. A tales efectos, es preciso llevarlo a un centro de recolección para su posterior reciclaje. Esto ayuda a preservar los recursos naturales y garantiza que dicho procedimiento se realice protegiendo la salud y el medioambiente. Para obtener más información al respecto, comuníquese con el distribuidor o el centro de reciclaje más cercano.



Según las pruebas realizadas, este equipo cumple con los límites indicados para dispositivos digitales Clase A, en conformidad con la sección 15 de las normas establecidas por la Comisión Federal de Comunicaciones. Esto permite proporcionar una protección razonable contra interferencias nocivas al operar el dispositivo en un entorno comercial. Este equipo usa, genera y puede irradiar energía de radiofrecuencia, y si no se instala o utiliza de acuerdo con el manual de instrucciones, podría ocasionar interferencias nocivas para las comunicaciones radiales. El funcionamiento de este equipo en una zona residencial podría ocasionar interferencias nocivas, en cuyo caso el usuario deberá solucionar dicho inconveniente por cuenta propia.

El funcionamiento de este equipo está sujeto a las siguientes condiciones:

- 1 El dispositivo no debe causar interferencias nocivas.
- 2 El dispositivo debe admitir cualquier interferencia recibida, incluidas aquellas que pudieran provocar un funcionamiento incorrecto del mismo.

Las conexiones a interfaces HDMI deberán realizarse mediante cables blindados.

## Seguridad

Este equipo debe enchufarse a una toma de corriente que disponga de una conexión a tierra.

A fin de reducir el riesgo de descarga eléctrica, evite exponer el equipo a goteras o salpicaduras.

Este equipo puede utilizarse en climas tropicales a una temperatura ambiente máxima de 40 °C.

Compruebe que haya suficiente ventilación en torno a la unidad.

Al instalar el equipo en un bastidor, verifique que el dispositivo contiguo no impida la ventilación.

La reparación de los componentes internos del equipo no debe ser llevada a cabo por el usuario. Comuníquese con nuestro centro de atención más cercano para obtener más información al respecto.



Evite utilizar el equipo a una altura mayor de 2000 metros.

# Garantía

## Garantía limitada

Blackmagic Design garantiza que el producto adquirido no presentará defectos en los materiales o en su fabricación por un período de 12 meses a partir de la fecha de compra, incluidos los conectores, los cables, los ventiladores, los fusibles, la pantalla y los botones. Si un producto resulta defectuoso durante el período de validez de la garantía, Blackmagic Design podrá optar por reemplazarlo o repararlo sin cargo alguno por concepto de piezas y/o mano de obra.

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# Blackmagic MultiView





## 欢迎辞

感谢您购买Blackmagic MultiView!

我们的梦想是让人人都能拥有最优质的视频设备，让广电业成为真正充满创意的行业。MultiView 16能搭配使用市售经济型Ultra HD电视机，因此相当于为您提供了多达16台独立的广播级监视器。MultiView 16无愧为一款物美价廉的广播级多画面监看设备!

Blackmagic MultiView 4则非常适合纳入小规模以及移动式制作流程，可通过单个HD或Ultra HD显示屏为您提供多达四路信号源进行监看。您甚至还可以把其中一台MultiView的输出接口和另一台相连，将多台MultiView组合到一起，根据需要打造出您自己的监看装备!

本操作手册涵盖您安装Blackmagic MultiView所需的全部信息。如果不明确IP地址或不熟悉计算机网络设置，请向技术人员咨询相关事宜。Blackmagic MultiView可通过Videohub Control软件进行控制，该软件安装步骤简单，安装完成后您只需设置几项技术偏好即可。

请访问公司网站[www.blackmagicdesign.com/cn](http://www.blackmagicdesign.com/cn)，并到支持页面下载最新版操作手册以及软件升级。最后，请您在下载软件更新时为您的Blackmagic MultiView完成设备注册，以便我们在发布新软件时能第一时间通知您。我们将不断致力于产品的功能开发和性能改进，诚挚期待您的意见和建议!

希望您能够成为Blackmagic MultiView的忠实用户，在色彩纷呈的Ultra HD世界中尽享画面监看工作!

A handwritten signature in black ink that reads "Grant Petty". The signature is written in a cursive, flowing style.

**Grant Petty**

Blackmagic Design首席执行官

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# 入门

Blackmagic MultiView使用前的准备工作非常简单，只要先连接电源，然后连接SDI视频源，再连接监视器或电视机的HDMI或SDI输出接口即可。本章节将为您介绍使用Blackmagic MultiView前的所有准备工作和注意事项。

## 连接电源

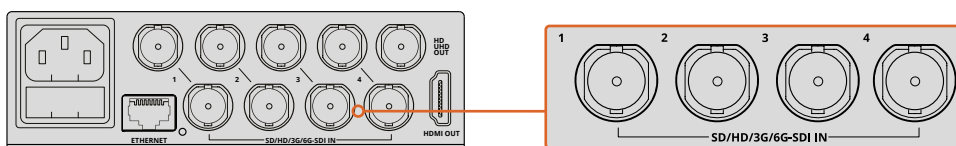
为Blackmagic MultiView连接电源时，只需将标准IEC电源线插入设备后面板的110-240V AC电源输入接口即可。

**提示** Blackmagic MultiView 4还支持以太网供电，您只需将其插入以太网交换机就可以获得PoE+。如果您同时为MultiView 4连接了AC电源和POE+，那么当一个连接断开或是有误时，它将自动切换到另一个电源供应上。

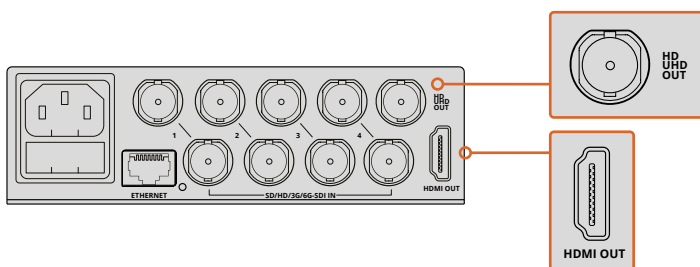
为Blackmagic MultiView 4 HD连接电源时，请将产品自带的电源适配器连接到6-36V DC输入上。插上配有通过螺丝固定的保护壳，可确保设备顺利运行并防止意外断电。

## 连接SDI信号源和监视器

将SDI信号源连接到Blackmagic MultiView的SDI视频输入接口。设备将自动检测视频格式并通过多画面分割输出显示画面。要查看输出画面，只需将监视器连接到SDI或HDMI多画面分割输出接口即可。



将视频源连接到Blackmagic MultiView的SDI视频输入接口。

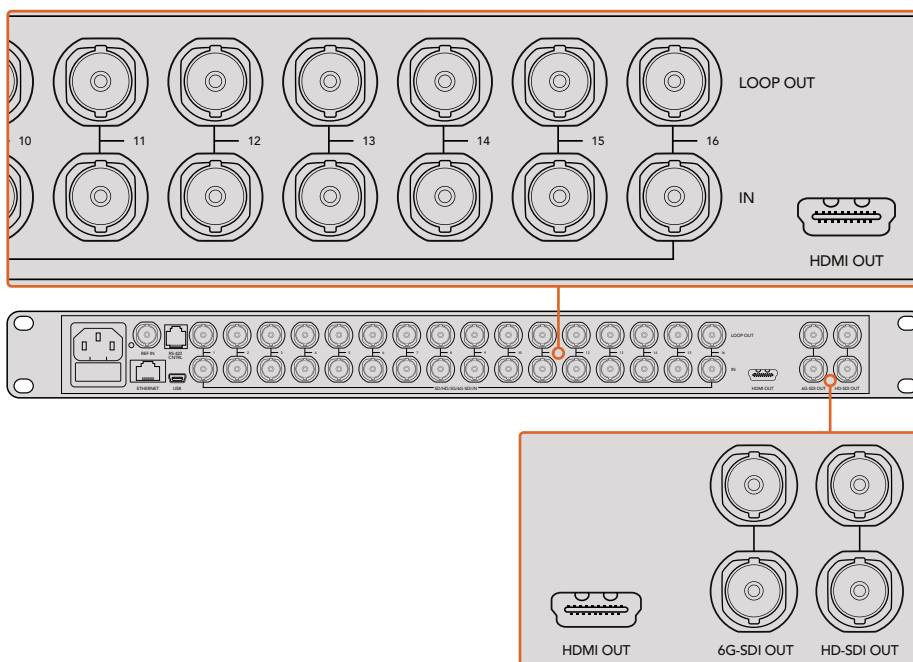


将监视器连接到Blackmagic MultiView的HDMI或SDI多画面分割输出接口。

将HDMI监视器连接到Blackmagic MultiView的HDMI输出接口上后，Blackmagic MultiView将自动检测该监视器支持的是Ultra HD还是HD格式，并根据检测结果切换多画面分割输出格式。

**提示** 使用Blackmagic MultiView 16机型时,您可以通过专设的HD-SDI输出接口输出多画面分割,或通过6G-SDI和HDMI输出接口输出最高可达Ultra HD的画面。

Blackmagic MultiView 4和MultiView 16机型的每路输入上均设有环通输出,因此每路源还可连接到其他视频设备上。



**提示** 所有Blackmagic MultiView 16的SDI和HDMI输出口都可同时用于Ultra HD和HD多画面监看。使用Blackmagic MultiView 4机型时,您可以通过内置开关、选购的Teranex Mini Smart Panel,或通过Blackmagic MultiView Setup实用软件来选择Ultra HD或HD多画面分割输出设置。

## 设置Multi View分割画面布局

您可以根据需要来更改Multi View画面布局。例如, Blackmagic MultiView 4和Blackmagic MultiView 4 HD机型可设为2x2画面布局或全屏监看。Blackmagic MultiView 16机型则可设为2x2、3x3、4x4画面布局或全屏监看。

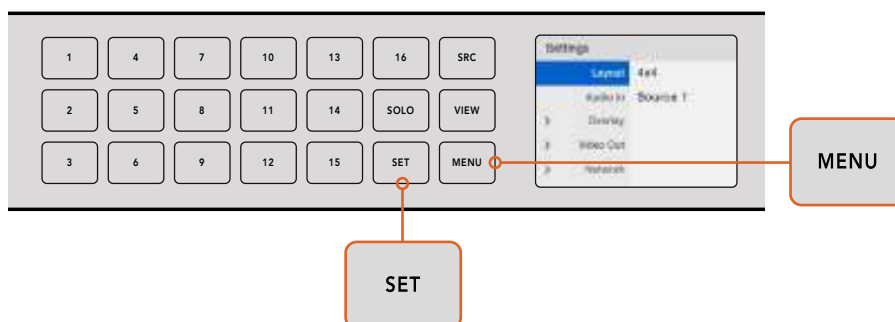
### 设置Blackmagic MultiView 16的分割画面布局

使用Blackmagic MultiView 16机型时,可通过控制面板上所设的控制按钮、旋钮以及LCD屏幕来更改画面布局。如果要以全屏模式监看任何画面,您可以按“SOLO”按钮,然后选择某个源画面所对应的数字按钮即可查看。

- 1 按设备前面板上的“MENU”按钮可在LCD屏幕上打开设置界面。
- 2 菜单中的第一个设置为“LAYOUT”(布局),因此每当您打开设置菜单时,该选项始终为高光显示状态。按“SET”按钮来编辑该设置。

- 3 转动前面板上的旋钮，从布局设置中选择4x4选项。4x4布局可在一个监视屏上为您提供16路信号源画面监看。每次更改设置时，设备上的“SET”按钮和“MENU”按钮均会开始闪烁。这是为了提醒您设置出现更改，您可以按下“SET”按钮确认该项更改，或按下“MENU”按钮取消该项更改。
- 4 按“SET”按钮确认设置。

您还可以通过Blackmagic MultiView 16 Setup应用程序的“Configure”（配置）选项卡来设置布局。

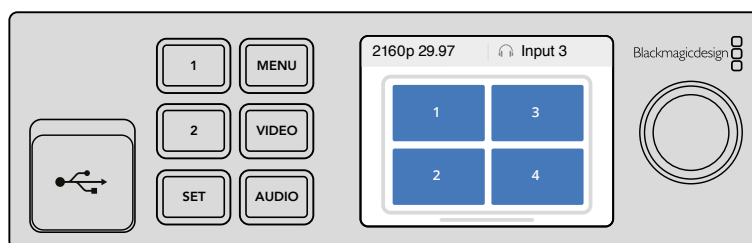


要设置Blackmagic MultiView 16的布局视图，请先按“MENU”按钮，然后使用旋钮选择相应的布局，再按“SET”即可。4x4布局可在一台监视器上为您提供16路画面监看

### 设置Blackmagic MultiView 4的分割画面布局

Blackmagic Multiview 4的默认设置为2x2画面布局。要将Blackmagic MultiView 4的画面布局改为“SOLO”全屏监看模式，可按下Teranex Mini Smart Panel上标有“1”的控制按钮，如按下“2”按钮则将更改回2x2画面布局模式。

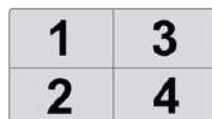
您还可以在设置应用程序中通过“Configure”（配置）选项卡来更改布局。



按“1”查看单视图布局，或按“2”查看2x2画面布局

### 设置Blackmagic MultiView 4 HD的分割画面布局

首次使用MultiView 4 HD时，设备默认使用2x2布局，上排显示输入1和输入3，下排显示输入2和输入4。要更改为全屏模式，请将内置的名为“Solo on”的6号开关设置为“ON”（开）。



MultiView 4 HD上四路SDI输入的2x2布局

详情请参考“Blackmagic MultiView 4 HD的开关设置”部分的内容。

## 连接到网络

Blackmagic MultiView支持Blackmagic Videohub以太网协议，因此即使设备被安装到不易触及的机架位置，您依然可以通过Blackmagic Smart Control或Master Control等Blackmagic Videohub控制面板进行远程操控。将Blackmagic MultiView连接到以太网后，该网络中的其他计算机和Videohub控制面板均能查看到这台Blackmagic MultiView，并对它进行远程控制。

将Blackmagic MultiView连接到您的网络步骤如下：

- 1 开启Blackmagic MultiView。
- 2 使用标准RJ45以太网线将Blackmagic MultiView连接到您的网络或计算机。

完成网络连接后，请确保您的Blackmagic MultiView所使用的IP地址不同于该网络下的其他设备。如使用Blackmagic MultiView 16型号，或者安装了Teranex Mini Smart Panel的MultiView 4型号时，您还可以通过设备控制面板上的LCD菜单来更改网络设置。此外，您还可以通过USB接口将Blackmagic MultiView和计算机相连，并使用Blackmagic MultiView Setup软件来更改网络设置。关于更改网络设置的详细内容，请查阅本手册“更改设置”部分的内容。

## 连接串行控制

第三方矩阵控制器可通过RS-422串行接口来控制Blackmagic MultiView 16。更多关于串行控制的详细信息，请参考本手册“使用Blackmagic MultiView Setup更改设置”部分的内容。

## 机架式安装

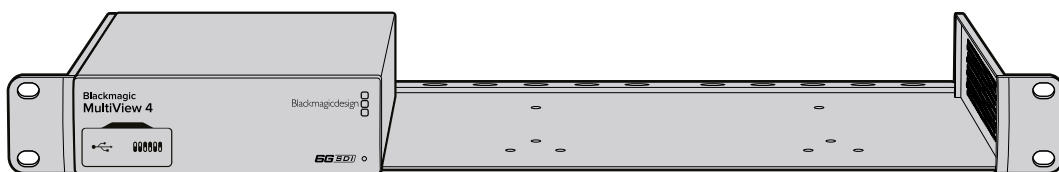
Blackmagic MultiView 16型号的高度为1RU，可完美容纳于任何广播机架和设备航空箱内。

Blackmagic MultiView 4型号则略小，可用于不需要设备航空箱的移动式制作方案。虽然MultiView 4的设计小巧便携，您依然可以将它安装到机架上使用。Blackmagic Teranex Mini Rack Shelf机架的设计可容纳至多三台设备并排安装于1RU机架上，以便设备彼此相连，您可根据需要添加任意数量的信号源进行查看。

将Blackmagic MultiView 4安装到Teranex Mini Rack Shelf机架的步骤非常简单，只需移除设备上的橡胶垫（如有安装），再将设备底部的安装孔对准机架底部的螺孔，并使用螺丝加以固定即可。Teranex Mini Rack Shelf附带两块标配空白面板，可在您不想安装多台MultiView 4时用来填补机架的空隙。

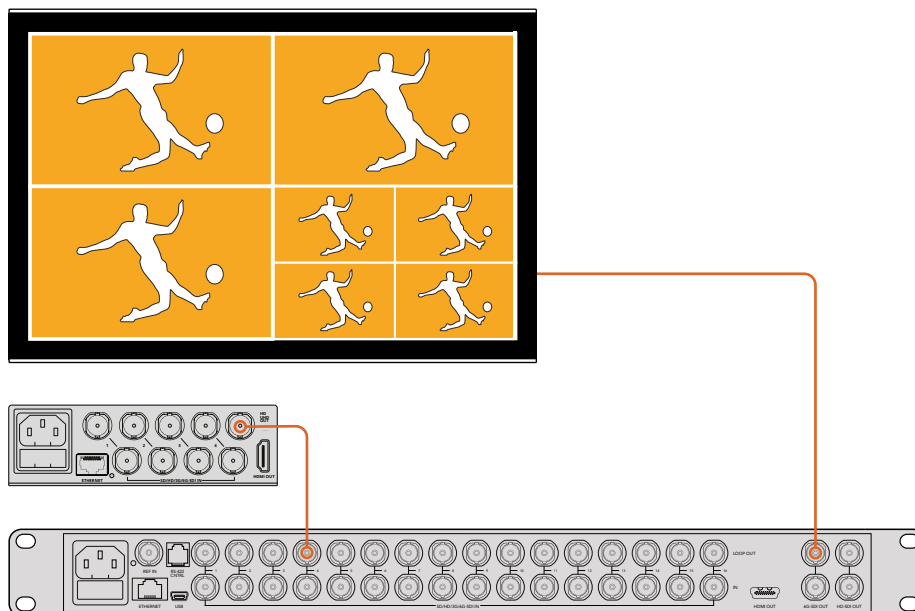
详情请访问Blackmagic Design网站[www.blackmagicdesign.com/cn](http://www.blackmagicdesign.com/cn)。

安装到机架后，设备后侧的所有接口依然可以正常使用。



## 使用多台MultiView

您可以将多台BlackMagic MultiView进行组合, 创建出自定义监看设备。这样能帮助您多画面分割输出上添加更多的信号源。要在多画面分割输出上添加更多的信号源, 只需将一台MultiView的输出连接到另一台的输入接口即可。为获得最大清晰度, 强烈建议您将上游设备的多画面分割输出接口连接到Ultra HD监视器。



如将一台MultiView的输出连接到另一台的输入接口上, 您就可以在多画面分割布局中添加更多的分割画面。

一切准备就绪。请继续阅读本操作手册接下来的章节, 获取如更改设置、为分割画面命名等更多关于如何充分利用Blackmagic MultiView的相关信息。

## 更改设置

您可以通过多种途径来更改Blackmagic MultiView的各项设置。

- **前面板控制** – Blackmagic MultiView 16自带控制面板和LCD屏幕, 可通过设备本身快速更改设置。
- **开关** – Blackmagic MultiView 4和Blackmagic MultiView 4 HD的前面板设有多个小型开关, 您可使用笔尖来快速更改设置。要找到Blackmagic MultiView 4的开关, 请打开前面板的橡胶防尘盖。设备底部印有开关设置表, 方便您查看每个开关的具体设置。
- **Teranex Mini Smart Panel** – 您可以将Blackmagic MultiView 4的标配前面板替换为选购的Teranex Mini Smart Panel智能前面板, 以便使用其内置的控制按钮、旋钮以及LCD屏幕。这些功能和Blackmagic MultiView 16前面板的控制项非常接近, 能够为您提供便捷直观的本地控制。
- **Blackmagic MultiView Setup** – 通过USB或以太网连接后, 您可以在计算机上使用这款设置软件来更改设置。详情请参考“Blackmagic MultiView Setup”部分的内容。
- **Videohub Control软件** – 当Blackmagic MultiView 16或Blackmagic MultiView 4连接到网络时, 您可以使用Blackmagic Videohub Control控制软件来进行信号指派和分割画面更改, 并选择音频输入源。请阅读“使用Videohub Control软件”部分内容获得更多信息。



## Blackmagic MultiView 16的前面板控制

Blackmagic MultiView 16的前面板可实现各项设置的快速更改。

首次启动Blackmagic MultiView 16时, 您会看到设备自带的LCD屏幕上显示主页面。主页面是默认显示界面, 里面包含各项设置的快捷浏览信息, 例如:

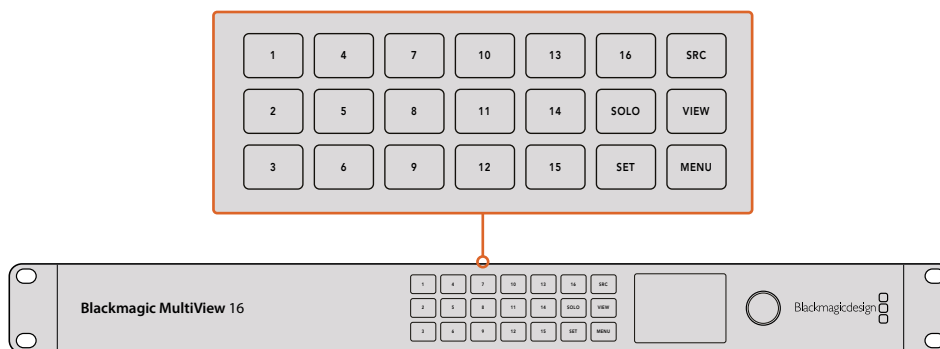
- **多画面分割输出帧率** – 位于左上角, 可显示您的Ultra HD SDI多画面分割输出所选的帧率。
- **音频输入** – 位于多画面分割输出帧率的一侧, 可显示哪路SDI输入被用于HDMI和SDI多画面分割输出信号上的嵌入音频。
- **多画面分割布局** – 可显示您所选的多画面分割布局。



主页面是Blackmagic MultiView 16前面板LCD屏幕的默认显示内容。该页面可显示您所选择的多画面分割布局、多画面分割SDI输出的帧率, 以及被选中用于在多画面分割输出上嵌入音频的SDI输入。

## 控制面板按钮

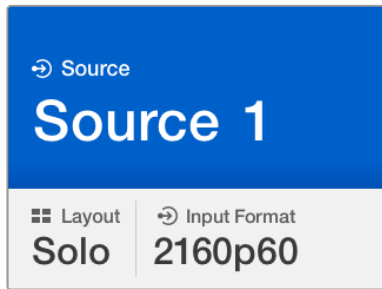
Blackmagic MultiView 16的前面板上设有发光按钮, 可快速调整各项设置并选定信号源和分割画面。



Blackmagic MultiView 16的控制面板按钮能方便您通过设备前面板来更改设置并切换分割画面。

## SOLO按钮

按“SOLO”按钮可以全屏视图监看单个画面。您也可以按控制面板上任意一个数字按钮，以全屏模式监看单个画面。再次按下“SOLO”按钮可返回到多画面分割布局。



SOLO功能可在全屏模式下监看某路分割画面。

## MENU按钮

按下“MENU”按钮可打开设置界面。使用旋钮和按钮来更改设置，然后再次按“MENU”按钮回到主页面。

## SET按钮

按“SET”按钮可选择某项要调整的设置。完成设置更改后，再次按下“SET”按钮可确认该项更改。

## SRC和VIEW按钮

这两个按钮可用于选择各路输入源分别显示到哪路分割画面中。浏览设置菜单时，SRC和VIEW按钮还可被用于在设置选项间上下移动。

## 旋钮

使用旋钮来滚动显示各项设置，或者选择设置页面的菜单项。要撤销某项选择，您可以按下旋钮，从而回到之前选中的设置。

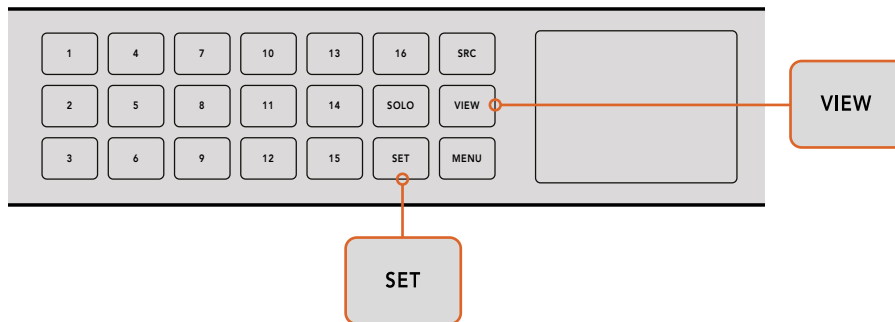
顺时针或逆时针转动旋钮可在菜单中的两个选项间进行选择。您也可以通过按下旋钮来开启或关闭各项设置。

## 设置Blackmagic MultiView 16的信号源和分割画面

Blackmagic MultiView 16的主要功能之一就是可以将您连接的SDI信号源指派到不同分割画面中。您可以通过调整这些设置来更改分割画面的排列布局。例如，您可以让SDI输入5出现在分割画面1当中。

如何为各路信号源设置所显示的分割画面位置：

- 1 按下前面板上的“VIEW”按钮，打开屏幕中的分割画面选择界面。分割画面选择将以蓝色背景高光显示。
- 2 按下某个数字按钮来选择想要的分割画面位置。或者，您可以转动旋钮来浏览各个分割画面位置。按“SET”确认设置。
- 3 按“SRC”按钮。LCD屏幕中的信号源页面将以高光显示。
- 4 按下控制面板的某个数字按钮来选择想要的输入。或者，您可以转动旋钮，在LCD屏幕上浏览各路输入。
- 5 按“SET”按钮确认设置。



要让某个信号源显示在某个分割画面中，请按“VIEW”按钮进入分割画面设置，然后进行选择，再按“SET”按钮确认设置。

## 设置Blackmagic MultiView 16的分割画面布局

如使用Blackmagic MultiView 16型号，您可以选择在多画面分割输出上所显示的分割画面数量。举例说明，如果您连接有4路输入，只要选择2x2布局即可以垂直x水平网格显示这四个分割画面。为了以最佳效果监看各路输入，请根据所连接的输入数量选择最为合适的分割画面布局。

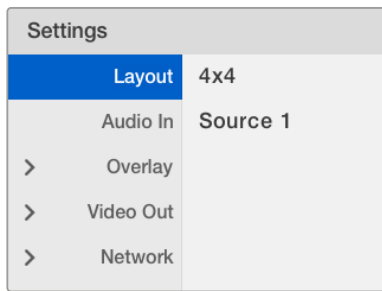
共有四类多画面分割布局供您选择：

- **2x2** 可显示4个分割画面。如果您连接了一台Ultra HD监视器，每路信号源将以原生HD分辨率显示。
- **3x3** 可显示9个分割画面。
- **4x4** 可显示所有16个分割画面。

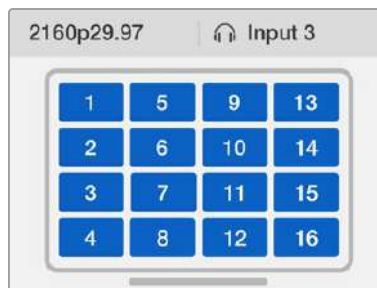
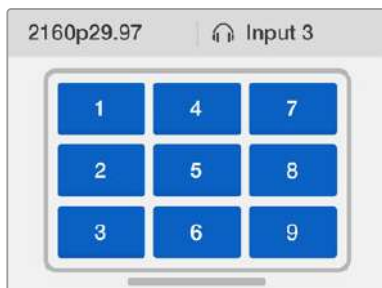
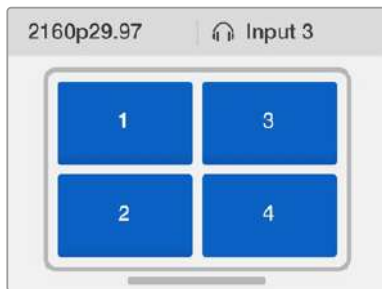
**提示** 您也可以按Blackmagic MultiView 16控制面板上的“SOLO”按钮，然后选择一个数字按钮，以全屏模式监看相应分割画面。使用Blackmagic MultiView 4机型时，在Teranex Mini Smart Panel上按下标有“1”的SOLO按钮。



使用旋钮或数字按钮来选择您要将某路信号源指派到哪个分割画面。



高光显示您想要进行调整的菜单条目, 并按“SET”依次浏览各项设置。



共有3个不同的多画面分割布局模式, 请根据您连接的输入数量进行相应选择。

## Audio In (音频输入)

该设置可选择在哪路SDI输入上提取音频并嵌入到多画面分割输出上。

## Overlay (叠加)

该子菜单可通过开启或关闭叠加功能来更改多画面分割的外观。

叠加功能如下:

- **Border (边框)** – 可将每个分割画面以网格形状分开。
- **Label (标签)** – 可显示或隐藏分割画面的标签。标签可使用Blackmagic MultiView Setup进行修改。
- **Audio Meters (音频表)** – 可开启或关闭所有分割画面的音频VU表。每个分割画面都可以显示出嵌入到每个SDI信号中的前两个通道, 以便您参考分割画面并监看音频电平。
- **SDI Tally** – 如果Blackmagic MultiView 16的输入16上连接了ATEM切换台的SDI节目输出, 当某个信号源切换到直播时, 该信号的分割画面周围会显示Tally边框。您可以使用SDI Tally叠加设置开启或关闭这一功能。

为了使Tally良好工作, 请确保您连接的Blackmagic MultiView 16输入与ATEM切换台的输入编号相符, 否则Tally可能出现在错误的分割画面上。

## Video Out (视频输出)

视频输出设置可控制Blackmagic MultiView 16上的输出选项。

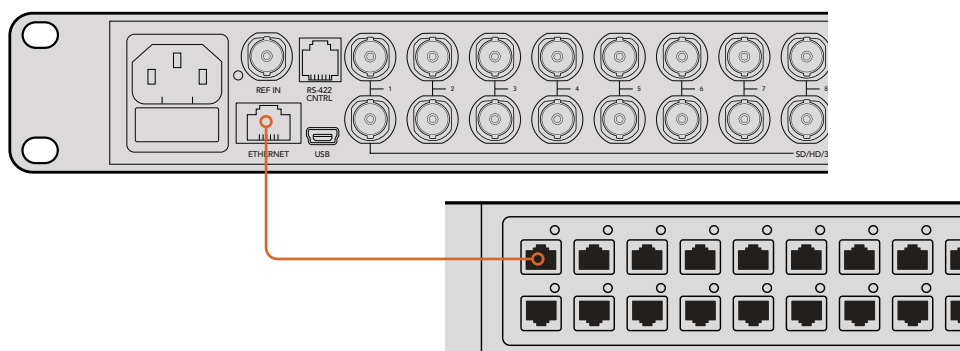
- **Video Format (视频输出)** – 使用这一设置可将Ultra HD多画面分割输出帧率更改为2160p29.97或2160p25。HD多画面分割输出帧率将转为Ultra HD输出。按下旋钮可取消设置更改, 或者返回上一个菜单。
- **HD Output (HD输出)** – 可为HD多画面分割输出选择隔行扫描或逐行扫描。如果选择的视频格式为2160p29.97, 那么HD输出可以是1080p29.97或1080i59.94。同样的, 如果选择了2160p25, 那么HD输出可以是1080p25或1080i50。

## Network (网络)

当Blackmagic MultiView 16连接到网络时, 网络设置可用来设定设备的IP地址、子网络以及网关地址。

设置Blackmagic MultiView 16的IP地址:

- 1 按前面板上的“MENU”按钮, 转动旋钮直至LCD屏幕菜单中的“Networking”（网络）选项高光显示。
- 2 按“SET”按钮进入网络设置页面。
- 3 转动旋钮来选择“IP Address”选项。
- 4 按下“SET”按钮, 使IP地址的第一段数字高光显示。使用旋钮来更改数值。
- 5 按下“SET”确认第一段数值, 然后重复上述步骤完成剩余三段数值的更改。请根据需要使用相同方法指派子网络和网关地址。
- 6 连接两下“MENU”按钮可返回主页面。



将Blackmagic MultiView 16连接到以太网后, 您就可以从其他位置控制这台设备了。

Network Settings	
IP Address	192.168.10.160
Subnet	255.255.255.0
Gateway	192.168.10.1

使用Blackmagic MultiView 16控制面板上的旋钮和数字按钮完成网络设置的数值指派。

## Teranex Mini Smart Panel

Teranex Mini Smart Panel可安装在Blackmagic MultiView 4的正面，以取代其标配的基本前面板。您可以使用智能前面板上自带的按钮、旋钮和LCD屏幕快速选择设置。

### 安装Teranex Mini Smart Panel

由于这款选购的智能前面板支持热插拔操作，因此您无需关闭Blackmagic MultiView 4便能安装，且步骤非常简单。

- 1 使用Pozidriv 2号螺丝刀卸下Blackmagic MultiView标配前面板两侧各两枚M3螺丝，小心取下前面板。
- 2 在标配面板内侧，您会发现底部角落里有一根透明的塑料管。这根塑料管将设备内部LED的灯光导出照亮标配面板上的状态指示灯。塑料管应与标配前面板保持连接状态。

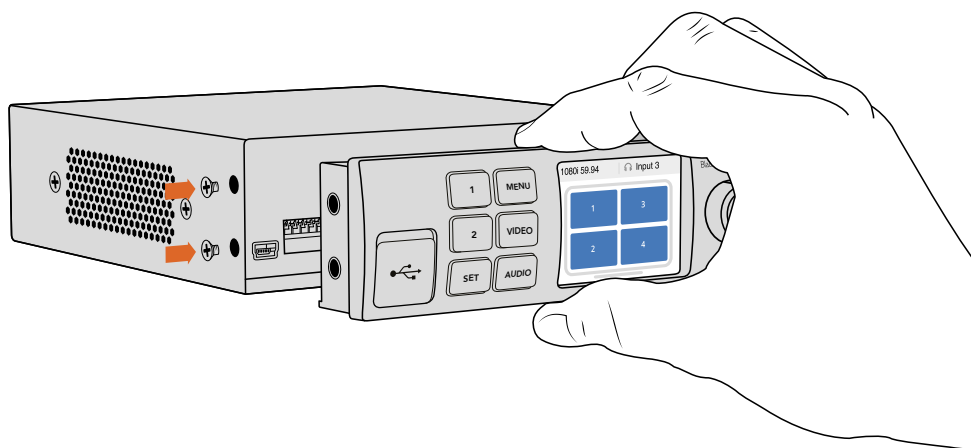
**提示** 如果要重新安装回标配前面板，请确保灯管对齐设备前方的管槽。

- 3 将智能前面板后侧的接口对准Blackmagic MultiView 4正面的连接口后，再将智能前面板轻轻推入设备，直至接口牢牢固定。智能前面板应与Blackmagic MultiView 4的正面紧密贴合并固定到位。
- 4 将标配前面板上的M3螺丝重新安装到智能前面板上。

如果Blackmagic MultiView 4安装在Teranex Mini Rack Shelf机架上，您需要先将Blackmagic MultiView 4从机架上卸下方可拆装其前面板的螺丝。

详细内容请参考“机架式安装”章节。

Blackmagic MultiView 4的USB端口在安装了智能前面板后依然可以使用。只需打开USB橡胶盖即可找到该端口。安装了Smart Panel时，前面板的小型开关将被盖住，不再使用，因为现在所有设置只有通过LCD屏幕菜单就可以更改。



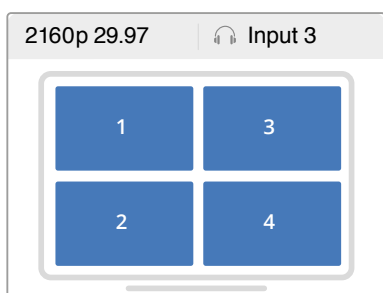
为您的Blackmagic MultiView 4安装Teranex Mini Smart Panel时, 请手持智能前面板, 并将其后侧的接口对准转换器正面的接口以便固定到位。

**提示** 标配基本款前面板的设计非常牢固, 因此如果您需要将Blackmagic MultiView 4安装到设备机架系统后侧, 或者安装在布满线缆且有工作人员频繁走动的位置时, 可以重新安装基本款前面板。

## Teranex Mini Smart Panel功能介绍

智能前面板的功能和MultiView 16自带的控制面板类似。主页面是LCD屏幕菜单首先出现的功能, 也是默认显示界面, 里面包含各项设置的快捷浏览信息, 例如:

- **多画面分割输出帧率** – 位于左上角, 可显示您的Ultra HD SDI多画面分割输出所选的帧率。
- **音频输入** – 位于多画面分割输出帧率的一侧, 可显示哪路SDI输入被用于HDMI和SDI多画面分割输出信号上的嵌入音频。
- **多画面分割布局** – 可显示2x2多画面分割布局。

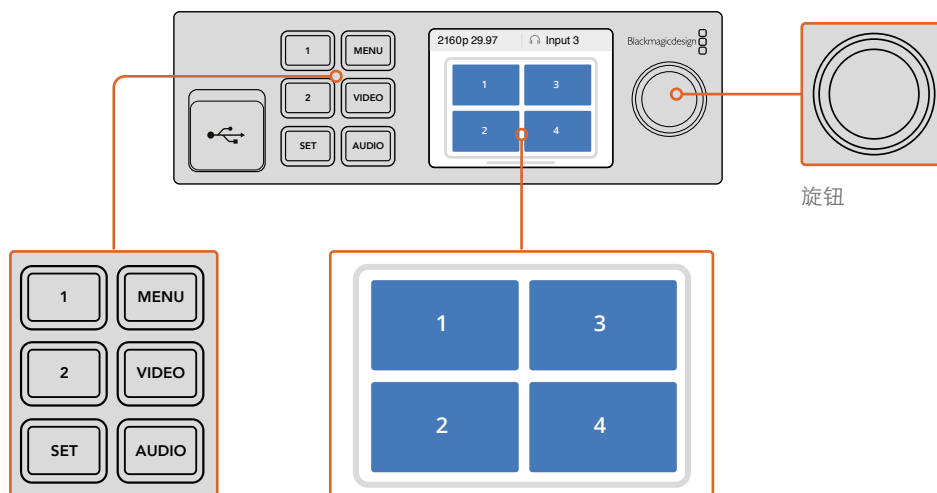


主页面是Teranex Mini Smart Panel智能前面板LCD屏幕的默认显示内容。

## 控制按钮和旋钮

Teranex Mini Smart Panel设有一组按钮和一个旋钮, 可用来上下翻找Blackmagic MultiView 4的设置菜单。

- **按钮1和按钮2** – 这两个按钮可增加或减少数字设置值，或在菜单设置中上下移动。
- **SET按钮** – 使用按钮1和按钮2能成设置更改后，按“SET”按钮可确认更改。
- **MENU** – 按此按钮可进入Blackmagic MultiView 4的设置菜单。您也可以按“MENU”按钮逐层退出菜单条目，直到返回主页面。
- **VIDEO (视频) 和AUDIO (音频) 按钮** – 这些按钮为Teranex Mini Converter系列专用，并不适用于Blackmagic MultiView 4。
- **旋钮** – 顺时针或逆时针旋转旋钮可来回查看菜单设置，也可调整数字设置值。



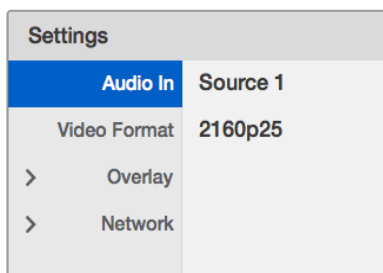
控制按钮

视频监视器 – 显示了主页面屏幕，且当更改设置时使用。

## 使用Teranex Mini Smart Panel更改设置

使用Teranex Mini Smart Panel更改设置非常简便，您可以立即在LCD上看到您的设置并加以确认。

在Teranex Mini Smart Panel上按下“Menu”（菜单）软按钮，可进入Blackmagic MultiView 4的设置菜单。在此您可以进行如下设置：



高光显示想要调整的菜单选项，并按下“Set”（设置）将其选中。使用旋钮在各设置选项间移动。

### Audio In (音频输入)

该设置可选择在哪路SDI输入上提取音频并嵌入到多画面分割输出上。



## 视频格式

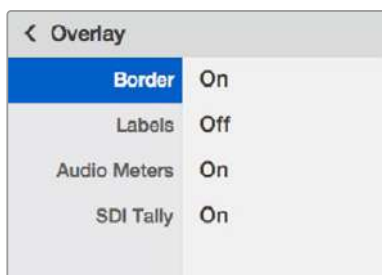
Blackmagic MultiView 4可设为Ultra HD或HD输出，帧率可为每秒29.97帧或每秒25帧。通过此设置在可用的分辨率和帧率选项间进行选择。

## Overlay (叠加)

叠加子菜单可开启或关闭叠加信息。

叠加功能如下：

- **Border (边框)**：可将每个分割画面以网格形状分开。
- **Labels (标签)**：可显示或隐藏分割画面的标签。标签可使用Blackmagic MultiView Setup进行修改。
- **Audio Meters (音频表)**：可开启或关闭所有分割画面的音频VU表。每个分割画面都可以显示出嵌入到每个SDI信号中的前两个通道，以便您参考分割画面并监看音频电平。

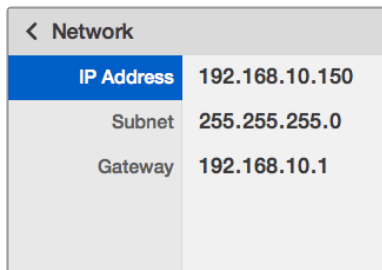


## Network (网络)

当Blackmagic MultiView 4连接到网络时，网络设置可用于设定设备的IP地址、子网络以及网关地址。

设置Blackmagic MultiView 4的IP地址：

- 1 按前面板上的“MENU”按钮，转动旋钮直至LCD屏幕菜单中的“Networking”（网络）选项高光显示。
- 2 按“SET”按钮进入网络设置页面。
- 3 转动旋钮来选择“IP Address”选项。
- 4 按下“SET”按钮，使IP地址的第一段数字高光显示。使用旋钮来更改数值。
- 5 按下“SET”确认第一段数值，然后重复上述步骤完成剩余三段数值的更改。请根据需要使用方法指派子网络和网关地址。
- 6 连按两下“MENU”按钮可返回主页面。

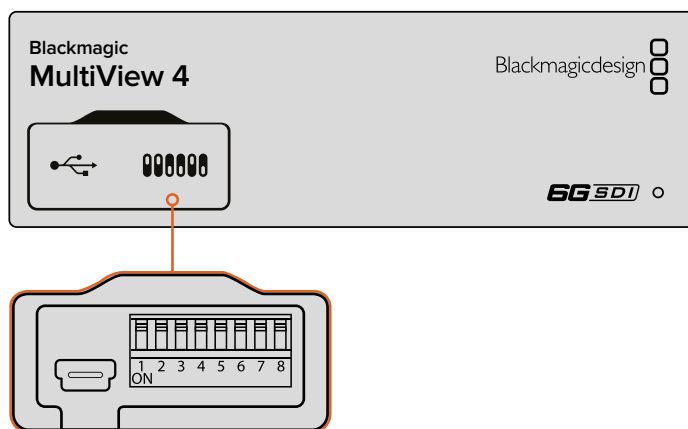


使用Teranex Mini Smart Panel上的旋钮或“1”和“2”按钮为您的Blackmagic MultiView 4网络设置指派数值。

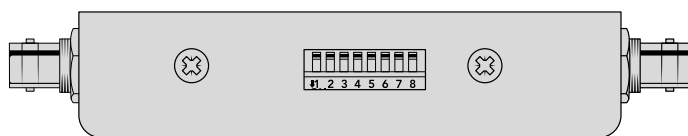
## 使用开关更改设置

Blackmagic MultiView 4和MultiView 4 HD上设有小型内置开关, 用来更改设置。使用Blackmagic MultiView 4时, 这些开关位于前面板橡胶防尘盖下。

使用Blackmagic MultiView 4 HD时, 这些开关位于设备一侧。



使用笔尖拨动开关来调整设置。



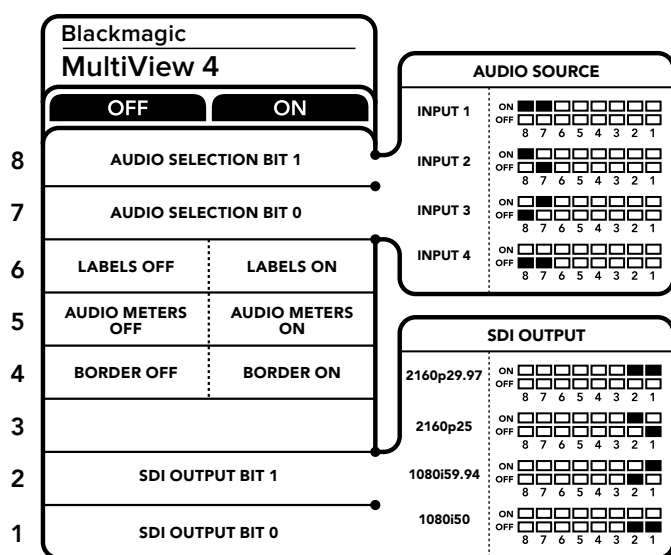
设备底部印有开关设置图表。请从左到右仔细观察8到1号开关, 以确保您的开关设置对应相关说明。

## 内置开关

Blackmagic MultiView 4底部印有开关设置图表。请从左到右仔细观察8到1号开关, 以确保您的开关设置对应相关说明。

**提示** 虽然设备底部已印有开关设置图表, 但是将来设备更新后或将添加新的设置功能, 因此请关注本操作手册的最新版本发布, 以便获得最新的信息。请前往Blackmagic Design的支持中心下载最新版操作手册, 网址: [www.blackmagicdesign.com/cn/support](http://www.blackmagicdesign.com/cn/support)。

## Blackmagic MultiView 4上的开关设置



Blackmagic MultiView 4上的开关设置

Blackmagic MultiView 4的开关可用来更改以下设置：

### 8、7号开关-音频选择

8、7号开关分别代表Bit 1和0。通过设置8、7号开关的开/关的组合，您可以选择哪路SDI输入用于HDMI和SDI多画面分割输出信号中的加嵌音频。

### 音频选项表

音频源	8号开关	7号开关	开关示意图
输入1	ON (开)	ON (开)	ON <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
输入2	ON (开)	OFF (关)	ON <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
输入3	OFF (关)	ON (开)	ON <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
输入4	OFF (关)	OFF (关)	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

### 6号开关-标签

将6号开关设为“On”（开）可显示您多画面分割输出信号中每个窗口的标签。这些标签可通过Blackmagic MultiView Setup来设定，详细内容请查阅本手册后面的介绍。将6号开关设为“Off”（关）可隐藏标签。

### 5号开关-音频表

将5号开关设为“On”（开）可显示您多画面分割输出信号中每个窗口的音频表。将5号开关设为“Off”（关）可隐藏音频表。

### 4号开关-边框

将4号开关设为“On”（开）可显示每个MultiView窗口间的边框。将4号开关设为“Off”（关）可隐藏边框。

## 2、1号开关

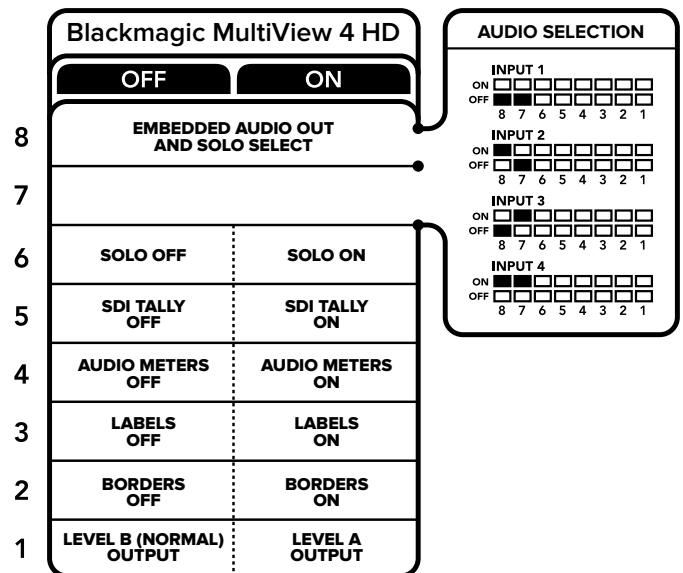
2、1号开关分别代表Bit 1、0。通过设置2、1号开关的开/关的组合，您可以选择MultiView 4型号中SDI信号的输出格式。

### SDI输出选择表

SDI输出	2号开关	1号开关	开关示意图
2160p29.97	ON (开)	ON (开)	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 8 7 6 5 4 3 2 1
2160p25	ON (开)	OFF (关)	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 8 7 6 5 4 3 2 1
1080i59.94	OFF (关)	ON (开)	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 8 7 6 5 4 3 2 1
1080i50	OFF (关)	OFF (关)	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 8 7 6 5 4 3 2 1

**备注** 使用选购的Teranex Mini Smart Panel时，开关设置将被智能前面板的设置代替。不论是通过开关、智能前面板或是Blackmagic MultiView Setup软件设置，您的Blackmagic MultiView 4将保持最近一次应用的操作。当卸下智能前面板或通过软件更新Blackmagic MultiView 4设置后想要恢复到开关控制，您可能需要手动切换每个开关，使新设置生效。

## Blackmagic MultiView 4 HD上的开关设置



Blackmagic MultiView 4 HD底部设有开关设置图供您参考，方便您更改设置。

Blackmagic MultiView 4 HD的开关可用来更改以下设置

### 8号和7号开关 – 选择SDI音频加嵌和全屏

8号和7号开关合在一起可提供四种开/关组合。有了这四种不同的组合，您就可以将来自任何四路SDI输入的音频加嵌到多画面分割输出上。在全屏模式下，音频会跟随视频，因此您可以使用这些开关来选择视频源和音频源。

#### 音频选项表

音频源	8号开关	7号开关	开关示意图
输入1	OFF (关)	OFF (关)	
输入2	ON (开)	OFF (关)	
输入3	OFF (关)	ON (开)	
输入4	ON (开)	ON (开)	

### 6号开关 – 全屏视图

将8号开关设为“ON”（开），可显示全屏模式。这样就能以全屏监看单一视图。将6号开关设为“OFF”（关），可监看2x2多画面分割布局。

全屏模式输出上的加嵌音频会与您选择的视频源自动匹配。使用7号和8号开关为全屏模式选择音频和视频源的组合。2x2多画面分割布局下，7号和8号开关可选择音频输入。

### 5号开关 – Tally

将5号开关设为“ON”（开），可在各分割画面上显示Tally边框。设为“OFF”（关），可隐藏Tally边框。

全屏模式下时，所有其他数据，包括ATEM SDI摄影机控制、时间码以及隐藏式字幕都会直接通过，不发生任何改动。

**提示** 每路分割画面的输入号码可使用Blackmagic MultiView Setup软件来设置。请确保分割画面号码对应切换台上的输入号码，以便Tally信息正确显示。详情请参阅“Tally配置”部分的内容。

### 4号开关 – 音频表

将4号开关设为“ON”（开），可在分割画面上显示音频表。设为“OFF”（关），可隐藏音频表。

### 3号开关 – 分割画面的标签

将3号开关设为“ON”（开），可显示每路分割画面的标签。设为“OFF”（关），可关闭标签显示。

### 2号开关 – 边框

将2号开关设为“ON”（开），可显示各分割画面的边框，设为“OFF”（关），可关闭边框。

### 1号开关 – A级和B级3G-SDI

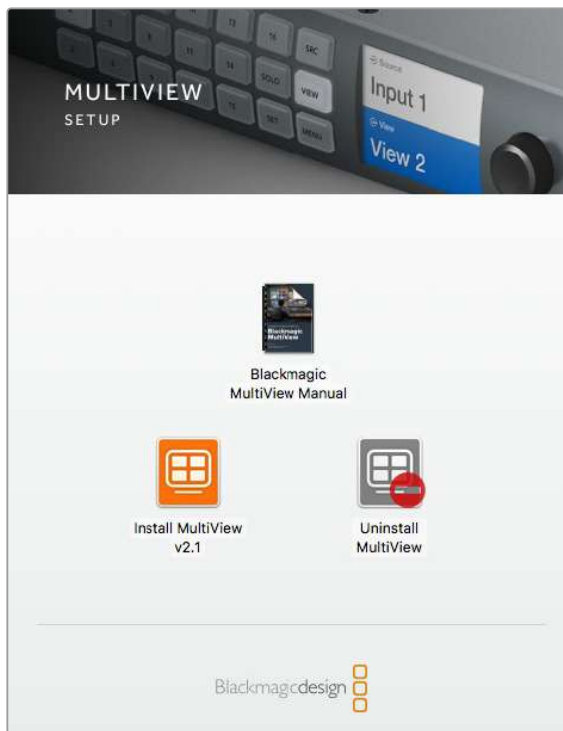
将1号开关设为“OFF”（关），可选择B级3G-SDI输出，设为“ON”（开），可选择A级3G-SDI。这能方便您更改3G-SDI输出电平，以便兼容其他SDI设备。

# 使用Blackmagic MultiView Setup

Blackmagic MultiView Setup可以让您从任意Mac或Windows计算机来轻松配置您的Blackmagic MultiView, 并更新其内部软件。这一实用程序简单易用, 如果您将Blackmagic MultiView 4连接至网络后, 甚至无需USB连接就可以通过以太网更改设置。

## 安装Blackmagic MultiView Setup

Blackmagic MultiView Setup可在64位版Windows以及最新的Sierra和High Sierra版macOS系统上运行。



双击安装程序并遵循提示来安装Blackmagic MultiView Setup。

### 在Windows系统下安装

- 1 双击内附的安装文件, 如果您从Blackmagic Design网站下载该程序, 请找到下载文件夹, 并双击其中的安装文件。
- 2 根据安装提示操作, 并同意License Agreement许可协议条款, Windows会自动安装该软件。

点击Windows系统的“开始”按钮, 并依次进入“所有程序”>Blackmagic Design>MultiView。MultiView文件夹里含有Blackmagic MultiView Setup应用程序。

## 在Mac OS X系统下安装

- 1 双击内附的安装文件, 如果您从Blackmagic Design网站下载该程序, 请找到下载文件夹, 并双击其中的安装文件。
- 2 根据安装提示操作, Mac OS X会自动安装该软件。

然后, 您的应用程序文件夹中会新建一个名为“Blackmagic MultiView”的文件夹, 里面含有Blackmagic MultiView Setup程序。

## Blackmagic MultiView Setup的主页面

运行Blackmagic MultiView Setup后, 首先出现的是软件主页面。如果您的网络中连接了多台Blackmagic MultiView, 请点击主页面左右两侧的箭头进行选择。

如果要进入Blackmagic MultiView的设置页面, 请点击产品图片下方的圆形图标, 或直接点击图片。



通过以太网或USB连接后, 您就可以在计算机上使用Blackmagic MultiView Setup来更改Blackmagic MultiView的各项设置。

## 使用Blackmagic MultiView Setup更改设置

点击设置图标打开Blackmagic MultiView的设置。设置窗口里您将看到名为“Sources”（源）、“Views”（分割画面）以及“Configure”（配置）的三个选项卡。使用Blackmagic MultiView 4和MultiView 4 HD机型时, 由于分割画面无法通过Videohub Control软件来调整, 因此“Views”（分割画面）设置不可用。Blackmagic MultiView 4 HD还设有“Tally”菜单, 可用来更改Tally设置。

**提示** 设备和计算机必须具备相同的网络设置方可显示源信号。



使用Blackmagic MultiView Setup可自定义输入标签，因此您能迅速识别多画面分割布局中的每个信号源。

- **Sources (源)** – 可用来自定义您的输入标签。该选项卡可更改多画面分割布局中信号源标签的显示方式。
- **Views (分割画面)** – 这一选项卡只有通过Videohub Control软件控制Blackmagic MultiView 16时方可使用。为分割画面更改名称后，您能够更容易在Videohub Control软件的Destination面板中加以识别。
- **视频输出**– 可从Blackmagic MultiView 4 HD上自定义视频格式和SD输出宽高比。
- **Configure (配置)** – 可控制多项设置，包括设备名称自定义、视频输出和叠加设置，以及网络设置和串行控制调整。

## Sources (源)

### 自定义输入标签

为信号源添加标签可有助于快速识别多画面分割布局中的每路信号。您还可以保存和加载标签组，因此如果您经常将Blackmagic MultiView用于不同场合，就可以使用这一功能快速加载标签，无需重新一一录入。

添加的标签可在Videohub Control软件以及联网的Videohub控制面板中查看。

要自定义您的输入标签：

- 1 点击“Sources”选项卡。
- 2 点击您想要更改的输入源名称文本框并键入新标签。
- 3 点击“Save”以确认设置。



## Views (分割画面)

### 自定义分割画面标签

如使用Blackmagic MultiView 16机型，您可以更改分割画面的标签，因此当通过Videohub Control软件控制MultiView 16时能够更容易便于识别。

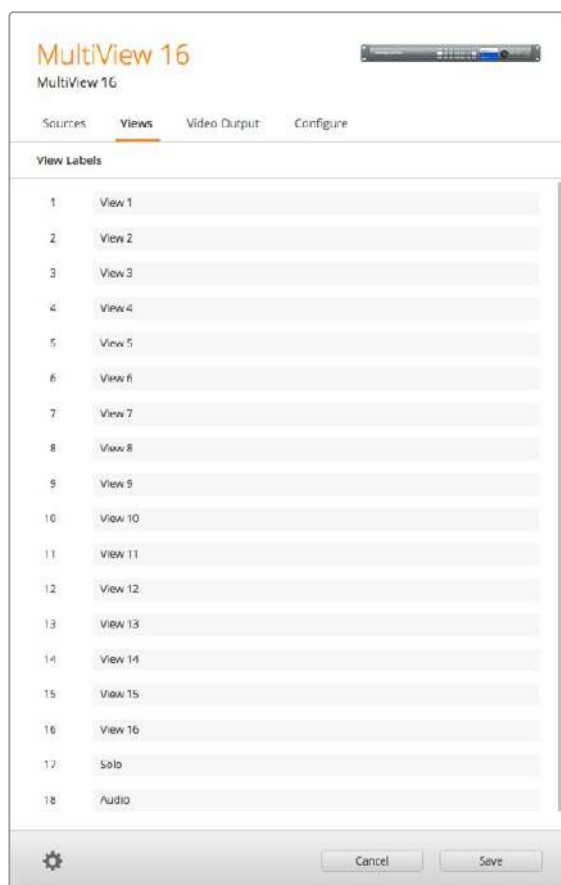
自定义分割画面标签步骤如下：

- 1 点击“Views”选项卡。
- 2 到“Output Labels”（输出标签）设置下，点击想要更改的输出源名称文本框并键入新标签。
- 3 点击“Save”以确认设置。

当这些分割画面标签仍处于其默认状态时，您会注意到输出17的标签为“Solo”（单画面），输出18的标签为“Audio”（音频）。

输出17可更改“Solo”（单画面）设置的软件标签，这一功能可通过Blackmagic MultiView 16的前面板进行控制。这将有利于您使用Blackmagic Videohub Control软件来控制MultiView 16。自定义Blackmagic MultiView Setup中的“Solo”输出标签可更改它在Blackmagic Videohub Control中的显示内容。

输出18对应Blackmagic MultiView 16的LCD屏幕菜单中的“Audio In”（音频输入）设置，可指派您想要加嵌到多画面分割输出上的音频。它和“Solo”输出标签类似，您可以对这一分割画面标签进行自定义更改，从而在使用Blackmagic Videohub Control控制Blackmagic MultiView 16时能查看到不同显示。



包括“Solo”和“Audio”在内的输出标签都可以更改名称，因此当使用Blackmagic Videohub Control控制Blackmagic MultiView 16时您可以自定义这些标签的显示方式。

## Video Output (视频输出)

### 视频格式和HD输出

Blackmagic MultiView不同机型的视频格式设置稍有不同。

Blackmagic MultiView 16可同时输出HD和Ultra HD视频。您也可以选择想要输出的视频帧率。例如，如果您想要输出的信号需要符合美国通常所使用的格式，可选择2160p29.97那么HD输出就可以自动匹配帧率。

本例中，如果选择的视频格式为2160p29.97，那么HD输出可根据您的视频要求设置为1080p29.97或1080i59.94。



MultiView 16中“Video Output”（视频输出）选项卡上的单选按钮可用来设置观看布局、Ultra HD视频格式、HD输出和SD宽高比等设置。

使用Blackmagic MultiView 4机型时，您可以选择通过SDI输出Ultra HD还是HD视频，以及设定帧率等。这些设置全都位于“Video Format”（视频格式）下拉菜单中。



Blackmagic MultiView 4的“Video Output”（视频输出）选项卡包含了一个视频格式选项下拉表，里面有分辨率和帧率选项

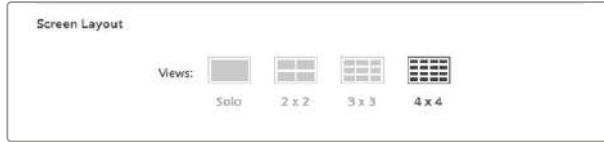
如使用Blackmagic MultiView 4 HD，您可以使用“视频格式”菜单选择HD帧率，以及输出隔行扫描还是逐行扫描视频。您还可以为Blackmagic MultiView 4 HD选择16:9或4:3的SD宽高比。



Blackmagic MultiView 4 HD的“Video Output”（视频输出）选项卡可用来选择输出HD分辨率和帧率，并设置为隔行或逐行扫描。

## 更改Multi View的分割画面布局

与Blackmagic MultiView 16控制面板LCD菜单上的“Layout”（布局）设置一样，您还可以使用Blackmagic MultiView Setup软件来更改画面布局。在“Details”（详情）设置中点击相应的布局图标来选择想要使用的布局设置。



在“Video Output”（视频输出）选项卡中为MultiView 16设置屏幕布局。

## Tally Configuration (Tally配置)

如使用Blackmagic MultiView 4 HD，您可将Tally配置设置为“Tally Override”或设为Blackmagic摄影机，或从ATEM切换台发送到MultiView 4 HD的摄影机号码。



MultiView Setup软件上“Tally”菜单中的Tally选项

选择和切换台输入对应的Tally信号时，您可以在输入1到4的文本框中输入1到99的摄影机编号。

### Tally Override

Tally信号通常由连接到MultiView最后一个SDI输入上的节目返送信号提供。但是，您可能想要将所有摄影机连接到所有分割画面上。

如果您使用Blackmagic Design摄影机并连接到ATEM切换台或其他带有第三方Tally系统的SDI切换台，就可以启用“Tally Override”功能。选择了“Tally Override”功能后，您的MultiView 4 HD就会寻找嵌入在每路SDI输入上的Tally信号。也就是说，所有分割画面都将单独接收Tally信号，而不是通过设备最后一个输入的节目返送上接收一组Tally信号。

**提示** “Tally Override” 模式适用于任何连接了Blackmagic ATEM切换台或Blackmagic Camera Fiber Converter的Blackmagic URSA Mini、URSA Mini 4K、URSA Mini Pro和URSA Broadcast摄影机。更多关于如何连接第三方切换台或第三方Tally的信息，请参考Blackmagic 3G-SDI Shield for Arduino操作手册。

## SD宽高比

如果将4:3 SD视频连接到Blackmagic MultiView 16，请勾选“Set to 4:3”复选框。这样能确保您的4:3视频使用正确的宽高比显示。

如果连接的是16:9 SD视频，请勾选“Set to 16:9”复选框，以便显示正确的画面。

当您一路SD信号源输入到Blackmagic MultiView 4 HD时，您可以使用设置软件来切换16:9和4:3输出画面。到“Video Output”（视频输出）菜单中，选择一个SD宽高比选项。



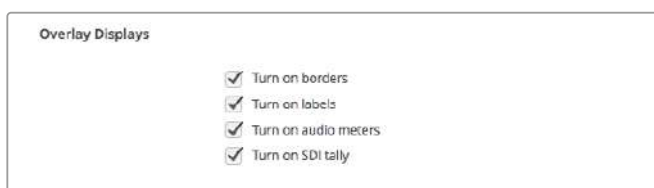
MultiView设置软件里“视频输出”菜单中的SD宽高比选项

## Overlay Displays (叠加显示)

Blackmagic MultiView 16和Blackmagic MultiView 4的“Overlay”（叠加）设置中设有复选框，用来启用Blackmagic MultiView中的各项功能。

叠加功能如下：

- **Border (边框)**：可将每个分割画面以网格形状分开。
- **Labels (标签)**：可显示或隐藏分割画面的标签。标签可使用Blackmagic MultiView Setup进行修改。
- **Audio Meters (音频表)**：可开启或关闭所有分割画面的音频VU表。每个分割画面都可以显示出嵌入到每个SDI信号中的前两个通道，以便您参考分割画面并监看音频电平。
- **SDI Tally**：当Blackmagic MultiView 16的16号输入或Blackmagic MultiView 4的4号输入连接到ATEM切换台的节目SDI输出上时，一旦将视频源切换为播出状态，画面上就会显示Tally边框。Tally功能可通过在叠加设置中勾选“Turn on SDI Tally”复选框来启用。取消勾选可禁用该项功能。输入号码可在设置软件中指派，以便Tally正确显示。



在Blackmagic MultiView 16和Blackmagic MultiView 4机型上，“Configure”（配置）选项卡中的叠加设置可以开启或关闭边框、分割画面标签、音频表等叠加信息，甚至还可添加SDI Tally边框

**提示** 为了使Tally正常工作，请确保您所连接的Blackmagic MultiView的所有输入都与ATEM切换台的输入编号相符，否则Tally可能显示在错误的分割画面上。

## Configure (配置)

### 为您的Blackmagic MultiView命名

不同Blackmagic MultiView型号的“Configure”（配置）选项卡各有不同。

Blackmagic MultiView 16或Blackmagic MultiView 4的“Configure”（配置）选项卡设有“Details”（细节）、“Overlay”（叠加）以及“Network Settings”（网络设置）等多组设置。Blackmagic MultiView 4 HD可显示标签和软件版本号，没有设置。

为Blackmagic MultiView 16或Blackmagic MultiView 4命名，可在进行远程控制时便于识别：

- 1 点击“Configure”选项卡。
- 2 在“Details”（详情）设置下，点击“Name”（名称）文本框并为您的Blackmagic MultiView键入一个新标签。
- 3 点击“Save”（保存）。



使用Blackmagic MultiView Setup为您的Blackmagic MultiView 16命名，以便网络用户轻松识别。

## 网络和串行控制设置

通过USB将Blackmagic MultiView 16连接到计算机上后，您可以使用Blackmagic MultiView Setup软件来设置Network Settings（网络设置）和Serial Control Settings（串行控制设置）。此外，您还可以通过设备的前面板LCD屏幕菜单来更改这些设置。当为Blackmagic MultiView 4进行配置时，仅有网络设置可用。

要更改网络设置，请点击相应的文本框并使用键盘键入相应值，或者勾选相应的复选框即可。



The screenshot displays two sections of a configuration window. The top section, titled "Network Settings", contains three input fields: "IP Address" with the value "192.168.10.160", "Subnet Mask" with "255.255.255.0", and "Gateway" with "192.168.10.1". The bottom section, titled "Serial Control", features a "Leitch protocol:" label followed by two radio button options: "Leitch Client" (which is unselected) and "Leitch Server" (which is selected).

连接到网络后，您可能需要对MultiView 16的“Network Settings”（网络设置）进行相应更改。“Serial Control”（串行控制）设置让您可以根据RS-422远程控制设置需要为MultiView 16配置Leitch用户或服务器

要设置串行控制，请根据以下步骤将Blackmagic MultiView 16通过USB连接到您的计算机：

- 1 运行Blackmagic MultiView Setup，点击产品图片或其下方的设置图标来选择Blackmagic MultiView 16。
- 2 点击“Configure”（配置）选项卡，如果您的Blackmagic MultiView 16是以访客身份连接控制面板，请将“Leitch Protocol”交换机设置为“Leitch Client”；如果您的Blackmagic MultiView 16是从自动化系统或第三方矩阵控制系统上操控，请将“Leitch Protocol”交换机设置为“Leitch Server”。
- 3 点击“Save”按钮确认您的设置。



This screenshot shows the "Serial Control" section of the configuration window. It includes the "Leitch protocol:" label and two radio button options: "Leitch Client" (unselected) and "Leitch Server" (selected).

当使用RS-422串行控制时，选择“Client”或“Server”。

## 保存和加载标签组

如果您从事项目制作时经常会重复用到一些标签组，您还可以通过简单步骤将标签组保存用于日后加载。

要保存您的标签组，请点击Blackmagic MultiView Setup软件界面中的齿轮图标，打开“Label Set”（标签组）设置，并选择“Save Label Set”（保存标签组）。选择文件保存地址，然后点击“Save”保存。

要加载您的标签组，请点击该齿轮图标，打开“Label Set”（标签组）设置，并选择“Load Label Set”（加载标签组）。找到您保存的标签组文件并点击“Load”加载。



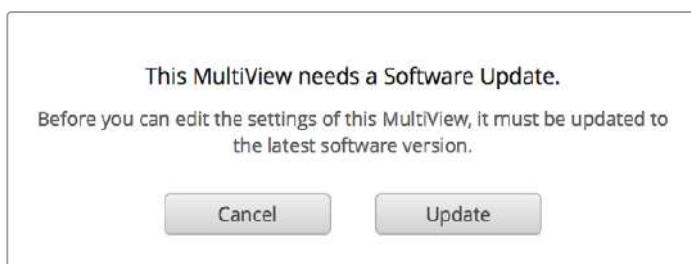
使用Blackmagic MultiView Setup保存并加载标签。

## 更新内部软件

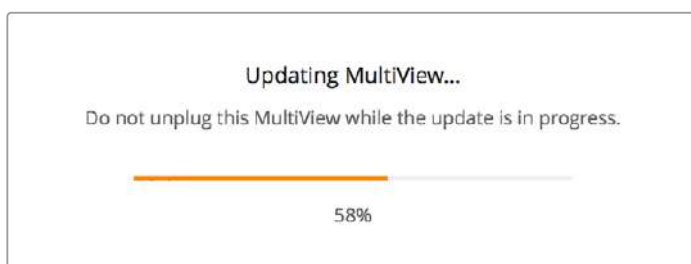
您需要定期更新Blackmagic MultiView的内部软件。升级内部软件可以添加新功能、兼容新硬件，并支持新格式等。

更新Blackmagic MultiView内部软件步骤如下：

- 1 通过USB或以太网将Blackmagic MultiView连接到您的计算机。
- 2 运行Blackmagic MultiView Setup，软件会自动显示网络中所连接的Blackmagic MultiView。
- 3 点击产品图片或产品名称下方的设置图标来选择您的Blackmagic MultiView。
- 4 Blackmagic MultiView Setup会告知是否需要更新。
- 5 如果需要更新，请点击“Update”按钮，并完成软件安装。请确保在更新过程中不要断开Blackmagic MultiView。
- 6 更新完成后，点击“Close”按钮关闭。



点击“Update”（更新）按钮安装新的内部软件。



请确保在更新过程中不要断开Blackmagic MultiView。

## 使用Videohub Control软件

将您的Blackmagic MultiView 16连接到网络中后，您可以在Mac或Windows计算机上使用Blackmagic Videohub Control软件，将Blackmagic MultiView 16的视频输入指派到多画面分割布局的不同分割画面上。Blackmagic MultiView的SDI输入会以按钮形式显示在“Sources”面板中，各路分割画面则会以按钮形式显示在“Destinations”面板中。Videohub软件安装程序中包含了Videohub Control应用程序，该应用程序也可在Blackmagic Design网站的支持页面进行下载，网址：[www.blackmagicdesign.com/cn/support](http://www.blackmagicdesign.com/cn/support)。

**备注** 您可以使用Videohub Control软件将源信号指派到Blackmagic MultiView 16画面上，以及为多画面分割输出选择单画面模式或音频源等其他设置。使用Blackmagic MultiView 4机型时，您可以使用Videohub Control软件为多画面输出更改单画面和音频源。

### 选择您的MultiView 16

运行Videohub Control软件后，点击齿轮图标打开“Settings”（设置）弹出菜单，并选择“Select Videohub”（选择Videohub）。从连接设备列表中选择您的Blackmagic MultiView 16。

如果您为输入添加了标签，那么这些名字也会出现在Videohub Control软件中。如果您没有为输入添加标签，那么它们将显示为Input 1、Input 2、Input 3，以此类推。



您可以使用Blackmagic Videohub Control将Blackmagic MultiView 16的信号源远程设定到不同的分割画面上。



## 查看输入

点击Destinations面板中的各个分割画面按钮，可查看每路Blackmagic MultiView 16的视频输入具体被指派到哪个分割画面上。然后，该Destination按钮，也就是分割画面按钮会亮起。而此时，Sources面板中相对应的视频输入也会亮起，以便您明确哪路输入或信号源对应的是哪个分割画面。

## 将输入指派到分割画面

要将一路视频输入指派到一个分割画面上，请从Destination面板中点击一个分割画面按钮，然后在Sources面板中点击一个输入按钮，就可以立即将该路输入指派到该分割画面了。

## Solo Input (单画面输入)

当Blackmagic MultiView 16的前面板上的“SOLO”按钮启用时，“Solo Input”按钮可以决定哪路输入将全屏显示。点击Videohub Control的Destination面板中的“Solo Input”按钮，再点击Sources面板中的一个输入按钮即可。

## Audio Input (音频输入)

当使用Blackmagic MultiView 16及Blackmagic MultiView 4时，您可以使用Videohub Control软件中的“Audio Input”（音频输入）按钮来决定哪路SDI输入的音频将被指派到多画面分割输出上。点击Videohub Control的Destination面板中的“Audio Input”按钮，再点击Sources面板中的一个输入按钮就可以立即将该输入的音频指派到该多画面分割输出了。



“Solo Input”（单画面输入）和“Audio Input”（音频输入）按钮可让您通过Videohub Control更改这些设置。

# Developer Information

## Blackmagic Videohub Ethernet Protocol v2.3

### Summary

Your Blackmagic MultiView is compatible with the Blackmagic Videohub Ethernet Protocol. It is text based and is accessed by connecting to your Blackmagic MultiView's IP address and TCP port 9990.

**NOTE** Controlling your MultiView via Ethernet is available on Blackmagic MultiView 16 and Blackmagic MultiView 4, however, most features are relevant to Blackmagic MultiView 16. On Blackmagic MultiView 4, you can change the solo source and audio source for the multi view output.

The multi view sends information in blocks which each have an identifying header in all caps, followed by a full colon. A block spans multiple lines and is terminated by a blank line. Each line in the protocol is terminated by a newline character.

Lines sent to the Blackmagic MultiView 16 can be terminated with line feed, carriage return or both.

Upon connection, the multi view sends a complete dump of the state of the device. After the initial status dump, status updates are sent every time the multi view status changes.

To be resilient to future protocol changes, clients should ignore blocks they do not recognize, up to the trailing blank line. Within existing blocks, clients should ignore lines they do not recognize.

### Protocol Preamble

The first block sent by the multi view is always the protocol preamble:

```
PROTOCOL PREAMBLE:↵  
Version: 2.3↵  
↵
```

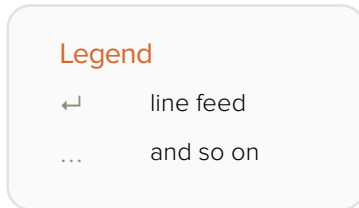
The version field indicates the protocol version. When the protocol is changed in a compatible way, the minor version number will be updated. If incompatible changes are made, the major version number will be updated.

### Device Information

The next block contains general information about the connected Blackmagic MultiView 16 device. If a device is connected, the multi view will report the attributes of the Blackmagic MultiView 16:

```
MULTIVIEW DEVICE:↵  
Device present: true↵  
Model name: Blackmagic MultiView 16↵  
Video inputs: 16↵  
Friendly name:  
Unique ID:  
Video processing units: 0↵  
Video outputs: 16↵  
Video monitoring outputs: 0↵  
Serial Ports:  
↵
```

This example is for the Blackmagic MultiView 16 which has 16 sources and 18 views including solo which is view 16 and audio which is view 17, referred to here as outputs.



Version 2.3 of the Blackmagic Videohub Ethernet Protocol was released with Videohub 4.9.1 software

### Initial Status Dump

The next two blocks enumerate the labels assigned to the input and output ports.

```
INPUT LABELS:↵
0 VTR 1↵
1 VTR 2↵
...
↵

OUTPUT LABELS:↵
0 Output feed 1↵
1 Output feed 2↵
...
↵
```

Note: Input and Output labels are always numbered starting at zero in the protocol which matches port one on the chassis.

The next three blocks describe the routing of the view ports.

```
VIDEO OUTPUT ROUTING:↵
0 5↵
1 3↵
...
↵
```

The next block describes the locking status of the views. Each port has a lock status of “O” for ports that are owned by the current client (i.e., locked from the same IP address), “L” for ports that are locked from a different client, or “U” for unlocked.

```
VIDEO OUTPUT LOCKS:↵
0 U↵
1 U↵
...
↵
```

The last block is the configuration block.

```
Layout: SOLO or 2x2 or 3x3 or 4x4
Output format: 50i or 50p or 60i or 60p
Solo enabled: True or False
Widescreen SD enable: True or False
Display border: True or False
Display labels: True or False
Display audio meters: True or False
Display SDI tally: True or False
```

## Status Updates

When any route, label, or lock is changed on the multi view by any client, the multi view resends the applicable status block, containing only the items that have changed.

If multiple items are changed, multiple items may be present in the update:

```
OUTPUT LABELS:↵
7 New output 8 label↵
10 New output 11 label↵
↵
```

## Requesting Changes

To update a label, lock or route, the client should send a block of the same form the multi view sends when its status changes. For example, to change the route of output port 8 to input port 3, the client should send the following block:

```
VIDEO OUTPUT ROUTING:↵
7 2↵
↵
```

The block must be terminated by a blank line. On receipt of a blank line, the multi view will either acknowledge the request by responding:

```
ACK↵
↵
```

or indicate that the request was not understood by responding:

```
NAK↵
↵
```

After a positive response, the client should expect to see a status update from the MultiView showing the status change. This is likely to be the same as the command that was sent, but if the request could not be performed, or other changes were made simultaneously by other clients, there may be more updates in the block, or more blocks. Simultaneous updates could cancel each other out, leading to a response that is different to that expected.

For MultiView 16 the client can change the solo source and the audio source to embed on the output.

Solo mode needs to be enabled either from the front panel or by sending the block:

```
CONFIGURATION:↵
Solo enabled: true↵
↵
```

Once enabled the following block will change the SOLO source to input 11:

```
Video Output Routing:↵
16 10↵
↵
```

This is not available on MultiView 4.

The following block will send embedded audio from input 1 to the MultiView 16 output:

```
Video Output Routing:↵
17 0↵
↵
```

The following block will send embedded audio from input 1 to the MultiView 4 output:

```
Video Output Routing:↵
5 0↵
↵
```

In the absence of simultaneous updates, the dialog expected for a simple label change is as follows:

```
OUTPUT LABELS:↵
6 new output label seven↵
↵
ACK↵
↵
OUTPUT LABELS:↵
6 new output label seven↵
↵
```

The asynchronous nature of the responses means that a client should never rely on the desired update actually occurring and must simply watch for status updates from the MultiView and use only these to update its local representation of the server state.

### Requesting a Status Dump

The client may request that the MultiView resend the complete state of any status block by sending the header of the block, followed by a blank line. In the following example, the client requests the MultiView resend the output labels:

```
OUTPUT LABELS:↵
↵
ACK↵
↵
OUTPUT LABELS:↵
0 output label 1↵
1 output label 2↵
2 output label 3↵
...
↵
```

### Checking the Connection

While the connection to the MultiView is established, a client may send a special no-operation command to check that the MultiView is still responding:

```
PING:↵
↵
```

If the MultiView is responding, it will respond with an ACK message as for any other recognized command.

## Blackmagic MultiView 16 RS-422 Protocol

### General

The RS-422 protocol can be used to control Blackmagic MultiView 16 as a slave device from third party routers and automation systems.

The “Leitch Server” mode implements the router (server) side of the Leitch Serial Pass Through Protocol as specified in section 4 of Leitch document SPR-MAN revision D. In “Leitch Client” mode, the Blackmagic MultiView 16 implements the controller (client) side of the Leitch terminal protocol. Set the desired leitch mode in the ‘configure’ settings in the Blackmagic MultiView Setup software.

This document describes the commands and parameters in the protocol that are relevant and supported by Blackmagic MultiView 16. Other commands and parameters specified in the Leitch protocol are accepted but ignored.

The RS-422 serial port is configured as 9600 N81:

9600 is the line speed, or baud rate, at 9600 bits/sec.

N represents no parity check, or 'none'.

8 is the data length.

1 is for stop bits.

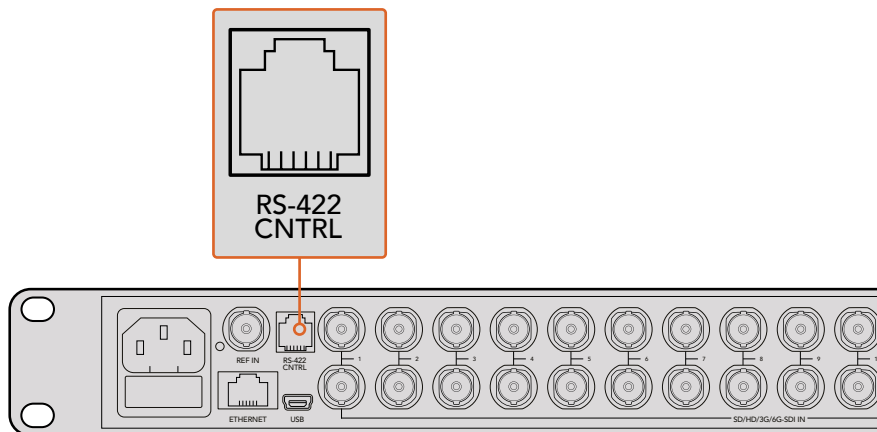
To summarize N81, data without a parity check begins with 1 start bit, includes 8 true data bits, and 1 stop bit. There are 10 bits in total.

The protocol is line oriented, with a maximum length of 250 characters per command. Each command from the client should be terminated with a carriage return (\r). Each response from the server will be terminated with a carriage return and line feed (\r\n).

Sources, destinations and levels are always specified in base-16, numbered from zero. Levels are always between 0 and 15 ("F") . Blackmagic MultiView 16 only has one valid level – level zero.

On connecting to the serial port, the client should send a carriage return. Blackmagic MultiView 16 will respond with a > character prompt, which is not followed by a carriage return or line feed. Receiving the prompt indicates that a connection has been established. The same prompt will be issued after each command received by the MultiView.

In the following documentation, commands in orange and values in blue must be typed literally, including any spaces. In the following example of an immediate command using destination port 7 and source port 3, @ X:0/destination,source would be entered as: @ X:0/6,2

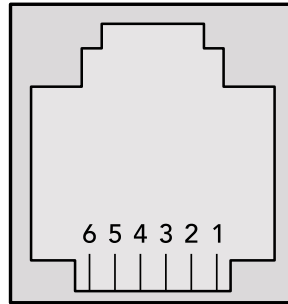


The RS-422 serial port lets you control Blackmagic MultiView 16 from third party routers and automation systems. The connector is an RJ11 connector, the same used in many landline telephone connections. By modifying an RS-422 to USB adapter cable terminated with an RJ11 connector, you can control Blackmagic MultiView 16 using external controllers via USB.



An RS-422 to USB adapter cable and RJ11 connector can be purchased from electronics stores such as Digi-Key.com. Refer to the pinout diagram below for help wiring the RJ11 connector to the adapter cable.

Pin No.	Function
Pin 1	TX +
Pin 2	TX -
Pin 3	GND
Pin 4	GND
Pin 5	RX -
Pin 6	RX +



Pinout diagram for the RJ11 connector

### Notifications

Once connected, if status reporting is enabled, the client will receive a notification message when a route changes on the MultiView. The notifications take one of two forms:

**S:0destination,source** Routing change

This message indicates that the specified source port is now routed to the specified destination.

**V:0destination,source** Preset routing notification

This message indicates that the current preset includes a route from the specified source to the specified destination.

### Global Commands

All pass through commands are preceded by an @ symbol and a space.

The following client commands are supported:

@ !     disable status reporting  
Status reporting is disabled by default.

@ ?     enable status reporting  
Status reporting is enabled.

@ Z:    reset routing table

Routing is reset so that the first source is routed to all destinations.

### Immediate Commands

@ X:0/destination,source   change route

@ X:0/destination,source/destination-2,source-2...   change multiple routes  
The specified source ports are routed to the specified destinations.  
Any routing changes will trigger S: notifications

@ X?0destination   request individual route status  
The source routed to the specified destination will be returned as an S: notification.

@ S?0   request all ports route status  
Each source and destination port pair will be returned as S: notifications

## Salvo Commands

- @ P:0/destination,source queue route change
- @ P:0/destination,source/destination-2,source-2... queue multiple route changes  
The specified routing changes are added to the current salvo for later execution.
- @ P?0destination request individual port status in salvo  
If a routing change for the specified destination port is queued, the route will be returned as a V: notification.
- @ V?0 request all ports status in salvo  
Each queued routing change in the salvo is reported as a V: notification.
- @ B:C clear salvo
- @ B:R clear salvo  
Any queued changes are discarded and the salvo is reset.
- @ B:E execute salvo  
Any queued changes are executed and each routing change will be returned as an S: notification.



# 帮助

## 获得帮助

获得帮助最快捷的途径是登陆Blackmagic Design在线支持页面，并浏览有关Blackmagic MultiView的最新支持信息和材料。

### Blackmagic Design在线支持页面

请登陆Blackmagic Design支持中心[www.blackmagicdesign.com/cn/support](http://www.blackmagicdesign.com/cn/support)获得最新版操作手册、软件以及技术答疑文章。

### Blackmagic Design论坛

您可以登陆我们的网站访问Blackmagic Design论坛，获得更多信息和有用的创意资源。访问论坛也是获取帮助的一个捷径，因为论坛中不乏经验丰富的用户和Blackmagic Design的员工，他们都能为您答疑解惑。请登陆网址<http://forum.blackmagicdesign.com>进入论坛。

### 联系Blackmagic Design支持中心

如果我们提供的支持信息和论坛均无法解答您的疑问，请到支持页面下点击“给我们发送电子邮件”按钮即可发送技术支持请求。或者，您也可以点击“查找您所在地区的支持团队”按钮，致电您所在地区的Blackmagic Design支持中心获得帮助。

### 查看当前安装的软件版本

要检查您计算机上安装的Blackmagic MultiView软件版本，请打开Blackmagic MultiView应用程序查看。打开“Blackmagic MultiView”菜单，选择“About MultiView”即可查看版本号。

### 如何获得更新

请先检查计算机上安装的Blackmagic MultiView 16版本，然后登陆网址[www.blackmagicdesign.com/cn/support](http://www.blackmagicdesign.com/cn/support)，访问Blackmagic Design支持中心查看版本更新信息。请定期关注版本更新，但切勿在进行重要项目工作时进行软件升级，以免重要资料丢失。

# 监管告知与安全信息

## 监管告知

### 在欧盟范围内处置电子垃圾和电子设备的注意事项。



根据产品所附的提示标志，本设备不得与其它废弃材料共同处置。处置废弃设备时，必须交给指定收集点进行回收。对废弃设备进行单独收集并回收能够节省自然资源，且回收方式不会损害环境和人体健康。获取更多关于废弃设备回收点的信息，请联系您所在城市的回收站，或当时购买设备的经销商。



本设备经过测试，符合FCC规则的第15部分对A类数字设备的限制。这些限制旨在为运行于商业环境中的设备提供合理保护，使其免受有害干扰的影响。本设备可生成、使用且辐射射频能量，如果未按照安装手册来安装和使用本设备，则可能导致对无线电通信的有害干扰。在住宅区运行本产品可能会产生有害干扰，在这种情况下将由用户自行承担消除干扰的费用。

必须满足以下条件后方可操作：

- 1 设备不会造成有害干扰。
- 2 设备必须能够承受任何干扰，包括可能导致意外操作的干扰。

必须使用有高品质屏蔽的HDMI电缆连接HDMI接口。

## 安全信息

设备必须连接在配有保护地线的电源插座。

为了降低触电风险，请勿将设备放在会滴水或溅水的地方。

设备适合在环境温度低于40°C的热带地区使用。

确保设备四周留有足够的空间，不受阻碍。

安装在机架上时，确保相邻设备不会阻碍通风。

设备内部零件 维修服务请联系当地Blackmagic Design服务中心。



请在海平面高度为2000米以下的地区使用。

# 保修

## 有限保修

Blackmagic Design保证Blackmagic MultiView自购买之日起12个月内不会有材料和工艺上的缺陷，包括接口、线缆、冷却风扇、保险丝、LCD显示屏以及按键。若本产品在保修期内出现质量问题，Blackmagic Design可选择为产品提供免费修理或更换零部件，或者更换缺陷产品。

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# Blackmagic MultiView





## 환영합니다.

Blackmagic MultiView를 구매해 주셔서 감사합니다.

모두가 고화질 영상을 이용할 수 있도록 하여 TV 산업을 창의적으로 발전시켜 나가려는 저희의 목표를 같이 이루어나갈 수 있기를 희망합니다. MultiView 16과 경제적인 UHD TV를 함께 사용하면 최대 16대의 개별 방송용 모니터를 사용하는 것과 같은 효과를 얻을 수 있습니다. MultiView 16을 사용하면 저렴한 비용으로 진정한 방송급 멀티 소스 모니터링을 사용할 수 있습니다.

Blackmagic MultiView 4는 작고 휴대성이 높은 프로덕션에 완벽한 제품으로 HD 또는 UHD 화면에서 최대 4개의 영상 소스를 모니터할 수 있습니다. 한 대의 MultiView 출력을 다른 MultiView로 라우팅하는 방식으로 여러 대를 사용하면 완벽하게 사용자 지정된 모니터링 셋업을 구축할 수 있습니다!

본 사용 설명서에는 Blackmagic MultiView 설치와 관련된 모든 정보가 담겨있습니다. 하지만, IP 주소나 컴퓨터 네트워크에 대한 확신이 없을 경우에는 기술 지원을 요청하는 것이 좋습니다. Blackmagic MultiView는 Videohub Control 소프트웨어를 통해 제어할 수 있습니다. 이 소프트웨어의 설치와 설정은 간단하지만 설치를 마친 후에 몇 가지 기술적 설정 사항을 적용해야 합니다.

자사 웹사이트 [www.blackmagicdesign.com/kr](http://www.blackmagicdesign.com/kr)에 방문하여 고객 지원 페이지에서 최신 설명서 및 소프트웨어를 다운로드하세요. 마지막으로, 소프트웨어 업데이트 다운로드 시에는 사용하는 Blackmagic MultiView를 등록하면 새로운 소프트웨어 출시 소식을 받아볼 수 있습니다. 저희는 새로운 기능과 제품 향상을 위해서 끊임없이 노력하고 있으며, 항상 고객 여러분의 의견을 기다립니다.

구입한 Blackmagic MultiView를 통해 비디오 입력을 놀라운 UHD 화질로 감상하며 오랫동안 즐겁게 사용하시기 바랍니다.

Blackmagic Design의 CEO 그랜트 페티

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# 시작하기

전원을 연결하고 SDI 비디오 소스를 연결한 뒤, 모니터 및 TV를 HDMI 또는 SDI 출력에 연결하기만 하면 Blackmagic MultiView의 사용 준비가 완료됩니다. 이 부분에서는 Blackmagic MultiView 사용 시작에 필요한 모든 정보를 확인할 수 있습니다.

## 전원 연결하기

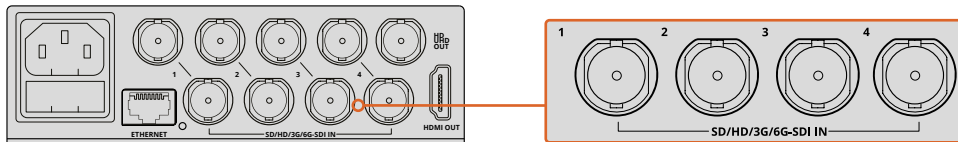
Blackmagic MultiView 뒷면 패널에 있는 110-240V AC 전원 입력에 표준 IEC 전원 코드를 연결하여 전원을 공급하세요.

**정보** Blackmagic MultiView 4는 이더넷 전원 장치(PoE+)를 지원하기 때문에 PoE+를 공급하는 이더넷 스위치에 연결하기만 하면 됩니다. MultiView 4에 AC 전원과 PoE+ 연결 모두 연결되어 있는 경우 이 중 하나의 연결이 끊기거나 고장날 시, 다른 전원으로 자동 전환됩니다.

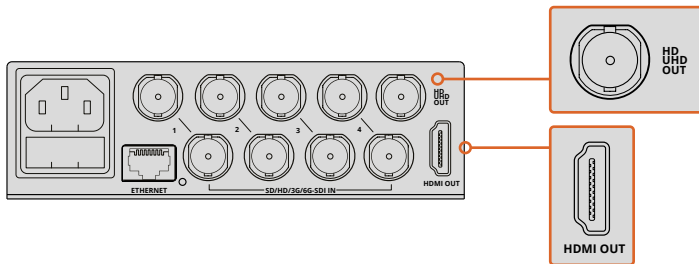
Blackmagic MultiView 4 HD 전원을 연결하려면 전원 공급 장치를 6V-36V DC 입력에 연결하세요. 제품에 전원을 단단히 고정할 수 있는 나사 하우징을 탑재해 실수로 전원이 분리되지 않습니다.

## SDI 소스 및 모니터 연결하기

Blackmagic MultiView의 SDI 비디오 입력 중 하나에 SDI 소스를 연결하세요. 비디오 포맷이 자동으로 감지되어 멀티뷰 출력에 영상이 나타납니다. 모니터를 SDI 또는 HDMI 멀티뷰 출력에 연결하기만 하면 출력 확인이 가능합니다.



Blackmagic MultiView의 SDI 비디오 입력에 비디오 소스를 연결하세요.

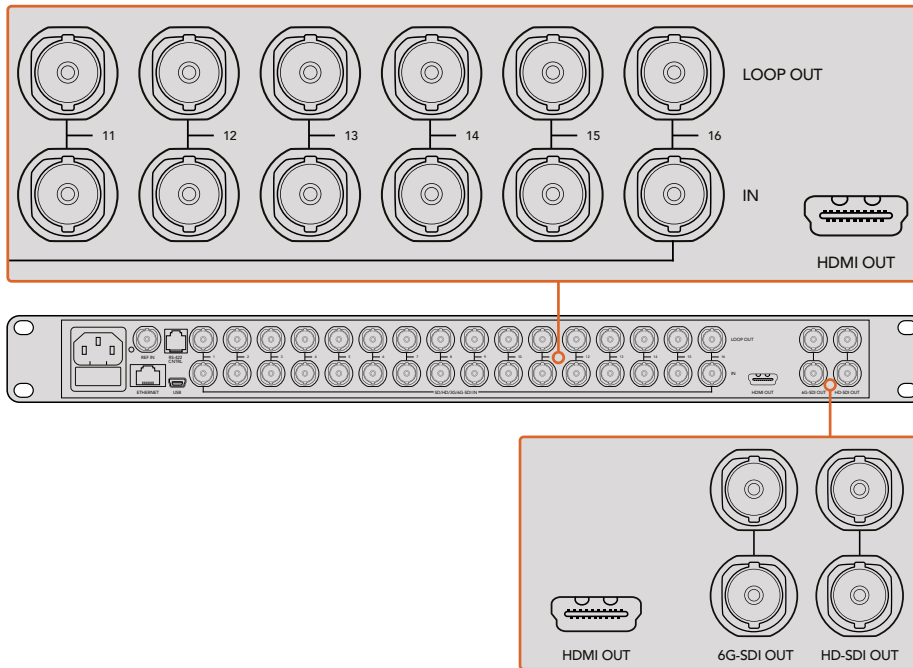


Blackmagic MultiView의 HDMI 또는 SDI 멀티뷰 출력에 모니터를 연결하세요.

HDMI 모니터를 HDMI 출력에 연결할 경우, Blackmagic MultiView는 모니터가 UHD 또는 HD를 지원하는지 자동으로 감지한 뒤 해당 멀티뷰 출력으로 전환합니다.

**정보** Blackmagic MultiView 16에서는 HD-SDI 전용 출력을 통해 멀티뷰를 출력하거나, 6G-SDI 출력과 HDMI 출력을 통해 최대 UHD 까지 출력할 수 있습니다.

Blackmagic MultiView 4와 MultiView 16의 각 입력 단자 위에 탑재된 루프 출력을 통해 각 소스 신호를 다른 비디오 장비에 연결할 수도 있습니다.



**정보** 모든 Blackmagic MultiView 16의 SDI 출력과 HDMI 출력을 동시에 사용하여 UHD/HD 멀티뷰를 모니터링할 수 있습니다. Blackmagic MultiView 4를 사용할 시에는 내장 스위치 및 Teranex Mini Smart Panel 옵션, Blackmagic MultiView Setup 유틸리티 소프트웨어를 통해 UHD 또는 HD 멀티뷰 출력 설정을 선택할 수 있습니다.

## 멀티뷰 레이아웃 설정하기

필요에 맞게 멀티뷰 레이아웃을 변경할 수 있습니다. 예를 들어, Blackmagic MultiView 4와 Blackmagic MultiView 4 HD를 2x2 또는 Solo로 설정할 수 있습니다. Blackmagic MultiView 16은 2x2, 3x3, 4x4 또는 Solo 보기로 설정할 수 있습니다.

### Blackmagic MultiView 16에서 레이아웃 설정하기

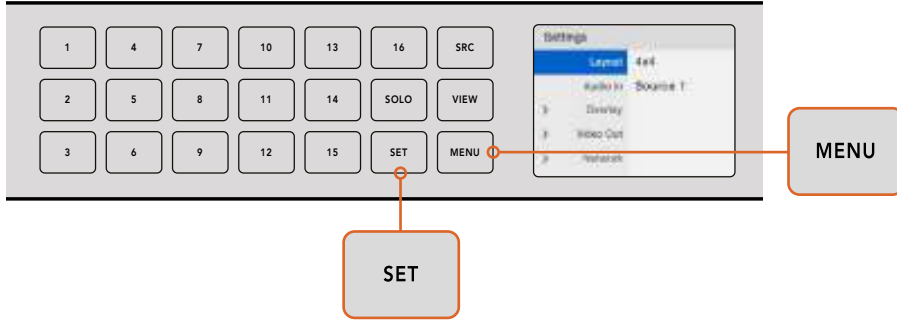
내장 제어 패널에 탑재된 제어 버튼과 회전 노브, LCD를 사용하여 Blackmagic MultiView 16의 레이아웃을 변경하세요. SOLO 버튼을 누른 뒤, 소스 버튼 중 하나를 사용해 선택한 입력을 지정하면 전체 화면 모드로 모니터링할 수 있습니다.

- 1 전면 패널의 MENU 버튼을 누르면 LCD에 설정 화면이 나타납니다.
- 2 레이아웃이 설정 메뉴의 가장 첫 단계이기 때문에 설정 메뉴에 처음 들어가면 항상 하이라이트 상태로 되어 있습니다. 설정을 변경하려면 SET 버튼을 누르세요.



- 3 전면 패널의 회전 노브를 돌려 레이아웃 설정을 '4x4'로 선택하세요. '4x4'로 설정하면 하나의 화면에서 16개의 소스를 모두 볼 수 있습니다. 설정을 변경할 때마다 SET 버튼과 MENU 버튼에 불빛이 깜빡이는 것을 확인할 수 있습니다. 설정이 변경되면 SET 버튼을 눌러 변경을 확인하거나, MENU 버튼을 눌러 변경을 취소할 수 있습니다.
- 4 설정을 확인하려면 SET 버튼을 누르세요.

Blackmagic MultiView 16 Setup 소프트웨어의 'Configure' 탭에서도 레이아웃을 설정할 수 있습니다.

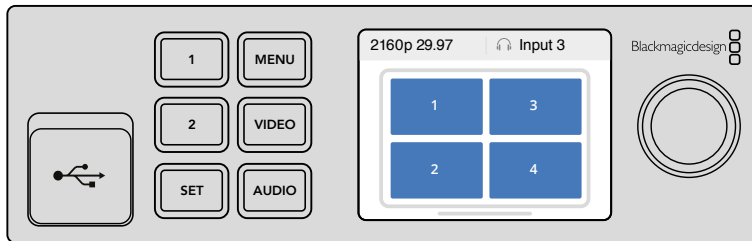


Blackmagic MultiView 16의 뷰 레이아웃을 설정하려면 MENU 버튼을 누르고 회전 노브로 원하는 레이아웃을 선택한 뒤, SET 버튼을 누르세요. '4x4'로 설정하면 하나의 화면에서 16개의 소스를 모두 볼 수 있습니다.

### Blackmagic MultiView 4에서 레이아웃 설정하기

Blackmagic Multiview 4는 2x2 레이아웃으로 기본 설정되어 있습니다. Blackmagic MultiView 4의 레이아웃을 Solo로 변경하려면 Teranex Mini Smart Panel의 '1' 버튼을 누르세요. '2' 버튼을 누르면 2x2 화면 모드로 돌아옵니다.

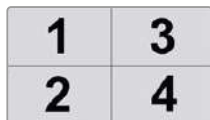
Setup 소프트웨어의 Configure 탭을 통해 레이아웃을 변경할 수도 있습니다.



'1' 버튼을 눌러 Solo로, '2' 버튼을 눌러 2x2 모드로 변경할 수 있습니다.

### Blackmagic MultiView 4 HD에서 레이아웃 설정하기

MultiView 4 HD를 처음으로 사용할 경우, 입력 1과 입력 3이 뒷줄에, 입력 2와 입력 4가 하단에 배치된 2x2 레이아웃으로 기본 설정되어 있습니다. Solo 모드로 변경하려면 내장 스위치 6을 SOLO ON으로 설정하세요.



MultiView 4 HD의 2x2 레이아웃(4개의 SDI 입력)

더 자세한 정보는 [Blackmagic MultiView 4 HD 스위치 설정] 부분을 참조하세요.

## 네트워크 연결하기

Blackmagic MultiView는 Blackmagic Videohub 이더넷 프로토콜을 지원하므로 접근이 힘든 장비랙에 제품을 설치한 경우, Blackmagic Smart Control 및 Blackmagic Master Control 같은 Blackmagic Videohub 컨트롤 패널을 사용해 원격으로 쉽게 제어할 수 있습니다. 이더넷을 통해 네트워크에 연결하면 다른 컴퓨터와 네트워크에 연결된 Videohub 패널에서 Blackmagic MultiView를 볼 수 있습니다. 컴퓨터와 패널에서 제품을 원격으로 제어할 수 있습니다.

네트워크에 Blackmagic MultiView 연결하기

- 1 Blackmagic MultiView 전원을 연결합니다.
- 2 표준 RJ45 이더넷 케이블을 사용하여 Blackmagic MultiView를 네트워크 또는 컴퓨터에 연결합니다.

네트워크 연결이 완료되면 Blackmagic MultiView의 IP 주소가 네트워크에 연결된 다른 장비의 주소와 다르게 설정되어 있는지 확인하세요. Blackmagic MultiView 16을 사용하거나 Teranex Mini Smart Panel이 설치된 MultiView 4를 사용할 경우, 제어 패널의 LCD 메뉴를 통해 네트워크 설정을 변경할 수 있습니다. USB로 Blackmagic MultiView를 컴퓨터에 연결하고, Blackmagic MultiView Setup에서 네트워크 설정을 변경하세요. 네트워크 설정 변경에 관한 더 자세한 정보는 본 설명서의 [설정 변경하기] 부분을 참고하세요.

## 시리얼 컨트롤 연결하기

RS-422 시리얼 연결을 사용하여 서드파티 라우터 컨트롤러로 Blackmagic MultiView 16을 제어할 수 있습니다. 시리얼 컨트롤에 관한 더욱 자세한 정보는 본 설명서의 [Blackmagic MultiView Setup에서 설정 변경하기] 부분을 참고하세요.

## 랙에 설치하기

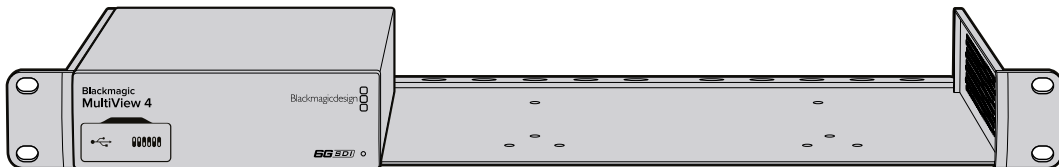
Blackmagic MultiView 16은 1RU 크기의 제품으로 방송 장비랙 또는 로드 케이스에 설치할 수 있습니다.

Blackmagic MultiView 4는 훨씬 작은 크기의 제품으로 장비랙을 사용하지 않는 이동식 프로덕션에서 사용할 수 있습니다. MultiView 4는 높은 휴대성을 가진 소형 제품으로 제작되었지만, 장비랙 환경에서도 사용할 수 있습니다. Blackmagic Teranex Mini Rack Shelf는 최대 세 대의 제품을 나란히 1RU 크기의 공간에 설치할 수 있도록 제작되어 손쉽게 장비 간을 연결하여 원하는 수의 소스 영상 뷰를 구축할 수 있습니다.

컨버터의 고무 바닥을 제거하면 손쉽게 MultiView 4를 Teranex Mini Rack Shelf에 설치할 수 있습니다. 설치한 뒤, 랙 밑에 위치한 나사홈을 통해 나사를 조여 장비를 고정합니다. Teranex Mini Rack Shelf는 설치랙에 추가 Teranex Mini를 설치하지 않을 시 빈 공간을 채울 수 있는 두 개의 검은색 패널이 함께 제공됩니다.

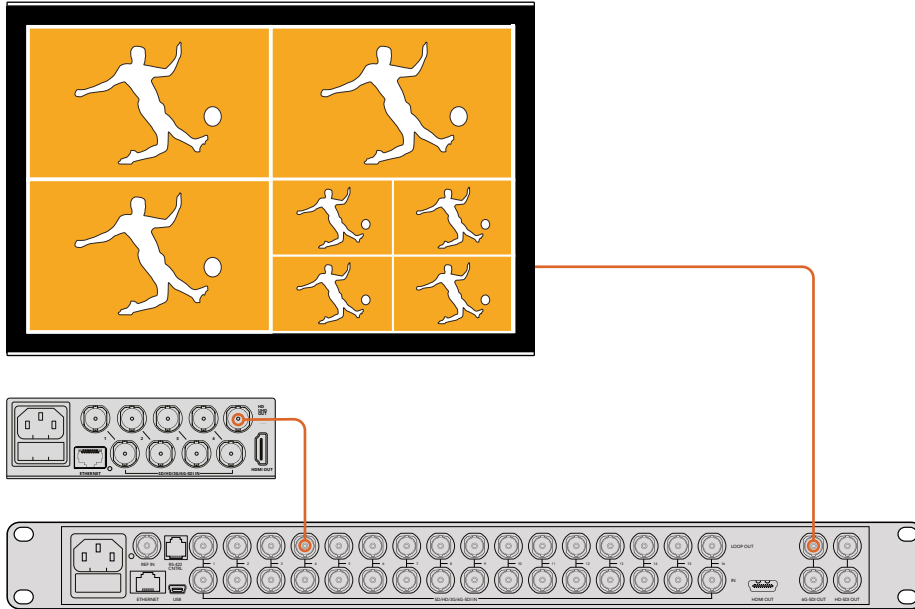
더 자세한 정보는 Blackmagic Design 웹사이트 [www.blackmagicdesign.com/kr](http://www.blackmagicdesign.com/kr)에서 확인할 수 있습니다.

제품을 랙 선반에 설치할 경우 일반적으로 모든 커넥터는 제품 뒷면을 통해 연결합니다.



## 여러 대의 MultiView 사용하기

여러 대의 BlackMagic MultiView 함께 사용하여 모니터링 셋업을 사용자가 지정할 수 있습니다. 멀티뷰 출력에 더 많은 뷰 소스를 추가할 시에 사용할 수 있습니다. MultiView 출력을 다른 MultiView 입력에 연결하여 멀티뷰 출력에 더욱 많은 소스 뷰를 추가할 수 있습니다. 업스트림 멀티뷰 출력을 UHD 모니터에 연결하여 최상의 선명도를 유지할 것을 권장합니다.



MultiView 출력을 다른 MultiView 입력에 라우팅하여 멀티뷰 레이아웃에 더 많은 뷰를 추가할 수 있습니다.

모든 사용 준비가 완료되었습니다. 다음 부분에서는 설정 변경 및 뷰 이름 설정 등, MultiView를 최대한 활용하기 위한 유용한 정보를 확인할 수 있습니다.

## 설정 변경하기

Blackmagic MultiView의 설정을 변경할 수 있는 방법에는 여러 가지가 있습니다.

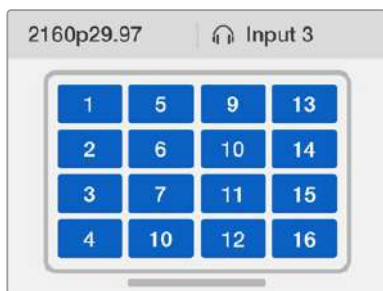
- **전면 제어 패널** – Blackmagic MultiView 16에는 내장 제어 패널과 LCD가 탑재되어 있어 제품 전면에서 손쉽게 설정을 변경할 수 있습니다.
- **스위치** – Blackmagic MultiView 4의 전면 패널 및 Blackmagic MultiView 4 HD의 측면 패널에 있는 작은 스위치를 펜 끝으로 조정해 설정을 바로 변경할 수 있습니다. Blackmagic MultiView 4의 전면 패널에 있는 고무 커버를 열면 스위치가 나타납니다. 제품 아래에 있는 스위치 설정 범례에서 각 스위치에 해당하는 설정을 확인할 수 있습니다.
- **Teranex Mini Smart Panel** – Blackmagic MultiView 4의 기본 전면 패널을 Teranex Mini Smart Panel 옵션으로 교체하면 내장 컨트롤 버튼과 회전 노브, LCD를 사용할 수 있습니다. Blackmagic MultiView 16의 전면 패널과 거의 흡사한 기능을 지원해 직관적인 로컬 제어가 가능합니다.
- **Blackmagic MultiView Setup** – USB 또는 이더넷을 통해 컴퓨터에서 설정 변경이 가능한 설치 소프트웨어입니다. 더 자세한 정보는 [Blackmagic MultiView Setup] 부분을 참조하세요.
- **Videohub Control 소프트웨어** – 사용 중인 Blackmagic MultiView 16 또는 Blackmagic MultiView 4가 네트워크에 연결된 경우, Blackmagic Videohub Control 소프트웨어에서 소스 라우팅, 뷰 변경, 오디오 입력 소스 선택을 수행할 수 있습니다. 더 자세한 정보는 [Videohub Software 사용하기] 부분을 참고하세요.

## Blackmagic MultiView 16의 전면 제어 패널

Blackmagic MultiView 16의 전면 제어 패널을 사용하면 모든 설정을 쉽게 변경할 수 있습니다.

Blackmagic MultiView 16의 전원을 처음 켜면 내장 LCD에 시작 화면이 나타나는 것을 볼 수 있습니다. 기본 설정인 시작 화면에서 다음과 같은 설정을 한 번에 확인할 수 있어 편리합니다.

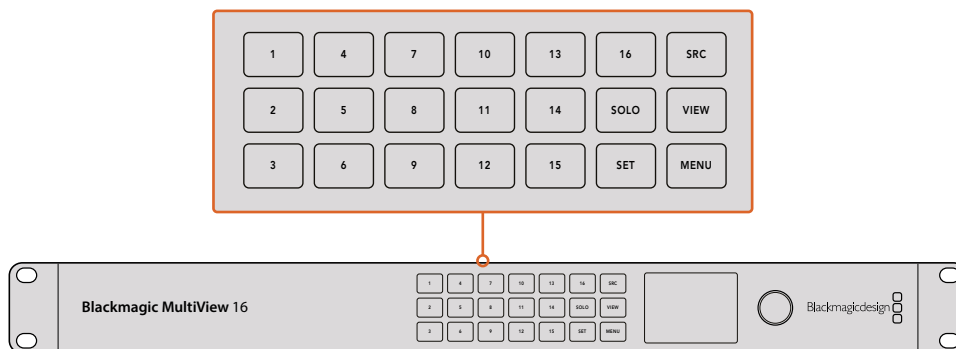
- **멀티뷰 출력 프레임 속도** – 좌측 상단에 나타나는 이 설정은 UHD SDI 멀티뷰 출력을 위해 선택한 프레임 속도를 나타냅니다.
- **오디오 입력** – 멀티뷰 출력 프레임 속도 바로 옆에 위치한 이 설정 정보는 오디오를 임베드시, 어느 SDI 입력이 HDMI와 SDI 멀티뷰 출력 신호에 사용되고 있는지를 보여줍니다. 멀티뷰 레이아웃 – 선택한 멀티뷰 레이아웃이 나타납니다.



시작 화면은 MultiView 16 제어 패널 LCD의 기본 설정 디스플레이입니다. 시작 화면에서 선택한 멀티뷰 레이아웃과 멀티뷰 SDI 출력의 프레임 속도, 멀티뷰 출력에 오디오를 임베드하기 위해 선택한 SDI 입력을 확인할 수 있습니다.

## 제어 패널 버튼

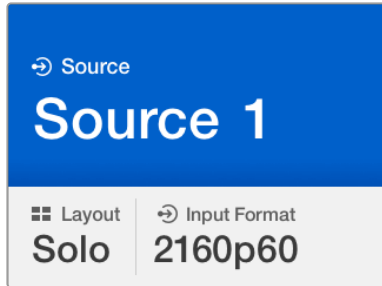
Blackmagic MultiView 제어 패널의 발광 버튼으로 설정 변경과 소스/뷰 설정을 쉽게 제어할 수 있습니다.



Blackmagic MultiView 16의 제어 패널 버튼으로 제품 전면에서 설정을 쉽게 변경하고 뷰를 전환할 수 있습니다.

## SOLO 버튼

SOLO 버튼을 누르면 전체 화면 모드로 모니터링할 수 있습니다. 제어 패널에 있는 VIEW 버튼을 누르면 현재 장면을 전체 화면 모드로 모니터링할 수 있습니다. SOLO 버튼을 다시 누르면 멀티뷰 레이아웃으로 되돌아갑니다.



Solo 기능을 사용하면 전체 화면 모드로 모니터링할 수 있습니다.

## MENU 버튼

MENU 버튼을 누르면 설정 화면이 나타납니다. 회전 노브를 사용하여 설정을 변경한 뒤, Menu 버튼을 다시 누르면 Home 스크린으로 되돌아갑니다.

## SET 버튼

SET 버튼을 눌러 변경할 설정을 선택하세요. 설정을 변경한 뒤, SET 버튼을 누르면 변경이 완료됩니다.

## SRC 버튼과 VIEW 버튼

이 두 개의 버튼으로 원하는 뷰에 디스플레이할 입력 소스를 선택할 수 있습니다. 설정 메뉴 이동 시, SRC 버튼과 VIEW 버튼을 사용하여 설정 옵션을 위/아래로 이동할 수도 있습니다.

## 회전 노브

회전 노브로 설정 목록을 스크롤 하거나 설정 화면의 메뉴 항목을 선택합니다. 선택을 취소하고 싶은 경우 회전 노브를 누르면 이전에 선택한 설정으로 되돌아갑니다.

시계방향 또는 시계 반대방향으로 회전 노브를 돌려 메뉴에 있는 두 가지의 옵션 중에서 선택합니다. 회전 노브를 눌러 설정을 켜고 끌 수 있습니다.

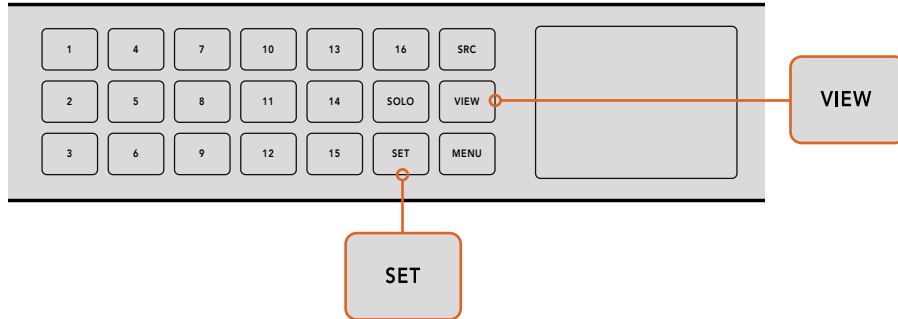
## Blackmagic MultiView 16의 소스와 뷰 설정하기

Blackmagic MultiView 16의 주요 기능 중 하나는 연결된 SDI 소스를 다른 뷰에 지정할 수 있는 기능입니다. 이 두 개의 설정을 조절하여 화면 보기 구성을 손쉽게 변경할 수 있습니다. 예를 들어, SDI 입력 5가 뷰 1에 나타나길 원할 수 있습니다.

원하는 뷰에 특정 입력 소스 설정하기

- 1 전면 패널에 있는 VIEW 버튼을 누르면 뷰 선택창이 나타납니다. 선택된 뷰의 배경이 파란색으로 변합니다.
- 2 해당 뷰의 번호를 누르면 원하는 뷰가 선택됩니다. 다른 방법으로는 회전 노브로 뷰를 스크롤 하여 선택할 수도 있습니다. 설정을 확인하려면 SET 버튼을 누르세요.
- 3 SCR 버튼을 누르세요. LCD에는 선택된 소스에 하이라이트가 생깁니다.

- 4 전면 패널에서 원하는 번호의 뷰를 눌러 원하는 입력을 선택하세요. 다른 방법으로는 회전 노브를 사용하여 LCD에서 입력을 스크롤 할 수 있습니다.
- 5 SET 버튼을 눌러 설정을 확인하세요.



뷰에 소스를 설정하려면 VIEW 버튼을 눌러 뷰 설정에 들어간 뒤, 원하는 소스를 선택하고 SET 버튼을 눌러 설정을 확인하세요.

### Blackmagic MultiView 16에서 레이아웃 설정하기

Blackmagic MultiView 16에서 멀티뷰 출력에 사용할 뷰의 번호를 선택할 수 있습니다. 예를 들어, 4개의 입력이 연결되어 있는 경우 화면이 가로/세로 그리드 4개로 나누어져 있는 2x2 레이아웃을 선택하면 됩니다. 최적의 입력 모니터링을 위해서 연결된 입력 수에 가장 적절한 레이아웃을 선택하세요.

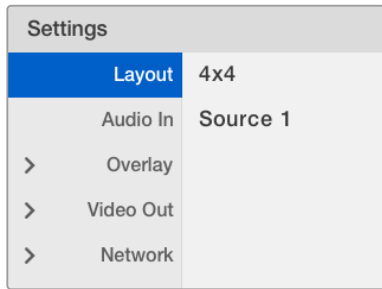
4가지의 뷰 레이아웃에서 선택할 수 있습니다.

- **2x2** 4개의 뷰를 디스플레이합니다. UHD 모니터를 연결한 경우, 각각의 입력 소스가 원본 HD 화질로 디스플레이됩니다.
- **3x3** 9개의 뷰를 디스플레이합니다.
- **4x4** 16개의 뷰를 디스플레이합니다.

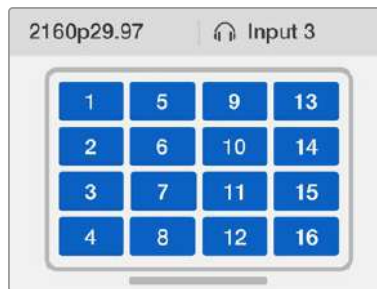
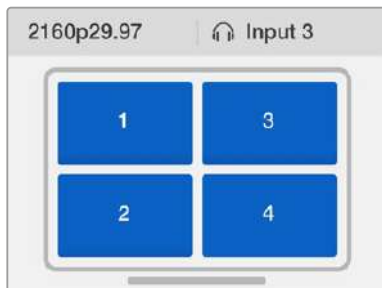
**정보** Blackmagic MultiView 16의 제어 패널에서 SOLO 버튼을 선택한 뒤 VIEW 버튼을 누르면 전체 화면 모드로 모니터링할 수 있습니다. Blackmagic MultiView 4의 경우 Teranex Mini Smart Panel에서 SOLO 버튼에 해당하는 '1' 버튼을 누르세요.



회전 노브 또는 VIEW 버튼을 사용하여 소스를 지정할 뷰를 선택하세요.



조절하려는 메뉴 항목을 하이라이트한 뒤, SET 버튼을 눌러 설정 페이지를 여세요.



3가지의 다양한 뷰 레이아웃 중에서 연결한 입력 수에 가장 적절한 레이아웃을 선택하세요.

## 오디오 입력

이 설정을 사용하여 멀티뷰 출력에 임베디드할 오디오를 가져올 SDI 입력을 선택할 수 있습니다.

## 오버레이

오버레이 서브메뉴에서는 오버레이 기능을 On/Off로 설정하여 멀티뷰 사용 여부를 변경할 수 있습니다.

다음과 같은 오버레이 기능을 사용할 수 있습니다.

- **Borders** – 그리드 패턴으로 각각의 뷰를 구분합니다.
- **Labels** – View 라벨을 나타내거나 감춥니다. Blackmagic MultiView Setup에서 라벨을 변경할 수 있습니다.
- **Audio Meters** – 모든 뷰를 위한 오디오 VU 미터를 On/Off 할 수 있습니다. 각각의 SDI 신호에 임베디드된 처음 두 개의 오디오 채널이 각 뷰에 나타나므로 영상과 오디오 레벨을 함께 모니터링할 수 있습니다.
- **SDI Tally** – Blackmagic MultiView 16의 입력 16에 ATEM 스위치의 프로그램 SDI 출력을 연결하면, 입력 소스가 전환되어 송신될 때 뷰 테두리에 tally가 나타나는 것을 확인할 수 있습니다. SDI tally 오버레이 설정에서 이 기능을 On/Off 할 수 있습니다.

탈리가 제대로 작동할 수 있도록 Blackmagic MultiView 16의 입력 연결을 확인해야 ATEM 스위처의 입력 번호가 일치합니다. 그렇지 않으면, 탈리가 다른 뷰에 나타날 수도 있습니다.

## 비디오 출력

비디오 출력 설정에서는 Blackmagic MultiView 16의 출력 옵션을 제어할 수 있습니다.

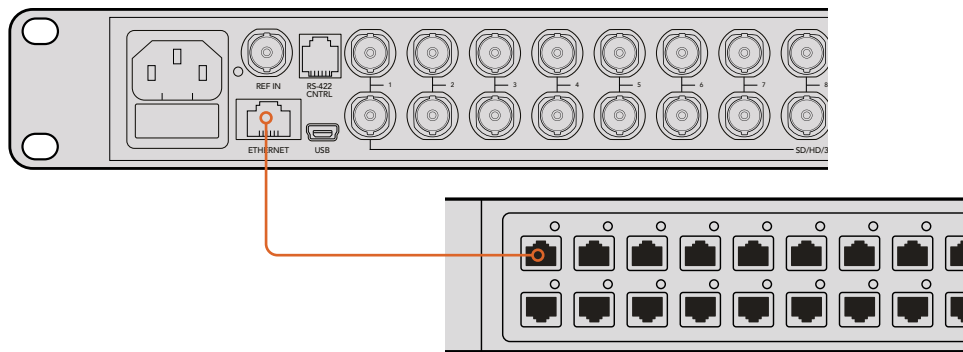
- **Video Format** – 이 설정에서 UHD 멀티뷰 출력의 프레임 속도를 2160p29.97 또는 2160p25로 변경할 수 있습니다. HD 멀티뷰 출력의 프레임 속도는 Ultra HD 출력으로 컨폼됩니다. 설정 변경을 취소하려면 회전 노브를 누르거나 이전 메뉴로 되돌아갑니다.
- **HD Output** – HD 멀티뷰 출력을 위한 인터레이스 또는 프로그레시브 방식을 선택하세요. 2160p29.97 비디오 포맷을 선택한 경우 HD 출력은 1080p29.97 또는 1080i59.94로 설정할 수 있습니다. 마찬가지로, 2160p25를 선택한 경우, HD 출력은 1080p25 또는 1080i50로 설정할 수 있습니다.

## 네트워크

Network 설정에서는 Blackmagic MultiView 16의 네트워크 연결을 위한 IP와 서브넷, 게이트웨이 주소를 설정할 수 있습니다.

Blackmagic MultiView 16의 IP 주소 설정하기

- 6 전면 패널의 MENU 버튼을 누르고 회전 노브를 사용하여 LCD 메뉴에서 'Networking' 탭을 선택하세요.
- 7 SET 버튼을 눌러 네트워크 설정 화면으로 들어가세요.
- 8 회전 노브를 사용하여 'IP Address' 탭을 선택하세요.
- 9 SET 버튼을 누르면 IP 주소의 첫 번째 필드에 하이라이트가 설정됩니다. 회전 노브를 사용하여 설정값을 변경하세요.
- 10 SET을 눌러 첫 번째 필드를 선택한 뒤, 세 개의 필드도 같은 방식으로 진행하세요. 서브넷과 게이트웨이 주소 지정 또한 같은 방식으로 할 수 있습니다.
- 11 MENU 버튼을 두 번 누르면 메뉴 화면으로 되돌아갑니다.



Blackmagic MultiView 16을 이더넷 네트워크에 연결하면 다른 위치에서 장치를 제어할 수 있습니다.



Network Settings	
IP Address	192.168.10.160
Subnet	255.255.255.0
Gateway	192.168.10.1

Blackmagic MultiView 16 제어 패널의 회전 노브 및 VIEW 버튼을 사용하여 네트워크 설정값을 지정하세요.

## Teranex Mini Smart Panel

Blackmagic MultiView 4 전면에 있는 기본 패널을 Teranex Mini Smart Panel로 교체하여 설치합니다. 버튼과 회전 노브, 내장 LCD를 사용하여 더욱 빠르게 설정할 수 있습니다.

### Teranex Mini Smart Panel 설치하기

옵션 사항인 Smart Panel은 간단히 설치할 수 있으며, 핫스와핑 기능을 지원하여 설치 시 Teranex Mini 컨버터 전원을 끄 필요가 없습니다.

- 1 Pozidriv 2 드라이버를 사용해 Blackmagic MultiView 4의 기본 전면 패널 측면에 있는 2개의 M3 나사를 제거한 뒤, 전면 패널을 조심스럽게 떼어내세요.
- 2 기본형 패널 안쪽을 보면 제품 하단 끝부분에 투명한 작은 플라스틱 부품이 부착되어 있는 것을 확인할 수 있습니다. 제품 내부에 있는 LED 불빛이 이 투명 부품을 통해 전달되어 기본형 패널에 있는 상태 표시등에 불이 들어옵니다. 이 부품은 반드시 기본형 전면 패널과 함께 보관하세요.

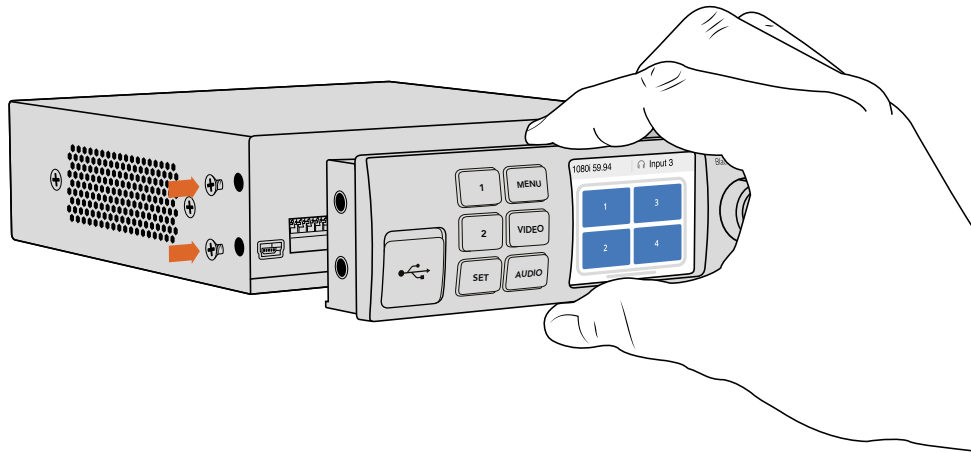
**TIP** 기본형 전면 패널을 다시 장착할 경우, 전원 표시를 위한 투명 부품을 제품 전면에 있는 슬롯에 맞춰 조립하세요.

- 3 Smart Panel 뒷면의 커넥터를 Blackmagic MultiView 4 앞쪽의 커넥터와 잘 맞춰 Smart Panel이 제품에 완전히 장착될 때까지 천천히 밀어 넣으세요. Smart Panel이 Blackmagic MultiView 4 전면에 잘 연결되어 완벽하게 장착되었는지 확인하세요.
- 4 기본 패널에서 떼어낸 M3 나사를 다시 조이세요.

Blackmagic MultiView 4를 Teranex Mini Rack Shelf에 설치한 경우, 랙 선반에서 제품을 떼어내야 전면 패널 나사를 제거할 수 있습니다.

더 자세한 정보는 [랙에 설치하기] 부분을 참고하세요.

Smart Panel을 장착해도 Blackmagic MultiView 4의 USB 포트를 계속 사용할 수 있습니다. USB 고무 커버를 열면 간편하게 포트를 사용할 수 있습니다. Smart Panel을 설치한 경우, 전면 패널의 작은 스위치들이 가려져 더 이상 사용할 수 없게 됩니다. 이는 LCD 메뉴에서 모든 설정 사항을 변경할 수 있기 때문입니다.



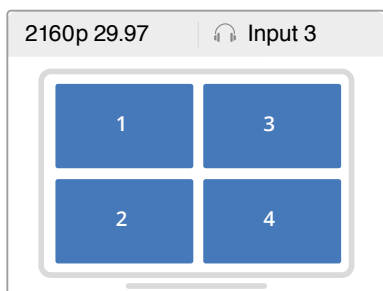
Teranex Mini Smart Panel을 Blackmagic MultiView 4에 설치할 때, 패널을 손가락으로 잡고 패널 뒷면의 커넥터를 잘 맞추면 정확하게 장착할 수 있습니다.

**정보** 기본 제어 패널은 상당히 견고하기 때문에 Blackmagic MultiView 4를 장비랙 시스템 뒤에 설치하거나 케이블과 움직임이 많은 장소에 설치해야 할 경우, 언제든지 기본 패널로 바꿔 장착할 수 있습니다.

## Teranex Mini Smart Panel 기능

Smart Panel의 기능은 MultiView 16의 내장 제어 패널 기능과 비슷합니다. LCD에 가장 처음 나타나는 시작 화면은 기본 설정 화면으로 다음과 같은 설정 개요를 쉽게 확인할 수 있습니다.

- **멀티뷰 출력 프레임 속도** – 좌측 상단에 나타나는 이 설정은 UHD SDI 멀티뷰 출력을 위해 선택한 프레임 속도를 나타냅니다.
- **오디오 입력** – 멀티뷰 출력 프레임 속도 바로 옆에 위치한 이 설정 정보는 오디오를 임베이드하는데 어떤 SDI 입력이 HDMI와 SDI 멀티뷰 출력 신호에 사용되고 있는지를 보여줍니다.
- **멀티뷰 레이아웃** – 2x2 멀티뷰 레이아웃이 나타납니다.

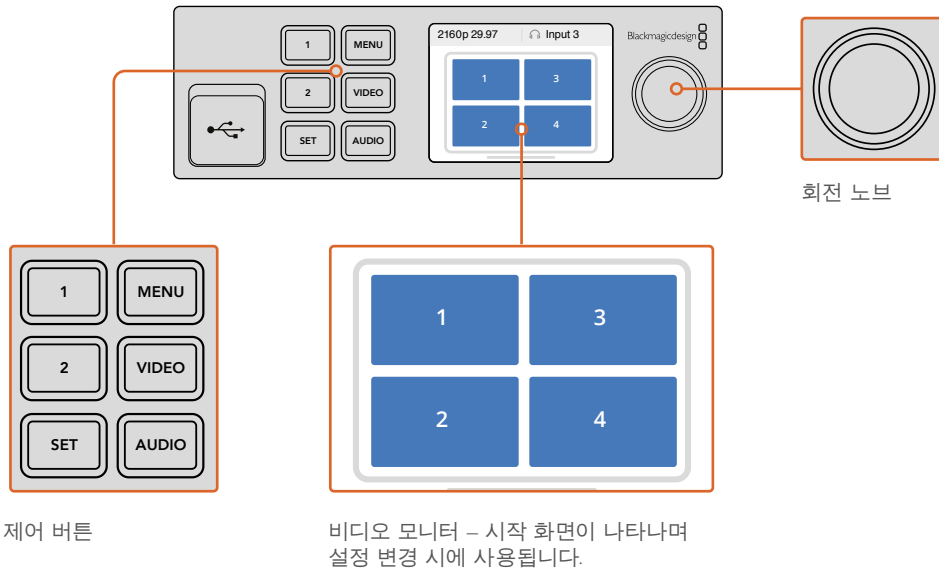


시작 화면은 Teranex Mini Smart Panel LCD의 기본 설정 디스플레이입니다.

## 컨트롤 버튼과 회전 노브

Teranex Mini Smart Panel에 탑재된 일련의 버튼과 회전 노브를 사용해 Blackmagic MultiView 4의 설정 메뉴를 이동할 수 있습니다.

- **1 버튼과 2 버튼** – 이 버튼을 눌러 설정값을 높이거나 줄일 수 있으며, 메뉴 설정에서 위/아래로 이동할 수 있습니다.
- **SET** – 1 또는 2 버튼을 사용해 설정을 변경한 뒤, SET 버튼을 눌러 변경 사항을 저장하세요.
- **MENU** – MENU 버튼을 누르면 Blackmagic MultiView 4의 설정 메뉴로 이동합니다. 특정 항목에서 MENU 버튼을 누르면 시작 화면으로 되돌아갑니다.
- **Video 버튼과 Audio 버튼** – 이 버튼은 Teranex Mini에만 해당하는 것으로 Blackmagic MultiView 4에서는 사용하지 않습니다.
- **회전 노브** – 회전 노브를 시계 방향 또는 반시계 방향으로 돌려 설정 메뉴를 이동하거나 설정값을 조정할 수 있습니다.



## Teranex Mini Smart Panel에서 설정 변경하기

Teranex Mini Smart Panel을 사용한 설정 변경은 더욱 간편하고 LCD를 통해 변경된 설정을 시각적으로 즉각 확인할 수 있습니다.

Teranex Mini Smart Panel의 MENU 소프트 버튼을 눌러 Blackmagic MultiView 4의 셋업 메뉴에 들어갑니다. 여기에서 다음과 같은 설정을 사용할 수 있습니다.

Settings	
Audio In	Source 1
Video Format	2160p25
> Overlay	
> Network	

조절하려는 메뉴 항목을 하이라이트한 뒤 SET 버튼으로 설정을 선택합니다. 회전 노브로 설정 항목을 스크롤 하세요.

### 오디오 입력

이 설정을 사용하여 SDI 입력에서 가져와 멀티뷰 출력에 임베디드할 오디오를 선택할 수 있습니다.

## 비디오 포맷

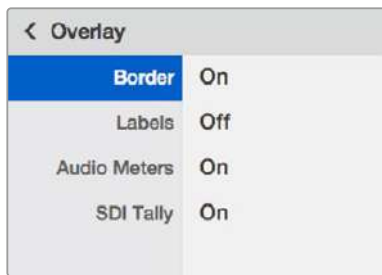
Blackmagic MultiView 4는 초당 29.97 또는 25 프레임의 UHD 및 HD 출력으로 설정할 수 있습니다. 이 설정에서 사용 가능한 해상도 및 프레임 속도 옵션을 확인할 수 있습니다.

## 오버레이

오버레이 서브메뉴에서 오버레이 기능을 On/Off로 설정할 수 있습니다.

다음과 같은 오버레이 기능을 사용할 수 있습니다.

- **Borders:** 그리드 패턴으로 각각의 뷰를 구분합니다.
- **Labels:** View 라벨을 나타내거나 감춥니다. Blackmagic MultiView Setup에서 라벨을 변경할 수 있습니다.
- **Audio Meters:** 모든 뷰를 위한 오디오 VU 미터를 On/Off 할 수 있습니다. 각각의 SDI 신호에 임베디드된 처음 두 개의 오디오 채널이 각 뷰에 나타나므로 영상과 오디오 레벨을 함께 모니터링할 수 있습니다.

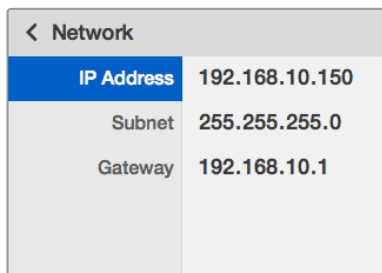


## 네트워크

Network 설정에서는 Blackmagic MultiView 4의 네트워크 연결을 위한 IP와 서브넷, 게이트웨이 주소를 설정할 수 있습니다.

Blackmagic MultiView 4의 IP 주소 설정하기

- 1 전면 패널의 MENU 버튼을 누르고 회전 노브를 사용하여 LCD 메뉴에서 'Networking' 탭을
- 2 선택하세요.
- 3 SET 버튼을 눌러 네트워크 설정 화면으로 들어가세요.
- 4 회전 노브를 사용하여 'IP Address' 탭을 선택하세요.
- 5 Set 버튼을 누르면 IP 주소의 첫 번째 필드에 하이라이트가 설정됩니다. 회전 노브를 사용하여 설정값을 변경하세요.
- 6 SET을 눌러 첫 번째 필드를 선택한 뒤, 세 개의 필드도 같은 방식으로 진행하세요. 서브넷과 게이트웨이 주소 지정 또한 같은 방식으로 할 수 있습니다.
- 7 MENU 버튼을 두 번 누르면 메뉴 화면으로 되돌아갑니다.

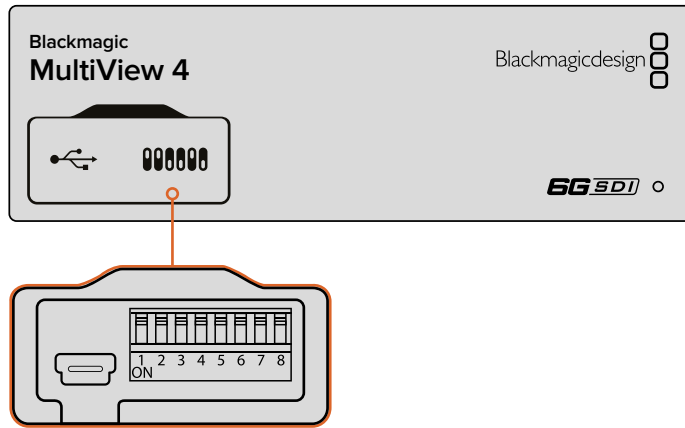


Teranex Mini Smart Panel의 회전 노브 또는 1 버튼과 2 버튼을 사용하여 Blackmagic MultiView 4의 네트워크 설정값을 입력하세요.

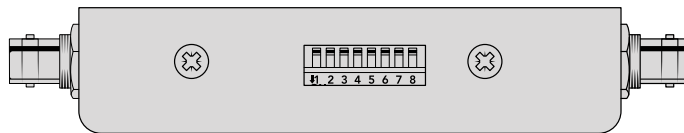
## 스위치를 사용한 설정 변경

Blackmagic MultiView 4 및 MultiView 4 HD에는 설정을 변경할 수 있는 작은 스위치가 내장되어 있습니다. Blackmagic MultiView 4의 전면 패널에 있는 고무 커버를 열면 스위치가 나타납니다.

Blackmagic MultiView 4 HD의 경우, 스위치가 제품 측면에 탑재되어 있습니다.



펜을 사용해 스위치 설정을 변경하세요.



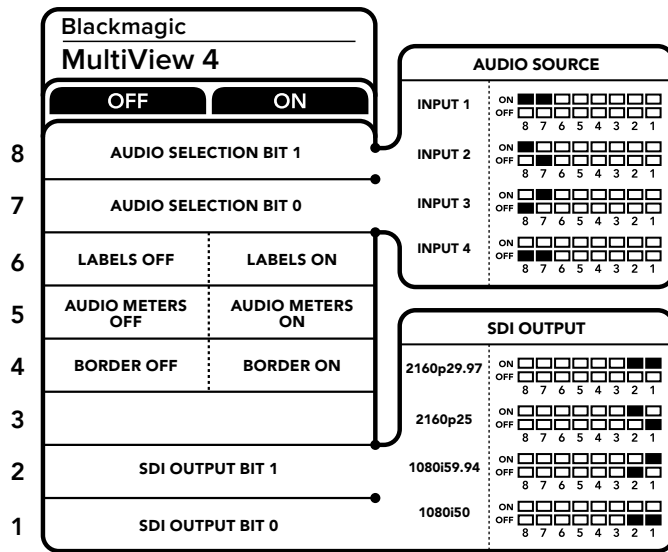
Blackmagic MultiView 4 HD의 경우, 스위치가 제품 측면에 탑재되어 있습니다.

## 내장 스위치

제품 바닥면에 스위치 설정 다이어그램 프린트되어 있습니다. 스위치 사용 범례에 맞게 스위치가 왼쪽에서 오른쪽 순으로 8부터 1까지 제대로 설정되어 있는지 확인하세요.

**정보** 제품 하단에 스위치 설정 정보가 있지만 업데이트로 인한 새로운 설정 기능이 추가될 수 있으므로, 최신 버전의 설명서를 통해 최신 정보를 확인하는 것이 좋습니다. Blackmagic 고객지원 센터([www.blackmagicdesign.com/kr/support](http://www.blackmagicdesign.com/kr/support))에서 최신 버전을 다운로드할 수 있습니다.

## Blackmagic MultiView 4 스위치 설정



Blackmagic MultiView 4 스위치 설정

Blackmagic MultiView 4의 스위치를 통해 다음과 같은 설정을 변경할 수 있습니다.

### 스위치 8과 스위치 7 – 오디오 선택

스위치 8과 스위치 7은 각각 Bit 1과 Bit 0을 나타냅니다. 다시 말해, 스위치 8과 7을 다양한 조합의 ON/OFF로 설정하여 HDMI 및 SDI 멀티뷰 출력 신호에 오디오 정보를 임베드할 SDI 신호 채널을 선택할 수 있습니다.

### 오디오 선택 설정표

오디오 소스	스위치 8	스위치 7	스위치 다이어그램
입력 1	ON	ON	ON <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
입력 2	ON	OFF	ON <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
입력 3	OFF	ON	ON <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
입력 4	OFF	OFF	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

### 스위치 6 – 라벨

스위치 6을 ON으로 설정하면 멀티뷰 출력 신호의 각 창에 라벨을 나타나게 할 수 있습니다. Blackmagic MultiView Setup에서 이 라벨을 설정할 수 있으며 자세한 내용은 설명서 뒷부분에 설명되어 있습니다. 스위치 6을 Off로 설정하면 라벨이 사라집니다.

### 스위치 5 – 오디오 미터

스위치 5를 ON으로 설정하면 멀티뷰 출력 신호의 각 창에 오디오 미터가 나타납니다. 스위치 5를 Off로 설정하면 오디오 미터가 사라집니다.

### 스위치 4 – 보더

스위치 4를 ON으로 설정하면 MultiView 창 사이에 보더가 나타납니다. 스위치 4를 Off로 설정하면 보더가 사라집니다.

### 스위치 2와 스위치 1

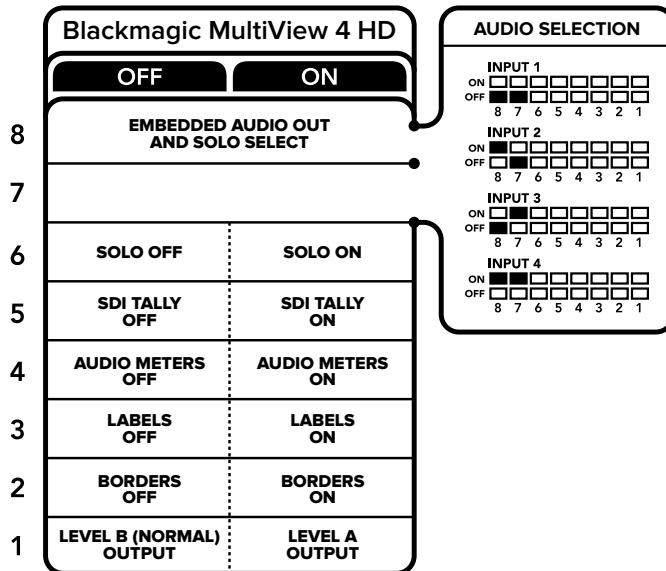
스위치 2와 1은 각각 비트 1과 비트 0을 나타냅니다. 다시 말해, 스위치 2와 1을 다양한 조합의 ON/OFF로 설정하여 MultiView 4의 SDI 신호를 위한 출력 포맷을 선택할 수 있습니다.

### SDI 출력 설정표

SDI 출력	스위치 2	스위치 1	스위치 다이어그램
2160p29.97	ON	ON	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 8 7 6 5 4 3 2 1
2160p25	ON	OFF	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 8 7 6 5 4 3 2 1
1080i59.94	OFF	ON	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 8 7 6 5 4 3 2 1
1080i50	OFF	OFF	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 8 7 6 5 4 3 2 1

**참고** 옵션 사항인 Teranex Mini Smart Panel을 사용할 경우, 스위치 설정은 Smart Panel의 설정에 따라 재설정됩니다. Blackmagic MultiView 4 설정은 스위치나 Smart Panel, Blackmagic MultiView Setup 소프트웨어로 설정된 마지막 설정 사항으로 유지됩니다. Smart Panel을 떼어내고 다시 스위치 방식의 제어를 사용하거나, 소프트웨어를 통해 Blackmagic MultiView 4 설정을 업데이트할 경우에 새로운 설정이 적용되도록 각각의 스위치를 토글해야 할 수도 있습니다.

## Blackmagic MultiView 4 HD 스위치 설정



설정 변경에 관한 자세한 정보는 Blackmagic MultiView 4 HD 아래에 있는 스위치 사용 범례에서 확인할 수 있습니다.

Blackmagic MultiView 4 HD의 스위치를 통해 다음과 같은 설정을 변경할 수 있습니다.

### 스위치 8과 스위치 7 – SDI 오디오 임베디드 및 Solo 선택

스위치 8과 스위치 7을 4가지 조합으로 사용하여 ON/OFF를 설정할 수 있습니다. 4가지 설정 방식을 통해 4개의 SDI 입력 중 원하는 오디오를 멀티뷰 출력에 임베드할 수 있습니다. 솔로 모드에서는 AFV가 설정되므로 이 스위치를 멀티뷰 소스와 오디오 소스 선택에 사용할 수 있습니다.

#### 오디오 선택 설정표

오디오 소스	스위치 8	스위치 7	스위치 다이어그램
입력 1	OFF	OFF	
입력 2	ON	OFF	
입력 3	OFF	ON	
입력 4	ON	ON	

### 스위치 6 – Solo 뷰

스위치 6을 ON으로 설정하면 Solo 뷰가 나타납니다. 이를 통해 싱글 뷰를 전체 화면으로 모니터링할 수 있습니다. 스위치 6을 OFF로 설정하면 2x2 레이아웃으로 모니터링할 수 있습니다.

솔로 멀티뷰 출력에 임베드된 오디오는 자동으로 멀티뷰 선택 영상 소스와 매칭됩니다. 스위치 7과 스위치 8을 사용하여 오디오 레이아웃을 위한 오디오가 통합된 멀티뷰 소스를 선택할 수 있습니다. 2x2 멀티뷰 레이아웃 형식에서 스위치 7과 스위치 8은 오디오 입력에 사용됩니다.

### 스위치 5 – 탈리

스위치 5를 ON으로 설정하면 탈리 보더가 뷰에 나타납니다. 스위치를 OFF로 설정하면 탈리 보더가 사라집니다.

Solo 모드에서는 ATEM SDI 카메라 컨트롤과 타임코드, 폐쇄 자막을 포함한 모든 부가적인 데이터가 아무런 영향도 받지 않습니다.

**정보** Blackmagic MultiView Setup 소프트웨어를 사용해 각 뷰의 입력 번호를 설정할 수 있습니다. 뷰 번호와 입력 번호가 일치하는지 확인해야 탈리가 올바르게 표시됩니다. 더 자세한 정보는 본 설명서의 [탈리 설정] 부분을 참고하세요.

### 스위치 4 – 오디오 미터

스위치 4를 ON으로 설정하면 오디오 미터가 뷰에 나타납니다. 스위치 4를 Off로 설정하면 오디오 미터가 사라집니다.

### 스위치 3 – 뷰 라벨

스위치 3을 ON으로 설정하면 각 뷰에 라벨이 나타납니다. OFF로 설정하면 라벨이 사라집니다.

### 스위치 2 - 보더

스위치 2를 ON으로 설정하면 뷰 보더가 나타나고 OFF로 설정하면 보더가 사라집니다.

### 스위치 1 – Level A 및 Level B 3G-SDI

스위치 1을 OFF로 설정하면 레벨 B 3G-SDI 출력을, ON으로 설정하면 레벨 A 3G-SDI를 선택할 수 있습니다. 이 설정을 통해 3G-SDI 출력 레벨을 변경하면 다른 SDI 장비와의 호환성을 유지할 수 있습니다.

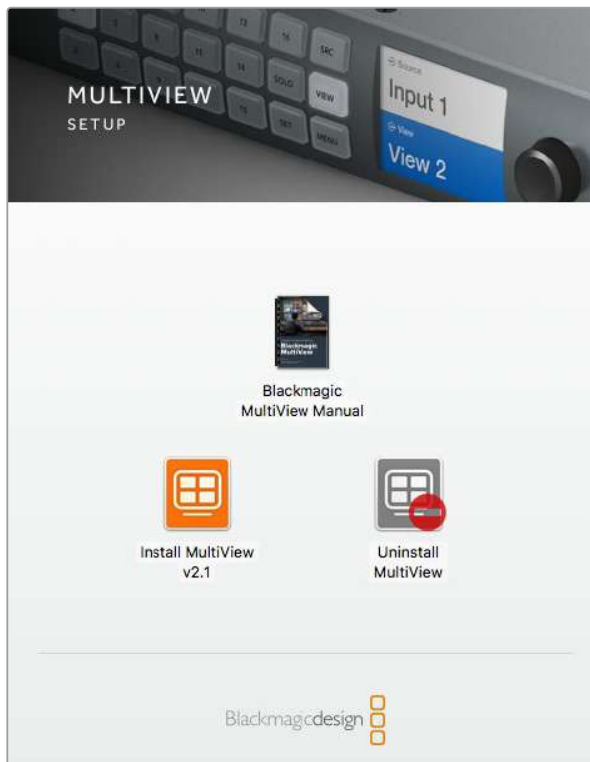


# Blackmagic MultiView Setup 사용하기

Blackmagic MultiView Setup으로 모든 Mac 또는 Windows PC에서 Blackmagic MultiView의 환경설정을 구성할 수 있을 뿐만 아니라 내부 소프트웨어 또한 업데이트할 수 있습니다. 직관적이고 사용법이 간단하여 Blackmagic MultiView 4를 네트워크에 연결하면 이더넷을 통해 설정 변경을 수행할 수도 있어 USB 연결이 필요하지 않습니다.

## Blackmagic MultiView Setup 설치하기

Blackmagic MultiView Setup은 64비트 버전의 Windows와 최신 Sierra와 High Sierra 버전의 macOS를 지원합니다.



설치 프로그램을 더블 클릭한 뒤, 화면에 나타나는 지시에 따라 Blackmagic MultiView 셋업을 설치합니다.

### Windows에 설치하기

- 1 제품과 함께 제공되는 미디어에서 설치 프로그램 파일을 더블 클릭하거나, Blackmagic Design 웹사이트에서 소프트웨어를 다운로드할 경우, 다운로드 폴더에서 설치 프로그램 파일을 더블 클릭하세요.
- 2 화면에 나타나는 지시에 따르고 라이선스 계약 조건에 동의하면 Windows가 자동으로 소프트웨어 설치를 시작합니다.

Windows의 시작 버튼을 클릭한 뒤, '모든 프로그램' > 'Blackmagic Design > 'MultiView' 를 클릭하세요. MultiView 폴더에서 MultiView Setup 애플리케이션을 찾을 수 있습니다.

## Mac OS X에 설치

- 1 제품과 함께 제공되는 미디어에서 설치 프로그램 파일을 더블 클릭하거나, Blackmagic Design 웹사이트에서 소프트웨어를 다운로드할 경우 다운로드 폴더에서 설치 프로그램 파일을 더블 클릭하세요.
- 2 화면에 나타나는 지시에 따르면 Mac OS X가 자동으로 소프트웨어 설치를 시작합니다.

애플리케이션 폴더 안에 Blackmagic MultiView 폴더가 생성되며, 이 폴더에서 Blackmagic MultiView Setup 애플리케이션을 찾을 수 있습니다.

## Blackmagic MultiView Setup 홈페이지

Blackmagic MultiView Setup을 처음 실행하면 홈페이지가 나타납니다. 네트워크에 여러 대의 Blackmagic MultiView가 연결되어 있는 경우, 홈페이지에서 좌/우 화살표를 클릭하여 원하는 MultiView를 선택할 수 있습니다.

Blackmagic MultiView 설정에 접속하려면, 제품 이미지 아래 위치한 동그라미 설정 아이콘을 클릭하거나 제품 이미지를 클릭하세요.



Blackmagic MultiView Setup을 사용하여 이더넷 또는 USB로 연결된 컴퓨터에서 Blackmagic MultiView 설정을 변경할 수 있습니다.

## Blackmagic MultiView Setup을 사용한 설정 변경

설정 아이콘을 클릭하여 Blackmagic MultiView의 셋업 설정에 접속하세요. 설정창에 Sources와 View, Configure 탭이 나타납니다. Blackmagic MultiView 4 및 MultiView 4 HD의 경우, Videohub Control 소프트웨어에서 화면 보기를 조절할 수 없어 View 설정이 필요하지 않습니다. Blackmagic MultiView 4 HD에서는 tally 설정을 변경할 수 있는 Tally 메뉴 또한 사용할 수 있습니다.

**정보** MultiView 네트워크 설정이 컴퓨터에 나타나는 소스와 일치하는지 확인하세요.



Blackmagic MultiView Setup에서 사용자가 직접 입력 라벨을 설정할 수 있어 멀티뷰 레이아웃에 있는 소스를 바로 확인할 수 있습니다.

- **Sources** – 입력 라벨을 사용자가 지정할 수 있습니다. 여기서 멀티 뷰 화면에 나타나는 소스 라벨을 변경할 수 있습니다.
- **Views** – 이 탭은 Videohub Control 소프트웨어를 통해 Blackmagic MultiView 16을 사용할 시에만 해당됩니다. Videohub Control 소프트웨어의 데스티네이션 패널에서 쉽게 확인할 수 있도록 뷰의 이름을 변경할 수 있습니다.
- **Video Output** – Blackmagic MultiView 4 HD에서 비디오 포맷과 SD 출력 중횡비를 사용자 지정할 수 있습니다.
- **Configure** – Configure 탭에서는 장비 이름 사용자 지정 및 비디오 출력, 오버레이 설정, 네트워크 설정, 시리얼 컨트롤 조정 등의 설정 기능을 제어할 수 있습니다.

## 영상 소스(Sources)

### 입력 레벨 사용자 지정

소스 라벨을 설정하면 멀티 뷰 레이아웃 안에서 각 소스를 신속하게 확인할 수 있습니다. 라벨을 저장하고 불러올 수 있기 때문에 Blackmagic MultiView를 서로 다른 프로젝트에서 자주 사용하는 경우, 라벨을 다시 입력할 필요 없이 신속하게 불러올 수 있습니다.

라벨은 Videohub Control 및 네트워크로 연결된 Videohub 컨트롤 패널에서 확인할 수 있습니다.

#### 입력 라벨 사용자 지정 방법

- 1 'Sources' 탭을 클릭하세요.
- 2 변경하고자 하는 입력 소스 이름이 표시된 텍스트 상자를 클릭해 새로운 라벨명을 입력하세요.
- 3 'Save'를 클릭하면 설정이 완료됩니다.

## 뷰 라벨(Views)

### 뷰 라벨 사용자 지정

Blackmagic MultiView 16에서 뷰 라벨을 변경할 수 있어 Videohub Control 소프트웨어를 통해 MultiView 16을 제어할 시, 데스크네이션에서 쉽게 알아볼 수 있습니다.

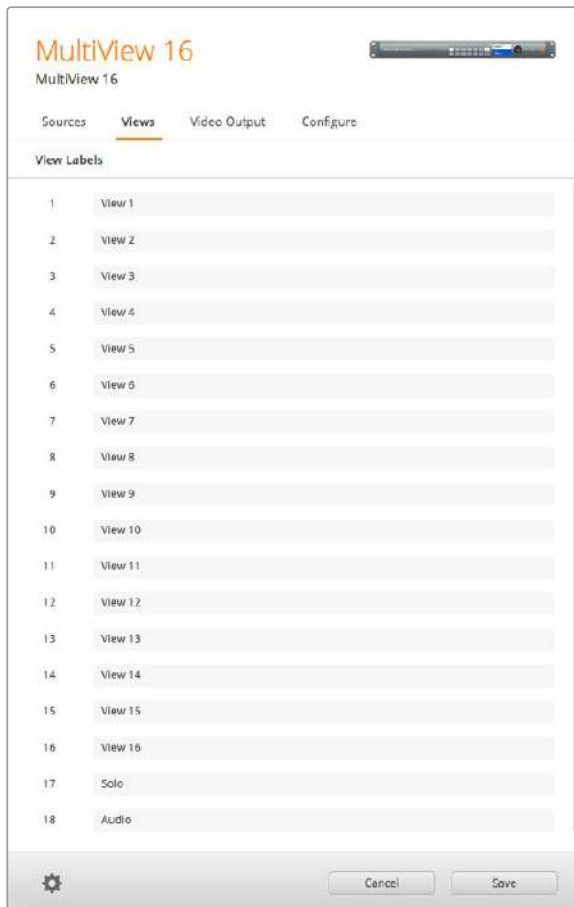
뷰 라벨을 다음과 같이 사용자 지정할 수 있습니다.

- 1 'Views' 탭을 클릭하세요.
- 2 출력 라벨(Output Labels) 설정에서 변경하려는 뷰의 텍스트 상자를 클릭해 새로운 라벨명을 입력하세요.
- 3 'Save'를 클릭하면 설정이 완료됩니다.

뷰 라벨에서 출력 17은 'Solo'로, 출력 18은 'Audio'로 기본 설정되어 있습니다.

출력 17을 통해 Solo 설정을 위한 소프트웨어 라벨을 변경할 수 있으며, 이 설정은 Blackmagic MultiView 16 전면 패널에서 제어할 수 있습니다. Blackmagic Videohub Control 소프트웨어를 사용해 MultiView 16을 제어할 시 유용하게 사용할 수 있는 기능입니다. Blackmagic MultiView Setup에서 Solo 출력 라벨을 사용자 지정하면 변경된 라벨이 Blackmagic Videohub Control에 나타납니다.

출력 18은 Blackmagic MultiView 16 LCD 메뉴에 있는 Audio In 설정과 관련되어 멀티 뷰 출력에 임베디드하고자 하는 오디오를 출력 18을 통해 라우팅합니다. Solo 출력 라벨과 마찬가지로 뷰 라벨 또한 변경할 수 있으므로 Blackmagic Videohub Control에서 Blackmagic MultiView 16을 제어할 때의 라벨 모습을 직접 설정할 수 있습니다.



Solo 출력과 Audio 출력 라벨 추가 기능을 통해 출력 이름을 변경할 수 있어 Blackmagic Videohub Control에서 Blackmagic MultiView 16을 제어할 시 나타나는 라벨을 사용자 지정할 수 있습니다.

## 비디오 출력(Video Output)

### 비디오 포맷과 HD 출력

비디오 포맷 설정은 Blackmagic MultiView 모델마다 약간 다릅니다.

Blackmagic MultiView 16에서는 HD 및 UHD 비디오를 동시에 출력할 수 있습니다. 출력하고자 하는 비디오 프레임 레이트를 선택할 수도 있습니다. 예를 들어, 미국에서 널리 사용되는 포맷으로 신호를 출력하고자 할 경우, 2160p29.97을 선택하면 HD 출력이 해당 프레임 레이트로 자동 매칭됩니다.

다음 예시와 같이 비디오 포맷을 2160p29.97로 선택할 경우, HD 출력을 비디오 요구사항에 맞게 1080p29.97 또는 1080i59.94로 설정할 수 있습니다.



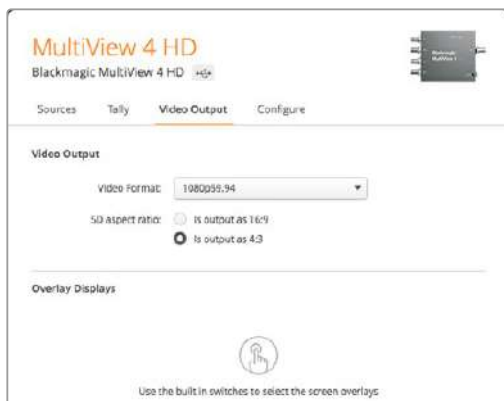
MultiView 16의 Video Output 탭에 있는 라디오 버튼을 사용하여 뷰 레아웃과 UHD 비디오 포맷, HD 출력, SD纵横비를 설정할 수 있습니다.

Blackmagic MultiView 4에서는 프레임 속도뿐만 아니라 SDI 출력을 통해 UHD 또는 HD 비디오를 출력하도록 선택할 수 있습니다. 이러한 설정은 Video Format 드롭다운 메뉴에서 사용할 수 있습니다.



Blackmagic MultiView 4의 Video Output 탭에는 해상도와 프레임 속도를 포함한 비디오 포맷을 선택할 수 있는 드롭다운 목록이 있습니다.

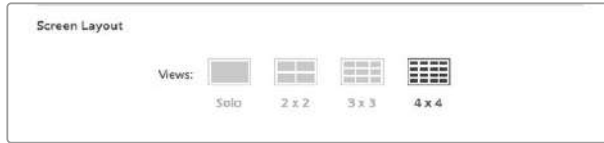
Blackmagic MultiView 4 HD의 Video Format 메뉴에서는 HD 프레임 레이트를 선택할 수 있으며, 비디오를 인터레이스 또는 프로그레시브로 출력하도록 설정할 수 있습니다. Blackmagic MultiView 4 HD의 SD纵横비 16:9 또는 4:3로 설정할 수도 있습니다.



Blackmagic MultiView 4 HD의 Video Output 탭에서 출력 HD 해상도 및 프레임 레이트를 설정할 수 있을 뿐 아니라 비디오를 인터레이스 또는 프로그레시브로 출력하도록 설정할 수 있습니다.

## Multi View 레이아웃 변경하기

Blackmagic MultiView 16 컨트롤 패널 LCD 메뉴에서 사용하는 Layout 설정과 비슷한 방법으로 셋업 소프트웨어에서 레이아웃을 변경할 수 있습니다. Details 설정에서 원하는 레이아웃 아이콘을 클릭해 사용하고자 하는 레이아웃 설정을 선택하세요.



Video Output 탭에서 MultiView 16을 위한 화면 레이아웃을 설정하세요.

## 탈리 설정

Blackmagic MultiView 4 HD에서는 탈리 설정에서 탈리 오버라이드를 설정하거나 Blackmagic 카메라 및 ATEM 스위처에서 MultiView 4 HD의 입력 4로 전송한 카메라 번호로 표시할 수 있습니다.



MultiView Setup 유틸리티의 Tally 메뉴 내 탈리 옵션.

탈리가 스위처 입력에 반응하도록 선택할 경우, 'Input 1' ~ 'Input 4'를 위한 텍스트 필드에 1부터 99 사이의 카메라 번호를 입력할 수 있습니다.

## 탈리 오버라이드

탈리 신호는 보통 MultiView의 마지막 SDI 입력에 연결된 프로그램 리턴 피드를 통해 제공됩니다. 하지만 모든 카메라를 모든 뷰에 연결하고자 할 경우가 있을 수 있습니다.

Blackmagic Design 카메라를 ATEM 스위처에 연결하여 사용하거나 서드파티 탈리 시스템을 통해 다른 SDI 스위처를 사용하는 경우, 탈리 오버라이드 기능을 활성화할 수 있습니다. 탈리 오버라이드를 선택하면 MultiView 4 HD에서 각 SDI 입력 신호에 임베드된 탈리 신호를 검색합니다. 이는 제품의 마지막 입력에 연결된 프로그램 리턴을 통한 통합 탈리 신호가 아니라 모든 뷰에서 탈리 신호를 개별적으로 수신하는 방식입니다.

**정보** ‘탈리 오버라이드’ 모드는 Blackmagic ATEM 스위처 또는 Blackmagic Camera Fiber Converter와 연결된 Blackmagic URSA Mini, URSA Mini 4K, URSA Mini Pro 및 URSA Broadcast 카메라에서 사용할 수 있습니다. 서드파티 스위처 또는 서드파티 탈리 연결 방법에 대한 정보는 Blackmagic 3G-SDI Shield for Arduino 설명서를 참고하세요.

## SD 종횡비

Blackmagic MultiView 16에 4:3 SD 비디오를 연결한 경우 ‘Set to 4:3’ 확인란을 선택하세요. 이 확인란을 선택하면 정확한 종횡비의 4:3 비디오가 디스플레이됩니다.

16:9 SD 비디오가 연결된 경우, 해당 이미지가 올바르게 디스플레이되도록 ‘Set to 16:9’ 확인란을 선택하세요.

Blackmagic MultiView 4 HD에 SD 입력 소스를 연결할 경우, Setup 유틸리티를 사용해 16:9 및 4:3 출력 간을 전환할 수 있습니다. Video Output 메뉴에서 SD 종횡비를 선택할 수 있습니다.



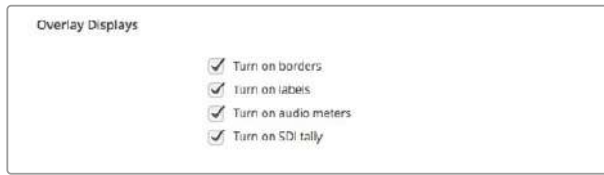
MultiView Setup 유틸리티의 ‘Video Output’ 메뉴 내 SD 종횡비.

## 오버레이 디스플레이

Blackmagic MultiView 16과 Blackmagic MultiView 4에 있는 오버레이 설정 확인란을 통해 사용 중인 Blackmagic MultiView의 각 기능을 활성화할 수 있습니다.

다음과 같은 오버레이 기능을 사용할 수 있습니다.

- **보더:** 그리드 패턴으로 각각의 뷰를 구분합니다.
- **라벨:** View 라벨을 나타내거나 감춥니다. Blackmagic MultiView Setup에서 라벨을 변경할 수 있습니다.
- **오디오 미터:** 모든 뷰를 위한 오디오 VU 미터를 On/Off 할 수 있습니다. 각각의 SDI 신호에 임베디드된 처음 두 개의 오디오 채널이 각 뷰에 나타나므로 영상과 오디오 레벨을 함께 모니터링할 수 있습니다.
- **SDI 탈리:** Blackmagic MultiView 16의 입력 16이나 Blackmagic MultiView 4 모델의 입력 4와 같은 입력에 ATEM 스위처의 프로그램 SDI 출력을 연결하면 입력 소스가 전환되어 송신될 때 뷰 테두리에 탈리가 나타나는 것을 확인할 수 있습니다. 오버레이 설정에서 ‘Turn on SDI tally’ 확인란을 선택하면 탈리 기능이 활성화됩니다. 선택을 해제하면 해당 기능이 비활성화됩니다. Setup 유틸리티 소프트웨어에서 입력 번호를 지정할 수 있기 때문에 탈리가 올바르게 나타납니다.



Blackmagic MultiView 16과 Blackmagic MultiView 4에서는 'Configure' 탭의 오버레이 설정을 통해 보더와 View 라벨, 오디오 미터, SDI tally 보더 같은 오버레이 기능들을 켜고 끌 수 있습니다.

**정보** 탈리가 제대로 작동할 수 있도록 모든 Blackmagic MultiView의 입력 연결을 확인해야 ATEM 스위치의 입력 번호가 일치합니다. 그렇지 않으면 탈리가 다른 뷰에 나타날 수도 있습니다.

## 환경설정(Configure)

### Blackmagic MultiView 이름 설정하기

Configure 탭은 Blackmagic MultiView 모델마다 조금씩 다릅니다.

Blackmagic MultiView 16 또는 Blackmagic MultiView 4의 'Configure' 탭은 'Details', 'Overlay', 'Network', 'Settings'로 구성되어 있습니다. Blackmagic MultiView 4 HD의 경우, 라벨 및 소프트웨어 버전 숫자가 나타나지만 다른 설정 항목은 나타나지 않습니다.

Blackmagic MultiView 16 또는 Blackmagic MultiView 4를 원격으로 사용할 때 쉽게 확인할 수 있도록 이름 설정하는 방법은 다음과 같습니다.

- 1 'Configure' 탭을 클릭하세요.
- 2 'Details' 설정에서 'Name' 옆에 있는 텍스트 상자를 클릭한 뒤, Blackmagic MultiView의 새로운 라벨명을 입력하세요.
- 3 'Save'를 클릭하세요.



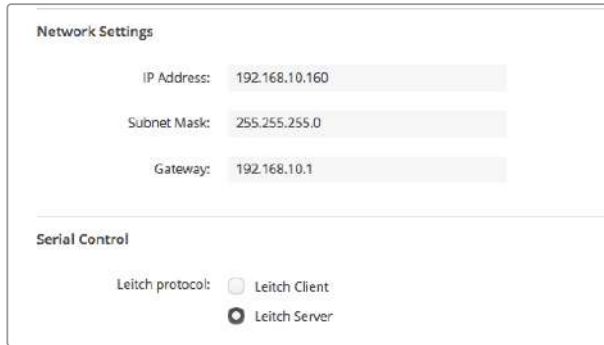
Blackmagic MultiView Setup에서 Blackmagic MultiView 16의 이름을 설정하면 네트워크 사용자가 쉽게 알아볼 수 있습니다.



## 네트워크 및 시리얼 컨트롤 설정

USB를 통해 Blackmagic MultiView 16을 컴퓨터에 연결한 경우, Blackmagic MultiView Setup을 사용해 네트워크 및 시리얼 컨트롤을 설정할 수 있습니다. 전면 패널 LCD 메뉴에서도 동일한 설정 사항을 변경할 수 있습니다. Blackmagic MultiView 4 설정에서는 네트워크 설정만 사용 가능합니다.

네트워크 설정을 변경하려면 해당 텍스트 상자를 클릭하고 키보드로 설정값을 입력하거나 해당 확인란을 선택하세요.



네트워크에 연결할 시, MultiView 16의 네트워크 설정을 변경해야 할 수도 있습니다. RS-422 원격 제어 설정 요구에 따라 Serial Control 설정에서 MultiView 16을 Leitch 클라이언트 및 서버로 설정할 수 있습니다.

시리얼 컨트롤을 설정하려면 USB로 Blackmagic MultiView 16을 연결한 뒤 다음과 같이 설정하세요.

- 1 Blackmagic MultiView 셋업을 실행하고, 제품 이미지 또는 그 아래 있는 설정 아이콘을 클릭하여 Blackmagic MultiView 16을 선택하세요.
- 2 'Configure' 탭을 클릭한 뒤, Blackmagic MultiView 16을 클라이언트로 사용할 시 'Leitch Protocol'을 'Leitch Client'로 전환하고, 자동 시스템 또는 서드파티 라우터 컨트롤 시스템으로 멀티뷰를 제어할 시에는 'Leitch Server'로 전환하여 설정합니다.
- 3 'Save' 탭을 클릭하여 설정을 확인하세요.



RS-422 시리얼 컨트롤을 사용할 시, 'Client' 또는 'Server'를 선택하세요.

## 라벨 저장 및 불러오기

반복되는 프로젝트에서 일련의 라벨을 주기적으로 사용하는 경우, 파일에 라벨을 저장한 뒤 나중에 로딩해서 사용할 수 있습니다.

라벨을 저장하려면 Blackmagic MultiView Setup의 톱니바퀴 아이콘을 클릭하여 'Label Set' 설정을 열고 'Save Label Set'을 선택하세요. 파일을 저장할 장소를 선택한 뒤 'Save'를 클릭하세요.

라벨을 로딩하려면 톱니바퀴 아이콘을 클릭하여 'Label Set' 설정을 열고 'Load Label Set'을 선택하세요. 저장된 라벨 세트 파일을 찾아 'Load'를 클릭하세요.



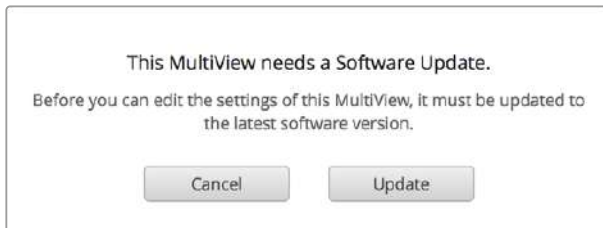
Blackmagic MultiView Setup에서 라벨을 저장하고 로딩할 수 있습니다.

## 내부 소프트웨어 업데이트하기

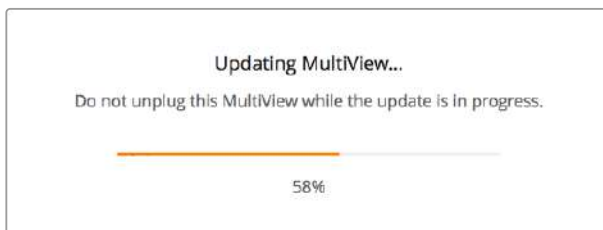
가끔씩 Blackmagic MultiView의 내부 소프트웨어 업데이트가 필요합니다. 내부 소프트웨어 업데이트를 통해 새로운 기능, 새로운 하드웨어 호환성, 새로운 포맷 지원 등을 제공합니다.

Blackmagic MultiView 내부 소프트웨어 업데이트하기

- 1 Blackmagic MultiView를 USB 또는 이더넷을 통해 컴퓨터에 연결하세요.
- 2 Blackmagic MultiView Setup을 실행하면 네트워크에 연결된 Blackmagic MultiView 16이 자동으로 나타납니다.
- 3 제품 이미지 또는 제품명 아래에 있는 설정 아이콘을 클릭하여 사용하는 Blackmagic MultiView를 선택하세요.
- 4 Blackmagic MultiView Setup에서 업데이트 여부를 알려줍니다.
- 5 업데이트가 필요한 경우, 'Update' 버튼을 누르면 소프트웨어가 설치됩니다. 업데이트가 진행되는 동안 Blackmagic MultiView 전원 연결이 끊기지 않게 주의하세요.
- 6 업데이트가 완료되면 'Close' 버튼을 클릭하세요.



새로운 내부 소프트웨어를 설치하려면 'Update' 버튼을 클릭하세요.



업데이트가 진행되는 동안 Blackmagic MultiView 전원 연결이 끊기지 않게 주의하세요.

# Videohub Control 소프트웨어 사용하기

Blackmagic MultiView 16을 네트워크에 연결한 경우, Mac/Windows 컴퓨터에서 운영하는 Blackmagic Videohub Control을 사용하여 Blackmagic MultiView 16의 비디오 입력을 멀티뷰 레이아웃으로 라우팅할 수 있습니다. 사용하는 Blackmagic MultiView의 SDI 입력은 Sources 패널에서 푸시버튼으로 나타나며, 뷰는 Destination 패널에 푸시버튼으로 나타납니다. Videohub Control 애플리케이션은 Videohub 소프트웨어 설치 프로그램의 한 부분으로 Blackmagic Design 고객지원 센터 [www.blackmagicdesign.com/kr/support](http://www.blackmagicdesign.com/kr/support)에서 다운로드할 수 있습니다.

**참고** Videohub Control 소프트웨어를 사용하여 소스를 Blackmagic MultiView 16 뷰어에 라우팅할 수 있으며, Solo 모드 및 멀티뷰 출력의 오디오 소스 선택과 같은 기타 설정사항을 이용할 수 있습니다. Blackmagic MultiView 4에서는 Videohub Control 소프트웨어를 사용하여 멀티뷰 출력을 위한 솔로 소스 및 오디오 소스를 변경할 수 있습니다.

## 사용하는 MultiView 16 선택하기

Videohub Control 소프트웨어를 실행하여 톱니바퀴 아이콘을 클릭한 뒤, 'Setting' 팝업 메뉴를 열고 'Select Videohub'를 선택합니다. 연결 장비 목록에서 사용하는 Blackmagic MultiView 16의 이름을 선택하세요.

입력 라벨을 설정한 경우, 설정한 라벨 이름이 Videohub Control 소프트웨어에 나타납니다. 라벨을 설정하지 않은 경우에는 Input 1과 Input 2, Input 3 등으로 나타납니다.



Blackmagic Videohub Control에서 Blackmagic MultiView 16 소스를 서로 다른 뷰에 라우팅할 수 있습니다.

## 입력 확인하기

Blackmagic MultiView 16의 어떤 비디오 입력이 특정 뷰에 라우팅 되는지를 확인하려면 'Destination' 패널에서 'View' 푸시버튼을 클릭하세요. 'Destination' 또는 'View' 버튼에 불이 들어옵니다. 'Source' 패널에는 라우팅 되는 비디오 입력 푸시버튼에도 불이 들어오기 때문에 어떤 입력 또는 영상 소스가 뷰에 라우팅 되고 있는지를 분명하게 확인할 수 있습니다.

## 입력을 뷰에 라우팅하기

비디오 입력을 뷰에 라우팅하려면 'Destination' 패널에서 'View' 푸시버튼을 클릭한 뒤, 'Sources' 패널에서 'Input' 푸시버튼을 클릭하세요.

## 솔로 입력

Blackmagic MultiView 16의 전면 패널에 있는 Solo 버튼이 활성화되면 전체 화면에 사용할 입력을 'Solo Input' 푸시버튼으로 선택하세요. Videohub Control의 'Destination' 패널에서 'Solo Input' 푸시버튼을 클릭한 뒤, 'Source' 패널에서 입력 푸시버튼을 클릭하기만 하면 됩니다.

## 오디오 입력

Blackmagic MultiView 16과 Blackmagic MultiView 4를 사용할 시 Videohub Control 소프트웨어의 'Audio Input' 푸시버튼을 사용하여 멀티뷰 출력에 어떤 SDI 입력의 오디오를 라우팅할 것인지 결정하세요. Videohub Control의 'Destination' 패널에서 'Audio Input' 푸시버튼을 클릭한 뒤, 'Source' 패널에서 입력 푸시버튼을 클릭하기만 하면 선택한 입력의 오디오가 멀티뷰 출력에 바로 라우팅 됩니다.



Videohub Control의 'Solo Input'과 'Audio Input' 푸시버튼으로 이러한 설정을 변경할 수 있습니다.

# Developer Information

## Blackmagic Videohub Ethernet Protocol v2.3

### Summary

Your Blackmagic MultiView is compatible with the Blackmagic Videohub Ethernet Protocol. It is text based and is accessed by connecting to your Blackmagic MultiView's IP address and TCP port 9990.

**NOTE** Controlling your MultiView via Ethernet is available on Blackmagic MultiView 16 and Blackmagic MultiView 4, however, most features are relevant to Blackmagic MultiView 16. On Blackmagic MultiView 4, you can change the solo source and audio source for the multi view output.

The multi view sends information in blocks which each have an identifying header in all caps, followed by a full colon. A block spans multiple lines and is terminated by a blank line. Each line in the protocol is terminated by a newline character.

Lines sent to the Blackmagic MultiView 16 can be terminated with line feed, carriage return or both.

Upon connection, the multi view sends a complete dump of the state of the device. After the initial status dump, status updates are sent every time the multi view status changes.

To be resilient to future protocol changes, clients should ignore blocks they do not recognize, up to the trailing blank line. Within existing blocks, clients should ignore lines they do not recognize.

### Protocol Preamble

The first block sent by the multi view is always the protocol preamble:

```
PROTOCOL PREAMBLE:↵
Version: 2.3↵
↵
```

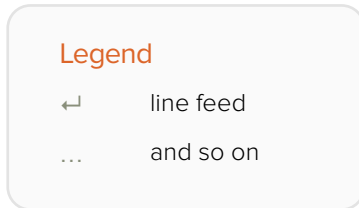
The version field indicates the protocol version. When the protocol is changed in a compatible way, the minor version number will be updated. If incompatible changes are made, the major version number will be updated.

### Device Information

The next block contains general information about the connected Blackmagic MultiView 16 device. If a device is connected, the multi view will report the attributes of the Blackmagic MultiView 16:

```
MULTIVIEW DEVICE:↵
Device present: true↵
Model name: Blackmagic MultiView 16↵
Video inputs: 16↵
Friendly name:
Unique ID:
Video processing units: 0↵
Video outputs: 16↵
Video monitoring outputs: 0↵
Serial Ports:
↵
```

This example is for the Blackmagic MultiView 16 which has 16 sources and 18 views including solo which is view 16 and audio which is view 17, referred to here as outputs.



Version 2.3 of the Blackmagic Videohub Ethernet Protocol was released with Videohub 4.9.1 software

### Initial Status Dump

The next two blocks enumerate the labels assigned to the input and output ports.

```
INPUT LABELS:↵
0 VTR 1↵
1 VTR 2↵
...
↵

OUTPUT LABELS:↵
0 Output feed 1↵
1 Output feed 2↵
...
↵
```

Note: Input and Output labels are always numbered starting at zero in the protocol which matches port one on the chassis.

The next three blocks describe the routing of the view ports.

```
VIDEO OUTPUT ROUTING:↵
0 5↵
1 3↵
...
↵
```

The next block describes the locking status of the views. Each port has a lock status of “O” for ports that are owned by the current client (i.e., locked from the same IP address), “L” for ports that are locked from a different client, or “U” for unlocked.

```
VIDEO OUTPUT LOCKS:↵
0 U↵
1 U↵
...
↵
```

The last block is the configuration block.

```
Layout: SOLO or 2x2 or 3x3 or 4x4
Output format: 50i or 50p or 60i or 60p
Solo enabled: True or False
Widescreen SD enable: True or False
Display border: True or False
Display labels: True or False
Display audio meters: True or False
Display SDI tally: True or False
```

## Status Updates

When any route, label, or lock is changed on the multi view by any client, the multi view resends the applicable status block, containing only the items that have changed.

If multiple items are changed, multiple items may be present in the update:

```
OUTPUT LABELS:↵
7 New output 8 label↵
10 New output 11 label↵
↵
```

## Requesting Changes

To update a label, lock or route, the client should send a block of the same form the multi view sends when its status changes. For example, to change the route of output port 8 to input port 3, the client should send the following block:

```
VIDEO OUTPUT ROUTING:↵
7 2↵
↵
```

The block must be terminated by a blank line. On receipt of a blank line, the multi view will either acknowledge the request by responding:

```
ACK↵
↵
```

or indicate that the request was not understood by responding:

```
NAK↵
↵
```

After a positive response, the client should expect to see a status update from the MultiView showing the status change. This is likely to be the same as the command that was sent, but if the request could not be performed, or other changes were made simultaneously by other clients, there may be more updates in the block, or more blocks. Simultaneous updates could cancel each other out, leading to a response that is different to that expected.

For MultiView 16 the client can change the solo source and the audio source to embed on the output.

Solo mode needs to be enabled either from the front panel or by sending the block:

```
CONFIGURATION:↵
Solo enabled: true↵
↵
```

Once enabled the following block will change the SOLO source to input 11:

```
Video Output Routing:↵
16 10↵
↵
```

This is not available on MultiView 4.

The following block will send embedded audio from input 1 to the MultiView 16 output:

```
Video Output Routing:↵
17 0↵
↵
```

The following block will send embedded audio from input 1 to the MultiView 4 output:

```
Video Output Routing:↵
5 0↵
↵
```

In the absence of simultaneous updates, the dialog expected for a simple label change is as follows:

```
OUTPUT LABELS:↵
6 new output label seven↵
↵
ACK↵
↵
OUTPUT LABELS:↵
6 new output label seven↵
↵
```

The asynchronous nature of the responses means that a client should never rely on the desired update actually occurring and must simply watch for status updates from the MultiView and use only these to update its local representation of the server state.

### Requesting a Status Dump

The client may request that the MultiView resend the complete state of any status block by sending the header of the block, followed by a blank line. In the following example, the client requests the MultiView resend the output labels:

```
OUTPUT LABELS:↵
↵
ACK↵
↵
OUTPUT LABELS:↵
0 output label 1↵
1 output label 2↵
2 output label 3↵
...
↵
```

### Checking the Connection

While the connection to the MultiView is established, a client may send a special no-operation command to check that the MultiView is still responding:

```
PING:↵
↵
```

If the MultiView is responding, it will respond with an ACK message as for any other recognized command.

## Blackmagic MultiView 16 RS-422 Protocol

### General

The RS-422 protocol can be used to control Blackmagic MultiView 16 as a slave device from third party routers and automation systems.

The “Leitch Server” mode implements the router (server) side of the Leitch Serial Pass Through Protocol as specified in section 4 of Leitch document SPR-MAN revision D. In “Leitch Client” mode, the Blackmagic MultiView 16 implements the controller (client) side of the Leitch terminal protocol. Set the desired leitch mode in the ‘configure’ settings in the Blackmagic MultiView Setup software.

This document describes the commands and parameters in the protocol that are relevant and supported by Blackmagic MultiView 16. Other commands and parameters specified in the Leitch protocol are accepted but ignored.



The RS-422 serial port is configured as 9600 N81:

9600 is the line speed, or baud rate, at 9600 bits/sec.

N represents no parity check, or 'none'.

8 is the data length.

1 is for stop bits.

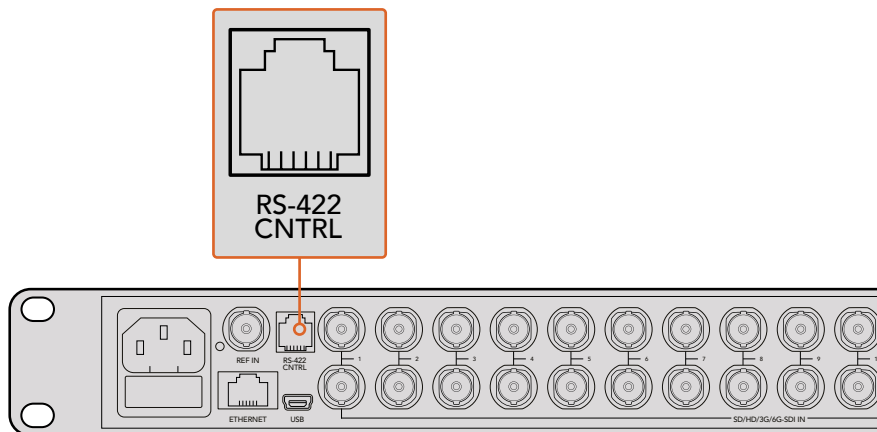
To summarize N81, data without a parity check begins with 1 start bit, includes 8 true data bits, and 1 stop bit. There are 10 bits in total.

The protocol is line oriented, with a maximum length of 250 characters per command. Each command from the client should be terminated with a carriage return (\r). Each response from the server will be terminated with a carriage return and line feed (\r\n).

Sources, destinations and levels are always specified in base-16, numbered from zero. Levels are always between 0 and 15 ("F") . Blackmagic MultiView 16 only has one valid level – level zero.

On connecting to the serial port, the client should send a carriage return. Blackmagic MultiView 16 will respond with a > character prompt, which is not followed by a carriage return or line feed. Receiving the prompt indicates that a connection has been established. The same prompt will be issued after each command received by the MultiView.

In the following documentation, commands in orange and values in blue must be typed literally, including any spaces. In the following example of an immediate command using destination port 7 and source port 3, @ X:0/destination,source would be entered as: @ X:0/6,2

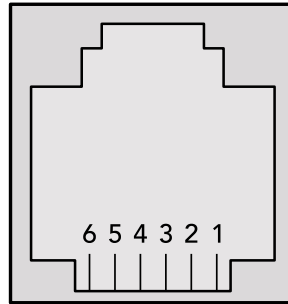


The RS-422 serial port lets you control Blackmagic MultiView 16 from third party routers and automation systems. The connector is an RJ11 connector, the same used in many landline telephone connections. By modifying an RS-422 to USB adapter cable terminated with an RJ11 connector, you can control Blackmagic MultiView 16 using external controllers via USB.



An RS-422 to USB adapter cable and RJ11 connector can be purchased from electronics stores such as Digi-Key.com. Refer to the pinout diagram below for help wiring the RJ11 connector to the adapter cable.

Pin No.	Function
Pin 1	TX +
Pin 2	TX -
Pin 3	GND
Pin 4	GND
Pin 5	RX -
Pin 6	RX +



Pinout diagram for the RJ11 connector

### Notifications

Once connected, if status reporting is enabled, the client will receive a notification message when a route changes on the MultiView. The notifications take one of two forms:

**S:0destination,source** Routing change

This message indicates that the specified source port is now routed to the specified destination.

**V:0destination,source** Preset routing notification

This message indicates that the current preset includes a route from the specified source to the specified destination.

### Global Commands

All pass through commands are preceded by an @ symbol and a space.

The following client commands are supported:

@ !     disable status reporting  
Status reporting is disabled by default.

@ ?     enable status reporting  
Status reporting is enabled.

@ Z:    reset routing table

Routing is reset so that the first source is routed to all destinations.

### Immediate Commands

@ X:0/destination,source   change route

@ X:0/destination,source/destination-2,source-2...   change multiple routes  
The specified source ports are routed to the specified destinations.  
Any routing changes will trigger S: notifications

@ X?0destination   request individual route status  
The source routed to the specified destination will be returned as an S: notification.

@ S?0   request all ports route status  
Each source and destination port pair will be returned as S: notifications

## Salvo Commands

- @ P:0/destination,source queue route change
- @ P:0/destination,source/destination-2,source-2... queue multiple route changes  
The specified routing changes are added to the current salvo for later execution.
- @ P?0destination request individual port status in salvo  
If a routing change for the specified destination port is queued, the route will be returned as a V: notification.
- @ V?0 request all ports status in salvo  
Each queued routing change in the salvo is reported as a V: notification.
- @ B:C clear salvo
- @ B:R clear salvo  
Any queued changes are discarded and the salvo is reset.
- @ B:E execute salvo  
Any queued changes are executed and each routing change will be returned as an S: notification.

# 지원

## 지원받기

가장 빠르게 지원받을 수 있는 방법은 Blackmagic Design 온라인 고객지원 페이지에 접속하여 Blackmagic MultiView 관련 최신 지원 정보를 확인하는 것입니다.

### Blackmagic Design 온라인 고객 지원 페이지

최신 사용 설명서와 소프트웨어, 지원 노트는 Blackmagic 고객 지원 센터([www.blackmagicdesign.com/kr/support](http://www.blackmagicdesign.com/kr/support))에서 확인하실 수 있습니다.

### Blackmagic Design 포럼

저희 웹사이트에 마련된 Blackmagic Design 포럼은 유용한 정보를 제공하는 곳으로, 방문을 통해 자세한 정보와 창의적인 아이디어를 얻을 수 있습니다. 또한, 숙련된 사용자들이나 Blackmagic Design 직원들이 기존에 올려놓은 해결책을 통해 원하는 해답을 얻을 수도 있으므로 여러 가지 도움을 빠르게 받아 한 단계 성장할 수 있는 방법이기도 합니다. 포럼은 <http://forum.blackmagicdesign.com/kr>을 방문해 이용할 수 있습니다.

### Blackmagic Design 고객 지원에 문의하기

고객 지원 페이지나 포럼에서 원하는 정보를 얻지 못한 경우에는 [이메일 보내기] 버튼을 클릭하여 지원 요청 이메일을 보내주세요. 다른 방법으로는 [지역별 고객 지원팀 찾기] 버튼을 클릭하여 가장 가까운 Blackmagic Design 고객지원 사무실에 문의하세요.

### 현재 설치된 소프트웨어 버전 확인하기

컴퓨터에 설치된 Blackmagic MultiView 소프트웨어의 버전을 확인하려면 Blackmagic MultiView 응용프로그램을 여세요. Blackmagic MultiView 메뉴에서 About MultiView를 선택하면 버전 번호를 확인할 수 있습니다.

### 최신 버전으로 업데이트하기

컴퓨터에 설치된 Blackmagic MultiView 16 버전을 확인한 뒤, Blackmagic Design 고객 지원 센터 ([www.blackmagicdesign.com/kr/support](http://www.blackmagicdesign.com/kr/support))에 방문하여 최신 업데이트를 확인하세요. 최신 버전으로 업데이트하는 것을 권장하지만 중요한 프로젝트를 작업 중인 경우에는 소프트웨어 업데이트를 하지 않는 것이 좋습니다.

# 규제 사항 및 안전 정보

## 규제 사항

### 유럽 연합 국가 내의 전기전자제품 폐기물 처리



제품에 부착된 기호는 해당 제품을 다른 폐기물과는 별도로 처리되어야 함을 나타냅니다. 제품을 폐기하려면 반드시 재활용 지정 수거 장소에 폐기해야 합니다. 폐기물 제품을 분리수거 및 재활용으로 처리하는 것은 자연 자원을 보존하고 인간의 건강과 환경을 보호할 수 있도록 폐기물을 재활용할 수 있는 방법입니다. 재활용을 위한 제품 폐기물 장소에 관한 자세한 정보는 해당 지역 시청의 재활용 센터 혹은 해당 제품을 구입한 상점으로 문의하십시오.



본 제품은 테스트 결과 FCC 규정 제15항에 따라 A급 디지털 기기 제한 사항을 준수하는 것으로 확인되었습니다. 해당 제한 사항은 본 제품을 상업적 환경에서 사용할 시 발생할 수 있는 유해 혼선으로부터 적절한 보호를 제공하기 위함입니다. 이 제품은 무선 주파수를 생성 및 사용, 방출할 수 있습니다. 따라서 설명서의 안내에 따라 제품을 설치 및 사용하지 않을 시, 무선 통신을 방해하는 전파 혼선을 일으킬 수 있습니다. 해당 제품을 주거 지역에서 작동할 경우 유해 전파 혼선이 발생할 가능성이 있으며, 이 경우 사용자는 자체 비용으로 전파 혼선 문제를 해결해야 합니다.

제품 작동은 다음 두 가지 조건을 전제로 합니다.

- 1 본 기기는 유해 혼선을 일으키지 않습니다.
- 2 본 기기는 원치 않는 동작을 유발할 수 있는 혼신을 포함한 수신되는 모든 혼신을 수용해야 합니다.

HDMI 인터페이스 연결 시에는 반드시 고품질의 쉴드 HDMI 케이블을 사용해야 합니다.

## 안전 정보

본 제품은 반드시 보호 접지가 되어있는 메인 콘센트에 연결해야 합니다.

감전사고 위험을 줄이기 위해서 본 제품을 물이 튀거나 젖는 곳에 두지 마세요.

본 제품은 주위 온도가 최대 40°C인 열대 지역에서 사용하기 적합합니다.

공기가 잘 통할 수 있도록 제품을 통풍이 잘되는 곳에 두세요.

장비랙에 제품을 설치할 시, 주변 장비가 제품 통풍에 방해가 되지 않도록 주의하세요.

본 제품에는 사용자가 수리 가능한 부품이 포함되어 있지 않습니다. 제품 수리는 해당 지역 Blackmagic Design 서비스 센터에 문의하세요.



최대 작동 고도는 해수면 기준 2000m입니다.

# 보증

## 한정 보증

Blackmagic Design은 커넥터, 케이블, 냉각팬, 퓨즈, LCD 디스플레이, 버튼을 포함한 Blackmagic MultiView 제품의 부품 및 제조에 어떠한 결함도 없음을 제품 구매일로부터 12개월 동안 보증합니다. 보증 기간 내에 결함이 발견될 경우, Blackmagic Design은 당사의 결정에 따라 무상 수리 또는 새로운 제품으로 교환해드립니다.

구매 고객은 반드시 보증 기간이 만료되기 전에 결함 사실을 Blackmagic Design에 통지해야 적절한 보증 서비스를 제공받을 수 있습니다. 구매 고객은 지정된 Blackmagic Design 서비스 센터로 결함 제품을 포장 및 운송할 책임이 있으며 운송 비용은 선불로 지급되어야 합니다. 구매 고객은 또한 이유를 불문하고 제품 반송에 대한 운송료와 보험, 관세, 세금, 기타 비용을 부담해야 합니다.

이 보증은 부적절한 사용 및 관리, 취급으로 인한 파손, 고장, 결함에는 적용되지 않습니다. Blackmagic Design은 다음과 같은 경우에 보증 서비스를 제공할 의무가 없습니다. a) Blackmagic Design 판매 대리인이 아닌 개인에 의해 발생한 제품 손상. b) 부적절한 사용 및 호환하지 않는 장비와의 연결로 인한 제품 손상. c) Blackmagic Design사의 부품 및 공급품이 아닌 것을 사용하여 발생한 손상 및 고장. d) 제품을 개조하거나 다른 제품과 통합하여 제품 작동 시간 증가 및 기능 저하가 발생한 경우. BLACKMAGIC DESIGN에서 제공하는 제품 보증은 다른 모든 명시적 또는 묵시적 보증을 대신합니다. BLACKMAGIC DESIGN사와 관련 판매 회사는 상품성 및 특정 목적의 적합성과 관련된 모든 묵시적 보증을 부인합니다. 구매 고객에게 제공되는 BLACKMAGIC DESIGN의 결함 제품 수리 및 교환 관련 책임은 BLACKMAGIC DESIGN 또는 판매 회사에서 관련 위험의 가능성에 대한 사전 통보의 여부와 관계없이 모든 간접적, 특별, 우발적, 결과적 손해에 대한 유일한 배상 수단입니다. BLACKMAGIC DESIGN은 고객이 사용한 불법 장비에 대해서는 어떤 법적 책임도 지지 않습니다. BLACKMAGIC은 본 제품의 사용으로 인해 발생하는 손해에 대해서는 어떤 법적 책임도 지지 않습니다. 제품 사용으로 인해 발생할 수 있는 위험에 대한 책임은 본인에게 있습니다.

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Январь 2022 г.

Руководство по установке и эксплуатации

Blackmagicdesign

# Blackmagic MultiView



Blackmagic MultiView



## Добро пожаловать!

Благодарим вас за покупку Blackmagic MultiView.

Мы стремимся к тому, чтобы телевидение стало по-настоящему творческим процессом, в котором любой профессионал имеет возможность создавать материал самого высокого качества. MultiView 16 обеспечивает мониторинг сигнала до 16 разных источников на одном экране доступных Ultra HD-телевизоров.

Модель Blackmagic MultiView 4 идеально подходит для небольших или мобильных студий производства, позволяя выводить до четырех источников на HD- или Ultra HD-дисплей. При необходимости можно также создать собственную конфигурацию, объединив несколько устройств MultiView в одну цепь.

Это руководство содержит всю информацию, необходимую для работы с Blackmagic MultiView. Если вы не знаете, как задавать IP-адрес и сетевые параметры, мы рекомендуем обратиться за помощью к техническому специалисту. Для управления устройством можно использовать приложение Blackmagic Videohub Control, однако после его установки потребуется выполнить определенную настройку.

Чтобы загрузить последнюю версию руководства и программного приложения, посетите раздел поддержки на нашем сайте [www.blackmagicdesign.com/ru](http://www.blackmagicdesign.com/ru). При загрузке обновления для Blackmagic MultiView не забудьте зарегистрироваться, и тогда мы будем сообщать вам о выпуске очередного релиза. Мы постоянно работаем над совершенствованием наших продуктов, поэтому ваши отзывы помогут нам сделать их еще лучше.

Мы надеемся, что Blackmagic MultiView прослужит вам много лет и станет надежным помощником в студии для мониторинга в Ultra HD!

**Grant Petty**

Генеральный директор Blackmagic Design



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# Подготовка к работе

Чтобы начать работу с Blackmagic MultiView, достаточно подключить питание и источники SDI-сигнала, а HDMI- или SDI-выход соединить с монитором или телевизором. В данном разделе описан порядок подготовки к использованию устройства Blackmagic MultiView.

## Подключение питания

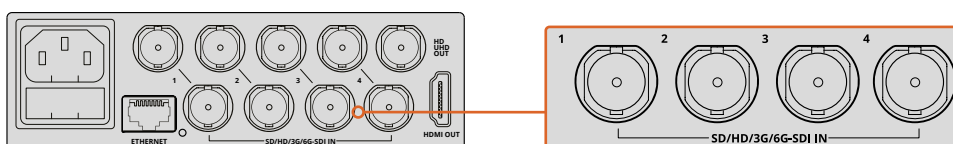
Для подачи питания соедините силовой кабель по стандарту IEC со входом 110-240 В переменного тока на задней панели Blackmagic MultiView.

**СОВЕТ.** Blackmagic MultiView 4 также может получать питание через локальную сеть Ethernet при использовании порта с поддержкой PoE+. Если подключены оба источника — переменного тока и PoE+, то в случае сбоя одного из них устройство автоматически переходит на работу от другого.

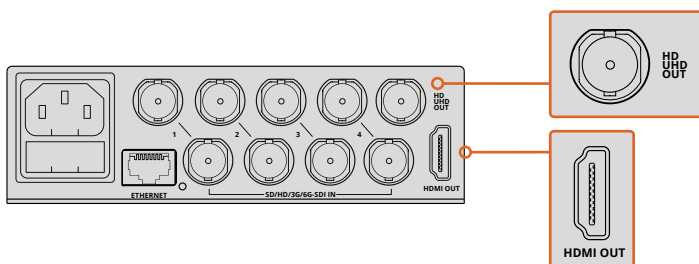
Для подачи питания подключите прилагаемый сетевой адаптер ко входу постоянного тока 6-36 В на Blackmagic MultiView 4 HD. Чтобы зафиксировать соединение, на электрическом разъеме устройства предусмотрена крепежная резьба.

## Подключение источников сигнала и мониторов с SDI-интерфейсом

Подключите источники SDI-сигнала к SDI-входам на Blackmagic MultiView. Формат видео будет определен автоматически, и изображение появится на экране для многооконого мониторинга. Для просмотра исходящего сигнала достаточно соединить монитор с SDI- или HDMI-выходом.



Подключите источники сигнала к SDI-входам на Blackmagic MultiView

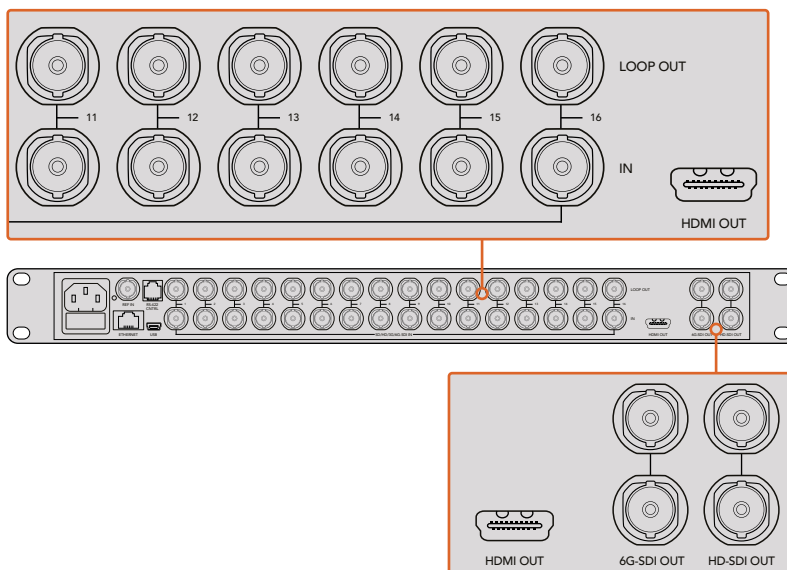


Соедините монитор с HDMI- или SDI-выходом на Blackmagic MultiView

Когда монитор подключен к HDMI-выходу, Blackmagic MultiView автоматически определяет поддерживаемый им формат (Ultra HD или HD) и выбирает для мониторинга соответствующее разрешение.

**COBET.** Blackmagic MultiView 16 позволяет выводить сигнал многооконного мониторинга через HD-SDI-выходы, а в формате Ultra HD — через разъемы 6G-SDI и HDMI.

На Blackmagic MultiView 4 и MultiView 16 над каждым входным разъемом есть сквозные выходы, которые можно использовать для подключения источников сигнала к любому другому оборудованию.



**COBET.** На Blackmagic MultiView 16 все выходы SDI OUT и разъем HDMI OUT можно использовать для одновременного мониторинга Ultra HD- и HD-сигналов. Blackmagic MultiView 4 допускает вывод сигнала в Ultra HD или HD. Формат выбирают с помощью встроенных переключателей, Teranex Mini Smart Panel или утилиты Blackmagic MultiView Setup.

## Настройка конфигурации окон

Конфигурацию окон можно изменить в соответствии с требованиями работы. Например, Blackmagic MultiView 4 позволяет выводить изображение в режиме 2x2 или на полный экран. Blackmagic MultiView 16 поддерживает следующие конфигурации: 2x2, 3x3, 4x4, а также полноэкранный режим.

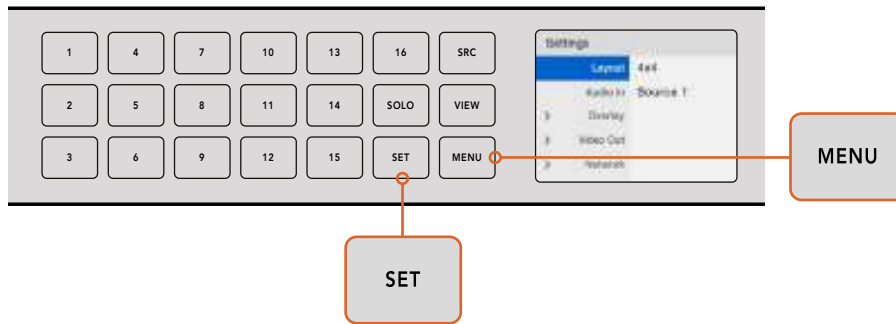
### Выбор конфигурации на Blackmagic MultiView 16

На Blackmagic MultiView 16 конфигурацию окон изменяют с помощью кнопок, поворотной ручки и ЖК-дисплея контрольной панели управления. Любое видео можно просматривать в полноэкранном режиме. Для этого нажмите кнопку SOLO, затем выберите получаемый сигнал с помощью кнопки источника.

- 1 Чтобы открыть экран настроек на ЖК-дисплее, нажмите кнопку MENU на передней панели управления.
- 2 Layout (Конфигурация) — первая настройка в списке, поэтому она всегда подсвечивается, когда вы начинаете работать с меню. Для изменения настройки нажмите кнопку SET.

- 3 С помощью поворотной ручки выберите конфигурацию 4x4, которая позволяет видеть все 16 источников сигнала на одном экране. Обратите внимание, что при каждом изменении настройки кнопки SET и MENU начинают мигать. Нажмите кнопку SET, чтобы подтвердить новую настройку, или MENU, чтобы отменить ее.
- 4 Нажмите кнопку SET, чтобы подтвердить сделанный выбор.

Выбрать конфигурацию окон можно также с помощью настроек Configure утилиты Blackmagic MultiView Setup.

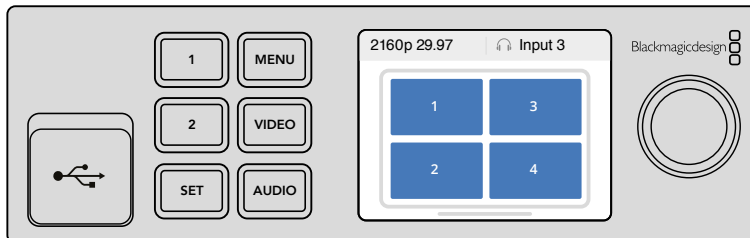


Для выбора конфигурации на Blackmagic MultiView 16 нажмите MENU, с помощью поворотной ручки перейдите к нужному режиму и нажмите SET. Режим 4x4 позволяет видеть все 16 источников сигнала на одном экране.

### Выбор конфигурации на Blackmagic MultiView 4

Blackmagic MultiView 4 по умолчанию использует конфигурацию 2x2. Для просмотра видео в полноэкранном режиме SOLO нажмите кнопку 1 на панели Teranex Mini Smart Panel. Чтобы вернуться к конфигурации 2x2, нажмите кнопку 2.

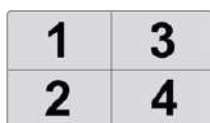
Выбрать конфигурацию окон можно также с помощью настроек Configure утилиты Blackmagic MultiView Setup.



Нажмите кнопку 1 для просмотра видео в режиме SOLO или кнопку 2 для выбора конфигурации 2x2

### Настройка конфигурации окон

Конфигурацию окон можно изменить в соответствии с требованиями работы. Например, Blackmagic MultiView 4 и MultiView 4 HD позволяют выводить изображение в режиме 2x2 или на полный экран. Blackmagic MultiView 16 поддерживает следующие конфигурации: 2x2, 3x3, 4x4, а также полноэкранный режим.



Выбор конфигурации на Blackmagic MultiView 4 HD

Подробнее см. раздел «Настройка переключателей на Blackmagic MultiView 4 HD».

## Подключение к локальной сети

Blackmagic MultiView поддерживает Blackmagic Videohub Ethernet Protocol и управление в удаленном режиме при размещении в стойке с ограниченным доступом. Для этого можно использовать Blackmagic Smart Control и Master Control. После подключения к локальной сети через порт Ethernet устройство будет распознаваться другими компьютерами и панелями коммутаторов Videohub. Это позволяет использовать дистанционный контроль.

Порядок подключения Blackmagic MultiView к локальной сети

- 1 Включите питание Blackmagic MultiView.
- 2 Для соединения с сетью или компьютером используйте стандартный Ethernet-кабель с разъемом RJ45.

После подключения к локальной сети убедитесь в том, что IP-адрес Blackmagic MultiView отличается от адресов других устройств. При использовании Blackmagic MultiView 16 или MultiView 4 с панелью Teranex Mini Smart Panel сетевые настройки можно изменить с помощью меню на ЖК-дисплее панели управления. Устройство Blackmagic MultiView также допускает подключение к компьютеру через порт USB. После этого сетевые настройки устанавливаются из утилиты Blackmagic MultiView Setup. Дополнительную информацию об изменении сетевых настроек см. в разделе «Изменение настроек» данного руководства.

## Порт последовательного соединения

Контрольные панели сторонних производителей могут управлять устройством Blackmagic MultiView 16 с помощью последовательного соединения через интерфейс RS-422. Подробнее о последовательном соединении см. раздел «Изменение настроек с помощью Blackmagic MultiView Setup».

## Установка в стойку

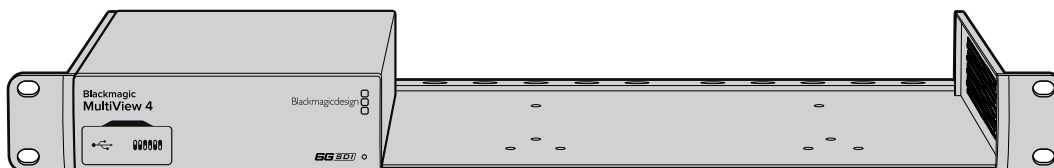
Blackmagic MultiView 16 занимает одно место в стойке и идеально подходит для размещения в передвижных телестанциях.

Blackmagic MultiView 4 имеет более компактный корпус, что делает эту модель удобной для работы в мобильных условиях. При необходимости ее также можно установить в стойку с помощью полки Teranex Mini Rack Shelf размером 1 RU. Она вмещает три устройства, которые легко соединить между собой для вывода сигналов из нужного количества источников.

Для размещения Blackmagic MultiView 4 на полке Teranex Mini Rack Shelf достаточно снять резиновые вставки в основании корпуса и закрепить его с помощью винтов, используя монтажные отверстия. В комплект поставки Teranex Mini Rack Shelf входят две пустые панели для заполнения свободного места при установке одного или двух устройств.

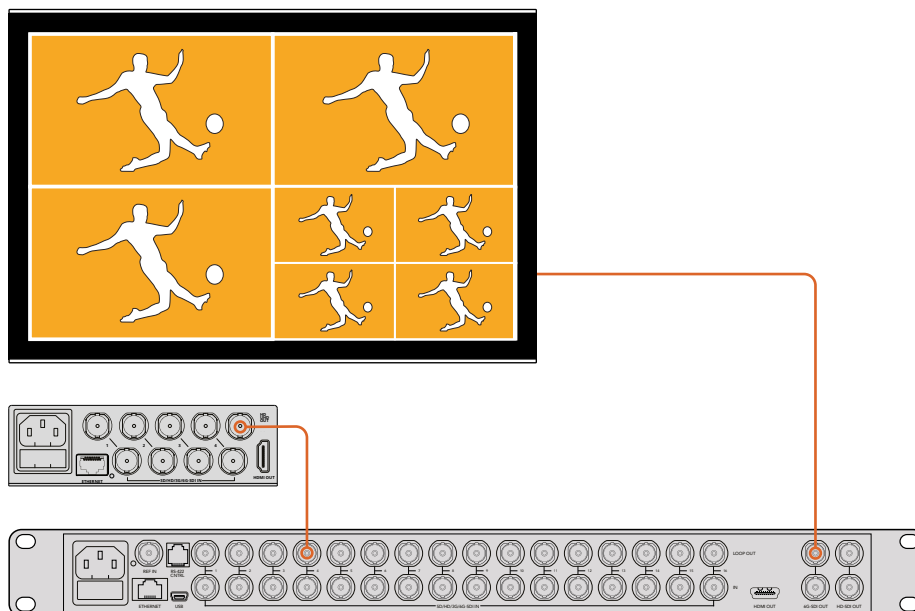
Подробнее см. веб-сайт компании Blackmagic Design [www.blackmagicdesign.com/ru](http://www.blackmagicdesign.com/ru).

После размещения в стойке разъемы на задней панели доступны в обычном порядке.



## Использование нескольких решений MultiView

Если на монитор необходимо вывести сигналы из дополнительных источников, можно создать собственную конфигурацию с помощью нескольких решений Blackmagic MultiView. Для этого достаточно соединить выход одного устройства со входом другого. Чтобы получить изображение максимальной четкости, рекомендуется выводить первичный сигнал на Ultra HD-монитор.



Соединив выход одного устройства со входом другого, можно увеличить количество источников для многооконного мониторинга

Все готово для начала работы. Подробнее об изменении настроек, присвоении имен окнам и использовании других функций Blackmagic MultiView см. разделы ниже.

## Изменение настроек

Настройки Blackmagic MultiView можно изменить несколькими способами.

- **Передняя панель управления** — Blackmagic MultiView 16 имеет встроенную панель управления и ЖК-дисплей для прямого доступа к настройкам.
- **Переключатели** — находятся под пылезащитной резиновой крышкой на передней панели MultiView 4 и на боковой стороне MultiView 4 HD. Они позволяют менять настройки с помощью шариковой ручки. Для удобства работы с ними на нижней стороне корпуса есть наглядная схема.
- **Teranex Mini Smart Panel** — оригинальную переднюю панель Blackmagic MultiView 4 можно заменить на Teranex Mini Smart Panel, чтобы использовать кнопки, поворотную ручку и ЖК-дисплей. В этом случае настройки меняют так же, как с помощью передней панели Blackmagic MultiView 16.
- **Blackmagic MultiView Setup** — эта утилита позволяет менять настройки с компьютера через USB-порт или подключение к локальной сети Ethernet. Подробнее см. раздел «Утилита Blackmagic MultiView Setup».
- **Приложение Videohub Control** — при подключении Blackmagic MultiView к локальной сети это приложение позволяет задавать направление коммутации, менять назначение окон и выбирать источник аудиосигнала. Подробнее см. раздел «Работа с приложением Videohub Software Control».

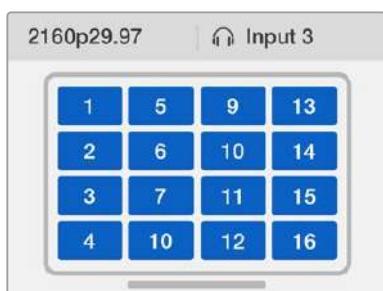
- **Приложение Videohub Control** — при подключении Blackmagic MultiView 16 или MultiView 4 к локальной сети это приложение позволяет задавать направление коммутации, менять назначение окон и выбирать источник аудиосигнала. Подробнее см. раздел «Работа с приложением Videohub Control Software».

## Передняя панель Blackmagic MultiView 16

Передняя панель Blackmagic MultiView 16 служит для изменения всех используемых настроек.

При первом включении устройства на ЖК-дисплей выводится начальная страница, которая содержит три параметра.

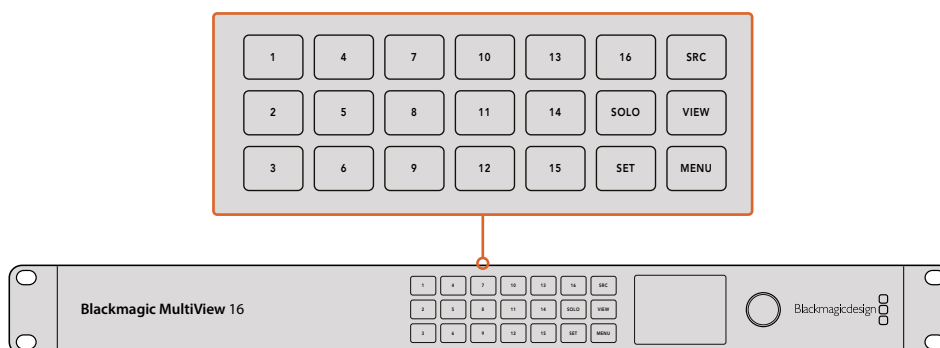
- **Кадровая частота многооконного режима** — отображается в верхнем левом углу и показывает выбранную кадровую частоту для вывода SDI-сигнала в Ultra HD.
- **Аудиосигнал на входе** — отображается рядом с кадровой частотой и показывает, какой SDI-вход используется для звука, встроенного в сигнал на HDMI- или SDI-выходе.
- **Конфигурация окон** — показывает выбранный режим многооконного мониторинга.



По умолчанию на ЖК-дисплее Blackmagic MultiView 16 отображается начальная страница, где показаны конфигурация окон, кадровая частота и SDI-вход, используемый для встраивания звука в сигнал на выходе

### Кнопки панели управления

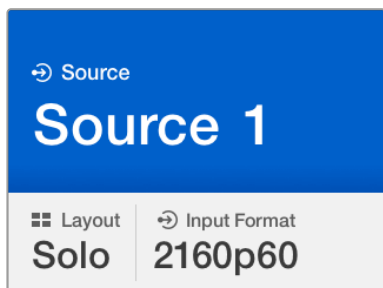
Кнопки с подсветкой на панели управления служат для изменения настроек, а также для назначения источников сигнала и окон мониторинга на Blackmagic MultiView 16.



Кнопки на передней панели управления позволяют легко переключаться между окнами и менять настройки Blackmagic MultiView 16

## Кнопка SOLO

Для мониторинга в полноэкранном режиме нажмите кнопку SOLO. Затем нажмите любую из пронумерованных кнопок на панели управления. Для возврата к многооконному режиму нажмите SOLO еще раз.



Функция SOLO позволяет выводить сигнал в полноэкранном режиме

## Кнопка MENU

Нажмите кнопку MENU, чтобы открыть настройки. Измените настройку с помощью поворотной ручки и кнопки SET, затем нажмите кнопку MENU еще раз для возврата к начальной странице.

## Кнопка SET

Нажмите кнопку SET для выбора изменяемой настройки. Чтобы подтвердить изменение, нажмите SET еще раз.

## Кнопки SRC и VIEW

Эти кнопки позволяют выбрать источник входящего сигнала для мониторинга. Их также можно использовать для навигации по меню настроек вверх и вниз.

## Поворотная ручка

Чтобы найти нужную настройку или опцию меню, поверните ручку. Для возврата к предыдущей настройке нажмите ручку.

Чтобы выбрать нужную опцию меню, поверните ручку по часовой или против часовой стрелки. Чтобы включить или отключить настройки, нажмите на ручку.

## Назначение источников и окон на Blackmagic MultiView 16

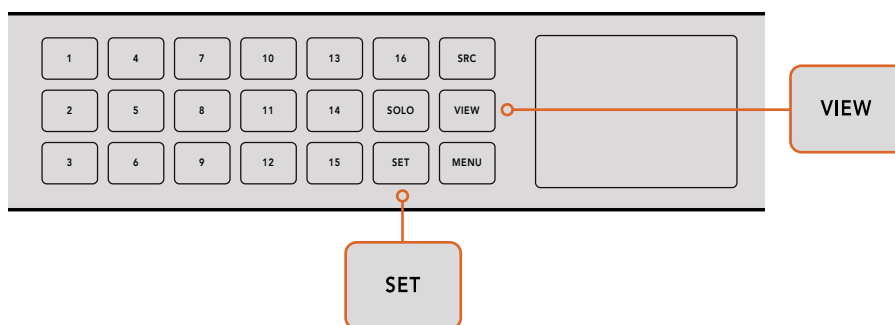
Одна из ключевых функций Blackmagic MultiView 16 — вывод SDI-сигнала из определенного источника в заданном окне. Эта настройка позволяет легко менять конфигурацию окон. Например, SDI-сигнал, поступающий на вход 5 (Input 5), можно выводить в окне 1 (View 1).

Порядок назначения окна для источника

- 1 Чтобы открыть экран выбора окон, нажмите кнопку VIEW на панели управления. Настройка View будет отображаться на синем фоне.
- 2 Нажмите одну из пронумерованных кнопок, чтобы задать окно для вывода изображения. Для этого можно также использовать поворотную ручку. Нажмите кнопку SET, чтобы подтвердить сделанный выбор.
- 3 Нажмите кнопку SRC. На ЖК-дисплее будет отображаться настройка Source.



- 4 Нажмите одну из пронумерованных кнопок на панели управления, чтобы задать вход для сигнала. Для перехода можно также использовать поворотную ручку.
- 5 Нажмите кнопку SET, чтобы подтвердить сделанный выбор.



Чтобы назначить окно для определенного источника, нажмите кнопку VIEW. Затем задайте окно и нажмите кнопку SET, чтобы подтвердить сделанный выбор.

## Выбор конфигурации на Blackmagic MultiView 16

При работе с Blackmagic MultiView 16 можно задать необходимое количество окон. Например, при подключении четырех источников сигнала оптимальной будет конфигурация 2x2 с двумя окнами по вертикали и двумя по горизонтали. Для качественного мониторинга следует использовать наиболее подходящую конфигурацию.

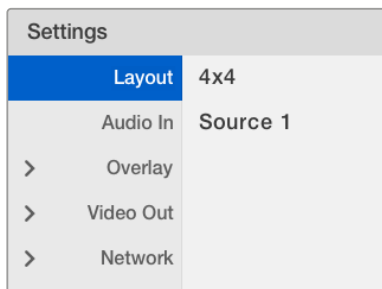
Четыре возможные конфигурации

- **2x2** показывает четыре окна. При наличии подключенного Ultra HD-монитора сигнал каждого из источников будет выводиться в HD.
- **3x3** показывает девять окон.
- **4x4** показывает все 16 окон.

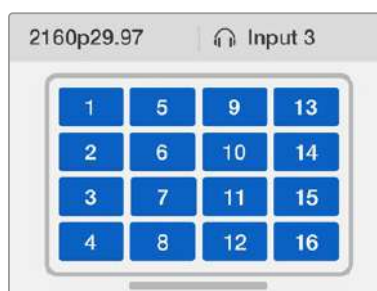
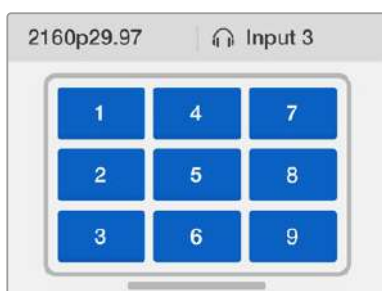
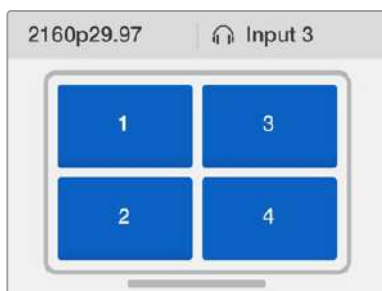
**СОБЕТ.** Для вывода изображения в полноэкранном режиме нажмите кнопку SOLO, затем кнопку VIEW на панели управления. Если вы используете Blackmagic MultiView 4, нажмите кнопку 1 на Teranex Mini Smart Panel.



Используя поворотную ручку или кнопки VIEW, выберите окно, которое необходимо назначить для определенного источника



Перейдите к нужному элементу меню и нажмите SET для вывода его настроек



В зависимости от количества используемых сигналов выберите наиболее подходящую конфигурацию

## Audio In

Эта настройка используется для выбора SDI-входа, звук которого будет выводиться во время многооконного мониторинга.

## Overlay

Этот раздел меню позволяет менять способ отображения при многооконном мониторинге. Функция Overlay имеет режимы On (вкл.) или Off (выкл.).

### Параметры функции Overlay

- **Border** — использует рамку при отображении каждого окна.
- **Labels** — показывает или скрывает идентификаторы окна, которые можно изменить с помощью утилиты Blackmagic MultiView Setup.
- **Audio Meters** — включает и отключает индикаторы VU для всех окон. В каждом из окон отображаются первые два канала, встроенные в SDI-сигнал. Это позволяет вести мониторинг уровней звука вместе с изображением.
- **SDI Tally** — если на Blackmagic MultiView 16 поступает программный SDI-сигнал с видеомикшера ATEM, при передаче изображения в эфир окно будет отображаться в рамке. Возможные режимы: On (вкл.) или Off (выкл.).

Для корректной работы необходимо использовать входы с одинаковыми номерами на Blackmagic MultiView 16 и на видеомикшере АТЕМ. В противном случае рамка будет отображаться неверно.

## Video Out

Эта настройка дает возможность выбирать параметры сигнала на выходе Blackmagic MultiView 16.

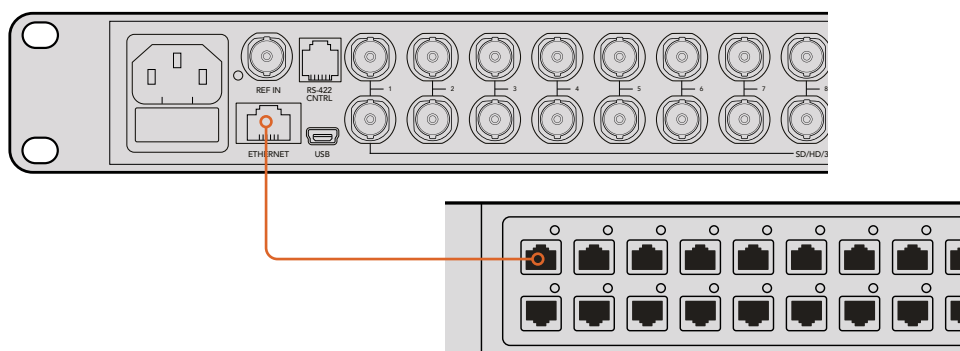
- **Video Format** — позволяет изменить кадровую частоту при выводе Ultra HD и выбрать формат 2160p/29,97 или 2160p/25. HD-сигнал на выходе будет иметь такую же кадровую частоту, как сигнал в Ultra HD. Для отмены изменений или возврата к предыдущему меню нажмите поворотную ручку.
- **HD Output** — позволяет выбрать чересстрочное или прогрессивное видео при выводе HD-сигнала. При настройке 2160p/29,97 сигнал на выходе будет иметь формат 1080p/29,97 или 1080i/59,94. При настройке 2160p/25 сигнал на выходе будет иметь формат 1080p/25 или 1080i/50.

## Network

Эти настройки позволяют задавать адреса IP, Subnet и Gateway при подключении Blackmagic MultiView 16 к локальной сети.

Установка IP-адреса Blackmagic MultiView 16

- 1 На панели управления нажмите кнопку MENU и с помощью поворотной ручки выберите вкладку Network.
- 2 Нажмите кнопку SET, чтобы открыть экран сетевых настроек.
- 3 С помощью поворотной ручки выберите вкладку IP Address.
- 4 Нажмите кнопку SET, чтобы выделить первый сегмент адреса. Для изменения значения используйте поворотную ручку.
- 5 Нажмите кнопку SET, чтобы подтвердить значение первого сегмента, затем повторите те же действия для следующих трех сегментов. Таким же способом можно при необходимости изменить адреса Subnet и Gateway.
- 6 Для возврата к начальной странице нажмите кнопку MENU два раза.



Подключение Blackmagic MultiView 16 по сети Ethernet позволяет управлять устройством из любого места

Network Settings	
IP Address	192.168.10.160
Subnet	255.255.255.0
Gateway	192.168.10.1

Для установки сетевых настроек используйте поворотную ручку или кнопки VIEW, расположенные на панели управления Blackmagic MultiView 16

## Teranex Mini Smart Panel

Teranex Mini Smart Panel устанавливают на место стандартной передней панели Blackmagic MultiView 4. Ее кнопки, ручка и ЖК-дисплей обеспечивают быстрый доступ к настройкам.

### Установка Teranex Mini Smart Panel

Дополнительная панель Smart Panel допускает установку непосредственно во время работы без отключения Blackmagic MultiView 4.

- 1 Используя отвертку Pozidriv 2, открутите по два винта М3 на боковых поверхностях Blackmagic MultiView 4 и осторожно снимите стандартную переднюю панель.
- 2 На внутренней стороне основной панели, в ее нижнем углу, имеется прозрачная пластиковая трубка. Она служит для подсветки индикатора состояния. Не отсоединяйте ее от передней панели.

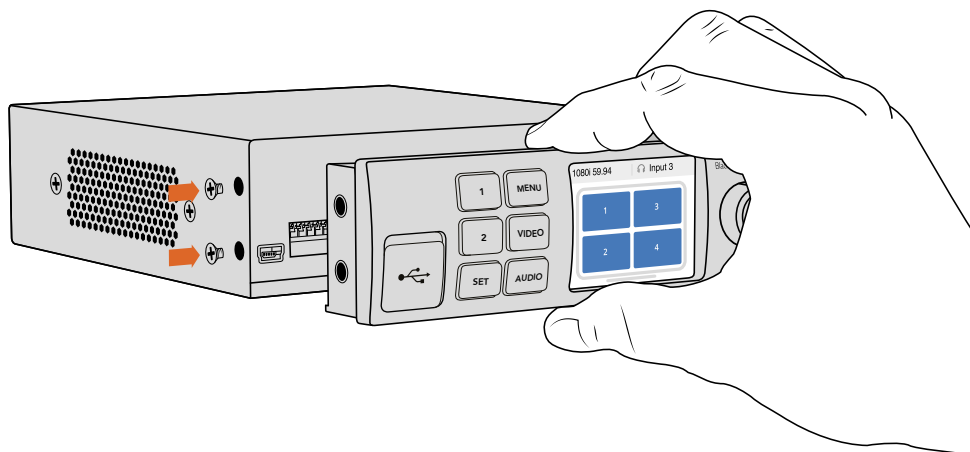
**СОВЕТ.** При обратной установке передней панели убедитесь, что световая трубка для индикации питания совпадает с предназначенным для нее местом на панели.

- 3 Совместите разъем на тыльной стороне Smart Panel с соответствующим разъемом на лицевой поверхности Blackmagic MultiView 4 и осторожно надавите на Smart Panel по направлению к устройству до упора. Smart Panel должна быть надежно соединена с лицевой поверхностью Blackmagic MultiView 4.
- 4 Установите винты М3 на прежнее место и закрутите их.

Устройство Blackmagic MultiView 4, размещенное на полке, необходимо предварительно вынуть, чтобы иметь доступ к винтам передней панели.

Подробнее см. раздел «Установка в стойку».

После установки Smart Panel на Blackmagic MultiView 4 сохраняется доступ к USB-порту. Для этого необходимо открыть пылезащитную резиновую крышку. В этом случае переключатели на передней панели не используются. Вместо них настройки меняют с помощью меню Teranex Smart Panel на ЖК-дисплее.



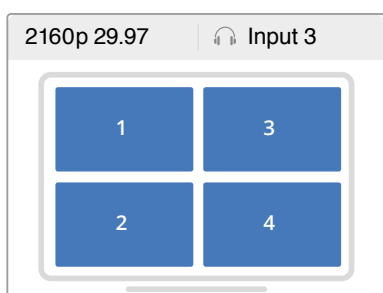
При установке Teranex Mini Smart Panel на Blackmagic MultiView 4 держите панель так, чтобы пальцы находились точно по линии разъема на ее тыльной стороне. Это поможет правильно выполнить соединение.

**СОВЕТ.** Если Blackmagic MultiView 4 находится в стойках за другим оборудованием, для защиты корпуса стандартную переднюю панель можно установить обратно на место.

## Функции Teranex Mini Smart Panel

Smart Panel обеспечивает доступ к тем же функциям, что и панель управления MultiView 16. Начальная страница, которая отображается на ЖК-дисплее, по умолчанию содержит три параметра.

- **Кадровая частота многооконного режима** — отображается в верхнем левом углу и показывает выбранную кадровую частоту для вывода SDI-сигнала в Ultra HD.
- **Аудиосигнал на входе** — отображается рядом с кадровой частотой и показывает, какой SDI-вход используется для звука, встроенного в сигнал на HDMI-или SDI-выходе.
- **Конфигурация окон** — показывает режим многооконного мониторинга 2x2.

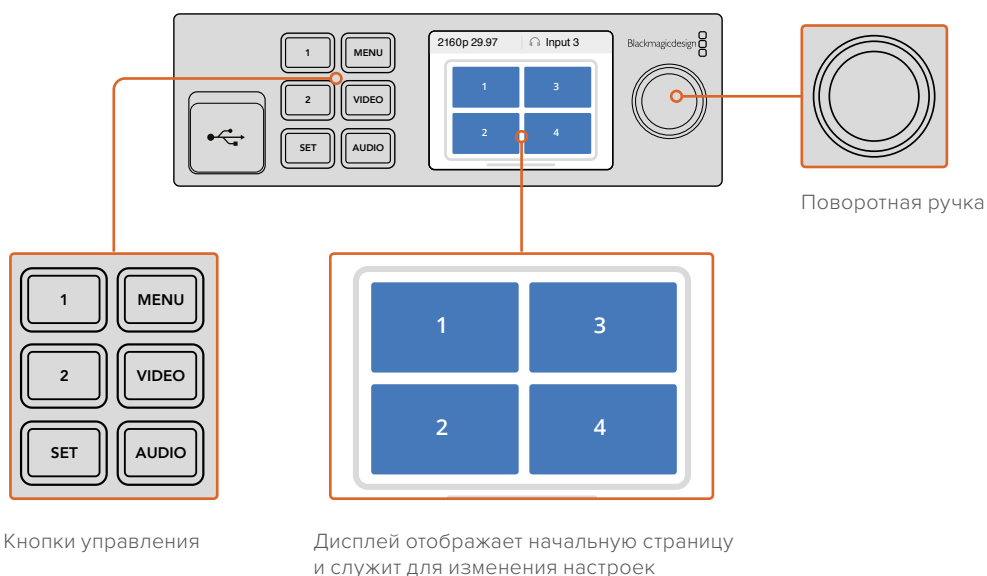


По умолчанию на ЖК-дисплее Teranex Mini Smart Panel отображается начальная страница меню

## Поворотная ручка и кнопки управления

Панель Teranex Mini Smart Panel оснащена поворотной ручкой и кнопками для навигации по настройкам Blackmagic MultiView 4.

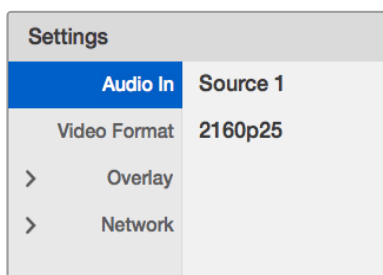
- **Кнопки 1 и 2** — предназначены для увеличения и уменьшения числового значения настроек, а также для навигации по меню.
- **SET** — используется для подтверждения выбранных настроек после их изменения с помощью кнопок 1 и 2.
- **MENU** — служит для перехода к меню настроек Blackmagic MultiView 4. Также используется для возврата на один шаг назад вплоть до начальной страницы.
- **Кнопки VIDEO и AUDIO** — эти кнопки используются только с конвертерами Teranex Mini и не применяются на Blackmagic MultiView 4.
- **Поворотная ручка** — предназначена для навигации по меню настроек (по часовой или против часовой стрелки), а также для изменения цифровых значений настроек.



## Изменение настроек с помощью Teranex Mini Smart Panel

Teranex Mini Smart Panel позволяет устанавливать настройки с помощью ЖК-дисплея.

Для доступа к ним нажмите кнопку MENU на панели управления. На рисунке ниже показаны параметры, которые можно изменить.



Выделите нужный элемент меню и нажмите SET, чтобы получить доступ к настройкам. Для перехода между настройками используйте поворотную ручку.

### Audio In

Эта настройка используется для выбора SDI-входа, звук которого будет выводиться во время многооконного мониторинга.

## Video Format

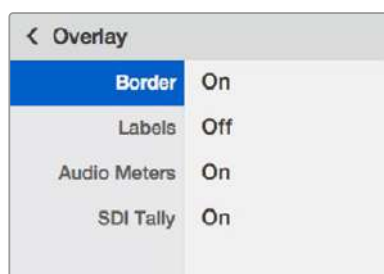
На Blackmagic MultiView 4 можно выбрать вывод в Ultra HD или HD с частотой 29,97 или 25 кадров/с. Используйте эту настройку для перехода между доступными опциями разрешения и частоты.

## Overlay

Этот раздел меню позволяет включать и отключать вывод дополнительных параметров.

Параметры функции Overlay

- **Border:** использует рамку при отображении каждого из окон.
- **Labels:** показывает или скрывает идентификаторы окна, которые можно изменить с помощью утилиты Blackmagic MultiView Setup.
- **Audio Meters:** включает и отключает индикаторы VU для всех окон. В каждом из окон отображаются первые два канала, встроенные в SDI-сигнал. Это позволяет вести мониторинг уровней звука вместе с изображением.

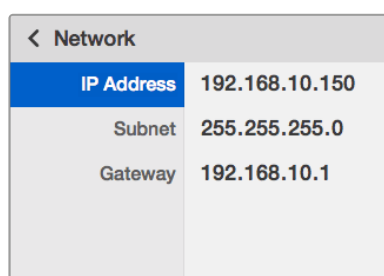


## Network

Эти настройки позволяют задавать адреса IP, Subnet и Gateway при подключении Blackmagic MultiView 4 к локальной сети.

Установка IP-адреса Blackmagic MultiView 4

- 1 На панели управления нажмите кнопку MENU и с помощью поворотной ручки выберите вкладку Network.
- 2 Нажмите кнопку SET, чтобы открыть экран сетевых настроек.
- 3 С помощью поворотной ручки выберите вкладку IP Address.
- 4 Нажмите кнопку SET, чтобы выделить первый сегмент адреса. Для изменения значения используйте поворотную ручку.
- 5 Нажмите кнопку SET, чтобы подтвердить значение первого сегмента, затем повторите те же действия для следующих трех сегментов. Таким же способом можно при необходимости изменить адреса Subnet и Gateway.
- 6 Для возврата к начальной странице нажмите кнопку MENU два раза.

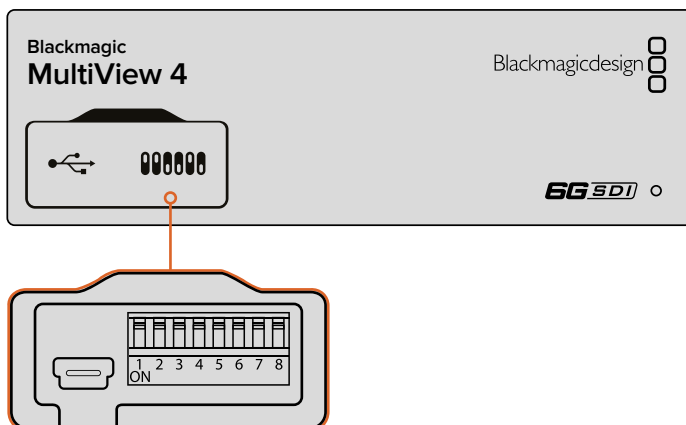


Чтобы установить сетевые настройки Blackmagic MultiView 4, используйте поворотную ручку или кнопки 1 и 2 на Teranex Mini Smart Panel

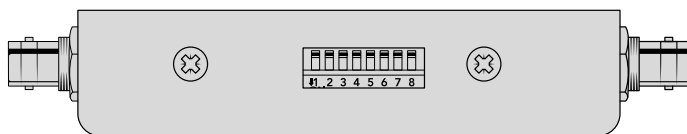
# Изменение настроек с помощью переключателей

Для работы с настройками на Blackmagic MultiView 4 и MultiView 4 HD предусмотрены небольшие переключатели. На Blackmagic MultiView 4 они находятся под пылезащитной резиновой крышкой на передней панели.

На Blackmagic MultiView 4 HD переключатели расположены на боковой стороне устройства.



Установка настроек переключателей с помощью авторучки



На Blackmagic MultiView 4 HD переключатели расположены на боковой стороне устройства

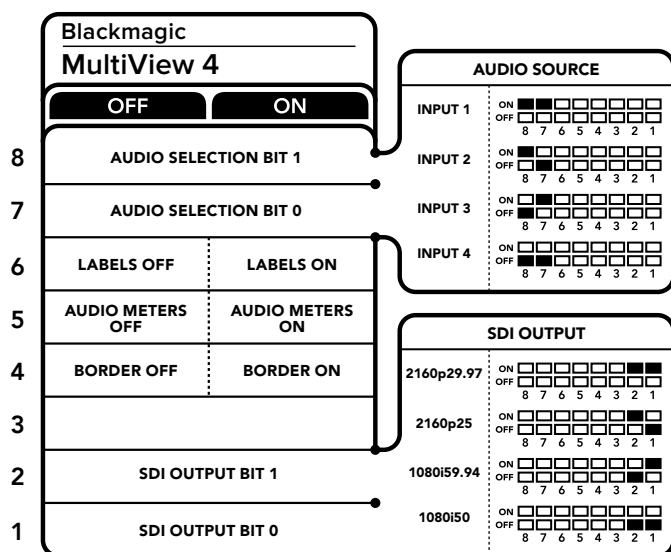
## Переключатели

На нижней стороне корпуса есть схема соединений. Настройки переключателей выполняются в соответствии с их номерными обозначениями (1-8).

**СОВЕТ.** В качестве подсказки можно использовать диаграмму на нижней стороне корпуса, однако она не всегда отражает комбинации для недавно добавленных функций. Рекомендуется обращаться к последней версии руководства по эксплуатации, которая доступна в центре поддержки Blackmagic Design на странице [www.blackmagicdesign.com/ru/support](http://www.blackmagicdesign.com/ru/support).



## Настройка переключателей на Blackmagic MultiView 4



Настройка переключателей на Blackmagic MultiView 4

Переключатели на Blackmagic MultiView 4 служат для изменения настроек.

### Переключатели 8 и 7 — выбор аудиосигнала

Переключатели 8 и 7 соответствуют битам 1 и 0. Используя различные комбинации ON/OFF (вкл./выкл.) для этих переключателей, можно выбрать SDI-вход, который будет использоваться для звука, встроенного в сигнал на HDMI- или SDI-выходе.

#### Выбор аудиосигнала

Источник звука	Переключатель 8	Переключатель 7	Положение переключателя
Input 1	ON	ON	ON <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Input 2	ON	OFF	ON <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Input 3	OFF	ON	ON <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Input 4	OFF	OFF	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

### Переключатель 6 — идентификаторы

Установите переключатель 6 в положение ON (вкл.) для отображения идентификатора каждого окна. Идентификаторы можно задать с помощью утилиты Blackmagic MultiView Setup (см. раздел ниже). Чтобы их скрыть, установите переключатель 6 в положение OFF (выкл.).

### Переключатель 5 — индикаторы звука

Установите переключатель 5 в положение ON (вкл.) для отображения индикаторов звука в каждом окне. Чтобы их скрыть, установите переключатель 5 в положение OFF (выкл.).

### Переключатель 4 — рамки

Установите переключатель 4 в положение ON (вкл.) для отображения окон в рамках. Чтобы их скрыть, установите переключатель 4 в положение OFF (выкл.).

## Переключатели 2 и 1

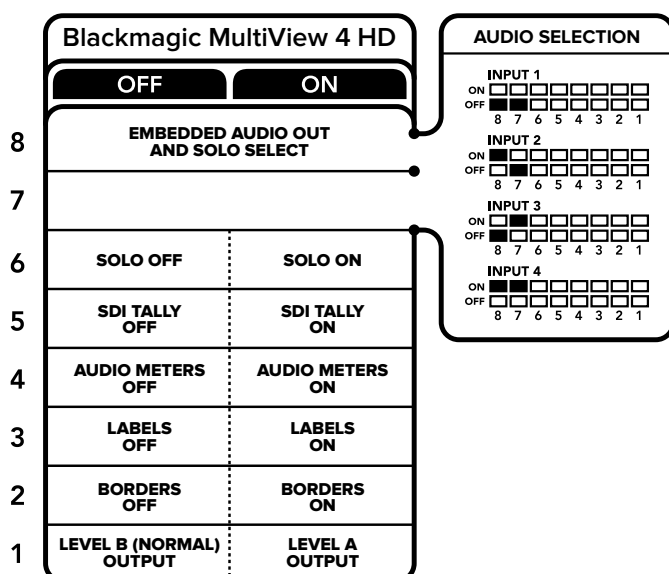
Переключатели 2 и 1 соответствуют битам 1 и 0. Используя различные комбинации ON/OFF (вкл./выкл.), можно выбрать формат вывода SDI-сигнала на MultiView 4.

### Выбор формата на SDI-выходе

SDI-выход	Переключатель 2	Переключатель 1	Положение переключателя
2160p/29,97	ON	ON	
2160p/25	ON	OFF	
1080i/59,94	OFF	ON	
1080i/50	OFF	OFF	

**ПРИМЕЧАНИЕ.** При использовании дополнительной панели управления Teranex Mini Smart Panel она будет иметь приоритет над переключателями. Blackmagic MultiView 4 использует последние настройки независимо от того, как их установили — с помощью переключателей, Smart Panel или утилиты MultiView Setup. Если после программного обновления параметров Blackmagic MultiView 4 или снятия Smart Panel необходимо вернуться к ручной настройке, может потребоваться повторная установка отдельных переключателей.

## Настройка переключателей на Blackmagic MultiView 4 HD



На нижней стороне корпуса есть схема соединений

Переключатели на Blackmagic MultiView 4 HD служат для изменения настроек.

### Переключатели 8 и 7 — SDI Audio Embed и Solo Select

Переключатели 8 и 7 позволяют использовать четыре комбинации ON/OFF. Это дает возможность встраивать звук с любых четырех SDI-входов в сигнал многооконного мониторинга на выходе. Так как в полноэкранном режиме звуковая дорожка привязана к изображению, данные переключатели служат для выбора источников видео и аудио.

#### Выбор аудиосигнала

Источник звука	Переключатель 8	Переключатель 7	Положение переключателя
Input 1	OFF	OFF	
Input 2	ON	OFF	
Input 3	OFF	ON	
Input 4	ON	ON	

### Переключатель 6 — полноэкранный режим

Для работы в полноэкранном режиме установите переключатель 6 в положение ON (вкл.). Чтобы вернуться к конфигурации 2x2, выберите положение OFF (выкл.).

Звук, встроенный в выходной сигнал при полноэкранном режиме, поступает из заданного источника изображения. Переключатели 7 и 8 служат для выбора аудио и видео при полноэкранной конфигурации дисплея, а в режиме 2x2 с их помощью задают входной аудиосигнал.

### Переключатель 5 — Tally

Для отображения Tally-индикации установите переключатель 5 в положение ON (вкл.), чтобы скрыть — в положение OFF (выкл.).

Все дополнительные данные, включая команды управления камерами с ATEM через SDI-сигнал, тайм-код и скрытые субтитры, передаются в полноэкранном режиме без изменений.

**СОВЕТ.** С помощью утилиты Blackmagic MultiView Setup каждому источнику сигнала можно присвоить свой номер для вывода на экран. Для корректного отображения Tally-индикации убедитесь в том, что он совпадает с номером, заданным на видеомикшере. Подробнее см. раздел «Настройка Tally-индикации».

### Переключатель 4 — индикаторы звука

Для отображения индикаторов звука установите переключатель 4 в положение ON (вкл.), чтобы скрыть — в положение OFF (выкл.).

### Переключатель 3 — идентификаторы окон

Для отображения идентификаторов окон установите переключатель 3 в положение ON (Вкл.), чтобы скрыть — в положение OFF (выкл.).

### Переключатель 2 — рамки

Для отображения рамок установите переключатель 2 в положение ON (вкл.), чтобы скрыть — в положение OFF (выкл.).

### Переключатель 1 — Level A и Level B для 3G-SDI

Для выбора Level B установите переключатель 1 в положение OFF (выкл.), для Level A — в положение ON (вкл.). Это позволит выбрать уровень при работе с сигналом 3G-SDI для совместимости с другим SDI-оборудованием.

## Работа с утилитой Blackmagic MultiView Setup

Утилита Blackmagic MultiView Setup позволяет устанавливать настройки с любого компьютера на платформе Mac или Windows и обновлять ПО устройства. Для Blackmagic MultiView 4 настройку можно выполнить через локальную сеть Ethernet без подключения к USB-порту.

### Установка утилиты Blackmagic MultiView Setup

Утилита Blackmagic MultiView Setup работает на 64-разрядной версии Windows и последних версиях macOS (Sierra и High Sierra).



Для установки Blackmagic MultiView Setup дважды щелкните кнопкой мыши по значку установщика и следуйте инструкциям на экране

### Установка для Windows

- 1 Дважды щелкните по установщику утилиты на электронном носителе или в папке загрузок (если приложение было загружено с веб-сайта Blackmagic Design).
- 2 Следуйте инструкциям установщика. После согласия с условиями лицензионного соглашения Windows автоматически установит утилиту.

Из меню «Пуск» выберите Все программы>Blackmagic Design>MultiView. Утилита Blackmagic MultiView Setup находится в папке MultiView.

## Установка для Mac OS X

- 1 Дважды щелкните по установщику утилиты на электронном носителе или в папке загрузок (если приложение было загружено с веб-сайта Blackmagic Design).
- 2 Следуйте инструкциям установщика. Mac OS X автоматически установит утилиту.

Утилита Blackmagic MultiView Setup содержится в папке Blackmagic MultiView, которая находится в Приложениях.

## Начальная страница утилиты Blackmagic MultiView Setup

После запуска Blackmagic MultiView Setup на экране появится начальная страница утилиты. Если к локальной сети подключено несколько устройств Blackmagic MultiView, для выбора нужного из них используйте стрелки с правой и левой стороны страницы.

Для доступа к настройкам щелкните кнопкой мыши по круглому значку под изображением Blackmagic MultiView или по самому изображению.



Утилита позволяет изменять настройки Blackmagic MultiView при подключении компьютера по сети Ethernet или через USB

## Изменение настроек с помощью Blackmagic MultiView Setup

Щелкните кнопкой мыши по значку настроек, чтобы открыть утилиту Blackmagic MultiView Setup. Окно настроек содержит три вкладки: Sources, Views и Configure. При работе с Blackmagic MultiView 4 и MultiView 4 HD настройки Views не требуются, так как приложение Blackmagic Videohub Control не поддерживает их изменение. На Blackmagic MultiView 4 HD дополнительно есть меню Tally для работы с настройками индикации.

**СОВЕТ.** Сетевые параметры на компьютере должны соответствовать тем, которые установлены на Blackmagic MultiView.



Утилита Blackmagic MultiView Setup позволяет задавать идентификаторы окон для быстрого поиска источника

- **Sources** — позволяет задавать идентификаторы источников сигнала при мониторинге.
- **Views** — эта вкладка используется при управлении с помощью приложения Videohub Control (только Blackmagic MultiView 16). Измените имена окон, чтобы облегчить их идентификацию на панели Destinations приложения Videohub Control.
- **Video Output** — позволяет настроить формат видеосигнала и пропорции кадра при выводе SD-сигнала с Blackmagic MultiView 4 HD.
- **Configure** — позволяет управлять сетевыми настройками, задавать имена устройств и параметры видеосигнала на выходе, менять способ отображения окон и подключения через последовательное соединение.

## Sources

### Идентификаторы источников

Эти идентификаторы помогают быстро ориентироваться среди источников входящего сигнала во время многооконного мониторинга. Если вы регулярно используете Blackmagic MultiView для работы над разными проектами, можно сохранить наборы идентификаторов, чтобы не вводить их заново каждый раз.

Идентификаторы видны в приложении Videohub Control и на контрольных панелях Videohub, подключенных к локальной сети.

Порядок изменения идентификаторов (Input Labels)

- 1 Выберите вкладку Sources.
- 2 Щелкните кнопкой мыши в поле источника, имя которого нужно изменить, и введите название нового идентификатора.
- 3 Нажмите Save, чтобы подтвердить выбор.

## Views

### Идентификаторы окон

При работе с Blackmagic MultiView 16 можно изменить идентификаторы окон, чтобы быстрее находить их при управлении из приложения Videohub Control.

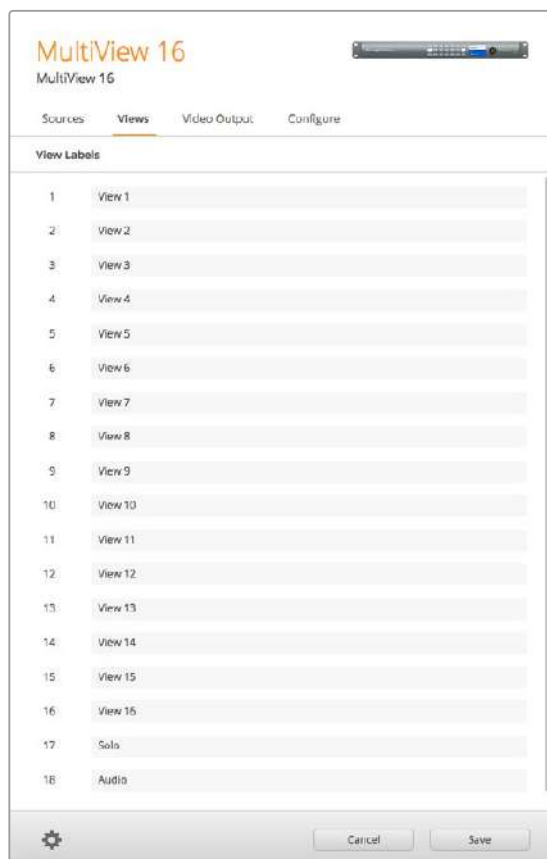
Изменение идентификаторов окон

- 1 Выберите вкладку Views.
- 2 В списке Output Labels перейдите к окну, имя которого нужно изменить, и введите название нового идентификатора.
- 3 Нажмите Save, чтобы подтвердить выбор.

Если идентификаторы окон имеют первоначальную настройку, выход 17 будет обозначен как Solo, а 18 — как Audio.

Настройка выхода 17 позволяет задать идентификатор режима Solo, который активируют с передней панели Blackmagic MultiView 16. Эта функция бывает полезной, когда нужно изменить название режима, если устройством MultiView 16 управляют с помощью приложения Blackmagic Videohub Control.

Настройка выхода 18 соответствует настройке Audio In, выбранной в меню ЖК-дисплея Blackmagic MultiView 16. Она показывает, какой звуковой сигнал используется во время многооконного мониторинга. Если устройством MultiView 16 управляют с помощью приложения Blackmagic Videohub Control, этот идентификатор можно изменить так же, как для режима Solo.



Когда для работы с MultiView 16 используют приложение Blackmagic Videohub Control, при необходимости можно изменить имена идентификаторов Solo и Audio

## Video Output

### Video Format и HD Output

Настройки формата видеосигнала отличаются в зависимости от модели Blackmagic MultiView.

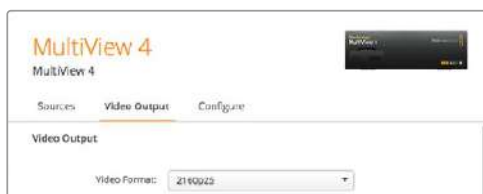
Blackmagic MultiView 16 позволяет одновременно выводить видео в HD и Ultra HD. Дополнительно можно задать кадровую частоту сигнала на выходе. Например, при работе в США выберите формат 2160p/29,97. В этом случае для HD-видео будет автоматически использоваться соответствующая частота кадров.

В данном примере при настройке 2160p/29,97 на выходе можно получать HD-видео в формате 1080p/29,97 или 1080i/59,94.



Вкладка Video Output для MultiView 16 позволяет выбирать конфигурацию окон, формат Ultra HD-видео, параметры HD-сигнала на выходе, а также пропорции кадра для SD-материала

При работе с Blackmagic MultiView 4 можно задать вывод сигнала в Ultra HD или HD через SDI-выход, а также выбрать кадровую частоту. Эти настройки доступны в раскрывающемся меню Video Format.



Вкладка Video Output для Blackmagic MultiView 4 содержит раскрывающийся список форматов видеосигнала с указанием разрешения и кадровой частоты

При работе с Blackmagic MultiView 4 HD для выбора кадровой частоты HD-сигнала и прогрессивной или чересстрочной развертки исходящего видео используется меню Video Format. Для SD-сигнала можно использовать пропорции кадра 16:9 или 4:3.

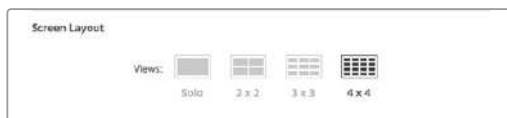


При работе с Blackmagic MultiView 4 HD на вкладке Video Output можно задать разрешение и кадровую частоту HD-сигнала на выходе, а также чересстрочную или прогрессивную развертку



## Изменение конфигурации окон

Утилита Blackmagic MultiView Setup позволяет изменить конфигурацию окон так же, как при использовании опции Layout в меню ЖК-дисплея на Blackmagic MultiView 16. Для этого выберите нужный вариант в строке Layout настроек Details.



Вкладка Video Output позволяет выбрать конфигурацию окон на Blackmagic MultiView 16

## Настройка Tally-индикации

При работе с Blackmagic MultiView 4 HD для отображения Tally-индикации есть две опции: Tally override и Switcher input. В первом случае используется сигнал самой камеры, во втором — сигнал, поступающий с видеомикшера АТЕМ на вход 4.



Меню Tally-индикации в утилите MultiView Setup

При выборе индикации, соответствующей сигналу с видеомикшера, в полях Input 1 - Input 4 можно задать номера камер (от 1 до 99).

## Tally override

Сигналы Tally-индикации обычно передаются вместе с обратным программным потоком, поступающим на последний SDI-вход устройства MultiView, однако иногда необходимо выводить информацию со всех подключенных камер.

Если вы работаете с камерами Blackmagic Design, которые подключены к видеомикшеру АТЕМ или любому другому SDI-устройству с системой Tally-индикации, можно использовать опцию Tally override. В этом случае MultiView 4 HD обнаруживает Tally-сигналы, поступающие на SDI-входы. При такой настройке все окна на экране будут иметь автономный Tally-сигнал вместо одного общего, получаемого вместе с обратным программным потоком через последний вход устройства.

**COBET.** Режим Tally override используется с камерами Blackmagic URSA Mini, URSA Mini 4K, URSA Mini Pro и URSA Broadcast, которые подключены к видеомикшеру ATEM или к конвертеру Blackmagic Camera Fiber. Подробнее о подключении видеомикшеров и Tally-систем других производителей см. руководство по Blackmagic 3G-SDI Shield for Arduino.

## SD aspect ratio

Если Blackmagic MultiView 16 получает SD-видео с пропорциями 4:3, выберите опцию Set to 4:3. Это позволит отображать сигнал с корректным соотношением сторон.

При получении SD-сигнала с пропорциями 16:9 поставьте флажок в поле Set to 16:9.

При работе с источником SD-сигнала на Blackmagic MultiView 4 HD можно выбрать пропорции 16:9 или 4:3. Для этого перейдите к полю SD aspect ratio на вкладке Video Output.



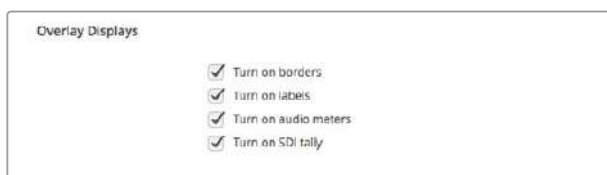
Для SD-сигнала на вкладке Video Output можно выбрать пропорции кадра

## Overlay Display

Чтобы активировать необходимые функции на Blackmagic MultiView 16 и MultiView 4, поставьте флажки в соответствующих полях.

Параметры функции Overlay

- **Border:** использует рамку при отображении каждого из окон.
- **Labels:** показывает или скрывает идентификаторы окна, которые можно изменить с помощью утилиты Blackmagic MultiView Setup.
- **Audio Meters:** включает и отключает индикаторы VU для всех окон. В каждом из окон отображаются первые два канала, встроенные в SDI-сигнал. Это позволяет вести мониторинг уровней звука вместе с изображением.
- **SDI Tally:** если на вход 16 (Blackmagic MultiView 16) или вход 4 (модели Blackmagic MultiView 4) поступает программный SDI-сигнал с видеомикшера ATEM, при передаче изображения в эфир окно будет иметь рамку. Поставьте или снимите флажок в поле Turn on SDI tally для включения или отключения этой настройки. Чтобы Tally-сигнал отображался корректно, нужно назначить номер входа в меню утилиты.



При работе с Blackmagic MultiView 16 и MultiView 4 настройки Overlay Displays на вкладке Configure позволяют включать или отключать функции Border, Labels, Audio Meters и SDI Tally

**СОБЕТ.** Для корректной работы SDI Tally необходимо использовать входы с одинаковыми номерами на Blackmagic MultiView и на видеомикшере АТЕМ. В противном случае отображение рамки будет некорректным.

## Configure

### Присвоение имени устройству

Содержание вкладки Configure зависит от модели Blackmagic MultiView.

Для Blackmagic MultiView 16 и MultiView 4 на вкладке Configure сгруппированы настройки Details, Overlay и Network settings. При работе с Blackmagic MultiView 4 HD на вкладке нет настроек, а показаны только ярлыки и текущая версия ПО.

Присвоение имени упростит идентификацию устройства Blackmagic MultiView 16 или MultiView 4 при удаленной работе.

- 1 Перейдите на вкладку Configure.
- 2 В настройках Details выберите строку Name и введите новое имя устройства.
- 3 Нажмите Save.



Утилита Blackmagic MultiView Setup позволяет присвоить устройству имя для облегчения его идентификации

## Network Settings и Serial Control

Если устройство Blackmagic MultiView 16 подключено к компьютеру через порт USB, настройки сетевого доступа и управления через последовательное соединение можно задать с помощью утилиты Blackmagic MultiView Setup. Эти настройки также доступны из меню ЖК-дисплея на передней панели. При работе с Blackmagic MultiView 4 используются только сетевые настройки.

Для изменения сетевых настроек выберите соответствующее поле и введите значение с клавиатуры или поставьте флажок.



The screenshot shows a configuration window with two sections. The top section, titled "Network Settings", contains three input fields: "IP Address" with the value "192.168.10.160", "Subnet Mask" with "255.255.255.0", and "Gateway" with "192.168.10.1". The bottom section, titled "Serial Control", has a label "Leitch protocol:" followed by two radio button options: "Leitch Client" (which is unselected) and "Leitch Server" (which is selected).

При подключении MultiView 16 к локальной сети может потребоваться изменение сетевых настроек. В зависимости от способа удаленного доступа через порт RS-422 выберите опцию Leitch Client или Leitch Server для параметра Serial Control.

Для этого необходимо подключить Blackmagic MultiView 16 к компьютеру через порт USB и выполнить действия, описанные ниже.

- 1 Запустите утилиту Blackmagic MultiView Setup и выберите Blackmagic MultiView 16, для чего щелкните кнопкой мыши по его изображению или расположенному ниже значку настроек.
- 2 Перейдите на вкладку Configure и для параметра Leitch Protocol выберите опцию Leitch Client, если устройство Blackmagic MultiView 16 подключено к панели управления. Если им управляют с системы автоматизации или коммутатора стороннего производителя, выберите опцию Leitch Server.
- 3 Для подтверждения настроек выберите Save.



The screenshot shows the "Serial Control" section of the configuration window. It features the label "Leitch protocol:" followed by two radio button options: "Leitch Client" (unselected) and "Leitch Server" (selected).

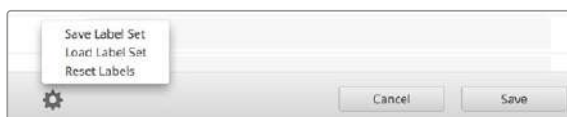
При использовании последовательного соединения RS-422 выберите опцию Client или Server

## Сохранение и загрузка набора идентификаторов

Если вы часто используете один и тот же набор идентификаторов, их можно сохранить в виде файла для последующей загрузки.

Чтобы сохранить набор идентификаторов, нажмите на значок шестеренки в утилите Blackmagic MultiView Setup, откройте настройки Label Set и выберите Save Label Set. Укажите папку для сохранения файла и нажмите Save.

Чтобы загрузить набор идентификаторов, нажмите на значок шестеренки, откройте настройки Label Set и выберите Load Label Set. Перейдите к сохраненному файлу с набором идентификаторов и нажмите Load.



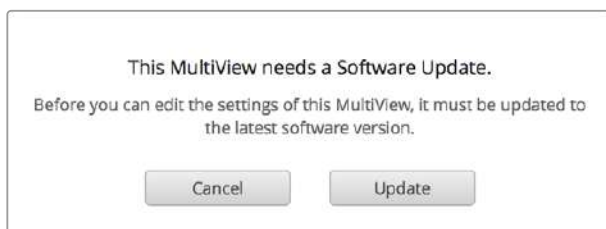
Утилита Blackmagic MultiView Setup позволяет сохранять и загружать идентификаторы

## Обновление прошивки

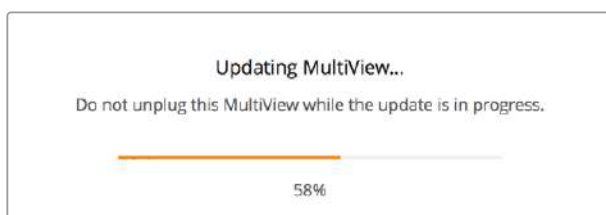
При выходе последней версии прошивки рекомендуется обновлять ПО устройства Blackmagic MultiView. Обновления обеспечивают поддержку добавленных функций и форматов, а также улучшают совместимость с оборудованием.

Порядок обновления прошивки на Blackmagic MultiView

- 1 Подключите Blackmagic MultiView к компьютеру через порт USB или Ethernet.
- 2 Запустите утилиту Blackmagic MultiView Setup. На экране будут отображены все устройства Blackmagic MultiView в локальной сети.
- 3 Щелкните по изображению устройства или по значку настроек под названием продукта.
- 4 Если прошивка требует обновления, утилита Blackmagic MultiView Setup сообщит об этом.
- 5 Для обновления нажмите кнопку Update, чтобы установить актуальную версию ПО. Не отключайте Blackmagic MultiView от источника питания до тех пор, пока не закончится обновление.
- 6 По окончании обновления нажмите Close.



Для установки новой версии ПО нажмите кнопку Update



Не отключайте Blackmagic MultiView от источника питания до тех пор, пока не закончится обновление

## Работа с приложением Videohub Control

Если устройство Blackmagic MultiView 16 подключено к локальной сети, для коммутации видео можно использовать приложение Blackmagic Videohub Control (платформа Mac или Windows). Входящие SDI-сигналы будут отображаться на панели Sources, а окна мониторинга — на панели Destinations. Приложение Videohub Control является частью программного пакета для Videohub. Его можно загрузить в разделе поддержки Blackmagic Design на странице [www.blackmagicdesign.com/ru/support](http://www.blackmagicdesign.com/ru/support).

**ПРИМЕЧАНИЕ.** При работе с Blackmagic MultiView 16 приложение Videohub Control позволяет назначать окна, а также выбирать режим SOLO или источник звука во время мониторинга. При использовании Blackmagic MultiView 4 приложение Videohub Control дает возможность менять источник видео- и аудиосигнала для вывода.

### Выбор MultiView 16

После запуска приложения Videohub Control нажмите на значок шестеренки, откройте всплывающее меню Settings и выберите Select Videohub. В списке подключенного оборудования выберите Blackmagic MultiView 16 с заданным именем.

Если ранее источникам сигнала были присвоены идентификаторы, Videohub Control показывает их имена. В противном случае источники отображаются как Input 1, Input 2, Input 3 и т. д.



Для направления поступающих сигналов в нужные окна можно использовать приложение Blackmagic Videohub Control

## Просмотр входящих сигналов

Чтобы увидеть, какое изображение выводится в том или ином окне, нажмите клавишу на панели Destinations. Она загорится вместе с соответствующей клавишей на панели Sources, показывая источник выбранного сигнала.

## Маршрутизация входящих сигналов

Чтобы вывести поступающее изображение в определенном окне, нажмите клавишу на панели Destinations, затем — нужную клавишу на панели Sources для привязки сигнала к этому окну.

## Solo Input

Клавиша Solo Input позволяет выводить сигнал в полноэкранном режиме. Для этого должна быть активирована кнопка Solo на передней панели Blackmagic MultiView 16. Нажмите клавишу Solo Input на панели Destinations в приложении Videohub Control, затем клавишу входящего сигнала на панели Sources.

## Audio Input

При работе с Blackmagic MultiView 16 и Blackmagic MultiView 4 клавиша Audio Input позволяет задать SDI-вход, звук которого будет выводиться во время многооконного мониторинга. Нажмите клавишу Audio Input на панели Destinations в приложении Videohub Control, затем клавишу входящего сигнала на панели Sources для выбора источника звука.



Клавиши Solo Input и Audio Input позволяют менять настройки с помощью приложения Videohub Control

# Информация для разработчиков

## Blackmagic Videohub Ethernet Protocol v2.3

### Summary

Your Blackmagic MultiView is compatible with the Blackmagic Videohub Ethernet Protocol. It is text based and is accessed by connecting to your Blackmagic MultiView's IP address and TCP port 9990.

**NOTE** Controlling your MultiView via Ethernet is available on Blackmagic MultiView 16 and Blackmagic MultiView 4, however, most features are relevant to Blackmagic MultiView 16. On Blackmagic MultiView 4, you can change the solo source and audio source for the multi view output.

The multi view sends information in blocks which each have an identifying header in all caps, followed by a full colon. A block spans multiple lines and is terminated by a blank line. Each line in the protocol is terminated by a newline character.

Lines sent to the Blackmagic MultiView 16 can be terminated with line feed, carriage return or both.

Upon connection, the multi view sends a complete dump of the state of the device. After the initial status dump, status updates are sent every time the multi view status changes.

To be resilient to future protocol changes, clients should ignore blocks they do not recognize, up to the trailing blank line. Within existing blocks, clients should ignore lines they do not recognize.

### Protocol Preamble

The first block sent by the multi view is always the protocol preamble:

```
PROTOCOL PREAMBLE:↵
Version: 2.3↵
↵
```

The version field indicates the protocol version. When the protocol is changed in a compatible way, the minor version number will be updated. If incompatible changes are made, the major version number will be updated.

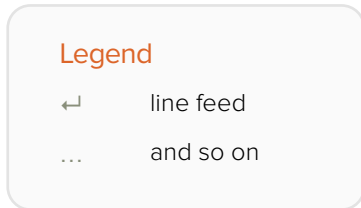
### Device Information

The next block contains general information about the connected Blackmagic MultiView 16 device. If a device is connected, the multi view will report the attributes of the Blackmagic MultiView 16:

```
MULTIVIEW DEVICE:↵
Device present: true↵
Model name: Blackmagic MultiView 16↵
Video inputs: 16↵
Friendly name:
Unique ID:
Video processing units: 0↵
Video outputs: 16↵
Video monitoring outputs: 0↵
Serial Ports:
↵
```



This example is for the Blackmagic MultiView 16 which has 16 sources and 18 views including solo which is view 16 and audio which is view 17, referred to here as outputs.



Version 2.3 of the Blackmagic Videohub Ethernet Protocol was released with Videohub 4.9.1 software

### Initial Status Dump

The next two blocks enumerate the labels assigned to the input and output ports.

```
INPUT LABELS:↵
0 VTR 1↵
1 VTR 2↵
...
↵

OUTPUT LABELS:↵
0 Output feed 1↵
1 Output feed 2↵
...
↵
```

Note: Input and Output labels are always numbered starting at zero in the protocol which matches port one on the chassis.

The next three blocks describe the routing of the view ports.

```
VIDEO OUTPUT ROUTING:↵
0 5↵
1 3↵
...
↵
```

The next block describes the locking status of the views. Each port has a lock status of “O” for ports that are owned by the current client (i.e., locked from the same IP address), “L” for ports that are locked from a different client, or “U” for unlocked.

```
VIDEO OUTPUT LOCKS:↵
0 U↵
1 U↵
...
↵
```

The last block is the configuration block.

```
Layout: SOLO or 2x2 or 3x3 or 4x4
Output format: 50i or 50p or 60i or 60p
Solo enabled: True or False
Widescreen SD enable: True or False
Display border: True or False
Display labels: True or False
Display audio meters: True or False
Display SDI tally: True or False
```

## Status Updates

When any route, label, or lock is changed on the multi view by any client, the multi view resends the applicable status block, containing only the items that have changed.

If multiple items are changed, multiple items may be present in the update:

```
OUTPUT LABELS:↵
7 New output 8 label↵
10 New output 11 label↵
↵
```

## Requesting Changes

To update a label, lock or route, the client should send a block of the same form the multi view sends when its status changes. For example, to change the route of output port 8 to input port 3, the client should send the following block:

```
VIDEO OUTPUT ROUTING:↵
7 2↵
↵
```

The block must be terminated by a blank line. On receipt of a blank line, the multi view will either acknowledge the request by responding:

```
ACK↵
↵
```

or indicate that the request was not understood by responding:

```
NAK↵
↵
```

After a positive response, the client should expect to see a status update from the MultiView showing the status change. This is likely to be the same as the command that was sent, but if the request could not be performed, or other changes were made simultaneously by other clients, there may be more updates in the block, or more blocks. Simultaneous updates could cancel each other out, leading to a response that is different to that expected.

For MultiView 16 the client can change the solo source and the audio source to embed on the output.

Solo mode needs to be enabled either from the front panel or by sending the block:

```
CONFIGURATION:↵
Solo enabled: true↵
↵
```

Once enabled the following block will change the SOLO source to input 11:

```
Video Output Routing:↵
16 10↵
↵
```

This is not available on MultiView 4.

The following block will send embedded audio from input 1 to the MultiView 16 output:

```
Video Output Routing:↵
17 0↵
↵
```

The following block will send embedded audio from input 1 to the MultiView 4 output:

```
Video Output Routing:↵
5 0↵
↵
```

In the absence of simultaneous updates, the dialog expected for a simple label change is as follows:

```
OUTPUT LABELS:↵
6 new output label seven↵
↵
ACK↵
↵
OUTPUT LABELS:↵
6 new output label seven↵
↵
```

The asynchronous nature of the responses means that a client should never rely on the desired update actually occurring and must simply watch for status updates from the MultiView and use only these to update its local representation of the server state.

### Requesting a Status Dump

The client may request that the MultiView resend the complete state of any status block by sending the header of the block, followed by a blank line. In the following example, the client requests the MultiView resend the output labels:

```
OUTPUT LABELS:↵
↵
ACK↵
↵
OUTPUT LABELS:↵
0 output label 1↵
1 output label 2↵
2 output label 3↵
...
↵
```

### Checking the Connection

While the connection to the MultiView is established, a client may send a special no-operation command to check that the MultiView is still responding:

```
PING:↵
↵
```

If the MultiView is responding, it will respond with an ACK message as for any other recognized command.

## Blackmagic MultiView 16 RS-422 Protocol

### General

The RS-422 protocol can be used to control Blackmagic MultiView 16 as a slave device from third party routers and automation systems.

The “Leitch Server” mode implements the router (server) side of the Leitch Serial Pass Through Protocol as specified in section 4 of Leitch document SPR-MAN revision D. In “Leitch Client” mode, the Blackmagic MultiView 16 implements the controller (client) side of the Leitch terminal protocol. Set the desired leitch mode in the ‘configure’ settings in the Blackmagic MultiView Setup software.

This document describes the commands and parameters in the protocol that are relevant and supported by Blackmagic MultiView 16. Other commands and parameters specified in the Leitch protocol are accepted but ignored.

The RS-422 serial port is configured as 9600 N81:

9600 is the line speed, or baud rate, at 9600 bits/sec.

N represents no parity check, or 'none'.

8 is the data length.

1 is for stop bits.

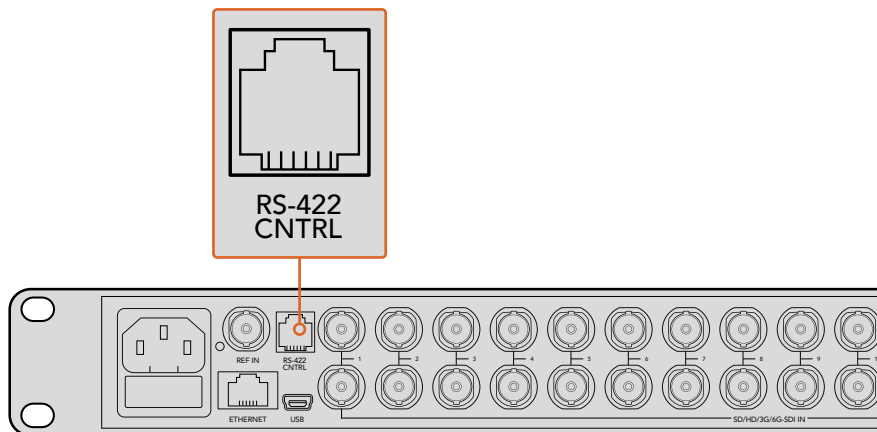
To summarize N81, data without a parity check begins with 1 start bit, includes 8 true data bits, and 1 stop bit. There are 10 bits in total.

The protocol is line oriented, with a maximum length of 250 characters per command. Each command from the client should be terminated with a carriage return (\r). Each response from the server will be terminated with a carriage return and line feed (\r\n).

Sources, destinations and levels are always specified in base-16, numbered from zero. Levels are always between 0 and 15 ("F") . Blackmagic MultiView 16 only has one valid level – level zero.

On connecting to the serial port, the client should send a carriage return. Blackmagic MultiView 16 will respond with a > character prompt, which is not followed by a carriage return or line feed. Receiving the prompt indicates that a connection has been established. The same prompt will be issued after each command received by the MultiView.

In the following documentation, commands in orange and values in blue must be typed literally, including any spaces. In the following example of an immediate command using destination port 7 and source port 3, @ X:0/destination,source would be entered as: @ X:0/6,2

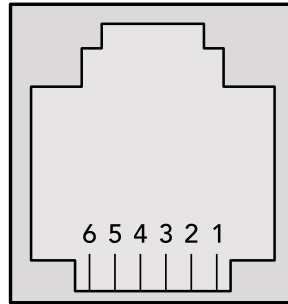


The RS-422 serial port lets you control Blackmagic MultiView 16 from third party routers and automation systems. The connector is an RJ11 connector, the same used in many landline telephone connections. By modifying an RS-422 to USB adapter cable terminated with an RJ11 connector, you can control Blackmagic MultiView 16 using external controllers via USB.



An RS-422 to USB adapter cable and RJ11 connector can be purchased from electronics stores such as Digi-Key.com. Refer to the pinout diagram below for help wiring the RJ11 connector to the adapter cable.

Pin No.	Function
Pin 1	TX +
Pin 2	TX -
Pin 3	GND
Pin 4	GND
Pin 5	RX -
Pin 6	RX +



Pinout diagram for the RJ11 connector

### Notifications

Once connected, if status reporting is enabled, the client will receive a notification message when a route changes on the MultiView. The notifications take one of two forms:

**S:0destination,source** Routing change

This message indicates that the specified source port is now routed to the specified destination.

**V:0destination,source** Preset routing notification

This message indicates that the current preset includes a route from the specified source to the specified destination.

### Global Commands

All pass through commands are preceded by an @ symbol and a space.

The following client commands are supported:

@ !     disable status reporting  
Status reporting is disabled by default.

@ ?     enable status reporting  
Status reporting is enabled.

@ Z:    reset routing table

Routing is reset so that the first source is routed to all destinations.

### Immediate Commands

@ X:0/destination,source   change route

@ X:0/destination,source/destination-2,source-2...   change multiple routes  
The specified source ports are routed to the specified destinations.  
Any routing changes will trigger S: notifications

@ X?0destination   request individual route status  
The source routed to the specified destination will be returned as an S: notification.

@ S?0   request all ports route status  
Each source and destination port pair will be returned as S: notifications

## Salvo Commands

@ P:0/destination,source queue route change

@ P:0/destination,source/destination-2,source-2... queue multiple route changes  
The specified routing changes are added to the current salvo for later execution.

@ P?0destination request individual port status in salvo  
If a routing change for the specified destination port is queued, the route will be returned as a V: notification.

@ V?0 request all ports status in salvo  
Each queued routing change in the salvo is reported as a V: notification.

@ B:C clear salvo

@ B:R clear salvo  
Any queued changes are discarded and the salvo is reset.

@ B:E execute salvo  
Any queued changes are executed and each routing change will be returned as an S: notification.

# Помощь

## Как получить помощь

Самый быстрый способ получить помощь — обратиться к страницам поддержки на сайте Blackmagic Design и проверить наличие последних справочных материалов по Blackmagic MultiView.

### Раздел поддержки на сайте Blackmagic Design

Последние версии руководства по эксплуатации, программного обеспечения и дополнительную информацию можно найти в разделе поддержки Blackmagic Design на странице [www.blackmagicdesign.com/ru/support](http://www.blackmagicdesign.com/ru/support).

### Форум сообщества Blackmagic Design

Полезным источником информации является форум сообщества на веб-сайте Blackmagic Design. На нем можно поделиться своими идеями, а также получить помощь от персонала поддержки и других пользователей. Адрес форума <http://forum.blackmagicdesign.com>.

### Обращение в Службу поддержки Blackmagic Design

Если с помощью доступных справочных материалов и форума решить проблему не удалось, воспользуйтесь формой «Отправить нам сообщение» на странице поддержки. Можно также позвонить в ближайшее представительство Blackmagic Design, телефон которого вы найдете на нашем веб-сайте.

### Проверка используемой версии программного обеспечения

Чтобы узнать используемую версию ПО в Blackmagic MultiView, откройте утилиту Blackmagic MultiView на компьютере. В меню Blackmagic MultiView выберите About MultiView и посмотрите номер версии.

### Загрузка последних версий ПО

Узнав версию ПО Blackmagic MultiView 16, перейдите в центр поддержки Blackmagic Design на странице [www.blackmagicdesign.com/ru/support](http://www.blackmagicdesign.com/ru/support), чтобы проверить наличие обновлений. Рекомендуется всегда использовать последнюю версию программного обеспечения, однако обновление лучше всего выполнять после завершения текущего проекта.

# Соблюдение нормативных требований и правила безопасности

## Соблюдение нормативных требований

### Утилизация электрооборудования и электронной аппаратуры в Европейском Союзе



Изделие содержит маркировку, в соответствии с которой его запрещается утилизировать вместе с бытовыми отходами. непригодное для эксплуатации оборудование необходимо передать в пункт вторичной переработки.

Раздельный сбор отходов и их повторное использование позволяют беречь природные ресурсы, охранять окружающую среду и защищать здоровье человека. Чтобы получить подробную информацию о порядке утилизации, обратитесь в местные муниципальные органы или к дилеру, у которого вы приобрели это изделие.



Данное оборудование протестировано по требованиям для цифровых устройств класса А (раздел 15 спецификаций FCC) и признано соответствующим всем предъявляемым критериям. Соблюдение упомянутых нормативов обеспечивает достаточную защиту от вредного излучения при работе оборудования в жилых помещениях. Так как это изделие генерирует, использует и излучает радиоволны, при неправильной установке оно может становиться источником радиопомех. Если оборудование эксплуатируется в жилых помещениях, высока вероятность возникновения помех, влияние которых в этом случае пользователь должен устранить самостоятельно.

До эксплуатации допускаются устройства, соответствующие двум главным требованиям.

- 1 Оборудование не должно быть источником вредных помех.
- 2 Оборудование должно быть устойчивым к помехам, включая помехи, которые могут вызвать сбой в работе.

Подключение к HDMI-интерфейсу должно выполняться с помощью качественного экранированного кабеля.

## Правила безопасности

Электрическая розетка для подключения этого оборудования к сети должна иметь заземляющий контакт.

Чтобы минимизировать опасность поражения электрическим током, изделие необходимо защищать от попадания брызг и капель воды.

Допускается эксплуатация в условиях тропического климата с температурой окружающей среды до 40° С.

Для работы устройства необходимо обеспечить достаточную вентиляцию.

При установке в стойку убедитесь в том, что не нарушен приток воздуха.

Внутри корпуса не содержатся детали, подлежащие обслуживанию.

Для выполнения ремонтных работ обратитесь в местный сервисный центр Blackmagic Design.



Допускается эксплуатация в местах не выше 2000 м над уровнем моря.



# Гарантия

## Ограниченная гарантия

Компания Blackmagic Design гарантирует отсутствие в устройстве Blackmagic MultiView дефектов материала и производственного брака (включая разъемы, кабели, охлаждающие вентиляторы, предохранители, ЖК-дисплей и кнопки) в течение 12 месяцев с даты продажи. Если во время гарантийного срока будут выявлены дефекты, Blackmagic Design по своему усмотрению выполнит ремонт неисправного изделия без оплаты стоимости запчастей и трудозатрат или заменит такое изделие новым.

Чтобы воспользоваться настоящей гарантией, потребитель обязан уведомить компанию Blackmagic Design о дефекте до окончания гарантийного срока и обеспечить условия для предоставления необходимых услуг. Потребитель несет ответственность за упаковку и доставку неисправного изделия в соответствующий сервисный центр Blackmagic Design с оплатой почтовых расходов. Потребитель обязан оплатить все расходы по доставке и страхованию, пошлины, налоги и иные сборы в связи с возвратом изделия вне зависимости от причины возврата.

Настоящая гарантия не распространяется на дефекты, отказы и повреждения, возникшие из-за ненадлежащего использования, неправильного ухода или обслуживания. Компания Blackmagic Design не обязана предоставлять услуги по настоящей гарантии: а) для устранения повреждений, возникших в результате действий по установке, ремонту или обслуживанию изделия лицами, которые не являются персоналом Blackmagic Design; б) для устранения повреждений, возникших в результате ненадлежащего использования или подключения к несовместимому оборудованию; в) для устранения повреждений или дефектов, вызванных использованием запчастей или материалов других производителей; г) если изделие было модифицировано или интегрировано с другим оборудованием, когда такая модификация или интеграция увеличивает время или повышает сложность обслуживания изделия. НАСТОЯЩАЯ ГАРАНТИЯ ПРЕДОСТАВЛЯЕТСЯ КОМПАНИЕЙ BLACKMAGIC DESIGN ВМЕСТО ЛЮБЫХ ДРУГИХ ПРЯМО ВЫРАЖЕННЫХ ИЛИ ПОДРАЗУМЕВАЕМЫХ ГАРАНТИЙ. КОМПАНИЯ BLACKMAGIC DESIGN И ЕЕ ДИЛЕРЫ ОТКАЗЫВАЮТСЯ ОТ ЛЮБЫХ ПОДРАЗУМЕВАЕМЫХ ГАРАНТИЙ КОММЕРЧЕСКОЙ ЦЕННОСТИ ИЛИ ПРИГОДНОСТИ ДЛЯ КАКОЙ-ЛИБО ОПРЕДЕЛЕННОЙ ЦЕЛИ. ОТВЕТСТВЕННОСТЬ BLACKMAGIC DESIGN ПО РЕМОНТУ ИЛИ ЗАМЕНЕ НЕИСПРАВНЫХ ИЗДЕЛИЙ ЯВЛЯЕТСЯ ПОЛНЫМ И ИСКЛЮЧИТЕЛЬНЫМ СРЕДСТВОМ ВОЗМЕЩЕНИЯ, ПРЕДОСТАВЛЯЕМЫМ ПОТРЕБИТЕЛЮ В СВЯЗИ С КОСВЕННЫМИ, ФАКТИЧЕСКИМИ, СОПУТСТВУЮЩИМИ ИЛИ ПОСЛЕДУЮЩИМИ УБЫТКАМИ, ВНЕ ЗАВИСИМОСТИ ОТ ТОГО, БЫЛА ИЛИ НЕТ КОМПАНИЯ BLACKMAGIC DESIGN (ЛИБО ЕЕ ДИЛЕР) ПРЕДВАРИТЕЛЬНО ИЗВЕЩЕНА О ВОЗМОЖНОСТИ ТАКИХ УБЫТКОВ. BLACKMAGIC DESIGN НЕ НЕСЕТ ОТВЕТСТВЕННОСТИ ЗА ПРОТИВОПРАВНОЕ ИСПОЛЬЗОВАНИЕ ОБОРУДОВАНИЯ СО СТОРОНЫ ПОТРЕБИТЕЛЯ. BLACKMAGIC DESIGN НЕ НЕСЕТ ОТВЕТСТВЕННОСТИ ЗА УБЫТКИ, ВОЗНИКАЮЩИЕ ВСЛЕДСТВИЕ ИСПОЛЬЗОВАНИЯ ЭТОГО ИЗДЕЛИЯ. РИСКИ, СВЯЗАННЫЕ С ЕГО ЭКСПЛУАТАЦИЕЙ, ВОЗЛАГАЮТСЯ НА ПОТРЕБИТЕЛЯ.

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# Blackmagic MultiView





## Benvenuto e Benvenuta

Grazie per aver acquistato Blackmagic MultiView.

Il nostro sogno è di rendere sempre più creativa l'industria della televisione e dare l'opportunità a tutti di accedere a contenuti video di massima qualità. Utilizzando MultiView 16 con i moderni ed economici televisori Ultra HD è possibile monitorare fino a 16 fonti distinte ad alta prestazione. MultiView 16 garantisce operazioni efficienti ad un costo incredibilmente competitivo!

Blackmagic MultiView 4 è la soluzione compatta e portatile, ideale per le produzioni meno impegnative e dagli spazi limitati, per monitorare fino a 4 fonti distinte su uno schermo HD o Ultra HD. Per personalizzare la schermata di monitoraggio con riquadri aggiuntivi, basta interconnettere più MultiView.

Questo manuale di istruzioni contiene tutte le informazioni necessarie per installare Blackmagic MultiView. Consigliamo tuttavia di richiedere assistenza tecnica sulla rete e sull'impostazione dell'indirizzo IP. Blackmagic MultiView consente la gestione tramite Videohub Software Control ed è facile da installare, ma richiede la configurazione di alcune impostazioni avanzate ad installazione completata.

Consulta la pagina Supporto del nostro sito web su [www.blackmagicdesign.com/](http://www.blackmagicdesign.com/) it per scaricare gli aggiornamenti del manuale e del software. Una volta scaricati gli aggiornamenti, registra i tuoi dati personali per ricevere le notifiche sulla disponibilità del software più recente. Blackmagic è in costante stato di innovazione. Ti invitiamo a lasciare i tuoi preziosi suggerimenti per consentirci di migliorare prestazioni e funzionalità.

Buon lavoro e buon divertimento con Blackmagic MultiView, il dispositivo di monitoraggio multiview delle fonti video con la straordinaria qualità dell'Ultra HD!

A stylized, cursive signature in black ink that reads "Grant Petty".

**Grant Petty**

AD di Blackmagic Design

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# Operazioni preliminari

Installare Blackmagic MultiView è facilissimo: connetti l'alimentazione, le fonti SDI, i monitor e i televisori alle uscite HDMI o SDI. Questa sezione del manuale spiega come configurare Blackmagic MultiView.

## Collegare l'alimentazione

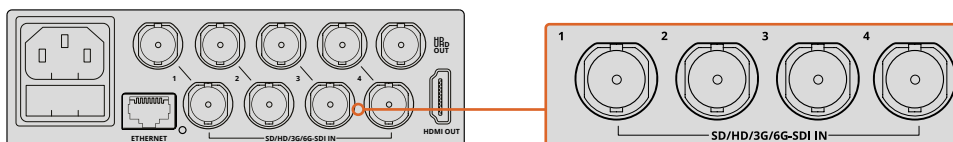
Per alimentare Blackmagic MultiView, collega il cavo IEC standard all'ingresso 110-240V AC sul retro del pannello.

**SUGGERIMENTO** Blackmagic MultiView 4 supporta PoE+, quindi basta collegarlo ad un interruttore compatibile. Utilizzando entrambi gli ingressi AC e PoE+ di MultiView 4, nel caso uno dei due si disconnetta il dispositivo passa automaticamente alla fonte di alimentazione funzionante.

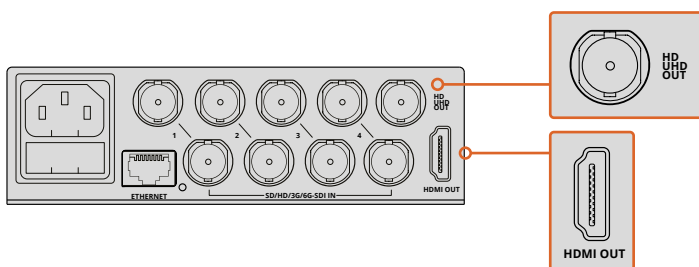
Per alimentare Blackmagic MultiView 4 HD collega l'alimentatore all'ingresso 6-36 V DC. L'alimentatore in dotazione ha un'estremità filettata che fissa saldamente il cavo all'unità per evitare la disconnessione accidentale.

## Connettere le fonti SDI e i monitor

Collega le fonti SDI a qualsiasi ingresso video SDI del Blackmagic MultiView. Il formato video verrà rilevato in modo automatico e il video verrà visualizzato sul monitor connesso. Per visualizzare la fonte, connetti un monitor alle uscite multiview SDI o HDMI.



Connetti le fonti video agli ingressi SDI di Blackmagic MultiView.

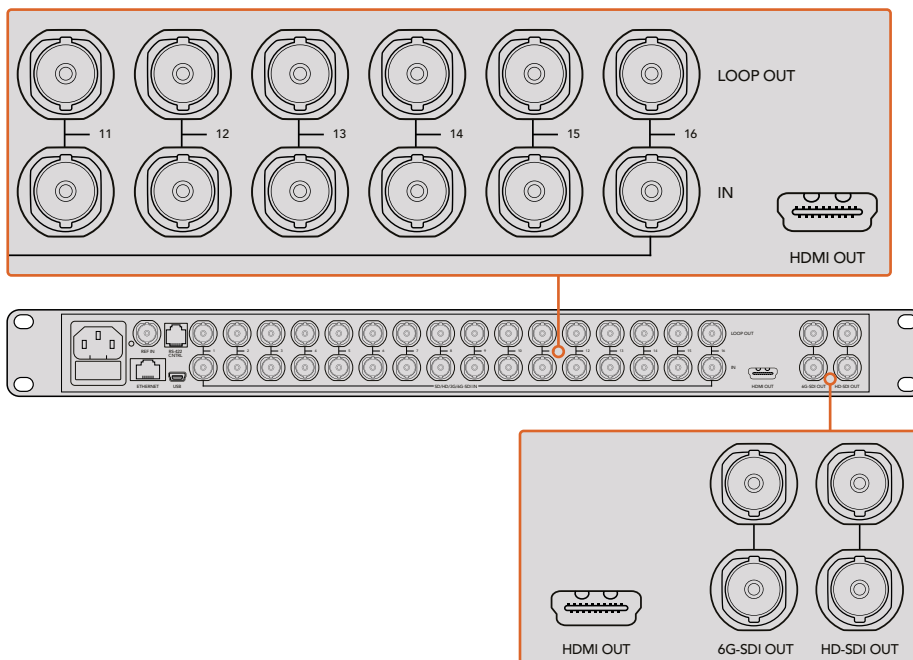


Connetti i monitor alle uscite multiview HDMI o SDI di Blackmagic MultiView.

Connettendo un monitor HDMI all'uscita HDMI, Blackmagic MultiView rileva automaticamente il formato da esso supportato (Ultra HD o HD) per visualizzare le fonti nel modo opportuno.

**SUGGERIMENTO** Con Blackmagic MultiView 16 puoi trasmettere il flusso multiview tramite le apposite uscite HD-SDI, oppure sfruttare le uscite 6G-SDI e HDMI per la risoluzione Ultra HD.

Blackmagic MultiView 4 e MultiView 16 hanno uscite di loop sopra ogni ingresso che consentono di connettere ciascuna fonte ad altri dispositivi video.



**SUGGERIMENTO** Tutte le uscite SDI e HDMI di Blackmagic MultiView 16 si possono utilizzare contemporaneamente per monitorare in Ultra HD e HD. Con Blackmagic MultiView 4 è possibile scegliere tra Ultra HD e HD cambiando la posizione degli interruttori, montando il pannello opzionale Teranex Mini Smart Panel, oppure con l'utilità Blackmagic MultiView Setup.

## Impostare la visualizzazione multiview

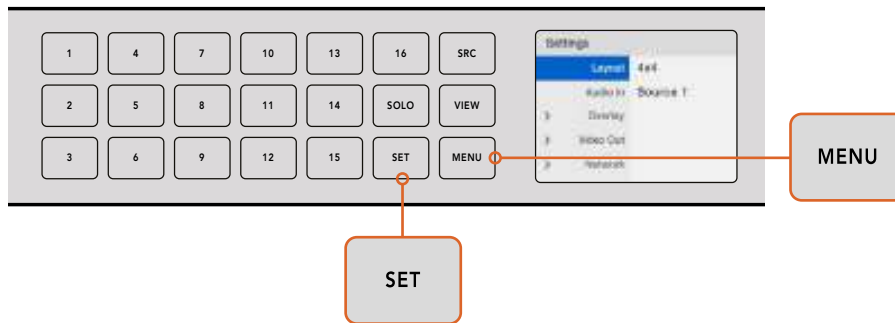
La visualizzazione multiview si può cambiare secondo necessità. Per esempio con Blackmagic MultiView 4 e Blackmagic MultiView 4 HD puoi scegliere di visualizzare una griglia 2x2 o un riquadro singolo. Blackmagic MultiView 16 consente di scegliere tra le griglie 2x2, 3x3, 4x4 o riquadro singolo.

### Impostare la visualizzazione multiview di Blackmagic MultiView 16

Per cambiare la visualizzazione di Blackmagic MultiView 16 usa i pulsanti, la manopola e il display LCD del pannello di controllo integrato. Se preferisci visualizzare una sola fonte a schermo intero, premi il pulsante SOLO e poi seleziona l'opzione desiderata premendo uno dei pulsanti numerati.

- 1 Premi il pulsante MENU sul pannello di controllo frontale per accedere alle impostazioni sul display LCD.
- 2 La prima voce del menù è "Layout". Premi il pulsante SET per modificare un'impostazione.
- 3 Seleziona "4x4" ruotando la manopola del pannello frontale. Questa opzione consente di visualizzare 16 fonti su un singolo schermo. I pulsanti SET e MENU lampeggiano durante le operazioni. Premi SET per confermare la selezione oppure MENU per annullare.
- 4 Premi SET per confermare la selezione.

Puoi configurare la visualizzazione di Blackmagic MultiView 16 anche dal pannello di controllo dell'utilità.

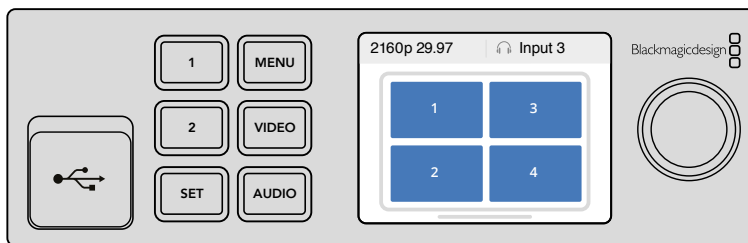


Per configurare la visualizzazione dei riquadri di Blackmagic MultiView 16, premi il pulsante MENU, seleziona l'opzione desiderata con la manopola e conferma con SET. L'opzione 4x4 visualizza 16 fonti sullo schermo.

### Impostare la visualizzazione multiview di Blackmagic MultiView 4

La griglia di visualizzazione di default di Blackmagic Multiview 4 è 2x2. Per visualizzare una singola fonte a schermo intero, premi il pulsante "1" sul pannello Teranex Mini Smart Panel, oppure premi il pulsante "2" per tornare alla griglia 2x2.

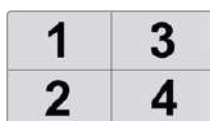
La configurazione della visualizzazione si può effettuare anche dal pannello di controllo dell'utilità.



Premi "1" per visualizzare una fonte a schermo intero, premi "2" per la griglia 2x2.

### Impostare la visualizzazione multiview di Blackmagic MultiView 4 HD

La prima volta che usi MultiView 4 HD, la visualizzazione di default è la griglia 2x2 con gli ingressi 1 e 3 in alto e gli ingressi 2 e 4 in basso. Per passare al riquadro singolo sposta l'interruttore 6 "Solo on" su ON.



La griglia 2x2 del MultiView 4 HD con i quattro ingressi SDI.

Per i dettagli, consulta il capitolo "Cambiare le impostazioni di Blackmagic MultiView 4 HD".

## Connettersi a una rete

Blackmagic MultiView è compatibile con Blackmagic Videohub Ethernet Protocol, che consente la gestione remota tramite i pannelli Blackmagic Smart Control o Blackmagic Master Control quando il dispositivo è installato su un rack difficilmente accessibile. Una volta connesso alla tua rete tramite ethernet, Blackmagic MultiView viene rilevato dai computer e dai pannelli Videohub connessi alla stessa rete. Questi pannelli gestiscono il dispositivo a distanza.

Per connettere Blackmagic MultiView alla tua rete:

- 1 Collega l'alimentazione a Blackmagic MultiView.
- 2 Utilizza un cavo ethernet RJ45 standard per collegare Blackmagic MultiView all'interruttore di rete o al computer.

Una volta connesso ad una rete, assicurati che l'indirizzo IP di Blackmagic MultiView sia diverso da quello degli altri dispositivi sulla stessa rete. Con Blackmagic MultiView 16 e in presenza del pannello Teranex Mini Smart Panel su MultiView 4, puoi cambiare le impostazioni di rete dal display LCD del pannello frontale. In alternativa, collega Blackmagic MultiView a un computer tramite USB e cambia le impostazioni di rete tramite Blackmagic MultiView Setup. Per tutte le informazioni su come cambiare le impostazioni di rete, consulta il capitolo "Cambiare le impostazioni".

## Connettere dispositivi di controllo seriale

Sfrutta la porta RS-422 per gestire Blackmagic MultiView 16 con i dispositivi di controllo per router di terzi. Tutte le informazioni sul controllo seriale sono contenute nella sezione "Cambiare le impostazioni con Blackmagic MultiView Setup".

## Installazione a rack

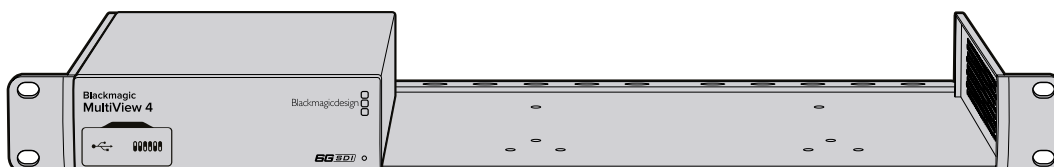
Blackmagic MultiView 16 occupa una unità di rack per adattarsi perfettamente in qualsiasi sistema a rack e flightcase.

Blackmagic MultiView 4 è più compatto e si presta alle produzioni mobili che non usano i sistemi a rack. Progettato per la massima portabilità e flessibilità, MultiView 4 è anche installabile su una mensola a rack. La mensola Teranex Mini Rack Shelf è progettata per ospitare tre unità affiancate su una unità di rack, agevolandone l'interconnessione per monitorare tutte le fonti desiderate.

Installare Blackmagic MultiView 4 su Teranex Mini Rack Shelf è facile: basta rimuovere i piedi in gomma (se presenti) e montare il dispositivo utilizzando i fori di montaggio alla base. Teranex Mini Rack Shelf include due pannelli frontali vuoti che puoi usare per coprire lo spazio non utilizzato quando sono presenti meno di tre MultiView 4.

Per maggiori informazioni, visita il sito di Blackmagic Design [www.blackmagicdesign.com/it](http://www.blackmagicdesign.com/it).

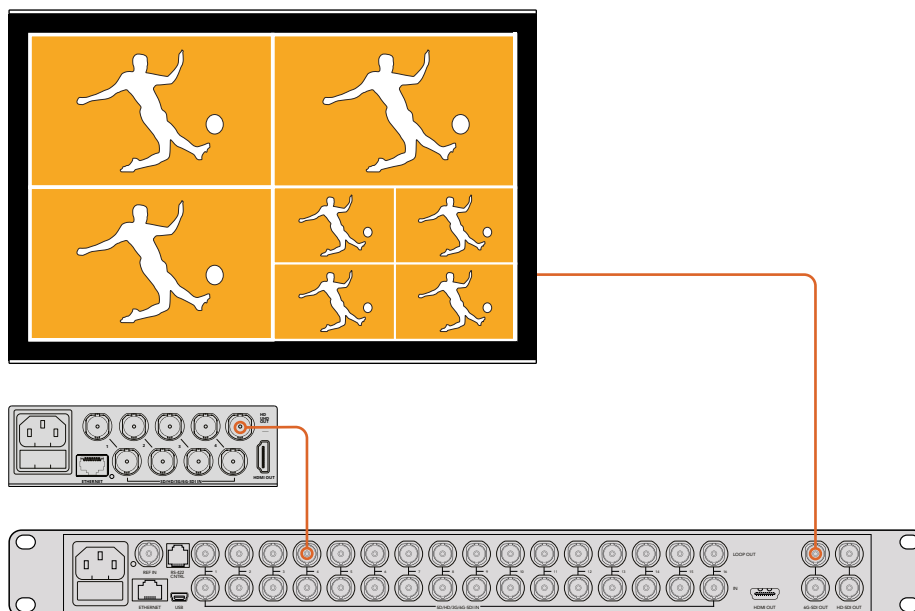
Tutti i connettori sono regolarmente accessibili dal retro dell'unità.





## Interconnettere più MultiView

Per arricchire la visualizzazione multiview con ulteriori riquadri è possibile interconnettere più Blackmagic MultiView. Questa soluzione è utile se desideri monitorare fonti aggiuntive. Collega l'uscita di un MultiView all'ingresso di un secondo MultiView per visualizzare immediatamente nuovi riquadri nella schermata. È consigliabile connettere l'uscita multiview ad uno schermo Ultra HD per visualizzare le immagini con la massima nitidezza.



Collega l'uscita di un MultiView all'ingresso di un secondo MultiView per visualizzare nuovi riquadri nella schermata.

Questo è tutto quello che c'è da sapere per iniziare ad utilizzare il dispositivo. Consulta le sezioni seguenti del manuale per scoprire tutte le caratteristiche e le funzioni per sfruttare appieno le prestazioni di Blackmagic MultiView.

## Cambiare le impostazioni

Ci sono diversi modi per cambiare le impostazioni di Blackmagic MultiView.

- **Pannello frontale** – Il pannello frontale di Blackmagic MultiView 16 è dotato di display LCD per un accesso diretto alle impostazioni.
- **Interruttori** – I piccoli interruttori sul pannello frontale di Blackmagic MultiView 4 e sul lato di Blackmagic MultiView 4 HD consentono di cambiare impostazione istantaneamente con la punta di una penna. Per accedere agli interruttori su Blackmagic MultiView 4, apri lo sportellino antipolvere in gomma sul pannello frontale. Alla base dei dispositivi uno schema mostra le configurazioni disponibili e la posizione degli interruttori ad esse corrispondenti.
- **Teranex Mini Smart Panel** – Questo pannello opzionale sostituisce il pannello di MultiView 4 in dotazione, per cambiare le impostazioni usando i pulsanti, la manopola e il display LCD. Questa soluzione è molto simile ai controlli intuitivi del pannello frontale di Blackmagic MultiView 16.
- **Blackmagic MultiView Setup** – Questo software permette di cambiare le impostazioni da un computer tramite USB o ethernet. Per tutti i dettagli, consulta il capitolo "Utilizzare Blackmagic MultiView Setup".

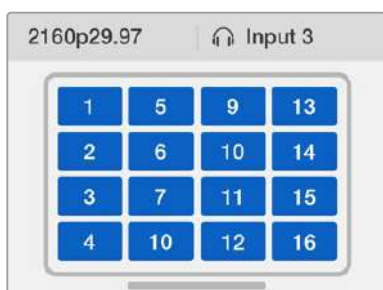
- **Videohub Control Software** – Questo software permette di abbinare ingressi e uscite, cambiare la griglia di visualizzazione, e selezionare la fonte audio che desideri riprodurre quando Blackmagic MultiView 16 o Blackmagic MultiView 4 sono connessi a una rete. Per tutti i dettagli, consulta il capitolo “Utilizzare Videohub Control Software”.

## Pannello frontale di Blackmagic MultiView 16

Il pannello frontale di controllo di Blackmagic MultiView 16 permette di cambiare le impostazioni con facilità.

All'accensione di Blackmagic MultiView 16, il display LCD mostra la schermata iniziale, contenente una pratica panoramica delle impostazioni:

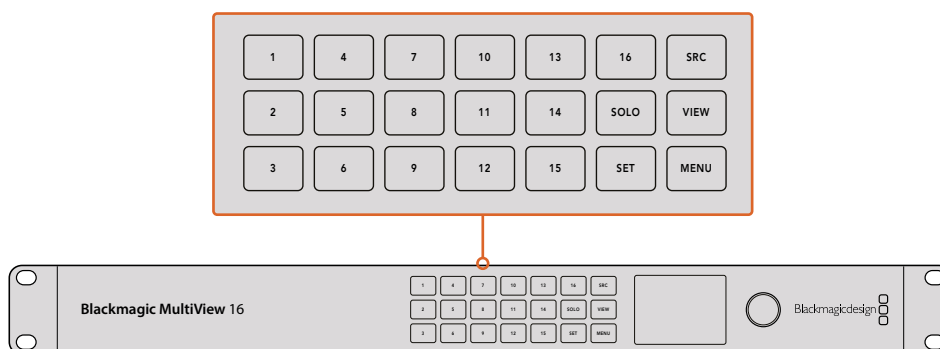
- **Frame rate** – Situato nell'angolo in alto a sinistra, mostra il frame rate dell'uscita multiview SDI in Ultra HD.
- **Fonte audio** – Affianca la voce precedente e mostra l'ingresso SDI utilizzato per integrare l'audio nel segnale multiview HDMI e SDI di uscita.
- **Griglia multiview** – Mostra la griglia di visualizzazione selezionata.



La schermata iniziale del display LCD sul pannello di controllo di Blackmagic MultiView 16. Mostra la griglia di visualizzazione, il frame rate dell'uscita multiview SDI e l'ingresso SDI con l'audio integrato nel segnale multiview di uscita.

### Pulsanti di controllo

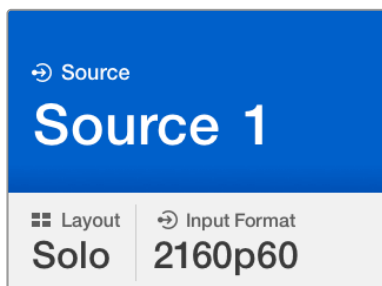
I pulsanti luminosi situati sul pannello frontale di Blackmagic MultiView 16 permettono di cambiare le impostazioni e di configurare fonti e visualizzazioni con facilità.



Utilizza i pulsanti sul pannello di controllo di Blackmagic MultiView 16 per cambiare le impostazioni e la configurazione di fonti e visualizzazioni con facilità.

## SOLO

Per visualizzare una fonte a schermo intero, premi SOLO e poi il pulsante corrispondente all'uscita che desideri. Premi di nuovo SOLO per ritornare alla visualizzazione multiview.



La funzione SOLO consente di visualizzare una fonte a schermo intero.

## MENU

Premi il pulsante MENU per accedere alle impostazioni. Scorri e seleziona le opzioni con la manopola di controllo e il pulsante SET. Premi di nuovo MENU per tornare alla schermata iniziale.

## SET

Premi il pulsante SET per selezionare l'impostazione che desideri cambiare. Premi di nuovo SET per confermare la selezione.

## SRC e VIEW

Questi pulsanti consentono di assegnare le fonti ai riquadri di visualizzazione. In modalità menù, usa i pulsanti SRC e VIEW per spostarti in alto e in basso nella lista delle opzioni.

## Manopola

Ruota la manopola per scorrere tra le impostazioni, o per selezionare le voci desiderate sul menù a schermo. Premi la manopola per annullare una selezione.

Ruota la manopola in senso orario o antiorario per scegliere tra due opzioni del menù. Premi la manopola per aprire o chiudere il menù impostazioni.

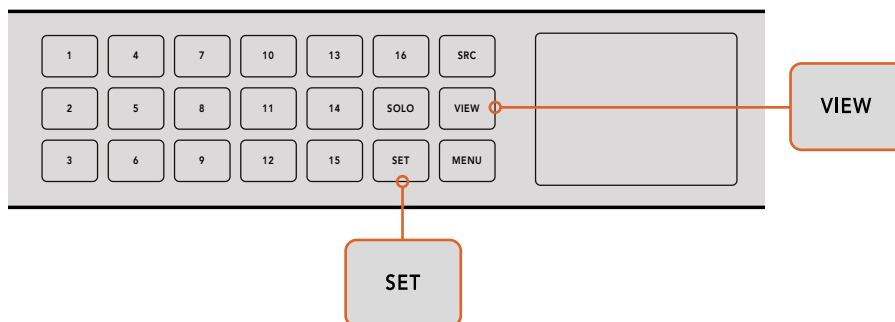
## Assegnare le fonti ai riquadri con Blackmagic MultiView 16

Una delle funzionalità chiave di Blackmagic MultiView 16 è la possibilità di assegnare le fonti SDI connesse ai riquadri desiderati, quindi di cambiare la configurazione della visualizzazione. Per esempio, puoi assegnare l'ingresso SDI numero 5 all'uscita numero 1.

Come assegnare una fonte al riquadro desiderato:

- 1 Premi il pulsante VIEW sul pannello di controllo frontale per accedere al menù "View", evidenziato da uno sfondo blu.
- 2 Premi uno dei pulsanti numerati per selezionare il riquadro desiderato. In alternativa, usa la manopola per scorrere tra le opzioni. Conferma la selezione premendo il pulsante SET.
- 3 Premi il pulsante SRC. Il display LCD mette in evidenza la voce "Source".

- 4 Premi uno dei pulsanti numerati per selezionare la fonte desiderata. In alternativa, usa la manopola per scorrere tra le opzioni sul display LCD.
- 5 Premi il pulsante SET per confermare la selezione.



Per assegnare una fonte a un riquadro, premi VIEW per accedere al menù "View", seleziona l'opzione desiderata e premi SET per confermare.

## Selezionare la griglia di visualizzazione con Blackmagic MultiView 16

Come descritto nel capitolo "Operazioni preliminari", è possibile scegliere il numero di riquadri di visualizzazione che apparirà sullo schermo. Per esempio, se sono collegate 4 fonti, seleziona la griglia 2x2. Per un monitoraggio ottimale, seleziona la griglia più idonea a seconda del numero delle fonti collegate.

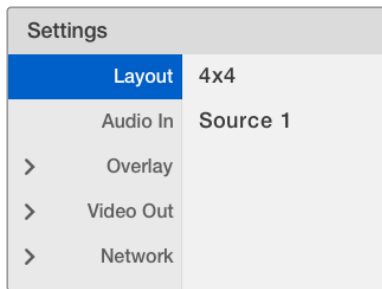
Sono disponibili quattro opzioni di monitoraggio:

- **2x2** mostra 4 riquadri. Se è collegato uno schermo Ultra HD, ogni fonte viene visualizzata in HD nativo.
- **3x3** mostra 9 riquadri.
- **4x4** mostra 16 riquadri.

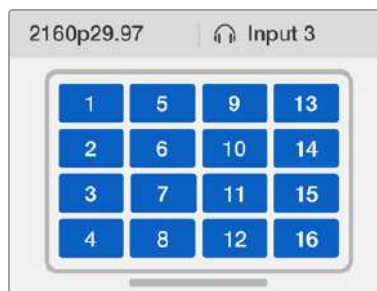
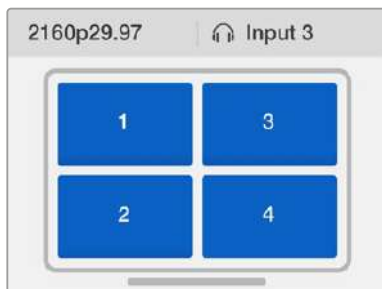
**SUGGERIMENTO** Per visualizzare una fonte a schermo intero, premi il pulsante SOLO sul pannello di controllo di Blackmagic MultiView 16 e seleziona il numero della fonte desiderata. Su Blackmagic MultiView 4, premi il pulsante "1" sul pannello Teranex Mini Smart Panel.



Seleziona il riquadro a cui desideri assegnare una fonte utilizzando la manopola o i pulsanti numerati.



Seleziona la voce del menù desiderata e seleziona SET per accedere alle opzioni.



Scegli tra 3 griglie di visualizzazione in base al numero delle fonti connesse.

## Audio in

Questa voce consente di selezionare l'ingresso SDI il cui audio verrà integrato nelle uscite multiview.

## Overlay

Questa sottovoce del menù consente di abilitare e disabilitare gli overlay in sovrapposizione sui riquadri multiview.

Gli overlay disponibili sono i seguenti:

- **Borders** – I bordi separano i riquadri di visualizzazione come in una griglia.
- **Labels** – Le etichette mostrano il nome della fonte. Si possono cambiare utilizzando Blackmagic MultiView Setup.
- **Audio meters** – Mostra o nasconde gli indicatori VU in tutti i riquadri. I primi due canali integrati in ogni segnale SDI sono visibili in ogni riquadro, consentendo di monitorare i segnali audio e le immagini contemporaneamente.
- **SDI Tally** – Connettendo un'uscita di programma SDI dello switcher ATEM all'ingresso 16 di Blackmagic MultiView 16, il segnale tally illumina i bordi del riquadro della fonte correntemente in onda. Abilita o disabilita questa funzione spuntando la voce "Display SDI Tally".

Assicurati di abbinare correttamente gli ingressi di Blackmagic MultiView 16 ai corrispettivi ingressi dello switcher ATEM. In caso contrario, il segnale tally illuminerà il riquadro sbagliato.

## Video Out

La voce "Video Out" contiene le opzioni relative alle uscite di Blackmagic MultiView 16.

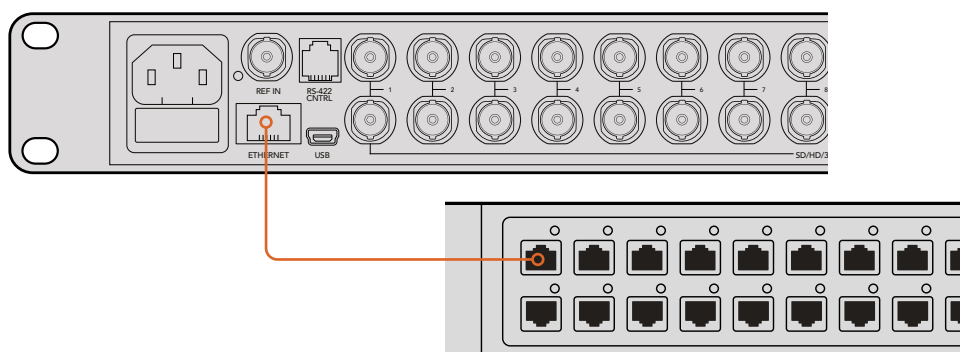
- **Video Format** – Questa impostazione consente di selezionare un frame rate di 2160p29.97 o 2160p25 per l'uscita multiview Ultra HD. Il frame rate dell'uscita multiview HD si conforma all'uscita Ultra HD. Premi la manopola per annullare la selezione o per ritornare al menù precedente.
- **HD Output** – Seleziona "Interlaced" o "Progressive" per l'uscita multiview HD. Se il formato video selezionato è 2160p29.97, scegli 1080p29.97 o 1080i59.94. Analogamente, se il formato video selezionato è 2160p25, scegli 1080p25 o 1080i50.

## Network

La voce "Network" consente di impostare l'indirizzo IP, la maschera di sottorete (subnet) e il gateway per connettere Blackmagic MultiView 16 a una rete.

Per impostare l'indirizzo IP di Blackmagic MultiView 16:

- 1 Premi il pulsante MENU sul pannello di controllo frontale e ruota la manopola fino a raggiungere la voce "Network" sul display LCD.
- 2 Premi il pulsante SET per accedere alle impostazioni di rete.
- 3 Ruota la manopola fino a raggiungere la voce "IP Address".
- 4 Premi SET per selezionare il primo campo dell'indirizzo IP. Ruota la manopola per cambiarli i valori.
- 5 Premi SET per confermare il primo campo, poi ripeti l'operazione per i tre campi successivi. Segui lo stesso procedimento per impostare un indirizzo di sottorete e il gateway.
- 6 Premi due volte il pulsante MENU per tornare alla schermata iniziale.



Connettendo Blackmagic MultiView 16 a una rete ethernet è possibile controllare l'unità da una postazione separata.

Network Settings	
IP Address	192.168.10.160
Subnet	255.255.255.0
Gateway	192.168.10.1

Usa la manopola o pulsanti numerati di Blackmagic MultiView 16 per cambiare i valori dell'indirizzo di rete.

## Teranex Mini Smart Panel

Teranex Mini Smart Panel si installa sul lato frontale di Blackmagic MultiView 4 e sostituisce il pannello in dotazione. I pulsanti, la manopola e il display LCD danno accesso diretto alle impostazioni.

### Installare Teranex Mini Smart Panel

Smart Panel è hot swap, quindi non è necessario spegnere Blackmagic MultiView 4 durante l'installazione.

- 1 Estrai le due viti M3 da entrambi i lati di Blackmagic MultiView 4 con un cacciavite Pozidriv 2 e rimuovi delicatamente il pannello in dotazione.
- 2 Dietro il pannello in dotazione c'è un tubicino di plastica trasparente nell'angolo in basso. Il tubicino illumina la spia LED di stato sul pannello, e non va rimosso.

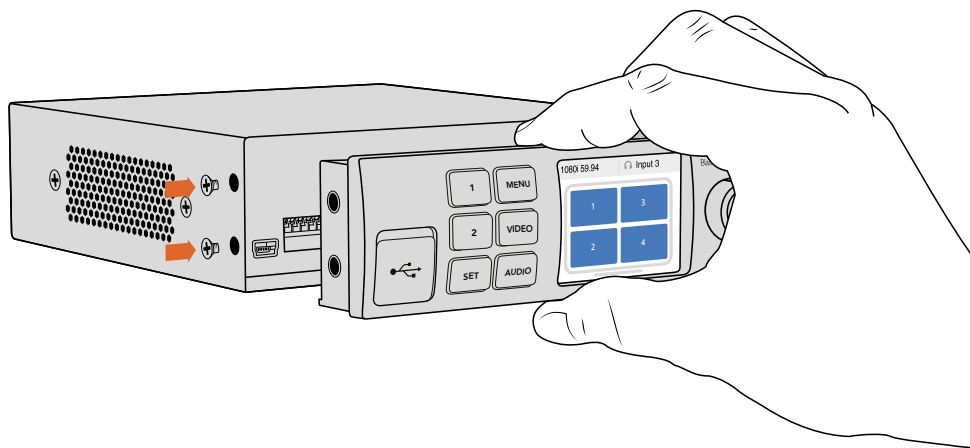
**SUGGERIMENTO** Quando riattacchi il pannello frontale in dotazione, accertati che il tubicino sia allineato con lo slot frontale.

- 3 Allinea il connettore situato sul retro dello Smart Panel con il connettore attiguo sul lato frontale di Blackmagic MultiView 4 e premi delicatamente fino a bloccare saldamente il pannello.
- 4 Inserisci di nuovo le viti M3 precedentemente estratte.

Se Blackmagic MultiView 4 è installato sulla mensola Teranex Mini Rack Shelf, è necessario rimuoverlo per accedere alle viti.

Per tutti i dettagli, consulta il capitolo "Installazione a rack".

La porta USB di Blackmagic MultiView 4 è accessibile anche quando è installato lo Smart Panel. Apri lo sportellino gommato antipolvere per utilizzarla. Quando è installato il pannello opzionale, gli interruttori sul lato frontale dell'unità sono nascosti perché tutte le impostazioni si cambiano con i menù sul display LCD.



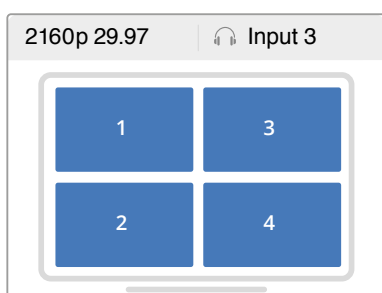
Accompagna Teranex Mini Smart Panel con l'indice e il pollice allineati in corrispondenza del connettore sul retro per ancorare correttamente il pannello a Blackmagic MultiView 4.

**SUGGERIMENTO** Installa il resistente pannello originale in dotazione se desideri collocare Blackmagic MultiView 4 sul retro di un sistema a rack o in una postazione piena di cavi.

## Caratteristiche di Teranex Mini Smart Panel

Le caratteristiche di Teranex Mini Smart Panel sono simili a quelle del pannello frontale di MultiView 16. La schermata iniziale mostra una pratica panoramica delle impostazioni:

- **Frame rate** – Situato nell'angolo in alto a sinistra, mostra il frame rate dell'uscita multiview SDI in Ultra HD.
- **Fonte audio** – Affianca la voce precedente e mostra l'ingresso SDI utilizzato per integrare l'audio nel segnale multiview HDMI e SDI di uscita.
- **Griglia multiview** – Mostra la griglia 2x2.



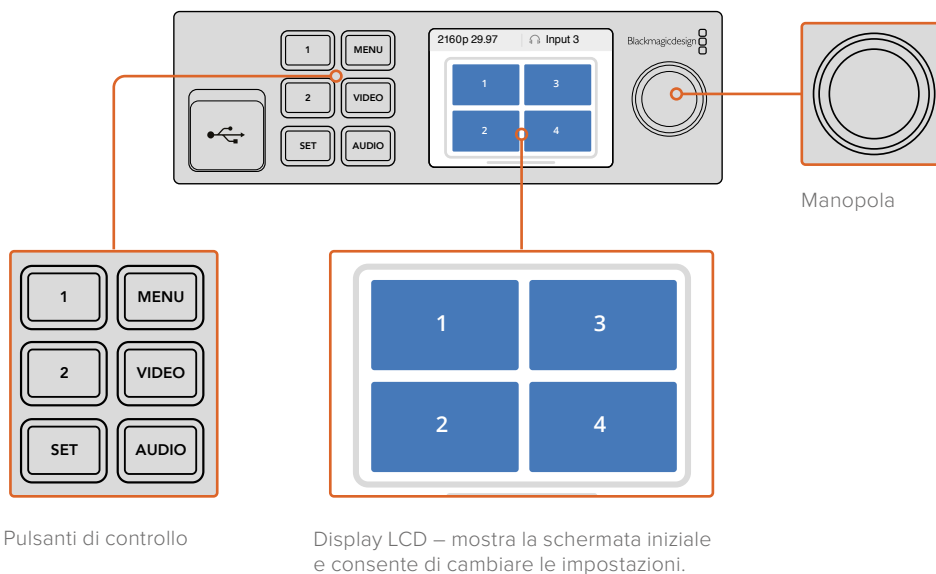
La schermata iniziale del display LCD di Teranex Mini Smart Panel.

## Pulsanti di controllo e manopola

Teranex Mini Smart Panel è dotato di pulsanti di controllo e di una manopola per navigare il menù impostazioni di Blackmagic MultiView 4.



- **Pulsanti 1 e 2** – Premi questi pulsanti per aumentare o diminuire i valori numerici o per spostarti in alto o in basso nel menù.
- **SET** – Dopo aver cambiato un'impostazione con i pulsanti 1 e 2, premi SET per confermare la selezione.
- **MENU** – Premi il pulsante MENU per accedere al menù impostazioni di Blackmagic MultiView 4 e per tornare alla voce precedente, fino alla schermata iniziale.
- **VIDEO e AUDIO** – Questi pulsanti sono solo pertinenti ai convertitori Teranex Mini.
- **Manopola** – Ruota la manopola in senso orario o antiorario per navigare il menù e regolare i valori numerici.



## Cambiare le impostazioni con Teranex Mini Smart Panel

Cambiare le impostazioni con Teranex Mini Smart Panel è intuitivo e ancora più immediato grazie al display LCD.

Per accedere al menù impostazioni di Blackmagic MultiView 4, premi il pulsante MENU. Questo menù contiene le seguenti voci:

Settings	
Audio In	Source 1
Video Format	2160p25
> Overlay	
> Network	

Seleziona la voce desiderata dal menù e premi SET per confermare. Scorri tra le opzioni usando la manopola.

### Audio in

Questa voce consente di selezionare l'ingresso SDI il cui audio verrà integrato nelle uscite multiview.

## Video Format

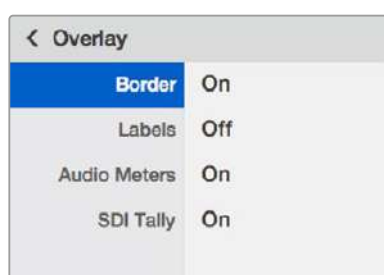
Blackmagic MultiView 4 ammette i formati Ultra HD e HD con un frame rate di 29,97 o 25. Questa voce contiene le risoluzioni e i frame rate disponibili.

## Overlay

Questa voce consente di abilitare e disabilitare gli overlay in sovrapposizione.

Gli overlay disponibili sono i seguenti:

- **Border:** I bordi separano i riquadri di visualizzazione come in una griglia.
- **Labels:** Le etichette mostrano il nome della fonte, e si possono cambiare tramite Blackmagic MultiView Setup.
- **Audio meters:** Mostra o nasconde gli indicatori VU in tutti i riquadri. I primi due canali integrati in ogni segnale SDI sono visibili in ogni riquadro, per monitorare i segnali audio e video contemporaneamente.

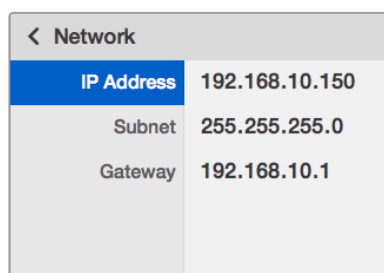


## Network

La voce "Network" consente di impostare l'indirizzo IP, la maschera di sottorete (subnet) e il gateway per connettere Blackmagic MultiView 4 a una rete.

Per impostare l'indirizzo IP di Blackmagic MultiView 4:

- 1 Premi il pulsante MENU sul pannello di controllo frontale e ruota la manopola fino a raggiungere la voce "Network" sul display LCD.
- 2 Premi il pulsante SET per accedere alle impostazioni di rete.
- 3 Ruota la manopola fino a raggiungere la voce "IP Address".
- 4 Premi SET per selezionare il primo campo dell'indirizzo IP. Ruota la manopola per cambiarli i valori.
- 5 Premi SET per confermare il primo campo, poi ripeti l'operazione per i tre campi successivi. Segui lo stesso procedimento per impostare un indirizzo di sottorete e il gateway.
- 6 Premi due volte il pulsante MENU per tornare alla schermata iniziale.

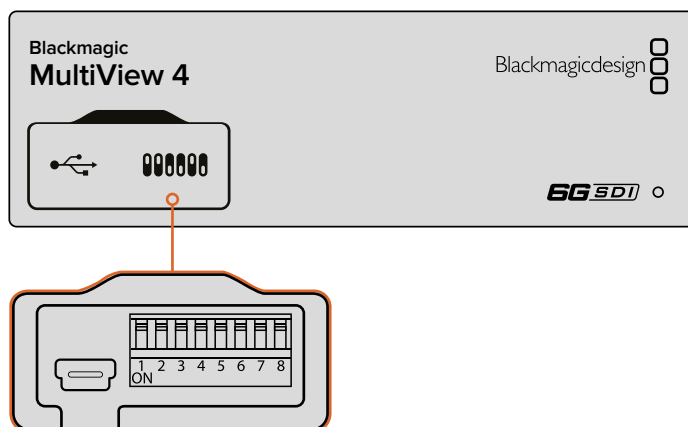


Usa la manopola o i pulsanti 1 e 2 di Teranex Mini Smart Panel per cambiare i valori dell'indirizzo di rete di Blackmagic MultiView 4.

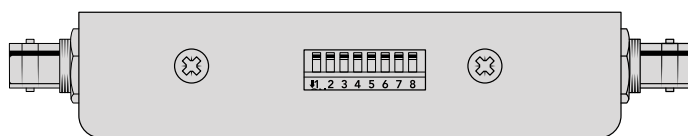
# Cambiare le impostazioni con gli interruttori

Blackmagic MultiView 4 e MultiView 4 HD hanno dei piccoli interruttori integrati che consentono di cambiare le impostazioni. Su Blackmagic MultiView 4, gli interruttori sono dietro lo sportellino antipolvere in gomma sul pannello frontale.

Su Blackmagic MultiView 4 HD, gli interruttori sono sul lato dell'unità.



Cambia la configurazione spostando gli interruttori con la punta di una penna.



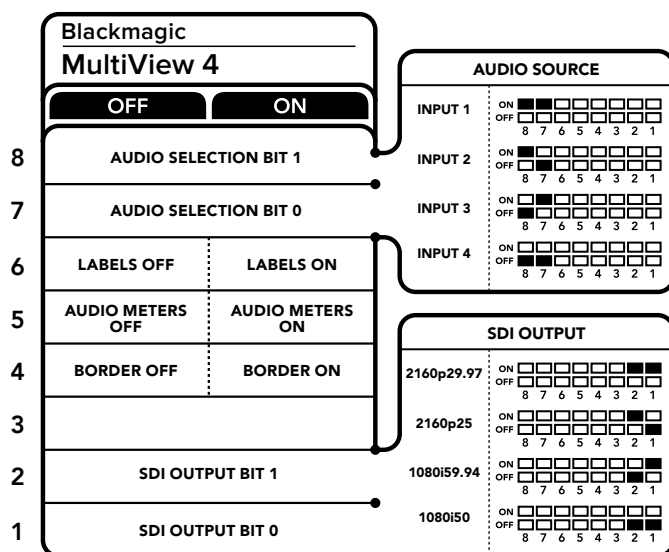
Su Blackmagic MultiView 4 HD, gli interruttori sono sul lato dell'unità.

## Interruttori integrati

Alla base del dispositivo trovi lo schema di configurazione degli interruttori. Assicurati che la posizione degli interruttori corrisponda a quella indicata nello schema, seguendo i numeri da 1 a 8, da sinistra verso destra.

**SUGGERIMENTO** Oltre allo schema alla base del dispositivo, è consigliabile consultare la versione più recente di questo manuale per scoprire se sono disponibili nuove funzioni. La versione più recente è disponibile per il download alla pagina di supporto [www.blackmagicdesign.com/it/support](http://www.blackmagicdesign.com/it/support).

## Impostazioni degli interruttori per MultiView 4



Impostazioni degli interruttori per MultiView 4

Gli interruttori di Blackmagic MultiView 4 ti consentono di cambiare le seguenti impostazioni:

### Interruttori 8 e 7 – Selezione audio

Gli interruttori 8 e 7 sono rappresentati rispettivamente come bit 1 e 0. Cambiando la posizione di questi interruttori in diverse combinazioni, si seleziona l'ingresso SDI che desideri utilizzare per integrare l'audio nel segnale multiview HDMI e SDI di uscita.

#### Tabella di riferimento per la selezione audio

Fonte audio	Interruttore 8	Interruttore 7	Combinazioni
Ingresso 1	ON	ON	ON <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Ingresso 2	ON	OFF	ON <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Ingresso 3	OFF	ON	ON <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Ingresso 4	OFF	OFF	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

### Interruttore 6 – Etichette

Sposta l'interruttore 6 su ON per visualizzare le etichette delle uscite su ogni riquadro di visualizzazione. Le etichette si possono gestire con Blackmagic MultiView Setup, come descritto nelle pagine seguenti. Sposta l'interruttore 6 su OFF per nascondere le etichette.

### Interruttore 5 – Livelli audio

Sposta l'interruttore 5 su ON per visualizzare i livelli audio su ogni riquadro di visualizzazione. Sposta l'interruttore 5 su OFF per nascondere i livelli audio.

### Interruttore 4 – Bordi

Sposta l'interruttore 4 su ON per visualizzare i bordi che separano i riquadri di visualizzazione. Sposta l'interruttore 4 su OFF per nascondere i bordi.

## Interruttori 2 e 1

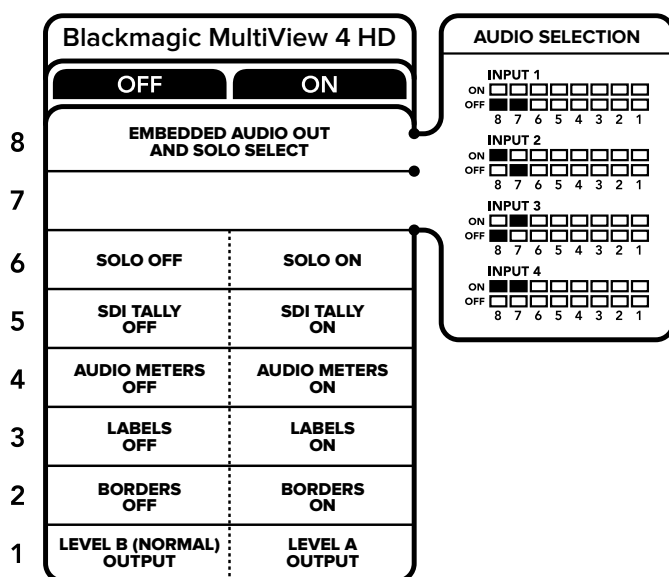
Gli interruttori 2 e 1 sono rappresentati come bit 1 e 0 rispettivamente. Cambiando la posizione di questi interruttori in diverse combinazioni, selezioni il formato di uscita del segnale SDI di MultiView 4.

### Tabella di riferimento per la selezione del formato SDI di uscita

Uscita SDI	Interruttore 2	Interruttore 1	Combinazioni
2160p29.97	0	ON	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 8 7 6 5 4 3 2 1
2160p25	ON	OFF	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 8 7 6 5 4 3 2 1
1080i59.94	OFF	ON	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 8 7 6 5 4 3 2 1
1080i50	OFF	OFF	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 8 7 6 5 4 3 2 1

**NOTA** La configurazione con il pannello opzionale Teranex Mini Smart Panel sostituisce quella degli interruttori. Blackmagic MultiView 4 memorizza la configurazione più recente, impostata con gli interruttori, con Teranex Mini Smart Panel o con Blackmagic MultiView Setup. Se rimuovi lo Smart Panel o desideri aggiornare la configurazione di Blackmagic MultiView 4 tramite il software, potrebbe essere necessario riposizionare i singoli interruttori perché la nuova configurazione abbia effetto.

## Impostazioni degli interruttori per Blackmagic MultiView 4 HD



Lo schema alla base di Blackmagic MultiView 4 HD mostra la configurazione degli interruttori per cambiare le impostazioni.

Gli interruttori di Blackmagic MultiView 4 HD ti consentono di cambiare le seguenti impostazioni:

### Interruttori 8 e 7 - Audio integrato SDI e Solo

Gli interruttori 8 e 7 sono raggruppati insieme per fornire 4 combinazioni ON/OFF. Con 4 combinazioni è possibile integrare l'audio di uno dei quattro ingressi SDI nell'uscita multiview. Nella modalità riquadro singolo, l'audio è vincolato al video, quindi puoi usare questi interruttori per selezionare il video e l'audio che desideri monitorare.

#### Tabella di selezione audio

Fonte audio	Interruttore 8	Interruttore 7	Posizione																														
Ingresso 1	OFF	OFF	<table border="1"> <tr> <td>ON</td> <td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td> </tr> <tr> <td>OFF</td> <td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td> </tr> <tr> <td></td> <td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td></td> </tr> </table>	ON	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OFF	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		8	7	6	5	4	3	2	1	
ON	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																								
OFF	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																								
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Ingresso 2	ON	OFF	<table border="1"> <tr> <td>ON</td> <td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td> </tr> <tr> <td>OFF</td> <td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td> </tr> <tr> <td></td> <td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td></td> </tr> </table>	ON	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OFF	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		8	7	6	5	4	3	2	1	
ON	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																								
OFF	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																								
	8	7	6	5	4	3	2	1																									
Ingresso 3	OFF	ON	<table border="1"> <tr> <td>ON</td> <td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td> </tr> <tr> <td>OFF</td> <td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td> </tr> <tr> <td></td> <td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td></td> </tr> </table>	ON	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OFF	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		8	7	6	5	4	3	2	1	
ON	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																								
OFF	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																								
	8	7	6	5	4	3	2	1																									
Ingresso 4	ON	ON	<table border="1"> <tr> <td>ON</td> <td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td> </tr> <tr> <td>OFF</td> <td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td> </tr> <tr> <td></td> <td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td></td> </tr> </table>	ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OFF	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		8	7	6	5	4	3	2	1	
ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																								
OFF	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																								
	8	7	6	5	4	3	2	1																									

### Interruttore 6 - Riquadro singolo

Sposta l'interruttore 6 su ON per visualizzare una sola fonte a schermo intero. Sposta l'interruttore su OFF per visualizzare la griglia 2x2.

L'audio integrato nell'uscita per riquadro singolo si appaia automaticamente alla fonte selezionata. Usa gli interruttori 7 e 8 per selezionare la combinazione di audio e video per la modalità riquadro singolo. Con la griglia 2x2, gli interruttori selezionano l'ingresso audio.

### Interruttore 5 - Tally

Sposta l'interruttore 5 su ON per visualizzare i bordi tally sui riquadri. Spotalo su OFF per nascondere i bordi.

Nella visualizzazione a riquadro singolo la trasmissione di tutti i dati aggiuntivi, inclusi controllo camera ATEM via SDI, timecode e sottotitoli chiusi, è inalterata.

**SUGGERIMENTO** Il numero di ingresso per ogni riquadro si può impostare dal software Blackmagic MultiView Setup. Assicurati che il numero del riquadro corrisponda al numero dell'ingresso impostato sullo switcher, in maniera che il tally illumini quello giusto. Consulta la sezione "Configurazione tally" per maggiori informazioni.

### Interruttore 4 - Livelli audio

Sposta l'interruttore 4 su ON per visualizzare i livelli audio. Sposta l'interruttore su OFF per nascondere i livelli audio.

### Interruttore 3 - Etichette riquadri

Sposta l'interruttore 3 su ON per visualizzare le etichette su ogni riquadro. Sposta l'interruttore su OFF per nasconderle.

### Interruttore 2 - Bordi

Sposta l'interruttore 2 su ON per visualizzare i bordi e su OFF per nasconderli.

### Interruttore 1 - 3G-SDI livello A e B

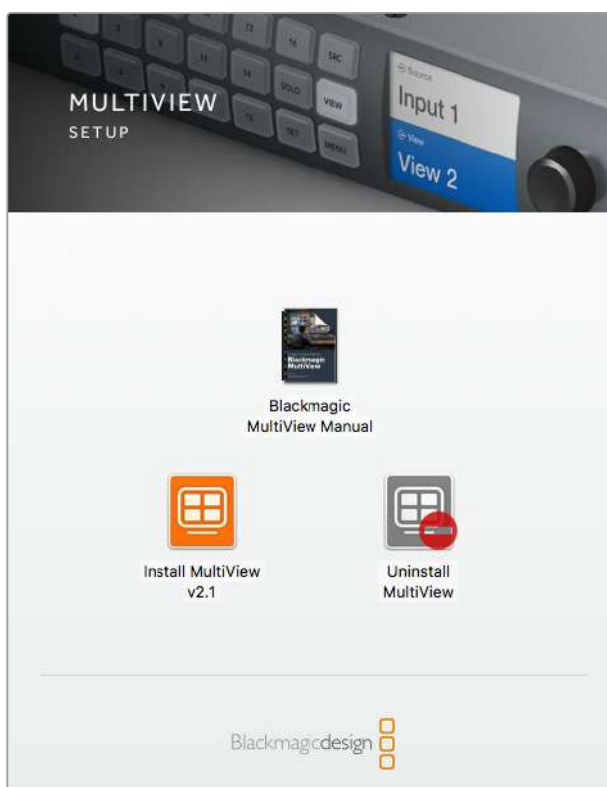
Imposta l'interruttore 1 su OFF per selezionare il 3G-SDI di livello B, su ON per il 3G-SDI di livello A. Questo consente di cambiare il livello dell'uscita 3G-SDI in base ai dispositivi SDI connessi.

# Utilizzare Blackmagic MultiView Setup

Installa Blackmagic MultiView Setup su Mac o Windows per configurare e aggiornare il software interno di Blackmagic MultiView. Questa utilità è intuitiva e facile da utilizzare, e se Blackmagic MultiView 4 è connesso a una rete puoi cambiare le impostazioni sfruttando ethernet invece della connessione USB.

## Installare Blackmagic MultiView Setup

Blackmagic MultiView Setup è compatibile con i sistemi operativi Windows a 64 bit e con le ultime versioni di Sierra e High Sierra per macOS.



Fai doppio clic sull'icona "Install" e segui i passi per completare l'installazione.

### Installazione su Windows

- 1 Fai doppio clic sulla cartella "Install" del software incluso oppure nella cartella "Download" se hai scaricato il programma dal sito Blackmagic Design.
- 2 Segui le istruzioni di installazione e accetta i termini del contratto di licenza. Windows installa il programma automaticamente.

Clicca su Start e prosegui con Tutti i programmi > Blackmagic Design > MultiView. La cartella MultiView contiene l'applicazione Blackmagic MultiView Setup.

## Installazione su Mac OS X

- 1 Fai doppio clic sulla cartella "Install" del software incluso oppure nella cartella "Download" se hai scaricato il programma dal sito Blackmagic Design.
- 2 Segui le istruzioni di installazione. Mac OS X installa il programma automaticamente.

All'interno della cartella applicazioni verrà creata una cartella intitolata "Blackmagic MultiView", contenente l'applicazione Blackmagic MultiView Setup.

## Pagina iniziale di Blackmagic MultiView Setup

All'avvio dell'applicazione appare la pagina iniziale di Blackmagic MultiView Setup. Se alla tua rete sono connessi più Blackmagic MultiView puoi selezionarli cliccando sulle frecce a destra e a sinistra della pagina iniziale.

Per accedere alle impostazioni di Blackmagic MultiView clicca sull'icona circolare situata sotto l'immagine del dispositivo, oppure clicca sull'immagine stessa.



Installa Blackmagic MultiView Setup sul computer connesso a ethernet o tramite USB per cambiare le impostazioni di Blackmagic MultiView.

## Cambiare le impostazioni con Blackmagic MultiView Setup

Clicca sull'icona delle impostazioni per accedere alle impostazioni di Blackmagic MultiView. La finestra impostazioni contiene le tab "Sources", "Views" e "Configure". Su Blackmagic MultiView 4 e Blackmagic MultiView 4 HD la tab "Views" è superflua perché le opzioni di visualizzazione non sono configurabili tramite il software di controllo Videohub. Blackmagic MultiView 4 HD ha anche un menù "Tally" per cambiarne le impostazioni.

**SUGGERIMENTO** Assicurati che le impostazioni di rete dell'unità combacino con quelle del tuo computer per visualizzare le fonti correttamente.





Utilizza Blackmagic MultiView Setup per assegnare un titolo alle etichette degli ingressi e identificare le uscite corrispondenti ai riquadri multiview con facilità.

- **Sources** – Consente di personalizzare le etichette degli ingressi. I titoli assegnati appaiono sulle uscite corrispondenti ai riquadri multiview.
- **Views** – Questa tab è pertinente quando si utilizza Videohub Software Control per gestire Blackmagic MultiView 16. Cambiando il nome delle uscite, i nuovi titoli appaiono nella finestra "Destinations" di Videohub Software Control.
- **Video Output** – Consente di personalizzare il formato video e il rapporto d'aspetto dell'uscita SD dal Blackmagic MultiView 4 HD.
- **Configure** – Consente di cambiare le impostazioni relative al nome del dispositivo, all'uscita video, agli overlay, alla rete e alla trasmissione seriale.

## La tab "Sources"

### Personalizzare le etichette degli ingressi

Assegna un nome agli ingressi per identificarli con facilità durante il monitoraggio multiview. Salva e richiama le etichette preferite per utilizzare Blackmagic MultiView regolarmente con altre applicazioni, senza dover ripetere le operazioni.

Le etichette sono visibili su Videohub Software Control e sui pannelli di controllo Videohub connessi alla rete.

Come personalizzare le etichette degli ingressi:

- 1 Clicca sulla tab "Sources".
- 2 Clicca sul campo della fonte che vuoi cambiare e digita il nome che desideri assegnare all'ingresso.
- 3 Clicca su "Save" per confermare.

## La tab "Views"

### Personalizzare le etichette di visualizzazione

Cambia le etichette delle uscite di Blackmagic MultiView 16 per identificarle con facilità nella finestra "Destinations" di Videohub Software Control.

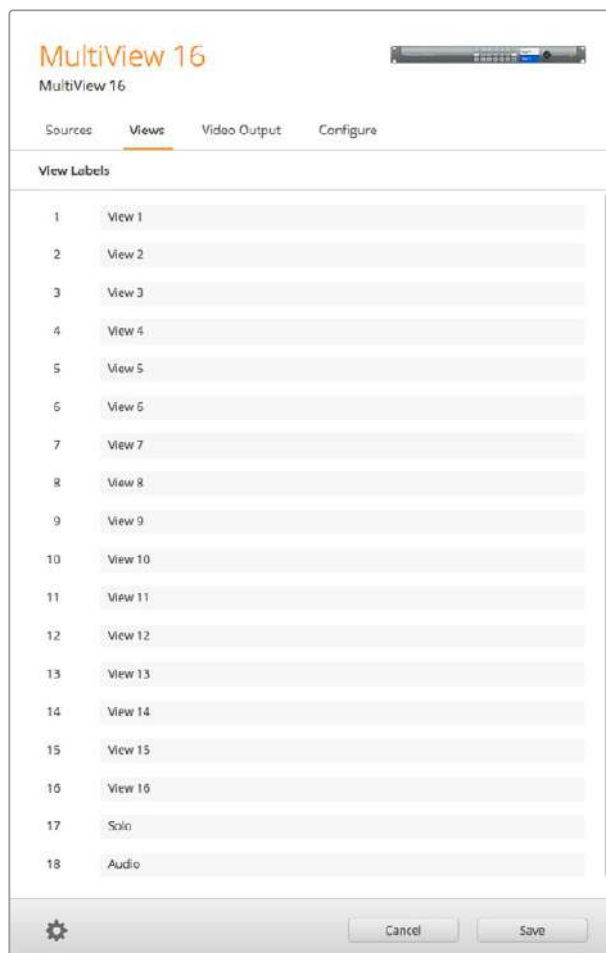
Come personalizzare le etichette di visualizzazione:

- 1 Clicca sulla tab "Views".
- 2 Nel menù "Output labels" clicca sul campo e digita il nome che desideri assegnare all'uscita video.
- 3 Clicca su "Save" per confermare.

L'etichetta di default dell'uscita 17 è intitolata "Solo", mentre quella dell'uscita 18 è intitolata "Audio".

L'etichetta "Solo" dell'uscita 17 si può rinominare e gestire dal pannello di controllo frontale di Blackmagic MultiView 16. Questa operazione è particolarmente utile perché la nuova etichetta dell'uscita 17 appare automaticamente su Videohub Software Control.

L'uscita 18 si riferisce alla voce "Audio in" del menù sul display LCD di Blackmagic MultiView 16, da cui è selezionabile la fonte audio che desideri integrare nell'uscita multiview. Analogamente all'etichetta "Solo", è possibile rinominare l'etichetta "Audio" e gestirla con Videohub Software Control.



Personalizza le etichette delle uscite "Solo" e "Audio" e visualizza i nuovi titoli su Blackmagic Videohub Software Control.

## Uscita video

### Video Format e HD Output

Le impostazioni dei formati video differiscono leggermente nei vari modelli Blackmagic MultiView.

Blackmagic MultiView 16 è in grado di trasmettere video HD e Ultra HD contemporaneamente, con l'opzione di scegliere anche il frame rate. Per esempio per trasmettere un segnale conforme agli standard negli Stati Uniti, basta selezionare 2160p29.97 perché l'uscita HD selezionerà automaticamente il frame rate giusto.

Se il formato video selezionato è 2160p29.97, imposta l'uscita HD su 1080p29.97 o 1080i59.94.



Le impostazioni della voce "Video Output" di MultiView 16 consentono di impostare la visualizzazione, il formato video Ultra HD, l'uscita HD e il rapporto d'aspetto per il formato SD.

Con Blackmagic MultiView 4 puoi scegliere se visualizzare le immagini in Ultra HD o HD attraverso l'uscita SDI, e impostare il frame rate. Queste impostazioni sono disponibili nel menù a discesa della voce "Video Format".



La tab "Video Output" di Blackmagic MultiView 4 contiene un menù a discesa per selezionare il formato video, quindi la risoluzione e il frame rate.

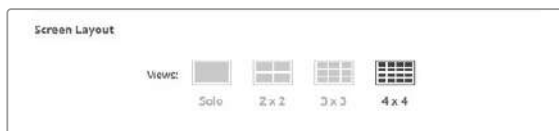
Su Blackmagic MultiView 4 HD puoi usare il menù "Video Format" per selezionare il frame rate HD e l'opzione di trasmettere video interlacciato o a scansione progressiva. Puoi anche selezionare il rapporto d'aspetto SD 16:9 o 4:3.



La tab "Video Output" di Blackmagic MultiView 4 HD consente di impostare il frame rate e la risoluzione HD dell'uscita, e scegliere l'opzione interlacciato o a scansione progressiva.

## Cambiare la visualizzazione multiview

Analogamente al menù “Layout” sul display LCD del pannello di controllo di Blackmagic MultiView 16, anche l'utilità permette di impostare la visualizzazione. Scegli l'opzione di visualizzazione che desideri cliccando sull'icona corrispondente nel menù “Details”.



Scegli l'opzione di visualizzazione per MultiView 16 nella tab “Video Output”.

## Configurazione Tally

Blackmagic MultiView 4 HD consente di impostare la configurazione tally su “Tally override”, oppure contrassegnare il segnale inviato da una camera Blackmagic, o il numero della camera se il segnale viene inviato dallo switcher ATEM all'ingresso 4 del MultiView 4 HD.



Le opzioni del menù “Tally” nell'utilità MultiView Setup.

Quando si seleziona il tally per farlo corrispondere all'ingresso dello switcher puoi inserire il numero della camera da 1 a 99 nel campo desiderato degli ingressi da 1 a 4.

## Tally Override

I segnali di tally in genere sono forniti dal segnale di ritorno del programma collegato all'ultimo ingresso SDI del MultiView. Tuttavia, a volte è necessario collegare tutte le camere a ciascun ingresso.

Se usi camere Blackmagic Design, collegate allo switcher ATEM o a un altro switcher SDI con un sistema tally di terzi, abilita la funzione “Tally override”. Quando il tally override è selezionato, il MultiView 4 HD cerca i segnali tally integrati in ogni segnale SDI di ingresso. Questo significa che ogni riquadro di visualizzazione riceverà il segnale tally in modo indipendente, invece di un segnale tally collettivo attraverso il ritorno di programma dall'ultimo ingresso del dispositivo.

**SUGGERIMENTO** La modalità “Tally Override” funziona con Blackmagic URSA Mini, URSA Mini 4K, URSA Mini Pro e URSA Broadcast collegate a uno switcher ATEM o a un Blackmagic Camera Fiber Converter. Per informazioni su come collegare uno switcher o un tally di terzi, consulta il manuale Blackmagic 3G-SDI Shield for Arduino.

## SD Aspect Ratio

Se la fonte video SD connessa a Blackmagic MultiView 16 ha un rapporto d'aspetto di 4:3, spunta la casella "Set to 4:3" per visualizzare l'immagine correttamente.

Se il rapporto d'aspetto della fonte video SD connessa è di 16:9, spunta la casella corrispondente.

Quando colleghi una fonte SD a Blackmagic MultiView 4 HD, puoi usare l'utilità per passare dal rapporto 16:9 al 4:3 e viceversa. Nel menù “Video Output” seleziona l'opzione desiderata.



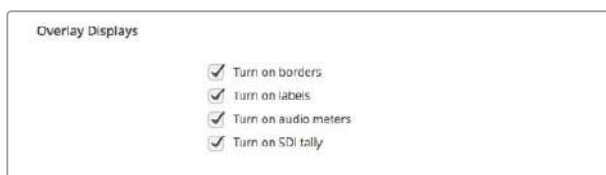
Le opzioni di rapporto d'aspetto SD nel menù “Video Output” dell'utilità Multiview.

## Overlay

Le impostazioni “Overlay Displays” di Blackmagic MultiView 16 e Blackmagic MultiView 4 hanno delle caselle di spunta per abilitare le varie funzioni.

Sono disponibili i seguenti overlay:

- **Borders:** I bordi separano i riquadri di visualizzazione come in una griglia.
- **Labels:** Le etichette mostrano il nome della fonte e si possono cambiare tramite Blackmagic MultiView Setup.
- **Audio meters:** Mostra o nasconde gli indicatori VU in tutti i riquadri. I primi due canali integrati in ogni segnale SDI sono visibili in ogni riquadro, per monitorare i segnali audio e video contemporaneamente.
- **SDI Tally:** Quando l'uscita SDI di programma dello switcher ATEM è connessa all'ingresso 16 di Blackmagic MultiView 16, o all'ingresso 4 nel caso di Blackmagic MultiView 4, è possibile abilitare la funzione tally, che illumina il bordo del riquadro della fonte in onda. Abilita questa funzione spuntando l'opzione “Turn on SDI Tally” alla voce “Overlay Displays”. Rimuovi la spunta per disabilitarla. Nell'utilità di setup puoi assegnare un numero di ingresso in modo che il tally illumini quello giusto.



Blackmagic MultiView 16 e Blackmagic MultiView 4 consentono di abilitare o disabilitare gli overlay relativi ai bordi, alle etichette, ai livelli audio e al segnale tally dal menù "Overlay Displays" della tab "Configure".

**SUGGERIMENTO** Assicurati di abbinare correttamente gli ingressi di Blackmagic MultiView ai corrispondenti ingressi dello switcher ATEM. In caso contrario, il segnale tally illuminerà il riquadro sbagliato.

## La tab "Configure"

### Assegnare un nome al tuo Blackmagic MultiView

La tab "Configure" è diversa nei vari modelli Blackmagic MultiView.

La tab "Configure" di Blackmagic MultiView 16 e Blackmagic MultiView 4 contiene le impostazioni "Details", "Overlay", e "Network Settings". Blackmagic MultiView 4 HD mostra il nome dell'unità e la versione del software, e non ha impostazioni.

Come assegnare un nome al tuo Blackmagic MultiView 16 o Blackmagic MultiView 4 per identificarlo con facilità in modalità remota:

- 1 Clicca sulla tab "Configure".
- 2 Nel menù "Details" clicca sul campo "Name" e digita il nome che desideri assegnare al tuo Blackmagic MultiView.
- 3 Clicca su "Save".

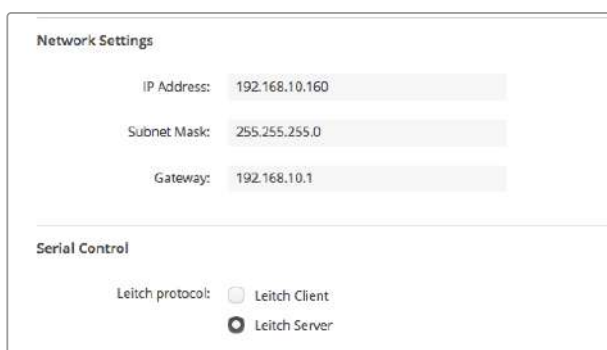


Assegna un nome al tuo Blackmagic MultiView 16 con Blackmagic MultiView Setup per identificarlo con facilità all'interno della rete.

## Impostazioni di rete e trasmissione seriale

Le impostazioni di rete e di trasmissione seriale si possono configurare usando Blackmagic MultiView Setup se Blackmagic MultiView 16 è connesso al computer tramite USB. Le stesse impostazioni sono configurabili con l'apposito menù sul display LCD del pannello di controllo. Con Blackmagic MultiView 4 si manifestano solo le impostazioni di rete.

Per cambiare un'impostazione clicca sul campo e digita i valori manualmente, oppure spunta la casella desiderata.



The screenshot shows two sections of the software interface. The top section, titled "Network Settings", contains three input fields: "IP Address" with the value "192.168.10.160", "Subnet Mask" with "255.255.255.0", and "Gateway" with "192.168.10.1". The bottom section, titled "Serial Control", has a label "Leitch protocol:" followed by two radio button options: "Leitch Client" (which is unselected) and "Leitch Server" (which is selected).

Per connettersi ad una rete potrebbe essere necessario cambiare le relative impostazioni di MultiView 16. Il menù "Serial Control" consente di selezionare le voci "Leitch Client" o "Leitch Server" in base ai requisiti del controllo remoto RS-422.

Per configurare la modalità di trasmissione seriale, connetti Blackmagic MultiView 16 al tuo computer tramite USB e segui queste istruzioni:

- 1 Lancia Blackmagic MultiView Setup e seleziona il tuo Blackmagic MultiView 16 cliccando sull'immagine del dispositivo o sull'icona delle impostazioni in basso.
- 2 Clicca sulla tab "Configure". Accanto alla voce "Leitch Protocol", seleziona "Leitch Client" se desideri utilizzare il tuo Blackmagic MultiView 16 come client di un pannello di controllo, oppure "Leitch Server" se preferisci controllarlo tramite un sistema di automazione o un sistema di controllo per router di terzi.
- 3 Clicca su "Save" per confermare l'impostazione.



This is a close-up of the "Serial Control" section from the previous screenshot. It shows the "Leitch protocol:" label and the two radio button options: "Leitch Client" and "Leitch Server". The "Leitch Server" option is selected, indicated by a filled circle next to it.

In presenza di un dispositivo di controllo seriale RS-422 seleziona "Leitch Client" o "Leitch Server".

## Salvare e richiamare le etichette preferite

Se utilizzi una serie di etichette frequentemente, puoi salvarle con facilità in una cartella e richiamarle in qualsiasi momento.

Per salvare le etichette clicca sull'icona dell'ingranaggio nella finestra di Blackmagic MultiView Setup e seleziona "Save Label Set" dal menù a discesa. Scegli la destinazione in cui salvare la cartella e clicca su "Save".

Per richiamare le etichette clicca sull'icona dell'ingranaggio e seleziona "Load Label Set" dal menù a discesa. Apri la cartella in cui le hai salvate e clicca su "Load".



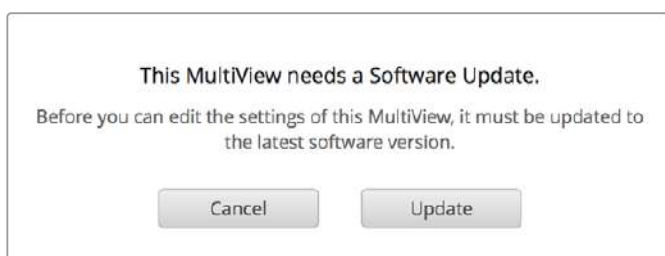
Utilizza Blackmagic MultiView Setup per salvare e richiamare le etichette.

## Aggiornare il software interno

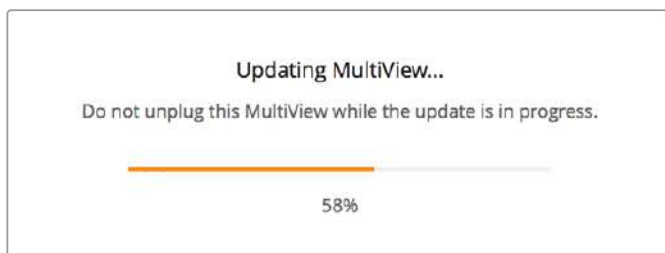
È importante aggiornare regolarmente il software interno di Blackmagic MultiView. Gli aggiornamenti danno accesso alle nuove funzionalità e offrono il supporto per la strumentazione e i formati di prossima generazione.

Come aggiornare il software interno di Blackmagic MultiView:

- 1 Connetti Blackmagic MultiView al tuo computer tramite USB o ethernet.
- 2 Lancia Blackmagic MultiView Setup e verifica quali dispositivi sono connessi alla rete.
- 3 Seleziona il tuo Blackmagic MultiView cliccando sull'immagine del dispositivo o sull'icona delle impostazioni sotto il nome del prodotto.
- 4 Blackmagic MultiView Setup mostrerà gli aggiornamenti disponibili.
- 5 Clicca su "Update" per avviare l'installazione. Non disconnettere Blackmagic MultiView durante l'aggiornamento.
- 6 Clicca su "Close" ad aggiornamento completato.



Clicca su "Update" per aggiornare il software interno.



Non disconnettere Blackmagic MultiView durante l'aggiornamento.



# Utilizzare Videohub Software Control

Se Blackmagic MultiView 16 è connesso a una rete puoi gestirlo da un Mac o Windows con Blackmagic Videohub Software Control, assegnando gli ingressi video ai riquadri desiderati sullo schermo multiview. La finestra "Sources" contiene pulsanti che rappresentano gli ingressi SDI di Blackmagic MultiView, mentre la finestra "Destinations" contiene pulsanti che rappresentano i riquadri. Videohub Software Control fa parte dell'applicazione di installazione Videohub, disponibile per il download sulla pagina Supporto del sito [www.blackmagicdesign.com/it/support](http://www.blackmagicdesign.com/it/support).

**NOTA** Utilizza Videohub Software Control per assegnare le fonti ai riquadri desiderati di Blackmagic MultiView 16, e cambiare altre impostazioni relative alla visualizzazione a schermo intero, alla fonte audio e alle uscite multiview. Grazie a Videohub Software Control è possibile selezionare la fonte che vuoi visualizzare a schermo intero e l'audio che vuoi monitorare sull'uscita multiview con Blackmagic MultiView 4.

## Selezionare il tuo MultiView 16

Lancia Videohub Software Control, clicca sull'icona dell'ingranaggio per accedere al menù impostazioni e seleziona "Select Videohub". Clicca sul nome tuo Blackmagic MultiView 16 nella lista dei dispositivi rilevati.

Se hai assegnato un nome agli ingressi, questi appariranno nella finestra di Videohub Software Control, altrimenti saranno elencati con i titoli "Input 1", "Input 2", "Input 3" ecc.



Utilizza Blackmagic Videohub Software Control per assegnare le fonti di Blackmagic MultiView 16 ai riquadri desiderati.

## Verificare ingressi e uscite

Per verificare quale fonte corrisponde a un determinato riquadro, clicca su uno dei pulsanti nella finestra "Destinations". Si illumineranno il pulsante cliccato e il pulsante della fonte corrispondente nella finestra "Sources". Questa funzione consente di tenere facilmente sotto controllo le fonti di entrata e i rispettivi riquadri.

## Assegnare le fonti ai riquadri di visualizzazione

Per assegnare una fonte video a un riquadro di visualizzazione, clicca su uno dei pulsanti nella finestra "Destinations", poi clicca sul pulsante dell'ingresso che desideri nella finestra "Sources".

## Solo Input

Assegna al pulsante "Solo Input" la fonte che desideri visualizzare a schermo intero. Per abilitare questa funzione, premi il pulsante SOLO sul pannello di controllo frontale di Blackmagic MultiView 16. Clicca sul pulsante "Solo Input" nella finestra "Destinations" di Videohub Software Control, poi premi il pulsante corrispondente alla fonte desiderata nella finestra "Sources".

## Audio Input

Sia Blackmagic MultiView 16 che Blackmagic MultiView 4 consentono di assegnare al pulsante "Audio input" la fonte audio SDI che desideri riprodurre. Clicca sul pulsante "Audio input" nella finestra "Destinations" di Videohub Software Control, poi premi il pulsante corrispondente alla fonte audio desiderato nella finestra "Sources" per instradarlo verso l'uscita multiview.



I pulsanti "Solo input" e "Audio input" di Videohub Software Control consentono rispettivamente di visualizzare una fonte a schermo intero e di selezionare la fonte audio che desideri riprodurre.

# Developer Information

## Blackmagic Videohub Ethernet Protocol v2.3

### Summary

Your Blackmagic MultiView is compatible with the Blackmagic Videohub Ethernet Protocol. It is text based and is accessed by connecting to your Blackmagic MultiView's IP address and TCP port 9990.

**NOTE** Controlling your MultiView via Ethernet is available on Blackmagic MultiView 16 and Blackmagic MultiView 4, however, most features are relevant to Blackmagic MultiView 16. On Blackmagic MultiView 4, you can change the solo source and audio source for the multi view output.

The multi view sends information in blocks which each have an identifying header in all caps, followed by a full colon. A block spans multiple lines and is terminated by a blank line. Each line in the protocol is terminated by a newline character.

Lines sent to the Blackmagic MultiView 16 can be terminated with line feed, carriage return or both.

Upon connection, the multi view sends a complete dump of the state of the device. After the initial status dump, status updates are sent every time the multi view status changes.

To be resilient to future protocol changes, clients should ignore blocks they do not recognize, up to the trailing blank line. Within existing blocks, clients should ignore lines they do not recognize.

### Protocol Preamble

The first block sent by the multi view is always the protocol preamble:

```
PROTOCOL PREAMBLE:↵
Version: 2.3↵
↵
```

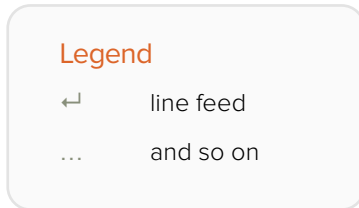
The version field indicates the protocol version. When the protocol is changed in a compatible way, the minor version number will be updated. If incompatible changes are made, the major version number will be updated.

### Device Information

The next block contains general information about the connected Blackmagic MultiView 16 device. If a device is connected, the multi view will report the attributes of the Blackmagic MultiView 16:

```
MULTIVIEW DEVICE:↵
Device present: true↵
Model name: Blackmagic MultiView 16↵
Video inputs: 16↵
Friendly name:
Unique ID:
Video processing units: 0↵
Video outputs: 16↵
Video monitoring outputs: 0↵
Serial Ports:
↵
```

This example is for the Blackmagic MultiView 16 which has 16 sources and 18 views including solo which is view 16 and audio which is view 17, referred to here as outputs.



Version 2.3 of the Blackmagic Videohub Ethernet Protocol was released with Videohub 4.9.1 software

### Initial Status Dump

The next two blocks enumerate the labels assigned to the input and output ports.

```
INPUT LABELS:↵
0 VTR 1↵
1 VTR 2↵
...
↵

OUTPUT LABELS:↵
0 Output feed 1↵
1 Output feed 2↵
...
↵
```

Note: Input and Output labels are always numbered starting at zero in the protocol which matches port one on the chassis.

The next three blocks describe the routing of the view ports.

```
VIDEO OUTPUT ROUTING:↵
0 5↵
1 3↵
...
↵
```

The next block describes the locking status of the views. Each port has a lock status of “O” for ports that are owned by the current client (i.e., locked from the same IP address), “L” for ports that are locked from a different client, or “U” for unlocked.

```
VIDEO OUTPUT LOCKS:↵
0 U↵
1 U↵
...
↵
```

The last block is the configuration block.

```
Layout: SOLO or 2x2 or 3x3 or 4x4
Output format: 50i or 50p or 60i or 60p
Solo enabled: True or False
Widescreen SD enable: True or False
Display border: True or False
Display labels: True or False
Display audio meters: True or False
Display SDI tally: True or False
```

## Status Updates

When any route, label, or lock is changed on the multi view by any client, the multi view resends the applicable status block, containing only the items that have changed.

If multiple items are changed, multiple items may be present in the update:

```
OUTPUT LABELS:↵
7 New output 8 label↵
10 New output 11 label↵
↵
```

## Requesting Changes

To update a label, lock or route, the client should send a block of the same form the multi view sends when its status changes. For example, to change the route of output port 8 to input port 3, the client should send the following block:

```
VIDEO OUTPUT ROUTING:↵
7 2↵
↵
```

The block must be terminated by a blank line. On receipt of a blank line, the multi view will either acknowledge the request by responding:

```
ACK↵
↵
```

or indicate that the request was not understood by responding:

```
NAK↵
↵
```

After a positive response, the client should expect to see a status update from the MultiView showing the status change. This is likely to be the same as the command that was sent, but if the request could not be performed, or other changes were made simultaneously by other clients, there may be more updates in the block, or more blocks. Simultaneous updates could cancel each other out, leading to a response that is different to that expected.

For MultiView 16 the client can change the solo source and the audio source to embed on the output.

Solo mode needs to be enabled either from the front panel or by sending the block:

```
CONFIGURATION:↵
Solo enabled: true↵
↵
```

Once enabled the following block will change the SOLO source to input 11:

```
Video Output Routing:↵
16 10↵
↵
```

This is not available on MultiView 4.

The following block will send embedded audio from input 1 to the MultiView 16 output:

```
Video Output Routing:↵
17 0↵
↵
```

The following block will send embedded audio from input 1 to the MultiView 4 output:

```
Video Output Routing:↵
5 0↵
↵
```

In the absence of simultaneous updates, the dialog expected for a simple label change is as follows:

```
OUTPUT LABELS:↵
6 new output label seven↵
↵
ACK↵
↵
OUTPUT LABELS:↵
6 new output label seven↵
↵
```

The asynchronous nature of the responses means that a client should never rely on the desired update actually occurring and must simply watch for status updates from the MultiView and use only these to update its local representation of the server state.

### Requesting a Status Dump

The client may request that the MultiView resend the complete state of any status block by sending the header of the block, followed by a blank line. In the following example, the client requests the MultiView resend the output labels:

```
OUTPUT LABELS:↵
↵
ACK↵
↵
OUTPUT LABELS:↵
0 output label 1↵
1 output label 2↵
2 output label 3↵
...
↵
```

### Checking the Connection

While the connection to the MultiView is established, a client may send a special no-operation command to check that the MultiView is still responding:

```
PING:↵
↵
```

If the MultiView is responding, it will respond with an ACK message as for any other recognized command.

## Blackmagic MultiView 16 RS-422 Protocol

### General

The RS-422 protocol can be used to control Blackmagic MultiView 16 as a slave device from third party routers and automation systems.

The “Leitch Server” mode implements the router (server) side of the Leitch Serial Pass Through Protocol as specified in section 4 of Leitch document SPR-MAN revision D. In “Leitch Client” mode, the Blackmagic MultiView 16 implements the controller (client) side of the Leitch terminal protocol. Set the desired leitch mode in the ‘configure’ settings in the Blackmagic MultiView Setup software.

This document describes the commands and parameters in the protocol that are relevant and supported by Blackmagic MultiView 16. Other commands and parameters specified in the Leitch protocol are accepted but ignored.

The RS-422 serial port is configured as 9600 N81:

9600 is the line speed, or baud rate, at 9600 bits/sec.

N represents no parity check, or 'none'.

8 is the data length.

1 is for stop bits.

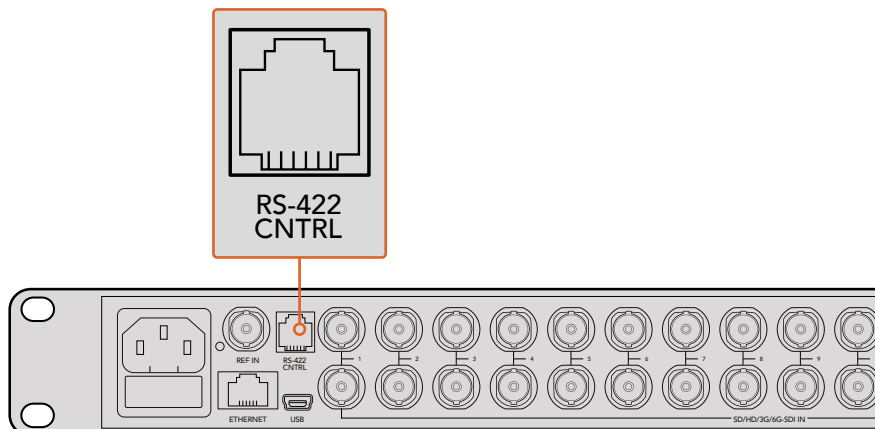
To summarize N81, data without a parity check begins with 1 start bit, includes 8 true data bits, and 1 stop bit. There are 10 bits in total.

The protocol is line oriented, with a maximum length of 250 characters per command. Each command from the client should be terminated with a carriage return (\r). Each response from the server will be terminated with a carriage return and line feed (\r\n).

Sources, destinations and levels are always specified in base-16, numbered from zero. Levels are always between 0 and 15 ("F") . Blackmagic MultiView 16 only has one valid level – level zero.

On connecting to the serial port, the client should send a carriage return. Blackmagic MultiView 16 will respond with a > character prompt, which is not followed by a carriage return or line feed. Receiving the prompt indicates that a connection has been established. The same prompt will be issued after each command received by the MultiView.

In the following documentation, commands in orange and values in blue must be typed literally, including any spaces. In the following example of an immediate command using destination port 7 and source port 3, @ X:0/destination,source would be entered as: @ X:0/6,2

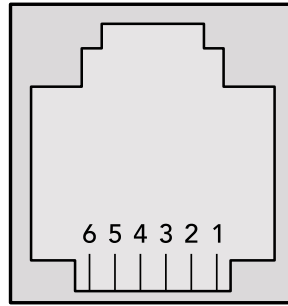


The RS-422 serial port lets you control Blackmagic MultiView 16 from third party routers and automation systems. The connector is an RJ11 connector, the same used in many landline telephone connections. By modifying an RS-422 to USB adapter cable terminated with an RJ11 connector, you can control Blackmagic MultiView 16 using external controllers via USB.



An RS-422 to USB adapter cable and RJ11 connector can be purchased from electronics stores such as Digi-Key.com. Refer to the pinout diagram below for help wiring the RJ11 connector to the adapter cable.

Pin No.	Function
Pin 1	TX +
Pin 2	TX -
Pin 3	GND
Pin 4	GND
Pin 5	RX -
Pin 6	RX +



Pinout diagram for the RJ11 connector

### Notifications

Once connected, if status reporting is enabled, the client will receive a notification message when a route changes on the MultiView. The notifications take one of two forms:

**S:0destination,source** Routing change

This message indicates that the specified source port is now routed to the specified destination.

**V:0destination,source** Preset routing notification

This message indicates that the current preset includes a route from the specified source to the specified destination.

### Global Commands

All pass through commands are preceded by an @ symbol and a space.

The following client commands are supported:

@ !     disable status reporting  
Status reporting is disabled by default.

@ ?     enable status reporting  
Status reporting is enabled.

@ Z:    reset routing table

Routing is reset so that the first source is routed to all destinations.

### Immediate Commands

@ X:0/destination,source   change route

@ X:0/destination,source/destination-2,source-2...   change multiple routes  
The specified source ports are routed to the specified destinations.  
Any routing changes will trigger S: notifications

@ X?0destination   request individual route status  
The source routed to the specified destination will be returned as an S: notification.

@ S?0   request all ports route status  
Each source and destination port pair will be returned as S: notifications



## Salvo Commands

- @ P:0/destination,source queue route change
- @ P:0/destination,source/destination-2,source-2... queue multiple route changes  
The specified routing changes are added to the current salvo for later execution.
- @ P?0destination request individual port status in salvo  
If a routing change for the specified destination port is queued, the route will be returned as a V: notification.
- @ V?0 request all ports status in salvo  
Each queued routing change in the salvo is reported as a V: notification.
- @ B:C clear salvo
- @ B:R clear salvo  
Any queued changes are discarded and the salvo is reset.
- @ B:E execute salvo  
Any queued changes are executed and each routing change will be returned as an S: notification.

# Assistenza

## Supporto tecnico

Il modo più veloce di ottenere assistenza è visitare la pagina Supporto sul sito Blackmagic Design, dove trovi il materiale di supporto più recente per il tuo modello MultiView.

### Pagina di supporto online

Per il materiale più recente, inclusi software e note di supporto, visita il sito Blackmagic Design alla pagina [www.blackmagicdesign.com/it/support](http://www.blackmagicdesign.com/it/support)

### Il Forum Blackmagic Design

La pagina Forum del sito Blackmagic Design è un'ottima risorsa per ottenere informazioni utili e condividere idee creative. Qui trovi le risposte alle domande più frequenti, oltre ai consigli degli utenti esistenti e dello staff Blackmagic Design. Visita il nostro Forum su <https://forum.blackmagicdesign.com>

### Contatta Blackmagic Design

Se il materiale di supporto non risponde alle tue domande, clicca su "Invia una email" oppure su "Trova un team di supporto" per contattare direttamente il team Blackmagic Design più vicino a te.

### Verificare la versione del software installata

Per scoprire quale versione del software Blackmagic MultiView è installata sul tuo computer, apri l'applicazione Blackmagic MultiView. Nel menù "Blackmagic MultiView" seleziona "About MultiView". Questa voce mostra la versione corrente del software.

### Come ottenere gli aggiornamenti di software più recenti

Dopo aver verificato la versione corrente del software Blackmagic MultiView 16, visita la pagina Supporto di Blackmagic Design su [www.blackmagicdesign.com/it/support](http://www.blackmagicdesign.com/it/support) per scaricare gli aggiornamenti più recenti. Ti consigliamo di non aggiornare il software se stai lavorando ad un progetto importante.

# Normative e sicurezza

## Indicazioni sulle normative

### Smaltimento di apparecchiature elettriche ed elettroniche nell'Unione Europea



Questo simbolo indica che il prodotto non deve essere scartato insieme agli altri rifiuti, ma consegnato a uno degli appositi centri di raccolta e riciclaggio. La raccolta e lo smaltimento differenziato corretto di questo tipo di apparecchiatura evita lo spreco di risorse e contribuisce alla sostenibilità ambientale e umana. Per tutte le informazioni sui centri di raccolta e riciclaggio, contatta gli uffici del tuo comune di residenza o il punto vendita presso cui hai acquistato il prodotto.



Questo dispositivo è stato testato, e dichiarato conforme ai limiti relativi ai dispositivi digitali di Classe A, ai sensi dell'articolo 15 del regolamento FCC. Tali limiti sono stati stabiliti con lo scopo di fornire protezione ragionevole da interferenze dannose in ambienti commerciali. Questo apparecchio genera, usa e può irradiare energia a radiofrequenza e, se non è installato o usato in conformità alle istruzioni, può causare interferenze dannose che compromettono le comunicazioni radio. Operare questo prodotto in ambienti residenziali può causare interferenze dannose, nella cui evenienza l'utente dovrà porvi rimedio a proprie spese.

Il funzionamento è soggetto alle due condizioni seguenti:

- 1 Questo dispositivo non deve causare interferenze dannose.
- 2 Questo dispositivo deve accettare eventuali interferenze ricevute, incluse le interferenze che possono causare un funzionamento indesiderato.

Consigliamo di connettere le interfacce HDMI usando cavi schermati HDMI di alta qualità.

## Informazioni di sicurezza

Questo dispositivo deve essere connesso a una presa di corrente con messa a terra.

Per ridurre il rischio di scosse elettriche, evitare di esporre il dispositivo a gocce o spruzzi.

Questo dispositivo è adatto all'uso nei luoghi tropicali con una temperatura ambiente non superiore ai 40°C.

Lasciare uno spazio adeguato intorno al prodotto per consentire sufficiente ventilazione.

Se il dispositivo è installato su rack, assicurarsi che i dispositivi adiacenti non ostacolino la ventilazione.

Le parti all'interno del dispositivo non sono riparabili dall'utente. Contattare il personale qualificato di un centro Blackmagic Design per le operazioni di manutenzione.



Usare il dispositivo a un'altitudine non superiore a 2000 m sopra il livello del mare.

# Garanzia

## Garanzia limitata

Blackmagic Design garantisce che Blackmagic MultiView è fornito privo di difetti nei materiali e nella manifattura per un periodo limitato di un anno a partire dalla data d'acquisto. Sono inclusi i connettori, i cavi, le ventole di raffreddamento, i fusibili, il display LCD e i pulsanti. Durante il periodo di garanzia Blackmagic Design riparerà o, a sua scelta, sostituirà tutti i componenti che risultino difettosi esonerando il/la Cliente da costi aggiuntivi, purché i componenti vengano restituiti.

Per ottenere l'assistenza coperta dalla presente garanzia, il Cliente deve notificare Blackmagic Design del difetto entro il periodo di garanzia. Il Cliente è responsabile del costo di imballaggio e di spedizione del prodotto al centro di assistenza indicato da Blackmagic Design. Il costo include spedizione, assicurazione, tasse, dogana, e altre spese pertinenti alla resa del prodotto a Blackmagic Design.

Questa garanzia perde di validità per danni causati da un utilizzo improprio, o da manutenzione e cura inadeguate del prodotto. Blackmagic Design non ha obbligo di assistenza e riparazione sotto garanzia per danni al prodotto risultanti da: a) previ tentativi di installazione, riparazione o manutenzione da personale non autorizzato, ovvero al di fuori del personale Blackmagic Design, b) previ usi impropri o tentativi di connessione ad attrezzatura incompatibile al prodotto, c) previo uso di parti o ricambi non originali Blackmagic Design, o d) previe modifiche o integrazione del prodotto ad altri prodotti, con il risultato di rendere la riparazione più difficoltosa o di allungare le tempistiche di eventuali ispezioni atte alla riparazione. La presente garanzia di Blackmagic Design sostituisce qualsiasi altra garanzia, esplicita o implicita. Blackmagic Design e i suoi fornitori escludono qualsiasi altra garanzia implicita di commerciabilità o di idoneità ad un uso specifico. L'intera responsabilità di Blackmagic Design e l'unico esclusivo ricorso dell'utente per qualsiasi danno arrecato di natura indiretta, specifica, accidentale o consequenziale, anche qualora Blackmagic Design fosse stata avvertita della possibilità di tali danni, è la riparazione o la sostituzione dei prodotti difettosi. Blackmagic Design non si assume alcuna responsabilità per qualsiasi uso illegale del dispositivo da parte del Cliente. Blackmagic Design non si assume alcuna responsabilità per danni derivanti dall'uso di questo prodotto. Il Cliente utilizza questo prodotto a proprio rischio.

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# Blackmagic MultiView





## Prezado Cliente,

Obrigado por adquirir um Blackmagic MultiView!

Esperamos que você compartilhe nosso sonho de tornar a indústria audiovisual verdadeiramente criativa ao possibilitar que todos tenham acesso a equipamentos de vídeo da mais alta qualidade. Usando o MultiView 16 com os televisores Ultra HD atualmente acessíveis, você obtém o equivalente a até 16 monitores broadcast independentes. O MultiView 16 fornece um monitoramento profissional de várias fontes a um custo acessível!

O Blackmagic MultiView 4 é perfeito para produções menores ou móveis, possibilitando que se monitore até quatro fontes em um display HD ou Ultra HD. Você pode até combinar vários MultiViews roteando a saída de um MultiView a outro para personalizar sua configuração de monitoramento!

Este manual de instruções contém todas as informações que você precisa para instalar o Blackmagic MultiView, mas é uma boa ideia solicitar a assistência de um profissional se você não souber o que é um endereço IP ou tiver dúvidas sobre redes de computadores. O Blackmagic MultiView pode ser controlado usando o software Videohub Control que é fácil de ser instalado, mas há algumas preferências técnicas que você precisa configurar depois da instalação.

Consulte nosso site em [www.blackmagicdesign.com/br](http://www.blackmagicdesign.com/br) e visite a página de suporte para fazer o download das atualizações mais recentes deste manual e do software. Finalmente, registre seu Blackmagic MultiView quando fizer o download das atualizações de software para que possamos mantê-lo(a) informado(a) sobre quando novas versões de software forem lançadas. Estamos constantemente trabalhando em novos recursos e melhorias, por isso gostaríamos de receber suas opiniões e comentários!

Esperamos que você aproveite seu Blackmagic MultiView por muitos anos e que se divirta muito visualizando suas entradas de vídeo em Ultra HD incrível!

**Grant Petty**

Diretor Executivo da Blackmagic Design

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# Instruções Preliminares

Para começar a utilizar o Blackmagic MultiView basta plugar o cabo de alimentação, conectar suas fontes de vídeo SDI e plugar seus monitores e TVs nas saídas HDMI ou SDI. Esta seção do manual apresenta tudo que você precisa saber para começar a utilizar o Blackmagic MultiView.

## Conexão de alimentação

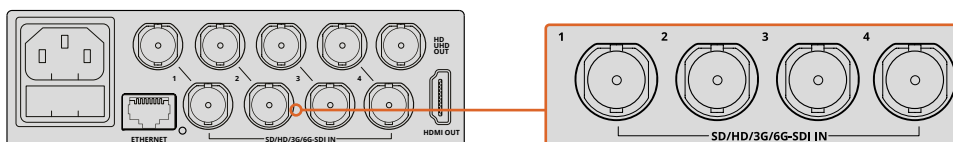
Para ligar o Blackmagic MultiView, basta conectar um cabo de alimentação IEC padrão à entrada de energia AC 110-240 V no painel traseiro.

**DICA** O Blackmagic MultiView 4 também pode receber Power over Ethernet Plus, o que significa que você precisa apenas conectá-lo a um switch de Ethernet capaz de fornecer PoE+. Caso possua alimentações AC e PoE+ conectadas ao seu MultiView 4, ele automaticamente alternará para a fonte de alimentação remanescente se uma delas desconectar ou falhar.

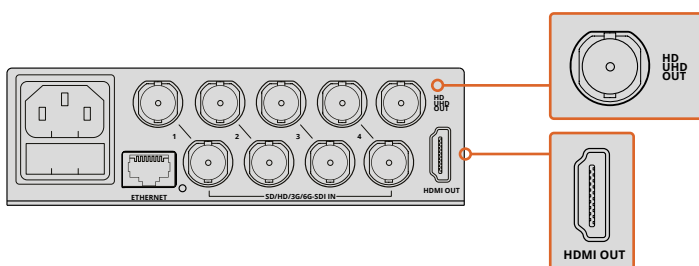
Para ligar o Blackmagic MultiView 4 HD, conecte o adaptador de energia incluso à entrada DC 6-36 V. Uma rosca de alojamento para o parafuso é fornecida para que você possa fixar a alimentação à unidade e evitar a desconexão acidental.

## Conexão de fontes SDI e monitores

Conecte as fontes SDI a qualquer entrada de vídeo SDI no painel traseiro. O formato do vídeo será detectado automaticamente e exibido na saída de multivisualização. Para visualizar a saída, basta conectar um monitor às saídas de multivisualização SDI ou HDMI.



Conecte as fontes de vídeo às entradas de vídeo SDI do Blackmagic MultiView.



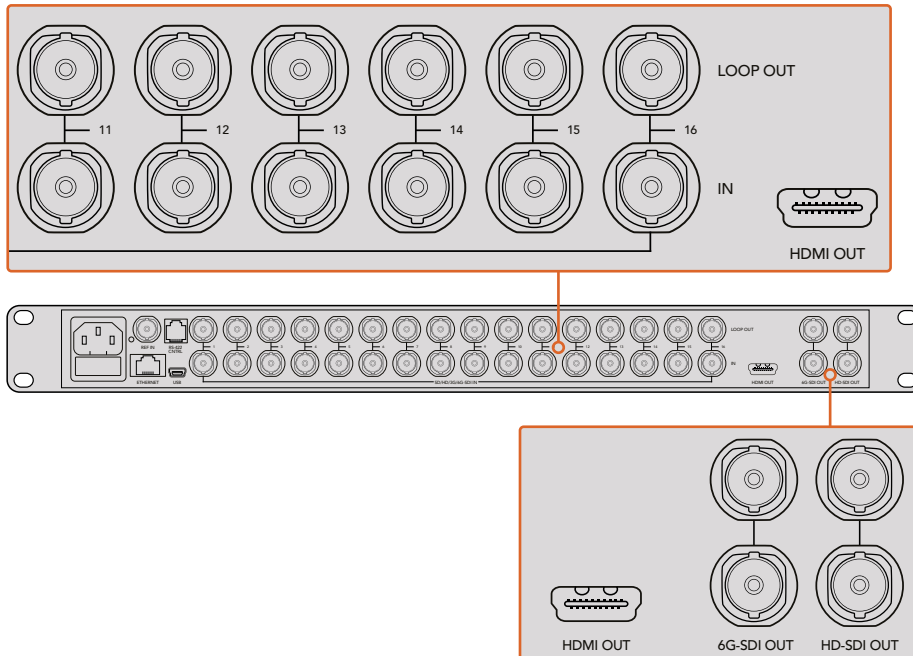
Conecte os monitores às saídas de multivisualização HDMI ou SDI do Blackmagic MultiView.

Ao conectar um monitor HDMI à saída HDMI, o Blackmagic MultiView detectará automaticamente se o monitor suporta Ultra HD ou HD e irá alterar a saída de multivisualização de acordo com o tipo de monitor.



**DICA** No Blackmagic MultiView 16, você pode transmitir a saída de multivisualização via as saídas HD-SDI dedicadas ou até Ultra HD via as saídas 6G-SDI e HDMI.

Os modelos Blackmagic MultiView 4 e MultiView 16 possuem saídas loop acima de cada entrada SDI para que a conexão de outros equipamentos de vídeo também seja possível.



**DICA** Todas as saídas SDI e HDMI do Blackmagic MultiView 16 podem ser usadas simultaneamente para monitoramento de multivisualização Ultra HD e HD. No Blackmagic MultiView 4, você pode selecionar entre configurações de saída de multivisualização Ultra HD ou HD usando as chaves integradas, um Teranex Mini Smart Panel opcional ou o utilitário de software MultiView Setup.

## Configuração do layout do seu MultiView

O layout de multivisualização pode ser alterado para atender às suas necessidades. Por exemplo, o Blackmagic MultiView 4 e o Blackmagic MultiView 4 HD podem ser configurados para 2x2 ou tela cheia no modo solo. O Blackmagic MultiView 16 pode ser configurado em uma combinação de visualizações como 2x2, 3x3, 4x4 ou solo.

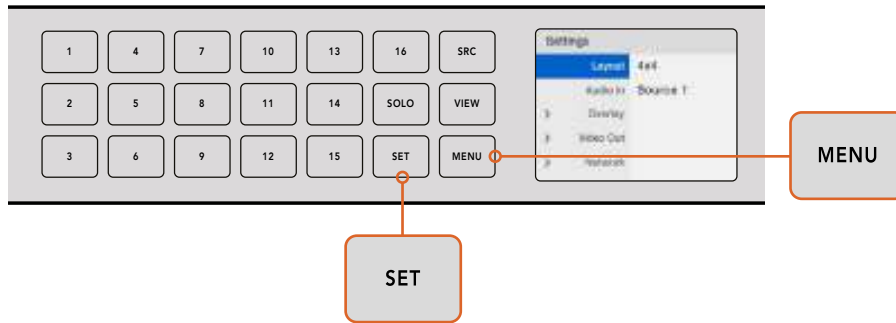
### Configurando o layout no Blackmagic MultiView 16

Para alterar o layout de visualização no Blackmagic MultiView 16, use os botões de controle, o botão giratório e a tela LCD no painel de controle integrado. Também é possível monitorar as imagens em tela cheia pressionando o botão "Solo". Em seguida, selecione a entrada escolhida pressionando um dos botões de fonte.

- 1 Pressione o botão "Menu" no painel de controle frontal para abrir a tela de configurações no LCD.
- 2 O layout de visualização é a primeira configuração no menu e ela estará sempre destacada quando você entrar no menu de configurações. Pressione o botão "Set" para editar essa configuração.

- 3 Selecione 4x4 nas configurações do layout girando o botão giratório no painel de controle frontal. A opção 4X4 permite que você veja 16 visualizações de fontes em uma única tela. Sempre que uma configuração for alterada, o botão “Set” e o botão “Menu” começam a piscar. Isso significa que uma configuração foi alterada e você pode confirmar a alteração pressionando o botão “Set” ou cancelar a alteração pressionando o botão “Menu”.
- 4 Pressione o botão “Set” para confirmar sua configuração.

Você também pode configurar o layout usando o software de instalação do Blackmagic MultiView 16 no painel de controle das configurações.

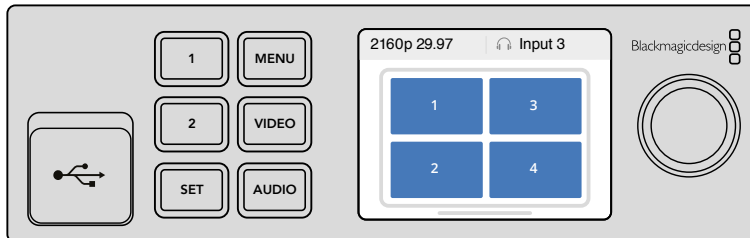


Para configurar o layout de visualização no Blackmagic MultiView 16 pressione “Menu”, selecione o layout desejado usando o botão giratório e depois pressione “Set”. 4X4 permite que você veja todas as 16 visualizações em um único monitor.

### Configurando o layout no Blackmagic MultiView 4

A visualização predefinida no Blackmagic MultiView 4 é o layout 2x2. Para alterar o layout de visualização no Blackmagic MultiView 4 para “Solo”, utilize o botão de controle marcado com “1” no Teranex Mini Smart Panel e pressione o botão “2” para retornar ao modo de exibição 2x2.

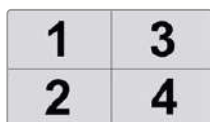
Você também pode configurar o layout usando as configurações sob “Configure” no software de instalação.



Pressione “1” para a visualização solo ou pressione “2” para a visualização 2x2.

### Configurando o layout no Blackmagic MultiView 4 HD

A primeira vez que você utiliza seu MultiView 4 HD, o padrão é um layout de 2x2 com as entradas 1 e 3 na fileira superior e as entradas 2 e 4 na parte inferior. Para alterar para o modo solo, habilite a chave 6 integrada como “Solo On”.



Layout 2x2 do MultiView 4 HD para quatro entradas SDI.

Consulte a seção ‘Alterar Configurações no Blackmagic MultiView 4 HD’ para mais informações.

## Conexão a uma rede

O Blackmagic MultiView suporta o protocolo ethernet Blackmagic Videohub e, se seu equipamento estiver instalado em um rack inacessível, você pode facilmente controlá-lo à distância usando um painel de controle Blackmagic Videohub, como o Blackmagic Smart Control e o Blackmagic Master Control. Uma vez conectado à rede através de ethernet, o Blackmagic MultiView será visível para outros computadores e painéis Videohub conectados à rede. Esses dispositivos podem então controlar o equipamento remotamente.

Como conectar o Blackmagic MultiView à rede:

- 1 Ligue seu Blackmagic MultiView.
- 2 Use um cabo ethernet padrão RJ45 para conectar o Blackmagic MultiView a uma rede ou computador.

Depois de conectar a uma rede, você deve se certificar de que o endereço IP do Blackmagic MultiView é diferente do endereço IP de outros equipamentos na rede. No Blackmagic MultiView 16 e quando usar o MultiView 4 com um painel Teranex Mini Smart Panel instalado, você pode alterar as configurações de rede através do menu LCD do painel de controle. Você também pode plugar o Blackmagic MultiView em um computador via USB e alterar as configurações de rede usando o Blackmagic MultiView Setup. Para mais informações sobre como alterar configurações de rede, consulte a seção 'Alterar Configurações de Rede' neste manual.

## Conexão de controle serial

Controladores de roteador de terceiros podem controlar o Blackmagic MultiView 16 usando a conexão serial RS-422. Para informações adicionais sobre controle serial, consulte a seção 'Alteração de configurações usando o Blackmagic MultiView Setup' neste manual.

## Instalação em rack

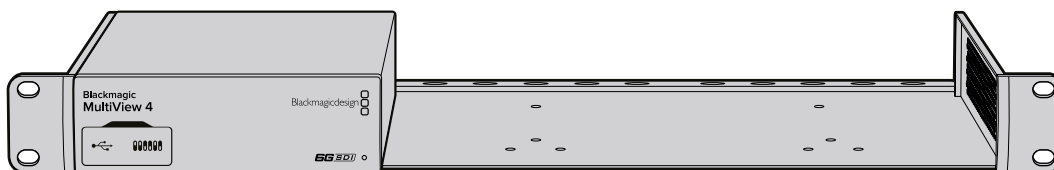
O Blackmagic MultiView 16 tem a altura de 1 unidade de rack, de modo que se encaixa perfeitamente em qualquer rack ou case de transporte profissional.

O Blackmagic MultiView 4 é muito menor e pode ser usado em produções móveis que não utilizem um rack profissional. No entanto, mesmo tendo sido projetado para ser pequeno e portátil, o MultiView 4 pode ser usado em um ambiente de rack. A prateleira Blackmagic Teranex Mini Rack Shelf foi concebida para permitir a montagem de até três aparelhos lado a lado no espaço de 1 unidade de rack para que seja possível conectá-los entre si facilmente e criar quantas visualizações de fontes forem necessárias.

Instalar o Blackmagic MultiView 4 em uma Teranex Mini Rack Shelf é tão fácil quanto remover os pés de borracha da unidade, se instalados. Basta aparafusar a unidade na base da prateleira usando os orifícios para montagem na parte inferior. A Teranex Mini Rack Shelf é fornecida com dois painéis de frente falsa originais que podem ser usados para cobrir lacunas caso você não instale MultiView 4 adicionais.

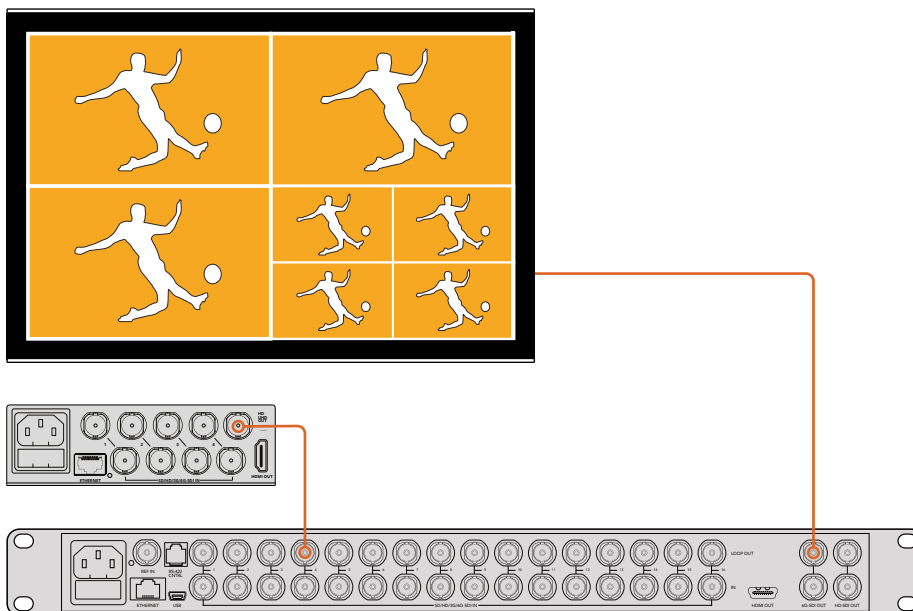
Para mais informações, consulte o site da Blackmagic Design em [www.blackmagicdesign.com/br](http://www.blackmagicdesign.com/br).

Quando instalados na prateleira do rack, todos os conectores são acessados pela parte traseira da unidade.



## Como usar múltiplos MultiViews

Você pode usar múltiplos Blackmagic MultiViews em combinação para criar configurações de monitoramento personalizadas. Isso é útil se você precisar adicionar mais fontes de visualização na sua saída de multivisualização. Basta conectar a saída de um dos MultiViews à entrada de outro para adicionar mais fontes para a saída de multivisualização. É altamente recomendável que a saída de multivisualização seja conectada a um monitor Ultra HD para o máximo de nitidez.



Ao rotear a saída de um MultiView para a entrada de outro, você pode adicionar mais visualizações ao layout de multivisualização.

Isso é tudo que você precisa saber para começar. Continue lendo as próximas seções do manual para encontrar mais informações sobre como obter o máximo do seu Blackmagic MultiView, tais como alterar configurações, nomear suas visualizações e muito mais.

## Alteração de configurações

Há diversas maneiras de alterar as configurações no Blackmagic MultiView.

- **Painel de controle frontal** – O Blackmagic MultiView 16 possui um painel de controle e uma tela LCD integrados que permitem alterar as configurações facilmente a partir do painel frontal do equipamento.
- **Chaves** – As minichaves no painel frontal do Blackmagic MultiView 4 permitem alterar as configurações instantaneamente usando a ponta de uma caneta. Acesse as chaves, abrindo a tampa protetora de borracha no painel frontal. Um esquema com as legendas das configurações de chave está impresso na base da unidade para que você possa ver facilmente as configurações de cada chave.
- **Teranex Mini Smart Panel** – Você pode substituir o painel frontal original do Blackmagic MultiView 4 pelo painel opcional Teranex Mini Smart Panel para usar os botões de controle, o botão giratório e a tela LCD. Ele funciona de modo muito semelhante ao painel de controle frontal do Blackmagic MultiView 16 e possibilita um controle local fácil e intuitivo.
- **Blackmagic MultiView Setup** – O software de instalação permite que você altere as configurações via USB ou Ethernet usando seu computador. Consulte a seção ‘Blackmagic Videohub Setup’ neste manual para mais informações.

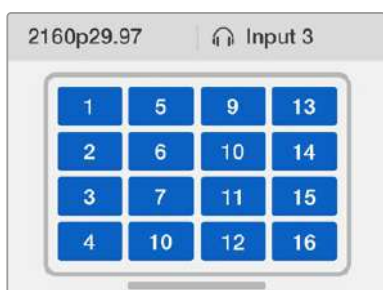
- **Software Videohub Control** – Quando o Blackmagic MultiView estiver conectado a uma rede, o software Videohub Control pode ser usado para rotear fontes, alterar visualizações e selecionar a fonte de entrada de áudio. Consulte a seção 'Como usar o software Videohub Control' para mais informações.

## Painel de controle frontal do Blackmagic MultiView 16

É muito fácil alterar as configurações no painel de controle frontal do Blackmagic MultiView 16.

Ao ligar o Blackmagic MultiView 16, você verá a tela de início no LCD. A tela inicial é a exibição padrão e mostra uma visão geral das configurações, como:

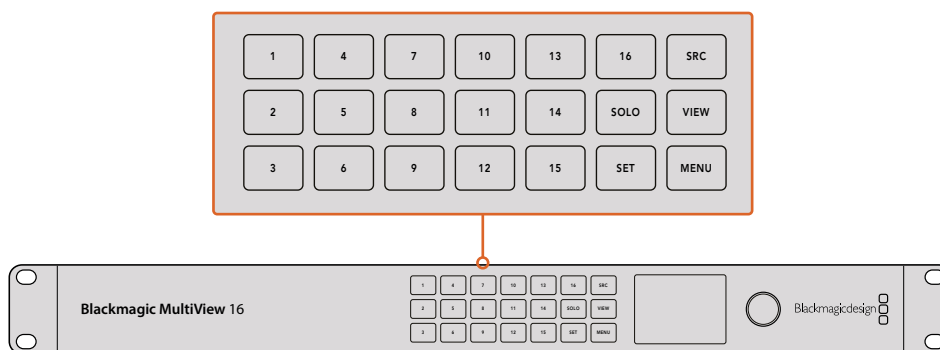
- **Taxa de quadros da saída de multivisualização** – Localizada no canto superior esquerdo, exibe a taxa de quadros selecionada para a sua saída de multivisualização Ultra HD SDI.
- **Entrada de áudio** – Essa informação está localizada ao lado da taxa de quadros da saída de multivisualização e exibe qual das entradas SDI está sendo usada para o áudio embutido no sinal da saída de multivisualização HDMI e SDI.
- **Layout de multivisualização** – Exibe o layout de multivisualização selecionado.



A tela inicial é o display padrão exibido na tela LCD do painel de controle do Blackmagic MultiView 16. Essa tela exibe o layout de multivisualização selecionado, a taxa de quadros da saída SDI de multivisualização e a entrada SDI usada para incorporar o áudio à saída de multivisualização.

### Botões do painel de controle

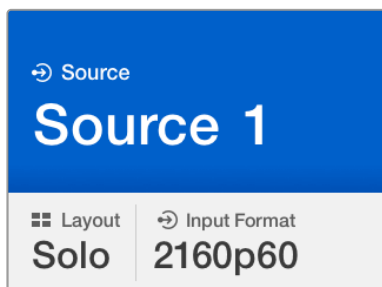
Os botões luminosos no painel de controle do Blackmagic MultiView 16 facilitam muito o ajuste de configurações e a configuração das fontes e das visualizações.



Os botões do painel de controle do Blackmagic MultiView 16 permitem alterar facilmente as configurações e alternar as visualizações a partir do painel frontal da unidade.

## Solo

Você pode monitorar uma visualização em tela cheia pressionando o botão “Solo”. Pressione em seguida qualquer botão de visualização no painel de controle para monitorar a visualização no modo tela cheia. Pressione “Solo” novamente para retornar ao layout de multivisualização.



O recurso solo permite que você monitore uma visualização no modo tela cheia.

## Menu

Pressione o botão “Menu” para acessar a tela de configurações. Altere uma configuração usando o botão giratório e, em seguida, pressione o botão “Menu” novamente para retornar à tela inicial.

## Set

Pressione o botão “Set” para selecionar a configuração a ser ajustada. Após alterar uma configuração, pressione o botão “Set” novamente para confirmar a alteração.

## Botões Source e View

Esses botões permitem selecionar a fonte de entrada que você deseja exibir em uma determinada visualização. Ao navegar pelos menus de configurações, os botões “Source” e “View” também podem ser usados para subir e descer pelas opções de configuração.

## Botão giratório

Utilize o botão giratório para navegar pelas configurações ou selecionar itens do menu na tela de configurações. Se não estiver satisfeito com uma seleção, você pode retornar para uma configuração selecionada anteriormente pressionando o botão giratório.

Gire o botão no sentido horário ou anti-horário para selecionar uma entre duas opções em um menu. As configurações também podem ser ativadas ou desativadas pressionando o botão giratório.

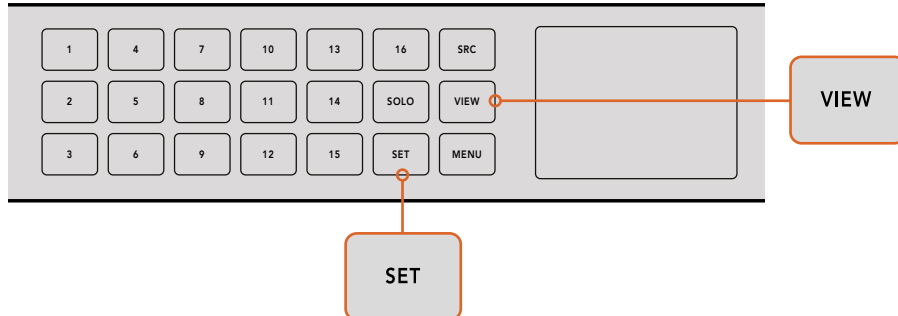
## Configuração de fontes e visualizações no Blackmagic MultiView 16

Um dos principais recursos do Blackmagic MultiView 16 é a capacidade de atribuir as fontes SDI conectadas a diferentes visualizações. Ajustando essas configurações, você pode facilmente alterar a disposição de suas visualizações. Por exemplo, você pode querer que a entrada SDI 5 apareça na visualização 1.

Como definir qual fonte aparece em uma visualização desejada:

- 1 Pressione o botão “View” no painel de controle frontal para abrir a tela de seleção de visualização. A seleção de visualização ficará destacada com um fundo de cor azul.
- 2 Pressione uma tecla numérica para selecionar a visualização desejada. Alternativamente, você pode usar o botão giratório para navegar pelas visualizações. Confirme seu ajuste ao pressionar o botão “Set”.
- 3 Pressione o botão “Src”. A seção de fontes na tela LCD ficará destacada.

- 4 Pressione uma tecla numérica no painel de controle para selecionar a entrada desejada. Alternativamente, você pode usar o botão giratório para navegar pelas entradas na tela LCD.
- 5 Pressione o botão “Set” para confirmar sua configuração.



Para atribuir uma fonte a uma visualização, pressione o botão “View” para acessar a configuração de visualização, faça a seleção e, em seguida, pressione o botão “Set” para confirmar a configuração.

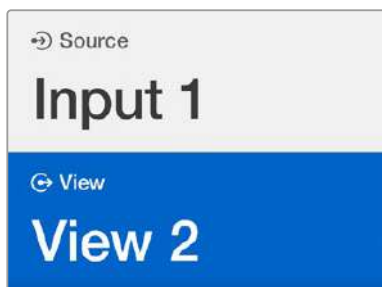
## Configuração do layout de visualização no Blackmagic MultiView 16

No Blackmagic MultiView 16, você pode selecionar o número de visualizações que aparecem na saída de multivisualização. Por exemplo, se você tem quatro entradas conectadas, você pode facilmente selecionar o layout de visualização 2x2 que exibe quatro visualizações em uma grade vertical x horizontal. Para um monitoramento ideal de suas entradas, selecione o layout de visualização que melhor acomode o número de entradas conectadas.

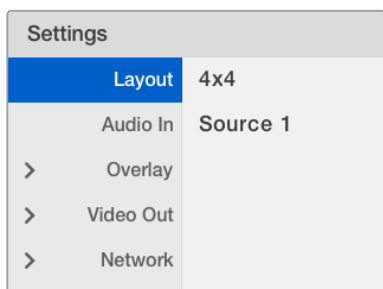
Há quatro layouts de visualização que podem ser escolhidos:

- **2x2** exibe 4 visualizações. Se houver um monitor Ultra HD conectado, cada fonte será exibida na resolução HD nativa.
- **3x3** exibe 9 visualizações.
- **4x4** exibe todas as 16 visualizações.

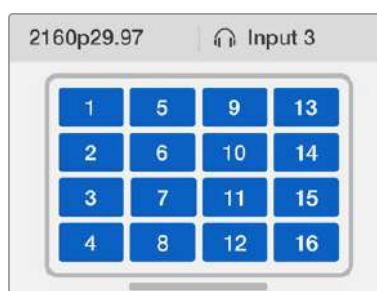
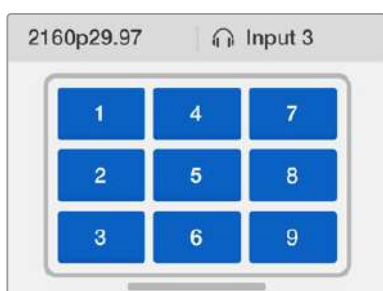
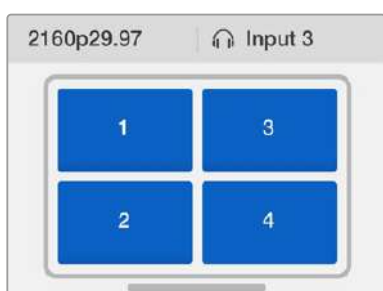
**DICA** Você também pode monitorar uma visualização em modo de tela cheia ao pressionar o botão “Solo” no painel de controle do Blackmagic MultiView 16 e selecionando um botão de visualização. No Blackmagic MultiView 4, pressione o botão solo marcado como “1” no Teranex Mini Smart Panel.



Selecione a visualização à qual você deseja atribuir uma fonte usando o botão giratório ou o botão “View”.



Coloque em destaque o item do menu que você deseja ajustar e pressione “Set” para abrir suas configurações.



Você pode escolher entre três layouts de visualização o que melhor se adapte ao número de entradas conectadas.

## Audio In

Esta configuração é usada para selecionar a entrada SDI da qual o áudio será captado e integrado às saídas de multivisualização.

## Overlay

Este submenu permite a alteração da aparência da multivisualização ativando ou desativando os recursos de sobreposição.

Esses recursos são:

- **Borders** – Permite separar cada visualização em um padrão de grade.
- **Labels** – Exibe ou oculta os rótulos das visualizações. Os rótulos podem ser alterados usando o Blackmagic MultiView Setup.
- **Audio Meters** – Exibe ou oculta os medidores VU de áudio em todas as visualizações. Os dois primeiros canais integrados em cada sinal SDI são exibidos em cada visualização permitindo monitorar os níveis de áudio junto da imagem.
- **SDI Tally** – Quando o Blackmagic MultiView 16 tiver uma saída SDI programada de um switcher ATEM conectada à entrada 16, bordas de sinalização em torno de uma visualização podem ser observadas se sua fonte estiver no ar. Esse recurso pode ser ativado ou desativado usando a configuração de sobreposição “SDI Tally”.



Para que a sinalização funcione adequadamente, é necessário que as entradas do Blackmagic MultiView 16 estejam conectadas de modo que correspondam aos números das entradas no switcher ATEM, senão a sinalização pode ser exibida na visualização errada.

## Video Out

As configurações “Video Out” permitem controlar as opções de saída no Blackmagic MultiView 16.

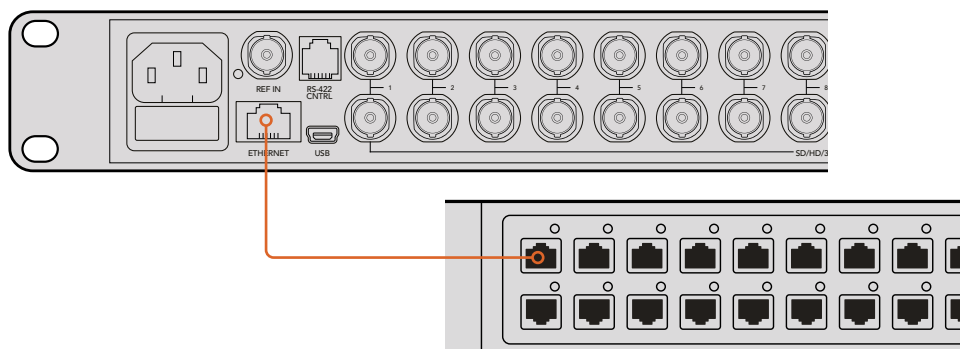
- **Video Format** – Use essa configuração para alterar a taxa de quadros da saída de multivisualização Ultra HD para 2160p29.97 ou 2160p25. A taxa de quadros da saída de multivisualização HD estará em conformidade com a saída Ultra HD. Pressione o botão giratório para cancelar a alteração da configuração ou retornar para o menu anterior.
- **HD Output** – Selecione entrelaçado ou progressivo para a saída de multivisualização HD. Se 2160p29.97 é o formato de vídeo selecionado, a saída HD pode ser 1080p29.97 ou 1080i59.74. Quando 2160p25 é selecionado, a saída HD pode ser 1080p25 ou 1080i50.

## Network

As configurações “Network” permitem definir os endereços de IP, sub-rede e gateway para o Blackmagic MultiView 16 quando conectado a uma rede.

Como definir o endereço IP do Blackmagic MultiView 16:

- 1 Pressione o botão “Menu” no painel de controle frontal e use o botão giratório para destacar a opção “Networking” no menu LCD.
- 2 Pressione o botão “Set” para entrar na tela das configurações de rede.
- 3 Gire o potenciômetro para selecionar a aba “IP Address”.
- 4 Pressione o botão “Set” para destacar o primeiro campo do endereço IP. Use o botão giratório para alterar os valores.
- 5 Pressione “Set” para confirmar o primeiro campo e depois repita a etapa acima para os próximos três campos. Caso necessite atribuir o endereço de sub-rede e gateway, isto pode ser feito usando o mesmo método.
- 6 Pressione o botão “Menu” duas vezes para retornar à tela inicial.



A conexão do Blackmagic MultiView 16 a uma rede ethernet permite controlar a unidade de um outro local.

Network Settings	
IP Address	192.168.10.160
Subnet	255.255.255.0
Gateway	192.168.10.1

Utilize o controle giratório ou os botões de visualização no painel de controle do Blackmagic MultiView 16 para atribuir os valores da configuração da sua rede.

## Teranex Mini Smart Panel

O painel Teranex Mini Smart é montado na frente do Blackmagic MultiView 4 e substitui o painel básico original. Ele permite o acesso rápido às configurações usando os botões, o botão giratório e a tela LCD integrada.

### Instalação do Teranex Mini Smart Panel

A instalação do Smart Panel opcional é fácil e, como os painéis podem ser substituídos em funcionamento, você nem precisa desligar o Blackmagic MultiView 4 para instalá-lo.

- 1 Remova os dois parafusos M3 de cada lado do painel frontal básico do Blackmagic MultiView 4 usando uma chave de fenda Pozidriv 2 e puxe o painel cuidadosamente para fora da frente da unidade.
- 2 Na parte interna do painel básico, você notará um pequeno tubo de plástico transparente preso ao canto inferior. Este tubo direciona a luz do LED dentro da unidade para iluminar o indicador de status no painel básico. Este tubo deve permanecer fixado ao painel frontal básico.

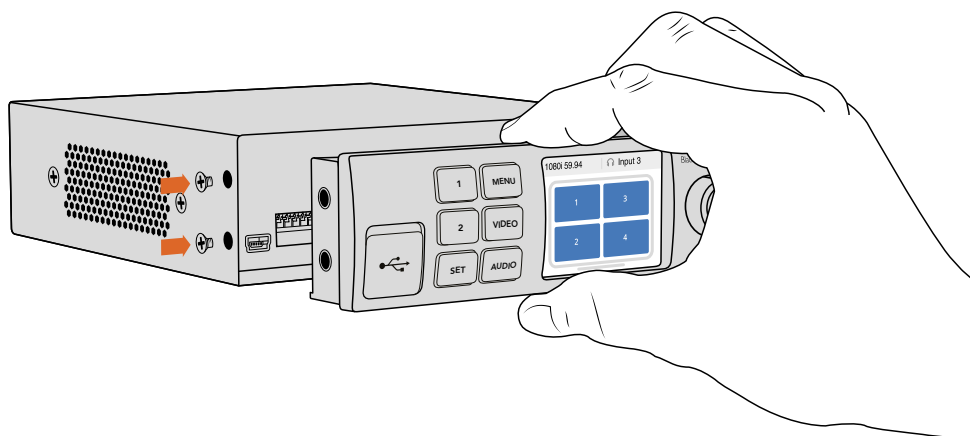
**DICA** Ao reencaixar o painel frontal básico, certifique-se de que o tubo de luz do indicador de alimentação esteja alinhado com o compartimento na frente da unidade.

- 3 Alinhe o conector na parte traseira do Smart Panel ao conector adjacente na frente do Blackmagic MultiView 4 e empurre suavemente o Smart Panel em direção ao equipamento até que os conectores estejam firmemente encaixados. O Smart Panel deve fazer uma conexão firme e se encaixar perfeitamente na frente do seu Blackmagic MultiView 4.
- 4 Reinsira os parafusos M3 do painel original.

Se o Blackmagic MultiView 4 estiver instalado em uma mini prateleira Teranex Mini Rack Shelf, será necessário remover o equipamento da prateleira do rack para acessar os parafusos do painel frontal.

Consulte a seção 'Instalação em rack' para obter mais informações.

A porta USB do Blackmagic MultiView 4 ainda está acessível com o Smart Panel montado. Para acessar a porta, basta abrir a tampa protetora de borracha da USB. Com o Smart Panel instalado, as pequenas chaves do painel frontal ficam encobertas e não são mais usadas. Isso ocorre porque agora todas as configurações podem ser alteradas através dos menus da tela LCD.



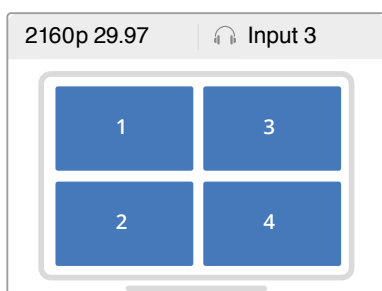
Ao instalar o Teranex Mini Smart Panel no Blackmagic MultiView 4, segurar o painel com os dedos e o polegar alinhado com o conector traseiro do painel, ajudará a guiá-lo na montagem.

**DICA** O painel básico original é muito resistente, então, caso queira montar seu Blackmagic MultiView 4 na parte traseira de um sistema de rack ou em áreas onde há muitos cabos ou muita atividade, você pode sempre reinstalar o painel básico original.

## Recursos do Teranex Mini Smart Panel

Os recursos do Smart Panel são semelhantes aos recursos do painel de controle do MultiView 16. A tela inicial é o primeiro recurso que você verá no LCD e é a tela padrão. Ela exibe uma visão geral prática de configurações, como:

- **Taxa de quadros da saída de multivisualização** – Localizada no canto superior esquerdo, exibe a taxa de quadros selecionada para a sua saída de multivisualização Ultra HD SDI.
- **Entrada de áudio** – Essa informação está localizada ao lado da taxa de quadros da saída de multivisualização e exibe qual das entradas SDI está sendo usada para o áudio embutido no sinal da saída de multivisualização HDMI e SDI.
- **Layout de multivisualização** – Exibe o layout de multivisualização 2x2.

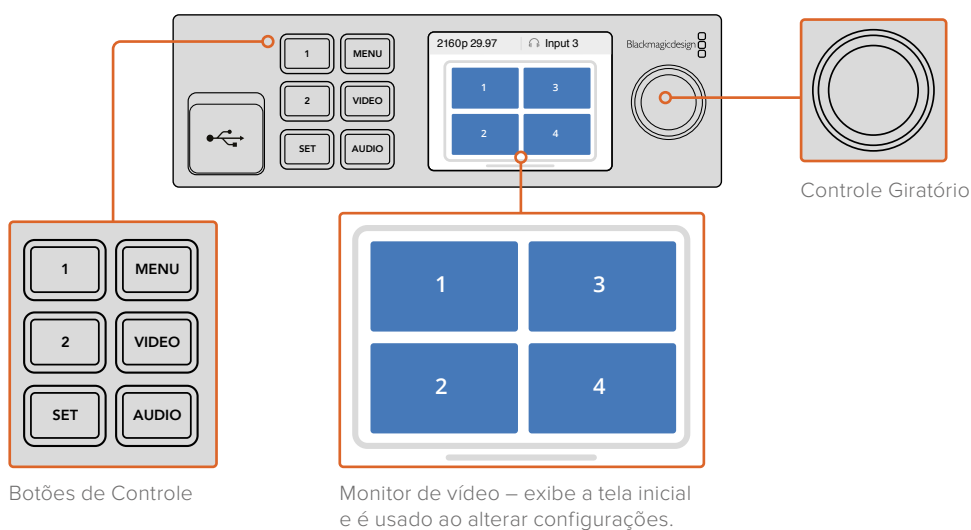


A tela inicial é a exibição padrão no LCD do Teranex Mini Smart Panel.

## Teclas de controle e botão giratório

O Teranex Mini Smart Panel tem um conjunto de botões e um controle giratório que são usados para navegar no menu de configurações do Blackmagic MultiView 4.

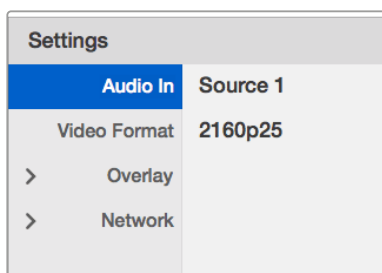
- **Botões 1 e 2** – Pressione estes botões para aumentar ou diminuir os valores numéricos da configuração ou para navegar para cima ou para baixo nos menus de configurações.
- **Botão Set** – Após alterar uma configuração usando os botões 1 e 2, pressione o botão “Set” para confirmar a configuração.
- **Botão Menu** – Pressione esse botão para entrar no menu de configurações do Blackmagic MultiView 4. O botão “Menu” também pode ser pressionado para retornar aos itens anteriores até a tela inicial.
- **Botões Vídeo e Audio** – Esses botões são específicos para os conversores Teranex Mini e não são usados no Blackmagic MultiView 4.
- **Botão giratório** – Gire esse botão no sentido horário ou anti-horário para navegar pelas configurações do menu e ajustar valores das configurações numéricas.



## Alteração de configurações usando o Teranex Mini Smart Panel

A alteração de configurações usando o Teranex Mini Smart Panel é mais conveniente e você pode confirmar as alterações imediatamente visualizando no LCD.

Para acessar o menu de configurações do Blackmagic MultiView 4, pressione o botão “Menu” no painel Teranex Mini Smart. As configurações que se seguem podem ser acessadas.



Destaque o item do menu que você deseja ajustar e pressione “Set” para selecioná-lo. Role pelas configurações usando o botão giratório.

### Audio In

Esta configuração é usada para selecionar a entrada SDI da qual o áudio será captado e integrado às saídas de multivisualização.

## Video Format

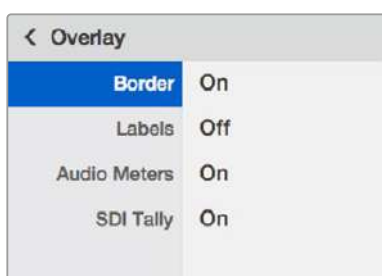
O Blackmagic MultiView 4 pode ser configurado para saída Ultra HD ou HD em 29,97 ou 25 quadros por segundo. Use essa configuração para navegar pelas opções disponíveis de taxa de quadros e resolução.

## Overlay

Esse submenu permite a alteração da aparência da multivisualização ativando ou desativando os recursos de sobreposições.

Esses recursos são:

- **Borders** – Permite separar cada visualização em um padrão de grade.
- **Labels** – Exibe ou oculta os rótulos das visualizações. Os rótulos podem ser alterados usando o Blackmagic MultiView Setup.
- **Audio Meters** – Exibe ou oculta os medidores VU de áudio em todas as visualizações. Os dois primeiros canais integrados em cada sinal SDI são exibidos em cada visualização permitindo monitorar os níveis de áudio junto da imagem.

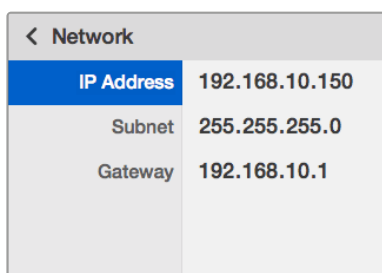


## Network

As configurações “Network” permitem definir os endereços de IP, sub-rede e gateway para o Blackmagic MultiView 4 quando conectado a uma rede.

Como definir o endereço IP do Blackmagic MultiView 4:

- 1 Pressione o botão “Menu” no painel de controle frontal e use o botão giratório para destacar a opção “Network” no menu LCD.
- 2 Pressione o botão “Set” para entrar na tela das configurações de rede.
- 3 Gire o potenciômetro para selecionar a aba “IP Address”.
- 4 Pressione o botão “Set” para destacar o primeiro campo do endereço IP. Use o botão giratório para alterar os valores.
- 5 Pressione “Set” para confirmar o primeiro campo e depois repita a etapa acima para os próximos três campos. Caso necessite atribuir o endereço de sub-rede e gateway, isto pode ser feito usando o mesmo método.
- 6 Pressione o botão “Menu” duas vezes para retornar à tela inicial.

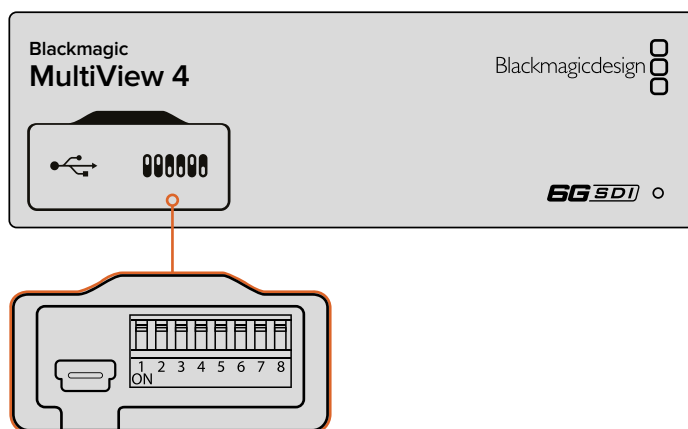


Use o botão giratório ou os botões ‘1’ e ‘2’ no painel Teranex Mini Smart para atribuir valores nas configurações de rede do Blackmagic MultiView 4.

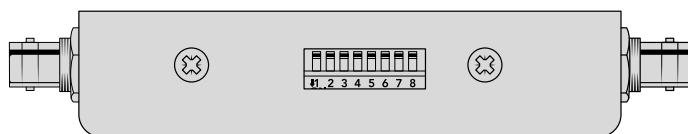
## Alteração de configurações usando chaves

No painel frontal do Blackmagic MultiView 4 há uma cobertura de borracha que protege um conjunto de pequenos switches usados para alterar as configurações. No Blackmagic MultiView 4, as chaves estão no painel frontal, atrás de uma capa antipoeira emborrachada.

No Blackmagic MultiView 4 HD, as chaves estão na lateral da unidade.



Altere configurações ajustando as chaves com a ponta de uma caneta.



No Blackmagic MultiView 4 HD, as chaves estão localizadas na parte de trás do painel.

## Chaves integradas

Você encontrará um diagrama impresso com as configurações de chave na base da unidade. Assegure-se de que as configurações de chave correspondam às legendas observando os números das chaves de 8 até 1, da esquerda para a direita.

**DICA** Apesar das configurações de chave estarem impressas na base da unidade, novos recursos em atualizações posteriores podem adicionar novas configurações, então vale a pena conferir a versão mais recente deste manual para as informações mais atuais. Você pode baixar a última versão na Central de Suporte Técnico da Blackmagic Design em [www.blackmagicdesign.com/br/support](http://www.blackmagicdesign.com/br/support).



### Chave 1 e 2

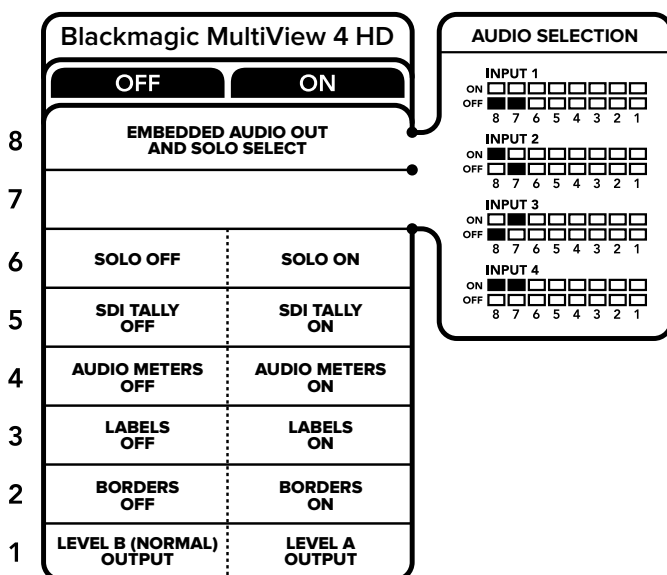
As chaves 1 e 2 são representadas como os bits 1 e 0 respectivamente. Isso significa que, ao definir várias combinações “On/Off” das chaves 1 e 2, você pode selecionar o formato de saída do sinal SDI do MultiView 4.

**Tabela de seleção de saída SDI**

Saída SDI	Chave 2	Chave 1	Diagrama
2160p29.97	ON	ON	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> OFF <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 8 7 6 5 4 3 2 1
2160p25	ON	OFF	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> OFF <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 8 7 6 5 4 3 2 1
1080i59.94	OFF	ON	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> OFF <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 8 7 6 5 4 3 2 1
1080i50	OFF	OFF	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> OFF <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 8 7 6 5 4 3 2 1

**OBSERVAÇÃO** Ao utilizar o Teranex Mini Smart Panel opcional, as configurações de chave serão desativadas pelas configurações do Smart Panel. O Blackmagic MultiView 4 manterá suas configurações mais recentes tanto se tiverem sido aplicadas via chave, Smart Panel ou Blackmagic MultiView Setup. Caso retorne ao controle de chaves depois de remover o Smart Panel ou atualizar as configurações do seu Blackmagic MultiView 4 via software, talvez seja necessário alterar chaves individuais para que os novos ajustes funcionem.

## Configurações de chaves do Blackmagic MultiView 4 HD



A legenda de chaves na base Blackmagic MultiView 4 HD oferece todas as informações necessárias para alterar configurações.



As chaves do Blackmagic MultiView 4 HD possibilitam as seguintes configurações:

### Chave 8 e 7 – Integração de áudio SDI e seleção Solo

As chaves 7 e 8 são agrupadas para fornecer quatro combinações “On/Off”. Com quatro combinações diferentes, o áudio de qualquer uma das quatro entradas SDI pode ser integrado à saída de multivisualização. No modo solo, o áudio segue o vídeo, portanto é possível usar essas chaves para selecionar a fonte de visualização e a fonte de áudio.

#### Tabela de Seleção de Áudio

Fonte de Áudio	Chave 8	Chave 7	Diagrama da Chave
Entrada 1	OFF	OFF	
Entrada 2	ON	OFF	
Entrada 3	OFF	ON	
Entrada 4	ON	ON	

### Chave 6 - Visualização Solo

Posicione a chave 6 em “On” para a exibição da visualização solo. Isto permite monitorar uma única visualização em tela cheia. Posicione a chave 6 em “Off” para monitorar com o layout de multivisualização 2x2.

O áudio integrado na visualização solo corresponde à sua fonte de visualização automaticamente. Utilize a chave 7 e 8 para selecionar uma combinação do áudio e fonte de visualização para o layout solo. No layout de multivisualização 2x2, a chave 7 e 8 seleciona a entrada de áudio.

### Chave 5 – Sinalização

Posicione a chave 5 em “On” para exibir bordas de sinalização na multivisualização. Posicione em “Off” para ocultar as bordas de sinalização.

Todos os dados adicionais, incluindo controle de câmera SDI ATEM, código de tempo e áudiodescrição fechada são transmitidos inalterados no modo solo.

**DICA** O número da entrada para cada visualização pode ser configurado usando o software Blackmagic MultiView Setup. Certifique-se de que o número de visualização corresponda ao conjunto de números de entradas no seu switcher para que a sinalização seja exibida corretamente. Consulte a seção ‘Configuração de sinalização’ para mais informações.

### Chave 4 – Medidores de áudio

Posicione a chave 4 em “On” para exibir os medidores de áudio nas visualizações. Posicione em “Off” para ocultar os medidores de áudio.

### Chave 3 – Visualização de rótulos

Posicione a chave 3 em “On” para exibir rótulos em cada visualização. Posicione em “Off” para desabilitar os rótulos.

### Chave 2 – Bordas

Posicione a chave 2 em “On” para exibir as bordas de visualização, e em “Off” para desabilitá-las.

### Chave 1 - 3G-SDI Nível A e Nível B

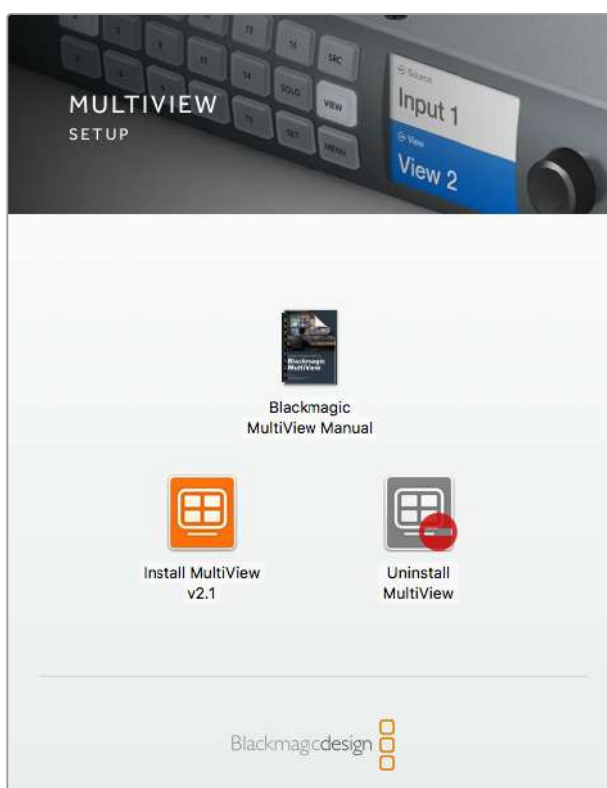
Posicione a chave 1 em “Off” para selecionar a saída 3G Nível B, ou “On” para selecionar a saída 3G Nível A. Isto permite alterar o nível da saída 3G-SDI para compatibilidade com outros equipamentos SDI.

# Como usar o software Blackmagic MultiView Setup

O software Blackmagic MultiView Setup permite configurar o Blackmagic MultiView facilmente a partir de qualquer computador Mac ou Windows, assim como atualizar o software interno do equipamento. Esse utilitário de software é intuitivo e fácil de usar e, se o Blackmagic MultiView 4 estiver conectado a uma rede, as configurações podem também ser alteradas via Ethernet, não sendo necessário usar USB.

## Instalação do Blackmagic MultiView Setup

O Blackmagic MultiView Setup é executado nas versões de 64 bits do Windows e nas versões mais recentes de Sierra e High Sierra do macOS.



Para instalar o Blackmagic MultiView Setup, clique duas vezes no instalador e siga as instruções.

### Instalação no Windows

- 1 Clique duas vezes no arquivo instalador na mídia fornecida ou na pasta de downloads, se você baixou o software do site da Blackmagic Design.
- 2 Siga as orientações e aceite os termos do contrato de licença e o Windows irá instalar o software automaticamente.

Clique o botão "Iniciar" do Windows e, em seguida, em Todos os Programas>Blackmagic Design>Multiview. A pasta MultiView contém o utilitário Blackmagic MultiView Setup.

## Instalação no Mac OS X

- 1 Clique duas vezes no arquivo instalador na mídia fornecida ou na pasta de downloads, se você baixou o software do site da Blackmagic Design.
- 2 Siga as orientações e o Mac OS X irá instalar o software automaticamente.

Será criada uma pasta denominada “Blackmagic MultiView” contendo o utilitário Blackmagic MultiView Setup.

## Página inicial do Blackmagic MultiView Setup

Assim que abrir o Blackmagic MultiView Setup você verá a página inicial. Se houver múltiplos Blackmagic MultiViews conectados à rede, eles podem ser selecionados clicando nas setas à esquerda e à direita da página inicial.

Para acessar o seu Blackmagic MultiView, clique no ícone de configurações sob a imagem do produto ou clique na própria imagem.



O Blackmagic MultiView Setup permite alterar as configurações do Blackmagic MultiView a partir de um computador, quando conectado a uma rede por ethernet ou USB.

## Alteração de configurações usando o Blackmagic MultiView Setup

Clique no ícone de configurações para abrir a definição de configurações do Blackmagic MultiView. Na janela de configurações há três abas denominadas “Sources”, “Views” e “Configure”. No Blackmagic MultiView 4 e MultiView 4 HD, o recurso “Views” não é necessário, pois as visualizações não são ajustáveis via o software Videohub Control. O Blackmagic MultiView 4 HD também possui um menu “Tally” para alterações das configurações de sinalização.

**DICA** Certifique-se de que suas configurações de rede na unidade correspondam às do seu computador para que as fontes sejam exibidas.



Use o Blackmagic MultiView Setup para personalizar os rótulos de entrada de modo que se possa identificar rapidamente cada fonte no layout de multivisualização.

- **Sources** – Permite personalizar os rótulos de entradas. Altera o modo como suas fontes são rotuladas no display de multivisualização.
- **Views** – Essa aba só é relevante quando o Blackmagic MultiView 16 é controlado pelo software Videohub Control. Ao alterar os nomes das visualizações, torna-se mais fácil identificá-las no painel de destino no software Videohub Control.
- **Video Output** – Permite personalizar o formato de vídeo e a proporção de tela SD no Blackmagic MultiView 4 HD.
- **Configure** – A aba “Configure” permite o controle de configurações como personalização do nome do dispositivo, saída de vídeo e configurações de sobreposições, além de configurações de rede e ajustes do controle serial.

## Fontes

### Personalização de rótulos de entradas

A rotulação das fontes permite identificar rapidamente cada fonte no layout de multivisualização. Você pode salvar e carregar conjuntos de rótulos. Se você usa regularmente o Blackmagic MultiView para diferentes aplicações, você pode carregar os rótulos rapidamente sem ter que inseri-los novamente.

Os rótulos são visíveis no software Videohub Control e também nos painéis de controle Videohub conectados a uma rede.

Como personalizar os rótulos de entradas:

- 1 Clique na aba “Sources”.
- 2 Nas configurações de “Input Labels”, clique na caixa de texto do nome da fonte de entrada que você deseja alterar e insira o novo nome de rótulo.
- 3 Clique em “Save” para confirmar a configuração.

## Visualizações

### Personalização de rótulos de visualização

No Blackmagic MultiView 16, os rótulos das visualizações podem ser alterados para tornar mais fácil sua identificação como destinos quando o MultiView 16 estiver sendo controlado pelo software Videohub Control.

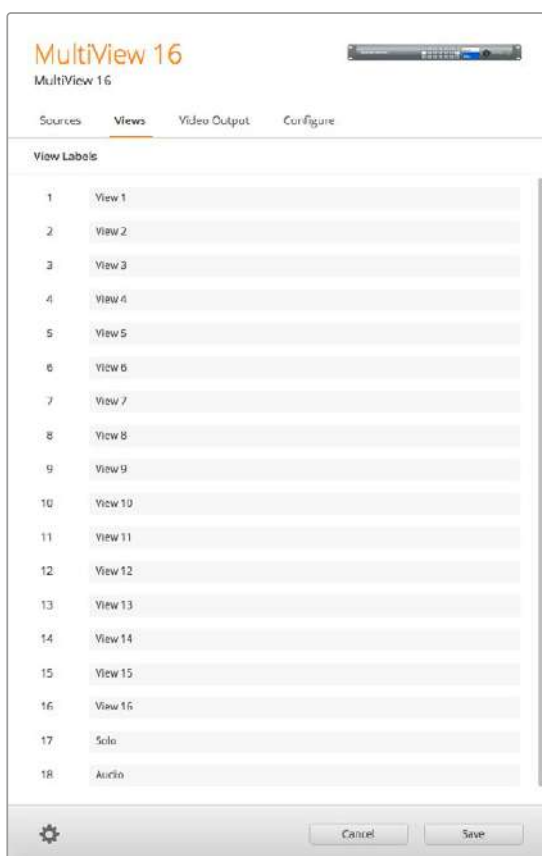
Como personalizar os rótulos de visualização:

- 1 Clique na aba “Views”.
- 2 Nas configurações de “Output labels”, clique na caixa de texto do nome da visualização que você deseja alterar e insira o novo nome de rótulo.
- 3 Clique em “Save” para confirmar a configuração.

Quando os rótulos de visualização estão em seu estado padrão, você pode observar que a saída 17 é rotulada como “Solo” e a saída 18 é rotulada como “Audio”.

A saída 17 permite alterar o rótulo do software para a configuração “Solo” que é controlada usando o painel frontal do Blackmagic MultiView 16. Isso é vantajoso quando o MultiView 16 estiver sendo controlado por meio do software Blackmagic Videohub Control. Personalizar o rótulo da saída “Solo” no Blackmagic MultiView Setup permite que você altere o modo como ela aparece no Blackmagic Videohub Control.

A saída 18 está relacionada à configuração “Audio In” no menu LCD do Blackmagic MultiView 16, que direciona o áudio que você deseja incorporar à saída de multivisualização. Assim como para o rótulo “Solo”, você pode alterar o rótulo “View” de modo a personalizar sua aparência quando estiver controlando o Blackmagic MultiView 16 usando o Blackmagic Videohub Control.



A inclusão dos rótulos de saída “Solo” e “Audio” permite que você altere seus nomes para personalizar o modo como aparecerão quando estiver controlando o Blackmagic MultiView 16 usando o Blackmagic Videohub Control

## Saída de vídeo

### Formato de vídeo e saída HD

As configurações do formato de vídeo são ligeiramente diferentes entre os modelos Blackmagic MultiView.

O Blackmagic MultiView 16 permite transmitir vídeos HD e Ultra HD simultaneamente. Você também pode escolher a taxa de quadros do vídeo de saída. Por exemplo, se você deseja transmitir um sinal em conformidade com o formato comumente usado nos EUA, selecione 2160p29.97 e a saída HD corresponderá automaticamente à taxa de quadros.

Nesse exemplo, se 2160p29.97 é selecionado como formato de vídeo, a saída HD pode ser configurada para 1080p29.97 ou 1080i59.94 para atender aos requisitos do vídeo.



Os botões de opção na aba “Video Output” do MultiView 16 são usados para definir o layout da visualização, o formato de vídeo Ultra HD, a saída HD e a proporção de tela SD.

No Blackmagic MultiView 4, você pode escolher se deseja transmitir vídeo Ultra HD ou HD via saída SDI, além de definir a taxa de quadros. Essas configurações estão disponíveis no menu suspenso “Video Format”.



A aba “Video Output” no Blackmagic MultiView 4 contém uma lista suspensa de opções de formato de vídeo que cobrem tanto a resolução quanto a taxa de quadros.

No Blackmagic MultiView 4 HD, você pode usar o menu “Video Format” para selecionar a taxa de quadro HD e se quer a saída de vídeo como varredura entrelaçada ou progressiva. Você também pode definir a proporção de tela SD para o seu MultiView 4 HD como 16:9 ou 4:3.



A aba “Video Output” do Blackmagic MultiView 4 HD, permite que você configure a resolução e taxa de quadro HD, além de defini-la como varredura entrelaçada ou progressiva.

## Alteração do layout de multivisualização

De modo semelhante à configuração de layout no menu LCD do painel de controle do Blackmagic MultiView 16, a alteração do layout também pode ser feita usando o software Blackmagic MultiView Setup. Escolha a configuração de layout que você deseja usar clicando no ícone do layout desejado nas configurações “Details”.



Defina o layout da tela para o MultiView 16 na aba “Video Output”.

## Configuração de sinalização

No Blackmagic MultiView 4 HD, você pode configurar a sinalização para substituir, sinalizar do modo como é enviada pela câmera Blackmagic ou pela numeração de câmera quando é enviada do switcher ATEM à entrada 4 do MultiView 4 HD.



As opções de sinalização do menu “Tally” no utilitário MultiView Setup.

Ao selecionar a sinalização para corresponder à entrada do switcher, você pode inserir o número de câmera de 1 a 99 nos campos de texto das entradas 1 a 4.

## Sinalização de substituição

Os sinais da sinalização são geralmente fornecidos pela alimentação de retorno do programa conectada à última entrada SDI no seu MultiView. Contudo, pode haver momentos em que você quer todas as suas câmeras conectadas em todas as visualizações.

Se estiver usando câmeras Blackmagic Design conectadas a um switcher ATEM ou a qualquer outro switcher SDI com um sistema de sinalização de terceiros, você pode habilitar a sinalização de substituição. Basta selecionar “Tally Override” e agora o seu MultiView 4 HD irá procurar pela sinalização em cada sinal de entrada SDI. Isto significa que todas as visualizações receberão sua sinalização independentemente, em vez da sinalização coletiva via a alimentação de retorno do programa na última entrada da unidade.

**DICA** O modo de substituição da sinalização funciona com as câmeras Blackmagic URSA Mini, URSA Mini 4K, URSA Mini Pro e URSA Broadcast que estiverem conectadas a um switcher ATEM ou a um Blackmagic Camera Fiber Converter. Para informações sobre como conectar um switcher de terceiros ou sinalização de terceiros, consulte o manual Blackmagic 3G-SDI for Arduino.

## Proporção de Tela SD

Se um vídeo SD 4:3 estiver conectado ao seu Blackmagic MultiView, marque a caixa de seleção “Set to 4:3”. Isso garante que o vídeo 4:3 seja exibido usando a proporção de tela correta.

Se um vídeo SD 16:9 estiver conectado, marque a caixa de seleção “Set to 16:9” para que a imagem seja exibida corretamente na visualização.

Quando você insere uma fonte SD no Blackmagic MultiView 4 HD, é possível alternar entre a saída de 16:9 e 4:3 usando o utilitário de instalação. No menu “Video Output”, selecione uma opção para a proporção de tela SD.



Opções de proporção de tela SD no menu “Video Output” do utilitário de instalação MultiView.

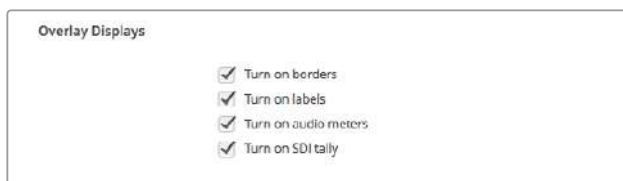
## Exibição de superposições

O Blackmagic MultiView 16 e o Blackmagic MultiView 4 possuem caixas de seleção nas configurações “Overlay” para ativar recursos de sobreposição no Blackmagic MultiView.

Esses recursos são:

- **Borders:** Permite separar cada visualização em um padrão de grade.
- **Labels:** Exibe ou oculta os rótulos das visualizações. Os rótulos podem ser alterados usando o Blackmagic MultiView Setup.
- **Audio Meters:** Habilita e desabilita os medidores de áudio para todas as visualizações. Os dois primeiros canais integrados em cada sinal SDI são exibidos em cada visualização permitindo monitorar os níveis de áudio junto da imagem.
- **SDI Tally:** Quando o Blackmagic MultiView possui uma saída SDI do programa de um switcher ATEM conectada à entrada 16 no Blackmagic MultiView 16 ou à entrada 4 no Blackmagic MultiView 4, você pode ver as bordas de sinalização em torno de uma visualização quando sua fonte é colocada no ar. O recurso de sinalização pode ser ativado marcando a caixa de seleção “Turn on SDI tally” nas configurações “Overlay”. Desmarque para desativar o recurso. Um número de entrada pode ser atribuído no utilitário de software da instalação para que a sinalização seja exibida corretamente.





No Blackmagic MultiView 16 e Blackmagic MultiView 4, As configurações de sobreposição na aba “Configure” permitem ativar e desativar os recursos de sobreposição como bordas, rótulos de visualização, medidores de áudio ou mesmo bordas de sinalização SDI.

**DICA** Para que a sinalização funcione adequadamente, certifique-se de conectar todas as entradas do seu Blackmagic MultiView para que correspondam aos números de entrada no seu switcher ATEM ou a sinalização poderá ser exibida na visualização errada.

## Aba de configuração

### Nomear o Blackmagic MultiView

A aba “Configure” é diferente entre os modelos Blackmagic MultiView.

A aba de configuração para um Blackmagic MultiView 16 ou Blackmagic MultiView 4 possui conjuntos de configurações para “Details”, “Overlay” e “Network”. No Blackmagic MultiView 4 HD, ela exibe o rótulo e o número da versão de software e não contém configurações.

Como nomear o Blackmagic MultiView 16 ou Blackmagic MultiView 4 e reconhecê-lo facilmente quando estiver sendo usado remotamente:

- 1 Clique na aba “Configure”.
- 2 Nas configurações “Details” clique na caixa de texto “Name” e insira um novo rótulo para o Blackmagic MultiView.
- 3 Clique em “Salvar”.



Use o Blackmagic MultiView Setup para nomear o Blackmagic MultiView 16 para que os usuários da rede possam identificá-lo facilmente.

## Configurações de rede e controle serial

As configurações de rede e controle serial podem ser definidas usando o Blackmagic MultiView Setup quando o Blackmagic MultiView 16 estiver conectado a um computador através de USB. Essas configurações também podem ser alteradas usando o menu do LCD do painel de controle frontal. Na configuração do Blackmagic MultiView 4, apenas as configurações de rede estão disponíveis. Ao configurar o MultiView 4, apenas as configurações de rede estarão disponíveis.

Para alterar as configurações de rede, basta clicar na caixa de texto e inserir os valores com seu teclado ou marcar a caixa desejada.



The screenshot shows a configuration menu with two sections. The top section, titled "Network Setting", contains three input fields: "IP Address" with the value "192.168.10.160", "Subnet Mask" with "255.255.255.0", and "Gateway" with "192.168.10.1". The bottom section, titled "Serial Control", has a label "Leitch protocol:" followed by two radio button options: "Leitch Client" (which is unselected) and "Leitch Server" (which is selected).

Ao conectar a uma rede, pode ser necessário alterar as configurações de rede do MultiView 16. As configurações "Serial Control" permitem definir o MultiView 16 para configuração de cliente Leitch ou servidor baseada nos requisitos de configuração do controle remoto RS-422.

Para configurar o controle serial, conecte o Blackmagic MultiView 16 ao computador através de USB e siga os passos abaixo:

- 1 Inicie o Blackmagic MultiView Setup e selecione o Blackmagic MultiView 16 clicando na imagem do produto ou no ícone de configurações abaixo da imagem.
- 2 Clique na aba "Configure" e defina a chave "Leitch Protocol" para "Leitch Client", se o Blackmagic MultiView 16 deve atuar como cliente de um painel de controle conectado, ou para "Leitch Server", se o equipamento for controlado a partir de um sistema de automação ou um sistema de controle de roteamento de terceiros.
- 3 Clique em "Save" para confirmar a configuração.



This screenshot is identical to the one above, showing the "Serial Control" section. The "Leitch Server" radio button is now selected, while "Leitch Client" is unselected.

Selecione "Client" ou "Server" quando usar o controle serial RS-422.

## Salvar e carregar conjuntos de rótulos

Se você usa regularmente um conjunto de rótulos para um projeto recorrente, eles podem ser salvos facilmente em um arquivo e carregados posteriormente.

Para salvar os rótulos, clique no ícone de configurações do Blackmagic MultiView Setup para abrir as configurações "Label Set" e selecione "Save Label Set". Escolha o local para armazenar o arquivo e clique em "Save".

Para carregar os rótulos, clique no ícone de configurações para abrir as configurações "Label Set" e selecione "Load Label Set". Navegue até os rótulos salvos e clique em "Load".



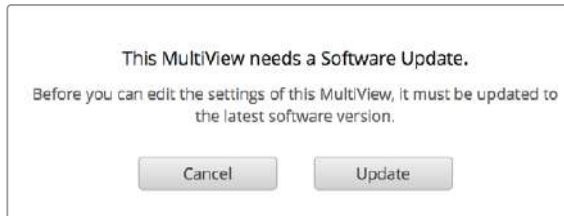
Use o Blackmagic MultiView Setup para salvar e carregar rótulos.

## Atualização do software interno

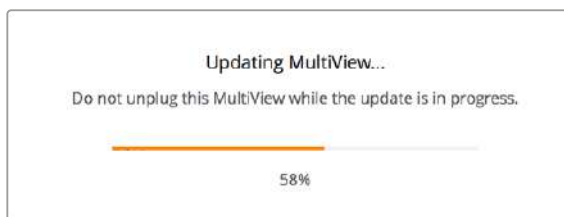
Ocasionalmente, o software interno do Blackmagic MultiView precisa ser atualizado. A atualização do software interno pode fornecer novos recursos, compatibilidade com novos hardwares e suporte a novos formatos.

Como atualizar o software interno do Blackmagic MultiView:

- 1 Conecte o Blackmagic MultiView ao computador através de USB ou Ethernet.
- 2 Abra o Blackmagic MultiView Setup e todos os Blackmagic MultiView que estejam conectados à rede serão exibidos automaticamente.
- 3 Selecione o seu Blackmagic MultiView clicando na imagem do produto ou no ícone de configurações abaixo do nome do produto.
- 4 O Blackmagic MultiView Setup informará se uma atualização é necessária.
- 5 Se uma atualização for necessária, clique no botão “Update” e permita a instalação do software. Certifique-se de que o Blackmagic MultiView não será desconectado enquanto a atualização estiver em progresso.
- 6 Clique no botão “Close” quando a atualização terminar.



Clique no botão “Update” para instalar um novo software interno.



Certifique-se de que o Blackmagic MultiView não será desconectado enquanto a atualização estiver em progresso.

# Como usar o software Videohub Control

Quando o Blackmagic MultiView 16 estiver conectado a uma rede, o Blackmagic Videohub Control pode ser usado em um computador Mac ou Windows para rotear as entradas de vídeo do Blackmagic MultiView 16 para diferentes visualizações no layout de multivisualização. As entradas SDI do Blackmagic MultiView aparecem como botões no painel de fontes, enquanto as visualizações aparecem como botões no painel de destino. A aplicação Videohub Control é parte do instalador do software Videohub que pode ser baixado na Central de Suporte Técnico da Blackmagic Design em [www.blackmagicdesign.com/br/support](http://www.blackmagicdesign.com/br/support).

**OBSERVAÇÃO** Você pode usar o software Videohub Control para rotear fontes para visualizações no Blackmagic MultiView 16, além de outras configurações, como a seleção da visualização no modo solo ou da fonte de áudio para a saída de multivisualização. No Blackmagic MultiView 4, é possível usar o Videohub Control para alterar a fonte solo e a fonte de áudio para a saída de multivisualização.

## Selecionar um MultiView 16

Após abrir o software Videohub Control, clique no ícone de configurações para abrir o menu pop-up “Settings” e escolha “Select Videohub”. Selecione o nome do Blackmagic MultiView 16 na lista de dispositivos conectados.

Se as entradas estiverem rotuladas, os nomes atribuídos aparecerão no software Videohub Control. Se não estiverem rotuladas, aparecerão como “Input 1”, “Input 2”, “Input 3”, etc.



O Blackmagic Videohub Control pode ser usado para rotear as fontes do Blackmagic MultiView 16 para diferentes visualizações.

## Visualizar entradas

Para ver qual das entradas de vídeo do Blackmagic MultiView 16 está roteada para uma visualização em particular, clique no botão “View” da visualização no painel de destino. O botão de destino ou da visualização ficará destacado. No painel de fontes, o botão da entrada de vídeo roteada também estará destacado, deixando claro qual entrada ou fonte está roteada para a visualização.

## Rotear entradas para visualizações

Para rotear uma entrada de vídeo para uma visualização, clique em um botão “View” de visualização no painel de destino e, em seguida, clique em um botão “Input” de entrada no painel de fontes para rotear essa entrada para a visualização imediatamente.

## Entrada solo

Use o botão “Solo Input” para determinar qual a entrada que será exibida em tela cheia quando o botão “Solo” for acionado no painel frontal do Blackmagic MultiView 16. Basta clicar no botão “Solo Input” no painel de destino do Videohub Control e, em seguida, clicar em um botão de entrada no painel de fontes.

## Entrada de áudio

No Blackmagic MultiView 16 e no Blackmagic MultiView 4, o botão “Audio Input” do software Videohub Control pode ser usado para determinar qual o áudio de entrada SDI será roteado para a saída de multivisualização. Basta clicar no botão “Audio Input” no painel de controle do Videohub Control e, em seguida, clicar em um botão “Input” no painel de fontes para direcionar imediatamente o áudio dessa entrada para a saída de multivisualização.



Os botões “Solo Input” e “Audio Input” permitem alterar as configurações de entrada solo e de áudio usando o Videohub Control.

# Informações para Desenvolvedores (em inglês)

## Blackmagic Videohub Ethernet Protocol v2.3

### Summary

Your Blackmagic MultiView is compatible with the Blackmagic Videohub Ethernet Protocol. It is text based and is accessed by connecting to your Blackmagic MultiView's IP address and TCP port 9990.

**NOTE** Controlling your MultiView via Ethernet is available on Blackmagic MultiView 16 and Blackmagic MultiView 4, however, most features are relevant to Blackmagic MultiView 16. On Blackmagic MultiView 4, you can change the solo source and audio source for the multi view output.

The multi view sends information in blocks which each have an identifying header in all caps, followed by a full colon. A block spans multiple lines and is terminated by a blank line. Each line in the protocol is terminated by a newline character.

Lines sent to the Blackmagic MultiView 16 can be terminated with line feed, carriage return or both.

Upon connection, the multi view sends a complete dump of the state of the device. After the initial status dump, status updates are sent every time the multi view status changes.

To be resilient to future protocol changes, clients should ignore blocks they do not recognize, up to the trailing blank line. Within existing blocks, clients should ignore lines they do not recognize.

### Protocol Preamble

The first block sent by the multi view is always the protocol preamble:

```
PROTOCOL PREAMBLE:↵  
Version: 2.3↵  
↵
```

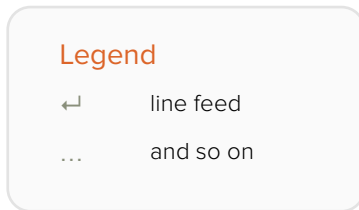
The version field indicates the protocol version. When the protocol is changed in a compatible way, the minor version number will be updated. If incompatible changes are made, the major version number will be updated.

### Device Information

The next block contains general information about the connected Blackmagic MultiView 16 device. If a device is connected, the multi view will report the attributes of the Blackmagic MultiView 16:

```
MULTIVIEW DEVICE:↵  
Device present: true↵  
Model name: Blackmagic MultiView 16↵  
Video inputs: 16↵  
Friendly name:  
Unique ID:  
Video processing units: 0↵  
Video outputs: 16↵  
Video monitoring outputs: 0↵  
Serial Ports:  
↵
```

This example is for the Blackmagic MultiView 16 which has 16 sources and 18 views including solo which is view 16 and audio which is view 17, referred to here as outputs.



Version 2.3 of the Blackmagic Videohub Ethernet Protocol was released with Videohub 4.9.1 software

### Initial Status Dump

The next two blocks enumerate the labels assigned to the input and output ports.

```
INPUT LABELS:↵
0 VTR 1↵
1 VTR 2↵
...
↵

OUTPUT LABELS:↵
0 Output feed 1↵
1 Output feed 2↵
...
↵
```

Note: Input and Output labels are always numbered starting at zero in the protocol which matches port one on the chassis.

The next three blocks describe the routing of the view ports.

```
VIDEO OUTPUT ROUTING:↵
0 5↵
1 3↵
...
↵
```

The next block describes the locking status of the views. Each port has a lock status of “O” for ports that are owned by the current client (i.e., locked from the same IP address), “L” for ports that are locked from a different client, or “U” for unlocked.

```
VIDEO OUTPUT LOCKS:↵
0 U↵
1 U↵
...
↵
```

The last block is the configuration block.

```
Layout: SOLO or 2x2 or 3x3 or 4x4
Output format: 50i or 50p or 60i or 60p
Solo enabled: True or False
Widescreen SD enable: True or False
Display border: True or False
Display labels: True or False
Display audio meters: True or False
Display SDI tally: True or False
```

## Status Updates

When any route, label, or lock is changed on the multi view by any client, the multi view resends the applicable status block, containing only the items that have changed.

If multiple items are changed, multiple items may be present in the update:

```
OUTPUT LABELS:↵  
7 New output 8 label↵  
10 New output 11 label↵  
↵
```

## Requesting Changes

To update a label, lock or route, the client should send a block of the same form the multi view sends when its status changes. For example, to change the route of output port 8 to input port 3, the client should send the following block:

```
VIDEO OUTPUT ROUTING:↵  
7 2↵  
↵
```

The block must be terminated by a blank line. On receipt of a blank line, the multi view will either acknowledge the request by responding:

```
ACK↵  
↵
```

or indicate that the request was not understood by responding:

```
NAK↵  
↵
```

After a positive response, the client should expect to see a status update from the MultiView showing the status change. This is likely to be the same as the command that was sent, but if the request could not be performed, or other changes were made simultaneously by other clients, there may be more updates in the block, or more blocks. Simultaneous updates could cancel each other out, leading to a response that is different to that expected.

For MultiView 16 the client can change the solo source and the audio source to embed on the output.

Solo mode needs to be enabled either from the front panel or by sending the block:

```
CONFIGURATION:↵  
Solo enabled: true↵  
↵
```

Once enabled the following block will change the SOLO source to input 11:

```
Video Output Routing:↵  
16 10↵  
↵
```

This is not available on MultiView 4.

The following block will send embedded audio from input 1 to the MultiView 16 output:

```
Video Output Routing:↵  
17 0↵  
↵
```

The following block will send embedded audio from input 1 to the MultiView 4 output:

```
Video Output Routing:↵  
5 0↵  
↵
```



Na falta de atualizações simultâneas, o diálogo esperado para uma simples alteração de rótulo é o seguinte:

```
OUTPUT LABELS:↵
6 new output label seven↵
↵
ACK↵
↵
OUTPUT LABELS:↵
6 new output label seven↵
↵
```

The asynchronous nature of the responses means that a client should never rely on the desired update actually occurring and must simply watch for status updates from the MultiView and use only these to update its local representation of the server state.

### Requesting a Status Dump

The client may request that the MultiView resend the complete state of any status block by sending the header of the block, followed by a blank line. In the following example, the client requests the MultiView resend the output labels:

```
OUTPUT LABELS:↵
↵
ACK↵
↵
OUTPUT LABELS:↵
0 output label 1↵
1 output label 2↵
2 output label 3↵
...
↵
```

### Checking the Connection

While the connection to the MultiView is established, a client may send a special no-operation command to check that the MultiView is still responding:

```
PING:↵
↵
```

If the MultiView is responding, it will respond with an ACK message as for any other recognized command.

## Blackmagic MultiView 16 RS-422 Protocol

### General

The RS-422 protocol can be used to control Blackmagic MultiView 16 as a slave device from third party routers and automation systems.

The “Leitch Server” mode implements the router (server) side of the Leitch Serial Pass Through Protocol as specified in section 4 of Leitch document SPR-MAN revision D. In “Leitch Client” mode, the Blackmagic MultiView 16 implements the controller (client) side of the Leitch terminal protocol. Set the desired leitch mode in the ‘configure’ settings in the Blackmagic MultiView Setup software.

This document describes the commands and parameters in the protocol that are relevant and supported by Blackmagic MultiView 16. Other commands and parameters specified in the Leitch protocol are accepted but ignored.

The RS-422 serial port is configured as 9600 N81:

9600 is the line speed, or baud rate, at 9600 bits/sec.

N represents no parity check, or 'none'.

8 is the data length.

1 is for stop bits.

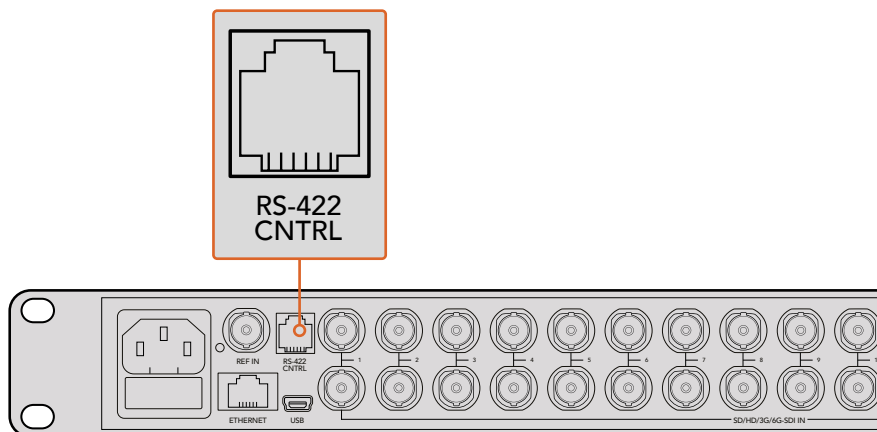
To summarize N81, data without a parity check begins with 1 start bit, includes 8 true data bits, and 1 stop bit. There are 10 bits in total.

The protocol is line oriented, with a maximum length of 250 characters per command. Each command from the client should be terminated with a carriage return (\r). Each response from the server will be terminated with a carriage return and line feed (\r\n).

Sources, destinations and levels are always specified in base-16, numbered from zero. Levels are always between 0 and 15 ("F"). Blackmagic MultiView 16 only has one valid level – level zero.

On connecting to the serial port, the client should send a carriage return. Blackmagic MultiView 16 will respond with a > character prompt, which is not followed by a carriage return or line feed. Receiving the prompt indicates that a connection has been established. The same prompt will be issued after each command received by the MultiView.

In the following documentation, commands in orange and values in blue must be typed literally, including any spaces. In the following example of an immediate command using destination port 7 and source port 3, @ X:0/destination,source would be entered as: @ X:0/6,2

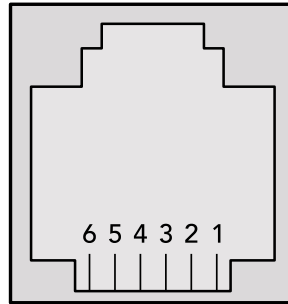


The RS-422 serial port lets you control Blackmagic MultiView 16 from third party routers and automation systems. The connector is an RJ11 connector, the same used in many landline telephone connections. By modifying an RS-422 to USB adapter cable terminated with an RJ11 connector, you can control Blackmagic MultiView 16 using external controllers via USB.



An RS-422 to USB adapter cable and RJ11 connector can be purchased from electronics stores such as Digi-Key.com. Refer to the pinout diagram below for help wiring the RJ11 connector to the adapter cable.

Pin No.	Function
Pin 1	TX +
Pin 2	TX -
Pin 3	GND
Pin 4	GND
Pin 5	RX -
Pin 6	RX +



Pinout diagram for the RJ11 connector

### Notifications

Once connected, if status reporting is enabled, the client will receive a notification message when a route changes on the MultiView. The notifications take one of two forms:

**S:0destination,source** Routing change

This message indicates that the specified source port is now routed to the specified destination.

**V:0destination,source** Preset routing notification

This message indicates that the current preset includes a route from the specified source to the specified destination.

### Global Commands

All pass through commands are preceded by an @ symbol and a space.

The following client commands are supported:

@ !      disable status reporting  
Status reporting is disabled by default.

@ ?      enable status reporting  
Status reporting is enabled.

@ Z:     reset routing table

O roteamento é redefinido para que a primeira fonte seja roteada para todos os destinos.

### Immediate Commands

@ X:0/destination,source    change route

@ X:0/destination,source/destination-2,source-2...    change multiple routes  
The specified source ports are routed to the specified destinations.  
Any routing changes will trigger S: notifications

@ X?0destination    request individual route status  
The source routed to the specified destination will be returned as an S: notification.

@ S?0    request all ports route status  
Each source and destination port pair will be returned as S: notifications

## Salvo Commands

- @ P:0/destination,source queue route change
- @ P:0/destination,source/destination-2,source-2... queue multiple route changes  
The specified routing changes are added to the current salvo for later execution.
- @ P?0destination request individual port status in salvo  
If a routing change for the specified destination port is queued, the route will be returned as a V: notification.
- @ V?0 request all ports status in salvo  
Each queued routing change in the salvo is reported as a V: notification.
- @ B:C clear salvo
- @ B:R clear salvo  
Any queued changes are discarded and the salvo is reset.
- @ B:E execute salvo  
Any queued changes are executed and each routing change will be returned as an S: notification.

# Ajuda

## Obter Ajuda

O modo mais rápido de obter ajuda é acessando as páginas de suporte online da Blackmagic Design e verificando o material de suporte mais recente disponível para o seu Blackmagic MultiView.

### Central de Suporte Técnico online da Blackmagic Design

O manual, o programa e as notas de suporte mais recentes podem ser encontrados na Central de Suporte Técnico da Blackmagic Design [www.blackmagicdesign.com/br/support](http://www.blackmagicdesign.com/br/support).

### Fórum Blackmagic Design

O fórum da Blackmagic Design no nosso site é um recurso útil que você pode acessar para obter mais informações e ideias criativas. Esse pode ser um meio mais rápido para obter ajuda pois você pode encontrar respostas de usuários mais experientes e da equipe da Blackmagic Design que ajudam a seguir adiante. Você pode visitar o fórum em <https://forum.blackmagicdesign.com>

### Como entrar em contato com o Suporte Técnico Blackmagic Design

Caso não encontre a ajuda que precisa no nosso material de suporte ou no fórum, por favor clique no botão “Envie-nos um email” na página de suporte para nos encaminhar uma solicitação de suporte. Como alternativa, clique no botão “Encontre sua equipe de suporte local” e ligue para a assistência técnica da Blackmagic Design mais próxima.

### Como verificar a versão do software instalado

Para verificar a versão do software Blackmagic MultiView que está instalado no computador, abra a aplicação do Blackmagic MultiView. A partir do menu “Blackmagic MultiView”, selecione “About MultiView” e observe o número da versão.

### Como obter as atualizações mais recentes

Após verificar a versão de seu Blackmagic MultiView 16 no computador, visite o centro de suporte da Blackmagic Design em [www.blackmagicdesign.com/br/support](http://www.blackmagicdesign.com/br/support) para verificar se há atualizações mais recentes. Embora geralmente seja uma boa ideia executar as atualizações mais recentes, é uma prática sábia evitar a atualização de qualquer software se você estiver no meio de um projeto importante.

# Informações Regulatórias e de Segurança

## Informações Regulatórias



### Descarte de resíduos de equipamentos elétricos e eletrônicos na União Europeia

O símbolo no produto indica que este equipamento não pode ser descartado com outros materiais residuais. Para descartar o equipamento usado, ele deve ser entregue em um ponto de coleta designado para reciclagem. A coleta e a reciclagem seletivas de seu equipamento usado no momento do descarte ajudarão a conservar os recursos naturais e a garantir que ele seja reciclado de modo a proteger a saúde humana e o meio ambiente. Para mais informações sobre onde você pode eliminar os resíduos do seu equipamento para reciclagem, por favor entre em contato com a agência de reciclagem local da sua cidade ou o revendedor do produto adquirido.



Este equipamento foi testado e considerado em conformidade com os limites para um dispositivo digital de Classe A, de acordo com a Parte 15 das regras da FCC. Esses limites foram projetados para fornecer proteção razoável contra interferências nocivas quando o equipamento é operado em um ambiente comercial. Este equipamento gera, utiliza e pode irradiar energia de radiofrequência e, se não for instalado e utilizado de acordo com as instruções, poderá causar interferência nociva às comunicações de rádio. A operação deste produto em uma área residencial pode causar interferência nociva, nesse caso o usuário será solicitado a corrigir a interferência às suas próprias custas.

A operação está sujeita às duas condições a seguir:

- 1 Este dispositivo não poderá causar interferência nociva.
- 2 Este dispositivo deve aceitar qualquer interferência recebida, incluindo interferência que possa causar operação indesejada.

A conexão a interfaces HDMI devem ser feitas com cabos HDMI blindados de alta qualidade.

## Informações de Segurança

Este equipamento deve ser conectado a uma tomada com conexão de aterramento de proteção.

Para reduzir o risco de choque elétrico, não exponha este equipamento a gotas ou respingos.

Este equipamento é adequado para uso em regiões tropicais com uma temperatura ambiente de até 40 °C.

Certifique-se de que seja fornecida ventilação adequada em torno do produto e que não seja colocado em local com ventilação restrita.

Ao montar o produto em rack, certifique-se de que a ventilação não ficará reduzida em função do equipamento adjacente.

Não há peças que possam ser reparadas pelo operador no interior do produto.

Consulte o serviço de assistência técnica local da Blackmagic Design.



Use apenas em altitudes inferiores a 2000 m acima do nível do mar.

# Garantia

## Garantia Limitada

A Blackmagic Design garante que o Blackmagic MultiView, incluindo conectores, cabos, ventoinhas, fusíveis, tela LCD e botões, estará livre de defeitos de materiais e fabricação por um período de 12 meses a partir da data de compra. Se o produto apresentar defeito durante este período de garantia, a Blackmagic Design, a seu critério, consertará o produto com defeito sem cobrança pelos componentes e mão de obra, ou providenciará a substituição em troca pelo produto defeituoso.

Para obter o serviço sob esta garantia você, o Consumidor, deve notificar a Blackmagic Design do defeito antes da expiração do período de garantia e tomar as providências necessárias para o desempenho do serviço. O Consumidor é responsável pelo empacotamento e envio do produto defeituoso para um centro de assistência designado pela Blackmagic Design com os custos de envio pré-pagos. O Consumidor é responsável pelo pagamento de todos os custos de envio, seguro, taxas, impostos e quaisquer outros custos para os produtos retornados para nós por qualquer razão.

Esta garantia não se aplica a defeitos, falhas ou danos causados por uso inadequado ou manutenção e cuidado inadequado ou impróprio. A Blackmagic Design não é obrigada a fornecer serviços sob esta garantia: a) para consertar danos causados por tentativas de instalar, consertar ou fornecer assistência técnica ao produto por pessoas que não sejam representantes da Blackmagic Design, b) para consertar danos causados por uso ou conexão imprópria a equipamentos não compatíveis, c) para consertar danos ou falhas causadas pelo uso de componentes ou materiais que não são da Blackmagic Design, d) para fornecer assistência técnica de um produto que foi modificado ou integrado a outros produtos quando o efeito de tal modificação ou integração aumenta o tempo ou a dificuldade da assistência técnica do serviço. ESTA GARANTIA É FORNECIDA PELA BLACKMAGIC DESIGN NO LUGAR DE QUAISQUER OUTRAS GARANTIAS, EXPLÍCITAS OU IMPLÍCITAS. A BLACKMAGIC DESIGN E SEUS FORNECEDORES NEGAM QUAISQUER GARANTIAS IMPLÍCITAS DE COMERCIALIZAÇÃO OU ADEQUAÇÃO A UMA FINALIDADE ESPECÍFICA. A RESPONSABILIDADE DA BLACKMAGIC DESIGN DE CONSERTAR OU SUBSTITUIR PRODUTOS DEFEITUOSOS É A ÚNICA E EXCLUSIVA MEDIDA FORNECIDA AO CONSUMIDOR PARA QUAISQUER DANOS INDIRETOS, ESPECIAIS OU ACIDENTAIS INDEPENDENTEMENTE DA BLACKMAGIC DESIGN OU DE FORNECEDORES POSSUÍREM INFORMAÇÕES PRÉVIAS SOBRE A POSSIBILIDADE DE TAIS DANOS. A BLACKMAGIC DESIGN NÃO É RESPONSÁVEL POR QUAISQUER USOS ILEGAIS DO EQUIPAMENTO PELO CONSUMIDOR. A BLACKMAGIC NÃO É RESPONSÁVEL POR QUAISQUER DANOS CAUSADOS PELO USO DESTE PRODUTO. O USUÁRIO DEVE OPERAR ESTE PRODUTO POR CONTA E RISCO PRÓPRIOS.

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# Blackmagic MultiView







## Hoş Geldiniz

Blackmagic MultiView ünitesini satın aldığınız için teşekkür ederiz!

Herkesin en yüksek kalitedeki videoya erişim sağlamasını mümkün kılarak, televizyon endüstrisinin gerçekten yaratıcı olmasına ilişkin hayalimizi paylaştığınızı umuyoruz. MultiView 16'yı günümüzün uygun fiyatlı Ultra HD televizyonlarıyla kullanarak, 16 bağımsız yayın monitörüne denk bir teknolojiye sahip oluyorsunuz. MultiView 16, gerçek yayın seviyesinde çoklu kaynak izleme imkanını çok daha düşük bir fiyatla sunuyor!

Blackmagic MultiView 4, daha küçük veya mobil yapımlar için mükemmel olup, bir HD veya Ultra HD ekranda, dört adede kadar kaynağı izlemenizi mümkün kılıyor. İzleme kurulumunuzu gerçek anlamıyla kişiselleştirmek için, MultiView ünitesinin çıkışı bir diğerine yönlendirerek MultiView ünitelerini birleştirebilirsiniz.

Bu kullanım kılavuzu, Blackmagic MultiView ünitesinin kurulumu için ihtiyacınız olan tüm bilgileri içerir. Ancak IP adresleri hakkında veya bilgisayar ağlarına ilişkin bilgi sahibi değilseniz, bir teknik asistandan yardım istemenizde yarar vardır. Blackmagic MultiView kolay yüklenebilen Videohub Control yazılımıyla kontrol edilebilir ancak, yükledikten sonra ayarlamamız gereken, kısmen teknik bazı seçenekler vardır.

Lütfen [www.blackmagicdesign.com/tr](http://www.blackmagicdesign.com/tr) adresinden internet sitemizi ziyaret ederek, bu kılavuz ile yazılımın en son güncellemelerini indirmek için destek sayfasına tıklayınız. Son olarak, yeni güncellemeleri size duyurabilmemiz için, bilgisayarınıza yazılım güncellemeleri indirirken, Blackmagic MultiView ünitenizi sitemize kaydetmenizi rica ediyoruz. Sürekli yeni özellikler ve geliştirmeler için çaba içindeyiz ve yorumlarınızı almaktan mutluluk duyarız.

Blackmagic MultiView ünitenizi uzun yıllar kullanmanızı umuyoruz ve video girişlerinizi harika Ultra HD formatta izlerken çok eğlenmenizi diliyoruz!

**Grant Petty**

CEO Blackmagic Design

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# Başlarken

Blackmagic MultiView ünitenizi kullanmaya başlamanız; elektriğe takıp çalıştırmak, SDI video kaynaklarınızı bağlamak, monitörlerinizi ve televizyonlarınızı HDMI veya SDI çıkışlarına takmak kadar kolaydır. Kullanım kılavuzunun bu bölümü, Blackmagic MultiView ünitenizi kullanmaya başlamanız için bilmeniz gereken her şeyi gösterecektir.

## Güç Kaynağının Takılması

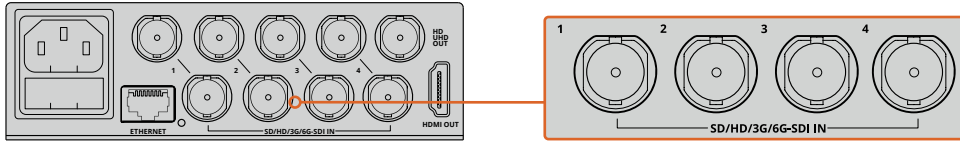
Blackmagic MultiView ünitenizi çalıştırmak için yapmanız gereken tek şey, standart bir IEC elektrik kablosunu arka paneldeki 110-240V AC güç girişine takmaktır.

**BİLGİ** Blackmagic MultiView 4 ünitesinin ayrıca Ethernet Plus üzerinden Güç desteği de içermesi sayesinde, PoE+ sağlayabilen bir Ethernet girişine takmanız yeterli olacaktır. MultiView 4 ünitenize hem AC güç hem de PoE+ bağlı ise, birinin prizden çıkarıldığı veya çalışmadığı durumlarda, geriye kalan güç kaynağına otomatik olarak geçecektir

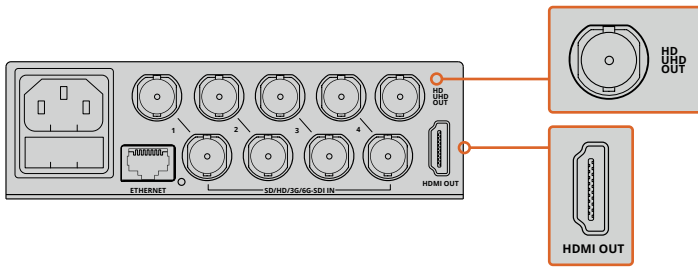
Blackmagic MultiView 4 HD'yi çalıştırmak için, kutuda gelen adaptörü 6-36 V DC girişe takın. Üniteye elektrik temin etmek ve elektriğin kazara kesilmesini önlemek için çevrilerek kilitlenen elektrik girişi de sağlanmıştır.

## SDI Kaynaklarının ve Monitörlerin Bağlanması

SDI kaynaklarınızı Blackmagic MultiView SDI video girişlerinin herhangi birine takınız. Video formatı otomatik olarak tespit edilecektir ve video, çoklu görüntüleme çıkışında görüntülenecektir. Çıkışı görebilmek için, SDI veya HDMI çoklu görüntüleme çıkışlarına bir monitör bağlamanız yeterlidir.



Video kaynaklarını Blackmagic MultiView ünitenizin SDI video girişlerine bağlayın

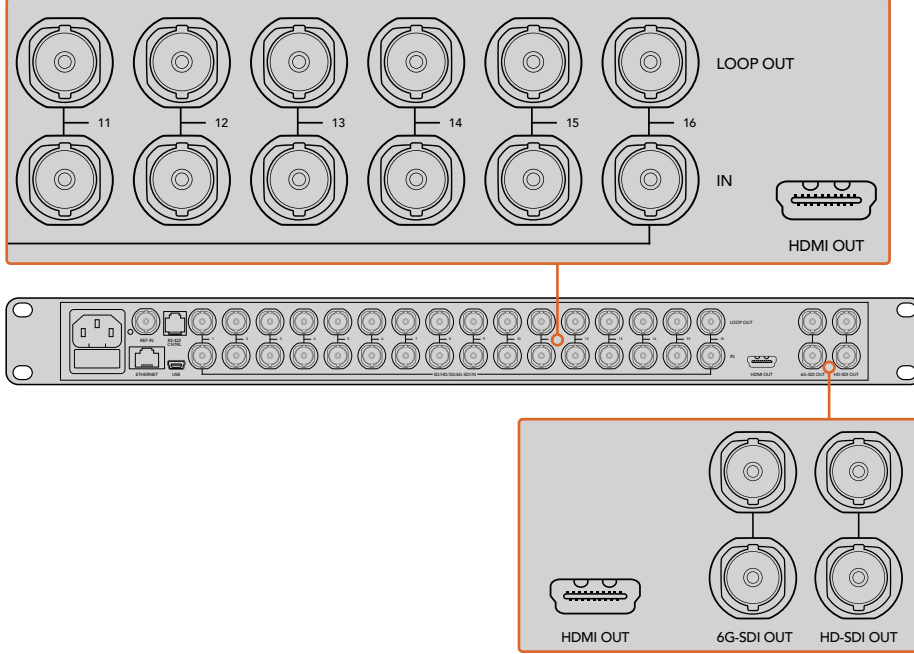


Monitörleri Blackmagic MultiView ünitenizin HDMI veya SDI çoklu görüntüleme çıkışlarına bağlayın

HDMI çıkışına bir HDMI monitör bağlarken, Blackmagic MultiView ünitesi, monitörün Ultra HD veya HD formatını destekleyip desteklemediğini otomatik olarak tespit eder ve çoklu görüntüleme çıkışını buna bağlı olarak değiştirir.

**BİLGİ** Blackmagic MultiView 16 üzerindeki çoklu görüntüleme çıkışı, atanmış HD-SDI çıkışları veya Ultra HD çözünürlüğe kadar 6G-SDI ve HDMI çıkışları üzerinden yapabilirsiniz.

Blackmagic MultiView 4 ve MultiView 16 ünitelerindeki her girişin üstünde döngü (loop) çıkışları bulunduğundan, her bir kaynağı başka video ekipmanlarına da bağlayabilirsiniz.



**BİLGİ** Blackmagic MultiView 16'nın SDI ve HDMI çıkışlarının hepsi, Ultra HD ve HD çoklu görüntüleme modunda izleme için eşzamanlı olarak kullanılabilirler. Blackmagic MultiView 4 ünitesinde; dahili anahtarlar, opsiyonel bir Teranex Mini Smart Panel veya Blackmagic MultiView Setup yardımcı yazılımı üzerinden, Ultra HD veya HD çoklu görüntüleme çıkış ayarları arasından seçebilirsiniz.

## Multi View Düzeninin Ayarlanması

Çoklu görüntüleme düzeni, ihtiyaçlarınıza uygun bir şekilde değiştirilebilir. Örneğin, Blackmagic MultiView 4 ile Blackmagic MultiView 4 HD üniteleri 2x2 veya solo olarak ayarlanabilirler. Blackmagic MultiView 16 ünitesi 2x2, 3x3, 4x4 veya solo gibi çeşitli görüntüleme seçeneklerine ayarlanabilir.

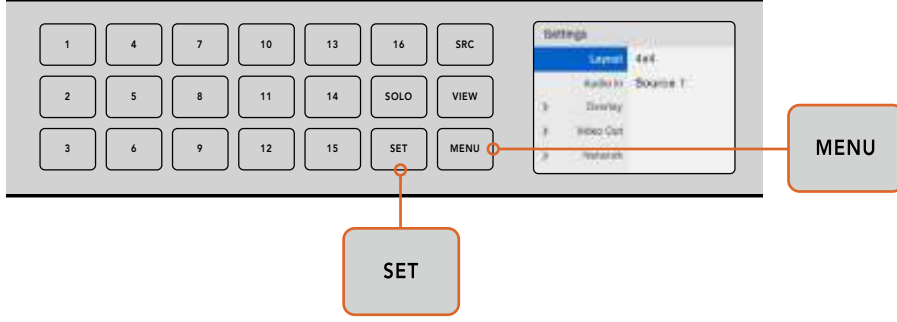
### Blackmagic MultiView 16 üzerinde ekran düzeninin ayarlanması.

Blackmagic MultiView 16 üzerindeki ekran düzenini değiştirmek için, dahili kontrol paneli üzerindeki kontrol butonlarını, döner düğmeyi ve LCD'yi kullanın. Ayrıca, 'solo' butonuna basarak ve ardından kaynak butonlarından birine basarak seçmek istediğiniz girişi seçip, ekran pencerelerinden herhangi birini, tam ekran modunda da izleyebilirsiniz.

- 1 LCD üzerindeki ayarlar ekranını açmak için, ön kontrol panelindeki 'menü' butonunu basın.
- 2 Menü içindeki ilk ayar ekran düzenidir. Dolayısıyla, ayarlar menüsüne ilk girdiğinizde, bu her zaman vurgulanır. Ayarı değiştirmek için 'set' butonuna basın.

- 3 Ön kontrol panelindeki döner düğmeyi çevirerek, ekran düzeni ayarından 4x4'ü seçin. 4x4 ayarı, 16 adet kaynak görüntüsünün hepsini tek bir ekranda görmeyi sağlar. Bir ayar değiştiğinde, 'set' butonunun ve 'menü' butonunun yanıp sönmeye başladığını göreceksiniz. Bu, bir ayarın değiştiğini işaret eder ve bunun üzerine 'set' butonuna basarak bu ayarı dilerse teyit edebilirsiniz ya da 'menü' butonuna basarak iptal edebilirsiniz.
- 4 Ayarınızı teyit etmek için 'set' butonuna basın.

Yapılandırma kontrol paneli üzerinden, ekran düzenini ayrıca Blackmagic MultiView 16 kurulum yazılımını kullanarak da ayarlayabilirsiniz.

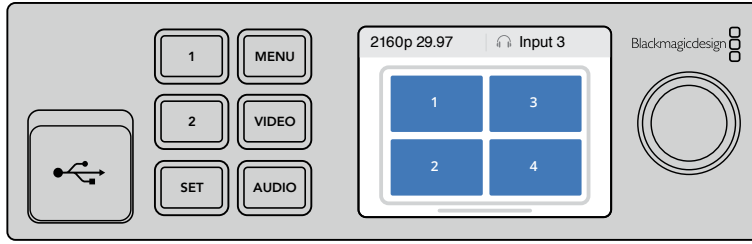


Blackmagic MultiView 16'nızın ekran düzenini ayarlamak için, 'menü' butonuna basın, döner düğmeyi kullanarak ekran düzeninizi seçin, sonra 'set' butonu üzerine basın. 4x4 ayarı, 16 görüntüleme penceresini tek bir monitörde görmeyi mümkün kılıyor

### Blackmagic MultiView 4 üzerinde ekran düzeninin ayarlanması

Blackmagic MultiView 4 ünitenizdeki varsayılan görüntüleme ayarı 2x2 düzenidir. Blackmagic MultiView 4 ünitesinin düzenini 'solo' ayarına değiştirmek için, Teranex Mini Smart Panel'iniz üzerindeki '1' olarak işaretli kontrol butonunu kullanın ve ayarı 2x2 görüntüleme moduna geri değiştirmek için '2' numaralı butona basın.

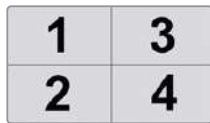
Ekran düzenini ayrıca, kurulum yazılımındaki 'configure' (yapılandırma) ayarlarını kullanarak da ayarlayabilirsiniz.



Solo görüntüleme için '1' e basın veya 2x2 görüntüleme için de '2' ye basın.

### Blackmagic MultiView 4 HD üzerinde ekran düzeninin ayarlanması

MultiView 4 HD ünitenizi ilk kullandığınızda, 1. ve 3. girişler üst sırada ve 2. ile 4. girişler de altta olmak üzere, varsayılan ayarı 2x2 görüntüleme modudur. Solo moduna değiştirmek için, 'Solo on' ibareli dahili 6 numaralı anahtar ON olarak ayarlayın.



MultiView 4 HD dört adet SDI girişinin 2x2 ekran düzeni

Daha fazla bilgi için 'Blackmagic MultiView 4 HD için Anahtar (Switch) Ayarları' bölümüne bakınız.

## Bir Ağa Bağlanma

Blackmagic MultiView üniteniz Blackmagic Videohub Ethernet Protocol'ünü destekler. Böylelikle, üniteniz zor erişilen bir rack'te kuruluysa, Blackmagic Smart Control ve Master Control gibi bir Blackmagic Videohub kontrol paneli kullanarak onu kolaylıkla uzaktan kontrol edebilirsiniz. Ağınıza Ethernet üzerinden bağlandıktan sonra, Blackmagic MultiView üniteniz başka bilgisayarlara ve ağa bağlı olan Videohub panellerine görülür olacaktır. Bu cihazlar, daha sonra üniteyi uzaktan kontrol edebilir.

Blackmagic MultiView ünitesini ağınıza bağlamak için:

- 1 Blackmagic MultiView Ünitenizi Çalıştırın
- 2 Blackmagic MultiView ünitesini bir ağa veya bilgisayara bağlamak için, standart bir RJ45 Ethernet kablosu kullanın.

Bir ağa bağlandıktan sonra, Blackmagic MultiView ünitenizin IP adresinin, ağınıza bulunan diğer ekipmanlarınkinden farklı olduğundan emin olmanız gerekecektir. Blackmagic MultiView 16 ünitesi üzerinde ve bir MultiView 4'ü, Teranex Mini Smart Panel kurulu olarak kullanırken, ağ ayarlarını kontrol panelinin LCD menüsünden değiştirebilirsiniz. Ayrıca, Blackmagic MultiView ünitesini bir bilgisayara USB üzerinden de takabilirsiniz ve Blackmagic MultiView Setup yazılımını kullanarak ağ ayarlarını değiştirebilirsiniz. Ağ ayarlarının değiştirilmesi hakkında daha fazla bilgi için, bu kılavuzun 'ayarların değiştirilmesi' başlıklı bölümüne bakınız.

## Seri Kontrolün Bağlanması

Üçüncü parti yönlendirici kontrolörleri, Blackmagic MultiView 16'yı RS-422 seri bağlantısını kullanarak kontrol edebilir. Seri kontrol hakkında daha fazla bilgi için, bu kılavuzun 'Blackmagic MultiView Setup kullanılarak ayarların değiştirilmesi' başlıklı bölümüne bakınız.

## Rack Montajı

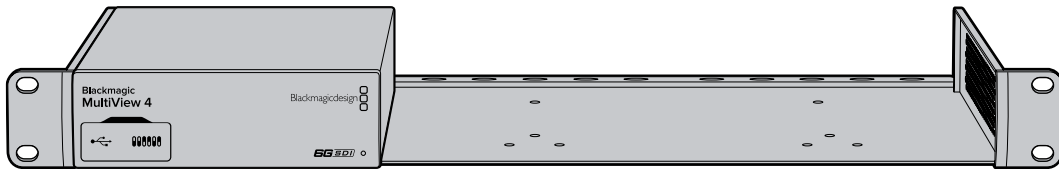
Blackmagic MultiView 16 ünitesi, 1 rack birimi boyutundadır ve herhangi bir yayın rack'ine veya taşıma kasasına mükemmel bir şekilde sığar.

Blackmagic MultiView 4 çok daha küçüktür ve bir yayın rack'i kullanmadığınız mobil prodüksiyonlarda kullanılabilir. Ancak, MultiView 4 üniteniz her ne kadar küçük ve portatif olmak üzere tasarlanmış olsa da onu yine de bir rack ortamında kullanabilirsiniz. Blackmagic Teranex Mini Rack Shelf, bir 1 rack birimlik alana üç üniteyi yan yana monte etmeniz için tasarlanmıştır. Bu sayede onları birbirine kolayca bağlayabilir ve ihtiyacınız olduğu kadar kaynak görüntüleme penceresi geliştirebilirsiniz.

Blackmagic MultiView 4'ün bir Teranex Mini Rack Shelf'e montajı; takılıysa ünitenin lastik ayaklarını çıkartıp, altındaki montaj deliklerini kullanarak üniteyi rack'in tabanına vidalamak kadar kolaydır. Teranex Mini Rack Shelf, iki adet orijinal boş panel ile gelir. Ek MultiView 4 ünitesi kurmanıza gerek kalmadığı durumlarda, bunları boşlukları kapatmak için kullanabilirsiniz.

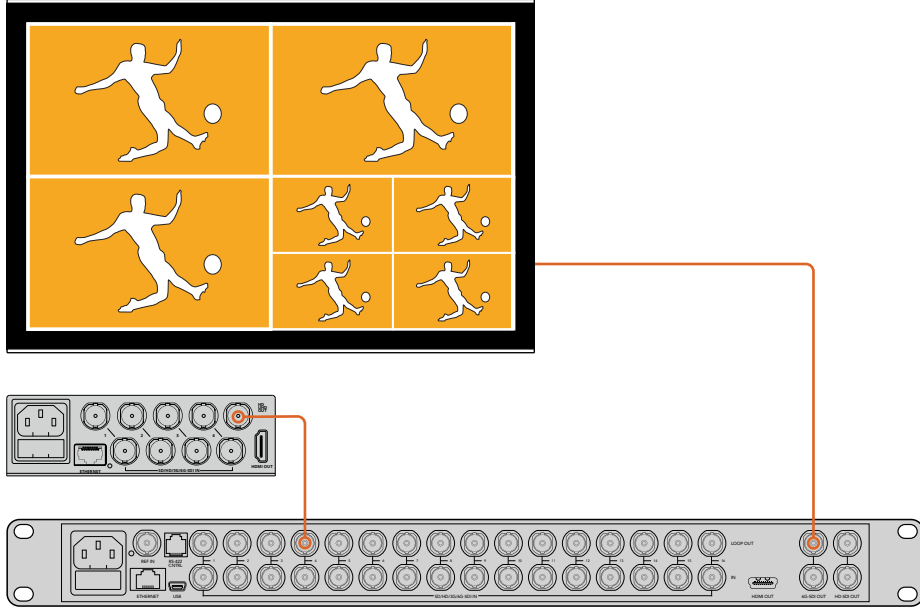
Daha fazla bilgi için [www.blackmagicdesign.com/tr](http://www.blackmagicdesign.com/tr) adresinden Blackmagic Design web sitesine bakın.

Bir rack'e monte edildiğinde, tüm konektörlere erişim normalde olduğu gibi ünitenin arkasından sağlanır.



## Birden Fazla MultiView Ünitesini Kullanma

Özel izleme kurulumları oluşturmak üzere, birden fazla BlackMagic MultiView ünitesini birleşik bir halde kullanabilirsiniz. Bu, çoklu görüntüleme çıkışınıza daha fazla görüntü kaynağı ilave etmeniz gerektiği durumlarda faydalıdır. Çoklu görüntüleme çıkışınıza daha fazla kaynak görüntüsü ilave etmek için yapmanız gereken, bir MultiView ünitesinin çıkışını bir diğersinin girişine takmaktır. En yüksek derecede netlik için, Multiview çıkışının bir Ultra HD monitöre bağlanması şiddetle tavsiye edilir.



MultiView ünitesinin birinin çıkışını başka bir ünitenin girişine yönlendirerek, çoklu görüntü düzenine daha fazla görüntü penceresi ilave edebilirsiniz

Ürünü kullanmaya başlamanız için yapmanız gerekenler bu kadar. Ayarların değiştirilmesi, görüntü ekranlarının isimlendirilmesi ve daha nicesi gibi, Blackmagic MultiView ünitenizden en iyi şekilde nasıl yararlanabileceğiniz hakkında daha fazla bilgi için, bu kılavuzun ilerleyen bölümlerini okumaya devam ediniz.

## Ayarların Değiştirilmesi

Blackmagic MultiView üniteniz üzerinde ayarları değiştirmenizin çeşitli yöntemleri vardır.

- **Ön Kontrol Paneli** – Blackmagic MultiView 16 ünitesinin dahili kontrol paneli ve LCD'si sayesinde, ayarları ünitenin ön kısmından kolaylıkla değiştirebilirsiniz.
- **Anahtarlar (Switches)** – Blackmagic MultiView 4'ün ön panelinde ve Blackmagic MultiView 4 HD'nin yan panelindeki küçük anahtarlar, bir kalem ucu yardımıyla ayarları anında değiştirmenizi mümkün kılar. Blackmagic MultiView 4 üzerindeki anahtarlara erişim için, ön paneldeki lastik toz kapağını açın. Bu ünitelerin altında anahtar ayarlarına ilişkin açıklamalar bulunur. Her bir anahtarın ayarlarını buradan kolaylıkla görebilirsiniz.
- **Teranex Mini Smart Panel** – Blackmagic MultiView 4 ünitesinin orijinal ön panelini, opsiyonel bir Teranex Mini Smart Panel ile değiştirebilirsiniz. Böylece, dahili kontrol butonları, döner düğmeyi ve LCD'yi kullanabilirsiniz. Bu; Blackmagic MultiView 16'nın ön kontrol paneline çok benzer şekilde işlev görür ve hem kolay hem de sezgisel yerel kontrol sunar.
- **Blackmagic MultiView Setup** – Kurulum yazılımı, bilgisayarınızı kullanarak USB veya Ethernet üzerinden ayarları değiştirmenize olanak sağlar. Daha fazla bilgi için, 'Blackmagic MultiView Setup' bölümüne bakın.

- **Videohub Control yazılımı** – Blackmagic MultiView 16 veya Blackmagic MultiView 4 üniteniz bir ağa bağlıyken, kaynakları yönlendirmek, görüntü pencerelerini değiştirmek ve ses giriş kaynağını seçmek için, Blackmagic Videohub Control yazılımını kullanabilirsiniz. Daha fazla bilgi için, 'Videohub Software Control'ün Kullanılması' bölümüne bakın.

## Blackmagic MultiView 16'nın Ön Kontrol Paneli

Blackmagic MultiView 16'nın ön kontrol paneli, ayarların herhangi birini değiştirmeyi çok kolaylaştırıyor.

Blackmagic MultiView 16'nızı ilk kez çalıştırırken, dahili LCD'de 'ana' (home) ekranın görüntülediğini göreceksiniz. Ana (home) ekran, ayarlara kolay erişilir bir genel bakış sunan, varsayılan görüntüleme ekranıdır, örneğin:

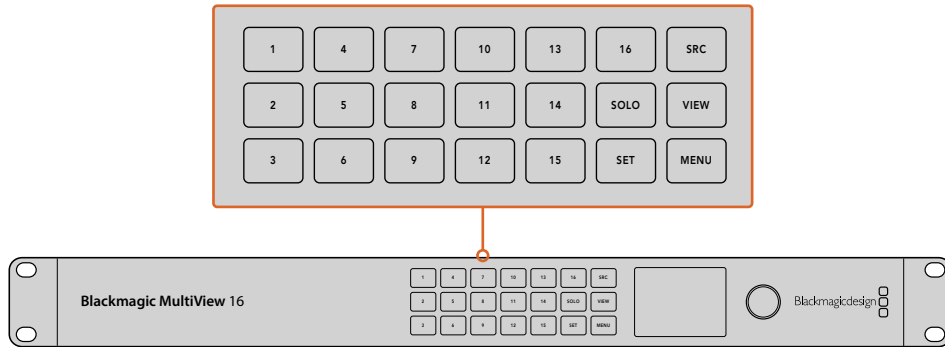
- **Çoklu görüntüleme çıkışı kare hızı** – Sol üst köşede bulunan bu bilgi, Ultra HD SDI çoklu görüntüleme çıkışınızın seçili kare hızını görüntüler.
- **Ses girişi** – Bu bilgi çoklu görüntüleme çıkışı kare hızı yanında bulunur ve HDMI ile SDI çoklu görüntüleme çıkışı sinyalinde, gömülü ses için hangi SDI girişinin kullanıldığını görüntüler.
- **Çoklu görüntüleme düzeni** – Bu, seçmiş olduğunuz çoklu görüntüleme düzenini görüntüler.



'Ana' ekran Blackmagic MultiView 16'nın kontrol panel LCD'si üzerinde varsayılan görüntü ekranıdır. Bu ekran; seçtiğiniz çoklu görüntüleme düzenini, çoklu görüntüleme SDI çıkışı için kare hızını ve çoklu görüntüleme çıkışına ses gömmek için kullanılan seçili SDI girişini görüntüler.

### Kontrol Panel Butonları

Blackmagic MultiView 16'nın kontrol paneli üzerindeki aydınlatmalı butonlar, ayarları değiştirmenizin yanında kaynaklarınızı ve görüntü pencerelerinizi ayarlamanızı son derece kolaylaştırır.

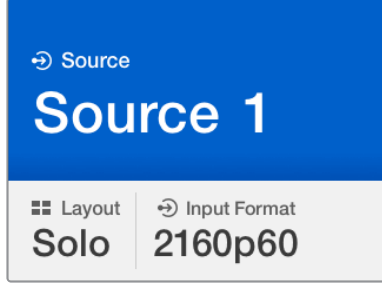


Blackmagic MultiView 16'nın kontrol panel butonları, ayarları kolayca değiştirmenizi ve ünitenin ön kısmından görüntü pencerelerini değiştirmenizi sağlar



## Solo Butonu

'Solo' butonuna basarak, bir görüntü penceresini tam ekran modunda izleyebilirsiniz. Şimdi herhangi bir görüntü penceresini tam ekran modunda izleyebilmek için, o görüntü penceresinin kontrol paneli üzerindeki butona basın. Çoklu görüntüleme düzenine geri dönmek için solo butonuna tekrar basın.



Solo özelliği, bir görüntü penceresini tam ekran modunda izlemenizi sağlar.

## Menü Butonu

Ayarlar ekranını açmak için 'menu' (menü) butonuna basın. Döner düğme ve set butonu ile bir ayarı değiştirin ve ardından 'ana' (home) ekrana geri dönmek için tekrar menü butonuna basın.

## Set (Ayarla) Butonu

Düzeltilmek istediğiniz bir ayarı seçmek için 'set' (ayarla) butonuna basın. Bir ayarı değiştirdikten sonra, yapılan değişikliği teyit etmek için set butonuna tekrar basın.

## Kaynak (Source) ve Görüntü Penceresi (View) Butonları

Bu butonlar, arzu ettiğiniz görüntü penceresinde, hangi giriş kaynağını görüntülemek istediğinizi seçmenize olanak verir. Ayar menüleri arasında gezinirken, kaynak ve görüntü butonları, ayar seçenekleri arasında yukarı ve aşağı hareket etmek için de kullanılabilirler.

## Döner Düğme

Ayarlar arasında gezinmek veya ayarlar ekranındaki menü öğelerini seçmek için döner düğmeyi kullanın. Yaptığınız bir seçimden memnun değilseniz, döner düğmeye basarak daha önce seçmiş olduğunuz bir ayara geri dönebilirsiniz.

Bir menüdeki iki seçenek arasında seçim yapmak için, döner düğmeyi saat yönünde veya saat yönünün tersine çevirin. Ayrıca, bu düğmeye basarak ayarlar etkinleştirilebilir veya etkisiz hale getirilebilir.

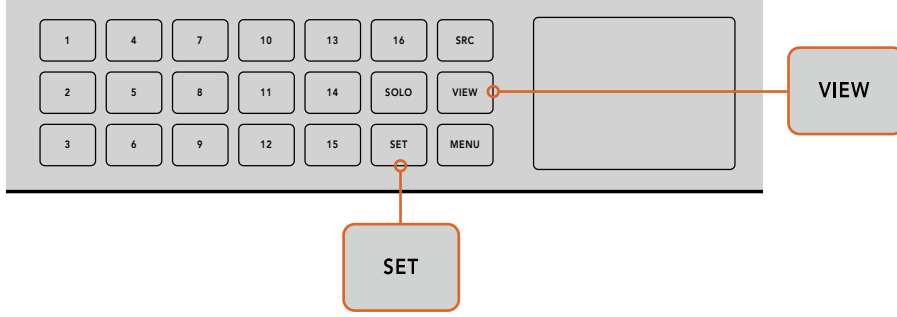
## Blackmagic MultiView 16 üzerinde Kaynaklarınızı ve Görüntü Pencerelerinizi Ayarlama

Blackmagic MultiView 16 ünitesinin temel özelliklerinden biri, bağlı olan SDI kaynaklarınızı farklı görüntü pencerelerine atayabilmenizdir. Bu ayarları değiştirerek görüntü pencerelerinizin düzenini kolayca değiştirebilirsiniz. Örneğin, 5 numaralı SDI girişinin, 1 numaralı görüntü penceresinde görünmesini isteyebilirsiniz.

Arzu ettiğiniz görüntü penceresinde hangi kaynağın görüneceğini ayarlamak için:

- 1 Görüntü penceresi seçim ekranını açmak için, ön kontrol panelindeki 'view' (görüntü penceresi) butonuna basın. Görüntü penceresi seçenekleri, mavi bir arkaplan ile vurgulanmış olacaktır.
- 2 Tercih ettiğiniz görüntü penceresini seçmek için, numaralı görüntü penceresi butonlarından bir tanesine basın. Bunun yerine, görüntü pencereleri arasında gezinmek için döner düğmeyi de kullanabilirsiniz. 'Set' butonuna basarak, ayarınızı teyit edin.
- 3 'Src' (kaynak) butonuna basın. LCD'nin kaynak bölümü vurgulanmış olacaktır.

- 4 Tercih ettiğiniz girişi seçmek için, kontrol paneli üzerindeki numaralı görüntü penceresi butonlarından birine basın. Bunun yerine, LCD üzerinde girişleriniz arasında gezinmek için, döner düğmeyi de kullanabilirsiniz.
- 5 Ayarınızı teyit etmek için 'set' butonuna basın.



Bir görüntü penceresine bir kaynak ayarlamak için, görüntü penceresi ayarına girmek üzere 'view' butonuna basın, seçiminizi yapın, sonra ayarınızı teyit etmek için 'set' butonuna basın.

### Blackmagic MultiView 16 üzerinde Ekran Düzeninin (Layout) ayarlanması.

Blackmagic MultiView 16 üzerinde, çoklu görüntüleme çıkışınızda görünecek olan görüntü penceresi sayısını seçebilirsiniz. Örneğin, 4 giriş bağlı ise, bir dikey x yatay ızgara düzeninde dört adet görüntü penceresi sergileyen 2x2 ekran düzenini kolayca seçebilirsiniz. Girişlerinizi en elverişli şekilde görüntülemek için, bağlı bulunan giriş sayısına uygun olan ekran düzenini seçin.

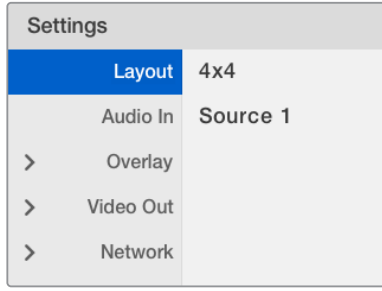
Aralarından seçebileceğiniz dört adet çoklu görüntüleme düzeni mevcuttur:

- **2x2** 4 ekran penceresi görüntüler. Ultra HD bir monitör bağlıysa, her bir kaynak native (gerçek) HD çözünürlükte görüntülenecektir.
- **3x3** 9 ekran penceresi görüntüler.
- **4x4** 16 ekran penceresinin hepsini görüntüler.

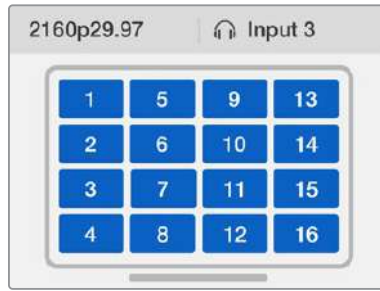
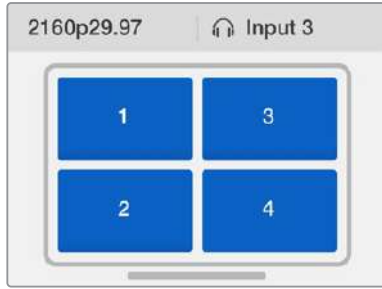
**BİLGİ** Blackmagic MultiView 16'nın kontrol paneli üzerindeki 'solo' butonuna basarak ve ardından bir görüntü penceresi butonu seçerek, bir görüntü penceresini tam ekran modunda izleyebilirsiniz. Blackmagic MultiView 4 ünitesinde, Teranex Mini Smart Panel üzerinde '1' olarak işaretli olan solo butonunu basın.



Döner düğmeyi veya pencere butonlarını kullanarak, bir kaynak atamak istediğiniz görüntü penceresini seçin



Düzeltilmek istediğiniz menü öğesini vurgulayın ve o öğenin ayarlarını açmak için "set" ibaresine basın



Bağlı olan giriş sayınıza en uygun olabilecek, aralarından seçebileceğiniz 3 farklı çoklu görüntüleme düzeni mevcuttur

## Ses Girişi

Bu ayar, üzerinden sesin alınıp çoklu görüntüleme çıkışlarına gömüleceği SDI girişini seçmek için kullanılır.

## Katman (Overlay)

Bu alt menü, katman özelliklerini açıp kapatarak, çoklu görüntü düzeninizin görünümünü değiştirmenize yarar.

Katman özellikleri şunlardır:

- **Kenarlıklar** – Her bir görüntü penceresini ızgara gibi bir desenle ayırmanızı mümkün kılar.
- **Etiketler** – 'Görüntü penceresi' etiketlerini görünür veya gizli moduna dönüştürür. Etiketler, Blackmagic MultiView Setup yazılımıyla değiştirilebilir.
- **Ses Göstergeleri** – Tüm görüntü pencereleri için ses VU göstergelerini açar veya kapatır. Her bir SDI sinyalinde gömülü olan ilk 2 kanal her bir görüntü penceresinde görüntülenir. Böylelikle, görüntüyle birlikte ses seviyelerini denetleyebilirsiniz.
- **SDI Tally** – Blackmagic MultiView 16 ünitesinin 16 numaralı girişine bir ATEM switcher'in program SDI çıkışı bağlıyken, bir görüntü penceresinin kaynağı yayına anahtarlandığında, çevresinde tally çerçeveleri görüntülenebilir. SDI tally katman ayarını kullanarak bu özelliği etkinleştirebilir veya etkisiz hale getirebilirsiniz.

Tally özelliğinin etkili çalışabilmesi için, Blackmagic MultiView 16'nızın girişlerini, ATEM switcher'iniz üzerindeki giriş numaralarıyla eşleştirecek şekilde bağladığınızdan emin olun.

## Video Çıkışı

'Video çıkışı' ayarları, Blackmagic MultiView 16 üniteniz üzerinde çıkış seçeneklerini kontrol etmenizi sağlar.

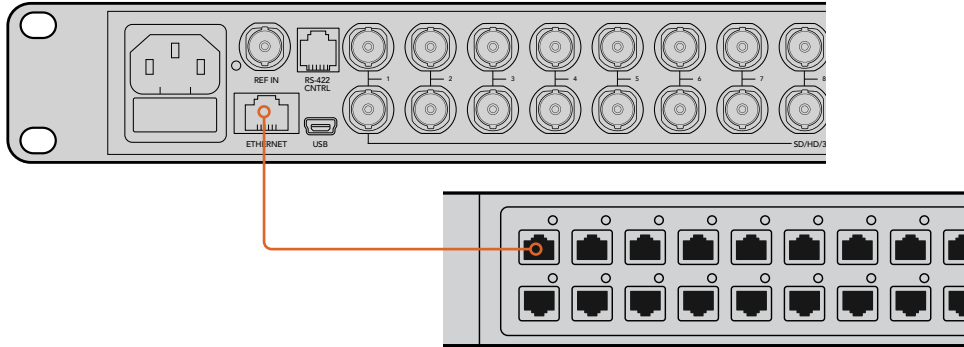
- **Video Formatı** – Ultra HD çoklu görüntüleme çıkışının kare hızını 2160p29.97'ye veya 2160p25'e değiştirmek için bu ayarı kullanın. HD çoklu görüntüleme çıkışının kare hızı, Ultra HD çıkışına uyumluluk sağlayacaktır. Ayar değişikliğini iptal etmek istediğinizde veya bir önceki menüye geri dönmek için, döner düğmeye basın.
- **HD Output** – HD çoklu görüntüleme çıkışı için interlaced (geçmeli video) veya progressive (tek geçişli video) modunu seçiniz. Seçili video formatı 2160p29.97 ise, HD çıkışı 1080p29.97 veya 1080i59.94 olabilir. Benzer şekilde, 2160p25 seçildiğinde, HD çıkışı 1080p25 veya 1080i50 olabilir.

## Ağ (Network)

'Network' (ağ) ayarları; bir ağa bağlanırken Blackmagic MultiView 16 ünitenizin IP, Subnet (alt ağ) ve Gateway (ağ geçidi) adreslerini ayarlamanıza olanak sağlar.

Blackmagic MultiView 16'nızın IP adresini ayarlamak için:

- 1 Ön kontrol panelindeki 'menu' butonuna basın ve LCD menü üzerindeki 'networking' (ağ yapılandırma) sekmesini vurgulamak için, döner düğmeyi kullanın.
- 2 Ağ ayarları ekranına girmek için 'set' (ayarla) butonuna basın.
- 3 "IP address" (IP adresi) sekmesini seçmek için döner düğmeyi çevirin.
- 4 IP adresinin ilk alanını vurgulamak için 'set' butonuna basın. Değerleri değiştirmek için döner düğmeyi kullanın.
- 5 İlk alanı teyit etmek için 'set' ibaresine basın, ardından daha sonraki gelen üç alan için yukarıdaki adımı tekrarlayın. Alt ağ ve ağ geçidi adreslerini atamanız gerekiyorsa, aynı yöntemi kullanarak bunları da ayarlayabilirsiniz.
- 6 Ana ekrana geri dönmek için menü butonuna iki kez basın.



Blackmagic MultiView 16'yı bir Ethernet ağına bağlamanız, üniteyi başka bir konumdan kontrol etmenizi mümkün kılar.

Network Settings	
IP Address	192.168.10.160
Subnet	255.255.255.0
Gateway	192.168.10.1

Blackmagic MultiView 16'nın kontrol panelindeki döner düğmeyi veya görüntü penceresi butonlarını kullanarak, ağ ayarlarının değerlerini atayabilirsiniz

## Teranex Mini Smart Panel

Teranex Mini Smart Panel, Blackmagic MultiView 4 ünitenizin önüne monte edilir ve orijinal ana panelin yerine geçer. Butonları, döner düğmeyi ve dahili LCD'yi kullanarak ayarlarınıza hızlıca erişebilirsiniz.

### Teranex Mini Smart Panel'in Takılması

Opsiyonel Smart Panel'inizin takılması kolaydır ve paneller çalışırken değiştirilebildiğinden, Blackmagic MultiView 4 ünitenizi takma esnasında kapatmanıza bile gerek yoktur.

- 1 Blackmagic MultiView 4 ünitenizin, ana ön panelinin her iki tarafındaki 2 adet M3 vidayı bir Pozidriv 2 tornavida ile çıkartın ve paneli ünitenin önünden yavaşça çekip ayırın.
- 2 Ana panelin iç kısmının alt köşesine takılı küçük, şeffaf plastik bir tüp fark edeceksiniz. Bu tüp, ünitenin içindeki LED'den gelen ışığı, ana panelin üzerindeki durum göstergesini aydınlatmak için yönlendirir. Bu tüp, ana ön panele takılı kalmalıdır.

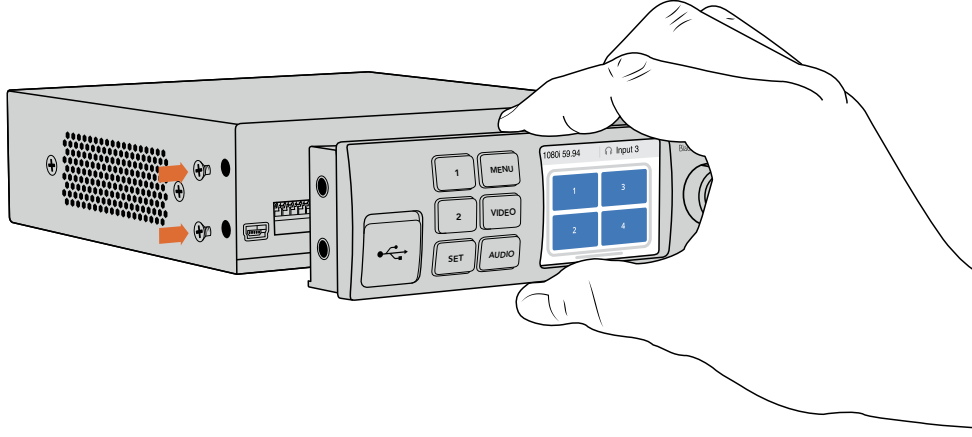
**BİLGİ** Eğer ana ön paneli tekrar takıyorsanız, güç göstergesi için olan ışık tüpünün, ünitenin önündeki yuvayla hizalandığından emin olun.

- 3 Smart Panel'in arkasındaki konektörü, Blackmagic MultiView 4 ünitenizin yüzeyindeki bitişik konektör ile hizalayın ve konektörler birbiri üzerine sıkı bir şekilde oturuncaya dek Smart Panel'i üniteye doğru itin. Smart Panel sıkı bir şekilde bağlanmalı ve Blackmagic MultiView 4 ünitenizin yüzeyine düzgün bir şekilde oturmalıdır.
- 4 Orijinal panelden çıkarmış olduğunuz M3 vidaları tekrar yerleştirin.

Blackmagic MultiView 4 üniteniz bir Teranex Mini Rack Shelf üzerine monte edilmişse, ön panel vidalarına erişebilmek için üniteyi rack'ten çıkarmanız gerekecektir.

Daha fazla bilgi için 'Rack Installation' (Rack Kurulumu) bölümüne bakınız.

Blackmagic MultiView 4 ünitesi üzerinde Smart Panel takılıken bile USB portuna erişebilirsiniz. Porta erişmek için, lastik USB toz kapağını kaldırmanız yeterlidir. Smart Panel takılınca, ön paneldeki küçük anahtarların üzeri kaplanır ve artık kullanılmazlar. Bunun sebebi, artık tüm ayarların LCD menü üzerinden değiştirilebilir olmasıdır.



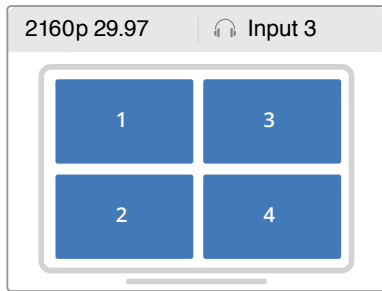
Teranex Mini Smart Panel, Blackmagic MultiView 4 üzerine takılırken, parmak ve baş parmağınızı panelin arkasındaki konektörle hizalandırarak paneli tutmanız, yerine oturtmanıza yardımcı olacaktır.

**BİLGİ** Orijinal ana panel çok güçlüdür. Dolayısıyla, Blackmagic MultiView 4 ünitenizi bir raf sisteminin arkasına veya çok sayıda kablo ya da hareket olan alanlara monte etmeniz gerekiyorsa, orijinal ana paneli istediğiniz zaman yeniden takabilirsiniz.

## Teranex Mini Smart Panel Özellikleri

Smart Panel'in özellikleri, MultiView 16'nın dahili kontrol paneliyle benzer niteliktedir. LCD üzerinde göreceğiniz ilk özellik ana ekrandır ve aşağıdakiler gibi, ayarların pratik bir genel bakışını gösteren, varsayılan görüntüdür:

- **Çoklu görüntüleme çıkışı kare hızı** – Sol üst köşede bulunan bu bilgi, Ultra HD SDI çoklu görüntüleme çıkışınızın seçili kare hızını görüntüler.
- **Ses girişi** – Bu bilgi çoklu görüntüleme çıkışı kare hızının yanında bulunur ve HDMI ile SDI çoklu görüntüleme çıkışı sinyalinde, gömülü ses için hangi SDI girişinin kullanıldığını görüntüler.
- **Çoklu görüntü düzeni** – Bu, 2x2 çoklu görüntü düzenini görüntüler.

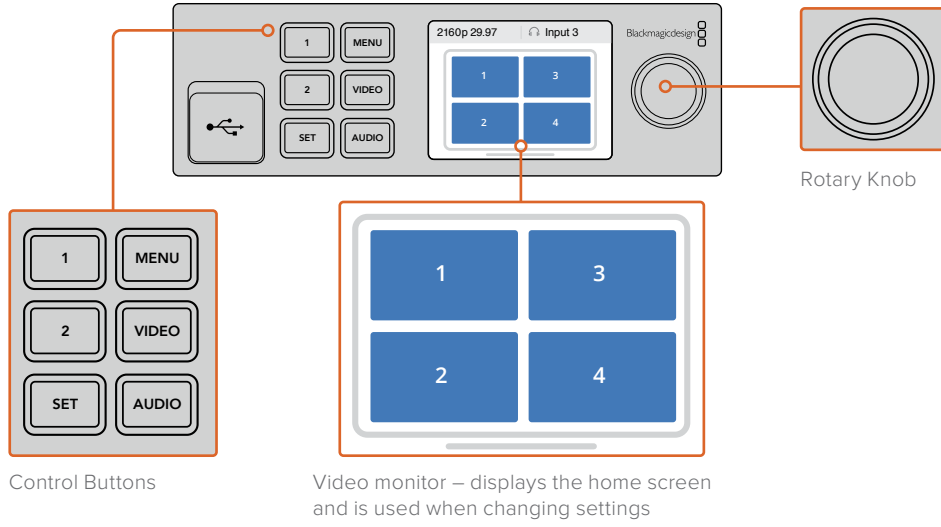


Teranex Mini Smart Panel'in LCD'si üzerindeki varsayılan görüntü ekranı, 'ana' (home) ekrandır

## Kontrol Butonları ve Döner Düğme

Teranex Mini Smart Paneliniz; Blackmagic MultiView 4'ün ayarlar menüsünde gezinmenize yarayan, bir dizi butona ve bir döner düğmeye sahiptir.

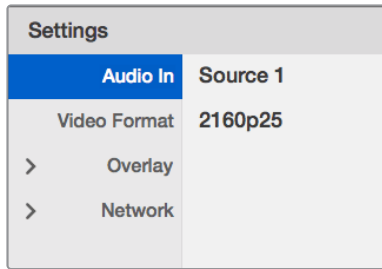
- **1 ve 2 butonları** – Sayısal ayar değerlerini artırmak ya da düşürmek veya menü ayarları arasında yukarı ya da aşağı hareket etmek için bu butonlara basın.
- **Ayarları Kaydet (Set)**– 1 ve 2 numaralı butonları kullanarak bir ayarı değiştirdikten sonra, 'set' butonuna basarak ayarınızı teyit edin.
- **Menu** – Blackmagic MultiView 4 ünitesinin ayarlar menüsüne girmek için basın. Menü butonuna ayrıca, menü öğeleri arasından ana ekrana kadar geriye doğru gitmek için de basabilirsiniz.
- **Video ve Ses Butonları** – Bu butonlar Teranex Mini çeviricilerine özeldir ve Blackmagic MultiView 4 ile kullanılmamaktadırlar.
- **Döner Düğme (Rotary Knob)** – Menü ayarları arasında gezinmek ve sayısal ayar değerlerini değiştirmek için, döner düğmeyi saat yönünde veya saat yönünün tersine çevirin.



## Teranex Mini Smart Panel Kullanılarak Ayarların Değiştirilmesi

Teranex Mini Smart Panel'i kullanarak ayarları değiştirmek daha pratiktir ve ayarlarınızı anında LCD üzerinde görsel olarak da teyit edebilirsiniz.

Blackmagic MultiView 4 ünitenizin kurulum menüsüne girmek için, Teranex Mini Smart Panel üzerindeki 'menu' yazılı butonuna basın. Buradan aşağıdaki ayarlara erişim sağlıyorsunuz.



Düzeltilmek istediğiniz menü öğesini vurgulayın ve seçmek için "set" ibaresine basın. Döner düğmeyi kullanarak ayarlar arasında gezin.

### Ses Girişi

Bu ayar, üzerinden sesin alınıp çoklu görüntüleme çıkışlarına gömüleceği SDI girişini seçmek için kullanılır.

## Video Formatı

Blackmagic MultiView 4 üniteniz, saniyede 29.97 veya 25 karede Ultra HD veya HD çıkış için ayarlanabilir. Mevcut olan çözünürlük ve kare hızı seçenekleri arasında gezinmek için bu ayarı kullanın.

## Katman (Overlay)

Katman alt menüsü, katman özelliklerinin görüntülenmesini etkinleştirmenizi veya etkisiz hale getirmenizi mümkün kılar.

Katman özellikleri şunlardır:

- **Kenarlıklar (Borders)** – Her bir görüntü penceresini ızgara tipi bir biçimde ayırmanızı mümkün kılar.
- **Etiketler (Labels)** – ‘View’ (Görüntü Penceresi) etiketlerinin görünür ya da görünmez olmalarını sağlar. Etiketler, Blackmagic MultiView Setup yazılımıyla değiştirilebilir.
- **Ses Göstergeleri (Audio Meters)** – Görüntü pencerelerinin hepsi için, ses VU göstergelerini etkinleştirir veya etkisiz hale getirir. Her bir SDI sinyalinde gömülü olan ilk 2 kanal her bir görüntü penceresinde görüntülenir. Böylelikle, görüntüyle birlikte ses seviyelerini denetleyebilirsiniz.

< Overlay	
Border	On
Labels	Off
Audio Meters	On
SDI Tally	On

## Ağ (Network)

‘Network’ (ağ) ayarları; Blackmagic MultiView 4 ünitenizin IP, Subnet (alt ağ) ve Gateway (ağ geçidi) adreslerini bir ağa bağlanırken ayarlamanıza olanak sağlar.

Blackmagic MultiView 4’ünüzün IP adresini ayarlamak için:

- 1 Ön kontrol panelindeki ‘menu’ butonuna basın ve LCD menü üzerindeki ‘networking’ (ağ yapılandırma) sekmesini vurgulamak için, döner düğmeyi kullanın.
- 2 Ağ ayarları ekranına girmek için ‘set’ (ayarla) butonuna basın.
- 3 “IP address” (IP adresi) sekmesini seçmek için döner düğmeyi çevirin.
- 4 IP adresinin ilk alanını vurgulamak için ‘set’ butonuna basın. Değerleri değiştirmek için döner düğmeyi kullanın.
- 5 İlk alanı teyit etmek için ‘set’ ibaresine basın, ardından daha sonra gelen üç alan için, yukarıdaki adımı tekrarlayın. Alt ağ ve ağ geçidi adreslerini atamanız gerekiyorsa, aynı yöntemi kullanarak bunları da ayarlayabilirsiniz.
- 6 Ana ekrana geri dönmek için menü butonuna iki kez basın.

< Network	
IP Address	192.168.10.150
Subnet	255.255.255.0
Gateway	192.168.10.1

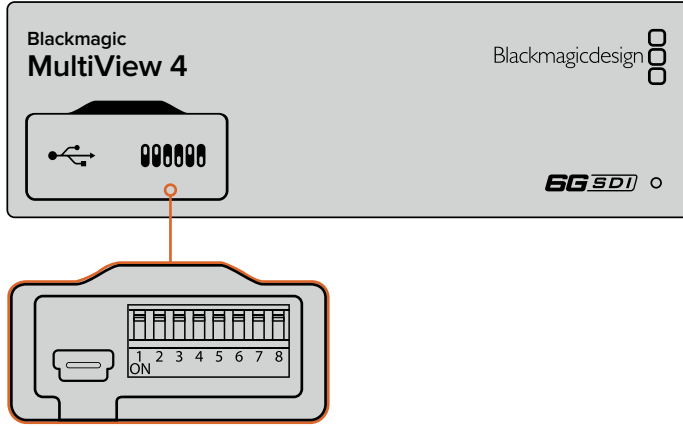
Blackmagic MultiView 4 ünitenizin ağ ayarlarına değer atamak için, Teranex Mini Smart Panel üzerindeki döner düğmeyi veya “1” ve “2” numaralı butonları kullanın



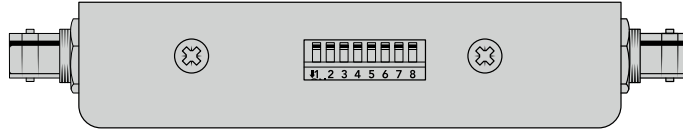
# Anahtarları (Switch) kullanarak Ayarların Deđiřtirilmesi

Blackmagic MultiView 4 ve MultiView 4 HD üzerinde, ayarları deđiřtirmenize yarayan küçük dahili anahtarlar (switch) bulunmaktadır. Blackmagic MultiView 4'te, anahtarlar lastik bir toz kapađının arkasında, ön panelin üzerindedir.

Blackmagic MultiView 4 HD'de, anahtarlar ünitenin yan tarafındadır.



Ayarları bir kalem yardımıyla, anahtarları düzelterek deđiřtiriniz.



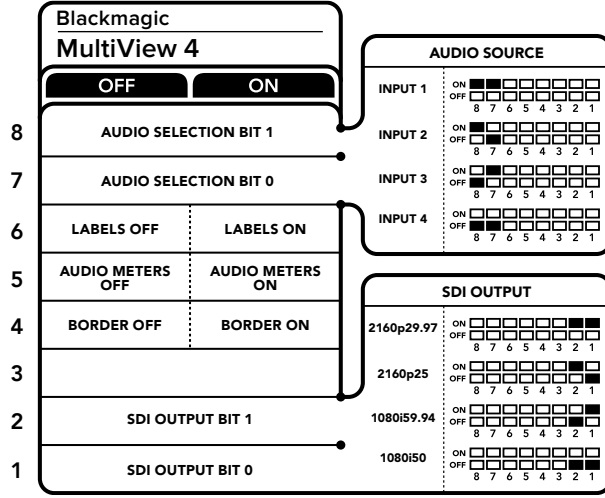
Blackmagic MultiView 4 HD'de, küçük anahtarlar ünitenin arka yan paneli üzerindedir

## Dahili Anahtarlar (Switch)

Ünitenin tabanında, basılı bir anahtar ayarları řeması bulacaksınız. Anahtar numaralarını 8'den 1'e ve soldan sađa takip ederek, anahtar ayarlarının açıklamalarla uyumlu olduđundan emin olun.

**BİLGİ** Anahtar ayarları ünitenizin tabanında basılı olsa da son güncellemelerdeki yeni özellikler, yeni ayarlar ilave edebilir. Bu nedenle, en güncel bilgiler için bu kılavuzun en son baskısına bakmanızda yarar vardır. En son sürümü [www.blackmagicdesign.com/tr/support](http://www.blackmagicdesign.com/tr/support) adresindeki BlackmagicDesign destek merkezinden indirebilirsiniz.

## Blackmagic MultiView 4 için Anahtar (Switch) Ayarları



Blackmagic MultiView 4 için Anahtar (Switch) Ayarları

Blackmagic MultiView 4'ün anahtarları, aşağıdaki ayarları değiştirmenize olanak sağlar.

### Anahtar 8 ve 7 – Ses Seçimi

8 ve 7 numaralı anahtarlar, sırasıyla bit (parça) 1 ve 0 olarak temsil edilir. Bu; 8 ve 7 numaralı anahtarların çeşitli açık/kapalı kombinasyonlarını ayarlayarak, HDMI ve SDI çoklu görüntüleme çıkış sinyalinde, gömülü ses için hangi SDI girişinin kullanıldığını seçebileceğiniz anlamına gelir.

### Ses Seçim Tablosu

Ses Kaynağı	Anahtar 8	Anahtar 7	Anahtar Şeması
Giriş 1	AÇIK	AÇIK	
Giriş 2	AÇIK	KAPALI	
Giriş 3	KAPALI	AÇIK	
Giriş 4	KAPALI	KAPALI	

### Anahtar 6 – Etiketler

Çoklu görüntüleme çıkışı sinyalinizdeki pencerelerin her birisi için etiketleri görüntülemek üzere, 6 numaralı anahtarı 'on' (açık) olarak ayarlayın. Bu etiketler, bu kılavuzun ilerleyen bölümlerinde açıklandığı üzere, Blackmagic MultiView kurulum yazılımıyla ayarlanabilir. Etiketleri gizlemek için, 6 numaralı anahtarı 'off' (kapalı) olarak ayarlayın.

### Anahtar 5 – Ses Göstergeleri

Çoklu görüntüleme çıkış sinyalinizdeki pencerelerin her biri için ses göstergelerini görüntülemek üzere, 5 numaralı anahtarı 'on' (açık) olarak ayarlayın. Ses göstergelerini gizlemek için 5 numaralı anahtarı 'off' olarak ayarlayın.

### Anahtar 4 – Kenarlıklar

Her bir MultiView penceresinin arasında kenarlıklar görüntülemek için 4 numaralı anahtarı 'on' olarak ayarlayın. Kenarlıkları gizlemek için, 4 numaralı anahtarı 'off' olarak ayarlayın.

## Anahtar 2 ve 1

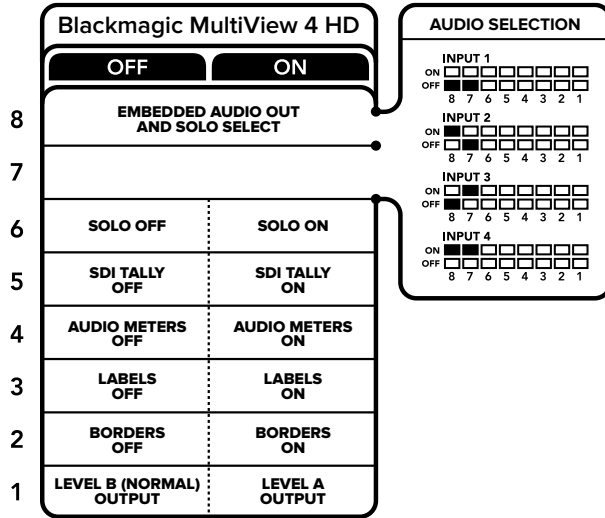
2 ve 1 numaralı anahtarlar, sırasıyla bit (parça) 1 ve 0 olarak temsil edilir. Bu; 2 ve 1 numaralı anahtarların çeşitli açık/kapalı kombinasyonlarını ayarlayarak, MultiView 4 ünitenizin SDI sinyalinin çıkış formatını seçebileceğiniz anlamına gelir.

### SDI Çıkışı Seçim Tablosu

SDI Çıkışı	Anahtar 2	Anahtar 1	Anahtar Şeması
2160p29.97	AÇIK	AÇIK	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
2160p25	AÇIK	KAPALI	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>
1080i59.94	KAPALI	AÇIK	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
1080i50	KAPALI	KAPALI	ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>

**NOT** Opsiyonel Teranex Mini Smart Panel'i kullanırken, anahtar ayarları, Smart Panel ayarları tarafından geçersiz kılınır. Blackmagic MultiView 4 üniteniz; anahtar, Smart Panel veya Blackmagic MultiView Setup yazılımı üzerinden uygulanmış olmasına bakmaksızın, en son ayarlarını muhafaza edecektir. Smart Panel'i çıkardıktan sonra anahtar (switch) kontrolüne dönüyorsanız ya da yazılım üzerinden Blackmagic MultiView 4 ünitenizin ayarlarını güncelliyorsanız, yeni ayarların etkinleşmesi için anahtarlar arasında tek tek gezinmeniz gerekebilir.

## Blackmagic MultiView 4 HD için Anahtar Ayarları



Blackmagic MultiView 4 HD'nizin altındaki anahtar açıklamaları ayarları değiştirmeniz için ihtiyacınız olan tüm bilgileri sunar.

Blackmagic MultiView 4 HD'nin anahtarları, aşağıdaki ayarları değiştirmenize olanak sağlar:

### Anahtar 8 ve 7 – SDI Ses Gömme (Embed) ve Solo Seçme

8 ve 7 numaralı anahtarlar, 4 adet AÇIK/KAPALI (ON/OFF) kombinasyonu sunmak üzere bir arada gruplandırılmıştır. Dört farklı kombinasyonun olması, dört SDI girişinin herhangi birinden alınan sesin, çoklu görüntüleme çıkışına gömülmesini mümkün kılar. Solo modunda, ses videoyu takip eder. Böylelikle, görüntü penceresinin kaynağını ve ses kaynağını seçmek üzere, bu anahtarları kullanabilirsiniz.

### Ses Seçim Tablosu

Ses Kaynağı	Anahtar 8	Anahtar 7	Anahtar Şeması
Giriş 1	KAPALI	KAPALI	
Giriş 2	AÇIK	KAPALI	
Giriş 3	KAPALI	AÇIK	
Giriş 4	AÇIK	AÇIK	

### Anahtar 6 – Solo Görüntüleme

Solo görüntüleme modunu etkinleştirmek için 6 numaralı anahtarı 'ON' olarak ayarlayın. Bu ayar, tek bir görüntü penceresini tam ekran modunda izlemenizi sağlar. 2x2 çoklu görüntü düzenini izlemek için, 6 numaralı anahtarı 'OFF' olarak ayarlayın.

Solo görüntü penceresi çıkışında gömülü olan ses, görüntü penceresi kaynağı seçiminizle otomatik olarak eşleşir. Solo düzeni için birleşik bir ses ve görüntü kaynağı seçmek üzere, 7 ve 8 numaralı anahtarı kullanın. 2x2 çoklu görüntüleme düzeninde, 7 ve 8 numaralı anahtar ses girişini seçer.

### Anahtar 5 – Tally

Görüntü pencereleri üzerinde tally çerçeveleri görüntülemek için, 5 numaralı anahtarı 'ON' olarak ayarlayın. Tally çerçevelerini gizlemek için 'OFF' olarak ayarlayın.

Solo modundayken; ATEM SDI kamera kontrol, zaman kodu ve kapalı altyazılar dahil tüm ilave veriler, değişime uğramadan aktarılır.

**BİLGİ** Görüntü pencerelerinin her biri için giriş numarası, Blackmagic MultiView Setup yazılımı kullanılarak ayarlanabilir. Tally özelliğinin doğru görüntülenmesi için, görüntü penceresi numarasının switcher'iniz üzerinde ayarlı olan giriş numarasıyla eşleştiğinden emin olunuz. Daha fazla bilgi için 'Tally Configuration' (Tally Yapılandırması) bölümüne bakınız.

### Anahtar 4 – Ses Göstergeleri

Görüntü pencereleri üzerinde ses göstergeleri görüntülemek için, 4 numaralı anahtarı 'ON' olarak ayarlayın. Ses göstergelerini gizlemek için, anahtarı 'OFF' olarak ayarlayın.

### Anahtar 3 – Görüntü Penceresi Etiketleri

Görüntü pencerelerinin her biri üzerinde etiketleri görüntülemek için, 3 numaralı anahtarı 'ON' olarak ayarlayın. Etiketleri etkisiz hale getirmek için 'OFF' olarak ayarlayın.

### Anahtar 2 – Kenarlıklar

Görüntü penceresi kenarlıklarını görüntülemek için, 2 numaralı anahtarı 'ON' olarak ve çerçeveleri etkisiz hale getirmek için de 'OFF' olarak ayarlayın.

### Anahtar 1 – Level A ve Level B 3G-SDI

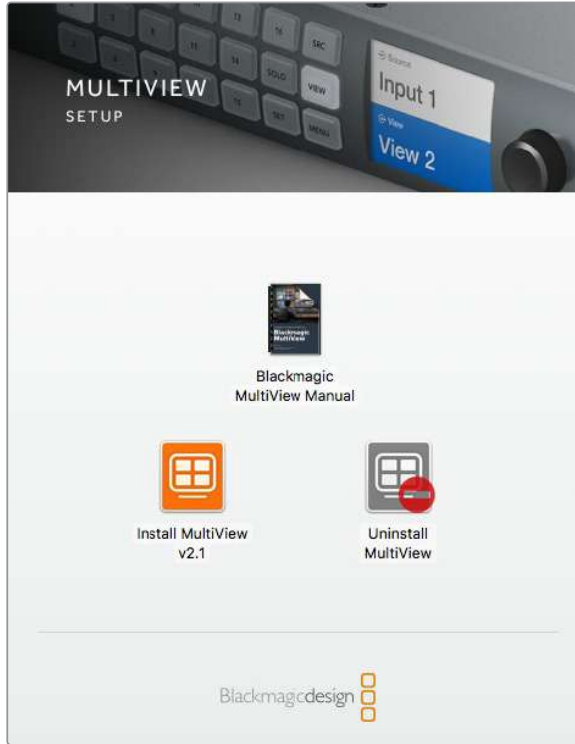
Level B (B seviye) 3G-SDI çıkışını seçmek için 1 numaralı anahtarı 'OFF' olarak veya level A (A seviye) 3G-SDI'yı seçmek için de 'ON' olarak ayarlayın. Bu, başka SDI ekipmanla uyumluluk için, 3G-SDI çıkış seviyesini değiştirmenize olanak verir.

# Blackmagic SmartView Setup Yazılımını Kullanma

Blackmagic MultiView Setup yazılımı, Blackmagic MultiView ünitenizi herhangi bir Mac veya Windows PC'den kolayca yapılandırmanızı sağlamakla birlikte, ünitenin dahili yazılımını güncellemenizi de mümkün kılar. Bu eklenti sezgiseldir ve kullanımı kolaydır. Ayrıca, Blackmagic MultiView 4 ünitesi bir ağa bağlıysa, USB ile takmanıza gerek yoktur ve ayarları Ethernet üzerinden bile değiştirebilirsiniz.

## Blackmagic MultiView Setup Yazılımının Yüklenmesi

Blackmagic MultiView Setup; Windows'un 64-bit versiyonları ve macOS'un da en son Sierra ve High Sierra versiyonlarıyla çalışır.



Blackmagic MultiView Setup yazılımını yüklemek için, yükleyici üzerine çift tıklayın ve komutları takip edin.

## Windows'un Yüklenmesi

- 1 Yazılımı Blackmagic Design web sitesinden indirdiyseniz, gelen medyadaki veya yüklenenler dosyasındaki yükleyici dosyasını çift tıklayın.
- 2 Yükleme talimatlarını takip edin ve Lisans Sözleşmesindeki şartları kabul ettiğinizde Windows otomatik olarak yazılımı yükleyecektir.

Windows 'start' butonuna basın ve sonra All Programs>Blackmagic Design>MultiView butonlarına basın. MultiView dosyası, Blackmagic MultiView kurulum uygulamasını içerir.

## Mac OS X Sisteminde Yazılımın Yüklmesi

- 1 Yazılımı Blackmagic Design web sitesinden indirdiyse, gelen medyadaki veya yüklenenler dosyasındaki yükleyici dosyasını çift tıklayın.
- 2 Yükleme talimatlarını takip ettiğiniz takdirde, Mac OS X yazılımı otomatik olarak yükleyecektir.

Uygulamalar dosyanızda, Blackmagic MultiView Setup yazılımını içeren, "Blackmagic MultiView" adlı bir dosya oluşturulacaktır.

## Blackmagic MultiView Setup Ana Sayfa

Blackmagic MultiView Setup yazılımını başlattıktan sonra göreceğiniz ilk şey, yazılım ana sayfasıdır. Açınıza birden fazla Blackmagic MultiView ünitesi bağlı ise, ana sayfanın sol ve sağındaki okları tıklayarak bunları seçebilirsiniz.

Blackmagic MultiView ünitenizin ayarlarına erişim sağlamanız için, ürün görüntüsünün altındaki yuvarlak ayarlar ikonunu tıklayın veya görüntünün üzerine de tıklayabilirsiniz.



Blackmagic MultiView Setup, Ethernet veya USB üzerinden bağlı olduğu durumlarda, Blackmagic MultiView ayarlarınızı bir bilgisayardan değiştirmenizi mümkün kılar.

## Blackmagic MultiView Setup ile Ayarların Değiştirilmesi

Blackmagic MultiView üniteniz için kurulum ayarlarını açmak üzere ayarlar ikonu üzerine tıklayın. Ayarlar penceresinde 'sources' (kaynaklar), 'views' (görüntü pencereleri) ve 'configure' (yapılandırma) adlı üç tane sekme göreceksiniz. Blackmagic MultiView 4 ve MultiView 4 HD üzerinde, görüntü pencereleri Videohub Control yazılımı üzerinden değiştirilemediklerinden, 'views' (görüntü pencereleri) ayarına gerek yoktur. Blackmagic MultiView 4 HD, tally ayarlarının değiştirilmesi için bir 'tally' menüsüne de sahiptir.

**BİLGİ** Kaynakların görüntülenmeleri için, ünitenizdeki ağ ayarlarının bilgisayarınızdakilerle eşleştiğinden emin olun.



Blackmagic MultiView Setup yazılımını, özel giriş etiketleri oluşturmak için kullanabilirsiniz. Böylece, çoklu görüntüleme düzenindeki her bir kaynağı hızlıca tespit edebilirsiniz.

- **Kaynaklar (Sources)** – Giriş etiketlerinizi kişiselleştirmenize olanak verir. Bu, çoklu görüntüleme ekranınızdaki kaynakların nasıl etiketlendiğini değiştirir.
- **Görüntü Pencereleri (Views)** – Bu sekme sadece, Blackmagic MultiView 16'yı Videohub Control yazılımı üzerinden kontrol ederken geçerlidir. Görüntü pencerelerinin adını değiştirerek, Videohub Control yazılımındaki varış noktası paneli dahilinde, onların daha kolay tespit edilmelerini sağlayabilirsiniz.
- **Video Çıkışı** – Blackmagic MultiView 4 HD ünitesinden, video formatını ve SD çıkışının görüntü oranını kişiselleştirmenize imkan tanır.
- **Yapılandırma** – 'Yapılandırma' (configure) sekmesi; cihaz adını kişiselleştirme ve video çıkışı ile katman ayarlarının yanı sıra, ağ ayarları ve seri kontrol düzeltmeleri gibi ayarlar üzerinde kontrol sağlar.

## Kaynaklar

### Giriş Etiketlerinin Kişiselleştirilmesi

Kaynaklarınızı etiketlendirmek, çoklu görüntüleme düzeni kapsamında her bir kaynağı, hızla tespit etmenizi sağlar. Ayrıca etiket setlerini de kaydedip yükleyebilirsiniz. Bu sebeple, Blackmagic MultiView ünitenizi veya farklı uygulamaları düzenli olarak kullanıyorsanız, tekrar girmenize gerek kalmadan, etiketleri hızla yükleyebilirsiniz.

Etiketler Videohub Control yazılımında görünürdürler ve ayrıca ağa bağlı olan Videohub Control panellerine de görünürler.

Giriş etiketlerinizi kişiselleştirmek için:

- 1 'Kaynaklar' sekmesini tıklayın.
- 2 Değiştirmek istediğiniz giriş kaynağının ismi için olan metin kutusunu tıklayın ve yeni bir etiket ismi girin.
- 3 Ayarlarınızı doğrulamak için, 'kaydet' (save) üzerine tıklayın.

## Görüntü Pencereleri (Views)

### Görüntü Pencereleri Etiketlerini İsteğe Göre Düzenleme

Blackmagic MultiView 16'da, MultiView 16 ünitenizi Videohub Control yazılımı üzerinden kontrol ettiğiniz durumlarda, varış noktası olarak daha kolay tespit edilmeleri için, görüntü pencerelerinin etiketlerini değiştirebilirsiniz.

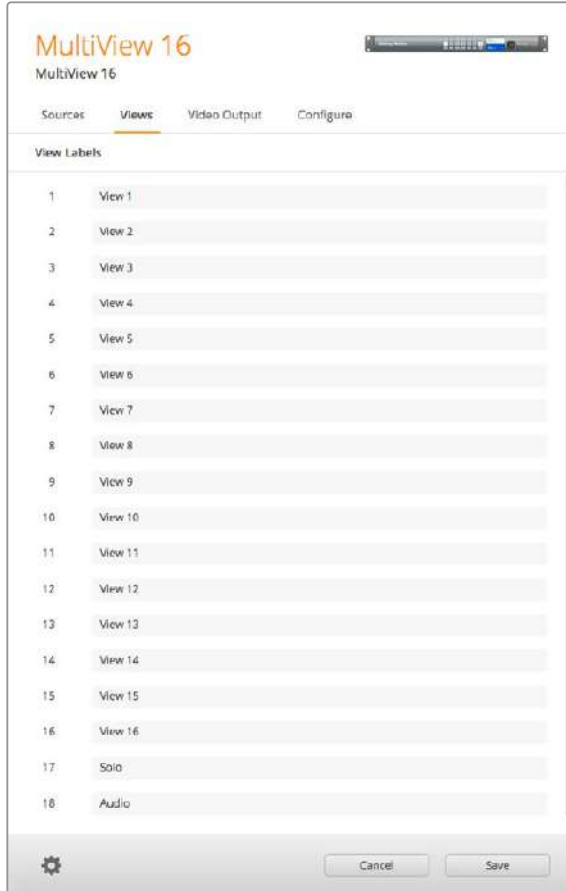
Görüntü penceresi etiketlerini kişiselleştirmek için:

- 1 'Views' (görüntü pencereleri) sekmesini tıklayın.
- 2 'Output labels' (çıkış etiketleri) ayarında, değiştirmek istediğiniz görüntü penceresi için olan metin kutusunu tıklayın ve yeni bir etiket adı girin.
- 3 Ayarınızı doğrulamak için, 'kaydet' (save) üzerine tıklayın.

Görüntü pencere (View) etiketleri varsayılan ayarlarında olduklarında, 17 numaralı çıkışın 'solo' ve 18 numaralı çıkışın 'audio' (ses) olarak etiketli olduğunu fark edeceksiniz.

17 numaralı çıkış, Blackmagic MultiView 16'nın ön paneli kullanılarak kontrol edilen 'solo' ayarı için olan, yazılım etiketini değiştirmenizi sağlar. Bu, Blackmagic Videohub Control yazılımını kullanarak, MultiView 16 ünitenizi kontrol ederken faydalıdır. Blackmagic MultiView Setup yazılımındaki 'solo' çıkış etiketini kişiselleştirmek, Blackmagic Videohub Control'de nasıl belirdiğini değiştirmenizi sağlar.

18 numaralı çıkış Blackmagic MultiView 16'nızın LCD menüsündeki 'audio in' (ses girişi) ayarıyla ilişkilidir. Bu ayar, çoklu görüntüleme çıkışınıza gömmek istediğiniz sesi yönlendirir. 'Solo' çıkış etiketine benzer şekilde, Blackmagic MultiView 16 ünitesini Blackmagic Videohub Control ile kontrol ederken, görünümünü kişiselleştirebilmeniz için, görüntü penceresi etiketini değiştirebilirsiniz.



"Solo" ve "audio" çıkış etiketlerini dahil ederek isimlerini değiştirebilirsiniz ve Blackmagic MultiView 16 ünitenizi Blackmagic Videohub Control'ü kullanarak kontrol ettiğinizde, görünümünü kişiselleştirebilirsiniz



## Video Çıkışı

### Video Formatı ve HD Çıkışı

Video format ayarları, Blackmagic MultiView modelleri arasında kısmen farklı olabilir.

Blackmagic MultiView 16 eşzamanlı olarak HD ve Ultra HD video çıkışı sağlayabilir. Ayrıca, çıkarmak istediğiniz video kare hızını da seçebilirsiniz. Örneğin, ABD’de yaygınca kullanılan format ile uyumlu bir sinyal çıkarmak istiyorsanız, 2160p29.97’yi seçiniz ve HD çıkışı otomatik olarak kare hızıyla eşleşecektir.

Bu örnekte, video formatı 2160p29.97 olarak seçiliyse, video gereksinimlerinize uygun olacak şekilde HD çıkışını 1080p29.97 veya 1080i59.94 olarak ayarlayabilirsiniz.



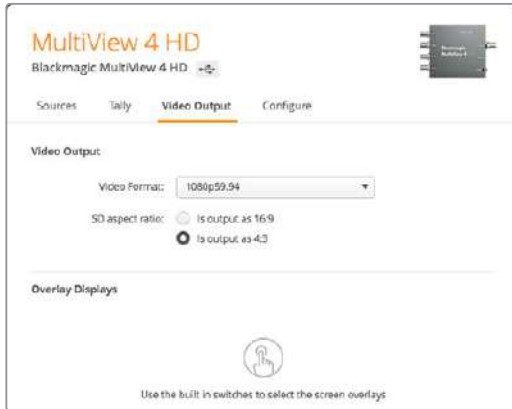
MultiView 16 için olan 'video output' (video çıkışı) sekmesindeki seçenek butonları; görüntü penceresi düzenini, Ultra HD video formatını, HD çıkışı ve SD görüntü oranını ayarlamak için kullanılır.

Blackmagic MultiView 4 üzerinde, SDI çıkış üzerinden Ultra HD mi yoksa HD video mu çıkarmak istediğinizi seçebilmenin yanında, kare hızını da ayarlayabilirsiniz. Bu ayarlar, açılır 'video format' menüsünde mevcuttur.



Blackmagic MultiView 4 için olan 'video output' (video çıkışı) sekmesi hem çözünürlük hem de kare hızını kapsayan video format seçeneklerinden oluşan bir açılır liste içerir.

Blackmagic MultiView 4 HD üzerinde, HD kare hızını ve videonuzu geçmeli (interlaced) mi yoksa tek geçişli (progressive) mi çıkarmak istediğinizi seçmek için, 'video format' menüsünü kullanabilirsiniz. Blackmagic MultiView 4 HD ünitenizin SD görüntü oranını ayrıca 16:9 veya 4:3 olarak da ayarlayabilirsiniz.



Blackmagic MultiView 4 HD için olan 'video output' (video çıkışı) sekmesi, çıkış HD çözünürlüğü ve kare hızının yanı sıra, geçmeli (interlaced) veya tek geçişli (progressive) tarama modunu da ayarlamanızı mümkün kılar.

## Çoklu Görüntüleme Düzenini Değiştirmek

Blackmagic MultiView 16'nın kontrol panelinin LCD menüsündeki 'layout' (düzen) ayarlarına benzer şekilde, görüntü düzenini kurulum yazılımını kullanarak da değiştirebilirsiniz. 'Details' (Detaylar) ayarlarındaki arzu ettiğiniz düzen ikonu üzerine tıklayarak, kullanmak istediğiniz düzen ayarını seçiniz.



MultiView 16 için ekran düzenini 'video output' (video çıkışı) sekmesinden ayarlayın.

## Tally Yapılandırması

Blackmagic MultiView 4 HD üzerindeki tally yapılandırmasını; tally'i etkisiz hale getirmek için, bir Blackmagic kamera tarafından gönderilmiş olarak veya ATEM switcher tarafından MultiView 4 HD'nin 4 numaralı girişine gönderildiği takdirde kamera numarasına göre işaretlemek için ayarlayabilirsiniz.



MultiView kurulum yardımcı yazılımının 'Tally' menüsündeki tally seçenekleri.

Tally'nin switcher girişine tekabül etmesini seçerken, 1'den 4'e kadar olan girişlerin metin alanına, kamera numarasını 1'den 99'a kadar olmak üzere girebilirsiniz.

## Tally'nin Geçersiz Kılınması (Tally Override)

Tally sinyalleri genelde, MultiView üniteniz üzerindeki en son SDI girişine bağlı olan program dönüş sinyali tarafından temin edilir. Ancak, kameralarınızın her birinin tüm görüntü pencerelerine bağlı olmalarını istediğiniz zamanlar olabilir.

Bir ATEM switcher'e veya üçüncü parti tally sistemi olan başka bir SDI switcher'e bağlı olan Blackmagic Design kameralarını kullanıyorsanız, 'tally override' (tally'i geçersiz kılma) özelliğini etkinleştirebilirsiniz. Tally'i geçersiz kılma modu seçildiğinde, MultiView 4 HD üniteniz her bir SDI giriş sinyalinde gömülü olan tally sinyallerini arayacaktır. Bu demektir ki, ünitenin son girişindeki program dönüşü sinyali üzerinden toplu bir tally sinyali almak yerine, görüntü pencerelerinin hepsi, tally sinyallerini bağımsız olarak alacaktır.

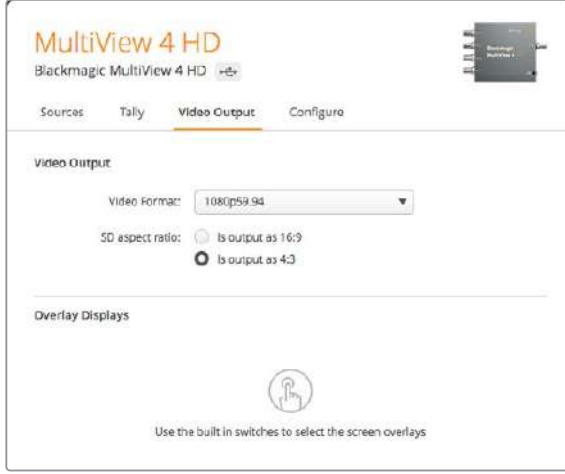
**BİLGİ** 'Tally override' modu, bir Blackmagic ATEM switcher veya Blackmagic Camera Fiber Converter cihazına bağlı olan Blackmagic URSA Mini, URSA Mini 4K, URSA Mini Pro ve URSA Broadcast kameralarıyla çalışır. Üçüncü parti bir switcher veya üçüncü parti bir tally cihazını nasıl bağlayacağınız hakkında daha fazla bilgi için, Blackmagic 3G-SDI Shield for Arduino kılavuzuna bakınız.

## SD Görüntü Oranı

Blackmagic MultiView ünitenize 4:3 SD video bağlı ise, 'set to 4:3' (4:3'e ayarla) onay kutusunu kontrol edin. Bu 4:3 videonuzun, doğru görüntü oranını kullanarak görüntülenmesini garanti eder.

Eğer 16:9 SD video bağlı ise görüntünün, görüntü penceresinde doğru bir şekilde gösterileceğinden emin olmak için 'set to 16:9' (16:9'a ayarla) onay kutusunu kontrol edin.

Blackmagic MultiView 4 HD'ye bir SD kaynağı ilettiğinizde, kurulum yazılımını kullanarak 16:9 ile 4:3 çıkış modu arasında değiştirebilirsiniz. 'Video Output' (Video Çıkış) menüsünde, SD görüntü oranı için bir opsiyon seçin.



MultiView kurulum yazılımının 'Video Output' (Video Çıkış) menüsündeki SD görüntü oranı seçenekleri.

## Katman (Overlay) Ekranı

Blackmagic MultiView 16 ve Blackmagic MultiView 4 ünitelerinin 'overlay' (katman) ayarlarında, Blackmagic MultiView ünitesindeki tüm özellikleri etkinleştirmek için onay kutuları mevcuttur.

Katman özellikleri şunlardır:

- **Kenarlıklar (Borders):** Her bir görüntü penceresini izgara tipi bir desenle ayırmanızı mümkün kılar.
- **Etiketler (Labels):** 'Görüntü penceresi' etiketlerini görünür veya gizli moduna dönüştürür. Etiketler, Blackmagic MultiView Setup yazılımıyla değiştirilebilir.
- **Ses Göstergeleri (Audio Meters):** Tüm görüntü pencereleri için ses VU göstergelerini açar veya kapatır. Her bir SDI sinyalinde gömülü olan ilk 2 kanal, her bir görüntü penceresinde görüntülenir. Böylelikle, görüntüyle birlikte ses seviyelerini denetleyebilirsiniz.
- **SDI Tally:** Bir ATEM switcher'in program SDI çıkışı Blackmagic MultiView ünitenizin, örneğin Blackmagic MultiView 16'nın 16 numaralı girişine veya Blackmagic MultiView 4'ün 4 numaralı girişine bağlı ise; kaynağı yayına anahtarlanmış olduğu durumlarda, bir görüntü penceresinin çevresinde tally çerçevesi görebilirsiniz. Tally özelliği, katman ayarlarındaki 'turn on SDI tally' (SDI tally'i etkinleştir) onay kutusunu seçerek etkinleştirilebilir. Bu özelliği etkisiz hale getirmek için seçimi iptal edin. Tally'nin doğru görüntülenmesi için, kurulum yazılım eklentisinde bir giriş numarası atanabilir.



Blackmagic MultiView 16 ve Blackmagic MultiView 4 üzerinde, 'configure' (yapılandırma) sekmesindeki katman ayarları; çerçeveler, görüntü penceresi etiketleri, ses göstergeleri ve hatta SDI tally çerçeveleri gibi katman özelliklerini etkinleştirmenizi veya etkisiz hale getirmenizi sağlar.

**BİLGİ** Tally özelliğinin etkili çalışabilmesi için, Blackmagic MultiView ünitenizin girişlerini, ATEM switcher'inizin giriş numaralarıyla eşleştirecek şekilde bağladığınızdan emin olun. Aksi takdirde, tally yanlış görüntü penceresi üzerinde görüntülenebilir.

## Yapılandırma

### Blackmagic MultiView Ünitenize İsim Atamak

'Configure' (yapılandırma) sekmesi Blackmagic MultiView modelleri arasında farklılık gösterir.

Blackmagic MultiView 16 veya Blackmagic MultiView 4 ünitelerinin 'configure' (yapılandırma) sekmesi; 'Details' (Detaylar), 'Overlay' (Katman) ve 'Network settings' (Ağ ayarları) için ayar grupları içerir. Blackmagic MultiView 4 HD için, etiket ve yazılım sürüm numarasını gösterir ve ayarları yoktur.

Uzaktan kullanıldığında kolay tespit edilebilmesi için Blackmagic MultiView 16'nıza veya Blackmagic MultiView 4'ünüze isim atamak için:

- 1 'configure' (yapılandırma) sekmesini tıklayın.
- 2 'Details' (detaylar) ayarında, 'name' (isim) metin kutusunu tıklayın ve Blackmagic MultiView üniteniz için yeni bir etiket girin.
- 3 'Save' (kaydet) ibaresini tıklayın.



Ağ kullanıcılarının kolay tespit edebilmelerini sağlamak üzere, Blackmagic MultiView 16'nıza isim atamak için Blackmagic MultiView Setup yazılımını kullanın

## Ağ ve Seri Kontrol Ayarları

Blackmagic MultiView 16 ünitenizin bilgisayarınıza USB üzerinden bağlı olduğu durumlarda, ağ ve seri kontrol ayarları Blackmagic MultiView Setup yazılımı kullanılarak ayarlanabilirler. Bu ayarları ayrıca, ön kontrol panelin LCD menüsünü kullanarak da değiştirebilirsiniz. Blackmagic MultiView 4'ü yapılandırırken, yalnızca ağ ayarları kullanılabilir.

Ağ ayarlarını değiştirmek için, metin kutusunu tıklamanız ve klavyenizi kullanarak değerleri girmeniz veya arzu edilen onay kutusunu işaretlemeniz yeterlidir.



The screenshot shows the 'Network Settings' and 'Serial Control' sections of the Blackmagic MultiView Setup interface. The 'Network Settings' section has three input fields: 'IP Address' with the value '192.168.10.160', 'Subnet Mask' with '255.255.255.0', and 'Gateway' with '192.168.10.1'. Below this, the 'Serial Control' section has a 'Leitch protocol:' label followed by two radio button options: 'Leitch Client' (which is unselected) and 'Leitch Server' (which is selected).

Bir ağa bağlanırken, MultiView 16'nızın 'ağ ayarlarını' (network settings) da uygun olacak şekilde değiştirmeniz gerekebilir. 'Serial Control' (seri kontrol) ayarları, RS-422 uzaktan kontrol kurulum gereksinimlerinize bağlı olarak, MultiView 16 ünitenizi Leitch client veya sunucu yapılandırması için ayarlamanıza olanak verir.

Seri kontrolü kurmak için, Blackmagic MultiView 16 ünitesini USB üzerinden bilgisayarınıza bağlayın ve aşağıdaki adımları takip edin:

- 1 Blackmagic MultiView kurulum yazılımını başlatın ve ürün resmini veya altındaki ayarlar ikonunu tıklayarak Blackmagic MultiView 16 ünitenizi seçin.
- 2 Eğer Blackmagic MultiView 16'nız bağlı olan bir kontrol panelinin client cihazı olarak işlev görecekseniz, 'configure' (yapılandırma) sekmesini tıklayarak "Leitch Protocol" anahtarını "Leitch Client" olarak ayarlayın ya da üniteniz bir otomasyon sistemi veya üçüncü parti yönlendirici kontrol sisteminden kontrol edilecekse, "Leitch Server" (Leitch Sunucu) olarak ayarlayın.
- 3 Ayarınızı doğrulamak için 'save' (kaydet) üzerine tıklayın.



The screenshot shows the 'Serial Control' section of the Blackmagic MultiView Setup interface. It features a 'Leitch protocol:' label followed by two radio button options: 'Leitch Client' (unselected) and 'Leitch Server' (selected).

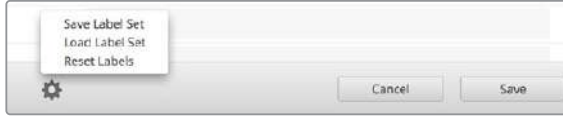
RS-422 seri kontrol kullanırken 'client' veya 'server' ibarelerini seçin.

## Etiket Setlerinin Kaydedilmesi ve Yüklenmesi

Sürekli devam eden bir proje için bir etiket seti kullanıyorsanız, bunları bir dosyaya kaydederek daha sonra yükleyebilirsiniz.

Etiketlerinizi kaydetmek için, 'label set' (etiket seti) ayarlarını açmak üzere Blackmagic MultiView kurulum yazılımındaki dişli ikonunu tıklayın ve "save label set" (etiket setini kaydet) ibaresini seçin. Dosyayı saklamak için bir konum seçin ve 'save' (kaydet) üzerine tıklayın.

Etiketlerinizi yüklemek için, 'label set' (etiket seti) ayarlarını açmak üzere dişli ikonunu tıklayın ve "load label set" (etiket setini yükle) ibaresini seçin. Kaydettiğiniz etiket seti dosyanıza gidin ve 'load' (yükle) ibaresini tıklayın.



Etiketleri kaydetmek ve yüklemek için Blackmagic MultiView kurulum yazılımını kullanın.

## Dahili Yazılımın Güncellenmesi

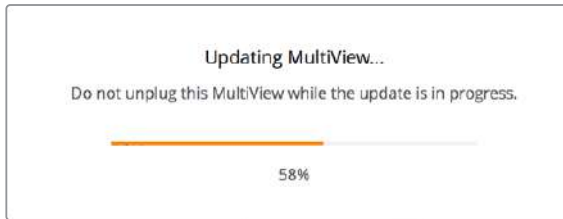
Zaman zaman, Blackmagic MultiView ünitenizdeki dahili yazılımın güncellenmesi gerekecektir. Dahili yazılımın güncellenmesi; yeni özellikler, yeni donanımlarla uyumluluk ve yeni formatlar için destek sağlayabilir.

Blackmagic MultiView ünitenizin dahili yazılımını güncellemek için:

- 1 Blackmagic MultiView ünitenizi bir USB veya Ethernet üzerinden bilgisayarınıza bağlayın.
- 2 Blackmagic MultiView kurulum yazılımını başlatmanız, ağınıza bağlı olan tüm Blackmagic MultiView ünitelerini otomatik olarak görüntüleyecektir.
- 3 Ürün resmini veya ürün ismi altındaki ayarlar ikonunu tıklayarak, Blackmagic MultiView ünitenizi seçin.
- 4 Blackmagic MultiView kurulum yazılımı, bir güncelleme gerektiğinde size bildirecektir.
- 5 Bir güncelleme gerektiğinde, 'update' (güncelle) butonunu tıklayın ve yazılımın yükleme işlemini tamamlamasını bekleyin. Güncelleme işlemi devam ederken, Blackmagic MultiView ünitesinin prizden çıkarılmış olmadığından emin olun.
- 6 Güncelleme tamamlandığında 'close' (kapat) butonunu tıklayın.



Yeni dahili yazılımı yüklemek için 'update' (güncelle) butonunu tıklayın.



Güncelleme işlemi devam ederken, Blackmagic MultiView ünitesinin prizden çıkarılmış olmadığından emin olun

# Videohub Control Yazılımının Kullanılması

Blackmagic MultiView 16 ünitesi bir ağıba bağlı iken, Blackmagic MultiView 16'nın video girişlerini çoklu görüntüleme düzeninizdeki farklı görüntü pencerelerine yönlendirmek üzere, Blackmagic Videohub Control yazılımını bir Mac veya Windows bilgisayar üzerinde kullanabilirsiniz. Blackmagic MultiView ünitenizin SDI girişleri, 'sources' (kaynaklar) panelinde basmalı buton olarak belirirken, görüntü pencereleri de 'destinations' (varış noktaları) panelinde basmalı buton olarak görünürler. Videohub Control uygulaması Videohub yazılım yükleyicinin bir parçasıdır ve [www.blackmagicdesign.com/tr/support](http://www.blackmagicdesign.com/tr/support) adresindeki Blackmagic Design destek merkezinden indirilebilir .

**NOT** Videohub Control yazılımını; Blackmagic MultiView 16 üzerindeki görüntü pencerelerine kaynak yönlendirmenin yanında, solo modu için görüntü penceresini seçmek veya çoklu görüntüleme çıkışı için ses kaynağını seçmek gibi başka ayarlar için de kullanabilirsiniz. Blackmagic MultiView 4 üzerinde, çoklu görüntüleme çıkışının solo kaynağını ve ses kaynağını değiştirmek için Videohub Control yazılımını kullanabilirsiniz.

## MultiView 16 ünitenizi seçin

Videohub Control yazılımını başlattıktan sonra, 'settings' (ayarlar) açılır menüsünü açmak için dışı ikonunu tıklayın ve "select Videohub" (Videohub'ı seç) ibaresini seçin. Bağlı olan cihazlar listesinden Blackmagic MultiView 16'nızın ismini seçin.

Girişleriniz etiketlenmiş ise, onlara atadığınız isimler, Videohub Control yazılımı kapsamında belirecektir. Eğer etiketlenmiş değilse, o durumda Giriş 1, Giriş 2, Giriş 3 vs. olarak görüntüleneceklerdir.



Blackmagic MultiView 16'nın kaynaklarını farklı görüntü pencerelerine yönlendirmek için Blackmagic Videohub Control'ü kullanabilirsiniz.

## Girişlerinizi Görüntüleme

Blackmagic MultiView 16'nızın video girişlerinin hangisinin belirli bir görüntü penceresine yönlendirilmiş olduğunu görmek için, varış noktası panelinden bir görüntü penceresi basmalı butonunu tıklayın. Varış noktası veya görüntü penceresi butonu yanacaktır. 'Sources' (kaynaklar) panelinde, yönlendirilmiş olan video girişinin butonu da yanacaktır. Böylece, görüntü penceresine hangi girişin veya kaynağın yönlendirilmiş olduğu daha açık olacaktır.

## Girişleri Görüntü Pencerelerine Yönlendirme

Bir video girişini bir görüntü penceresine yönlendirmek için, varış noktası panelinden bir görüntü penceresi işlem butonunu tıklayın ve ardından, girişi görüntü penceresine anında yönlendirmek için kaynaklar panelinden bir giriş butonunu tıklayın.

## Solo Giriş

Blackmagic MultiView 16'nın ön panelindeki "solo" butonu etkinleştirildiğinde, hangi girişin tam ekran modunda görüntüleneceğini belirlemek üzere, "solo input" (solo giriş) butonunu kullanın. Videohub Control varış noktası panelindeki "solo input" işlem butonunu tıklamanız ve ardından, kaynaklar panelinden bir giriş butonunu tıklamanız yeterlidir.

## Ses Girişi

Blackmagic MultiView 16 ve Blackmagic MultiView 4 üzerinde, çoklu görüntüleme çıkışına hangi SDI giriş sesinin yönlendirilmiş olduğunu tespit etmek için, Videohub Control yazılımındaki "audio input" (ses giriş) işlem butonunu kullanabilirsiniz. Videohub Control varış noktası panelindeki "audio input" (ses giriş) işlem butonunu tıklamanız ve ardından, o girişin sesini anında çoklu görüntüleme çıkışına yönlendirmek için, kaynaklar panelinden bir giriş butonunu tıklamanız yeterlidir.



"Solo input" ve "audio input" işlem butonları, bu ayarları Videohub Control yazılımını kullanarak değiştirmenizi mümkün kılar.



# Yazılım Geliştiricileri İçin Bilgiler

## Blackmagic Videohub Ethernet Protocol v2.3

### Summary

Your Blackmagic MultiView is compatible with the Blackmagic Videohub Ethernet Protocol. It is text based and is accessed by connecting to your Blackmagic MultiView's IP address and TCP port 9990.

**NOTE** Controlling your MultiView via Ethernet is available on Blackmagic MultiView 16 and Blackmagic MultiView 4, however, most features are relevant to Blackmagic MultiView 16. On Blackmagic MultiView 4, you can change the solo source and audio source for the multi view output.

The multi view sends information in blocks which each have an identifying header in all caps, followed by a full colon. A block spans multiple lines and is terminated by a blank line. Each line in the protocol is terminated by a newline character.

Lines sent to the Blackmagic MultiView 16 can be terminated with line feed, carriage return or both.

Upon connection, the multi view sends a complete dump of the state of the device. After the initial status dump, status updates are sent every time the multi view status changes.

To be resilient to future protocol changes, clients should ignore blocks they do not recognize, up to the trailing blank line. Within existing blocks, clients should ignore lines they do not recognize.

### Protocol Preamble

The first block sent by the multi view is always the protocol preamble:

```
PROTOCOL PREAMBLE:↵  
Version: 2.3↵  
↵
```

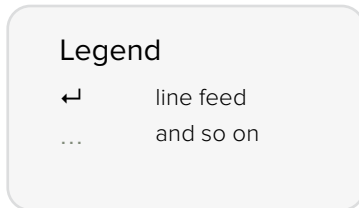
The version field indicates the protocol version. When the protocol is changed in a compatible way, the minor version number will be updated. If incompatible changes are made, the major version number will be updated.

### Device Information

The next block contains general information about the connected Blackmagic MultiView 16 device. If a device is connected, the multi view will report the attributes of the Blackmagic MultiView 16:

```
MULTIVIEW DEVICE:↵  
Device present: true↵  
Model name: Blackmagic MultiView 16↵  
Video inputs: 16↵  
Friendly name:  
Unique ID:  
Video processing units: 0↵  
Video outputs: 16↵  
Video monitoring outputs: 0↵  
Serial Ports:  
↵
```

This example is for the Blackmagic MultiView 16 which has 16 sources and 18 views including solo which is view 16 and audio which is view 17, referred to here as outputs.



Version 2.3 of the Blackmagic Videohub Ethernet Protocol was released with Videohub 4.9.1 software

### Initial Status Dump

The next two blocks enumerate the labels assigned to the input and output ports.

```
INPUT LABELS:↵
0 VTR 1↵
1 VTR 2↵
...
↵
```

```
OUTPUT LABELS:↵
0 Output feed 1↵
1 Output feed 2↵
...
↵
```

Note: Input and Output labels are always numbered starting at zero in the protocol which matches port one on the chassis.

The next three blocks describe the routing of the view ports.

```
VIDEO OUTPUT ROUTING:↵
0 5↵
1 3↵
...
↵
```

The next block describes the locking status of the views. Each port has a lock status of “O” for ports that are owned by the current client (i.e., locked from the same IP address), “L” for ports that are locked from a different client, or “U” for unlocked.

```
VIDEO OUTPUT LOCKS:↵
0 U↵
1 U↵
...
↵
```

The last block is the configuration block.

```
Layout: SOLO or 2x2 or 3x3 or 4x4
Output format: 50i or 50p or 60i or 60p
Solo enabled: True or False
Widescreen SD enable: True or False
Display border: True or False
Display labels: True or False
Display audio meters: True or False
Display SDI tally: True or False
```

## Status Updates

When any route, label, or lock is changed on the multi view by any client, the multi view resends the applicable status block, containing only the items that have changed.

If multiple items are changed, multiple items may be present in the update:

```
OUTPUT LABELS:↵
7 New output 8 label↵
10 New output 11 label↵
↵
```

## Requesting Changes

To update a label, lock or route, the client should send a block of the same form the multi view sends when its status changes. For example, to change the route of output port 8 to input port 3, the client should send the following block:

```
VIDEO OUTPUT ROUTING:↵
7 2↵
↵
```

The block must be terminated by a blank line. On receipt of a blank line, the multi view will either acknowledge the request by responding:

```
ACK↵
↵
```

or indicate that the request was not understood by responding:

```
NAK↵
↵
```

After a positive response, the client should expect to see a status update from the MultiView showing the status change. This is likely to be the same as the command that was sent, but if the request could not be performed, or other changes were made simultaneously by other clients, there may be more updates in the block, or more blocks. Simultaneous updates could cancel each other out, leading to a response that is different to that expected.

For MultiView 16 the client can change the solo source and the audio source to embed on the output.

Solo mode needs to be enabled either from the front panel or by sending the block:

```
CONFIGURATION:↵
Solo enabled: true↵
↵
```

Once enabled the following block will change the SOLO source to input 11:

```
Video Output Routing:↵
16 10↵
↵
```

This is not available on MultiView 4.

The following block will send embedded audio from input 1 to the MultiView 16 output:

```
Video Output Routing:↵
17 0↵
↵
```

The following block will send embedded audio from input 1 to the MultiView 4 output:

```
Video Output Routing:↵
5 0↵
↵
```

In the absence of simultaneous updates, the dialog expected for a simple label change is as follows:

```
OUTPUT LABELS:↵
6 new output label seven↵
↵
ACK↵
↵
OUTPUT LABELS:↵
6 new output label seven↵
↵
```

The asynchronous nature of the responses means that a client should never rely on the desired update actually occurring and must simply watch for status updates from the MultiView and use only these to update its local representation of the server state.

### Requesting a Status Dump

The client may request that the MultiView resend the complete state of any status block by sending the header of the block, followed by a blank line. In the following example, the client requests the MultiView resend the output labels:

```
OUTPUT LABELS:↵
↵
ACK↵
↵
OUTPUT LABELS:↵
0 output label 1↵
1 output label 2↵
2 output label 3↵
...
↵
```

### Checking the Connection

While the connection to the MultiView is established, a client may send a special no-operation command to check that the MultiView is still responding:

```
PING:↵
↵
```

If the MultiView is responding, it will respond with an ACK message as for any other recognized command.

## Blackmagic MultiView 16 RS-422 Protocol

### General

The RS-422 protocol can be used to control Blackmagic MultiView 16 as a slave device from third party routers and automation systems.

The “Leitch Server” mode implements the router (server) side of the Leitch Serial Pass Through Protocol as specified in section 4 of Leitch document SPR-MAN revision D. In “Leitch Client” mode, the Blackmagic MultiView 16 implements the controller (client) side of the Leitch terminal protocol. Set the desired leitch mode in the ‘configure’ settings in the Blackmagic MultiView Setup software.

This document describes the commands and parameters in the protocol that are relevant and supported by Blackmagic MultiView 16. Other commands and parameters specified in the Leitch protocol are accepted but ignored.

The RS-422 serial port is configured as 9600 N81:

9600 is the line speed, or baud rate, at 9600 bits/sec.

N represents no parity check, or 'none'.

8 is the data length.

1 is for stop bits.

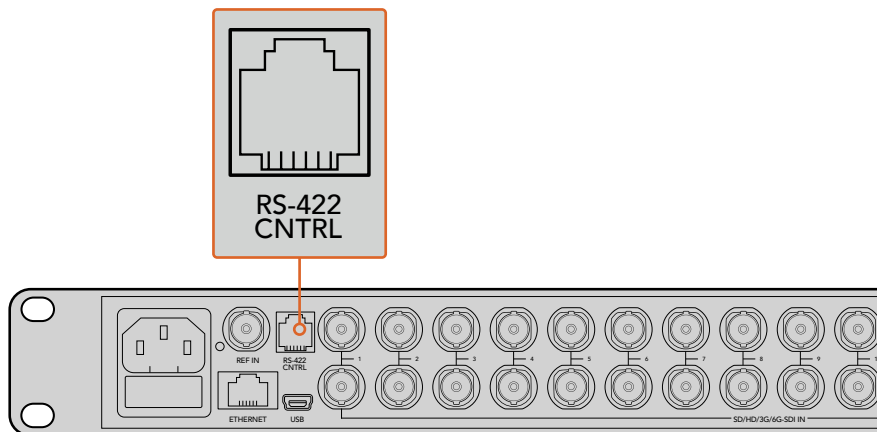
To summarize N81, data without a parity check begins with 1 start bit, includes 8 true data bits, and 1 stop bit. There are 10 bits in total.

The protocol is line oriented, with a maximum length of 250 characters per command. Each command from the client should be terminated with a carriage return (\r). Each response from the server will be terminated with a carriage return and line feed (\r\n).

Sources, destinations and levels are always specified in base-16, numbered from zero. Levels are always between 0 and 15 ("F") . Blackmagic MultiView 16 only has one valid level – level zero.

On connecting to the serial port, the client should send a carriage return. Blackmagic MultiView 16 will respond with a > character prompt, which is not followed by a carriage return or line feed. Receiving the prompt indicates that a connection has been established. The same prompt will be issued after each command received by the MultiView.

In the following documentation, commands in orange and values in blue must be typed literally, including any spaces. In the following example of an immediate command using destination port 7 and source port 3, @ X:0/destination,source would be entered as: @ X:0/6,2

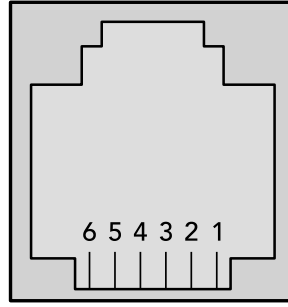


The RS-422 serial port lets you control Blackmagic MultiView 16 from third party routers and automation systems. The connector is an RJ11 connector, the same used in many landline telephone connections. By modifying an RS-422 to USB adapter cable terminated with an RJ11 connector, you can control Blackmagic MultiView 16 using external controllers via USB.



An RS-422 to USB adapter cable and RJ11 connector can be purchased from electronics stores such as Digi-Key.com. Refer to the pinout diagram below for help wiring the RJ11 connector to the adapter cable.

Pin No.	Function
Pin 1	TX +
Pin 2	TX -
Pin 3	GND
Pin 4	GND
Pin 5	RX -
Pin 6	RX +



Pinout diagram for the RJ11 connector

### Notifications

Once connected, if status reporting is enabled, the client will receive a notification message when a route changes on the MultiView. The notifications take one of two forms:

**S:0destination,source** Routing change

This message indicates that the specified source port is now routed to the specified destination.

**V:0destination,source** Preset routing notification

This message indicates that the current preset includes a route from the specified source to the specified destination.

### Global Commands

All pass through commands are preceded by an @ symbol and a space.

The following client commands are supported:

**@ !** disable status reporting  
Status reporting is disabled by default.

**@ ?** enable status reporting  
Status reporting is enabled.

**@ Z:** reset routing table

Routing is reset so that the first source is routed to all destinations.

### Immediate Commands

**@ X:0/destination,source** change route

**@ X:0/destination,source/destination-2,source-2...** change multiple routes

The specified source ports are routed to the specified destinations.

Any routing changes will trigger **S:** notifications

**@ X?0destination** request individual route status

The source routed to the specified destination will be returned as an **S:** notification.

**@ S?0** request all ports route status

Each source and destination port pair will be returned as **S:** notifications

## Salvo Commands

@ P:0/destination,source queue route change

@ P:0/destination,source/destination-2,source-2... queue multiple route changes

The specified routing changes are added to the current salvo for later execution.

@ P?0destination request individual port status in salvo

If a routing change for the specified destination port is queued, the route will be returned as a V: notification.

@ V?0 request all ports status in salvo

Each queued routing change in the salvo is reported as a V: notification.

@ B:C clear salvo

@ B:R clear salvo

Any queued changes are discarded and the salvo is reset.

@ B:E execute salvo

Any queued changes are executed and each routing change will be returned as an

S: notification.

# Yardıım

## Yardıım İin

Yardıım almanın en hızlı yolu, Blackmagic Design online destek sayfalarına girip, Blackmagic MultiView üniteler için mevcut olan en son destek kaynaklarını incelemenizdir.

### Blackmagic Design Online Destek Sayfaları

En güncel kılavuz, yazılım ve destek notlarına, [www.blackmagicdesign.com/tr/support](http://www.blackmagicdesign.com/tr/support) adresindeki BlackmagicDesign destek merkezinden ulaşılabilir.

### Blackmagic Design Forum

Web sitemizdeki Blackmagic Design forum, daha fazla bilgi ve yaratıcı fikirler için ziyaret edebileceğiniz faydalı bir kaynaktır. Burası yardıım alabilmeniz için daha hızlı bir yol olabilir çünkü, başka deneyimli kullanıcılar ya da Blackmagic Design çalışanları tarafından sorularınıza yanıtlar bulabilir ve bu sayede çalışmalarınıza devam edebilirsiniz. Foruma, <https://forum.blackmagicdesign.com> adresinden ulaşabilirsiniz.

### Blackmagic Design Destek Hizmetiyle İrtibat Kurma

Aradığınız yardıımı destek kaynaklarında veya forumda bulamadığınız durumda, destek talebinde bulunmak üzere, lütfen destek sayfamızdaki “Bize e-posta gönderin” butonunu tıklayın. Bunun yerine, “Yerel destek ekibini arayın” butonunu tıklayabilir ve size en yakın olan Blackmagic Design destek ofisini arayabilirsiniz.

### Yüklü Olan Yazılım Sürümünün Kontrol Edilmesi

Bilgisayarınızda Blackmagic MultiView yazılımının hangi sürümünün yüklü olduğunu kontrol etmek için, Blackmagic MultiView uygulamasını açın. “Blackmagic MultiView” menüsünden, “About MultiView” (MultiView Hakkında) ibaresini seçin ve sürüm numarasını kaydedin.

### En son güncellemelere erişim

Bilgisayarınızda yüklü olan Blackmagic MultiView yazılımının sürümünü kontrol ettikten sonra, lütfen Blackmagic Design destek merkezine [www.blackmagicdesign.com/tr/support](http://www.blackmagicdesign.com/tr/support) adresinden girerek en son güncellemeleri kontrol edin. En son güncellemelerin çalıştırılması önerilse de önemli bir projenin ortasındaiken yazılımı güncellemekten kaçınmanız daha mantıklıdır.



# Mevzuata İlişkin Bildirimler ve Güvenlik Bilgileri

## Mevzuata İlişkin Bildirimler



### Avrupa Birliğinin elektrikli ve elektronik cihazlara dair atık kontrol yönetmeliği.

Ürün üzerindeki sembol, bu cihazın başka atık malzemelerle bertaraf edilmemesi şartını belirler. Atık cihazlarınızı bertaraf edebilmeniz için, geri dönüşümünü sağlamak üzere, belirlenmiş toplama noktasına teslim edilmeleri gerekmektedir. Bertaraf anında atık cihazlarınızın ayrı olarak toplanması ve geri dönüşümü, doğal kaynakların korunmasına yardımcı olacaktır ve insan sağlığını ve çevreyi koruyucu bir şekilde geri dönüşümünü sağlayacaktır. Atık cihazlarınızı geri dönüşüm için nereye teslim edebileceğiniz konusunda daha fazla bilgi için, lütfen yerel belediyenizin geri dönüşüm şubesini ya da ürünü satın aldığınız satış bayisini arayınız.



Bu cihaz test edilmiş ve Federal İletişim Komisyonu (FCC) koşullarının 15. bölümü doğrultusunda A Sınıfı dijital cihazların sınırlarıyla uyumlu olduğu tespit edilmiştir. İlgili sınırlar, bu cihaz ticari bir ortamda çalıştırıldığında, zararlı müdahalelere karşı makul koruma sağlamaları amacıyla tasarlanmıştır. Bu cihaz, radyo frekans enerjisi üretir, kullanır ve saçabilir ve talimatlar doğrultusunda kurulmadığı ve kullanılmadığı takdirde, radyo iletişimlerine zararlı müdahaleye yol açabilir. Bu cihazın bir meskun bölgede çalıştırılması, zararlı müdahaleye yol açabilir. Bu durumda, müdahalenin düzeltilmesi için ilgili maliyeti, kullanıcının kendisi karşılamak zorunda kalacaktır.

Bu cihazın çalıştırılması aşağıdaki iki şarta bağlıdır:

- 1 Bu cihaz, zararlı müdahaleye sebebiyet vermemelidir.
- 2 Bu cihaz, istenmeyen işleme yol açan müdahaleler de dahil olmak üzere, maruz kaldığı her türlü müdahaleyi kabul etmelidir.

HDMI arayüzlerine bağlantı, yüksek kaliteli korumalı HDMI kablolarıyla yapılmalıdır.

## Güvenlik Bilgileri

Bu cihaz, koruyucu topraklama bağlantısı olan bir şebeke prizine takılmalıdır.

Elektrik çarpması riskine karşı, bu cihaz damlayan veya sıçrayan suya maruz bırakılmamalıdır.

Bu cihaz, çevresel ısı 40° C'ye kadar olan tropikal ortamlarda kullanılmaya uygundur.

Cihazın çevresinde yeterli havalandırma olduğundan ve hava akımının kısıtlanmadığından emin olun.

Rafa monte ederken, hava akımının bitişik cihazlardan dolayı kısıtlanmadığından emin olun.

Ürünün içinde, kullanıcı tarafından tamir edilebilecek hiç bir parça bulunmamaktadır. Gerekli tamiratları, yerel Blackmagic Design servis merkezine yönlendirin.



Deniz seviyesinden yüksekliğin 2000m'yi aşmadığı yerlerde kullanın.

# Garanti

## Sınırlı Garanti

Blackmagic Design, Blackmagic MultiView cihazının satın alındığı tarihten itibaren 12 ay boyunca; bağlantılar, kablolar, soğutma fanları, elektrik sigortaları, LCD ekranı ve butonlar dahil olmak üzere, malzeme ve işçilik bakımından kusursuz olacağını garantiler. Bu garanti süresi içinde üründe bir arıza ve kusur söz konusu olursa, Blackmagic Design kendi seçimi doğrultusunda arızalı ürünü, parça ve işçilik bedeli talep etmeksizin tamir edecektir veya yenisiyle değiştirecektir.

Bu garanti kapsamındaki hizmetten yararlanmak için, kusur ve hataya ilişkin garanti süresi sona ermeden, Müşteri Blackmagic Design'i bilgilendirmeli ve söz konusu hizmetin sağlanması için uygun düzenlemeleri yapmalıdır. Blackmagic Design tarafından özel belirlenmiş ve yetkilendirilmiş bir hizmet merkezine arızalı ürünün ambalajlanarak nakliyesi, Müşteri'nin sorumluluğudur ve nakliye ücretleri, peşin ödenmiş olmalıdır. Bize herhangi bir sebepten dolayı iade edilen ürünlerin tüm nakliyat değişiklikleri, sigorta, yasal bedel, vergi ve diğer tüm masrafları, müşterinin sorumluluğundadır.

Bu garanti; yanlış kullanım ya da yanlış veya kusurlu bakımdan kaynaklanan herhangi bir arızayı, bozukluğu ya da hasarı kapsamaz. Blackmagic Design, burada açıklanan durumlarda bu garanti kapsamında hizmet sağlamak zorunda değildir: a) Blackmagic Design temsilcileri haricindeki başka personelin ürün kurma, tamir etme ya da bakımını yapma girişimlerinden kaynaklanan hasarın tamiri, b) uygun olmayan kullanım veya uyumlu olmayan ekipmanlara bağlamaktan kaynaklanan hasarın tamiri, c) Blackmagic Design ürünü olmayan parçaların ya da malzemenin kullanımından kaynaklanan hasarın ya da arızanın tamiri ya da d) Modifiye veya başka ürünlerle entegre edilmiş bir ürünü; söz konusu modifikasyon ya da entegrasyonun, gereken tamiratın süresini uzattığı ya da ürün bakımını zorlaştırdığı durumlarda tamir edilmesi. BU GARANTİ, BLACKMAGIC DESIGN TARAFINDAN VERİLMİŞTİR VE AÇIK YA DA ZİMNİ, HERHANGİ BİR GARANTİNİN YERİNİ TUTAR. BLACKMAGIC DESIGN VE SATICILARI, ZİMNİ TİCARİ UYGUNLUK GARANTİSİNİ YA DA ÖZEL BİR AMACA UYGUNLUK GARANTİSİNİ KABUL ETMEZ. KUSURLU BİR ÜRÜNÜN TAMİRİ VEYA DEĞİŞTİRİLMESİ, BLACKMAGIC DESIGN'İN MÜŞTERİLERİNE SUNDUĞU TAM VE MÜNHASİR ÇÖZÜMDÜR. BLACKMAGIC DESIGN YA DA SATICILARININ OLABİLECEK HASARLAR HAKKINDA ÖNCEDEN BİLGİSİ OLMASINI GÖZETMEKSİZİN, ÜRÜNDE DOLAYLI, ÖZEL, TESADÜFİ YA DA NETİCE OLARAK ORTAYA ÇIKAN HERHANGİ BİR HASAR İÇİN, BLACKMAGIC DESIGN SORUMLU DEĞİLDİR. BLACKMAGIC DESIGN, MÜŞTERİLER TARAFINDAN EKİPMANIN YASAL OLMAYAN HERHANGİ BİR KULLANIMINDAN SORUMLU DEĞİLDİR. BLACKMAGIC DESIGN, BU ÜRÜNÜN KULLANIMINDAN KAYNAKLANAN HERHANGİ BİR HASARDAN SORUMLU DEĞİLDİR. BU ÜRÜNÜN ÇALIŞTIRILMASINDAN DOĞAN RİSK, KULLANICININ KENDİSİNE AİTTİR.

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