Testing

After Triple checking your component placement and soldering connections 12VDC can be applied with the switch in OFF position. Ensure your "+" positive and "-" negative connections are correct.
It is a good idea to have some form of current limit on the power supply voltage supply in case there is a construction / soldering issue that wasn't noticed. With the switch OFF, the Green Led should be OFF.
Slide the switch ON and the Led indicator should light up.If that doesn't happen turn OFF immediately and inspect thoroughly, there is something wrong.
When the Green Led is lit carefully measure the Voltage on TDA1519 between Pin 7 and Pin 2, it should be approximately 12VDC the same as the supply voltage. 2nd check is between Pin3 and Pin2 on TDA1519 which should be approx. 6VDC. If both OK switch off and connect your 4 to 8Ohm speakers to the outputs and your audio device output signal to the 3.5mm Stereo Socket. Pay careful attention that the input signal level PT1 is turned to low so as not to overdrive the amplifier then gradually increase the volume to test.

You are now ready to add the Bluetooth Module and create your own Bluetooth speaker.

Fitting Bluetooth Module

Disconnect power to the Amplifier. Fitting the Bluetooth module requires extra care when soldering.
Firstly solder in the 2 Pin power header in the ARD2-2049 space then solder in the 3 wire links, any length is OK, you will trim them later(see pic***)
Now fit the Bluetooth Module into position on the Power Amp PC and solder the power connections on top then bend over the wire links into place, trim them and solder them to their "R" "G" and "L" pads.
Be extra careful to ensure there a no solder shorts and the links do not touch.

Testing Bluetooth Kit

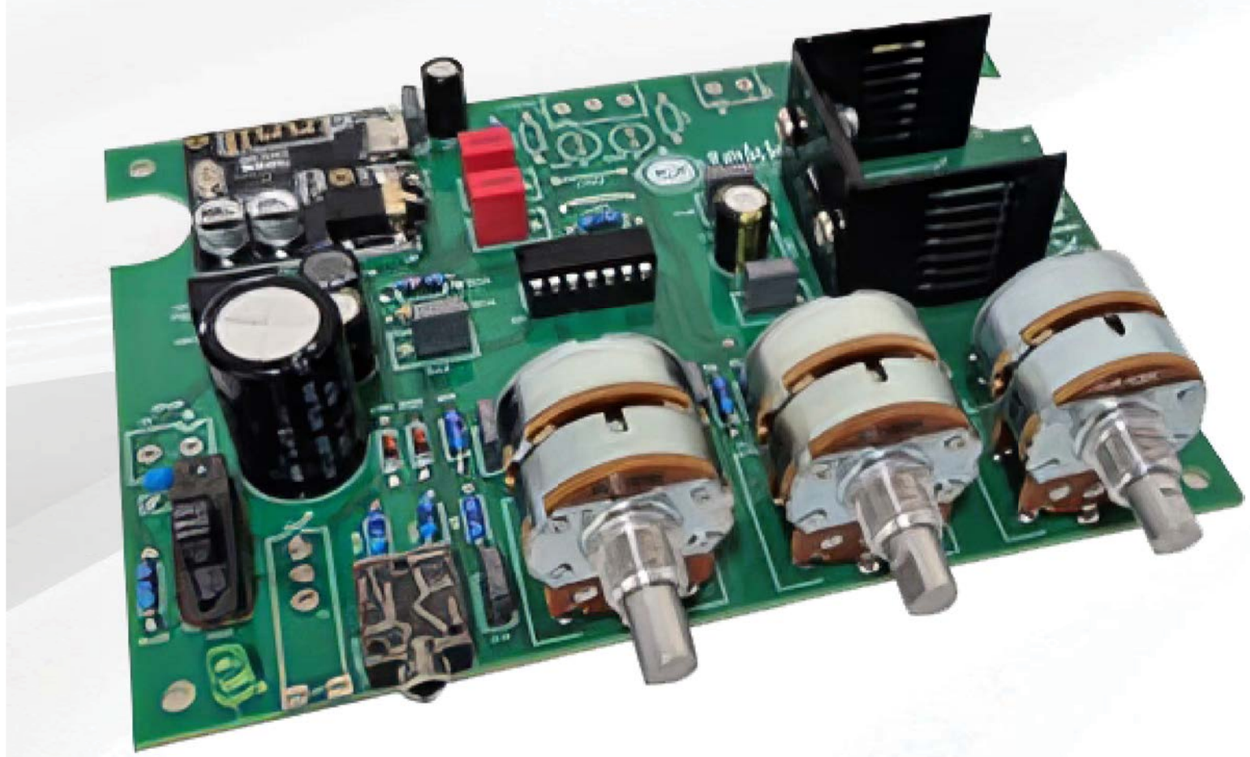
Do not plug into the 3.5mm stereo audio line connection. Connect the 12Vdc and switch ON the Amplifier.
The Green Led on the Amplifier board should light up, followed shortly after by the Blue LED on the Bluetooth Module. With the Volume potentiometer PT1 turned up slightly you will hear Voice prompts from the Bluetooth Module to connect it to your Source

Assembled Unit with Bluetooth Parts

(KI0244)

12V DC Stereo Power Amplifier with Bluetooth Kit

Tekky Kit



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COMPONENTS

What does it do?

This kit is a Stereo High Power Amplifier with Bluetooth 5.0 MP3 player.
It has Treble Control P1 (100K Linear), Bass Control P2 (100K Linear) and Volume Control P3 (10K Logarithmic).

The Amplifier IC TDA1519 is actually two 4W amplifiers in one package. Effectively one amplifier drives the left loudspeaker while the second amplifier drives the right. Typically each amplifier can deliver 6W into a 4Ω speaker.

The Bluetooth Module is an ARD2-2049 powered on PCB by a 12VDC to 5VDC isolated converter (ROE-1205S).

Audio connection is via the Bluetooth or if the 3.5mm Stereo Audio Line In Socket is used it will override the Bluetooth source.

	Part Description	Part No.	Qty
PCB1	TEKKY Kit Bluetooth Stereo Amplifier PCB FR4 D/S	**584-0001**	1
R20 R21	470R CR 0.25W Resistor	**RS1445**	2
R18 R19	1K CR 0.25W Resistor	**RS1485**	2
R15	4K7 CR 0.25W Resistor	**RS1565**	1
R1 R2 R6 R7 R11 R12	10K CR 0.25W Resistor	**RS1605**	6
R3 R4 R5 R8 R9 R10	22K CR 0.25W Resistor	**RS1645**	6
R14	47K CR 0.25W Resistor	**RS1685**	1
R13	150K CR 0.25W Resistor	**RS1745**	1
C3 C6	560pF 50V Disc Ceramic	**CC0134**	2
C1 C2 C4 C5 C22	0.047uF 63V MKT Capacitor	**CC3357**	5
C10 C11 C12	0.22uF 63V MKT Capacitor	**CC3365**	3
C13 C14	0.47uF 63V MKT Capacitor	**CC3369**	2
C8 C9	1uF 50V Mono Z5U 5mmLS (105)	**CC0073**	2
C21	10uF 63V Low ESR 105C 5x11mm	**CC19EXR18**	1
C7 C16	100uF 35V Low ESR 105C 8x12mm	**CC19EXR46**	2
C15	220uF 35V Low ESR 105C 10x16mm 5mm LS	**CC19EXR52**	1
C17	2200uF 35V RB Cap 7.5mm LS	**CC1477**	1
L1	1mH 0.16A RF Choke (105J) 5% Radial	**CH0050RAD**	1
U1	Bluetooth 5.0 MP3 Module	**ARD2-2049**	1

Designator	Part Description	Part No.	Qty
U2	TDA1519 Audio Amplifier IC	**X-TDA1519A**	1
U3	LM324 14 Pin DIL IC	**X-LM324N**	1
HS1	U Shape Heatsink for Flat Semiconductor (28x32x24mm)	**ATH0625**	1
LINE IN	3.5mm Stereo PCB Socket (Suits PICAXE UNI Board)	**PL6112**	1
ZD1 ZD2	3.3V 400mW Zener Diode	**X-BZX79-C3V3**	2
LED1	5mm Green Led Diffused	**X-LED-5MM/G**	1
P1 P2	VGU 100K Dual Pot Linear	**PT2165**	2
P3	VGU 100K Dual Pot Log	**PT2350**	1
SW2	DPDT Miniature Slide Switch	**SW0535**	1
SW2 (Optional)	Switch M/Toggle SPDT Right Angle	**ATS1320**	1
VR1	DC-DC Converter ROE-1205S	**X-ROE-1205S**	1
HS1 Screw	3mm x 12mm Screw	**HAM3-0090**	2
HS1 Nut	3mm Nylock Nut	**HAM3-0020**	2
PH2	2 Pin Power Header for Blue Tooth Module		1
Link Wire	For Link 1 and “R” “G” and “L” Blue Tooth Module connections		10cm

PCB Component Overlay

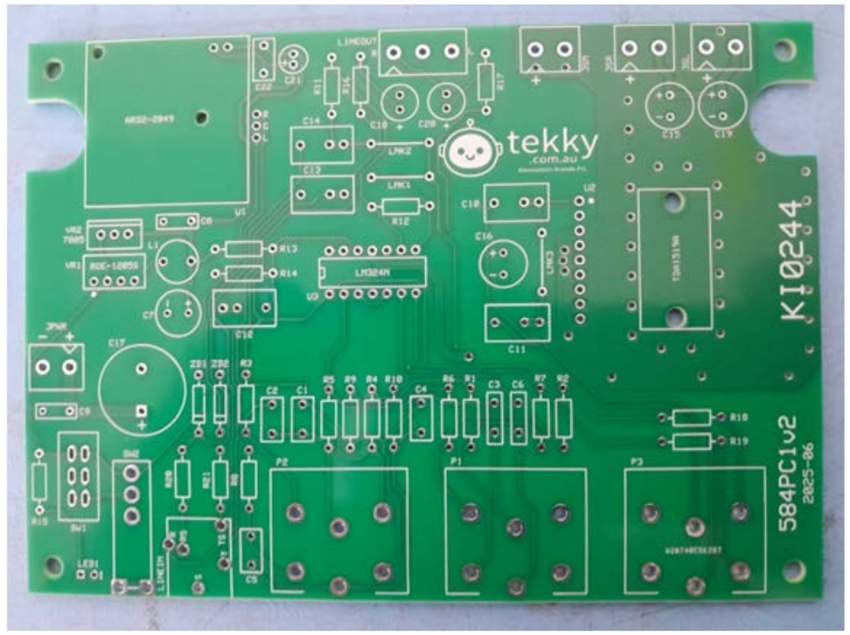


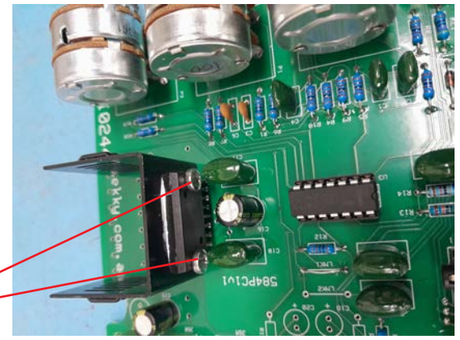
Fig. 1

Construction of the Amplifier

Drill the Heatsink for mounting the TDA1519 IC

Drilling template for Heatsink
2 Holes x 3mm diameter

Use the template to drill the 2 x 3mm holes to Accept the TDA1519 Audio Amp I.C



Assemble Circuit Board

Build the Amplifier using the component list and the circuit diagram load and solder the components into the printed circuit board (PCB). Start with the lower profile components first to enable you to turn board over and solder leads easily. Start with the wire link, then resistors, led, capacitors and switch and potentiometers soldering as you fit them. Do not fit Bluetooth Module yet. Apply a smear of Heatsink compound to the metal area underneath the TDA1519 Amplifier to maximize heat transfer to the heatsink and fix using the 3mm hardware fit the TDA1519 and heatsink and solder into the PCB.
When finished, carefully inspect your solder joints and double check that your component placements and polarization are correct.

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