

# PICAXE INFRA-RED REMOTE CONTROL UPGRADE

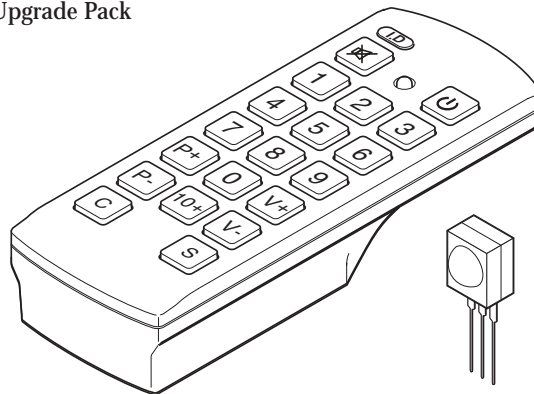
## Order Codes:

AXE040 PICAXE IR Remote Control Upgrade Pack

## Contents:

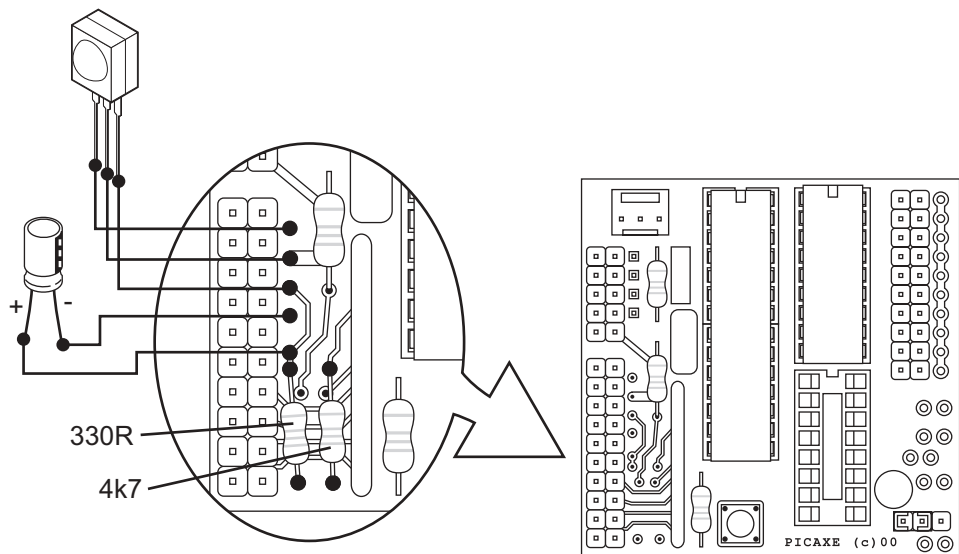
- Infra-red remote transmitter\*
- Infra-red remote control receiver
- 330R resistor (orange orange brown gold)
- 4k7 resistor (yellow violet red gold)
- 4.7uF capacitor

\*requires 3x AAA batteries (not supplied)  
*Please note that style and shape of remote control may vary from the diagrams.*



## Instructions (AXE020)

Solder the components in position as shown in the diagram below. The infrared receiver can be soldered directly to the board or connected via wires. It is recommended that the receiver is left on 'long-legs' so that it can be laid back over the PICAXE microcontroller to avoid fouling the inputs cable.



## Instructions (CHI030/CHI035)

The circuit shown on page 3 can be connected to input0 on the CHI030 standard or CHI035 high power project boards, or V5 (or later) of the MOD001 buggy. It can also be build on your own circuit board.

## Instructions (Home made board)

The circuit shown on page 3 can be built into any PICAXE circuit.

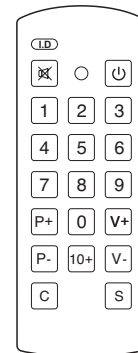
## Programming the transmitter

Before use, the transmitter must be programmed with the 'Sony' transmit code.

This process varies upon the brand of tv remote:

### TVR010 (Grey colour, no arrow keys)

1. Insert 3 AAA size batteries, preferably alkaline.
2. Press 'C'. The LED should light.
3. Press '2'. The LED should flash.
4. Press '1'. The LED should flash.
5. Press '2'. The LED should flash and then go out.



### TVR010A (Transparent Blue colour, with arrow keys)

1. Insert 2 AAA size batteries, preferably alkaline.
2. Press 'S' and 'B' at the same time. S is in the centre of the arrows. The top left red LED should light.
3. Press '0'. The LED should flash.
4. Press '1'. The LED should flash.
5. Press '3'. The LED should go out.
6. Press the red power button (top right).

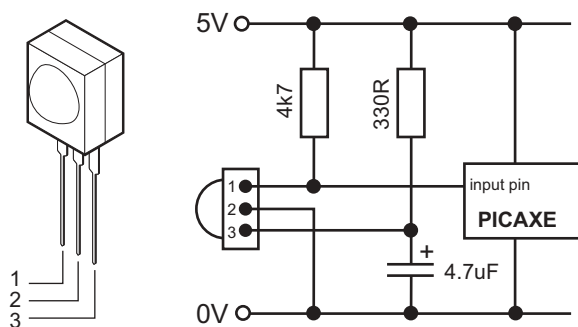


### TVR010A Key Values for PICAXE infrain2, irin commands

Symbol KEY_POWER =	21
Symbol KEY_1	= 0
Symbol KEY_2	= 1
Symbol KEY_3	= 2
Symbol KEY_4	= 3
Symbol KEY_5	= 4
Symbol KEY_6	= 5
Symbol KEY_7	= 6
Symbol KEY_8	= 7
Symbol KEY_9	= 8
Symbol KEY_0	= 9
Symbol KEY_UP	= 16
Symbol KEY_DOWN	= 17
Symbol KEY_LEFT	= 19
Symbol KEY_RIGHT	= 18
Symbol KEY_BAR	= 96
Symbol KEY_TENT	= 54
Symbol KEY_VERT_CROSS	= 37
Symbol KEY_DIAG_CROSS	= 20
Symbol KEY_MINUS	= 98
Symbol KEY_PLUS	= 11

## Circuit

The infrared circuit and sample programs are shown below (Receiver is part LED020):



Note that different PICAXE chips use different commands for receiving infra red signals. This may be 'infrain', 'infrain2' or 'irin' depending on the chip type. See part 2 of the PICAXE manual for more details.

An example program for each command type follows:

### IRIN EXAMPLE

```

symbol b2 = infra
main:
  irin 0,infra           'wait for new signal
  if infra = 0 then
    high 1              'switch on 1
  end if
  if infra = 1 then
    high 2              'switch on 2
  end if
  if infra = 2 then
    low 1               'switch off 1
  end if
  if infra = 3 then
    low 2               'switch off 2
  end if
  goto main

```

## INFRAIN2 EXAMPLE

```
main:
    infrain2                'wait for new signal
    if infra = 0 then
        high 1              'switch on 1
    end if
    if infra = 1 then
        high 2              'switch on 2
    end if
    if infra = 2 then
        low 1               'switch off 1
    end if
    if infra = 3 then
        low 2               'switch off 2
    end if
    goto main
```

## INFRAIN EXAMPLE

```
main:
    infrain                'wait for new signal
    if infra = 1 then
        high 1              'switch on 1
    end if
    if infra = 2 then
        high 2              'switch on 2
    end if
    if infra = 3 then
        low 1               'switch off 1
    end if
    if infra = 4 then
        low 2               'switch off 2
    end if
    goto main
```