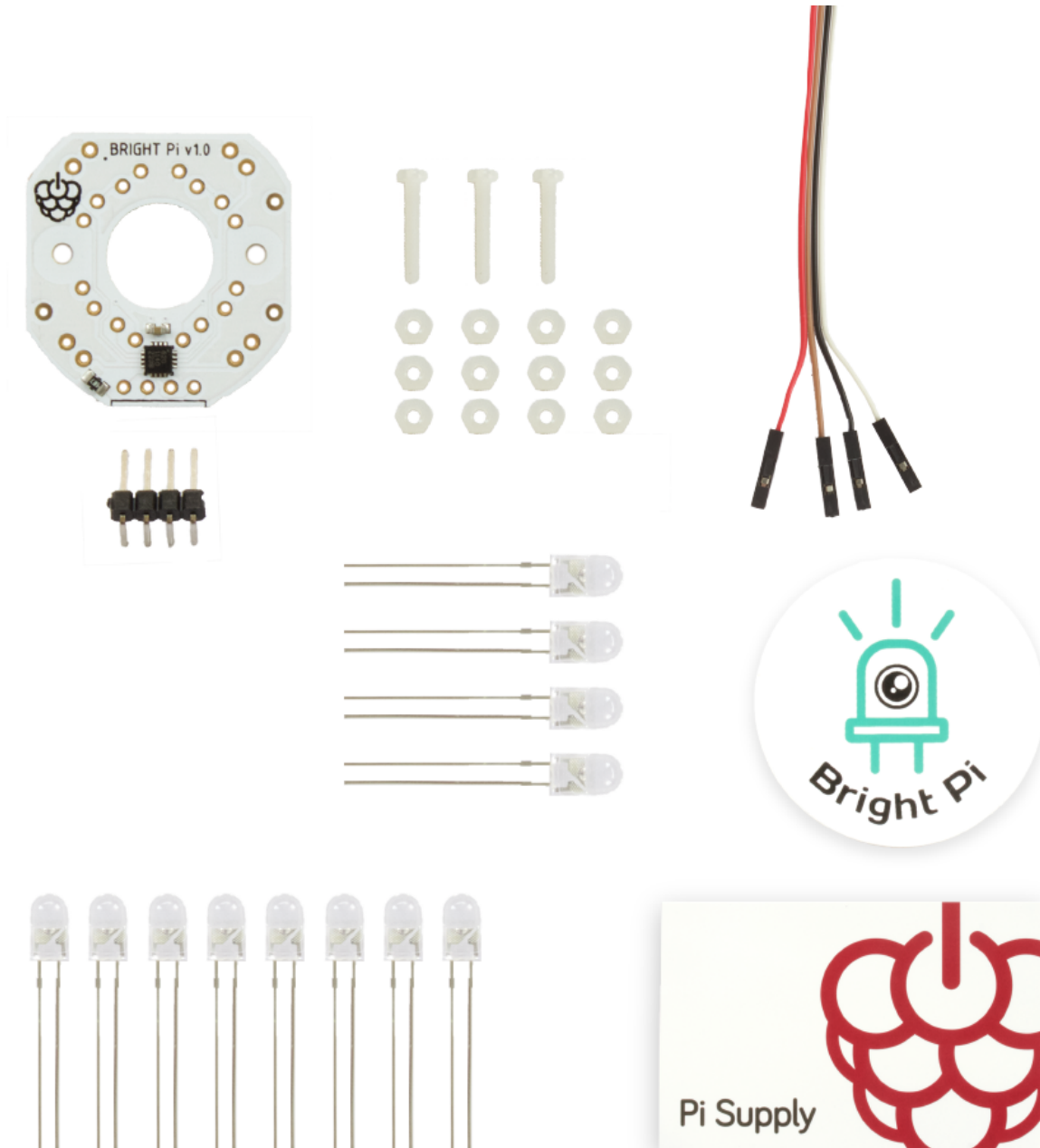


Bright Pi Quick Start And FAQ

[Getting started](#)

When you purchased your Bright Pi v1.0 kit, you should have received an anti-static bag with some components in it which will require soldering together in order to get the Bright Pi up and running and connected to your Raspberry Pi (or other single board computer or I2C enabled microcontroller). Below we have put together some simple assembly instructions to get you up and running with the Bright Pi v1.0.

Kit contents



Inside the anti-static bag you should have received the following items:

- 1 x Bright Pi PCB (with LED driver chip pre-assembled)
- 4 x bright white LEDs in small ziploc bag (high quality Cree LEDs)
- 8 x bright IR LEDs (high quality LITEON LEDs)

- 1 x right angle header
- 1 x 4 way header cable, 20cm length
- 3 x M2 x 12mm nylon bolts
- 12 x M2 nylon nuts (to use as spacers as well)
- 3 x stickers
- 1 x info card

[Putting the kit together](#)

What do you need to do the soldering:

- Soldering iron 15-25W. Keep the temperature at about 300 degrees if you have a regulated one.
- Leaded solder which is so much easier to use compared to lead free.
- Some blue tack or a sponge to help you keep the components in place whilst soldering them.

There are only three types of component that need to be soldered to the board – the bright white LEDs (marked in yellow), the bright IR LEDs (marked in red) and the right angle 4 pin header connector. The location of the LEDs on the PCB is marked out with black circular arrows.



The cathode of the LEDs (short leg) needs to be on the same side as the arrows point to on the PCB. As noted above, the four LEDs in a separate bag are the bright white ones, these are intended to go in the four corner spots around the edge (bottom left, top left, top right, bottom right). All of the other 8 LED locations should be filled with the IR LEDs. We would recommend soldering the IR LEDs first (as they are in the centre) and then the white ones around the edge last.

If you mix up which are the bright white and IR LEDs at any point, it is quite easy to tell the difference between the two by simply looking down the centre of the LED from the top. As in the below picture you will notice that the white LEDs at each corner have a slight yellow tinge in the centre of the LED.

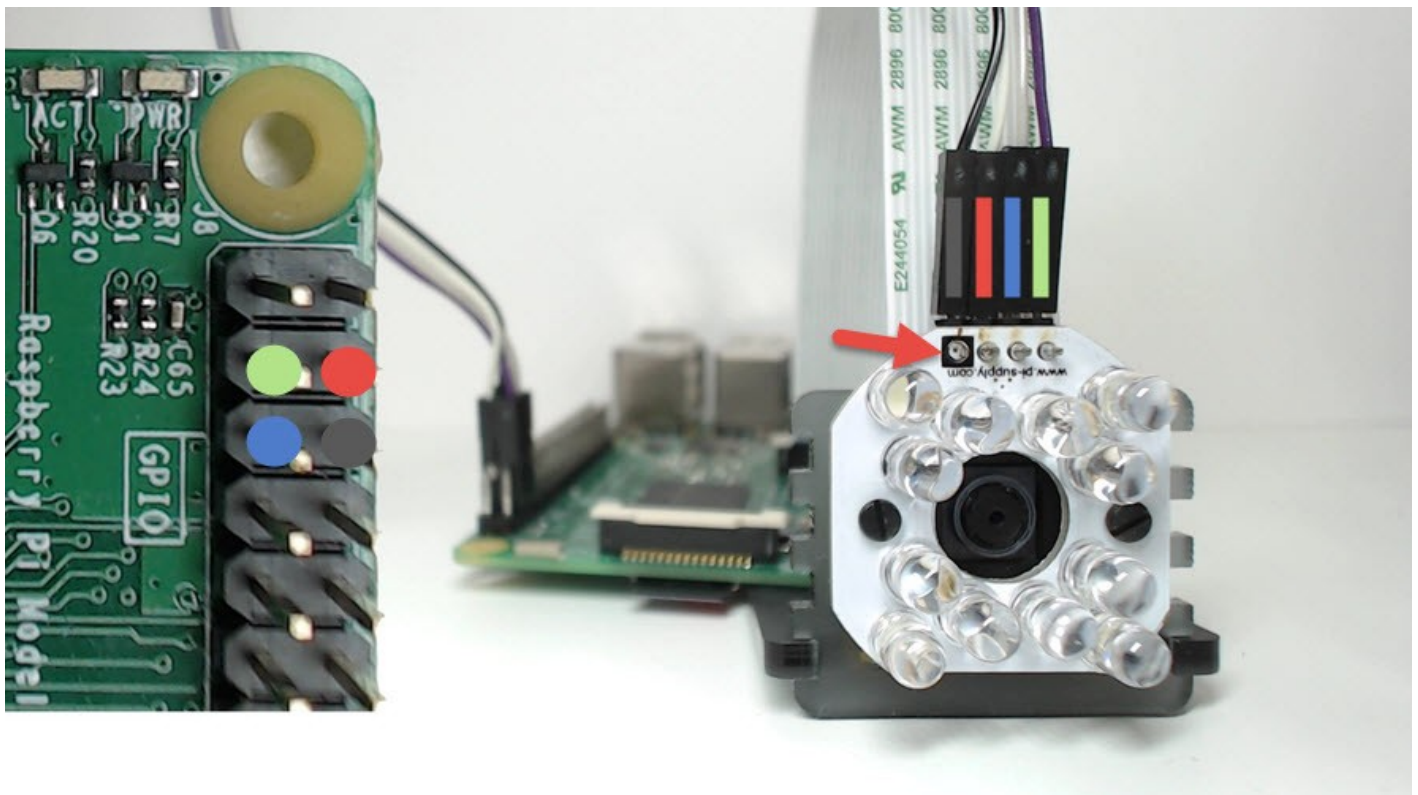
You can solder the header connector on whichever side you wish to on the board, however we recommend soldering the connector the opposite way to the LEDs (i.e. perform the soldering on the top side of the board, as shown in the above picture).

The soldering of this board is fairly straightforward, there are just a fair few components to solder so if you are an absolute beginner at soldering it may take you up to half an hour to complete. Experienced soldering gurus could easily complete the entire job in under 10 minutes.

Please be careful when soldering the bottom middle IR LEDs not to touch any of the joints of the small surface mount resistor or LED driver chip as this could damage the operation of the board.

Wiring the Bright Pi

Once you have finished the soldering, you are ready to connect the board up to the Raspberry Pi (or other I2C enabled main board) in order to start using the Bright Pi in your project.



On the picture above you will see a square black mark on the PCB. That is the GND pin 1, which connects to physical pin 6 on the Raspberry Pi. Connect the other wires according to the colour coding in the picture.

Be careful as wiring things in the wrong way could damage the Bright Pi.

You can now move onto [our Github repository](#) to start coding.

[FAQ](#)

[LEDs not working](#)

[The flat marker on the casing is on the wrong side](#)

In some rare cases we found that the manufacturer of the LEDs accidentally put the flat side of the plastic on the opposite side as to where it should be. When installing the LEDs always refer to the legs length instead of the flat part.

[The LEDs become defective](#)

We currently do not source spare LEDs for the Bright Pi but if any of the LEDs becomes defective you can always order more by using the following part numbers:

- bright white LEDs (high quality Cree C513A-WSN-CV0Y0151 LEDs)
- bright IR LEDs (high quality LITEON HSDL-4261 LEDs)

ModMyPi sells both [the IR](#) and [the white](#) LEDs.

[Bad soldering](#)

When you have a bad joint some electrical values drop below their nominal value and some might actually jumps above it. The circuit will then become unstable and not function properly. Ultimately this could damage the main chip on the Bright Pi.

Please refer to this really detailed article from [Adafruit Guide To Excellent Soldering](#) and particularly to the [Common Problems](#) section to avoid getting into troubles caused by bad soldering.

[I2C issues](#)

[Enable I2C](#)

Remember that in order to use the Bright Pi you have to enable I2C. Within Raspbian you have to run

Then choose "Interfacing Options"

Finally choose "I2C" and confirm that you want it to be enabled

Exit the menu and reboot the Raspberry Pi for the changes to take effect.

[Verify that the Bright Pi is seen by the OS](#)

Once that the I2C has been enabled on the OS you can issue the following command to verify that the device has been configured correctly

the command should return something similar to this picture

if 70 is shown as in the picture then the Bright Pi is correctly configured.

Should the I2C not have been enabled you would get instead an error message like the following

[I cannot see the IR LEDs lighting up](#)

The [infrared frequency is not in the visible spectrum](#) hence even when you light the IR LEDs to their maximum power you will still not be able to tell if they are working or not. A good way to tell if they do is to use a digital camera as through it you will be able to see the LEDs shining with a grayish glow.

A good way to "see" if the IR LEDs are working is to use the Raspberry Pi NoIR Infrared Camera Board and take a picture of the Bright Pi before assembling them together.

Run the following command to light up the IR LEDs:

Then take a snapshot with the Pi Camera by issuing:

This method will return a picture with distinctively bright gray LEDs.

If you were to use the standard Raspberry Pi Camera Board you would still be able to tell if the LEDs are working but as above for the digital camera you will only be able to see a faded grey glow.

[Where can I find the supporting code?](#)

Please have a look at [our Github repository](#) where you will find sample code and further information. Additional [examples](#) on how to use the Bright Pi directly from the command line are also available.