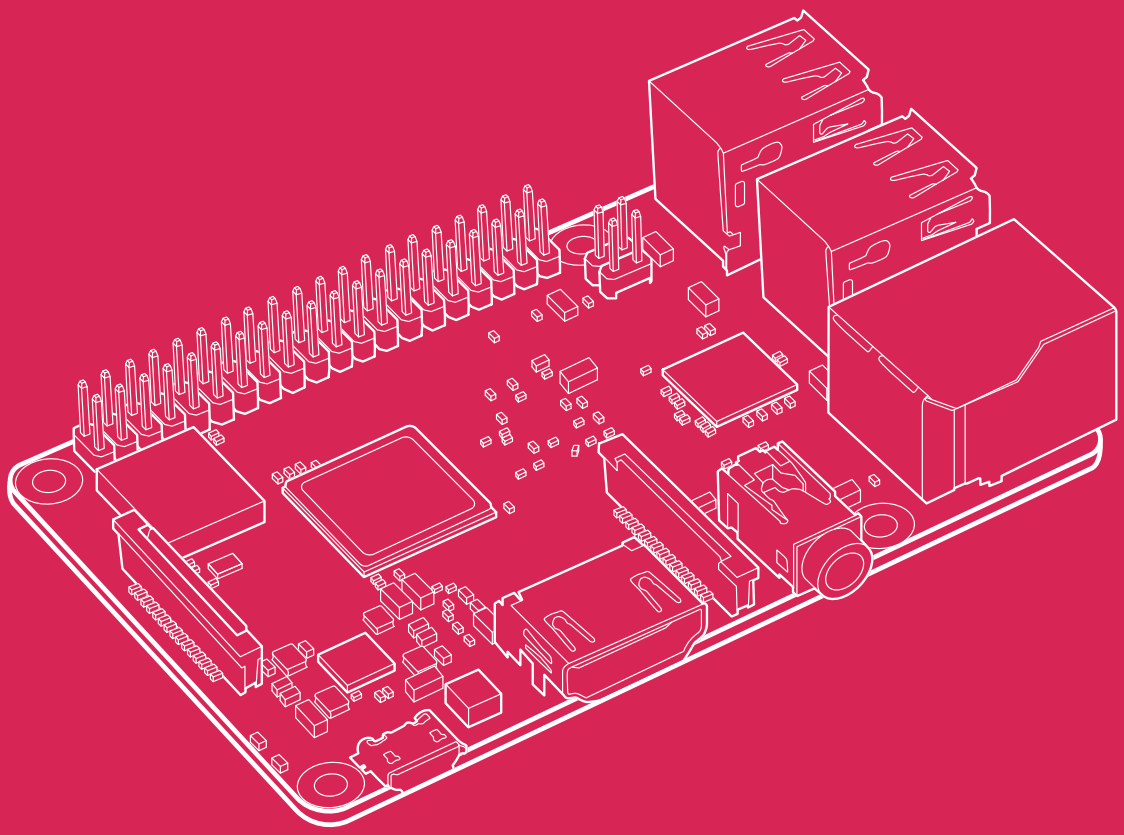
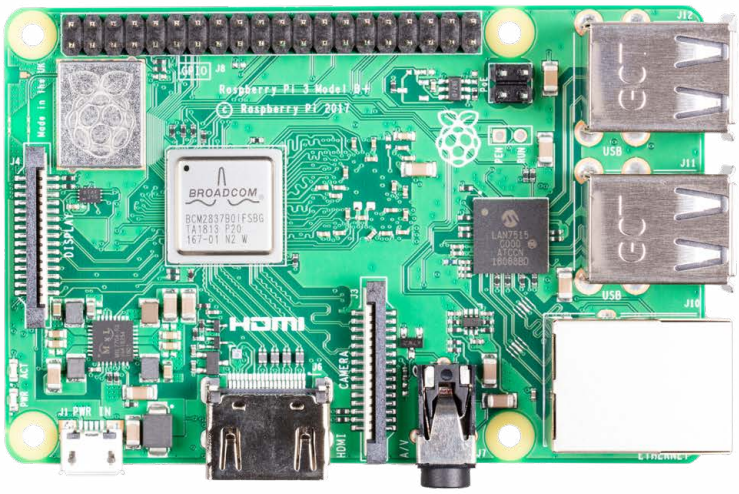
Raspberry Pi 3 Model B+

Published January 2025



Raspberry Pi Ltd

Overview



Raspberry Pi 3 Model B+ has a 64-bit quad-core processor running at 1.4GHz, dual-band 2.4GHz and 5GHz wireless LAN, Bluetooth 4.2/BLE, Gigabit Ethernet over USB 2.0, and PoE capability via a separate PoE HAT. The dual-band wireless LAN comes with modular compliance certification.

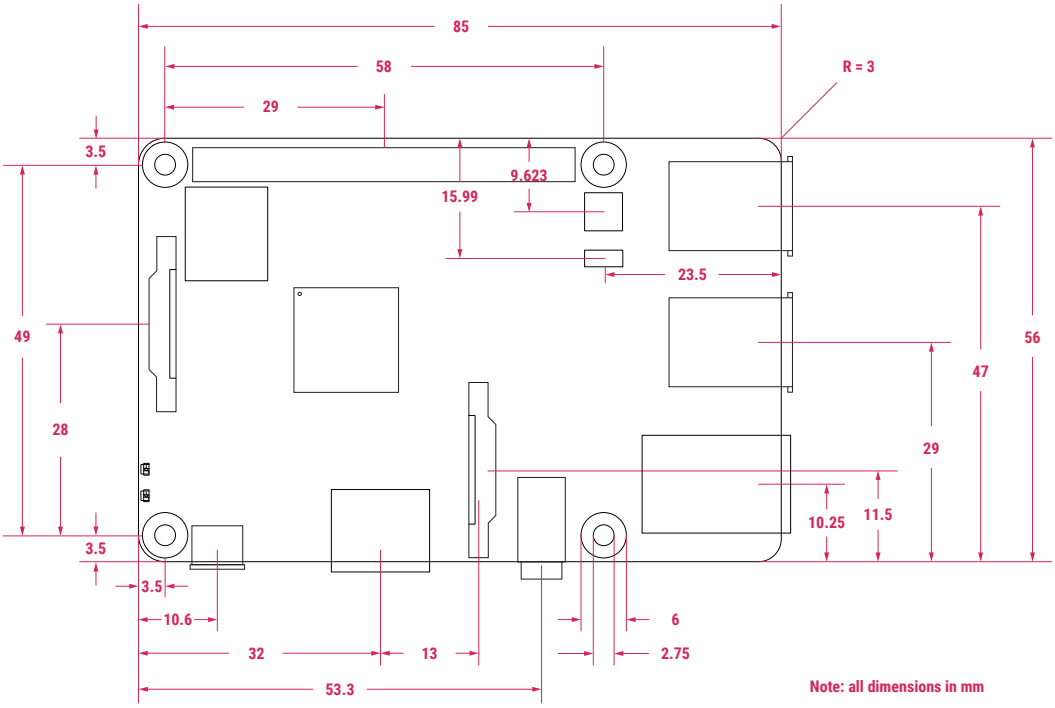
Raspberry Pi 3 Model B+ maintains the same mechanical footprint as both Raspberry Pi 2 Model B and Raspberry Pi 3 Model B.

Specification

Processor:	Broadcom BCM2837B0, Cortex-A53 64-bit SoC @ 1.4GHz
Memory:	1GB
Connectivity:	• 2.4 GHz and 5 GHz IEEE 802.11b/g/n/ac wireless LAN, Bluetooth 4.2, BLE • Gigabit Ethernet over USB 2.0 (maximum throughput 300Mbps) • 4 × USB 2.0 interface
Video and sound:	• 1 x full size HDMI • MIPI DSI display port • MIPI CSI camera port • 4 pole stereo output and composite video port
Multimedia:	H.264, MPEG-4 decode (1080p30); H.264 encode (1080p30); OpenGL ES 1.1, 2.0 graphics
SD card support:	Micro SD format for loading operating system and data storage
Input Power:	• 5V/2.5A DC via micro USB connector • 5V DC via GPIO header • Power over Ethernet (PoE)-enabled (requires separate PoE HAT)
Operating temperature:	0-50°C
MTBF[1] Ground Benign:	378 000 hours
Production lifetime:	Raspberry Pi 3 Model B+ will remain in production until at least January 2028
Compliance:	For a full list of local and regional product approvals, please visit pip.raspberrypi.com
List price:	**$35**

[1] Mean Time Between Failure

Physical specification



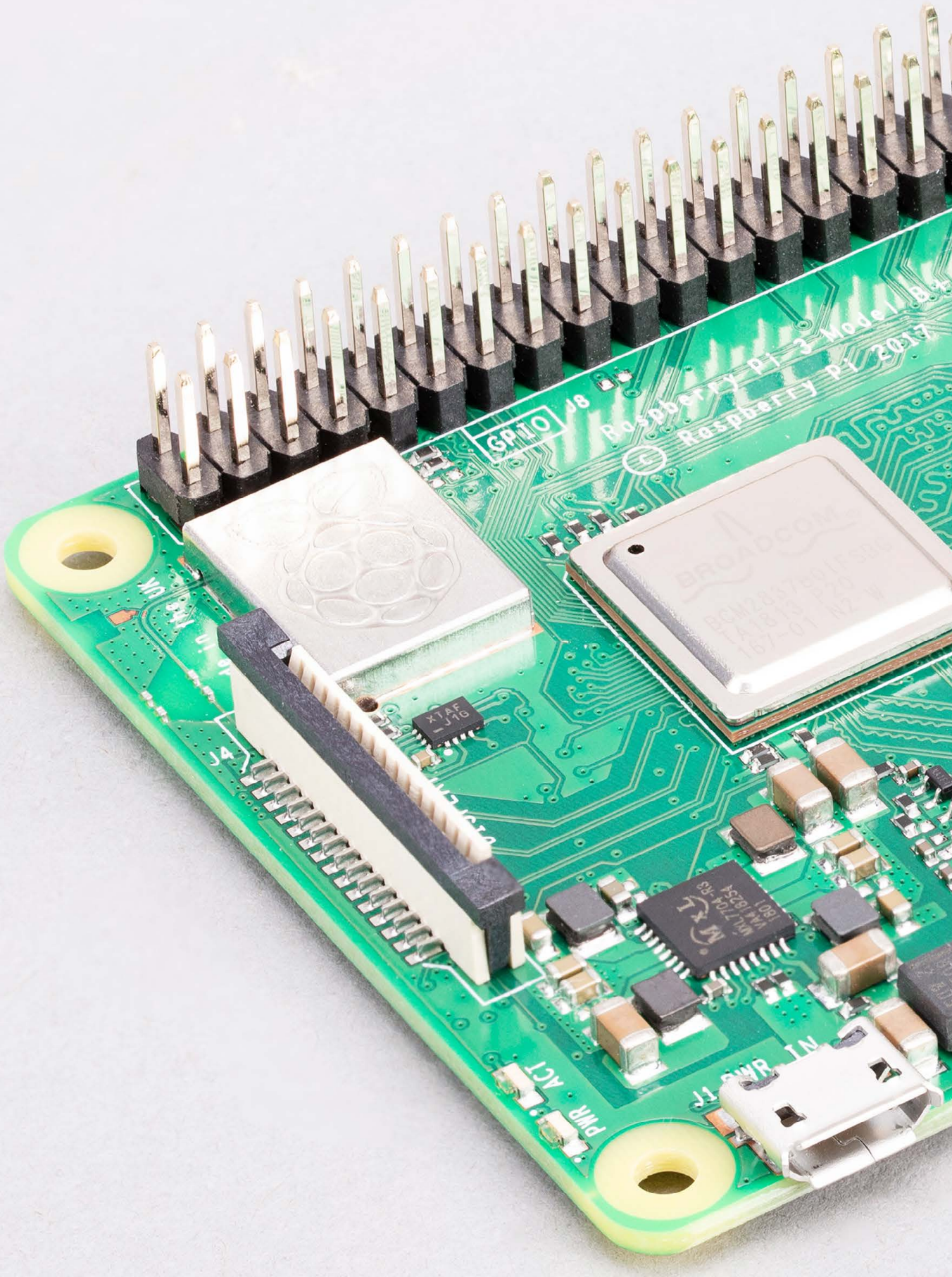
WARNINGS

- This product should only be connected to an external power supply rated at 5V/2.5 A DC. Any external power supply used with Raspberry Pi 3 Model B+ shall comply with relevant regulations and standards applicable in the country of intended use.
- This product should be operated in a well-ventilated environment, and if used inside a case, the case should not be covered.
- Whilst in use, this product should be placed on a stable, flat, non-conductive surface, and should not be contacted by conductive items.
- The connection of incompatible devices to the GPIO connection may affect compliance, result in damage to the unit, and invalidate the warranty.
- All peripherals used with this product should comply with relevant standards for the country of use and be marked accordingly to ensure that safety and performance requirements are met. These articles include but are not limited to keyboards, monitors, and mice when used in conjunction with the Rapsberry Pi.
- The cables and connectors of all peripherals used with this product must have adequate insulation so that relevant safety requirements are met.

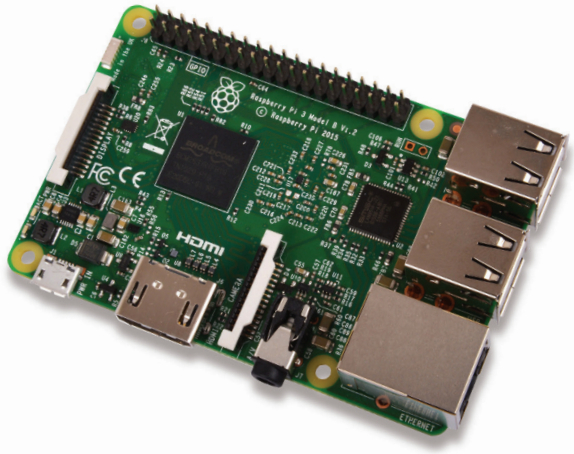
SAFETY INSTRUCTIONS

To avoid malfunction or damage to this product, please observe the following:

- Do not expose to water or moisture, or place on a conductive surface whilst in operation.
- Do not expose to heat from any source; Raspberry Pi 3 Model B+ is designed for reliable operation at normal ambient temperatures.
- Do not expose the printed circuit board to high-intensity light sources (e.g. xenon flash or laser) whilst in operation.
- Take care whilst handling to avoid mechanical or electrical damage to the printed circuit board and connectors.
- Whilst it is powered, avoid handling the printed circuit board, or only handle it by the edges to minimise the risk of electrostatic discharge damage.

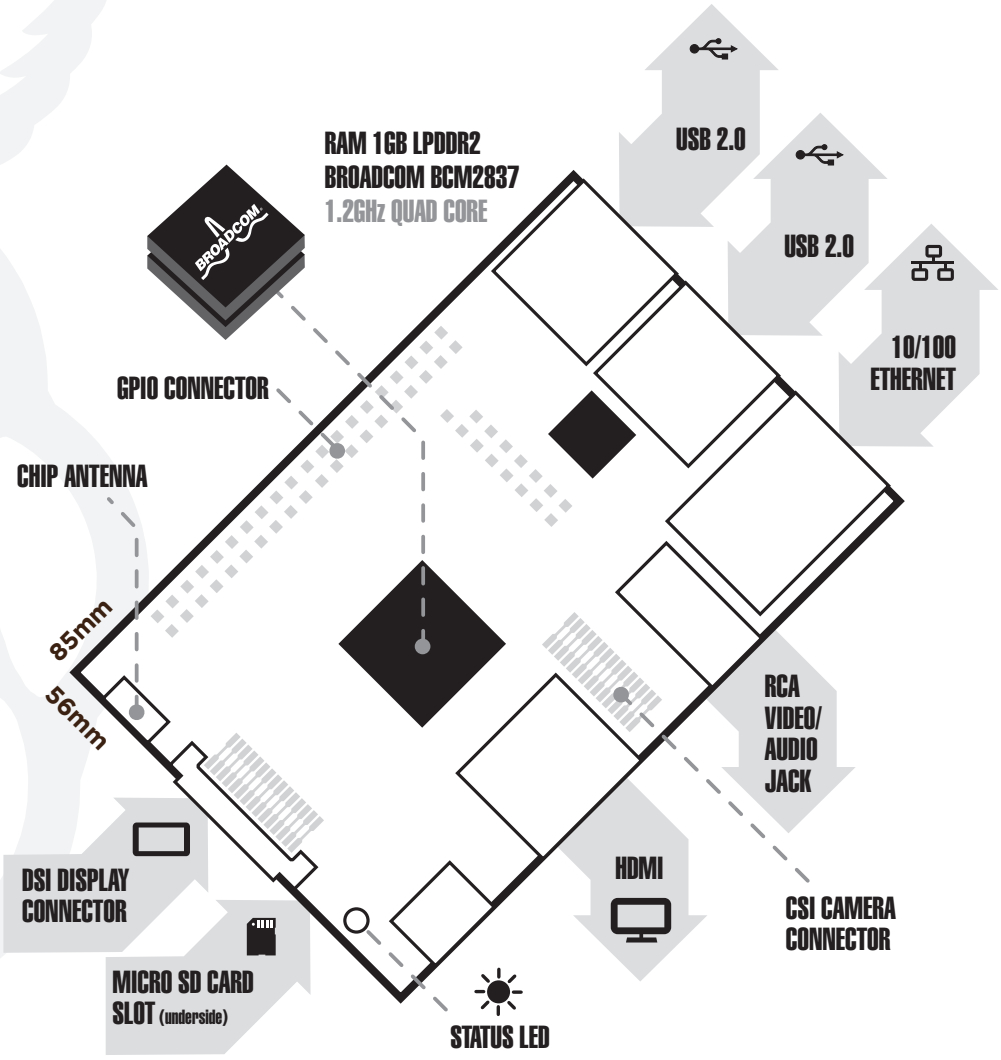

GPIO
J8
Raspberry Pi 3 Model B+
Raspberry Pi 2017
J4
PWR
ACT

Raspberry Pi



Raspberry Pi 3 Model B

Product Name	**Raspberry Pi 3**
Product Description	The Raspberry Pi 3 Model B is the third generation Raspberry Pi. This powerful credit-card sized single board computer can be used for many applications and supersedes the original Raspberry Pi Model B+ and Raspberry Pi 2 Model B. Whilst maintaining the popular board format the Raspberry Pi 3 Model B brings you a more powerful processer, 10x faster than the first generation Raspberry Pi. Additionally it adds wireless LAN & Bluetooth connectivity making it the ideal solution for powerful connected designs.
RS Part Number	**896-8660**



Raspberry Pi 3 Model B

Specifications

Processor	Broadcom BCM2387 chipset. 1.2GHz Quad-Core ARM Cortex-A53 802.11 b/g/n Wireless LAN and Bluetooth 4.1 (Bluetooth Classic and LE)
GPU	Dual Core VideoCore IV® Multimedia Co-Processor. Provides Open GL ES 2.0, hardware-accelerated OpenVG, and 1080p30 H.264 high-profile decode. Capable of 1Gpixel/s, 1.5Gtexel/s or 24GFLOPs with texture filtering and DMA infrastructure
Memory	1GB LPDDR2
Operating System	Boots from Micro SD card, running a version of the Linux operating system or Windows 10 IoT
Dimensions	85 x 56 x 17mm
Power	Micro USB socket 5V1, 2.5A

Connectors:

Ethernet	10/100 BaseT Ethernet socket
Video Output	HDMI (rev 1.3 & 1.4 Composite RCA (PAL and NTSC)
Audio Output	Audio Output 3.5mm jack, HDMI USB 4 x USB 2.0 Connector
GPIO Connector	40-pin 2.54 mm (100 mil) expansion header: 2x20 strip Providing 27 GPIO pins as well as +3.3 V, +5 V and GND supply lines
Camera Connector	15-pin MIPI Camera Serial Interface (CSI-2)
Display Connector	Display Serial Interface (DSI) 15 way flat flex cable connector with two data lanes and a clock lane
Memory Card Slot	Push/pull Micro SDIO

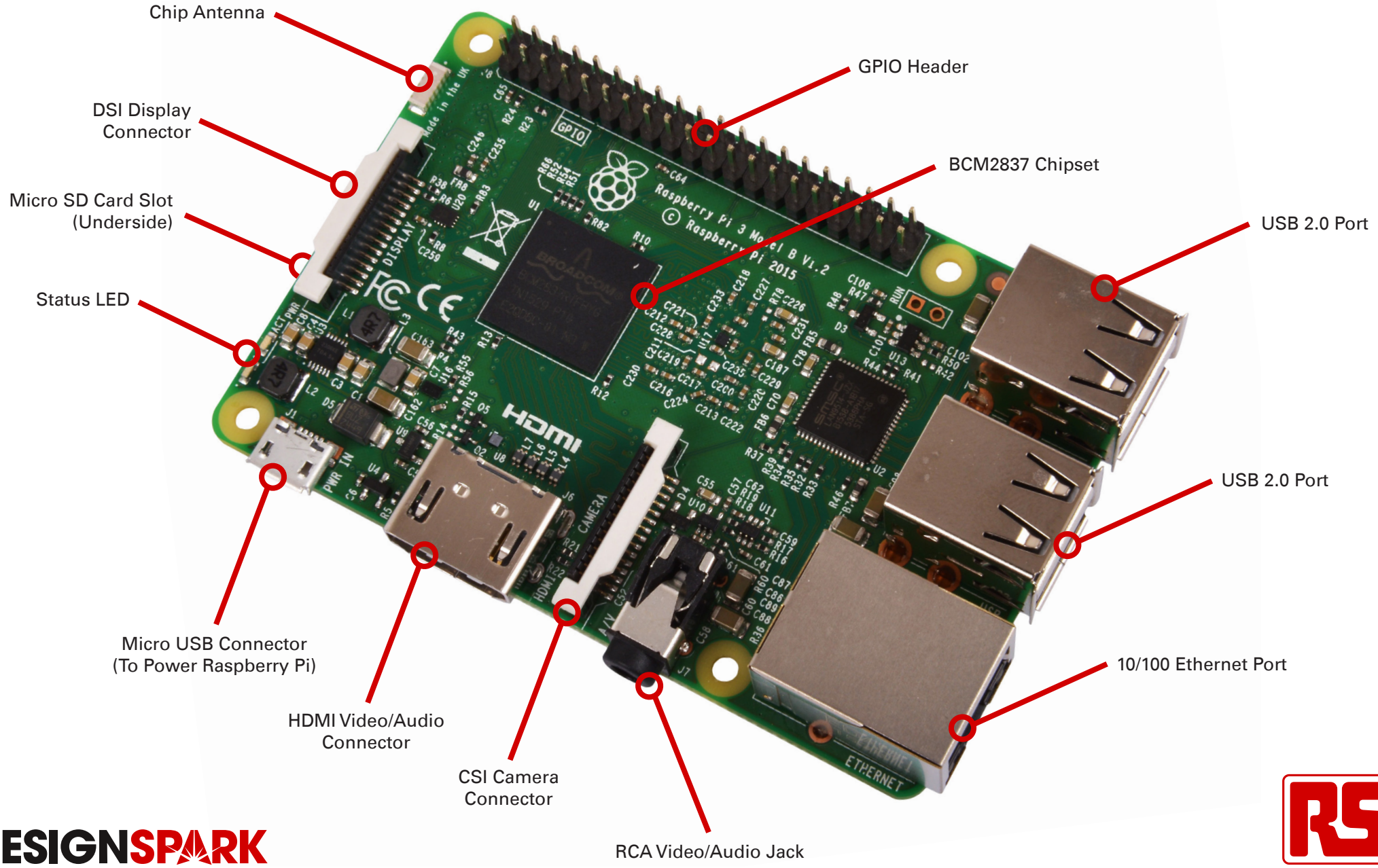
Key Benefits

- Low cost
- 10x faster processing
- Consistent board format
- Added connectivity

Key Applications

- Low cost PC/tablet/laptop
- Media centre
- Industrial/Home automation
- Print server
- Web camera
- Wireless access point
- IoT applications
- Robotics
- Server/cloud server
- Security monitoring
- Gaming
- Environmental sensing/monitoring (e.g. weather station)

Raspberry Pi 3 Model B



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Raspberry Pi
Frequently Asked Questions

What is a Raspberry Pi?

Created by the Raspberry Pi Foundation, the Raspberry Pi is an open-source, Linux based, credit card sized computer board. The Pi is an exciting and accessible means of improving computing and programming skills for people of all ages. By connecting to your TV or monitor and a keyboard, and with the right programming, the Pi can do many things that a desktop computer can do such as surf the internet and play video. The Pi is also great for those innovative projects that you want to try out - newer models are ideal for Internet of Things projects due to their processing power. With Pi 3, Wireless LAN and Bluetooth Low Energy are on-board too.

What are the differences between the models?

Current versions of the Raspberry Pi are the Pi A+, Pi B+, Pi 2 B, Pi 3 B and Compute Module.

	Pi A+	Pi B+	Pi 2 B	Pi 3 B	Compute Module
Dimensions	66 x 56 x 14mm	85 x 56 x 17mm	85 x 56 x 17mm	85 x 56 x 17mm	67.5 x 30mm
SoC	BCM2835	BCM2835	BCM2836	BCM2837	BCM2835
Processor Core	ARM11	ARM11	ARM Cortex-A7	ARM Cortex-A53	ARM11
Processing Power	700 MHz	700 MHz	900 MHz	1.2 GHz	700 MHz
Memory	256 MB	512 MB	1 GB	1GB LPDDR2	512 MB
Ports	1x USB 2.0	4x USB 2.0 1x 10/100 Ethernet	4x USB 2.0 1x 10/100 Ethernet	4x USB 2.0 1x 10/100 Ethernet	N/A
GPIO	40	40	40	40	N/A

What do I get with my Raspberry Pi?

A Raspberry Pi board only.

Each Raspberry Pi customer is unique. You may already have cables, power supplies, keyboards, SD memory cards or monitors. However, if you do require additional products to start with your Pi or to really get creative, we can help.

Our expanding range of accessories includes:

Protective Cases	Power Supplies	NOOBS microSD Cards	Keyboards & Mice	Printers
Cables	Displays & Camera Boards	Wireless Connectivity	Add-on Boards	RS Pi Bundles

How do I get connected?

To get started with your Pi you will need;

- A monitor or TV screen to set-up your Pi
- A keyboard to interact with your Pi
- A mouse to navigate your Pi
- A power supply
- An SD card with the latest version of New Out Of Box Software (NOOBS), to install the operating system that you would like to use.

To get **sound** and **video** you will need cables to suit what your screen or monitor accepts. For those with monitors that accept VGA, a HDMI to VGA adaptor is needed in addition to a HDMI cable, unless you use the composite video output from the Pi.

For an **internet connection**, the Pi B+ and Pi 2 B have an ethernet port. You also have the option of adding a WiFi Adapter/Dongle which may mean that you need a USB Hub if you have run out of USB ports. The Pi 3 already has 802.11 b/g/n wireless LAN and Bluetooth 4.1 (Bluetooth Classic and Low Energy).

Powering my Pi

The Pi has a 5 V microUSB power socket, located on the bottom left hand corner of your Pi board.

Version	Recommended Power Supply Current Capacity
Pi B	1.2 A
Pi A+	700 mA
Pi B+	1.8 A
Pi 2 B	1.8 A
Pi 3 B	2.5 A

Generally, the more USB ports and interfaces you use on your Pi, the more power you are going to need - be careful.

We advise to look at buying a powered USB hub - this means less pressure on your Pi whilst still being able to incorporate all the features and functionality that you want to. When connecting any devices to your Pi, it is advisable to always check the power rating.

Batteries are not a recommended power supply for your Pi.

Note: The Official Raspberry Power Supply Unit for Pi 3 is not a general purpose power supply and must only be used for the Pi 3.

What is the user name and password for the Raspberry Pi?

The user name for Raspbian is **pi**

The password for Raspbian is **raspberry**

Operating Systems, Programming Languages & SD Cards

You will need an **operating system** to start using your Pi. An operating system is vital software that acts as a computer manager.

To download an operating system you will need an **SD card** between 8-32 GB. We have SD cards with New Out Of Box Software (NOOBS) pre-installed, so you don't have to do all of the work. NOOBS helps you to set up your Pi and has six operating systems that you can download;

Raspbian (recommended)	**Pidora**	**OpenElec**	**Windows 10 IoT**
RaspBMC	**RISC OS**	**Arch Linux**	

Of course, you don't have to use NOOBS. The Raspberry Pi Foundation regularly updates other available 'distros' in the downloads section of their website.

The Raspberry Pi Foundation - Downloads

Python — Python is the recommended **programming language** — particularly if you are new to programming or want to refresh your programming knowledge.

Scratch — Scratch is a great interactive programming language for children who want to learn to code through creating games, stories and animations.

Other programming languages you can get on your Pi include C, C++, Java and Ruby.

Raspberry Pi
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What educational material/resources can I use?

There is so much information out there to support you with Raspberry Pi due to it's collaborative nature.

DESIGNSPARK

Here at RS, we recommend DesignSpark, our own support gateway filled with blogs, forums, useful tools, product reviews and much more. You can also let us know how you get on with your projects.

Visit DesignSpark

We have a range of Raspberry Pi support books, written by Pi experts such as it's co-founder Eben Upton and Carrie Philbin.

See our Range of Books

Other great Pi resources

Raspberry Pi Foundation

MagPi - The official Pi magazine

Piweekly - Newsletter you can subscribe to

The Raspberry Pi Guy

geekgurldiaries

Not answered your query?

DesignSpark or The Raspberry Pi Foundation website may be able to help you further.

Visit DesignSpark **Visit The Raspberry Pi Foundation website**

T5875DV

Raspberry Pi Power Supply

Features:

- Official Raspberry Pi Power Supply
- 1.5M Micro USB B Lead
- ErP Level 6 Efficiency Rating
- 50,000 Hour MTBF
- 1 Years Warranty

Output

Output Voltage	+5.1Vdc
Minimum Load Current	0A
Nominal Load Current	2.5A
Nominal Output Power	13W
Output Regulation	+/-5%
Line Regulation	+/-2%
Ripple & Noise	120mVp-p Maximum
Rise Time	100mS Maximum at nominal input
Turn-on Delay	3 Seconds Maximum at nominal input
Protection	Short circuit, over current, over voltage
Efficiency	80.86%
Output Cable	1500mm Micro USB B 5 Pin

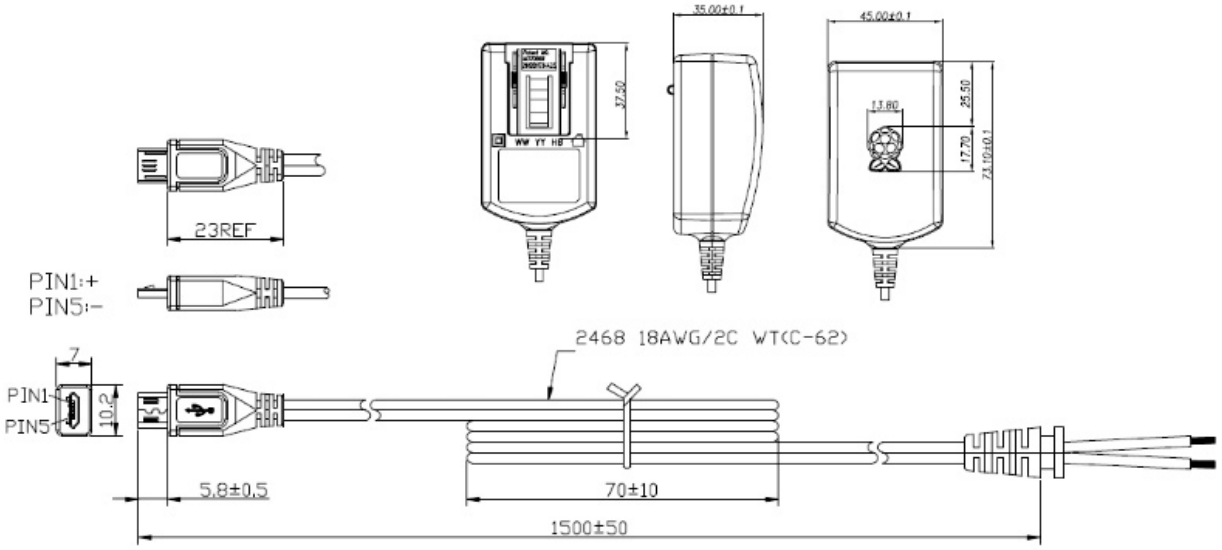
Input

Input Voltage Range	90-264VAC
Input Frequency	47-63Hz
Input Current	0.5A Max
Inrush Current	No damage and IP fuse will not blow
AC Inlet	UK, Euro, Aus & US changeable heads

Other

Dimensions	73.2 (L) * 45.1 (W) * 35.1 (H) mm
Weight	Approx 150g
Operating Temp.	0 °C to 40 °C
Storage Temp.	-20 °C to +60 °C
Opertating Humidity	20 ~ 85 % RH. Non-Condesning
MTBF	50,000 Hours

Diagrams



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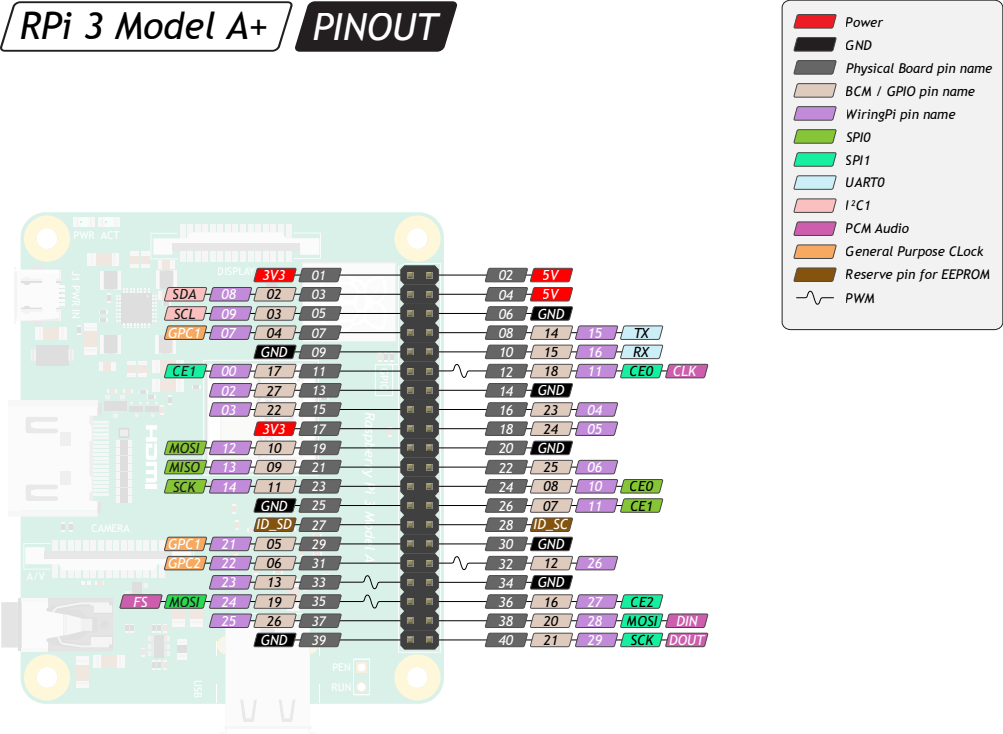
RPi 3 Model A+ PINOUT



All pins not 5V tollerant