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 processor, 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

- Chip Antenna
- DSI Display Connector
- Micro SD Card Slot (Underside)
- Status LED
- Micro USB Connector (To Power Raspberry Pi)
- HDMI Video/Audio Connector
- CSI Connector
- RCA Video/Audio Jack
- USB 2.0 Port
- USB 2.0 Port
- USB 2.0 Port
- 10/100 Ethernet Port
- GPIO Header
- BCM2837 Chipset
- Raspberry Pi 3 Model B
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.

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

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.

<table>
<thead>
<tr>
<th>Version</th>
<th>Recommended Power Supply Current Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pi B</td>
<td>1.2 A</td>
</tr>
<tr>
<td>Pi A+</td>
<td>700 mA</td>
</tr>
<tr>
<td>Pi B+</td>
<td>1.8 A</td>
</tr>
<tr>
<td>Pi 2 B</td>
<td>1.8 A</td>
</tr>
<tr>
<td>Pi 3 B</td>
<td>2.5 A</td>
</tr>
</tbody>
</table>

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.

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

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.
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
- geekgurdiaries

**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

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

### Input

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Voltage Range</td>
<td>90-264VAC</td>
</tr>
<tr>
<td>Input Frequency</td>
<td>47-63Hz</td>
</tr>
<tr>
<td>Input Current</td>
<td>0.5A Max</td>
</tr>
<tr>
<td>Inrush Current</td>
<td>No damage and IP fuse will not blow</td>
</tr>
<tr>
<td>AC Inlet</td>
<td>UK, Euro, Aus &amp; US changeable heads</td>
</tr>
</tbody>
</table>

### Other

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>73.2 (L) * 45.1 (W) * 35.1 (H) mm</td>
</tr>
<tr>
<td>Weight</td>
<td>Approx 150g</td>
</tr>
<tr>
<td>Operating Temp.</td>
<td>0 °C to 40 °C</td>
</tr>
<tr>
<td>Storage Temp.</td>
<td>-20 °C to +60 °C</td>
</tr>
<tr>
<td>Operating Humidity</td>
<td>20 ~ 85 % RH. Non-Condensing</td>
</tr>
<tr>
<td>MTBF</td>
<td>50,000 Hours</td>
</tr>
</tbody>
</table>

### Diagrams

[Diagram of T5875DV Raspberry Pi Power Supply]

---

Stontronics Ltd accepts no responsibility for typographical errors in the production of this leaflet. Product specifications are subject to change without notice.