Raspberry Pi 4 Hardware Specs & Comparison

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Always expect the unexpected - Raspberry Pi foundation have today (June 24th 2019) released the latest Raspberry Pi 4 despite many sources adamant it will not be released until 2020.

So whats new then?

Well most of us would have guessed a new smaller chip being used since the Raspberry Pi foundation released statement at the launch of the Compute module 3+ in January, stating that it was the last in-line of the 40nm based products. Raspberry Pi 4 is the first of the 28nm-based product (I'm sure we can expect many more such as Pi Zero?) moving to a more modern process node allowing to deliver a significant increase in processor, multimedia I/O performance, this makes the Raspberry PI 4 a true PC replacement.

Key Features:

- 1.5GHz quad-core ARM Cortex-A72 CPU
- VideoCore VI graphics
- 4kp60 HEVC decode
- True Gigabit Ethernet
- 2 × USB 3.0 and 2 × USB 2.0 ports
- 2 × micro-HDMI ports (1 × 4kp60 or 2 × 4kp30)
- USB-C for input power, supporting 5V 3A operation
- 1GB, 2GB and 4GB LPDDR4 memory SKUs

USB-C - Yes thats right, a modern device need modern power. It seems like the new Pi 4 requires more power to run its fancy new features which why the Pi 4 has opted to use the USB-C connector, which you can find in most modern smart devices such as phones and tablet PC's. The Raspberry Pi foundation has released an official power adaptor rated at 5V 3A 15.3W, however if you have one of the predecessor Pi's with a micro USB power adaptor you can simply purchase a USB micro-B to USB-C adaptor for compatibility.

Did someone say 4K? - You heard it right, the Raspberry Pi 4 is compatible with any 4K TV/Monitor now making it the go to board for multimedia playback. The PI 4 support 1x 4K display running at 60fps or 2x 4K displays at 30fps, this is due to the new Broadcom video core VI graphics on-board. As we know from the 3B+, space is somewhat limited on the boards, hence why the display connectors come in the form of micro HDMI (I would have preferred mini DP), but do not fear we have more official Pi accessories in the market in the form of a micro HDMI to standard HDMI cable (1m).

True Gigabit Ethernet - Wowzer, now we have true Gigabit ethernet, which is actually capable of a bandwidth up to 1GB, unlike the 3B+ which topped out at around 400 Mbs due to hardware limitations. This is great for streaming all those 4k .MKV files to your TV :)

USB 3.0 - Much welcomed addition is the 2x USB 3.0 ports to power and drive those large external peripherals such as USB HDDs. One would assume this is where the extra power is needed in the USB-C PSU, amongst other parts.

4GB Memory - The Raspberry Pi 3B+ came with 1GB of LDDR2 SDRAM, now the Raspberry Pi 4 comes with three different flavours; 1GB, 2GB or 4GB of LDDR4 SDRAM. This is what differentiates the pricing between the boards, 1GB $35, 2GB $45 and 4GB $55. It seems as though the Pi foundation are still locked in to their $35 price target (For marketing reasons) but are offering alternatives for those that want it and don't mind paying more for more.

Accessories

As mentioned earlier there will be some new official Raspberry Pi accessories released with the Pi 4 including:

- USB-C 15W 5V 3A PSU
- Micro USB to USB-C adaptor
- Raspberry Pi 4 compatible case
- Raspberry Pi 4 desktop Kit

Operating System

A new version of NOOBs and Raspbian "Buster" (based on Debian 10) will be required for Raspberry Pi 4. Earlier releases of NOOBs and Raspbian will not work with Raspberry Pi 4. Release notes:

- Based on Debian Buster
- Support for Raspberry Pi 4 hardware
- FKMS OpenGL desktop graphics driver and xcompmgr compositing window manager used when running on Raspberry Pi 4
- Screen Configuration application added for use with FKMS driver
- Raspberry Pi 4 video output options added to Raspberry Pi Configuration * Uses new PiXflat UI theme for GTK and Openbox
- CPU activity gauge plugin no longer shown on taskbar by default
- CPU temperature gauge plugin added (not shown by default) * USB ejecter and Bluetooth taskbar icons hidden when not appropriate
- Version 74.0.3729.157 of Chromium web browser included
- Version 32.0.0.207 of Flash player included
- IDLE Python IDE removed
- Wolfram Mathematica removed temporarily due to incompatibility with Buster
- Display of package sizes removed from Recommended Software
- Appearance Settings modified to support independent settings for two monitors
- Oracle Java 7 and 8 replaced with OpenJDK 11
- Miscellaneous small bug fixes

- On-board 5GHz WiFi blocked by rfkill by default The block is removed when taking one of the following actions:
- - Selecting a locale in the first run wizard
- - Setting the WiFi country in the Raspberry Pi Configuration tool or the Network Settings applet
- - Setting the WiFi country in raspi-config
- - Providing a wpa_supplicant.conf file through the boot partition
- - Running 'rfkill unblock wifi'
- Boot partition size set to 256M
- Linux kernel 4.19.50

Board Comparison

	Pi3 Model B	**Pi3 Model B+**	**Pi4 Model B**
Processor	Broadcom BCM2837A1(B0), Quad-core Cortex-A53 64-bit SoC@ 1.2GHz	Broadcom BCM2837B0, Quad-core Cortex-A53 64-bit SoC@ 1.4GHz	**Broadcom 2711, Quad-core Cortex-A72 64-bit SoC @ 1.5GHz**
Memory	1GB LPDDR2 SDRAM	1GB LPDDR2 SDRAM	**1GB, 2GB or 4GB LPDDR4 SDRAM**
Connectivity			