# Raspberry pi Module research

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| https://www.aliexpress.com/item/1005002805365890.html?spm=a2g0o.productlist.0.0.1d3c5be1Rbb3k5&algo_pvid=3e66f8ae-5ea8-4915-a2a5-3c12d8729b44&algo_exp_id=3e66f8ae-5ea8-4915-a2a5-3c12d8729b44-5&pdp_ext_f=%7B%22sku_id%22%3A%2212000022269774618%22%7D&pdp_npi=2%40dis%21NZD%21%2130.96%21%21%21%21%21%40210318b916521335286924393e32d0%2112000022269774618%21sea | -. TheRaspberry Pi PoE+ HATis a Power Over Ethernet (PoE+) accessory for theRaspberry Pi 3B+/4B. Compared to its predecessorRaspberry Pi PoE+ HAT,<br>- It features better cooling effect.<br>- By using this small HAT and some proper 802.3af/at-compliant power sourcing equipments, it is possible to provide both network connection and power supply for your Raspberry Pi in only one Ethernet cable. |
| https://www.aliexpress.com/item/1005004253673308.html?spm=a2g0o.productlist.0.0.a5c7d685H4xzgN&algo_pvid=a657ed70-fa52-4aa8-a6da-55321b22f757&algo_exp_id=a657ed70-fa52-4aa8-a6da-55321b22f757-18&pdp_ext_f=%7B%22sku_id%22%3A%2212000028532821796%22%7D&pdp_npi=2%40dis%21NZD%21%21168.34%21%21%21%21%21%402101d68d16521332517113920e90db%2112000028532821796%21sea | - 2GB, 4GB, 8GB<br>- Free shipping<br>- 2022 Latest Raspberry Pi 4 Model B |
| https://www.officemax.co.nz/Digital-Technologies-STEAM/Electronics/STEAM-Raspberry-Pi-4-Model-B-2GB-2005719?gs=1&utm_source=google&utm_medium=organic&utm_campaign=organic-shopping&gclid=CjwKCAjw9-KTBhBcEiwAr19ig9p7H-Y4YlAj5UV066HU5vJ1YQjjFlGM-sSsGwrHQaCjPmsDXxuGcBoCNNIQAvD_BwE | - 1.5GHz quad-core ARM Cortex-A72 CPU<br>- VideoCore VI graphics<br>- Dual display support at resolutions up to 4K<br>- 4kp60 HEVC decode<br>- USB-C for input power, supporting 5V 3A operation<br>- 2x USB 3.0 and 2x USB 2.0 ports<br>- Conveniently backwards compatible<br>- 2x micro HDMI ports<br>- Up to 8GB RAM |

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| | - Dual-band 2.4/5.0 GHz wireless LAN<br>- Bluetooth 5.0<br>- True Gigabit Ethernet<br>- POE compatibility<br>- |
| | • 1.5GHz quad-core ARM Cortex-A72 CPU<br>• VideoCore VI graphics<br>• Hardware 4kp@60Hz HEVC decoding<br>• True Gigabit Ethernet<br>• 2.4 GHz and 5.0 GHz IEEE 802.11ac wireless, Bluetooth 5.0, BLE<br>• 2 × USB 3.0 and 2 × USB 2.0 ports<br>• 2 × **Micro-HDMI** ports (1 × 4kp@60Hz or 2 × 4kp@30Hz)<br>• USB-C for input power, supporting 5.1V 3A operation<br>• 3 LPDDR4 RAM options available: 1GB, **2GB**, **4GB** and **8GB** |
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Comparison table (Pi3 Model B / Pi3 Model B+ / Pi4 Model B):

| | 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 | 2.4GHz IEEE 802.11.b/g/n/ac wireless LAN, Bluetooth 4.1, BLE, 4 x USB 2.0 ports | 2.4GHz / 5.0GHz IEEE 802.11.b/g/n/ac wireless LAN, Bluetooth 4.2, BLE 4 x USB 2.0 ports, Gigabit Ethernet over USB2.0 (max. 300MPS) | 2.4GHz / 5.0GHz IEEE 802.11.b wireless LAN, Bluetooth 5.0, 2 x USB 2.0 / 2 x USB 3.0 ports delivering true Gigabit Ether |
| Access | Extended 40 pin GPIO header Extended | Extended 40 pin GPIO header Extended | Extended 40 pin GPIO header Extended |
| Video & Sound | 1 x full size HDMI, 1 X MIPI DSI display port 1 X MIPI CSI camera port 4 pole stereo output and composite video port | 1 x full size HDMI, 1 X MIPI DSI display port 1 X MIPI CSI camera port 4 pole stereo output and composite video port | 2 x micro HDMI, 4k video 1 X MIPI DSI display port 1 X MIPI CSI camera port 4 pole stereo output and com video port |
| Multimedia | H.264, MPEG 4 decode (1080p30), H.264 encode (1080p30), OpenGL ES 1.1, 2.0 graphics | H.264, MPEG 4 decode (1080p30), H.264 encode (1080p30), OpenGL ES 1.1, 2.0 graphics | H.265 decode (4kp60) H.264 decode (1080p60), H.264 encode (1080p30), OpenGL ES 1.1, 2.0, 3.0 graph |
| SD card support | Micro SD format for loading OS & data storage | Micro SD format for loading OS & data storage | Micro SD format for loading O |
| Input Power | 5V/2.5A DC via micro USB connector 5V DC via GPIO | 5V/2.5A DC via micro USB connector 5V DC via GPIO PoE enabled | 5V/3A DC via USB type C con 5V DC via GPIO PoE enabled |

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| | • Broadcom BCM2711, quad-core Cortex-A72 (ARM v8) 64-bit SoC @ 1. 5GHz---4GB LPDDR4-2400 SDRAM<br>• 2. 4 GHz and 5. 0 GHz IEEE 802. 11B/g/n/ac Wireless LAN, Bluetooth 5. 0, double-true Gigabit Ethernet<br>• 2 × USB 3. 0 ports, 2 x USB 2. 0 Ports---2 × micro HDMI ports supporting up to 4Kp60 video resolution<br>• 2-lane MIPI DSI/CSI ports for camera and display--4-pole stereo audio and composite video port--Micro SD card slot for loading operating system and data storage<br>• Requires 5. 1V, 3a power via USB Type C or gpio-poep (power over Ethernet) enabled (requires PoE hat-not included) |
| | • BCM2711B0 (ARM Cortex-A72): 64-bit 1.5GHz quad-core<br>• RAM: 8GB<br>• Gigabit Ethernet<br>• 802.11ac 2.4GHz/5GHz dual-band NIC<br>• Bluetooth 5.0, BLE<br>• USB 3.0 x 2, USB 2.0 x 2<br>• micro HDMI x 2 (supports 4Kp60)<br>• PoE header (supports PoE HAT)<br>• MicroSD slot<br>• 3.5 mm audio jack<br>• 40PIN GPIO header |

| | <ul><li>CSI camera interface</li><li>DSI display interface</li><li>USB Type C power supply (5V/3A or above)</li></ul> |
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