Overview

Welcome to the latest generation of Raspberry Pi: the everything computer.

Featuring a 64-bit quad-core Arm Cortex-A76 processor running at 2.4GHz, Raspberry Pi 5 delivers a 2–3× increase in CPU performance relative to Raspberry Pi 4. Alongside a substantial uplift in graphics performance from an 800MHz VideoCore VII GPU; dual 4Kp60 display output over HDMI; and state-of-the-art camera support from a rearchitected Raspberry Pi Image Signal Processor, it provides a smooth desktop experience for consumers, and opens the door to new applications for industrial customers.

For the first time, this is a full-size Raspberry Pi computer using silicon built in-house at Raspberry Pi. The RP1 “southbridge” provides the bulk of the I/O capabilities for Raspberry Pi 5, and delivers a step change in peripheral performance and functionality. Aggregate USB bandwidth is more than doubled, yielding faster transfer speeds to external UAS drives and other high-speed peripherals; the dedicated two-lane 1Gbps MIPI camera and display interfaces present on earlier models have been replaced by a pair of four-lane 1.5Gbps MIPI transceivers, tripling total bandwidth, and supporting any combination of up to two cameras or displays; peak SD card performance is doubled, through support for the SDR104 high-speed mode; and for the first time the platform exposes a single-lane PCI Express 2.0 interface, providing support for high-bandwidth peripherals.
Specification

Processor
Broadcom BCM2712 2.4GHz quad-core 64-bit Arm Cortex-A76 CPU, with cryptography extensions, 512KB per-core L2 caches, and a 2MB shared L3 cache

Features:
• VideoCore VII GPU, supporting OpenGL ES 3.1, Vulkan 1.2
• Dual 4Kp60 HDMI® display output with HDR support
• 4Kp60 HEVC decoder
• LPDDR4X-4267 SDRAM (4GB and 8GB SKUs available at launch)
• Dual-band 802.11ac Wi-Fi®
• Bluetooth 5.0 / Bluetooth Low Energy (BLE)
• microSD card slot, with support for high-speed SDR104 mode
• 2 × USB 3.0 ports, supporting simultaneous 5Gbps operation
• 2 × USB 2.0 ports
• Gigabit Ethernet, with PoE+ support (requires separate PoE+ HAT)
• 2 × 4-lane MIPI camera/display transceivers
• PCIe 2.0 x1 interface for fast peripherals (requires separate M.2 HAT or other adapter)
• 5V/5A DC power via USB-C, with Power Delivery support
• Raspberry Pi standard 40-pin header
• Real-time clock (RTC), powered from external battery
• Power button

Production lifetime: Raspberry Pi 5 will remain in production until at least January 2035

Compliance: For a full list of local and regional product approvals, please visit pip.raspberrypi.com
Physical specification

**WARNINGS**

- This product should be operated in a well ventilated environment, and if used inside a case, the case should not be covered.
- While in use, this product should be firmly secured or should be placed on a stable, flat, non-conductive surface, and should not be contacted by conductive items.
- The connection of incompatible devices to Raspberry Pi 5 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.

**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 while in operation.
- Do not expose to heat from any source; Raspberry Pi 5 is designed for reliable operation at normal ambient temperatures.
- Store in a cool, dry location.
- Take care while handling to avoid mechanical or electrical damage to the printed circuit board and connectors.
- While it is powered, avoid handling the printed circuit board, or handle it only by the edges, to minimise the risk of electrostatic discharge damage.