Raspberry Pi 5

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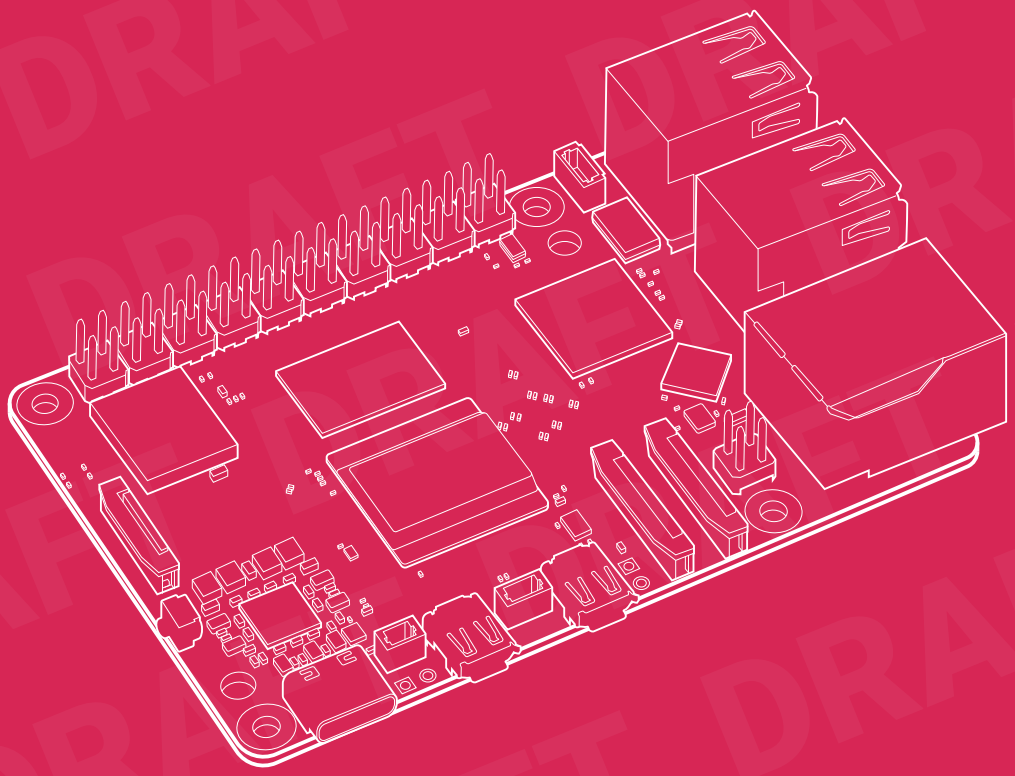

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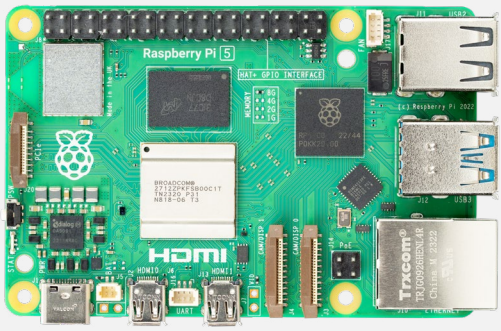
Raspberry Pi Ltd

Overview



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

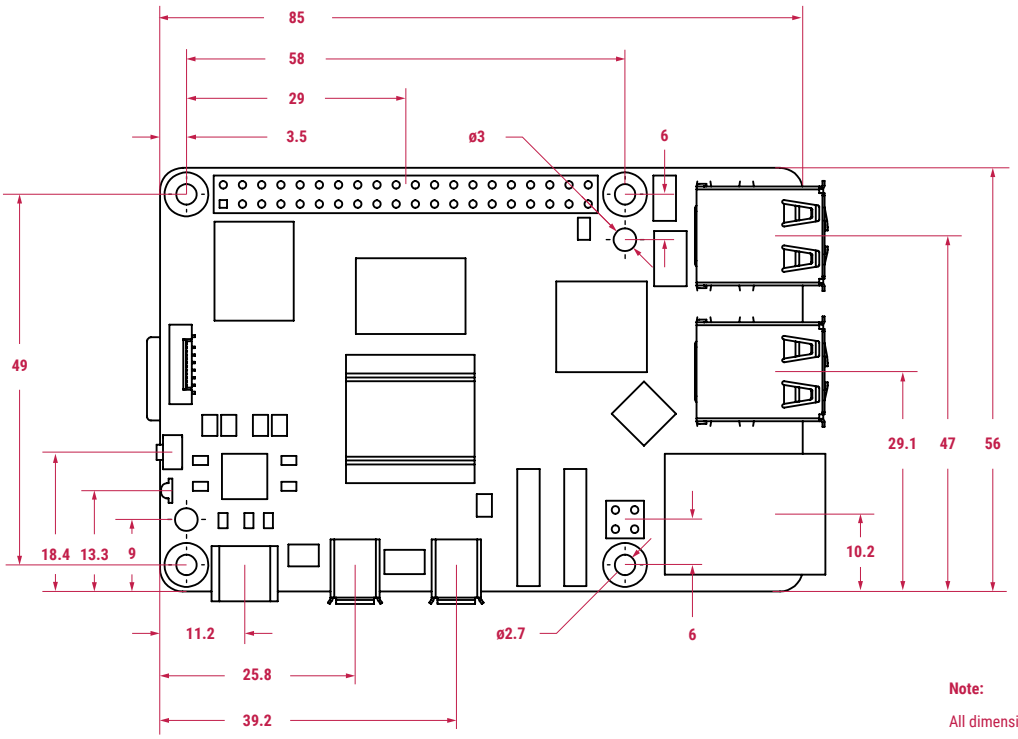
Featuring a 64-bit quad-core Arm Cortex-A76 processor running at 2.4GHz, Raspberry Pi 5 delivers a 2–3× increase in CPU performance relative to Raspberry Pi 4. Alongside a substantial uplift in graphics performance from an 800MHz VideoCore VII GPU; dual 4Kp60 display output over HDMI; and state-of-the-art 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.

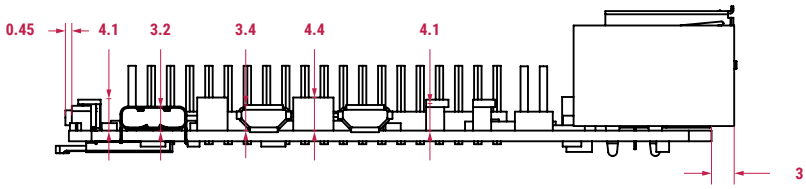
For the first time, this is a full-size Raspberry Pi computer using silicon built in-house at Raspberry Pi. The RP1 “southbridge” provides the bulk of the I/O capabilities for Raspberry Pi 5, and delivers a step change in peripheral performance and functionality. Aggregate USB bandwidth is more than 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high-speed peripherals; the dedicated two-lane 1Gbps MIPI camera and display interfaces present on earlier models have been replaced by a pair of four-lane 1.5Gbps MIPI transceivers, tripling total bandwidth, and supporting any combination of up to two cameras or displays; peak SD card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





Note:

All dimensions in mm

All dimensions are approximate and for reference purposes only. The dimensions shown should not be used for producing production data

The dimensions are subject to part and manufacturing tolerances

Not all of the board components are shown. Please reference a physical board for representation of componentry

Dimensions may be subject to change

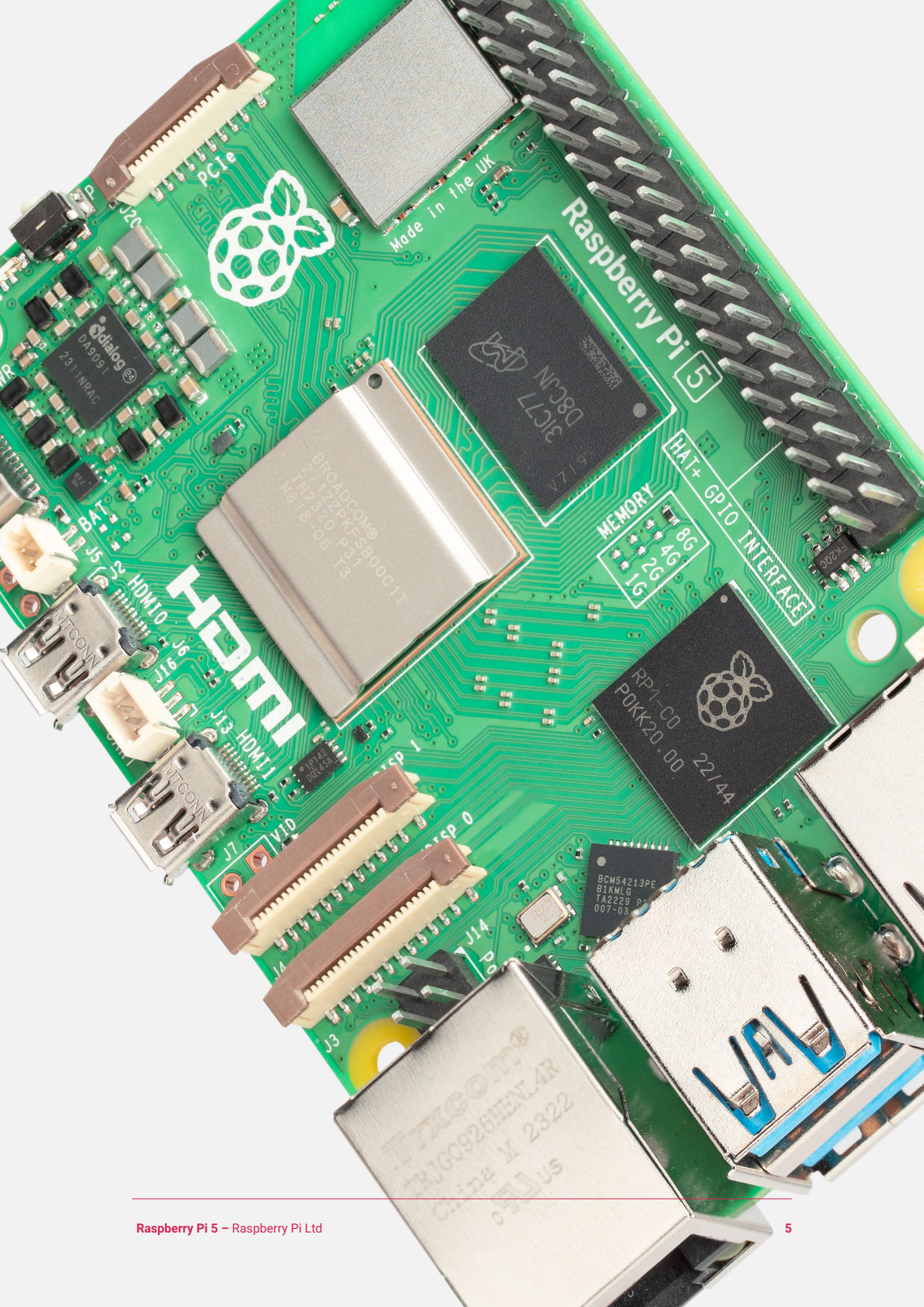
WARNINGS

- 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.


Raspberry Pi 5
Made in the UK
PCIe
HAT+ GPIO INTERFACE
MEMORY
8G
4G
2G
1G
HDMI0
HDMI1
BAT
RP1-C0
POKK20.00
22144
BCM54213PE
B1KMLG
TA2229
007-03

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Raspberry Pi:

SC1110 SC1113