# Raspberry Pi 5

Published October 2023
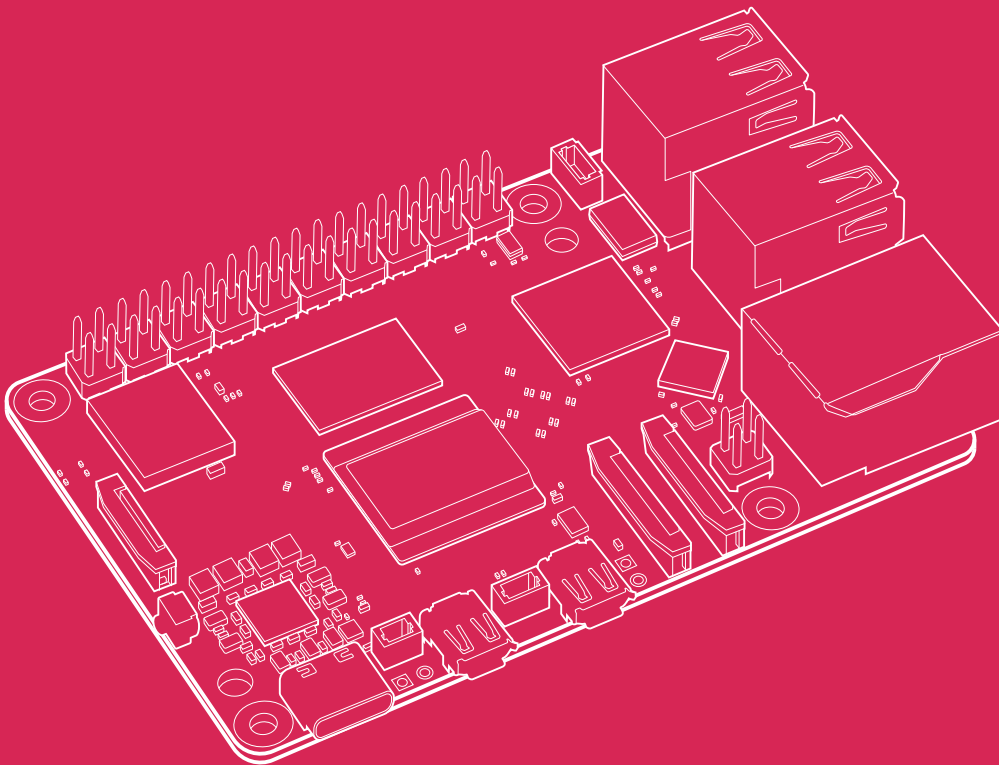
**Raspberry Pi Ltd**

# 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high-speed peripherals; the dedicated two-lane 1Gbps MIPI camera and display interfaces present on earlier models have been replaced by a pair of four-lane 1.5Gbps MIPI transceivers, tripling total bandwidth, and supporting any combination of up to two cameras or displays; peak SD card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 Cryptographic Extension, 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
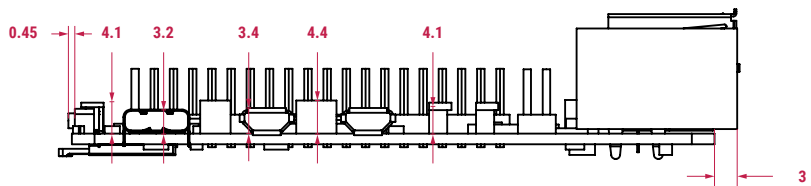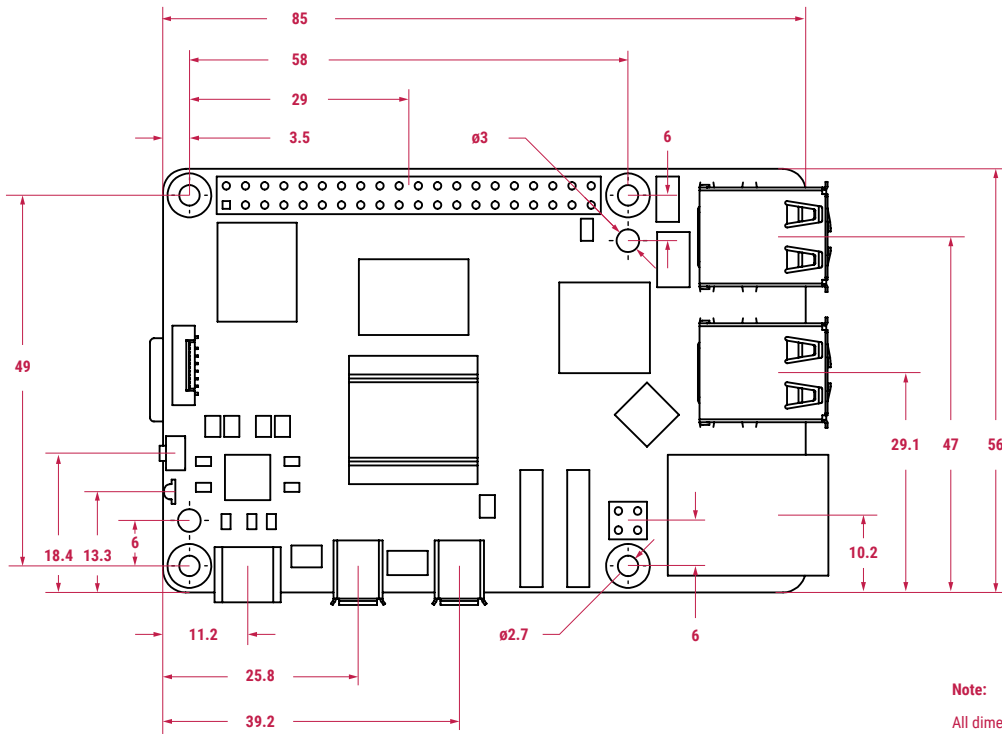


**Note:**

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.
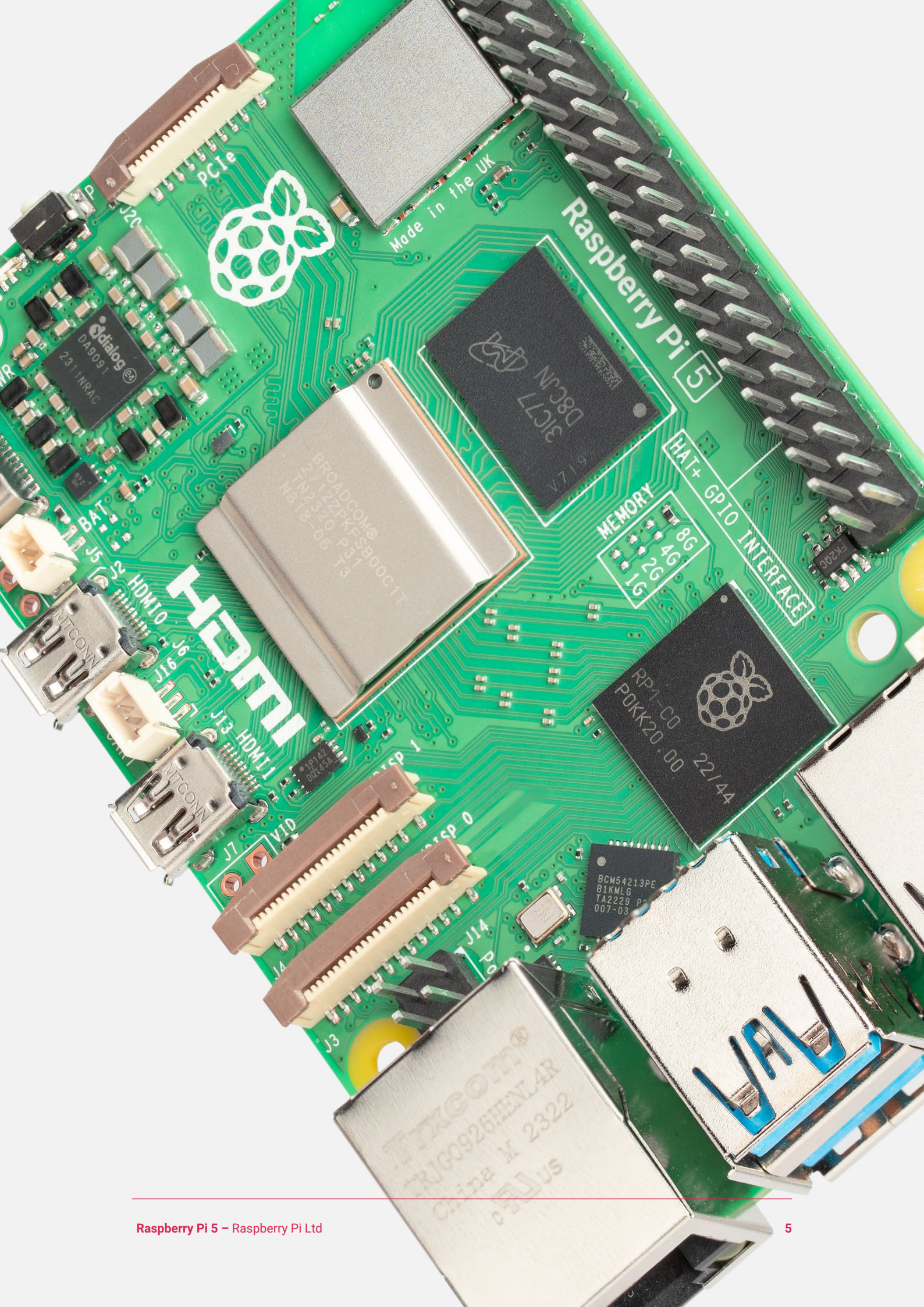
# X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for* Development Boards & Kits - ARM *category:*

*Click to view products by* Raspberry Pi *manufacturer:*

Other Similar products are found below :

CY4541  OM13090UL  Raspberry Pi 4 Model B,8GB  YR0K77210B000BE  B-U585I-IOT02A  NUCLEO-C031C6  NUCLEO-U5A5ZJ-Q  NUCLEO-WL55JC1  STM32MP135F-DK  ZDSD-Pinboard  081ZYKFB  LKS32MC034DOF6Q8-k  LKS32MC077MBS8-K  LKS32MC038Y6P8B-K  LKS32MC071DOC8T8-K  LKS32MC074DOF8Q8-K  LKS32MC071CBT8-K  LKS32MC038Y6P8-k  Ai-WB2-32S-Kit  GD32E103T-START  GD32L233K-START  RTK7F124FPC01000BJ  XDS601  RP2040-Tiny  M6G2C-256LI  YT37  LKS32MC033H6P8B-K  VC-02-Kit_EN  Ra-08H-Kit  Hi-12FL-Kit  PB-03M-Kit  Ai-WB2-13-Kit  PB-03F-Kit  Ra-08-Kit  Hi-07SL-Kit  Hi-07S-Kit  Ai-WB2-12F-Kit  PB-03-Kit  Hi-12F-Kit  AT-START-F437  AT-START-F407  E104-BT40-TB  FT8132Q-3HALL-FOC+EMF  APM32F072VBT6  APM32F091VC MINI  APM32F407IG-MINIBOARD  APM32F003F6P6-MINIBOARD  APM32F051R8 MINI  GD32EPRTV-START  GD32FPRT-START