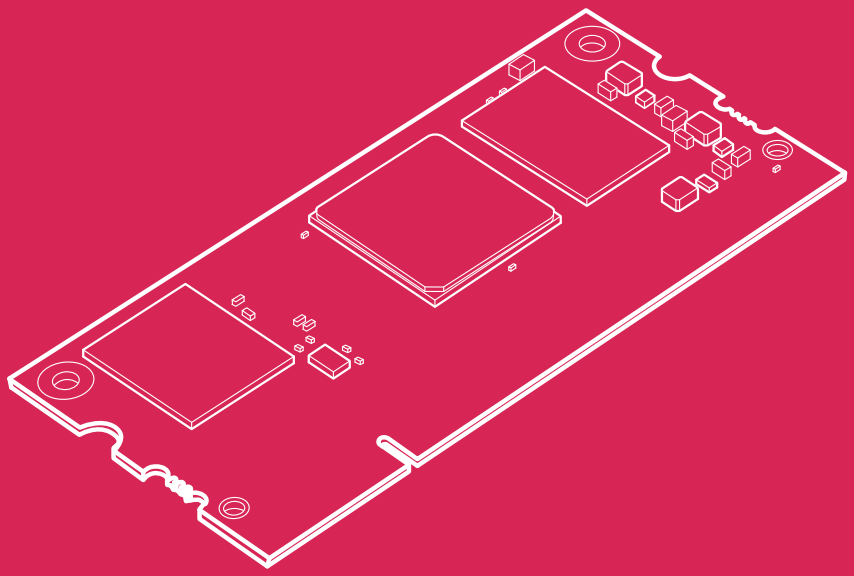
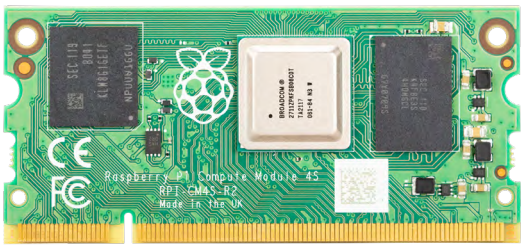
Raspberry Pi Compute Module 4S

Published April 2024



Raspberry Pi Ltd

Overview



Raspberry Pi Compute Module 4 SODIMM (CM4S) is a System on Module (SoM) containing processor, memory, eMMC flash, and supporting power circuitry. These modules allow a designer to leverage the Raspberry Pi hardware and software stack in their own custom systems and form factors. The SODIMM form factor compute modules have 18 additional GPIO pins compared to the standard Raspberry Pi boards, for a total of 46, opening up more options for designers.

CM4S is loosely based on Raspberry Pi 4 Model B, and for cost-sensitive applications it can be supplied without the eMMC fitted; this version is called Raspberry Pi Compute Module 4 SODIMM Lite (CM4SLite).

CM4S is in the same form factor as the older Raspberry Pi Compute Module 3 and 3+, which are mechanically compatible with DDR2-SODIMM.

This device is intended for industrial customers migrating from Compute Module 3 or 3+, who wish to continue to use the SODIMM form factor or to take advantage of the increased SDRAM capacity.

Specification

Form factor:

67.6mm × 31.0mm
(compatible with JEDEC MO-224 mechanical specification for 200-pin DDR2)

NOTE

> The pinout of Compute Module 4S is not the same as that of a DDR2 SODIMM module; they are not electrically compatible.

Processor:

Broadcom BCM2711 quad-core 64-bit Cortex-A72 (Arm v8) at 1.5GHz

Memory:

- 1GB, 2GB, 4GB, or 8GB LPDDR4-3200 SDRAM with ECC
- 0GB (CM4SLite only), 8GB, 16GB, or 32GB eMMC flash

Connectivity:

- 1 × USB 2.0 port (high speed)
- 46 × GPIO signals
- 1 × SDIO 2.0 (CM4SLite only)

Video:

- 1 × HDMI 2.0 port (up to 4Kp60 supported)
- 1 × 2-lane MIPI DSI display interface
- 1 × 4-lane MIPI DSI display interface
- 1 × 2-lane MIPI CSI camera interface
- 1 × 4-lane MIPI CSI camera interface
- 1 × composite TV out (PAL or NTSC)

Multimedia:

- H.265 (HEVC) (up to 4Kp60 decode),
  H.264 (up to 1080p60 decode, 1080p30 encode)
- OpenGL ES 3.0 graphics

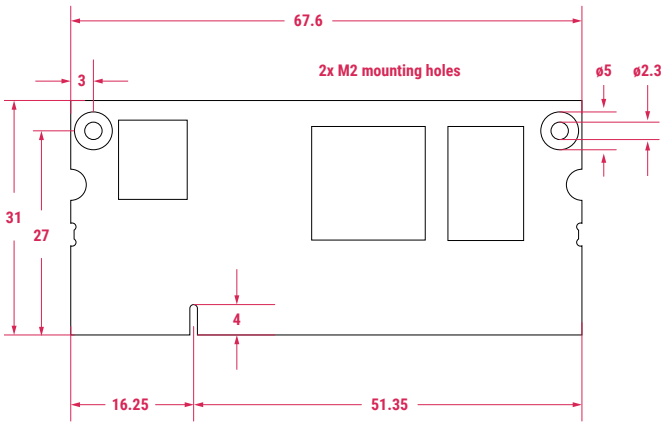
Input voltage:

Requires VBAT (2.5V to 5V) and +3.3V supplies.
Older Compute Modules also required +1.8V: +1.8V is no longer used but can be supplied for backward compatibility.

Production lifetime:

Raspberry Pi Compute Module 4S will remain in production until at least January 2034

Physical specification



Note: all dimensions in mm

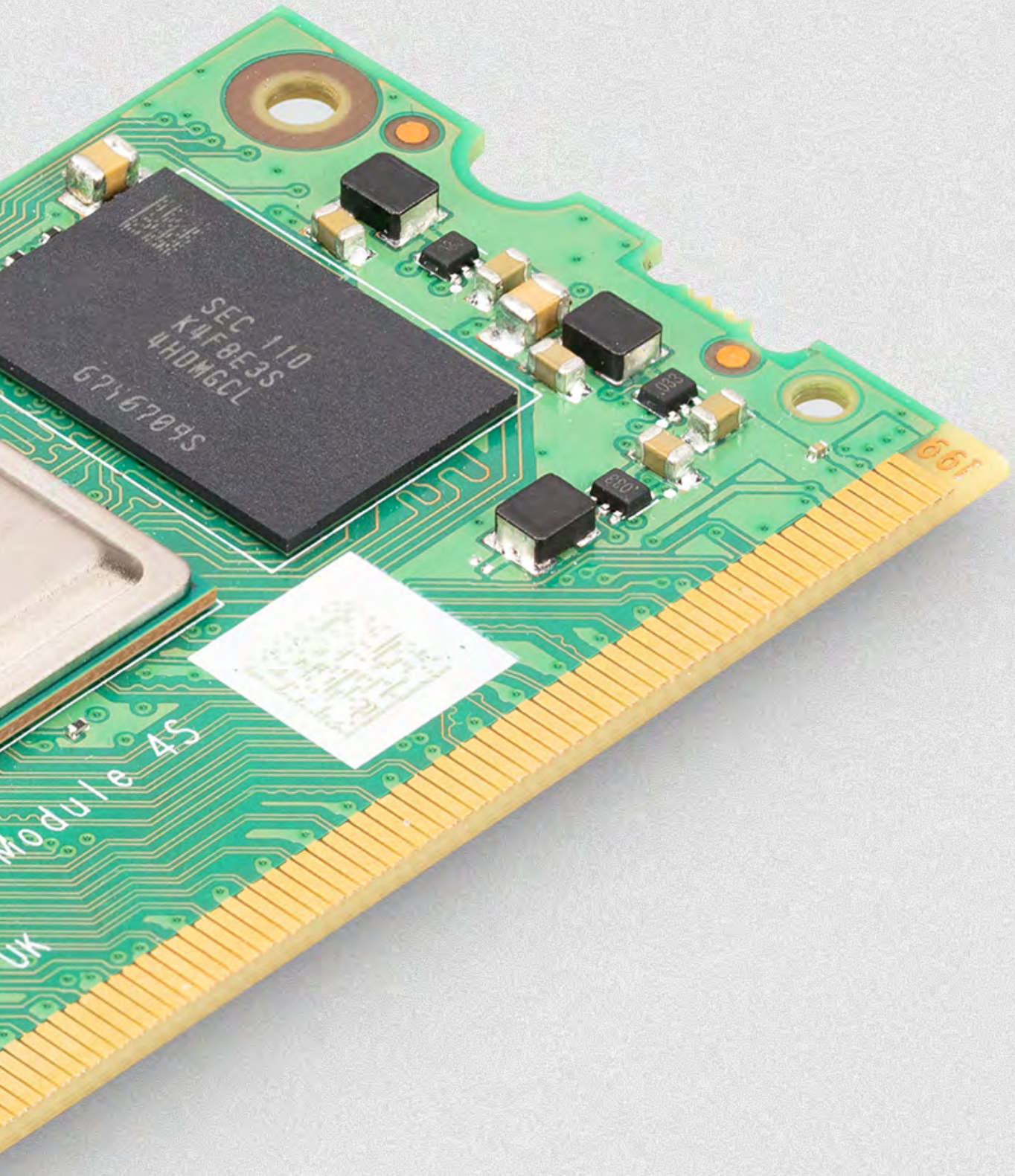
WARNINGS

- Any external power supply used with Raspberry Pi Compute Module 4S shall comply with relevant regulations and standards applicable in the country of intended use.
- This product should be operated in a well-ventilated environment, and if used inside a case, the case should not be covered.
- Whilst in use, this product should be placed on a stable, flat, non-conductive surface, and should not be contacted by conductive items.
- The connection of incompatible devices to Compute Module 4S 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. These articles include but are not limited to keyboards, monitors, and mice when used in conjunction with the Compute Module.
- The cables and connectors of all peripherals used with this product must have adequate insulation so that relevant safety 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 whilst in operation.
- Do not expose to heat from any source; Raspberry Pi Compute Module 4S is designed for reliable operation at normal ambient temperatures.
- Take care whilst handling to avoid mechanical or electrical damage to the printed circuit board and connectors.
- Whilst it is powered, avoid handling the printed circuit board, or only handle it by the edges to minimise the risk of electrostatic discharge damage.


SEC 110
K4F8E3S
4HDMGCL
Module 4S
UK