Radxa CM4 Product Brief

Edge AI Compute Module, Ready to Deploy

Revision 1.1

2025-09-01

Radxa Computer

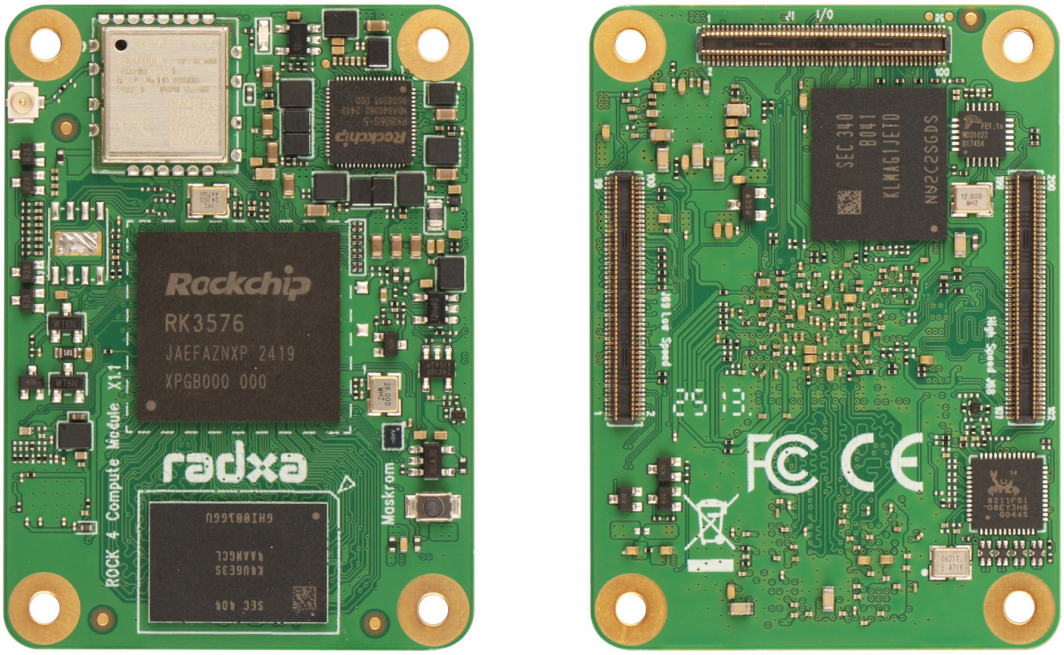
Contents

1 Revision Control Table

Version	Date	Changes from previous version
1.0	2025/04/16	First version
1.1	2025/04/25	Change PDF fonts to avoid CJK characters

2 Introduction

Edge AI Compute Module, Ready to Deploy



Radxa CM4 is a high-performance system-on-module designed to bring the capabilities of the RK3576 processor to space-constrained and custom embedded applications. Built around a 55 mm × 40 mm compact form factor, CM4 is ideal for industrial control, edge computing, computer vision, and multimedia applications.

Powered by the Rockchip RK3576 or RK3576J SoC, Radxa CM4 features an octa-core CPU (4× Cortex-A72 + 4× Cortex-A53), Mali-G52 GPU, and a powerful 6 TOPS NPU, making it well-suited for AI and multimedia tasks. It supports high-speed LPDDR4x memory, onboard eMMC storage up to 256GB, optional UFS 2.0, SPI Flash, and SDMMC for flexible storage configurations.

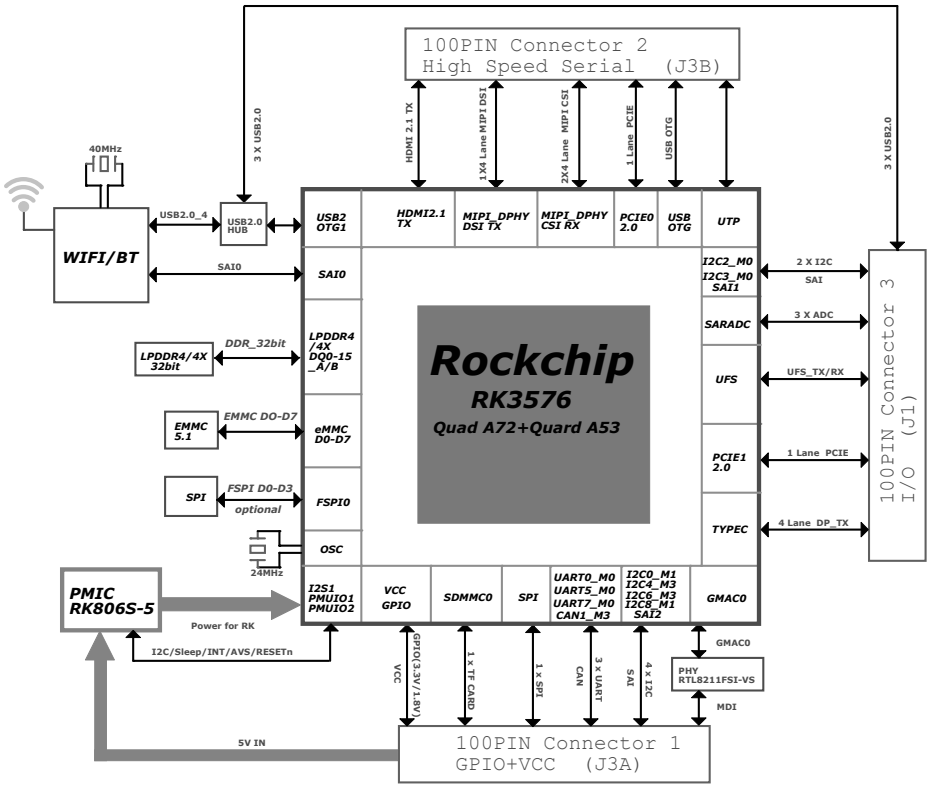
With its powerful specs, industrial-grade reliability, flexible I/O via three 100-pin board-to-board connectors, and open ecosystem, Radxa CM4 is the ideal platform for building next-generation embedded systems and edge AI devices.

Note:

> The components on the Compute Module may be different on specific SKU such as the SKU without eMMC doesn't have the onboard eMMC mounted.

3 Block Diagram

As illustrated in the figure below, the CM4 block diagram showcases the intricate design and components of this powerful module.



To empower product developers and integrators, Radxa provides an official CM4 IO Board to help users quickly get started with prototyping and evaluation. The IO Board breaks out all major interfaces of CM4, including PCIe, USB, Ethernet, display, and camera connections.

All hardware design files for the CM4 IO Board—including schematics, PCB layout, and BOM—are open source and available on the Radxa Github for community access and customization.

4 Specification

Product Name	Radxa CM4
Form Factor	55 mm × 40 mm × 4.5 mm module 4 × M2.5 mounting holes
SoC	Rockchip RK3576 or RK3576J
CPU	Quad-core Cortex-A72 (1MB L2) and Quad-core Cortex-A53 (512KB L2) ARMv8-A, TrustZone, Cryptography Extensions
GPU	ARM Mali G52 MC3
NPU	6 TOPS (INT8), supports INT4/INT8/INT16/FP16/BF16/TF32 compatible with TensorFlow, PyTorch, ONNX, etc.
Memory	LPDDR4/LPDDR4X (up to 4266MT/s) dual-channel 16bit, up to 16GB total address space
Codec	AV1 / AVS2 / VP9 / H.265 multivideo decoder up to 8K@30fps or 4K@120fps H.264 multivideo decoder up to 4K@60fps H.265 multivideo encoder up to 4K@60fps
Storage	Onboard eMMC Up to 256GB Optional onboard SPI Flash 1x UFS 2.0 1x SDMMC
Ethernet	1x Onboard Gigabit Ethernet PHY supporting IEEE 1588
Video Input	1x 4-lane MIPI CSI 1x 4-lane MIPI CSI or 2x 2-lane MIPI CSI

Video Output	1x HDMI TX up to 4K@120Hz 1x 4-lane eDP Interface up to 4K@60fps 1x DP Interface up to 4K@120fps 1x 4-lane MIPI DSI for MIPI LCD Able to provide 2x display output
USB	1x USB 3.2 Gen1x1 OTG / HOST 1x USB 3.2 Gen2x1
PCIe	2x PCIe Gen2 1-lane
SATA	2x SATA 3.1
Low Speed Buses	SPI, I2C, I3C, UART, CAN
Connector	3x 100P 0.4mm pitch B2B connector
Operation Temperature	0°C to 60°C(Commercial Grade) -40°C to 85°C(Industrial Grade)

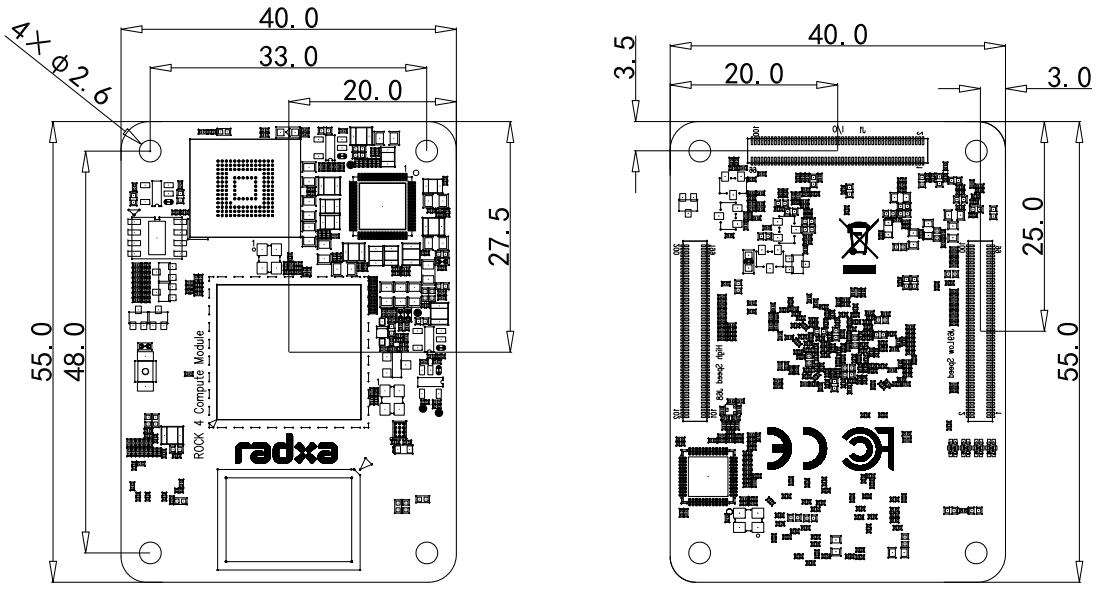
5 Software

- Debian Linux support
- Yocto Linux support
- Buildroot support
- Android 14 support
- Rockchip RKNN SDK for AI model deployment

6 Pinout

The Pinout document for Radxa CM4 offers a detailed explanation of pin assignments and connectivity. You are welcome to visit Radxa CM4 Pinout to access this valuable resource. Download it for comprehensive information.

7 Mechanical Specification



8 Model and SKU

Temp	SoC	RAM	eMMC	Wireless	SKU
0°C to 70°C	RK3576	1GB	8GB	No WiFi	RM126-D1E8J0R35W0
				WiFi 6, BT 5.4	RM126-D1E8J0R35W28
		2GB	16GB	No WiFi	RM126-D2E16J0R35W0
				WiFi 6, BT 5.4	RM126-D2E16J0R35W28
		4GB	32GB	No WiFi	RM126-D4E32J0R35W0
				WiFi 6, BT 5.4	RM126-D4E32J0R35W28
		8GB	64GB	No WiFi	RM126-D8E64J0R35W0
				WiFi 6, BT 5.4	RM126-D8E64J0R35W28
		16GB	128GB	No WiFi	RM126-D16E128J0R35W0
				WiFi 6, BT 5.4	RM126-D16E128J0R35W28
-40°C to 85°C	RK3576J	1GB	8GB	No WiFi	RM126-D1E8J1R36W0
				Industrial WiFi 6, BT 5.4	RM126-D1E8J1R36W29
		2GB	16GB	No WiFi	RM126-D2E16J1R36W0
				Industrial WiFi 6, BT 5.4	RM126-D2E16J1R36W29
		4GB	32GB	No WiFi	RM126-D4E32J1R36W0
				Industrial WiFi 6, BT 5.4	RM126-D4E32J1R36W29
		8GB	64GB	No WiFi	RM126-D8E64J1R36W0
				Industrial WiFi 6, BT 5.4	RM126-D8E64J1R36W29
		16GB	128GB	No WiFi	RM126-D16E128J1R36W0
				Industrial WiFi 6, BT 5.4	RM126-D16E128J1R36W29

9 Availability

Radxa guarantees availability of the Radxa CM4 until at least September 2035.

10 Support

For support please see the hardware documentation section of the Radxa Website and post questions to the Radxa forum.

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> **Note:**
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