
Radxa NX4 Product Brief

High Efficiency, Low Power AI SoM

Revision 1.0

2025-12-10



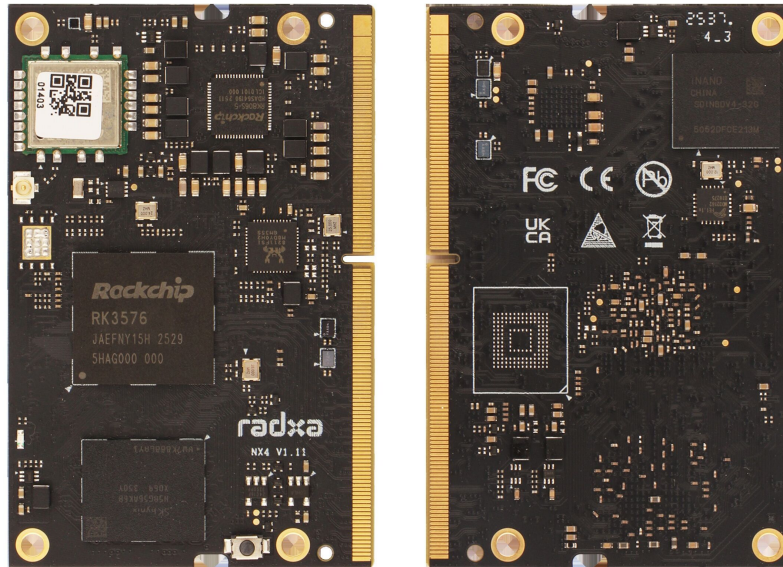
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1 Revision Control Table

Version	Date	Changes from previous version
0.8	2025/04/16	First version
0.9	2025/04/25	Change PDF fonts to avoid CJK characters
1.0	2025/12/10	Update parameters

2 Introduction



Radxa NX4 is a high-performance system-on-module designed to bring the capabilities of the RK3576(J) processor to space-constrained and custom embedded applications. Built around a 69.6 mm × 45 mm compact form factor, NX4 is ideal for industrial control, edge computing, computer vision, and multimedia applications.

Powered by the Rockchip RK3576 or RK3576J SoC, Radxa NX4 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 LPDDR5 memory, onboard eMMC storage up to 256GB, optional UFS 2.0, SPI Flash, and SDMMC for flexible storage configurations.

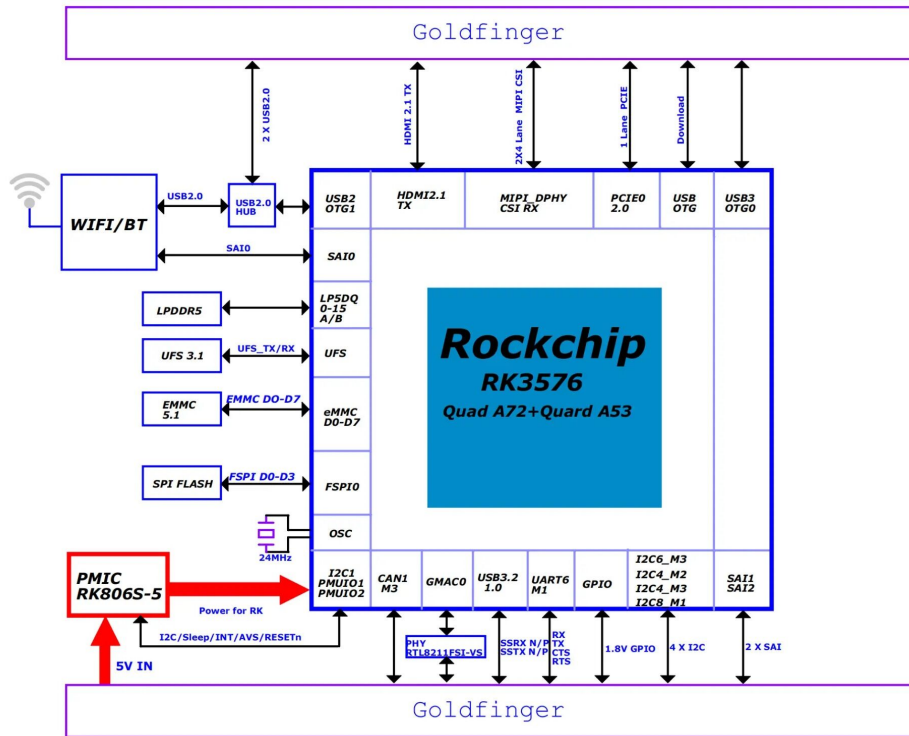
With its powerful specs, industrial-grade reliability, flexible I/O via 260-pin SO-DIMM connectors, and open ecosystem, Radxa NX4 is the ideal platform for building next-generation embedded systems and edge AI devices.

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 NX4 block diagram showcases the intricate design and components of this powerful module.



To empower product developers and integrators, Radxa provides an official NX4 IO Board to help users quickly get started with prototyping and evaluation. The IO Board breaks out all major interfaces of NX4, including PCIe, USB, Ethernet, display, and camera connections.

All hardware design files for the NX4 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 NX4
SoC	Rockchip RK3576(J)
CPU	Quad Cortex-A72 + Quad Cortex-A53
GPU	ARM Mali G52 MC3 - Support OpenGL ES 1.1, 2.0 and 3.2, OpenCL 2.1, Vulkan 1.2
NPU	6 TOPS@INT8 - Supports INT4 / INT8 / INT16 / FP16 / BF16 / TF32 computation precision - Support deep learning frameworks: TensorFlow, Caffe, Tflite, Pytorch, Onnx NN, Android NN, etc
RAM	LPDDR5 - Capacity: up to 16GB - Memory bus width: 32-bit (dual-channel, 16-bit per channel) - Data rate: up to 5500 MT/s
Codec	Video Encoder: H.265 multivideo encoder up to 4K@60fps Video Decoder: AV1 / AVS2 / VP9 / H.265 multivideo decoder up to 8K@30fps or 4K@120fps H.264 multivideo decoder up to 4K@60fps
Storage	Optional eMMC 5.1 or UFS 2.0 - eMMC 5.1, up to 256GB - UFS 2.0, up to 1TB Optional onboard SPI Flash 1x SDMMC
Networking	1x Gigabit Ethernet

	Onboard WiFi 6 & BT5.4
	Onboard antenna connector
Display	1x HDMI 2.1, up to 4K@120Hz
Camera	2x MIPI CSI (4-lane)
USB	USB 3.2 USB 2.0
PCIe	1x PCIe 2.0 x1
Other IO	Support UART, I2C, I2S, CAN, PWM, GPIOs, etc
Connector	260-pin SO-DIMM connector
Operating System	Support Debian, Yocto, Buildroot, Android 14
Dimension	69.6 mm × 45 mm
Operation Temperature	0 - 60°C (Commercial Grade) -40°C to 85°C(Industrial Grade)

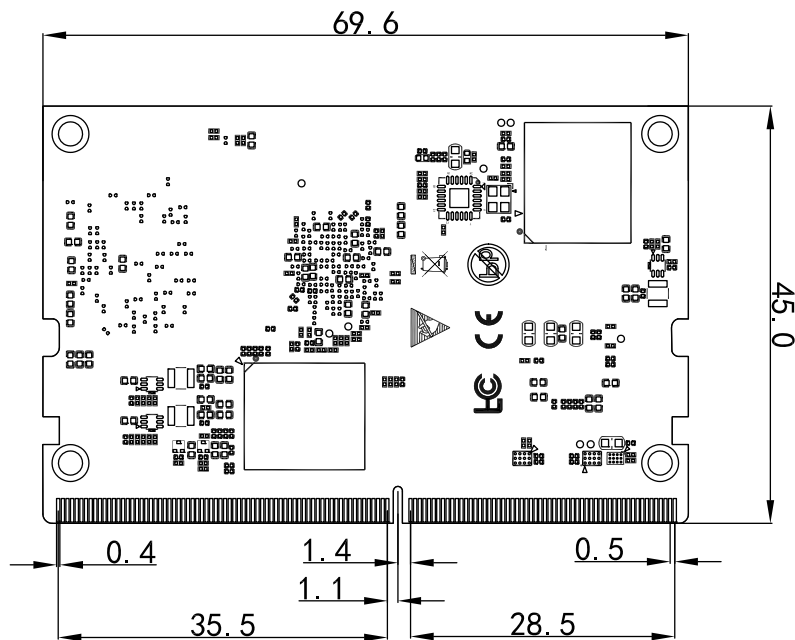
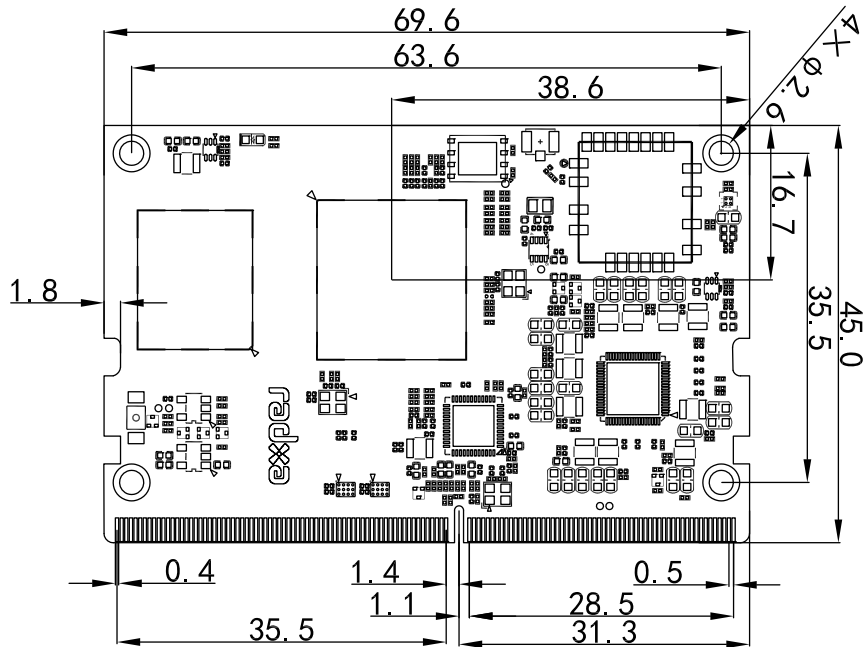
5 Software

- 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 NX4 offers a detailed explanation of pin assignments and connectivity. You are welcome to visit [Radxa NX4 Pinout](#) to access this valuable resource. Download it for comprehensive information.

7 Mechanical Specification



8 Availability

Radxa guarantees availability of the Radxa NX4 until at least November 2030.

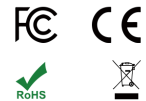
Note: Component shortages or third-party supplier discontinuations may affect actual delivery times.

9 Support

For support, please refer to the hardware documentation section of the [Radxa Documentation Center](#) and post questions to the [Radxa Forum](#).

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