
Radxa rCore-Q8280

Snapdragon 8cx Gen 3 SoM for Edge AI

Draft 0.8

2026-06-16



Radxa Computer



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1 Revision Control Table

Version	Date	Changes from previous version
0.8	2026-06-16	First release

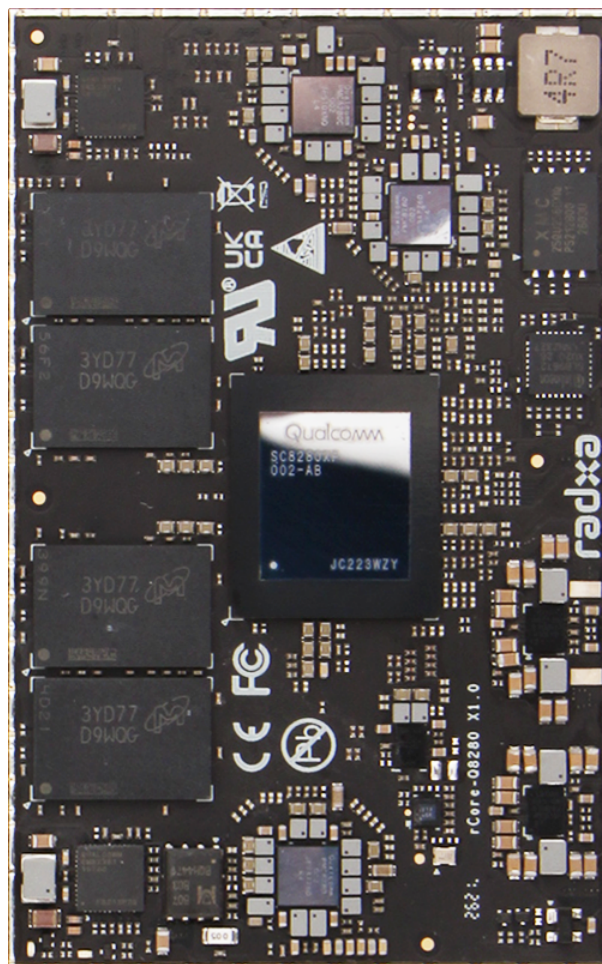
2 Introduction

Radxa rCore-Q8280 is a high-performance SoM based on the Qualcomm Snapdragon 8cx Gen 3 Compute Platform (SC8280XP), designed for edge AI, mobile computing, industrial terminals, and embedded applications.

Built on a 5nm process, it combines an octa-core Qualcomm Kryo CPU, Qualcomm Adreno 690 GPU with up to 2.7 TFLOPS graphics performance, and Qualcomm AI Engine with up to 29+ TOPS total AI performance.

With support for up to 32GB LPDDR4X, 4K video encode/decode, UFS 3.1, NVMe, USB 3.1 Gen2, and USB-C with DisplayPort Alt Mode, rCore-Q8280 delivers strong compute performance and flexible high-speed I/O in a compact 50 mm x 80 mm form factor.

It supports multiple operating systems, helping developers accelerate product development, validation, and deployment.



3 Specification

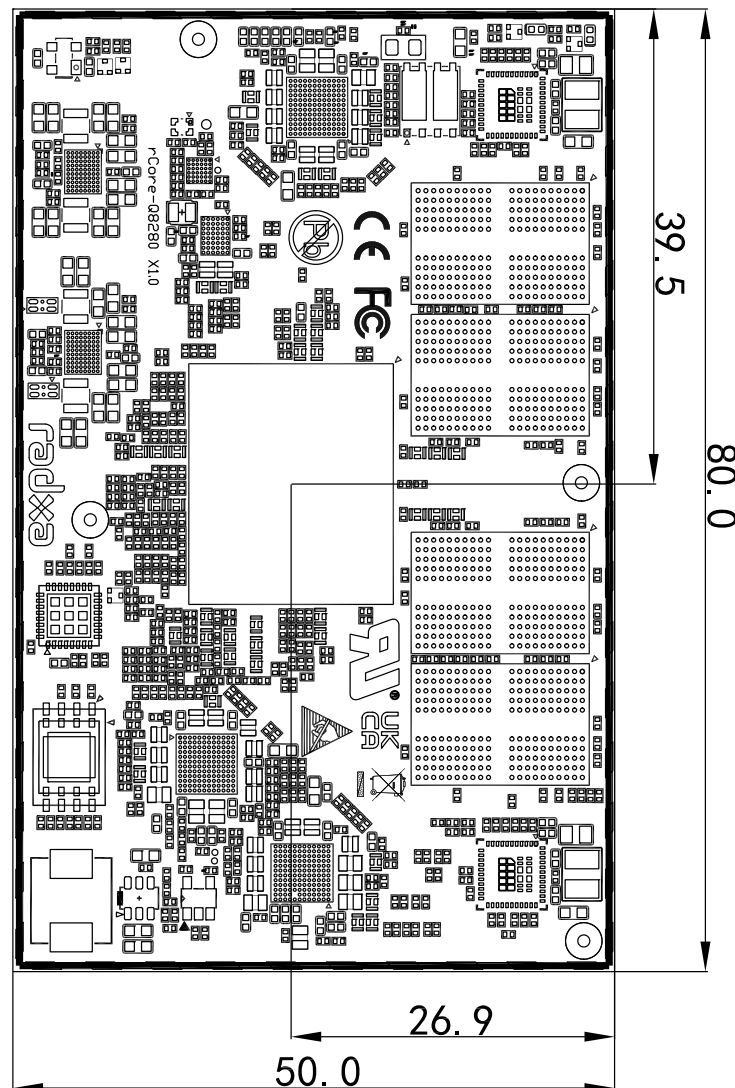
Product Name	Radxa rCore-Q8280
SoC	Qualcomm® Snapdragon® 8cx Gen 3 Compute Platform
CPU	Qualcomm® Kryo™ CPU - 8-core CPU - 4x Kryo Prime + 4x Kryo Gold - 64-bit CPU Architecture
GPU	Qualcomm® Adreno™ 690 GPU - 2.7 TFLOPS - DirectX 12 support - DirectML support
AI Performance	Qualcomm® AI Engine - Up to 29+ TOPS
Process	5 nm Process Technology
Codec	Qualcomm® Adreno™ VPU (5th-gen UHD VPU) - Video decode: up to 4K@120; H.265 Main 10/Main, H.264 High, VP9 Profile 2 - Video encode: up to 4K@60; H.265 Main 10/Main, H.264 High
PCIe	PCIe Gen3 - Up to 9 PCIe Gen3 lanes - Configurable as 2 + 2 + 2 + 2 + 1 or 4 + 4 + 1
Memory	LPDDR4X - Capacity: Up to 32 GB - Data rate: Up to 4266 MT/s

	- Memory bus width: 128-bit (8 channels x 16-bit)
Storage	microSD via SD 3.0 UFS via UFS 3.1 Gear 4 NVMe over PCIe
Display	Qualcomm® Adreno 1199 DPU - 2x 4-lane DP / eDP - 1x 4-lane MIPI DSI - USB-C with DisplayPort v1.4, up to 4K@120
Camera	Qualcomm Spectra ISP - 1x 4-lane MIPI CSI
USB	2x USB 3.1 Gen2 (10 Gbps) 2x USB 3.1 Type-C with DisplayPort v1.4 1x USB 2.0
Audio	Qualcomm® Low-Power Audio Subsystem (LPASS) - SoundWire audio interface for audio codec and speaker amplifier - Supports DMIC / MI2S / TDM / PCM audio interfaces
Connectivity	228 GPIOs 24 QUP ports (multiplexed for I2C / I3C / SPI / UART serial interfaces)
Dimension	50 mm x 80 mm
Longevity	June 2029

4 Software Support

- Radxa OS
- Windows
- Ubuntu
- Debian
- ...

5 Mechanical Specification



Unit: mm

6 Availability

Radxa guarantees availability of the Radxa rCore-Q8280 until at least June 2029.

7 Support

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