Radxa VMARC-Q9075 Dev Kit

Built for High-Performance Robotics and Edge Intelligence

Revision 1.0

2026-08-28

Radxa Computer

Contents

1 Revision Control Table

Version	Date	Changes from previous version
0.8	2025-11-11	First draft
0.9	2026-05-15	Added product images and revised product description
1.0	2026-08-28	Updated hardware specifications

2 Introduction

The Radxa VMARC-Q9075 Dev Kit combines the Radxa VMARC-Q9075 SoM with the Radxa C201 VMARC IO Board, targeting high-performance robotics and edge intelligence applications.

Powered by the Qualcomm® Dragonwing IQ-9075 NPU with up to 100 Dense TOPS / 200 Sparse TOPS@INT8 AI-accelerated inference and 36GB LPDDR5, it offers dual 2.5GbE Ethernet, MIPI DSI / eDP / HDMI / DP display, dual MIPI CSI, and 4× USB 3.2 Gen 2 — ready for prototyping in robotics, autonomous systems, and edge AI.

3 Features

- **Peak AI Performance**: Qualcomm® Dragonwing IQ-9075 NPU delivering up to 100 Dense TOPS / 200 Sparse TOPS@INT8 AI-accelerated inference
- **High-Performance Compute**: 8-core Kryo Gen 6 CPU, 4-core Cortex-R52 MCU, and Adreno 663 GPU for robotics and edge intelligence
- **High-Speed Memory**: 36GB LPDDR5 @ 6400 MT/s with 96-bit bus for bandwidth-intensive workloads
- **Flexible Storage**: On-module 128GB UFS 3.1, plus M.2 NVMe SSD expansion on the IO Board
- **Rich Connectivity**: Dual 2.5GbE, 4× USB 3.2 Gen 2, MIPI DSI / eDP / HDMI / DP, dual MIPI CSI, RS-232 / RS-485 / CAN bus, 40-Pin GPIO
- **Industrial-Grade Power**: 19–24V DC input via DC5525 or XT60, suited for robotics, autonomous systems, and edge AI

4 Specifications

4.1 CPU

- 8-core Kryo Gen 6, up to 2.36GHz

4.2 MCU

- 4-core Cortex-R52, up to 1.85GHz

4.3 GPU

- Qualcomm Adreno 663
  - Delivers 1.2 TFLOPS FP32 with secure GPU compute
  - Supports Vulkan 1.2, OpenGL ES 3.2, OpenCL 2.0 FP
  - Supports Adreno NN Direct

4.4 NPU

- 100 Dense TOPS / 200 Sparse TOPS@INT8
  - Features the Hexagon Tensor Processor (HTP) with quad HVX and dual HMX
  - Supports deep-learning frameworks: TensorFlow, PyTorch, ONNX, Paddle, Caffe, DarkNet, etc.

4.5 Video Codec

4.5.1 Encode

- Supports H.264, H.265, HEIF, and HEIC formats
- 2× 4Kp60 / 4× 4Kp30 / 8× 1080p60 / 16× 1080p30

4.5.2 Decode

- Supports AV1, HEVC, H.264, H.265, VP9, and MPEG2 formats
- 1× 8Kp60 / 2× 8Kp30 / 4× 4Kp60 / 8× 4Kp30 / 16× 1080p60 / 32× 1080p30

4.6 Video

4.6.1 Video Output

- 1× MIPI DSI (4-lane, 39-Pin 0.3mm)
- 1× eDP
- 1× HDMI (DP to HDMI, up to 4K)
- 1× DisplayPort (DP, up to 4K)

4.6.2 Video Input

- 1× MIPI CSI (4-lane, 31-Pin 0.3mm)
- 1× MIPI CSI (2-lane, 15-Pin 1.0mm)

4.7 Memory

- LPDDR5
  - Capacity: 36GB
  - Memory bus width: 96-bit
  - Data rate: up to 6400 MT/s

4.8 Storage

- 1× On-Module 32MB SPI Flash
- 1× On-Module 128GB UFS 3.1 (Gear4 ×2)
- 1× M.2 M Key 2280 Slot for NVMe SSD

4.9 Network

- 2× 2.5GbE RJ45 Ports
- 1× M.2 E Key 2230 Slot for WiFi / Bluetooth Module
- 1× M.2 B Key 3042 Slot for Cellular Module
- 1× Nano SIM Slot

4.10 USB

- 4× USB 3.2 Gen 2 Ports (10Gbps)
- 1× USB 3.2 Gen 2 Header (10Gbps)
- 3× USB 2.0 Headers
- 1× USB Type-C (Debug)

4.11 Power

- DC5525 Power Jack or XT60 Connector
- Voltage Range: 19–24V DC

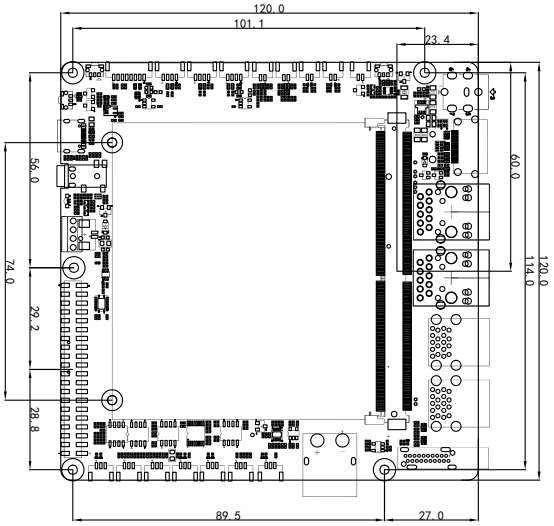
4.12 Other Interfaces

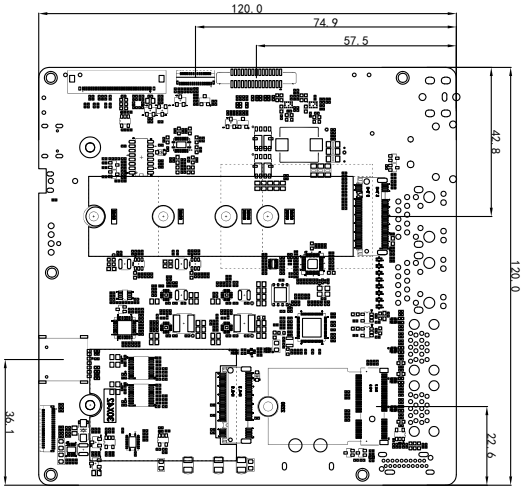
- 1× Power Button
- 1× EDL Button
- 1× 2-Pin 1.25mm Fan Connector
- 1× RTC Battery Connector
- 4× CAN Bus Connectors
- 2× RS-232 Ports
- 1× RS-485 Port
- 1× 40-Pin GPIO Headers (UART / SPI / I2C / GPIO, etc.)

5 Software Support

- Ubuntu Linux
- Yocto Linux
- ROS / ROS2

6 Mechanical Specification





7 Availability

Radxa guarantees availability of the Radxa VMARC-Q9075 Dev Kit until at least December 2038.

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

8 Support

For support, please refer to the hardware documentation section of the Radxa Documentation Center and post questions to the Radxa Forum.