

---

# Radxa C200 Orin Developer Kit

Next-Gen Intelligent Edge & Robotics Platform

Revision 1.0

2025-11-27



Radxa Computer



## Contents

|       |                          |   |
|-------|--------------------------|---|
| 1     | Revision Control Table   | 2 |
| 2     | Introduction             | 3 |
| 3     | Features                 | 4 |
| 4     | Specifications           | 4 |
| 4.1   | CPU                      | 4 |
| 4.2   | GPU                      | 4 |
| 4.3   | AI Performance           | 4 |
| 4.4   | Video Codec              | 5 |
| 4.4.1 | Encode                   | 5 |
| 4.4.2 | Decode                   | 5 |
| 4.5   | Video                    | 5 |
| 4.5.1 | Video Output             | 5 |
| 4.5.2 | Video Input              | 5 |
| 4.6   | Memory                   | 5 |
| 4.7   | Storage                  | 6 |
| 4.8   | USB                      | 6 |
| 4.9   | Network                  | 6 |
| 4.10  | Power                    | 6 |
| 4.11  | Other Interfaces         | 6 |
| 5     | Block Diagram            | 7 |
| 6     | Software Support         | 7 |
| 7     | Mechanical Specification | 8 |
| 8     | Availability             | 9 |
| 9     | Support                  | 9 |

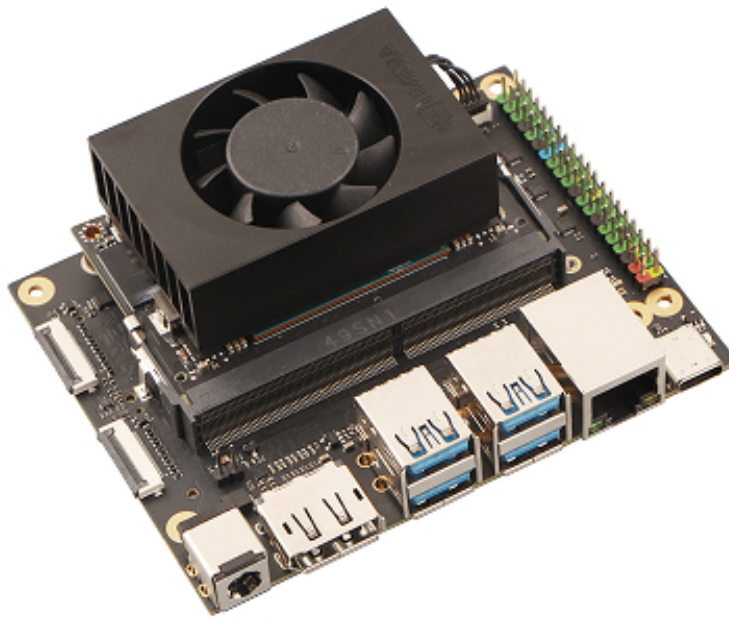
## 1 Revision Control Table

| Version | Date       | Changes from previous version |
|---------|------------|-------------------------------|
| 1.0     | 2025-11-27 | First version                 |

## 2 Introduction

The Radxa C200 Orin Developer Kit consists of the Radxa C200 IO Board and the NVIDIA Jetson Orin NX 8GB module, targeting next-generation embedded edge AI and robotics applications.

Powered by a hexa-core Arm® Cortex®-A78AE CPU and an NVIDIA Ampere architecture GPU, it delivers up to 117 TOPS of AI performance in Super mode, providing strong compute for industrial automation, robotics, and intelligent security scenarios.



## 3 Features

- Peak Performance: Up to 117 TOPS @INT8 with sparsity support
- Core Architecture: Features an Ampere-based GPU with 1024 NVIDIA® CUDA® Cores and 32 Tensor Cores
- Compact Form Factor: High-density layout in a compact 100mm x 79mm board size
- Rich I/O: Comprehensive interface lineup including USB 3.2, DisplayPort, MIPI CSI, and GPIO
- Flexible Storage: Dual M.2 slots for NVMe SSD and wireless module expansion
- Industrial Reliability: Designed for reliable operation with efficient thermal management

## 4 Specifications

### 4.1 CPU

- Hexa-core Arm® Cortex®-A78AE v8.2 (64-bit) CPU @ 2 GHz
- Heterogeneous multi-processing (HMP) CPU architecture
- 1.5MB L2 + 4MB L3

### 4.2 GPU

- Ampere architecture GPU
- GPU Max Frequency: 1173 MHz (Super mode)
- 1024 NVIDIA® CUDA® Cores + 32 Tensor Cores
- End-to-end lossless compression
- Support OpenGL 4.6 / OpenGL ES 3.2 / Vulkan 1.2 / CUDA 11.4+

### 4.3 AI Performance

- Normal Mode
  - GPU Max Frequency: 765 MHz
  - AI Performance: Up to 70 TOPS @INT8 (Sparse), 35 TOPS @INT8 (Dense)
- Super Mode
  - GPU Max Frequency: 1173 MHz
  - AI Performance: Up to 117 TOPS @INT8 (Sparse), 58 TOPS @INT8 (Dense)

## 4.4 Video Codec

### 4.4.1 Encode

- Supports H.265 (HEVC) / H.264 / AV1 formats
- 1x 4K60 / 3x 4K30 (H.265) / 6x 1080p60 (H.265) / 12x 1080p30 (H.265)

### 4.4.2 Decode

- Supports H.265 (HEVC) / H.264 / VP9 / VP8 / AV1 / MPEG-4 / MPEG-2 / VC-1 formats
- 1x 8K30 / 2x 4K60 / 4x 4K30 / 9x 1080p60 / 18x 1080p30 (H.265)

## 4.5 Video

### 4.5.1 Video Output

- 1x VESA® DisplayPort™ v1.2 with MST

### 4.5.2 Video Input

#### 2x 22-Pin FPC connector

- 1x MIPI CSI
  - 2 lanes
  - 2.5 Gbps per pair
- 1x MIPI CSI
  - 2 or 4 lanes
  - 2.5 Gbps per pair

## 4.6 Memory

- 8GB LPDDR5
  - Speed: 6400MT/s
  - Peak Memory Bandwidth: 102 GB/s

## 4.7 Storage

- 2x M.2 M Key NVMe slots
  - Slot 1: PCIe Gen4 x2
  - Slot 2: PCIe Gen4 x4
  - Support NVMe SSD

## 4.8 USB

- 1x USB 3.2 Gen2 Type-C
  - Support Recovery Mode
- 4x USB 3.2 Gen2 Type-A

## 4.9 Network

- 1x 10/100/1000M Ethernet
- 1x M.2 E Key slot
  - PCIe Gen4
  - Support WiFi / BT

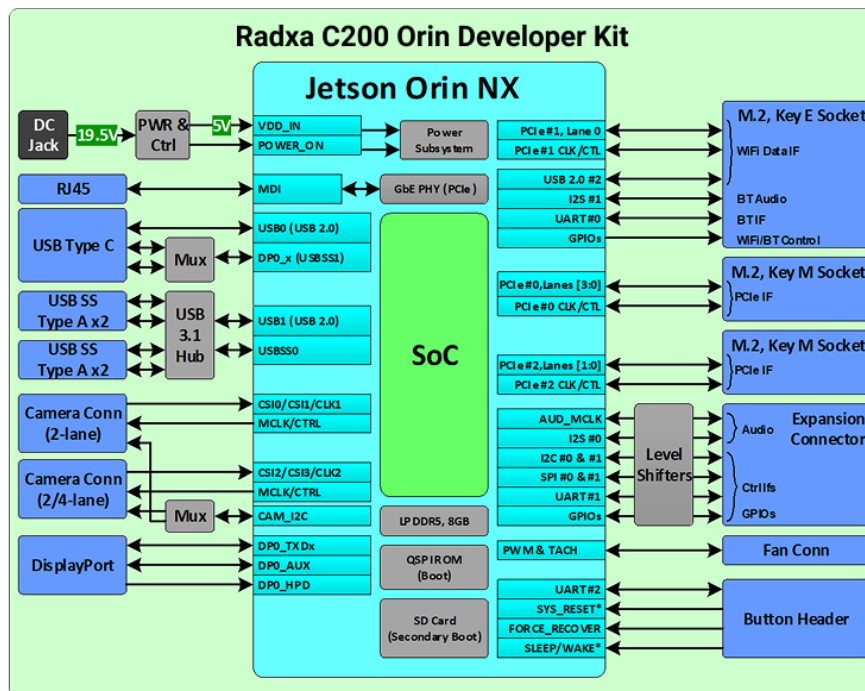
## 4.10 Power

- DC Power Input (5.5×2.5 mm jack)
- Voltage Range: 9 - 20V

## 4.11 Other Interfaces

- 1x 40-Pin GPIO Header
  - Supports I2C, SPI, UART, GPIO, PWM and other functional interfaces
- 1x 4-Pin PWM Fan Connector
- 1x 2-Pin RTC Battery Connector
- 1x 4-Pin CAN Bus Header
- 1x 12-Pin Button Header
- 1x 2-Pin PoE Backpower Header
- 1x 4-Pin PoE Header

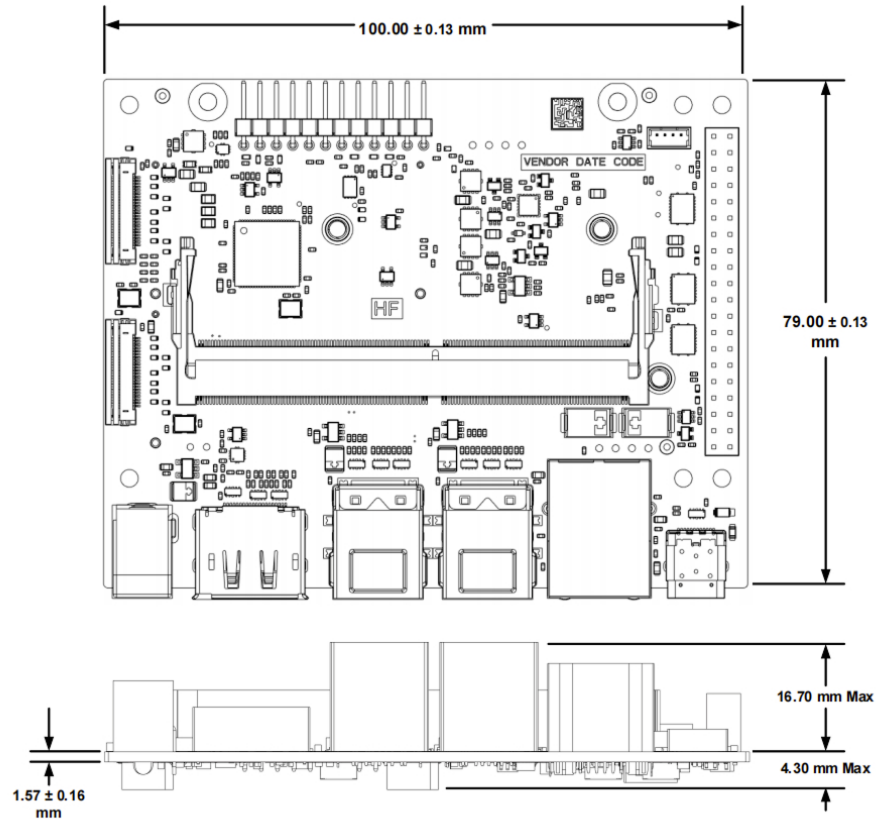
## 5 Block Diagram



## 6 Software Support

Supports Ubuntu 20.04 / 22.04 LTS

## 7 Mechanical Specification



## 8 Availability

Radxa guarantees availability of the Radxa C200 Orin Developer Kit 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](#).

