radxa

Radxa CM5
A High Performance Embedded System-on-Module

Revision 1.3

2024-09-04

Radxa Computer

Contents

1 Revision Control Table

| Version	Date	Changes from previous version
1.0	06/07/2023	First version
1.1	26/09/2023	Add Specific Information
1.2	18/03/2024	Update CM5 Pictures and Spec
1.3	04/09/2024	Update SKU

2 Introduction

The Radxa CM5 is a System on Module (SoM) based on a the Rockchip RK3588S2 or Rockchip RK3582 System on Chip (SoC). The Radxa CM5 integrates the Central Process Unit (CPU), Graphics Processing Unit (GPU), Neural Processing Unit (NPU), Power Management Unit (PMU), LPDDR4X DRAM Memory, and Onboard eMMC Storage in a small form factor of just 55mm x 40mm. Radxa CM5 offers out of box high performance solution for multiple purpose applications, accelerates customer's product development.

Radxa CM5 offers two versions: one is the Radxa CM5 Lite based on RK3582, and the other is based on RK3588S2. Additionally, Radxa CM5 provides various LPDDR4x RAM and onboard eMMC storage size configurations, and specific models can be viewed in the model and SKU section.

2.1 Radxa CM5 Lite
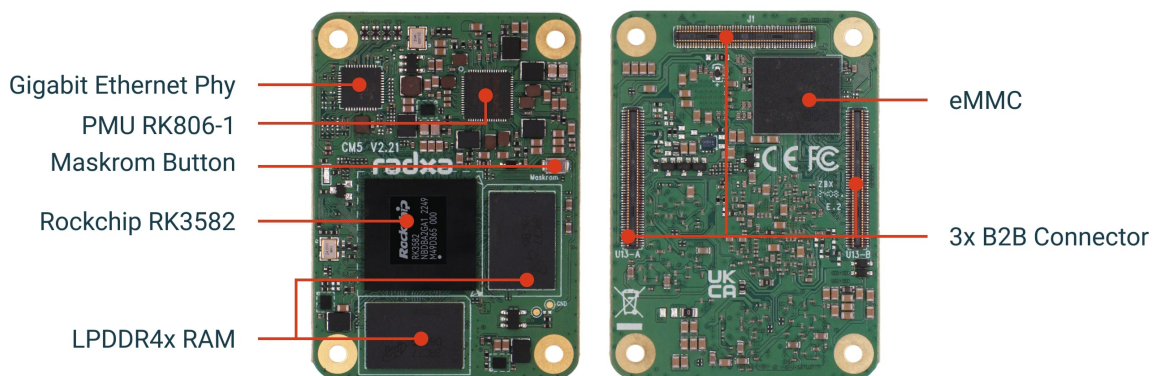
2.2 Radxa CM5
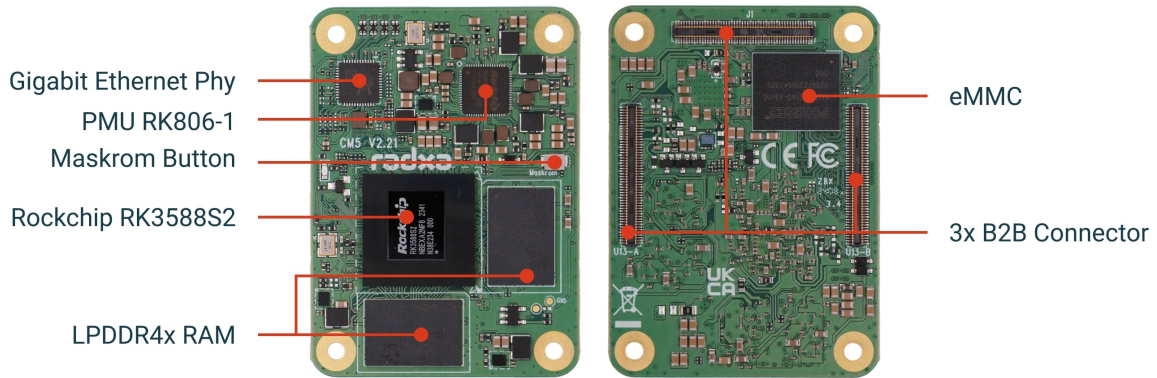
Notice that the carrier board reference design files are provided at Radxa Github. In addition, Radxa offers the Radxa CM5 IO board to help customers to quickly show a basic use of the SoM.

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 Specification

|	CM5	CM5 Lite
SoC	Rockchip RK3588S2	**Rockchip RK3582**
CPU	Quad Cortex®-A76 and Quad Cortex®-A55	**Dual Cortex®-A76 and Quad Cortex®-A55**
GPU	Arm Mali-G610MC4	**N/A**
NPU	6TOPs@INT8	**5TOPs@INT8**
Memory	64bit LPDDR4X	
Multimedia	H.265 and VP9 decoder by 8K@60fps H.264 decoder by 8K@30fps AV1 decoder by 4K@60fps H.264 and H.265 encoder by 8K@30fps	**H.264 and H.265 encoder by 4K@60fps**
eMMC	8GB / 16GB / 32GB / 64GB / 128GB onboard eMMC	
Ethernet	1 x Onboard Gigabit Ethernet PHY	
Display	1x HDMI TX up to 8K@60hz 1x eDP TX up to 4K@60Hz 1x DP TX (and USB3.0 Combo) up to 8K@30Hz 1x 2-lane MIPI D/C PHY TX 1x 4-lane MIPI D/C PHY TX	
Camera	1x 2-lane MIPI DPHY CSI RX 1x 4-lane MIPI D/C PHY RX	
USB	2 × USB 2.0 Host Port (HighSpeed) 1 x USB 3.0 Host Port (SuperSpeed) 1 x USB 3.0 OTG Port	
PCIe	2 x PCIe2.0 1-lane, one shared with USB3 and SATA, one shared with SATA	
SATA	2 x SATA ports, one shared with USB3 and PCIe2.0, one shared with PCIe2.0	
Connectivity	Up to 2x I2S Up to 2x PDM Up to 2x SPDIF TX Up to 10x UART Up to 5x SPI Up to 3x CAN Up to 7x I2C Up to 15x PWM	
Connector	3x 100-Pin B2B Connector	
Form Factor	55mm x 40mm	

4 Software

- Debian/Ubuntu Linux support
- Android 11/12 support

Please check Radxa Download for third party images support.

5 Pinout

The Pinout document for Radxa CM5 offers a detailed explanation of pin assignments and connectivity. You are welcome to visit Radxa CM5 Pinout to access this valuable resource. Download it for comprehensive information.

6 Mechanical Specification

Top   Bottom
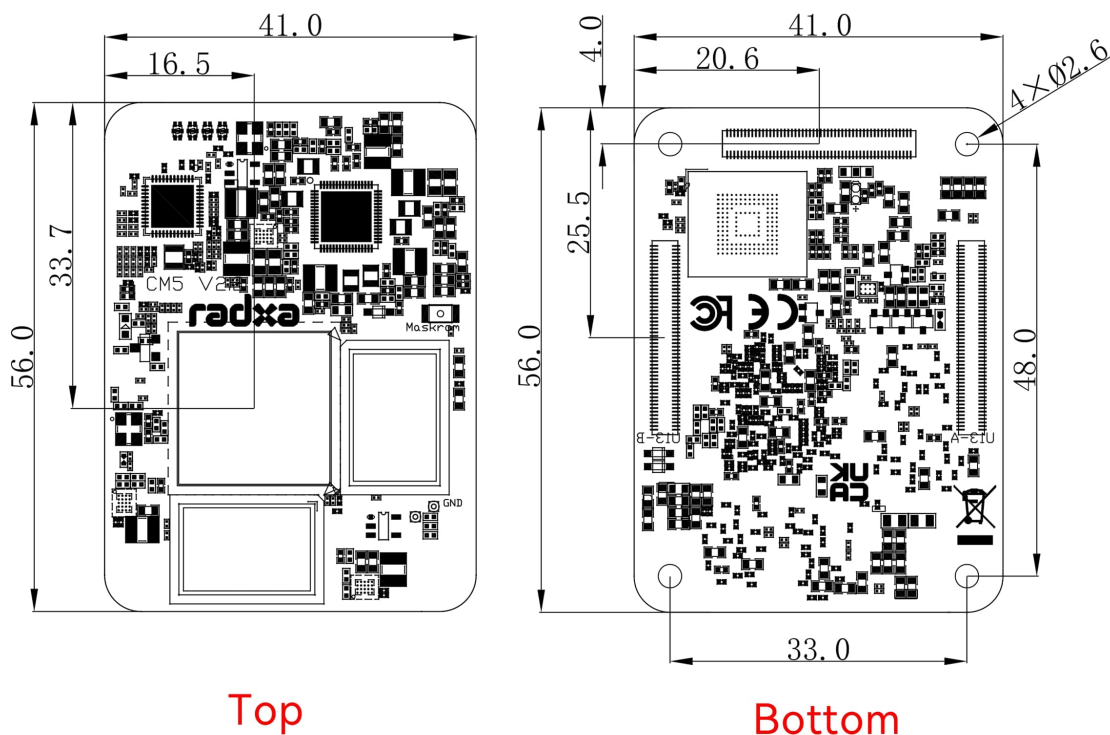
7 Model and SKU

SoC	RAM	eMMC	SKU
RK3582	4GB	32GB	RM120-D4E32R27
	8GB	64GB	RM120-D8E64R27
	16GB	128GB	RM120-D8E128R27
RK3588S2	4GB	32GB	RM120-D4E32R26
	8GB	64GB	RM120-D8E64R26
	16GB	128GB	RM120-D16E128R26
	32GB	256GB	RM120-D32E256R26

8 Availability

Radxa guarantees availability Radxa CM5 until at least September 2032.

9 Support

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