



CM4 MEDIA

A SMALL MULTIMEDIA DESKTOP COMPUTER

Shanghai EDA Technology Co.,Ltd
2023-07-11

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1 Product Overview

ED-CM4MEDIA is a multimedia computer based on Raspberry Pi Compute Module 4 (CM4 for short). It makes full use of CM4's structural flexibility to solve the heat dissipation problem of CPU, wireless module and PMU, improves the reliability of wireless communication through external WIFI/BT antenna, adds WM8960 chip, supports dual speaker playback, has microphone, 3.5mm headphone jack and is equipped with SONY IMX219 eight-megapixel sensor to meet the daily photo requirements.

1.1 Target Application

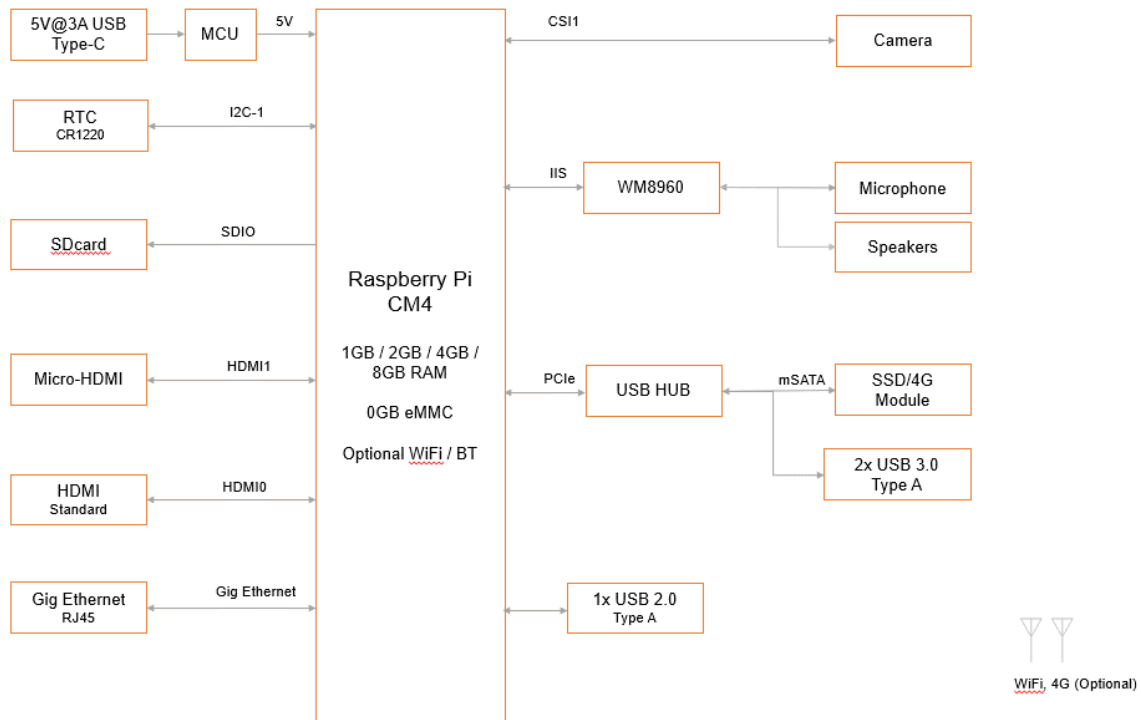
- Multimedia entertainment
- AI development
- Intelligent instrument
- Panoramic display
- Intelligent life

1.2 Specifications and Parameters

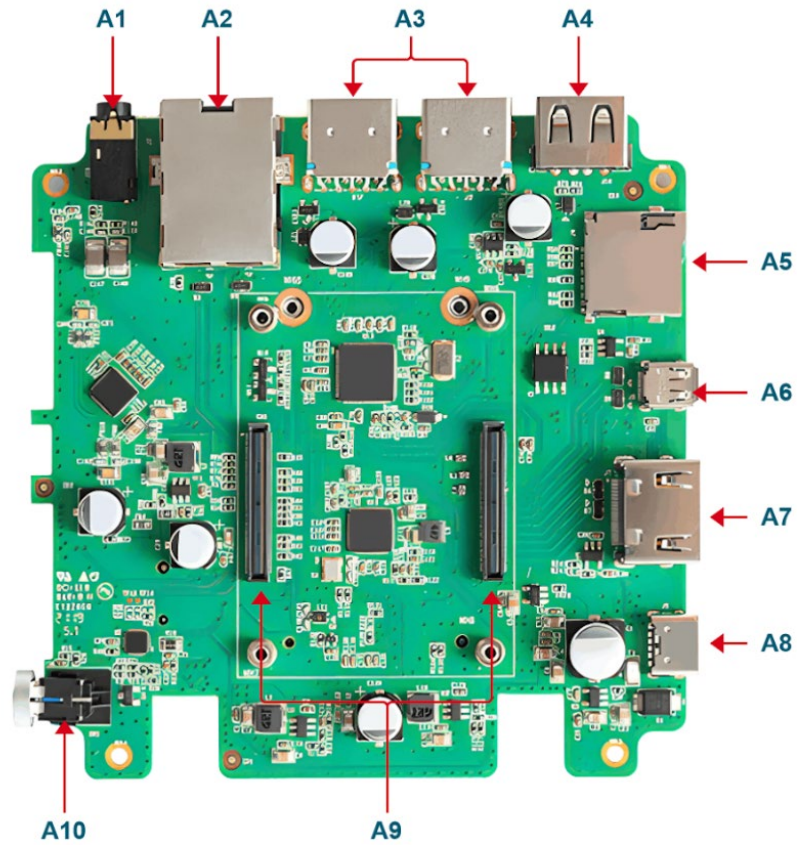
| Function | Parameters |
|------------------|-----------------------------------------------------------|
| CPU | BCM2711 4 core, ARM Cortex-A72(ARM v8), 1.5GHz, 64bit CPU |
| Memory | 1GB / 2GB / 4GB / 8GB option |
| eMMC flash | 8GB / 16GB / 32GB option |
| SD card | 8GB / 16GB / 32GB option |
| SSD | 128GB / 256GB option |
| Ethernet | 1x Gigabit Ethernet |
| WiFi / Bluetooth | 2.4G / 5.8G Dual band WiFi, bluetooth5.0 |
| HDMI | 1x standard HDMI |
| Micro-HDMI | 1x Micro-HDMI |
| USB Host | 2x USB 3.0 Type A, 1x USB 2.0 |
| Mini PCIe | 1-lane PCIe 2.0, Highest support 5Gbps (default use SSD) |
| Real time clock | 1x RTC |
| Speaker | 2x Speaker |
| Microphone | 1x Microphone |
| LED indicator | Blue LED as power indicator and status indicator. |
| Power input | 5V@3A |
| Dimensions | 100(length) x 100(wide) x 19(high) mm |
| Case | CNC cutting aluminum alloy shell |

| Function | Parameters |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Antenna accessory | Support optional WiFi/BT external antenna, which has passed wireless authentication together with Raspberry Pi CM4, and optional 4G external antenna. |
| Working environment temperature | Run at full speed at 0 ~ 60 °C ambient temperature. |
| Operation system | compatible with official Raspberry Pi OS, provides BSP software support package, and supports online installation and update of APT. |

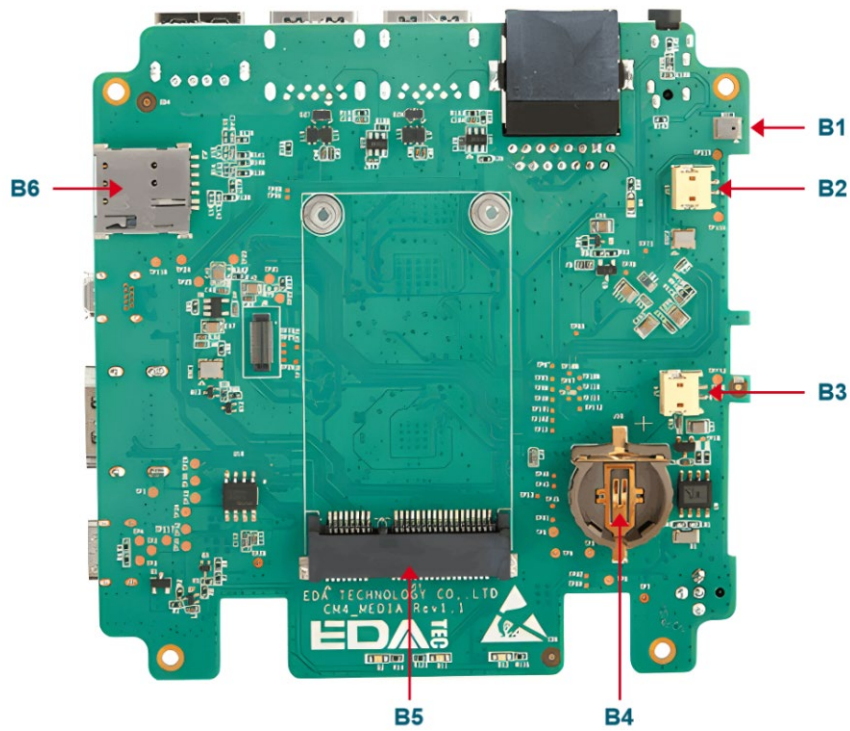
1.3 System Diagram



1.4 Functional Layout



| Item | Function Description | Item | Function Description |
|------|-------------------------------|------|---------------------------|
| A1 | Standard 3.5mm headphone jack | A2 | RJ45 Gigabit network port |
| A3 | USB 3.0 | A4 | USB 2.0 |
| A5 | Micro-SD card slot | A6 | Micro-HDMI port |
| A7 | Standard HDMI port | A8 | Type-C power port |
| A9 | CM4 slot | A10 | Power button |

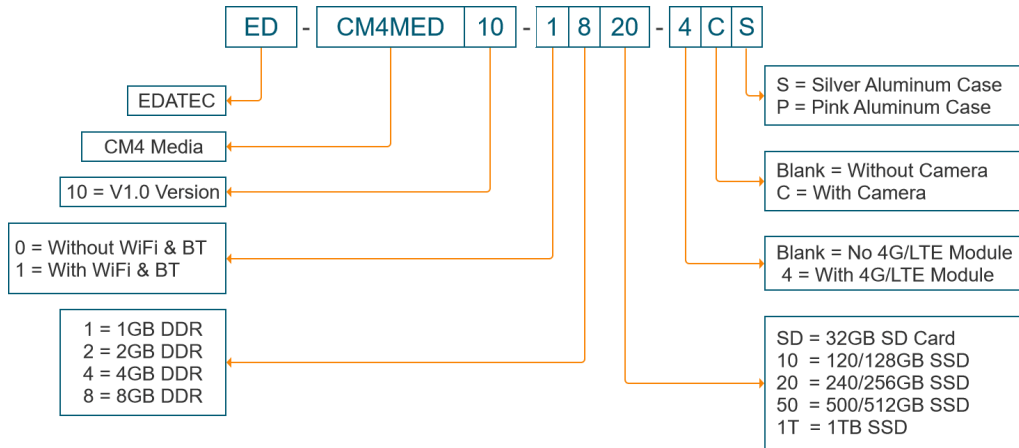


| Item | Function Description | Item | Function Description |
|------|----------------------|------|--------------------------------------|
| B1 | Onboard microphone | B2 | 5W speaker |
| B3 | 5W speaker | B4 | CR1220 button cell, powered for RTC. |
| B5 | Mini PCIe | B6 | Micro SIM card slot |

1.5 Packing List

- 1x CM4 Media
- 1x WIFI/BT antenna
- [option] 1x 4G antenna

1.6 Order Code



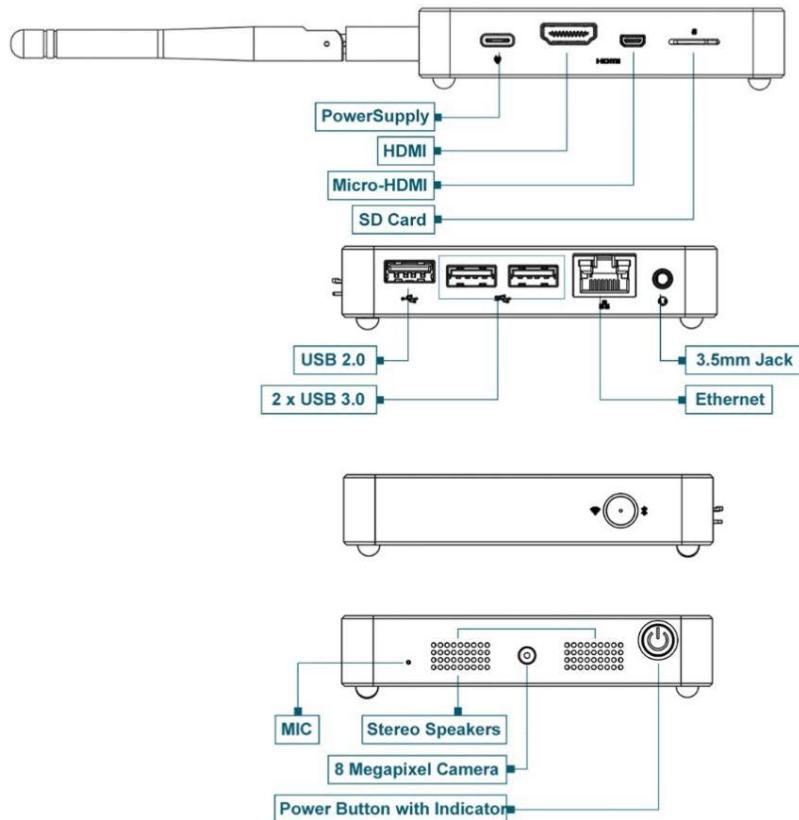
Example

Part# : ED-CM4MED10-1820-4CS

Configuration : CM4 Media Computer V1.0 Version
1pcs Raspberry Pi certified WiFi/Bluetooth Antenna 8GB DDR,
240/256GB SSD, 4G/LTE, camera and Silver Aluminum Case.

2 Product Appearance and Structure

2.1 Product Appearance

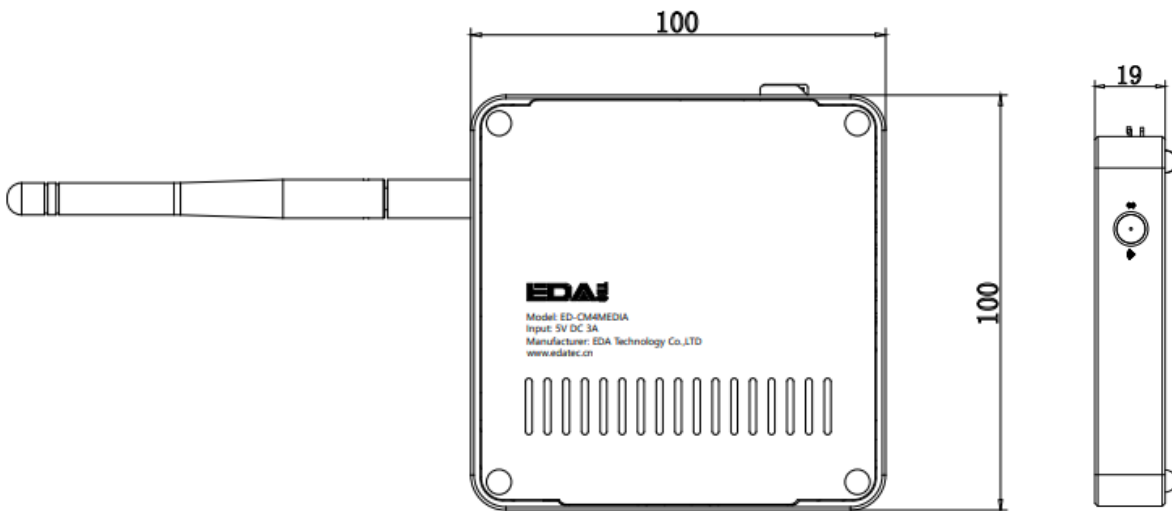


2.2 Product Photo



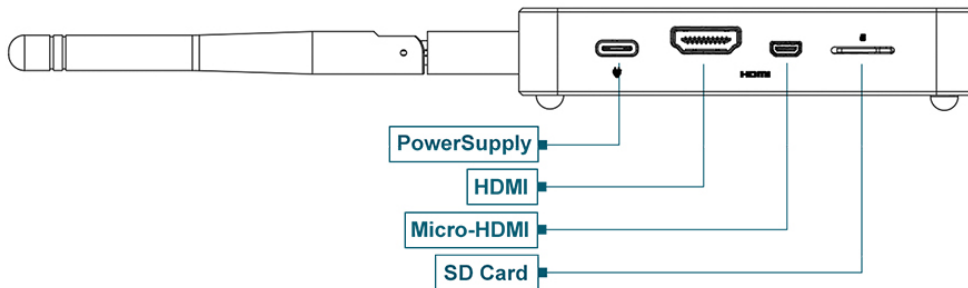
2.3 Dimensions

unit: mm, tolerance: $\pm 0.1\text{mm}$



3 Interfaces and Connectors

3.1 Front Panel



3.1.1 Power Input

CM4 Media uses Type-C interface for 5V@3A power input.

3.1.2 HDMI

CM4 Media has a standard HDMI Type A (full-size) interface, which uses CM4 HDMI0 signals and supports HDMI2.1 video output with a maximum resolution of 4Kp60.

3.1.3 Micro-HDMI

CM4 Media has a Micro-HDMI interface, which can be connected to the micro-HDMI and connected to the display screen, supporting the use as a dual screen.

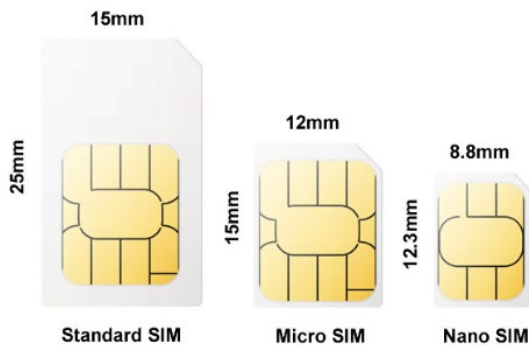
3.1.4 Micro SD Card

CM4 Media supports the use of SD card as the main system, and of course it also supports the use of SD card as extended storage. Please note that if you choose to use eMMC, SD card is not supported.

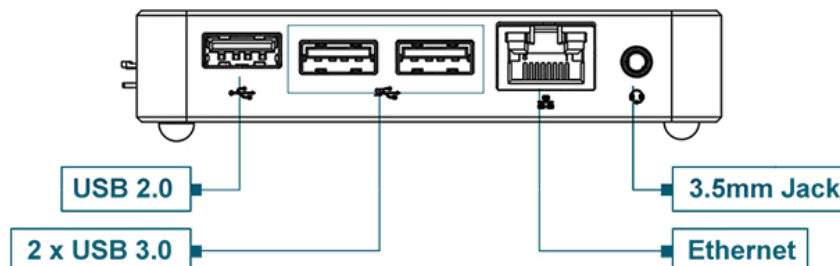
3.1.5 SIM Slot

Below the SD card in the above picture, if you choose to buy a SIM card slot with 4G function, users can choose whether to bring a 4G module. We have configured a Quectel EC20 full netcom 4G module in China, which supports mobile, Unicom and telecom network standards, with optional GPS support.

The 4G module is extended by USB 2.0, and supports one Nano-SIM card.



3.2 Right Panel



3.2.1 USB 2.0

CM4 Media has a USB 2.0 port.

| | Pin ID | Pin Name |
|---|--------|----------|
| | 1 | 5V |
| | 2 | D- |
| | 3 | D+ |
| 4 | GND | |

3.2.2 USB 3.0

CM4 Media has a two USB 3.0 port.

| | Pin ID | Pin Name |
|---|------------|------------|
| | 1 | 5V |
| | 2 | D- |
| | 3 | D+ |
| | 4 | GND |
| | 5 | StdA_SSRX- |
| | 6 | StdA_SSRX+ |
| | 7 | GND_DRAIN |
| | 8 | StdA_SSTX- |
| 9 | StdA_SSTX+ | |

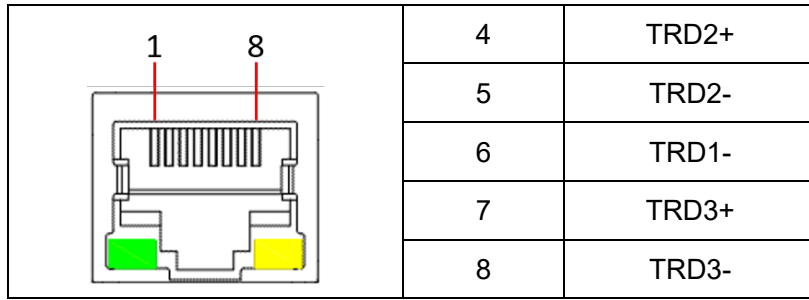
3.2.3 Headset 3.5mm Jack

CM4 Media has a 3.5mm standard headphone jack, which supports automatic switching to headphones when plugged in.

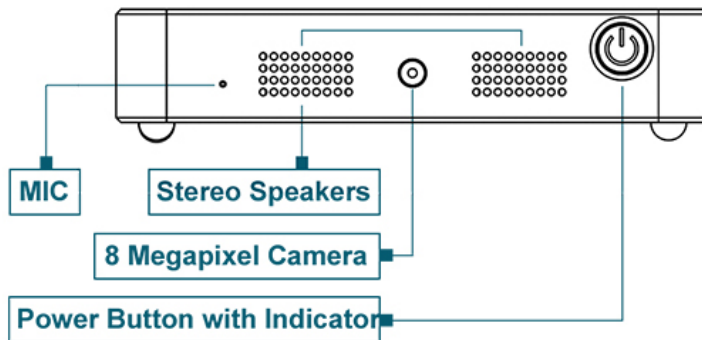
3.2.4 Gigabit Ethernet

There is an adaptive 10/100/1000Mbps Ethernet on CM4 Media, which uses RJ45 interface. It is recommended to use Cat6 (Category 6) network cable to cooperate with it.

| | Pin ID | Pin Name |
|---|--------|----------|
| | 1 | TRD0+ |
| | 2 | TRD0- |
| 3 | TRD1+ | |



3.3 Rear Panel



3.3.1 On-board Microphone

CM4 Media has an onboard microphone, which can be used as a recording device without headphones inserted.

3.3.2 Speaker

CM4 Media has two speakers for stereo playback.

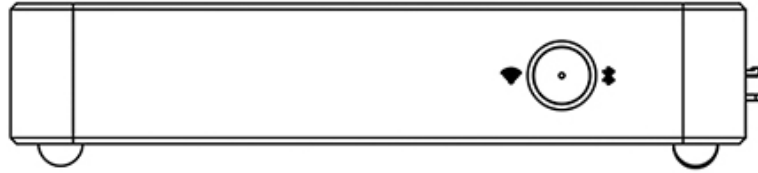
3.3.3 Camera (optional)

CM4 Media has an 8-megapixel Sony camera, which can be used with the built-in libcamera to easily realize functions such as taking photos and recording videos.

3.3.4 Switch Button

CM4 Media has an on-off button. Press the button to turn it on, and long press it to turn it off.

3.4 Antenna



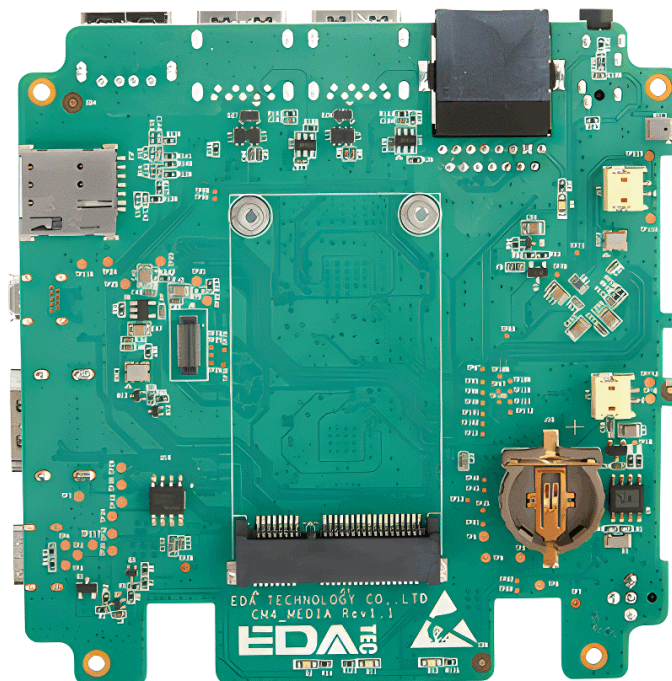
3.4.1 WIFI/BT (optional)

There is a WIFI antenna interface on the back panel of CM4 Media, which supports 2.4 GHz and 5.0 GHz IEEE 802.11b/G/N/AC dual-band WiFi. We provide a dual-band external antenna, which has passed the wireless authentication together with Raspberry Pi CM4.

3.4.2 4G (optional)

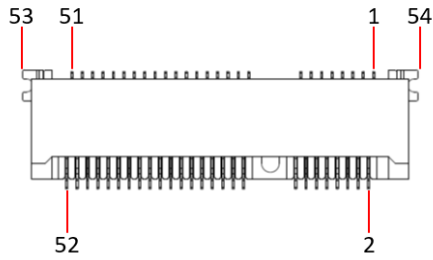
If CM4 Media with 4G function is selected, the rear panel will have a 4G antenna interface on the left.

4 Internal Interface



4.1 Mini PCIe

There is a Mini PCIe expansion interface on CM4 Media, which is used to drive SSD hard disk. If users want to use 4G, it can also be used to drive 4G modules:



| Pin | Definition | Pin | Definition |
|-----|------------------|-----|------------|
| 1 | GND | 28 | NC |
| 2 | 3V3 | 29 | GND |
| 3 | B1 | 30 | NC |
| 4 | GND | 31 | PCIE_TXN |
| 5 | NC | 32 | NC |
| 6 | NC | 33 | PCIE_TXP |
| 7 | PCIE_CLK_nREQ | 34 | GND |
| 8 | USIM_VDD | 35 | GND |
| 9 | GND | 36 | USB_DM |
| 10 | USIM_DATA | 37 | GND |
| 11 | GND | 38 | USB_DP |
| 12 | USIM_CLK | 39 | 3V3 |
| 13 | PCIE_CLKP | 40 | GND |
| 14 | USIM_RST | 41 | 3V3 |
| 15 | GND | 42 | LED_WWAN |
| 16 | NC | 43 | GND |
| 17 | NC | 44 | NC |
| 18 | GND | 45 | NC |
| 19 | NC | 46 | NC |
| 20 | NC | 47 | NC |
| 21 | GND | 48 | NC |
| 22 | GPIO10/PCIE_nRST | 49 | NC |
| 23 | PCIE_RXN | 50 | GND |

| | | | | |
|--|-----------|----------|-----------|-----|
| | 24 | 3V3 | 51 | NC |
| | 25 | PCIE_RXP | 52 | 3V3 |
| | 26 | GND | 53 | GND |
| | 27 | GND | 54 | GND |

4.2 RTC

CM4 Media is integrated with RTC. For the version sold in China, we will install CR1220 button cell (RTC backup power supply) by default when shipping. In this way, the system can be guaranteed to have an uninterrupted and reliable clock, which is not affected by factors such as equipment power down.

RTC clock chip is mounted on i2c-0 bus, and the device address is 0x51.

5 Wireless Communication

5.1 WiFi

Customers can purchase CM4 Media with WiFi version, which supports 2.4 GHz and 5.0 GHz IEEE 802.11b/G/N/AC dual-band WiFi.

2.4G band

| parameter | Feature |
|-------------------|----------------------------------------------------------------|
| frequency range | 802.11b/g/n(HT20): 2412-2472MHz 802.11n(HT40): 2422-2462MHz |
| modulation system | 802.11b:DSSS 802.11g/n:OFDM |
| Frequency Step | 5M |

5G band

| parameter | Feature |
|-------------------|---------------------------------------------------------------|
| frequency range | 802.11a/n/ac: 5150-5350MHz 5470-5725MHz 5725-5850MHz |
| modulation system | BPSK |
| Frequency step | 5M |

5.2 Bluetooth

CM4 media support bluetooth 5.0.

| parameter | Feature |
|-------------------|--------------|
| frequency range | 2402-2480MHz |
| modulation system | GFSK,DPSK |
| Frequency step | 2M |

5.3 Antenna

5.3.1 WiFi / BT Antenna

| Parameter | Feature |
|----------------|-----------------------------|
| Antenna type | External antenna |
| frequency band | 2400-2500MHz, 5150-5850 MHz |
| antenna gain | 2 dBi |
| impedance | 50 OHM |

6 Electrical Characteristics

6.1 Electrical Parameters

| Parameters | Minimum | Typical | Max | Unit |
|------------------------------|---------|---------|-----|------|
| System power input | | 5 | | V |
| Working temperature | 0 | 25 | 60 | °C |
| Storage temperature | 0 | 25 | 60 | °C |
| Working environment humidity | 20 | | 90 | % |

7 FAQ

7.1 Username and Password

User name: pi
password: raspberry

Root user does not have a password, so users need to set their own passwords.

8 About us

8.1 About EDATEC

EDATEC, located in Shanghai, is one of Raspberry Pi's global design partners. Our vision is to provide hardware solutions for Internet of Things, industrial control, automation, green energy and artificial intelligence based on Raspberry Pi technology platform.

We provide standard hardware solutions, customized design and manufacturing services to speed up the development and time to market of electronic products.

8.2 Contact us

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