CM4 MEDIA

A SMALL MULTIMEDIA DESKTOP COMPUTER

Shanghai EDA Technology Co.,Ltd

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EDA Technology Co.,LTD– Electronics Development Accelerator

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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 Wi-Fi/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
SD card slot	It is used to install SD card and supports booting the OS from SD card.
Ethernet	1x Gigabit Ethernet
Wi-Fi/Bluetooth	2.4G/5.8G Dual band Wi-Fi, 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	It is used to install mSATA SSD or 4G module, supporting mSATA and USB 2.0 signals.
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
Antenna accessory	Support optional Wi-Fi/BT external antenna, which has passed wireless authentication together with Raspberry Pi CM4, and optional 4G external antenna.

Function	Parameters
Working environment temperature	Run at full speed at 0 ~ 60 ℃ 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
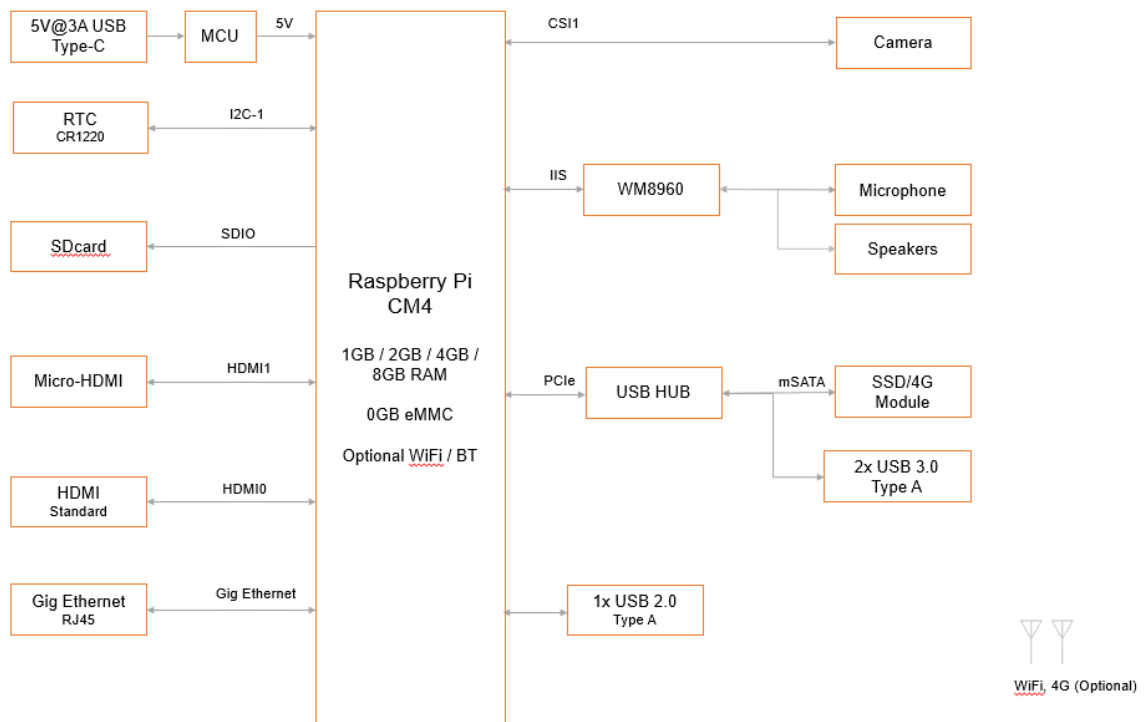
1.4 Functional Layout
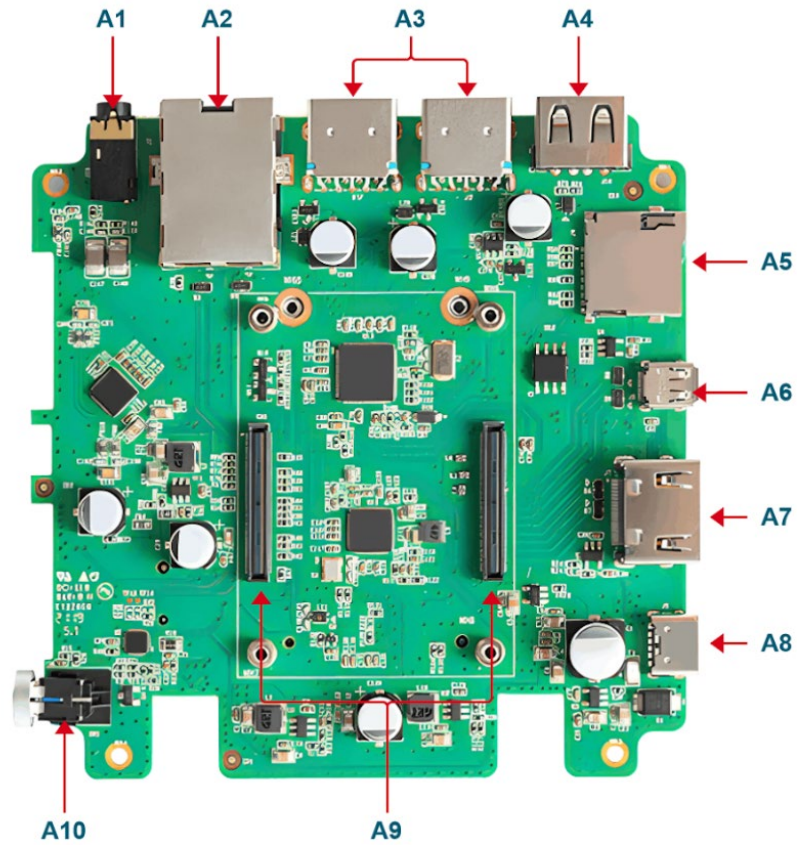
Item	Function Description	Item	Function Description
A1	Standard 3.5mm headphone jack	A2	RJ45 Gigabit network port
A3	USB 3.0	A4	USB 2.0
A5	Micro-SD card slot	A6	Micro-HDMI port
A7	Standard HDMI port	A8	Type-C power port
A9	CM4 slot	A10	Power button
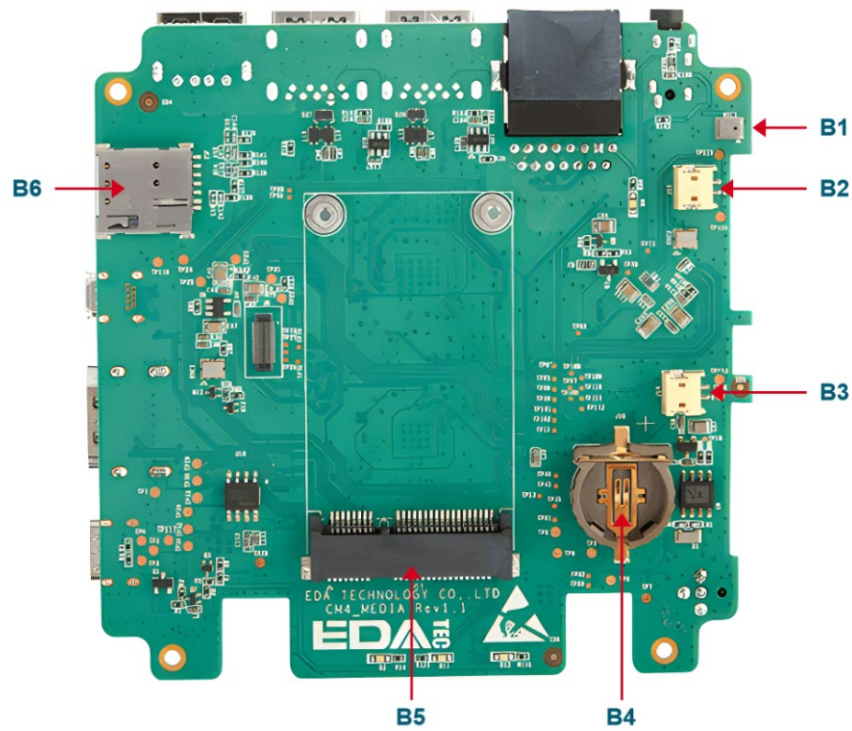
Item	Function Description	Item	Function Description
B1	Onboard microphone	B2	5W speaker
B3	5W speaker	B4	CR1220 button cell, powered for RTC.
B5	Mini PCIe	B6	Micro SIM card slot

1.5 Packing List

- 1x CM4 Media
- [optional] 1x Wi-Fi/BT antenna
- [optional] 1x 4G antenna

1.6 Order Code

ED	-	CM4MED	10	-	1	8	20	-	4	C	S

EDATEC

CM4 Media

10 = V1.0 Version

0 = Without WiFi & BT
1 = With WiFi & BT

1 = 1GB DDR
2 = 2GB DDR
4 = 4GB DDR
8 = 8GB DDR

S = Silver Aluminum Case
P = Pink Aluminum Case

Blank = Without Camera
C = With Camera

Blank = No 4G/LTE Module
4 = With 4G/LTE Module

SD = 32GB SD Card
10 = 128GB SSD
20 = 256GB SSD
50 = 512GB SSD
1T = 1TB SSD
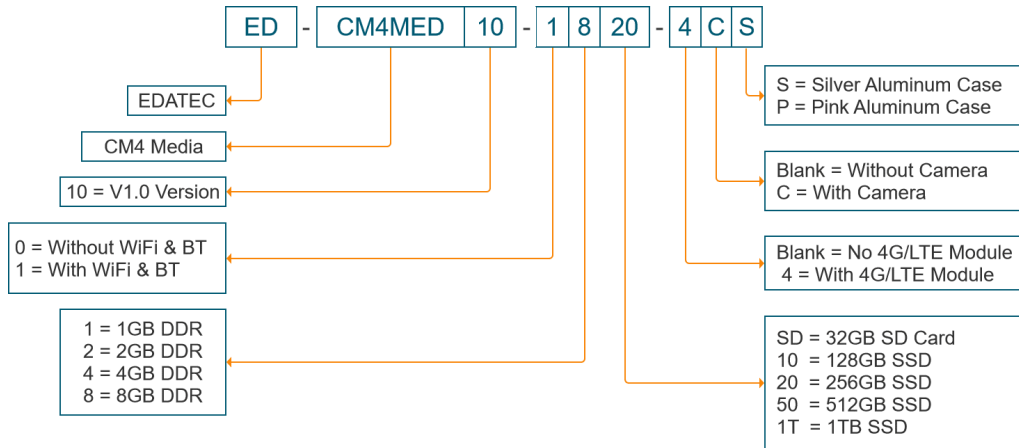
Note:
You can only choose one of SSD and 4G/LTE module, not both at the same time.

Example

PN: **ED-CM4MED10-1820-4CS**

Configration: CM4 Media Computer V1.0 Version, with Wi-Fi & Bluetooth, 8GB DDR, 32GB SD card, 4G/LTE, camera and Sliver Aluminum Case.

2 Product Appearance and Structure

2.1 Product Appearance

PowerSupply
HDMI
Micro-HDMI
SD Card

USB 2.0
2 x USB 3.0
3.5mm Jack
Ethernet

MIC   Stereo Speakers
8 Megapixel Camera
Power Button with Indicator
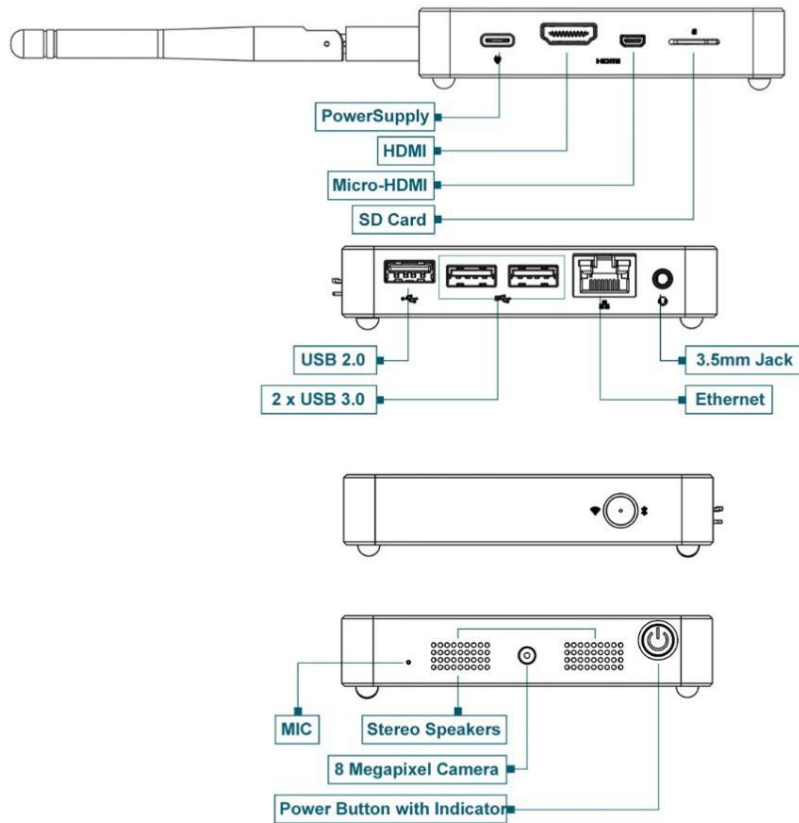
2.2 Product Photo

2.3 Dimensions

unit: mm，tolerance：±0.1mm
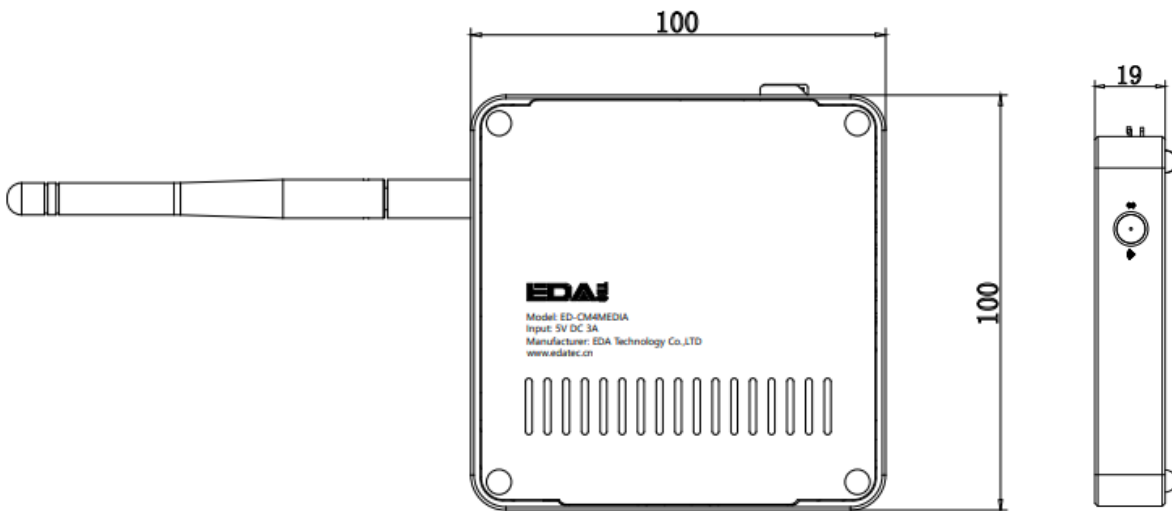
3 Interfaces and Connectors

3.1 Front Panel
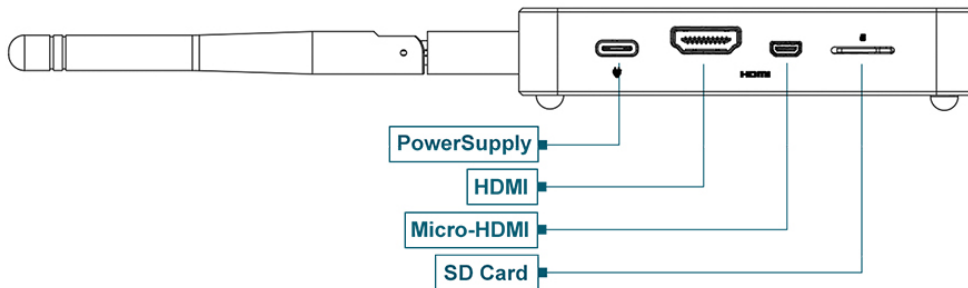
3.1.1 Power Input

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.

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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 (optional)

If the user chooses CM4 Media with 4G function, it includes a Micro SIM card slot for installing a SIM card that obtains 4G signals. The size differences between standard SIM, Micro SIM and Nano SIM cards are as follows:
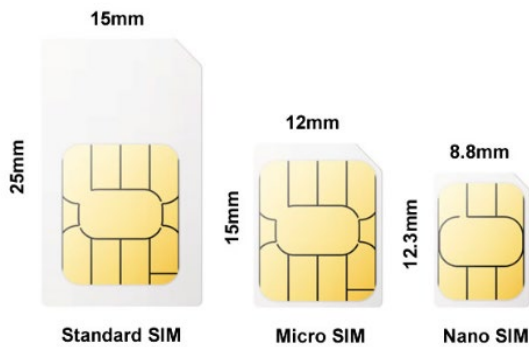
3.2 Right Panel
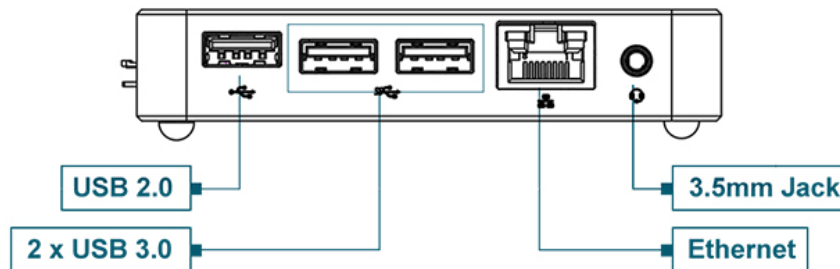
3.2.1 USB 2.0

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.
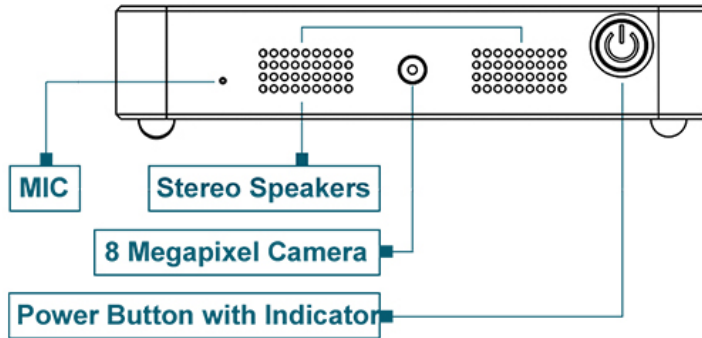
3.2.4 Gigabit Ethernet

There is an adaptive 10/100/1000Mbsp 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+
4	TRD2+
5	TRD2-
6	TRD1-

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7	TRD3+
8	TRD3-

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 includes a camera interface, which can be equipped with an optional 8-megapixel Sony camera. It can be used with the built-in libcamera to achieve functions such as taking pictures 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
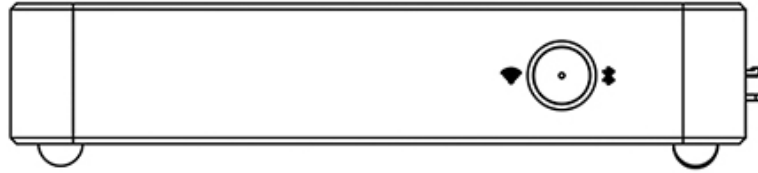
3.4.1 Wi-Fi/BT (optional)

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 Wi-Fi. 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
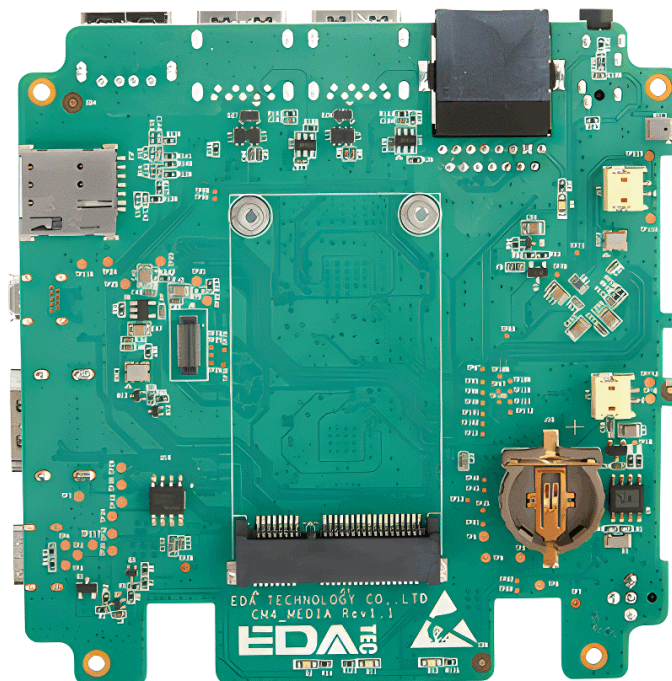
4.1 Mini PCIe

The CM4 Media motherboard contains 1 Mini PCIe interface, which is used to install mSATA SSD or 4G module, supporting mSATA and USB 2.0 signals.

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
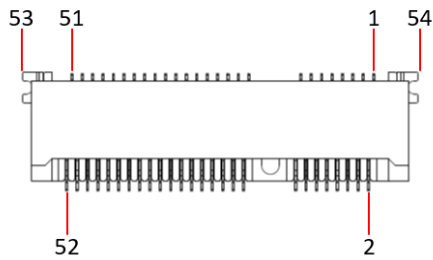
4.2 RTC

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 Wi-Fi

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

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 Wi-Fi / 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	℃
Storage temperature	0	25	60	℃
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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