ED-CM4IO COMPUTER

AN INDUSTRIAL EMBEDDED COMPUTER BASED ON RASPBERRY PI CM4

Shanghai EDA Technology Co.,Ltd

2023-02-07

EDA Technology Co.,LTD– Electronics Development Accelerator

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Release Note

Date	Version	Description	Note
2023-02-07	V1.0	Initial version	

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Contents

1 Product Overview

ED-CM4IO Computer is a commercial industrial computer based on Compute Module 4 IO Board and CM4 module.

1.1 Target Application

- industrial applications
- Advertising display
- Intelligent manufacture
- Maker develop

1.2 Specifications and Parameters

Function	Parameters
CPU	Broadcom BCM2711 4 core, ARM Cortex-A72(ARM v8), 1.5GHz, 64bit CPU
Memory	1GB / 2GB / 4GB / 8GB option
eMMC	0GB / 8GB / 16GB / 32GB option
SD card	micro SD card, support CM4 Litewithout eMMC
Ethernet	1x Gigabit Ethernet
WiFi / Bluetooth	2.4G / 5.8G Dual band WiFi, bluetooth5.0
HDMI	2x standard HDMI
DSI	2x DSI
Camera	2x CSI
USB Host	2x USB 2.0 Type A, 2x USB 2.0 Host Pin Header extended, 1x USB micro-B for eMMC burning
PCIe	1-lane PCIe 2.0, Highest support 5Gbps
40-Pin GPIO	Raspberry Pi 40-Pin GPIO HAT extended
Real time clock	1x RTC
One-button on-off	Software on/off based on GPIO
Fan	1x adjustable speed fan control interface
DC power supply output	5V@1A, 12V@1A,
LED indicator	red(power indicator), green(system state indicator)
Power input	7.5V-28V

Function	Parameters
Dimensions	180(length) x 120(wide) x 36(high) mm
Case	Full Metal Shell
Antenna accessory	Support optional WiFi/BT external antenna, which has passed wireless authentication together with Raspberry Pi CM4, and optional 4G external antenna.
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
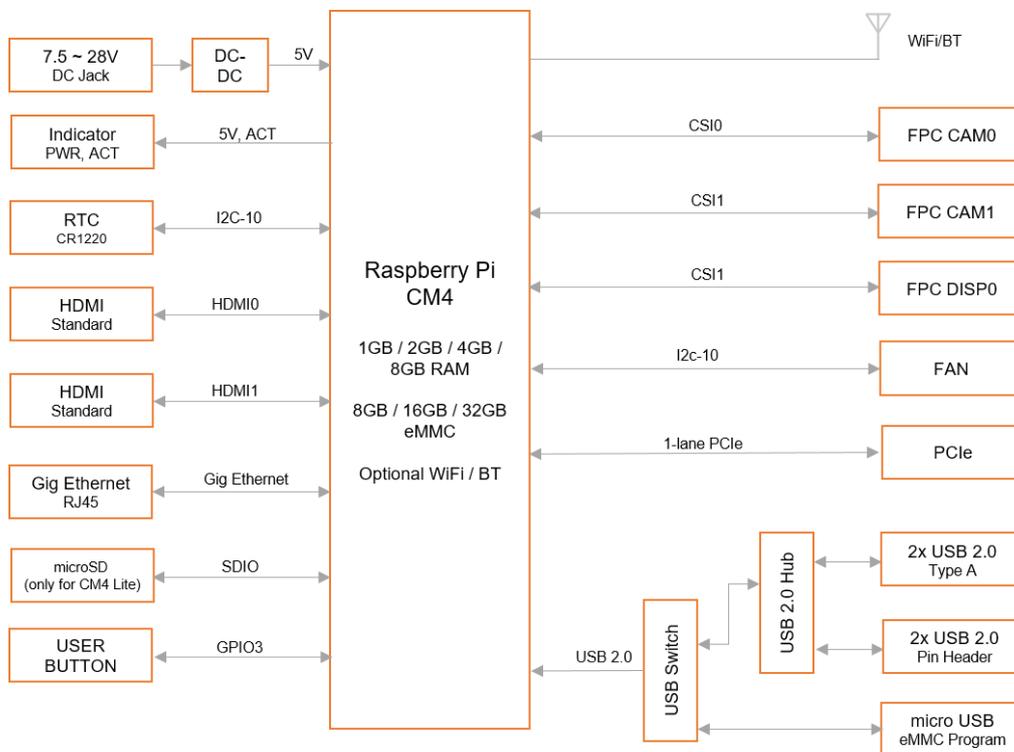
ED-CM4IO Computer

1.4 Functional Layout
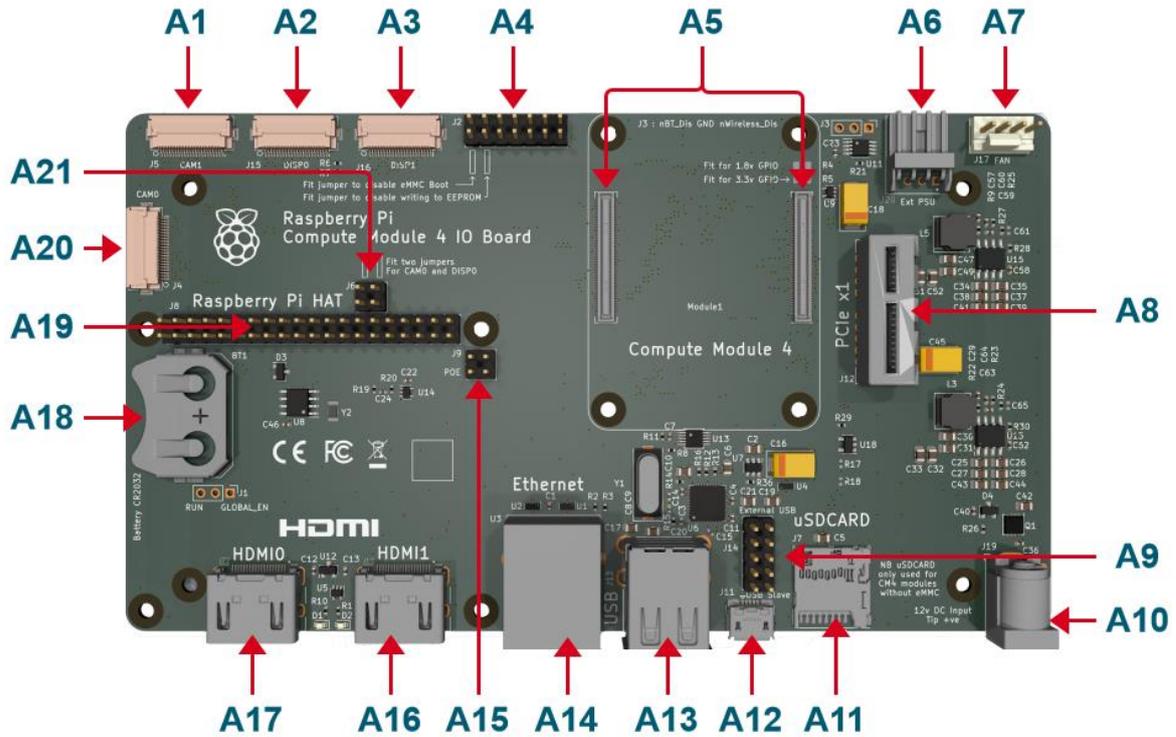
No.	Function	No.	Function
A1	CAM1 port	A13	2× USB port
A2	DISP0 port	A14	Ethernet RJ45 port
A3	DISP1 port	A15	POE port
A4	CM4 Config Pin Header	A16	HDMI1 port
A5	CM4 socket	A17	HDMI0 port
A6	External power output port	A18	RTC battery socket
A7	Fan control port	A19	40 Pin Header
A8	PCIe port	A20	CAM0 port
A9	2× USB Pin Header	A21	I2C-0 connect Pin Header
A10	DC power socket		
A11	Micro SD slot		
A12	Micro USB port		

1.5 Packing List

- 1x CM4 IO Computer host
- 1x 2.4GHz/5GHz WiFi/BT antenna

1.6 Order Code
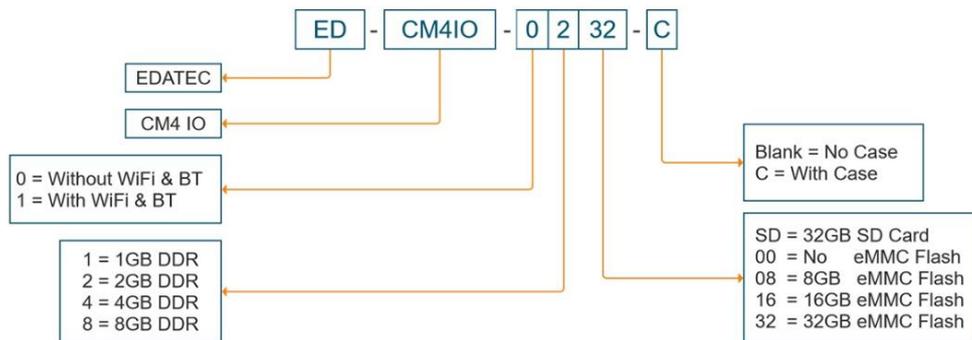
Example

Part#: **ED-CM4IO-1232-C**

Configuration: ED-CM4IO-Computer

CM4102032 Computer Module with Wireless,2GB DDR & 32GB eMMC

1pcs Raspberry Pi certified WiFi/Bluetooth Antenna

Metal Case

2 Quick Start

Quick start mainly guides you on how to connect devices, install systems, first-time startup configuration and network configuration.

2.1 Equipment List

- 1x ED-CM4IO Computer
- 1x 2.4GHz/5GHz WiFi/BT dual antenna
- 1x 12V@2A adapter
- 1x CR2302 button battery (RTC power supply)

2.2 Hardware Connection

Take the CM4 version with eMMC and supporting WiFi as an example to demonstrate how to install it.

In addition to the ED-CM4IO host, you also need:
- 1x Network cable
- 1x HDMI display
- 1x standard HDMI to HDMI cable
- 1x keyboard

● 1x mouse

1.Install the WiFi external antenna.。

2.Insert the network cable into the Gigabit network port, and the network cable is connected to network devices such as routers and switches that can access the Internet.

3.Plug in the mouse and keyboard into USB port.

4.Plug in the HDMI cable and connect the monitor.

5.Power the 12V@2A power adapter and plug it into the DC power input port of ED-CM4IO Computer (labeled +12V DC).

2.3 First Start

The ED-CM4IO Computer is plugged into the power cord, and the system will start to boot.

1.The red LED lights up, which means the power supply is normal.

2.The green light starts flashing, indicating that the system starts normally, and then the logo of Raspberry will appear in the upper left corner of the screen.

2.3.1 Raspberry Pi OS (Desktop)

After the Desktop version of the system is started, directly enter the desktop.
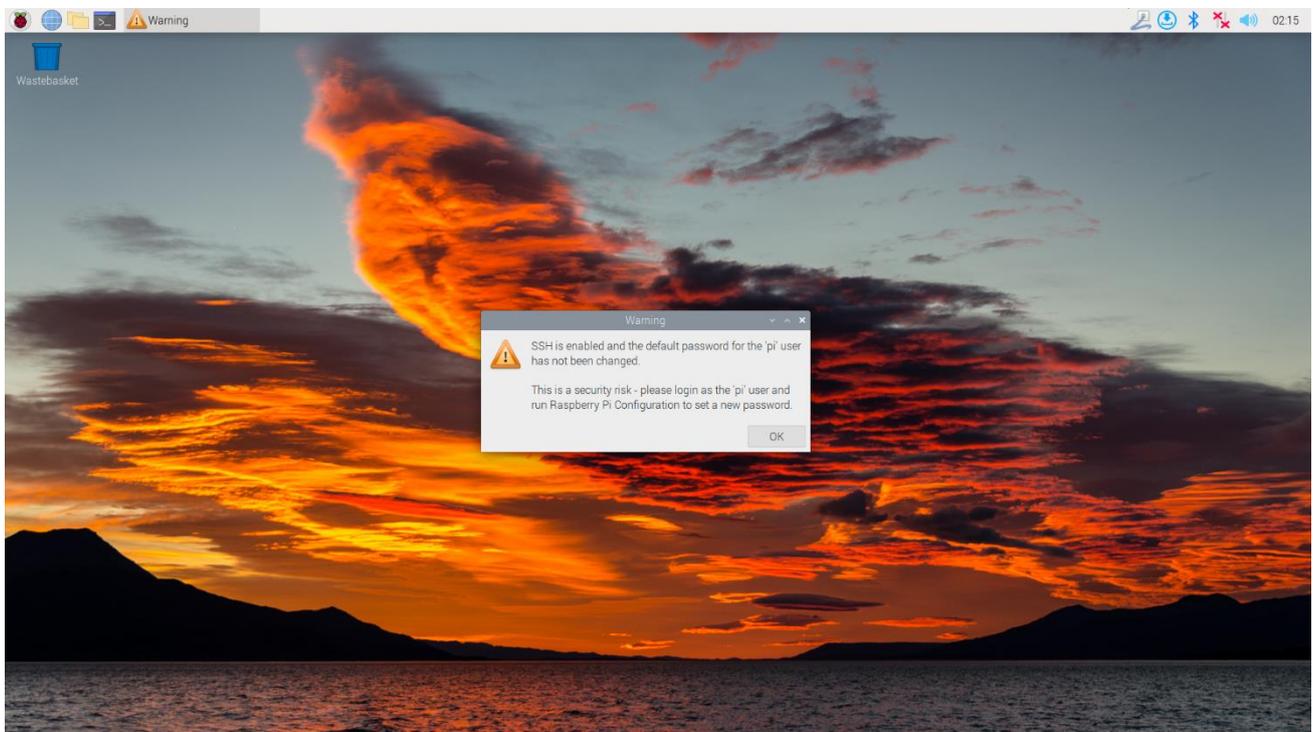
If you use the official system image, and the image is not configured before burning, the Welcome to Raspberry Pi application will pop up and guide you to complete the initialization setting when you start it for the first time.

- Click Next to start the setup.
- Setting Country, Language and Timezone, click Next。

NOTE: You need to select a country region, otherwise the default keyboard layout of the system is the English keyboard layout (our domestic keyboards are generally the American keyboard layout), and some special symbols may not be typed.

- Input a new password for the default account pi, and click Next.

NOTE: default password is raspberry

- Select the wireless network you need to connect to, enter the password, and then click Next.
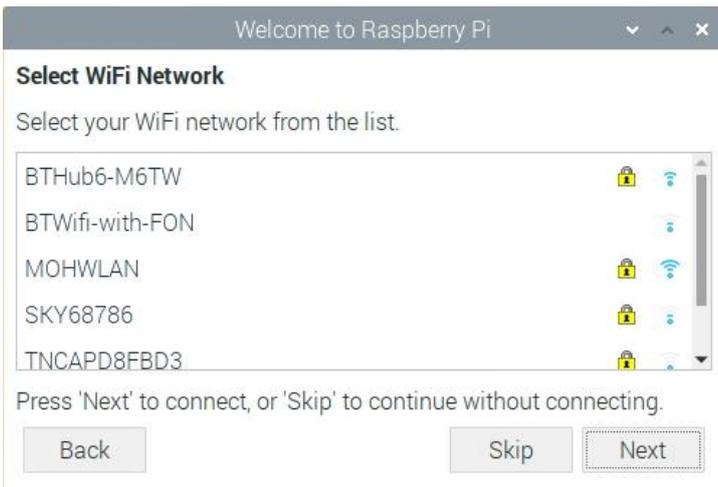
NOTE: If your CM4 module does not have a WIFI module, there will be no such step.
NOTE: Before upgrading the system, you need to wait for the wifi connection to be normal (the wifi icon appears in the upper right corner).

- Click Next, and the wizard will automatically check and update Raspberry Pi OS.
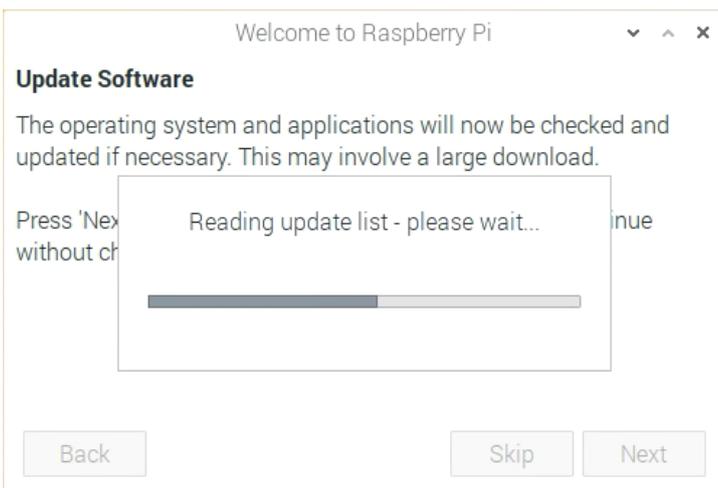
- Click Restart to complete the system update.

2.3.2 Raspberry Pi OS (Lite)

If you use the system image provided by us, after the system starts, you will automatically log in with the user name pi, and the default password is raspberry.

If you use the official system image, and the image is not configured before burning, the configuration window will appear when you start it for the first time. You need to configure the keyboard layout, set the user name and the corresponding password.

● Set the configuration keyboard layout

● Creat new user name
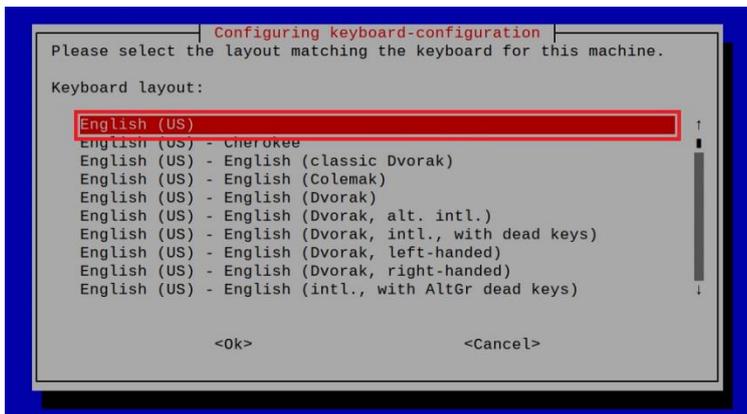
```
Please enter new username:

_

                    <Ok>              <Cancel>
```
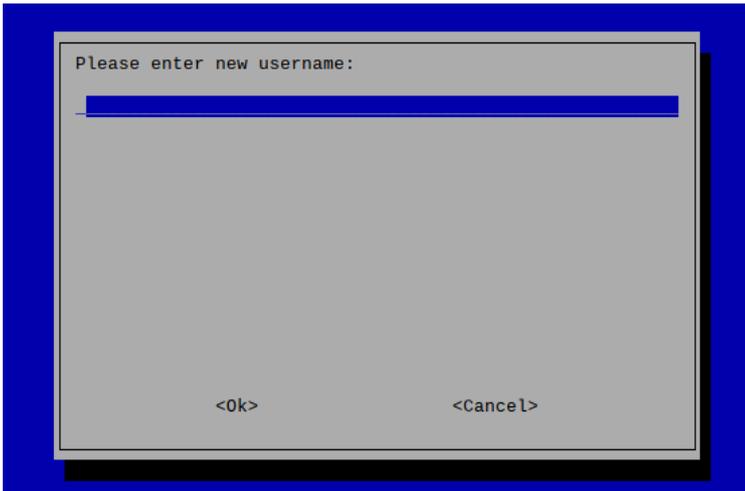
Then set the password corresponding to the user according to the prompt, and enter the password again for confirmation. At this point, you can log in with the user name and password you just set.

2.3.3 Enable SSH

All the images we provide have turned on the SSH function. If you use the official image, you need to turn on the SSH function.

2.3.3.1   Use raspi-config Enable SSH

```
sudo raspi-config
```

1. Choose 3 Interface Options
2. Choose I2 SSH
3. Would you like the SSH server to be enabled? Select Yes
4. Choose Finish

2.3.3.2   Add Empty File To Enable SSH
Put an empty file named ssh in the boot partition, and the SSH function will be automatically enabled after the device is powered on.

2.3.4 Get The Device IP

●   If the display screen is connected, you can use the ifconfig command to find the current device IP.
●   If there is no display screen, you can view the assigned IP through the router.
●   If there is no display screen, you can download the nmap tool to scan the IP under the current network.
     Nmap supports Linux, macOS, Windows and other platforms. If you want to use nmap to scan the network segments from 192.168.3.0 to 255, you can use the following command：

nmap -sn 192.168.3.0/24

After waiting for a period of time, the result will be output.

Starting Nmap 7.92 (https://nmap.org) at 2022-12-30 21:19 中国标准时间

Nmap scan report for 192.168.3.1 (192.168.3.1)

Host is up (0.0010s latency).

MAC Address: XX:XX:XX:XX:XX:XX (Phicomm (Shanghai))

Nmap scan report for DESKTOP-FGEOUUK.lan (192.168.3.33)

Host is up (0.0029s latency).

MAC Address: XX:XX:XX:XX:XX:XX (Dell)

Nmap scan report for 192.168.3.66 (192.168.3.66)

Host is up.

Nmap done: 256 IP addresses (3 hosts up) scanned in 11.36 seconds

3 Wiring Guide

3.1 Panel I/O

3.1.1 micro-SD Card

There is a micro SD card slot on the ED-CM4IO Computer. Please insert the micro SD card face up into the micro SD card slot.

3.2 Internal I/O

3.2.1 DISP

DISP0 and DISP1, use a 22-pin connector with a spacing of 0.5 mm. Please use FPC cable to connect them, with the foot surface of the metal pipe facing down and the substrate surface facing up, and the FPC cable is inserted perpendicular to the connector.
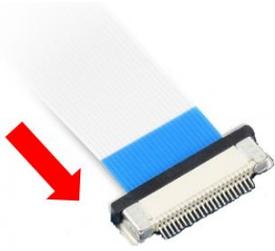
3.2.2 CAM

CAM0 and CAM1 both use 22-pin connectors with a spacing of 0.5 mm. Please use FPC cable to connect them, with the foot surface of the metal pipe facing down and the substrate surface facing up, and the FPC cable is inserted perpendicular to the connector.
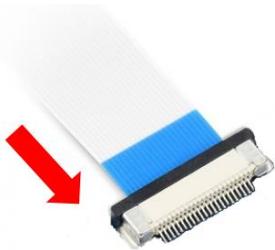
3.2.3 Fan Connection

The fan has three signal wires, black, red and yellow, which are respectively connected to pins 1, 2 and 4 of J17, as shown below.

B -Zoom in
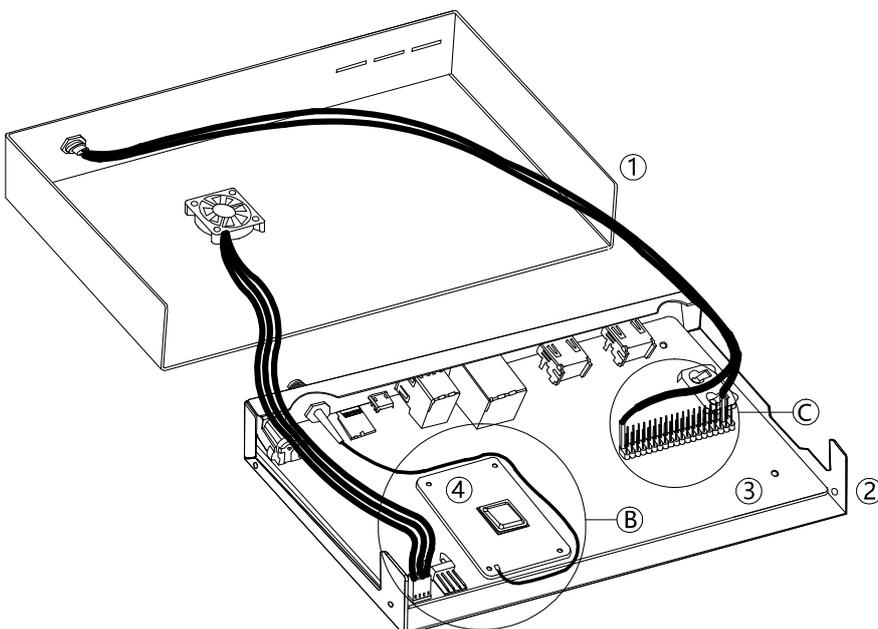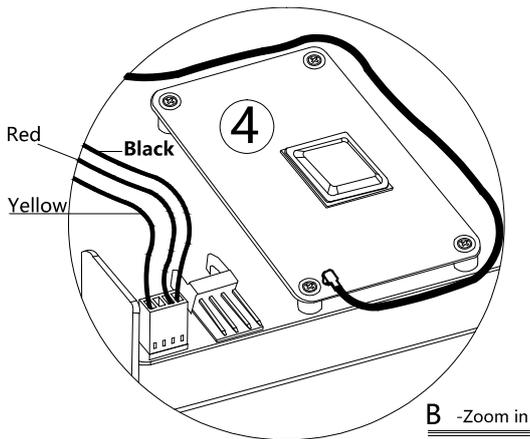
3.2.4 Power ON-OFF Button Connection

The power on-off button of ED-CM4IO Computer has two red and black signal wires, the red signal wire is connected with PIN3 pin of 40PIN socket, and the black signal wire corresponds to GND, and can be connected with any pin of PIN6, PIN9, PIN14, PIN20, PIN25, PIN30, PIN34 and PIN39.

C -Zoom in
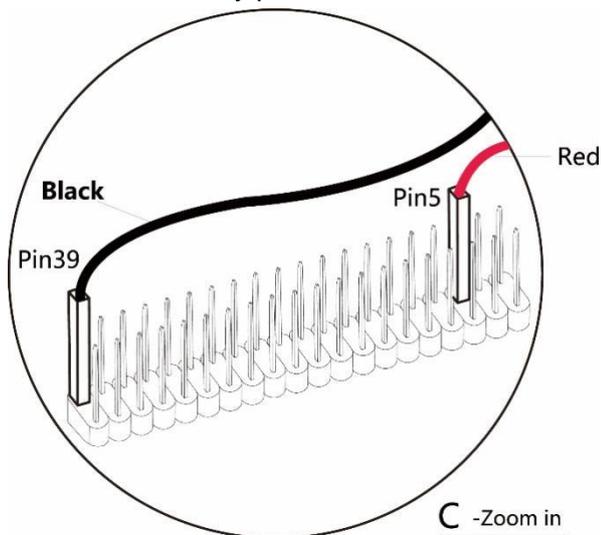
4 Software Operation Guide

4.1 USB 2.0

ED-CM4IO Computer has 2 USB2.0 interfaces. In addition, there are two USB 2.0 Host which are led out by 2x5 2.54mm Pin Header, and the socket is screen printed as J14. Customers can expand USB Device devices according to their own applications.

4.1.1 Check USB Device Information

List USB device

```
lsusb
```

The information displayed is as follows:

```
Bus 002 Device 001: ID 1d6b:0003 Linux Foundation 3.0 root hub
Bus 001 Device 005: ID 1a2c:2d23 China Resource Semico Co., Ltd Keyboard
Bus 001 Device 004: ID 30fa:0300   USB OPTICAL MOUSE
Bus 001 Device 003: ID 0424:9e00 Microchip Technology, Inc. (formerly SMSC)
LAN9500A/LAN9500Ai
Bus 001 Device 002: ID 1a40:0201 Terminus Technology Inc. FE 2.1 7-port Hub
Bus 001 Device 001: ID 1d6b:0002 Linux Foundation 2.0 root hub
```

4.1.2 USB Storage Device Mounting

You can connect an external hard disk, SSD or USB stick to any USB port on Raspberry Pi and mount the file system to access the data stored on it.

By default, your Raspberry Pi will automatically mount some popular file systems, such as FAT, NTFS and HFS+, in the location of /media/pi/HARD-DRIVE-LABEL.

In general, you can directly use the following commands to mount or unmount external storage devices.

```
lsblk

NAME           MAJ:MIN RM   SIZE RO TYPE MOUNTPOINT
sda              8:0     1 29.1G   0 disk
 └─sda1          8:1     1 29.1G   0 part
mmcblk0        179:0     0 59.5G   0 disk
 ├──mmcblk0p1 179:1      0   256M   0 part /boot
 └──mmcblk0p2 179:2      0 59.2G   0 part /
```

Use the mount command to mount sda1 to the /mnt directory. After the mount is completed, users can directly operate storage devices in the /mnt directory.

```
sudo mount /dev/sda1 /mnt
```

After the access operation is completed, use the command umount to uninstall the storage device.

```
sudo umount /mnt
```

4.1.2.1 Mount

You can install the storage device in a specific folder location. It is usually done in the /mnt folder, such as /mnt/mydisk. Please note that the folder must be empty.

1. Insert the storage device into the USB port on the device.
2. Use the following command to list all disk partitions on Raspberry Pi:

```
sudo lsblk -o UUID,NAME,FSTYPE,SIZE,MOUNTPOINT,LABEL,MODEL
```

Raspberry Pi uses mount points / and /boot. Your storage device will appear in this list, along with any other connected storage devices.

3. Use the SIZE, LABLE and MODEL columns to identify the name of the disk partition that points to your storage device. For example, sda1.
4. The FSTYPE column contains file system types. If your storage device uses the exFAT file system, please install the exFAT driver:

```
sudo apt update
sudo apt install exfat-fuse
```

5. If your storage device uses NTFS file system, you will have read-only access to it. If you want to write to the device, you can install the ntfs-3g driver:

```
sudo apt update
sudo apt install ntfs-3g
```

6. Run the following command to get the location of the disk partition:

```
sudo blkid
```

like, /dev/sda1

7. Create a target folder as the mount point of the storage device. The mount point name used in this example is mydisk. You can specify a name of your choice:

```
sudo mkdir /mnt/mydisk
```

8. Mount the storage device at the mount point you created:

```
sudo mount /dev/sda1 /mnt/mydisk
```

9. Verify that the storage device has been successfully mounted by listing the following:

```
ls /mnt/mydisk
```

WARN：If there is no desktop system, external storage devices will not be automatically mounted.

4.1.2.2 Unmount

When the device is turned off, the system will unmount the storage device so that it can be pulled out safely. If you want to uninstall the device manually, you can use the following command:

```
sudo umount /mnt/mydisk
```

If you receive a "destination busy" error, it means that the storage device has not been unmounted. If no error is displayed, you can safely unplug the device now.

4.1.2.3　Set up automatic mount in the command line

You can modify the fstab setting to mount automatically.

1. First, you need to get the disk UUID.
   ```
   sudo blkid
   ```
2. Find the UUID of the mounted device, such as 5C24-1453.
3. Open fstab file
   ```
   sudo nano /etc/fstab
   ```
4. Add the following to the fstab file
   ```
   UUID=5C24-1453 /mnt/mydisk fstype defaults,auto,users,rw,nofail 0 0
   ```
   Replace fstype with the type of your file system, which you can find in step 2 of "Mounting storage devices" above, for example, ntfs.
5. If the file system type is FAT or NTFS, add umask = 000 immediately after nofail, which will allow all users to have full read/write access to every file on the storage device.

You can use man fstab to find more information about fstab commands.

4.2 Ethernet Configuration

4.2.1 Gigabit Ethernet

There is an adaptive 10/100/1000Mbsp Ethernet interface on ED-CM4IO Computer, and it is recommended to use Cat6 (Category 6) network cable to cooperate with it. By default, the system uses DHCP to automatically obtain IP. The interface supports PoE and has ESD protection. PoE signal introduced from RJ45 connector is connected to the pin of J9 socket.

NOTE：Because PoE module only provides +5V power supply and cannot generate +12V power supply，PCIe expansion cards and fans will not work when using PoE power supply.

4.2.2 Using The Network Manager To Configure

If you use the desktop image, it is recommended to install the NetworkManager plug-in network-manager-gnome. After installation, you can directly configure the network through the desktop icon.

```
sudo apt update
sudo apt install network-manager-gnome
sudo reboot
```

NOTE:　If use our factory image, the network-manager tool and the network-manager-gnome plug-in are installed by default.

NOTE: If use our factory image, the NetworkManager service is automatically started and the dhcpcd service is disabled by default.

After the installation is completed, you will see the NetworkManager icon in the status bar of the system desktop. 。

Right-click the NetworkManager icon and select Edit Connections。
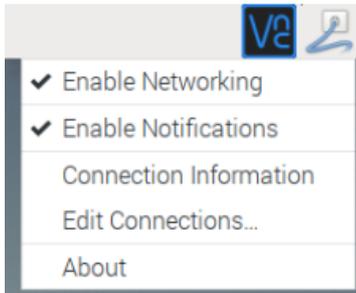
Select the connection name to modify, and then click the gear below.
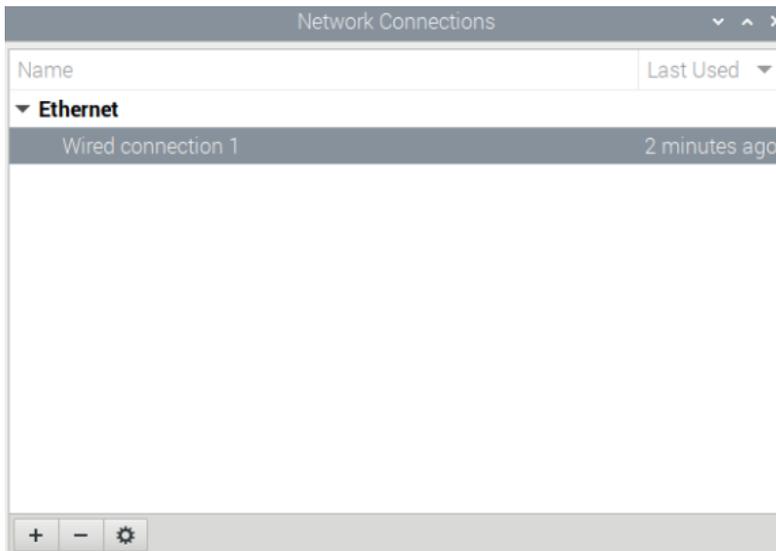
Switch to the configuration page of IPv4 Settings. If you want to set static IP, the Method selects Manual, and Addresses the IP you want to configure. If you want to set it as dynamic IP acquisition, just configure the Method as Automatic(DHCP) and restart the device.
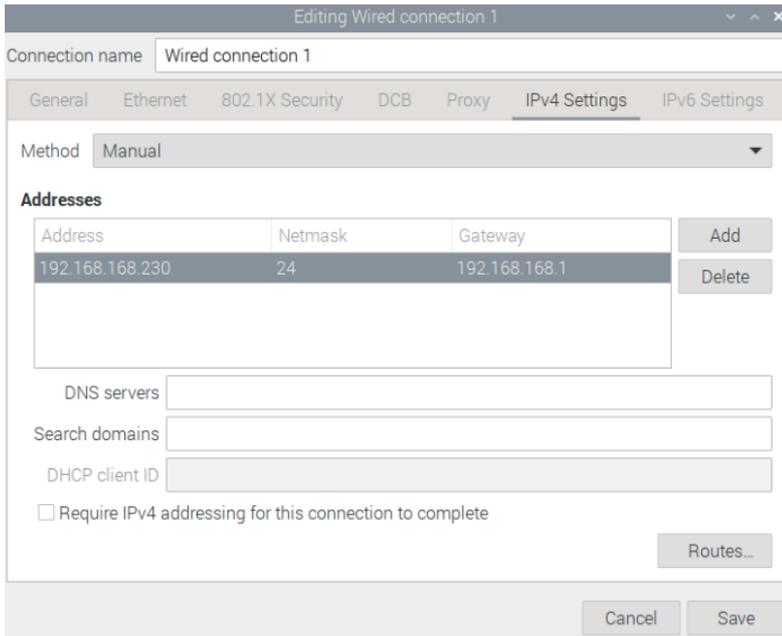
If you use the Raspberry Pi OS Lite, you can configure it through the command line.

If you want to use the command to set the static IP for the device, you can refer to the following methods.
set the static IP

```
sudo nmcli connection modify <name> ipv4.addresses 192.168.1.101/24 ipv4.method manual
```

set the gateway

```
sudo nmcli connection modify <name> ipv4.gateway 192.168.1.1
```

Set dynamic IP acquisition

```
sudo nmcli connection modify <name> ipv4.method auto
```

4.2.3 Configuration With dhcpcd Tool

The official system of Raspberry Pi uses dhcpcd as the network management tool by default.

If you use the factory image provided by us and want to switch from NetworkManager to dhcpcd network management tool, you need to stop and disable NetworkManager service and enable dhcpcd service first.

```
sudo systemctl stop NetworkManager
sudo systemctl disable NetworkManager
sudo systemctl enable dhcpcd
sudo reboot
```

The dhcpcd tool can be used after the system is restarted.

Static IP can be set by modifying/etc/dhcpcd.conf. For example, eth0 can be set, and users can set wlan0 and other network interfaces according to their different needs.

```
interface eth0
static ip_address=192.168.0.10/24
static routers=192.168.0.1
static domain_name_servers=192.168.0.1 8.8.8.8 fd51:42f8:caae:d92e::1
```

4.3 WiFi

Customers can purchase ED-CM4IO Computer with WiFi version, which supports 2.4 GHz and 5.0 GHz IEEE 802.11 b/g/n/ac dual-band WiFi. We provide dual-band external antenna, which has passed wireless authentication together with Raspberry Pi CM4.

4.3.1 Enable WiFi

The WiFi function is blocked by default, so you need to set the country region before you can use it. If you use the desktop version of the system, please refer to the chapter: Initialization Settings Configure WiFi. If you use the Lite version of the system, please use raspi-config to set the WiFi country area. Please refer to the documentation.： "Raspberry Pi official documents - Using the Command Line"

4.3.1.1   Configure Using Network Manager

After installing the desktop plug-in, you can directly connect to the WIFI network through the desktop icon.
You can also use the command line to execute the following commands:

Scan WiFi

```
sudo nmcli device wifi
```

Connect WiFi with password.

```
sudo nmcli device wifi connect <SSID> password <password>
```

Set up WiFi automatic connection

```
sudo nmcli connection modify <name> connection.autoconnect yes
```

4.3.1.2 Configure Using dhcpcd

The official system of Raspberry Pie uses dhcpcd as the network management tool by default.

```
sudo raspi-config
```

1. Choose 1 System Options
2. Choose S1 Wireless LAN
3. Choose your country in Select the country in which the Pi is to be used ，than choose OK，This prompt only appears when setting up WIFI for the first time.
4. Please enter SSID，input WIFI SSID
5. Please enter passphrase. Leave it empty if none，input password than restart the device

4.3.2 External Antenna and Internal PCB Antenna

You can switch whether to use an external antenna or a built-in PCB antenna through software configuration. Considering compatibility and widest support, the factory default system is the built-in PCB antenna. If the customer chooses a complete machine with a shell and is equipped with an external antenna, you can switch by the following operations:

Edit /boot/config.txt
```
sudo nano /boot/config.txt
```

Choose external add

```
dtparam=ant2
```

Then restart to take effect.

4.3.3 AP and Bridge Mode

ED-CM4IO Computer's Wifi also supports configuration in AP router mode, bridge mode or mixed mode.

Please refer to the open source project github: garywill/linux-router to learn how to configure it.

4.4 Bluetooth

ED-CM4IO Computer can choose whether the Bluetooth function is integrated or not. If it is equipped with Bluetooth, this function is turned on by default.

Bluetoothctl can be used to scan, pair and connect Bluetooth devices. Please refer to the [ArchLinux-Wiki-Bluetooth](#) guide to configure and use Bluetooth.

4.4.1 Usage

Scan：

```
bluetoothctl scan on/off
```

Find：

```
bluetoothctl discoverable on/off
```

Trust device：

```
bluetoothctl trust [MAC]
```

Connect device：

```
bluetoothctl connect [MAC]
```

Disconnect device：

```
bluetoothctl disconnect [MAC]
```

4.4.2 Example

Into bluetootch shell

```
sudo bluetoothctl
```

Enable Bluetooth

```
power on
```

Scan device

```
scan on

Discovery started
[CHG] Controller B8:27:EB:85:04:8B Discovering: yes
[NEW] Device 4A:39:CF:30:B3:11 4A-39-CF-30-B3-11
```

Find the name of the turned-on Bluetooth device, where the name of the turned-on Bluetooth device is test.

```
devices

Device 6A:7F:60:69:8B:79 6A-7F-60-69-8B-79
Device 67:64:5A:A3:2C:A2 67-64-5A-A3-2C-A2
Device 56:6A:59:B0:1C:D1 Lefun
Device 34:12:F9:91:FF:68 test
```

Pair device

```
pair 34:12:F9:91:FF:68
Attempting to pair with 34:12:F9:91:FF:68
[CHG] Device 34:12:F9:91:FF:68 ServicesResolved: yes
[CHG] Device 34:12:F9:91:FF:68 Paired: yes
Pairing successful
```

Add as trusted device

```
trust 34:12:F9:91:FF:68
[CHG] Device 34:12:F9:91:FF:68 Trusted: yes
Changing 34:12:F9:91:FF:68 trust succeeded
```

4.5 RTC

The ED-CM4IO Computer is integrated with RTC and uses CR2032 button cell. RTC chip is mounted on i2c-10 bus.

Enabling I2C bus of RTC needs to be configured in config.txt

```
dtparam=i2c_vc=on
```

NOTE：The address of RTC chip is 0x51.

We provide an automatic synchronization BSP package for RTC, so you can use RTC without feeling. If you install the official system of Raspberry Pie, you can install the "ed-rtc" package. Please refer to the detailed installation process Install BSP Online Based On The Original Raspberry Pi OS.

The principle of RTC automatic synchronization service is as follows:

- When the system is turned on, the service automatically reads the saved time from RTC and synchronizes it to the system time.
- If there is an Internet connection, the system will automatically synchronize the time from the NTP server and update the local system time with Internet time.
- When the system is shut down, the service automatically writes the system time into RTC and updates the RTC time.
- Because of the installation of button cell, although the CM4 IO Computer is powered off, the RTC is still working and timing.

In this way, we can ensure that our time is accurate and reliable.

If you don't want to use this service, you can turn it off manually:

```
sudo systemctl disable rtc
sudo reboot
```

Re-enable this service:

```
sudo systemctl enable rtc
sudo reboot
```

Read RTC Time manually:

```
sudo hwclock -r
2022-11-09 07:07:30.478488+00:00
```

Manually synchronize RTC time to the system:

```
sudo hwclock -s
```

Write the system time into RTC:

```
sudo hwclock -w
```

4.6 Power ON/OFF Button

ED-CM4IO Computer has the function of one-button power on/off. Forcibly turning off the power supply during the operation may damage the file system and cause the system to crash. One-button power on/off is realized by combining Raspberry Pi's Bootloader and 40PIN's GPIO through software, which is different from the traditional power on/off by hardware.

One-button power on/off uses GPIO3 on the 40-pin socket. If you want to realize the one-button power on/off function, this pin should be configured as ordinary GPIO function, and can no longer be defined as SCL1 of I2C. Please remap I2C function to other pins.

When the +12V input power supply is connected, pressing the key continuously will trigger the CM4 module to turn off and on alternately.

NOTE:To realize the one-button on-off function, it is necessary to install the factory image or the BSP package provided by us.

4.7 LED Indication

ED-CM4IO Computer has two indicator lights, the red LED is connected with the LED_PI_nPWR pin of CM4, which is the power indicator light, and the green LED is connected with the LED_PI_nACTIVITY pin of CM4, which is the running status indicator light.

4.8 Fan Control

CM4 IO Computer supports PWM drive and speed control fan. The fan power supply is +12V, which comes from the +12V input power supply.

The chip of fan controller is mounted on i2c-10 bus. To enable I2C bus of fan controller, it needs to be configured in config.txt

```
dtparam=i2c_vc=on
```

NOTE：The address of the fan controller chip on I2C bus is 0x2f.

4.8.1 Install The Fan Control Package

First, install the fan BSP package ed-cm4io-fan through apt-get. Please refer to for details Install BSP Online Based On The Original Raspberry Pi OS.

4.8.2 Set Fan Speed

After installing ed-cm4io-fan, you can use the set_fan_range command and the fanmanual command to automatically configure and manually set the fan speed.

1.Automatic control of fan speed
The set_fan_range command sets the temperature range. Below the lower temperature limit, the fan stops working, and above the upper temperature limit, the fan runs at full speed.

```
set_fan_range -l [low]    -m [mid] -h [high]
```

Set the fan monitoring temperature range, low temperature is 45 degrees, medium temperature is 55 degrees, and high temperature is 65 degrees.

```
set_fan_range -l 45 -m 55 -h 65
```

When the temperature is lower than 45 ℃, the fan stops output.
When the temperature is higher than 45 ℃ and lower than 55 ℃, the fan will output at 50% speed.
When the temperature is higher than 55 ℃ and lower than 65 ℃, the fan will output at 75% speed.
When the temperature is higher than 65 ℃, the fan will output at 100% speed.

2.Manually set the fan speed.

```
#Stop the fan control service first
sudo systemctl stop fan_control.service

#Manually set the fan speed, and then enter the parameters as prompted.
fanmanual
```

5 Operating system installation

5.1 Image Download

We have provided the factory image. If the system is restored to factory settings, please click the following link to download the factory image.

Raspberry Pi OS With Desktop, 64-bit

- Release date: Dec 09th 2022
- System: 64-bit
- Kernel version: 5.10
- Debian version: 11 (bullseye)
- Release notes
- Downloads: https://1drv.ms/u/s!Au060HUAtEYBco9DinOio2un5wg?e=PQkQOI

5.2 eMMC Flash

EMMC burning is required only when CM4 is a non-Lite version.

- Download and install rpiboot_setup.exe
- Download and install Raspberry Pi Imager or   balenaEtcher

If the installed CM4 is a non-Lite version, the system will burn to eMMC:
- Open the upper cover of CM4IO Computer.
- Connect the MicroUSB data cable with J73 interface (screen printed as USB PROGRAM).
- Start the rpiboot tool just installed on the Windows PC side, and the default path is C:\Program Files (x86)\Raspberry Pi\rpiboot.exe。
- When the CM4IO Computer is powered on, the CM4 eMMC will be recognized as a mass storage device.
- Use the image burning tool to burn your image to the identified mass storage device.

5.3 Install BSP Online Based On The Original Raspberry Pi OS

BSP package provides support for some hardware functions, such as SPI Flash, RTC, RS232, RS485, CSI, DSI, etc. Customers can use the image of our pre-installed BSP package or install the BSP package themselves.

We support installing and updating BSP through apt-get, which is as simple as installing some other software or tools.

1.First, download the GPG key and add our source list.

```
curl -sS https://apt.edatec.cn/pubkey.gpg | sudo apt-key add -
echo "deb https://apt.edatec.cn/raspbian stable main" | sudo tee /etc/apt/sources.list.d/edatec.list
```

2. Then, install the BSP package

```
sudo apt update
sudo apt install ed-cm4io-fan ed-rtc
```

3.Install the NetworkManager network management tool [optional]
NetworkManager tools can more easily configure routing rules and set priorities.

```
#   If you use the Raspberry Pi OS Lite version system.
sudo apt install ed-networkmanager

# If you use a system with a desktop, we recommend that you install the plug-in
sudo apt install ed-networkmanager-gnome
```

4.reboot

```
sudo reboot
```

6 FAQ

6.1 Default username and password

For the image we provide, the default user name is pi, and the default password is raspberry.

7 About us

7.1 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.

7.2 Contact us

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