



ED-CM4NANO

Datasheet

by EDA Technology Co., Ltd

built: 2025-10-17

1 Product Overview

ED-CM4NANO is a compact industrial computer based on Raspberry Pi CM4. Depending on different application scenarios and user requirements, computer systems with varying RAM and eMMC specifications are available.

RAM options include 1GB, 2GB, 4GB, and 8GB. eMMC options include 8GB, 16GB, and 32GB. ED-CM4NANO provides commonly used interfaces such as HDMI, USB, and Ethernet, while also reserving expansion interfaces including DSI, CSI, and a 40-PIN connector. It supports network connectivity via both Wi-Fi and Ethernet, primarily targeting industrial control and IoT applications.



1.1 Target Application

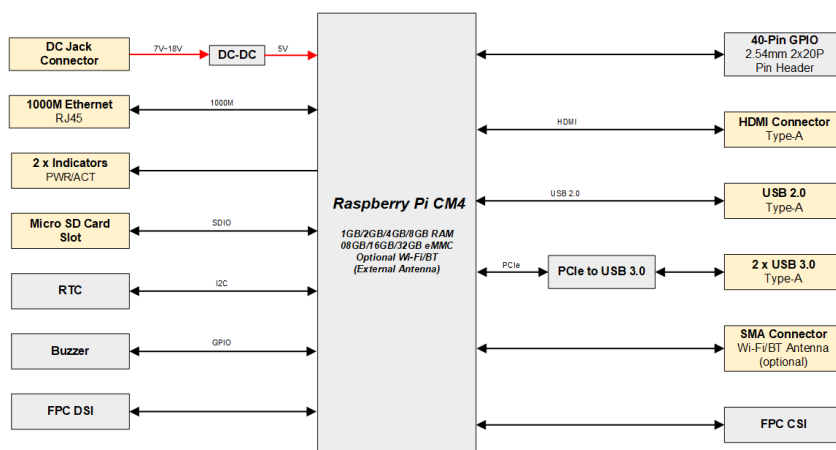
- Multimedia entertainment
- AI development
- Intelligent instrument
- Panoramic display
- Intelligent life

1.2 Specifications

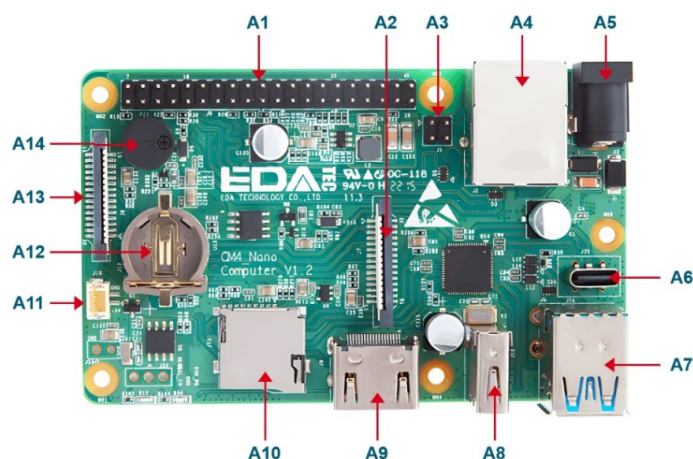
Specification	Description
CPU	Broadcom BCM2711 Quad-core Cortex-A72 (ARM v8) 64-bit 1.5GHz SoC
RAM	1GB/2GB/4GB/8GB LPDDR4-3200 SDRAM optional

Specification	Description
Storage	8GB/16GB/32GB eMMC optional Micro SD card slot (for expanded user data storage)
Wi-Fi/Bluetooth (Optional)	Supports 2.4GHz & 5GHz dual-band Wi-Fi and Bluetooth 5.0 with antenna • 2.4GHz Wi-Fi: IEEE 802.11 b/g/n compatible • 5GHz Wi-Fi: IEEE 802.11 a/n/ac compatible • Bluetooth: 2402MHz ~ 2480MHz band compatible
1000M Ethernet Interface	1 × Ethernet port (10/100/1000M auto-negotiation), RJ45 connector
SD Card Slot	1 × Micro SD card slot for user data storage
HDMI Interface	1 × HDMI Type-A port, HDMI 2.0 compliant, supports 4K@60Hz resolution
USB 3.0 Interface	2 × USB 3.0 Type-A ports, each supporting up to 5Gbps data transfer
USB 2.0 Interface	1 × USB 2.0 Type-A port, supporting up to 480Mbps data transfer
Reserved Interfaces	• DSI interface: Supports LCD display expansion • CSI interface: Supports camera module expansion • 40-PIN connector: Raspberry Pi standard 40-PIN GPIO • 4-Pin PoE connector: Supports PoE module expansion • 2-Pin DC 5V: 5V power output expansion
Extended Features	• Built-in RTC function • Built-in buzzer
LED Indicators	• Green: System status indicator • Red: Power indicator
Power Input	7V~18V DC
Dimensions	103mm(W) x 62mm(D) x 32mm(H)
Enclosure	Heat-dissipating aluminum alloy
Antenna	External antenna
Operating Temperature	-25°C ~60°C
Operating System	• Raspberry Pi OS (Desktop) 32-bit • Raspberry Pi OS (Lite) 32-bit • Raspberry Pi OS (Desktop) 64-bit • Raspberry Pi OS (Lite) 64-bit

1.3 System Diagram



1.4 Functional Layout

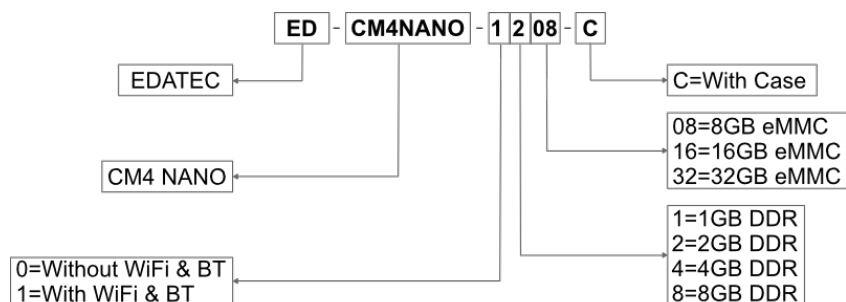


No.	Function	No.	Function
A1	40-PIN Pin Header	A2	CSI Interface
A3	PoE Pin Header	A4	1000M Ethernet Port
A5	DC Power Interface	A6	Type-C USB Port
A7	USB 3.0 Port	A8	USB 2.0 Port
A9	Standard HDMI Type-A Port	A10	Micro SD Card Slot
A11	5V DC Output Terminal	A12	RTC Battery Base
A13	DSI Interface	A14	Buzzer

1.5 Packing List

- 1 x ED-CM4NANO
- [WiFi/BT Version - optional] 1 x WiFi/BT Antenna

1.6 Ordering code



Example

P/N: ED-CM4NANO-1208-C

Configuration: CM4 NANO Computer Based on Raspberry Pi CM4,
with Wi-Fi & Bluetooth, 2GB DDR, 8GB eMMC and a metal case.

Optional Accessory

Users can optionally install the rail bracket as needed for DIN rail mounting.

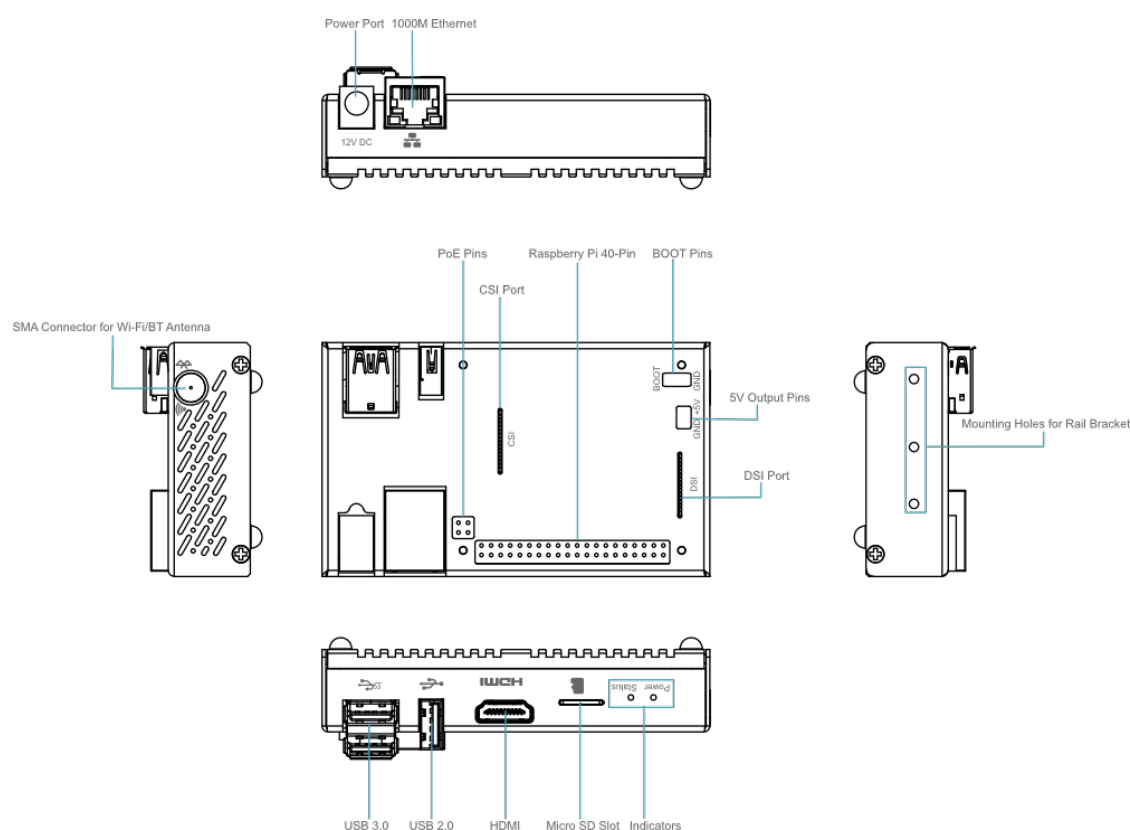
Model	Description	Picture
ED-ACC- DRBNANO	Mounting Bracket for 35mm DIN Rail	

2 Product Appearance and Structure

Introduces the physical appearance and structural features of the product.

2.1 Product Appearance

Describes the exterior design and interfaces of the product.



TIP

The mounting tabs shown in the illustration are for reference only and are not included as standard.

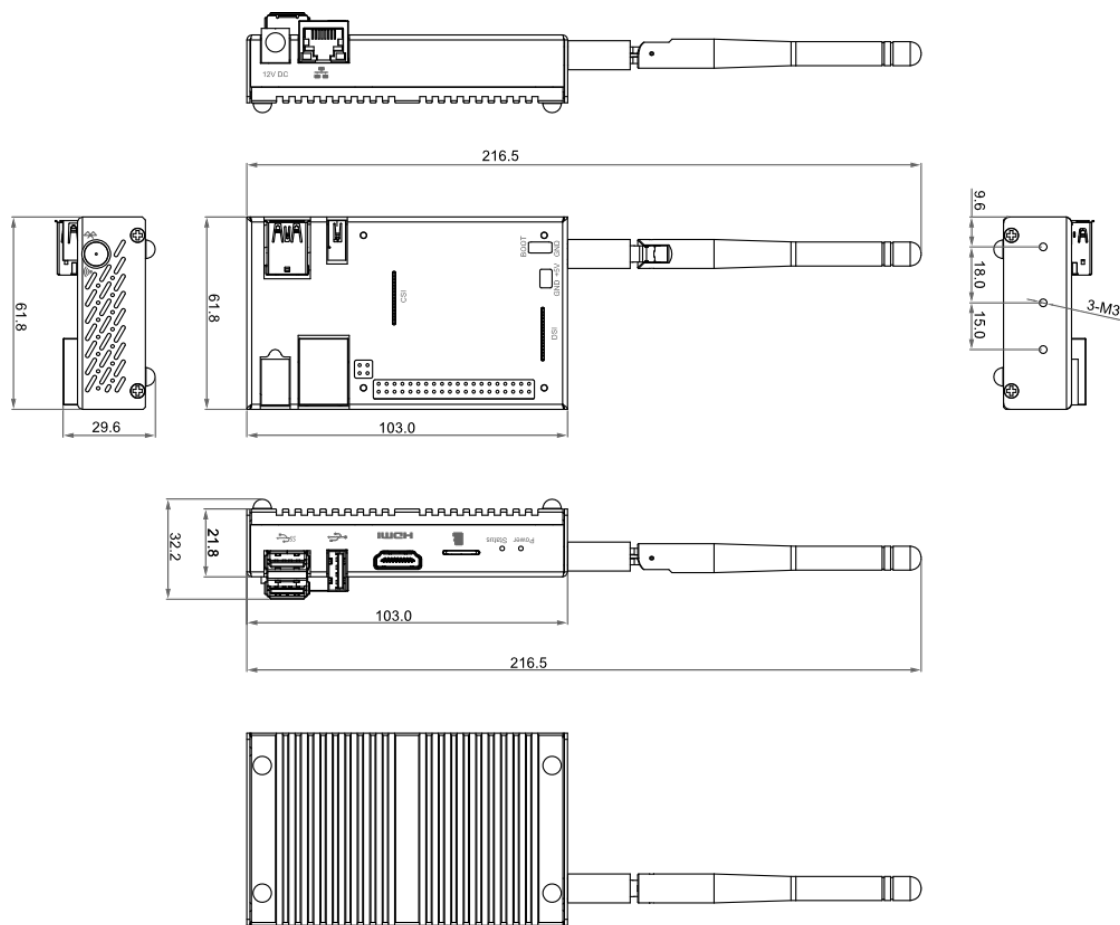
2.2 Product Photos

Physical product images from multiple perspectives.



2.3 Dimensions

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



2.4 Installation

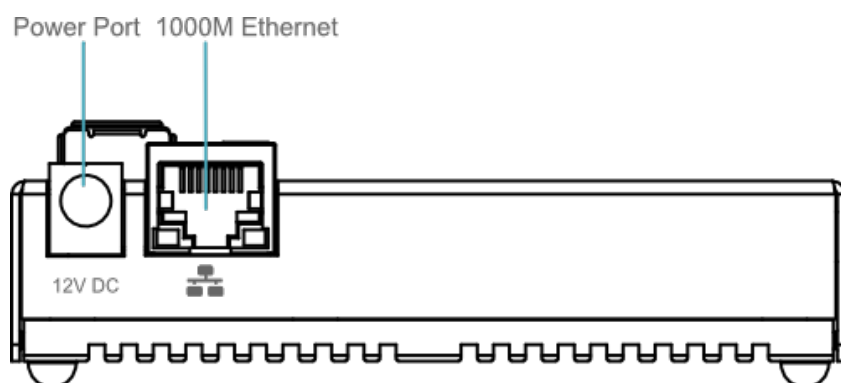
The ED-CM4NANO supports DIN rail mounting. The standard package does not include the rail mounting bracket (ED-ACC-DRBNANO). Please purchase the ED-ACC-DRBNANO bracket before installation. For specific installation steps, refer to [ED-ACC-DRBNANO Installation](#).

3 Interfaces and Connectors

Describes the interfaces and connectors on each panel of the device.

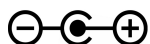
3.1 Front Panel

Interface descriptions for the front panel.



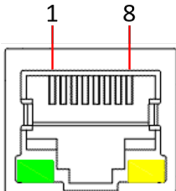
3.1.1 Power Input

ED-CM4NANO features one DC power interface with a DC Jack connector supporting 7V–18V DC input. A DC 12V power adapter is recommended. Pin definition (center-positive):



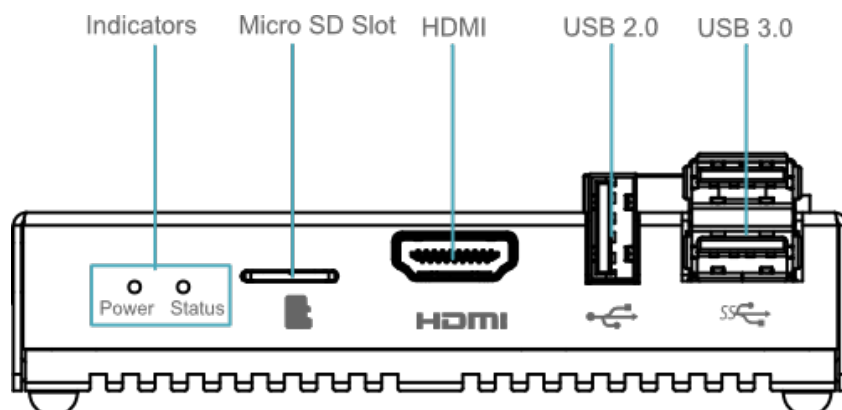
3.1.2 1000M Ethernet Port

ED-CM4NANO integrates one auto-negotiation 10/100/1000M Ethernet port (RJ45). For network connectivity, use Cat6 or higher-grade cables.

	Pin ID	Pin Name
	1	TRD0+
	2	TRD0-
	3	TRD1+
	4	TRD2+
	5	TRD2-
	6	TRD1-
	7	TRD3+
	8	TRD3-

3.2 Rear Panel

Interface and indicator descriptions for the rear panel.



3.2.1 LED Indicators

ED-CM4NANO has two LEDs:

- Power (Red): Indicates power status
- Status (Green): Indicates system operational status

Indicator	Function
Power	Red LED showing power on/off state
Status	Green LED showing system status

3.2.2 Micro SD Card Slot

ED-CM4NANO includes a Micro SD card slot, it supports Micro SD cards for expanded user data storage.

TIP

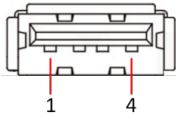
Micro SD cards are for storage expansion only; the device does not boot from SD cards.

3.2.3 HDMI Interface

ED-CM4NANO features one HDMI interface with a standard Type-A connector, supporting connection to HDMI displays and delivering up to 4K@60Hz video output.

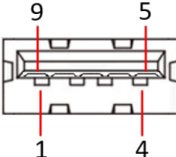
3.2.4 USB 2.0 Interface

ED-CM4NANO features one USB 2.0 interface with a standard Type-A connector, supporting standard USB 2.0 peripherals with transfer rates up to 480Mbps.

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

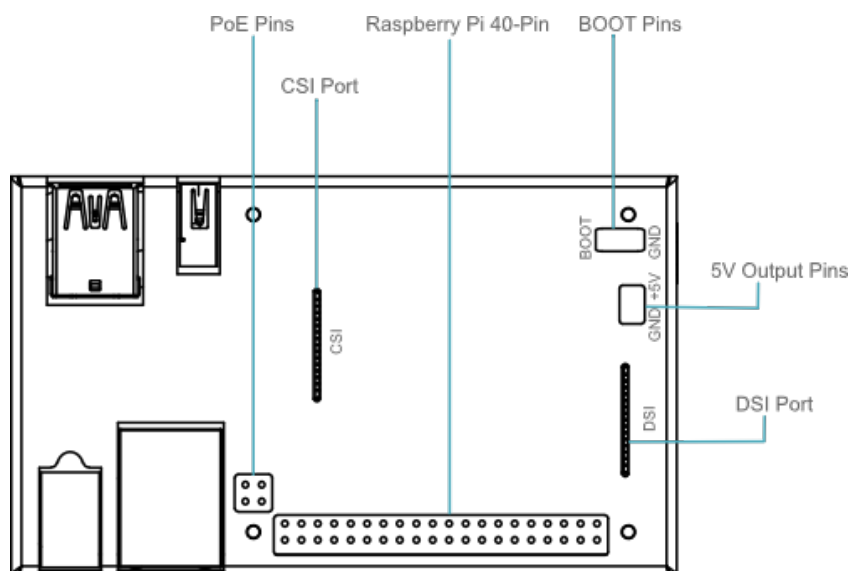
3.2.5 USB 3.0 Interface

ED-CM4NANO features two USB 3.0 interfaces with standard Type-A connectors, supporting standard USB 3.0 peripherals with transfer rates up to 5Gbps.

	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+

3.3 Top Panel

Interface and connector descriptions.

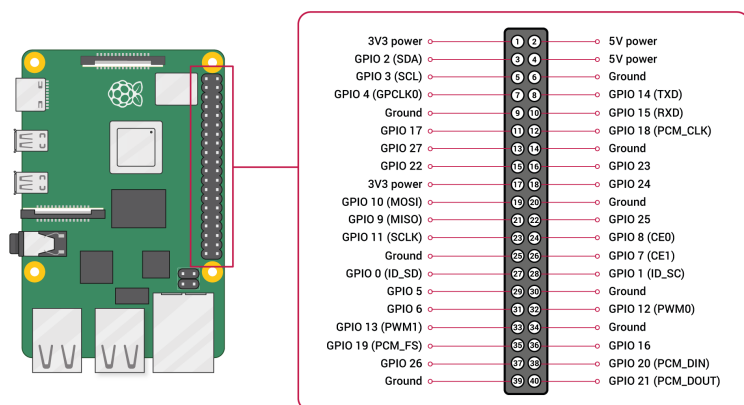


3.3.1 BOOT

ED-CM4NANO provides two dedicated BOOT and GND pins. Short-circuiting these pins enters flashing eMMC mode.

3.3.2 40-PIN Header

ED-CM4NANO integrates one standard Raspberry Pi 40-PIN GPIO header with the following pinout:



3.3.3 CSI Interface

ED-CM4NANO features one CSI interface for camera module expansion.

3.3.4 DSI Interface

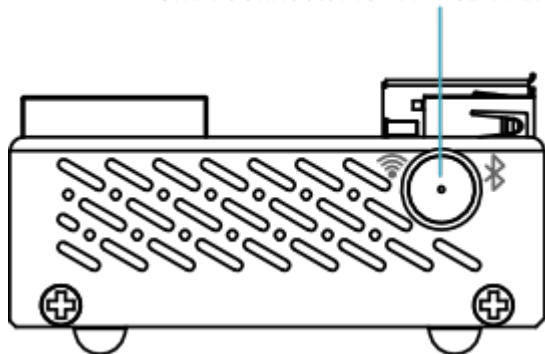
ED-CM4NANO features one DSI interface for LCD display connectivity.

	Pin	Definition	Pin	Definition
	1	GND	9	DSI1_D0_P
	2	DSI1_D1_N	10	GND
	3	DSI1_D1_P	11	SCL0
	4	GND	12	SDA0
	5	DSI1_CLK_N	13	GND
	6	DSI1_CLK_P	14	3V3
	7	GND	15	3V3
	8	DSI1_D0_N	-	-

3.4 Side Panel

Introduce the interfaces on the side panel.

SMA Connector for Wi-Fi/BT Antenna



3.4.1 WiFi/BT Antenna (Optional)

ED-CM4NANO supports optional WiFi/BT antennas with dual-band 2.4GHz&5.0GHz WiFi capability.

4 Internal Interfaces

Describes interfaces integrated within the device.

4.1 Power Output

ED-CM4NANO integrates a 2-pin wire-to-board connector (silkscreen marking: J10) delivering 5V/1A output.

4.2 Type-C USB

ED-CM4NANO integrates an internal Type-C USB interface (silkscreen marking: J75) for USB 3.0 expansion.

4.3 RTC

ED-CM4NANO features an internal RTC battery holder supporting CR1220 coin cell installation, which maintains an uninterrupted real-time clock during power cycles. The RTC clock chip resides on i2c-0 bus at address 0x51.

TIP

CR1220 batteries are excluded in some shipments due to international logistics restrictions. Install a CR1220 coin cell before using RTC functionality.

4.4 Buzzer

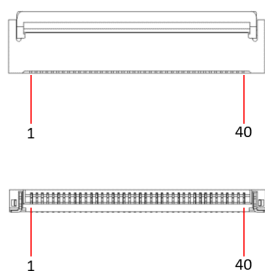
ED-CM4NANO incorporates an internal buzzer controlled by GPIO6:

- Active-high: Enabled
- Active-low: Disabled

4.5 HDMI FPC

ED-CM4NANO contains an FPC HDMI connector (silkscreen: J13) with reserved USB 2.0 touchscreen signals and PWM brightness control signals, supporting LCD display expansion.

	Pin	definition	Pin	definition



1	NC	21	GND
2	NC	22	HDMI1_CLKP
3	NC	23	HDMI1_CLKN
4	NC	24	GND
5	GND	25	BACKLIGHT_PWM
6	USB_DP	26	GND
7	USB_DM	27	GND
8	GND	28	GND
9	HDMI1_HPD	29	GND
10	HDMI1_SCL	30	GND
11	HDMI1_SDA	31	GND
12	GND	32	LCD_PWR_EN
13	HDMI1_TX2P	33	5V
14	HDMI1_TX2N	34	5V
15	GND	35	5V
16	HDMI1_TX1P	36	5V
17	HDMI1_TX1N	37	5V
18	GND	38	5V
19	HDMI1_TX0P	39	5V
20	HDMI1_TX0N	40	5V

The **BACKLIGHT_PWM** and **LCD_PWR_EN** signals correspond to the following GPIO pins on the CM4:

Signal	CM4 GPIO Name
BACKLIGHT_PWM	GPIO12
LCD_PWR_EN	GPIO16

5 Wireless Communication

5.1 WiFi

Customers can purchase ED-CM4NANO 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

ED-CM4NANO 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	Maximum	Unit
System power input	7	12	18	V
Working temperature	-25	25	60	°C
Storage temperature	-25	25	60	°C
Working environment humidity	20	-	90	%

7 FAQ

1. Why do certain functions fail after installing the official Raspberry Pi OS on ED-CM4NANO?

We recommend using our customized system image. Alternatively, download and install our BSP to enable external interfaces.

2. Does ED-CM4NANO support booting from a Micro SD card?

No. The Micro SD slot is for data storage only. The OS must be installed on the eMMC.

3. Are any signals occupied on the 40-PIN header?

- Buzzer: GPIO6 is occupied. Disable it by removing resistor R39 to disconnect the circuit.
- SD Card: GPIO22–27 are occupied when an SD card is inserted. Avoid inserting an SD card if unused.

4. How to install the operating system?

Refer to the User Manual for detailed instructions.

5. How to resolve the error "config failed hub doesn't have any ports! (err -19)" during boot?

Remove `"otg_mode=1", [cm4]` from `config.txt` and add `"dtoverlay=dwc2,dr_mode=host"`.