ED-HMI2120-070C

7.0-inch High Reliability Industrial Panel PC Based on Raspberry Pi CM4

◆ 7.0" TFT, resolution 1024x600, multi-point capacitive touch screen

◆ Broadcom BCM2711, quad core Arm Cortex-A72 (ARM v8) 64-bit SoC @ 1.5GHz

◆ Up to 8GB LPDDR4 RAM and 32GB eMMC storage

◆ Support Micro SD card and M.2 NVMe SSD storage expansion

◆ Dual Lans, 1 x Gigabit Ethernet and 1 x 100M Ethernet

◆ 4 x isolated RS232/485 with electrostatic and surge protection

◆ 2.4GHz and 5GHz dual-band Wi-Fi, Bluetooth and 4G LTE

◆ Wide voltage power input range of DC 9V~36V with reverse polarity protection, overvoltage protection and overcurrent protection

◆ Integrated supercapacitor (backup power supply, optional) , RTC, Watch Dog, EEPROM and crypto authentication

◆ Embedded installation, compatible with VESA standard bracket installation

Specifications

System	
CPU	Broadcom BCM2711, quad core Arm Cortex-A72 (ARM v8) 64-bit SoC @ 1.5GHz
VPU	H.265(HEVC), up to 4Kp60 decode H.264, up to 1080p60 decode, 1080p30 encode
GPU	OpenGL ES 3.1 & Vulkan 1.0
Memory	Options for 1GB, 2GB, 4GB, 8GB LPDDR4-3200 SDRAM
Storage	• Options for 8GB, 16GB, 32GB eMMC storage • Micro SD card (user storage expansion) • M.2 NVMe SSD (optional)

Software	
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

Front I/O

Camera	Built-in 8-megapixel front camera(optional)

Side I/O

Power	1 x DC IN, 2-Pin 3.5mm spacing phoenix terminals with screw holes. It supports 9V~36V input, the signal is defined as VIN+/GND.
Audio	1 x Audio In/Stereo Out, 3.5mm audio jack connector. It can be used as MIC IN and LINE OUT. • When a headphone is connected, the audio output switches to the headphone. • When no headphone is connected, the audio output switches to the speaker.
RS485	2 x RS485, 6-Pin 3.5mm spacing phoenix terminals with IO isolator, which are equipped with electrostatic and surge protection. The single signal is defined as IGND/A/B.
RS232	2 x RS232, 6-Pin 3.5mm spacing phoenix terminals with IO isolator, which are equipped with electrostatic and surge protection. The single signal is defined as IGND/TX/RX.
1000M Ethernet	1 x adaptive 10/100/1000M ethernet port, RJ45 connector. It can be used to access the network. PoE can be supported through expansion module.
100M Ethernet	1 x adaptive 10/100M ethernet port, RJ45 connector. It can be used to access the network.
SD Card Slot	1 x Micro SD card slot, which is used to install SD card for storing user data.
SIM Card Slot	1 x Nano SIM card slot, which is used to install SIM card for getting 4G signal.
Micro USB	1 x Micro USB port, which supports to flash to eMMC for the system.
HDMI	1 x HDMI port, type A connector. It is compatible with HDMI 2.1 and supports 4K 60Hz.
USB 2.0	2 x USB 2.0 ports, type A connector, supporting up to 480Mbps transmission rate.
Antenna	2 x SMA ports, using to connect 4G antenna and Wi-Fi/BT antenna.
Speaker	1 x PA output, built-in a 4Ω 3W speaker.

Buttons and Indicators

Reset	1 x Reset button, which can reset the device.
PWR	1 x red power indicator, which is used to check the status of device power-on and power-off.
4G	1 x green 4G indicator, which is used to check the status of 4G signal.
ACT	1 x green system indicator, which is used to check the working status of device.
USER	1 x green user indicator, user can customize a status according to actual application.
COM1~ COM4	4 x green UART indicators, which is used to check the communication status of UART port.

Expansion Performance

EEPROM	Supports 4K byte storage and improves the ease of use of device.
Crypto Authentication	It can be matched to realize the required upper layer application and improves the security of device.
RTC	RTC with CR1220 battery backup, which can ensure that the system clock is not affected by device power-off. **Note: A CR1220 battery is provided by default in China.**
Buzzer	A tip or an abnormity can be configured according to actual application, which realizes the alarm function.
Watch Dog	Realize the hardware Watch Dog based on the RTC alarm function to ensure the reliability of device.

Expansion I/O

12V 1A	3 x DC OUT, 2-Pin 2.0mm spacing WTB connector, supporting 12V 1A output. These pins are defined as GND/12V, reserving to provide power supply for extended LCD.
40-Pin GPIO	1 x GPIO Pin Header, 2x20-Pin 2.54mm spacing, using to lead out the GPIO ports of CM4. • These pins are defined as GPIO1~GPIO27/3V3/5V2/GND. • It is compatible with expansion modules, reserving to connect expansion accessories.
10-Pin GPIO	1 x GPIO Pin Header, 2x5-Pin 2.54mm spacing, using to lead out the expansion GPIO ports. User can customize the function according to actual application, these pins are defined as 8xGPIO/3V3/GND.
HDMI	1 x FPC HDMI, 40-Pin 0.5mm spacing FPC connector, which can be reserved to connect extended LCD, supporting USB/I2C touch screen and backlight adjustment.
USB	1 x USB 2.0, 5-Pin 1.5mm spacing WTB connector, supporting to expand the USB 2.0 port.
M.2 B	1 x M.2 B, M.2 B Key connector, supporting to connect SSD. It is compatible with M.2 2230 and M.2 2242.

LCD

LCD Size	7.0" TFT
Resolution	1024 x 600
Colors	16.7MB
Active Area	154.21mm(H) x 85.92mm(V)
Backlight	LED
MTBF	>30000h
Luminance	400cd/m^2
Contrast Ratio	800:1
Response Time	30ms
Viewing Angle (CR≥10)	85°(L)/85°(R)/85°(U)/85°(D)

Touch Screen

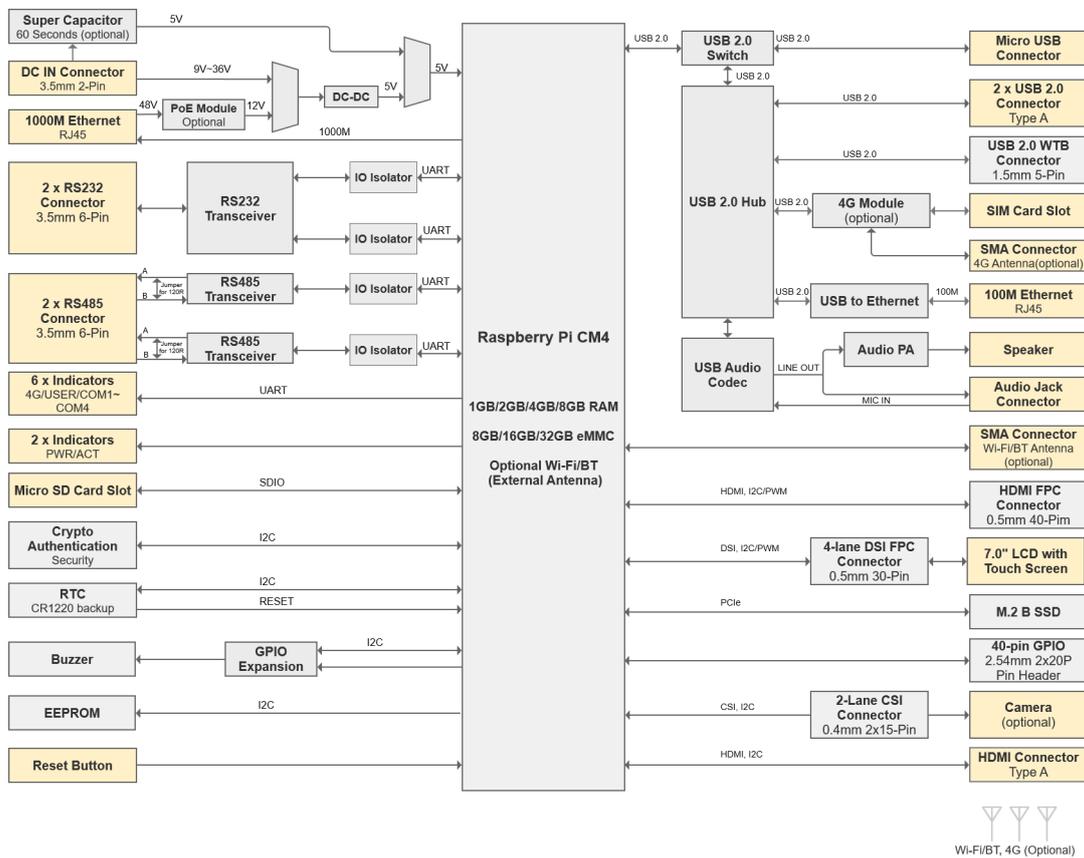|	
Type	Multi-point Capacitive Touch Screen
Transmittance	≥85%
Connection Method	COF
Controller Interface	I2C
Driver Support	Linux
Multi-touch	10 points
Surface Hardness	6H

Electrical Characteristics

Input Voltage	9V ~ 36V DC
Maximum Power Consumption	25W

Mechanical Characteristics

Dimensions	188mm x 123mm x 43.5mm (WxDxH, antenna is not included.)
Weight	1Kg
Installation	Embedded front installation

Wireless

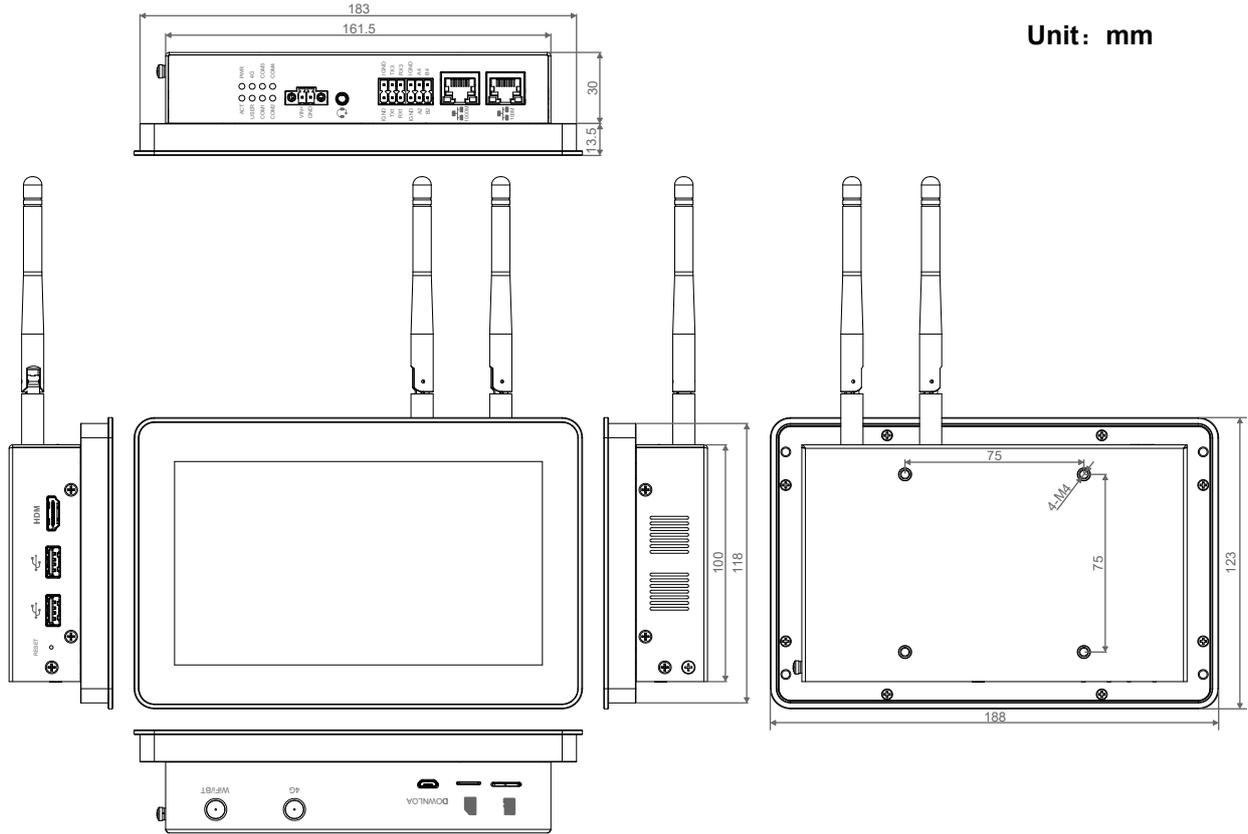| Wi-Fi/Bluetooth (optional)	2.4GHz & 5GHz dual-band Wi-Fi and Bluetooth with antenna. • 2.4GHz Wi-Fi: Compatible with IEEE 802.11 b/g/n • 5GHz Wi-Fi: Compatible with IEEE 802.11 a/n/ac • The Bluetooth supports 2402MHz ~ 2480MHz frequency

4G (optional)	Connect with various 4G LTE modules through the Mini PCIe interface, with antenna.
	• **EC20-CN Module (China/India)**
	  LTE FDD: B1/B3
	  LTE TDD: B38/B39/B40/B41
	  TDSCDMA: B34/B39
	  WCDMA: B1
	  CDMA 1x/EVDO: BC0
	  GSM: 900/1800MH
	• **EC25-AFX Module (North America)**
	  LTE-FDD: B2/B4/B5/B12/B13/B14/B66/B71
	  LTE-TDD
	  WCDMA: B2/B4/B5
	  GSM/EDGE
	• **EC25-AUX Module (Latin America/Australia/New Zealand)**
	  LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B28
	  LTE-TDD: B40
	  WCDMA: B1/B2/B4/B5/B8
	  GSM/EDGE: B2/B3/B5/B8
	• **EC25-EUX Module (Europe/Middle East/Africa/Thailand)**
	  LTE-FDD: B1/B3/B7/B8/B20/B28A
	  LTE-TDD: B38/B40/B41
	  WCDMA: B1/B8
	  GSM/EDGE: B3/B8

Environmental & Regulatory

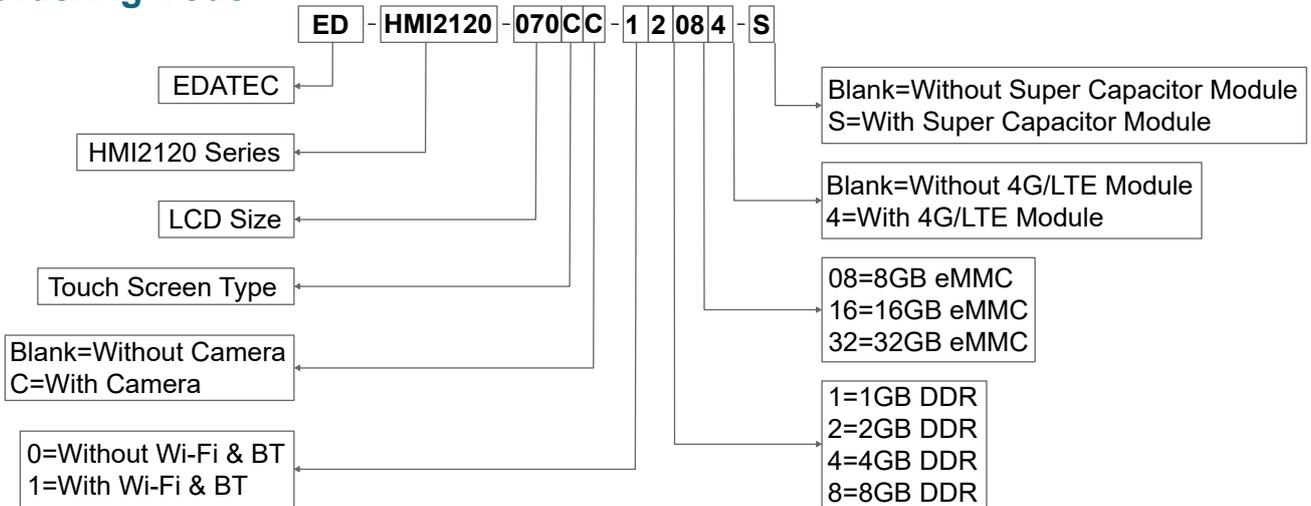| Operating Temperature	-20°C ~ 60°C
Storage Temperature	-25°C ~ 60°C
Ambient Humidity	5% ~ 95%(non-condensing)
Certifications	• **FCC** FCC 47 CFR Part 15 Subpart B • **CE** EN IEC 62368-1/EN IEC 62311/EN IEC 61000-3-2/EN IEC 61000-3-3 EN 55032/EN 55035 EN 301 489-1/EN 301 489-3/EN 301 489-17/EN 301 489-52 EN 301 328/EN 301 440/EN 301 511/EN 301 908-1/EN 301 908-2

System Diagram

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Dimensions

Unit：mm

Ordering Code

ED - HMI2120 - 070CC - 1 2 08 4 - S

EDATEC

HMI2120 Series

LCD Size

Touch Screen Type

Blank=Without Camera
C=With Camera

0=Without Wi-Fi & BT
1=With Wi-Fi & BT

Blank=Without Super Capacitor Module
S=With Super Capacitor Module

Blank=Without 4G/LTE Module
4=With 4G/LTE Module

08=8GB eMMC
16=16GB eMMC
32=32GB eMMC

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

Example

P/N: **ED-HMI2120-070CC-12084**
Configuration: 7.0-inch High Reliability Industrial Panel PC Based on Raspberry Pi CM4, with Wi-Fi & Bluetooth, 4G, 2GB DDR, 8GB eMMC, 2 x RS485, 2 x RS232 and Camera.

Packing List

- 1 x ED-HMI2120-070C Unit
- 4 x buckles (including 4xM4*8 screws and 4xM4*16 screws)
- [**Wi-Fi/BT Version - optional**] 1 x 2.4GHz/5GHz Wi-Fi/BT Antenna
- [**4G Version - optional**] 1 x 4G/LTE Antenna