



# ED-IPC3100

## Datasheet

by EDA Technology Co., Ltd

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# ED-IPC3100 Series

## Industrial Computer Based on Raspberry Pi CM5

- Broadcom BCM2712, quad core Cortex-A76 (ARM v8) 64-bit SoC @ 2GHz
- Up to 16GB LPDDR4 RAM and 64GB 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 & 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 super capacitor (backup power supply, optional), RTC, Watch Dog, EEPROM and crypto authentication
- Wide temperature range of -25°C~60°C for working environment
- High-quality metal case, compatible with DIN-rail installation



## Specifications

System	
CPU	Broadcom BCM2712, quad core Cortex-A78 (ARM v8) 64-bit SoC @ 2GHz
VPU	H.265 (HEVC), up to 4Kp60 decode
GPU	OpenGL ES 3.1 & Vulkan 1.2
Memory	Options for 2GB, 4GB, 8GB, 16GB LPDDR4-4267 SDRAM
Storage	Options for 16GB, 32GB, 64GB eMMC storage Micro SD card (user storage expansion) M.2 NVMe SSD (options for 128GB, 256GB, 512GB)

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	
Power	1 x DC IN, 2-Pin 3.5mm pitch phoenix terminals with screw holes. It supports 9V~36V input, the signal is defined as VIN+/GND.
Audio (optional)	1 x Audio In/Stereo Out, 3.5mm audio jack connector. It can be used as MIC IN and LNE OUT. • When a headphone is connected, the audio output switches to the headphone.

Front I/O	
	<ul style="list-style-type: none"> <li>When no headphone is connected, the audio output switches to the speaker.</li> </ul> Note: Only ED-IPC3120 contains this interface.
RS485/232	12-Pin 3.5mm pitch phoenix terminals with IO isolator, which are equipped with electrostatic and surge protection. Different numbers of RS232 and RS485 ports can be selected according to actual application. The signal of RS485 is defined as IGND/A/B, and the signal of RS232 is defined as IGND/TX/RX. <ul style="list-style-type: none"> <li>ED-IPC3110: 2 x RS485 + 2 x RS232</li> <li>ED-IPC3120: 2 x RS485 + 2 x RS232</li> <li>ED-IPC3130: 3 x RS485 + 1 x RS232</li> <li>ED-IPC3140: 4 x RS485, without RS232</li> </ul>
1000M Ethernet	1 x adaptive 10/100/1000M ethernet port, RJ45 connector. It can be used to access the network.
100M Ethernet	1 x adaptive 10/100M ethernet port, RJ45 connector. It can be used to access the network.

Rear I/O	
SD Card Slot	1 x Micro SD card slot, using to install SD card for storing user data.
SIM Card Slot	1 x Nano SIM card slot, using to install SIM card for getting 4G signal.
Micro USB	1 x Micro USB port, supporting to flash to eMMC for the system.

Side I/O	
HDMI	1 x HDMI port, type A connector. It is compatible with HDMI 2.1 standard and supports 4K 60Hz.
USB 2.0	2 x USB 2.0 ports, type A connector, supporting up to 480Mbps.
Antenna	2 x SMA ports (optional), using to connect 4G antenna and Wi-Fi/BT antenna.

Buttons and Indicators	
Reset	1 x Reset button, which can reset the device.
PWR	1 x red power indicator, using to check the status of device power-on and power-off.
4G	1 x green 4G indicator, using to check the status of 4G signal.
ACT	1 x green system indicator, using 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, using to check the communication status of UART port.

Expansion I/O	
12V 1A	3 x DC OUT, 2-Pin 2.0mm pitch connector, support 12V 1A output. These pins are defined as GND/12V, reserving to provide power supply for extended LCD.

Expansion I/O	
5V 1A	1 x DC OUT, 3-Pin 2.0mm pitch connector, support 5V 1A output. These pins are defined as GND/5V/GND, reserving to provide power supply for extended LCD.
40-Pin GPIO	1 x GPIO Pin Header, 2x20-Pin 2.54mm pitch, 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, and reserves to connect expansion accessories.
10-Pin GPIO	1 x GPIO Pin Header, 2x5-Pin 2.54mm pitch, 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.
CSI (optional)	1 x Pin Header, 2x15-Pin 0.4mm pitch connector, supporting 2-Lane CSI signal. It can be used to connect 800M CSI camera. Note: Only ED-IPC3120 contains this interface.
HDMI (optional)	1 x FPC HDMI, 40-Pin 0.5mm pitch FPC connector, which can be reserved to connect extended LCD, supporting USB/I2C touch screen and backlight adjustment. Note: Only ED-IPC3120 contains this interface.
DSI (optional)	1 x FPC DSI, 30-Pin 0.5mm pitch FPC connector, supporting 4-Lane DSI signal. It can be reserved to connect extended LCD, supporting USB/I2C touch screen and backlight adjustment. Note: Only ED-IPC3120 contains this interface.
USB	1 x USB 2.0, 5-Pin 1.5mm pitch 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 compatibles with M.2 B 2230 and M.2 B 2242 SSD.
Speaker (optional)	1 x PA output, 4-Pin 1.5mm pitch connector, dual channel stereo audio output. It can be extended to connect two 4Ω 3W stereo speakers, these pins are defined as R+/R-/L+/L-. Note: Only ED-IPC3120 contains this interface.

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 1F SuperCAP backup, which can ensure that the system clock is not affected by device power-off. We also provide a battery base, and you can buy a CR1220 battery backup for RTC.
Buzzer	A tip or an abnormality can be configured according to actual application, which realizes the alarm function.
Watch Dog*	This function has been reserved on hardware. But we need additional software to support it, which is under development.

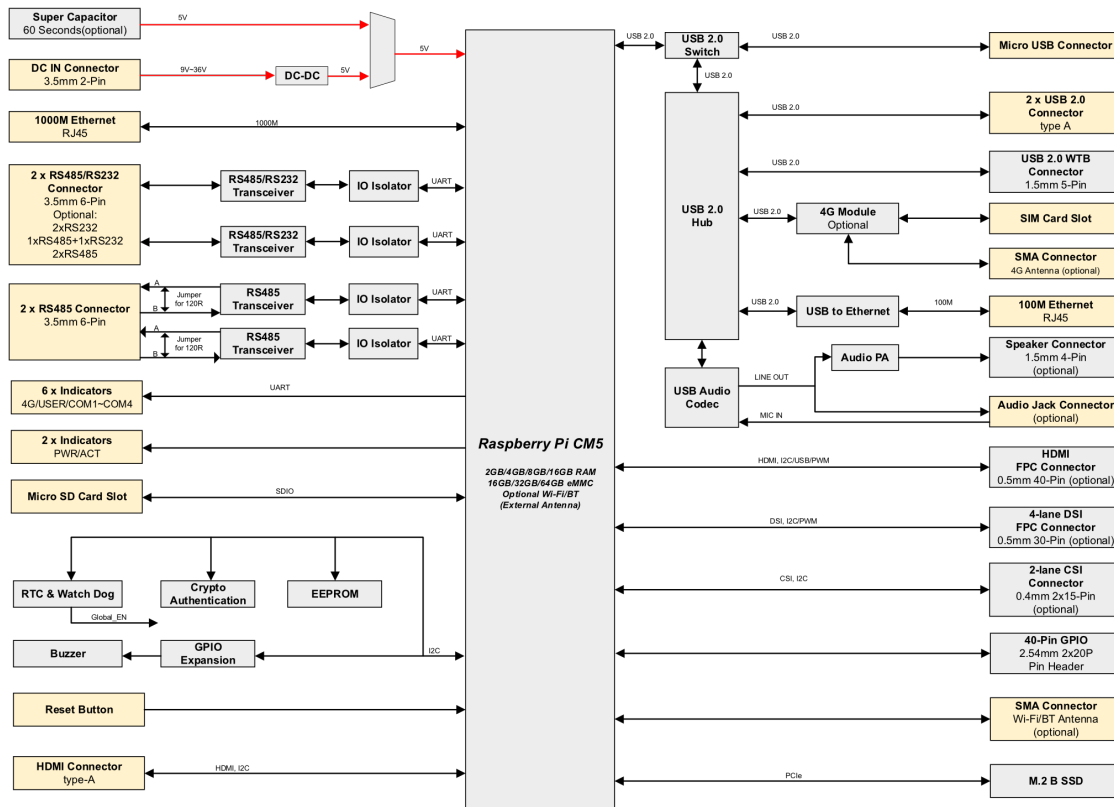
Electrical Characteristics	
Input Voltage	9V ~ 36V DC
Power Consumption	24W (Max)

Mechanical Characteristics	
Dimensions	143mm x 100mm x 35mm (WxDxH, DIN-rail bracket and antenna are not included.)
Weight	750g
Installation	DIN-rail installation

Wireless	
Wi-Fi/Bluetooth (optional)	<p>2.4GHz &amp; 5GHz dual-band Wi-Fi and Bluetooth with antenna.</p> <ul style="list-style-type: none"> <li>• 2.4GHz Wi-Fi: Compatible with IEEE 802.11 b/g/n</li> <li>• 5GHz Wi-Fi: Compatible with IEEE 802.11 a/n/ac</li> <li>• The Bluetooth supports 2402MHz ~ 2480MHz frequency</li> </ul>
4G (optional)	<p>Connect with various 4G LTE modules through the Mini PCIe interface, with antenna.</p> <ul style="list-style-type: none"> <li>• EC20-CE Module (China/India) <ul style="list-style-type: none"> <li>◦ LTE FDD: B1/B3</li> <li>◦ LTE TDD: B38/B39/B40/B41</li> <li>◦ TDSCDMA: B34/B39</li> <li>◦ WCDMA: B1</li> <li>◦ CDMA 1x/EVDO: BC0</li> <li>◦ GSM: 900/1800MHz</li> <li>◦ GPS/GLONASS/BDS/Galileo/QZSS (optional)</li> </ul> </li> <li>• EC25-AFX Module (North America) <ul style="list-style-type: none"> <li>◦ LTE FDD: B2/B4/B5/B12/B13/B14/B66/B71</li> <li>◦ LTE TDD</li> <li>◦ WCDMA: B2/B4/B5</li> <li>◦ GSM/EDGE</li> <li>◦ GPS/GLONASS/BDS/Galileo/QZSS</li> </ul> </li> <li>• EC25-AUX Module (Latin America/Australia/New Zealand) <ul style="list-style-type: none"> <li>◦ LTE FDD: B1/B2/B3/B4/B5/B7/B8/B28</li> <li>◦ LTE TDD: B40</li> <li>◦ WCDMA: B1/B2/B4/B5/B8</li> <li>◦ GSM/EDGE: B2/B3/B5/B8</li> <li>◦ GPS/GLONASS/BDS/Galileo/QZSS</li> </ul> </li> <li>• EC25-EUX Module (Europe/Middle East/Africa/Thailand) <ul style="list-style-type: none"> <li>◦ LTE FDD: B1/B3/B7/B8/B20/B28A</li> <li>◦ LTE TDD: B38/B40/B41</li> <li>◦ WCDMA: B1/B8</li> <li>◦ GSM/EDGE: B3/B8</li> <li>◦ GPS/GLONASS/BDS/Galileo/QZSS</li> </ul> </li> <li>• EC25-EM Module (Europe/Middle East/Africa/South-East Asia) <ul style="list-style-type: none"> <li>◦ LTE FDD: B1/B3/B7/B8/B20/B28</li> <li>◦ LTE TDD: B38/B40/B41</li> </ul> </li> </ul>

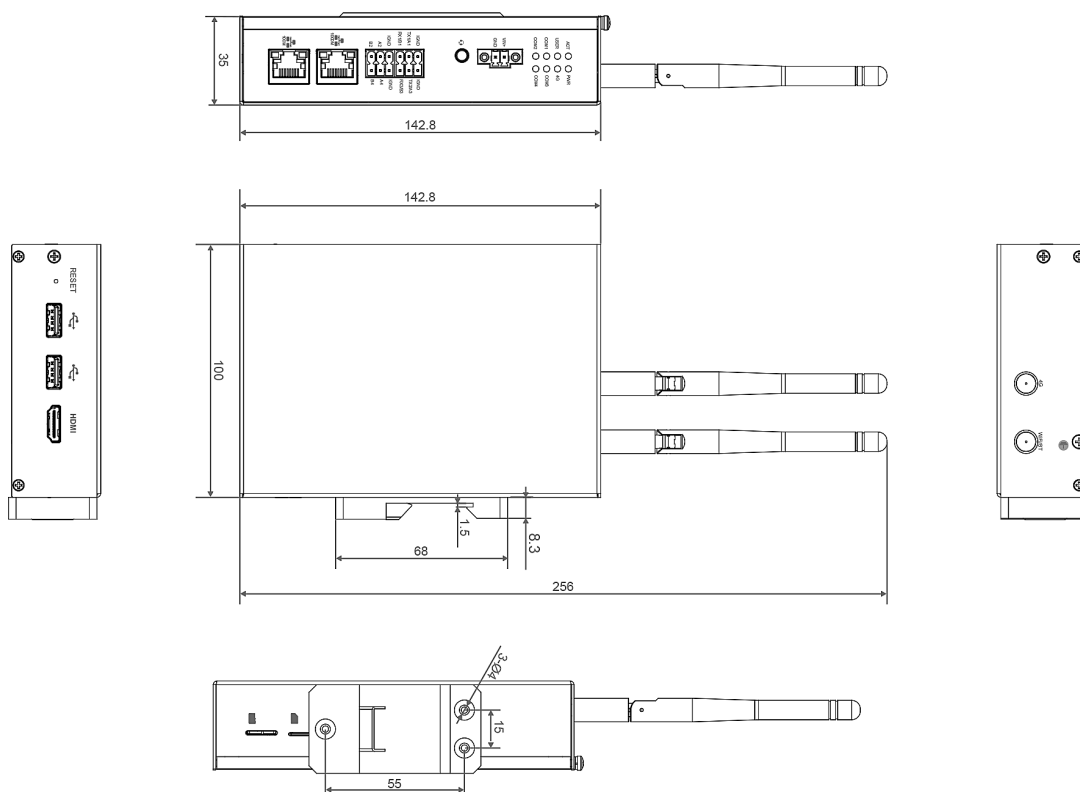
Wireless	
	<ul style="list-style-type: none"> <li>◦ WCDMA: B1/B5/B8</li> <li>◦ GSM/EDGE: B3/B8</li> <li>◦ GPS/GLONASS/BDS/Galileo/QZSS</li> </ul>
Environmental & Regulatory	
Operating Temperature	-25°C ~ 60°C
Storage Temperature	-25°C ~ 60°C
Ambient humidity	5% ~ 95% (non-condensing)
Certifications	FCC 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

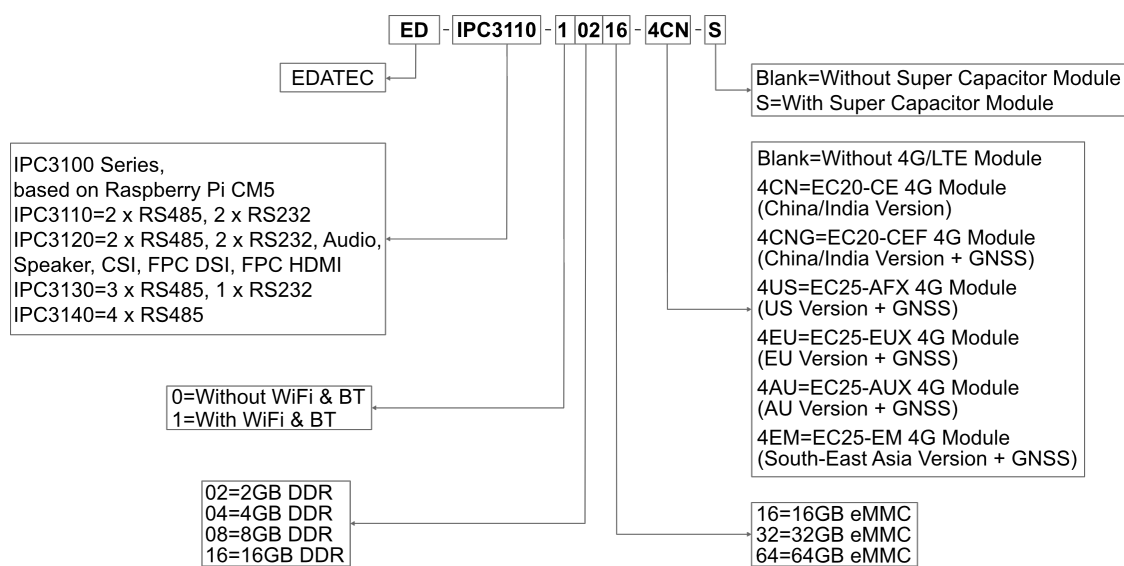


## Dimensions

Unit: mm



## Ordering Code



**Example**  
 P/N: **ED-IPC3110-10216-4CN-S**  
 Configuration: Industrial Computer Based on Raspberry Pi CM5, with Wi-Fi & Bluetooth,  
 4G (EC20-CE Module), 2GB DDR, 16GB eMMC, 2 x RS485, 2 x RS232 and Super Capacitor Module.

## Optional Accessory

You can choose a power adapter according to actual needs.

Model	Description	Picture
ED-PSU1202-UK-3.5PL		

Model	Description	Picture
	100~240VAC to 12VDC/2A Adapter, with UK AC plug, 3.5mm pitch phoenix plug with lock	
ED-PSU1202-US-3.5PL	100~240VAC to 12VDC/2A Adapter, with US AC plug, 3.5mm pitch phoenix plug with lock	
ED-PSU1202-AU-3.5PL	100~240VAC to 12VDC/2A Adapter, with AU AC plug, 3.5mm pitch phoenix plug with lock	
ED-PSU1202-EU-3.5PL	100~240VAC to 12VDC/2A Adapter, with EU AC plug, 3.5mm pitch phoenix plug with lock	
NOTE: Each model contains only one of the UK, US, AU and EU plugs.		

## Packing List

- 1 x ED-IPC3100 Unit
- [Wi-Fi/BT Version - optional] 1 x 2.4GHz/5GHz Wi-Fi/BT Antenna
- [4G Version - optional] 1 x 4G/LTE Antenna