



ED-HMI3320-156C

Datasheet

by EDA Technology Co., Ltd

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ED-HMI3320-156C

15.6-inch Industrial HMI Based on Raspberry Pi CM5

- 15.6" TFT, resolution 1920x1080, multi-point capacitive touch screen
- 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 mSATA SSD storage expansion
- Support HDMI+LVDS touchscreen dual displays, HDMI supports up to 4Kp60
- 1 x Gigabit LAN (dual LANs are optional)
- 2 x USB 3.0, 2 x USB 2.0 (optional), up to 3 x RS232 and up to 2 x RS485
- 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 RTC, EEPROM and crypto authentication
- Support VESA 75x75 wall mounting and optional desktop mounting base



Specifications

System	
CPU	Broadcom BCM2712, quad core Cortex-A76 (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) mSATA 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

Side I/O	
Power	1 x DC IN, DC Jack connector, with reverse polarity protection, overvoltage protection and overcurrent protection. It supports 9V~36V input.

Side I/O	
HDMI	1 x HDMI port, type A connector, which is compatible with HDMI 2.1 standard and supports 4K 60Hz.
RS232	1 x RS232 port, DB9 male connector, using the 2, 3 and 5 pins, the corresponding signal is defined as RX/TX/GND.
RS485 ^{*1} /232	<p>3 x RS485/232 port, DB9 male connector, different numbers of RS232 and RS485 ports can be selected according to actual application.</p> <p>We use the 1 and 2 pins for RS485 signal, the corresponding signal is defined as A/B.</p> <p>We use the 2, 3 and 5 pins for RS232 signal, the corresponding signal is defined as RX/TX/GND.</p> <ul style="list-style-type: none"> • Number of RS485 ports: 0~2 • Number of RS232 ports: 1~3
USB 3.0	2 x USB 3.0 ports, type A connector, supporting up to 5Gbps USB 3.0 transmission rate.
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 optional expansion module. The maximum power of PoE is 60W and it is compatible with IEEE 802.3bt standard.
USB 2.0/1000M Ethernet	<p>Choose one between 2 x USB 2.0 ports and 1 x 1000M Ethernet port.</p> <ul style="list-style-type: none"> • 2 x USB 2.0 ports, type A connector, which support up to 480Mbps transmission rate. • 1 x adaptive 10/100/1000M ethernet port, RJ45 connector. It can be used to access the network. <p>Different ports can be selected according to actual application.</p> <ul style="list-style-type: none"> • ED-HMI3320 : 2 x USB2.0 • ED-HMI3321: 1 x 1000M Ethernet
MIC IN	1 x MIC Input, 3.5mm audio jack connector (red), which can connect to microphone.
LINE OUT	1 x Audio Output, 3.5mm audio jack connector (green), stereo audio output.
Antenna (optional)	2 x SMA ports, using to connect 4G antenna and Wi-Fi/BT antennas.

Buttons and Indicators	
Power Switch	<p>1 x Power button, including short press and long press operations.</p> <ul style="list-style-type: none"> • When it is not powered on: <ul style="list-style-type: none"> ◦ Short press: Start up the device ◦ Long press: Enter flashing to eMMC mode • After it is powered on: <ul style="list-style-type: none"> ◦ Short press: Null ◦ Long press: Shut down the device forcibly

Internal I/O	
Speaker	1 x PA output, built-in a 4Ω 3W stereo speaker.
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.
mSATA ^{*2}	1 x mSATA port, Mini PCIe connector, which is used to connect mSATA SSD.

Expansion Performance	
Auto-boot	It supports automatic power-on function by default.
EEPROM	It 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	Ensure that the system clock is not affected by device power-off. Note: A CR2032 battery is provided by default in China.
Buzzer	A tip or an abnormality can be configured according to actual application, which realizes the alarm function.

LCD	
LCD Size	15.6" TFT
Resolution	1920 x 1080
Screen Ratio	16:9
Colors	16.7MB
Active Area	344.16mm(H) x 193.59mm(V)
Backlight	E-LED
MTBF	50000h
Pixel Pitch	0.05975mm x 0.17925mm
Contrast Ratio	3000:1
Response Time	5ms
Viewing Angle (CR≥10)	89°(L)/89°(R)/89°(U)/89°(D)
Input Type	LVDS

Touch Screen	
Type	Multi-point Capacitive Touch Screen
Multi-touch	10 points
Transmittance	85%±5%
CommunicationInterface	USB
Touches	More than 50 million times
Resolution	4096 x 4096
SurfaceHardness	Not less than 6H

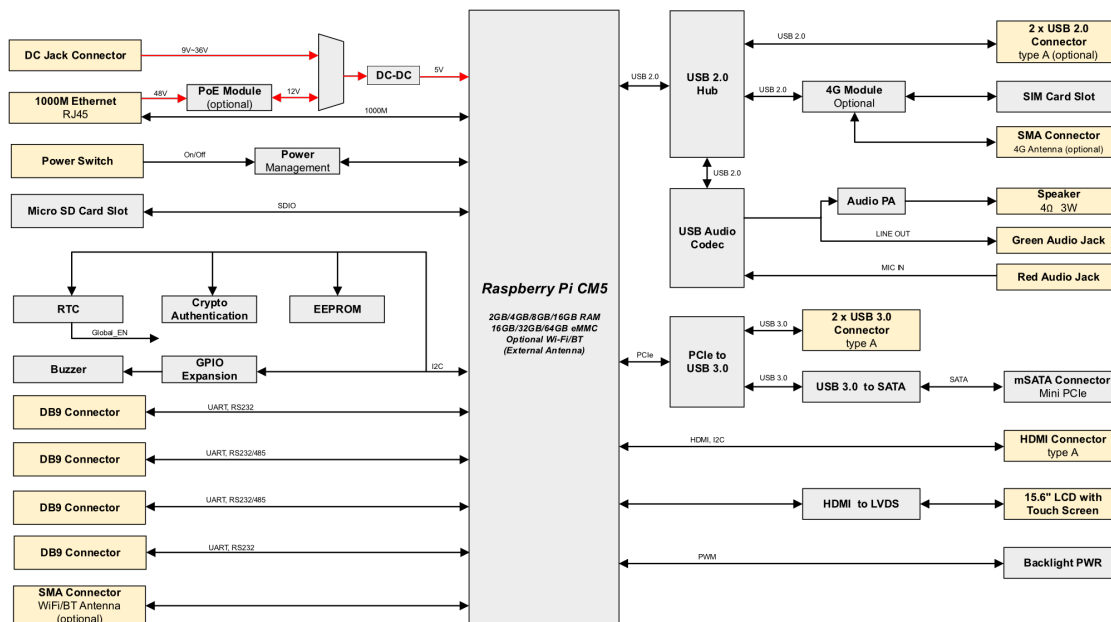
Electrical Characteristics	
Input Voltage	9V ~ 36V DC
Power Consumption	60W (Max)

Mechanical Characteristics	
Dimensions	417mm x 266.8mm x 56.3mm (WxDxH, mounting base and antenna are not included.)
Weight	4.05Kg
Installation	Wall mounting and desktop mounting

Wireless	
Wi-Fi/Bluetooth (optional)	<p>2.4GHz & 5GHz dual-band Wi-Fi and Bluetooth with antenna.</p> <ul style="list-style-type: none"> • 2.4GHz Wi-Fi: Compatible with IEEE 802.11 b/g/n. • 5GHz Wi-Fi: Compatible with IEEE 802.11 a/n/ac. • Bluetooth 5.0, compatible with 2402MHz ~ 2480MHz frequency.
4G (optional)	<p>Connect with various 4G LTE modules through the Mini PCIe interface, with antenna.</p> <ul style="list-style-type: none"> • EC20-CE Module (China/India) <ul style="list-style-type: none"> ◦ LTE FDD: B1/B3 ◦ LTE TDD: B38/B39/B40/B41 ◦ TDSCDMA: B34/B39 ◦ WCDMA: B1 ◦ CDMA 1x/EVDO: BC0 ◦ GSM: 900/1800MH ◦ GPS/GLONASS/BDS/Galileo/QZSS (optional) • EC25-AFX Module (North America) <ul style="list-style-type: none"> ◦ LTE FDD: B2/B4/B5/B12/B13/B14/B66/B71 ◦ LTE TDD ◦ WCDMA: B2/B4/B5 ◦ GSM/EDGE ◦ GPS/GLONASS/BDS/Galileo/QZSS • EC25-AUX Module (Latin America/Australia/New Zealand) <ul style="list-style-type: none"> ◦ 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 ◦ GPS/GLONASS/BDS/Galileo/QZSS • EC25-EUX Module (Europe/Middle East/Africa/Thailand) <ul style="list-style-type: none"> ◦ LTE FDD: B1/B3/B7/B8/B20/B28A ◦ LTE TDD: B38/B40/B41 ◦ WCDMA: B1/B8 ◦ GSM/EDGE: B3/B8 ◦ GPS/GLONASS/BDS/Galileo/QZSS • EC25-EM Module (Europe/Middle East/Africa/South-East Asia) <ul style="list-style-type: none"> ◦ LTE FDD: B1/B3/B7/B8/B20/B28 ◦ LTE TDD: B38/B40/B41

Wireless	
	<ul style="list-style-type: none"> ◦ WCDMA: B1/B5/B8 ◦ GSM/EDGE: B3/B8 ◦ GPS/GLONASS/BDS/Galileo/QZSS
Environmental & Regulatory	
Operating Temperature	0°C ~ 50°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

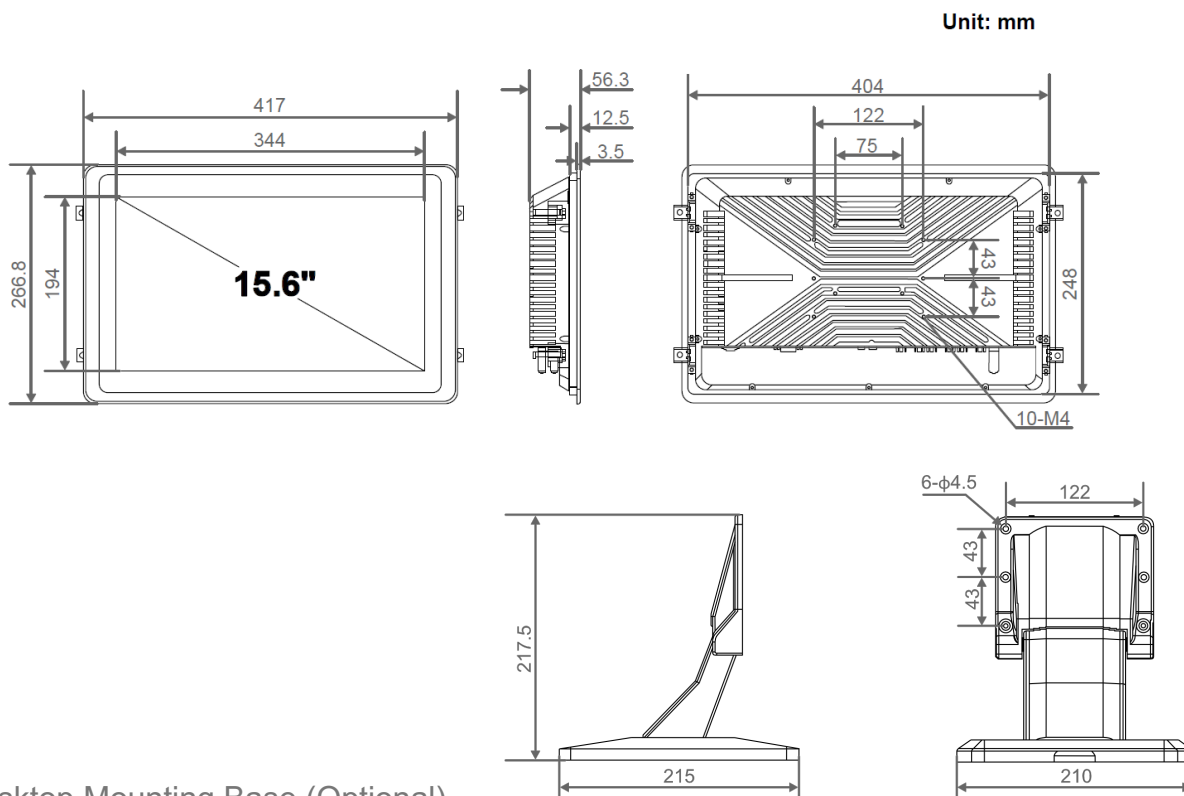


Known Issues

- *1. The RS485 function is not available at present. If you need to use RS485, we can manually modify it for you.
- *2. The read rate of some mSATA SSDs is slow.

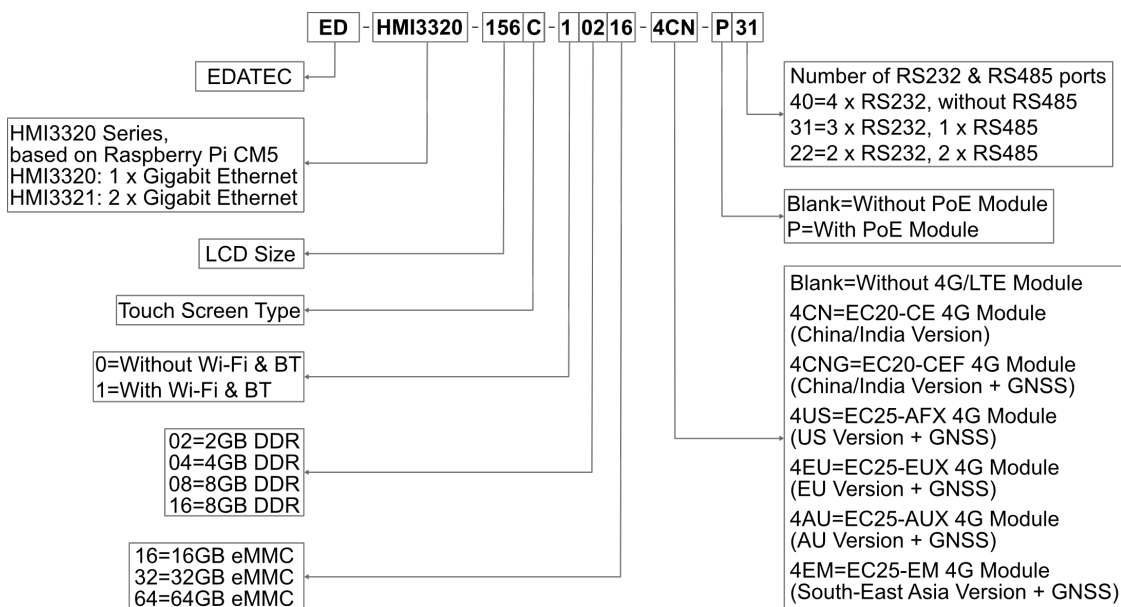
Dimensions

Unit: mm



Desktop Mounting Base (Optional)

Ordering Code



Example

P/N: ED-HMI3320-156C-10216-4CN-P31

Configuration: 15.6-inch Industrial HMI Based on Raspberry Pi CM5, with Wi-Fi & Bluetooth, 4G (EC20-CE Module), 2GB DDR, 16GB eMMC, 1 x Gigabit Ethernet, PoE Module, 3 x RS232 and 1 x RS485.

Packing List

- 1 x ED-HMI3320-156C Unit
- [Optional] 1 x ED-ACC-DMB2320 (Desktop Mounting Base, including 6xM4 screws)
- [Wi-Fi/BT Version - Optional] 1 x 2.4GHz/5GHz Wi-Fi/BT Antenna
- [4G Version - Optional] 1 x 4G/LTE Antenna