# ED-HMI3120-156C

## Datasheet

by EDA Technology Co., Ltd

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# ED-HMI3120-156C

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 @ 2.4GHz
- 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 12V~24V with TVS transient voltage protection and reverse polarity protection
- Integrated supercapacitor (backup power supply, optional), RTC, EEPROM and crypto authentication
- Embedded installation, compatible with VESA 75x75 standard bracket installation

## Specifications

| System | |
|---|---|
| CPU | Broadcom BCM2712, quad core Cortex-A76 (ARM v8) 64-bit SoC @ 2.4GHz |
| 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<br>1 x Micro SD card slot (user storage expansion)<br>1 x M.2 B-Key interface (for 2230/2242 SSD storage expansion, optional 128GB/256GB/512GB supported) |

| Software | |
|---|---|
| Operating System | Raspberry Pi OS (Desktop) 64-bit<br>Raspberry Pi OS (Lite) 64-bit |

| Side I/O | |
|---|---|
| Power | 1 x DC IN, 2-Pin 3.5mm pitch phoenix terminals with screw holes. It supports 12V~24V input, the signal is defined as VIN+/GND. |

| Side I/O | |
|---|---|
| Audio | 1 x Audio In/Stereo Out, 3.5mm audio jack connector. It can be used as MIC IN and LNE OUT.<br>• When a headphone is connected, the audio output switches to the headphone.<br>• When no headphone is connected, the audio output switches to the speaker. |
| RS485 | 2 x RS485, 6-Pin 3.5mm pitch phoenix terminals with IO isolator, which are equipped with electrostatic and surge protection. The single signal of RS485 is defined as IGND/A/B. |
| RS232 | 2 x RS232, 6-Pin 3.5mm pitch phoenix terminals with IO isolator, which are equipped with electrostatic and surge protection. The single signal of RS232 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. |
| 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, using to install Micro SD card for storing user data. |
| SIM Card Slot | 1 x Nano SIM card slot, using to install Nano SIM card for getting 4G signal. |
| Micro USB | 1 x Micro USB port, supporting to flash to eMMC for the system. |
| HDMI | 1 x HDMI port, Type-A connector. It is compatible with HDMI 2.0 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. |
| Speaker | 1 x PA output, built-in a 4Ω 5W speaker. |

| 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. |

| LCD | |
|---|---|
| LCD Size | 15.6" TFT |
| Resolution | 1920 x 1080 |
| Color Number | 16.7M |
| Active Area | 344.16mm (H) x 193.59mm (V) |
| Backlight | LED |
| Luminance | 450cd/$m^2$ |

| LCD | |
|---|---|
| Contrast Ratio | 1500:1 |
| Response Time | 25ms |
| Viewing Angle (CR≥10) | 85° (L) / 85° (R) / 85° (U) / 85° (D) |

| Touch Screen | |
|---|---|
| Type | Capacitive Touch Screen |
| multi-touch | Up to 5 points |
| Communication Method | USB |
| Transmittance | ≥85% |
| Surface Hardness | ≥6H |

| Expansion Functions | |
|---|---|
| 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 abnormity can be configurated according to actual application, which realizes the alarm function. |

| Electrical Characteristics | |
|---|---|
| Input Voltage | 12V ~ 24V DC |
| Power Consumption | 35W (Max) |

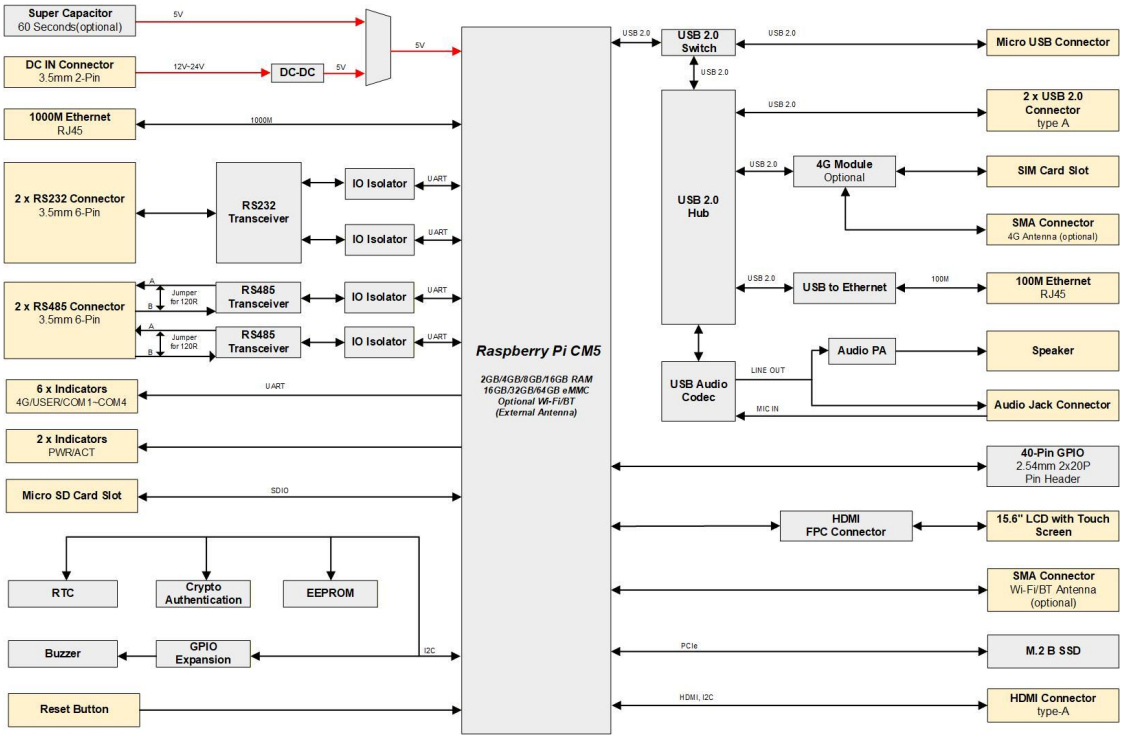
| Mechanical Characteristics | |
|---|---|
| Dimensions | 388.3mm x 238.3mm x 46.5mm (WxDxH, antenna are not included.) |
| Weight | About 2.4Kg |
| Installation | Embedded front installation and VESA 75×75 standard mounting |

| Wireless | |
|---|---|
| Wi-Fi/Bluetooth (optional) | 2.4GHz & 5GHz dual-band Wi-Fi and Bluetooth with antenna.<br>• 2.4GHz Wi-Fi: Compatible with IEEE 802.11 b/g/n<br>• 5GHz Wi-Fi: Compatible with IEEE 802.11 a/n/ac |

| Wireless | |
|---|---|
| | • The Bluetooth supports 2402MHz ~ 2480MHz frequency |
| 4G (optional) | Connect with various 4G LTE modules through the Mini PCIe interface, with antenna.<br>• EC20-CE Module (China/India)<br>◦ LTE FDD: B1/B3<br>◦ LTE TDD: B38/B39/B40/B41<br>◦ TDSCDMA: B34/B39<br>◦ WCDMA: B1<br>◦ CDMA 1x/EVDO: BC0<br>◦ GSM: 900/1800MHz<br>◦ GPS/GLONASS/BDS/Galileo/QZSS (optional)<br>• EC25-AFX Module (North America)<br>◦ LTE FDD: B2/B4/B5/B12/B13/B14/B66/B71<br>◦ LTE TDD<br>◦ WCDMA: B2/B4/B5<br>◦ GSM/EDGE<br>◦ GPS/GLONASS/BDS/Galileo/QZSS<br>• EC25-AUX Module (Latin America/Australia/New Zealand)<br>◦ LTE FDD: B1/B2/B3/B4/B5/B7/B8/B28<br>◦ LTE TDD: B40<br>◦ WCDMA: B1/B2/B4/B5/B8<br>◦ GSM/EDGE: B2/B3/B5/B8<br>◦ GPS/GLONASS/BDS/Galileo/QZSS<br>• EC25-EUX Module (Europe/Middle East/Africa/Thailand)<br>◦ LTE FDD: B1/B3/B7/B8/B20/B28A<br>◦ LTE TDD: B38/B40/B41<br>◦ WCDMA: B1/B8<br>◦ GSM/EDGE: B3/B8<br>◦ GPS/GLONASS/BDS/Galileo/QZSS<br>• EC25-EFA Module (Europe/Middle East/Africa/South-East Asia)<br>◦ LTE FDD: B1/B3/B7/B8/B20/B28<br>◦ LTE TDD: B38/B40/B41<br>◦ WCDMA: B1/B5/B8<br>◦ GSM/EDGE: B3/B8<br>◦ GPS/GLONASS/BDS/Galileo/QZSS |

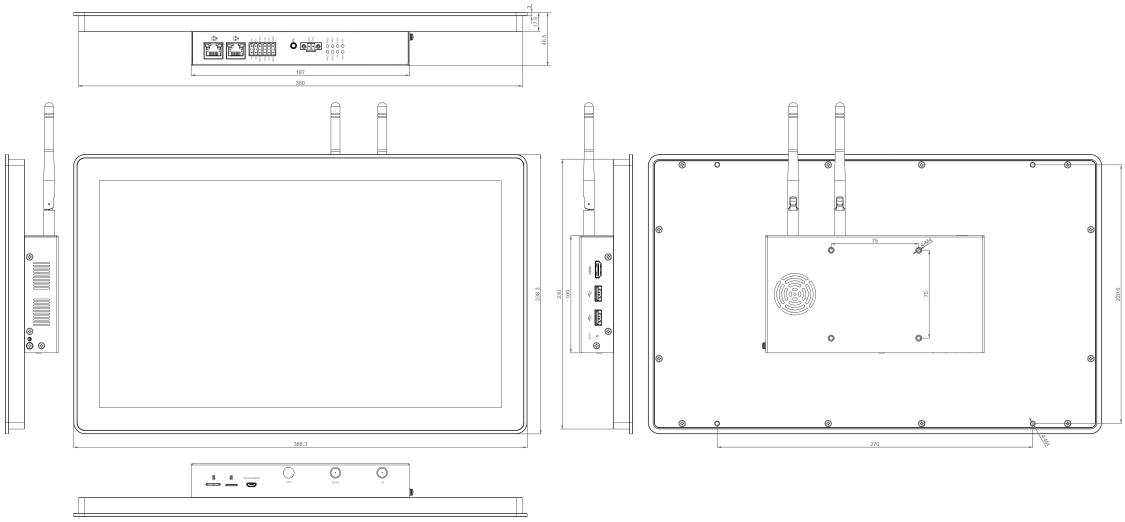
| Environmental & Regulatory | |
|---|---|
| Operating Temperature | -20°C ~ 50°C |
| Storage Temperature | -20°C ~ 60°C |
| Ambient humidity | 5% ~ 95% (non-condensing) |

# System Diagram

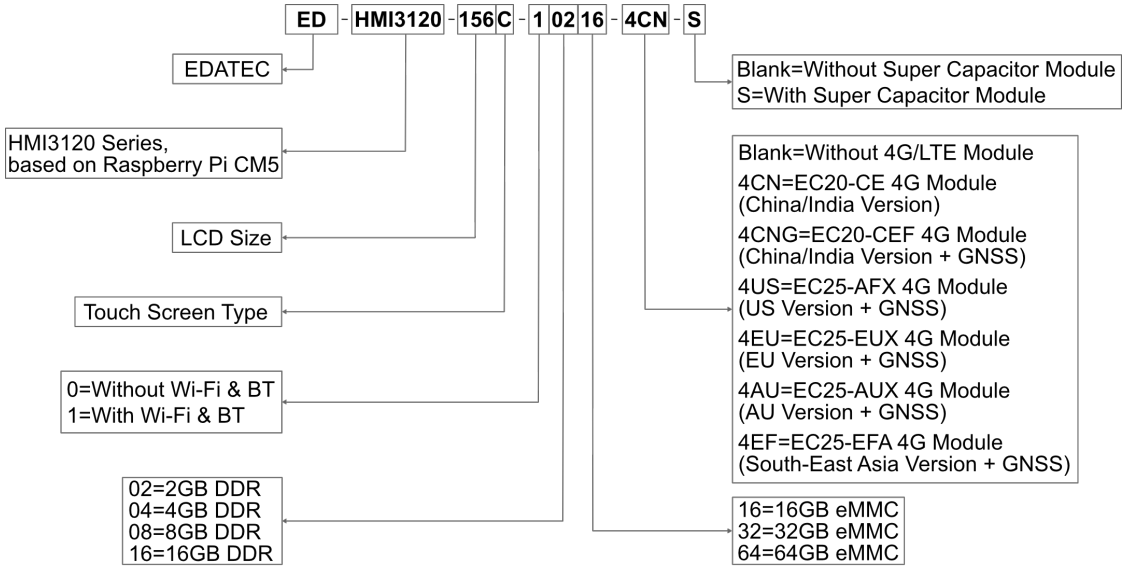



# Dimensions

## Unit: mm



# Ordering Code




**Example**

P/N: **ED-HMI3120-156C-10216-4CN-S**

Configuration: 15.6-inch Industrial HMI Based on Raspberry Pi CM5, with Wi-Fi & Bluetooth, 4G (EC20-CE Module), 2GB DDR, 16GB eMMC and Super Capacitor Module.

# Optional Accessory

You can choose a power adapter according to actual needs.

| Model | Description | Picture |
|---|---|---|
| ED-PSU1204-UK-3.5PL | 100~240VAC to 12VDC/4A Adapter, with UK AC plug, 3.5mm pitch phoenix plug with lock | |
| ED-PSU1204-US-3.5PL | 100~240VAC to 12VDC/4A Adapter, with US AC plug, 3.5mm pitch phoenix plug with lock | |
| ED-PSU1204-AU-3.5PL | 100~240VAC to 12VDC/4A Adapter, with AU AC plug, 3.5mm pitch phoenix plug with lock | |
| ED-PSU1204-EU-3.5PL | 100~240VAC to 12VDC/4A 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. | | |

VESA mounting brackets are available as optional accessories depending on your specific requirements.

| Model | Description | Picture |
| --- | --- | --- |
| ED-VESA-A | VESA wall mount bracket for ED-MONITOR and ED-HMI series | |
| ED-VESA-B | Swivel VESA wall mount bracket for ED-MONITOR and ED-HMI series | |
| ED-VESA-C | VESA desk mount stand for ED-MONITOR and ED-HMI series | |

## Package Contents

- 1 x ED-HMI3120-156C Unit
- 1 x Mounting Kit (including 4 x buckles, 4xM4*10 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
- 1 x 2-Pin Phoenix Terminal with lock
- 2 x 6-Pin Phoenix Terminals