

## Industrial PC

# AIO-CM4-156



PN: CS19108RA4156A

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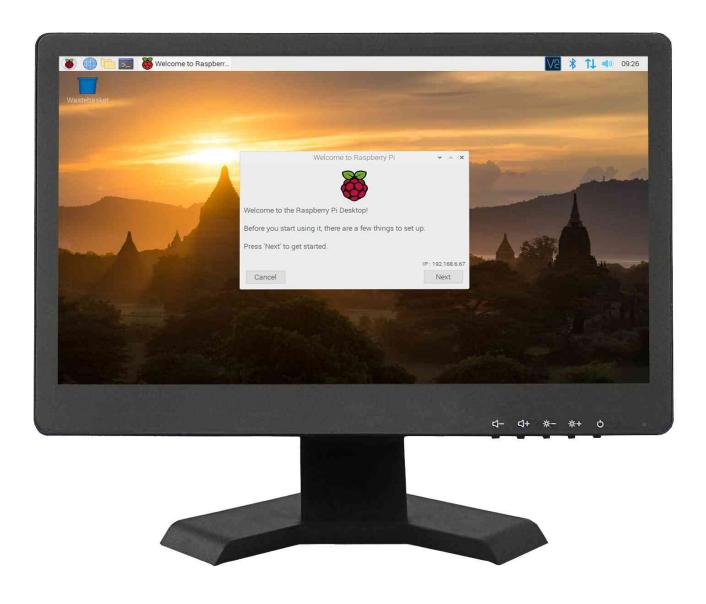
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## AIO-CM4-156

## Front View



## Rear View



## Side View



## Embedded PCB



AIO-CM4-156 Product Overview

### **Product Overview**

The AIO-CM4-156 industrial Pi PC (PN: CS19108RA4156A) is an all-in-one desktop computer based on Raspberry Pi<sup>®</sup> CM4. This single board computer features a 15.6" IPS display with a maximum brightness of 350 cd/m<sup>2</sup> Raspberry Pi Display.

The product is easy to use, perfect for developers and makers accustomed to the Raspberry Pi and is looking for a computer they can use daily. It is fully compatible with the Raspberry Pi 4 Linux distribution.

#### **Key Applications**

- Human Machine Interface HMI
- Process Control
- Process Monitoring
- HMI
- IIoT node
- Environmental Monitoring
- PLC
- Automotive applications
- ATM...

AIO-CM4-156 Ordering Options

## **Ordering Options**

Chipsee products can be customized during the ordering process. The product will be shipped with the pre-installed factory defaults if no extra requirements are specified. The table in the Hardware Features section provides information about the default options bundled with the product.



Note

You can order AIO-CM4-156 from the official Chipsee Store or from your nearest distributor.

### Pi® CM4 Module

The Pi<sup>®</sup> Compute Module 4 appears in different versions depending on the size of the DDR4 and eMMC.

The AIO-CM4-156 industrial Pi PC does not include the CM4 Raspberry Pi<sup>®</sup> module by default. If you would like to purchase it with a CM4, you can select it at the Chipsee store during the ordering process.

### **Operating System**

This product comes with a pre-installed Raspberry Pi OS or Ubuntu OS. Chipsee software engineers have created all the drivers, so every hardware feature is readily available for any standard development tool.

If your project requires a different OS, please **Contact us**, and we'll make a customized version that suits your needs.

AIO-CM4-156 **Optional Features** 

### **Optional Features**

The AIO-CM4-156 industrial Pi PC does not include the 4G/LTE modules by default. These modules are optional and can be selected at the Chipsee store during the ordering process.



#### Warning

Installation, repair, and maintenance tasks should be performed by trained personnel only. Chipsee does not bear any responsibility for damage caused by inadequate handling of the product. AIO-CM4-156 Hardware Features

### **Hardware Features**

The AIO-CM4-156 industrial Pi PC offers a board range of performance and connectivity options for scalable integration, providing expandability according to future needs. Some of the key features are listed in the table below.

AIO-CM4-156			
СРИ	Raspberry Pi <sup>®</sup> CM4, CM4 Lite; Quad Cortex-A72 at 1.5GHz		
Storage	1 x TF card slot for boot. Optional, Internal M.2 NVMe connector for SSD card		
RAM	2GB DDR1		
еММС	16GB		
Display	15.6" IPS LCD, 1920 x 1080 resolution px, brightness 350 cd/m <sup>2</sup>		
Touch	Optional, 10-point capacitive touch with 1.1mm Armored Glass		
USB	2 x USB 3.0 Host, 1 x Type-C USB (Slave)		
LAN	1 x Channel Giga LAN		
Audio	2W internal stereo speaker, 3.5mm audio Out connector		
Buzzer	Internal Buzzer		
RTC	Yes, High accuracy internal RTC (keep track of time one week after power off)		
RS232	N/A		
RS485	N/A		
Relay	N/A		
GPIO/Wiegand	40-pin GPIO connector		
WiFi/BT	WiFi/BT module comes with the CM4		
HAT Connector	Standard Raspberry Pi 40-way HAT connector		
Micro SD card socket	For use only with CM4 Lite modules		
Micro SD card socket ZIGBEE	For use only with CM4 Lite modules  N/A		
	,		
ZIGBEE	N/A		
ZIGBEE	N/A  HDMI 2.0 connectors, slave HDMI port for CM4		
ZIGBEE HDMI 4G/LTE	N/A  HDMI 2.0 connectors, slave HDMI port for CM4  N/A		
ZIGBEE HDMI 4G/LTE Power Input	N/A  HDMI 2.0 connectors, slave HDMI port for CM4  N/A  12V		
ZIGBEE  HDMI  4G/LTE  Power Input  Current at 12V	N/A  HDMI 2.0 connectors, slave HDMI port for CM4  N/A  12V  700mA Max		
ZIGBEE  HDMI  4G/LTE  Power Input  Current at 12V  Power Consumption	N/A  HDMI 2.0 connectors, slave HDMI port for CM4  N/A  12V  700mA Max  10W Typical		

AIO-CM4-156 Hardware Features

AIO-CM4-156		
Weight	1600g	
Plastic Case Color	Black	
Certification	CE, ROHS	

Table 435 Key Features

1 RAM can be 1/2/4/8GB based on CM4 Lite onboard.

AIO-CM4-156 Power Input

## **Power Input**

The AIO-CM4-156 industrial Pi PC can be powered by an input voltage: 12V DC. The total power consumption is typically about 8.4W. The power input connector is a 2.1mm I.D  $\times$  5.5mm O.D  $\times$  9.5mm DC connector. For a proper DC power adapter, refer to the figure below.

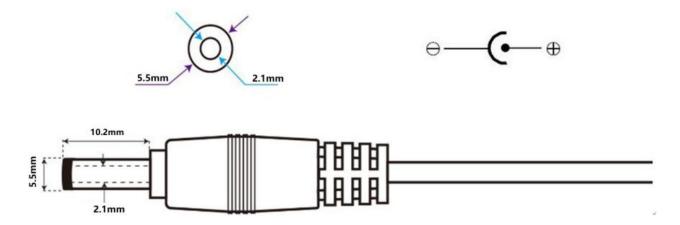


Figure 1005: Power Adapter

AIO-CM4-156 Buttons and Status LED

## **Buttons and Status LED**

#### **Status LED**

This product has a status LED on the front panel. The LED turns RED after power on and GREEN when the system is booted. It can be controlled by software to flash YELLOW when the CPU is working.



Figure 1006: Status LED

AIO-CM4-156 Buttons

#### **Buttons**

There are five (5) buttons on the front panel: Brightness +, Brightness -, Volume +, Volume -, and Power, as the figure below shows.



Figure 1007: Buttons

The AIO-CM4-156 industrial Pi PC supports two (2) boot modes, the auto-boot and manual boot modes. The default boot mode is the auto-boot mode. You can change the boot mode by using Software or by pushing **Volume +** and **Volume -** buttons at the same time before power on and releasing it 3 seconds after power on to toggle, as the table below shows.

Boot mode	Behaviors	Default Configuration	How to toggle
Auto	Auto boot after power on	$\checkmark$	Software control or Push Volume+
Manual	Boot after pushing the Power button and releasing it 3 seconds after power on		and Volume- buttons at the same time before power on, and release it 3 seconds after power on.

Table 436 Boot mode

- The AIO-CM4-156 industrial Pi PC boots from the internal eMMC by default. If you want it to boot from the Type-C connector, press and hold the Volume + button before power ON, and release it 3 seconds after power ON.
- You can use Brightness + / Brightness buttons to control the backlight of the LCD.
- You can also use Volume + / Volume buttons to control the System Volume.

For a detailed explanation of button functions, check the table below.

Buttons	Functions before the system boot	Functions after the system boot
Power	Push after power on and release after 3 seconds will boot the system	Push after the system booted and release after 3 seconds will close the system.
Brightness +	NULL	Increase the brightness of LCD

AIO-CM4-156 Buttons

Buttons	Functions before the system boot	Functions after the system boot
Brightness -	NULL	Reduce the brightness of LCD
Volume +	Push before power on and release it after 3 seconds, the system will boot from the Type-C port	Increase the volume of the system
Volume -	NULL	Reduce the volume of the system
Volume + and Volume -	Toggle the boot mode	NULL

Table 437 Boot mode

AIO-CM4-156 Connectivity

## Connectivity

There are many connectivity options available on the AIO-CM4-156 industrial Pi PC. It has 2 x USB 3.0 Host, 1 x Type-C USB (Slave), 1 x Channel Giga LAN (RJ45) Ethernet connector supporting up to 1 Gbps, and RS232+RS485+Relay connector.

### **USB HOST and Type C**

There are 2 x 3.0 **USB HOST connectors** and 1 x **Type-C Connector** onboard, as shown on the figures below.



Figure 1008: USB3.0 HOST and Type-C Connectors



- External USB peripherals like a USB disk or USB mouse or keyboard can connect to the USB3.0 HOST.
- You can download software to the Raspberry Pi CM4 eMMC using the Type-C.
- When you connect the Type-C to a device, it will disable the USB HOST.

AIO-CM4-156 LAN Connectors

#### **LAN Connectors**

**LAN (RJ45) connector** provides Ethernet connectivity over standardized Ethernet cables as shown the figure below. The integrated Ethernet interface supports up to 1 Gbps data throughput. These Giga LAN signals come from the CM4 module directly.



Figure 1009: RJ45 LAN Connectors



Use CAT5 or better cables to achieve full data throughput over maximum distance defined by the 1000BASE-T standard (100m).

AIO-CM4-156 TF Card Slot

#### **TF Card Slot**

The AIO-CM4-156 industrial Pi PC features 1 x **TF Card (micro SD) slot** that can only be used with CM4 Lite modules, as shown on the figure below.



Figure 1010: TF Card Slot



1. The product does not come shipped with the TF Card by default.

#### **Audio Out Connector**

The product features audio Out connector as shown on the figure below.



Figure 1011: Audio Out Connector

#### **HDMI**

The CM4 supports dual HDMI 2.0 connectors. The product uses the master HDMI for the LCD so, customers can use the slave HDMI port, as the figure below shows.



Figure 1012: HDMI Connector (slave)

#### Camera

The AIO-CM4-156 industrial Pi PC has a camera on the front panel but is not mounted by default.

### **40-Pin Expansion Connector**

The AIO-CM4-156 industrial Pi PC has a standard Raspberry Pi 40 way HAT connector, as the figure below shows. You also can check Pinout for more details.

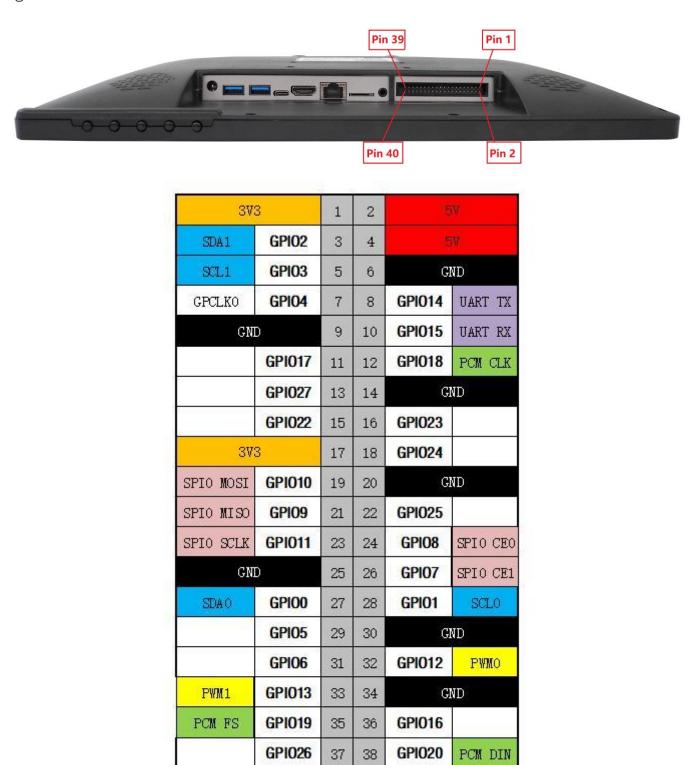


Figure 1013: 40-pin Expansion Connector

39

40

**GPI021** 

PCM DOUT

GND

### Raspberry Pi Hat adapter

The product also has an available I/O connector that is 100% compatible with any Raspberry Pi cape or extensions, making the AIO-CM4-156 a perfect fit with your existing tools.

The product also comes with an adapter with a standard Raspberry Pi HAT pin-out to add more flexibility to your project. It offers a convenient way to develop and test your hardware with all the connectors at hand. You can learn more about it in the product manual.



Figure 1014: Raspberry Pi Hat adapter

AIO-CM4-156 Mounting Procedure

## **Mounting Procedure**

You can mount AIO-CM4-156 with the Vesa (75 x 75mm) and Stand mounting methods, as shown in the figures below.



Figure 1015: VESA mounting

AIO-CM4-156 Mounting Procedure



Figure 1016: Stand mounting



#### Attention

Please make sure the display is not exposed to high pressure when mounting into an enclosure.

You can find detailed information about mounting in the Mount IPC Guide.

AIO-CM4-156 Mechanical Specifications

## **Mechanical Specifications**

The outer mechanical dimensions of AIO-CM4-156 are  $374 \times 238 \times 33$ mm (W x L x H). Please refer to the technical drawing in the figures below for details related to the specific product measurements.

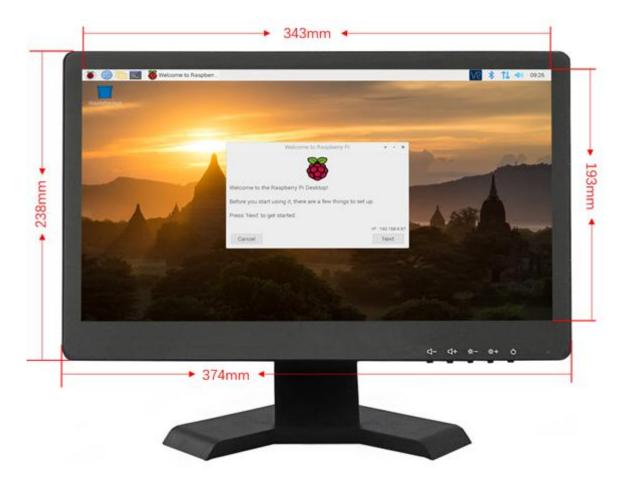


Figure 1017: Front Panel Dimension Technical Drawing



Figure 1018: Backside Dimension Technical Drawing



Figure 1019: Side Dimension Technical Drawing

AIO-CM4-156 3D Model

## **3D Model**

AIO-CM4-156 3D model can be viewed in the online doc in a web browser, **if you are reading from the PDF** version, please visit the online doc AIO-CM4-156, select hardware documentation, drag the navigation bar to the 3D Model section.

AIO-CM4-156 Disclaimer

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