Chipsee

Industrial PC

PPC-J1900-156-C

PN: PPC-J1900-156-C

Revision 1.1
www.chipsee.com

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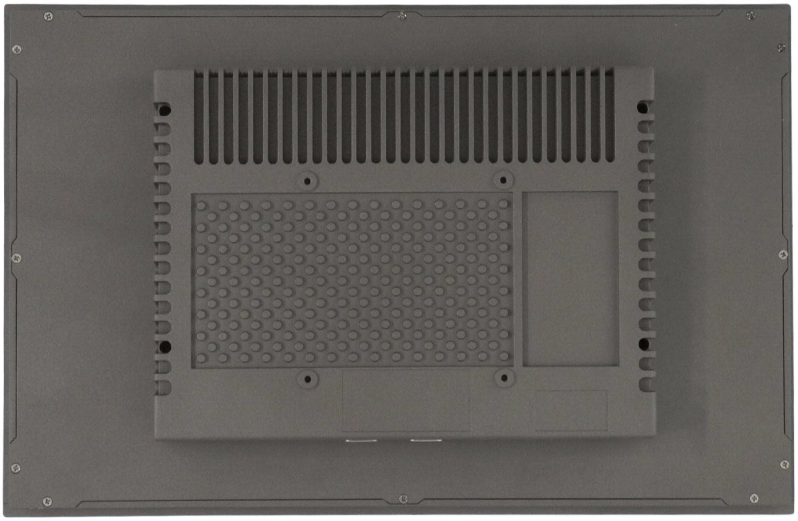
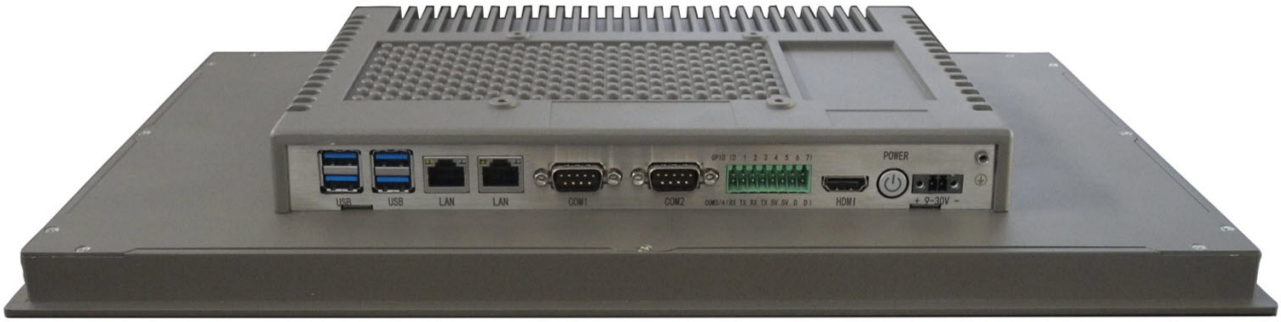
PPC-J1900-156-C

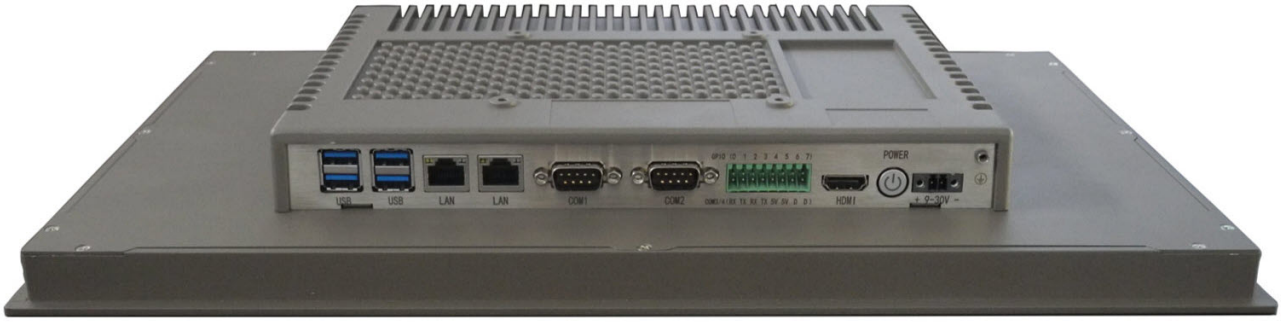
Front View



Rear View



Side View 1



Side View 2

Product Overview

The PPC-j1900 series PPC-J1900-156-C is a rugged, high-quality NEMA 4X/IP65-compliant industrial panel PC. It features a 15.6” multi-point capacitive touch screen with a resolution of 1920 x 1080 pixels.

Key Applications

- Human Machine Interface HMI
- Industrial Automation
- Process Control
- Smart Grid Management
- CNC Manufacturing
- Environmental Monitoring
- Machine Vision Inspection
- ATM, Kiosk, Infotainment...

The PPC-J1900-156-C Industrial Panel PC is powered by Intel® Celeron® J1900 quad-core CPU and equipped with a broad range of connectivity options, allowing it to meet highly demanding application requirements in harsh industrial or outdoor environments.

A specially designed magnesium-aluminum alloy housing with fins for increased heat dissipation serves as a passive cooler, eliminating the need for built-in fans. The fan-less design reduces noise, as well as the maintenance costs and efforts, increasing reliability at the same time.

> **Caution**
>
> Be careful when handling the product while it is operating: the back panel might become hot under heavy CPU load.

Ordering Options

Most of the 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 The PPC-J1900-156-C Industrial Panel PC from the official **Chipsee Store** or from your nearest distributor.

Operating System

By default, PPC-J1900-156-C comes with the Linux operating system (OS) pre-installed. A different OS can be selected during the ordering process. In addition to Linux, PPC-J1900-156-C also supports Windows 7 and Windows 10 OS.

Optional Features

The PPC-J1900-156-C Industrial Panel PC does not include WiFi/BT and/or 3G/4G modules by default. The Wi-Fi/BT module is optional and can be selected during the ordering process.

A 3G/4G LTE module is not available at the Chipsee store for this product. However, it can be obtained from specialized third-party suppliers.

> **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.

Hardware Features

The PPC-J1900-156-C Industrial Panel PC offers a broad 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.

PPC-J1900-156-C	
CPU	Intel® Celeron® J1900, 2GHz, Quad-Core, 2MB Cache, TDP=10W
GPU	Intel® HD integrated GPU, 512MB shared memory
RAM	Default 4GB, maximum supported 8GB, DDR3L 1333 SO-DIMM
Display	15.6” LCD, resolution 1920 x 1080 px, brightness 500 cd/m^2
Storage	Default mSATA 64GB SSD, supports up to 512GB
Touch	Multi-point capacitive touch screen
USB	1 x USB 3.0 HOST, 3 x USB 2.0 HOST ports (Type A)
LAN	2 x RJ45, GbE (Intel® I211), Wake on LAN (WoL) support
UART	Default 4 x RS232 (2 x RS485 optional)
GPIO	8 x General Purpose I/O (GPIO) channels
3G/4G	Optional, module available from other manufacturers/stores
WiFi/BT	Optional, module available from the Chipsee store
HDMI	1 x HDMI out
SATA	1 x mSATA SSD electronic disk supports; 1x SATA 2.5” HDD
Power IN	From 9V to 30V DC
Power Consumption	22W
OS	Default Linux, Windows 7, Windows 10
Operating Temp.	From -20°C to +60°C
Dimensions	422 × 271 × 52.5mm
Mounting	VESA 100, Panel mounting with fixtures
Weight	4200g

Table 203 Table 1: Key Features

Power Input

The PPC-J1900-156-C Industrial Panel PC can be powered by a wide range of input voltages: from 9V to 30V DC. The power input connector is a 2-pin, 3.81mm screw terminal *(Figure 1)*. The polarity of the power connector is clearly labeled on the housing itself: the ‘**+**’ sign is the positive, while the ‘**-**’ sign is the negative power supply input.

The **POWER** button is located next to the power input connector and can be used to switch the power ON or OFF.

The power input section of PPC-J1900-156-C features a range of protection features, including over-current, over-voltage, power surge, and reverse polarity protection, allowing it to meet stringent industrial safety regulations.

Figure 828: *Figure 1: Power Input Section*

> **Note**
>
> If the product is used to control some key processes, it is highly recommended to use an Uninterruptible Power Supply (UPS) to prevent critical data loss.

Touch Screen

PPC-J1900-156-C is equipped with a multi-point capacitive touch screen. Its multitouch detection capability enables implementation of some advanced GUI operations, such as two-finger zoom or rotation.

The capacitive touch screen can be operated by fingers, gloves with a special coating, or a conductive stylus.

Size/Type: 15.6” multi-point capacitive touch screen
Touch screen structure: G+F+F
Surface Strength: 7H
Surface Hardness: 50G steel ball 70cm impact drop 3 times not broken
Service Life (MTBF): 50 million touch events
Light Transmittance: > 92%

Connectivity

There are many connectivity options available on the PPC-J1900-156-C industrial PC. It has 4 x USB Type A connectors configured as HOSTS, 1 x HDMI port, 2 x RJ45 connectors supporting Gigabit Ethernet (GbE), and up to 4 x RS232 connectors, of which two can be configured in the RS485 mode. There are also 8 x GPIO channels for various user-defined purposes.

RS232/485/GPIO Connectors

The PPC-J1900-156-C Industrial Panel PC has 2 x 9-pin D-sub connectors and 1 x 16-pin 3.81mm connector with pluggable terminal block *(Figure 2)*. Two 9-pin D-sub connectors labeled as **COM1** and **COM2** can be configured either as RS232 or RS485 communication interfaces.

The bottom row of terminals on the terminal block is labeled as **COM3/4**. These terminals are configured as two additional RS232 interfaces by default. The upper row of terminals on the terminal block represents eight **GPIO** channels, labeled as **GPIO (0 ... 7)**.

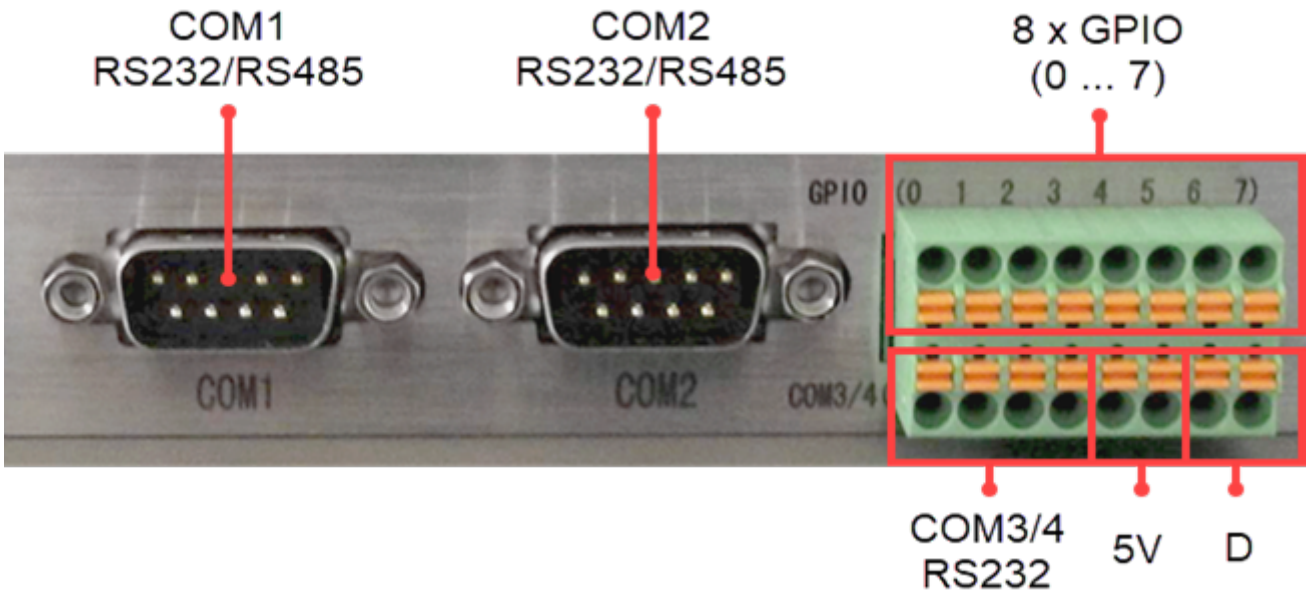


Figure 829: *Figure 2: Connectivity Section - 2 x D-sub Connectors & 16-pin Double-Row Pluggable Terminal Block*

Note

The default configuration of the PPC-J1900-156-C industrial PC is 4 x RS232 interfaces and 8 x GPIO channels. If you need different configuration, please contact Chipsee Technical Support at **support@chipsee.com**

USB HOST Connectors

PPC-J1900-156-C is equipped with 3 x USB 2.0 connectors and 1 x USB 3.0 HOST connector. The **USB** connectors are configured as shown in *Figure 3*. The data throughput of the USB 3.0 interface can reach up to 4.8 Gbps, while the USB 2.0 interfaces are limited to 480 Mbps.

Although fully compatible with USB 2.0 devices, the USB 3.0 interface provides 10 times more data transfer bandwidth than USB 2.0, making it best suited for fast peripherals that can utilize its full potential.

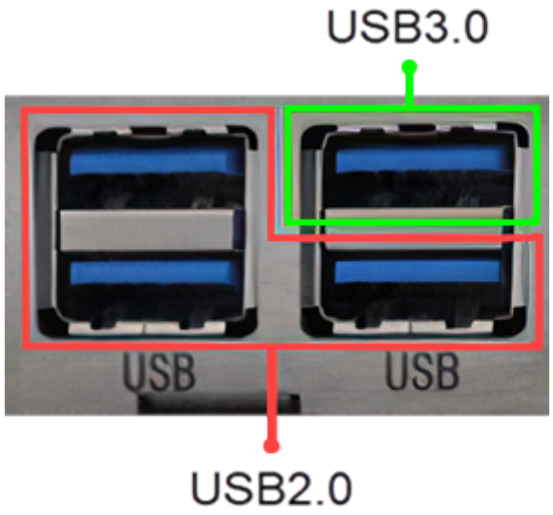


Figure 830: *Figure 3: USB HOST Connectors*

LAN Connectors

2 x **LAN (RJ45) connectors** *(Figure 4)* provide Ethernet connectivity over standardized Ethernet cables. The integrated two-port Ethernet interface supports 10/100/1000BASE-T/TX specifications with automatic speed negotiation and Wake on LAN (WoL) functionality. Power over Ethernet (PoE) is not supported.

Figure 831: *Figure 4: 2 x RJ45 GbE LAN Connectors*

Note

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

HDMI Connector

The PPC-J1900-156-C Industrial Panel PC is equipped with 1 x **HDMI** connector. The HDMI connector *(Figure 5)* allows connecting an additional (external) monitor. HDMI output resolution can be configured by the software.

Figure 832: *Figure 5: HDMI Connector*

Mounting Procedure

The PPC-J1900-156-C Industrial Panel PC supports VESA 100 x 100 mounting pattern with 4 x M4 screws, enabling simplified installation onto any standard VESA mounting rack. Other mounting options might also be supported according to the table in the Hardware Features section.

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

Mechanical Specifications

The outer mechanical dimensions of The PPC-J1900-156-C Industrial Panel PC are 422 × 271 × 52.5mm (W x L x H). Please refer to the technical drawing in the figure below for details related to the specific product measurements.

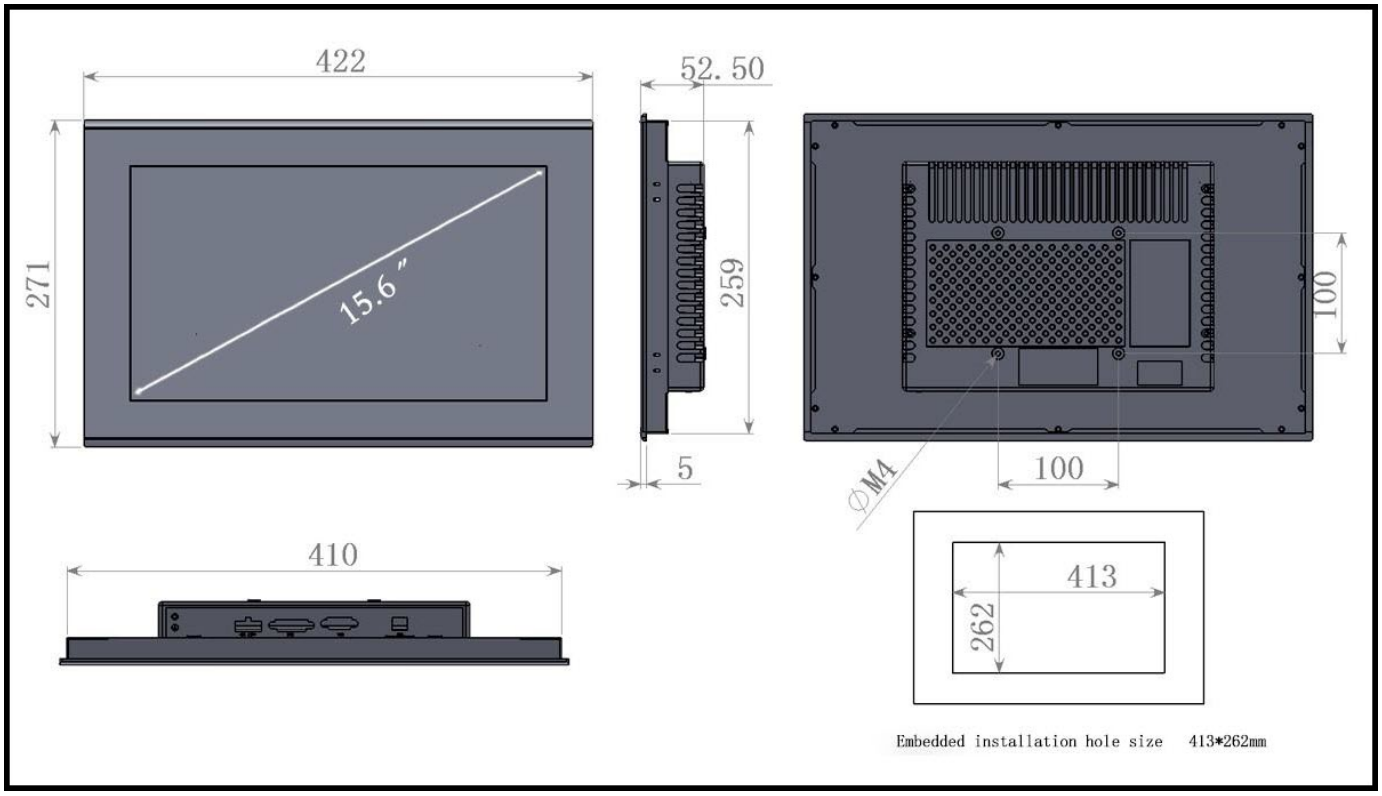


Figure 833: *PPC-J1900-156-C Technical Drawing*

Disclaimer

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