



Industrial PC

# PPC-J1900-121-R



PN: PPC-J1900-121-R

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# PPC-J1900-121-R

## Front View



# Rear View



# Side View 1



## Side View 2



## Product Overview

The PPC-J1900 series PPC-J1900-121-R is a rugged, high-quality NEMA/IP65-compliant industrial panel PC. This single board computer features a 12.1" resistive touch screen with a resolution of 1024 x 768 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-J1900-121-R 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.

# Product Changes

## Ver 2.0

- Released on Jul 1, 2025

### Warning

**Breaking Changes: this product is completely redesigned.**

If you bought PPC-J1900-121-R before **July 1, 2025**, please note the new board (ver 2.0) is **not compatible** with the previous board (ver 1.1).

## Ver 1.1

- Initial Release
- **Download Archived Manual: [PPC-J1900-121-R-ver1.1.pdf](#)**

## 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 **PPC-J1900-121-R** from the official **Chipsee Store** or from your nearest distributor.

## Operating System

By default, PPC-J1900-121-R comes with the Ubuntu Linux operating system (OS) pre-installed. A different OS can be selected during the ordering process.

In addition to Linux, PPC-J1900-121-R also supports Windows 7, Windows 8 and Windows 10.



## Optional Features

The PPC-J1900-121-R 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.

The 3G/4G module is a mini-PCIe module, WiFi/BT module is also a mini-PCIe module. There is only 1 mini-PCIe socket on the board, so only one (4G or WiFi) module can be installed. You may use a USB module together with the mini-PCIe module if you need both 4G and WiFi, though.



### 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-J1900-121-R 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-J1900-121-R          |   |
|--------------------------|---|
| <b>CPU</b>               | Intel® Celeron® J1900, 2GHz, Quad-Core, 2MB Cache, TDP=10W            |
| <b>GPU</b>               | Intel® HD integrated GPU, 512MB shared memory                         |
| <b>RAM</b>               | Default 4GB, maximum 8GB, DDR3L 1333 SO-DIMM                          |
| <b>Display</b>           | 12.1" LCD, resolution 1024 x 768 px, brightness 350 cd/m <sup>2</sup> |
| <b>Storage</b>           | Default mSATA 128GB SSD, supports 256/512GB                           |
| <b>Touch</b>             | Resistive touch screen  |
| <b>USB</b>               | 1 x USB 3.0 HOST, 3 x USB 2.0 HOST ports (Type A)                     |
| <b>LAN</b>               | 2 x RJ45, 1 Gbps Ethernet Controller                                  |
| <b>UART</b>              | 4 x RS232, 2 x RS485  |
| <b>GPIO</b>              | N/A   |
| <b>3G/4G</b>             | Optional, module available from other manufacturers/stores            |
| <b>WiFi/BT</b>           | Optional, module available from the Chipsee store                     |
| <b>HDMI</b>              | 1 x HDMI out  |
| <b>VGA</b>               | N/A   |
| <b>mini-PCIe</b>         | 1 x mini PCIe   |
| <b>Power IN</b>          | 12V DC  |
| <b>Power Consumption</b> | 20.5W   |
| <b>OS</b>                | Ubuntu Linux (default), Windows 7 / 8 / 10 (optional)                 |
| <b>Operating Temp.</b>   | From 0°C to 60°C (no condensation)                                    |
| <b>Storage Temp.</b>     | From -20°C to 75°C (no condensation)                                  |
| <b>Dimensions</b>        | 322 X 254 X 53mm  |
| <b>Mounting</b>          | VESA 100, Panel mounting with fixtures                                |
| <b>Weight</b>            | 3000g   |

Table 292 Table 1: Key Features

## Power Input

The PPC-J1900-121-R Industrial Panel PC can be powered by 12V DC power supply. The power input connector is a 2-pin, 3.81mm screw terminal.

The **POWER** button can be used to switch the power ON or OFF.

Check the image below for positive and negative DC input, you can use either pair of the two ports:



*12V DC Power Input*

### 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-J1900-121-R is equipped with a resistive touch screen. The resistive touch screen is an ideal option for harsh industrial conditions due to its high immunity against high temperature, dirt, and dust. In addition, it does not require any special material to be operated; the resistive touch screen can be used with regular rubber gloves, fingers, or a plastic stylus.

**Size/Type:** 12.1" high-temperature resistant, five-wire analog resistive touch screen

**Surface Hardness:** 3H

**Service Life (MTBF):** 35 million click events

**Light Transmittance:** > 81%

# Connectivity

There are many connectivity options available on the PPC-J1900-121-R industrial PC. It has 4 x USB Type A connectors configured as HOSTS, 1 x HDMI out port, 2 x RJ45 supporting Gigabit Ethernet (GbE), and 4 x RS232, 2 x RS485 connectors.

## RS232/RS485

The PPC-J1900-121-R Industrial Panel PC has 2 x 9-pin D-sub connectors and 1 x 16-pin 3.81mm connector with pluggable terminal block. The 9-pin D-sub connectors labeled as **COM1/COM2** are RS485.

**COM 3/4/5/6** are RS232:



| COM1/COM2 RS485 |       |       |   |   |   |   |   |   |   |
|-----------------|-------|-------|---|---|---|---|---|---|---|
| PIN             | 1     | 2     | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Definition      | 485 - | 485 + |   |   |   |   |   |   |   |



| PIN | COM3 RS232 |     |     | COM4 RS232 |     |     |   |   |
|-----|------------|-----|-----|------------|-----|-----|---|---|
|     | 1          | 2   | 3   | 4          | 5   | 6   | 7 | 8 |
|     | RXD        | TXD | GND | RXD        | TXD | GND |   |   |

| PIN | COM5 RS232 |     |     | COM6 RS232 |     |     |    |    |
|-----|------------|-----|-----|------------|-----|-----|----|----|
|     | 9          | 10  | 11  | 12         | 13  | 14  | 15 | 16 |
|     | RXD        | TXD | GND | RXD        | TXD | GND |    |    |



RS232 / RS485 Interfaces

## USB HOST

PPC-J1900-121-R is equipped with 3 x USB 2.0 connectors and 1 x USB 3.0 HOST connectors.



*USB 2.0 HOST Port*



*USB 3.0 HOST Port*



### Warning

Be careful not to touch surrounding electronic components accidentally while plugging USB devices into the embedded IPC version.

## LAN

2 x **LAN (RJ45)** 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.



*LAN/RJ45*

### Note

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

## HDMI

The PPC-J1900-121-R Industrial Panel PC is equipped with 1 x **HDMI** connector. The HDMI connector allows connecting an additional (external) monitor.

HDMI output resolution can be configured by the software.



*HDMI Connector*



## Mounting Procedure

The PPC-J1900-121-R 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-J1900-121-R Industrial Panel PC are 322 X 254 X 53mm (W x L x H). Please refer to the technical drawing in the figure below for details related to the specific product measurements.

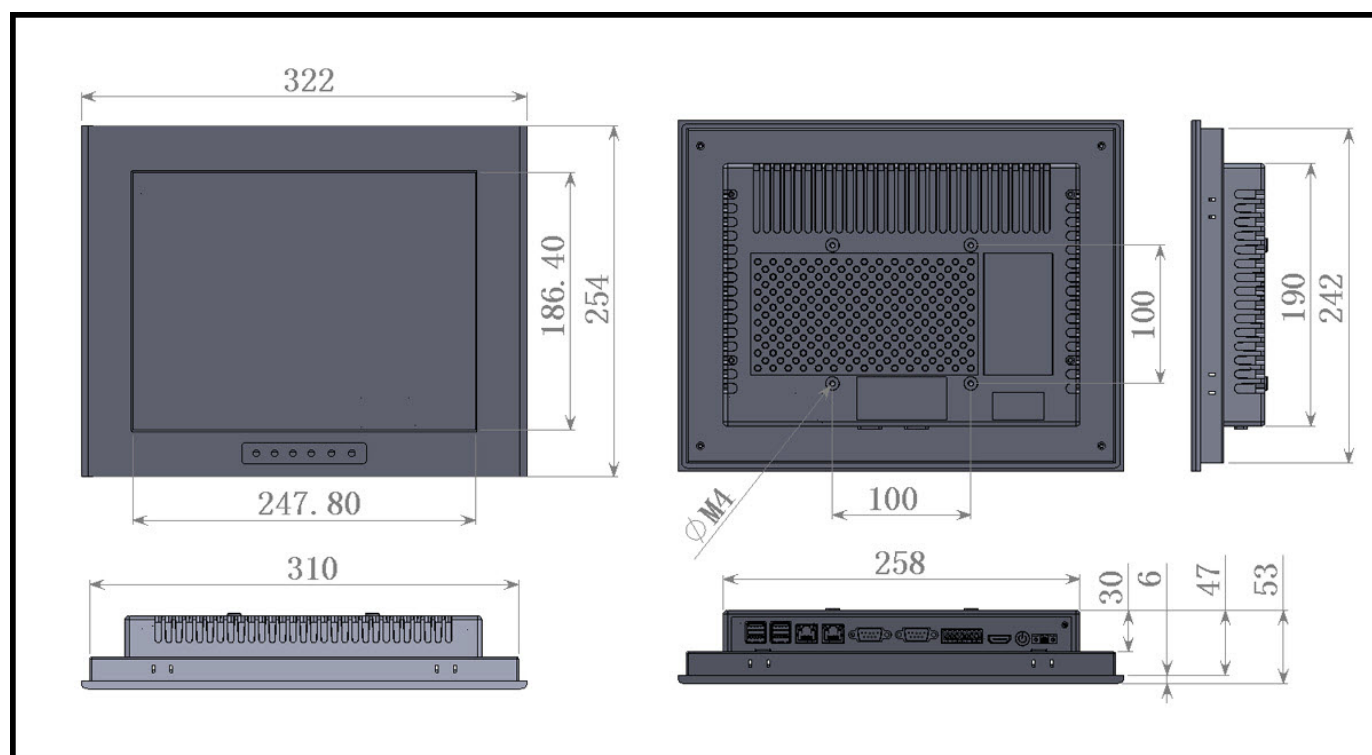


Figure 855: PPC-J1900-121-R Technical Drawing

## Disclaimer

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