Chipsee

Industrial PC

PPC-10510U-150-C

PN: PPC-10510U-150-C

Revision 1.1
www.chipsee.com

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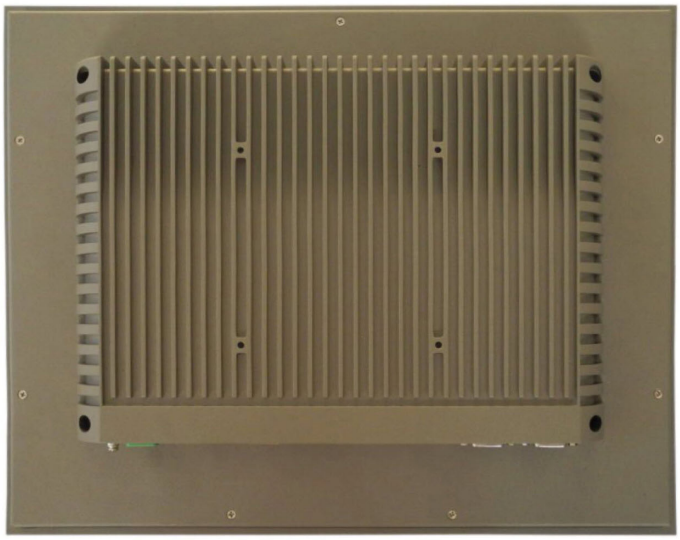
PPC-10510U-150-C

Front View



Rear View

Side View 1

Side View 2

Product Overview

The PPC-10510U series PPC-10510U-150-C is a rugged, high-quality NEMA 4X/IP65-compliant industrial panel PC. It features a Touch sensitive 15.0” with a resolution of 1024 x 768 pixels.

PPC-10510U-150-C is powered by the high-performance Intel® Core™ i7 10510U quad-core (8 threads) CPU by default, but it can be scaled down to i5 7200U or Celeron® 3865U, depending on application requirements. The PPC-10510U-150-C Industrial Panel PC also features a broad range of connectivity options, allowing it to meet even the most demanding requirements in harsh industrial or outdoor environments.

Key Applications

- Human Machine Interface HMI
- Industrial Automation
- Process Control
- Smart Grid Management
- CNC Manufacturing

- Environmental Monitoring
- Machine Vision Inspection
- Predictive Maintenance
- ATM, Kiosk, Infotainment...

Despite their cutting-edge performances, the offered CPUs consume very little power: their TDP is only 15W at respective base clock frequencies. From the ground-up, these CPUs are built for low power consumption. As such, they are best suited for mobile and power-constrained industrial or field applications.

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-10510U-150-C Industrial Panel PC from the official **Chipsee Store** or from your nearest distributor.

Operating System

By default, PPC-10510U-150-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-10510U-150-C also supports Windows 7 and Windows 10 OS.

Optional Features

The PPC-10510U-150-C Industrial Panel PC offers the highest levels of scalability in the entire products portfolio. It can be configured with any of the three CPUs offered.

Feel free to contact Chipsee Technical Support at **support@chipsee.com** for all your customization needs.

PPC-10510U-150-C does not include WiFi/BT and/or 3G/4G 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.

Hardware Features

The PPC-10510U-150-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-10510U-150-C	
CPU Options	Intel® Core™ i7 10510U/i5 7200U/Intel Celeron® 3865; TDP=15W
GPU	Intel® HD integrated GPU, shared memory (CPU-dependent)
RAM	Default 4GB, up to 16GB (1 x SO-DIMM DDR4L - CPU-dependent)
Display	15.0” LCD, resolution 1024 x 768px, brightness 300 cd/m^2
Storage	Default mSATA 32GB SSD (supports up to 512GB)
Touch	Default Capacitive touch screen (resistive touch screen is optional)
USB	4 x USB 3.0 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)
3G/4G	Optional, modules available from the manufacturer
WiFi/BT	Optional, modules available from the manufacturer
HDMI	1 x HDMI Out port
SATA	1 x mSATA, 1 x SATA
Power Input	12 to 24V DC
Power Consumption	27W
OS	Default Linux, supports Windows 7, Windows 10
Operating Temp.	From -20°C to +60°C
Dimensions	376 x 300 x 61.7mm
Mounting	VESA 100, Panel mounting with fixtures
Weight	4500g

Table 223 Table 1: Key Features

Power Input

The PPC-10510U-150-C Industrial Panel PC can be powered by a wide range of input voltages: from 12V to 24V 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-10510U-150-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.

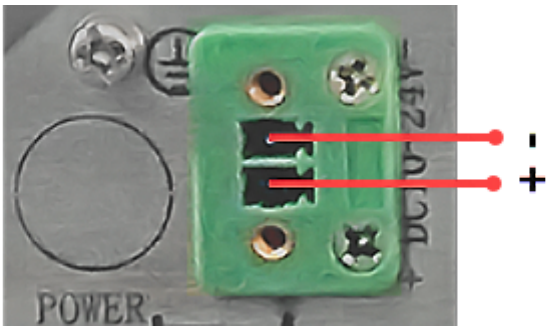


Figure 860: *Figure 1: Power Input Section*

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

The PPC-10510U-150-C Industrial Panel PC can be equipped with either a resistive or capacitive touch screen, as per request.

A 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.

The multi-point capacitive touch screen offers high precision and enables implementation of some advanced GUI operations, such as two-finger zoom or rotation. It can be operated by fingers, gloves with a special coating, or a conductive stylus. It offers a slightly higher light transmittance and screen surface hardness than the resistive screen.

Size/Type: 15.0” multi-point capacitive touch screen
Surface Hardness: 7H
Service Life (MTBF): 50 million touch events
Light Transmittance: > 92%

Size/Type: 15.0” 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-10510U-150-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 RS485 mode.

RS232/485 Connectors

Product has 4 x 9-pin D-sub connectors *(Figure 2 and 2a)* which are configured as RS232 interfaces by default. The two 9-pin D-sub connectors labeled **COM1** and **COM2** can be configured as either RS232 or RS485 communication interfaces. If different configuration is required, please get in touch with Chipsee technical support at **support@chipsee.com**

Figure 861: *Figure 2: 2 x D-sub Connectors: RS232 or RS485*

Figure 862: *Figure 2a: 2 x D-sub Connectors: RS232*

USB HOST Connectors

PPC-10510U-150-C is equipped with 4 x *USB 3.0* HOST connectors *(Figure 3)*. 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.

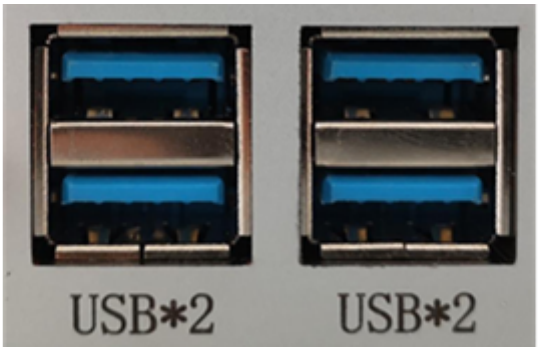


Figure 863: *Figure 3: 4 x USB 3.0 HOST Connectors*

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 864: *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-10510U-150-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 865: *Figure 5: HDMI Connector*

Mounting Procedure

The PPC-10510U-150-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-10510U-150-C Industrial Panel PC are 376 x 300 x 61.7mm (W x L x H). Please refer to the technical drawing in the figure below for details related to the specific product measurements.

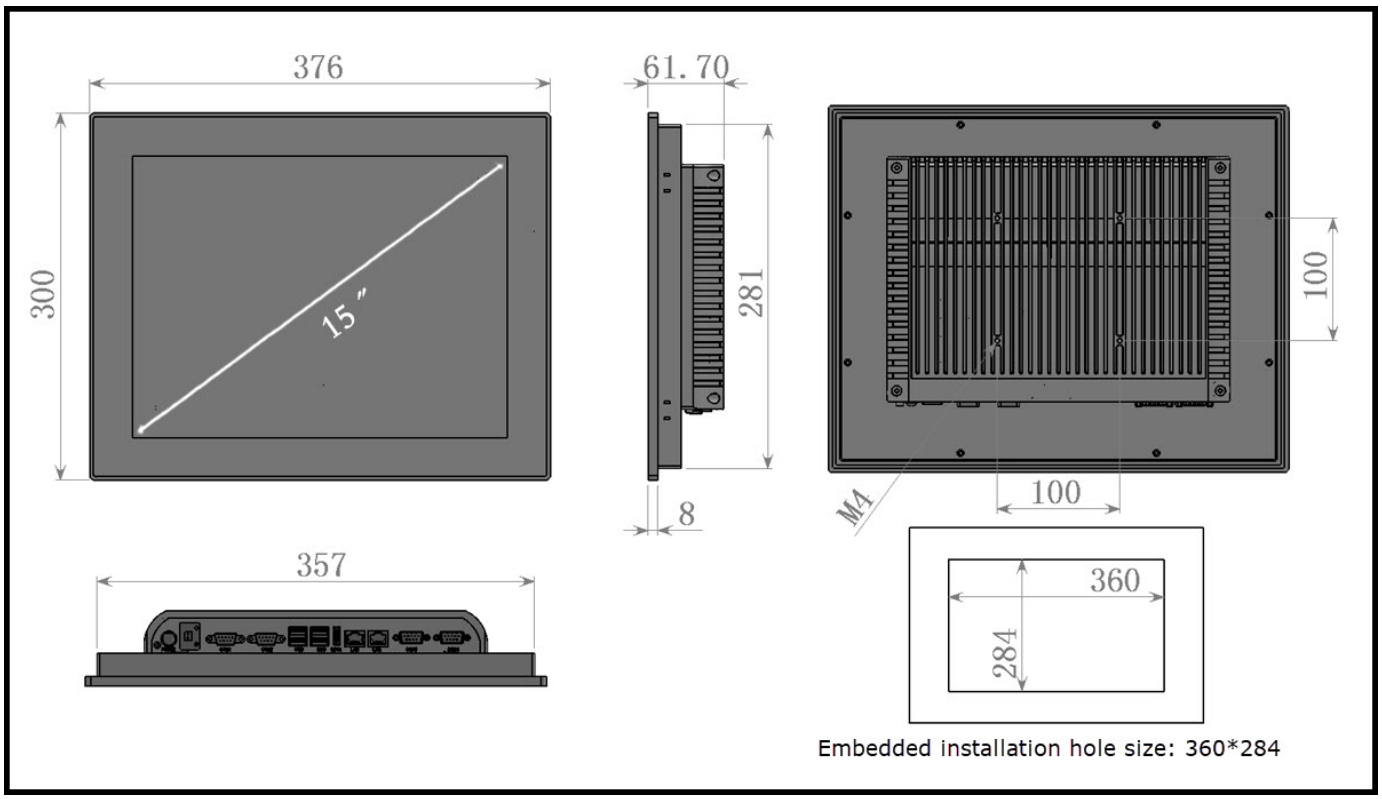


Figure 866: *PPC-10510U-150-C Technical Drawing*

Disclaimer

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