Chipsee

Industrial PC

CS86-BOX

PN: CS86-BOX

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CS86-BOX

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Product Overview

The CS86-BOX is a rugged, high-quality mountable multifunctional industrial PC without a display. Thanks to the integrated brackets and its light-weight construction, this single board computer can be firmly attached to any flat surface, such as industrial cabinets or walls.

CS86-BOX is powered by the high-performance Intel® Core™ i7 10510U quad-core (8 threads) CPU, but it can be scaled down to i5 10310U or Celeron® 3855U, depending on application requirements. The CS86-BOX 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

- Industrial Automation
- Process Control
- Smart Grid Management
- CNC Manufacturing
- Environmental Monitoring
- Machine Vision Inspection
- Predictive Maintenance

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 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: it 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 CS86-BOX from the official Chipsee Store or from your nearest distributor.

Operating System

By default, CS86-BOX comes with the Linux operating system (OS) pre-installed. A different OS can be selected during the ordering process. In addition to Linux, CS86-BOX also supports Windows 7 and Windows 10 OS.

Optional Features

The CS86-BOX 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.

CS86-BOX 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 CS86-BOX 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.

CS86-BOX	
CPU Options	Intel® Core™ i7 10510U/i5 10310U/Intel Celeron® 3855U; TDP=15W
GPU	Intel® HD integrated GPU, shared memory (CPU-dependent)
RAM	Default 4GB, up to 16GB (1 x SO-DIMM DDR4L - CPU-dependent)
Storage	Default mSATA 32GB SSD (supports up to 512GB)
USB	4 x USB 3.0 HOST ports (Type A)
LAN	2 x RJ45, GbE (Intel® I211), Wake on LAN (WoL) support
UART	Default 2 x RS232 (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 IN	12 to 24V DC
Current max. (15V)	800mA
OS	Default Linux, supports Windows 7, Windows 10
Operating Temp.	From -20°C to +60°C
Dimensions	249.2 x 152 x 34mm
Mounting	Panel mounting with fixtures
Weight	1300g

Table 313 Table 1: Key Features

Power Input

The CS86-BOX 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.

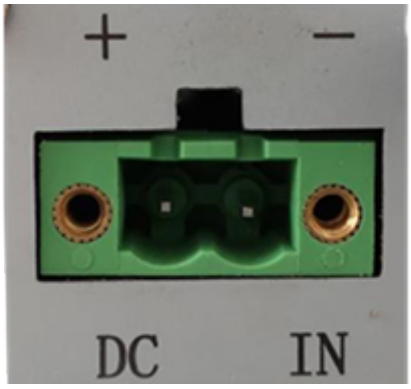

Figure 879: *Figure 1: Power Input Section*

The **POWER** button is *(Figure 1a)* is located to the opposite side of the power input connector and can be used to switch the power ON or OFF.

The power input section of CS86-BOX 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 880: *Figure 1a: Power Button*

Note

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

Connectivity

There are many connectivity options available on the CS86-BOX 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 2 x RS232 connectors that can be configured in RS485 mode as per request.

RS232/485 Connectors

Product has 2 x 9-pin D-Sub connectors *(Figure 2)* 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 881: *Figure 2: D-Sub (2 x RS232/485)*

USB HOST Connectors

CS86-BOX 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.

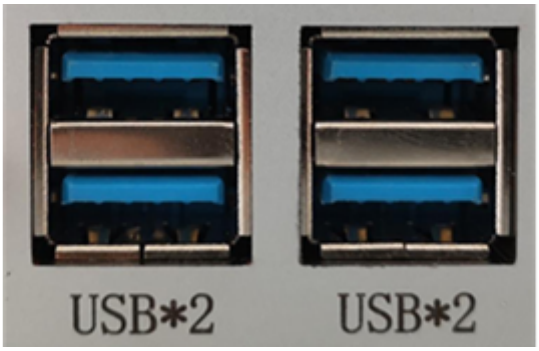

Figure 882: *Figure 3: 4 x USB 3.0 HOST Connectors*

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 883: *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

Although not equipped with the screen on its own, the The CS86-BOX Industrial Panel PC features 1 x **HDMI** connector. The HDMI connector *(Figure 5)* allows connecting an external monitor. HDMI output resolution can be configured by the software or the OS.

Figure 884: *Figure 5: HDMI Connector*

Mounting Procedure

The CS86-BOX 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 CS86-BOX Industrial Panel PC are 249.2 x 152 x 34mm (W x L x H). Please refer to the technical drawing in the figure below for details related to the specific product measurements.

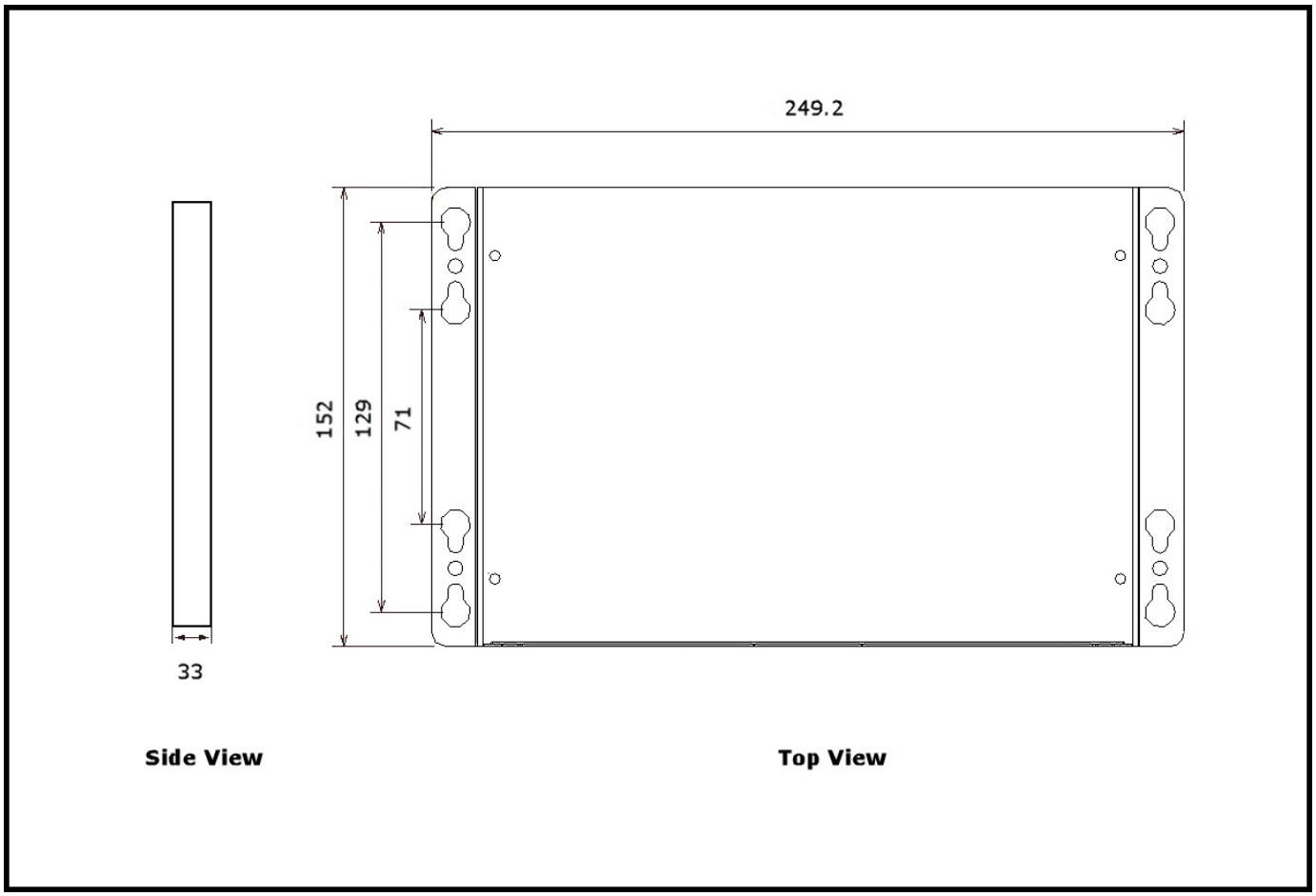

Figure 885: *CS86-BOX Technical Drawing*

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