Chipsee

Industrial PC

CS86-BOX-J1900

PN: CS86-BOX-J1900

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CS86-BOX-J1900

Front View

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Side View 1


Chipsee
Type:CS86-BOX-J1900
OS: Ubuntu
Config:DDR4G/SSD64G
SN:202304207000207
https://chipsee.com
Origin:Made in China
MIC
SPK
COM1

Side View 2


Chipsee
Type:CS86-BOX-J1900
OS: Ubuntu
Config:DDR4G/SSD64G
SN:20230420700000207
https://cn.chipsee.com
Origin:Made in China
LAN1
LAN2
VGA
DC-12V

Product Overview

The CS86-BOX-J1900 is a fanless embedded industrial PC with Intel® Celeron® J1900 quad-core (4 threads) to meet a variety of requirements in harsh environments. Thanks to the fanless design, it is stable and reliable in client terminal, multimedia and other industry applications. In addition, its support for 2 x LAN, 2 x COM, 3 x USB2.0, 1 x USB3.0 ports can interconnect devices easily.

Key Applications

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

The offered CPU consumes very little power: its TDP is only 10W at the base clock frequency. From the ground-up, the CPU is built for low power consumption. As such, it is 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 fanless design reduces noise, as well as the maintenance costs and efforts, leading to increased 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-J1900 from the official Chipsee Store or from your nearest distributor.

Operating System

By default, CS86-BOX-J1900 comes with the Ubuntu Linux operating system (OS) pre-installed. A different OS can be selected during the ordering process. In addition to Linux, CS86-BOX-J1900 also supports CentOS, Windows 7, Windows 8 and Windows 10 OS.

Optional Features

The CS86-BOX-J1900 Industrial PC 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-J1900 Industrial 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-J1900	
CPU	Intel® Celeron® J1900, Quad-Core, 2GHz(Turbo Boost 2.41GHz), 2MB L2 Cache, 10W TDP, AMI BIOS
GPU	Intel® HD Graphics (Bay Trail) integrated GPU, shared memory
RAM	Default 4GB 1600MHz DDR3L, up to 8GB (1 x Single channel SO-DIMM 204-pin slot, supports DDR3L, 1066/1333/1600MHz)
Storage	Default 1 x full size mSATA 64GB SSD, up to 2TB; 1 x 2.5” SATA 2.0
USB	1 x USB 3.0 (Type A), 3 x USB 2.0 (Type A)
LAN	2 x RJ45, 10/100/1000 Mbps (Realtek 8111F), supports Wake on LAN (WoL)
UART	2 x RS232
3G/4G	Optional, USB module available from the manufacturer, no on-board SIM slot
WiFi/BT	Optional, mini PCIe module available from the manufacturer
Audio	Realtek ALC662, two channel, stereo audio, line out
Display	1 x HDMI Out (1920 x 1080 @ 60Hz), 1 x VGA Out (1920 x 1080 @ 60Hz), supports VGA + HDMI synchronous and asynchronous display
Extension	1 x half size mini PCIe
Power IN	12V DC(DC-IN 5.5 x 2.5)
Power Adapter	DC 12V 3A/36W (AC to DC, 100 ~ 240V)
Current max.	1.25A
OS	Default Ubuntu, supports CentOS Linux, Windows 7, Windows 8, Windows 10
Graphic Engine	DirectX 11.1, OpenCL 1.2, OpenGL 3.2; Encoding: H.264, MPEG2/4, VC1, WMV9; Decoding: H.264, MPEG2
Temp.	From -20°C to +69°C (Operational), From +15°C to +35°C (Storage)
Humidity	From 5% to 95% relative humidity (no condensation)
Dimensions	133 x 126.2 x 38 mm
Structure	Aluminium Casing
Mounting	VESA 75 x 75, Wall, Desktop
Weight	0.65 kg

Table 292 Table 1: Key Features

Power Input

The CS86-BOX-J1900 Industrial PC can be powered by 12V DC. The power input connector is a 5.5 x 2.5 mm DC connector *(Figure 1)*.

Figure 910: *Figure 1: Power Input Section*

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

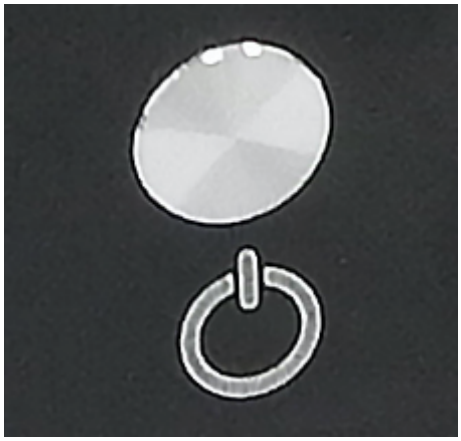

Figure 911: *Figure 1a: Power Button*

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-J1900 industrial PC. It has 1 x USB3.0 and 3 x USB2.0 Type A connectors configured as HOSTS, 1 x HDMI port, 1 x VGA port, 2 x RJ45 connectors supporting 10/100/1000Mbps Ethernet, 2 x RS232 connectors, 1 x audio in connector, 1 x audio out connector, 2 x SMA connectors(for Wi-Fi antenna).

RS232 Connectors

Product has 2 x 9-pin D-Sub connectors which are configured as RS232 interfaces by default. The two connectors are on two different sides: COM1 *(Figure 2)* and COM2 *(Figure 2a)*.

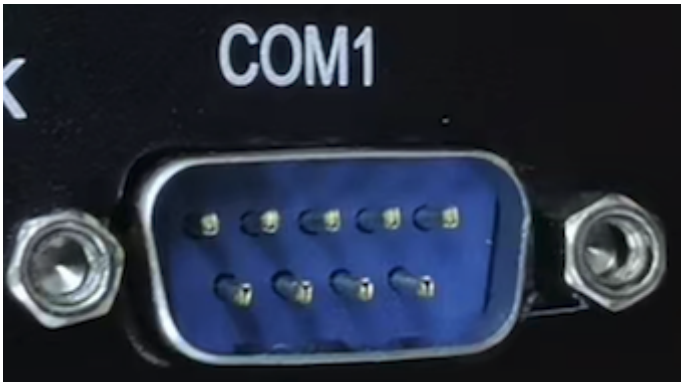

Figure 912: *Figure 2: D-Sub (RS232) COM1*

Figure 913: *Figure 2a: D-Sub (RS232) COM2*

USB HOST Connectors

CS86-BOX-J1900 is equipped with 1 x *USB 3.0* and 3 x *USB 2.0* 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.

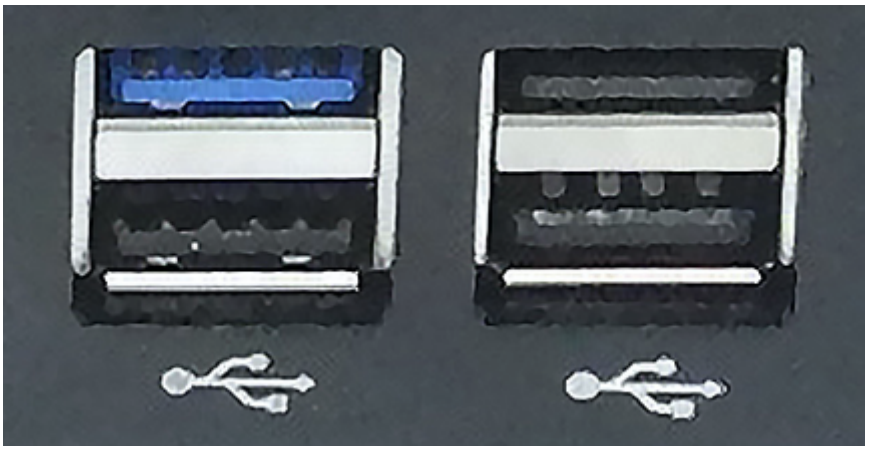

Figure 914: *Figure 3: 1 x USB 3.0 and 3 x USB 2.0 HOST Connectors*

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.

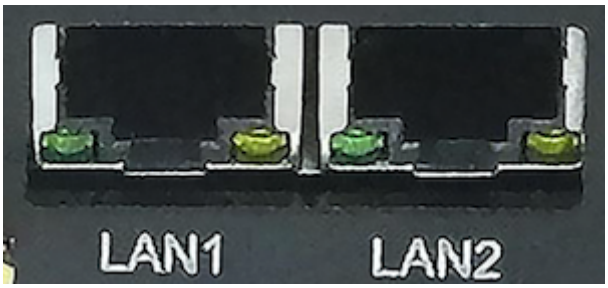

Figure 915: *Figure 4: 2 x RJ45 GbE LAN Connectors*

Note

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

HDMI and VGA Connectors

Although not equipped with the screen on its own, the CS86-BOX-J1900 features 1 x **HDMI** connector *(Figure 5)* and 1 x **VGA** connector *(Figure 5a)*. The two connectors allow connecting two external monitors in synchronous or asynchronous modes. HDMI and VGA output resolution can be configured by the software or the OS, up to 1920 x 1080 at 60Hz.

Figure 916: *Figure 5: HDMI Connector*

Figure 917: *Figure 5a: VGA Connector*

Audio In/Out Connectors

The product features audio in and audio out connectors as shown in the *Figure 6* below.

Figure 918: *Figure 6: Audio In and Audio Out Connectors*

WiFi/BT Module

The default CS86-BOX-J1900 does not include a Wi-Fi module or BT module, but it contains a half size mini PCIe slot that can be expanded with a Wi-Fi module or a BT module.
The product includes two SMA connectors for external Wi-Fi antennas, as illustrated in the *Figure 7* below.

Figure 919: *Figure 7 SMA Connectors for WiFi Antennas*

Attention

The product does not come shipped with the Wi-Fi/BT module by default.

Mounting Procedure

The CS86-BOX-J1900 Industrial PC supports VESA 75 x 75 mounting pattern with 6 x M3 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-J1900 are 136 x 126.2 x 38mm (W x L x H). Please refer to the technical drawing in the figure below for details related to the specific product measurements.

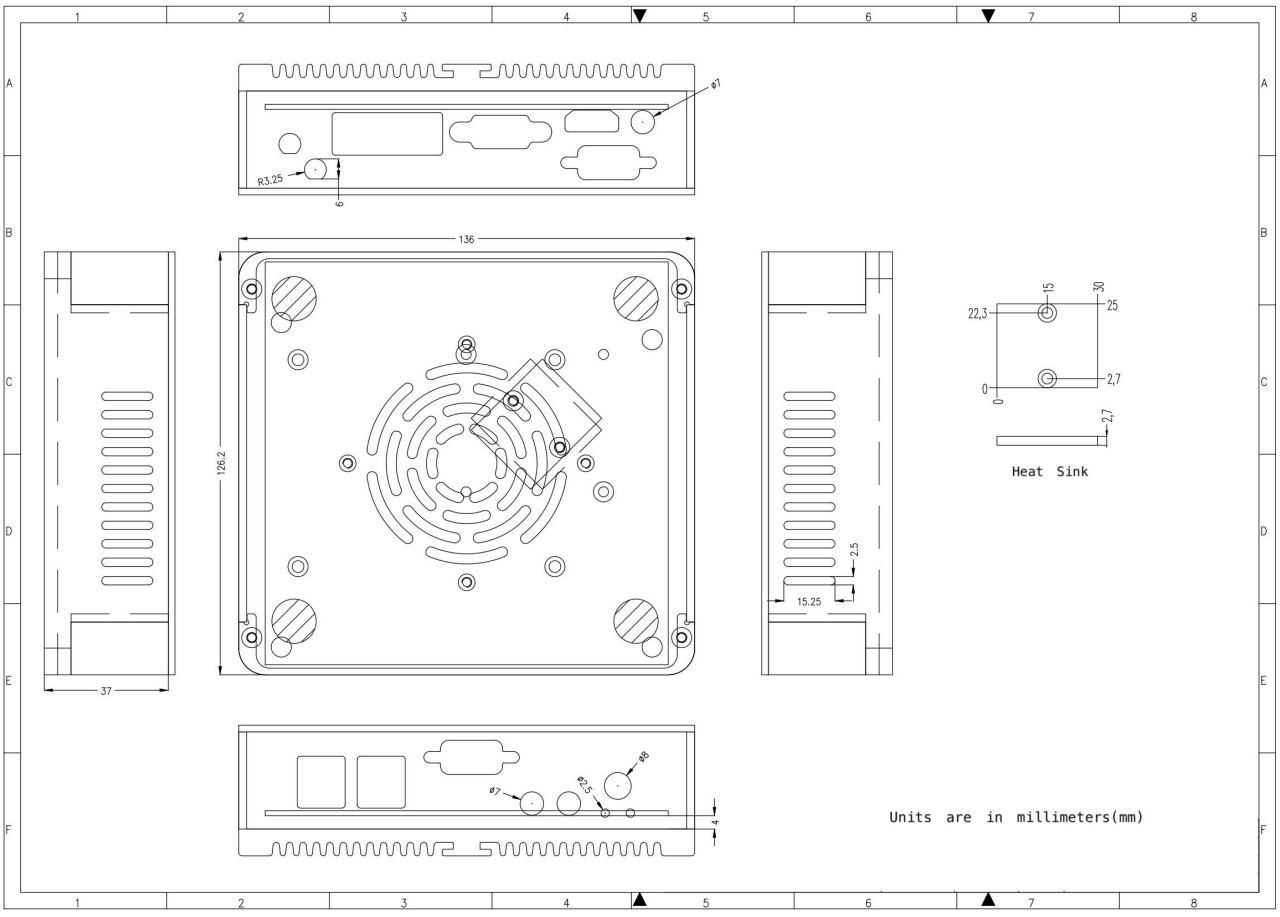

Figure 920: *CS86-BOX-J1900 Technical Drawing*

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