CIMON | Beyond Factory Automation
Towards Digital Manufacturing

CIMON Box PC

In English

• CM-NB-300-D

USER MANUAL

Box PC

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- For your safety and the safe operation of this product, please read this manual before using the product. The manual is subject to change without notice.
- Please review the product specifications in this manual to determine the suitability of this product for its intended use.
- For your safety only qualified persons should perform electrical and wiring attachments to this product.
- This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules.

Essential Safety Precautions

⚠ Warning

Prohibition of disassembly and modification

• Do not disassemble or modify the PC. It will void the warranty and may cause an electric shock or fire.

Avoiding of flammable substances

• This version of the PC is not rated for flammable environments. Do not use this panel around flammable gases. It may cause an explosion.

Precautions for installation

• Be sure to securely connect all cable connectors to the PC. A loose connection may cause incorrect input or output.

• Make sure to tighten the screw with standard torque (0.5–0.6 Nm). Loose connections may cause short, fire or malfunction.

• Be careful that metal debris does not enter the PC, they may cause a fire, panel damage malfunction.

• The device is only for indoor use.

• Use a UL certified product for the power supply. Use a power supply that meets Class 2 or LVLC (Limited Voltage Limited Circuit) supplied by an isolating source, providing DOUBLE INSULATION or REINFORCED INSULATION.

• This product is an open type equipment and belongs to Overvoltage Category II.

• The device is intended to be installed in a suitable fire, mechanical and electrical enclosure.

Essential Safety Precautions

⚠ Warning

Precautions for wiring

- Make sure to check if the device's power supply is turned off before wiring. Failure to do so may cause electric shock or damage to the device.
- When grounding PC, make sure to separate it from other devices.
- If ground wires are close to each other, it may cause electric shock or damage to the device.
- Use wire which has grounding resistance lower than 100 Ω and thicker than 1 mm2. Follow your country's applicable standard.
- Correctly wire the PC, be sure that the rated voltage and terminal layout are within the designated range. If the voltage supplied differs from the rated voltage, or incorrect wiring or grounding is performed, it may cause a fire or unit malfunction and it will void the warranty.

Maintenance – Battery Exchange

- The PC uses a lithium battery to back up the internal clock. Do not replace this battery yourself because it may cause an explosion. If the battery needs to be replaced, please contact your local service center.

General Safety Cautions

- Do not strike the touch panel with a hard or pointed object, or press on the touch panel with too much force, since it may damage the touch panel or the display.
- Do not install the PC where the operating temperature exceeds the allowed range (-20℃-60℃). Doing so may cause the PC to malfunction or shorten product lifespan.
- Do not restrict or limit naturally occurring rear-face ventilation of the PC, or storing or using the PC in an environment that is too hot.
- Do not use the PC in areas where large, sudden temperature changes can occur. These changes can cause condensation to form inside the unit, possibly causing the unit to malfunction.
- Do not allow water, liquids, metal or charged particles to enter the PC, since they can cause either a PC malfunction or an electric shock.
- Do not store or use the PC in direct sunlight, or in excessively dusty or dirty environments.
- Do not store or use the PC where strong jolting or excessive vibration can occur.
- Do not store or use the PC where chemicals (such as organic solvents, etc.) and acids can evaporate, or where chemicals and acids are present in the air.
- Do not use paint thinner or organic solvents to clean the PC.
- Do not store PC where the operating temperature is higher than the its range (-20℃-80℃).
- After turning the PC OFF, be sure to wait about 20 seconds before turning it ON again. If the PC started too soon, it may not start up properly.
- Backup your PC project regularly to prepare for the unexpected accident.
- It is not recommended to update Windows by yourself. Please contact manufacturer for Windows Update.

Precautions for unit disposal

- When this unit is disposed of, it should be done according to your country's regulation for similar types of industrial waste.

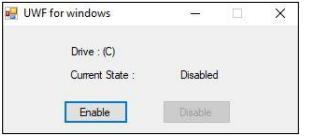
UWF : Unified Write Filter

Supported OS	Windows 11 IoT Enterprise

C: drive of Box PC is protected by UWF. UWF is a function of Windows Embedded which protects the physical storage media from all write attempts.

- UWF intercepts all write attempts to a protected volume and redirects those write attempts to a RAM.
- When Box PC reboots, all data stored in the RAM are cleared. C: drive is restored to the previous status.
- To enable/disable UWF, click [Start] and execute 

which is fixed on the Start menu. Right-click on the program and run as administrator.



- When you click [Enable], the system reboots and UWF is enabled.
- When you click [Disable], the system reboots and UWF is disabled.



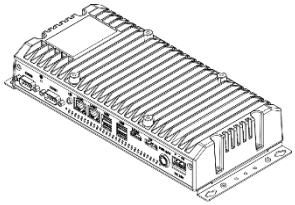
- To restore in Windows 11, run “UWF_SETUP_WIN8_WIN10” as administrator and reset UWF, which is located in C:\XWF (or C:\CIMON\XWFWin).
- If icon is deleted, run “XWFWin” in C:\XWF (or C:\CIMON\XWFWin).
- Professional OS(DSP) which is not ‘Embedded’, does not support UWF.

Package Contents

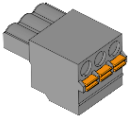
This product is an industrial box type PC.

The following items are contained in the package of the BOX PC. Before using the BOX PC, please confirm that all items listed below are present.

● PC



● Power Connector



● Installation Guide

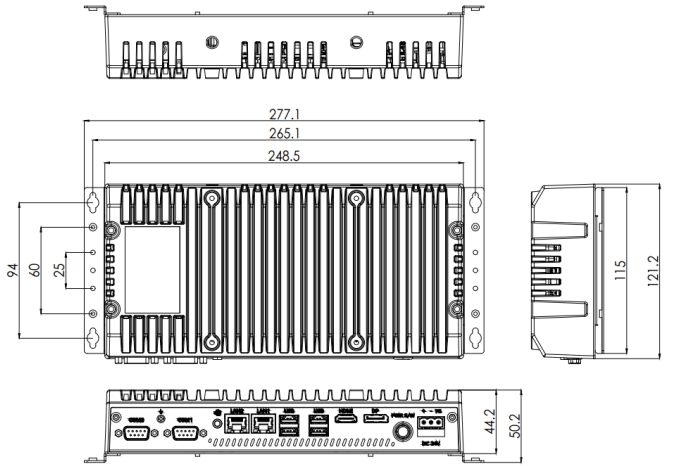


※ This unit has been carefully packed, with special attention to quality. However, should you find anything damaged or missing, please contact your local PC distributor immediately.

English

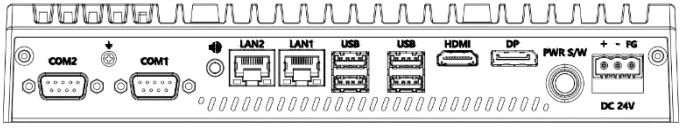
Dimensions

Unit: mm



Interfaces

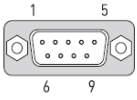
● Placement of the Interface



● COM1 : RS-232/422/485 (Default : RS-232)

● COM2 : RS-232

This interface is used for the connection between PC and target device via an RS-232/422/485 cable.

Connector	Pin No.	RS-232	RS-422	RS-485
	1	DCD	TXD-	D-
	2	RXD	TXD+	D+
	3	TXD	RXD+	
	4	DTR	RXD-	
	5	GND		
	6	DSR		
	7	RTS		
	8	CTS		
	9	RI		



- Normal communication is not guaranteed when using USB connector as a communication port in ordinary times.
- Serial Port of the PC is not insulated.
- SG (Signal Ground) and FG (Frame Ground) are connected in the PC.
- Please be cautious not to short the circuit when connect external device to SG of the PC.

● Communication via COM1 must be configured in BIOS setup window.

As PC starts, press 'Delete' key in the LOGO screen to enter the BIOS setup window. (A keyboard has to be used.)

● Advanced – Super IO Configuration – Serial Port 1 – Mode Select

Mode Select
RS-232 (Default)
RS-422
RS-485
RS-422 with TR
RS-485 with TR



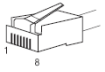
● In case of RS-485 connection, connect both TXD+ and TXD-.

Interfaces

● Ethernet

This interface complies with the IEE802.3 for Ethernet.

Refer to the following figures for pin numbers and constructing cables.

RJ45 Connector	RJ45 Jack
	

Direct Cable: Host ↔ HUB

Cable	No	Color	Color	No	Cable
	1	Orange/W	Orange/W	1	
	2	Orange	Orange	2	
	3	Green/W	Green/W	3	
	4	Blue	Blue	4	
	5	Blue/W	Blue/W	5	
	6	Green	Green	6	
	7	Brown/W	Brown/W	7	
	8	Brown	Brown	8	

Crossover Cable: Host ↔ Host

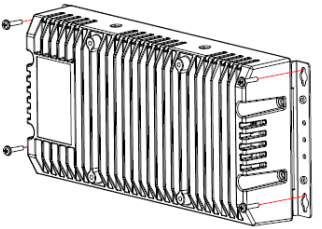
Cable	No	Color	Color	No	Cable
	1	Orange/W	Green/W	1	
	2	Orange	Green	2	
	3	Green/W	Orange/W	3	
	4	Blue	Blue	4	
	5	Blue/W	Blue/W	5	
	6	Green	Orange	6	
	7	Brown/W	Brown/W	7	
	8	Brown	Brown	8	

English

Installation

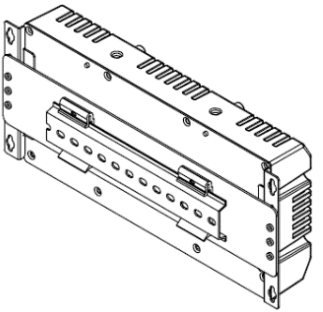
Before mounting the system, ensure sufficient space and ventilation for power and signal cable wiring. It must also be able to support the weight of the product and the cables to be connected to the system.

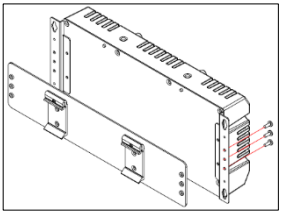
Wall mounting Installation



- Secure the system to the wall by inserting the fixing screws into each bracket.

DIN rail Mounting / Installation

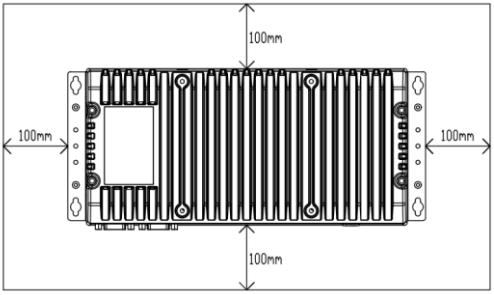


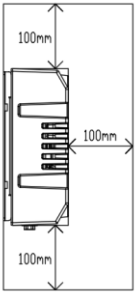


- Attach the DIN rail bracket (accessory sold separately) and mount the device by hooking it onto the DIN rail (35 mm).

Installation

● For the performance and safe use of the equipment, please keep the distance between the back of the main unit and each all of the container at least 100 mm.





English

Wiring and Power Supply Caution

⚠ Warning

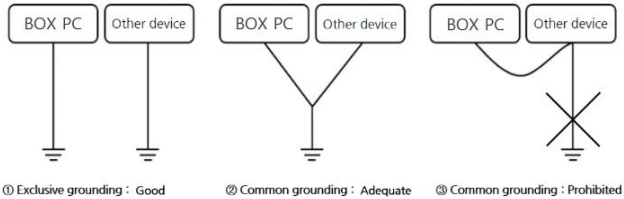
Pay particular attention to the following When connection the Power Cord to the PC

- Make sure to check if the device's power and external power supply is turned off before wiring, via a breaker, or similar unit. Failure to do so may cause electric shock or damage to the device.
- If the power supply voltage exceeds the GP's specified range, connect a voltage transformer.
- Between the line and the ground, be sure to use a low noise power supply. If there is still an excessive amount of noise, connect a noise reducing transformer.
- The power supply cord should not be bundled with or kept close to main circuit lines (high voltage, high current), or input/output signal lines.
- Connect a surge absorber to handle power surges.
- To reduce noise, make the power cord as short as possible.
- Wire Range : 12 - 24 SOL/STR, Wire Type : Cu

Grounding Caution

• When connecting an external device to the PC with the SG terminal, ensure that no short-circuit loop is created when you setup the system.

• Connect the FG terminal on the power supply to an exclusive ground.
(Refer to the figure below)



① Exclusive grounding : Good ② Common grounding : Adequate ③ Common grounding : Prohibited

● If the grounding causes operational errors, please detach the FG terminal.

English

Specifications

BOX PC	CM-NB-300-D
CPU	Intel® Quad-Core x7425E SoC (FANLESS)
MEMORY	DDR5 SDRAM 8GB (Max. 16GB)
GRAPHIC	Integrated Intel UHD Graphics
STORAGE	SSD 250GB (2.5" / SATA)
EX. STORAGE	SSD 250GB (M.2 / SATA3) **(option)**
Serial	1 x RS232 / 422 / 485 (COM1) 1 x RS232 (COM2)
Ethernet	2 x 2.5GbE
USB	4 x USB 3.2
Audio	1 x Line-Out
EX. VIDEO	1 x DP, 1 x HDMI
OS	Windows 11 IoT Enterprise (Standard) / Windows 11 Pro
UTILITY PROGRAM	UWF, Winclon (Recovery System)
POWER CONSUMPTION	48W (Max : 51W)
POWER INPUT	DC24V
Weight	1.4kg
Operating Temperature	-10℃~60℃
Storage Temperature	-20℃~60℃
CE	Electromagnetic Compatibility Directive 2014/30/EU (EMC)
FCC	The 47 CFR Part15 Of FCC Requirement
KC	Registration of Broadcasting and Communication Equipments
Protection Class	IP20

Specifications

Item	Description
Operating Temperature	-10℃–60℃
Storage Temperature	-20℃–60℃
Operating Humidity	10–90% RH (below 29℃, not condensed)
Storage Humidity	10–90% RH (below 39℃, not condensed)
Environment Condition	800–1114 hPa (2000 m/6,500 ft or less)
Dust	≤ 0.1 mg/m^3
Pollution Degree	≤ Pollution Degree 2
Operating ambience	No corrosive gas and dust
Vibration Resistance	5–9 Hz Single amplitude: 3.5 mm 9–150 Hz Fixed acceleration: 9.8 m/s^2(1G) X,Y,Z directions for 10 times
Shock Resistance	Max. Shock acceleration : 147m/s^2(15G) Duration : 11ms Pulse Waveform : Half-sine pulse (X,Y,Z directions for 3 times)
Noise Resistance	Impulse, EFT/Burst, Surge, ±0.5 kV
Electrostatic Discharge	Contact Discharge ±4 kV / Air Discharge ±8 kV

Products Warranty

All CIMON products, including hardware, software, and firmware (collectively called “Products”), carry a **three-year warranty** against defects in materials and workmanship beginning from the date of product shipment from CIMON to its appointed distributor. If a product proves defective in materials and workmanship within three years from purchase, we will replace or repair it. **Products returned under warranty after 30 days may be replaced with refurbished or manufactured goods at CIMON’s discretion**. CIMON makes no representation or warranty, express or implied, that the operation of the Products will be uninterrupted or error-free or that the functions contained therein will meet or satisfy the buyer’s intended use or requirements.

Repaired or replaced Products provided as a result of this warranty are warranted for 90 days from the shipment to the buyer or the remainder of the original warranty term for that particular product, whichever is longer. CIMON’s standard policy is that all customers are responsible for freight charges to CIMON when returning products under the warranty return policy.

This warranty will be void if the Products date codes, serial numbers, or seals are removed or defaced. Warranties do not apply to products that have been subjected to abnormal use, abnormal conditions, improper storage, exposure to moisture or dampness, unauthorized modifications, unauthorized repair, misuse, neglect, accident, alteration, improper installation, or other acts that are not the fault of CIMON, including damage caused in shipping. Our warranty also does not apply to any product that has been damaged by external causes such as fire, flood, sand, dirt, lightning, acts of God, battery leakage, theft, blown fuses, improper use of any electrical source or connection to Products, not recommended in writing for interconnection by CIMON.

In no event will CIMON be liable, whether in contract, tort, or under any other legal theory, for lost profits or revenues, loss of use, or similar economic loss for any indirect, special, incidental, consequential, punitive, or similar damages arising out of or in connection with any Products, including non-conforming Products, or for any third-party claims against you relating to the Products, even if we have been advised of the possibility of such a claim**. In no event will our monetary liability concerning any Products exceed the purchase price you paid them.**

To minimize the risk of potential safety problems, you should follow all applicable local and national codes that regulate the installation and operation of your equipment. These codes vary from area to area and usually change with time. It is your responsibility to determine which codes should be followed and to verify that the equipment, installation, and operation comply with the latest revision of these codes.

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Products Warranty

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MEMO

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