

MOXA MC-1100 Series x86 DIN-Rail Industrial Computer Installation Guide

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Contents

1 Overview
2 Package Checklist
3 MC-1111 Panel Layout
4 MC-1121 Panel Layout
5 MC-1112 Panel Layout
6 MC-1122 Panel Layout
7 LED Indicators
8 Installing a Wireless Module
9 Installing the MC-1100
10 Connector Description
11 Specific Conditions of Use
12 Documents / Resources
12.1 References
13 Related Posts

Overview

The Moxa MC-1100 Series DIN-rail mountable, fanless, x86 embedded computers are based on the Intel® Atom™ E3800 Series processor. These computers feature the most reliable I/O design to maximize connectivity and support multiple wireless modules (Wi-Fi/3G/LTE), making them suitable for a diverse range of communication applications.

Powered by a wide operating temperature range (-40 to 70°C) and Safety/EMI/EMS compliances, the MC-1100 Series is ideal for intelligent computing and communication solutions in critical environments, including marine communication, Oil & Gas field site monitoring, and transportation.

The MC-1100 Series comes with hardware monitoring features built in for device I/O status monitoring and alerts, system temperature monitoring and alerts, and system power management. Monitoring system status closely makes it easier to recover from errors and provides the most reliable platform for your applications.

Package Checklist

Before installing the MC-1100, verify that the package contains the following items:

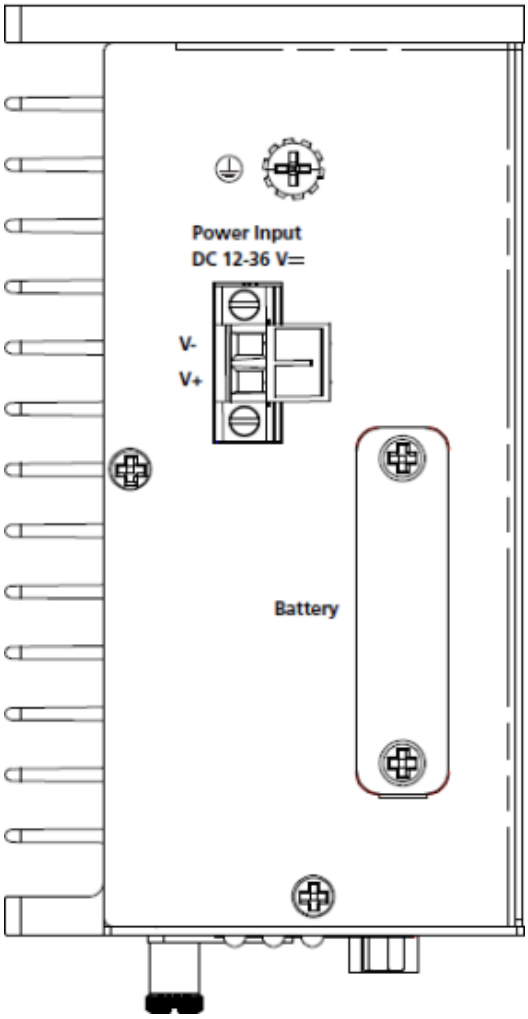
- MC-1100 embedded computer
- Terminal block to power jack converter
- DIN-rail mounting kit
- Quick installation guide (printed)
- Warranty card

Please notify your sales representative if any of the above items are missing or damaged.

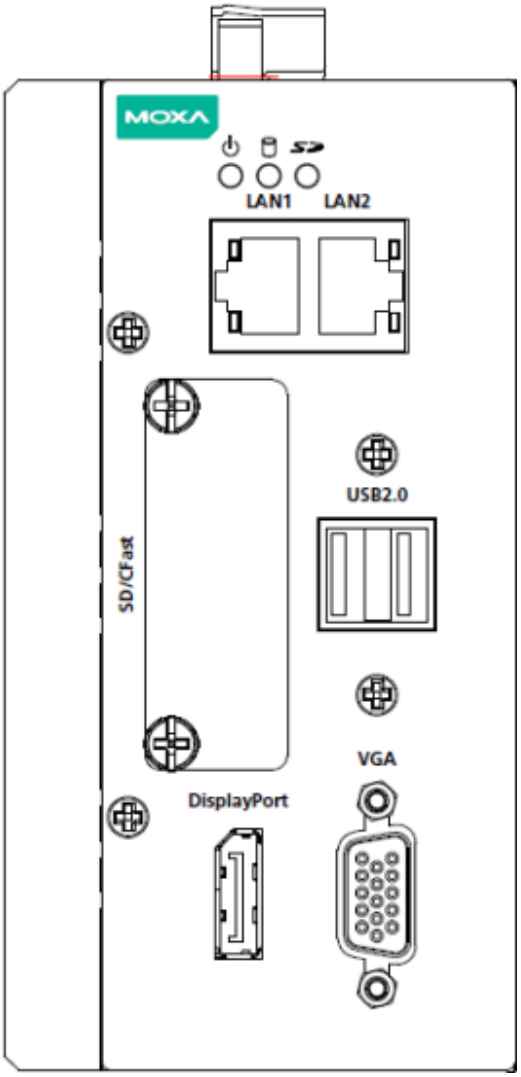
MC-1111 Panel Layout

The following figures show the panel layouts of the MC-1111 Series:

Top View

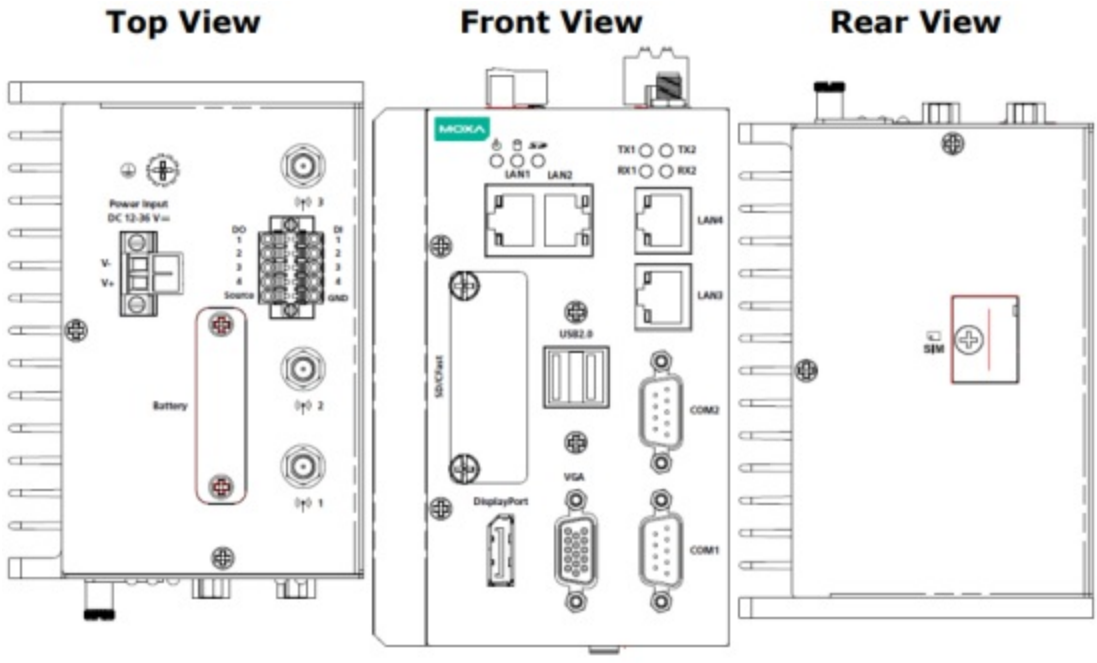


Front View

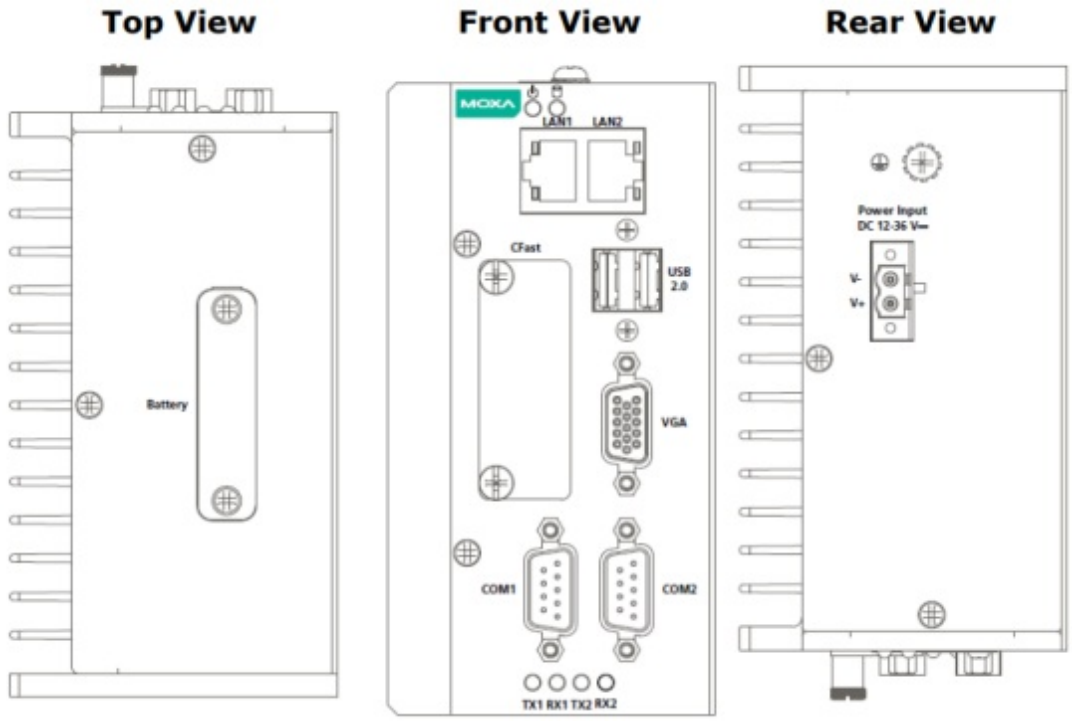


MC-1121 Panel Layout

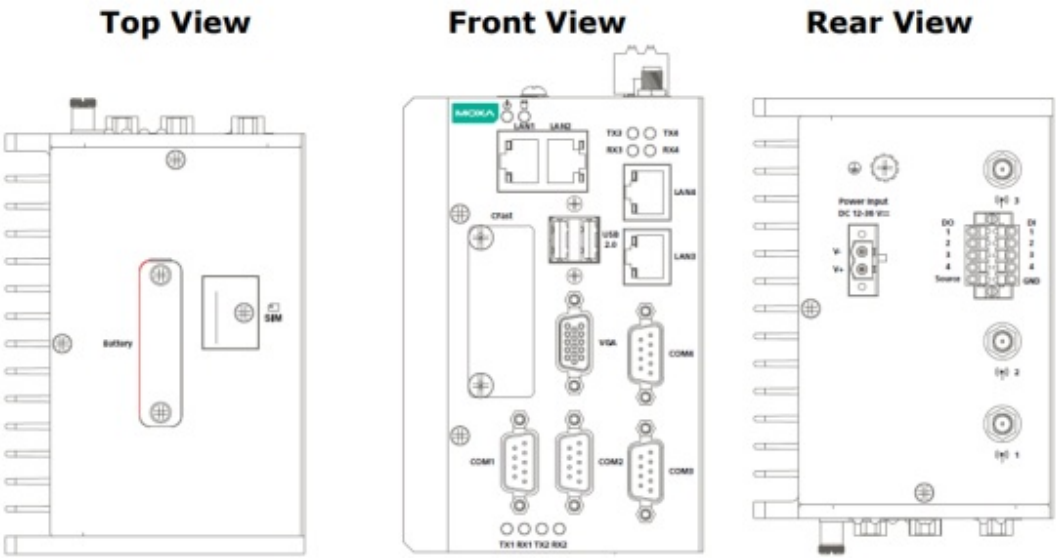
The following figures show the panel layouts of the MC-1121 Series:



MC-1112 Panel Layout



MC-1122 Panel Layout



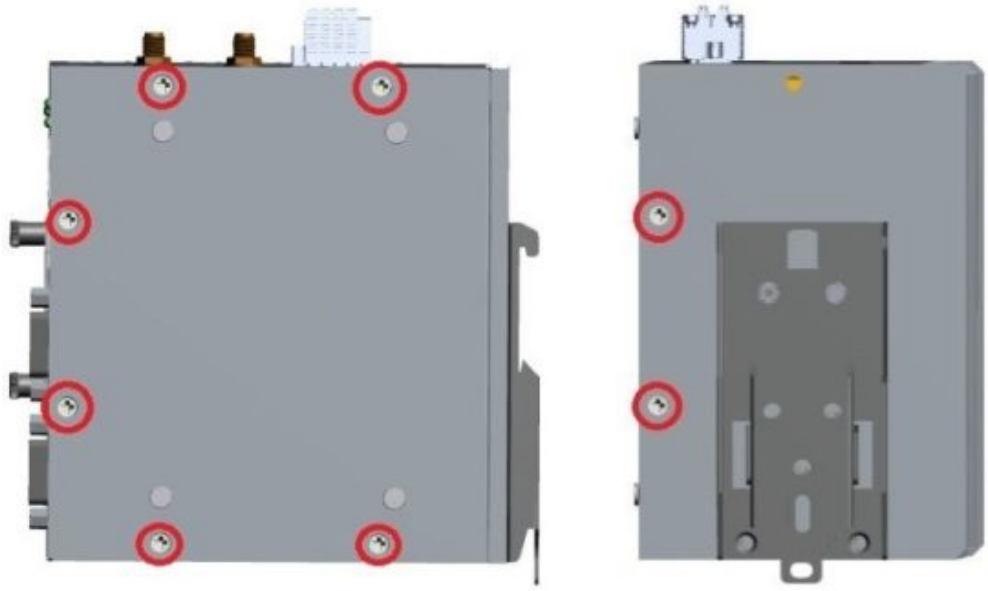
LED Indicators

The following table describes the LED indicators located on the front panel of the MC-1100:

LED Name	Status	Description
Power 	Green	Power is on and computer is functioning normally
	Off	Power is off
Storage 1 (CFast) 	Yellow	Blinking: Data transmission
	Off	No data transmission.
Storage 2 (SD)  (MC-1111 and MC- 112 1 Series only)	Yellow	Blinking: Data transmission
	Off	No data transmission
LAN 1/2/3/4	Green	Steady On: 100 Mbps Ethernet link Blinking: Data is being transmitted
	Yellow	Steady On: 1000 Mbps Ethernet link Blinking: Data is being transmitted
	Off	10 Mbps Ethernet link or LAN is not connected
Tx 1/2/3/4	Green	Blinking: Data is being transmitted.
	Off	No connection
Rx 1/2/3/4	Yellow	Blinking: Data is being transmitted.
	Off	No connection

Installing a Wireless Module

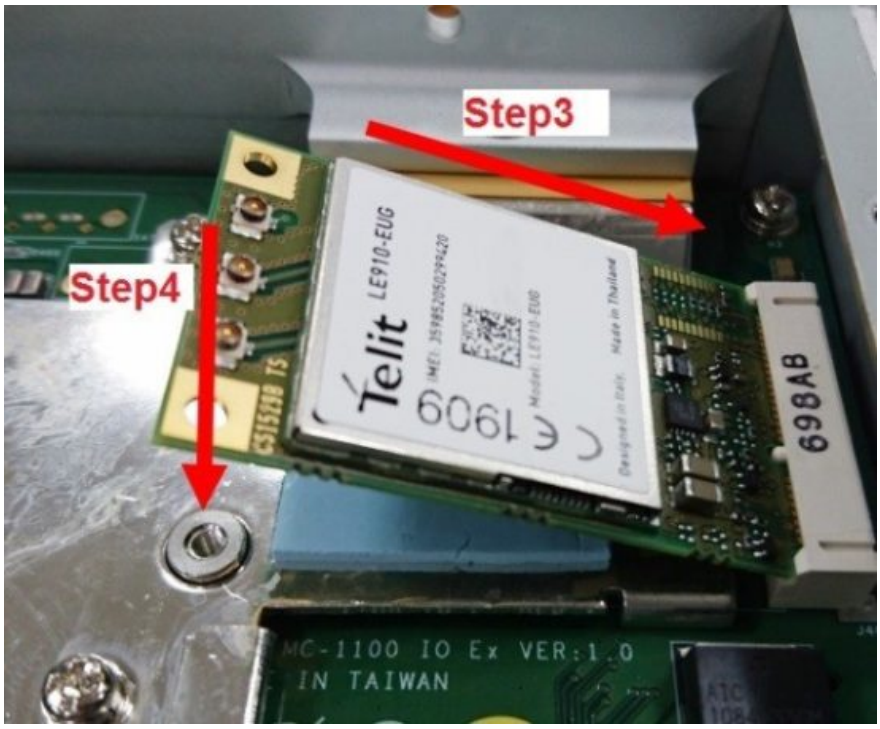
Both the MC-1121 and MC-1122 models have been provided with an inbuilt Mini PCIe socket for installing a wireless module. To install a wireless module on your MC-1100 computer, do the following:
STEP 1: Loosen the six screws on the right panel and the two screws on the bottom panel.



STEP 2: Open the right cover to reveal the Mini PCIe socket.



STEP 3: Insert the wireless module into the socket at an angle.
STEP 4: Push the wireless module card down.

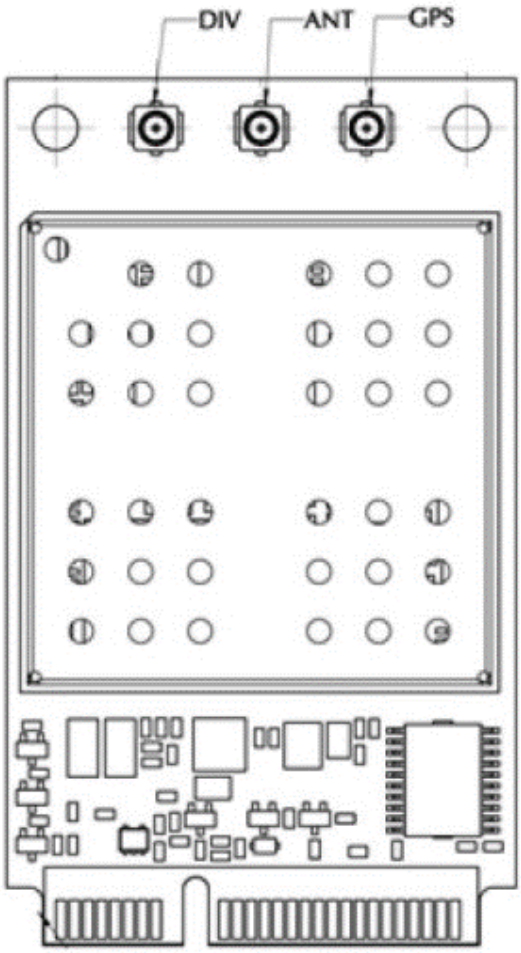


STEP 5: Secure the wireless module card with the 2 screws included in the package.
STEP 6: Connect the antenna cable connector to the wireless module card.



The available connectors are:

- Main RF antenna (ANT)
- RX Diversity Antenna (DIV)
- GNSS Antenna (GPS)



STEP 7: Replace the side and bottom covers and secure them with screws.
STEP 8: (Optional) You can install external
3G, 4G, and Wi-Fi antennas from Moxa to increase the wireless coverage. Contact a Moxa sales representative for details.

A MC-1100 computer with external antennas installed is shown here.



NOTE The MC-1121-E4-T-US model is C1D2 certified with the wireless module. The other models do not use the wireless module and hence are C1D2 certified without the wireless module.

Installing the MC-1100

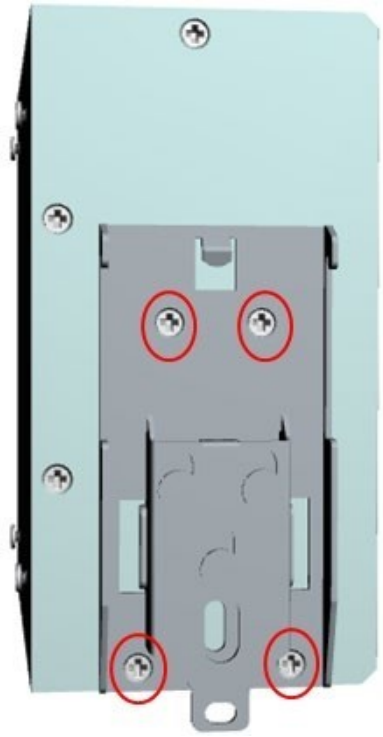
DIN-rail Mounting

The MC-1100 comes with a DIN-rail mounting kit. To install the DIN-rail mounting kit, do the following:

Installation:

STEP 1:

Use the 4 screws included with the kit to attach the DIN-rail mounting bracket to the MC-1100's rear panel and tighten the screws to secure the bracket to the MC-1100.

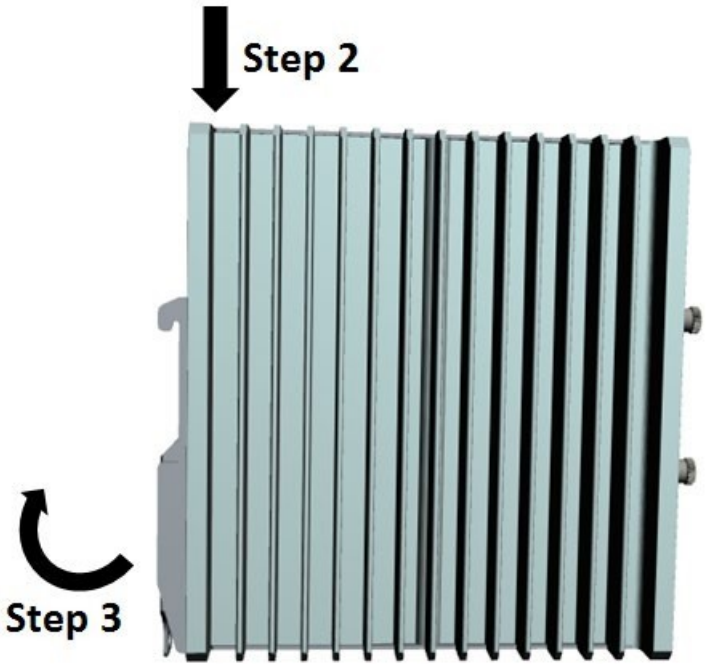


STEP 2:

Insert the top of the DIN rail into the slot just below the upper hook of the DIN-rail mounting kit.

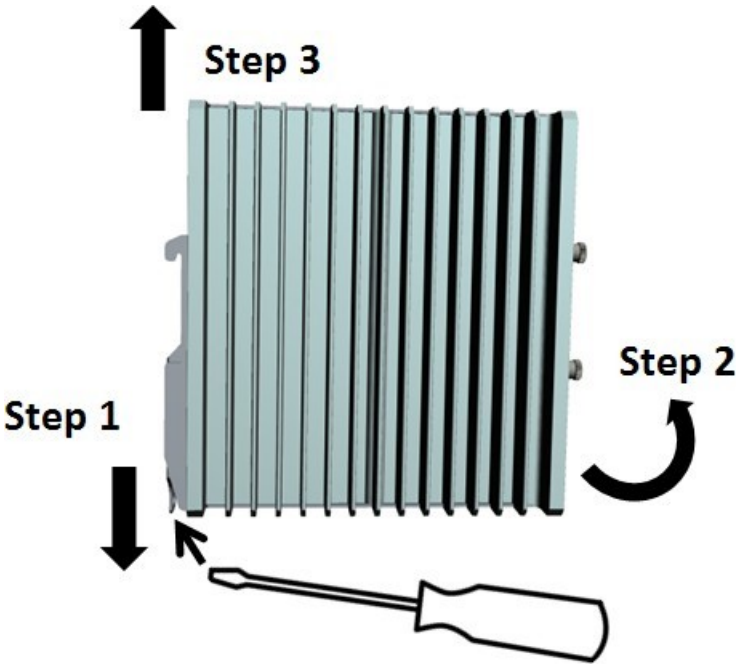
STEP 3:

Press the MC-1100 towards the DIN rail until it snaps into place.



Removal:

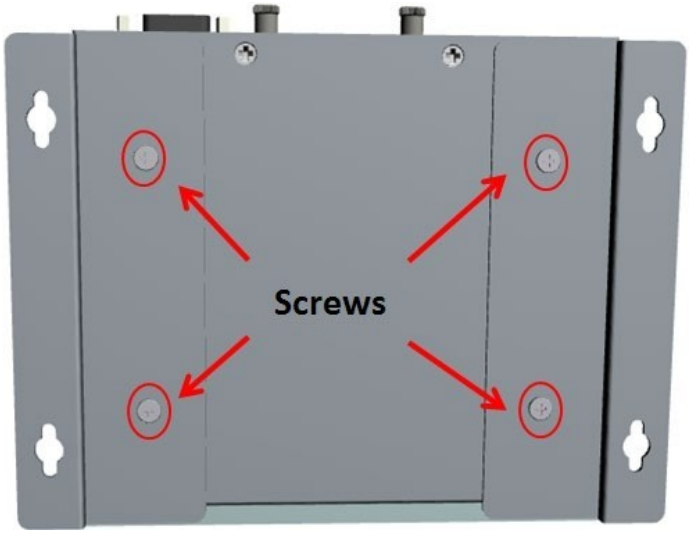
STEP 1:
Pull down the latch on the mounting kit with a screwdriver.
STEP 2 & 3:
Slightly pull the MC-1100 forward and lift it up to remove it from the DIN rail.



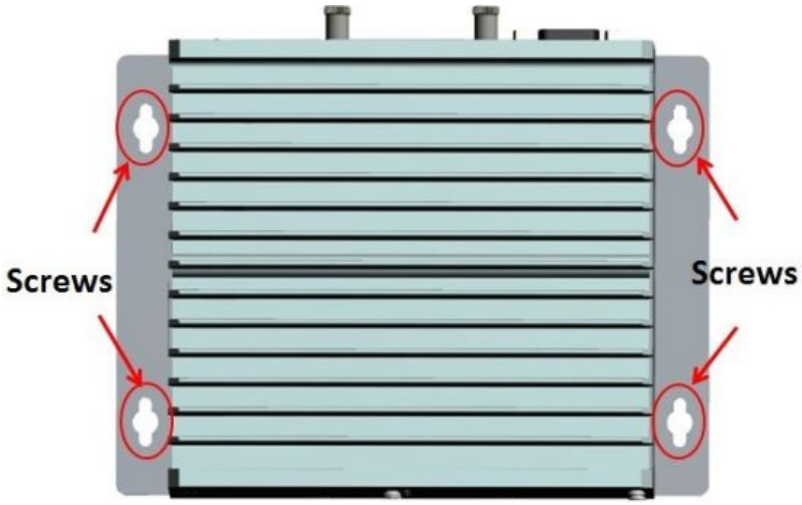
Wall or Cabinet Mounting

The MC-1100 can be installed on a wall by using the optional wall mounting kit. This wall-mounting kit must be purchased separately.

STEP 1:
Use two screws for each bracket and attach the brackets to the rear of the MC-1100.

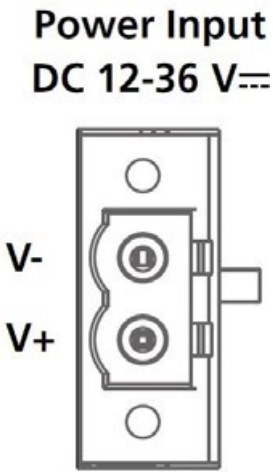


STEP 2:
Use two screws per side to attach the MC-1100 to a wall or cabinet.



Connector Description

Power Connector

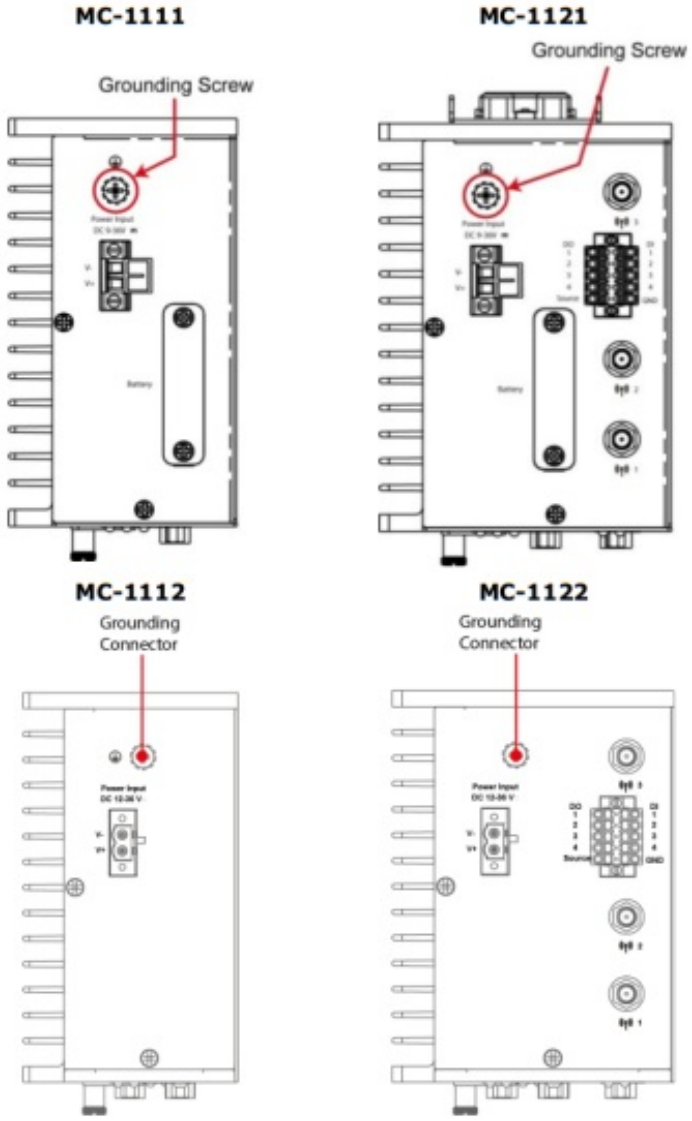


Use an LPS (12-36 VDC) or Class 2 power cord to connect to the MC-1100's terminal block to power jack converter and then turn on the power. If the power is supplied properly, the Power LED will light up. The OS is ready when the Power LED glows a solid green.

Grounding the MC-1100

Grounding and wire routing help limit the effects of noise due to electromagnetic interference (EMI). Run the ground connection from the grounding screw (M4) to the grounding surface prior to connecting the power as shown in the illustrations below:

NOTE A 4 mm2 conductor must be used when the connection to the external grounding screw is utilized. The heat sink is grounded to the chassis by an internal screw.



⚠ WARNING

Antenna connectors are NOT FOR USE IN HAZARDOUS LOCATIONS.

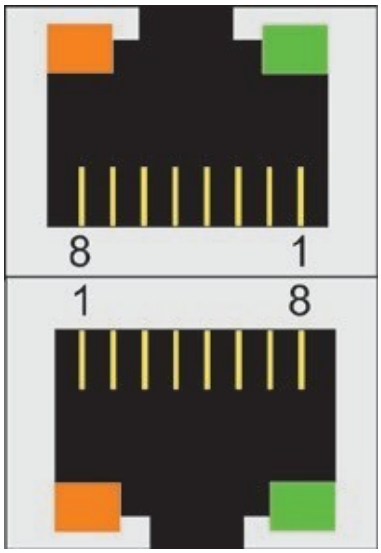
Terminal Block

Terminal block (JP1)—R/C (XCFR2, XCFR8); socket soldered on to the PWB, DINKLE ENTERPRISE CO., LTD, type 2EHDRM, rated 300 V, 15 A, 105°C. Mating with plug type 2RSDAM, 2ESDPM, 2ESDPLM or 2ESDVM, rated 300 V, 15 A, 105°C. The plug half connection is secured by screws. Suitable for 12-24 AWG wire size and secured on to a plug by screws with a torque value 0.5 N-m (4.4253 lb-in).

Ethernet Ports

The 10/100/1000 Mbps Ethernet ports use RJ45 connectors.

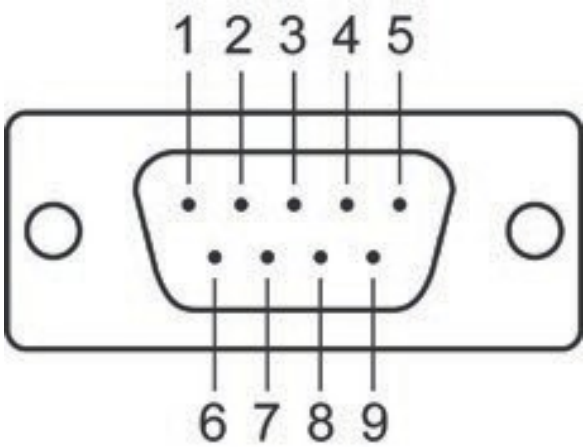
Pin	10/100 Mbps	1000 Mbps
1	ETx+	TRD(0)+
2	ETx-	TRD(0)-
3	ERx+	TRD(1)+
4	–	TRD(2)+
5	–	TRD(2)-
6	ERx-	TRD(1)-
7	–	TRD(3)+
8	–	TRD(3)-



Serial Ports

The serial ports use DB9 connectors. Each port can be configured by software for RS-232, RS-422, or RS-485 port. The pin assignments for the ports are shown in the following table

Pin	RS-232	RS-422	RS-485 (4-wire)	RS-485 (2-wire)
1	DCD	TxDA(-)	TxDA(-)	–
2	RxD	TxDB(+)	TxDB(+)	–
3	TxD	RxDB(+)	RxDB(+)	DataB(+)
4	DTR	RxDA(-)	RxDA(-)	DataA(-)
5	GND	GND	GND	GND
6	DSR	–	–	–
7	RTS	–	–	–
8	CTS	–	–	–



SD Slot

The MC-1100 (MC-1111 and MC-1121 Series) has an SD slot for storage expansion. The SD slot allows users to plug in an SD 3.0 standard SD card. To install an SD card, gently remove the outer cover, and then insert the SD card into the slot.

USIM Slot

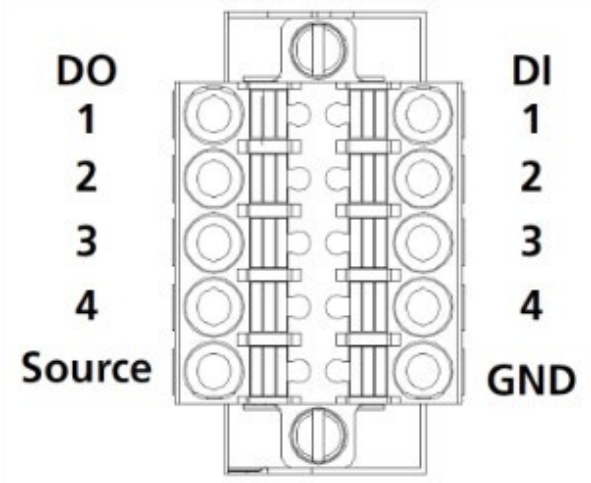
The MC-1100 (MC-1121 and MC-1122 Series) has a USIM slot for 3G/LTE wireless Internet connections. To install a USIM card, gently remove the outer cover from the bottom, and then insert the USIM card into the slot.

USB Hosts

The MC-1100 has 2 USB 2.0 ports with Type A connectors (rated 5V and 700 mA total for 2 ports; max. 500 mA/port) located on the front panel. The ports support keyboard and mouse and can also be used to connect a flash disk for storing large amounts of data.

DI/DO

The MC-1100 is provided with a 2×5 terminal block that has 4 digital inputs and 4 digital outputs.



Models

- MC-11WW-XX-Y-ZZZZZ
- **WW:** Function Type: can be 11 or 21 or 22 or 12
- **XX:** Performance Type: E2 = Atom E3826, E4 = Atom E3845
- **Y:** Operation temperature; T = wide-temperature models
- **ZZZZZ:** Application Type for marketing purpose 12-36 VDC, 2.5 A

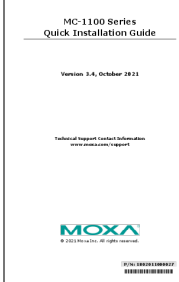
Rating ATEX Information

II 3 G
DEMKO 17 ATEX 1852X e II 3 G Ex nA IIC T4 Gc
Ambient Range: -40°C ≤ Ta ≤ +70°C
Rated Cable Temp.≥ 107 °C for models MC-1111,
MC-1112, MC-1121, and MC-1122.
IECEx Certificate no. IECEx UL 17.0025X (excluding the MC-1121-E4-T-US model)

Specific Conditions of Use

1. The equipment shall be installed in an enclosure that provides a degree of protection not less than IP54 in accordance with EN 60079-15 and accessible only by the use of a tool.
2. Subject devices are for use in an area of not more than pollution degree 2 in accordance with EN 60664-1.
3. Transient protection shall be provided that is set at a level not exceeding 140 % of the peak rated voltage value at the supply terminals to the equipment.

Documents / Resources

	**MOXA MC-1100 Series x86 DIN-Rail Industrial Computer** [pdf] Installation Guide MC-1100 Series x86 DIN-Rail Industrial Computer, MC-1100 Series, x86 DIN-Rail Industrial Computer

References

- **Moxa - Support**

Manuals+,