MC-1100 Series
Quick Installation Guide

Version 3.5, April 2024

Technical Support Contact Information
www.moxa.com/support

MOXA®

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
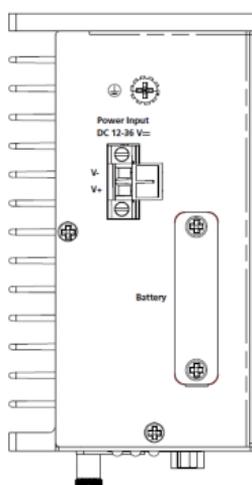- Quick installation guide (printed)
- Warranty card

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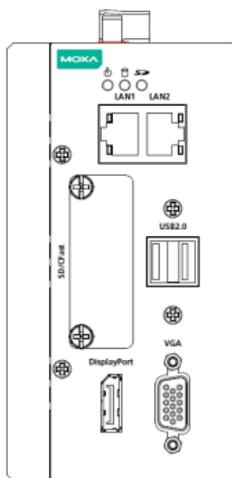
Panel Views

MC-1111

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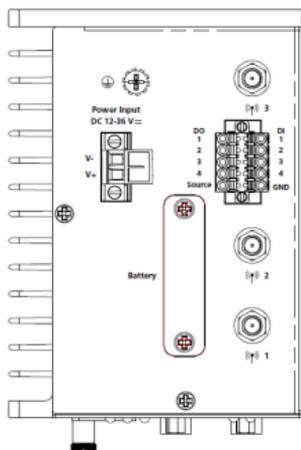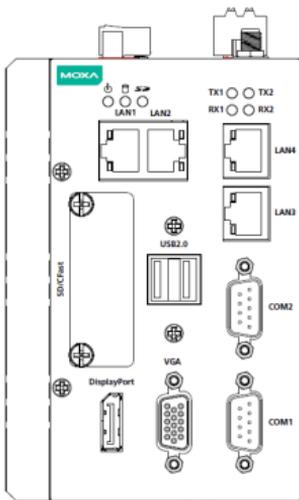

- 2 -

MC-1121

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

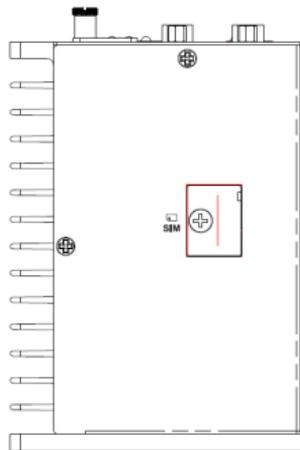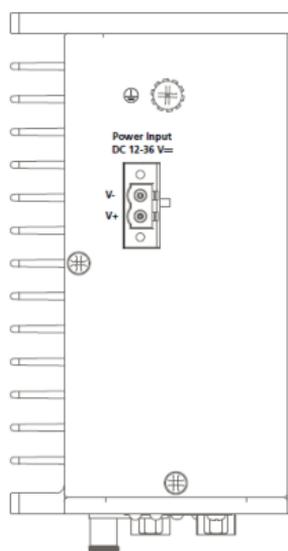| Top View	Front View	Rear View

MC-1112
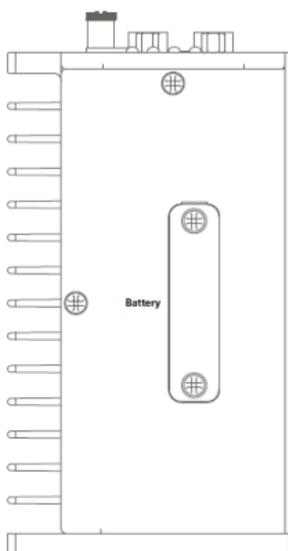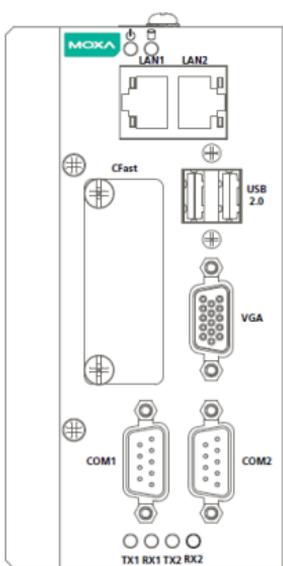
Top View	Front View	Rear View

MC-1122
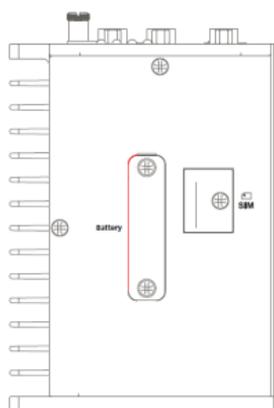
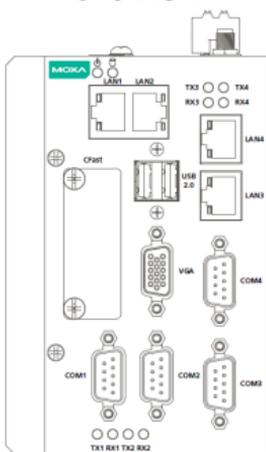| Top View	Front View	Rear View

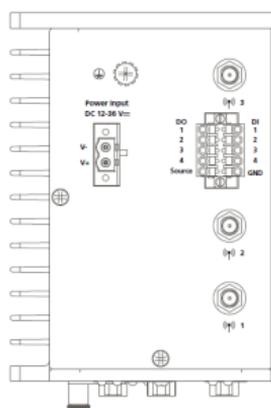## LED Indicators

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) SD™ (MC-1111 and MC-1121 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 a built-in 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.
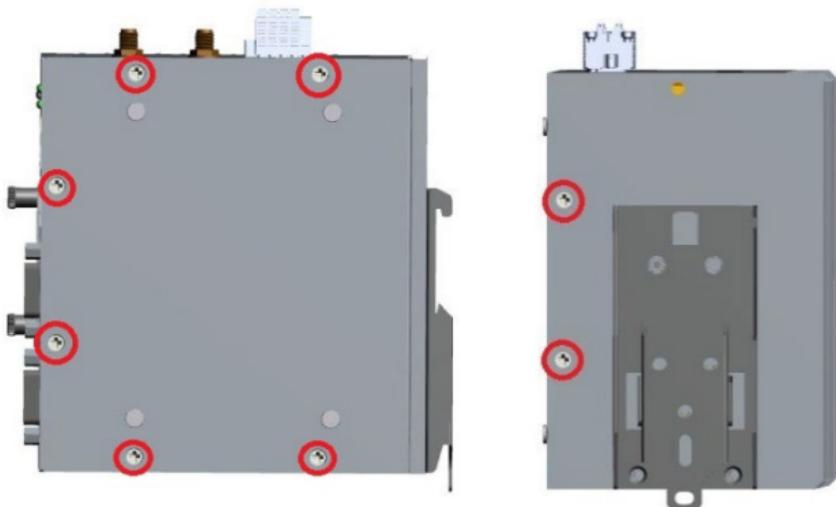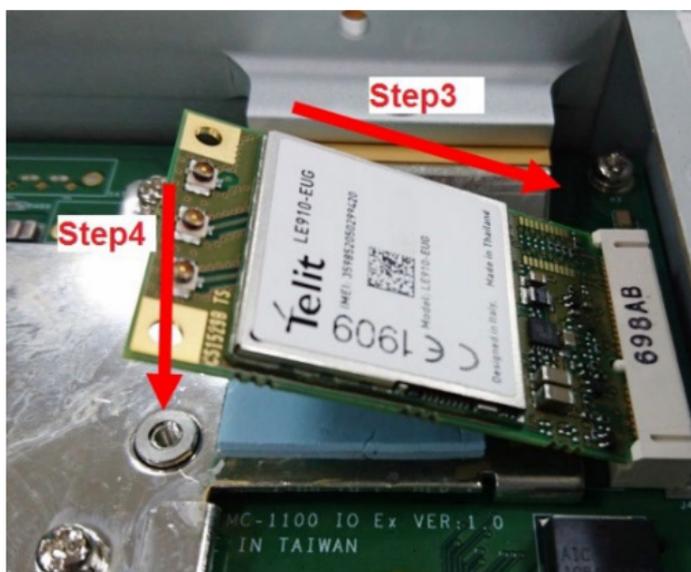

STEP 2: Open the right cover to reveal the Mini PCIe socket.

STEP 3: Insert the wireless module into the socket at an angle.

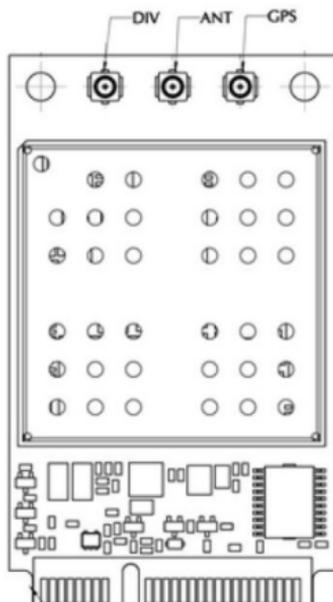**STEP 4**: Push the wireless module card down.

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.

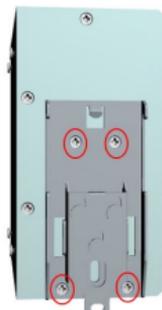## Installing the MC-1100

DIN-rail Mounting

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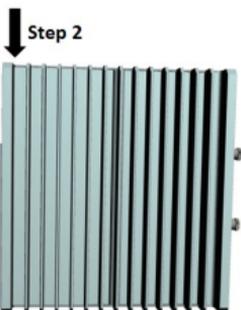
Installation:

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.
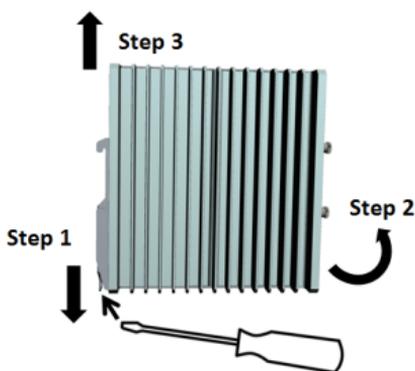
*The DIN-rail mounting brackets require screws with the specifications: Length: 6 mm; Diameter: 3 mm.

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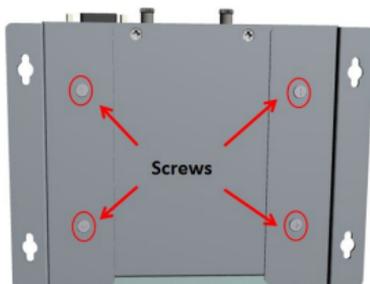
STEP 2:
Use two screws per side to attach the MC-1100 to a wall or cabinet.

*The wall-mounting kit brackets require screws with the specifications:

Equipment side: Length: 6 mm; diameter: 3 mm.
Wall side: Length: 10 mm; diameter: 3 mm.

Connector Descriptions

Power Connector

**Power Input
DC 12-36 V⎓**

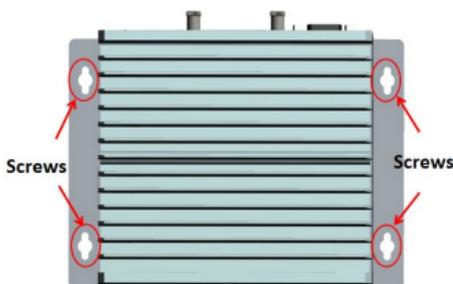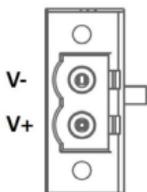Use an LPS (12-36 VDC) or Class 2 power cord to connect to the MC-1100's terminal block to power jack converter and then turn on the power. If the power is supplied properly, the Power LED will light up. The OS is ready when the Power LED glows a solid green.

V-
V+

Wire Size: 12 to 24 AWG (3.31 to 0.21 mm^2)
Torque Value: 0.5 N-m (4.4253 lb-in)

Recommend stripping 7 to 8 mm of the wire and securing it with the screws in the plug.

> ⚠️ **ATTENTION**
>
> This product is intended to be supplied by an external power source (UL Listed/ IEC 60950-1/ IEC 62368-1), the output of which complies with ES1/SELV/PS2/LPS. The output rating should be 12 to 36 VDC, 2.5 A min. suitable for use at Tma = 70°C min.

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 mm^2 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.

MC-1111

Grounding Screw

MC-1121

Grounding Screw

MC-1112

Grounding Connector

MC-1122

Grounding Connector
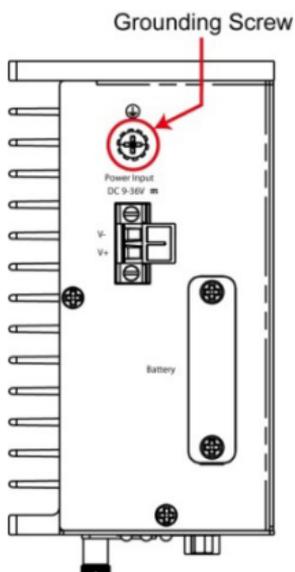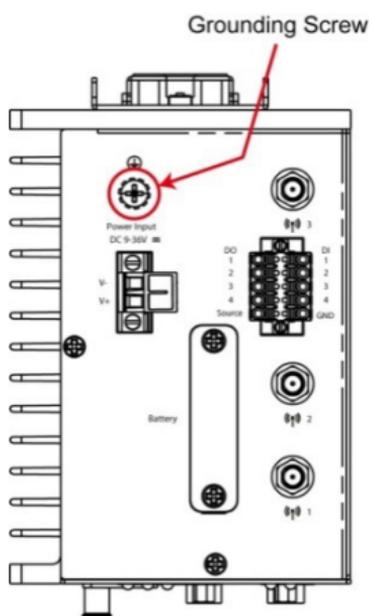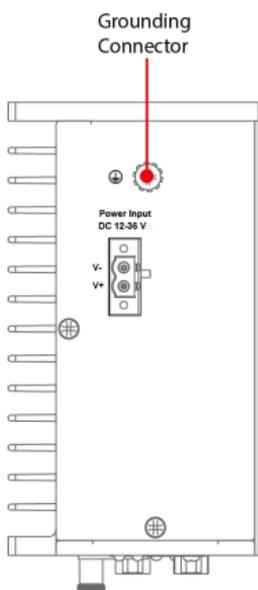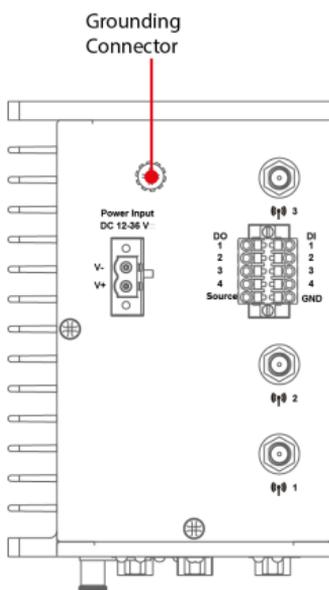
⚠️ **WARNING**

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 the plug by screws with a torque value 0.5 N-m (4.4253 lb-in).

WARNING

The wiring for the input terminal block should be installed by a skilled person.

- Wire Type: Cu
- Wire Size: 12 to 24 AWG (3.31 to 0.21 mm2)
- 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:

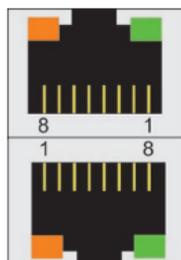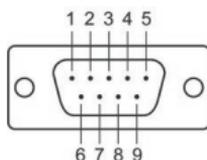| Pin	RS-232	RS-422	RS-485 (4-wire)	RS-485 (2-wire)
1	DCD	TxDA(-)	TxDA(-)	–
2	RxD	TxDB(+)	TxDB(+)	–
3	TxD	RxDB(+)	RxDB(+)	DataB(+)
4	DTR	RxDA(-)	RxDA(-)	DataA(-)
5	GND	GND	GND	GND
6	DSR	–	–	–
7	RTS	–	–	–
8	CTS	–	–	–

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 (USB 2.0 rated 5V, 2 ports total 700; 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 x 5 terminal block that has 4 digital inputs and 4 digital outputs.

The DI/DO terminal block is suitable for:
Wire Size: 16 to 28 AWG (1.31 to 0.081 mm²)
Recommend stripping 7 to 8 mm of the wire and securing it with the screws in the plug.
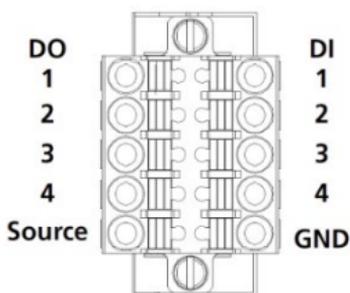
Hazardous Locations Specifications

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
Rating	12-36 VDC, 2.5 A

ATEX Information

CE $\langle Ex \rangle$ II 3 G

DEMKO 17 ATEX 1852X
Ex ec 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 IECEx UL 17.0025X
Certificate no. (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 IEC / 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 IEC/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.

⚠ ATTENTION

This equipment is suitable for use in Class I Division 2, Groups A, B, C, and D or non-hazardous locations only.

⚠ ATTENTION

These devices are open-type devices that are intended to be used in a Restricted Access Location, such as a dedicated computer room, where access can only be gained by SERVICE PERSONS or by USERS who have been instructed about the fact that the metal chassis of the equipment is extremely hot and may cause burns.

⚠ WARNING

EXPLOSION HAZARD

Do not disconnect the equipment unless the power has been switched off, or the area is known to be nonhazardous.

⚠ WARNING

There is a risk of explosion if the clock's lithium battery is replaced with an incompatible battery.

BSMI Certification for Taiwan

限用物質含有情況標示聲明書

Declaration of the Presence Condition of the Restricted Substances Marking

設備名稱: 嵌入式計算機			型號 (型式) : MC-1122-E4-TPM-T		
					(及其系列型號)
Equipment name			Type designation (Type)		

單元 Unit	限用物質及其化學符號 Restricted substances and its chemical symbols					
	鉛 Lead (Pb)	汞 Mercury (Hg)	鎘 Cadmium (Cd)	六價鉻 Hexavalent chromium (Cr^{+6})	多溴聯苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
外殼	○	○	○	○	○	○
印刷電路板及其電子組件	−	○	○	○	○	○
電纜/電線/連接器	−	○	○	○	○	○
機械部件/金屬	−	○	○	○	○	○
機械部件/非金屬	○	○	○	○	○	○

備考 1. "超出 0.1 wt %" 及 "超出 0.01 wt %" 係指限用物質之百分比含量超出

百分比含量基準值。

Note 1: "Exceeding 0.1 wt %" and "exceeding 0.01 wt %" indicate that the percentage content of the restricted substance exceeds the reference percentage value of presence condition.

備考 2. "○" 係指該項限用物質之百分比含量未超出百分比含量基準值。

Note 2: "○" indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence.

備考 3. " − " 係指該項限用物質為排除項目。

Note 3: The "−" indicates that the restricted substance corresponds to the exemption.

⚠ **警告**

未避免電磁干擾，本產品不應安裝或使用於住宅環境。

⚠ **警告**

如果更換不正確之電池型式會有爆炸的風險，
請依製造商說明書處理用過之電池。

⚠ **注意**

本手冊內提及的所有電信終端功能目前不提供予台灣市場，
若需要更多資訊請與 Moxa 聯繫。

製造商資訊:
Moxa 四零四科技股份有限公司
+886-3-2737575
桃園市八德區和平路 1111 號

產品型號:
MC-1122-E2-T
MC-1122-E4-T
MC-1122-E4-TPM-T