

UC-4400A Series Quick Installation Guide

Version 1.1, December 2024

Technical Support Contact Information
www.moxa.com/support

MOXA[®]

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P/N: 180204400002



Overview

The UC-4400A Series computing platform is designed for embedded data acquisition applications. The UC-4400A computers come with two or four RS-232/422/485 serial ports and dual 10/100/1000 Mbps Ethernet LAN ports, as well as M.2 and Mini PCIe sockets to support cellular and Wi-Fi modules. These versatile communication capabilities let users efficiently adapt the UC-4400A Series to a variety of complex communications solutions.

Package Checklist

Before installing the UC-4400A Series, verify that the package contains the following items:

- 1 x UC-4400A Series embedded computer
- 1 x Quick installation guide (printed)
- 1 x Warranty card (printed)



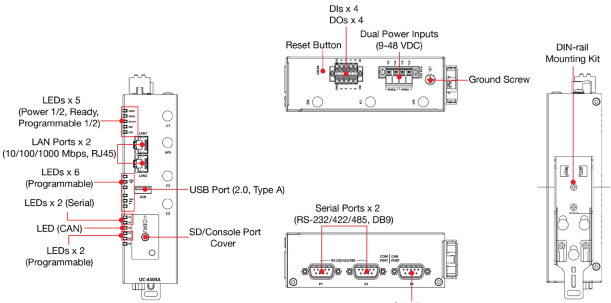
IMPORTANT!

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

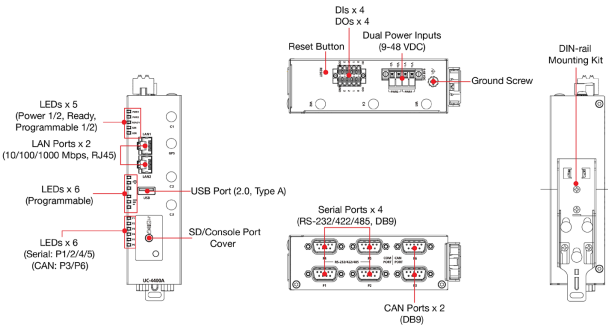
Panel Layouts

The panel layouts of the UC-4400A models are given below:

UC-4410A

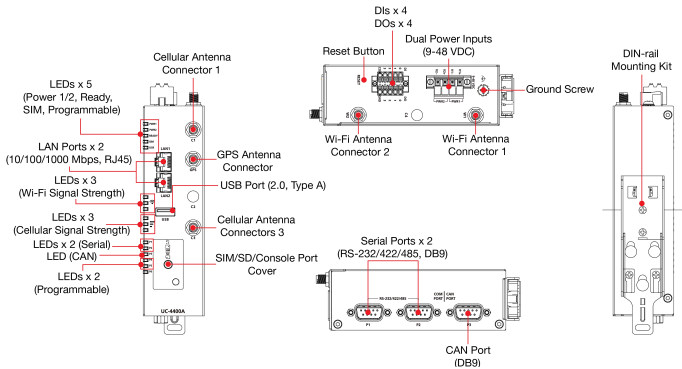


UC-4414A

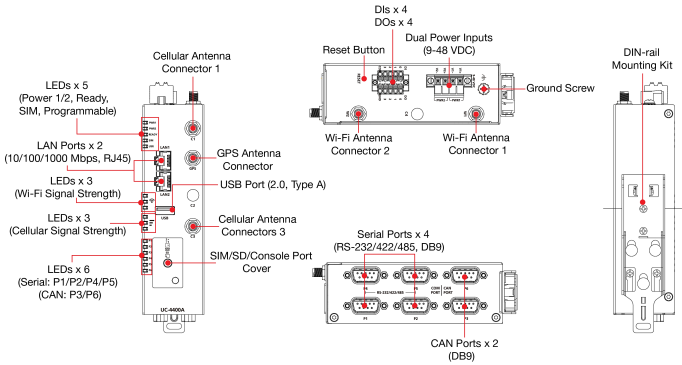


NOTE The P4 and P5 serial ports come with built-in 2 kV isolation.

UC-4430A

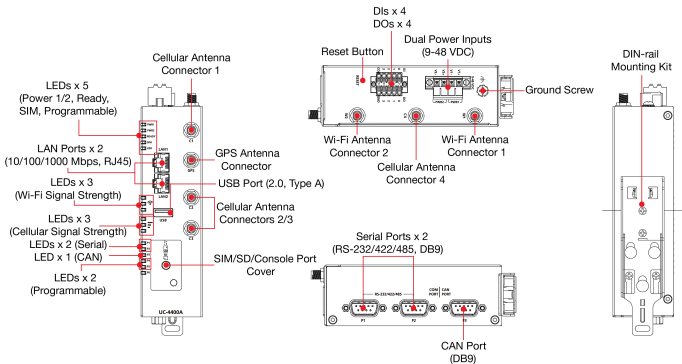


UC-4434A

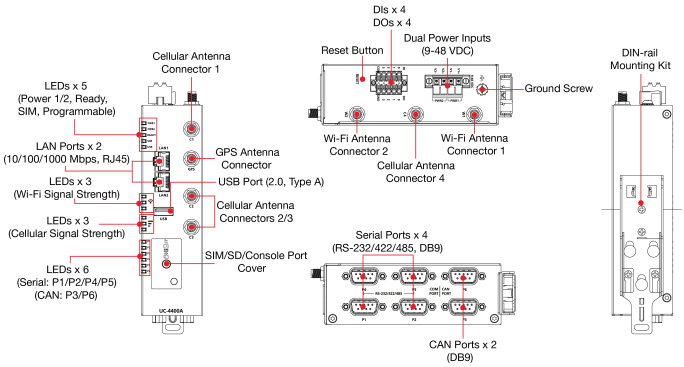


NOTE The P4 and P5 serial ports come with built-in 2kV isolation.




UC-4450A



UC-4454A



LED Indicators

LED Name	Status	Function
PWR1/PWR2	Green	Power is on
	Off	No power
READY	Green	Steady on: The device has successfully booted and all services are initialized
		Blinking: Device is in the process of booting up
	Red	Device boot failure, which occurs if any service fails to initialize
SIM	Green	The device remains in the bootloader stage and has not yet booted into the kernel
	Yellow	SIM2 is the active slot, with a functional SIM card inserted
USR	Green	SIM1 is the active slot, with a functional SIM card inserted
	Yellow	User programmable
 (Cellular Signal Strength)	Green	Three LEDs steady on: Good or excellent
		Two LEDs steady on: Fair
One LED steady on: Poor		
 (Wi-Fi Signal Strength)	Green	One LED blinking: Very poor
		Off
 (Cellular Signal Strength)	Green	Three LED steady: 61% to 100%
		Two LED steady: 41% to 60%
		One LED steady: 21% to 40%
LAN1/LAN 2 (RJ45 connector)	Green	One LED blinking: 0% to 20%
		Off
	P1/P2 (Serial Port)	Green
Yellow		Blinking: Receive or transmitting data
Off		Steady ON: 1000M link established
P1/P2 (Serial Port)	Green	Blinking: Receive or transmitting data
	Yellow	No Ethernet connection
P1/P2 (Serial Port)	Green	Blinking: Serial port is transmitting data
	Yellow	Blinking: Serial port is receiving data

LED Name	Status	Function
	Off	Serial port is not transmitting or receiving data
P4/P5 (Serial ports only available on the UC-4414A/34A/54A models)	Green	Blinking: Serial port is transmitting data
	Yellow	Blinking: Serial port is receiving data
	Off	Serial port is not transmitting or receiving data
P3 (CAN port)	Light Yellow	Blinking: CAN port is transmitting data
	Yellow	Blinking: CAN port is receiving data
	Off	CAN port is not transmitting or receiving data
P6 (CAN port only available on the UC-4414A/34A/54A models)	Light Yellow	Blinking: CAN port is transmitting data
	Yellow	Blinking: CAN port is receiving data
	Off	CAN port is not transmitting or receiving data

NOTE In certain UC-4400A Series models, the SIM, Wi-Fi Signal Strength, Cellular Signal Strength, P4, or P5 LEDs might not be in use. In such cases, the LEDs not in use are user programmable.

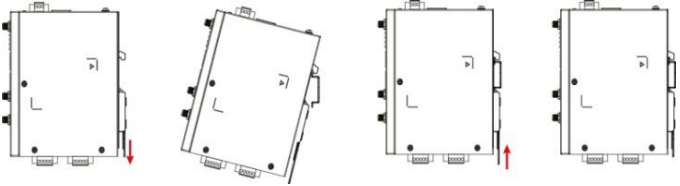
Mounting the UC-4400A Series

The UC-4400A Series can be mounted on to a DIN rail or on to a wall. The DIN-rail mounting kit is attached to the computer by default. To order a wall-mounting kit, contact a Moxa sales representative.

DIN-rail Mounting

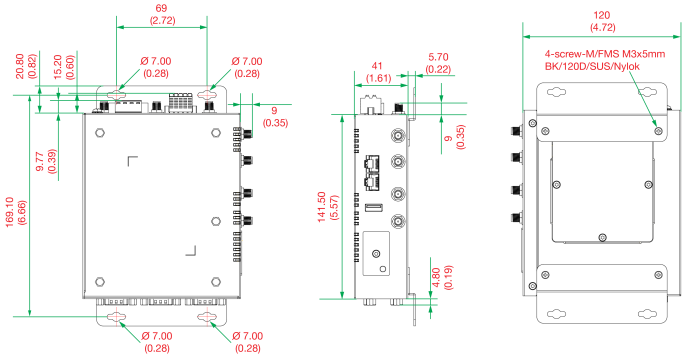
The aluminum DIN-rail attachment plate is attached to the product's casing. To mount the UC-4400A Series on to a DIN rail, ensure that the stiff metal spring is facing upwards and follow these steps.

1. Pull down the slider of the DIN-rail bracket located at the back of the unit.
2. Insert the top of the DIN rail into the slot just below the upper hook of the DIN-rail bracket.
3. Latch the unit firmly on to the DIN rail as shown in the illustrations below.
4. Once the computer is mounted properly, you will hear a click and the slider will rebound back into place automatically.



Wall Mounting (optional)

Unit: mm (inch)

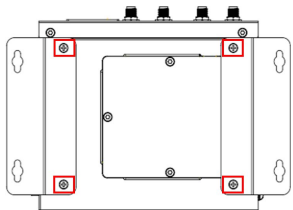


The UC-4400A Series can be mounted on to a wall using a wall-mounting kit. The optional wall-mounting kit must be purchased separately.

To mount the computer on to a wall, do the following:

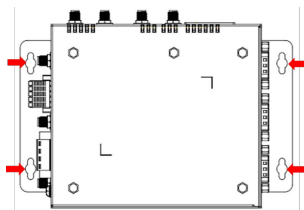
Step 1

Use the four screws (M3 x 5 mm) in the package to fasten the wall-mounting brackets to the computer.



Step 2

Use another four screws (M3 x 6 mm) to mount the computer on to a wall or in a cabinet.



Recommended Fastening Torque: 4.5 ± 0.5 kgf-cm.

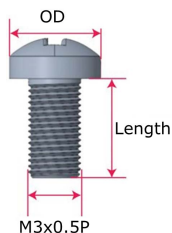
The additional four screws in Step 2 are not included in the wall-mounting kit package and must be purchased separately. The specifications of the additional screws required are as follows:

Head Type: Pan/Doom

Head Diameter 5.2 mm < OD < 7.0 mm

Length > 6 mm

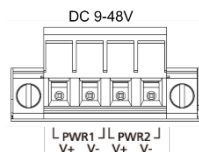
Thread Size: M3 x 0.5P



- NOTE**
- Test the screw head and shank size by inserting the screws into one of the keyhole shaped apertures of the wall-mounting plates before attaching the plate to the wall.
 - Do not drive the screws in all the way—leave a space of about 2 mm to allow room for sliding the wall mount panel between the wall and the screws.

Connector Descriptions

Power Connector



Connect the power jack to the UC-4400A Series' DC terminal block (located on the top panel), and then connect the power adapter. It takes about 10 to 30 seconds for the system to boot up. Once the system is ready, the Power LED will light up. All models support dual power inputs for redundancy.



ATTENTION

The wiring for the input terminal block should be installed by a skilled person. The wire type should be copper (Cu), wire size should be 14 AWG to 16 AWG (2.08 to 1.31 mm²), and a torque of 0.19 n-m should be used for V+, V-, and GND connections. The wire size of the power input and earthing conductor should be the same.



ATTENTION

This product is intended to be supplied by a UL Listed Power Unit marked **LPS** (Limited Power Source). The ratings for the different models in the series are as follows:

- UC-4410A and UC-4414A: 9 VDC (1.53 A min) to 48 VDC (0.21 A min) and T_{ma} = 75°C (min)
- UC-4430A and UC-4434A: 9 VDC (2.11 A min) to 48 VDC (0.27 A min) and T_{ma} = 70°C (min)
- UC-4450A and UC-4454A: 9 VDC (2.13 A min) to 48 VDC (0.3 A min) and T_{ma} = 70°C (min)

If you need further information or assistance, contact a Moxa representative.



WARNING

EXPLOSION HAZARD!

Do not disconnect equipment unless the power has been removed or the area is known to be non-hazardous.



ATTENTION

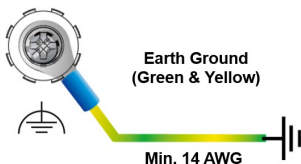
Altitude Requirement

This product and the listed power supply (LPS) adapter(s) used with it are UL-certified for operation at 2,000 meters. Although the product is tested at 5,000 meters, it is not UL-certified for this altitude. For reliable performance of the product in high-altitude installations of over 2,000 meters (e.g., 5,000 meters), use a suitable adapter that is tested and certified at the altitude (i.e., 5,000 meters).

Grounding the Computer

There is a grounding connector located on the top panel of the computer. Grounding and wire routing help limit the effects of noise due to electromagnetic interference (EMI). Note that this product is intended to be mounted on a well-grounded mounting surface, such as a metal panel.

The power cord adapter should be connected to a socket outlet with an earthing connection.

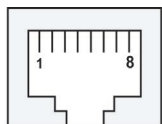


ATTENTION

This product is intended to be mounted to a well-grounded mounting surface such as a metal panel. Use the green-and-yellow cable type minimum with American Wire Gauge (AWG) 14 (2.5 mm²) for grounding.

Ethernet Ports

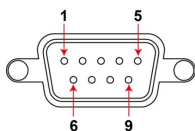
The two 10/100/1000 Mbps Ethernet ports (LAN 1 and LAN 2) come with RJ45 connectors. The pin assignment is shown in the following table:



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

Serial Ports

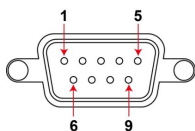
The four serial ports (P1, P2, P4, P5) use DB9 interface. Each port can be configured by software for RS-232, RS-422, or RS-485. The pin assignment is shown in the following table:



Pin	RS-232	RS-422/ RS-485 4w	RS-485 2w
1	DCD	TxD-(A)	-
2	RxD	TxD+(B)	-
3	TxD	RxD+(B)	Data+(B)
4	DTR	RxD-(A)	Data-(A)
5	GND	GND	GND
6	DSR	-	-
7	RTS	-	-
8	CTS	-	-

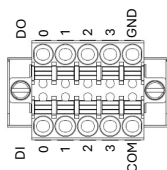
CAN Ports

One or two (P3, P6) CAN ports with DB9 interfaces are located on the bottom panel. The pin assignment is shown in the following table:



Pin	Definition
1	-
2	CAN_L
3	CAN_GND
4	-
5	(CAN_SHLD)
6	(GND)
7	CAN_H
8	-
9	(CAN_V+)

Digital Inputs/Outputs



There are four digital inputs and four digital outputs on the top panel. Refer to the figure on the left for detailed pin definitions.

USB Port

The USB port is a type-A USB 2.0 port, which can be used to connect a USB storage device or a type-A USB compatible device.

NOTE The peripheral devices installed are recommended to be placed at least 25 mm from the UC-4400.

SIM Card Socket

The UC-4430A-T, UC-4434A-I-T, UC-4450A-T-5G, UC-4454A-T-5G computers come with a nano-SIM card slot that can install two SIM cards for cellular communication.

To install the SIM card, do the following:

Step 1

Remove the screw securing the SIM card holder cover on the front panel of the computer.



Step 2

The SIM card tray can hold two SIM cards, one on each side.



Install the first SIM card in the SIM1 slot and the second SIM card on the opposite side of the tray.



To remove the SIM card tray, press the tray inwards, then release it to eject the tray. You can then pull out the tray.

MicroSD Card Sockets

The UC-4400A comes with a microSD socket for storage expansion. The microSD socket is located on the lower part of the front panel. To install the card, remove the screw and the protection cover to access the socket, and then insert the microSD card into the socket. You will hear a click when the card is in place. To remove the card, push the card in before releasing it.

Console Port

The console port is an RS-232 port located on the lower part of the front panel. To install the card, remove the screw and the protection cover to access the console port. You can connect a 4-pin pin header cable and use the port for debugging issues or system image upgrades.



Pin	Signal
1	TxD
2	RxD
3	NC
4	GND

Antenna Connectors

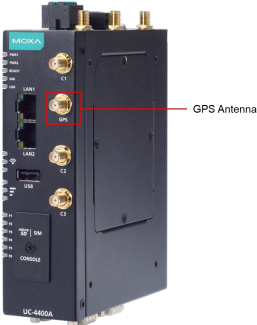
UC-4450A and UC-4454A models come with four cellular antenna connectors (C1 to C4) on the front and top panels.

UC-4430A and UC-4434A come with two cellular antenna connectors (C1 and C3) on the front panel.

UC-4434, UC-4430, UC-4454, and UC-4450 models have two Wi-Fi antenna connectors (W1 and W2) on the top panel. Both come with RP-SMA female connectors.



In addition, a GPS antenna connector is provided for the GPS module. All cellular and GPS connectors are of type SMA female.



Real-time Clock

The real-time clock in the UC-4400A Series is powered by a lithium battery. We strongly recommend that you do not replace the lithium battery without the help of a Moxa support engineer. If you need to change the battery, contact the Moxa RMA service team.



ATTENTION

There is a risk of explosion if the battery is replaced with an incorrect type of battery. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Accessing the UC-4400A Series Using a PC

You can use a PC to access the UC-4400A Series by one of the following methods:

- A. Through the serial console port with the following settings:
Baudrate=115200 bps, **Parity**=None, **Data bits**=8, **Stop bits**=1, **Flow Control**=None



ATTENTION

Remember to choose the **VT100** terminal type. Use the console cable to connect a PC to the UC-4400A Series's serial console port.

- B. Using SSH over the network.
Refer to the following IP addresses and login information:

	Default IP Address	Netmask
LAN 1	Assigned by DHCP server. Link-local IP addresses will be assigned when DHCP server is not available	255.255.255.0
LAN 2	192.168.4.127	255.255.255.0

Login: moxa

Default Password: moxa

Certification Information

Model Type and Model Name in the Product Labels

The UC-4400A Series models have been organized into different Model Types with other Moxa products for certification purposes. The following table maps the commercial names of the UC-4400A Series models to the Model Type listed on the product labels:

Model Type		Commercial Series	Commercial Model
Virtual Series	Virtual Model		
MXEG4400	MXEG4400-4S2C5GW	UC-4400A Series	UC-4454A-T-5G-WiFi
	MXEG4400-4S2C5G		UC-4454A-T-5G
	MXEG4400-2S1C5G		UC-4450A-T-5G
	MXEG4400-4SI2C		UC-4434A-I-T
	MXEG4400-2S1C		UC-4430A-T
	MXEG4400-4SI2CNW		UC-4414A-I-T
	MXEG4400-2S1CNW		UC-4410A-T

FCC Statement



ATTENTION

Operation of transmitters in the 5.925 to 7.125 GHz band is prohibited for control of or communications with unmanned aircraft systems.



ATTENTION

1. The device is restricted to indoor use only when operating in the 5150 to 5350 MHz frequency range.
2. This device is intended for indoor use only when operating in the frequency range 5945 to 6425 MHz, which is applicable in countries that support Wi-Fi 6E.
3. The device is restricted to indoor use only when operating in the 5925 to 6425 MHz frequency range.

4. **RF Exposure warning**

- This device meets the EU requirements (2014/53/EU) on the limitation of exposure of the general public to electromagnetic fields by way of health protection.
- To comply with the RF exposure requirements, the device must be used 20 cm away from your body.

5. **Wireless Operational modes**

Cellular

- **5G NR(Sub 6G):** n1, n3, n7, n8, n20, n28, n38, n40, n41, n75, n76, n77, n78
- **LTE:** B1, B3, B7, B8, B20, B28, B32, B34, B38, B40, B41, B42, B43
- **WCDMA:** B1, B8
- **TX Power:** Compliant with 3GPP Standard
 - WCDMA: 24 dBm +1.7/-3.7 dB
 - LTE/5G bands: 23 dBm +/-2.7 dB
 - LTE/5G NR HPUE bands (B41, n41, n77, n78): 26dBm +2/-3 dB
- **GNSS:** GPS/GLONASS/Beidou/Galileo

WiFi

- **Frequency Range:** 2412 to 2472 MHz, 5180 to 5320 MHz, 5500 to 5700 MHz, 5955 to 6415 MHz
- **TX Power:**
 - 2.4 GHz: 20 dBm
 - 5 GHz: 23 dBm
 - 6 GHz: 23 dBm

Bluetooth

- **Version:** Bluetooth EDR+LE
- **TX Power:** 20 dBm

RCM Statement



ATTENTION

The frequency range of 5600 to 5650 MHz is not permitted for use in Australia.

KC Statement

이 기기는 업무용 환경에서 사용할 목적으로 적합성평가를 받은 기기로서가정용 환경에서 사용하는 경우 전파간섭의 우려가 있습니다.

상호: Moxa Inc.

기자재 명칭: Arm-based Platform

모델명: MXEG4400-2S1C, MXEG4400-2S1CNW, MXEG4400-4SI2C, MXEG4400-4SI2CNW

제조사 및 제조국가: Moxa Inc. / 대만

NCC Statement

減少電磁波影響，請妥適使用。

電波功率密度 MPE 標準值為：1.0 mW/cm² · 送測產品實測值為：0.152 mW/cm² · 建議使用時設備天線至少距離人體 20 公分。

此產品之國家通訊傳播委員會 (NCC) 型式認證證明無涵蓋 Wi-Fi 規格。

請於合法範圍內使用，避免違反相關法規。

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：嵌入式平台 Equipment name	型號（型式）：UC-4410A-T, UC-4414A-I-T 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 Polybrominat ed 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.						

**WARNING**

警告：為避免電磁干擾，本產品不應安裝或使用於住宅環境。

警告：更換不正確之電池形式會有爆炸的風險，請依製造商說明書處理用過之電池。

製造商：四零四科技股份有限公司

地址：桃園市八德區和平路 1111 號

服務電話：+886-3-273-7575