MOXA UC-1200A Series New Arm Based 64 bit Computers Installation Guide

Contents

MOXA UC-1200A Series New Arm Based 64 bit Computers

UC-1200A Series Quick Installation Guide
Specifications

Processor	Armv8 Cortex-A53 dual-core 1-GHz
Serial Ports	Two RS232/422/485 serial ports
Ethernet Ports	Two 10/100/1000 Mbps Ethernet ports
Mini PCIe Socket	Supports cellular modules

Package Checklist

- UC-1200A computing platform
- Power jack
- Wall-mounting kit (optional, purchased separately)

Panel Layouts

- Front Panel View
  Front Panel View
- Top Panel View
  Top Panel View
- Bottom Panel View
  Bottom Panel View

LED Indicators

LED	Indication
Power	Green: On, Off: Off
SW Ready/Programmable	Yellow: On, Off: Off
USB/Programmable	Green: On, Off: Off
SD/Programmable	Green: On, Off: Off
Wireless Signal Strength/Programmable	Yellow: On, Off: Off
Serial Tx	Green: On, Yellow: Off
Serial Rx	Green: On, Yellow: Off
LAN Status	Green: On, Yellow: Off

Installing the UC-1200A

DIN-rail Mounting
The UC-1200A comes with a DIN-rail mounting plate attached to its casing. To mount the UC-1200A onto a DIN rail, follow these steps:

1. Pull out the bottom slider on the UC-1200A.
2. Latch the unit onto the DIN rail.
3. Push the slider back in to secure the UC-1200A.

Wall Mounting (optional)
The UC-1200A can be mounted on a wall using a wall-mounting kit (purchased separately). Follow these steps to mount the computer onto a wall or a cabinet:

1. Use four screws (M3 x 4 mm) to fasten the wall-mounting brackets on the left panel of the computer.
2. Use another four screws (M3 x 6 mm) to mount the computer on a wall or a cabinet.

Connector Descriptions

Power Connector

- Connect the power jack (included in the package) to the UC-1200A's DC terminal block located on the top panel. Then, connect the power adapter. It takes about 30 seconds for the system to boot up. Once the system is ready, the Power LED will light up.
- **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 to 16 AWG, 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.
- **WARNING:** The power cord of the adapter should be connected to a socket-outlet with an earthing connection.
- **WARNING:** EXPLOSION HAZARD! Do not disconnect equipment unless the power has been removed or the area is known to be non-hazardous.

Grounding the UC-1200A
Grounding and wire routing help limit the effects of noise due to electromagnetic interference (EMI).

- The Shielded Ground (SG) contact is the right-most contact of the 3-pin power terminal block connector when viewed from the angle shown in the manual. Connect the SG wire to an appropriate grounded metal surface.

Ethernet Ports
The UC-1200A has two 10/100/1000 Mbps Ethernet ports (LAN 1 and LAN 2) with RJ45 connectors. The pin diagram of the ports is given below:

Pin	Signal
1	

FAQ

1. **Q: What is the processor used in the UC-1200A?**
   A: The UC-1200A is built around an Armv8 Cortex-A53 dual-core 1-GHz processor.
2. **Q: How many serial ports does the UC-1200A have?**
   A: The UC-1200A comes with two RS232/422/485 serial ports.
3. **Q: Can I mount the UC-1200A on a wall?**
   A: Yes, the UC-1200A can be mounted on a wall using a wall-mounting kit (purchased separately).
4. **Q: How long does it take for the UC-1200A to boot up?**
   A: The UC-1200A takes about 30 seconds to boot up.
5. **Q: How can I ground the UC-1200A?**
   A: Connect the Shielded Ground (SG) wire to an appropriate grounded metal surface.

UC-1200A Series Quick Installation Guide
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Technical Support Contact Information

www.moxa.com/support

P/N: 1802012220011

Overview

- The UC-1200A computing platform is designed for embedded data-acquisition applications. The UC-1200A is built around an Armv8 Cortex-A53 dual-core 1-GHz processor and comes with two RS-
- 232/422/485 serial ports, two 10/100/1000 Mbps Ethernet ports, and a Mini PCIe socket to support cellular modules. These versatile communication capabilities let users efficiently adapt the UC-1200A to a variety of complex communications solutions.

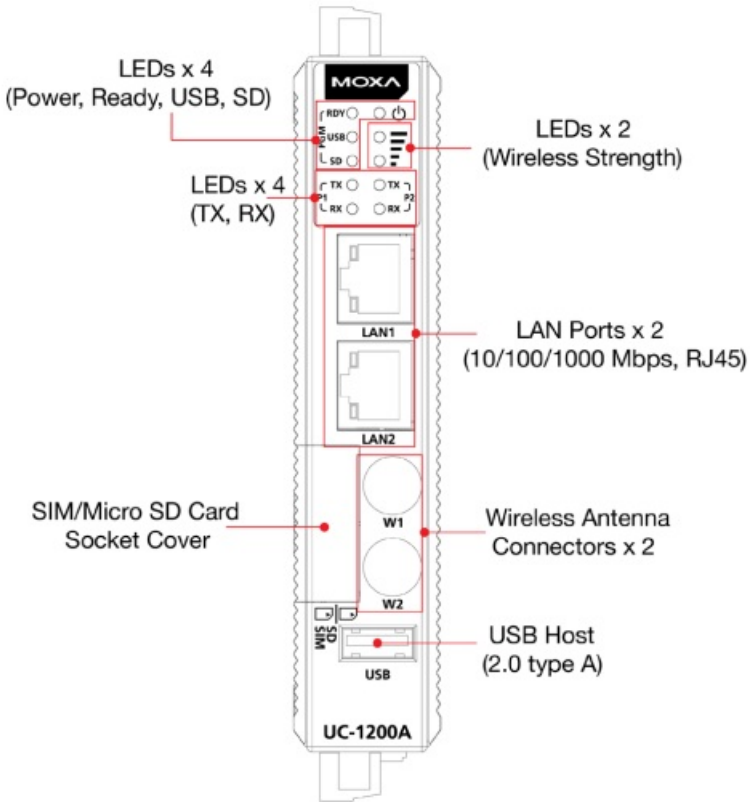
Package Checklist

Before installing the UC-1200A, verify that the package contains the following items:

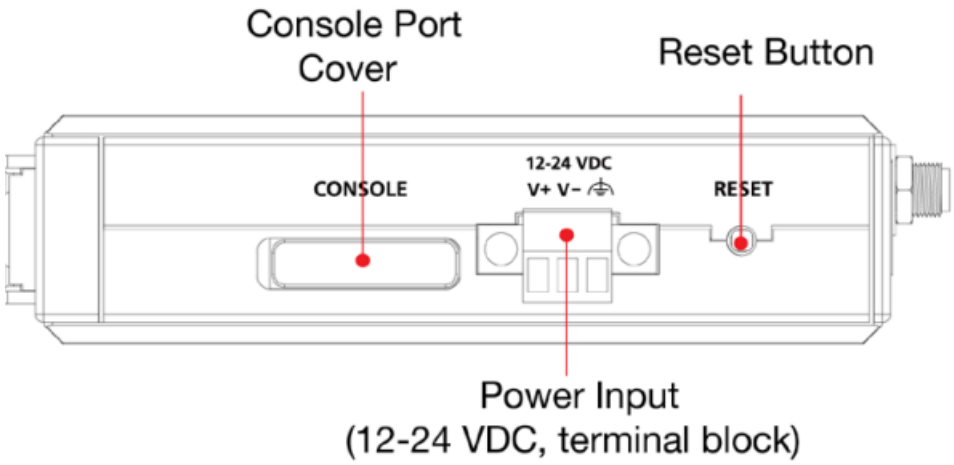
- UC-1200A Series computer
- 3 round stickers to prevent screw tampering
- Quick installation guide (printed)
- Warranty card

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

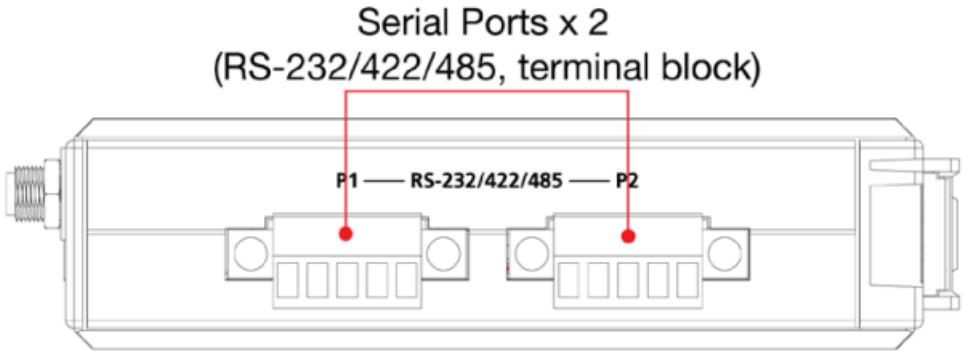
Panel Layouts
The following figures show the panel layouts of the UC-1200A.
Front Panel View



Top Panel View



Bottom Panel View



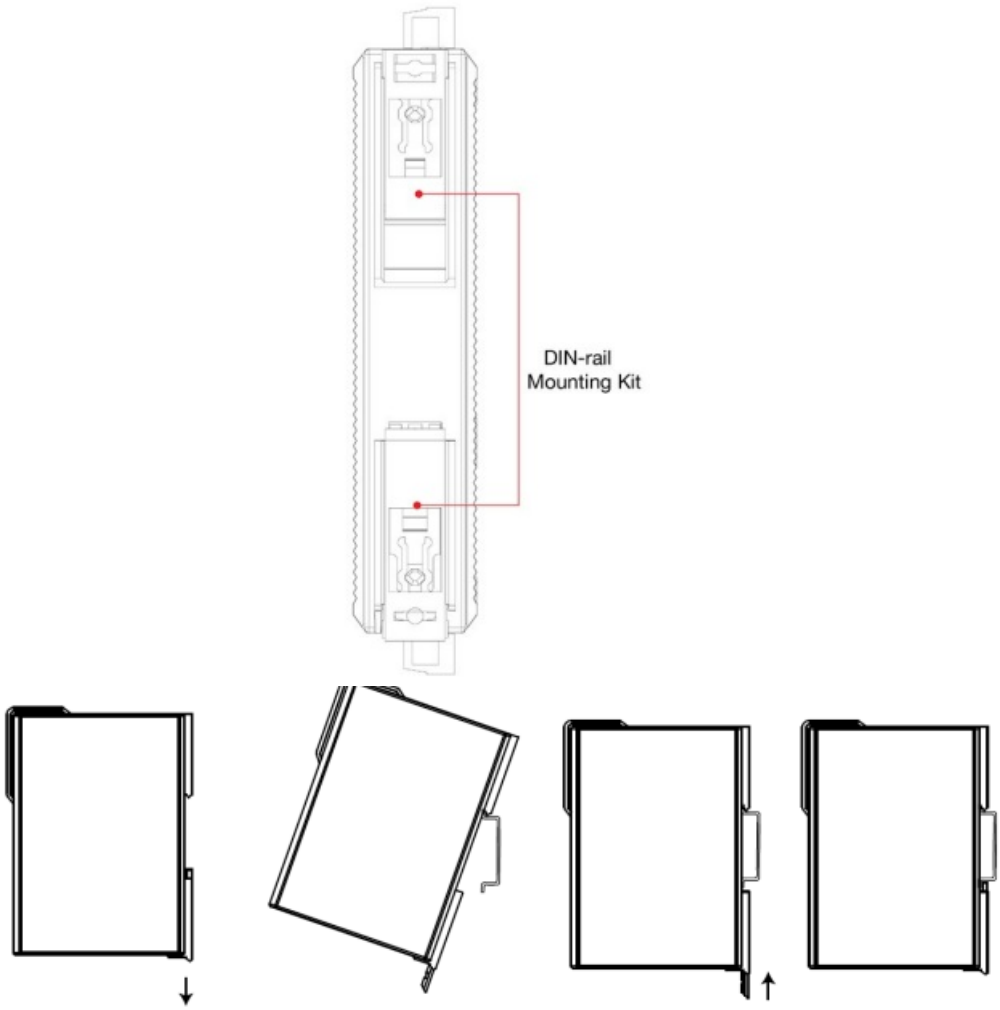
LED Indicators

LED	Status	Function
Power	Green	Power plugged in
	OFF	Power is OFF
SW Ready/ Programmable	Yellow	System is ON and the computer is working normally
	OFF	System is not ready
USB/ Programmable	Green	USB device is connected and working normally
	OFF	USB device is not connected
SD/ Programmable	Green	Micro SD card inserted and working normally
	OFF	Micro SD card is not detected
Wireless Signal Strength/ Programmable	Yellow	The number of glowing LEDs indicates the signal strength: 2 (both Yellow): Excellent 1 (Yellow): Poor 1 (Yellow, blinking, heartbeat): Very poor
	OFF	Wireless module is not detected
Serial Tx	Green	Steady ON: Serial 1/2 is working normally. Blinking: Serial 1/2 is transmitting data
	OFF	Serial 1/2 is not used.
Serial Rx	Yellow	• **Steady ON**: Serial 1/2 is working normally • **Blinking:** Serial 1/2 receiving data
	OFF	Serial 1/2 is not used.
LAN	Green	• **Steady ON:** 10/100 M link established • **Blinking:** Receive or transmitting data
	Yellow	• **Steady ON:** 1000 M link established • **Blinking:** Receive or transmitting data
	OFF	No Ethernet connection

Installing the UC-1200A

DIN-rail Mounting
The DIN-rail mounting plate comes attached to the product's casing.

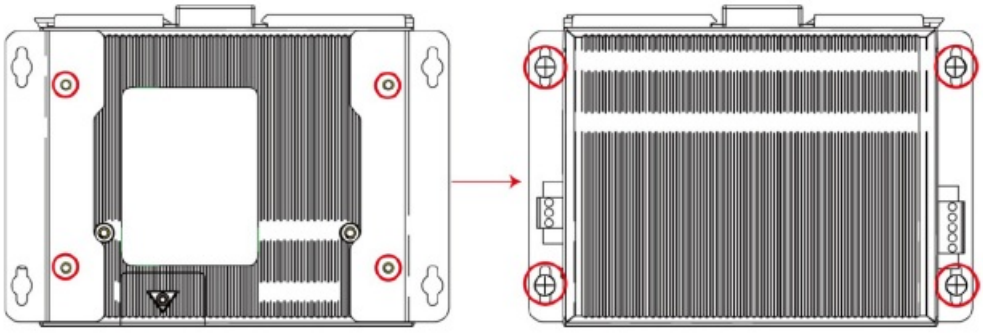
- To mount the UC-1200A on to a DIN rail, pull out the bottom slider, latch the unit onto the DIN rail, and push the slider back in.



Wall Mounting (optional)

The UC-1200A can be mounted using a wall-mounting kit, which needs to be purchased separately. Follow these steps to mount the computer on to a wall:

- **Step 1**: Use four screws (M3 x 4 mm) to fasten the wall-mounting brackets on the left panel of the computer.
- **Step 2**: Use another four screws (M3 x 6 mm) to mount the computer on a wall or a cabinet.



Connector Descriptions

- **Power Connector**

  Connect the power jack (in the package) to the UC-1200A's DC terminal block (located on the top panel), and then connect the power adapter. It takes about 30 seconds for the system to boot up. Once the system is ready, the Power LED will light up.
- **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 to 16 AWG, 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.

- **WARNING**

  The product is intended to be supplied by a UL Listed Power Unit marked “L.P.S.” (or “Limited Power Source”) and is rated 12 to 24 VDC, 0.6 A min., Tma = 60°C (min). If you need further help with purchasing the power source, please contact Moxa for further information.
- **WARNING**

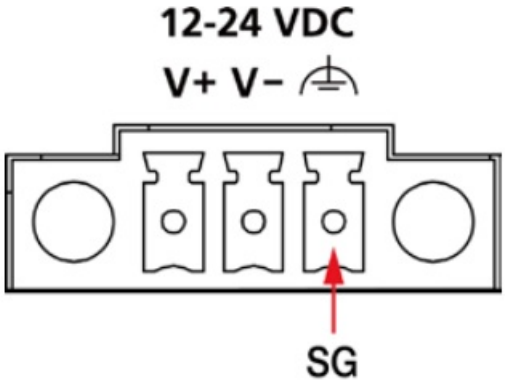
  The means of power cord of adapter should be connected to a socket-outlet with earthing connection.
- **WARNING**
- **EXPLOSION HAZARD!**

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

Grounding the UC-1200A

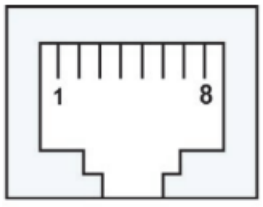
Grounding and wire routing help limit the effects of noise due to electromagnetic interference (EMI).

- SG: The Shielded Ground (sometimes called Protected Ground) contact is the right-most contact of the 3-pin power terminal block connector when viewed from the angle shown here. Connect the SG wire to an appropriate grounded metal surface.



Ethernet Ports

The two 10/100/1000 Mbps Ethernet ports (LAN 1 and LAN 2) come with RJ45 connectors. The pin diagram of the ports is given below:



10/100 Mbps

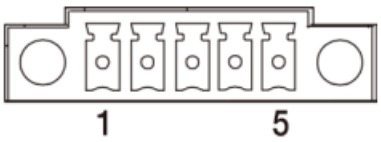
Pin	Signal
1	Tx+
2	Tx-
3	Rx+
4	–
5	–
6	Rx-
7	–
8	–

1000 Mbps

Pin	Definition
1	TRD(0)+
2	TRD(0)-
3	TRD(1)+
4	TRD(2)+
5	TRD(2)-
6	TRD(1)-
7	TRD(3)+
8	TRD(3)-

Serial Ports

The two serial ports (P1 and P2) come with terminal-block connectors. Each port can be configured by software for the RS-232, RS-422, or RS-485 mode. The pin assignments for the ports are given below:



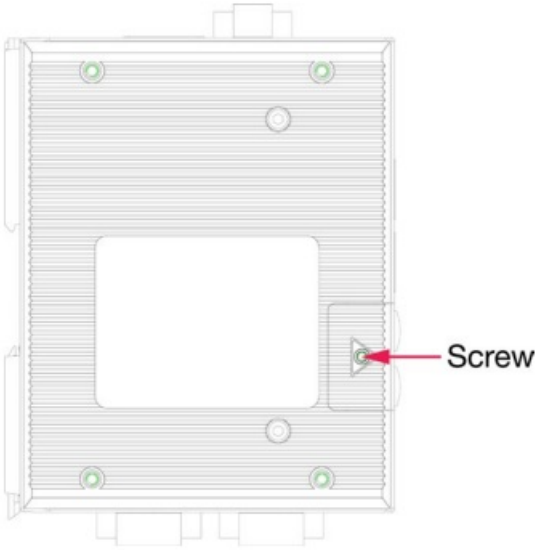
Pin	RS-232	RS-422	RS-485
1	TXD	TXD+	–
2	RXD	TXD-	–
3	RTS	RXD+	D+
4	CTS	RXD-	D-
5	GND	GND	GND

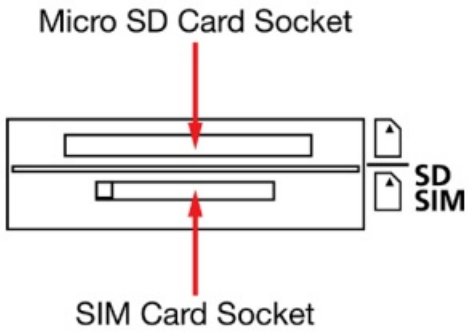
USB Port

The USB 2.0 port is located at the lower part of the front panel. By default, the USB auto-mount is disabled. If enabled, the USB storage is mounted at /media/USB_P1/media/USB_P2.

Micro SD/SIM Card Sockets

- The UC-1200A comes with a Micro SD socket for storage expansion and a SIM card socket for cellular communication. The Micro SD card and SIM card sockets are located on the lower part of the front panel. However, the screw is located at the left panel of the device. To install the cards, remove the screw and protection cover to access the sockets and insert the Micro SD card or the SIM card into the sockets. Ensure that the cards are inserted in the correct direction. Refer to the instructions above the socket. You will hear a click when the cards are in place.
- To remove the cards, push the cards in before releasing them.





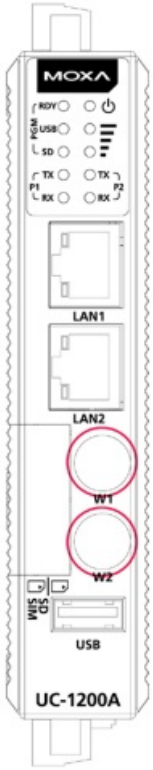
Console Port

The console port is an RS-232 port that can be connected to a 4-pin pin-header cable. You can use this port for debugging or firmware upgrade. The console port is located on the top
panel of the device and is accessible after removing the cover of the slot.

Pin	Signal
1	TxD
2	RxD
3	NC
4	GND

Antenna Connectors

The UC-1200A provides a Mini PCIe socket for installing a wireless module. You can purchase the A-CRF-SMIF-100 antenna accessory with an SMA connector. Two SMA-type wireless antenna connectors W1 and W2 are located on the front panel.



- **Real-time Clock**

  The real-time clock in the UC-1200A 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.

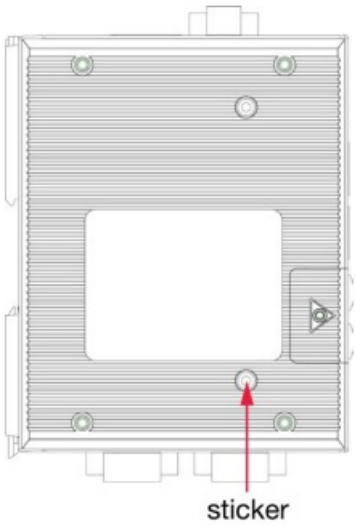
- **ATTENTION**

  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.

- **Placing the Round Stickers on the Screws**

  Three round stickers are included in the product package. Stick one of them on to an external screw as indicated in the figure below to help detect unauthorized access and tampering.



To place the sticker, do the following:

1. Use a cloth to clean the surface of the screw with a 75% alcohol solution.
2. Use a tweezer to place the sticker on the screw.
3. Press the sticker down on to the screw for at least 15 seconds with a pressure of about 15 psi (pound/square inch)
4. Keep the device at room temperature for 24 hours before deploying it.

NOTE

1. Place the sticker carefully on the screw because it is thin and fragile.
2. The ideal environment to store the stickers is at 22°C (72°F) and less than 50% relative humidity.
3. Keep the extra two stickers in a safe place so that only authorized persons can access them.

Specifications

Input Current	• 600 mA @ 12 VDC • 300 mA @ 24 VDC
Input Voltage	12 to 24 VDC (3-pin terminal block, V+, V-, SG)
Power Consumption	• 4.5 W (minimum; without external USB device attached) • 7.2 W (maximum, with external USB device attached)
Operating Temperature	-40 to 60°C (-40 to 140°F)
Storage Temperature	-40 to 80°C (-40 to 176°F)

The latest specifications for Moxa's products can be found at **https://www.moxa.com**.

Accessing the UC-1200A Using a PC
You can use a PC to access the UC-1200A 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-1200A’s serial console port
  - B. Using SSH over the network. Refer to the following IP addresses and login information:

	Default IP Address	**Netmask**
LAN 2	192.168.4.127	255.255.255.0

- **Login:** moxa
- **Password:** moxa

BSMI Certification for Taiwan

Declaration of the Presence Condition of the Restricted Substances Marking

Unit	Restricted substances and its chemical symbols					
	Lead (Pb)	Mercury (Hg)	Cadmium (C d)	(Cr+6)	(PBB)	(PBDE)
	○	○	○	○	○	○
		○	○	○	○	○
		○	○	○	○	○
		○	○	○	○	○
		○	○	○	○	○

1. **Note 1:** “Exceeding 0.1 wt %” and “exceeding 0.01 wt %” indicate that the percentage content of the restricte d substance exceeds the reference percentage value of presence condition.
2. **Note 2**: “○” indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence.
3. **Note 3:** The “–” indicates that the restricted substance corresponds to the exemption.

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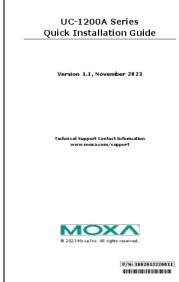
Documents / Resources

	**MOXA UC-1200A Series New Arm Based 64 bit Computers** [pdf] Installation Guide UC-1222A, UC-1200A Series New Arm Based 64 bit Computers, New Arm Based 64 bit Computers, Based 64 bit Computers, bit Computers, Computers

References

- **Moxa - Support**
- **Moxa - Your Trusted Partner in Automation**
- **User Manual**