

RKP-C220 Series Quick Installation Guide

Version 1.0, August 2025

Technical Support Contact Information
www.moxa.com/support



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P/N: 1802002200010



Overview

The RKP-C220 Series rackmount computers are powered by 13th Gen Intel® Core™ i3/i5/i7/i9 processor. The computers come with a rich set of interface options, including up to 10 software-selectable RS-232/422/485 serial ports, up to 8 Gigabit Ethernet ports, and 4 digital inputs and 4 digital outputs. The RKP-C220 Series is equipped with 3 standard PCIe slots (x16, x8, and x1), providing various peripheral interface extension possibilities. Meanwhile, the Series comes with 2 lockable 2.5" SSD slots and 3 internal M.2 slots support Intel® RST RAID 0/1 functionality. In addition, an outer replaceable RTC battery design delivers a reliable, durable, and versatile platform for a more user-friendly option.

Designed as 2U standard form factor, the fanless rackmount RKP computers with an operating temperature range of -30 to 60°C (w/o GPU) and a build-in TPM 2.0 module, the RKP computers are ideal as reliable and secure computing platforms for industrial applications in extreme operating environments.

Package Checklist

Each basic system model is shipped with the following standard items. Before installing the RKP Series, verify that the package contains the following items:

- RKP-C220 rackmount computer
- A pair of rack-mounting brackets with 12 screws
- C15 to C13 power cord
- GPU power cable
- 10-pin terminal block for DI/DO
- Two 2.5" SSD door keys
- Two M.2 screws
- A thermal pad for the DDR module
- Quick Installation Guide
- Warranty card

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

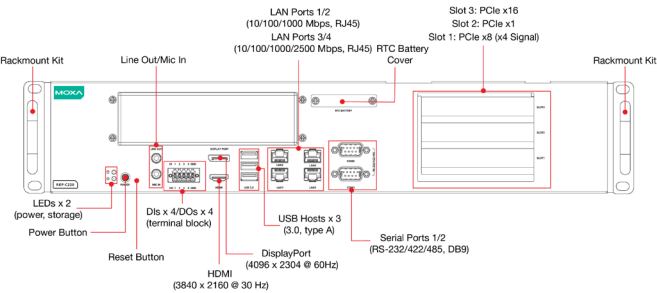
Accessory List (purchase separately)

- HS-M.2 2280-RKP-C220: M.2 2280 heat sink with thermal pad attached and two screws
- RKP-FAN: Fan module with one fan air baffle and four screws

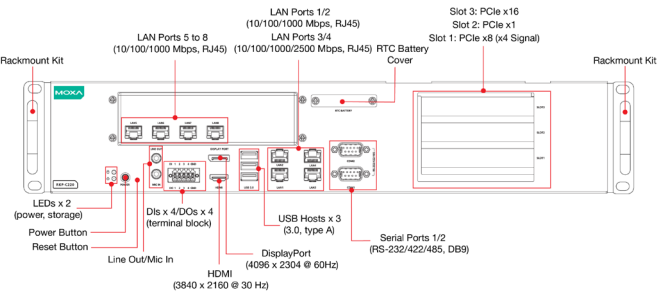
Panel Layouts

Front View

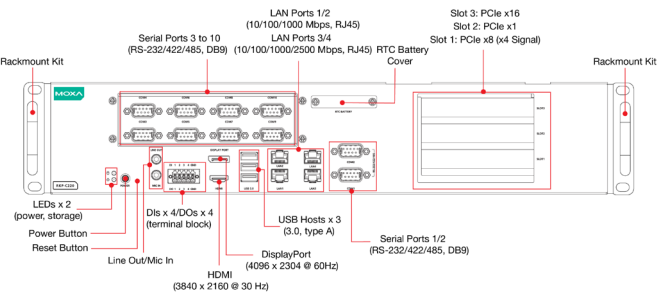
RKP-C220-C3-T/RKP-C220-C5-T/RKP-C220-C7-T/RKP-C220-C9-T Models



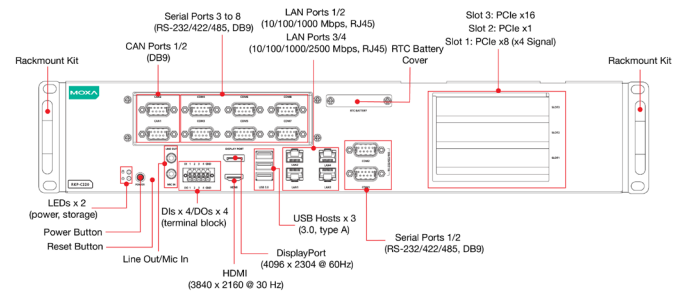
RKP-C220-C3-4L-T/RKP-C220-C5-4L-T/RKP-C220-C7-4L-T/RKP-C220-C9-4L-T Models



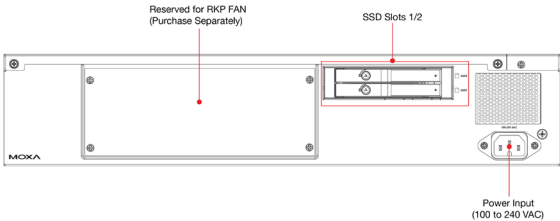
RKP-C220-C3-8C-T/RKP-C220-C5-8C-T/RKP-C220-C7-8C-T/RKP-C220-C9-8C-T Models



RKP-C220-C3-2CB6C-T/RKP-C220-C5-2CB6C-T/RKP-C220-C7-2CB6C-T/RKP-C220-C9-2CB6C-T Models

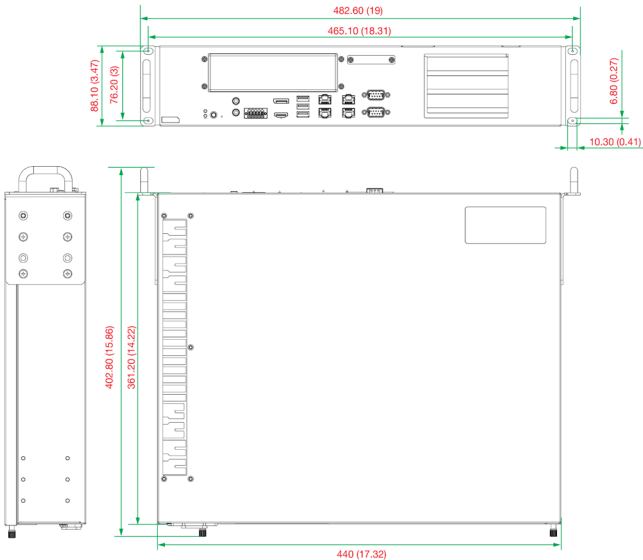


Rear View



Dimensions

Unit: mm (inch)



LED Indicators

The following table describes the function of the LED indicators located on the front panel of the RKP-C220 computers.

LED Name	Status	Function
Power	Green	Power is ON
	OFF	No power input or any other power error
Ethernet LAN 1, LAN 2 (10/100/1000 Mbps)	Green	Steady ON: 10/100 Mbps Ethernet link Blinking: Data is being transmitted or received
	Yellow	Steady ON: 1000 Mbps Ethernet link Blinking: Data is being transmitted or received
	OFF	No Ethernet connection
Ethernet LAN 3, LAN 4 (10/100/1000/2500 Mbps)	Green	Steady ON: 10/100/1000 Mbps Ethernet link Blinking: Data is being transmitted or received
	Yellow	Steady ON: 2500 Mbps Ethernet link Blinking: Data is being transmitted or received
	OFF	No Ethernet connection
Storage	Yellow	Blinking: Data is being accessed from the SSD
	OFF	Data is not being accessed from the SSD

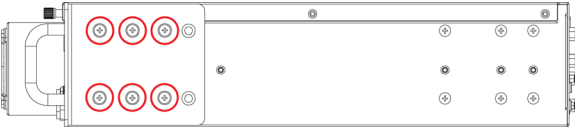
Installing the RKP-C220 Computer

Step 1: Use six M4 x 8 mm screws (in the package) for each rack-mounting bracket to attach them to the left and right sides of the computer. The screw locations for front mounting and rear mounting are different; refer to the following diagrams for the exact location of the screws.

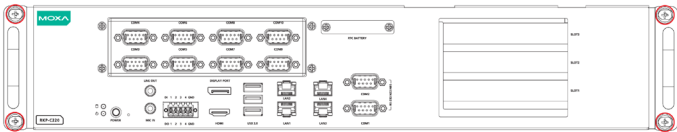
Front Mounting



Rear Mounting



Step 2: Place the RKP on a rack and use four screws to secure the rack-mounting ears to the rack.

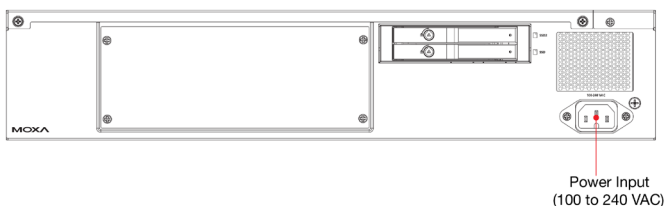


NOTE For better thermal performance, we recommend leaving 1U gap at the top and bottom when installing this computer.

NOTE This computer is intended to be installed only in an area with restricted access. In addition, for safety reasons, the computer should be installed and handled only by qualified and experienced professionals.

Connecting the Power

The RKP-C220 computers have one 100 to 240 VAC IEC 60320 C16 power inlet on the rear panel. Plug in the power cable to a power source. The power LED will light up to show that power is being supplied to the computer. The operating system boot-up process should take about 30 to 60 seconds to complete.



NOTE For surge protection, connect the grounding connector located at the top right of the power connector with the earth (ground) or a metal surface. The power cord should be connected to a socket outlet with an earthing connection.



An 18 AWG cable size conductor must be used when the connection to the external grounding screw is used. An internal screw grounds the heat sink to the chassis.



WARNING

HOT Surface

External metal parts of this equipment are hot!!
Before touching the equipment, you must take special precautions to protect your hands and body from serious injury.

NOTE 產品供電來源不會經過市電網絡，而由機櫃、機架等專屬設備提供電源，故產品不帶電線線組銷售。



警告

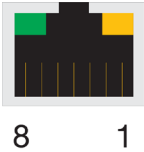
為避免電磁干擾，本產品不應安裝或使用於住宅環境。

Communication Connections

Ethernet Ports

The 10/100/1000/2500 Mbps Ethernet ports (up to 8) come with RJ45 connectors. The pin assignments are as follows:

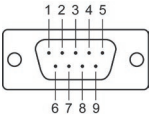
Pin	10/100 Mbps	1000/2500 Mbps
1	ETx+	TRD(0)+
2	ETx-	TRD(0)-
3	ERx+	TRD(1)+
4	-	TRD(2)+
5	-	TRD(2)-
6	ERx-	TRD(1)-
7	-	TRD(3)+
8	-	TRD(3)-



Serial Ports

The serial ports (up to 10) come with DB9 connectors. Each port can be configured by software as a RS-232, RS-422, or RS-485 port. The pin assignments are as follows:

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	-	-	-

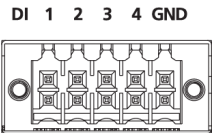


USB Hosts

Three USB 3.2 Gen 1 type-A connectors are located on the front panel. The ports support keyboard and mouse devices and can also be used to connect a flash disk for storing large amounts of data. One USB 3.2 Gen 1 type-A connector is located on the main board inside the computer to be used as a USB Dongle. The port provides a secure way to connect a flash disk for storing data or inserting product key.

Digital Inputs/Digital Outputs

The RKP-C220 computer comes with four digital inputs and four digital outputs in a terminal block. The pin definitions and the current ratings are as follows:



DI 1 2 3 4 GND

DO 1 2 3 4 GND

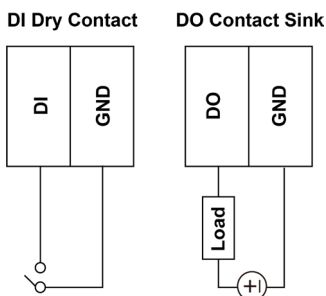
Digital Inputs

Dry Contact:
Logic 0: Short to Ground
Logic 1: Open

Digital Outputs

Current Rating:
200 mA per channel
Voltage:
0 to 24 VDC

For the wiring method, refer to the following diagram:



For additional details, refer to the *RKP Series Hardware User Manual*.

Connecting Displays

The RKP-C220 computers come with an HDMI 2.0b (3840 x 2160 @ 30 Hz) connector and a DisplayPort (4096 x 2304 @ 60Hz) connector located on the front panel.

NOTE For a reliable audio or video connection, use HDMI-certified cables.

Installing Storage



WARNING

When installing the storage, power off the computer and unplug the power cord from the power input to prevent any danger or damage.

The RKP-C220 computer is provided with two lockable storage slots on the rear panel for installing 2.5" SSDs and three M.2 M-key slots (1 x 2280, 2 x 2242) on the main board for storage expansion.

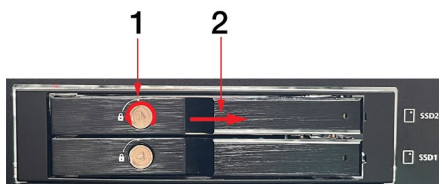
Installing a 2.5" SSD

To install a 2.5" SSD, do the following:

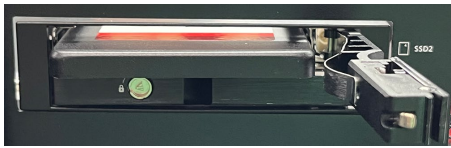
1. Unlock the door to the storage slot using the storage key.



2. Unlatch the storage slot door.



3. Insert the SSD into the slot.



4. Close the storage slot door and lock it with the key.

Use the same method to install a storage (SSD) in the second slot.

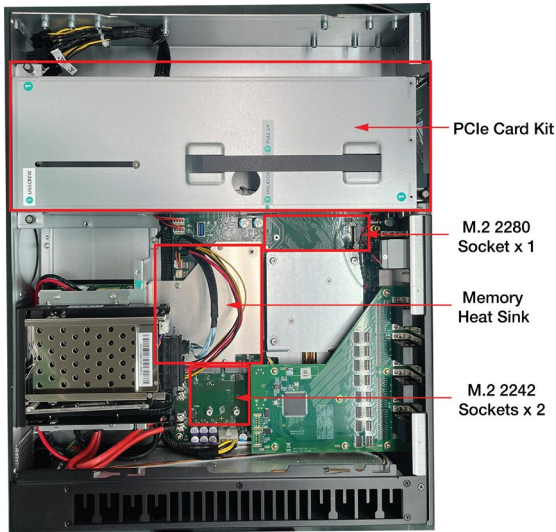
Installing a M2.2280 SSD Module

To install an M.2 2280 M-key SSD module, do the following:

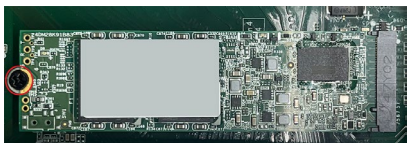
1. Unfasten the two screws (hand rotatable) on the rear panel and remove the top cover.



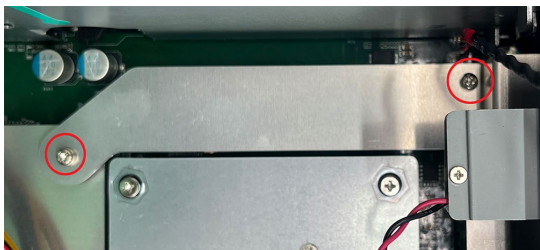
2. Find the location of the M.2 2280 socket.



3. Insert the M.2 2280 M-key SSD into the socket and secure the module using the M2.5 x 5 mm screw in the package.



4. Place an M.2 2280 heatsink (purchase separately) on top of the disk and fasten with 2 screws.



NOTE We strongly recommend purchasing an M.2 2280 heat sink for better heat dissipation.

5. Replace the top cover and secure it with screws.

Installing a M2.2242 SSD Module

To install an M.2 2242 M-key SSD module, do the following:

1. Find the location of the M.2 2242 socket (see the image indicator in the previous section)
2. Insert the M.2 2242 M-key SSD into the socket and secure it with the M2.5 x 5 mm screw provided in the package.
3. Use the same method to install a module in the other socket if required.
4. Replace the top cover and secure it with screws.

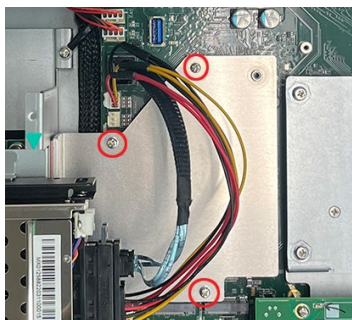


Replacing the Memory

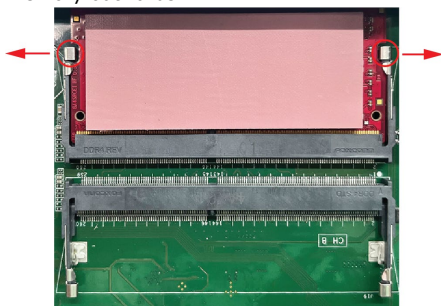
The RKP-C220 computers come with two DDR SODIMM slots (non-ECC type) for a total memory size of up to 64 GB (32 GB per module). An 8 GB memory is preinstalled.

To replace the memory, do the following:

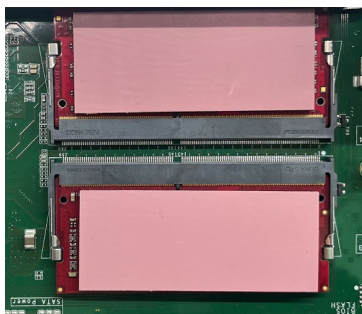
1. Disconnect the RKP-C220 from its power source.
2. Unfasten two hand-rotated screws on the top rear panel cover and remove the top cover.
3. Unfasten the three M3 x 6 mm screws on the heat sink covering the memory.



An 8 GB memory is preinstalled in the first slot with a thermal pad pasted. Remove it by pulling the two latches on both sides of the memory outwards.



4. Insert a new memory in the slot and press it down until you hear a click.
5. Paste the thermal pad (in the package) onto the memory.



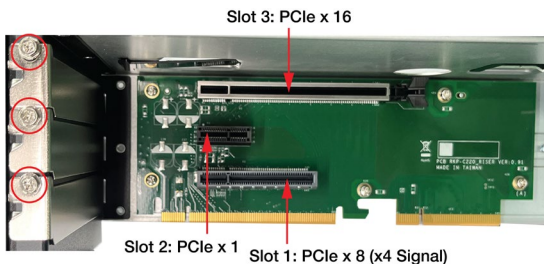
6. Replace the heat sink and secure it with three M3 x 6 mm screws.
7. Replace the top cover and secure it with screws.

The RKP-C220 computer comes with three slots that support the PCIe interface. To insert PCIe cards, do the following:

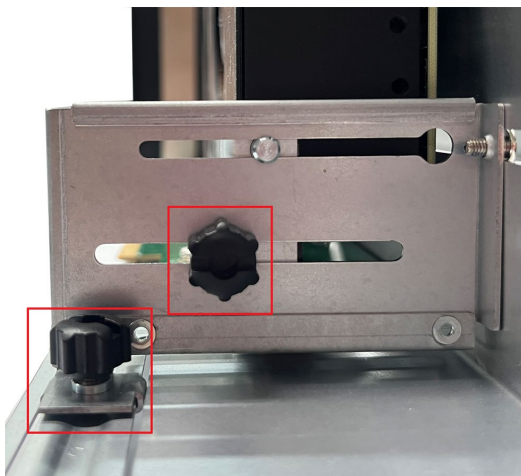
4. Press the latch at the bottom of the kit (indicated by the sticker "2").

5. Pull up the handle of the kit (indicated by the sticker "**3**").

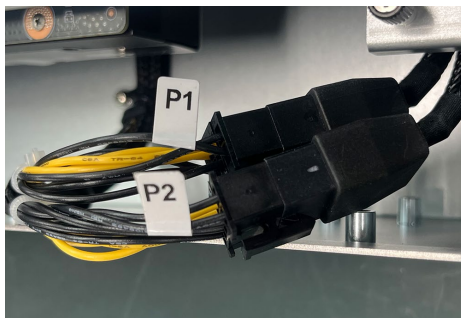
6. Three different types of PCIe card sockets are provided. Ensure your card is inserted into the interface socket.



7. To insert the card, remove the screw on the protection plate, and remove the plate.
8. Insert the card carefully in the slot.
9. There are two black screws on the adjustment plate at the end of the kit. Use them to fix the PCIe cards.



10. If you have installed a graphics card, connect the power connectors provided at the end of the kit.



11. Restore the kit carefully and secure it. Ensure the latch is locked and fasten all the screws to secure it.
12. Replace the top cover and secure it with screws.

Installing the RKP-FAN Module

NOTE If you have installed a graphics card, we strongly recommend purchasing and installing the RKP-FAN module for better heat dissipation.

To install the RKP-FAN module (fan module), do the following:

1. Unfasten two hand-rotated screws on the top of the rear panel and remove the top cover.
2. Find the green triangle indicator next to the PCIe card kit inside the RKP-C220.

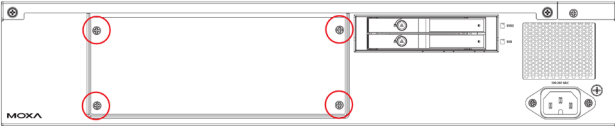


3. Place the fan air baffle (from the RKP-FAN accessory package) and fasten a screw in the same direction as the green triangle indicator.

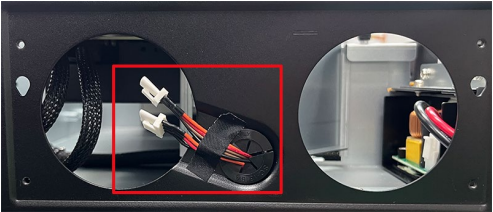


4. Replace the top cover and secure it with screws.

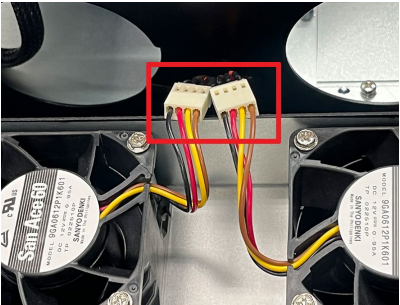
5. Unfasten the four screws on the cover of the aperture for the fan module on the rear panel and remove the cover.



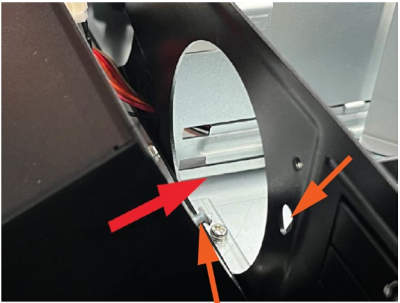
6. Tear off the tape on the fan power connector.



7. Connect the power cords of the RKP-FAN module as shown in the image.



8. Install the fan module and make sure the latches pointed in the image are aligned.



9. Fasten the four screws on the fan module to secure it to the rear panel.

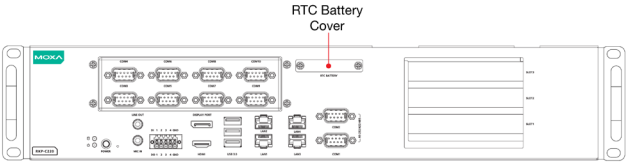


Replacing the Battery

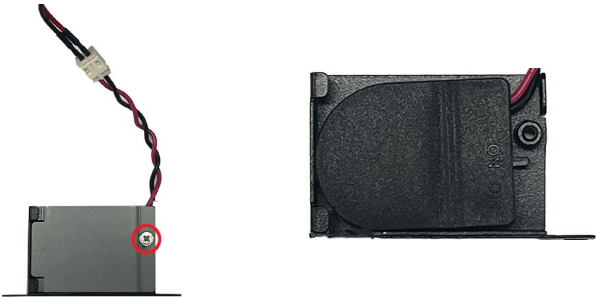
The RKP-C220 computer comes with one slot on the front panel of the computer for a battery. A lithium battery (3 V / 200 mAh) is preinstalled in the slot.

To replace the battery, do the following:

- 1. Unfasten the two screws on the battery cover.



- 2. Take off the cover.
The battery is attached to the slot cover, as shown in the image. Remove the screw on the cover and take off the battery holder.

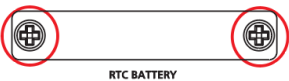


- 3. Pull out the two latches to open the battery holder and take out the battery.

NOTE We suggest using a screwdriver for safe removal. Unplugging the connector is allowed if needed. But remember to plug in the connector before placing the battery holder back in the slot.



- 4. Replace the new battery and close the holder.
- 5. Close the black battery holder, recover the metal plate on the top and bottom of the battery holder, and fasten the metal plates with the screw.
- 6. Place the battery holder back in the slot and secure it by fastening the two screws on the cover.



NOTE Unplugging the connector on step 3 is allowable if needed, but remember to plug in the connector before placing the battery holder back in the slot.



WARNING

- Be sure to use the correct type of battery. Incorrect batteries may cause system damage. Contact Moxa’s technical support staff for assistance, if necessary.
- To reduce the risk of fire or burns, do not disassemble, crush, or puncture the battery; do not dispose of in fire or water and do not short external contacts.



警告

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。

BSMI

限用物質含有情況標示聲明書

Declaration of the Presence Condition of the Restricted Substances Marking

證書號碼 / 受理編號: (No.)

Certificate No / Application No.

商品標籤及商品檢驗標驗: (Picture)

Product Label and Commodity Inspection Mark

樣張及其標示位置: (Description and Picture)

Sample and its location

設備名稱：機架式電腦				型號（型式）：RKP-C220 系列		
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.

製造商資訊

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產品型號

RKP-C220-C3-T, RKP-C220-C5-T, RKP-C220-C7-T, RKP-C220-C9-T

RKP-C220-C3-4L-T, RKP-C220-C5-4L-T, RKP-C220-C7-4L-T,
RKP-C220-C9-4L-T

RKP-C220-C3-8C-T, RKP-C220-C5-8C-T, RKP-C220-C7-8C-T,
RKP-C220-C9-8C-T

RKP-C220-C3-2CB6C-T, RKP-C220-C5-2CB6C-T,
RKP-C220-C7-2CB6C-T, RKP-C220-C9-2CB6C-T