

RKP Series Quick Installation Guide

Version 1.3, January 2024

Technical Support Contact Information
www.moxa.com/support

MOXA[®]

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P/N: 1802001100004



Overview

The RKP series rackmount computers are powered by an Intel Atom®, 11th Gen Intel® Celeron®, or Intel® Core™ i5/i7 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 12 Gigabit Ethernet ports, and 8 digital inputs and 8 digital outputs. The communication interfaces are located on the front and rear sides of the product, enabling easy access and expansion for industrial applications. Two hand-rotated 2.5" SSD storages and an outer replaceable RTC battery design deliver a reliable, durable, and versatile platform for a more user-friendly option.

Designed as 1U standard form factor fanless rackmount computers with an operating temperature range of -30 to 60°C 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:

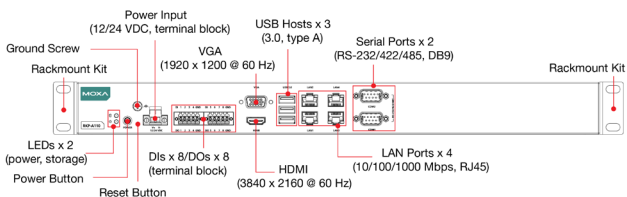
- RKP rackmount computer (mounting ears attached)
- 2-pin terminal block for DC power
- 2 10-pin terminal blocks for DI/DO
- Pack of 8 screws for the storage trays
- Quick Installation Guide
- Warranty card

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

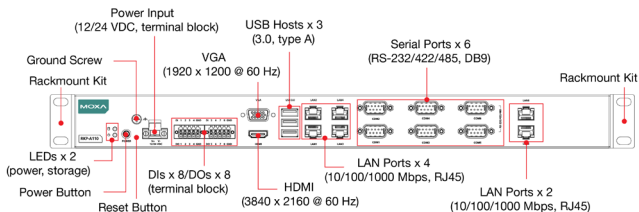
Hardware Overview

Front View

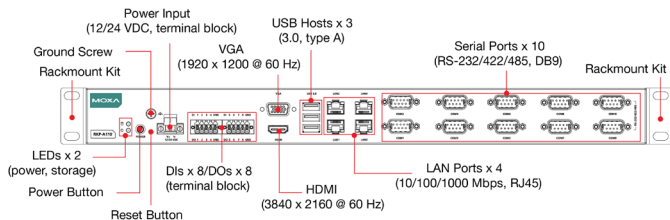
RKP-A110-E2-T/RKP-A110-E4-T Models



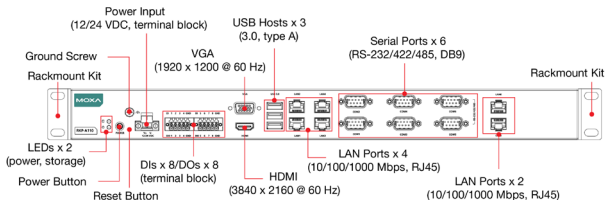
RKP-A110-E2-8L-T/RKP-A110-E4-8L-T Models



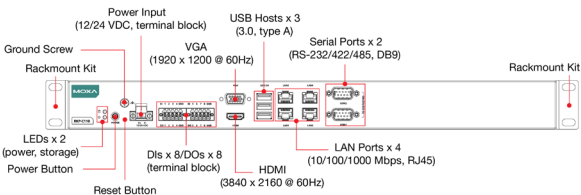
RKP-A110-E2-8C-T/RKP-A110-E4-8C-T Models



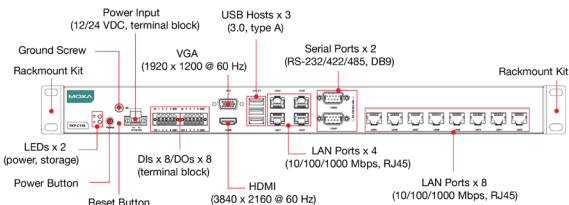
RKP-A110-E2-2L4C-T/RKP-A110-E4-2L4C-T Models



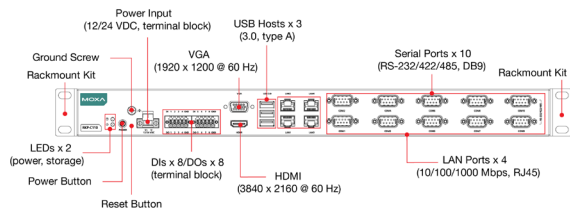
RKP-C110-C1-T/RKP-C110-C5-T/RKP-C110-C7-T Models



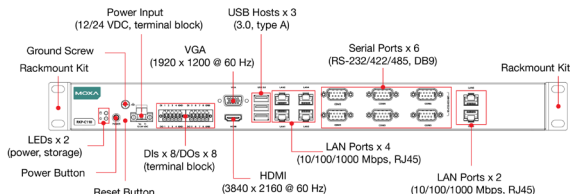
RKP-C110-C1-8L-T/RKP-C110-C5-8L-T/RKP-C110-C7-8L-T Models



RKP-C110-C1-8C-T/RKP-C110-C5-8C-T/RKP-C110-C7-8C-T Models

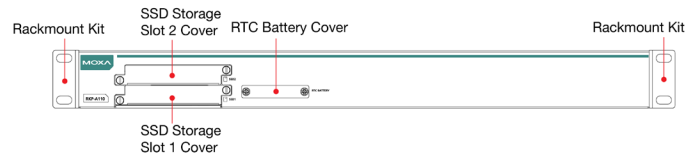


RKP-C110-C1-2L4C-T/RKP-C110-C5-2L4C-T/RKP-C110-C7-2L4C-T Models

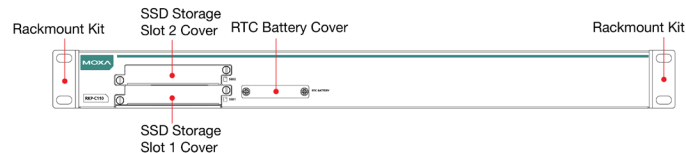


Rear View

RKP-A110 Series



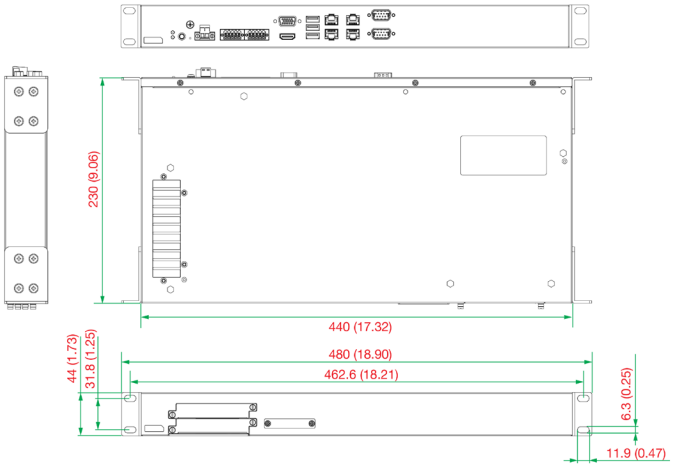
RKP-C110 Series



Dimensions

RKP-A110/RKP-C110 Series

Unit: mm (inch)



LED Indicators

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

LED Name	Status	Function
Power	Green	Power is ON
	OFF	No power input or any other power error
Ethernet (10/100 Mbps) (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
Storage (2.5" SSD)	Yellow	Blinking: Data is being accessed from the SSD drive
	OFF	Data is not being accessed from the SSD drive

Installing the RKP Computer

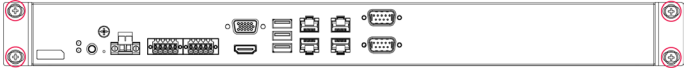
The RKP computers come preinstalled with two rack-mounting ears. To mount the computer on to a rack, do the following:

Step 1: If the mounting ears are not installed, use four screws each to attach the mounting ears on both sides of the computer.

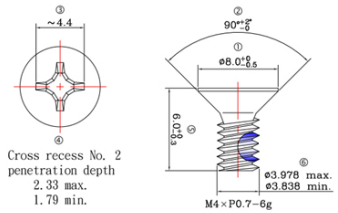


Step 2:

Place the RKP on a rack and use another four screws to secure the rack-mount ears to the rack.



The second set of four screws needs to be purchased separately. Refer to the figure on the right for the specifications.

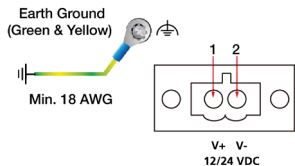


NOTE This computer is intended to be installed only in an area with restricted access. In addition, for safety reasons, the computer should be installed and handled only by qualified and experienced professionals.

Connecting the Power

The RKP computers are provided with 2-pin power input connectors in a terminal block on the front panel. Insert the power-cord wires into the connectors and tighten them to secure the wires in place. Plug in the power cable to a power source. The power LED will light up to indicate that power is being supplied to the computer. It should take about 30 to 60 seconds for the operating system to complete the boot-up process.

Pin	Definition
1	V+
2	V-





ATTENTION

This product is intended to be supplied by a Listed Power Supply with the output marked LPS and rated to deliver the following:

- RKP-A110 Series: 12 VDC at a maximum of 5.4 A / 24 VDC at a maximum of 2.6 A
- RKP-C110 Series: 12 VDC at a maximum of 7.34 A / 24 VDC at a maximum of 3.4 A
- Minimum Tma = 60°C

If you need assistance with purchasing a power adapter, contact the Moxa technical support team.



ATTENTION

Before connecting the RKP computer to the DC power inputs, ensure that the DC power source voltage is stable.

- The wiring for the input terminal block shall be installed by qualified and experienced professionals.
 - Wire Type: Cu, FW2
 - Use 18-12 AWG wire size and a torque value of 0.51 N-m.
- Use only one conductor in a clamping point between the DC power source and the power input.

NOTE If using Class I adapter, the power cord adapter should be connected to a socket outlet with an earthing connection or the power cord and adapter must comply with Class II construction.

NOTE For surge protection, connect the grounding connector located below the power connector with the earth (ground) or a metal surface.
An 18 AWG cable size 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

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.



警告

為避免電磁干擾，本產品不應安裝或使用於住宅環境。

Connecting Displays

The RKP computer comes with an HDMI 2.0b (3840 x 2160 @60 Hz) connector and a VGA (1920 X 1200 @60Hz) connector located on the front panel for connecting audio or video devices.

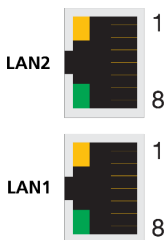
NOTE Use HDMI-certified cables for a reliable audio or video connection.

Communication Connections

Ethernet Ports

The 10/100/1000 Mbps Ethernet ports use RJ45 connectors. The pin assignments are shown below:

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)-

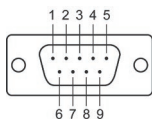


NOTE For reliable Ethernet connections, we recommend enabling the ports in standard temperatures and keeping them enabled in high/low temperature environment.

Serial Ports

The serial ports use DB9 connectors. Each port can be configured by software as a RS-232, RS-422, or RS-485 port. The pin assignments are shown below:

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	-	-	-

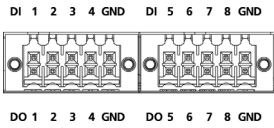


USB Hosts

Three USB 3.1 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.

Digital Inputs/Digital Outputs

The RKP computer comes with four digital inputs and four digital outputs in a terminal block. Refer to the following figures for the pin definitions and the current ratings.



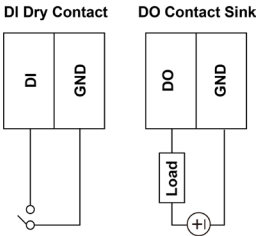
Digital Inputs

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

Digital Outputs

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

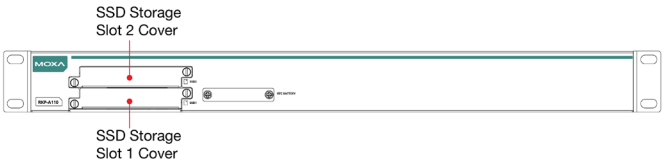
For the wiring method, refer to the following diagram:



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

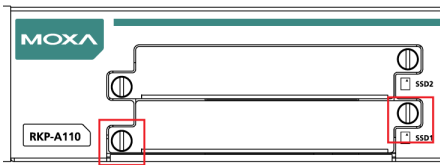
Installing a Storage Drive

The RKP computer is provided with two storage slots on the rear panel for storage expansion.



To install an SSD drive, do the following:

1. Unfasten the two screws on the storage slot.



2. Pull out the storage tray and layout four screws from the pouch included in the product package.



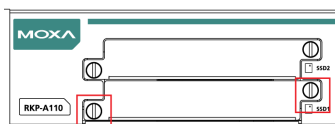
3. Place the storage drive on the tray.



4. Reverse the storage tray and fasten four screws to secure the storage drive to the tray.



5. Insert the storage tray into the slot and fasten secure the tray in place with two screws.



6. Use the same method to install a storage drive in the other slot.

Replacing the Battery

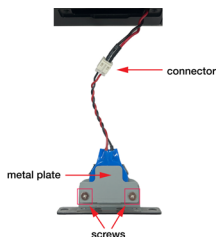
The RKP computer comes with one slot for a battery on the bottom panel of the computer. A lithium battery (3 V / 200 mAh) is preinstalled in the slot.

To replace the battery, do the following:

1. Unfasten the two screws on the battery cover.



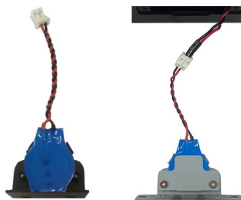
2. Take off the cover.
The battery is attached to the slot cover as indicated in the image.



3. Unplug the connector of the battery-cover assembly from the internal wire of the slot.
4. Remove the two screws on the metal plate attached to the battery holder.



5. Place a new battery in the battery holder, replace the metal plate, and fasten the two screws on to the frame to secure the battery.



6. Plug in the connector of the battery-cover assembly to the internal wire of the slot.
7. Place the battery holder back in the slot and secure it by fastening the two screws on the cover.



WARNING

- Be sure to use the correct type of battery. Incorrect battery 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 Certification for Taiwan

RKP-C110 Series

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: 機架式無風扇電腦 Equipment name		型號 (型式): RKP-C110-C7-T(及其系列型號) 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

Moxa 四零四科技股份有限公司

+886 3 2737575

桃園市八德區和平路 1 11 1 號

產品型號

RKP-C110-C1-T, RKP-C110-C1-T-Win10

RKP-C110-C1-8L-T, RKP-C110-C1-8C-T, RKP-C110-C1-2L4C-T

RKP-C110-C5-T, RKP-C110-C5-T-Win10

RKP-C110-C5-8L-T, RKP-C110-C5-8C-T, RKP-C110-C5-2L4C-T

RKP-C110-C7-T, RKP-C110-C7-T-Win10, RKP-C110-C7-8L-T

RKP-C110-C7-8C-T, RKP-C110-C7-2L4C-T

RKP-C110-T, RKP-C110-C, RKP-C110-L

RKP-A110 Series

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：機架式無風扇電腦 Equipment name		型號(型式)：RKP-A110-E4-T(及其系列型號) 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	○	○	○	○	○	○
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製造商資訊

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桃園市八德區和平路 1 11 1 號

產品型號

RKP-A110-E2-T, RKP-A110-E2-T-Win10

RKP-A110-E4-T, RKP-A110-E4-T-Win10

RKP-A110-E2-8L-T, RKP-A110-E4-8L-T

RKP-A110-E2-8C-T, RKP-A110-E4-8C-T

RKP-A110-E2-2L4C-T, RKP-A110-E4-2L4C-T

RKP-A110-T, RKP-A110 C, RKP-A110-L