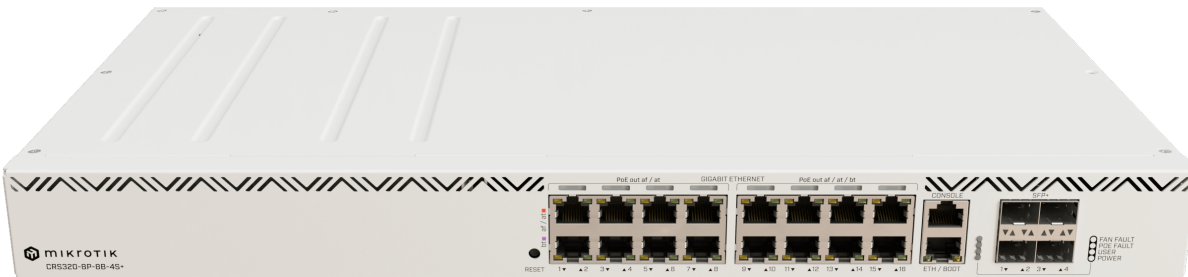


CRS320-8P-8B-4S+RM

CRS320-8P-8B-4S+RM



Safety Warnings

Before you work on any equipment, be aware of the hazards involved with electrical circuitry, and be familiar with standard practices for preventing accidents.

Ultimate disposal of this product should be handled according to all national laws and regulations.

The Installation of the equipment must comply with local and national electrical codes.

This unit is intended to be installed in the rackmount. Please read the mounting instructions carefully before beginning installation. Failure to use the correct hardware or to follow the correct procedures could result in a hazardous situation to people and damage to the system.

This product is intended to be installed indoors. Keep this product away from water, fire, humidity or hot environments.

Use only the power supply and accessories approved by the manufacturer, and which can be found in the original packaging of this product.

The socket-outlet shall be installed near the equipment and shall be easily accessible.

Read the installation instructions before connecting the system to the power source.

We cannot guarantee that no accidents or damage will occur due to the improper use of the device. Please use this product with care and operate at your own risk!

In the case of device failure, please disconnect it from power. The fastest way to do so is by unplugging the power plug from the power outlet.

It is the customer's responsibility to follow local country regulations. All Mikrotik devices must be professionally installed.

This is a Class A product. In a domestic environment, this product might cause radio interference in which case the user might be required to take adequate measures

Quick start

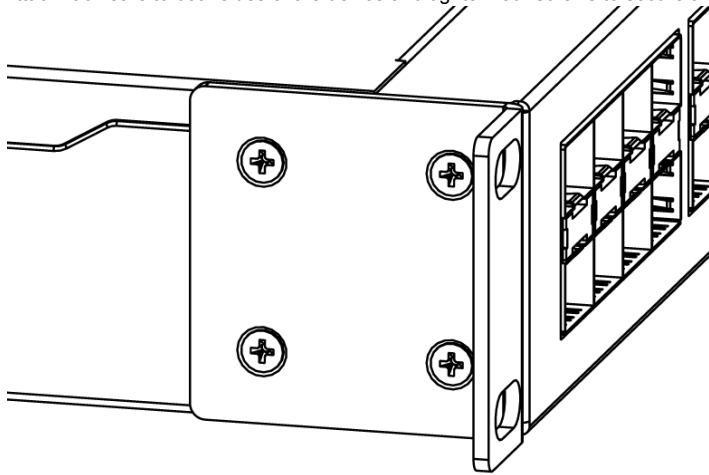
- Connect with your computer to the device;
- Connect the device to a power source;
- Download the configuration tool <https://mt.lv/WinBox>;
- Start configuration within the chosen tool, using the default IP address 192.168.88.1. If the IP address is unavailable, use WinBox and choose the "Neighbors" tab to find the device;
- Proceed to connect using the MAC address. The username is "admin," and there is no password (or, for some models, check user and wireless passwords on the sticker);
- For a manual update, visit the products page at <https://mikrotik.com/products> to find your product. The required packages are accessible under the "Support&Downloads" menu;
- Upload downloaded packages to the WinBox "Files" menu and reboot the device;
- By upgrading your RouterOS software to the latest version, you can ensure optimal performance, stability, and security updates;
- Set up your router password.

Mounting

The device is designed to use indoors and it can be mounted in a rackmount enclosure using provided rack mounts, or it can be placed on the desktop.

Please attach rubber pegs on the bottom of the router if the desired placement is on the flat surface or use a Phillips screwdriver to attach rackmount ears on both sides of the device if designated use is for rackmount enclosure:

1. Attach rack ears to both sides of the device and tighten four screws to secure them in place, as shown in the picture.



2. Place the device in the rackmount enclosure and align with the holes so that the device fits conveniently.
3. Tighten screws to secure it in place.

The device has no protection from water contamination, please ensure the placement of the device in a dry and ventilated environment.

We recommend Cat6 cables for our devices.

Mounting and configuration of this device should be done by a qualified person.

Powering

The unit is equipped with one Hot Swap IEC type AC power supply, 636W, which accepts 100-240 V (~ 50/60 Hz 11 A max).

The second PSU slot is intended to be equipped with the same Hot Swap IEC type AC power supply, 636 W, which accepts 100-240 V (~ 50/60 Hz 11 A max).

The maximum power consumption without attachments is 36 W, and under maximum load (using two power supplies), it can reach 1150W.

Operating System Support

The device supports RouterOS software version 7.15 or above, as indicated in the RouterOS menu under /system resource. Dual boot to SwOS is available if installed from the RouterOS menu. Other operating systems have not been tested.

Configuration

Full RouterOS and SwOS documentation is located here: <https://mt.lv/help>

This device is not preconfigured other than an IP address on the master Ethernet port. You can connect from any port, as all ports are switched together by default. Another configuration has to be applied according to the documentation manual linked above.

The Initial connection has to be done via the Ethernet cable, using the MikroTik WinBox utility. WinBox should be used to connect to the default IP address of 192.168.88.1 from any port, with the username admin and no password (or, for some models, check user and wireless passwords on the sticker).

For recovery purposes, it is possible to boot the device from the network, see Buttons, and Jumpers.

In case the IP connection is not available, the WinBox utility can also be used to connect to the MAC address of the device. Applies only when the device has booted RouterOS.

The device is equipped with an RJ45 serial port, set by default to 115200bit/s, 8 data bits, 1 stop bit, no parity. Standard RJ45 to COM cable can be used, pinout can be found in our manual: <https://mt.lv/help>

Power output

This device can supply PoE power to external devices through its Ethernet ports. All ports provide ~54V.

Ethernet ports 1 to 8 can power 802.3 af/at devices. By default, the PoE mode is set to auto, ensuring it will not damage devices. It will auto-detect devices with PoE support and provide power. Once a PoE device is detected, it will be powered, and the PoE LEDs will turn on.

Ethernet ports 9 to 16 can power 802.3 af/at/bt devices, supporting "Type 3" (Classes 5-6) and "Type 4" (Classes 7-8).

Each 802.3 af/at port can provide up to 30W with high voltage.

Each 802.3 bt port can provide up to 90W.



Supports only fully compliant 802.3 at/af/bt PD devices: [mAP-lite](#), [RB1100AHx4](#), [CRS510-8XS-2XQ](#), [CRS504-4XQ-OUT](#), [CRS504-4XQ-IN](#)

Non-isolated devices like [NetMetal ax](#) can cause ground loop issues, if ground path is produced by PSU or earthing cable.

If such device is required, [RBGPOE-CON-HP](#) should be used to provide galvanic isolation

Description of Terminology Used in the recommended connection Schemes:

Unlike our previous 802.3 af/at Power Sourcing Equipment, this is our first PoE switch with full implementation of the 802.3 af/at/bt standard. It supports only fully compliant 802.3 af/at/bt Powered Devices, such as [CRS510-8XS-2XQ-IN](#), [CRS504-4XQ-IN](#), [CRS504-4XQ-OUT](#), [FTC11XG](#), [mAP lite](#), [RB1100AH x4](#) and future models.

PSE - Power sourcing equipment.

PD - Powered Device.

PSU - Power Supply Unit.

AF/AT - IEEE 802.3af and 802.3at are standards for Power over Ethernet (PoE), which allows Ethernet cables to transmit power alongside data to power devices such as IP cameras, wireless access points, and VoIP phones.

8P - eight ports IEEE 802.3 af/at.

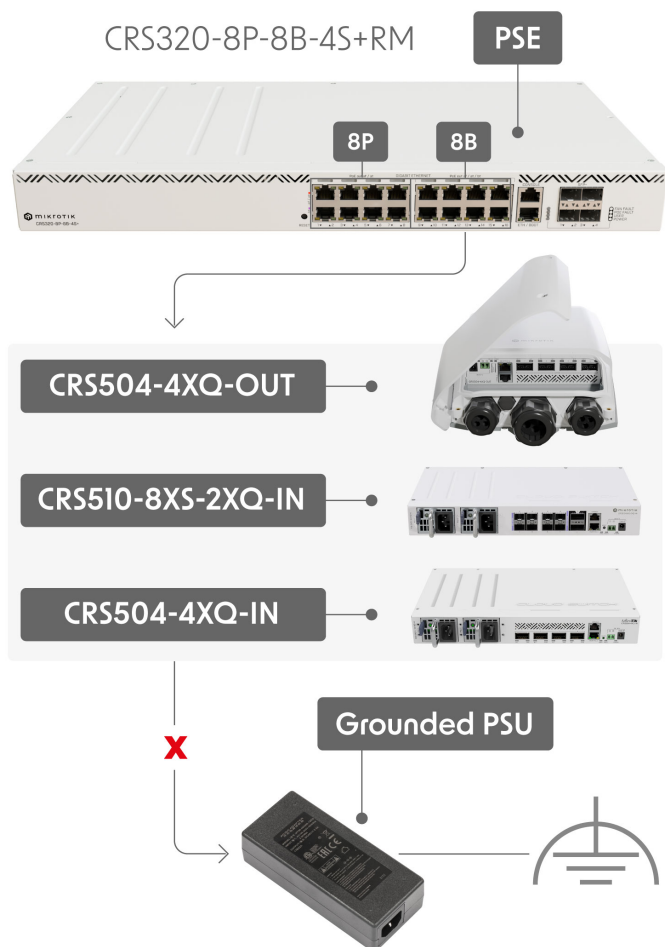
8B - eight ports IEEE 802.3 bt.

Use case 1:

An **802.3 af/at/bt** device, such as the [CRS504-4XQ-OUT](#), [CRS510-8XS-2XQ-IN](#), or [CRS504-4XQ-IN](#) , can be connected to one of the **8B** ports, but it shouldn't be additionally connected with a grounded **PSU**.

CASE 1

Compliant 802.3 bt PD

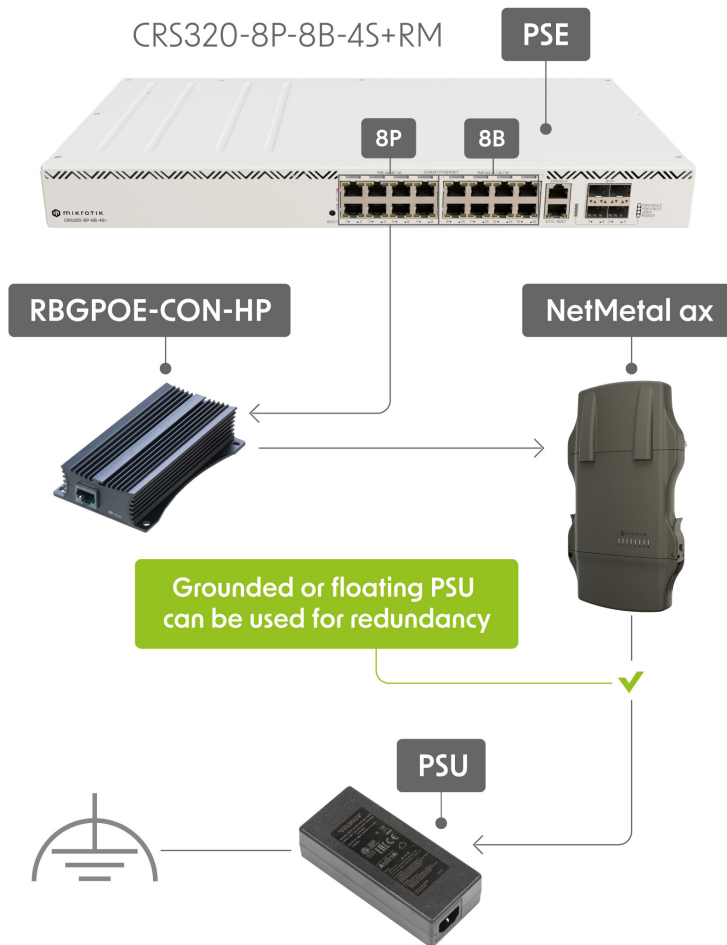


Use case 2:

To power a Passive PoE device, the [RBGPOE-CON-HP](#) should be used. Grounded or floating **PSU** can be used for redundancy.

CASE 2

Low-Voltage devices

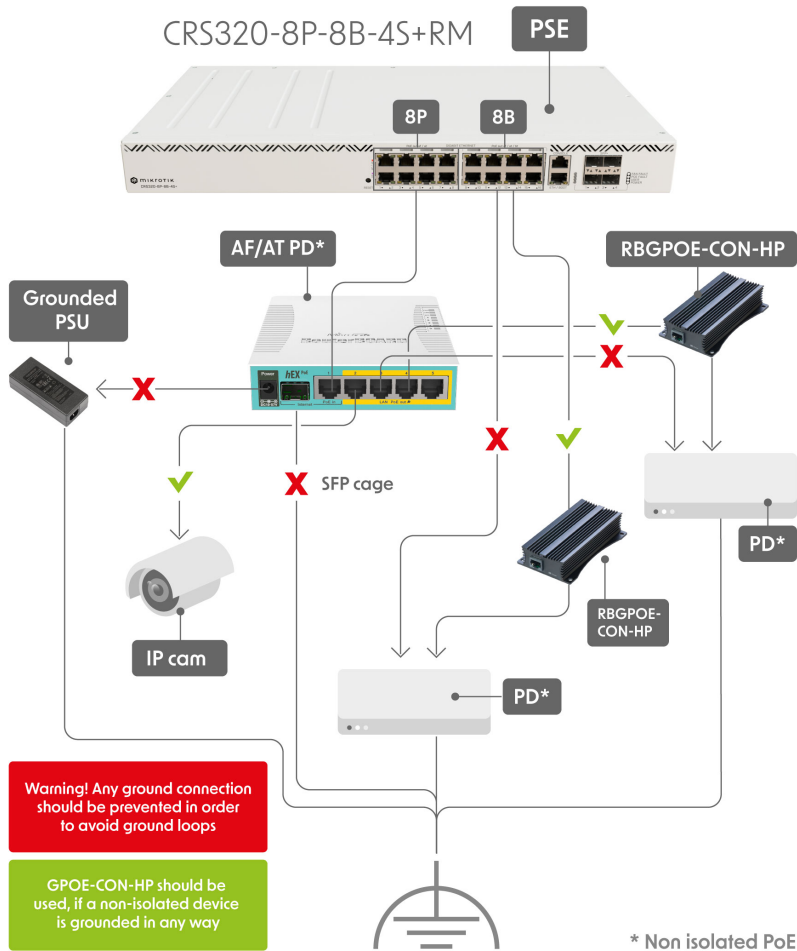


Use case 3 - Special cases for 802.3 af/at Powered Device with non-isolated PoE:

- Any ground connection should be avoided.
- If the ground connection is required, for a Powered Device with non-isolated PoE [RBGPOE-CON-HP](#) should be used.
- Grounded PSU can't be used for Powered Devices at the same time.
- An SFP cage, USB and RS232 ports should not have a connection to the ground.

CASE 3

Non-Isolated devices



Buttons

Reset button:

- Hold this button during boot time until the USR LED light starts flashing, release the button to reset RouterOS configuration.
- Hold the Reset button and power on your device (wait until the "USR" led is blinking then stable "On", and when the "USR" led is "Off" - release the Reset button) - the device is booting in bootp mode to reinstall RouterOS using [Netinstall](#).

The MGMT/BOOT Ethernet port is used for the Netinstall process. See RouterOS documentation about using the [Netinstall](#) recovery utility.

Regardless of the above option used, the system will load the backup RouterBOOT loader if the button is pressed before power is applied to the device. Release the button before LED begins to flash, to only load backup RouterBOOT without resetting. This is useful for RouterBOOT debugging and recovery.

Extension slots and ports

- 16 gigabit Ethernet ports (With Auto MDI/X so you can use either straight or cross-over cables for connecting to other network devices).
- 4x 10G SFP ports.

- MGMT/BOOT labeled port.
- RJ45 serial port.

LED indicators

- PWR LED is lit when the router is powered on.
- USER LED indicates the device's state while powering it up into different modes, such as resetting the configuration or booting device for the Netinstall utility.
- PoE FAULT LED indicates an exceeded overall max PoE output limit.
- FAN FAULT LED indicates a problem with any of the cooling fans.
- Triangle LEDs (top row) indicate PoE-Out status:
 - **Red LED:** Indicates that the respective port uses PoE 802.3af/at.
 - **Flashing single red LED:** Indicates a problem starting low voltage or high (802.3af/at) voltage device.
 - **Purple LED:** Indicates that the respective port uses PoE 802.3bt.
 - **Flashing single purple LED:** Indicates a problem starting a high (802.3bt) voltage device.
- The square orange and green Ethernet port LEDs indicate individual Ethernet port activity.
- The triangle SFP+ port green LEDs indicate individual SFP+ port activity.

Accessories

Package includes the following accessories that come with the device:



IEC cord



Rackmount ears

Please visit help pages for MikroTik SFP module compatibility table: <https://help.mikrotik.com/docs/display/ROS/MikroTik+wired+interface+compatibility>



Information contained here is subject to change. Please visit the product page on www.mikrotik.com for the most up to date version of this document.