

# CRS328-24P-4S+

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This is a network switch with twenty four gigabit ethernet ports and four SFP+ ports. It is already configured, with all ports switched together. We recommend you to set up a password to secure your device. This unit is compatible with 1.25G SFP and 10G SFP+ modules. The device is capable of powering other devices through PoE.

## Powering

The unit is equipped with one IEC type AC power input, which accepts 100-240 V powering (~ 50/60 Hz 7 A max). The power consumption of this device itself under maximum load is up to 44 W.

## Booting process

The device supports booting RouterOS (for complete routing and switching configuration) or SwOS (for only using as a switch). By default the device will boot RouterOS, but you can reboot into the other operating system in the following ways:

- From SwOS: In the System menu, click "Boot RouterOS" button on the bottom of the page.
- From RouterOS: in the System RouterBOARD menu, click "Settings" and there select "Boot OS".

## PoE output

This device can supply PoE powering to external devices from its ethernet ports. The output voltage will be selected automatically, depending on what kind of voltage the connected device requires. The device can power both 802.3af/at devices and devices that accept passive PoE power. If necessary, the output voltage can be switched manually. By default the PoE mode is set to auto, it will not damage non PoE devices and will auto-detect devices with PoE support and the needed voltage. Once a PoE device is detected, it will be powered and the PoE LEDs will turn on.

The PoE out ports are grouped in three PoE out groups of 8 ports each (PSE8). Total device PoE limit = 450w (150w per PSE8 group).

Each port can provide up to 30 W with high voltage, and 26,5 W with low voltage power output.

## Configuration

Full RouterOS and SwOS documentation is located here: <http://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. Other configuration has to be applied according to the documentation manual linked above.

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.

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

In case IP connection is not available, the Winbox utility can also be used to connect to the MAC address of the device. Applies only when 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: <http://mt.lv/help>

## Buttons and Jumpers

### Reset button:

- Hold this button during boot time until the USR LED light starts flashing, release the button to reset RouterOS configuration.
- Keep holding the button for 5 more seconds or until the user LED turns off, then release it to make the RouterBOARD look for Netinstall servers. The first 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 reset. This is useful for RouterBOOT debugging and recovery.

### Mode button:

The action of the mode buttons can be configured from RouterOS software to execute any user supplied RouterOS script. You can also disable this button. The mode button can be configured in RouterOS menu `/system routerboard mode-button`

## Extension slots and ports

- 24 gigabit ethernet ports (With Auto MDI/X so you can use either straight or cross-over cables for connecting to other network devices).
- 4 SFP+ cages, which accept both 1.25 Gb SFP and 10 Gb SFP+ modules.
- RJ45 serial port.

## LED indicators

- PWR LED is lit when the router is powered on.
- The USR LED can be configured from RouterOS.
- Triangle LEDs (top row) indicate PoE out status. Green LED indicates that the respective port uses low voltage, a red LED indicates high voltage. Flashing single green LED: problem to start low voltage device. Flashing single red LED: problem with high voltage device.
- The square port LEDs (bottom row) indicate the individual ethernet, SFP port activity.
- FAN FAULT LED indicates a problem with any of cooling fans.
- PoE FAULT LED indicates an exceeded overall max PoE output limit. Port poe-out priorities will work in 3 independent sections (8 ports each) and overload will happen in any section that breach 150W consumption

## Operating System Support

The device supports RouterOS software with the version number at or above what is indicated in the RouterOS menu `/system resource`. The device can also boot SwOS. Other operating systems have not been tested.





# CE Declaration of Conformity

Full Declaration of Conformity (DoC) may be obtained by visiting our product page on <https://mikrotik.com>

[EN] English	Hereby, MIKROTIKLS SIA declares that this RouterBOARD is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EC.
[BG] Bulgarian	С настоящето, MIKROTIKLS SIA декларира, че RouterBOARD е в съответствие със съществените изисквания и другите приложими разпоредби на Директива 2014/53/EC.
[CZ] Czech	MIKROTIKLS SIA tímto prohlašuje, že RouterBOARD splňuje základní požadavky a všechna příslušná ustanovení Směrnice 2014/53/ES.
[DK] Danish	Undertegnede MIKROTIKLS SIA erklærer herved, at følgende udstyr RouterBOARD overholder de væsentlige krav og øvrige relevante krav i direktiv 2014/53/EF.
[DE] German	Hiermit erkläre MIKROTIKLS SIA dass sich das Gerät RouterBOARD in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 2014/53/EG befindet.
[EE] Estonian	Käesolevaga kinnitab MIKROTIKLS SIA seadme RouterBOARD vastavust direktiivi 2014/53/EU põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
[GR] Greek	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ Ο ΚΑΤΑΣΚΕΥΑΣΤΗΣ MIKROTIKLS SIA ΔΗΛΩΝΕΙ ΟΤΙ RouterBOARD ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 2014/53/ΕΚ
[ES] Spanish	Por la presente, MIKROTIKLS SIA declara que este RouterBOARD cumple con los requisitos esenciales y otras exigencias relevantes de la Directiva 2014/53/EC.
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[LV] Latvian	Ar šo MIKROTIKLS SIA deklarē, ka RouterBOARD atbilst Direktīvas 2014/53/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
[LT] Lithuanian	Šiuo MIKROTIKLS SIA deklaruoją, kad šis RouterBOARD atitinka esminius reikalavimus ir kitas 2014/53/EB Direktyvos nuostatas
[HU] Hungarian	A MIKROTIKLS SIA ezzel kijelenti, hogy a RouterBOARD típusú berendezés teljesíti az alapvető követelményeket és más 2014/53/EK irányelvben meghatározott vonatkozó rendelkezéseket.
[NL] Dutch	Hierbij verklaart MIKROTIKLS SIA dat het toestel RouterBOARD in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 2014/53/EG.
[PL] Polish	Niniejszym MIKROTIKLS SIA deklaruje że RouterBOARD jest zgodny z zasadniczymi wymaganiami i innymi właściwymi postanowieniami Dyrektywy 2014/53/EC.
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[FI] Finnish	MIKROTIKLS SIA vakuuttaa täten että RouterBOARD tyyppinen laite on direktiivin 2014/53/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
[SE] Swedish	Härmed intygar MIKROTIKLS SIA att denna RouterBOARD är i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 2014/53/EG.
[NO] Norwegian	MIKROTIKLS SIA Erklærer herved at RouterBOARD er i samsvar med de grunnleggende krav og øvrige relevante krav i direktiv 2014/53/EF.

**EN. Instruction manual:** Connect the power adapter to turn on the device. Open 192.168.88.1 in your web browser, to configure it. More information on <https://mt.lv/help>

**BG. Инструкция:** Свържете адаптера на захранване, за да включите устройството. Отворете 192.168.88.1 в уеб браузър, за да настроите продукта. Повече информация в <https://mt.lv/help>

**CZ. Návod k použití:** Připojte napájecí adaptér k zapnutí přístroje. Otevřete 192.168.88.1 ve webovém prohlížeči pro konfiguraci produktu. Více informací najdete v <https://mt.lv/help>

**DK. Instruktionsbog:** Tilslut strømadapteren for at tænde for enheden. Åbn 192.168.88.1 i en webbrowser til at konfigurere produktet. Mere information i <https://mt.lv/help>

**FR. Mode d'emploi:** Connectez l'adaptateur d'alimentation pour allumer l'appareil. Ouvrez 192.168.88.1 dans un navigateur Web pour configurer le produit. Plus d'informations dans <https://mt.lv/help>

**DE. Bedienungsanleitung:** Verbinden Sie das Netzteil, um das Gerät einzuschalten. Öffnen Sie 192.168.88.1 in einem Web-Browser, um das Produkt zu konfigurieren. Weitere Informationen im <https://mt.lv/help>

**EE. Kasutusjuhend:** Ühendage toiteadapter seadme sisselülitamiseks. Avatud 192.168.88.1 in veebilehitseja seadistada toodet. Rohkem teavet <https://mt.lv/help>

**ES. Manual de instrucciones:** Conecte el adaptador de alimentación para encender la unidad. Abra 192.168.88.1 en un navegador web para configurar el producto. Más información en <https://mt.lv/help>

**IT. Manuale di istruzioni:** Collegare l'adattatore di alimentazione per accendere l'unità. Aprire 192.168.88.1 in un browser Web per configurare il prodotto. Maggiori informazioni in <https://mt.lv/help>

**LV. Lietošanas instrukcija:** Pievienojiet Strāvas adapteri, lai ieslēgtu ierīci. Atvērt 192.168.88.1 ar interneta pārlūku, lai konfigurētu produktu. Plašāka informācija <https://mt.lv/help>

**LT. Naudojimosi instrukcija:** Prijunkite maitinimo adapterį jūnkite įrenginį. Į interneto naršyklę 192.168.88.1 Atidarykite galite konfigūruoti gaminį. Daugiau informacijos rasite <https://mt.lv/help>

**HU. Használati utasítás:** Csatlakoztassa a hálózati adaptert a készülék bekapcsolásához. Megnyitása 192.168.88.1 egy webböngészőben beállítani a terméket. Több információ <https://mt.lv/help>

**NL. Handleiding:** Sluit voedingsadapter aan op het apparaat in te schakelen. Open 192.168.88.1 in een webbrowser om het product te configureren. Meer informatie in <https://mt.lv/help>

**PL. Instrukcja obsługi:** Podłącz adapter zasilania, aby włączyć urządzenie. Otwórz 192.168.88.1 w przeglądarce internetowej, aby skonfigurować urządzenie. Więcej informacji w <https://mt.lv/help>

**PT. Manual de instruções:** Conecte o adaptador de alimentação para ligar o aparelho. Abra 192.168.88.1 em um navegador da web para configurar o produto. Mais informações em <https://mt.lv/help>

**RO. Instrucțiuni de utilizare:** Conectați adaptorul de alimentare pentru a porni aparatul. Deschide 192.168.88.1 într-un browser web pentru a configura produsul. Mai multe informații în <https://mt.lv/help>

**SK. Návod na použitie:** Pripojte napájací adaptér k zapnutiu prístroja. Otvorte 192.168.88.1 vo webovom prehliadači pre konfiguráciu produktu. Viac informácií nájdete v <https://mt.lv/help>

**SI. Navodila:** Priključite napajalnik za vklop naprave. Odprite 192.168.88.1 v spletnem brskalniku nastaviti izdelek. Več informacij v <https://mt.lv/help>

**FI. Käyttöohje:** Kytke virtalähde päälle laitteen. Avaa 192.168.88.1 in selaimen määrittää tuotteen. Lisää tietoa <https://mt.lv/help>

**SE. Instruktionsmanual:** Anslut nätadaptern för att slå på enheten. Öppna 192.168.88.1 i en webbläsare för att konfigurera produkten. Mer information på <https://mt.lv/help>

**NO. Bruksanvisningen:** Koble strømadapteren for å slå på enheten. Åpne 192.168.88.1 i en nettleser for å konfigurere produktet. Mer informasjon på <https://mt.lv/help>

**GR. εγχειρίδιο οδηγιών:** Συνδέστε τον προσαρμογέα τροφοδοσίας για να ενεργοποιήσετε τη μονάδα. Ανοίξτε 192.168.88.1 σε ένα πρόγραμμα περιήγησης στο Web για να διαμορφώσετε το προϊόν. Περισσότερες πληροφορίες στο <https://mt.lv/help>