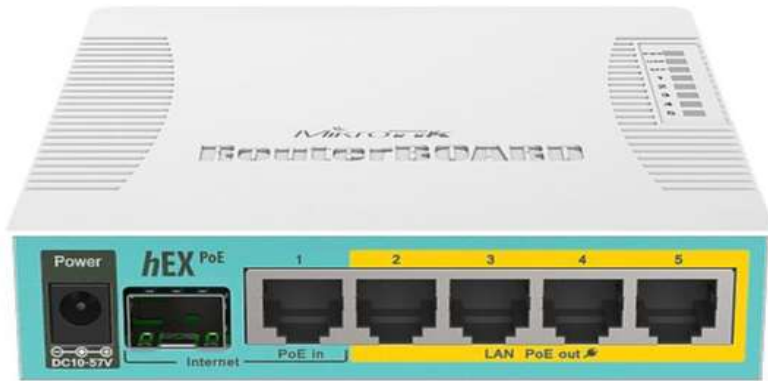# User Manuals

hEX PoE (RB960PGS)

hEX PoE is a powerful five-port Gigabit Ethernet router with an SFP port capable of powering other devices.

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.

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, including operation within legal frequency channels, output power, cabling requirements, and Dynamic Frequency Selection (DFS) requirements. All Mikrotik devices must be professionally installed.

First use

1.Choose your powering solution, please see the [Powering](#) section for possibilities.

2.Connect your Internet cable to port 1 (labeled "Internet"), and local network computers to ports 2-5.

3.Connect your direct input power jack if not using POE, to start up the device.

4.If using POE please see section [POE Adapter](#) on how to connect.

5.The device will boot up and after the short beep, the network will be available for connecting.

6.Set your computer IP configuration to automatic (DHCP).

7.Once connected to the network, open https://192.168.88.1 in your web browser to start configuration, since there is no password by default, you will be logged in automatically (or, for some models, check user and wireless passwords on the sticker).

8.We recommend clicking the "Check for updates" button and updating your RouterOS software to the latest version to ensure the best performance and stability.

9.Set up your password on the screen that loads.

Mounting

This device is designed for use indoors by placing it on the flat surface or mounting on the wall, mounting points are shown in the picture below, screws are not included in the package. Screws with size 4x25 mm fit nicely, depending on your wall structure you can use dowels 6x30 mm and 6 mm drill bit if needed.
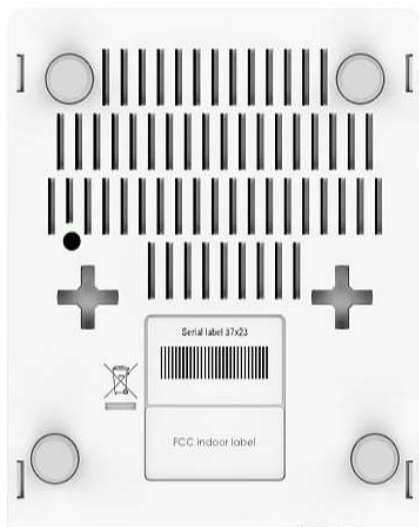
When mounting on the wall, please ensure that the cable feed is pointing downwards. We recommend using Cat6 cable for our devices. The IP rating scale for this device is IPX0.
Warning! This equipment should be installed and operated with a minimum distance of 20 cm between

the device and your body. The operation of this equipment in the residential environment could cause radio interference.

Powering

The device accepts power from the power jack or from the first Ethernet port (Passive PoE):

●Direct input power jack (5.5mm outside and 2mm inside, female, pin positive) accepts 12 - 57 V ⎓DC.

●The first Ethernet port accepts passive Power over Ethernet 12 - 57 V ⎓DC.

●PoE out on 2 - 5 Ethernet port, It also supports passive PoE input and passive or 802.3af/at PoE output. Ethernet ports 2-5 can power other PoE capable devices with the same voltage as applied to the unit. It can power at/af mode B (4,5+)(7,8-) compatible devices, if 48-57 input voltage is used.
The power consumption of this device under maximum load with attachments is 59 W. Without attachments 6 W.

Power output

This device can supply PoE power to external devices from its Ethernet ports. This is convenient as you don't need any additional PoE injectors to power other devices. The output voltage will be the same as the input voltage. The maximum power output of each Ethernet port in this mode is 1 A (the total maximum for all ports is 2 A). Once Power Output is enabled in RouterOS, the Ethernet LED adds red color to it (green means Ethernet link is made, red means power but no link, red and green both means there is link and power).

Booting process

RouterOS includes many configuration options in addition to what is described in this document. We suggest starting here to get yourself accustomed to the possibilities: https://mt.lv/help. In case an IP connection is not available, the Winbox tool (https://mt.lv/winbox) can be used to connect to the MAC address of the device from the LAN side (all access is blocked from the Internet port by default).
For recovery purposes, it is possible to boot the device from the network, see a section Reset button.

Extension Slots and Ports

●The device has five individual Ethernet ports, supporting automatic cross/straight cable correction (Auto MDI/X), so you can use either straight or cross-over cables for connecting to other network devices.

●1G SFP port.

●USB type-A slot.

Please visit wiki pages for MikroTik SFP module compatibility
table: https://wiki.mikrotik.com/wiki/MikroTik_SFP_module_compatibility_table

Buttons and jumpers

Reset button

The RouterBOOT reset button has the following functions. Press the button and apply the power, then:

●Release the button when green LED starts flashing, to reset RouterOS configuration to defaults.

●Release the button when the LED turns solid green to clear all configuration and bridge all interfaces.

●Release the button after LED is no longer lit (~20 seconds) to cause a device to look for Netinstall
servers (required for reinstalling RouterOS over the network).
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. Useful for RouterBOOT debugging and recovery.

Connecting to a POE Adapter:

1.Connect the Ethernet cable from the device to the POE port of the POE adapter.

2.Connect an Ethernet cable from your LAN to the LAN port of the POE adapter, please mind arrows
for data and power flow.

3.Connect the power cord to the adapter, and then plug the power cord into a power outlet.

Accessories

The package includes the following accessories that come with the device:

24V 2.5A power
adapter

IEC cord

Specifications

For more information about this product, specifications, and pictures please visit our web page: https://mikrotik.com/product/RB960PGS

Operating System Support

The device supports RouterOS software version 6. The specific factory-installed version number is indicated in the RouterOS menu /system resource. Other operating systems have not been tested.

To avoid pollution of the environment, please separate the device from household waste and dispose of it in a safe manner, such as in designated waste disposal sites. Familiarize yourself with the procedures for the proper transportation of the equipment to the designated disposal sites in your area.

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

●Reorient or relocate the receiving antenna.

●Increase the separation between the equipment and receiver.

●Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

●Consult the dealer or an experienced radio/TV technician for help.
FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This unit was tested with shielded cables on the peripheral devices. Shielded cables must be used with the unit to ensure compliance.

Innovation, Science and Economic Development Canada

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science, and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following two conditions: (1) This device may not cause interference. (2) This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : 1) L'appareil ne doit pas produire de brouillage; 2) L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe [B] est conforme à la norme NMB-003 du Canada.

CAN ICES-003 (B) / NMB-003 (B)

UKCA Marking

Eurasian Conformity Mark

Информация о дате изготовления устройства указана в конце серийного номера на его наклейке через дробь. Первая цифра означает номер года (последняя цифра года), две последующие означают номер недели.

Изготовитель: Mikrotikls SIA, Aizkraukles iela 23, Riga, LV-1006, Латвия, support@mikrotik.com. Сделано в Китае, Латвии или Литве. См. на упаковке.

Для получения подробных сведений о гарантийном обслуживании обратитесь к продавцу. Информация об импортерах продукции MikroTik в Российскую Федерацию: https://mikrotik.com/buy/europe/russia

Продукты MikroTik, которые поставляются в Евразийский таможенный союз, оцениваются с учетом соответствующих требований и помечены знаком EAC, как показано ниже:

ΕΛC

Norma Oficial Mexicana

EFICIENCIA ENERGETICA CUMPLE CON LA NOM-029-ENER-2017.

La operacion de este equipo esta sujeta a las siguientes dos condiciones:

●Es posible que este equipo o dispositivo no cause interferencia perjudicial y.

●Este equipo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operacion no deseada.
Fabricante: Mikrotikls SIA, Brivibas gatve 214i, Riga, LV-1039, Latvia.

País De Origen: Letonia; Lituania; China (Republica Popular); Estados Unidos De America; Mexico.

Por favor contacte a su distribuidor local para preguntas regionales específicas. La lista de importadores se puede encontrar en nuestra página de inicio
– https://mikrotik.com/buy/latinamerica/mexico.

CE Declaration of Conformity

Manufacturer: Mikrotikls SIA, Brivibas gatve 214i Riga, Latvia, LV1039.

The full text of the EU Declaration of Conformity is available at the following internet address: https://mikrotik.com/products

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.