

RouterBOARD Metal 2SHPN

Quick Setup Guide and Warranty Information

The RouterBOARD **Metal 2SHPN** is a solid, waterproof outdoor device with a high power wireless transmitter (2GHz, 802.11b/g/n, N-Male antenna connector), and one 10/100 Ethernet connector which supports MDI-X auto detection. The device is packaged with a 24V power adapter, a PoE injector and two mounting loops.

First use

1. Connect the antenna to the N-Male connector
2. Use the latches to open the product case, to reveal the Ethernet connector
3. Use the provided round rubber insulator to put on the Ethernet cable, and push it into the case opening, so that the opening is tightly closed.
To put the cable through the insulator, you have to put in the cable first, and only then clamp on the Ethernet connector. If the connector is already on the cable, you can cut the insulator on one side, to clamp it around the cable, but this sacrifices waterproofness.
4. The Metal accepts 12-28V Passive PoE from a PoE injector (please compensate voltage for loss due to cable length)
5. The default IP address from Ether1 is 192.168.88.1 for configuration
Username is **admin** and there is **no password**
6. Depending on the antenna used, you must set its gain in the RouterOS software to ensure that EIRP meets the limit set by authorities. This is done in the Wireless menu.

Powering

The board accepts powering from the Ethernet port (Passive PoE):

- Ethernet port accepts passive Power over Ethernet 12-28V DC. Package contains a 24V adapter and a PoE injector.

Maximum power consumption of the device is 12W at 24V.

Booting process

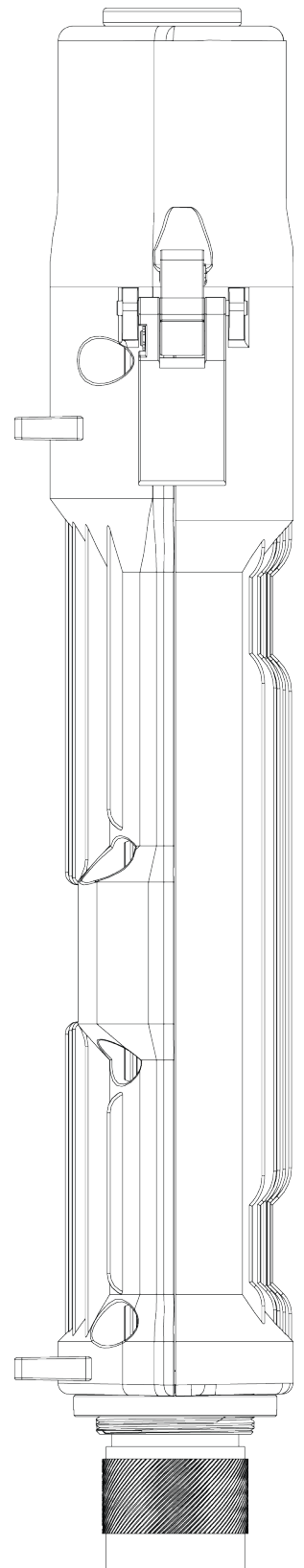
Connect to wireless SSID "MikroTik" and open **192.168.88.1** in your web browser. Username is **admin** and there is no password. In case IP connection is not available, Winbox can be used to connect to the MAC address of the device. More information here:

http://wiki.mikrotik.com/wiki/First_time_startup

In case you wish to boot the device from network, for example to use MikroTik Netinstall, hold the RESET button of the device when starting it until the LED light turns off, and Metal will start to look for Netinstall servers.

Mounting

To tighten the Metal to a pole, use the provided mounting loops. The Metal comes bundled with two plastic and two metallic mounting loops (choose either) - guide the loops around the Metal through the provided edge markings, and around the pole where it will be mounted. You should avoid connecting a loose Ethernet cable to the Ethernet port - secure the cable to a wall or the pole, so that the cable weight is not pulling the port. It is recommended to secure the Ethernet cable less than 2m from the Metal device. This is to ensure that the cable doesn't damage the port by its weight, or doesn't fall out.



Expansion Slots and Ports

- Built in 2GHz 802.11b/g/n wireless, 1x1 MIMO, station mode (*AP mode for Metal A-2SHPN*)
- One 10/100 Ethernet port, supporting automatic cross/straight cable correction (Auto MDI/X), so you can use either straight or cross-over cable for connecting to other network devices. The Ethernet port accepts 8-30V DC powering from a passive PoE injector.

Buttons and Jumpers

- RouterOS reset jumper hole (no direct access, board has to be removed from case) – resets RouterOS software to defaults. Must short circuit the metallic sides of the hole (with a screwdriver, for example) and boot the device. Hold screwdriver in place until RouterOS configuration is cleared.
- RouterBOOT reset button (access through the door) has two functions:
 - Hold this button during boot time until LED light starts flashing, release the button to **reset RouterOS configuration** (same result as with reset hole)
 - Hold this button during boot time longer, until LED turns off, then release it to make the device **look for Netinstall servers**.

Operating System Support

Currently tested operating system is MikroTik RouterOS (starting from version v5.16).

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Hardware. MikroTik warrants all RouterBOARD series equipment for the term of fifteen (15) months from the shipping date to be free of defects in materials and workmanship under normal use and service, except in case of damage caused by mechanical, electrical or other accidental or intended damages caused by improper use or due to wind, rain, fire or other acts of nature.

To return failed units to MikroTik, you must perform the following RMA (Return Merchandise Authorization) procedure. Follow the instructions below to save time, efforts, avoid costs, and improve the speed of the RMA process.

1. If you have purchased your product from a MikroTik Reseller, please contact the Reseller company regarding all warranty and repair issues, the following instructions apply **ONLY** if you purchased your equipment directly from MikroTik in Latvia.
2. We do not offer repairs for products that are not covered by warranty. Exceptions can be made for RB1000, RB1100 and RB1200.
3. Out-of-warranty devices and devices not covered by warranty sent to MikroTik will be returned to the sender at sender's cost.

RMA Instructions are located on our webpage here: <http://rma.mikrotik.com>

Manual. This manual is provided “as is” without a warranty of any kind, expressed or implied, including, but not limited to, the implied warranty of merchantability and fitness for a particular purpose. The manufacturer has made every effort to ensure the accuracy of the contents of this manual, however, it is possible that it may contain technical inaccuracies, typographical or other errors. No liability is assumed for any inaccuracy found in this publication, nor for direct or indirect, incidental, consequential or other damages that may result from such an inaccuracy, including, but not limited to, loss of data or profits. Please report any inaccuracies found to support@mikrotik.com

Federal Communication Commission Interference Statement

(FCC ID: TV7METL2SHPN)

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 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.

This device and its antenna must not be co-located or operation in conjunction with any other antenna or transmitter.

IMPORTANT: Exposure to Radio Frequency Radiation.

63 cm minimum distance has to be maintained between the antenna and the occupational user and 142 cm to general public. Under such configuration, the FCC radiation exposure limits set forth for an population/uncontrolled environment can be satisfied.

List of approved antennas:

- Omni Directional (fiberglass pole), Model WLO-2450-15, 15 dBi
- Omni Directional (hor. Polarization, bar), Model HP ODH 24-13, 13 dBi
- Panel, Model WLP-2450-20, 20 dBi
- Sector, Model SA 24-90-17-WB, 17 dBi
- Dish, Model DC 24-HD-PFIP, 24 dBi

Antenna Installation. **WARNING:** It is installer's responsibility to ensure that when using the authorized antennas in the United States (or where FCC rules apply); only those antennas certified with the product are used. The use of any antenna other than those certified with the product is expressly forbidden in accordance to FCC rules CFR47 part 15.204. The installer should configure the output power level of antennas, according to country regulations and per antenna type. Professional installation is required of equipment with connectors to ensure compliance with health and safety issues.