

RouterBOARD 953GS-5HnT

Quick Setup Guide and Warranty Information

The RB953 is equipped with three Gigabit Ethernet ports, two SFP cages and two miniPCI slots. It also has a built-in 5GHz wireless device with three-chain support (three antenna connectors).

Assembling the Hardware

First use of the board:

1. Insert the miniPCI cards
2. Install the board in a case and connect antenna cables
3. Connect other peripherals and cables
4. Plug in PoE powered Ethernet to turn on the board

The device comes with a thermal pad, which is located inside a small bag. This thermal pad will ensure heat transfer between the backside of RB953 wireless device heatsink, and the indoor or outdoor case, where it will be mounted. The thermal pad should be put on the rectangular area of the RB953 heatsink, so that it is pressing against the device case, when it is mounted.

Powering

It's possible to power the device with the following methods:

- The first Ethernet port (Ether1) accepts 8-30V DC input (at the board; higher voltage needed to compensate for power loss on long cables; at least 18V suggested) from non-standard (passive) Power over Ethernet injectors. This device does **not** work with IEEE802.3af compliant 48V power injectors.
- DC power jack which accepts 8-30V (5.5mm outside and 2mm inside diameter, female, pin positive plug)

Booting process

RouterOS is the operating system of all RouterBOARD routers. Please see detailed configuration guide here: <http://wiki.mikrotik.com/wiki/Category:Manual>

This device doesn't come fitted with a Serial Port connector, so 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** with the username **admin** and **no password**.

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 Groove will start to look for Netinstall servers.

In case IP connection is not available, Winbox can also be used to connect to the MAC address of the device. More information here: http://wiki.mikrotik.com/wiki/First_time_startup

Extension Slots and Ports

- Three 10/100/1000 Gigabit 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. The first Ethernet port accepts 8-30V DC powering from a passive PoE injector. The other two Ethernet ports **do not** support PoE powering.

- Two MiniPCI Type IIIA/IIIB ports with 3.3V power signaling
- Two SFP cages (Supports 1.25G SFP modules, supports DDMI)
- One powered USB 2.0 port (5V)
- One 8-30V DC power jack
- One fan header, for connecting an optional cooling fan (5V)

Buttons

- Bootloader backup button (Reset 1). Holding the button while booting will cause the backup bootloader to be used
- RouterOS reset hole (While booting, and holding a metal object in this hole (for example a screwdriver) will cause RouterOS software to be reset to defaults

Operating System Support

Currently tested operating system is MikroTik RouterOS (starting from v6).

Copyright and Warranty information

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Hardware. MikroTik warrants all RouterBOARD series equipment for the term of twelve (12) 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. MikroTik does not offer repairs for products that are not covered by warranty. Exceptions can be made for: CCR1016-12G, CCR1016-12G-BU, CCR1036-12G-4S, RB1100, RB1100AH, RB1100AHx2, RB1200, RB600, RB600A and RB800 as a paid service (fees apply).
3. Out-of-warranty devices and devices not covered by warranty sent to MikroTik will be returned to the sender at sender's cost. If the customer has not organized return of such rejected devices within 12 months from the day of arrival, MikroTik has the right to discard them.

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

This document 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 document, 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: TV7RB953GS-5HNT)



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: 160 cm minimum distance has to be maintained between the antenna and the occupational user and 355 cm to general public. Under such configuration, the FCC radiation exposure limits set forth for an population/uncontrolled environment can be satisfied.

List of additional approved antennas:

- Omni Directional, MT-482016NA, 8.5 dBi
- Panel Antenna, PA58-24-ANT, 24 dBi
- Dish Antenna, HDDA5W-32-DP2, 32dBi

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.

CE Declaration of Conformity



Full Declaration of Conformity (DoC) may be obtained by visiting this web page: <http://routerboard.com/doc/>

[EN] English	Hereby, MIKROTIKLS SIA declares that this ROUTERBOARD is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
[BG] Bulgarian	С настоящето, MIKROTIKLS SIA декларира, че ROUTERBOARD е в съответствие със съществените изисквания и другите приложими разпоредби на Директива 1999/5/EC.
[CZ] Czech	MIKROTIKLS SIA tímto prohlašuje, že ROUTERBOARD splňuje základní požadavky a všechna příslušná ustanovení Směrnice 1999/5/ES.
[DK] Danish	Undertegnede MIKROTIKLS SIA erklærer herved, at følgende udstyr ROUTERBOARD overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/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 1999/5/EG befindet.
[EE] Estonian	Käesolevaga kinnitab MIKROTIKLS SIA seadme ROUTERBOARD vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
[GR] Greek	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ Ο ΚΑΤΑΣΚΕΥΑΣΤΗΣ ΜΙΚΡΟΤΙΚΛΣ SIA ΔΗΛΩΝΕΙ ΟΤΙ ROUTERBOARD ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ
[ES] Spanish	Por la presente, MIKROTIKLS SIA declara que este ROUTERBOARD cumple con los requisitos esenciales y otras exigencias relevantes de la Directiva 1999/5/EC.
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[NO] Norwegian	MIKROTIKLS SIA Erklærer herved at ROUTERBOARD er i samsvar med de grunnleggende krav og øvrige relevante krav i direktiv 1999/5/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 <http://wiki.mikrotik.com>

BG. Инструкции: Свържете адаптера на захранване, за да включите устройството. Отворете 192.168.88.1 в уеб браузър, за да настроите продукта. Повече информация в <http://wiki.mikrotik.com>

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 <http://wiki.mikrotik.com>

DK. Instruktionsbog: Tilslut strømadapteren for at tænde for enheden. Åbn 192.168.88.1 i en webbrowser til at konfigurere produktet. Mere information i <http://wiki.mikrotik.com>

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 <http://wiki.mikrotik.com>

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 <http://wiki.mikrotik.com>

EE. Kasutusjuhend: Ühendage toiteadapter seadme sisselülitamiseks. Avatud 192.168.88.1 in veebilehitseja seadistada toodet. Rohkem teavet <http://wiki.mikrotik.com>

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 <http://wiki.mikrotik.com>

IT. Manuale di istruzioni: Collegare l'adattatore di alimentazione per accendere l'unità. Aprite 192.168.88.1 in un browser Web per configurare il prodotto. Maggiori informazioni in <http://wiki.mikrotik.com>

LV. Lietošanas instrukcija: Pievienojiet Strāvas adapteri, lai ieslēgtu ierīci. Atvērt 192.168.88.1 ar interneta pārlūku, lai konfigurētu produktu. Plašāka informācija <http://wiki.mikrotik.com>

LT. Naudojimosi instrukcija: Prijunkite maitinimo adapterį įjunkite įrenginį. Į interneto naršyklę 192.168.88.1 Atidarykite galite konfigūruoti gaminį. Daugiau informacijos rasite <http://wiki.mikrotik.com>

HU. Használati utasítás: Csatlakoztassa a hálózati adaptert a készülék bekapcsolásához. Megnyitása 192.168.88.1 egy webböngészőben beállítani a terméket. Több információ <http://wiki.mikrotik.com>

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 <http://wiki.mikrotik.com>

PL. Instrukcja obsługi: Podłącz adapter zasilania, aby włączyć urządzenie. Otwórz 192.168.88.1 w przeglądarce internetowej, aby skonfigurować urządzenie. Więcej informacji w <http://wiki.mikrotik.com>

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 <http://wiki.mikrotik.com>

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 <http://wiki.mikrotik.com>

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 <http://wiki.mikrotik.com>

SI. Navodila: Priključite napajalnik za vklop naprave. Odprite 192.168.88.1 v spletnem brskalniku nastaviti izdelek. Več informacij v <http://wiki.mikrotik.com>

Fl. Käyttöohje: Kytke virtalähde päälle laitteen. Avaa 192.168.88.1 in selaimen määrittää tuotteen. Lisää tietoa <http://wiki.mikrotik.com>

SE. Instruktionsmanual: Anslut nätadaptern för att slå på enheten. Öppna 192.168.88.1 i en webbläsare för att konfigurera produkten. Mer information på <http://wiki.mikrotik.com>

NO. Bruksanvisningen: Koble strømadapteren for å slå på enheten. Åpne 192.168.88.1 i en nettleser for å konfigurere produktet. Mer informasjon på <http://wiki.mikrotik.com>

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 <http://wiki.mikrotik.com>