

# LHG series

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## Quick Setup Guide and Warranty Information

The LHG is an outdoor wireless router with a built in directional antenna. It can be used as a CPE or for point to point links (use RouterOS wireless mode "bridge" to work as a single-client AP for point to point scenarios).

## Assembly

Attach the two legs to the LHG case, then snap the assembled LHG unit to the grid in the appropriate locations. Fix the legs in place with two self thread screws (Included, use philips screw driver PH2). The package also contains a grounding cable connector, and a 5 degree angle adapter. More detailed instructions available on the product page on <http://routerboard.com>

## Connecting

1. Open the ethernet door to connect an ethernet cable to the ethernet port, connect the other end of the ethernet cable to the included PoE injector
2. Plug the PoE injector into your network switch or ISP internet outlet
3. Plug the included power supply into the PoE injector to start up the device
4. Set LAN computer IP configuration to *automatic* (DHCP)
5. Default IP address of the unit is 192.168.88.1, open this address in your web browser to start configuration. The username is admin and there is no password

The device is preconfigured as a wireless client, and all you need to do is select the AP to connect to and set a device password. You can do this in the quickSET tab that is loaded by default.

In case IP connection is not available, Winbox can be used to connect to the MAC address of the device.

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, then the device will start to look for Netinstall servers.

More information about using RouterOS and connecting to this device in our documentation: <http://mt.lv/help>

## Powering

The device accepts powering only from Passive PoE injectors

## Extension Slots and Ports

- One 10/100 Ethernet port, 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.
- One Integrated 2x2 MIMO wireless device with built in grid antenna

## Buttons and Jumpers

RouterBOOT reset button (RESET, front panel) has three functions:

- Hold this button during boot time until LED light starts flashing, release the button to reset RouterOS configuration (total 5 seconds)
- Keep holding for 5 more seconds, LED turns solid, release now to turn on CAPs mode (total 10 seconds)
- Or Keep holding the button for 5 more seconds until until LED turns off, then release it to make the RouterBOARD look for Netinstall servers (total 15 seconds)

Power on device with pressed reset button and release it right away in order to boot backup RouterBOOT (useful for debugging situations where RouterOS and Netinstall do not work).

The device includes a grounding connection (marked  $\perp$ ) which you should connect to the grounding installation of the tower or building where the device will be used. This is to substantially reduce risk of ESD and lightning damage.

## Operating System Support

Currently tested operating system is MikroTik RouterOS starting from version v6.38

# 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 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.

13 cm minimum distance has to be maintained between the antenna and the occupational user and 28 cm to general public. Under such configuration, the FCC radiation exposure limits set forth for an population/uncontrolled environment can be satisfied.

**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.

**FCC ID numbers:** TV7LHG5ACD, TV7LHG5ND, TV7LHG5NDM, TV7LHG5HPND

## Industry Canada (IC: 7442A-LHG2ND)

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie 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, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

**IC numbers:** 7442A-LHG5ACD, 7442A-LHG5ND, 7442A-LHG5NDM, 7442A-LHG5HPND

# 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 MIKROTIKLS 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.                                          |
| [IT] Italian    | Con la presente MIKROTIKLS SIA dichiara che questo ROUTERBOARD è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.                        |
| [LV] Latvian    | Ar šo MIKROTIKLS SIA deklarē, ka ROUTERBOARD atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.                                                             |
| [LT] Lithuanian | Šiuo MIKROTIKLS SIA deklaruoją, kad šis ROUTERBOARD atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas                                                                          |
| [HU] Hungarian  | A MIKROTIKLS SIA ezzenel kijelenti, hogy a ROUTERBOARD típusú berendezés teljesíti az alapelvető követelményeket és más 1999/5/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 1999/5/EG.                               |
| [PL] Polish     | Niniejszym MIKROTIKLS SIA deklaruje że ROUTERBOARD jest zgodny z zasadniczymi wymaganiami i innymi właściwymi postanowieniami Dyrektywy 1999/5/EC.                                                  |
| [PT] Portuguese | Eu, MIKROTIKLS SIA declaro que o ROUTERBOARD cumpre os requisitos essenciais e outras provisões relevantes da Directiva 1999/5/EC.                                                                  |
| [RO] Romanian   | Prin prezenta, MIKROTIKLS SIA declară că aparatul ROUTERBOARD este în conformitate cu cerințele esențiale și cu alte prevederi pertinente ale Directivei 1999/5/CE..                                |
| [SK] Slovak     | MIKROTIKLS SIA týmto vyhlasuje, že ROUTERBOARD spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.                                                                         |
| [SI] Slovenian  | MIKROTIKLS SIA izjavlja, da je ta ROUTERBOARD v skladu z bistvenimi zahtevami in drugimi relevantnimi določili direktive 1999/5/ES.                                                                 |
| [FI] Finnish    | MIKROTIKLS SIA vakuuttaa täten että ROUTERBOARD tyyppinen laite on direktiivin 1999/5/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 1999/5/EG.                      |
| [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. Инструкция:** 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>. **Z. 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. Aprire 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, **a b y 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>. **FI. Käyttöohje:** Kytke virtalähde päälle laitteen. Avaa 192.168.88.1 selaimen määrättä 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>