

# LHG series

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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 and mounting

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 (Use Phillips screwdriver PH2). More detailed instructions available on the product page on <https://mikrotik.com/products/>.

The device designed to be mounted on pole using zip ties or steel clamp.

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.

Warning! This equipment should be installed and operated with a minimum distance of 20 cm between the device and your body. Operation of this equipment in the residential environment could cause radio interference.



## Connecting

- 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.
- Plug the PoE injector into your network switch or ISP internet outlet.
- Plug the included power supply into the PoE injector to start up the device.
- Set LAN computer IP configuration to *automatic* (DHCP).
- Once connected to the wireless network, open <http://192.168.88.1> in your web browser to start configuration, since there is no password by default, you will be logged in automatically.
- We recommend clicking the “Check for updates” button and updating your RouterOS software to the latest version to ensure the best performance and stability.
- Choose your country, to apply country regulation settings and set up your password in the screen that loads.

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 opened by default. We recommend clicking the “Check for updates” button and updating your RouterOS software to the latest version to ensure the best performance and stability.

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>

## Configuration

Once logged in, we recommend clicking the “Check for updates” button in the QuickSet menu, as updating your RouterOS software to the latest version ensures the best performance and stability. For wireless models, please make sure you have selected the country where the device will be used, to conform with local regulations.

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: <http://mt.lv/help>. In case IP connection is not available, the Winbox tool (<http://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.

## Powering

The device accepts powering only from Passive PoE injectors.

## Extension slots and ports

- One 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.
  - LHG 2 Dual chain 18 dBi, 2.4GHz, 802.11b/g/n.
  - LHG 5 Dual chain 24.5 dBi, 5GHz, 802.11 a/n.
  - LHG HP5 Dual chain 24dBi, 5GHz, 802.11 a/n.
  - LHG 5 ac Dual chain 24.5dBi, 5GHz, 802.11 a/n/ac.

## Reset button

The reset button 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 LED turns off, then release it to make the RouterBOARD look for Netinstall servers (total 15 seconds).

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.

## 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.

# Federal Communication Commission Interference Statement



FCC ID: TV7LHG5ACD, TV7LHG5ND, TV7LHG5NDM, TV7LHG5HPND, TV7LHG2ND

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.

This equipment complies with the FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and any part of your body.

## Industry Canada

IC:7442A-LHG5ACD, 7442A-LHG5ND, 7442A-LHG5NDM, 7442A-LHG5HPND, 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.

**IMPORTANT:** Exposure to Radio Frequency Radiation.

This equipment complies with the IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and any part of your body.

Cet équipement est conforme aux limites d'exposition au rayonnement IC définies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé à une distance minimale de 20 cm entre le radiateur et toute partie de votre corps.

CAN ICES-3 (B)/NMB-3(B)

# CE Declaration of Conformity



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

BG	С настоящото Mikrotikls SIA декларира, че този тип радиосъоръжение RouterBOARD е в съответствие с Директива 2014/53/ЕС. Цялостният текст на ЕС декларацията за съответствие може да се намери на следния интернет адрес: <a href="https://mikrotik.com/products">https://mikrotik.com/products</a>
CS	Tímto Mikrotikls SIA prohlašuje, že typ rádiového zařízení RouterBOARD je v souladu se směrnicí 2014/53/EU. Úplné znění EU prohlášení o shodě je k dispozici na této internetové adrese: <a href="https://mikrotik.com/products">https://mikrotik.com/products</a>
DA	Hermed erklærer Mikrotikls SIA, at radioudstyrstypen RouterBOARD er i overensstemmelse med direktiv 2014/53/EU. EU-overensstemmelseserklæringens fulde tekst kan findes på følgende internetadresse: <a href="https://mikrotik.com/products">https://mikrotik.com/products</a>
DE	Hiermit erkläre Mikrotikls SIA, dass der Funkanlagentyp RouterBOARD der Richtlinie 2014/53/EU entspricht. Der vollständige Text der EU-Konformitätserklärung ist unter der folgenden Internetadresse verfügbar: <a href="https://mikrotik.com/products">https://mikrotik.com/products</a>
EL	Με την παρούσα ο/η Mikrotikls SIA, δηλώνει ότι ο ραδιοεξοπλισμός RouterBOARD πληροί την οδηγία 2014/53/ΕΕ. Το πλήρες κείμενο της δήλωσης συμμόρφωσης ΕΕ διατίθεται στην ακόλουθη ιστοσελίδα στο διαδίκτυο: <a href="https://mikrotik.com/products">https://mikrotik.com/products</a>
EN	Hereby, Mikrotikls SIA declares that the radio equipment type RouterBOARD is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: <a href="https://mikrotik.com/products">https://mikrotik.com/products</a>
ES	Por la presente, Mikrotikls SIA declara que el tipo de equipo radioeléctrico RouterBOARD es conforme con la Directiva 2014/53/UE. El texto completo de la declaración UE de conformidad está disponible en la dirección Internet siguiente: <a href="https://mikrotik.com/products">https://mikrotik.com/products</a>
ET	Käesolevaga deklareerib Mikrotikls SIA, et käesolev raadioseadme tüüp RouterBOARD vastab direktiivi 2014/53/EL nõuetele. ELi vastavusdeklaratsiooni täielik tekst on kättesaadav järgmisel internetiaadressil: <a href="https://mikrotik.com/products">https://mikrotik.com/products</a>
FI	Mikrotikls SIA vakuuttaa, että radiolaitetyyppi RouterBOARD on direktiivin 2014/53/EU mukainen. EU-vaatimustenmukaisuusvakuutuksen täysimittainen teksti on saatavilla seuraavassa internetosoitteessa: <a href="https://mikrotik.com/products">https://mikrotik.com/products</a>
FR	Le soussigné, Mikrotikls SIA, déclare que l'équipement radioélectrique du type RouterBOARD est conforme à la directive 2014/53/UE. Le texte complet de la déclaration UE de conformité est disponible à l'adresse internet suivante: <a href="https://mikrotik.com/products">https://mikrotik.com/products</a>
HR	Mikrotikls SIA ovime izjavljuje da je radijska oprema tipa RouterBOARD u skladu s Direktivom 2014/53/EU. Cjeloviti tekst EU izjave o sukladnosti dostupan je na sljedećoj internetskoj adresi: <a href="https://mikrotik.com/products">https://mikrotik.com/products</a>
HU	Mikrotikls SIA igazolja, hogy a RouterBOARD típusú rádióberendezés megfelel a 2014/53/EU irányelvnek. Az EU-megfelelőségi nyilatkozat teljes szövege elérhető a következő internetes címen: <a href="https://mikrotik.com/products">https://mikrotik.com/products</a>
IT	Il fabbricante, Mikrotikls SIA, dichiara che il tipo di apparecchiatura radio RouterBOARD è conforme alla direttiva 2014/53/UE. Il testo completo della dichiarazione di conformità UE è disponibile al seguente indirizzo Internet: <a href="https://mikrotik.com/products">https://mikrotik.com/products</a>
IS	Hér með lýsir Mikrotikls SIA yfir því að RouterBOARD er í samræmi við grunnkröfur og aðrar kröfur, sem gerðar eru í tilskipun 2014/53/EU. Fullur texti ESB samræmisýfirlýsing er að finna á eftirfarandi netfangi: <a href="https://mikrotik.com/products">https://mikrotik.com/products</a>
LT	Aš, Mikrotikls SIA, patvirtinu, kad radijo įrenginių tipas RouterBOARD atitinka Direktyvą 2014/53/ES. Visas ES atitikties deklaracijos tekstas prieinamas šiuo interneto adresu: <a href="https://mikrotik.com/products">https://mikrotik.com/products</a>
LV	Ar šo Mikrotikls SIA deklarē, ka radioiekārta RouterBOARD atbilst Direktīvai 2014/53/ES. Pilns ES atbilstības deklarācijas teksts ir pieejams šādā interneta vietnē: <a href="https://mikrotik.com/products">https://mikrotik.com/products</a>
MT	B'dan, Mikrotikls SIA, niddikjara li dan it-tip ta' taghmir tar-radju RouterBOARD huwa konformi mad-Direttiva 2014/53/UE. It-test kollu tad-dikjarazzjoni ta' konformità tal-UE huwa disponibbli f'dan l-indirizz tal-Internet li ġej: <a href="https://mikrotik.com/products">https://mikrotik.com/products</a>
NL	Hierbij verklaar ik, Mikrotikls SIA, dat het type radioapparatuur RouterBOARD conform is met Richtlijn 2014/53/EU. De volledige tekst van de EU-conformiteitsverklaring kan worden geraadpleegd op het volgende internetadres: <a href="https://mikrotik.com/products">https://mikrotik.com/products</a>
NO	Mikrotikls SIA erklærer herved at utstyret RouterBOARD er i samsvar med de grunnleggende krav og øvrige relevante krav i direktiv 2014/53/EU. Den fulle teksten til EU-samsvarserklæringen er tilgjengelig på følgende internetadresse: <a href="https://mikrotik.com/products">https://mikrotik.com/products</a>
PL	Mikrotikls SIA niniejszym oświadczam, że typ urządzenia radiowego RouterBOARD jest zgodny z dyrektywą 2014/53/UE. Pełny tekst deklaracji zgodności UE jest dostępny pod następującym adresem internetowym: <a href="https://mikrotik.com/products">https://mikrotik.com/products</a>
PT	O(a) abaixo assinado(a) Mikrotikls SIA declara que o presente tipo de equipamento de rádio RouterBOARD está em conformidade com a Diretiva 2014/53/UE. O texto integral da declaração de conformidade está disponível no seguinte endereço de Internet: <a href="https://mikrotik.com/products">https://mikrotik.com/products</a>
RO	Prin prezenta, Mikrotikls SIA declară că tipul de echipamente radio RouterBOARD este în conformitate cu Directiva 2014/53/UE. Textul integral al declarației UE de conformitate este disponibil la următoarea adresă internet: <a href="https://mikrotik.com/products">https://mikrotik.com/products</a>
SK	Mikrotikls SIA týmto vyhlasuje, že rádiové zariadenie typu RouterBOARD je v súlade so smernicou 2014/53/EÚ. Úplné EÚ vyhlásenie o zhode je k dispozícii na tejto internetovej adrese: <a href="https://mikrotik.com/products">https://mikrotik.com/products</a>
SL	Mikrotikls SIA potrjuje, da je tip radijske opreme RouterBOARD skladen z Direktivo 2014/53/EU. Celotno besedilo izjave EU o skladnosti je na voljo na naslednjem spletnem naslovu: <a href="https://mikrotik.com/products">https://mikrotik.com/products</a>
SV	Härmed försäkras Mikrotikls SIA att denna typ av radioutrustning RouterBOARD överensstämmer med direktiv 2014/53/EU. Den fullständiga texten till EU-försäkran om överensstämmelse finns på följande webbadress: <a href="https://mikrotik.com/products">https://mikrotik.com/products</a>

## MPE statement

This equipment complies with EU radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body, unless specifically stated otherwise in page 1 of this document. In RouterOS you must specify your country, to make sure local wireless regulations are observed.

## Frequency bands terms of use

Frequency range (for applicable models)	Channels used	Maximum Output Power (EIRP)	Restriction
2412-2472 MHz	1 - 13	20 dBm	Without any restriction to use in all EU Member States
5150-5250 MHz	26 - 48	23 dBm	Restricted to indoor use only*
5250-5350 MHz	52 - 64	20 dBm	Restricted to indoor use only*
5470-5725 MHz	100 - 140	27 dBm	Without any restriction to use in all EU Member States

\* 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 radio devices must be professionally installed!

Note. Information contained here is subject to change. Please visit the product page on [www.mikrotik.com](http://www.mikrotik.com) for the most up to date version of this document.



**BG. Инструкции:** Съвжете адаптера на захранване, за да включите устройството. Отворете 192.168.88.1 в уеб браузър, за да настроите продукта. Поечте информация в <http://mt.lv/help-bg>

**CS. 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://mt.lv/help-cs>

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

**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://mt.lv/help-de>

**EL. 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://mt.lv/help-el>

**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://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 <http://mt.lv/help-es>

**ET. Kasutusjuhend:** Ühendage toiteadapter seadme sisselülitamiseks. Avatud 192.168.88.1 in veebilehitseja seadistada toodet. Rohkem teavet <http://mt.lv/help-et>

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

**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://mt.lv/help-fr>

**HR. Uputa za uporabu:** Prikjučite napajanje i uključite uređaj. Za konfiguraciju uređaja u pregledniku otvorite 192.168.88.1. Više informacija je na <http://mt.lv/help-hr>

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

**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://mt.lv/help-it>

**IS. Notkunarhandbók:** Tengdu straumbreytirinn til að kveikja á tækinu. Opnaðu 192.168.88.1 í vafranum þínum til að stilla það. Nánari upplýsingar á <http://mt.lv/help-is>

**NO. Instruksjonsmanual:** Koble strømadapteren for å slå på enheten. Åpne 192.168.88.1 i nettleseren din for å konfigurere den. Mer informasjon på <http://mt.lv/help-no>

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

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

**MT. Manwal tal-istruzzjoni:** Qabbad l-adapter tal-qawwa biex iddawwar it-tagħmir. Iftaħ 192.168.88.1 fil-web browser tiegħek, biex jigi kkonfigurati. Aktar informazzjoni fuq <http://mt.lv/help-mt>

**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://mt.lv/help-nl>

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

**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://mt.lv/help-pt>

**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://mt.lv/help-ro>

**SK. Navodila:** Priključite napajalnik za vklop naprave. Odprite 192.168.88.1 v spletnem brskalniku nastavit izdelek. Več informacij v <http://mt.lv/help-sk>

**SL. 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://mt.lv/help-sl>

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

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

**RU. Руководство по эксплуатации:** подключите адаптер питания чтобы включить устройство. Откройте 192.168.88.1 в своем веб-браузере для конфигурации. Дополнительная информация <http://mt.lv/help-ru>

**CN. 说明书:** 连接电源适配器以打开设备。在 Web 浏览器中打开 192.168.88.1 进行配置。有关 <http://mt.lv/help-zh> 的更多信息