

MikroTik

wAP LoRa8 kit

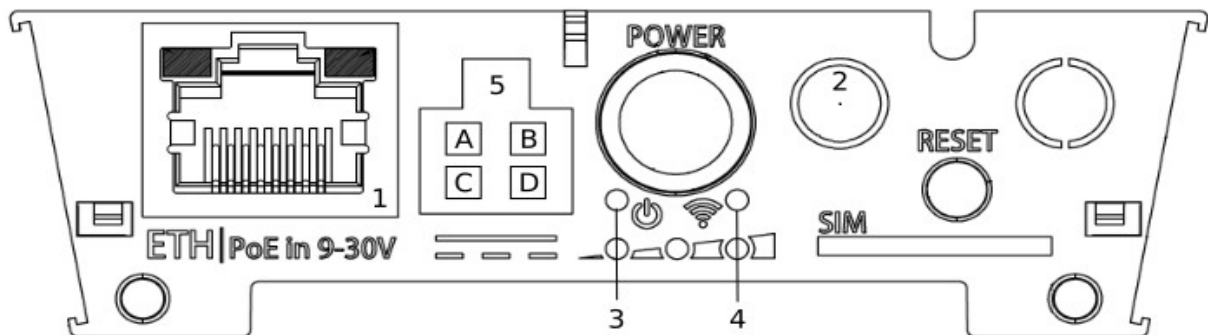
The wAP is a small weatherproof device with integrated LoRa8 card for UDP packet forwarding to chosen server.

Quickstart

Please follow these quick steps to set up your device:

- Open the bottom lid (see [“Bottom Lid”](#)).
- Connect an external antenna to the SMA connector (see [“Antenna usage”](#)).
- Connect the device to the power source (see [“Powering”](#)).
- Open network connections on your PC, mobile phone or other device and search for MikroTik wireless network and connect to it.
- The Configuration has to be done through the wireless network using a web browser or mobile app - (see [“MikroTik mobile app”](#)). Alternatively, you can use WinBox configuration tool <http://mt.lv/winbox>. By default, Ethernet port access is blocked by a firewall.
- Once connected to the wireless network, open <http://192.168.88.1> in your web browser to start configuration, user name: *admin* and there is no password by default.
- When using mobile application choose Quick setup and it will guide you through all necessary configuration in six easy steps.
- Find your LoRa Gateway ID on the label within the product and register it in your Network Server.
- To make the device connect to the LoRa Network Server, please see [“Configuration”](#).
- 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.

Expansion slots and ports



1. 10/100 Ethernet port, supporting automatic cross/straight cable correction (Auto MDI/X). Either straight or crossover cable can be used for connecting to other network devices.
 2. External SMA antenna connector already connected to the LoRa card.
 3. LED indicating a power state of the device.
 4. LED Indicating the activity of Wireless network.
 5. Automotive connector. Pinout: A - reserved for future use (orange), B - reserved for future use (blue), C - ground (black), D – power in (red).
- MiniPCIe slot with integrated LoRa8 card.
 - Integrated Wireless module operating at 2.4 GHz, 802.11b/g/n protocol.
 - SIM Slot.

Powering

The device accepts power in the following ways:

- Ethernet port accepts passive PoE 9-30 V DC $\overline{\text{---}}$.
- Direct-input power jack (5.5 mm outside and 2 mm inside, female, pin positive plug) accepts 9-30 V DC $\overline{\text{---}}$.
- Automotive connector 9-30 V DC $\overline{\text{---}}$.

The power consumption under maximum load can reach 7 W.

Connecting to a PoE Adapter:

1. Connect the Ethernet cable from the device to the PoE+DATA port of the PoE adapter.
2. Connect an Ethernet cable from your local network (LAN) to the PoE adapter.
3. Connect the power cord to the adapter, and then plug the power cord into a power outlet.

Mounting

The device can be mounted in several ways: pole, wall, ceiling or it can be placed in specially designed Mikrotik holder which comes with the package. The package also includes a drill hole template with detailed mounting instructions, to help you with the Ethernet cable installation and attachment to a ceiling or a wall. Steel bracket to put on the other side of a dropdown ceiling tile and two screws and wall anchors. Zip ties or steel clamps for mounting on the pole.



The IP rating scale for this device is IP54. When mounting outdoors, please ensure that any cable openings are directed downwards. We recommend using POE injector and proper grounding with Cat6 shielded cable. When using and installing this device please pay attention to Maximum Permissible Exposure (MPE) safety distance with a minimum of 20 cm between the radiator and your body.

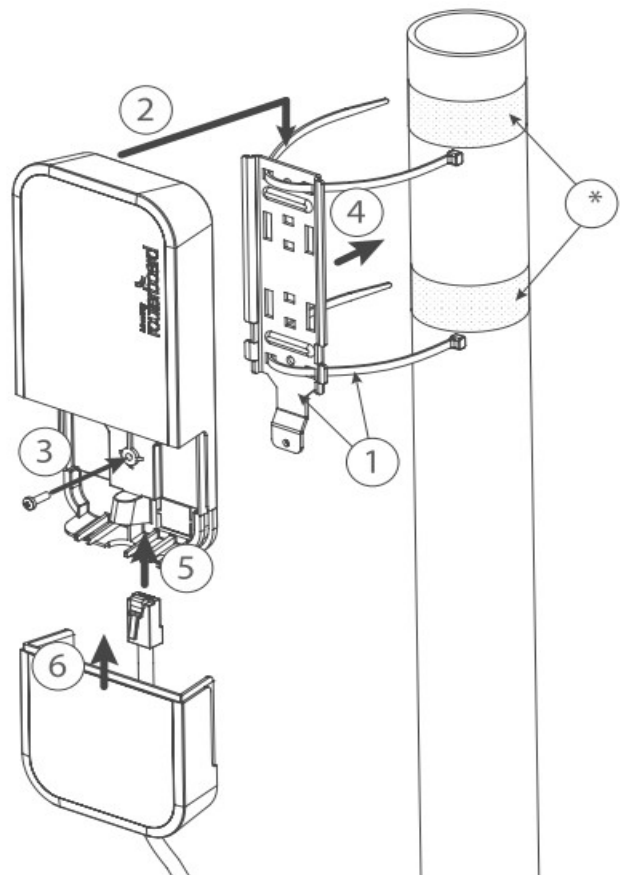
Mounting on the mast or pole:

** It's recommended to use electrical tape to increase friction between materials.*

1. Mount plastic tie straps to steel bracket guiding them through holes.
2. Mount bracket to the device.
3. Secure them with a screw.
4. Mount and align the device on the pole or mast.
5. Guide Ethernet cable through the opening and connect to the Ethernet port.
6. Close bottom latch and secure with a screw.

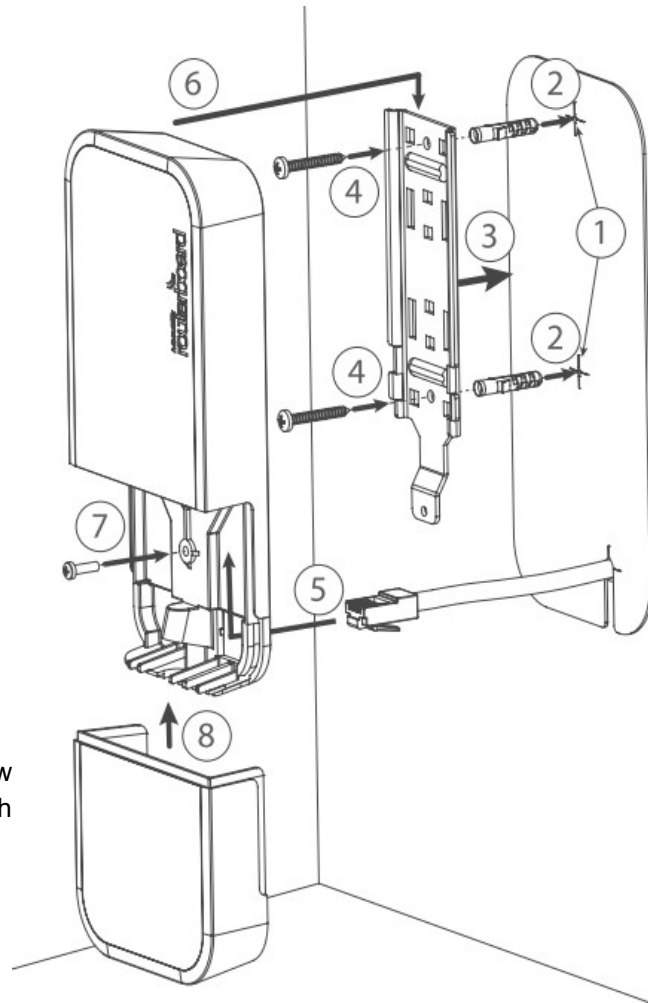


It's recommended to secure Ethernet cable to the pole using zip ties. With the distance from the device approximately 30 cm.



Mounting unit on the wall:

1. Use included a template to mark spots for drilling holes. And if needed for Ethernet cable. Align accordingly, it will depend on how the device will be mounted finally.
2. Insert dowels if needed, depends on wall structure and material.
3. Place included steel bracket on the wall.
4. Use screws to secure it in the place.
5. Extend your Ethernet cable through the opening and connect to Ethernet port.
6. Mount the device on the steel bracket
7. Secure it in place with the screw.
8. Close bottom latch.

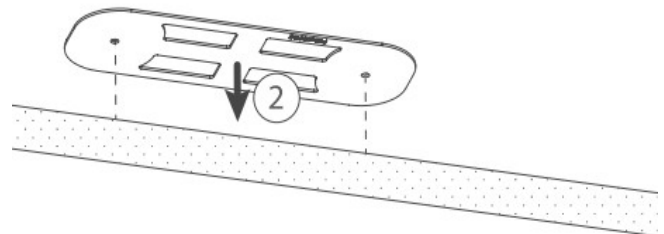


Avoid mounting the device on the low ground spot, as you won't be able to attach and close bottom latch.

Mounting on the ceiling:

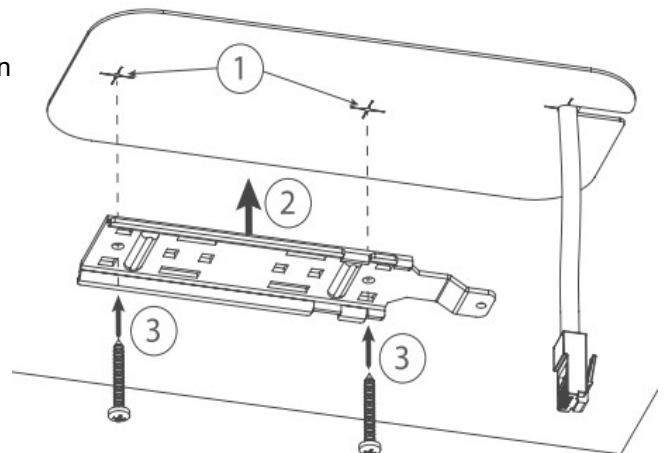
A Special bracket is included in the package to mount on the drop ceiling. As it consists of two parts, to be attached on both sides of the ceiling tile.

1. Use the template to mark spots for holes.
2. Place both of mounting brackets on the spot.
3. Secure them together using screws.



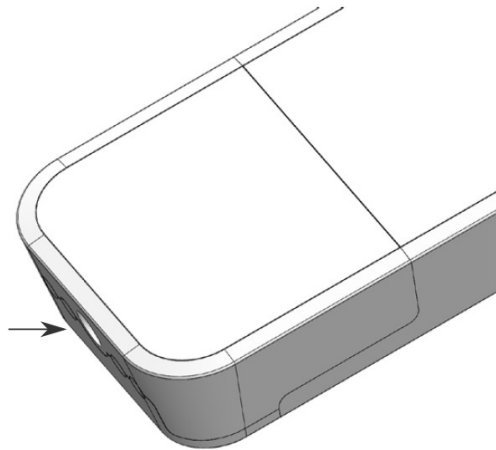
Continue assembling in the same manner if mounting on the wall.

4. Extend your Ethernet cable through the opening and connect to Ethernet port.
5. Mount the device on the steel bracket.
6. Secure it in place with the screw.
7. Close bottom latch.

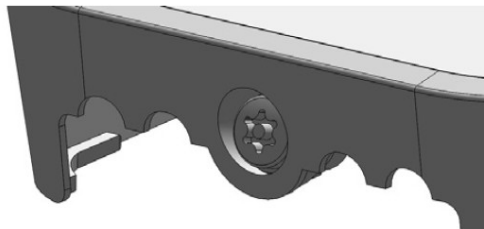


Bottom Lid

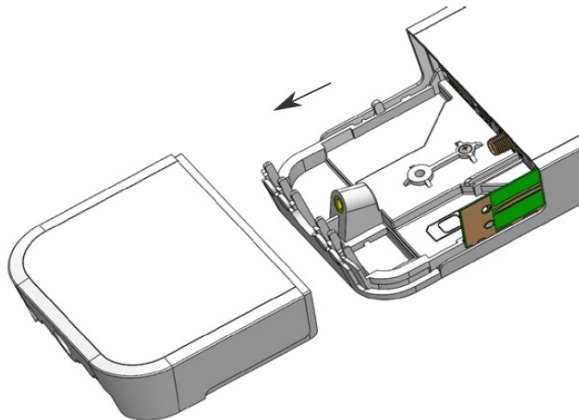
1. Bottom lid is secured in place with the captive screw.



2. Use Torx T20 screwdriver to unscrew it, but do not remove the screw completely.



3. Pull the cover to the opposite direction from the device to remove it.



4. Reassemble in back order.

Configuration

To set the configuration for LoRa please connect to the device and log in with your web browser or use a mobile application. Two easy steps to follow:

First step:

1. Once logged in, Quick Set will be selected, please switch to WebFig on the right side of the screen. If the configuration is done through mobile application then click on the gear symbol on the right side of the screen to open up an advanced menu.
2. On the left side menu please find and select section "Lora".
3. On the newly opened window select Servers tab.
 1. Click + to add new server configuration.
 2. A New window will appear and you will have to enter:
Name: (Server name)
Address: (Server address)
Up port: (Usually it's 1700)
Down port: (Usually it's 1700)
3. Click OK to save.

Second step:

4. Select the Device tab on the previous window.
5. Double-click or tap on the line to configure.
6. Choose previously entered network on the drop-down menu.
7. Click on the button Enable to enable the gateway.
8. Click OK to save.
9. The configuration is done.

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 for reinstallation, see section [Buttons and Jumpers](#).

MikroTik mobile app

Use the MikroTik smartphone app to configure your router in the field, or to apply the most basic initial settings for your MikroTik home access point.

1. Scan QR code and choose your preferred OS.
2. Install and open application.
3. By default, IP address and user name will be already entered.
4. Click Connect to establish a connection to your device through a wireless network.
5. Choose Quick setup and application will guide you through all basic configuration settings in a couple of easy steps.
6. Advanced menu is available to fully configure all necessary settings.



Antenna usage

We recommend to use an external antenna, the “LoRa Antenna kit” - can be obtained separately. Antenna kit has pole mount and cable ready to use with LoRa cards. https://mikrotik.com/product/loro_antenna_kit

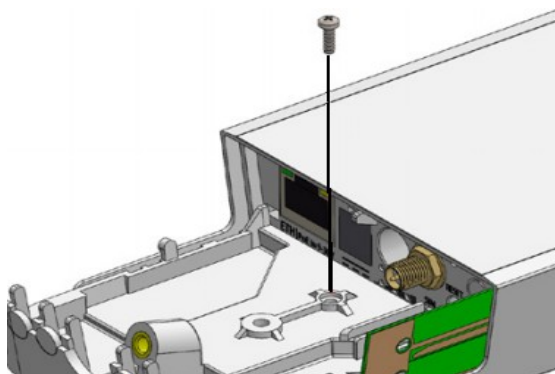
SMA connector located under the bottom door is already connected to the LoRa card and ready to be used. Please see [Mounting](#) section on how to remove the door.



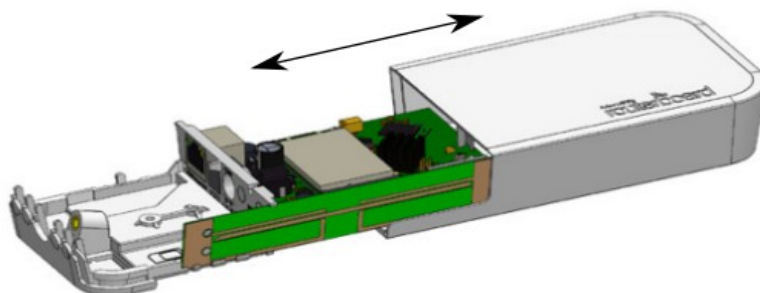
Please connect and disconnect the antenna, when the device is turned off!

Internal antenna 2,5dBi can be used for setups where the distance to the gateway are closer than 1km. By default, the antenna is not connected to the card! To use an internal antenna:

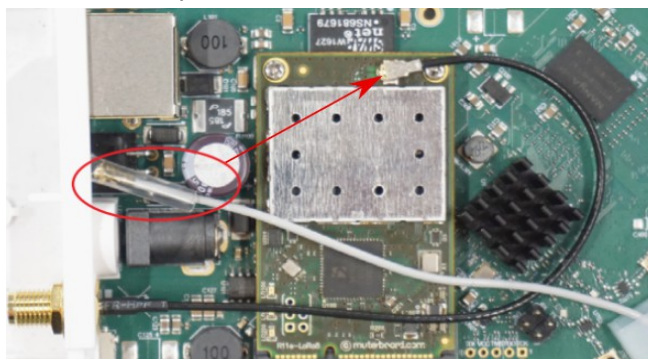
- Open bottom door (see [“Mounting”](#)).
- Use PH2 screwdriver to remove the screw.



- Disassemble upper case from the bottom by sliding them to opposite sides.



- Locate internal antenna cable and replace with SMA cable connector on the LoRa card.



- Reassembly.

Buttons and jumpers

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 CAP mode. The device will now look for a CAPsMAN server (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.

Accessories

Package includes the following accessories that come with the device:

- EU/US Switching Power Supply 24 V \approx , 0.8 A, 19.2 W, 85.3 %, VI, cable:150 cm Hor CMC.
- WAP desk bracket.
- WAP outdoor case bracket AL, white.
- POE Injector cable.
- Cable (H4130-04PDB000R 3 mm 2x2P Housing) to (StripJacket 5 cm+WireEnd Strip/Tin 1 cm) 24 AWG.
- Hose Clamp, 35-70 mm, W4.
- K-52 fastening set.
- WAP-drill-template, paper brochure.

Specifications

For more information about this product, specification and pictures please visit our web page:

https://mikrotik.com/product/wap_lora8_kit

Operating system support

The device supports RouterOS software version 6.44.5. The specific factory-installed version number is indicated in the RouterOS menu `/system resource`. Other operating systems have not been tested.

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: https://mikrotik.com/products
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: https://mikrotik.com/products
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: https://mikrotik.com/products
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: https://mikrotik.com/products
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: https://mikrotik.com/products
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: https://mikrotik.com/products
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: https://mikrotik.com/products
ET	Käesolevaga deklareerib Mikrotikls SIA, et käesolev raadioseadme tüüp RouterBOARD vastab direktiivi 2014/53/EL nõuetele. ELi vastavusdeklaratsiooni täielik tekst on kättesaadav järgmisel internetiaadressil: https://mikrotik.com/products
FI	Mikrotikls SIA vakuuttaa, että radiolaitetyyppi RouterBOARD on direktiivin 2014/53/EU mukainen. EU-vaatimustenmukaisuusvakuutuksen täysimittainen teksti on saatavilla seuraavassa internetosoitteessa: https://mikrotik.com/products
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: https://mikrotik.com/products
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: https://mikrotik.com/products
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: https://mikrotik.com/products
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: https://mikrotik.com/products
IS	Hér með lýsir Mikrotikls SIA því yfir að RouterBOARD er í samræmi við grunnkröfur og aðrar kröfur, sem gerðar eru í tilskipun 2014/53/EU. Fullur texti ESB samræmisýfirlýsingar er að finna á eftirfarandi veffangi: https://mikrotik.com/products
LT	Aš, Mikrotikls SIA, patvirtinu, kad radijo įrenginių tipas RouterBOARD atitinka Direktyvą 2014/53/ES. Visas ES atitikties deklaracijos tekstas prieinamas šiuo interneto adresu: https://mikrotik.com/products
LV	Ar šo Mikrotikls SIA deklarē, ka radioiekārta RouterBOARD atbilst Direktīvai 2014/53/ES. Pilns ES atbilstības deklarācijas teksts ir pieejams šādā interneta vietnē: https://mikrotik.com/products
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: https://mikrotik.com/products
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: https://mikrotik.com/products
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: https://mikrotik.com/products
PL	Mikrotikls SIA niniejszym oświadcza, że typ urządzenia radiowego RouterBOARD jest zgodny z dyrektywą 2014/53/UE. Pełny tekst deklaracji zgodności UE jest dostępny pod następującym adresem internetowym: https://mikrotik.com/products
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: https://mikrotik.com/products
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: https://mikrotik.com/products
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: https://mikrotik.com/products
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: https://mikrotik.com/products
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: https://mikrotik.com/products

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	Maximum Output Power (EIRP)
WiFi (EIRP): 2412-2472 MHz	18.23 dBm
LoRa (EIRP): 863-870 MHz	4.60 dBm

* 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!

Warning: Operation of this equipment in residential environment could cause radio interference, the EUT is intended to use in industrial, commercial environment.

Note. 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.



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://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: Priključite 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. Notkunarleiðbeiningar: Tengdu straumbreytinn til að kveikja á tækinu. Opnaðu 192.168.88.1 í vafra 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 jiġi 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 nastaviti izdelek. Več informacij v <http://mt.lv/help-sk>

SL. Navod na použitie: Pripojite napájecí 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 nettleser 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: 连接电源适配器并打开设备。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