

wAP R ac



wAP R ac

The wAP R ac is a small weatherproof device with integrated antennas and miniPCIe slot for your modem.

Safety Warnings

Before you work on any equipment, be aware of the hazards involved with electrical circuitry, and be familiar with standard practices for preventing accidents.

Ultimate disposal of this product should be handled according to all national laws and regulations.

All installation methods for mounting an access point on any wall surface is subject to the acceptance of local jurisdiction.

The Installation of the equipment must comply with local and national electrical codes.

This product is intended to be mounted outdoors on a pole but can also be installed indoors. Please read the mounting instructions carefully before beginning installation. Failure to use the correct hardware and configuration or to follow the correct procedures could result in a hazardous situation to people and damage to the system.

Use only the power supply and accessories approved by the manufacturer, and which can be found in the original packaging of this product.

Read the installation instructions before connecting the system to the power source.

We cannot guarantee that no accidents or damage will occur due to the improper use of the device. Please use this product with care and operate at your own risk!

In the case of device failure, please disconnect it from power. The fastest way to do so is by unplugging the power plug from the power outlet.

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.

Exposure to Radio Frequency Radiation: This MikroTik equipment complies with the FCC, IC, and European Union radiation exposure limits set forth for an uncontrolled environment. This MikroTik device should be installed and operated no closer than 20 centimeters from your body, occupational user, or the general public.

Quickstart

- Use a Phillips head screwdriver to loosen the screw, which secures the bottom lid (see [Bottom Lid](#)).
- Install your desired modem into the miniPCIe slot (see [miniPCIe usage](#))
- Insert the SIM card into the slot with the chip facing up.
- Choose your powering solution, please see the [Powering](#) section for possibilities.
- Open network connections on your PC and search for the SSID that begins with "MikroTik".
- Connect to the wireless network, open <http://192.168.88.1> in your web browser to start the configuration.
- User name: *admin* and there is no password by default you will be logged in automatically to the Quick Set screen (or, for some models, check user and wireless passwords on the sticker).
- Update the device by clicking the "Check for updates" button on the right side and updating your RouterOS software to the latest version to ensure the best performance and stability. Must have a valid SIM card inserted.
- To manually update the device, please go <https://mikrotik.com/download>
- Choose ARM packages for this device and download it to your PC.
- Upload downloaded packages to the WebFig "Files" menu and reboot the device.
- Updating your RouterOS software to the latest version will ensure the best performance, stability, and security updates.
- To personalize your wireless network, SSID can be changed in the fields "Network Name";
- Choose your country on the left side of the screen in the field "Country", to apply country regulation settings.
- Set up your wireless network password in the field "WiFi Password" the password must be at least eight symbols.

- Set up your router password in the bottom field "Password" to the right and repeat it in the field "Confirm Password", it will be used to login next time.
- Click on the "Apply Configuration" to save changes.

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.



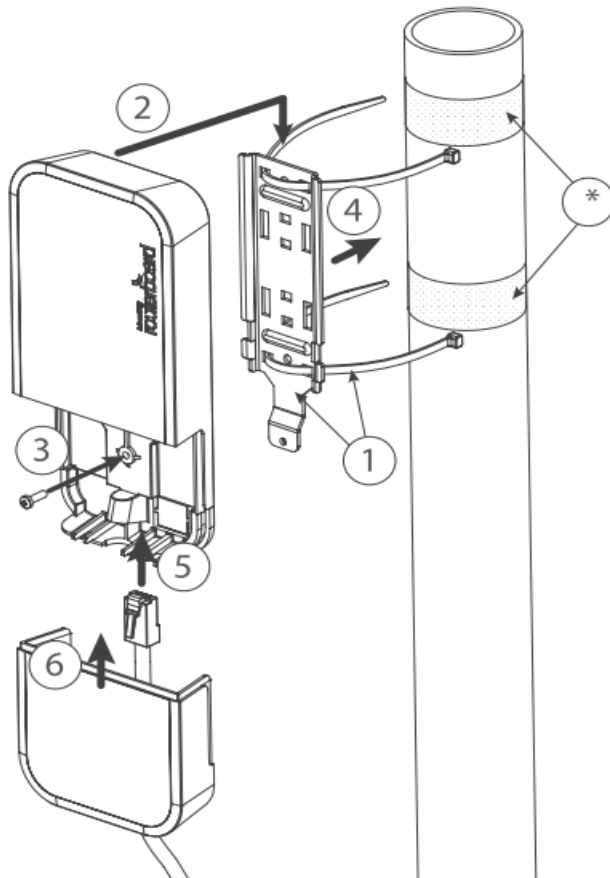
1. Scan QR code and choose your preferred OS.
2. Install and open application.
3. By default, the IP address and user name will be already entered.
4. Click Connect to establish a connection to your device through a wireless network.
5. Choose Quick setup and application will guide you through all basic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

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 the 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 31 cm between the radiator and your body.

Mounting on the mast or pole:

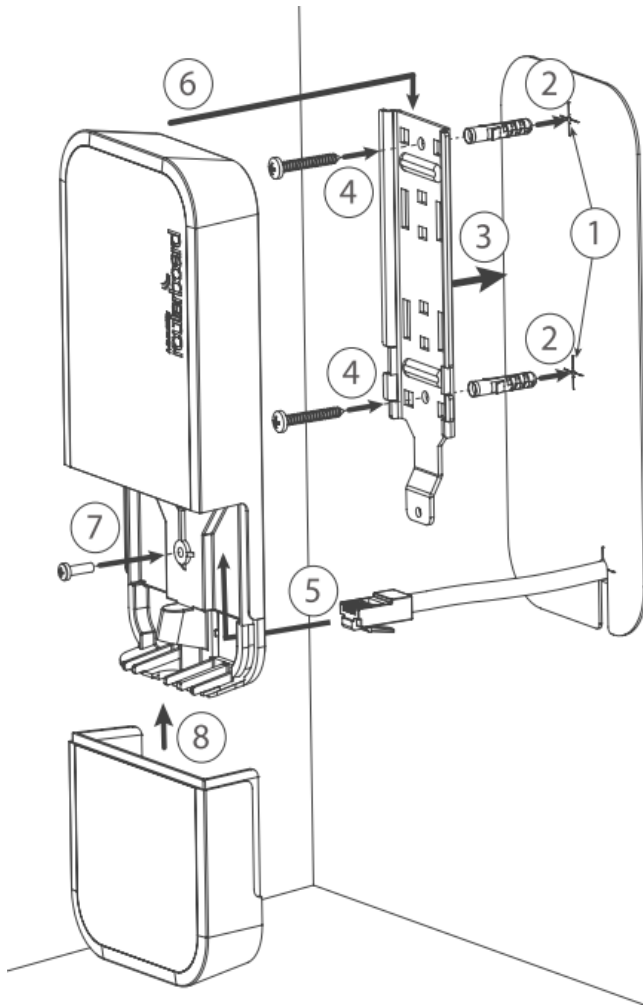


** It's recommended to use electrical tape to increase friction between materials.*

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.

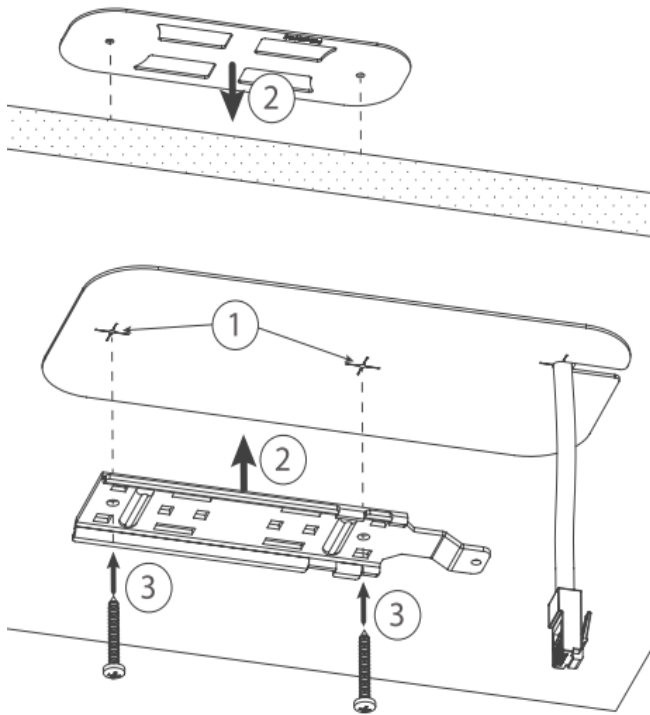


Mounting unit on the wall:

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 a 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 the 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 the 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.

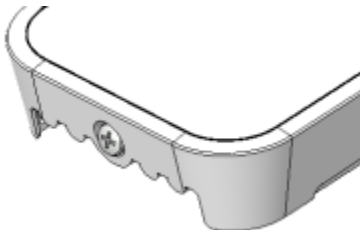
1. Use the template to mark spots for holes.
2. Place both mounting brackets on the spot.
3. Secure them together using screws.

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

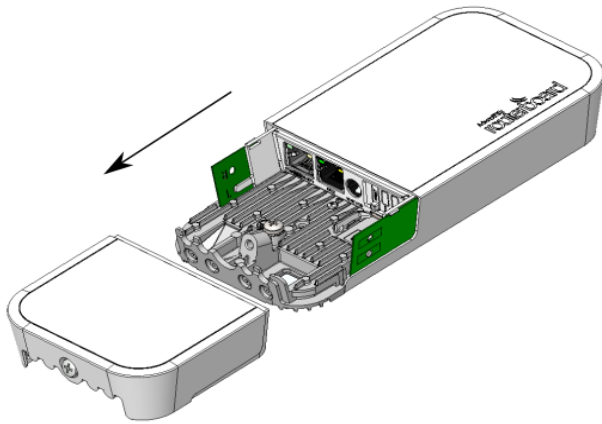
1. Extend your Ethernet cable through the opening and connect to the Ethernet port.
2. Mount the device on the steel bracket.
3. Secure it in place with the screw.
4. Close bottom latch.

Bottom Lid

- The bottom lid is secured in place with the captive screw.
- Use the Philips PH2 screwdriver to unscrew it, but do not remove the screw completely.



- Pull the cover in the opposite direction from the device to remove it.



- Reassemble.

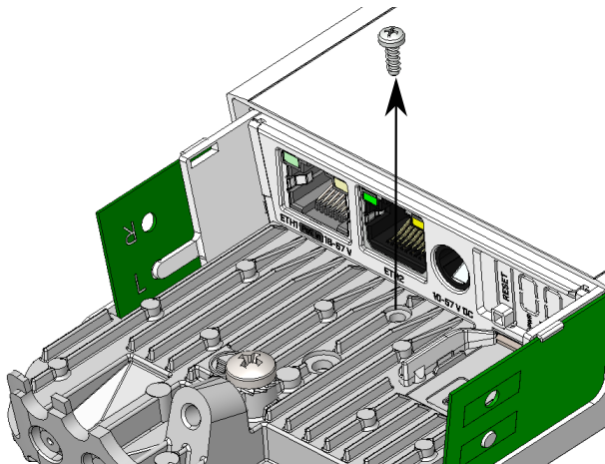
MiniPCle usage

The device has miniPCle slot inside, to access it you will have to disassemble the main body, this should be done by a qualified person.

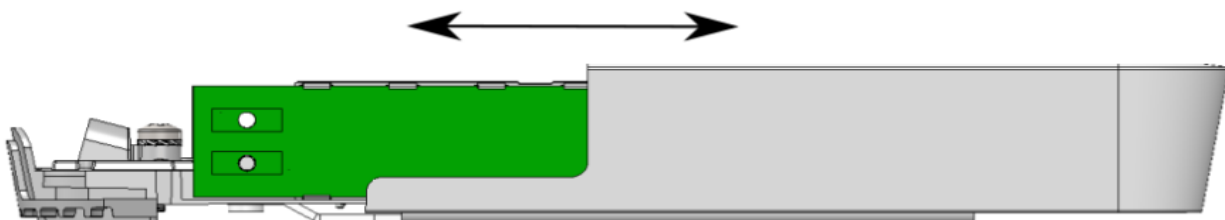
i This product will support only LTE Modems, the wireless card will not work on this device.

When handling electrical equipment please observe the safety precautions, use a wrist grounding strap when unpacking and working with electrical components to avoid electrical discharge (ESD) damage.

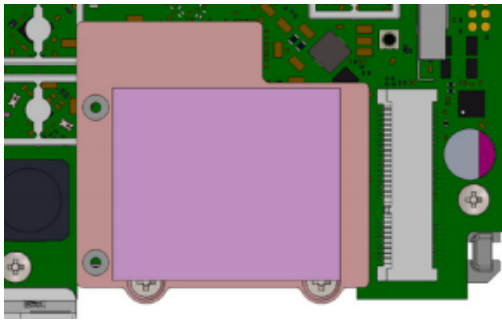
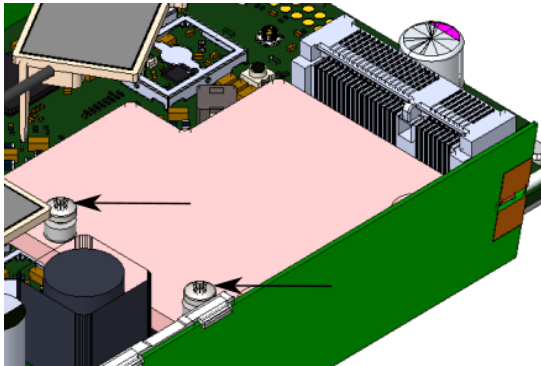
- Remove bottom lid (see "[Bottom Lid](#)").



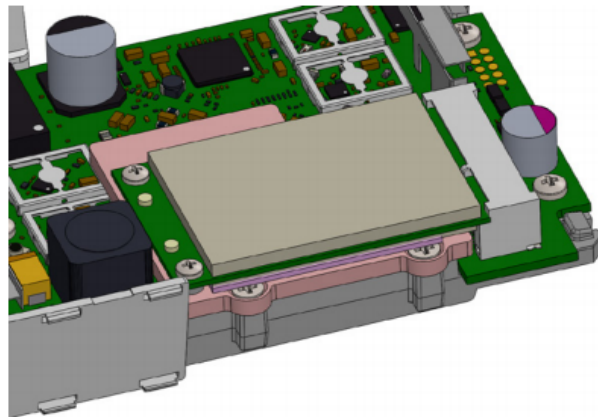
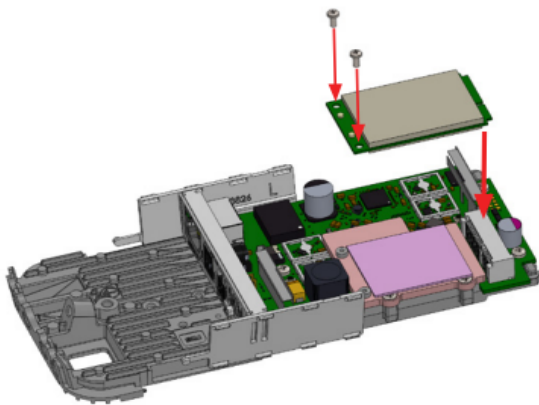
- Use the PH2 screwdriver to remove the center screw.
- Hold case and cover separately and pull to disassemble.



- Locate miniPCle slot.
- Unscrew two factory attached screws.



- Place the thermal pad to the heat sink plate.
- Install modem to the miniPCIe slot and secure with previously removed screws. Tightening torque 0,3 Nm.



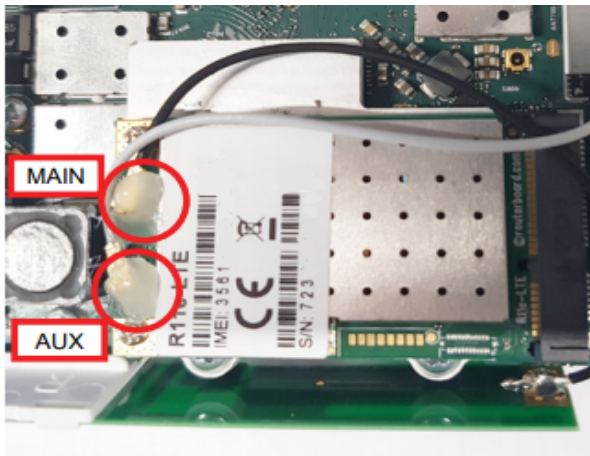
- Attach antenna cables to the modem (see "[Antenna usage](#)").
- Reassemble.

Antenna usage

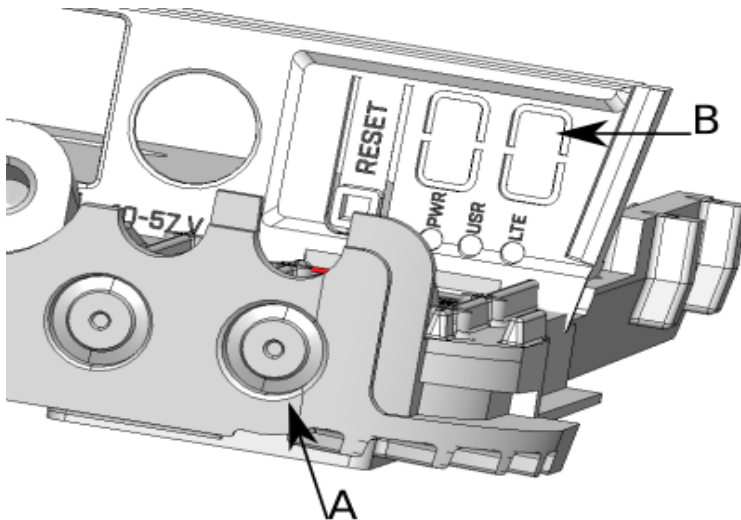
The device has two internal antennas to connect to the modem. Also, it is possible to connect to the external antennas by adding cable connectors, product code – ACSMAUFL. <https://mikrotik.com/product/acsmaufl>

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

- Install modem (see "[MiniPCIe usage](#)").

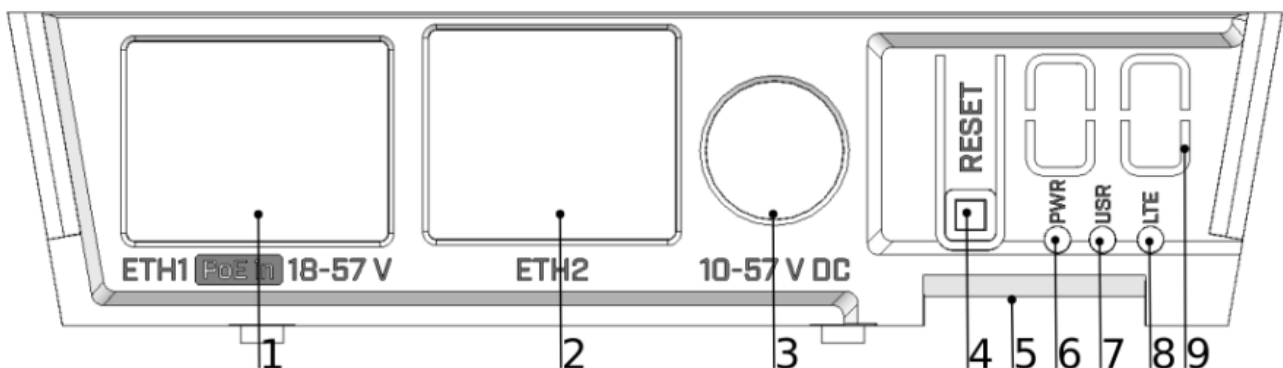


- Attach internal antenna cables to the installed modem or use external antenna cables. Black cable to the main connector of the modem and gray cable to the aux connector. Use rubber/glue to secure them in place.
- Optional – External antenna. To mount SMA cable connectors to the base of the device using a 6.5 mm drill to make mounting points - A.
- Remove plastic doors to gain access to cables - B.



- Secure SMA cable connector in the drilled hole A and guide U.FL end through the opening - B.
- Connect U.FL ends to the modem.
- Secure SMA connectors with washers to the bottom of the device to prevent water contamination. The white washer should be placed on the inner side and red washer on the outer.

Expansion slots and ports



1. Gigabit Ethernet port accepts PoE 802.3af/at.
 2. Gigabit Ethernet port.
 3. DC jack for power adapter 10 – 57 V.
 4. [Reset button](#).
 5. SIM card slot.
 6. LED indicating a power state of the device.
 7. LED - user-defined.
 8. LED Indicating the activity of the LTE network.
 9. Plastic doors for SMA cables.
- MiniPCle slot.
 - Integrated Wireless module operating at 2.4 GHz, 802.11b/g/n and 5 GHz, 802.11a/n/ac protocol.

Configuration

The device is configured as an AP router. Eth1 is blocked by the firewall, you can access router for configuration through the wireless interface.

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: <https://mt.lv/help>. In case the IP connection is not available, the Winbox tool (<https://mt.lv/winbox>) can be used to connect to the MAC address of the device from the LAN side. When using Winbox on login the default configuration settings will be shown.

For recovery purposes, it is possible to boot the device for reinstallation, see section [Buttons and Jumpers](#).

Buttons and jumpers

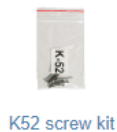
The reset button has three functions:

- 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:



Operating system support

The device supports RouterOS software version v6. The specific factory-installed version number is indicated in the RouterOS menu /system resource. Other operating systems have not been tested.



To avoid pollution of the environment, please separate the device from household waste and dispose of it in a safe manner, such as in designated waste disposal sites. Familiarize yourself with the procedures for the proper transportation of the equipment to the designated disposal sites in your area.

Federal Communication Commission Interference Statement

Model	FCC ID
RBwAPGR-5HacD2HnD	TV7WAPGR5AC2D

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.



Innovation, Science and Economic Development Canada

Model	IC
RBwAPGR-5HacD2HnD	7442A-WAPGR5AC2D

This device complies with Industry Canada's license-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.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe [B] est conforme à la norme NMB-003 du Canada.

CAN ICES-003 (B) / NMB-003 (B)

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.

UKCA marking



Eurasian Conformity Mark

Частотный диапазон	Мощность передатчика
2400-2483.5 МГц, 5150-5350 МГц, 5650-5850 МГц	≤10 Вт

*Доступные частотные каналы могут различаться в зависимости от модели продукта и сертификации.

Информация о дате изготовления устройства указана в конце серийного номера на его наклейке через дробь. Первая цифра означает номер года (последняя цифра года), две последующие означают номер недели.

Изготовитель: Mikrotikls SIA, Aizkraukles iela 23, Rīga, LV-1006, Латвия, support@mikrotik.com. Сделано в Китае, Латвии или Литве. См. на упаковке.

Для получения подробных сведений о гарантийном обслуживании обратитесь к продавцу. Информация об импортерах продукции MikroTik в Российскую Федерацию: <https://mikrotik.com/buy/europe/russia>

Продукты MikroTik, которые поставляются в Евразийский таможенный союз, оцениваются с учетом соответствующих требований и помечены знаком EAC, как показано ниже:



Norma Oficial Mexicana

Rango de frecuencia (potencia de salida máxima): 2400-2483.5 MHz (30 dBm), 5725-5850 MHz (30 dBm). Los canales de frecuencia disponibles pueden variar según el modelo y la certificación del producto.

EFICIENCIA ENERGETICA CUMPLE CON LA NOM-029-ENER-2017.

La operacion de este equipo esta sujeta a las siguientes dos condiciones:

- Es posible que este equipo o dispositivo no cause interferencia perjudicial y.
- Este equipo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operacion no deseada.

Fabricante: Mikrotikls SIA, Brīvības gatve 214i, Rīga, LV-1039, Latvia.

País De Origen: Letonia; Lituania; China (República Popular); Estados Unidos De América; México.

Por favor contacte a su distribuidor local para preguntas regionales específicas. La lista de importadores se puede encontrar en nuestra página de inicio – <https://mikrotik.com/buy/latinamerica/mexico>.

The National Commission for the State Regulation of Communications and Informatization by Ukraine

Виробник: Mikrotikls SIA, Brīvības gatve 214i Rīga, Latvija, LV1039.

Робоча частота (Максимальна вихідна потужність): 2480-2483.5 МГц (20 дБм), 5150-5250 МГц (23 дБм), 5250-5350 МГц (20 дБм), 5470-5725 МГц (27дБм).



Справжнім MikrotikSIA заявляє, що маршрутизатор відповідає основним вимогам та іншим відповідним положенням директиви 2014/53/EC, а також суттєвим вимогам Технічного регламенту радіообладнання, затвердженого постановою Кабінету Міністрів України від 24 травня 2017 року № 355.

Для експлуатації в Україні необхідно отримати дозвіл на експлуатацію у порядку, затвердженому рішенням НКРЗІ від 01.11.2012 № 559, зареєстрованому в Міністерстві юстиції України 03.01.2013 за № 57/22589.

CE Declaration of Conformity

Manufacturer: MikrotikSIA, Brivibas gatve 214i Riga, Latvia, LV1039.

Hereby, MikrotikSIA declares that the radio equipment type RBwAPGR-5HacD2HnD 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>

Frequency bands terms of use

Frequency range (for applicable models)	Channels used	Maximum Output Power (EIRP)	Restriction
2400-2483.5 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!*



This MikroTik device meets Maximum WLAN transmit power limits per ETSI regulations. For more detailed information see Declaration of Conformity above / Dieses MikroTik-Gerät erfüllt die maximalen WLAN- Sendeleistung Grenzwerte gemäß ETSI-Bestimmungen. Weitere Informationen finden Sie oben unter Konformitätserklärung / Cet appareil MikroTik respecte les limites maximales de puissance de transmission WLAN conformément aux réglementations ETSI. Pour plus d'informations, voir la déclaration de conformité ci-dessus / Questo dispositivo MikroTik è conforme ai limiti massimi di potenza di trasmissione WLAN in conformità con le normative ETSI. Per ulteriori informazioni, consultare la dichiarazione di conformità sopra / Este dispositivo MikroTik cumple con los límites máximos de potencia de transmisión WLAN de acuerdo con las regulaciones ETSI. Para obtener más información, consulte la declaración de conformidad anterior / Это устройство MikroTik соответствует максимальным пределам мощности передачи WLAN в соответствии с правилами ETSI. Для получения дополнительной информации см. Декларацию соответствия выше.



The WLAN function for this device is restricted to indoor use only when operating in the 5150 to 5350 MHz frequency range. / Die WLAN-Funktion dieses Geräts ist nur für die Verwendung in Innenräumen im Frequenzbereich 5150 bis 5350 MHz beschränkt. / La fonction WLAN de cet appareil est limitée à une utilisation en intérieur uniquement lorsqu'il fonctionne dans la gamme de fréquences 5150 à 5350 MHz. / La funzione WLAN per questo dispositivo è limitata all'uso interno solo quando si opera nella gamma di frequenza da 5150 a 5350 MHz. / La función WLAN para este dispositivo está restringida al uso en interiores solo cuando se opera en el rango de frecuencia de 5150 a 5350 MHz. / Функция WLAN для этого устройства ограничена использованием внутри помещения только при работе в диапазоне частот от 5150 до 5350 МГц.



Note. The 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.