MikroTik wAP ac Wireless Router User Manual

Contents

MikroTik wAP ac Wireless Router

Product Information

- Product Name: wAP ac
- Model: RBwAPG-5HacD2HnD
- Alternate Model: RBwAPG-5HacD2HnD-BE (for specific variant)

Product Usage Instructions

1. Ensure that your Internet service provider allows hardware changes and will issue an IP address.
2. Open the bottom lid of the device.
3. Plug the included PoE injector into the ISP outlet and connect an Ethernet cable to it.
4. Connect the other end of the Ethernet cable to the router.
5. Plug the provided power supply into the PoE injector.
6. Connect your computer to the wireless network.
7. Open **https://192.168.88.1** in your web browser to start the configuration.
8. Enter “admin” as the user name. There is no default password, or check the user and wireless passwords on the sticker for some models.
9. You will be logged in to the configuration screen.
10. Click the “Check_for_updates” button on the right side and update your RouterOS software to the latest version. Ensure an active Internet connection.
11. The device will reboot.
12. Reconnect to the device and choose your country on the left side of the screen to apply country regulation settings.
13. Set up your wireless network password. The password must be at least eight symbols.
14. Choose “Indoors” or “Outdoors” for the installation type.
15. Set up your router password in the bottom field to the right and repeat it. This password will be used for future logins.

Mounting Instructions

Mounting on the Mast or Pole:

1. Use electrical tape to increase friction between materials.
2. Mount plastic tie straps to steel brackets and guide them through holes.
3. Mount the bracket to the device.
4. Secure them with a screw.
5. Mount and align the device on the pole or mast.
6. Guide the Ethernet cable through the opening and connect it to the Ethernet port.
7. Close the bottom latch and secure it with a screw.
8. Secure the Ethernet cable to the pole using zip ties, approximately 30 cm away from the device.

Mounting on the Wall:

1. Use the included template to mark spots for drilling holes, including holes for the Ethernet cable if needed.
2. Align accordingly based on how the device will be mounted.
3. Insert dowels if needed, depending on the wall structure and material.
4. Place the included steel bracket on the wall.
5. Use screws to secure it in place.
6. Extend your Ethernet cable through the opening and connect it to the Ethernet port.
7. Mount the device on the steel bracket.
8. Secure it in place with the screw.
9. Close the bottom latch.
10. Avoid mounting the device on a low-ground spot where you won’t be able to attach and close the bottom latch.

Mounting on the Ceiling:

1. Follow the instructions for mounting on the wall, but adjust the positioning for ceiling installation.

Powering:
The device can be powered through the power jack or the Ethernet port. The package includes:

- Direct-input power jack (5.5 mm outside and 2 mm inside, female, pin positive plug) accepts 10-57 V
- Ethernet port for power delivery

wAP ac , RBwAPG-5HacD2HnD
wAP ac BE, RBwAPG-5HacD2HnD-BE

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. The Installation of the equipment must comply with local and national electrical codes.
- This unit is intended to be mounted on a pole, wall, or mast. Please read the mounting instructions carefully before beginning installation. Failure to use the correct hardware or to follow the correct procedures could

result in a hazardous situation to people and damage to the system.
- Read the installation instructions before connecting the system to the power source.
- 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.

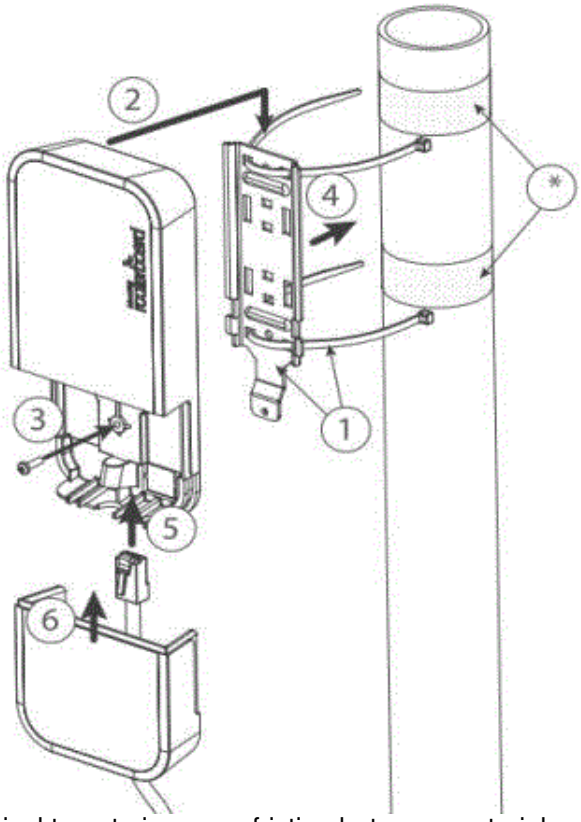
Quick start

- Make sure your Internet service provider is allowing hardware change and will issue an IP address.
- Open the bottom lid.
- Plug the included PoE injector into the ISP outlet and attach an Ethernet cable to it.
- Connect the other end of the Ethernet cable to this router.
- Plug the provided power supply into the PoE injector.
- Connect your computer to the wireless network.
- Open **https://192.168.88.1** in your web browser to start the configuration.
- User name: admin and there is no password by default (or, for some models, check user and wireless passwords on the sticker)..
- You will be logged in to the configuration screen.
- Click the "Check_for_updates" button on the right side and update your RouterOS software to the latest version. Must have an active Internet connection.
- The device will reboot.
- Connect again and choose your country on the left side of the screen, to apply country regulation settings.
- Set up your wireless network password, the password must be at least eight symbols.
- Set the Installation to indoors or outdoors, depending on the usage type.
- Set up your router password in the bottom field to the right and repeat it, it will be used to log in next time.

Mounting

- The device can be mounted in several ways: wall, ceiling, pole or it can be placed in a specially designed Mikrotik holder which comes with the package. The package includes a drill hole template with instructions, to help you with the Ethernet cable installation and attachment to a ceiling or a wall. The package also includes a steel bracket to put on the other side of a dropdown ceiling tile and two screws and wall anchors. The Unit can be attached to the pole using zip ties or steel clamps.
- To prevent the bottom lid from opening different screws can be used. One Torx T20 security screw is included for optional use. Use it with the included L-shaped wrench to fix it into the bottom lid. Detailed instructions for replacing the screw are in the package.
- 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.

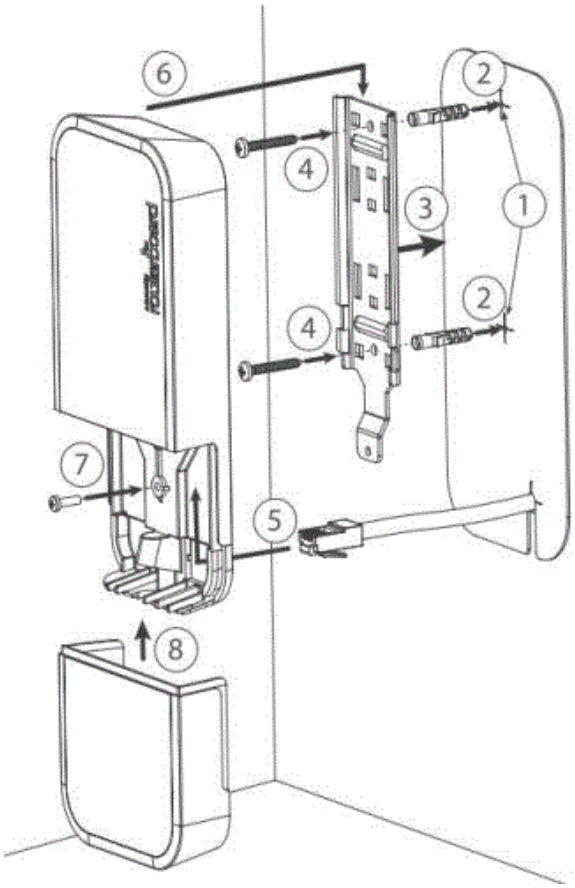
Mounting on the mast or pole:



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

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

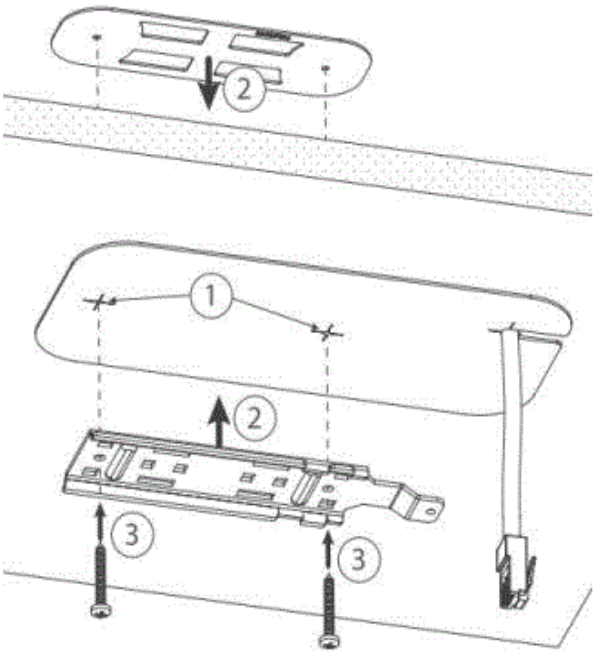
   It’s recommended to secure the Ethernet cable to the pole using zip ties. The distance from the device is approximately 30 cm.



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, depending on the 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 the 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.

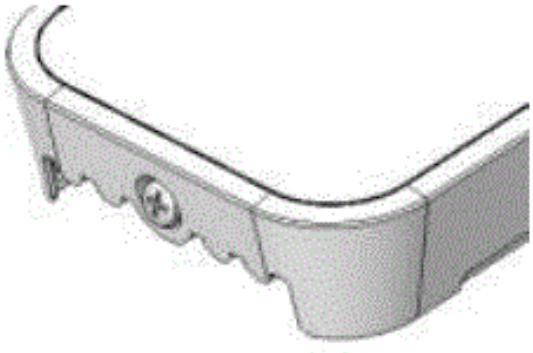
1. Use the template to mark spots for holes.
2. Place both mounting brackets on the spot.
3. Secure them together using screws.

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

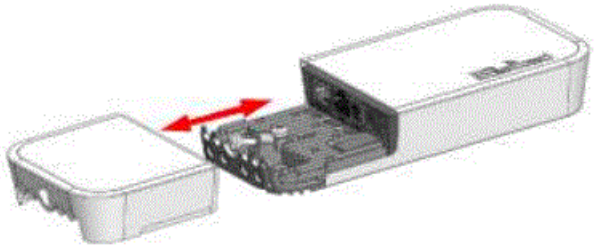
1. Extend your Ethernet cable through the opening and connect to the Ethernet port.
2. Mount the device on the steel bracket.
3. Secure it in place with the screw.
4. Close the bottom latch.

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.

Powering

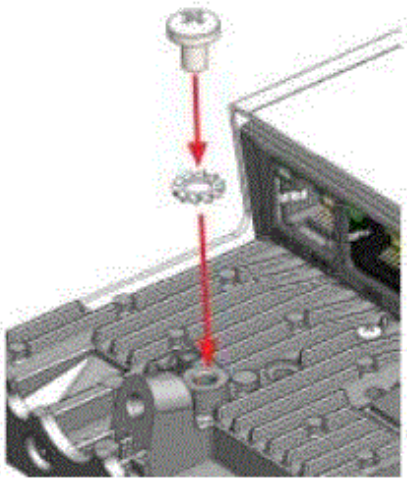
The device accepts power from the power jack or from the Ethernet port, both provided in the package:

- Direct-input power jack (5.5 mm outside and 2 mm inside, female, pin positive plug) accepts 10-57 V DC;
- The Ethernet port accepts 802.3af/at PoE 18-57 V DC.
  The power consumption under maximum load can reach 10 W. Please attach ground (earth) wire to the screw under the bottom lid.

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.

The grounding screw is located under the bottom lid:



Expansion slots and ports

- Integrated two Wireless modules operating at 2.4 GHz and 5 GHz, supporting AP/CPE/P2P/repeater modes.
- Two 10/100/1000 Ethernet ports, supporting automatic cross/straight cable correction (Auto MDI/X). Either straight or crossover cable can be used for connecting to other network devices.

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.

- Internet connection configuration **https://mt.lv/configuration**;
- Upgrade options for the RouterOS software **https://mt.lv/upgrade**;
- RouterOS includes many configuration options in addition to what is described in this document. We suggest visiting the RouterOS documentation page to get yourself accustomed to the possibilities:
- In case IP connection is not available, the Winbox tool (**https://mt.lv/winboxa**) 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).
- It is possible to boot the device from a network, for reinstalling RouterOS for recovery purposes. This can be done from the first Ethernet port. See above how to do this.

Buttons and jumpers

The reset button has three functions:

- Hold this button during boot time until the LED light starts flashing, and release the button to reset the 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 the 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 with the version number at or above what is indicated in the RouterOS menu /system resource. Other operating systems have not been tested.

Notice

- The Frequency band 5.470-5.725 GHz isn't allowed for commercial use.
- In case WLAN devices work with different ranges than the above regulations, then a customized firmware version from the manufacturer/supplier is required to be applied to the end-user equipment and also prevent the end-user from reconfiguration.
- For Outdoor Usage: The user requires approval/license from the NTRA.
- Datasheet for any device is available on the official manufacturer's website.
- Products with the letters "EG" at the end of their serial number have their wireless frequency range limited to 2.400 – 2.4835 GHz, the TX power is limited to 20dBm (EIRP).
- Products with the letters "EG" at the end of their serial number have their wireless frequency range limited to 5.150 – 5.250 GHz, the TX power is limited to 23dBm (EIRP).
- Products with the letters "EG" at the end of their serial number have their wireless frequency range limited to 5.250 – 5.350 GHz, the TX power is limited to 20dBm (EIRP).
  Please make sure the device has a lock package (firmware version from the manufacturer) which is required to be applied to the end-user equipment to prevent the end-user from reconfiguration. The product will be marked with country code "-EG". This device needs to be upgraded to the latest version to ensure compliance with local authority regulations! It is the end users 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.

Accessories

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
RBwAPG-5HacD2HnD-US	TV7WAPGR5AC2 D
RBwAPG-5HacD2HnD-BE- US	TV7WAPGR5AC2 D

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 or more 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.

Note: This unit was tested with shielded cables on the peripheral devices. Shielded cables must be used with the unit to ensure compliance.
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**
RBwAPG-5HacD2HnD-US	7442A- WAPGR5AC2D
RBwAPG-5HacD2HnD-BE- US	7442A- WAPGR5AC2D

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science, and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following two conditions: (1) This device may not cause interference. (2) This device must accept any interference, including interference that may cause undesired operation of the device.

CAN ICES-003 (B) / NMB-003 (B)
The device for operation in the band 5150–5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems.

UKCA Marking

CE Declaration of Conformity

Manufacturer: Mikrotik SIA, Brivibas gatve 214i Riga, Latvia, LV1039.
Hereby, Mikrotīkls 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

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 the Declaration of Conformity above
The WLAN function for this device is restricted to indoor use only when operating in the 5150 to 5350 MHz frequency range.
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.

Documents / Resources

	MikroTik wAP ac Wireless Router [pdf] User Manual RBwAPG-5HacD2HnD, RBwAPG-5HacD2HnD-BE, wAP ac, wAP ac Wireless Router, Wireless Router, Router

References

- MikroTik Routers and Wireless
- MikroTik Routers and Wireless - Buy
- MikroTik Routers and Wireless - Buy
- MikroTik Routers and Wireless - Products