MikroTik RouterOS new Wireless and LTE features overview

Uldis Cernevskis
MikroTik, Latvia

MUM Brazil
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Overview

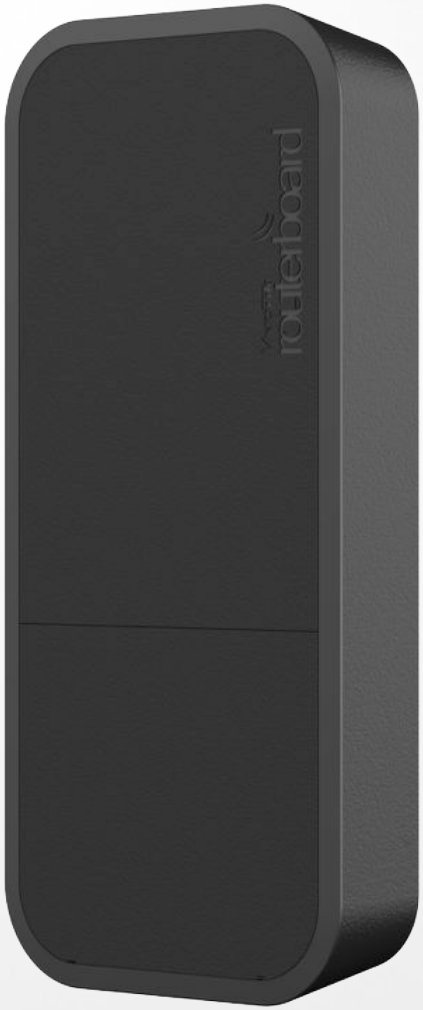
- RouterBOARD wAP
- New Wireless (wireless-rep) package
- LTE Interface and “wAP LTE kit”

wAP





Black and White edition





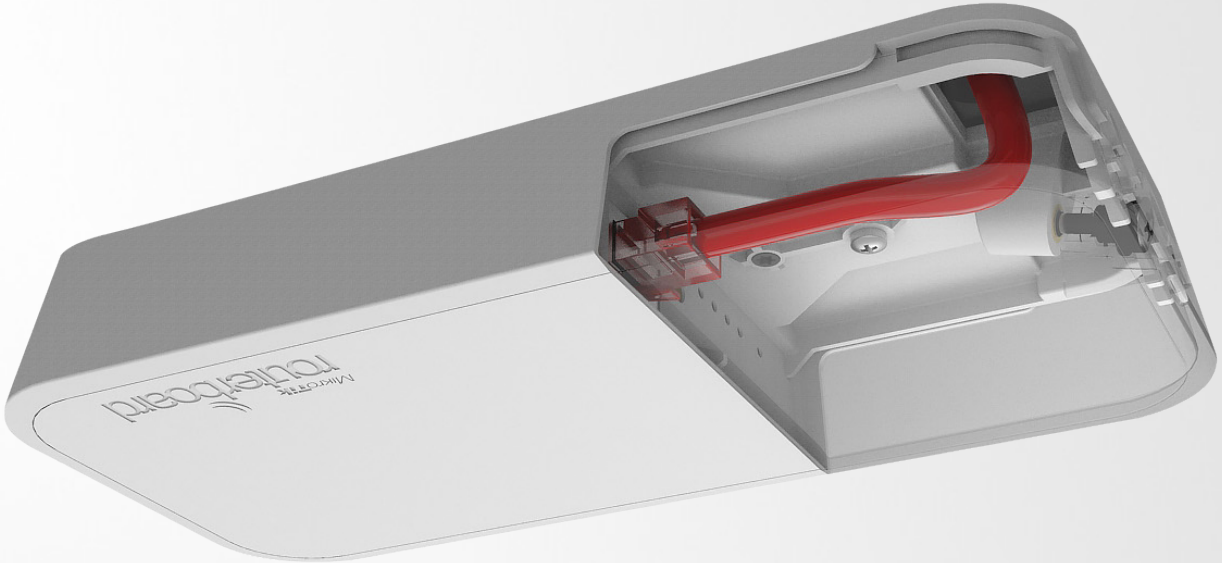
Features

- 2 chain Wireless radio
- Jack and PoE power option
- Wide power input range (11-57V)
- Supports 802.3af/at and Passive PoE
- Low Power Consumption
- High Operating Temperatures
- Suitable for indoor and outdoor
- Waterproof case design

Specification

- CPU 650 MHz
- RAM 64 MB
- Flash 16 MB
- Wireless 802.11b/g/n dual-chain
- Gain 2dBi antennas
- Ethernet 10/100Mbps
- Voltage 11-57V
- Consumption up to 4W
- Operating Temperatures -40C to +70C
- Dimensions 185 x 85 x 30 mm

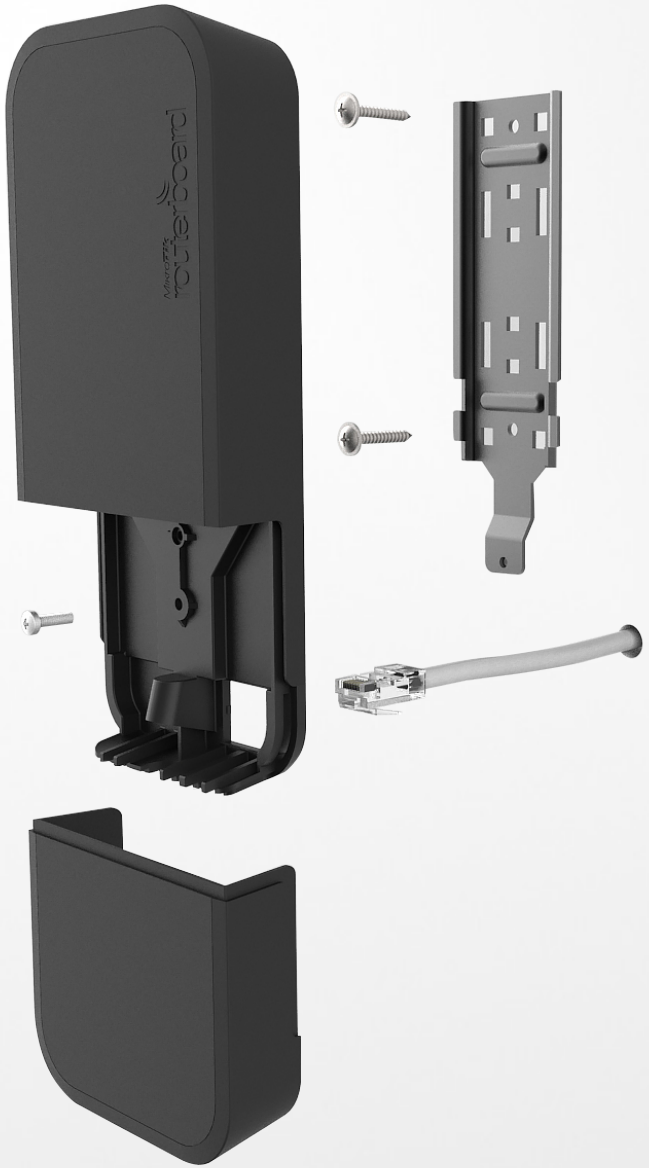
Usage Cases



Use it on the ceiling!

- The wAP comes bundled with all the necessary things to be mounted on ceiling
- Cable breakout provides ability to run cable through the ceiling

Usage Cases



Use it on the wall!

- Wall mounting is easy thanks to the provided drill template and screw anchor. Everything included

New wAP ac

- CPU 720 MHz
- RAM 64 MB
- Flash 16 MB
- Wireless 802.11b/g/n dual-chain
- Wireless 802.11a/n/ac triple-chain
- Gain 2dBi antennas
- Ethernet 10/100/1000Mbps
- Voltage 11-57V
- Consumption up to 12W
- Operating Temperatures -40C to +50C
- Dimensions 185 x 85 x 30 mm

New Wireless (wireless-rep) package

New Wireless package

- Repeater setup
- Background scan
- Virtual Wireless Interfaces
- WPS client
- New Wireless Scan features
- Scan-list Step support
- Station Roaming support
- G/N band support
- CAPsMAN additional settings enabled
- CAPsMAN Rates support

Repeater Setup

- Allow to receive signal from the AP and repeat the signal using the same physical interface locally for connecting other clients
- Allows to extend wireless service for the wireless clients
- Steps that this setup command does:
  - Configure wireless interface to connect to the AP
  - Create a Virtual AP interface
  - Create Bridge interface
  - Adds both (main and virtual) interfaces to bridge ports

Background Scan

- Supported for 802.11 protocol only
- Working conditions
  - Wireless interface should be enabled
  - For AP mode – when operating on fixed channel
  - For Station mode – when connected to AP
- Supported also on Virtual interfaces
  - Scan is only performed in channel where master interface is running

Virtual Wireless Interfaces

- Supported for 802.11 protocol only
- Virtual AP and Client interface can be added on the same physical interface
- Multiple Virtual Wireless interfaces can be added
- Background scan is supported on Virtual Wireless Interfaces and is only performed in channel where master interface is running

WPS Client Support

- Allows wireless client to get Pre-Shared Key configuration of the AP that has WPS Server enabled
- Gets information from any WPS Server running or can be specified to get only with specific SSID or MAC address
- Received configuration is shown on the screen and can be also saved to a new wireless security profile

Wireless Scan features

- Scan to file
  - Allows to save the scan results in a CSV format file
  - Supported with background scan
- Scan Round setting
  - Allows to do full scan of the scan-list and then stop scanning
  - Useful for remote scans on the clients
  - Supported with background scan as well

Scan-list Step feature

- Scan-list Step feature allows to make compact scan-list entries
- To make scan-list from 5500-5700 with 20mhz step now you need just one entry:
  - Scan-list=5500-5700:20
  - In system it will create scan-list with such frequencies: 5500,5520,5540,5560,5580,5600,5620,5640,5660,5680,5700

Station Roaming support

- Supported for 802.11 protocol only
- While connected to AP station does periodic background scans to look for a better AP
- When a better AP is found station roams to the new AP
- Time intervals between scans becomes shorter when signal becomes worse
- Time intervals between scans becomes longer when signal becomes better

G/N Band Setting

- Regular Wireless Interface and CAPsMAN supports '2ghz-g/n' band setting
  - basic-rates – 6-54Mbps
  - supported – 6-54Mbps
  - ht-basic-mcs – None
  - ht-supported-mcs – 0-23

CAPsMAN Settings

- CAPsMAN now supports the following settings:
  - distance – default value is 'indoors'
  - hw-retries
  - hw-protection-mode
  - frame-lifetime
  - disconnect-timeout

CAPsMAN Rates support

- CAPsMAN supports Rates configuration tab:
  - Basic – B and A/G basic-rates
  - supported – B and A/G supported data-rates
  - ht-basic-mcs – N basic-rates
  - ht-supported-mcs – N supported data-rates
  - vht-basic-mcs – AC basic rates
  - vht-supported-mcs – AC supported data-rates

DFS mode setting changes in v6.37

- In RouterOS v6.37 DFS configuration is redesigned making the DFS mode setting unnecessary
- By default now the DFS mode setting is set to radar-detect
  - If you select a frequency that is a DFS frequency range then before beginning of transmission on that channel it will do a DFS radar detect
  - If you select a frequency that is not in a DFS frequency range then it will begin the transmission on that channel

Wireless package in v6.37

- In RouterOS v6.37 there is only one wireless package - “wireless”
- “wireless” is the same wireless-rep package in older versions
- Upgrading from older RouterOS versions that had bundle package will automatically upgrade to new bundle package with new wireless package
- If individual wireless packages were installed upgrade to new version will be done automatically

LTE interface

- RouterOS supports PPP emulation and Ethernet emulation driver:
  - PPP emulation has speed limit of approx 25Mbps
  - Ethernet emulation doesn't have such limitation
- Shows supported 2G/3G/4G interfaces that uses ethernet emulation driver under '/interface lte' section

LTE configuration
WEB or Direct

- LTE modem configuration might have two options:
  - WEB interface on the modem IP address where APN,PIN,modem specific configuration and status is located
  - Direct configuration in the RouterOS lte interface menu

LTE interface IP address

- LTE interface IP address, default-gateway is added depending on the LTE modem:
  - On most of the LTE modems IP address, default-gateway is configured by adding DHCP-Client on LTE interface
  - On few LTE modems like SXT LTE the IP address, default-gateway is configured directly on the LTE interface without DHCP-Client
- SXT LTE also support IPv6 on the LTE interface

SMS on LTE interface

- Starting from RouterOS v6.37 you can Send and Receive SMS on LTE modems
- Allows to send custom status messages and execute scripts by receiving SMS messages
- Some limitations/requirements applies:
  - Sending and Receiving SMS will only work when the LTE interface is Running (Connected)
  - SMS tool supports only “GSM 7” encoding for SMS messages

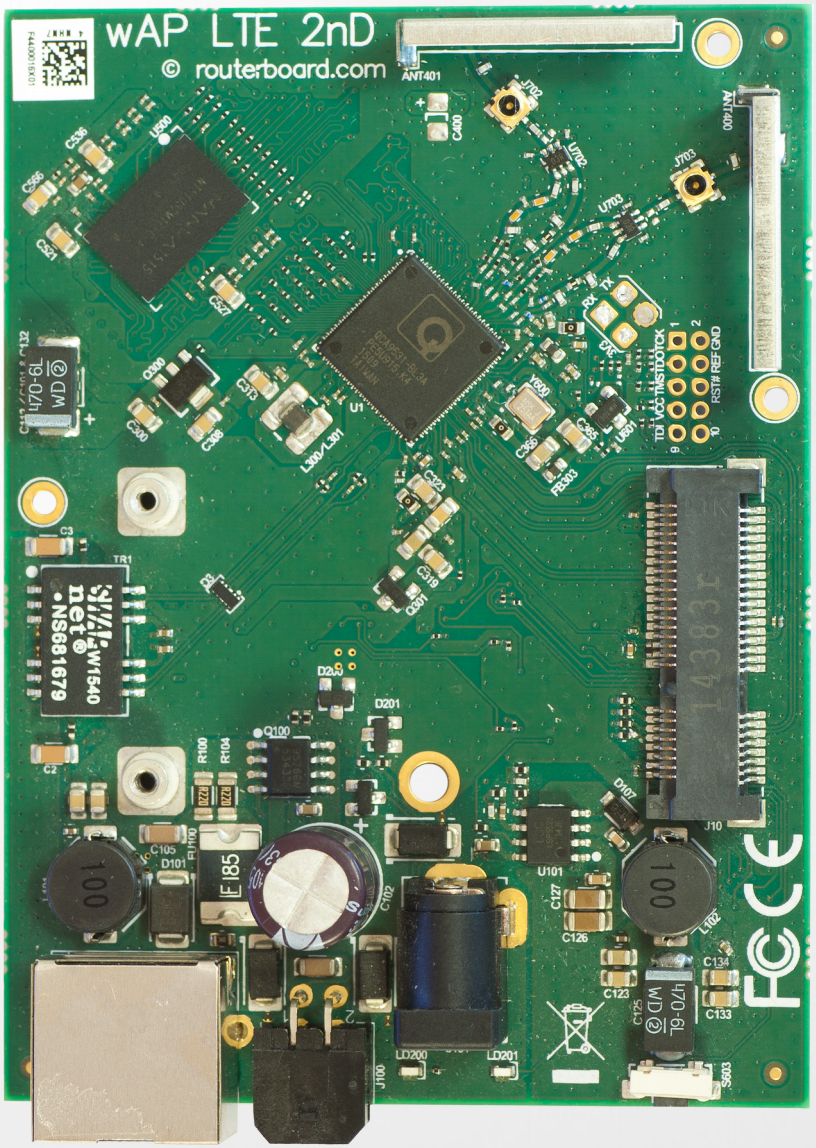
wAP LTE kit



wAPR-2nD board with case

- mini-PCIe LTE modem card
- Two LTE antennas built-in the case for LTE modem

wAPR-2nD board picture



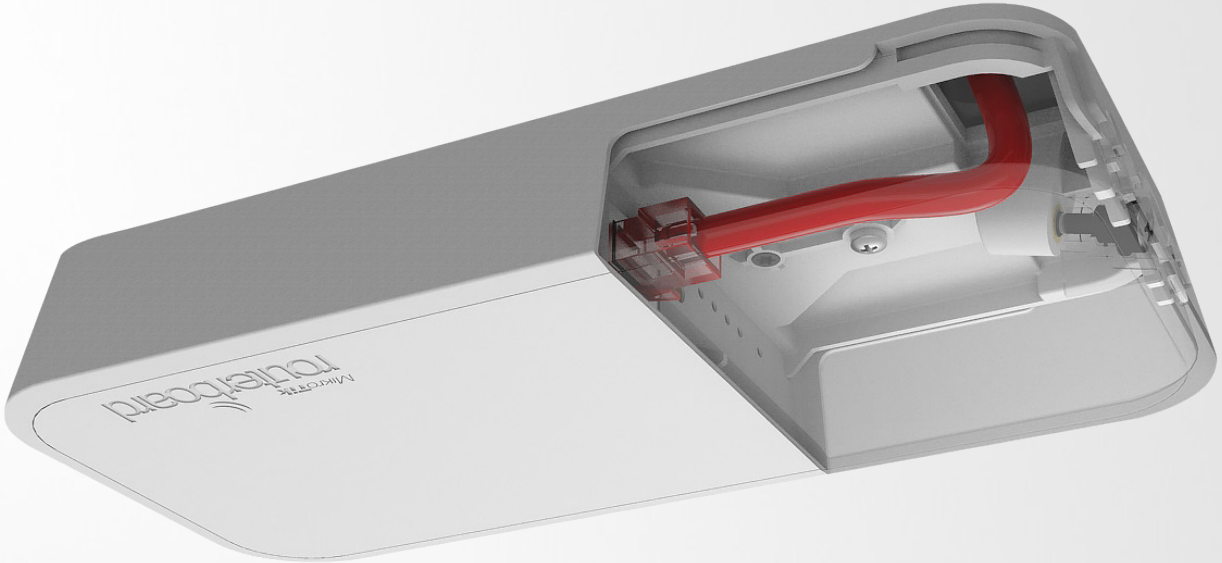
Features

- 2 chain Wireless radio
- Mini-PCIe slot for wireless radio or LTE modem
- SIM slot for LTE modem
- Integrated antennas for LTE interface
- Jack, PoE, 4-pin Automotive power option
- Supports Passive PoE
- Low Power Consumption
- High Operating Temperatures
- Suitable for indoor, outdoor and mobile operation
- Waterproof case design

Specification

- CPU 650 MHz
- RAM 64 MB
- Flash 16 MB
- Wireless 802.11b/g/n dual-chain
- One Mini-PCIe slot for wireless or LTE modem
- Gain 2dBi antennas for 802.11b/g/n
- Gain 2-4.5dbi antennas LTE modem
- Ethernet 10/100Mbps
- Voltage 11-30V
- Consumption up to 7W
- Operating Temperatures -40C to +60C
- Dimensions 185 x 85 x 30 mm

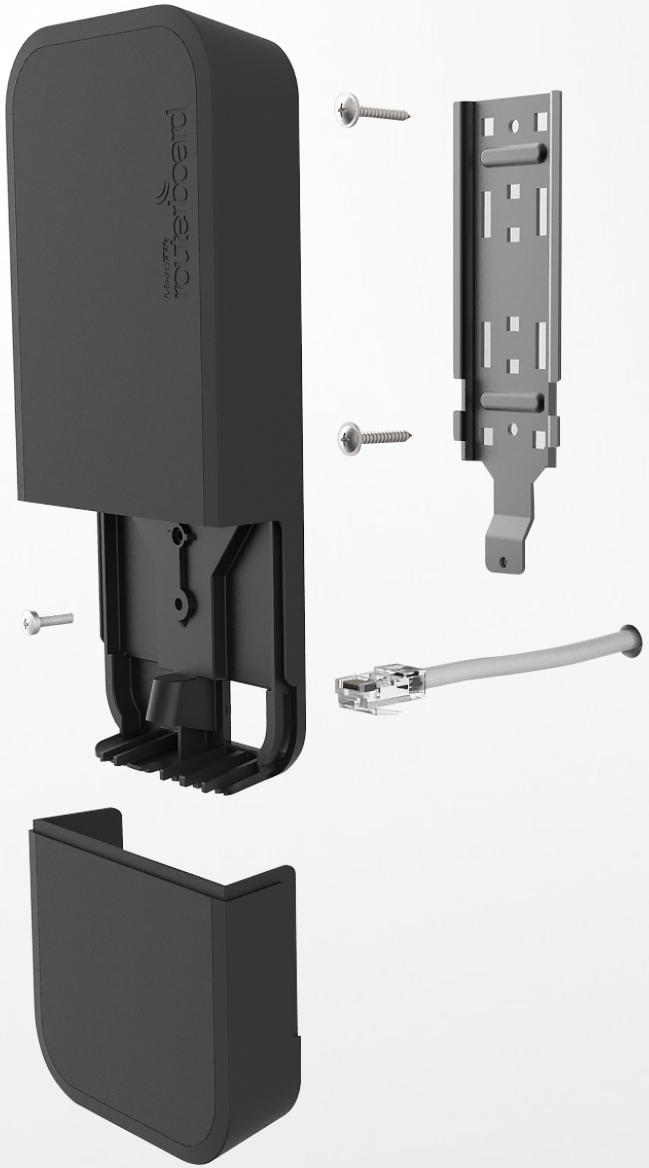
Usage Cases - Mobile



Use it on the ceiling inside a car, bus or train

- The wAP comes bundled with all the necessary things to be mounted on ceiling
- Cable breakout provides ability to run cable through the ceiling

Usage Cases - Wall



Use it on the wall!

- Wall mounting is easy thanks to the provided drill template and screw anchor. Everything included

Usage Cases – Table



Use it on the table!

- Use special plastic stand to place it on the table at home or office

Supported LTE modules

- RouterOS supported Mini-PCIe LTE modules can be found in this Wiki page:

http://wiki.mikrotik.com/wiki/Supported_Hardware

- MikroTik will provide bundle “WAP LTE kit” with a Mini-PCIe LTE module and antenna inside
  - LTE module will be different depending on the Region as LTE supported bands are not the same everywhere

Suggestions?
Feature requests?

Information on “WAP LTE kit” please talk to MikroTik staff at the registration table

Thank you!