Wireless Workshop

Uldis Cernevskis

MikroTik, Latvia

MUM Europe

February 2016

Overview

- Gift from MikroTik – wAP
- Wireless-rep package

wAP

Black and White edition

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

Features

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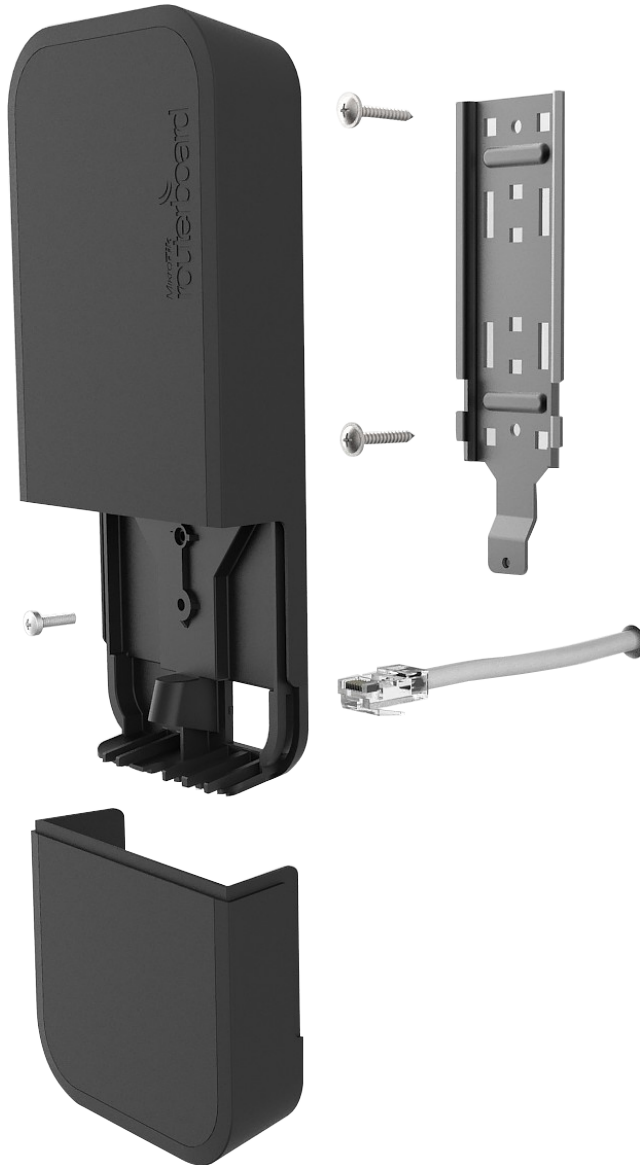- Waterproof case design

Usage Cases
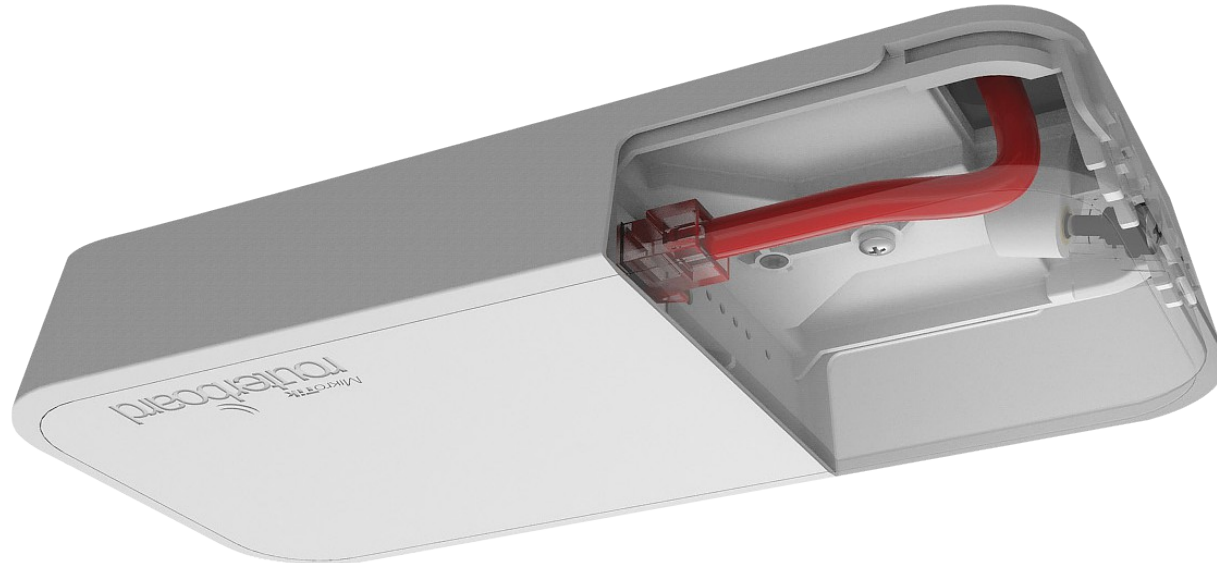
Use it on the ceiling!

- 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

Wireless-rep 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

Try at home

- Install wireless-rep package
- Use Repeater function on wAP