



MUM Chile

Febrero 2019



What do we do?

We create networks



- Established 1996
- RouterOS created in 1997
- RouterBOARD created in 2002
- First MUM event in Prague 2006
- MUM Indonesia 2018 had over 3700 people
- 31 events in 2018



**LETONIA**

# TECHNOLOGIES

- Wired routers, Ethernet, SFP
- Switches
- Wi-Fi 802.11ac, 2GHz, 5GHz
- Mobile networks, 4G, LTE
- 60GHz connectivity.

# PRODUCT FAMILIES

RouterOS

built and advanced for more than 20 years

RouterBOARD

Wireless outdoor, indoor, Ethernet routers

CRS

Switches with RouterOS

CSS

Switches with SwOS

# More than 190 MUM events around the world





STAFF

Look for MikroTik staff in the red t-shirts:

- Karlis Oga (sales)
- Sergejs Boginskis (technical support)
- Kaspars Krampis (training)



# Agenda

Presentaciones

10:00

Almuerzo (con vouchers)

13:15

Presentaciones

14:45

Sorteo

17:00

[mt.lv/agenda](https://mt.lv/agenda)

# WiFi

SSID: MUM

Password: MikroTik

# MUM Live

[www.youtube.com/mikrotik](http://www.youtube.com/mikrotik)

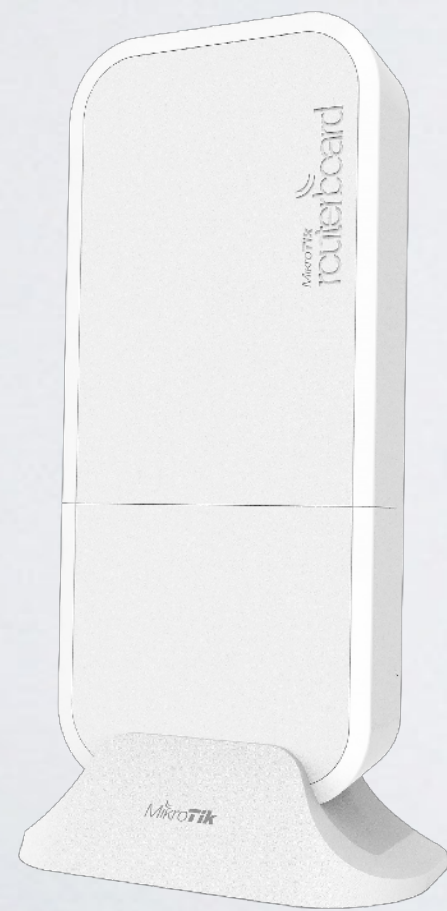
# Special Thanks



Some of our latest products

# 60GHz device family

wAP60



LHG60



SXTsq Lite60



LHG Lite60



# MikroTik 60GHz Products

PtP Link Distances at Full Speed

<b>LHG 60G</b>	<b>1500+ meters</b>	<b>LHG 60G</b>
<b>LHG 60G</b>	<b>800+ meters</b>	<b>wAP 60G</b>
<b>LHG Lite60</b>	<b>800+ meters</b>	<b>wAP 60G</b>
<b>SXTsq Lite60</b>	<b>200+ meters</b>	<b>wAP 60G</b>
<b>wAP 60G</b>	<b>200+ meters</b>	<b>wAP 60G</b>

# LHG Lite60

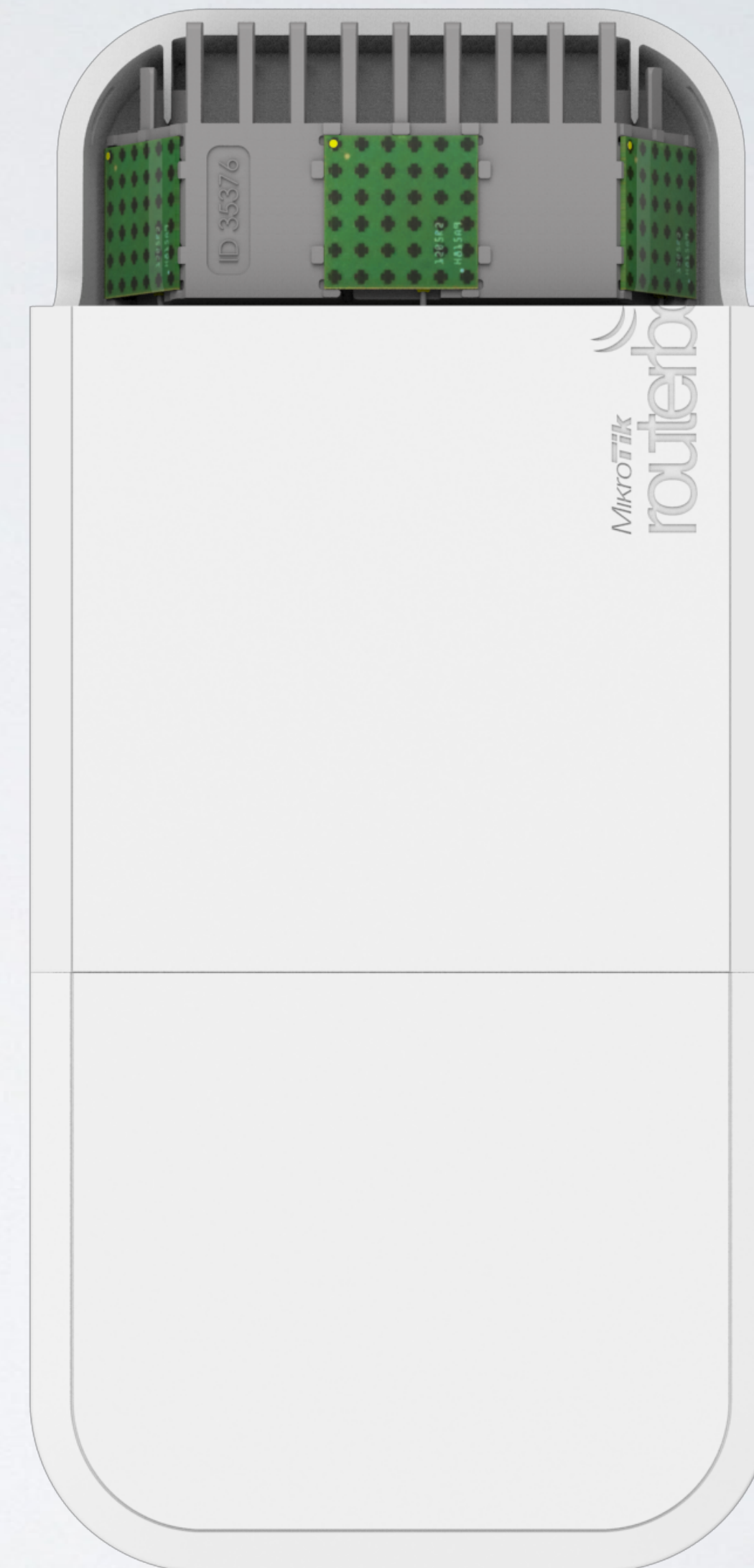
- 60 GHz CPE
- LHG design
- 100 Mbps Ethernet
- For distance 800 meters +
- Price \$99



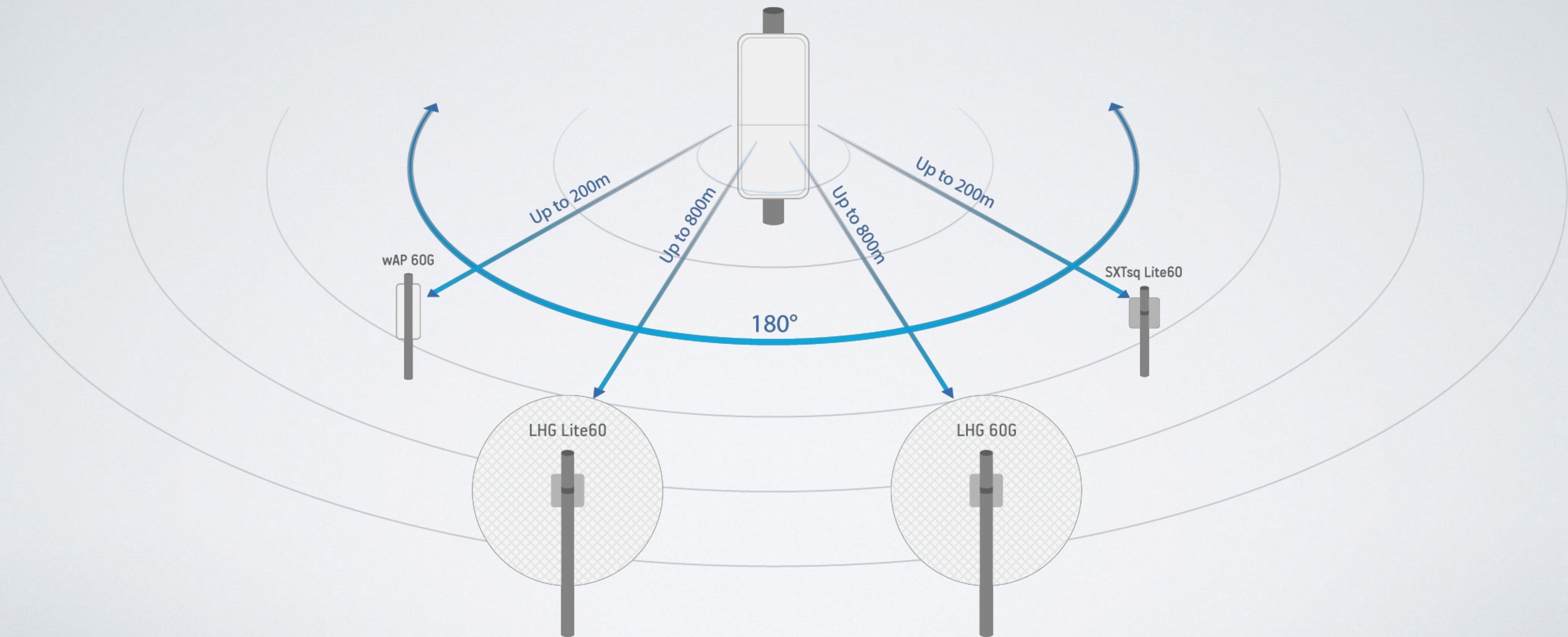


# wAP 60Gx3 AP

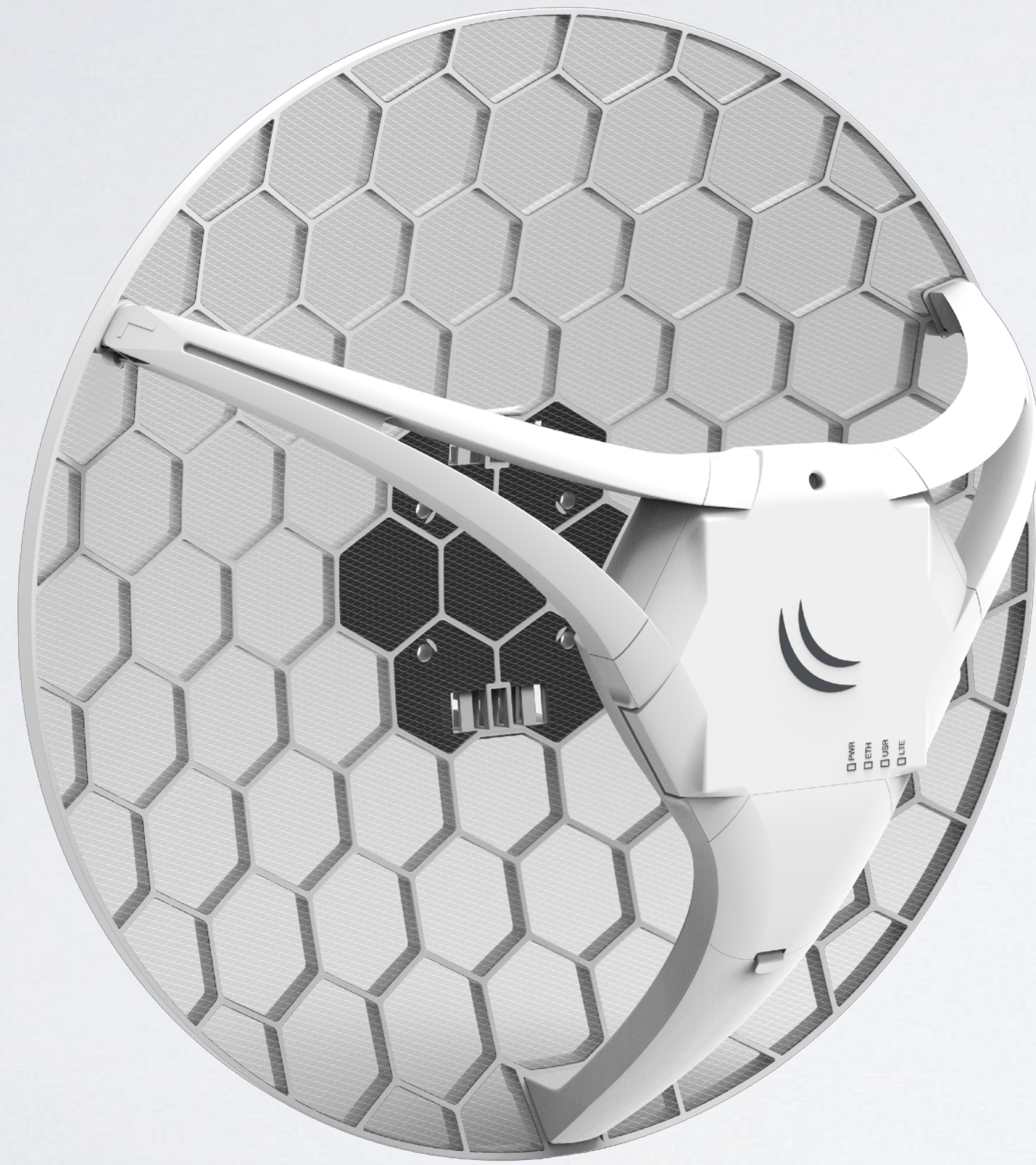
- 60 GHz AP
- Now with 180° beam width  
(3x times wider!)
- Supports up to 8 clients
- 1 Gbps Ethernet
- Price \$199



# wAP 60Gx3 AP

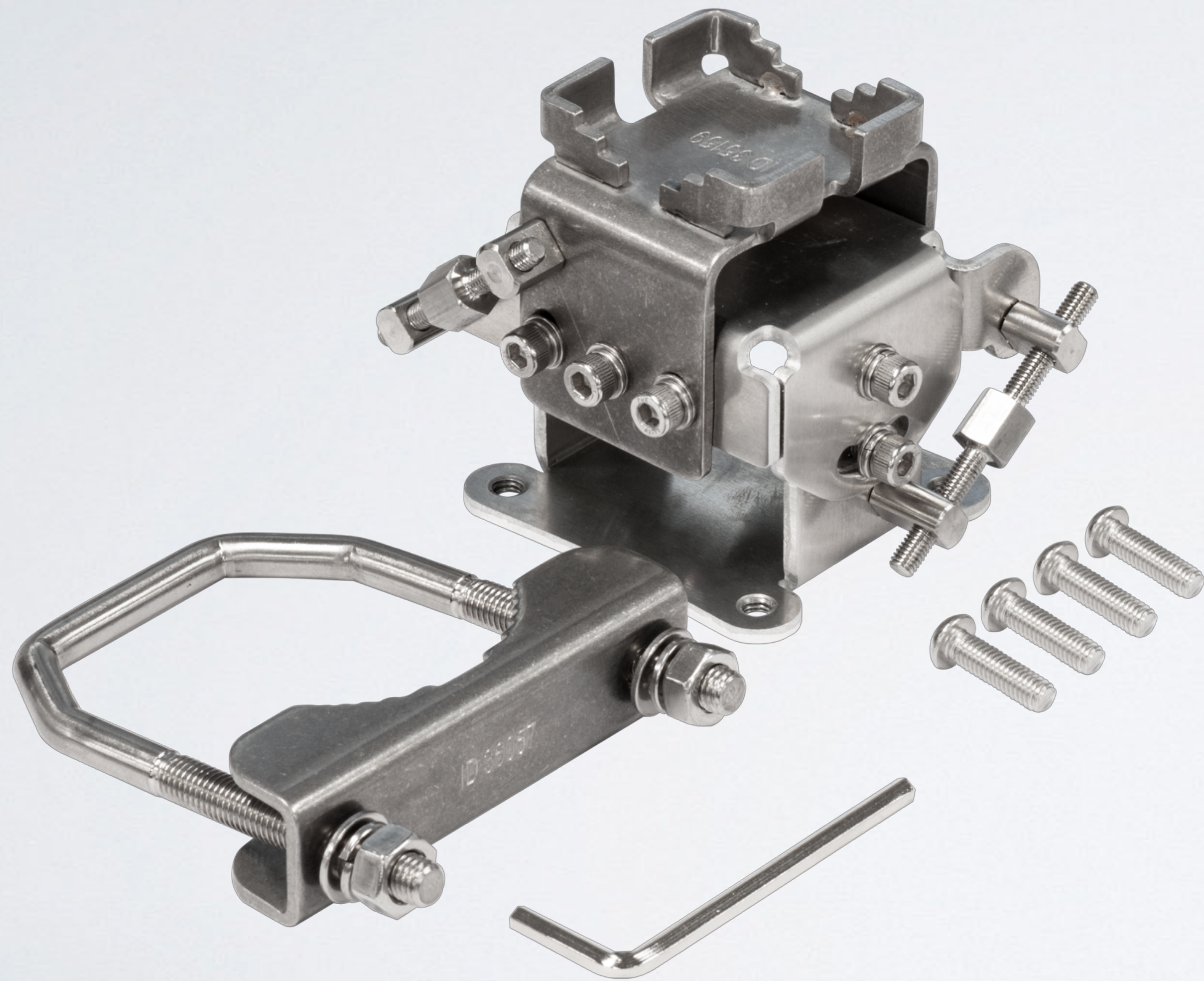


# LHG LTE kit



- LTE built-in modem
- 17 dBi, 25 angle
- 4 category (150 Mbps/50 Mbps) LTE
- 3G - R7/R8
- For long distances
- Kit price \$159

# solidMOUNT



- Allows vertical and horizontal adjustments
- Supports all LHG series (including LHG XL)
- Made from metal
- Includes U-bolt and mounting kit
- \$29

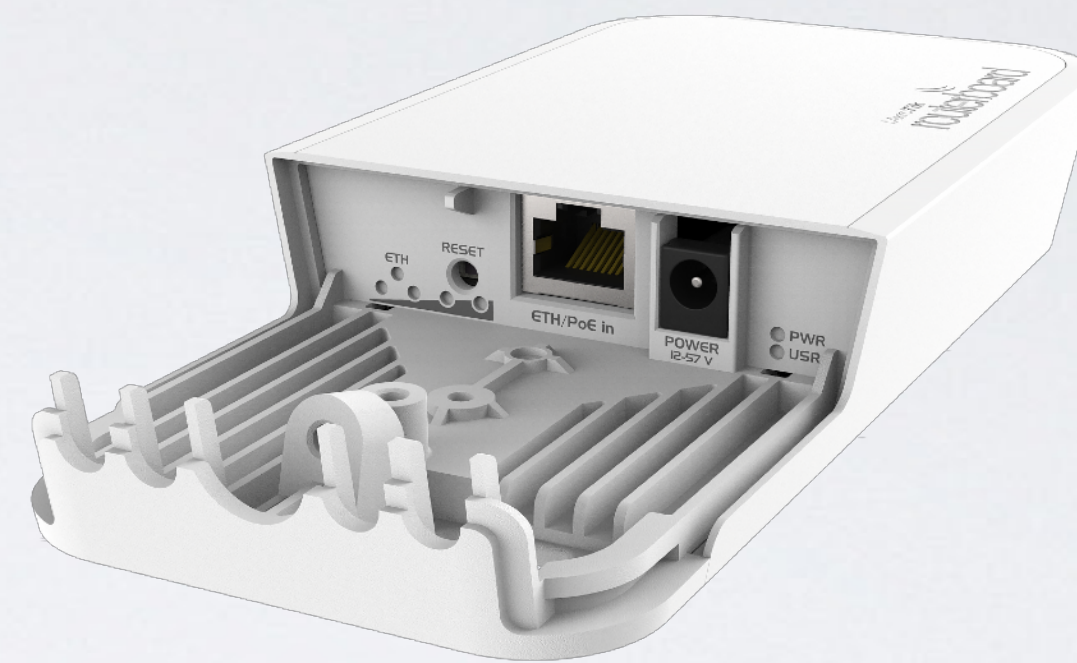
# R11e-4G

- 4G Modem (no 2G/3G)
- 4 Category (150Mbps/50Mbps)
- 3,7,20,31 FDD bands
- 41n,42,43 TDD bands
- \$79



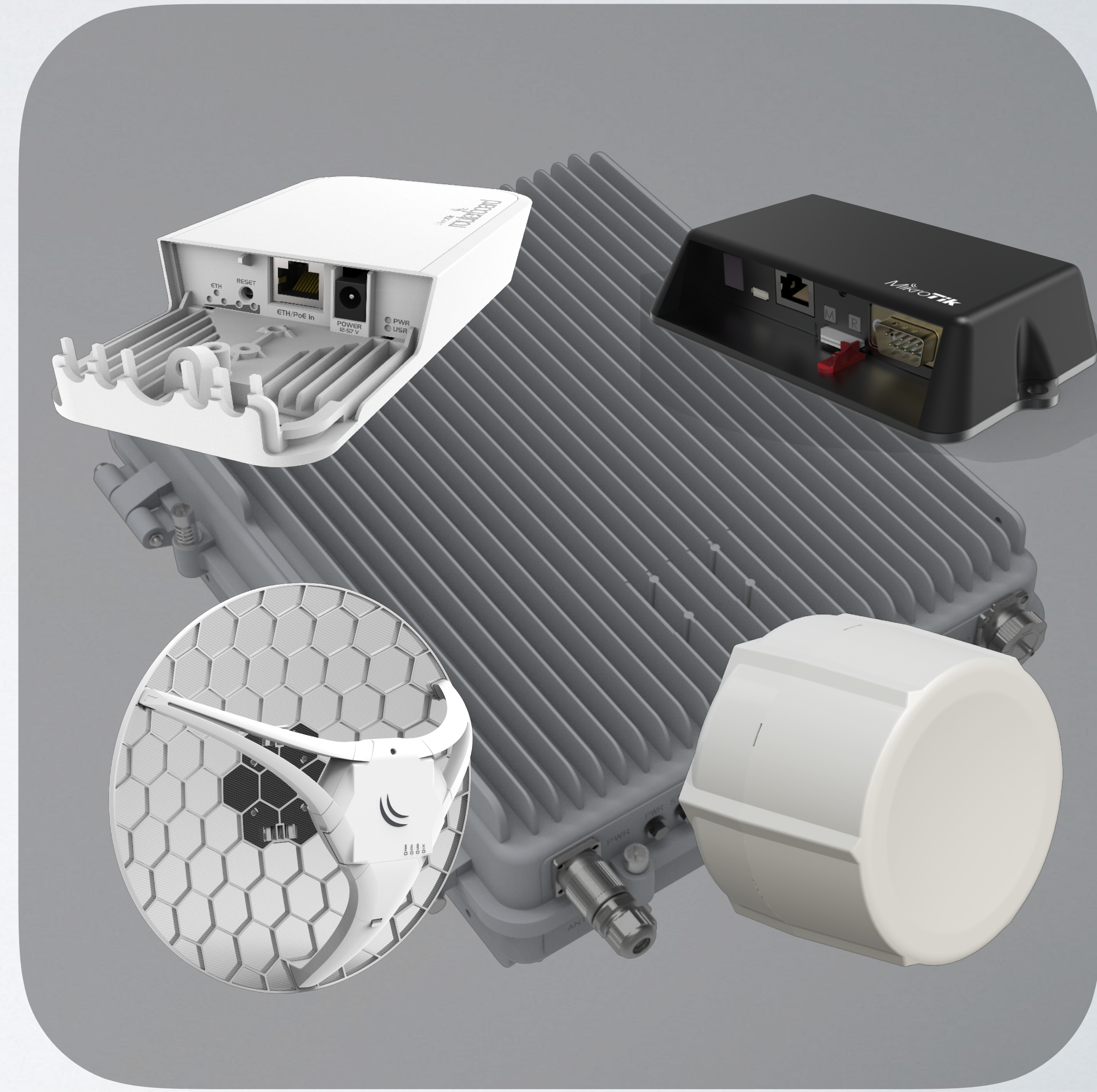
# 4G kits

- wAP 4G kit \$129
- LtAP mini 4G kit \$139
- SXT 4G kit \$139
- LHG 4G kit \$169



# InterCell - LTE base station

- LTE base station for WISPs or mobile operators
- LTE bands 38 and 39 (4 models)
- Up to 192 clients
- Can use together with MikroTik LTE CPE's
- Price \$2200 - \$3500



# mANTBox2 12s

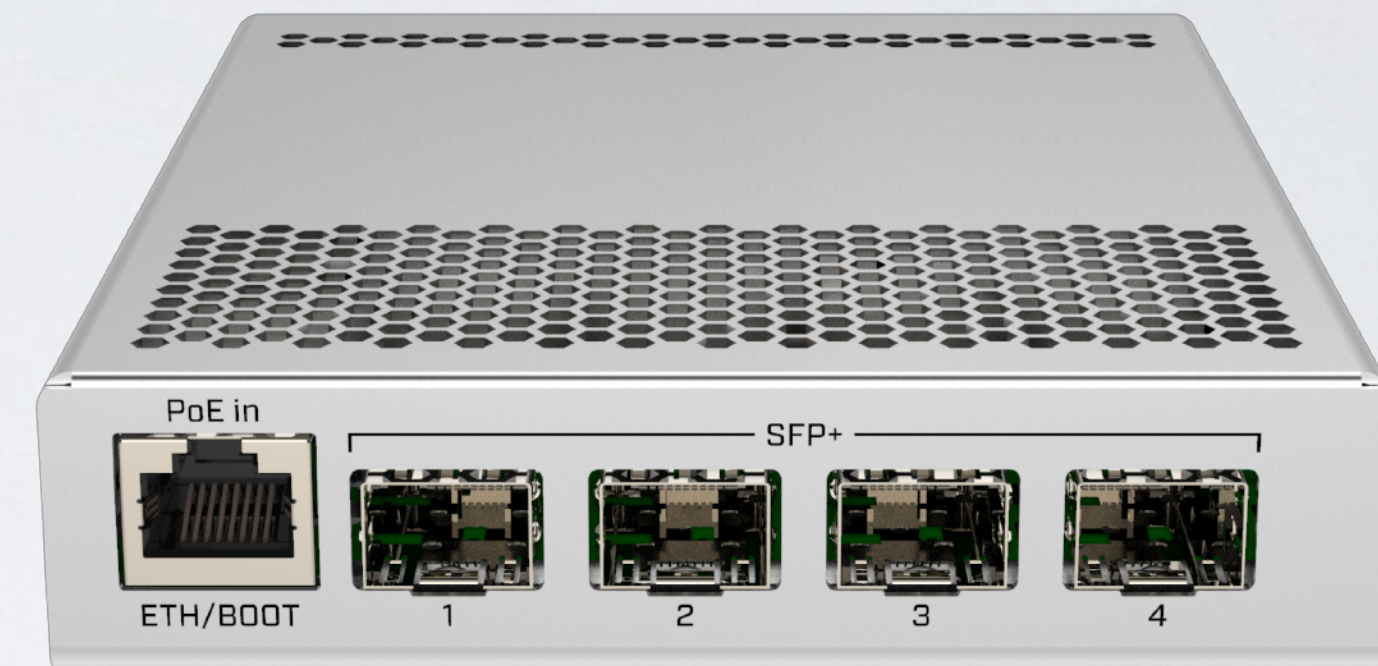
- 2 GHz sector antenna
- 12 dBi
- RouterBOARD built-in
- Price \$99





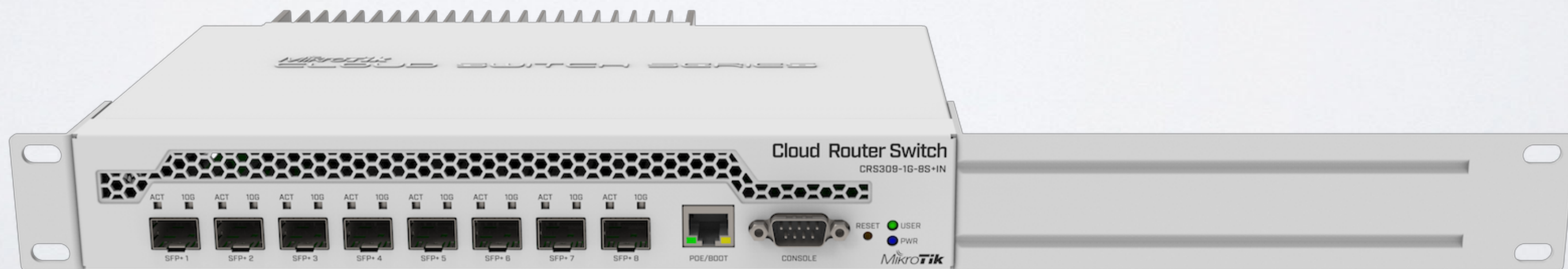
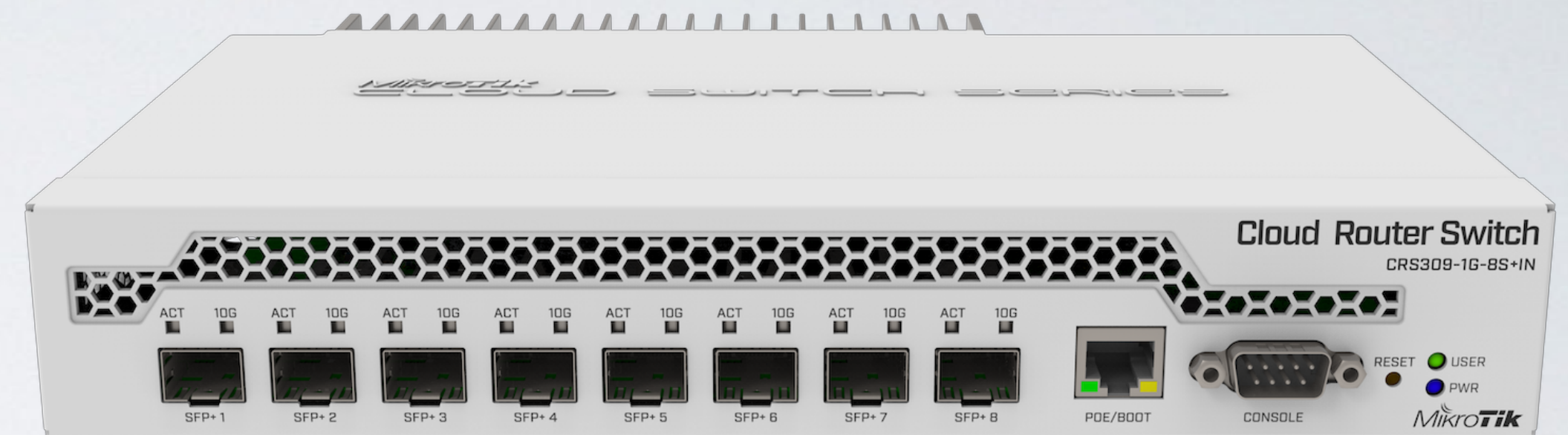
# CRS305-1G-4S+IN

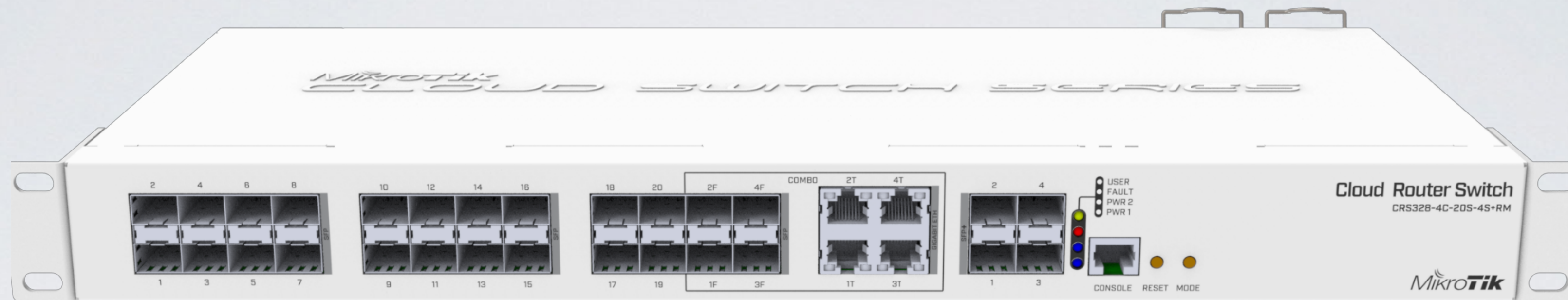
- 4x SFP+ ports
- 1x Gigabit Ethernet
- Dual boot: RouterOS / SwOS
- Metallic enclosure, silent
- Dual DC jacks
- Kit price \$149



# CRS309-1G-8S+PC

- 8x SFP+ ports
- 1x Gigabit Ethernet
- Dual boot: RouterOS / SwOS
- Passive cooling case, silent
- Redundant power using PoE
- Kit price \$269





# CRS328-4C-20S-4S+RM

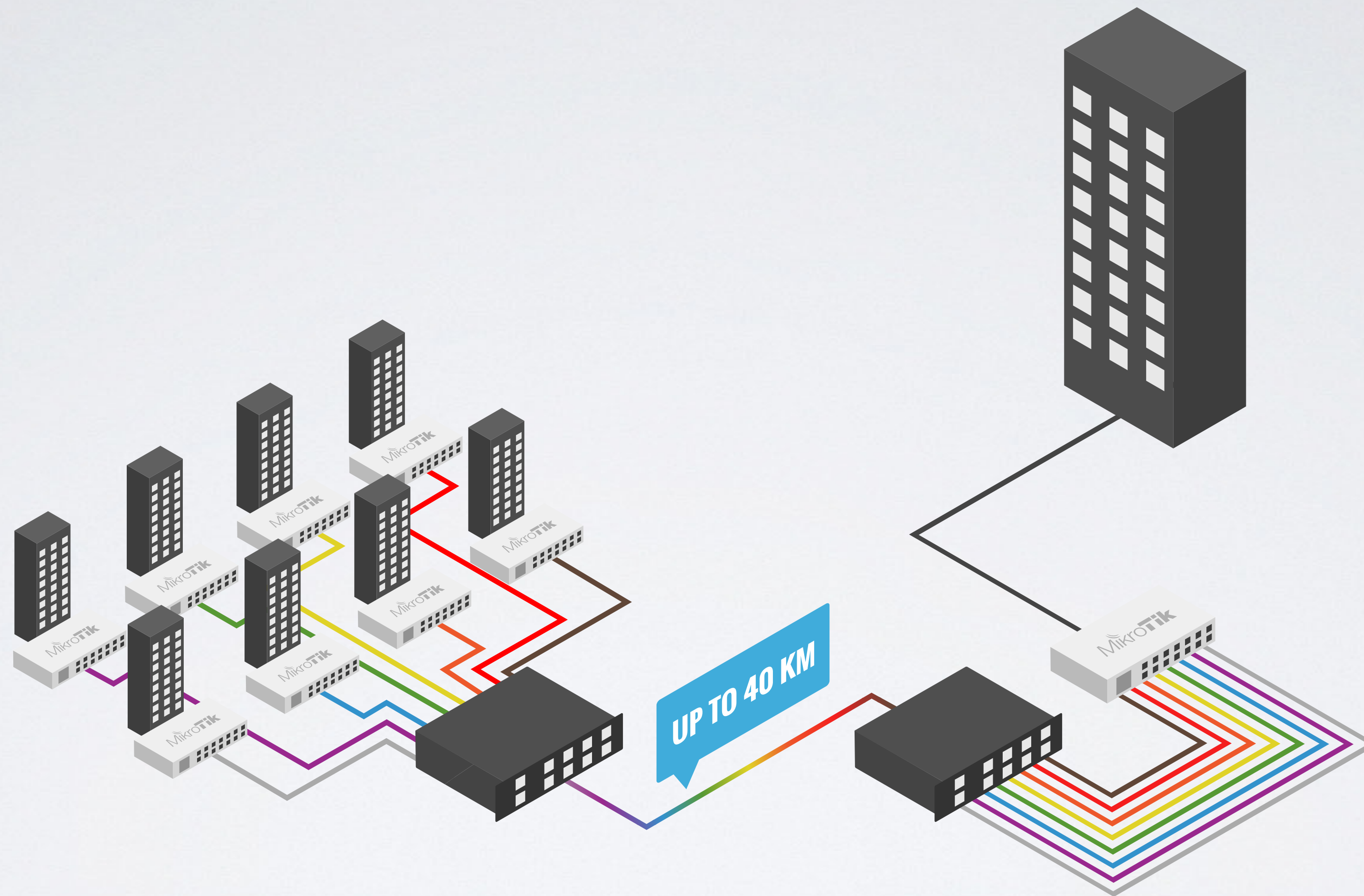
- 20x SFP ports
- 4x SFP+ ports
- 4x ETH/SFP combo ports
- Dual PSU
- Kit price \$369

# CWDM

- Passive MUX/DEMUX unit
- Combine up to eight Fiber links into one
- Supports both SFP and SFP+
- Price \$359



# CWDM



# RouterBOARD 4011



# RouterBOARD 4011

- 4 Core Cortex A15 CPU
- 10 Gigabit SFP+
- IPsec hardware encryption
- 1 GB RAM
- PoE out
- Price \$199



# RouterBOARD 4011



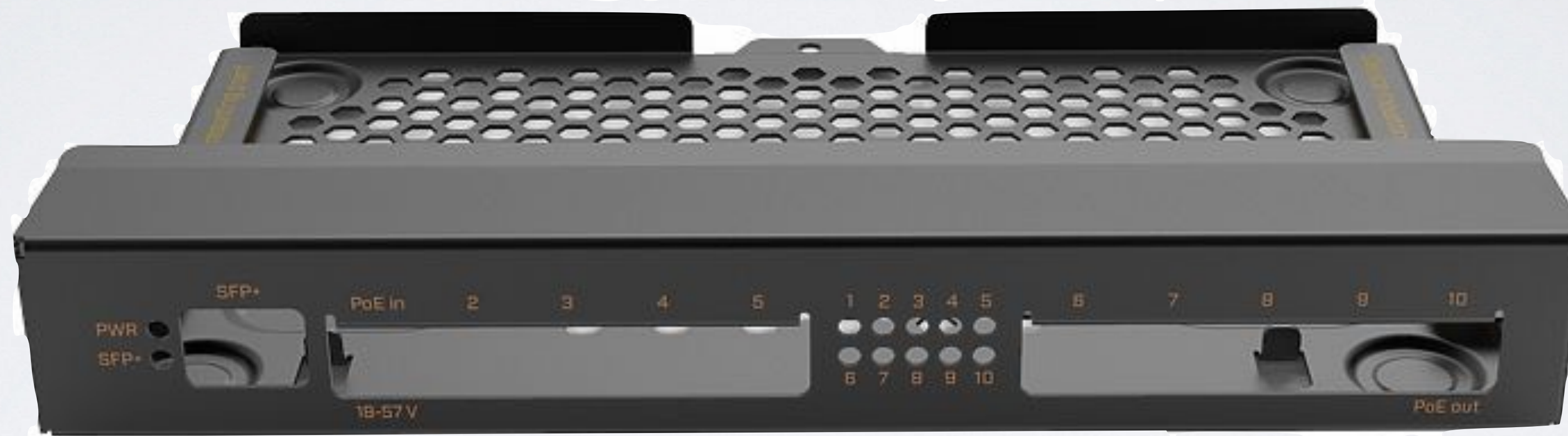


# RouterBOARD 4011

- 2 chains for 2 GHz, 802.11 b/g/n
- 4 chains for 5 GHz, 802.11 a/n/ac
- 160 MHz channel width
- 1733 Mbps + 300 Mbps data rates
- Price \$249



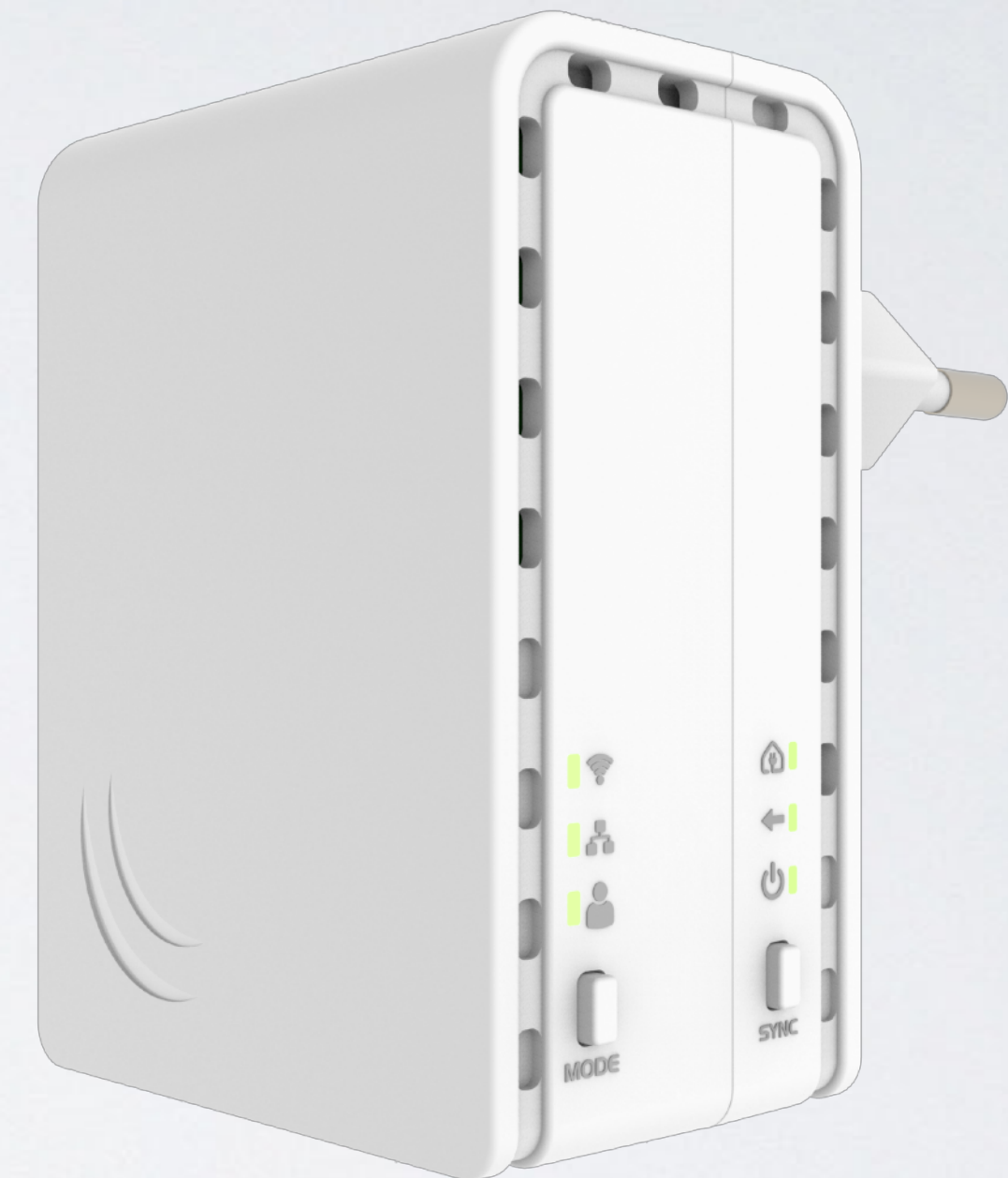
# RouterBOARD 4011

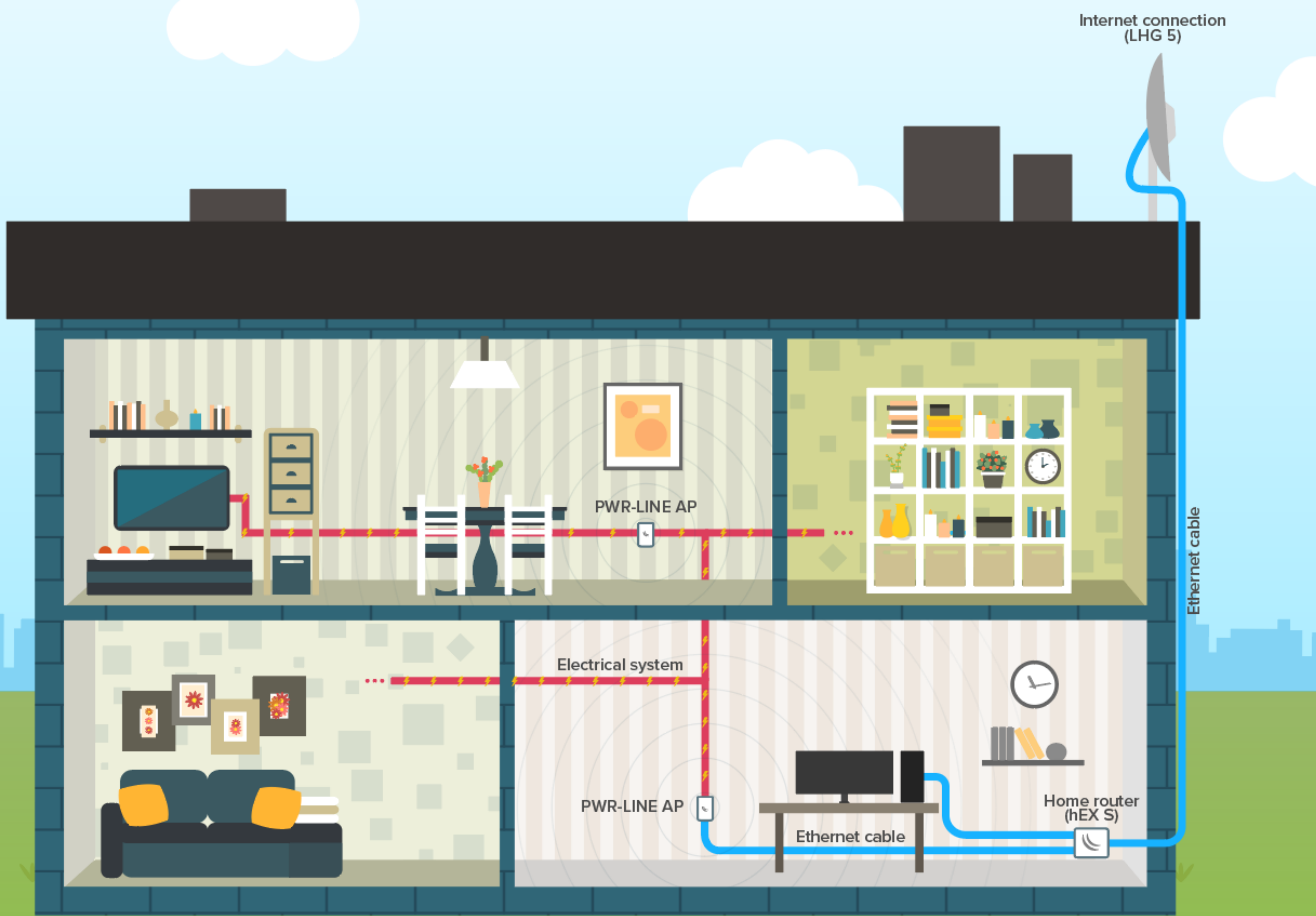


RB4011 wall mount kit - 12\$

# PWR-Line AP

- Small AP that directly plugs into socket
- Makes 100 Mbps links with others like it
- Build WiFi network without special cabling
- Automatically pairs with new devices
- Uses HomePlug AV standard





Internet connection (LHG 5)

PWR-LINE AP

Electrical system

PWR-LINE AP

Ethernet cable

Home router (hEX S)

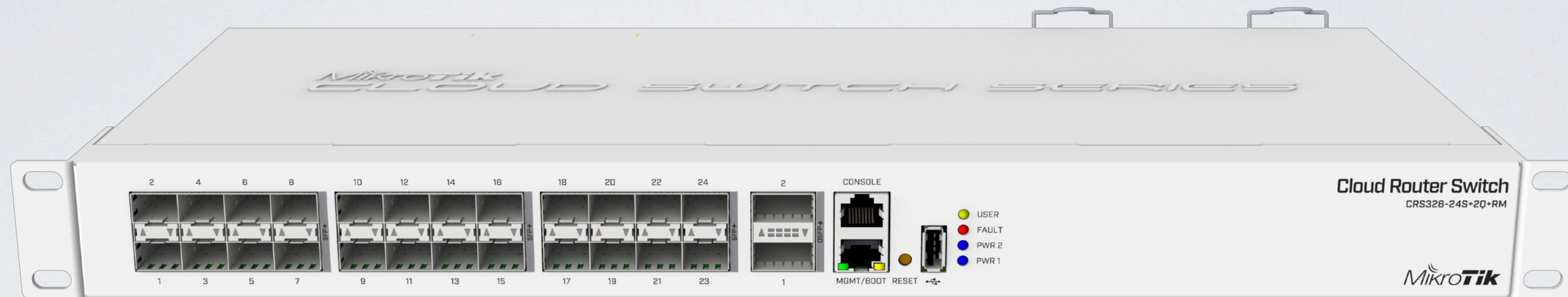
Ethernet cable

Some of our upcoming products

# LtAP

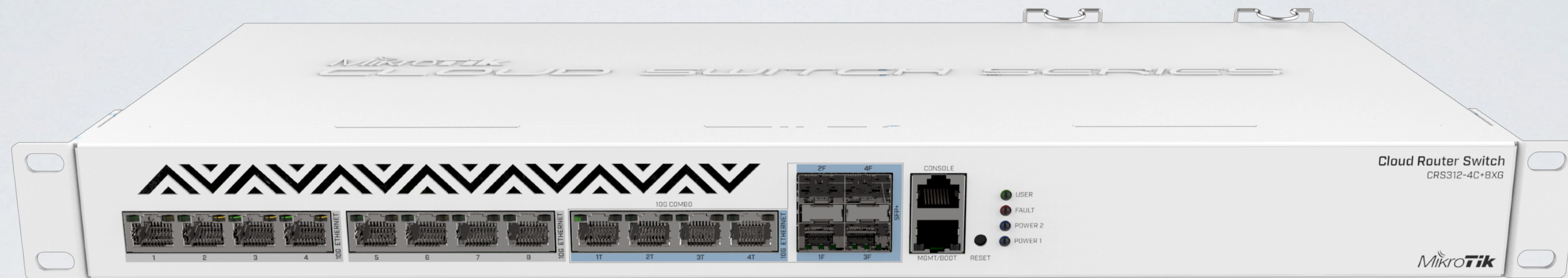
- 2.4 GHz AP in a rugged case
- 2x miniPCle for LTE
- Built-in GPS
- Optional external antenna for GPS and LTE
- 1 Gbps Ethernet interface
- Perfect for outdoor and mobile applications





# CRS326-24S+2Q+RM

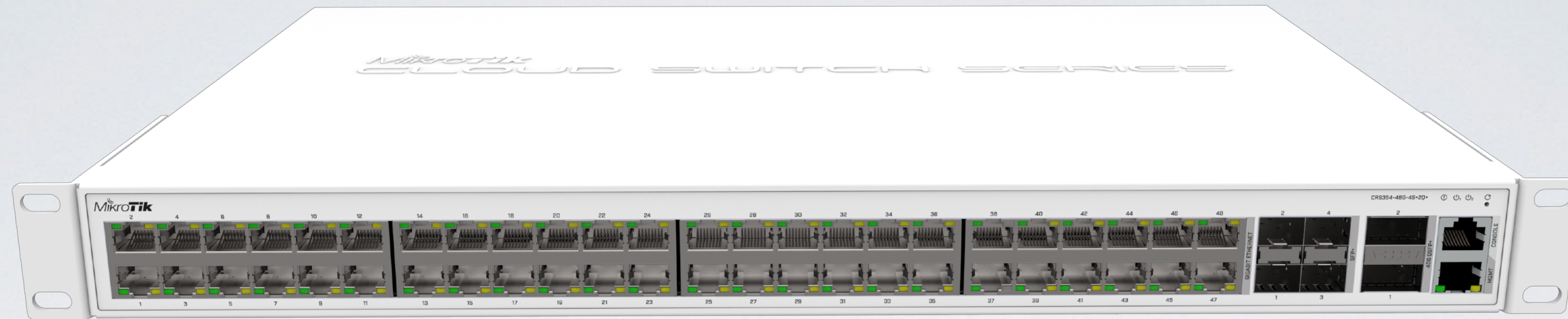
- 24x SFP+ for 10 Gbit connections
- 2x QSFP+ ports for 40 Gbit connections
- RJ45 console and Ethernet ports for management
- USB port, Dual PSU



# CRS312-4C+8XG

- 8x 10G Ethernet ports
- 4x 10G Ethernet / 10G SFP+ combo ports
- Console and management ports
- Dual PSU





# CRS354-48G-4S+2Q+

- 48x Gigabit ports
- 4x SFP+ for 10 Gbit connections
- 2x QSFP+ ports for 40 Gbit connections
- Dual PSU



# CRS354-48P-4S+2Q+

- 48x Gigabit ports with PoE out
- 4x SFP+ for 10 Gbit connections
- 2x QSFP+ ports for 40 Gbit connections

Software related news

# 60 GHz Improvements

- Major received signal sensitivity improvements
- Maximum reachable distance improvements (up to 4 KM at full speed)
- Decreased re-connection time on lost connection
- PtMP performance improvements
- Added hardware stats [`/interface w60g print stats`]
- Other improvements

# Security updates

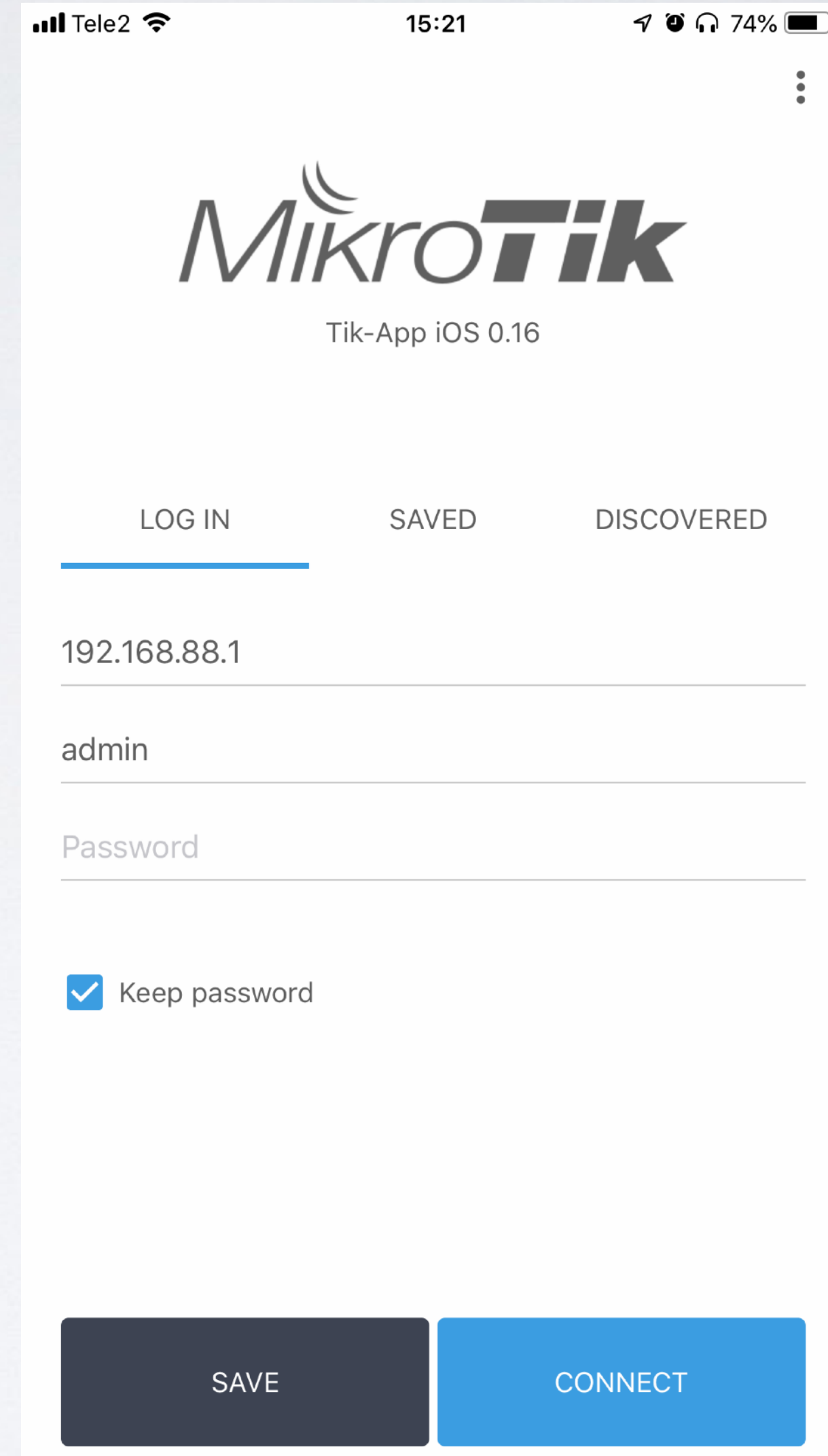


**<https://blog.mikrotik.com>**

- Fixed within 24 hours (in April, 2018)
- Affects only devices with no firewall for Winbox services
- MikroTik routers **have** default firewall
- Versions that include fix - v6.40.8 (long-term), v6.42.1 (stable)

# MikroTik App iOS / Android

- Auto-Configuration
- Simplified interface
- Questions and suggestions:  
[support@mikrotik.com](mailto:support@mikrotik.com)



Tele2 15:21 74%

**MikroTik**  
Tik-App iOS 0.16

LOG IN SAVED DISCOVERED

192.168.88.1

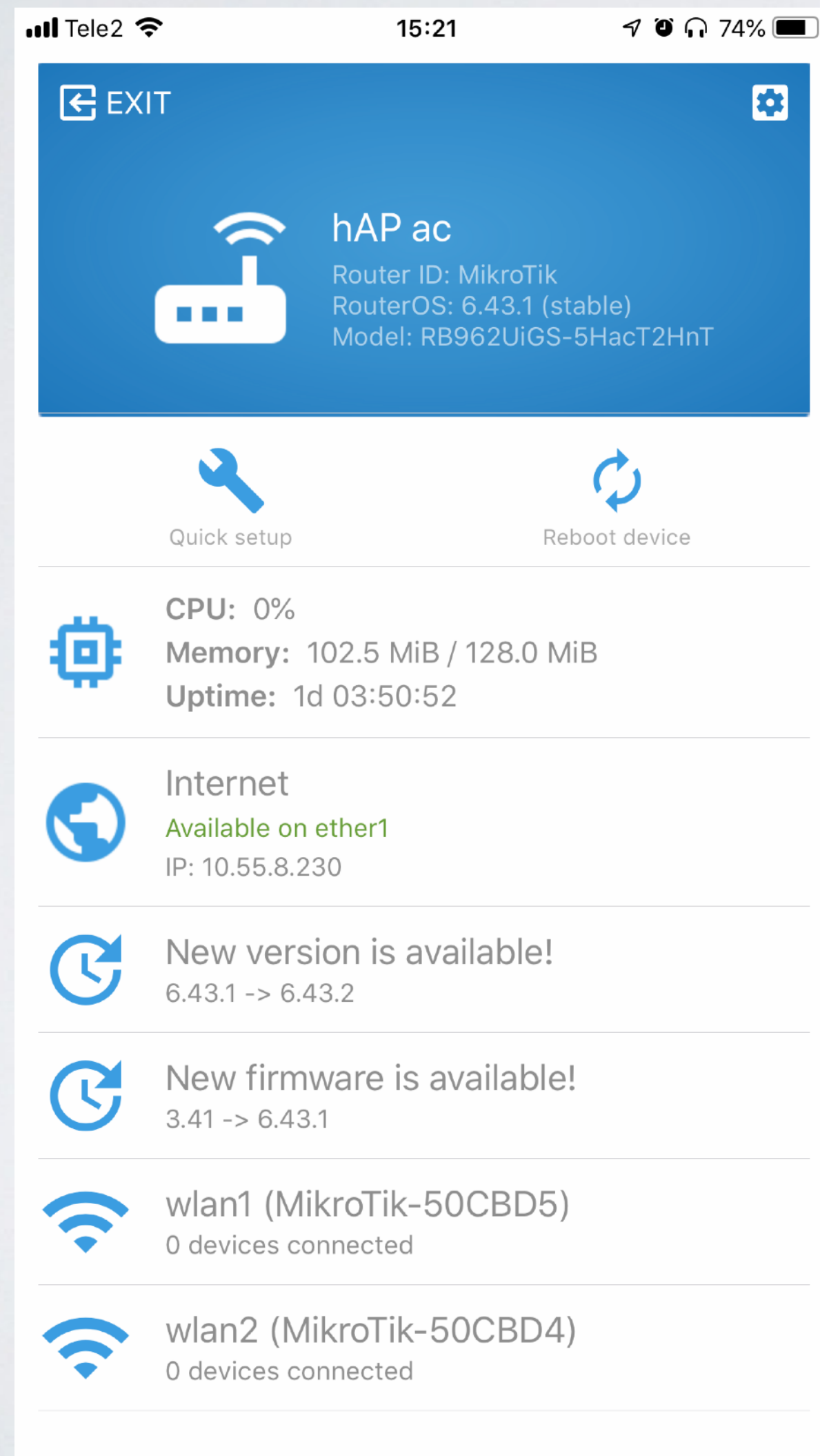
admin

Password

Keep password

SAVE CONNECT

# MikroTik App iOS / Android



Tele2 15:21 74%

EXIT

**hAP ac**  
Router ID: MikroTik  
RouterOS: 6.43.1 (stable)  
Model: RB962UiGS-5HacT2HnT

Quick setup Reboot device

CPU: 0%  
Memory: 102.5 MiB / 128.0 MiB  
Uptime: 1d 03:50:52

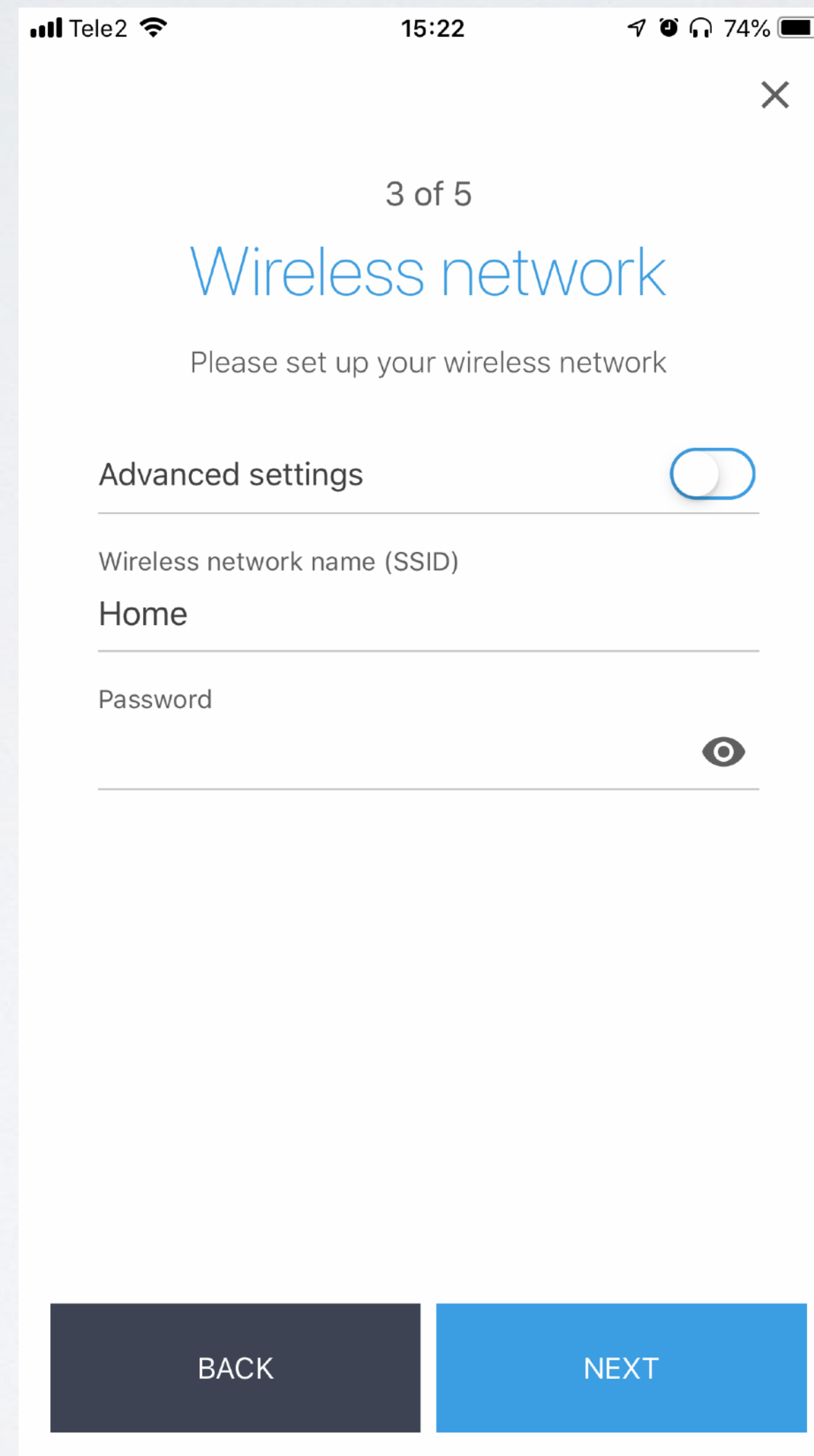
Internet  
Available on ether1  
IP: 10.55.8.230

New version is available!  
6.43.1 -> 6.43.2

New firmware is available!  
3.41 -> 6.43.1

wlan1 (MikroTik-50CBD5)  
0 devices connected

wlan2 (MikroTik-50CBD4)  
0 devices connected



Tele2 15:22 74%

3 of 5

## Wireless network

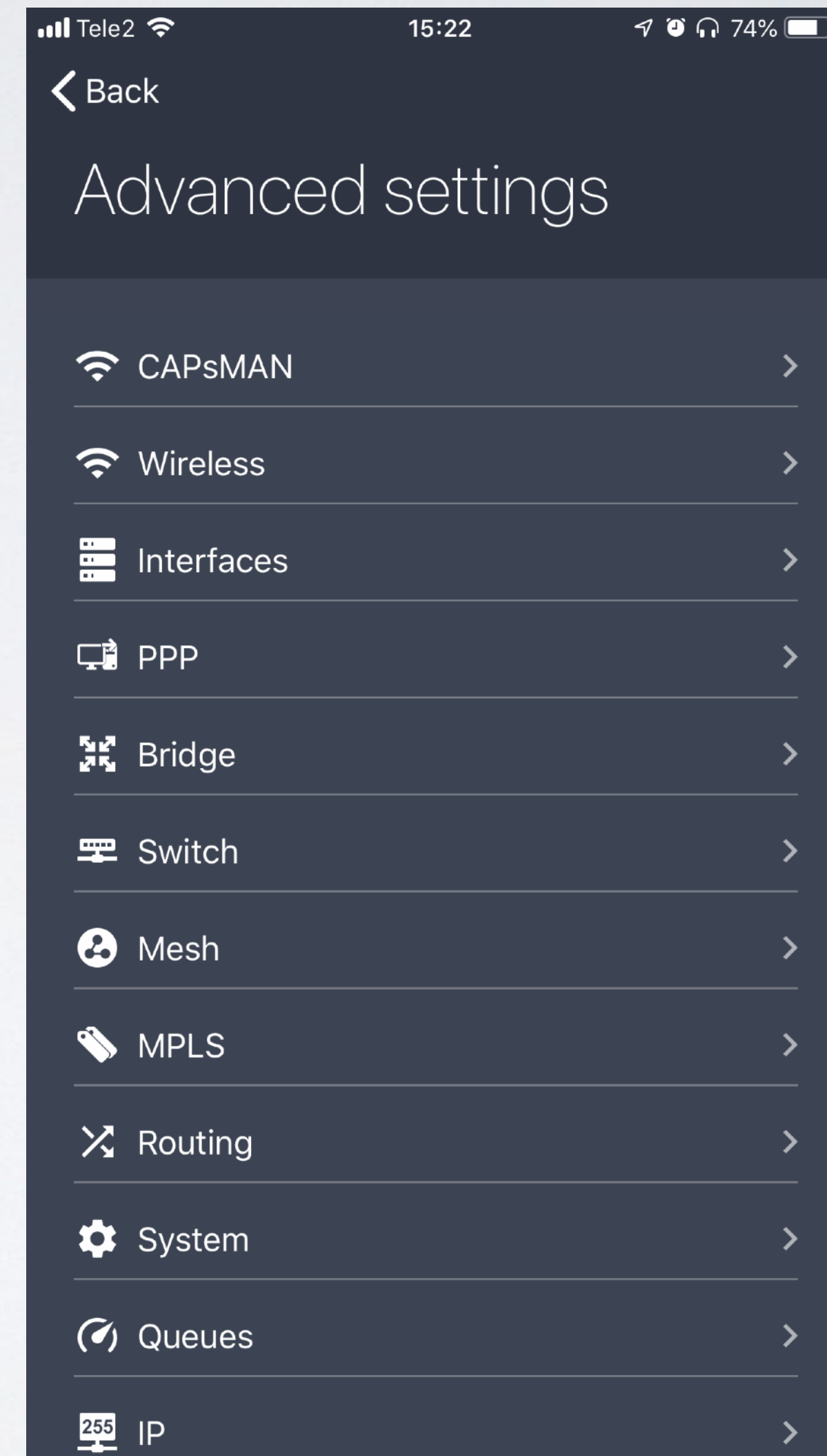
Please set up your wireless network

Advanced settings

Wireless network name (SSID)  
Home

Password

BACK NEXT



Tele2 15:22 74%

Back

## Advanced settings

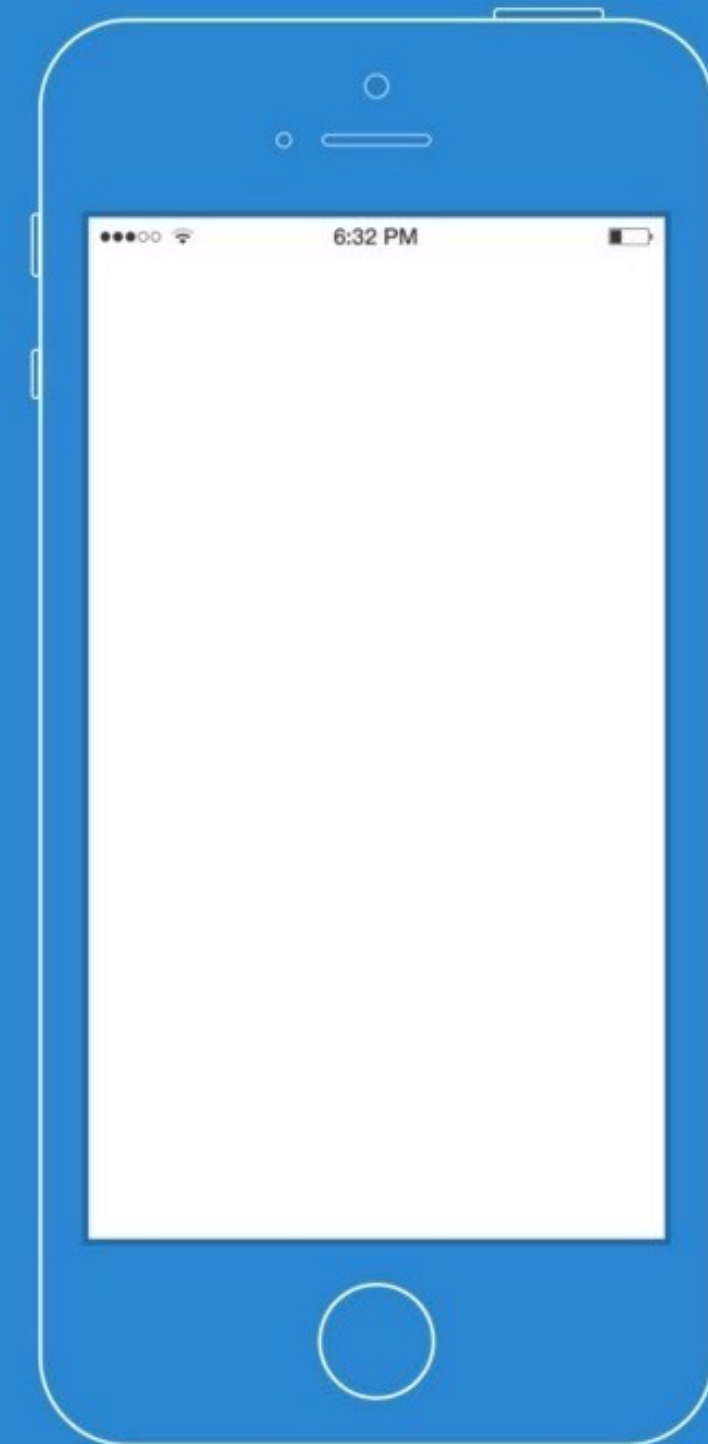
- CAPsMAN
- Wireless
- Interfaces
- PPP
- Bridge
- Switch
- Mesh
- MPLS
- Routing
- System
- Queues
- IP



# MikroTik Tik-App iOS beta invite



TestFlight



# Need help?

- Ask a local distributor
- Hire MikroTik consultant
- Read the manual [wiki.mikrotik.com](http://wiki.mikrotik.com)
- Email [support@mikrotik.com](mailto:support@mikrotik.com)
- Attend a training class or join an Academy class in a University

# After the MUM

- All presentations - [mum.mikrotik.com](http://mum.mikrotik.com)
- Videos - [youtube.com/mikrotik](http://youtube.com/mikrotik)
- License for paid and voucher registrations will be sent by an e-mail

The logo for MikroTik, featuring the word "MikroTik" in a stylized font. The "Mikro" part is in a lowercase, italicized sans-serif font, and the "Tik" part is in a bold, uppercase sans-serif font. A small, stylized icon consisting of two curved lines is positioned above the "ro" in "Mikro". The entire logo is centered and has a reflection effect below it.

*Mikro***Tik**