

*MikroTik*

MUM Georgia 

Tbilisi

December 2018



What do we do?

We create networks

Our products include

RouterOS

built and advanced for more than 20 years

RouterBOARD

Wireless outdoor, indoor, Ethernet routers

CRS

Switches with RouterOS

CSS

Switches with SwOS



- 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

# More than 180 MUM events around the world





**LATVIA**

Iceland

Finland

Sweden

Russia

Norway

Estonia

Denmark

Lithuania

Ireland

United Kingdom

Kazakhstan

Netherlands

Belarus

Poland

Belgium

Germany

Ukraine

Luxembourg

Czech Republic

Slovakia

France

Switzerland

Liecht.

Austria

Hungary

Moldova

Romania

Georgia

Azerbaijan

Monaco

Slovenia

Croatia

Armenia

Portugal

Andorra

San Marino

Bosnia and Herzegovina

Serbia

Bulgaria

Iran

Spain

Italy

Montenegro

Albania

Macedonia

Turkey

Vatican City

Greece

Syria

Iraq

**STAFF**

Look for MikroTik staff in the red t-shirts

Martins Kengis (sales)

Maris Bulans (support)

Sergejs Boginskis (support and training)



# Agenda

**Presetations**

**10:00**

**Lunch**

**12:15**

**Presentations**

**13:45**

**Lottery**

**14:45**

**Wine, beer and drinks**

**15:00**

[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



Intelcom Group Ltd

**Some of our latest products**

1Gbit  
over wireless

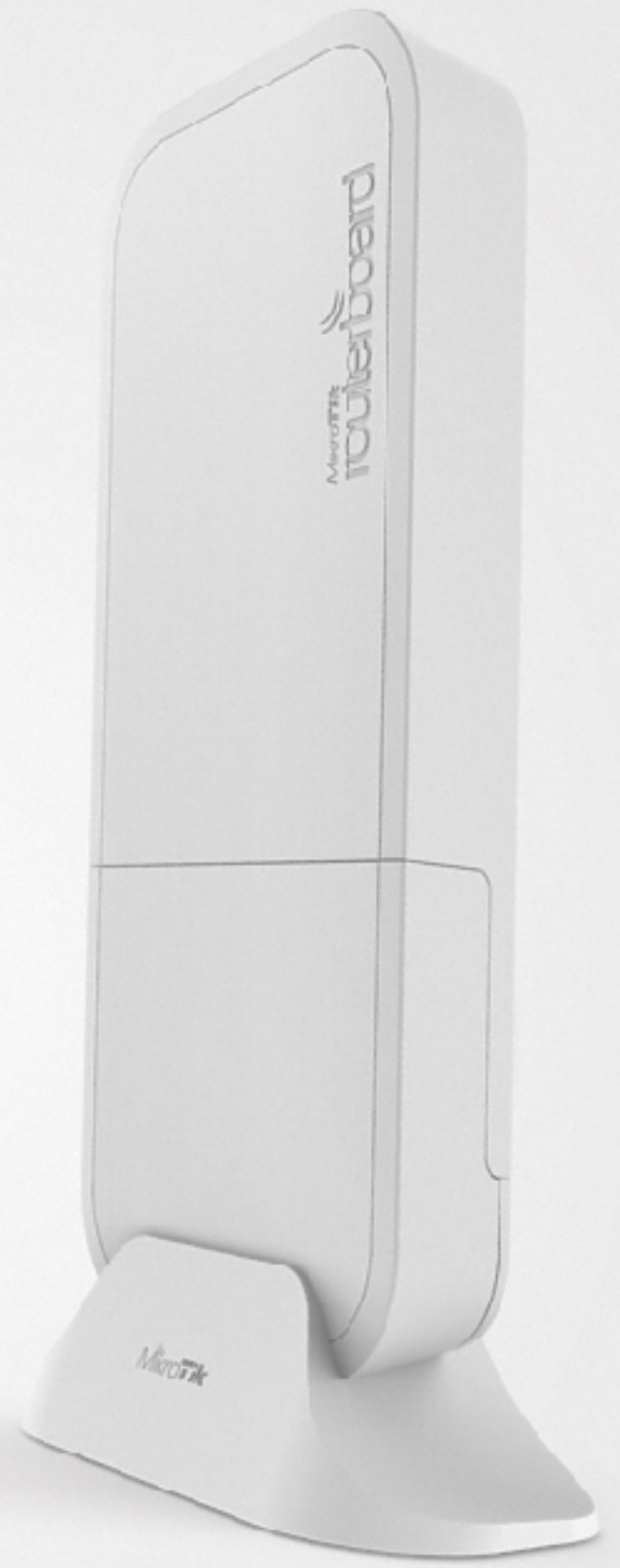
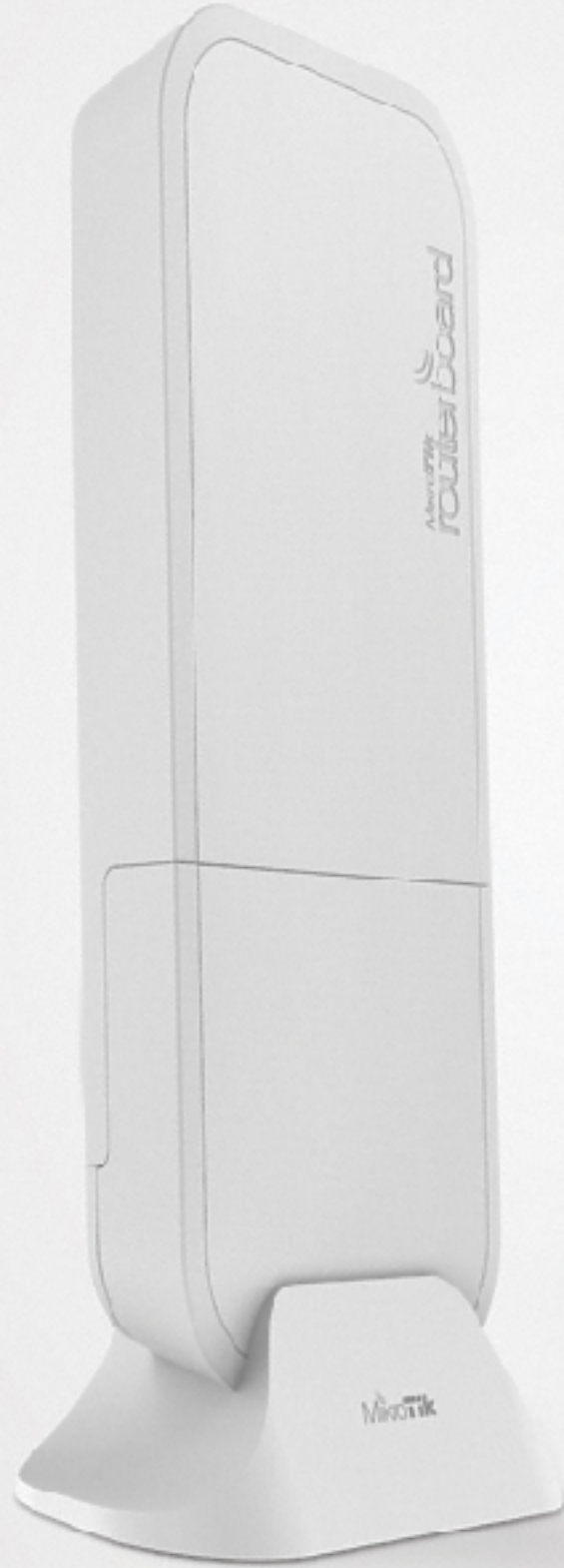
100m+  
range

60GHz  
radio

Gigabit  
Ethernet

Paired  
Secure Link  
preconfigured

Powered by  
AF/AI/Passive  
PoE, DC jack



MikroTik

Wireless Wire

# Wireless Wire

NOW

- 1 Gbps full duplex without wires
- For distance 200 meters +
- 60 GHz beam-forming
- Paired secure link preconfigured
- IPsec encryption
- \$198 kit



# Wireless Wire Dish

Two LHG60G devices for long range | Gbit



# LHG 60G

NOW

- 1 Gbit full duplex (wire speed)
- Works in 60 GHz spectrum
- Familiar LHG design
- Quad-core ARM CPU
- Low cost and low weight
- Targeted for 1.5 km and more!
- IPsec encryption
- Kit price \$298



# SXTsq Lite60

- 60GHz CPE
- SXTsq design
- 100 Mbps ethernet
- For distance 200 meters +
- Price \$69

NOW



# MikroTik 60GHz Products

PTP Link Distances at Full Speed

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

# LtAP mini

NOW

- 2.4 GHz AP in a rugged case
- miniPCIe for LTE
- Built-in GPS
- Optional external antennas for GPS and LTE
- Serial port
- Perfect for outdoor and mobile applications



NOW



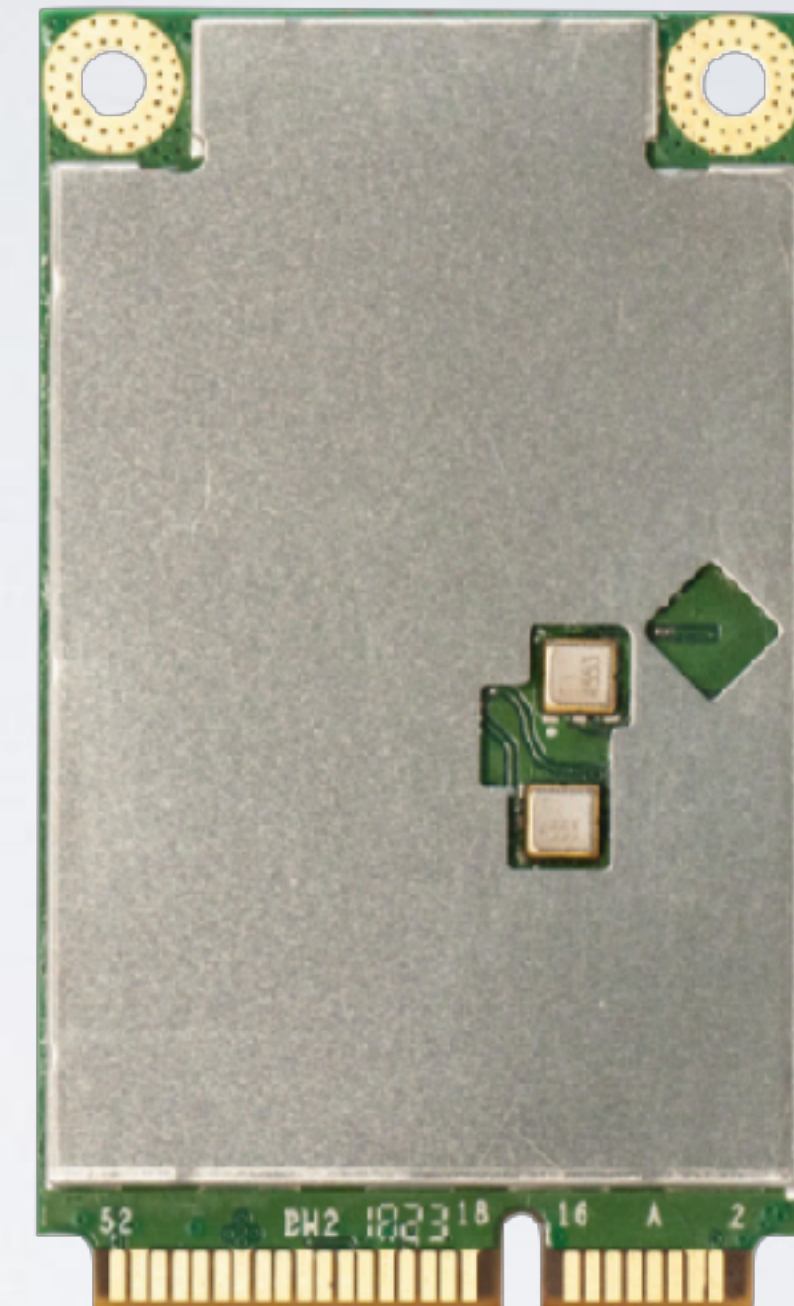
# Available now

- 89\$ without module
- 129\$ with LTE (US version available) module

# R11e-4G

NOW

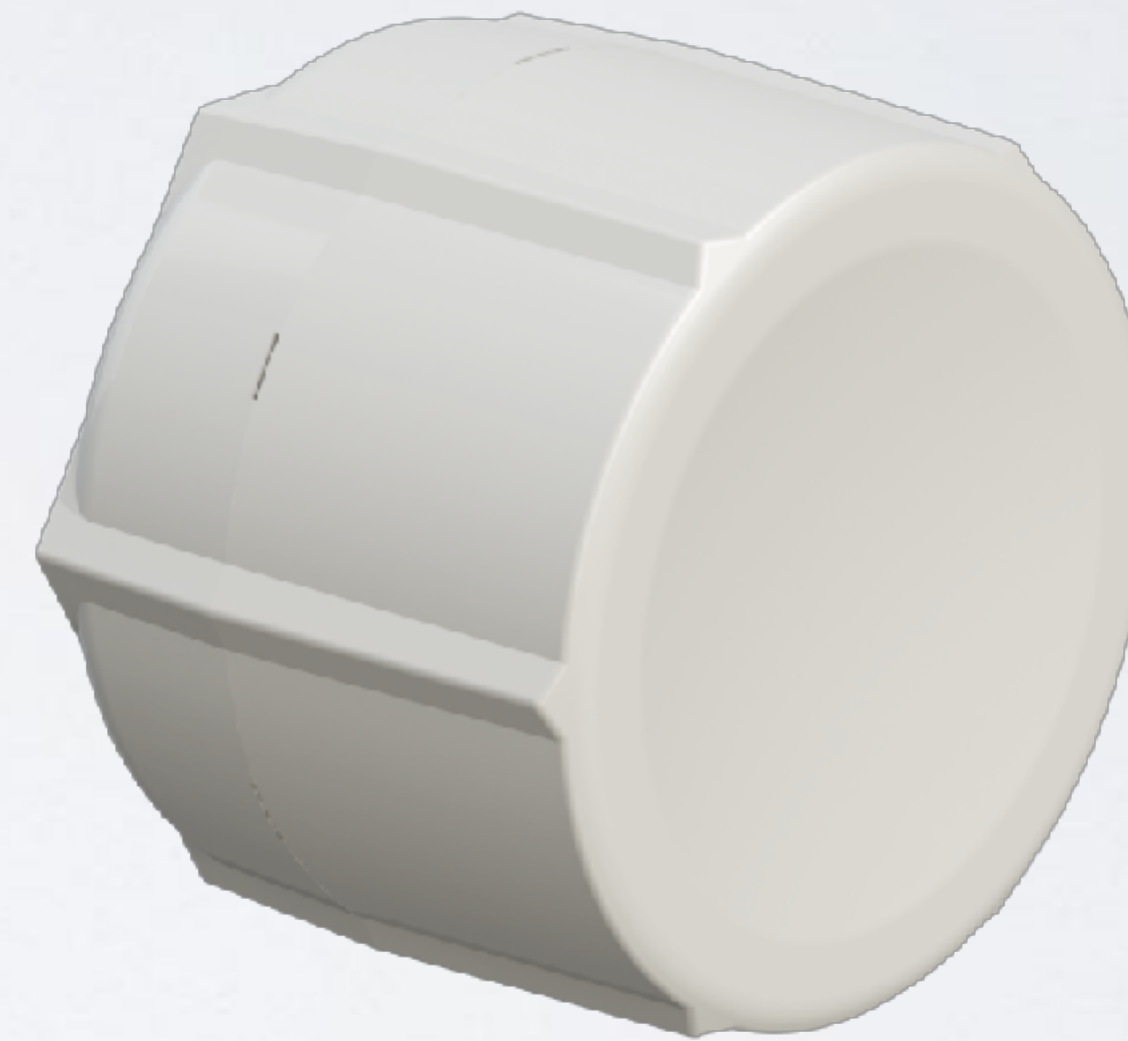
- 4G Modem (no 2G/3G)
- 4 Category (150Mbps/50Mbps)
- 3,7,20,31 FDD bands
- 41n,42,43 TDD bands



# SXT LTE kit

NOW

- Dual SIM
- LTE card built in
- 2x Ethernet
- PoE output on ether2
- International LTE bands 1,2,3,7,8,20,38 and 40
- US bands 2,4,5 and 12
- Kit price \$129



# LHG LTE kit

NOW



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



# hAP ac<sup>2</sup>

NOW

- Gigabit ports
- Dual chain, dual band
- IPsec hardware encryption
- Same small size as "lite" model
- Kit price \$69

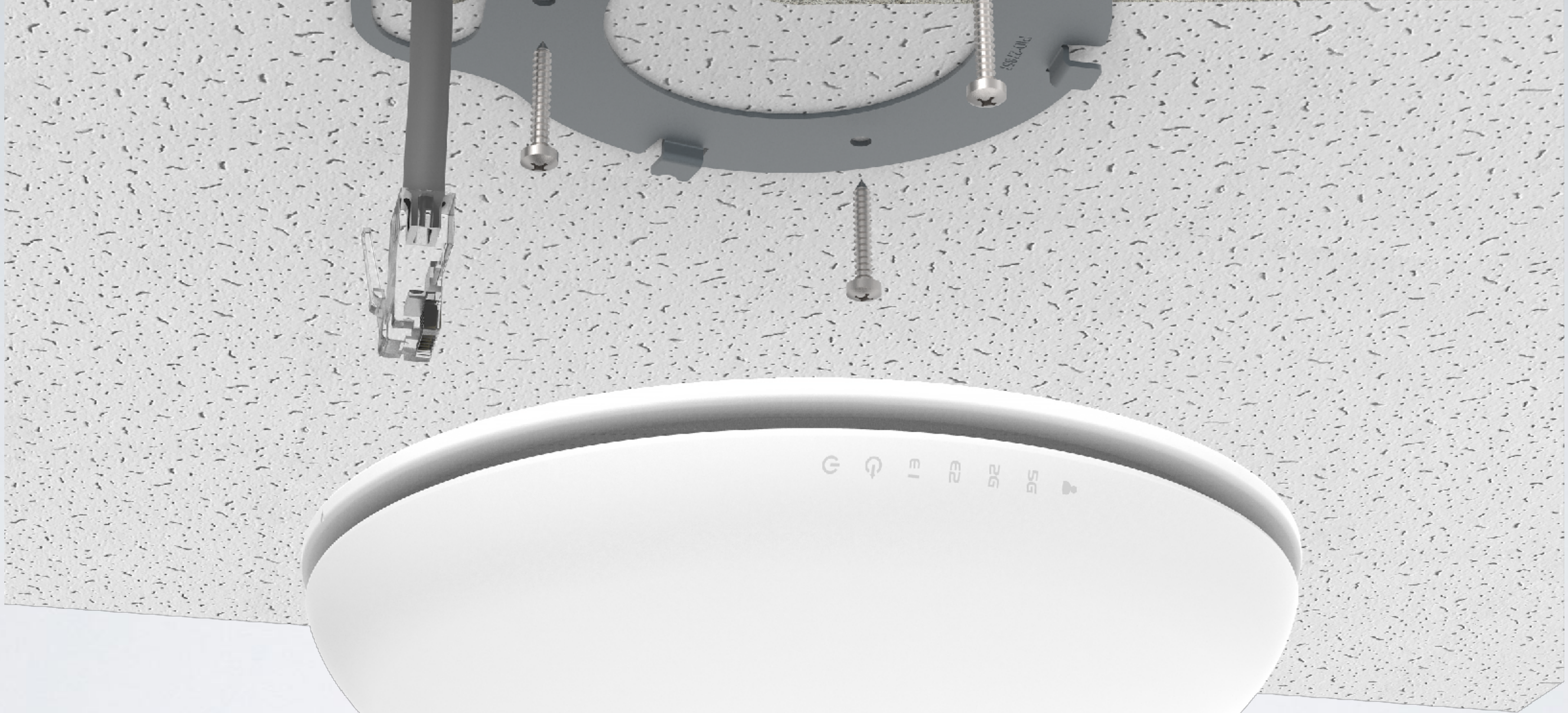


# cAP ac

NOW

- Dual band, dual chain
- Gigabit port for 802.11ac speeds
- Two Ethernet ports
- PoE out
- Two cases included
- IPsec encryption
- Kit price \$69



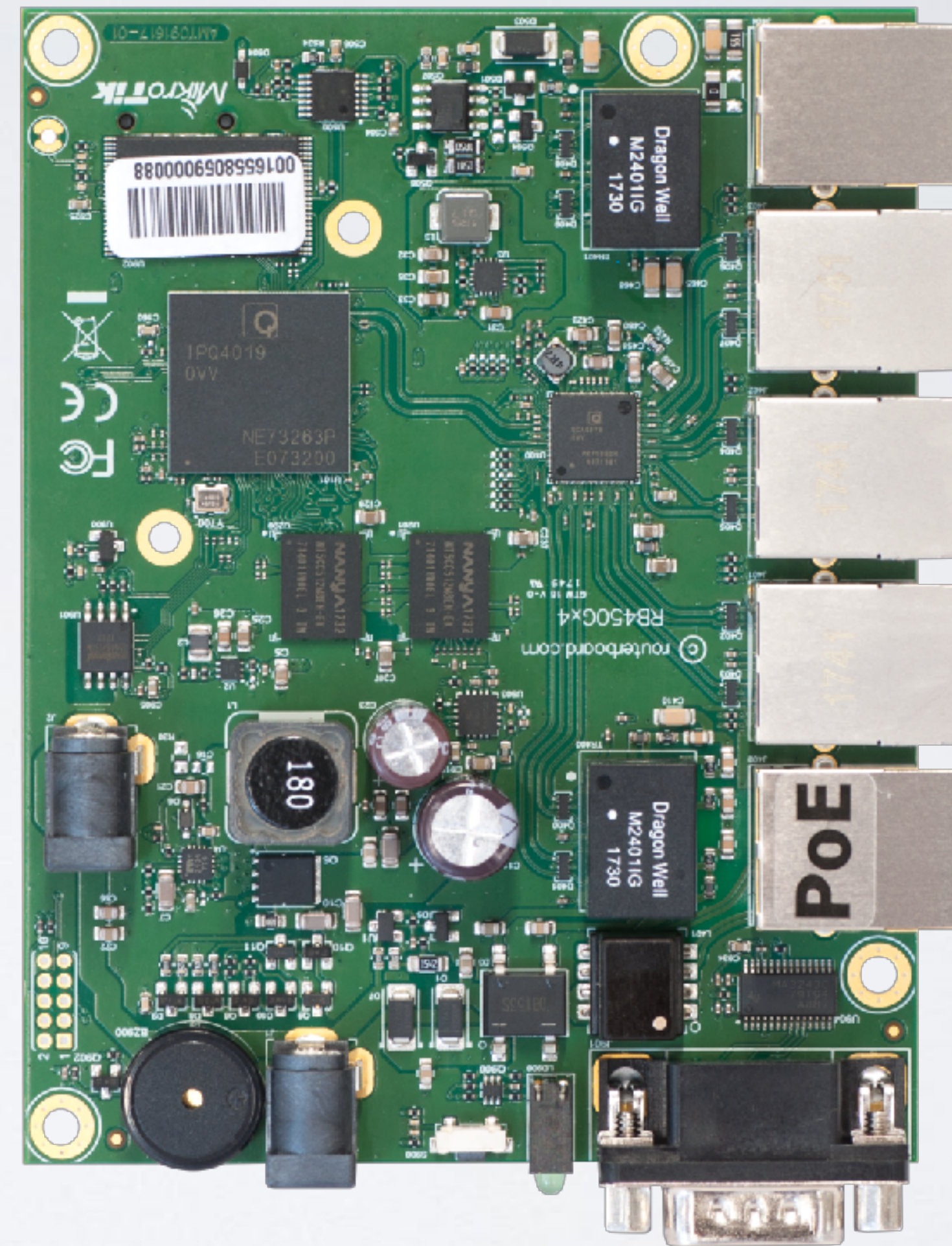




# 450Gx4

NOW

- Quad core 716 MHz
- 1 GB of RAM
- IPsec encryption
- PoE out on ether5
- microSD
- 10V - 57V input by two power jacks
- Price \$99



# hEX S

NOW

- Dual-core 880 MHz
- 256 MB of RAM
- Full size USB
- 1.25 Gbps SFP
- 10V - 57V input and PoE
- IPsec encryption
- Price \$69



# SXTsq Lite 2



- 2 GHz CPE
- Slim design
- Low price
- Price \$39



# LDF 2

NOW

- 2 GHz CPE
- Mounts in regular satellite dish
- Ultra long range
- Price \$39





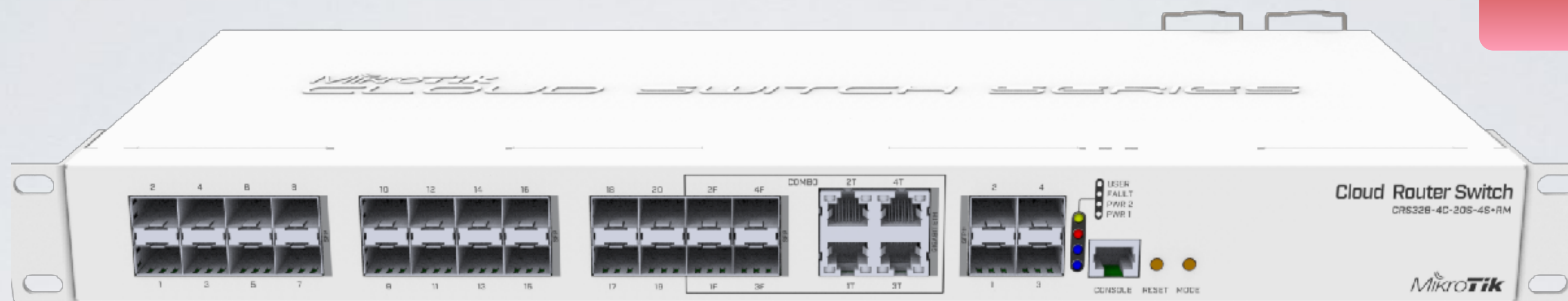
# mANTBox2 12s

NOW

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



NOW



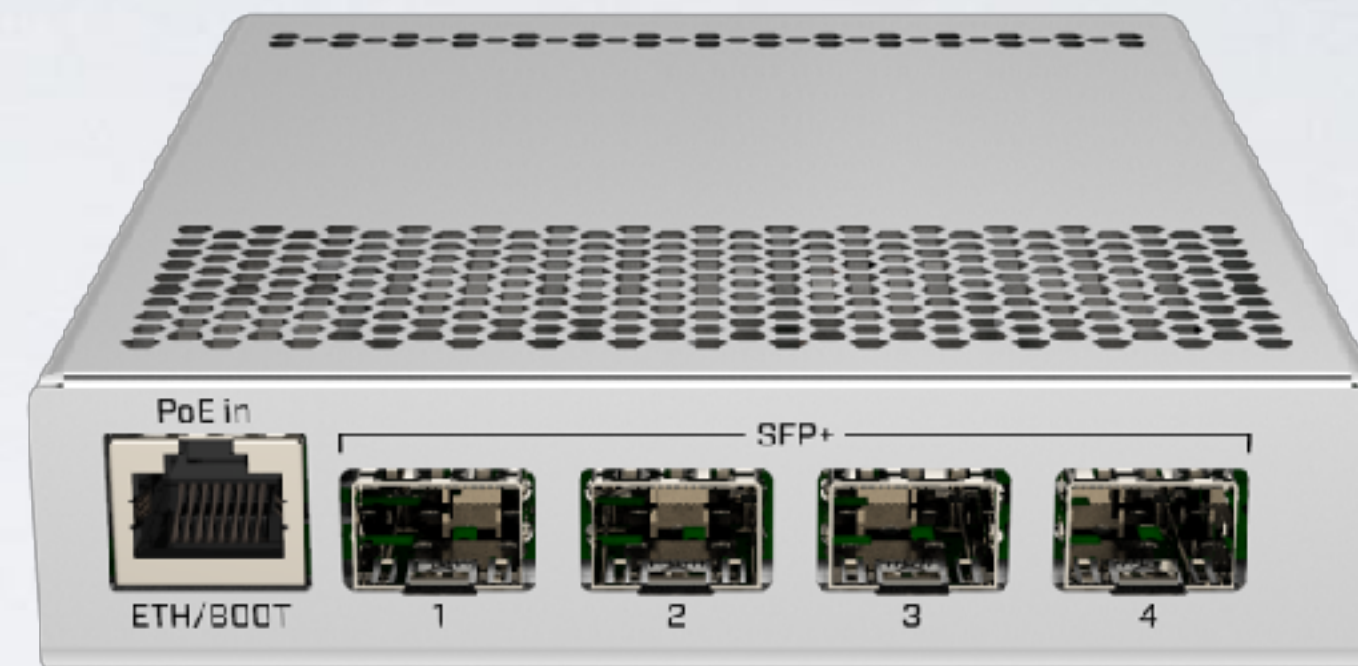
# CRS328-4C-20S-4S+RM

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

# CRS305-1G-4S+IN

NOW

- 4x SFP+ ports
- 1x Gigabit Ethernet
- Metallic enclosure
- Dual DC jacks



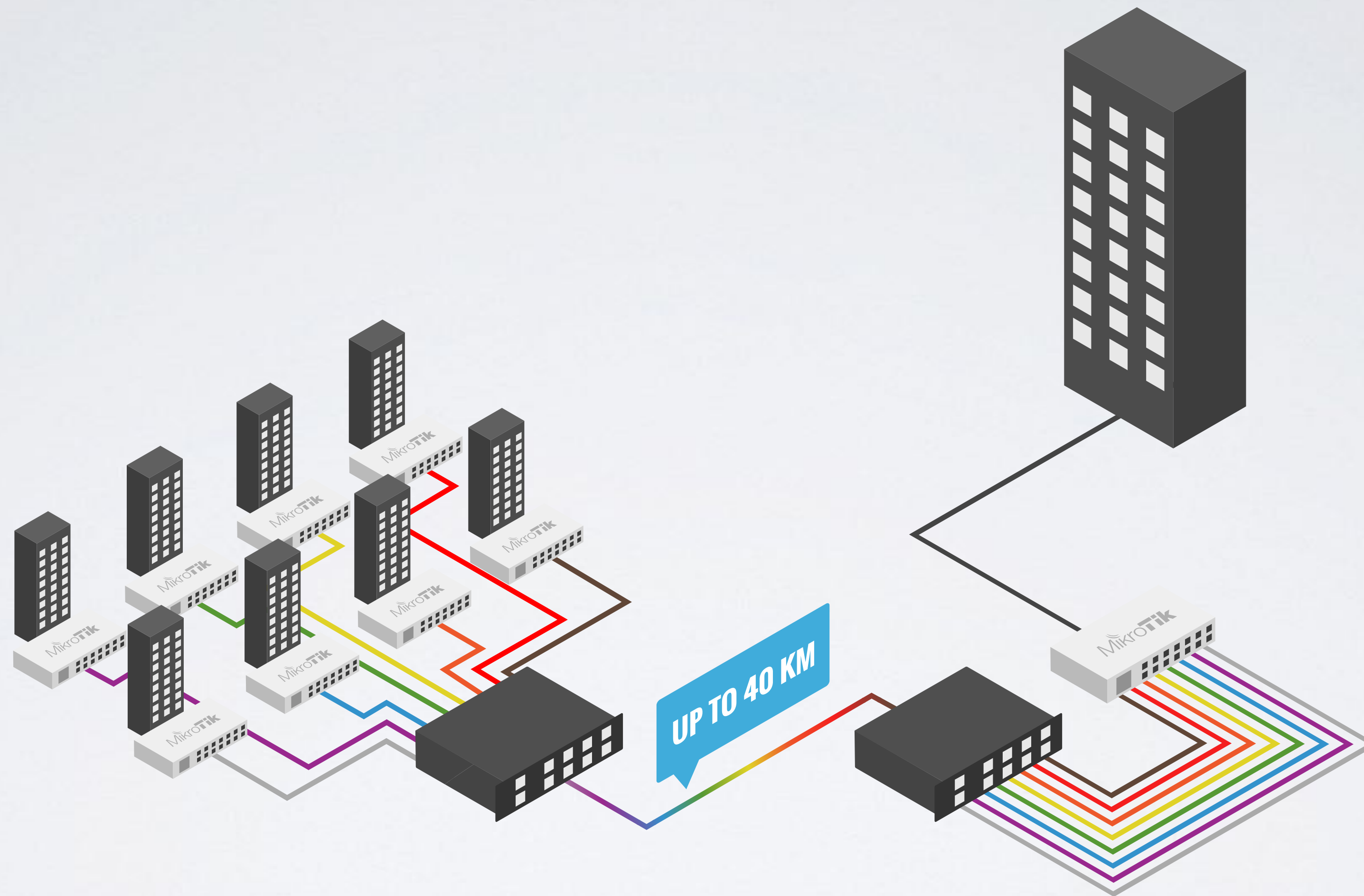
# CWDM

NOW

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



# CWDM



# Base Box 6

- 6GHz
- RB912 inside
- 2 SMA connectors
- License 4
- Price \$69



NOW

# RouterBOARD 4011

NOW



# RouterBOARD 4011

NOW

- 4 Core Cortex A15 CPU
- 10 Gigabit SFP+
- IPsec Hardware acceleration
- 1GB RAM
- PoE Out
- Price \$199





# RouterBOARD 4011

NOW



# RouterBOARD 4011

NOW

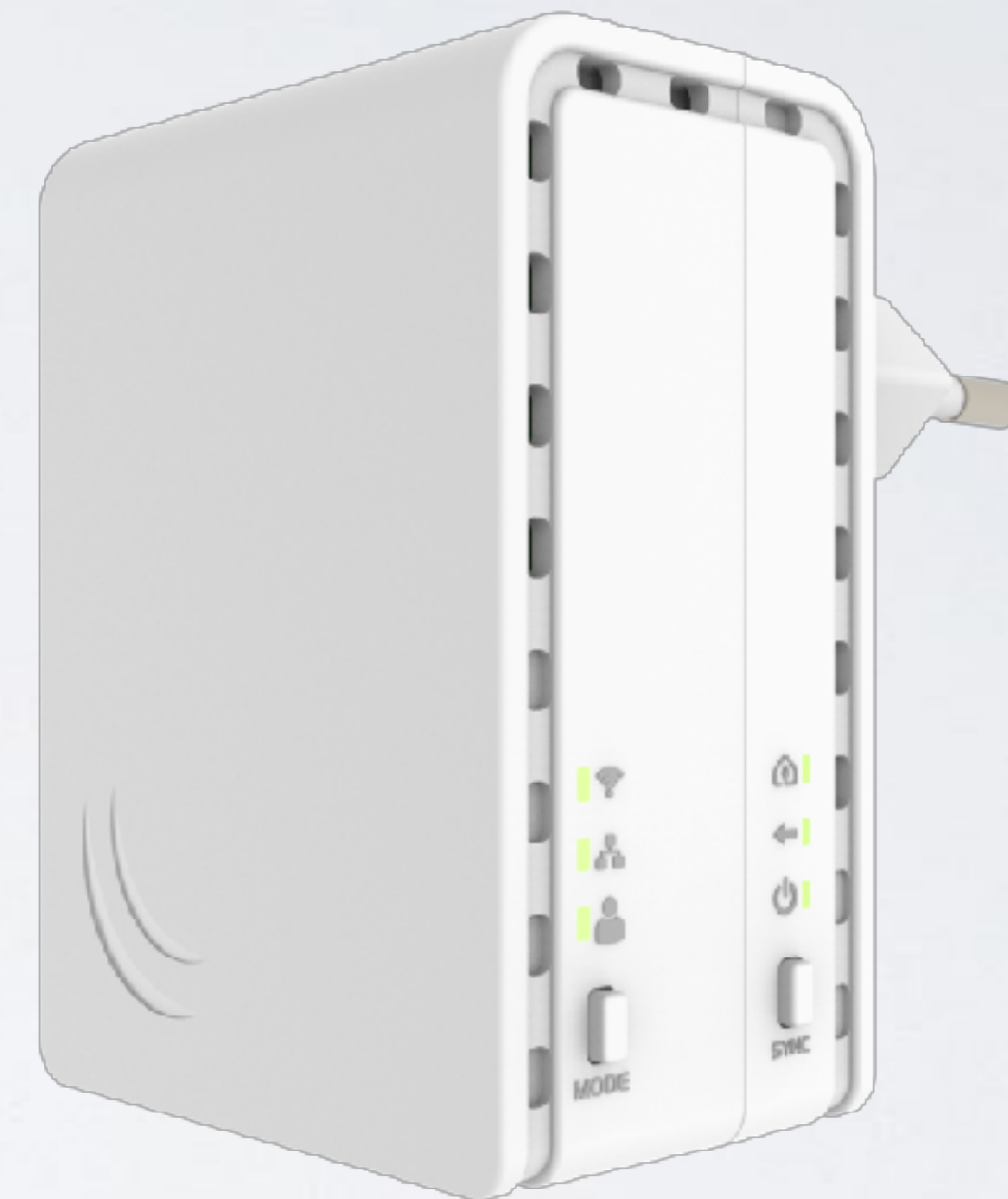
- 2 chains for 2GHz, 802.11 b/g/n
- 4 chains for 5GHz, 802.11 a/n/ac
- 160 MHz channel width
- 1733 Mbps + 300 Mbps data rates
- Price \$249



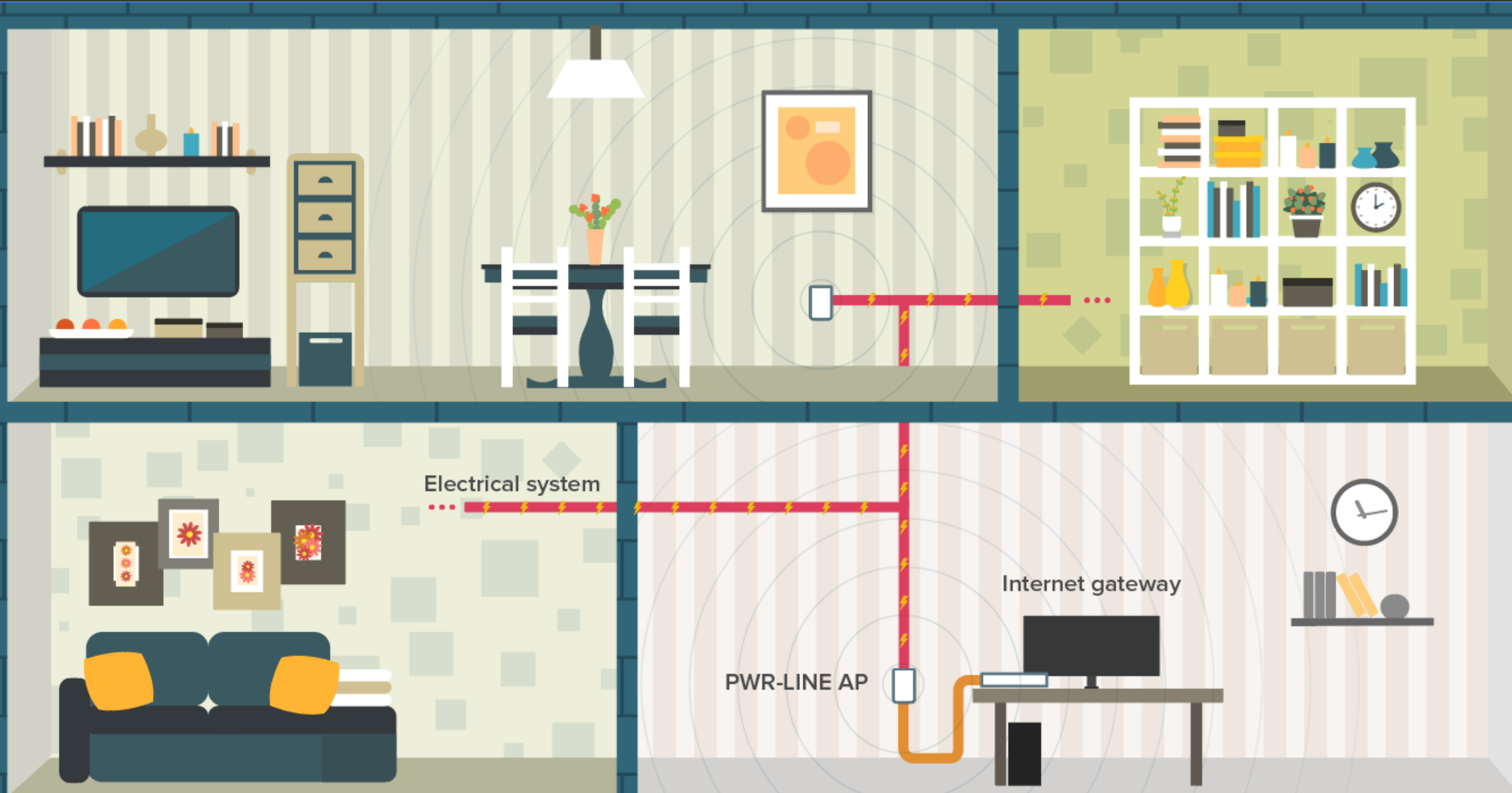
# PWR-Line AP

NOW

- 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



# PWR-Line AP

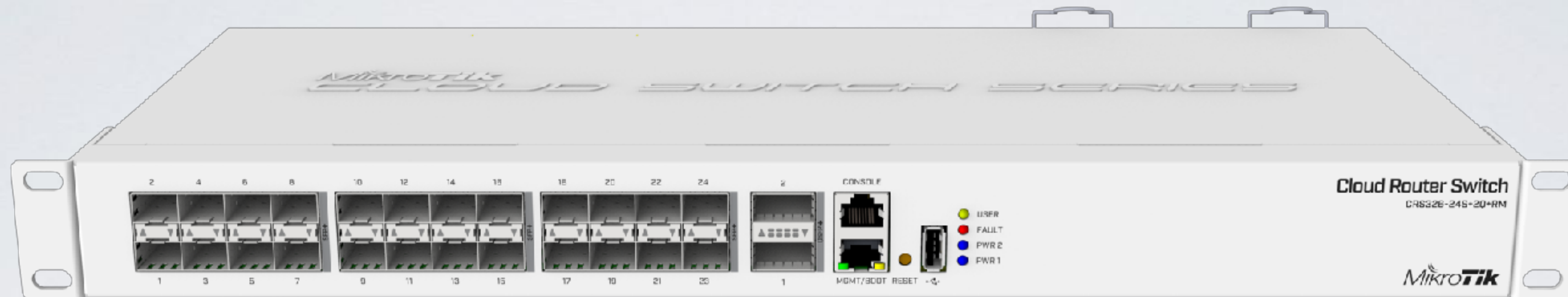


Some of our upcoming products

# CRS309-1G-8S+PC

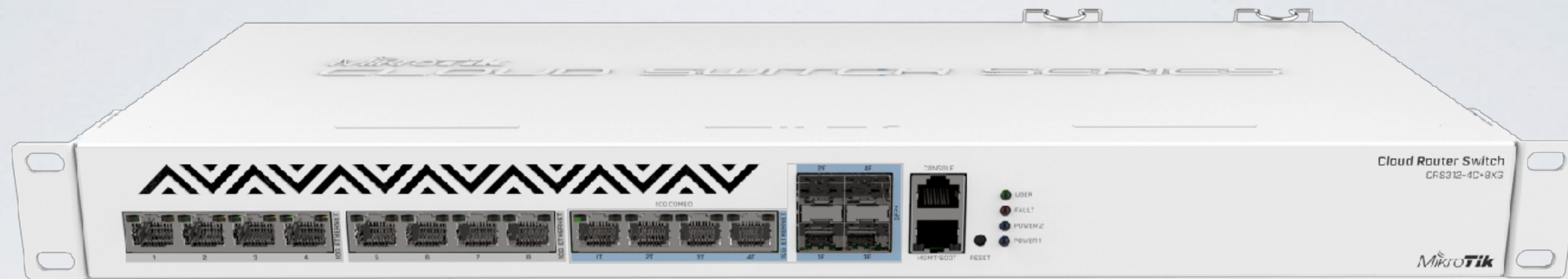
- 8x SFP+ ports
- 1x Gigabit Ethernet
- Dual boot: RouterOS / SwOS
- Silent case





# CRS326-24S+2Q+RM

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



# CRS312-4C+8XG

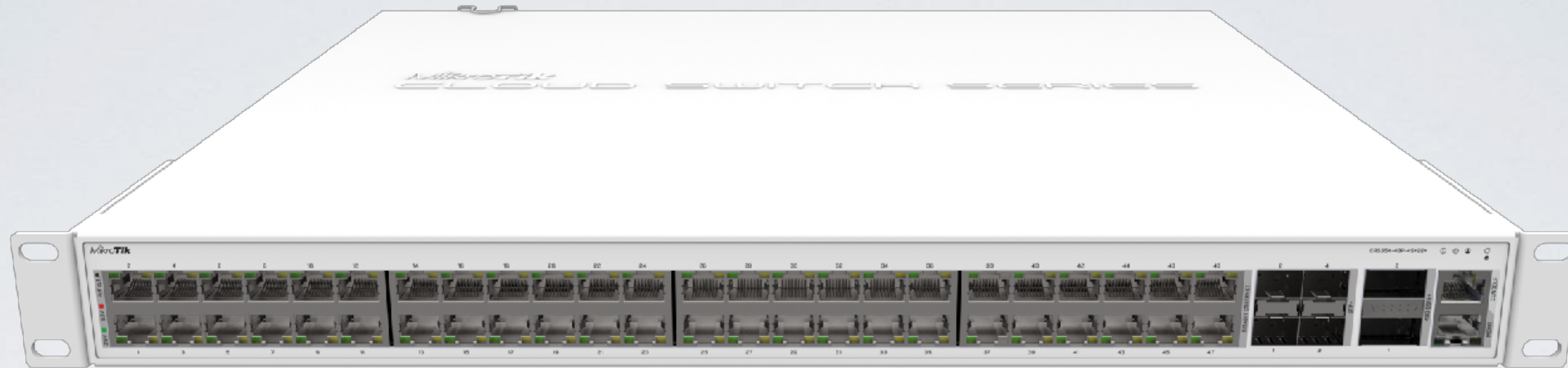
- 8x 10G Ethernet ports
- 4x 10G Ethernet / 10G SFP+ combo ports
- Console and management ports
- Dual PSU





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

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



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

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

# 60GHz Improvements

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

- Linksys
- MikroTik
- NETGEAR
- TP-Link
- QNAP



- Fixed within 24 hours (in April)
- Affects only devices with no firewall
- MikroTik routers **have** default firewall

# MikroTik App iOS / Android

- Auto-Configuration
- Simplified interface
- [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

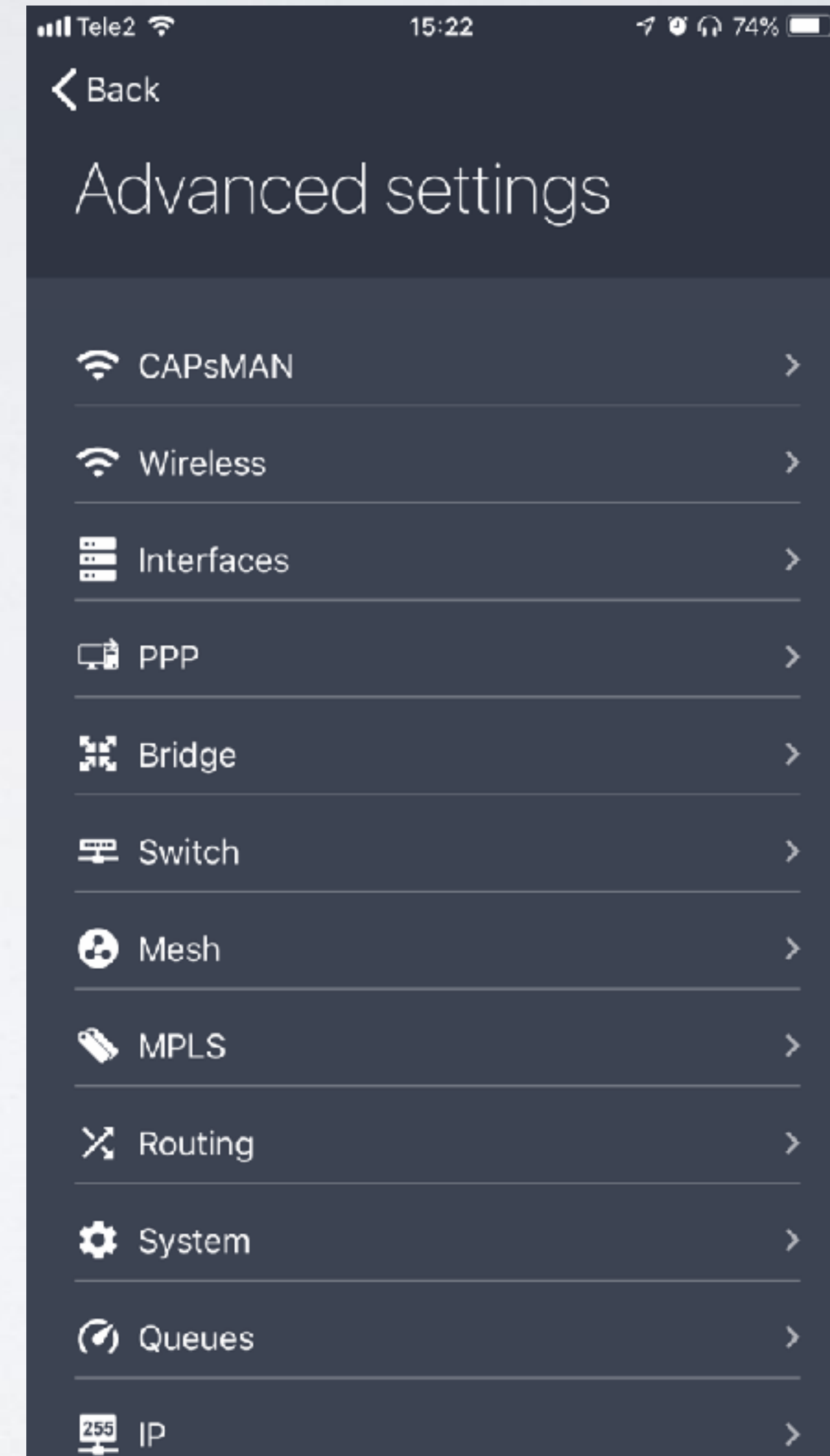
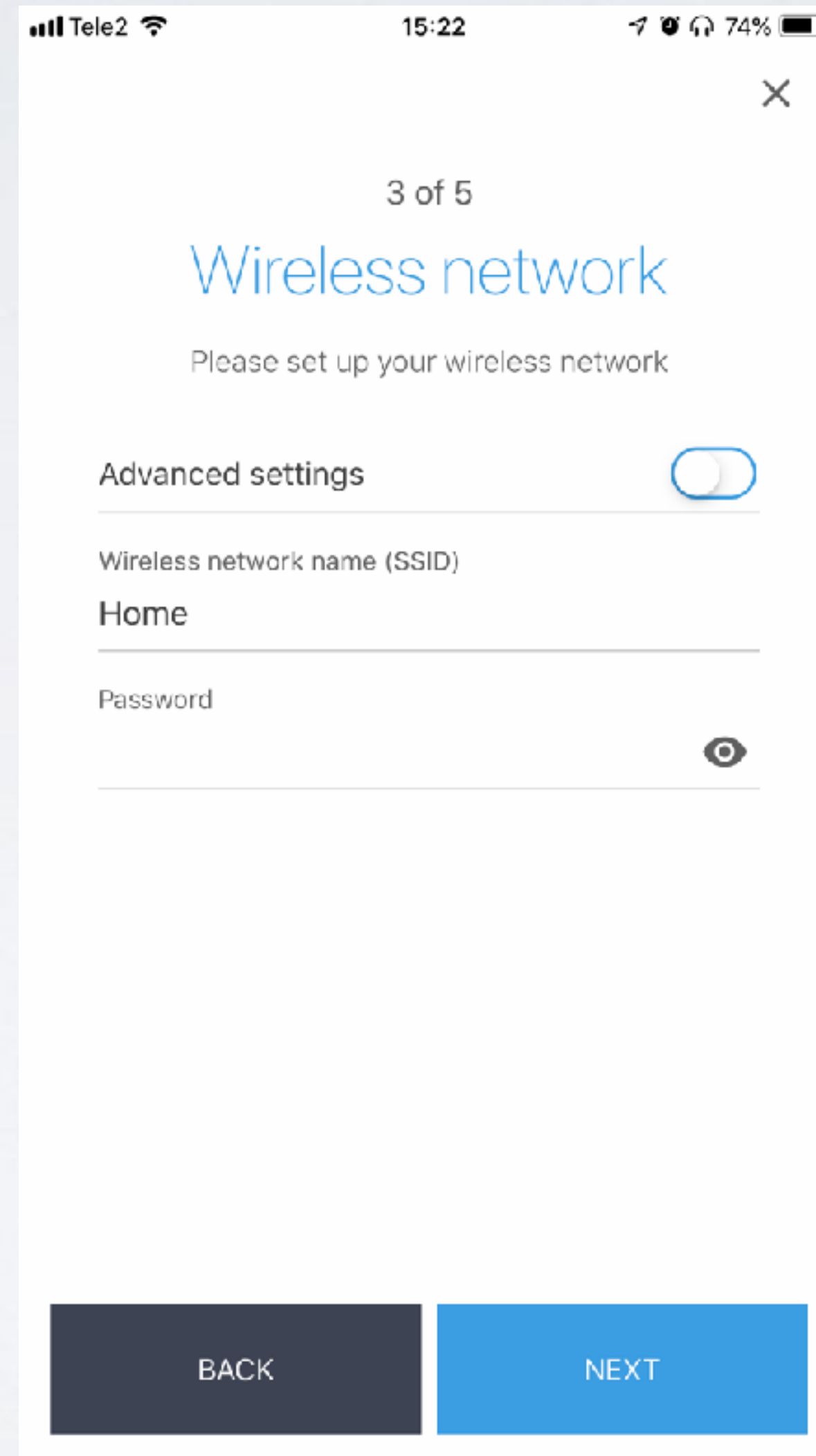
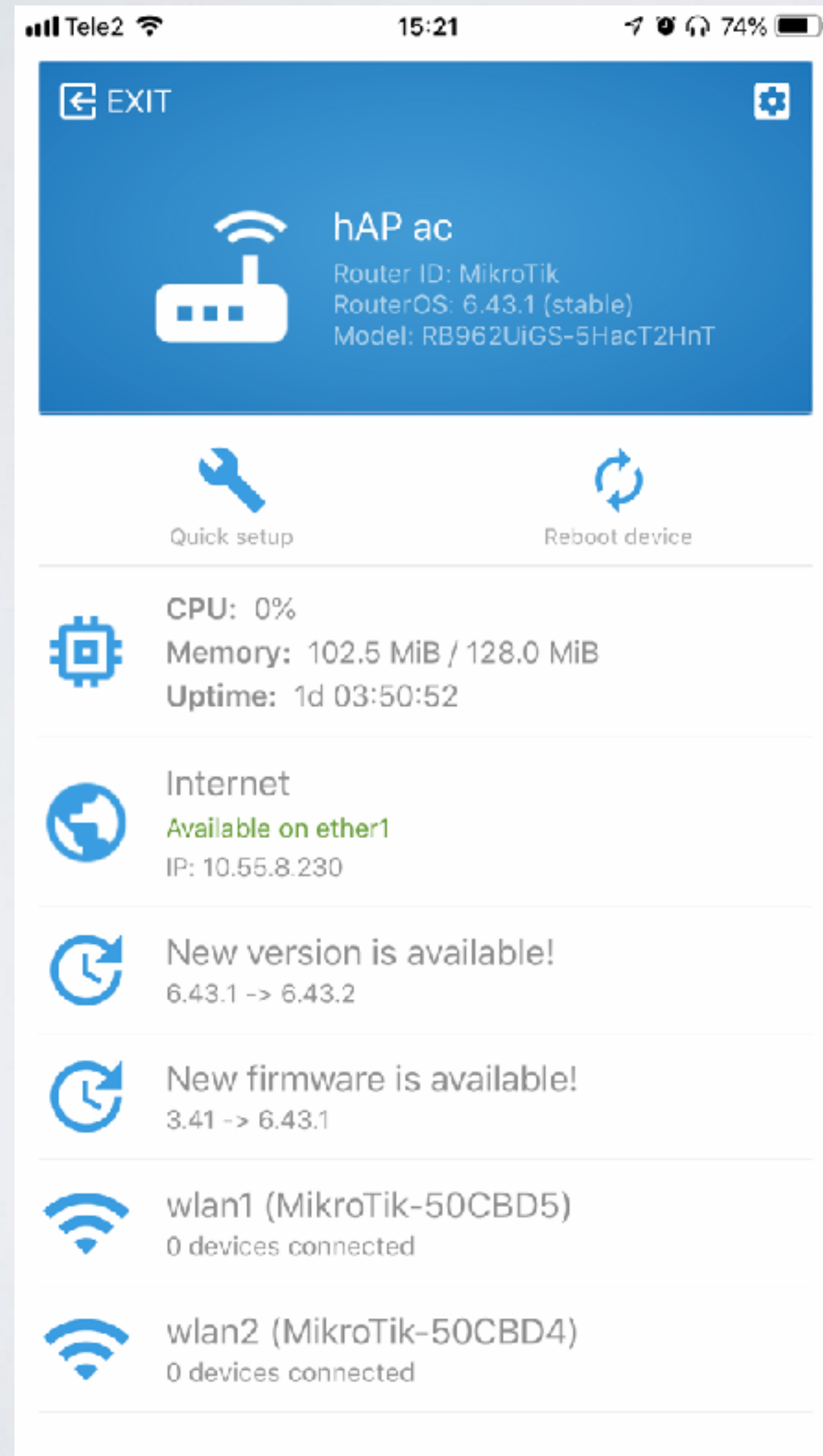
admin

Password

Keep password

SAVE CONNECT

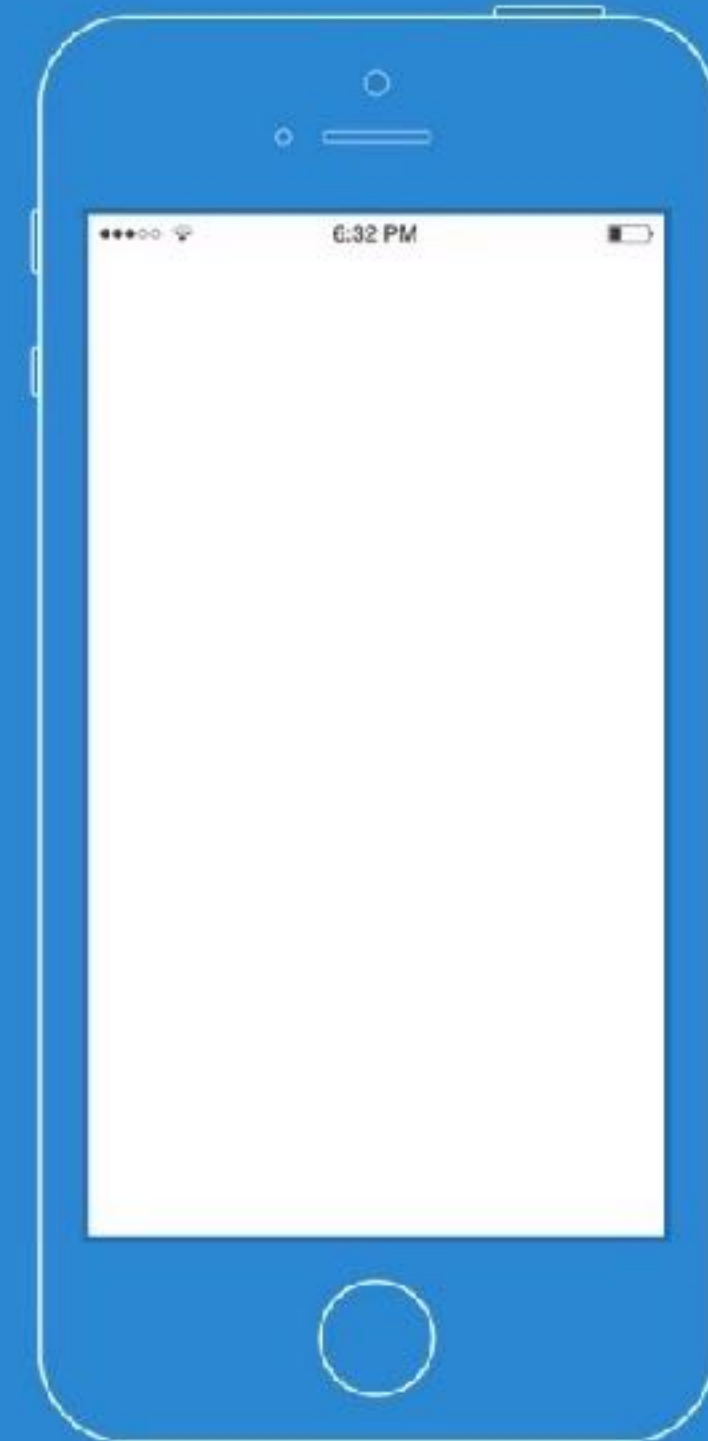
# MikroTik App iOS / Android



# 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, italicized font. The "T" is significantly larger and bolder than the other letters. Above the "i" in "Mikro" are two curved lines. The text is rendered in a dark gray color and is reflected on a light gray surface below it.

*MikroTik*