

*Mikro***Tik**

 MUM España 



What do we do?

We create networks



- Established 1996
- RouterOS created in 1997
- RouterBOARD created in 2002
- First MUM event in Prague 2006
- MUM in Indonesia had over 3100 people
- 25 events in 2017



LETONIA

Iceland

Finland

Sweden

Russia

Norway

Estonia

Denmark

Lithuania

Ireland

United Kingdom

Kazakhstan

Netherlands

Belarus

Belgium

Poland

Germany

Ukraine

Luxembourg

Czech Republic

Slovakia

France

Switzerland

Liecht.

Austria

Hungary

Moldova

Romania

Georgia

Azerbaijan

Slovenia

Croatia

Armenia

Monaco

Bosnia and Herzegovina

Serbia

Bulgaria

Portugal

Andorra

San Marino

Montenegro

Iran

Spain

Italy

Albania

Macedonia

Turkey

Vatican City

Greece

Syria

Iraq

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

no matter where you are

More than 180 MUM events around the world



STAFF

Look for MikroTik staff in the red t-shirts

Karlis (sales)
Viesturs (support)
Kaspars (training)

10:00

Presentaciones

12:45

Almuerzo (con vouchers)

14:15

Presentaciones

16:30

Sorteo

17:00

Bebidas

MUM Live

www.youtube.com/mikrotik

Some of our latest products

1Gbit
over wireless

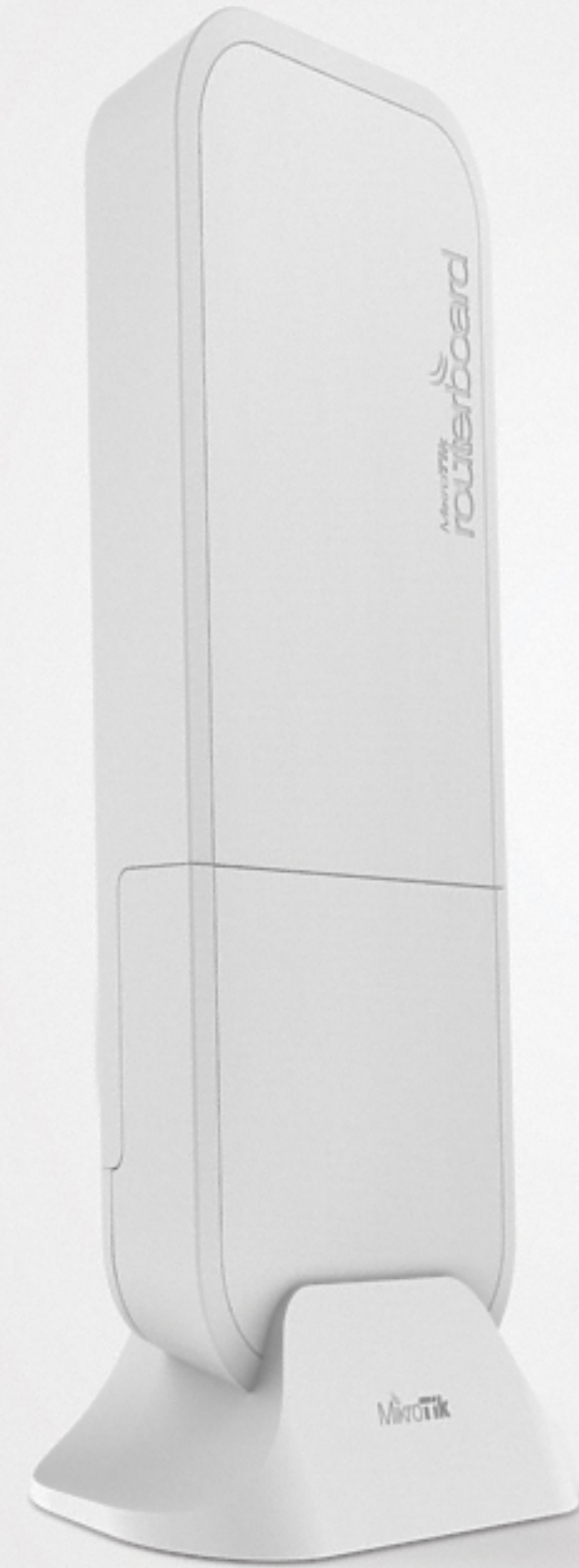
100m+
range

60GHz
radio

Gigabit
Ethernet

Paired
Secure Link
preconfigured

Powered by
AF/AT/Passive
PoE, DC jack



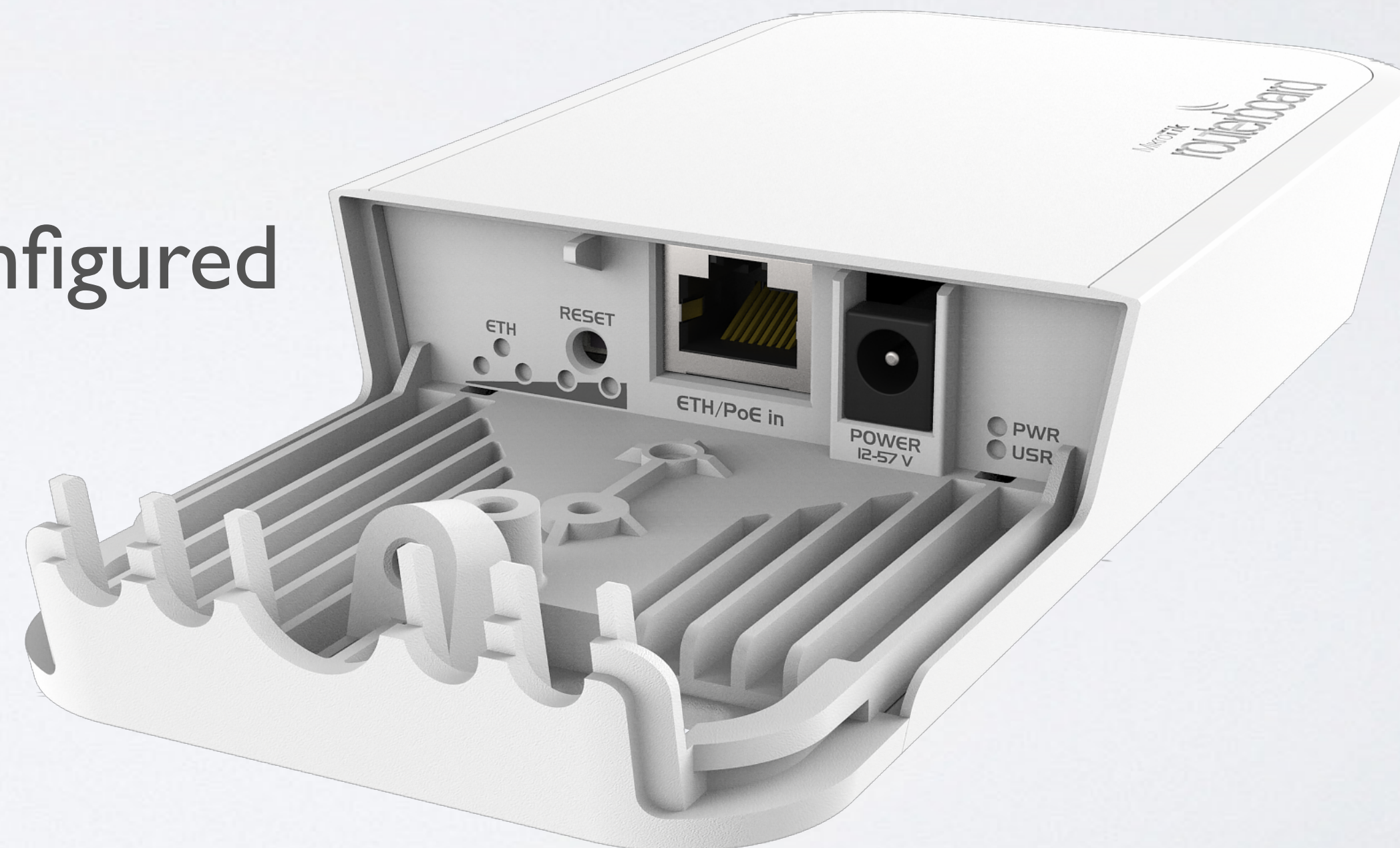
MikroTik

Wireless Wire

Wireless Wire



- 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
- Targeted for 1.5 km and more!
- IPsec encryption
- Kit price \$298



SXTsq Lite60

- 100 Mbps
- SXTsq design
- For distance 200 meters +
- Low cost and low weight
- Unit price \$69

NOW



MikroTik 60GHz Products

Max distance at full speed

LHG 60G	1500+ meters	LHG 60G
wAP 60G	200+ meters	wAP 60G (AP)
LHG 60G	800+ meters	wAP 60G AP
LHG Lite60	800+ meters	wAP 60G AP
SXTsq Lite60	200+ meters	wAP 60G AP

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





Available now

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

hAP ac²

NOW

- Gigabit ports
- Dual chain, dual band
- Wall mount or stand
- 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



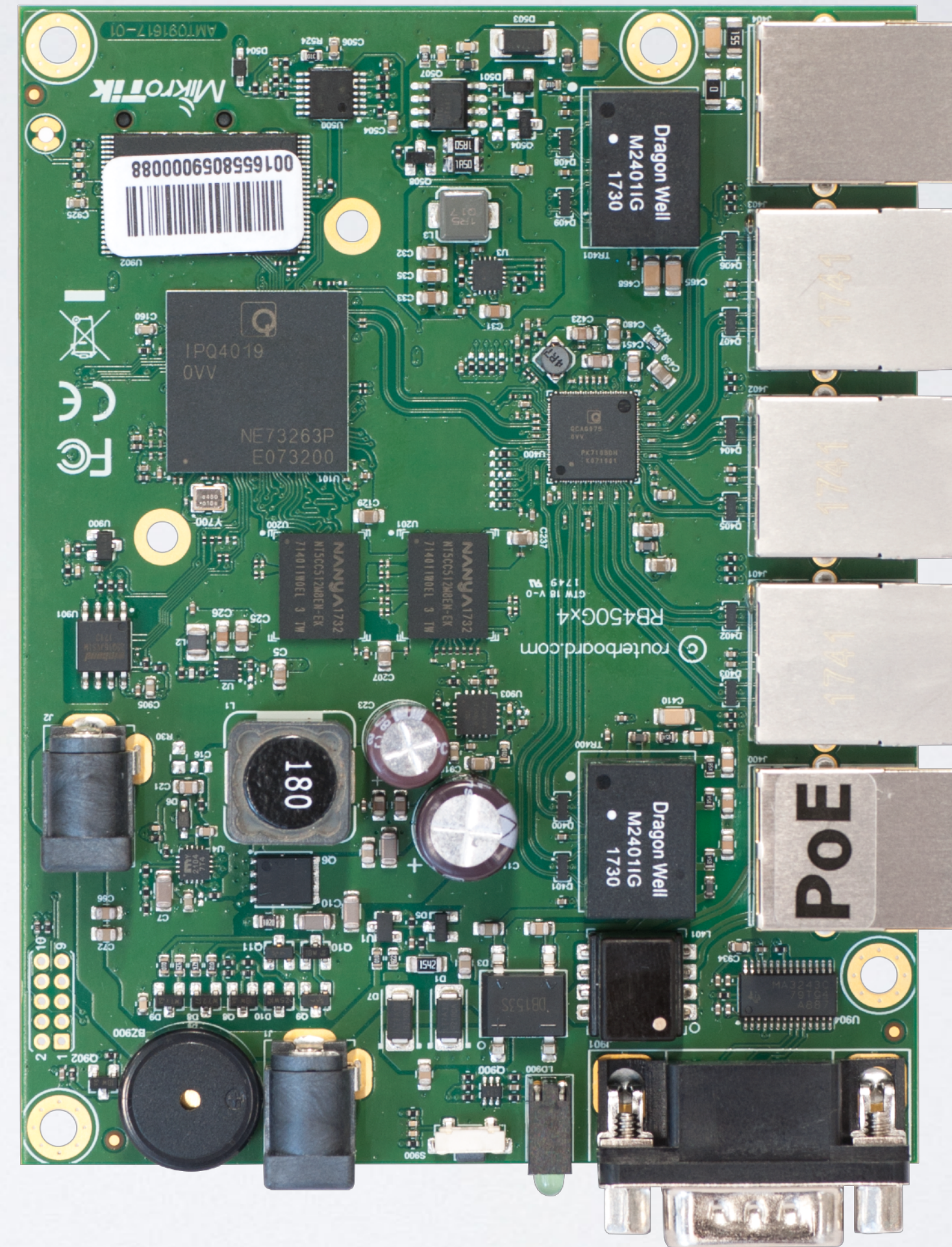




450Gx4

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



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



hEX S

NOW



SXTsq Lite 2



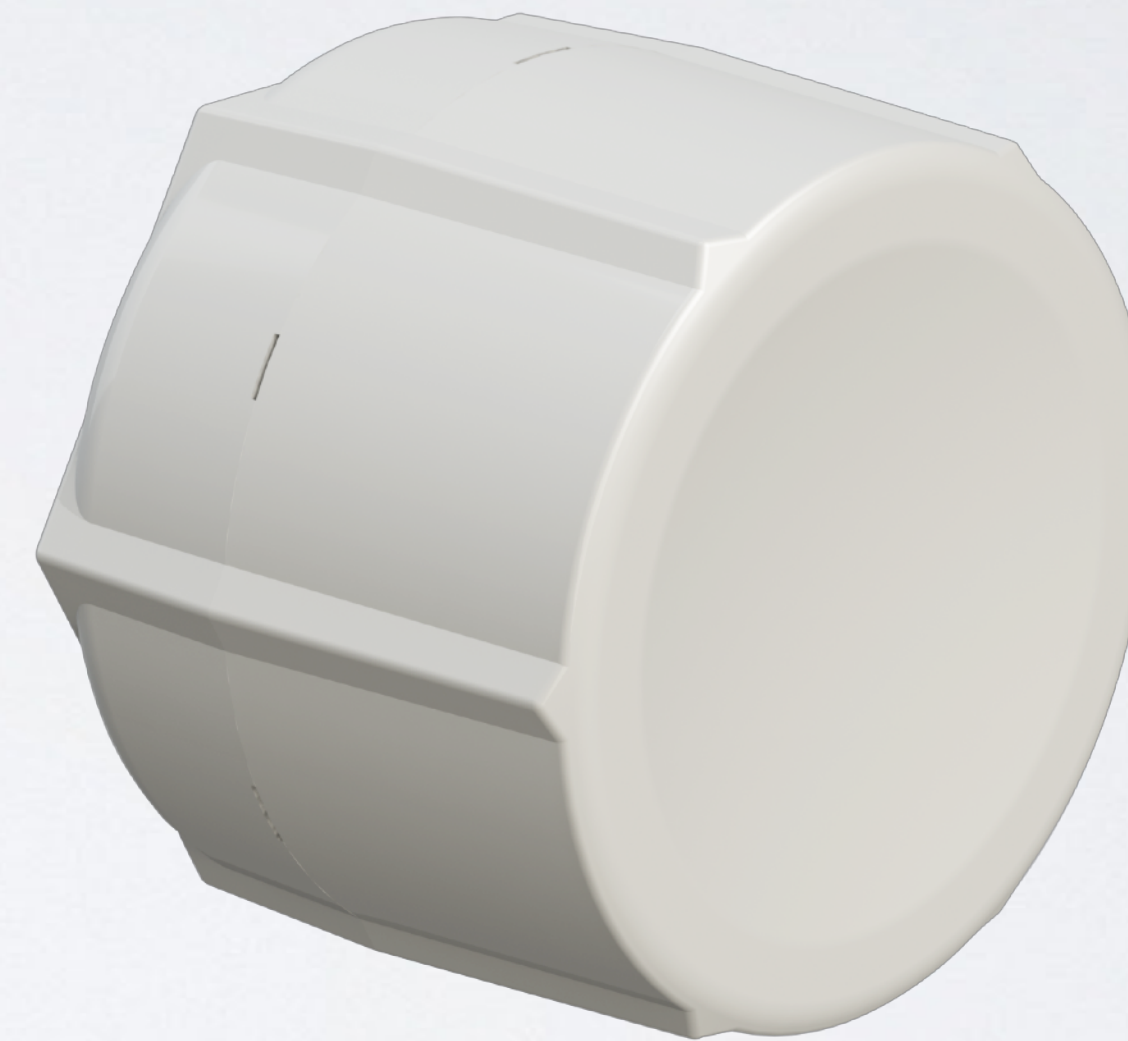
- 2 GHz CPE
- Slim design
- Low price
- Kit price \$39



SXT LTE kit



- 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



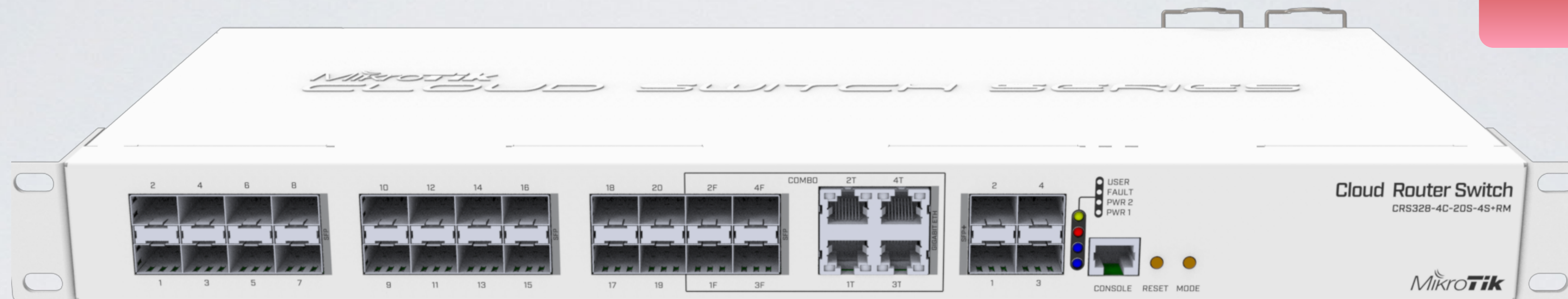
LDF 2

NOW

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



NOW



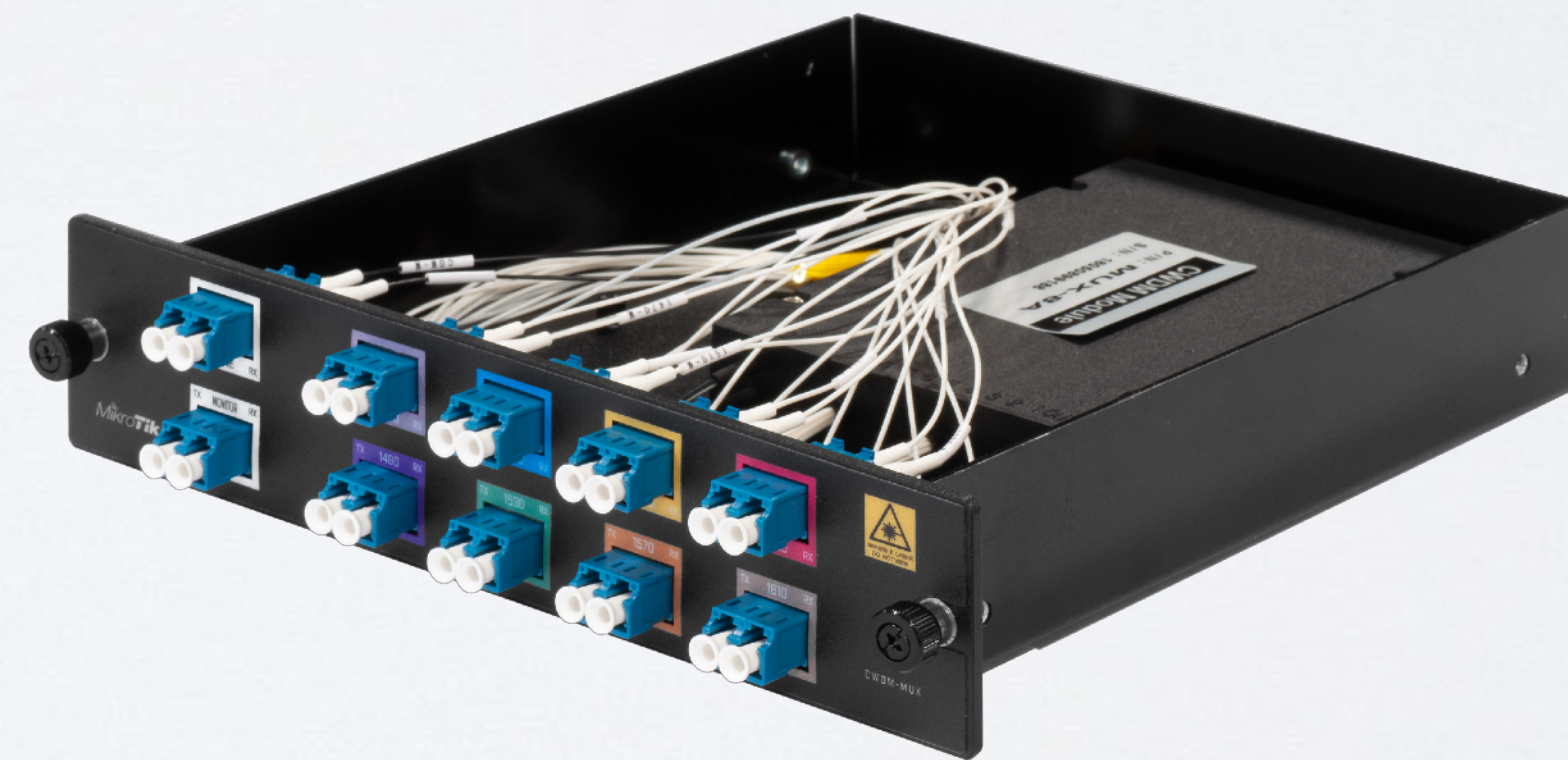
CRS328-4C-20S-4S+RM

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

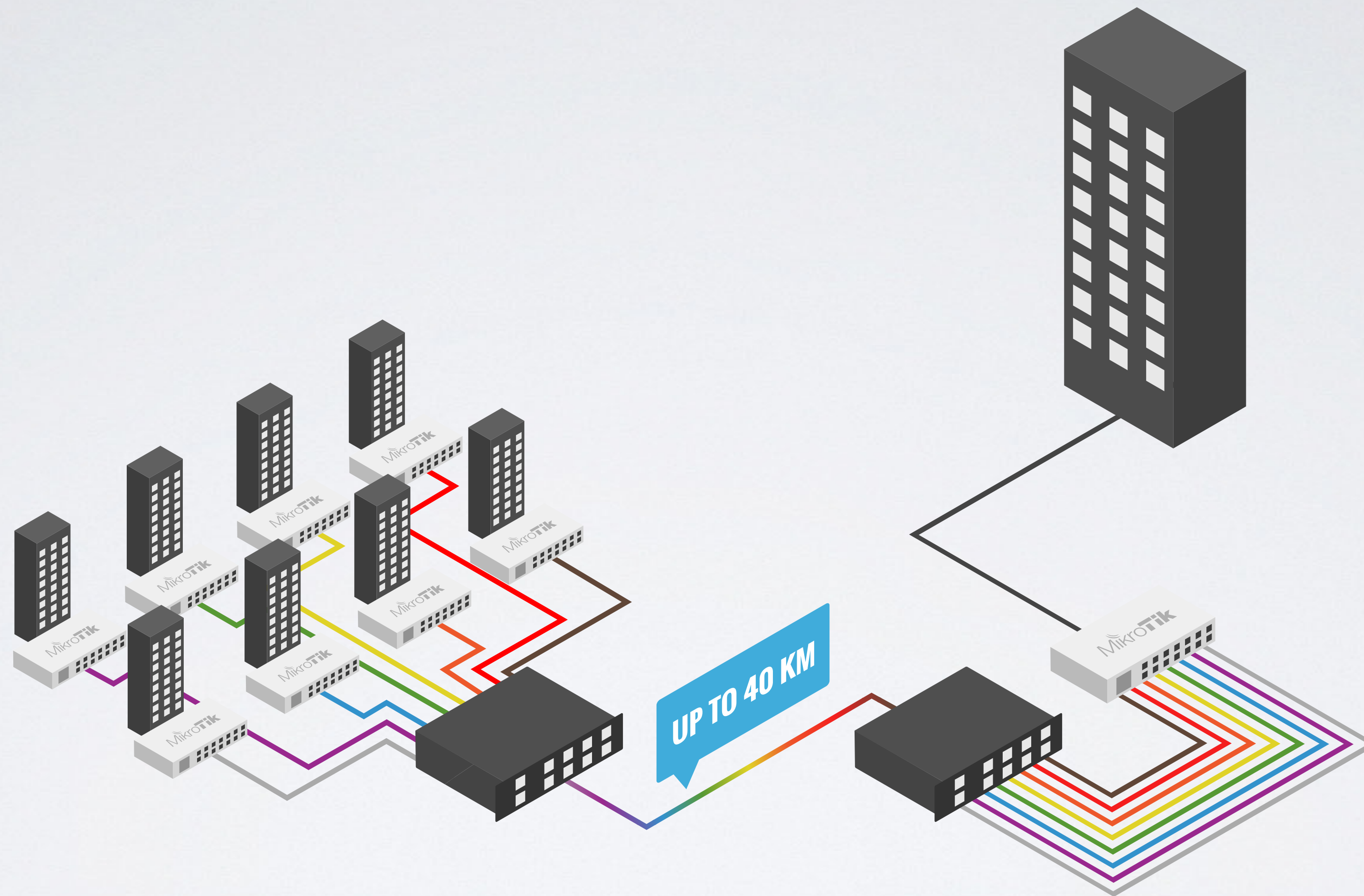
CWDM

NOW

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



CWDM



RouterBOARD 4011



- 4 core Cortex A15 CPU
- 10x Gigabit ethernet ports and 1x SFP+ (10 Gpbs)
- IPsec hardware encryption
- 1GB RAM
- PoE out
- Price \$199/\$249

RouterBOARD 4011

NOW



RouterBOARD 4011

NOW



RouterBOARD 4011



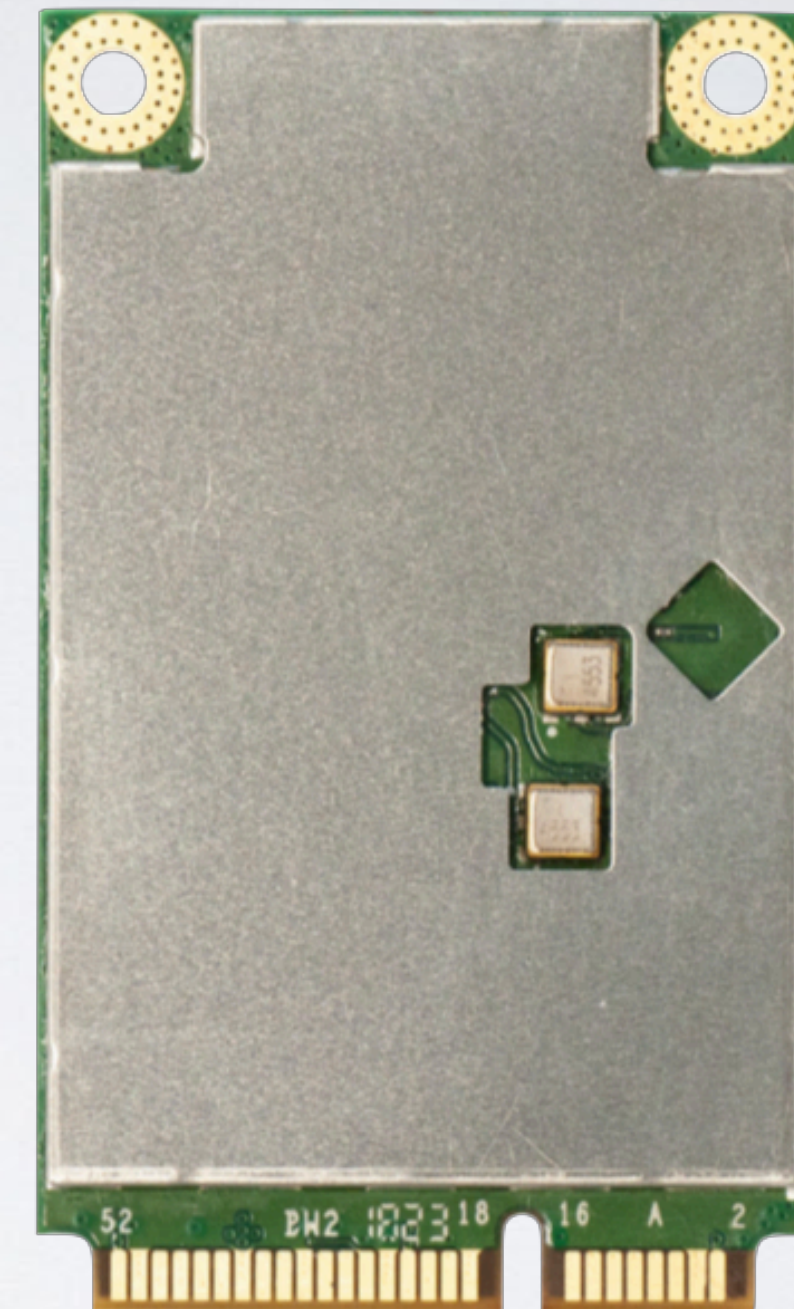
- 2GHz 2 chains, 802.11 b/g/n
- 5GHz 4 chains, 802.11 ac
- 1733 Mbps + 300 Mbps
- 160 MHz channel width
- 360 omni directional antennas



R11e-4G

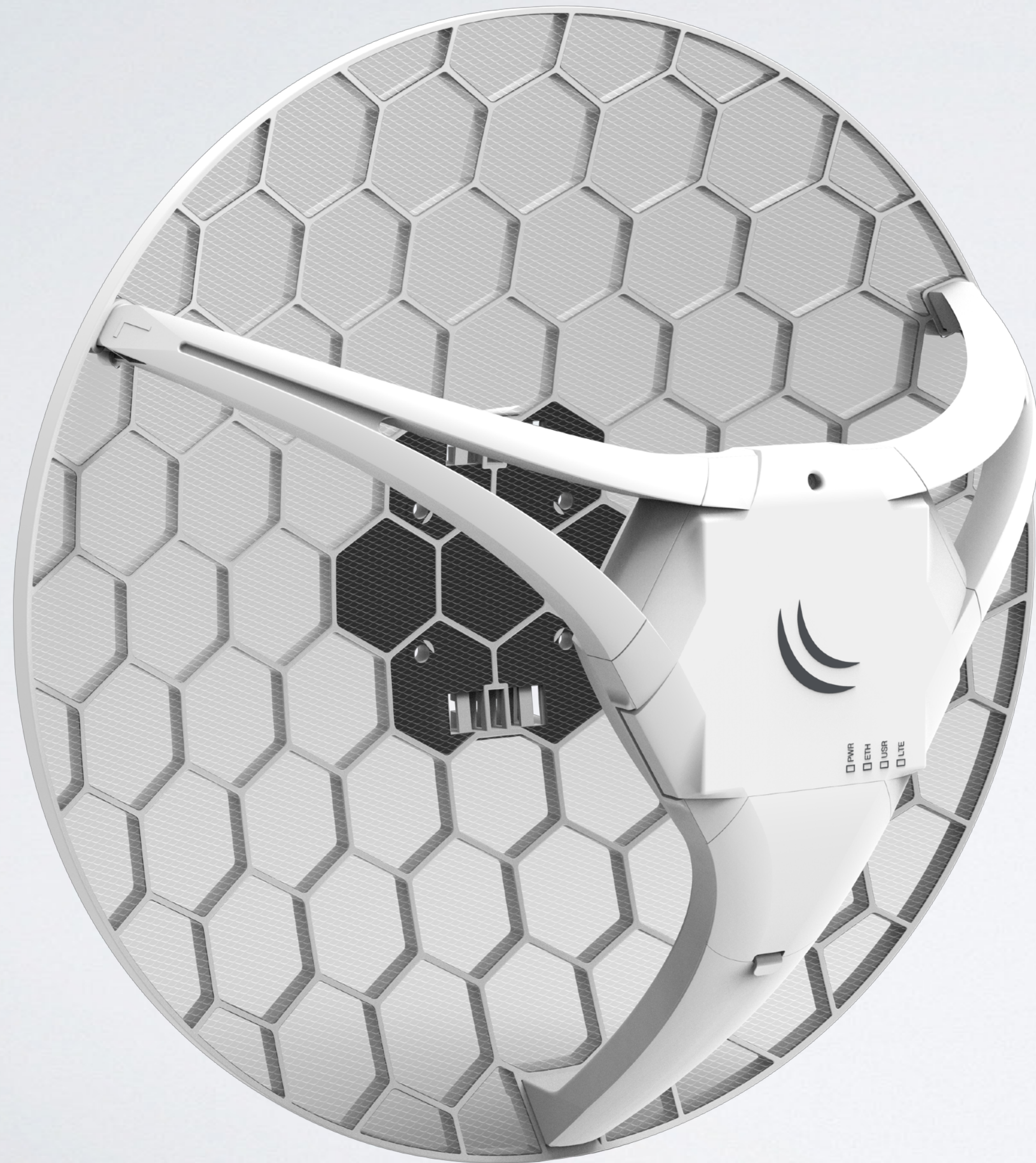


- 4G modem
- Category 4 (150Mbps/50Mbps)
- 3,7,20,31 FDD bands
- 41n,42,43 TDD bands



Some of our upcoming products

LHG LTE kit



- LTE card built in
- 17 dBi, 25° beam width
- Category 4 LTE modem (150Mbps/50Mbps)
- 3G - R7/R8
- For extremely remote locations

LHG LTE kit



LHG LTE kit

spx@172.20.110.39 (220saulkrasti) - WinBox v6.42.6 on RBSXTR (mipsbe)

Session Settings Dashboard

Safe Mode Session: 172.20.110.39

Interface <lte1>

General Status Traffic

Last Link Down Time: Sep/14/2018 11:56:28

Last Link Up Time: Sep/14/2018 11:57:07

Link Downs: 7

PIN Status: no password required

Functionality: full

Manufacturer: "MikroTik"

Model: "R11e-LTE"

Revision: "MikroTik_CP_2.160.000_v008"

Current Operator: 24701

Current Cell ID: 515100

Access Technology: Evolved 3G (LTE)

EARFCN: 6300 (band 20, bandwidth 10Mhz)

IMEI: 355654090046983

Session Uptime: 4d 05:22:02

RSRP: -95 dBm

RSRQ: -16 dB

SINR: -1 dB

CQI: 4

RouterOS WinBox

admin@10.7.80.200 (lhg-lte-test-spx) - WinBox v6.42.6 on LHG R (mipsbe)

Session Settings Dashboard

Safe Mode Session: 10.7.80.200

Interface <lte1>

General Status Traffic

Last Link Down Time: Sep/13/2018 18:51:26

Last Link Up Time: Sep/13/2018 18:52:17

Link Downs: 6

PIN Status: no password required

Functionality: full

Manufacturer: "MikroTik"

Model: "R11e-LTE"

Revision: "MikroTik_CP_2.160.000_v008"

Current Operator: 24701

Current Cell ID: 515104

Access Technology: Evolved 3G (LTE)

EARFCN: 150 (band 1, bandwidth 10Mhz)

IMEI: 355654090599130

Session Uptime: 4d 22:28:37

RSRP: -104 dBm

RSRQ: -12 dB

SINR: 10 dB

CQI: 11

enabled running slave

RouterOS WinBox

mANTBox2 12s

- 2 GHz sector antenna
- 12 dBi
- RouterBOARD built-in



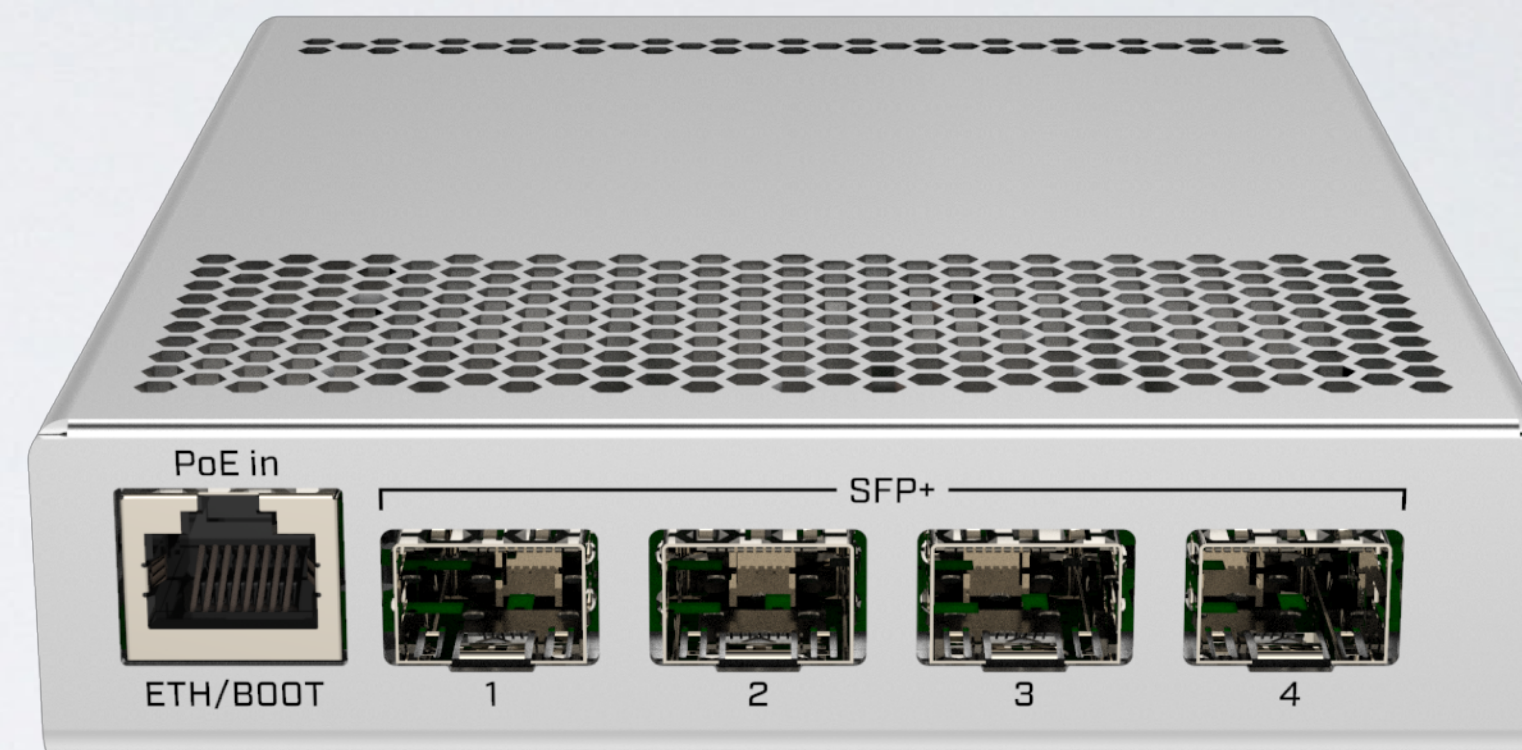
PWR-Line AP

- 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



CRS305-1G-4S+IN

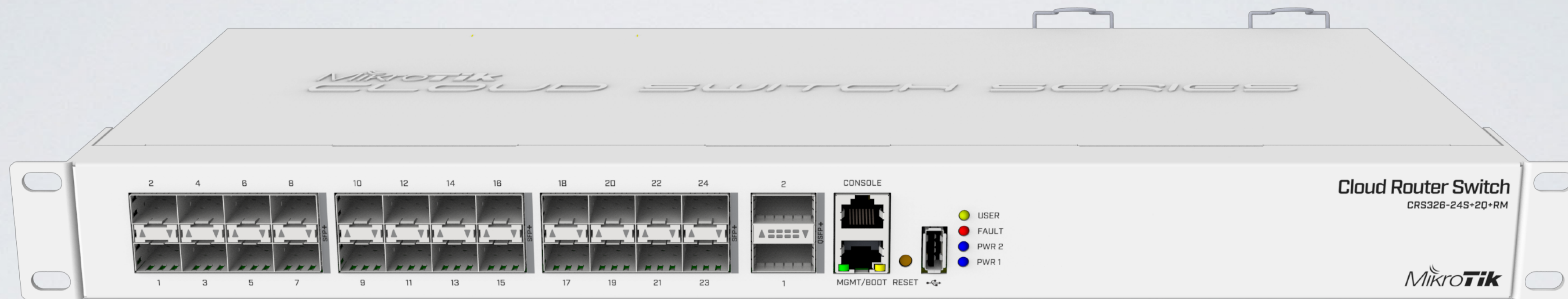
- 4x SFP+ ports
- 1x Gigabit Ethernet
- Metallic enclosure
- Dual DC jacks



CRS309-1G-8S+PC

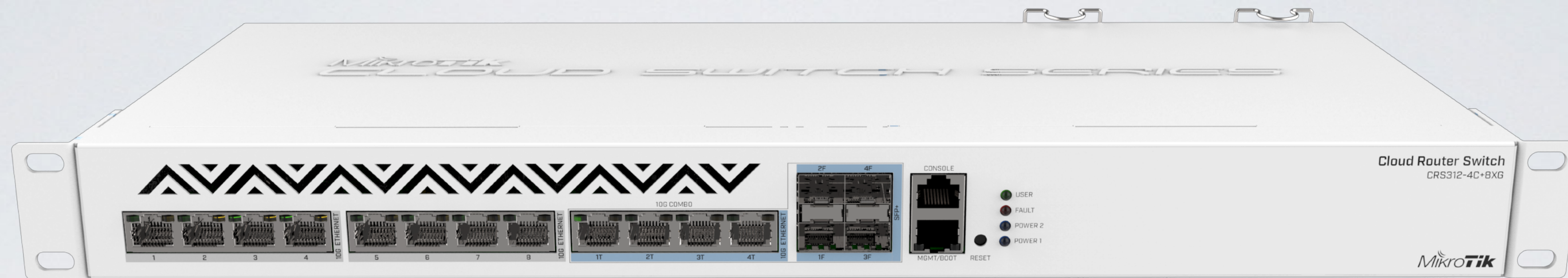
- 8x SFP+ ports
- 1x Gigabit Ethernet
- Passive cooling (and silent) case





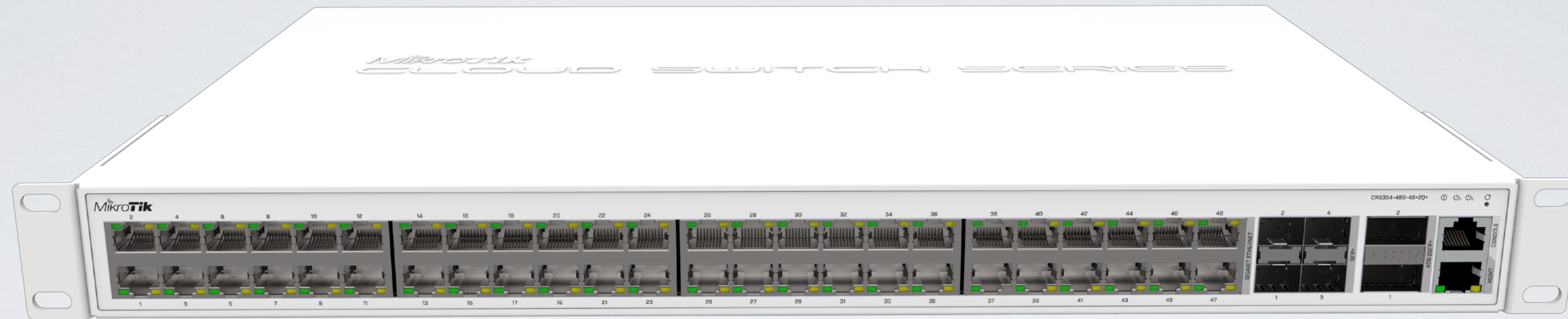
CRS326-24S+2Q+RM

- 24x SFP+ for 10 Gbit connections
- 2x QSFP+ ports for 40 Gbit connections
- RJ45 console and ETH 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

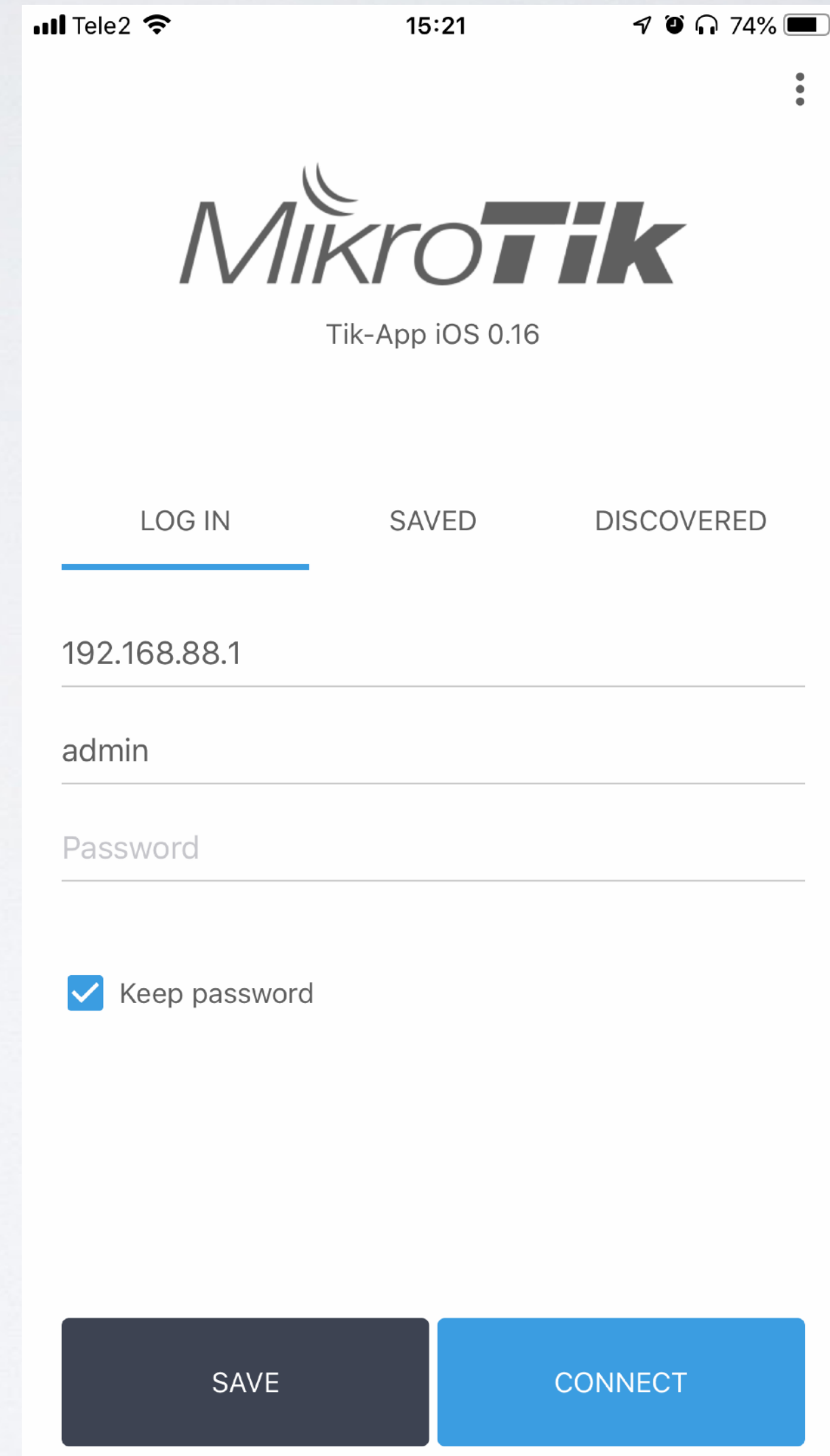


CRS354-48P-4S+2Q+

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

MikroTik App iOS

- Public beta version coming soon
- Auto-configuration
- Simplified initial setup of the router
- Feedback: 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

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

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`]

60GHz Improvements

== August 10 v6.42.7 ==

- Stability and rate search improvements
- PtMP improvements

== June 27 v6.42.5 ==

- Stability improvements
- w60g SNMP improvements

60GHz Improvements

== September 20 v6.43.2 ==

- Major received signal sensitivity improvements
- LHG60G can reach up to 4000 m distances (depending on used frequency)
- PtMP improvements

== September 10 v6.43 ==

- Added beam forming stats counters

Need help?

- Ask a local distributor
- Hire MikroTik consultant
- Read the manual wiki.mikrotik.com
- Email support@mikrotik.com
- Attend a training class or join an Academy class in a University

After the MUM

- All presentations - mum.mikrotik.com
- Videos - 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 regular weight, while the "Tik" part is in a bold, italicized weight. A small, stylized icon consisting of two curved lines is positioned above the letter "i" in "Mikro". The entire logo is rendered in a dark gray color and is reflected on a light gray surface below it.

*Mikro***Tik**