



MUM Indonesia

October 2016



- Established 1996
- RouterOS created in 1997
- RouterBOARD created in 2002
- First MUM event in Prague 2006
- Biggest MUM in 2015, Indonesia - 2500+ people
- More than 180 employees



A map of Europe with the Mikrotik logo centered over the Baltic Sea region. The logo consists of the word "MikroTik" in a stylized, bold, black font, with a small graphic of a bird or wing above the 'i'. The country of Lithuania is highlighted in green. Other countries labeled on the map include Iceland, Ireland, United Kingdom, France, Spain, Portugal, Andorra, Monaco, San Marino, Italy, Vatican City, Germany, Poland, Czech Republic, Slovakia, Austria, Hungary, Slovenia, Croatia, Bosnia and Herzegovina, Serbia, Montenegro, Albania, Macedonia, Greece, Bulgaria, Romania, Moldova, Ukraine, Belarus, Russia, Finland, Sweden, Norway, Denmark, and Turkey. The map is a light gray color with black outlines for the countries.

MikroTik



More than 130 MUMs all Around the World



MUM Indonesia #8

- 2008, Denpasar - 85
- 2009, Jakarta - 454
- 2011, Jakarta - 796
- 2012, Jakarta - 1104
- 2013, Yogyakarta - 1384
- 2014, Yogyakarta - 1936
- 2015, Yogyakarta - 2526
- 2016, Jakarta - ?

MikroTik at the MUM

- Arnis Riekstins (CTO)
- Edmunds Aperans (sales)
- Kaspars Krampis (training)
- Sergejs Boginskis (support)



Schedule

09:00 - 12:15	Presentations
12:15	Lunch with vouchers
13:45 - 17:00	Presentations
17:00 (tomorrow)	Raffle (lottery)

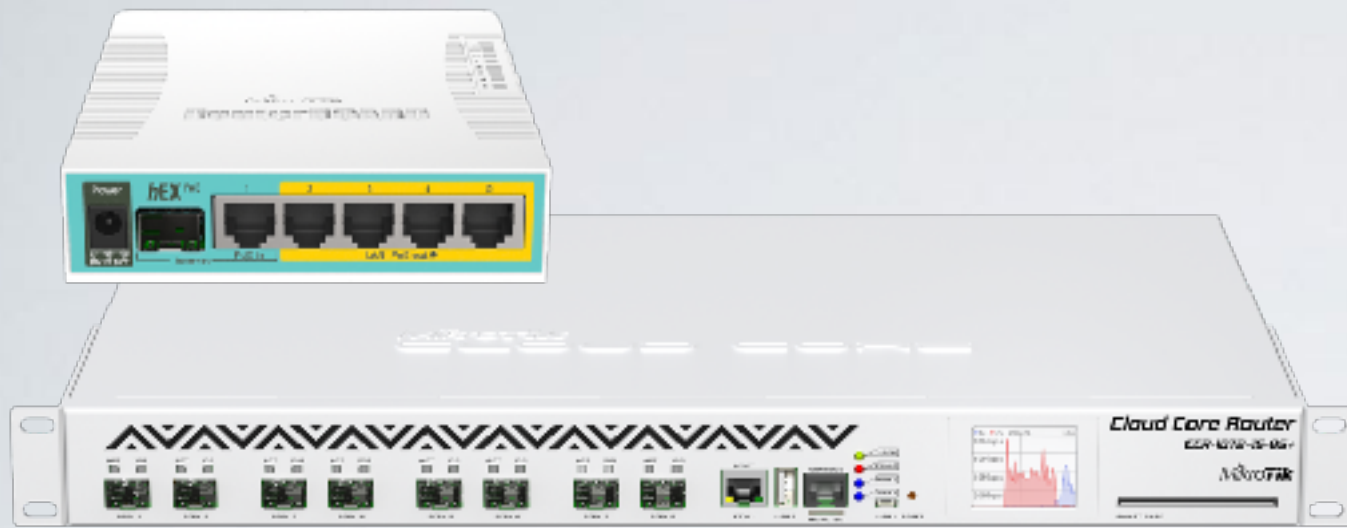
mt.lv/agenda

MUM live

www.youtube.com/mikrotik

Special thanks

Citraweb Nusa Infomedia



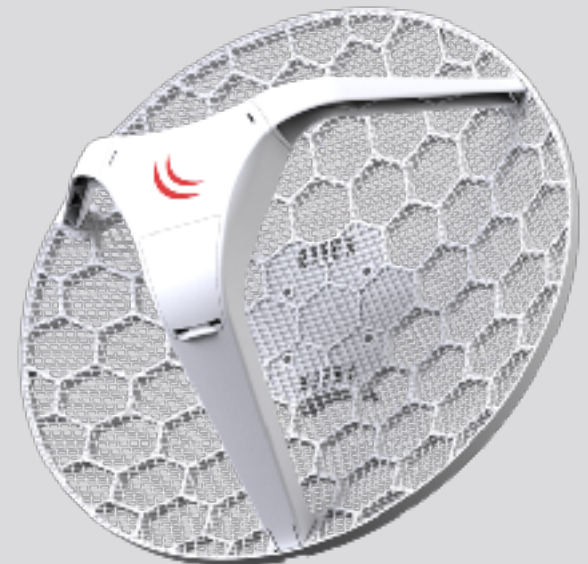
Ethernet



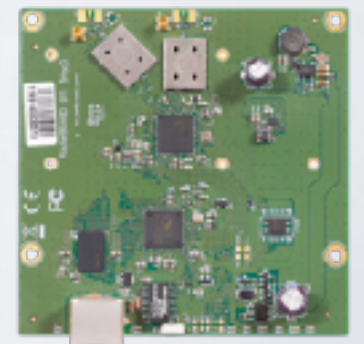
Wireless for home and office



Wireless



Switches



RouterBOARDs

NEW PRODUCTS

LHG 5

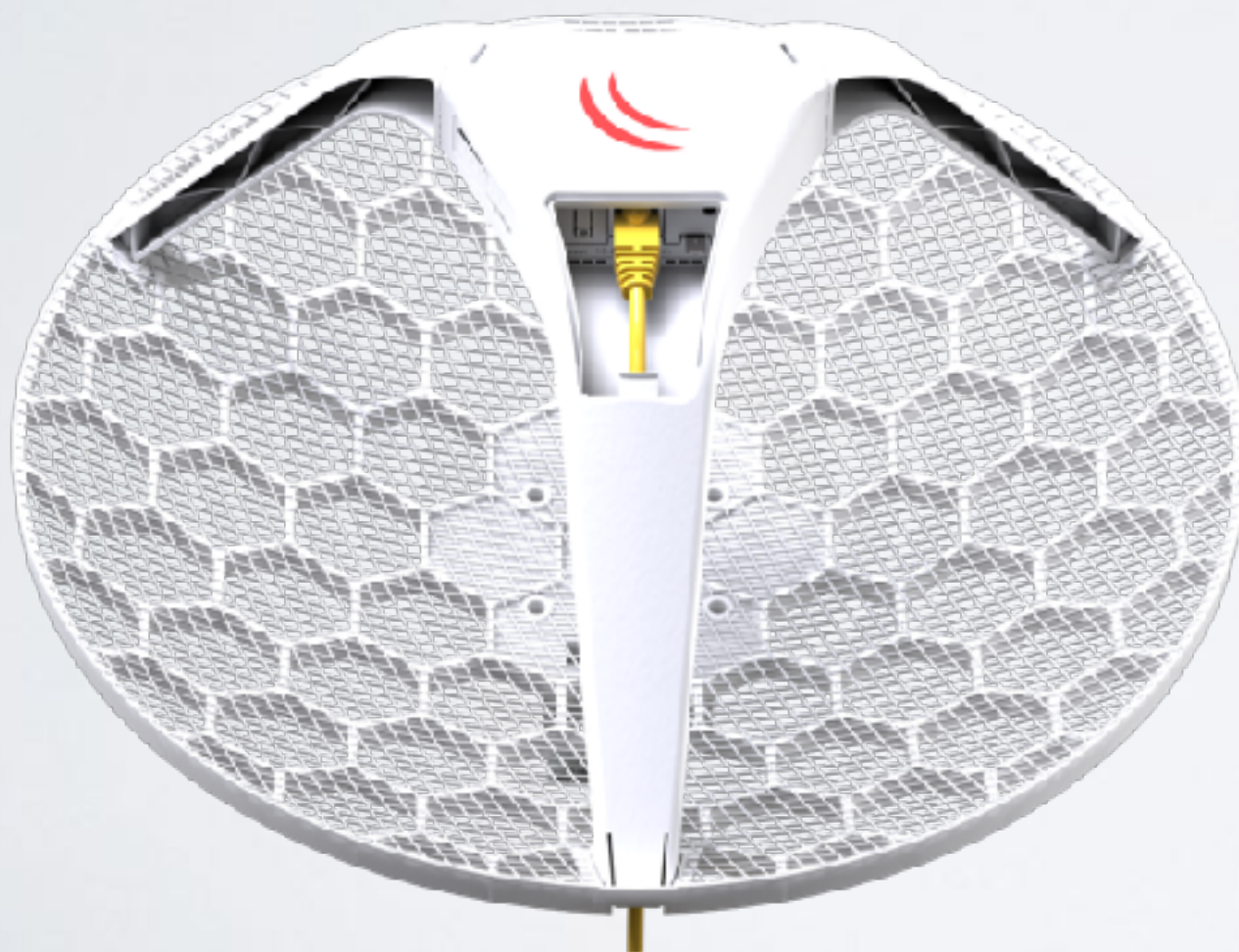
Light Head Grid

- 24.5 dBi antenna
- Antenna is built into wireless unit
- 802.11a/n dual chain
- Very affordable



LHG 5

Light Head Grid



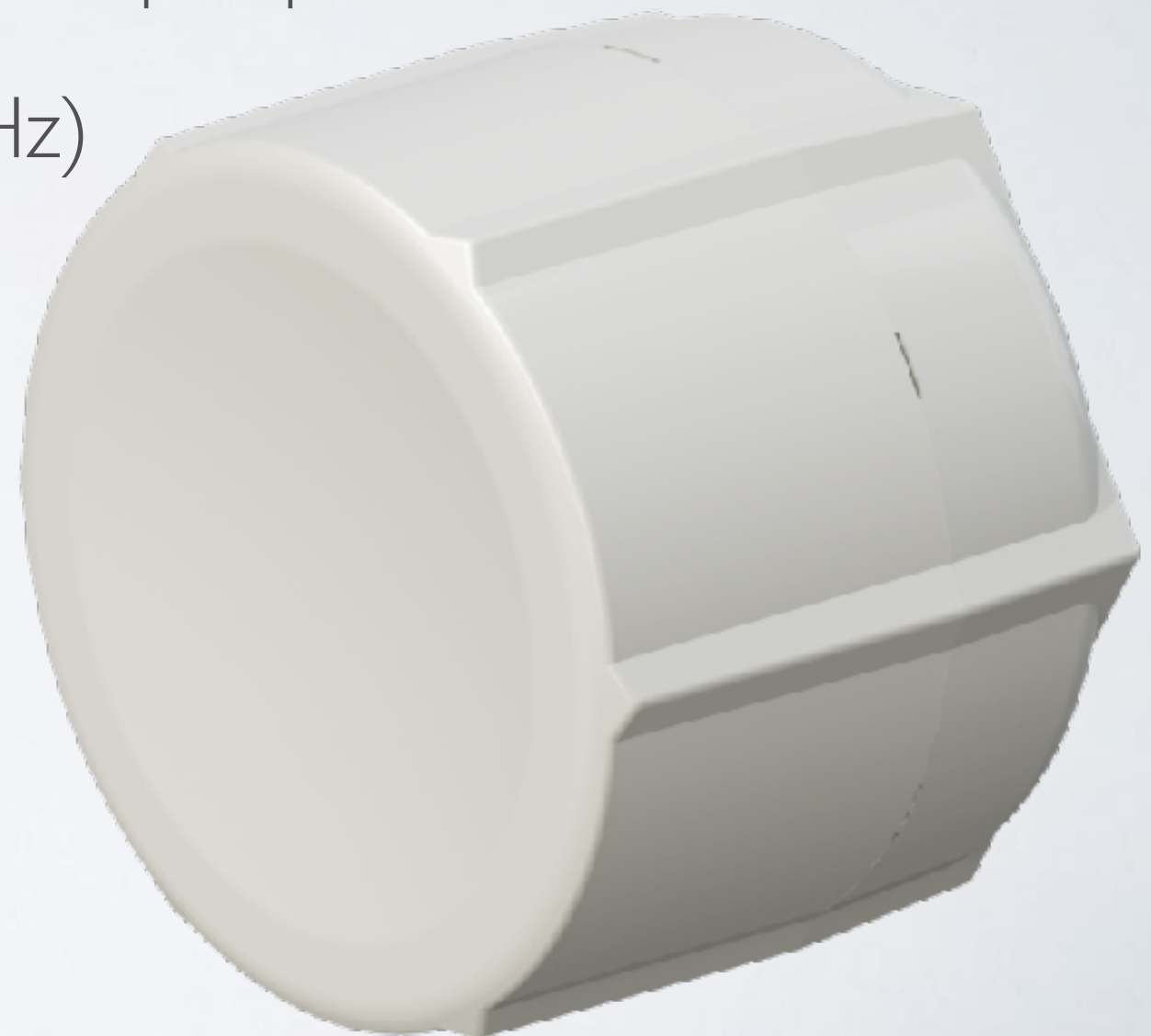
quickMOUNT pro LHG

- Wall or pole mount adapter
- $\pm 70^\circ$ horizontal adjustment
- $\pm 30^\circ$ vertical adjustment
- Special plastic composite material - anvilNITE (TM)



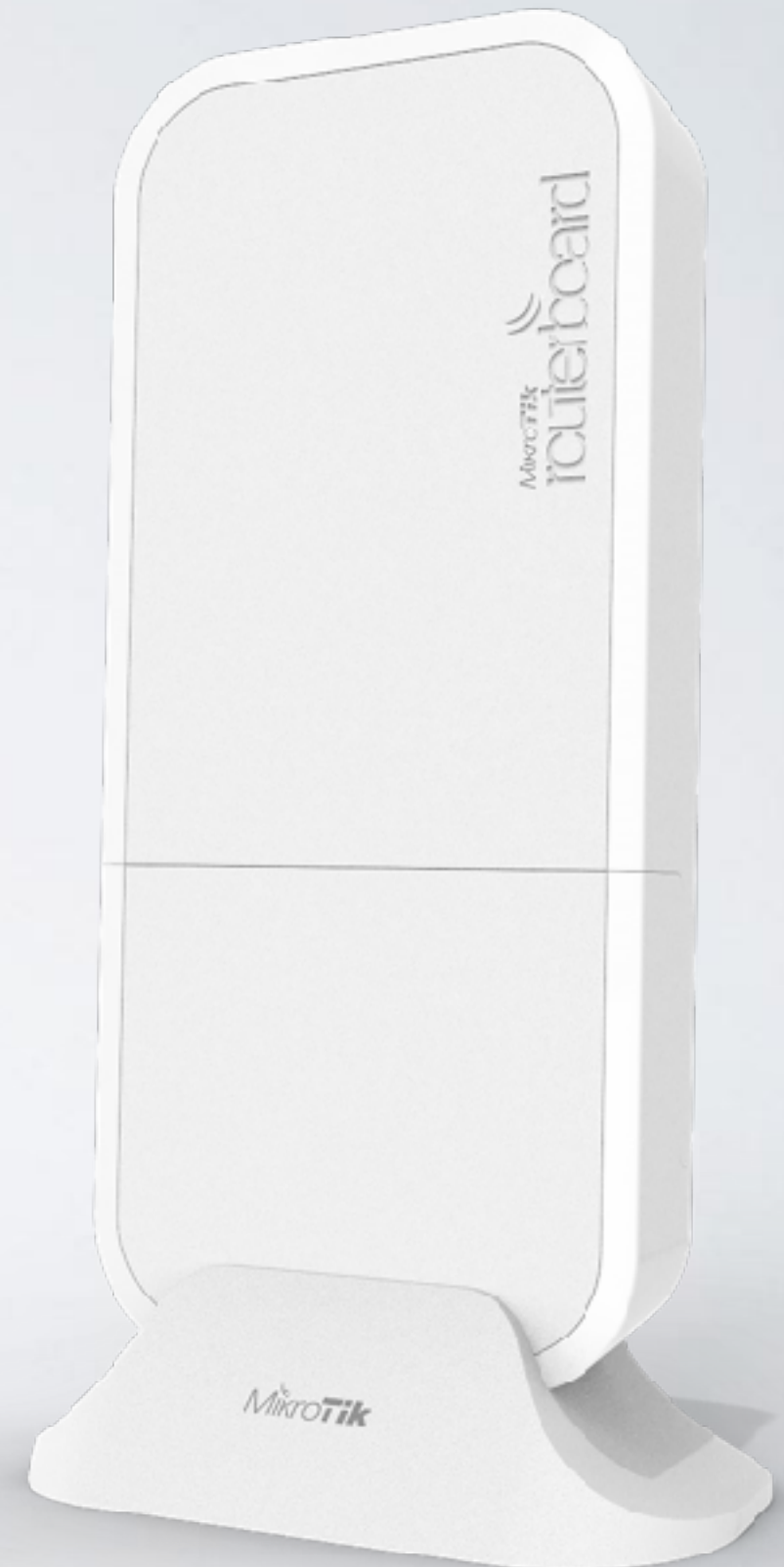
SXT LTE

- LTE 3 category modem
- 100Mbps download and 50 Mbps upload
- LTE FDD bands 3 (1800MHz)
- miniSIM slot



wAP LTE kit

- 2GHz wireless
- LTE antennas
- LTE modem within minipci-e
- weatherproof case
- indoor, outdoor, mobile operation



Groove 52 ac



- ac update for the popular Groove model

Metal 52 ac



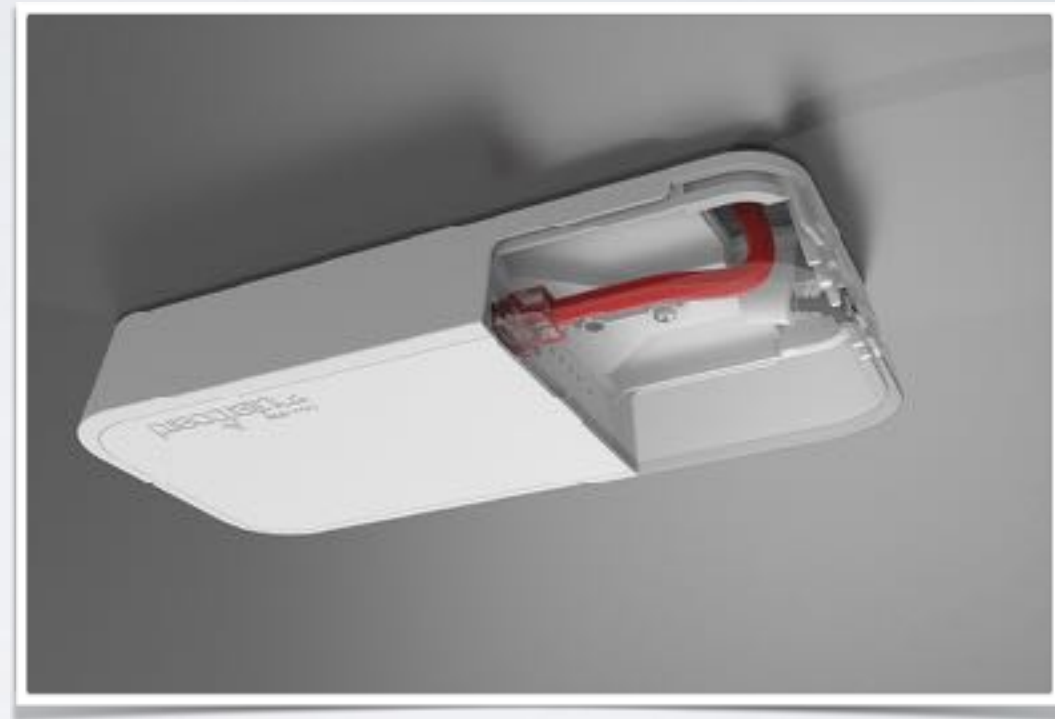
- Waterproof, rugged with a super high output power
- 802.11 b/g/n and 802.11 a/n/ac, 1xGigabit Ethernet

mAP



- update for small AP, dual chain 2.4GHz wireless
- 802.3 af/at support, PoE out!

wAP ac



- Wall or ceiling mountable
- Use for hotel, office, etc.
- Gigabit and 802.11ac
- Dual band (simultaneous 2.4GHz and 5GHz)

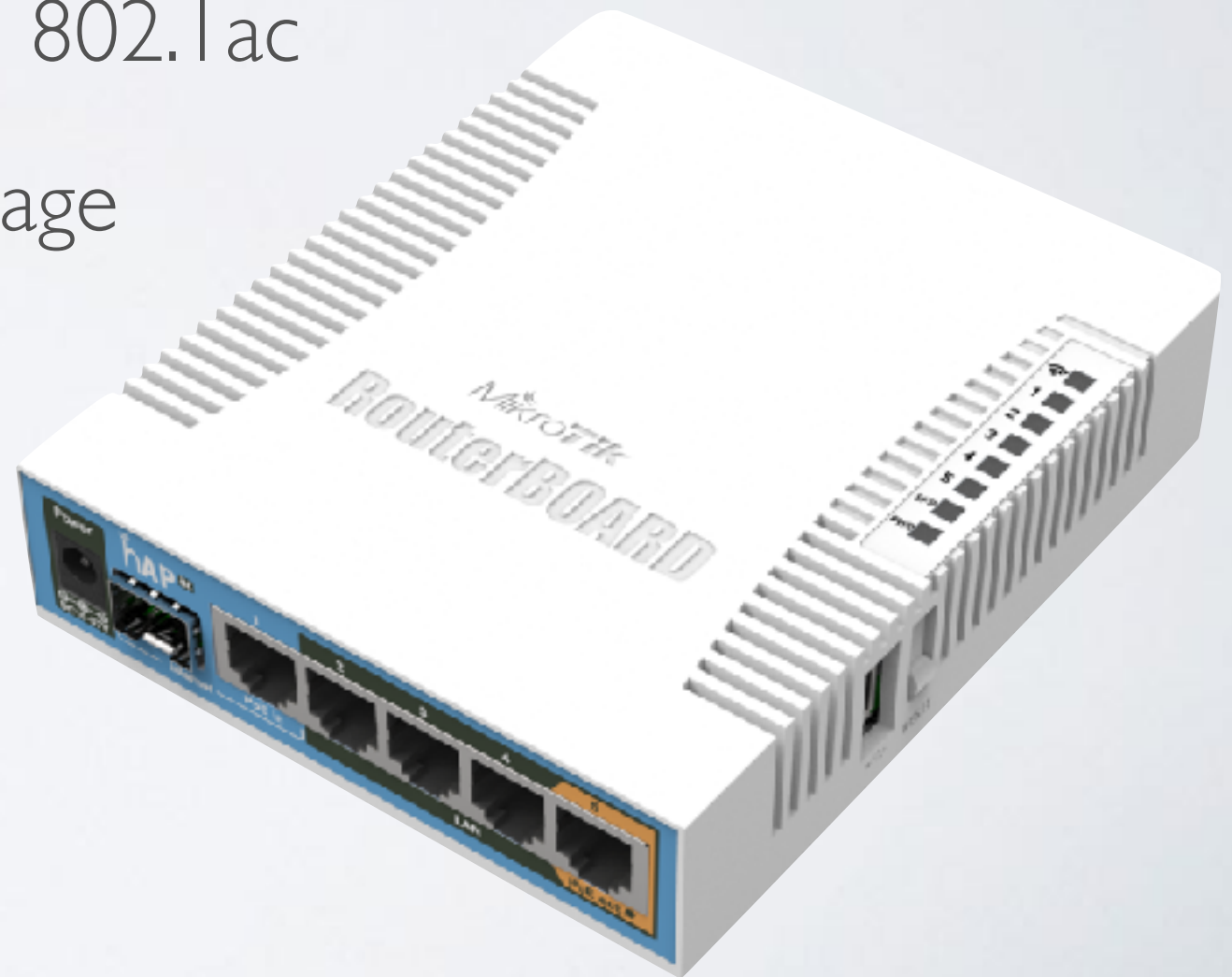
cAP



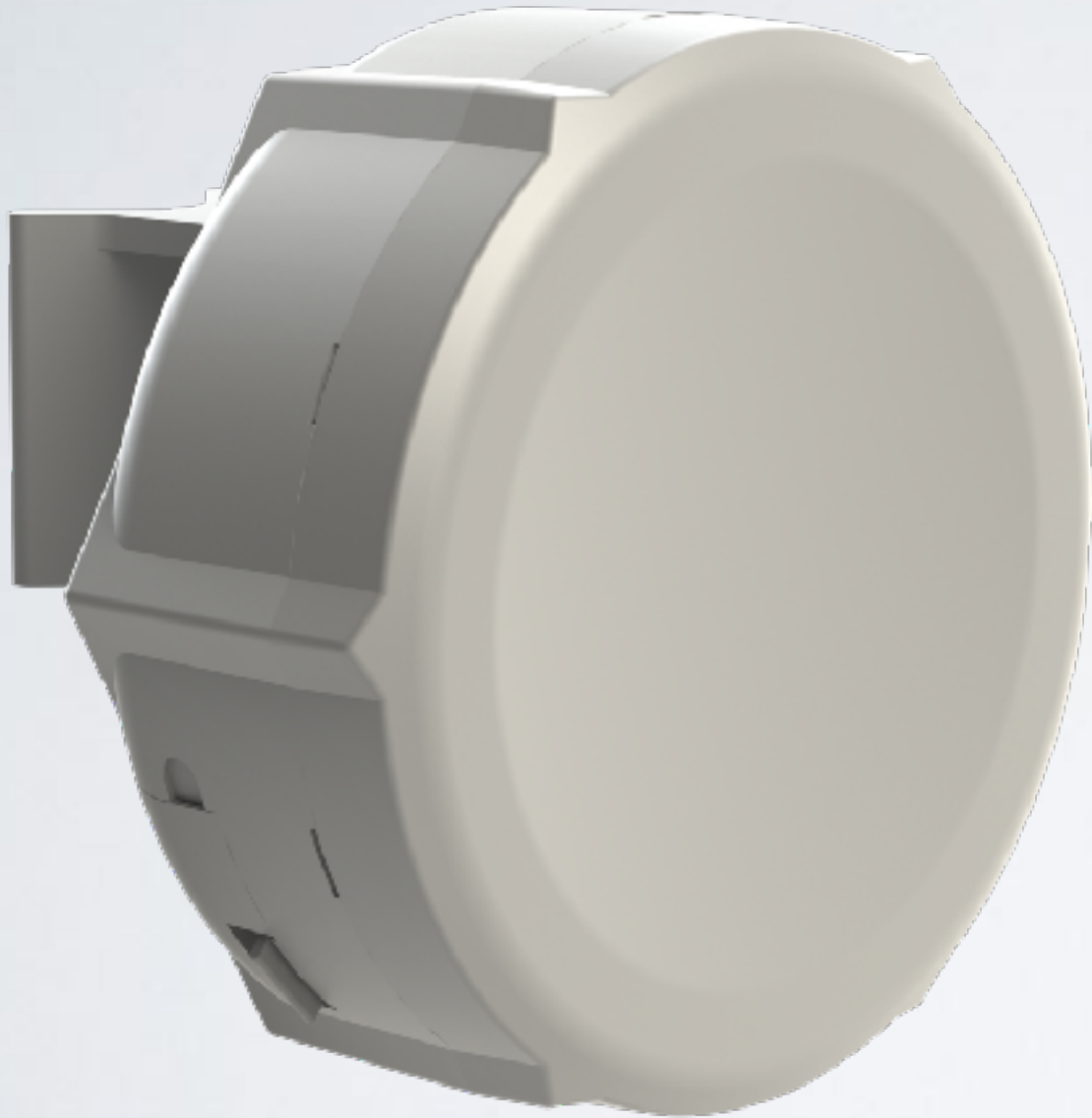
- ceiling AP, dual chain 2.4GHz wireless
- 802.3 af/at support

hAP ac

- Gigabit dual concurrent home AP
- 2.4GHz high power 3 chain 802.11n
- 5GHz high power 3 chain 802.11ac
- 5x1 Gbps ports & 1 SFP cage
- 720MHz CPU
- PoE-out on port 5

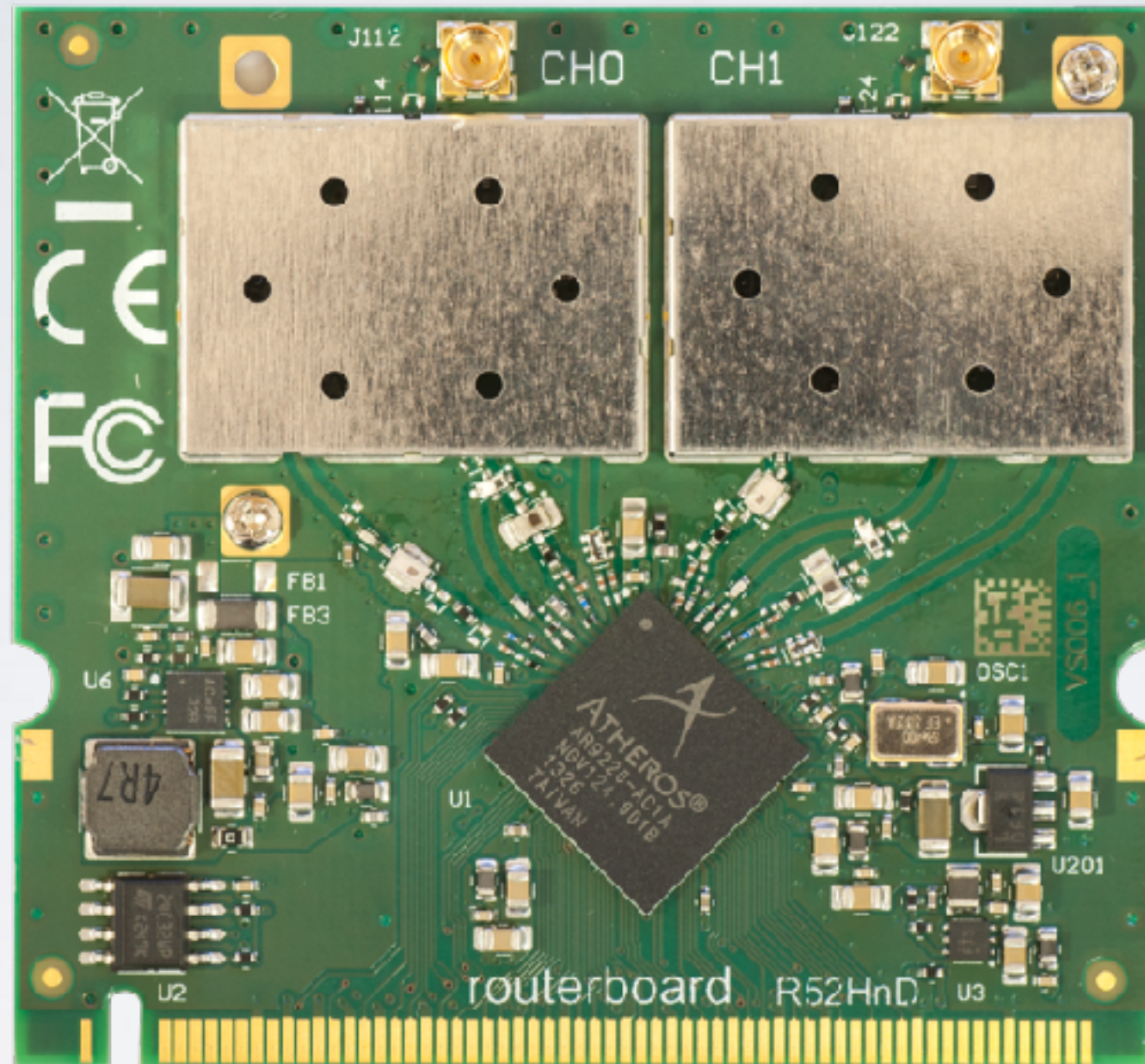


SXT 6GHz



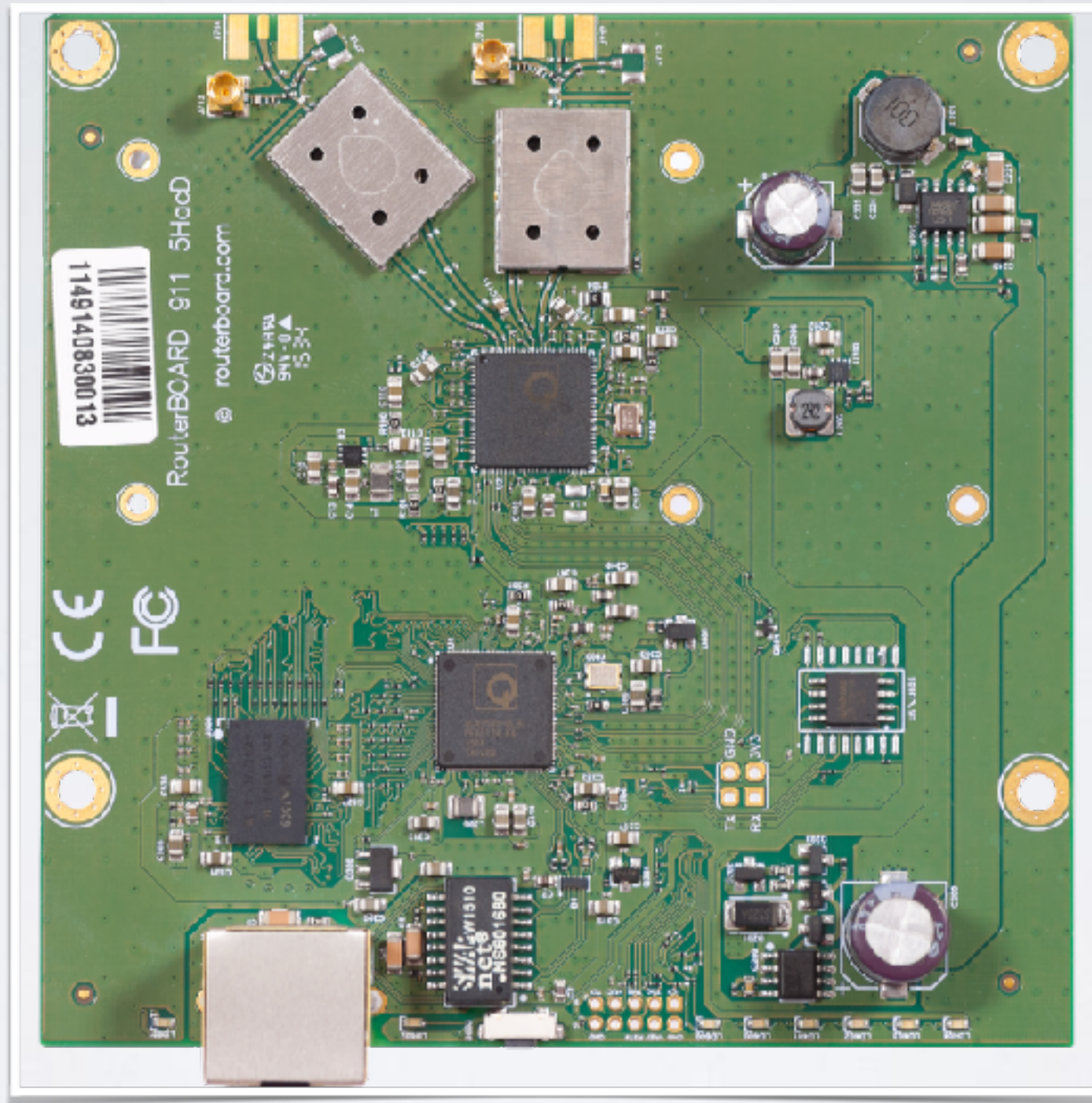
- 5940-6500 MHz range
- 802.11 a/n
- Antenna gain 16dBi
- Antenna beam width 28

R52HnD



tx-power 26 dbm, R52H replacement

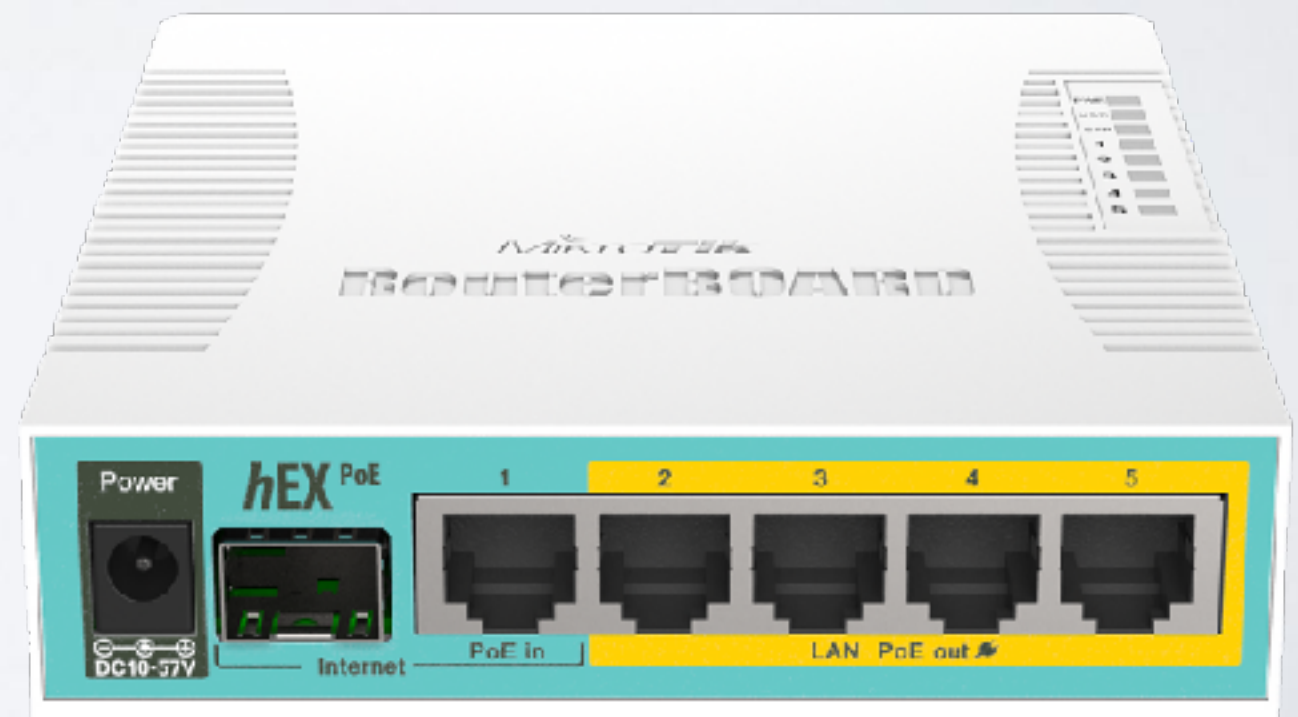
911 Lite 5ac



ac update for extremely affordable board

hEX PoE

- Small Ethernet device
- Five Gbps ports
- Power over Ethernet out on ports 2-5



OmniTIK 5 ac

- 802.11ac, 2 chains
- 5x1 Gbit Ethernet ports
- 7.5 dBi
- PoE in



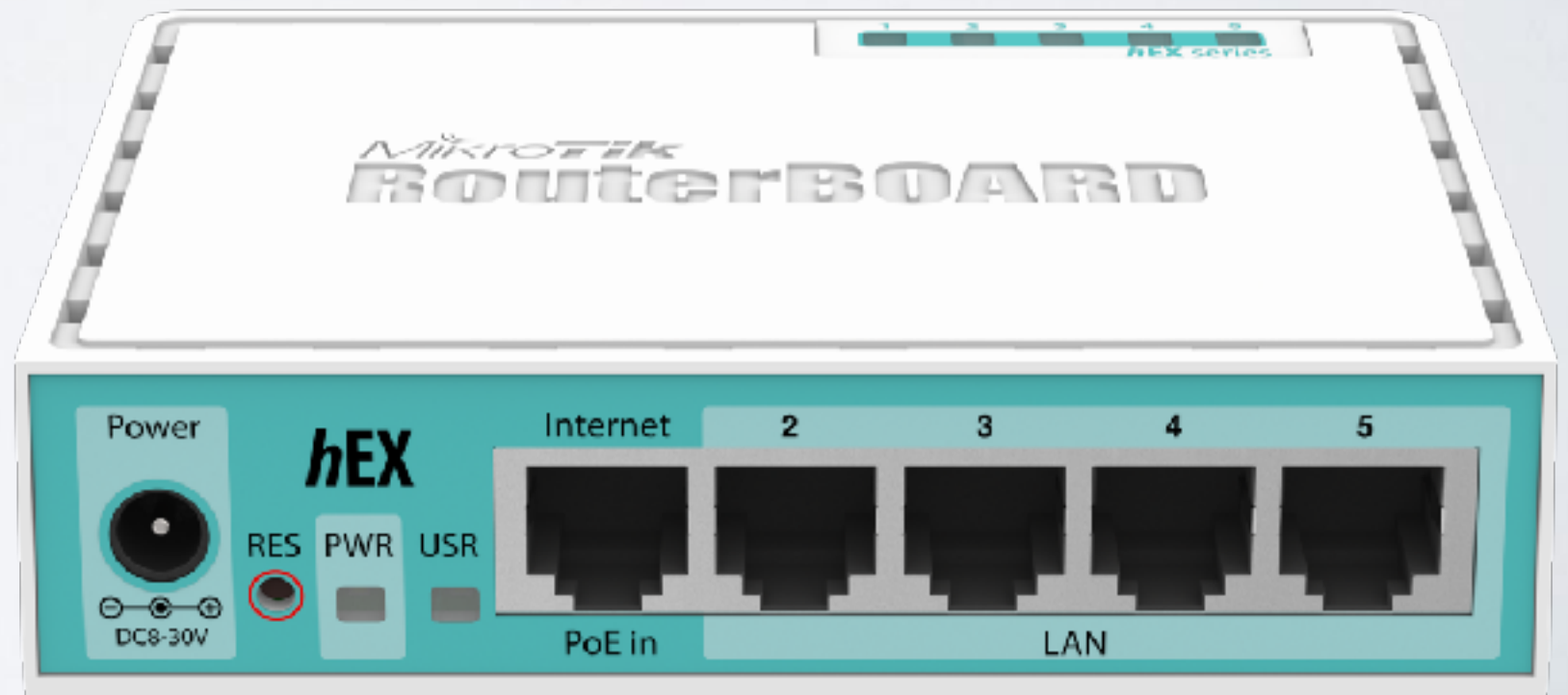
OmniTIK 5 PoE ac

- 802.11ac, 2 chains
- 5x1 Gbit Ethernet ports
- 7.5 dBi
- PoE in
- PoE out (ports 2-5)



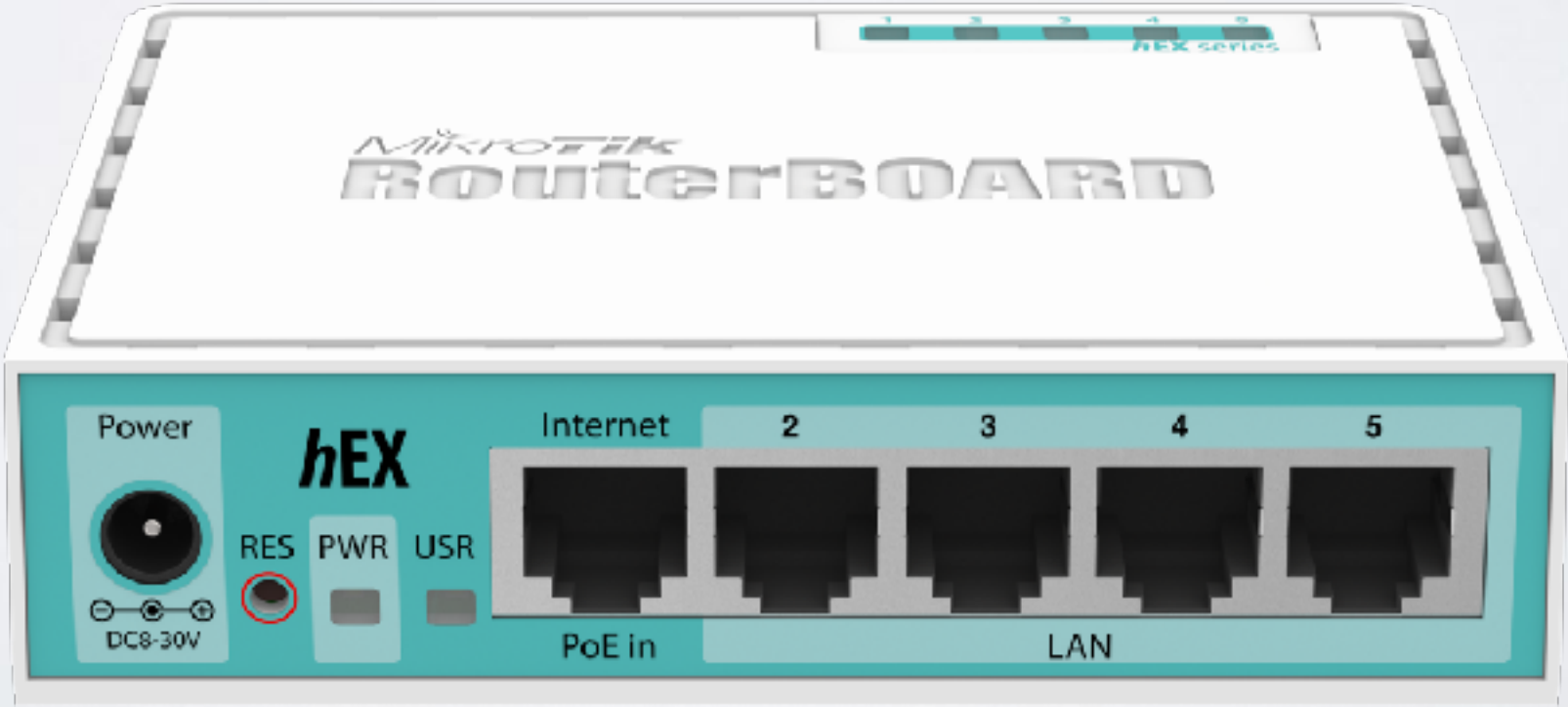
hEX

- new hEXr3
- very affordable!
- 880 MHz, 2 cores and 4 threads
- hardware acceleration ~470mbps
- same form factor
- same price



hEX

previous r2	new r3
396 Mbps, bridging 64 bytes	532 Mbps
986 Mbps, bridging 1518 bytes	1640 Mbps
373 Mbps, routing 64 bytes	530 Mbps
396 Mbps, routing 1518 bytes	1640 Mbps
40 Mbps, AES-128 1400 bytes	472 Mbps



All Products

- Include free software upgrades for life
- Run the same RouterOS software*
- For more info see **routerboard.com**

*Except RB260GS (SwOS)

ROUTEROS FEATURES

CHR

Cloud Hosted Router

- RouterOS version tailored for running in virtual environments
- Runs on VMware Workstation and ESXi, VirtualBox, HyperV, KVM, XenServer, etc.
- Cloud services - Amazon, Azure and others

CHR

AWS Marketplace

1. Choose AMI

2. Choose Instance Type

3. Configure Instance

4. Add Storage

5. Tag Instance

6. Configure Security

Step 1: Choose an Amazon Machine Image (AMI)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch an instance in Amazon EC2. You can find AMIs in the AWS Marketplace, the public AMI community, or the AWS Marketplace; or you can select one of your own AMIs.

Quick Start

My AMIs

AWS Marketplace

Community AMIs

▼ Categories

All Categories

Software Infrastructure (1)

🔍 Mikrotik



Free tier eligible

Cloud Hosted Router

★★★★★ (0) | 6.34.1 | Sold by [MikroTik](#)

Bring Your Own License + AWS usage fees

Linux/Unix, Other 6.34.1 | 64-bit Amazon Machine Image (AMI) | Updated: 4/7/16

Use the CHR for protecting your cloud servers using RouterOS firewall, for running your own VPN service or ...

[More info](#)

CHR

Use cases

- Firewall for your cloud services
- VPN server in the cloud
- The Dude monitoring server
- Simulate networks for learning or training
- And much more

CHR

Licensing

License	Speed limit	Price
Free	1 Mbit	FREE
PI	1 Gbit	\$45
PI0	10Gbit	\$95
P-Unlimited	Unlimited	\$250

- 60 day trial available
- Purchased license can be transferred

CHR

Licensing

1

Licence

System ID: 6LR1ZP/utuJ

Level: free

Next Renewal At:

Deadline At:

☐ Limited Upgrades

OK

Generate New ID

Renew Licence

Renew Licence

Account: mymikrotikcomaccount

Password: *****

Level: P1

Start

Stop

Close

done

2

Licence

System ID: 6LR1ZP/utuJ

Level: P1

Next Renewal At: Jan/10/2016 21:59:59

Deadline At: Feb/09/2016 21:59:59

☐ Limited Upgrades

OK

Generate New ID

Renew Licence

WinBox → System → License

CHR

Licensing

3



Routers & Wireless

[home](#)[software](#)[hardware](#)[support](#)[downloads](#)[purchase](#)[training](#)[account](#)[Overview](#) [Support](#)[Logout](#)

Account Notices

⚠ You must approve your account for creditcard purchases.

Account authorisation procedure >>>

Current account balance is **\$0**

Prepaid keys available: **0**

Generate a NEW software KEY

- purchase a key
- make a demo key

For already created software keys

- all keys **or** try search
- replacement key (0)
- request key from another account

Cloud Hosted Router (CHR)

- all keys
- orders and invoices

Account information

- balance
- change user information
- **hardware orders**

Training

- my training sessions(0)
- my certificates(0)
- MikroTik User Meeting

Support

- support contact form
- supout.rif viewer

Other

- lockpack creator

www.mikrotik.com

CHR

Licensing

4

[Back To Main Menu]

User Keys

Show **10** entries

Search:

System ID	Key	Issued	Expires	Level	Transfer	Action	Note
6IR1ZP/utuJ	-----BEGIN MIKROTIK SOFTWARE KEY----- alnRyhu6h1VkgfrR4wfrXcyP3MB4CBysaE1qMBikaNodTDUhtuK8ggpNddOGGcbjU6n1WwL7YsDsf/wZcmFAw== END MIKROTIK SOFTWARE KEY-----	2015-12-09	2016-02-09	P1-Perpetual (Trial version)		Upgrade	

Previous **1** Next

CHR

Licensing

5

Upgrade system license ?

System ID **Level**

6IR1ZP/utuJ

- ✓ Select level
- P1-Perpetual (\$ 45.00)
- P10-Perpetual (\$ 95.00)
- P-Unlimited (\$ 250.00)

System 6IR1ZP/utuJ
Perpetual Trial version

**You have following prepaid balance keys
available to purchase a CHR license:**

P1-Perpetual - 4 keys

Back

6

Payment ?

You have selected: **P1-Perpetual**
System ID **6IR1ZP/utuJ**
Total price: **\$ 54.45**

Pay using deposit (left: \$ 73.51)

Pay using CC

Pay using PayPal

Pay using Balance key (4)

***Note:** Price includes VAT 21% because you have specified EU country as your residence. To avoid this you have to enter your VAT registration number in your account settings.*

Back

CHR

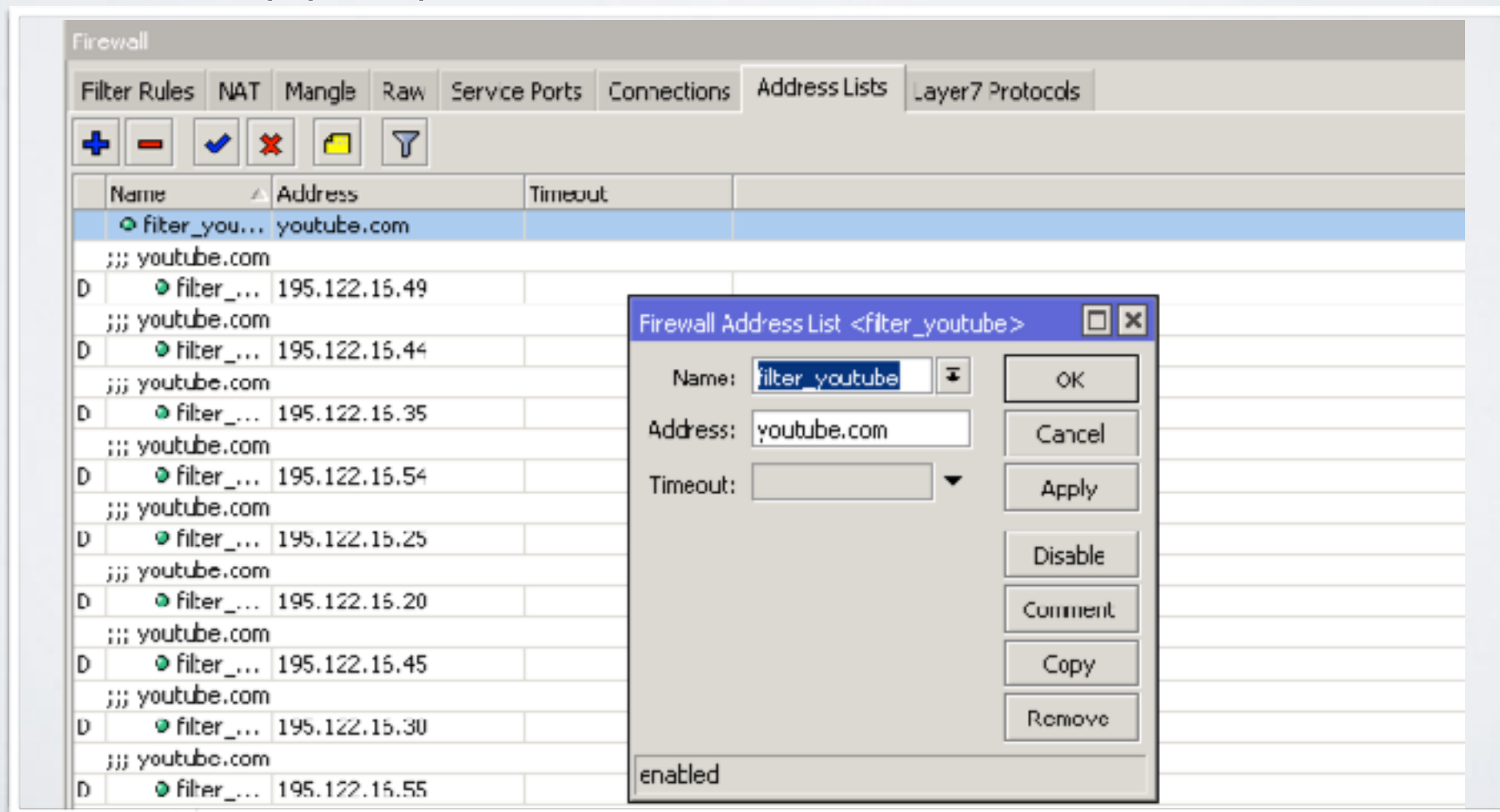
Cloud Hosted Router

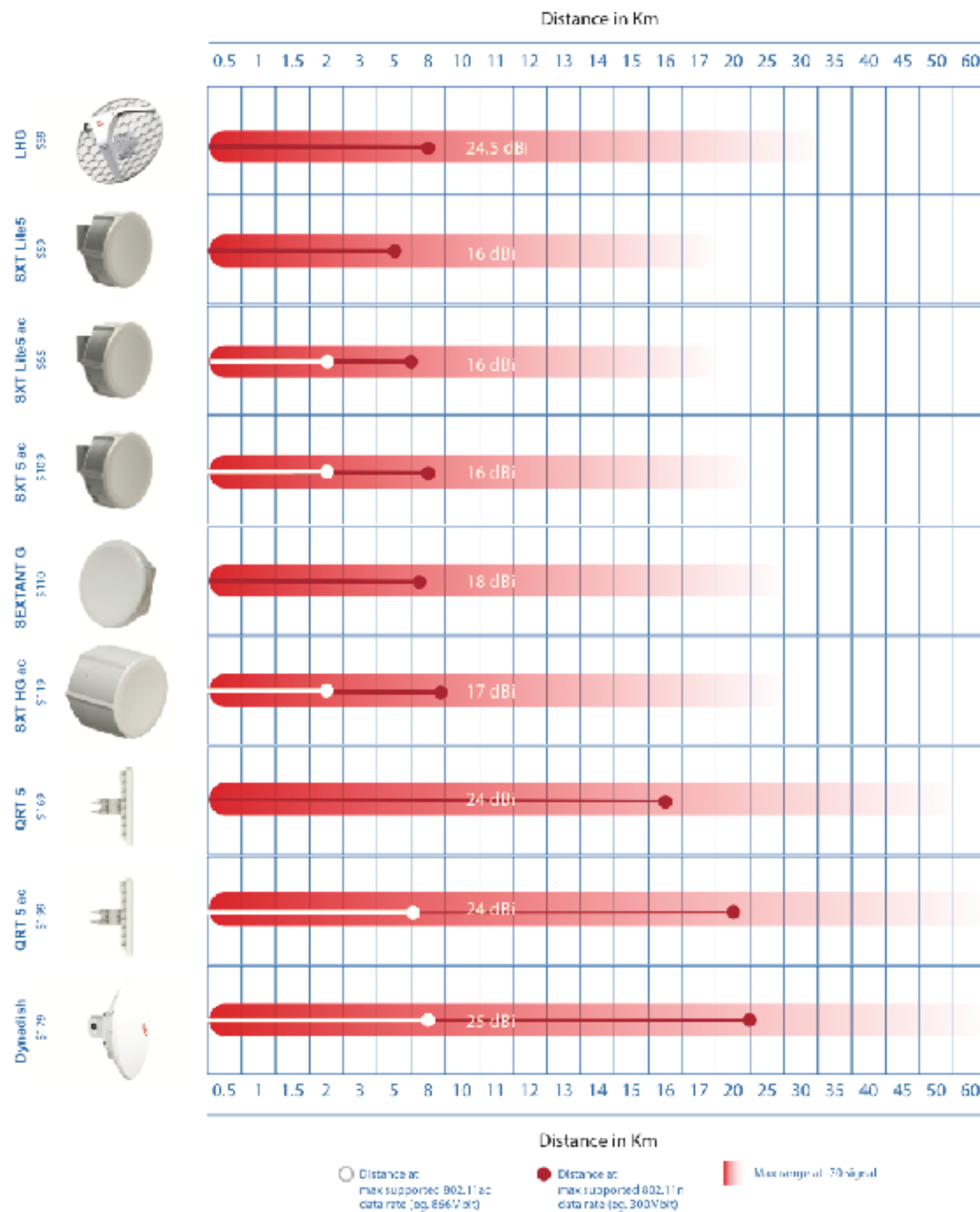
- For more info, see the CHR page on our wiki:
<http://wiki.mikrotik.com/wiki/Manual:CHR>
- Available on the download page:
<http://mikrotik.com/download#chr>

RouterOS v6.37 changelog
120 entries!

DNS at address-list

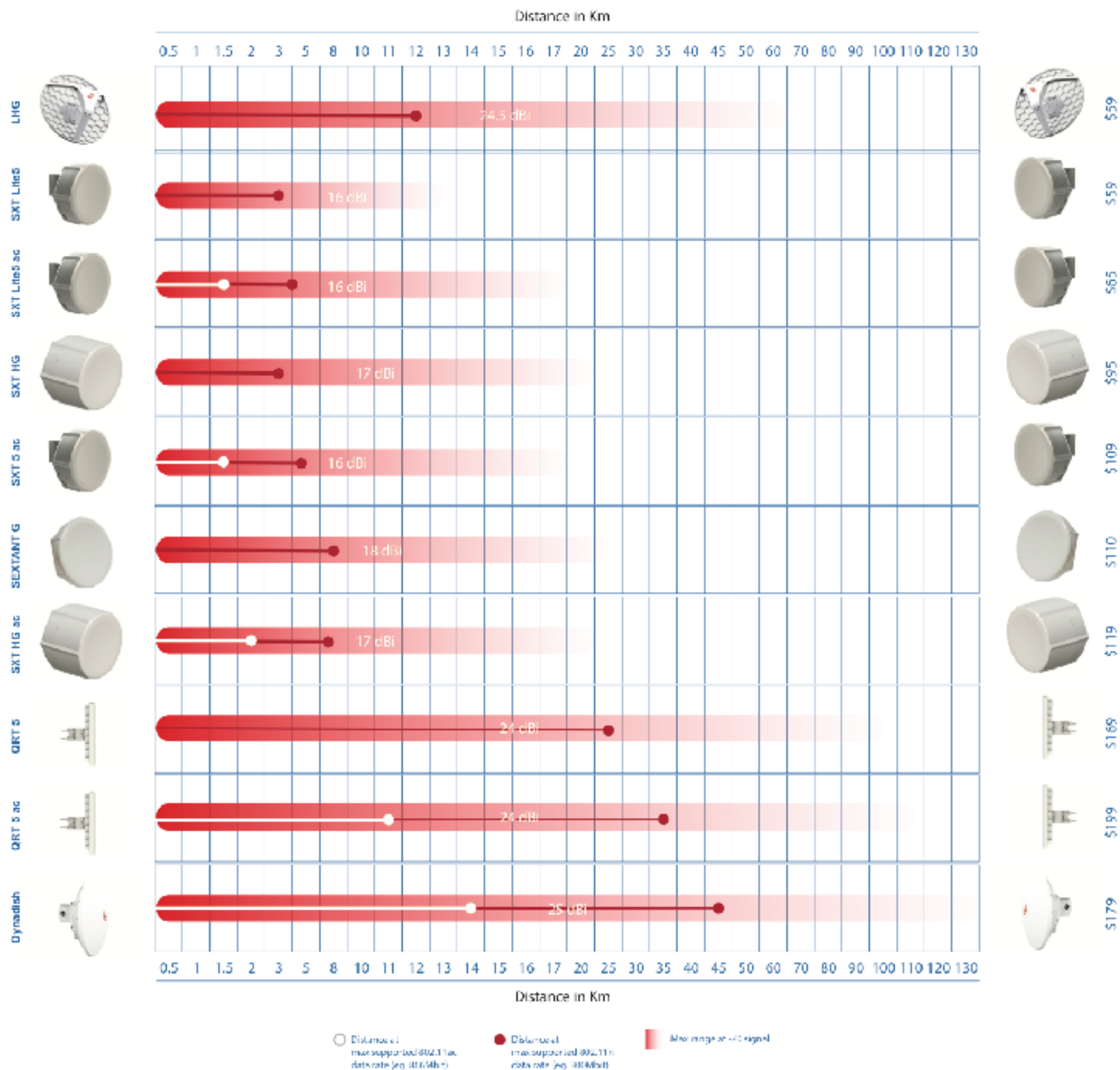
- add DNS name to address-list, router will find addresses automatically
- set appropriate rules at firewall





Note: line of sight, interference, alignment, weather and other outside factors will affect the wireless link performance and possible distance





Note: line of sight, interference, alignment, weather and other outside factors will affect the wireless link performance and possible distance

Need Help?

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

After the MUM

- All presentations - mum.mikrotik.com
- Video - youtube.com/mikrotik
- License will be e-mailed

Enjoy the MUM!



MikroTik

The image shows the Mikrotik logo in a dark gray, 3D-style font. The word "Mikro" is in a standard sans-serif typeface, while "Tik" is in a bold, italicized sans-serif typeface. Above the letter 'i' in "Mikro", there are three curved lines that suggest motion or signal waves. The entire logo is positioned on a light gray, reflective surface, which creates a clear reflection of the logo below it. The background is a smooth, light gray gradient.