

The Mikrotik logo features the word "Mikrotik" in a stylized, italicized font. The "i" in "Mikro" has a dot that is replaced by two curved lines, resembling a stylized "M" or a signal icon. The "T" in "Tik" is bold and has a horizontal bar above it. The "i" in "ik" has a dot that is replaced by a vertical bar.

MikroTik

MUM Central America (Guatemala)

January 2017

More than 140 MUMs
all around the world



MikroTik

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

A map of Europe with the Mikrotik logo overlaid. The logo consists of a stylized bird icon above the word 'Mikrotik' in a bold, italicized sans-serif font. The country of Latvia is highlighted in a solid green color. Other countries are labeled in a small, black, sans-serif font.

Mikrotik

Latvia

MikroTik at the MUM

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



Horario

09:00

Presentaciones

12:15

Almuerzo (con vouchers)

13:45 - 16:00

Presentaciones

16:00

Sorteo

mt.lv/agenda

MUM live

www.youtube.com/mikrotik

Special thanks!

RedyTec

REDES Y TECNOLOGÍA S.A.

Internet Access

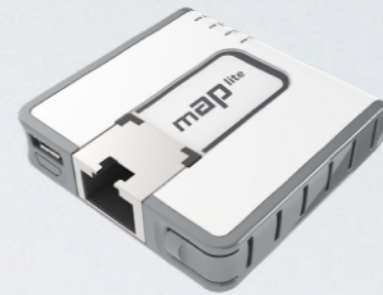
SSID: MUM

login: MUM

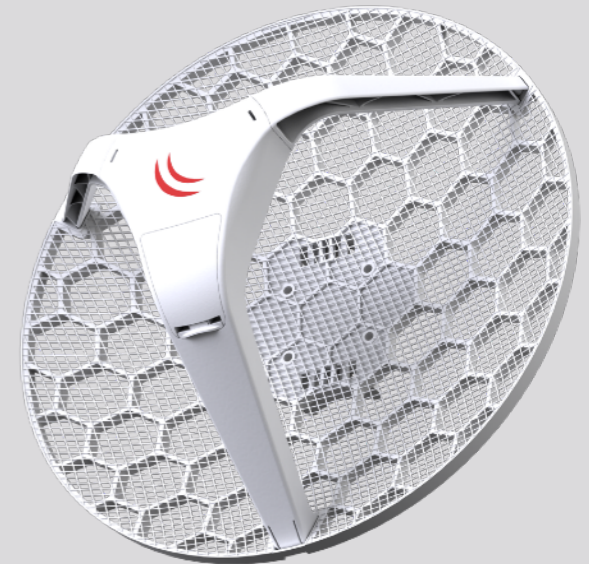
password: MUM2018-



Ethernet



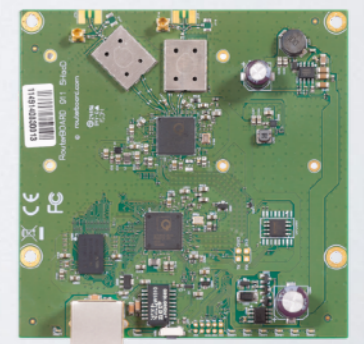
Wireless for home and office



Wireless



Switches



RouterBOARDs

RECENTLY INTRODUCED

LHG 5

Light Head Grid

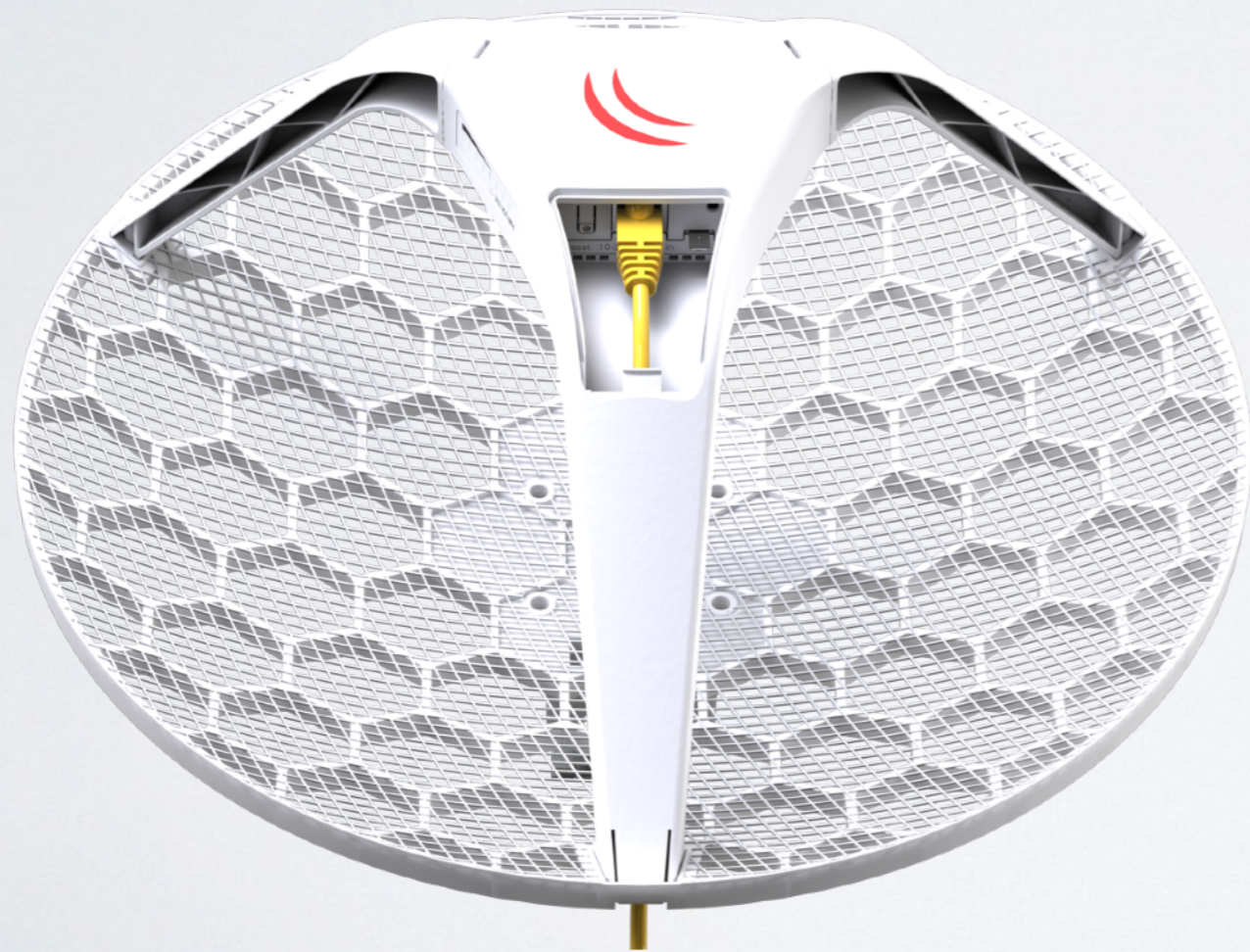
- 24.5 dBi antenna
- Antenna is built into wireless unit
- 802.11a/n dual chain
- Very affordable



now

LHG 5

Light Head Grid



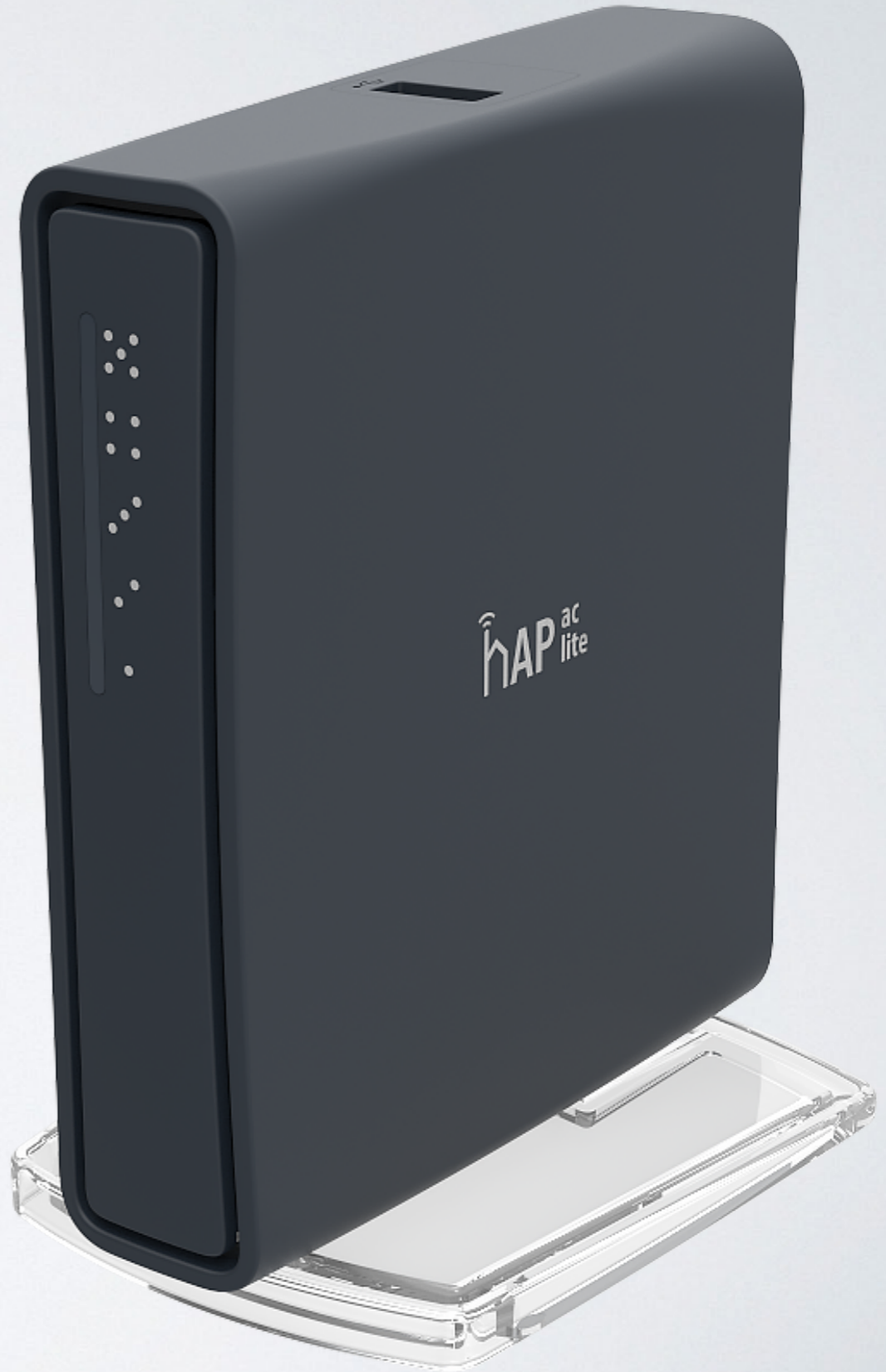
quickMOUNT pro LHG

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



now

hAP ac lite



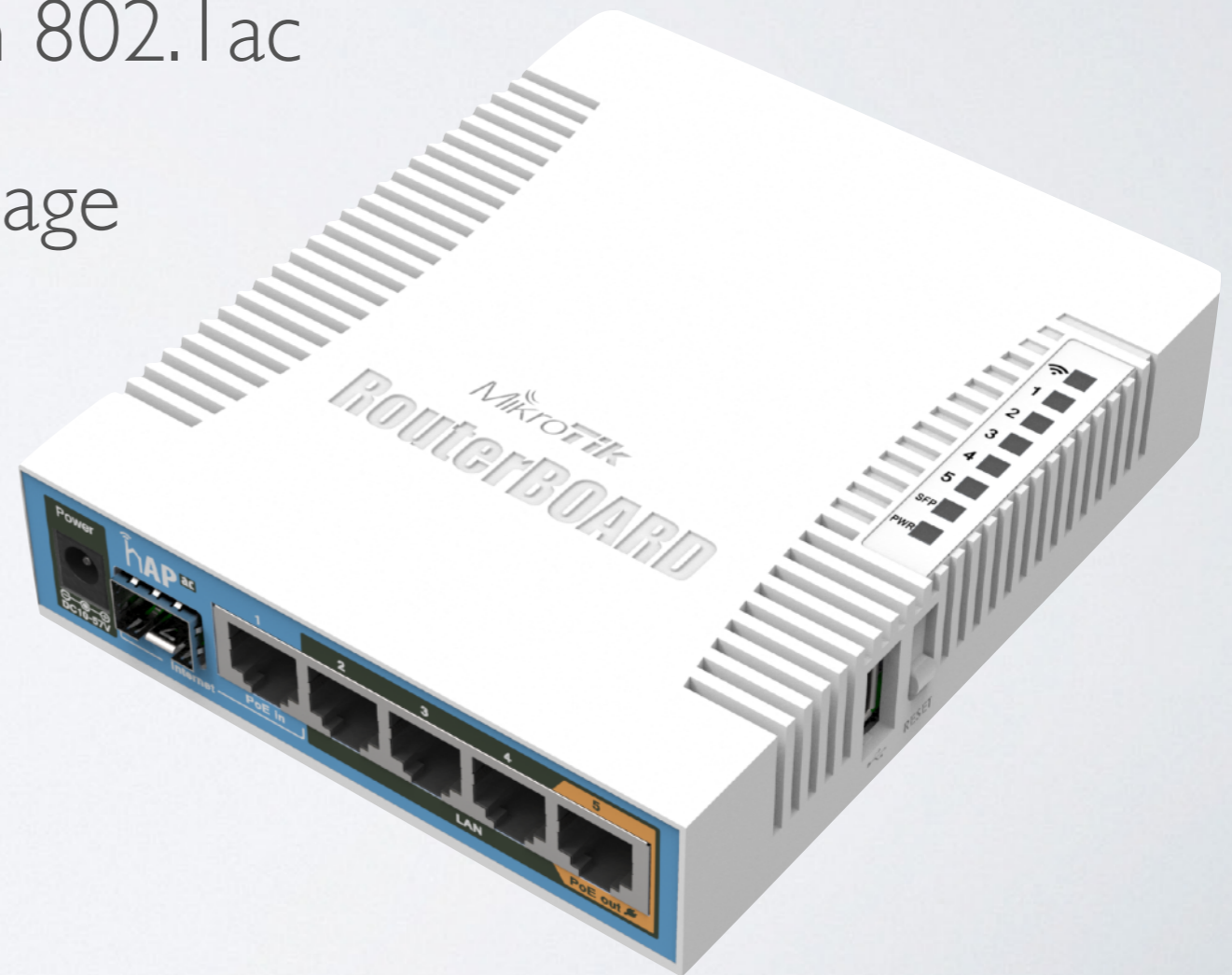
hAP ac lite

- Dual concurrent home AP
- 2.4GHz high power 2 chain 802.11n
- 5GHz high power 1 chain 802.11ac
- 5x100Mbps ports
- 650MHz CPU
- USB port for 3G/4G

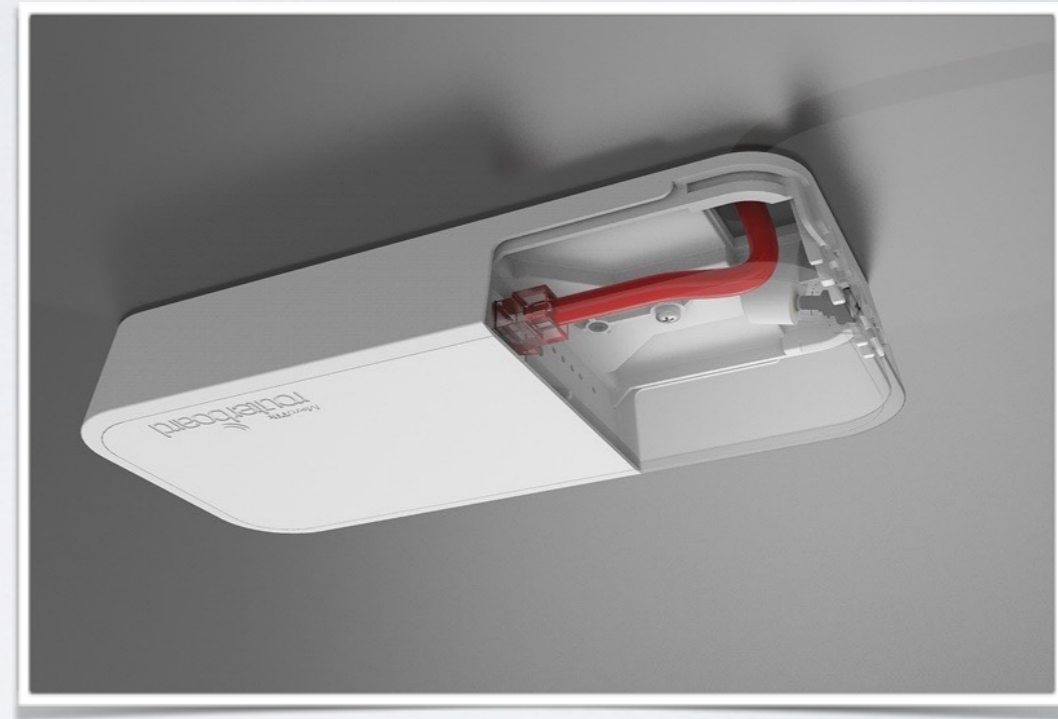


hAP ac

- 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



wAP ac



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

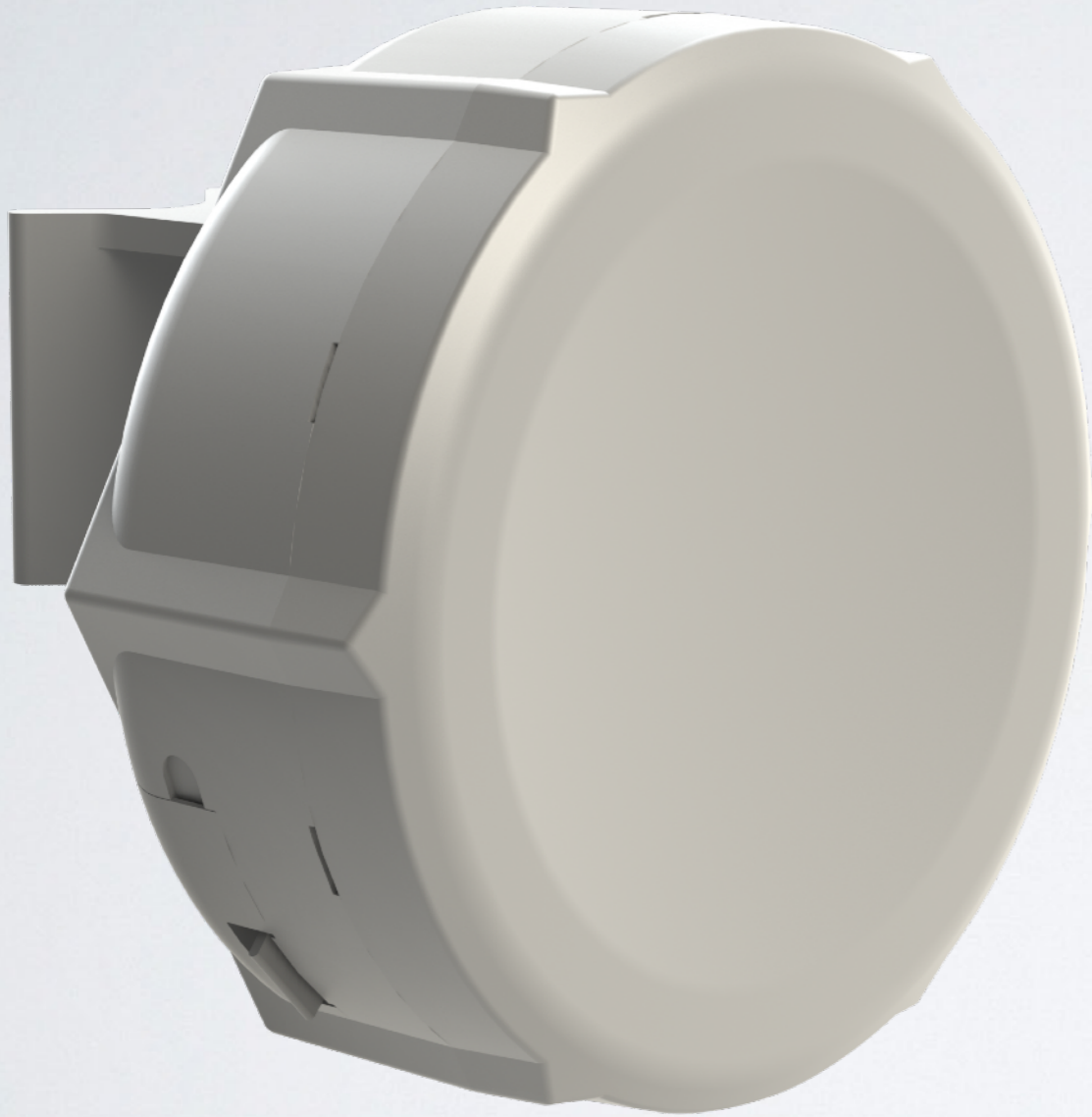


wAP LTE kit

- 2GHz wireless
- LTE antennas
- LTE modem within miniPCI-e slot
- Weatherproof case
- Indoor, outdoor, mobile operation



SXT 6GHz



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

OmniTIK 5 ac

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



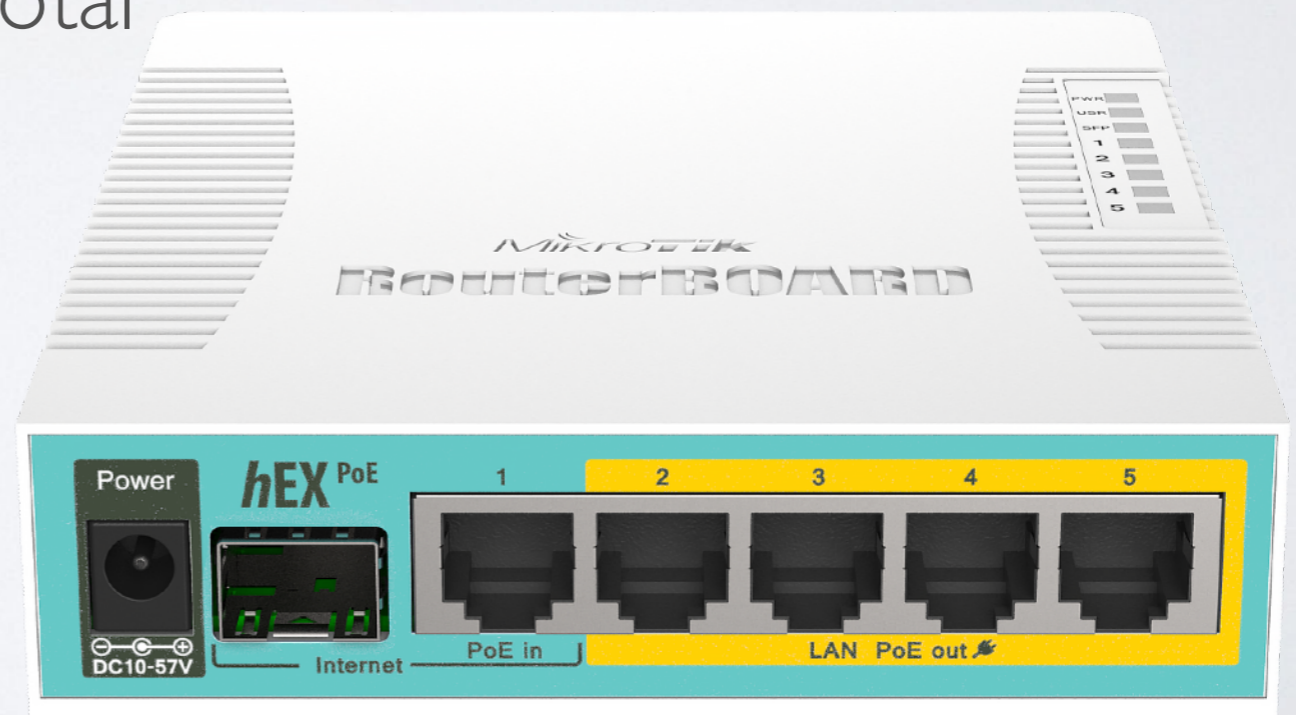
OmniTIK 5 PoE ac

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



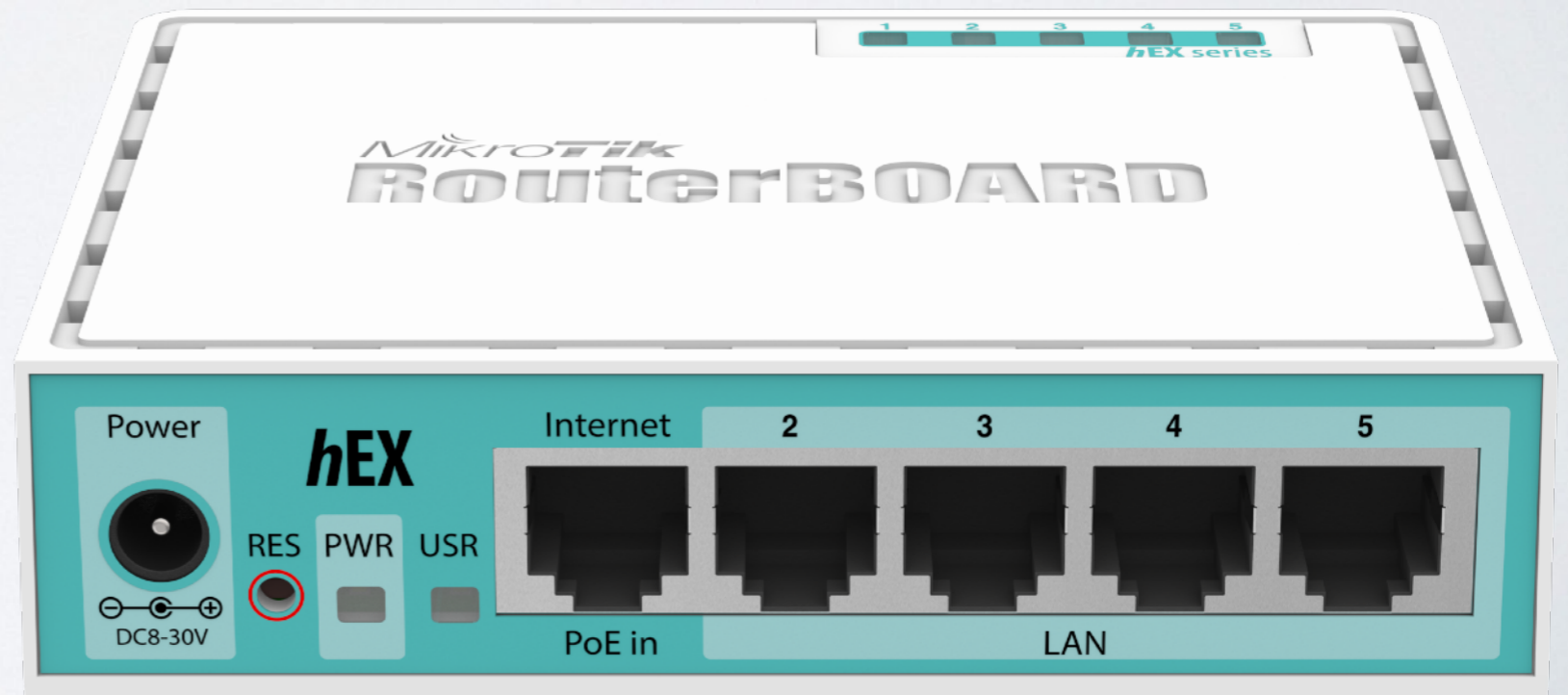
hEX PoE

- Small Ethernet device
- Five Gbps ports
- Power over Ethernet out on ports 2-5
- Max 1A per port, 2A total



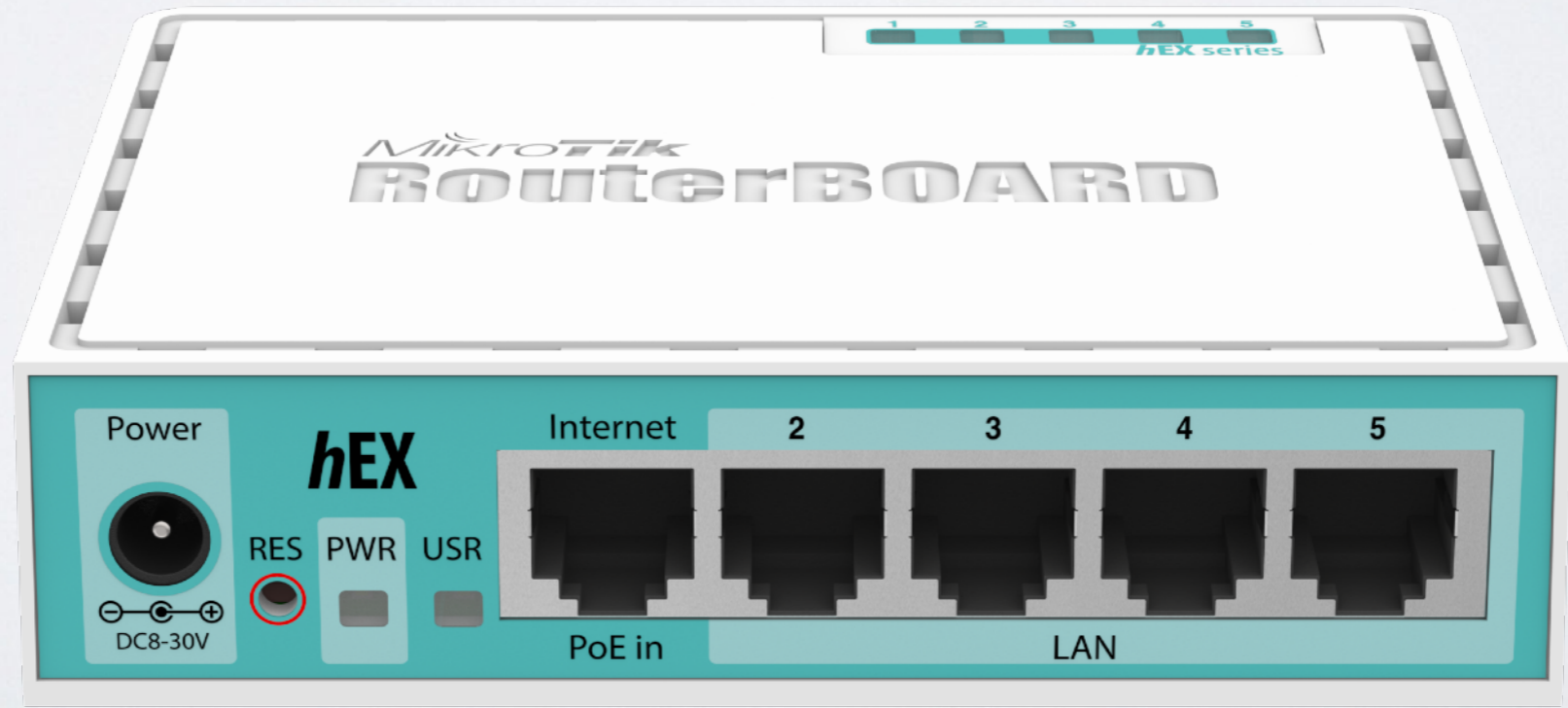
hEX

- 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 | 590 Mbps |
| 986 Mbps, bridging 1518 bytes | 1955 Mbps |
| 373 Mbps, routing 64 bytes | 520 Mbps |
| 396 Mbps, routing 1518 bytes | 1961 Mbps |
| 40 Mbps, AES-128 1400 bytes | 472 Mbps |



CCR1009 update

- new CCR1009 available!
- no switch chip!
- 100Mbps support over SFP!
- combo port
- more throughput



CCR1009 update

CCR1009-8G-1S+PC - 6Gbps (old)

CCR1009-7G-1C-PC - 8Gbps (new)

CCR1009-8G-1S-1S+PC - 16Gbps (old)

CCR1009-7G-1C-1S+PC - 18Gbps (new)



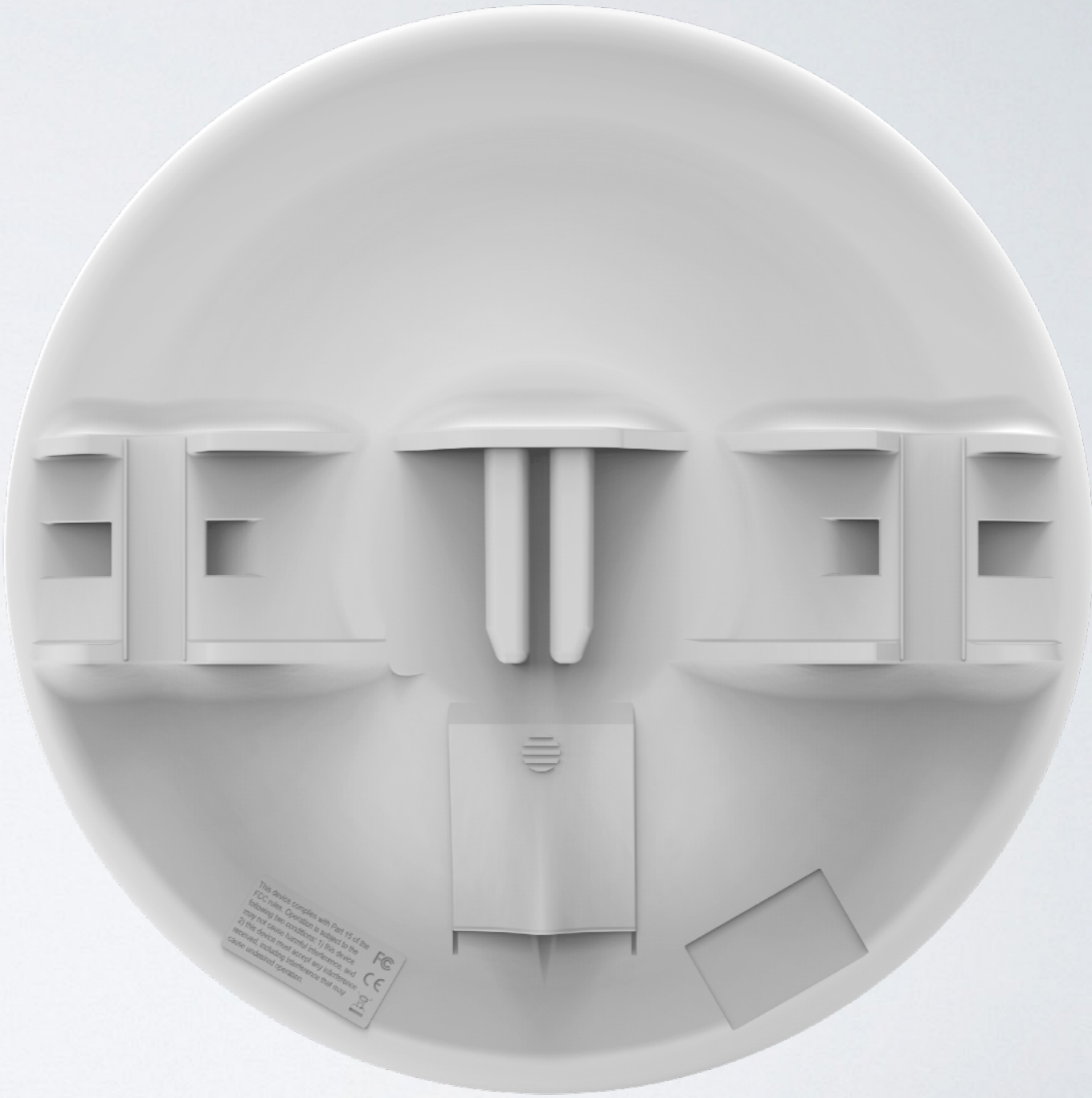
NEW PRODUCTS

Disc 5

- High gain CPE at disruptive price!
- 21 dBi dual chain, 802.11n
- 600MHz CPU
- Kit recommended price \$48



Disc 5





LDF 5

Light Dish Feed

- For satellite offset dish antennas
- Offset mount 40mm
- 100cm dish gives 33dBi
- RouterOS inside
- Tiny package





LDF 5

Light Dish Feed



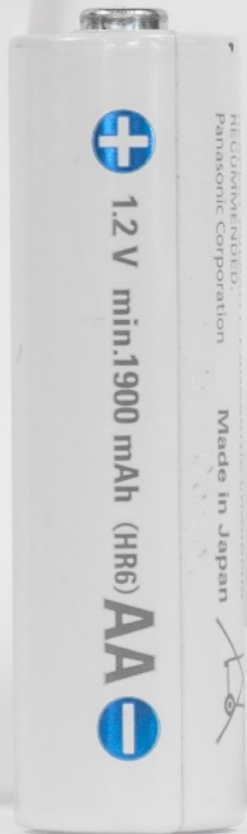
cAP lite

- Small and elegant 2.4GHz AP
- 802.11n, dual chain
- Two different cases
- Custom 3D design cases





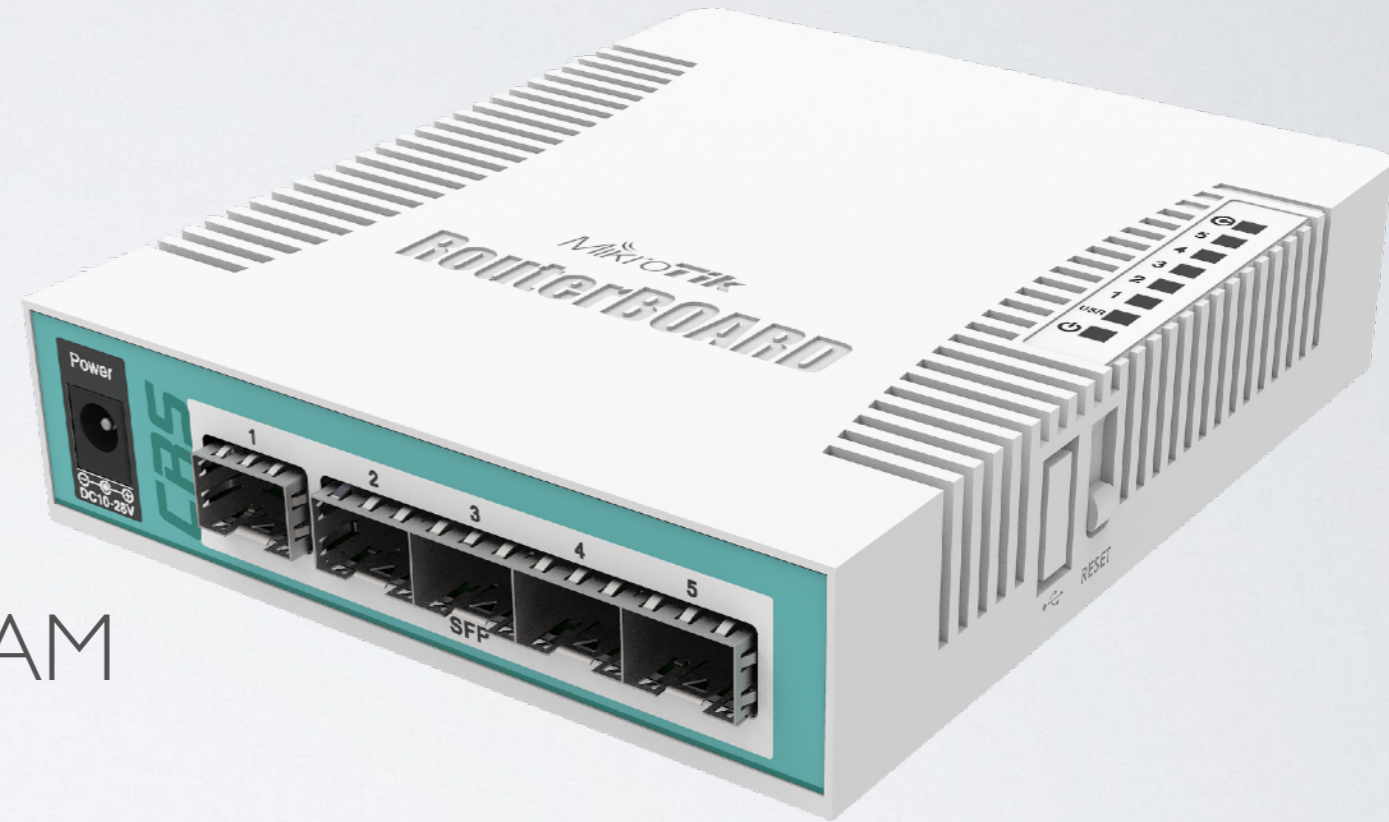
cAP lite





CRS106-1C-5S

- Desktop size smart switch
- 1 combo port Ethernet/SFP
- 5 SFP cages
- 400MHz CPU and 128MB RAM



CSS326-24G-2S+RM



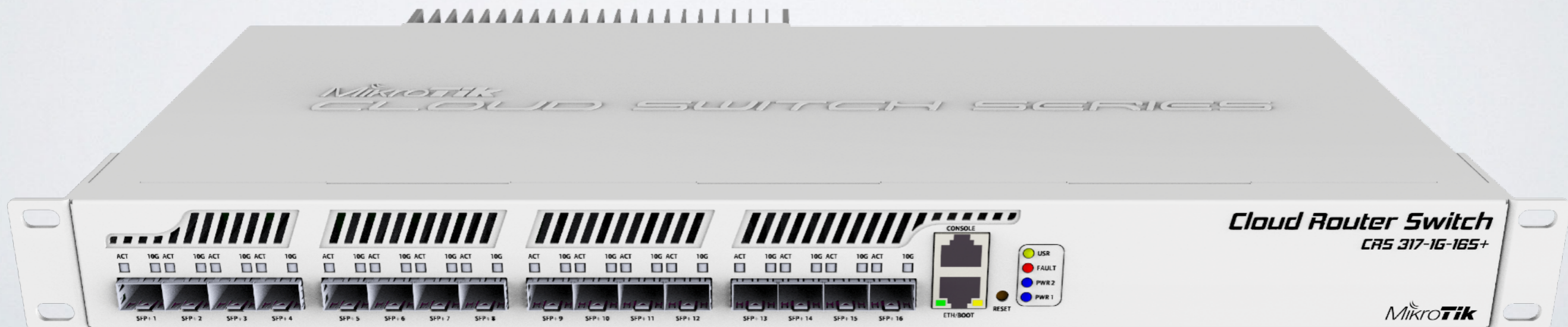
- SwOS powered device
- Wire speed on 24G ports and 2 10G SFP+



CRS317-1G-16S+RM



- Layer3 switch powered by MikroTik RouterOS
- 16 SFP+ ports and 1G Ethernet



All Products

- Include free software upgrades for life
- Run the same RouterOS software
- For more info see [**routerboard.com**](http://routerboard.com)

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

Use cases

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

CHR

Licensing

| License | Speed limit | Price |
|-------------|-------------|-------|
| Free | 1 Mbit | FREE |
| P1 | 1 Gbit | \$45 |
| P10 | 10Gbit | \$95 |
| P-Unlimited | Unlimited | \$250 |

- 60 day trial available
- Purchased license can be transferred

CHR

Licensing

1

Licence

System ID: 6R1ZP/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: 6R1ZP/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

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----- alnRyhu6h1VqzR4wfrXcyP3MB4BysaE1qMBikaNodTDLHTUK8ppNxddOGCebjU6n1WwL7hsDsfwZcMFA==----- 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>

The Dude

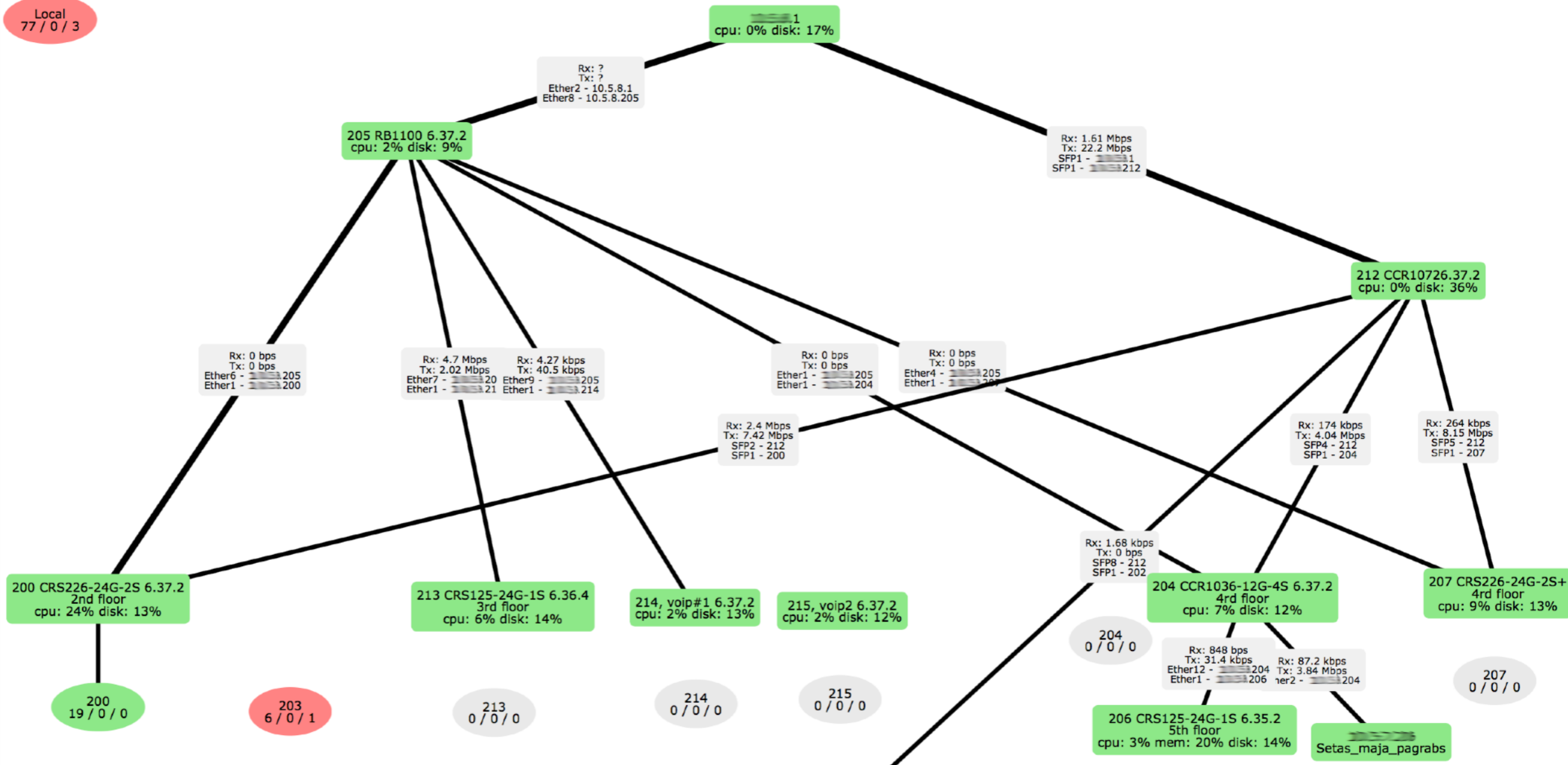
- New features in v6.38
- The Dude configuration interface in WinBox/WebFig
- Viewable maps WinBox/WebFig
- Any RouterOS device can be used as The Dude agent
- And many more - mikrotik.com/dude

The Dude

- Interfaces
- PPP
- Bridge
- Mesh
- IP
- MPLS
- Routing
- System
- Queues
- Files
- Log
- Radius
- LCD
- Tools
- New Terminal
- Dude**
- Charts
- Devices
- Functions
- Links
- Mibs
- Network Maps
- Networks
- Notifications
- Probes
- RouterOS Info
- SNMP Profiles
- Server Config
- Services
- Settings
- Syslog Rules
- Tools
- Partition
- Make Supout.rif
- Undo
- Redo

OK Cancel Apply Remove

Local
77 / 0 / 3



DNS at address-list

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

The screenshot shows the Mikrotik WinBox Firewall configuration interface. The 'Address Lists' tab is active, displaying a list of address lists. A dialog box titled 'Firewall Address List <filter_youtube>' is open, showing the configuration for a new address list named 'filter_youtube' with the address 'youtube.com'. The status 'enabled' is shown at the bottom of the dialog.

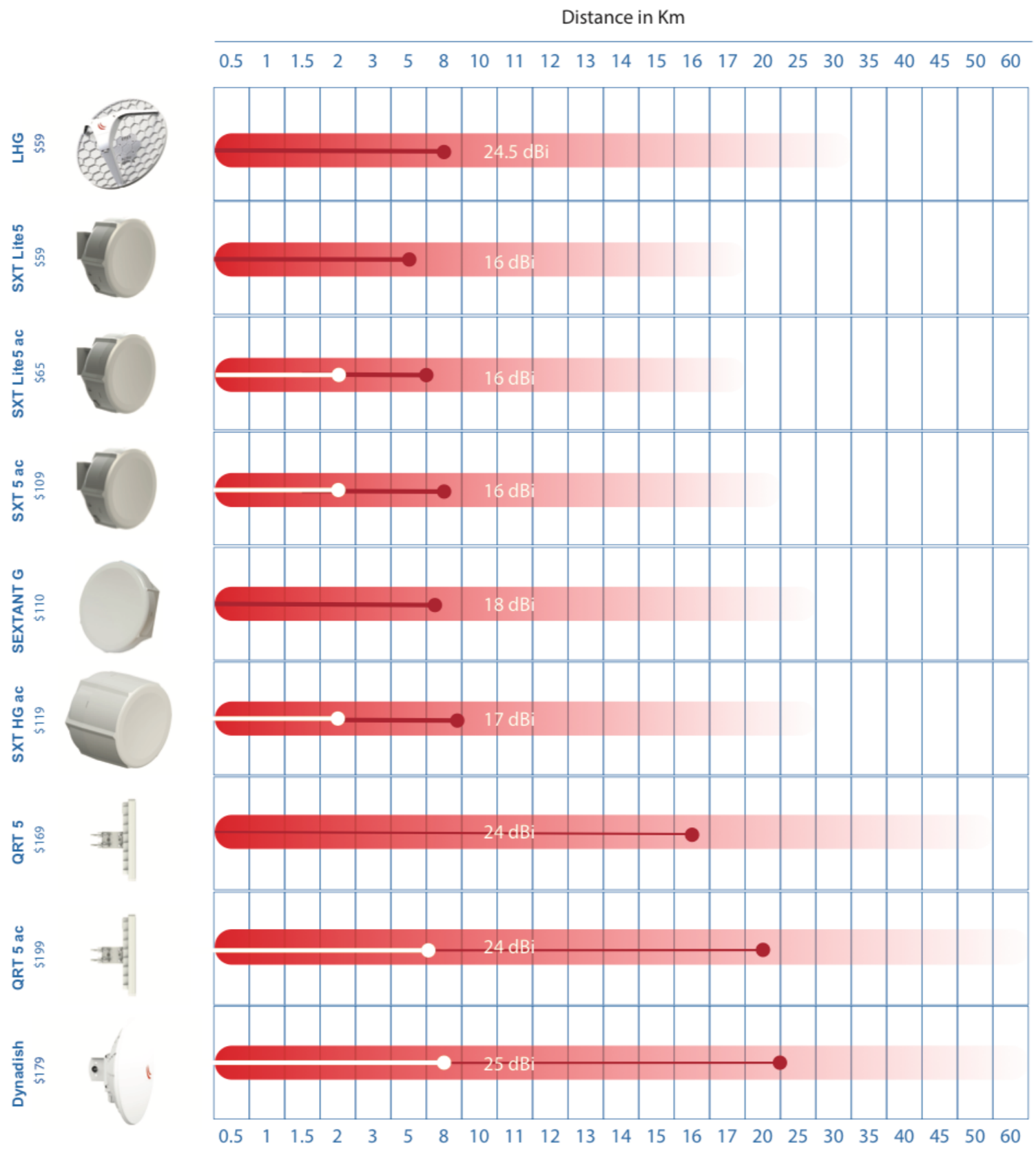
| Name | Address | Timeout |
|---------------|---------------|---------|
| filter_you... | youtube.com | |
| filter_... | 195.122.16.49 | |
| filter_... | 195.122.16.44 | |
| filter_... | 195.122.16.35 | |
| filter_... | 195.122.16.54 | |
| filter_... | 195.122.16.25 | |
| filter_... | 195.122.16.20 | |
| filter_... | 195.122.16.45 | |
| filter_... | 195.122.16.30 | |
| filter_... | 195.122.16.55 | |

Firewall Address List <filter_youtube>

Name: filter_youtube
Address: youtube.com
Timeout:
enabled

TR069-Client

- Initial support for TR-069 added
- Based on TR181 issue 2 Data Model
- In addition to DM attributes can push and execute arbitrary RouterOS script file
- Available in RouterOS v6.38
- wiki.mikrotik.com/wiki/Manual:TR069-client



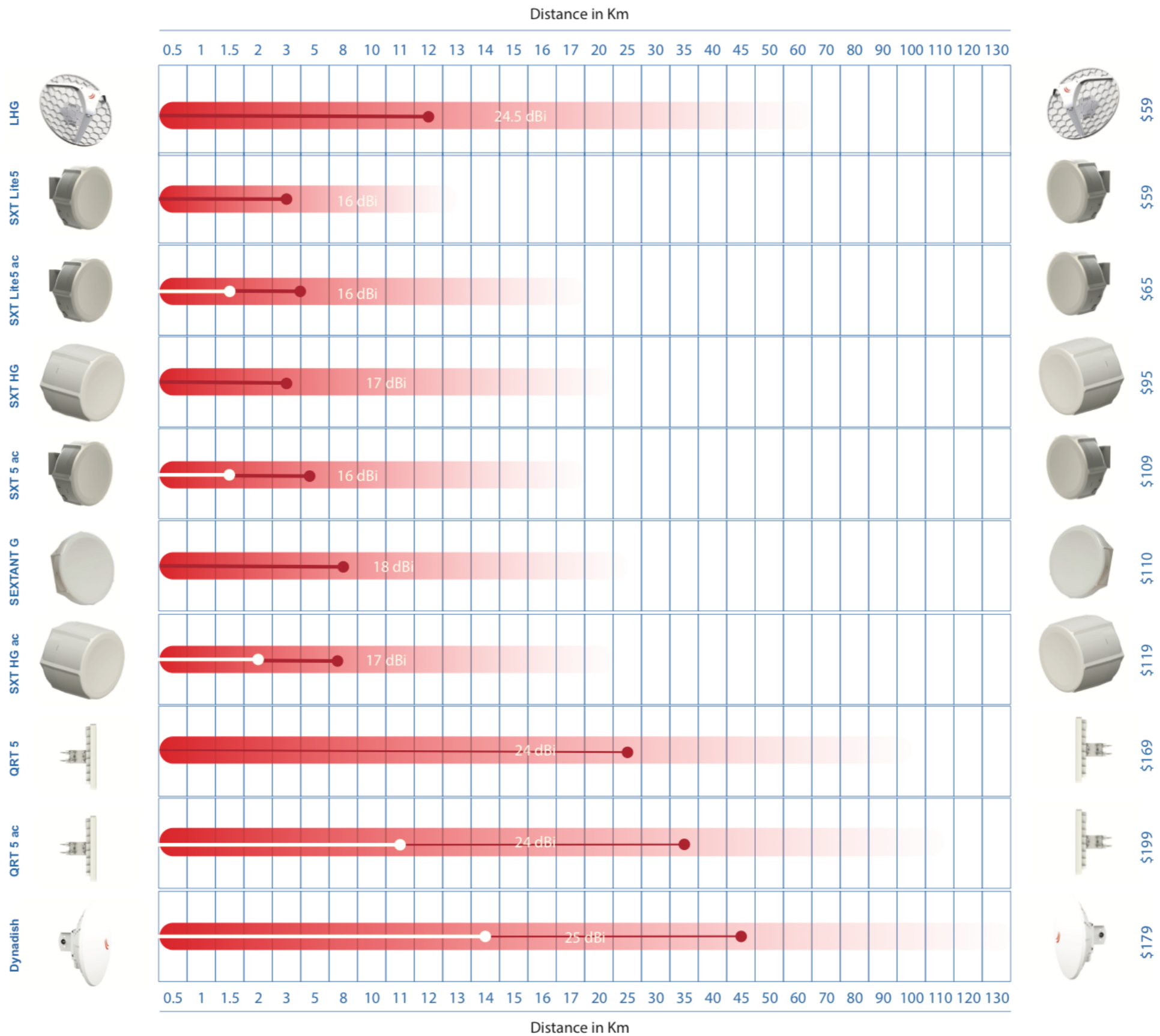
Distance in Km

○ Distance at max supported 802.11ac data rate (eg. 866Mbit)

● Distance at max supported 802.11n data rate (eg. 300Mbit)

▬ Max range at -70 signal

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



Distance at max supported 802.11ac data rate (eg. 866Mbit)
 Distance at max supported 802.11n data rate (eg. 300Mbit)
 Max range at -70 signal

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

RouterOS v6.38 changelog
159 entries!

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 added to your account

¡Disfrutar el MUM!

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, italicized sans-serif font. Above the "i" in "Mikro" are three curved lines. The entire logo is reflected on a glossy surface below it.

MikroTik