# User Meeting

Beirut, Lebanon

June 2016

MikroTik

- Established 1996
- RouterOS created in 1997
- RouterBOARD created in 2002
- First MUM event in Prague 2006
- Biggest MUM in 2015, Indonesia - 2600+ people
- More than 170 employees

MikroTik
Latvia
Iceland
Sweden
Finland
Russia
Norway
Estonia
Lithuania
Belarus
Den-
mark
Ireland
United
Kingdom
Nether-
lands
Poland
Belgium
Germany
Luxembourg
Czech Republic
Slovakia
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Romania
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Croatia
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Herzego-
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Serbia
Monaco
San
Marino
Bulgaria
Andorra
Monte-
negro
Portugal
Italy
Spain
Vatican City
Mace-
donia
Al-
ba-
nia
Turkey
Greece
Syria

# More than 120 MUM events all Around the World

# What we do

- MikroTik provides networking equipment for all possible uses - wireless, ethernet and switching
- RouterOS software supports most common and also many custom made features

# MikroTik at the MUM

- Edmunds Aperāns (Sales, Training + Academy)
- Mārtiņš Strods (Support)
- Pauls Jukonis (Support)

# Schedule

| | |
|---|---|
| 11:45-12:45 | Break |
| 16:15 | Raffle |
| 16:45 | Drinks |

http://mum.mikrotik.com/2016/LB/agenda

# MUM Live stream

www.youtube.com/mikrotik

# RouterOS

- MikroTik RouterOS is the operating system of RouterBOARD hardware
- Stand-alone operating system based on the Linux Kernel
- Routing, Firewall, QoS, Wireless, Hotspot, VPN and more...

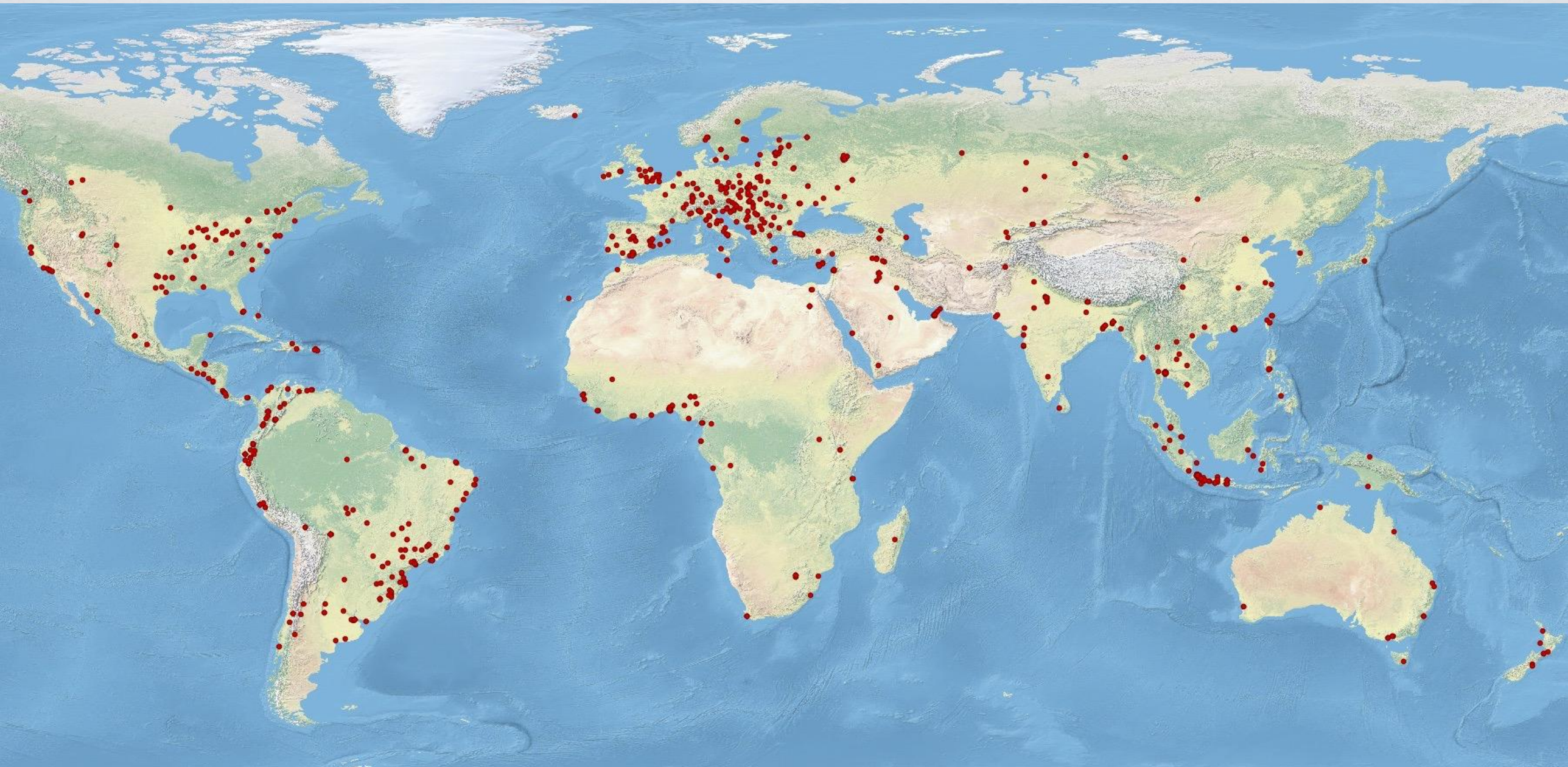
# Why us

- Millions of RouterOS powered devices currently routing the world
- 20 years of experience in developing networking software and hardware
- Over 40'000 RouterOS trained and certified network engineers

# Why us

- More than 3000 training classes in 2015
- World wide network of certified consultants
- Offering products for both simple home usage and complex enterprise networks
- Thousands of pages of documentation, examples, application notes and guides

# MikroTik Certified Trainers

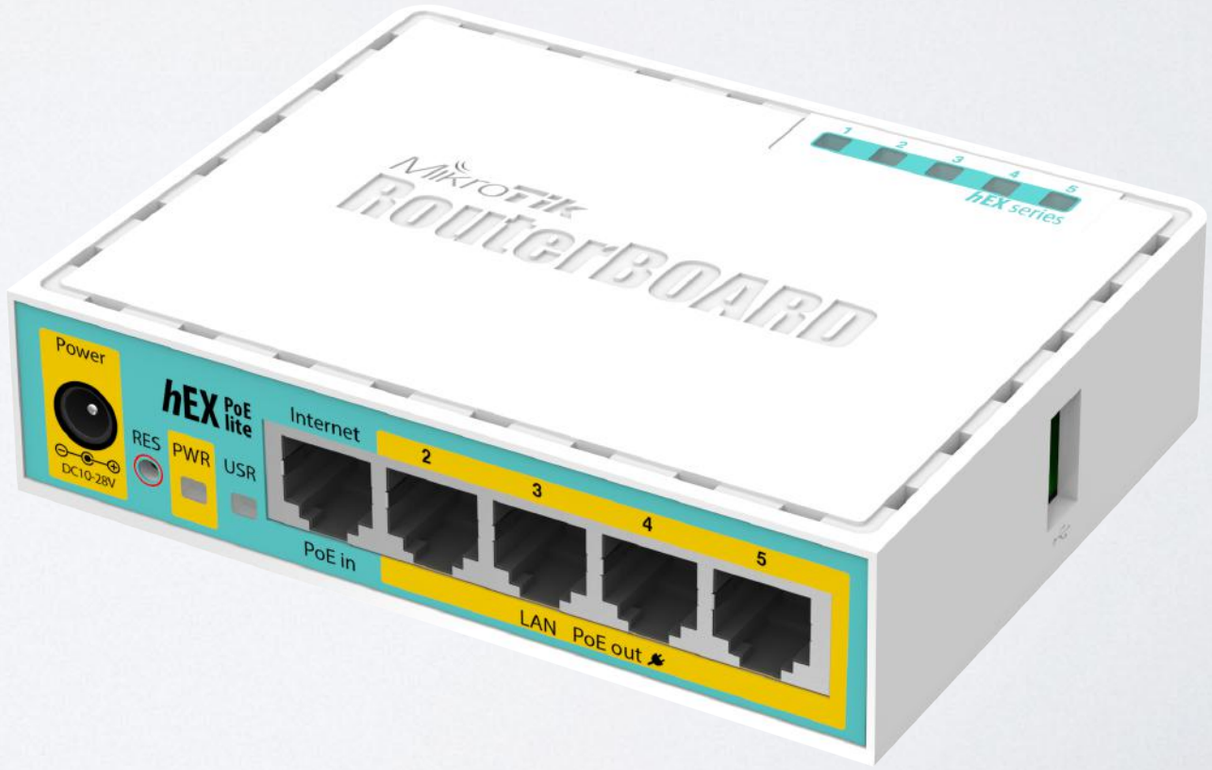


# PRODUCT SERIES

# ETHERNET ROUTERS

# hEX lite

- Small Ethernet device
- Five Fast Ethernet ports
- Power output version (hEX PoE lite)

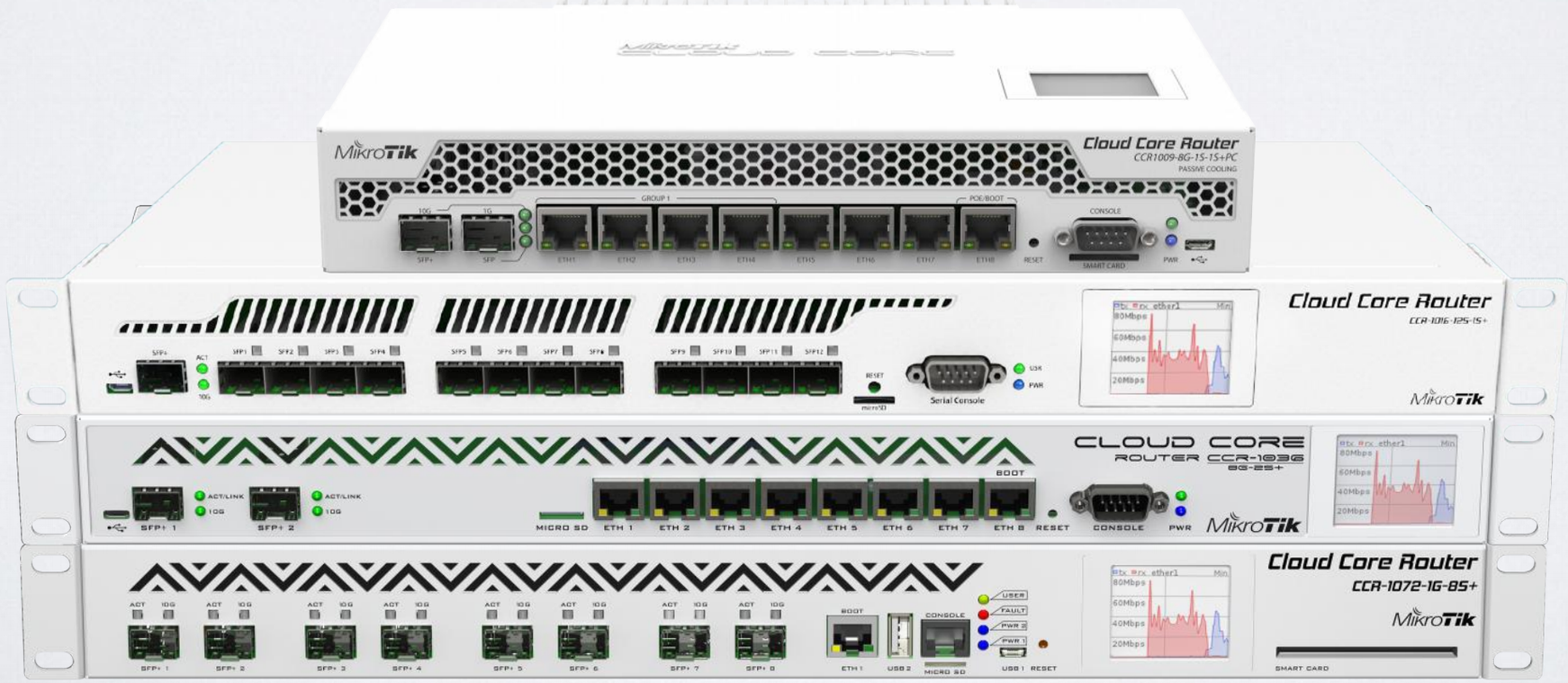


# RB2011 and RB3011

- Rackmount and desktop case
- 10 Ethernet ports
- 1 SFP (fiber optic)
- RB3011 - dual core ARM CPU

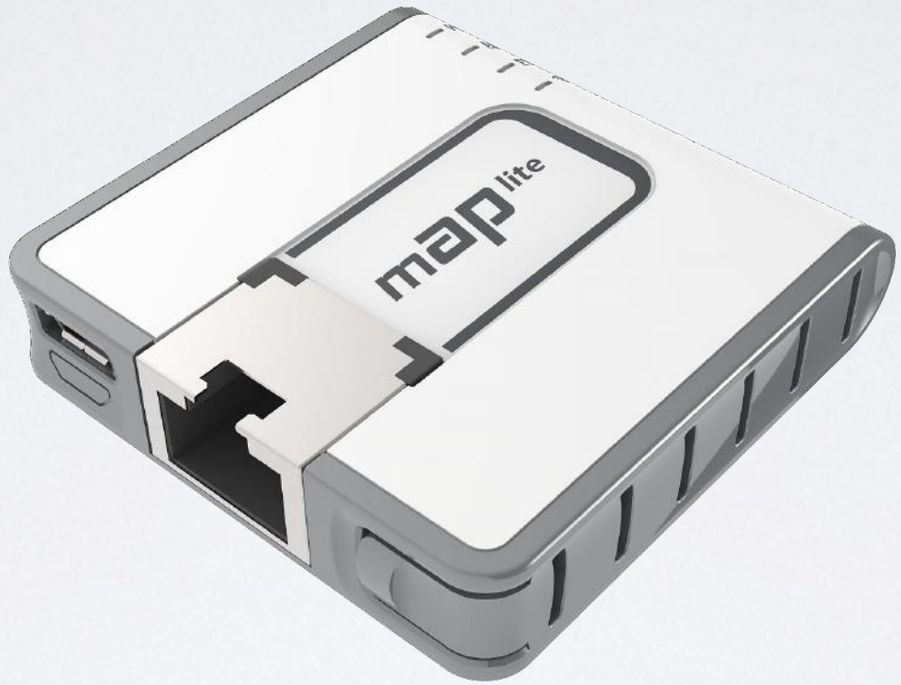
# CCR series

- 9, 16,  36 and 72 cores
- Extreme performance
- Hardware accelerated encryption
- 1Gbps Ethernet, SFP and SFP+ ports



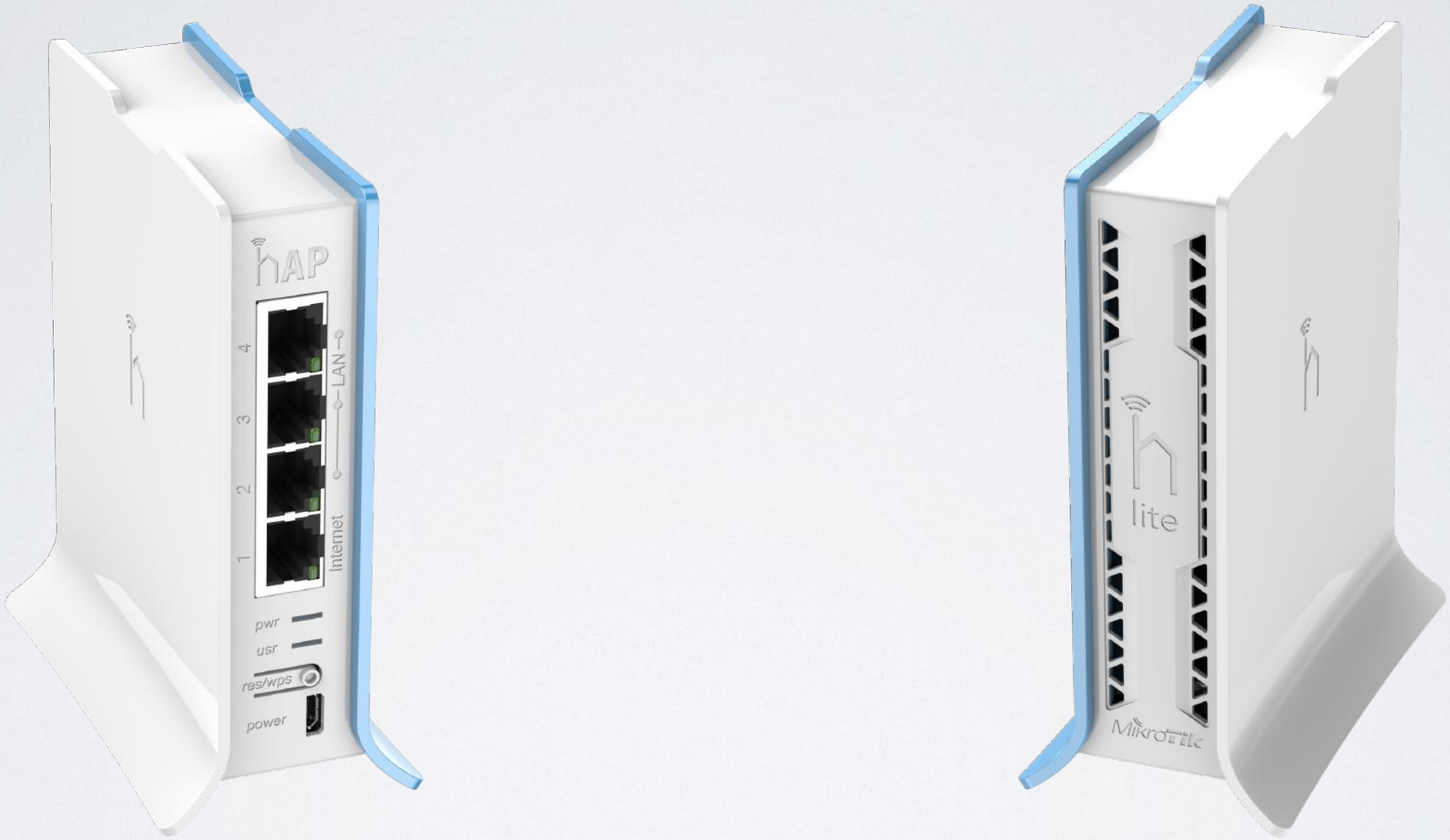
# WIRELESS FOR HOME & OFFICE

# mAP lite




Tiny size 2.4GHz dual chain access point
with a 650MHz CPU, 64MB RAM and one Fast Ethernet

# hAP lite




Small, nice design and low cost device for home or office usage

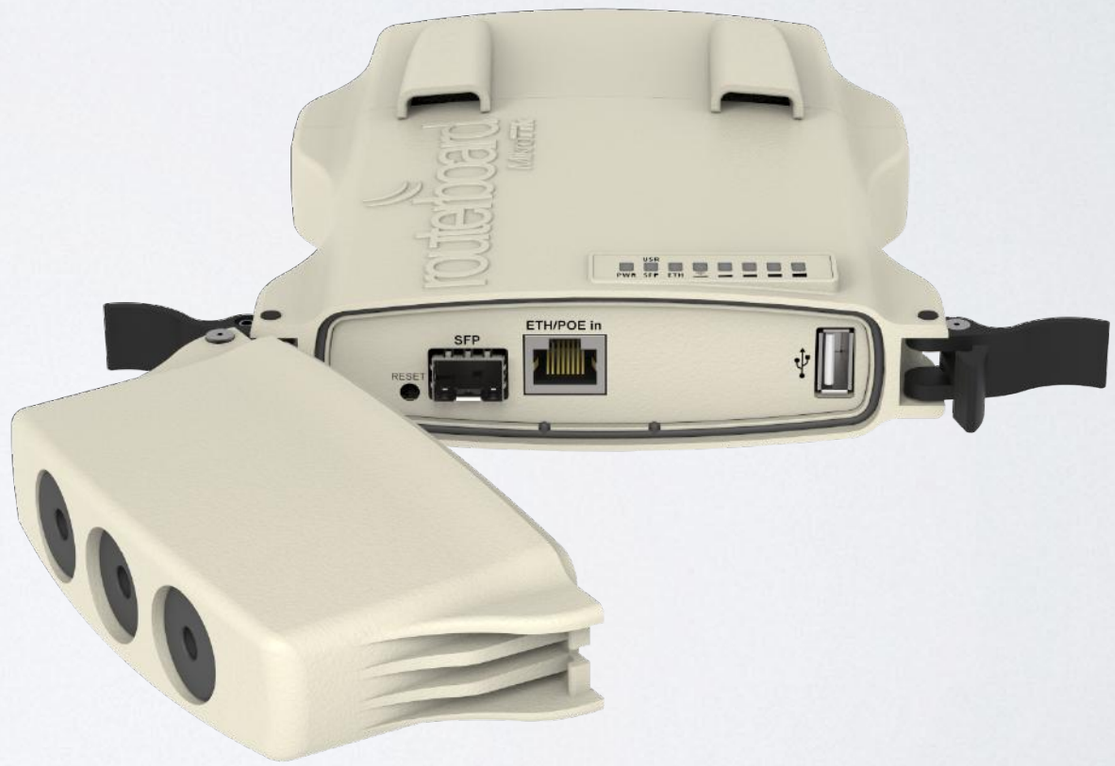
# hAP ac

Dual band 2.4/5GHz AP, 802.11ac/a/b/g/n,
5x1Gbps Ethernet, PoE-out on port 5, SFP and USB

# WIRELESS SYSTEMS

# NetMetal

- Waterproof metal enclosure
- Gigabit Ethernet, SFP
- 3 chains (antennas)
- 802.11ac technology
- 4 different models



# SXT

- Compact AP/CPE
- 24-90 degree antenna
- Different models available (2GHz, 5GHz, 802.11ac)
- Low cost
- Mid-range wireless links

# DynaDish

- Dual-chain 802.11ac
- 8 degree, 25dBi antenna
- Gigabit Ethernet
- Long range point-to-point links

# SWITCHES

# RB260GSP

- Small switch
- Runs SwOS software
- Powers other devices over PoE

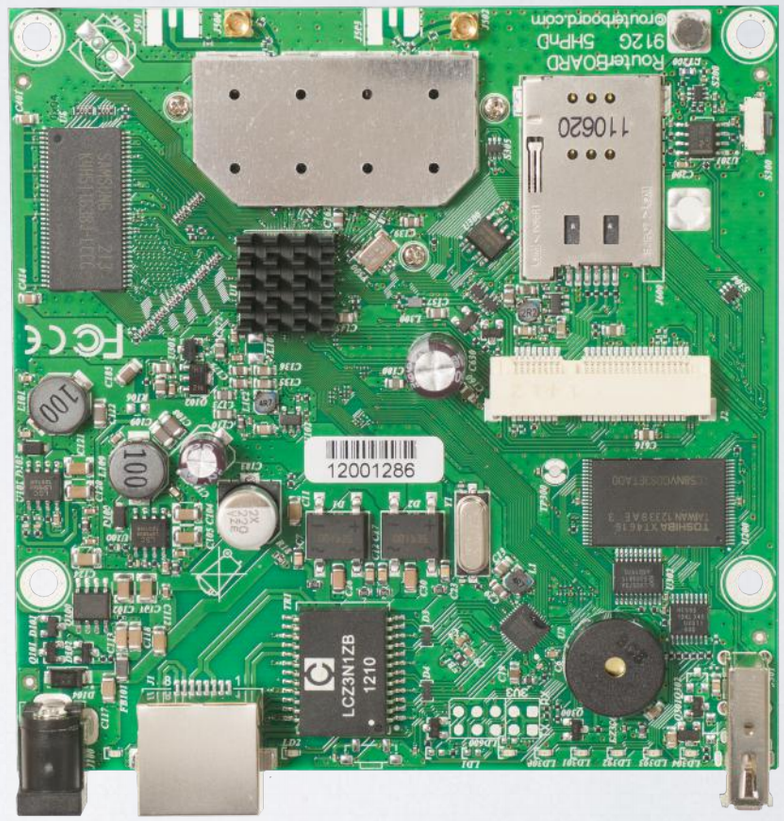
# CRS Series

- Layer 3 switches
- Runs MikroTik RouterOS
- From 8 to 24 ethernet ports
- Gigabit Ethernet
- SFP/SFP+
- Wireless

# ROUTERBOARD

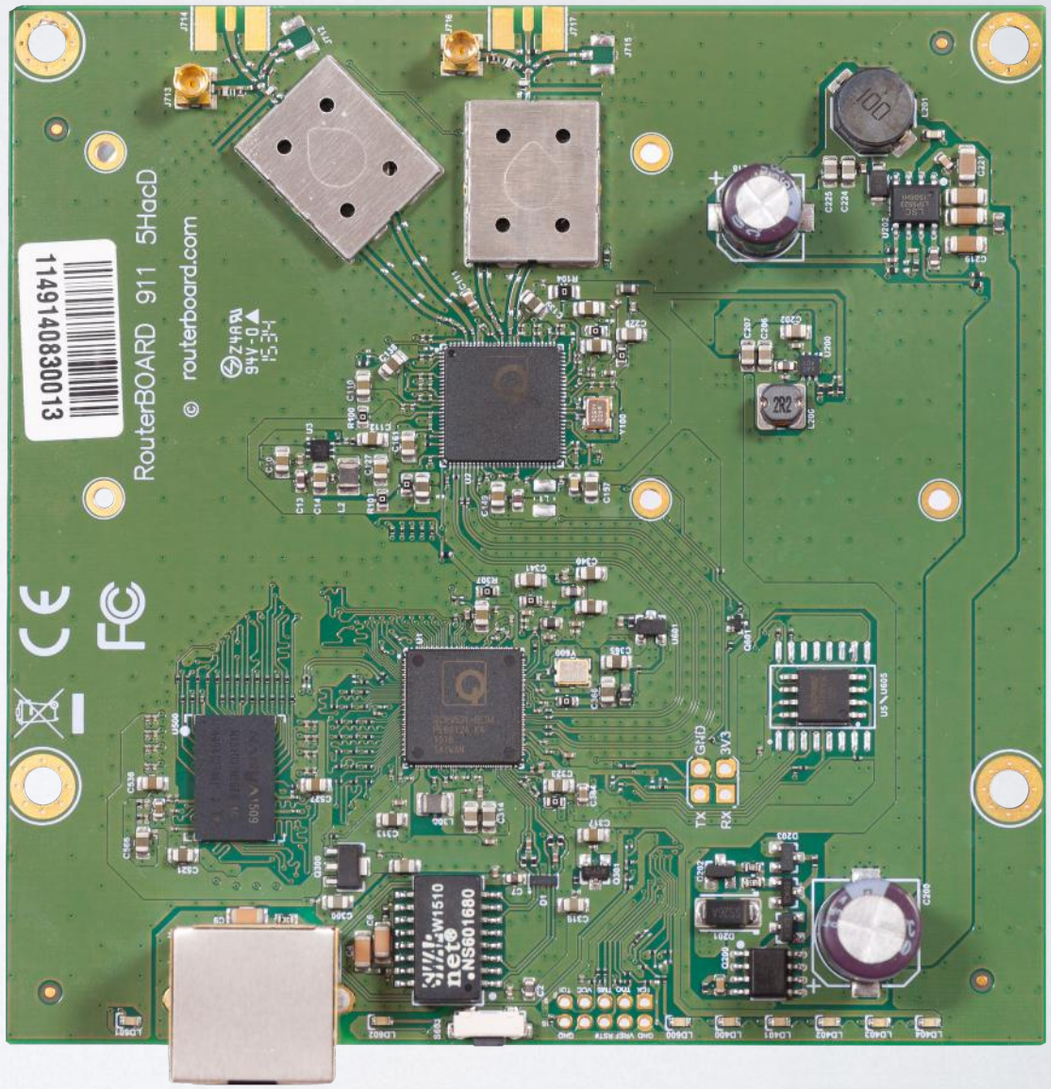
# RouterBOARD

- Use custom case
- Upgrade or expand with ease
- Choose model based on ports, features and speed



# RB911 ac

- 802.11ac support
- 10/100 Mbit port
- Affordable cost



# INTERFACES AND MORE

# SFP modules

- 1.25Gbps and 10Gbps
- Single, Multi modes
- Different distances
- GPON

# Wireless Cards

- 802.11 a/b/g/n/ac
- 2GHz, 5GHz
- miniPCI-e, miniPCI

# Antennas

- mANT30
- Parabolic dish
- Regular or precise alignment

# All Products

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

*Except RB260 series (SwOS)

# NEW PRODUCTS

NOW

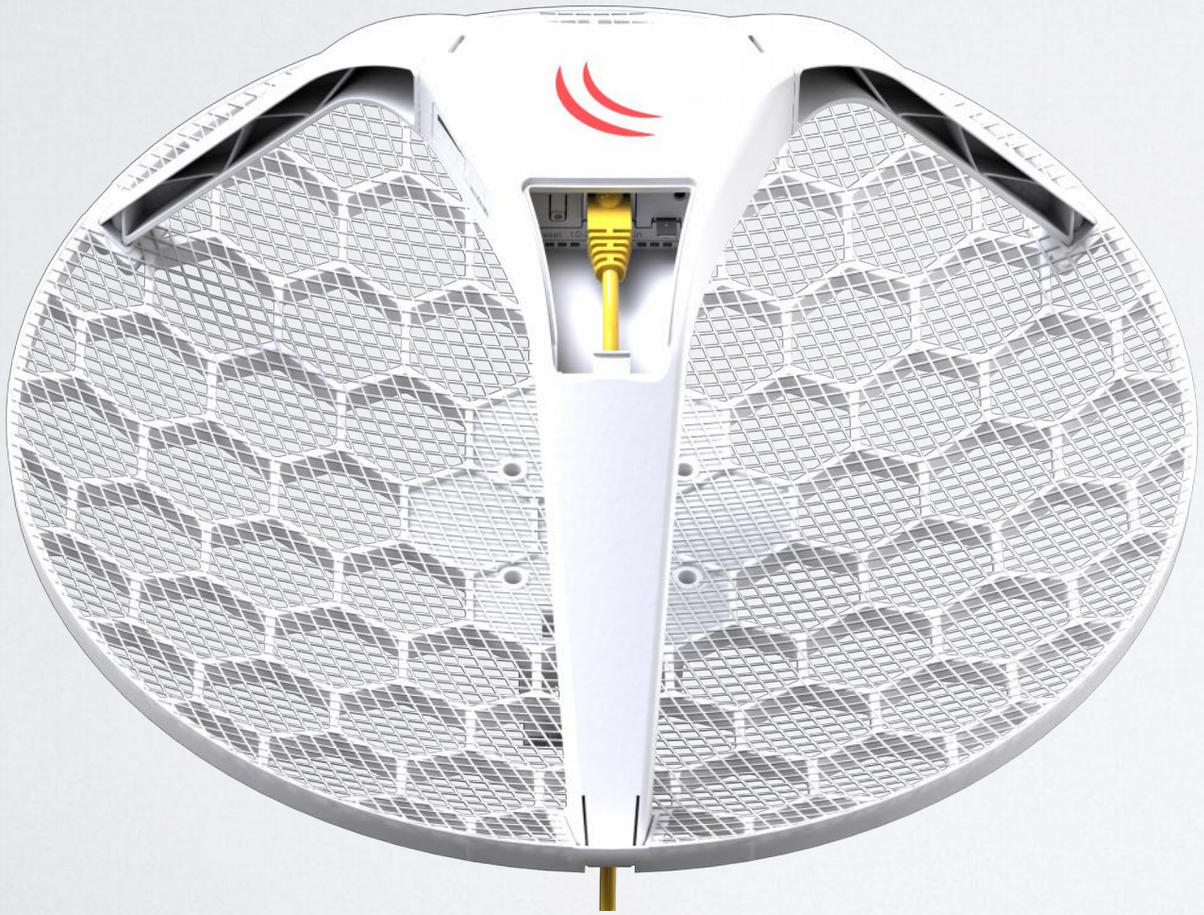
# LHG 5

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

59$

NOW

# LHG 5



NOW

# QuickMOUNT pro LHG

- Wall or pole mount adapter
- ±70° horizontal adjustment
- ±30° vertical adjustment

- Special plastic composite material - anvilNITE (TM)

9.5$

NOW

# Groove 52 ac

- 802.11ac update for the popular Groove model
- Waterproof, rugged and ready to use.
- 802.11 b/g/n and 802.11 a/n/ac, Gigabit Ethernet

CPE 79$ / AP 99$

NOW

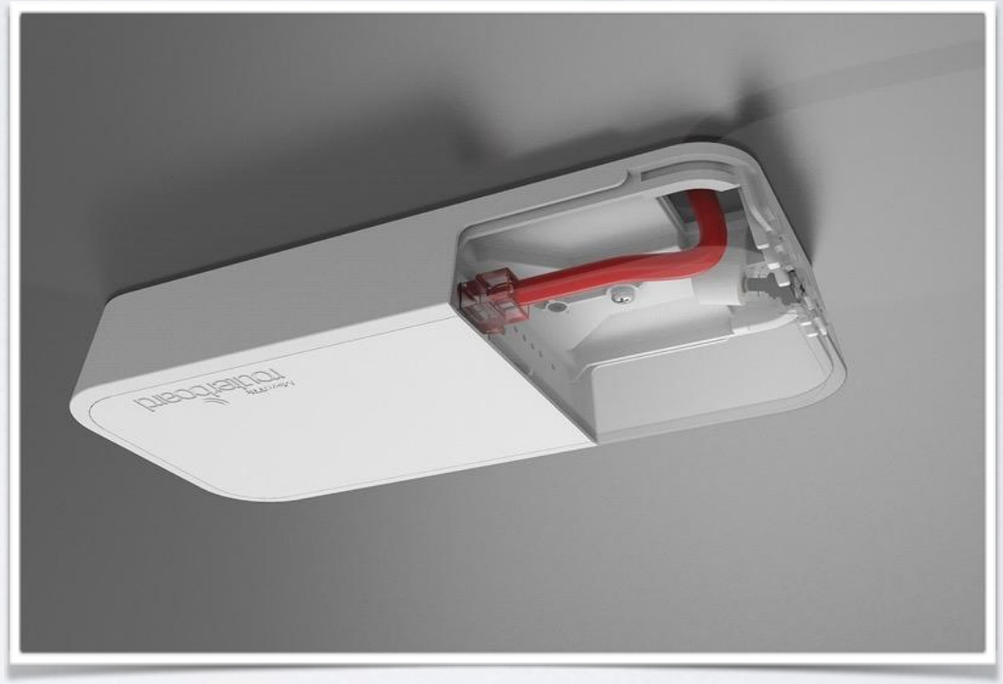
# Metal 52 ac

- 802.11ac update for the popular Metal model
- Higher output power
- Metalic case that works as a heatsink

119$

NOW

# wAP ac



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

89$

NOW

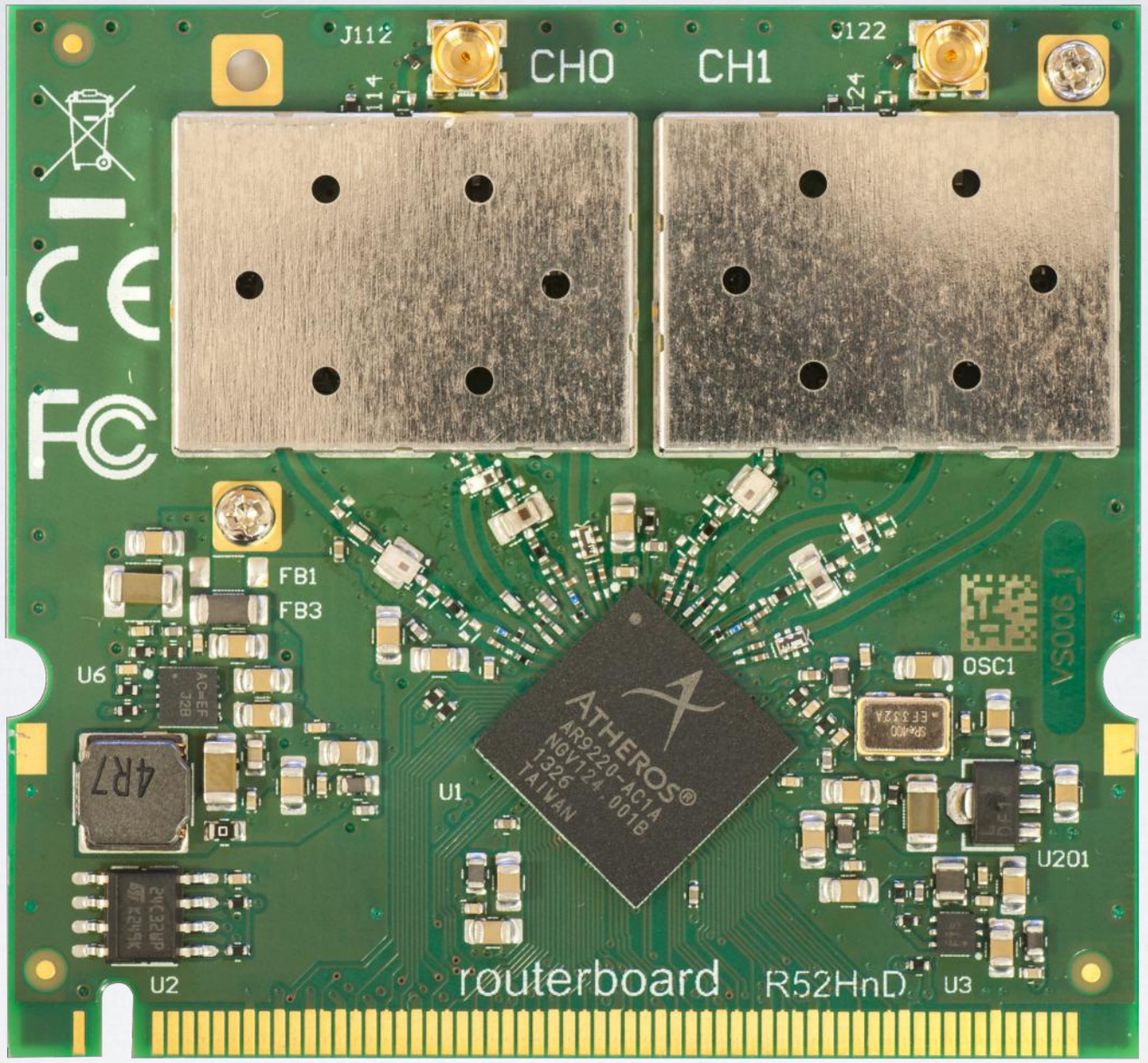
# hAP ac

- Gigabit dual concurrent home AP
- 2.4GHz high power 3 chain 802.11n
- 5GHz high power 3 chain 802.11ac
- 5x1Gbps ports & 1 SFP cage
- 720MHz CPU
- PoE-out on port 5

129$

NOW

# R52HnD

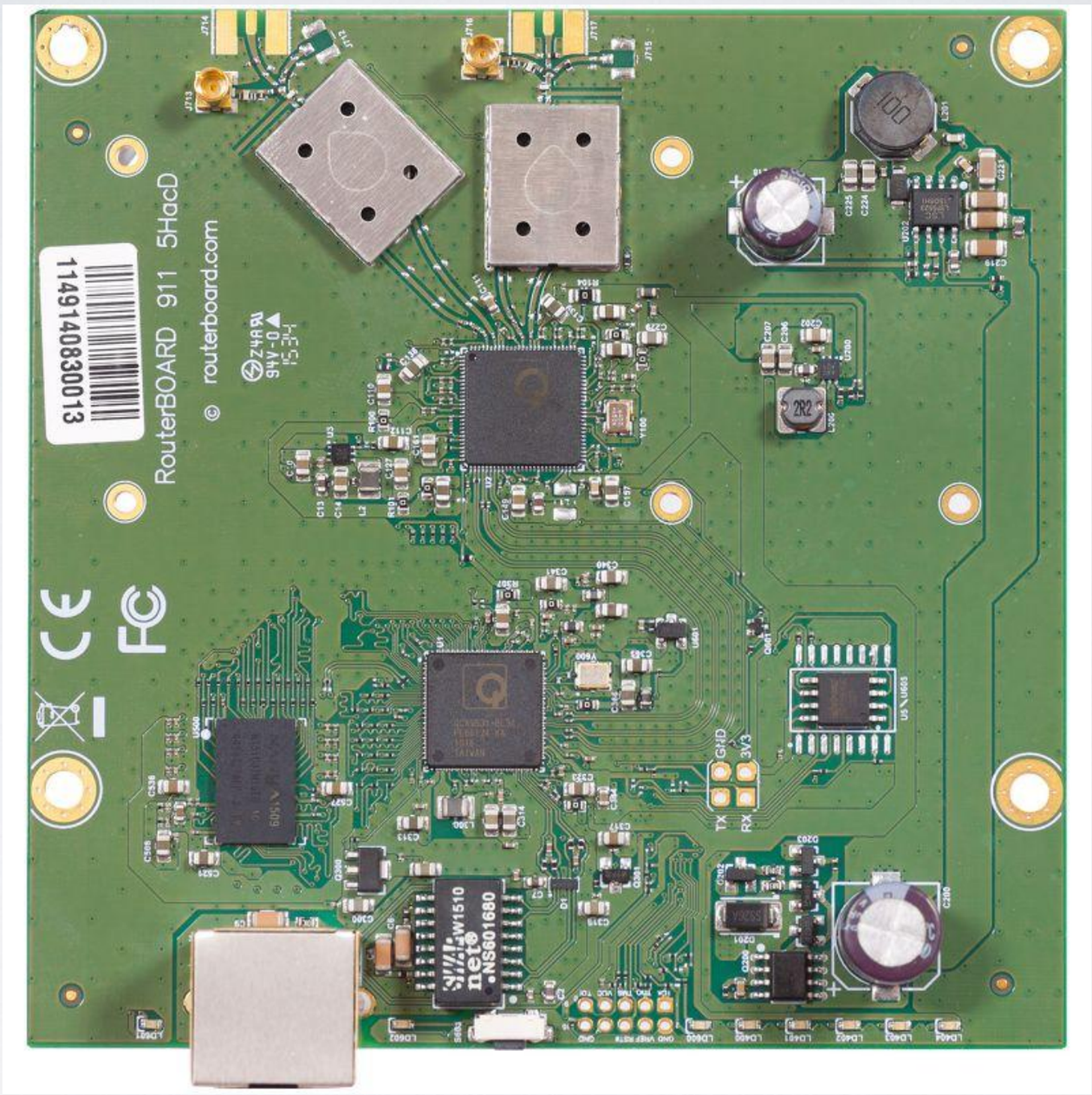



59$

Tx-power 26 dBm, R52H replacement

NOW

# 911 Lite5 ac



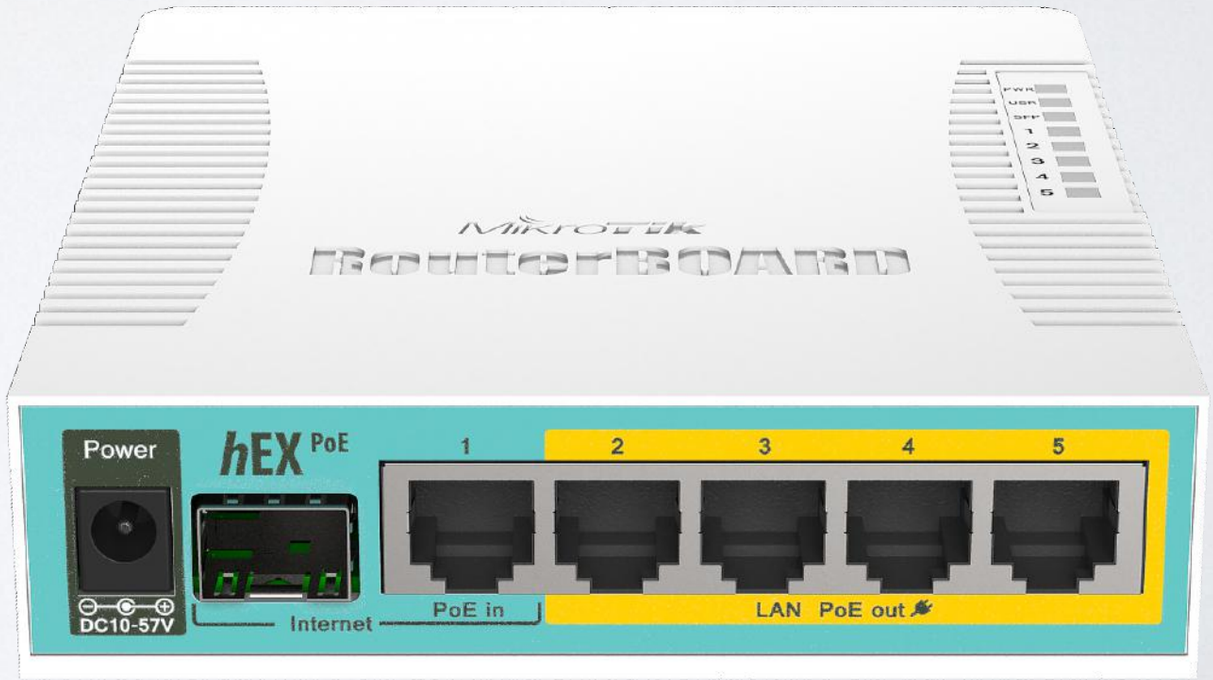

802.11ac update for extremely affordable board

49$

Q2

# hEX PoE

- Small Ethernet device
- Five 1Gbps ports
- Power over Ethernet out on ports 2-5



Q2

# OmniTIK 5 ac /PoE ac

- 802.11ac, 2 chains
- 5x1Gbit Ethernet ports
- 7.5 dBi
- PoE in
- *PoE out (ether2-5)

# CHR

- 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

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

# CHR

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

- 60 day trial available
- Purchased license can be transferred

# CHR

- 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

RouterOS v6.35 changelog **181** line

# Wireless in v6.35

- New wireless package '**wireless-rep**'
- Multiple simultaneus wireless modes on the same wireless interface
    - Client and AP
    - Repeater
    - Scan without disconnects
- Improved driver

# 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

MikroTik

# Possibilities and Benefits of Partnership Programs

Knowledge

Consultant → Configures and helps

Training center → Certifies and advances

Products

Distributor → Offers products and services

Reseller → Buys from Distributor and resells

Made for MikroTik → Accessories, integrators, software

Consultant

# Who?

- Experienced network engineers
- Profound RouterOS and RouterBOARD knowledge

Consultant

# How?

MTCNA + 1x MTCRE, MTCWE, MTCUME, MTCTCE, MTCINE

# Result: 75%+

sales@mikrotik.com

# Consultant

# Where?

[mikrotik.com/consultants](mikrotik.com/consultants)

Consultant

+

MikroTik
Train the Trainer

=

MikroTik
TRAINING CENTER

Training center

# How?

- Get MTCNA + 1x certificate (75%)
- Pass **Train The Trainer** course
- Give 1 hour lecture
- Next Train The Trainer course in Dubai, UAE October 18-20

# Training center

- Courses developed according official MikroTik training outline
- We offer certification tests
- Publish training schedule on our website

Training center

# MikroTik Courses

| | |
|---|---|
| MTCNA | Network Associate |
| MTCRE | Routing Engineer |
| MTCWE | Wireless Engineer |
| MTCTCE | Traffic Control Engineer |
| MTCUME | User Management Engineer |
| MTCINE | Inter-networking Engineer |

mikrotik.com/training

MikroTik ACADEMY

Certified training sessions

Train students (MTCNA)

Train academic personnel

Consultant

Training center

End user

MikroTik Train the Trainer

Knowledge

Consultant → Configures and helps

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Products

Distributor → Offers products and services

Reseller → Buys from Distributor and resells

Made for MikroTik → Accessories, integrators, software

# Distributor

1

MTCNA

MTCRE

MTCWE

MTCUME

MTCTCE

MTCINE

At least 1 certificate

2

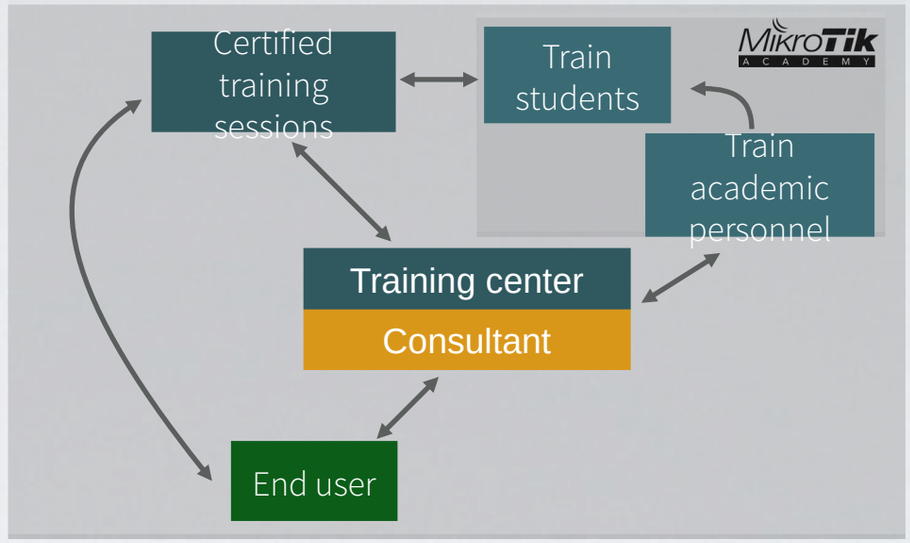
Web page

3

Purchase volumes

sales@mikrotik.com

MikroTik




Distributor

Training center

Consultant

MikroTik
Train the Trainer

End user

Reseller

Distributor

# Benefits

- The more you learn, the better you can help your customers
- Happier customers > better sales

Knowledge

Consultant → Configures and helps

Training center → Certifies and advances

Products

Distributor → Offers products and services

Reseller → Buys from Distributor and resells

Made for MikroTik → Accessories, integrators, software

Made for MikroTik

| | |
|---|---|
| Accessories | Accessories for MikroTik products |
| Integrators | Integrated solutions |
| Software | Software that works with RouterOS |
| CPE | More affordable integrated solutions |
| Books | Books about RouterOS |

mikrotik.com/mfm

# Made for Mikrotik

The Made for Mikrotik program consists of two parts: "Mikrotik certified Integrators" and "Mikrotik certified Accessories".

**MikroTik Certified Accessories** are made by Mikrotik approved companies, who make accessories specifically for MikroTik products. This includes RouterBOARD compatible cases, outdoor antennas and other products

**MikroTik Certified Integrators** are companies who make turnkey solutions based on Mikrotik RouterBOARD and RouterOS, their products include assembled CPE/AP devices, preinstalled Integrated antennas and Rackmount solutions assembled for and with RouterOS

Powered by MikroTik

Click here for design files

Click here to apply to the "MFM" program

Below is a list of our 173 Certified Mikrotik Integrators and Accessory makers in Random order:

Accessories | Integrators | Software | CPE | Textbooks

## Netkrom solution

http://netkromsolution.com

NetMedic is one product design to the hospital. Powered by MikroTik RouterOS NetMedic bundle with Monitor temperature, date and uptime of MikroTik. New Design Casing spesific for Hospital.

Choice NetMedic for improving performance Your Network Hospital

## Pro-Cell Co., Ltd.

http://www.antenna.com.tw/

PRO-CELL is a professional antenna manufacturer in Taiwan. PRO-CELL product range includes an outdoor APA enclosure which can be combined with RouterBoards inside and antennas both inside or outside.

mikrotik.com/mfm

# How To Apply?

- Description
- Picture
- Homepage

sales@mikrotik.com

MikroTik

ACADEMY

**MikroTik Academies** - educational institutions such as universities, technical schools, colleges, vocational schools, and other educational institutions offering **semester time based Internet networking courses** for their academic students using MikroTik RouterOS as a learning tool

MikroTik ACADEMY

- Certification program for educational institutions
- Course is based on MTCNA
- Taught by Academy trainers
- Includes free MTCNA exam

# MTCNA Covers...

- **RouterOS introduction** (setup, upgrade, managing, TCP/IP basics)
- **Firewall** (principles, filters, connection tracking, NAT)
- **QoS** (simple queue, traffic prioritisation, PCQ, monitoring)
- **Network management** (ARP, DHCP, HotSpot, Proxy)
- **Wireless** (802a/b/g/n concepts, security, protocols)
- **Bridging** (concepts, WDS)
- **Routing** (overview, static routing, OSPF)
- **Tunnels** (PPPoE, PPP, PPTP (L2TP))

# MikroTik Offers

- Training outline
- MTCNA course materials
- 20x RouterBOARDs
- MTCNA certificates & RouterOS level4 licenses to students
- Academy trainer shirts

# HowTo Become Academy?

1. Fill out application - mikrotikacademy.com

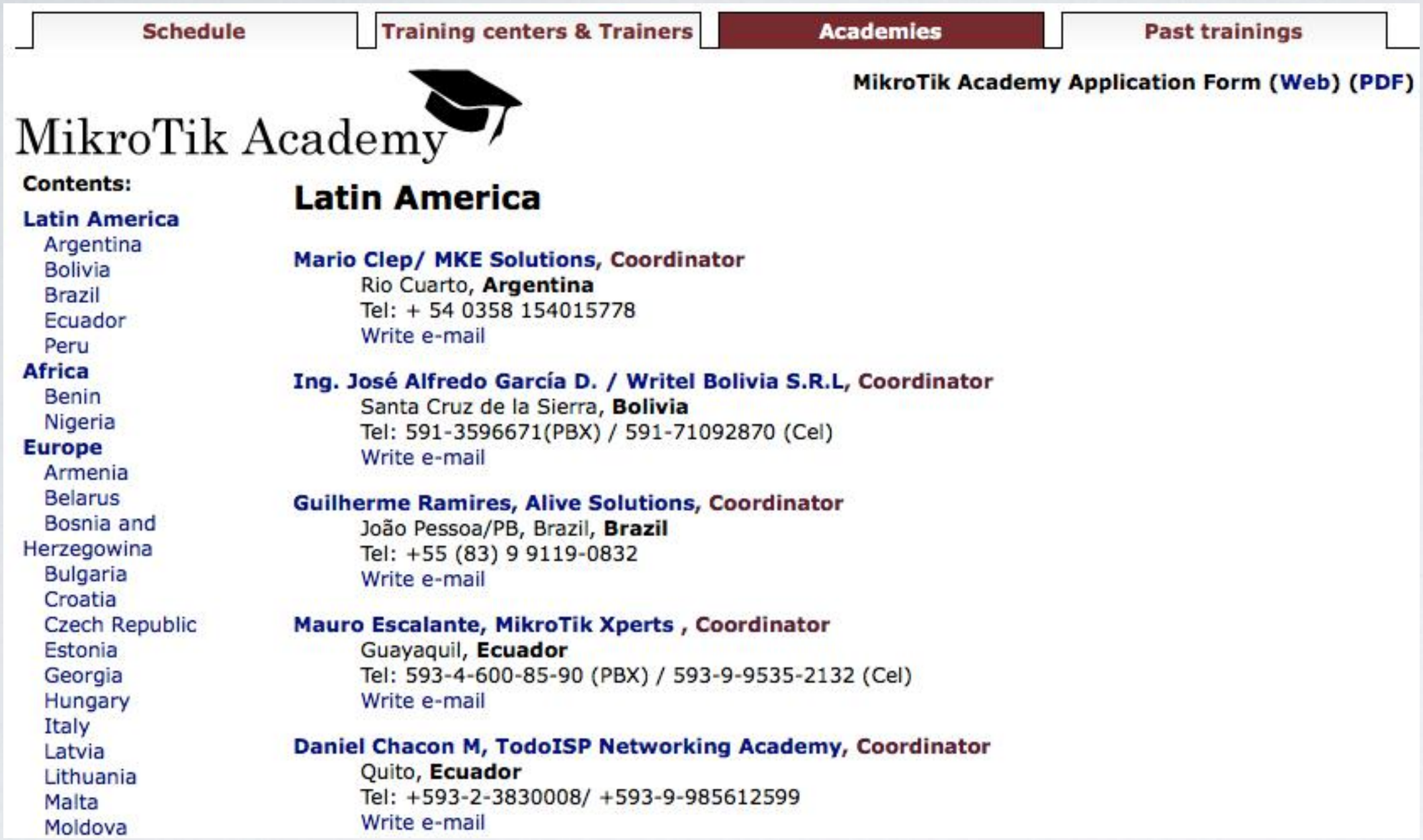
2. Sign MikroTik Academy agreement

3. Attend preparatory training

4. Pass MTCNA + 1x engeneer level certificate test (result 75% +)

# MikroTik Offers

- 75% compensation to Training Centers for training Academy staff



Schedule | Training centers & Trainers | Academies | Past trainings

MikroTik Academy Application Form (Web) (PDF)

MikroTik Academy

Contents:


**Latin America**
- Argentina
- Bolivia
- Brazil
- Ecuador
- Peru

**Africa**
- Benin
- Nigeria

**Europe**
- Armenia
- Belarus
- Bosnia and Herzegowina
- Bulgaria
- Croatia
- Czech Republic
- Estonia
- Georgia
- Hungary
- Italy
- Latvia
- Lithuania
- Malta
- Moldova


# Latin America

**Mario Clep/ MKE Solutions, Coordinator**
Rio Cuarto, **Argentina**
Tel: + 54 0358 154015778
Write e-mail

**Ing. José Alfredo García D. / Writel Bolivia S.R.L, Coordinator**
Santa Cruz de la Sierra, **Bolivia**
Tel: 591-3596671(PBX) / 591-71092870 (Cel)
Write e-mail

**Guilherme Ramires, Alive Solutions, Coordinator**
João Pessoa/PB, Brazil, **Brazil**
Tel: +55 (83) 9 9119-0832
Write e-mail

**Mauro Escalante, MikroTik Xperts , Coordinator**
Guayaquil, **Ecuador**
Tel: 593-4-600-85-90 (PBX) / 593-9-9535-2132 (Cel)
Write e-mail

**Daniel Chacon M, TodoISP Networking Academy, Coordinator**
Quito, **Ecuador**
Tel: +593-2-3830008/ +593-9-985612599
Write e-mail

mikrotikacademy.com
training@mikrotik.com

- 200+ MikroTik Academies around the world
- 350+ Academy trainers

MikroTik

ACADEMY

mikrotikacademy.com

# After the MUM

- Presentation slides - mum.mikrotik.com
- Videos – youtube.com/mikrotik
- License will be emailed

MikroTik