

Antenna and Router IN ONE

Easy to install

PoE support

High speed

Long distances

Compact and waterproof design

Meets European regulations (DFS, TPC)

EIRP is up to 8 Watts (software regulated)

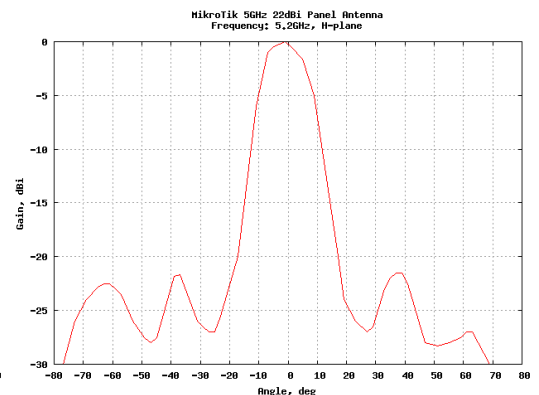
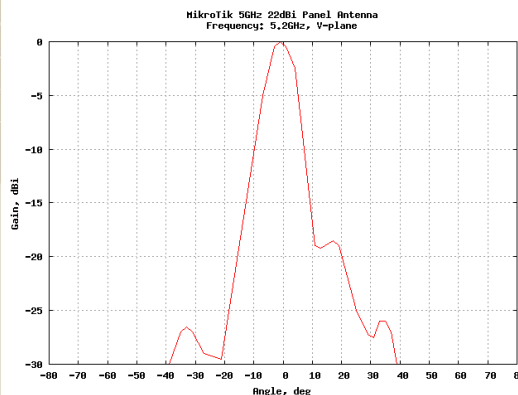
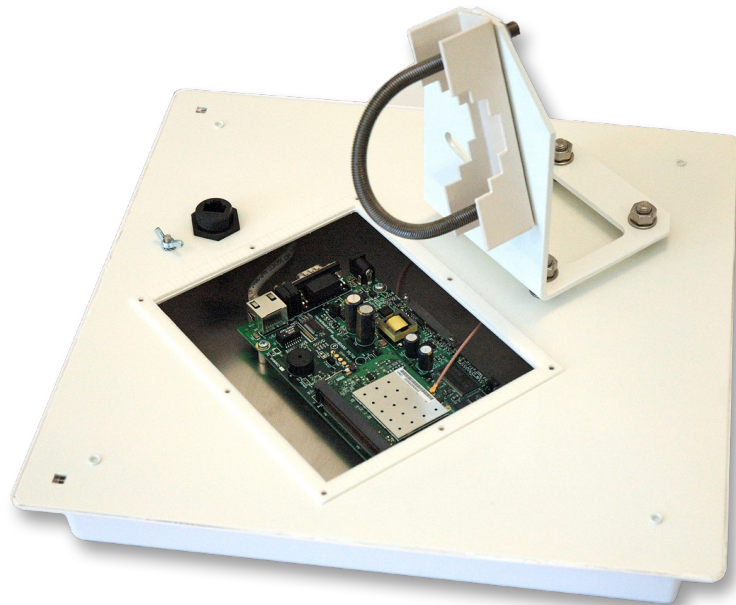
MikroTik 5GHz Integrated Router Antenna (RIC-522)

The MikroTik 5GHz integrated router antenna is the most comprehensive wireless solution, which includes powerful wireless router with Power over Ethernet (PoE) feature, all embedded in high-gain directional antenna, which is protected from adverse weather conditions.

The high-gain antenna with integrated router is easy installable and can be positioned almost everywhere thanks to power and data supply to router over a single, Category 5 line. This allows great flexibility of the package positioning, decreases installation costs, and significantly reduces cabling and outlet requirements especially in hard-to-reach places. Use this integrated router package and forget about waterproof boxes and complex installation!

RIC/522 now includes low cost RB/112 board, that is perfect for simple CPE applications.

You can use pair of RIC-522 to create point-to-point backbone link or use it as subscriber unit in point-to-multipoint networks.



Package includes:

- RouterBOARD 112 with MIPS CPU, 16 MB RAM, one LAN port
- 5.1-5.8 GHz 22 dBi Integrated Flat Panel Antenna
- 802.11a+b+g 54 Mbps MiniPCI wireless card
- MikroTik RouterOS with Level4 (WISP) license
- 18V 18W power supply PoE (PoE over datalines not supported)

Product overview:

Frequency:	5.1GHz..5.9GHz
EIRP / Sensitivity:	36..39dBm/-107...-110dBm @ 6Mbps 32..35dBm/-90...-93dBm @ 54Mbps
Regulations:	output power control (TPC), DFS
Suggested applications:	long-distance links
Polarization:	linear
3dB beam width, typ.:	10.5°
CPU:	MIPS 175 MHz

Software features:

- wireless client (AP optional), speed improvements using Nstreme protocol, WEP and WPA security
- plug and Play access system
- packet flow management (firewall, hierarchical speed limits, quality of service, P2P protocol blocking /limiting)
- VPN and IPsec security, proxying
- remote updating and realtime configuration

RouterOS license:

level 4

Powering options:

18V passive PoE, 5-6W typ.

Environmental protection:

UV protected

Dimensions:

340x340x50 mm

Weight:

1.9kg

Temperature:

-40°C to +75°C

RouterBOARD 112

CPU:

MIPS32 4Kc based IDT 175MHz embedded processor

Memory:

16MB DDR onboard memory chip

BootLoader:

RouterBOOT, 1Mbit Flash chip

Data storage:

64MB onboard NAND memory chip

Ethernet port:

One 10/100 Mbit/s Fast Ethernet port supporting Auto-MDIX

MiniPCI slot:

Two MiniPCI Type IIIA/IIIB slots

Serial ports:

one DB9 RS232C asynchronous serial port

LEDs:

power, user, 2 LED pairs for MiniPCI slot

Power options

IEEE802.3af Power over Ethernet: 12V or 48V DC (except power over datalines)
Power jack: 11..60V DC

Dimensions

14.0 cm x 8.5 cm (5.51 in x 3.35 in)

Currently supported OS

RouterOS 2.9.12 (included)

20dBi antenna

Frequency

5.1GHz..5.9GHz

Antenna gain, min.

20..23dBi

Polarization

linear

3dB beam width, typ.

10.5°

Antenna input impedance

50Ω

Cross polarization, min.

20dB

Front to back ratio, min.

40dB

VSWR, max

1:1.6

Wireless Mini-PCI Card (R52)

Frequencies:

4.920..6.100 (5 MHz step)

Chipset:

Atheros AR5414

Security:

hardware 64 and 128 bit WEP; Hardware TKIP and AES-CCM encryption; WPA authentication

Modulation:

OFDM

Host Interface:

Mini-PCI form factor; Mini-PCI version 1.0 type 3B

Power requirements:

3.3V +/- 10% DC; 400mA max (300mA typ.)

Output Power /

17dBm/-88dBm @ 6Mbps

Receive Sensitivity:

13dBm/-71dBm @ 54Mbps

Transfer Data Rate:

(Normal mode):6-54 Mbps, auto-fallback
(Turbo mode):12-108 Mbps, auto-fallback

Supported OS:

MikroTik RouterOS, Linux, Windows XP

Wi-FiR:

WECA Compliant

Media Access Protocol:

CSMA/CA with ACK architecture 32-bit MAC

Connectors:

Two U.fl connectors

RouterOS:

TCP/IP protocol suite:

- **Firewall and NAT** - stateful packet filtering; Peer-to-Peer protocol filtering; source and destination NAT; classification by source MAC, IP addresses (networks or a list of networks), protocols, ports, interfaces, internal packet and connection marks, ToS (DSCP) byte, content, matching sequence/frequency, packet size, time and more...
- **Routing** - static routing; Equal cost multi-path routing; Policy based routing (classification done in firewall); RIP v1 / v2, OSPF v2, BGP v4
- **Data Rate Management** - hierarchical HTB QoS system with bursts; per IP / protocol / subnet / port / firewall mark; PCQ, RED, SFQ, FIFO queue; CIR, MIR, contention ratios, dynamic client rate equalizing (PCQ), bursts, Peer-to-Peer protocol limitation
- **HotSpot** - HotSpot Gateway with RADIUS authentication and accounting; true Plug-and-Play access for network users; data rate limitation; differentiated firewall; traffic quota; real-time status information; walled-garden; customizable HTML login pages; iPass support; SSL secure authentication; advertisement support
- **Point-to-Point tunneling protocols** - PPTP, PPPoE and L2TP Access Concentrators and clients; PAP, CHAP, MSCHAP v1/v2 authentication protocols; RADIUS authentication and accounting; MPPE encryption; data rate limitation; differentiated firewall; PPPoE dial on demand
- **Simple tunnels** - IPIP tunnels, EoIP (Ethernet over IP)
- **IPsec** - IP security AH and ESP protocols; MODP Diffie-Hellman groups 1,2,5; MD5 and SHA1 hashing algorithms; DES, 3DES, AES-128, AES-192, AES-256 encryption algorithms; Perfect Forwarding Secrecy (PFS) MODP groups 1,2,5
- **Proxy** - FTP, HTTP and HTTPS proxy; transparent DNS and HTTP proxying; SOCKS protocol support; DNS static entries; access control lists
- **DHCP** - multiple DHCP server and client functionality; DHCP relay; multiple networks; static and dynamic DHCP leases; RADIUS support
- **VRRP** - VRRP protocol for high availability
- **Other features** - universal Plug-and-Play (UPnP); NTP server and client with GPS synchronization; SNMP read-only access; packet packing (M3P); neighbour discovery (MNDP and Cisco Discovery Protocol); and other
- **Monitoring/Accounting** - real-time monitoring; IP traffic accounting, firewall actions logging, statistics graphs accessible via HTTP
- **Tools** - ping; traceroute; bandwidth test; ping flood; telnet; SSH; packet sniffer; Dynamic DNS update tool

Layer 2 connectivity

- **Wireless** - IEEE802.11a/b/g wireless client and Access Point; Nstreme and Nstreme2 proprietary protocols; Wireless Distribution System (WDS) support; virtual AP; 40 and 104 bit WEP; WAP pre-shared key authentication; access control list; authentication on RADIUS server; roaming (for wireless client); Access Point bridging
- **Bridge** - spanning tree protocol; multiple bridge interfaces; bridge firewall and MAC NAT
- **VLAN** - IEEE802.1q Virtual LAN support on Ethernet and wireless links; multiple VLANs; VLAN bridging
- **Asynchronous** - serial PPP dial-in / dial-out; PAP, CHAP, MSCHAP v1/v2 authentication protocols; RADIUS authentication and accounting;

Remote configuration

- **Serial console** - onboard RS232 asynchronous serial port, which is by default set to 115200bit/s, 8 data bits, 1 stop bit, no parity
- **Telnet** - telnet server is running on 23 TCP port by default
- **SSH** - SSH (secure shell) server is running on 22 TCP port by default (available only if **security** package is installed)
- **MAC Telnet** - MikroTik MAC Telnet potocol server is by default enabled on all Ethernet-like interfaces
- **Winbox** - Winbox is a RouterOS remote administration GUI for Windows, that use 8290 TCP port (or 8291 if security package is installed). It may also connect routers by their MAC addresses
- **Webbox** - easy web-based configuration for basic functionality
- **Updates** - uploadable with FTP or SFTP protocol