



## **Radio Bridge & Router** *2.1 to 2.5 GHz 4.9 to 6.1 GHz*

MMS MIMO Plus balances enterprise-scale security, management and Quality of Service features with high performance.

### **Features Benefits**

The MMS MIMO Plus Radio Bridge & Router is a any Point to Multipoint and Multipoint-to Multipoint OFDM Radio Bridge Equipment for High Bandwidth connectivity in 2GHz and 5Ghz bands. It has a range of up to 100kms with the possibilities of other interfaces like E1/E2 in addition to Ethernet.

### **HOTSPOT**

Built-in HOTSPOT and SPUTNIK AGENT, plus PPPOE server/client

### ***Built-in Router Specifications:***

#### **Basic Network Platform**

TCP/IP protocol suite

#### **Firewall and NAT**

Packet filtering, source and destination NAT, source MAC addresses, ports, protocols, protocol options, interfaces.

#### **Routing**

RIP 1 / 2, OSPF v2, OLSRD, BGP v4, equal cost multi-path routing, Policy based routing, firewall marked packet routing

#### **Bridging**

Spanning tree protocol, multiple bridge interfaces, bridge firewall

#### **Bandwidth Management**

Per IP / protocol / subnet / port, CBO, RED, SFQ, byte limited queue, packet limited queue

#### **PPPoE**

Access Concentrator (server)

#### **Tunnels**

PPTP, EoIP (Ethernet over IP)

**OPEN VPN** support for super secrecy

**Multicasting** support

**VLAN**, Virtual LAN support



#### **NTP**

Network Time Protocol server and client

#### **QOS**

Full Scale QOS with traffic shaping and user friendly Presets .

#### **DNS client/Server**

Name resolving for local use, Dynamic DNS Client

#### **Monitoring/Accounting**

IP traffic accounting, firewall actions logging

#### **SNMPV2**

read only access

### ***Administration***

#### **General**

History, undo / redo /display, multiple administrator connections real time updates in GUI, real time Configuration

#### **Web/GUI**

Uses HTTP/ HTTPS for remote administration, graphing of traffic, statistics, and resource

monitoring multiple internal configuration windows Terminal Console standard keyboard and monitor connection, scripting import /export of configuration scripts to screen / file command history, hierarchical command structure monitoring of interface status and traffic, context specific hints.

#### **Telnet/ SSH**

All terminal console features, SSH option, cut/paste of configuration

#### **FTP**

For uploading upgrade packages, uploading and downloading scripts, Hot Spot authorization.

#### **Upgrading**

Remote Firmware Upgrade

## Wireless

Radio Operation	2.4Ghz & 5.8Ghz
Channel Width	40Mhz, 20Mhz, 5Mhz, 10Mhz,
Receive Sensitivity	Up to -96dBm
Processing Gain	> 10 dB
Antenna	Dual polarity Dish, 29dbi, 60cm
Integrated Design	23dbi Cross Polarity Integrated
Option of Additional Ethernet 10/100/1000 Interface	Yes
RF Modulation Scheme	QAM64, QAM16, QPSK, BPSK, CCK (OFDM, DSSS)
Duplex Format	TDD, FDD
Certification	FCC,ISO 9001-2000
Range	Up to 150Km*
Output Power	Super power MIMO, up to 26dBm
Software controllable	Yes (Steps of 1 dB)
Extended Range (XR)	Best in the industry (-) 105dBm
Watch Dog Timer	Software/Hardware/Temperature
QOS/COS/GOS	Yes
Bandwidth Management	Yes
Router	Yes
Packet Format	IEEE 802.3 and Ethernet II

## Security

Security 256 bit AES, WPA and WPA2 encryption, Security, VPN and firewall

Data Security Password Network attachment is password protected

## Network

Network Connection	10/100/1000* Base T (optional) RJ Female Ethernet Connection
Bridge Functionality	Intelligent Local Packet Filtering Node by node user configurable data rates (CIR and MBR)
Network Topologies	Any point-to Multipoint Multipoint-to Multipoint
Repeater Mode	Built-in Mode
RF Collision Management	Combined TDD and FEC

## Physical

Power Adapter Requirement	110 VAC or 220 VAC , 7V - 18V DC
Power Consumption	Less than 20W (fully loaded)
Height x Width x Depth Weight	7" x 11" x 5" 3Kg
Operational Temperature	(-)-40C to (+)80C
Humidity	Humidity 0-95% non condensing, Outdoor weatherproof enclosure

## Management

Remote Management	HTTP, HTTPS ,Telnet, SSH
Monitor/Control	Through Ethernet port using HTTP/HTTPS/Telnet
SNMP	v2c
Management Port Functionality	Full configuration/management from any station through a command line
Software Management	File download over RF for firmware updates

MCS Index	Spatial Streams	Modulation Type	Coding Rate	Data Rate Mbps			
				20 MHz channel		40 MHz channel	
				800ns GI	400ns GI	800ns GI	400ns GI
0	1	BPSK	1/2	6.50	7.20	13.50	15.00
1	1	QPSK	1/2	13.00	14.40	27.00	30.00
2	1	QPSK	3/4	19.50	21.70	40.50	45.00
3	1	16-QAM	1/2	26.00	28.90	54.00	60.00
4	1	16-QAM	3/4	39.00	43.30	81.00	90.00
5	1	64-QAM	2/3	52.00	57.80	108.00	120.00
6	1	64-QAM	3/4	58.50	65.00	121.50	135.00
7	1	64-QAM	5/6	65.00	72.20	135.00	150.00
8	2	BPSK	1/2	13.00	14.40	27.00	30.00
9	2	QPSK	1/2	26.00	28.90	54.00	60.00
10	2	QPSK	3/4	39.00	43.30	81.00	90.00
11	2	16-QAM	1/2	52.00	57.80	108.00	120.00
12	2	16-QAM	3/4	78.00	86.70	162.00	180.00
13	2	64-QAM	2/3	104.00	115.60	216.00	240.00
14	2	64-QAM	3/4	117.00	130.00	243.00	270.00
15	2	64-QAM	5/6	130.00	144.40	270.00	300.00