

# RM-MAX: Wireless Broadband IP Radio

## Carrier Grade High Capacity Wireless Broadband IP Radio

### OVERVIEW

This platform deploys reliable and secure high-speed wireless IP connections between multiple remote locations. Available in multiple frequency bands and configurations, it covers a distance of more than 100 kms.

Wireless Broadband IP Radio Modem incorporates the latest technologies such as OFDM with VNL's proprietary protocols. The Carrier Grade Solution ensures 24/7 connectivity with zero network downtime.

RM-MAX device can be configured to work in multiple deployment modes i.e. Point-to-Point, Multiple-Point-to-Point & Point-to-Multipoint. When deployed as Point-to- Multipoint Base Station, RM-MAX can inter work with RM series subscriber units.

IP Radios can be used in various applications like

- Last Mile Access to provide internet connectivity for broadband services. It can also be used in enterprises like mines, offshore fields, hospitals, hotels, universities etc.
- Backhaul connectivity in GSM/3G deployments particularly in rural and remote areas.
- E1/TDM Connectivity to transport native TDM enabling seamless migration from TDM to all IP networks.
- Public safety agencies like for emergency response, where time to provideservices with minimum infrastructure dependencies is the key.

### BENEFITS

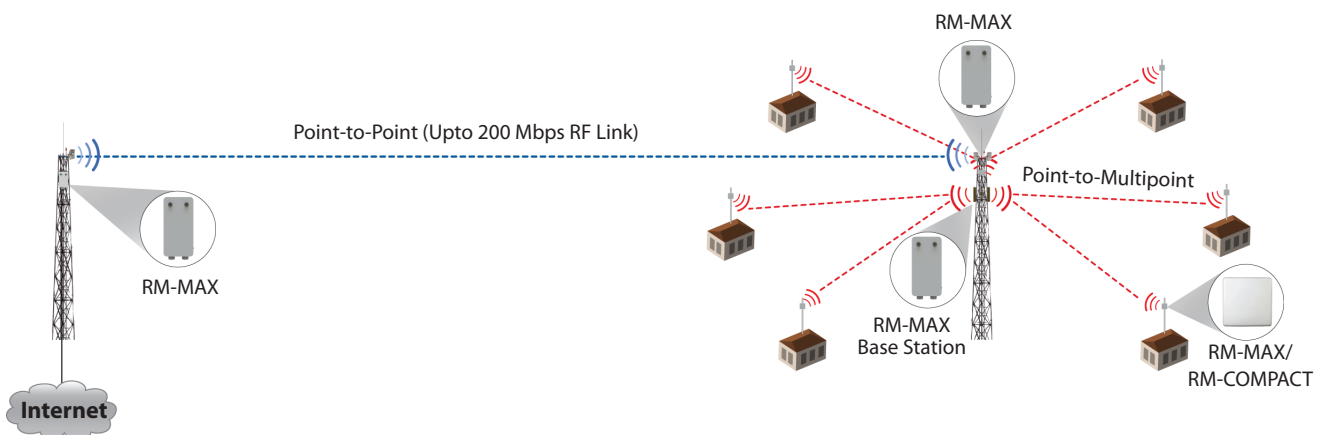
- **Optimized Transmission Cost:** Control your transmission cost by avoiding the need to use fiber and leased lines. Significantly reduces CAPEX and OPEX.
- **Rapid Deployment:** This solution is provided as a Plug and Play solution for rapid deployment. Dismantling and redeployment of the unit is speedy as well.
- **Maximum Service Availability:** RM-MAX offers 1+1 redundancy thus offering maximum service availability.
- **Single Integrated Voice and Data Solution:** Can connect routers via ethernet to provide a Single Voice & Data Link for customers. The revenue generating potential for this application is immense.
- **All Weather Reliability:** Our system is outdoor capable and rugged enough to withstand extreme weather conditions.



*Carrier Grade Wireless Broadband IP Radio with Integrated/External Antenna*

### HIGHLIGHTS

- *Aggregate User Throughput of Up to 200 Mbps*
- *License Exempt Frequency (2.4 and 5.8 GHz)*
- *Low Power Consumption – Reduced Opex*
- *Compact Form Factor – Easy to Transport and Install*
- *Centralized Management using OMC*



*Point-to-Point and Point-to-Multipoint Network Diagram*

**Related Products:** RM-COMPACT, RM-EXTREME, SSU, E1-IDU, IDU-E, EDS

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## SPECIFICATIONS

SYSTEM	
Type	Outdoor
Link Topology	Point-to-Point, Multiple-Point-to-Point (Only in Sync Enabled Hardware), Point-to-Multipoint Subscriber Unit
Frequency Bands	2.4 - 2.5 GHz / 5.125 - 5.875 GHz
Channel Bandwidth	5/10/20/40 MHz
RF Output (dBm)	Up to 25 dbm (Configurable)
Rx Sensitivity (dBm) 2.4/5.8 GHz	BPSK: -89 QPSK: -87 16QAM: -82 64QAM: -74
Data Rate	Aggregate User throughput of Up to 200 Mbps
Latency	4 msec (Typical)
Duplex Technique	TDD
Dimension (H x W x D) in mm	275 x 135 x 75 (With External Antenna) 370 x 370 x 80 (With Integrated Antenna)
Weight (Kg)	With Integrated Antenna: 3.0 Without Antenna: 1.3

FEATURES	
Modulation	OFDM - BPSK/QPSK/16QAM/64QAM
FEC	1/2, 2/3, 3/4, 5/6
Encryption	AES 128
Authentication	MAC Address Control List, SSID
Adaptive Coding & Modulation	Supported
Automatic Channel Switching	Supported
Site Synchronization	Supported with Sync Option Model
Bridging	Self-Learning Up to 2047 MAC Addresses IEEE 802.1Q
Maximum Frame Size	1536 bytes
VLAN	802.1Q, QinQ Tagging
QoS	IP ToS Based, Four Priorities, SP Scheduling
Management VLAN	Supported
IP/MAC Filtering	Supported
DFS	Supported
Installation and Maintenance Tools	Built in RF Analyzer, Ethernet Test Tool, Ping Test, Buzzer for Alignment

POWER	
Power Supply	48 V through PoE
Max Power Consumption	12 W

INTERFACES		
ETHERNET		
Type	10/100BaseT with Auto-Negotiation (IEEE 802.3u) Framing/Coding IEEE 802.3	
Number of Ports	With Sync: 1 PoE and 1 Sync Without Sync: 1 PoE and 1FE	
Connector	RJ-45	
ANTENNA		
Antenna Port	N-Type (Only for Unit with External Antenna Option)	
Polarization	Dual	
Frequency Band	2.4 - 2.5 GHz	5.125 - 5.875 GHz
Integrated Antenna Gain	19 dBi	23 dBi
Beam Width	20° (Typical)	8° (Typical)

MANAGEMENT	
Management Interface	SSH, Web Server and SNMP
Firmware Upgrade	Local & Remote
Network Management	Centralized Management using OMC

ENVIRONMENT	
Water & Dust Protection	IP66
Operating Temperature	-20° to 70° C (-4° to 158° F)
Humidity	Up to 95% (Non-Condensing)

REGULATION	
RADIO (FCC : 47CFR)	Part 15, Subpart C
C&B (IC)	RSS-210
SAFETY (TUV)	60950, According to UL 60950
SAFETY (CAN-CSA)	C22.2 No. 60950
EMI/EMC	CISPR-22
ENVIRONMENTAL	Category D of QM333

No.	Model No.	Freq	Antenna	Sync Port
1	RMM-2400	2.4	External	
2	RMM-2400-SYNC	2.4	External	Yes
3	RMM-2419	2.4	Integrated	
4	RMM-2419-SYNC	2.4	Integrated	Yes
5	RMM-5800	5.8	External	
6	RMM-5800-SYNC	5.8	External	Yes
7	RMM-5823	5.8	Integrated	
8	RMM-5823-SYNC	5.8	Integrated	Yes
9	RMM-BS-2400-SYNC*	2.4	External	Yes
10	RMM-BS-5800-SYNC*	5.8	External	Yes

\* Point to Multipoint Base Station

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