

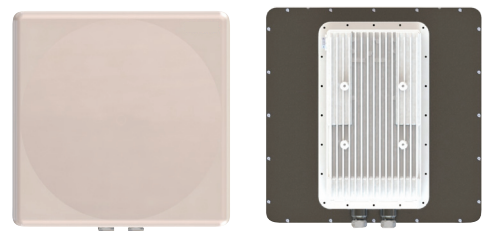
RM-EXTREME

WIRELESS BROADBAND RADIO

- Carrier Grade Performance
- MIMO & OFDMA Technologies
- Robust Systems
- License Exempt Frequencies (2.4, and 5.8 GHz) with Security
- Aggregate User Throughput of Up to 200 Mbps



External Antenna



*Integrated Antenna,
Carrier Grade Wireless Broadband IP Radio*

RM-EXTREME

DETAILS

ROBUST HIGH CAPACITY LONG RANGE OPTIMIZED IP BACKHAUL

Shyam RM-EXTREME series offers carrier grade rock solid performance with high Tx Power, Noise immunity and High throughput.

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.

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

RM-EXTREME 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-EXTREME can inter work with RM series subscriber units.

FEATURES

- **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.
- **Seamless Migration:** RM-EXTREME offers Ethernet and native TDM thus enabling seamless migration from TDM to all IP networks. Also have support for 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. With optimized and unique air interface and incorporation of advanced interference mitigation techniques; it offers highest spectrum efficiency superior throughput and robust performance in dense radio environments.

HIGHLIGHTS

- *Carrier Grade Performance*
- *Aggregate User Throughput of Up to 200 Mbps*
- *High Tx Power (1W) without of Band Interference Rejection*
- *Options for External or Integrated Antenna with 2X2 MIMO capability*
- *Based on OFDM technology*
- *Flexible Architecture: Point-to-Point, Multiple-Point-to-Point and Point-to-Multipoint*
- *Long Range - More than 100 kms (Depending on Terrain, Frequency, etc.)*
- *Operational in nLOS, High Interference and Harsh Weather Conditions*
- *Simple Installation and Maintenance*
- *Power through PoE*
- *TDD - TDMA Duplex Technique Suitable for Both TDM and Ethernet Services*
- *License Exempt Frequencies (2.4 and 5.8 GHz)*
- *Enhanced Security – AES Encryption*
- *Traffic Prioritization*
- *Interoperable with Shyam E1 IDU*
- *Optional Co-location Interference Avoidance*
- *Centralized Management using Shyam UNMP*
- *Inter Operable with E1 IDU*

RM-EXTREME

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 4.9 - 6.0 GHz (Optional)
Channel Bandwidth	5/10/20/40 MHz
RF Output (dBm)	Up to 30 dbm (Configurable)
Rx Sensitivity (dBm) 2.4/5.8 GHz	BPSK: -90 QPSK: -88 16QAM: -85 64QAM: -75
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	325 x 190 x 90 (With External Antenna) 370 x 370 x 95 (With Integrated Antenna)
Weight (Kg)	With Integrated Antenna: 6.1 Without Antenna: 4

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 (Only in Sync Enabled Hardware)
Bridging	Self-Learning Up to 2047 MAC Addresses IEEE 802.1Q
Maximum Frame Size	1536 bytes
VLAN	Transparent
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	AC or DC (via PoE)
Max Power Consumption	25 W

RM-EXTREME

SPECIFICATIONS

INTERFACES	
Ethernet	
Type	10/100BaseT with Auto-Negotiation (IEEE 802.3u) Framing/Coding IEEE 802.3
Number of Ethernet Ports	1 (Unit with Sync Option) 2 (Units without Synch Option)
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	25° (Typical) 8° (Typical)
MANAGEMENT	
Management Interface	SSH, Web Server and SNMP
Firmware Upgrade	Local & Remote
Network Management	Shyam's Unified Network Management (UNMP)
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

RM-EXTREME MODELS

MODEL NO.	PRODUCT DESCRIPTION
RME-2400	PTP RM Extreme, 2.4 GHz, 200 Mbps throughput with 2XN Ext. Antenna Option, 1 PoE in and 1 FE Port
RME-2400-SYNC	PTP RM Extreme, 2.4 GHz, 200 Mbps throughput with 2XN Ext. Antenna Option, 1 PoE in and 1 SYNC Port
RME-2419	PTP RM Extreme, 2.4 GHz, 200 Mbps throughput with 19 dBi Integrated Antenna, 1 PoE in and 1 FE Port
RME-2419-SYNC	PTP RM Extreme, 2.4 GHz, 200 Mbps throughput with 19 dBi Integrated Antenna, 1 PoE in and 1 SYNC Port
RME-5800	PTP RM Extreme, 5.8 GHz, 200 Mbps throughput with 2XN Ext. Antenna Option, 1 PoE in and 1 FE Port
RME-5800-SYNC	PTP RM Extreme, 5.8 GHz, 200 Mbps throughput with 2XN Ext. Antenna Option, 1 PoE in and 1 SYNC Port
RME-5823	PTP RM Extreme, 5.8 GHz, 200 Mbps throughput with 23 dBi Integrated Antenna, 1 PoE in and 1 FE Port
RME-5823-SYNC	PTP RM Extreme, 5.8 GHz, 200 Mbps throughput with 23 dBi Integrated Antenna, 1 PoE in and 1 SYNC Port
RME-BS-2400-SYNC	PTMP RM Extreme Base Station, 2.4 GHz, 200 Mbps throughput with 2XN Ext. Antenna Option, 1 PoE in and 1 SYNC Port
RME-BS-5800-SYNC	PTMP RM Extreme Base Station, 5.8 GHz, 200 Mbps throughput with 2XN Ext. Antenna Option, 1 PoE in and 1 SYNC Port

ABOUT VNL

VNL makes WorldGSM™, a complete GSM and Broadband Solution that helps mobile operators reach rural markets profitably. It is completely solar powered and optimized for rural markets. For the first time, mobile operators can build profitable businesses serving low-ARPU users in rural and remote communities.

The microtelecom revolution is ready to begin and VNL is leading the charge.

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CORPORATE HEADQUARTERS

VNL, 21-B, Sector 18, Udyog Vihar
Gurgaon 122 015, Haryana, INDIA
Tel +91 124 309 2000
www.vnl.in

