Redline communications

www.redlinecommunications.com

RedMAX Subscriber Unit (SU-O)

Features:

- WiMAX Forum Certified™ design
- Intel® PRO/Wireless 5116
- Simple, quick and economical installation
- Non-LOS PMP capability employing OFDM technology for high reliability
- Dynamic Quality of Service (QoS) settings
- 3.4 - 3.6 GHz frequency band

The RedMAX SU-O is a ruggedized broadband wireless access product for outdoor subscriber deployment. Designed to WiMAX Forum Certified™ specifications, compliance to the IEEE 802.16-2004 standard ensures its interoperability (as defined by the WiMAX Forum™) with an emerging industry-wide base of compatible Point to Multipoint (PMP) equipment.

The RedMAX SU-O is easy and economical to deploy, allowing service providers to quickly provision new services with bandwidth comparable to xDSL. This outdoor unit, available with fully integrated flat panel antenna, or option for use with standalone antenna, includes an audible antenna alignment indicator for quick and simple installation. The indoor Power-over-Ethernet (PoE) adapter provides power for the outdoor unit and the user's Ethernet network access port.

Operating in the 3.4 - 3.6 GHz band, Redline's built-in 3rd generation, Orthogonal Frequency Division Multiplexing (OFDM) non Line of Sight (NLOS) technology helps overcome typical urban obstacles such as trees and buildings while maintaining high reliability. Rugged design standards and sophisticated techniques, including advanced forward error correction (FEC), combine to deliver wireline-equivalent high availability.

The very low latency of Redline's RedMAX SU-O ensures reliable delivery of delay sensitive mission critical services such as circuit-switched voice traffic, video, voice-over-IP (VoIP), and prioritized data traffic. WiMAX-based compatibility, high performance, and easy installation all combine to make the RedMAX SU-O an excellent choice when deploying wireless broadband for business and residential access.

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System Capability:	LOS, Optical LOS, non-LOS Cell-based Point-to-Multipoint
RF Band:	3.400 GHz to 3.600 GHz (FWA Band)
Channel Size:	3.5 MHz, 7 MHz
Spectral Efficiency:	Up to 5 bps/Hz (over the air) Up to 3 bps/Hz (net to Ethernet)
Over The Air Rate:	Up to 35 Mbps (@7 MHz, rates depend on channel size)
Data Rate:	Up to 23 Mbps Maximum Ethernet rate (@7 MHz)
Maximum Tx Power:	Up to +20 dBm (region specific)
Rx Sensitivity:	Better than -93 dBm @ BPSK 1/2 (based on BER of 1x10e-6)
Cable:	Maximum length up to 300 ft (91 m) using Redline recommended shielded outdoor cable
Network Attributes:	Transparent bridge 802.1Q VLAN 802.1p, TOS/DSCP and L2/L3 address traffic prioritization DHCP client and DHCP pass-through
Modulation/Coding Rates:	Dynamic adaptive modulation (bi-directional) Auto select: BPSK, QPSK, 16 QAM, 64 QAM
Coding Rates:	1/2, 3/4 and 2/3
Over the Air Encryption:	DES and AES
MAC:	Cell-based PMP deployment 802.16-2004 compliant PMP 802.16-2004 packet convergence sub-layer mode TDMA access Automatic repeat request (ARQ) error correction
Range:	Over 19 mi (30 km) LOS Over 1.5 mi (2.5 km) non-LOS
Duplex Technique:	TDD (time division duplex) HD-FDD (Half Duplex Frequency Division Duplex)
Wireless Transmission (PHY):	256 FFT Orthogonal Frequency Division Multiplexing (OFDM)
System Configuration:	HTTP (Web) interface, SNMP, TFTP
Network Management:	SNMP, standard and proprietary MIBs Full management by RedMAX Management Suite (RMS)
Power Requirements:	PoE-Standard IEEE 802.3af
Available Power Blocks:	Auto-sensing 110/220/240 VAC 50/60 Hz
Compliance:	EMC: EN 301 489-1, EN 301 489-4, EN 55022/CISPR 22; RF: EN 301 021, EN 301 753; Safety: IEC 60950-1, EN 60950-1, UL 60950-1; Industry Canada: RSS-192
Operating Temperature:	-40 C to 65 C
Antenna:	Standard: Integrated 15 dBi flat panel Optional: Selection of non integrated high gain antennas
Dimensions/Weight:	8" W x 8" L x 2.5" H (20 cm x 20 cm x 6.35 cm) / 4.5 lbs (2 Kg) not including mounting bracket

*Interface Options**

Ethernet Option

Standard:	10/100 Ethernet (RJ-45)
Optional:	4 port mini switch

TDM Option

General	
Ports:	One full rate E1 or T1 Supports fractional nx64 services
Round-Trip-Delay:	Under 50 ms
Line Length:	6562 ft (2000 m) using 22 AWG twisted pair cable
Clocking:	Internal, network, adaptive
Diagnostics:	Local, remote and traffic loopback testing Detects LOS, OOF, AIS, RAI Generates AIS, RAI

	E1 Interface	**T1 Interface**
Connector:	RJ-48c	RJ-48c
Data Rate:	2.048 Mbps	1.544 Mbps
Framing:	Unframed, PCM 31	Unframed, D4 (SF), ESF
Jitter:	ITU-T G.823	AT&T TR-62411, ITU-T G.824
Line Code:	AMI, HDB3	AMI, B8Z5
Line Impedence:	Balanced 120 ohm	Balanced 100 ohm
Line Build Out:	n/a	0 dB, -7.5 dB, -15 dB, -22.5 dB
Standards:	ETS TBR 12/13, ITU-T Rec., G.703, G.704, G.706, G.732, G.821, G.826	ANSI T1.403, ITU-T Rec. G.703,G.704, G.733, G.821, G.826

Voice Interface Options

VoIP	SIP
POTS	1 to 4 FXO/FXS

*contact sales for availability

About Redline Communications

Redline Communications is a technology leader in the design and manufacture of standards-based broadband wireless access solutions. Using industry leading OFDM technologies, Redline's award-winning products provide unmatched high-capacity non line-of-sight capabilities with proven performance, reliability and security. Ideal for a variety of access, backhaul and private network applications, Redline products are meeting the needs of carriers, service providers and enterprises worldwide. Redline has over 15,000 installations in 75 countries across six continents through a global distribution network of 80+ partners.

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