

RADITEK

Telecom 23G Point to Point Radio

Point to Point Radio LC Family,
23 GHz 160E1 / IP 366Mb



Up to 366 Mbps, Ethernet, 160E1, Low Cost, Point to Point

Features & Benefits																		
<ul style="list-style-type: none"> • Licensed Frequency Bands • Point to Point IP Link • Very Low Latency Ethernet • Adaptive Modulation for increased availability • Internet Ethernet 10/100Base-T • Low Power Consumption • Wide Operating Temperature Range • SNMP (V1,2,3) Management • Up to 300 Meter separation between IDU and ODU • Small profile • Low installed cost • Carrier class performance 	<p>Overview</p> <p>This is a Full Duplex (FD), 23GHz Point to Point, Low Cost (LC) microwave, radio link.</p> <p>An IP based Ethernet Radio system, offering Full Duplex (FD) (data rates up to 366 Mbps). The radio supports software configurable capacity selection to 366 Mbps capacity, up to 160 x E1, using 14, 28/30, 40 and 56 MHz channel bandwidths. With QPSK to 256QAM modulation and Advanced, integrated forward Error correction (FEC) provides superior link performance and reliability.</p> <p>This RADIO is ideally suited for: Backhaul networks; including: WiMAX backhaul, ISPs, next generation mobile, and enterprise/campus networks requiring the best solution that exceeds Carrier-Grade Class standards for highest reliability, quality, and environmental compliance at a relatively low price.</p> <ul style="list-style-type: none"> • Incorporates digital Channel filtering for the various data bandwidths. • Offers volume capacity and proven performance for applications, worldwide • Represents a new low cost solution of roof/tower installation • Designed to minimize product logistics and overall product life cycle costs. • Connects directly to antennas from many (other) manufacturers. • Optional: Protected (1+1), 2 x (2+0) Capacity, Full Duplex and other configurations possible with compatible router 																	
	<p>Standards Compliance</p> <table border="1" data-bbox="477 1367 1406 1623"> <tr> <td>EMC</td> <td>EN 301 489</td> </tr> <tr> <td>Operation, ODU</td> <td>ETS 300 019 Class 4.1</td> </tr> <tr> <td>Operation , IDU</td> <td>ETS 300 019 Class 3.2</td> </tr> <tr> <td>Storage</td> <td>ETS 300 019 Class 1.2</td> </tr> <tr> <td>Transportation</td> <td>ETS 300 019 Class 2.3</td> </tr> <tr> <td>Safety</td> <td>EN 60950</td> </tr> <tr> <td>RF</td> <td>EN 302 217</td> </tr> <tr> <td>Water resistance, ODU</td> <td>IEC 60529 (IPX6)</td> </tr> </table>		EMC	EN 301 489	Operation, ODU	ETS 300 019 Class 4.1	Operation , IDU	ETS 300 019 Class 3.2	Storage	ETS 300 019 Class 1.2	Transportation	ETS 300 019 Class 2.3	Safety	EN 60950	RF	EN 302 217	Water resistance, ODU	IEC 60529 (IPX6)
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Point to Point Radio Family 23GHZ RTR-P2P-23G-HYBRID-LC-g16

Key Feature	GENERAL Technical Information		
<ul style="list-style-type: none"> Browser based GUI for easy setup and management Standard IP and Serial Interfaces Supports NMS & SNMP <p>Benefits</p> <ul style="list-style-type: none"> More cost effective Quick Deployment Lowest cost, Licensed bands Easily Setup and Activated <p>Applications</p> <ul style="list-style-type: none"> Ethernet IP/ to 160E1 IP Radio Networks G3/G4 Backhaul WiMAX /LTE Backhaul <p>Services available</p> <ul style="list-style-type: none"> Technical Support Installation and Setup Maintenance Applications Support Hardware Support Extended Warranty 	RTR-P2P-23G-HYBRID-LC-g16		
	Operating frequency	23	GHz
	Range	To 20Km	Depends on antenna
	Digital line rate	1000	Mbps (Fast Ethernet)
	Capacity	3660	Mbps
	Modulation Options	QPSK, 8PSK, 16QAM/16APSK, 32QAM/32APSK to 256 QAM	
	Error Correction/coding	RS, LDPC	
	PRODUCT CONFIGURATION:		
	1+1, HSB, FD, SD		
	ENVIRONMENTAL:		
	Operating temperature		
	IDU	-5 to 50 °C	
	ODU, standard		
	ODU, extended		
	IDU, Humidity, (ODU)	0 to 95% (100%)	Non condensing ()
	Altitude	4500m	15000 feet
	Fault and configuration management		
	Protocol	SNMP v1/v2/v3	
	Interface, electrical	Ethernet 10/100 base-T	
	Interface, electrical	RJ-45	
Local/remote configuration, support Tools	WEB LCT		
Performance monitoring	ITU-T REC. G.826		
Network management	EMS 1000		
EOW (Engineering Order Wire)	EOW and AUX RS-232		
Capacity/Channel Bandwidth			
Capacity	Modulation	Bandwidth (ODU 300)	
20-90 Mbps	QPSK-256QAM	14MHz	
40-180 Mbps	QPSK-256QAM	28/30MHz,	
60-260 Mbps	QPSK-256QAM	40MHz	
88-366Mbps	QPSK-256QAM	56MHz	
			

RTR-P2P-23G-160E1 or IP366Mb-LC-g16

Specifications may be subject to change

03/05/13

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General. IDU Options

LED indicators	PWR, IDU, ODU, RAI, LNK	
Line interface	GE	
IF interface	Transmit	350MHz -12 to -8 dBm
	Receive	140MHz, -8 to -37 dBm
IF Cable Connector	N Type (f/m)	
Auxiliary Data	Channel interface #	1
	Interface	RS-232
	Line rate, configurable	1.2 to 19.2 Kbps Async
	Connector type	RS-232, 9 PIN D-SUB
Alarm I/O	External Alarm input	2 x TTL
	External Alarm output	2 x TTL, 2 x Form C relay
	Connector	9 pin D-SUB
NMS LNA		
Interface	Type	10/100 BaseT Ethernet, RJ45
Electrical	Input voltage range	-38 to -72 VDC
	Power consumption	<40W, typ.
	Protective Circuit	6A fuse
Mechanical	Dimensions	44 x 482 x 300 (1U); 87 x 482 x300 (2U)
	Weight	~2.8Kg (1U typ.), 5.6Kg/2U typ.
Internet	E1	
Capacity options	Configurable to 366Mbps, 10/100/1000baseT	Configurable to 160 x E1 (2.048 Mbps)
Traffic	4 x GE electrical, 1xGE Optical, 4 RJ45 and 1xSFP	SCS168
Connectors	4 x RJ45	Coding type: HDB3; 75Ω unbalanced or 120Ω balanced.
Specifications	L2 Switching, VLAN (802.3ac), Flow control (802.3X), QoS (802.1p)	
Threshold (BER 10E-6)		
QPSK (28MHz BW)	-85	dBm
ODU Specifications		
Frequency	23	GHz
Modulation	QPSK to 256QAM	
IF Specification		
IF frequency, Tx	140	MHz
IF frequency, Rx	350	MHz
Cable impedance	50	Ω
Maximum IF cable length (IDU-ODU)	300	m
ODU interfaces		
IF cable connectors	N type f/m	
AGC monitor	BNC f/m	
Antenna port	EIA rectangular (standard)	Refer to ODU system spec.
Polarization (field selectable)	Vertical (standard), horizontal	
Antenna mount	Direct mount	
Power	20 (QPSK)	dBm
	16 (128QAM)	dBm
Power control range	Resolution: 0.1 steps (6dB/sec.)	dB
	Accuracy: ± 1	dB

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Transmit mute	<-50	dBm/MHz
Transmitter source	Synthesizer	
Stability	±5	ppm
Receiver overload (BER 10E-6)	-20	dBm
Residual BER	10E-13	
RSSI accuracy	±2	dB
@1KHz Phase Noise	-70	dBc/Hz
@10KHz	-80	dBc/Hz
@100KHz	-98	dBc/Hz
@1MHz	-110	dBc/Hz
25 dBm (Pout) QPSK EVM	15 spec.	%
24 dBm (Pout) 8PSK EVM	10 spec.	%
23 dBm (Pout) 16APSK EVM	8 spec.	%
15dBm (Pout) 256 QAM EVM	4 spec.	%
Electrical		
Power consumption	35	W
Mechanical		
H x W x D	287 x 287 x 120	mm
Weight	6.5	Kg
Thermal cycle (32APSK, 28MHz BW)	8	hrs



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Mounting Detail

