

SIERRA DIGITAL MODEL 23DS3 *21.2 - 23.6 GHz Licensed Microwave* Millimeter Wave Video Link for DS3 Data Transmission



APPLICATIONS

*Point-to-point private and Telco voice and digital data applications
Can be operated as a "Repeater" with antennas in back-to-back configuration*

- Frequency synthesized tunable at interface unit or remotely
- Output Power level control manual or automatic from interface unit or remotely
- One-year factory warranty - High MTBF (>70,000 hours)
- Easy Installation - Single coax cable between RF head and inside unit for all signals and power (not included)
- Forward Error Correction providing maximum data integrity and reliability
- Performance monitoring of all critical operational RF and data parameters
- Performance monitor logging for QOS reporting and diagnostic aid
- Configurable performance alarm limits and alarm relay activation
- Remote access to performance monitoring through dial up direct PC connection or network connection (Internal modem option)

DESCRIPTION

The Raymar-Telenetics Model 23DS3 synthesized digital millimeter wave radio is a simple, low-cost alternative to leased land-line DS3 circuits and more expensive microwave radio systems.

The carrier class performance ensures reliability and integrity of the data connection. High MTBF provides long-term operation in diverse climates with minimal service requirements.

Because of cost, response time, or right-of-way constraints with land lines, implementation of the 23DS3 will be quicker, easier, and more affordable.

PRIMARY BENEFITS

- Quick deployment of system
- System is re-deployable if requirements change
- Fast ROI, less than one (1) year
- High reliability, carrier class equipment
- Licensed for protection against interference
- Meets ANSI Standard T1 102-1993
- Meets CCITT Rec G 703

The radio comes in both an integrated antenna configuration (12") or with a Waveguide flange to attach to external antennas of choice.

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Sierra Digital 23DS3 Microwave Video Link

TECHNICAL SUMMARY

Frequency Range:	21.2 to 23.6 GHz
Standard TX/RX spacing:	1200 MHz
Allocated RF Channel Bandwidth:	50 MHz
Occupied Bandwidth:	28 MHz
Modulation type:	4-level FSK (FM)

STATUS & DIAGNOSTICS

- Front panel menu driven status display
- Standard Direct PC monitor & configuration utilities
- Dial-up access to all monitor & configuration utilities
- Alignment Aids for quick path alignment

TRANSMITTER CHARACTERISTICS

RF Source:	Digital Frequency Synthesized
Guaranteed Power Output:	+17dBm (Minimum)
Power Control Option:	7 steps down from Max power out
Frequency Stability (-30° to +70°C):	±0.001%
Tuning Range:	Covers full band with two (2) sets of units

(One set covers upper half & one set covers lower half)
In response to interference, radios may be tuned in 5 MHz increments at the control unit.

RECEIVER CHARACTERISTICS

Dual Conversion Superhetrodyne:	2500 & 70 MHz
Noise Figure (system):	5.5 dB (typical)
Sensitivity - Receiver Threshold:	-72dBm
(for 10-6 BER)	
Maximum receiver input:	-15 dBm
(Damage will occur at +5 dBm)	

12" ANTENNA CHARACTERISTICS (23DS3i only)

Type:	Parabolic
Diameter:	12.5 inches (31.8 cm)
Polarization:	Linear
Gain (22.4 GHz):	35 dB
Front to back ratio:	42 dB
Beamwidth (3 dB):	3.2°

TRANSMISSION DATA

System Gain (nominal):	90 dB
Unfaded BER:	<10 ⁻⁹
Line Code:	B3ZS

ENVIRONMENTAL CHARACTERISTICS

	OUTDOOR UNIT	INDOOR UNIT
Ambient temperature range:	-30° to +70° C	0° to +50° C
Storage & transportation:	-40° to +80° C	-40° to +60° C
Humidity (non-condensing):	up to 100%	to 95% at +50° C

INPUT VOLTAGE REQUIREMENTS

Voltage input:	93 to 265 VAC
Brown-out voltage:	90 VAC
Line frequency:	50-60 Hz

Six-foot 3-prong power cord provided with indoor unit.

POWER CONSUMPTION

Total power required per terminal:	50 Watts Maximum
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(100 Watts for both terminal ends)

FCC INFORMATION

FCC rules part:	101
Frequency range:	21.2 - 23.6 GHz*
Emission Designator:	42M0F7D
Frequency tolerance:	±0.001%
FCC Maximum power output:	100mW (+20dBm)

* In the US, operation with 12-inch antennas is restricted to Pair numbers D (21.825/23.025), T (21.875/23.075), G (21.925/23.125), and E (21.975/23.175)

SIZE & WEIGHT

Outdoor RF Unit (w/12" ant.):	15" H x 12" D x 15" W
Outdoor RF Unit (w/Ext ant.):	11" H x 8" D x 6" W
Weight:	15 lbs (7.0 kg)
Indoor Interface Unit:	19" Rack Mount wide 2U High (3.5")

INTERCONNECT CABLES & CONNECTORS

Cabling between RF Head and Interface Unit

0' to 500' (LMR400) /	Single 50W coaxial
500' to 1000' (LMR500)	(Belden 9913 or equivalent)
RF Head Coaxial Connector:	Type N
Waveguide Flange:	UG595/U
(for connection to external antennas)	
DS3 In & Out Connectors:	BNC (75Ω) CCITT (Rec. G.703)

Phone Line (Modem):	RJ-11 (RS232C)
SNMP:	RJ-45 (Ethernet 802.3)
PC Monitor:	DB9 Male (RS232C)
Alarm Relay Output:	3 terminal Phoenix type

FREQUENCIES

The lower half of the band is covered by one pair of units and the upper half of the band is covered by a second pair of units. Therefore, to spare all possible frequencies would require four (4) different RF Heads.

OPTIONS

Option 6:	+ or - 24 VDC
Option 7:	+ or - 48 VDC
Option 10:	24" External antennas
Option 11:	Flex Waveguide to connect antennas to RF Head
Option 17:	Arctic Mode to operate down to -45°C
	(Increase power consumption)
Option XX:	SNMP Management



WARRANTY

Raymar-Telenetics manufactured products are warranted against defects in hardware material and workmanship under normal use for one (1) year from date of original retail purchase. Defective product will be repaired or replaced, determination to be made by Raymar-Telenetics, at no charge. Repaired or replaced products are warranted for 90 days or for original warranty period, whichever is longer. Warranty extends to original end-user only.



Manufactured in the USA by RAYMAR-TELENETICS

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