

## TECHNICAL SPECIFICATIONS FOR 23DS3\*\*

### TECHNICAL SUMMARY

Frequency Range	21.2 to 23.6 GHz
Standard TX/RX spacing	1200 MHz
Allocated RF Channel Bandwidth	50 MHz
Occupied Bandwidth	34 MHz
Modulation Type	4-level FSK (FM)

### STATUS AND DIAGNOSTICS

Front panel menu driven status display
Standard Direct PC monitor and 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 (for 10-6 BER)	-72 dBm
Maximum receiver input (Damage will occur at +5 dBm)	-15 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
Beam width (3 dB)	3.2°

### TRANSMISSION DATA

System Gain (nominal)	90 dB
Unfaded BER	<10 <sup>-11</sup>
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 – 265 VAC
Brown-out Voltage	90 VAC
Line Frequency	50-60 Hz
(Six ft. power cord with 3-prong plug provided with indoor unit)	

### POWER CONSUMPTION

Total power required per terminal	50 Watts Maximum
(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	100 mW (+20 dBm)

### SIZE AND WEIGHT

	High	Deep	Wide	Wt.
Outdoor RF Unit (w/12" ant.)	15"	12"	15"	15lb.
Outdoor RF Unit (w/Ext ant.)	11"	8"	6"	15lb.
Indoor Interface Unit	19" Rack Mount wide			2U High (3.5")

### INTERCONNECT CABLES & CONNECTORS

<i>Cabling Between RF Head and Interface Unit</i>	
0' to 1000'	Single 50W coaxial (Belden 9913 or Equivalent)
RF Head coaxial connector	Type N
Waveguide Flange (For connection to external antennas)	UG 595/U
DS3 In & Out connectors	BNC (75Ω) (CCITT Rec. G.703)
Phone Line (Modem)	RJ-11 (RS232C)
SNMP (future option)	RJ-45 (Ethernet 802.3)
PC Monitor	DB9 Male (RS232C)
Network Management	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 12	Output Power Control
Option 17	Arctic Mode to operate down to -45°C (Increase power consumption)
Option XX	SNMP Management

\* Specifications are subject to change without notice

\*\* In the US, operation with 12" antennas is restricted to the following pair frequencies:

D	(21.825 / 23.025)
T	(21.875 / 23.075)
G	(21.925 / 23.125)
E	(21.975 / 23.175)

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