

# Microwave: Sierra Digital Series

## Applications

- ▲ Point to Point medium haul, light density digital data applications.
- ▲ Can be operated as a "Repeater" with antennas in a "back to back" configuration.

## MODEL 2350S (SYNTHESIZED) 21.2-23.6 GHz MILLIMETER WAVE RADIO LINK *MEDIUM HAUL - UNIVERSAL (BASEBAND) RADIO*



## Features & Benefits

- ▲ Flexible – the 2350S Universal Radio accepts most signals utilizing 1 volt p-p levels with a bandwidth of 15 MHz.
- ▲ Operating frequency tunable at the Interface Unit with thumbwheel switches.
- ▲ Optional Output Power Control at the Interface Unit with thumbwheel switch.
- ▲ One year warranty - Low parts count, highly derated solid state devices make for extremely high MTBF.
- ▲ Easy installation – special mounts enable simplified, rapid installation.
- ▲ Can be used as repeater.

## Description

The SDC 2350S series synthesized digital millimeter wave radio is a simple, low cost, alternative to a land line circuit.

The 2350S is a wide open Baseband radio and whether your requirements are for a T2 (6.312 Mb/s) or a E2 (8.448 Mb/s) circuit, a LAN, a video circuit or a special circuit, the 2350 millimeter wave link, with an appropriate MUX, affords you a low cost radio solution. Because of cost, response time, or right of way constraints with land lines; implementation of the 2350S digital radio will be quicker, easier, and more affordable.

Three units make up the 2350S system:

- A weatherproof outdoor transmitter/receiver unit including integral 12" antennas.
- Also available in separate box for use with external antennas.
- An Indoor Interface unit containing power supplies, and Baseband circuitry.

## Technical Specifications

### TECHNICAL SUMMARY

Frequency Range	21.2 to 23.6 GHz
Standard TX/RX spacing	1200 MHz
Allocated R.F. Channel Bandwidth	50 MHz
Occupied Bandwidth	Up to 30 MHz
(requires modification of normal 15 MHz Bandwidth)	
Modulation type	2-level FSK (FM)

### STATUS AND DIAGNOSTICS

LED Status Indicators	Primary power, Link continuity
LED Alarm indicators	AGC Alarm, Tx Alarm, RX Alarm, Frequency command error
Alignment Aids	Outdoor Unit: AGC Test Points Indoor Unit: AGC Level Meter



## ORDERING INFORMATION

Synthesized Universal  
Radio Model 2350S

## OPTIONS

### (Consult the Factory)

Note that standard  
models will accept  
input voltages from 93  
to 265 VAC, 50/60 Hz.

6. + or - 24 VDC
7. + or - 48 VDC
10. 24" External  
Antennas
11. Flexguide sections  
to connect  
antennas to RF  
Heads.
12. Output Power  
control
17. Arctic Mod to  
Operate Down to -  
45°C (Increases  
power consumption)

\*\* 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).

## Technical Specifications for the 2350S\*

### TRANSMITTER CHARACTERISTICS

RF Source	Oscillator/ Multiplier/ Amplifier Type
Guaranteed Power Output	+17 dBm (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

Type - Dual Conversion Superhetrodyne	2500 & 70 MHz
Noise Figure (System)	5.5 dB (typical)
Sensitivity - Receiver Threshold (for 10 <sup>-6</sup> operating point)	-80 dBm
Maximum receiver input (Damage will occur at +5 dBm)	-15 dBm

### 12" ANTENNA CHARACTERISTICS

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	97 dB
-------------	-------

### INTERFACE PARAMETERS

Input Level	1 V P-P
Bandwidth	15 MHz
Impedance	75 Ohms

### 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%	up to 95% at +50° C

### INPUT VOLTAGE REQUIREMENTS

Power input	93 - 265 VAC
Brown-out voltage	90 VAC
Line frequency	50/60 Hz

Six foot 3-prong powercord provided with indoor unit

### POWER CONSUMPTION

Total power required per Terminal (100 w for both end)	50 Watts Maximum
---	------------------

### FCC INFORMATION

FCC rules part number	101
Frequency range	21.2 - 23.6 GHz**
Emission Designator	42M0F7D
Frequency tolerance	± 0.001%
FCC Maximum power output	0.10 watts

### SIZE AND WEIGHT

	High	Deep	Wide	Wt
Outdoor RF Unit with Integrated 12" antennas (excluding mount)	15"	12"	15"	15lb.
Outdoor RF Unit for use with external antennas (excluding mount)	11"	8"	6"	15lb.
Indoor Interface Unit	19" Rack, 2U mounting space (3.5" high)			

### INTERCONNECT CABLES & CONNECTORS

Cabling Between RF Head and Interface Unit	
0' to 1000'	Single 50 Ohm coaxial (Belden 9913 or equivalent.)
Coaxial connectors	Type N
Waveguide Flange	UG 595/U
for connection to external antennas	
Baseband In/Out Connectors (75 Ohms)	BNC

### 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.

\*Specifications are subject to change without notice.

**For more information on Telenetics' 2350 Series and  
other wireless products and services, contact us at:**

**949-455-4000 or visit  
www.telenetics.com**

Document #0057 1100

Telenetics is registered trademark of Telenetics Corporation. All other  
trademarks are the property of their respective holders. ©2000 Telenetics Corporation.