

Microwave: Sierra Digital Series

Applications

- ▲ Point to Point, short haul, light density digital data applications.
- ▲ Extending communications service, including voice/data distribution, local area networks and PBX intracity trunk line connections.

**MODEL 2340S
(SYNTHESIZED)**
21.2-23.6 GHz MILLIMETER
WAVE RADIO LINK
SHORT HAUL 4xT1 or 4xE1



Features & Benefits

- ▲ Flexible - Four (4) separate T1 or E1 lines in a full duplex configuration.
- ▲ Low cost - No recurring monthly charges, fast payback.
- ▲ Available with integral 12" parabolic antennas or in a separate box for use with larger external antennas.
- ▲ One-hour installation - Bolt in place, plug-in and aim.
- ▲ One year warranty - Low parts count, highly derated solid state devices make for extremely high MTBF.
- ▲ Low power consumption - Total power consumption per end is only 45 watts.

Description

The SDC 2340S/41S-4 digital millimeter wave radio is a simple, low cost alternative to a landline data circuit.

Whether your requirements are for a 4xT1 (4 X 1.544 Mb/s) or a 4xE1 (4 X 2.048 Mb/s) circuit, the 2340S/41S-4 millimeter wave radio provides a frequency agile low cost radio solution. Because of cost, response time, or right of way constraints with land lines, implementation of the 2340S/41S-4 digital radio will be quicker, easier, and more affordable.

The 2340S/41S-4 system consists of two modules:

- A weatherproof outdoor transmitter/receiver/ antenna unit.
- An indoor modem/line interface unit.

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	25 MHz
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, Freq. command error
Alignment aids	Outdoor unit: AGC Test Points Indoor unit: AGC Level Meter



ORDERING INFORMATION

4xT1 (1.544 Mb/s X 4)
Model 2340S-4
4xE1 (2.048 Mb/s X 4)
Model 2341S-4

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 external 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" 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 2340*

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 5.5 dB (typical)
Sensitivity
For 10⁻⁶ BER operating point -80 dBm
For 10⁻³ BER operating point -83 dBm
Maximum receiver input -15 dBm
(Damage will occur at -5 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 (referred to antenna ports)
Guaranteed for 10⁻⁶ BER operating point 97 dB
Guaranteed for 10⁻³ BER operating point 100 dB

ENVIRONMENTAL CHARACTERISTICS

	OUTDOOR UNIT	INDOOR UNIT
Ambient temperature range	-40° to +70° C	0° to +50° C
(turn-on at -40° C requires 5-10 minute warm-up period before full spec operation)		
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 to 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 50 Watts Maximum
(100 w for each end)

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"	101b.
Outdoor RF Unit for use with external antennas (excluding mount)	11"	8"	6"	101b.
RF unit mounts to 2.5" to 4.5" pipe, mount for vertical polarization is supplied with unit.				
Indoor Interface Unit	19" Rack, 2U mounting space (3.5" high)			

INTERCONNECT CABLES & CONNECTORS

0' to 1000' Single 50 Ohm coaxial (Belden 9913 or equivalent.)
Coaxial connectors Type N
Waveguide Flange UG 595/U
T1 connectors RJ45
E1 connectors 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.

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Document #0073 1100	
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