Microwave: Sierra Digital Series

Applications

- ▲ Point to Point short haul, light density LAN extensions.
- ▲ Extending

 communications

 service, including

 voice \ data

 distribution, local

 area networks

 and PBX intracity

 trunk line

 connections

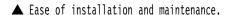
 together with

 LAN service.

MODEL 2471S SERIES

24.0-24.25 GHz MILLIMETER WAVE RADIO LINK

SHORT HAUL, ETHERNET + 1 or 2 T1 or E1
INTEGRAL ANTENNAS
PART 15/ISM - NO LICENSE REQ'D



- ▲ No licensing required The 24.0-24.25

 GHz band is a Part 15/ISM Band and operation there does not require any licensing by the FCC.
- ▲ Low cost No recurring monthly charges, fast payback.
- ▲ Two year warranty Low parts count,
 highly derated solid state devices make
 for extremely high MTBF.
- ▲ Low maintenance Simple, compact design ensures a lifetime of troublefree service.

Technical Specifications TECHNICAL SUMMARY

Frequency Range 24.0 to 24.25 GHz

Standard TX/RX spacing 125 MHz

R.F. Channel Bandwidth 30 MHz (recommended)

Modulation type 2-level FSK (FM)

Tuning Range Covers full band with
Two (2) sets of units

(One set covers upper half, one set covers lower half)



The SDC 2471S series digital millimeter wave radio is a simple, low cost, 10 Mbps, alternative to fiber.

For all your LAN or ETHERNET needs, the 2471S millimeter wave link gives you a low cost radio solution. The 2471S digital radio, with its switch selectable full duplex UTP/RJ45, or IEEE 802.3 interface, will connect directly to your net-work device such as a Router, Bridge, or repeater, because the transceiver unit is built into the radio itself.

The UTP interface facilitates full duplex operation. Optional separate T1/E1 capability...1T1 1E1, 2T1 or 2E1 is available to add low cost voice service to the same radio link.

Two units make up the 2471S system:

- A weatherproof outdoor transmitter/receiver/ antenna unit.
- An indoor modem/line interface unit containing an ETHERNET transceiver and power supply.

STATUS AND DIAGNOSTICS

LED status indicators Primary power

LED alarm indicators AGC alarm, TX Alarm, Rx
Alarm

Diagnostic aids Signal level meter,
IF test points

ORDERING INFORMATION

Full 10 Mb/s Duplex LAN Radio Model 2471S

OPTIONS (Consult the Factory)

- 1. Add T1 capability
- 2. Add E1 capability
- 6. ± 48 VDC
- 7. ± 24 VDC
- Arctic Mod to Operate
 Down to -45 C. (Increases
 Power Consumption)
- 18. Add 2 T1 capability
- 19. Add 2 E1 capability

Technical Specifications for the 2471si*

TRANSMITTER CHARACTERISTICS

RF Source Crystal Controlled

 ${\bf Synthesized} \ {\bf Source}$

Maximum Allowable Power Output 250mv/m2 measured 3

meters from the

radiator/antenna. (field

strength)

Frequency Stability (-30°C to +60°C)

± 0.001%

In response to interference, radios may be tuned in 5 MHz increments in the RF Head.

RECEIVER CHARACTERISTICS

Type Superhetrodyne
Noise Figure (system) 6.0 dB Max

I.F. Frequencies 2,600 MHz and 70 MHz

(dual down conversion)

Sensitivity

For 10⁻⁶ BER operating point -88 dBm
For 10⁻³ BER operating point -91 dBm
Maximum receiver input -15 dBm

(Damage will occur at -5 dBm)

INTERFACE PARAMETERS

Ethernet Specification Full Duplex UTP/RJ45

or AUI/DB-15

ANTENNA CHARACTERISTICS

Type Parabolic

Diameter 12.5 inches (31.8 cm)

Polarization Linear
Gain (24.25 GHz) 35 dB
Front to back ratio 42 dB
Beamwidth (3 dB) 3°

ENVIRONMENTAL CHARACTERISTICS

OUTDOOR UNIT INDOOR UNIT

Ambient temperature range -30° to $+70^{\circ}$ C 0° to $+50^{\circ}$ C (wider range available with Arctic modification)

Storage & transportation -40° to +80° C -40° to +80° C

Storage a transportation -+0 to 100 to -+0 to 100 t

Humidity up to 100% up to 95% at +50° C (non-condensing) (non-condensing)

 $\ensuremath{^{\star}}$ Specifications are subject to change without notice

INPUT VOLTAGE REQUIREMENTS

Power input 93 to 260 VAC ± 10%

Brown-out voltage 90 VAC Line frequency 50/60 Hz

A six foot long power cord with a 3-prong plug is provided

with the indoor unit.

POWER CONSUMPTION

Total power required per Terminal 50 Watts Maximum (100 Watts Maximum for both ends of the link)

FCC INFORMATION

FCC identifier IO8SDC-2420

FCC rules part number 15

Frequency range 24.0 - 24.25 GHz

Frequency tolerance ± 0.001%

SIZE AND WEIGHT

High Deep Wide Wt

Outdoor RF Unit (excluding mount)15" 12" 15" 10 lb.

38cm 30cm 38cm 4.6 kg

Indoor Modem Unit Two mounting spaces (3.5")

in 19" rack panel

INTERCONNECT CABLES & CONNECTORS

One RG-9/U coaxial cable up to 1000 ft. long between RF Unit and modem (50 Ohms, 100% Shielded), Belden 9913 or equivalent.

Outdoor Coaxial connectors Type N
Indoor Coaxial connectors Type N
802.3 Ethernet Connector DB-15

Full-Duplex UTP Ethernet Connector RJ45

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.

For more information on Telenetics' 2471 Series and other wireless products and services, contact us at:

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

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