

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



- ▲ Ease of installation and maintenance.
- ▲ 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.

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.

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)

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
17. 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 Synthesized Source
Maximum Allowable Power Output	250mv/m ² measured 3 meters from the radiator/antenna. (field strength)

Frequency Stability (-30°C to +60°C)	± 0.001%
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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 (dual down conversion)	2,600 MHz and 70 MHz

Sensitivity

For 10 ⁻⁶ BER operating point	-88 dBm
For 10 ⁻³ BER operating point	-91 dBm
Maximum receiver input (Damage will occur at -5 dBm)	-15 dBm

INTERFACE PARAMETERS

Ethernet Specification	Full Duplex UTP/RJ45 or AUI/DB-15
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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° C (wider range available with Arctic modification)	0° to +50° C
Storage & transportation	-40° to +80° C	-40° to +80° C
Humidity	up to 100% (non-condensing)	up to 95% at +50° C (non-condensing)

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	I08SDC-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.

www.arcelect.com

* Specifications are subject to change without notice

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