



SS2400DS-9

Wireless Ethernet



FEATURES

- * No License required
- * Data rates up to 2.75 MB/sec
- * Single hop ranges in excess of 80 km
- * Remote Software Updates
- * Transparent Ethernet Bridging
- * Remote management through Telnet, SNMP or "Console"

Description

The GDI SS2400DS-9 Long Range Ethernet radio provides an off-the-shelf, ready-to-install solution for a multitude of wireless network applications. Spread spectrum technology allows the immediate deployment of a network without the need for a license.

The SS2400DS-9 was specifically designed to operate over long distances and yet provide reliable links in the 2.4 GHz license exempt band. All the electronics are enclosed in an environmentally sealed Outdoor unit which can be mounted in close proximity to the antennas. For long range links, where the antennas need to be mounted on towers and rooftops, this configuration reduces costly RF cables and improves RF system performance. A standard CAT5e cable carries both Ethernet signals and DC power to the outdoor unit. This cable can be up to 300 ft (100m) in length.

The SS2400DS-10 uses direct sequence spread spectrum technology with selectable data rates of .25, .50, 1.375 and 2.75 MB/sec. The "Smart RF Technology" protocol adaptively sets the data rate, transmit power, and other parameters on each individual link, on a packet by packet basis. In case of interference or weak signals the software can automatically switch to a lower data rate to assure an error free connection.

For ease of installation and maintenance, and to combat interference, the SS2400DS-9 also includes the following features:

- Accurate measurement of Receive Signal Strength (RSS).
- Antenna Alignment Aid output, at the outdoor unit, with an audio pitch proportional to the RSS
- Spectrum Analysis with graphical display of in-band RF energy

The radio RF bandwidth is much narrower than other unlicensed devices in the 2.4 GHz band. This feature offers several advantages. First, the radio sensitivity is greatly improved allowing for long link distances. Secondly, there are a greater number of non-overlapping channels to choose from which makes it much easier to find an unused gap in a crowded spectrum. Lastly, the radio's transmit and receive frequencies can be different to aid in the deployment of a system in a difficult interference environment.

The radio implements a transparent bridge algorithm, where each unit automatically learns the addresses of all station in the network and forwards over the network only the traffic that needs to be delivered to the remote unit. This reduces the RF throughput required by the radio.

The radios operate in Time Division Duplex (TDD) mode using a configurable size time slot. One advantage of TDD operation is that the radios can synchronize their transmissions such that all co-located radios transmit at the same time, thereby avoiding self-generated interference. This technique allows deploying a star network with 30 or more radios at the same location.

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SPECIFICATIONS

RF

Frequency Range	2.400—2.483 GHz (USA) 2.400—2.5000 GHz (Overseas)
Modulation	Direct Sequence Spread Spectrum
Transmit Power	0 to +23 dBm, adjustable in 1 dB steps
Transmit Bandwidth (@ -20 dBc)	4.6 MHz
Number of Channels	34 (12 non-overlapping) Independent Tx/Rx
Data Rates	.25, .5 1.375, 2.75 MB/sec
Sensitivity (1E10 ⁻⁶ BER)	-97 dBm @ .25 MB/sec -94 dBm @ .50 MB/sec -93 dBm @ 1.375 MB/sec -90 dBm @ 2.75 MB/sec

INPUT POWER

Voltage	8-28 VDC or 115 or 230 VAC (external supply)
Power Consumption	5 W

COMMAND/CONTROL INTERFACE

Serial console	RS232 asynchronous (DE-9 with adapter cable) 9600 to 115.2 Kbaud
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COMMUNICATIONS INTERFACE

LAN interface	10/100 BASE-T Ethernet, Full/half Duplex, auto-negotiating
Protocols supported, Bridge mode	Ethernet (protocol transparent)

MECHANICAL

Dimensions in inches (cm)	4.72" (12mm) (W) x 2.2" (5.6mm) (D) x 8.66" (22mm) (H)
Weight	2.4 lbs (1.1 Kg)

ENVIRONMENTAL

Temperature	-40°C to +70°C
Maximum humidity	90% non-condensing

CERTIFICATIONS

FCC Part 15, IC

Specifications subject to change without notice

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