

SCH-1000

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900 MHz Frequency Hopping Spread Spectrum Transceiver

Overview

The SCH-1000 is a frequency-hopping spread spectrum digital transceiver operating in the 902-928 MHz license-free band. It is designed for use with: SCADA, Telemetry, Vehicle Data/Tracking, Display Signs, Traffic Control, and many more automation applications. The SCH-1000's High Performance Radio Core ensures consistent distance and throughput performance even in close proximity to noisy paging and cellular towers.

The Latest in Coding Technology

The SCH-1000 uses the latest coding technology which improves security, throughput efficiency, and error detection. It dramatically reduces the overhead inherent in other coding methods and provides faster effective communications speeds at a much lower cost. The result is the most reliable and cost efficient radio available.



Performance

The SCH-1000 is a powerful 1 Watt transceiver that effectively communicates at distances up to 20 Miles line of sight, depending upon antenna selection and the environment. The Hopper transmits data at true 115Kbps and has a high tolerance to environmental conditions and interference. Combining high performance and with affordable price, the SCH-1000 enables the implementation of applications previously unable to benefit from wireless communications. This radio supports Point-to-Point, Point-to-Multipoint, Repeater (Store and Forward), TDMA, Multimaster, Modbus, and Remote Diagnostics modes. The SCH-1000 sets new standards for robust, reliable wireless communications at an affordable price.

Certifications

Spread spectrum technology allows use of the SCH-1000 without an FCC site license. The Hopper is certified for use as an unlicensed spread spectrum device in the United States and Canada.

Applications

The SCH-1000 was designed with the industrial market in mind. The radio can be powered by 24VDC and uses a standard Db9 connector. The Hopper works well with Modbus RTU which means higher throughput than Modbus ASCII. The SCH-1000 can be used for point to point applications as well as multi-drop applications. The standard built-in repeater further enhances the SCH-1000's capabilities and flexibility.

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Specifications

General

Radio Frequency	902-928 MHZ
Type	Frequency Hopping Spread Spectrum Digital Transceiver
Frequency Control	Frequency Hopping
Interface	Asynchronous Serial - 5V TTL RS-232C
Hopping Patterns	64 user selectable
Diagnostics	Remote control, remote statistics, remote diagnostics
Operating Modes	Point-to-Point, Point-to-Multipoint, Store and Forward (Repeater), TDMA, Multimaster
Status Signals	RX/Sync, TXMode, RSSI 1,2,3
Error Detection	16bit CRC with optional FEC
RS-232 Signals	Gnd, TxD, RxD, CTS, RTS, DTR, DSR, DCD
User Interface	SCH-1000 Software

Performance

RF Data Rate	115.2 Kbps, maximum
Interface Data Rate	2400 bps minimum, 115.2 Kbps maximum (uncompressed)
Range**	20 Miles, line of sight
Sensitivity	-108 dBm
Duty Cycle	100%
Rejection	70dB out of band; 60dB in band; 50dB adjacent channel

**Range calculations are line-of-sight. Actual range will vary based upon specific board integration, antenna selection, environment, and the OEM's device.

Power Requirements

Input Voltage	9-32 VDC
Current Consumption	550mA max at 1W Tx Power; 210mA typical In Rx Mode
Output Power	1 Watt (User Configurable)

Physical Properties

Temperature Range	-40°C to 70°C
Width	4.5 inches (11.5 cm)
Height	4.0 inches (10.2 cm)
Depth	1.5 inches (3.8 cm)
Mounting	Horizontal Center-to-Center: 2.1875 inches (5.5 cm) Vertical Center-to-Center: 4.75 inches (12.3 cm)

Antenna

Antenna Connector	SMA Female
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Certifications

United States	FCC Part 15.247
Canada	IC RSS210

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