RF407
900 MHz Spread-Spectrum Radio

Overview

The RF407 is a high-speed 900 MHz serial radio designed for unlicensed operation in several countries, including the United States and Canada. The RF407 is a 902 to 928 MHz frequency-hopping spread-spectrum radio with a configurable transmit-power output of 5 to 250 mW and software-selectable channel masking for improved RF interference immunity. This power-sipping, yet speedy, radio provides a cost-effective way to network data loggers.

The RF407 is part of the RF407 series of radios that includes:

❯ RF407: North America (FCC & IC), 902 to 928 MHz

❯ RF412: Australia (ACMA RCM), 915 to 928 MHz

❯ RF422: Most of Europe and some of Asia (ETSI), 863 to 870 MHz

❯ RF427: Brazil (ANATEL), 905/920 MHz

Note to RF401A users: The RF401A is factory upgradeable to an RF407. Contact Campbell Scientific for a Return Material Authorization (RMA).

Benefits and Features

❯ Does not require individual operational license in the United States or Canada

❯ High-speed serial communication, optimized for PakBus networks

❯ Low power (< 2 mA idle) during periods of inactivity

❯ Supports point-to-point with RF retries and point-to-multipoint operations

❯ Remote diagnostics using PakBus node operations

Specifications

Radio Type	Frequency Hopping Spread Spectrum (FHSS)	Transmission Distance	❯ *-Note- Transmission distance assumes line-of-sight and appropriate antenna. Line-of-sight obstructions, RF interference, and antenna type will affect transmission distance.*
Frequency	902 to 928 MHz		
Country Used In	US, Canada		

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	❯ Up to 1.61 km (1 mi) with omnidirectional antenna; up to 16.09 km (10) mi with higher-gain directional antennas at ideal conditions
Power Output	5 to 250 mW (software-selectable)
Receiver Sensitivity	-101 dBm
Channel Capacity	Eight 25-channel hop sequences sharing 64 available channels
Data Rate	200 kbps
Link Throughput	105 kbps (maximum)
Antenna Connector	Reverse Polarity SMA (RPSMA) jack
LEDs	Red TX/PWR and green RX
RS-232 Baud Rate	1200 to 115200 bps
CS I/O Modes	SDC 7, 8, 10, 11, and ME master
Operating Temperature Range	-40° to +70°C
Power	9 to 16 Vdc
Power Connector	2.5 mm DC power jack
Powered Over	CS I/O or barrel plug
Average Current Drain	❯ Receive: 15 mA ❯ Transmit: < 80 mA (250 mW TX Power) ❯ Stand-by: < 0.5 mA (depending on power-saving mode)

Communication Ports	❯ RS-232 9-pin D female ❯ USB Type B jack ❯ CS I/O 9-pin D male
Maximum Nodes in Network	50
Service Requirements	Shares frequency with other devices. Must not cause harmful interference to licensed radios. Requires line-of-sight.
Dimensions	11.1 x 6.9 x 2.7 cm (4.4 x 2.7 x 1.1 in.) Dimension are from the tip of the antenna connector to the other side of the case, and from the bottom of the case to the top of the DB9 connector jack screw. The width includes the thickness of the screw heads on the screws that hold the case together.
Weight	❯ 136 g (4.8 oz) without "Ships With" items ❯ 283.5 g (10 oz) with "Ships With" items

Certifications

United States (FCC Part 15.247)	MCQ-XB900HP
Industry Canada (IC)	1846A-XB900HP
Mexico IFT	RCPDIXB15-0672-A1

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