



RF401A

900 MHz Spread-Spectrum Radio



Overview

The RF401A is a 900 MHz radio designed for license-free use in several countries, including the United States and Canada. It provides a hassle-free way to create long-distance wireless links between your computer, data loggers, and measurement devices. The RF401A has a 910 to 918 MHz operating-frequency range and a configurable transmit-power output of 5 to 250 mW.

Campbell Scientific recommends the RF401A radios for existing installations that require compatibility with products such as the RF401, CR206X, CR211X, AVW206, and AVW211. For new installations, Campbell Scientific recommends using the [RF407](#) or [RF451](#).

Note: The image depicts the RF401A with an attached antenna. The antenna is sold separately.

Benefits and Features

- › Rugged, low-cost transceivers
- › Can be used in the field as a transceiver or in the office as the base station
- › Individual FCC license not required
- › Transmits up to one mile with omnidirectional antenna; up to 10 miles with higher gain directional antennas at ideal conditions
- › Settings stored in non-volatile memory
- › Frequency-hops over 25 channels avoids interference from other spread spectrum radios
- › Optional extended temperature testing
- › Faster communication due to elimination of some small "link state packets"
- › Ability to have stand-alone RF router/repeaters (up to 8 repeaters)
- › Greater immunity to interference and RF collisions by using RF retries
- › Reduced power consumption by the data logger, as the radios perform "packet address filtering"
- › Designed for use in PakBus networks
- › Built-in setup menus allow access to advanced functionality

Detailed Description

The RF401A is a frequency hopping spread spectrum radio

designed for 900 MHz license-free ISM band operation. It has a

910 to 918 MHz operating-frequency range and a configurable transmit power output of 5 to 250 mW. It provides one of three selectable active connections including CS I/O, RS-232, and USB. It has a reverse polarity SMA (RPSMA) antenna jack connection. It is over the air compatible with legacy 9XStream

products including the RF400, RF401, RF430, CR205, CR206(X), and AWW206.

Specifications

Radio Type	Frequency Hopping Spread Spectrum (FHSS)
Frequency	910 to 918 MHz
Country Used In	US, Canada
Transmission Distance	<ul style="list-style-type: none"> › <i>-Note- Transmission distance assumes line-of-sight and appropriate antenna. Line-of-sight obstructions, RF interference, and antenna type will affect transmission distance.</i> › 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	-109 dBm (Campbell Scientific protocols will issue retries wherever a bit error occurs.)
Channel Capacity	7 hop sequences share 25 frequencies.
RF Throughput Data Rate	9.6 kbps
Data Rate	10 kbps
Antenna Connector	Reverse Polarity SMA (RPSMA) jack
LEDs	Power on, Tx, Rx, diagnostics
RS-232 Baud Rate	1200 to 115200 bps
CS I/O Modes	SDC 7, 8, 10, 11, and ME master
Average Current Drain	<ul style="list-style-type: none"> › Stand-by: < 0.5 mA (depending on power-saving mode) › Receive: 15 mA

	› Transmit: < 80 mA (250 mW TX power)
Power	9 to 16 Vdc
Power Connector	2.5 mm DC power jack
Operating Temperature Range	<ul style="list-style-type: none"> › -40° to +85°C (extended) › -25° to +50°C (standard)
Communication Ports	<ul style="list-style-type: none"> › RS-232 9 pin D female › USB Type B jack › CS I/O 9 pin D male
Service Requirements	Shares frequency with other devices. Must not cause harmful interference to licensed radios. Requires line-of-sight.
Dimensions	<p>11.1 x 6.9 x 2.7 cm (4.4 x 2.7 x 1.1 in.)</p> <p>Dimension are from the tip of antenna connector to other side of case, and from the bottom of case to the top of DB9 connector jack screw. The width includes the thickness of the screw heads on the screws that hold the case together.</p>
Weight	<ul style="list-style-type: none"> › 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

For comprehensive details, visit: www.campbellsci.com/rf401a 



Campbell Scientific, Inc. | 815 W 1800 N | Logan, UT 84321-1784 | (435) 227-9120 | www.campbellsci.com
 AUSTRALIA | BRAZIL | CANADA | CHINA | COSTA RICA | FRANCE | GERMANY | INDIA | SOUTH AFRICA | SPAIN | THAILAND | UK | USA