



**allweatherinc**

# Radio Modem Model 20980-B

## Overview

The 20980-B is an integrated modem and radio that provides digital data transmission at data rates greater than 19,200 baud (bits per second). Versions are available that operate in both the VHF and UHF frequency bands. The 20980-B is a half duplex unit, meaning that it can receive or transmit, but cannot do both simultaneously. However, two units can be combined to provide full duplex capability.

The user data interface is a serial port through a 9-pin D connector, and can be configured for either RS-232 or TTL signal levels. The data format is bits. The modem can operate with either the standard DTE/DCE handshake signals or in data activation mode which requires only the receive and transmit data lines.

## Antenna

The antenna interface to the 20980-B is through a standard 50 ohm female BNC connector. A variety of antennas can be used with the 20980-B.

## LED Indicators

The Model 20980-B has three LED indicators to provide operational status of transmit (TX), receive (RX), and power (PWR) functions. Special combinations of these indicators are used to indicate secondary operating modes and fault conditions.



- Frequency Range 450-470 MHz
- Selectable Data Rates
- RS-232 and TTL Signal Levels
- Programmable Power Level (0.1 to 2 Watts)

PERIPHERALS

## SPECIFICATIONS

Parameter	Specification
Supply Voltage	9-28 VDC (full transmit power)
Power	1.0 watts - Standby (typical) 1.5 watts - Receive (typical) 7.0 watts - Transmit (typical)
Power Connector	2-pin Molex or through serial port
Data Buffer	32 kByte SRAM
Program Storage	512 kByte Flash ROM (supports in-field firmware upgrades)
LED Indicators	Transmit, Receive, Power
Operating Temperature	-22 to +140° F (-30 to +60° C)
Data Interface	
Data Rates	300, 1200, 2400, 4800, 9600, 19200, 38400 baud
Data Format	Asynchronous; Word length: 7 or 8 bits;
Parity:	Even, Odd, or None
Signal Levels	RS-232, TTL (Port 1 only)
Handshake Protocols	Full Handshake: Supports RTS, CTS, DCD, DSR, DTR; Data Activation (3 wire): Requires only TXD, RXD, and SG
Data Only Time Out	1 to 500 character periods
Data Connector	9-pin D, female, DCE
Radio	
Frequency Range	403-419 MHz
Channel Step Size	6.25, 10 kHz
Frequency Stability	±1.5 ppm
FCC ID	JWFTS4000A (403-512 MHz)
FCC Authorizations	11K2F1D, 16K0F1D, 20K0F1D
IC (Industry Canada) ID	3163195426 (403-512 MHz)
IC Authorizations	11K2F1D, 16K0F1D, 20K0F1D
RF Connector	BNC, female, 50 W (std. case)
Transmit Power	0.1 to 2 watts (programmable)
Duty Cycle	50% @2 watts, 100% @0.2 watts and below
Attack Time	20 ms
Sensitivity (BER)	-103 dBm for < 1x10 <sup>-4</sup> BER
Carrier Detect Threshold	-110 to -60 dBm (programmable)
Receive Filter Bandwidth	12.5, 25 kHz
Selectivity	-60 dB (12.5 kHz) -70 dB (25 kHz)

## ORDERING INFORMATION

Part Number	Description
20980-B	Radio Modem
M491689	Universal Power Supply
M489126-00	Omni Antenna
M491361	Antenna Cable (50 Ft.)

## DIMENSIONS & WEIGHTS\*

Product Dimensions	4.3" x 3.1" x 1.8" (109 mm x 79 mm x 46 mm)
Product Weight	12 oz. (340 g)
Shipping Dimensions	6" x 6" x 6" (152 mm x 152 mm x 152 mm)
Shipping Weight	Approx. 1 lb (453.6 g)

\* Dimensions and weights are for the 20980-A Radio Modem only.



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