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F-SERIES**

F514X008 Military 225 - 400 MHz Radio

Overview:

The FreeWave Technologies military products are designed to meet the rigorous demands of military and government users world-wide. This user-configurable 225-400 MHz product is available as OEM board level radio. It is used in applications ranging from UAVs to UGVs and more. FreeWave military products share the same features as our other radios that assure accurate data transmission such as 32 bit CRC error detection with automatic retransmission, high speed hopping and more.

Features:

- 25 kHz Channel Spacing.
- Frequency Hopping.
- High Speed –19.2 Kbps throughput (pending).
- Long Range – 60 mile range with clear line of sight.
- Error Free Communications – 32 bit CRC with automatic retransmission.
- Industrial Grade Specifications – 100% tested for RF performance from –20° C to +65° C.
- Improved supply voltage range and power consumption. Input voltage range is now 9.5-30 VDC at full RF output power. Receive current is less than 250 mA @ 12 VDC.
- Separate diagnostic serial connector allows real time local diagnostics and setup menu access.
- Diagnostics, including signal level in dBm and transmit current.
- TTL interface.
- Noise Immunity – Superior performance in noise congested environments.
- Secure – proprietary spread spectrum technology prevents detection and unauthorized access.

F-SERIES**

F514X008 Military 225 - 400 MHz Radio

Technical Specifications

Transmitter	
Frequency range	225-400 MHz (FHSS)
Output Power	4 W
Range, Line of Sight	60 miles
Modulation	2 and 4 level GFSK
Occupied Bandwidth	21 kHz
Hopping Patterns	15 per Band, 105 total, user selectable
Hopping Channels	28,000 possible, maximum 64 or Single Frequency at one time
Channel Spacing	25 kHz
Hopping Bands	7, user selectable
RF Connector	SMA
Receiver	
Sensitivity	-108 dBm for BER $1x10^{-6}$ 2 level GFSK, -100 dBm for BER $1x10^{-6}$ 4 level GFSK
Selectivity	20 dB at fc ± 27 kHz (2nd IF)
System Gain	144 dB
Data Transmission	
Error Detection	32 bit CRC, Retransmit on Error
Data Encryption	Dynamic Key Substitution
Maximum Throughput	19.2 Kbps— 4 level GFSK (pending), 9.6 Kbps— 2 level GFSK
Protocol	TTL
Data Connector	10 pin header with locking ramp, 0.1 inch spacing, power/data connector. Separate Diagnostics connector.
Diagnostics Interface	
Connector	Separate 20-pin PCB header
Power Requirement	
Operating Voltage	9.5-30 VDC
Current Drain	

Mode	9.5 VDC	12 VDC	30 VDC
Transmit	3.2 A	2.5 A	750 mA
Receive	315 mA	250 mA	100 mA

General Information	
Operating Temperature Range	-20° C to +65° C
Dimension	128 mm L x 62 mm W x 20 mm H
Weight	200 g
Humidity	0 to 95% non-condensing

**This device is regulated under the U.S. International Traffic in Arms Regulations (ITAR). These regulations control the Export and Import of defense articles. The device may only be sold or transferred to a non-U.S. person (in the U.S. abroad) after authorization is obtained from the U.S. Department of State. Customer (a) agrees to comply with ITAR regulations and (b) shall be responsible for obtaining all necessary U.S. Government authorizations required to ensure compliance with these and other applicable U.S. Laws. Please contact FreeWave for export control information for specific products.

5.15.09

FreeWave Radios Require Professional Installation.

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