



# F Series

\*F514X008 Military 225 to 400 MHz Radio



\*F514X008

## OVERVIEW

The FreeWave Technologies military products are designed to meet the rigorous demands of military and government users worldwide. This user-configurable 225-400 MHz product is available as OEM board level radio. It is used in applications ranging from UAV's to UGV's and more.

FreeWave military products share the same features as our other radios that assure data transmission such as 32 bit CRC error detection with automatic retransmission, 115.2 kbps throughput, high speed hopping and more.

All radios are designed, manufactured and tested in Boulder, Colorado.

## APPLICATIONS



Government & Defense

## KEY FEATURES

- Frequency Hopping Spread Spectrum
- **Long Range:** 60 mile line of sight, ability to extend through repeaters
- **Error Free Communications:** 32 bit CRC with automatic retransmission
- **Industrial Grade Specifications:** 100% tested for RF performance from -20° C to +65° C
- Repeater and simultaneous Slave and Repeater function all in a single radio
- TTL Interface
- **Input Voltage Range:** +9.5 to +30 VDC
- **Noise Immunity:** Superior performance in noise congested environments.
- **Secure:** Proprietary spread spectrum technology prevents detection and unauthorized access

MODEL	DIMENSIONS	PRODUCT OPTIONS
F514X008	128 L x 62 W x 20 H (mm)	Board Level

# F514X008 225 to 400 MHz Military Radio Technical Specifications

<b>TRANSMITTER</b>	Frequency Range	225 to 400 MHz (FHSS)			
	Output Power	4 W (average)			
	Data Link Range	60 miles, Clear Line of Sight			
	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			
<b>RECEIVER</b>	Sensitivity	-108 dBm @ BER $1 \times 10^{-6}$ 2 level GFSK, -100 dBm @ BER $1 \times 10^{-6}$ 4 level GFSK			
	Selectivity	20 dB at fc +/- 27 kHz (2nd IF)			
	System Gain	144 dB			
<b>DATA TRANSMISSION</b>	Error Detection	32 bit CRC, Retransmit on error			
	Data Encryption	Dynamic Key Substitution			
	Maximum Throughput	19.2 kbps @ 4 level GFSK, 9.6 kbps @ 2 level GFSK			
	Data Interface	TTL			
	Data Connector	10 pin header with locking ramp, 0.1 inch spacing, power/data connector. Separate Diagnostics connector.			
<b>POWER REQUIREMENTS</b>	Operating Voltage	+9.5 to +30 VDC			
	Typical Current	<b>Mode</b>	<b>+9.5 VDC</b>	<b>+12 VDC</b>	<b>+30 VDC</b>
		<b>Transmit</b>	3.2 A	2.5 A	750 mA
		<b>Receive</b>	315 mA	250 mA	100 mA
<b>GENERAL INFORMATION</b>	Operating Temp. Range	-20° C to +65° C			
	Dimensions	128 L x 62 W x 20 H (mm)			
	Weight	200 g			
	Humidity	0 to 95 % non-condensing			

\* This device is regulated under the U.S. International Traffic in Arms Regulation (ITAR). These regulations control the Export and Import of the defense articles. The device may only be sold or transferred to a non-U.S. party (in the U.S. or 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.



FreeWave Radios Require Professional Installation. Specifications may change at any time without notice. ©2012 FreeWave Technologies, Inc.

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