

F SERIES

225 TO 400 MHZ

Narrowband Radios



KEY FEATURES

Long Range: 60 mile line of sight, ability to extend through Repeaters

Error free communication: 32 bit CRC with automatic retransmission

Industrial Grade Specifications:
100% tested for RF performance from -20° C to +65° C

Input Voltage Range: +9.5 to +30 VDC

Noise Immunity: Superior performance in noise congested environments

Secure: FHSS Spread Spectrum Technology prevents detection and unauthorized access

Versatility: Repeater and simultaneous Endpoint and Repeater function in a single radio

OVERVIEW

The FreeWave Technologies products are designed to meet the rigorous demands of military, government, and international users worldwide. 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 data transmission such as 32 bit CRC error detection with automatic retransmission, 19.2 kbps throughput, high speed hopping and more.

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

TECHNICAL SPECIFICATIONS

TRANSMITTER

Frequency Range	225 to 400 MHz
Output Power	4 Watt (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

DATA TRANSMISSION

Error Detection	32 bit CRC, retransmit on error
Data Encryption	Dynamic Key Substitution
Maximum Throughput	9.6 kbps @ 2 level GFSK 19.2 kbps @ 4 level GFSK
RF Connector	SMA
Interface Connector	10-pin header with locking ramp, 0.1 in. spacing power/data connector. Separate diagnostics connector

INTERFACES

Data Interface	TTL or RS232
-----------------------	--------------

POWER REQUIREMENTS

Operating Voltage	+9.5 VDC to +30 VDC
+9.5 VDC Typical Current	Transmit: 3.2 A Receive: 315 mA
+12 VDC Typical Current	Transmit: 2.5 A Receive: 250 mA
+30 VDC Typical Current	Transmit: 750 mA Receive: 100 mA

RECEIVER

Sensitivity	-108 dBm @ BER 1x10 ⁻⁶ 2 level GFSK -100 dBm @ BER 1x10 ⁻⁶ 4 level GFSK
Selectivity	20 dB at fc +/- 27 kHz (2nd IF)
System Gain	144 dB

GENERAL INFORMATION

Operating Temperature	-20° C to +65° C
Humidity	0 to 95%, non-condensing
Dimensions	128 L x 62 W x 20 H (mm)
Weight	200 g

INFORMATION TO ORDER

Model Number	Description
F-504X008	Board Level, RS232
F-514X008	Board Level, TTL

SOLUTIONS



DRONES & ROBOTICS



EARTH MONITORING



GOV & DEFENSE



IRRIGATION & PRECISION AGRICULTURE



ASSET TRACKING



OIL & GAS



WATER & WASTEWATER



SMART CITIES



UTILITIES

CONTACT US

5395 Pearl Parkway, Boulder, CO 80301
 TF: 866-923-6168 T: (303) 381-9200
 For more information, visit www.freewave.com