

F Series

225 TO 400 MHZ UHF
FGBR RADIOS



KEY FEATURES

Versatility: Gateway, Endpoint, Repeater or simultaneous Endpoint and Repeater function in a single radio.

Long Range: 60 miles with clear line of sight with the ability to extend through Repeaters.

Noise Immunity: Superior performance in noise congested environments.

Secure: Frequency Hopping Spread Spectrum technology prevents detection and unauthorized access.

Error Free Communications: 32-bit CRC with automatic retransmissions.

Industrial Grade: Operating Temperature from -40°C to +75°C.

Available Options: TDMA, Super Epoch TDMA, 256-bit AES encryption

OVERVIEW

The FreeWave Technologies' products are designed to meet the rigorous demands of military, government, and international users worldwide. The FGBR user-configurable 225-400 MHz product is available in a ruggedized enclosure offering a 9 or 15-pin D connector or a weatherproof enclosure with a 11-pin Fisher connector.

The FGBR series of products offered by FreeWave Technologies share many of the same features as the FGR2, MM2, and M13 family of products such as high reliable and transmission assurance.

These products offer 32-bit CRC error detection, automatic retransmission, up to 115.2 and 153.6 kbps throughput, high speed frequency hopping, and much more.

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

SOLUTIONS



DRONES & ROBOTICS



EARTH MONITORING



GOV & DEFENSE



IRRIGATION & PRECISION AGRICULTURE



ASSET TRACKING



OIL & GAS



WATER & WASTEWATER



SMART CITIES



UTILITIES

TECHNICAL SPECIFICATIONS

TRANSMITTER

Frequency Range	225 to 400 MHz
Output Power	Up to 4 Watt (average)
Range	Up to 97 km (60 mi.), clear line of sight
Channel Spacing	230.4 kHz
RF Data Rate	115.2 kbps standard speed, 153.6 kbps high speed, user-selectable

RECEIVER

Sensitivity	-103 dBm @ 115.2 kbps for BER 10 ⁻⁶ -99 dBm @ 153.6 kbps BER 10 ⁻⁶
Selectivity	20 dB at fc +/- 230 kHz
System Gain	139 dB

DATA TRANSMISSION

Type	Frequency Hopping Spread Spectrum Options: TDMA, Super Epoch TDMA
Modulation	2 level GFSK
Data Throughput	80 kbps 115.2 kbps
Error Detection	32-bit CRC, retransmit on error
Data Encryption	Options: AES 256-bit encryption
Protocol	RS232 / RS422 / RS485

POWER REQUIREMENTS

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

INTERFACES

Data Interface	9-pin Sub-D, 15-pin Sub-D, or 11-pin Fisher for power, data, and diagnostics 1 Serial: RS232 / RS422 / RS485
Diagnostics Interface	Options: RS232 / RS422 / RS485
RF Connector	N-type, Female

GENERAL INFORMATION

Operating Temperature	-40°C to +75°C (-40°F to +167°F)
Humidity	0 to 95%, non-condensing
Dimensions	165 L x 78 W x 60 H (mm) 6.50 L x 3.07 W x 2.36 H (in.)
Weight	496g (1.09 lbs.)

INFORMATION TO ORDER

Model Number	Description
FGBR-115RA-x	Ruggedized, RS422, 15-pin Sub-D
FGBR-115RC-2	Ruggedized, RS232 / RS422 / RS485 9-pin Sub-D
FGBR-115RG-x	Ruggedized, RS232 / RS422 / RS485 9-pin Sub-D
FGBR-115WA-2	Weatherproof, RS232 / RS422 / RS485 11-pin Fisher
FGBR-115WC-2	Weatherproof, RS232 / RS422 / RS485 11-pin Fisher
FGBR-115WR-x	Weatherproof, RS422, 11-pin Fisher

Note
x=2 for no AES encryption
x=5 for AES encryption

CONTACT US

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