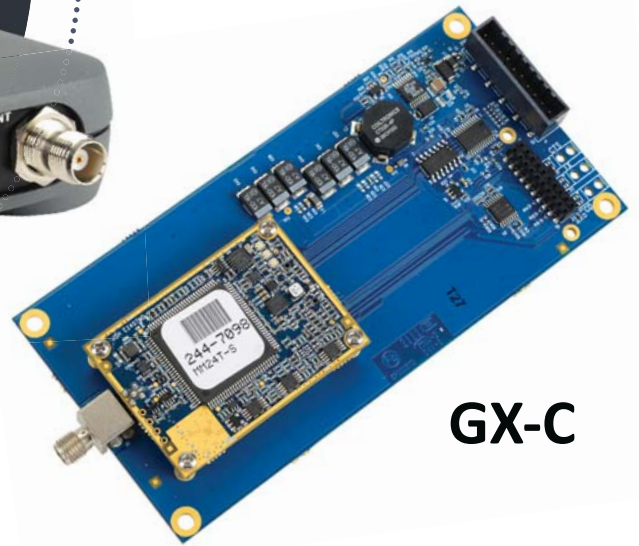# GX Series
GX-C, GX-CE, & GX-T

FREEWAVE

GX-CE

GX-C

KEY FEATURES

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

Long Range: 20 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.

Low Power Consumption: Ideal for solar, battery, and DC applications.

Industrial Grade: Operating Temperature from -40°C to +85°C.

Available Options: 128 and 256-bit AES encryption.

OVERVIEW

Building on the success of our 900 MHz product family, the FreeWave GX Series of 2.4 GHz industrial radios provides our customers the performance, reliability and quality that our customers have come to know and expect in all of our products in a globally available spectrum and full ETSi, FCC, IC, RoHS, and UL Class 1 Division 2 certificates.

The GX is a cost effective solution that allows customers to incorporate wireless communications into a wide variety of applications.
Offered is a board level product and in an enclosure, the GX provides tremendous flexibility for use in applications around the world ranging from oil and gas to golf carts, water systems and more.

The GX is backward compatible with the I2 Series of FreeWave radios, enabling existing customers to leverage and extend their existing investment.

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

SOLUTIONS

| DRONES & ROBOTICS | EARTH MONITORING | GOV & DEFENSE | IRRIGATION & PRECISION AGRICULTURE | ASSET TRACKING | OIL & GAS | WATER & WASTEWATER | SMART CITIES | UTILITIES |

TECHNICAL SPECIFICATIONS

FREEWAVE

TRANSMITTER

Frequency Range	2.4 to 2.483 GHz
Output Power	Up to 500 mW with option to limit to 100 mW
Range	Up to 32 km (20 mi.), clear line of sight
Channel Spacing	230 kHz
RF Data Rate	115.2 or 153.6 kbps, user-selectable

RECEIVER

Sensitivity	-105 dBm @ 115.2 for BER 10^{-4} -103 dBm @ 153.6 kbps BER 10^{-6}
Selectivity	20 dB at fc +/- 230 kHz 60 dB at fc +/- 290 kHz
System Gain	132 dB

DATA TRANSMISSION

Type	Frequency Hopping Spread Spectrum
Modulation	2 level GFSK
Data Throughput	80 or 115.2 kbps Uncompressed, measured assuming 75% frequency availability
Error Detection	32-bit CRC, retransmit on error
Data Encryption	Options: AES 128 / 256-bit encryption
Hopping Zones	16 zones, 5 channels per zone user-selectable
Hopping Bands	7, user-selectable
Hopping Channels	3 groups of 80, user-selectable
Hopping Patterns	15 per band, 105 total, user-selectable
Protocol	RS232 / RS422 / RS485

POWER REQUIREMENTS

Operating Voltage	+6 VDC to 27 VDC

Current Consumption

Voltage	Transmit	Receive	Idle
+6 VDC	375 mA	120 mA	9 mA
+12 VDC	295 mA	80 mA	5 mA
+30 VDC	140 mA	51 mA	3 mA

INTERFACES

Data Interface	10-pin header with locking clamp 2.5mm (0.1in) spacing power / data connector
Diagnostics Interface	Separate diagnostic connector
Board level:	Separate 20-pin PCB header
Enclosed:	3-pin PCB header
RF Connector	
Board level:	Right-angle female SMA
Enclosed:	Female TNC

GENERAL INFORMATION

Operating Temperature	-40°C to +85°C (-40°F to +185°F)
Humidity	0 to 95%, non-condensing
Dimensions	
Board level:	127 L x 61 W x 11 H (mm) 5.0 L x 2.4 W x 0.43 H (in.)
Enclosed:	173 L x 107 W x 35 H (mm) 6.81 L x 4.21 W x 1.38 H (in.)
Weight	
Board level:	53g (0.12 lbs.)
Enclosed:	504g (1.11 lbs.)

INFORMATION TO ORDER

Model Number	Description
GX-C	Board Level, UL
GX-CE	Rugged Enclosure
GX-T	Board Level, TTL

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