



GX Series

2.4 GHz Industrial Radios



GX-C



GX-CE

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, Colorado.

MODEL	DIMENSIONS	PRODUCT OPTIONS
GX-C	127mm L x 61mm W x 11mm H	Board Level/ UL
GX-T	127mm L x 61mm W x 11mm H	Board Level / TTL
GX-CE	173mm L x 107mm W x 35mm H	Rugged Enclosure

APPLICATIONS



Oil & Gas



Smart Grid



Water & Wastewater



Precision Agriculture

KEY FEATURES

- 500 mW maximum output power with an optional 100 mW limit to meet compliance requirements
- Linear power control allows output power to be specified in dBm from 10 to 27 or 10 to 20 if limited to 100 mW for ETSI
- **High Speed:** Throughput of 115.2 kbps
- **Long Range:** 20 miles (32 km)
- **Error-Free Communications:** 32 bit CRC with automatic retransmission
- **Industrial Grade Specifications:** 100% tested for RF performance from -40° C to +85° C
- **Versatility:** A single radio can operate as a master, slave, repeater or slave/repeater
- **Secure:** FHSS technology prevents detection and unauthorized access; 128 bit or 256 bit AES encryption available*
- **Input voltage range:** +6 to +30 VDC at full RF output power. Receive current is less than 115 mA @ 12 VDC
- UL approved C1D2, ETSI, FCC, IC & RoHS

GX-C & GX-CE 2.4 GHz Industrial Radios Technical Specifications

TRANSMITTER	Frequency Range	2.4 to 2.483 GHz (FHSS)			
	Output Power	10 mW to 500 mW with option to limit to 100 mW			
	Data Link Range	20 miles (32 km), Clear Line of Sight			
	Modulation	2 level GFSK, 115.2 kbps or 153.6 kbps			
	Hopping Patterns	15 per Band, 105 total, user selectable			
	Hopping Channels	12.5 kHz			
	Frequency Zones	16 Zones, 5 Channels per zone			
	Occupied Bandwidth	230 kHz			
	RF Connector	Board level (GX-C, GX-T): Right angle SMA, female Enclosed (GX-CE): TNC, female			
RECEIVER	Sensitivity	-105 dBm for BER of 10^{-4} -103 dBm for BER of 10^{-6}			
	Selectivity	20 dB at fc +/- 230 kHz 60 dB at fc +/- 290 kHz			
	System Gain	132 dB			
DATA TRANSMISSION	Error Detection	32 bit CRC, Retransmit on error			
	Data Encryption	Proprietary Spread Spectrum Technology			
	Data Throughput	115.2 kbps standard speed, 80 kbps low speed. <i>Uncompressed, measured assuming 75% frequency availability</i>			
	Data Interface	RS232/RS485/RS422			
	Data Connector	10-pin header with locking ramp, 0.1 inch spacing power/data connector. Separate diagnostics connector Enclose (ruggedized): DB9			
DIAGNOSTICS	Connector	Board Level: Separate 20-pin PCB header Enclosed (ruggedized): 3-pin PCB header			
POWER REQUIREMENTS	Operating Voltage	+6 to 27 VDC			
	Typical Current (mA)	Mode	+6 VDC	+12 VDC	+30 VDC
		Transmit	375	295	140
		Receive	120	80	51
		Sleep	9	5	3
GENERAL INFORMATION	Operating Temperature	-40° C to +85° C (-40° F to +185° F)			
	Humidity	0 to 95% non-condensing			
	Dimensions	Board: 127 L x 61 W x 11 H (mm) Enclosed: 173 L x 107 W x 35 H (mm)			
	Weight	Board: 53 g Enclosed: 504 g			

*Contact your FreeWave reseller or sales rep for implementation details.

FreeWave Radios Require Professional Installation. Specifications may change at any time without notice. ©2013 FreeWave Technologies, Inc.



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