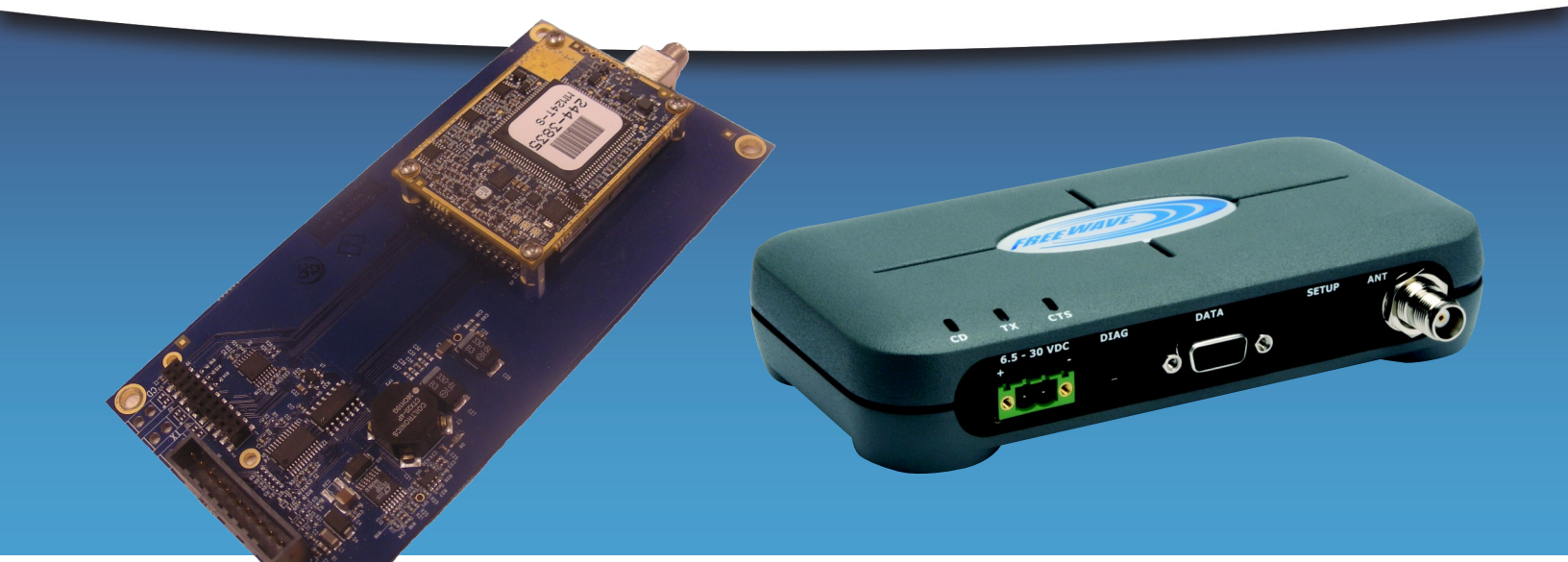
GX Series 2.4 GHz Industrial Radio



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

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 Gateway, Endpoint, Repeater or Endpoint/ 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

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 as 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.

Specifications

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

FreeWave®

GX-C/CE 2.4 GHz Industrial Radio: 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, 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 *Uncompressed, measured assuming 75% frequency availability*
Data Interface	RS232/RS422/RS485
Data Connector	10-pin header with locking ramp, 0.1 in. spacing power/data connector
	Separate diagnostics connector | Enclosed: DB9

DIAGNOSTICS	
Connector	Board Level: Separate 20-pin PCB header
	Enclosed: 3-pin PCB header

POWER REQUIREMENTS		
Operating Voltage	+6 VDC to +27 VDC	
+6 VDC Typical Current		
Transmit: 375 mA	Receive: 120 mA	Sleep: 9 mA
+12 VDC Typical Current		
Transmit: 295 mA	Receive: 80 mA	Sleep: 5 mA
+27 VDC Typical Current		
Transmit: 140 mA	Receive: 51 mA	Sleep: 3 mA

GENERAL INFORMATION	
Operating Temperature	-40°C to +85°C
Humidity	0 to 95%, non-condensing
Dimensions	Board Level: 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

GX-C/CE 2.4 GHz Industrial Radio: Applications


Oil and Gas


Agriculture


Utilities


Defense


SCADA


Mining


Fleet Management


Municipal


Enterprise

Contact your FreeWave reseller or sales rep for implementation details.

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For more information, visit www.freewave.com
Specifications are subject to change without notice.