GX Series

GXM 2.4 GHz Global Transceiver Module

GXM-T24

OVERVIEW

Building on the success of our 900 MHz product family, the FreeWave 2.4 GHz GXM radio has been designed to provide OEMs the performance, reliability and quality they have come to know and expect in our products in a globally available spectrum and full ETSI, FCC, IC, RoHS and UL Class 1 Division 2 Certifications.

The 1.4” x 2” form factor of the GXM is a drop-in replacement for the MM2, enabling OEMs to leverage their existing designs for international markets where 900 MHz spectrum is unavailable and is ideally suited for applications where space is a premium. The GXM has all of the functionality of our larger footprint GX family of products and is backward compatible with the I2 Series radio.

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

MODEL	DIMENSIONS	PRODUCT OPTIONS
GXM-T14	50.8mm L x 36mm W x 9.6mm H	14-pin connector
GXM-T24	50.8mm L x 36mm W x 9.6mm H	24-pin connector

APPLICATIONS

Oil & Gas

Smart Grid

Water & Wastewater

Precision Agriculture

KEY FEATURES

- **Improved Low Signal Performance:** RISC-based signal demodulation with matched filter.
- **Versatile:** A single radio can operate simultaneous as a Master, slave, repeater or as a slave/repeater.
- **High Noise Immunity:** Superior performance in noisy or congested environments.
- **Secure:** FHSS technology prevents detection and unauthorized access; 128 bit or 256 bit AES encryption available.
- **Industrial Grade Specifications:** 100% tested for RF performance from -40° C to +85° C.
- **Size & Performance:** Smallest data radio with the highest performance available.
- UL Approved C1D2, ETSI, FCC, IC & RoHs.
- Linear power control allows output power to be specified in dBm from 10 to 27 VDC or 10 to 20 VDC if limited to 100 mW.
- 500 mW maximum output power with an optional 100 mW limit to meet compliance requirements.

GXM 2.4 GHz Global Transceiver Module Technical Specifications

TRANSMITTER	Frequency Range	2.4 to 2.483 GHz ISM Band
	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
	Occupied Bandwidth	230 kHz
	Hopping Patterns	15 per Band, 105 total, user selectable
	Hopping Channels	3 groups of 80
	Hopping Bands	7, User selectable
	Frequency Zones	16 Zones
	RF Data Rate	Selectable 115.2 kbps to 153.6 kbps
	RF Connector	MMCX
RECEIVER	Sensitivity	-105 dBm @ 115.2 kbps for BER 10^{-4} -102 dBm @ 153.6 kbps for BER 10^{-6}
	IF Selectivity	20 dB at fc +/- 345 kHz
	Dynamic Range	+10 dBm 3rd Order Intercept Point at Input Connector
DATA TRANSMISSION	Error Detection	32 bit CRC, Retransmit on error
	Data Encryption	AES 128/256 bit encryption available*, and Proprietary Spread Spectrum Technology
	Data Interface	1200 bps to 230.4 kbps
	Data Connector	Straight 14-pin or 24-pin dual row header 2.0 mm spacing
	Data Throughput	115.2 kbps
POWER REQUIREMENTS	Operating Voltage	+3.3 to +5.0 VDC
	Typical Current (mA)	

Mode	+3.3 VDC	+5.0 VDC
Transmit	1200	700
Receive	165	135
Idle	35	19
Sleep	8	6

GENERAL INFORMATION	Operating Temperature	-40° C to +85° C (-40° F to +185° F)
	Humidity	0 to 95% non-condensing
	Dimensions	50.8mm L x 36mm W x 9.6mm H (2” L x 1.4” W x 0.38” H)
	Weight	15g

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

FreeWave®

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