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# GXM

## 2.4 GHz Global Transceiver Module

### 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 & IM Series radio. All radios are designed, manufactured and tested in Boulder, CO.

### GX Product Line:



**GX-Serial**



**GX-CP**



**GX-PE**



**GX-IO**

*The GXM is a small module with BIG FreeWave performance and reliability.*

### 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 100mW.
- Remote LED support with optional 24-pin connector.
- VSWR protection.
- Improved Low Signal Performance: RISC-based signal demodulation with matched filter.
- Unparalleled Signal Performance: GaAs FET RF front end with multistage SAW filtering has unmatched combination of overload immunity and sensitivity.
- High Noise Immunity: Superior performance in noise congested environments.
- Versatility: A single radio can operate as a Master, Slave, Repeater or Slave/Repeater.
- 115.2-153.6 Kbps.
- Secure: Proprietary spread spectrum technology prevents detection and unauthorized access; 128 bit or 256 bit AES encryption available\*.
- Reliability: Every radio 100% tested for RF performance from -40° C to +85° C.
- Size & Performance: Smallest data radio with the highest performance available.
- Low power consumption.
- UL Approved C1D2, ETSI, FCC, IC & RoHs.

*\*Contact FreeWave for implementation details.*



Transmitter			
Frequency Range	2400-2483 MHz ISM Band		
Output Power	10 mW to 500 mW with option to limit to 100 mW		
Range - Line of Sight	20 miles		
Modulation	2 level GFSK		
RF Data Rate	Selectable speeds 115.2 to 153.6 Kbps		
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 Connector	MMCX		
Receiver			
Sensitivity	-105 dBm @ 115.2 kbps for BER 10 <sup>-4</sup> -102 dBm @ 153.6 kbps for BER 10 <sup>-4</sup>		
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	Proprietary Spread Spectrum Technology		
Data Interface	1200 bps - 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		
Current [mA]	<b>Mode</b>	<b>+3.3 VDC</b>	<b>+5 VDC</b>
	<b>Transmit</b>	1200	700
	<b>Receive</b>	165	135
	<b>Idle</b>	35	19
	<b>Sleep</b>	8	6
General Information			
Operating Temperature Range	-40° C to +85° C (-40° F to +185° F)		
Dimensions	50.8mm L x 36mm W x 9.6mm H ( 2" L x 1.4" W x 0.38" H)		
Weight	15 g		
Humidity	0 to 95% non-condensing		

FreeWave Radios Require Professional Installation. Specifications may change at any time without notice. ©2012 FreeWave® Technologies, Inc.

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