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MM2-MR

Embedded 900 MHz Series

Overview:

The FreeWave MM2-MR radio has been designed to provide the performance, reliability, and quality that our customers have come to know and expect in our products in a compact form factor for applications where space is at premium. The MM2-MR has all of the functionality of the larger footprint FGR Series of radios.

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

The MM2-MR is a "Mega-Mini" radio with BIG FreeWave performance and reliability.

Features:

- Improved Low Signal Performance: RISC-based signal demodulation with matched filter.
- Versatility: A single radio can operate as a master, slave, repeater, or slave/repeater.
- 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.
- TDMA: Time Divisible Multiple Access available.
- 115.2-153.6 kbps
- Secure: Proprietary spread spectrum technology prevents detection and unauthorized access; 128 bit and 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 Class 1 Div 2*

**Certain Models*

All RF specifications are tested and guaranteed.



MM2-MR

Embedded 900 MHz Technical Specifications

Transmitter				
Frequency Range	902-928 MHz (FHSS) (DTS)			
Output Power	10 mW to 1 W			
Range - Line of Sight	60 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	50 to 112, user selectable			
Hopping Bands	7, user selectable			
Frequency Zones	16 Zones			
RF Connector	MMCX (Straight)			
Receiver				
Sensitivity	-107 dBm @ 115.2 kbps for BER 10 ⁻⁴ -102 dBm @ 153.6 kbps for BER 10 ⁻⁴			
IF Selectivity	40 dB at fc +/- 230 kHz			
RF Selectivity	50 dB at 896 MHz, 935 MHz			
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	Board Level: 10-pin header, 0.1 inch spacing, power/data connector			
Data Throughput	115.2 Kbps			
Power Requirements				
Operating Voltage	6.5 VDC to 30 VDC			
Current [mA]	Mode	6.5	12 VDC	30 VDC
	Transmit	1 mA	500 mA	200 mA
	Receive	152 mA	86 mA	43 mA
	Idle	40 mA	21 mA	12 mA
	Sleep	8 mA	6 mA	3 mA
General Information				
Operating Temperature Range	-40° C to +85° C (-40° F to +185° F)			
Dimensions	70mm L x 62mm W x 9.6mm H (2.75" L x 2.4" W x 0.40" H)			
Weight	38 g			
Humidity	0 to 95% non-condensing			

10.25.11



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