

MM2 Series

MM2-MR Embedded 900 MHz Series



MM2-MR-R

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 MM2 “Mega Mini” form factor for applications where space is at a 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.

MODEL

DIMENSIONS

OPTIONS

MODEL	DIMENSIONS	OPTIONS
MM2-MR-R	2.75" L x 2.4" W x 0.4" H	MMCX Connector
MM2-MR-R-U	2.75" L x 2.4" W x 0.4" H	MMCX Connector, Class 1 Div 2
MM2-MR-SR	2.75" L x 2.4" W x 0.4" H	SSMC Connector
MM2-MR-T	2.75" L x 2.4" W x 0.4" H	MMCX Connector, TTL
MM2-MR-T-U	2.75" L x 2.4" W x 0.4" H	MMCX Connector, TTL, Class 1 Div 2

APPLICATIONS



Government & Defense

KEY FEATURES

- **Improved Low Signal Performance:** RISC-based signal demodulation with matched filter
- **Versatile:** 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
- **TDMA:** Time Divisible Multiple Access available
- **Selectable Speeds:** 115.2 kbps - 153.6 kbps
- **Secure:** Proprietary spread spectrum technology prevents detection and unauthorized access; 128 bit AES encryption available*
- **Size & Performance:** Smallest data radio with the highest performance available
- **Reliable:** 100% tested for performance from -40° C to +85° C
- Superior performance in noise congested environments

MM2-MR Embedded 900 MHz Series Radio Specifications

Preliminary

TRANSMITTER	Frequency Range	902 - 928 MHz (FHSS) (DTS)			
	RF Data Rate	115.2 Kbps or 153.6 Kbps, User Selectable			
	Output Power	10 mW to 1 W			
	Range	60 miles			
	Modulation	2-level GFSK			
	Occupied Bandwidth	230 kHz			
	Hopping Channels	50 to 112, User Selectable			
	Hopping Bands	7, User Selectable			
	Hopping Patterns	15 per Band, 105 Total, User Selectable			
	Frequency Zones	16 Zones			
	RF Connector	MMCX (Right Angle)			
RECEIVER	Sensitivity	-107 dBm @ 115.2 kbps for BER 10 ⁻⁴ -102 dBm @ 153.6 kbps 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 Throughput	115.2 Kbps			
	Data Encryption	Proprietary Spread Spectrum Technology			
	Data Interface	1200 bps - 230.4 Kbps			
DIAGNOSTICS	Connector	Board Level: 10-pin header, 0.1 inch spacing, power/data connector			
POWER REQUIREMENTS	Operating Voltage	+6.5 VDC to +30 VDC			
	Typical Current	Mode	+6.5 VDC	+12 VDC	+30 VDC
		Transmit	1 A	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	-40° C to +85° C (-40° F to +185° F)			
	Humidity	0 to 95% non-condensing			
	Dimensions	70mm L x 62mm W x 9.6mm H (2.75" L x 2.4" W x 0.40" H)			
	Weight	38 g			

* These devices are regulated under the U.S. International Traffic in Arms Regulation (ITAR). These regulations control the Export and Import of the defense articles. These devices may only be sold or transferred to a non-U.S. party (in the U.S. or abroad) after authorization is obtained from the U.S. Department of State. Customer (a) agrees to comply with ITAR regulations and (b) shall be responsible for obtaining all necessary U.S. Government authorizations required to ensure compliance with these and other applicable U.S. Laws. Please contact FreeWave for export control information for specific products.

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