

MM2 Series 900 MHz ISM



MM2-T

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: FHSS technology prevents detection and unauthorized access; 128-bit or 256-bit AES encryption available*

Size & Performance: Smallest data radio with the highest performance available

Noise Immunity: Superior performance in noise congested environments

Reliable: 100% tested for performance from -40°C to +85°C

Overview

The FreeWave MM2 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 a premium. The MM2 has all of the functionality of the larger footprint FGR2 Series of radios

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

Specifications

MODEL	DESCRIPTION	DIMENSIONS	OPTIONS
MM2-T	Base Version	2 L x 1.4 W x 0.38 H (in)	AES 128 or 256*, TDMA
MM2-T-U	Class 1, Div 2	2 L x 1.4 W x 0.38 H (in)	AES 128 or 256*, TDMA
MM2-T-LF	RoHS	2 L x 1.4 W x 0.38 H (in)	AES 128 or 256*, TDMA



MM2-TTL 900 MHz Series Radio: Technical Specifications

TRANSMITTER

Frequency Range	902 to 928 MHz (FHSS) (DTS)
RF Data Rate	115 kbps or 153 kbps, user-selectable
Output Power	10 mW to 1 W
Data Link Range	60 miles
Modulation	2 level GFSK
Channel Spacing	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, user-selectable
RF Connector	MMCX (right-angle)

RECEIVER

Sensitivity	-108 dBm @ 115.2 kbps for BER 10^{-4} -103 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 Rate	115.2 kbps
Data Encryption	AES 128 or 256*
Data Interface	1200 bps to 230.4 kbps

INTERFACE

Connector	Straight 14-pin dual row header 2.0 mm spacing
Type	TTL serial

POWER REQUIREMENTS

Operating Voltage	+5 VDC (+/- 5%)
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+5 VDC Typical Current†

Transmit: 855 mA	Receive: 90 mA	Idle: 21 mA
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GENERAL INFORMATION

Operating Temperature	-40°C to +85°C
Humidity	0 to 95%, non-condensing
Dimensions	2 L x 1.4 W x 0.38 H (in)
Weight	14 g

†See Integration Manual for more detailed information

MM2-TTL 900 MHz Series Radio: Applications



Oil and Gas



Agriculture



Defense



SCADA



Mining



Fleet
Management



Municipal

* FreeWave Technologies, Inc. manages technology subject to the U.S. Export Administration Regulations (EAR) and the Wassenaar Arrangement. All transactions must undergo a compliance check to ensure that none of the parties to an order are listed on the U.S. Bureau of Industry and Security's Entity List.

Contact your FreeWave reseller or sales rep for implementation details.

FreeWave Technologies, Inc.

5395 Pearl Parkway, Suite 100, Boulder, CO 80301

TF 866.923.6168

T 303.381.9200

For more information, visit www.freewave.com

Specifications are subject to change without notice.

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