

MM2 SERIES

*MM2-M13 1.3 GHZ RADIO



KEY FEATURES

High Speed: 115.2 kbps maximum throughput

Long Range: Up to 40 miles with clear line of sight

Error Free Communication: 32-bit CRC with automatic retransmission

Input Voltage Range: +8 to +30 VDC at full RF output power. Receive current is less than 75 mA @ 12 VDC. Sleep mode only consumes 5 mA @ 12

Diagnostics port allows real-time local diagnostics and setup menu access

Diagnostics include signal level in dBm and transmit current

RS232/RS485 or TTL interface

Noise Immunity: Superior performance in noise congested environments

Reliable: 100% tested for performance from -40°C to +75°C

OVERVIEW

FreeWave Technologies' military products are designed to meet the rigorous demands of military and government users worldwide. This user-configurable 1.3 GHz product is available as an OEM board level radio. It is used in applications ranging from UAVs to UGVs, and more. FreeWave military products share the same features as our other radios that assure accurate data transmission, such as 32 bit CRC error detection with automatic retransmission and more.

The FreeWave MM2 Series of radios has been designed to provide the performance, reliability, and quality that our customers have come to know and expect in our products. The MM2 combines high performance with a small size making it ideal for applications where space is at a premium.

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

* This device is regulated under the U.S. International Traffic in Arms Regulation (ITAR). These regulations control the Export and Import of the defense articles. The device 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.

TECHNICAL SPECIFICATIONS

SPECIFICATIONS

MM2-M13-C	2 L x 2 W x 0.3 H (in) RS232/RS485
MM2-M13-T	2 L x 2 W x 0.3 H (in) TTL

TRANSMITTER

Frequency Range	1.350 to 1.390 GHz
RF Data Rate	153 kbps or 115, user-selectable
Output Power	5 mW to 1 W
Data Link Range	40 miles
Modulation	2 level GFSK
Occupied Bandwidth	230 kHz
Hopping Channels	1 to 112 (out of 172), user-selectable
Hopping Bands	7, user-selectable
Hopping Patterns	15 per band, 105 total, user-selectable
RF Connector	MMCX

RECEIVER

Sensitivity	-106 dBm @ BER 10 ⁻⁴
IF Selectivity	20 dB at fc +/- 230 kHz
System Gain	136

DATA TRANSMISSION

Error Detection	32 bit CRC, retransmit on error
Data Throughput	115.2 kbps
Data Encryption	FHSS technology
Protocol	RS232/RS485 or TTL

DIAGNOSTICS

Connector	Dual row 14-pin header, 2mm pin spacing
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POWER REQUIREMENTS

Operating Voltage	+8 to +30 VDC or +5 (-LV models only)
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+5 VDC Typical Current		
Transmit: 1000 mA	Receive: 120 mA	Idle: 30 mA

+12 VDC Typical Current		
Transmit: 500 mA	Receive: 75 mA	Idle: 20 mA

+30 VDC Typical Current		
Transmit: 200 mA	Receive: 40 mA	Idle: 9 mA

GENERAL INFORMATION

Operating Temperature	-40°C to +75°C
Humidity	0 to 95%, non-condensing
Dimensions	2 L x 2 W x 0.3 H (in)
Weight	21 g

APPLICATIONS



OIL & GAS



AGRICULTURE



UTILITIES



DEFENSE



SCADA



MINING



FLEET
MANAGEMENT



MUNICIPAL



ENTERPRISE

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