

## MM2 Series

### MM2-9X5W 900 MHz 5 Watt Radio



The MM2-9X5W 900 MHz 5 Watt radio has been designed to provide the performance, reliability, and quality that our customers have come to know and expect. The small form factor MM2-9X5W is ideal for applications where space is a premium.

The small form factor MM2-9X5W has all of the functionality of the MM2 series of radios and larger form factor FGR and FGR2 series of radios including: TDMA, Super Epoch TDMA, and AES encryption.

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

#### Key Features

**Output:** 5 Watt RF output power

**Improved Low Signal Performance:** RISC based signal demodulation with matched filter

**Versatility:** A single radio can operate as a Gateway, Endpoint, Repeater, or Endpoint/ Repeater

**Unparalleled Signal Performance:** RF front end with multistage SAW filtering has unmatched combination of overload immunity and sensitivity

**Selectable Speeds:** 115.2 kbps and 153.6 kbps

**Secure:** Using Frequency Hopping Spread Spectrum (FHSS) technology; available with 128-, 192-, or 256-bit AES encryption

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

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

## Transmitter

<b>Frequency Range</b>	902 to 928 MHz
<b>RF Data Rate</b>	153 kbps and 115 kbps, user-selectable
<b>Output Power</b>	5 W
<b>Range</b>	Up to 145 km (90 miles) with clear line of sight
<b>Modulation</b>	2 level GFSK
<b>Occupied Bandwidth</b>	230 kHz
<b>Hopping Channels</b>	50 to 112, user-selectable
<b>Hopping Bands</b>	7, user-selectable
<b>Hopping Patterns</b>	15 per band, 105 total, user-selectable
<b>Frequency Zones</b>	16 zones
<b>RF Connector</b>	MMCX

## Receiver

<b>Sensitivity</b>	-108 dBm @ 115.2 for BER 10 <sup>-4</sup> -103 dBm @ 153.6 kbps BER 10 <sup>-4</sup>
<b>IF Selectivity</b>	20 dB at fc +/- 230 kHz 40 dB at fc +/- 460 kHz
<b>Dynamic Range</b>	+10 dBm 3rd order intercept point at input connector

## Data Transmission

<b>Type</b>	Frequency Hopping Spread Spectrum Options: TDMA, Super Epoch TDMA
<b>Error Detection</b>	32-bit CRC, retransmit on error
<b>Data Throughput</b>	115.2 kbps and 153.6 kbps
<b>Data Encryption</b>	Options: 128- / 192- / 256-bit AES encryption
<b>Data Interface</b>	1200 bps to 230.4 kbps

## Power Requirements

<b>Operating Voltage</b> Both voltages are required	+5 VDC (4.9 to 5.5 VDC) +12 VDC (12 to 13.5 VDC)			
<b>Current Consumption</b>	<b>Voltage</b>	<b>Transmit</b>	<b>Receive</b>	<b>Idle</b>
	+5 VDC	590 mA	160 mA	90 mA
	+12 VDC	1410 mA	0 mA	0 mA

## General Information

<b>Operating Temperature</b>	-40°C to +85°C (-40°F to +185°F)
<b>Humidity</b>	0 to 95%, non-condensing
<b>Dimensions</b>	2.3 L x 2 W x 0.79 H (in)
<b>Weight</b>	34 g

## Information to Order

Model Number	Description
MM2-9X5W	Board Level, 5 W
MM2-9X5W-CC	Conformal Coated MM2-9X5W