

## RV-M5-M

## FireLine MURS Band 2-Watt Data Radio Modem

*This MURS Band Data Radio modem is a 2 watt VHF data radio modem, designed to easily integrate into OEM products. Perfect to remote control, SCADA, and telemetry applications, it contains a high-performance transceiver with an integrated high-speed modem.*



## Product Overview

### Unlicensed Long-Range Operation

Utilizing the MURS frequencies, the two-watt RV-M5-M radio modem is the longest-range unlicensed radio modem on the market.

### High Speed and Efficiency

The *FireLine* operates with over-the air data rates of 1200, 2400, 4800, or 9600 bps. Faster rates for higher efficiency, or lower-speed for increased communication range.

### Fully Programmable

Using industry-standard AT commands, the *FireLine* RV-M5-M may be configured for simple "Transparent" operation, or for more sophisticated systems, may be configured with network IDs, and hardware flow control. The *FireLine* modem may be configured to send data in either a Packet Mode or Streaming Data Mode. Use Packets for reliability and error-free communications, and use streaming for high-speed low-latency transmissions.

### Serial Interface

A versatile RS-232 serial interface is utilized for both the user's data and to configure the data radio modem. Industry standard AT commands are used to configure it, and user

data passes transparently from one modem to another.

### Real-time diagnostics and statistics

Channel performance, RSSI, RF power, packet counters, and radio configuration are easily accessed. An *Auto-Status* feature enables the *FireLine* to periodically report its status and DC voltage.

### Fully Integrated Design

The advanced VHF transceiver is integrated with a powerful 16-bit microprocessor-based modem in one easy-to implement package. The microprocessor simplifies the user interface, make the data radio modem truly transparent. Data In. Data Out. It also incorporates sophisticated DSP and FEC routines, allowing the modem to receive data buried in noise and interference that other modems cannot tolerate.

### Flexible Addressing and Error Correction

The *FireLine* uses a 16 bit address with a 16 bit network mask, allowing for many devices to be co-located without receiving each other, as well as the creation of sophisticated network topologies. User-programmable automatic error correction is built in using an ARQ method. If enabled, *FireLine* modems will automatically re-transmit data that is received with errors.

### For More Information

For more information about this or any other Raveon product, call in the U.S.A. 1-760-931-8001.

## General Specifications

Model:  
RV-M5-M

Size:  
3" X 3" X 1"

Input Voltage:  
10 – 16 VDC

Current draw:  
Receiving data: <90mA (typical)  
Transmitting data: <1.6A

Frequency Stability:  
Better than  $\pm 2.5$ ppm

Serial Port Baud Rates (programmable)  
1200, 2400, 4800, 9600, 19200, 57600

Over-the-air baud rates (programmable)  
1200, 2400, 4800, 5142, 9600

Operating Mode  
Simplex or Half-duplex

Full Spec Operating Temperature range  
-30°C to +60°C

TX-RX and RX-TX turn-around time  
<15mS

Wake-up time from Standby  
<500mS

Front Panel LEDs  
Power  
Carrier Detect  
Transmit

RF I/O Connector  
BNC (F)

Power Connector  
Molex

## MURS Frequencies

User selectable channels:

1	151.820 MHz
2	151.880 MHz
3	151.940 MHz
4	154.570 MHz
5	154.600 MHz

## Transmitter Specifications

RF Power Output	2 watts
Maximum Duty Cycle	10% max. @ 2W
Maximum Frequency Deviation	$\pm 2.25$ kHz (-N) $\pm 4.5$ kHz (-W)
Occupied bandwidth	9KHz
TX Spurious outputs	< -20dBm
Occupied Bandwidth	Per FCC
FCC Emissions Designator	9K30F1D

## Receiver Specifications

RX sensitivity (.001% BER)	
9600bps	<.7uV (-109dBm) (-W)
9600bps	<1uV (-107dBm) (-N)
4800bps	<.7uV (-109dBm)
2400bps	<.5uV (-114dBm)
800bps	<.25uV (-119dBm)
RX selectivity	-60dB
RX intermodulation rejection	-70dB at 2400bps

## Interface Specifications

### Serial Interface Port

Connector Type	DB-15
Voltage Levels	RS-232 or CMOS
RX and TX data	Transparent
Async	
Word length	7 or 8 bits
Format	N, O, or E
Modem handshake signals	RTS, CTS, CD

### AT Commands

AT commands are available for the following functions:

- Channel Number
- Power Output
- TX Packet Size
- Carrier Detect Operation
- Modem Statistics
- Unit Address
- Destination address
- Network Address Mask
- Number of Retries
- Baud Rate, parity, stop bits
- Preamble-length
- ARQ error correction on/off
- Select Packet or Streaming mode

## Raveon Technologies Corporation

2780 La Mirada Drive, Suite C  
Vista, CA 92081  
Phone: +1-760-727-8004  
Fax: +1-760-598-8004

Email: [sales@raveontech.com](mailto:sales@raveontech.com)

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