

RV-M24 Weatherproof

**M24 UHF, VHF, 220MHz Band
500mW-5W Radio Modem**

The RV-M24 Radio Modem is a rugged, modular data radio modem available in UHF, VHF & 220MHz bands. With its field-configurable I/O interface, the M24 can be configured for RS-232, RS-422, RS485, USB interfaces.

Product Overview



Reconfigurable I/O

The front HR30 interface of the M24 is fully field-reconfigurable. The IO Pin Options are Listed:

- RS-232 [[S](#)] 5A835
- USB [[U](#)] 5A837
- RS-485 [[T](#)] 5A836-1
- RS-422 [[F](#)] 5A836-2

Water-Proof Modem

The M24 was Tech Series designed with a new Water-Proof enclosure. Raveon found a reliable **IP68** enclosure.

Embedded M8 Modem

The M24 embeds Data radio within the enclosure a wireless modem. Any Radio series modem may be inserted into the M24 chassis, giving the M24 all the benefits and features available in the M8 series of modems. All modems can communicate with Raveon's M series modems.

Efficient Power Consumption

The RV-M24 can operate off DC input from 9-28V. Receiving, the M24 draws less than 1watt of power!

Long-Range Operation

The M24 radio modem works over 10 miles point-to-point and many miles with omni-directional antennas. This support store-and-forward repeating for wide-area coverage.

Fast Polling

The M24 transceiver has a 3mS PLL in it, making it one of the fastest telemetry radios available, especially well-suited for polled, DNP, and MODBUS applications.

High Speed and High Efficiency

The RV-M24 operates with user-selectable over-the air data rates from 1200 to 19200bps. Faster rates for higher efficiency or lower speed for increased communication range. This fast-switching radio can send 50 transmissions per second.

Secure Data

The data encryption feature may be enabled on any Tech Series data radio modem. When secure data is enabled, the M24 will encrypt transmissions using AES128 Encryption. When properly managed your wireless network of Tech Series radio modems will be secure and hacker-proof.

GPS Option

The optional internal GPS allows the RV-M24 to be a powerful Automatic Vehicle Locating (AVL) system or Time Space Position Information (TSPI) reporting device.

Raveon Technologies Corporation

2320 Cousteau Court
Vista, CA 92081 - USA
Phone: +1-760-444-5995
Fax: +1-760-444-5997

Email: sales@raveon.com

Global Navigation Satellite Systems (GNSS) systems and can receive GPS, GALILEO, or GLONASS on versions since G11.

OTA Configuration

The ID of a particular transponder and certain system parameters such as report rate may be configured Over-The-Air, without having to physically connect to the unit.

HR30 Waterproof IO Connector

This Connector on the front panel of this M24 data radio has 6 pins. HR30 connects to serial IO connectors. Raveon sell [1J752-2](#) connector to plug into HR30.



Flexible Addressing and Error Correction

The RV-M24 uses a 16 bit address with a 16 bit network mask, allowing for many devices to be co-located without receiving each other, providing for the creation of sophisticated network topologies.

DC Power Waterproof Connector

This DC Connector on the front panel has 3 pins. You can connect to it or Buy a connector from RAVEON. You can buy a long cable to connect to it ([M84C850-1](#)).



Model Version to Order

Model: RV-M24AB-CC

(A = I/O option) (B = G for GPS/GNSS option)
(CC = frequency band code – see module datasheet)

Frequency Bands CC: {Internal Modem Number}

UA	400-434 MHz (non-US/gov.) {RV-M8}
UB	419-450 MHz (non-US/gov.) {RV-M8}
UC	450-470 MHz (RV-M8)
UD	480-512 MHz (non-US/gov.) {RV-M8}
UJ	380-400 MHz (non-US/gov.) {RV-M8}
VA	132-155 MHz (non-US/gov.) {RV-M8}
VB	150-174 MHz {RV-M8}
VC	216-222 MHz {RV-M8}

IO Pin options A ordered for this version:
S(RS232) T(RS485) F(RS422) U(USB)

General Specifications

Serial Port Baud Rates (programmable)
1.2k, 2.4k, 4.8k, 9.6k, 19.2k, 38.4k, 57.6k, 115.2k

Over-the-air baud rates (programmable)
-N 1200, 2000, 2400, 4.8k, 5142, 8K,9.6k
-W 1200, 2000, 2400, 4.8k, 8k, 9.6k, 19.2k

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

Case Size:
6.7" x 4.48" x 1.37"

TX-RX and RX-TX turn-around time
<3mS

RF I/O Connector
BNC (Female), TNC (Female) optional

Addressing
Individual address: 65,536

Weight:
1.17 LBS

Input Voltage VCC:
12-28 VDC full-spec
9-28 VDC operational

Power Consumption:
Receiving data: <100 mA at 12.0 VDC Input
Transmitting data: <2000 mA at 12.0 VDC Input
Sleep (<100 µA)

Options:
Internal GPS, TDMA firmware G option

Security

Encryption Method..... AES128
Electronic Serial Number..... Silicon ESN
Configuration Monitor..... Serialized on update

Transmitter Specifications (See RV-M8 for details)

See the Datasheet of the Radio Module Used within the M24 enclosure for the Version you have. Here is a summary of Typical Specs:

RF Power Output VHF 500mW – 5W (programmable)
RF Power Output UHF 500mW – 5W (programmable)
Maximum DC Current..... 2.1A (Max)
Maximum Duty Cycle..... 100% to 40C, 20% to 60C
Frequency Deviation ± 2.2kHz (-N) ± 3.5kHz (-W)
Occupied bandwidth..... 11 kHz (-N) 16kHz(-W)
TX Spurious outputs < -70dBc
Occupied Bandwidth Per FCC
FCC Emissions Designator..... 11K0F1D (-N)
Frequency Stability..... Better than ±1.5ppm

Receiver Specifications (See RV-M8 for details)

See the Datasheet of the Radio Module used within the M24 enclosure for the Version you have. Here is a summary of Typical Specs:

RX sensitivity (.1% BER)	9600bps < -108dBm
1200 & 2400baud	4800bps < -114dBm
Adjacent Channel Selectivity 12.5kHz.....	< -118dBm
Adjacent Channel Selectivity 25kHz.....	-50dB
Alternate Channel Selectivity	-60dB
Blocking and spurious rejection	-65dB
RX intermodulation rejection.....	-75dB
	-70dB

Interface Option Connections

RS-232 Interface Port

Connector Type	DB-9 female
IO Voltage Levels	RS-232

RS-485 Interface Port

Connector Type	Phoenix 6-pin
IO Voltage Levels	RS-485

RS-422 Interface Port

Connector Type	Phoenix 6-pin
IO Voltage Levels	RS-422

USB Interface Port

Connector Type	Mini B
----------------	--------

Raveon Technologies Corporation

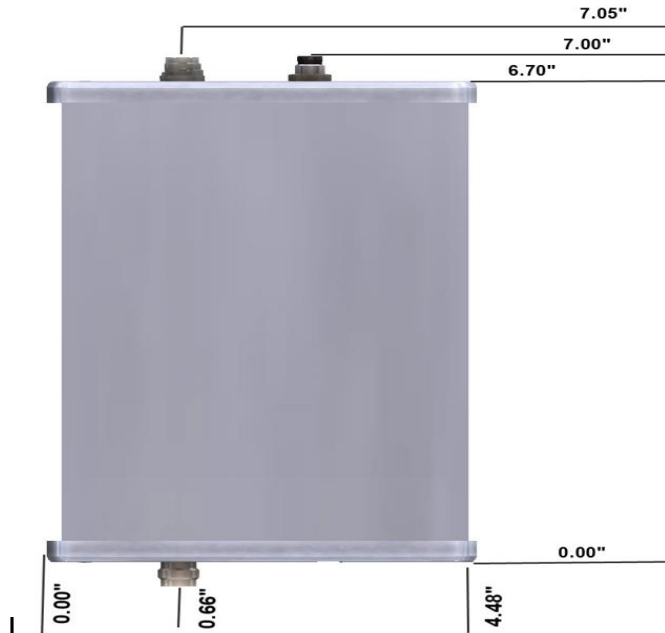
2320 Cousteau Court
Vista, CA 92081 - USA
Phone: +1-760-444-5995
Fax: +1-760-444-5997

Email: sales@raveon.com

Jan 2023
All rights reserved
Version J1

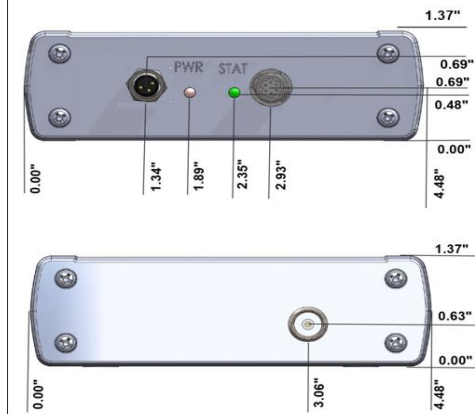
Mechanical Specifications

Length: 6.7" width: 4.88"



Height: 1.37"

Pannels in Front and Back:



Accessories



DC Power Connector

This 3-pin is often called the M8 cable.

Raveon part number to connect to this is SA3349/1

Description Sealed 3-pin 7mm, 2m

DC Power Cable

The water-proof 3-pin can use this Cable.

Raveon part number to connect to this is M84C850-1



Raveon Technologies Corporation

2320 Cousteau Court
Vista, CA 92081 - USA
Phone: +1-760-444-5995
Fax: +1-760-444-5997

Email: sales@raveon.com

Jan 2023
All rights reserved
Version J1