RV-M9-U

*The M9 data transceiver is a rugged MIL810G compliant ½ - 5 watt UHF data radio mode with Ethernet port. The radio has an **optional GPS** for use in AVL and asset tracking applications. Other options include tilt-sensor, AES encryption, and optional 25 watt power amplifier.*

Product Overview

Long-Range Operation

Operating in the UHF 450-470MHz frequency band, the RV-M9 radio modem works over 50 miles point-to-point and many miles with omni-directional antennas. All RV-M9 modems support store-and-forward repeating for wide-area coverage. The optional 25 watt RF amplifier can increase the communication range another 2-4 times.

High-Performance RF

The M9 has enhanced RF performance, exceeding the RF performance of virtually every radio modem in its class. Its 3mS PLL makes it fast, and its receiver has an exceptional dynamic range and selectivity. The GFSK transmitter can operate up to 5 watts output, and 25 watts with the optional RF power amplifier.

Rugged and Weather Proof

The RV-M9 is built to MIL810G standards, and is fully submersible for an hour at 1 meter. The M9 will work in the harshest of physical and RF environments.

High Speed and High Efficiency

The *RV-M9* operates with user-selectable rates of 1200 to 2400bps. It draws less than 90mA when receiving.

GPS Option

The optional internal [Trimble Copernicus II GPS receiver](#) allows the RV-M9 to be a powerful Automatic Vehicle Locating (AVL) system or Time Space Position Information (TSPI) reporting device.

Fully Programmable

The RV-M9L is configured using industry-standard AT commands. The device has an Ethernet port for simultaneous data communications using TCP/Ip sockets, and configuration via Telnet or WEB browser. Raveon also provides a PC program called "[Radio Manager](#)" that makes configuring the M9 a snap.

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.

Real-time diagnostics and statistics

Channel performance, RSSI, RF power, packet counters, and radio configuration are easily accessed by telnet, or remotely over-the-air.

Very Low Power Consumption

The advanced UHF transceiver is integrated with a powerful 32-bit microprocessor-based modem in one easy-to mount package. It has very low power consumption, and sleep modes that allow it to be active and consume almost no power at all.

Flexible Addressing and Over-The-Air Error Correction

The RV-M9 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.

For More Information

For more information about this or any other Raveon product, call in the U.S.A. 1-760-456-1620.

General Specifications

Model:
RV-M9i-Ux-oo (i-I/O, x=band, oo=options)
Size: .... 4.50" X 2.60" X 1.62
            (11.7cm X 6.6cm X 2.43cm)
Weight:...6 oz
Input Voltage: ....10.5 – 30 VDC
Optional Extended Voltage:..............40.0 – 50.0 VDC
Current draw:
    Receiving data: serial or USB I/O .... <100mA
    Receiving data: Ethernet I/O .... <150mA
    Transmitting data: 2.6A @ 5w, 1.2A @ 2W typical
    Sleep ....<10mA
Frequency Bands:
    UA   *403-434*MHz (for export)
    UB   *419-440*MHz (for export)
    UC   450-480MHz (for US channels)
    UD   470-512MHz (for export)
Over-the-air baud rates (programmable)
    -N 1200, 2000, 2400
    -W 1200, 2000, 2400
Operating Mode
    Simplex or Half-duplex
Full Spec Operating Temperature range
    Full-spec:..-30°C to +60°C
    Reduced performance..................-40°C to +70°C
TX-RX and RX-TX turn-around time
    <3mS
Wake-up time   ....<3s from OFF
            .... <10ms from Sleep
Front Panel LEDs
    Power , Status, GPS
RF Connector ....N (Female)
GPS Connector.......................................TNC(Female)
Power Cable .... Raveon P/N: RT-CB-H1
Addressing
    Individual address:......................................65,536
Options:
    Internal GPS .... -GX
    3-Axis Tilt Sensor...-T
    AES encryption ....-E1
    DES encryption ....-E2

Transmitter Specifications

RF Power Output .... *500mW – 5.0 W*
                                        programmable
Maximum Duty Cycle .... *100% @ 2W to 40C, 25% @5W*
                                    (100% w/ optional heat-sink)
Frequency Deviation .... *± 2.2kHz (-N) ± 3.5kHz (-W)*
RF Bandwidth.................................... 20MHz no-tune
Occupied bandwidth........................ *11 kHz (-N) 16kHz(-W)*
TX Spurious outputs.......................... *< -80dBc*
Occupied Bandwidth.......................... *Per FCC*
FCC Emissions Designator .... *11K0F1D (-N)*
Frequency Stability -30 to +60C........ *Better than ±1.0ppm*
Frequency Stability -40 to +70C........ *Better than ±1.5ppm*

Receiver Specifications

RX sensitivity (.1% BER)……..............1200bps < -118dBm
RF No-tune bandwidth 20MHz
12.5KHz Adjacent Channel Selectivity....................-60dB
25KHz Adjacent Channel Selectivity.......................-70dB
Alternate Channel Selectivity ....-75dB
Blocking and spurious rejection...............................-80dB
RX intermodulation rejection ....-80dB

Interface Specifications

Ethernet Interface
    Connector Type RJ45
    Standard 802.3-2008
    Speed .... 10/100 auto-sense
    Protocols.. telnet

Notes: 1. Encryption options not available on product for export
    out of the United States of America.