RV-M7-UA

The M7 UHF data transceiver is a rugged ½ - 5 watt UHF data radio modem with an RS-232 (or optional 422/485) serial interface, ideal for SCADA and telemetry applications.

Product Overview

Long-Range Operation

Operating in the **UHF 403-433MHz** frequency band, the RV-M7 radio modem works over 50 miles point-to-point and many miles with omni-directional antennas. All RV-M7 modems support store-and-forward repeating for wide-area coverage.

Fast Polling

The M7 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-M7* operates with user-selectable over-the air data rates of 1200 to 19200bps. Faster rates for higher efficiency or lower-speed for increased communication range. Its fast-switching radio enables it to send up to 50 transmissions per second.

Very Low Power Consumption

The advanced UHF transceiver is integrated with a powerful 16-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.

Fully Programmable

It is configured with a serial connection using industry-standard AT commands. Parameters such as network IDs, unit ID and transmission rate are easily configured. Raveon also provides a PC program called "*Radio Manager*" that makes configuring the M7 fast and easy.

Over-The-Air (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 via the serial port or remotely over-the-air. An *Auto-Status* feature enables the RV-M7 to periodically report its status and DC voltage.

Rugged and Weather Proof Options

The RV-M7 is available with optional 'weather proof' IP65 (NEMA 4) rated connections and enclosure. All models include protection against damage from over-temperature, high VSWR, and reverse voltage.

Flexible Addressing and Error Correction

The RV-M7 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.
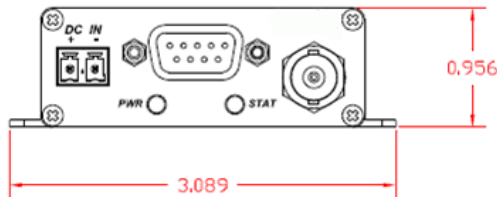
GPS Option

The optional on-board GPS allows the RV-M7 to be a powerful Automatic Vehicle Locating (AVL) system or Time Space Position Information (TSPI) reporting device. For details see: http://www.raveon.com/rv_m7GX.html

For More Information

For more information about this or any other Raveon product, call in the U.S.A. 1-760-444-5995 or visit www.raveon.com.

Raveon

General Specifications

Size:
4.60" X 2.60" X .956 (11.7cm X 6.6cm X 2.43cm)

Weight:
    6 oz
Input Voltage:
    9.5 – 16 VDC
Current draw:
    Receiving data: <90mA,
    Transmitting data:
     (2.7A @ 5w, 1.2A @ 2W typical)
    Sleep (<25mA)
Frequency Band:
    A *403-433*MHz
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
Operating Mode
    Simplex or Half-duplex
Full Spec Operating Temperature range
    -30°C to +60°C
TX-RX and RX-TX turn-around time
    <3mS
Wake-up time
<500mS from OFF
    <5mS from Sleep
Front Panel LEDs
    Power, Status (Carr Det, TX, mode…)
RF I/O Connector
    BNC (Female)
Power Cable
    Raveon P/N: RT-CB-H1
Addressing
    Individual address: 65,536
Options:
    On-board GPS   -GX option
    IP65-rated ("waterproof") -WX option
    RS422/485 option   -4 option

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......................... *< -70dBc*
Channel Spacing *25KHz*
FCC Emissions Designator .... *11K0F1D (-N)*
Frequency Stability .... *Better than ±1.5ppm*

Receiver Specifications

RX sensitivity (.1% BER) .... 4800bps < -116dB
1200 & 2400baud .... Contact Factory
RF No-tune bandwidth 20MHz
Adjacent Channel Selectivity............ -50dB
Alternate Channel Selectivity........... -65dB
Blocking and spurious rejection....... -75dB
RX intermodulation rejection .... -70dB

Interface Specifications

Serial Interface Port

Connector Type	DB-9
IO Voltage Levels	RS-232, RS-485, RS-422 (user selectable)
RX and TX data	Transparent Async.
Word length	7 or 8 bits
Format	N, O, or E
Modem handshake signals	RTS, CTS, CD

Selected Configuration Options

    Channel Number and Operating Frequency
    Carrier Detect Operation
    Modem Statistics
    Power-savings modes
    Unit Address and Destination address
    Network Address Mask
    ARQ error correction on/off
    Baud Rate, parity, stop bits
    Select Packet or Streaming mode of data transmission
    Store-and-forward Repeating configuration
    Busy-channel lock-out
    Hardware flow control operation
    LEDs operation or disabled
    Auto Status report on/off and interval.
    Read DC voltage, current, forward RF power, VSWR
    Remote PING

For a complete feature list see the technical manual here:
http://www.raveon.com/support.html

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