

RV-M7-UC-WX

**M7 UHF Band
½ - 5 watt Data Radio**

The M7-UC-GX is a rugged, "weatherproof" (IP65 rated) UHF data transceiver for ½ - 5 watt **narrowband** (12.5KHZ) transmission. With an RS-232 or optional 422/485 serial interface, the radio is ideal for SCADA and telemetry applications.



Product Overview

Long-Range Operation

Operating in the UHF 450-470MHz frequency band, the RV-M7 radio modem works over 50 miles point-to-point and many miles with omnidirectional 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.

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

In addition to protection against damage from over-temperature, high VSWR, and reverse voltage the RV-M7-UC-WX features 'weatherproof' (IP65 rated / NEMA 4) connections and enclosure.

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

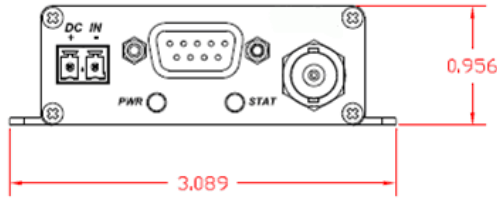
The optional internal GPS allows the RV-M7 to be a powerful Automatic Vehicle Locating (AVL) system or Time Space Position Information (TSPI) reporting device.

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.

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)

Standard Frequency Band:

C 450-480MHz

Optional Frequency Bands

A 403-434MHz

B 419-440MHz

D 470-512MHz

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:

Internal GPS -GX 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 $\pm 2.2\text{kHz} (-N) \pm 3.5\text{kHz} (-W)$

RF Bandwidth..... 20MHz no-tune

Occupied bandwidth..... 11 kHz (-N) 16kHz(-W)

TX Spurious outputs..... < -70dBc

Channel Spacing 12.5KHz

FCC Emissions Designator 11K0F1D (-N)

Frequency Stability Better than $\pm 1.5\text{ppm}$

Receiver Specifications

RX sensitivity (.1% BER) 9600bps < -108dBm

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

AT Commands Overview

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

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