

RV-M7-CEx

M7 UHF Band, CE Compliant ½ - 5 watt Data Radio

The M7 CE compliant UHF data transceiver is a rugged 1-5 watt UHF data radio modem with an RS-232 (or optional 422/485) serial interface, perfect for SCADA, AVL and telemetry applications.



Product Overview

Long-Range Operation

Operating in the UHF 440-480MHz frequency band using 3-sub-bands, 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 fast synthesizer in it, making it especially well suited for polled, TDMA, DNP and MODBUS applications. Its fast-switching radio enables it to send up to 50 transmissions per second.

High Speed and High Efficiency

The M7 operates with user-selectable over-the air data rates of 1200, 4800, or 9600bps. Faster rates for higher efficiency, or lower-speed for increased communication range.

GPS Option

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

Fully Programmable

It is configured with a serial connection using "AT" type commands. Parameters such as network IDs, unit ID and transmission rate are easily configured. Raveon also provides a PC program called "[Radio Manager](#)" that simplifies configuring the M7.

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.

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.

Rugged and Weather Proof

The RV-M7 is available with optional IP65 rated weatherproof 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.

For More Information

For more information about this or any other Raveon product, call in the U.S.A. 1-760-727-8004 or visit us at www.raveontech.com.

General Specifications

Model:
RV-M7-CEX-oo (x=band) (oo=options)

Size:
5.0 X 3.76W X 0.95H

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 Sub-Bands:
CEA 440-450MHz
CEB 450-470MHz
CEC 470-480MHz

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 4.8k
-W 9.6k

ETSI Compliance: EN 300 113
EN 301 89

Operating Mode
Simplex or Half-duplex

Operating Temp. -30°C to +60°C

TX-RX time <10mS

Wake-up time <500mS from OFF

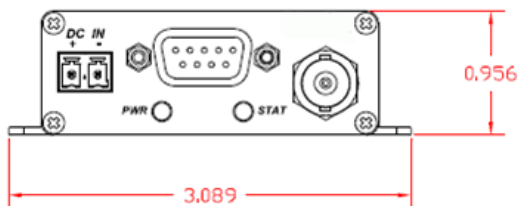
Front Panel LEDs
Power , Status (Carr Det, TX, mode...)

RF I/O Connector BNC (Female)

Power Cable P/N: RT-CB-H1

Individual address: 65,536

Options:
Internal GPS -GX option
RS422/485 option -4 option
Narrow-Band -N
Wide-Band standard



Transmitter Specifications

RF Power Output 500mW – 5.0 W programmable
Maximum Duty Cycle 100% @ 2W to 40C, 25% @5W
(100% w/ optional heatsink)

Frequency Deviation $\pm 2.2\text{kHz} (-N) \pm 3.5\text{kHz} (-W)$

RF Bandwidth..... 10MHz no-tune

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

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

Occupied Bandwidth..... Per ETSI 300

Emissions Designator 11K0F1D (-N)
15k3F1D (-W)

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

Receiver Specifications

Wideband RX sensitivity 9600bps < -112dBm

Narrowband RX sensitivity 4800bps < -115dB

1200 & 2400baud Contact Factory

RF No-tune bandwidth 10MHz

Channel Spacing 25kHz (-W)
12.5kHz (-N)

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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