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 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.

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.
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 403-433MHz

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

Serial Port Baud Rates (programmable)
-N 1200, 2000, 2400, 4.8k, 5142, 8k,9.6k
-W 1200, 2000, 2400, 4.8k, 8k, 9.6k, 19.2k

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

RX and 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
-65-rated (“waterproof”)
RS422/485 option

Transmitter Specifications

RF Power Output 500mW – 5.0 W programmable

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