

# RV-M7 Series High Speed UHF or VHF -GPS Transceivers

.....100 vehicles can be tracked with 10 second updates

## Features

- INDUSTRIAL, RUGGEDIZED, GPS TRACKING DEVICE
- HIGH SPEED, REAL TIME LOCATION AND SPEED UPDATES
- SENDS LOCATION, SPEED, VOLTAGE, TEMPERATURE, INPUTS STATUS, DIRECTION AND TIME
- RECEIVE THE LOCATION OF ALL OTHER UNITS TO PROVIDE PROXIMITY ALERTS
- USES COMMERCIAL UHF OR VHF CHANNELS
- ONE AUX INPUTS—WITH GPS
- PROVIDES “STORE AND FORWARD” FOR ‘REPEATER’ WIDE AREA COVERAGE
- SERIAL PORT FOR EXTERNAL CONNECTION
- 9-30V DC OPERATION



**Presenting the RV Series,**  
high speed, no monthly fee

GPS tracking solution for use over commercial UHF or VHF radio channel. This fully integrated device includes a transceiver, modem, GPS, GPS output to drive external devices, proximity alerts, auxiliary input and an optional IP weatherproof enclosure. 100 vehicles can be tracked with up to 10 second updates

This ruggedized, industrial styled, in-vehicle GPS tracking device is compatible with the CES POWER-trak PC/Desktop/Server fleet management subscriber service, FleetLinked web service or your choice of tracking software using the CES FleetControl API.

Integration to 911, CAD or market specific software also provided.

## Applications

- CONSTRUCTION—SITE ACTIVITIES
- PUBLIC SAFETY—REAL TIME RESPONSE
- MINING—MONITORING TRAFFIC IN SMALL AREA
- MARINE—TRACK VESSELS, FEED DATA TO RADAR
- PARKS AND GOLF— MONITOR RENTAL EQUIPMENT



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# RV Series High Speed UHF or VHF -GPS Transceivers

The heart of the RV Real-time Tracking Solution is the M7 GPS transponder—a 1/2-5 watt UHF/VHF wireless modem with built in GPS, NMEA input/output and a TDMA radio modem. An optional IP65 weatherproof enclosure is also available.

The device lets you quickly locate your vehicles, co-workers, your trucks that break-down, your rented-boats, your stolen vehicle, nearest help, lost people...or slow-moving golfers.

It is the fastest real-time GPS tracking transponder available that uses commercial UHF radio channels with, no service fees, no monthly charges, and it works virtually anywhere.

## **Long-Range Operation**

Operating in the UHF frequency band, the RV can communicate as far as 50 miles (depending upon terrain). All devices also can store-and-forward “repeater” for wide-area coverage.

## **High Speed and High Efficiency**

The unit operates with fast over the air data rates of 4800 to 19200bps. Its fast-switching radio enables it to send up to 20 position-transmissions per second.

## **Real-Time**

Position and status updates are available as quickly as every second. No other tracking system has as fast an update rate as the RV.

## **Flexible Reporting**

The M7 may be configured to transmit position and status reports at pre-set time intervals (programmable), when it has moved a certain distance (programmable), when an I/O changes, or a combination of these.

## **No Monthly Charges**

Because no external services are required, there are no recurring costs with this system.

## **Works Everywhere**

The RV does not rely upon public wireless services, so the system works in rural areas, mines, mountains, foreign countries, and deserts.

## **Simple to Interface**

The M7 Transponder is very simple to use and works with a multitude of other software, plotters, and GPS displays including:

- Lowrance GPS displays and navigation
- Garmin hand-held GPS
- Any GPS Navigational device with an RS-232 NMEA interface
- POWER-trak PC/Desktop/Server Fleet Management software from CES
- Marine Radar Displays

## **Proximity Alerts**

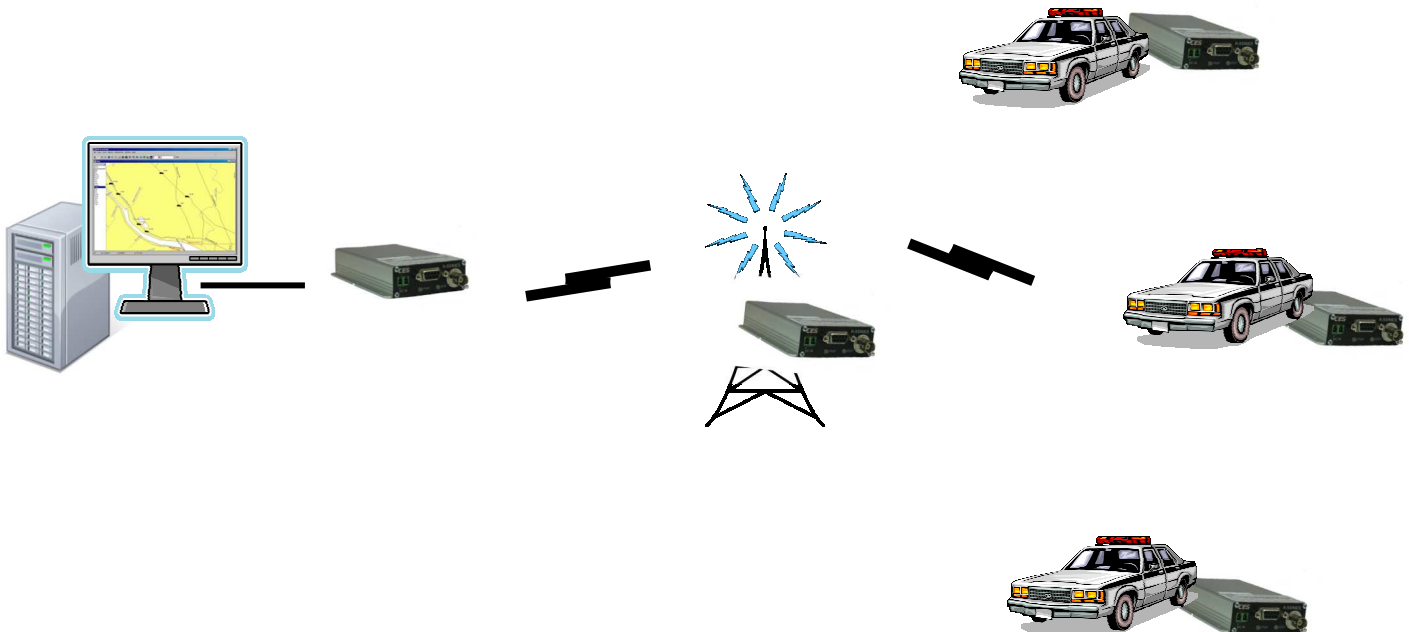
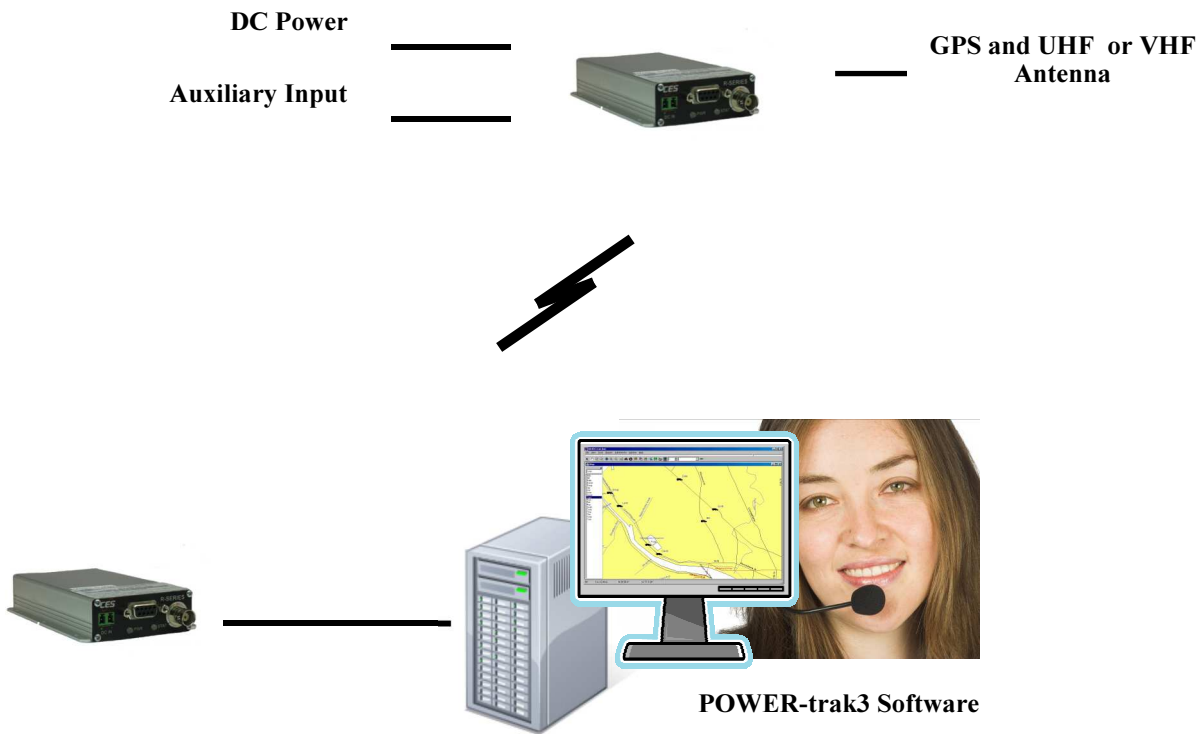
Each unit may be configured to transmit an alert, as well as signal an output circuit whenever it is in proximity of another device. Used for collision avoidance or theft security.

## **Secure**

All position reports are 128-bit AES encrypted for secure communications. No other radio modem will be able to listen in or monitor positions without knowing the security key.

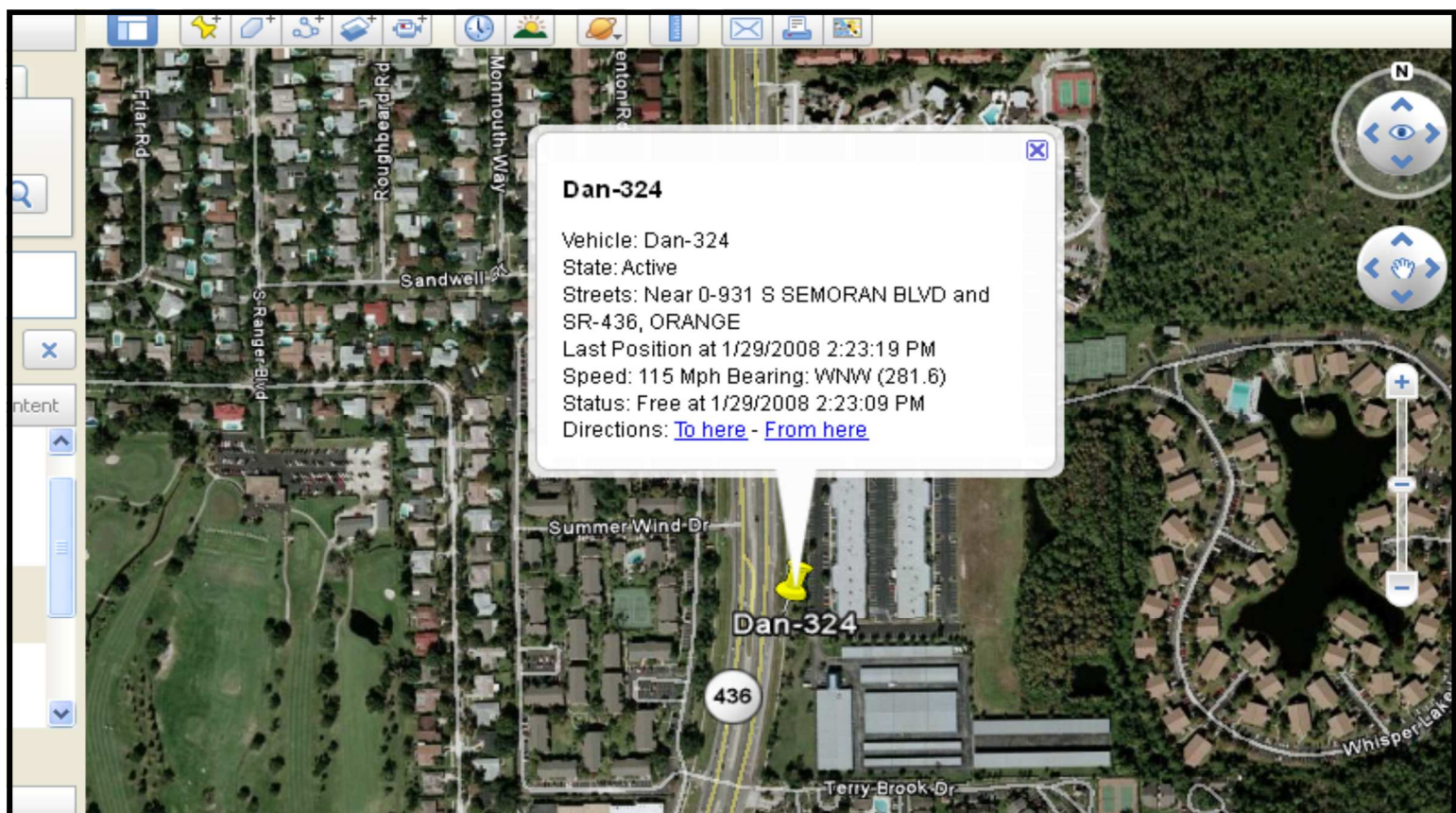
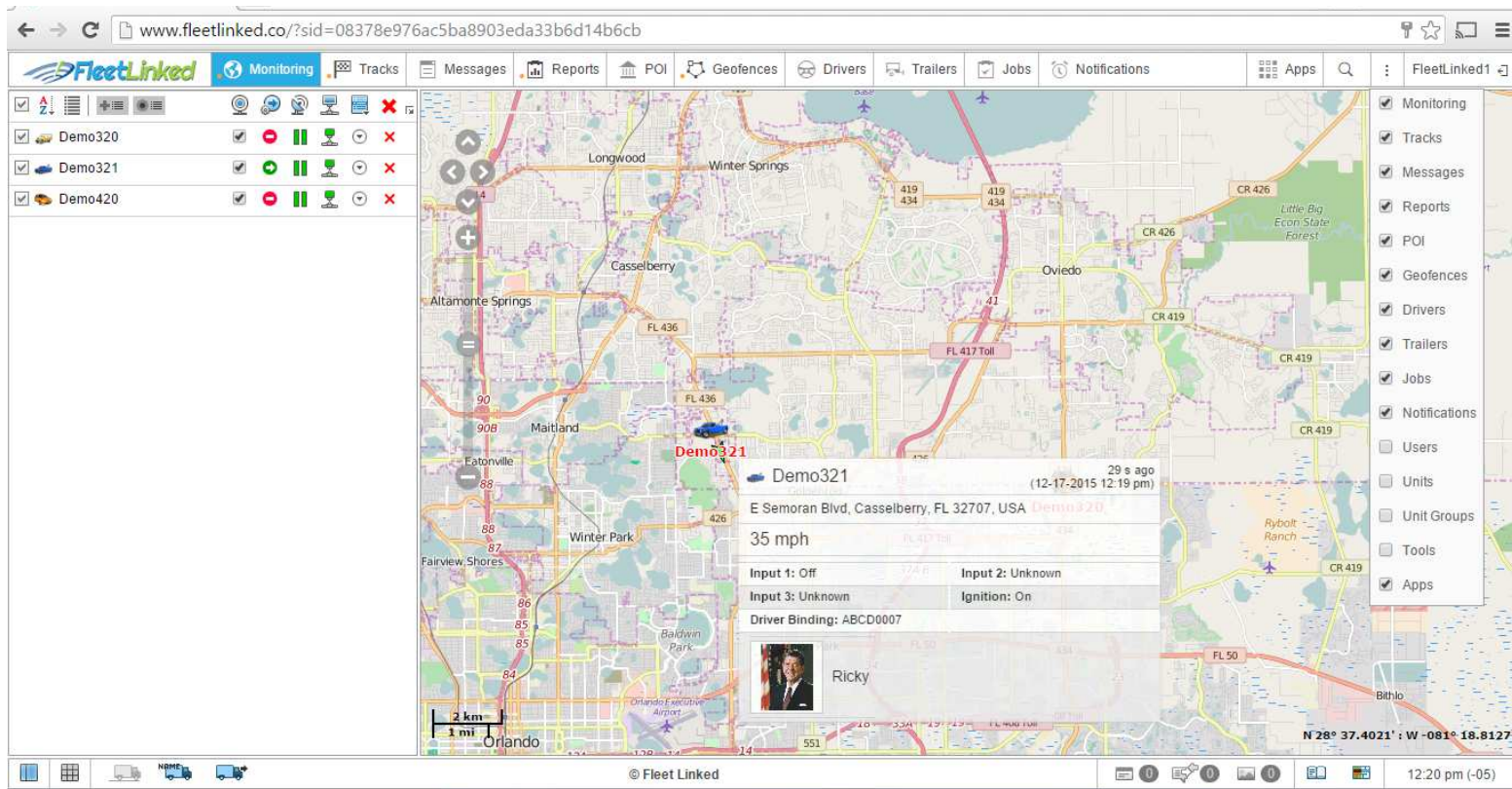
# RV Series High Speed UHF or VHF -GPS Transceivers

## UHF Transceiver/Radio Modem/GPS





# RV Series High Speed UHF or VHF -GPS Transceivers



## General Specifications

### Model:

RV-M7-Ux-GX (x=band) (oo=options)

Size: 5.0 X 3.76W X 0.95H

Weight: 6 oz

Input Voltage: 9.5 – 16 VDC

### Current draw:

GPS tracking, 1min updates: <30mA

GPS tracking, 10sec updates: <80mA

GPS and radio receiving data: <120mA

Transmitting data:

(2.7A @ 5w, 1.2A @ 2W typical)

Sleep (<25mA), Ignition off: (<10mA)

### Frequency Bands:

A 403-434MHz (for export)

B 419-440MHz (for export)

C 450-480MHz (for US channels)

D 470-512MHz (for export)

### 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, 5142, 8K, 9.6k

-W 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) (TNC on -WX version)

### Power Cable

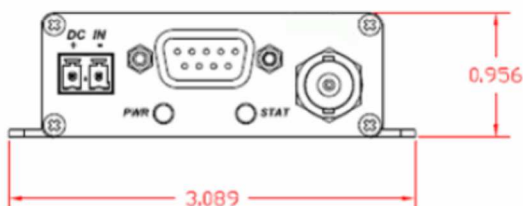
Raveon P/N: 1C738-1

### Addressing

Individual address: 65,536

### Options:

Waterproof Enclosure -WX 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)

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

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

Occupied Bandwidth ..... Per FCC

FCC Emissions Designator ..... 11K0F1D (-N)

Frequency Stability ..... Better than ±1.5ppm

## Receiver Specifications

RX sensitivity (.1% BER) ..... 9600bps < -  
108dBm  
4800bps < -  
116dB

RF No-tune bandwidth ..... 20MHz

Alternate Channel Selectivity ..... -65dB

Blocking and spurious rejection ..... -75dB

## Interface Specifications

### Serial Interface Port

Connector Type	DB-9
IO Voltage Levels	RS-232
RX and TX data	Transparent Async
Word length	7 or 8 bits
Format	N, O, or E
Modem handshake signals	RTS, CTS, CD
NMEA messages:	TTL, GLL, WPT

### User Configurable Parameters (overview)

Channel Number and Operating Frequency

Unit Address: 0001 thru 9999

Baud Rate, parity, stop bits

GPS Update Rate: 1 – 9999 Seconds

GPS report on movement: 0 – 9999 Meters

GPS report on digital in Enable/disable

Digital Inputs (Gen Purpose or alarm) 2

Digital Outputs 1

Store-and-forward Repeating configuration

Encryption keyphrase 128 bits

LEDs operation or disabled

Auto Status report on/off and interval.

Read DC voltage, current, forward RF power, VSWR

Remote PING

Serial Port Format: (NMEA, RavTrack PC, RADAR TLL,  
or Lowrance  
Plotter)