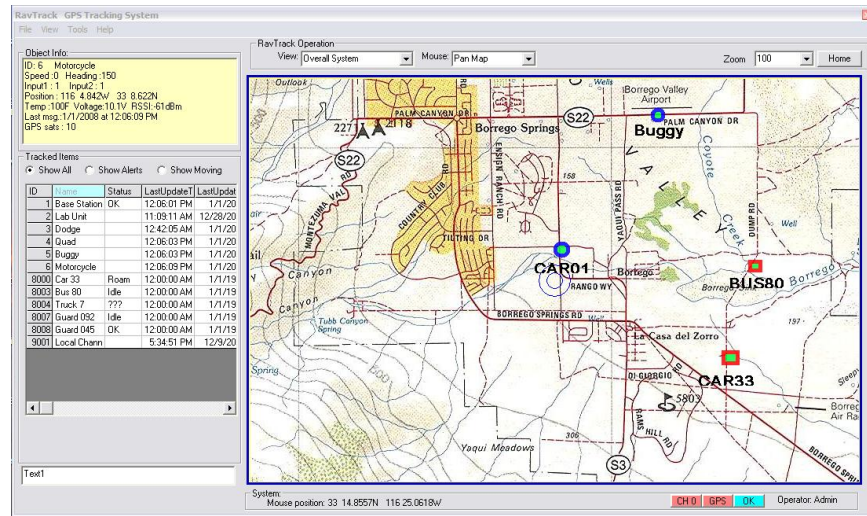


RavTrack PC

RavTrack PC AVL/Tracking Software Application

RavTrack™ PC by Raveon is a PC application for displaying, tracking, alarming, and logging the activity of GPS Transponders such as Raveon's RV-M7-GX series of vehicle trackers and ATLAS series of personnel locators.



This easy-to use PC application graphically shows the location and status of cars, trucks, people, or anything equipped with RavTrack Transponders. The displayed map may be any graphic image, bitmap, or .jpg.

RavTrack PC Features:

The features below are what make RavTrack PC the right choice for tracking your vehicles and personnel:

- 1) **Real-time.** See where your vehicles are *NOW*, not a few minutes ago. Position and status updates are available as quickly as every second. No other radio tracking system has as fast an update rate as *RavTrack*.
- 2) **In the Office or In the Field.** Track your vehicles and assets at field offices, temporary work sites, remote locations, or in the office. RavTrack PC is a complete stand-alone tracking system. No server required. No Internet required. No satellite required. A single PC and a Raveon GPS transponder is all that is required. The map on the display may be any graphics image, scanned map, or photo you choose.
- 3) **Visualize your Operation.** The displayed map can be your city, your airport, your construction site, or park, golf course, or city. See where vehicles and personnel are, or should be - see where they aren't but should. *RavTrack PC* can show you your business in a way no voice

system can. Zoom and switch between different maps with a click of the mouse.

- 4) **Geo-Fence monitoring.** RavTrack PC users may create geo-fences on the map around areas like keep-out zones, off-limit areas, must-patrol areas, and environmentally sensitive areas, and then have the system alert when geo-fence rules are violated.
- 5) **One-Click status.** Tracking is one thing it does well, but do you want to know status also? One-click on an icon on the map or click an entry in the tracked-object table, and the user can see complete vehicle status including location, distance, heading, velocity, I/O status, temperature, voltage, altitude, and radio signal strength.
- 6) **Custom Alerts.** Knowledge is power, and RavTrack PC gives you the power over your moving assets. Know where they are, when they move, how-long they are idle, or if they are miss-used. The *RavTrack PC* operator can be alerted to various transponder-specific events such as speeding, proximity to Points of Interest, Geo-fence violations, and digital input status.
- 7) **Database Driven.** The information on all units being tracked is stored in a Microsoft Access SQL database. All movements and events are logged in a separate MS Access SQL database. Users may use Access and other SQL tools to create custom reports or interface with the data in real-time.
- 8) **Single or Multi-User.** The software may be run in a single-user stand alone configuration on one PC, or operated in a multi-user configuration where multiple *RavTrack PC* users can monitor the system and create their won alarms.
- 9) **Log Replay** The user may select log entries to replay on the map, to show the past location and status information.
- 10) **Up to 6 radio Channels.** Expand the coverage with multiple radio channels. *RavTrack PC* will allow up to 6 radios to be connected to one PC, so up to 6 different RF channels may be utilized in the same area, or linked in via remote sites.
- 11) **Low Cost Transponders.** The highly integrated *RV-M7 series GPS Transponder* has a radio, modem, and GPS in one assembly. The per-unit cost is lower than any other radio AVL product on the market. And there are no service fees for a wireless carrier or satellite provider.
- 12) **Secure.** All position transmissions are encrypted, so that only radios with the same pass-key code can communicate. The pass-key itself cannot be read out of the radio, so even a stolen radios will not make the system less secure. The *RavTrack PC* program is also administrator-rights protected, allowing a view-only user mode, and total-control for the administrator.

- 13) **Filtered View.** *RavTrack PC's* powerful display filtering allows the operator to filter the tracked vehicle list and the displayed icons on the map by over a dozen different parameters such as displaying only moving vehicles, or alarming vehicles, or stationary vehicles, low-battery conditions, or emergency personnel, or ignition on.
- 14) **Advanced Features.** Advanced features are configured when the Transponder is installed. The *RavTrack* Transponders have alarm inputs, status output pins for specialized applications.
All *Raveon* GPS Transponders report position, velocity, time, temperature, voltage, altitude, I/O status, alarms, GPS signal quality, and radio signal quality in each transmission, so the system operator has enormous visibility to the status and location of his tracked objects.
- 15) **ESRI Shape Files.** ESRI shape files may be imported and overlaid on the map.

RavTrack PC Specifications:

Map Files

Any .jpg, .tiff, geo-tiff, or .gif graphics file
Photos, scanned maps, or screen captures may be used
User may easily switch between available maps stored on local hard drive
Comes with standard database of icons to display tracked objects
Supplied utility to calibrate user maps
Raveon map calibration service available
User may add custom icons to map file.

DataBases

Tracked Objects: Microsoft Access. One record for each tracked M7 Transponder.
Fields: ID, Name, Status, Time, Date of last report, Lat, Lon, Altitude, Alerts, Speed, Direction, Inputs, GPS status, Icon used, Voltage, Temperature, Radio Signal Strength
System Log File: Microsoft Access. One record for each position report received over the air.
Fields: Entry Number, ID, Status, Time, Date, Lat, Lon, Alerts, Speed, Altitude, Inputs, UTC time, Voltage, Temperature, RSSI, Operator Text
System Log Filter: Log all activity or log only moving objects.

Map Home Location

Center map on current position as reported by local GPS
Center map on a fixed lat-lon
Optionally draw circles around home location
On-click to re-center map on home location

Alerts Triggers (rule based):

Zone alert. entering or leaving a geo-fence
Low battery
Speeding
Idling too long
Stopped
Proximity to points of Interest on the map
Distance from home location

Alert Actions

Message box pop-up showing ID and rule that caused the alert
Play a .wav file
Send an email
Execute a shell program

Communications:

Radio InterfaceRS-232 COM port
Maximum number of channels (open Com Ports):6
Com port numbers supported 1-16
Protocols\$PRAVE, NMEA 0182

RavTrack PC Screen Shots:

Main Screen.

Select what you would like to view. Turn layers on or off.

Pan, click to center, or measure distance

Name, location and status of selected object.

Database view of all tracked objects. One click on any to display detailed status.

Zoom map and center it one "Home" with one click

Location of the mouse on the map.

Status of the radio channels.

Status of GPS connected to PC

Object Info:
ID: 6 Motorcycle
Speed: 0 Heading: 150
Input1: 1 Input2: 1
Position: 116 4.842W 33 8.622N
Temp: 100F Voltage: 10.1V RSSI: -61dBm
Last msg: 1/1/2008 at 12:06:09 PM
GPS sats: 10

Tracked Items
 Show All Show Alerts Show Moving

ID	Name	Status	LastUpdate	LastUpdate
1	Base Station	OK	12:06:01 PM	1/1/20
2	Lab Unit		11:09:11 AM	12/28/20
3	Dodge		12:42:05 AM	1/1/20
4	Quad		12:06:03 PM	1/1/20
5	Buggy		12:06:03 PM	1/1/20
6	Motorcycle		12:06:09 PM	1/1/20
8000	Car 33	Roam	12:00:00 AM	1/1/19
8003	Bus 80	Idle	12:00:00 AM	1/1/19
8004	Truck 7	???	12:00:00 AM	1/1/19
8007	Guard 092	Idle	12:00:00 AM	1/1/19
8008	Guard 045	OK	12:00:00 AM	1/1/19
9001	Local Chann		5:34:51 PM	12/9/20

RavTrack Operation
View: Overall System Mouse: Pan Map Zoom 100 Home

System:
Mouse position: 33 14.8557N 116 25.0618W
CH 0 | GPS | OK | Operator: Admin

System Configuration Screens

Rule Edit Screen

Rule Edit

Rules

Name of this rule
No Reports lately

Rule Enabled

Rule applies to:

A single object Object ID 1

A range of objects to Object ID 9999

Rule only applies if this flag is received Vibration

Alert/alarm when the object does this:

Electronic Fence INSIDE FENCE
Fence name

Parameter Monitoring NO REPORTS
GREATER_THAN
1 hours

Distance Monitoring DISTANCE FROM HOME
GREATER_THAN miles

Action to take:

Alert Operator Execute Shell 1
 Play sound Test Sound Execute Shell 2
 Send Email
 Log the rule event when alert triggers.

Save Rule Delete Rule Exit

Properties

Program Operation Alerts Shell Programs Units and Display

System Log

Log activity to disk
 Only moving objects logged 50 ft

Start a new log file:
Never. Use same file at all times.

Store all activity log files in this directory
s: [\\Server1\Eng]

Home Location

Home at my GPS position
 Home at fixed location

Fixed Home Position
Lat. dd mm.mmm Lon. dd mm.mmm
33 8.9000N 117 13.1100W

Center as new Home

Current Map File
NorthCounty_MapLib

Log File Entry Comment
16cm

Save and Exit Quit - No Save

Properties

Program Operation Alerts Shell Programs Units and Display ESRI Data Servers

Object highlight

Highlight object ID with RED background when it triggers a Rule Alert

Clear alerts

Clear Rule Alerts for individual objects upon program start

The .WAV file to play for Rule Alerts

evillaugh.wav
hal, always human error.wav
HeresJohnny.wav
i am your father.wav
jetson space car.wav
makemyday.wav
notify.wav

Test Sound

Digital Input Descriptors

- Input 1
 - Low Door Open
 - High Door Closed
- Input 2
 - Low Siren ON
 - High Siren OFF
- Input 3
 - Low Input 3 is low
 - High Input 3 is high

Save and Exit Quit - No Save

Properties

Program Operation Alerts Shell Programs Units and Display ESRI Data Servers

Distance Units of Measure

Metric (kilometers)
 English (miles)

Map Center

Keep map centered on My GPS location

Icon Label Font

Arial Narrow Change

Size 10

Normal Color Alert Color

Icon Label Offset
0 16

Default Icon for Importing POIs
1-Red

Show POI names with the Icons

Track Dots

Draw Track Dots for all objects
 Make dot color proportional to RSSI
Minimum distance between dots
0 ft

Circles

No circles shown
 Draw circle around center of map
 Draw circle around home location

List Filter Settings

Speed Limit 55 Idling Time (hours) 1
Voltage Limit 11.5

Save and Exit Quit - No Save

Radio Channel Configuration

The screenshot shows the 'System Communications' window with several sections: 'Port 1' through 'Port 6' tabs; 'Enable this port' checked; 'Serial COM Port' with 'Use a serial COM port' checked and 'COM3' selected; 'Network IP Port' with 'TCP/IP Server' unchecked and 'Port Number' set to '53885'; 'Device' set to 'Raveon RV-M7 (38.4k baud)'; and 'Interpret GPS data w/o ID as:' with 'Ignore' selected. 'Save' and 'Exit' buttons are at the bottom.

Tracked Vehicle Information

The screenshot shows the 'Edit Object Information' window. It includes fields for 'ID' (1), 'Base #1' (Base #1), and 'User Group' (Everyone). The 'Alerts' section has 'Clear Alert' and 'Current Alert Codes' buttons, and 'Enabled', 'Displayed on Map', and 'Store reports to the log file' checked. The 'Icon for this object' is '1-Red' and the 'Color of Track Dot' is blue. The 'Last Reported Information' section shows 'Last reception a 11/9/2008 8:20:27 PM 0 (UTC time)' and various location and sensor data. The 'Digital Input Bits Used' section has 'Input 1' and 'Input 2' checked. 'Exit', 'Save', 'Delete', 'Add New', and 'Quit - No Save' buttons are at the bottom.

Load Historical Log Data to Map

The screenshot shows the 'Load Historical Log Data to Map' window. It features a 'Date Range' section with 'From' and 'To' date and time pickers. Below is a 'Comment Filter' text box. The 'ID Filter' section has 'Only load the IDs within this range' checked, with '1' and '9999' in input boxes. The 'Load Log Data For a Single One' section has 'Only load data for this object' unchecked and '1 Base #1' in a dropdown. The 'Action' section has 'Stop Receiving new positions while displaying' unchecked. The 'Status' section is empty. 'Begin' and 'Exit' buttons are at the bottom.

For More Information

For more information about this or any other Raveon product, call in the U.S.A. 1-760-457-1620 or visit us at www.ravtrack.com.

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