

RT3000

Inertial and GPS Measurement System



Quick Installation Guide

Step 1 – Install Software



Insert the CD; double-click on the program:

rtsetup.exe

and follow the instructions given by the installer.



Step 2 – Install RT3000

Mount the RT3000 securely in the car with:

- Connectors to the **rear**,
- GPS connector to the **right**.

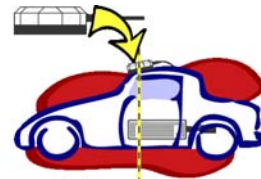


Make sure the RT3000 is **mounted rigidly** and that it **cannot move or rotate** in the car.

Caution: The RT3000 contains fragile components that may break if dropped.

The RT3000 can be mounted in different orientations, see user manual for details.

Step 3 – Fit GPS Antenna



Clip the GPS Antenna on the car roof **directly above** the RT3000.

The Antenna includes a magnetic base for easy mounting.

The position of the Antenna relative to the RT3000 can be changed, see manual for details.

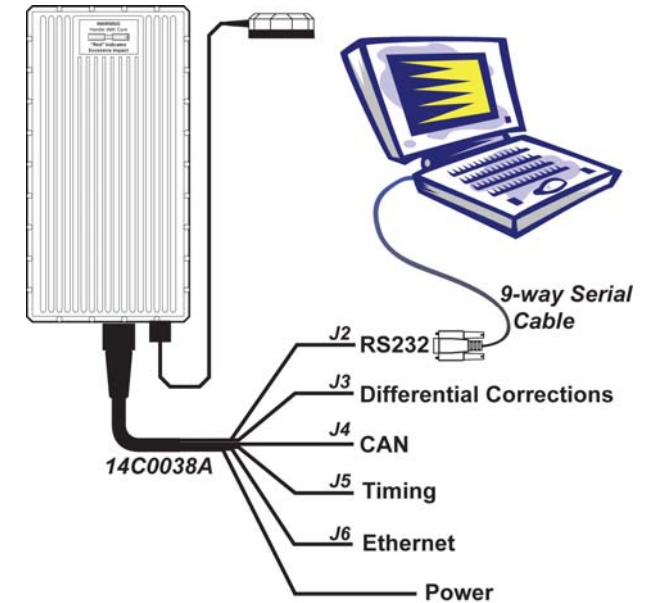
See drawing 14A0007x for the exact position of the RT3000's measurement point.

Note: To get the best performance from your RT3000 system please make sure you read the manual thoroughly.

Step 4 – Connect RT3000

Fit the cables as follows:

- GPS Antenna to the top TNC connector
- 14C0038A to RT3000
- 9-way Female-Female Serial Cable to 14C0038A-J2
- Serial Cable to COM1 of laptop
- 14C0038A to Car Power Supply (9-18V d.c.)



The Ethernet may also be used to connect to the PC. Refer to the manual for details of the Ethernet settings required.

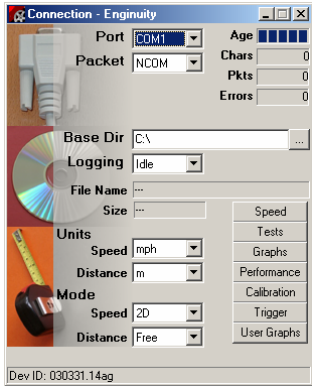
Step 5 - LEDs

The LEDs on the front of the RT3000 show when the RT3000 is ready. **Remain stationary** until the LEDs match the picture.



Go on to Step 6 without waiting for the LEDs. The software shows the same information.

Step 6 – Run Enginity



Run **Enginity** from the Windows **Start** menu.

Configure the *Port*, *Packet* and *Base Dir* fields as shown.

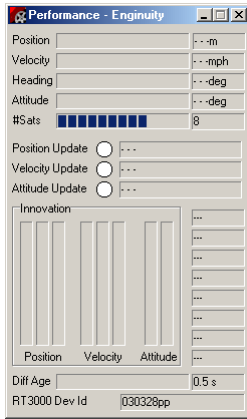
The *Pkts* field will increase if the software is receiving data from the RT3000 correctly.

The buttons on the bottom right open additional windows. Open the Performance window now.

Until the RT3000 initialises the software will only display the number of satellites being tracked.

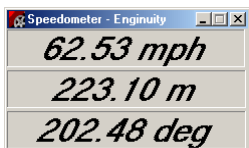
Wait until the *Position Update* and the *Velocity Update* indicators go **Red**. This shows that the GPS card is ready.

Before driving click on the Speed button to open the Speed window.



Step 7 – Initialise RT3000

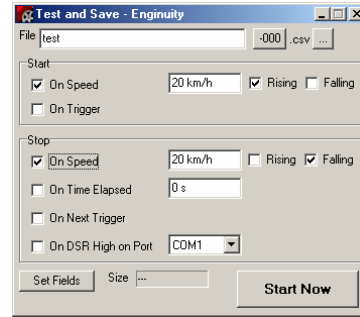
Accelerate forwards in a straight line up to about 30km/h (20mph) and then stop the vehicle.



Now the Speed window shows values of Speed, Distance and Heading.

Note: It takes 15 minutes before the RT3000 reaches full specification.

Step 8 – Run a Test

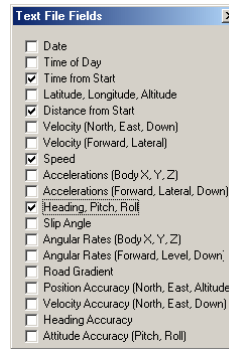


Open the Tests window by clicking on the Tests button.

Configure the window as shown on the left.

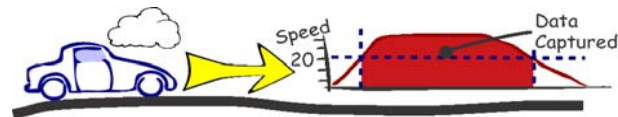
The speeds set in the 'Test and Save' window are used to trigger the start and end of the measurements.

Next click on the Set Fields button. Select the fields shown on the right. These will be the fields that are written to the file during the test.



Drive forward, increasing speed up to 50 km/h and then stop the vehicle.

The software will start recording into file when the speed exceeds 20km/h and will stop recording when the speed falls below 20km/h.



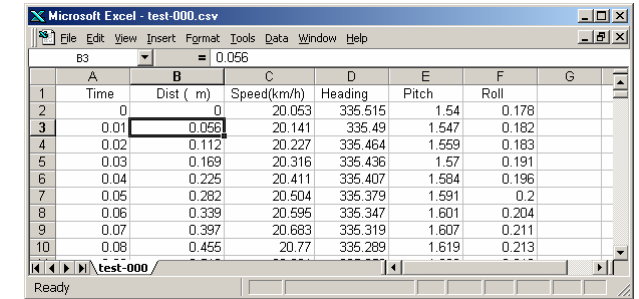
The file will be saved as:

C:\test-000.csv

and can be loaded and plotted using Microsoft Excel or other graphical packages.

Step 9 – View Test using Excel

If you have Microsoft Excel installed on your computer then you can double-click the test file to load it.



Graphs can be plotted in the usual way. For example, during a sine test the speed, pitch, roll and heading can be plotted, as shown below.

