Introduction

The objective of this test is to perform acceleration tests to determine 0-60, 0-100MPH and 0-100m data using the Report Generator software.

Equipment used

Caterham Superlight R500.
1 x VBOXIII (VBOX Lite or VBOXIIIDCF also applicable)
1 x Cigar lighter adaptor, RLVBCAB10
1 x GPS Magnetic Aerial, RLVBACS050
1 x 32Mb Compact Flash Card, RLVBACS005
1 x PC running VBOX software V8.2.2 bld 17and Report Generator 5.9

Test Procedure

Place the magnetic GPS Aerial on the roof of the test vehicle and run the cable into the vehicle through the door seal. Connect the aerial cable to the VBOXIII ensuring the connection is free from dirt. Connect power to the VBOXIII using the cigar lighter adapter or a battery pack.

Insert an empty compact flash card into the compact flash card slot in the VBOXIII. For the test, the VBOX should be left until the green 'ST' light on the VBOX indicates that at least 6 satellites are in lock.

For this test, the vehicle should be accelerated hard to just over 100MPH before braking to zero. In this example, the test is repeated three times.

Viewing the Data

Remove the compact flash card from the VBOX and insert into the PCMCIA card reader in the laptop. Run the VBOX software and load the file from the compact flash card by clicking 'Load' from the drop down 'File' menu. Open the graph facility of the VBOX software by clicking 'Graph' in order to view the data in a velocity versus time window. This should show that data has been correctly logged in all three acceleration tests. See the graph below also showing longitudinal acceleration in green.
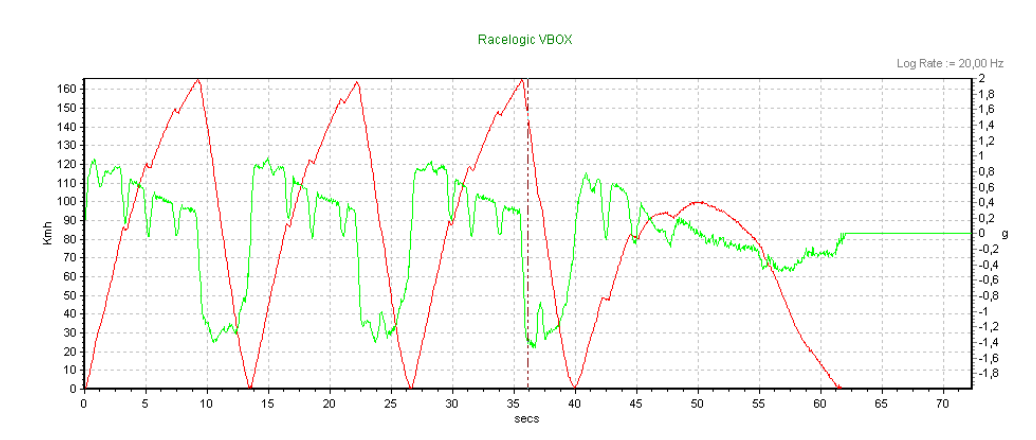
The Report Generator - Producing a table of results
Run the Report Generator software and load the log file using the 'Load' option from the drop down 'File' menu.

Set the column headings to the following: **Run Num**, **Time**, **Dist**, **Speed**, **LongACC(g)** (average between test lines) and **Description**.

Open the test setup page. In the options page set the units to MPH, meters and g. Enable the 'continuous testing' and 'hide test resets on over/under speed' options.

In the Start Conditions select 'speed' , enter 0 for speed and select the option 'either'.

In the End Conditions select 'speed' , enter 100 for speed and select the option 'increasing'.

In the Line conditions enter 60 Mph in the section titled 'Additional lines will be added at the following speeds'.

In the section titled 'Additional lines will be added at the following distances' enter 100m

Close the test setup window and select the 'scan' button. The report generator should now produce the following table of results.

Results / Conclusion
The table below shows the results from the three acceleration runs. The second row of each run shows the data at the point the vehicle reaches 60mph. The third row is the data when the vehicle reaches 100M and the fourth row is the data when the vehicle reaches 100Mph.

Run num	Time(s)	Dist(m)	Speed(mph)	Longacc(g)	Description
1	0	0	0	0,23	Speed start
1	3,87	55,82	60	0,71	Speed line
1	5,3	100	73,5	0,47	Distance line
1	8,7	234,41	100	0,35	Speed end
2	0	0	0	0,22	Speed start
2	3,58	52,5	60	0,76	Speed line
2	5,1	100	74,8	0,48	Distance line
2	8,34	229,62	100	0,35	Speed end
3	0	0	0	0,24	Speed start
3	3,68	53,43	60	0,74	Speed line
3	5,19	100	74,4	0,45	Distance line
3	8,57	234,27	100	0,35	Speed end