Race Studio Analysis

RSA is introducing a new management of software settings, in which there will be two different and separated places where the RSA saves (1) DRK data that are displayed and (2) how data must be represented in every software view.

DRK related data will be saved with drk files, views related data will be saved in the software profiles.

Race Studio Analysis is able to prompt to users the last used views. For example, when you open a drk file and use measure graph and channels report and then you close the test; whenever you'll be opening a new drk file, measure graph and channels report will be automatically opened. The same will happen if you close Race Studio Analysis, open it again and open a drk file.

Profiles Settings

Differently from what happened before, all views settings are now saved into the profiles, the aim is to let the user open the software and have it exactly how it was before closing it. The aim is also to have the software use automatically, for example, engine data when engine data is needed instead of defaulting to a wrong channel; we can do it thanks to the introduction of function and position.

As we're about to describe, most settings like measure use and placement are different for every view, so you'll be able for example to have some channels potted on the measure graph and some others plotted on the histogram view. For further example, you'll be able to have overlapped XY view and tiled measure graph.

There are things in common among views, like for example the shown laps and measures colors.

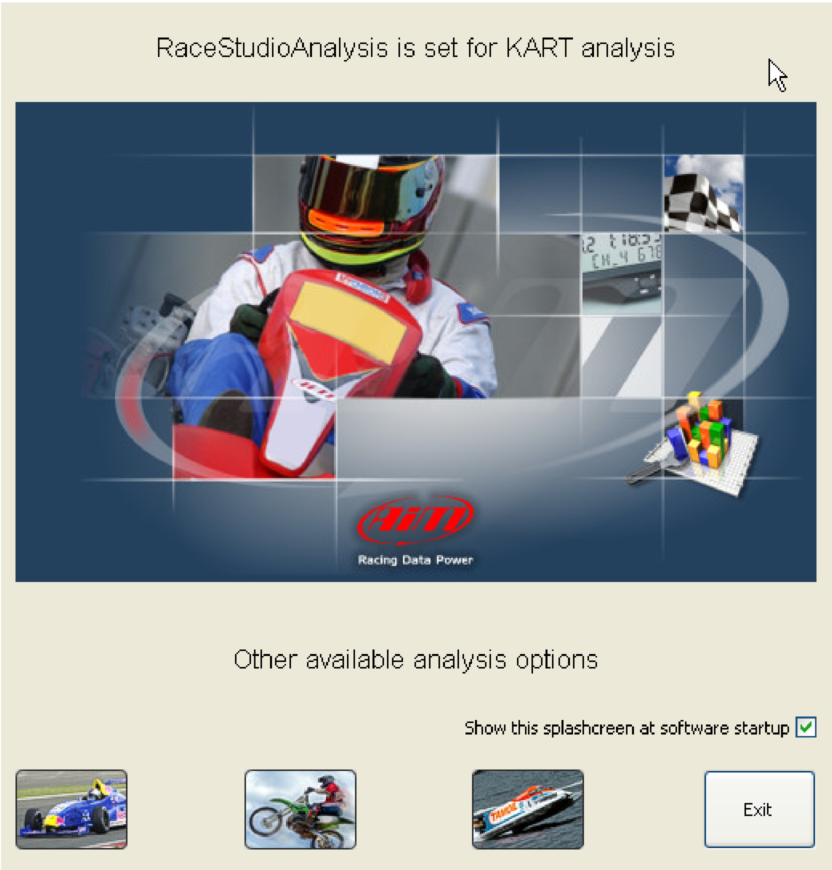
You have to pay attention to a peculiar aspect of measure top and bottom of scale: it is managed in common among views and it is separated between vehicle types. This way you'll be able to analyze some go-kart data and use a top speed value and then move to car analysis and have a higher top speed value. Measure top and bottom of scale are always separated between different measure units. This way you'll be able to look at [AFR] lambda data (for a channel named lambda and using lambda function and right bank position) and use a top value, and then move to another drk with [λ] lambda data (for a channel with the same features as before) and use a different top value without affecting previous settings and without affecting the software capability to plot the data you need.

Splash screen

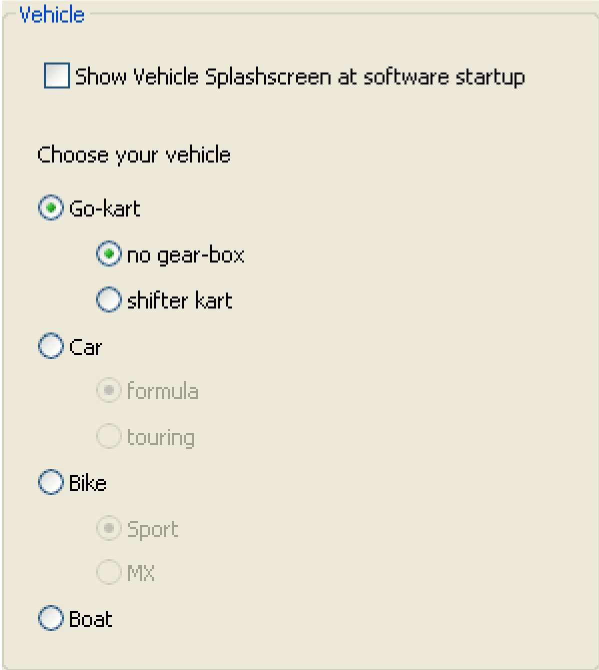
Given that the vehicle type settings are so important for measure top and bottom of scale, RSA starts showing a splash screen, which remains visible for 4 seconds. The logic in prompting this view is both to recall you which are the settings of the software and to let you quickly access to the window in which you can modify those.

The main part of the splashscreen is showing you the vehicle type currently chosen. If you click on this splash screen, in any place, it disappears. Instead, if you click upon the image of any of the small pictures representing other kinds of vehicles, you are shown the usual dialog in which you can change the vehicle type.

You can also choose whether to show or not the splashscreen at next startup.

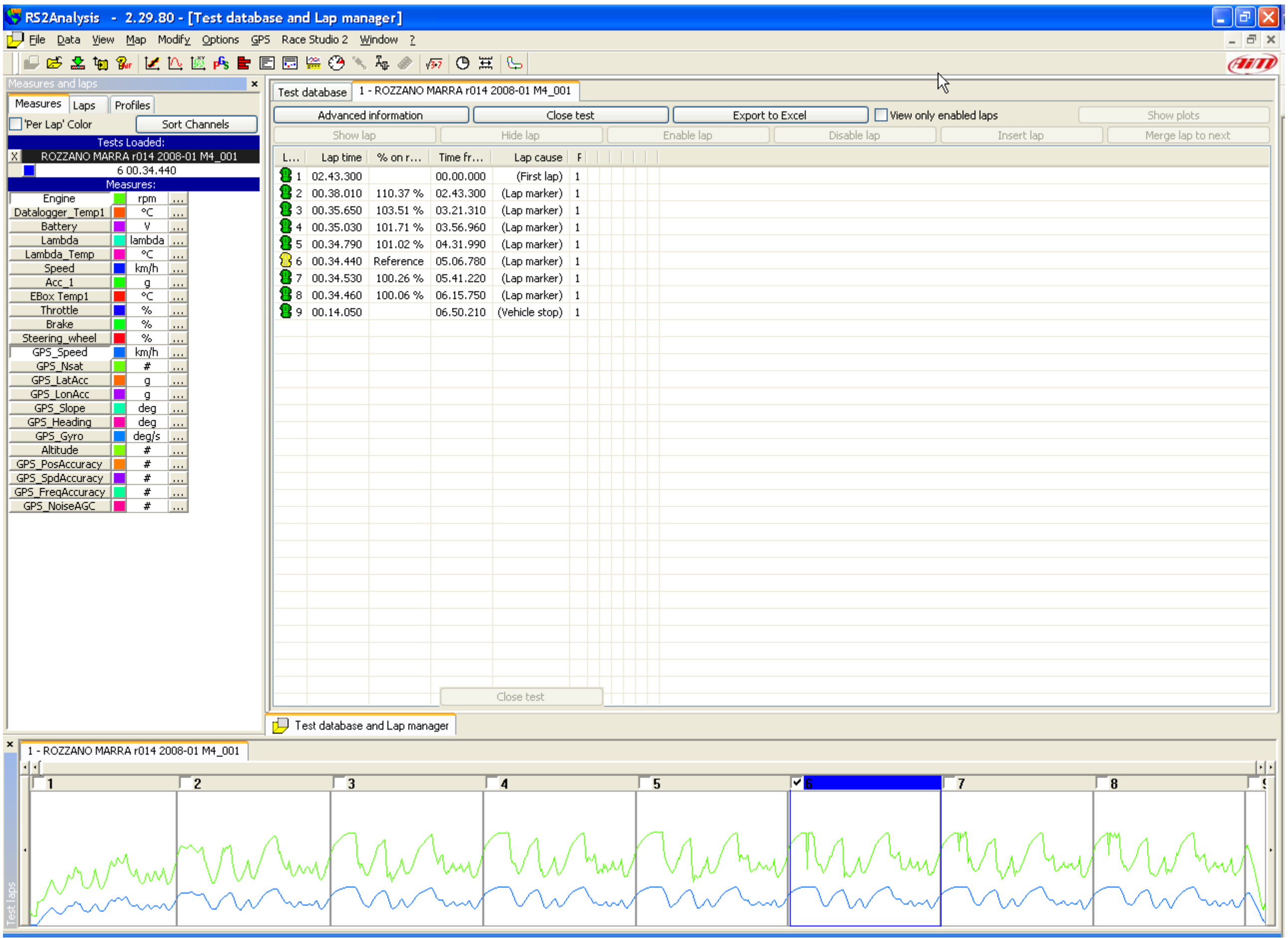


If you choose not to flash the splashscreen at startup it won't be shown any more, unless you reverse this behaviour through the vehicle type settings window, shown down here.



Test database and Lap Manager

The main software screen unveils some new details of the measures toolbar on the left.

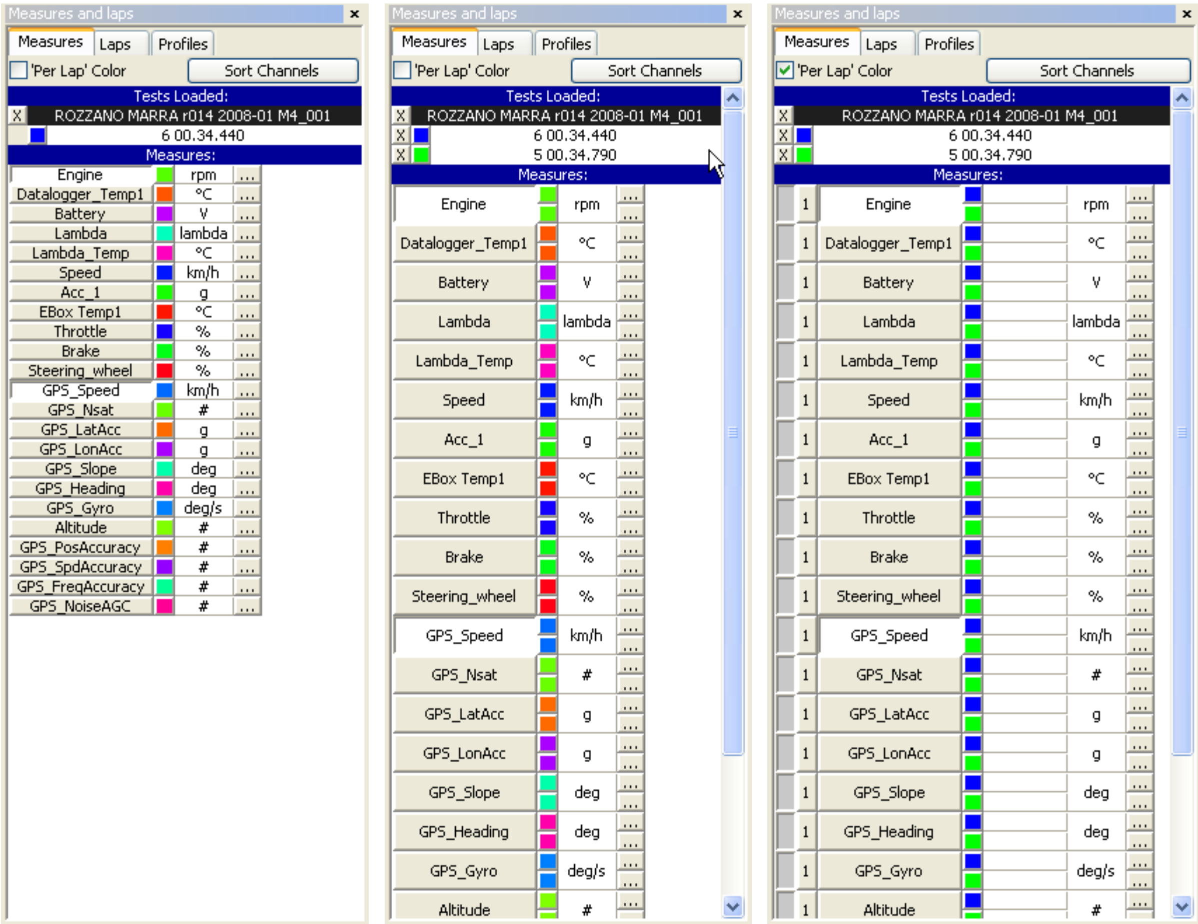


Measures Toolbar

The main difference from the previous versions of RSA is that the list grows vertically instead than horizontally, this means that when two or more laps of the same drk file are shown, the information of different laps are vertically grouped for every channel, if more than one drk file is open, channels that have the same name in more than one test are grouped together with the same logic.

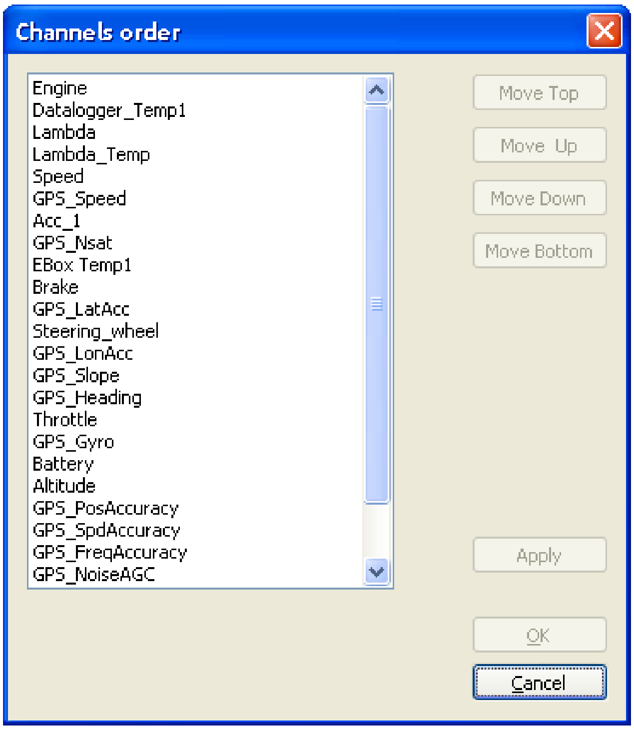
Loaded drk files and shown laps are shown at the top of the list and an intuitive '*x*' button lets you close them. The color cell lets you select the color you want for every object: test, lap or measure.

The '*Per Lap Color*' checkbox lets you decide whether to have the same color used for every measure of the same lap.



A new button “Sort channels” allows you to choose channels order: for example, it may be comfortable to have at the top of the list the measures shown for a certain view.

Sort Channels



This new window allows the user to modify the order in which measures are shown for a given view.

You can swap upward (*Move Up*) or downward (*Move Down*) two consecutive measures. Otherwise, you can move a measure to the top of the list (*Move Top*), or to the bottom (*Move Bottom*).

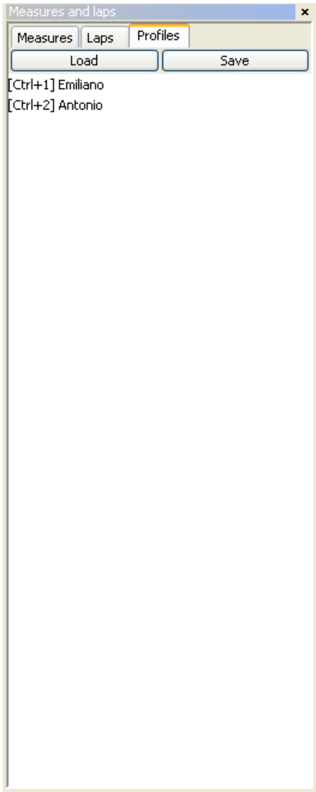
Profiles

You can save the actual settings to a profile, giving them a name. This will let you load the actual software status 'as is' when you need it back. Saved profiles will be shown in the *Profiles* tab inside the *Measures Toolbar*.

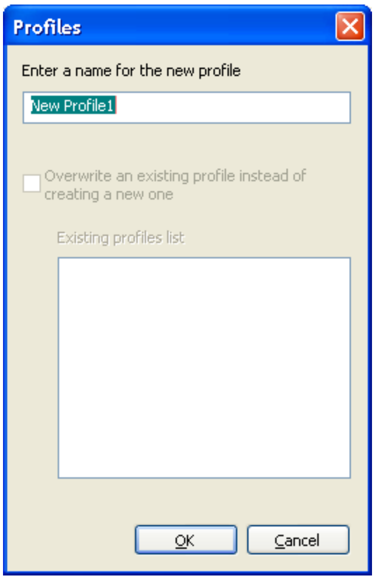
You can load the settings contained in a profile just with a doubleclick on it or with the quick keyboard shortcuts shown together with the name.

While loading a profile actual settings are lost if you haven't saved them before.

We describe the functionalities of *Load* and *Save* buttons in what follows.



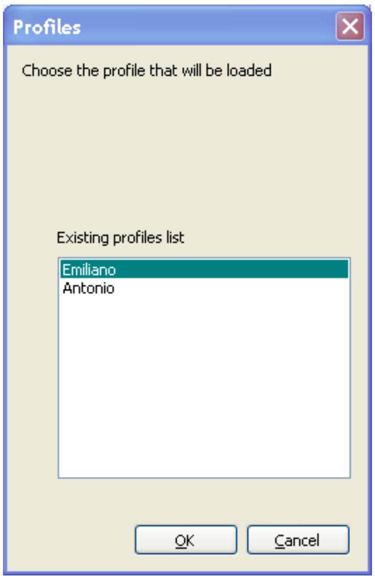
Save Profile



In this screenshot we are displaying the *Save Profile* window, once it is prompted, you only have to insert a new name and then click OK.

You can eventually overwrite an eventually existing profile.

Load Profile



The Load button in the profiles list prompts you the aside window, in which you just have to choose a profile name and then click OK.

Import Profile

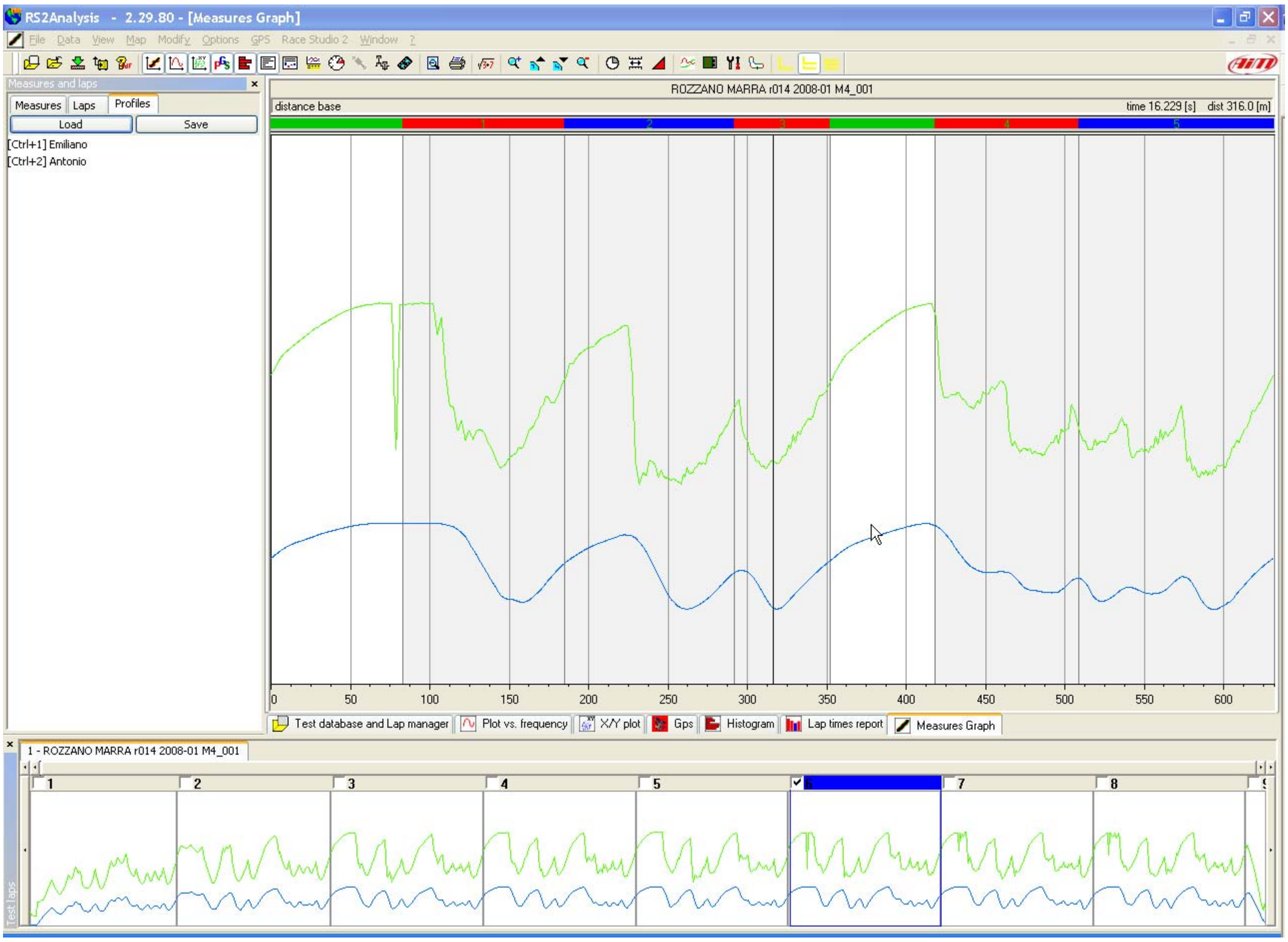
You can use either the settings of another person or the settings you created on another PC: you just need to import his profile by using the menu *File->Import Profile*. You are asked to restart Race Studio Analysis in order to be able to use the new settings. We suggest you to save a backup copy of your profile (simply exporting it to a safe path) before importing a new one.

Export Profile

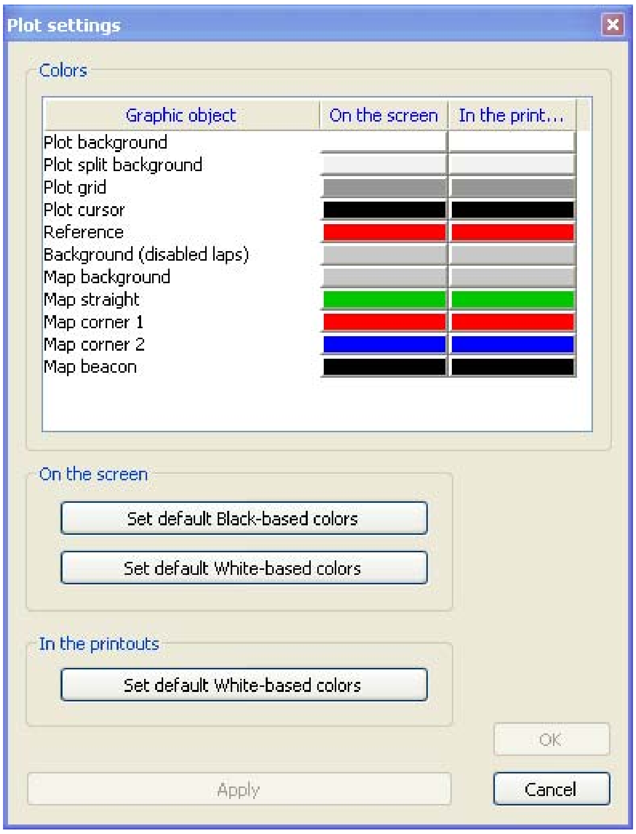
You can let another person use your settings: you just need to export your profile (*File->Export Profile*).

Loading a DRK Test

All profiles windows are automatically loaded, as they were present for the last test that was opened. For example, if Measure Graph was opened before the last test was closed, now it is opened again.



Plot Settings



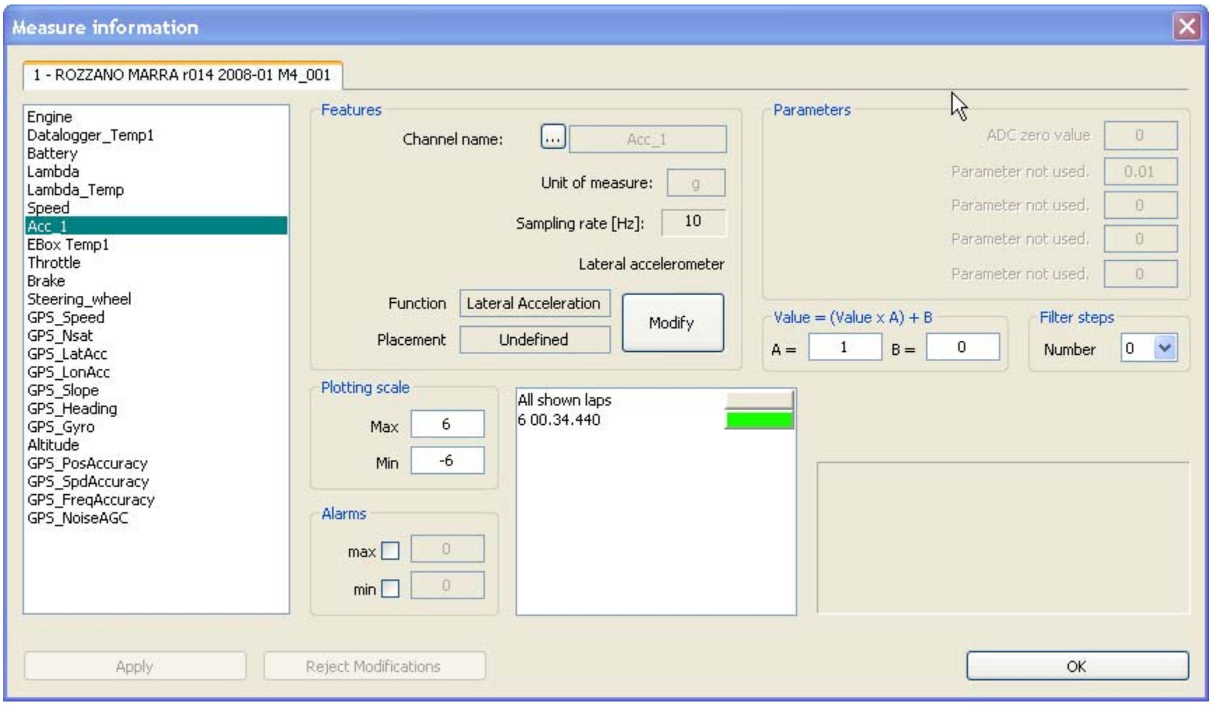
The new RSA lets you use two different colors settings for the screen and for the printouts, this is useful whenever you want to use the black background for the screens. The settings can be accessed through the window shown in the next picture.

You can choose individually every color of the objects that are plotted into the views clicking on the color cell.

You can get the default settings for the screens or for the printouts through specific buttons, for the screen the software proposes you a white default and a black default, for the printouts there is only the white default.

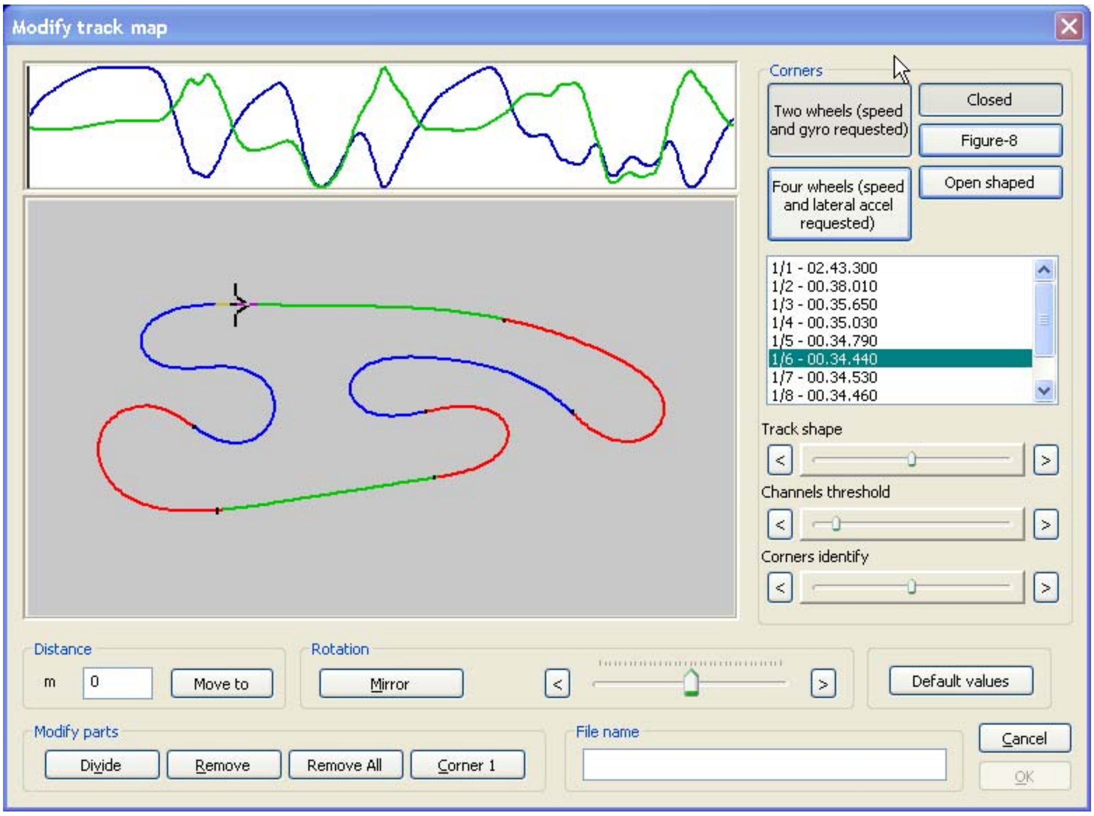
Measure Settings

The Measure Settings Window has been modified in order to separate the parts that are logically different. At the left side you'll se the available measures list, in the upper part you'll find all the settings that will be saved into the drk file, in the lower part all the other settings that will be saved into the profile.



Map Computing

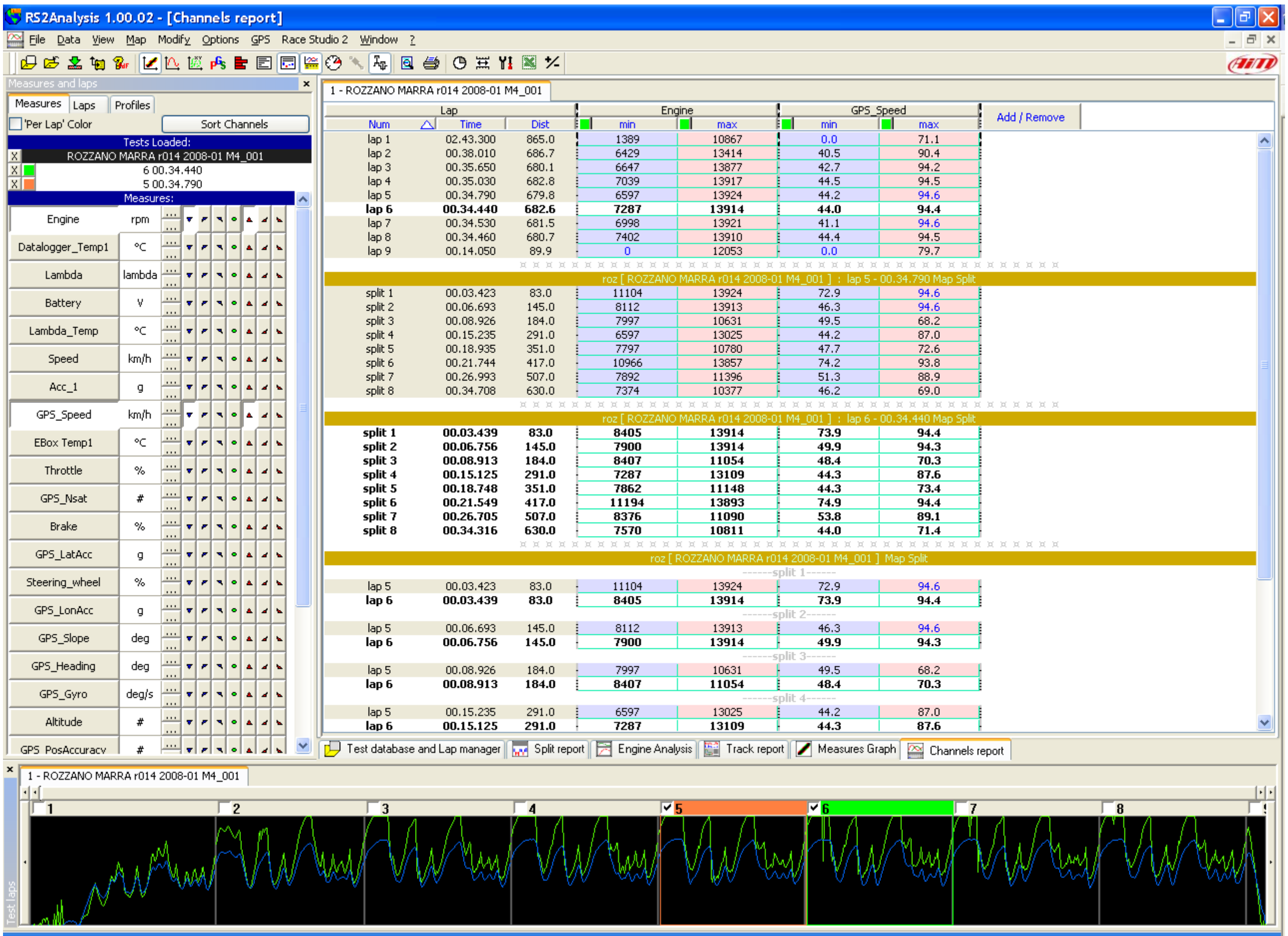
The map computing window has been modified to add (in its upper part) the plot of the traces of the channels used to compute the map. This will allow a better way to choose the points in which to place the split beacons.



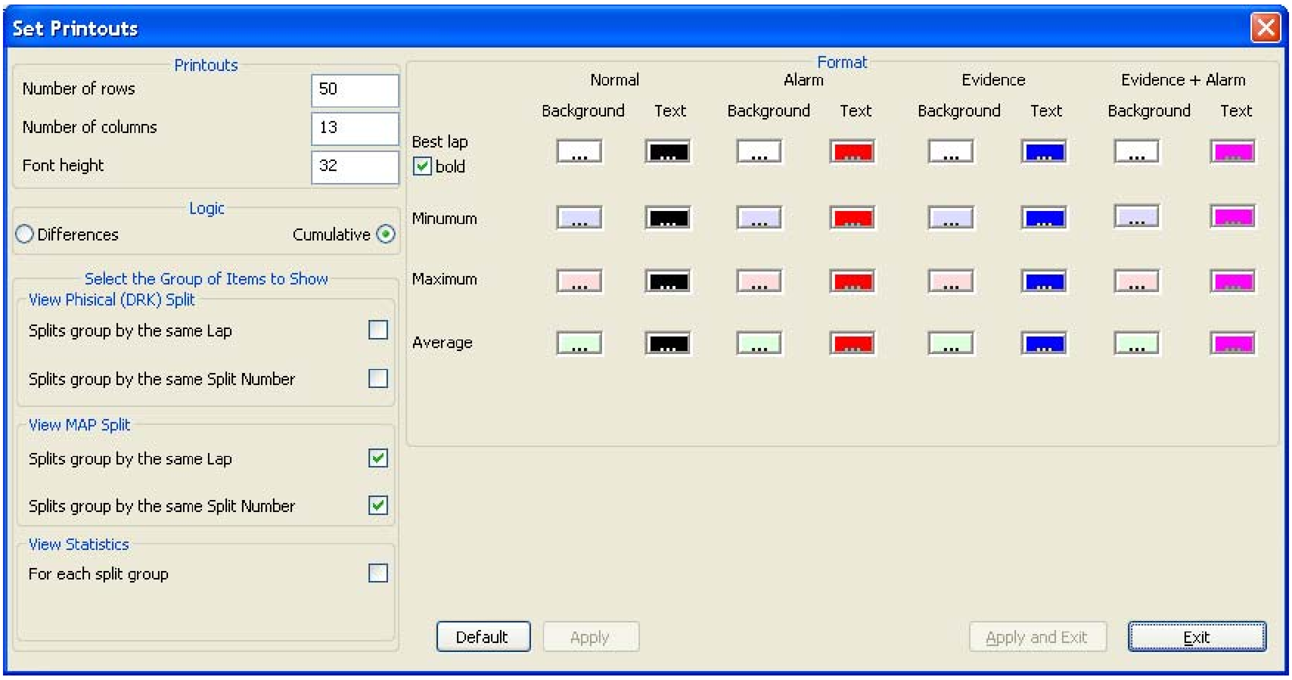
Channels Report

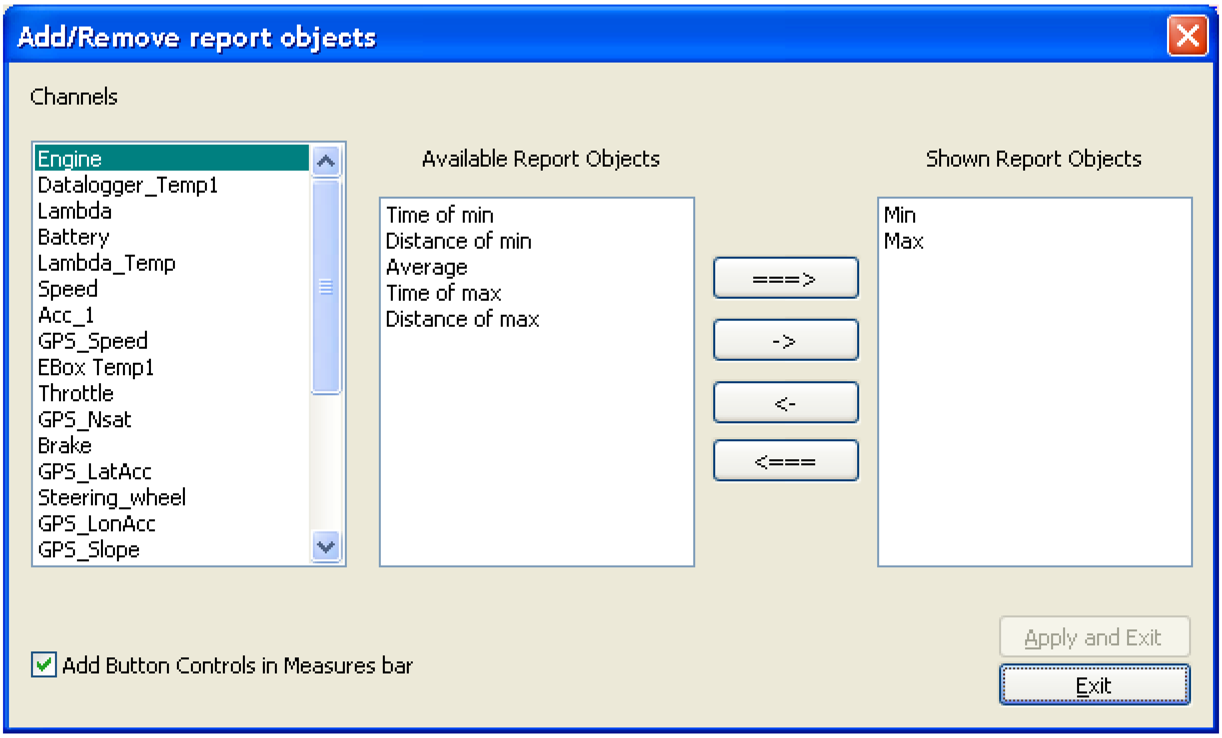
The entire view has been rewritten. In the left part, close to channels names you can quickly select minimum, maximum and all other values for every channel. In the right part you have the classic channels report organized lap by lap, where the table can be sort according to single column values just clicking the column header.

The table implements also the report split by split. The split analysis is done only for the laps that are chosen in the bottom bar.



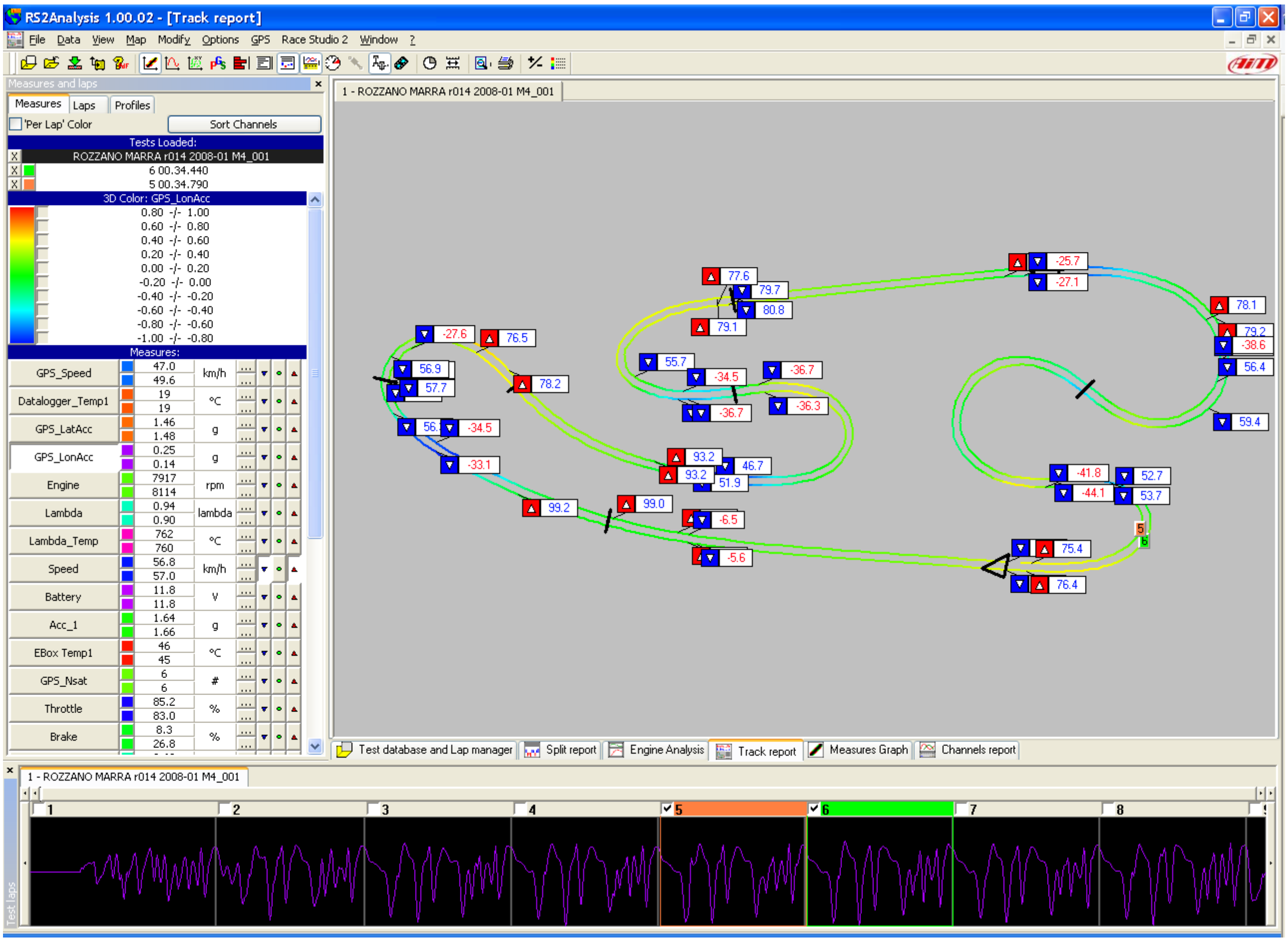
All new functionalities can be accessed through the new configuration dialogs: in what follows the first dialog is for the view layout, while the second one is to be used for choosing which channels values must be shown.


Set Printouts
Printouts
Number of rows
50
Number of columns
13
Font height
32
Logic
Differences
Cumulative
Select the Group of Items to Show
View Phisical (DRK) Split
Splits group by the same Lap
Splits group by the same Split Number
View MAP Split
Splits group by the same Lap
Splits group by the same Split Number
View Statistics
For each split group
Format
Normal
Alarm
Evidence
Evidence + Alarm
Background
Text
Best lap
bold
Minumum
Maximum
Average
Default
Apply
Apply and Exit
Exit


Add/Remove report objects
Channels
Engine
Datalogger_Temp1
Lambda
Battery
Lambda_Temp
Speed
Acc_1
GPS_Speed
EBox Temp1
Throttle
GPS_Nsat
Brake
GPS_LatAcc
Steering_wheel
GPS_LonAcc
GPS_Slope
Available Report Objects
Time of min
Distance of min
Average
Time of max
Distance of max
===>
->
<-
<===
Shown Report Objects
Min
Max
Add Button Controls in Measures bar
Apply and Exit
Exit

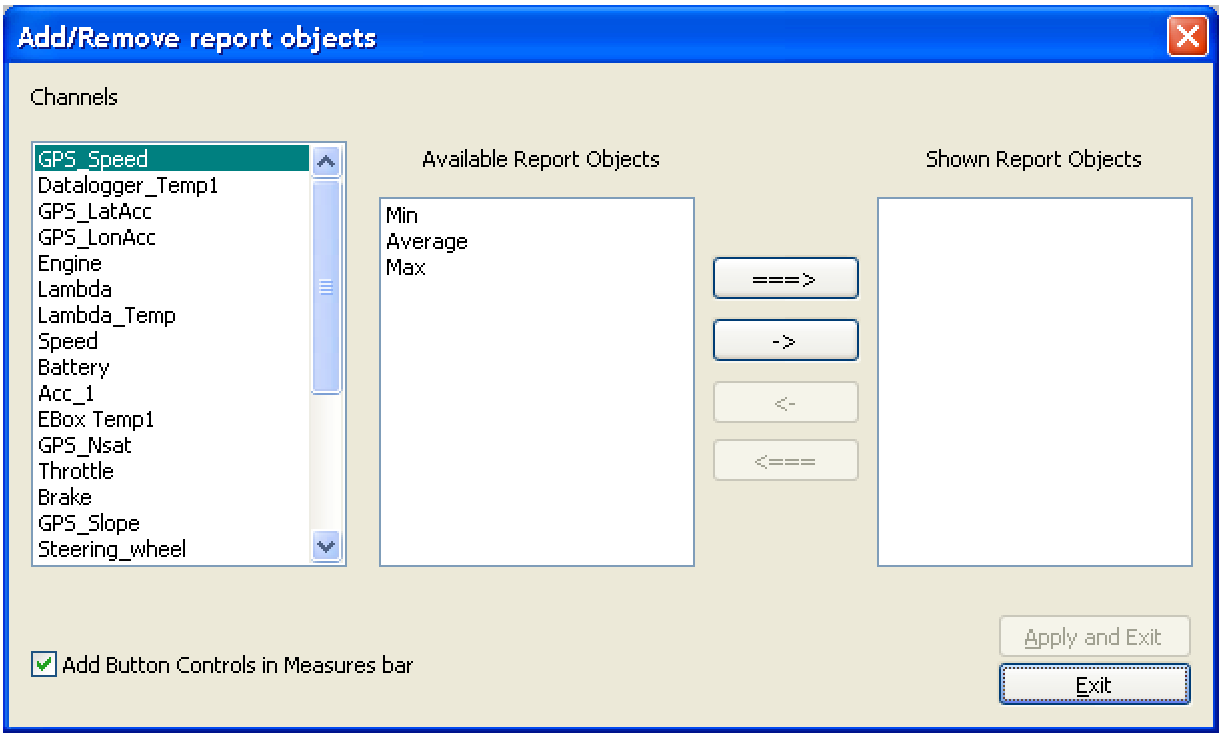
Track report

The entire view has been reimplemented. It bases now on map splits to draw some small report flags on the screen. Flags are available for maximum values, as well as minimum and average values. Report flags are shown for the laps chosen in the bottom bar and for the report objects selected in the left measure bar or through the configuration dialog shown in what follows.



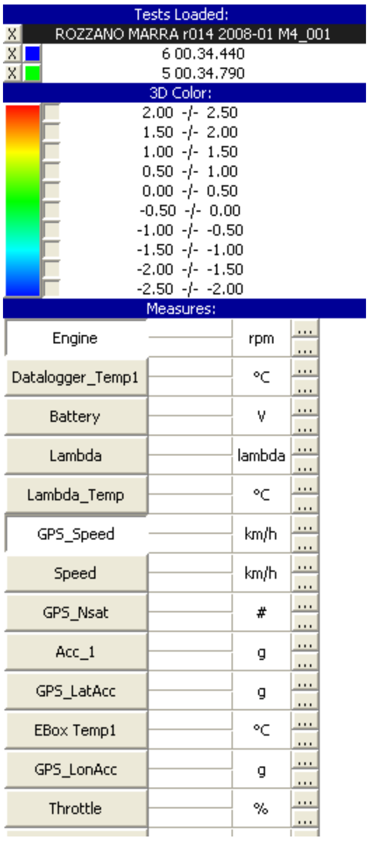
The lines represent the chosen laps over a map shape. This line is drawn using the color as a function of a channel, just like the usual GPS view.

Racing Data Power

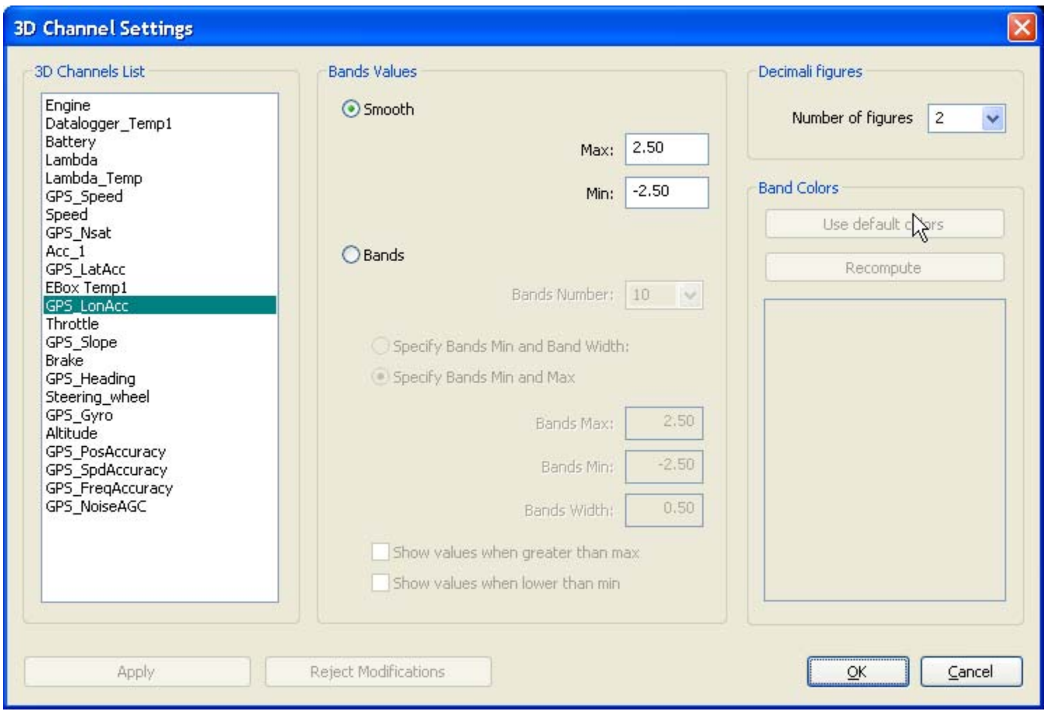


GPS View

The main new feature of this view is what shown in the Measure Toolbar, in its upper part there is a representation of what configured as 3D color channel.

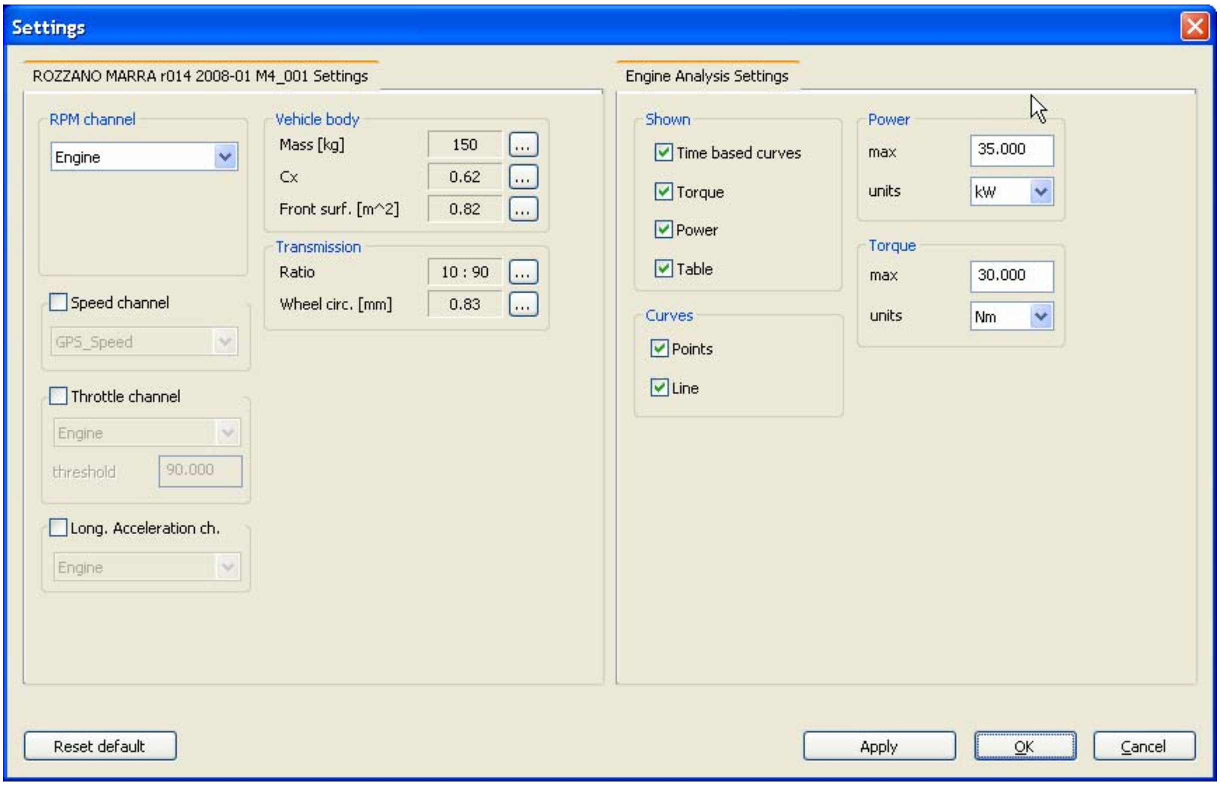


The window used to set the 3d channel has been modified in what shown in the next screenshot. As before a channel can be shown using a smooth color or bands.



Engine Analysis View

The new feature introduced here is the settings dialog window. It is divided in two different parts: on the left all the settings bound to the drk file, on the right all the settings related to the view.



Suspension Analysis View

As for the Engine Analysis, the new feature introduced here is the settings dialog window. It is divided in two different parts: on the left all the settings bound to the drk file, on the right all the settings related to the view.