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Før Analyse program kan bruges, er det vigtigt det er installeret, og konfigureret efter retningslinjer.

Efter installation på PC, læses System Variabel fil ind i program, og du konfigurerer alle parametre. Samt kontrol at de er sat rigtigt op.

Derefter tjekkes RT Analyse program viser korrekt hp, ved at load Reference_Run. Se dokumentation for tjek med Reference_Run

Hvis man har Analyse program åben med et Run, og vil se et nyt Run, så vælg fane, Data, Clear everything. før åben nyt Run.

Setup, marker filer etc, hentes på ytcc.dk

Installer Race Technology program.

Download nyeste version 8.x af RT program fra Race-Technology.com, og installer på computer.

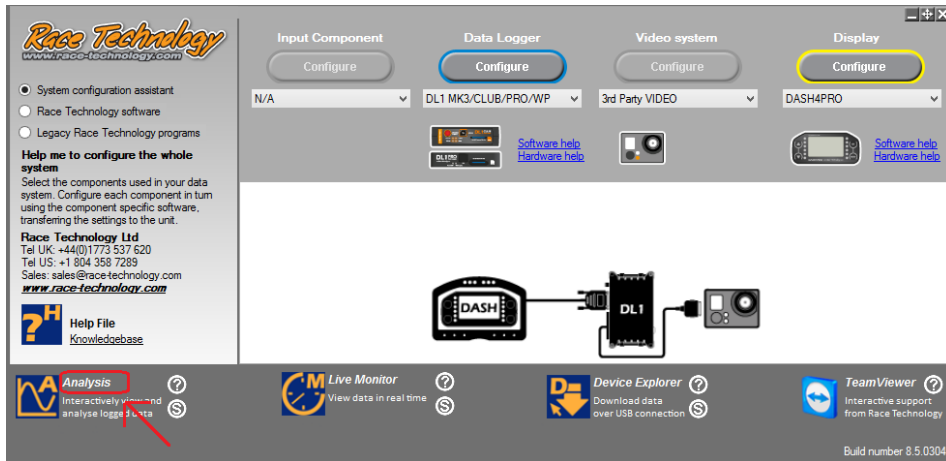
Start RT Analyse program, og indlæs evt. et Layout fra Layout fil. (Detailslayout.Lay)

Load variable information, fra fil. (Setup_RT.Var)

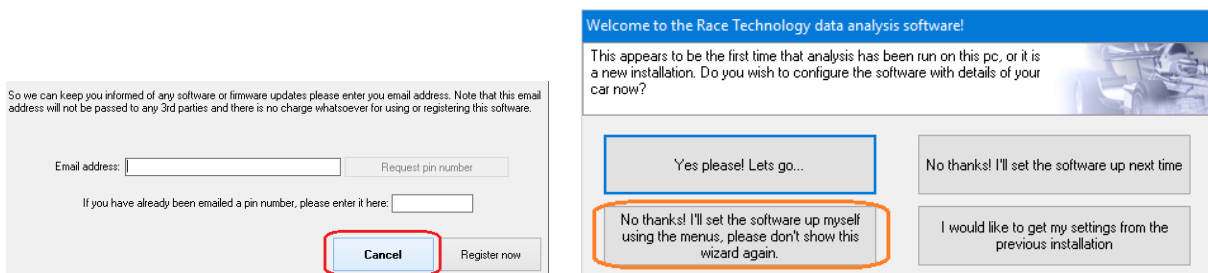
Kontroller variabler er læst ind.

Konfigurer parametre / variabler efter vejledning.

Start datalogger Analyse program.

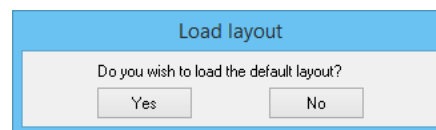
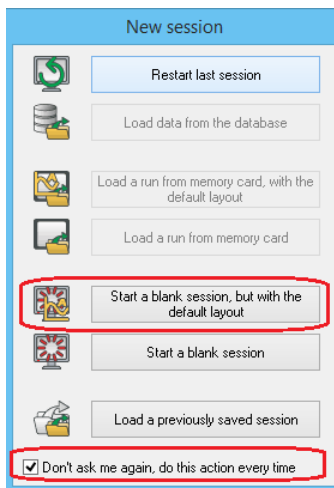


Tryk på Analysis.



Vælg Skip / Cancel til at registrere.

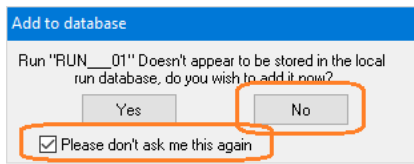
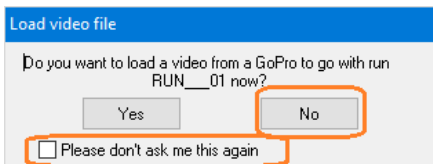
Vælg : No thanks....



Start a blank session, but with the default layout,

Hvis du bliver spurgt, vælg default layout.

og sæt flueben, for ikke at blive spurgt hver gang Analysis startes.

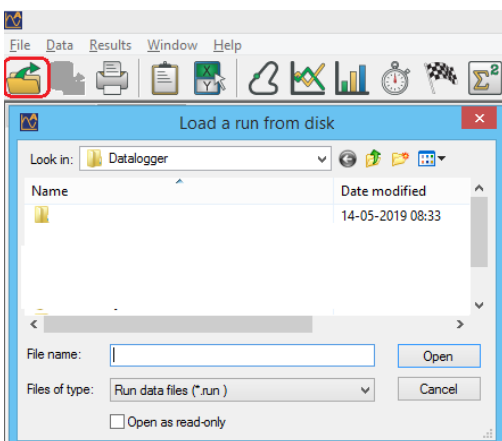


Sæt altid flueben, og vælg No til disse pops.

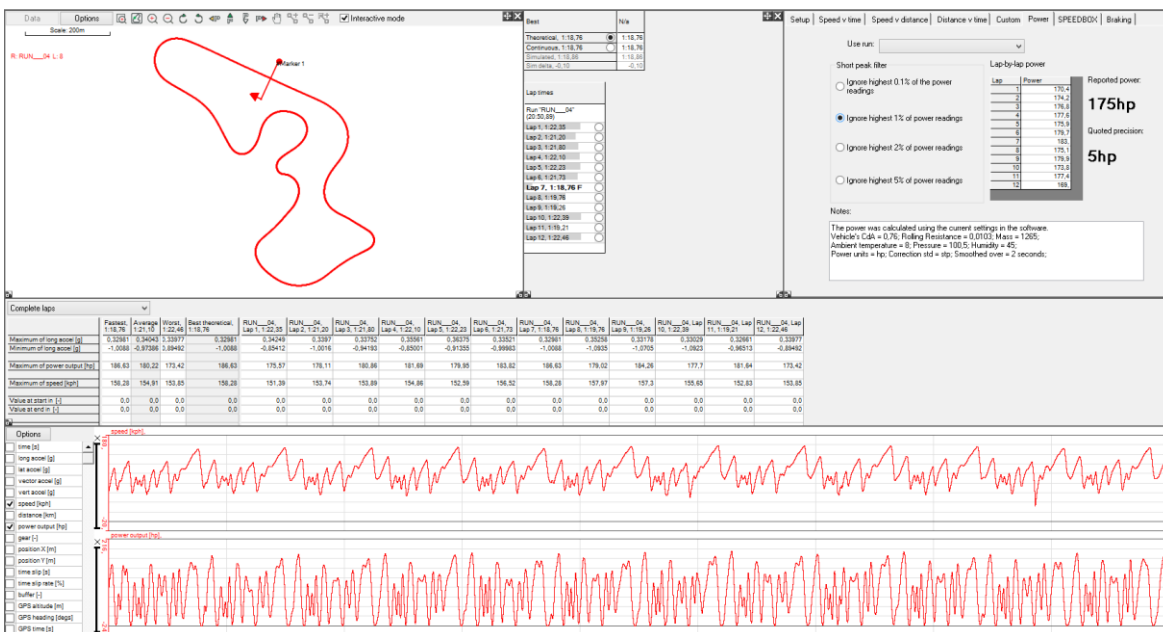
Indlæs en Run file.

Hvis du allerede har læst en Run ind i Analyse, så vælg fane, Data, Clear everything.

Tryk på Åben File icon.



Find det Run som du vil se data for, og Open.



Ovenstående eksempel, Run fra Jyllandsringen

Load Layout file.

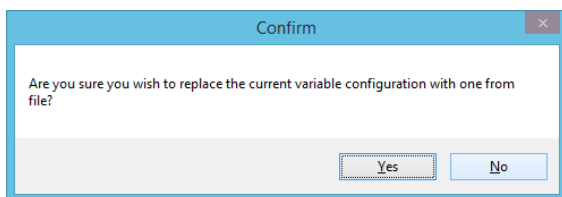
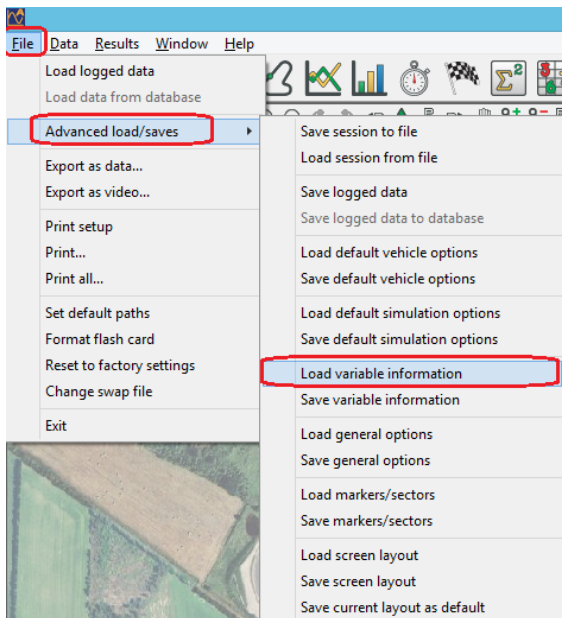
Vælg fane, File, Advanced load/saves, Load Screen layout.

Find filen DetailsLayout.Lay, og læs den ind.

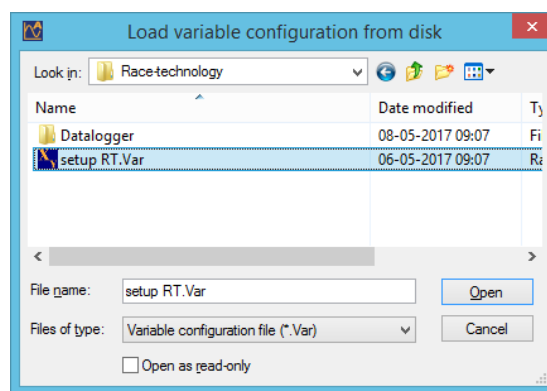
Derefter gem layout som default layout.

Vælg fane, File, Advanced load/saves, Save current layout as default.

Load variables file, som leveret af datalogger kontrollant.

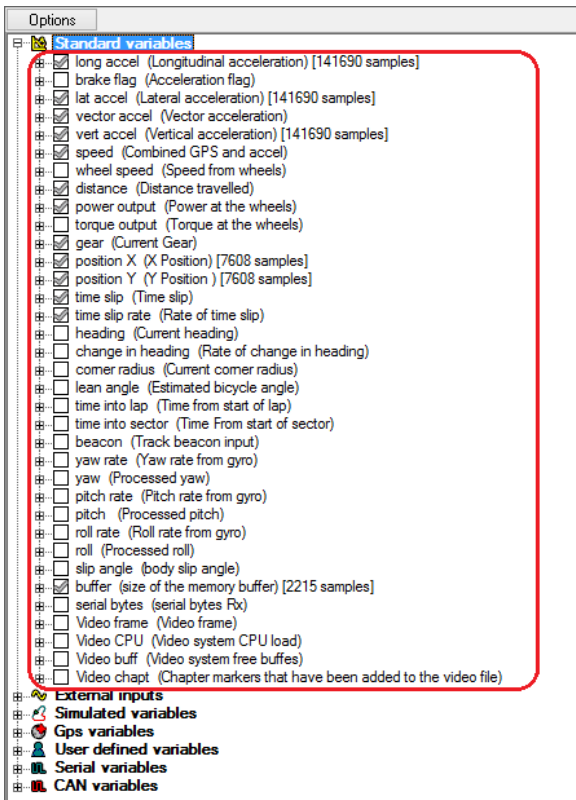
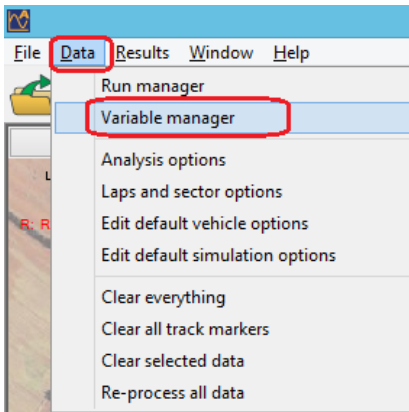


Tryk Yes



Find variable file, og Open den.

Check om variables file er læst ind i program.



Hvis IKKE alle flueben er sat, så har du indlæst file.

BEMÆRK: Det er dit eget ansvar at have indlæst rigtig file, og ikke manipuleret med variabler. Hvis du er i tvivl, Reset RT Analyse program til default settings, og start konfigurer forfra, eller installer RT program på anden computer og sammenlign data.

Tjek variable indstillinger.

Sammenlign din PC har samme settings som nedenstående:

The image shows a screenshot of a software interface with a tree view of variable settings. The tree is organized into two main columns. The left column is titled 'Standard variables' and contains the following variables and their settings:

- long accel (Longitudinal acceleration)
 - Advanced options
 - Filtering : none
 - Calculus : none
 - Maximum rate of change: none set
 - Interpolation type: No interpolation
 - Units: [g]
 - sample rate (100Hz)
 - Variable name: long accel
 - Minimum: none set
 - Maximum: none set
 - Smoothed over: 0,3 seconds
- brake flag (Acceleration flag)
- lat accel (Lateral acceleration)
 - Advanced options
 - Filtering : none
 - Calculus : none
 - Maximum rate of change: none set
 - Interpolation type: No interpolation
 - Units: [g]
 - sample rate (100Hz)
 - Variable name: lat accel
 - Minimum: none set
 - Maximum: none set
 - Smoothed over: 0,3 seconds
- vector accel (Vector acceleration)
 - Advanced options
 - Filtering : none
 - Calculus : none
 - Maximum rate of change: none set
 - Interpolation type: No interpolation
 - Units: [g]
 - sample rate (100Hz)
 - Variable name: vector accel
 - Minimum: none set
 - Maximum: none set
 - Smoothed over: 0,3 seconds
- vert accel (Vertical acceleration)
 - Advanced options
 - Filtering : none
 - Calculus : none
 - Maximum rate of change: none set
 - Interpolation type: No interpolation
 - Units: [g]
 - sample rate (100Hz)
 - Variable name: vert accel
 - Minimum: none set
 - Maximum: none set
 - Smoothed over: none set
- speed (Combined GPS and accel)

The right column contains the following variables and their settings:

- speed (Combined GPS and accel)
 - Advanced options
 - Units: [kph]
 - sample rate (100Hz)
 - Variable name: speed
 - Minimum: none set
 - Maximum: none set
 - Smoothed over: none set
- wheel speed (Speed from wheels)
- distance (Distance travelled)
 - Advanced options
 - Units: [km]
 - sample rate (100Hz)
 - Variable name: distance
 - Minimum: none set
 - Maximum: none set
 - Smoothed over: none set
- power output (Power at the wheels)
 - Advanced options
 - Units: [hp]
 - sample rate (100Hz)
 - Correction standard
 - Variable name: power output
 - Minimum: none set
 - Maximum: none set
 - Smoothed over: 2 seconds
- torque output (Torque at the wheels)
- gear (Current Gear)
 - Advanced options
 - Units: [-]
 - sample rate (100Hz)
 - Variable name: gear
 - Minimum: none set
 - Maximum: none set
 - Smoothed over: none set
- position X (X Position) [6223 samples]

- position X (X Position)
 - Advanced options
 - Filtering : none
 - Calculus : none
 - Maximum rate of change: none set
 - Interpolation type: No interpolation
 - Units: [m]
 - sample rate (100Hz)
 - Variable name: position X
 - Minimum: none set
 - Maximum: none set
 - Smoothed over: none set
- position Y (Y Position)
 - Advanced options
 - Filtering : none
 - Calculus : none
 - Maximum rate of change: none set
 - Interpolation type: No interpolation
 - Units: [m]
 - sample rate (100Hz)
 - Variable name: position Y
 - Minimum: none set
 - Maximum: none set
 - Smoothed over: none set
- time slip (Time slip)
 - Advanced options
 - Filtering : none
 - Calculus : none
 - Maximum rate of change: none set
 - Interpolation type: No interpolation
 - Units: [s]
 - sample rate (100Hz)
 - Variable name: time slip
 - Minimum: none set
 - Maximum: none set
 - Smoothed over: none set
- time slip rate (Rate of time slip)
 - Advanced options
 - Filtering : none
 - Calculus : none
 - Maximum rate of change: none set
 - Interpolation type: No interpolation
 - Units: [%]
 - sample rate (100Hz)
 - Variable name: time slip rate
 - Minimum: none set
 - Maximum: none set
 - Smoothed over: none set
 - heading (Current heading)
 - change in heading (Rate of change in heading)
 - corner radius (Current corner radius)
 - lean angle (Estimated bicycle angle)
 - time into lap (Time from start of lap)
 - time into sector (Time From start of sector)
 - beacon (Track beacon input)
 - yaw rate (Yaw rate from gyro)
 - yaw (Processed yaw)
 - pitch rate (Pitch rate from gyro)
 - pitch (Processed pitch)
 - roll rate (Roll rate from gyro)
 - roll (Processed roll)
 - slip angle (body slip angle)
 - buffer (size of the memory buffer)
 - Advanced options
 - Filtering : none
 - Calculus : none
 - Maximum rate of change: none set
 - Interpolation type: No interpolation
 - Units: []
 - sample rate (100Hz)
 - Variable name: buffer
 - Minimum: none set
 - Maximum: none set
 - Smoothed over: none set
 - serial bytes (serial bytes Rx)
 - Video frame (Video frame)
 - Video CPU (Video system CPU load)
 - Video buff (Video system free buffes)
 - Video chapt (Chapter markers that have been added to the video file)

Nedenstående. Sæt visning til horsepowers i stedet for kw.

The image shows a software interface with an 'Options' window and a 'Set units for Power at the wheels' dialog box.

Options Window:

- Standard variables**
 - long accel (Longitudinal acceleration) [117446 samples]
 - brake flag (Acceleration flag)
 - lat accel (Lateral acceleration) [117446 samples]
 - vector accel (Vector acceleration)
 - vert accel (Vertical acceleration) [117446 samples]
 - speed (Combined GPS and accel)
 - wheel speed (Speed from wheels)
 - distance (Distance travelled)
 - power output (Power at the wheels)
 - Advanced options
 - Units: [kW]
 - sample rate (100Hz)
 - Correction standard
 - Variable name: power output
 - Minimum: none set
 - Maximum: none set
 - Smoothed over: 2 seconds
 - torque output (Torque at the wheels)
- gear (Current Gear)
- position X (X Position) [6066 samples]
- position Y (Y Position) [6066 samples]
- time slip (Time slip)
- time slip rate (Rate of time slip)
- heading (Current heading)
- change in heading (Rate of change in heading)
- corner radius (Current corner radius)

Set units for Power at the wheels Dialog:

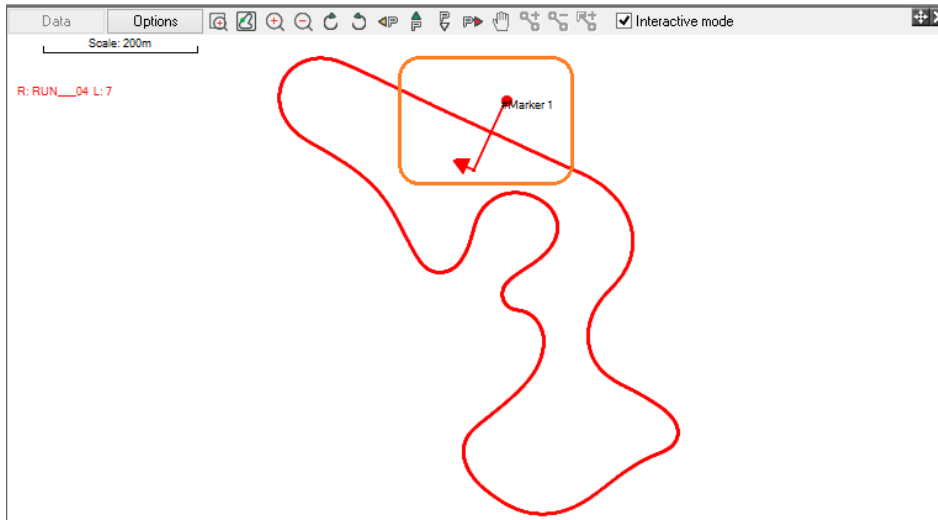
- Standard
 - native units: kilowatts
 - horsepowers (selected in dropdown)
 - Units as displayed: [hp]
- Custom
 - Enter in script format
 - Note: must use "." As decimal separator
 - Units to display: []

Buttons: Ok, Cancel

Se HK for din bil.

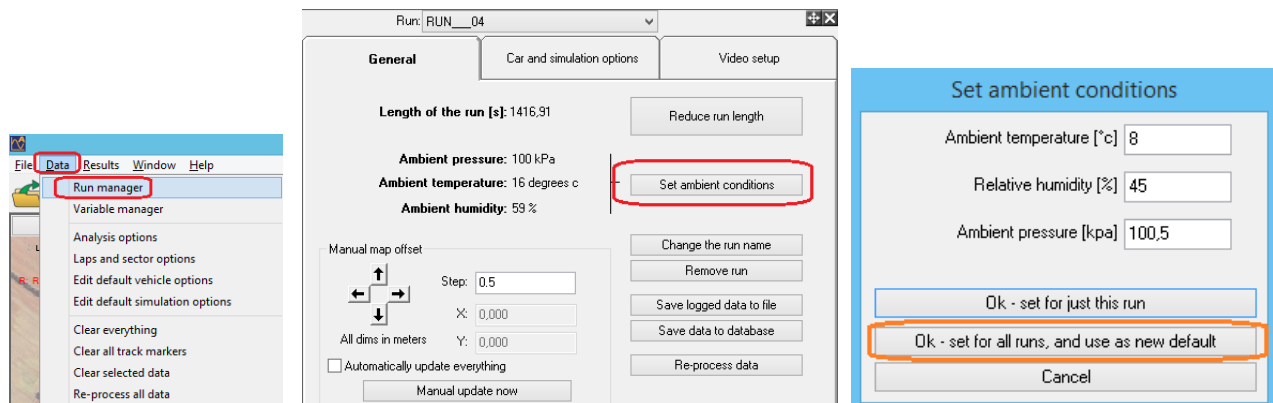
Når alle data er sat korrekt op, kan du se HK for din bil.

Load marker file, eller sæt marker ved målstreg, ved at sætte prik og tryk på "M" tast på PC.



Læg vejr data ind i Analyse program.

Fane Data, Run manager.



Indtast vejr information for det Run du ser på. Vælg OK – set for all runs.

Læg bilen's data ind.

Fane Data, Edit default vehicle options

The image shows two screenshots of the 'Vehicle options' dialog box. The left screenshot is the 'Mounting' tab, where the 'BACK' option is selected. The right screenshot is the 'Accelerometers' tab, where the 'Tune' checkbox is checked.

Mounting, DOT er sat i BACK.

Accelerometers, sæt flueben

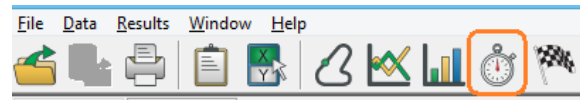
"Tune" the longitudinal accelerometers data using gps data.

The image shows the 'Power' tab of the 'Vehicle options' dialog box. The 'Car details' section has input fields for Cda (aerodynamic drag) [m²] (0.476), Rolling resistance [-] (0.022), and Vehicle mass [kg] (1316). The 'Options' section has 'Use accelerometer sensor for calculating power' selected.

Power, DOT skal være sat i Use accelerations sensor. Indtast bilen's data, og tryk OK.

RT Analyse Power Tool beregning.

Tryk på UR icon, hvis ikke Power Tool, kan ses i layout



Setup | Speed v time | Speed v distance | Distance v time | Custom | Power | SPEEDBOX | Braking

Use run:

Short peak filter

- Ignore highest 0.1% of the power readings
- Ignore highest 1% of power readings
- Ignore highest 2% of power readings
- Ignore highest 5% of power readings

Lap-by-lap power

Lap	Power
1	170,4
2	174,2
3	176,8
4	177,6
5	175,9
6	179,7
7	183,
8	175,1
9	179,9
10	173,8
11	177,4
12	169,

Reported power:
175hp

Quoted precision:
5hp

Notes:

The power was calculated using the current settings in the software.
 Vehicle's CdA = 0,76; Rolling Resistance = 0,0103; Mass = 1265;
 Ambient temperature = 8; Pressure = 100,5; Humidity = 45;
 Power units = hp; Correction std = stp; Smoothed over = 2 seconds;

Sæt DOT i den x% som regler for måling angiver, her brugt 1%. Reported power viser 175 hp, beregning viser at bil har mellem 175, med en Quoted precisions på 5 hp. Der er trukket usikkerheder fra i beregning.

RT Analyse peak power måling.

Vælg complete laps, i peak detaljer vindue.

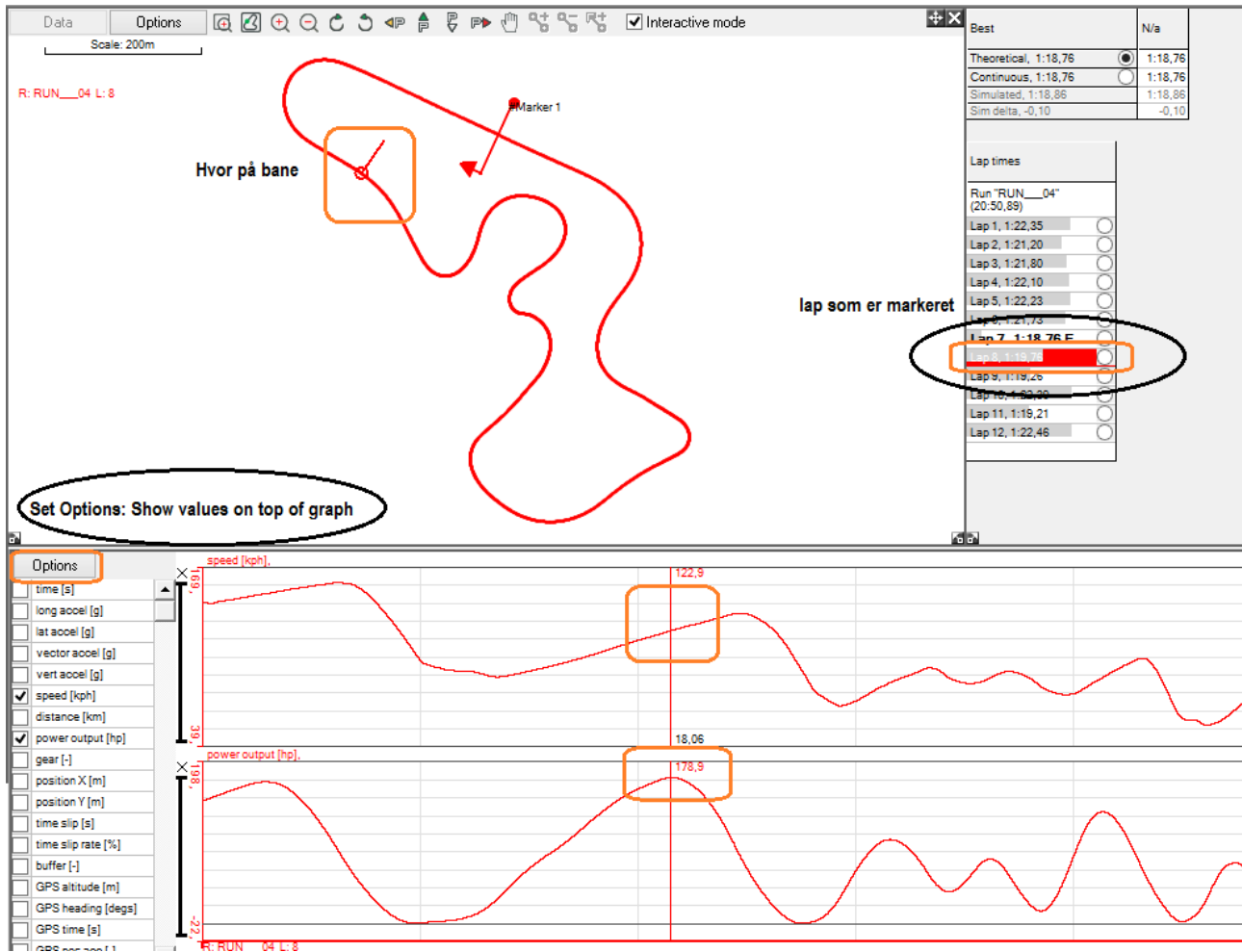
Complete laps

	Fastest, 1:18,76	Average 1:21,10	Worst, 1:22,46	Best theoretical, 1:18,76	RUN__04, Lap 1, 1:22,35	RUN__04, Lap 2, 1:21,20	RUN__04, Lap 3, 1:21,80	RUN__04, Lap 4, 1:22,10	RUN__04, Lap 5, 1:22,23	RUN__04, Lap 6, 1:21,73	RUN__04, Lap 7, 1:18,76
Maximum of long accel [g]	0,32981	0,34043	0,33977	0,32981	0,34249	0,3397	0,33752	0,35561	0,36375	0,33521	0,32981
Minimum of long accel [g]	-1,0088	-0,97386	0,89492	-1,0088	-0,85412	-1,0016	-0,94193	-0,85001	-0,91355	-0,99983	-1,0088
Maximum of power output [hp]	186,63	180,22	173,42	186,63	175,57	178,11	180,86	181,69	179,95	183,82	186,63
Maximum of speed [kph]	158,28	154,91	153,85	158,28	151,39	153,74	153,89	154,86	152,59	156,52	158,28
Value at start in [-]	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Value at end in [-]	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

Ovenstående kan ses Peak målinger for de enkelte omgange.

Se værdier på graph.

Hvis der i vindue Quick xy Graph Options, sættes : Show values at top of graph

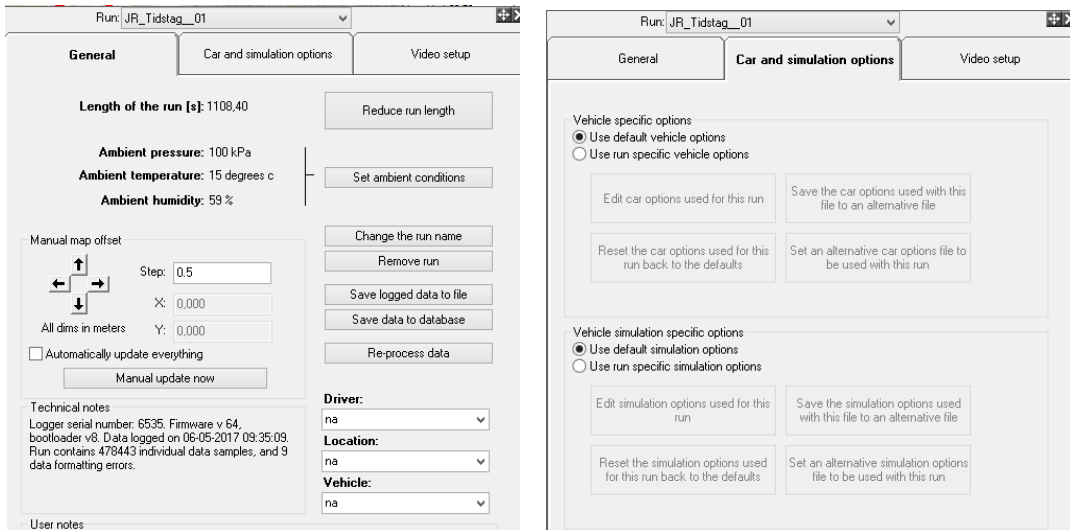


Ovenstående kan ses at der ydes peak 178,9 hp, hvor markering på bane for markeret lap.

Hvis du ønsker at tjekke alle dine settings, kan kontrolleres med nedenstående eksempler.

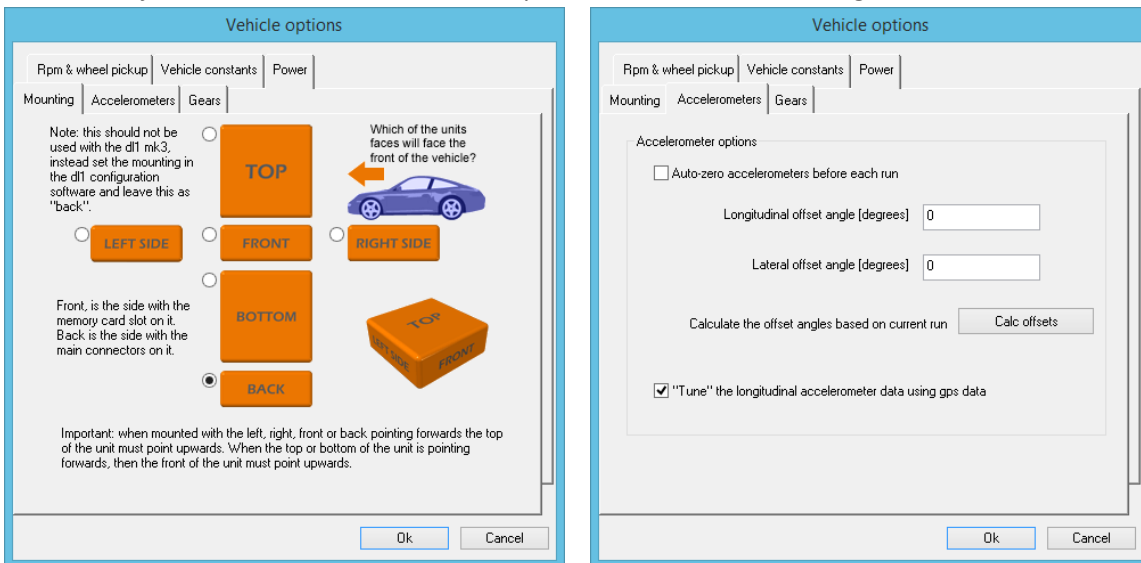
Detaljer faner:

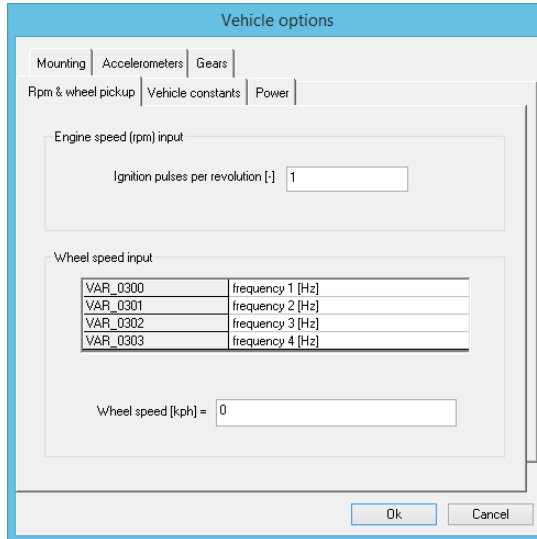
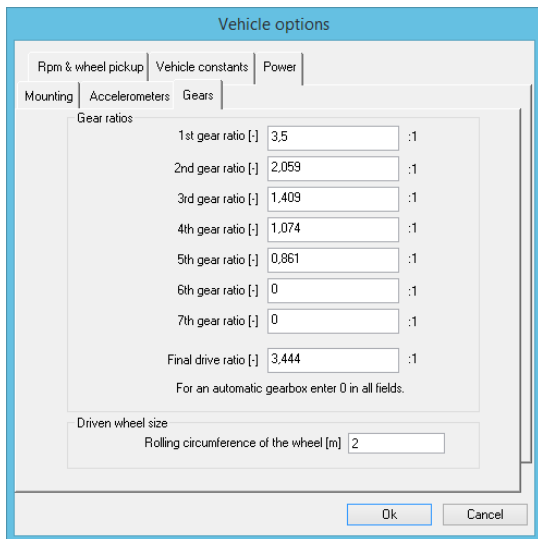
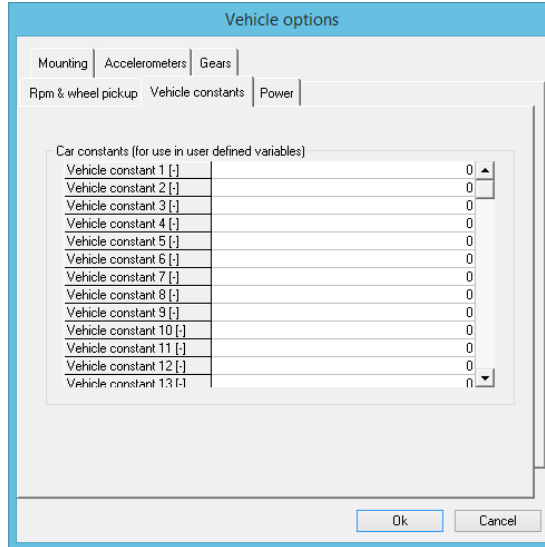
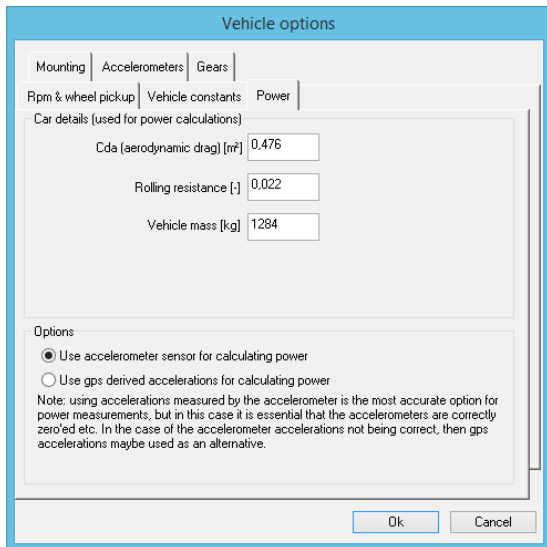
Data, Run manager.



Alle Default vehicle options:

Hvis du vil tjekke at din PC Default vehicle options er korrekt, sammenlign med nedenstående.





Reset til Factory settings.

Hvis der er problemer med at få RT Analyse program til at vise sectore, rigtige værdier, eller andre særheder. Så kan man reset til Factory settings, og derefter starte forfra som det var lige efter man havde installeret RT Analyse program, HUSK at teste med Reference Run file, at RT Analyse program viser korrekt. Som beskrevet i dette dokument.

