

RACE STUDIO 2 >>>



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Race Studio 2.20.02 - December 2nd 2004
Race Studio 2.20.01 - November 26th 2004
Race Studio 2.20.00 - October 2nd 2004

2.22.01

Race Studio Configuration

1. First Race Studio 2 - Microsoft Vista (32bit) compatible version (*)
2. Added ECU management: Ford Focus PZEV 2003/04, Ford Focus 2005/07, Electromotive TECgt, Lotus Elise/Exige, Ducati 1098
3. Updated drivers: Hondata K-Pro, Ducati Energia, Ford Mustang (S197)
4. Added EVO3 Pista (8 channels) management
5. Improved configuration window for EVO3 Pro/Pista dataloggers
6. MyChron3, MyChron3 Kart, Dash St1 are not supported anymore
7. Erased buttons: MyChron4, TG Log. The "data download" function for these systems is still available
8. Added Race Studio 2 background picture management
9. Changed default installation path in order to solve software update issues under Windows Vista
10. A "restore database" function that saves user's configuration and logos in DaVid configuration has been added, This procedure starts automatically in case of a new software installation
11. To avoid some issues under Race Studio Analysis, some special keyboard keys cannot be used in "Channel name" field. These keys will be replaced by an " _ " (underscore) key.

Race Studio Analysis

1. A new "automatic import" function of *.drk files was added. This function requires MS Explorer 5 or higher and works only on MS Vista installations.

(*) please refer to the **Vista Race Studio 2 Setup - ENG.pdf** document available on AIM website to get more informations about the setup (and related issues) under Microsoft Windows Vista operating systems

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2.21.30

Race Studio Configuration

1. No modifications since last release

Race Studio Analysis

1. Fixed bug on RPM sensor filters on which the channel seemed to be undersampled
2. Fixed bug on beacon shift which forced the user to close and re-load the test

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2.21.29

Race Studio Configuration

1. Fixed bug in the online window. The milliVolt value is now correctly shown only for meaningful channels.
2. Fixed ECT channel management on Suzuki GSXR1000 K7 ECU

Race Studio Analysis

1. No modifications since last release

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2.21.28

Race Studio Configuration

1. Added ECU management: Hondadata K-PRO (AIM interface needed)
2. Added ECU management: Walbro HPUH1 (Formula SAE)
3. Fixed bug on AUX 1-2-3-4 channels (ECU Nira I3+)
4. Fixed bug on Oilp e Vbatt channels (ECU Marelli Custom)
5. Inserted ABS_Alarm channel (ECU Mazda MX5)
6. Inserted AutoDiagnose error signal channel on default configuration for MXL Plug and Play Kit for Yamaha R1-R6
7. From now on, MXL/EVO3Pro data download software will remember driver and vehicle name associating it to the last data download with the same instrument
8. In the "Online window" it is now possible to show milliVolt (V/1000) values measures for analog sensors
9. Added visor management on EVO3 Pro systems
10. From now on, on MXL/EVO3Pro systems, the configuration software allows the insertion of top and bottom scale values with the same decimal figures chosen within the units field.

Race Studio Analysis

1. No modifications since last release

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2.21.25

Race Studio Configuration

1. From now on, 100hz channels sampling frequency is available (on Mazda MX5 ECU)
2. Added ECU management: Marelli Toyota_A for EVO3 Pro
3. Added ECU management: Performance Electronics PE-ECU_1

Race Studio Analysis

1. No modifications since last release

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2.21.24

Race Studio Configuration

1. On MXL and EVO3 Pro systems, changing the ECU type will maintain the master channels settings
2. Added clock management on MXL / EVO3 Pro systems
3. Added a Shift light signal with threshold management to the available output signal pool
- 4 Updated Japanese language
5. On MXL and EVO3 Pro systems, in the “Online” window channels are ordered as shown in the Configuration Panel
6. On MXL and EVO3 Pro systems, the “Online” window can be resized
7. Improved data verification while downloading tests
8. Fixed bug – downloading some test can lead to a queued “ghost lap”
9. Fixed bug – Before CAN line identification , sometimes it was necessary to transmit a configuration with no expansions, lambda probes or David.
10. Fixed bug on maximum settable frequency on ECU channels
11. Fixed bug on resetting the rpm values to default on David Standalone system
12. Added ECU management: HydraEMS Nemesis
13. Added ECU management: Nissan 350Z

Race Studio Analysis

1. In the Laps history bar, disabled laps are hidden in “snap on” mode
2. Fixed bug on calculating split times in the split time window
3. Fixed bug that could generate a software crash while opening or closing a .drk file keeping the engine analysis window open
4. Fixed bug in XY graph profiles management
5. Fixed software/firmware version string in the advanced info test window
6. Added a new algorithm to realign GPS data
7. Fixed indexing procedure and export of XML (Google KML) files

8. Improved filters management in Channels Optimization
9. Fixed bug on final time calculation in Time Compare function
10. Fixed cursor misalignment between map and time plot while zoomed

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2.21.23

Race Studio Configuration

1. Added MyChron4 2T support
2. Added Yamaha R1 2007 and R6 2006/2007 management
3. Added EVO3 PRO Lap signal management
4. Fixed bug EFI Euro4 Faseup-Fasedown

Race Studio Analysis

1. No modifications since last release

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2.21.22

Race Studio Configuration

1. Added Bosch Audi ECU support
2. Added Walbro Bimota ECU support
3. Added EFI Euro 4 ECU support
4. Added Hydra ECU support
5. Fixed bug on BMW Z4 Coupe
6. Fixed bug on rpm multiplier parameter found in previous version of RS2
7. Improved management of configurations and expansions
8. Improved management of error messages while transmitting configurations

Race Studio Analysis

1. Fixed bug in the Engine Analysis window that leads to an "Incorrect parameter" error

2. Improved grid redrawing features and management while scrolling race studio windows

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2.21.21

Race Studio Configuration

1. Fixed bug on the progress-bar. From now on, it will not execute after exiting Race Studio 2.21.21
2. Added GPS data download feature for MXL and MyChron4
3. Added EVO3 PRO management
4. Added Single Run download support for MXL (works with 14.80 firmware version or higher)

Race Studio Analysis

1. No modifications since last release

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2.21.19

Race Studio Configuration

1. No modifications since last release.

Race Studio Analysis

- 1 . From now on, at the software installation or update the user is prompted a window telling him there are new sample tests on his hard disk. The same window lets users add those tests to test database or simply refuse them.
- 2 . Fixed bug in engine analysis window for which the computations were done on rpm and speed data slightly disaligned, but only if speed channel is sampled at a different frequency.
- 3 . Fixed bug in GPS data import for which software crashes could be generated if the GPS antenna cable was cut.
- 4 . General improvements in GPS data view.
- 5 . Fixed bug for which channels management window and plot settings window modified the title of the main window.

2.21.18

Race Studio Configuration

1. For datalogger systems of MXL family the max value of "Max rpm" parameter for Revolution speed sensor by now is 30000.
2. Fixed bug for datalogger systems of MXL family, that caused a database error receiving a configuration with a displayed speed channel set to none.
3. Fixed bug for ECU BMW Z4COUPE.

Race Studio Analysis

- 1 . The Track Report view now correctly stores the default values for the channels.
- 2 . The suspension analysis view now shows values into position and velocity graph, and now correctly manages the negative value for velocity threshold.
- 3 . In the measures toolbar the values for the frequencies are now shown when FFT view is shown.
- 4 . The lap replay colours are now synchronized with the laps color when possible.
- 5 . The measures plot now shows laptime with lap number when lap triggers are shown.
- 6 . Fixed bug for which the FFT view generated a crash if the analyzed time interval was too short, and fixed bug for which the x axis on FFT view was wrongly managed.
- 7 . The engine analysis view now shows and manages correctly the parameters of vehicle mass and front surface, in kg and m² or pound and feet², according to the unit chosen for speed channels (km/h or mph). Now it is possible to set the different parts of the view that have to be shown: table with numbers, measures values, torque and power.
- 8 . Now the printouts correctly manage the colors of the little map printed in the page header.
- 9 . The windows used for measures settings and plot properties settings are now shown with the correct dimensions.
- 10 . In measures plot the time compare shows delta if required.
- 11 . Profiles management has been improved.
- 12 . GPS view has been added.

13 . Map creation window now manages correctly the split tipe information.

14 . Fixed bug for which car setup analysis and movie view weren't sinchronized with data.

15 . Split times view now uses correct colors for the splits.

16 . Fixed bug for which, in case one only lap is shown, the whole test plot didn't manage the zoom correctly.

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2.21.17

Race Studio Configuration

1. Fixed bug downloading data from MXL with firmware version 14.62 or late

Race Studio Analysis

1. No modifications since last release

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2.21.16

Race Studio Configuration

1. Added support for Nira I3+ ECU

2. Added support for Walbro Benelli04 ECU

3. Added support for BMW Z4MCOUPE ECU

4. From now on, vdo pressure sensor values are visualized with 2 decimals for bar, and 1 decimal for psi.

Race Studio Analysis

1. Fixed bug for which the test history toolbar didn't manage correctly the tab change after opening two tests, and close the first.

2. Fixed some wrong words in english language.

3. Split times report showed splits multiplied by 10 when comparing two tests.

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2.21.14

Race Studio Configuration

1. No modifications since last release

Race Studio Analysis

1. Fixed problem with "An invalid argument was encountered" error message appearing while adding a lap.
2. Modified the behaviour of the software when it is set to use the same colour for all the measures of the same lap: while trying to modify the colour of a single measure the software switches back to use different colours for every measure

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2.21.13

Race Studio Configuration

1. Fixed bug in visualization of BMW PT6 ECU Channels
2. Fixed bug in visualization of ECU Speed on MXL display

Race Studio Analysis

1. Fixed bug with histograms alignment: added two more beans, one at the top, including all values over the top of the scale, one at the bottom, including all the values under the beginning of the scale.
2. In the measures toolbar is now possible to increment the value of the nMixed graph position (use a simple mouse click) and to decrement the same value (use ctrl+click).
3. Fixed a minor problem with the use of the reference speed in the map computation.
4. Fixed bug for which the calculation of minimum and maximum values in channels report could generate software crashes.
5. Fixed a minor problem in XY data visualization with two channels loaded.
6. Fixed bug for which a misalignment between laps shown and laps in the measures toolbar could be created adding and removing laps.

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2.21.12

Race Studio Configuration

1. Deleting configurations for lambda controller now a diagnostic message box informs on how many configs are being deleted.
2. While transmitting configurations, in the slave-configs coupling window, missing slaves are evidenced.
3. Fixed bug for which, in Online mode for MXL with only some ECU channels enabled, the other enabled ECU channels showed correct ADC count values, but converted values set to zero.
4. Managed DTA S60 ECU (the ECUinterface ASE-01 IS NEEDED).
5. Fixed bug for EMS Stingerv4 e Stinger8860 ECUs.

Race Studio Analysis

1. Improved profiles management: measures axes were added.
2. Fixed bug in data alignment in case laps had difference in length for more than 10% (only with Snap ON and Distance Mode)
3. Fixed bug for which, with Snap ON mode, Histograms and XY plot didn't react to a zoom command.
4. Fixed bug for which, in case two drk were loaded and the first unloaded, map computation lead to crash.
5. Fixed bug for which the change between Time and Distance Mode wasn't immediately notified on measures graph.
6. Fixed bug for which, in histograms the change between Time and Percentage mode could generate a completely gray layout.
7. Fixed bug for which, with two drk loaded + two laps shown for the first + one lap shown for the second, in the measures toolbar only one was shown.

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2.21.11

Race Studio Configuration

1. Fixed bug for which Online function didn't work for DaVid systems.
2. Fixed bug for which Online window always showed the message "Configuration not ok" for MXL systems.

Race Studio Analysis

No changes since the last release.

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2.21.10

Race Studio Configuration

1. Fixed bug for which, creating a new configuration for some acquisition systems, speeds units were shown in place of pressure ones.
2. Executable resources have been modified in order to have the correct icon set as default for the executable.
3. Fixed bug for which the unit temperature was fixed in MXL configuration once set at the beginning.
4. The firmup is no more launched from RS2, a message informing user for the need of a firmup used instead.
5. Dutch language has been updated for the Lambda Configurator.
6. Fixed bug for which, downloading data from MXL systems, some channels showed zero values.

Race Studio Analysis

1. - Engine Analysis: fixed bug for which the y axes for power and torque showed different values, added a table numeric representation of torque and power, fixed problem for which the MS Excel file export wasn't possible.
2. - Added 4 values for practice and qualifying for test type in drk file properties.
3. - Fixed bug for which some wrong values in drk measurements could arise after deletion of math channels.
4. - Fixed bug for which an application crash could arise while opening a drk file with wrong run values in laps structures.
5. - Improved the management of profiles, the possibility of storing the settings of a channel (top and bottom of scale, alarms) for any further opening of other files.
6. - Histogram: fixed bug in the beans number management, fixed bug that made impossible to get the percentage histogram.
7. - Fixed bug with drk channels color management.
8. - Added possibility to manage the colors of the map and of split in measures plot.
9. - Fixed bug for which a second drk loaded could misalign the zoom level of both files and create errors in time compare.
10. - Fixed bug for which the icon's tooltips in split times toolbar were wrong.
11. - Split times: fixed bug for which in some cases the split value was wrongly computed and shown as "-1#IO", creating errors in best rolling lap value.
12. - Fixed bug for which, clicking the zoom icon in the toolbar and then clicking on the map, some wrong intervals were marked on measures plot.

2.21.09

Race Studio Configuration

1.Fixed bug on some combo box. This bug caused impossibility to select a display for DaVid Standalone.

Race Studio Analysis

No changes since the last release.

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2.21.08

Race Studio Configuration

1.Fixed bug from the last release for which instead of the right strips the line "S0002:[Microsoft][Driver ODBC Microsoft..." used to appear.

Race Studio Analysis

No changes since the last release.

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2.21.07

Race Studio Configuration

1. Added new languages management through dll.
2. Fixed bug for which the total acquisition frequency was not updated after making a channel able or unable.
3. Fixed bug on the visualization of the panels with the speed parameters for MXL and DaVid systems
4. Added possibility to download and save data from a USB key just clicking on "download selected"
5. Fixed bug of the previous version for which the selected language used to be automatically reset in English or wasn't consistent with RSA
6. Fixed bug on the MX-5 channels visualization for XG-Log
7. Replaced the ABS speed channel management for MXL, where each of the two speed channels must be set as ABS speed channel

Race Studio Analysis

1. Fixed the language management (the previous version didn't work properly if italian or english languages were selected, other languages worked properly)
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Race Studio Configuration

1. Added On-line management of the channels from Lambda Sond connected to MXLs via CAN.
2. Fixed the default parameters of the speed channel for MyChron4 Gold
3. Fixed bug for which the parameters of the speed channel for MyChron4 Gold used to be always the default ones and not the configured ones.
4. Fixed bug downloading data from MXLs, configured with ECU, provided with Firmware versions previous to 14.58.
5. Fixed bug causing the strip "bad slave config." when transmitting with video-system a configuration for MXL provided with firmware version previous to 14.58
6. ECU WALBRO A1BEN_00 (BENELLI) management
7. ECU MOTEC800-600-400v3 management
8. Fixed bug ECU BMW PT6.

Race Studio Analysis

1. All the languages are now managed by a dll.
 2. Improved the engine analysis view.
 3. The computation engine in the frequency view has now been improved, it wrongly used the modulus of the transformed signal instead of the power spectrum.
 4. Fixed bug: opening files from Race Studio 1 (standard version) the software could generate a crash.
 5. Fixed bug: RSA didn't store correctly the number of mixed plot a measure was plotted in.
 6. Fixed bug: some crashes could arise analyzing a drk file with speed partially working.
 7. In the measures toolbar the button that activates the same color for all the measures of a lap is now activating at the same time all the other laps.
 8. The delta activation can be achieved even with the 'D' key.
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9. Laps shift can be done at the same time for more than one lap by Ctrl+(drag and drop)
10. The map creation window now starts on the best lap of a test.
11. Fixed bug that could generate crashes while zooming outside a plot.
12. The window in which engine analysis parameters are setup has now been simplified.
13. Fixed bug for which, if a test was open and a new one was downloaded, this one wasn't automatically opened at the activation of the analysis.
14. Fixed the printouts management of the measures graph.
15. Fixed the printouts of the channels report, in which channel names weren't printed.
16. Fixed the bug for which the colors in the measures plot could be wrong.

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2.21.05

Race Studio Configuration

1. Introduced data download for MyChron4 Gold Expansion
2. Introduced in configuration/channels the new AIM LCU-ONE Lambda Controller sensor to manage the analogic outputs, configured according to AIM default values
3. Modified the user interface for the Lambda Sond configuration via CAN (now every information is collected in "CAN-Lambda Configurator")
4. Fixed bug causing the display of "UNKNOWN" string instead of the system name in MyChron4 download window
5. Fixed bug preventing the data download from MXLs Plug and Play systems
6. Fixed bug about the gain referred to some sensors and the consequent uncorrect measurement values
7. Fixed bug allowing the transmission of configurations with an acquisition frequency higher than 2000 Hz in MXL systems.

Race Studio Analysis

1. Fixed bug for which the maximum frequency in the suspension analysis window was wrongly displayed, the same happened in the frequency plot.

2. fixed bug for which the total time of the drk file could be wrongly computed while opening the file itself
3. Fixed bug for which the software could crash while opening drk files with no samples for the speed channel
4. Fixed bug for which the software could crash while showing the measures plot, the histogram and the frequency plot for channels without samples
5. Fixed bug for which the colours of the channels could be badly managed and not stored
6. Fixed bug for which in some cases the fastest lap could not be correctly shown while opening the drk file
7. The languages bound to the strings in the measures graph are now correctly managed
8. In the measures graph a string to clearly show the time or distance mode has been added
9. The refresh of the cursor position in the measures plot and in the lateral toolbar has been made quicker
10. In the plot setting window now it is possible to set the background color for the disabled laps
11. Fixed bug for which in the lateral toolbar and in the drk laps history toolbar could be generated a mismatch between tabs and test loaded, hence giving a crash
12. Fixed bug in the computation of the split times, this bug could generate wrong lap times
13. Fixed the management of the laps icons and of the pushbuttons in the main view
14. Fixed bug for which while enabling a lap in the lateral toolbar a different lap could be enabled

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2.21.04

Race Studio Configuration

1. No changes since last release.

Race Studio Analysis

1. Fixed bug in the samples number checking routine, this could prevent the drk file opening.
2. Fixed bug bound to the computation of math channels during drk files opening.
3. Fixed bug bound to the modification of a math channel in the drk files.
4. Fixed bug causing the gap shown in time compare being different from the real one in the lap.
5. Fixed bug sometimes causing the impossibility to trace the cursor on the map.

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2.21.03

Race Studio Configuration

1. Fixed bug that could crash the Race Studio software while going to online.
2. Fixed bugs in japanese language configuration.
3. Fixed bug that could crash the Race Studio software while switching tabs in MXL configurations.

Race Studio Analysis

1. Fixed bug for which the position of deltas was not bound to cursor.
 2. Added the possibility to compute the delta rate af all measures in delta.
 3. Fixed bug in the math channels computation, this could crash the software while opening drk files.
 4. Time Compare cursor has been sinchronized to arrow keys pressure in the keyboard.
 5. Fixed bug bound to cursor movement within the map in time mode.
 6. Fixed bug for which the shift didn't work if the plots were in mixed mode.
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7. Decreased the step increment bound to arrow keys in the keyboard.
8. Fixed bug for which the toolbar buttons of dashboard and channels report were reversed.
9. The cursor movement in Track Report view has been correctly managed.
10. Correctly managed all the messages in the toolbar's tooltips.
11. Test name is now correctly inserted in the measure selection toolbar.

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2.21.02

Race Studio Configuration

1. Fixed bugs sometimes disturbing the visualization in the Japanese version.

Race Studio Analysis

1. Fixed bug causing the impossibility to open the drk files if the automatic mathematical channels import was provided
2. Fixed bug causing the impossibility to manage files with names longer than 40 characters.
3. Fixed bug causing RSA crash when a mathematical channel was modified lowering the calculation frequency.
4. Fixed bug disturbing the correct management of the colours in the characters.
5. The zoom in the measures graph is now centred on the cursor.
6. Fixed problem in the visualization of some Japanese strips in the measures graph.
7. Fixed bug causing the cancellation of the measures bar when the space character was filled in the file name.
8. The possibility to show or hide the measures name and the time compare have been reinserted.
9. The graph lines thickness now can be correctly managed, according to the settings.
10. Fixed bug causing error in the Snap-On and Distance modes visualization of the values along the X axe: they were shown in meters instead of inches. The same X axe, in Time mode, used to show values in milliseconds and not in seconds.

2.21.01

Race Studio Configuration

1. Fixed bug for which it was impossible to transmit a configuration to gauges using firmware older than 14.57
2. Fixed bug for which some plug and play MXL featured some invalid channels in configuration.
3. In the configuration list two columns were added for MXL, one to say if the configurations include the video system, the other one to indicate how many lambda sensors are being used.
4. For MXL gauges there's a new button close to 'send' and 'receive' cfg buttons, it is used to check several informations on the CAN network.
5. Fixed bug for which it was impossible to send a configuration to a MXL without configuration.
6. The number of objects shown in the combo box list has been increased.
7. Fixed bug for which in Online and Calibration operations some invalid configurations could appear for MXL gauges.
8. ECU BOSCH SeatLeonCup managed.
9. ECU EMS Stingerv4 managed.
10. ECU EMS Stinger8860 managed.
11. Restored welcome text function for MXL systems.
12. Fixed bug for which after downloading data from MXL systems the names of channels appear with the short name as prefix in Analysis.

Race Studio Analysis

1. The data shifting mode has been introduced. The software calls 'SNAP ON' mode the existing function in which no shift could be performed on data, 'SNAP OFF' mode the new one in which data displayed can be shifted one over the other.
To switch between these two modes use menu Modify->Snap ON/OFF (there's a shortcut icon in the toolbar).

2. The software uses two modes (time and distance) instead of two plots. To switch between modes use menu Modify->Time/Distance mode.
3. The software can compute delta values in the measure graph. To activate delta function use menu Modify->Toggle delta (a shortcut icon in the toolbar can make it quicker) and click on the graph.
4. The zoom in the main graph can be done using the mouse wheel and the keyboard up and down keys.
5. The measure graph can show the value tags, use the checkbox in the plot-setting window to enable them.
6. There's a new layout for the engine analysis view, it is possible to print it out and to compare data among tests as well.

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2.20.25

Race Studio Configuration

1. Fixed bug causing error in the "Lap Cause" field for data downloaded from the DataKey.
2. Fixed bug causing error in "Best Lap Time" for data downloaded in the DataKey download window.
3. Fixed bug preventing the visualization on XGLog of the MBE 992 ECU channels.

Race Studio Analysis

Fixed bug preventing the change of wheel circumference on DaVid's DRK files.

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2.20.24

Race Studio Configuration

1. Added new button to delete all the data acquired from the DataKey. Usually this operation is not necessary; it' could be useful in case of data in the DataKey memory creating problems during the download process (in this case these data must be cleared also from the MyChron 4).

To delete data from the DataKey you need to download the last version of the DataKey firmware, and follow the procedure until the window showing the recorded data opens. Then just click on Clear DataKey button.

2. Changed symbol of the downloaded data in the DataKey download window.
3. Fixed bug indicating 32MB memory in a DataKey with a 16MB memory and vice versa.

Race Studio Analysis

Removed extension limit of 40 characters for DRK file name.

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2.20.23

Race Studio Configuration

1. Fixed bug found in the previous version (2.20.22), throughout which it was impossible to select DaVid video system in MXL configurations.
2. New data control in the download from MyChron 4 of the "driver's name" and "circuit name", according to which these information automatically appear in the test properties.
3. Introduced possibility to add a text assigned by the user to the name of DRK-files, created during data download process from MyChron 4 through DataKey.

Race Studio Analysis

No changes since last release.

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2.20.22

Race Studio Configuration

1. Introduced data download from MyChron4.
2. Introduced ECU Bosch Porsche 91 (Mod.997)
3. Changed colors for the visualization of DaVid accelerometers

Race Studio Analysis

1. Fixed bug in the cancellation of the mathematical channels. Actually some channels among the selected for the cancellation weren't erased.
2. Fixed bug in the laptimes indication. Sometimes the first laptimes after the start had too high values.
3. Fixed bug in the automatic opening of the DRK files, after downloading more than 4 before the activation of the analysis.

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2.20.21

Race Studio Configuration

No changes since last release.

Race Studio Analysis

1. Improved data exporting window: added compatibility with Motec CSV or Bosch LapSim files and added possibility of exporting data in TXT format.
2. Added import option of NKT files, coming from netkarPRO videogame. The video game should be available from next April 10th 2006.

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2.20.20

Race Studio Configuration

1. Added management of 4.000 and 6.000 RPM scale on MXL and DaVid. Version 14.53 of MXL Firmware needed.
2. Added management of Motec M4-M48 19.200 bit/sec. and Bosch MS4-997 ECUs.

Race Studio Analysis

No changes since last release

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2.20.19

Race Studio Configuration

1. Corrected management of MyChron Light TGLog data download with 8Mb internal memory. Firmware release 19.15 or later necessary.
2. Added management of the following Plug and Play bike kits: MXL Strada for Yamaha R1/R6 2005 and MXL Pista for Yamaha R1/R6 2005.
3. Racetech Engman 18 ECU: added new lambda channel, fixed bug on water temperature channel.
4. Added Haltech E11v2 ECU management.

Race Studio Analysis

No changes since last release.

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2.20.18

Race Studio Configuration

1. Fixed bug on main window refresh.
2. Added management for the following MXL Plug & play systems: MXL Pista for Suzuki GSXR Yoshimura; MXL PRO 05 for Suzuki GSXR Yoshimura.
3. Added management for MyChron 3 XGLog Formula Renault 2000 (XGLOG - FR2000J).
4. Added management for ECUs AEM EMS30-1050, Marelli FR2000J (for New MyChron 3 XGLog FR2000J system) and Sybele CAN.
5. Added FR2000J.cfn configuration file importable to configurate MyChron 3 XGLog FR2000J systems with the default configuration;

Race Studio Analysis

No changes since last release.

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2.20.17

Race Studio Configuration

1. Managed Dutch language for visualization on MyChron 3 Basic and MyChron 3 Club.
 2. Managed translation of some warning messages during configuration transmission and data download.
 3. Fixed bug concerning import/export of DaVid configurations.
 4. Fixed bug that could cause Race Studio 2 to crash during data download of MXL systems.
 5. Added management of one welcome message configurable through Race Studio 2 software for MXL systems.
 6. Fixed bug: MyChron Light TG Dash was said available for EVO3 systems while it is not.
-

7. Added possibility of single channel auto-calibration in addition to all channels calibrations.
8. Fixed bug on MXL systems: if you transmitted a configuration with gear set on "calculated with neutral signal", when you received the same configuration from your gauge the configuration you received was set only on calculated gear (without neutral signal).
9. Added possibility of setting, with a checkbox, the system to automatically re-start calculated gear calibration when a new configuration is transmitted on DaVid Systems.
10. Added management of Weber ATS04 Temperature sensor and Nagano km 10 oil pressure sensor.
11. Added management of MBE 992 and Denso MX5 ECUs

Race Studio Analysis

1. Modified the filters on temperature channels; now they are lighter in order to better understand when a sensor is broken (in the rare cases it is).

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2.20.16

Race Studio 2 Configuration

1. Added BMW_Mini ECU
2. Fixed Bug on Marelli Customer Protocol ECU

Race Studio Analysis

No changes since last release

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2.20.15

Race Studio Configuration

1. Race Studio does no more open automatically configuration window of the selected logger family at start up.
2. Added management of Sybele RS232, Autronic SM4, Bosch MS4, MoTec M800-M600-M400-1M (1Mbit/sec version) ECUs.

Race Studio Analysys

1. Fixed minor computation bug in suspension analysis window.
2. Fixed bug in channel filter compute.
3. Added possibility of exchanging accelerometers for MyChron 3 XGLog too.
4. Measure Information toolbar is now updated in suspension analysis view too.

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2.20.14

Race Studio Configuration

1. Fixed bug: in "MyChron 3 Dash" configuration window for DaVid systems one item was not translated.
2. Fixed bug: on max sampling frequency of DaVid systems: user was allowed to set up to 1000Hz in spite of up to 500 Hz with consequent loss of samples for the measures sampled at lower frequency (up to the total loss of some measures).
3. Fixed bug: Video configuration transmission was made also if exceeding max admitted sampling frequency.

Race Studio Analysis

1. Fixed bug: General Protection Fault (Crash) could occur in Lap Replay view if selected unit of measure for speed was mph in spite of km/h.

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2.20.13

Race Studio Configuration

1. Added 1/5 RPM Multiply factor.
2. Added Pressure sensor "MSI 0-150 psi sensor "
3. Video System can show external accelerometers signals too.
4. Fixed bugs on channels alarms for MXL systems.
5. Fixed bugs on current configuration values saving when closing configuration window pressing the button that opens another family of systems.
6. Fixed bug: "Potentiometer distance" configuration panel was only partially shown on some Pc.
7. Fixed bugs concerning units of measure for some temperature sensors.
8. Fixed bugs on speed channels enabling and related configuration windows visualization.
9. Neutral checkbox for calculated gears has been substituted by a more evident dedicated button on MXL systems.
10. Fixed bug: changing gears number on calculated gears and transmitting the configuration, some times, the system did not re-start gear calibration.
11. Fixed bug: if pressing "ESC" button when configuration window or channels window were open on MXL or on DaVid Stand Alone systems Race Studio 2 crashed.
12. Fixed bugs on Japanese language in video system configuration window.
13. Added possibility of reading Video Configuration both for DaVid Stand Alone and for DaVid Slave Expansion version.
14. Added clone, export and import options for Video configuration.
15. Added possibility of showing external accelerometers in the graphical part of Video System.
16. Added numeric video object for RPM and speed.
17. Introduced numeric video objects with bargraph that can be associated to any sensor of current configuration.
18. Added possibility of specifying a short name for generic numeric video object.
19. New management with bitmap of numeric video object.

20. Added a new default configuration including new video objects.
21. New function for MXL and DaVid systems: if Race Studio detects a firmware version not-compatible with the new functionalities user is asked if he wishes to upgrade firmware and in case of affirmative answer firmware upgrading starts automatically.
22. Added Management for Mazda RX8 ECU - Denso manufacturer (CAN communication protocol)
23. Added Management for EFI_USA 2.1 ECU (RS232 communication protocol - AIM external interface board needed - part number **X05EFIUS210**).

Race Studio Analysis

1. Fixed bug on covered distance compute (in some particular conditions, during drk files opening and during visualization of views based upon distance, like time compare, plot vs space and lap replay, the software could crash).
2. Unified sliders management for all views and managed slider in suspension analysis view.
3. Added slider draw in XY view. In the same view fixed bug to manage abscissa axis of more runs.
4. Draw of graph and print preview made slightly quicker.
5. Modified file preferences window so to have type of vehicle and unit of measure settings in the same folder.
6. Unified view zoom management. Now zoom tool stores zoom settings and allows user to come back to previous used setting. Moreover added possibility of making graphs zoom via keyboard: "↑" to zoom in "↓" to zoom out.
7. Introduced suspension analysis view for 4 wheels vehicles (needed "type of vehicle = car" setting in preferences window: menu → File / Preferences).
8. Deleted useless re-computes of value of Time Compare view, that becomes quicker.
9. Fixed bug that could cause crash in math channels compute.
10. Fixed bug in track map draw: the map could be drawn out of its window.
11. Added engaged gear number management in dash display.
12. Added "Apply" button in suspension analysis setting window.
13. Fixed bug of double slider in lap replay. It could occur that, while re-drawing the view to change displayed measures, the slider was badly drawn.
14. Fixed bug concerning the list order on the last split in the main window. Laps can now be ordered also by

last split value.

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2.20.12

Race Studio Configuration

1. Added management of DaVid Slave Expansion for MXL systems.
2. New user interface managed with tabs for MXL and DaVid Standalone systems.
3. Configuration of DaVid merged in the new user interface.
4. System Identification, Online, Calibration and Custom Sensor management functions moved in the main Race Studio menu for MXL and DaVid Standalone systems.
5. When choosing your logger after Race Studio start up the related configuration window appears.
6. Added management of Marelli Toyota and Marelli Toyota B ECU.
7. Updated language database for Spanish language.

Race Studio Analysis

1. Updated language database for Spanish language.
- 2 . Fixed bug:some temperature channels with sensors others than thermocouples were corrected in respect to cold junction.

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2.20.11

Race Studio Configuration

1. Added MXL Strada/MXL Pista Plug and Play systems management for Kawasaki ZX6R-6RR and Kawasaki ZX10R.
2. Added management of Nissan HN1 ECU.
3. Added management of Marelli Customer Protocol ECU.
4. Added management of "TG-DASH" display for DaVid.
5. Added possibility of choosing reference speed in "System manager\Channels" panel on DaVid systems. That measure is shown on display and used to calculate gear and to draw map in Analysis software.
6. Fixed bug on DaVid system: after "Calibrate" operation the video system stopped and didn't show measure values.
7. Fixed bug: if changing "Highest gear number" on calculated gear, some times it didn't really change after configuration transmission.
8. Fixed bug: "Oil Press Suzuki GSXR" sensor some times showed wrong measure value in Online panel.
9. Added "Water Temp Suzuki GSXR" sensor on MyChron 3 Plus/Gold and MyChron 3 Log/XGLog for bike.
10. Minimal value of sampling frequency for speed sensors is 10Hz (minimal value for drawing map in Analysis).

Race Studio Analysis

- 1 . Modified all the queries to the sensors database in order to make internally quicker and simpler the loading process of drk files.
 - 2 . Added 'pre-final, final, 1st final, 2nd final' test types.
 - 3 . Improved speed compute of math channels.
 - 4 . Fixed problem related to the small map representation in the printouts.
 - 5 . Fixed bug: in some cases the software could crash when trying to close a view in print preview mode after opening and closing the same window more than three times.
 - 6 . Fixed posible crash occurring in Bike Suspension Analysis View.
 - 7 . Fixed bug: Channels Report View wasn't self-updating after a change in shown laps.
-

8. Fixed bug: in Channels Report View the background colour of the table cells wasn't correctly held after showing histograms.
9. Fixed bug: in some cases test database list in the main view wasn't automatically updated after a download.

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2.20.10

Race Studio Configuration

1. Added logos management in video system configuration.
2. Added management of ECU: BOSCH PORSCHE 911 vers. 996.

Race Studio Analysis

1. Fixed bug for which the button "Show plots" in the main view disappeared.
2. When opening RSA unused items in tables: championship, racer, track and vehicle are removed (to get quicker access and queries to the database itself).
3. Inserted params names in the math channels.
4. Managed possible crashes while sending e-mails.
5. Introduced the possibility to load ".mpg" and ".avi" movies in a dedicated view.
6. Modified "Map Manager" dialog window, added the possibility to import/export maps and send them by e-mail.
7. Fixed bug for which, in some conditions, RSA software loosed the map-drk association.
8. Fixed bug for which, in some cases, it was not possible deleting some math channels from the drk file.
9. In "drk file properties" window it is now possible to modify most of the fields only if no file is opened for analysis; this to avoid some bugs in database management.
10. Fixed possible crash in suspension analysis settings dialog.
11. Fixed possible crash with toolbars while closing the main view window.
12. Fixed crash with Lap Replay.

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2.20.09

Race Studio Configuration

1. Fixed problems with Japanese language
2. Video System window: clicking on a graphical object selects corresponding configuration-tab
3. Fixed bug: selecting a different display for DaVid system lists of display-channels were not correctly updated.
4. Fixed bug: generic linear 0-5 V, 0-500 mV, 0-50 mV sensors were not showed on the display of DaVid system.
5. Solved incompatibility with DTA P8 V29 ECU and DTA P8 V30 ECU.

Race Studio Analysis

1. Fixed problems with Japanese language.

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2.20.08

Race Studio Configuration

1. Modified Online window: no more Message windows nor "Restart online" button; user has only to connect the logger and Online window shows info.

Race Studio Analysis

1. Fixed bug related to wrong cold joint correction (and wrong computation) of thermocouples.
 2. Fixed bug for which a bad math formula in a channel could imply wrong values of a channel instead of zero values.
 3. Fixed bug that could imply a crash in Export to Excel dialog window.
 4. Fixed problems bound to japanese language characters transformation.
-

5. Added import and export buttons for suspension analysis settings.
6. Fixed minor bug in the population of the test database list in the main view.

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2.20.07

Race Studio Configuration

1. Added management of **DaVid** Standalone system.

Race Studio Analysis

1. New Test type added to meet new customers' needs: Race 1, Race 2, Superpole. The test type is now correctly stored into drk during import/export operations.
 2. Implemented alphabetic sort in selection criteria of main window and in dialog window to set vehicle, driver, championship, track.
 3. In the drk management all lap codes are now correctly managed to identify laps not coming from lap marker.
 4. Improved run time updating of modified math channels.
 5. It is now possible to find new buttons to help use of map shape sliders in map creation window now.
 6. Fixed bug, with possible crashes, in string management of dashboard view bargraphs.
 7. Fixed bug for which, during map creation, a rotation of the map could make the map itself smaller and smaller.
 8. Map creation window now manages only laps coming from lap marker.
 9. In map creation window has been improved the verification of the algorithm to be used for map creation. If the test doesn't have neither the lateral accelerometer nor the gyroscope the window itself is not even loaded. If the test features both sensors the algorithm for 2 wheels is set as default leaving users free to choose 4 wheels algorithm.
 10. Fixed some bugs in pixel management during map plotting.
 11. Fixed spelling problem in the string "under construction".
 12. Fixed bugs originating crashes in windows status management while loading sets with some particular settings.
-

- 13 In the damper forces settings, in suspension analysis view, now languages are correctly managed.
14. Fixed some characters transformation bug in some views.
15. Fixed bug in map creation window, this window could be created as 'not modal' and hence let users do operations capable of crashes in RSA.
16. Improved the overall management of the map manager window.
17. Fixed bug with possible crash in split times analysis that could occur in case a map with no splits was loaded.
18. Fixed bug that could originate a double elevator bar in the lateral toolbars.
19. Fixed bug in suspension analysis view: with some combination of settings a crash in the software could occur.
20. Fixed bug for which, enlarging the toolbars to maximum width, a crash could be generated.
21. Fixed bug for which the pre-installed tests weren't automatically imported into test database.
22. Fixed bug for which the software crashed loading drk files without samples from Light TGLog.
23. Fixed check on run values during drk file opening, in some cases a crash could occur.

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2.20.06

Race Studio configuration

1. Added new feature: import and export of custom sensor.
2. Added new feature: custom sensors can be deleted pressing "DEL" on keyboard in "Customize Sensor" window.
3. Added management of MXL PRO 05.
4. Fixed bug about reference speed channel used to draw map if it is an ECU-Channel.
5. Upgrade of user's interface: TG LOG button, default channels of MXL systems configured with "Generic linear 0-5 V" sensor rather than "Thermocouple" sensor; in Configuration window of MXL systems it is indicated witch channel is used by gear potentiometer or NEUTRAL signal, if enabled.

Race Studio Analysis

1. Improved software settings and preferences management; now they are all managed in a new window that can be run using menu File->Preferences. It is possible to find here all settings related to vehicle, measure units, DRK management, language, team information

2. Till the last version of RSA, software settings were split among Race Studio 2 installation folder, windows registry and windows folder. Starting from release 2.20.07 all the settings are stored in .INI files within Race Studio 2 installation folder (or subfolders). This to correct several installation bugs and to simplify eventual complete uninstallation of the software. Unfortunately this implies that, only for this version (2.20.07), the whole software must be re-initialized by user as if it were the very first installation.

3. All languages database queries have been speed up through a better memory loading of the most used strings. This implies a quicker menu visualization and a quicker load of all windows in all software.

4. Keyboard shortcuts were added for views: Time Compare (Alt+F2) and Channels Report (Ctrl+F4). Now all buttons of the toolbar do show the keyboard shortcut in the tooltip.

5. Math channels: the overall execution of stack operations is quicker; fixed bug for which, while opening a drk file, in some cases, the filtering of math channels weren't properly computed.

6. DRK management: a) fixed bug for which, opening files included in folders with a long name, a bad management of pc memory could be induced, hence generating a low performance; b) improved initialization of drk structures in the event of several load-unload operations, this implies a lower crashes possibility; c) introduced a quicker (dedicated) filtering for the speed channel; this to avoid a stepped behaviour of high frequency data acquisition; d) fixed bug that used to imply a bad memory conversion for files with old structures coming from MyChron2 and Drack GOLD loggers; e) fixed the conversion function for old AIM sensors; f) improved the checks to ensure that run number always grows inside the test and that the lap number always grows inside the run; g) all conversion functions have been speed up, mostly for measures that are managed automatically for imperial or metric units; h) fixed bug implying a bad computation of distance run after the insertion of a math channel used as reference speed; i) fixed bug (with possible crashes) generated by a bad management of distance run in parts of the test with zero speed; l) new verifications have been introduced in date/time management within the drk file to avoid possible crashes in Windows Time management APIs; m) improved speed of all the distance run functions used by the Time Compare view; n) improved verification on the lap cause (to fix a possible bug in the identification of laps from lap marker).

4. Fixed bug (with possible crashes) in the color selection controls in split times view.

5. Fixed bug with tabs management in measures view.

6. New verifications introduced to avoid crashes if user tries to compute the map in a drk in which speed channel or lat.acc. channel or gyro channel are sampled at a frequency lower than 10 Hz.

7. Unified and quickenized the map plotting function in all views.

8. Main View: a)- introduced the possibility to send drk files by e-mail, this can be run with a right click in the file list or with menu Data->send by e-mail; b) - introduced a new command menu to open a Windows Explorer folder on the folder containing the drk file; c) introduced in the main command menu all the commands to manage drk operations that were before available only with pushbuttons in the view; d) fixed

bug that saw a missed reinitialization of lap list in case a user tried to enable more than 8 laps at one time; this generated a bad software working until the drk file were unloaded and loaded again; e) the populate function of the drk file list is now quicker; this used to imply a slowness of the whole software during the passage from RSA to another application and viceversa.

9. The mouse movement management in all views is now quicker.

10. Dashboard view, fixed bug in the management of top and bottom of the scale if the channel used for the gauge is a math channel.

11. Lap Replay view, fixed bug (with possible crashes) due to missed alignment in parts of the tests with zero speed.

12. Step 1 completed for suspension analysis view for bikes.

13. Time Compare: the whole string management in the view is quicker, this to get a quicker movement of the cursor; the plot now evidences with a thicker line the parts where the driver is quicker in the reference lap

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2.20.05

Race Studio configuration

1. List of ECU Manufacturer is now shown in alphabetical order.

2. Fixed small bug about units of measure.

3. Fixed bug about available acquisition frequencies with max frequency of 2 Hz.

4. Added management of ECU: Wolf 3d, Racetech EM46, Marelli RSA.

5. Fixed bug about ECU Motec M4 DataSet 5, during data acquisition at 10 Hz.

Race Studio Analysis

No changes since last release.

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2.20.04

Race Studio 2 Installation

1. Fixed bug about icon that didn't run Race Studio 2.
2. Fixed bug about installing right version of Race Studio Analysis.

Race Studio Analysis

No changes since last release

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2.20.03

Race Studio 2 Configuration

1. Update of sensors database for alarm message management on MXL systems display. Modified calibration curve for water temperature sensor on Suzuki GSXR 750
2. Updated USB communication between computer and data acquisition system.

Race Studio 2 Analysis

No changes since last release.

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2.20.02

Race Studio 2 Configuration

No changes since last release

Race Studio 2 Analysis

1. Fixed bug: old releases could have problems while importing a drk file when the folder containing the file had a long name.
2. Fixed bug: old releases had problems while computing the engine power with low frequencies acquisition, this was due to a high level of filtering applied by default.

3. Fixed bug: old releases could give error messages while computing the map.

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2.20.01

Race Studio 2 Configuration

1. From this version onward, changing speed sensor from "Speed" to "ABS Speed sensor" speed parameters are saved.
2. Upgrade of bike Plug & Play data acquisition systems - added MXL Strada for Suzuki GSXR
3. Fixed bug: it is now possible to set parameters for "Revolution Speed" sensors.
4. Added management for ECUs: Motec M8, Marelli FR1600, Gems OMEX;
5. Introduced water temperature sensors H and L management for Kawasaki Plug & Play systems
6. Introduced data download management for MyChron Light TG LOG systems.
7. Fixed bug: during data download from My Chron3 basic systems laps without samples were shown all set to zero.
8. Updated Yoshimura oil temperature sensor characteristic curve.
9. Added new water temperature sensor for Yoshimura zero-50
10. Fixed bug on led configuration for MyChron 3 family systems (MyChron 3 Auto-Moto Plus/Gold/XG and Mychron 3 Kart Extreme)

Race Studio 2 Analysis

1. Fixed minor bug: a lap coming from an hardware reset could be shown with no origin string in lap list.
2. Fixed bug: importing drk files coming from WDrack could be impossible.
3. Fixed minor bug: if sampled data made impossible computing the map, error message was shown three times.
4. Map creation dialog window allows user to modify the lap on which the map itself has being calculated. At present available track shapes are: closed/ open / figure-8 **instead of** clockwise / counterclockwise / open / figure-8

5. Map creation dialog window shows an upgrade of start/finish line dimensions in the same map and a better interface for map rotation.

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2.20.00

First version working with old (5.22) an new (10.01) USB drivers.
No other changes since Race Studio 2.17.17

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NOTE: Software versions released before October 22nd are not included in this documentation. If you wish to see the "old" software release history, please connect to our website www.aim-sportline.com and click on "Race Studio 2 - Release history up to Race Studio 2.17.17".