

SX-CONF v4

User Manual

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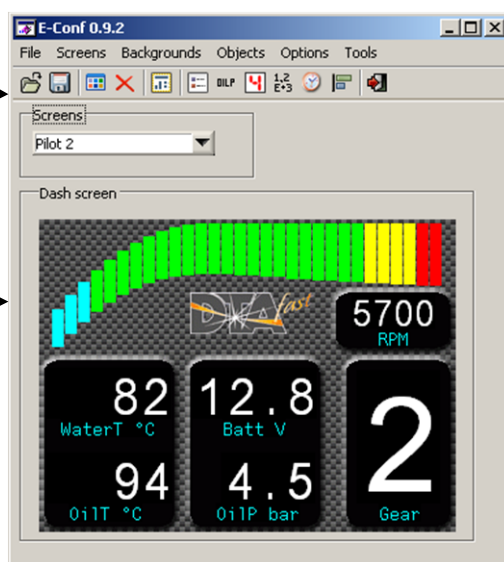
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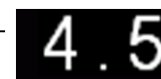
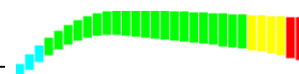
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1. Basics

Design your own screens



Add your meters



Upload to the dash



2. Terms definition

2.1. Screen

A screen will define a combination of a background picture, and controls.

2.2. Configuration

A configuration is a set of screens. Up to 8 screens can be included in a configuration.

2.3. Background

A background picture can be any 256 colors, 400x240 pixels bitmap. The importation tool reduces automatically the number of colors to 242, to integrate the system color palette.

2.4. Color palette

The configuration software includes a 14 colors system palette. These colors will be available to display the controls.



2.5. Controls

The controls are overlaid on the background picture to complete the screen. They are updated with the values received by the dash dynamically.

2.6. Font

6 different text font sizes are embedded in the dashboard. They are specified by their *width x height* in pixels : 8x14, 24x39, 32x53, 48x80, 64x102, 96x155.

2.7. Data Channels

Depending on the dashboard configuration, a set of data channels is provided. Any data can be displayed according to the user configuration, with the provided objects.

2.8. Directories and files

The configuration software installs itself in the provided directory (usually \PROGRAM FILES\X-CONF). It also needs a "C:\XAP DATA\SCREENS" directory to work properly. It will be created if not present.

The screen configuration files (.xml files) are in "C:\XAP DATA\SCREENS".

The background pictures (.bmpx files) will be placed in "C:\XAP DATA\SCREENS\".

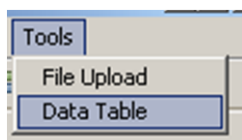
The bargraph configuration files (.xmlb files) will be placed in "C:\XAP DATA\SCREENS\BG".

The data configuration files (.xml files) are in "C:\XAP DATA\SCREENS\CONFDATA".

3. Creating a configuration

3.1. Data channels

Click on



It will show the list of every data that can be displayed on the dash.

Configuration												
Data												
Name	Conv.	Alert L	Alert H	Alert Val.	Value S.	Delay	Temp.	Level	Color	Sign	Nb fig.	Precision
RPM	Linéaire	0.00	0.00	RPM	2000.00	500	10	0		0	4	0

3.1.1 Name

The name of the channel.

3.1.2 Conversion

The conversion method, for the display of data. The dashboard receives a raw value, which is converted into the real one. Data coming from the S-Series ECUs are pre-configured.

Clicking on the cell will show the conversion dialog box

	X	Y
1	0	0.00
2	0	0.00
3	0	0.00
4	0	0.00
5	0	0.00

There are 2 types of conversion : *Linear* and *Steps*.

In the first one, you have to enter the factors for a linear conversion.

The second one allows the use of non-linear sensors, by entering 5 different values of the sensor in Y, and the corresponding voltage in X.

3.1.3 Alert Levels

These are the Low and High Alert value for the channel.

When the value is below the Low level, the alert for the channel is triggered.

When the value is above the High level, the alert for the channel is triggered.

3.1.4 Alert Value and Value L.

This allows to set a particular data and a level below which the alert will **not** be triggered.

3.1.5 Delay

The delay after which the alert stripe will be displayed.

3.1.6 Temporization

The time the alert will remain after the channel is no more active.

3.1.7 Level

The priority level for the overlayed stripe.

0 : no stripe displayed.

1 and more : the stripe is displayed.

The higher the value, the higher the priority.

3.1.8 Color

The color of the stripe that will be displayed on an alert.

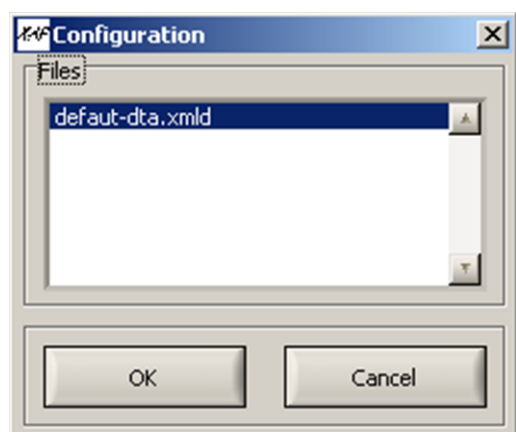
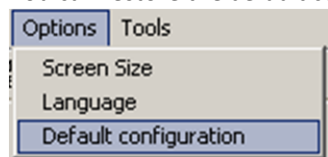
3.1.9 Data display

The display options for the numerical value.

- Sign : indicate if the value is signed or not.
- Nb fig : the number of figures before the comma.
- Precision : the number of figures after the comma.

3.2. Data Table restoration

You can restore the default configuration of the data table anytime by clicking on :



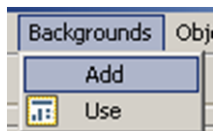
Select the right one and click “OK”. Otherwise click “Cancel”.

3.3. Background design

3.3.1 User-designed background

It's possible to import any 256 colors and 320x240 pixels BMP picture. Use your favorite bitmap designer and save the file in Windows BMP format.

Then click on

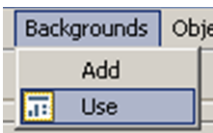


to display the file selection dialog box. Click on the select button. After a while, you'll be advised on the success of the operation.

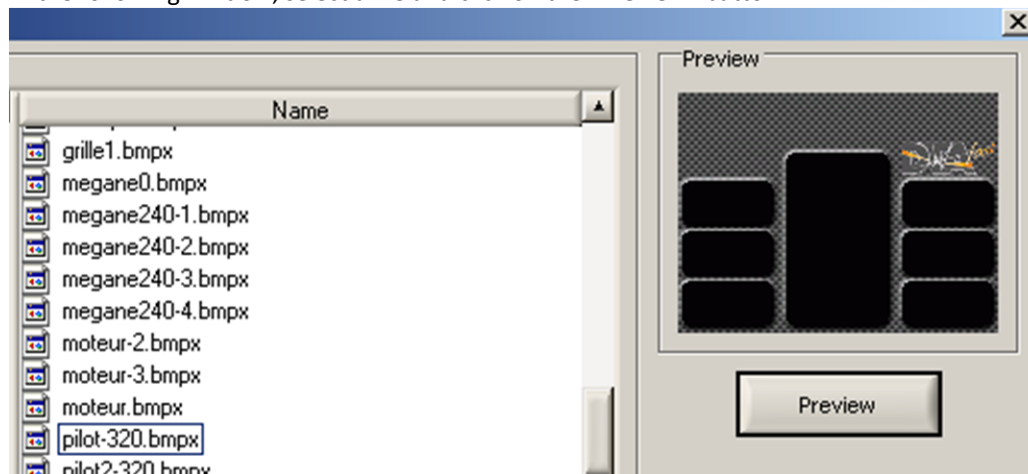
The picture is now part of the background library.

3.3.2 Background from the library

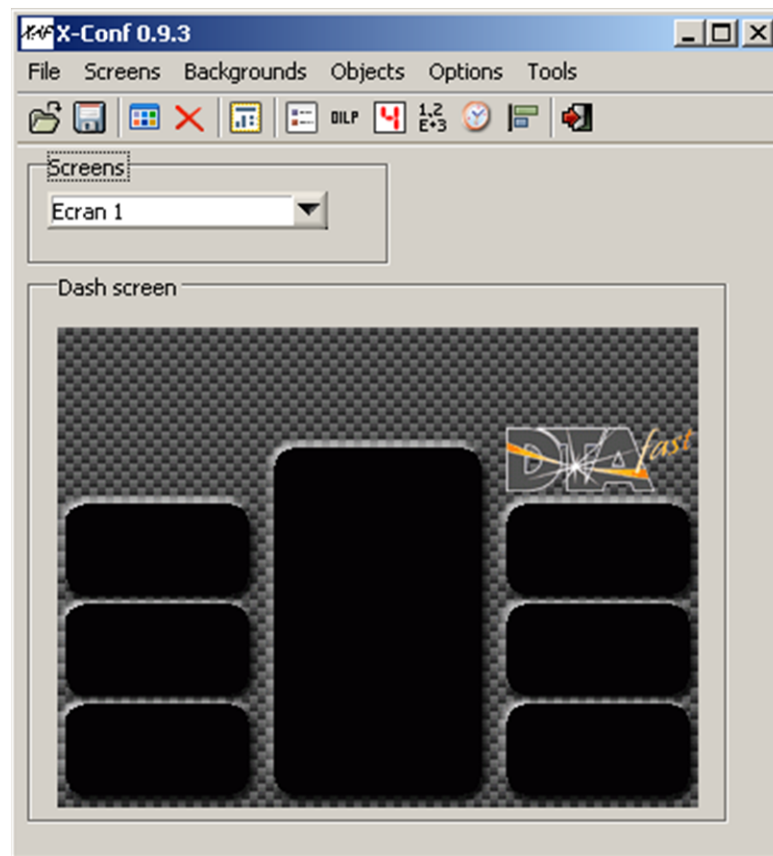
Click on



In the following window, select a file and click on the “Preview” button.

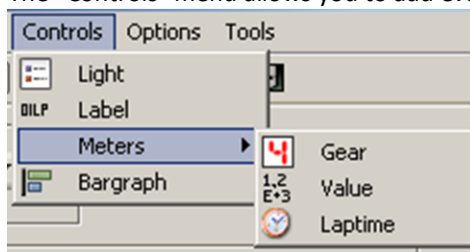


When you've chosen the right background, click on “OK”. The selected background appears on the design area.



3.4. Adding the controls

The “Controls” menu allows you to add every available controls.



Every control can be dragged with the left button of the mouse everywhere on the screen.
To access control properties, click with the right mouse button on the control.

3.4.1 Light

The light is a rectangular area, that changes its color when a data is on alert state.

The following parameters can be set :

- Data : the data channel
- Width : the width of the area in pixels
- Height : the height of the area in pixels
- Colors : the colors of the control
 - o Normal : when the data is not on alert nor default
 - o Default : when the data is on default
 - o Alert : when the data is on alert
- Position : the X,Y position of the area on the screen

Properties

Source
Data: RPM

Simulation
Value: 0.000

Text
Label: Font: P8x14

Dimensions
Width: 50 Height: 50

Colors
Normal: [green] Bkgd: [black]
Default: [blue] Alert: [red]

Position
X: 0 Y: 0

Close Delete Apply

3.4.2 Labels

The label is a rectangular area containing text.

The following values can be set :

- Label : the text, maximum 16 characters
- Font : the text font
- Colors : the colors of the control
 - o Normal : the color of the text
 - o Bkgd : the background color of the text.
- Position : the X,Y position of the area on the screen

3.4.3 Meters

Meters are used to display any numerical data.

Value is the generic one.

Gear and *Laptime* are specific for their respective data.

Note : with the S-Series ECUs, it is not necessary to use a Gear control to display the Gear value.

The following values can be set :

- Data
- Simulation value (for screen design only)
- Font

- Colors : the colors of the control
 - o Normal : the color of the text
 - o Bkgd : the background color of the text.
 - o Default : when the data is on default
 - o Alert : when the data is on alert
- Position : the X,Y position of the area on the screen

3.4.4 Bargraph

The bargraph is a set of rectangular areas, fully adjustable.

	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
X Pos	191	201	211	221	231	241	251	261	271	281	291	301	311	321	331
Y Pos	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Width	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Height	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
Col. 1															
Col. 2															
Col. B															
Step 1	5500.00	5600.00	5700.00	5800.00	5900.00	6000.00	6100.00	6200.00	6300.00	6400.00	6500.00	6600.00	6700.00	6800.00	6900.00
Step 2	7000.00	7000.00	7000.00	7000.00	7000.00	7000.00	7000.00	7000.00	7000.00	7000.00	7000.00	7000.00	7000.00	7000.00	7000.00

You can load and save your bargraphs in a file, in order to use them on other screen configurations.

Bargraphs properties :

- Nb of Bars : from 1 to 30.
- Data : the name of the data channel
- Position : to move all the bars together
- Simulation : value used to check the bargraph behaviour

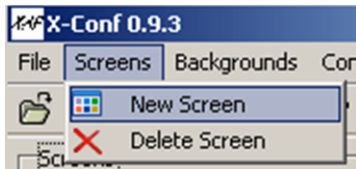
Bars properties

- X Pos : X position in pixels
- Y Pos : Y position in pixels
- Width : bar width in pixels
- Height : bar height in pixels
- Col. 1 : Color of the bar when the value is over Step 1
- Col. 2 : Color of the bar when the value is over Step 2
- Col. B : Color of the bar when the value is below Step 1
- Step 1 : value of Step 1
- Step 2 : value of Step 2

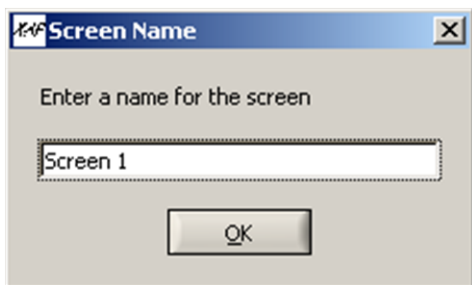
4. Managing Screens

4.1. Adding a new screen

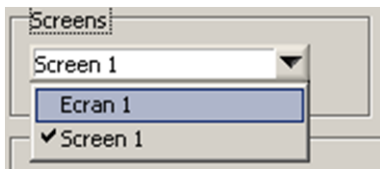
Click on



Then enter a name for the screen (max 15 characters) :

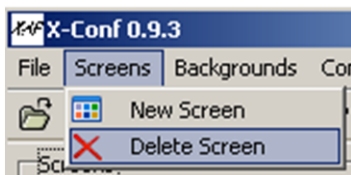


And the new screen appears in the screen menu



4.2. Removing a screen

Click on

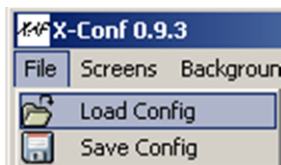


And the current screen will be removed from the configuration.

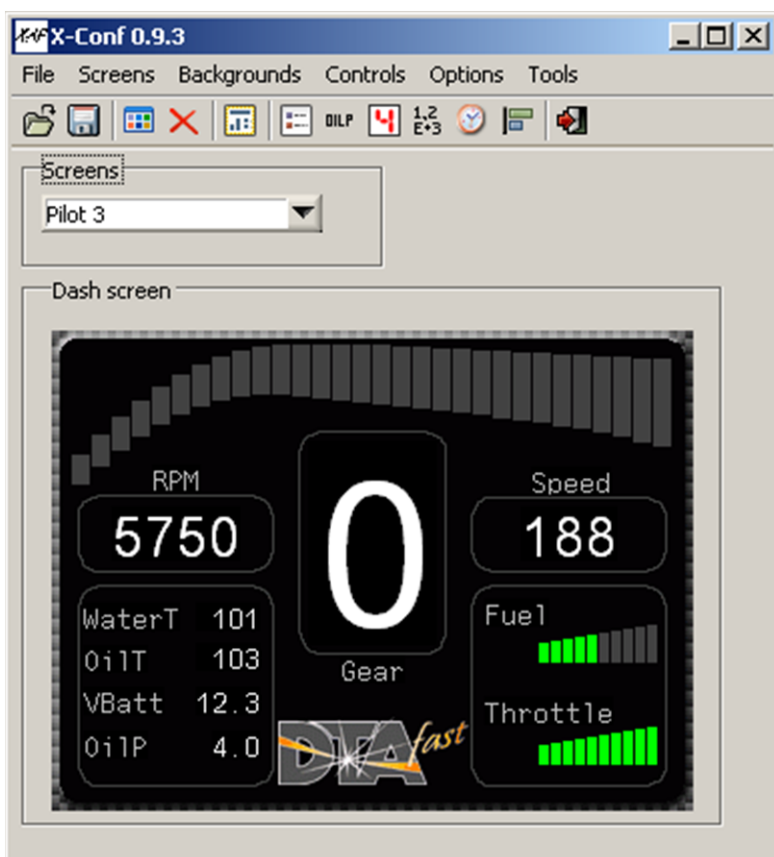
5. Managing Configurations

5.1. Loading a configuration file

Click on

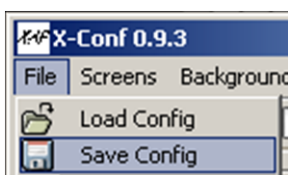


and choose a config file to be loaded.



5.2. Saving a configuration file

Click on



and select a file to save the configuration. Be careful, the selected file will be replaced.

6. Dashboard connection

6.1. Installing the USB drivers

Connect the USB cable and switch on the dashboard. When the computer asks for drivers, don't let it finding automatically the drivers on internet, and give the right path of the provided drivers.

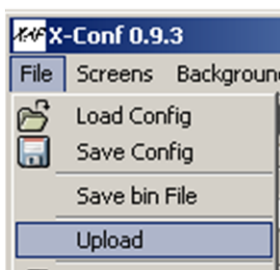
It should install two peripherals "XAP USB Interface" and "XAP USB Port".

If it asks for "Install unsigned drivers anyway", choose "Yes".

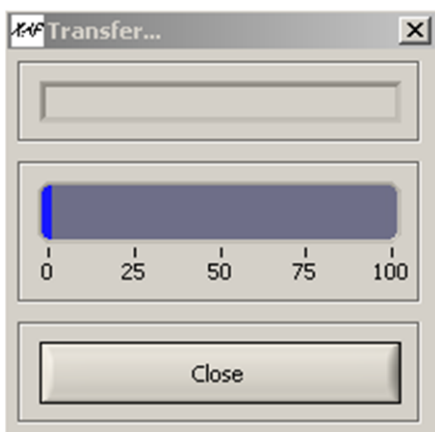
6.2. Uploading the configuration

Connect and start the dashboard.

Click on



The following window appears :

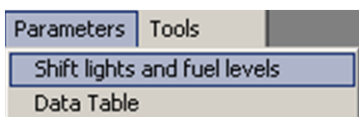


When the upload is finished, the progress bar turns green. You have to restart the dash to display the new configuration.

Sometimes the upload fails at the first time. Click on Upload again to retry.

6.3. Configuring the shift lights and fuel gauge

Click on



The following dialog allows to set up the values for the shift lights, and 15 steps for the fuel gauge (connected to ANA_2).

Shift lights - fuel levels

RPM Shift lights

	1	2	3	4	5	6	7	8	9	10	11	12
ON	6000	6200	6400	6600	6800	7000	7000	6800	6600	6400	6200	6000
OFF	9000	9000	9000	9000	9000	9000	9000	9000	9000	9000	9000	9000

Fuel levels

Volume	100	90	80	70	60	50	40	30	25	20	15	10	5	2	0
Voltage	2450	2500	2900	3200	3400	3600	3800	4000	4100	4200	4300	4400	4500	4600	4700

The fuel gauge sensor voltages must be in ascending order.

Lap Time

Display Time (s)	5
Display Delay (s)	1
Minimum Time (s)	100

Speed

Wheel Perimeter: 1640

Number of pulses: 1

ECU - ☒ Dashboard - ☐ GPS - ☐

Barrel

	Min	Max
R	0	0
N	0	0
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0

OK Cancel OK Update Download

6.3.1 Shift lights

For each led, it's necessary to indicate a RPM value for the led to light ON, and another value for it to light OFF.

6.3.2 Fuel levels

On the first line, enter the fuel levels that you noted. Then, on the second line, enter the corresponding sensor voltage. Beware of entering the voltages in ascending order (the fuel levels can be in descending order). The fuel gauge is connected to the "ANA_2" input of the dashboard.

6.3.3 Lap Time

These are the parameters relative to the laptime function, the display time of the the laptime panel, the display delay, and the minimum time of the lap.

6.3.4 Speed

This sets the way the dashboard receives the speed. From the ECU by the CAN line, directly calculated by the dash, or with the GPS unit. You have to set also the wheel perimeter, and the number of pulses of the speed target, in the case of the speed is computed by the dashboard.

6.3.5 Barrel

In the case of the dash have to acquire the Gear position, you enter here the min and max voltage levels of the barrel sensor for each gear.

6.3.6 Update the dashboard configuration

When you're done, connect the dashboard and click on "Update". A message "Upload OK" indicates the success of the operation.

6.3.7 Saving the configuration

Clicking on "OK" will automatically save the values in the current configuration.

Clicking on "Cancel" will discard the changes.