EDL8 Race Dash Quick Start Guide

Engine Management Systems

EMS EDL8 User Quick Start Guide Version 1.2

EDL8 Race Dash

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Table of Contents

Before you start

Minimum Requirements

Operating Systems:	Windows 7, 8 and 10
Minimum Disk Space:	40MB
CPU:	Minimum 32 bit, 1.2GHz
	SD Card Reader

Dash Manager Overview

All dash functions and settings are programmed using the Dash Manager. The settings are saved to the SD card while it is in the laptop SD card slot. The saved settings are then loaded in to the race dash when you place the SD card into the SD Card slot of the dash and switch the dash on.

Your Race Dash comes with a pre-initialised SD card ready to use. However, if you purchase a new SD card it must be initialised before it will work with the EDL8 race dash. This is done with the SD card initialization function of the Dash Manager software.

The Dash Manager functions are accessed through the Data View Software. This software must be installed on a Windows Laptop or PC.

The USB Flash Drive that came with the Race Dash has the EDL8 Data View software. This software must be installed on to a Windows laptop or PC with Windows 7 or later.

Installing the Data View Software

To install the EDL8 Data View software.
1. Insert the USB flash drive that came with you Race Dash into a USB slot on the Laptop or PC.
2. Open the USB Flash Drive with Windows Explorer and run the EDL8Installer.exe file.
3. The installer will put the software on to the computer and also add the EDL8 Data View Icon on to the desktop.
4. Double click the EDL8 Data View Icon to start the software.
5. See Initializing an SD card for instructions on how to prepare the SD card for the ED8 Race Dash.

Initializing an SD card

Once you have initialized the SD card for the EDL8 Race dash it will not be compatible with windows.
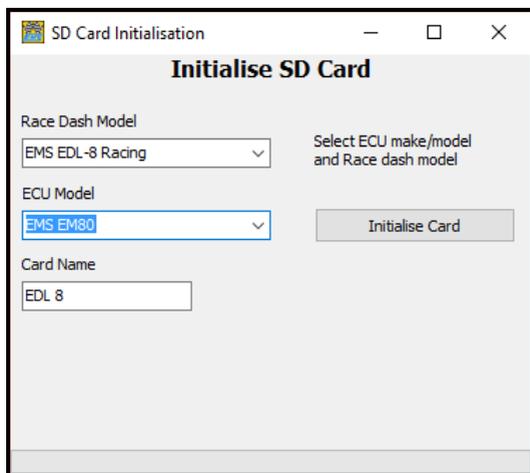
Initializing an SD card for the EDL8 race dash.

1. From the Dash Manager menu select "SD Card"->"Initialise new Card". This will show the card initialisation screen.
2. Select a Race Dash model.
3. Select the ECU model used with this Race Dash.
4. Enter a card name in the field provided
5. Press the "Initialize Card" button.

The card name is important. The system will use this to group all extracted data logs together under the card name.

When the initialisation is complete the SD card will have a blank Dash Configuration. You can either load a pre-saved configuration file or set up a new configuration file with new screen layout, Display channels and Acquisition channels and also any required channel

translations. If using the LED lights, PWM outputs or Pulse Inputs then these must also be configured.

Once you have finished setting up the dash configuration it must be saved to the SD card and loaded in to the race dash.

To save the configuration file on to the SD card press the "Save to SD card" button at the top of the screen.

To load the settings from the SD card in to the dash, insert the card into the SD card slot on the dash and turn the dash on. The dash will indicate that it is loading the new settings by flashing the LED lights on the right hand side. Loading should take about 1 minute. Once loaded the dash will start operating with the new settings.

The EDL8 software comes with pre-saved configuration files for each of the EMS ECUs. After initializing the SD Card you can load a pre-saved configuration file and then adjust and change it to suit you requirements.

Loading a pre-saved configuration
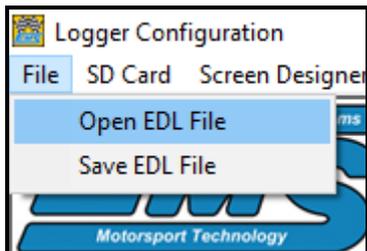
1. From the Dash Manager menu select "File"->"Open EDL File". This will show a folder with pre-saved configuration files.
2. Select a file matching the ECU used with the Race Dash
3. Press the Open Button

This will load a pre-saved configuration file in to the Dash Manager Software. You can now customise this configuration to suit your specific needs and save it again or save it with a different name.

Connecting to EMS EM-Tech ECUs

The CAN data channels must be enabled on the EM-Tech ECU.
This is done using the EM-Tech Manager Software.

While the ECU is connected to the laptop and communicating with
the EM-Tech Manager software go to the ECU setup screen and set
the CAN Baud Rate to 250 Kbps and select the data packet for each
frame.

Log Activation

This is used to select how the logger will start and stop logging. The logger can be set to start logging whenever the selected channel data is higher than the Start Trigger Value. The logging will stop when the selected channel value is below the Stop Trigger value.

Start / Stop Channel

Set the channel used to start and stop the logging.

Start / Stop Trigger

This tells the logger how to compare the start / stop channel. It will either compare if the channel is more than or less than the trigger value.

Start Trigger Value

This is the value used to compare the start/stop channel value. If Start/Stop Trigger is set to *greater than,* then the logger will commence logging when the data channel value is higher than the

trigger value. If Start/Stop Trigger is set to *Less than,* then the logger will commence logging when the data channel value is lower than the trigger value.

Stop Trigger Value

This is the value used to compare the start/stop channel value. If Start/Stop Trigger is set to *greater than,* then the logger will stop logging when the data channel value is lower than the trigger value. If Start/Stop Trigger is set to *Less than,* then the logger will stop logging when the data channel value is higher than the trigger value.

Start/Stop Delay

This tells the logger how long to wait before logging commences and stops. This time is represented in milliseconds.

Example: To commence logging when the RPM is higher than 2000 for 300 milliseconds and stop logging when the RPM is less than 1500 RPM for 300 milliseconds.

- Set the Start/Stop Channel to "ECU Engine RPM"
- Set the Start/Stop Trigger to "Greater or Equal"
- Set the Start Trigger value to "2000"
- Set the Stop Trigger value to "1500"
- Set the logging Start/Stop delay to 300

Log Packets per second

A log packet contains all of the data channels selected to log. This can be from 1 channel up to 40 channels.

Use this to set the number of log packets per second. If you set it to "200" then the logger will record every channel 200 times per second. Set it to 100 to log every channel 100 timers per second.

GPS Active

If you have a GPS module and want to record speed and track mapping then this must be set to "Activated"

Lap Timer

The "minimum lap time in seconds" parameter is used identify sector beacons from lap beacons. If the lap time reading is less than the minimum lap time then the dash will assume the beacon signal to be a sector.
Set this value to a time that is less than your fastest lap time but more that the last sector time.

Set Date and Time

The Dash has a built-in clock that runs off a small battery when power is off. Once the battery is discharged the time is lost and must be reset.
Resetting the date and time on dash is done via the SD card. Set the correct date and time in the fields provides and then tick the "Set Dash Time on settings upload". The time clock will be reset once you put the SC card into the dash an turn the dash on.

Select Channels to log
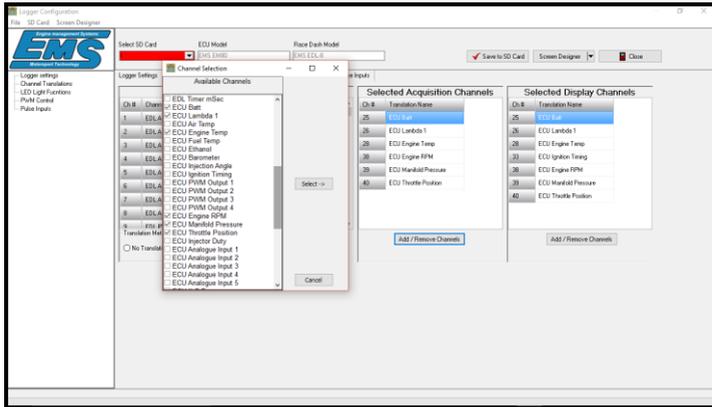
Up to 40 channels can be selected for logging from the list of available channels. To select the channels for logging press the "Add / Remove Channels" button that is directly under the "Selected Acquisition Channels" to show the channel selection screen.

Each available channel has a selection tick box beside the channel name. Select the required channel by clicking on the tick box next to the channel name, a selection tick will appear in the small box. Repeat this for each channel you want to record. Once all required channels are selected press the "Select ->" button.

To remove a selected channel press the "Add / Remove Channels" to display the channel selection box. Click on the tick box beside the channel name you want to remove, this will remove the selection tick. Repeat this for each channel you want to remove then press the "Select ->" button.

Select Channels to Display
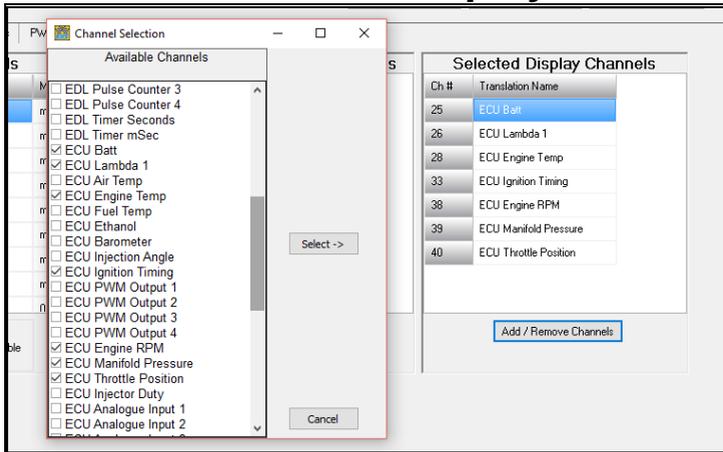
You can select up to 20 channels to display from the list of available channels. To select the channels you want to use on the dash display press the "Add / Remove Channels" button that is directly under the "Selected Display Channels" to show the channel selection screen.

Each available channel has a selection tick box beside the channel name. You select the channel you want to display by clicking on the tick box to show a selection tick. Repeat this for each channel you want to display. Once all required channels are selected press the "Select ->" button.

To remove selected channels press the "Add / Remove Channels" button to display the channel selection box. Click on the tick box beside the channel name you want to remove, this will remove the selection tick. Repeat this for each channel you want to remove then press the "Select ->" button.

All of the channels selected will become selectable in the Screen designer windows.

How to set up shift lights

Follow the steps below to set up the Main LED configuration as Shift Lights.

1. Set the LED Config Selection Channel to Default.
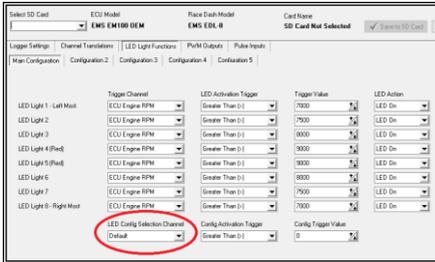
The Race dash will only use the main LED configuration.

2. Set the Trigger Channel to "ECU Engine RPM" for each of the LED lights.
3. Set the LED Activation Trigger to "Greater Than (>)" for each of the LED lights.
4. Set the Trigger Value for each LED light to the RPM value you want the LED light to come on.
5. Set the LED Action to "LED On" for each LED light.

The example shown in the screen image will cause the LED lights to come ON progressively starting from 7000 to 9000 RPM. The LED lights will start from the outer left and right LED lights and progress towards the middle Red LED lights at 9000 RPM

Screen Designer

Use this feature to design the Race Dash screens. Any changes made with screen designer are saved to the SD Card and will become active once the SD card is inserted into the Race Dash and the dash is turned on. The EDL8 race dash can display 2 screens, the main screen and a secondary screen. The second screen is activated via an input switch. It is a momentary screen that remains active for a defined period then the main screen becomes active again. See "Screen Return Delay" to define the delay period.
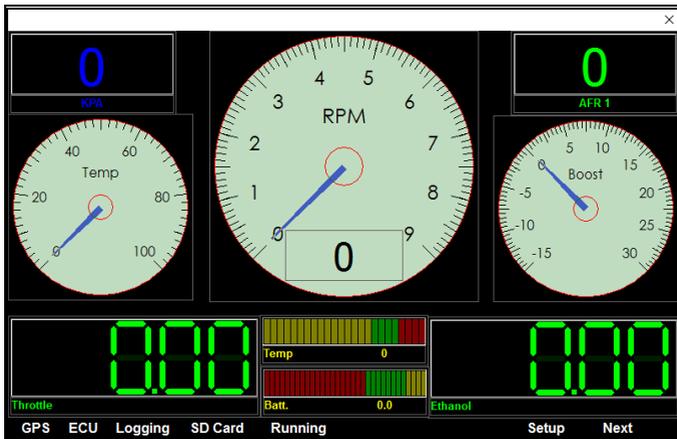
Adding Gauges to the Dash Screens

To add new gauges place the mouse pointer on an area of the screen that is clear of any gauge and press the right mouse button. A menu will be shown allowing for the selection of various gauges. Select the desired gauge from the pop-up menu. You can now resize and position by clicking and dragging with the mouse pointer.

Repositioning and resizing Gauges

You can reposition and resize any gauge by placing the mouse pointer on the gauge you want to modify and press the right mouse button to show the pop-up menu then select the Move/Resize/Lock option. This will show a window border around the gauge. Use the top border to drag and reposition the gauge. Click and drag the side borders to resize the gauge. To lock the gauge position and size press the right mouse button again and select the Move/Resize/Lock option.

Removing Gauges

To remove a gauge place the mouse pointer on the gauge you want to remove and press the right mouse button and select the Remove Gauge option.

Data Analyser

The Data Analyser screen is the initial screen shown when you start the analyser software. It allows you to view log data in a graphical form. You can view multiple log files together so you can compare two or more sessions.

When you select channels to display on the graph, the software will automatically display channels with the same name together in the same graph. This allows you to overlay similar data for easier comparison. The channel data values are also shown in text form on the left side of the screen. As you move the mouse pointer over the chart the text data follow showing the numeric value for each channel in the log pointed to by the mouse cursor.

When adding a channel to the data chart and display setting for the channel have not be set then the chart minimum and maximum span will be automatically set based on the minimum and maximum data value detected in the log. This may cause the line graphs to seem disproportionate to the actual data span for the channel.

Example: The battery voltage may visually appear to swing high and low by a large amount but it is actually swinging a small amount of only 2 volts. This is because the chart automatically sets the minimum / maximum chart span to be between the minimum and maximum data values. This can be adjusted by using the Set Display Options feature.

Importing a log file from the SD card

The EDL8 saves all log files to the SD card. Each log session is saved as a separate file on the SD card. Before the recorded data can be displayed it must be extracted from the SD card.

To import a log file from the SD card:
Select menu option "File"->"Import file from SD card"
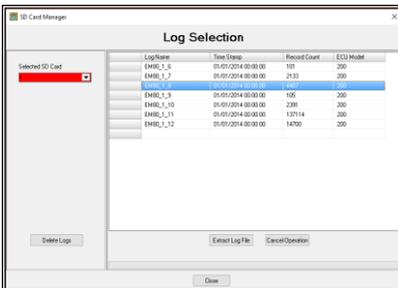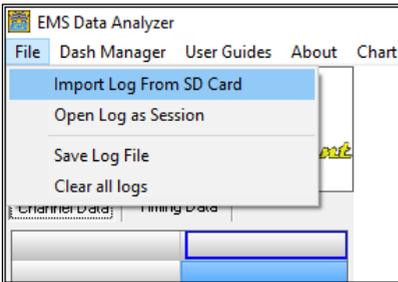
Select the SD card from the "Selected SD Card" dropdown box, Click on the log session you want and press the "Extract Log File" button. After extraction, the log file will be saved using the "Log Name", it will also be automatically loaded into the analysis screen.

EDL8 Loom Pin out

28 Pin plug

Pin Number	Pin Description	Wire Colour
1	Aux output 1	Yellow
2	Aux output 2	Yellow
3	5 Volt Ref	Orange
4	Aux output 3	Yellow
5	Pulse Input 3	Green
6	Pulse Input 6	Green
7	Pulse Input 5	Green
8	Ground	Black
9	Aux output 4	Yellow
10	Pulse input 4	Green
11	0-5 Volt input 5	Blue
12	0-5 Volt input 8	Blue
13	0-5 Volt input 6	Blue
14	5 Volt Ref	Orange
15	5 Volt Ref	Orange
16	Switch input 2	Green
17	Switch input 1: Second Screen	Green
18	5 Volt Ref	Orange
19	Beacon Pulse	Green
20	Ground	Black
21	Ground	Black
22	0-5 Volt input 4	Blue

23	0-5 Volt input 3	Blue
24	0-5 Volt input 2	Blue
25	0-5 Volt input 1	Blue
26	0-5 Volt input 7	Blue
27	Pulse input 1	Green
28	Pulse input 2	Green

9 Pin plug

Pin Number	Pin Description	Wire Colour
1	Ignition Power	Red
2	GPS TX	Grey
3	GPS RX	Grey
4	CAN H	Grey
5	CAN L	Grey
6	GPS Module Power	Orange
7	ECU RX	Grey
8	ECU TX	Grey
9	Ground	Black

The Smaller 9 pin loom is terminated with the correct plugs ready to use with any EMS ECU.

If you are using any Motorsport or Stinger V4 and S2R ECU then use the 9 pin D-Type plug. This is the RS232 serial communications plug.

If you are using any EM-Tech ECU then you must use the Square CAN plug. This is the CAN BUS communications plug.

You must also connect the red wire from pin 1 to a switched power source and the black wire from pin 9 to ground. Preferably to the same ground as the ECU.

The power source should not exceed 22 volts.