EFI Europe

Euro 6 TC TRIM ECU

Racing Data Power

INTRODUCTION

AIM has developed special applications for many of the most popular ECUs: by special applications we mean user-friendly systems which allow to easily connect your ECU to our high tech data loggers: user needs only to install harness between the **logger** and the ECU.

Once connected, the logger displays (and/or records, depending on the logger and on the ECU data stream and configuration) values like RPM, engine load, throttle position (TPS), air and water temperatures, battery voltage, speed, gear, lambda value (air/fuel ratio) analog channels…

All AIM loggers include – free of charge – **Race Studio 2** software, a powerful tool to configure the system and analyze recorded data on your PC.

Warning: once the ECU is connected to the logger, it is necessary to set it in the logger configuration in Race Studio 2 software.
Select Manufacturer "Efi" Model "Euro_6_TC_TRIM".
Refer to Race Studio Configuration user manual for further information concerning the loggers configuration.

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Chapter 1 – Technical communication notes

EFI “Euro 6_TC_TRIM” can communicate with AIM loggers through the CAN bus. This communication can be wrong due to different reasons related to hardware, software of firmware.

1.1 – Hardware check

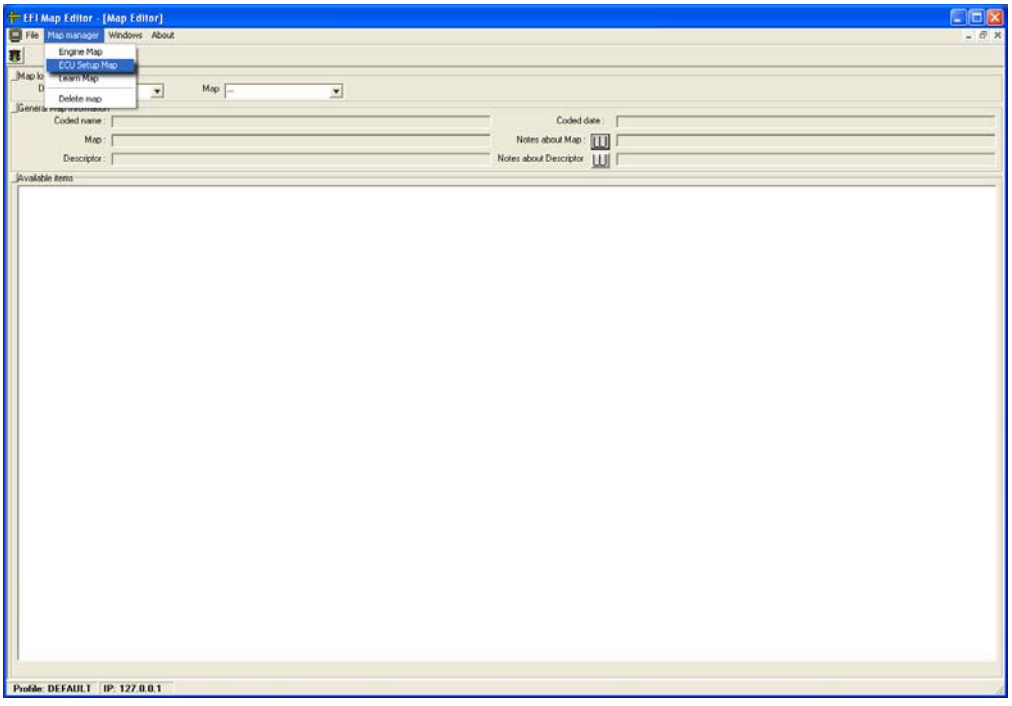
EFI CAN line works normally with two only wires: CAN high (corresponding to AIM CAN+) and CAN low (corresponding to AIM CAN-). Generally AIM loggers do not need to ground CAN line. To check if hardware is ok:

- ensure that a 120 Ohm “line-end resistor” is installed between CAN+ and CAN-; use a multimeter; disconnect AIM logger form the ECU and make this check on both sides (ECU and logger);
- check if the amplitude of each bit is 2V (or at least 1.8); using a scope ground the probe on CAN- while measuring CAN+. Please ensure that no filtering feature is enabled on the scope: this because of high baud rate of this line.

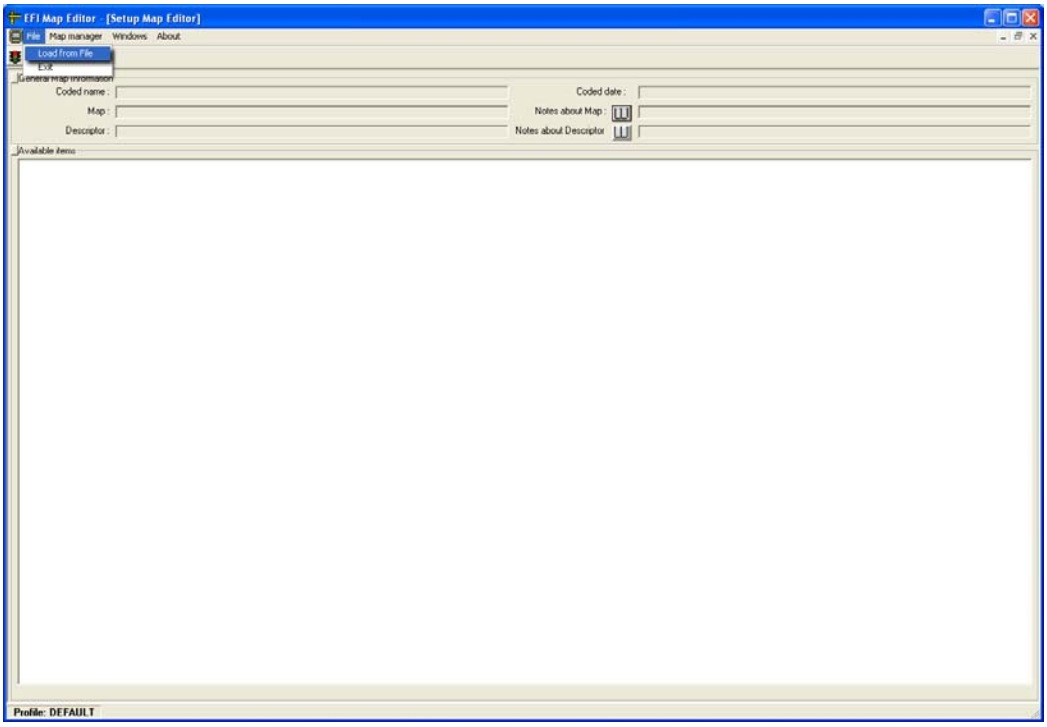
1.2 – Software setup and firmware check

To configure EFI “Euro 6 TC TRIM” ECU:

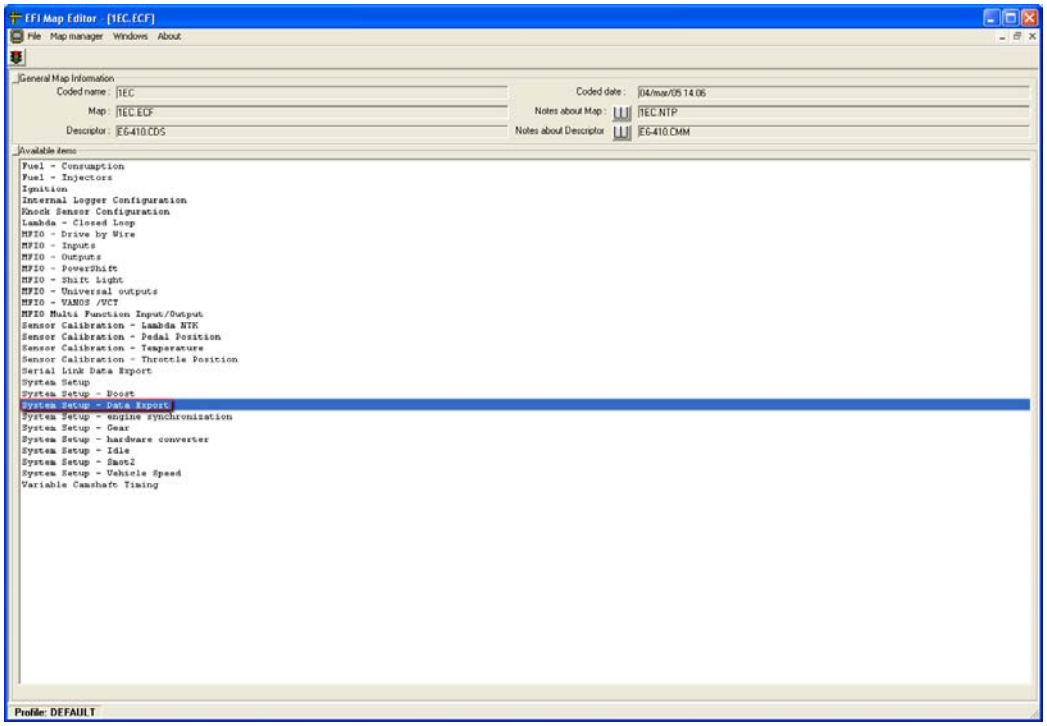
- run “ECT Mod” software
- load an “Euro TC TRIM” ECU
- click “Map Editor”
- click Map Manager and select “ECU Setup Map”



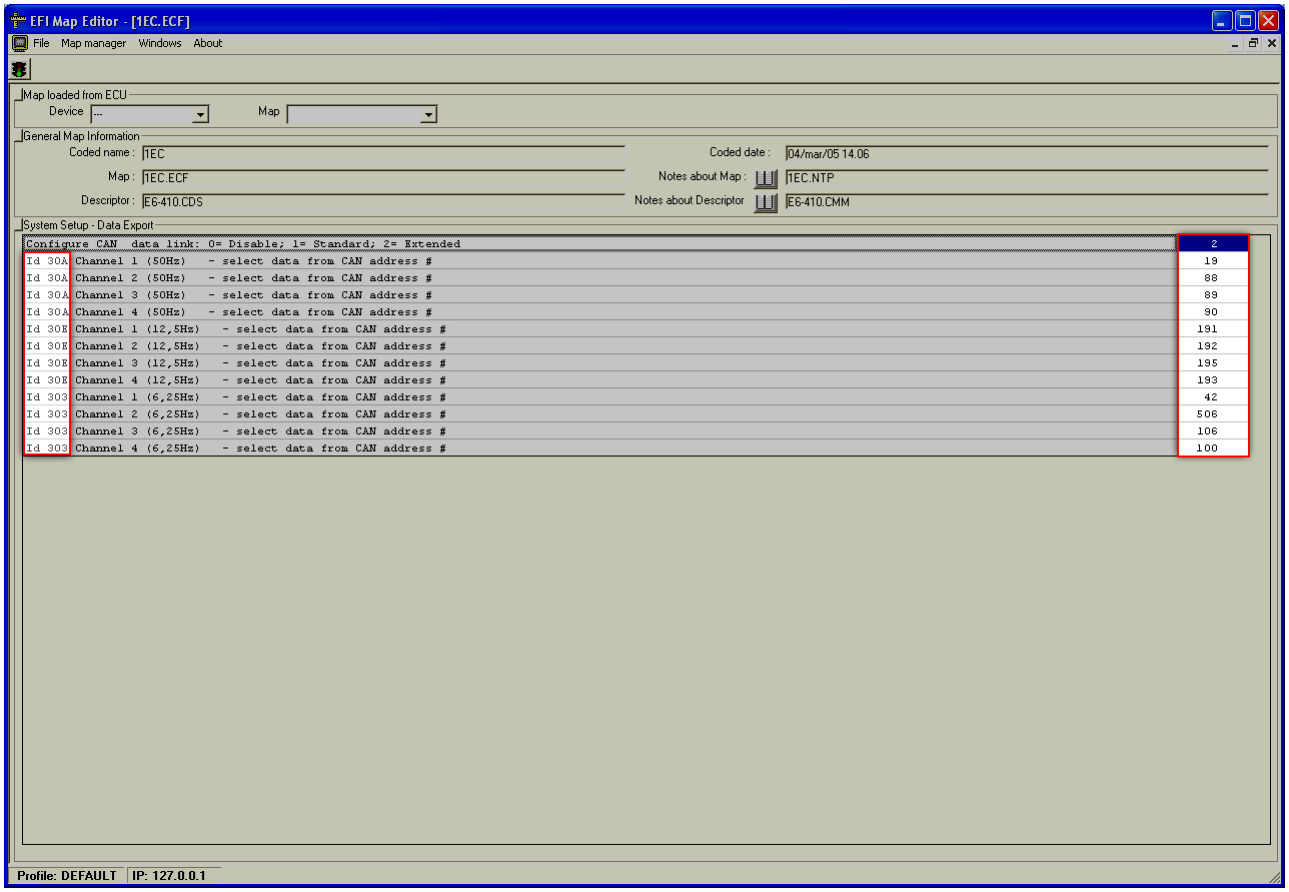
- Click File and select “Load from file” option.



- Select the “.ECF” file;
- select the “.CDS” file.
- the map is loaded
- select “System setup – data export” option



- Data export table is loaded.



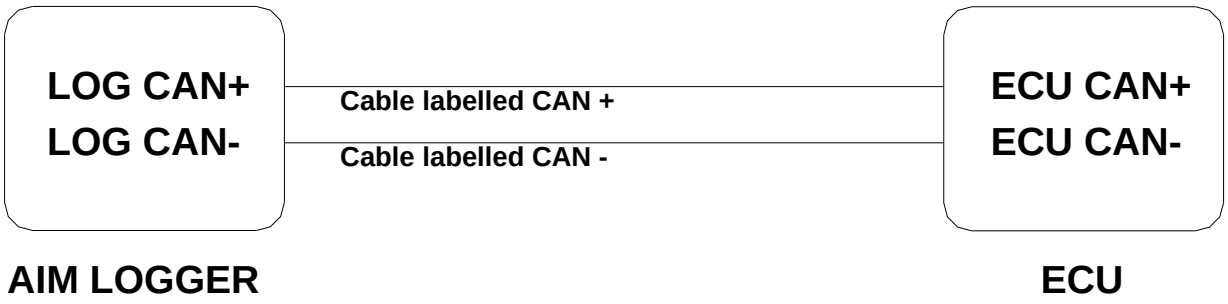
With reference to the image here above: the **first row** ha to be set to **"2 =Extended."**
All other values have to be set as follows:

ID	Value
30A	19
30A	88
30A	89
30A	90
30E	191
30E	192
30E	195
30E	193
303	42
303	506
303	106
303	100

Please ensure that the logger connected to the ECU is upgraded at the latest firmware version and has been configured with the latest Race Studio 2 version.

Chapter 2 – CAN communication Setup

EFI Euro 1 ECU is equipped with a CAN communication setup used to communicate parameters to an external logger.
The image here below shows the standard CAN communication setup.



Chapter 3 – Connection with AIM loggers

EFI “Euro 6 TC TRIM” is equipped with a 79 pins connector used to communicate parameters to an external data logger or to configure the ECU itself. To connect AIM logger to the ECU:

- connect AIM cable labelled “CAN+” with pin 55 of the ECU connector;
- connect AIM cable labelled “CAN-“ with pin 70 of the ECU connector.

Chapter 4 – Communication protocol

Channels received by AIM loggers connected to EFI “Euro_6new/Euro_12new” ECU are the same, to say:

ID	CHANNEL NAME	FUNCTION
ECU_1	EFI_RPM	RPM
ECU_2	EFI_TPS1	Throttle position sensor bank 1
ECU_3	EFI_TPS2	Throttle position sensor bank 2
ECU_4	EFI_MAP	Manifold air pressure bank 1
ECU_5	EFI_MAP2	Manifold air pressure bank 2
ECU_6	EFI_DFARF	Throttle position derivative
ECU_7	EFI_DMAP	Manifold pressure Derivative
ECU_8	EFI_AE	Fuel enrichment for positive TPS transient
ECU_9	EFI_DE	Fuel enrichment for negative TPS transient
ECU_10	EFI_WHEELSPD	Driven wheel speed
ECU_11	EFI_DRAXSSPD	Driving wheel speed
ECU_12	EFI_SLIP	Slip factor
ECU_13	EFI_OSASLIP	Ignition cut vs slip factor
ECU_14	EFI_DfarfCalc	Calculated throttle position derivative
ECU_15	EFI_PPSpc	Throttle request
ECU_16	EFI_TINJ1	Injection time for cylinder 1
ECU_17	EFI_TINJ5	Injection time for cylinder 5
ECU_18	EFI_TEROGBASE	Injection table - injection time
ECU_19	EFI_TEROG	Real injection time
ECU_20	EFI_SABASE	Injection table - injection time
ECU_21	EFI_SA	Real spark advance
ECU_22	EFI_NTK1	Lambda value 1
ECU_23	EFI_NTK2	Lambda value 2
ECU_24	EFI_KFUELLEARN	Fuel correction coefficient for auto mapping
ECU_25	EFI_CLC1	Closed loop control 1 (injection)
ECU_26	EFI_CLC2	Closed loop control 2 (injection)
ECU_27	EFI_GEAR	Engaged gear
ECU_29	EFI_GEARSHIFTTIME	Gear shift time
ECU_30	EFI_OILPRESS	Oil pressure
ECU_31	EFI_FUELPRESS	Fuel pressure

ECU_32	EFI_FASE_L	Lower injectors phase
ECU_33	EFI_FASE_H	Upper injectors phase
ECU_34	EFI_KFuelCntCrk	Cranking fuel multiplier
ECU_35	EFI_KinjHIGHperc	Terog_U/Terog_L
ECU_36	EFI_BATTVOLTDIR	Direct battery supply
ECU_37	EFI_BATTVOLTKEY	ECU voltage supply
ECU_44	EFI_AEDFarfl	Fuel enrichment for positive TPS transient derivative
ECU_45	EFI_Slip Calc	Calculated slip (with engine strategies)
ECU_46	EFI_SPEED FR	Front right wheel speed (ECU Reference speed)
ECU_47	EFI_SELEEPROM	Selected Engine Map
ECU_48	EFI_WATERTEMP	Water temperature
ECU_49	EFI_OILTEMP	Oil temperature
ECU_50	EFI_FUELTEMP	Fuel temperature
ECU_51	EFI_AIRTEMP01	Air temperature bank 01
ECU_52	EFI_AIRTEMP02	Air temperature bank 02
ECU_54	EFI_KFUELCAL	Calibration fuel multiplier
ECU_56	EFI_FUELUSED	Injected fuel
ECU_57	EFI_FUELLEFT	Left fuel