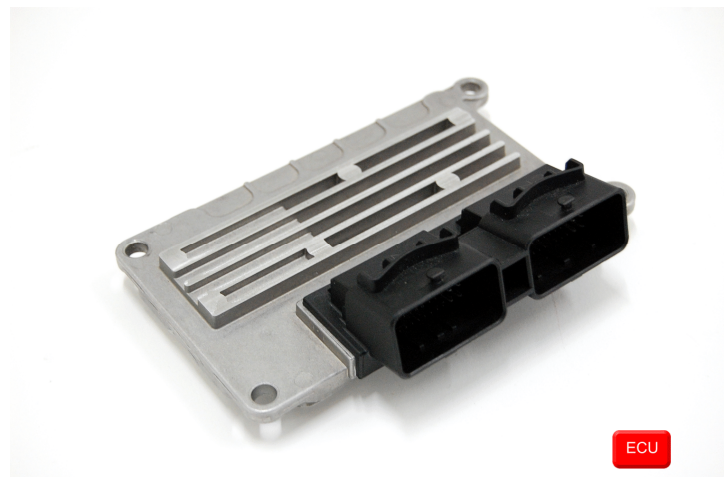


AiM Infotech

EFI EURO 4 Bike ECU

Release 1.03



This tutorial explains how to connect EFI EURO 4 ECUs to AiM devices.

1

Supported models

Supported EURO 4 ECU is:

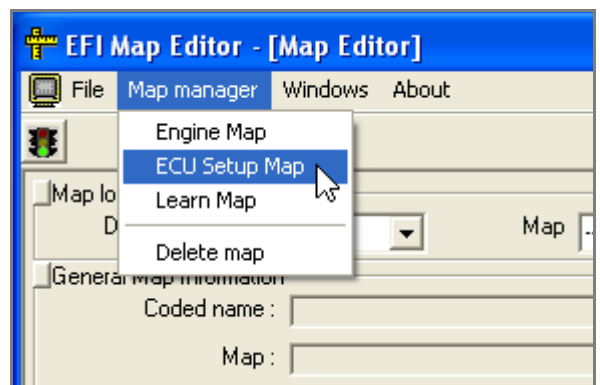
- EURO 4 Bike

2

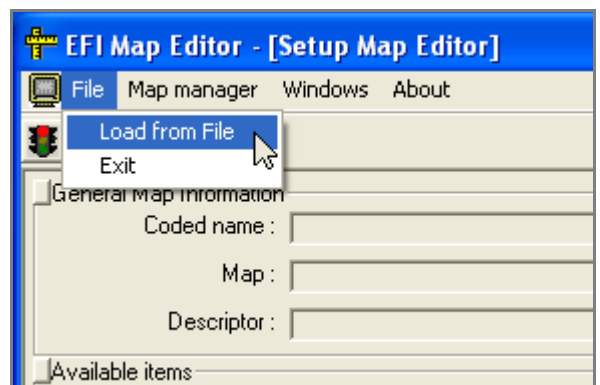
Software setup

EFI EURO 4 Bike ECU comes with the dedicated "ECT_MOD" software to be used for setting the ECU.

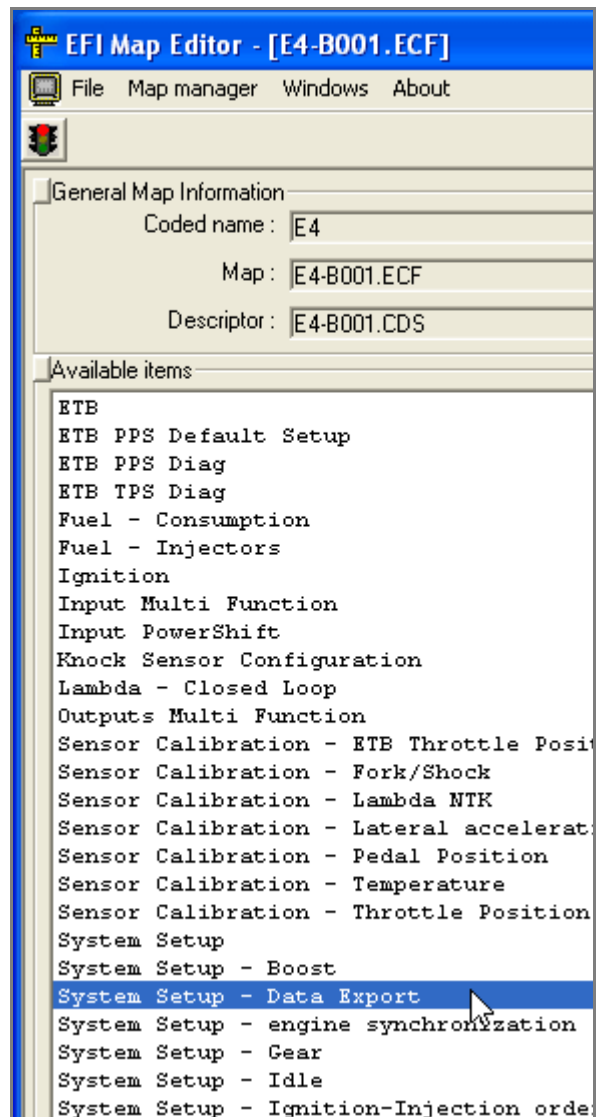
- Run the software
- Load "B001" or higher device
- Open Map Editor
- Follow the path: "Map Manager -> ECU Setup Map"



- Follow this path: "File" -> "Load from file"



- Select ".ECF" file
- Select ".CDS" file and the map is loaded
- Click "System setup – data export"





This way "Data export" table, shown below, is loaded

The screenshot shows the 'EPI Map Editor' interface. At the top, there's a menu bar and a toolbar. Below that, there are fields for 'Map loaded from ECU', 'Device', and 'Map'. The 'General Map Information' section includes 'Coded name: E4', 'Coded date: 07/gen/08 11:53', 'Map: E4B001.ECF', 'Notes about Map: E4B001.NTP', 'ID Descriptor: E4B001.CDS', and 'Notes about Descriptor: E4B001.CMM'. The main area is titled 'System Setup - Data Export' and contains a table with the following columns: 'ID', 'Description', and 'VALUE'. The first row of the table is highlighted with a red box. Above the table, there is a configuration bar with the text 'Configure CAN data link: 0= Disable, 1= standard, 2= User'. The '2= User' option is selected. The table contains 64 rows of data, each representing a channel (1-64) with a corresponding ID and VALUE.

ID	Description	VALUE
Id 300	Channel 1 (200Hz) - select data from CAN address #	135
Id 300	Channel 2 (200Hz) - select data from CAN address #	599
Id 300	Channel 3 (200Hz) - select data from CAN address #	276
Id 300	Channel 4 (200Hz) - select data from CAN address #	227
Id 301	Channel 5 (200Hz) - select data from CAN address #	200
Id 301	Channel 6 (200Hz) - select data from CAN address #	202
Id 301	Channel 7 (200Hz) - select data from CAN address #	206
Id 301	Channel 8 (200Hz) - select data from CAN address #	255
Id 302	Channel 9 (200Hz) - select data from CAN address #	254
Id 302	Channel 10 (200Hz) - select data from CAN address #	181
Id 302	Channel 11 (200Hz) - select data from CAN address #	211
Id 302	Channel 12 (200Hz) - select data from CAN address #	153
Id 303	Channel 13 (200Hz) - select data from CAN address #	122
Id 303	Channel 14 (200Hz) - select data from CAN address #	124
Id 303	Channel 15 (200Hz) - select data from CAN address #	259
Id 303	Channel 16 (200Hz) - select data from CAN address #	260
Id 304	Channel 17 (200Hz) - select data from CAN address #	133
Id 304	Channel 18 (200Hz) - select data from CAN address #	314
Id 304	Channel 19 (200Hz) - select data from CAN address #	168
Id 304	Channel 20 (200Hz) - select data from CAN address #	167
Id 305	Channel 21 (200Hz) - select data from CAN address #	94
Id 305	Channel 22 (200Hz) - select data from CAN address #	149
Id 305	Channel 23 (200Hz) - select data from CAN address #	158
Id 305	Channel 24 (200Hz) - select data from CAN address #	152
Id 306	Channel 25 (200Hz) - select data from CAN address #	253
Id 306	Channel 26 (200Hz) - select data from CAN address #	142
Id 306	Channel 27 (200Hz) - select data from CAN address #	144
Id 306	Channel 28 (200Hz) - select data from CAN address #	96
Id 307	Channel 29 (200Hz) - select data from CAN address #	95
Id 307	Channel 30 (200Hz) - select data from CAN address #	91
Id 307	Channel 31 (200Hz) - select data from CAN address #	92
Id 307	Channel 32 (200Hz) - select data from CAN address #	93
Id 308	Channel 33 (200Hz) - select data from CAN address #	129
Id 308	Channel 34 (200Hz) - select data from CAN address #	420
Id 308	Channel 35 (200Hz) - select data from CAN address #	36
Id 308	Channel 36 (200Hz) - select data from CAN address #	271
Id 309	Channel 37 (200Hz) - select data from CAN address #	0
Id 309	Channel 38 (200Hz) - select data from CAN address #	0
Id 309	Channel 39 (200Hz) - select data from CAN address #	0
Id 309	Channel 40 (200Hz) - select data from CAN address #	0
Id 309	Channel 41 (200Hz) - select data from CAN address #	0
Id 309	Channel 42 (200Hz) - select data from CAN address #	0
Id 309	Channel 43 (200Hz) - select data from CAN address #	0
Id 309	Channel 44 (200Hz) - select data from CAN address #	0
Id 308	Channel 45 (200Hz) - select data from CAN address #	0
Id 308	Channel 46 (200Hz) - select data from CAN address #	0
Id 308	Channel 47 (200Hz) - select data from CAN address #	0
Id 308	Channel 48 (200Hz) - select data from CAN address #	0
Id 300	Channel 49 (200Hz) - select data from CAN address #	0
Id 300	Channel 50 (200Hz) - select data from CAN address #	0
Id 300	Channel 51 (200Hz) - select data from CAN address #	0
Id 300	Channel 52 (200Hz) - select data from CAN address #	0
Id 300	Channel 53 (200Hz) - select data from CAN address #	0
Id 300	Channel 54 (200Hz) - select data from CAN address #	0
Id 300	Channel 55 (200Hz) - select data from CAN address #	0
Id 300	Channel 56 (200Hz) - select data from CAN address #	0
Id 30E	Channel 57 (200Hz) - select data from CAN address #	0
Id 30E	Channel 58 (200Hz) - select data from CAN address #	0
Id 30E	Channel 59 (200Hz) - select data from CAN address #	0
Id 30E	Channel 60 (200Hz) - select data from CAN address #	0
Id 30F	Channel 61 (200Hz) - select data from CAN address #	0
Id 30F	Channel 62 (200Hz) - select data from CAN address #	0
Id 30F	Channel 63 (200Hz) - select data from CAN address #	0
Id 30F	Channel 64 (200Hz) - select data from CAN address #	0

- set the first row on "2=User"



- check that "ID" and "Value" digits are as in the following table

ID	VALUE		ID	VALUE		ID	VALUE
300	135		305	158		30B	0
300	599		305	152		30B	0
300	276		306	253		30B	0
300	227		306	142		30B	0
301	200		306	144		30C	0
301	202		306	96		30C	0
301	206		307	95		30C	0
301	255		307	91		30C	0
302	254		307	92		30D	0
302	181		307	93		30D	0
302	211		308	129		30D	0
302	153		308	420		30D	0
303	122		308	36		30E	0
303	124		308	271		30E	0
303	259		309	0		30E	0
303	260		309	0		30E	0
304	133		309	0		30F	0
304	314		309	0		30F	0
304	168		30A	0		30F	0
304	167		30A	0		30F	0
305	94		30A	0			
305	149		30A	0			

Please note: these values are verified for EFU Euro4 B002 device. Newer devices can need different values to be checked in "Data properties" layer of "Device Manager" page of "ECT Mode" software.

The image here below shows "Data Properties" layer where correct Values are to be filled in.

Please note: the example shows TPS Static position ("133") verified for EFI Euro4 Bike B001. For newer versions check the new value for this channel.

Device : C:\Programmi\EFI Technology\ECT_MOD\DEVICE\E4-B001.DEV\E4-B001.DDB

Device Can/Info | Data Properties :

String expression sought: 133

ST Pos.	Description:	Custom Name:	Factory Name :					
133	Throttle 1 Position	TPS	TPS					
Data Type :	Conversion Type :	Default Value :	Display Format:	Unit:				
MIS	DEC	0	##0.0	%				
Gain 1 :	Offset 1 :	Gain 2 :	Offset 2 :	Dlogger	Dlog max Hz	Bytes	Min graph val	Max graph val
100	0	0	256	<input checked="" type="checkbox"/>	50	1	0	100

Correction type - Button 'STORE': 0 - DISABLED

ASAP :

On Line

Address :	Bytes :	Data Result :

Check Data

Inherits from | Append | Delete last

Exit



The table here below shows the correspondence between AiM channel name and EFI channel name in Static table. These channel are to be checked; TPS channel in particular is highlighted.

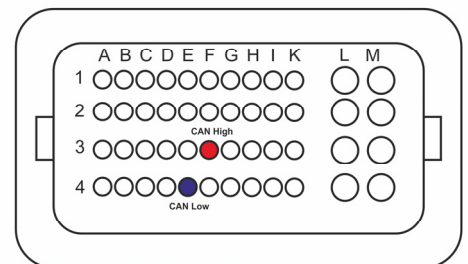
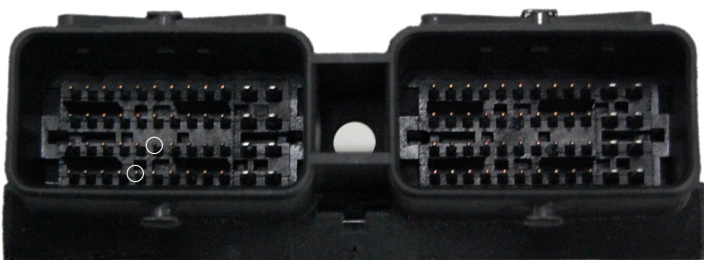
AiM channel name	Static table position	EFI Channel name
RPM	135	RPMd
AFR	599	ILIOS_AFRatio
LAMBDA	276	AFRNGK1
INJ_TIME_BASE	227	terog-base1
NJ_TIME	200	terog-log
NJ_TIME_UP	202	tinj-5
NJ_TIME_LOW	206	tinj-1
INJ_PHASE_UP	255	faseU
INJ_PHASE_LOW	254	faseL
SPARK_ADV_BASE	181	SABase1
SPARK_ADV	211	teta1
OSA_SLIP	153	OSAslip
SPEED_F	122	speedFR
SPEED_R	124	speedRR
FORK	259	fork_mm
SHOCK	260	Shock_mm
TPS	133	tps
PPS	314	pps
BRAKE_F	168	BrakeF
BRAKE_R	167	BrakeR
MAP	94	MAP
SLIP_CALC	149	slipCalc
TC_CUT_LEVEL	158	TC_CUT_LEVEL
TC_TRIM	152	TRIM_SLIP
INJ_REP	253	kinjhighperc
AED_TPS	142	AEDfarfl
DTPS	144	Dfarfcalc

FUEL_P	96	fuel press
OIL_P	95	oil press
OIL_T	91	Toil
WATER_T	92	TH2o
AIR_T	93	Tair
GEAR	129	GEAR
SEL_MAP	420	sel_eeeprom_table
ECU_VBATT	36	Vbat_INI
FUEL_USED	271	cosumo fuel

3

Wiring connection

EFI Euro4 Bike ECU features a bus communication protocol based on CAN on the 48 pins front left male connector. Here below it is shown with its pinout. Below is connection table.



EFI connector pin

F3
E4

Pin function

CAN High
CAN Low

AiM cable

CAN+
CAN-

4

AiM device configuration

Before connecting the ECU to AiM device set this up using AiM Race Studio software. The parameters to select in the device configuration are:

- ECU manufacturer "EFI_EUROPE"
- ECU Model "EURO_4_BIKE"

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Available channels

Channels received by AiM devices connected to "EFI EUROPE" "EURO_4_BIKE" protocol are:

ID	CHANNEL NAME	FUNCTION
ECU_1	RPM	RPM
ECU_2	AFR	Air/Fuel ratio
ECU_3	Lambda	Lambda value (stoichiometric value =14.70)
ECU_4	INJ_TIME_BASE	Injection table – injection time
ECU_5	NJ_TIME	Real injection time
ECU_6	NJ_TIME_UP	Upper injectors injection time
ECU_7	NJ_TIME_LOW	Lower injectors injection time
ECU_8	INJ_PHASE_UP	Upper injectors phase
ECU_9	INJ_PHASE_LOW	Lower injectors phase
ECU_10	SPARK_ADV_BASE	Ignition table – spark advance
ECU_11	SPARK_ADV	Real spark advance
ECU_12	OSA_SLIP	Advance cut due to SLIP_CALC
ECU_13	SPEED_F	Front wheel speed
ECU_14	SPEED_R	Rear wheel speed
ECU_15	FORK	Fork position
ECU_16	SHOCK	Mono position



ECU_17	TPS	Throttle position sensor
ECU_18	PPS	Throttle request
ECU_19	BRAKE_F	Front brake pressure
ECU_20	BRAKE_R	Rear brake pressure
ECU_21	MAP	Manifold air pressure
ECU_22	SLIP_CALC	Calculated slip (with engine strategies)
ECU_23	TC_CUT_LEVEL	Advance cut (for traction control)
ECU_24	TC_TRIM	Slip multiplier (for traction control)
ECU_25	INJ_REP	TEROG_U/TEROG_L
ECU_26	AED_TPS	Fuel enrichment multiplier on throttle positive transients
ECU_27	DTPS	Throttle derivative
ECU_28	FUEL_P	Fuel pressure
ECU_29	OIL_P	Oil pressure
ECU_30	OIL_T	Oil temperature
ECU_31	WATER_T	Engine coolant temperature
ECU_32	AIR_T	Intake air temperature
ECU_33	GEAR	Engaged gear
ECU_34	SEL_MAP	Selected Engine Map
ECU_35	ECU_VBATT	ECU Voltage supply
ECU_36	FUEL_USED	Injected fuel