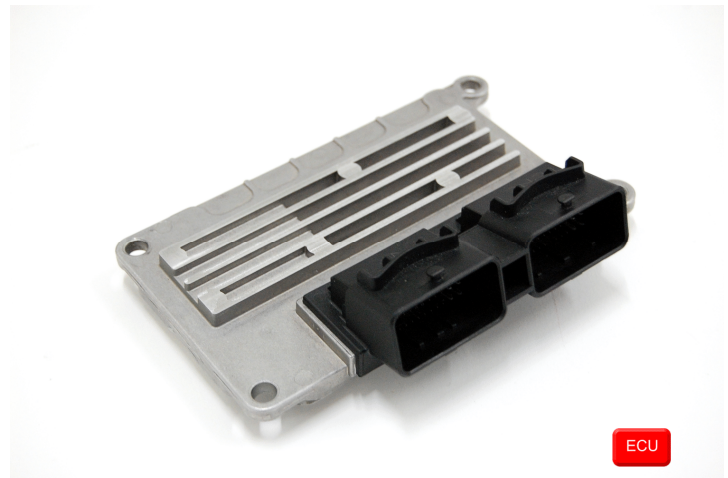


AiM Infotech

EFI EURO 4 Bike  
B009-B012 ECU

Release 1.02

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

## 1 Supported models

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Supported EURO 4 ECU is:

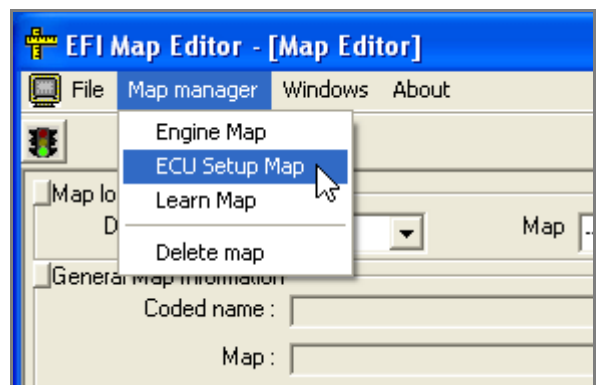
- EURO 4                                      Bike                                      B009-B012

## 2 Software setup

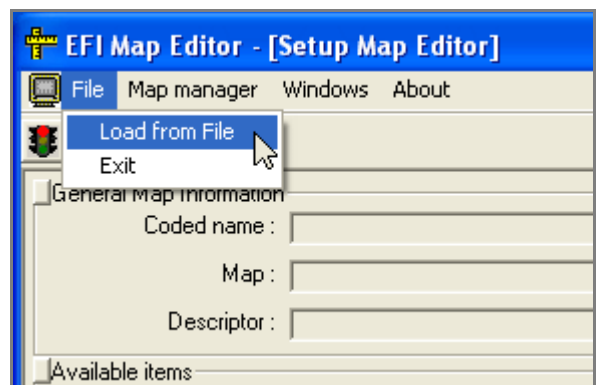
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EFI EURO 4 Bike ECU comes with the dedicated "ECT\_MOD" software to be used for setting the ECU.

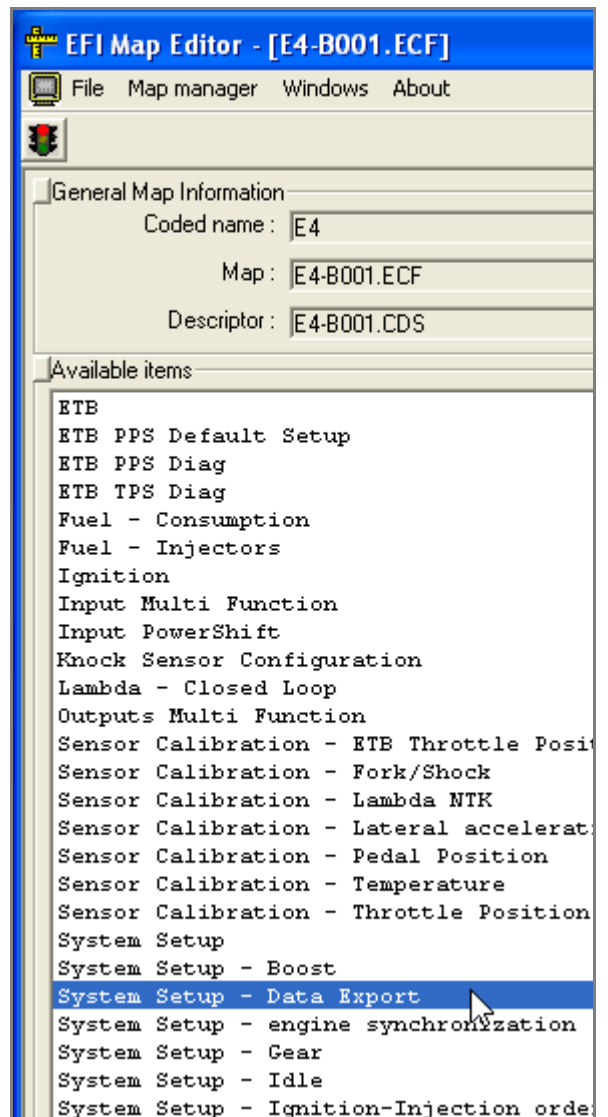
- Run the software
- Load "B001" or higher device
- Open Map Editor
- Follow the path: "Map Manager -> ECU Setup Map"



- 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 several configuration fields: 'Map loaded from ECU', 'Device', 'Map', 'General Map Information' (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 a table titled 'System Setup - Data Export'. The table has three columns: 'ID', 'Description', and 'VALUE'. The first row is highlighted with a red box. Above the table, there's 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 its 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 #	40
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 #	226
Id 301	Channel 6 (200Hz) - select data from CAN address #	206
Id 301	Channel 7 (200Hz) - select data from CAN address #	202
Id 301	Channel 8 (200Hz) - select data from CAN address #	152
Id 302	Channel 9 (200Hz) - select data from CAN address #	0
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 #	314 or 134
Id 303	Channel 13 (200Hz) - select data from CAN address #	425
Id 303	Channel 14 (200Hz) - select data from CAN address #	263
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 #	513
Id 304	Channel 19 (200Hz) - select data from CAN address #	94
Id 304	Channel 20 (200Hz) - select data from CAN address #	255
Id 305	Channel 21 (200Hz) - select data from CAN address #	254
Id 305	Channel 22 (200Hz) - select data from CAN address #	504
Id 305	Channel 23 (200Hz) - select data from CAN address #	253
Id 305	Channel 24 (200Hz) - select data from CAN address #	142
Id 306	Channel 25 (200Hz) - select data from CAN address #	144
Id 306	Channel 26 (200Hz) - select data from CAN address #	520
Id 306	Channel 27 (200Hz) - select data from CAN address #	516
Id 306	Channel 28 (200Hz) - select data from CAN address #	518
Id 307	Channel 29 (200Hz) - select data from CAN address #	505
Id 307	Channel 30 (200Hz) - select data from CAN address #	129
Id 307	Channel 31 (200Hz) - select data from CAN address #	507
Id 307	Channel 32 (200Hz) - select data from CAN address #	36
Id 308	Channel 33 (200Hz) - select data from CAN address #	0
Id 308	Channel 34 (200Hz) - select data from CAN address #	509
Id 308	Channel 35 (200Hz) - select data from CAN address #	510
Id 308	Channel 36 (200Hz) - select data from CAN address #	511
Id 308	Channel 37 (200Hz) - select data from CAN address #	517
Id 308	Channel 38 (200Hz) - select data from CAN address #	131
Id 308	Channel 39 (200Hz) - select data from CAN address #	508
Id 308	Channel 40 (200Hz) - select data from CAN address #	380
Id 308	Channel 41 (200Hz) - select data from CAN address #	515
Id 308	Channel 42 (200Hz) - select data from CAN address #	148
Id 308	Channel 43 (200Hz) - select data from CAN address #	95
Id 308	Channel 44 (200Hz) - select data from CAN address #	128
Id 308	Channel 45 (200Hz) - select data from CAN address #	519
Id 308	Channel 46 (200Hz) - select data from CAN address #	512
Id 308	Channel 47 (200Hz) - select data from CAN address #	514
Id 308	Channel 48 (200Hz) - select data from CAN address #	33
Id 308	Channel 49 (200Hz) - select data from CAN address #	34
Id 308	Channel 50 (200Hz) - select data from CAN address #	35
Id 308	Channel 51 (200Hz) - select data from CAN address #	100
Id 308	Channel 52 (200Hz) - select data from CAN address #	101
Id 308	Channel 53 (200Hz) - select data from CAN address #	119
Id 308	Channel 54 (200Hz) - select data from CAN address #	98
Id 308	Channel 55 (200Hz) - select data from CAN address #	0
Id 308	Channel 56 (200Hz) - select data from CAN address #	91
Id 308	Channel 57 (200Hz) - select data from CAN address #	167
Id 308	Channel 58 (200Hz) - select data from CAN address #	92
Id 308	Channel 59 (200Hz) - select data from CAN address #	93
Id 308	Channel 60 (200Hz) - select data from CAN address #	96
Id 30F	Channel 61 (200Hz) - select data from CAN address #	420
Id 30F	Channel 62 (200Hz) - select data from CAN address #	168
Id 30F	Channel 63 (200Hz) - select data from CAN address #	122
Id 30F	Channel 64 (200Hz) - select data from CAN address #	124

- 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 B009-B012 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 B009-B012. 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 :
[empty]	[empty]	[empty]

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
SPEED_F	40	Lnr71
SPEED_R	276	AFRNGK1
T_INJ_BASE	227	terog-base1
T_INJ	226	Terog-injectors erogation time(before cyl trim)
T_INJ_U	206	tinj-5
T_INJ_L	202	tinj-1
TC_TRIM	152	tc trim
	0	
SA_BASE	181	SABase1
SA	211	teta1
PPS	314 or 134	PPS O TPS2
CLC2	425	CLC2
CLC1	263	CLC1
LASER_F_mm	259	Fork_mm
LASER_R_mm	260	Shock_mm
<b>TPS1</b>	<b>133</b>	<b>TPS</b>
TC_P_CUT_CORR	513	Proportional Cut Slip Correction
MAP	94	MAP
PHASE_UP	255	FaseU
PHASE_LOW	254	Fase L
TC_TARGET_SLIP	504	Target Slip
RATIO_INJ_U_L	253	klnjHighPerc
ENRICHMENT	142	AEDfarfl
D_TPS_1	144	DFarfCalc
TC_FINAL_SA	520	Final Slip Spark Retard
TC_P_SA	516	Proportional Spark Slip



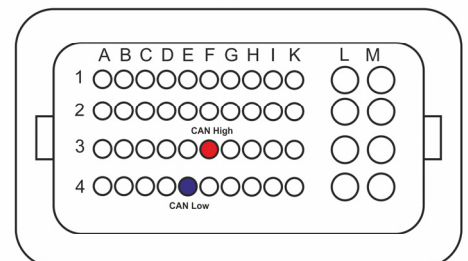
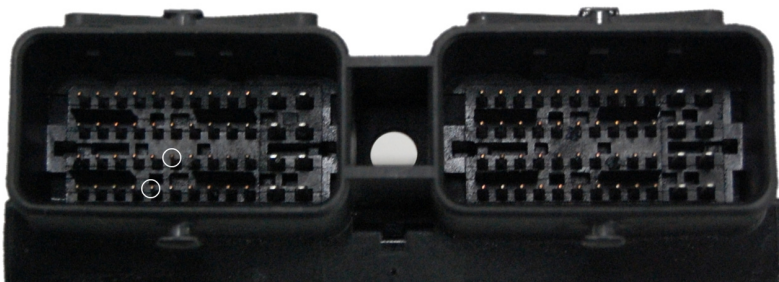
TC_I_SA	518	Integral Spark Slip
TC_TAR_SLIP_CALC	505	Target Slip Calc
GEAR	129	Gear
TC_P_CUT	507	Proportional Cut Slip
VBATT	36	Vbat_Inl
	0	
TC_I_CUT	509	Integral Cut Slip
TC_D_CUT	510	Derivative Cut Slip
TC_FINAL_CUT	511	Final Slip Cup Level
TC_TRIM_SA	517	Proportional Trim Spark Slip
GEAR_SHIFT_TIME	131	GearShiftTimer
TC_TRIM_CUT	508	Proportional Trim Cut Slip
SLIP_NEG	380	SlipNegCalc
TC_P_SA_CORR	515	Proportional Spark Slip Correction
TC_SLIP	148	Slip
P_OIL	95	Oil Press
GEAR_RATIO	128	GearRatio
TC_D_SA	519	Derivative Spark Slip
TC_ERROR	512	Slip Error
TC_ANALOG_TARGET	514	AnalogTarget Input
FB_VREF_TPS	33	Fb_Vref_Tpsl
FB_VREF_1	34	Fb_Vref__1l
FB_VREF_2	35	Fb_Vref__2l
SYNC	100	SMOTV24_f_Running
CAM_COUNTER	101	CamCounter
CRANK_COUNTER	119	CntCrk
P_BARO	98	Baro
	0	
T_OIL	91	TOil
P_BRAKE_R	167	BrakeR
T_H2O	92	TH2o



T_AIR	93	TAir
P_FUEL	96	fuel press
SEL_MAP	420	sel_eeeprom_table
P_BRAKE_F	168	BrakeF
NTK_2	122	speedFR
NTK_1	124	speedRR

### 3 Wiring connection

EFI Euro4 B009-B012 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

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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\_B009\_B012"

## 5

# Available channels

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Channels received by AiM devices connected to "EFI EUROPE" "EURO\_4\_BIKE\_B009\_B012" protocol are:

<b>ID</b>	<b>CHANNEL NAME</b>	<b>FUNCTION</b>
ECU_1	RPM	RPM
ECU_2	SPEED_F	Front wheel speed sensor
ECU_3	SPEED_R	Rear speed wheel sensor
ECU_4	T_INJ_BASE	Injection table - injection time
ECU_5	T_INJ	TerogBase1
ECU_6	T_INJ_U	Upper injectors phase
ECU_7	T_INJ_L	Lower injectors phase
ECU_8	TC_TRIM	Traction control slip multiplier
ECU_10	SA_BASE	Spark Advance base
ECU_11	SA	Spark Advance
ECU_12	PPS	Pedal position sensor
ECU_13	CLC2	Closed loop Control 2 (injection)
ECU_14	CLC1	Closed loop Control 1 (injection)
ECU_15	LASER_F_mm	Front fork position in mm
ECU_16	LASER_R_mm	Rear fork position in mm



ECU_17	TPS1	Throttle position sensor 1
ECU_18	TC_P_CUT_CORR	Proportional Traction control Cut
ECU_19	MAP	Manifold Air pressure
ECU_20	PHASE_UP	Phase Up
ECU_21	PHASE_LOW	Phase Low
ECU_22	TC_TARGET_SLIP	Slip multiplier (for traction control)
ECU_23	RATIO_INJ_U_L	Upper/Lower injector phase ratio
ECU_24	ENRICHMENT	Fuel enrichment multiplier on throttle positive transients
ECU_25	D_TPS_1	Throttle position sensor 1 derivative
ECU_26	TC_FINAL_SA	Traction Control Final spark advance
ECU_27	TC_P_SA	Proportional Spark Slip
ECU_28	TC_I_SA	Integral Spark Slip
ECU_29	TC_TAR_SLIP_CALC	Target cut due to slip calc
ECU_30	GEAR	Engaged gear
ECU_31	TC_P_CUT	Traction control Proportional cut slip
ECU_32	VBATT	Battery supply
ECU_34	TC_I_CUT	Cut for traction control Integral
ECU_35	TC_D_CUT	Cut for traction control Derivative
ECU_36	TC_FINAL_CUT	Final Slip cut for traction control
ECU_37	TC_TRIM_SA	Traction Control Trim Spark Advance
ECU_38	GEAR_SHIFT_TIME	Gear shift timer
ECU_39	TC_TRIM_CUT	Proportional Trim cut slip
ECU_40	SLIP_NEG	Slip Negative calculation
ECU_41	TC_P_SA_CORR	Proportional spark slip correction
ECU_42	TC_SLIP	Traction Control Slip
ECU_43	P_OIL	Oil pressure
ECU_44	GEAR_RATIO	Gear ratio
ECU_45	TC_D_SA	Traction control Derivative spark advance
ECU_46	TC_ERROR	Traction Control Slip Error
ECU_47	TC_ANALOG_TARGET	Analog target input for traction control
ECU_48	FB_VREF_TPS	Throttle position sensor Vreference
ECU_49	FB_VREF_1	V Reference 1



ECU_50	FB_VREF_2	V Reference 2
ECU_51	SYNC	Sync
ECU_52	CAM_COUNTER	CAM Counter
ECU_53	CRANK_COUNTER	Crank counter
ECU_54	P_BARO	Barometric Pressure
ECU_56	T_OIL	Oil Temperature
ECU_57	P_BRAKE_R	Rear brake pressure
ECU_58	T_H2O	Water temperature
ECU_59	T_AIR	Air temperature
ECU_60	P_FUEL	Fuel pressure
ECU_61	SEL_MAP	Selected Map
ECU_62	P_BRAKE_F	Front brake pressure
ECU_63	NTK_2	Lambda 1
ECU_64	NTK_1	Lambda 2