Ford Focus via OBDII Connection







INTRODUCTION

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

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

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 "Ford" and Model (depending on own car model – refer to "Communication protocols" Chapter).

Moreover refer to Race Studio configuration user manual for further information concerning the loggers configuration.



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Chapter 1 – Car Models

Ford ECU is installed on the following car models:

- Focus 2003-2004 all models
- Focus 2005-2007 all models
- Focus 2008 all models

Chapter 2 – OBDII CAN Communication Setup

In all Ford Focus models listed in the previous chapter (ECU communicates On Board Diagnostic values to AIM loggers through the CAN bus (ISO 15765/4) communication protocol. It works with EVO4, MXL, EVO3, XGLog, ECU Bridge, using OBDII standard connector.

OBDII standard connector and its pinout are (see below):



Pin	Function
2	Bus positive Line of SAE-J1850
4	Chassis Ground
5	Signal Ground
6	CAN + (ISO 15765-4 and SAE J2234)
7	K Line of ISO 9141-2 and ISO 14230-4
10	Bus negative Line of SAE-J1850
14	CAN – (ISO 15765-4 and SAE-J2234)
15	L line of ISO 9141-2 and ISO 14230-4
16	Battery voltage



Chapter 3 – OBDII position

OBDII connector position depends on the car model. The scheme below shows some of the most common OBDII connector position.



Location

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Description

Driver's side, underneath dashboard, in the area under the steering column, +and-150 mm (i.e.,+/-6 inches on either side of the steering column).

Driver side, underneath dashboard, between the driver- side door and steering column area.

Driver side, underneath dashboard, between the steering column area and the center console (also includes connectors on the driver side but connected to the center console).

Driver's side, dashboard instrument/gauge area, between the steering column and the center console.

Driver's side, dashboard instrument/gauge area, between the steering column and the center console

Center console , vertical surface (i.e. near radio and climate controls), left of the vehicle centreline.

Center console, vertical surface right of the vehicle centreline or on passenger side of center console.

Center console, horizontal surface (i.e. armrest , and brake area) in front passenger area

Any location other than locations #1-8 (i.e. rear passenger area, passenger side glove box, top of dashboard near windshield)

Note: some manufacturers use covers to protect the integrity of the connector. For further information it is suggested to ask to the dealer where OBDII connector is situated on the vehicle.



Connections to AIM loggers

To connect Ford Focus vehicles to AIM loggers:

- connect the cable labelled CAN+ of the logger to pin 6 of the OBDII port
- connect the cable labelled CAN- of the logger to pin 14 of the OBDII port





Warning :OBDII is not powered by the vehicle master switch, so if AIM logger is connected to OBDII for a long time the battery runs down. The communication works only if the dashboard is switched on.



Chapter 4 – Ford communication protocols

Depending on the car model there is a different selection to configure the logger (refer to the appropriate paragraph for more detail about the correct configuration).

4.1 – Ford Focus 2003-2004 communication protocol

To configure Ford Focus 2003/2004 select the following ECU model "Focus_2003-2004" Channels received by AIM loggers connected to Ford Focus 2003/2004 ECU are:

ID	CHANNEL NAME	FUNCTION
ECU_1	F_RPM	RPM
ECU_2	F_SPEED	Speed
ECU_3	F_PEDAL_POS	Pedal position sensor
ECU_4	F_TENGINE	Engine temperature
ECU_5	F_FUEL_PULSE	Fuel pulse
ECU_6	F_FUEL_LEVEL	Fuel level
ECU_7	F_TYRE_FRONT	Front tyre circumference
ECU_8	F_TYRE_REAR	Real tyre circumference
ECU_9	F_BRAKE_SWITCH	Brake switch

4.2 – Ford Focus 2005-2007 communication protocol

To configure Ford Focus 2005-2007 select the following ECU model "Focus_2005/07" Channels received by AIM loggers connected to Ford Focus 2005/2007 ECU are:

ID	CHANNEL NAME	FUNCTION
ECU_1	F_RPM	RPM
ECU_2	F_SPEED	Speed
ECU_3	F_PEDAL_POS	Pedal position sensor
ECU_4	F_WH_SPD_FL	Front left wheel speed
ECU_5	F_WH_SPD_FR	Front right wheel speed
ECU_6	F_WH_SPD_RL	Rear left wheel speed
ECU_7	F_WH_SPD_RR	Rear right wheel speed
ECU_8	F_TENGINE	Engine temperature
ECU_11	F_FUEL_PULSE	Fuel pulse
ECU_12	F_FUEL_LEVEL	Fuel level
ECU_13	F_TYRE_FRONT	Front tyre circumference
ECU_14	F_TYRE_REAR	Rear tyre circumference



4.3– Ford Focus 2008 communication protocol

To configure Ford Focus 2008 select the following ECU model "Focus_2008" Channels received by AIM loggers connected to Ford Focus 2008 ECU are:

ID	CHANNEL NAME	FUNCTION
ECU_1	F_RPM	RPM
ECU_2	F_SPEED	Speed
ECU_3	F_PEDAL_POS	Pedal position sensor
ECU_4	F_WH_SPD_FL	Front left wheel speed
ECU_5	F_WH_SPD_FR	Front right wheel speed
ECU_6	F_WH_SPD_RL	Rear left wheel speed
ECU_7	F_WH_SPD_RR	Rear right wheel speed
ECU_8	F_ECT	Engine cooling temperature
ECU_9	F_GEAR	Engaged gear
ECU_10	F_BRK_SW	Brake switch
ECU_11	F_FFLOW	Fuel flow
ECU_12	F_FUEL_LEV	Fuel level
ECU_13	F_MIL_TELTAL	Malfunction Indicator lamp
ECU_14	F_FAILSAFE_COOL	Failsafe coolant tell tale
ECU_15	F_ETC_TELTAL	Electronic traction control tell tale
ECU_16	F_ABS_TELTAL	ABS Tell tale
ECU_17	F_TCS_ENG	Engine traction control system