AiM Infotech

Subaru Impreza 1999-2011 ECU

Release 1.02

This tutorial explains how to connect AiM devices to Subaru Impreza 1999-2011.

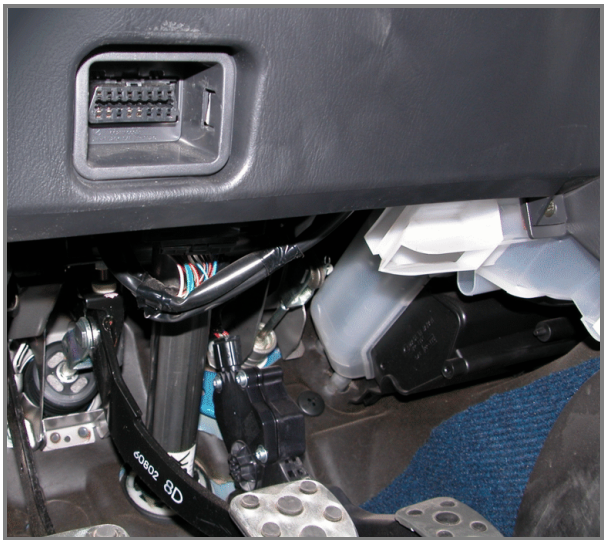
Supported AiM devices are:

- SoloDL
- Evo4
- ECU Bridge

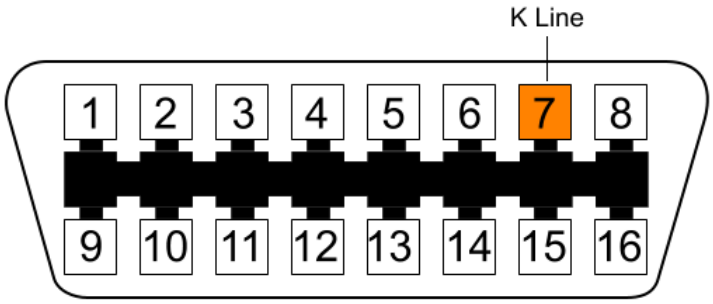
Please note: for MXL loggers you need to buy the proper Plug&Play kit you find on AiM website at www.aim-sportline.com download area, stock ECU section.

1 Wiring connection

Subaru Impreza features a bus communication protocol based on CAN on the OBDII plug placed on the car driver side under the steering column as shown here below.



The ECU communicates using the K line on the OBDII connector. Connector pinout as well as connection table are shown here below.



OBDII connector pin	Pin function	AiM cable
7	K line	K line

Please note: we recommend you to use AiM cables to connect AiM devices. Their part number are:

• ECU Bridge with OBDII plug	X90BGCK12MA
• EVO4 cable (to be plugged in EVO4 connector labelled RPM)	V02563050
• SoloDL cable with OBDII plug	V02569010 (2m length) or V02569090 (1,2m length)
• MXG	37 pins standard cable
• MXL2	37 pins standard cable

2
AiM Logger configuration

Before connecting AiM device to the ECU, set it up as follows:

Run Race Studio 2 software and follow this path:

- Device Configuration –> Select the device you are using;
- select the configuration or press "New" to create a new one;
- select ECU manufacturer "Subaru" and – according to the year of your Impreza – ECU Model:
    - "SSM 1999/2007" for cars produced between 1999 and 2007
    - "SSM 2008/2011" for cars produced between 2008 and 2011
- transmit the configuration to the device pressing "Transmit".

3
Available channels

Channels received by AiM device change according to the selected protocol.

3.1
“SSM 1999/2007” protocol

Channels received by AiM loggers connected to "Subaru" "SSM 1999/2007"protocol are:

ID	CHANNEL NAME	FUNCTION
ECU_1	RPM	RPM
ECU_2	SPEED	Vehicle Speed
ECU_3	TPS	Throttle Position Sensor
ECU_4	ECT	Engine coolant temperature
ECU_5	TURBO_PRESS	Turbo pressure
ECU_6	IN_VVT_R	Right bank inlet timing
ECU_7	IN_VVT_L	Left bank inlet timing
ECU_8	IGN_ADV	Ignition advance
ECU_9	KNOCK_CORR	Advances correction depending on detonation sensor
ECU_10	FUEL_LEV	Fuel level
ECU_11	NEUTRAL	Neutral sensor
ECU_12	CLUTCH	Clutch disengaged signal
ECU_13	BRAKE	Brake switch
ECU_14	ENG_LOAD	Instant engine load
ECU_15	AIR_FLOW	Air flow in the air pipes

Please note: channels listed above are those polled by AiM devices. They may or may not come across in the data stream depending on models. RPM, TPS,ECT and speed are generally available.

3.2
“SSM 2008/2011” protocol

Channels received by AiM loggers connected to "Subaru" "SSM 2008/2011" are:

ID	CHANNEL NAME	FUNCTION
ECU_1	SSM_RPM	RPM
ECU_2	SSM_SPEED	Vehicle Speed
ECU_3	SSM_TPS	Throttle Position Sensor
ECU_4	SSM_ECT	Engine coolant temperature
ECU_5	SSM_TURBO_PRES	Turbo pressure
ECU_6	SSM_IN_VVT_R	Right bank inlet timing
ECU_7	SSM_IN_VVT_L	Left bank inlet timing
ECU_8	SSM_IGN_ADV	Ignition advance
ECU_9	SSM_KNOCK_CORR	Advances correction depending on detonation sensor
ECU_10	SSM_FUEL_LEV	Fuel level
ECU_11	SSM_NEUTRAL	Neutral sensor
ECU_12	SSM_CLUTCH	Clutch disengaged signal
ECU_13	SSM_BRAKE	Brake switch
ECU_14	SSM_ENG_LOAD	Instant engine load
ECU_15	SSM_AIR_FLOW	Air flow in the air pipes
ECU_16	SSM_EX_VVT_R	Right bank exhaust timing
ECU_17	SSM_EX_VVT_L	Left bank exhaust timing
ECU_18	SSM_SEL_MAP	Selected Map
ECU_19	SSM_GEAR	Engaged gear

Please note: channels listed above are those polled by AiM devices. They may or may not come across in the data stream depending on models. RPM, TPS,ECT and speed are generally available.