AiM InfoTech

TOYOTA - Supra
from 2020

Release 1.00

ECU

1 Models and years

This document explains how to connect AiM devices to the vehicle Engine Control Unit (ECU) data stream.
Supported models and years are:

- Supra 5thgen from 2020

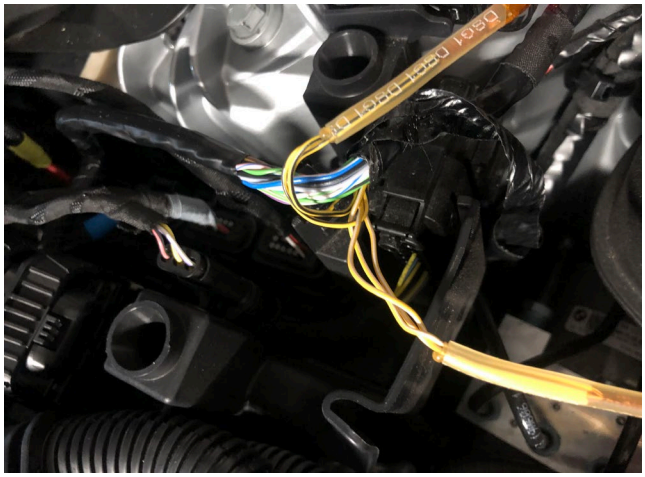
2 Connection and configuration

AiM devices can be connected to these models in two different ways:

- Through a direct connection to the Powertrain CAN twisted wires, using a specific CAN protocol
- Through the OBD II plug, using a standard OBD II protocol (easy connection, basic parameters)

2.1
"CAN" Wiring connection

These models feature a protocol based on CAN, accessible through the Powertrain CAN twisted wires accessible in different positions (i.e. A46* 1B 54 connector on the ECU, on the BMC - Body Control Module etc). For this installation refer to the following and the connection table.



CANBUS color cable	Pin function	AiM cable	AiM color cable
Yellow / White	CAN High	CAN+	White
Yellow / Black	CAN Low	CAN-	Blue

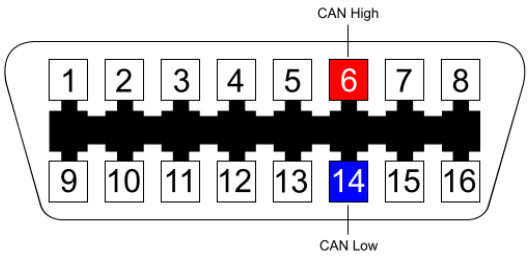
2.2
Race Studio configuration

Before connecting the AiM device to the ECU, set all functions using AiM software Race Studio. The parameters to set in the device configuration are:

- ECU Manufacturer: **TOYOTA**
- ECU Model: **Supra Gen5** (RS3 Only)

2.3
“OBDII” Wiring connection

These models feature a standard diagnostic protocol based on CAN, accessible through the OBDII connector plug placed on the left under the steering column. For this installation refer to the following pinout of the OBDII connector and its connection table.



OBD	**Pin function**	**AiM cable**	**AiM color cable**
6	CAN High	CAN+	White
14	CAN Low	CAN-	Blue

2.4
Race Studio configuration

Before connecting the AiM device to the ECU, set all functions using AiM software Race Studio. The parameters to set in the device configuration are:

- ECU Manufacturer: **OBD_II**
- ECU Model: **CAN**

3 Protocols

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

3.1 “TOYOTA – Supra Gen5” protocol

Channels received by AiM devices configured with "TOYOTA – Supra Gen5” protocol are:

CHANNEL NAME	FUNCTION
RPM	Engine RPM
Throttle	Throttle position sensor
Gear Display	Engaged gear
Speed	Vehicle speed
Wheel Speed RL	Rear left wheel speed
Wheel Speed RR	Rear right wheel speed
Wheel Speed FL	Front left wheel speed
Wheel Speed FR	Front right wheel speed
Long Acc	Longitudinal acceleration
Lat Acc	Lateral acceleration
Yaw Rate	Yaw rate
Eng T	Engine temperature
Oil T	Oil temperature
Amb T	Ambient temperature
Brake P F	Front brake pressure
Brake P R	Rear brake pressure
Steering Angle	Steering angle position
Pedal Pos	Pedal position sensor
Fuel Km	Fuel distance

Battery Volt	Battery voltage
Fuel used	Fuel used
Gbx Torque	Gearbox torque
Eng Torque	Engine torque
ABS	Function ABS
ASC	Function ASC
Brake Status	Brake status
Fuel Raw ul	Fuel used per cylinder
Indicator lights	Direction lights
Fuel lamp	Fuel reserve lamp
Hi beam	High beam
Rpm MAX	Max RPM

Technical note: not all data channels outlined in the ECU template are validated for each manufacture's model or variant; some of the outlined channels are model and year specific, and therefore may not be applicable.

3.2
“OBDII - CAN” protocol

Channels received by AiM devices configured with "OBDII - CAN” protocol are:

CHANNEL NAME	FUNCTION
OBDII_RPM	Engine RPM
OBDII_SPD	Vehicle speed
OBDII_TPS	Throttle position sensor
OBDII_PPS	Pedal position sensor
OBDII_ECT	Engine coolant temperature
OBDII_IAT	Intake air temperature
OBDII_FuelLev	Fuel level
OBDII_MAP	Manifold air pressure
OBDII_MAF	Air mass flow

Technical note: not all data channels outlined in the ECU template are validated for each manufacture’s model or variant; some of the outlined channels are model and year specific, and therefore may not be applicable.