AIM InfoTech

Porsche 991-981 OBDII and Porsche 991-911 ECU

Release 1.09

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:

• Porsche 911 (991 MK1)	all models	2012 - 2016
• Porsche 911 (991 MK2)	all models	2017 - 2018
• Porsche Boxster (981 MK1)	all models	2013 - 2015
• Porsche Cayman (981 MK1)	all models	2013 - 2015

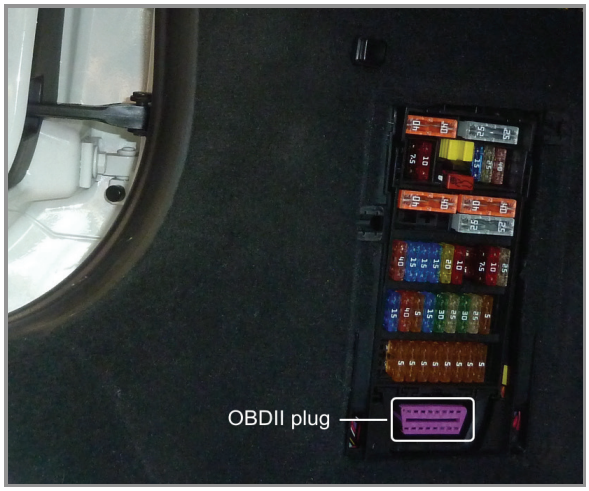
2 Wiring connection

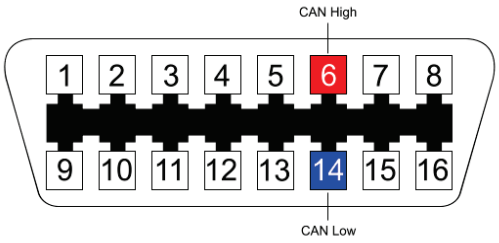
AiM devices can be connected to these models in two different ways:
- through the OBD II plug, using a standard OBD II protocol (easy connection, basic parameters)
- through a direct connection to the ECU CAN wires, using a specific manufacturer CAN protocol.

2.1
OBDII “CAN” connection

These models feature a standard diagnostic protocol based on CAN, accessible through the OBDII plug placed on the car driver side, bottom left of the driver, in the fuse box near to the pedal area (following left image). For this installation refer to the following pinout of the OBDII plug (vehicle side – front view) and connection table.

Please note: this kind of connection works only on cars that feature automatic transmission or PDK.





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

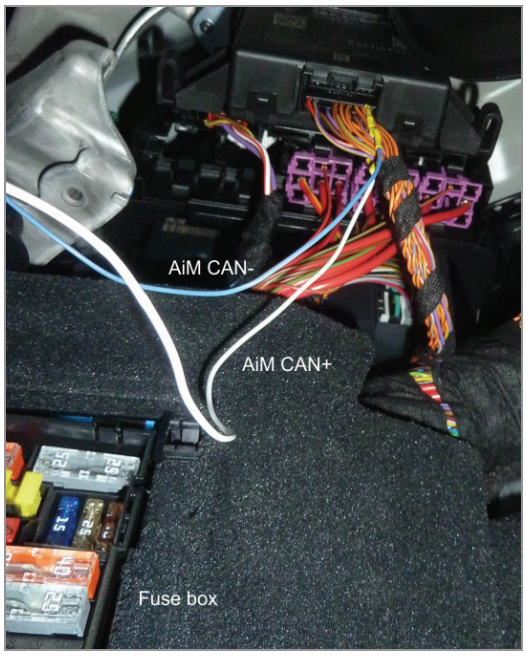
2.2
OBDII – Race Studio configuration

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

- ECU manufacturer: **PORSCHE**
- ECU Model: **991_981_OBDII**

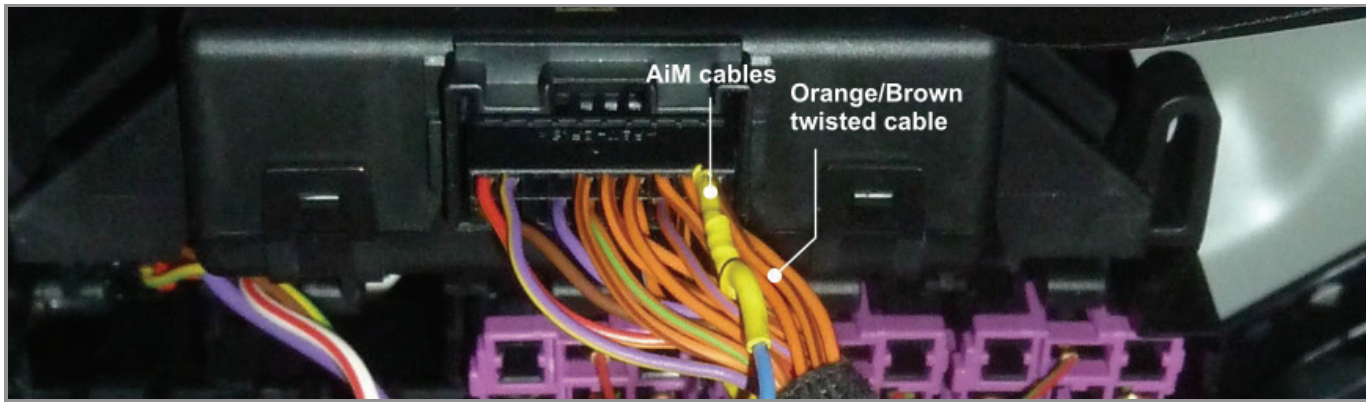
2.3
ECU CAN connection

These models feature a CAN data bus accessible from the Gateway connector, placed on the driver side of the car under the steering column but over the fuse box. (see following picture). It is strongly recommended to refer to a skilled technician to perform this kind of installation. For this installation refer to the following pinout of the car's Gateway connector (vehicle side – front view) and connection table.

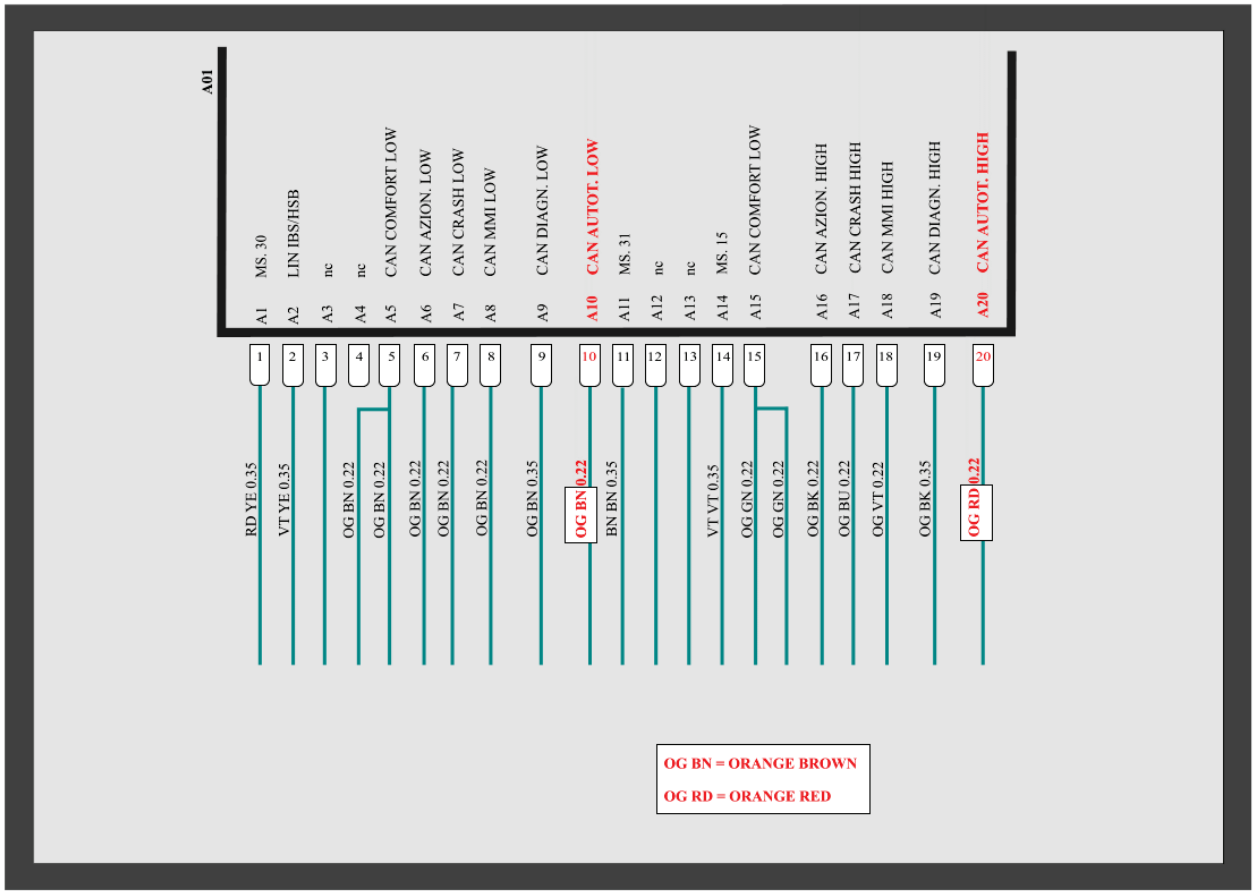


ECU connector pin	Cable colour	Pin function	AiM Color cable
A20	Orange/red twisted	CAN High	CAN+ (white)
A10	Orange/brown twisted	CAN Low	CAN- (blue)

Please note: as you can see in the image here below, the car harness features more than one orange/brown cable connected to the Gateway connector. In the image orange/brown cable as well as AiM cables are highlighted.



Gateway connector pinout is here below



2.4
ECU CAN – 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: **Porsche**
- ECU Model: **991_911**

3
Protocols

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

3.1
"Porsche – 991_981_OBDII" protocol

Channels received by AiM devices configured with "Porsche – 991_981_OBDII" protocol are:

CHANNEL NAME	FUNCTION
RPM	RPM
WHEEL SP FL	Front left wheel speed
WHEEL SP FR	Front right wheel speed
WHEEL SP RL	Rear left wheel speed
WHEEL SP RR	Rear right wheel speed
COOLANT TEMP	Engine coolant temperature
INTK AIR TEMP	Intake air temperature
BRAKE PRESS	Brake pressure
MANIFOLD PRESS	Manifold air pressure
STEER ANGLE	Steering angle
THROTTLE POS	Throttle position sensor
ACCEL POS	Acceleration position

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

3.2
"Porsche – 991_911" protocol

Channels received by AiM devices configured with "Porsche – 991_911" protocol are:

CHANNEL NAME	FUNCTION
TRQ WO EXT	Torque less external interval
TRQ WO MEC	Torque less mechanical looses
TRQ LOSS	Torque loss
TRQ MAX	Max torque value
TRQ FILT	Filtered torque
TRQ FOR IGN	Torque for ignition
TRQ REQ	Torque request
TRQ APPLY	Applied torque
STEER POS	Steering position
STEER SPD	Steering speed
VEH SPD	Vehicle speed
ACC LAT	Lateral acceleration
GEAR INFO	Active gear
WHEEL FL	Front left wheel speed
WHEEL FR	Front right wheel speed
WHEEL RL	Rear left wheel speed
WHEEL RR	Rear right wheel speed
RPM	RPM
PEDAL POS	Throttle position
BRK SW	Brake switch
BRK PRESS	Brake pressure
MAP	Manifold air pressure
BRK PRESS1	Brake pressure 1
BRK PRESS2	Brake pressure 2
BRK PRESS3	Brake pressure 3

BRK PRESS4	Brake pressure 4
GEAR	Active gear
SUSP SW	Suspension switch
MODE SEL	Engine mode
GEAR TEMP	Gearbox temperature
ECT	Engine coolant temperature
OIL TEMP	Oil temperature
IAT	Intake air temperature
ENG PWR	Engine power
FUEL LEV	Fuel level

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