AIM Infotech

Porsche 991-981 OBDII and Porsche 991-911 ECU

Release 1.02

This tutorial explains how to connect Porsche cars to AiM devices. The connection can be made through the OBDII plug or using the car Gateway connector. These two connections implies different protocols to be selected and different sampled channels.

1 Car models and years

Supported car models and years are:

• Porsche 911 (991 MK1)	all models	2012 onwards
• Porsche Boxster (981 MK1)	all models	2013 onwards
• Porsche Cayman (981 MK1)	all models	2013 onwards

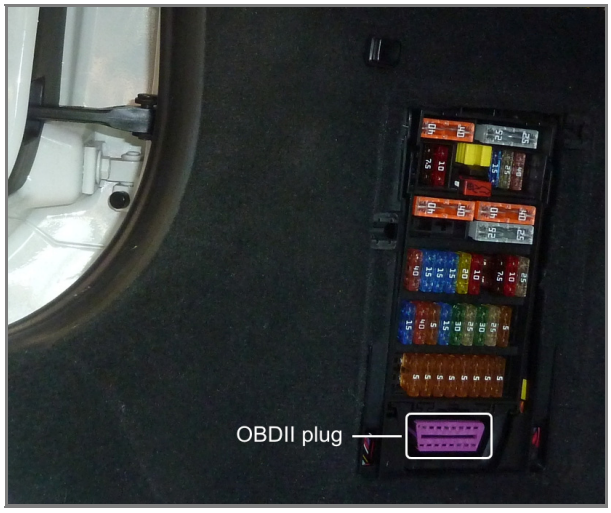
2 Available connections

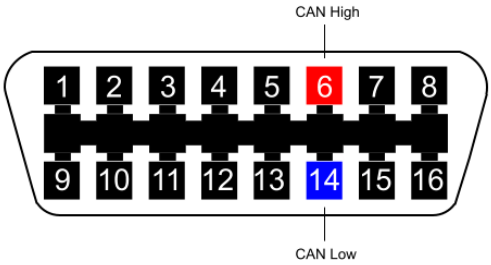
These Porsche cars can communicate with AiM devices using the diagnostic CAN bus on the OBDII plug or using the engine CAN bus on the car ECU. As already said, these connections implies different communication protocols to be selected when setting up AiM devices and also the available channels changes.

2.1
OBDII connection

These Porsche cars feature a bus communication protocol based on CAN for diagnostic purposes on the OBDII plug placed on the car driver side, bottom left of the driver, in the fuse box near to the pedal area as shown here below. This connection is faster and easier though sampled channels are less.

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



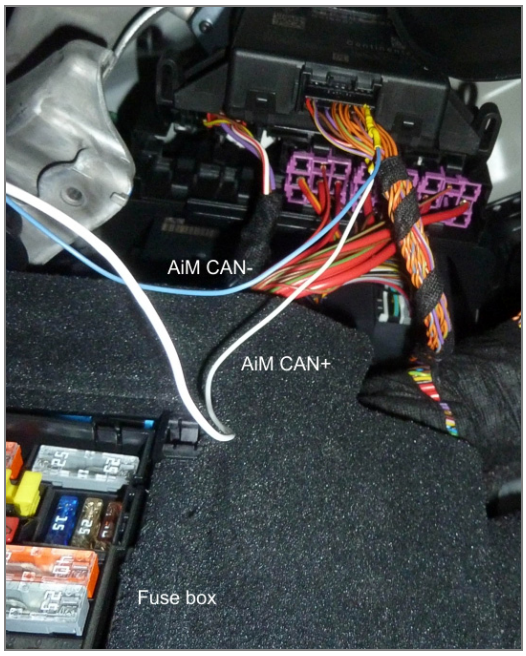


Connector pinout as well as connection table are shown here below

OBDII connector pin	Pin function	AiM cable
6	CAN High	CAN+
14	CAN Low	CAN-

2.2
Connection through the Gateway connector

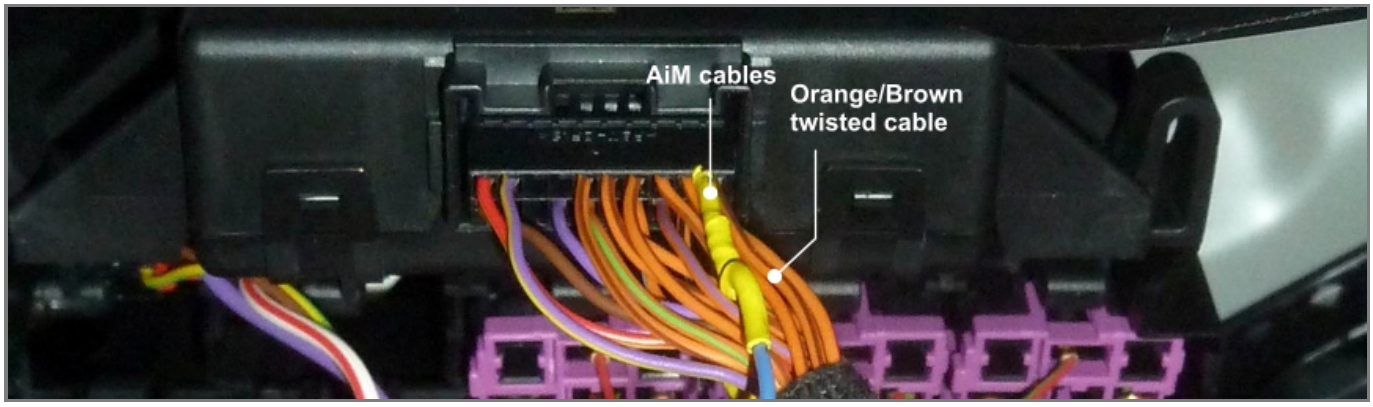
The second possible connection is through the Gateway connector. This connection is more difficult but allows you to sample more channels. Gateway connector is placed on the driver side of the car under the steering column but over the fuse box. Images below show: on the left the fuse box and on the right the position of the Gateway connector. In this second image AiM device is already connected to the car. AiM cables are: light blue for CAN– and white for CAN+.



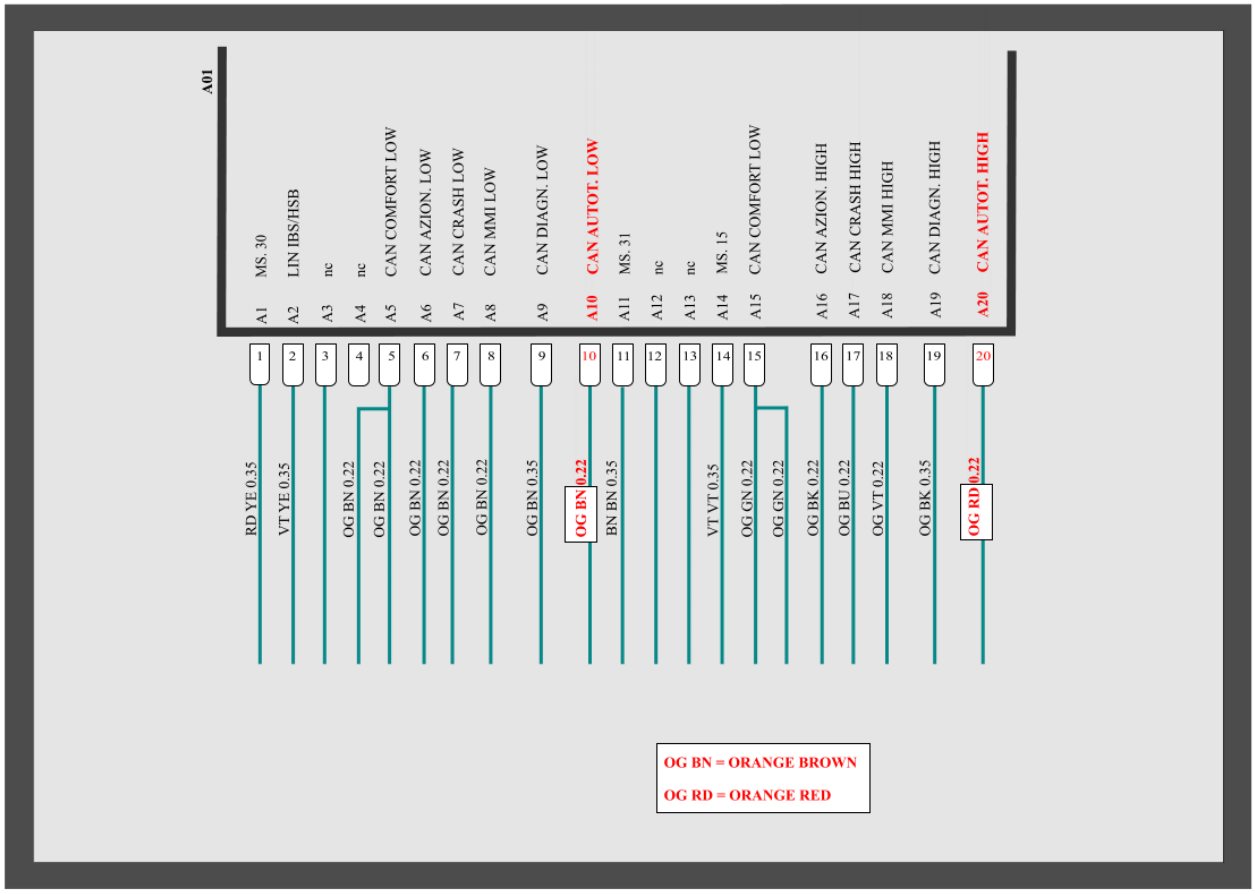
Here below is connection table.

ECU connector pin	Cable colour	Pin function	AiM cable	Cable colour
A20	Orange/red twisted	CAN High	CAN+	White
A10	Orange/brown twisted	CAN Low	CAN-	Light 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



3
AiM Logger configuration

Before connecting the ECU to AiM device 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 “Porsche” and ECU Model
    - “991_981_OBDII” if you are using the OBDII plug
    - "991-911" if you are connecting through the Gateway connector;
- transmit the configuration to the device pressing “Transmit”.

4
Available channels

Channels received by AIM loggers connected to Porsche cars changes according to the protocol you have selected.

4.1
"991-981_OBDII" protocol available channels

Channels received by AiM devices connected to "991_981_OBDII" protocol are:

ID	CHANNEL NAME	FUNCTION
ECU_1	RPM	RPM
ECU_2	WHEEL_SP_FL	Front left wheel speed
ECU_3	WHEEL_SP_FR	Front right wheel speed
ECU_4	WHEEL_SP_RL	Rear left wheel speed
ECU_5	WHEEL_SP_RR	Rear right wheel speed
ECU_6	THROTTLE_POS	Throttle position sensor
ECU_7	ACCEL_POS	Acceleration position
ECU_8	COOLANT_TEMP	Engine coolant temperature
ECU_9	INTK_AIR_TEMP	Intake air temperature
ECU_10	MANIFOLD_PRESS	Manifold air pressure
ECU_11	FUEL_LEVEL	Fuel level
ECU_12	STEER_ANGLE	Steering angle
ECU_13	BRAKE_PRESS	Brake pressure

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.

4.2
"991-911" available channel

Channels received by AiM devices connected to "991_911" protocol are:

ID	CHANNEL NAME	FUNCTION
ECU_1	PSH_RPM	RPM
ECU_2	PSH_VEH_SPEED	Vehicle speed
ECU_3	PSH_WHEEL_FL	Front left wheel speed
ECU_4	PSH_WHEEL_FR	Front right rear speed
ECU_5	PSH_WHEEL_RL	Rear left wheel speed
ECU_6	PSH_WHEEL_RR	Rear right wheel speed
ECU_7	PSH_PPS	Pedal position sensor
ECU_8	PSH_BRAKE_SW	Brake switch
ECU_9	PSH_BRAKE_PR1	Brake pressure 1
ECU_10	PSH_BRAKE_PR2	Brake pressure 2
ECU_11	PSH_BRAKE_PR3	Brake pressure 3
ECU_12	PSH_BRAKE_PR4	Brake pressure 4
ECU_13	PSH_STEER_POS	Steering position
ECU_14	PSH_STEER_SPD	Steering speed
ECU_15	PSH_GEAR	Engaged gear
ECU_16	PSH_ECT	Engine coolant temperature
ECU_17	PSH_IAT	Intake air temperature
ECU_18	PSH_MAP	Manifold air pressure
ECU_19	PSH_ACC_LAT	Lateral acceleration
ECU_20	PSH_MODE_TYPE	Selected mode
ECU_21	PSH_SW_SUSP	Suspension switch
ECU_22	PSH_GEAR_INFO	Gear information

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.