

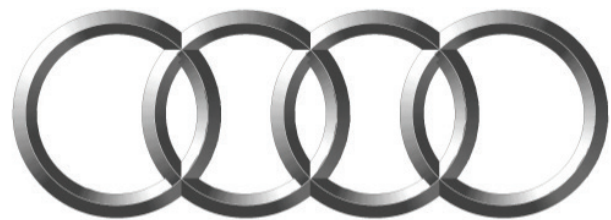
AiM Infotech

AUDI

A3 3rd series

TT 3rd series

Release 1.00



Audi

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:

- | | | |
|-----------|------------------------|-------------|
| • Audi A3 | 3 rd series | 2013 - 2019 |
| • Audi TT | 3 rd series | from 2015 |

2

Wiring connection

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

- through a direct connection to the ECU CAN wires, using a specific AUDI CAN protocol
- through the OBD II plug, using a standard OBD II protocol (easy connection, basic parameters)

2.1 ECU CAN Connection

Audi cars are equipped with a communication protocol based on CAN. Regardless of the standard ECU installed on the car, colors of the cables to be connected to are always the same, they are twisted and positioned in different locations: behind the instrument cluster, near the steering column, behind the fuse box or the glove box inside the main wiring loom. Follow the connection table below.

Audi ECU color cable	Pin function	AiM cable label	AiM color cable
Orange/Black	CAN High	CAN+	White
Orange/Brown	CAN Low	CAN-	Blue

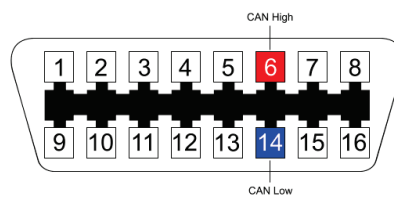
2.2 Race Studio configuration

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: **AUDI**
- ECU model: **TTCUP_CAN1_2016** (Only RS3)
TT_CUP_TCR (Only RS2)

2.3 OBDII Connection

These models feature a standard diagnostic protocol based on CAN. These are accessible through the OBD II plug, placed on the driver side, in the footrest area. For this installation refer to the following pinout of the car's plug (vehicle side – front view) and connection table:



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

2.4 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: **OBD_II**
- ECU Model: **CAN**

3 Protocols

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

3.1 "AUDI – TTCUP_CAN1_2016" protocol

Channels received by AiM devices configured to "AUDI – TTCUP_CAN1_2016" protocol are:

CHANNEL NAME	FUNCTION
RPM ENG	Engine RPM
V WHL RL	Rear left wheel speed
V WHL RR	Rear right wheel speed
V WHL FL	Left front wheel speed
V WHL FR	Front right wheel speed
GEAR	Engaged gear
A STE	Steering angle position
POS GBX LEVER	Position gearbox lever
G CH Y	Lateral acceleration
G CH X	Inline acceleration
W CH	Yaw rate
POS PEDAL	Pedal position sensor
P TURBO	Turbo pressure
FLAG BRAKE	FLAG BRAKE
TIP DOWN	TIP down
TIP UP	TIP up
T ENG AIR	Intake air temperature
T ENG OIL	Engine oil temperature
T ENG WATER	Engine water temperature



T AIR	Air temperature
I FBX MAIN	Main FBX
FLAG FBX 5	FLAG FBX 5
FLAG FBX 4	FLAG FBX 4
FLAG FBX 3	FLAG FBX 3
FLAG FBX 2	FLAG FBX 2
FLAG FBX 1	FLAG FBX 1
T GBX OIL	Head temperature
FLAG FBX RELAY2	FLAG FBX RELAY 2
FLAG FBX RELAY1	FLAG FBX RELAY 1
POS GBX	Position gearbox
FLAG STW OUT1	FLAG STW OUT1
FLAG STW OUT2	FLAG STW OUT2
V WHL REF	Vehicle wheel speed reference
FLAG TCS OFF	Traction control sensor flag off
FLAG ABS	ABS flag
FLAG TCS	Traction control sensor flag
FUEL LEVEL	Fuel level
FUEL CONS	Fuel consumption
S FUEL	S fuel
LAP CONS	LAP consumption
N FUEL	N fuel
I FBX TURNLIGHT	FBX turn light
POS ENG MAP	MAP engine position
N PTP REMAIN	N PTP REMAIN
S PTP REMAIN	S PTP REMAIN
FLAG SW OUT 3	FLAG SWT PUT 3

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 "AUDI – TT_Cup_TCR" protocol

Channels received by AiM devices configured to "AUDI – TT_Cup_TCR" protocol are:

CHANNEL NAME	FUNCTION
RPM	Engine RPM
Speed_rl	Rear left wheel speed
Speed_rr	Rear right wheel speed
Speed_fl	Front left wheel speed
Speed_fr	Front right wheel speed
PPS	Pedal position sensor
Boost_press	Boost pressure
Brake	Brake pressure
Water_Temp	Water temperature
Air_Temp	Air temperature
Eng_Load_ist	Engine load instant
Engine_Load_soll	Engine load

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.

3.3

“OBD_II – CAN” protocol

Channels received by AiM devices connected to "OBD_II – CAN" protocol are:

CHANNEL NAME	FUNCTION
OBDII RPM	Engine RPM
OBDII SPEED	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	Manifold air flow

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.