



## AiM Infotech

AUDI  
A3, A4, TT

Release 1.05

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**Audi**

ECU



# 1

## Models and years

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This document explains how to connect AiM devices to the vehicle Engine Control Unit (ECU) data stream.

Supported models and years are:

- |           |                        |             |
|-----------|------------------------|-------------|
| • Audi A3 | 2 <sup>nd</sup> series | 2003 - 2012 |
| • Audi A4 | 3 <sup>rd</sup> series | 2005 - 2008 |
| • Audi TT | 1 <sup>st</sup> series | 2001 - 2006 |
| • Audi TT | 2 <sup>nd</sup> series | 2006 - 2014 |

# 2

## Wiring connection

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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

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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.

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

## 2.2 Race Studio configuration

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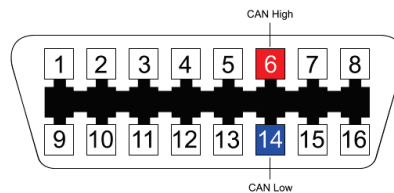
Before connecting the AiM device to the ECU, set all functions using AiM software Race Studio. The parameters to set in the device configuration are:

- ECU manufacturer: **AUDI**
- ECU model: **CAN\_PQ35\_P5**

## 2.3 OBDII Connection

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These models feature a standard diagnostic protocol based on CAN or K-Line depending on the year. 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

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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: **KWP2000\_SLOW\_INIT** (Only RS2) all models before 2008  
**CAN** all models after 2008

## 3 Protocols

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

### 3.1 "AUDI - CAN\_PQ35\_P5" protocol

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Channels received by AiM devices configured with "AUDI - CAN\_PQ35\_P5" protocol are:

| <b>CHANNEL NAME</b> | <b>FUNCTION</b>           |
|---------------------|---------------------------|
| STEER SPEED         | Steering wheel speed      |
| STEER ANGLE         | Steering angle position   |
| STEER SIGN          | Steering sign             |
| ASR ACTIVE          | ASR Active                |
| ABS ACTIVE          | ABS Active                |
| ASR MOM FAST        | Fast ASR torque reduction |
| ASR MOM SLOW        | Slow ASR torque reduction |
| ASR OFF             | ASR off                   |
| MO1 MO M EX         | Engine moment             |
| MO1 RPM             | Engine RPM                |
| MO1 PEDAL           | Pedal position sensor     |
| DES TORQUE          | Desired engine torque     |
| ENG TORQ LOSS       | Engine torque loss        |
| T WATER             | Water temperature         |
| MO2 BLS             | Brake light signal        |
| ABS SWITCH          | ABS switch                |
| TAIR                | Intake air temperature    |
| LIMITER             | Speed limiter             |
| SHIFT DOWN          | Tiptronic-Tip-Down        |



|               |                          |
|---------------|--------------------------|
| SHIFT UP      | Tiptronic-Tip-Up         |
| BLINKER LEFT  | Left turning light       |
| BLINKER RIGHT | Right turning light      |
| FAULT LAMP    | Fault lamp               |
| STEER ERR     | Steering error           |
| SUP POW STEER | Supplied power steering  |
| TSTEER        | Steering temperature     |
| GE1 ACTIVE    | Gear shifting active     |
| GE1 LEV POS   | Gear lever position      |
| GE1 SOLL MO   | Required internal moment |
| OIL TEMP 2    | Oil temperature 2        |
| V WH FL       | Front left wheel speed   |
| V WH FR       | Front right wheel speed  |
| V WH RL       | Rear left wheel speed    |
| V WH RR       | Rear right wheel speed   |
| BRAKE PRESS   | Brake pressure           |
| GE2 SYNCDZ    | Angular speed            |
| T OIL         | Oil temperature          |
| BOOST         | Boost pressure           |
| ABS OFF       | ABS Off                  |
| ASR SWITCH    | ASR switch               |
| GEAR          | Engaged gear             |

**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

## “OBD\_II – CAN / KWP2000\_SLOW\_INIT” protocol

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Channels received by AiM devices connected to "OBD\_II – CAN / KWP2000\_SLOW\_INIT " protocol are:

| <b>CHANNEL NAME</b> | <b>FUNCTION</b>            |
|---------------------|----------------------------|
| 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.