

AiM Infotech

Aprilia RSV4 and RSV4 APRC

Release 1.07

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ECU



# 1

## Bike years and models

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This tutorial explains how to connect Aprilia RSV4 ECU to AiM devices. Supported models and years are:

- Aprilia RSV4 Factory from 2009
- Aprilia RSV4 R from 2009
- Aprilia RSV4 APRC (Aprilia Performance Ride Control) from 2011

**Warning:** for these models/years AiM recommends not to remove the stock dash. Doing so will disable some of the bike functions or safety controls. AiM Tech srl will not be held responsible for any consequences that may result from the replacement of the original instrumentation cluster.

# 2

## CAN bus connection

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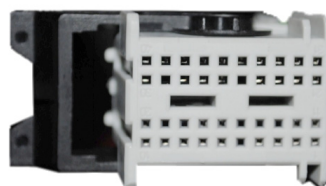
Aprilia RSV4 ECU is equipped with a bus communication protocol based on CAN that can be reached through the stock dashboard rear connector or directly. The first connection is easier to reach.

### 2.1

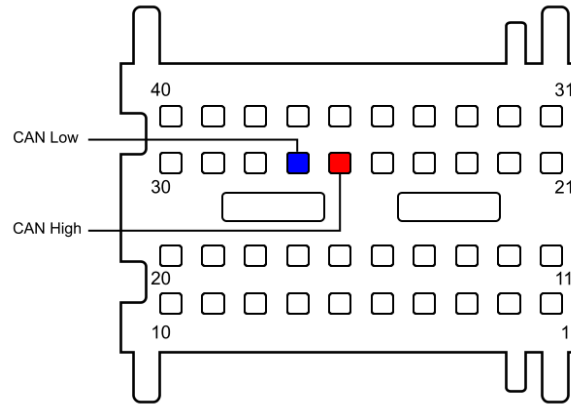
## Connection through the stock dashboard connector

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To reach Aprilia RSV4 stock dash rear connector, temporary remove the stock dash and see the 40 pins female connector shown here below.



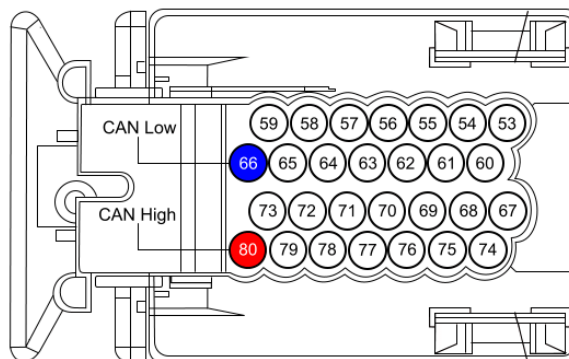
Below you see stock dash connector pinout as well as connection table.



40 pins connector pin	Pin function	Aprilia cable colour	AiM cable label
26	CAN High	Orange	CAN+
27	CAN Low	White/Black	CAN-

## 2.2 ECU direct connection

Aprilia RSV4 ECU is equipped with two connectors called ECU1 (engine) and ECU2 (vehicle). The CAN bus is on ECU2 connector right of the fuel tank. Below is shown its pinout with the connection table.



Dash connector pin	Pin function	Aprilia cable colour	AiM cable label
80	CAN+	Orange	CAN+
66	CAN-	White/Black	CAN-

## 3

# Configuration with Race Studio 2

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Before connecting the ECU to AiM device set this up using AiM Race Studio 2 software. The parameters to select in the device configuration are:

- ECU manufacturer "Aprilia" and
- ECU Model
  - "RSV4" for Aprilia RSV4 Factory 2009-2010 and Aprilia RSV4 R 2010
  - "RSV4\_APRC" for Aprilia RSV4 APRC 2011

## 4

# Available channels

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

## 4.1

# Aprilia "RSV4" protocol

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Channels received by AiM devices connected to "Aprilia" "RSV4" protocol are:

<b>ID</b>	<b>CHANNEL NAME</b>	<b>FUNCTION</b>
ECU_1	RSV4_RPM	Rpm
ECU_2	RSV4_SPEED	Speed
ECU_3	RSV4_GEAR	Gear number
ECU_4	RSV4_SEL_MAP	Selected MAP: <ul style="list-style-type: none"><li>1 = "T" Track/race</li><li>2 = "S" Sport</li><li>3 = "R" Road</li></ul>
ECU_5	RSV4_NEUTRAL	Neutral led

ECU_6	RSV4_WARNING	Warning Led
ECU_7	RSV4_SIDEStand	Side stand led
ECU_8	RSV4_ENG_TEMP	Engine coolant temperature
ECU_9	RSV4_V_BATT	V Battery
ECU_10	RSV4_FUEL_LOW	Low 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.

## 4.2

### Aprilia "RSV4\_APRC" protocol

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Channels received by AiM devices connected to Aprilia "RSV4" "RSV4\_APRC" protocol are:

ID	CHANNEL NAME	FUNCTION
ECU_1	RSV4_RPM	RPM
ECU_2	RSV4_BK_SPEED	Bike speed
ECU_3	RSV4_GEAR	Engaged gear
ECU_4	RSV4_SEL_MAP	Selected Map
ECU_5	RSV4_NEUTRAL	Neutral signal
ECU_6	RSV4_WARNING	Warning led
ECU_7	RSV4_SIDEStand	Side stand led
ECU_8	RSV4_ENG_TEMP	Engine coolant temperature
ECU_9	RSV4_V_BATT	V battery
ECU_10	RSV4_FUEL_LOW	Low fuel level
ECU_11	RSV4_YAW_RATE	Yaw rate
ECU_12	RSV4_ROLL_RATE	Rolling rate
ECU_13	RSV4_ACC_LAT	Lateral accelerometer
ECU_14	RSV4_ACC_LONG	Longitudinal accelerometer
ECU_15	RSV4_THRT_HAND	Throttle handle
ECU_16	RSV4_WH_SPD_F	Front wheel speed



ECU_17	RSV4_WH_SPD_R	Rear wheel speed
ECU_18	RSV4_TC_CTRL	ATC – Aprilia Traction Control level
ECU_19	RSV4_WHEEL_C	AWC – Aprilia Wheel control
ECU_20	RSV4_LAUNCH_C	ALC – Aprilia Launch control
ECU_24	RSV4_TPS1	Throttle position 1
ECU_25	RSV4_TPS2	Throttle position 2
ECU_27	RSV4_TC_INT	Traction control intervention

**Please note:** throttle position may or may not come across in the CAN data stream due to an update by the manufacturer.

**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.