AiM InfoTech

Lotus Elise, Exige, 2-Eleven, 3-Eleven from 2004 ECU

Release 1.05

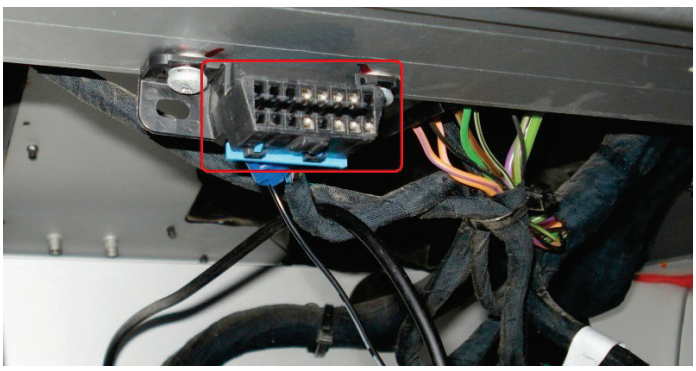
1 Models and years

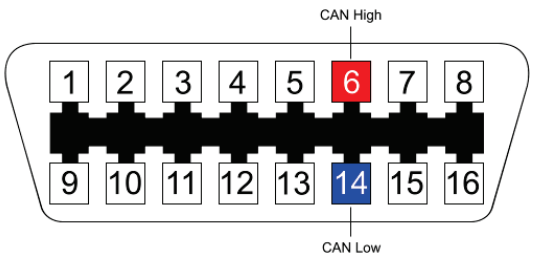
This document explains how to connect AiM devices to the vehicle Engine Control Unit (ECU) data stream.
Supported models and years are:

• Elise S2/Exige S2/2-Eleven (white dash)	all models	2004-2007
• EliseS2/ExigeS2/2-Eleven(blackdash)	all models	2004-2007
• Elise S3/ExigeV6/3-Eleven	all models	from 2011

2 OBDII Connection

These models feature a standard diagnostic protocol based on CAN, accessible through the OBDII plug placed under the stock dash (following left picture). For this installation refer to the following pinout of the OBDII plug (vehicle side – front view) and connection table.





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

3
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: **Lotus**
- ECU Model:
  - **"Clusters 04-07"** for Lotus Slise S2/Exige S2/2-Eleven all models (white dash) 2004-2007
  - **"Clusters 08-09"** for Lotus Elise S2/Exige S2/ 2-Eleven all models (black dash) 2008-2011
  - **"Clusters 11-19"** for Lotus Elise S3/Exige V6/3-Eleven from 2011 (RS3 only)

4
Protocols

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

4.1
“Lotus – Clusters 04-07” protocol

Channels received by AiM devices configured with "Lotus – Clusters 04-07” protocol are:

CHANNEL NAME	FUNCTION
RPM	RPM
SpeedVeh	Vehicle speed
WaterTemp	Water temperature
FuelIst	Instant fuel consumption
Bitfield	Includes the following warning lights:
= 1 SFLight	Shift light
= 2 MILLight	Malfunction indicator light
= 3 OilLight	Low oil pressurelight
= 4 TCLight	Traction control light

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

4.2
“Lotus – Clusters 08-09” protocol

Channels received by AiM devices configured with "Lotus – Clusters 08-09” protocol are:

CHANNEL NAME	FUNCTION
RPM	RPM
SpeedVeh	Vehicle speed
WaterTemp	Water temperature
IntakeAirTemp	Intake air temperature
TPS	Throttle position sensor
PPS	Pedal position sensor
CuSelLTC	Custom selection - traction control level
MAF	Manifold air flow
FuelIst	Instant fuel level
Bitfield1	Includes the following warning lights:
= 1 SFLight1	Shift light 1
= 2 SFLight2	Shift light 2
= 3 SFLight3	Shift light 3
= 4 MILLight	Malfunctioning indicator light
= 5 OilLight	Low oil pressurelight
= 6 TCLight	Traction control light
Bitfield2	Includes the following warning lights:
= 1 ServLight	Service light
= 5 TH2OLight	Water temperature light
FuelAver	Average 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.

4.3
“Lotus – Clusters 11-19” protocol

Channels received by AiM devices configured with "Lotus – Clusters 11-19” protocol are:

CHANNEL NAME	FUNCTION
ECU RPM	RPM
ECU GEAR	Active gear
ECU VEH SPD	Vehicle speed
ECU WS FL	Front left wheel speed
ECU WS FR	Front right wheel speed
ECU WS RL	Rear left wheel speed
ECU WS RR	Rear right wheel speed
ECU ACC Y	Lateral accelerometer
ECU YAW	Yaw rate
ECU STEER SPEED	Steering speed
ECU ENG TMP	Water temperature
ECU INT AIR T	Intake air temperature
ECU MAP	Manifold air pressure
ECU STEER ANG	Steering angle
ECU TIME ADV	Ignition advance
ECU FUEL LEV	Fuel level
ECU TPS	Throttle position sensor
ECU PPS	Throttle pedal sensor
ECU CALC LOAD	Calc load
ECU ACT ENG TORQ	Actual engine torque
ECU ABS LOAD VAL	ABS load value
ECU LAMBDA	Lambda
ECU FUELCONS	Fuel consumption
ECU MAF	Manifold air flow
ECU TRQ RED	Torque reduction
ECU TRQ INCR	Torque increasing
ECU TRQ	Torque
ECU APPLY TRQ	Applied torque
ECU SYS STATE	System state
ECU MODE	Engine mode

ECU CRUISE CTRL	Cruise control
ECU RACE SW 01	Race switch 01
ECU RACE SW	Race switch
ECU BRAKE SW	Brake switch
ECU BRK LIGHT	Brake light switch
ECU FUEL LAMP	Fuel lamp switch
ECU CLUTCH SW	Clutch switch
LTC 5 STEPS	Lotus traction control – 5 steps
LTC 10 STEPS	Lotus traction control – 10 steps
ECU SPORT RACE L	Contains the following messages:
= 1	Brake lamp switch
= 2	Sport Info lamp switch
= 3	Hold Gear TCS switch
= 4	Race Info Lamp
SW1	Contains the following messages:
= 1	Start condition request
= 2	Kick down request
ECU ESP ASR SPOR	Contains the following messages:
= 1	ESP ASR status
= 2	Sport switch status
ECU ESP ASR	Contains the following status messages:
= 1	ABS error
= 2	ABS intervention
= 3	ASR error
= 4	ASR intervention
= 5	ASR info lamp
= 6	ESP error status
= 7	ESP intervention
= 8	ESP info lamp
ECU DASH LAMP	Contains the following status messages:
= 1	Coolant temperature flash
= 2	TPMS Lamp
= 3	Service lamp
= 4	Low oil pressure lamp
= 5	Malfunctioning indicator lamp
= 6	Shift lamp 1
= 7	Shift lamp 2
= 8	Shift lamp 3

ECU ASR STAT	Contains the following status messages:
= 1	TR_ASR status
= 2	TI_ASR status

Technical notes

- 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.
- According to the vehicle Traction Control module, this parameter can be displayed in different ways:
  - ON/OFF (enable the "ESP ASR SwStatus" reference channel);
  - 5 steps scale (enable the "LTC 5 steps" reference channel);
  - 10 steps scale (enable the "LTC 10 steps" reference channel);
- "Gear" channel is displayed only if the AiM device is connected to a vehicle model equipped with automated gearbox.