

**Lotus ECU for
Exige, Exige S, Exige Cup, Exige GT,
Elise S, Elise R, 2-11 (Toyota)
Model Years 2004-2007**





INTRODUCTION

AIM has developed special applications for many of the most common ECUs: by special applications we mean user-friendly systems which allow to easily connect your ECU to our hi-tech data loggers: user need only to install harness between the **logger** and the ECU.

Once connected, the logger displays (and/or records, depending on the logger and on the ECU data stream) values like RPM, engine load, throttle position (TPS), air and water temperatures, battery voltage, speed, gear, lambda value (air/fuel ratio), analog channels..

All AIM loggers include – free of charge – **Race Studio 2** software, a powerful tool to configure the system and analyze recorded data on your PC.

Warning: once the ECU is connected to the logger, it is necessary to set it in the logger configuration in Race Studio 2 software.

Select Manufacturer “Lotus” Model “Clusters 04-07”.

Refer to Race Studio Configuration user manual for further information concerning the loggers configuration.

Chapter 1 – Car Models

Lotus Clusters 04-07 protocol is stock on these car models (Model Year 2004-2007):

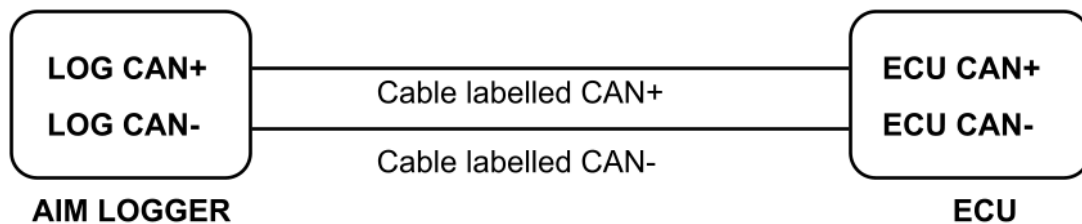
- Elise S;
- Elise R;
- Exige;
- Exige S;
- Exige Cup;
- Exige GT;
- 2-11.

Chapter 2 – CAN communication Setup

Lotus ECU is equipped with a CAN communication protocol used to communicate parameters to a data logger.

The CAN bus is available on pin 12 of the OBDII diagnosis connector placed back on the stock dashboard or on the ECU.

The image here below shows the standard CAN communication setup used to connect the ECU with AIM loggers.



Chapter 3 – Connection to AIM loggers

3.1 – Connection through the OBDII plug

To connect OBDII connector with AIM loggers connect AIM cable labelled CAN+ to pin 6 and cable labelled CAN- to pin 14 of the OBDII connector.

OBDII supplies external power to the logger too. VBatt (+12V) is on pin 16 and chassis GND on pin 4.

OBD is not powered by the vehicle master switch, so if AIM logger is connected to OBD for a long time the battery runs down.

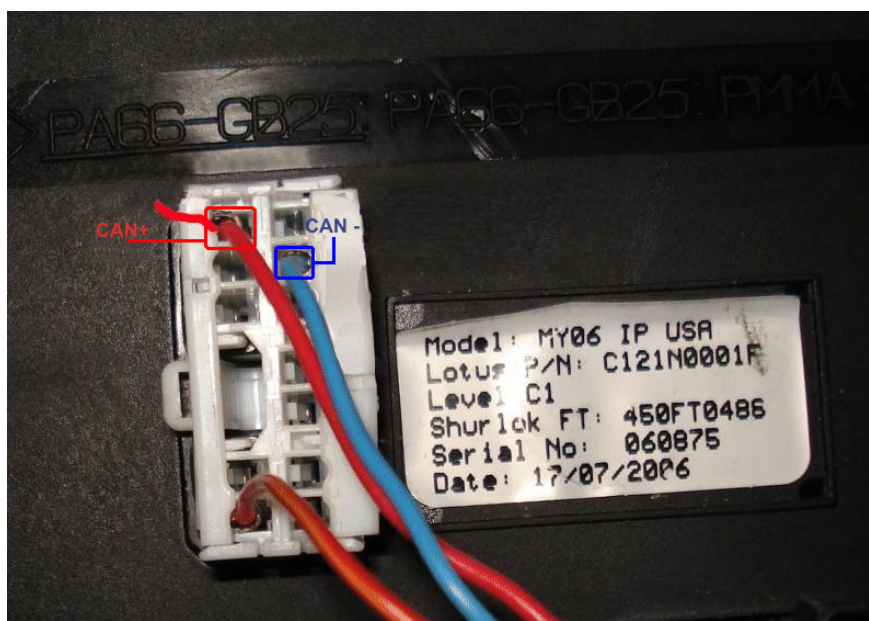
The CAN communications works only if the dashboard is switched on.



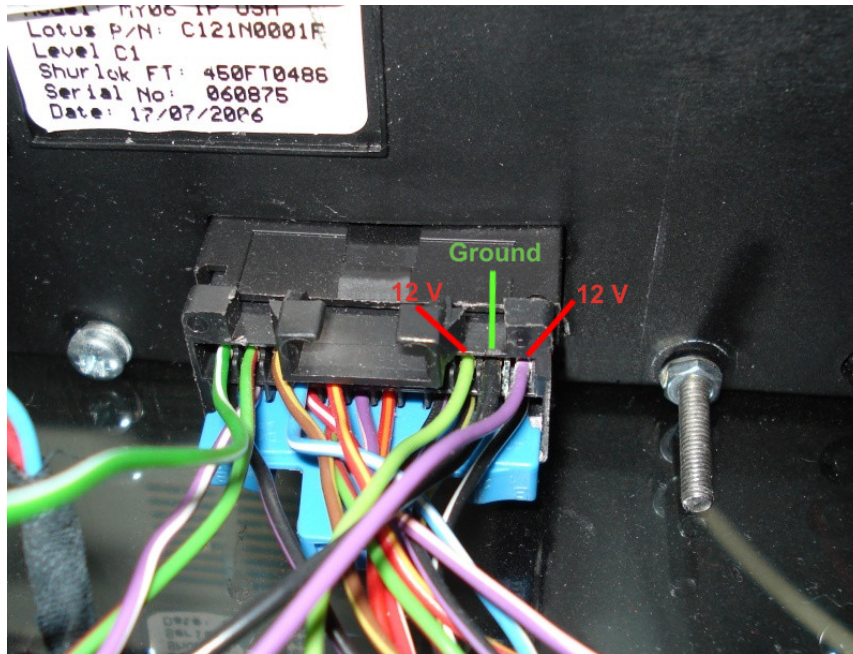
3.2 –Connection through the stock dashboard

To receive data coming from the ECU through the stock dashboard connect AIM cable labelled CAN+ with pin 1 (red wiring) and AIM cable labelled CAN- with pin 7 (blue wiring) of the 12 pins connector placed back on the stock dashboard.

The power supply of MXL can be obtained through the other connector placed always back of the original dashboard.



In case of permanent installation it is necessary to check which cable of the second connector is powered by the master switch. With reference to the below image the cables to check are the green and the purple one.



Chapter 4 – Lotus Clusters 04 – 07 communication protocol

Channels received by AIM loggers connected to Lotus ECU are:

ID	CHANNEL NAME	FUNCTION
ECU_1	CU_SPEED	SPEED
ECU_3	CU_RPM	RPM
ECU_4	CU_FUEL_IST	Instant fuel
ECU_5	CU_FUEL_AVG	Average fuel
ECU_6	CU_ENGT	Engine temperature
ECU_7	CU_SF_LIGHT	Shift Light
ECU_8	CU_MIL_LIGHT	Malfunction Indicator Light
ECU_11	CU_OIL_LIGHT	Low Oil Pressure Light
ECU_13	CU_TC_LIGHT	Traction Control Light