Emerald K3 ECU for

Lotus Elise S1, Exige S1, 340 R

AiM

Racing Data Power

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.

Note : 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 "Emerald" Model "K3". Refer to Race Studio Configuration user manual for further information concerning the loggers configuration.

Warning: it is strongly recommended to always verify whether the ECU needs specific software settings to export data.

Chapter 1 – Car Models

Emerald ECU can be installed on the following Lotus cars models:
- Elise S1;
- Exige S1;
- 340 R.

Chapter 2 – CAN communication Setup

Emerald K3 ECU is equipped with a CAN communication protocol used to communicate parameters to a data logger.
The image here below show the standard CAN communication setup used to connect the Emerald K3 DB9 COMMS female connector with AIM loggers.
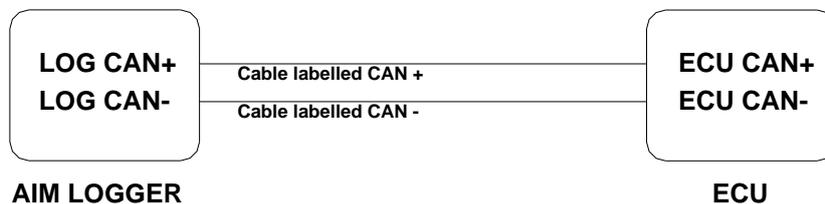
2.1 – Emerald K3 configuration setup

Before the connection with loggers, Emerald K3 software must be configured.
Please, follow these instructions:
Select "Can data link" from "ECU configuration Menu".
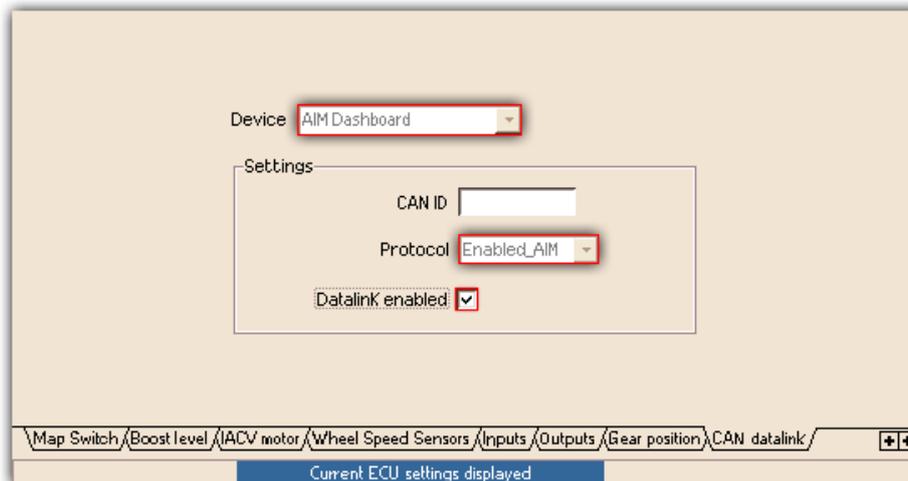
From the " Device" drop down menu select " AIM dashboard". To enable this K3 to AIM data-link ensure the "data link" check box is ticked.
Before configuration changes can take effect the ECU must be updated.
- Select "Update ECU configuration" from the "ECU" menu.

3 – Connection to AIM loggers

To connect Emerald ECU to AIM loggers:
- Connect pin 1 of the DB9 COMMS connector to AIM cable labelled CAN+

Connect pin 2 of the DB9 COMMS connector to AIM cable labelled CAN-
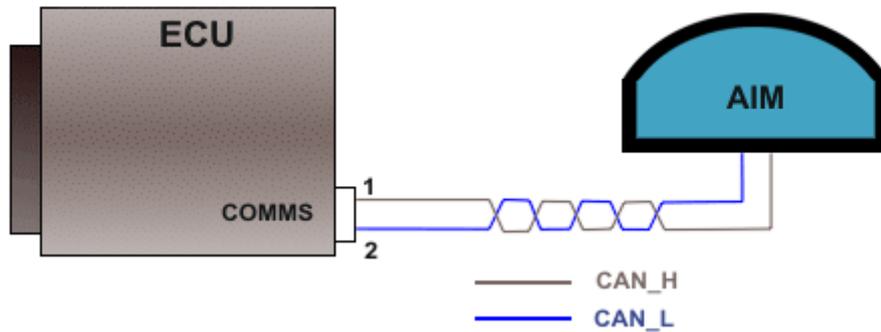
Chapter 4 – Lotus Emerald communication protocol

Channels received by AIM loggers connected to Lotus Emerald K3 ECU are:

ID	CHANNNEL NAME	FUNCTION
ECU_1	K3_RPM	SPEED
ECU_2	K3_SPEED	RPM
ECU_3	K3_OILPRESS	Instant fuel
ECU_4	K3_OILTEMP	Average fuel
ECU_5	K3_ECT	Engine temperature
ECU_6	K3_FUEL PRESS	Fuel pressure
ECU_7	K3_BATTVOLT	Battery voltage
ECU_8	K3_TPS	Throttle position sensor
ECU_9	K3_MAP	Manifold pressure
ECU_10	K3_AIRCHARGETEMP	Air charge temperature
ECU_11	K3_LAMBDA	Lambda value
ECU_12	K3_FUELTEMP	Fuel temperature
ECU_13	K3_EXHTEMP	Exhausted gas temperature
ECU_14	K3_GEAR	Gear number
ECU_15	K3_ERRORFLAG	Error flag