Gems OMEX ECU

AIM

Racing Data Power

INTRODUCTION

AIM has developed special applications for many of the most popular ECU: by special applications we mean user-friendly systems which allow to easily connect your ECU to our high tech data loggers: user needs 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 and configuration) 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 "GEMS" and Model "Omex".
Refer to Race Studio Configuration user manual for further information concerning the loggers configuration.
For any further information concerning ECU firmware/software settings and/or upgrading it is always recommended to address to the ECU dealer.

1 – Models and communication Set – Up
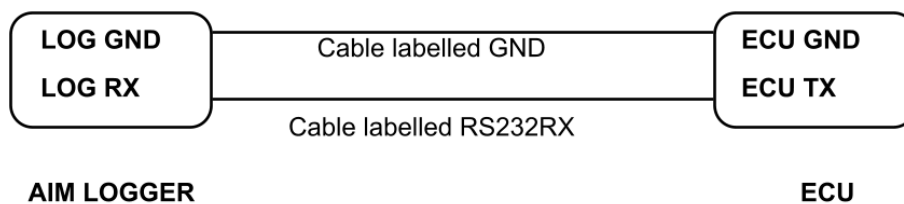
1.1 – ECU Models

Gems Omex ECU models compatible with AIM loggers are listed here below:

- GEMS Omex 100
- GEMS Omex 150
- GEMS Omex 200
- GEMS Omex 500
- GEMS Omex 550
- GEMS Omex 600
- GEMS Omex 700
- GEMS Omex 710

1.2 – ECU Serial communication Set-Up

The ECU is equipped with a serial communication interface (RS 232) used to communicate parameters to an external data logger or to configure the ECU itself.

The image here below shows the standard serial communication setup.
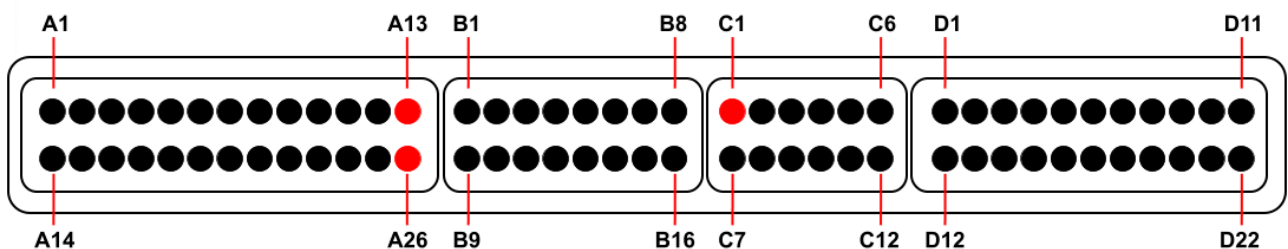

2 – Connection to AIM Data logger

The ECU connector is made of four sections: "A", "B", "C", and "D" is so characterised:

"A" - 26 pins
"B" - 16 pins
"C" - 12 pins
"D" – 22 pins

GEMX OMEX connector is shown below:

With reference to the image above:

- Connect cable labelled **RS232RX** with **pin** "**C1**" of the **ECU** (**ECU TX**).
- Connect cable called **GND** with **pin** "**A 13**" **or pin** "**A 26**" of the **ECU** (**GND** pins).

3 – Communication protocol

Channels received by AIM loggers connected ECU are.

ID	CHANNEL NAME	FUNCTION
ECU_1	GEMS_ENGINESPD	RPM
ECU_2	GEMS_LOAD	Engine load
ECU_3	GEMS_TPS	Throttle position
ECU_4	GEMS_AIRTEMP	Intake air temperature
ECU_5	GEMS_COOLTEMP	Water temperature
ECU_6	GEMS_BATTVOLT	Battery voltage
ECU_7	GEMS_ACCFUEL	***No info available yet***
ECU_8	GEMS_RESULT	***No info available yet***
ECU_9	GEMS_ADV2	Ignition advance#2
ECU_10	GEMS_ERROR	Error signal