AEM ECU
EMS 30-1050
V1.19+

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INTRODUCTION

AIM has developed special applications for many of the most common ECUs: by special applications we mean user-friendly systems which allow to connect your ECU to our hi-tech dataloggers (EVO3 PRO/PISTA, MXL STRADA/PISTA/PRO, XG Log) quite easily: users need only to install harness between the - for example - MXL and the ECU unit. Once connected, the MXL displays (and can record, depending on the model) values like RPM, engine load, throttle position (TPS), air and water temperatures, battery voltage, speed, gear, lambda value (air/fuel ratio), analog channels of your choice.

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

Please note: once your ECU is connected to the AIM Logger, you need to set it in the logger configuration in **Race Studio 2** software.
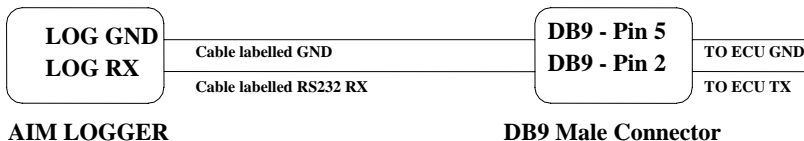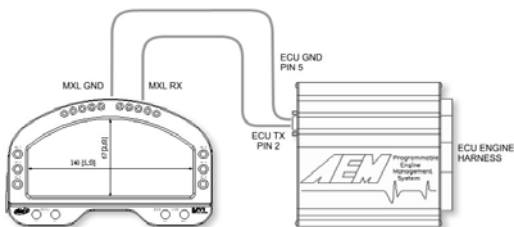
"AEM – Mod. EMS30 – 1050"

- **Serial Communication Set-Up**

The ECU has got a serial communication protocol (RS 232) and is equipped with 9 pins connector – whose pinout is reported at the following page – used to communicate parameters to a data logger, or to configure the ECU itself.

- **Connection with AIM Data Loggers**

To connect Your AIM logger to the ECU, please connect AIM cable labelled as RS232rx with pin 2 of the DB9 male connector (that goes to ECU TX) and AIM cable labelled "GND" with pin 5 of the DB9 male connector (that goes to ECU GND) as reported below.

LOG GND		DB9 - Pin 5	TO ECU GND
LOG RX	Cable labelled GND	DB9 - Pin 2	TO ECU TX
	Cable labelled RS232 RX		

AIM LOGGER   **DB9 Male Connector**

Connection between DB9 AEM cable and AIM loggers is provided by the following pins:

For connection, put the serial cable in the pinout

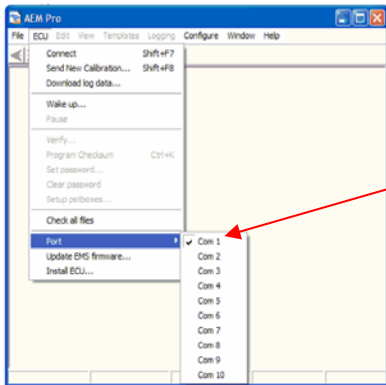DB 9 ECU connector

In order to ensure communication between Pc and ECU, download and install the software from the website www.aempower.com.
In the forums area you can find the link.

To execute this software, double- click on:
 http://forum.aempower.com/downloads/AEMRelease070406.EXE.

To connect to the EMS, the proper communication port must be selected. **The default serial port** for communication with EMS is **COM1**.

It's important that the correct COM Port to be used is set in the Pc software, or no communication will occur.

To change the COM port the AEMpro will use, select ECU port from the menu in AEMpro, followed by the appropriate port. The available options are or COM1 through COM10.

To configure the information on your PC pls refer to AEM pro User Guide V2.0.

Channels shown on AIM dataloggers via serial protocol with <u>AEM – EMS30-1050</u> are:
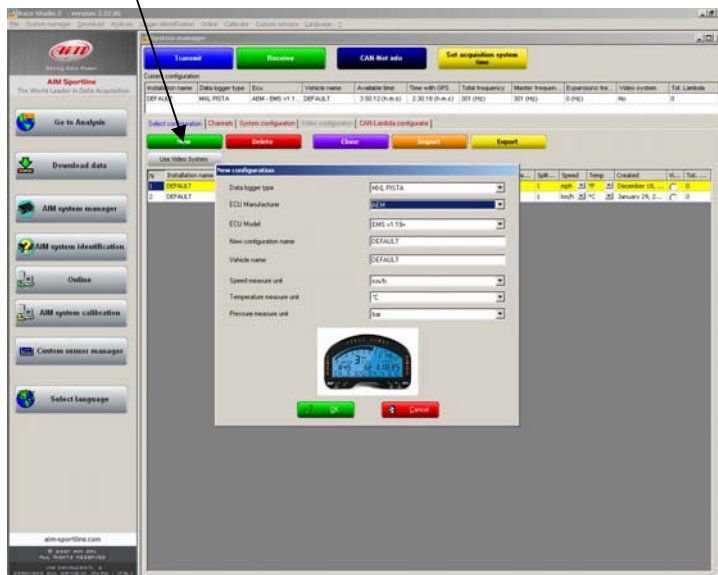
AEM - EMS30-1050

ECU1	AEM_RMP	RMP
ECU2	AEM_LOAD	ENGINE LOAD
ECU3	AEM_TPS	THROTTLE POSITION
ECU4	AEM_AIR_TEMP	INTAKE AIR TEMPERATURE
ECU5	AEM_WATER_TEMP	WATER TEMPERATURE
ECU6	AEM_ADCR11	PRESS VOLTAGE
ECU7	AEM_ADCR13	GEAR VOLT
ECU8	AEM_ ADCR14	SPARE TEMP VOLTAGE
ECU9	AEM_ ADCR15	EGT#3 VOLTAGE
ECU10	AEM_ ADCR16	EGT#4 VOLTAGE
ECU11	AEM_ ADCR17	EGT#1 VOLTAGE
ECU12	AEM_ ADCR18	EGT#2 VOLTAGE
ECU13	AEM_BATTERY	BATTERY VOLTAGE
ECU14	AEM_LAMBDA_#1	LAMBA VALUE#1
ECU15	AEM_LAMBA _#2	LAMBA VALUE#2
ECU16	AEM_SPEED	VEHICLE SPEED
ECU17	AEM_GEAR	ENGAGED GEAR
ECU18	AEM_	ERROR SIGNAL
ECU19	AEM_	ERROR SIGNAL

The system channels from 6 to 12 are Custom Free Channels but they are available only in volt .

CONFIGURE YOUR DATALOGGER
With Race Studio 2 software.

Now, in order to configure and ensure communication between AIM dataloggers and your ECU, you need lo launch RaceStudio 2 software and create a new configuration by pressing "NEW"

A new dialogue window will open.
Select:

– Datalogger type: choose your AIM model
– ECU Manufacturer AEM EMS 30-1050
– ECU model

To configure analog channels of your datalogger and data transmission, pls refer to Race Studio2 Manual and MXL Manual.