



AiM InfoTech

MBE 967/970 ECUs

Release 1.02



ECU



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Supported models.

This document explains how to connect AiM devices to the vehicle Engine Control Unit (ECU) data stream.

Supported models are:

- MBE 967
- MBE 970

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Software setup

MBE 967 and 970 ECUs come with EasyMap software. To allow them a correct communication with AiM devices set them up as follows:

- Connect the ECU to your PC and power it connects ECU pin 13 at 12V and ECU pin 6 – or other GND pin – to GND
- Run Easy Map and follow this path:
 - Data ->Get Data
 - "Select Parameter" window appears -> open "Data Logging" directory
 - select "Data Logger Link";
 - in "Data Source" options, select Select "ECU device".
 - press "OK"
- EasyMap reads now the information from the ECU and opens a new window to configure the communication.



- all parameters needs configuration as in the following table:

Data Logger Link: choose [Transmitting at 19200]
RPM choose [4,00]

Parameter	Scaling
1: choose [Engine Speed]	Choose 16 bit
2: choose [Ignition]	Choose 8 bit
3: choose [Injection Time]	Choose 16 bit
4: choose [Throttle Angle]	Choose 8 bit
5: choose [Coolant Temp]	Choose 8 bit
6: choose [Air Temp]	Choose 8 bit
7: choose [Baro Pressure]	Choose 8 bit
9: choose [Lambda]	Choose 8 bit
10: choose [Ri]	Choose 16 bit
11: choose [Engine Oil Pressure]	Choose 8 bit
12: choose [Fuel Pressure]	Choose 8 bit
13: choose [Engine Oil Temp]	Choose 8 bit
14: choose [Gearbox Oil Temp]	Choose 8 bit
15: choose [Boost Pressure]	Choose 8 bit
16: choose [Gear Position]	Choose 8 bit

Please note: data logging configuration with EasyMap V5.0 software is intended for expert users only. Refer to www.mbesystems.com for further information.

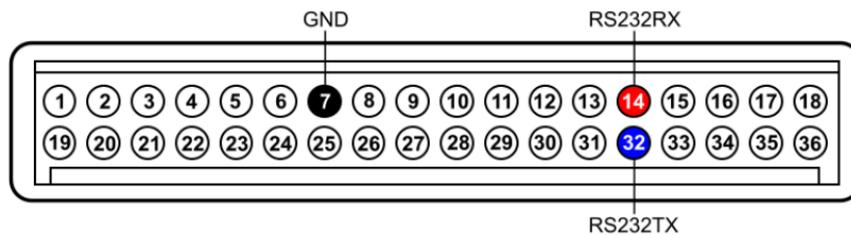
- once all parameters configured press "Send" and choose "ECU Device" if requested; the configuration is stored in ECU memory.
- close configuration window and quit the programme.
- before connecting MBE ECU to AiM device enable "Broadcast Mode" ensuring a nominally zero voltage (or open circuit) on fuel trim and ignition trim inputs.

3 Wiring connection

MBE 967 and MBE 970 ECUs feature a serial communication protocol and they connect differently to AiM devices as explained below.

3.1 Connection of MBE 967

MBE 967 is equipped with a 36 pins front connector. Here below is its pinout as well as connection scheme.



Data Output connector pin	Pin function	AiM Cable
32	RS232TX	RS232RX / ECU RS232TX
14	RS232RX	RS232TX / ECU RS232RX
7	Ground	GND

Please note:

AiM wiring harnesses supplied after September 2018 have the following labels:

ECU RS232TX (white) to be connected to **ECU TX** pin

ECU RS232RX (blue) to be connected to **ECU RX** pin (if indicated in the connection table above)

AiM wiring harnesses supplied before September 2018 have the following labels:

RS232RX (white) to be connected to **ECU TX** pin

RS232TX (blue) to be connected to **ECU RX** pin (if indicated in the connection table above)

3.2 Connection of MBE 970

MBE 970 ECU is equipped with a 55 pins front connector. Here below is connection table.

Data Output connector pin	Pin function	AiM Cable
46	RS232TX	RS232RX / ECU RS232TX
45	RS232RX	RS232TX / ECU RS232RX
7	Ground	GND

Please note:

AiM wiring harnesses supplied after September 2018 have the following labels:

ECU RS232TX (white) to be connected to **ECU TX** pin

ECU RS232RX (blue) to be connected to **ECU RX** pin (if indicated in the connection table above)

AiM wiring harnesses supplied before September 2018 have the following labels:

RS232RX (white) to be connected to **ECU TX** pin

RS232TX (blue) to be connected to **ECU RX** pin (if indicated in the connection table above)

4 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: **MBE**
- ECU Model: **967 970**

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“MBE – 967 970” Protocol

Channels received by AiM devices configured with "MBE – 967 970" protocol are:

CHANNEL NAME	FUNCTION
MBE ENGINE SPD	Engine RPM
MBE IGNITION	Ignition table
MBE INJECTIME	Injection time
MBE THROTANG	Throttle position sensor
MBE COOLANTTEMP	Engine coolant temperature
MBE AIRTEMP	Intake air temperature
MBE BAROPRESS	Barometric pressure
MBE LAMBDA	Lambda value
MBE VOLT LAMBDA	Lambda voltage
MBE ENGOILPRESS	Engine oil pressure
MBE FUELPRESS	Fuel pressure
MBE GEAR	Engaged gear
MBE GEAROILTEMP	Gearbox oil temperature
MBE VOLT GEAR	Gear sensor voltage
MBE BOOSTPRESS	Boost pressure
MBE RAW VAL	Throttle break point

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