

AiM Infotech

VEMS V3 ECU

Release 1.01

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# 1

## Supported models

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This document explains how to connect AiM devices to the Engine Control Unit (ECU) datastream. Supported models are:

- V3

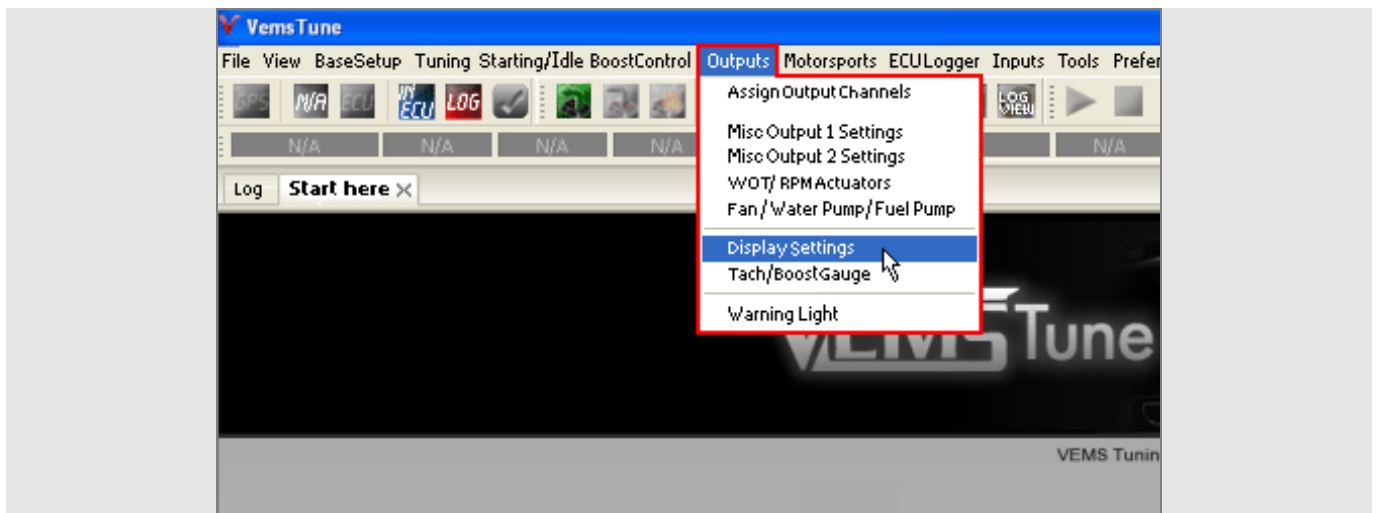
# 2

## Software configuration

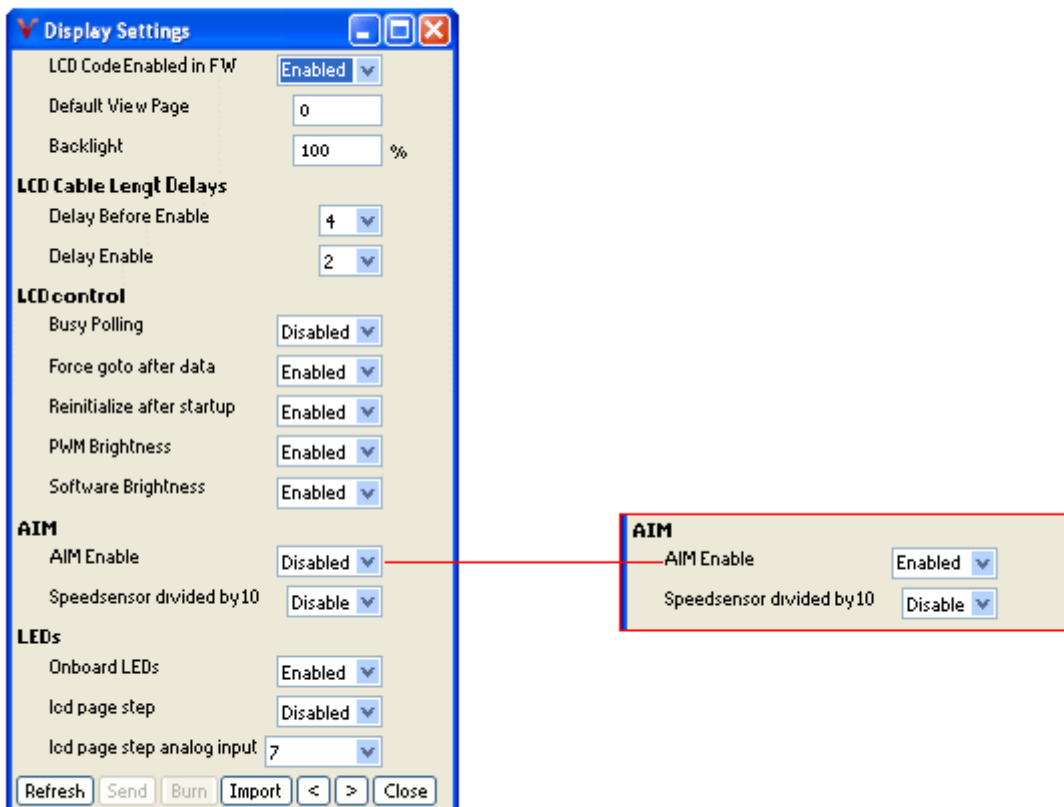
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VEMS ECU features a serial communication protocol (RS232). The ECU comes with VEMS Tune software and a software setup is needed before connecting the ECU to AiM devices. Install VEMS Tune software and follow these steps.

- Select “Outputs – >Display Settings” as shown here below.



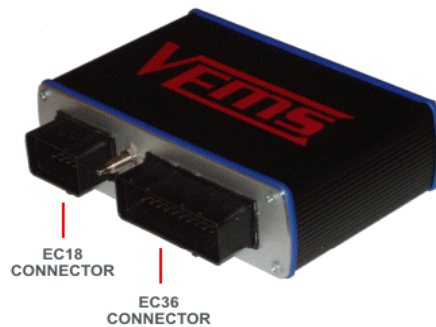
- Go to AiM option and set AiM Enable “Enabled” as shown here below.



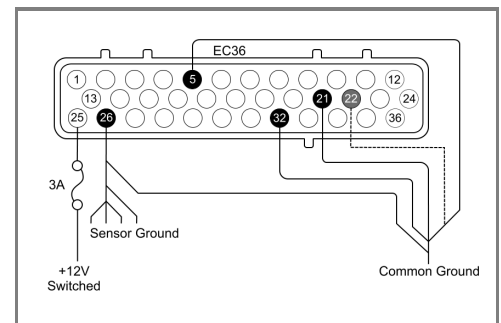
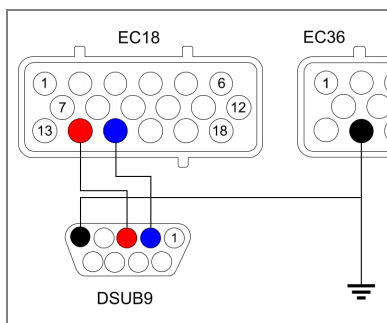
Please note: for further information concerning ECU firmware / software settings and/or upgrading it is always recommended to address to the ECU dealer.

### 3 Wiring connection

VEMS ECU is equipped with two connectors EC18 on the left and EC36 on the right shown here below.



To connect VEMS ECU with AiM devices through the ECU harness use the DB9 connector you find on the harness. Here below are serial connection drawings as well as connection table.



EC18 Pin	EC36 Pin	DB9 Pin	Pin Function	AiM device cable
14		3	RS232RX	RS232TX/ECU RS232RX
15		2	RS232TX	RS232RX/ECU RS232TX
	5-21-22-26-32	5	GND	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

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Before connecting AiM devices to the ECU, set all functions using AiM software Race Studio. The parameters to set in the device configuration are:

- ECU manufacturer: **VEMS**
- ECU Model: **ECU\_AIM\_Datastream**

## 5

# “VEMS - ECU\_AIM\_Datastream” protocol

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Channels received by AiM devices configured with "VEMS - ECU\_AIM\_Datastream" protocol are:

<b>CHANNEL NAME</b>	<b>FUNCTION</b>
ECU_RPM	RPM
ECU_SPEED	Vehicle speed
ECU_OIL_PRESS	Oil pressure
ECU_OIL_TEMP	Oil temperature
ECU_WATER_TEMP	Engine cooling temperature
ECU_FUEL_PRESS	Fuel pressure
ECU_BATT_VOLT	Battery supply
ECU_THRT_ANGLE	Throttle angle
ECU_MAP	Manifold air pressure
ECU_AIR_CHARGE	Intake air temperature
ECU_EXH_TEMP	Exhaust gas temperature
ECU_LAMBDA	Lambda value
ECU_FUEL_TEMP	Fuel temperature
ECU_GEAR	Engaged gear
ECU_ERRORS	ECU error