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AiM Infotech

Vi-PEC V44 and V88 ECU

Release 1.01



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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 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.

Warning: once the ECU is connected to the logger, it is necessary to set it in the logger configuration in Race Studio 2 software.

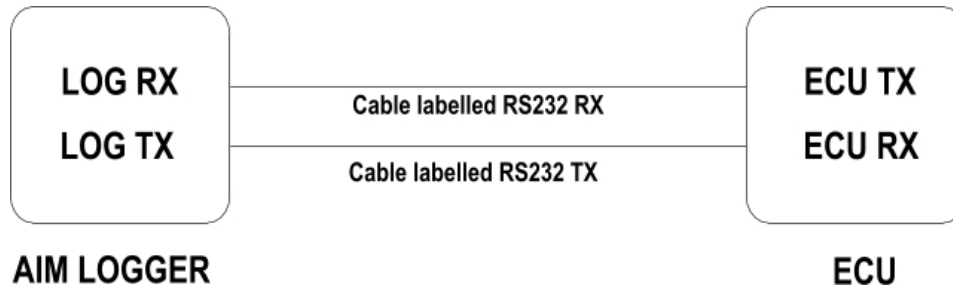
Select Manufacturer “VIPEC” and Model “V44_V88”.

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.

1 – Serial Communication Setup

Vi-PEC ECU has a serial communication protocol (RS232) and is equipped with 4 connectors used to communicate parameters to external loggers or to configure the ECU itself.



Vi-PEC ECU data transmission is 57600 Baud, for this reason Vi-PEC has created “Vi-PEC AIM ADAPTOR” that converts and re-transmits data at 19200 baud.

1.1 - ECU connectors Description

The image below shows the ECU connections:



“A” connector is necessary to power the ECU

“B” connector is used to connect different kind of sensors to the ECU

Connector labelled “USB” is used to connect ECU to the PC

Connector labelled “CAN” allows serial communication and is used to connect the ECU to “Vi-PEC AIM ADAPTOR”

1.2 – Vi-PEC ECU Setup

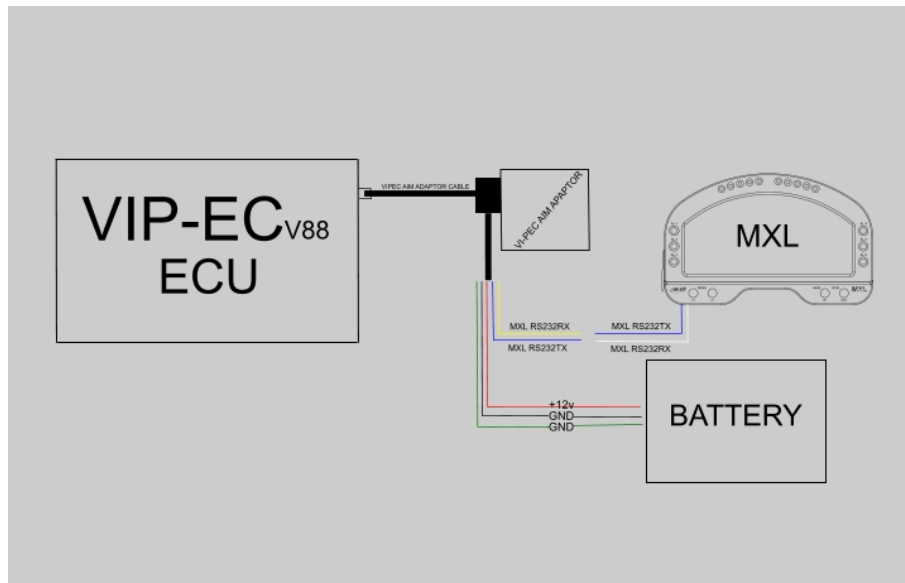
For the ECU to correctly communicate with AIM logger it is necessary to configure the first one via software.

Please, follow carefully these instructions:

- disconnect any PC USB cable from the ECU;
- ECU software and AIM datalogger cannot be online at the same time.
- the ECU must be powered on through “A” connector (as shown before) otherwise it doesn't send any response.
- software datastream mode must be OFF.
- AIM logger requests data.
- baud rate setting is 57600.

**Note: software setting is needed only for the latest firmware version.
Version 4.2.2 is configured by default.**

2 – Connection to AIM loggers



Note: for the ECU to correctly communicate with AIM loggers it is necessary to connect both devices to Vi-PEC-AIM adaptor, supplied with the ECU, that takes bit rate to 19200 bps.

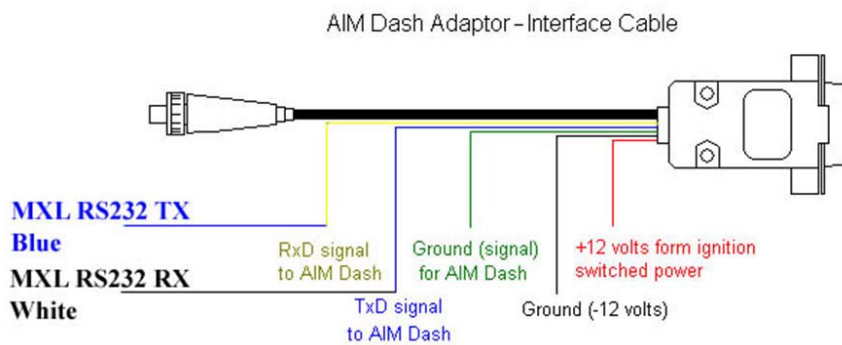
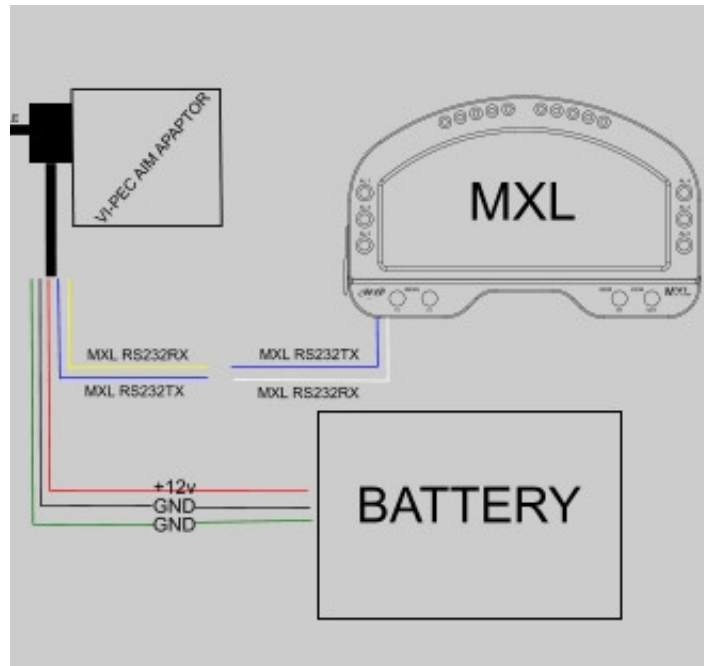
To connect the adaptor to the CAN Bus Port on the ECU use the jack cable – shown below on the right and, with reference to the images below:

- Connect DB9 connector to the adaptor.
- Connect “CAN” Binder connector to the ECU.



To connect AIM loggers to the adapter:

- Connect RX232TX cable (blue) of the adapter with AIM cable labelled “RS232RX” (white) of the AIM logger.
- Connect RX232RX cable (yellow) of the adapter with AIM cable labelled “RS232TX” (blue) of the AIM logger.
- Connect 12V cable (red) and “GND” ones (green and black) to the battery.



3 – Vi-PEC ECU communication protocol

Channels received by AIM loggers connected to Vi-PEC ECU are:

| ID | CHANNEL NAME | FUNCTION |
|-----------|---------------------|------------------------------|
| ECU_1 | VP_RPM | RPM |
| ECU_2 | VP_MAP | Manifold Air Pressure |
| ECU_3 | VP_MGP | NOT AVAILABLE |
| ECU_4 | VP_BAROMETRIC | Barometric value |
| ECU_5 | VP_TPS | Throttle position sensor |
| ECU_6 | VP_DUTY_CYCLE | NOT AVAILABLE |
| ECU_7 | VP_DUTY_CYC (S) | NOT AVAILABLE |
| ECU_8 | VP_INJ_PW | Injection power |
| ECU_9 | VP_ECT | Engine cooling temperature |
| ECU_10 | VP_IAT | Intake air temperature |
| ECU_11 | VP_BATT_VOLT | Battery voltage |
| ECU_12 | VP_MAF | Mass Air Flow |
| ECU_13 | VP_MAF_CYI | Cylinder Mass air flow |
| ECU_14 | VP_GEAR | Gear Number |
| ECU_15 | VP_ECU_TEMP | ECU temperature |
| ECU_16 | VP_INJ_ANGLE | Injection angle |
| ECU_17 | VP_IGN_ANGLE | Ignition angle |
| ECU_18 | VP_CAM_INL_LH | Camshaft Inlet Position |
| ECU_19 | VP_CAM_INL_RH | Camshaft Inlet Position |
| ECU_20 | VP_CAM_EXH_LH | Camshaft Exhaust Position |
| ECU_21 | VP_CAM_EXH_RH | Camshaft Exhaust Position |
| ECU_22 | VP_GPTemp_AN1 | Generic Temperature Channels |
| ECU_23 | VP_GPTemp_AN2 | Generic Temperature Channels |
| ECU_24 | VP_GPTemp_AN3 | Generic Temperature Channels |
| ECU_25 | VP_GPTemp_AN4 | Generic Temperature Channels |
| ECU_26 | VP_GPPress_AN1 | Generic Sensor Channels |
| ECU_27 | VP_GPPress_AN2 | Generic Sensor Channels |
| ECU_28 | VP_GPPress_AN3 | Generic Sensor Channels |
| ECU_29 | VP_GPPress_AN4 | Generic Sensor Channels |
| ECU_30 | VP_GPPress_AN5 | Generic Sensor Channels |
| ECU_31 | VP_GPPress_AN6 | Generic Sensor Channels |
| ECU_32 | VP_GPPress_AN7 | Generic Sensor Channels |
| ECU_33 | VP_GPPress_AN8 | Generic Sensor Channels |
| ECU_34 | VP_GPPress_AN9 | Generic Sensor Channels |
| ECU_35 | VP_GPPress_AN10 | Generic Sensor Channels |
| ECU_36 | VP_GPPress_AN11 | Generic Sensor Channels |

| | | |
|--------|----------------------|---|
| ECU_37 | VP_DI_SPEED1 | Generic Speed Channels |
| ECU_38 | VP_DI_SPEED2 | Generic Speed Channels |
| ECU_39 | VP_DI_SPEED3 | Generic Speed Channels |
| ECU_40 | VP_DI_SPEED4 | Generic Speed Channels |
| ECU_41 | VP_DI_SPEED5 | Generic Speed Channels |
| ECU_42 | VP_DI_SPEED6 | Generic Speed Channels |
| ECU_43 | VP_DI_FREQ1 | Generic Frequency Channels |
| ECU_44 | VP_DI_FREQ2 | Generic Frequency Channels |
| ECU_45 | VP_DI_FREQ3 | Generic Frequency Channels |
| ECU_46 | VP_DI_FREQ4 | Generic Frequency Channels |
| ECU_47 | VP_DI_FREQ5 | Generic Frequency Channels |
| ECU_48 | VP_DI_FREQ6 | Generic Frequency Channels |
| ECU_49 | VP_KNOCK_LEVEL | Knock level |
| ECU_50 | VP_KNOCK_COUNT | Knock count |
| ECU_51 | VP_KNOCK_TARGET | Knock Target |
| ECU_52 | VP_DWELL_TIME | Coil Dwell Time |
| ECU_53 | VP_OV_VOLT_LIM | Overvoltage Limiter (1=Act – 0=Not Act) |
| ECU_54 | VP_OV_FUEL_LIM | Overrun Fuel Cut (1=Act – 0=Not Act) |
| ECU_55 | VP_VOLTAGE_LIM | Voltage limit (1=Act – 0=Not Act) |
| ECU_57 | VP_MAX_IGN_LIM | Max ignition limiter (1=Act – 0=Not Act) |
| ECU_58 | VP_SPEED_LIM | Speed limiter (1=Act – 0=Not Act) |
| ECU_59 | VP_MAP_LIM | Manifold air pressure limit (1=Act – 0=Not Act) |
| ECU_60 | VP_RPM_LIM | RPM Limit(1=Act – 0=Not Act) |
| ECU_65 | VP_AN_LIM | Limit (1=Act – 0=Not Act) |
| ECU_66 | VP_WAKEUP_STATUS | Wake Up Status (1=Act – 0=Not Act) |
| ECU_67 | VP_LCH_RPM_LIM | Launch RPM Limit (1=Act – 0=Not Act) |
| ECU_68 | VP_UN_VOLT_LIM | Under Voltage Limit (1=Act – 0=Not Act) |
| ECU_69 | VP_TG1_ERR_CNT | Trig1 Error Counter |
| ECU_70 | VP_TG2_ERR_CNT | Trig2 Error Counter |
| ECU_76 | VP_ECCS_WIDESLOT_ERR | ECCS Widest Slot Error (1=Y – 2=NO) |
| ECU_77 | VP_TRIG2_ERR | Trig2 Error Signal (1=Y – 2=NO) |
| ECU_78 | VP_TRIG1_ERR | Trig1 Error Signal (1=Y – 2=NO) |