

## Vi-PEC V44 and V88 ECU



## 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.**

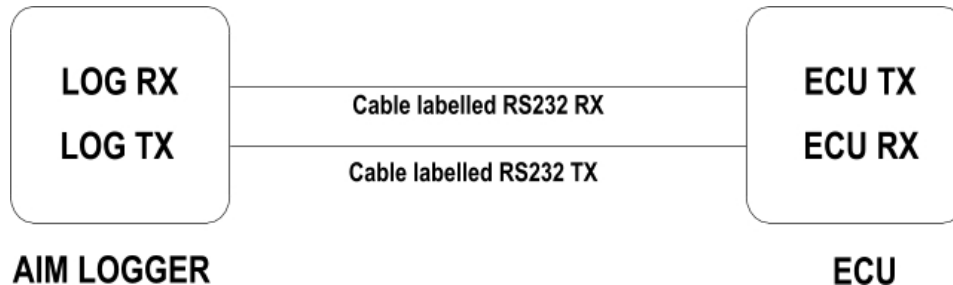
**Select Manufacturer “VIPEC” and Model “V44\_V88”.**

**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

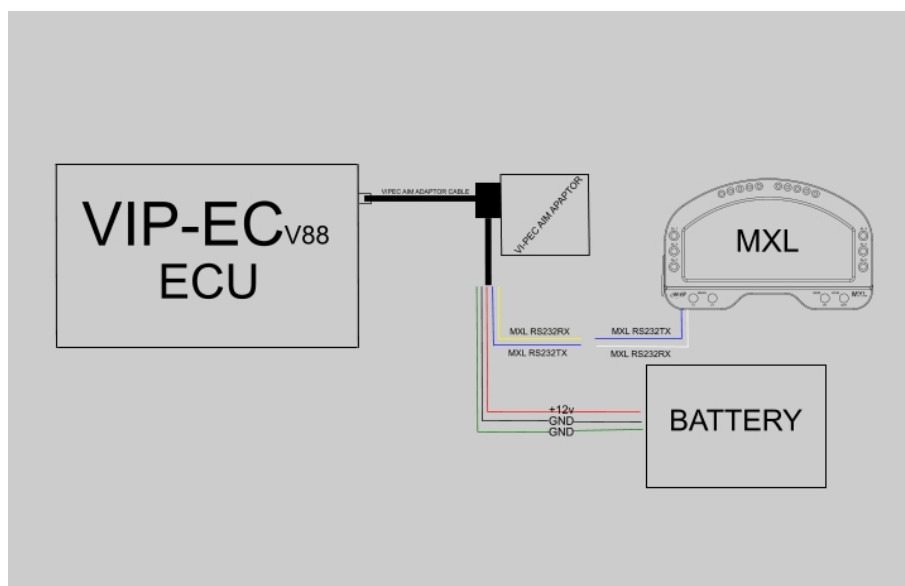
For the ECU to correctly communicate with AIM logger it is necessary to configure the first one via software.

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.**

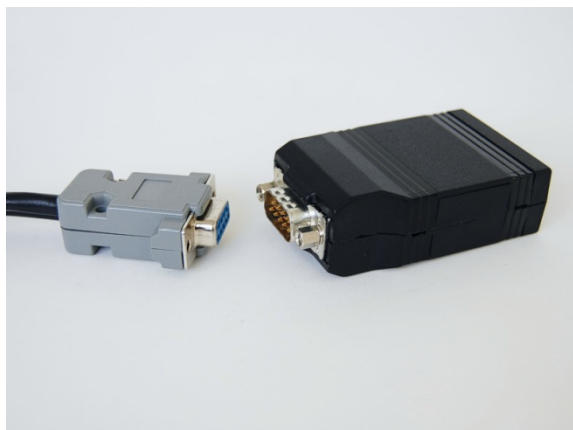
## 2 – Connection to AIM loggers



**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.**

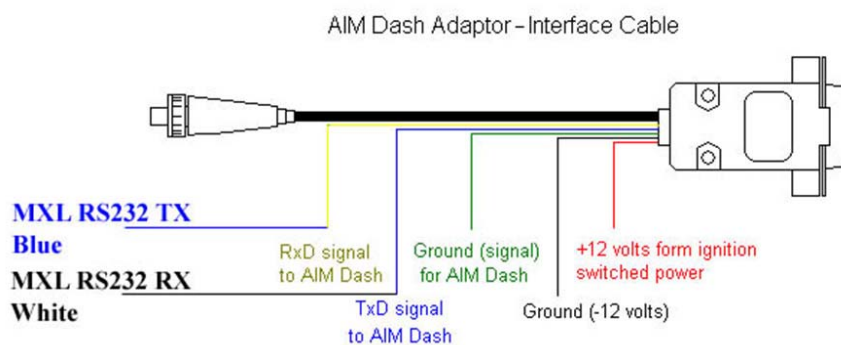
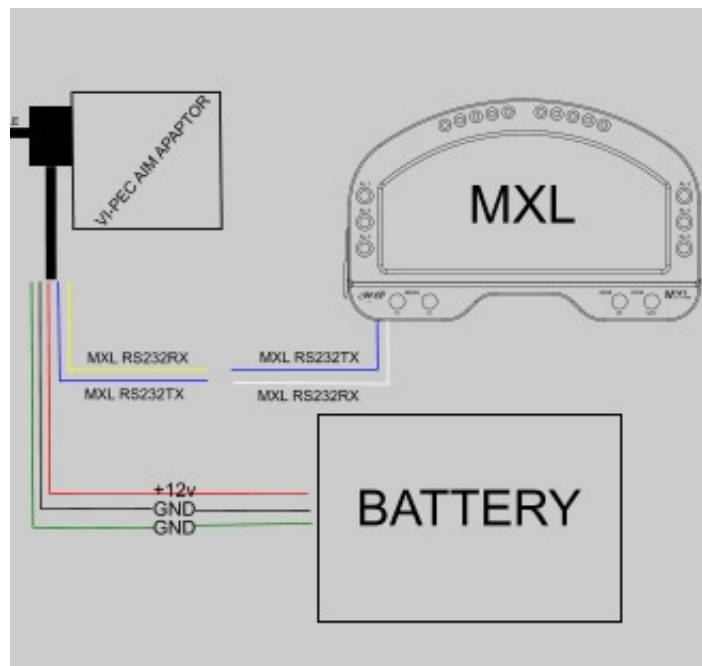
To connect the adaptor to the CAN Bus Port on the ECU use the jack cable – shown below on the right and, with reference to the images below:

- 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)