

Part Number: 230-VM-EFIAEM

AEM EMS Interface Module

Module Configuration Setup:

Module Type: AEM EMS

Serial Number: 501110

Sample Rate: All channels set to 10 samples per second:

Input Number	Channel Name	V_Net ID #	EFI Variable	Default Units
1	EFI Engine Rpm	0x532	AEM Engine Rpm	RPM
2	EFI Engine Load	0x53B	AEM Engine Load	%
3	EFI TPS	0x538	AEM Throttle Position	%
4	EFI Intake Temp	0x529	Display Degrees F	degF
5	EFI H2O Temp	0x536	Display Degrees F	degF
6	Custom 11 (ADCR 11)	0x50B	AEM ADCR Volts	V
7	Custom 13 (ADCR 13)	0x50D	AEM ADCR Volts	V
8	Custom 14 (ADCR 14)	0x50E	AEM ADCR Volts	V
9	EGT Cyl #1	0x601	AEM RTD Temp 30-2050	degF
10	EGT Cyl #2	0x602	AEM RTD Temp 30-2050	degF
11	EGT Cyl #3	0x603	AEM RTD Temp 30-2050	degF
12	EGT Cyl #4	0x604	AEM RTD Temp 30-2050	degF
13	EFI Voltage	0x52A	AEM Battery Volts	V
14	EFI A/F 1	0x539	AEM Air Fuel Ratio	Lambda
15	EFI A/F 2	0x53A	AEM Air Fuel Ratio	Lambda
16	EFI Speed	0x533	AEM Vehicle Speed	MPH
17	EFI Gear	0x551	AEM Gear	

IMPORTANT: This module has been designed and programmed to interface with the “AEM standard data stream”. This requires that your AEM EMS is programmed to output this data stream.

Description:

This interface module is used to convert the serial data stream for an AEM EMS unit into a CAN bus data stream compatible with the RacePak V_Net System. Data from the module is then available for use with the full range of RacePak V_Net devices including on board displays, real time telemetry, and data logging applications. The module also provides setup capability to accommodate selection of scaling units, data logging sample rates and even custom sensor calibration. Up to 17 different EMS data channels can be monitored and recorded as described above.

Module Installation:

The V_Net connector module can be inserted at any location in the V_Net data bus in your vehicle. Select locations where the connector module can be mounted safely. Avoid mounting near heat sources and high voltage ignition wires. The connector module must be mounted in a location that does not exceed 185°F or the module will be damaged.

EMS Hookup:

This module has been designed to interface directly to the EMS unit via the serial connector on the Module. Please refer to your EMS manual for connector locations.



Module Setup:

This module has been designed and programmed to interface with the “AEM standard data stream”. This requires that your EMS is programmed to output this data stream. The data channels and their default configurations are shown at the top of the first page of this sheet. The sensor ID’s and default calibrations can be modified through the use of a PC and the DataLink data acquisition software.

No further setup is required to begin using the module if the default setup information is correct for your application. In stand-alone V_Net systems, however, it is up to the user to insure that no other V_Net modules in your system have been assigned to the same V_Net ID numbers shown in the default channel list. If you already have a module in your system assigned to one of these ID’s you will need to change the ID of the particular channel in this module or in the previously installed V_Net module. In most cases the previously installed module will duplicate the monitoring function contained in the EMS module. In this case the module can simply be removed. Changing V_Net IDs is described on the back of this setup sheet.

If sensor inputs to the EMS unit are not being used the sample rate to that channel should be set to zero. This will disable the channel and will free up data logger memory as well as V_Net data bus resources. Software setup is discussed below.

You will need to update your car configuration file before you will be able to access the information from this module. Please refer to the setup instructions below.

Software Setup and Module Configuration

Before you can use this module you will need to update your Car Configuration File in your PC. To perform this step you will need to connect the data logger to your PC using the units serial interface cable (See your units instruction manual for details). Next start the RacePak DataLink program. If you selected your car configuration file as the default configuration file, the file will be opened and the file tab for the car configuration file will be selected. If it is not, open your car configuration file by selecting the **Open Car Configuration** menu item located in the **Files** main menu selection.

Next apply power to your on board system, wait 10 seconds and select the **Read VNET Config** menu item located in the **Edit** main menu selection. The DataLink program will read in the configuration of your system. If everything works properly, a new channel button will be added to the configuration file for each of the 17 data channels shown on the previous page.

If a new button is added, however, the button is captioned per the unit serial number (example: **SN 1001**), you have sensors in your system programmed to with the same V_Net ID as one of the channels in this module. You must change the V_Net ID on one of the sensors. In the case of duplicate sensors measuring the same value, either remove the duplicate module or change the V_Net ID on one of the modules to the Engine 2 (E2) parameters.

To edit the setup parameters of any of the 17 data channels, position the mouse cursor over the channel button and click the right mouse button. The VNET Input Channel Parameters dialog box will be displayed. A Portion of this dialog box is show below.

Locate the Input Number text box this value corresponds to the data channel from the module as outlined on page 1. If you change any of the default configurations for the channel besure you are editing the proper input channel as pointed to by this value.

Locate the text box labeled **AEM EMS Interface Module Instructions**. This text box provides online instructions for modifying the setup of this module. Read the instructions and modify the setup as desired. (Please note the scroll bars located on the left- hand portion of the text box are used to scroll through the instructions.

VNET Input Channel Parameters

Name: Type:

Unit Serial #: Vnet ID:

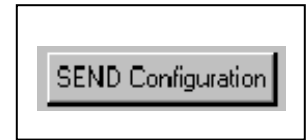
Input Number: Sensor:

AEM EMS INTERFACE MODULE INSTRUCTIONS:

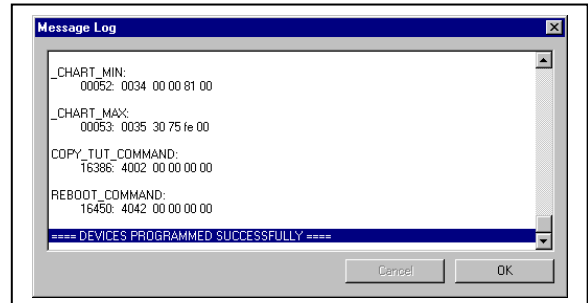
This data channel has been generated by the AEM EMS Interface module connected to your EFI unit. The data gathered by this channel is taken from the serial data output stream generated by your AEM EMS. The data channels have been pre calibrated to interface with the standard AEM data datastream. As such, you must have your EMS unit programmed to output the same data stream.

The channel has been named and assigned a V_NET ID according to the

When you have finished editing the configuration on your PC, you will need to send the information to the sensor module. Be sure the serial interface cable is connected to your data logger and power is applied to the system. To send the information position the mouse cursor over the **Send Configuration** button and click the left mouse button. The progress box as shown to the left will be displayed.



When finished sending the message “**Device Programmed Successfully**” should be displayed at the bottom of the progress box. If you receive an error message, turn power to the system off and then back on and repeat the send configuration process. If problems persist, check the troubleshooting section in your manual and then contact RacePak.



IMPORTANT INFORMATION FOR V300 AND V500 DATA LOGGERS:

V300 Data Loggers Require Firmware Version 36 or Higher.

V500 Data Loggers Require Firmware Version 53 or Higher.

If you do not know how to check the firmware version currently installed in your V300 or V500 data logger, please call us 949-709-5555 for assistance.

If you have a V300 or V500 data logger and do not meet the minimum firmware version requirement, you will need to send your data logger to Racepak to have the firmware upgraded.

All other Racepak data loggers, including V300SD, will work with all firmware versions and do not require any firmware updates to work properly with this module.