

Part Number: 230-VM-EFIMS1

MegaSquirt-I Interface Module

Module Configuration Setup:

Module Type: MEGASQUIRT-I **Serial Number: 501310**

Sample Rate: All channels set to 20 samples per second:

Input Number	Channel Name	V_Net ID #	EFI Variable	Default Units
1	EFI Engine Rpm	0x532	Engine Rpm	RPM
2	EFI H2O Temp	0x536	Coolant Temp	DegF
3	EFI Intake Temp	0x529	Intake Air Temp	DegF
4	EFI MAP Press	0x53C	Manifold Pressure	kPa
5	EFI Inj Pulse W	0x520	Injector Pulse Width	mSec
6	EFI TPS	0x538	Throttle Position	%
7	EFI Voltage	0x52A	Battery Volts	V
8	EFI A/F 1	0x539	EGO Voltage	V
9	O2 Correction	0x551	EGO Correction	%

Description:

This interface module is used to convert the serial data stream from the MegaSquirt-I 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.

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.



MegaSquirt-I Connection:

This module has been designed to interface directly to the MegaSquirt-I via the DB9 serial connector on the Module.

Configuration File Update:

Before you can use this module with a your data logger 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 9 data channels.

Module Configuration:

The MS-I data stream transmits the following data channels in analog to digital counts (ADC). Therefore, depending on the sensors you are using, you may need to re-configure the scaling on these channels from the default values.

EFI H2O Temp and EFI Intake Temp:

Both of these channels are configured for use with GM temperature sensor # 12146312 or equivalent. Thermistor type temperature sensors are non-linear and therefore require a lookup table to convert from ADC to Degrees F or C. This table must be programmed in to the VNET modules firmware. This is currently the only sensor option available for proper temperature conversion.

EFI MAP Press

There are currently 3 MAP sensor options.

- MPXH6400 (default)
- MPX4250
- MPX4115

To change the default sensor, right click on the **EFI MAP Press** channel button. The VNET Input Channel Parameters dialog box will appear. Click on the **Sensor** drop down menu and select the desired sensor type. Click on the **SEND Configuration** button to program the changes.

EFI TPS

By default, this channel is programmed to display in percent throttle open.

0 ADC (0 volts) = 0 % throttle

255 ADC (5 volts) = 100% throttle

However, in most cases the full range of the TPS sensor is not used and 0 volts will not equal 0% and 5 volts will not equal 100%. To correct this issue right click on the EFI TPS channel button. The VNET Input Channel Parameters dialog box will appear. Change **Raw data value A** to the correct ADC value for 0% and change **Raw data value B** to the correct ADC value for 100%. The easiest way to obtain the correct ADC values is to use a volt meter to measure the TPS sensor output at 0% and 100%. Simply multiply the volt meter readings by 51 to convert from voltage to ADC. (ADC = Voltage * 51) Click on the **SEND Configuration** button to program the changes.

EFI A/F 1

By default, this channel is programmed to display in volts. If you are using a wideband sensor you can change this channel to read in A/F ratio or lambda by right clicking on the **EFI A/F 1** channel button. The VNET Input Channel Parameters dialog box will appear. Change **Raw data value A** and **Raw data value B** values to match the output voltage of your wideband controller. For instance, if your wideband controller outputs 1 volt at 9 AFR and 5 volts and 16 AFR then you would enter:

Specify Linear Conversion
Raw data value A: 51 will become 9
Raw data value B: 255 will become 16
Minimum result value: 9, maximum: 16
Display: 3 digits before decimal point, 2 after
Result Unit: AFR Do not display

51 ADC per volt:

1 volt * 51 = 51 ADC

5 volts * 51 = 255 ADC

Click on the **SEND Configuration** button to program the changes.

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.