

# SETUP GUIDE



**V-Net  
data**



## *MSD Power Grid System to AEM CD Dash*

### Supported Devices

**MSD Power Grid System**

### CAN Bus Wiring

The Power Grid controller sends data out through the Racpak V-Net connector. This is a proprietary connector so to access the GRID's CAN data you will need to make an adapter harness.



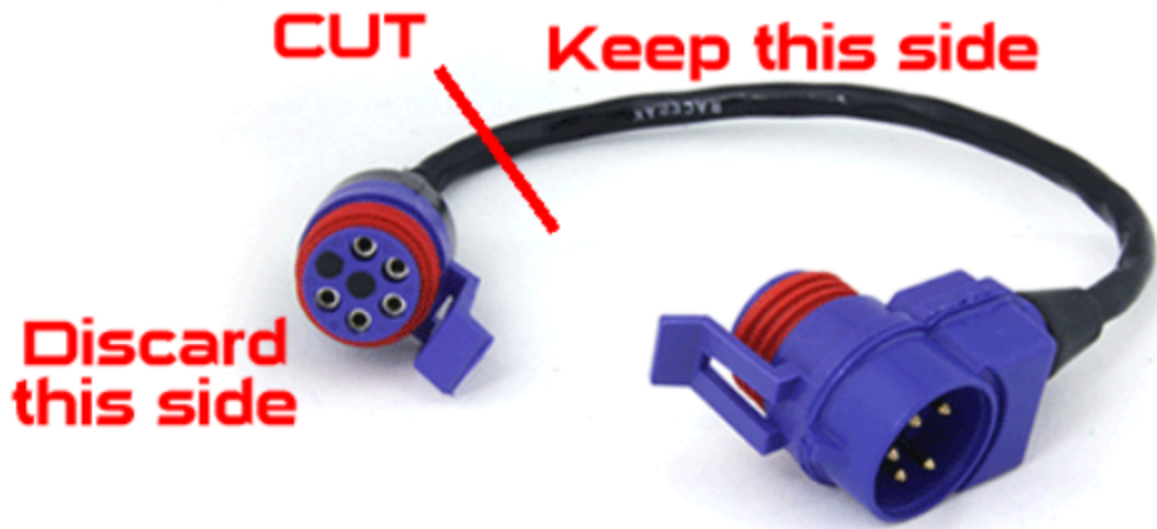
**280-CA-VM-TCAPM**  
V-Net Terminator Cap Male



**280-CA-VM-T009**  
V-Net Cable Tee Connector 9'

Purchase the two items shown above.

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Cut the V-Net Tee cable close to the single connector shown above. On the Tee side, strip the insulation back approx. 2" harness to expose the wires within.

There will be 5 wires:

Function	Wire Color
Switched 12V	Red
Ground	Green
CAN+	White
CAN-	Black
Shield	Bare Copper

If the GRID is the only V-Net device you are hooking up to the CD Dash then the only connections you need worry about are the CAN+ and CAN- and you can trim and insulate the other wires.

AEM CD has 2 separate CAN ports. For 3rd party devices, AEM recommends you use AEM CAN Bus 2, whose connections are contained in a 2 pin Deutsch DTM connector. On older harnesses it may be in an unterminated, twisted/shielded flying lead in the dash harness.

V-Net CAN+ (White Wire) → AEM CD Dash "CAN 2" 2 Pin DTM Pin 1 (Gray wire in twisted/shielded pair)  
V-Net CAN- (Black Wire) → AEM CD Dash "CAN 2" 2 Pin DTM Pin 2 (Black wire in twisted/shielded pair)

If you plan on using other V-Net modules with the CD Dash (and you can, even without any Racepak loggers or displays connected) you need to couple more connections:

1. Supply Switched 12V to the Red wire
2. Supply a good Ground to the Green wire
3. Supply a good Ground to the Shield bare copper wire

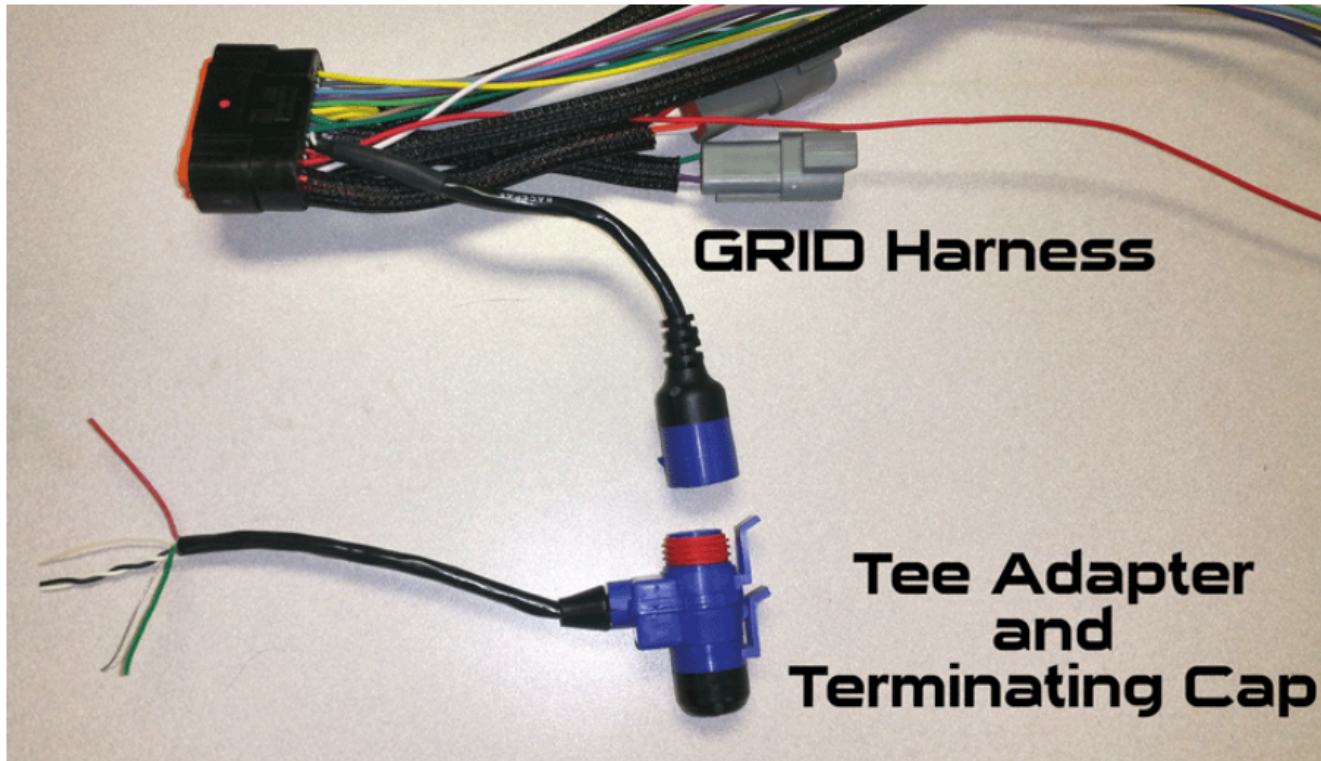
Note that there is a "dummy" wire in there as well, it is also white but is used as a filler only. It can be identified by the fact that it is a solid wire plastic tube, i.e. it doesn't have a conductor in it. This can simply be cut off in any case.

## WARNING!

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The 4 colors on the v-Net wires, Red, Black, Green and White are identical to those commonly used for AEMnet CAN connections except the assignments are different! If you connect these wires to an AEMnet connector make sure you pay extremely close attention to the colors as all 4 of them are used by both companies but for different purposes!



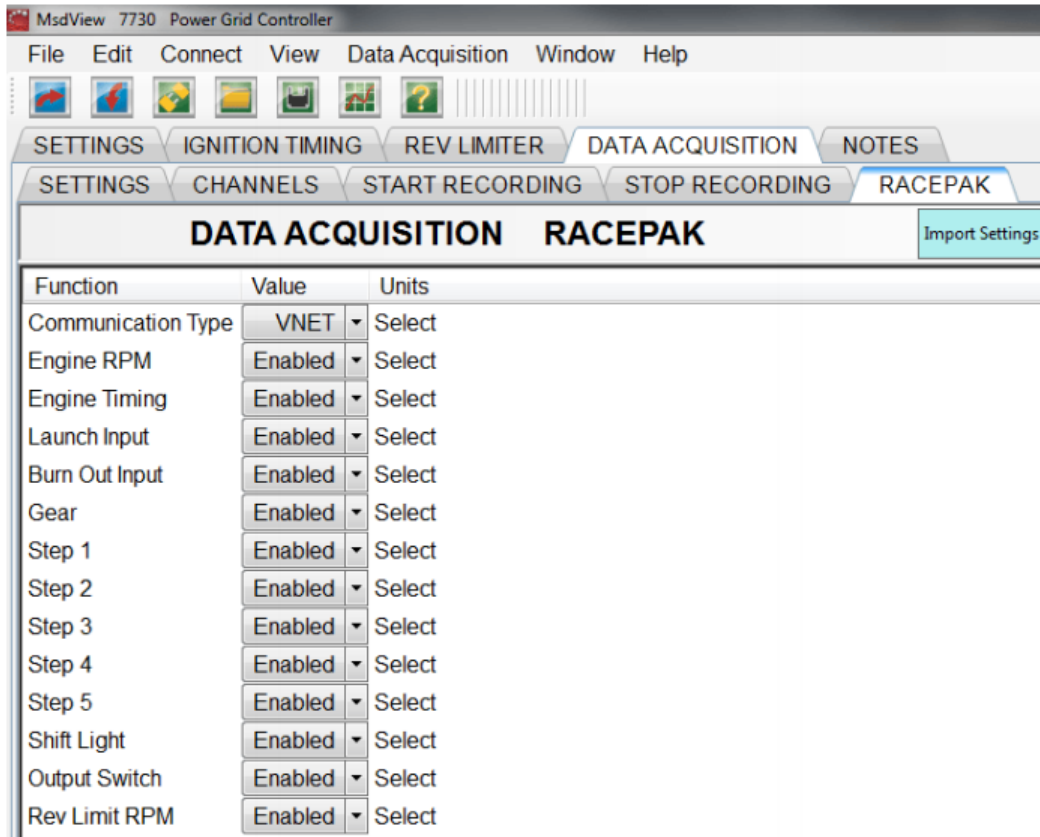
## Terminating Resistors:

All CAN networks require 2 terminating resistors, one located at each physical end of the network. The MSD Power Grid does not have an internal terminating resistor which is typical of V-Net modules. The AEM CD Dash has a software selectable terminating resistor which will be used on its end and the purchased Racepak terminating cap is used with the GRID.

## ECU Software Setup

Open MSDView and connect to your device. Under the DATA ACQUISITION – RACEPAK tab you have the opportunity to enable/disable the output. Set them to the same as shown below. Since there is no limit to the number of channels the CD Dash will allow you to view/record, there is no need to pick and choose only the most important channels. You can simply enable them all.

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Save the file and power cycle the unit.

## Supported Channels

CH	Channel Name
1	Engine Speed (RPM)
2	Engine Timing (BTDC)
3	Gear Position
4	Current Rev. Limit RPM
5	Launch (On/Off)
6	Burn-Out (On/Off)
7	Step 1 (On/Off)
8	Step 2 (On/Off)
9	Step 3 (On/Off)
10	Step 4 (On/Off)

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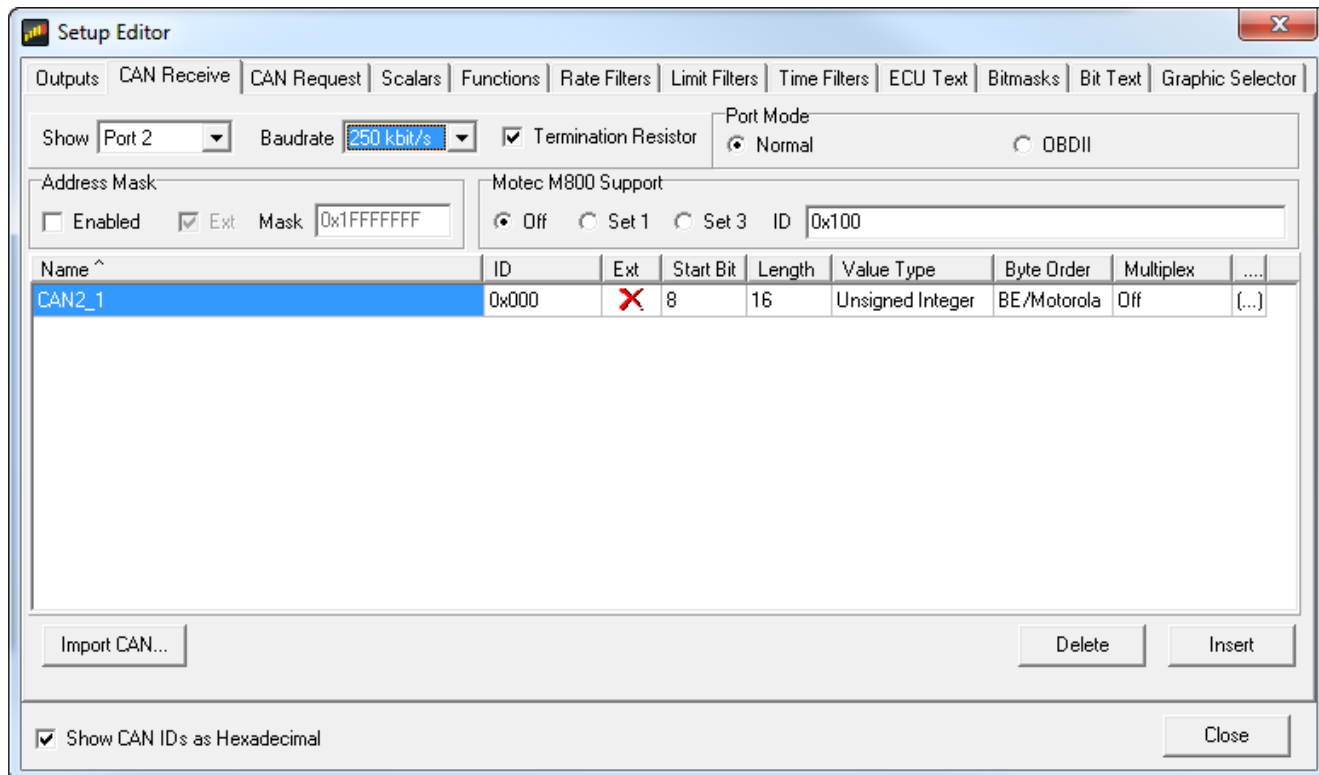


CH	Channel Name
11	Step 5 (On/Off)
12	Shift Light (On/Off)
13	Output Sw1 (On/Off)

## Layout Overview & CAN Setup

To use this device, the CD Dash must be running firmware 13x19 or later.

To import the MSD Power Grid CAN System setup, you select SETUP then DISPLAY from the main DashDesign menu. Once the dialog box opens you select the "CAN Receive" tab.



Change the CAN settings to the same as shown above: (Port 2, 250 kbit/s, Term Resistor "ON", Address Mask "OFF" and M800 Support "OFF") Then click on "Import CAN" on the lower left and select the "MSD\_GRID\_VNET\_Rev0.aemcan" file. After the dialog opens and displays the file, click on "Import" in the lower right on the dialog box to import them. Those raw channels will be added to CAN BUS 2 and the scaling information will be added for each under the Scalars tab.

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Setup Editor

Outputs | CAN Receive | CAN Request | Scalars | Functions | Rate Filters | Limit Filters | Time Filters | ECU Text | Bitmasks | Bit Text | Graphic Selector

Show Port 2 Baudrate 250 kbit/s  Termination Resistor Port Mode  Normal  OBDII

Address Mask  Enabled  Ext Mask 0x1FFFFFFF Motec M800 Support  Off  Set 1  Set 3 ID 0x100

Name ^	ID	Ext	Start Bit	Length	Value Type	Byte Order	Multiplex	...
CAN2_1	0x000	<input checked="" type="checkbox"/>	8	16	Unsigned Integer	BE/Motorola	Off	(...)
VNetMSD_BurnOut_raw	-	-	-	-	-	-	-	-
VNetMSD_EngineRPM_raw	-	-	-	-	-	-	-	-
VNetMSD_EngineTiming_raw	-	-	-	-	-	-	-	-
VNetMSD_Gear_raw	-	-	-	-	-	-	-	-
VNetMSD_Launch_raw	-	-	-	-	-	-	-	-
VNetMSD_ManifoldPress_raw	-	-	-	-	-	-	-	-
VNetMSD_MAP_raw	-	-	-	-	-	-	-	-
VNetMSD_OutputSw1_raw	-	-	-	-	-	-	-	-
VNetMSD_ResetInput_raw	-	-	-	-	-	-	-	-
VNetMSD_RevLimRPM_raw	-	-	-	-	-	-	-	-
VNetMSD_ShiftLight_raw	-	-	-	-	-	-	-	-
VNetMSD_Step1_raw	-	-	-	-	-	-	-	-
VNetMSD_Step2_raw	-	-	-	-	-	-	-	-
VNetMSD_Step3_raw	-	-	-	-	-	-	-	-
VNetMSD_Step4_raw	-	-	-	-	-	-	-	-
VNetMSD_Step5_raw	-	-	-	-	-	-	-	-
VNetMSD_TargetWasteGatePress_raw	-	-	-	-	-	-	-	-
VNetMSD_TriggerError_raw	-	-	-	-	-	-	-	-
VNetMSD_WasteGatePress_raw	-	-	-	-	-	-	-	-
VNetMSD_WDTInput_raw	-	-	-	-	-	-	-	-

Import CAN... Delete Insert

Show CAN IDs as Hexadecimal Close

There will also be a final calibrated channels added under the Outputs tab. They can now be viewed on the display or logged. You can rename, filter, or manipulate any of these channels or use them as conditions for alarms.