Revision	Date
Initial Release	Mar 31, 2017
Updated Harness P/N	Jul 13, 2017

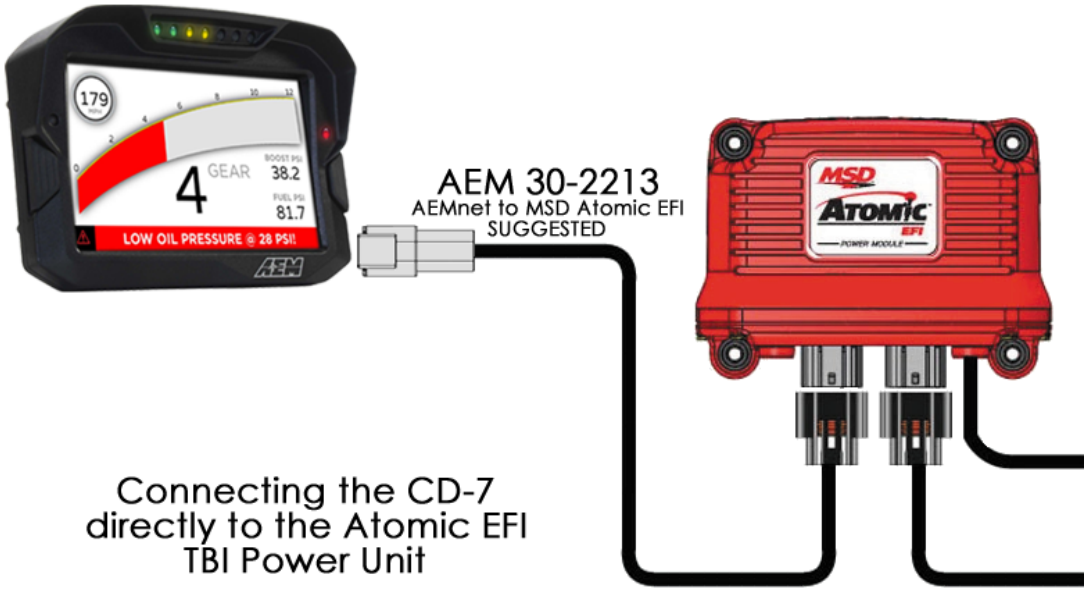
Using the MSD Atomic TBI system with the CD-7 Display

Supported Channels

The MSD Atomic TBI system transmits 31 unique channels to the CD-7.

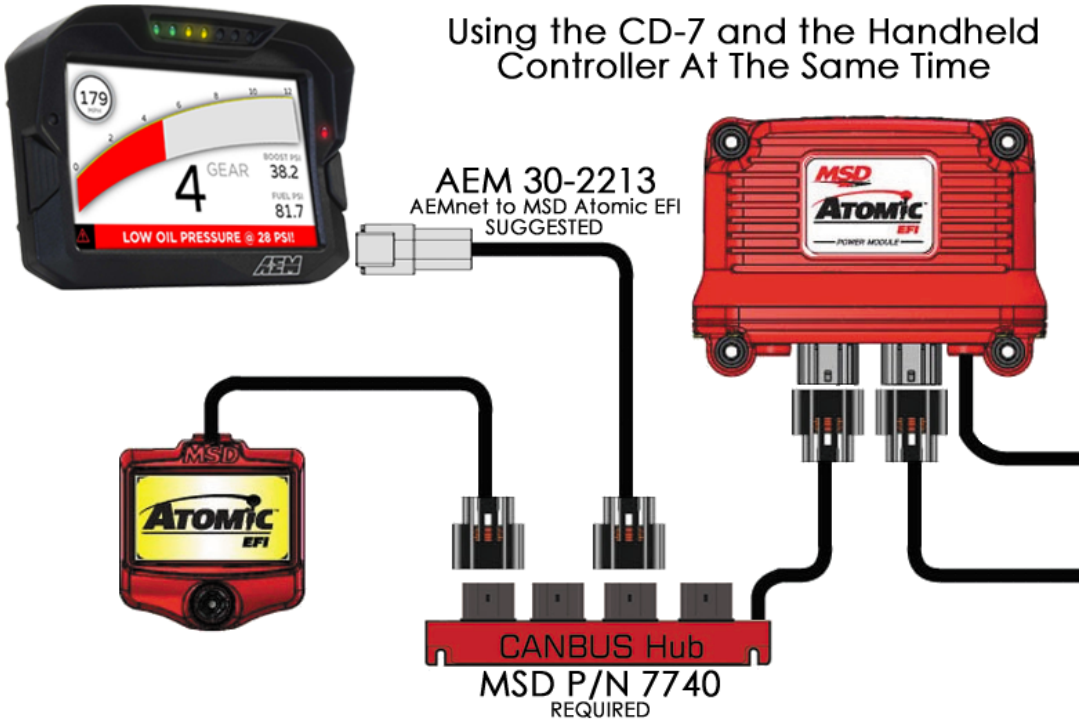
CD-7 Channels	
Engine Speed (RPM)	Fuel Decel Cut State (On / Off)
Throttle Pos (%)	Idle Control Status (On / Off)
A/F Ratio	Fuel Flood Clear Status (On / Off)
Ignition Timing (deg)	Throttle WOT Status (On / Off)
Coolant Temp (F)	Throttle Partial Status (On / Off)
Air Temp (F)	Throttle Closed Status (On / Off)
Manifold Air Press (in-Hg)	AFR Block Learn (Learning / Off)
Fuel Press (psi)	AFR Control (Open / Closed loop)
Battery Voltage (V)	Throttle Pos Error (Historical Error / Current Error / OK)
Fuel Inj Duty (%)	Manifold Air Press Error (Historical Error / Current Error / OK)
Idle Control Position	Air Temp Error (Historical Error / Current Error / OK)
MIL Count	Coolant Temp Error (Historical Error / Current Error / OK)
Coolant Fan 1 (On / Off)	Battery Volts Error (Historical Error / Current Error / OK)
Coolant Fan 2 (On / Off)	Fuel Press Error (Historical Error / Current Error / OK)
Nitrous Output (On / Off)	AFR Sensor Status (No Sensor / Warming Up / OK)
Rev Limiter (On / Off)	

CAN Bus Wiring



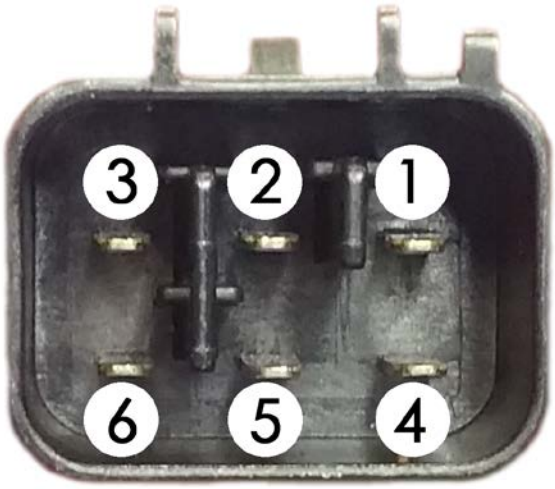
The simplest method of connecting the CD-7 to the Atomic TBI system is to use the AEM to Atomic TBI adapter harness (AEM P/N 30-2213). Doing this enables the CD-7 to be driven directly off the Atomic system and is a simple plug & play installation. In this case, the adapter harness and the CD-7 replace the Handheld Controller plugin at the power module. The CD-7 displays all the data the Handheld Controller can but it does not edit or write to the EFI. In cases where this is needed, you unplug the CD-7 and plug in the Handheld Controller to make whatever change is needed.

If you wish to connect both the CD-7 and the MSD Handheld Controller to the Atomic EFI's CAN bus at the same time, then you will need an MSD 4-Connector CAN-Bus Hub (PN 7740).



It is also possible to wire in the CD-7 without purchasing any PnP adapters or CANBUS hubs.

Atomic EFI TBI Power Module



Pin	Function	Wire
1	CAN HI	Small Red
2	Shield Termination	Brown
3	Ground	Large Black
4	CAN LO	Small Black
5	EFI Power	Large RED
6	---	---

Atomic CAN HI (Pin 1) ➔ AEM CD7 Pin 5 (CAN 2+), Gray wire in twisted/shielded pair
Atomic CAN LO (Pin 4) ➔ AEM CD7 Pin 6 (CAN 2-), Black wire in twisted/shielded pair

Termination Resistors

Both the MSD Atomic Power Module and the MSD Handheld Controller have termination resistors built into the devices. The CD-7 has a software selectable termination resistor available. If you are using the MSD CANBUS Hub and the MSD Handheld controller, you do not need to turn on any other termination resistors. If you are hooking the CD-7 directly up to the MSD Power Module then you need to activate the termination resistor in the CD-7.

Atomic Software Setup

No software setup is required with the Atomic EFI, it broadcasts the CAN channels continuously.

Using the Default Atomic TBI Setup

If you are using the AEM adaptor harness or you have hand wired the Atomic EFI to CAN BUS #2 and not using any other CAN devices, you can take advantage of the pre-made MSD Atomic TBI layout.

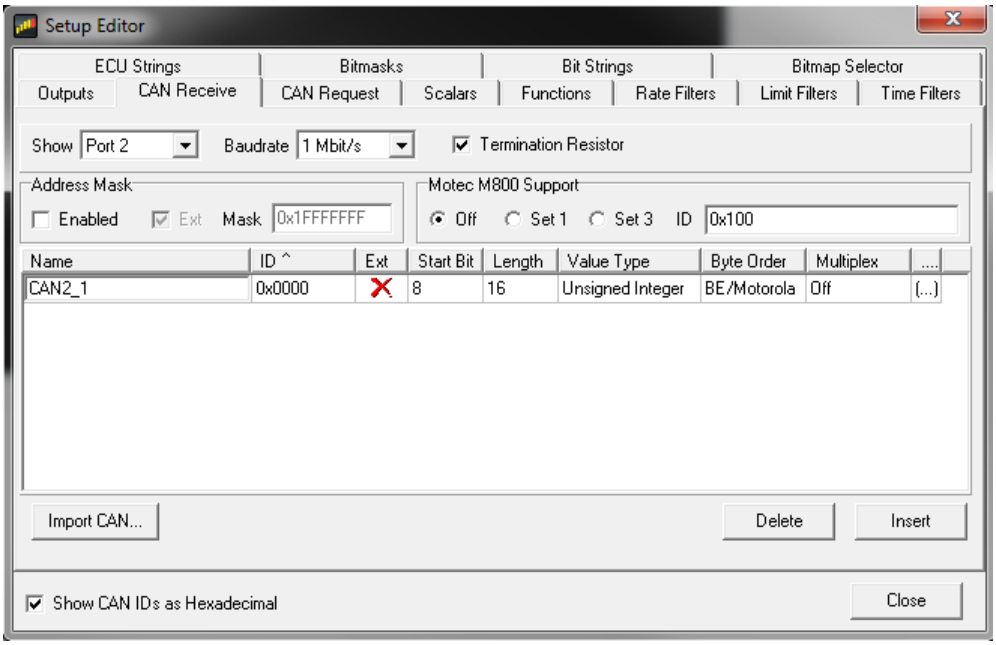
Simply open AEM DashDesign and select “File” then “Open” and choose the layout titled AtomicTBI.aemcd7.

Connect to the dash and upload it by selecting “File” and “Upload to Display”. After completion, unplug the USB cable to restart the dash.

Importing the Atomic CAN into an existing layout

If you want to import the Atomic TBI CAN settings into another layout then you can either start with a new dash layout by selecting “File” then “New” in DashDesign or you can select from a pre-designed layout that has screens already designed and inserted but has the CAN inputs left blank. These are chosen by selecting “File” then “Open” and selecting one of the setups titled xzyblank.aemcd7 with the xyz representing a description of the layouts contained in the file.

To import the CAN configuration into your setup you select “Setup” then “Display” from the main DashDesign menu. Once the dialog box opens you select the “CAN Receive” tab.



Change the settings to the following:

Show: “Port 2”
Baudrate: 1 Mbit/s
Termination Resistor: “Unchecked” if using the CANBUS Hub and Handheld Controller
“Checked” if you are connecting the CD-7 directly to Power Module
Address Mask: “OFF”
M800 Support: “OFF”

Then click on “Import CAN” on the lower left and open the “MSD_AtomicTBI_RevX” file and click “Import”. There will now be 31 new items shown.

There will also be a large number of new outputs created and they are accessed in the “Outputs” tab. They can now be viewed on the display or logged. You can rename, filter, or manipulate any of these channels to make them more useful.