

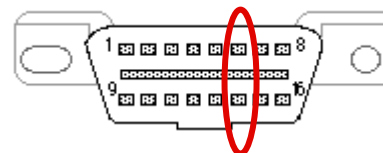


DashHawk

- What is it?
 - Universal OBDII multi-gauge displays over 100 parameters
 - Connects to the vehicle's diagnostic port
 - Display 0 – 60 mph and ¼-mile times with up to five other parameters
 - Records maximum values for speed, RPM and water temperature (Valet Mode)
 - Data Logging function will record up to 5 parameters for up to 5000 samples (about 5-6 minutes, depending on vehicle)
 - Accepts one additional sensor, such as a wideband O2 sensor (V2.1+, not released yet)
 - Backlit screen can be set to 16 million colors to match any interior
 - Contrast adjustment and temperature compensation for the screen
 - Set visual and audible alerts for any value
 - Built-in shift light capability
 - **Check and clear trouble codes**
 - Any parameter can be displayed on any screen, in any order, in any fashion!

- Installation
 - Super easy, no tools!
 - Just locate OBDII port under the dash and plug it in
 - Auto-senses vehicle's VIN and parameter support
- Vehicles Supported
 - Currently 2003-2007 CAN (Controller Area Network) equipped vehicles
 - Includes most Ford cars/light trucks, Dodge cars/2007 light trucks, GM cars and 2006+ trucks
 - Also supports Euro/Japanese "Euro/ISO CAN" applications from 2003+ (Volvo, Audi, BMW, Mercedes, 2006+ Honda Civics, etc.)
 - By 2008, all new cars will have CAN interface

- Will it work on my vehicle?
 - First, look at supported vehicle matrix.
 - If not there, if it's built before 2003, most likely it will NOT work (yet)
 - If it's a Ford 2004+, good chance it WILL work
 - Many GM models from 2005+ will work
 - If it's a GM truck, it won't work until 2006+ models (and some of those only 2007+)
 - Dodge cars from about 2004+ are a good chance, especially if they are built on common platform
- Trick for determining CAN capable
 - Look at OBDII connector. If pins 14 and 6 are populated, then good chance it will work (see diagram)



- **What vehicles are supported by DashHawk?**
 - Many Ford, Chrysler, and GM vehicles started implementing Controller Area Network (CAN) communications in 2004. As new vehicles are introduced, most are CAN compliant. As a result, you have some vehicles in 2004, many more in 2005-2006, most 2007s, and finally by 2008 ALL vehicles sold in the US must be CAN compliant. A matrix for known supported vehicles is shown in the [supported vehicles](#) page.
- **How big is DashHawk?**
 - It is a remarkably small device for all the power it packs! It is 1 7/8" tall by 4" wide by 3/4" thick. It EASILY fits in a pocket and is smaller than many cellphones!
- **How many parameters can I view at once?**
 - You have many customizable display options. You can view up to seven parameters on one display (plus fuel system status and display number). There are 11 customizable displays. A list of supported parameters can be found on the [parameters](#) page.
- **Can I change how the data is displayed?**
 - Certainly! Just press the MENU button and then select SetUp->Display->Display X (where X=the number of the display). You can choose 2 function bar graph, 2 function digital, 3 function digital, 4 function digital, 6 function digital or 7 function digital formats.
- **How do I know what's "Normal" for my car?**
 - Every vehicle is a little different, especially when some are fueled by diesel or have a turbo/supercharger. However, the User Guide has a complete set of descriptions for all the parameters in the Parameter Reference section. Be sure to read it! Also, look for a Firmware download in the near future that will have some display markers for normal ranges of the more common parameters.
- **Is there any type of data capture?**
 - Absolutely! DashHawk has a built in Data Logger feature that allows you to pick up to 5 parameters to record for up to 3 - 5 minutes (record time is vehicle dependent). You can review the data step by step on the DashHawk or hook it up to your PC (via the included USB cable) and analyze the data with the included PC software.
 - In addition, the 0-60 MPH and Quarter Mile tests also record addition data that can be reviewed on the PC.

- **How do I find documentation for all the features?**
 - The documentation can be found in several places:
 - On the original CD
 - On MSD Web Site
 - Installed in the Program Files->DashHawk->Documents folder when you installed the PC software
 - Online HELP is available at any time in the PC Software by hitting F1
- **How do I use DashHawk to increase my fuel economy?**
 - Fuel economy boils down to driving style and operating the vehicle in the best efficiency range. To do that, here are some general tips:
 - Use DashHawk to monitor engine Load and engine Absolute Load. Keeping this number low in a cruising configuration will reduce fuel consumption.
 - Monitor TPS and Speed. It may sound obvious, but keeping a light foot and operating in a speed appropriate for the gearing and torque curve of the vehicle are key factors in reducing fuel consumption.
 - Change up to a higher gear whenever possible (in a manual car). Keeping the RPMs down without lugging the engine can help efficiency.
 - Use the MAP parameter in conjunction with TPS, Speed, Load, and MAF to monitor your driving style to minimize fuel consumption.
- **How accurate is the quarter mile time?**
 - Experience has shown that a variance of 0.1 -0.2 seconds from calibrated dragstrip clocks. This can be greatly affected by wheel spin, crosswinds, etc. but is a useful relative gauge to compare modifications and conditions.
- **Can I use the quarter mile time to figure horsepower?**
 - You can use the Horsepower Calculator in conjunction with the Quarter Mile measurements to get a good idea of your horsepower at the wheels and crank.

- **Screens** — flip through 11 fully customizable screens with the up/down arrows

- Two function digital



- Two function Graphical



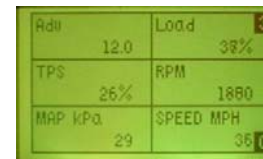
- Three function digital



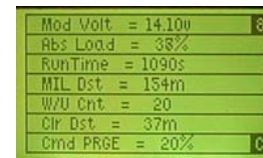
- Four function digital



- Six function digital



- Seven function digital



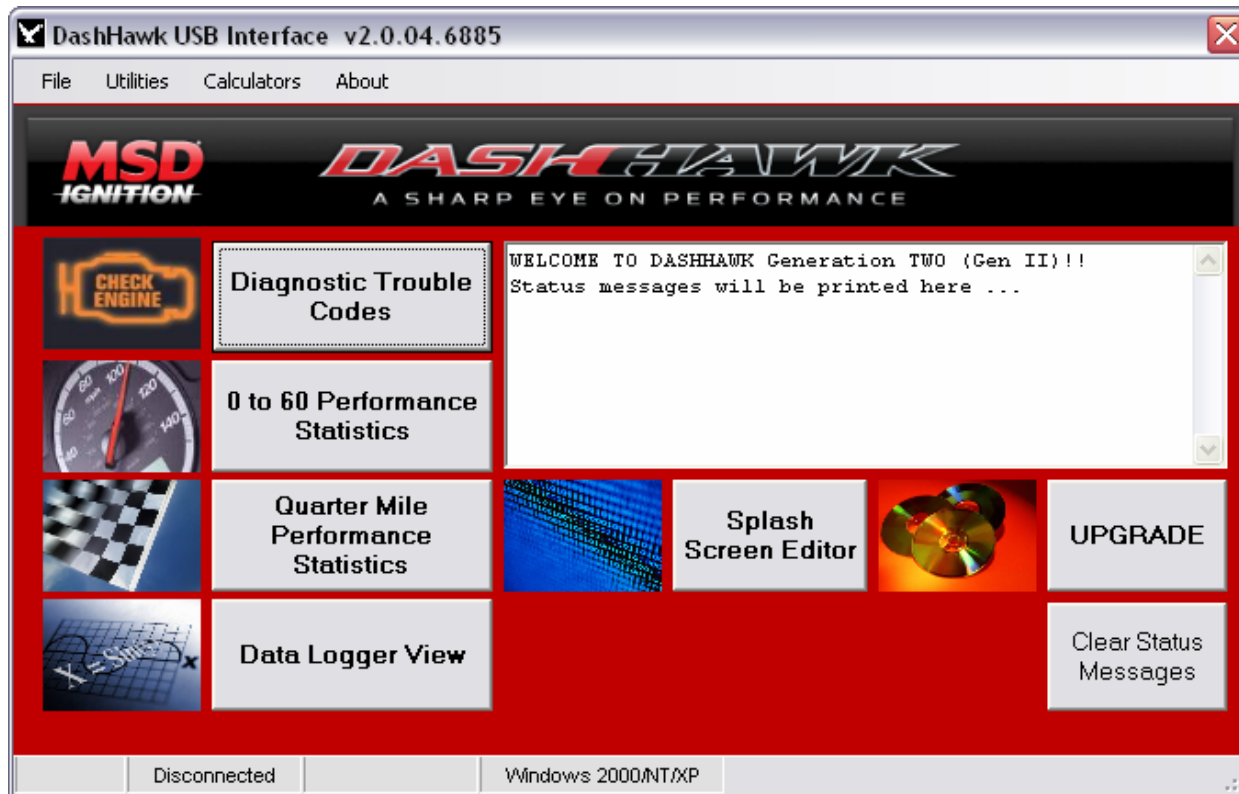
- User can set multiple ALERTS that will flash and beep if set thresholds are exceeded



- Upload data to the PC via the USB port
 - ¼ mile, 0-60, DTCs, and Data Logs
 - Data Logs can be ~60 seconds to ~6 minutes
 - Installation is typical PC install, but requires Microsoft .NET framework 2.0 or later .. If it doesn't find it on the user's machine, it will try to download it from Microsoft.
 - Issues may include firewalls on user site
 - User's machine may not be connected to Internet
 - Slow connections



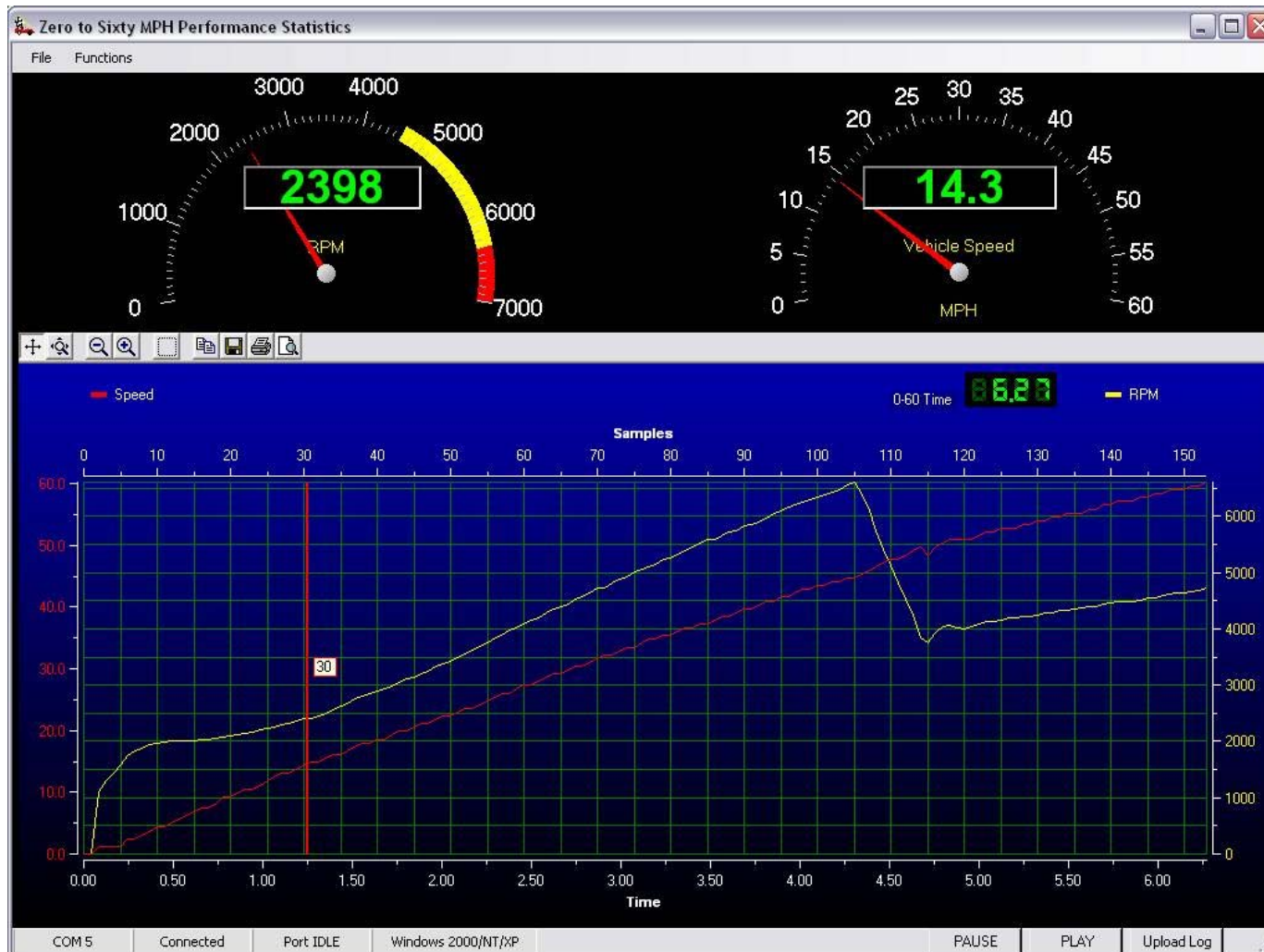
- Main Screen



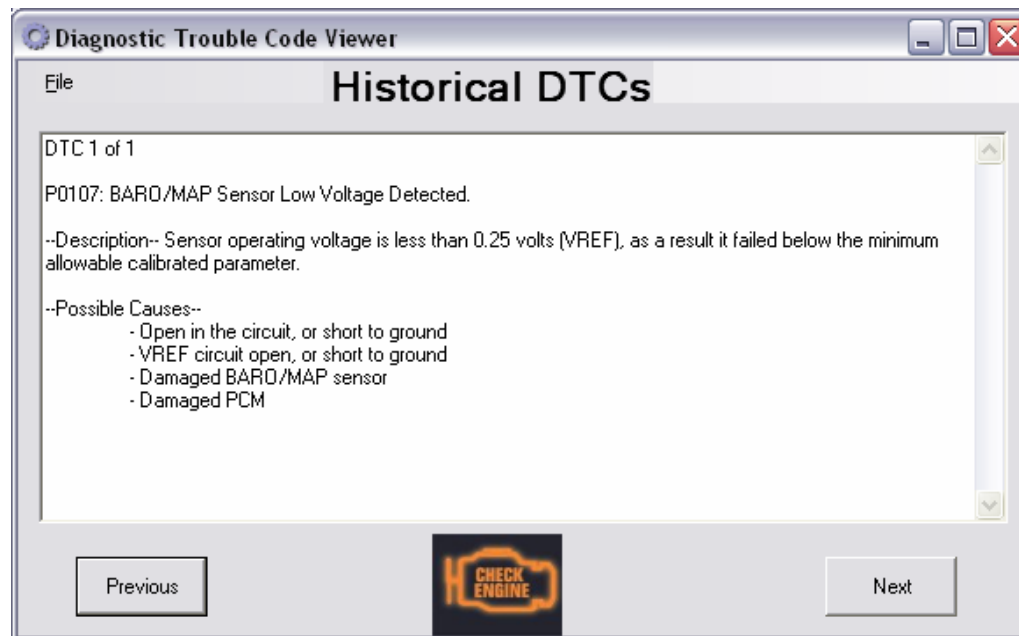
- Now (v2.0.4 and later) add your own personal touch to your DashHawk startup!
 - Using a simple Paint program and a blank template (supplied in the install), create your own startup “Splash Screen”!
 - Example screens provided as a starting point!



- Zero to Sixty Uploaded Log Replay



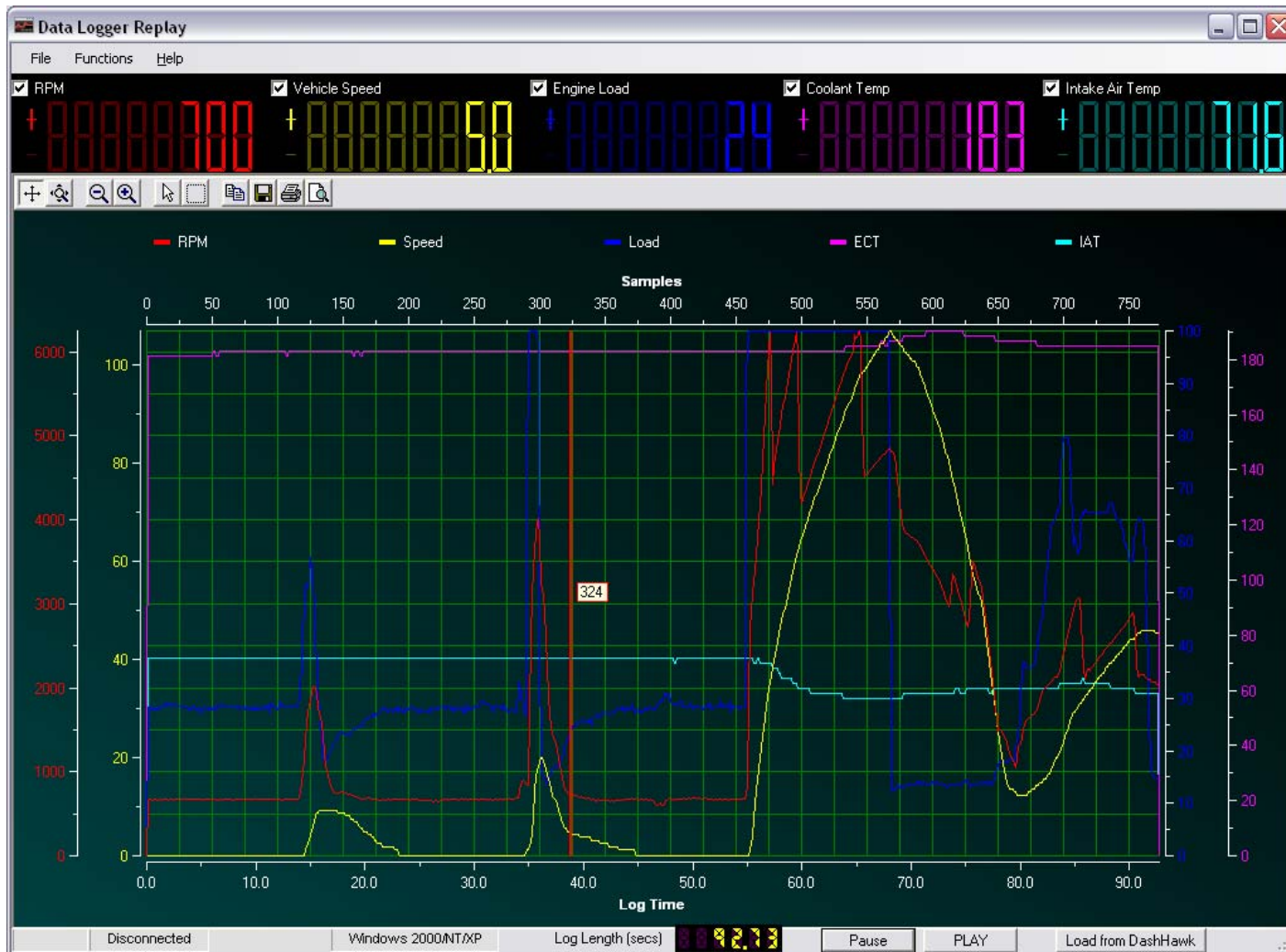
- Upload any captured DTCs to the PC for more complete diagnostic and troubleshooting information!



- Quarter Mile Data



- Data Logger



5/1/2007

- Special GM Features
 - Crank Angle Sensor Error (CASE) Relearn
 - Reset this critical parameter after an ECU replacement, cam change, timing chain replacement, or any time the balancer may have been disturbed.
 - Turn ON or OFF individual electric cooling fans (for diagnostic purposes)
 - Reset Fuel Trims

- **Universal Parameters**

- Calculated Engine Load
- Engine Coolant Temp (ECT)
- Short Term Fuel Trim Bank 1
- Short Term Fuel Trim Bank 2
- Long Term Fuel Trim Bank 1
- Long Term Fuel Trim Bank 2
- Fuel Pressure
- Manifold Absolute Pressure (MAP)
- Engine RPM
- Vehicle Speed
- Timing Advance (Spark)
- Intake Air Temp (IAT)
- Mass Air Flow (MAF)
- Absolute Throttle Position
- O2 Bank 1 Sensor 1
- O2 Bank 1 Sensor 2
- O2 Bank 1 Sensor 3
- O2 Bank 1 Sensor 4
- O2 Bank 2 Sensor 1
- O2 Bank 2 Sensor 2
- O2 Bank 2 Sensor 3
- O2 Bank 2 Sensor 4
- Relative Fuel Pressure
- Diesel/Direct Injection Fuel Pressure
- Commanded EGR Duty Cycle
- EGR Error
- Commanded EVAP Purge Duty Cycle
- Fuel Level
- Evap Vapor Pressure
- Barometric Pressure
- Catalyst Temp Bank 1 Sensor 1
- Catalyst Temp Bank 1 Sensor 2
- Catalyst Temp Bank 2 Sensor 1
- Catalyst Temp Bank 2 Sensor 2
- Fuel Type (MultiFuel vehicles)
- Alcohol %
- Fuel System Status (Closed/Open Loop)
- Module Voltage
- Absolute Load
- Number of O2 sensors
- Number of WB O2 sensors
- Commanded Equivalence Ratio
- Relative Throttle Position
- Ambient Air Temp (AAT)
- Absolute Throttle Position B
- Absolute Throttle Position C
- Absolute Pedal Position D
- Absolute Pedal Position E
- Absolute Pedal Position F
- Commanded Throttle Actuator
- Wide Band O2 Sensor 1 Equivalency Ratio (FACTORY)
- Wide Band O2 Sensor 2 Equivalency Ratio (FACTORY)
- Wide Band O2 Sensor 3 Equivalency Ratio (FACTORY)
- Wide Band O2 Sensor 4 Equivalency Ratio (FACTORY)
- Wide Band O2 Sensor 5 Equivalency Ratio (FACTORY)
- Wide Band O2 Sensor 6 Equivalency Ratio (FACTORY)
- Wide Band O2 Sensor 7 Equivalency Ratio (FACTORY)
- Wide Band O2 Sensor 8 Equivalency Ratio (FACTORY)
- Auxiliary O2 Short Term Fuel Trim
- Auxiliary O2 Long Term Fuel Trim
- Wide Band O2 Sensor 1 Heater Current (FACTORY)
- Wide Band O2 Sensor 2 Heater Current (FACTORY)
- Wide Band O2 Sensor 3 Heater Current (FACTORY)
- Wide Band O2 Sensor 4 Heater Current (FACTORY)
- Wide Band O2 Sensor 5 Heater Current (FACTORY)
- Wide Band O2 Sensor 6 Heater Current (FACTORY)
- Wide Band O2 Sensor 7 Heater Current (FACTORY)
- Wide Band O2 Sensor 8 Heater Current (FACTORY)
- Wide Band O2 Sensor 1 Voltage (FACTORY)
- Wide Band O2 Sensor 2 Voltage (FACTORY)
- Wide Band O2 Sensor 3 Voltage (FACTORY)
- Wide Band O2 Sensor 4 Voltage (FACTORY)
- Wide Band O2 Sensor 5 Voltage (FACTORY)
- Wide Band O2 Sensor 6 Voltage (FACTORY)
- Wide Band O2 Sensor 7 Voltage (FACTORY)
- Wide Band O2 Sensor 8 Voltage (FACTORY)
- BOOST/VACUUM (Calculated and corrected for altitude!)

- **GM Enhanced Parameters**

- BLM Cell #
- Torque Management Spark Retard (Shift)
- Commanded A/F Ratio
- Knock Retard
- Cylinder That Knocked
- Learned Spark
- Oil Pressure Calculated Vacuum (GM)
- Calculated Air Flow (GM)
- Current Misfire Cyl 1 (GM)
- Current Misfire Cyl 2 (GM)
- Current Misfire Cyl 3 (GM)
- Current Misfire Cyl 4 (GM)
- Current Misfire Cyl 5 (GM)
- Current Misfire Cyl 6 (GM)
- Current Misfire Cyl 7 (GM)
- Current Misfire Cyl 8 (GM)
- Total Misfires (GM)
- History Misfire Cyl 1 (GM)
- History Misfire Cyl 2 (GM)
- History Misfire Cyl 3 (GM)
- History Misfire Cyl 4 (GM)
- History Misfire Cyl 5 (GM)
- History Misfire Cyl 6 (GM)
- History Misfire Cyl 7 (GM)
- History Misfire Cyl 8 (GM)
- Misfire Cycles (GM)
- Desired Throttle Position (GM)
- Pedal Rotation (GM)
- Fan Speed (GM)
- Desired Fan Speed (GM)
- Fan Speed Error % (GM)
- Command Fans 1, 2, 3 ON/OFF
- Command Fuel Trim Reset
- Command Crank Angle Sensor Error (CASE) Relearn
- Last Shift Time
- Trans Input Shaft Speed
- Trans Output Shaft Speed
- Trans Temp
- TCC Slip
- Current Gear

- **GM Enhanced Parameters (cont)**

- VBS Force (Amps)
- VBS Force %
- TCC DC %
- 1->2 Shift Time
- 2->3 Shift Time
- 3->4 Shift Time
- 1->2 Shift Error
- 2->3 Shift Error
- 3->4 Shift Error

- **Ford Enhanced Parameters**

- Engine Oil Temp
- Trans Fluid Temp
- Cylinder Head Temp
- Fuel Pressure
- Torque Converter Slippage
- Pedal Position

- **Dodge/Chrysler (DCx) Enhanced Parameters**

- Knock Sensor 1 Voltage
- Knock Sensor 2 Voltage
- Spark Retard (Knock Retard)
- Multiple Displacement System (MDS) status (Hemi)
- Engine Oil Pressure
- Fuel Level % (DCx specific since SAE Fuel Level doesn't seem to read correctly for DCx vehicles)
- Transmission Input Shaft Speed1
- Transmission Input Shaft Speed2
- Transmission Turbine Speed
- Current Gear Status
- Target Gear Status
- Transmission Oil Temperature
- Blade Position (Throttle Blade)