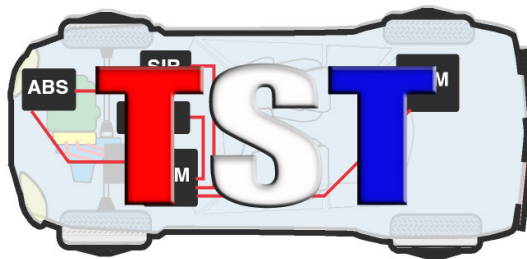


June 2009



Technicians Service Training

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David Decourcey

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Advanced Electric

Rich Peterson and

G Truglia

Editor

Jerry "G" Truglia

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Oh, What Diagnostic Tool to Buy... Part I

The title of this article says it all—at one time or another we all had to agonize over where we should spend our hard earned money on a needed tool. Certainly, tools are some of the most important and expensive investments we have to make in this industry. However, our industry is changing at an evermore rapid pace. As a result, our tool-investment decisions become increasingly difficult to make. After all, this is not the 80s or where you were able to buy a tool and keep it for ten years.

Luckily, there are some promising developments in the tool industry that may make our lives easier for once. Technology is changing so fast, the time where we bought our tools with the proprietary hardware is soon coming to an end. Many OEMs have already made the switch to PC-based tools.

The good news about this is that with PC-based diagnostic tools, you can add programs to your PC or laptop to update its capabilities instead of having to reinvest in yet another expensive tool. While everything seems to keep getting more expensive, one of the few exceptions to this is computers and software—and us technicians can certainly use that! Here we set out to provide information on quality PC-based tools that should be up-to-date for at least the next three years of service.



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- ***Keep our fellow technicians up to date with the latest technology.***
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- ***Keep technicians informed of information affecting our industry.***
- ***Increase consumer awareness of what a good technician is.***

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TST membership includes special pricing on once a month week-day night seminars and the occasional full Saturday seminar. With a \$75.00 yearly membership, the monthly seminars are only \$65.00. TST classes are NOT sales or product seminars. The instructors that TST brings in are all “hands-on” industry experts with up to date, cutting edge knowledge that you can use in your shop the next day. That’s 65 dollars for a seminar in which you are able to learn something useful, for fixing those tough jobs that we all see on a regular basis. Our instructors are masters at making the complex understandable. Membership also includes a Monthly Newsletter full of real world technical articles, diagnostic case studies, and solutions to the kinds of problems you see in your bays each week.

The following are some of TST’s regular instructors:

Bernie Thompson of ATS www.ATSnm.com

John Thornton formerly of Team AVI

Wayne Colonna of ATSG www.ATSGmiami.com

Jorge Menchu the “Labscope Guru,” owner of AES

www.aeswave.com/aboutaes.htm

John Anello Auto Tech On Wheels www.autotechonwheels.com

Luis Ruiz Mechanic’s Education Association

www.meatrainig.com

Jerry “G” Truglia National Instructor & owner of A.T.T.S. Inc.

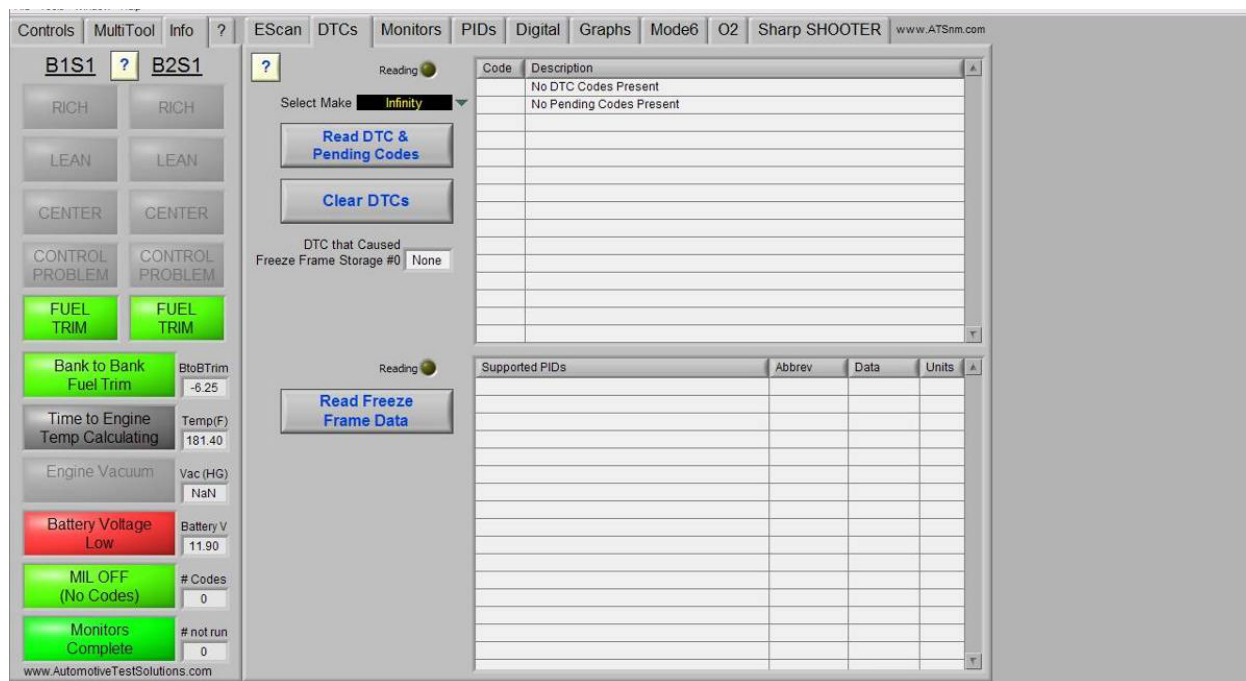
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Oh, What Diagnostic Tool to Buy (con't from p. 1)

First, let's take a look at PC-based scan tools. There are some after-market companies such as AutoEnginuity, Auto Tap, Automotive Test Solutions, EASE and Injectronic that can be installed on any PC. All of these scan tools offer generic functions and most offer enhanced data as well. Don't be afraid that it will be too hard to use yet another new-fangled piece of equipment. If you are familiar with using a PC, the rest is easy.

EScan

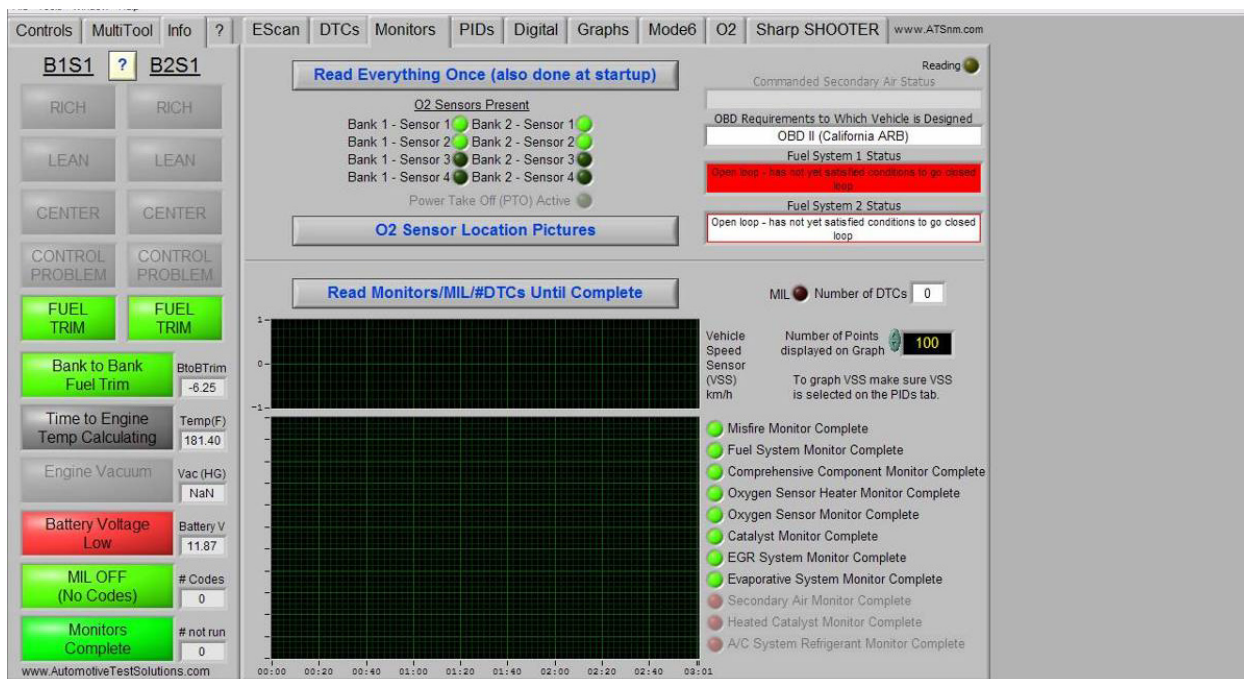
All the major PC-based scan tools are easy to view, use, and most of all, get help on. Let's take a look at the ATS (Automotive Test Solutions) EScan first, because it's the cheapest tool starting at \$795.00. Furthermore, the scan tools that we will review all have Generic/Global functions, so reviewing the EScan will help us get familiar with PC scan tools. Later, we will compare and contrast the other tools.



This tool is an easy generic-based scan tool that has unique diagnostic functions. You can view DTCs, Pending DTCs, and Freeze Frame. To the left of the screen a quick colored view of Fuel Trim, Engine Temperature, Engine Vacuum, Battery Voltage, MIL, and Monitors.

As you can see in the above, the colored boxes quickly alert a technician if problems exist by changing colors. The colors are self-intuitive: green is good, yellow is caution and red is bad. In fact, typical of other PC-based scan tools, the EScan's capabilities and diagnostic functions are easy to understand as you can see in the following: (Con't on page 4)

Oh, What Diagnostic Tool to Buy (con't from p. 3)



The screen above displays Monitor status and graph.



Generic PIDs



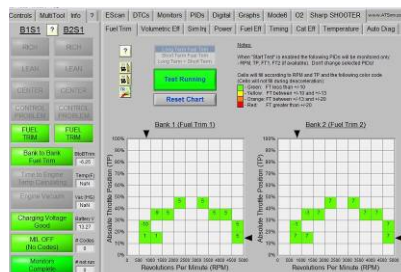
Digital view



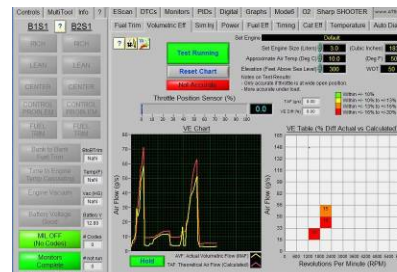
Graphing view



Mode 6



Fuel Trim



Volumetric Efficiency

This Generic/Global scan tool works on all vehicles on the OBD II generic side. It offers quick views of DTCs, Pending DTCs, Freeze Frame, Monitor status, PIDs, digital and graphing views of PIDs, Mode 6, Fuel Trim diagnosis, Volumetric Efficiency and much more. The EScan can be used on all 1996 to present model year OBD II vehicles, including CAN protocols.

(Con't on page 6)

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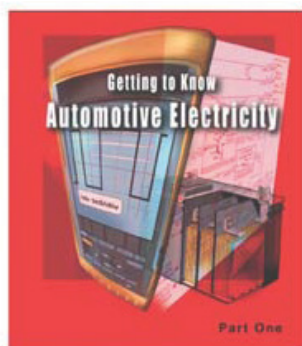
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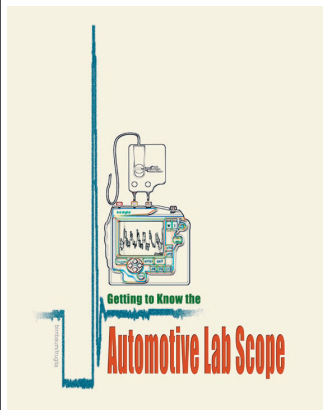
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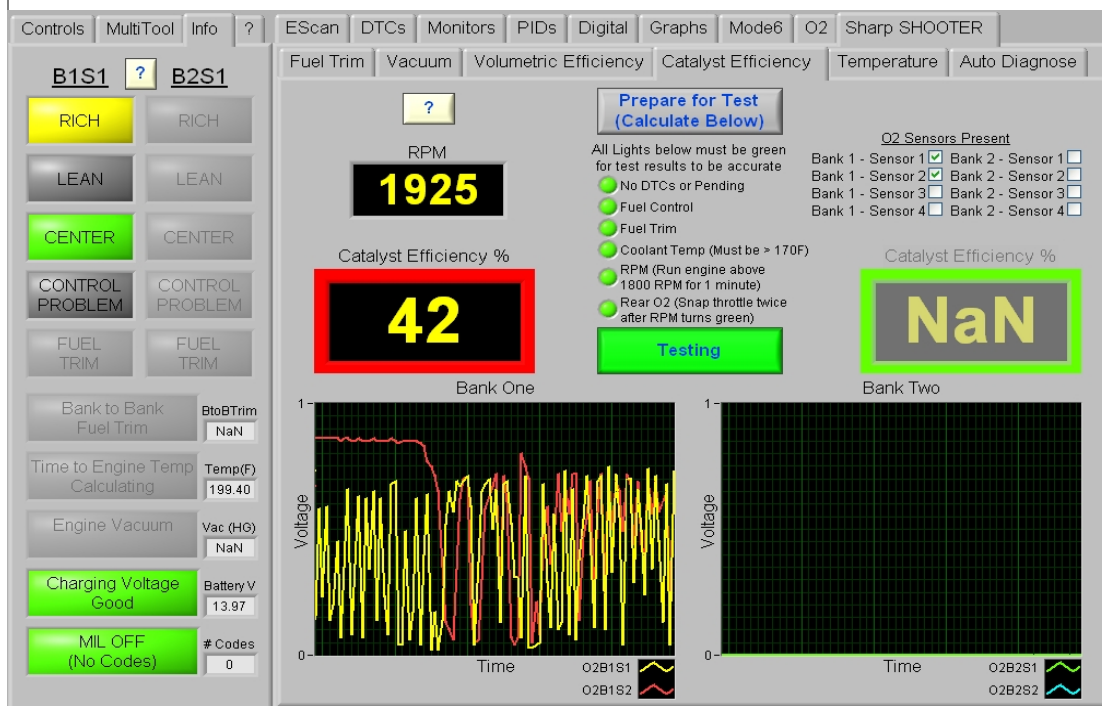
www.ATTstraining.com



Oh, What Diagnostic Tool to Buy... (con't from p. 4)

Furthermore, the EScan's contains quite a few capabilities that other scan tools lack. Hexadecimal Mode 6 data is decoded into plain English. The Fuel Trim preset test is easy to perform with the help of the color-coded diagnostic information. You are able to input engine size, air temperature, and sea level for an effective Volumetric Efficiency test. This allows you to discern the exact amount of air that is entering the engine allowing you to find problems in the intake system. Note: look at the RED in the Volumetric Efficiency graph above—the RED is calculated and the Yellow is the actual.

Also, the Catalytic Converter test makes checking a P0420 or P0430 a breeze. The test, as you can see in the below, displays the front HO2S (oxygen sensor) and the rear HO2S as a comparison. The number that is displayed in the red box provides the percentage of the efficiency that the converter tests at.

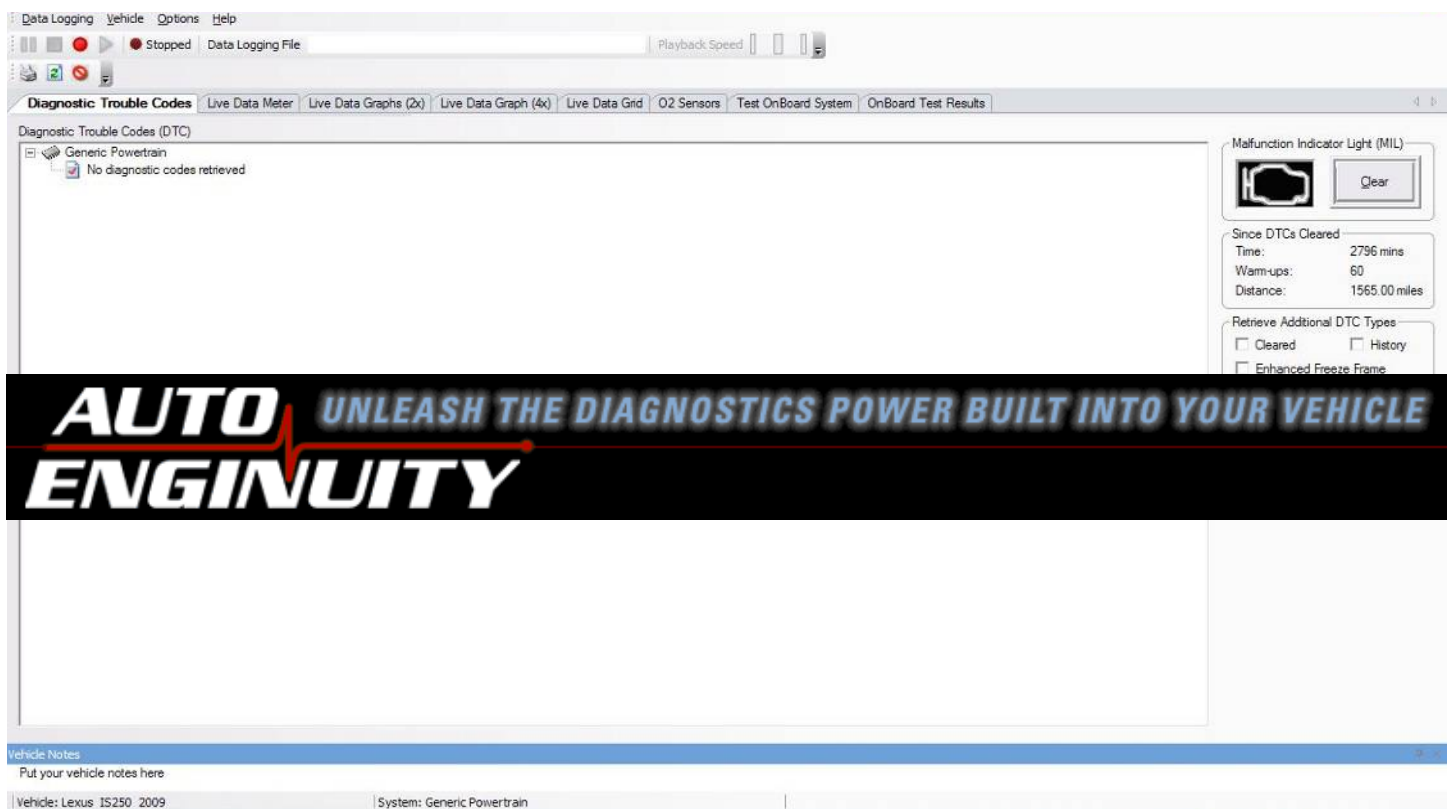


The easy-to-understand layout on this scan tool and the software's capability allowing you to print anything you see on the screen really helps out in explaining or justifying repairs to your customers. Another bonus is that this tool connects via Bluetooth so you have the option to work free and easy, without the wires. So, when you take into account not only the EScan's many diagnostic test capabilities but also its user friendliness, this PC based Generic/Global scan tool is a real money maker. List Price: \$795.00 (\$715.00 for TST members)

Oh, What Diagnostic Tool to Buy (con't from page 6)

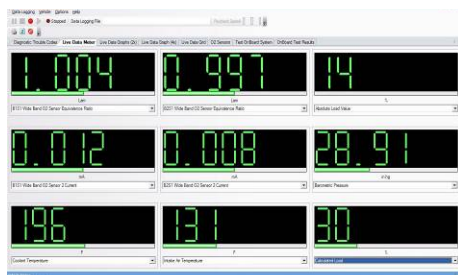
Auto Enginuity

Now let's take a look at another PC-based scan tool that has Generic/Global and Enhanced capabilities, the Auto Enginuity. This tool has a few different connectors aside from the common OBD II DLC connector, such as the small round connector for early BMWs that attaches to the underhood DLC port amongst others.

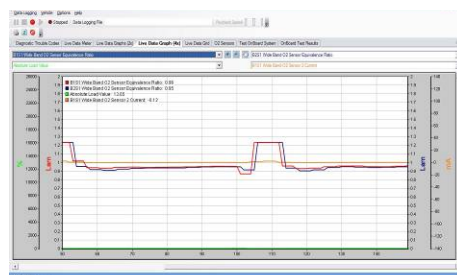


Let's take a look at how the Auto Enginuity can aid you in diagnosing problems. Just like the Escan, the Auto Enginuity has an easy to understand layout and it takes advantage of color-coding to make important diagnostic information quicker to analyze.

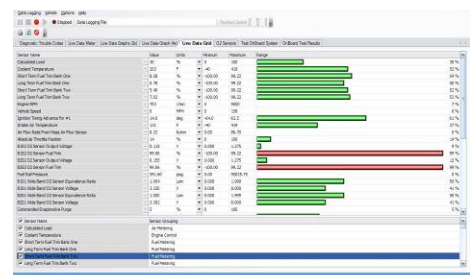
The Live Meter screen allows you to view the data in a digital format while the Live Graph takes the same data and graphs the data in different colors. On the Live Grid screen, the user can select a single to all the PIDs (parameter identification) and their information is translated into an easy to understand bar graph.



Live Meter(s)



Live Graph(s)



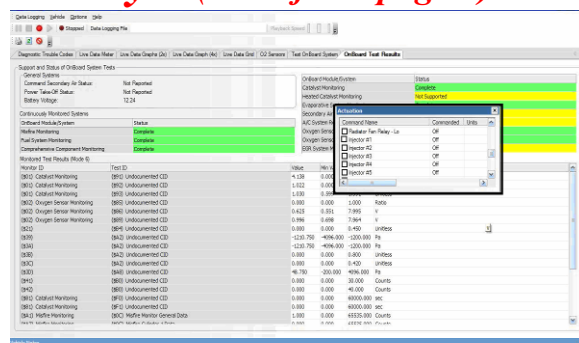
Live Grid Data (*Con't on. 8*)

Oh, What Diagnostic Tool to Buy... (con't from page 7)

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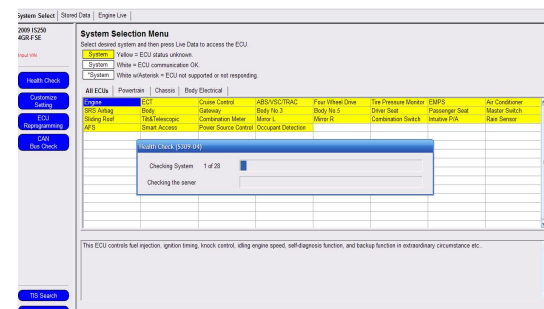


Mode 6 and Activation

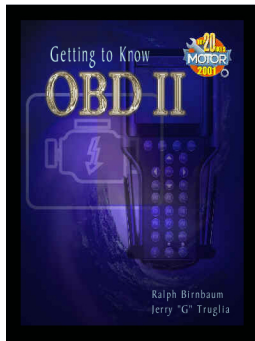
Here's an example of what it can do. About a year ago, I had to put together a presentation on air conditioning and cooling for MACS. I used the Chrysler factory scan tool on a 2006 Chrysler 300C and compared it to the AutoEnginuity. To my surprise the AutoEnginuity displayed all the same PIDS (scan tool parameters) and provided the same bi-directional controls. I was able to open and close the blend air door, change speed of the cooling fan, and much more. (List price: \$1195.95 wired Domestic and Asian)

Toyota Techstream

Speaking of factory tools, Toyota has recently released the Techstream, a new PC-based factory scan tool. This tool offers some helpful features such as Health Check, an intuitive monitor display, graphing, bi-directional control, and the ability to update using the Toyota, Lexus and Scion websites accessing all of the factory information. Let's take a look at what this tool is all about:



(Con't on page 9)



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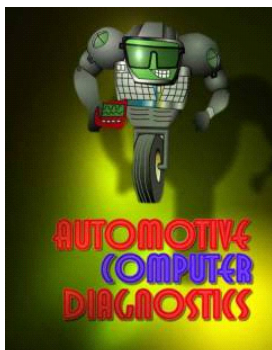


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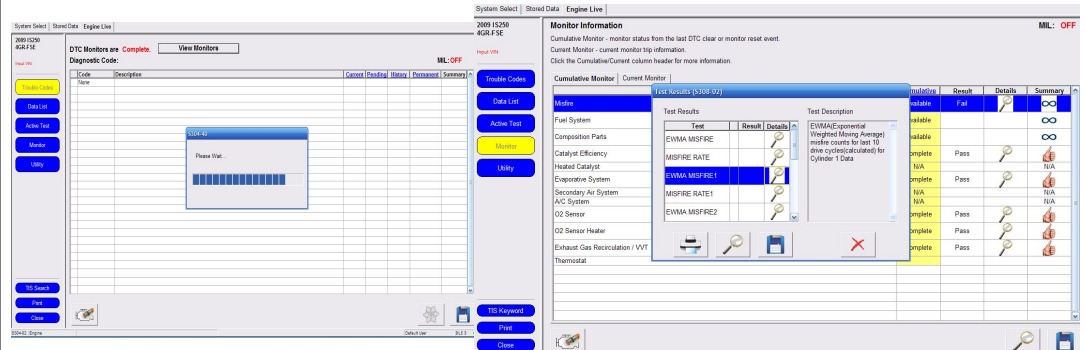
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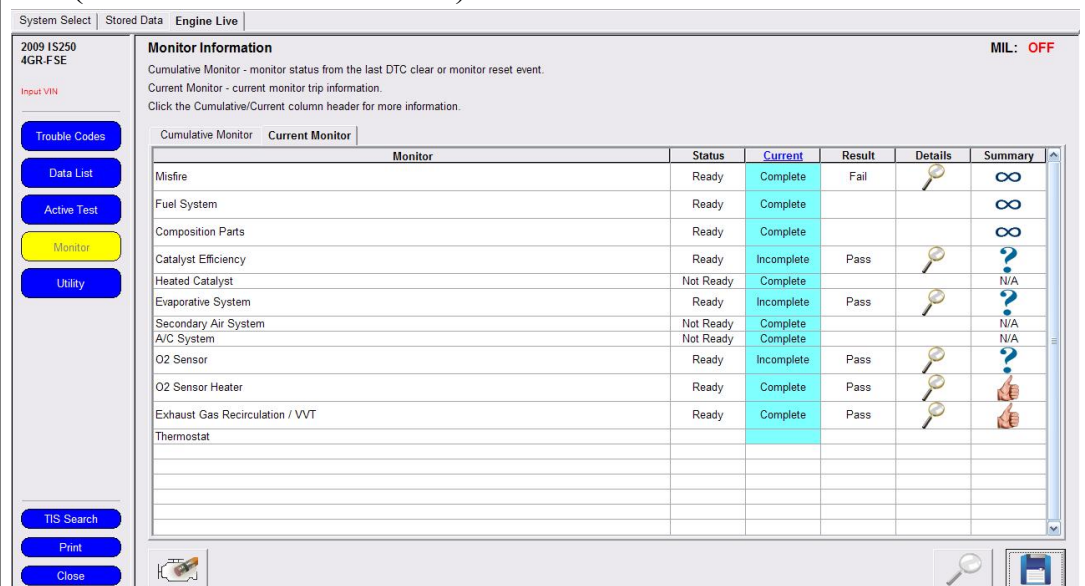


Oh, What Diagnostic Tool to Buy... (con't from page 8)

The screen shot (above left) showing Health Check displays all the ECU (computers) with a click of the mouse allowing you to check all of the on-board computers. To the right we can see the Techstream in the process of checking the 28 listed computers (in the yellow boxes) on this 2009 Lexus IS 250 AWD. Toyota puts a standard list of ECUs for each vehicles, so in this example not all of the 28 ECUs were installed on this vehicle even though there were listed.



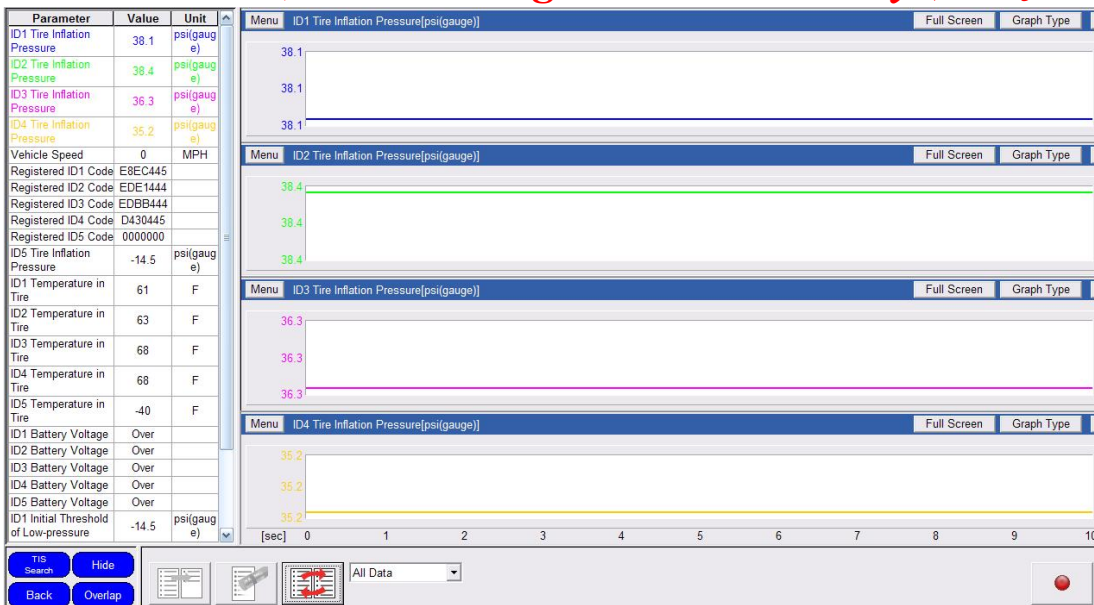
Checking Monitors is a breeze with Techstream. As we can see in the above left screenshot, we can check the Monitor status on the vehicle. To the above right we can see detailed the Monitor information. Information such as Cumulative Monitor status provides the status from when the last DTC was cleared or when the Monitor was reset. Current Monitor status provides detailed information on current trip information. Lastly, the tool uses universal symbols to help us understand Monitor status too, as opposed to vaguer indications that a Monitor has run (such as the word "YES.")



With a click on the magnifier glass, you will be provided with details concerning the Monitor in question. The Summary display provides a detailed report on the Monitor.

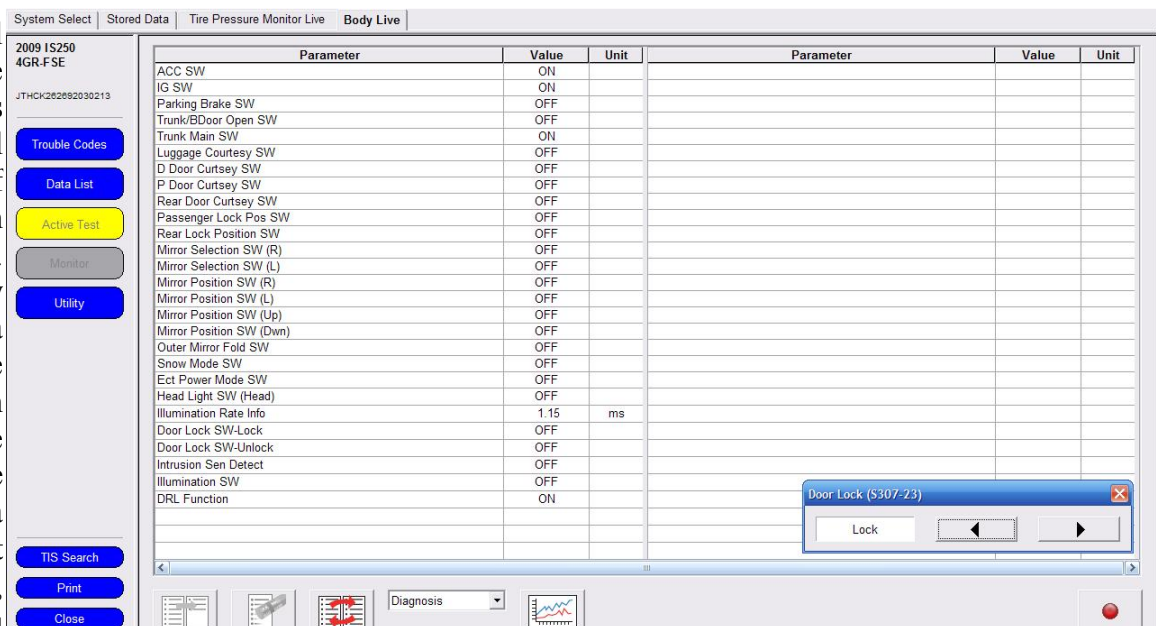
(Con't on page 10)

Oh, What a Diagnostic Tool to Buy (con't from page 9)



Also easy to understand and use is the graphing screen. All you have to do is select any PID (Left side of screen) and drag it to the graph section. Here the tool is remarkably versatile—You can select multiple graphs, full screen, bar graph, analog meter, or a mix.

Bi-directional control is also available. The above screen allows for bi-directional control on many of the components on multiple systems. This feature is very important, allowing a tech to diagnose the operability of system components. All we need to do is click the mouse on a component and select off or on, duty cycle, and etcetera. If you



own an amp clamp, meter, or scope; you can measure the draw of the solenoid you want to check.

Remember, factory scan tools are always the most comprehensive, because they have what the OEMs believe the dealer technicians need to diagnose vehicles. Now that they are becoming PC-based, they will be getting cheaper and easier to update; and that is good news for all of us.

By now we are getting familiar with PC-based scan tools, so we will only briefly discuss some of the different features not typical of other tools that you can find on the EASE and OTC Pegisys PC-based scan tools. (List price: \$7995.00) **TO BE CONTINUED...** *Article courtesy of G Truglia, President*

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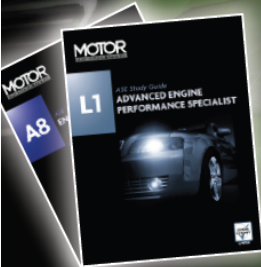
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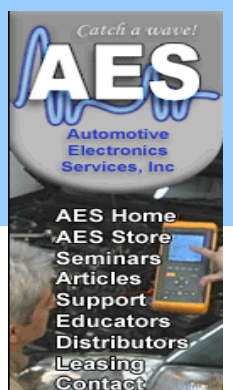
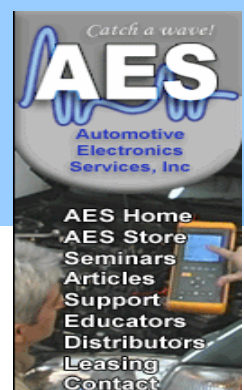
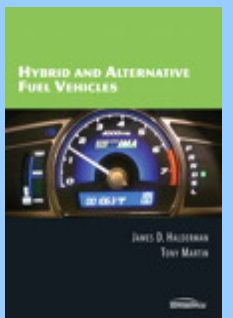
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