PROScan

Transform any computer into a powerful
automotive diagnostic scan tool
with performance analysis capabilities!

~ Visit us online at MyScanTool.com ~

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Warnings

Never use ProScan while driving!

You should never attempt to use ProScan while operating a moving vehicle. If you need to monitor sensor information while driving, it is strongly recommended that you have a passenger operate ProScan. If you don't have a helping passenger, use ProScan's logging feature so that you can playback the collected data once you have safely parked your vehicle.

Never run an engine indoors!

You should never start your vehicle inside a closed garage or anywhere without proper ventilation. Engines produce carbon monoxide, which is an odorless gas that can kill you!

Always obey traffic regulations!

When using ProScan on public roads, you must obey all traffic laws. ProScan's performance analysis tools are intended for off-road use only!

Introduction

First of all, thank you for choosing ProScan as your OBD-II scan tool and performance analysis solution! We truly appreciate your business, and we hope that ProScan benefits you tremendously.

ProScan started out as a project by me, David Gore, to develop an affordable OBD-II scan tool for my own personal use. I was a college student at the time and I couldn't afford to spend over $400 on a laptop-based scan tool to aid in tuning my highly-modified Camaro. So I did some research and discovered a Canadian company known as ELM Electronics, who had recently developed a set of inexpensive microprocessors capable of translating OBD-II communications into a format recognizable by PCs and handheld computers. I purchased their hardware and spent the next few months researching OBD-II standards and conducting in-vehicle experiments.

To mimic the expensive scan tools, I then started developing a graphical user interface to simplify common tasks. After several months of hard work, I had developed an application that could read and clear trouble codes, monitor and plot sensor data, and even calculate performance statistics such as 1/4 mile time and trap speed. At the time, my software was among the first to support the performance analysis features.

I quickly realized that my software bundled with ELM-based hardware had produced a remarkably inexpensive scan tool with features rivaling those of the popular and expensive tools! The product I had developed could save many other individuals hundreds of dollars as well. So I created a web site and began distributing my software, which I named ProScan. In no time at all, it was so popular that I couldn't meet the demand by myself. Therefore, in February of 2005, my wife and I started Gore Research with ProScan being our flagship product.

We at Gore Research are dedicated to maintaining ProScan as the most cost-effective scan tool on the market. We even offer a price-match guarantee because we are so confident that no other company can offer a similar product at a lower price. Our promise to you is that we will continue to improve ProScan by implementing your requests and by introducing new and innovative features. Best of all, you'll receive these software upgrades absolutely **free of charge**!

Thank you for choosing ProScan as your OBD-II scan tool and performance analysis solution! We look forward to serving your future diagnostic and analytical needs.

Thank you,
David & Amber Gore
Owners, Gore Research

Getting Started with ProScan

Hardware and Software Requirements

Supported Operating Systems
- Windows XP Professional
- Windows XP Home
- Windows XP Tablet PC Edition
- Windows 2000
- Windows ME
- Windows Server 2003
- Windows NT
- Windows 98 Second Edition

Memory
- A minimum of 64MB of RAM (128MB recommended)

Disk Space
- A minimum of 10MB of available hard drive disk space

Hardware
- The PC must have an available 9-pin serial port. If your PC does not have a serial port, ProScan will require a USB-to-Serial adapter (sold separately).

Installing ProScan from CD-ROM

- When upgrading from a previous version of ProScan, you must always uninstall the original installation of ProScan before upgrading.

1. Insert the ProScan CD into your PC's CD-ROM drive.
2. The ProScan installation should automatically begin. If not, browse the contents of the CD and double-click the ProScan*.exe file.
3. ProScan requires that your PC have the Microsoft .NET Framework installed. If your PC doesn't have the latest version of the .NET Framework installed, you should elect to install the .NET Framework when prompted to do so.
4. Follow the instructions provided on the dialogs.

Installing ProScan from the Website

- When upgrading from a previous version of ProScan, you must always uninstall the original installation of ProScan before upgrading.
- If your PC does not already have the .NET Framework installed, you will need to visit Windows Update and install it.

    Windows Update: http://windowsupdate.microsoft.com

1. Download the latest version of ProScan from:
   http://www.myscantool.com/download
2. Execute the installation file you just downloaded.
3. Follow the instructions provided on the dialogs.

The User Interface

- **Toolbar**
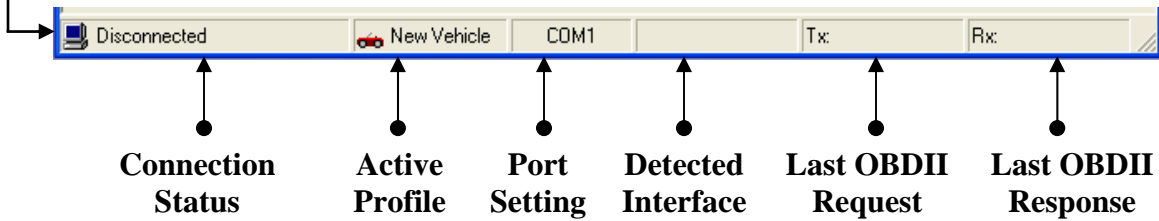 The toolbar provides single-click access to all of ProScan's tools.

- **Menu Bar**
  The menu bar provides categorized access to all of ProScan's functionality.

- **Title Bar**
  The title bar displays the name of the active tool selection.

- **Status Bar**
  The status bar displays useful information regarding your ProScan session.

| Connection Status | Active Profile | Port Setting | Detected Interface | Last OBDII Request | Last OBDII Response |

Toolbar Icons

Vehicle Connection Manager		Dynamometer	
Vehicle Status Monitor		Diagnostic Report Generator	
Diagnostic Trouble Codes		Terminal	
Freeze Frame Data		Communication Log	
Oxygen Sensor Tests		User Preferences	
Live Sensor Grid		Vehicle Profile Manager	
Live Sensor Graphs		Communication Settings	
Race Track Analysis		Help	

Registering ProScan

The ProScan software can be freely downloaded and installed from our web site, but the diagnostic and analysis tools cannot be used on a vehicle until the software has been purchased and registered.

When you purchase ProScan you will be issued a serial number that will unlock the software and provide full functionality.

Registering ProScan is a simple, one-time-only process that will take only a few seconds the first time you try connecting to a vehicle. To register, run the ProScan software and click the Connect button within the Vehicle Connection Manager. If you haven't previously registered, you'll be presented with the dialog shown below in Image 1. Simply enter your assigned serial number and click the Register button.
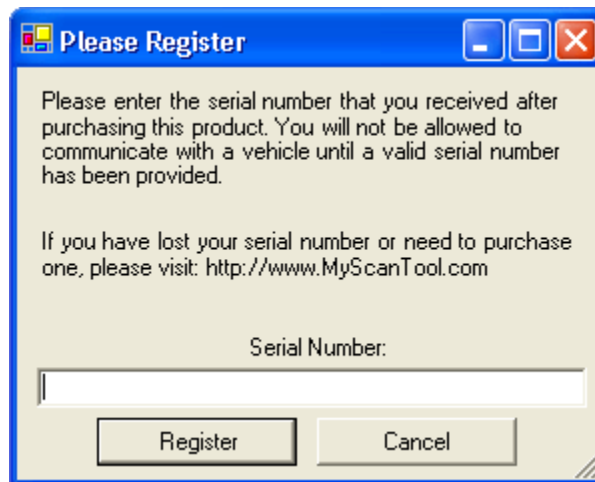
Image 1: Registration Prompt

If you entered a valid serial number, you will receive confirmation that your software was successfully registered. You will not be required to enter your serial number again unless you re-install the software.

ℹ️ **TIP**
Store your serial number and proof of purchase in a safe place as you will need them to upgrade your software in the future.

ProScan's Tools

Vehicle Connection Manager

Toolbar Icon:	
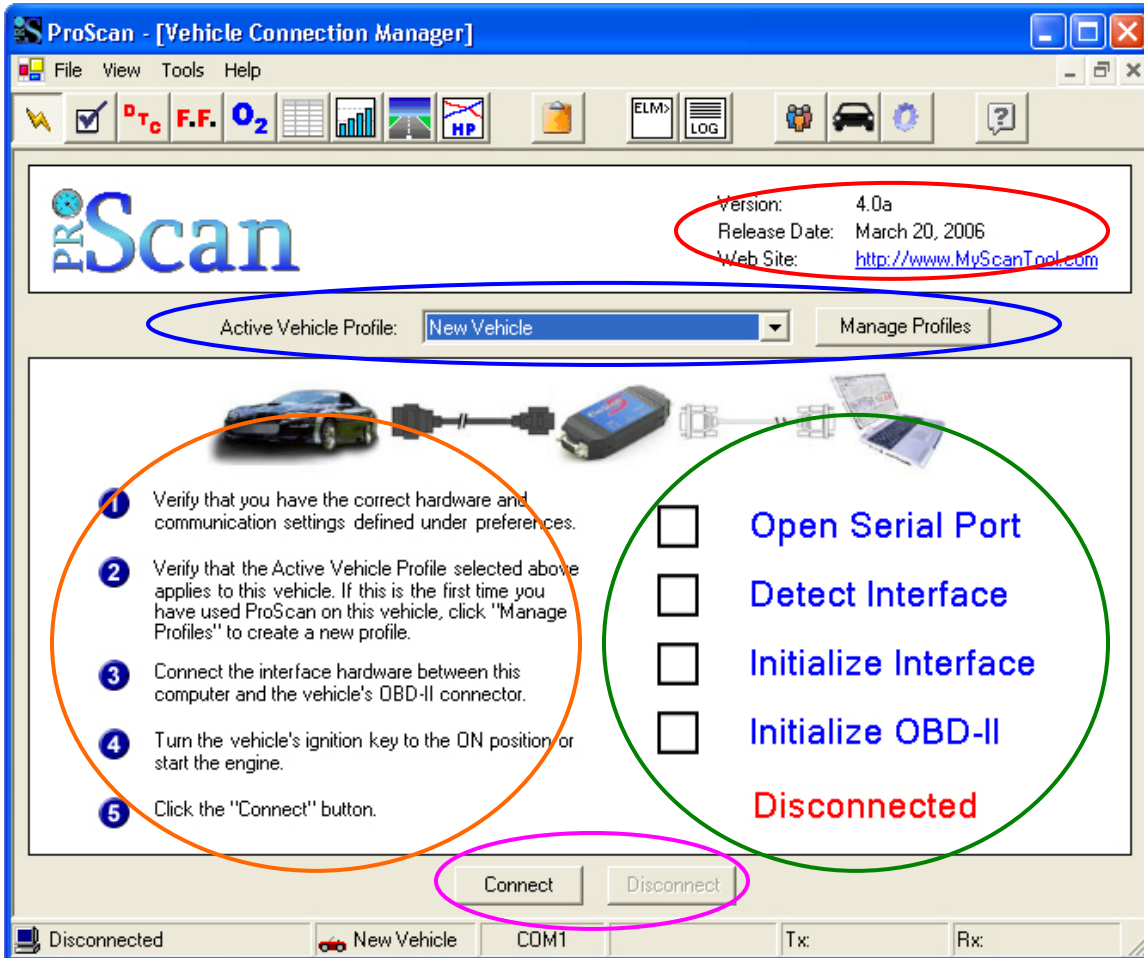
Image 2: Vehicle Connection Manager

Each time you run ProScan, the Vehicle Connection Manager is displayed automatically. This tool is used to establish communication with a vehicle, which is a required step before using any of ProScan's other tools.

ℹ️ **TIP**	In the top right corner (Red Circle, Image 2), you'll
You should regularly visit our web site for important news and software upgrades. **http://www.MyScanTool.com**	find details regarding the version of ProScan you are currently running.

The first time you use ProScan on a vehicle, you should define a new Vehicle Profile for the vehicle.

This can be quickly and easily accomplished by using the Vehicle Profile Manager,

which is made conveniently accessible by means of the Manage Profiles button (Blue Circle, Image 2). Once you have defined a profile for the vehicle, you can make it the active vehicle profile by selecting it from the drop-down list (Blue Circle, Image 2).

Step-by-step instructions for establishing communication with a vehicle are conveniently displayed on the left half of the window (Orange Circle, Image 2).

Establishing a Vehicle Connection

1 Verify that ProScan's communication settings are correct for the hardware you are using. See "Communication Settings" for more information.

2 Make sure you have selected the correct vehicle profile. If one does not already exist, create a new profile for the vehicle and then select it. See "Vehicle Profile Manager" for more information.

3 Physically attach the required cables and interface hardware between the vehicle and your laptop computer.

4 Turn the vehicle's ignition key to the ON position, or go ahead and start the vehicle.

5 Click the Connect button at the bottom of the window to begin the connection process (Pink Circle, Image 2).

> **ⓘ   TIP**
> If you don't see the Connect button, make sure your display is set to 96 dpi.

After you click the Connect button, ProScan will attempt to detect and initialize the interface hardware and then establish communication with the vehicle. Each step of this process can be monitored with the Connection Status Checklist that is displayed on the right half of the window (Green Circle, Image 1). A green checkmark (Image 3) will appear next to tasks once they have been successfully completed. If a task fails, a red X (Image 4) will appear next to the task.

Image 3: Task Succeeded Indicator

Image 4: Task Failed Indicator

Once all tasks complete successfully, the red "Disconnected" label will change to a green "Connected" label, and the ProScan software will have an active connection with the vehicle. You can then switch to the ProScan tool of your choice and begin your diagnostic session.

Vehicle Status Monitor

Toolbar Icon: ☑
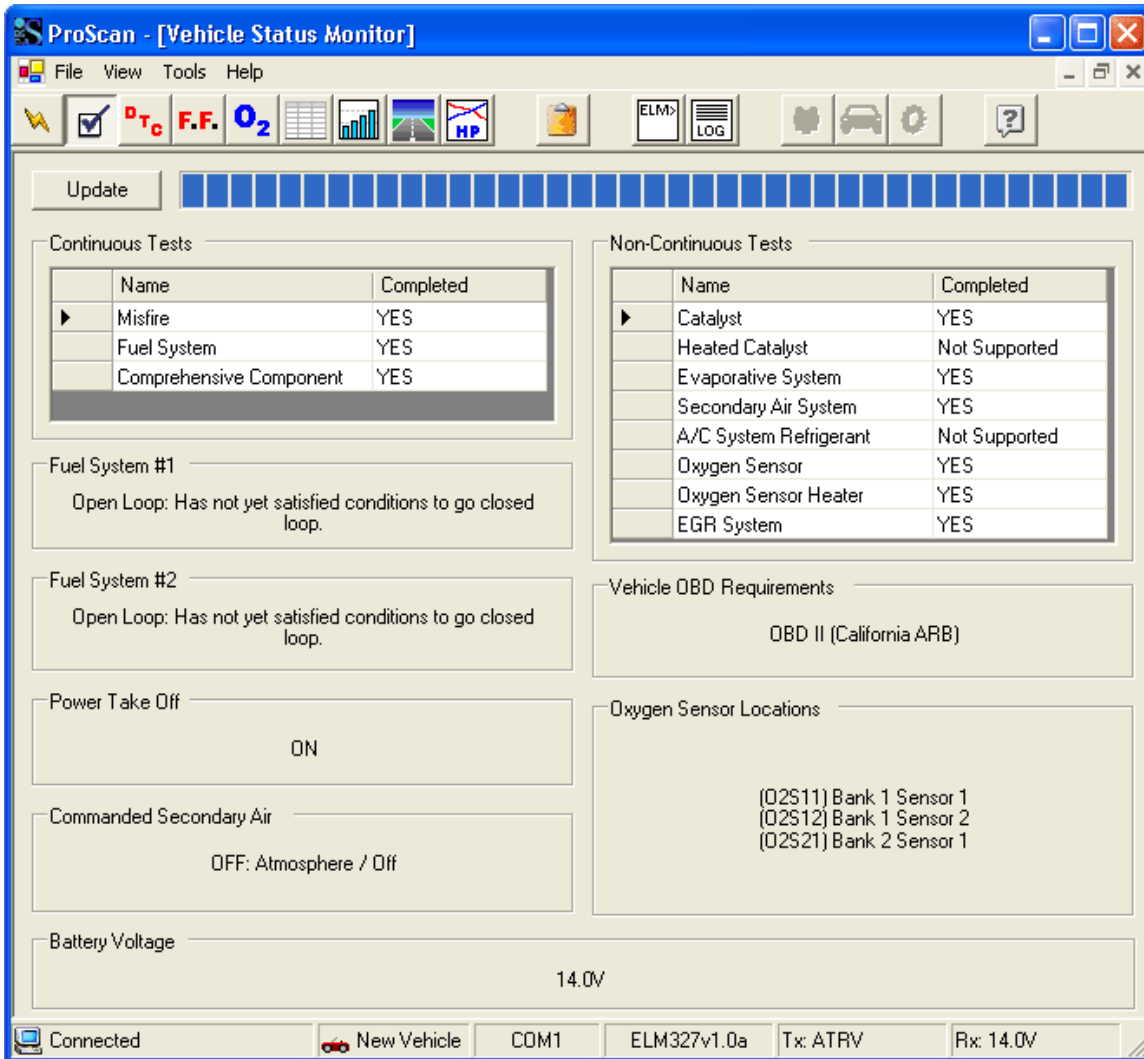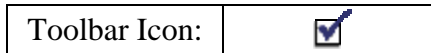
Image 5: Vehicle Status Monitor

Your vehicle's diagnostic system routinely performs system readiness tests. If your vehicle is in good operating condition, all tests supported by your vehicle should complete successfully. The Vehicle Status Monitor allows you to view the results of these tests along with some other important information.

Updating the Display

When you switch to the Vehicle Status Monitor, you will need to update the display to reflect the vehicle's current status. Simply click the "Update" button in the top left corner to gather the latest test results. The progress bar will keep you informed of the progress.

Continuous Tests

The Continuous Tests section displays whether or not your vehicle supports each continuous test, and if it does, whether or not the test has been successfully completed.

Misfire Monitoring

Misfire monitoring shall be supported on both spark ignition and compression vehicles if the vehicle utilizes a misfire monitor. Misfire monitoring shall always indicate complete for spark ignition engines. Misfire monitoring shall indicate complete for compression ignition engines after the misfire evaluation is complete.

Fuel System Monitoring

Fuel system monitoring shall be supported on vehicles that utilize oxygen sensors for closed loop fuel feedback control, and utilize a fuel system monitor, typically spark ignition engines. Fuel system monitoring shall always indicate complete for both spark ignition and compression ignition engines.

Comprehensive Component Monitoring

Comprehensive component monitoring shall be supported on spark ignition and compression ignition vehicles that utilize comprehensive component monitoring. Comprehensive component monitoring shall always indicate complete on both spark ignition and compression ignition engines.

Non-Continuous Tests

The Non-Continuous Tests section displays whether or not your vehicle supports each non-continuous test, and if it does, whether or not the test has been successfully completed. Following is a list of the available non-continuous tests:

- Catalyst Monitoring
- Heated Catalyst Monitoring
- Evaporative System Monitoring
- Secondary Air System Monitoring
- A/C System Refrigerant Monitoring
- Oxygen Sensor Monitoring
- Oxygen Sensor Heater Monitoring
- EGR System Monitoring

Fuel System Status

The fuel system 1 & 2 status sections each display the status of the respective fuel system. A fuel system can be in one of the following five states:

1. Open Loop – Has not yet satisfied conditions to go closed loop.
2. Closed Loop – Using oxygen sensor(s) as feedback for fuel control.
3. Open Loop – Open loop due to driving conditions (e.g., power enrichment, deceleration enleanment).
4. Open Loop – Detected system fault.

5. Closed Loop – Fault with at least one oxygen sensor. May be using single oxygen sensor for fuel control.

NOTE: Fuel systems do not normally refer to injector banks. Fuel systems are intended to represent completely different fuel systems that can independently enter and exit closed loop fuel. Banks of injectors on a V-engine are generally not independent and share the same closed-loop enablement criteria.

Power Take Off

A power take-off (PTO) is a splined driveshaft, usually on a tractor or truck that can be used to provide power to an attachment or separate machine. It is designed to be easily connected and disconnected. If your vehicle is not a truck or tractor equipped with PTO, you can safely ignore the PTO status.

Commanded Secondary Air

The commanded secondary air is an emission control system that forces fresh air into the exhaust system to accelerate catalyst operation. This reduces hydrocarbon and carbon monoxide emission levels. ProScan will report one of the following three states:

1. Upstream of first catalytic converter.
2. Downstream of first catalytic converter inlet.
3. Atmosphere / Off

Vehicle OBD Requirements

The Vehicle OBD Requirements section defines the OBD requirements to which the vehicle was designed. All vehicles will use report one of the following:

- OBD II (California ARB)
- OBD I
- EOBD
- EOBD, OBD, and OBD II
- JOBD and EOBD
- OBD (Federal EPA)
- Not OBD Compliant
- EOBD and OBD
- JOBD
- JOBD, EOBD, and OBD-II
- OBD and OBD II
- EOBD
- EOBD and OBD II
- JOBD and OBD II

Oxygen Sensor Locations

The Oxygen Sensor Locations section informs you of the number of oxygen sensors being used by your vehicle as well as where they are located on the exhaust system. See the "Oxygen Sensor and Catalyst Configuration Examples" section of this manual for more information on oxygen sensor locations.

Battery Voltage

This section displays the current battery voltage. **ELM327-based hardware is required.**

Diagnostic Trouble Codes

Toolbar Icon: **DTC**
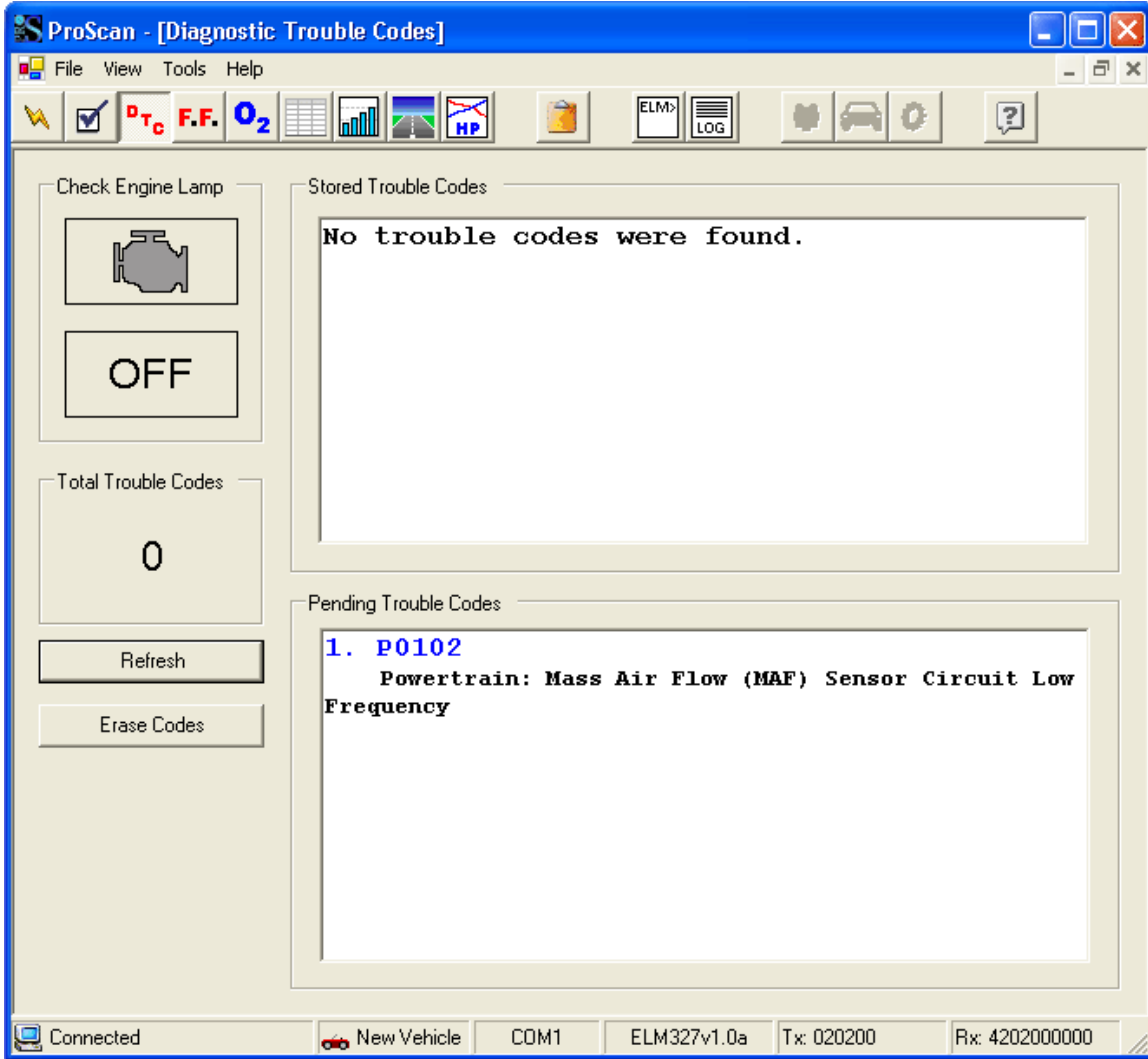
Image 6: Diagnostic Trouble Codes

When your vehicle's **malfunction indicator lamp** (MIL) comes on, your vehicle has stored a code that identifies the problem detected. This code is known as a diagnostic trouble code (DTC). Diagnostic trouble codes are alphanumeric codes that are used to identify a problem that is present on any of the systems that are monitored by the on-board diagnostic system. For more information about DTCs, see the "Diagnostic Trouble Code Breakdown" section.

Pending and Stored Trouble Codes Explained

When a problem is first detected, its corresponding DTC is typically recorded as a pending trouble code. Pending trouble codes do not illuminate the MIL on the dash, so the driver is not made aware of any potential problem at this time. If the vehicle's diagnostic system continues to detect the same problem after multiple driving cycles, the DTC will become a stored code and the MIL will illuminate.

After you think you have fixed the problem and have reset the vehicle's MIL, you should always check for pending trouble codes before assuming success. Just because the MIL doesn't come back on after a few minutes of driving, it does not indicate the absence of a problem. Because if the problem still exists, it could take multiple driving cycles for the MIL to kick back on.

Refreshing DTCs

Checking a vehicle for stored or pending diagnostic trouble codes is a simple task. Simply switch to the Diagnostic Trouble Codes tool (Image 6) and click the "Refresh" button. The status of the vehicle's MIL will be updated and any stored or pending codes will be listed along with their detailed definitions.

Clearing DTCs and Resetting the Check Engine Light (MIL)

After making necessary repairs to your vehicle, you will need to erase all stored and pending trouble codes along with all other historical diagnostic data from your vehicle. With ProScan, this task is as simple as clicking the "Erase Codes" button. After clicking the button, you will be presented with a confirmation prompt. Click "Yes" to erase all diagnostic data and reset the vehicle's MIL.

Seeking Repair Assistance

As all vehicles are different, and we do not staff automotive technicians, we cannot provide repair assistance for our customers. If you are having difficulty finding the cause of a problem, we recommend visiting an online forum dedicated to your specific vehicle and asking your question there. Usually, another owner has experienced the same issue and can tell you the likely cause of your problem.

Alternatively, you can call your local AutoZone, NAPA, Advance Auto Parts, or even your dealership, and ask their knowledgeable staff about the problem you are experiencing.

Freeze Frame Data

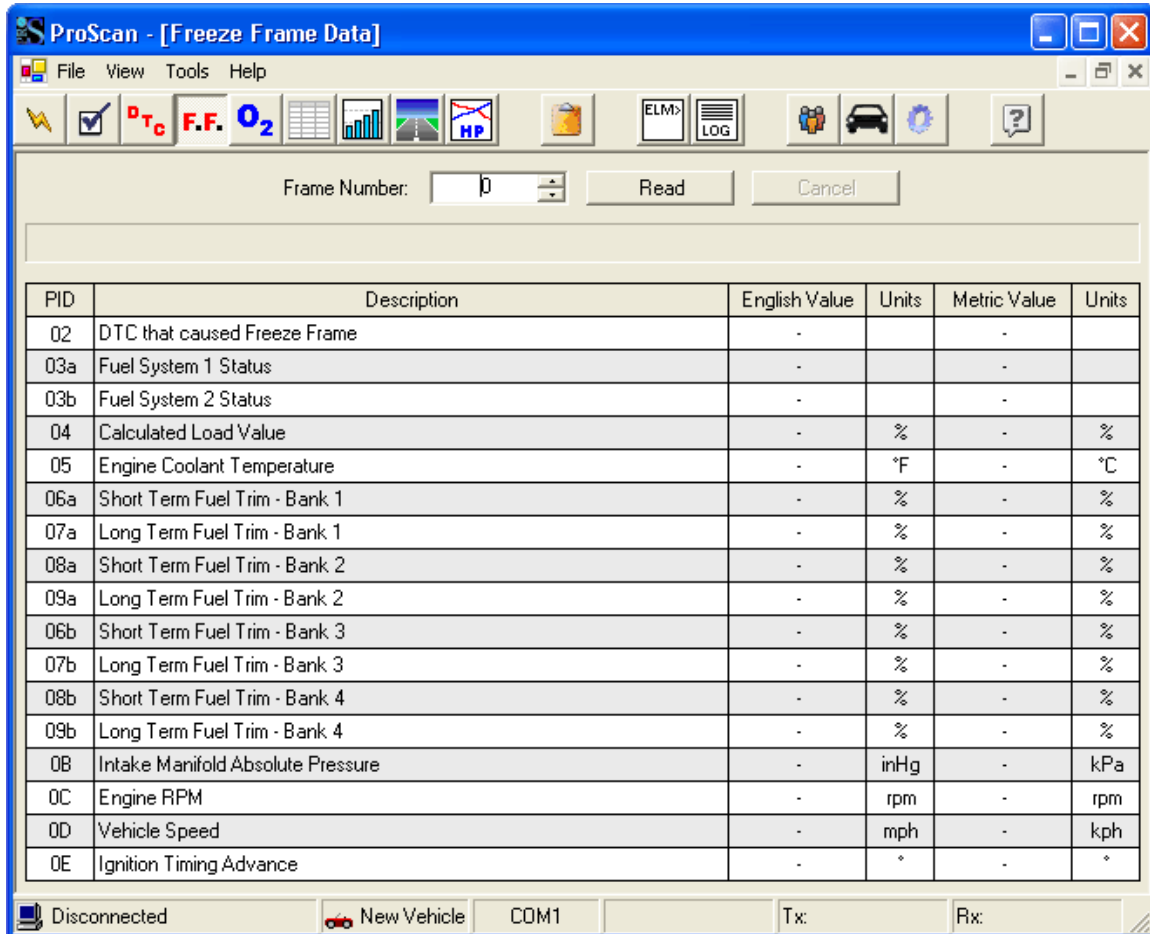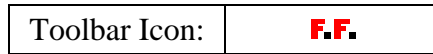| Toolbar Icon:	F.F.

Image 7: Freeze Frame Data

If your vehicle's malfunction indicator lamp is illuminated, there could be freeze frame data stored in memory for one or more diagnostic trouble codes. Freeze frame data represent the value of multiple critical sensors at the time a problem is detected and a DTC is stored. This information allows technicians to determine how the vehicle was being driven when the problem occurred.

Whenever a vehicle has one or more stored DTCs, you should check for the existence of freeze frame data. To do so, switch to the Freeze Frame Data tool (Image 7), start with frame number 0, and click the Read button. The progress bar at the top of the table will indicate the progress of the operation. If the vehicle supports freeze frames and data exist, the table will populate with sensor values in both English and Metric units. Increment the frame number and click the Read button to check for the existence of additional freeze frame data. Repeat this process until no more data are found.
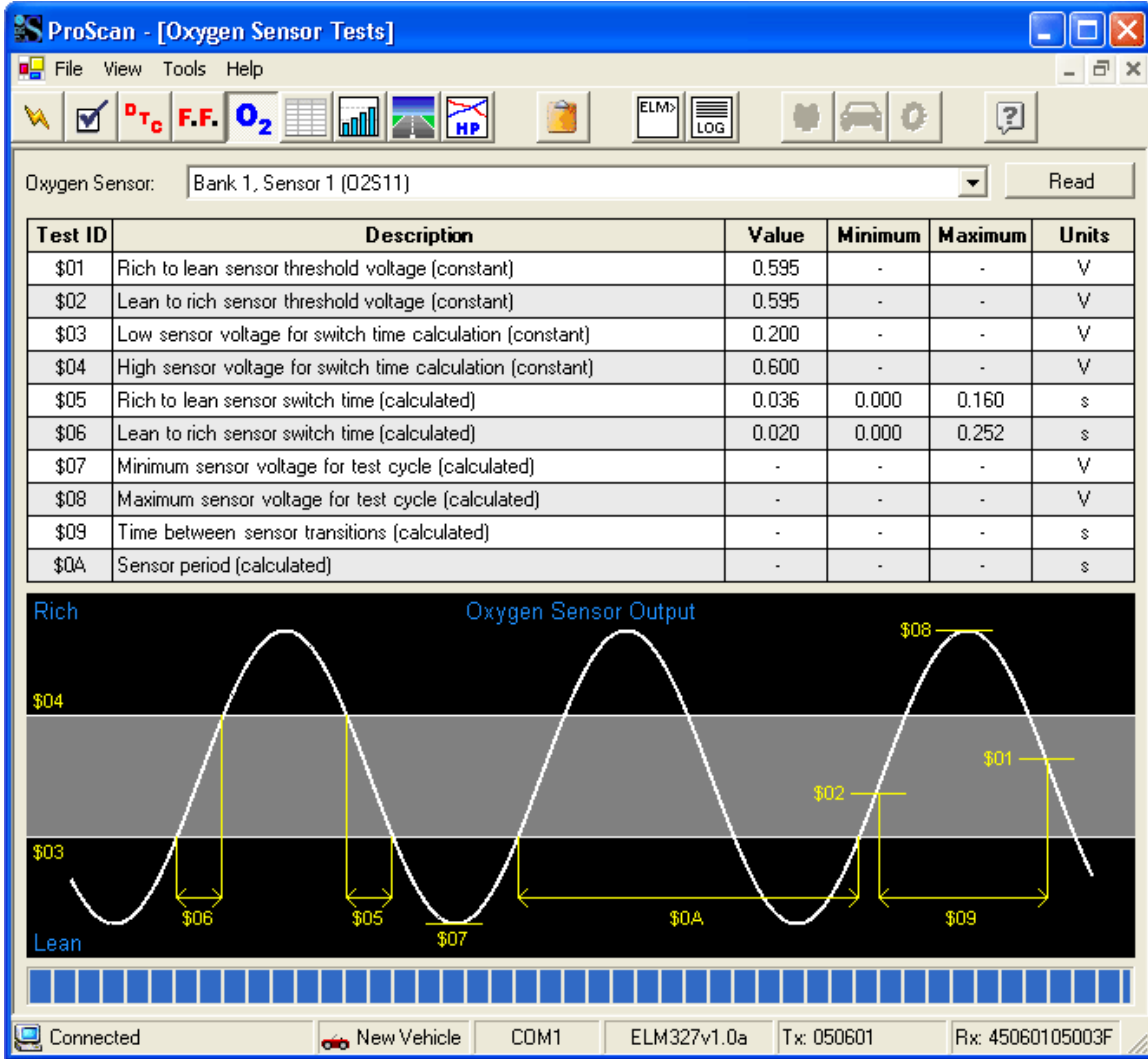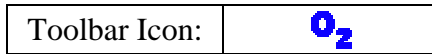
Oxygen Sensor Tests

Toolbar Icon: **O₂**

Image 8: Oxygen Sensor Tests

Oxygen sensors provide feedback to the vehicle's computer estimating the air to fuel ratio so that fueling changes can be made to achieve peak engine performance and clean emissions. Therefore, oxygen sensors are arguably the most important sensors on modern fuel-injected vehicles.

Most OBD-II vehicles perform tests on the oxygen sensors at least once per driving cycle. The results of these tests are stored in memory for the remainder of the driving cycle. ProScan allows you to view the results of these tests by using the Oxygen Sensor Test tool (Image 8). Before attempting to view test results, be sure to start the engine and allow adequate time for the tests to take place.

To view test results for a specific oxygen sensor, select it from the drop-down list and click the "Read" button. The progress indicator at the bottom of the window will display the progress of the operation. If the test is supported and has been completed, the results will display in the table.

The graphic at the bottom of the window represents a typical oxygen sensor output voltage waveform. The Test IDs are labeled in the graphic to help you visualize what each test result represents.

Available Oxygen Sensor Tests		
Test ID	**Description**	**Units**
$01	Rich to lean sensor threshold voltage (constant)	Volts
$02	Lean to rich sensor threshold voltage (constant)	Volts
$03	Low sensor voltage for switch time calculation (constant)	Volts
$04	High sensor voltage for switch time calculation (constant)	Volts
$05	Rich to lean sensor switch time (calculated)	Seconds
$06	Lean to rich sensor switch time (calculated)	Seconds
$07	Minimum sensor voltage for test cycle (calculated)	Volts
$08	Maximum sensor voltage for test cycle (calculated)	Volts
$09	Time between sensor transitions (calculated)	Seconds
$0A	Sensor period (calculated)	Seconds

Live Sensor Grid

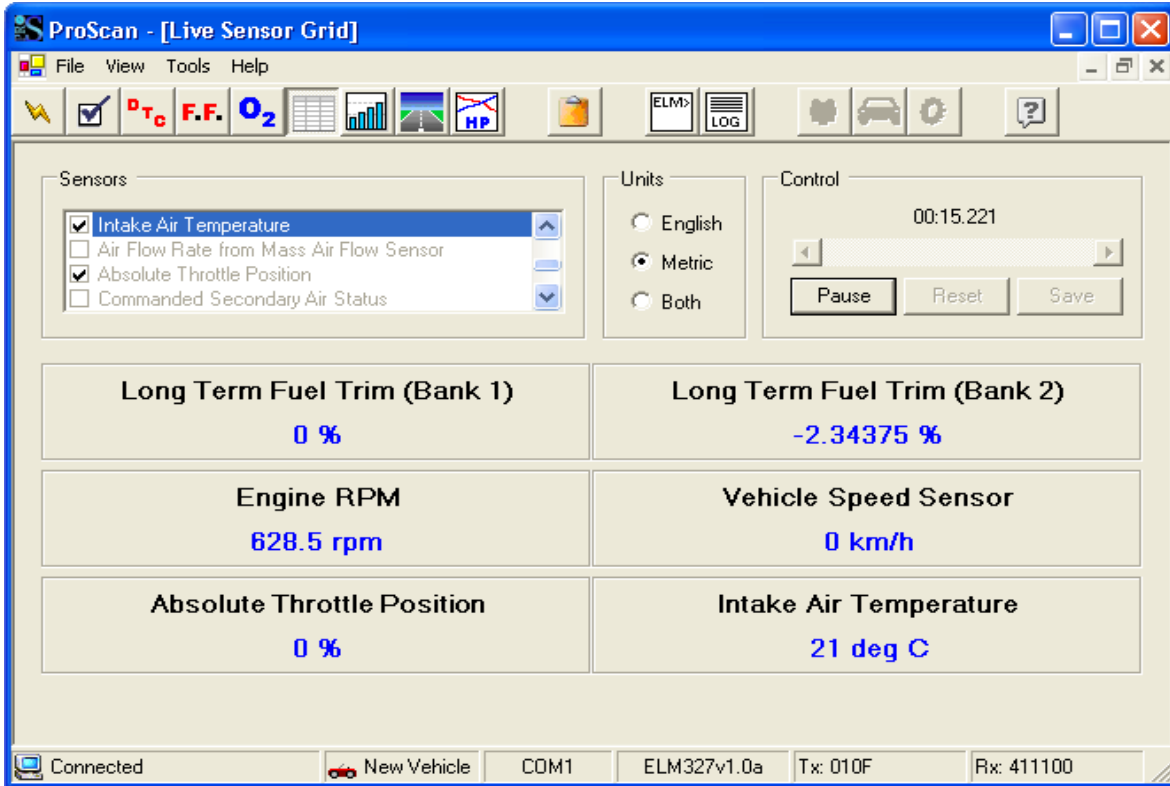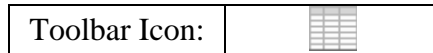| Toolbar Icon:	

Image 9: Live Sensor Grid

The Live Sensor Grid tool (Image 9) allows you to monitor a custom set of sensors in real-time. A powerful feature of this tool is its ability to record and playback sensor readings. This allows you to specify which sensors to monitor, go for a drive, and then safely playback the sensor readings once you have parked. Alternatively, you can save the recorded sensor readings to a text file for future analysis or to import into another application such as Excel. You can save recorded sensor readings in one of two formats: comma-separated values (CSV) or XML.

Monitoring Sensor Readings

In the "Sensors" group box you will need to place a checkmark beside of each sensor you wish to monitor. Once you select the sensors to monitor, you will need to specify the units of measure to use. Simply select English, Metric, or Both within the "Units" group box. To begin monitoring, click the "Start" button in the "Control" group box. The sensor readings will begin updating in real-time. At any time you may temporarily halt the monitoring process by clicking the "Pause" button. While paused, you can playback the sensor readings by dragging the scrollbar in the "Control" group box. You may also choose to save the recorded sensor readings to file by clicking the "Save" button.

Live Sensor Graphs
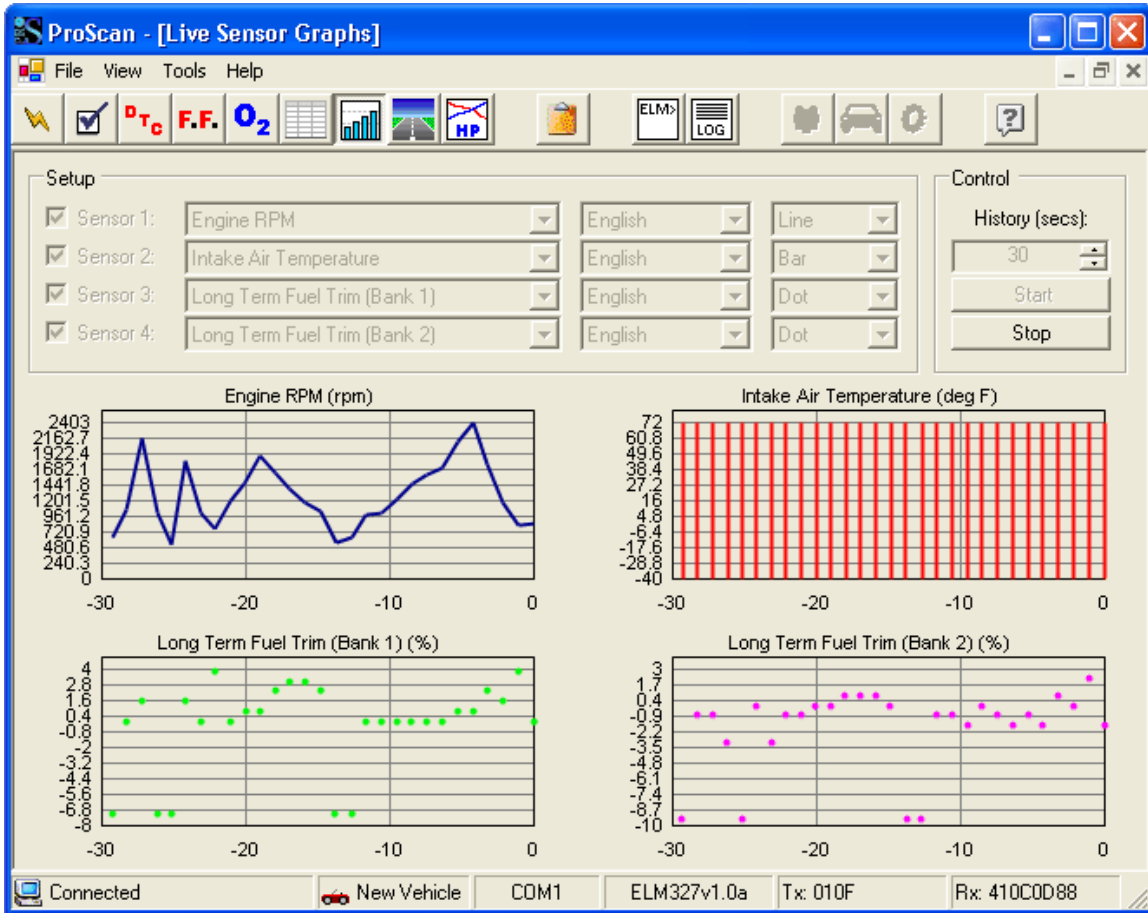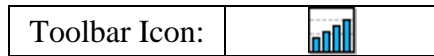
Toolbar Icon:	

Image 10: Live Sensor Graphs

The Live Sensor Graphs tool (Image 10) functions similarly to the Live Sensor Grid tool. However, the Live Sensor Graphs tool does not allow recording and is limited to displaying 4 graphs.

Graphing Sensor Readings

To graph up to four sensors in real-time, you will need to check the checkbox beside of each sensor you intend to use. Then select each sensor to graph, the units of measure, and the type of graph. Finally, you can specify the period of time to represent on the x-axis of each graph by setting the history value. To activate the live graphs, simply click the "Start" button.

A line graph will automatically connect data points with a line (top left graph in Image 10). A bar graph will draw each data point as a vertical bar with the height representing the value (top right graph in Image 10). A dot graph will simply draw a dot for each collected data point (both bottom graphs in Image 10).
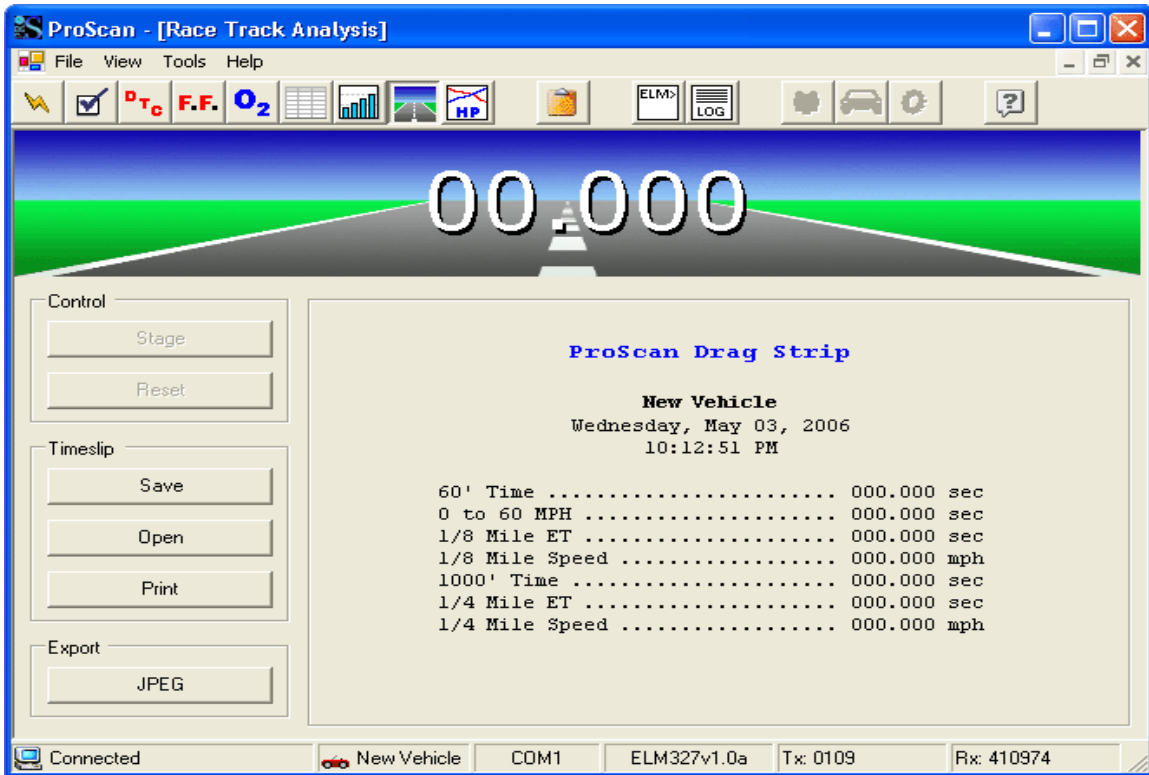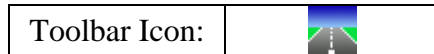
Race Track Analysis

Toolbar Icon:	

Image 11: Race Track Analysis

ℹ️ **TIP**
Wheel-spin will lead to inaccurate results.

ℹ️ **TIP**
If the vehicle's speedometer is not accurate, use a speedometer calibration factor in the vehicle's profile.

The Race Track Analysis tool (Image 11) allows you to easily and accurately generate a ¼ mile timeslip. **This tool is intended for off-road use only.**

If you want your results to closely match your official track results, you will need to perform your run on a straight and level road at a similar altitude as your track and during calm weather.

To generate a timeslip, you need to pull to a **complete stop** where you intend to begin your run and click the "Stage" button. You can begin your run at any time by accelerating your vehicle. ProScan will automatically detect the movement of your vehicle and begin collecting data. The timeslip will display each statistic as soon as it is calculated during your run. You may abort the run at any time.

Clicking the "Save" button will allow you to save the displayed timeslip to file. Clicking the "Open" button will allow you to display a previously saved timeslip. Clicking "Print" will allow you to print your timeslip.

If you want to share your timeslip with online friends or publish it to a web site or forum, you can easily generate a JPEG image of your timeslip by clicking the "JPEG" button.
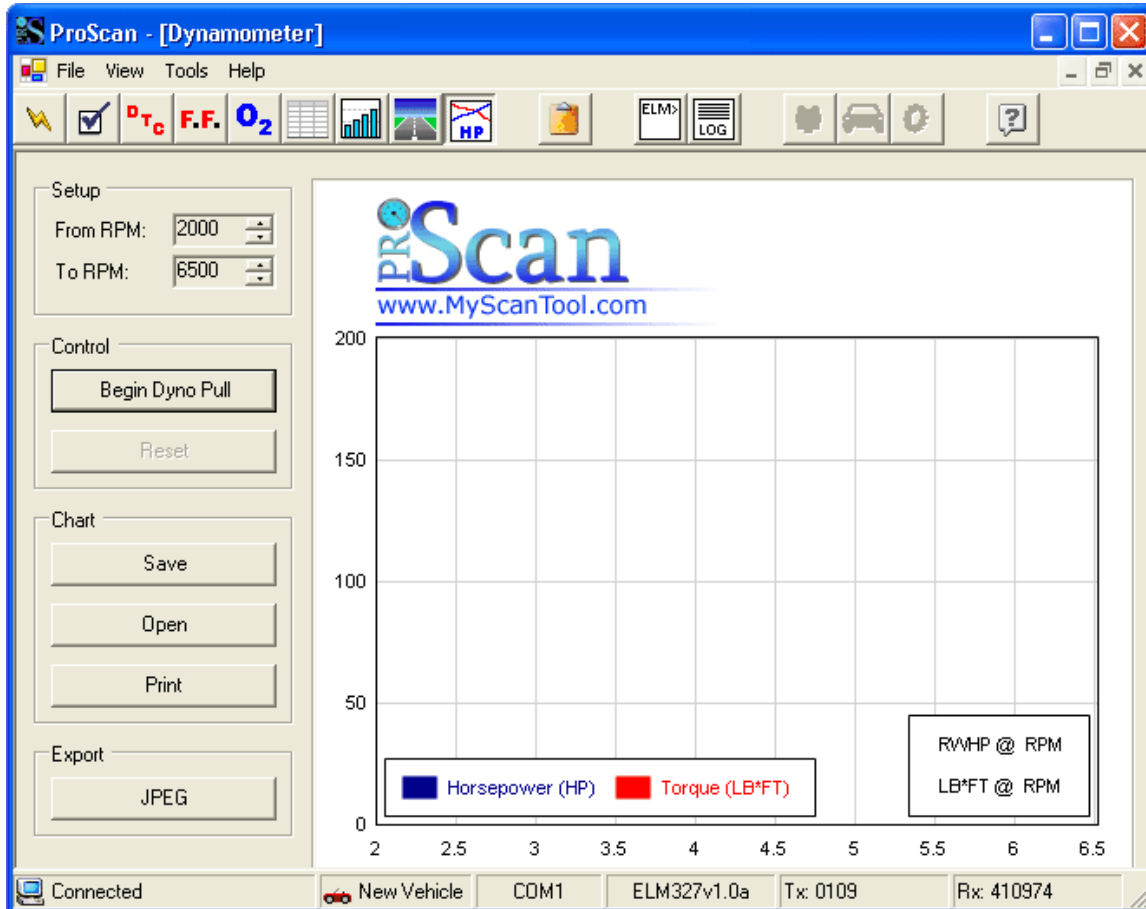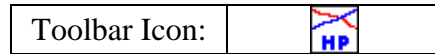
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Dynamometer

Toolbar Icon:	

Image 12: Dynamometer

ⓘ	**TIP** Wheel-spin will lead to inaccurate results.

The Dynamometer tool (Image 12) allows you to easily **estimate** a vehicle's horsepower and torque curves throughout a specific RPM band.

Accuracy of the ProScan Dyno

The most reliable way to dyno a vehicle is with the use of a chassis dynamometer. However, ProScan is able to **estimate** a vehicle's horsepower and torque curves based upon factors such as vehicle weight and acceleration. As with all acceleration-based dyno tools, such as the popular G-Tech, there are many environmental factors that cannot be controlled (e.g., wheel-spin, aerodynamic drag, road condition, slope, etc.). These factors can lead to unreliable results if care is not taken to minimize their impact.

Tips for Best Results with the ProScan Dyno Tool:

- You will need to be on a level road surface. If you are accelerating downhill, your vehicle will accelerate quicker than normal and ProScan will think your vehicle has more power than it truly does. If you accelerate uphill, ProScan will under-rate your vehicle's power.

- You will need to avoid wheel-spin. ProScan cannot determine when your vehicle is spinning its tires. If you spin your vehicle's wheels, ProScan will think you are accelerating faster, and the resulting horsepower and torque calculations will be higher than actual.

- You need to make certain that your vehicle's speedometer is properly calibrated for any wheel or tire size changes. If your vehicle's speedometer is not accurate, use the speedometer calibration factor in the vehicle's profile to compensate.

- You should always perform dyno runs on the same stretch of road, in the same direction, and during similar weather.

- Make sure your vehicle profile's weight and tire size settings are accurate.

- You should not expect your ProScan dyno numbers to match those generated from a chassis dyno.

The ProScan Dyno is an excellent tool for analyzing a vehicle's performance throughout an RPM band. Providing that you follow the above tips, before and after ProScan dyno charts can be compared to determine how well a modification has impacted performance.

Using the ProScan Dyno

This tool is intended for off-road use only, and requires the assistance of a passenger.

To generate horsepower and torque curves for a specific RPM range, you must first specify the range to analyze. Under the "Setup" group box, select the desired RPM range. If you have an automatic transmission, try to use an RPM range that will allow smooth acceleration without a change in gears. Position your vehicle on a straight and level road and begin driving. Get the vehicle in the desired transmission gear and maintain an engine speed lower than the starting RPM. When ready, have your friend click the "Begin Dyno Pull" button. ProScan will not begin collecting data until the engine speed reaches the starting RPM. You should accelerate the vehicle as quickly as possible through the RPM range. ProScan will stop collecting data once you pass the ending RPM value and the calculated horsepower and torque curves will appear. If you aborted the run and never reached the ending RPM value, you will need to click the "Reset" button and start over.

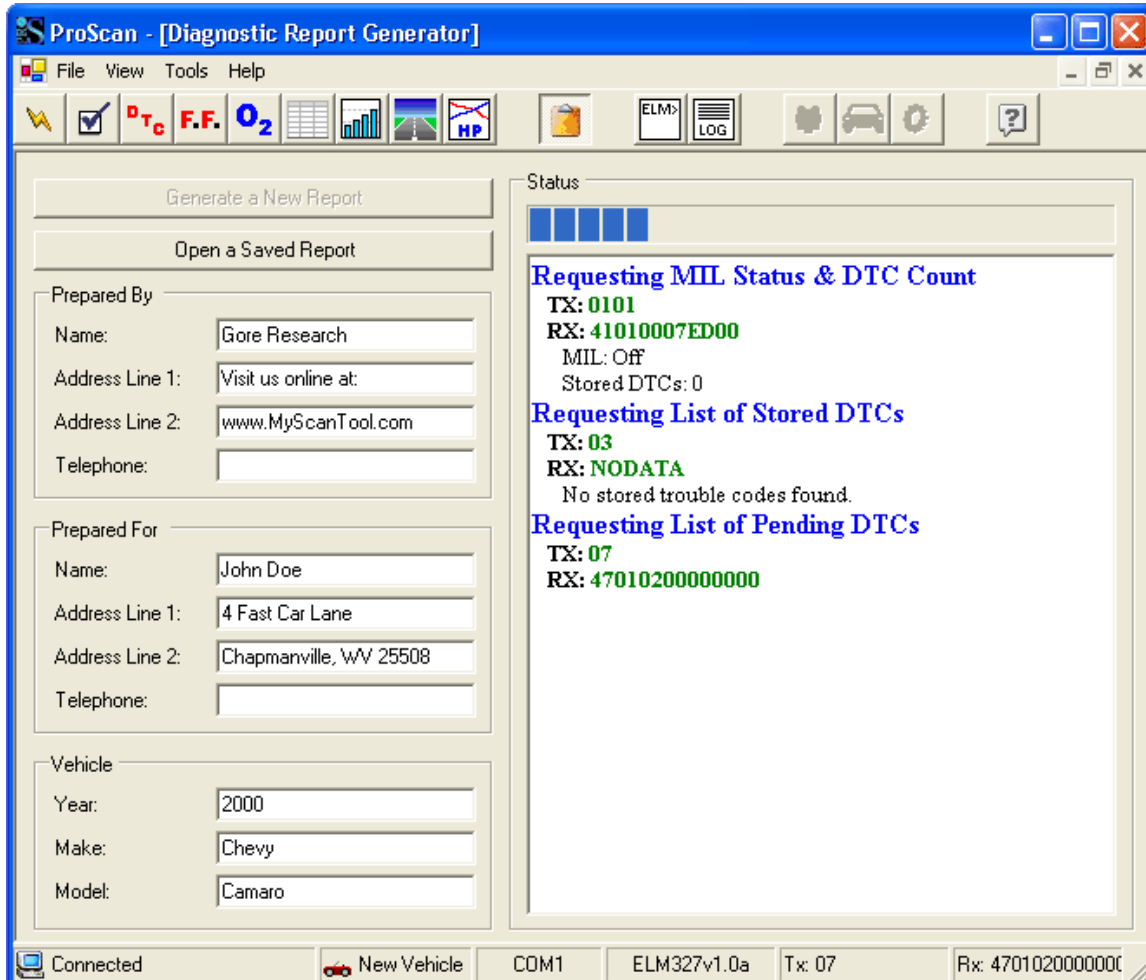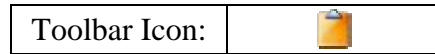# Diagnostic Report Generator

Toolbar Icon:

Image 13: Diagnostic Report Generator

The Diagnostic Report Generator tool (Image 13) allows you to generate a single-page diagnostic report for a vehicle. Reports can be saved to disk for future viewing, or they can be printed out and provided to a client.

All the text fields on the left half of the tool are optional, but are recommended if you operate a shop and want to present a professional-looking report.

To generate a report, provide as much or little information in the text fields as you desire and click the "Generate a New Report" button. ProScan will need to gather quite a bit of diagnostic information, so the "Status" section on the right will keep you informed of the progress of the operation. When the process completes, a new window will open and display the generated report (Image 14).

Image 14: OBD-II Diagnostic Report

At the top of the generated report display window (Image 14) are three buttons. The "Preview" button will display a common Print Preview dialog. The "Print" button will send the report to your printer. The "Save" button will present a common Save As dialog in which you can save the report to a file.

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Terminal

Toolbar Icon:	ELM>
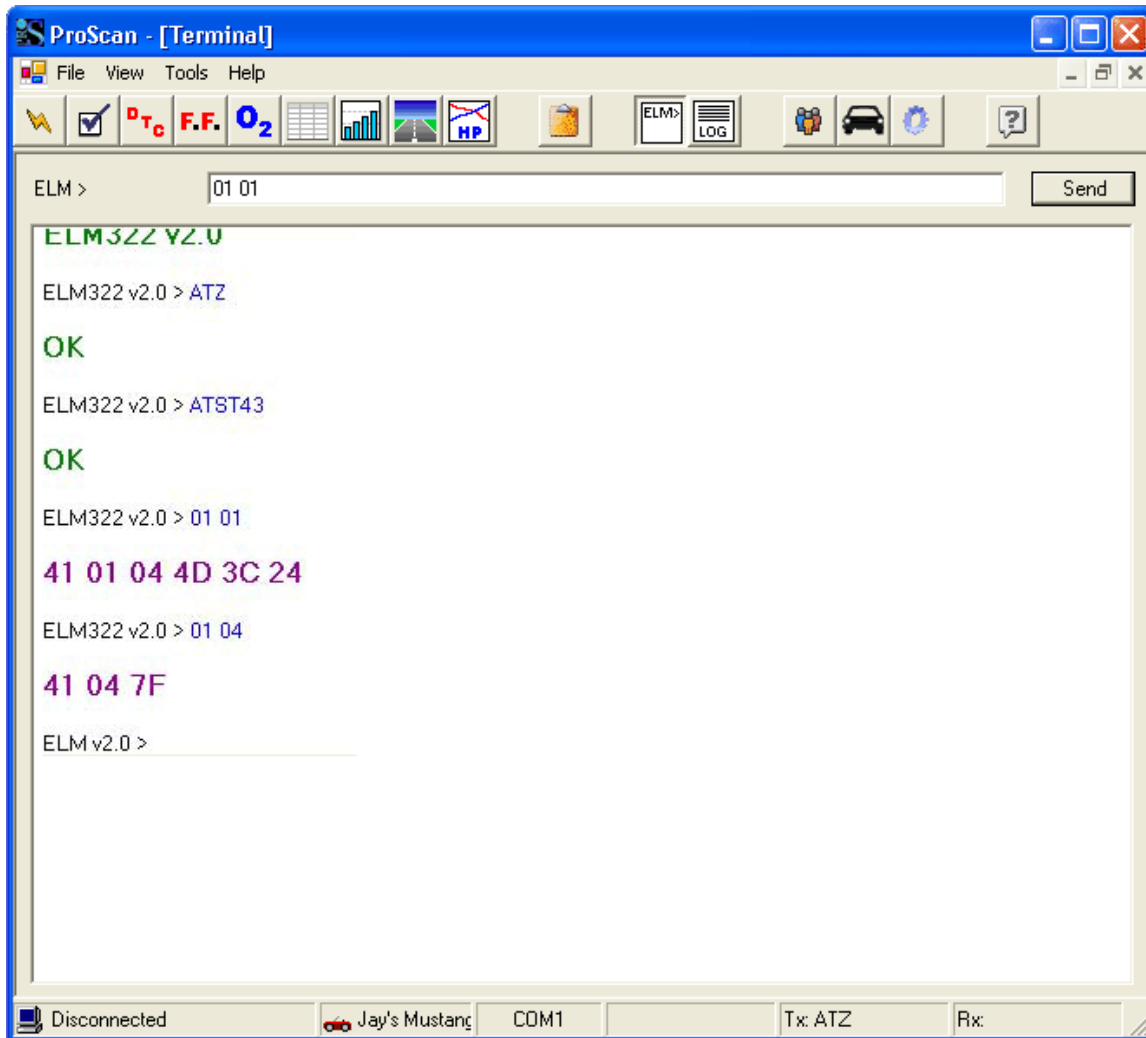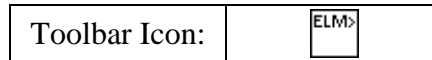
Image 15: Terminal

ProScan is an advanced graphical user interface for ELM-based OBD-II hardware. ProScan's Terminal tool (Image 15) allows you to send custom hex-formatted requests directly to the ELM microprocessor housed within the OBD-II hardware interface.

The Terminal should only be used by individuals who fully understand the OBD-II specification as defined in SAE J1979.

For more information, see ELM Electronics at http://www.elmelectronics.com.

Note: The Terminal tool requires a successful ProScan connection. If you have problems getting ProScan to connect, you will need to use a stand-alone terminal application such as Hyperterminal for troubleshooting.

Communication Log

Toolbar Icon:
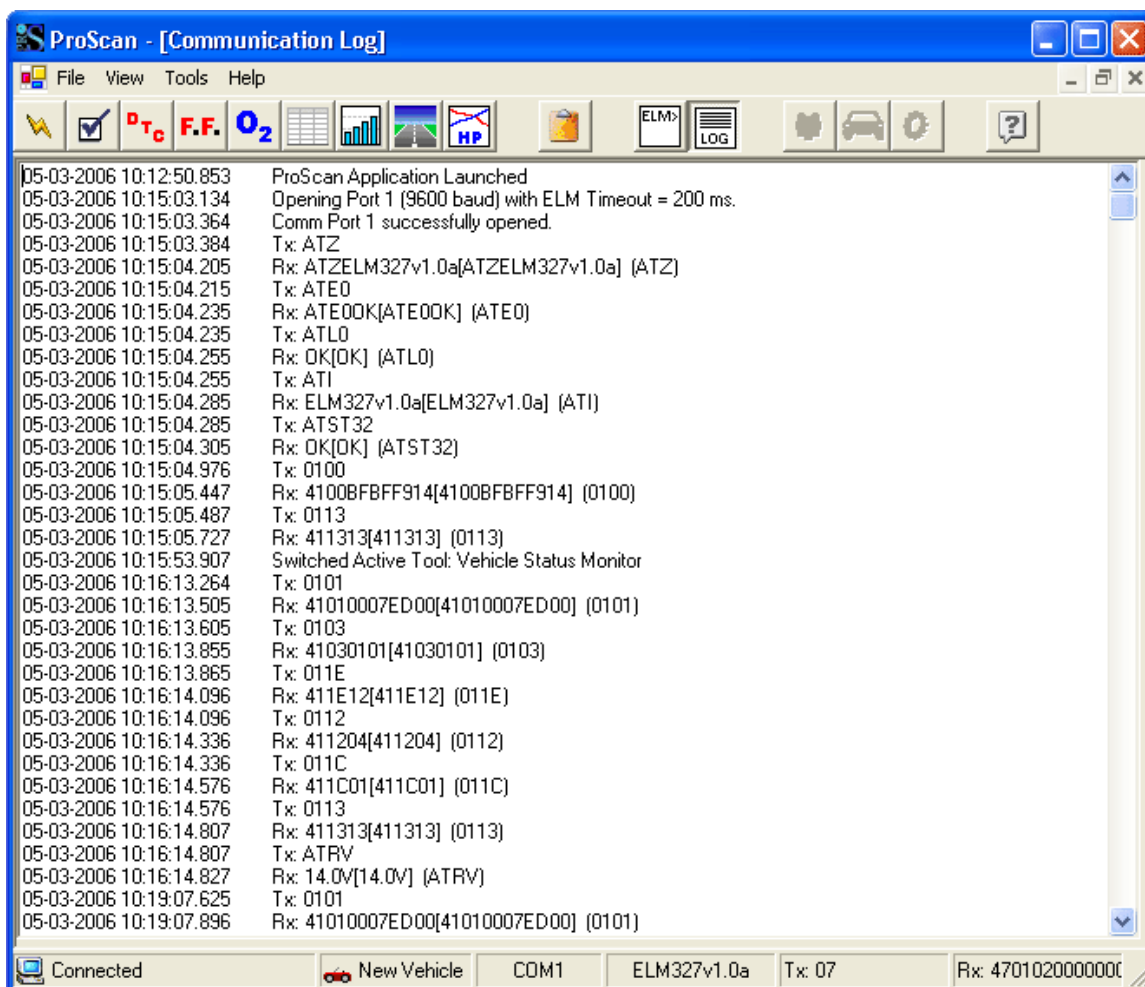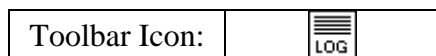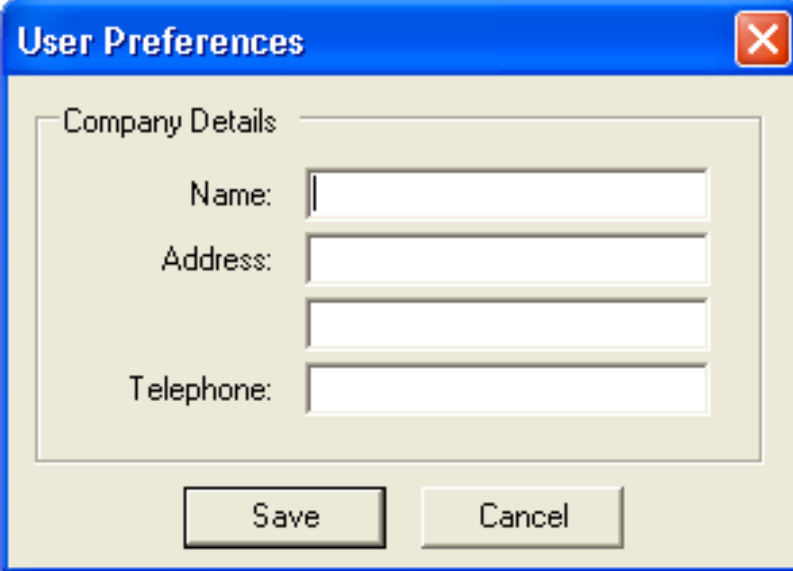
Image 16: Communication Log

The Communication Log (Image 16) maintains a history of all requests sent to the vehicle and all responses received during a single ProScan session. This log is made viewable so that if any technical difficulties arise, you can provide a copy of the log along with customer support inquiries. The log should provide customer support representatives with sufficient information to quickly pinpoint the exact problem and provide assistance.

Therefore, if you ever encounter problems using ProScan, please copy and paste the Communication Log into your support request. If ProScan crashes and you cannot access the Communication Log before the application closes, you can find a copy of the log saved as "commlog.txt" in the ProScan installation folder.

User Preferences

Toolbar Icon:	

Image 17: User Preferences

The User Preferences dialog allows you to save your company information. Storing your company information allows ProScan to automatically provide your details when needed. This eliminates a lot of repetitious typing.

Vehicle Profile Manager

Toolbar Icon:
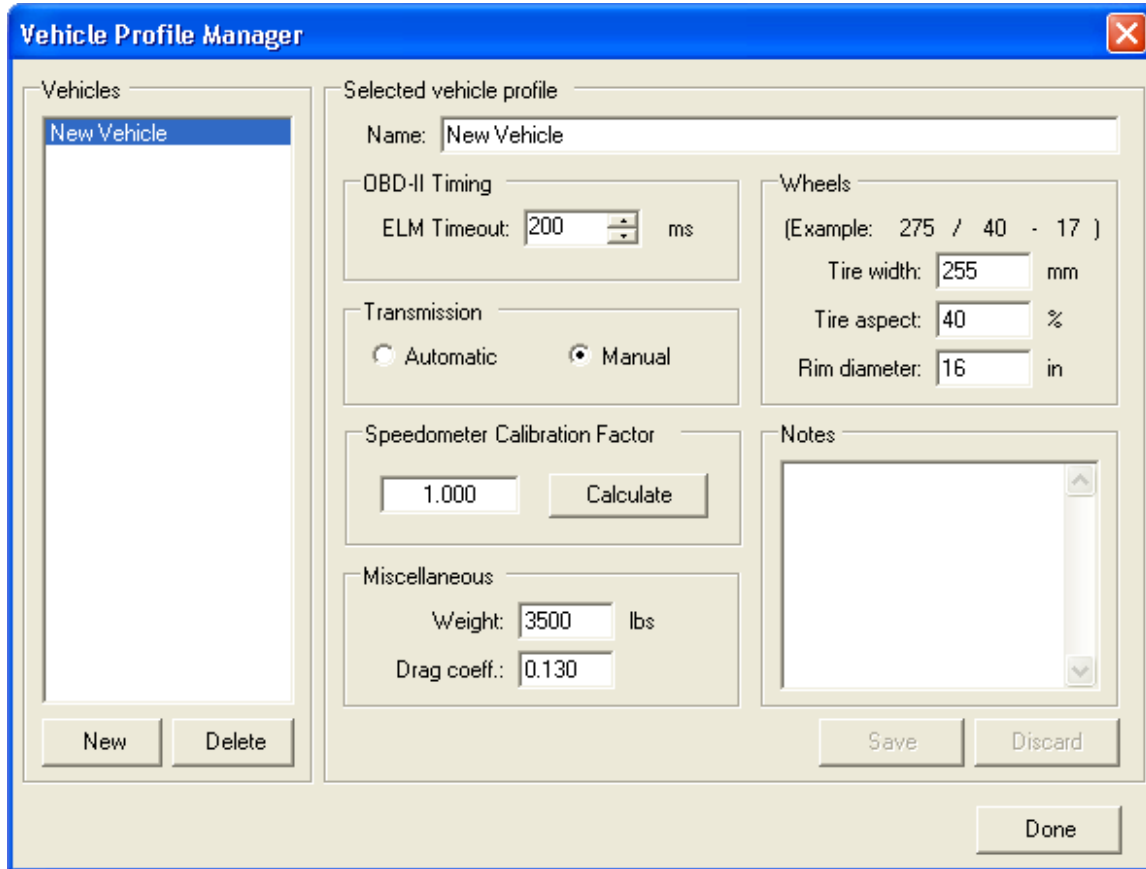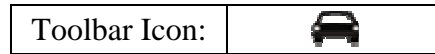
Image 18: Vehicle Profile Manager

The Vehicle Profile Manager allows you to create profiles for each vehicle you analyze with ProScan. A vehicle profile stores vehicle-specific information that ProScan may need during a session.

The list box on the left of the dialog displays all vehicle profiles. Selecting a profile in the list will display its details on the right. To create a new profile, simply click the "New" button. When you finish defining your new profile, be sure to click the "Save" button.

ELM Timeout
This value tells the OBD-II interface hardware how much time to wait for a response after sending a command. The default value is 200ms and should work on most vehicles. You can attempt to increase the sample rate by lowering this value. Setting it too low, however, will prevent vehicle responses from being received. If you notice a lot of "?" being received (the "Rx" section of the status bar) when using ProScan, you need to increase this value.
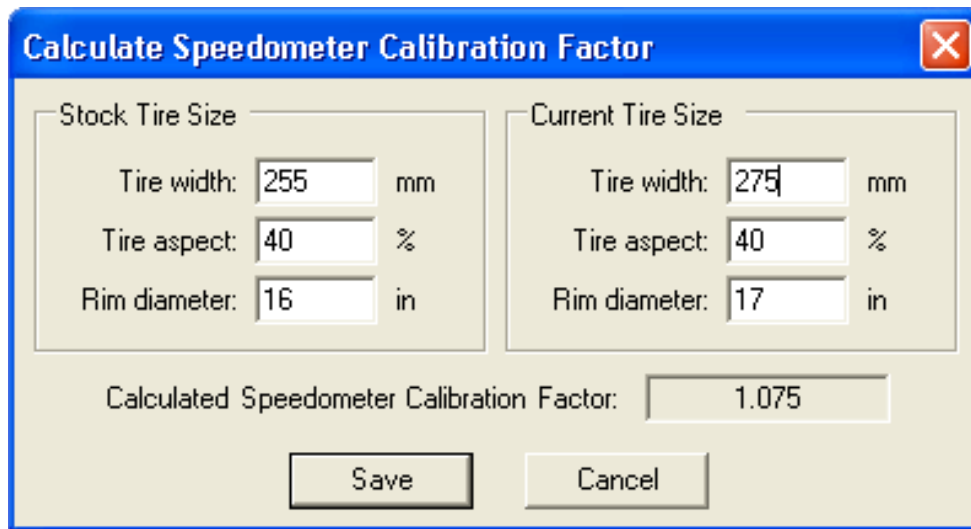
Transmission
Specify if your vehicle has an automatic or manual transmission.

Speedometer Calibration Factor
The speedometer calibration factor allows ProScan to compensate for incorrect speedometer readings due to non-stock tire sizes. If your vehicle has larger or smaller tires than stock and your speedometer has not been calibrated, you need to specify a speedometer calibration factor so that ProScan can correct your speedometer readings.

ProScan provides a calculator that makes it quick and simple to calculate a calibration factor for your vehicle. Click the "Calculate" button to open the "Speedometer Calibration Factor Calculator" (Image 19). Enter the stock and current tire sizes to generate a calibration factor.

Image 19: Speedometer Calibration Factor Calculator

* NOTE: ProScan cannot calibrate your vehicle's dashboard speedometer.

Weight
Enter the weight of your vehicle including your own weight and the weight of any passengers that will be in the vehicle during testing. If you don't know the exact weight, an approximate weight will suffice. Vehicle weight is used by ProScan to calculate horsepower and torque.

Drag Coeff
This value represents the aerodynamic drag coefficient for your vehicle. As of ProScan 4.0, this value is not yet used in any horsepower or torque calculations. Therefore, you can safely ignore this value at the present time.

Wheels
Enter your tire size. If you have different sized tires on the front and rear, use the rear tire size if your vehicle is rear-wheel-drive, and the front tire size if front-wheel-drive.

Communication Settings

Toolbar Icon:	
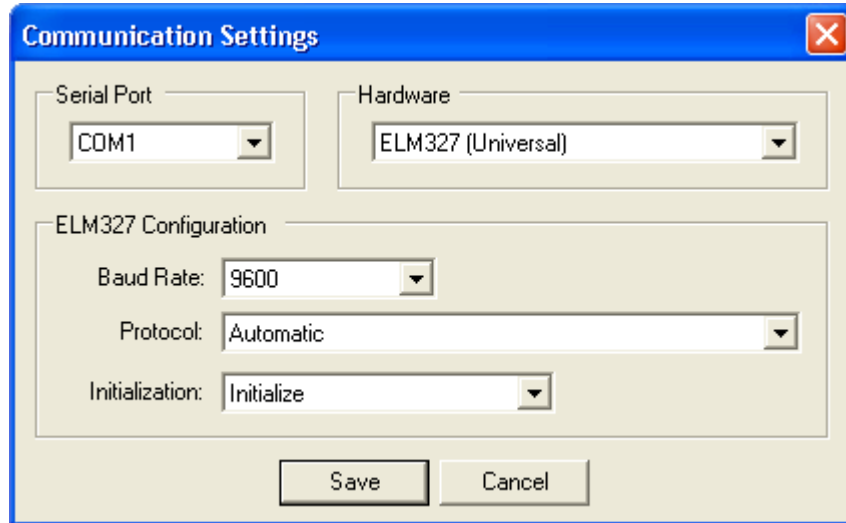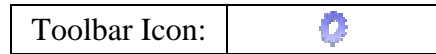
Image 20: Communication Settings

The Communication Settings dialog (Image 20) is where you configure the ProScan software to work with your ELM-based OBD-II interface hardware.

Serial Port
The serial port setting defines which physical serial port on your PC has the OBD-II interface hardware connected to it. If using a USB-to-Serial adapter, you will need to specify the serial port being emulated by the USB-to-Serial driver. (See the documentation accompanying your USB-to-Serial adapter for finding this information.)

Hardware
Select the OBD-II interface hardware being used.

ELM327 Configuration
The ELM327 supports 9600 baud and 38400 baud between the interface and the PC. Most ELM327 interfaces are internally set to 9600 baud. However, if you have set your ELM327 hardware to use 38400 baud, you will need to instruct ProScan to use 38400 baud by changing the baud rate setting under ELM327 Configuration.

ELM327 hardware can usually automatically detect the protocol being used by the vehicle. However, the automatic protocol detection does not always work. Therefore, it is best practice to specify which protocol should be used.

If you are having problems connecting to an OBD-II vehicle with ELM327 hardware, try specifying the actual protocol to use and bypass the initialization procedure by selecting "Bypass Initialization".

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Diagnostic Trouble Code Breakdown

DTCs are composed of five characters; one letter followed by 4 digits.

Example DTCs:

- P0134
- P1155
- B0042
- C1132
- U3201

Digit 1 = System Identifier	
Digit 1	**System**
P	Powertrain
B	Body
C	Chassis
U	Undefined

Digit 2 = Type of Code Definition	
Generic: Same definition for all manufacturers.	
Manufacturer-Specific: Definition varies among manufacturers.	
Digit 2	**Type of Code Definition**
0	Generic
1	Manufacturer-Specific
2	P2xxx = Generic B2xxx = Manufacturer-Specific C2xxx = Manufacturer-Specific U2xxx = Manufacturer-Specific
3	P30xx – P33xx = Manufacturer-Specific P34xx – P39xx = Generic B3xxx = Generic C3xxx = Generic U3xxx = Generic

Digit 3 = Sub-System	
Digit 3	**Sub-System**
1	Fuel & Air Metering
2	Fuel & Air Metering (Injector Circuit Malfunction Only)
3	Ignition System or Misfire
4	Auxiliary Emission Control System
5	Vehicle Speed Control & Idle Control System
6	Computer Output Circuits
7-8	Transmission

Digits 4 & 5
The fourth and fifth digits of the DTC identify the specific problem.

Oxygen Sensor and Catalyst Configuration Examples
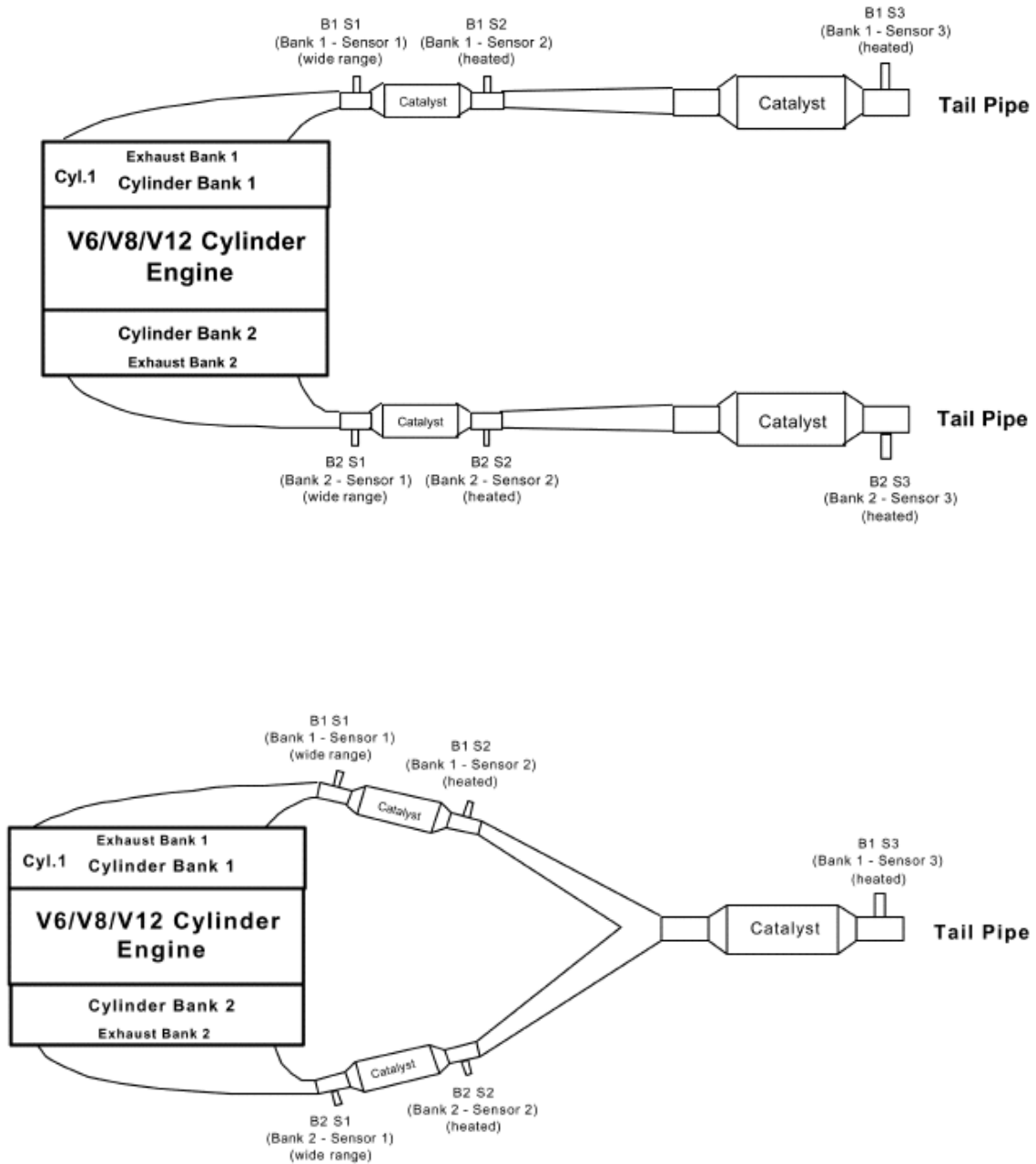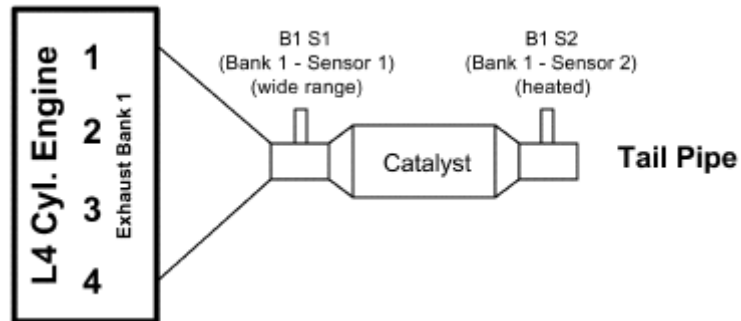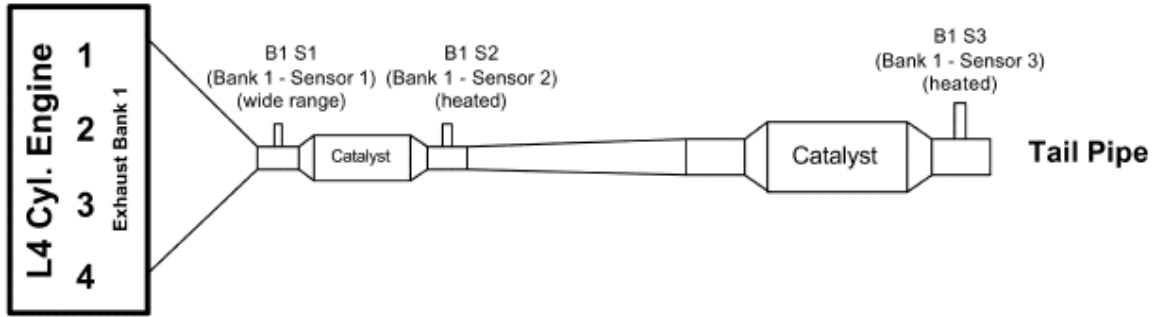
Troubleshooting

If you can't establish a working connection with your vehicle, try the following troubleshooting procedures.

1. **Do you have the latest ProScan software installed on your PC?**

   Yes: Continue to the next step.
   No: See the "Getting Started" section of this manual.

2. **Are you able to launch the ProScan software?**

   Yes: Continue to the next step.
   No: Make sure that your PC meets the minimum system requirements provided in the "Getting Started" section of this manual. If you receive an error message when trying to launch ProScan, the problem is most likely due to the .NET Framework not being installed. See the "Getting Started" section for instructions on installing the .NET Framework.

3. **Do you have compatible OBD-II interface hardware attached between your PC and your vehicle?**

   Yes: Continue to the next step.
   No: The ProScan software requires OBD-II interface hardware to translate OBD-II communications into a format understandable by PC serial ports and vice versa. ProScan supports any OBD-II interface hardware using one of the following interpreter chips manufactured by Elm Electronics:

   - ELM327 (VPW, PWM, ISO, and CAN)
   - ELM323 (ISO)
   - ELM322 (VPW)
   - ELM320 (PWM)

   Make sure the OBD-II cable is securely attached from the vehicle's 16-pin diagnostic connector into the OBD-II interface module. Make sure the serial cable is securely attached from the OBD-II interface module into your PC's 9-pin serial port. If your PC does not have a serial port, you will need to attach a USB-to-Serial adapter (sold separately) between the end of the serial cable and your PC's USB port.

4. **Is the OBD-II interface module receiving power from the vehicle as indicated by the LEDs?**

   Yes: Continue to the next step.
   No: Make sure the OBD-II cable is securely attached from the vehicle's 16-pin diagnostic connector into the OBD-II interface module. Also make sure you have the vehicle's ignition turned to the ON position, or go ahead and start the engine.

5. **Have you edited ProScan's communication settings to work properly with your hardware configuration?**

   Yes: Continue to the next step.
   No: See the "Communication Settings" section of this manual.

6. **Can you see the "Connect" button on ProScan's Vehicle Connection Manager?**

   Yes: Continue to the next step.
   No: Right-click on your desktop and click the "Properties" menu item. This will open the Display Properties dialog. Click the "Settings" tab and check your screen resolution setting. For best results, we recommend running a screen resolution of at least 800x600. Now click the "Advanced" button in the lower right corner of the same dialog. This will open another dialog. Make sure your DPI setting is set to "Normal size (96 DPI)". If it was set to something else, you will need to restart your computer for the display changes to take effect.

7. **Can you establish a connection with the vehicle by clicking the "Connect" button on ProScan's Vehicle Connection Manager?**

   Yes: Congratulations, you can begin using ProScan on your vehicle!
   No: Continue to the next step.

8. **Are you receiving an error stating that the serial port could not be opened?**

   Yes: Make sure that no other application is currently using the serial port. If you have previously used any other serial device, there may be another application using the serial port. Exit any such applications or command them to quit using the serial port.

   If you are using a USB-to-Serial adapter, make sure that you have installed the drivers according to the manufacturer's instructions. Also make sure that the serial port being emulated by the adapter is the one selected under ProScan's Communication Settings.
   No: Continue to the next step.

9. **Are you receiving an error stating that the OBD-II interface module could not be detected?**

    Yes: Make sure that you have selected the correct serial port under ProScan's Communication Settings dialog.

             Make sure that the interface is receiving power as indicated by its LEDs.

             Make sure that the cables and interface are securely fastened between the vehicle and your PC.

             If you are using a USB-to-Serial adapter, make sure that you have installed the drivers according to the manufacturer's instructions. Also make sure that the serial port being emulated by the adapter is the one selected under ProScan's Communication Settings.

             If you are using an ELM327-based interface, make sure that the correct baud rate setting is selected under ProScan's Communication Settings. This is typically 9600 baud, but it could be 38400.

    No: Continue to the next step.

10. **Are you receiving an error stating that the OBD-II interface module could not be initialized?**

    Yes: Make sure that your OBD-II interface module is selected under the Hardware section of ProScan's Communication Settings dialog.

    No: Continue to the next step.

11. **Are you receiving an error stating that the OBD-II interface module was detected and initialized, but communication with the vehicle could not be established?**

    Yes: Make sure that your OBD-II interface module is selected under the Hardware section of ProScan's Communication Settings dialog.

             If you are using an ELM327-based interface, and the protocol is set to "Automatic" under ProScan's Communication Settings, then you may need to specify the protocol to use. The automatic protocol detection usually works, but it is not guaranteed.

             If you are using an ELM327-based interface, you can also try bypassing initialization. To do this, select "Bypass Initialization" under the ELM327 configuration section of ProScan's Communication Settings.

    No: Continue to the next step.

12. Did the preceding troubleshooting process help you pinpoint and correct the problem you have been experiencing?

Yes: Congratulations, you can begin using ProScan on your vehicle.

No: We're sorry that you are experiencing difficulties using ProScan on your vehicle. If you have access to another OBD-II vehicle, we recommend that you first try using ProScan on it. This could rule out the possibility of a problem with your OBD-II interface hardware.

One of our knowledgeable support representatives would be more than happy to assist you with this problem. Please see the "Contacting Technical Support" section of this manual for further assistance.

Contacting Technical Support

Before contacting technical support, please visit our online support site and browse our growing list of frequently asked questions and knowledgebase articles.

When contacting our technical support department, please provide a detailed description of the problem you are experiencing. You should also provide a copy of ProScan's Communication Log with your support inquiry. This will allow our technicians to view the requests sent by ProScan along with the actual responses returned by your vehicle. To learn how to view ProScan's Communication Log, see the "Communication Log" section of this manual.

Online Support Site: http://www.gore-research.com/support

Technical Support E-Mail: support@myscantool.com