



DATA ACQUISITION DEVICE OIS-7500 SET-UP & OPERATIONS MANUAL

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INTRODUCTION

ABOUT WORLDWIDE ENVIRONMENTAL PRODUCTS, INC

Founded in 1984, Worldwide Environmental Products, Inc. (WEP) is recognized as an industry innovator and has many patents pending for its technologically advanced equipment. WEP operations are based in Brea, California and are a premier designer and manufacturer of vehicle emissions and safety testing equipment here in the United States.

WEP designs, manufactures, and services a line of vehicle emissions, OBDII, and safety inspection test equipment. We are committed to pre and post program implementation for quality, on time delivery of hardware, software and total vehicle inspection program management system.

Worldwide Environmental Products, Inc. has office locations throughout North America. Our certified emissions and Safety inspection systems are used throughout the United States of America, Canada, Central America including but not limited to Mexico, Ghana, Japan, China, Korea, Singapore, Fiji and Taiwan.

WELCOME TO THE FAMILY

Congratulations on the purchase of your new Worldwide On-Board Inspection System, A BAR certified data acquisition device with our model OIS 7500 (OBD) On-Board Inspection system. Worldwide prides itself with supplying only the finest systems to our customers. Prior to leaving our manufacturing facility, every system goes through a rigorous quality control program, insuring that our customers are provided with a system tested and proven to be in paramount condition.

Providing our customers with a definitive quality of service and care is our primary goal. Our courteous and knowledgeable staff are trained to quickly and properly diagnose system problems. In the unlikely event a problem does occur, our service staff will respond to your call promptly to ensure that your system will be operational as soon as possible.

WARRANTY AND SERVICE INFORMATION

To discuss warranty questions and information please contact our Operations Office at 1-800-832-7664 between the hours of 6:00 am (PST) and 5:00 pm (PST), Monday through Friday.

To schedule repairs or inquire about the operation of our systems, please contact our Service Department at 1-877-832-7664. Our Service Representatives are available to answer any technical questions between the hours of 6:00 am (PST) and 5:00 pm (PST), Monday through Friday and from 7:00 am (PST) and 1:00 pm (PST) Saturday, where required.

Please refer to your Worldwide Environmental “Limited Warranty Statement”, “Consumable Cost Disclosure” and “Standard Terms and Conditions” for Program Service Agreement for specific information on warranty, service, repairs, and pricing. Should you have inquiries or concerns regarding the “Vehicle Inspection Program” operating in your state, please contact the appropriate state or local agency.

Vehicle Emissions and Our Environment

In cities across the globe, the personal automobile is the single greatest polluter, as emissions from millions of vehicles on the road add up to a planet-wide problem. Driving a private car is probably a typical citizen's most "polluting" daily activity.

THE COMBUSTION PROCESS

Gasoline and diesel fuels are mixtures of hydrocarbons, compounds that contain hydrogen and carbon atoms. Hydrocarbons are combusted by combining them with oxygen. Nitrogen and sulfur atoms are also present and during the high heat and pressure conditions present during the combustion process, are combined with oxygen to produce emissions of nitrogen and sulfur oxides. Automotive engines emit several types of pollutants including: hydrocarbons (HC), carbon-monoxide (CO), and oxides of nitrogen (NOX). These three pollutants are the main focus of most vehicle regulations because of their abundance and associated health risks. Please see 'attachment A' to review the Gas Reading Trouble Shooting chart.

The internal combustion engine operates on a mixture of Oxygen (O₂) and fuel, which contains Hydrocarbons, (HC). The fuel is mixed with the air the combustion chamber and ignited to create the combustion process. Unfortunately, the by-product of the combustion process contains varying concentrations of HC, CO, CO₂, O₂, NO_x, and H₂O vapor. An ideal engine with an ideal combustion process would only produce CO₂ and H₂O vapor. Because this is not the case, emission controls have been implemented in the effort to reduce the volume of the unwanted pollutants, HC, CO, and NO_x.

Early engines were simpler and had relatively little to no emission controls. Essentially, the emissions from the exhaust pipe came direct from the engine and were released untreated/unprocessed into the environment. Because of the combination of lack of emission controls and popularity, the vehicle became the leading source of emissions resulting in record levels of air pollution.

HYDROCARBONS (HC)

Hydrocarbon emissions result when fuel molecules in the engine do not combust. HC emissions are also caused by blow-by, where unburned air/fuel mixture escapes past the piston rings into the crankcase. Current engine designs restrict the amount of crankcase vapors that are able to escape to the atmosphere by recirculating these crankcase vapors (which consist of blow-by gases and oil vapor) back into the intake manifold, and then drawn into the combustion chamber to be combusted. Unlike CO emissions, HC emissions increase during both rich and very lean air/fuel conditions. When the air/fuel mixture is rich in fuel, the combustion may be incomplete, therefore allowing the presence of unburned HCs in the exhaust stream. When the air/fuel mixture is too lean, misfire occurs and HC emissions and oxygen levels increase, due to the lack of combustion. On many engines that use an exhaust oxygen sensor (O₂S), the increase of oxygen in the exhaust is sensed as a lean condition, and the air/fuel mixture is driven rich to compensate.

Hydrocarbons react in the presence of ultraviolet radiation from the sun, nitrogen oxides, ozone, and moisture to form photochemical smog. A number of hydrocarbons are also toxic, with the potential to cause cancer.

CARBON MONOXIDE (CO)

Carbon monoxide (CO) is a colorless, odorless, poisonous gas. A product of incomplete combustion of hydrocarbon-based fuels, carbon monoxide consists of one carbon atom and one oxygen atom linked together. In 1992, carbon monoxide levels exceeded the Federal air quality standard in 20 U.S. cities, home to more than 14 million people. CO in the exhaust stream is an indication of incomplete combustion. Although perfect combustion can never be achieved, high levels of CO are caused by an insufficient amount of O₂ in the combustion chamber.

OXIDES of NITROGEN (NO_x)

Under the high pressure and temperature conditions in an engine, nitrogen and oxygen atoms react to form various nitrogen oxides, collectively known as NO_x. NO_x, like hydrocarbons, are precursors to the formation of photochemical smog. NO_x emissions also contribute to acid rain and play a key role in the formation of ground

level ozone. Ground level ozone irritates the eyes, damages the lungs, and aggravates respiratory problems. It is our most widespread and intractable urban air pollution problem.

NOx emissions increase with leaner air/fuel ratios. Lean air/fuel ratios contain higher concentrations of oxygen, which helps increase combustion efficiency, but under the high temperature conditions that exist during the combustion process, the available oxygen combines with nitrogen to form NOx

NOx emissions also increase in proportion to ignition advance, due to higher cylinder pressures and temperatures that are created with combustion beginning sooner in the compression stroke.

NOx emissions can be significantly reduced by using EGR (exhaust gas recirculation). EGR directs exhaust gases from the exhaust manifold into the intake system, either through internal passages, or via external stainless steel piping. This addition of exhaust gases displaces oxygen, which reduces the needed amount of fuel. By reducing the fuel and oxygen available in the combustion chamber, less heat energy is released and overall combustion temperatures are reduced. The EGR process is controlled by either a vacuum-operated EGR valve, or as in some late-model vehicles, by an electrically-operated EGR valve.

To measure NOx emissions accurately requires a dynamometer and a 5-gas analyzer. In those states now implementing enhanced emission programs, the measurement of NOx will be added to the usual emission test measurements of CO and HC.

OXYGEN (O₂)

Oxygen in the exhaust stream is the result of oxygen not being used during the combustion process. Since the engine does not produce oxygen, the combustion process uses what oxygen there is in the air taken in during the intake stroke. Therefore, any oxygen emitted with the exhaust gases will have passed straight through the engine.

Any misfire will cause the O₂ content to rise sharply, since the air is not used in the combustion process. Residual oxygen in the exhaust, ahead of the catalytic converter, is sensed by the exhaust oxygen sensor, and the signal generated is used to adjust the air/fuel mixture back to the ideal ratio, depending on the current operating conditions of the engine.

CATALYTIC CONVERTER

Catalytic converters, the part of car exhaust systems designed to break down nitrogen gases are actually forming nitrous oxide - 300 times more potent than carbon dioxide as a greenhouse gas. Nitrous oxide makes up about 7.2 percent of the gases cited in global warming, the USA EPA said in a study published spring 1998. Vehicles fitted with catalytic converters produced nearly half of that nitrous oxide. Nitrous oxide also comes from nitrogen-based fertilizer and manure from farm animals. The catalytic converter is normally installed between the exhaust manifold and the first muffler. Some modern cars will incorporate a pre-catalyst into the exhaust manifold itself. It has a steel outer casing and an interior ceramic matrix. This matrix is coated (textured) with aluminum oxide to increase the surface area by several thousand times. The resultant surface area is in turn coated with a very small amount of platinum, and/or palladium, and rhodium metals that act as catalysts to promote chemical reactions that decrease the pollutants.

The rhodium breaks down NOx emissions to nitrogen and oxygen. The nitrogen passes out the tailpipe and the oxygen is used at the platinum/palladium catalyst sites, promoting the combustion of remaining HCs in the engine out exhaust. CO is also combined with the oxygen to create CO₂.

The working life of a catalytic converter is "greater than 50,000 miles." There is no quantifiable upper limit on how long a catalytic converter will function correctly under ideal combustion conditions. A catalytic converter does not wear out during the normal processes of converting NOx to N₂, O/O₂, and HCs/CO to H₂O and CO₂. However, converter life can be drastically shortened if poisoned by lead or other contaminants such as phosphorus (from engine oil that is not properly maintained), carbon (from a rich air/fuel mixture), and silicon (from contaminated fuel or the wrong RTV gasket sealants being used). Misfiring or over-rich mixtures can also lead to a shorter catalytic converter life, due to physical damage (internal substrate melting) as a result of very high temperatures from excess fuel being combusted at the catalyst sites.

GROUND-LEVEL OZONE

Ground-level ozone is part of the brownish haze present in the atmosphere in most urbanized areas. In fairly large concentrations, ground-level ozone may also contribute to regional haze issues where visibility may be reduced. All of the pollutants mentioned above have negative impacts on human health. Air pollution, in general, causes or complicates many health related diseases and disorders and in high concentrations can even kill. Generally, children, the elderly, and the sick are affected the most by air pollution. Even healthy adults who are exposed to the pollution for long periods of time can suffer from the unhealthy levels of air pollution.

CALIFORNIA SMOG CHECK

Please refer to BAR's web site at: http://www.smogcheck.ca.gov/03_BARPrograms/index.html

Smog Check Manual can be found at:

http://www.smogcheck.ca.gov/80_BARResources/02_SmogCheck/Industry/Smog_Check_Guide.html

OIS 7500 Features and Capabilities

The Worldwide Emissions Analyzer was designed for convenient all in-one-solution for use in the typical vehicle repair shop environment. Our sturdy cabinet is made of high quality heavy gauge steel to provide you with years of use and will withstand the abuse encountered in the normal shop setting.

Our Cabinet stands upright with the large video monitor located near the top of the cabinet to provide an eye-level view of the screens. The cabinet sits on four rubber caster wheels, two of which are locking, for easier movement around the shop. The rubberized wheels help provide shock absorption to protect the internal equipment from being jolted around uneven floor surfaces during movement therefore extending the life of the product.

All Worldwide model OIS-7500 platforms come complete with;

- BAR certified Data Acquisition Device (DAD)
- Steel Cabinet
- WEP Software
- 22" monitor
- Commercial built PC with Windows 8.1 or Newer
- Laser Printer
- Bar Code Scanner
- OBD Emulator/ Self-Test Port

WEP DAD Driver Installation and Third-Party Applications

DAD Files

The following Instructions will only be required if you have purchased the DAD standalone. Those who have purchased the EIS-7500 will not need to complete these next steps as they have been completed before shipping. To install the WEPDAD drivers, go to the WEPDAD installation files download URL provided below. Once accessed, extract the contents of the zip file to the target computer, preferably to the Windows desktop. Make note of where the file is extracted as you will need to run the extracted file in the following steps.

WEPDAD Installation Files Download URL:

http://www.wep-inc.com/downloads/wepdad/WEP_DAD_Setup_Files.zip

1. After extracting the contents of the downloaded .zip file to your computer, navigate to the location of the file. The name of the extracted file is “**Worldwide Environmental Products Setup Files.exe**”. Double-click the file and click on the “**Unzip**” button. This will create a “**WEP DAD**” folder on your C:\ drive, and a “**Worldwide Environmental Products Updates**” folder on your Windows desktop.
2. When the unzip process is complete, open the “**Worldwide Environmental Products Updates**” folder. Each included directory/shortcut is numbered in the order they should be installed. The contents are as follows:
 - 01 Required (Folder)
 - i. 01 Install WEP DAD Port Drivers - Required
 - ii. 02 Enable Wireless Auto Connect - Required
 - iii. 03 Install Adobe Reader 1014 – Required for Windows 7 (Windows 8 Optional)
 - iv. 04 WEP DAD Tray Application Download – Required
 - 02 Optional (Folder)
 - i. 01 Reinstall Legacy Windows Start Menu – Optional
 - ii. 02 Install AVG Free AntiVirus 2014 – Optional
 - iii. 03 BAR-OIS Training Links – Optional

“01 Required” File Installation:

01 Install WEP DAD Port Drivers - Required:

Inside this folder are links to the WEP DAD COM Port drivers. To install the COM Port drivers: You must first determine which System file type (64-bit or 32-bit) of Windows you are running. To find this information in either Windows 7 or Windows 8 (and 8.1):

- a) Click on the “Windows Explorer”
- b) Right click on “Computer” (this is located on the left margin)
- c) Left click on “Properties”
- d) Search on the right margin for “System type:” in the “System” category
- e) Make note of whether it says 32-bit or 64-bit. This will be needed to complete the WEP DAD Port Drivers installation below.
- f) From inside the “**01 Install WEP DAD Port Drivers...**” folder, double-click the installation file shortcut that applies to your particular Windows operating system. If you are running a 64bit version of Windows, run the 64bit driver installation file (“**Install WEP DAD Port Drivers 64bit System**”), if you are running a 32bit version of Windows, run the 32bit installation file.

02 Enable Wireless Auto Connect - Required:

Double-click this file to enable the wireless network auto-connect feature for Windows 8 computers.

03 Install Adobe Reader 1014 – Optional (Recommended):

Double-click and follow the prompts to install Adobe Acrobat Reader. This is used by Worldwide Environmental Products software to view and print the VIR after running a Quick Test. Windows 8 and newer has PDF native support (no additional software needed) but Worldwide Environmental Products recommends using Adobe Reader 2014.

04 WEP DAD Tray Application Download - Required:

Double-click this link to download and install the Worldwide Environmental Products system tray application (TrayApp). See “**Installing Worldwide Software.doc**” for additional information.

“02 Optional” File Installation:

01 Reinstall Legacy Windows Start Menu – Optional:

This application will replace the Windows START Menu/Button on the bottom left side of your taskbar on Windows 8 Operating Systems. It is not required. Install it if you prefer the Windows 7 style Start Menu.

02 Install AVG Free AntiVirus 2014 – Optional:

Click this link to install AVG Anti-Virus. If you already have an Anti-Virus program installed on your computer, do not install this program, as your computer is already protected.

03 BAR-OIS Training Links – Optional:

Clicking this link will access a folder which will provide several BAR-OIS training links. Each link will provide valuable information on how to use your new DAD with the California BAR-OIS software.

USB Files

Not Applicable – There are no USB File Drivers

Wireless Files

Not Applicable – There are no Wireless File Drivers

All Other Drivers

Not Applicable – There are no other Drivers

Installing the Tray Application

Worldwide Environmental Products TrayApp Features:

To access each of the available features of the TrayApp diagnostics tool, right-click on the TrayApp system tray icon. Several features will be listed:

- **“Quick Test”** – Allows the technician to perform a pre-test on a vehicle prior to performing an official inspection with the BAR-OIS software.
- **“Clear DTC’s”** – This feature will clear the vehicle’s Diagnostic Trouble Codes. **WARNING:** Since each of the readiness monitors will be reset, performing an inspection after clearing the trouble codes will cause the vehicle to FAIL the inspection.
- **“Self-Test”** – Performs a self-test to verify DAD functionality.
- **“Configuration”** – Allows the technician to select the correct COM Ports for the DAD and the Self-Tester.
- **“Start automatically when Windows Starts”** – When checked, this will launch the TrayApp automatically when Windows starts.
- **“Check for WEPDAD Firmware Updates”** (Currently Disabled)
- **“About WEPDAD TrayApp”** – Displays the latest TrayApp version, wepdad.dll version, DAD Serial #, and DAD Firmware version.
- **“Close”** – Close the application. (To exit the menu WITHOUT closing the application left-click anywhere on the Windows Desktop or into another open program or window.)

Worldwide Environmental TrayApp Installation:

The following Instructions will only be required if you have purchased the DAD standalone. Those who have purchased the EIS-7500 will not need to complete these next steps as they have been completed prior to shipping.

Fresh Installation (No Previous TrayApp on Computer):

1. Using Windows Explorer, navigate to the “C:\WEP DAD” folder, or to “04 WEP DAD Tray Application Download...” located inside the “Worldwide Environmental Products Updates” folder on your desktop (Previously downloaded. See “Driver Installation Instructions.docx”), or click on the following link to access the download/installation page;
<http://www.wep-inc.com/downloads/publish.htm>
2. Next, click on the [Install] button to download and install the latest TrayApp version.
3. After the software download is complete, an “Open File/Security Warning” message box will be displayed. Make sure that the “Always ask before opening this file” checkbox is **UNCHECKED**.
4. Select “Run” to continue.
5. When the “TrayApp” system tray icon (green or red dot) is displayed in the Windows taskbar, close your browser window.
6. Installation is now complete.

Updating a Previously Installed Version:

1. Close the TrayApp; if the “TrayApp” is installed and running, you’ll see the Green/Red circular icon located in the system tray, just to the left of the system clock. To exit the TrayApp, right-click on the icon and select “Close”.
2. Click on the desktop shortcut to re-launch the TrayApp. If there is no desktop icon, complete the follow steps:
 - a. Click “Start > Programs > Worldwide Environmental Products, Inc. > WEPDAD > WEP DAD Tray Application”
 - b. Upon re-launching from either the desktop shortcut, or from the Start button, the application will check the internet for a more current version. If an update is available, it will prompt you to download and install the application. If there are no updates available, the TrayApp icon will load into the system tray as usual.
 - c. If an error occurs while attempting to update the TrayApp stating that setup was not able to complete, you’ll need to roll back the TrayApp installation to the previous version. To roll back:
 - i. From the “START” menu, select “Control Panel”.
 - ii. Double-click “Programs and Features”.
 - iii. Find “WEP DAD Tray Application” near the bottom of the list, select it, and click “Uninstall/Change”.
 - iv. You’ll be give two options: “Restore the application to its previous state.” and “Remove the application from this computer.” If enabled, select “Restore the application to its previous state.” press “OK” and follow the prompts until complete.
 - v. If the “Restore...” option is not available, you’ll need to select “Remove...”
 - vi. When the Tray Application has been successfully rolled back or removed, you’ll now be able to return to the download page as described above in step #1 under “Fresh Installation...” to download and install the Tray Application.

Instructions for Connecting DAD to OIS Computer and OIS Software

The complete system, EIS-7500, comes pre-configured for wired internet and the DAD is preconfigured for wireless installation. Please use the following steps if you have either purchased the DAD standalone or if you wish to configure the EIS-7500 in a different configuration.

Connecting the WEP DAD Unit in USB Mode (Wired)

1. Turn on the PC and login using the appropriate user account.
2. Install the correct WEP DAD COM Port device drivers.
See “**WEP DAD in USB Mode**” or “**WEP DAD in AP Mode**” for instructions on installing the drivers and verifying COM Port setup. After driver setup is complete, proceed with step #3 below. (These steps do not need to be performed unless you have purchased the DAD standalone.)
3. Turn on the DAD unit by plugging the DAD’s DLC connector into the Emulator’s DLC connector located on the side of the cabinet. If you have purchased a standalone DAD unit, plug the DAD’s DLC into the standalone Emulator’s DLC connector.
4. Plug one end of the provided USB cable into the USB port located on the side of the DAD Unit and the other end into an available USB port on the computer (typically will be one of the two ports on the back of the cabinet, near the power button).
5. To configure the BAR-OIS software, launch the software using the “**California BAR-OIS**” icon on the desktop.
6. From the “**File**” menu, select “**Self-Diagnostics**”.
7. Under the “**DAD Check**” heading, select “**Configure**”.
8. From the “**DAD Vendor**” dropdown list, select “**WEP**”.
9. Leave the “**DAD Port**” field blank and click on the “**Continue**” button to return to the Main Menu.
10. To verify communication with the DAD select “**File**” then select “**Self-Diagnostics**”.
11. Under the “**DAD Check**” heading click “**Get/Retry**”. If properly configured, the DAD Vendor, Firmware Version, DLL Version, and Serial number will be displayed.
12. Click “**Return to BAR-OIS**” to return to the Main Menu.

Connecting the WEP DAD Unit in Wireless AP (Access Point) Mode

This mode of connection between the DAD and the computer is configured to have the DAD use the wireless network adapter (Wi-Fi between the DAD and computer) with the computer using a wired (Ethernet) connection to the internet. The default configuration for Worldwide’s EIS-7500 is Wireless AP Mode (wired internet and wireless DAD connection).

The WEP DAD in AP mode cannot be used on a computer with a wireless internet connection unless the computer has two wireless network adapters.

Most importantly, the wireless network created by the WEP DAD should be the only network configured to automatically connect to the computer being used for testing. If there is more than one network setup to connect automatically in Windows, the DAD may not successfully connect to the computer via Wi-Fi.

Wireless DAD Setup procedures:

1. Turn on the PC and login using the appropriate user account.
2. Install the correct WEP DAD COM Port device drivers.
See “**WEP DAD in USB Mode**” or “**WEP DAD in AP Mode**” for instructions on installing the drivers and verifying COM Port setup. After driver setup is complete, proceed with step #3 below.

3. Connect your internet provider's installed RJ45 Ethernet cable to the RJ45 Ethernet port on the PC. This port can be accessed from the front of the cabinet on the right side of the pc. This port is at a 45 degree angle between the pc and the vertical wall of the cabinet.
4. Turn on the DAD unit by plugging the DAD's DLC connector into the Emulator's DLC connector located on the side of the cabinet. If you have purchased a standalone DAD unit, plug the DAD's DLC into the standalone Emulator's DLC connector.
5. If your DAD's wireless network connection has been properly preconfigured to automatically connect to the wireless DAD, the computer will automatically connect to the DAD's wireless adapter as shown in the screenshot below, please note that the DAD device will say it's a "Limited" connection (this is normal).



Windows 8 Screenshot

6. Click on the "Network" icon in the system tray to verify that the DAD has been wirelessly connected. If the DAD does not connect automatically, click on your DAD device serial number listed under the Wi-Fi connections, place a checkmark in the "Connect Automatically" checkbox, and select "Connect". If prompted for a passphrase, enter "i9Ueo6K842DSm88" without the quotes.
7. Your DAD is now wirelessly connected.
8. To configure the BAR-OIS software, launch the software using the "California BAR-OIS" icon on the desktop.
9. From the "File" menu, select "Self-Diagnostics".
10. Under the "DAD Check" heading, select "Configure".
11. From the "DAD Vendor" dropdown list, select "WEP".
12. Leave the "DAD Port" field blank and click on the "Continue" button to return to the Main Menu.
13. To verify communication with the DAD, reselect "Self-Diagnostics" from the "File" menu.
14. Under the "DAD Check" heading click "Get/Retry". If properly configured, the DAD Vendor, Firmware Version, DLL Version, and Serial number will be displayed.
15. Click "Return to BAR-OIS" to return to the Main Menu.

Instructions for Connecting DAD to OIS Computer and OIS Software

Connecting the WEP DAD Unit in USB Mode (Wired)

1. Turn on the PC and login using the appropriate user account.
2. Install the correct WEP DAD COM Port device drivers.
See “**WEP DAD in USB Mode**” or “**WEP DAD in AP Mode**” for instructions on installing the drivers and verifying COM Port setup. After driver setup is complete, proceed with step #3 below.
3. Connect your internet provider’s installed RJ45 Ethernet cable to the RJ45 Ethernet port on the PC.
4. Turn on the DAD unit by plugging the DAD’s DLC connector into the Emulator’s DLC connector located on the side of the cabinet, or by pushing the RED power button located on the side of the DAD Unit. If you have purchased a standalone DAD unit, plug the DAD’s DLC into the standalone Emulator’s DLC connector.
5. Plug one end of the provided USB cable into the USB port located on the side of the DAD Unit, and the other end into an available USB port on the computer.
6. To configure the BAR-OIS software, launch the software using the “**California BAR-OIS**” icon on the desktop.
7. From the “**File**” menu, select “**Self-Diagnostics**”.
8. Under the “**DAD Check**” heading, select “**Configure**”.
9. From the “**DAD Vendor**” dropdown list, select “**WEP**”.
10. Leave the “**DAD Port**” field blank and click on the “**Continue**” button to return to the Main Menu.
11. To verify communication with the DAD, reselect “**Self-Diagnostics**” from the “**File**” menu.
12. Under the “**DAD Check**” heading click “**Get/Retry**”. If properly configured, the DAD Vendor, Firmware Version, DLL Version, and Serial number will be displayed.
13. Click “**Return to BAR-OIS**” to return to the Main Menu.

Connecting the WEP DAD Unit in Wireless AP (Access Point) Mode

The WEP DAD in AP mode cannot be used on a computer with a wireless connection unless the computer has two wireless network adapters (dual-homed.)

Most importantly, the wireless network created by the WEP DAD should be the only network configured to automatically connect to the computer being used for testing.

Wireless DAD Setup procedures:

1. Turn on the PC and login using the appropriate user account.
2. Install the correct WEP DAD COM Port device drivers.
See “**WEP DAD in USB Mode**” or “**WEP DAD in AP Mode**” for instructions on installing the drivers and verifying COM Port setup. After driver setup is complete, proceed with step #3 below.
3. Connect your internet provider’s installed RJ45 Ethernet cable to the RJ45 Ethernet port on the PC. This port can be accessed from the front of the cabinet on the right side of the pc. This port is at a 45 degree angle between the pc and the vertical wall of the cabinet.

- Turn on the DAD unit by plugging the DAD's DLC connector into the Emulator's DLC connector located on the side of the cabinet, or by pushing the RED power button located on the side of the DAD Unit. If you have purchased a standalone DAD unit, plug the DAD's DLC into the standalone Emulator's DLC connector.
- If your DAD's wireless network connection has been properly preconfigured to automatically connect to the wireless DAD, the computer will automatically connect to the DAD's wireless adapter as shown in the screenshot below please note that the DAD device will say it's a "Limited" connection (this is normal).



Windows 8 Screenshot

- Click on the "Network" icon in the system tray to verify that the DAD has been wirelessly connected. If the DAD does not connect automatically, click on your DAD device serial number listed under the Wi-Fi connections, place a checkmark in the "Connect Automatically" checkbox, and select "Connect". If prompted for a passphrase, enter "i9Ueo6K842DSm88" without the quotes.
- Your DAD is now wirelessly connected.
- To configure the BAR-OIS software, launch the software using the "California BAR-OIS" icon on the desktop.
- From the "File" menu, select "Self-Diagnostics".
- Under the "DAD Check" heading, select "Configure".
- From the "DAD Vendor" dropdown list, select "WEP".
- Leave the "DAD Port" field blank and click on the "Continue" button to return to the Main Menu.
- To verify communication with the DAD, reselect "Self-Diagnostics" from the "File" menu.
- Under the "DAD Check" heading click "Get/Retry". If properly configured, the DAD Vendor, Firmware Version, DLL Version, and Serial number will be displayed.
- Click "Return to BAR-OIS" to return to the Main Menu.

Instructions for Set-Up and Operation of a DAD on Auxiliary Power

Wired DAD

If the DAD is connected to the computer via USB and needs auxiliary power, follow the steps below:

- Unplug the DAD from the OBD Diagnostics port on the side of the chassis. The power light will turn off and the status light will remain red.
- Press the power button (red) on the left side of the DAD. This will power on the DAD and the "Power" LED will start to flash; there is a battery pack inside. Once the "Status" light stays solid red, the DAD has

re-established the connection with the PC and will be ready to be used on a vehicle. The DAD will stay ON for 15 minutes after going into “Auxiliary Power” mode.

3. Once the test on the vehicle is completed, plug in the DLC connector on the DAD into the self-diagnostic port on the side of the chassis. This will recharge the DAD battery pack.

Wireless DAD

If the DAD is connected to the computer wirelessly and needs auxiliary power, follow the steps below:

- 1) Unplug the DAD from the OBD Diagnostics Port on the side of the chassis. All the lights will go off on the DAD.
- 2) Press the power button (red) on the left side of the DAD. This will power on the DAD and the lights will start to flash. Once the “Status” light stays solid green, the DAD has re-established the connection with the PC and will be ready to be used on a vehicle. The DAD will stay ON for 15 minutes after going into auxiliary mode.
- 3) Once the test on the vehicle is completed, plug in the DLC connector on the DAD into the self-diagnostic port on the side of the chassis. This will recharge the DAD battery pack.

Using the Tray Application Software

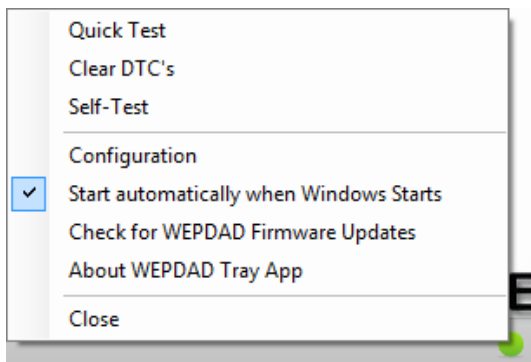
WEP provides the user with a Windows tray application to enhance the users’ experience of OBD testing. There is no interaction or correlation to the BAR’s official OIS software. This application aids the technician in determining if the DAD is connected and communicating with the PC.

The tray application notification icon is located on the lower right hand corner of the Windows task bar as seen below. The icon for the TrayApp is the green dot (See screenshot below).



The LED indicates the connection status of the DAD device to the PC. Green light indicates the DAD is connected and a red LED indicates the DAD is not connected to the PC (DAD may be powered off). The LED should be green when the DAD is connected to the Emulator or when the DAD is connected to a vehicle and powered.

Right click the mouse on the LED notification in the tray application and the following options will appear;



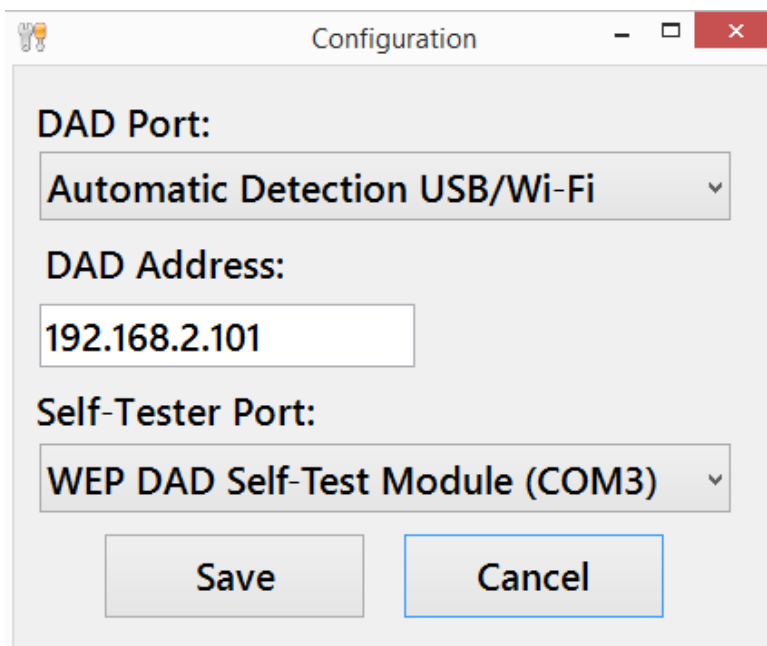
Verify that the “**Start automatically when Windows Starts**” is enabled (Checked). This will ensure the tray application will always automatically start every time you start the operating system.

“**Quick Test**” provides a quick scan of the vehicles OBD for readiness monitors, Mil light statues and fault codes. Quick test is not an official BAR OIS inspection. Printout of Quick Test result are available.

“**Clear DTC’s**” Will clear any DTC’s and reset the check engine light and Readiness Monitors. Do not attempt to perform a BAR OIS after completing this. The car will fail since you just cleared all the codes and reset the readiness monitors.

“**Self-Test**”, provides the user with a DAD self-test. The user will be prompted by the software to connect the OBD connector to the connector on the Emulator. The Self-Test diagnostic will check the DAD’s cable and OBD protocols then display to the user a pass or failed message at the completion of a Self-Test.

“**Configuration**” will let the user know what port the DAD and Emulator are connected to the PC.



The screenshot shows a 'Configuration' dialog box with the following settings:

- DAD Port:** Automatic Detection USB/Wi-Fi
- DAD Address:** 192.168.2.101
- Self-Tester Port:** WEP DAD Self-Test Module (COM3)

Buttons: Save, Cancel

“**Check for WEPDAD firmware updates**” will check for the latest BAR approved firmware. If there is a newer version available the user will be prompted to connect the USB cable to the DAD. Select continue and the DAD will install the latest approved firmware. This process may take several minutes to complete. (CAUTION) Do not disconnect the USB or power of the unit during the update. Doing so may corrupt the installation of the latest firmware and render the DAD inoperable.

Instructions for Performing a DAD Self-Test

Performing a DAD Self-Test with the WEP TrayApp

Wired DAD

- 1) Plug in the USB Cable on the back of the computer (located on the back of the cabinet)
- 2) Plug the other end of the USB cable into the DAD unit (the port is labeled USB)
- 3) To verify the connection, you will see a solid red light on the status LED indicator on the DAD unit, and the WEP Tray app will indicate that the DAD is now connected via USB
- 4) Plug in the DLC connector on the DAD into the Self-Diagnostic Port on the side of the chassis

- 5) With the computer mouse, right click on the Tray App icon. The application icon is a green dot located on the bottom right side of the screen (windows task bar)
- 6) When you right click on the application, a window will pop up with several options
- 7) Select the option Self-Test. A new window will pop up on the screen.
- 8) Click on "Perform a Self-Test". Self-Test will begin
- 9) Once the self-test is completed, the results will be displayed on the screen. Close the window with the red "x" at the top right of the window
- 10) Unplug the USB cable from the DAD device and the back of the machine
- 11) You have now completed a DAD self-test with the Wired DAD

Wireless DAD

- 1) Plug in the DLC connector on the DAD into the Self-Diagnostic Port on the right-side of the chassis
- 2) With the computer mouse, right click on the Tray App icon. The application icon is a green dot located on the bottom right side of the screen (windows task bar)
- 3) When you right click on the application, a window will pop up with several options
- 4) Select the "Self-Test" option
- 5) A new window will pop up on the screen, Click on "Perform a Self-Test". Self-Test begins.
- 6) Once the self-test is completed, the results will be displayed on the screen
- 7) When the test is complete, you may close the window with the red "x" at the top right of the window
- 8) You have now completed a DAD self-test with the Wireless DAD

Performing a DAD Self-Test with the BAR-OIS

Wired DAD

- 1) Run BAR-OIS Software
- 2) Select option #4 (DAD Diagnostics) from the main menu
- 3) Scan the technician barcode with the barcode scanner
- 4) Enter your password
- 5) Accept the Acknowledgement of the Terms and Conditions
- 6) Connect the DAD to the OBD self-diagnostics port on the side of the chassis
- 7) Press the "Continue" button on the screen to begin the test
- 8) Once the test is complete, the software will describe the results on the screen
- 9) Press Done

Wireless DAD

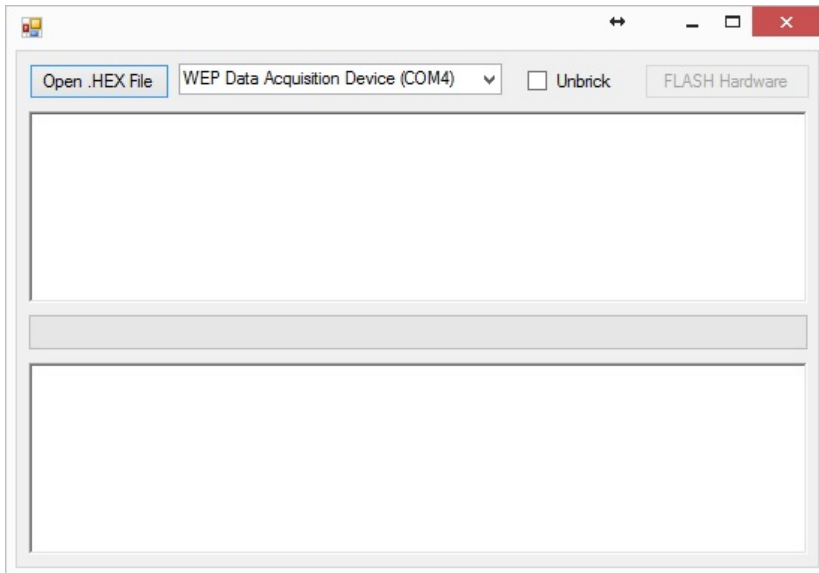
- 1) Run BAR-OIS Software
- 2) Select option #4 (DAD Diagnostics) from the Main Menu
- 3) Scan the technician barcode with the barcode scanner
- 4) Enter your password
- 5) Accept the Acknowledgement of the Terms and Conditions
- 6) Connect the DAD to the OBD self-diagnostic port on the right side of the chassis
 - a) Note some of the older chassis may have the OBD self-diagnostic port on the left side
- 7) Press the "Continue" button on the screen to begin the test
- 8) Once the test is complete, the software will describe the results on the screen
- 9) Press Done

Instructions for Updating / Downgrading DAD Firmware

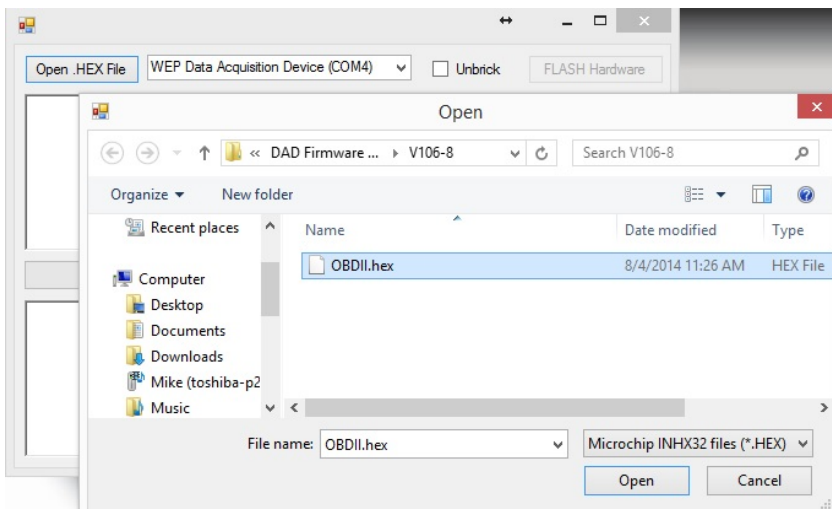
NOTE: Depending on the version of the firmware update application you have installed your screen and file selections may differ slightly from the screenshots below.

Make sure you do not remove the power or USB cables during the Firmware Update!

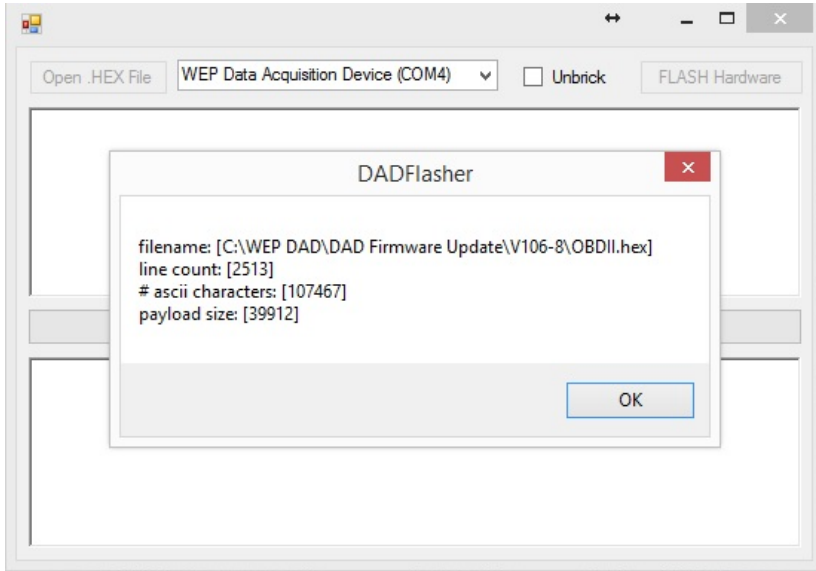
1. Plug one end of USB cable to DAD unit and the other end to PC.
2. Double click on the **“WEP DAD Flash Firmware”** short-cut icon on the desktop, or on the **“DAD and ECU Flash Firmware”** file located inside the **“C:\WEP DAD\DAD Firmware Update”** folder (file and location differs depending on system setup) and the form shown below will load.
3. Select the correct COM Port for your DAD from the dropdown list. In this example it is COM4.



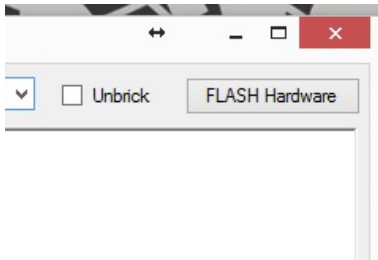
4. Click **“Open .HEX File”** and a dialog box will be displayed prompting for the location of the firmware file. Navigate to file location and select the latest update file. Older versions will be similar to **“OBDII-Ver1-05-8.hex”** and more current versions will be named as shown below. The file will be located inside a subfolder of the firmware updater application. The screenshot below shows **“OBDII.hex”**. When located, select the file and click **“Open”**.



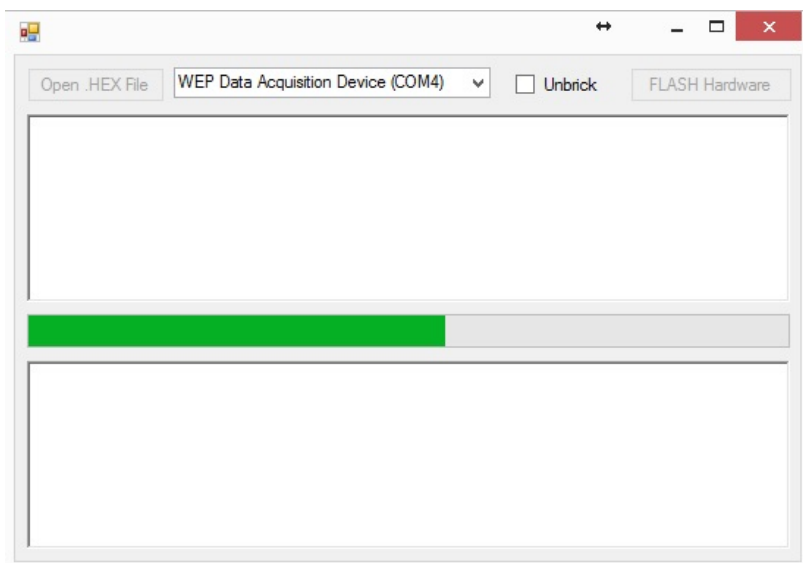
5. After loading the file, a pop up will be displayed as shown below. Click OK.



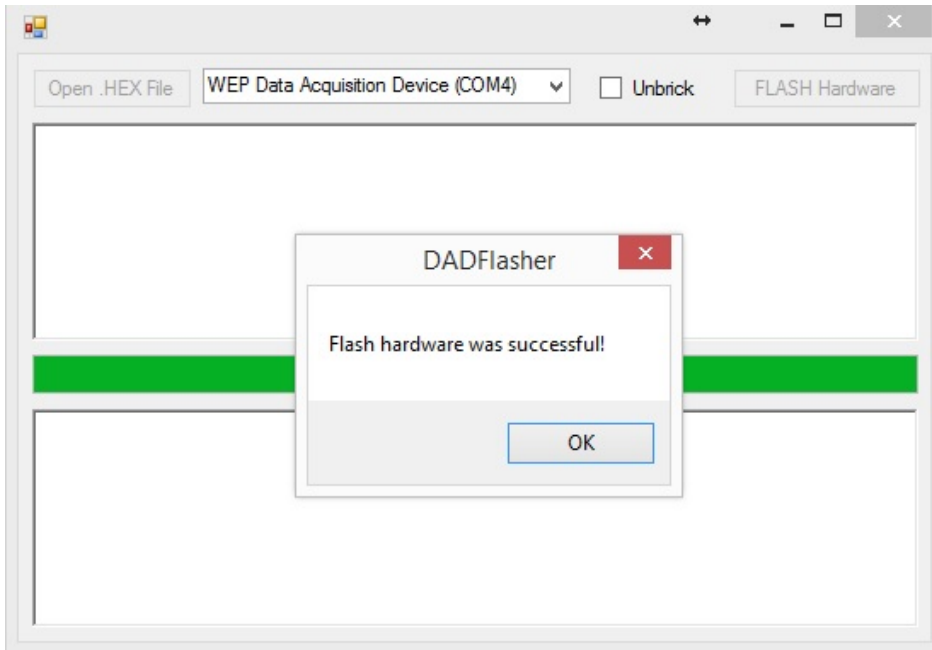
6. Press and hold the red power button on the side of the DAD unit to ensure the DAD is powered on. Release the button and click on the “**FLASH Hardware**” button to begin the update.







7. While updating, you’ll see a green status bar as shown below.



















8. When complete, the “Flash hardware was successful!” message will be displayed. Click “OK” and unplug the USB cable from the DAD unit.
















LED Status during Firmware Updates

Firmware Updates Using Internal Battery	POWER			STATUS		
	RED	GREEN	BLUE	RED	GREEN	BLUE
Send Update Firmware CMD Via USB	-	-	 Flashing/Off		 Flashing	-
Start Update Firmware Via USB	-	-	 Flashing/Off		 Flashing	-
Send Update Firmware CMD Via Wi-Fi	-	-	 Flashing/Off	-	 Flashing	-

Firmware Updates Connected to Emulator or Vehicle DLC W/Power	POWER			STATUS		
	RED	GREEN	BLUE	RED	GREEN	BLUE
Send Update Firmware CMD Via USB		-	 Flashing/Solid		-	
Start Update Firmware Via USB		-	 Flashing/Solid		-	
Send Update Firmware CMD Via Wi-Fi		-	 Flashing/Solid	-	 Flashing	
Start Update Firmware Via Wi-Fi		-	 Flashing/Solid	-	 Flashing	

LED Status during an Inspection

DLC Connected to 12V Vehicle W/DLC Power Description	POWER			STATUS		
	RED	GREEN	BLUE	RED	GREEN	BLUE
USB plugged-in and connected to computer		-	 Flashing		-	-
USB plugged-in and not connected to computer		-	 Flashing	 (1 min)	 Flashing	-
Wi-Fi Associated/Authenticated and has an IP Address		-	 Flashing	-		-
Wi-Fi Rx/Tx DATAs		-	 Flashing	-	 Flashing	-

If the power LED does not turn on when the DAD is connected to the vehicle, this means the vehicle DLC voltage is missing. Press the power button on the DAD to power ON the DAD for the inspection. Note: most vehicles that do not have power present at the DLC will also have several Readiness monitors not ready for inspection. In many cases this can be caused by a bad cigarette lighter fuse.

Wireless Declaration of Conformity

This Device (FCC Identifier T9J-RN171) complies with Part 15 of the FCC rules. Any changes or modifications NOT expressly approved will void the user's authority and or rights to operate the device.

Optional OBD Diagnostic Software

WEP has developed extensive OBD II diagnostic software. Please contact WEP for further information.