



Mac TaskPlus™ ET1205ANX



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Safety Precautions

This User's Manual describes the features of the Tool and provides step-by-step instructions for operating the Tool. Always refer to and follow safety messages and test procedures provided by the manufacturer of the vehicle and the Tool.

Read the User's Manual completely before operating the Tool. An undetected or uncorrected vehicle malfunction could cause a serious, even fatal, accident. Important Safety Information in the User's Manual is intended to protect the user, bystanders and the user's vehicle.

Signal Words Used

⚠ WARNING Indicates a possible hazardous situation which, if not avoided, could result in death or serious injury to operator or bystanders.

NOTICE Indicates a condition which may result in lost information.

⇒ Indicates a single-step procedure.

⚠ WARNING This Tool may not detect every malfunction. Do not take chances with brakes, steering, or other vital functions of your vehicle, as a serious accident could result.

Important Safety Messages

- Always wear ANSI approved goggles for eye protection.
- Before testing a vehicle, make sure the transmission is in PARK (automatic transmission) or Neutral (manual transmission) and the parking brake is set.
- Never lay tools on the vehicle battery.
- Battery acid can burn. If contacted, rinse with water or neutralize with a mild base such as baking soda. If you splash your eyes, flush with water and call a physician immediately.
- Never smoke or have open flames near vehicle. Vapors from gasoline and battery are explosive.
- Do not use the Tool if internal circuitry has been exposed to moisture. Internal shorts could cause a fire and damage the Vehicle or Tool.
- Always turn the ignition key OFF when connecting or disconnecting electrical components, unless otherwise instructed.

- Most vehicles are equipped with air bags. If you elect to work around air bag components or wiring, follow your vehicle service manual cautions. You could be seriously injured or killed by an unintended deployment.

⚠ WARNING The air bag can still open several minutes after ignition is turned off.

- Always follow vehicle manufacturer's warnings, cautions, and service procedures.

Using the CD

The included CD is NOT required to operate the Tool.

Install the CD application prior to connecting the Tool to the PC.

Some of the items included on the CD are:

- Manuals included with Tool
- Tool update software
- Print capture
- A link to Adobe Acrobat Reader Installer

To be able to use the included CD the PC must meet the following minimum requirements:

- Microsoft Windows, XP, Vista, and 7
 - CD ROM Drive
 - Adobe Acrobat Reader
 - Screen resolution of 800 x 600
- ⇒ If screen resolution is 800 x 600, in Display Properties, Settings Tab, set Font Size to Small Fonts.
- ✓ Use Scanning Suite to determine if any updates are available for your tool by clicking Check for Update button.
 - ✓ Check for updates to Use Scanning Suite by clicking on the Check For Scanning Suite Update button. This should be done prior to checking for Tool Updates.
 - ✓ You can also configure the Scanning Suite Frequency (SS Frequency) to automatically check every xx minutes. The default frequency is 7 days

Installing the Scanning Suite

1. Close all programs on the computer.
2. Place the CD in the CD drive. If the CD does not start automatically:
 - a. Select the Start button.
 - b. Select Run.
 - c. Enter "X:\Setup.exe" in dialogue box on computer. ("X" is the CD-ROM drive letter on the computer.)
 - d. Select Okay.



3. Follow screen prompts on the computer to install the applications.

About the Tool

The Tool allows you to retrieve and erase/reset diagnostic data from the vehicle control module. The diagnostic data can be used to help determine the cause of a vehicle malfunction.

Use the Tool to perform the following functions:

Codes/Data	Erase/Reset	Retrieve
Confirmed Codes	Erase	●
Pending Codes	Erase	●
Permanent Codes	--	●
View Data	--	●
MIL Status	--	●
I/M Monitors	Reset	●
Freeze Data	Erase	●
Vehicle Information	--	●
State OBD Check	Erase	●
Drive Cycle Monitor	Reset	●
O2 Monitor Test	Erase	●

Diagnostic Monitor Test	Erase	●
On-Board Systems	--	●

General Scan Tool Information

User Interface

The Tool is designed for easy use. All menus and lists operate the same way.



▼ **DOWN** ▲ **UP** arrow keys allow movement through lists and menus.

◀ **LEFT** or ▶ **RIGHT** arrow keys move between answers and Recorded Data Frames. They will also page up and page down for faster movement through lists and menus.

↵ **ENTER** key selects item.

← **BACK** key returns to previous screen.

⏻ **ON/OFF** key turns scan tool on or off when powered by batteries.

Display Icons

↓ Shows additional information is available by scrolling down.

↑ Shows additional information is available by scrolling up.

⋮ Shows if the internal batteries need replacing or are not installed.


√ Shows selected items in a data list, or data is available for items on the Review Data and Print Data Menu.

gR Shows graphical viewing of data items is available in View Data and Record Data.

Using Your Scan Tool

Installing Internal Batteries

The Tool requires 4-AAA alkaline batteries when operating Tool without vehicle power, otherwise tool is powered by vehicle battery.

When internal batteries need replacing, the low-battery icon () displays.



1. Place display face down on a non-abrasive surface.
2. Remove battery cover by turning screw counterclockwise and sliding cover off.
3. Remove batteries and properly discard.
4. Install 4 new AAA alkaline batteries.
5. Reinstall battery cover by sliding on and turning screw clockwise.

NOTICE Do not overtighten screw.


Powering the Tool

Internal Battery

Battery power is not required to use tool.

The ON/OFF  key on the Tool turns tool on and off. Press and hold the ON/OFF  key for at least 1 second to turn on the Tool. The Tool will automatically turn OFF after a user-selectable period of inactivity when powered from the internal batteries. When powered from the internal batteries, the Tool turns off the backlighting for the display if no key presses are made during a 1-minute period. If a key is pressed prior to the Tool powering off, the backlighting for the display will turn back on.

The Tool must be attached to the vehicle to perform diagnostic functions. The Tool disables the diagnostic functions when powered from the internal batteries. Each time the Tool is powered up, voltage of the internal battery is checked.

If voltage is low, the Low Battery Symbol () displays on screen. Replace the battery using instructions provided in Battery Replacement.

NOTICE

If the Tool will not be used for an extended period of time, remove the batteries to prevent battery leakage from damaging the battery compartment.

Vehicle Power

When the Tool is connected to the vehicle DLC, the Tool is powered by the vehicle and will automatically turn on once connected.

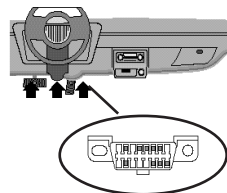
USB Power

When the Tool is connected to a Personal Computer (PC) via the USB cable, the Tool will automatically power up.

Connect the Tool

To connect the Tool to the vehicle:

1. Locate the OBD II connector under the steering column.
If the connector is not there, a label should be there indicating the whereabouts of the connector. For more information on OBD II connectors, go to <http://www.obdclearinghouse.com/oemdb>.
2. If necessary, remove the cover from the vehicle connector.
3. Turn the ignition switch to the ON position. Do not start the engine.
4. Plug the OBD II connector attached to the Tool into the vehicle connector.

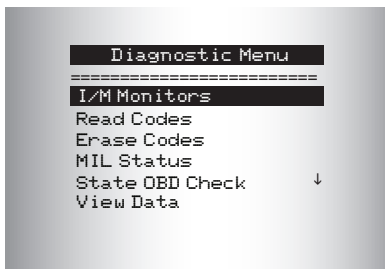


The Tool automatically reads codes and I/M monitors and displays the data. When done viewing data, press **← BACK** key to return to Diagnostic Menu.

Diagnostic Menu User Interface

To select functions:

1. From the **Diagnostic Menu**, press the **▲UP** or **▼DOWN** arrow key until the desired function is highlighted, then press the **↵ENTER** key to



- retrieve and display the results.
2. When complete, press **← BACK** to return to the **Diagnostic Menu** selection screen.

Read Codes

When you view codes, the Tool displays Confirmed, Pending, and Permanent Codes. Confirmed Trouble Codes are reported when a component, sensor, or other part of the vehicle is indicating a malfunction is present. The malfunction must be present for a sufficient amount of time before the Tool will display a Confirmed Trouble Code. Confirmed codes are indicated by the CONFIRMED icon.

Pending Codes are only reported if a problem occurs during the current or last completed drive cycle. Pending Codes do not necessarily indicate a faulty component or system. Pending Codes convert to Confirmed Trouble Codes when an emissions problem persists long enough to be considered a real problem, not an anomaly. Pending Codes are indicated by a PENDING icon.

Permanent Codes are a special type of confirmed code. Permanent Codes began being reported by vehicles beginning around 2010, so they are not supported by every vehicle. While Confirmed Codes can be erased by the tool, Permanent Codes cannot. Permanent Codes are erased by the vehicle when the vehicle has determined the fault is no longer present. Permanent Codes are indicated by a PERMANENT icon.

Vehicle Selection

AutoID™ uses the VIN to determine the type of vehicle the tool is connected to. Vehicle manufacturers began programming the VIN into the vehicle controller in 2000, but it was not an OBD II mandate until 2005. Vehicles between 2000 and 2004 may or may not support AutoID™, but vehicles after 2005 should support AutoID™. If the tool is on a vehicle with a model year (MY) newer than the tool has coverage for, it will be AutoID™ as MY OBD II/EODB, or 2012 OBD II/EODB.

Select **AutoID™**, **Manual**, or **Prev** from the **Vehicle Diagnostics** menu with the up or down arrow keys.

- If the vehicle is a year 2000 or newer, select AutoID™.
- If the vehicle is 1999 or older, or if the vehicle is 2000 to 2004 but does not support AutoID™, select Manual.
- If the previously tested vehicle listed after Prev: is desired, select Prev:. If this is the first time the Tool has been used, the

space after Prev: will be blank.

- Follow screen prompts to enter or provide vehicle information.
- ✓ Allows mixing and matching of vehicle data.
- ✓ The OBD II/EOBD selection is provided for vehicles that are not listed. It is a good idea to always select your specific vehicle when listed to get the most benefit from your tool.
- ✓ If you have previously selected a vehicle it will appear as a menu selection after Asian vehicles.
- ✓ If you wish to select a vehicle other than the previous vehicle, then choose between OBD II/EOBD, Domestic Vehicles, European Vehicles, or Asian Vehicles and continue making selections until the vehicle selection is complete.

Erase Codes

The **Erase Codes** function performs the following:

- Erases codes (both Confirmed Trouble Codes and Pending codes)
- May erase **Freeze Data, O2 Monitor Test, and Diagnostic Monitor Test** results depending on the vehicle.
- Sets **I/M Monitors** to *not ready*.

NOTICE Perform **Erase Codes** function only after systems have been checked completely and DTCs have been written down.

To erase codes from the vehicle computer:

1. Set the ignition to Key On and Engine Off (KOEO). Do NOT start the vehicle. The engine should not be running.
2. Select **Erase Codes** from **Diagnostic Menu** and press **↵ ENTER**.
3. When the confirmation message appears on the display, choose one of the following options.
 - To proceed with the operation: Press **↵ ENTER** for YES.
 - To cancel the operation and return to the **Diagnostic Menu**: Press **←BACK** for NO.

The Tool will automatically perform the **Read Codes** function after erasing codes. The Tool will then indicate the number of codes remaining. If after erasing codes a DTC returns, the problem has not

been fixed or other faults are present.

NOTICE Permanent DTCs can not be erased with the **Erase Codes** function.

MIL Status

NOTICE **MIL** (Malfunction Indicator Lamp) **Status** indicates if the vehicle computer is telling the MIL to illuminate when the engine is running. Since this tool only supports powertrain systems, the MIL is also the Check Engine Light.

- **MIL ON** indicates that the **MIL** should be ON.
- **MIL OFF** indicates that the **MIL** should be OFF.

I/M Monitors (Emissions)

Inspection / Maintenance monitors provide a snapshot of the emission system operations by indicating that the **I/M Monitors** are *Ready* or *Not Ready*. For an **I/M Monitor** to be *Ready*, the vehicle must have completed a drive cycle (been driven long enough under proper conditions to have completed a drive cycle). A monitor must be listed as *Ready* to pass an emissions test. If an **I/M Monitor** is *Not Ready*, it is because a drive cycle has not completed.

The Tool will indicate Ready (ok), Not Ready (inc), or Not Applicable (n/a) for each **I/M Monitor**. The Tool supports the following **I/M Monitors**:

Monitors	Expanded Name
Misfire Monitor	Misfire Monitor
Fuel System Mon	Fuel System Monitor
Comp Component	Comprehensive Components Monitor
Catalyst Mon	Catalyst Monitor
Htd Catalyst	Heated Catalyst Monitor
Evap System Mon	Evaporative System Monitor
Sec Air System	Secondary Air System Monitor
A/C Refrig Mon	Air Conditioning Refrigerant Monitor
Oxygen Sens Mon	Oxygen Sensor Monitor
Oxygen Sens Htr	Oxygen Sensor Heater Monitor
EGR/VVT Sys Mon	Exhaust Gas Recirculation or Variable Valve Timing
NMHC Cat Mon	Non-Methane Hydrocarbon Catalyst
NOx Treat Mon	Nitrogen Oxide Treatment

Monitors	Expanded Name
Boost Press Mon	Boost Pressure
Exhst Gas Sensr	Exhaust Gas Sensor
PM Filter Mon	Particulate Matter Filter

This is a complete list of **I/M Monitors** supported by the Tool. The number of monitors read by the Tool from your vehicle may vary. A diesel vehicle, for example, does not have an oxygen sensor monitor. As a result, there is no oxygen sensor monitor status for a diesel vehicle.

Two types of **I/M Monitors** tests are:

- Since DTCs Cleared** - shows status of the monitors since the DTCs were last erased.
- This Drive Cycle** - shows status of monitors since the start of the current drive cycle. Refer to the vehicle service manual for more detailed information on emission-related monitors and their status.

Some vehicles **do not** support **This Drive Cycle**. If vehicle supports both types of monitors select **Since DTCs Cleared** or **This Drive Cycle** as desired.

Drive Cycle Monitor

The **Drive Cycle Monitor** function is very similar to the **I/M Monitors** though the **Drive Cycle Monitor** is used to view **REAL TIME** operations of the emissions system on OBD II vehicles.

- Drive Cycle Monitor** continuously updates as the vehicle reports operations of the emission system.
- Refer to the vehicle service manual for how to perform a drive cycle on your specific vehicle.
- Drive Cycle Monitor** will only show the monitors that are inc (incomplete). When all monitors are complete the Tool will display a message.

See **I/M Monitors** for more information.

View Freeze Data

View Freeze Data displays a snapshot of operating conditions at the time the DTC was created. See PID Definitions for more information.

Vehicle Information

The **Vehicle Information** function allows the Tool to request the vehicle's VIN number, calibration ID(s) which identifies the software version in the vehicle control module(s), calibration verification numbers (CVN(s)), and In-use Performance Tracking (IPT).

Vehicle Information function applies to model year 2000 and newer OBD II compliant vehicles.

NOTICE The **Vehicle Information** function is not supported by all vehicles. Also, not every vehicle supports every piece of information (for example, CVN, IPT, VIN).

System Setup

System Setup allows:

- Measurement units to be changed.
- Display contrast to be changed.
- Auto-Power off time to be changed.
- Print Header to be turned ON or OFF
- Long PID Names to be turned On or OFF.
- Tool information to be viewed.
- Display to be checked.
- Operation of the keypad to be checked.
- Memory of the tool to be checked.
- Tool to be updated.
- Language to be changed.

State OBD Check (Emissions)

The **State OBD Check** (Emissions) function is used to display a basic status of the vehicle OBD system.

The **State OBD Check** function has the following areas:

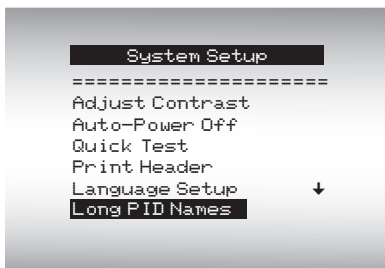
- MIL Status ON or OFF
- Number of Codes Found
- Number of Monitors OK
- Number of Monitors Inc
- Number of Monitors N/A
- ✓ **State OBD Check** should be done with the Key On Engine Running (KOER) due to showing MIL Status.
- ✓ The number of codes found are Confirmed DTCs and **not** Pending or Permanent DTCs.

- ✓ The number of monitors that are either OK, INC or NA are **only** since DTCs Cleared and **not** This Drive Cycle.
- ✓ Refer to **Read Codes** and **I/M Monitors** for more detailed information about the results.

Long PID Names

Long PID Names allows the user to enable/disable the tool scrolling the complete PID name on the bottom line of the display while viewing **Live Data** or viewing **Freeze Data**.

- From the **System Setup** menu, use the **▲UP** or **▼DOWN** arrow keys until **Long PID Names** is highlighted, then press **↵ENTER**.
- Select ON or OFF as desired using the **▲UP** or **▼DOWN** arrow keys, then press **↵ENTER** to save or **←BACK** to return to **System Setup**.



View Data

The **View Data** function allows real time viewing of the vehicle's computer module Parameter Identification Data (PID). As the computer monitors the vehicle, information is simultaneously transmitted to the Tool.

View Data allows the following items to be viewed on the Tool:

- Sensor data
- Operation of switches
- Operation of solenoids
- Operation of relays

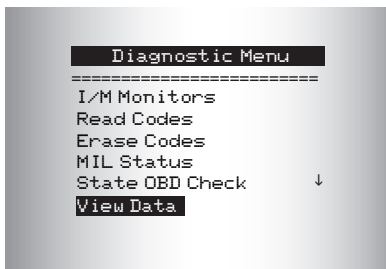
View Data can be shown as:

- Entire Data List
- Custom Data List

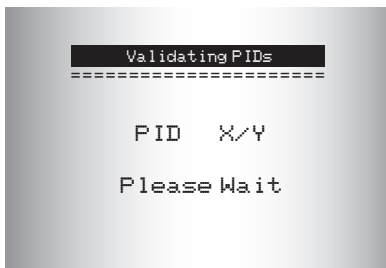
Apart from the **Read Codes**, **View Data** is the most useful diagnostic function for isolating the cause of a vehicle operation problem.

From the **Diagnostic Menu**:

1. Select **View Data**. Use the **▲ UP** or **▼ DOWN** arrow key until **View Data** is highlighted. Press **↵** **ENTER**.



2. Observe while Tool validates PID MAP.



PID MAP validation is the tool asking the vehicle which PIDs are supported. See PID Definitions for a complete list of PIDs supported by the tool.

Multiple PIDs may be sent if vehicle is equipped with more than one computer module (for example a powertrain control module [PCM] and a transmission control module [TCM]). The Tool identifies them by their identification names (ID) assigned by manufacturer (i.e. \$10 or \$1A). See PID Definitions for more information.

If one or more control modules stop responding, the Tool displays a message:

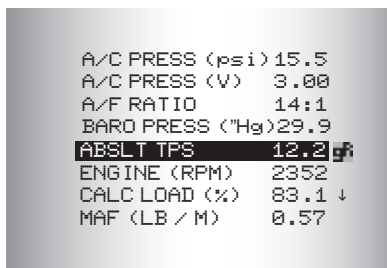
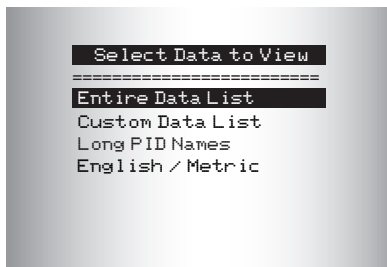
- If continuing , dashes will replace data in right hand column.
- If NO is selected, the Tool will attempt to re-establish communication with that module.

Entire Data List

Selecting **Entire Data List** from the **Select Data to View** menu will show all supported PID data for the vehicle being tested.

From the **Select Data to View** menu:

1. Select **Entire Data List**. Use the ▲ UP or ▼ DOWN arrow key until **Entire Data List** is highlighted. Press ↵ ENTER.
2. View PIDs on Tool. Use the ▲ UP or ▼ DOWN arrow key. See PID Definitions for more information.
3. If the "gR" icon displays while a PID is selected, press ↵ ENTER to view graph.
4. Press ← BACK to return to PID screen.
5. Press ← BACK again to **Select Data to View** menu.
6. Press ← BACK again to return to **Diagnostic Menu**.

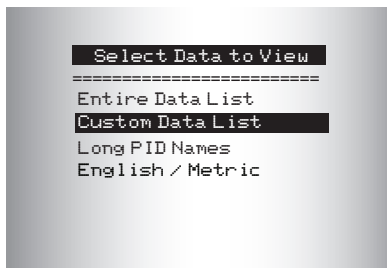


Custom Data List

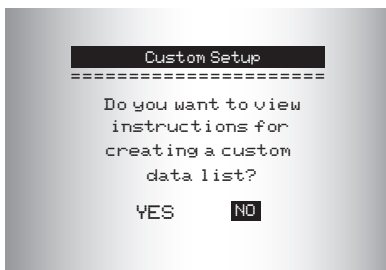
Selecting **Custom Data List** from the **Select Data to View** menu allows certain PIDs from the **Entire Data List** such as those PIDs that apply to a specific driveability symptom or system to be selected.

From the **Select Data to View** menu:

1. Select **Custom Data List**. Use the ▼ DOWN or ▼ DOWN arrow key until **Custom Data List** is highlighted. Press ↵ ENTER.



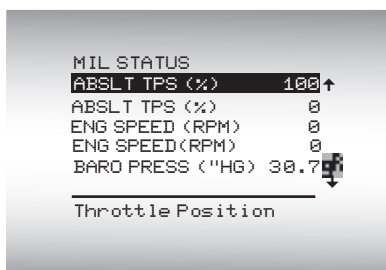
2. A **Custom Setup** will be shown. Select whether to view instructions or not. Use the ◀ **LEFT** or ▶ **RIGHT** arrow key as desired. Press ◀ **ENTER**.



3. Select **PIDs to View**. Use the ▲ **UP** or ▼ **DOWN** arrow key to move up and down the list. The ▶ **RIGHT** arrow selects or deselects data parameter. All selected data is marked with a (✓) symbol. The ◀ **LEFT** arrow deselects all marked data parameters. The ◀ **ENTER** key starts recording data or displaying selected data parameters.

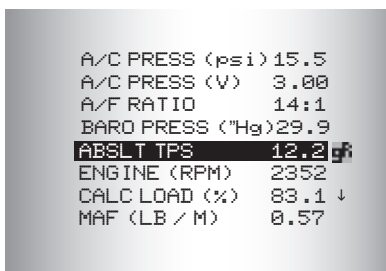


If **Long PID Names** is enabled, the complete PID name will scroll along the bottom line of the screen beneath a solid line.

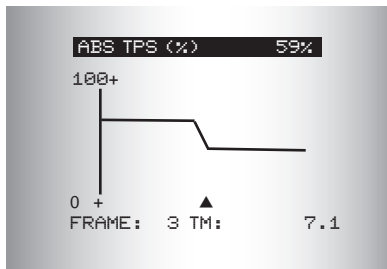


Selected PIDs are kept until you exit **View Data** and return to the **Diagnostic Menu**.

4. View PIDs on Tool. Use ▲ **UP** or ▼ **DOWN** arrow key to select PIDs. See PID Definitions for more information.



If the "gR" icon displays while a PID is selected, press **← ENTER** to view graph.



5. Press **← BACK** to return to PID screen.
6. Press **← BACK** again to **Select Data to View** menu.
7. Press **← BACK** again to return to **Diagnostic Menu**.

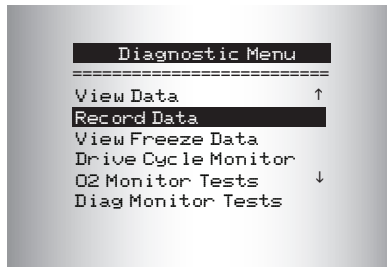
Record Data

- ❑ The **Record Data** function records PIDs while vehicle is parked or being driven
- ❑ The **Record Data** function is mainly used for diagnosing intermittent drivability problems that cannot be isolated by any other method.
- ❑ The recording time varies. A recording consists of frames of data prior to the trigger and several frames after the trigger.

⚠ WARNING Two people must be in the vehicle when driving, one to drive and the other to operate the Tool.

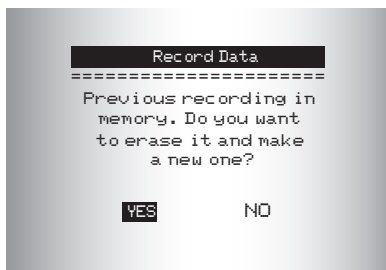
From the **Diagnostic Menu**:

1. Select **Record Data**. Use the **▲ UP** or **▼ DOWN** arrow key until **Record Data** is highlighted. Press **← ENTER**.

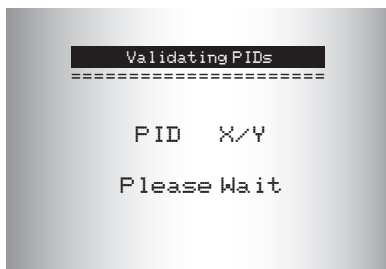


2. Follow instructions on the display.
- ❑ The Tool can maintain only one recording. Make sure to thoroughly review old recording before erasing.

- ❑ If a recording currently exists in memory, a message prompting to erase data is displayed.



- ❑ Tool validates list of global PIDs from vehicle.



3. Refer to **View Data** to setup **Custom List** or **View Entire List**.
4. Press **↵ ENTER** to start recording.

- ❑ Data continues to be saved until either the record memory is full or the operator presses **↵ ENTER**.
- ❑ Tool recording times vary. A recording consists of frames of data prior to trigger and several frames after trigger.

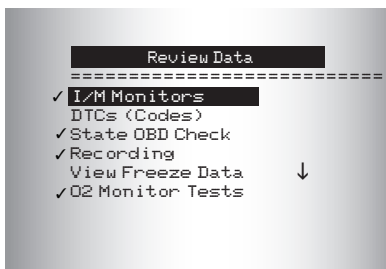


- After recording, the Tool will display a prompt to **Playback Data**.
- Select **NO** to return to **Diagnostic Menu**, or select **YES** to display recorded data.
- Refer to **Recording** for instructions on how to **Playback Data**.



Review Data

- The **Review Data** function allows the user to view the information from the previous vehicle tested.
- The Tool does not require power from the vehicle to use the **Review Data** function.
- The **Review Data** menu shows a checkmark next to the item(s) having data.
- If there isn't a checkmark next to the item, then this item can't be selected until the appropriate function is run from the **Diagnostic Menu**.
- Only 1 function, **Recording**, requires detailed instructions.

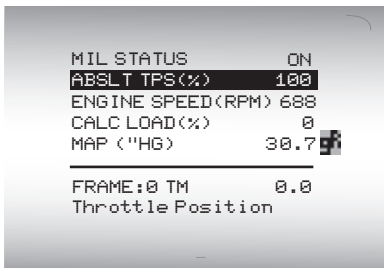


Recording

The **Recording** function is used to play back a recording. This function is very similar to **View Data**. Unlike **View Data**, **Recording** is a viewing of previously recorded PIDs.

The **Recording** has frame number and timestamp (in seconds).

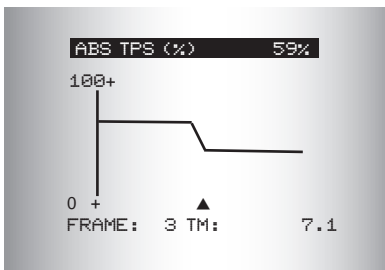
- ❑ Negative frames and timestamps indicate data recorded before trigger event.
- ❑ Positive frames and timestamps indicate data recorded after the trigger event.
- ❑ Use **▲ UP** or **▼ DOWN** arrow keys to view recorded PID data of each frame.
- ❑ Use **◀ LEFT** or **▶ RIGHT** arrow keys to scroll back and forth through frames.
- ❑ See PID Definitions for more information.
- ❑ If graphing is available for selected PID, the "gr" icon located on the side of the screen will show.



1. Press **◀ ENTER** to view graph.

2. Press **◀ ENTER** again to return to **Recording**.

- The triangle below the graph indicates the position of the frame in the graph.



3. Use the **◀ LEFT** or **▶ RIGHT** arrow keys to scroll back and forth through the graph.

Different vehicles communicate at different speeds and support a different number of PIDs. Therefore, the maximum number of frames that can be recorded varies.

Print Data

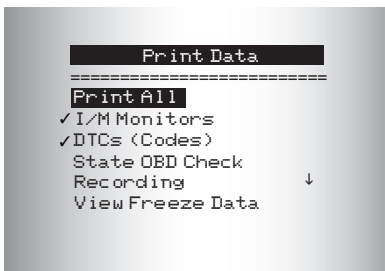
- ❑ The **Print Data** function allows the printing of diagnostic information stored in the Tool.
- ❑ Internal battery power can be used to print data.

- ❑ Use the **Print Header** function to turn On/Off printing vehicle information prior to printing data.
- ❑ Make sure you have previously installed the PC software following the instructions in **Installing Scanning Suite**.
- ❑ Launch Scanning Suite and then start printing application.
- ❑ Follow all instructions on the PC.

NOTICE On the **Print Data** menu, **Print All** prints all data collected by the Tool.

When printing a Recording, Start Frame and End Frame need to be defined.

The **Print Data** menu shows a check mark next to the items having data. If there isn't a check-mark next to the item, this item can't be selected until the appropriate function is run from the **Diagnostic Menu**.



Code Lookup

Code Lookup is used to look up definitions of DTCs stored in the Tool. The Tool does not require power from the vehicle to perform this function. In order for the Tool to show correct DTC definition, **Vehicle Selection** is required.

NOTICE Selecting a vehicle in **Code Lookup** does not change the currently selected vehicle chosen in **Read Codes**. The **Code Lookup** vehicle selection is only temporary. It allows you to look up a DTC definition for a vehicle other than the vehicle selected during **Read Codes**.

Entering codes:

- All characters must be entered.
- Only one character can be changed at a time.
- Use **◀ LEFT** or **▶ RIGHT** arrow keys to scroll to desired digit.
- Use **▲ UP** and **▼ DOWN** arrow keys to change selected digit.
- Press **↵ ENTER**.



Some vehicles may have an additional screen asking in which system to look for a code. If definition could not be found, the Tool displays No DTC Definition Found. See Service Manual.

O2 Monitor Test

OBD II regulations require applicable vehicles monitor and test oxygen (O₂) sensors to determine problems related to fuel and emissions. The **O₂ Monitor Test** allows retrieval of completed O₂ sensors monitor test results.

- The **O₂ Monitor Test is not an on-demand test**. O₂ sensors are **not** tested when selected via the menu. O₂ sensors are tested when engine operating conditions are within specified limits.
- If the vehicle communicates using a controller area network (CAN), O₂ Monitor tests are not supported by the vehicle. A message is displayed. See **Diagnostic Monitor Test** to see O₂ monitor data.

O₂ sensors are located before (upstream) and after (downstream) catalyst(s). Sensors are named (xy) for their position to both cylinder banks and catalysts.

- The O₂ sensor for cylinder bank 1 has prefix **1y** while O₂ sensor for cylinder bank 2 has prefix **2y**.
- The O₂ sensor upstream of catalyst (closest to engine) has suffix **x1** while O₂ sensor downstream of catalyst has suffix **x2**. If vehicle contains more catalysts, O₂ sensor downstream of second catalyst has suffix **x3** and O₂ sensor downstream

of next catalyst has suffix x4.

- For example, **O2S21** is upstream O2 sensor for cylinder bank 2.

Diagnostic Monitor Test

The **Diagnostic Monitor Test** function is useful after servicing or after erasing a vehicle's memory. Test results do not necessarily indicate a faulty component or system. Vehicle manufacturer is responsible for assigning test and component IDs.

Non-CAN vehicles **Diagnostic Monitor Test** receives test results for emission-related powertrain components and systems that are not continuously monitored.

On *Non-CAN vehicles* the Tool displays:

- Test data (test ID)
- Maximum value (MAX)
- Test measurements (MEAS)
- Minimum value (MIN)
- Status (STS)
- Measurements and specification values are hexadecimal numbers (i.e., \$1A, \$FE, \$11.)
- Module (MOD)

OR

CAN vehicles **Diagnostic Monitor Test** receives test results for emission-related powertrain components and systems that are and are not continuously monitored.

On *CAN vehicles* the Tool displays:

- Test performed. The test performed can be \$## if test is not defined. Refer to vehicle service manual for details.
- Measured values and units of measure (such as volts, amps, seconds).
- Status of monitor test data.
- Module ID where the monitor test data came from.

On-Board Systems

The **On-Board Systems** test allows the Tool to control operation of vehicle components, tests, or systems.

- Some manufacturers do not allow tools to control vehicle

systems. A vehicle not supporting an on-board system is identified by a message displayed when selected.

- ❑ Refer to the appropriate vehicle service manual for on-board systems instructions.
- ❑ After selecting **On-Board Systems**, a list of on-board systems and components available for testing are shown on the display.

Acronyms

The Acronyms function allows the user to view acronyms and abbreviations used by the Scan Tool.

- ✓ Acronyms function is accessed from the Main Menu

Component Locator

The Component Locator provides a vehicle specific location of components found on the selected vehicle.

- ❑ The Component Locator function can be selected from the Main or Diagnostic menus. Since Component Locator provides vehicle specific component location, a previous vehicle must be stored in the Scan Tool.

Modules Present

The Modules Present function identifies the module IDs and communication type for all Global OBD II modules in the vehicle.

- ✓ Selected from the Diagnostic Menu. Use up and down arrow keys to Modules Present and press Enter

The types of protocols (communication types) supported by the Scan Tool are:

- ❑ ISO 9141-2 (shown on the Scan Tool as “ISO”)
- ❑ SAE J1850 (shown on the Scan Tool as “VPWM or PWM”)
- ❑ ISO 15765-4 (shown on the Scan Tool as “CAN”)
- ❑ ISO 14230-4 (shown on the Scan Tool as “K2K” (meaning “Keyword 2000”))
- ✓ Since CAN vehicles use module IDs larger than 2 digits, The Scan Tool assigns a 2-digit module ID to be used in place of the actual CAN module ID. The module ID assigned for the CAN module ID is used in all functions of the Scan Tool.

Updating Your Tool

1. Refer to Install Scanning Suite.
2. Connect USB cable to Tool and PC.
3. Select **Program Mode** on Tool from the **System Setup** menu.
4. Start Scanning Suite. Click on Tool Update Icon and follow instructions.

Troubleshooting

- ❑ If a "LINK ERROR" message appears, cycle the ignition key to the OFF position for 10 seconds, then back ON, then press the **← ENTER** key. Make sure the ignition key is in the ON not the ACCESSORY position.
- ❑ If the **MIL Status** is ON and the MIL is not illuminated with the engine running, then a problem exists in the MIL circuit.

PID Definitions

NOTE: Even though there are over 300 PIDs, the Tool only displays the PIDs the vehicle supports.

Tool	Description
ABS FRP	Absolute Fuel Rail Pressure
ABS LOAD	Absolute Load Value
ABS TPS B, C	Throttle Position B, C
ABSLT TPS	Absolute Throttle Position
ACC POS D	Accelerator Pedal D, E, F
ACC POS REL	Relative Accelerator Pedal Position
AECD1_TIME1, TIME 2	Total Run Time with EI-AECD #1 Timer 1 Active, #2 Timer Active
AECD10_TIME1, TIME 2	Total Run Time with EI-AECD #10 Timer 1 Active, #2 Timer Active
AECD11_TIME1, TIME 2	Total Run Time with EI-AECD #11 Timer 1 active, #2 Timer Active
AECD12_TIME1, TIME 2	Total Run Time with EI-AECD #12 Timer 1 active, #2 Timer Active
AECD13_TIME1, TIME 2	Total Run Time with EI-AECD #13 Timer 1 active, #2 Timer Active
AECD14_TIME1, TIME 2	Total Run Time with EI-AECD #14 Timer 1 active, #2 Timer Active
AECD15_TIME1, TIME 2	Total Run Time with EI-AECD #15 Timer 1 active, #2 Timer Active
AECD16_TIME1, TIME 2	Total Run Time with EI-AECD #16 Timer 1 active, #2 Timer Active
AECD17_TIME1, TIME 2	Total Run Time with EI-AECD #17 Timer 1 active, #2 Timer Active

Tool	Description
AECD18_TIME1, TIME 2	Total Run Time with EI-AECD #18 Timer 1 active, #2 Timer Active
AECD19_TIME1, TIME 2	Total Run Time with EI-AECD #19 Timer 1 active, #2 Timer Active
AECD2_TIME1, TIME 2	Total Run Time with EI-AECD #2 Timer 1 Active, #2 Timer Active
AECD20_TIME1, TIME 2	Total Run Time with EI-AECD #20 Timer 1 active, #2 Timer Active
AECD3_TIME1, TIME 2	Total Run Time with EI-AECD #3 Timer 1 Active, #2 Timer Active
AECD4_TIME1, TIME 2	Total Run Time with EI-AECD #4 Timer 1 Active, #2 Timer Active
AECD5_TIME1, TIME 2	Total Run Time with EI-AECD #5 Timer 1 Active, #2 Timer Active
AECD6_TIME1, TIME 2	Total Run Time with EI-AECD #6 Timer 1 Active, #2 Timer Active
AECD7_TIME1, TIME 2	Total Run Time with EI-AECD #7 Timer 1 Active, #2 Timer Active
AECD8_TIME1, TIME 2	Total Run Time with EI-AECD #8 Timer 1 Active, #2 Timer Active
AECD9_TIME1, TIME 2	Total Run Time with EI-AECD #9 Timer 1 Active, #2 Timer Active
ALCOHOL	Alcohol Fuel Percent
BARO PRS	Barometric Pressure

Tool	Description
BAT_PWR	Hybrid Battery Pack Remaining Life
BP_A_ACT, B_ACT	Boost Pressure Sensor A, Sensor B
BP_A_CMD, B_CMD	Commanded Boost Pressure A, Pressure B
BP_A_STAT, B_STAT	Boost Pressure A Control Status, B Control Status
CACT 11, 12	Charge Air Cooler Temperature Bank 1 Sensor 1 supported, Sensor 2 supported
CACT 21,22	Charge Air Cooler Temperature Bank 2 Sensor 1 supported, Sensor 2 supported
CALC LOAD	Calculated Engine Load
CAT TEMP11, TEMP12	Catalytic Converter Temp Bank1, Temp Bank 3
CAT TEMP21, TEMP22	Catalytic Converter Temp Bank2, Temp Bank 4
CLR DIST	Distance since erase
CLR TIME	Minutes Run since Erase
CLR TRPS	Warmups Since Erase
CMD EQ RAT	Commanded Equivalence Ratio
COOLANT	Engine Coolant Temp
DPF_REG_AVGD	Average Distance Between DPF Regen
DPF_REG_AVGT	Average Time Between DPF Regen
DPF_REG_STAT	Diesel Particulate Filter (DPF) Regen Status

Tool	Description
DPF_REG_TYP	Diesel Particulate Filter (DPF) Regen Type
DPF_REGEN_PCT	Normalized Trigger for DPF Regen
DPF1_DP, DPF2_DP	Diesel Particulate Filter (DPF) Bank 1 Delta Pressure Bank 2 Delta Pressure
DPF1_INP, DPF2_INP	Diesel Particulate Filter (DPF) Bank 1 Inlet Pressure, Bank 2 Inlet Pressure
DPF1_INT, DPF2_INT	DPF Bank 1 Inlet Temperature Sensor, Bank 2 Inlet Temperature Sensor
DPF1_OUTP, DPF2_OUTP	Diesel Particulate Filter (DPF) Bank 1 Outlet Pressure, Bank 2 Outlet Pressure
DPF1_OUTT, DPF2_OUTT	DPF Bank 1 Outlet Temperature Sensor, Bank 2 Outlet Temperature Sensor
ECT 1, 2	Engine Coolant Temperature 1, Temperature 2
EGR_CMD	Comanded EGR
EGR_ERR	Exhaust Gas Recirculation Error
EGR_A_ACT, B_ACT	Actual EGR A Duty Cycle/Position, B Duty Cycle/ Position
EGR_A_CMD, B_CMD	Comanded EGR A Duty Cycle/Position, B Duty Cycle/Position
EGR_A_ERR, B_ERR	EGR A Error, B Error
EGRT 11, 21	Exhaust Gas Recirculation Temperature Bank 1 Sensor 1, Bank 2 Sensor 1
EGRT 12, 22	Exhaust Gas Recirculation Temperature Bank 1 Sensor 2, Bank 2 Sensor 2
EGT 11, 21	Exhaust Gas Temperature (EGT) Bank 1 Sensor 1, Bank 2 Sensor 1
EGT 12, 22	Exhaust Gas Temperature (EGT) Bank 1 Sensor 2, Bank 2 Sensor 2

Tool	Description
EGT 13, 23	Exhaust Gas Temperature (EGT) Bank 1 Sensor 3, Bank 2 Sensor 3
EGT 14, 24	Exhaust Gas Temperature (EGT) Bank 1 Sensor 4, Bank 2 Sensor 4
EMIS_SUP	Emission requirements to which vehicle is designed
ENG RUN	Time Since Engine Start
ENG SPEED	Engine RPM
EOT	Engine Oil Temperature
EP_1, 2	Exhaust Pressure Sensor Bank 1, Bank 2
EQ RATIO	Equivalence Ratio
EVAP PURGE	Commanded EVAP Purge
EVAP VP	EVAP Vapor Pressure
EVAP VPA	Absolute EVAP Vapor Pressure
FRP_A, B	Fuel Rail Pressure A, B
FRP_A_CMD, B_CMD	Commanded Fuel Rail Pressure A, B
FRT_A, B	Fuel Rail Temperature A, B
FUEL LEVEL	Fuel Level Input
FUEL PRES	Fuel Rail Pressure
FUEL SYS 1, 2	Fuel System 1 Loop Status, System 2 Loop Status

Tool	Description
FUEL TYPE	Fuel Type
FUEL_RATE	Engine Fuel Rate
FUEL_TIMING	Fueling Injection Timing
GPL_STAT	Glow Plug Lamp Status
IAF_A_CMD, B_CMD	Commanded Intake Air Flow A Control, B Control
IAF_A_REL, B_REL	Relative Intake Air Flow A Position, B Position
IAT	Intake Air Temp
IAT 11, 21	Intake Air Temperature Sensor Bank 1 Sensor 1, Bank 2 Sensor 1
IAT 12, 22	Intake Air Temperature Sensor Bank 1 Sensor 2, Bank 2 Sensor 2
IAT 13, 23	Intake Air Temperature Sensor Bank 1 Sensor 3, Bank 2 Sensor 3
ICP_A, B	Injection Control Pressure A, B
ICP_A_CMD, B_CMD	Commanded Injection Control Pressure A, B
IDLE_TIME	Total Idle Run Time
IGN ADV	Timing Advance
LAMBDA11, 21	O2 Sensor Lambda Bank 1 Sensor 1, Bank 2 Sensor 1
LAMBDA12, 22	O2 Sensor Lambda Bank 1 Sensor 2, Bank 2 Sensor 2
LT FTRM1	Long Term Fuel Trim 1 or 3

Tool	Description
LT FTRM2	Long Term Fuel Trim 2 or 4
LT SEC FT1, 2, 3, 4	Long Term Secondary O2 Sensor Fuel Trim 1, 2, 3, 4
MAF, A, B	Mass Air Flow, A, B
MAP, A, B	Manifold Absolute Pressure, A, B
MIL DIST	MIL_DIST
MIL STATUS	Malfunction Indicator Lamp
MIL TIME	Minutes Run by MIL activated
MST	Manifold Surface Temperature
N/D_STAT	Auto Trans Neutral Drive Status
N/G_STAT	Manual Trans Neutral Gear Status
NNTE_Stat	NOx NTE control area status
NOX 11, 21	NOx Sensor Concentration Bank 1 Sensor 1, Bank 2 Sensor 1
NOX 12,22	NOx Sensor Concentration Bank 1 Sensor 2, Bank 2 Sensor 2
NOX LEVEL HI, HI1, HI2, HI3, HI4	SCR inducement system actual state 10K history HI1 (0 - 10000 km), 10K history HI2 (10000 - 20000 km), 10K history HI3 (20000 - 30000 km), 10K history HI4 (30000 - 40000 km): NOx emission too high
NOX_ADS_DESUL	NOx Adsorber Desulfurization Status
NOX_ADS_REGEN	NOx Adsorber Regen Status

Tool	Description
NWI_TIME	Total Run Time by the Engien while NOx warning mode is activated
O2S	O2 Voltage or Current indicates Bank/Sensor
O2S11_PCT, O2S21_PCT	O2 Sensor Concentration Bank 1 Sensor 1, Bank 2 Sensor 1
O2S12_PCT, O2S22_PCT	O2 Sensor Concentration Bank 1 Sensor 2, Bank 2 Sensor 2
OBD2_STAT	OBD Status
OUT TEMP	Ambient Air Temp
PM 11, PM 21	PM Sensor Mass Concentration Bank 1 Sensor 1, Bank 2 Sensor 1
PNTE_Stat	PM NTE control area status
PTO STATUS	PTO Status
PTO_STAT	Power Take Off (PTO) Status
PTO_TIME	Total Run Time With PTO Active
REAG_DEMD	Average Demanded Reagent Consumption
REAG_LVL	Reagent Tank Level
REAG_RATE	Average Reagent Consumption
REL FRP	Relative Fuel Rail Pressure
REL TPS	Relative Throttle Position
RUN_TIME	Total Engine Run Time

Tool	Description
SCR REAG DEV, DEV1, DEV2, DEV3, DEV4	SCR inducement system actual state 10K history DEV1 (0 - 10000 km), 10K history DEV2 (10000 - 20000 km), 10K history DEV3 (20000 - 30000 km), 10K history DEV4 (30000 - 40000 km): deviation of reagent consumption
SCR REAG LOW, LOW1, LOW2, LOW3, LOW4	SCR inducement system actual state 10K history LOW1 (0 - 10000 km), 10K history LOW2 (10000 - 20000 km), 10K history LOW3 (20000 - 30000 km), 10K history LOW4 (30000 - 40000 km): reagent level too low
SCR REAG WRONG, WRONG1, WRONG2, WRONG3, WRONG4	SCR inducement system actual state 10K history WRONG1 (0 - 10000 km), 10K history WRONG2 (10000 - 20000 km), 10K history WRONG3 (20000 - 30000 km), 10K history WRONG4 (30000 - 40000 km): incorrect reagent
SCR SYS ACTIVE	SCR inducement system actual state: inducement system active
SCR_DIST_1D	Distance travelled in current 10K block (0 - 10000 km)
SCR_DIST_1N, 2N, 3N, 4N	Distance travelled while inducement system active in current 10K block 1N (0 - 10000 km), 20K block 2N (10 - 20000 km), 30K block 3N (20 - 30000 km), 40K block 4N (30 - 40000 km)
SECOND AIR	Secondary Air Status
ST FTRM	Fuel Trim Bank/Sensor
ST FTRM1, 3	Short Term Fuel Trim1 or 3
ST FTRM2, 4	Short Term Fuel Trim2 or 4
ST SEC FT1, 2, 3, 4	Short Term Secondary O2 Sensor Fuel Trim 1, 2, 3, 4
TAC_A_CMD, B_CMD	Commanded Throttle Actuator A Control, B Control

Tool	Description
TAC_A_REL, B_REL	Relative Throttle A Position, B Position
TCA_CINP, TCB_CINP	Turbocharger Compressor Inlet Pressure Sensor A, Pressure Sensor B
TCA_CINT, TCB_CINT	Turbocharger A Compressor Inlet Temperature, Turbocharger B
TCA_COUT, TCB_COUT	Turbocharger A Compressor Outlet Temperature, Turbocharger B
TCA_RPM, TCB_RPM	Turbocharger A RPM, B RPM
TCA_TCOUT, TCB_TCOUT	Turbocharger A Turbine Outlet Temperature, Turbocharger B
TCA_TINT, TCB_TINT	Turbocharger A Turbine Inlet Temperature, Turbocharger B
THROT CMD	Commanded Throttle Actuator Control
TP G	Absolute Throttle Position G
TQ_ACT	Actual Engine - Percent Torque
TQ_DD	Driver's Demand Engine - Percent Torque
TQ_MAX1, 2, 3, 4, 5	Engine Percent Torque At Point 1 (Idle), Point 2, 3, 4, 5
TQ_REF	Engine Reference Torque
TROUB CODE	Code causing the Freeze Frame
VEH SPEED	Vehicle Speed
VGT_A_ACT, B_ACT	Variable Geometry Turbo A Position, Turbo B
VGT_A_CMD, B_CMD	Commanded Variable Geometry Turbo A Position, Turbo B

Tool	Description
VGT_A_STAT, B_STAT	Variable Geometry Turbo A Control Status, Turbo B
VPWR	Control Module Voltage
WG_A_ACT, B_ACT	Wastegate A Position, B Position
WG_A_CMD, B_CMD	Commanded Wastegate A Control, B Control

Declaration of Conformity:



This product is declared to be in compliance with the European RoHS Directive 2002/95/EC which restricts the following substances in electrical and electronic equipment:

Substance	Maximum Concentration
Cadmium (Cd)	100 ppm
Hexavalent Chromium (CrVI)	1000 ppm
Lead (Pb)	1000 ppm
Mercury (Hg)	1000 ppm
Polybrominated Biphenyls (PBB)	1000 ppm
Polybrominated Diphenyl Ethers (PBDE)	1000 ppm



This product is declared to conform to the following standard under the EMC directive 89/336/EEC.

EN 61326-1:2006



Disposal Information

This product should be disposed of separately from household waste. When the product reaches its end of life, dispose of it according to local laws and regulations.



Matthew Koran

Matthew Koran
Hardware Development Manager
SPX Corporation
Service Solutions
Brook Park, Ohio, USA

April 27, 2011

Limited Warranty

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If you have any questions on the operation of the product, please call 1-800-MAC-TOOLS.

REPAIR SERVICE

- Please contact Technical Support for troubleshooting and service options prior to sending any unit in for repair.
- To send a unit in for repair, go to www.Repairtrack.spx.com and follow the online instructions. This website will also have the latest Service policies and service center locations. If you do not have internet access, please call 1-800-MAC-TOOLS.

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