PLX Logger Version 2.1 Users Guide

PLX Logger Version 2.1 Users Guide (V1.0) Aug 19, 2005

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1. PLX Logger Overview

1.1. System Requirements

Recommended System Requirements:

Windows 95 or higher operating system
Pentium 4/III/II Celeron 1GHz+
Athlon/Duron 1Ghz+
256MB Ram
USB Port

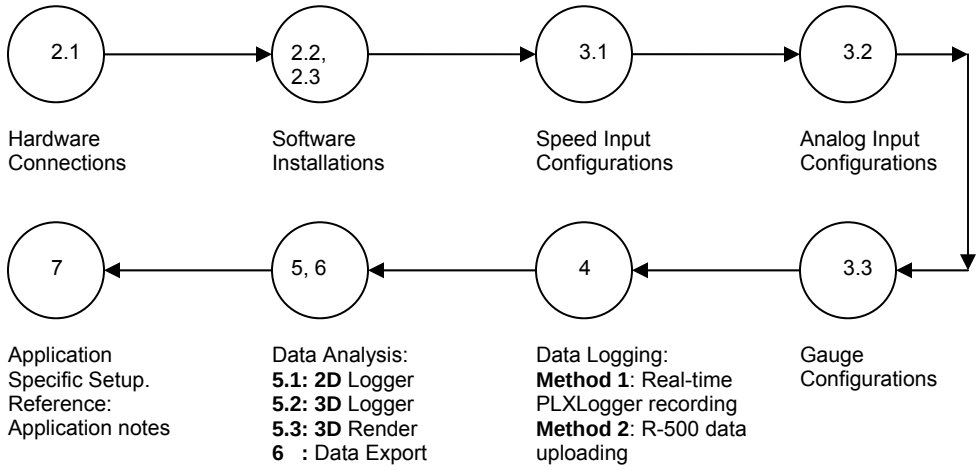
Minimum System Requirements:

Windows 95 or higher operating system
Pentium 4/III/II Celeron 500MHz+
Athlon/Duron 1Ghz+
128MB Ram
USB Port

1.2. Compatible Devices

- M-500 Wideband Controller
- R-500 Wideband Computer

1.3. Chart of Set-up Sequence with Relevant Chapters



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2. PLX Logger Setup PLX

2.1. Hardware connection

2.1.1.USB Port

USB Port: Proper device drivers must be installed for Windows to recognize the R-500 as a valid USB device. Insert the USB cable into the R-500 and the PC's USB port. Specify the location of the device driver when prompted by Windows. The device driver can be found on the CD included with the kit. Windows will recognize this device as "USB Serial Port (Com3-8)" in the Device Manager → Ports if everything is properly installed. The device driver only requires one installation.

2.1.2.Wiring

The PLX Logger can support 2 speed inputs and 4 analog inputs. Speed inputs measure the frequency of a oscillating signal and analog inputs measure amplitudes in voltage. Thus, the user should know which types of signals are being fed into the inputs. All inputs are high impedance and were designed to be transparent to your existing electrical systems.

Main Harness Wire Colors:

+12V	– Red (18 gauge)
GND	– Black (18 Gauge)
Speed 1	– Brown/Black
Speed 2	– Orange
Analog 1	– Red/Black
Analog 2	– Orange/Black
Analog 3	– Purple
Analog 4	– Blue

Special Note: The R-500 has the capability of internally routing AFR, EGT, raw Knock values to any of the 4 available analog input signals. Please refer to your R-500 users guide for detailed information on "routing."

2.2. A note for users with previous version of PLX logger

If there is an older version of PLX Logger already installed on the computer, the user will be notified that this version must undergo an uninstallation before the new version can be installed.

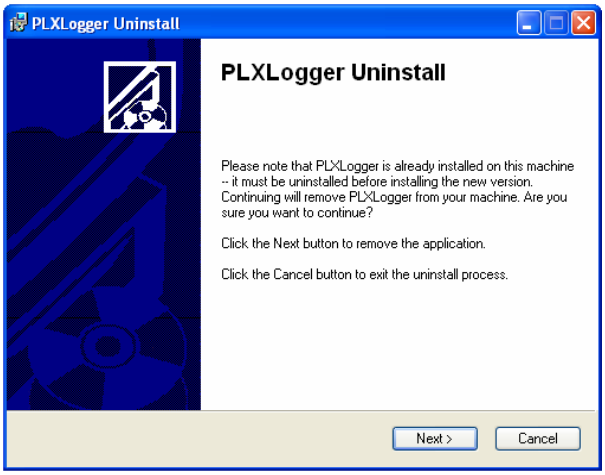

Figure 1: Screen informs the user that the older PLX Logger will be uninstalled

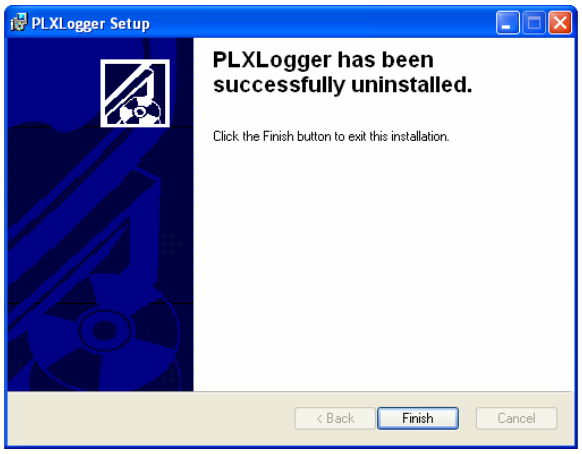

Figure 2: Successful uninstallation of the older PLX Logger

Upon the successful uninstallation of the older PLX Logger, the user will need to run setup again. This time, the new version will be installed.

2.3. Software Installations

Insert the included CD into the computer's CD Rom drive. Open the PLX Logger folder and run setup.exe. If an older version of PLX Logger is installed, the installation wizard will automatically uninstall the older version as described in the previous section. After completing the installation, start PLX Logger and set the USB Port number to match the assigned com port number in step (2.1).

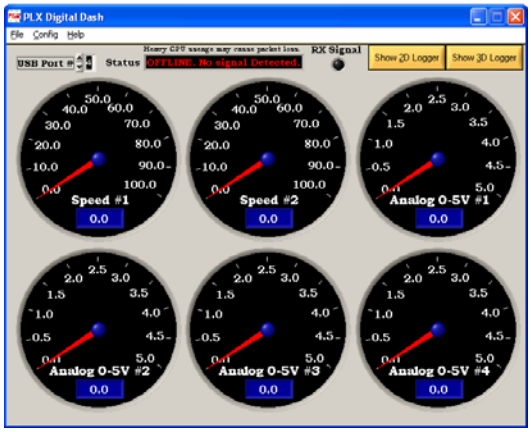

Figure 3: An example of USB Port number not matching: Not Connected

When the device is plugged into the USB port the first time, Windows will prompt the user to install the USB driver, as shown in the following screen:

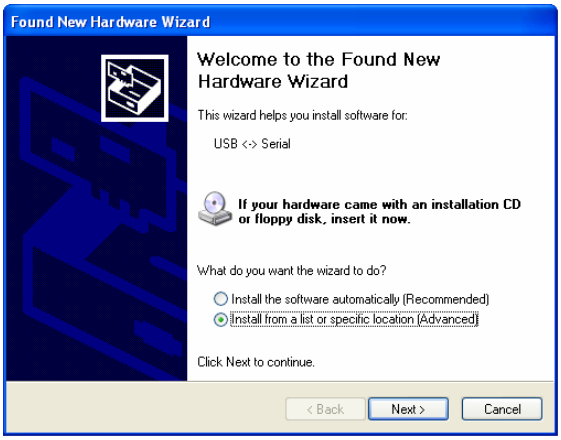

Figure 4: Installation for USB to Serial connection (1)

Select “Install from a list or specific location” and click “Next >”. Then select, “Search for the best driver in these locations,” checkmark “Search removable media,” and click “Next >”. Windows will then search for the appropriate driver.

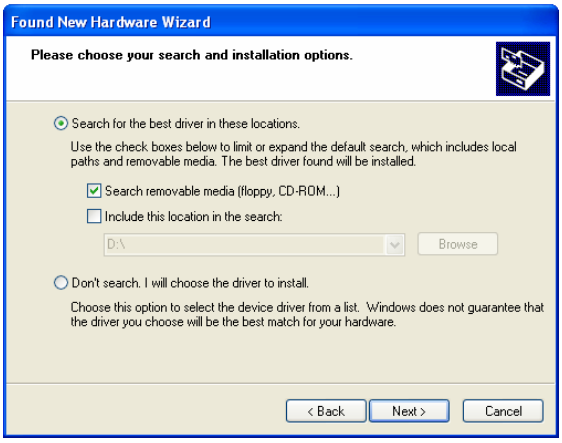

Figure 5: Installation for USB to Serial connection (2)

The subsequent screen will prompt the user to install the USB driver. Make sure the included CD is in the computer’s CD-Rom drive. Select, “Search for the best driver in these locations” and checkmark, “Include this location in search”. Click, “Browse” and select the folder, D:\USBDriver1.0 (where “D:\” would be the CD drive). Click, “OK”. Then click, “Next” on the “Found New Hardware Wizard” window.

Figure 6: Installation for USB driver

To double check if the USB device is properly installed, check "Start" → "Control Panel" → "Systems" → "Hardware" → "Devices Manager." If installation was successful, the "USB Serial Port" will be listed under the "Ports" folder as illustrated in Figure 7.

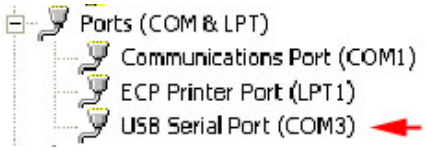

Figure 7: Successful USB driver installation

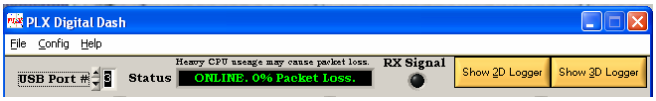

Figure 8: Device and USB Port online in PLX Digital Dash

Performance Tip 1: Insert the USB RX Module (M-500) or USB Cable (R500) approximately 10 seconds before starting PLX Logger to give time for Windows to detect the new device. Before removing the USB RX Module or USB Cable, close PLX Logger and wait approximately 10 seconds. This gives time for Windows to close the USB port. For the M-500, wireless performance is maximized when there is a "line of sight" between the" transmit" and" receive" antennas. Close all other applications while PLX Logger is active to minimize the chance of lost packets from high CPU usage. If packet loss is still present, lower the screen resolution and color depth.

Performance Tip 2: If the USB Port does not connect in the PLX Digital Dash, try changing the USB Port number to a different port number by clicking the up or down arrow key once (e.g., port #3 → port #4). Then immediately click the opposite arrow to switch back to the original port# (e.g., port #4 → port #3). The gauge configuration on the Digital Dash can be saved by selecting "File" → "Save Dash", typing the file name, and saving the configuration as a .dsh file.

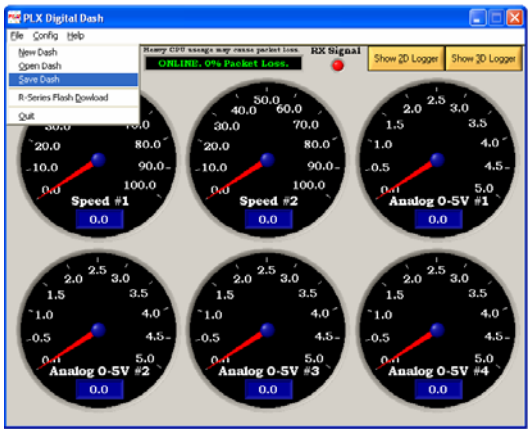

Figure 9: Saving Dash setup

Previous gauge configurations can be loaded by clicking "File" → "Open Dash" on the toolbar, and selecting one of the saved .dsh files.

3. Configuring Inputs

Users can customize different setups through three types of inputs: Speed, Analog and Gauge. These configurations should be tailored to the user's needs for the controller.

3.1. Configuring Speed Inputs

Speed inputs measure the frequency of an oscillating electrical signal in Hz. To make use of the input signal, the frequency is multiplied by a user definable constant value to convert frequency to the user's desired unit of measurement. For example, if the speed input oscillates 50Hz at 1000RPM, setting the "Units/Freq" constant to 20 will give the user the correct conversion for RPM.

One recommended setup method is to connect the vehicle speed sensor to the Speed #1 input and then connect the rpm signal to speed #2. The vehicle's sensor signal can be tapped from the ECU wire harness. This signal is often referred to as vehicle speed sensor, or VSS. The RPM signal can also be tapped from the ECU wire harness. This is the same signal that would be connected to an aftermarket tachometer. These signals can be located by referring to the vehicle's service manual or from the PLX online database on the company website.

3.1.1.RPM Pickup

First, a speed input needs to be connected to the RPM tachometer signal. Since the tachometer signal gives an arbitrary oscillating signal which directly corresponds to the RPM, the user must determine the conversion factor from frequency to RPM. Rev the engine to several RPM points to collect data.

4 stroke engines: To configure the speed inputs on the Digital Dash page, click "Config" → "Speed –Inputs" on the toolbar. The "Setup Speed Inputs" window will open. Then click on the drop down menu to the right of "Preset" to configure the speed input. The default setting options (RPM 2 to 8 Cylinder) are based on a four stroke engine. The appropriate setup can then be selected from the default list of options, or a custom speed input can be created.

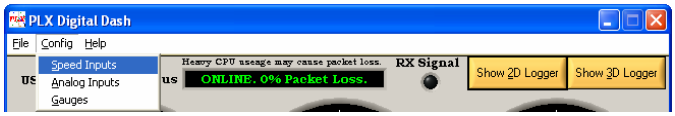

Figure 10: Configure Speed Inputs (1)

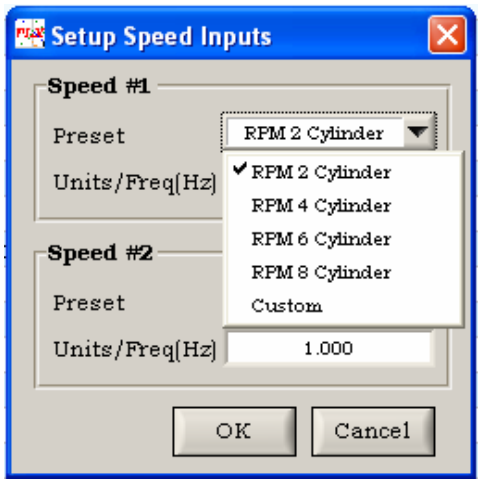

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Figure 11: Configure Speed Inputs (2)

Sample calculation of the frequency to RPM relationship (in a four strokes engine):
Frequency (Hz) = (Number of cylinders * RPM) / 120. If a car with a four strokes engine and four cylinders yields 100Hz at 3000 RPM, units/Freq (Hz) should be 30 = 120 / 4 cylinders, as illustrated on the default list of options.

Non-4 stroke engines: Click on the drop down menu to the right of "Preset" to configure the speed input. Choose "Custom" to customize the desired conversion.
e.g., 2 strokes engines: Frequency (Hz) = (Number of cylinders * RPM) / 60, thus with 2 cylinder 2 strokes, the conversion Units/Freq (Hz) would be 30 = 60 / 2 cylinder

3.1.2.Vehicle Speed

Every vehicle speed sensor gives an arbitrary oscillating signal which is proportional to the vehicle's speed. Therefore, the conversion factor from frequency to the choice of unit of speed measurement (E.g. Mph, km/h) can be determined. For example, drive the vehicle 20 MPH, 40MPH, 60MPH and record the corresponding frequencies of a speed input (for instance Sp1), and let's say 100 Hz, 200 Hz, and 300 Hz are obtained respectively.

Frequency (Hz) * Conversion Factor = unit of speed measurement (e.g. Mph, km/h)
Conversion Factor = speed measurement (e.g. Mph, km/h) / Frequency (Hz)
E.g. 0.2 = 20 mph / 100 Hz

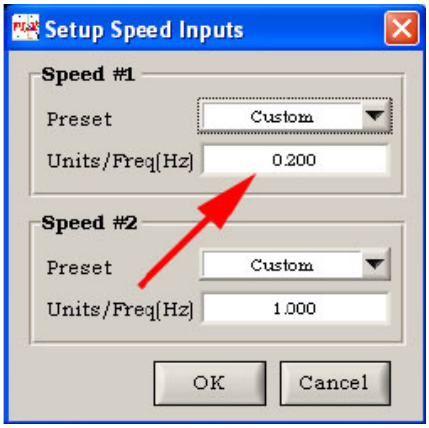

Figure 12: Configure Speed Inputs (2)

3.2. Configuring the Analog Inputs

Analog inputs measure the voltage of a signal. The acceptable input voltage ranges from 0-5V with up to 25V protection. Voltages between 5-25V will be capped at 5V. To make use of the input signal, voltage is mapped to the desired unit of measurement by entering the corresponding value into the table. Values are linear interpolated between each table cell.

To configure the analog inputs in the Digital Dash page, click "Config" → "Analog Inputs" on the toolbar.

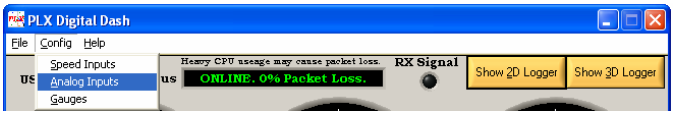

Figure 13: Configure Analog Inputs (2)

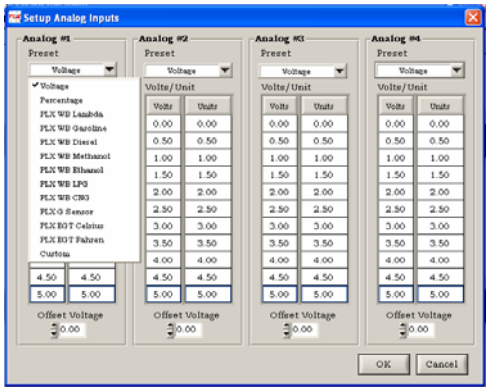

Figure 14: Configure Analog Inputs (2)

The default setting is Voltage, which has 1: 1 correspondent scaling in the Digital Gauge. Users can select different types of inputs and the digital gauge will display the calculated conversion. For example: knowing that the input is WB, the voltage (e.g., 2.35v) read from analog input will be converted to AFR (e.g., 14.70 AFR)

Offset Voltage is the trim in which users can input the amount of adjustments to set an effective reading. For example:

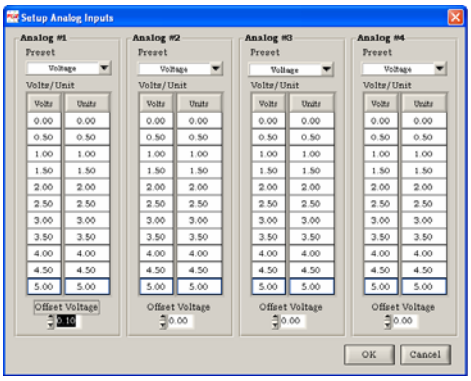

Figure 15: Offset Trimming in Analog Inputs

In the sample above, the offset voltage of Analog #1 is set to be 0.10 (lower left corner of Figure 14). This is essentially equivalent to changing all of the voltage column values to (0.0, 0.4, 0.9. 1.4, 1.9, 2.4, 2.9, 3.4, 3.9, 4.4, 4.9). This is very useful if the user observes a difference in reference ground and a small correction factor to the entire voltage column is needed. This is also very useful for "trimming" the G Sensor to zero if the G Sensor is positioned slightly off-center.

3.3. Configuring the Gauge Inputs

Gauges display data in instrument format. Users can customize any gauge by freely selecting any input signal, fill color, needle, and frame color.

Figure 16: Configure Gauge Inputs (1)

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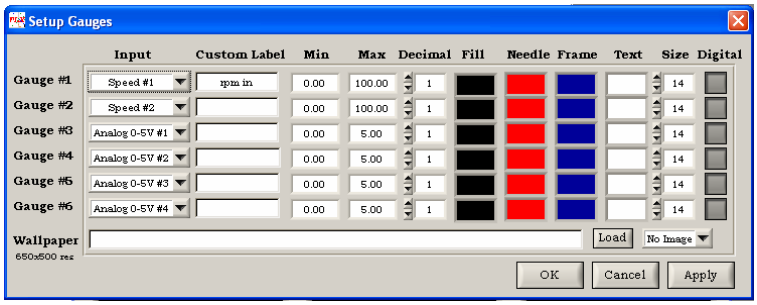

Figure 17: Configure Gauge Inputs (2)

Custom Label: Changes gauge names according to preference.
Min Max: Sets the range of desired scale (this will set the DEFAULT value range of gauge, 2D and 3D
logger)
Decimal: Adjusts the precision displayed on scale of the gauge.
Digital: Displays the digital readout on the bottom of the gauge.
Apply: Applies the settings without closing the window
OK: Applies the settings and then closes the window
Wallpaper: Selects the background of the gauge window (BMP format).

Performance tips regarding RPM display through gauge configuration: Once the conversion factor, which is the relationship between RPM and Frequency (Hz) data, is obtained, the gauges can be further customized to make them easier to read. Follow the example in section 3.1.1, a 100Hz signal picked up (e.g. at S1), conversion factor equals to 30 because 3000 RPM is observed. If the max RPM is 9000 RPM, set Min = 0 and Max = 9000. It is certainly a straight forward interpretation, but can look cumbersome, as shown in Figure 18.

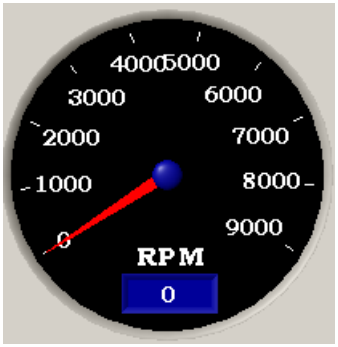

Figure 18: Tips of Configure Gauge for RPM

A simpler way is to interpret RPM as multiples of 1000. Thus in the gauge configuration, the range can be rescaled by inputting Min = 0 and Max = 9. The conversion factor needs to be changed since the scale is different now. The original conversion factor of 30 needs to be divided by 1000, (the multiple) to complement the new scale. The new conversion factor now becomes 0.03. Figure 19 and Figure 20 illustrate the necessary steps and the adjusted result.

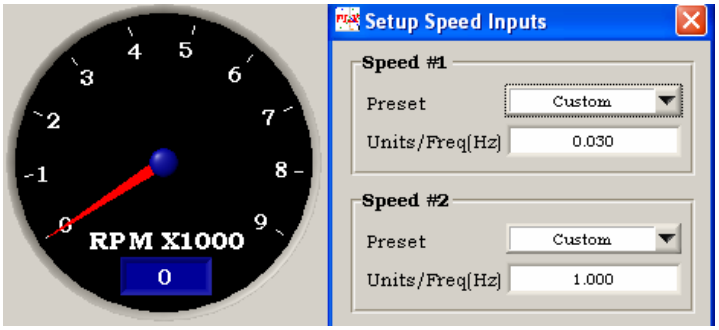

Figure 19: Configure Speed for RPM in multiples of 1000

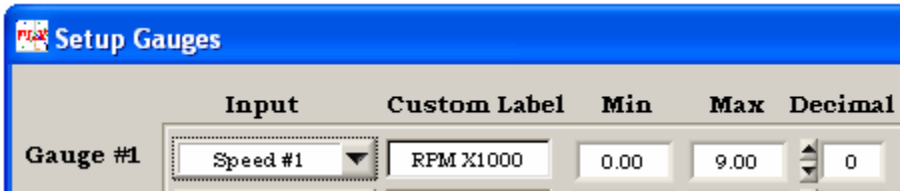

Figure 20: Configure Gauge for RPM in multiples of 1000
(Now the label can be correctly stated as “RPM x 1000”)

4. Data Logging

There are two ways to data log sessions.

Method 1: Using the R-500/M-500 to stream real-time signals directly to the PLX Logger Software on a laptop or PC.

Method 2 (R-500 only)**:** Using the R-500 to upload prerecorded data to a laptop or PC.

4.1. Method 1: Real-time data logging (Streaming)

If the M-500 or R-500 is connected to the USB port and the PC is successfully receiving real-time packets, a recording can be initiated by clicking the REC button in 2D Logger or 3D Logger. Click the STOP button to end the recording. To save the data, choose "File" → "Save Session," then enter a file name and save the session as a .plg file. PLX Logger will also automatically save the current dash configuration as a .plgd file at this time.

4.2. Method 2: Data Logging into Flash (R-500)

For detailed recording setup information for the R-500, please refer to the R-500 user's guide

Recording a data log session:

Toggle to the "Data Log" menu on the R-500. **Pressing the up button will start the recording of the signals into the internal flash memory.** Pressing the right button will pause/resume the data recording without creating a new data log session. Pressing the down button will stop/terminate the data logging session. Starting the data logger after pushing the stop button will create a new session. Pressing the left button exits to the previous menu.

Figure 21: "Data Log" screen

Uploading a data log session:

1) Start the PLXLogger software on the PC.
2) In the R-500, toggle to "Upload to PC" menu.

Figure 22: "Upload to PC" screen

3) Select "File" → "R-Series Flash Download" on the PLX Digital Dash toolbar. A blue window

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will appear and prompt the user to upload the data logged state. **Do not upload the session until this window is open! Failure to do so will cause data corruption!**

4) Press the left button on the R-500 to upload the session to the PC.

5) Upon successful transmission, PLX Logger Software will prompt the user to enter the file name of the data logged session that was uploaded. Enter a file name and save the session as a .plg file. PLX Logger will also automatically save the current dash configuration as a .plg file at this time. The file can now be analyzed using the 2D or 3D logger.

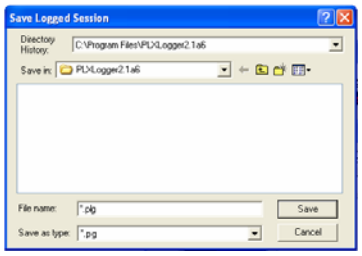


Figure 23: Saving R-500 Logged file into the PC

Method 1 or Method 2 will result in the following sample: *(the analysis will be discussed in Ch. 5)*

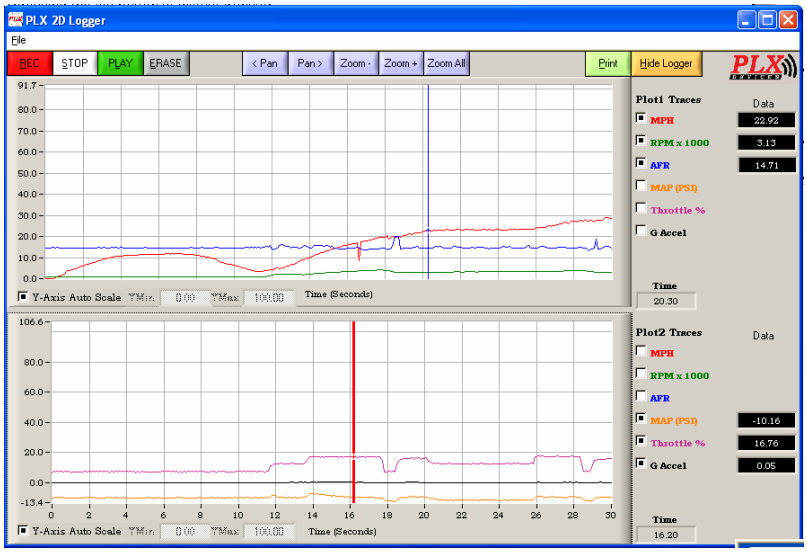
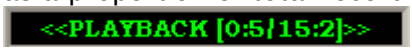


Figure 24: An illustration of the data capture

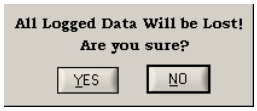
Replay recorded session:

Click the PLAY button to replay the logged session in the Digital Dash, 2D Logger, or 3D Logger. Click the STOP button to end the playback. Once the PLAY button is clicked, the time being played as a proportion of total recorded time can be viewed in the Digital Dash session:



Clearing Data from current session:

To delete the current session, press ERASE . The window will prompt:



Click YES to clear the data of the current session:

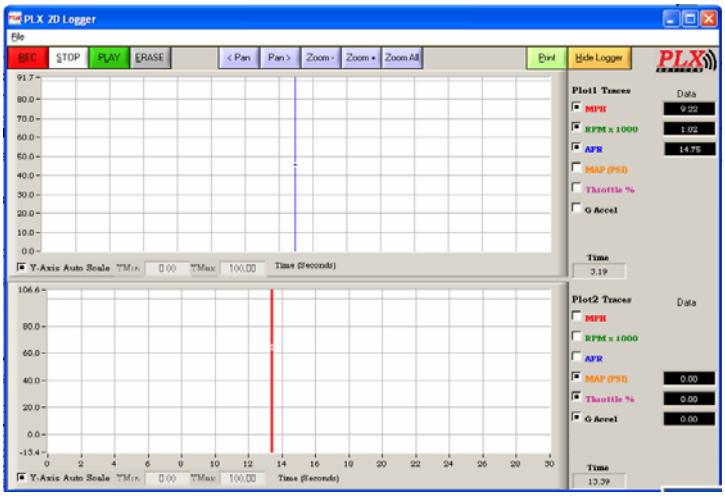


Figure 25: Session data is cleared

4.3. Special consideration regarding dash setting and logged data

Reminder: there are two file formats that work together with the PLX Logger. The .plg file contains the logged data, and the .dsh contains the gauge configuration in the dash. The .plg files that contain the data need the corresponding .dsh file to work. Otherwise, data shown will not be correct due to incorrect configuration from the dash. (*e.g., the data saved is AFR, however the gauge is configured as MAP. The data is also scaled in MAP. In doing so, the MAP gauge will actually be displaying AFR*). However, the .dsh file does not necessarily need the corresponding .plg file to run, since a single .dsh file can have many dash configuration options. Also, the previous statement is valid only when types of data collected are the same. For example, MPH, RPM, AFR, MAP, Throttle, and G-acceleration are set in the dash. When the recorded data are different types than the example above, the same .dsh file will not work.

Note: .dsh files are NOT backwards compatible with previous versions of PLX Logger, however .plg files are compatible with all previous versions.

5. Analyzing Logged Data

PLXLogger optimizes analysis by offering users with options of using 2D or 3D analysis. **All 2D, 3D and Render 3D** analysis **can be printed** by simply clicking the Print button. Exit 2D or 3D Logger and return to the Digital Dash by clicking Hide Logger.

5.1. Analyzing Logged Data with 2D Logger (illustration on following pages)

5.1.1.Overview

PLX Devices' 2D logger allows the user to analyze different inputs simultaneously versus logged time in a two dimensional layout, with the additional convenience of splitting traces into two viewing windows in any trace combination. This enhances the ability to track the trends and to spot abnormal phenomenon more effectively.

5.1.2.Navigating

Retreat or advance to different time sections within the recording by clicking on < Pan and Pan > respectively. (e.g., if the window shows 0th to 100th sec, clicking Pan >, will advance the recording to 50th to 150th sec)

The Zoom IN Zoom +, Zoom OUT Zoom - and Zoom ALL Zoom All allows the user to view the entire recording in a single window.

Shortcut keys:

Pan Left – Left arrow key
Pan Right – Right arrow key
Zoom In – Up arrow key
Zoom out – Down arrow key

5.1.3.Traces

There are 2 viewing windows to select from. Choose which signals go into each window for ease of viewing during analysis (see brown arrow in fig. 24).

Shortcut keys:

Shift + F1 to F6 enables/disables traces on graph 1
Shift + F7 to F12 enables/disables traces on graph 2

5.1.4.Cursor (fig. 22-23)

The cursor can slide on both windows separately (see black arrows in fig. 24). More detailed information in relation to the time and the value can be seen in the separate text boxes. When a session is opened initially, the data where the cursor intersects the signals may display 0. This is just a prompt for the user to drag the cursor to the desired position. After that, the corresponding values of the data will be shown.

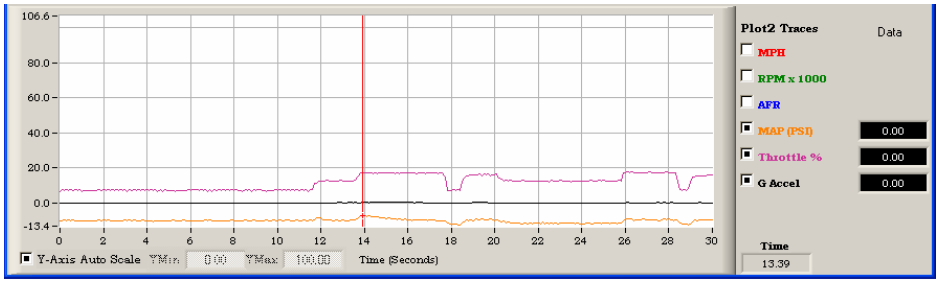


Figure 26: Logged data initially opened with 0 displayed in data

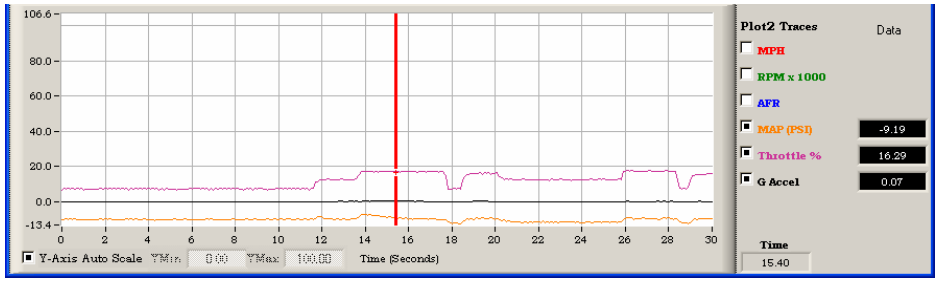


Figure 27: After moving the cursor to the desired location, corresponding data is displayed

Note: For added convenience, use the mouse to click on the closest of the desired trace at a desired time, and the program will automatically pin point the closest value of the closest trace with the data displayed.

5.1.5.Data Scaling

The default Y-axis scale can be used for analysis (see pink arrow in fig. 24), or for customizing the range of the Y-axis through inputting the starting and ending points of the Y-axis. e.g., some users may not need the scale to start at 0.

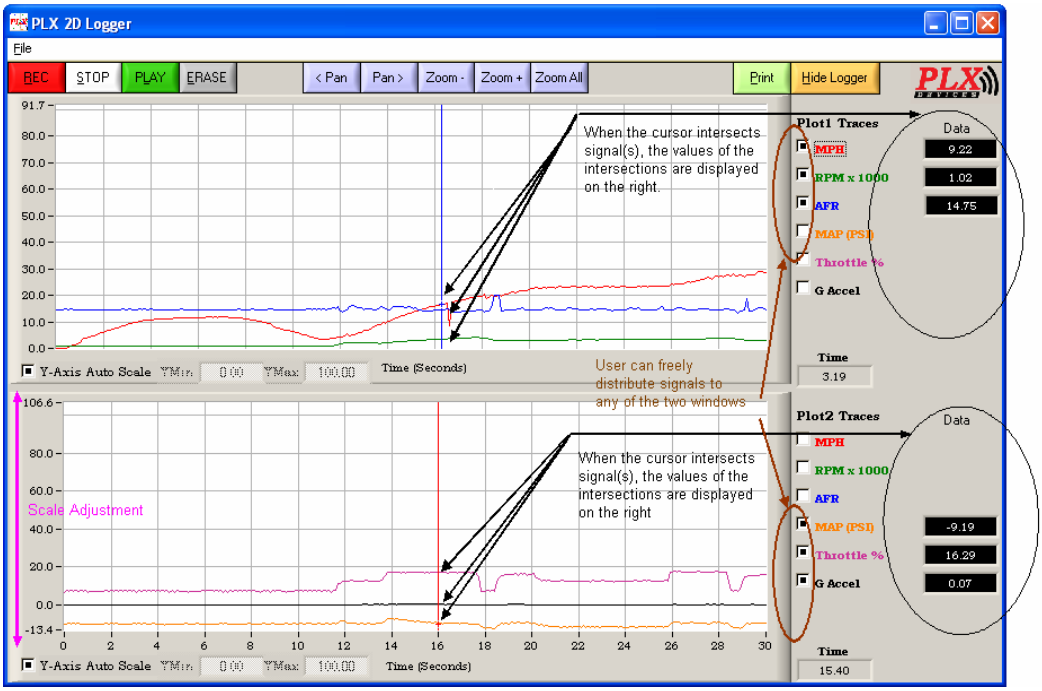


Figure 28: Illustration of tools in 2D logger

5.2. Analyzing Logged Data with 3D Logger

5.2.1. Overview

The 3D logger in a two dimensional layout is essentially a matrix, which is necessary for a 3D Render to be generated. Three inputs (Rows, Column and Data) must be selected, after which the 3D logger will generate a map that links the relationship of the data chosen in relation to the other two input parameters selected (which is Row and Column). In the Digital Dash page, select 3D Logger, and the data matrix layout will appear as illustrated in the following figure:

Figure 29: Illustration of tools in 3D logger

5.2.2. Matrix Values: Inputs selection of Rows, Columns, and Data

The 3D Logger offers the flexibility of choosing different matrices from 6 different types of input for Column, Row and Data.

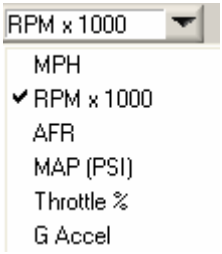


Figure 30: Selection of different types of input in Column, Row and Data

Row: Data will be confined to the same value horizontally. (In this case, horizontal values Data (AFR) will have
the same MAP value)
Column: Data will be confined to the same value vertically. (In this case, vertical values Data (AFR) will have the
same RPM value)

5.2.3.Data Presentation

Even more flexibility is available in choosing how data is presented. There are 3 degrees used for configuration:
1) Matrix Values (red box), 2) Min Max (purple circle), 3) Standard and Reverse (cyan triangle)

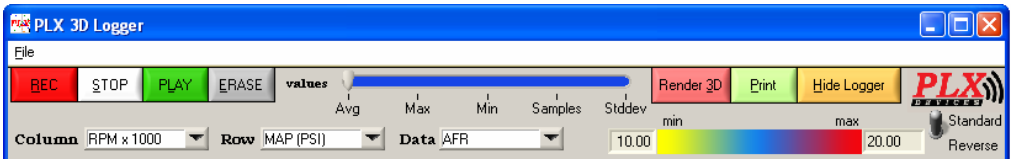


Figure 31: Selection of different settings of Data Presentation

1) Matrix Values have **5** different presentations: **Avg**, **Min**, **Max, Samples** and **Stddev**. Each presentation can be set by simply clicking the labels (Avg, Min, Max and Samples).
   Avg: displays the average values of the Data matrix.
   Min: displays the minimum values of the Data matrix.
   Max: displays the maximum values of the Data Matrix.
   Samples: displays the frequencies of occurrence of the data point (just like a histogram, in which frequencies of different values is mapped against values).

   E.g., imagine that a **1x 5 matrix** of values **(11,12,13,14,15)** are recorded, and these values have a different number of **occurrences** (e.g. **11 to 14** occurred only **once**, but **15** occurred **3 times**). If only 3 values are allowed to be displayed, **Avg** will display: **12,13,14**, **Min** will display **11,12,13**, and **Max** will display **13,14,15**.

   Samples will replace **11 to 14** with **1**, and **15** with **3**.

   Stddev: Simply put, standard deviation (Stddev) calculates the dispersion which surrounds the average. It is calculated by the formula on the left. The formula on the right calculates the average:

$$\sigma = \sqrt{\frac{1}{N}\sum_{i=1}^{N}(x_i - \overline{x})^2} \quad \text{, where} \quad \overline{x} = \frac{1}{N}\sum_{i=1}^{N} x_i \text{ .}$$

   N is the number of cases, x is the value of the particular case. For example, the following sets of values all yield an average of 10: (0, 10, 20), (5, 10, 15), (9, 10, 11). However the dispersion of the values in these 3 sets is different. The first set yields a stddev of 8.16, second set yields 4.08, and the third set yields 0.82. The third set with the least stddev indicates that this data yields the least dispersion. The third set has the least dispersion since the values in the set stick closest to the average, in comparison to the other two sets.

2) Min Max is bounded by the same Min Max settings as the user's gauge configuration (See section 2.5.). E.g. if under "Config", the Gauge setting has AFR's Min =10 and Max =20, then the AFR values of the Min Max in 3D Logger (and 2D Logger too) will display up to a minimum of 10 and a maximum of 20.

3) Standard and Reverse changes the color contours. For example, the sample configuration shown above (in the cyan triangle) has settings in Reverse, meaning Max (AFR =20) is yellow and Min (AFR =10) is red. By clicking Standard: the Max changes to Red and Min is now Yellow.

5.3. Use of 3D Rendering (in 3D Logger)

5.3.1. Overview

PLX 3D Rendering allows the user to visualize logged data in three dimensions. Logged data is displayed in a 3D viewing window as a set of data that is plotted on the X, Y and Z axis with user defined labels. In the 3D Logger page, click the button “Render 3D”. The default 3 dimensional graph will appear as the following:

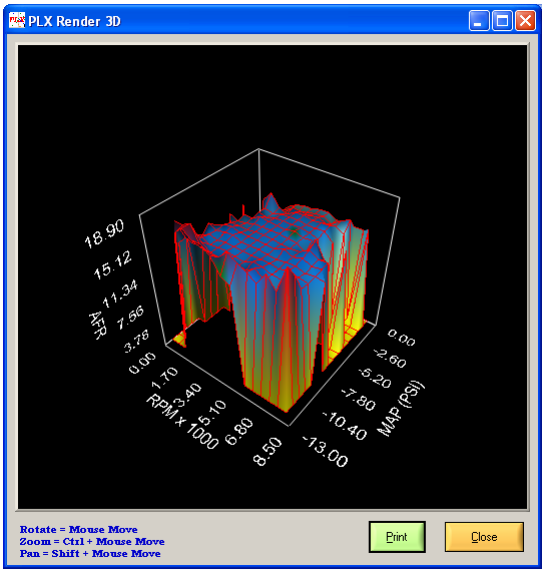


Figure 32: Sample 3D Render

Note: the values used in Column and Row in 3D Logger becomes the X and Y axis of the 3D graph (in this case Column is RPM and Row is MAP), the Z-axis is AFR.

5.3.2. Navigating

PLX 3D Rendering allows the user to rotate, pan, and zoom the 3D graph.
Rotate by holding down the left mouse button and dragging the mouse to the desired position on the graph.
Pan by holding Shift + left mouse button and drag the mouse to the desired position on the graph.

5.3.3. Scaling

Zooming:
To Zoom In: Hold Ctrl + left mouse button on the 3-D graph and Drag **DOWN** or to the **RIGHT**.
To Zoom Out: Hold Ctrl + left mouse button on the 3-D graph and Drag **UP** or to the **LEFT**.

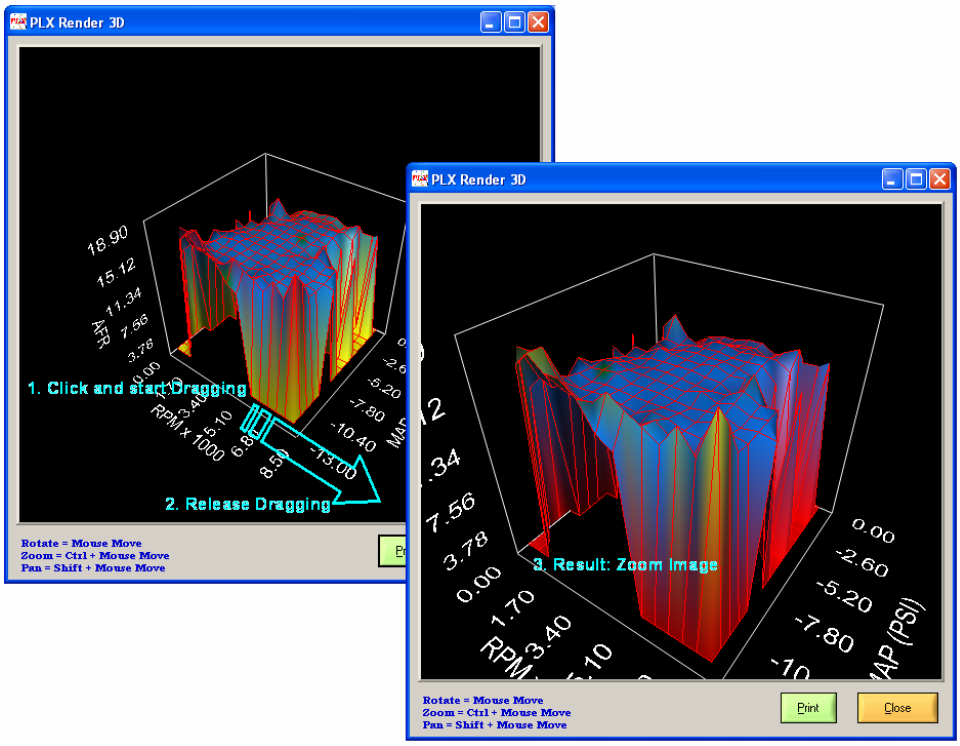


Figure 33: An illustration of the **Zoom-in** Process, reverse the process for **Zoom-Out**

6. Exporting Data

Data can be exported to Excel (.xls) format for enhanced convenience in analysis. In either 2D or 3D Logger, data can be exported to Excel in a User designated directory. The procedure to export to Excel is as follows: In either 2D or 3D Logger, click on "File", then select "Export to Excel." When the data export indicator screen appears, wait until the completion of the data export.

Figure 34: Access to "Export to Excel" in 3D logger (sample above: Column: Throttle, Row: mph, Data: AFR)

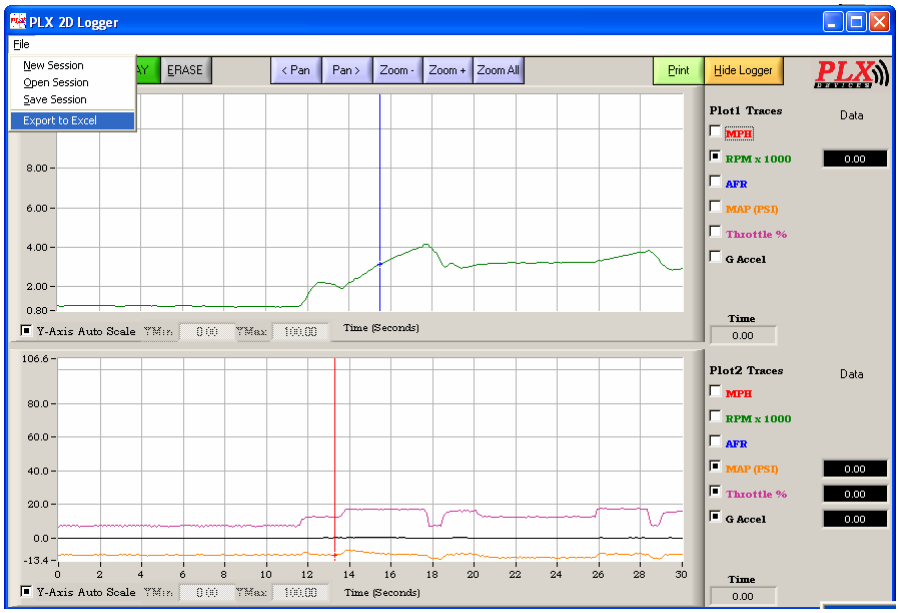


Figure 35: Access to "Export to Excel" in 2D logger

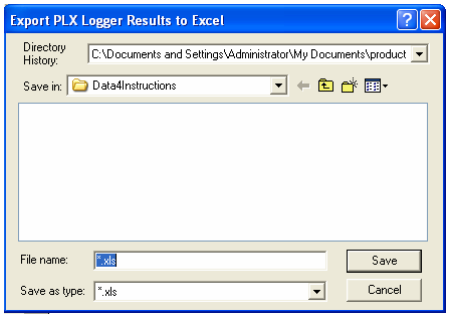


Figure 36: Save as *.xls

Figure 37: Data export is still in progress

Figure 38: Data export is complete

The saved .xls file can be opened with Excel to start the analysis process. The file contains two sheets. In the sample 3D Logger Excel data export shown in Figure 20, the first sheet lists the data recorded (and as user labeled) in 6 gauges with a time scale, which is similar to when all signals are selected in 2D logger. The second sheet records the data matrix as shown in Figure 20: Column: Throttle, Row: mph, Data: AFR.

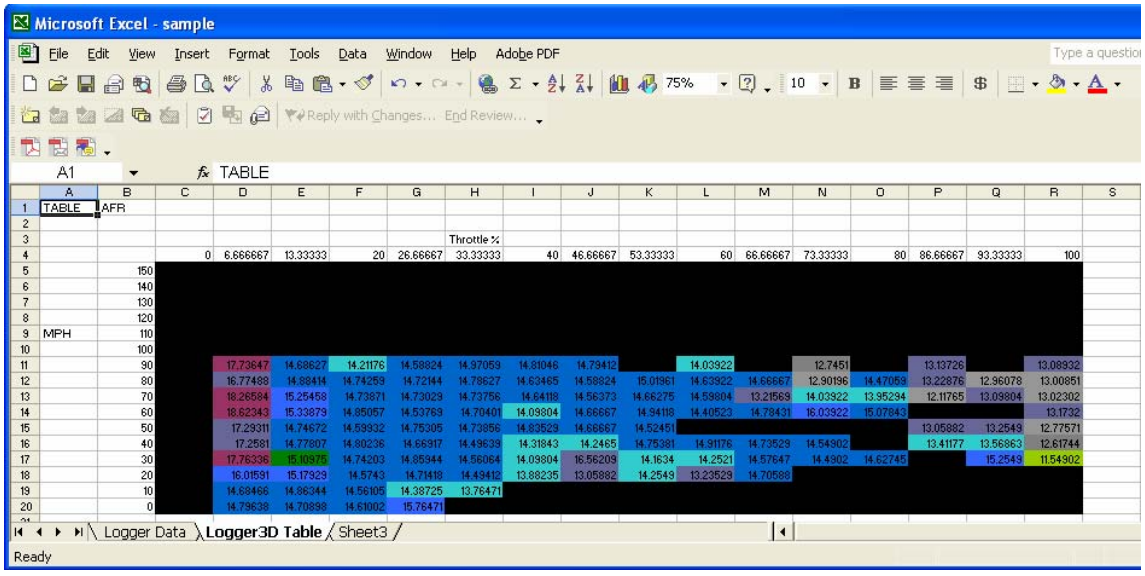


Figure 39: 3D Logger export in .xls

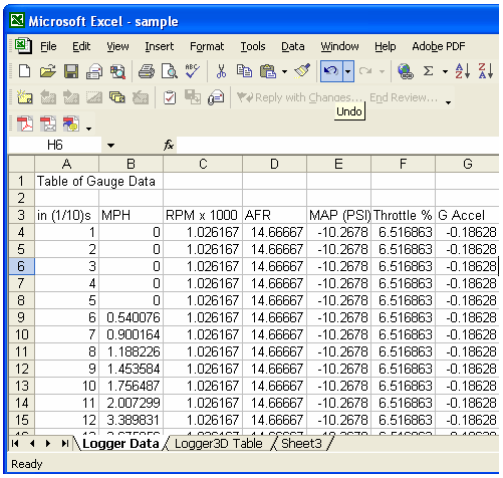


Figure 40: 2D Logger export in Logger Data in the same .xls file

Data can be transferred through both real time streaming and logged session uploads. For the most reliable data transfer, R-500 users are advised to first save data on the R-500, and then upload the data to the PC. This method will minimize any possible system interference (from OS, ambient noise in the recording environment, potential packet loss, etc).

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7. Application Specific Setups:

The following is a list of appropriate application notes that users can refer to for different applications. Each of these applications has been successfully applied under real world conditions. Visit www.plxdevices.com/appnotes.htm for a complete and updated selection:

7.1. Topical setup illustrations

PLXAPP009: R-500 Standard Setup for AutoX / Track

PLXAPP010: R-500 Standard Setup for Drag Racing

7.2. Peripheral interfacing

PLXAPP001: Interface with Narrowband Air/Fuel Gauges

PLXAPP004: Stock Narrowband Sensor Replacement

7.3. After-market systems integration

PLXAPP002: Integration with Hondata ECUs

PLXAPP003: Integration with AEM ECUs

PLXAPP005: Integration with Electromotive TEC3

PLXAPP006: Integration with Autronic SMC SM2

PLXAPP007: Integration with DTA FAST P8Pro

PLXAPP008: Integration with Holley Commander 950

Revision History

Version 1.0 (8/19/05)	Initial release. Document supports PLX Logger Version 2.1