Blaze® for SoundTrack LxT®

Industrial Hygiene Software
Technical Reference Manual

LARSON DAVIS
A PCB PIEZOTRONICS DIV.

Larson Davis

Blaze® Software

for use with the
SoundTrack LxT®

Technical Reference Manual

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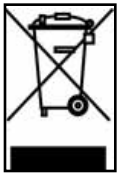

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CHAPTER

1 Getting Started

Larson Davis Blaze Software supports Windows 7 32 and 64 bit, Vista 32 bit and Windows XP 32 bit in conjunction with the following Larson Davis Instruments:

•SoundTrack LxT Sound Level Meter

•HVM100 Human Vibration Meter

•Spark Personal Noise Dosimeters (Models 703, 703+, 705, 705+, 706 and 706RC)

This manual addresses use of Blaze with the SoundTrack LxT.

This is a companion manual to the SoundTrack LxT User Manual which provides complete technical specifications and step-by-step instructions for the operation of the instrument.

Overview

SoundTrack LxT Sound Level Meter

SoundTrack LxT is a powerful Class 1 or Class 2 sound level meter with spectral analysis capability.

Blaze Software

Blaze Software enhances the flexibility and ease-of-use of the SoundTrack LxT by providing setup utilities, instrument calibration, computer-based control of the instrument, data downloading, versatile report generation features and data export to Microsoft Excel.

Formatting

This manual uses the following format conventions:

In step-by-step directions, the process (what you do) is shown in the right column, and the rationale (why you do it) with other cautions and comments are shown in the left column.

Installing Blaze Software

If you downloaded Blaze in a compressed (zip) file, you must decompress the file before running Setup.exe. The installation may fail if you launch it from within the compressed file itself.

Before installing the Blaze software, please write down the product serial number as found on the front of the CD.

Insert the Blaze CD into a computer to run the install program. Follow the installation wizard, entering the serial number when prompted.

Do not connect the SoundTrack LxT to the computer until the Blaze software has been installed.

You must agree to the License agreement in order to install Blaze Software.

The DVX009 and DVX010 drivers are needed for the IR-to-USB cables which can be used with the 703, 703+, 705, 705+, 706 and 706RC noise dosimeters. They need not be installed if Blaze is not going to be used with these instruments.

Loading the USB Drive

The first time you connect the SoundTrack LxT to the computer via the USB cable, Windows XP will display the following dialog box. It will also appear each time a different USB port is used.

Click to select “No, not this time” then click **Next** to obtain the following display.

FIGURE 1-1 Found New Hardware Dialog Box

Left click **Next** to continue. The installation procedure should begin as indicated by the display of the Installation Dialog Box.

Click to select “No, not this time” then click **Next** to obtain the following display.

Left click **Next** to continue. The installation procedure should begin as indicated by the display of the Installation dialog box as shown above.

Starting Blaze Software

The install program will place a shortcut to the Blaze program on the desktop. Double click this shortcut icon to start Blaze.

Blaze Main Window

When the Blaze® software is fully loaded, the Blaze® Main window is displayed. as shown in FIGURE 1-2.

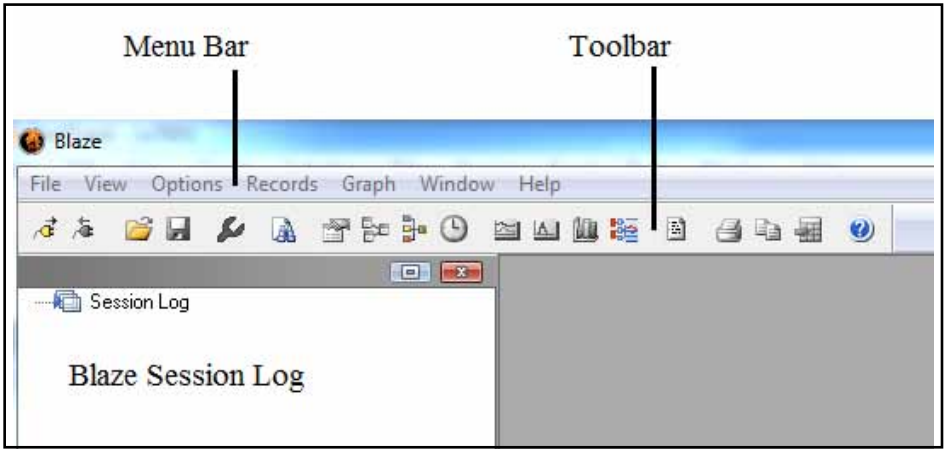


FIGURE 1-2 Blaze Main Menu

Blaze Toolbar

Just below the menu bar is the toolbar as shown in FIGURE 1-3.

FIGURE 1-3 Toolbar

Note that some of the icons in the toolbar are used only with instruments other than the SoundTrack LxT, so they will remain inactive as indicated by a lack of color on the icon.

The tool bar provides quick access to commonly used software functions. A description of the function of each toolbar button, or icon, is presented in Table 1-1 'Blaze Toolbar Buttons' below.

	The Connect button will make the connection to the SoundTrack LxT® instrument connected to the computer.
	The Disconnect button will terminate the connection between Blaze® and the SoundTrack LxT® instrument connected to the computer.
	The Open File button will bring up a standard windows browse window that will allow the user to open an existing database record.
	The Save File button will bring up a standard windows save file dialog box, that will allow the user to save the current Blaze® file. The dialog window will also allow the user to select a file name and location.
	The Instrument Manager button will bring up the Instrument manager screen. The user can then setup the instrument, set the clock, download data files, etc.

Table 1-1 Blaze Toolbar Buttons

	The Query Files button brings up a dialog window that will allow the user to search through the existing SoundTrack LxT® database records for records containing specific items.
	The Set Result Parameters button will bring up a dialog box that will allow the user to select from different dose settings, change Ln Values, and place general information onto the current record.
	The Merge Records button will allow the user to combine 2 or more downloaded records into a single record. Not used with SoundTrack LxT.
	The Average File Records button permits the user to select different files and then select a record from each of these files to average together. Not used with SoundTrack LxT.
	The Modify Time History Interval button will allow the user to change the time history period for the current record. Not used with SoundTrack LxT.
	The Time History Graph will bring up a time history graph for the current database record. Not used with SoundTrack LxT.
	The Statistics Graph button will bring up a statistics graph for the current database record.
	The Spectra Graph button will bring up a graph for 1/1 or 1/3 octave band frequency spectra.
	The Graph Multiple Files button permits the user to select different files and then select records from each to be plotted on a single graph. This function can also be accessed from the Main Menu by clicking on Window and then on Multi-File Graph in the drop-down menu. Not used with SoundTrack LxT.

Table 1-1 Blaze Toolbar Buttons

	The Measurement Log button opens the Measurement Log display window.
	The Print button will print the currently displayed record.
	The Print Reports button will give you access to the predefined reports that Blaze® can print.
	The Export Data button will export the currently displayed record as a Comma-Delimited File that can be opened in a spreadsheet application. It will also allow the user to select the output location and file name, and whether or not to automatically launch the viewer application.
	The About button will bring up the Blaze® splash screen with the current revision number.

Table 1-1 Blaze Toolbar Buttons

Blaze Session Log

On the left side of the screen you will find the Blaze Session Log. This useful area provides information with respect to the status of an active (connected) SoundTrack LxT.

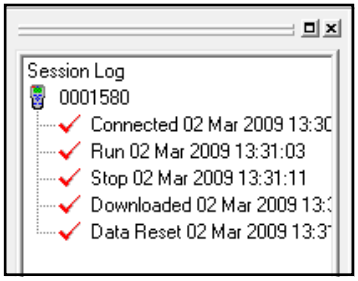


FIGURE 1-4 Blaze Session Log

To select the desired method of communication in the Blaze® software, left click **Options** in the menu bar and click **Connection** from the pull-down menu, as shown in FIGURE 1-5.

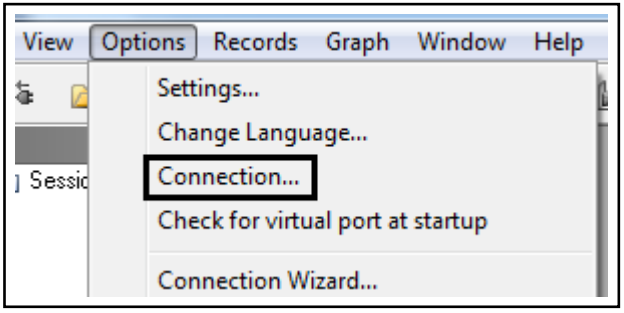


FIGURE 1-5 Connection Selected

This will open the Connection Setting dialog box, as shown in FIGURE 1-6.

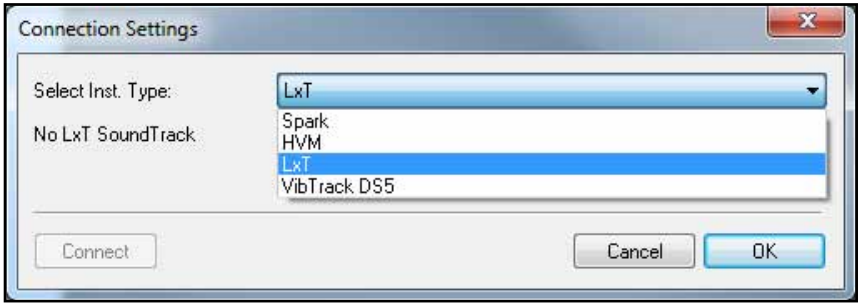


FIGURE 1-6 Connections Settings Dialog Box

Selecting the SoundTrack LxT Instrument

The Blaze software can be used with the SoundTrack LxT, Spark Dosimeter or the HVM100 Human Vibration Meter. This manual is concerned only with its use with SoundTrack LxT units.

Set **Select Inst. Type** to LxT and then select Connect.

Making the Connection

Clicking the **Connect** Button in the Connection Settings dialog box will initiate connection with the SoundTrack LxT. However, once the connection settings have been set, it will be simpler to left click the **Connect** icon on the toolbar as shown in FIGURE 1-7.

FIGURE 1-7 Toolbar; Connect Icon

Following connection, the Instrument Status page of the Instrument Manager will be displayed as shown in FIGURE 1-8.

.

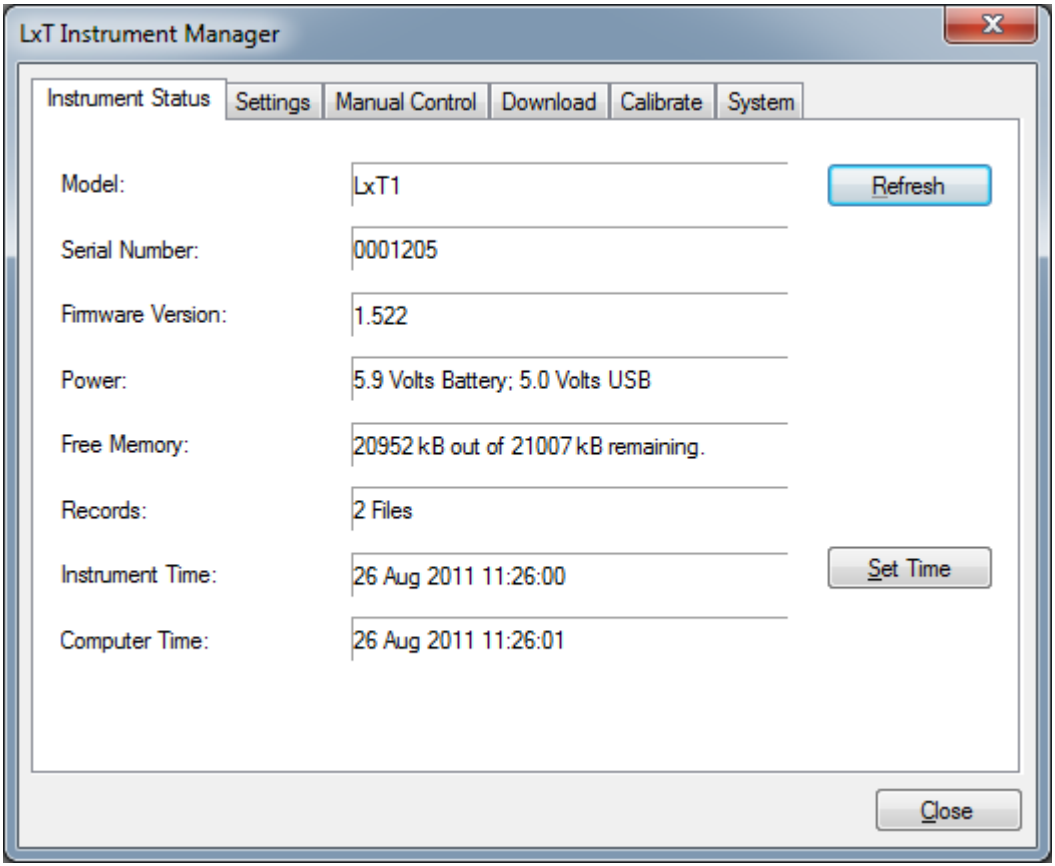


FIGURE 1-8 Instrument Manager; Instrument Status

Most of the operations of the Blaze software are performed from the Instrument Manager as described in the following chapters.

Interface Active Message

When the instrument manager starts, it reads the settings and preferences from the SoundTrack LxT. In this process, a temporary copy is made which can be modified and then copied back to the active instrument setting. If settings are being modified on SoundTrack LxT and by Blaze at the same time, unexpected results can be produced. To avoid this situation, if the LxT user interface is active when the connection process is initiated, the following message will be displayed.

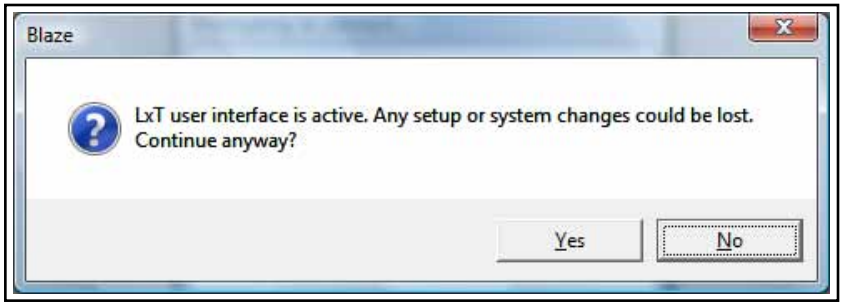


FIGURE 1-9 Interface Active Message

Click **Yes** to continue the connection or press **No** to abort the connection operation and save the setup.

Disconnecting the SoundTrack LxT

To disconnect the SoundTrack LxT from Blaze, left click the Disconnect icon from the Blaze toolbar as shown in FIGURE 1-10.

FIGURE 1-10 Toolbar; Disconnect Icon

CHAPTER

2

Instrument Manager

Most of the operations of the Blaze software are controlled from the Instrument Manager. Specific features implemented from the Instrument Manager include the following:

•Determination of instrument status; serial number, firmware version, battery status, data records in memory and date/time

•Management of instrument setups, including creation, modification and deletion of setups and utilization of the Setup Manager to work with the setup database

•Manual control of the SoundTrack LxT via the PC

•Downloading of data from the SoundTrack LxT to the PC

•System calibration

•Defining user preferences

Each of these functions, except calibration, will be discussed in this chapter. Calibration is described in the "Calibrate Page" on page 2-42

Opening the Instrument Manager

To view the instrument manager window the SoundTrack LxT must be connected, as described in the section "Connecting to SoundTrack LxT" on page 2-10. If you inadvertently close the Instrument Manager window, you can re-open it by pressing the Instrument Manager icon on the toolbar.

The Instrument Manager is displayed following satisfactory connection of the SoundTrack LxT to the PC. It will initially open with the Instrument Status page selected, as shown in FIGURE 2-2.

The Session Log will indicate the date and time the connection was established, as shown in FIGURE 2-1.

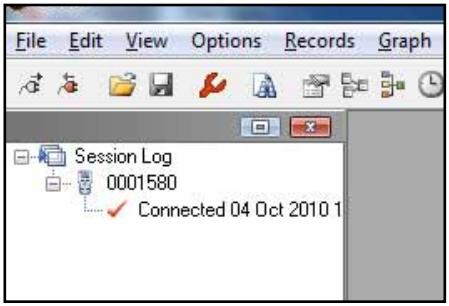


FIGURE 2-1 Session Log; Connected

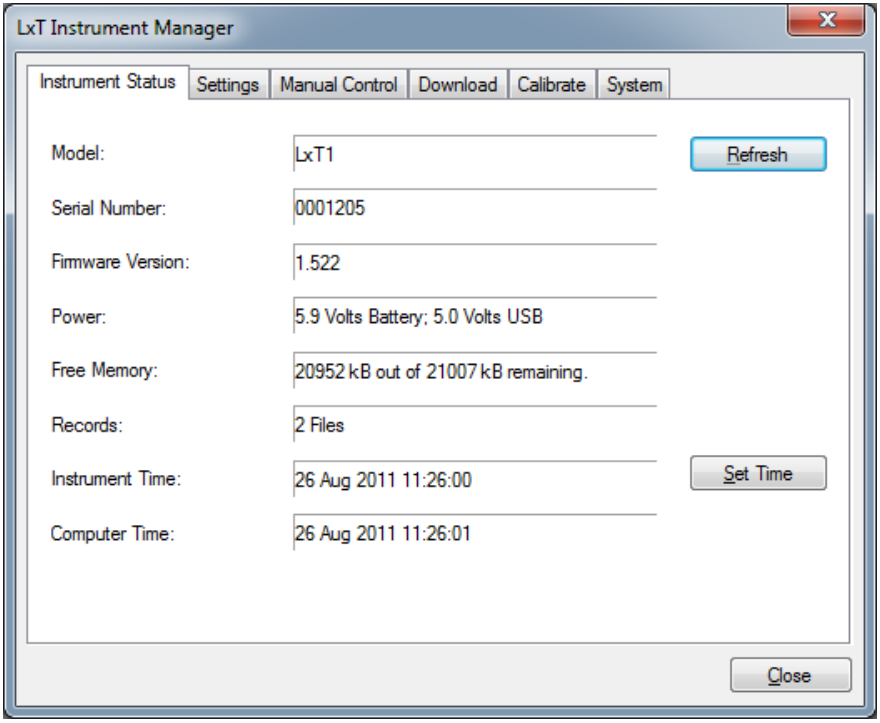


FIGURE 2-2 Instrument Manager; Instrument Status Page

Instrument Status Page

The Instrument Status Page, shown in FIGURE 2-2, presents the following information about the presently connected instrument:

- **The model number of the instrument connected**
- **The instrument's serial number**
- **The firmware version**
- **The battery voltage (6 Volts with fresh batteries) along with the external voltage applied when an external power source is connected**
- **The amount of free memory in the instrument**
- **The number of data records used and the total number available in the SoundTrack LxT**
- **The date/time of the SoundTrack LxT's built-in clock**
- **The date/time setting of the computer**

Setting the SoundTrack LxT Data and Time

Set the date and time of the built-in clock of the SoundTrack LxT as follows.

Press **Set Time** as shown in FIGURE 2-3.

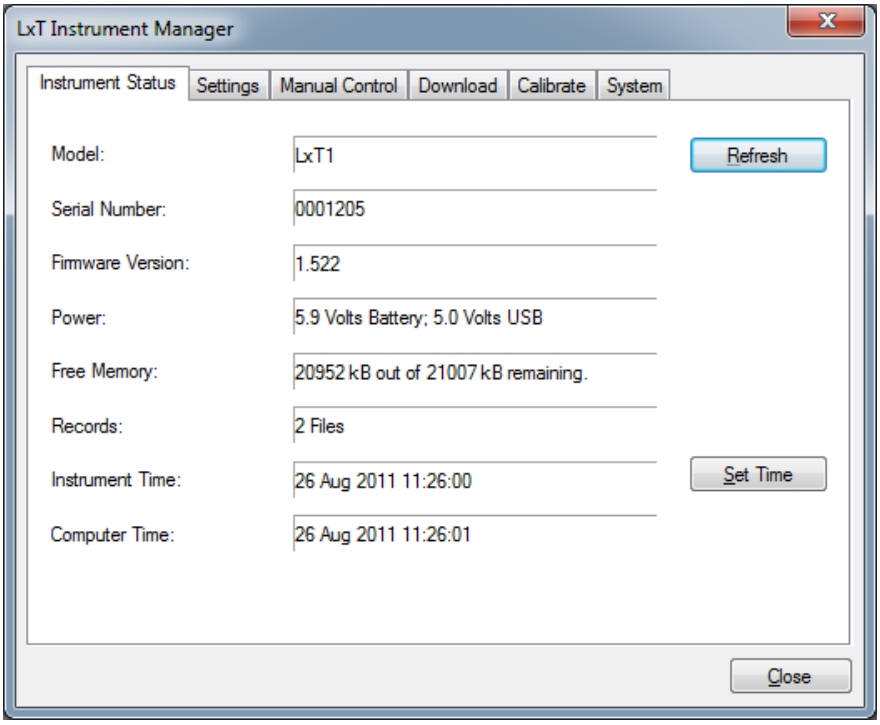


FIGURE 2-3 Set Time

This will open the Instrument Date and Time dialog box as shown in FIGURE 2-4.

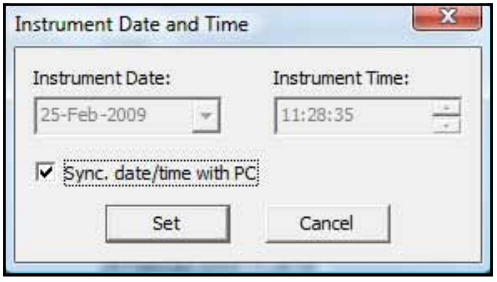


FIGURE 2-4 Instrument Data and Time Dialog Box

In the Instrument Time field, the hours, minutes and seconds are selected separately, highlighting each and using the up and down arrow keys to the right of the date field to select the desired values. Press **Set** to complete the selection of date and time.

Refreshing the Instrument Status page

In order to update the Instrument Status display to reflect changes in the battery life, memory available, etc. since the window was last opened, click **Refresh** as shown in FIGURE 2-5.

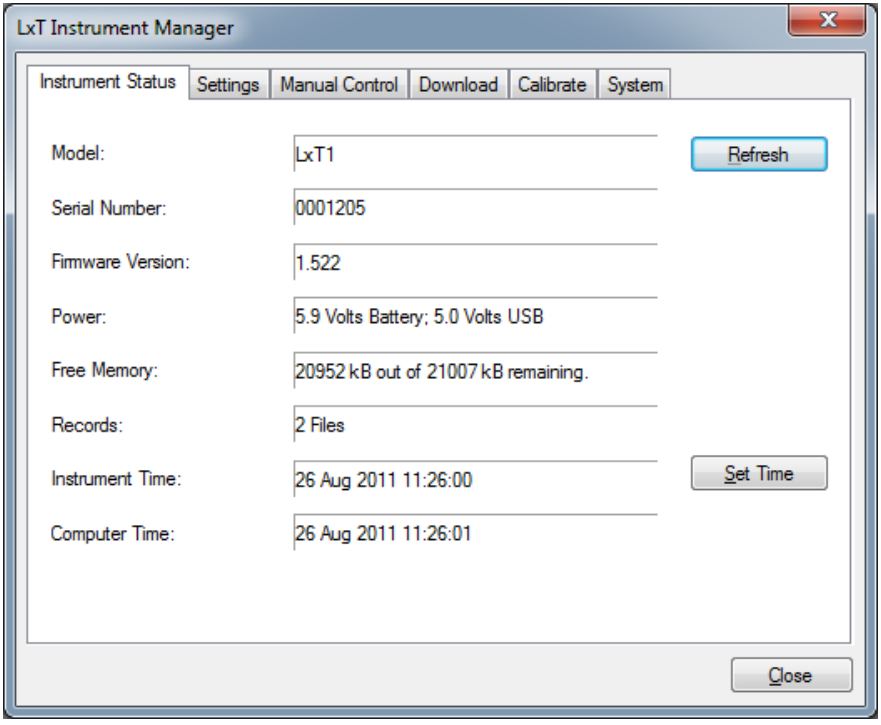


FIGURE 2-5 Refresh Instrument Status

Settings Page

When first displayed, the Settings Page displays the settings of the SoundTrack LxT which is connected to the computer at the time the connection is made. It may subsequently be used to create and download new setups to the SoundTrack LxT.

Click the **Settings** tab at the top of the Instrument Manager to display the Settings Page, shown in FIGURE 2-6.

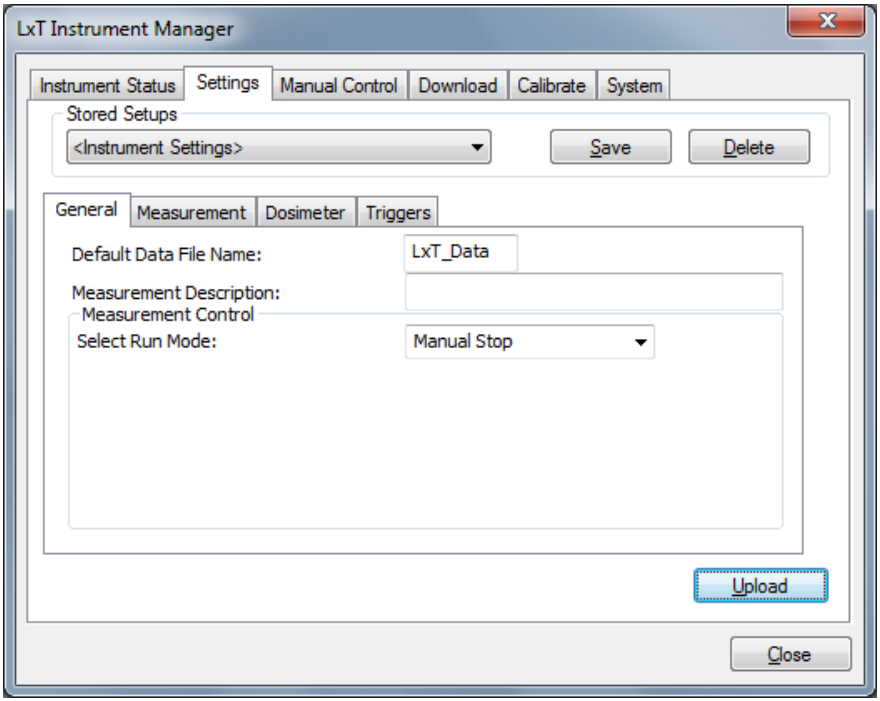


FIGURE 2-6 Instrument Manager; Settings Page

Displaying the SoundTrack LxT Setup

During connection the SoundTrack LxT setup parameters are downloaded to the computer. These will be displayed on the Settings Page when it is first opened, along with the name “Instrument Settings” in the **Stored Setups** field at the

upper left of the page to indicate that these values do represent the present setup of the SoundTrack LxT.

Displaying the Settings

SoundTrack LxT settings are distributed over four menus, labeled as shown in FIGURE 2-7.

General Menu

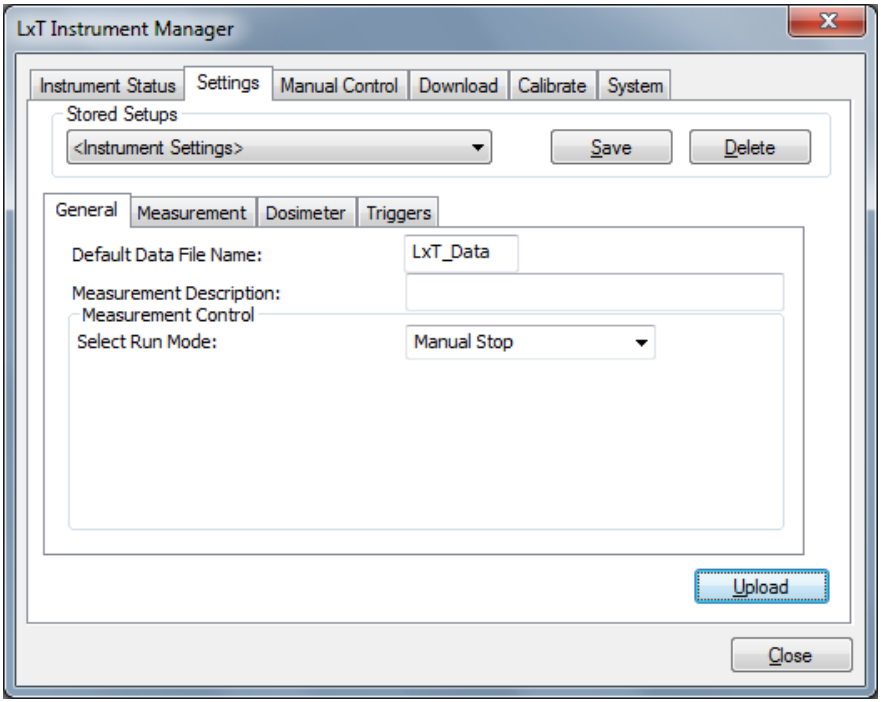


FIGURE 2-7 Settings; General Menu

Measurement Menu

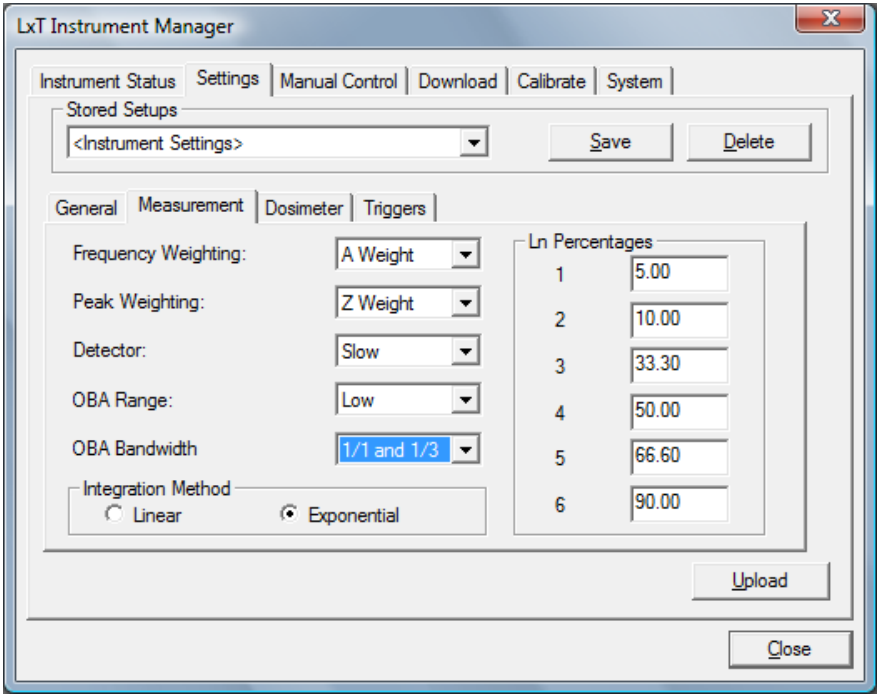


FIGURE 2-8 Setting; Measurement Menu

Dosimeter Menu

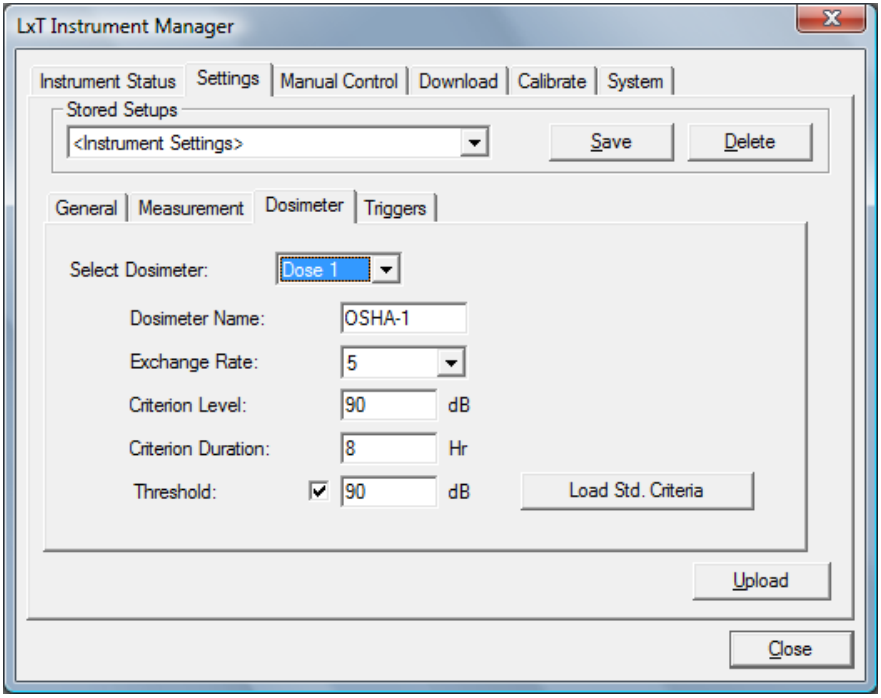


FIGURE 2-9 Settings; Dosimeter Menu

Triggers Menu

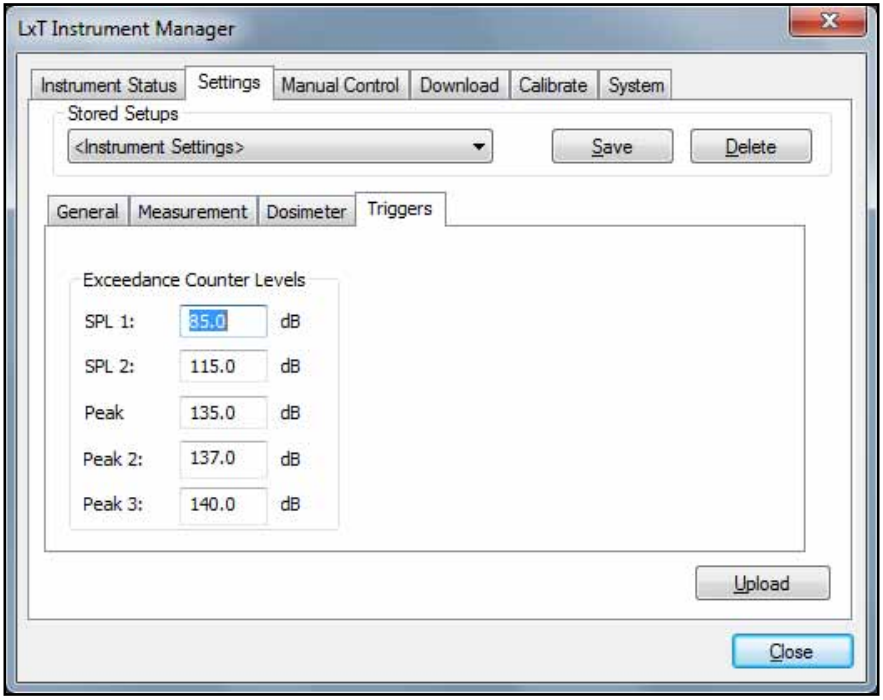


FIGURE 2-10 Settings; Triggers Menu

Creating a New Setup

Note that setups which have been created and stored previously can be recalled, and modified if necessary, instead of creating new ones. For more details on recalling a setup, see "Recalling a Setup" on page 2-17.

Working with the General, Measurement, Dosimeter and Triggers Menus shown above, the user can create and store a new SoundTrack LxT setup. See the SoundTrack LxT User Manual for detailed descriptions of the parameters which are set when creating a setup.

Name and Measurement Description

The name and measurement description of the setup appear in the General Menu, shown in FIGURE 2-7 "Settings; General Menu" . Each is entered by left clicking on the appropriate parameter field and typing alphanumeric data using the keyboard.

Measurement Control

The options available for measurement control depend upon the Run Mode selected. Click the down arrow to the right of Select Run Mode window to open a menu of available run modes.

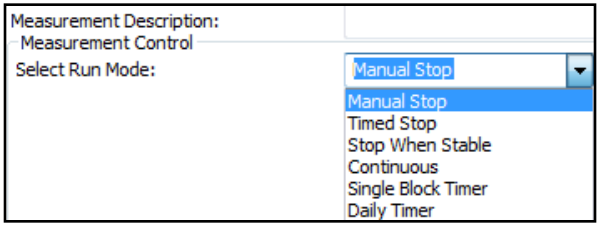


FIGURE 2-11 Run Modes

Click to make a selection and open a setup window for modes which require additional parameters to be defined.

Manual Stop

In this mode, the measurement will continue until the measurement is manually stopped by the user. No additional parameters need to be setup.

Time Stop

In this mode, the measurement is initiated manually and is stopped automatically after a user-defined time period. The measurement time is set as shown in FIGURE 2-12.

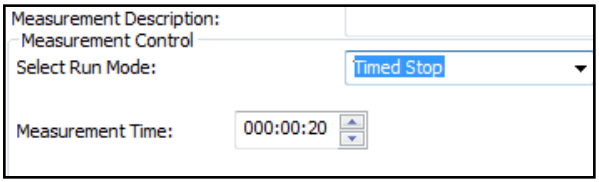


FIGURE 2-12 Time Stop Setup

Stop When Stable

In this mode, the measurement is initiated manually. The measurement will stop when the measured level has remained within a user-defined range and the measurement has run for a user-defined time period. The minimum time and Delta Leq are set as shown in FIGURE 2-13.

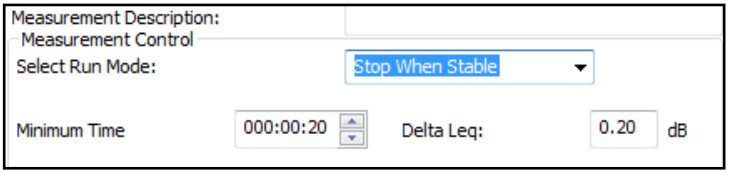


FIGURE 2-13 Stop When Stable Setup

Continuous

In this mode, the measurement is initiated manually or when the power is turned on. It is stopped manually. In this mode, no additional parameters need to be setup.

Single Block Time

In this mode, a single measurement is made for the time interval defined by the single block timer settings. The measurement may also be started or interrupted manually. The start and end times are set as shown in FIGURE 2-14.

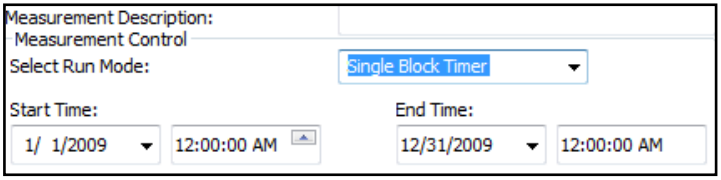


FIGURE 2-14 Single Block Time Setup

Daily Timer

In this mode, the measurement is initiated for one or more blocks of time every day within the programmed date range as set by the Daily Timer settings. The measurement may also be initiated or interrupted. Timer mode is often used for environmental noise monitoring or to make a work area survey that follows a worker's daily schedule for several days. The start and end times for each time block are set as shown in FIGURE 2-15.

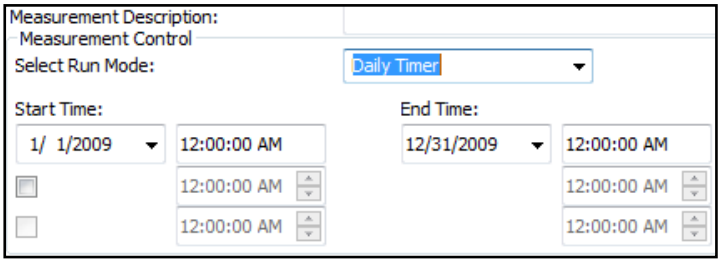


FIGURE 2-15 Daily Time Setup

Sound Level Meter Settings

The parameters defining the measurement of sound levels are entered from the Measurement Menu, shown in FIGURE 2-8. To select Frequency Weighting, Peak Weighting, Detector Setting or OBA Range, left click the down arrow to the right of the parameters field, which will open a drop-down menu. Left click the desired item to make the selection. Select the integration method by left clicking the check box to the left of the desired method. The Ln values are entered numerically into each field using the keyboard.

Sound Exposure and Noise Dose Settings

Note that independent setups can be created for Dose 1 and Dose 2 using the "Select Dosimeter Field".

The parameters defining the measurement of sound exposure and noise dose are entered from the Dosimeter Menu, shown in FIGURE 2-9.

Predefined Setups

One way to create a dosimeter setup is to select from a list of predefined setups. Left click **Load Std. Criteria** to open the list of predefined dosimeter setups as shown in FIGURE 2-

16.

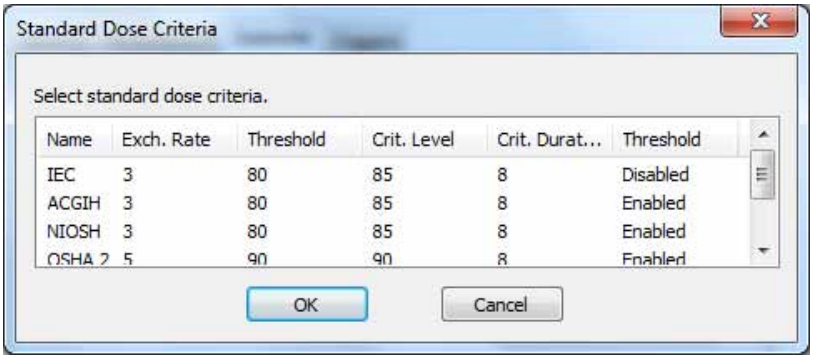


FIGURE 2-16 Pre-Defined Dosimeter Setups

Left click on the name of the desired setup in the first column and left click **OK**. The name and all the associated parameter values will be copied to the active dosimeter setup.

Manual Setups

Alternatively, the parameters can be entered one at a time. Dosimeter Name is a user-defined text field. Exchange Rate is selected from a list displayed by pressing the down arrow to the right of the parameter field. Criterion Level, Criterion Duration and Threshold are numerical values entered into the fields using the keyboard.

Noise Event Setting

The parameters defining noise events, based on the sound level exceeding user-defined threshold values, are entered from the Events Menu, shown in FIGURE 2-10. Two RMS thresholds (SPL 1 and SPL 2) and three Peak thresholds (Peak, Peak 1 and Peak 2) can be set by typing values into the fields using the keyboard.

To upload the new setup to the SoundTrack LxT, which will replace the previously stored setup, left click **Upload** as shown in FIGURE 2-17.

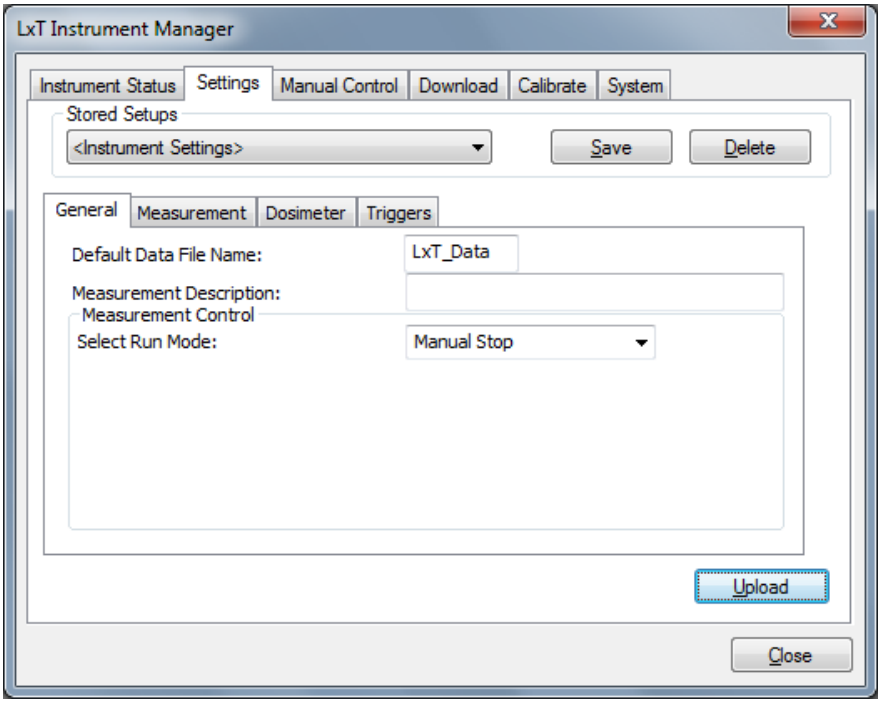


FIGURE 2-17 Uploading a Setup

When the upload has been completed, the message shown in Figure 2-18 will be displayed.

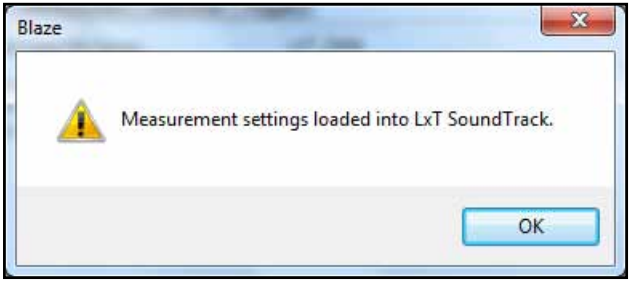


FIGURE 2-18 Upload Completed

SoundTrack LxT setups are saved as Stored Setups. To save a newly created setup, press **Save** as shown in FIGURE 2-19.

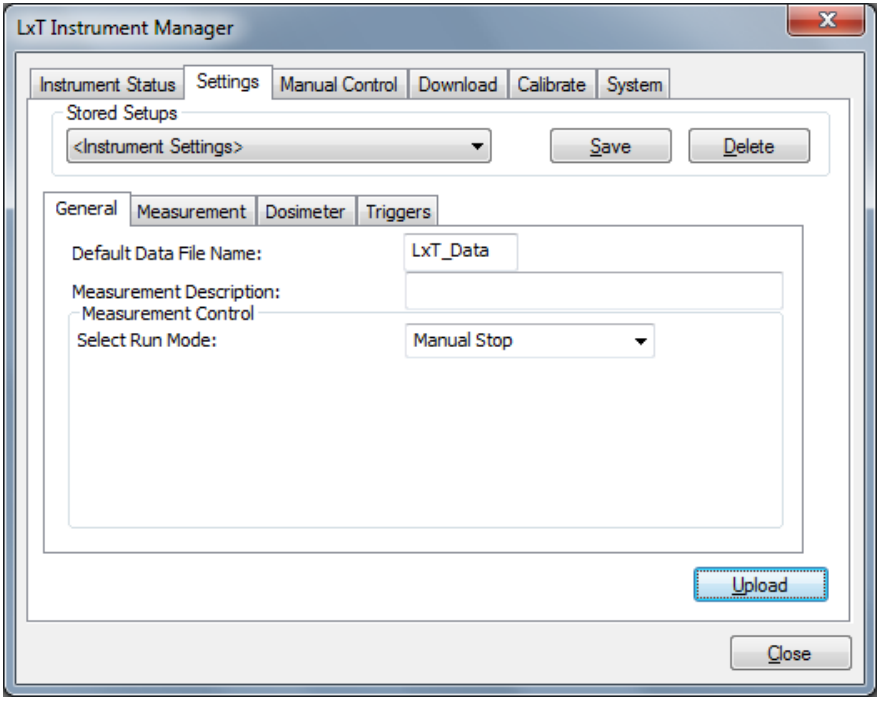


FIGURE 2-19 Save a Setup

Note that there is a 12 character limit for the configuration name.

This will bring up the Save Configuration Menu shown in FIGURE 2-20.

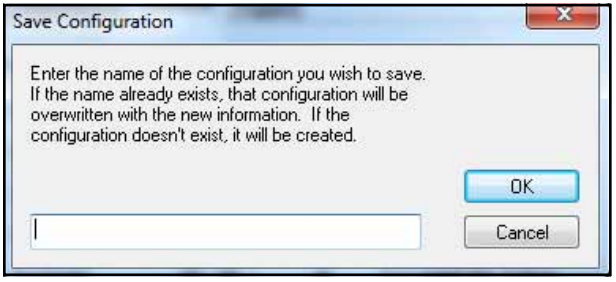


FIGURE 2-20 Save Configuration Menu

Enter a name for this setup file using the keyboard and left click **OK**.

Recalling a Setup

To recall a previously stored setup, left click the down arrow to the right of the "Stored Setups" field to open a list of stored setups, as shown in FIGURE 2-21.

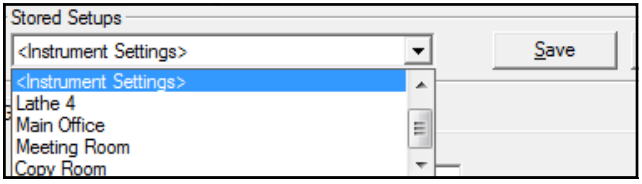


FIGURE 2-21 Stored Setups Menu

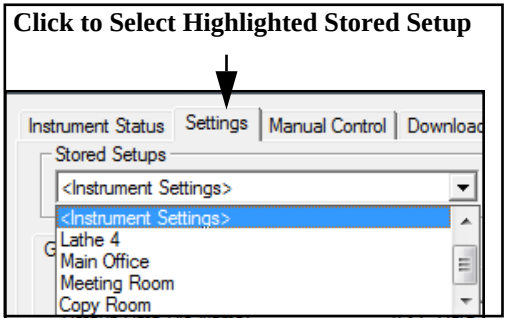


FIGURE 2-22 Selecting a Stored Setup

Highlight the desired stored setup and click the Settings Tab to make it the active setup.

The General, Measurement, Dosimeter and Triggers Pages will now display the setup parameters corresponding to this recalled setup.

Deleting a Setup

To delete a stored setup, recall that setup as described in the preceding section "Recalling a Setup" on page 2-17 and then delete it by left clicking **Delete** as shown in FIGURE 2-23.

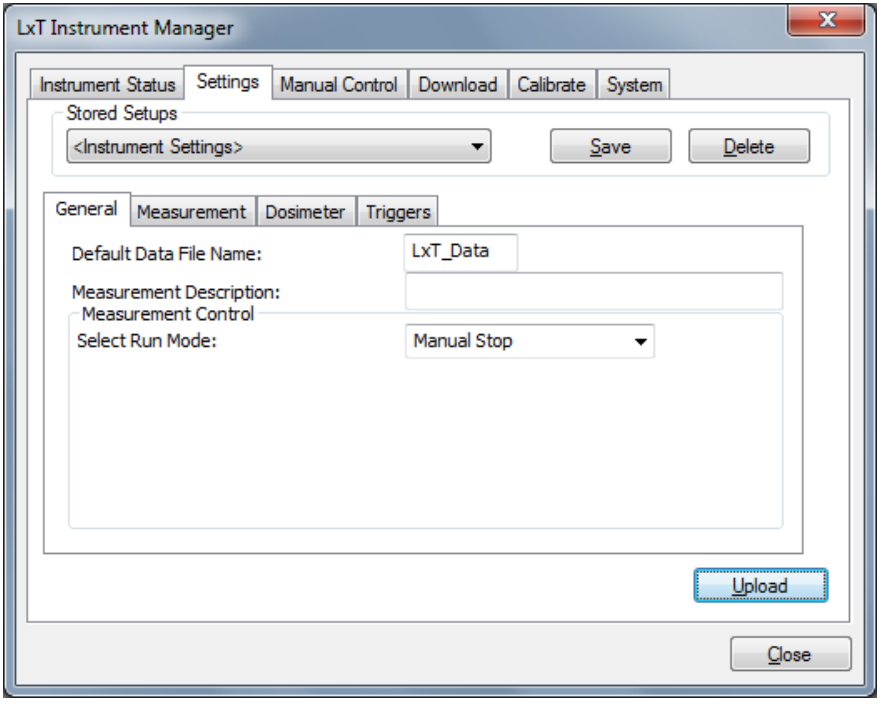


FIGURE 2-23 Delete a Setup

Manual Control Page

Note that the SoundTrack LxT can also be operated manually when not connected to the PC.

The Manual Control Page permits the user to remotely operate an SoundTrack LxT which is connected to the PC.

Left click the **Manual Control** tab to open the Manual Control Page, shown in FIGURE 2-24.

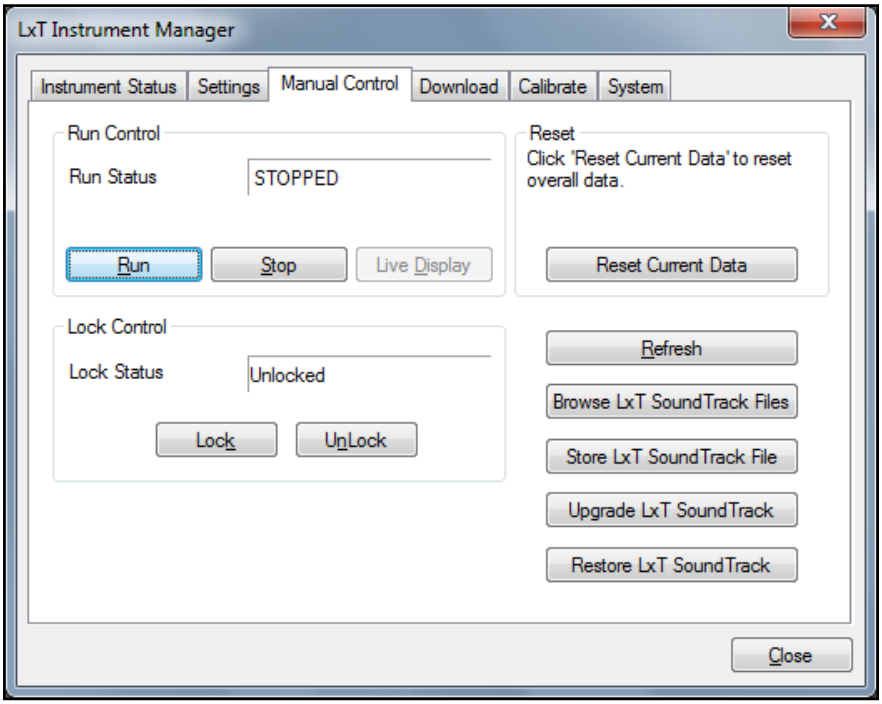


FIGURE 2-24 Manual Control Page

From the Manual Control page, the following operations can be performed:

•Run the SoundTrack LxT

•Stop the SoundTrack LxT

•Reset the data to clear the SoundTrack LxT memory

•View live data (SPL, Leq, Peak, Max)

•Refresh the Live Display

•Lock the SoundTrack LxT

•Unlock the SoundTrack LxT

•Browse SoundTrack LxT Files

•Store SoundTrack LxT Files

•Upgrade SoundTrack LxT

•Restore SoundTrack LxT

Begin a Measurement

Left click **Run**, as shown in FIGURE 2-25, to put the SoundTrack LxT into the Run mode and begin a measurement.

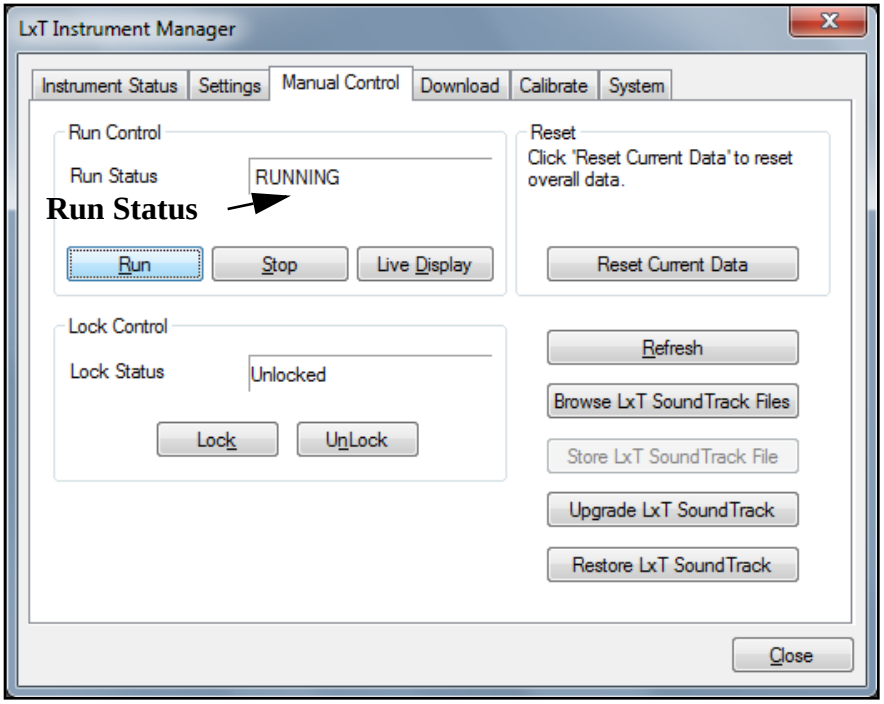


FIGURE 2-25 Run Key

When the SoundTrack LxT is running, the Run Status will be set to "RUNNING". Also, the Session Log will be updated to reflect the running status of the SoundTrack LxT and the date and time the run was initiated.

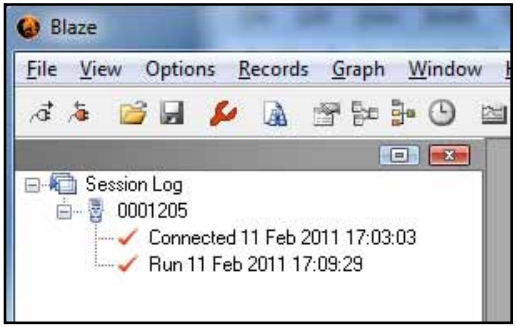


FIGURE 2-26 Session Log; Running

Live Measurement Display

Left click **Live Display**, as shown in FIGURE 2-27, to display the measurement in progress while the SoundTrack LxT is running.

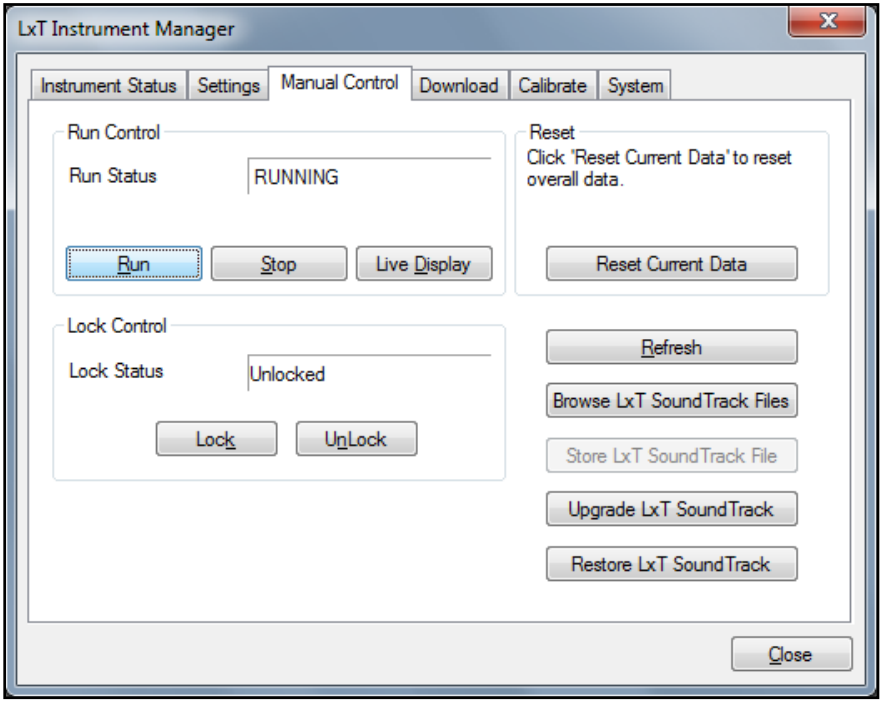


FIGURE 2-27 Live Measurement Key

This will open the Live Display Window shown in FIGURE 2-28.

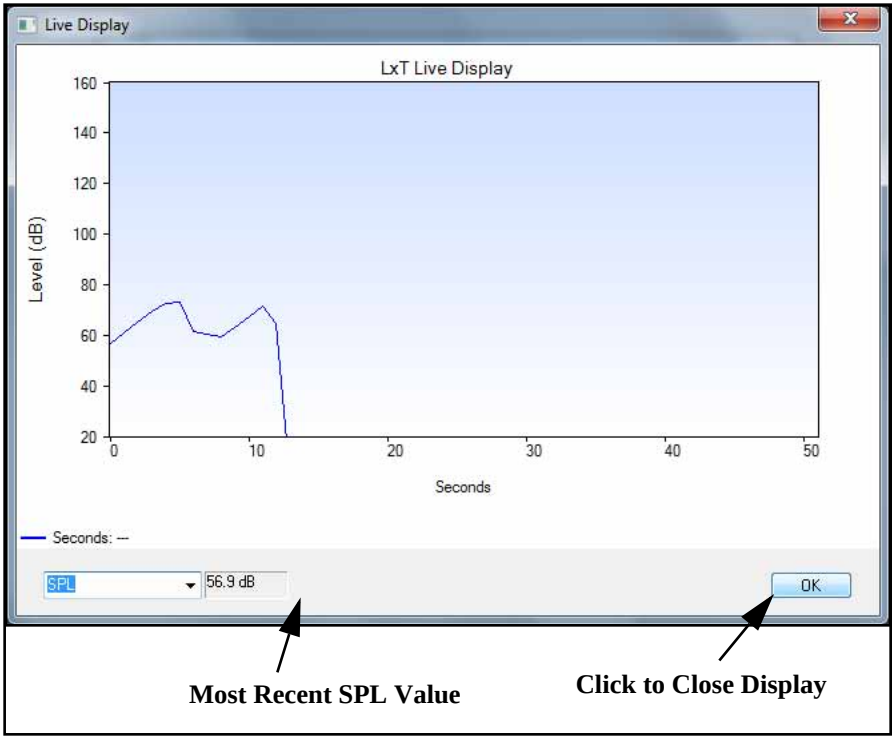


FIGURE 2-28 Live Display Window

In the default view, the SPL value will be graphed with the most recent sample value displayed.

Cursor Display

Click onto the display area to set a cursor position along the time axis. The level displayed will now correspond to the curve at that time point.

Displayed Parameter Selection

There are twelve different measured parameters whose values can be displayed on the Live Display. To make a selection, left click the down arrow to the right of the Displayed Parameter field. This will open a drop-down menu listing the available parameters as shown in FIGURE

2-29.

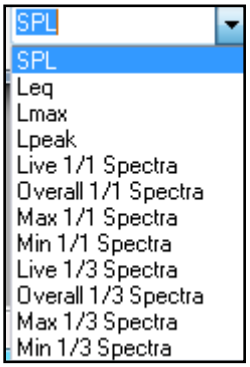


FIGURE 2-29 Live Display; Parameter Selection

Left click the desired parameter to make a selection.

Live Spectrum Display

The last eight options for the Displayed Parameter are frequency spectra, which will produce a display similar to that shown in FIGURE 2-30.

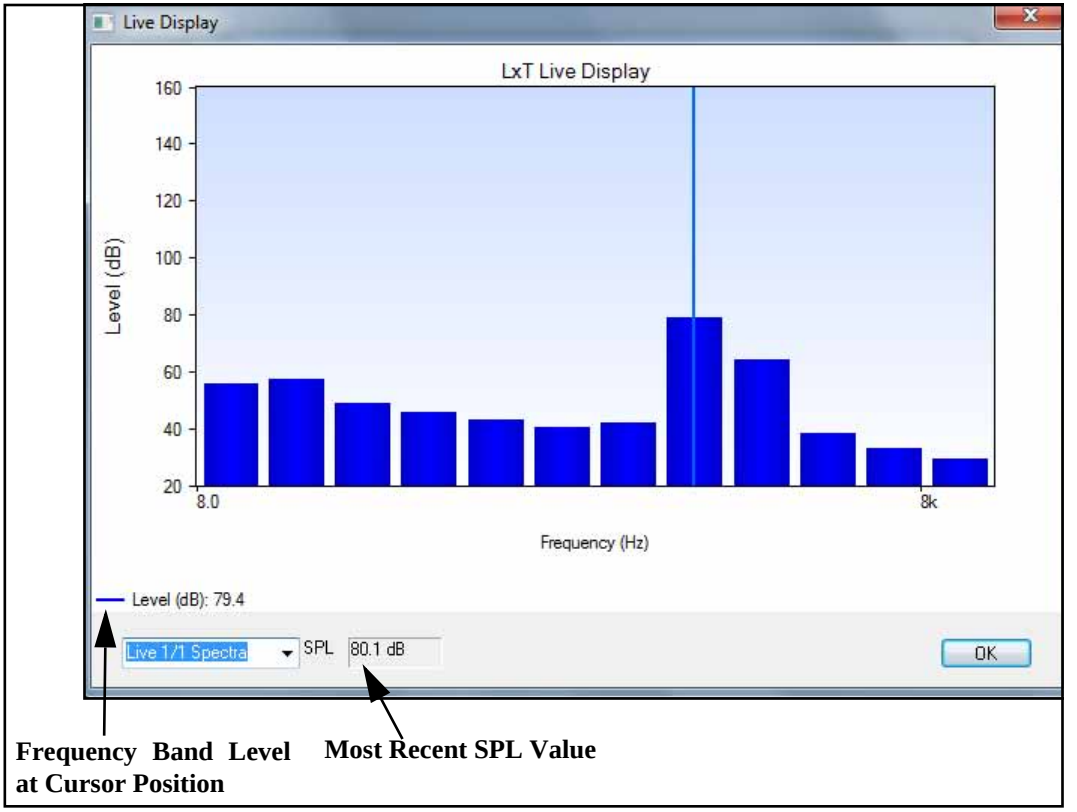


FIGURE 2-30 Live Spectrum Display

Click on the display to select a frequency band which will produce a frequency band cursor. The level for that frequency bank will then be displayed, along with the most recent SPL value.

Close Live Display

To close the Live Display, left click **OK** at the lower right corner.

Refresh Display

Note: the Live Display window must be closed in order to refresh it.

To refresh the live display, from the Manual Control Page shown in FIGURE 2-24 left click **Refresh** as shown in FIGURE 2-31.

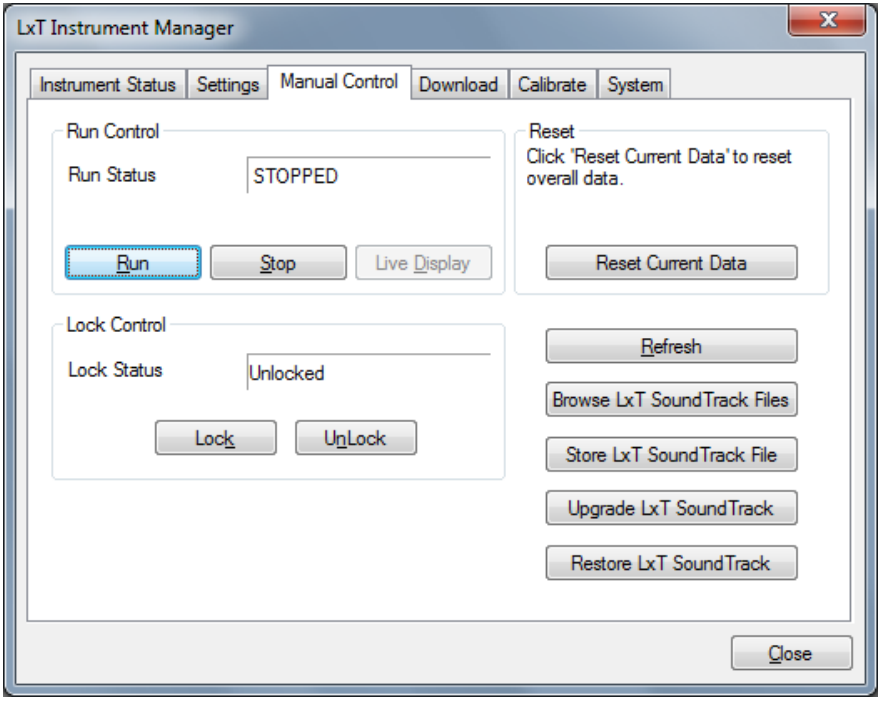


FIGURE 2-31 Refresh

Left click **Stop**, as shown in FIGURE 2-32, to put the SoundTrack LxT into the Stop mode and terminate a measurement.

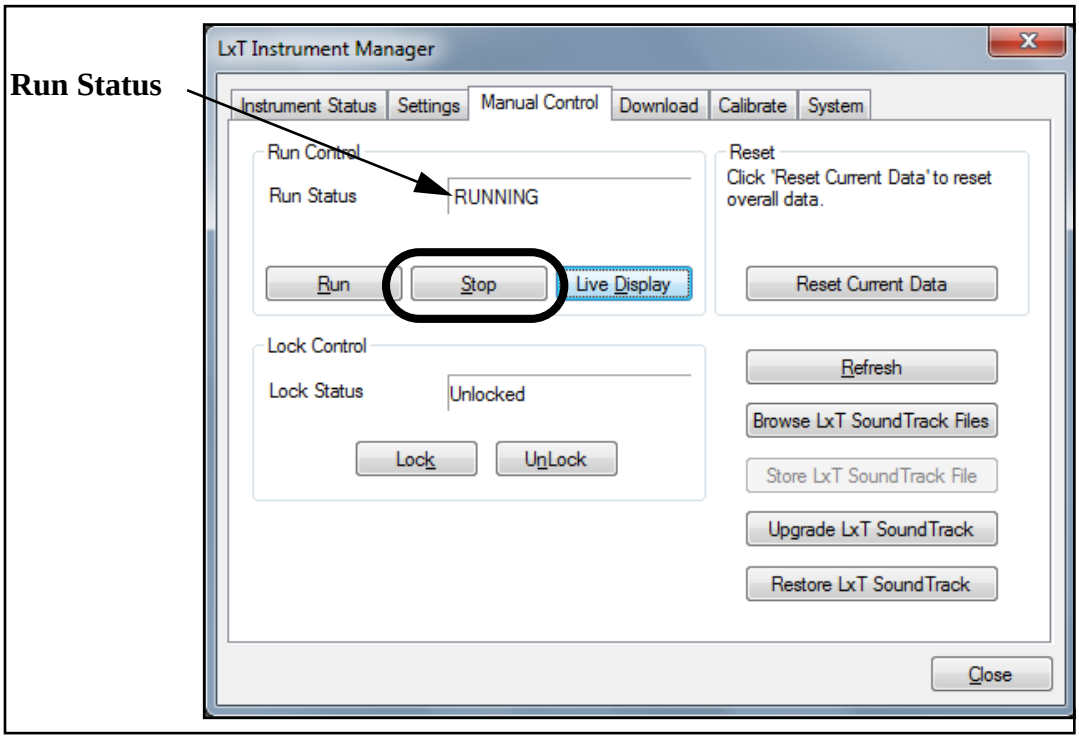


FIGURE 2-32 Stop Key

When the SoundTrack LxT is stopped, the Run Status will change to "STOPPED". Also, the Session Log will be updated to reflect the stopped status of the SoundTrack LxT, along with the date and time of the stop, as shown in FIGURE 2-33.

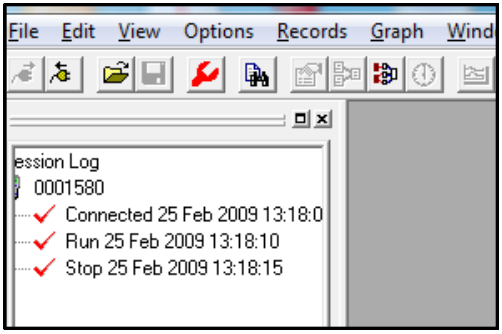


FIGURE 2-33 Session Log; Stopped

Reset Current Data

Warning: Exercise caution when using this action since deleted data cannot be recovered. Data you wish to keep should be downloaded prior to using the Reset Current Data function.

To clear the current data memory of the connected SoundTrack LxT, left click **Reset Current Data** as shown in FIGURE 2-34.

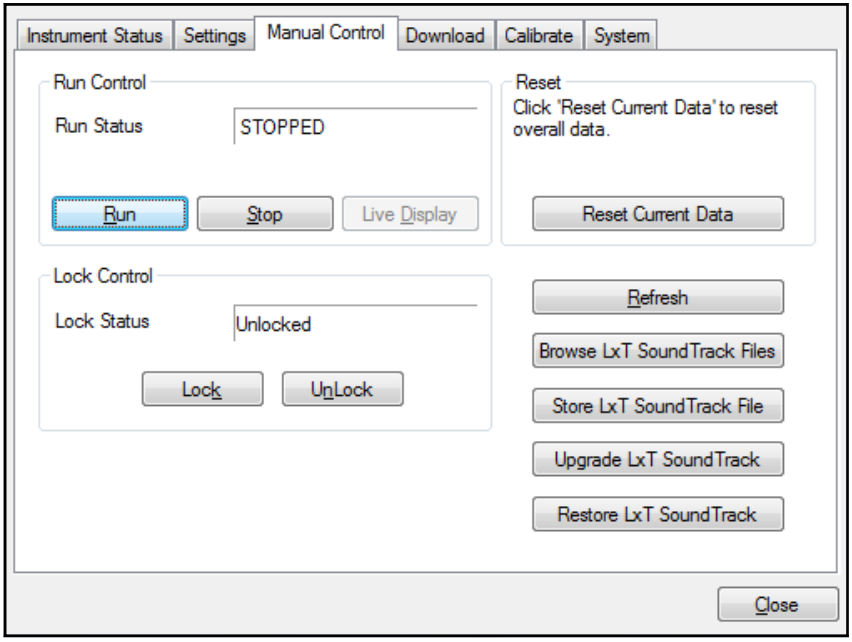


FIGURE 2-34 Reset Current Data

The data and time of a reset appears in the Session Log as shown in FIGURE 2-35.

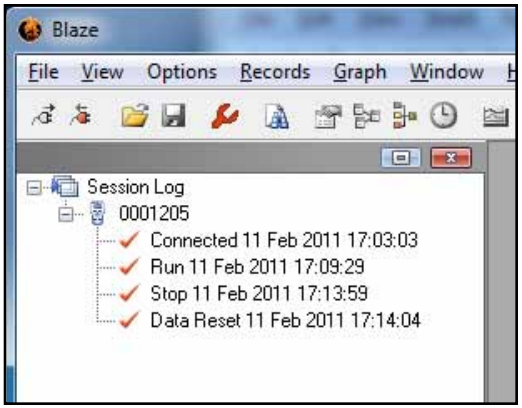


FIGURE 2-35 Session Log; Reset

Locking the SoundTrack LxT Keypad

The SoundTrack LxT has a very useful keypad Lock feature. The Lock Control section of the Manual Control Menu is shown in FIGURE 2-36.

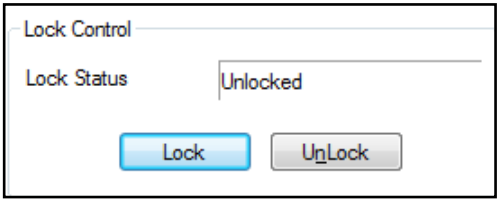


FIGURE 2-36 Lock Control

Lock Preferences

See the SoundTrack LxT User Manual for a description of the locking features of the SoundTrack LxT.

Click **Lock** to view the Set Password menu.

FIGURE 2-37 Set Password Menu

There are four options available:

•**Unlocked:** The keyboard is not locked; all functions are accessible to the instrument user.

•**Locked, Manual Store:** The keyboard is locked, although measurements may be run, paused, stopped and stored.

•**Locked, Auto Store:** The keyboard is locked and the data will be stored automatically.

•**Fully Locked:** The keyboard is fully locked.

Click on the desired option to make a selection, select a numerical password between 0000 and 9999 and click **OK**.

The new lock status will appear in the Lock Control menu.

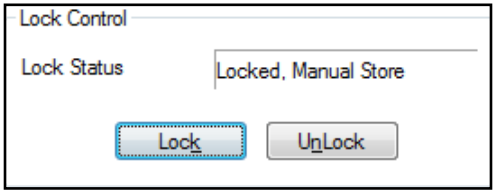


FIGURE 2-38 Lock Status

To browse the files stored in the SoundTrack LxT, left click **Browse SoundTrack LxT Files** as shown in FIGURE 2-39.

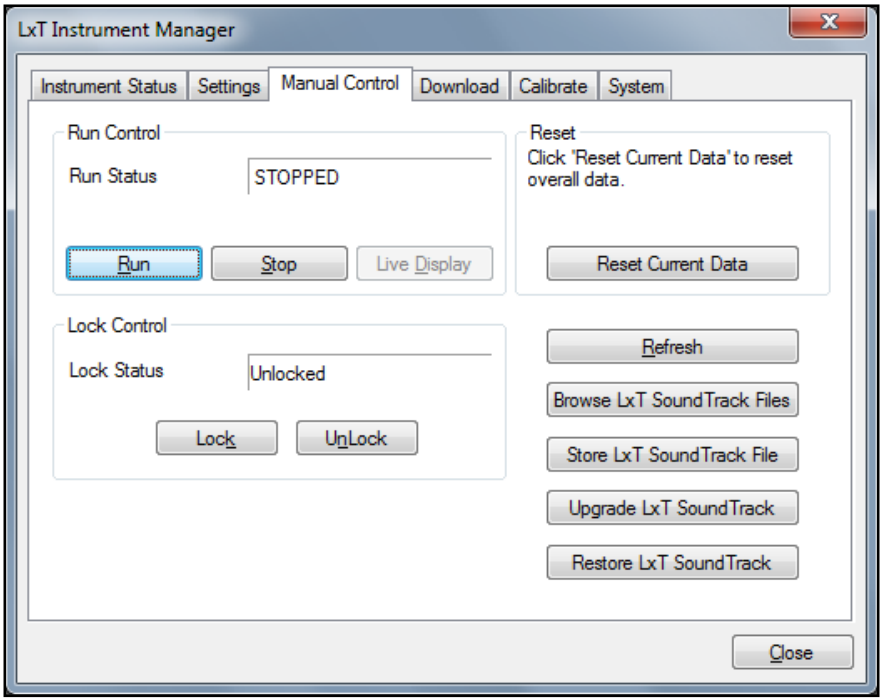


FIGURE 2-39 Browse SoundTrack LxT Files

This will open the SoundTrack LxT Files Browser window shown in FIGURE 2-40.

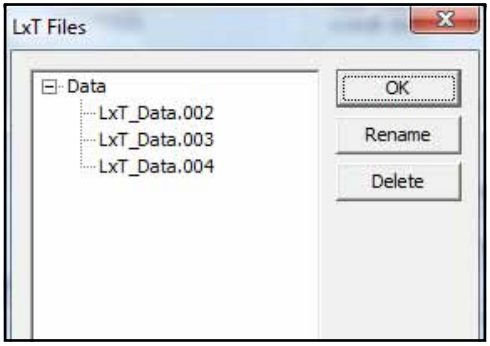


FIGURE 2-40 SoundTrack LxT Files Browser

If there is a + in the box to the left of “Data”, the data files tree can be expanded by left clicking that box, which will change the + to a - to indicate that the tree is already expanded.

Rename SoundTrack LxT Files

Any SoundTrack LxT file listed can be renamed by highlighting it with the cursor and left clicking **Rename,** which will create a frame around the file name as shown in FIGURE 2-41.

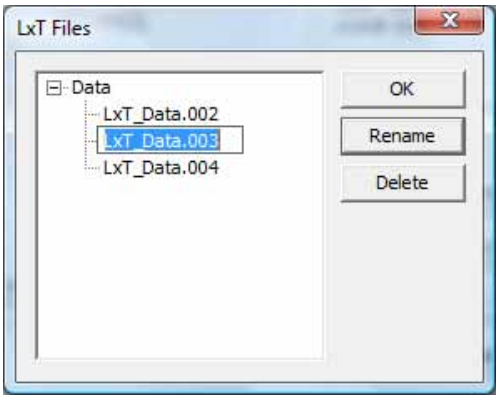


FIGURE 2-41 Rename SoundTrack LxT File

Note: Do not modify or delete the file extension .noi when renaming a SoundTrack LxT file.

Modify the file name as desired and left click outside the frame to accept the new name.

Delete SoundTrack LxT Files

Any SoundTrack LxT file listed can be deleted by highlighting it with the cursor and left clicking **Delete** as shown in FIGURE 2-42.

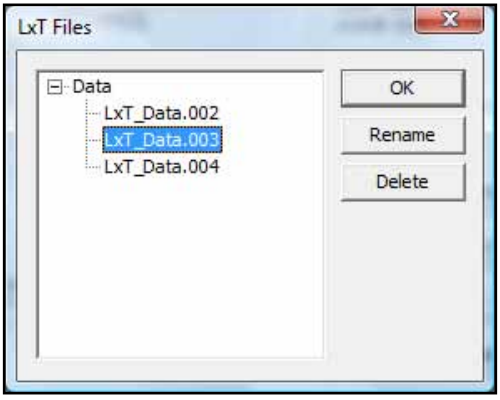


FIGURE 2-42 Delete SoundTrack LxT Files

Upgrade SoundTrack LxT

To upgrade the firmware in the SoundTrack LxT, first place the firmware file on your computer using a path you will remember. Then left click **Upgrade SoundTrack LxT** as shown in FIGURE 2-43.

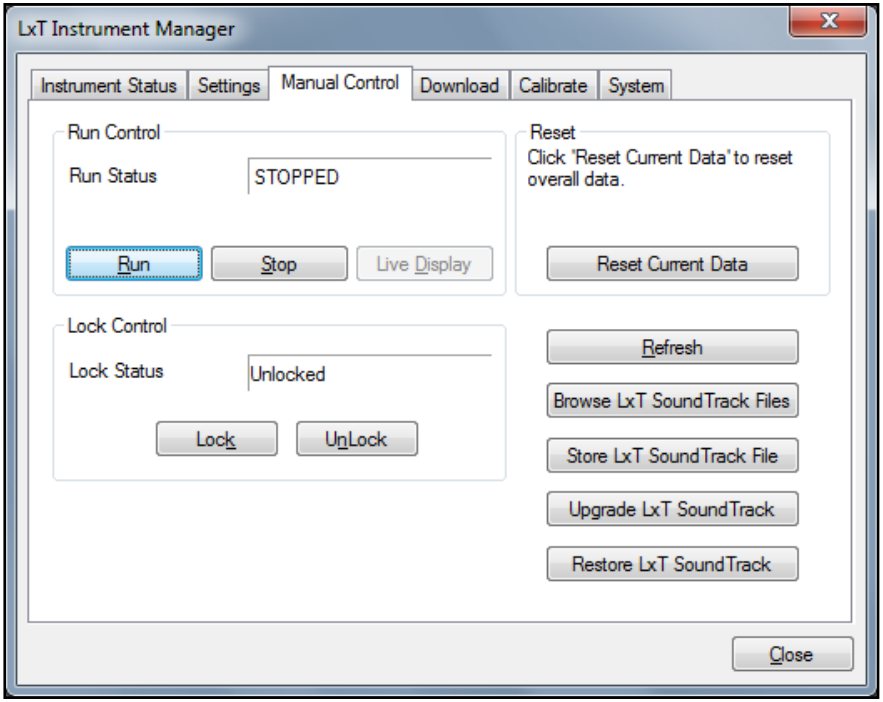


FIGURE 2-43 Upgrade SoundTrack LxT

This will display the warning message shown in FIGURE 2-44.

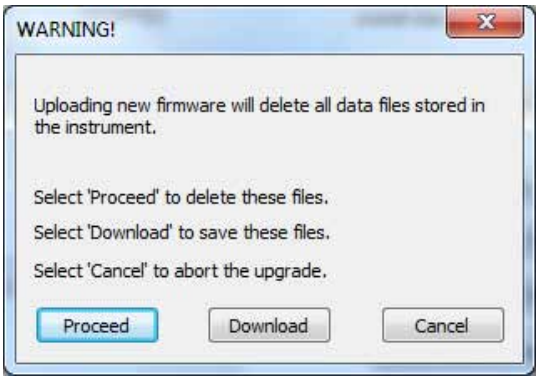


FIGURE 2-44 Upload SoundTrack LxT Warning Message

Press **Cancel** if you wish to abort the upload operation.

Press **Download** if you wish to download the data files and store them to your computer before performing the upload operation.

Press **Proceed** to continue the upload operation.

This will open a window containing the SoundTrack LxT Firmware Loader as shown in FIGURE 2-45.

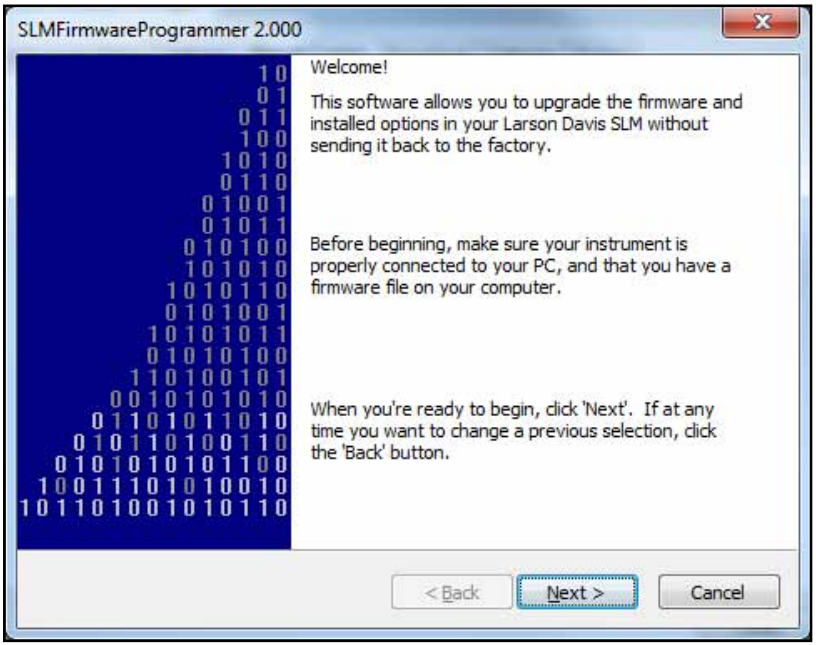


FIGURE 2-45 SoundTrack LxT Firmware Loader

Follow the directions provided to implement the upload process.

Restore SoundTrack LxT

Note: Restoring SoundTrack LxT will delete all measurement files and restore all settings to factory defaults.

This action will restore the SoundTrack LxT to the exact status it had upon delivery from the factory. To do this, left click **Restore SoundTrack LxT** as shown in FIGURE 2-46.

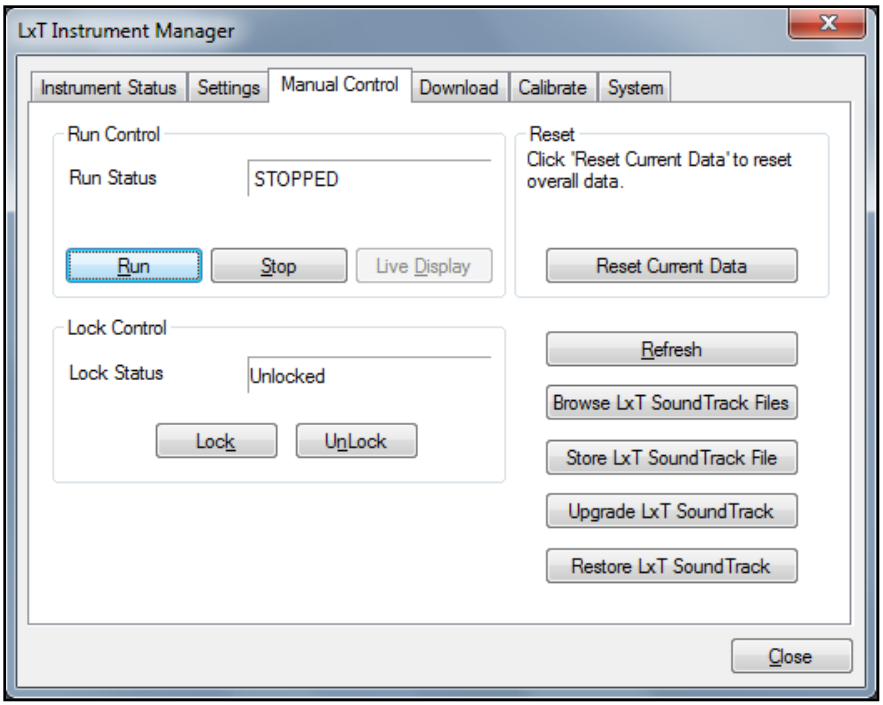


FIGURE 2-46 Restore SoundTrack LxT

This will produce the warning message shown in FIGURE 2-47.

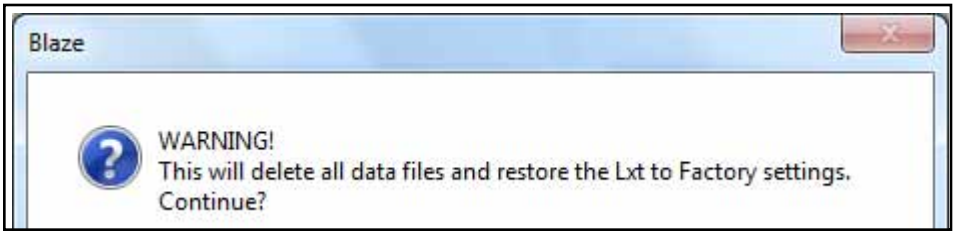


FIGURE 2-47 Restore SoundTrack LxT Warning Message

To proceed with the restoration, left click **Yes**.

To abort the restoration, left click **No**.

Download Page

To download measured data from the connected SoundTrack LxT to the PC, left click the **Download** tab to open the Download Page shown in FIGURE 2-48.

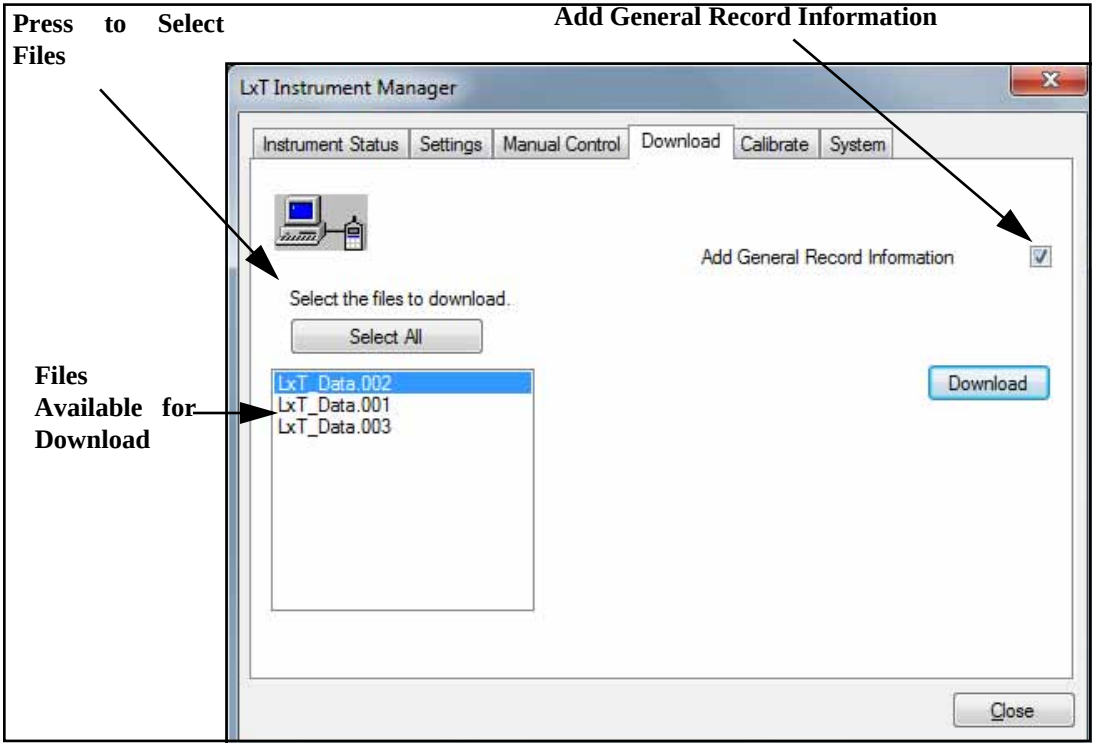


FIGURE 2-48 Download Page

Select File to Download

The files available for download from the SoundTrack LxT will be listed in the field on the lower left of the screen. There are two options for downloading files; all files or selected files.

Download All Files

Pressing the “Select All” button will highlight all the files. Pressing the “Download” button will then retrieve all the files from the SoundTrack LxT.

After the “Select All” button has been pressed, its name and function change to “Deselect All” which when pressed will unhighlight all the files.

Selected Files

Select the files you wish to download. Two or more files can be selected.

If the files to be downloaded are listed sequentially, you can select them as a block. Begin with a left click on the first file, then hold down the Shift key while using another left click to select the last file in the sequence. This will highlight all the files in the sequence.

If the files to be downloaded are not listed in a single sequence, use a left mouse click to select the first file, then hold down the Control key while left clicking on each additional file you wish to download.

Note the general information stored during download can be modified later or, if it has not been added during download, it can be added later as well. See "Inputting or Modifying General Information" on page 3-11 for further details.

By checking the "Add General Record Info" box, shown in FIGURE 2-48 prior to downloading, you will be able to add general information to each of the downloaded records during the download process. As the download process proceeds, the dialog box shown in FIGURE 2-49 will appear for each record, permitting information to be input using the computer keypad.

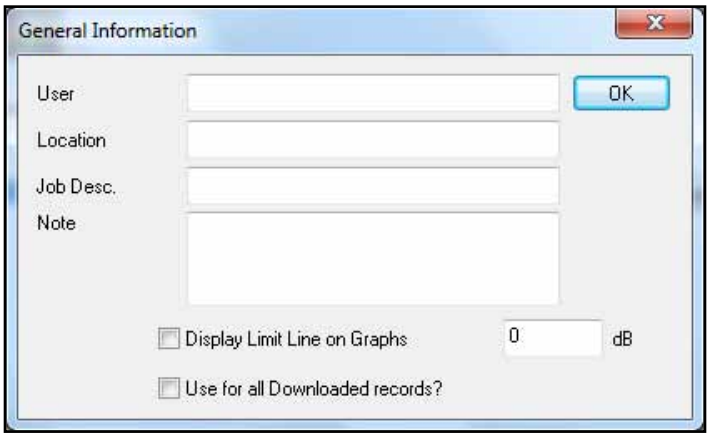


FIGURE 2-49 General Information Dialog Box

Display Limit Line on Graphs

Checking the box for Display Limit Line on Graphs will cause a horizontal line to appear on all graphs of level vs frequency at the user-selected amplitude position.

Same Information for All Records

If it is desired that the same general information provided for the first record be attached to all records, avoiding the necessity of entering information for each record, check the checkbox to the left of the text "Use for all Downloaded records?"

When the information for the record in question has been entered, press **OK** to continue the download process.

When the files to be downloaded have been selected, left click Download as shown in FIGURE 2-50 to initiate the download process.

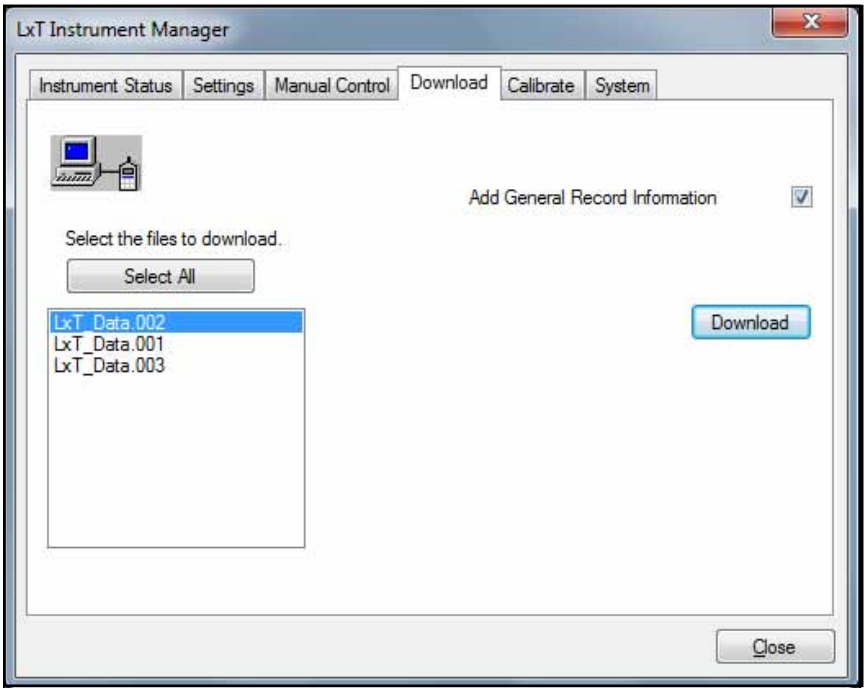


FIGURE 2-50 Download Key

The message “Data Transfer in Progress” will appear in a window along with a horizontal bar indicating the progress of the download for each data record.

Reset SoundTrack LxT Memory

At the conclusion of the download, the dialog box shown in FIGURE 2-51 is displayed to indicate that the download process has been completed and to provide the user with the option of resetting the data memory in the SoundTrack LxT.

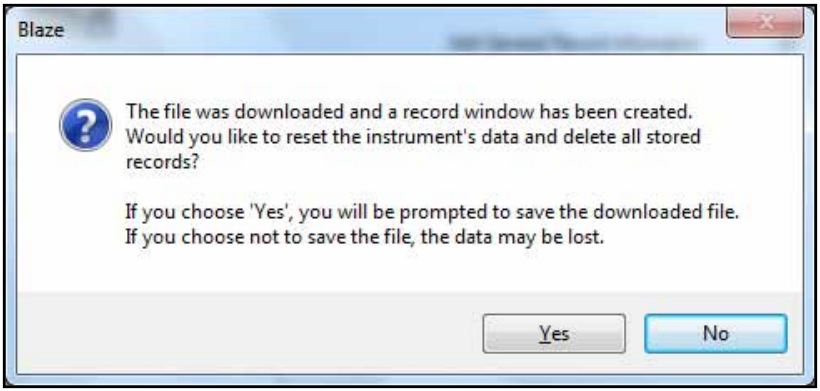


FIGURE 2-51 Reset SoundTrack LxT Data

Memory

Left click **Yes** to perform the reset or **No** to leave the measured data in the SoundTrack LxT memory. Following this, the downloaded data will be displayed as shown in FIGURE 2-52.

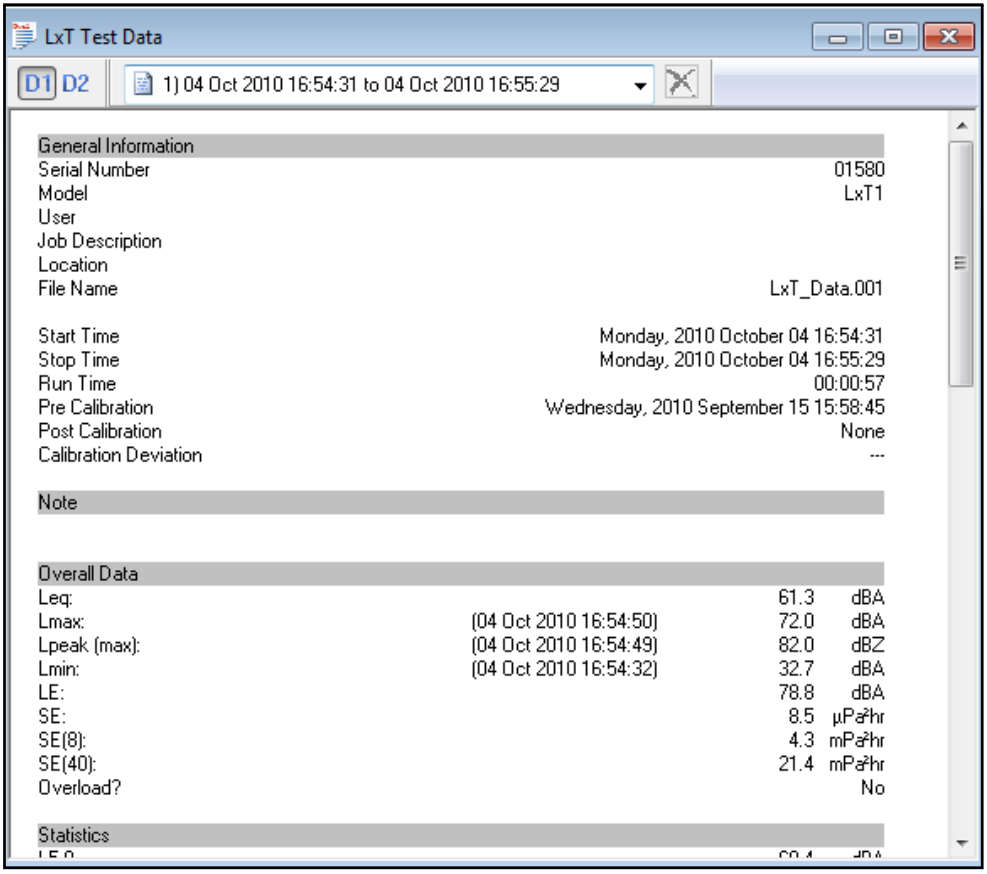


FIGURE 2-52 Measurement Display

For further information on the display of downloaded data, see the chapter "Data Display" on page 3-1.

Session Log Indication

When the download is complete, a new item will appear on the session log indicating the data and time of the download as shown in FIGURE 2-53.

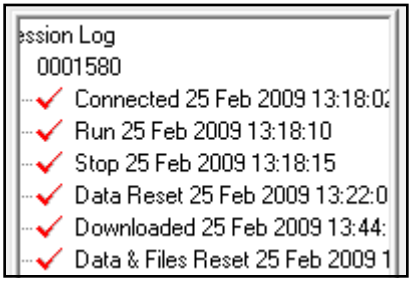


FIGURE 2-53 Session Log; Downloaded

Calibrate Page

Normally the SoundTrack LxT is calibrated using an acoustic calibrator which exposes the microphone to a known sound pressure level (dB) at a known frequency. The calibration procedure adjusts the sensitivity of the meter so that the meter reads the applied decibel level. There is, however, an alternative mode in which a voltage is input directly to the input connector, without the preamplifier. In this case, the sensitivity is adjusted such that the meter reads a user-defined decibel level. This mode is useful when the meter is being used to measure a signal from a transducer other than a microphone, such as an accelerometer.

Frequency Weighting/Detector

When calibration is performed, the SoundTrack LxT is automatically set to use C-Weight for the frequency weighting and Fast for the RMS detector averaging time. The use of C-Weighting permits the use of calibrators providing signals in the range 200 Hz to 1,250 Hz. The most commonly used calibrators provide signals at 250 Hz or 1 kHz.

The Fast detector is used to minimize the amount of time it takes for the value of the measured level to stabilize.

When the calibration is completed, the frequency weighting and detector are reset to those which were active prior to the calibration.

Click the **Calibrate** tab to open the Calibrate Page shown on FIGURE 2-54.

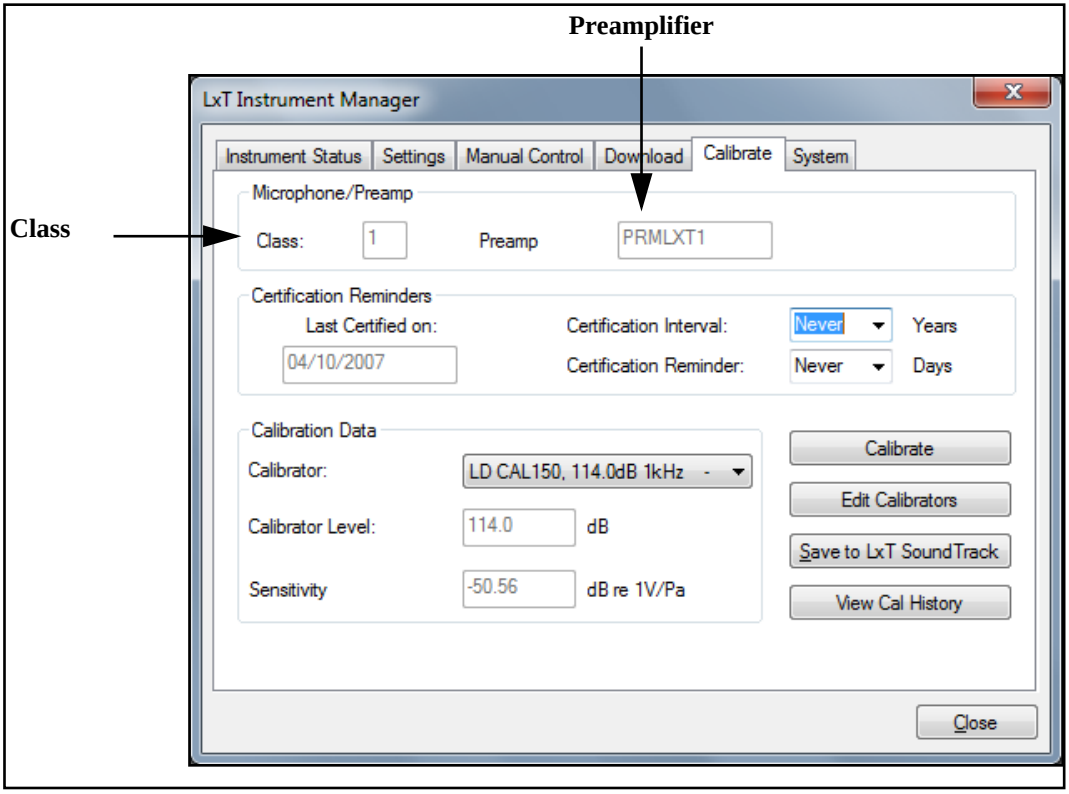


FIGURE 2-54 Calibrate Page

Microphone/Preamplifier

The upper section of the Calibration Page displays the accuracy Class according the IEC and ANSI standards and the model number of the preamplifier. Since these values are read from the SoundTrack LxT, the data appear greyed out and are not accessible for user modification.

It is standard practice to have a measuring instrument such as the SoundTrack LxT certified by the manufacturer at regular intervals. The interval is usually selected by the user according to the application for which it is used, although in some cases this might be based on a requirement established by a client for whom measurements are being performed. Many PCB Piezotronics customers select to have certification performed annually.

To assist users in maintaining their certification schedule, certification reminders are provided on the Calibrate Page as shown in FIGURE 2-55.

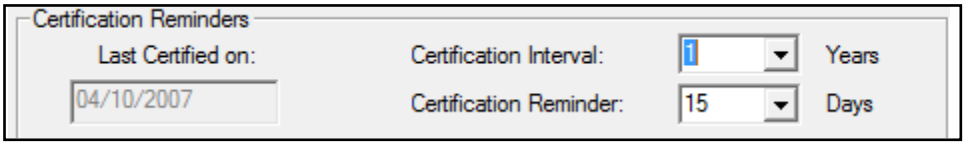


FIGURE 2-55 Certification Reminders

Last Certification Date

The date of the last certification is stored in the SoundTrack LxT as part of the certification process.

Certification Interval

The desired interval, in years, between certifications is set by the user by left clicking the down arrow to the right of the Cal. Interval data field, which will open the drop down menu shown in FIGURE 2-56.

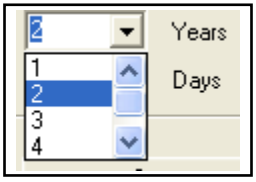


FIGURE 2-56 Certification Interval Menu

Left click on the desired value to make a selection. This value is stored in the SoundTrack LxT.

Certification Reminder

The SoundTrack LxT can be set to provide an on-screen reminder when the date for a new certification is approaching. This message will appear at a user-selected number of days prior to the desired certification date. This number is set by left clicking the down arrow to the right of the Cert. Reminder data field, which will open the drop down menu shown in FIGURE 2-57.

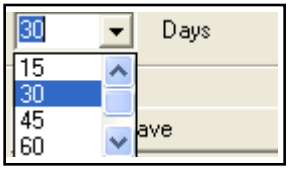


FIGURE 2-57 Certification Reminder

Left click on the desired value to make a selection. This value is stored in the SoundTrack LxT and used to determine when the certification reminder should be displayed.

The lower section of the Calibration Page, shown in FIGURE 2-58, is used to perform the calibration.

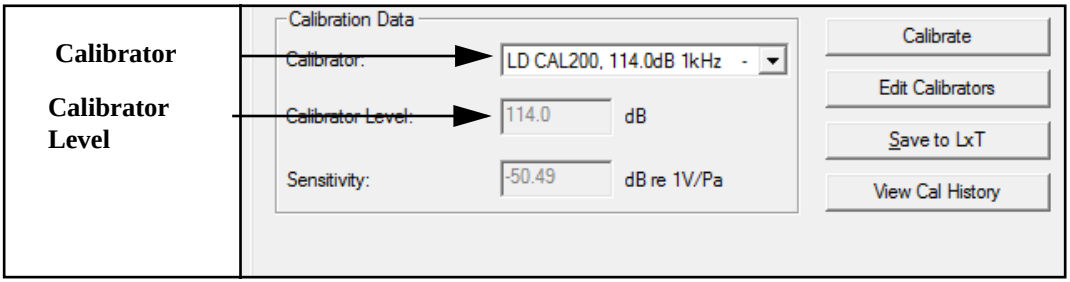


FIGURE 2-58 Calibration Section of Calibration Page

As mentioned at the beginning of the chapter, the calibration can be performed using either an acoustic calibrator or a voltage signal; usually the acoustic calibrator method is used. The SoundTrack LxT can have stored in its internal memory the specifications of four different calibrators. These data can be input either from the front panel of the SoundTrack LxT or using Blaze, as described below.

Edit Calibrators

The CAL200 provides a nominal pressure level of 94 dB or 114 dB. The exact levels are printed on the Larson Davis calibration sheet that came with the calibrator. When using a free-field microphone, the pressure level at the microphone diaphragm will be slightly different. Thus, a free field correction of -0.12 dB should be applied to either of these levels.

To edit the calibrator specifications, left click **Edit Calibrators** as shown in FIGURE 2-59.

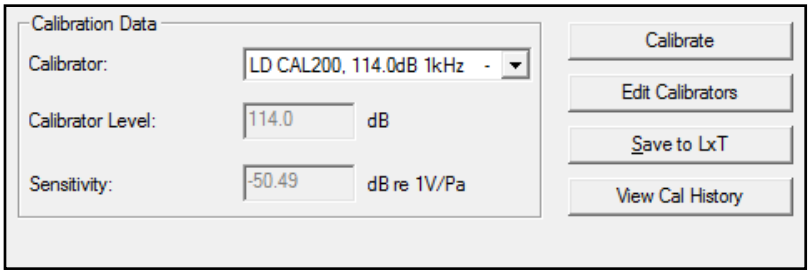


FIGURE 2-59 Edit Calibrators

This will display a window listing all four possible calibrators, along with their output level and frequency values shown in FIGURE 2-60.

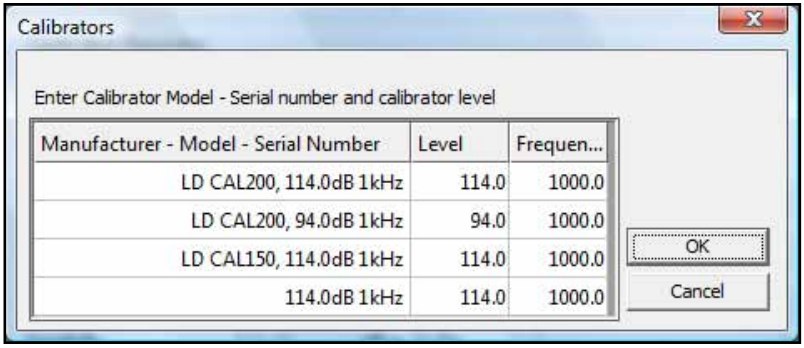


FIGURE 2-60 Calibrator Specifications Table

Any of these specifications can be edited directly from this table. When the calibrator(s) specifications have been

entered as desired, left click **OK** to make changes and close this window.

Select Calibrator

To select the calibrator which is to be used for the calibration, left click the down arrow to the right of the Calibrator field, which will open a drop down menu listing all four calibrators as shown in FIGURE 2-61.

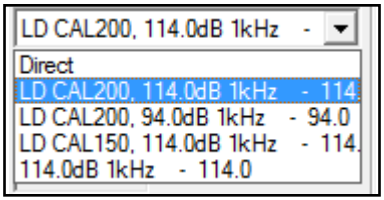


FIGURE 2-61 Calibrator Selection Menu

Highlight the desired calibrator with the cursor and left click to make a selection.

Perform Calibration

Left click **Calibrate**, as shown in FIGURE 2-62, to begin the calibration process.

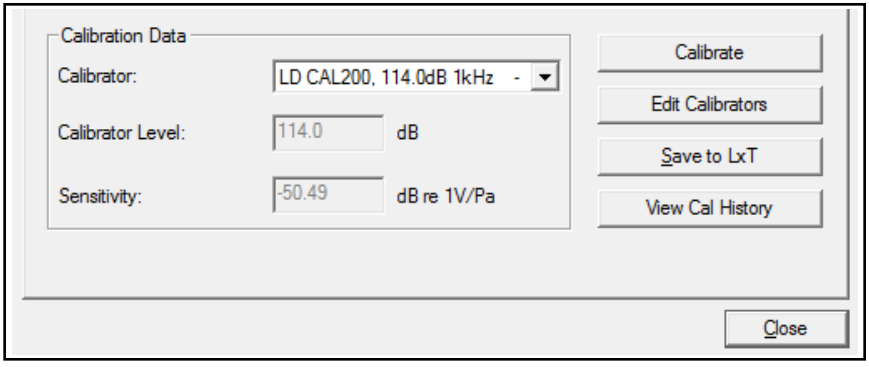


FIGURE 2-62 Initiate Calibration

A message, as shown in FIGURE 2-63, will be displayed to warn that data in the SoundTrack LxT will be lost when the calibration is performed.

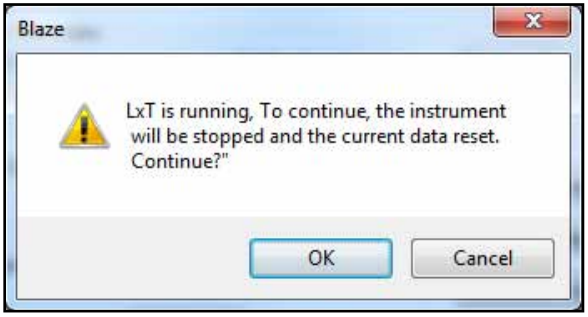


FIGURE 2-63 Unsaved Data Warning

Left click **OK** to continue with the calibration or left click **Cancel** to abort the calibration process.

When the calibration process is continued, the message shown in FIGURE 2-64 will appear to prompt the user to place the calibrator over the microphone and turn on the calibrator.

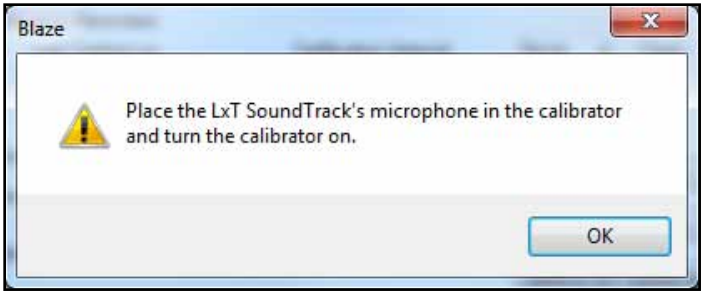


FIGURE 2-64 Turn On Calibrator Message

With the calibrator in place over the microphone and switched on, left click **OK** to continue.

Satisfactory Calibration

The calibration will continue until the level measured by the SoundTrack LxT is within 0.5 dB of the calibration level, at which time the calibration will stop and the resulting data will be displayed as shown in FIGURE 2-65.

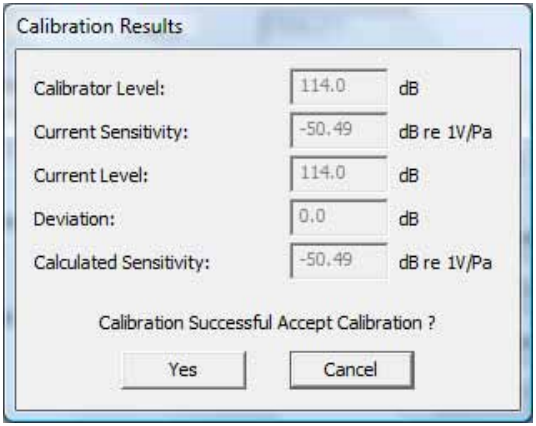


FIGURE 2-65 Calibration Results

Among the data presented are the Current Sensitivity, based on the previous calibration, and the Calculated Sensitivity, based on the results of the new calibration. If these results are satisfactory, left click **Yes** to accept the new calibration. This will update the Sensitivity value stored in the SoundTrack LxT. Otherwise, click **Cancel** to keep the sensitivity of the SoundTrack LxT at the Current Sensitivity value.

System Page

The System Page is used to set a number of parameters called Preferences, which are not associated with the measurements themselves. To display the System Page, click the **System** tab. The System Page will open with its Display Menu selected as shown in FIGURE 2-66.

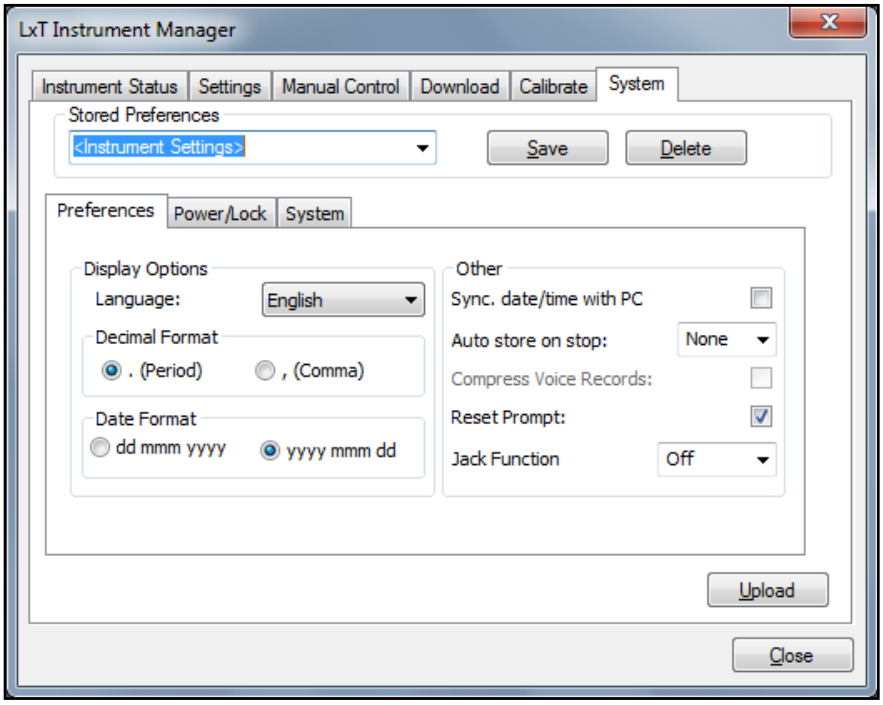


FIGURE 2-66 System Page; Display Preferences

The parameters set from the Systems Page are distributed over three menu pages as shown in FIGURE 2-66.

Each of these menus is described in the sections which follow.

Display Options

The Display Options portion of the Preference tab, shown in FIGURE 2-66, is used to set the Language and the Decimal and Date formats as described below.

Language

Clicking the down arrow to the right of the Language field will open a drop-down menu listing the language options as shown in FIGURE 2-67.

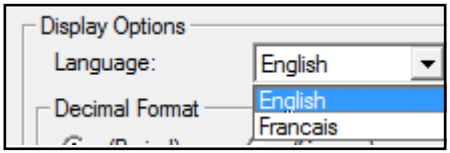


FIGURE 2-67 Language Selection Menu

Click on the desired language to make the selection.

Decimal Format

A decimal can be represented by a period (.) or a comma (,). Click on the radio button to the left of the desired format to make a selection.

Date Format

The date can be represented in one of two formats:

•dd mmm yyy

•yyyy mmm dd

Click on the radio button to the left of the desired format to make a selection.

Other Options

Synchronize date/time with PC

Click to place a check mark in the check box associated with the text “Synch. date/time with PC” to synchronize the date/time of the SoundTrack LxT with the PC to which it is connected.

Automatically Store Data on Stop

This option is provided to minimize the possibility that measured data be lost by forgetting to store it prior to beginning a subsequent measurement. Click the down arrow to the right of the data field entitled “Auto store on stop:” to open a drop-down menu listing the options as shown in FIGURE 2-68.

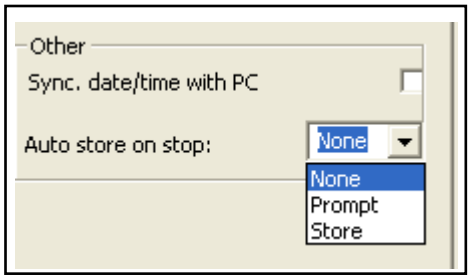


FIGURE 2-68 Auto Store on Stop Menu

The options are as follows:

•**None:** No automatic storage of data.

•**Prompt:** Upon stopping a measurement, a prompt is displayed asking whether or not the data is to be stored. If the response is Yes, the user will be prompted for a file name to assign to the stored file.

•**Store:** Upon stopping a measurement, the data is automatically stored. There will be no prompts for a file name; the default name will automatically be used along with an indexed numeric designator.

Reset Prompt

The user can choose whether or not a warning prompt is displayed on the SoundTrack LxT screen when the Reset button is pressed, prior to the reset being performed.

If this option is selected by placing a check mark in the checkbox, the message “Are You Sure?” will be displayed on the screen prompting the user to select Yes to continue with the reset or No to abort the reset operation.

If this option is not activated, the reset will be performed immediately without a prompt.

Jack Function

The AC/DC output, Voice Recorder connector on the right side of the base of the SoundTrack LxT can perform either of the following functions:

•Provide AC and DC analog output signals proportional to measured acoustic parameters.

•Provide a connection to a microphone-equipped headset for the recording and playback of voice recordings.

Or it can be set to Off.

Click the down arrow to the right of the data field entitled “Jack Function” to open a drop-down menu listing the options as shown in FIGURE 2-69.

FIGURE 2-69 Jack Function Menu

Click on the desired functionality to make a choice.

Power/Lock Menu

The Power/Lock Menu is used for setting the lock preference and also defining the power management options. Click the tab entitled **Power/Lock** to display the Power/ Lock Menu as shown in FIGURE 2-70.

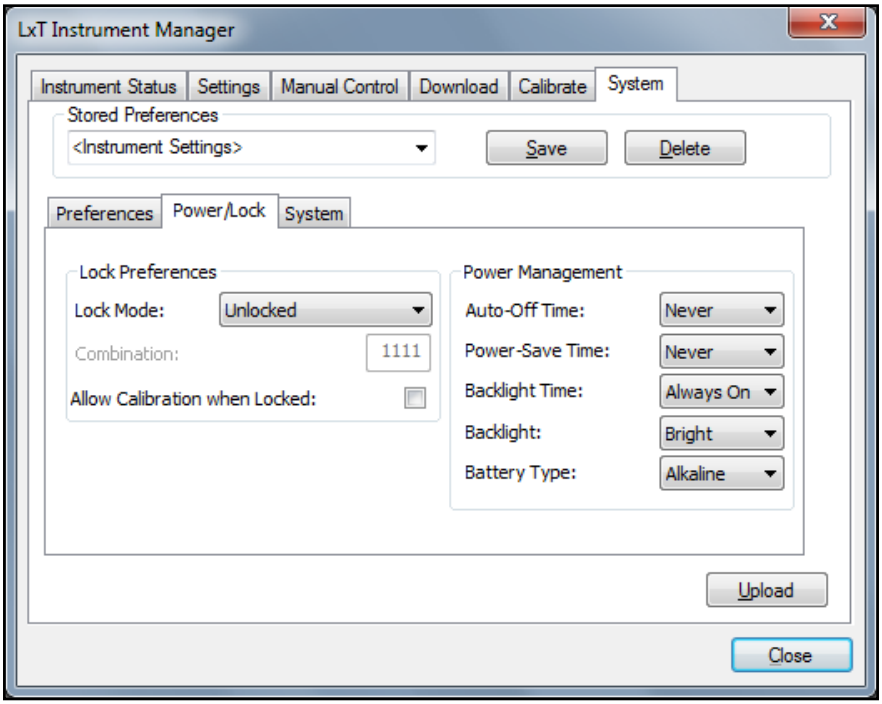


FIGURE 2-70 System Page; Power/Lock Menu

Lock Preferences

See the SoundTrack LxT User Manual for a detailed presentation of the locking features of the SoundTrack LxT.

There are four options available for the lock mode.

•Unlocked

•Locked, Manual Stop

•Locked, Auto Stop

•Fully Locked

Click the down arrow to the right of the “Lock Mode:” text field to open a menu listing the options as shown in FIGURE 2-71.

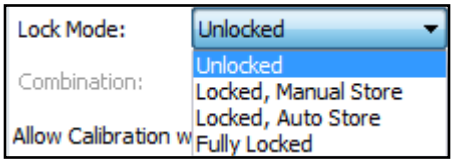


FIGURE 2-71 Lock Mode Menu

Click on the desired option to make a selection.

Allow Calibration When Locked

The lock function may or may not permit the operator to manually calibrate the SoundTrack LxT, depending on how this function is set. Checking the check box to the right of the text "Allow calibration when locked:" will permit the user to perform a calibration.

Power Management

There are four parameters which the user can set to define the power management of the SoundTrack LxT as follows:

•Auto-Off Time

•Power-Save Time:

•Backlight Time

•Backlight

•Battery Type

Each of these is set using a drop-down menu listing the options, which is opened by clicking the down arrow to the right of the text field bearing the parameter name. Click the desired option to make the selection. The available options for each of these are shown in the figures below.

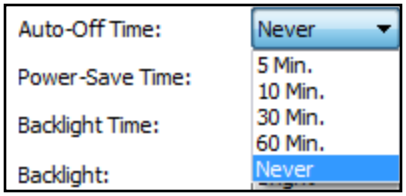


FIGURE 2-72 Auto-Off Timer Options

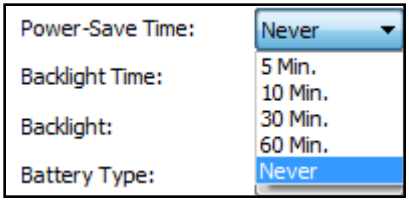


FIGURE 2-73 Power-Save Options

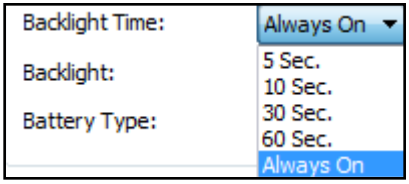


FIGURE 2-74 Backlight Timer Options

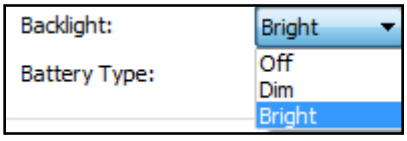


FIGURE 2-75 Backlight Options

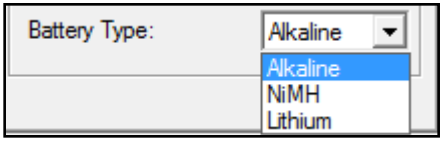


FIGURE 2-76 Battery Type Options

The battery type is used for power management, so the selection of a wrong battery type can provide an erroneous value for available battery power.

System Menu

The System Menu of the System Page identifies the firmware options loaded into the SoundTrack LxT and provides a key to implement the upload of new firmware which may contain additional options or updated versions of the same firmware. It also permits the user to input up to three lines of instrument identification text.

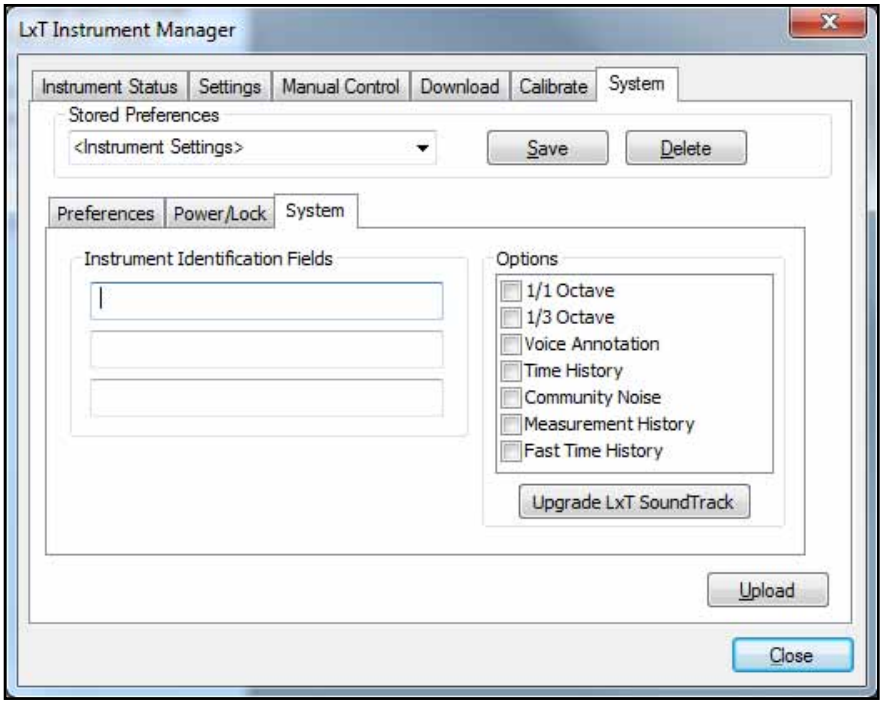


FIGURE 2-77 System Page; System Menu

Firmware Options

Firmware options presently loaded into the SoundTrack LxT are undefined by text fields appearing in the portion of the menu labeled “Options”.

Firmware Upgrade

When upgraded firmware is available, or new options have been purchased, the user will be supplied with a file to be placed on the PC. When the SoundTrack LxT is connected

to the computer, the firmware upgrade process is initiated by clicking on the key labeled **Upgrade SoundTrack LxT**.

Instrument Identification

Text for instrument identification purposes is entered directly into the three fields provided using the computer keyboard.

Saving Preferences

To save a set of Preferences, press **Save** as shown in FIGURE 2-78.

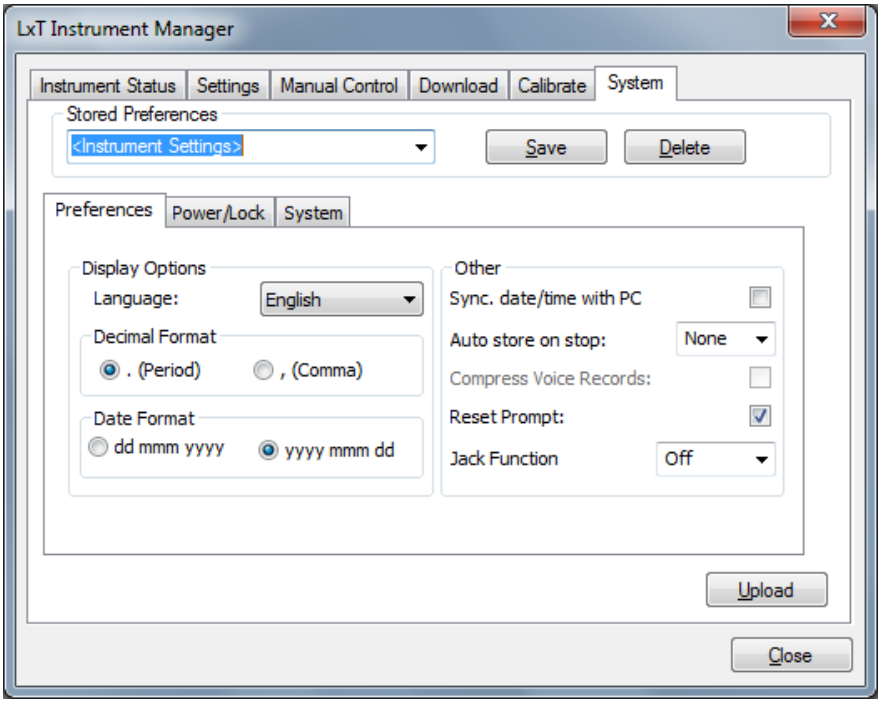


FIGURE 2-78 Save Preferences

This will bring up the Save Configuration Menu shown in FIGURE 2-79.

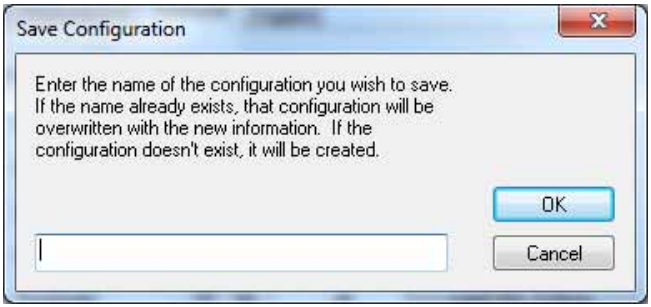


FIGURE 2-79 Save Configuration Menu

Note: that configuration names must not exceed12 characters.

Enter a name for this set of Preferences using the keyboard and click **OK**.

Recalling Preferences

To recall a previously stored set of Preferences, click the down arrow to the right of the "Stored Setups" field to open a list of stored Preferences, as shown in FIGURE 2-80, and click the name of the desired setup to make a selection.

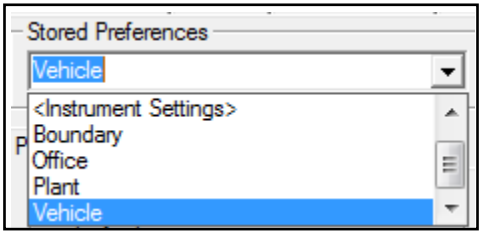


FIGURE 2-80 Recall a Set of Preferences Menu

The Display, Power/Lock and System Menus will now display the parameters corresponding to this recalled set of Preferences.

Deleting Preferences

To delete a stored set of Preferences, recall it as described in the preceding section "Recalling Preferences" on page 2-60 and then delete it by clicking **Delete** as shown in FIGURE 2-81.

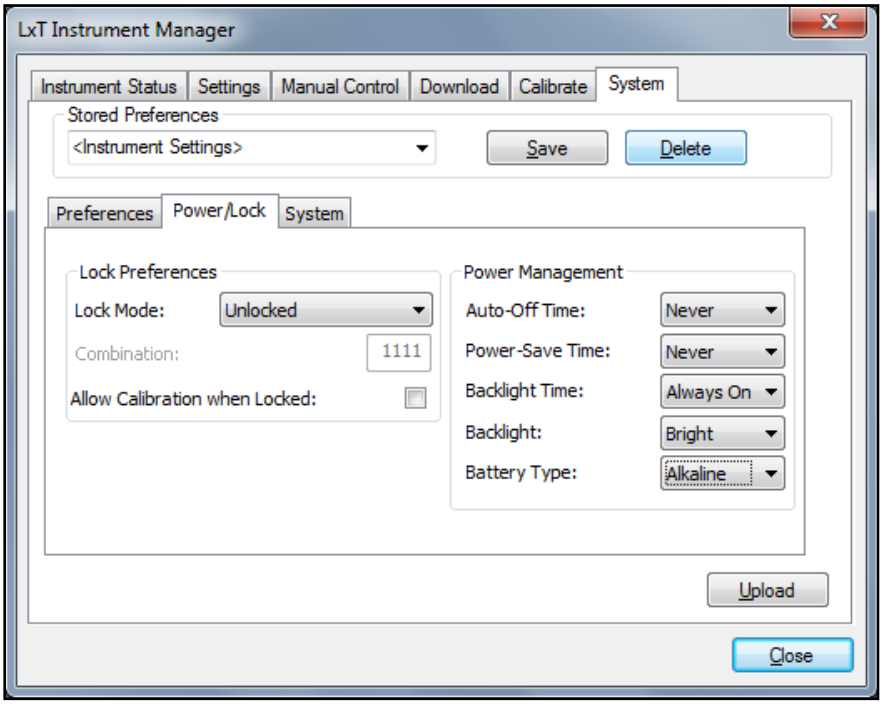


FIGURE 2-81 Delete a Set of Preferences

To transfer the preferences defined in the System Page to the SoundTrack LxT, click **Upload** as shown in FIGURE 2-82.

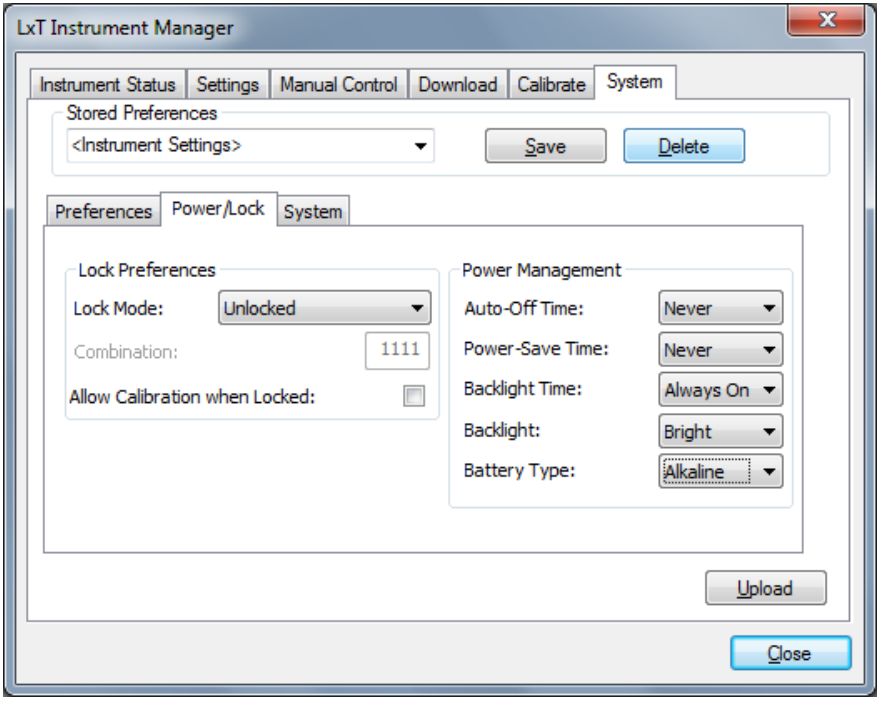


FIGURE 2-82 Upload Preferences

CHAPTER

3

Data Display

A download of data from the SoundTrack LxT provides general instrument information, calibration information, instrument setup information, notes and measurement information, which includes overall, dose and statistics data for each record downloaded. These data are presented on-screen as a series of Measurement Summaries, one for each register or set of merged registers.

The Measurement Log not only documents significant keypad related activities which took place during the measurement, but also presents voice annotation records which can be played back via the computer sound card.

Measurement Summary

At the conclusion of a download, the Measurement Summary will appear as shown in FIGURE 3-1.

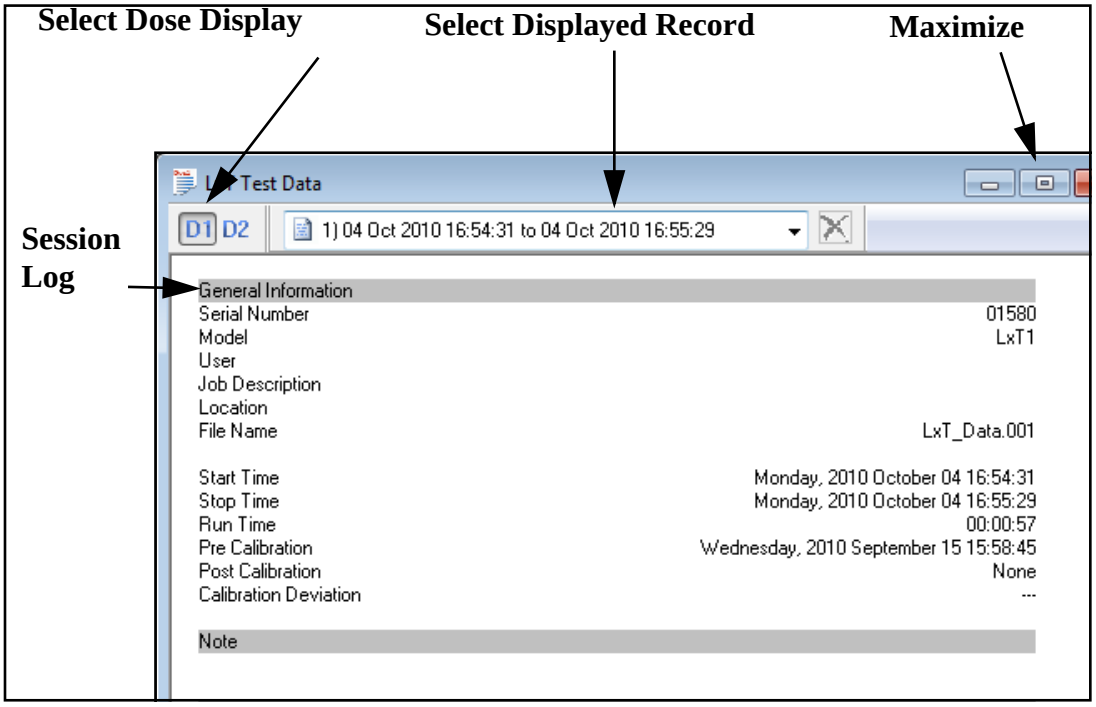


FIGURE 3-1 Measurement Summary

To obtain a larger view of the measurement data, perform one or both of the following actions.

•**Close the Session Log:** Either left click the **Close** box in the upper right corner of the Session Log window, or left click **View** in the Menu Bar and deselect **Session Log** by left clicking it.

•**Maximize the Measurement Summary:** Left click the open rectangle in the upper right of the Measurement Summary Window.

Note: There can be a slight rounding difference between values measured and displayed on the SoundTrack LxT and those downloaded and displayed on the computer. This difference will in all cases be less than 0.1 dB.

The Measurement Summary window presents a summary of complete information from the first measurement record. The summary presents General Information, Notes, Dose Data, Overall Data, Statistics Data and Setup Information. Similar reports are available for all the other records as well.

For a description of displaying the Measurement Summary for records other than the first downloaded, FIGURE 3-9.

Header Information

The header of the Measurement Summary is shown in FIGURE 3-2 .

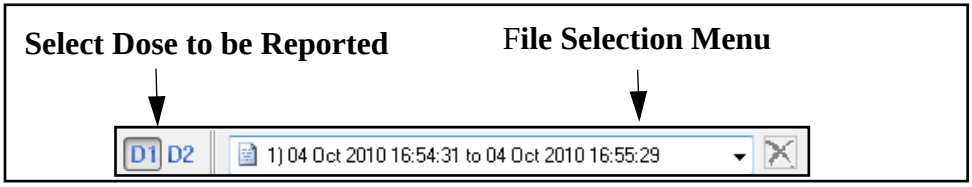


FIGURE 3-2 Measurement Summary; Header

The File Selection Menu is used to select a specific record for display, as described in the section "Displaying Other Data Records" on page 3-7.

The buttons indicated by the note “Select Dose to be Reported” are used to select whether Dose 1, Dose 2 or both are to appear in the Measurement Summary, as described in the section "Display of Dose Data" on page 3-7.

General Information

Note that text can be added to the User, Job Description and Location fields, or the existing text edited, after download as described in the section "Inputting or Modifying General Information" on page 3-11.

The General Information section lists the register number from which the data was downloaded, information concerning the instrument from which it was downloaded (i.e. serial number and model number), user information (User, Job Description and Location), start and stops times of the measurement, and calibration information. as shown in FIGURE 3-3.

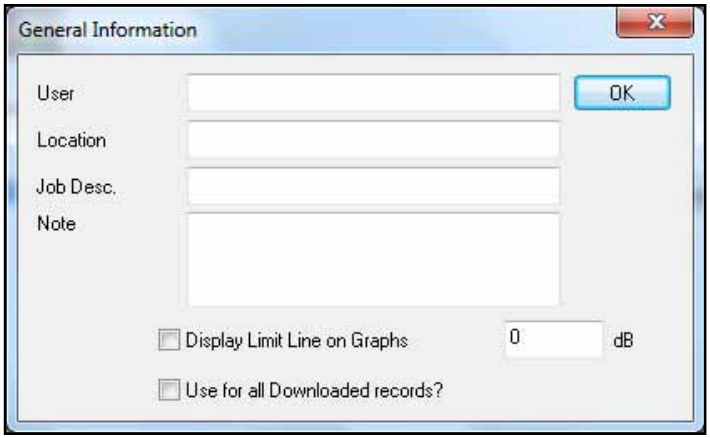


FIGURE 3-3 Measurement Summary; General Information

Notes

Note that text can be added to the Notes field, or the existing text edited, after download as described in the section "Inputting or Modifying General Information" on page 3-11.

The Notes section reports user-defined notes which were entered as part of the download process as described in the section "Add General Record Information" on page 2-38.

FIGURE 3-4 Measurement Summary; Notes

Overall Data

The Overall Data section reports the overall sound measurement data and sound exposure data measured during the runtime, with date and time for the max and min data associated with the measurement reported in FIGURE 3-5.

Overall Data			
Leq:		61.3	dBA
Lmax:	(04 Oct 2010 16:54:50)	72.0	dBA
Lpeak (max):	(04 Oct 2010 16:54:49)	82.0	dBZ
Lmin:	(04 Oct 2010 16:54:32)	32.7	dBA
LE:		78.8	dBA
SE:		8.5	µPa²hr
SE(8):		4.3	mPa²hr
SE(40):		21.4	mPa²hr
Overload?			No

FIGURE 3-5 Measurement Summary; Overall Data

Statistics

This section reports statistical data measured during the runtime, which is reported in FIGURE 3-6.

Statistics		
L5.0	68.4	dBA
L10.0	64.8	dBA
L33.3	59.7	dBA
L50.0	55.4	dBA
L66.6	52.0	dBA
L90.0	44.3	dBA
Event Counts (SPL Trigger 85.0 dB):	0	
Event Counts (SPL Trigger 115.0 dB):	0	
Event Counts (Lpeak Trigger 135.0 dB):	0	

FIGURE 3-6 Measurement Summary; Statistics

Spectra

1/1 Spectra												
Freq. (Hz):	8.0	16.0	31.5	63.0	125	250	500	1000	2000	4000	8000	16K
Leq:	71.5	70.2	72.9	72.4	68.1	61.2	52.3	88.2	73.2	43.4	40.4	35.0
Max:	78.6	77.9	79.6	78.9	76.7	70.1	61.5	94.0	82.8	49.2	45.9	41.7
Min:	56.6	48.1	41.2	37.6	34.7	44.2	40.1	37.8	31.3	24.8	25.2	27.8

1/3 Spectra												
Freq. (Hz):	6.3	8.0	10.0	12.5	16.0	20.0	25.0	31.5	40.0	50.0	63.0	80.0
Leq:	67.6	67.1	64.4	64.9	64.5	66.3	68.1	67.4	68.9	67.8	67.6	65.5
Max:	74.4	75.0	71.8	71.6	73.5	74.2	75.8	74.3	77.4	74.5	75.5	72.2
Min:	52.4	48.8	48.4	46.0	41.9	39.4	36.4	36.7	33.7	34.3	32.5	30.8
Freq. (Hz):	100	125	160	200	250	315	400	500	630	800	1000	1250
Leq:	64.0	63.2	61.8	59.1	56.3	51.8	49.6	47.4	43.4	79.2	85.9	82.9
Max:	73.4	71.4	70.7	67.7	64.3	61.0	59.4	55.7	52.1	87.1	92.3	89.5
Min:	30.5	27.8	29.5	28.5	43.6	31.7	30.6	36.3	31.2	35.5	30.7	31.6
Freq. (Hz):	1600	2000	2500	3150	4000	5000	6300	8000	10K	12.5K	16K	20K
Leq:	73.0	51.0	47.3	40.6	38.1	35.7	35.3	37.0	34.1	31.9	30.9	25.5
Max:	83.2	55.9	53.1	46.2	44.1	41.9	41.5	41.8	39.6	39.0	37.6	29.5
Min:	29.2	25.8	22.2	20.9	19.5	19.4	19.7	20.2	21.2	22.0	23.4	23.8

FIGURE 3-7 Measurement Summary: Spectra

Dose

The Dose section reports the measurement results related to noise dose.

Dose		
Name	OSHA-1	
Dose:	0.0	%
Projected Dose:	33.1	%
Projected TWA:	82.0	dBA
TWA (8)	30.3	dBA
Lep (8)	57.3	dBA

FIGURE 3-8 Measurement Summary; Dose

Settings

This section reports the setting of the SoundTrack LxT which define the measurements which were made during the time period reported in FIGURE 3-9.

Settings		
Exchange Rate:	5	
Threshold:	90	dBA
Criterion Level:	90.0	dBA
Criterion Duration:	8.0	hours
RMS Weight:		A Weighting
Peak Weight:		Z Weighting
Detector:		Slow
Preamp:		PRMLXT1
Integration Method:		Exponential
OBA Range:		Low
OBA Bandwidth:		1/1 and 1/3

FIGURE 3-9 Measurement Summary; Settings

Display of Dose Data

The SoundTrack LxT can measure two separate noise doses using setup parameters which were selected independently. Dose related data is reported in both the Dose and Settings sections of the Measurement Summary. The user can select to report data related to Dose 1, Dose 2 or both by making a selection from the buttons on the left of the record selection field at the top of the screen, as shown in FIGURE 3-1. This is shown enlarged below.

When data for both doses are displayed, left clicking either one will cause that dose data to not be displayed.

Displaying Other Data Records

At the conclusion of a data download, the Measurement Summary for the first record downloaded is displayed, regardless of the number of records downloaded. Any other record from the download can be similarly displayed as follows:

Step 1 Left Mouse click the top of the Data Record window to open a drop-down menu listing all the records in the downloaded file with the register numbers from which each was downloaded.

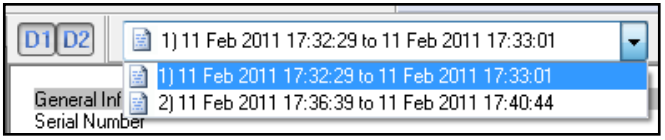


FIGURE 3-10 List Records

Step 2 Use the mouse pointer to highlight the desired record to be displayed.

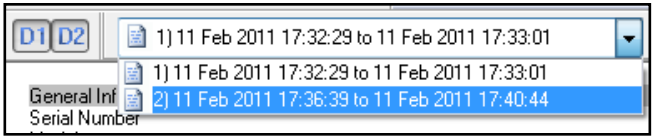


FIGURE 3-11 Select Record to Display

Recalculating Statistics and Dose

The statistical data reported is based upon a statistics table developed over the measurement period. The six values initially reported are for the six Ln values already defined as part of the measurement setup. The dose values are also calculated using the data from the statistics table, but the values initially reported are for the dose parameters (exchange rate, threshold and criteria) already defined as part of the measurement setup.

Using the data from this highly accurate statistics table, it is possible to recalculate Ln values using different values of n, and dose using different dose parameters. These are both done using the Set Parameters Menu, shown in FIGURE 3-12, which is opened by left clicking the Set Result Parameters icon in the Blaze toolbar, shown below.

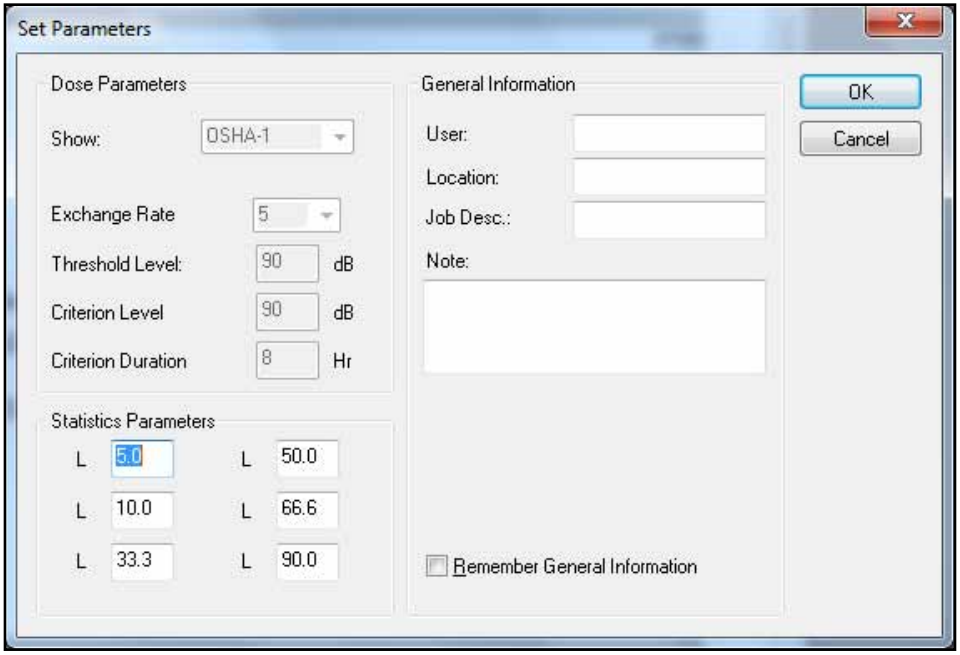


FIGURE 3-12 Set Result Parameters Menu

Recalculate Statistics

The data fields in the section named “Statistics Parameters” are used to calculate up to six values of Ln using any values of n in the range 0.01 to 99.99. Enter values into these fields using the keyboard and left click **OK** to modify the values reported in the Statistics section of the Measurement Summary shown in FIGURE 3-6.

Recalculate Dose

The data fields in the section denoted “Dose Parameters” are used to recalculate the dose based on user-selected values of Exchange Rate, Threshold Level, Criterion Level and Criterion Duration. This is done as follows:

Step 1 To select the Dose to be recalculated, left click the down arrow to the right of the “Show” data field shown in FIGURE 3-13.

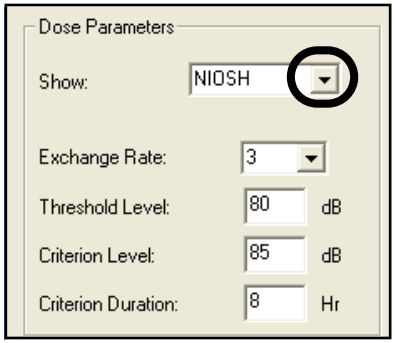


FIGURE 3-13 Open Dose to Recalculate Menu

This will open the drop-down menu shown in FIGURE 3-14.

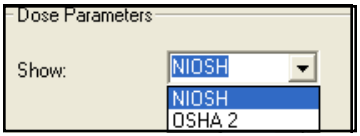


FIGURE 3-14 Select Dose to Recalculate

Click to make the selection.

Step 2 To select the Exchange Rate, click the down arrow to the right of the "Exchange Rate" data field.

This will open the drop-down menu shown in FIGURE 3-15.

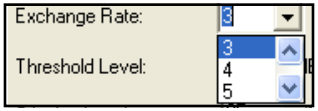


FIGURE 3-15 Select Exchange Rate

Click to make the selection.

Step 3 Enter numerical values into the data fields for Threshold Level, Criterion Level and Criterion Duration and press **OK** to perform the recalculation.

Note that only one modified dose calculation can be displayed on a Data Record at a time. In order to obtain dose data for multiple sets of modified dose parameters, each set must be recalculated and printed by itself.

A new Measurement Summary will be generated and displayed with the dose values reported in the Dose section corresponding to the modified values of dose parameters, which will be reported in the Setting section.

Inputting or Modifying General Information

If General Information was stored with the record during the download, this will appear in the General Information section of the Set Parameters Menu shown in FIGURE 3-12; otherwise the fields will be blank.

After download, the user can utilize this section of the Set Parameters Menu to input information into the blank fields or to modify existing information. Use the keyboard to enter information into the User, Location, Job Description and Notes fields and press **OK** to save the information with the record being displayed. Although this general information does not appear in the Measurement Summary, it will appear in reports generated and it is stored with the record if saved.

If you will be utilizing the same or similar information for other records, check the box “Remember General Information” so the Set Parameters dialog box will open with the same General Information each time.

Printing the Measurement Summary

The displayed Measurement Summary can be printed to the default printer by clicking the **Print** icon on the toolbar as shown in FIGURE 3-16.

FIGURE 3-16 Toolbar; Print Icon

or alternatively left clicking **File/Print** as shown in FIGURE 3-17 will intiate the print dialog box.

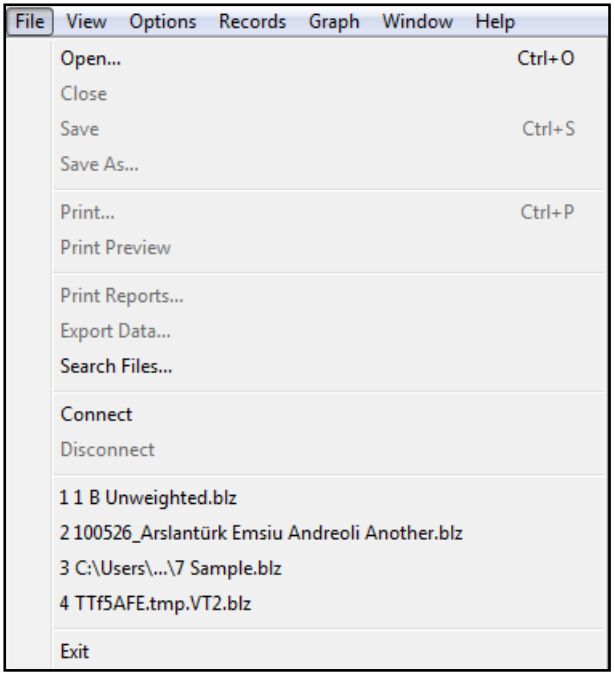


FIGURE 3-17 File/Print Menu

Complete the Print Document dialog box and press the **Print** button.

Saving Records to File

Records can be stored to folders in your PC as follows:

Step 1 Display the record to be saved.

Step 2 Click **File/Save As**, shown in FIGURE 3-18.

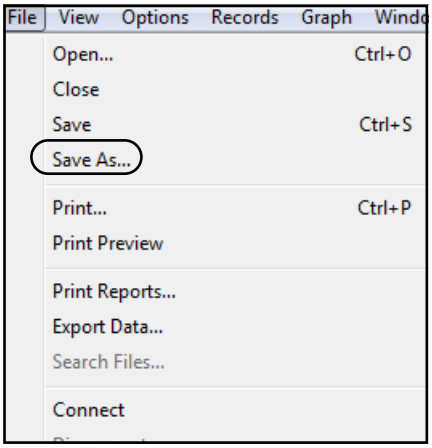


FIGURE 3-18 File/Save As Menu

This will open the Save As dialog box shown in FIGURE 3-19.

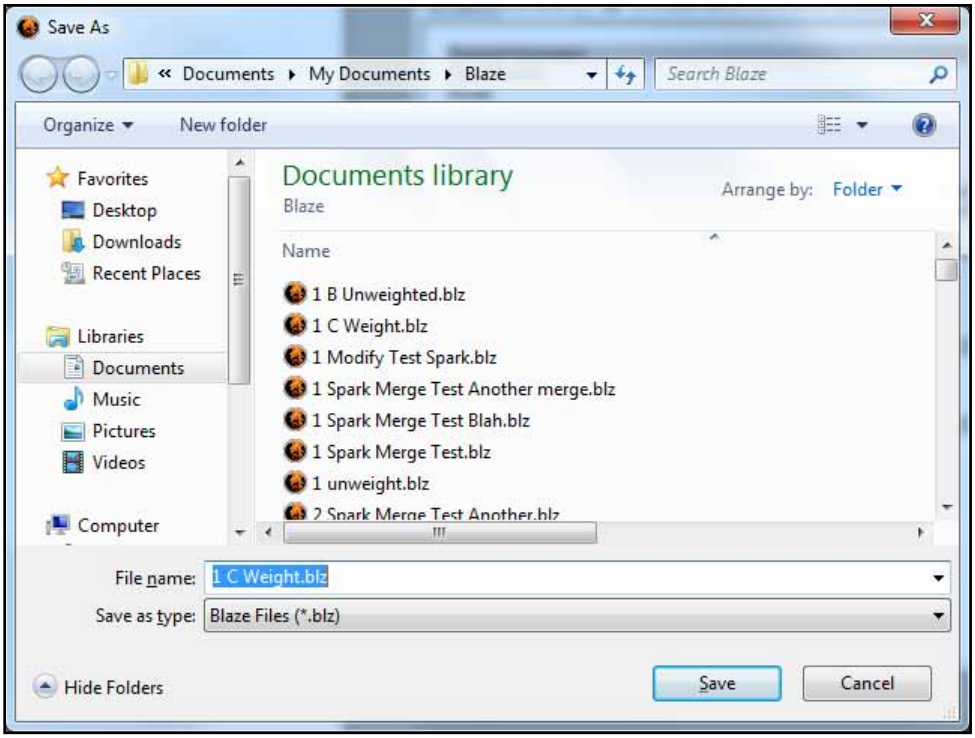


FIGURE 3-19 Save As Dialog Box

Step 3 Use the down arrow key in the “Save in:” window at the upper left to identify the folder into which to save the file, type a file name into the “File name” field and left click **Save** as shown in FIGURE 3-19.

Opening Saved Files

Click **File/Open** as shown in FIGURE 3-20.

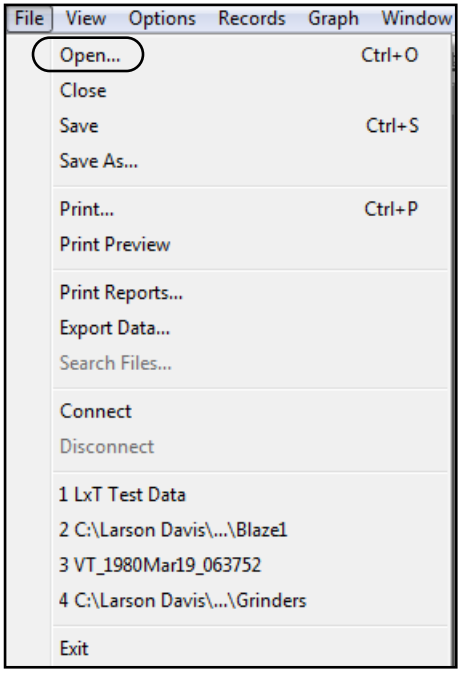


FIGURE 3-20 File/Open Menu

This will open the browser window shown in FIGURE 3-21.

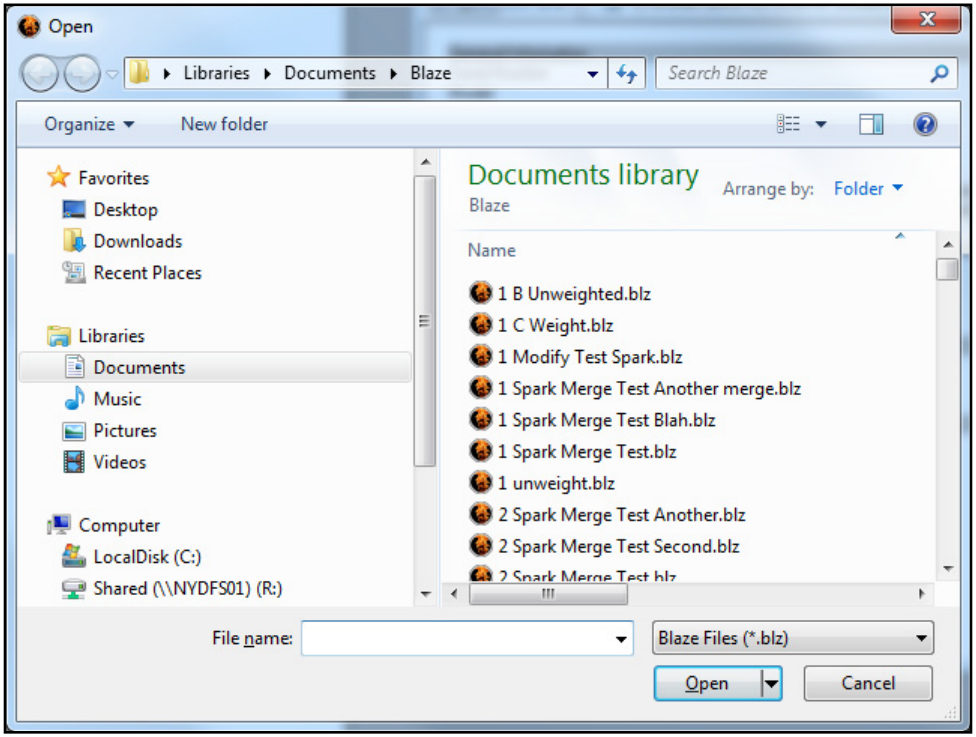


FIGURE 3-21 Browser Window

*If the file sought has been used recently, click **File** and see if the name of that file appears in the numbered list near the bottom of the window. If so, clicking it will open it.*

Use the browser to select the desired file and press **Open** to make the selection.

Closing the Measurement Summary

To close the Measurement Summary, left click **OK** in the lower right corner.

Measurement Log

The Measurement Log is similar to the Session Log, except that it logs actions initiated from the SoundTrack LxT keypad while the Session Log logs actions initiated from the Blaze Software Manual Control Page.

The Measurement Log records the date and time of significant SoundTrack LxT keypad initiated actions which occurred during the measurement interval, such as:

•Run

•Pause

•Resume

•Stop

It also indicates voice annotations made during the measurement interval.

To display the Measurement Log, left click the Measurement Log icon on the Blaze Toolbar as shown i FIGURE 3-22.

FIGURE 3-22 Toolbar; Measurement Log Icon

This will open the Measurement Log shown in FIGURE 3-23.

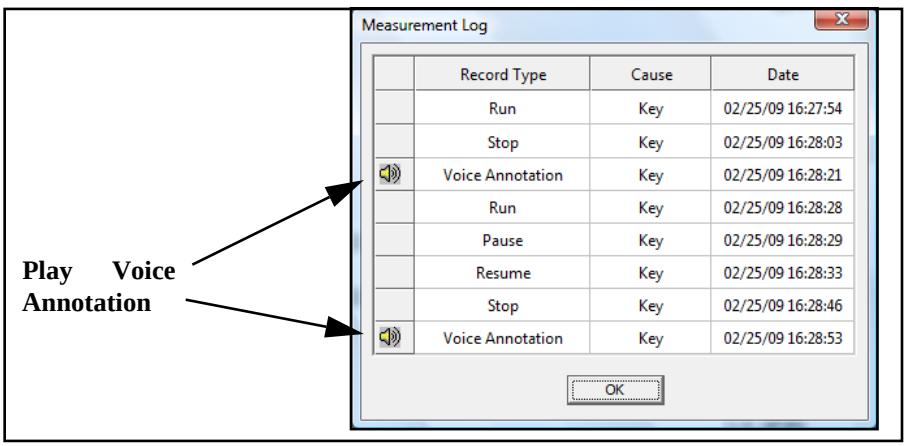


FIGURE 3-23 Measurement Log

Voice Annotation

Playback of Voice Annotation

Each voice annotation is indicated separately, with the date and time of creation. To playback a voice annotation, left click the speaker icon as shown in FIGURE 3-23.

Saving Voice Annotation Records as Wave Files

To save a voice annotation as a wave file, right click on the desired record to open the pop-up menu shown in FIGURE 3-24.

FIGURE 3-24 Save a Voice Annotation as a Wave File.

Left click **Save** to open the menu shown in FIGURE 3-25.

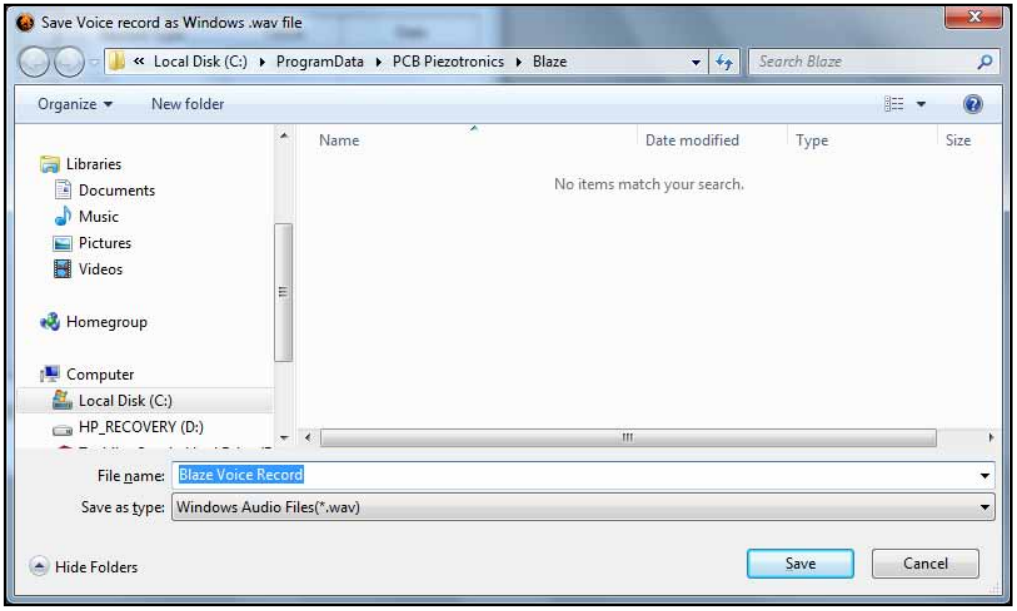


FIGURE 3-25 Save Voice Annotation Menu

Use the “Save in” field to define the path to the folder into which the wave file is to be saved, put a name for the wave file into the “File name” field and left click **Save** to complete the operation.

CHAPTER

4 Graphic Presentations

The Blaze Software includes powerful and flexible graphics capabilities for displaying statistical information and 1/1 and 1/3 octave frequency spectra (optional) downloaded from the SoundTrack LxT. This chapter describes the features and utilization of this graphics software.

Statistics Graph

To graph the statistical distribution of the data contained in the active measurement summary record, left click the **Statistics Graph** icon in the toolbar at the top of the screen, shown in FIGURE 4-1.

FIGURE 4-1 Blaze Toolbar; Statistics Graph Icon

This will generate the Statistics Graph shown in FIGURE 4-2.

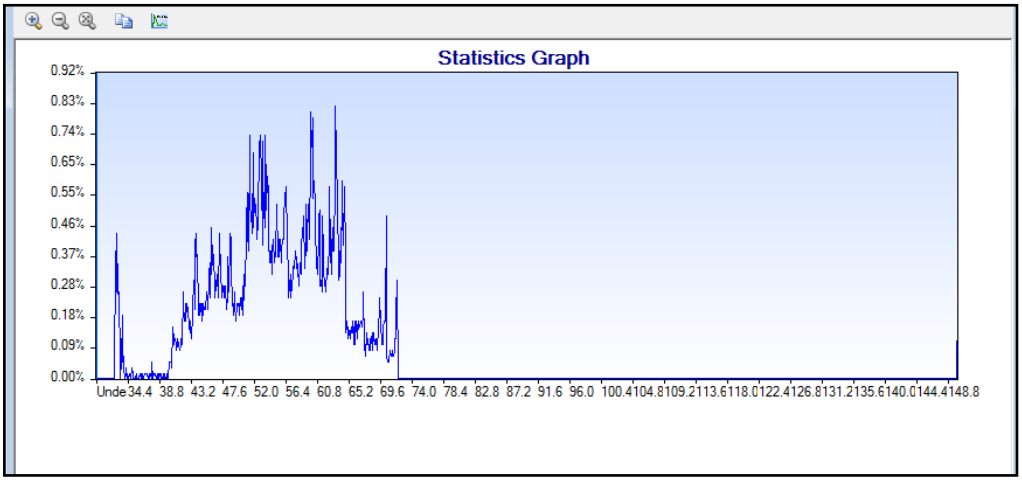


FIGURE 4-2 Statistics Graph

A new toolbar is provided for use with the statistics graph.

Icon	Function
	Zoom In - Puts graph into Zoom mode - Allows user to drag a rectangle over the graph to zoom to it - A second click puts the graph back into the interactive mode
	Zoom Out - Restores the previous zoom state if zoomed in multiple times - Disabled when graph is at 100%
	Zoom to original size - Zooms out to original size - Puts the graph into the interactive mode

Icon	Function
	Copy - Copies the graph into memory so that it can be pasted into another program (image only copy)
	Add Note - Sets the graph in a mode to place a new note next time the graph is clicked

Mode

The display can be utilized in two different modes:

- Normal (Interaction) Mode: described in the following section.
- Zoom Mode: described in the section Zoom Mode on page 4-5.

The active mode is indicated in the lower left corner of the screen.

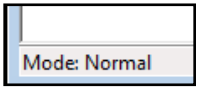


FIGURE 4-3 Active Mode

Clicking on the Zoom In button will toggle the mode between Normal and Zoom.

The mode can also be selected by right clicking on the display area and utilizing the menus shown below.

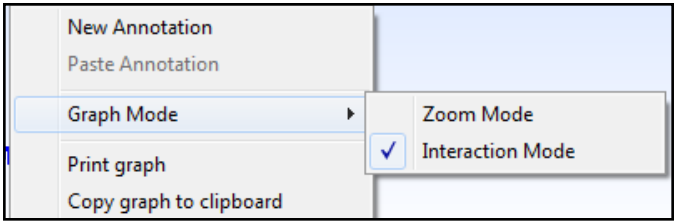


FIGURE 4-4 Mode Menu

Normal (Interaction) Mode

Quantity Display

The quantity display can only be activated from the Normal (Interaction) Mode.

To display the quantity at a selected position on the graph, click on the graph to produce a cursor.

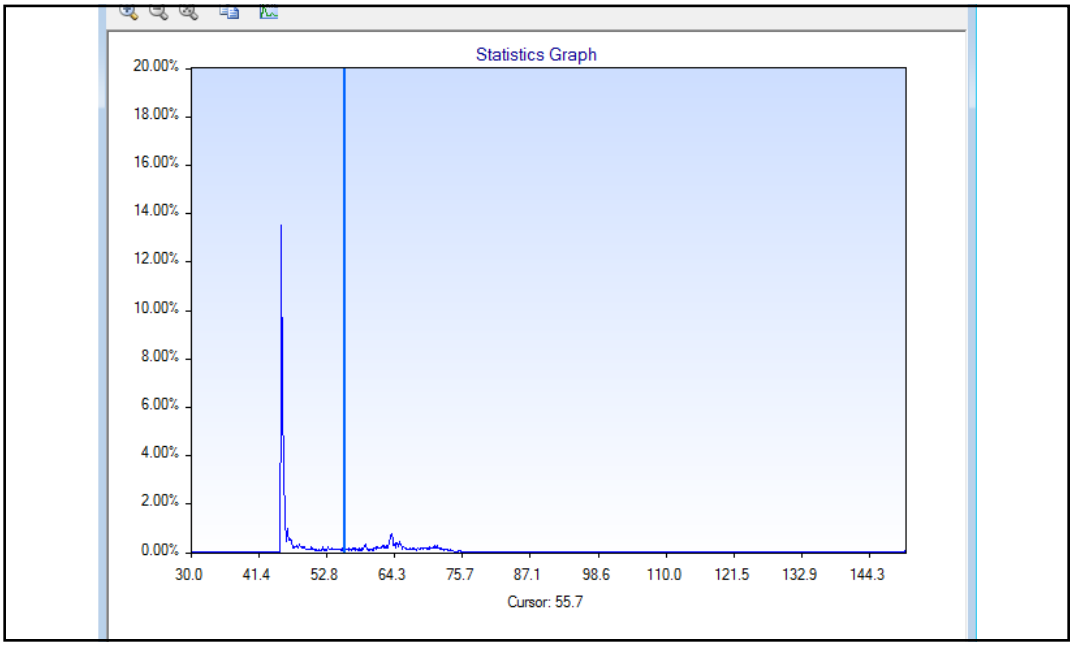


FIGURE 4-5 Quantity Display

To move the cursor to another location, click a new point on the graph or use the left/right arrow keys on the keyboard.

Zoom Mode

Zoom In

Step 1 The Zoom In function allows you to investigate details of the graph by “magnifying” selected sections of the measurement.

Step 2 Click the Zoom In button.

Step 3 At a desirable place on the graph, click and hold down the left mouse button and draw a box around the desired zoom location.

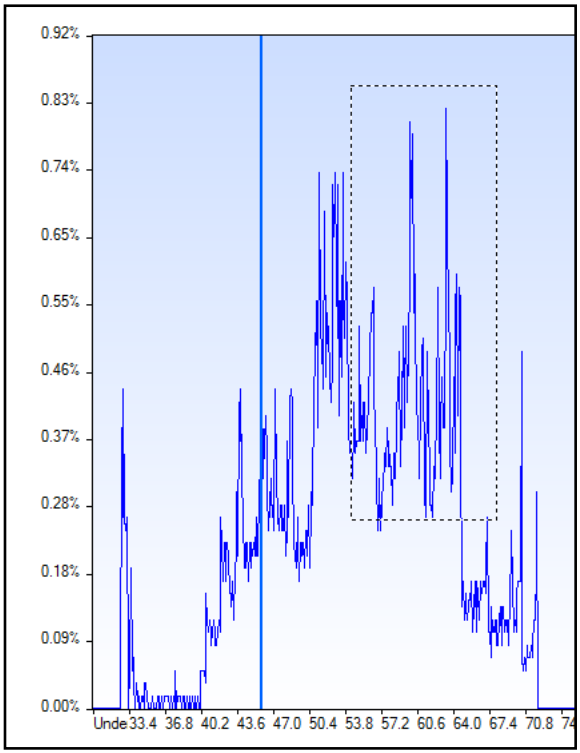


FIGURE 4-6 Define Zoom Area

Step 4 Release the left mouse button to execute the zoom.

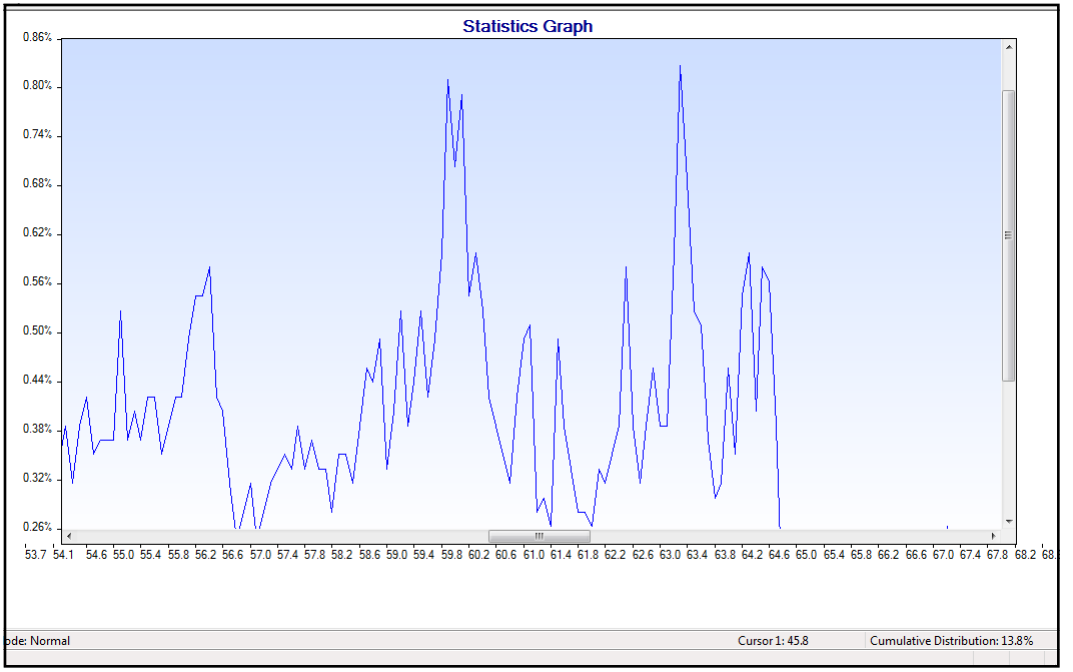


FIGURE 4-7 Zoomed Display

Further zooming can be achieved on the zoomed time history presently displayed by repeating the above procedure. In order to utilize the mouse to control the cursor function in the display, turn off the zoom function while retaining the zoomed display by clicking the Zoom In icon one more time so that it is no longer highlighted. Or, use the arrow keys rather than the mouse to move the cursor.

Zoom Out/Zoom to Original

When the zoom function has been utilized, Zoom Out

will return the graph to that displayed prior to the most recent zoom action. When the display is the result of a sequence of zoom actions, repeated use of Zoom Out will produce displays associated with each of the prior displays.

To return a zoomed display to its original display, regardless of the number zoom actions utilized, click the Zoom to Original icon.

Copy Statistics Graph

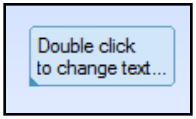
To copy the Statistics Graph, left click the **Copy** Icon, shown below.

The copied Statistics Graph can now be pasted onto another document.

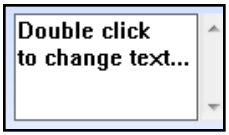
Annotating Graph

Multiple notes can be added to the graph, one note at a time. To add a note to a graph, click the **Add Note** icon on the graphic toolbar.

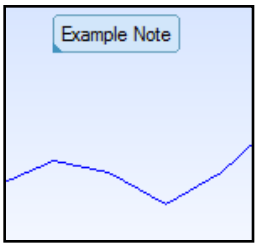
Place the mouse pointer where you would like to have the Note Box located on the graph and left click.



Double click within the box to open a new box for inserting text.

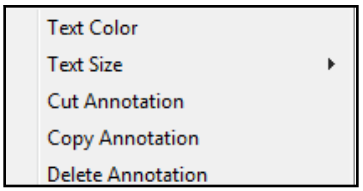


Type in the desired text and, when done, click outside the box to add the note to the graph.



Edit Note

To edit or delete the note, right click on the note box to open the menu shown below.



Spectrum Graph (Optional)

SoundTrack LxT units equipped with the SoundTrack LxT-OB1 or SoundTrack LxT-OB3 options can measure real-time 1/1 or 1/3 octave frequency spectra. This data does not appear in the screen display of the Measurement Summary, but it can be graphed as described in this section.

To graph the frequency spectrum contained in the active measurement summary record, left click the **Spectra Graph** icon in the toolbar at the top of the screen, shown in FIGURE 4-8.

FIGURE 4-8 Blaze Toolbar; Spectra Graph icon

Note that the graph can be either 1/1 octave or 1/3 octave when the required option is installed in the SoundTrack LxT.

This will generate the Spectrum Graph shown in FIGURE 4-9.

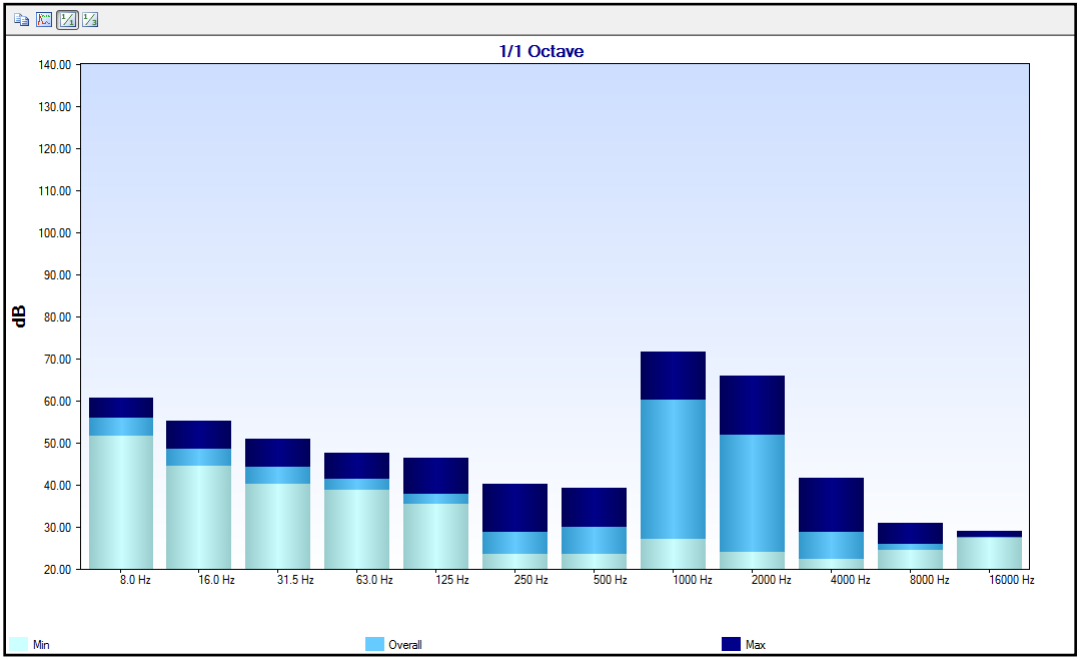


FIGURE 4-9 Octave Band Frequency Spectrum

For each frequency band, the Minimum, Overall and Maximum Levels are shown graphically as follows:

•**Minimum Level:** Upper limit of the light blue bar

•**Overall Level:** Upper limit of the medium blue bar

•**Maximum Level:** Upper limit of the dark blue bar

Cursor Control and Readout

Left click on any of the frequency band bars and a vertical cursor will appear in the center of that band, as shown in FIGURE 4-10.

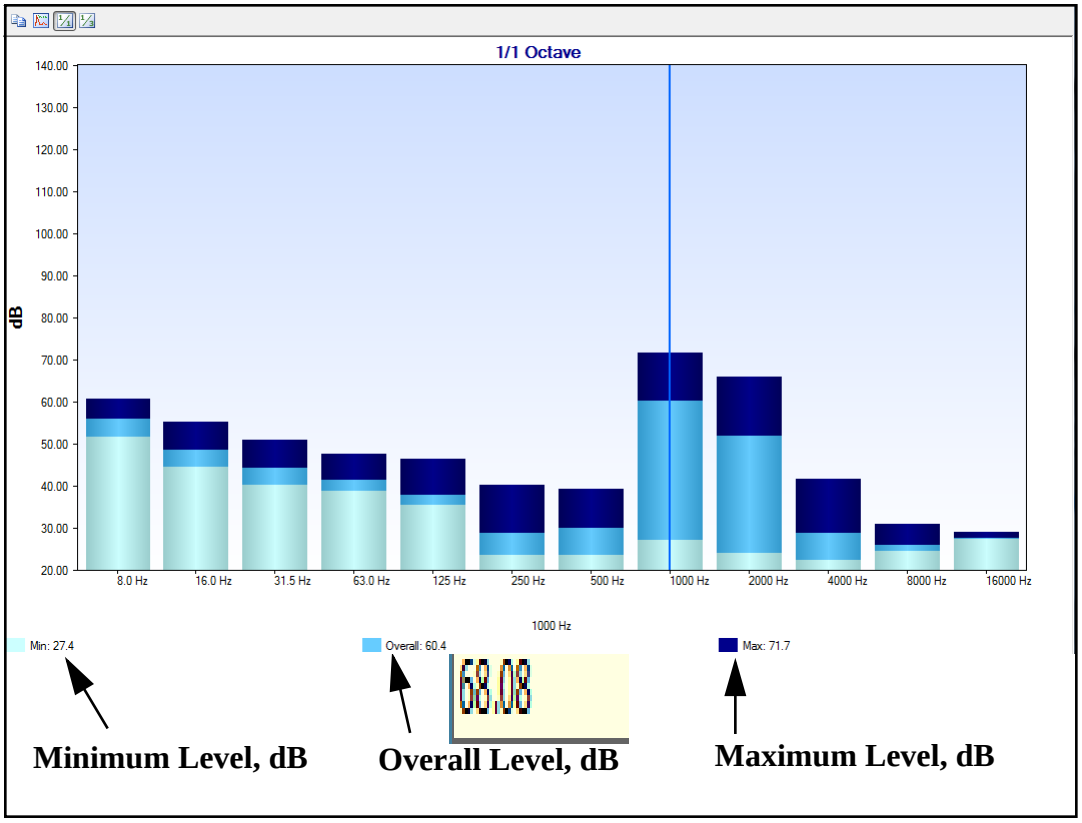


FIGURE 4-10 Octave Spectrum with Cursor

When the spectrum is initially displayed without a cursor, as shown in FIGURE 4-9, the digital values of Minimum, Overall and Maximum Levels correspond to the lowest frequency band.

The Minimum, Overall and Maximum Levels for the frequency band indicated by the cursor are displayed digitally at the bottom of the display as shown in FIGURE 4-10.

Spectrum Graph Toolbar

The Spectrum Graph Toolbar, located in the upper left corner of the Spectrum Graph, contains two icons as shown in FIGURE 4-11.

FIGURE 4-11 Spectrum Graph Toolbar

Select 1/1 or 1/3 Octave Graph

The last two icons on the Spectrum Graph Toolbar are used to select the bandwidth for the spectrum graph; 1/1 Octave or 1/3 Octave, respectively. Left click to obtain the desired format. The 1/3 octave spectrum graph will look as shown in FIGURE 4-12.

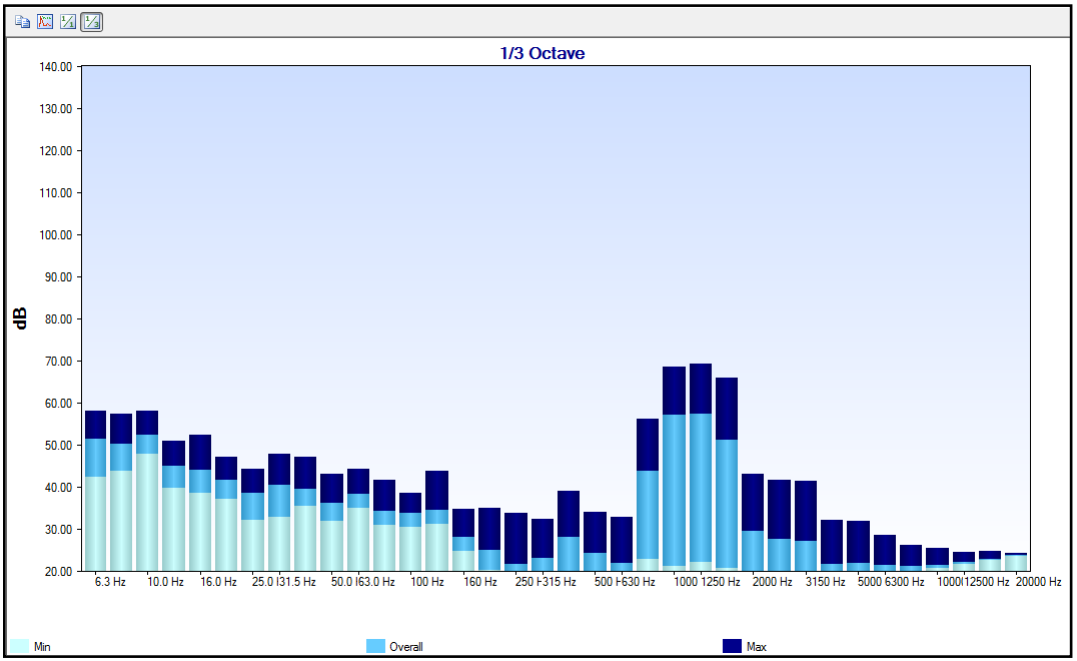


FIGURE 4-12 Third Octave Frequency Spectrum

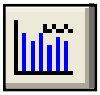
Copy Spectrum Graph

To copy the Spectrum Graph, left click the **Copy** Icon, shown below.

The copied Statistics Graph can now be pasted onto another document.

Adding Notes to Graph

Multiple notes can be added to the graph, one note at a time. Left click the **Add Note** icon on the Spectrum Graph Toolbar.



Proceed to add a note as described in section Annotating Graph on page 4- 7. The note can also be edited, moved and deleted as described in the same section.

CHAPTER

5 Report Generation

To improve your efficiency in documenting the results of your measurements, Blaze provides routines to generate and print Summary and Statistics Reports.

Summary and Statistics Reports

Begin by displaying the Measurement Summary of the measurement to be printed, as shown in FIGURE 5-1.

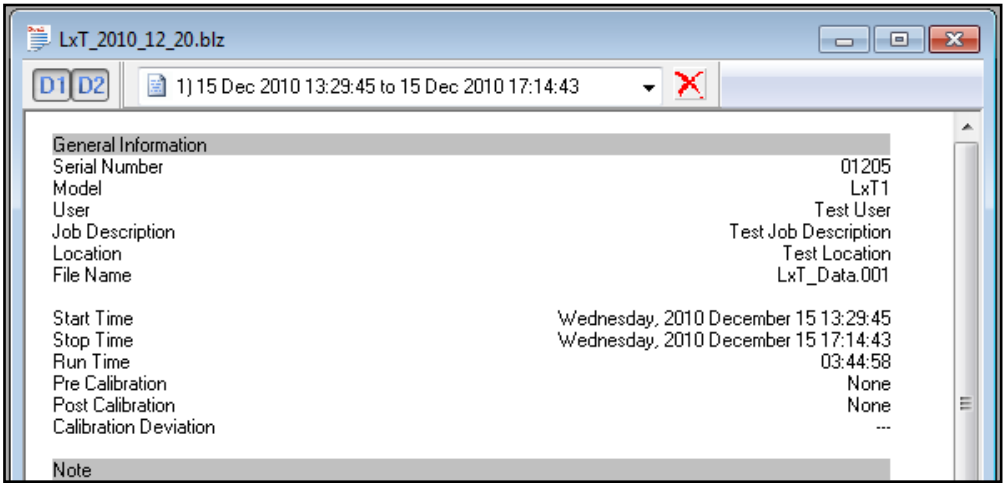


FIGURE 5-1 Measurement Summary

The Summary Report is a one-page report that prints instrument setup information, measurement results and, if the SoundTrack LxT is equipped with options SoundTrack LxT-OB1 or SoundTrack LxT-OB2, a frequency spectrum graph, all condensed to fit the page.

Initiate Printing

Simple Report

A simple printout of the data shown in the measurement summary can be obtained by left clicking the **Print** icon on the Blaze toolbar.

FIGURE 5-2 Blaze Toolbar; Print Icon

The printed data will be similar to that shown in "Report Generation" on page 5-1.

Formalized Reports

To obtain more formal reports, open the Reports menu, shown in FIGURE 5-3, by clicking the **Print Reports** icon from the toolbar.

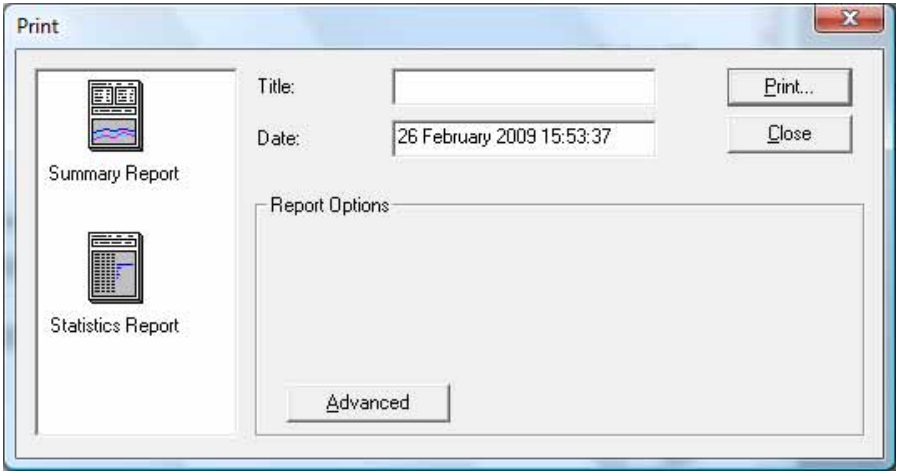


FIGURE 5-3 Reports Menu

Click to highlight the desired report; Summary Report or Statistics Report. This will place the name of the selected report into the Title field, as shown in FIGURE 5-4. The user can use the keyboard to edit this title.

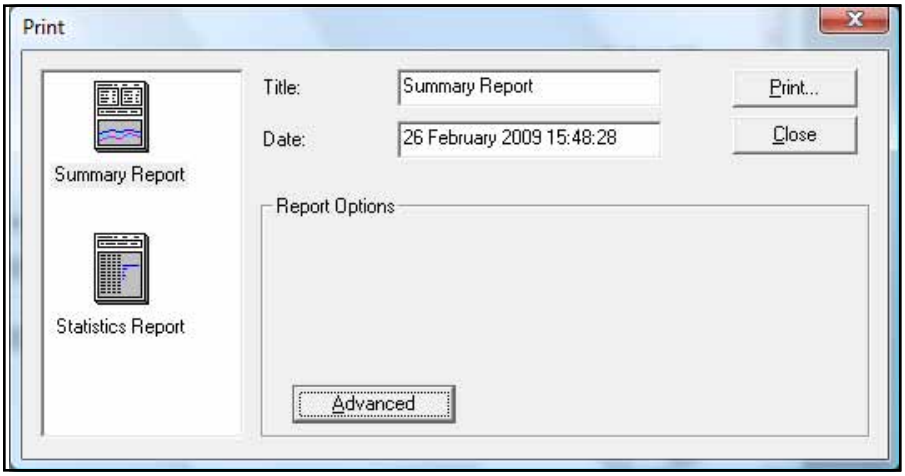


FIGURE 5-4 Summary Report

Advanced Print Options

To add advanced features, click the Advanced button to open the Advanced Print Options menu shown in FIGURE 5-5.

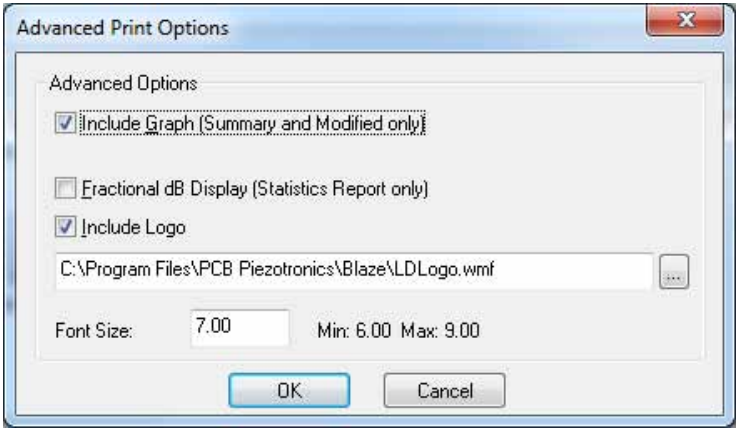


FIGURE 5-5 Advanced Print Options Menu

Include Graph

Click the “Include Graph” box to include summary and modified graphs.

Fractional dB

Click the “Fractional dB Display box to print dB values in fractional format for the statistics report.

Include a Logo

If you wish to have the report display your company logo, first save it to a convenient folder on the computer being used with the Blaze software using the .wmf (Windows metafile) format.

The “include logo “box will already be checked if the report type has already been selected as described in the section "Formalized Reports" on page 5-2. Otherwise, it will be blank.

Click the “Include logo” box shown in FIGURE 5-6.

FIGURE 5-6 Include Logo Menu

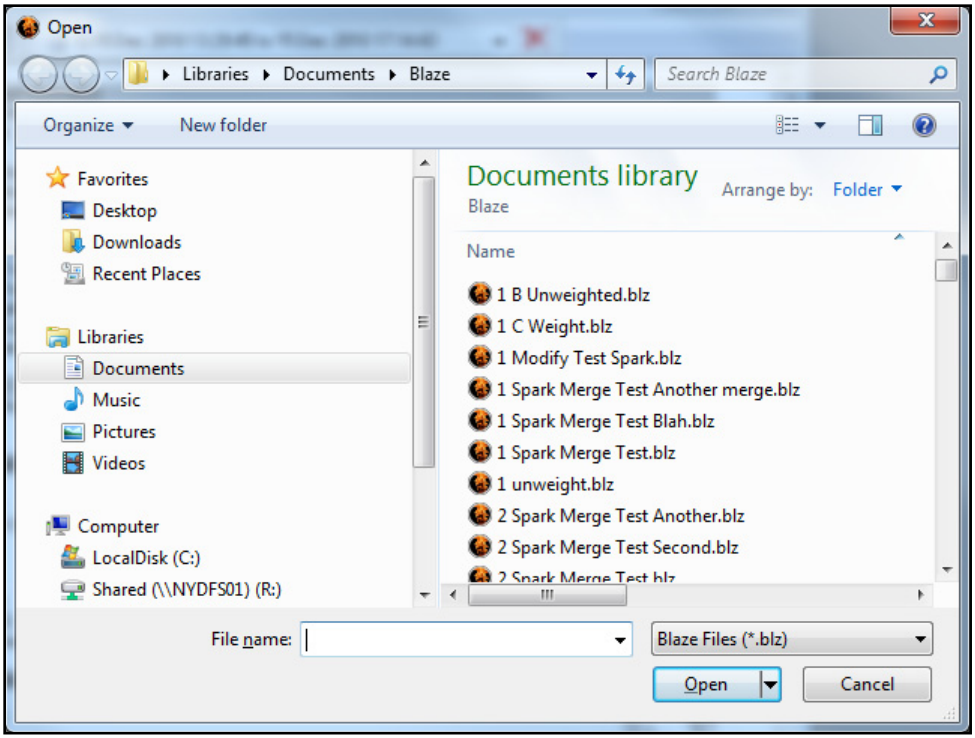


FIGURE 5-7 Define Path to Logo File

Use the "Look in" data field on top to define the path to the desired logo and click the "Open" button, on the lower right corner, which will close that window and return to the Advanced Print Options menu shown in FIGURE 5-5.

Use the "Font Size" field to set the desired size to be used to display the logo. Click **OK** to close the Advanced Logo menu when done.

Print Report

Click **OK** on the Reports Menu to initiate the printing process.

CHAPTER

6 Data Export

Blaze Measurement records can be exported as text files or as comma-delimited files for use with word processing and spreadsheet programs for further processing and reporting.

Exporting Measurement Records

Begin by displaying the measurement record you wish to export.

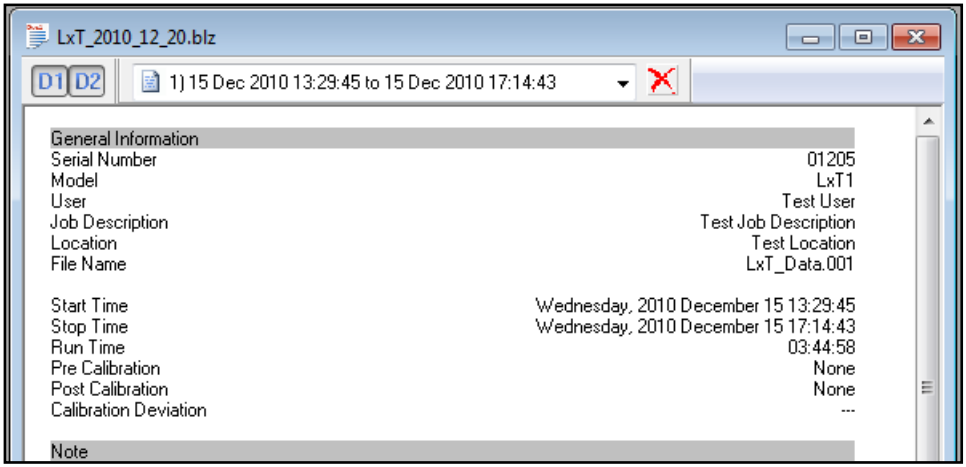


FIGURE 6-1 Measurement Summary

Click the **Export Data** icon on the Blaze toolbar or alternatively left click **File/Export Data** and left click **Export Data** as shown in FIGURE 6-3.

FIGURE 6-2 Blaze Toolbar; Export Data Icon

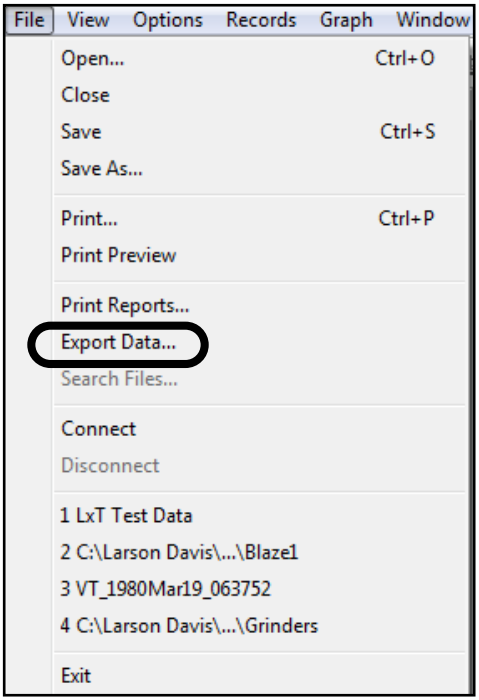


FIGURE 6-3 File/ Export Data Menu

Either action will display the Export Data Menu shown in FIGURE 6-4.

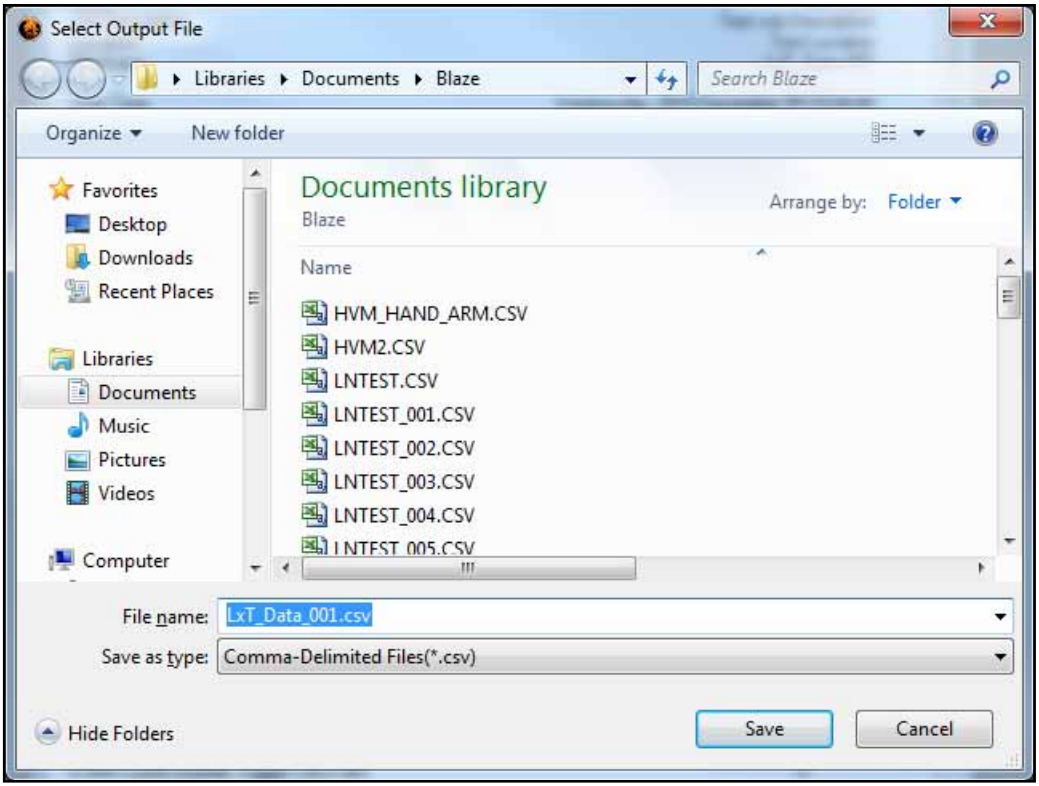


FIGURE 6-4 Export Data Menu

Select Data to Export

The export can include the following types of data:

•Results Summary

•Statistical Data

Select either type, or both, by left clicking to check the check box associated with each type of data.

Select Export File Type

Comma-delimited files are used to export data to spreadsheet programs.

Comma-delimited Files

To export the data as a comma-delimited file, left click the check box to the left of the text “Export as Comma-Delimited File” to insert a check mark.

Text files are typically used to export data to word processing programs.

Text Files

To export the data as a text file, leave the check box to the left of the text “Export as Comma-Delimited File” blank.

Export All Downloaded Files

To export all downloaded files, place a check in the “Export all downloaded files” check box. This will export all downloaded files with the appropriate suffix,.csv or .txt. The file name for each exported file will be the same as its file name in the SoundTrack LxT.

Define Output File

Since an “Export all” saves all files under the same name as the file name used in the instrument, changing the default output file name will have no effect when exporting all files at one time.

To select a file name other than the default output file name (the SoundTrack LxT data file name) left click the browse button to the right of the Output Filename field to bring up a standard Windows file tree as shown in FIGURE 6-5.

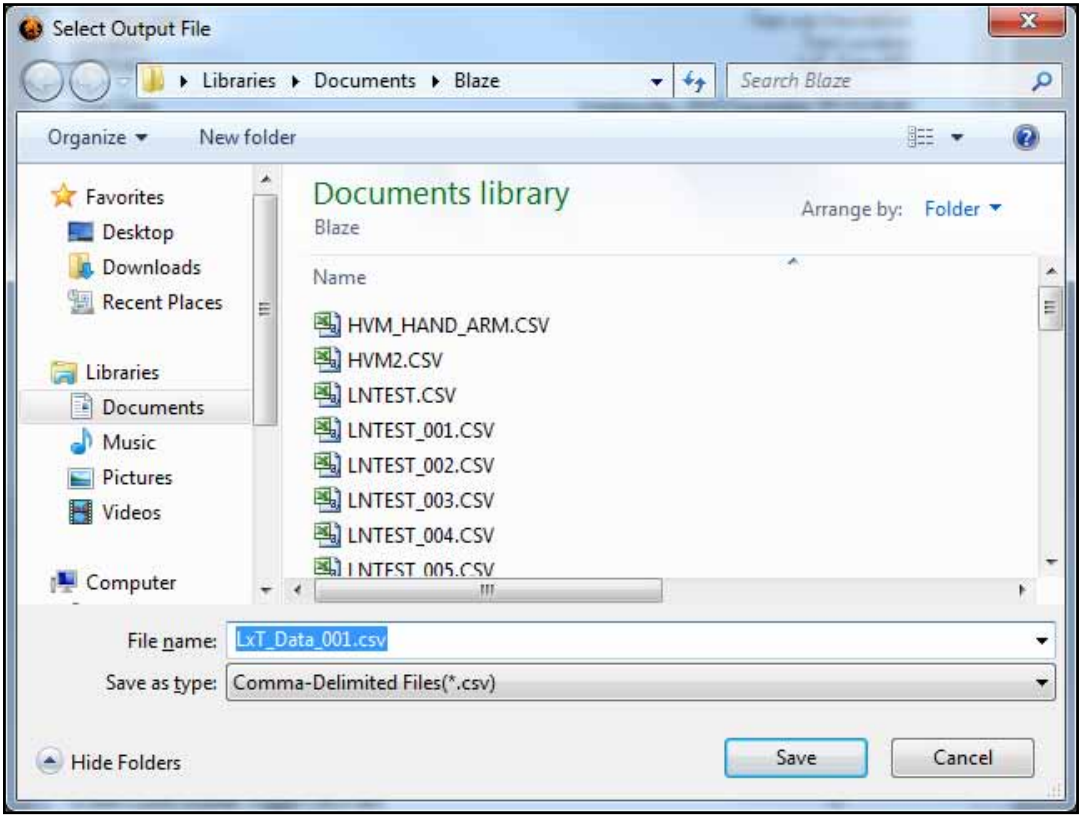


FIGURE 6-5 Browser Window

Use this window to define the path to the file folder into which the output file is to be saved and type a file name for the exported data file into the “File name” field. Press **Save** to close this window and return to the Export Data Menu with the path to the exported file in the “Output Filename” field as shown in FIGURE 6-6.

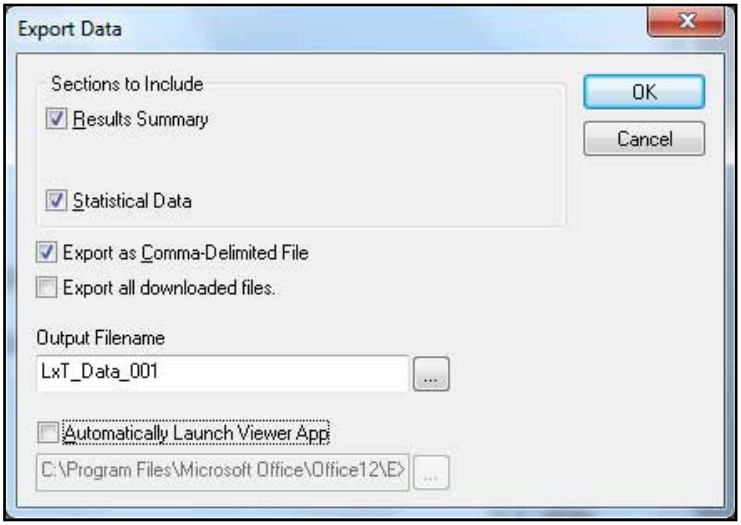


FIGURE 6-6 Export File Menu with Output File Path Defined

Export the File

Press **OK** to implement the export of the file.

In many instances, the user wants to examine the exported file, and possibly use it immediately for further processing. For this reason, the option to automatically launch the viewer application is provided in the Export File Menu. This feature is described in the following section.

Automatically Launch Viewer Application

In order to have a viewer appropriate for the selected file type (text or comma-delimited) open automatically as part of the export, left click the check box to the left of the "Automatically Launch Viewer App" prior to implementing the export operation, which will make active the field beneath the check box shown in FIGURE 6-7.

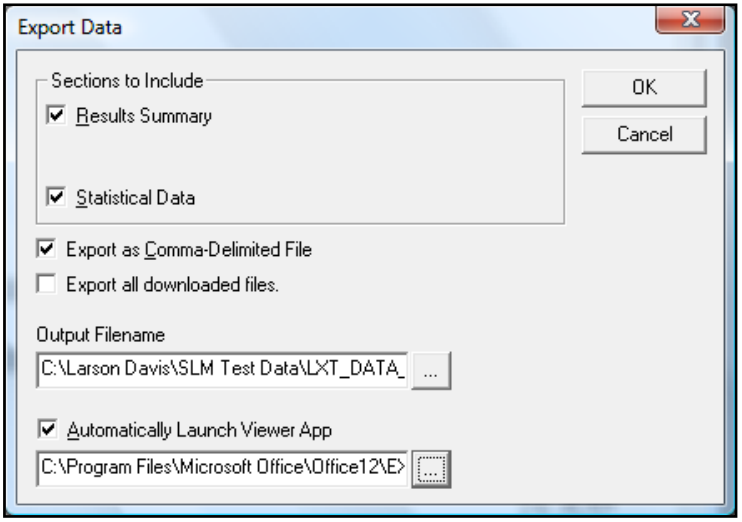


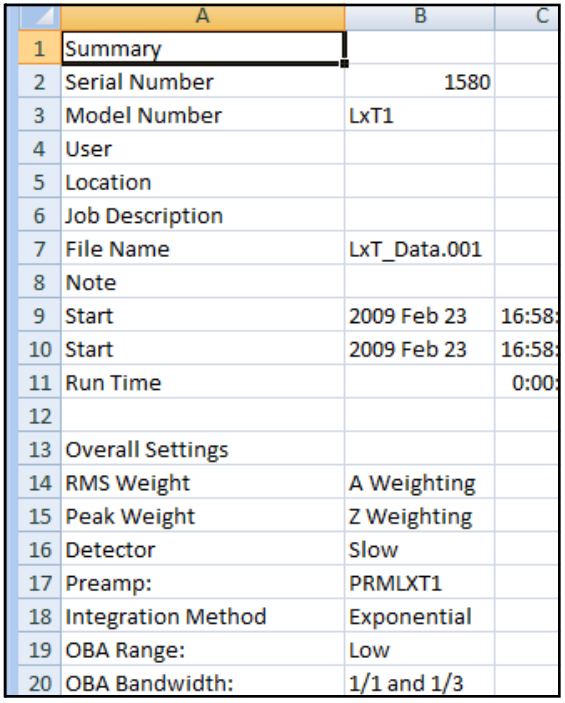
FIGURE 6-7 Export File Menu With Automatic Launch of Viewer Application

If the check box is checked, and the edit field is left blank, the default viewer for the file type (.csv or.txt) will be invoked to read the created file.

Left click the browse button to the right of the field beneath the "Automatically Launch Viewer App" to bring up a standard Windows file tree as shown in FIGURE 6-5. Use this window to define the path to the appropriate application program. In this case, we are exporting the file in comma-delimited format and the path has been defined to lead to the file to open Microsoft Excel.

Spreadsheet Example

The figures below show the exported data in a spreadsheet format, sectioned by data type.



	A	B	C
1	Summary		
2	Serial Number	1580	
3	Model Number	LxT1	
4	User		
5	Location		
6	Job Description		
7	File Name	LxT_Data.001	
8	Note		
9	Start	2009 Feb 23	16:58:
10	Start	2009 Feb 23	16:58:
11	Run Time		0:00:
12			
13	Overall Settings		
14	RMS Weight	A Weighting	
15	Peak Weight	Z Weighting	
16	Detector	Slow	
17	Preamp:	PRMLXT1	
18	Integration Method	Exponential	
19	OBA Range:	Low	
20	OBA Bandwidth:	1/1 and 1/3	

FIGURE 6-8 General and Setup Information

21	Results		
22	Leq	65.9	
23	SE	9.8	µPa²hr
24	SE(8)	12.6	mPa²hr
25	SE(40)	62.8	mPa²hr
26	Lmax	2/25/2009 16:28	74.3
27	LPeak	2/25/2009 16:27	83.4
28	Lmin	2/25/2009 16:28	38
29			
30	Dose Settings		
31	Dose Nam	OSHA-1	OSHA-2
32	Exch. Rate	5	5
33	Threshold	90	80
34	Criterion	90	90
35	Crit. Durat	8	8
36			
37	Results		
38	Dose	0	0
39	Projected	0	0
40	Projected	---	---
41	TWA (8)	---	---
42	Lep (8)	34.9	34.9

FIGURE 6-9 Sound Level and Dose Data

44	Statistics	
45	L[5.0]	93.1
46	L[10.0]	91.3
47	L[33.3]	89.2
48	L[50.0]	87.5
49	L[66.6]	86.2
50	L[90.0]	63.9

FIGURE 6-10 Statistics Data

LXT_DATA_001

	A	B	C	D	E	F	G
52	1/1 Octave						
53	Frequency (Hz)	8	16	31.5	63	125	250
54	Overall 1/1 Spectra	71.5	70.2	72.9	72.4	68.1	61.2
55	Max 1/1 Spectra	78.6	77.9	79.6	78.9	76.7	70.1
56	Min 1/1 Spectra	56.6	48.1	41.2	37.6	34.7	44.2
57							
58	1/3 Octave						
59	Frequency (Hz)	6.3	8	10	12.5	16	20
60	Overall 1/3 Spectra	67.6	67.1	64.4	64.9	64.5	66.3
61	Max 1/3 Spectra	74.4	75	71.8	71.6	73.5	74.2
62	Min 1/3 Spectra	52.4	48.8	48.4	46	41.9	39.4

FIGURE 6-11 Spectra Data

LXT_DATA_001

	A	B	C
65	Statistics		
66	Level (dB)	Count	Percent
67			
68	Under	0	0.00%
69	51.5	1	0.00%
70	51.6	4	0.20%
71	51.7	4	0.20%
72	51.8	2	0.10%
73	51.9	4	0.20%
74	52	2	0.10%
75	52.1	3	0.10%
76	52.2	3	0.10%
77	52.3	2	0.10%
78	52.4	3	0.10%
79	52.5	2	0.10%
80	52.6	4	0.20%
81	52.7	2	0.10%
82	52.8	3	0.10%
83	52.9	3	0.10%

FIGURE 6-12 Statistics Data

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