NoiseTutor System Manual

LARSON DAVIS
A PCB PIEZOTRONICS DIV.

Larson Davis

NoiseTutor System Manual

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Model 831 SLM: _____ Serial Number: _____

Preamplifier Model: _____ Serial Number: _____

Microphone Model: _____ Serial Number: _____

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CHAPTER

1 Introduction

This manual describes how to set up and configure the Larson Davis NoiseTutor System. The NoiseTutor System is designed to provide portable and remote observation of monitoring sites with features for performing the following functions:

These functions can be used simultaneously, if desired.

- Provide customizable graphs of measurement data files, including time histories and spectrograms
- Provide customizable real-time graphical reports of sound measurements
- Deliver sound level data files and graphical reports via e-mail
- Deliver sound level data files and graphical reports to FTP servers
- Provide event detection and graphical event notification through e-mail, text messaging to cell phones, and web publishing
- Record audio files of measurements to be sent with reports
- Provide simplified and centralized method for specifying recipients for e-mail and text messaging
- Provide administrative e-mail and text messaging support for operating and maintaining the NoiseTutor System

The NoiseTutor System software comes pre-installed when NoiseTutor is purchased as a system.

Setting up the NoiseTutor System includes the following procedures:

1. Checking NoiseTutor Components
2. Configuring the NoiseTutor server
3. Setting up the NoiseTutor Station
4. Installing the NoiseTutor System software, if not already pre-installed
5. Connecting peripheral and power devices

Figure 1-1 shows the components and architecture of the NoiseTutor System.

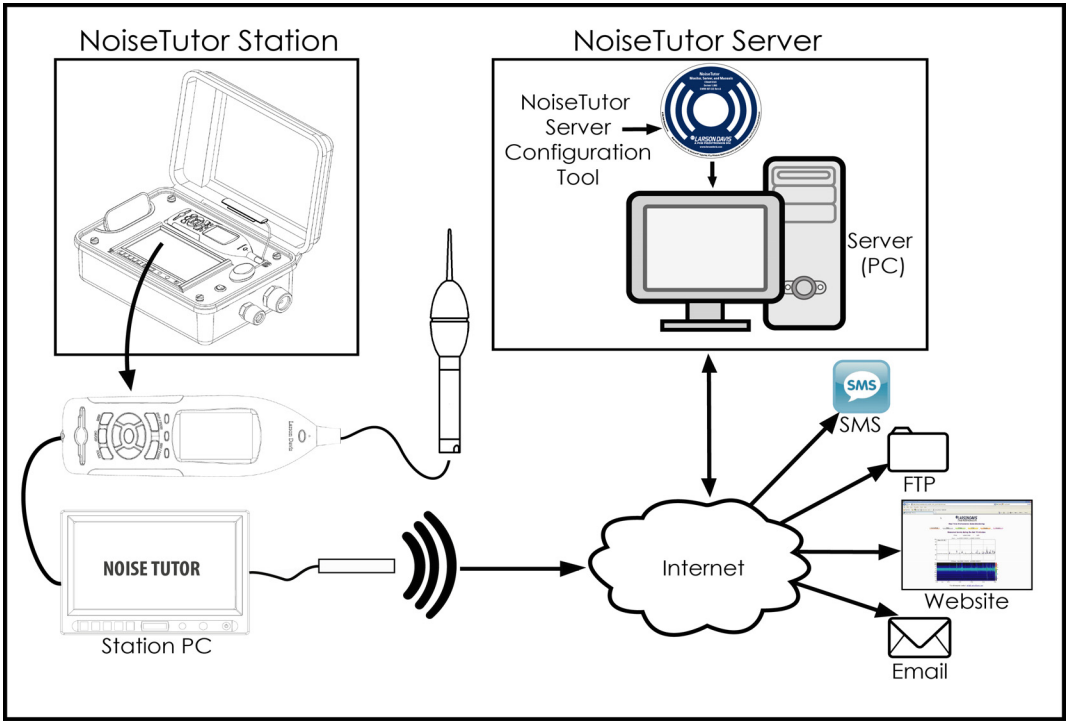

FIGURE 1-1 Components and Architecture - NoiseTutor System

Checking NoiseTutor Components

The NoiseTutor System is comprised of the following:

1. The NoiseTutor Station, including:
    - Model 831 sound level meter
    - Station PC
    - LCD display
    - Compact, remote keyboard with trackball
    - Preamplifier
    - Microphone
    - Environmentally-sealed station case
2. NoiseTutor Server Configuration Software
3. Web and FTP Server (customer-supplied)

The following table lists the components for the NoiseTutor Station model EPS041 (NoiseTutor Accessory Kit) and NMS021 (complete NoiseTutor Kit including Model 831 Sound Level Meter):

System	Component
EPS041	Outdoor enclosure including gland for AC power and mic cable
EPS041	Compact Industrial PC With Windows 7 Pro®
EPS041	LCD Monitor
EPS041	Portable wireless keypad with trackball
EPS041	Cellular modem for cellular network access
EPS041	Lithium battery w/charger
EPS041	Quick Reference Guide, Installation Reference, and NoiseTutor Manual
EPS041	CD with starter software
NMS021	831-FF Type 1 Sound Level Meter
NMS021	PRM831 Preamplifier with 377B02 free-field polarized microphone
NMS021	831-LOG, 831-ELA and 831-OB3 firmware modules
NMS021	EPS2116 Outdoor protection
NMS021	EPS041 NoiseTutor Accessory Kit (see above)
NMS021	EXC020 20 ft. (6m) extension cable
NMS022	PRM2103-FF preamplifier
NMS022	CBL203

The NoiseTutor Installation Reference is located inside your NoiseTutor station case and describes the assembly and operation of your station.

Optional Accessories

The following table lists the optional accessories for the NoiseTutor Station:

Component	Part number
Instrumentation Tripod	TRP003
Tripod Mounting Adapter	EPS2106-2 to TRP003 (ADP034)
Basic Tripod	TRP001
Outdoor Preamplifier	PRM2103-FF
Weather Station	SEN031
Anemometer	SEN032
GPS	GPS001
Custom Cable Plug	ACC007

If you are using an outdoor preamplifier or a weather station, you can connect the power for either or both to the NoiseTutor Station by using connectors inside the case that are labeled "Accessories." If using these accessories, you also need to order the Custom Cable Plug for the extra cable outlet in your NoiseTutor Station case.

Configuring the NoiseTutor Server

Larson Davis provides server configuration aids with the NoiseTutor System to provide web access to sound level monitoring sites. This includes the NoiseTutor Server Configuration Tool, which can be used with instructions in this manual to set up a server on a Windows®-based computer. The server consists of both a website--with a collection of pre-designed web pages--and an FTP site.

The pre-designed server web pages present information from each monitoring site in the following forms:

- Ten-minute report

- One-hour report
- One-day report
- One-week report
- One-month report

Although you can use any web site server that is capable of rendering HTML pages with Java Script, the configuration aids in this manual describe the steps for using Internet Information Services (IIS) from Microsoft. This manual describes configuration with IIS because it is currently the most common web server for Windows® operating systems and it is available at no cost.

Although the NoiseTutor system provides server configuration aids, you are responsible for setting up the web server.

You can also set up an FTP site on your server; in this way, you can collect noise monitoring data from Noise Tutor clients. This data can then be displayed in graphic reports for each monitoring site on a web site.

The process of installing and configuring the NoiseTutor Server involves complex and technical tasks, and generally requires the services of an IT professional. For your assistance, detailed instructions for installing and configuring the NoiseTutor Server on a Windows 7 platform are provided in this manual.

The NoiseTutor System also functions on Windows XP SP 3 and Windows Vista SP 1. However, the steps and options are different than those represented in this manual. To install and configure the NoiseTutor System on these platforms, Larson Davis recommends that you consult with an IT professional. Detailed instructions for setting up a server on other platforms are not available from Larson Davis.

System requirements for NoiseTutor Server Configuration

- A PC system to be used as an FTP server
- Windows 7 SP 1, Server or Professional editions. Server edition is recommended.
- IIS 5.1 or higher

- One or more NoiseTutor Noise Monitoring Systems (NMS)
- Sound level meter serial number for each NoiseTutor station

Setting up the NoiseTutor Station

The NoiseTutor Quick Start Guide describes the steps for deploying your NoiseTutor Station.

To set up your NoiseTutor Station, refer to the NoiseTutor Quick Start Guide, the NoiseTutor Installation Reference, and this manual. These are located inside the NoiseTutor station case.

Installing NoiseTutor Station Software

The NoiseTutor Station software comes pre-installed when ordering the NMS-021 (with Model 831 sound level meters), and the EPS 041 (without Model 831 sound level meters). For other configurations, the software must be installed on the PC that is connected to the sound level meter. The software interacts with noise monitoring stations by downloading measured data from the sound level meters at predefined intervals. It then sends data or graphical reports to specified recipients. If your system does not include pre-installed software, refer to the instructions in "Station Installation and Setup".

System Requirements for NoiseTutor Station Software

- Larson Davis sound level meter Model 831
- Windows 2000® or newer operating system
- Active SIM card

Larson Davis does not supply an active SIM card. You must obtain one separately.

CHAPTER

2 Server Installation and Setup

This chapter lists and describes the steps for setting up the NoiseTutor server on the Windows 7® operating system. To install the server, complete the following process:

1. Install IIS on Windows 7.
2. Configure the IIS web server.
3. Add Audio MIME Types.
4. Install the NoiseTutor Server Configuration Tool.
5. Run the NoiseTutor Server Configuration Tool.
6. Create an FTP user account.
7. Configure the Windows Firewall.

Each step is described in more detail in the following sections.

Before You Begin: *The process of installing and configuring the NoiseTutor Server involves complex and technical tasks, and generally requires the services of an IT professional. These detailed instructions are provided for the convenience of an IT professional working with your NoiseTutor System.*

Installing IIS on Windows 7 Operating System

The NoiseTutor System also functions on Windows XP® SP 3 and Windows Vista® SP 1. However, the steps and options are different than those represented in this manual. To install and configure the NoiseTutor System on these platforms, Larson Davis recommends that you consult with an IT professional. Detailed instructions for setting up a server on other platforms are not available from Larson Davis.

Installing the IIS add-in provides your host PC with both web- and FTP-server functionality. If you do not want to use IIS, you will need to supply your own web server and FTP server. To install IIS, follow these steps:

Step 1 On the Windows 7® Start menu, click **Control Panel**.

Step 2 Click **Programs and Features**.

Step 3 On the left window border, click **Turn Windows features on or off**, as shown in FIGURE 2-1.

*If the **Programs and Features** icon is not displayed in your Control Panel, click the drop down arrow in the address bar following the words "Control Panel." Click **All Control Panel Items**. The **Programs and Features** icon should then appear with other icons in your Control Panel.*

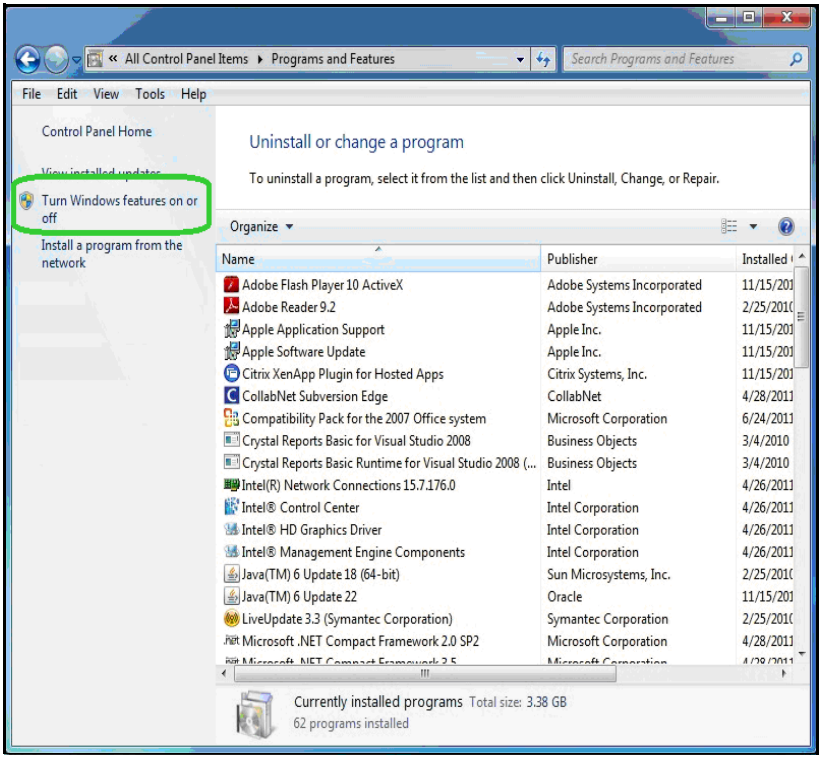

FIGURE 2-1 Turn Windows® Features On or Off

Step 4 Select **Internet Information Services.**

Step 5 Expand **Internet Information Services**.

Step 6 Expand **FTP Server**. Select all items, as shown in FIGURE 2-2.

Step 7 Select **Web Management Tools**, as shown in FIGURE 2-2. Accept all defaults.

Step 8 Select **World Wide Web Services**, as shown in FIGURE 2-2. Accept all defaults.

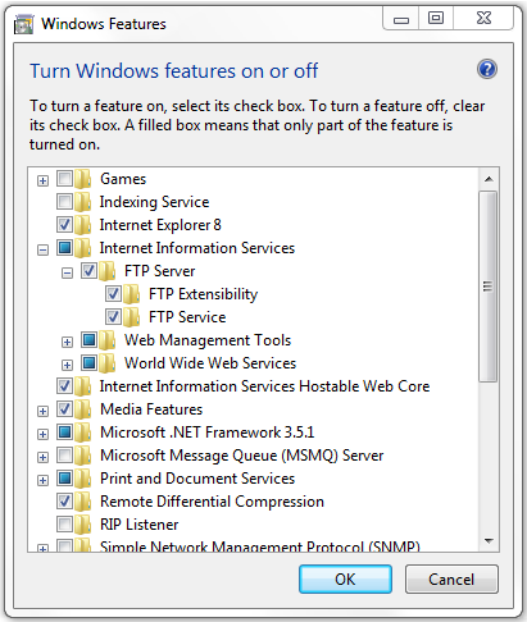

FIGURE 2-2 Windows® Features - Internet Information Services

Step 9 Click **OK**.Wait for Windows to make changes, as shown in FIGURE 2-3.

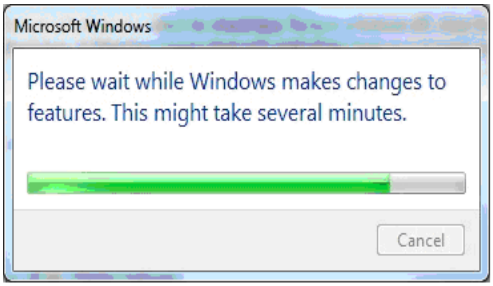

FIGURE 2-3 Microsoft Windows® - Please Wait

Step 10 Close **Programs and Features**.

Configuring the IIS Web Server

You can configure the IIS web server to set up your NoiseTutor web site. The following configuration places the web pages for your site in a virtual directory and sets the FTP server upload location as a subdirectory of that virtual directory. To set up your web site, follow these steps:

Step 1 Browse to **c:\inetpub\wwwroot** and click the **New Folder** button and name it **LarsonDavis**.

Step 2 Open **inetmgr** at the following location: **c:\windows\system32\inetsrv\inetmgr.exe**.

Step 3 Expand the name of your computer.

Step 4 Expand **Sites**.

Step 5 Depending on your operating system, you may have the option of creating a new web site. Otherwise, you may be provided only with the default web site option, as shown in FIGURE 2-4.

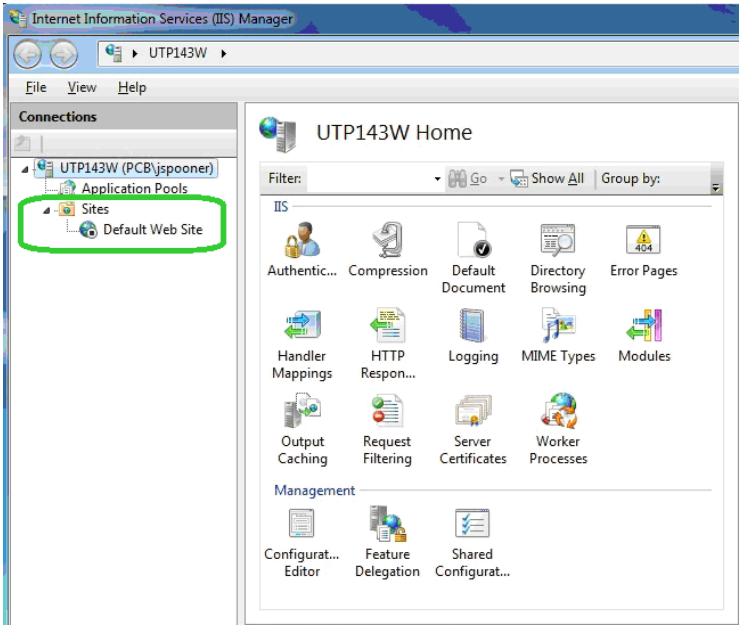

FIGURE 2-4 IIS Manager - Expand Sites

Step 6 Select **Default Web Site**.

Step 7 Select **View Virtual Directories**, as shown in **FIGURE 2-5**.

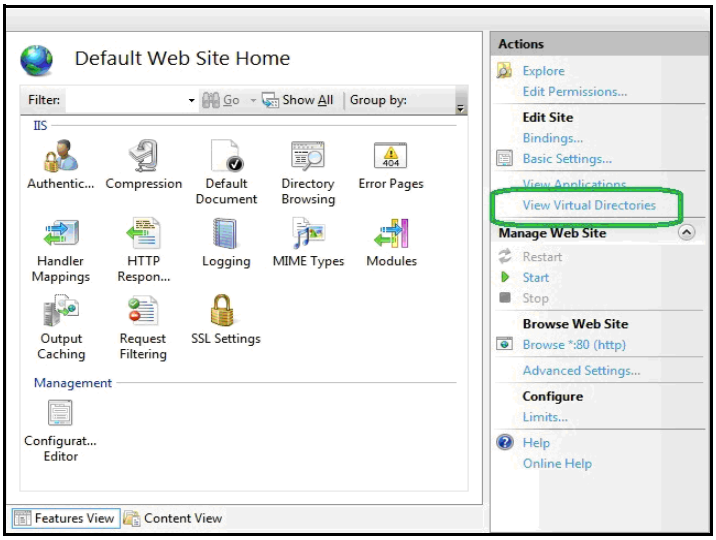

FIGURE 2-5 IIS Manager - View Virtual Directories

Step 8 Click **Add Virtual Directory**, as shown in FIGURE 2-6.

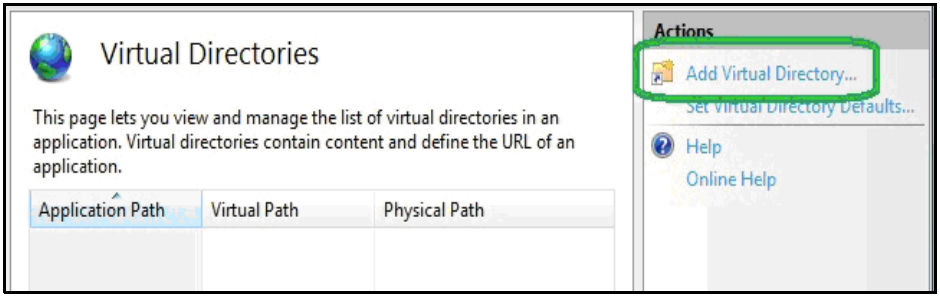

FIGURE 2-6 IIS Services Manager - Add Virtual Directory

Larson Davis strongly recommends that you specify, select, or accept all defaults for your configuration, as shown in this manual.

Step 9 In the **Add Virtual Directory** dialog box, type **LarsonDavis** in the Alias field, as shown in FIGURE 2-7.

Step 10 For **Physical path**, specify **LarsonDavis** as the default root directory by typing the path as shown in FIGURE 2-7.

Step 11 Click the **Connect as…**, as shown in FIGURE 2-7.

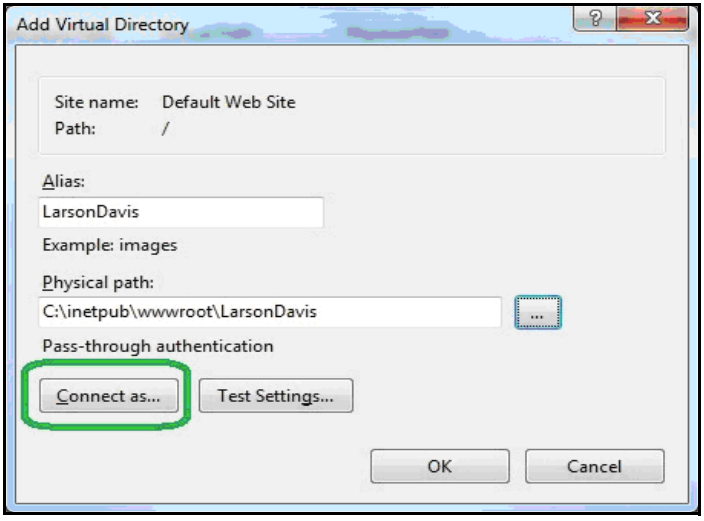

FIGURE 2-7 Add Virtual Directory - Connect As

Step 12 In the **Connect As** dialog box, select the **Application user (pass-through authentication)** option and click **OK**, as shown in FIGURE 2-8.

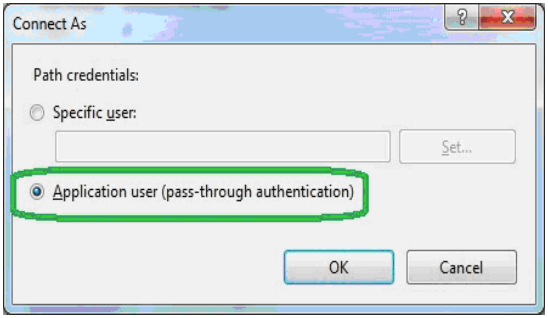

FIGURE 2-8 Connect As - Application User (pass through authentication)

Application user settings should not include errors, but can include warnings about being unable to verify access to the virtual directory. Such warnings are permissible because the user names and passwords are not available until the user accesses the web site.

Step 13 Select the application path and click **Edit Permissions...**, as shown in FIGURE 2-9.

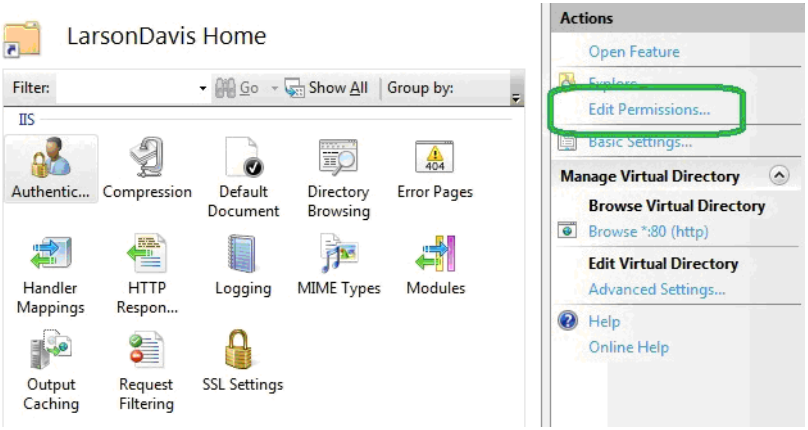

FIGURE 2-9 IIS Manager - Edit Permissions

Step 14 On the LarsonDavis Properties sheet, click the **Security** tab, as shown in FIGURE 2-10.

Step 15 Select the user or group that will access the web site, as shown in FIGURE 2-10. Ensure the user or group has the following permissions:

A. Read & execute

B. List folder contents

C. Read

It is recommended that you not grant other permissions.

Step 16 Click **Apply** if you have made changes. Otherwise, click **OK**.

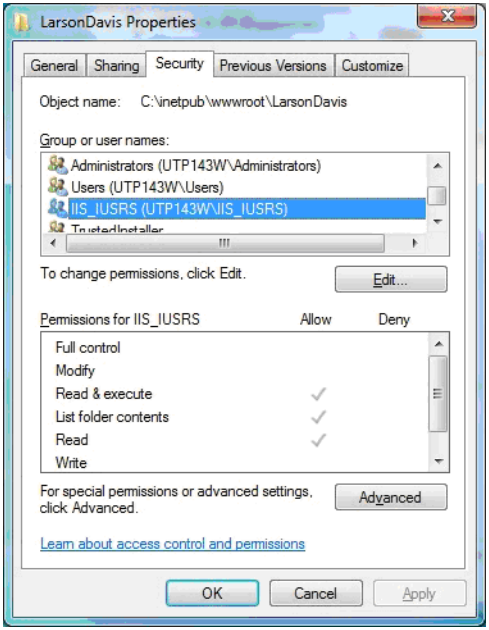

FIGURE 2-10 Larson Davis Properties - Security

Step 17 Expand **Default Web Site** and double-click **LarsonDavis**.

Step 18 Double-click **Default Document**, as shown in FIGURE 2-11.

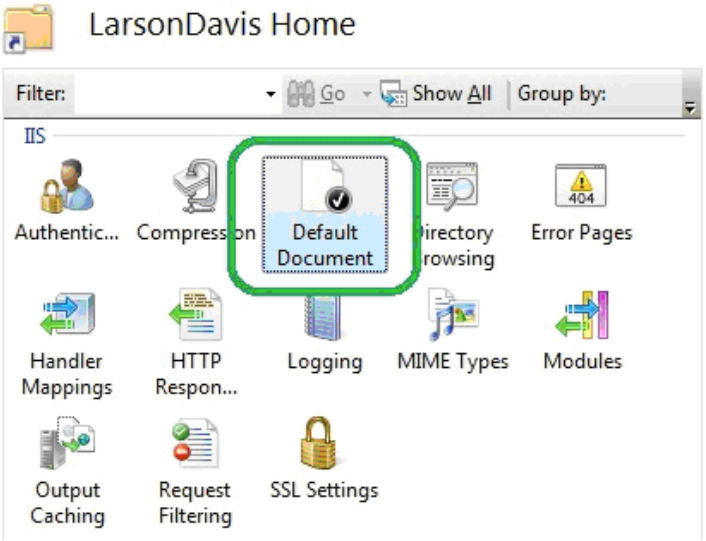

FIGURE 2-11 IIS Manager - Default Document

Step 19 Remove all default documents except for **index.html**.

Step 20 If **index.html** is not present, click **Add** and in the **Add Default Document** dialog box, type **index.html** and then click **OK**, as shown in FIGURE 2-12.

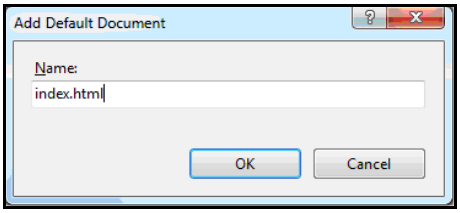

FIGURE 2-12 Add Default Document

Adding Audio MIME Types

If your NoiseTutor Station includes options for events and audio recording, with license files SWW-DNA-NT-EV and SWW-DNA-NT-CS, respectively, your web server must be configured for playing **.ogg** audio files. This is done by configuring MIME. If these options have not been purchased, this step can be skipped.

To add audio MIME types for supporting the audio recording feature, follow these steps:

Step 1 In the IIS Manager, double-click MIME Types, as shown in Figure 2-13.

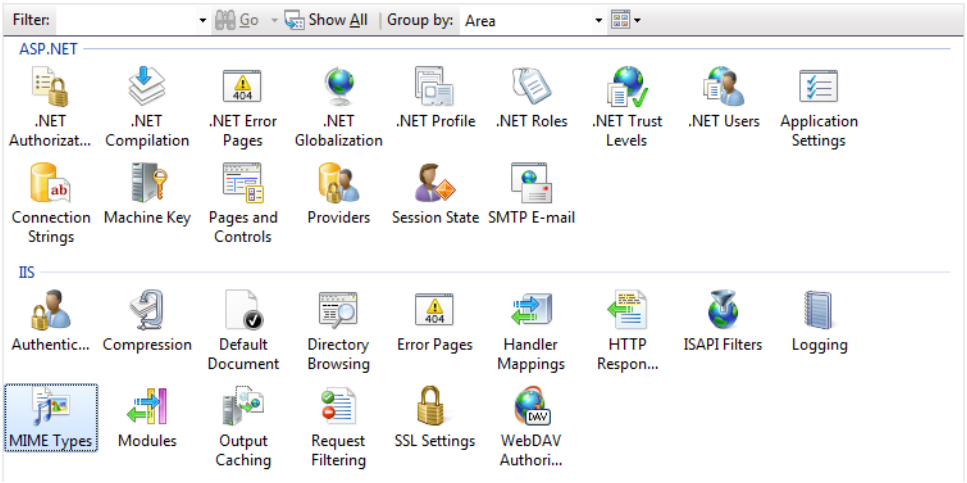

FIGURE 2-13 IIS MIME Types

Step 2 In the **MIME Types** list, click **Add**, as shown in Figure 2-14.

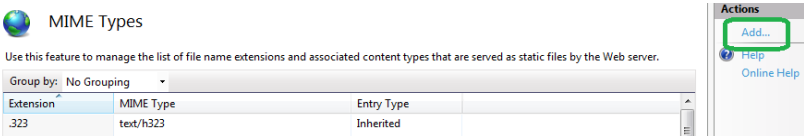

FIGURE 2-14 Add MIME Types

Step 3 In the **Add MIME Type** dialog box, type **.ogg** for the **File name extension** and type **audio/ogg** for **MIME type**, as shown in Figure 2-15.

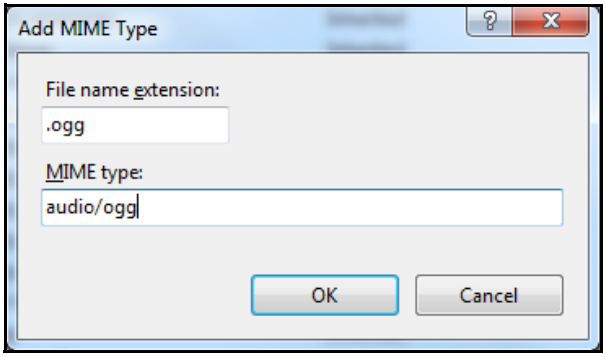

FIGURE 2-15 Add MIME Type ogg

Step 4 Click **OK**.

Step 5 As shown previously, in the **MIME Types** list, click **Add**.

Step 6 In the **Add MIME Type** dialog box, type **.ogx** for the **File name extension** and type **audio/ogx** for **MIME type**, as shown in Figure 2-16.

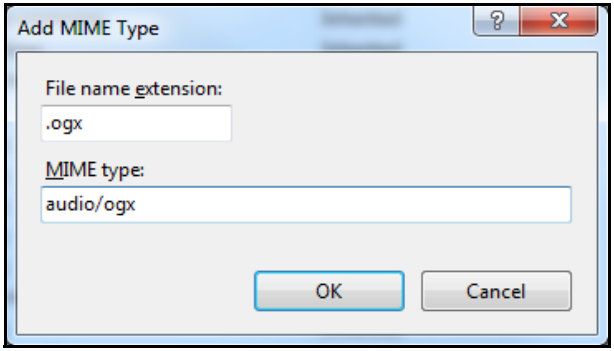

FIGURE 2-16 Add MIME Type ogx

Step 7 Click **OK**.

Installing the NoiseTutor Server Configuration Tool

To install the NoiseTutor Configuration Tool, follow these steps:

Step 1 Insert NoiseTutor CD into your CD/DVD drive.

Step 2 If auto start is not enabled, Click **[CD / DVD]\\NoiseTutorConfigurationInstaller.exe**.

Step 3 On the NoiseTutor Configuration Tool Setup Wizard, Click **Next**, as shown in FIGURE 2-17.

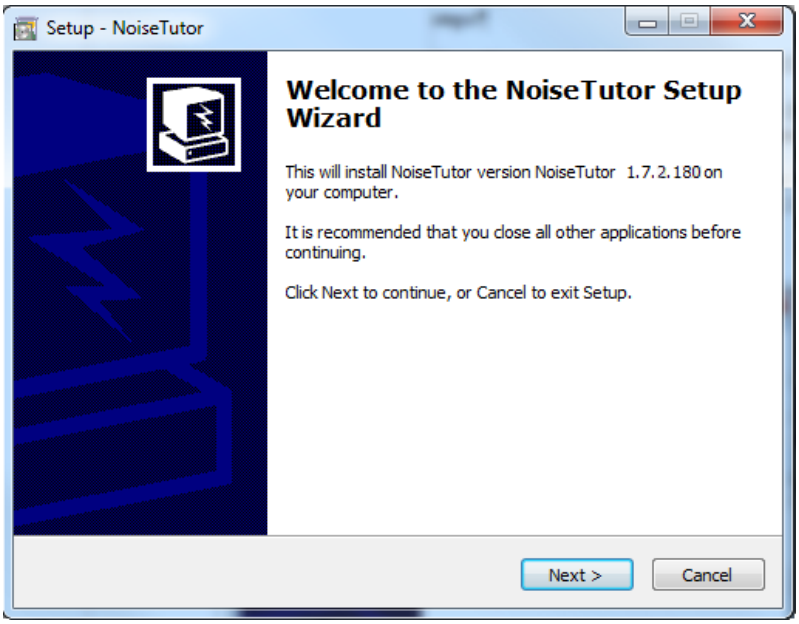

FIGURE 2-17 Configuration Tool Installer - Welcome

Step 4 Select the folder where you want to install the NoiseTutor Configuration Tool, as shown in FIGURE 2-18.

Step 5 Select either **Everyone** or **Just me**.

Step 6 Click **Next** to install the default installation folder.

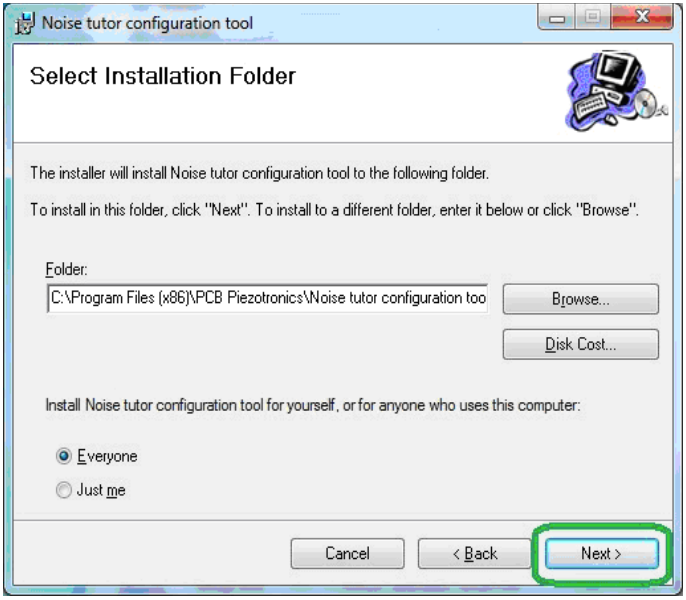

FIGURE 2-18 Configuration Tool Installer - Select Installation Folder

Step 7 To confirm the installation, click **Next** again. The wizard displays the installation progress as shown in FIGURE 2-19.

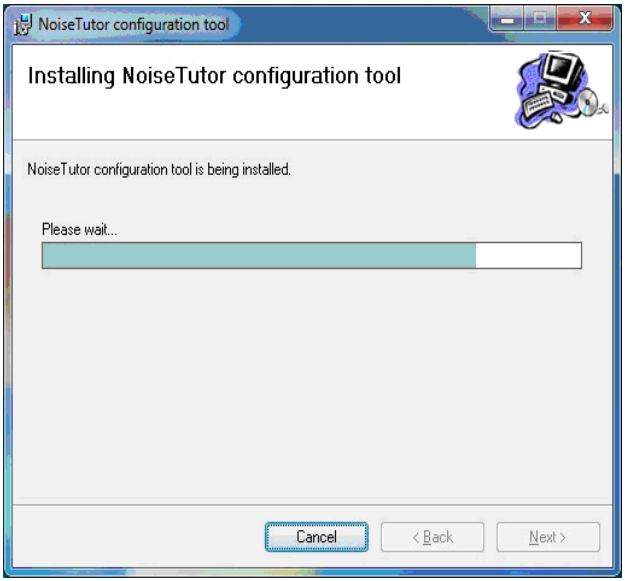

FIGURE 2-19 Configuration Tool - Installing NoiseTutor Configuration Tool

Step 8 Click **Close.**

Running the NoiseTutor Configuration Tool

The NoiseTutor Configuration Tool can be used to set up the following functionality on the server:

- Generate web pages
- Request specific monitoring site information to populate web page templates
- Generate and send graphical reports to a specified location
- Create an FTP directory for uploading site information

You are responsible for assigning users and giving them the correct permissions to any FTP upload directories you create with the NoiseTutor Configuration Tool.

To run the NoiseTutor Configuration Tool, follow these steps:

Step 1 On the **Start** menu, click **Computer**. Browse to the **NoiseTutor.exe** file in the **NoiseTutor** folder, and double-click it.

Step 2 If you are configuring a new site, click **New Configuration** on the **File** menu of the NoiseTutor Site **Configuration Tool** dialog box.

Step 3 If you are modifying an existing configuration, click **Open Configuration** on the **File** menu.

Step 4 From the **Open** dialog box, browse to the location of your existing site configuration file (.csf) and double-click it.

Step 5 For Monitoring Site information, provide decimal values for the **Latitude** and **Longitude** coordinates of your site, as shown in FIGURE 2-20. Refer to Google Maps, or another map service for help in finding these values for your site.

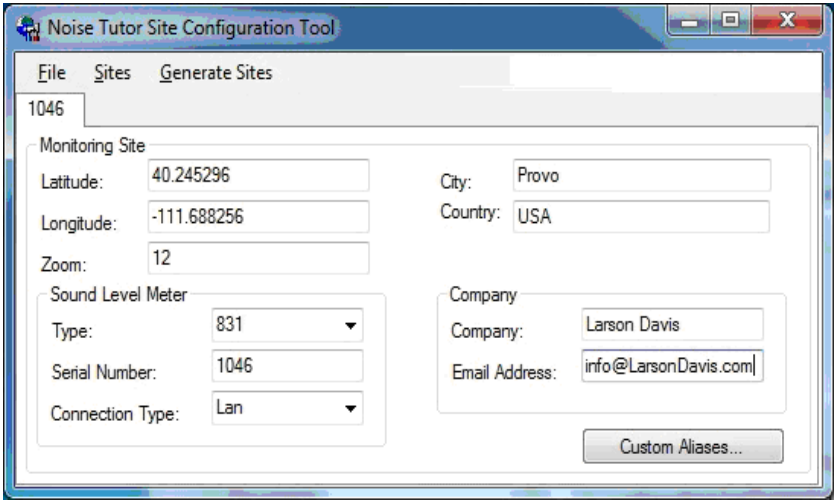

FIGURE 2-20 Configuration Tool - Information Launch3

Step 6 For **Zoom**, type a numeric value for the zoom level of the Google map to display for your site. The number you specify corresponds to the Google Maps designation of zoom levels, where zero (0) displays a map of the world and 21displays an individual building. Larson Davis provides a default value of 12.

Step 7 For Sound Level Meter, specify the **Type** as model **831** or **LxT**.

Step 8 For **Serial Number**, specify your sound level meter serial number. You can find the serial number by turning on your meter with the (ON/OFF) button, pushing the (TOOLS**)** key, scrolling to the **About** folder, selecting the folder by pressing (ENTER), and retrieving the number displayed in the Instrument Information section.

Step 9 Provide the appropriate information for the remaining fields in this dialog box.

Step 10 Repeat steps one through six for each site, as needed.

Step 11 On the **File** menu, click **Save Configuration**.

Step 12 On the **Generate Sites** menu, click **No Events** if your system does not include Event Detection as a feature. Event Detection is an optional feature that requires a purchased license file to operate. If you have purchased the license file, click **With Events**. This step creates the web files for the configuration.

Step 13 In **Browse for Folder**, click the folder location that you specified for your virtual directory.

Step 14 For **Confirm Delete**, click **Yes** to delete current web files. All previous files in the virtual directory are deleted prior to regenerating the new files. Click **No** to leave all previous files during generation. Duplicate files are overwritten.

Step 15 For **Successful Generation**, click **OK**.

Step 16 To close NoiseTutor Site Configuration Tool, click **Exit** on the **File** menu.

Creating User Accounts for FTP Uploads

You can create user accounts for your FTP client to authenticate itself with an FTP server. User accounts should have *write* access permissions to the FTP server **UploadImages** folder, and any sub-folders, but any additional rights are best left restricted. To create a user account, follow these steps:

Step 1 On the Start menu, click **Control Panel**.

Step 2 Click **Administrative Tools**.

*If **Administrative Tools** is not displayed in your Control Panel, click the drop down arrow in the address bar following the words "Control Panel." Click **All Control Panel Items**. The **Administrative Tools** icon should appear with other icons in your Control Panel.*

Step 3 Double-click **Computer Management**.

Step 4 Expand **Local Users and Groups**.

Step 5 Click the **Users** folder, as shown in FIGURE 2-21.

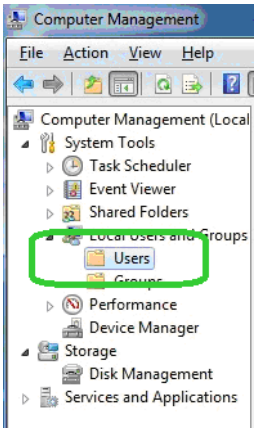

FIGURE 2-21 Computer Management - Users

Step 6 On the **Action** menu, click **New User**.

Larson Davis strongly recommends that you specify, select, or accept all defaults for your configuration, as demonstrated in this manual.

Step 7 In the **New User** dialog box, provide the user name, full name, description; also, create a password as shown in FIGURE 2-22. The default name for user accounts is **UploadUser**. Do not select any additional options on this dialog box.

Step 8 Click **Create.**

\

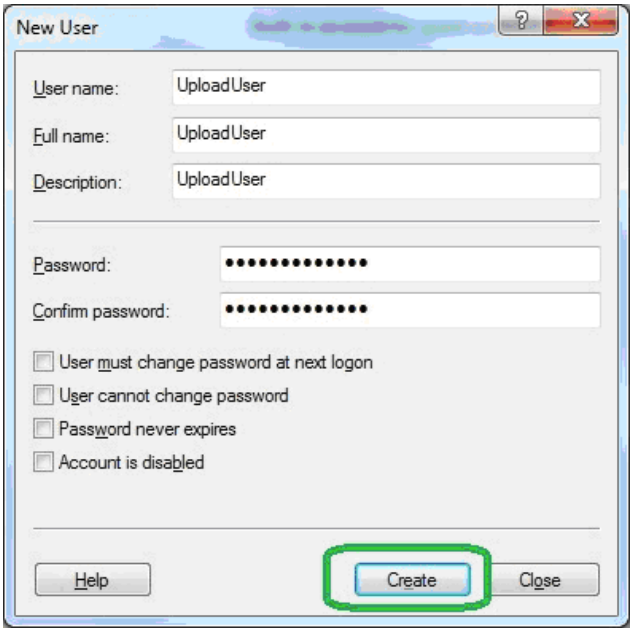

FIGURE 2-22 New User - Create

Step 9 Click **Close.**

Step 10 Click the name of the user account, or the default name **UploadUser**, if applicable, as shown in FIGURE 2-23.

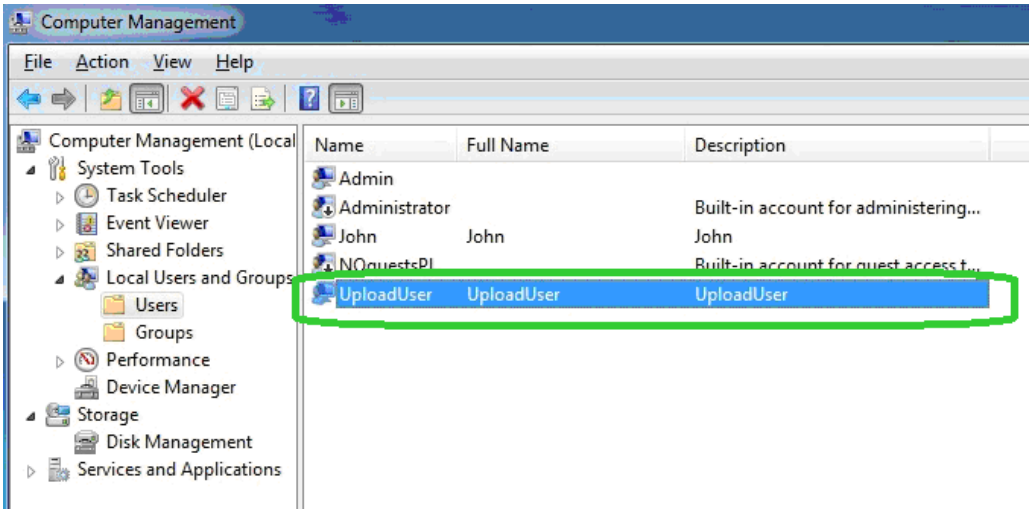

FIGURE 2-23 Computer Management - Upload User

Step 11 Provide the user account with the appropriate permissions to the FTP upload folder **UploadImages** and its sub-folders. This folder is a sub-folder in your NoiseTutor virtual directory. Permission options may vary but should include write access. It is best to restrict permissions to only the **UploadImages** folder and any sub-folders.

Step 12 On the **Actions** menu, click **Properties**.

Step 13 Click the **Member Of** tab.

Step 14 On the **Properties** dialog box, select any entries listed under **Member of**: and click **Remove**, as shown in FIGURE 2-24.

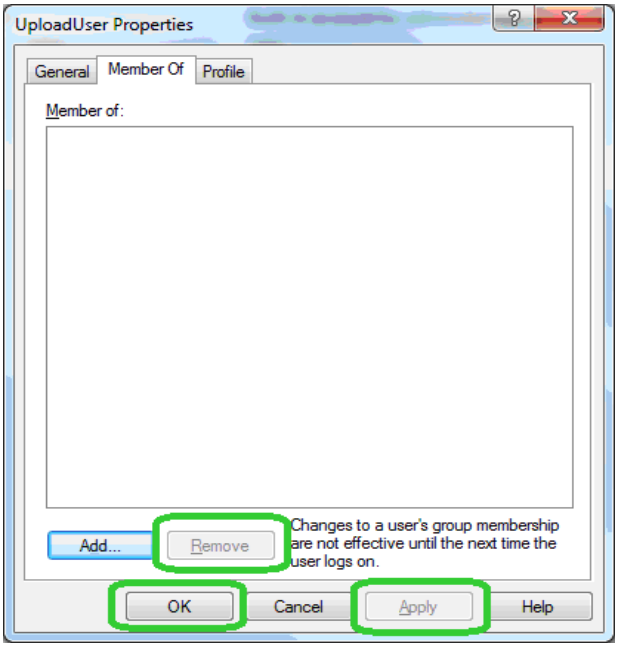

FIGURE 2-24 UploadUser Properties - Member of

Step 15 Click **Apply.**

Step 16 Click **OK.**

Step 17 To close the Computer Management screen click **Exit** on the **File** menu.

Step 18 Close the Administrative Tools screen and the Control Panel.

Step 19 From the Start menu, click **Computer**.

Step 20 Browse to the default virtual directory at **c:\inetpub\wwwroot\LarsonDavis\UploadImages**, as specified in **Step 7**.

Step 21 Right-click **UploadImages** and select **Properties**.

Step 22 On the **Properties** dialog box, click **Security Tab**.

Step 23 Click **Edit…**, as shown in FIGURE 2-25.

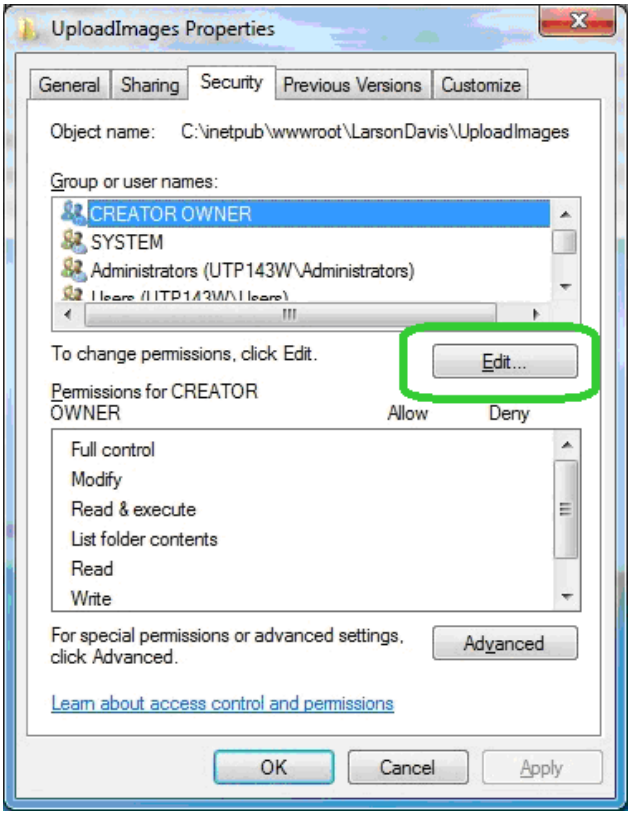

FIGURE 2-25 UploadImages Properties - Security

Step 24 On the **Permissions** dialog box, click **Add...**, as shown in FIGURE 2-26.

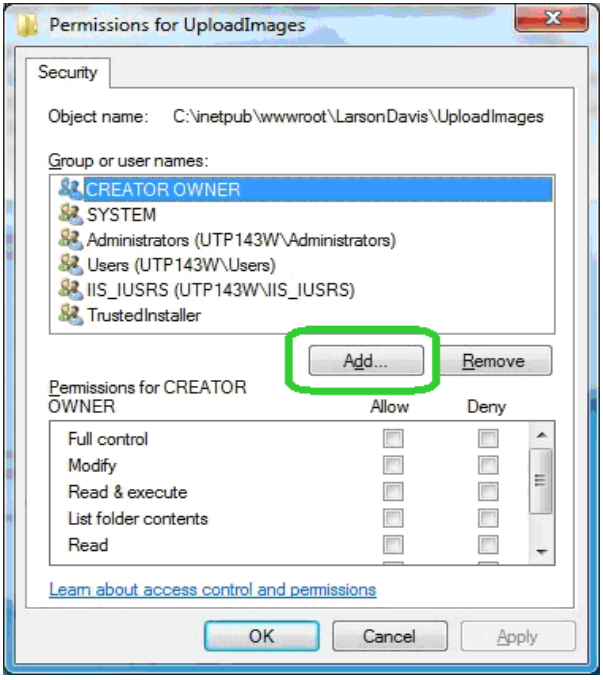

FIGURE 2-26 Permissions for UploadImages - Add

Step 25 In the **Enter the object names to select**, type in the name of the user account, or the default name **UploadUser**, if applicable, as shown in FIGURE 2-27.

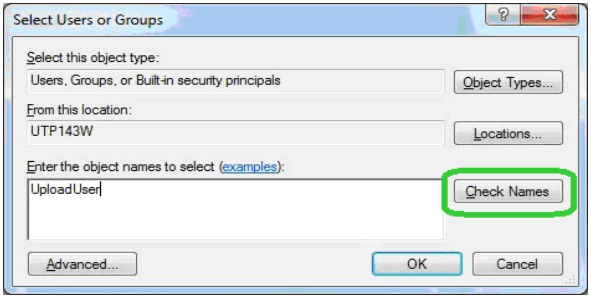

FIGURE 2-27 Select User or Groups - Upload User

Step 26 Make sure the **From this location** references your computer.

Step 27 Click **Check Names**.

Step 28 Click **OK** on both dialog boxes.

Step 29 On the **Security** tab of the **Properties** dialog box, click the user account name, or the default name **UploadUser**, if applicable, as shown in FIGURE 2-28.

Step 30 Click **Advanced.**

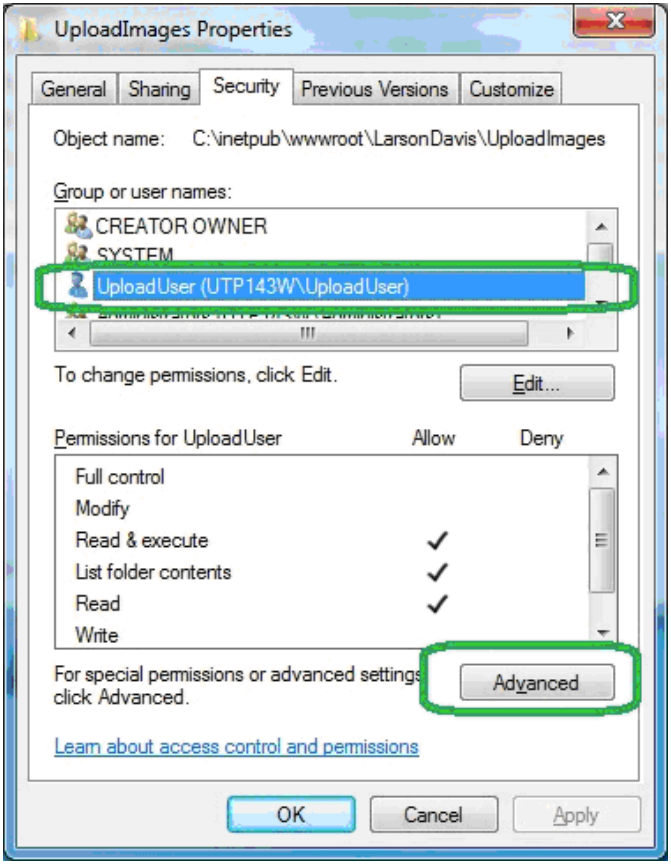

FIGURE 2-28 UploadImages Properties - Advanced

Step 31 On the **Advanced Security Settings** dialog box, click the **Permissions** tab.

Step 32 Click the user account name, or the default **UploadUser**, if applicable, as shown in FIGURE 2-29.

Step 33 Click **Change Permissions…**.

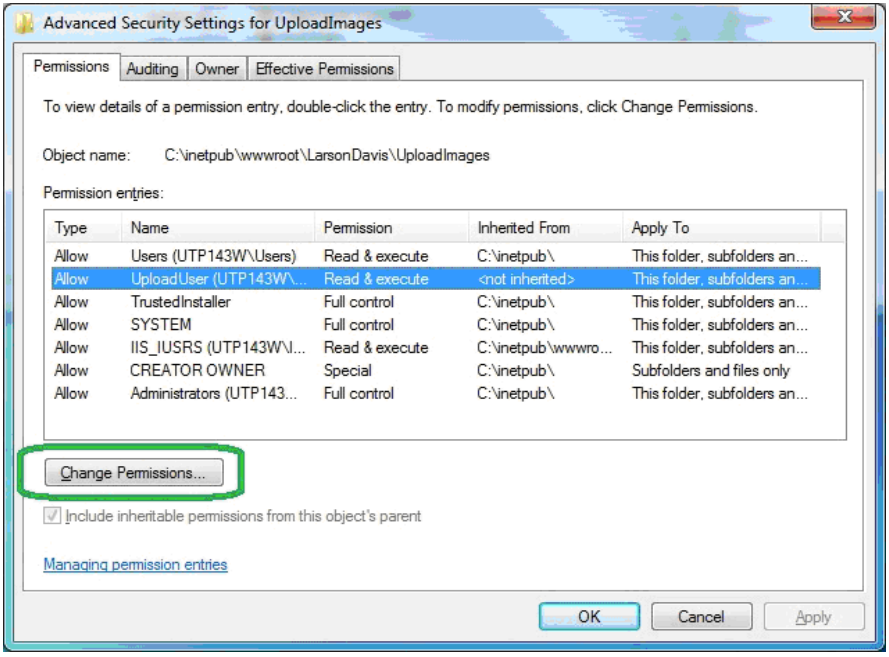

FIGURE 2-29 Advanced Security Settings for UploadImages - Change Permissions

Step 34 Click **Edit...**, as shown in FIGURE 2-30.

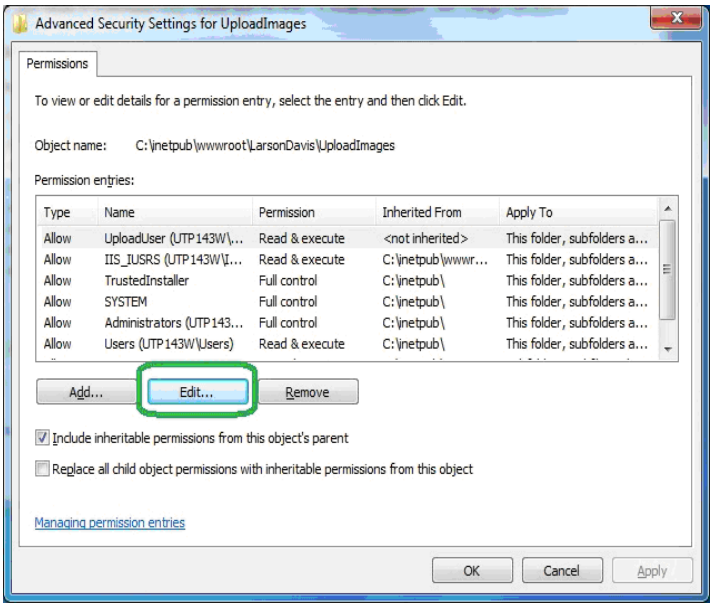

FIGURE 2-30 Advanced Security Settings for UploadImages - Edit

Step 35 For **Permission Entries**, select the following **Allow** rights, as shown in FIGURE 2-31:

- **List folder/read data**
- **Read attributes**
- **Read extended attributes**
- **Create files/write data**
- **Create folders/append data**
- **Write attributes**
- **Write extended attributes**
- **Delete sub-folders and files**
- **Delete**
- **Read permissions**

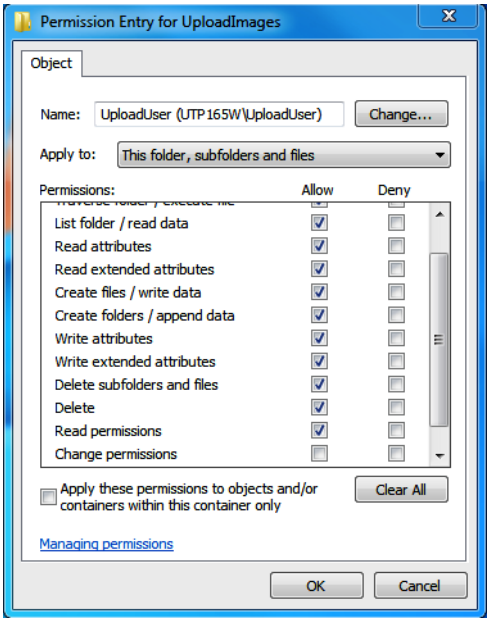

FIGURE 2-31 Permissions Entry for UploadImages - Upload User

Step 36 Click **OK** on all dialog boxes.

Setting up FTP Servers

Setting up an FTP server allows you to upload the NoiseTutor client reports. The FTP server root folder should be specified as the sub-folder “UploadImages” for the web server. To set up the FTP server, follow these steps:

Step 1 From the Start menu, click **Computer**. Browse to **c:\windows\system32\inetsrv\inetmgr.exe**.

Step 2 Double-click **inetmgr**:

Step 3 Under **Connections** on the Internet Information Services (IIS) Screen, click the local computer icon to expand it, as shown in FIGURE 2-32.

Step 4 Click **Content View**, as shown in FIGURE 2-32.

Step 5 Click **Add FTP Site**…, as shown in FIGURE 2-32.

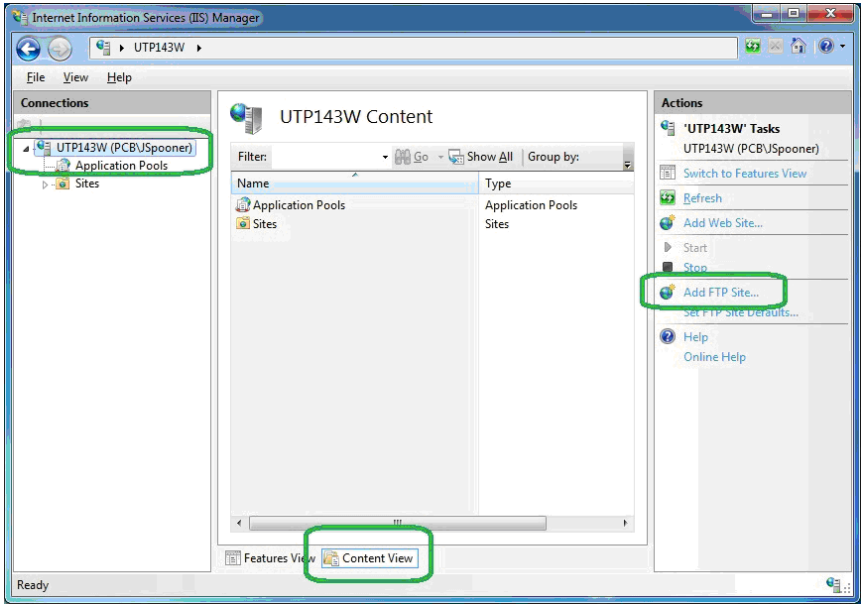

FIGURE 2-32 IIS Service Manager - Add FTP Site

Step 6 On the Site Information page of the Add FTP Site wizard, type **Upload Images FTP Site** for the FTP site name, as shown in FIGURE 2-33.

Step 7 Under Physical path: type **c:\inetpub\wwwroot\LarsonDavis\UploadImages**, as shown in FIGURE 2-33, or browse to the folder and select it.

Step 8 Click **Next**.

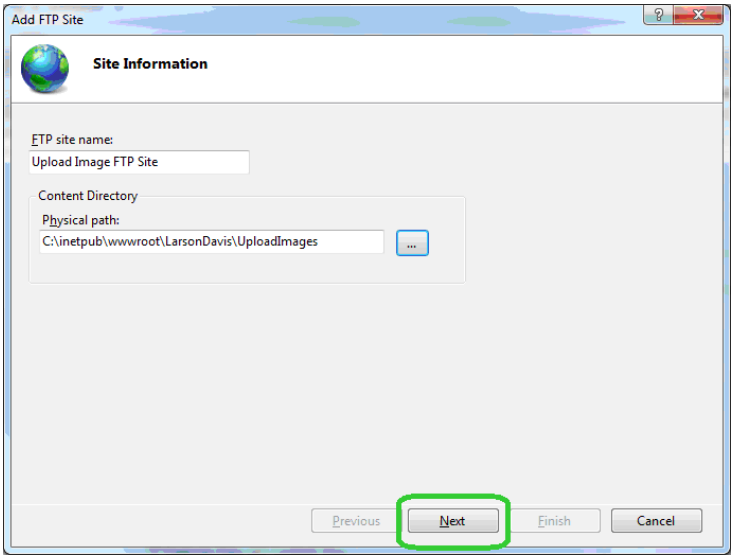

FIGURE 2-33 Add FTP Site - Site Information

Step 9 On the Binding and SSL Settings page, Select **All Unassigned** for IP Address, as shown in FIGURE 2-34.

Step 10 Specify the port for the FTP site, as shown in FIGURE 2-34. The default is 21.

Step 11 Clear the **Enable Virtual Host Names** option.

Step 12 Select **Start FTP Site Automatically.**

Step 13 Select **No SSL**.

Step 14 Click **Next**.

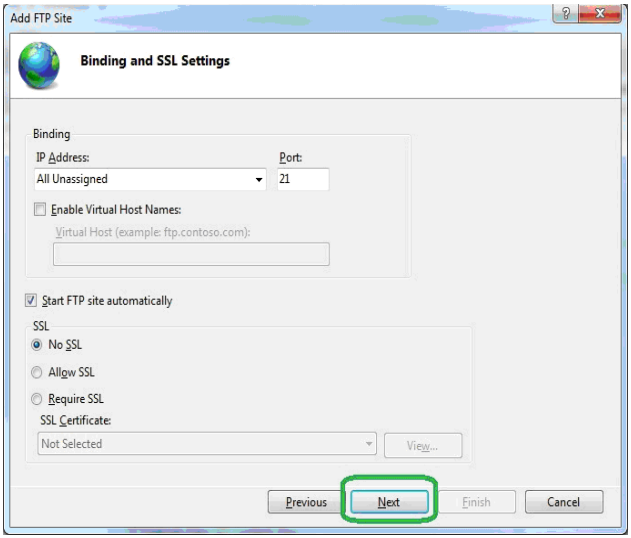

FIGURE 2-34 Add FTP Site - Binding and SSL Settings

Step 15 On the Authentication and Authorization Information page, select **Basic** for Authentication.

Step 16 Select **Specified Users** for **Allow access to:**

Step 17 Type in your user account name, or the default **UploadUser**, if applicable, as shown in FIGURE 2-35.

Step 18 Select **Read** and **Write** under **Permissions.**

Step 19 Click **Finish**.

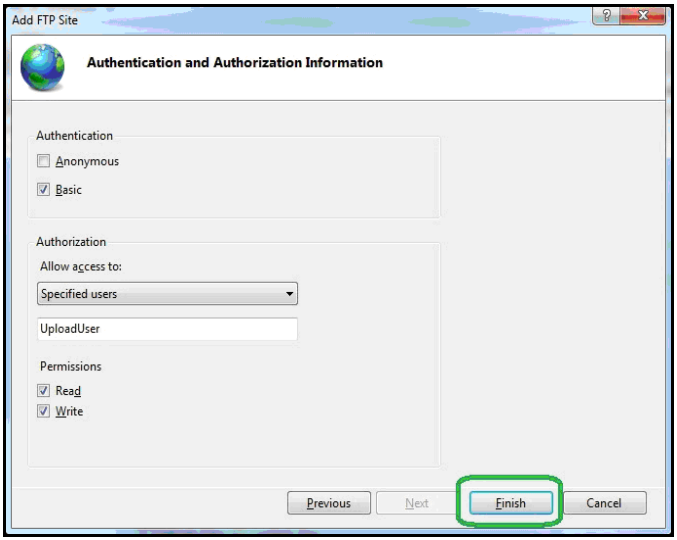

FIGURE 2-35 Add FTP Site - Authentication and Authorization Information

Step 20 Close IIS.

Configuring Windows Firewalls

Firewalls are used to restrict remote access to your computer. If you have a firewall present, you will need to allow web and FTP access. Below is an example for configuring Windows® Firewalls. For other firewalls, refer to the documentation from that provider.

Step 1 From the **Start** menu, click **Control Panel**.

*If **Windows Firewall** is not displayed in your Control Panel, click the drop down arrow in the address bar following the words "Control Panel." Click **All Control Panel Items**. The **Windows Firewall** icon should appear with other icons in your Control Panel.*

Step 2 Click **Windows® Firewall**.

Step 3 Click **Advanced Settings**, as shown in FIGURE 2-36.

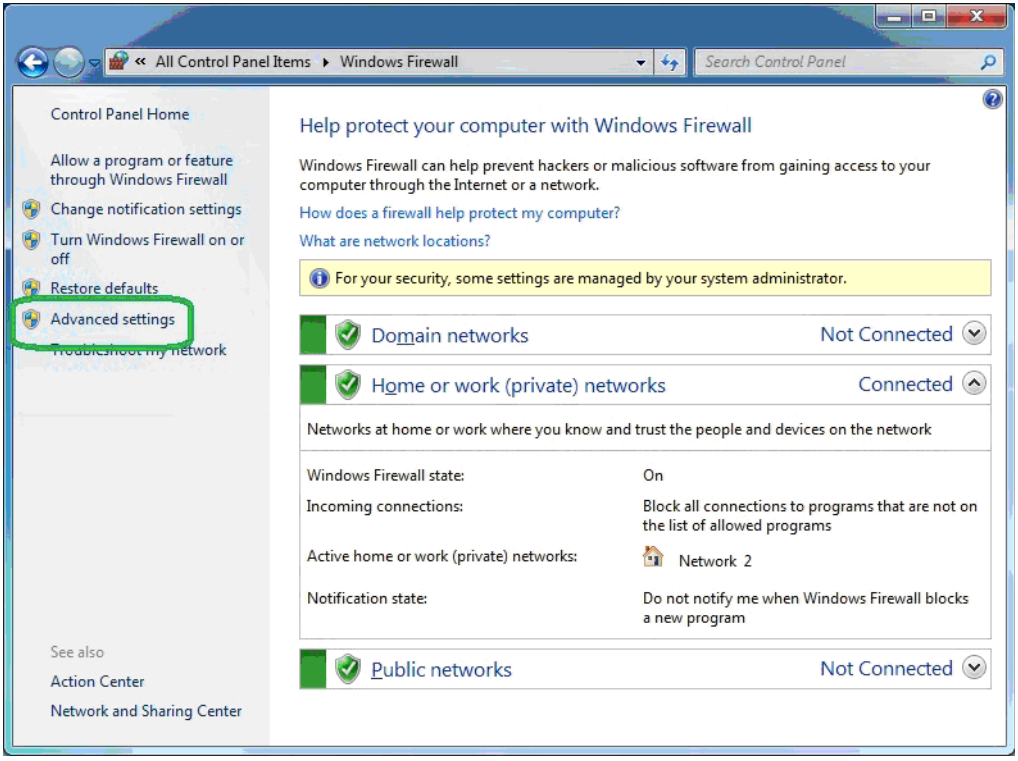

FIGURE 2-36 Windows Firewall - Advanced Settings

Step 4 On the Windows Firewall with Advanced Security screen, click **Inbound Rules**, as shown in FIGURE 2-37.

Step 5 Click **New Rule**..., as shown in FIGURE 2-37.

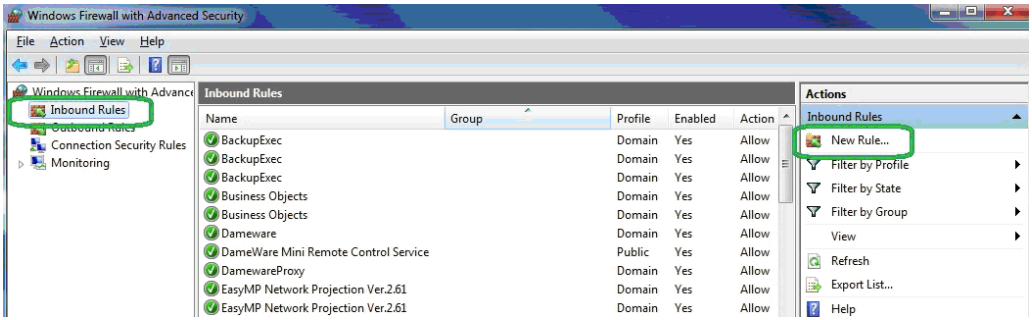

FIGURE 2-37 Windows® Firewall with Advanced Security - New Rule

Step 6 On the **Rule Type** page of the New Inbound Rule Wizard, select **Predefined:** as shown in FIGURE 2-38.

Step 7 Select **FTP Server**, as shown in FIGURE 2-38.

Step 8 Click **Next**.

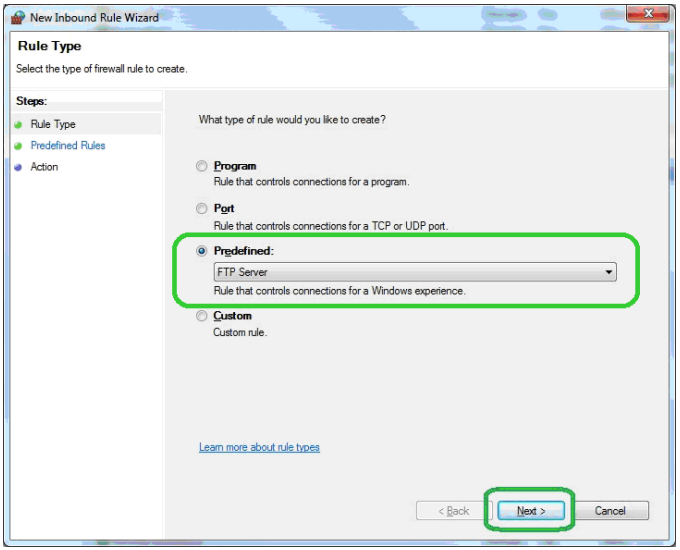

FIGURE 2-38 Windows Firewall - New Inbound Rule Wizard - Predefined (FTP Server)

Step 9 On the **Predefined Rules** page, select FTP Server Passive **(FTP Passive Traffic-In)**, as shown in FIGURE 2-39.

Step 10 Select **FTP Server Secure (FTP SSL Traffic-In)**, as shown in FIGURE 2-39.

Step 11 Select **FTP Server (FTP Traffic-In)**, as shown in FIGURE 2-39.

Step 12 Click **Next**.

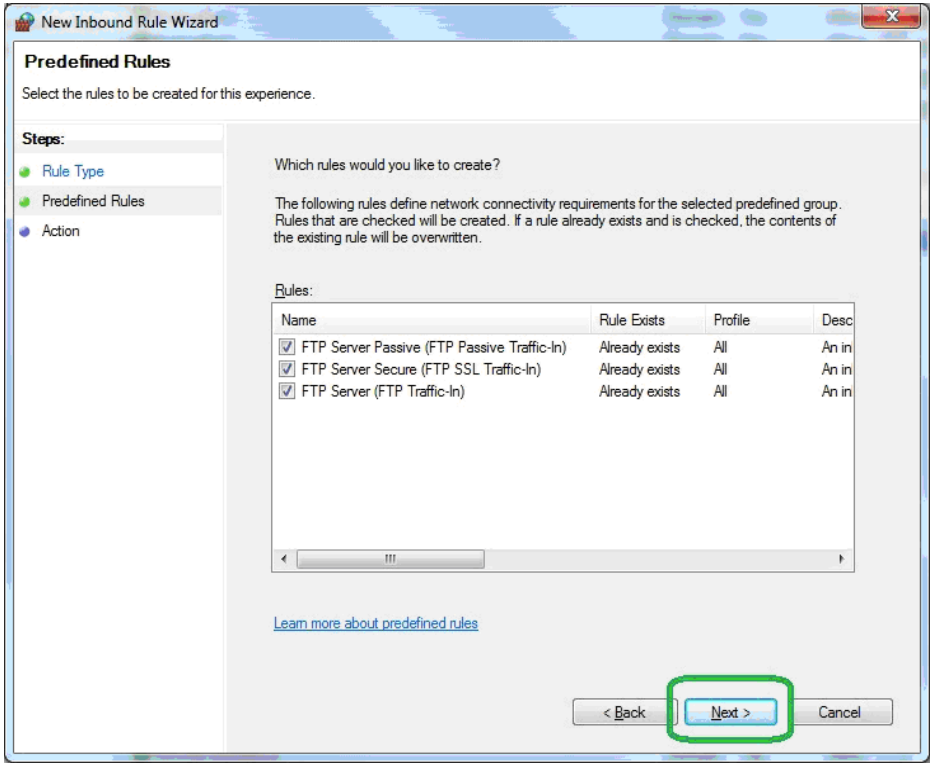

FIGURE 2-39 Windows® Firewall - New Inbound Rule Wizard - FTP Rules

Step 13 On the Action page, select **Allow the connection**, as shown in FIGURE 2-40.

Step 14 Click **Finish**.

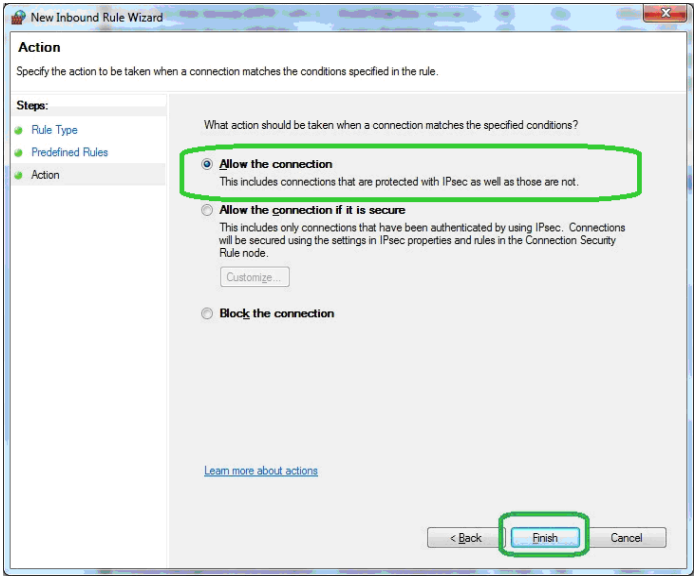

FIGURE 2-40 Windows® Firewall - New Inbound Rule Wizard - FTP (Allow the connection)

Step 15 On the Windows Firewall with Advanced Security screen, click **Inbound Rules**, as shown in FIGURE 2-41.

Step 16 Click **New Rule**…, as shown in FIGURE 2-41.

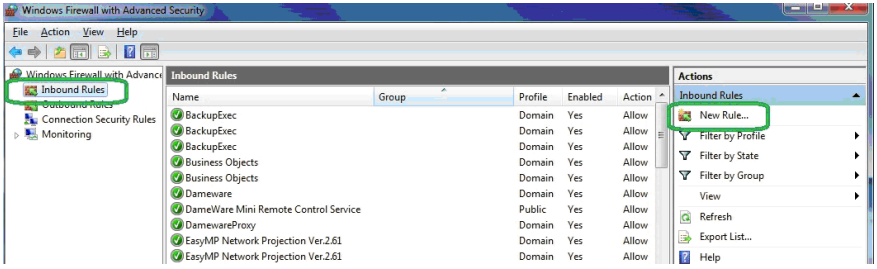

FIGURE 2-41 Windows® Firewall with Advanced Security - New Rule

Step 17 On the **Rule Type** page, select **Predefined**:, as shown in FIGURE 2-42.

Step 18 Select **World Wide Web Services (HTTP)**, as shown in FIGURE 2-42.

Step 19 Click **Next.**

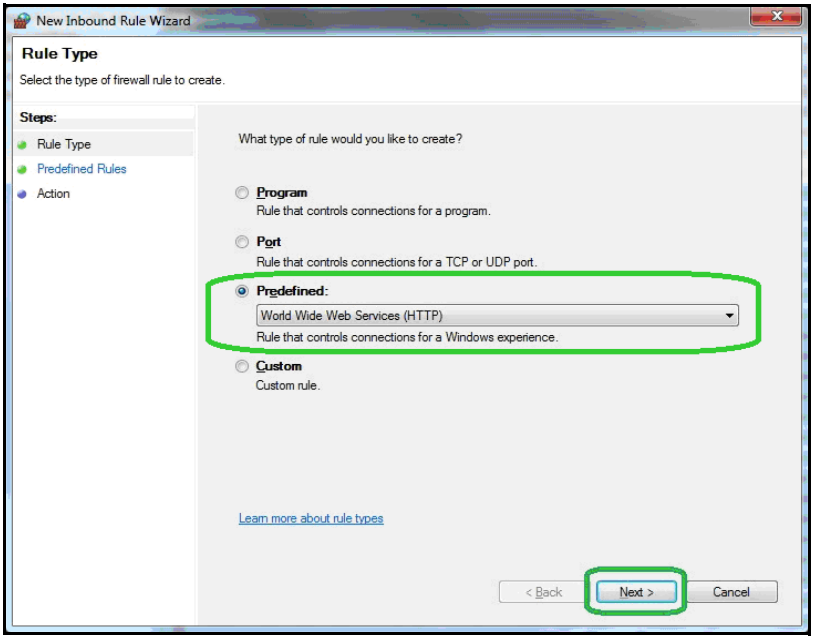

FIGURE 2-42 Windows Firewall - New Inbound Rule Wizard - Predefined (World Wide Web)

Step 20 On the **Predefined Rules** page, select **World Wide Web Services (HTTP Traffic-In)**, as shown in FIGURE 2-43.

Step 21 Click **Next**.

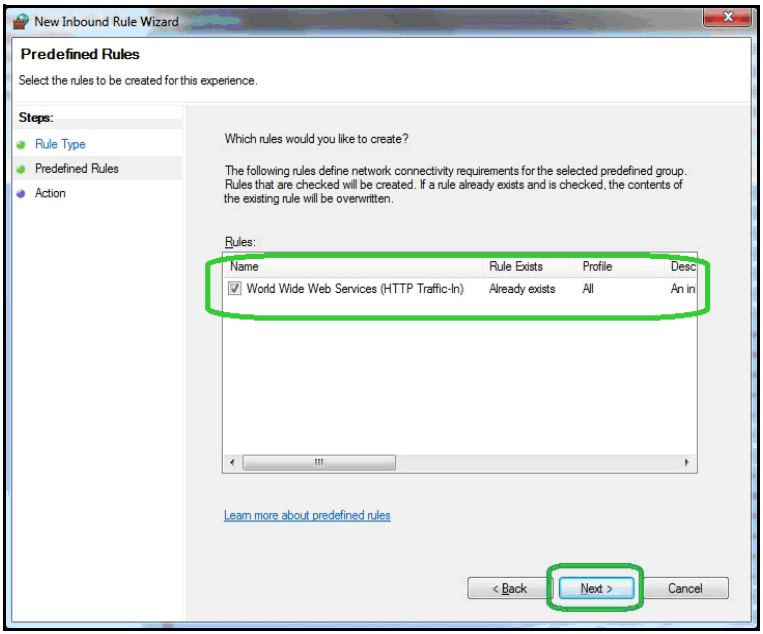

FIGURE 2-43 Windows® Firewall - New Inbound Rule Wizard - Rule (World Wide Web)

Step 22 On the **Action** page, select **Allow the connection**, as shown in FIGURE 2-44.

Step 23 Click **Finish**.

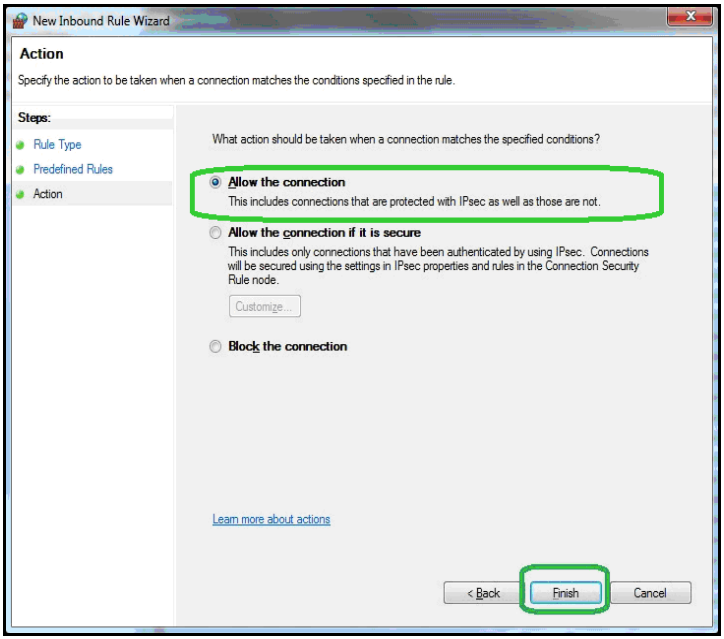

FIGURE 2-44 Windows® Firewall - New Inbound Rule Wizard - Allow the Connection

Step 24 Close the Windows Firewall with Advanced Security screen.

Step 25 Close the Windows Firewall.

Verifying Access to FTP Servers

Local Access

Verify your access to the FTP server from your server (local), by following these steps:

Step 1 Make sure the FTP server is running. Click **Start** in IIS if it is not, as shown in FIGURE 2-45.

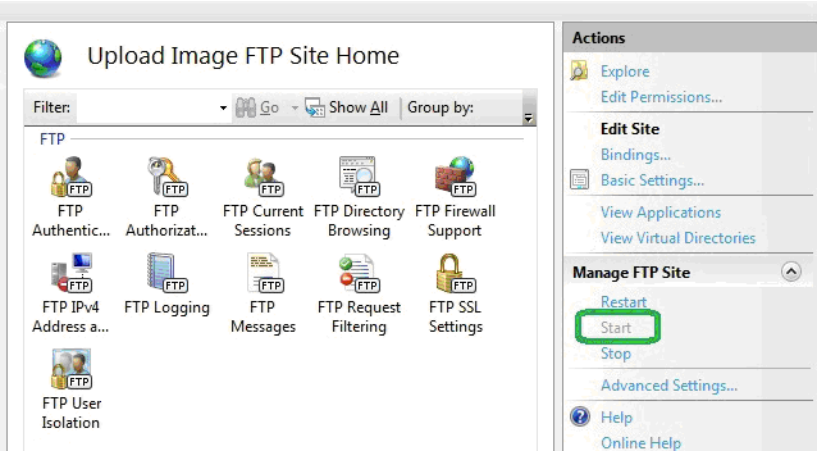

FIGURE 2-45 IIS Manager - FTP Server Running

Step 2 Verify that the user name and password are valid for the server. If not, use the user name and password supplied by the administrator, or add the user name and password to a user account for the server machine.

Local Network Access

Verify your access to the FTP server from another machine on the same network, by following these steps:

Step 1 Follow the steps for verifying that your server can access the FTP server.

Step 2 Verify that the FTP server's firewall allows FTP traffic, as shown in FIGURE 2-46.

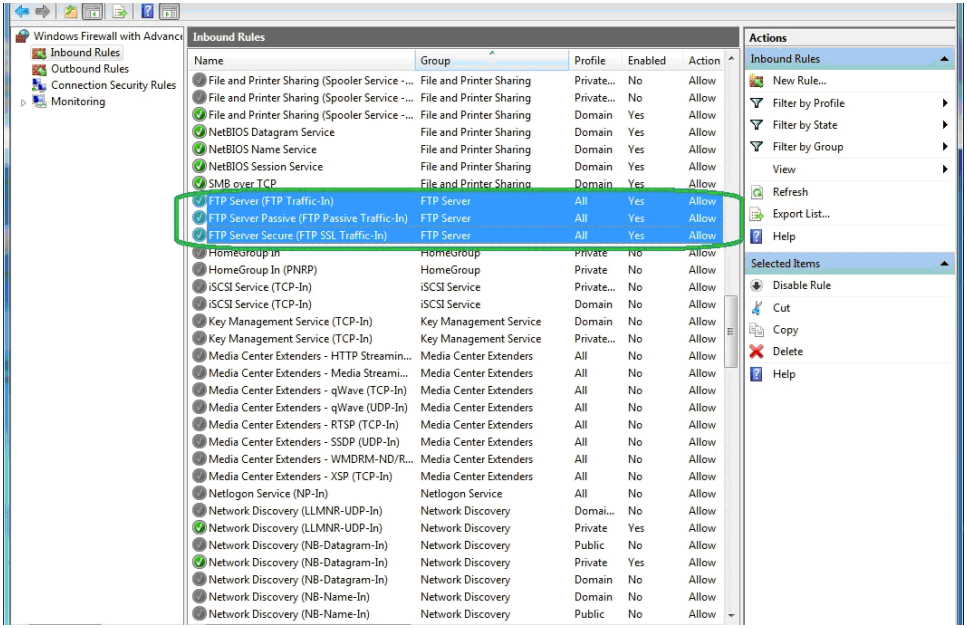

FIGURE 2-46 Windows® Firewall with Advanced Security - FTP Services Allowed

Step 3 Type your IP address into the address bar of your browser. Verify that the browser loads correctly, as described in the following section.

Public Access

If you have a public FTP firewall on your network, you will need help from your network administrator.

The FTP site address must be publicly accessible to receive data.

Verify your access to the FTP server from another network (public), by following these steps:

Step 1 Follow instructions in Accessing FTP server from another machine on the same network.

Step 2 Verify that the router has port forwarding or port triggering rules for the FTP port, as shown in FIGURE 2-47.

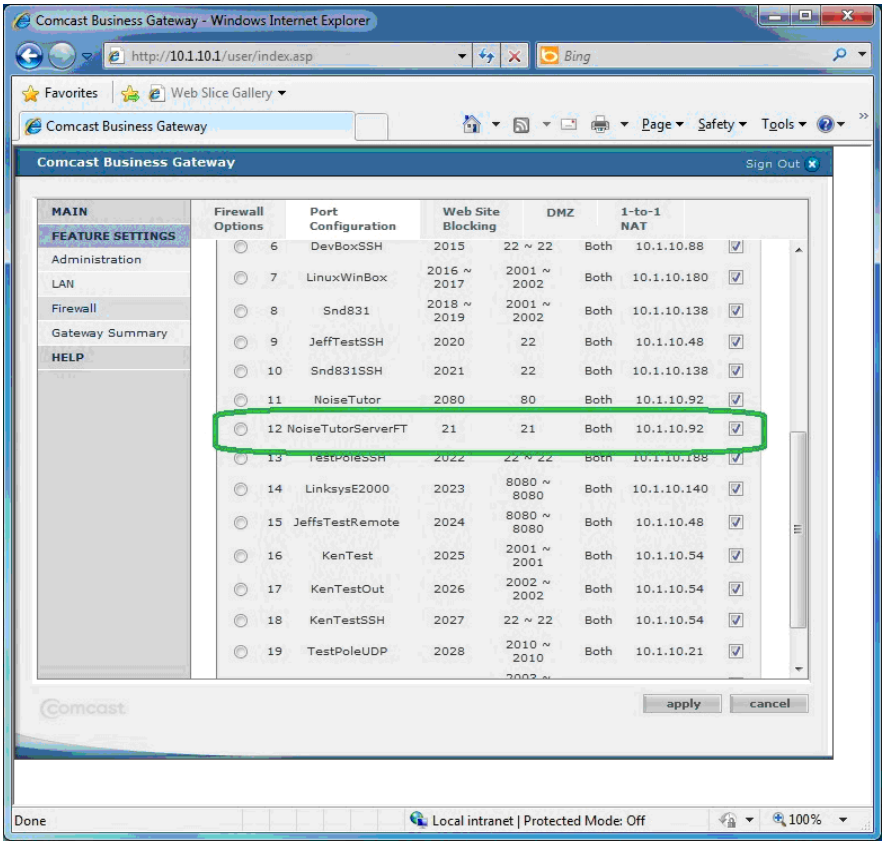

FIGURE 2-47 Router Port Forwarding - FTP Service

Verifying Browser Connections

To verify your browser is connected and loads correctly, follow these steps.

Step 1 Verify that the website is available on the web server.

Step 2 Open Internet Explorer.

Step 3 In the address bar, type **http://localhost/LarsonDavis/index.html**.

Step 4 If the main web page does not appear, verify that the web service is running. Click **Start** in IIS if it is not, as shown in FIGURE 2-48.

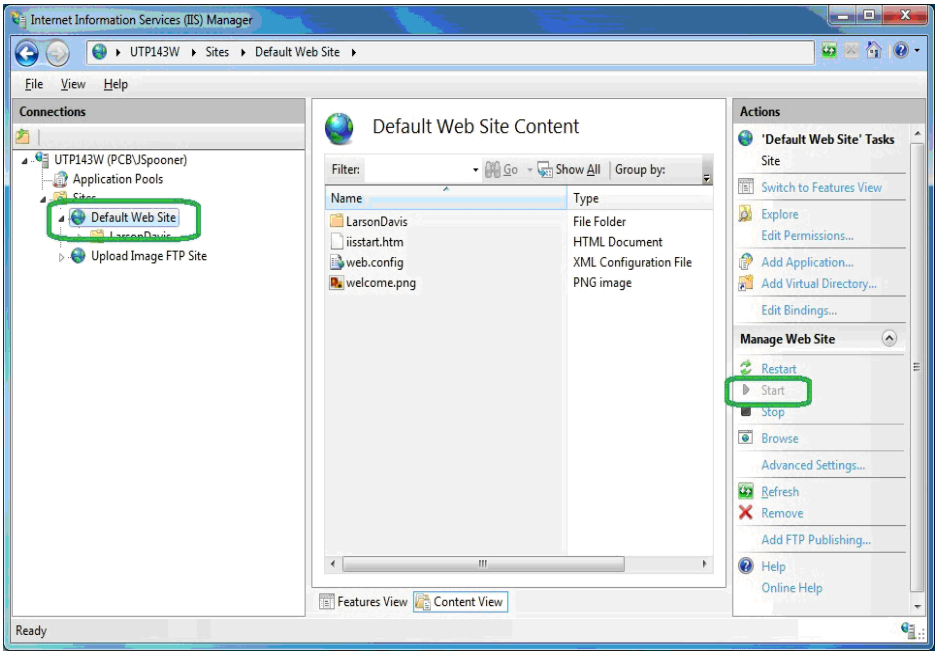

FIGURE 2-48 IIS Manager - Website Running

Step 5 Verify that the proxy user or supplied user has read access permissions, as shown in FIGURE 2-49. If not, grant read access to the proxy user or supplied user.

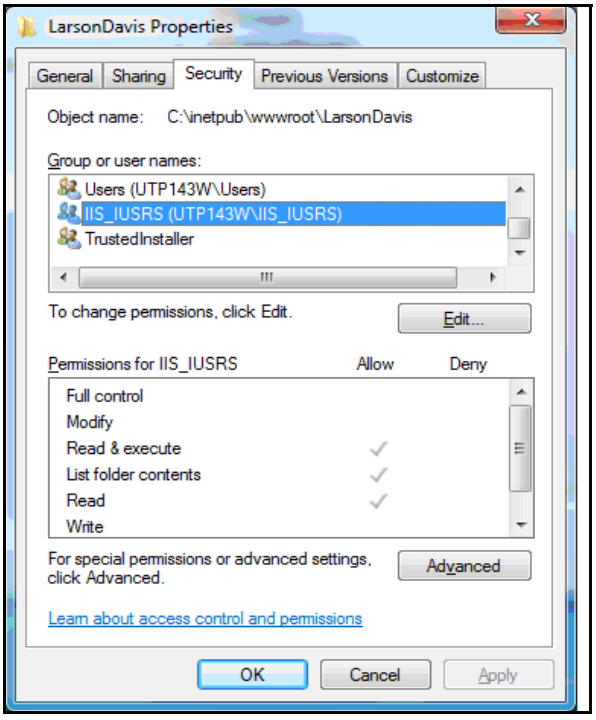

FIGURE 2-49 Larson Davis Properties - Web User Access Rights

Step 6 Verify that the file **index.html** is located in the virtual directory, as shown in FIGURE 2-50. If not, run **ConfigurationTool.exe** again.

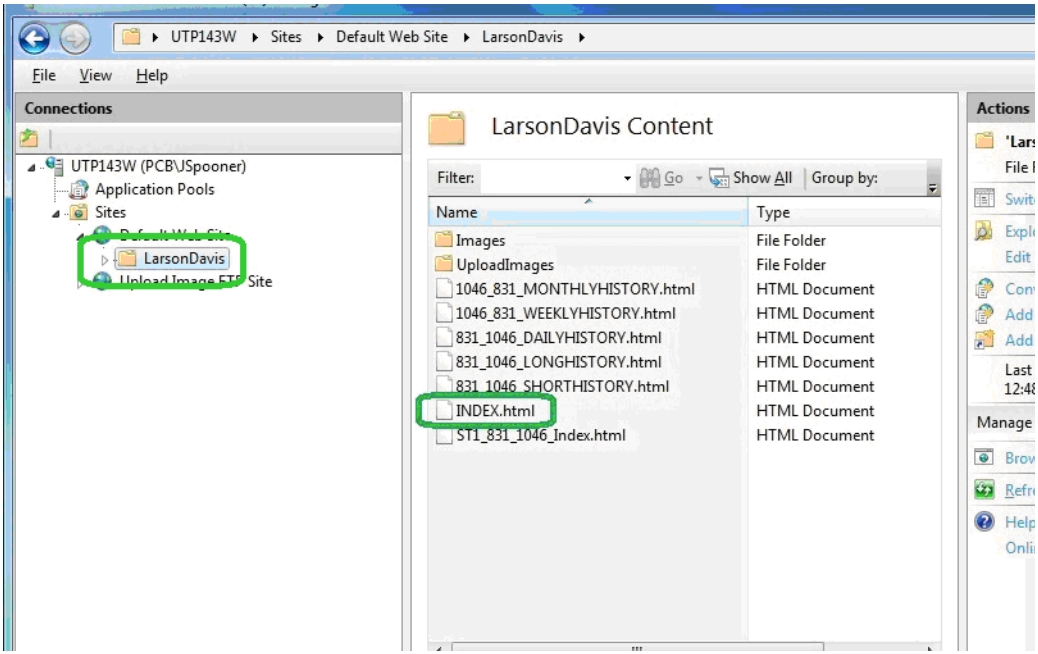

FIGURE 2-50 IIS Manager - Index.html Present

Step 7 To ensure access to your web site from another computer, verify that the server's firewall allows traffic through the web site port (Default 80), as shown in FIGURE 2-51. Change the firewall if needed.

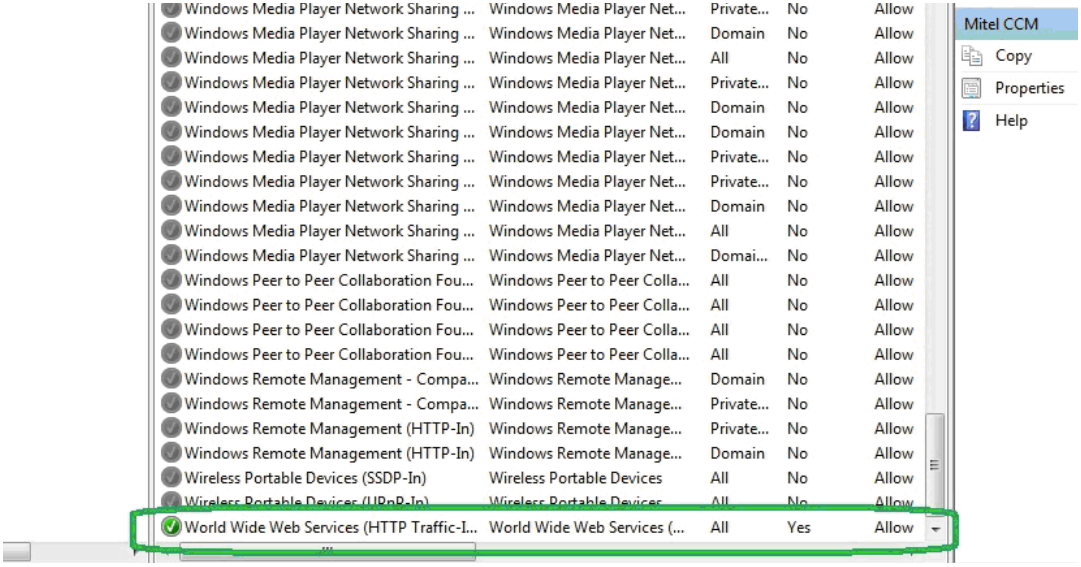

FIGURE 2-51 Windows® Firewall With Advanced Security - World Wide Web

If your web server does not have a public IP address, you will need to configure your routers for access. Consult with your organization IT professional for help.

Step 8 To ensure access to your website from the Internet (and not just your local network), verify that the router has port forwarding or port triggering rules for your web site.

CHAPTER

3 Station Installation and Setup

This chapter provides instructions for setting up the NoiseTutor Station, including software, licenses, settings, preferences, and data communication. For best results, perform the procedures in the order they are presented in the following sections.

Installing NoiseTutor Software

***Important**: NoiseTutor software is pre-installed when NoiseTutor is purchased as a system. If you purchased a system, skip to the following section, "Starting the NoiseTutor Station" on page 3-3.*

If your NoiseTutor Station was not purchased as part of a system, or if for some other reason you need to install the NoiseTutor software, insert the CD into your station computer (not the server computer) and follow the instructions on the installation wizard.

During the setup process, a link to the NoiseTutor software is created in the Startup folder of the Windows® operating system. As a result, the NoiseTutor software runs every time Windows is started. It also enables the NoiseTutor Station to automatically restart Windows without user intervention.

The link to the Windows Startup folder starts the NoiseTutor System as a program, but it does not automatically start monitoring operations. If Windows is restarted while the NoiseTutor System is opened and running (see Main Commands), the program stores the previous state, and upon restart it reactivates the monitoring operations.

If you want the monitoring operations to start automatically each time the Windows® operating system starts up, follow these steps:

Step 1 Browse to the NoiseTutor link in the Windows Startup folder.

Step 2 Right-click the NoiseTutor icon and click Properties, as shown in FIGURE 3-1.

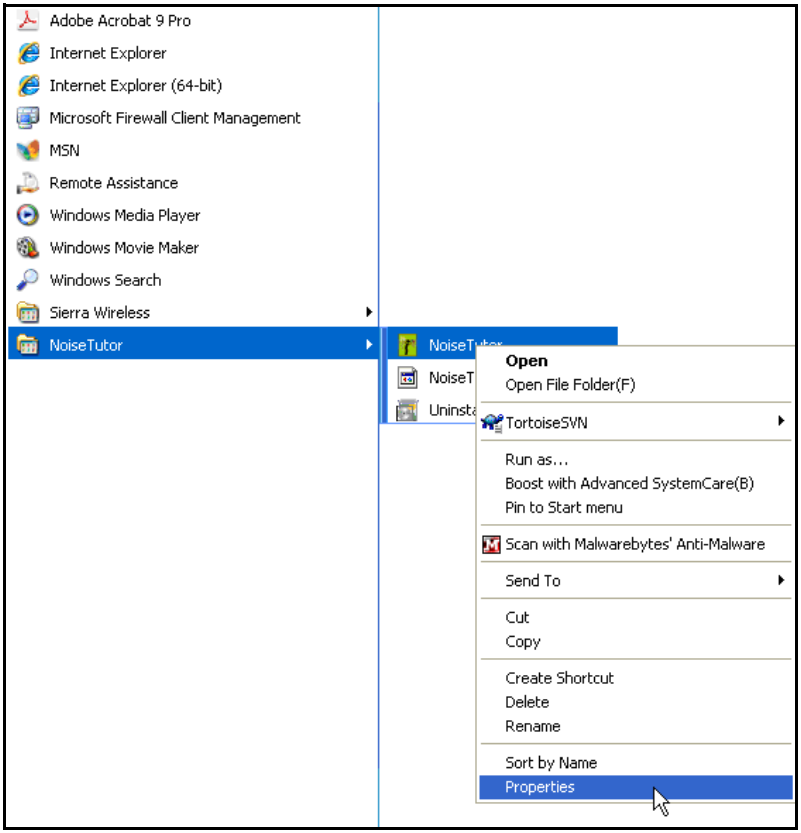

FIGURE 3-1 NoiseTutor Application Properties Access

Step 3 In the **Target** field, replace **C:\Program Files\NoiseTutor\NoiseTutor.exe** with **C:\ProgramFiles\NoiseTutor\NoiseTutor.exe -R**, as shown in FIGURE 3-2.

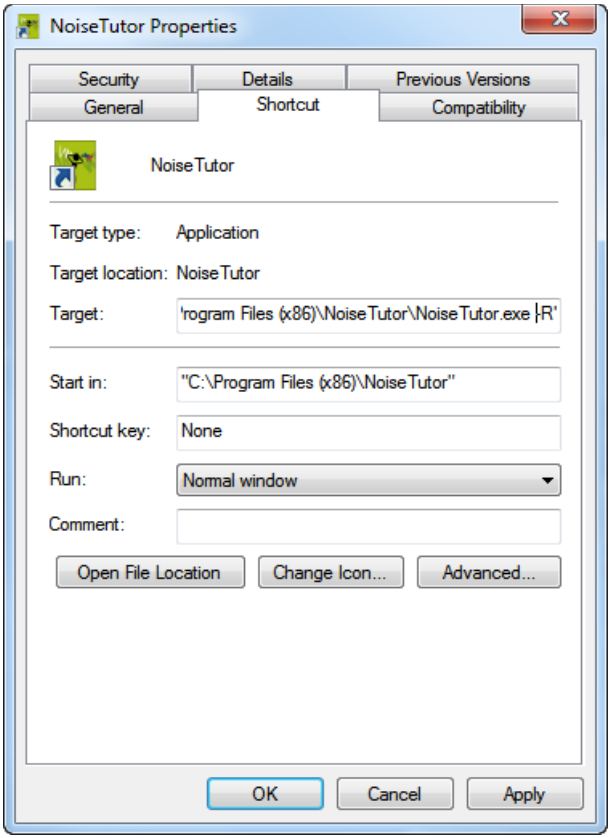

FIGURE 3-2 NoiseTutor Properties

Starting the NoiseTutor Station

Refer to the NoiseTutor Quick Start Guide and the NoiseTutor Installation Reference on the inside of the NoiseTutor System case to set up your hardware.

With the necessary hardware installed, follow these steps to start the NoiseTutor Station:

Step 1 Press the black power switch to start the system.

Step 2 Press the monitor power button to activate the display.

Step 3 Remove the keyboard and slide the keyboard switch to **ON**.

*Note: Slide the keyboard switch to **OFF** when not in use.*

Step 4 Verify that the network utility has connected to a cell network.

Step 5 When the wireless modem utility has connected to the cell network, minimize the utility.

Installing NoiseTutor Station Licenses

Your license may be pre-installed if you receive a new sound level meter as part of your NoiseTutor Station.

The NoiseTutor Station requires an activation license in order to be used. The license files you receive are based on the model and serial number of the sound level meter. Please contact PCB Technical Support to obtain license files. To install the license file, follow these steps:

If you received the license file as a zipped file, remember to unzip it first. Otherwise, NoiseTutor will not recognize it as a license file.

Step 1 Copy all license files you receive from PCB to your clipboard. Your license files may be sent to you through e-mail. If you receive them by some other method and are copying your license using USB flash memory, insert the USB drive into the USB connector. Do not disconnect the USB keyboard dongle to insert your USB flash memory. This is shown on the Installation Reference located on the inside of the front cover of the station case.

Step 2 Launch the NoiseTutor Software.

Step 3 From the **View** menu, click **NoiseTutor Folder**.

The license file is named in the following file naming format: NT_831_LxT_XXXX.lic, where XXXX represent the last four numbers of the sound level meter serial number being used in the system.

Step 4 Paste the license file into NoiseTutor folder.

If your are copying your license using USB flash memory, insert your memory into the drive port. Do not disconnect the USB keyboard dongle to insert your USB flash memory.

If your license was not factory installed for your sound level meter and you received it via another method, copy the file from the source where you receive it and paste it according to the directions provided above.

You can check the status of your license files by clicking **Help** and then clicking **About NoiseTutor...**. The license status window is shown in Figure 3-3.

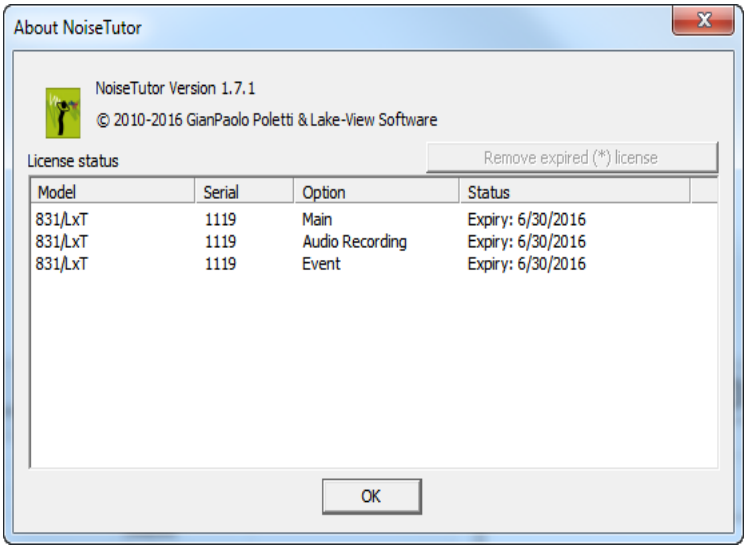

FIGURE 3-3 License Status Window

Checking Battery Status

If the Model 831 is ON, pressing the ⏻ (ON/OFF) key displays the Power Control screen, as shown in Figure 3-4.

On the Power Control Screen, the values associated with "Estimated Run Time," "Battery Type," and "Battery" are not applicable to the NoiseTutor station and should be disregarded while the sound level meter is part of the station.

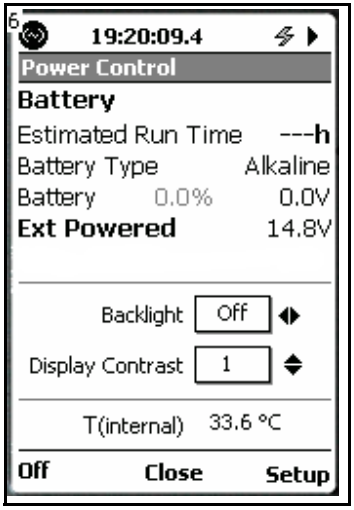

FIGURE 3-4 Power Control Screen

To check the voltage of the battery, refer to the value indicated next to "**Ext Powered**."

*Make sure you recharge the battery before the value on the **Ext Powered** displays 12.4 volts or less, or 11.0 if your system is configured for optional sealed lead-acid batteries.*

The fully-charged lithium ion battery for the NoiseTutor station carries 14.4 volts; when the battery depletes to 12 volts, the sound level meter powers off. You can also check the battery condition by pressing the switch button on the front of the battery. Refer to the battery manual for more information.

Checking the Station PC Power Settings

To check the power settings on the Station PC in the NoiseTutor station, follow these steps:

The settings in this section are the default power saving options for the Station PC. If your Station PC has had its settings altered, you can follow the steps in this section to restore the default settings.

Step 1 From the Start menu, click **Control Panel**.

Step 2 Click **Power Options**.

Step 3 Specify the default time settings as shown in Figure 3-5.

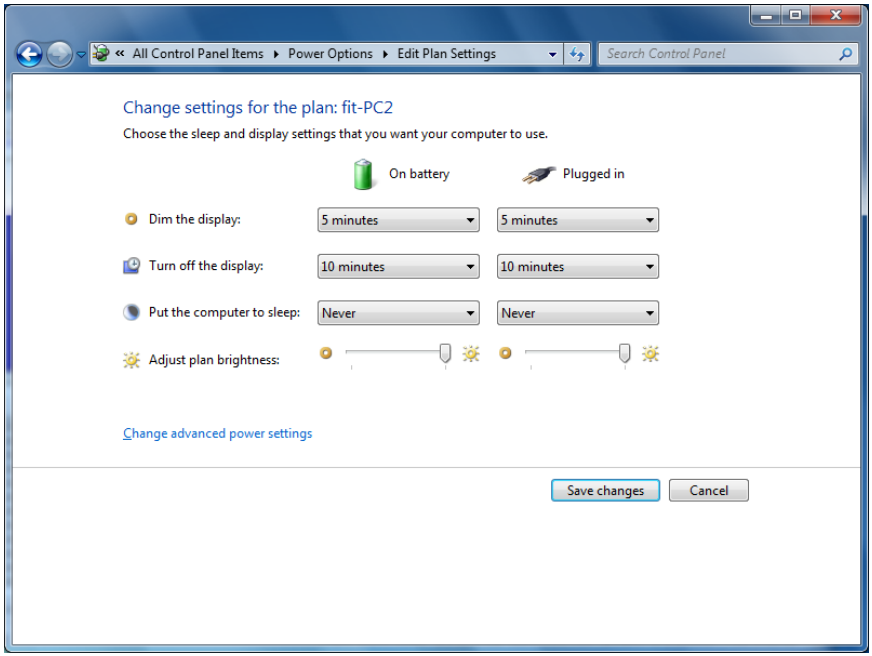

FIGURE 3-5 Station PC Default Power Settings

Step 4 Click **Change advanced power settings**, as shown in Figure 3-6.

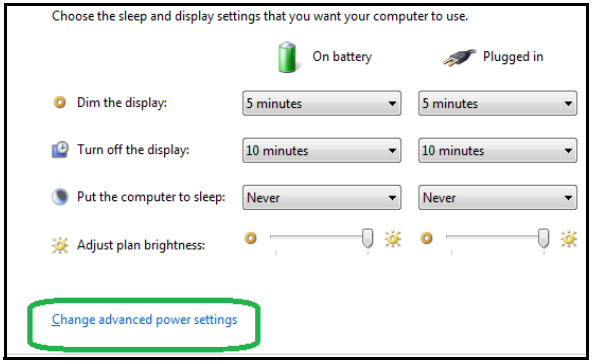

FIGURE 3-6 Advanced Power Settings

Step 5 On the **Advanced Settings** tab, expand **Battery** and **Critical battery action**. For the **On battery** entry, specify S**hut down** if not already selected; for the **Plugged in** entry, specify **Do nothing** if already not selected. The settings are shown in Figure 3-7.

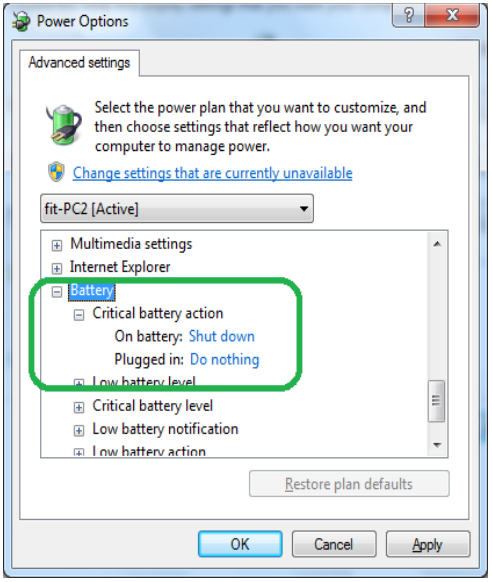

FIGURE 3-7 Critical Battery Action Settings

Step 6 On the **Advanced Settings** tab, expand **USB Settings** and **USB Selective Suspend Setting**. For the **On battery** entry, specify **Disabled** if not already selected; for the **Plugged in** entry, specify **Enabled** if not already selected. The settings are shown in Figure 3-8.

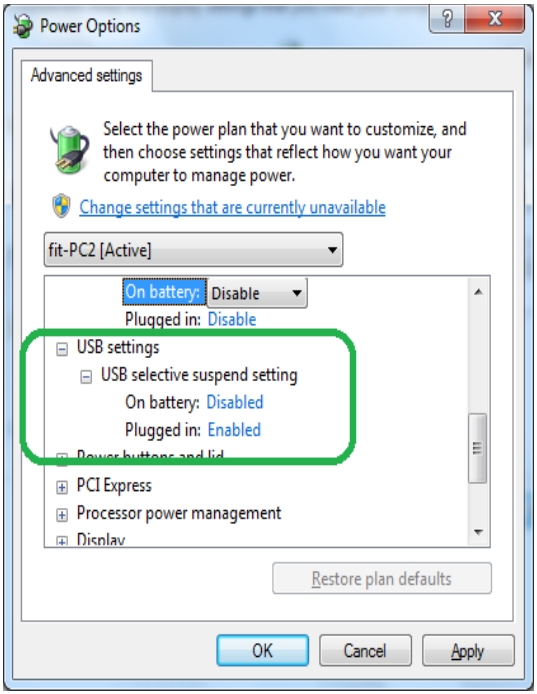

FIGURE 3-8 USB Settings

Step 7 If you made any changes, click **OK** on the **Advanced Settings** tab and then click **Save changes** on the Power options dialog box

Restoring Settings for Automatic Wakeup

Your NoiseTutor Station is shipped with automatic wakeup already configured. If this setting has been altered, you can restore it by following these steps:

Step 1 Click **Control Panel** > **Power Options** > and then click **Change advanced power settings** as shown previously in Figure 3-6.

Step 2 On the **Advanced Settings** tab, expand the **fit-PC2** setting and then expand **Require a password on wakeup**.

Step 3 For both **On battery** and **Plugged in** settings, select **No**.

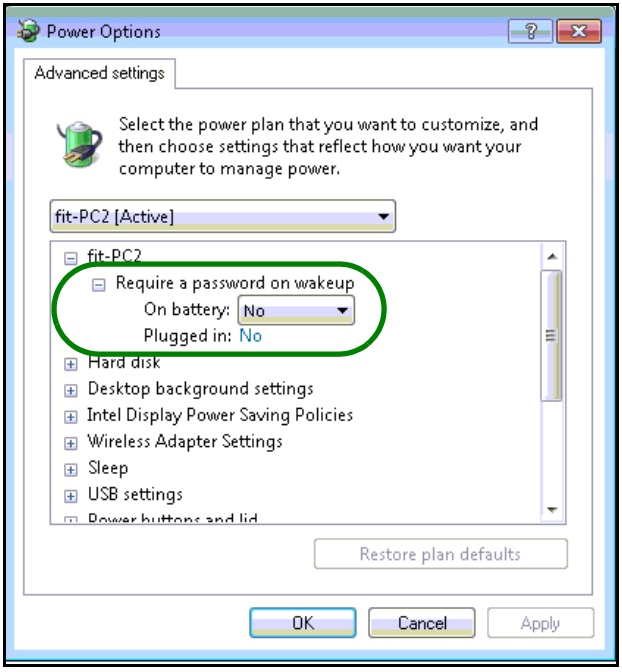

FIGURE 3-9 Wakeup Password Setting

Step 4 Expand the **Sleep** setting from the same list on the **Advanced Settings** tab and then expand **Allow wake timers**.

Step 5 For both **On battery** and **Plugged in** settings, select **Enable**.

Step 6 Click **Apply** and then click **OK**.

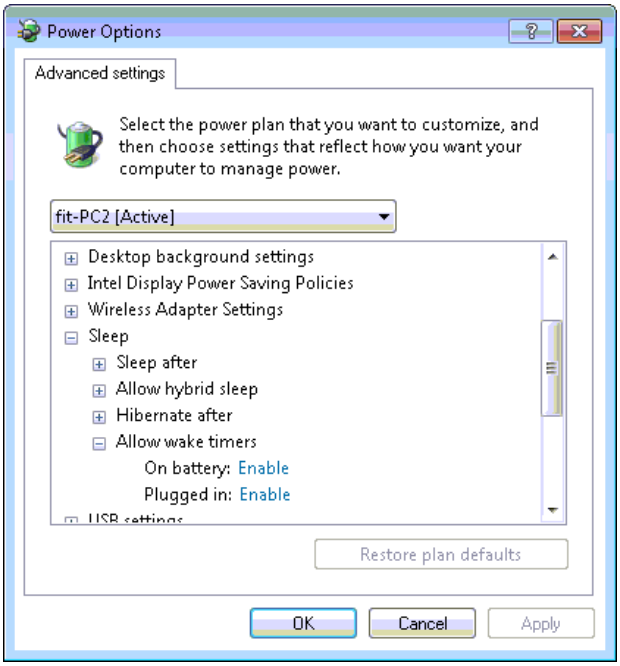

FIGURE 3-10 Wakeup Timer Setting

Setting Up Power Saving

If power saving is needed, follow these steps on the System Setup dialog box:

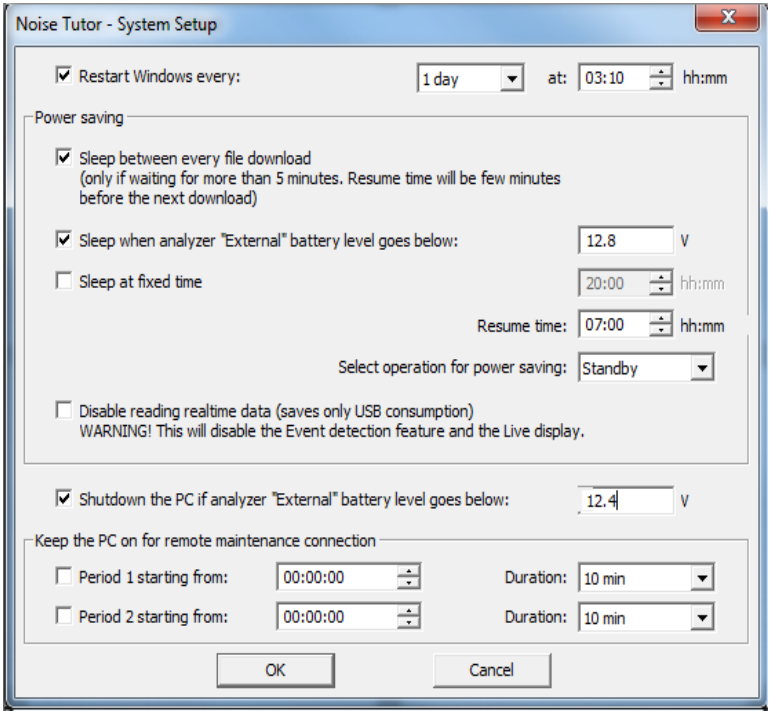

FIGURE 3-11 Power Saving Setup

Step 1 Launch the NoiseTutor software and click Setup > System.

*For NoiseTutor systems that are optionally powered by sealed lead-acid batteries, set the sleep and shutdown voltage as **11.0***

Step 2 In the **System Setup** dialog box, configure the following options:

- For **Restart Windows every**, Specify the number of days that the Station PC should wait before rebooting on a regular basis. This may be helpful because the Windows® operating system can become unstable if the system operates for long periods of time.
- Select **Sleep between every file download.**
- Specify the **Sleep** voltage as **12.8** V and **Shutdown** voltage as **12.4**.
- For regular times when monitoring is not needed, specify **Sleep at a fixed time**.

Do not select Hibernate power saving mode. Selecting this mode prevents the Station PC from waking up.

- For S**elect operation for power saving** specify **Standby** to enable power saving and put data in memory without turning off the computer. This option is disabled if with Realtime Reports.
- If realtime data is not needed, select **Disable**. and specify remote maintenance connection times, if needed.
- For **Keep the PC on for remote maintenance connection**: Select these options to have the Station PC on during two time periods every day, independently of other configurations, so that administrative tasks can be performed remotely.
    - For **Period 1 Starting from:** specify a beginning time in 24-hour notation for when the Station PC should be turned on.
    - For **Duration:** specify the duration of time the Station PC should be turned on. The times specified for this setting are referenced by the internal clock time on the Station PC, regardless of actual time.
    - If an additional time period is needed, specify the time and duration for **Period 2** in the same manner as specified for **Period 1**.
    - For remote operation, choose any remote software package that is compatible with Windows 7®.
    - If you are using a dial-up connection with a wireless modem, you may need to set the dial-up software to automatically connect when Windows is started.

Step 3 Click **OK**. You will need to restart Windows.

Checking the NoiseTutor Model 831 Run Preferences

To check the Run preferences on the model 831 in the NoiseTutor station, follow these steps:

Step 1 Press the softkey under Menu on the model 831 display.

Step 2 Select **Settings** and press ENTER.

Step 3 Press ENTER again on Yes to confirm **Settings in use by PC**.

Step 4 Use the left softkey to scroll to the Control tab.

Step 5 Check the Run Mode and Auto-Store Preference selections. The default settings are shown in Figure 3-12.

You can specify other Run preferences on the Control tab, such as Enable Measurement History or Cal-Check, without affecting the default Run preferences described here.

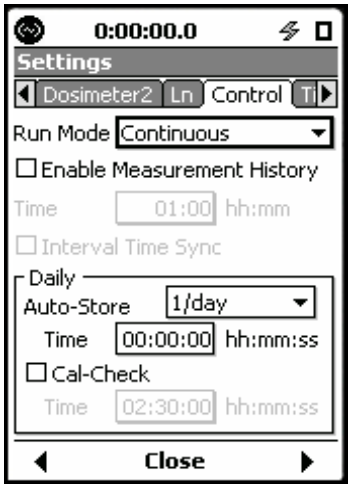

FIGURE 3-12 Model 831 Run Preferences

To modify the Run preferences for the model 831, scroll to **Run Mode** or **Auto-Store**, as shown in Figure 3-12, and select the desired option from the drop down menu, and then press ENTER.

Monitoring the Wireless Modem Connection

The NoiseTutor station includes the Sierra Wireless® modem. Additionally, the Sierra Wireless ACEview utility is installed on the Station PC for monitoring the status of the wireless connection. Figure 3-13 shows the ACEview icon as it appears on the Station PC desktop:

FIGURE 3-13 ACEview Modem Utility Icon

The shutoff voltage setting in the Sierra Wireless client should be 12.0 for internal, LiFePo3 batteries and 10.8 for external SLA batteries.

Refer to the *Sierra Wireless User Guide* and the *ACEview User Guide* for more information on the wireless modem and the ACEview utility.

Specifying Main Application Settings

Before configuring NoiseTutor Station data delivery features, the main applications settings must be specified in the **Main Setup** dialog box.

FIGURE 3-14 shows the **Main Setup** dialog box.

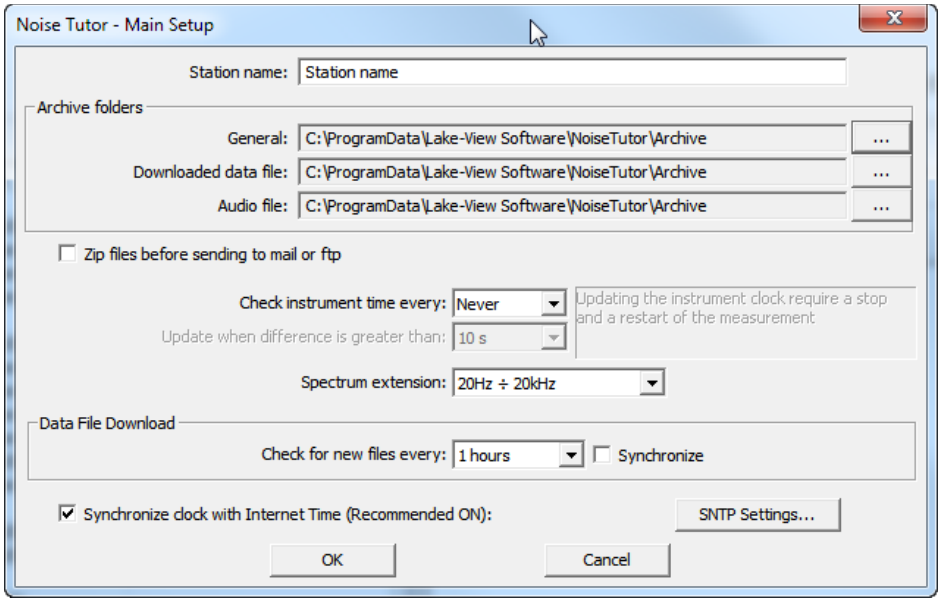

FIGURE 3-14 Main Setup

To specify the main settings, follow these steps:

Step 1 On the Setup menu, click Main Setup.

Step 2 Refer to FIGURE 3-14 while entering the following information:

- **Station name**: Type the name of your monitoring station.
- **Archive Folders**: Specify the folders on the local hard disk where the downloaded files are to be saved. To select locations other than the default, click the **...** button and navigate to the new location.
- Select the **zip files before sending to mail or ftp** option to send compressed files. Zipping files is recommended.
- **Check Instrument Time**: Specify how often the Station PC should check the sound level meter internal clock to verify synchronization with the PC clock. Checking the

internal clock does not require a stop in measurement, but changing the internal clock requires a stop. Choose between the following options:

- Never
- Every download
- 1 day
- 2 days
- 3 days
- 4 days
- 5 days
- 6 days
- 7 days

- **Update when difference is greater than**: Specify the value, in seconds, when the difference between the instrument internal clock and the Station PC clock merits updating the internal clock.
- **Spectrum extension**: Specify the octave spectrum size to be measured. Choose between **20Hz-20kHz** or **Full Spectrum**.
- **Check for new files**: Specify a time period for the Station PC to wait between download operations. If the **Synchronize** option is selected, the download time is synchronized at the specified hour, starting from midnight.
- **Synchronize clock:** Use SNTP Internet time service to keep the NoiseTutor clock synchronized independent of PC clock drifts. No changes are made to the PC clock. The default settings apply to most setups.

Configuring Data Transmission and Delivery Settings

Configuring data transmission and delivery settings for the NoiseTutor Station includes the following procedures:

1. Setting up SMTP and SMS Messaging Services
2. Adding E-mail and SMS Recipient Lists

The NoiseTutor Station does not support SSL connections for SMTP (e-mail).

3. Specifying Data Settings for E-mail Messages
4. Setting up Data Delivery for FTP Server Sites
5. Specifying Real-time Report E-mail Settings
6. Creating and Publishing Graphical Reports to Websites

7. Updating Webpages from the NoiseTutor Station

The following two sections describe the procedure for configuring these services.

Set Up SMTP (E-mail) Service

To deliver data files and graphical reports via e-mail, you must first configure SMTP service settings on the NoiseTutor Station.

To set up the NoiseTutor Station for SMTP (e-mail) service, follow these steps.

For more information on SMTP setup, refer to "Messaging" on page 5-6.

Step 1 On the **Setup** menu, click **Messaging < SMTP**.

Step 2 Refer to FIGURE 3-15 while entering the following information:

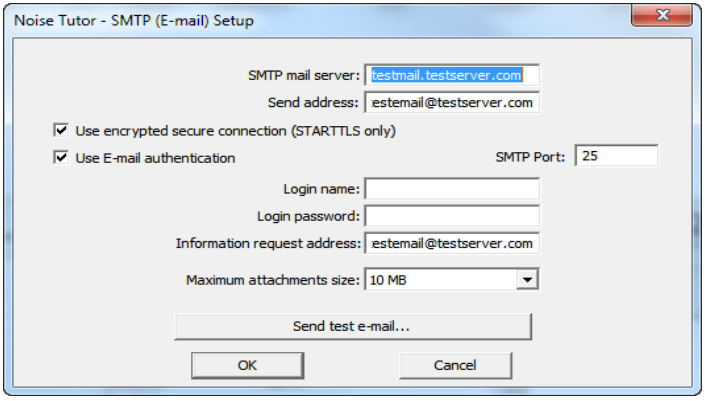

FIGURE 3-15 SMTP (E-mail) Setup

- **SMTP mail server**: Specify the name of your SMTP mail server. Usually, this address is provided by your Internet service provider.
- **Send Address**: Specify the e-mail address to be used to send data files and that is hosted by the SMTP mail server specified.
- **Use encrypted secure connection:** Select this option to use a secure connection to the mail server. Only the STARTTLS mechanism is supported.

- **Use E-mail authentication**: Select this option if your SMTP mail server requires a Login name and Login password.

If you set up the NoiseTutor Station to e-mail data files, the graphs in the message are based on the data file. If you want to view spectral data in the message, you must enable logging for spectral data on the sound level meter. See the technical reference manual for your sound level meter for more information.

- **SMTP Port**: Specify the port number reserved for mail by your organization. Consult with your network administrator to verify the correct number.
- **Login Name** and **Login Password**: Specify the login name and password you want to use to access e-mail on your SMTP mail server, if authentication is requested.
- In the **Information request address** field, type the e-mail address of the designated personnel to handle data inquiries.
- **Send test e-mail...**: Provide an address to send a test message. After sending, the Station PC displays the results and content of the SMTP test.

Step 3 Click **OK**.

Set Up SMS (Text Messaging) Service

To deliver sound level information through text messaging, you must first configure SMS service settings on the NoiseTutor Station.

To set up the NoiseTutor Station for SMS (text messaging), follow these steps.

For more information on SMS setup, refer to "Messaging" on page 5-6.

Step 1 On the **Setup** menu, click **Messaging < SMS**.

Step 2 Refer to FIGURE 3-16 while entering the following information:

SMS service, when used with the Event Detection feature, can be helpful in providing notification of specified events. For more information, see "Event Detection" on page 5-17.

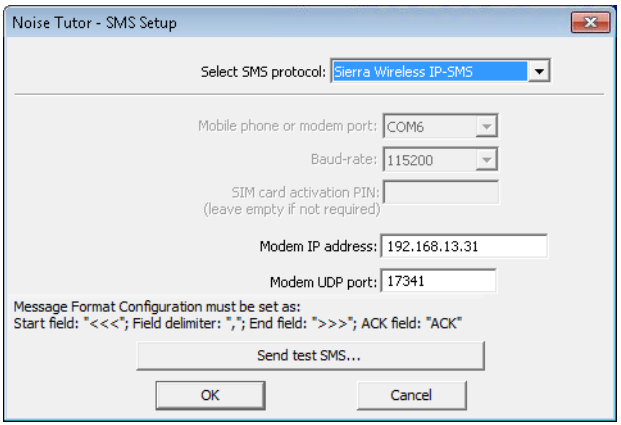

FIGURE 3-16 SMS Setup

- **Mobile phone or modem port**: Specify the COM port where the mobile phone or modem is connected. Access is always through a COM port, even with integrated modems. The correct number may be found through the Device Manager in Windows 7®.
- **Baud-rate**: Specify the desired communication speed between the Station PC and the device.
- **SIM card activation PIN**: Type the PIN of your SIM card. Leave this field empty if the PIN request is not activated or not needed for your SIM.
- **Send test SMS...**:Sends a test SMS, or text message. After sending, the Station PC displays the results and content of the SMS test.

Step 3 Click **OK**.

Add E-mail and SMS Recipient Lists

The NoiseTutor Station uses recipient lists to send sound level data. To add recipient lists, follow these steps:

For more information on setting up and specifying recipient lists for e-mail and text messaging, see "Recipient Lists" on page 5-4.

Step 1 On the **Setup** menu, click **Recipient Lists**.

Step 2 On the **Recipient Lists** dialog box, click the **New list** button in the lower left corner of the dialog box.

Step 3 For **List name**, type the name of the new recipient list, as shown in FIGURE 3-17.

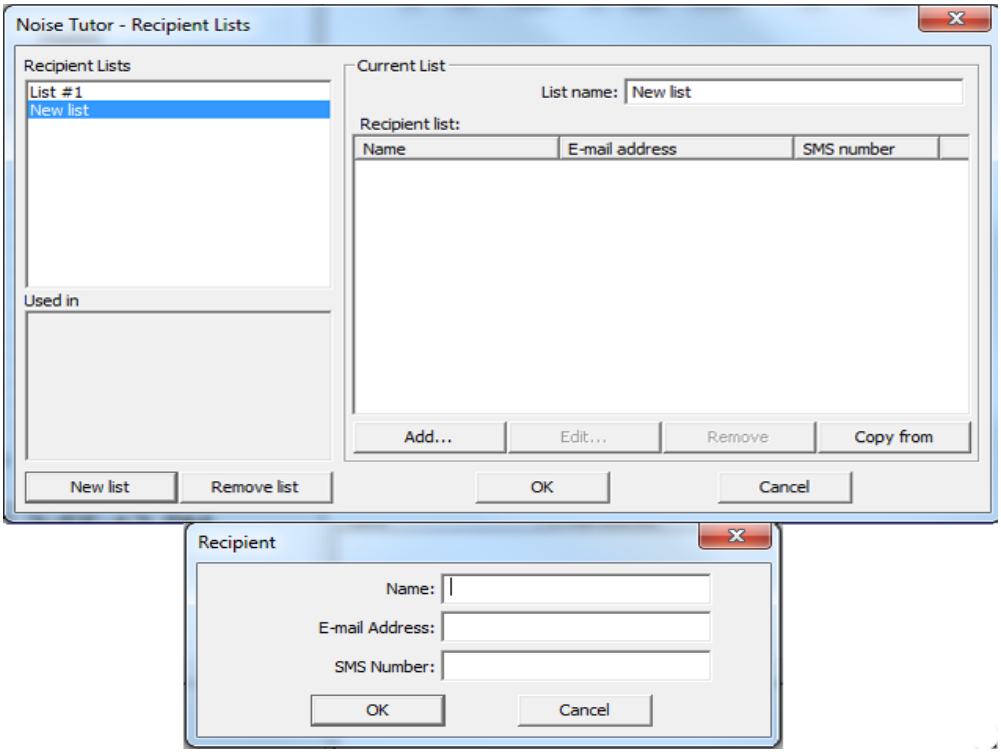

FIGURE 3-17 Recipient List Set-up

Step 4 To add e-mail and SMS information for a recipient on the list, click the **Add...** button.

Step 5 On the **Recipient** dialog box, type the **Name**, **E-mail** address and **SMS** number of the recipient to be added to the list.

Step 6 Click **OK** and repeat this step for every recipient you want to add to the list.

Step 7 Click the **New List** button to create additional recipient lists, as shown in FIGURE 3-17.

Step 8 Click **OK** to exit the Recipient Lists dialog box.

Specify Data Settings for E-mail Messages

The NoiseTutor Station can send both data files and graphical reports via e-mail. First, you must set up the SMTP Service settings for the NoiseTutor Station, as described previously. After setting up SMTP service, you specify the content, or data, to be included in e-mail messages.

To specify the data to be included in e-mail messages, follow these steps:

Step 1 On the **Setup** menu, click **Data File**, and then click **E-mail 1…**. This launches the **E-mail Data File 1 Service Setup** dialog box, as shown in FIGURE 3-18.

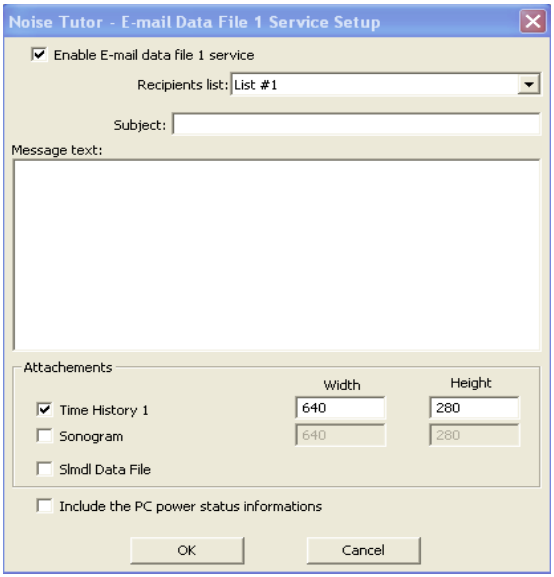

FIGURE 3-18 E-mail Data File Service Setup

Step 2 Select **Enable E-mail data file …**, as shown in FIGURE 3-18.

Step 3 For **Recipients list**, select the recipient list to which the sound level data will be sent.

Step 4 For **Subject**, type the subject title.

Step 5 For **Message text**, type the e-mail message.

For more information on Time History graphs and Sonograms, see "Graph" on page 5-9.

Step 6 In the **Attachments** section, select the graphic report attachment to include in the e-mail. You can select **Time History 1**, or **Sonogram**, or both.

Step 7 Specify the height and width dimensions for the graphs in the attachments.

*You can view **Slmdl** data files in the G4 LD Utility software.*

Step 8 Select **Slmdl Data File** to attach the data file from the NoiseTutor Station sound level meter.

Audio files can also be sent via e-mail when specified events are detected by the NoiseTutor Station. For more information, see "Event Detection" on page 5-17.

Step 9 Select the **Include the PC power status information** to include the Station PC power information.

Step 10 Click **OK**.

Step 11 Verify that **Internet Upload** on the **Commands** menu is checked.

Step 12 Configure other NoiseTutor data transmission options and begin taking sound level data by clicking **Start** on the **Commands** menu.

Step 13 To setup a second e-mail service, click **Setup < Data File < Email 2...** and repeat the previous steps.

Specify Real-Time Report E-mail Settings

The NoiseTutor Station can send real-time graphical reports via e-mail. After setting up SMTP service, you specify the real-time reports to be included in e-mail messages.

To specify the data to be included in e-mail messages, follow these steps:

Step 1 On the **Setup** menu, click **Realtime Report**, and then click **E-mail 1…**. This launches the **E-mail Report Service Setup** dialog box, as shown in FIGURE 3-19.

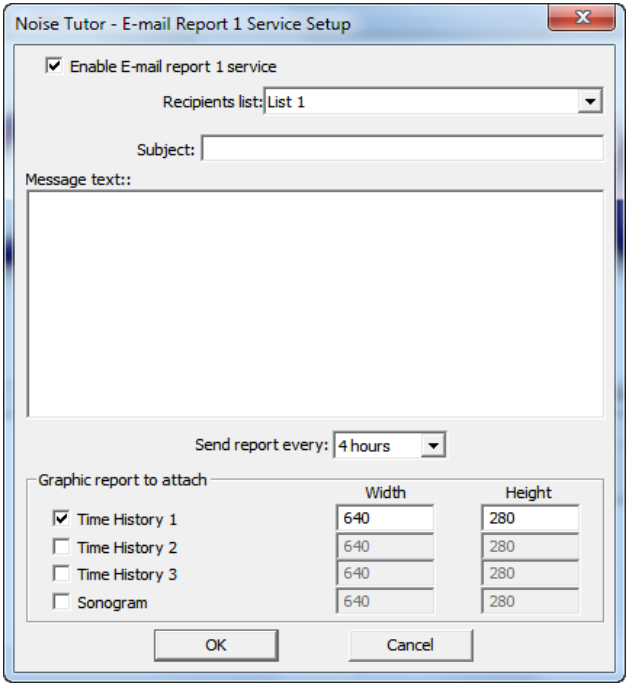

FIGURE 3-19 Realtime Report E-mail Service Setup

Step 2 Select **Enable E-mail report service**, as shown in FIGURE 3-19.

Step 3 For **Recipients list**, select the recipient list to which the real-time report is to be sent.

Step 4 For **Subject**, type the subject title.

Step 5 For **Message text**, type the e-mail message.

Step 6 For **Send report every**, specify how often the real-time report is to be sent.

For more information on Time History graphs and Sonograms, see "Graph" on page 5-9.

Step 7 In the **Graphic report to attach** section, select the graphic report attachment to include in the e-mail.

Step 8 Specify the height and width dimensions for the graphs in the attachments.

Step 9 Click **OK**.

Step 10 Verify that **Internet Upload** on the **Commands** menu is checked.

Step 11 Configure other NoiseTutor data transmission options and begin taking sound level data by clicking **Start** on the **Commands** menu.

Step 12 To setup a second real-time report e-mail service, click **Setup < Realtime Report < Email 2...** and repeat the previous steps.

Set up Data Delivery for FTP Server Sites

To publish graphical reports from FTP sites to websites, first set up data delivery on your FTP site, as described in this section, and then see the following section, "Create and Publish Graphical Reports to Websites" on page 3-27.

By setting up an FTP site for data delivery, you can do the following:

- Receive sound level data files
- Publish graphical reports of data files on websites
- Publish realtime reports of sound measurements on websites
- Receive and publish event detection reports
- Receive and post audio recordings of measurements to websites
- To set up data delivery for FTP sites, follow these steps:

If you have a public FTP firewall on your network, you will need help from your network administrator.

Step 1 On the **Setup** menu, click **Data File** and then click **FTP 1…** This launches the **FTP 1 Service Setup** dialog box, as shown in. FIGURE 3-20

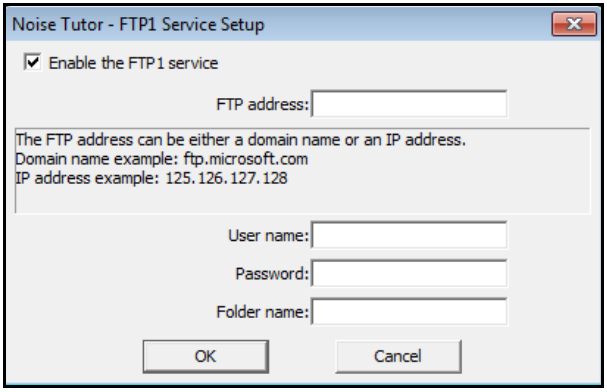

FIGURE 3-20 FTP Service Set-up

Step 2 On the **FTP1 Service Setup** dialog box, select the **Enable the FTP1** service option.

The FTP site address must be publicly accessible to receive data.

Step 3 Specify an FTP site address by typing your user IP address, the local host IP address, or a domain name.

Larson Davis strongly recommends that you specify, select, or accept all defaults for your configuration, as demonstrated in this manual.

Step 4 Type the default FTP site User name **UploadUser**.

Step 5 Type an FTP site password.

Step 6 If you have specified the default values in configuring your server, as shown in this manual, type a forward slash (/) for Folder name. This specifies your virtual directory. Otherwise, type the path to the location you have specified in configuring your server.

Step 7 Click **OK**.

Step 8 Verify that **Internet Upload** on the **Commands** menu is checked.

Step 9 Configure other NoiseTutor data transmission options and begin taking sound level data by clicking **Start** on the **Commands** menu.

Create and Publish Graphical Reports to Websites

Note: The NoiseTutor Station View menu enables the display of log files, where operations are recorded. It also enables the log of Internet connection statistics, or the logs of debug messages. Such log files can be helpful in debugging wireless modem dial-up connections.

To create and publish reports of sound level data to websites, follow these steps:

Step 1 Create a website that accepts graphical reports. This can be done using the NoiseTutor Server Configuration Tool located on the NoiseTutor CD.

Step 2 On the **Setup** menu, click **Realtime Report** and then click **Web1…**. This launches the **Web Report Service Setup** dialog box, as shown in Figure 3-21.

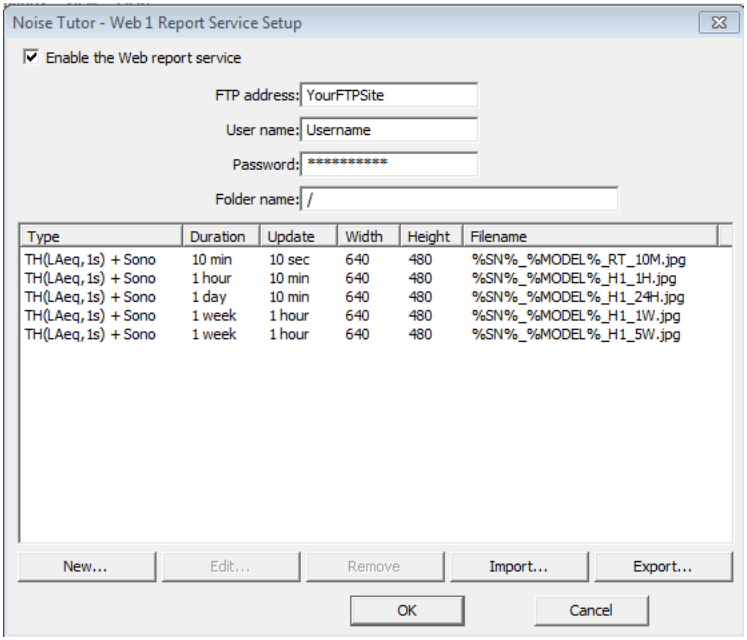

FIGURE 3-21 Web Report Service Setup

Step 3 On the **Web Report Service Setup** dialog box, select **Enable the web report service**.

Step 4 Specify the FTP site address by typing your user IP address or the local host IP address.

Larson Davis strongly recommends that you specify, select, or accept all defaults for your configuration, as demonstrated in this manual.

Step 5 Type the default FTP site User name **UploadUser**.

Step 6 Type your FTP site password.

Step 7 If you have specified the default values in configuring your server, as shown in this manual, type a forward slash (/) for Folder name. This specifies your virtual directory. Otherwise, type the path to the location you have specified in configuring your server.

Step 8 Click **New…**. This launches the **Web Graph** dialog box, as shown in FIGURE 3-22

This example shows the settings for 5 week (monthly) reporting time, including the filename that should be used.

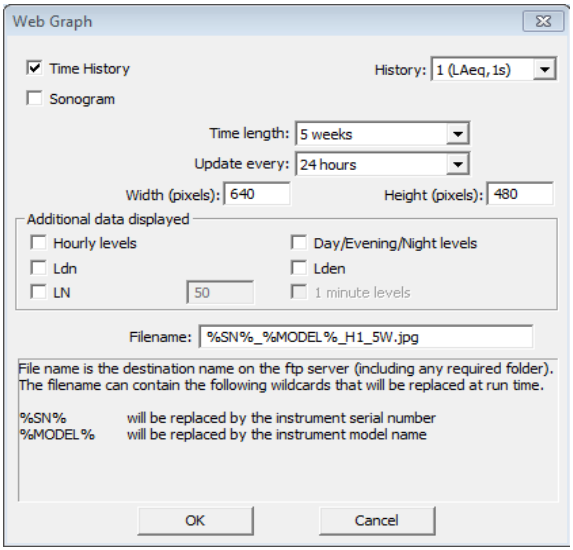

FIGURE 3-22 Web Graph

Step 9 Select the reports to be published to the website. You can select **Time History**, or **Sonogram,** or both.

Step 10 For **History**, select the template of the Time History report.

Step 11 For **Time Length**, select the length of the time axis in the graphical reports. The graphs display the last captured data, independent of the length of the axis.

Step 12 For **Update Every**, select how often to receive updates. For best results, specify an interval time similar to **Time Length**.

Step 13 For **Width** and **Height**, specify the size of the image in pixels.

Step 14 For **Additional Data Displayed**, select additional options for displaying data, including **Hourly levels**, **Ldn**, **LN**, **Day/Evening/Night levels**, and **Lden**.

The filename

Step 15 For **Filename**, verify that the destination location on the FTP server is specified according to reporting times, as follows:

- `%SN%_%MODEL%_RT_10M.jpg for Time length of 10 min`
- `%SN%_%MODEL%_H1_1H.jpg for Time length of 1 hour`
- `%SN%_%MODEL%_H1_24H.jpg for Time length of 1 day`
- `%SN%_%MODEL%_H1_1W.jpg for Time length of 1 week`
- `%SN%_%MODEL%_H1_5W.jpg for Time length of 5 weeks`

Step 16 Click **OK**.

Step 17 Verify that **Internet Upload** on the **Commands** menu is checked.

Step 18 Begin taking sound level data by clicking **Start** on the **Commands** menu.

Connecting with WiFi

Refer to your router manual and consult with a network professional for proper WiFi connectivity results.

The embedded PC within the NoiseTutor Station is capable of WiFi communications. However, the range for successful WiFi communications is dependent upon variables in your environment, including distance, barriers, elevation changes, and router quality. To position the NoiseTutor Station for best reception, place the case upright with the cable glands away from the WiFi router.

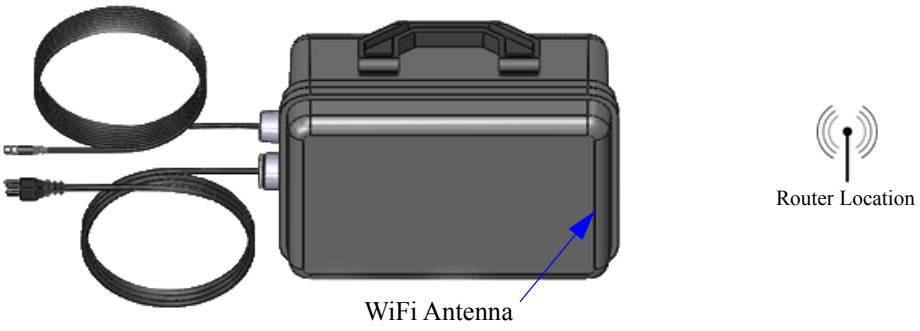

FIGURE 3-23 WiFi Orientation

CHAPTER

4 Wireless Gateway Setup for SMS Messaging

This chapter provides instructions for setting up and using the Sierra Wireless® modem Gateway for NoiseTutor Station SMS messaging. The modem provides data service for the NoiseTutor Station with its default settings; however, for SMS messaging, additional configuration is needed on both the Sierra Wireless Modem and the NoiseTutor Station.

Configuring the Sierra Wireless Modem for SMS Messaging

To configure the Sierra Wireless Modem for SMS messaging, follow these steps:

Step 1 Ensure that the Sierra Wireless Modem has an active SIM card associated with a data plan (purchased separately).

Step 2 Connect the modem to the Station PC with a CAT5 cable (sold separately) and turn on the modem.

*Form more information on **AceManager**, refer to the Sierra Wireless Modem user guide.*

Step 3 To launch **AceManager**--the Sierra Wireless Modem configuration software--open a web browser and enter the following IP Address into the Address bar: http://192.168.13.31:9191. If the login shown below does not appear, reboot the Station PC and repeat this step.

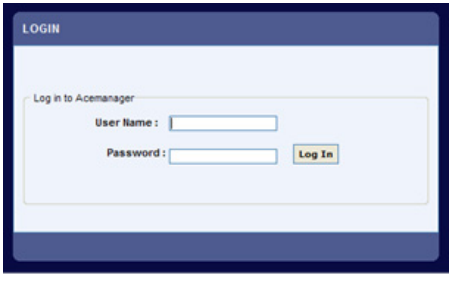

FIGURE 4-1 Sierra Wireless Modem AceManager Login

Step 4 Enter the default administrator user name and password for the AceManager login, as follows:

This is the default username and password for the Sierra Wireless modem. Use AceManager to change the password by going to ***Admin → Change Password.***

Username: **user**

Password: **LD_NMSystem16**

Step 5 After successful login, click the AceManager **Services** tab.

Remote administration access limited to SSL only on port 9449.

Step 6 On the left side of the screen, click **SMS** from the vertical list.

Step 7 Under **SMS Mode**, select **Gateway Only** from the first drop-down list.

Step 8 Under **Local Host Interface Configuration**, enter **17341** in the **ALEOS Port** field.

Step 9 Click **Apply** and then reboot the Station PC.

The Sierra Wireless® modem is now configured for SMS messages using UDP port 17341.

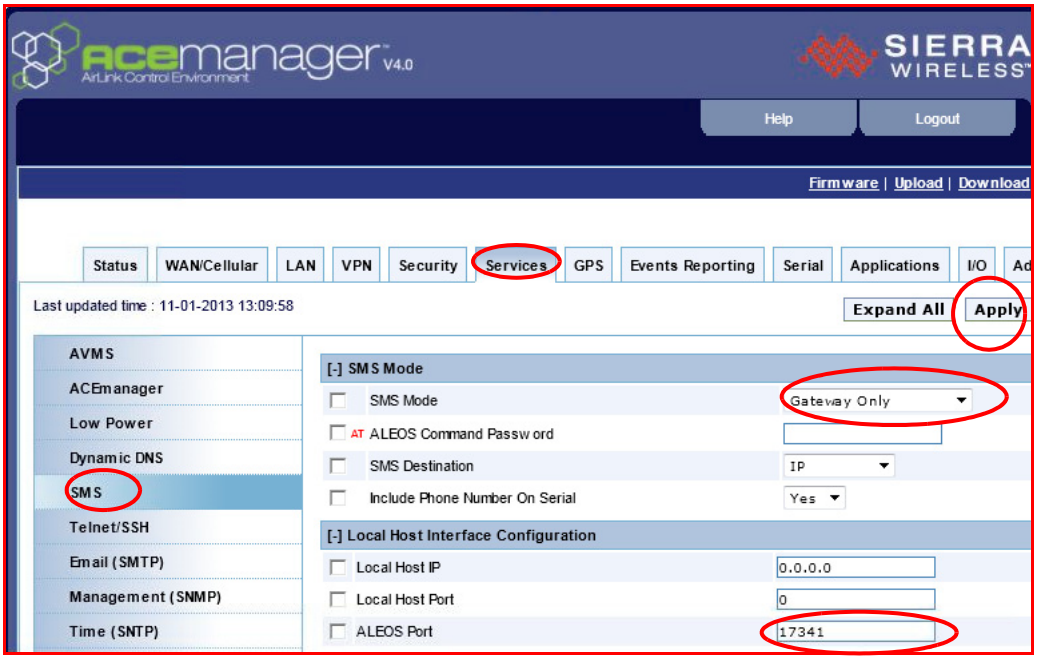

FIGURE 4-2 AceManager SMS Configuration

Configuring the NoiseTutor Station for SMS Messaging

To configure the NoiseTutor Station for SMS messaging, follow these steps:

Step 1 In the NoiseTutor software, click **Setup** > **Messaging** > **SMS...**.

Step 2 In the **Select SMS Protocol** drop-down list, select **Sierra Wireless IP-SMS**.

For information on configuring SMS messaging for Event Detection, see "Event Detection" in Chapter 5.

Step 3 In the **Modem IP address** field, enter **192.168.13.31**.

Step 4 In the **Modem UDP port** field, enter the number **17341**.

Step 5 Click Send test SMS to verify that SMS messages can be sent on the system and then click **OK**.

The NoiseTutor Station is now configured for SMS messages.

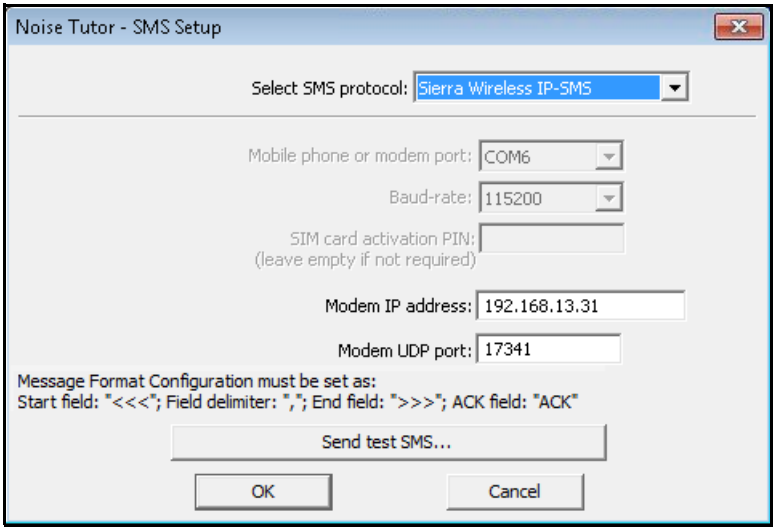

FIGURE 4-3 Sierra Wireless® SMS Messaging Setup

CHAPTER

5 Station Software Reference

This chapter provides information for configuring your station with the commands in the **Setup** and **Commands** menus of the NoiseTutor station.

You can view the features you have configured through the **Setup** menu by clicking the **Status** button on the NoiseTutor application window and viewing the Status display, as shown in Figure 5-1.

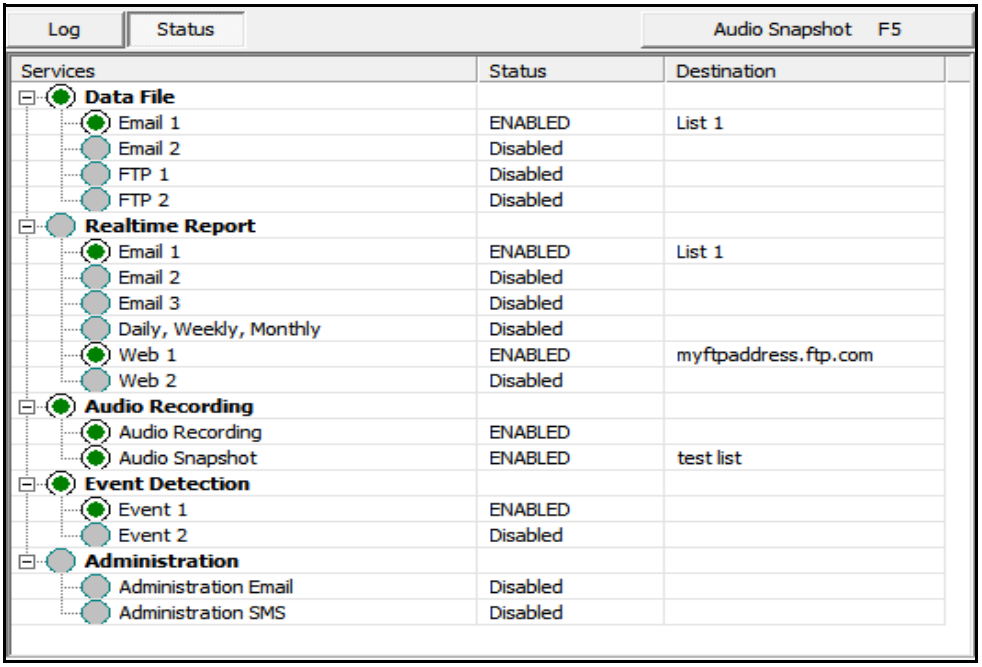

FIGURE 5-1 Status Display

Setup Commands

The Setup commands described in this chapter apply to the NoiseTutor station, not the server.

Figure 5-2 shows the **Setup** menu commands for the NoiseTutor station.

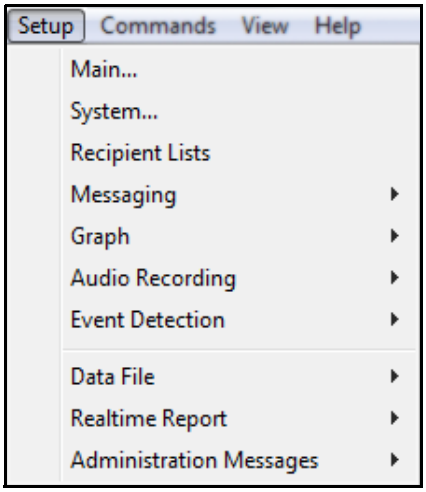

FIGURE 5-2 Setup Menu Commands

Table 5-1 lists the commands in the **Setup** menu and describes their basic functions.

Command	Usage
Main Setup	Changes main application settings.
System Setup	Specifies setup options
Recipient Lists	Defines the recipient lists used in e-mail or SMS services.
Messaging	Specifies settings for SMTP or SMS messaging.
Graph	Specifies the settings for graphs used in E-mail messages for web publishing.
Audio Recording	Specifies settings for audio recordings.
Event Detection	Specifies settings for event detection.
Data File (E-mail)	Specifies settings for graphs used in e-mail messages and for web publishing.

Command	Usage
Data File (FTP)	Specifies settings for FTP upload services used in “Data File” working mode.
Realtime Report (E-Mail)	Specifies settings for e-mail services used in the “Realtime Report” working mode.
Realtime Report (Daily, Weekly, Monthly)	Specifies settings for daily reporting services used in the “Realtime Report” working mode.
Realtime Report (Web)	Specifies settings for web publishing services.
Administration Messages	Specifies settings for e-mail or SMS messages sent to system administrators.

Table 5-1 Setup Commands and Functions

Main Setup

The **Main Setup** dialog box is shown in FIGURE 5-3.

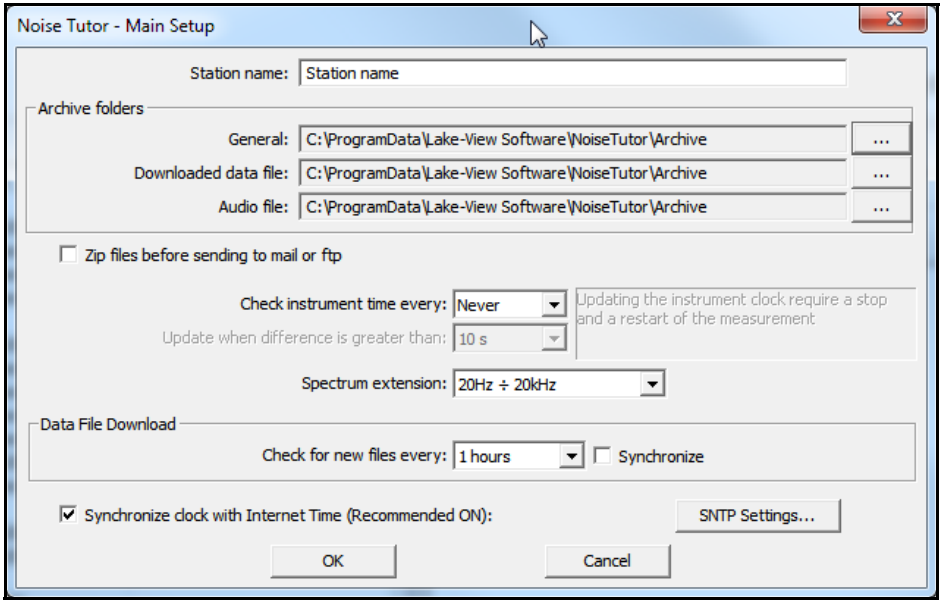

FIGURE 5-3 Main Setup

Table 5-2 describes the settings for the **Main Setup** dialog box.

Setting	Description
Station Name	The name of your monitoring station.
Archive Folders	The folders on the local hard-disk where the downloaded files are saved. To select another location, click the **...** button and navigate to the new location.
Zip files before...	Select this check box to zip the data files before attaching to an e-mail, or uploading to an FTP site.
Check Instrument time	All supported instruments have an internal clock. Use this field to keep the internal clock synchronized with the Station PC clock. Checking the clock does not require a stop in measurement. To change the internal clock, the measurement must be stopped and then restarted again after the clock change. Setting options include: **Never**, **Every download**, **1 day**, **2 days**, **3 days**, **4 days**, **5 days**, **6 days**, and **7 days**.
Update when difference is greater than	The value in seconds used to check the internal clock. When the difference between internal clock and Station PC clock is greater than this value, the internal clock is updated.
Spectrum extension	The octave spectrum size to be measured. Select either **20 Hz-20 kHz**, which is normally used for acoustic measurements, or **Full spectrum**.
Check files (Data File Download)	Sets the time between two download operations. If the synchronize check box is selected, the download time is synchronized at the specified hour, starting from midnight.
Synchronize clock with Internet Time	Synchronizes NoiseTutor clock with SNTP time without changing the PC clock.

Table 5-2 Main Setup Options

Recipient Lists

The **Recipient Lists** dialog box allows you to define the recipient lists for the outgoing e-mails and SMS messages, as shown in FIGURE 5-4. To enable the use of e-mail and SMS messaging services, at least one recipient list must be defined for either service. You can define an unlimited number of lists.

The Station PC verifies e-mail addresses and SMS numbers in recipient lists and removes recipients from lists that have non-existent addresses or numbers. If a recipient list for

either service becomes empty, the Station PC displays an error message.

Click the **New list** button to create a new recipient list. Click the **Remove list** button to delete selected lists. For each recipient list, click **Add** to specify individual recipient information, or select a recipient and click **Remove** to delete a recipient from a list.

Clicking the **New list** button while another recipient list is selected results in a new copy of the selected list.

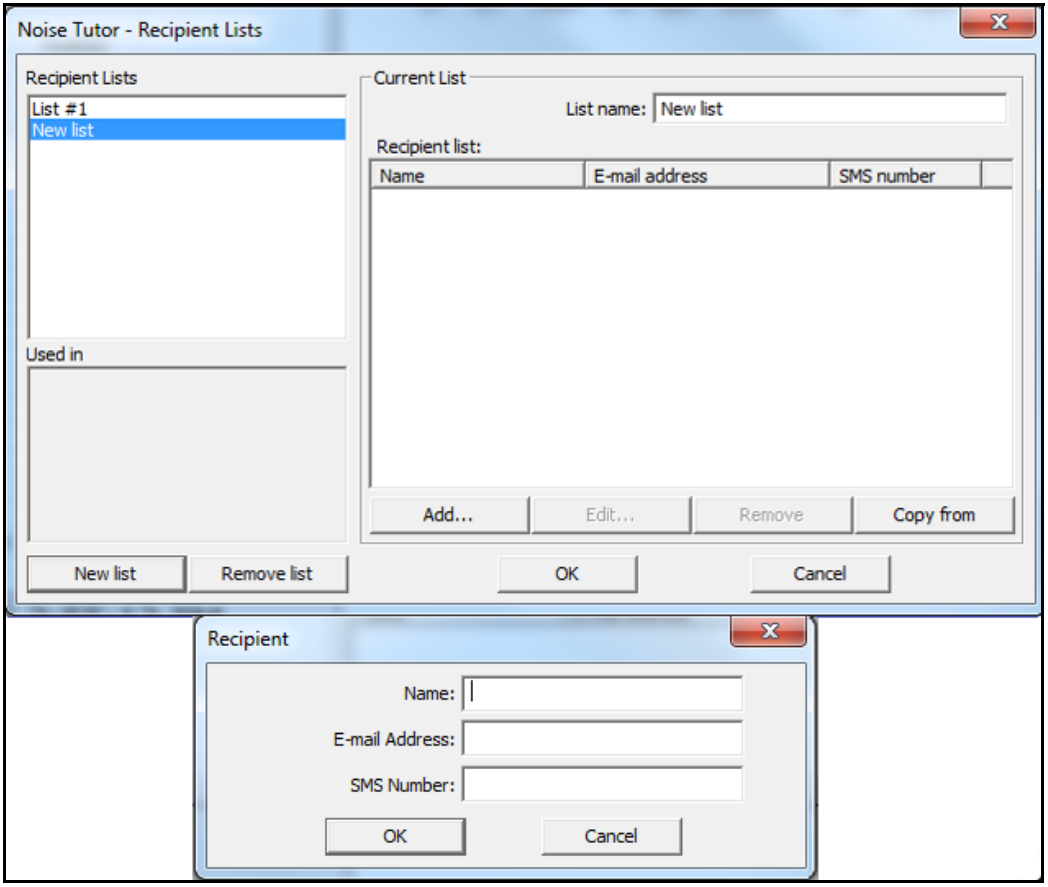

FIGURE 5-4 Recipient Lists

Table 5-3 describes the **Recipient Lists** controls settings.

Setting	Description
New List	Enables the **Current List** area so that new recipient lists may be named and specified.
Remove List	Deletes the selected recipient list.
List name	The name of the list of recipients. Make each list name unique.
Recipient list	The e-mail addresses and SMS numbers specified for the current recipient list.
Add	Opens the **Recipient** dialog box to add new e-mail addresses and SMS numbers to the current recipient list.
Edit	Opens the **Recipient** dialog box for the selected recipient so that the e-mail address and SMS number may be edited.
Remove	Deletes the selected recipient from the current list.
Copy from	Copies all addresses from the selected recipient list under **Recipient Lists**.
Name	The name of the recipient.
E-mail Address	The e-mail address of the recipient.
SMS Number	The mobile phone number of the recipient.

Table 5-3 Recipient List Control Settings

Messaging

The **Messaging** command is divided into two services: SMTP (E-mail) and SMS (text messaging).

SMTP (E-mail)

The **SMTP (E-mail) Setup** dialog box allows you to setup E-mail message settings., as shown in Figure 5-5.

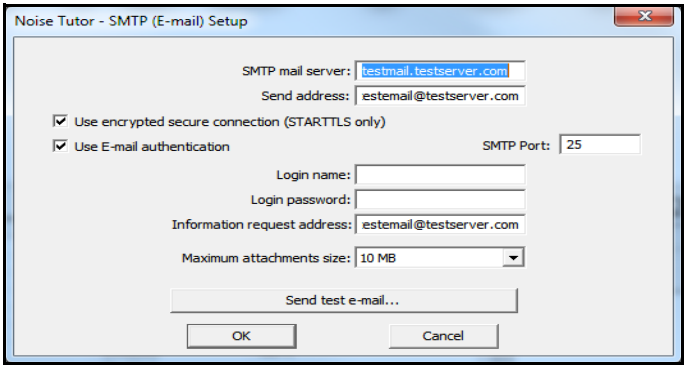

FIGURE 5-5 SMTP (E-mail) Setup

Table 5-4 describes the settings in the **SMTP (E-mail) Setup** dialog box.

Setting	Description
SMTP mail server	The name of the SMTP mail server. Normally this address is provided by the internet service provider.
Send Address	The e-mail address of the sender. If not specified correctly, the SMTP may fail to send the message.
Use E-mail authentication	Select this option if the mail server requires authentication. If selected, you must also enter the Login name and the Login password.
Login name	Login name for authentication.
Login password	Password required for authentication.
SMTP port	Port number to access the SMTP server. Normally it is 25. Do not change this value unless required by the internet service provider.

Setting	Description
Information request address	Your personal e-mail address. This information is appended to the end of e-mail messages to simplify information requests from customers.
Send test e-mail	Sends a test e-mail. Provide an address to send the test message. After sending, the Station PC displays the results and content of the SMTP test.

Table 5-4 SMTP (E-mail) Settings

SMS (Text Messaging)

The **SMS Setup** dialog box allows you to setup the SMS (text messaging) settings., as shown in Figure 5-6.

.

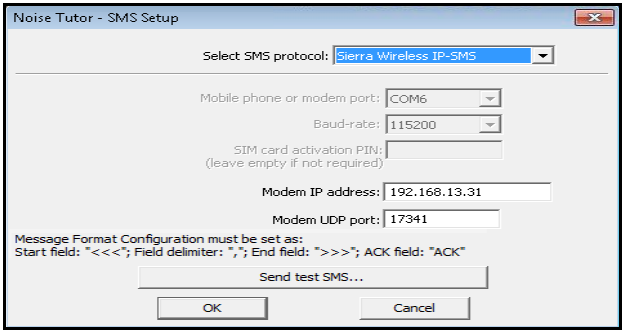

FIGURE 5-6 SMS (Text) Messaging Setup

Table 5-5 describes the settings in the **SMS Setup** dialog box.

Setting	Description
Mobile phone or modem port	The COM port where the mobile phone or modem is connected. Access is always through a COM port, even with integrated modems. The correct number may be found through the Device Manager in Windows 7®.
Baud-rate	The desired communication speed between the Station PC and the device.

Setting	Description
Activation PIN	The PIN of your SIM card. Leave this field empty if the PIN request is not activated or not needed for your SIM.
Send test SMS	Sends a test SMS, or text message. After sending, the Station PC displays the results and content of the SMS test.

Table 5-5 SMS (Text Messaging) Settings

Graph

The **Graph** command is divided into three different dialog boxes for setting up graphs used in reports. The graph setup dialog boxes are as follows:

- Time History Setup
- Spectrogram Setup
- Live Graph Setup

Time History Setup

The T**ime History Setup** dialog box allows you to define up to four time history graphs, as shown in Figure 5-7.

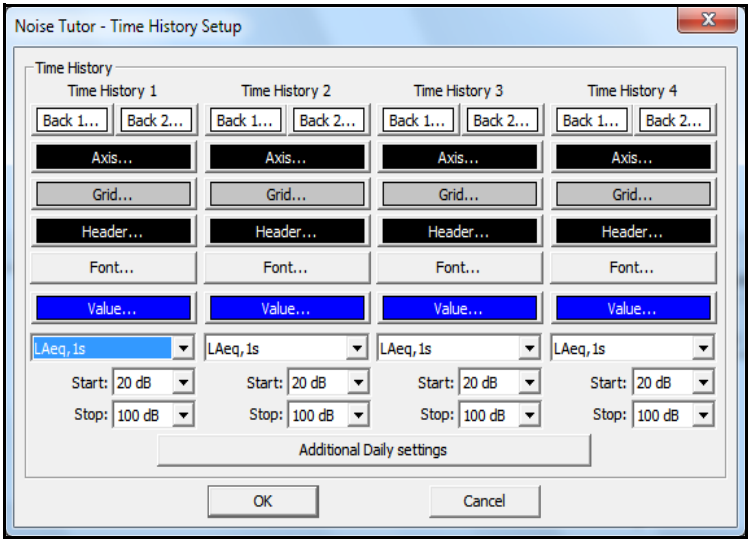

FIGURE 5-7 Time History Setup

To set up graphs, specify the following options:

- Background color
- Axis color
- Grid color
- Header color
- Font
- Value trace color
- Start value of the dB amplitude axis
- Stop value of the dB amplitude axis

For each color or font option, click the corresponding button, select the setting, and click **OK**. For other options, click the setting from the drop-down lists.

For long time histories or those with Ldn and Lden values, click the **Additional Daily Settings** button to launch the **Additional Daily Setup** dialog box, as shown in Figure 5-8.

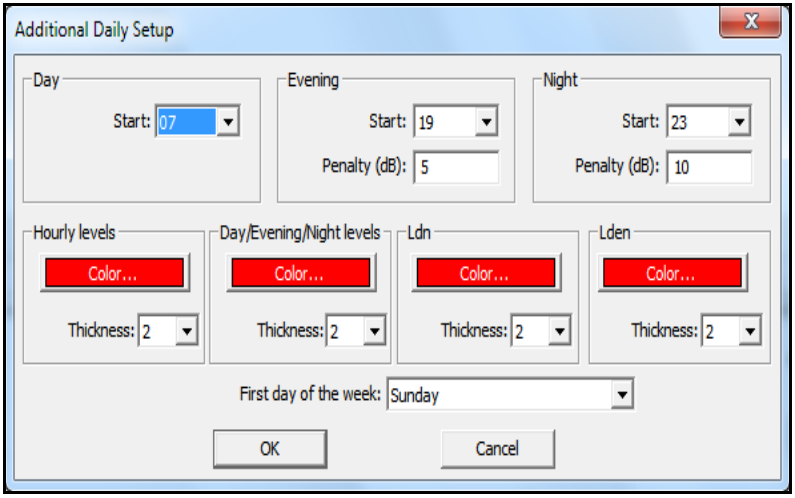

FIGURE 5-8 Additional Daily Setup

For each area--**Day**, **Evening**, and **Night**--you specify a **Start** time from the 24-hour notation numbers listed in the corresponding drop-down lists.

For **Penalty (dB)**, the number you specify is used in the Ldn and Lden calculations.

The **Color** and **Thickness** options you specify in the remaining areas are used for additional traces available in long-term histories. The **Hourly levels** options begin with four-hour histories and the others begin with one-day histories.

Spectrogram Setup

The **Spectrogram Setup** dialog box allows you to specify colors for a spectrogram in your reports, as shown in Figure 5-9.

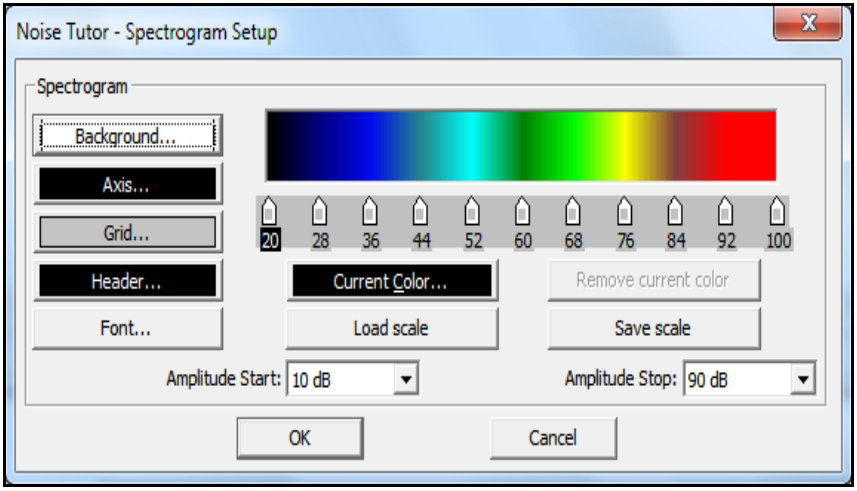

FIGURE 5-9 Spectrogram Setup

For spectrograms, the color scale settings are marked by a series of key points, where a particular sound level is associated with a specific color. Colors between two key points are calculated by interpolation. Initially, only two key points are defined, but you may add other key points. The key points are represented by markers at the bottom of the color scale.

Table 5-6 describes how to edit the key points.

Action	Description
Add a key point	Click a place on the key points bar.
Remove a key point	Select the key point and drag it outside the bar, or select a key point and click on the **Remove** current color button.
Change the level of a key point	Select the key point and drag it with the mouse.
Change the color of a key point	Select the key point and click on the **Current** color button.

Table 5-6 Editing Keypoint Instructions

A color scale can be saved to, or loaded from, a selected location using the **Save scale** and **Load scale** buttons, respectively.

Live Graph Setup

The **Live Graph Setup** dialog box allows you to specify parameters for an optional graph in the NoiseTutor application window when operating in "Realtime Report" working mode. The dialog box is shown in Figure 5-10.

To specify the parameters for the Live Graph, click the buttons and select from the options, as performed in the other graph setup dialog boxes.

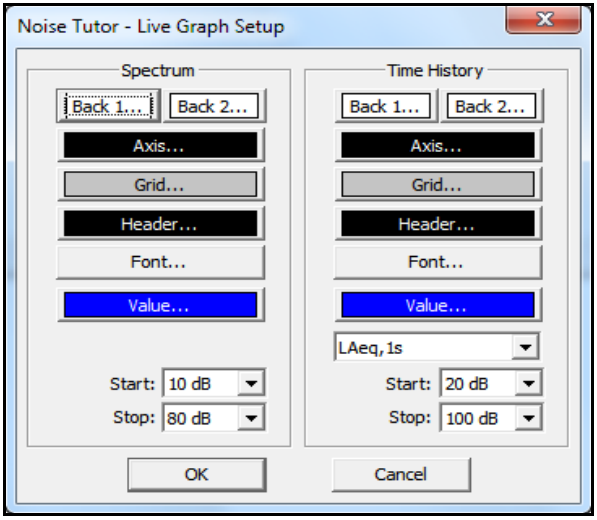

FIGURE 5-10 Live Graph Setup

Audio Recording

The audio recording options in NoiseTutor are enabled through an authorized license file. This feature allows you to continuously record signals applied to input connectors of the Station PC audio board from supported instruments. The recorded data is compressed dynamically into Vorbis format, using much less disk space than uncompressed formats and allowing for continuous recording for extended periods of time.

Figure 5-11 shows the dialog box for specifying the settings for audio recordings.

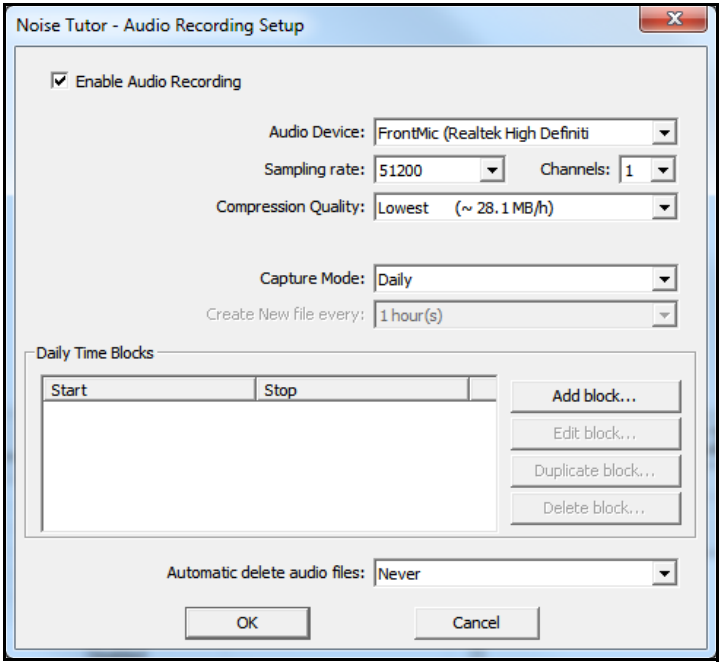

FIGURE 5-11 Audio Recording Setup

Table 5-7 describes the settings for **Audio Recording Setup** dialog box.

Setting	Description
Enable Audio Recording	Enables audio recording service.
Audio Device	Select the audio board to be used for service. If the list is empty, no compatible audio boards have been found and the service cannot be used.
Sampling Rate	Sampling rate of the input signal.
Channels	Select the number of channels to record.
Compression Quality	Audio compression quality. Select **Highest**, **High**, **Medium**, **Low**, or **Lowest**. Each option also displays the approximate disk space needed per hour.
Capture Mode	Select the capture mode **Continuous**, **Daily**, or **Event**. In **Continuous** mode, everything is recorded. In **Daily** mode, recordings begin and end on a daily basis according to blocks of time specified by clicking the **Add block...** button. In **Event only** mode, the audio signal is used only for the Event Detection feature.
Create a new file every	Specify the length for recorded audio files in number of hours. This setting is enabled in the Continuous mode only.
Daily time blocks	Click the **Add block...** button to specify daily time blocks for recording each day. Once created, each time block appears in the **Daily time block**s list.
Automatic delete audio files	Deletes audio recording files older than the specified age.

Table 5-7 Audio Recording Settings

To specify the settings for the inputs of the audio board, including volume, open the Windows 7® **Control Panel**, click on **Hardware and Sound** > **Sound** and select the settings. Alternately, you may be able to configure settings through the audio board software.

The compressed audio data is saved in one of two sub-folders within the **Data** folder. Continuous recordings are saved in the **Audio** folder and the audio recorded during events is saved in the **AudioEvent** folder.

Audio Snapshot

By using the Audio Snapshot feature, you can take a snapshot of an audio recording and send it via e-mail. This feature requires an audio recording license file. To use the feature, you must first enable audio recordings in the Audio Recordings Setup dialog box, as shown in Figure 5-11.

Figure 5-12 shows the dialog box for specifying the settings of audio snapshots.

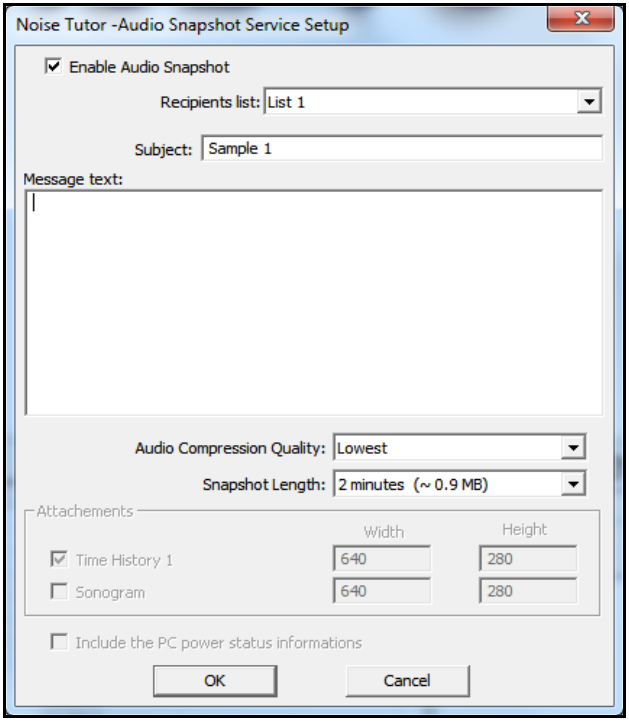

FIGURE 5-12 Audio Snapshot Service Setup

Table 5-8 describes the settings for **Audio Snapshot Service Setup** dialog box.

Setting	Description
Enable Audio Snapshot	Enables audio snapshot service.
Recipients List	Select the recipient list for this e-mail service.
Subject	The subject of the e-mail message regarding the snapshot.
Message text	The message of the e-mail. For optimal results, make messages meaningful and avoid words that typically trigger anti-spam software.
Compression Quality	Audio compression quality. Select **Highest**, **High**, **Medium**, **Low**, or **Lowest**.
Snapshot Length	The length, in minutes, of the audio snapshot. Select values from 1 to 5 minutes.
Time History 1	Attaches the time history graph from **Time History 1** setup in **Setup** > **Graph** > **Time History**. Specify a pixel width and height for the size of the graph.
Spectrogram	Attaches a spectrogram for the snapshot. Specify a pixel width and height for the size of the graph.
Data File	Attaches the data file from the sound level meter to the message.
Include power status	Includes information about the power status of the Station PC and the sound level meter in the message.

Table 5-8 Audio Snapshot Service Setup

Event Detection

Event Detection is an optional command providing features for detecting sound events and for sending notifications with graphical presentations of the events. This option is enabled through an authorized license file. With this feature, the NoiseTutor Station analyzes time histories according to specified values and thresholds, as shown in Figure 5-13. You can also specify that the station send messages at the end of events by e-mail, SMS (text), or that it load event graphs and audio recordings to websites. The NoiseTutor Station provides two functions for event detection so that two events with differing thresholds can be analyzed and reported in parallel.

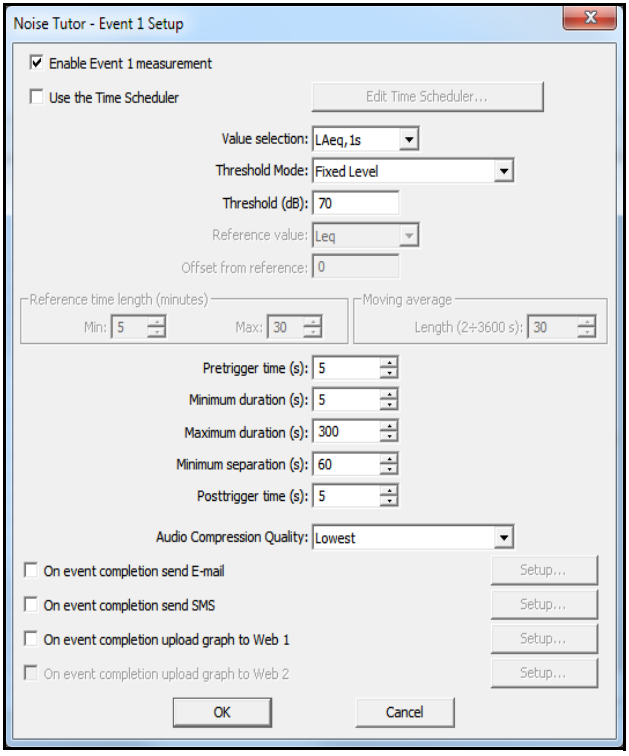

FIGURE 5-13 Event Detection Setup

Table 5-9 describes the settings in the **Event Setup** dialog box.

Setting	Description
Enable Event measurement	Enables the Event Detection feature.
Use the Time Scheduler	Enables Time Scheduler to be set according to specified days of week and blocks of time. Click Edit Time Scheduler to specify.
Value selection	The value to be measured for event detection.
Threshold Mode	The mode used for determining measurements that exceed specified thresholds. Select **Fixed Level** to have the specified value compared with the fixed threshold.Select **Dynamic Level** to have the selected value compared with a dynamic threshold that is measured against the last measured period of time, plus a specified offset from reference.
Threshold	The value in dB to set as the threshold. Measurements exceeding this value are detected as events.
Reference value	The value used to calculate the dynamic threshold.
Offset from reference	The offset value to be added to the dynamic calculated value to form the actual threshold.
Reference time length	The length of time from which the dynamic value is calculated.
Pretrigger time	The specified period of time before the beginning of an event that is included in the time history of the event. It may be helpful in reviewing differences in measurements just before the event with measurements at the beginning of an event.
Minimum duration	The minimum time, in seconds, that constitutes an event. If measurements fall and stay below specified thresholds before the minimum duration time has elapsed, the event is canceled. If the measurement rises again above the thresholds before the specified minimum separation time, the event is restarted and calculated from the first threshold trigger.
Maximum duration	The maximum time, in seconds, to store an event. If the duration of an event exceeds the specified maximum duration, the time history is truncated to this value.
Minimum separation	The minimum time, in seconds, in which two events must be separated to constitute separate events. If the amount of time between two events is less than this value, the events are considered to be a single event.

Setting	Description
Posttrigger time	The specified period of time after the end of an event that is included in the time history of the event. It may be helpful in reviewing differences in measurements just after the event with measurements at the end of an event.
Audio compression quality	The Vorbis audio format compression quality. This value is ignored if the **Enable Audio Recording** option is selected in the **Audio Recording** dialog box.
On event completion...	Enables notification or upload actions to execute upon completion of an event. The actions are sending e-mail, sending SMS (text messages), and uploading graphs to websites. To specify the settings for the actions, click the **Setup** button next to the listed options.

Table 5-9 Event Setup Settings

The following sections describe the notification and upload actions that can be executed upon event completion, including:

- Send E-mail
- Send SMS (text messages)
- Upload graphs to websites

Send E-mail

E-mail messages, sent upon event completion, contain selected graphical representations of the event, including time histories and spectrograms, as shown in Figure 5-14.

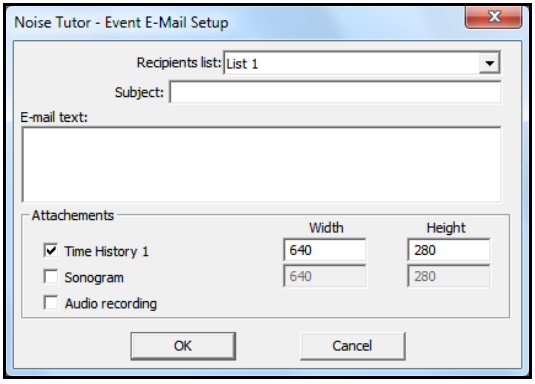

FIGURE 5-14 Event E-mail Setup

Recordings may also be attached, if Audio Recording is enabled in the **Audio Recording Setup** dialog box.

Table 5-10 describes the settings for **Event E-mail Setup** dialog box.

Setting	Description
Recipients list	The name of the e-mail recipient list as configured with the Recipient Lists command.
Subject	The subject of the message regarding the event.
E-mail text	The message of the e-mail. For optimal results, make messages meaningful and avoid words that typically trigger anti-spam software.
Time History 1	Attaches a time history graph for the event, as configured for **Time History 1** in the **Graph > Time History Setup** dialog box. Specify a pixel width and height for the size of the graph.
Spectrogram	Attaches a spectrogram for the event. Specify a pixel width and height for the size of the graph.
Audio recording	Attaches an audio recording of the event, if Audio Recording is also enabled in the **Audio Recording Setup** dialog box.

Table 5-10 Event E-mail Settings

Send SMS (text messages)

SMS messages, sent upon event completion, contain only the text in the message and the most common values that can be calculated on the event. Only two settings are required for SMS messaging: **Recipient list** and **SMS text**, as shown in Table 5-14.

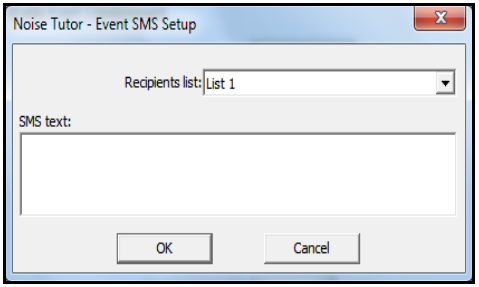

FIGURE 5-15 Event SMS Setup

Upload Event Graphs and Audio to Websites

The NoiseTutor Station can upload graphs for the three most recent events to Web 1 or Web 2. By using the recommended wildcard in graph filenames (see dialog box below), you can keep track which graphs correspond to which events. The most recent event is always portrayed in a file with the "1.jpg" ending. Upon completion of a new event, the least recent graph is deleted and the next least recent graph is renamed with a "3.jpg" ending. In this manner, new graphs are cycled from numbers one through three, with the most recent graph first, and the least recent graph third. Audio filenames are also handled in the same manner, if specified for upload. The Event SMS Setup dialog box is shown in Figure 5-16.

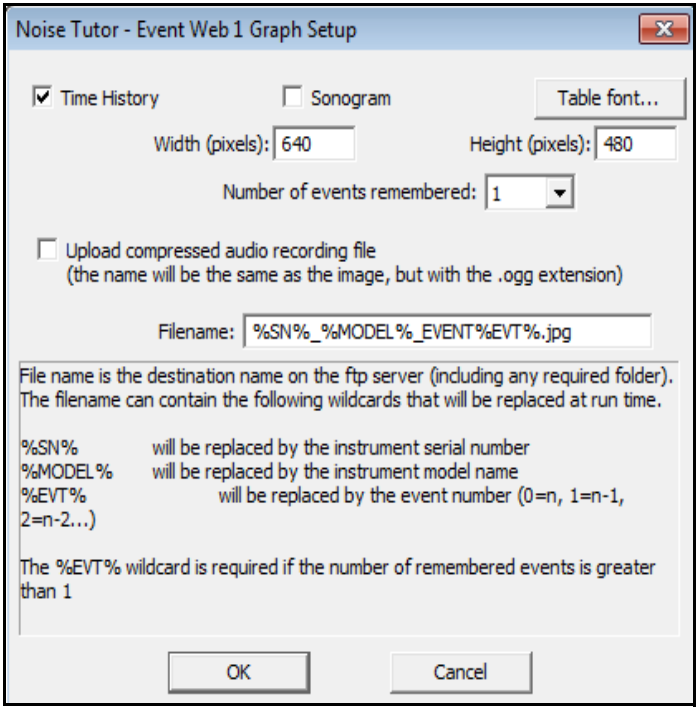

FIGURE 5-16 Event Web Graph Setup

Table 5-11 describes the settings for the Event Web Graph dialog box.

Setting	Description
Time History	Includes the time history graph of Laeq in the image.
Spectrogram	Includes a spectrogram in the image.
Width/Height	The size of the bitmap in pixels.
Number of remembered events	The number of most recent events to be remembered for graphical upload. Three is the maximum number of events.
Upload compressed audio recording	Uploads the audio file to the website, if audio recording is enabled. The audio filename is the same as the graph filename, but with the **.ogg** extension.
Filename	The destination filename for the graph. Use the wildcards indicated in the dialog box for best results.

Table 5-11 Event Web Graph Settings

Reporting Modes

NoiseTutor provides two options for reporting: the **Data File** mode and the **Realtime Report** mode.

The **Data File** mode downloads the data file from the connected sound level meter and sends it by e-mail to a recipient list or uploads it to an FTP site. This is the principal mode. It is usually active as it handles the data measured by the meter. It enables the user to automatically receive data through e-mail or through an FTP server. The NoiseTutor station keeps a copy of sent data on the local PC, thereby making a backup copy of the data.

The **Realtime Report** working mode keeps a continuous connection with the instrument, continuously reading the current level measured by the meter. It produces a graphical report that can be sent to a recipient list via e-mail or that can be used for web publishing.

It is possible to use both modes simultaneously. In this case, the **Realtime Report** mode is suspended during the data download from the instrument, after which it is then automatically restarted.

Data File Settings

The **Data File** command launches dialog boxes for delivering reports via e-mail or FTP in the Data File working mode.

E-mail Setup

If you set up the NoiseTutor Station to e-mail data files, the graphs in the message are based on the data file. If you want to view spectral data in the message, you must enable logging for spectral data on the sound level meter. See the technical reference manual for your sound level meter for more information.

The **E-mail 1...** and the **E-mail 2...** options launch the E-mail **Data File Service Setup** dialog box.The settings are shown in FIGURE 5-17.

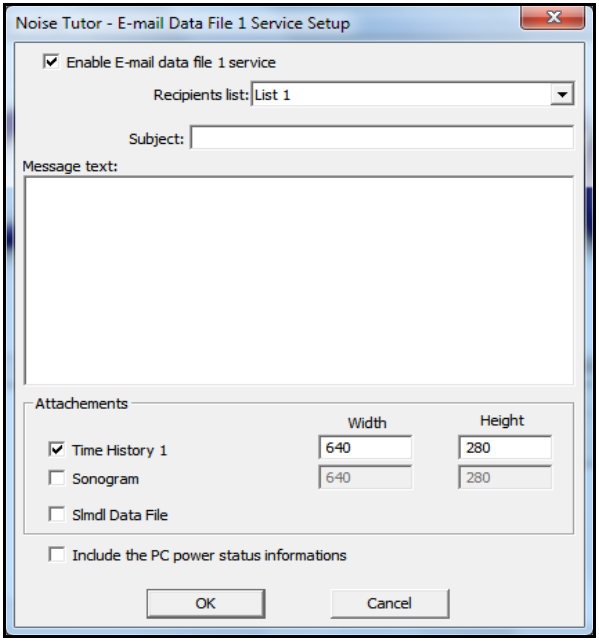

FIGURE 5-17 E-mail Data File Service Setup

Table 5-12 describes the settings for the **E-mail Data File Service Setup** dialog box.

Setting	Description
Enable E-mail service	Enables/Disables e-mail service.
Recipients List	The recipient list for the e-mail service.
Subject	The subject of the message.
Message text	The text of the message. Type messages in such a way that they are not filtered by anti-spam software.
Time History 1	Attaches a time history graph. On the right, specify the JPEG size in pixels.
Spectrogram	Attaches a spectrogram. On the right, specify the bitmap size in pixels.
Slmdl Data File	Attaches the downloaded file from the meter.
Include the PC power status	Includes information about the power supply status of the PC and of the analyzer in the message text.

Table 5-12 E-mail Data File Service Settings

FTP Setup Service

The **FTP1...** and **FTP2...** options launch the **FTP Service Setup** dialog box to setup the FTP upload service, as shown in FIGURE 5-18.

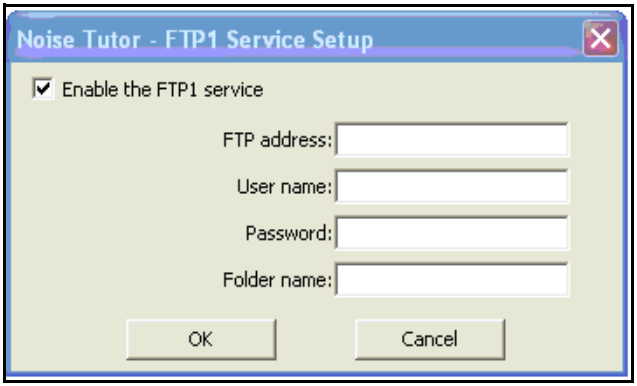

FIGURE 5-18 "Data File" FTP Setup Window

Table 5-13 describes the settings for the **FTP Service Setup** dialog box.

Setting	Description
Enable the FTP service	Enables/Disables the FTP service.
FTP Address	The FTP server where the data files are uploaded. It is possible to enter the address either in canonical form (ftp.domain.x) or in numeric form (x.x.x.x).
User name	This is the user name to establish the FTP connection.
Password	This is the password to establish the FTP connection.
Folder name	The name of the sub-folder where the data file is copied. If left empty, the files are copied to the root of the FTP site.

Table 5-13 FTP Service Settings

Realtime Report Settings

The **Realtime Report** command launches dialog boxes for creating reports for delivery via e-mail or for publishing on a website in the Realtime Report working mode.

The **Realtime Report** > **E-mail 1...**, **E-mail 2...**, and **E-mail 3...** commands launch the **E-mail Report Service Setup** dialog box. Three e-mail services are provided, corresponding to the numbers in the command menu. The settings are shown in FIGURE 5-19.

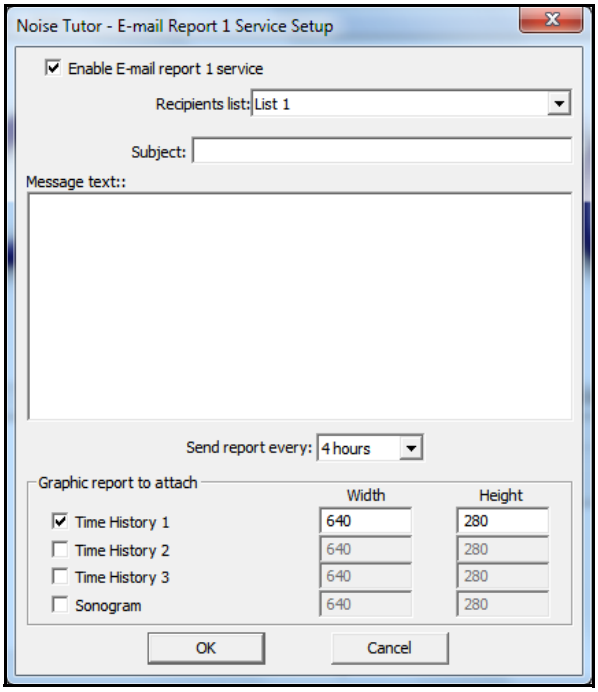

FIGURE 5-19 E-mail Report Service Setup

Table 5-14 describes the settings for the **E-mail Report Service Setup** dialog box.

Setting	Description
Enable E-mail Service	Enables/Disables the e-mail service.
Recipients list	The recipients list for the e-mail service.
Subject	The subject of the message.

Setting	Description
Message text	The text of the message. Type messages in such a way that they are not filtered by anti-spam software.
Send report every	Determines when the report message is sent.
Time History 1	Attaches a time history graph. On the right, specify the image size in pixels.
Time History 2	Attaches a time history graph. On the right, specify the image size in pixels.
Time History 3	Attaches a time history graph. On the right, specify the image size in pixels.
Spectrogram	Attaches a spectrogram. On the right, specify the image size in pixels.

Table 5-14 E-mail Report Service Settings

Daily, Weekly, or Monthly Monitoring

For longer monitoring periods, you can create daily, weekly, or monthly monitoring reports. The **Daily, Weekly, Monthly...** command launches the **Daily Report Service Setup** dialog box, as shown in FIGURE 5-20.

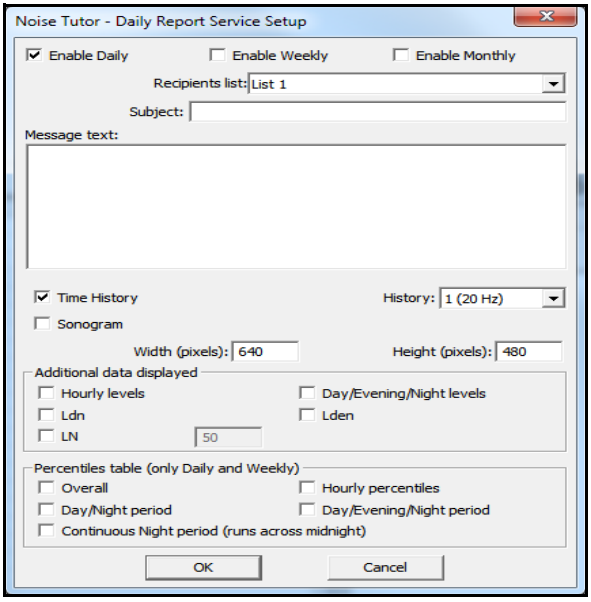

FIGURE 5-20 Daily Report Service Setup

Table 5-15 describes the settings for the **Daily Report Service Setup** dialog box.

Setting	Description
Recipients list	The recipients list for the e-mail service.
Subject	The subject of the message.
Message text	The text of the message.
Send report every	Determines when the report message is sent.
Time History	Attaches a time history graph. On the right, for **History**, select the value to be measured.
Spectrogram	Attaches a spectrogram.
Width/Height	The size of the image in pixels.
Additional data displayed	Select additional options for displaying data, including **Hourly levels**, **Ldn**, **LN**, **Day/Evening/Night levels**, **and Lden**.
Percentiles table	Select options to include percentile data displayed in tables: **Overall, Day/Night period, Continuous Night period, Hourly,** and **Day,/Evening.Night**.

Table 5-15 Daily Report Service Settings

By configuring your server with default values with the Configuration Tool, as described in the chapter ***Setting Up the NoiseTutor Server****, your graphs will be linked to web pages and be displayed within the pages. If you do not configure your server and station with default values, your IT professional will need to provide custom configurations to display your graphs on web pages.*

The **Web1...** or **Web 2...** option launches the **Web Report Service Setup** box, as shown in FIGURE 5-21. The Web Report Service creates a JPEG format image—with a graph based on real-time data—and uploads it to the FTP site associated with the web site. The graph is then published on the web site.

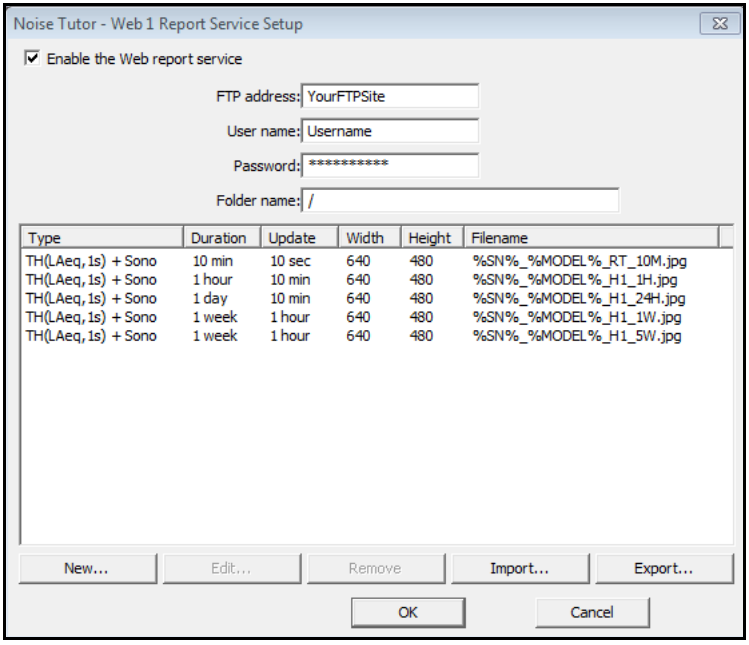

FIGURE 5-21 Web Report Service Setup

Table 5-16 describes the settings in the **Web Report Service Setup** dialog box.

Setting	Description
Enable the Web Report Service	Enables/Disables Web Report service.
FTP Address	The FTP server where the data file must be uploaded. It is possible to enter the address either in canonical form (ftp.domain.x) or in numeric form (x.x.x.x).
User name	The user name to establish the FTP connection.
Password	The password to establish the FTP connection.
Folder name	The name of the sub folder where the data file is copied. If left empty, the files are copied to the root of the FTP site.
New	Adds a new graph to the list.
Edit	Allows the selected graph on the list to be edited.
Remove	Removes the selected graph from the list.
Import/Export	Moves the web graph setup from one station to another.

Table 5-16 Web Publishing Settings

Clicking the **New** button or **Edit** button on the **Web Report Service Setup** box launches the **Web Graph** box, as shown in FIGURE 5-22.

In the **Web Graph** dialog box, you can specify that a single JPEG include a time history or a spectrogram, or both. Do not change the file name. Wild cards are useful to distinguish JPEG names based on the model and serial number when the same website is publishing data from more than one monitoring station.

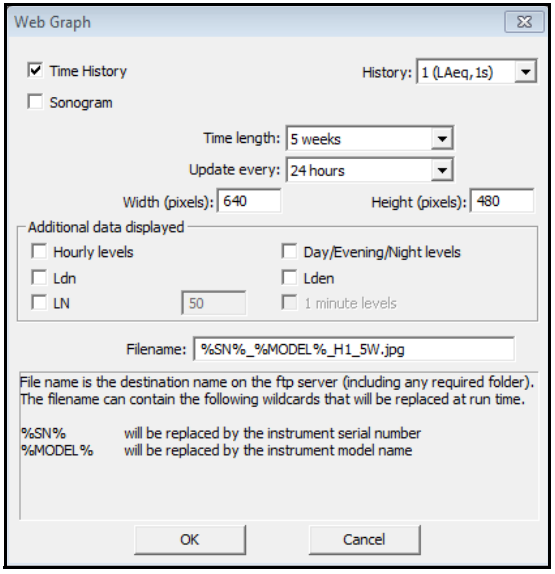

FIGURE 5-22 Web Graph Setup

Table 5-17 describes the settings in the **Web Graph** dialog box.

Setting	Description
Time History	Includes a time history graph. On the right, specify one of the four available templates to be used.
Sonogram	Includes a sonogram.
Time length	Determines the length of the time axis. The graphs display the last captured data, independent of the length of the axis.

Setting	Description
Update every	Sets the update time interval. To keep the internet traffic manageable, select this value proportionally to the length of the time axis.
Width/Height	Size of the JPEG in pixels.
Additional data displayed	Select additional options for displaying data, including **Hourly levels**, **Ldn**, **LN**, **Day/Evening/Night levels**, and **Lden**.
Filename	The destination file name.

Table 5-17 Web Graph Settings

System Administration Messages

The **Administration Messages** command provides options for sending messages to the system administrator by e-mail or by SMS (text messages).

E-mail System Administration Messages

Selecting the **Administration Messages > Email...** command launches the **E-mail System Administration Messages** dialog box, as shown in Figure 5-23.

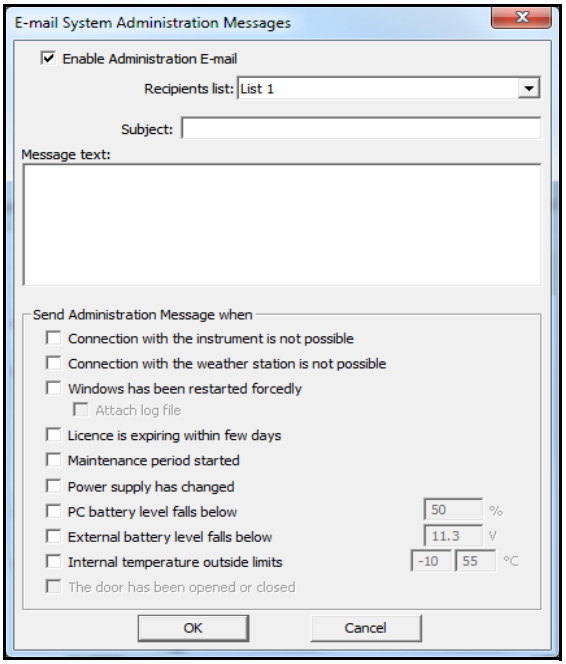

FIGURE 5-23 E-mail System Administration Messages

The recipient list for these messages should contain only the address of the administrator(s) of the system. These messages are sent for events that requires administrator intervention. There are six events available:

- When the connection with the instrument is not possible (or failed for any reason).
- When the connection with the weather station is not possible (or failed for any reason).
- When the Windows® operating system is restarted automatically by NoiseTutor (usually because of a locked internet connection).

- When a temporary license is about to expire.
- When a maintenance period has started.
- When the power supply of the PC changes from AC to battery, or vice-versa.
- When the PC battery level drops below the specified voltage
- When the external battery level drops below the specified voltage
- When the door is opened or closed.

SMS System Administration Messages

Selecting the **Administration Messages > SMS...** command launches the **SMS System Administration Messages** dialog box, as shown in Figure 5-24.

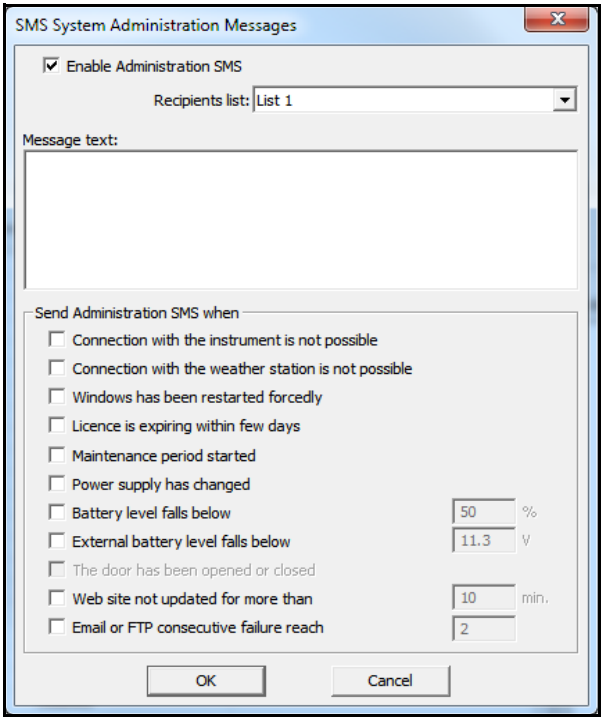

FIGURE 5-24 SMS System Administration Messages

The recipient list for these messages should contain only the address of the administrator(s) of the system. These messages are sent for events that requires administrator intervention. There are six events available:

- When the connection with the instrument is not possible (or failed for any reason).
- When the connection with the weather station is not possible (or failed for any reason).
- When the Windows® operating system is restarted automatically by NoiseTutor (usually because of a locked internet connection).
- When a temporary license is about to expire.
- When a maintenance period has started.
- When the power supply of the PC changes from AC to battery, or vice-versa.
- When the PC battery level drops below the specified voltage
- When the external battery level drops below the specified voltage
- When the door is opened or closed.
- When a website is not updated for more than the specified number of minutes.
- When the specified number of consecutive errors has occurred for sending e-mail or performing FTP uploads.

Main commands

Use **Start** and **Stop** on the **Commands** menu to start and stop the NoiseTutor Station operations. Clicking the **Start** command begins the connection with the instrument, checks if there is data to be downloaded, and begins the operations for the enabled services.

To setup the NoiseTutor station so that it automatically begins the **Start** command, refer to the section “Installing the NoiseTutor Software” in the *Installation and Setup* chapter of this manual. The automatic restart is effectively executed with a delay of 30 seconds from the program run. This delay is needed to allow the Windows® operating system to complete loading.

The **Stop** command ends the NoiseTutor Station operations and disconnects the analyzer, but does not terminate the sending of messages or the uploading of files. If the job queue is not empty, this operation continues even after the **Stop** command has been completed.

The **Direct Screen** command displays a window that reproduces the screen of the meter itself, with buttons positioned similar to those of the meter keyboard. Click buttons to perform actions with the meter, similar to pressing keys on the keypad of the meter. The instrument screen is continuously displayed; thus it is possible to operate remotely on the instrument, as if it were in your hands. FIGURE 5-25 shows an example of the Direct Screen window.

FIGURE 5-25 Direct Screen

APPENDIX

A Technical Specifications

The specifications contained in this chapter are subject to change without notice.

System Power Requirements

Battery Runtime (continuous, streaming updates)	6.5 hours, from full charge, typical at 25 °C
Battery Runtime (daily updates)	30 hours, from full charge, typical at 25 °C
Charge Time	4 hours
AC Input	90-240V, 50-60 Hz
Battery Voltage	12.8V
Battery Type	Lithium Iron Phosphate
Battery Capacity	81.9 watt hours

Physical

Weight	16.0 lbs. (8.3 kg.)
Dimensions (W x L x H)	18 x 13 x 7 in. (46 x 33 x 18 cm.)

Environmental

Operating Temperature	- 40 to 140° F (- 40 to 60 °C)**
Humidity	0 to 99%, relative humidity, non-condensing
Enclosure	Rated IP66

**The temperatures indicated correspond to operation in direct sunlight. For operation at higher environmental temperatures, the station must be shaded.

Station PC (provided)

Processor Speed	1.6 GHz
Memory	2 GB
Storage	80 GB
Operating System	Windows 7®

For specifications of 831 or SoundTrack LxT sound level meters, refer to the technical reference manuals for those products.

Items not Included

- Instrumentation Tripod (TRP003)
- Website hosting items (PC, Microsoft IIS, and FTP)
- SIM card for cell access
- Software to administer the PC remotely, such as logmein, radmin, or teamviewer

APPENDIX

B Shipping Instructions

You may encounter some restrictions when shipping the NoiseTutor Station because it includes a lithium ion battery. When shipping, follow these guidelines:

- Make sure that the system is off prior to closing the case.
- Do not place extra items in the case.
- Label your shipping box with an IATA cautionary label, as shown in FIGURE B-1. Print the label in color.

FIGURE B-1 IATA Caution Label

To comply with shipping regulations, you should, at a minimum, put the following warning and provide your contact information on your package:

LITHIUM ION BATTERIES OR CELLS

This package contains Lithium Ion cells or batteries.

This package must be handled with care and not damaged.

In the event the battery or cell is damaged a flammability hazard exists.

If this package is damaged it must be quarantined, inspected and repackaged before shipment continues.

If the battery or cell itself is damaged the package must be repacked and returned to the shipper via ground transport.

Damaged lithium batteries and cells are forbidden for transport by air in accordance with IATA Special Provision A154.

Telephone number for additional information: Phone #_____

This language is in accordance with Reference Section II of Lithium Cell or Batteries Packing Instruction-IATA Dangerous Goods Regulations.

APPENDIX

C Connecting Peripheral and Power Devices

The instructions contained in this chapter show how to connect the NoiseTutor System to peripheral devices or alternative sources of power.

Note: When ordering the optional ACC007 stopper used in the following procedures, specify the cable being used to match the configuration.

Connecting PRM2103-FF Preamplifier

To connect the PRM2103-FF preamplifier, follow these steps:

Step 1 Identify or gather components, as shown:

			
Model 831	**CBL203-20**	**Cable Gland on NoiseTutor**	**PRM2103-FF**

Step 2 Insert CBL203-20 through small gland in case so that the three-connector end (AUX, mic, and power) is on the inside of the case.

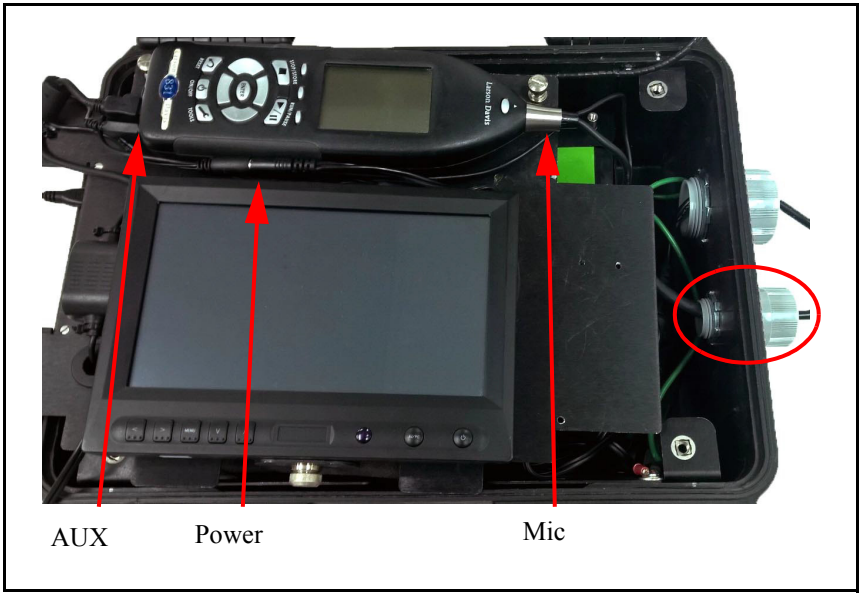

FIGURE C-2 Insert CBL203-20 through Small Gland

Step 3 Connect the other end of CBL203-20 to the PRM2103-FF.

FIGURE C-3 Connected PRM2103-FF

Step 4 Connect CBL203-20 AUX to Model 831.

FIGURE C-4 Connected AUX

Step 5 Connect CBL203-20 Mic to Model 831.

FIGURE C-5 Connected Mic

Step 6 Connect CBL203-20 power to power source.

FIGURE C-6 Connected Power

Step 7 Connect ground.

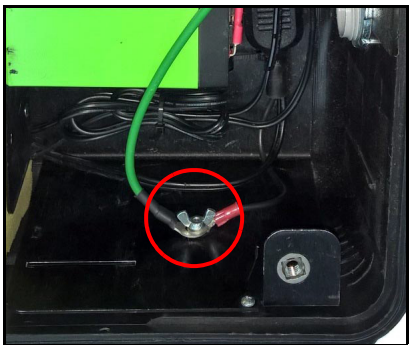

FIGURE C-7 Connected Ground

Step 8 Adjust cable length and tighten gland.

FIGURE C-8 Adjusted CBL203-20

Connecting SEN031 or SEN032 Sensors

To connect the SEN031 or SEN032 sensors, follow these steps:

Step 1 Identify or gather components, as shown:

			
Model 831	**SEN031 (shown) or SEN032**	**CBL167-20, with Cable Gland and ACC007 Stopper**	**DVX008A**

Step 2 Insert CBL167-20 through gland in case with ACC007 stopper so that the three-connector end is on the inside of the case.

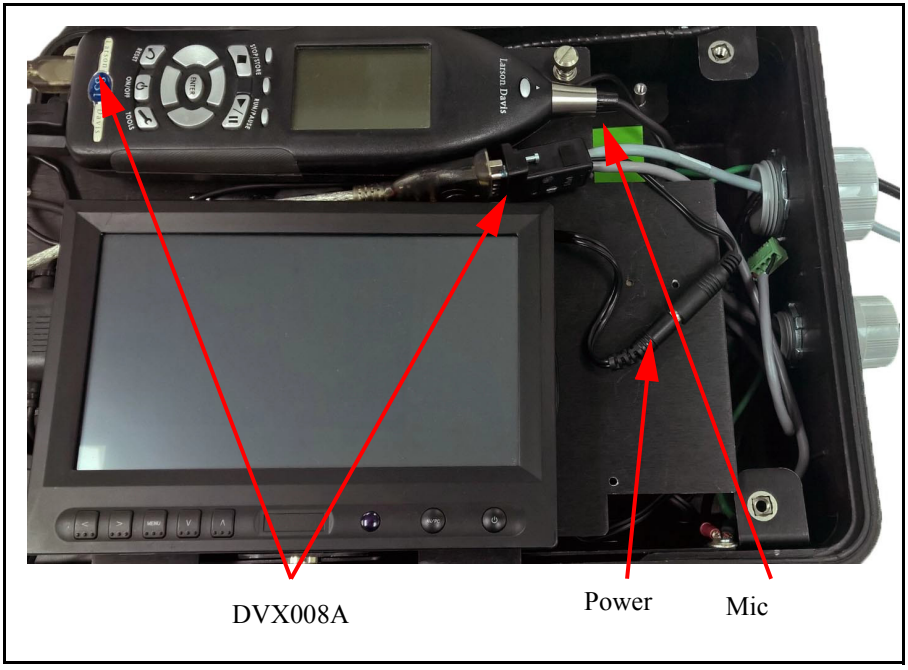

FIGURE C-9 Insert CBL167-20 through Gland

Step 3 Connect the other end of CBL167-20 to SEN031 or SEN032 weather sensor.

FIGURE C-10 Connected Weather Sensor

Step 4 Connect CBL167-20 to DVX008A.

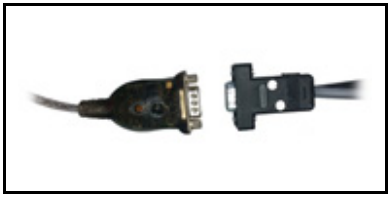

FIGURE C-11 CBL167-20 Connected to DVX008A

Step 5 Connect DVX008A to Model 831.

FIGURE C-12 Connected DVX008A

Step 6 Connect CBL167-20 to 12 VDC power (spare DC power plugs are included inside case)

FIGURE C-13 Connected Power

Step 7 Follow the instructions in the weather station manual to locate the screw terminals on SEN031 or SEN032 and insert jumpers as follows:

- HTG- to VIN-
- HTG+ to VIN+

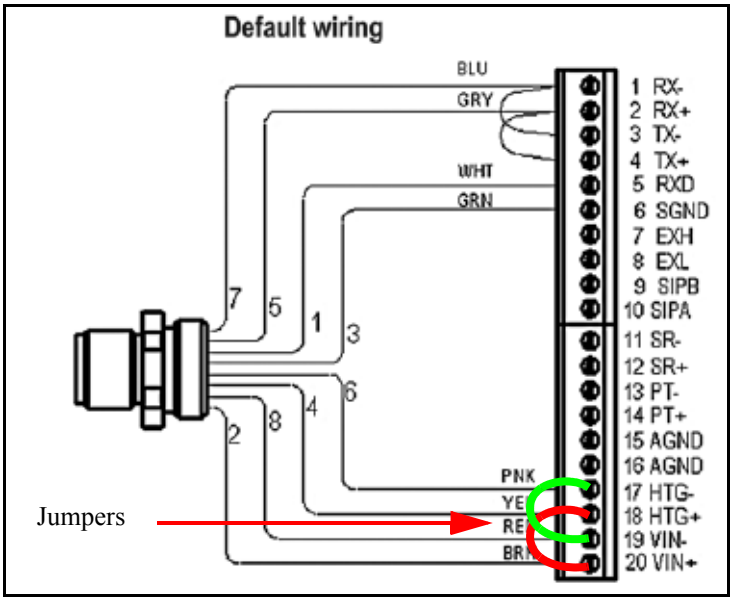

FIGURE C-14 Wire Jumpers

Step 8 Adjust cable length and tighten gland.

FIGURE C-15 Adjusted CBL167-20

Step 9 Setup SEN032 or SEN031 heater control in the Model 831, as follows

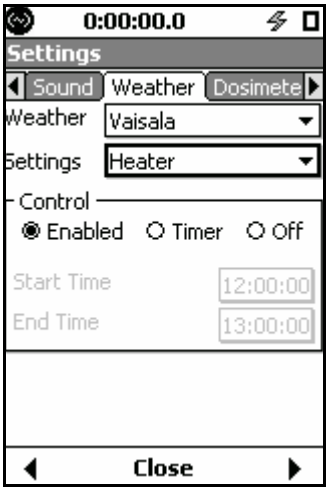

FIGURE C-16 Heater Setup
Vaisala® is a registered trademark of Vaisala Corporation.

- **Enabled** (shown above): the heater turns on or off automatically depending on the ambient temperature.The **Start Time** and **End Time** are dimmed.
- **Timer**: Makes the **Start Time** and **End Time** available for turning the heater on or off, respectively. Times are shown in 24-hour notation.
- **Off**: Keeps the heater always off. The **Start Time** and **End Time** are dimmed.

For more information on heater and weather settings, see the Model 831 and SEN031 or SEN032 manuals.

Connecting to Alternative 12 VDC Power (e.g. Solar)

To connect to alternative 12 VDC, follow these steps:

Step 1 Identify or gather components, as shown:

			
Model 831 and NoiseTutor Software	**CBL204-10**	**Cable Gland with ACC007 Stopper**	**Alternative 12 VDC Power Source**

Step 2 Insert CBL204-10 through gland in case with ACC007 stopper, as shown in Step 1.

Step 3 Disconnect NoiseTutor internal battery.

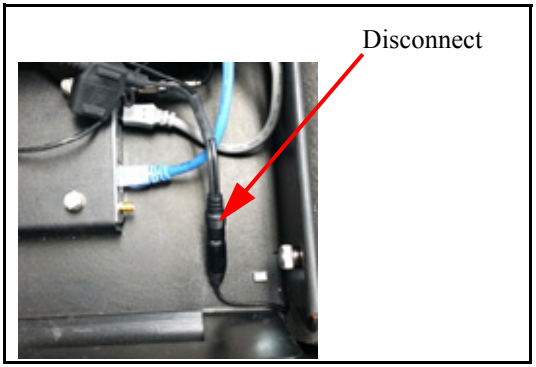

FIGURE C-17 Disconnect Battery Cable

Step 4 Connect CBL204-10 to available power connector in NoiseTutor.

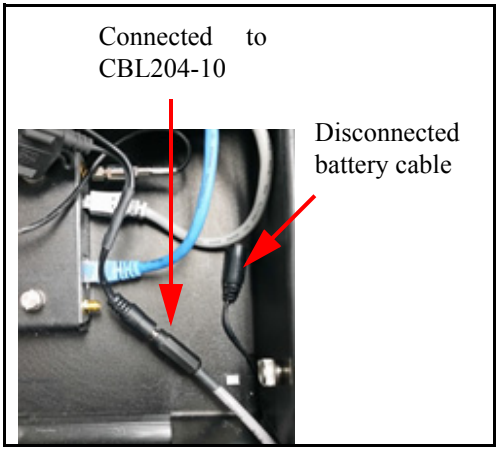

FIGURE C-18 CBL204-10 Connected to NoiseTutor

Step 5 Connect CBL204-10 to battery or other 12V power supply.

Step 6 Adjust cable length and tighten gland.

FIGURE C-19 Adjusted CBL204-10

Step 7 Turn on the Model 831 and press the (TOOLS) key and then select **System Properties**. Select the **Power** tab and set **External Shutoff Voltage**. For 12 V SLA batteries, set **10.8** V. For Lithium Iron Phosphate batteries, set **12.0** V.

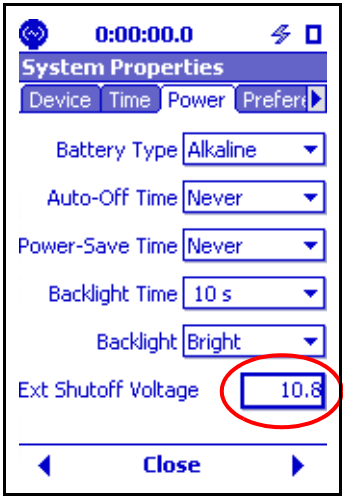

FIGURE C-20 Shutoff Voltage on Model 831

The PC requires connection to the Model 831 and LS300 modem, therefore it must shutdown prior to the Model 831 and LS300 shutting down. This is why the NoiseTutor shutdown voltage is higher than the Model 831.

Battery Type	NoiseTutor	Model 831	LS300
Internal Green K2 12.8 V LiFePO3	12.4 V	12.0 V	120 (0.1 V)[a]
External 12 V Lead Acid	11.0 V	10.8 V	108 (0.1 V)

Table C-1 Shutdown Voltage Values

a. LS300 requires the shutdown voltage to be entered in values of 1/10 volt, see FIGURE C-22

Step 8 Open NoiseTutor software on the PC and click **Setup** > **System**. On the **System Setup** dialog box, specify the low-voltage threshold for shutting down the PC. Refer to Table C-1 for value.

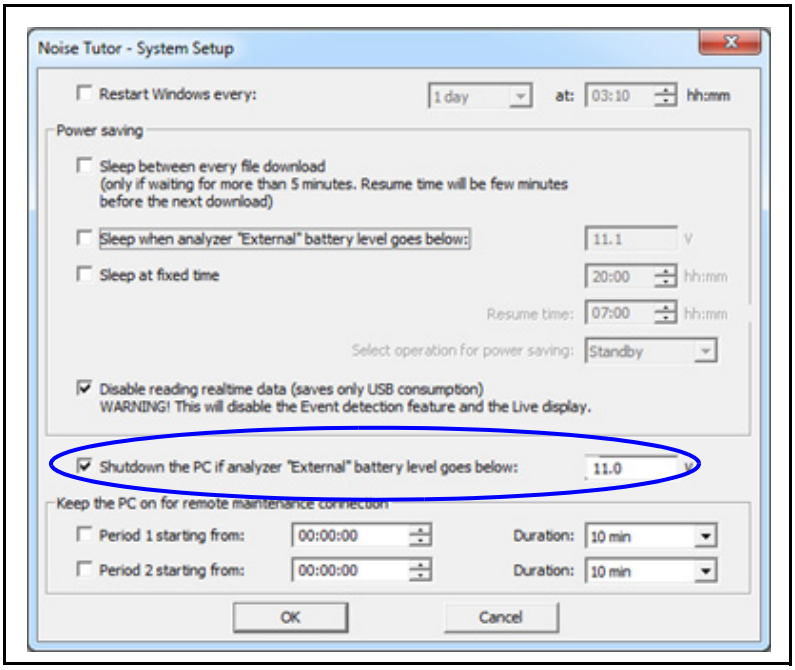

FIGURE C-21 Shutoff Voltage for PC

Step 9 Open the ACEmanager web page for the LS300, navigate **Services > Low Power.** Specify the low-voltage threshold for shutting down the LS300. Refer to Table C-1 for value.

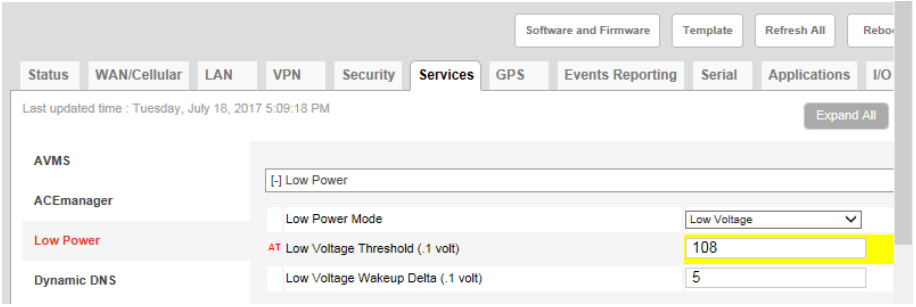

FIGURE C-22 Shutoff Voltage for LS300

Connecting to GPS001

To connect to alternative 12 VDC, follow these steps:

Step 1 Connect GPS001 USB to Model 831 USB-A input.

Step 2 Position GPS001 on top of unit for best reception.

FIGURE C-23 GPS001 Position

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