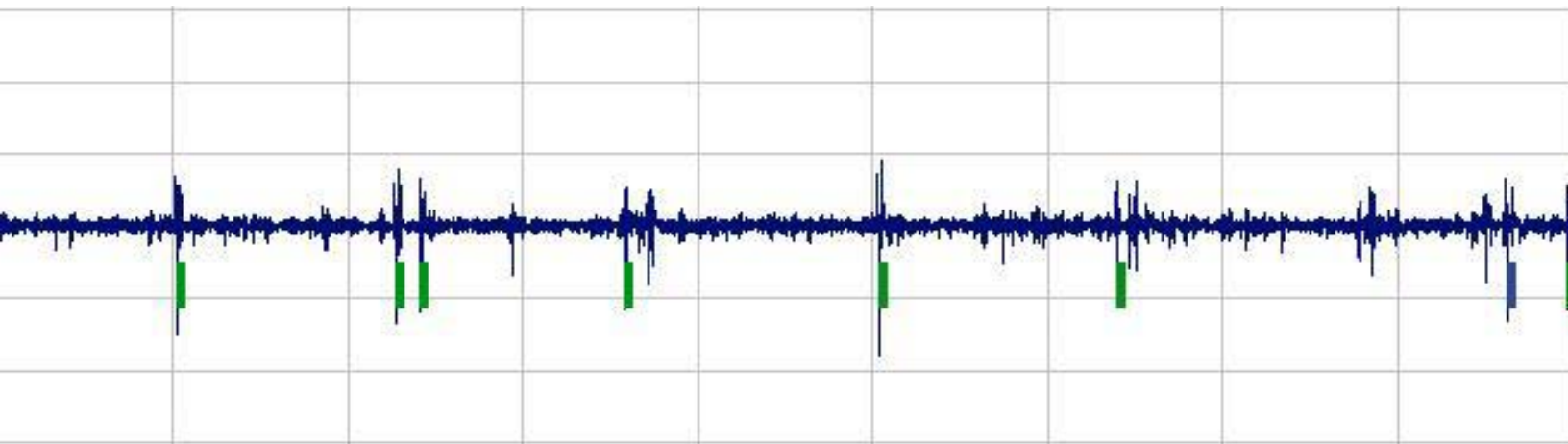


Quick Start Guide

SoundCTRL version 1.0

*For Ultrasonic Inspection and
Equipment Condition Analysis*



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Sound**CTRL** System

Quick Start Guide

Rev. 121505

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SoundCTRL Quick Start Guide

INTRODUCTION

Thank you for purchasing CTRL Systems' SoundCTRL System. This system will allow you to preserve, compare, diagnose, manage, and report critical information relating to key components and systems in your facility.

CTRL recommends that you take a few moments to review this Quick Start Manual and to refer back to it as needed. If used regularly with the CTRL UL101 ultrasonic inspection kit as part of a PdM program, the life expectancy and performance of critical equipment can be improved, and many unnecessary costs avoided. Additional information can be found online at <http://www.ctrlsys.com/community> or in the SoundCTRL software **Help** menu.

SoundCTRL Features

- Handheld system with desktop PC integration.
- Ultrasonic signal capture (20 sec. per recording) and automatic waveform display.
- User-assigned equipment ID field for easy component tracking and file retrieval.
- Automatic date and time stamp on files for easy tracking and retrieval.
- Comment fields for storing critical equipment info such as operating condition and test settings.
- Root mean square (RMS) calculation and reporting capability.
- Course and fine crackle counts indicate potential component faults.
- User-friendly menus and controls.

Requirements

- Pocket PC Device (included)
- SoundCTRL Software, Pocket PC and Desktop Versions (included)
- UL101-Pocket PC Connector Cable and Y-Splitter (included)
- CTRL UL101 Receiver and Headset
- Windows based PC

Important Registration Info

To obtain full use of the SoundCTRL software for the Pocket PC, the software must be registered. To register, complete the registration card that was included with the software and return it to CTRL, or register online at www.ctrlsys.com/community. To register properly, the Device ID number must be provided to CTRL. This number can be found in the "Registration Dialog" box that appears when using the Pocket PC SoundCTRL software. Please note, the Serial License Numbers provided with the software are not Device ID numbers.

SoundCTRL SETUP

Steps to Installation

1. Install Microsoft ActiveSync on your Desktop PC.
2. Establish a proper connection to your Pocket PC device.
3. Install Pocket PC Software
4. Install Desktop PC Software
5. Register Software
6. Make a backup of the Pocket PC

Microsoft ActiveSync Installation

Before installing the SoundCTRL software on your Pocket PC device, you must first install Microsoft ActiveSync on your Desktop PC, and establish a connection to your Pocket PC device. You will find the installation CD-Rom along with your Pocket PC manuals inside of the Pocket PC box. For details on the installation of ActiveSync, refer to your Pocket PC documentation.

Establishing The Proper Connection To Your Pocket PC

You must be sure that files are synchronized whenever the Pocket PC is placed into the cradle. This should have been set during the Microsoft ActiveSync installation. To be sure, do the following:

1. Open the Microsoft ActiveSync software on your desktop.
2. Click the "Options" tab to open the options window (Figure A).
3. Make sure the "Sync Options" tab is selected.
4. Make sure the checkbox next to Files is checked.
5. Click the "OK" button.

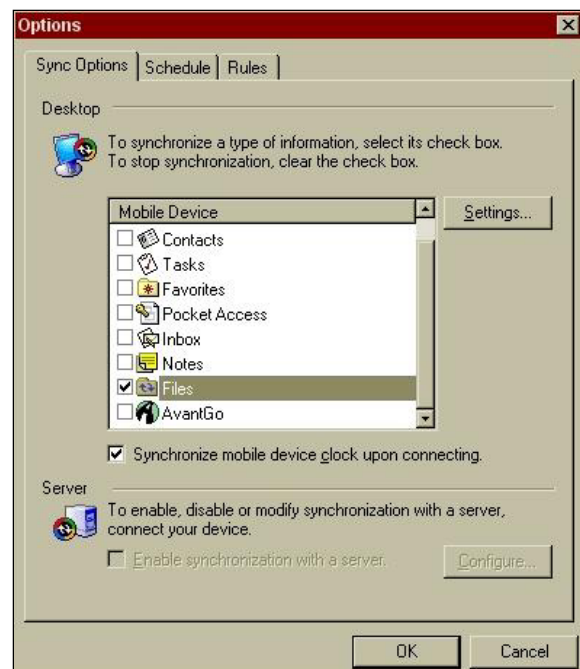


Figure A

Pocket PC Software Installation

1. Connect your Pocket PC to the Desktop PC* via the USB cable or cradle when prompted by the Active Sync setup. (Refer to your Pocket PC documentation for more information on establishing a connection to your Desktop PC with ActiveSync.)
2. Run the SoundCTRL installation program, "SoundCTRL_PPC_Setup.exe", located on the SoundCTRL CD.
3. Follow the prompts to install software (see Figure A.1 below.)

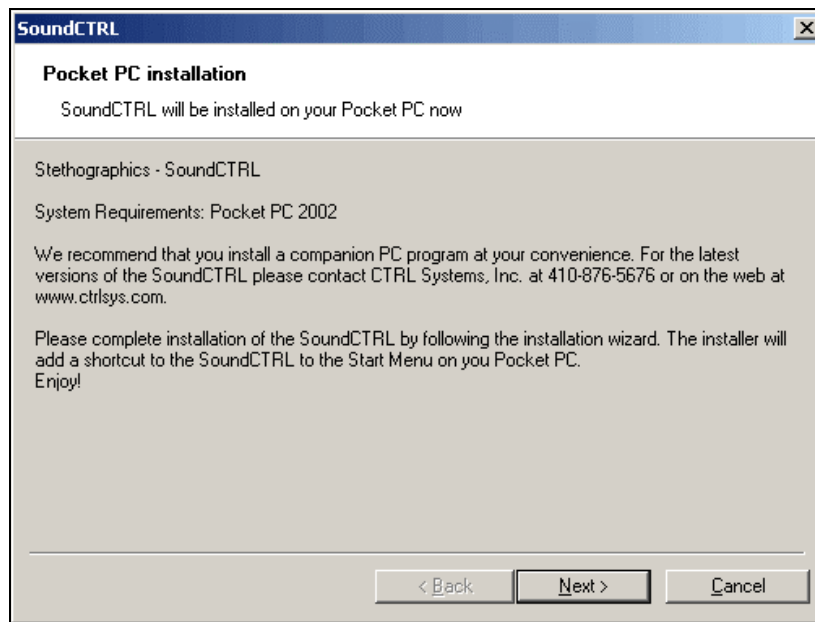



Figure B.1

4. On your Pocket PC, set the Automatic Gain Control by selecting **Settings** from the Pocket PC Start menu. Click the **System** tag at the bottom of the Settings screen, and then select **Microphone**. Adjust the settings to match those in Figure B (right), and then tap the  icon in the upper right corner of the screen. Make certain that automatic gain control is Disabled.
5. Optionally, you may set SoundCTRL as the default program tasked to the record button under **Buttons** within the Pocket PC **Settings, Personal** tab.

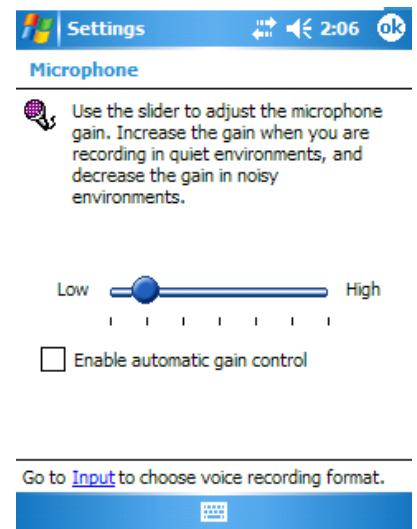


Figure B

* Special Note: All references to Desktop PC are inclusive of Notebook and Tablet PCs.

Desktop PC Software Installation

To install the Desktop PC version of SoundCTRL, simply run the PC SoundCTRL installation program, "SoundCTRL_Setup.exe", located on the SoundCTRL CD. Follow the prompts (see Figure C below).

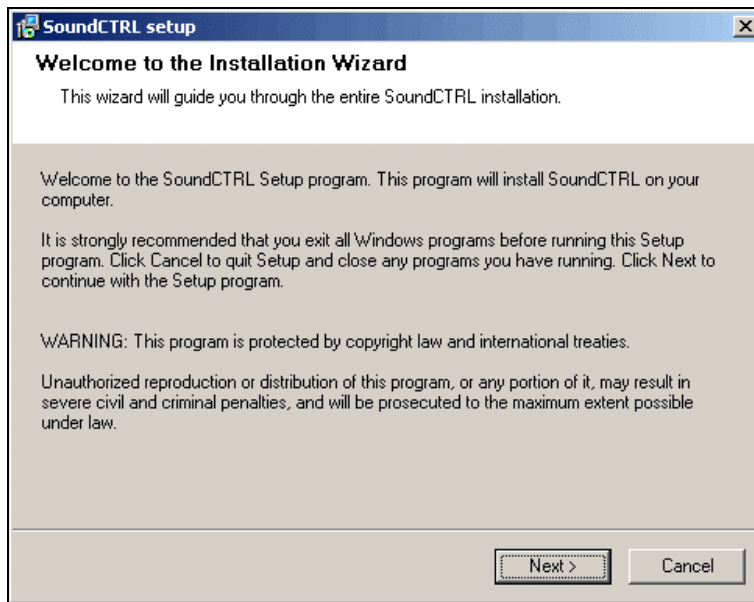



Figure C

Registering Your Software

1. Open SoundCTRL on the Pocket PC Device.
2. Tap the "File"< "Record..." button or tap the record button .
3. A screen will appear that shows the Pocket PC Device ID and asks for an Unlock Code.
4. Write down the Pocket PC Device ID
5. Go to www.ctrlsys.com/community *
6. Click the "CTRL Product Registration" button at the bottom of the left navigation menu.
7. Create a user profile for yourself.
8. Enter the Pocket PC Device ID in the Product Information window (Figure C.1 below) as well as other pertinent product information.
9. Click the "Submit" button.
10. Confirmation of your user status and an unlock code will be emailed to you

Product Information

Date of Purchase (Date format YYYY-MM-DD)

Products Purchased CTRL UL101 Kit SoundCTRL
 CTRL CMMS PowerBeam 300

CTRL UL101 Inspection Kit

UL101 Receiver SN

UT2000 Transmitter SN

PowerBeam 300 SN

SoundCTRL

Desktop PC Device ID (To locate the Device ID, refer to the "Registration Dialogue" box within the software.)

Pocket PC Device ID

FIGURE C.1

Making a Backup of Your Pocket PC

In addition to keeping the PDA charged, it is important to regularly backup your data on the PDA and store a copy of this backup on your PC. This will ensure that, in the event your PDA should lose battery power, you will be able to immediately restore your SoundCTRL. You should make the first backup of the complete system after successfully registering the SoundCTRL system. To backup the PDA perform the following steps:

1. From the Main Pocket PC screen, select Start > Programs.
2. Select Data Backup from the Programs screen.
3. Make sure that the Backup tab at the bottom of the screen is selected, and that all the folders atop the screen are checked.
4. Tap the ellipsis (...) square next to the File input.
5. Choose a name for the backup, for example "backup-9-20-03".
6. Verify the Location and Folder to which the backup will be made. If you are saving the backup to Main Memory, it is important to make a copy of this backup file on your PC. In the event the PDA should lose power, any data stored in Main Memory on the PDA could be lost.
7. Tap OK.
8. Tap the Backup... button.
9. Tap the Start button to begin the backup process.
10. After completing the backup, locate the file, and using ActiveSync, copy the file to a safe location on your PC.

This process should be carried out periodically, or any time you make a significant change to your PDA.

Planning

Before using your SoundCTRL software for the first time, you should take a moment to consider the ways in which you will want to categorize your equipment and the components for which you plan to build a library of recordings.

The SoundCTRL software bases the organization of your recordings on the **Equipment ID** entered at the time of recording. The Equipment ID field should contain specific information about the piece of equipment under test and, if applicable, the specific component being tested. This may be a bearing, valve, gearbox, etc. Optionally, the location of this piece of equipment may also be stored within the Equipment ID field. The exact meaning of this will depend on your organizations needs. This could refer to anything from geographical location of a plant to a specific building or floor where the equipment resides.

Once these two fields have been specified, each recording is stored in a folder, which is named based on the data entered in these fields. The folder's name will be based on the **Equipment ID** and each recording for that piece of equipment at that location will rest in that folder. The recordings will be individually named based on their Equipment ID and the Date and Time of the recording.

The remaining two information fields are labeled **Comment** and are for more general use. It is recommended that one of these be used to record the specific settings of the UL101 at the time of the recording. The other could then be used to record information about the condition of the equipment, operator's observations, or other useful information.

USING THE POCKET PC SOUNDCTRL SOFTWARE

Recording and Displaying Equipment Sounds with the CTRL UL101 and SoundCTRL

To record the sounds being produced by a component on a piece of equipment, follow the steps below.

1. Connect the SoundCTRL device to the UL101 Receiver with the UL101-Pocket PC Cable Connector as shown below (Figure D).



Figure D:

1. Connect one male end of the Connector Cable to the Pocket PC (refer to markings on cable that identify proper end)
2. Connect the other male end of the Connector Cable to one of the female ends of the Y-Splitter
3. Connect the Headset cord to the other female end of the Y-Splitter
4. Connect the male end of the Y-Splitter to the Base of the UL101 Receiver.

Special Note: The UL101 Headset is not designed for use with the PDA / Pocket PC. **Do not attempt to plug the Headset directly into the Pocket PC.**


2. Turn on the Pocket PC, and start the SoundCTRL software by selecting it from the **Start** menu.
3. Press the left side of the directional pad (Figure E) on your device, or tap the record icon  to begin a new recording. This will bring up the recording information window (Figure F).



Figure E

4. Enter the **Equipment ID** and any recording information such as UL101 settings, equipment operating speed, or other observations in the **Comments** fields.

Special Note: In order to easily retrieve, track, and sort files later, use care to enter information accurately into each field as files are saved according to the **Equipment ID** entry.







5. Make sure the UL101 is properly set to begin recording, then tap the  button, or press the center of the directional pad to begin recording.
6. After 20 seconds of good recording has taken place, tap the stop icon  or press the right side of the directional pad to stop the recording process.
7. When prompted, tap the **Yes** button to save your recording.
8. The waveform display of the recording will display automatically.



Figure F

Replaying and Viewing Saved Files on the Pocket PC

1. To view a previously recorded signal, start the SoundCTRL software by selecting it from the **Start** menu.
2. Connect a headset to the Pocket PC device. Ordinary stereo headphones are best for this purpose; **the UL101 headset is not designed for this use.**
3. To load a recording, tap the “Open File” icon  or choose the “Open...” option from the **File** menu. You will find individual recordings located in folders named by the **Equipment ID** (see Figure G at right).
4. Once a recording has been loaded, tap the “play” icon , or press the center of the directional pad to begin playing the sound. To stop playback, tap the “stop” icon , or press the right side of the directional pad.
5. To review the recording information for a sound once it has been loaded, tap the “information” icon. 

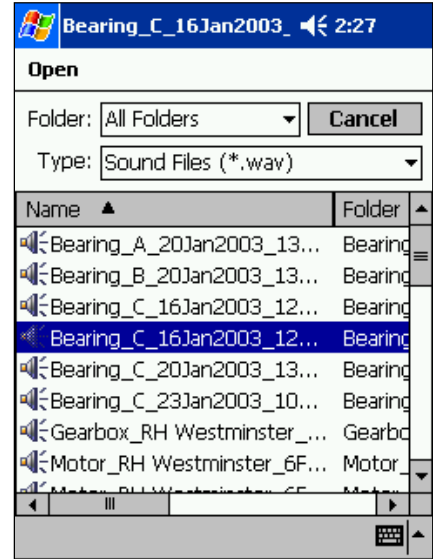




Figure G

Replaying and Viewing Saved Files on the Desktop PC

1. After Pocket PC files have been synchronized (see page 7 for synchronization steps) with the Desktop PC, open the SoundCTRL software by double clicking the  icon on your desktop or by selecting it from the **Start** menu.
2. Connect a headset to the Desktop PC or make sure that the PC’s speakers are turned on. Ordinary stereo headphones are best for this purpose; **the UL101 headset is not designed for this use.**
3. Follow the steps for replaying and viewing saved files on the Pocket PC above.

Analyzing Equipment Sounds

The SoundCTRL software has the capability to identify and flag some types of sound characteristics that may indicate trouble. These sounds are referred to as fine and coarse crackles. To check for the presence of crackles in a recorded signal, tap the analysis icon , or select **Analyze Sounds** from the Tools menu. This will cause the software to report the RMS value over the recording, as well as the number of fine and coarse crackles per second.

Special Note: The presence of these types of sounds may be perfectly normal in many types of equipment. For example a mechanical pocket watch produces a “fine crackle” at every tick. Refer to the SoundCTRL FAQ at www.ctrlsys.com/community or the SoundCTRL Help menu for more information.

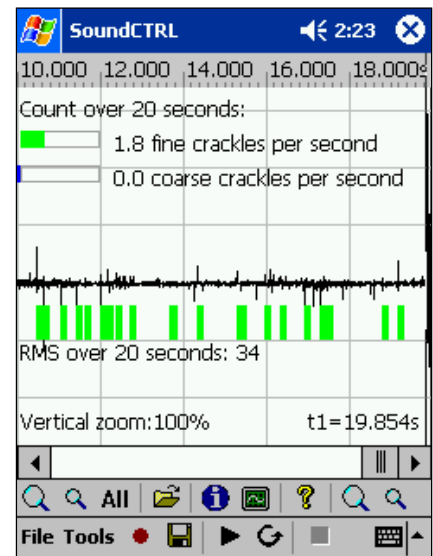


Figure H

Automatically Synchronizing the PC and Pocket PC

To make the most of the SoundCTRL software, you will want to automate the process of synchronizing data between the Desktop PC and Pocket PC. Microsoft ActiveSync provides a built-in mechanism for synchronizing folders. Each time you connect your Pocket PC to your Desktop PC (via the cradle), the ActiveSync software will check for new data to synchronize.

To synchronize:

1. Clicking the **Options** icon on the Desktop PC (Figure I) will allow you to establish which types of data should be automatically synchronized between PC and Pocket PC.
2. Click the **Files** checkbox, as shown (Figure J). ActiveSync will then notify you that a Synchronized Files Folder has been created in which you should place all of the files you wish to synchronize. This folder is, by default, located under your “My Documents” folder and is called “Pocket_PC My Documents”.
3. In order to maintain free space on your Pocket PC for future recordings, you should establish a separate folder for storing SoundCTRL files on your Desktop PC. This file can be set up in a location of your choosing. After new recordings from the Pocket PC are synchronized with ActiveSync onto the Desktop PC, you should move these files from the “Pocket_PC My Documents” folder to the new file. This will enable you to maintain a history of recordings.

Further information on using ActiveSync can be obtained by referring to the ActiveSync documentation.

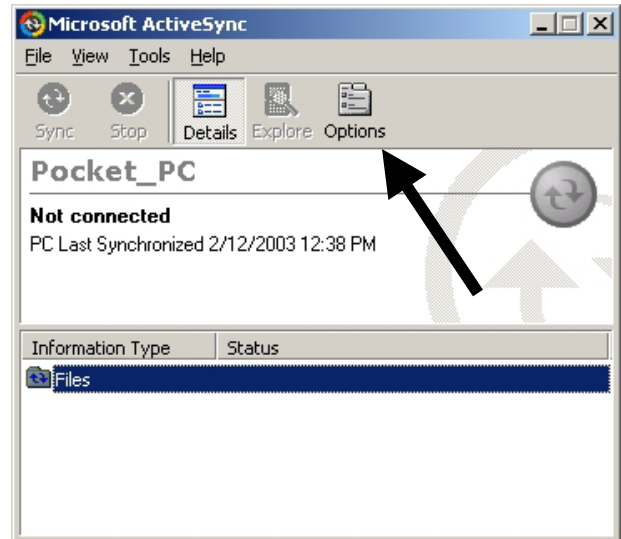


Figure I

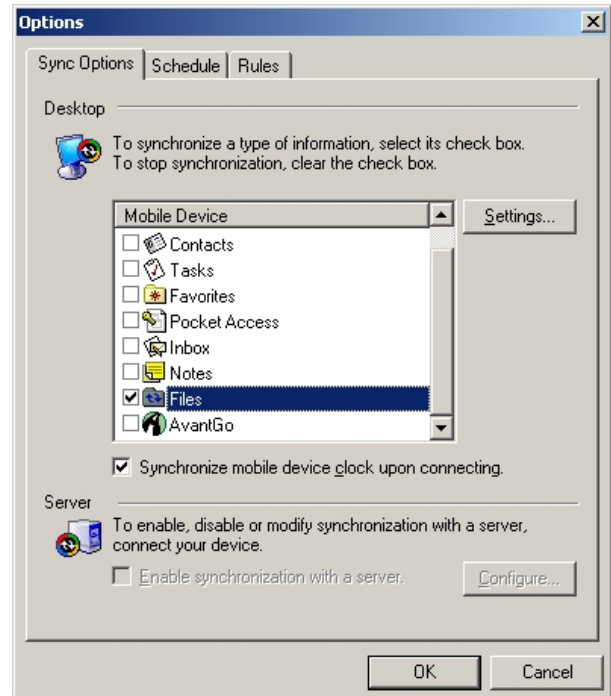









Figure J

Contacting Support/More Information















If you have difficulties installing or operating the SoundCTRL software, you can refer to the **Help** menu in the software, visit <http://www.ctrlsys.com/community>, or contact CTRL Systems support via email at support@ctrlsys.com.

SoundCTRL ICON and SHORTCUT KEY DEFINITION

Icons on Pocket PC *and* Desktop PC Software Version

 Expand Sound Vertically (“Alt” + “=”)	 Stop Playing/Recording (“Spacebar”)
 Collapse Sound Vertically (“Alt” + “-”)	 Open an Existing File (“O”)
 View All Sound (“Ctrl” + “A”)	 View Recording Information (“I”)
 Record (“R”)	 Analyze Sounds
 Save (“S”)	 Help
 Play Sound (“P”)	 Expand Sound Horizontally (“Ctrl” + “=”)
 Play in a Loop (“L”)	 Collapse Sound Horizontally (“Ctrl” + “-”)

Icons on Desktop PC Software Version

 Default Vertical Zoom
 View Spectrogram Display (“H”)
 View Waveform Display (“W”)
 Trim Sound Outside Highlighted Interval (“Ctrl” + “T”)
 Substitute Highlighted Interval by Silence (“Ctrl” + “E”)
 Normalize Sound to 100% (“Ctrl” + “N”)
 Digital Bandpass Filter
 Print
 Save As
 Cut
 Copy
 Paste
 Undo
 Default Horizontal Zoom