

Computer Sound Card Interface ELK-129



*Exceeding Expectations with Quality,
Innovation & Affordability*

ELK-129

Allows a sound card equipped Personal Computer to be used for programming ELK's Recordable Voice Annunciators.

VERSION 2.0

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General Information

APPLICATION

The ELK-129 Computer Sound Card Interface allows a sound card equipped PC to be used as a programmer for ELK's Recordable Annunciators such as the ELK-120, ELK-124, and more. The included shareware software program **Cool Edit™** processes computer sound files for use with the ELK-129.* The ELK-129 then "downloads" the processed files to the Recordable Annunciator. Finished messages can be saved on your computer's hard drive for re-use.

FEATURES

- Built-in 12V Power Supply for Programming
- Channel Selector and Power Switch
- Audio Jacks for Sound Card and Speakers
- Plug-In Cable for Quick Connections to Voice Annunciator
- Includes 6 foot Shielded Cable for Speakers
- Compact Plastic Case

REQUIREMENTS

- Requires Windows 3.1 or higher, 386 processor or better, 4MB RAM, 2MB Hard Drive Space, Stereo Sound Card (Recommended 16-Bit)
- Requires 12V, 20VA AC Transformer

SPECIFICATIONS

- Supplies 12Vdc @ 1 Amp. Max. for Recordable Annunciator
- Approx. Size: 4.4" x 3" x 1.15"
(111.8mm x 76.3mm x 29.2mm)

ORDERING INFORMATION

ELK-129 Computer Sound Card Interface

* **Cool Edit** is a Trade Mark of **Syntrillium Software Corporation, P.O. Box 60274, Phoenix, AZ 85082-0274**. This program is **shareware** and requires a **\$50** registration for the full version, or **\$25** for the Lite version.

Software Installation

PLEASE READ THE ENTIRE MANUAL BEFORE STARTING THIS INSTALLATION. *Note: This manual assumes a sound card has already been installed in the computer and is functional. If you have not yet installed the sound card hardware and software, stop the ELK-129 installation and install them now. If you do not know how to adjust the volume of your sound card, stop and read your sound card's documentation to find out. Your sound card's volume should be set to the half-way mark before continuing.*

Insert the ELK-129 Installation disk into your 3 1/2" floppy drive and run **SETUP.EXE** as follows:

Windows 3.1: In Program Manager, click on the **File** menu. Under the **File** menu, select **Run**. Type in **A:\SETUP (or the correct disk drive letter for your 3 1/2" floppy)**, then click on **OK**.

Windows 95: Click on the **Start** button in the left corner of the status bar. Then click **Run** and type in **A:\SETUP (or the correct disk drive letter for your 3 1/2" floppy)**, then click on **OK**.

The Setup program will guide you through the installation. Normally, you should choose the default directory suggested by setup, but you may change the drive and / or directory, if needed. Once setup has finished, find the new program group labeled Cool Edit. Double-click on the **Cool Edit** icon to start Cool Edit. Read the license agreement, click on **File Exit**, then Press **OK** to get past the registration screen. To test Cool Edit, click on the **File** menu, then click **Open** and double-click on the **ELK120** directory. You may need to double-click on the **COOL** folder first, if you are not already in this directory (the product folder(s) is located beneath the **COOL** folder). You should see the channel one and channel two default message files there (**ch1.wav** and **ch2.wav**). Click on one of these files and then click **OK**. Once the file has loaded, you should see a graphical representation of the recording, similar to Figure 1. Click on the **Play** button to hear the file. If you do not hear the file play, check the volume settings of you sound card. If your sound card came with a "mixer" program, make sure all of the sliders or knobs are turned up and no outputs are muted.

If you have determined that the volume control is turned up and you still don't hear the file when you click on **Play**, check to make sure your speaker cable is plugged into the correct jack on the sound card and on the speakers themselves. Also, make sure the speakers are turned on (amplified speakers only), and that their volume is turned up. Make sure that they have good batteries or are connected to a power adapter (and that the adapter is plugged into the AC).

Software Installation *Continued*



Figure 1.

Hardware Installation

The hardware installation requires the following supplied items:

- 1 - ELK-129 module (see Figure 2)
- 1 - 1 foot, 5-pin ribbon cable
- 1 - 6 foot shielded audio cable

You will need the following items, which are not supplied:

- 1 - 12V, 20VA transformer
- 1 - Length of 2-conductor (zip cord) wire for connection of the transformer
- 1 - computer with 16-bit stereo sound card
- 1 - pair of **self-amplified** speakers (headphones and non-amplified speakers may interfere with the ELK-129)
- 1 - Recordable Annunciator (ELK-120, ELK-124, etc.) and an 8 ohm speaker for playback of the recorded messages (if required)

Hardware Installation *Continued*

Refer to Figures 2 and 3 when making the following connections:

1. Strip the ends of the 2-conductor wire and connect one end to the 12V, 20VA transformer and the other end to the AC terminals on the ELK-129 (located under the cover). Plug the transformer into an AC receptacle and move the power switch to CH1, then to CH2. The red Power LED (D5) should come on for both positions. This confirms the power connections to the ELK-129. Return SW1 to the center "OFF" position. **Note: Always be sure SW1 is off before making any connections to the ELK Recordable Annunciator or the ELK-129 interface.**

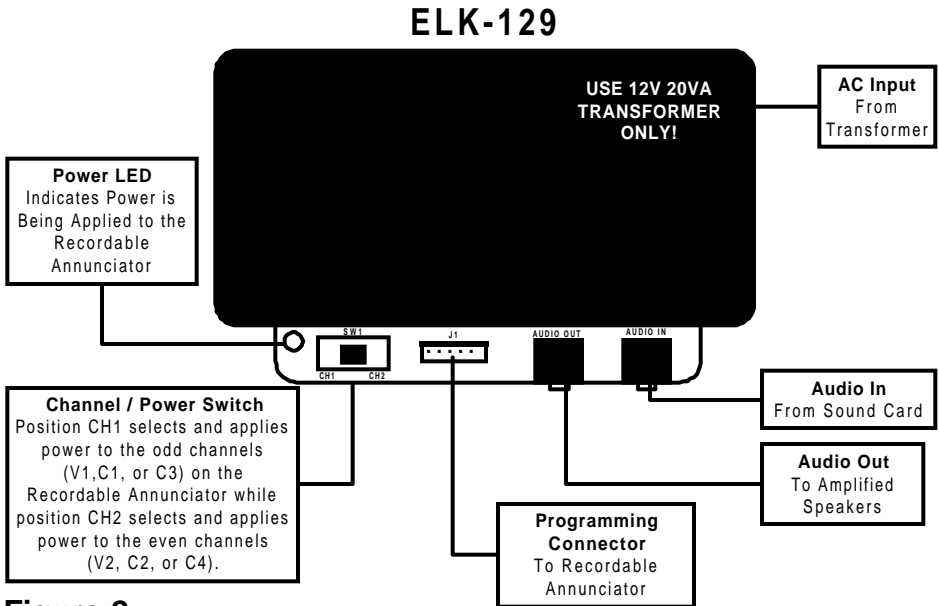


Figure 2.

2. Plug the 5-pin ribbon cable onto the polarized connector J1 on the ELK-129. Plug the other end onto the Programmer input of the Recordable Annunciator. Refer to the Recordable Annunciator instruction manual if there is more than one programmer input connector.

3. Remove the audio cable from the back of the amplified speakers and plug it into the **AUDIO IN** Jack on the ELK-129. Plug one end of the supplied 6-foot shielded audio cable into the **AUDIO OUT** Jack. Plug the other end of this cable into the amplified speakers, where the first cable was originally plugged. If your speaker cable is wired directly to the speaker with no jack, plug the speaker cable into **AUDIO OUT** and connect the 6-foot shielded cable between the sound card and **AUDIO IN**.

Hardware Installation *Continued*

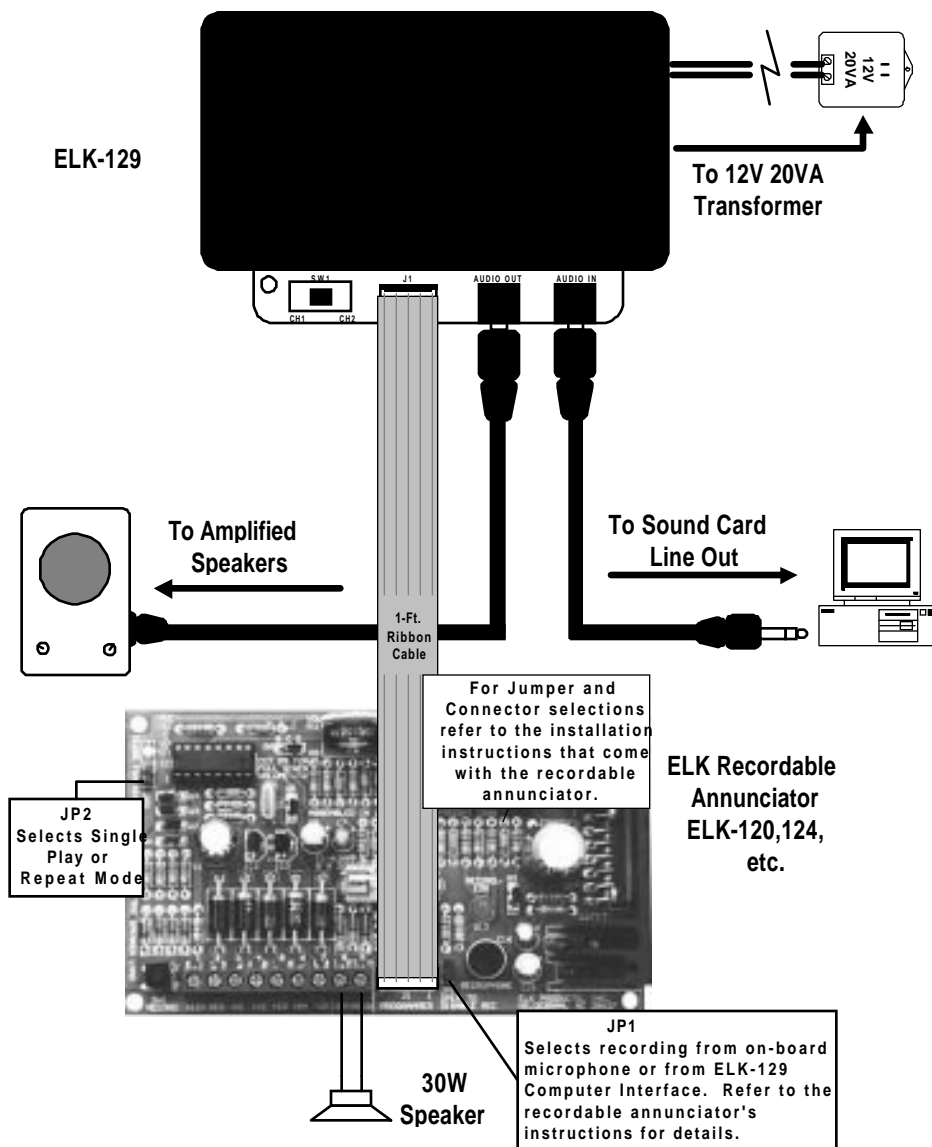


Figure 3.

Jumper JP1 should be set for recording from ELK-129 (mic. disabled)
Jumper JP2 should be set to the “Repeat” mode (single play disabled).

Hardware Installation *Continued*

4. Connect a speaker to the speaker terminals of the recordable annunciator.

Warning: Protect your ears! Adjust the annunciator's volume control to a minimum level before turning on the ELK-129!

5. Disable the on-board microphone on the recordable annunciator. This prevents room noises from being recorded. Make sure jumper JP2 is set to "Repeat" mode (single play disabled).

6. Find a clean location on your desk for the sound card interface and the recordable annunciator. To prevent short circuits, keep the units away from metal surfaces while power is applied. The computer's monitor is a potential source of noise, so keep both units as far away from the monitor as possible.

7. Place SW1 on the ELK-129 to the CH1 position. Adjust the recordable annunciator's volume control until you hear the default channel 1 message at a comfortable level. If channel 1 has been erased, you may not hear anything at all.

8. Once you have confirmed that the recordable annunciator and the sound card interface are properly connected, you are ready to begin the programming process (you may turn off CH1 for now).

Programming

Your First Programming Session

NOTE: This section explains how to program an ELK-120. For other ELK Recordable Annunciator models it will be necessary to substitute the names for files, scripts, switch, and jumper settings as appropriate. Please refer to the installation instructions that accompany the recordable annunciator.

If you have completed all of the hardware and software installations, you are ready to program your first unit. If Cool Edit is not running, start the program now.

In the following steps, you will use the factory default ELK-120 Channel One and Channel Two wav (sound) files (supplied by the setup program) to help you set the proper volume levels. Cool Edit will be used to add a control track to the left channel of both wav files. A special script file (similar to a macro or batch file) has been included to automate this process.

1. Click on the **File** menu and select **Open**. In the Directories window, double-click on the **ELK120** directory.
2. In the **File Name** window, click on the **ch1.wav** file, then click on **OK**.
3. When the file has finished loading, you should see a screen similar to Figure 4.
4. Click on the **Options** menu, then select the **Cool Scripts / Batch Process...** submenu (see Figure 5).



Figure 4.

Programming *Continued*



Figure 5.

4. In the Cool Scripts window, click on **Open / New** (see Figure 6).

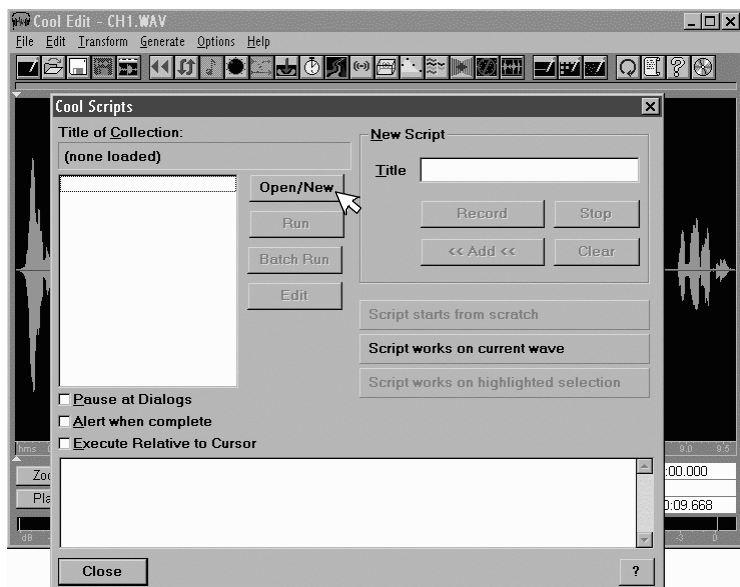


Figure 6.

Programming *Continued*

NOTE: All sound files must be properly formatted using a supplied automated "Script" file before they can be used by the ELK-129. This formatting is described as follows: If the sound file was a stereo recording, the left channel will be erased and replaced by a control track. If the sound file was a monaural recording, the file will be converted into stereo before the control track is embedded in the left channel. The control track is used to automatically trigger the record mode on the recordable annunciator. In addition to embedding a control track, the script also "pads" the beginning of the right audio channel with 30mS of silence (this prevents the beginning of your file from getting "chopped off" during programming). The remainder of the right channel (your sound file) remains unchanged. This process may sound complicated, but the script automates the entire process for you, allowing you to program with just a few button clicks!

5. In the **Directories** window, double-click on the **ELK120** directory (located under the **COOL** directory).
6. In the **File Name** window, click on the file **ELK120.SCP**, then press **OK** (see Figure 7).

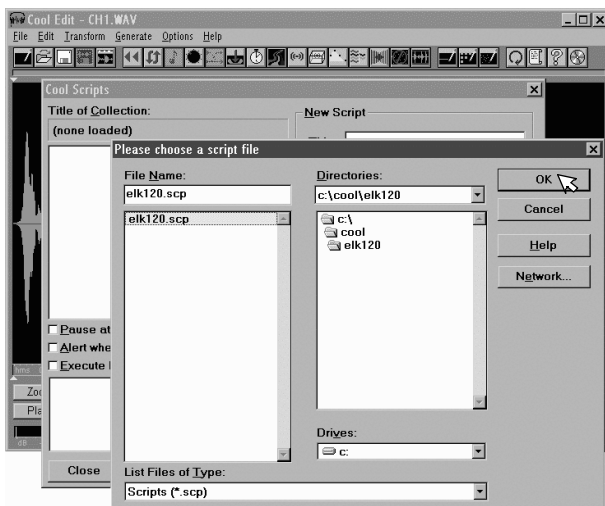


Figure 7.

NOTE: This section explains how to program an ELK-120. For other ELK Recordable Annunciator models it will be necessary to substitute the names for files, scripts, switch, and jumper settings as appropriate. Please refer to the installation instructions that accompany the recordable annunciator.

Programming *Continued*

7. Make sure the **Pause at Dialogs** and the **Execute Relative to Cursor** boxes are **not** checked. In the ELK Recording Utilities window, click on **Embed Control Track**, then click on **Run** (Figure 8). The ELK-120 Script will not run if any portion of the waveform has been "selected" (highlighted). If any of the waveform has been selected, press the Esc key to exit the script dialog box, then press Esc again to unselect the waveform.

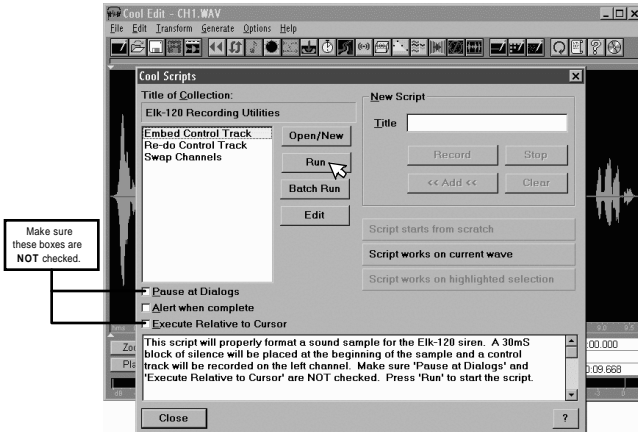


Figure 8.

8. When the script has finished, you should see two distinct waveforms, similar to Figure 9. The right channel has the original waveform (with 30mS of silence added to the beginning). The left channel should appear as a constant 20 Hz sine wave that runs the entire length of the recording. Your waveform has now been processed and is ready to be "downloaded"!

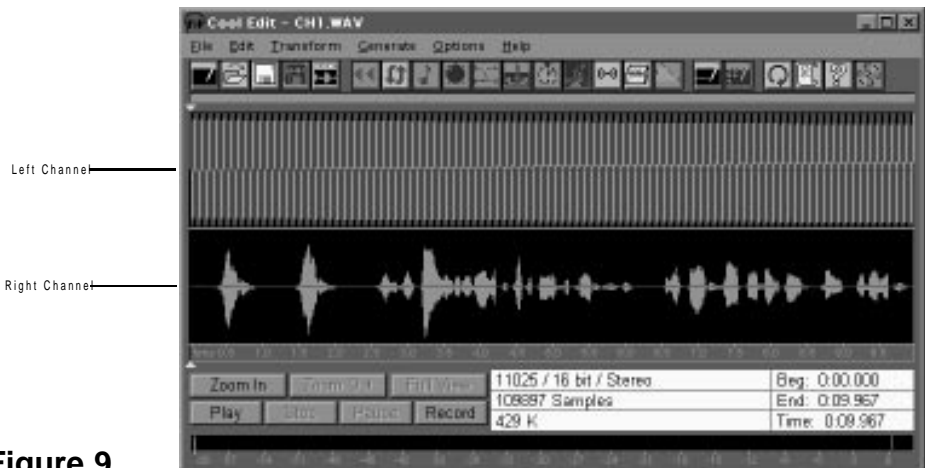


Figure 9.

Programming *Continued*

9. Set your sound card's volume to the half-way mark. Turn SW1 on the ELK-129 to CH1 (channel one's message should start playing). In Cool Edit, click on the **PLAY** button or press the spacebar to start playing **ch1.wav**. If the volume level is high enough, the **RECORD / EOM** LED on the recordable annunciator should come on solid, indicating the message is being recorded. If the LED does not come on solid while Cool Edit is playing the file, you will need to **increase** the volume of your sound card before trying again. If your volume is already set to maximum, see the Troubleshooting section for more help.

10. If the message sounds distorted during playback, try reducing your sound card's volume and repeating Step 9. To reduce distortion, use the lowest volume setting that will trigger the recordable voice annunciator. If the message still sounds distorted, try shifting the balance toward the left control track channel (if your card supports balance adjustment). You may need to run the "mixer" program that came with your sound card to do this. Do not shift the balance completely to the left (this mutes the right channel). If you are running Windows 95, you may see a small speaker icon in the right corner of the task bar. Double-click on this icon. The balance control will be directly above the Master Volume slider. Click on the center triangle shaped pointer and slide it to the left. If it does not slide, your sound card may not support balance adjustment.

11. When you have successfully programmed the message for Channel One, you may proceed to program Channel Two by placing SW1 on the ELK-129 to the CH2 position. Repeat Steps 1-10, loading the file **ch2.wav** instead of **ch1.wav**. Feel free to save the CH1 and CH2 processed files by selecting **File, Save As...** command. The **Save As** command will prompt you for a new file name, and keep the original file unchanged. Saving the processed files will keep you from having to run the script again if you wish to reload the default messages into another recordable annunciator.

12. Once you have mastered the programming process, try recording your own custom messages or sound effects with Cool Edit. With a little experimenting, you can build an impressive library of custom sounds and messages.

CAUTION: When recording your own messages, be careful not to exceed the maximum channel record time as specified for the particular recordable annunciator model. For example: On an ELK-120 do not exceed 10 seconds per message if you are using both channels. If Channel One goes over 10 seconds, Channel Two's message will be corrupted. If Channel Two goes over 10 seconds, playback will be erratic. If you are using only Channel One, you may record UP TO BUT NOT MORE THAN 20 SECONDS. Doing so will result in erratic behavior during playback!

NOTE: This section explains how to program an ELK-120. For other ELK Recordable Annunciator models it will be necessary to substitute the names for files, scripts, switch, and jumper settings as appropriate. Please refer to the installation instructions that accompany the recordable annunciator.

Troubleshooting

If you have followed all of the previous steps and still cannot get the recordable voice annunciator to program, here are some troubleshooting hints:

1. Make sure the audio file has been properly processed with the appropriate script. A properly processed file will look similar to **Figure 9** when loaded into Cool Edit.
2. Make sure the audio is getting to the ELK-129. When playing your audio file with Cool Edit, you should hear your file coming out of the RIGHT channel. You may only hear a 20 Hz buzzing or popping sound coming from the LEFT channel. Confirm this by plugging a pair of headphones that are marked with L and R into the **AUDIO OUT** jack. If your file is heard through the LEFT channel, you should run the **Swap Channels** script in Cool Edit. This will automatically swap the left and right channels in the audio file.
3. If you hear the audio coming from the correct channels, try increasing the sound card's output while playing the file in **Loop Mode** (select **Loop Mode** under the **Options** menu). This will change the **PLAY** button into a **LOOP** button. Pressing **LOOP** will cause the sound file to repeat endlessly, allowing you to adjust the volume to the proper setting. Once you find the correct setting, press **STOP** to end looping and prevent overrunning the time limit for channel one. If your volume is already at maximum, see if your sound card has a speaker output as well as a line output. If so, try the speaker output (this output should be capable of driving an un-amplified speaker).
4. If none of the above hints work, try manually pressing the annunciator's **RECORD** switch and clicking on **PLAY** at the same time. Shortcut: press the spacebar to start and stop playing, instead of clicking **PLAY**. If this works, you may have to use this manual method when programming. Some sound cards may lack the fidelity to reproduce the 20 Hz control track at a sufficient level. If the manual method does not work, then there may be a problem in the hookup or with one of the units.

Hints For Making Quality Recordings

1. Use a good quality microphone.
2. Observe the VU meters (the bar graph at the bottom of the screen). Try to keep your recording levels around -9 to -6 dB. If your levels exceed 0 dB, the sound will be distorted.
3. Record in a quiet area. Keep the microphone away from hard surfaces such as walls and table tops.
4. Always record your messages at the highest sampling rate supported by your sound card (see your sound card's instructions for this number). Always choose 16 bit recording (if your card supports it). Don't bother making the recording in stereo, since the script will create a new left channel anyway.
5. If you want to add special effects to a sound file (echo, stretch, etc.), you should do so before running the **Embed Control Track** script. This will insure that the control track does not get corrupted. If you have already run the script and want to add effects to the file, you may still do so. After you have added the effects, run the **Re-do Control Track** script to reformat the control track channel. **Note: Some effects (such as stretch) will change the length of your audio file. Use care to prevent overrunning the annunciator's recording time limit.**
6. Read Cool Edit's on-line help files to become familiar the program's features. You can download the official Cool Edit Manual (MS Word 6 format) from Syntrillium Software's web site. The manual contains some very useful information about Cool Edit and digital recording in general. If you have access to the Internet, go to <http://www.syntrillium.com>. You can also download the newest versions of Cool Edit for Windows or Windows 95 from this site. Don't forget to register Cool Edit! Select **Help, Registration Form** to view or print out a registration form.

*Note: Until you register Cool Edit, you can only choose from two categories of special effects when you start the program. Choose any effect you would like to try first, but you must always choose **Save, External Clipboard Functionality and Sample Converting** as one of the categories if you plan on saving your file to disk.*

Miscellaneous Helpful Hints

1. When programming from the ELK-129 into the recordable annunciator, make sure to disable the on-board microphone on the recordable annunciator. Also, make sure your sound card's microphone is either off, unplugged, or muted. This will prevent room noises from being recorded along with your messages.
2. To prevent electrical noise (EMI) from being induced into the recording, keep the recordable annunciator and the ELK-129 Sound Card Interface as far away as possible from sources of electrical noise such as video monitors and transformers. If you notice excessive hum or buzz during playback it may be necessary to reposition the units and re-program.
3. When recording directly through the on-board microphone, the ELK-129 can still be utilized for providing power to the recordable annunciator. However, you must unplug the cables from the **AUDIO IN** and **AUDIO OUT** jacks to prevent interference. Make certain that the on-board microphone is enabled by placing JP1 in the correct position. To record a message on Channel One, place SW1 on the ELK-129 to CH1, then press and hold the RECORD push-button on the ELK-120 or other recordable annunciator while speaking into the built-in microphone. For Channel Two, repeat the above step, placing SW1 on the ELK-129 to CH2.
4. Sample sound files along with automated Script files and updated information for the complete line of ELK Recordable Annunciators are available for downloading directly from our Internet Web site: **<http://www.elkpro.com>**

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