Cinnamonhillart.com

User Manual (R2.0)

Programmable Sound Effects Engine (PSEE)

Manual Contents

Photo #1: The complete Programmable Sound Effects Controller. The "wall-wart" power supply is not shown.

Section 1

Uses

-Community Theater sound effects
-Theater Organ for "Toy Counter" sound effects
-Special events projects
-Radio Station "Button", etc.

Features (Detailed information available on next page)

1-Up to 99 stored sound effects (sound clips) can be accessed.
2-User can remove any supplied sound effects and add additional sound effects taken from the internet, acoustical, electronic, or other sources.
3-16 programmable push switches to activate the sound effect.
4-The user can set the volume of each sound effect.
5-Special effects include Fadeout, Cancel, and Manual Control.
6-Optional additional 16 inputs for remote pushbuttons.
7-Stereo output with individual channel volume control.
8-Over 90 sound effects are included; hundreds more can be stored in the SD memory for future assignments.
9- All programmed data is retained even when the unit is powered down.

Technical Specifications:

Media: SDSC and SDHC micro SD card, 1GB (1000 MB)
Number of MB used for the 90+ sound clips: 10
Remaining capacity: 990 MB
File System: FAT16 and FAT32
Playback: 192 kbps stereo

Section 2

More Information on the Programmable Sound Effects Engine (PSEE) features

1-Up to 99 stored sound effects (sound clips) can be accessed.
The 1 GB SD Memory Card can hold hundreds of sound clips. The supplied list of sound clips has 99 numbered for use in the Cinnamon Hill Art Programmable Sound Effects Engine. These numbers range from 001 to 099. So, any of the 16 pushbuttons can be assigned (programmed) to a designated sound clip.

Sound clips that do not have numbers assigned to (**"Sound Clips-in-Waiting")** are in the same folder as the numbered sound clips. The user can add to this list. These clips can be assigned number with the use of a computer and a USB mini SD card reader.

The user can, therefore, collect hundreds of sound clips and have them ready to be used in a production. All the user must do is to assign the desired sound clip a number that the PSEE can access. It is a simple operation to open the sound clip file assign a number to the sound clip. This is explained in Section 7.

2- User can add additional sound effects taken from the internet, acoustical, electronic (organ, CD, DVD,etc.), or other sources. With the use of a digital recorder and a program called, Audacity, the user can add custom sound clips taken from a sound producing device. In addition, the user can download sound clips from the internet and transfer them to the SD memory card. Additional information in Section 17.

3-16 programmable front panel push switches to activate the chosen sound effect
The Cinnamon Hill Art PSEE has 16 spring-return lever switches on the front panel. These will be called pushbuttons from here on. Each of these pushbuttons can be assigned a sound clip number and volume level. Therefore 16 sound clips are available at the press of a button.

4-Individual control of volume for each sound effect
The volume level of each programmed sound clip can be individually assigned. A special feature in the process of programming the sound clip allows the user to change the volume level of a sound clip if the first attempt was not what was expected.

5-Special effects such as Fadeout/Cancel and Manual Control modes.
Fadeout/Cancel
Another special feature is the ability of the user to assign one of the pushbuttons to perform a FADE OUT and CANCEL function.

Here is how it works: As a sound clip is being played, if the Fadeout/Cancel pushbutton is pressed, the sound clip will fade out at a rate determined by the user. This can be from about 2 seconds to over twenty seconds.

This feature can be useful for sound clips like the Zimblestern or the clickity-clack of a train or a thunderstorm where the sound clip may be too long for the effect desired. When the fadeout function is activated there will be no abrupt volume changes. This is what would happen if the clip were to be cut off rather than faded.

Cancel function
If the user wants a fast cut-off (cancel) for some special application, then the PSEE can accommodate this function. It takes advantage of the fact that any press of a sound clip button will immediately stop the playing of a previous sound clip. So, all the user has to do is assign one of the pushbuttons to a sound clip that only contains a second or less of silence. When the silence sound clip is started, it will cancel any other playing sound clip. Another way to achieve a cancel function is to set up the Manual Control Mode for one of the front panel pushbuttons. This is explained next.

Manual Control Mode
Any of the pushbuttons can be assigned to be in Manual Control mode. This mode allows the user to have full control over the playing length of the sound clip. The user presses a pushbutton to start a sound clip and holds the pushbutton down to keep it playing. When it is desired to end the sound clip, the user releases the pushbutton. This mode is useful for certain sounds like a drum roll, tambourine shake, etc.

6-Optional 16 additional inputs to control sound clips #1 to 16
In addition, an option is available where the user has an additional 16 **non**-programmable inputs, which can be wired to user-supplied remote pushbuttons for accessing sound clip numbers 001 to 016. All inputs are electronically isolated to allow wire lengths of over ten feet without affecting the operation of the unit.
These 16 sound clips are independent from the sound clips that are programmed on the spring-return panel switches. It is therefore possible to have 16 front panel sound clips and 16 remote pushbutton sound clips for a total of 32 accessible sound clips.

7-Stereo output (RCA jacks) with individual channel volume control.
The outputs of the PSEE are stereo line level, RCA jacks. Each channel has its own trimmer volume control

8-A Sound effects library is included on the SD card with over 90 sounds.
At the end of this manual is a list of sound effects included with the purchase of the PSEE. Each of the sound clips is numbered from 01 to 99.

The user may, if desired, add additional sound clips to library on the SD card using a computer. See Section 6 and 7.

Section 3

Front Panel Controls (refer to Photo#1)

Pushbuttons #1 to 16. These spring-return lever switches actuate the desired sound clip.

SOUND # (switch, 2-digit) Accesses the sound clips from 01 to 99.

VOLUME Adjusted during programming to the desired sound level.

POWER (Low voltage power switch). Switches on the PSEE.

STORE Stores and assigns the desired sound clip number to a pushbutton.

LED This is a multifunction LED.

Half bright, steady: Unit is ready to operate.

Full-bright, steady: Sound clip is playing

Full-bright, quick flashing: User pressed STORE and the PSEE is waiting for a pushbutton assignment. Press the pushbutton where you want the assigned the SOUND # to be stored.

Full-bright, one flash: User readjusted the volume control and pressed STORE.

Full-bright three flashes: The LED verifies that the user played a sound clip and then set VOLUME to minimum and pressed STORE. Manual Control Mode has been assigned or unassigned to the pushbutton just played.

Full-bright, slowly flashing: Fadeout/Cancel function. The user set SOUND # to "00" and then pressed STORE. The LED is asking that the user press the STORE again or set the SOUND # switch to the number of seconds for the Fadeout and then press the STORE.

Section 4

Location of various parts inside the PSEE

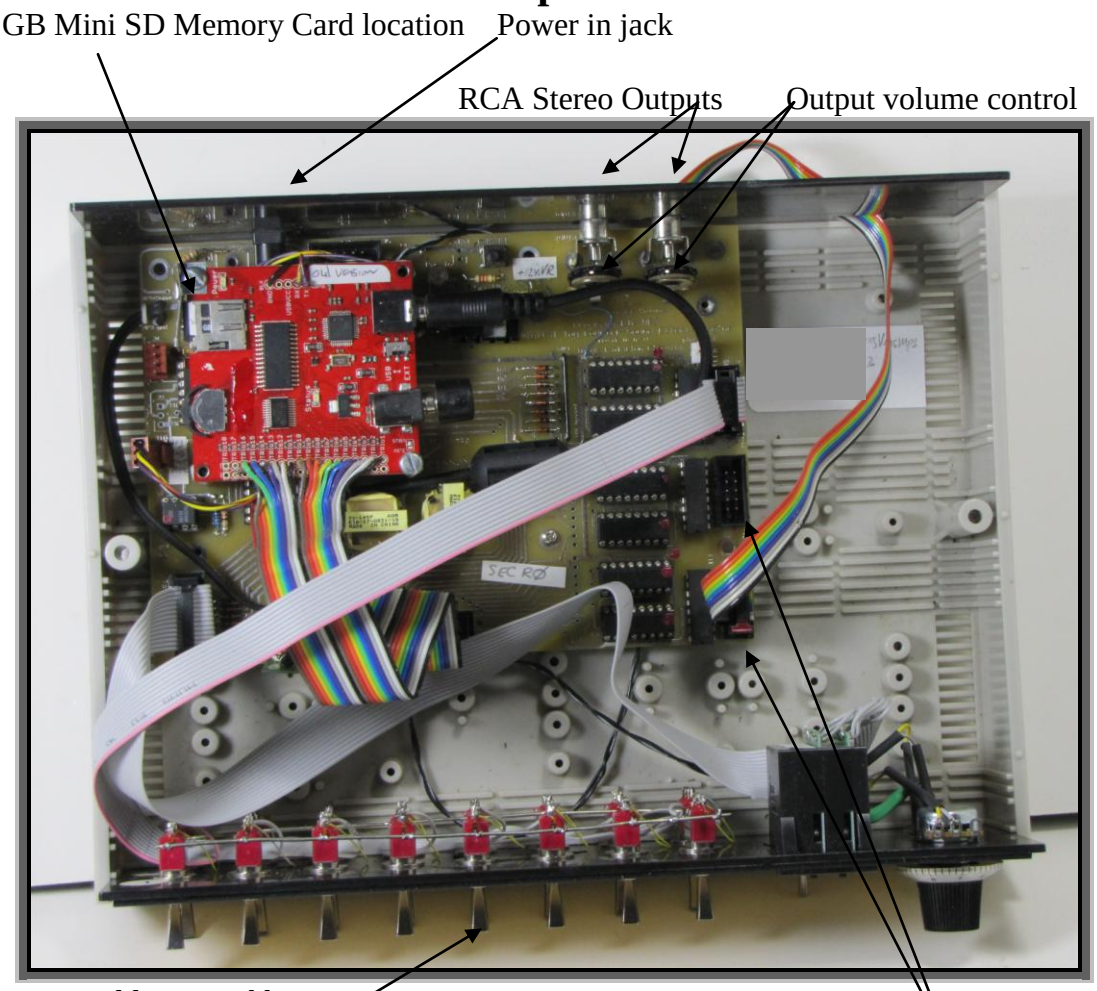


Photo #2: Top cover removed showing Mini SD memory card (upper left), Stereo output (upper center) , the output volume controls (upper right) and remote pushbutton connector locations (right side of printed circuit board).

SD Memory Card: 1 GB. Push in to release (loosen screw to move safety clip out of the way). This is a very delicate SD connector and must be handled with care. It is not replaceable. The safety clip keeps the SD card from flying out and getting lost.
Power In Jack: 12v, 200mA, linear wall adapter supply. Connector: female, center positive, 2.1mm ID x 5.5mm OD.
Stereo Outputs: RCA type, left and right.
Output Volume Control: trimmer pot each for left and right.

Remote pushbutton connectors: This is an option and it uses a 10-pin .100" IDC socket connector connected to a 10-conductor ribbon cable**Section 5**

How to connect the Programmable Sound Effects Engine:

Note: Be sure your amplifier is switched OFF or at minimum volume.

1- Insert the "wall-wart" power supply connector into the Power In jack located at the rear of the Controller.

2-Plug the power supply into a 120-volt outlet.

3-Connect the stereo amplifier input cables to the RCA jacks at the rear of the PSEE printed circuit board. Be sure your amplifier is switched **off**.

4- Switch on the PSEE using the toggle switch on the front panel.

5- Wait until the blue LED flashes once and then becomes dim. The time delay of about 12 seconds is due to the electronics having to "warm up". It takes that amount of time for the processor to catalog and check all 99 of the sound clips, which are loaded in the memory.

6- Press one of the 16 spring-return lever toggle switches on the front panel to listen to the sound clips, which were previously loaded by Cinnamon Hill Art. The blue pilot lamp will light brightly until the sound clip is finished. Then it will revert to its normal half-brightness.

7- Now you can experiment and change the sound clips assigned to the spring-return toggle switches. See Section 9 on programming the PSEC.

Section 6

Understanding the Sound Clip switches

There are two banks of possible pushbutton controls:

A) The 16 lever switches on the front panel are programmable and can be used for any sound clip from 001 to 099, the last sound clip available (99 maximum total). "Programmable" means that any of the 16 pushbuttons can be assigned to any of the numbered sound clips. Also, when programming the pushbutton, the user can assign a volume level for the sound clip being programmed. This means that each programmed sound clip will have its own volume level.

B) An optional set of 16 inputs control the triggering of sound clips 001 to 016*. These inputs can be wired to remote pushbuttons supplied by the user. They are not programmable. In other words, the first remote pushbutton will control sound clip #001, the second will control sound clip #002, etc. up to sound clip #016.

The user has the ability to change the number associated with a sound clip by using a computer and USB SD reader.

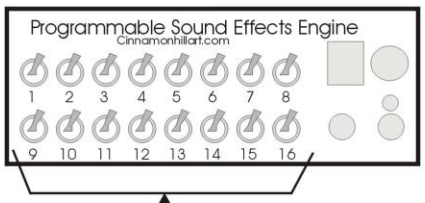
Sound clips 001 to 016 can be useful for sound effects that are frequently used and do not have to be programmed. These can be your favorite sound clips. The resulting volume level will be the volume level of the contained sound clip. It is not adjustable (see Sound Clip Concepts drawing on the next page).

*These sound clips are still available for use by the front panel lever switches and the volume level can be programmed when using these switches.

Sound Clip Concepts

Cinnamon Hill Art
Programmable Sound Effects Engine

Front Panel Pushbuttons



Pushbuttons are Programmable for Sound Clip # and Volume

Any of the numbered sound clips can be assigned to any of the pushbuttons.

PSEE Sound Clips R0

01	AC 100 inch Blower
02	Acme Siren
03	Ahooga Horn short
04	Ahooga
05	Applause 21sec
06	Applause short
07	Barge Horn
08	Bass Drum1
09	Screaming Woman
10	Bell Glissando long2
11	Bell Glissando Short
12	Bicycle Bell
13	Bicycle Horn
14	Bird singing
15	Birds
16	Boing1
17	Boing2
18	BottleBlow
19	Bubbles 7 sec
20	Bubbles 22 sec
21	Bugle Charge1
22	Bugle Charge 2
23	Bundt Bell aluminum
24	Car Horn
25	Church Chimes down
26	Coffee Perk
27	CowMoo
28	Crash Cymbal Roll 1
29	Curly Joe
30	Cymbal Crash Roll 2
31	Cymbal Crash
32	Cymbal Hit
33	Cymbal Roll and Hit
34	Driveby and Crash
35	Factory Whistle
36	Fanfare
37	Fart
38	Fire Bell
39	Fog Horn1
40	Fog Horn2
41	Fog Horn3Low
42	Fog Horn4Low
43	Footsteps
44	Glass Bell
45	Gong1
46	Gong BIG 12 sec
47	Gong Roll
48	Gong 2
49	Harp Glissando Up Dn
50	Horse Whinny
51	Klaxon Horn1
52	Laughing Man
53	Lion Roar

OPTIONAL User-supplied pushbuttons

Pushbutton #1 plays sound clip #01 at full volume. No programming is possible. Pushbutton #2, plays sound clip #02, etc.

Section 7
Sound Clip Naming

Note: Before working with the sound clips it is strongly suggested that you copy the entire SD memory card to a back-up folder on your computer.

The supplied 1 GB SD card holds the 99 numbered MP3 sound clips. These sound clips can be of any reasonable length of time (ie:Zimbelstern sound clip is over 1 minute long). Some can be as short as one second.

From these 99 numbered sound clips, the user selects which ones will be assigned to the 16 lever switches on the front panel. This is called programming.

The sound clips need to be named as shown below:

001 CrashCymbal.mp3
002 Thunder.mp3
003Dog Bark.mp3

Notice that there are always three digits for the sound clip number.
Leading zeros are required. For example: Sound clip #4 must be labeled as "004".
The sound clip number must always come first before the name of the sound.
A space after the sound clip number is optional.
The ".mp3" is necessary.

Here is another way to name sound clips:

001.mp3
002.mp3
003.mp3

Naming a sound clip like this will work fine but may cause some confusion since it is non-descriptive.

The list must be contiguous with no missing numbers up to the last sound clip number used. For example: if you only have 20 sound clips available, then the first sound clip will be "001" and the last sound clip number will be "020".
The PSEE can control up to 99 sound clips. The last sound clip will be numbered as "099" if there are 99 sound clips in the memory card.

For example: there may only be, let us say, 20 sound clips available, as in the above example. This is fine. But do not have any missing sound clip numbers as in the example below:

001 CrashCymbal.mp3
002 Thunder.mp3
004 Dog Bark.mp3
005.mp3
006.mp3 Note that we are missing sound clip # 003.

A list of the included sound clips is supplied by Cinnamon Hill Art. See an example at the end of this manual.

Section 8

Working with the "Sound Clips-in-Waiting"

Here is an example of a sound file list with numbered and unnumbered sound clips. The unnumbered clips are for future use by the user. These are called, "Sound Clips-in-Waiting".

001 CrashCymbal.mp3
002 Thunder.mp3
003 AcmeSiren.mp3
004 Dog Bark.mp3
005 TaDaah.mp3
006 Boing.mp3
007 SteamWhistle.mp3
008 Horn.mp3
Factory Whistle.mp3
AirRaidSiren.mp3
Zymbelstern.mp3
WoodyWoodpecker.mp3

The 1 GB SD memory card allows the user to load hundreds of "Sound Clips-in-Waiting" if desired. These are the sound clips that are NOT numbered. Therefore the PSEE does not recognize them nor does it play them.

The only ones that the PSEE will control are the numbered sound clips from 001 to 099. It will ignore the unnumbered sound clips. To activate any of the unnumbered sound clips, the user must remove the SD card, plug it into a USB mini SD reader (if your computer does not have a mini SD reader), and then plug it into a computer.

The sound clip file can then be opened and worked on. The un-numbered sound clips can be given a number and then they will be available to the user by the PSEE. When this is done the user must remove the numbers of numbered sound clips to make room for the new ones.

Here is an example of adding the Zimbelstern to the list:

The original list:

001 CrashCymbal.mp3
002 Thunder.mp3
003 AcmeSiren.mp3
004 Dog Bark.mp3
005 TaDaah.mp3
006 Boing.mp3
007 SteamWhistle.mp3
008 Horn.mp3

numbered
sound clips

AirRaidSiren.mp3
FactoryWhistle.mp3
WoodyWoodpecker.mp3
Zymbelstern.mp3

unnumbered
"Sound Clips-in-Waiting"

Numbering the Zimbelstern:

001 CrashCymbal.mp3
002 Thunder.mp3
003 AcmeSiren.mp3
004 Dog Bark.mp3
005 TaDaah.mp3
006 Boing.mp3
007 SteamWhistle.mp3
008 Horn.mp3
AirRaidSiren.mp3
FactoryWhistle.mp3
WoodyWoodpecker.mp3
009 Zymbelstern.mp3

Exiting the file and then re-entering by clicking on the file gives this list:

001 CrashCymbal.mp3
002 Thunder.mp3
003 AcmeSiren.mp3
004 Dog Bark.mp3
005 TaDaah.mp3
006 Boing.mp3
007 SteamWhistle
008 Horn.mp3
009 Zymbelstern.mp3
AirRaidSiren.mp3
FactoryWhistle.mp3
WoodyWoodpecker.mp3

Notice that the numbers are listed in numerical order. Your computer will automatically perform this operation when you re-open the file.
Also notice that there are no missing numbers in the list.

There is an error in the above list. Can you find it?

Answer:
****
During the process of moving the Zimbelstern, the Steam Whistle, 007, lost the ".mp3".
****

How to make room in the numbered list for the "Sound Clips-in-Waiting"

Note: Before working with the sound clips it is strongly suggested that you copy the entire SD memory card to a back-up folder on your computer.

If your SD card contains 99 numbered sound clips and several un-numbered "Sound Clips-in-Waiting", and you want to add some of the "Sound Clips-in-Waiting" to the numbered sound clips, you will have to make room in the numbered sound clips list. Here is how that is done.
This is a list of 99 sound clips plus 3 un-numbered "Sound Clips-in-Waiting":

001 CrashCymbal.mp3
002 Thunder.mp3
003 AcmeSiren.mp3
004 Dog Bark.mp3
005 TaDaah.mp3
006 Boing.mp3
007 SteamWhistle.mp3
008 Horn.mp3
- {the remaining sound clips, 009 to 098, are not shown to save page space}
-
-
099 Zymbelstern.mp3
AirRaidSiren.mp3
FactoryWhistle.mp3
WoodyWoodpecker.mp3

All of the numbered slots are taken. If you want to add the Air Raid Siren, Factory Whistle, and Woody Woodpecker sound clips, you must make room for these in the numbered list.
So, decide upon which sound clips you can do without. Let us assume you do not want the Dog Bark, the TaDaah, and the Boing.
Let us start with removing the Dog Bark, #004:
Step #1: Remove the number, 004, in front of the DogBark.mp3 sound clip:

001 CrashCymbal.mp3
002 Thunder.mp3
003 AcmeSiren.mp3

Dog Bark.mp3
005 TaDaah.mp3
006 Boing.mp3
007 SteamWhistle.mp3
008 Horn.mp3
-
-
-
099 Zymbelstern.mp3
AirRaidSiren.mp3
FactoryWhistle.mp3
WoodyWoodpecker.mp3

Step #2: Transfer that number, 004, to one of the new sound clips, AirRaidSiren.mp3:

001 CrashCymbal.mp3
002 Thunder.mp3
003 AcmeSiren.mp3
Dog Bark.mp3
005 TaDaah.mp3
006 Boing.mp3
007 SteamWhistle.mp3
008 Horn.mp3
-
-
-
099 Zymbelstern.mp3
004 AirRaidSiren.mp3
FactoryWhistle.mp3
WoodyWoodpecker.mp3

Step #3: Remove the 005, and 006 from the remaining sound clips, TaDaah, and Boing. Assign numbers 005 to the FactoryWhistle and 006 to WoodyWoodpecker:

001 CrashCymbal.mp3
002 Thunder.mp3
003 AcmeSiren.mp3
Dog Bark.mp3
TaDaah.mp3
Boing.mp3
007 SteamWhistle.mp3
008 Horn.mp3
-
-
-
099 Zymbelstern.mp3
004 AirRaidSiren.mp3
005 FactoryWhistle.mp3
006 WoodyWoodpecker.mp3

Step #4: Now, when you exit the file and then click on it again, the list will be put in numerical and alphabetical order by your computer:

001 CrashCymbal.mp3
002 Thunder.mp3
003 AcmeSiren.mp3
004 AirRaidSiren.mp3
005 FactoryWhistle.mp3
006 WoodyWoodpecker.mp3
007 SteamWhistle.mp3
008 Horn.mp3
-
-
-
099 Zymbelstern.mp3
Boing.mp3
Dog Bark.mp3
TaDaah.mp3

Notice that the Boing, Dog Bark, and TaDaah are now in alphabetical order.

Section 9

Programming the Cinnamon Hill Art
Programmable Sound Effects Engine

Programming Steps:

1-The SD sound card: The PSEE comes supplied with many sound clips stored on a 1 GB mini SD card. There is more than enough room on the SD card to contain the sound clips. Refer to the enclosed sound clip list at the end of this manual for the sound clip names and numbers.

Note: During the process of programming, the user should have a list of the numbered sound files available.

Photo #3: The programming section of the Programmable Sound Effects Controller

2-How to program a pushbutton to actuate a selected sound clip:

a) Set the "SOUND #" switch on the Control Panel to the sound clip number desired.

b) Set the VOLUME control to about halfway.

c) Press the STORE pushbutton and release.

Result: the LED will continuously flash on and off quickly, indicating that you are to now press one of the front panel lever pushbuttons in order to assign that pushbutton the desired sound clip.

d) Press and release the front panel pushbutton you desire to be assigned to the sound file.

Result: the LED will flash once and then resume normal half-bright mode.

3- Testing the sound:

Press and release the front panel pushbutton again to hear the sound clip. If it sounds fine, then go on to the next pushbutton that you wish to program.

4- If the sound volume is too low or too loud:

a) Readjust the **VOLUME level only** and then press the "STORE" pushbutton.
   Result: The LED will flash once indicating that it accepted the change in volume.

The new volume level will be stored in memory. (This will happen **only** if the "SOUND #" switch is **not** changed. Once this switch is changed then the processor will assume you desire to program another pushbutton. The only way to change the volume at this point is to repeat the programming steps(#2 above) for the desired pushbutton with the desired volume change.

b) Test the sound again by pressing the lever pushbutton assigned to that sound.
c) You may have to adjust the volume again if necessary using the same procedure as in (a).

5-Sound Clip FADEOUT/CANCEL function

You may want to have one of the front panel pushbuttons be assigned a Fadeout/Cancel function. I use button #16 for this purpose. You may want to designate another front panel pushbutton to this function. Pressing this button during the playing of a sound file will fade out the sound for a time duration specified by you. This function will operate the same on any of the remaining 15 lever pushbuttons.

Here is how it is done:

a) Decide upon the pushbutton that will perform this function. Let us say you want pushbutton #16 to be the Fade/Cancel function.
b) Set the "SOUND #" switch on the Control Panel to **"00"**. This indicates that you are programming a front panel pushbutton as a fadeout function.
c) Press and release the "STORE" pushbutton. The LED will flash on and off quickly to remind you that you must assign a lever pushbutton to this function.
d) Press and release the lever pushbutton that you want assigned to the Cancel/Fade Out function. Pushbutton #16 in this example. The LED will again flash on and off slowly.
e) You now have two choices for the fade-out time length:
   Choice 1 = about 2 seconds.
   Choice 2 = 2 to 20 seconds

Choice 1: Press and release the "STORE" pushbutton again to end the sequence.
Result: The LED will stop flashing slowly.

Check the operation of the Fadeout/Cancel by pressing any one of the 16 sound clip pushbuttons. Then press and release the Fadeout/Cancel pushbutton. The fade-out function will last about 2 seconds.

Choice 2: If you desire a longer fade-out then, after pressing the pushbutton you want to act as a Fadeout/Cancel (step d), and the LED starts flashing on and off slowly, set the SOUND # to a number from 2 to 20 or more if desired. (These are the approximate seconds that it will take for the sound clip to fade out.)

Then press and release the STORE button.

Result: The LED will stop flashing on and off slowly.
This will end the sequence and store your desired fadeout time.

Now, when you press a sound clip pushbutton, and the sound clip is playing, you will be able to fade out the sound clip by pressing the button assigned to the Fade Out/Cancel function. This fadeout function pushbutton will operate on any of the remaining front panel pushbuttons.

Notice that the volume control is not mentioned in these instructions. It has no use in the Fade Out/Cancel function.

6- Manual Control mode:
This mode of operation allows the user to enable any one or more of the 16 front panel pushbuttons to have full manual control of when to stop the sound. In other words, pressing the front panel lever pushbutton will start the sound clip and end it immediately when the button is released. This is not the same as the Normal Mode where pressing and immediately releasing of the button starts the sound clip and the clip continues on to its natural end.

How to assign or unassign the Manual Control Mode:
1-To assign or unassign the Manual Control Mode for any pushbutton, the user must play the sound clip first by pressing and releasing the front panel switch. This gives the processor the pushbutton number you wish to assign or unassign the Manual Control Mode. Do not fadeout to speed things up.

2-Turn the Volume control knob to **minimum**. This action alerts the unit that you desire to assign or unassign a Manual Control Mode. It is assumed that no user will assign a Sound Clip at minimum volume so when the Volume control knob is set to minimum, the Manual Control Mode will be activated after step #3 next.

3-Press and release STORE. The LED will flash at full brightness three times. You have now assigned the Manual Control Mode for the selected sound clip pushbutton.

If the sound clip pushbutton was previously assigned, then this process will unassign it.

Section 10

Adding Remote Pushbuttons

If you ordered the16 remote pushbutton option:

1- Plug in the ribbon cable connector into either J11 (for sound clips assigned to pushbuttons #1 to 8) or J12 (for sound clips assigned to pushbuttons #9-16)

2- Connect the pigtail end of the cable to your remote pushbuttons according to the wiring diagram under Photo #4 (a larger version is at the end of the manual).

Note: The user must supply his or her own pushbuttons for remote operation.

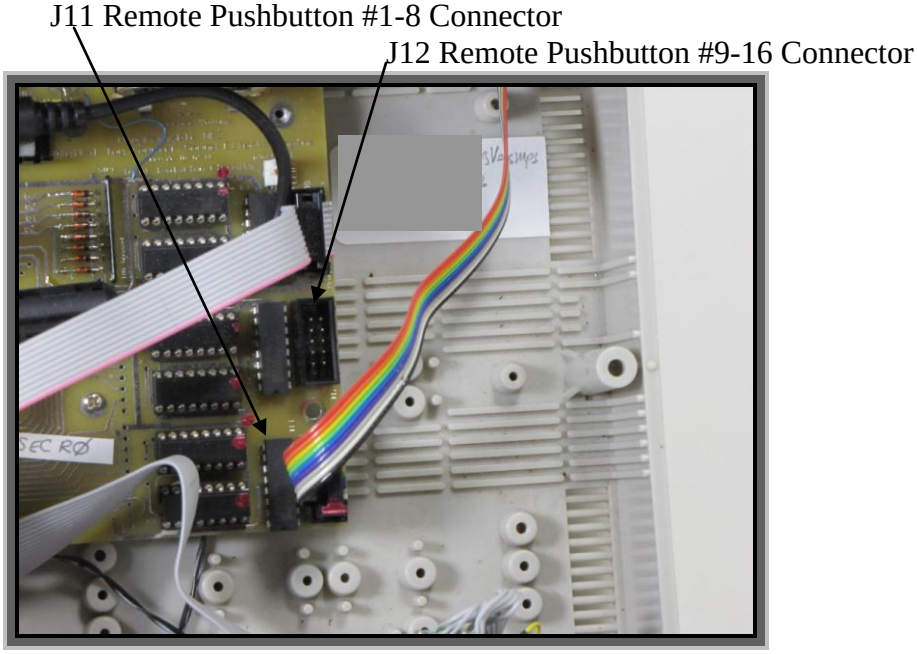
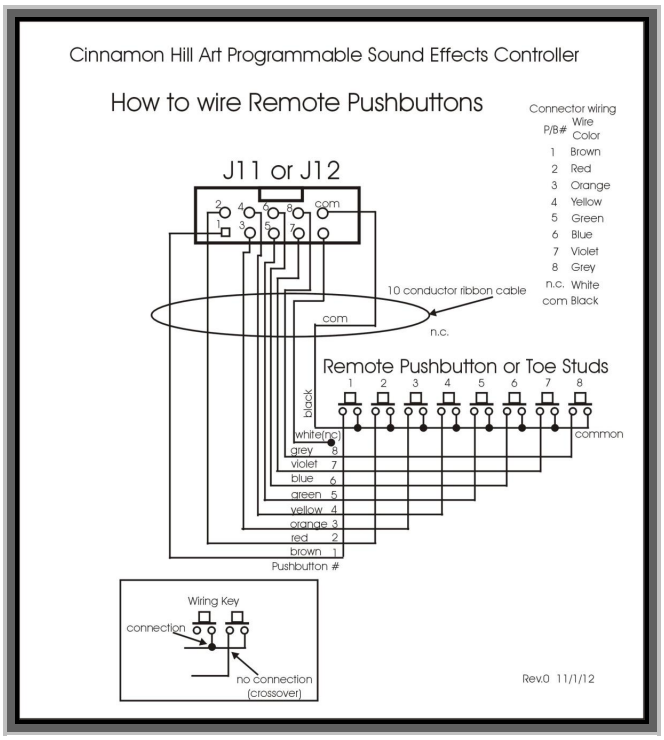


Photo #4: Connecting the Remote Pushbuttons



Section 11

Important considerations when adding sound files using your computer:

1- A three-digit number is required so a leading zero is necessary. (Example: 001 to 099).

2- If you add a sound clip make sure it is a mp3 file (be sure the ".mp3" is at the end of the file).

3- It is advisable to add about .5 to 1.0 seconds to the end of your new sound clip to prevent "clipping" of the sound when the PSEE plays it. This can be done in a program such as Audacity (free, it can be found on the internet at: http://audacity.sourceforge.net/).

4- Do not have two different sound clips with the same number. Before transferring the sound clips to the flash memory, check to see that the numbers are sequential. To make the numbers sequential just back out of the folder once and then go back into it. Your computer will automatically organize the sound file's number sequentially and the rest of the files without numbers will be organized alphabetically.

5- Make a **backup copy** of the SD memory contents before you do anything to it and place it in a folder in your computer or on a jump drive.

6- When power is applied to the Programmable Sound Effects Engine, the unit will scan all the sound files and get them ready to play. With over 90 stored sound clips, this takes about 10 seconds. If you add more sound clips then it will take longer for the PSEE to "warm up".

Section 12

How to remove the SD memory card:

Note: Before removing or inserting the SD memory card do the following:
1-Shut off any power to the Programmable Sound Effects Engine.
2-Ground yourself by momentarily touching the mounting screw holding the outlet plate on your 120 volt outlet in order to discharge any static electricity.
3-Avoid wearing a wool or poly sweater when working with the SD memory card.

If you desire to add or to reorganize the sound files that are activated by the pushbuttons you must remove the SD card from the red printed circuit board. This is done by first loosening the metal clip, moving the clip out of the way then pressing the card in slightly and letting it release from the holder. The SD Memory Card clip is used to prevent the card from popping out and getting lost.

Section 13

Tricks of the trade:

How to add your own sound files to the SD memory card:
The internet is full of sound clips that you might want to use. When you find one you like, do the following:

1-Open Audacity (Audacity is a very fine free software for doing audio editing) (http://audacity.sourceforge.net/).

2-Press the RECORD button in Audacity.

3-Play the sound clip while Audacity records it.

Now that you have the sound clip recorded in Audacity you can make adjustments such as:

1-Cutting out the silence at the beginning of the sound clip in order to have the clip begin without delay.

2-Adjust the volume level by highlighting the sound clip and "amplifying" until the waveform almost touches the top or bottom limits.

3-Use the Audacity "fade-out" or "fade-in" function if necessary at the beginning or end of the sound clip.

4-Add about 1 second of silence to the end of the sound clip especially if it has no fade-out and is a sound that ends abruptly such as a drum.

5-Save the sound clip in an Audacity sound clip folder so that you will be able to tweak it again if necessary.

6-Save it also as a "wav" file so you can convert it to a mp3 (Audacity does NOT save as a mp3 – at least in the version that I have).

7-Convert it to a .mp3 file using a program called Daniusoft. You can find this free software at www.daniusoft.com

8-After the conversion, double click on the file and listen to it. Check for startup time, distortion, and premature cutoff.

a- If it takes a moment for the sound file to start up then you need to cut out the silence at the beginning of the sound file. NOTE: Whenever one converts to MP3, a .025 second of silence is added to the beginning of the sound file. This can cause a short delay before the sound begins. It can not be eliminated from my experience. If you find a way to eliminate it then please let me know how to do it.

b-If you have distortion then you might have amplified the sound too much. You can not fix this so you must go back to the source of the sound file and record it again, this time being careful that you do not exceed the recording limits.

c- Whatever sound clip you use, you will find that the PSEE cuts off about ½ second of the sound clip. This can not be helped since it is inherent in the design of the MP3 player. So, the solution is to add about ½ to 1 second of silence to your sound clip to eliminate this problem.
This is particularly noticeable with sounds that end abruptly like the Klaxon Horn, etc. Sounds that fade out like the Chime usually do not give this problem.

Note: See Section 17, "How to add a sound clip using Audacity", for additional information.

Section 14

Notes on the operation of the PSEE:

1-Always have your amplifier either off or at minimum volume when switching on the power to the PSEE or plugging in or removing the audio cables.

2-Always use the POWER switch to activate the unit. Do not activate it by plugging in the wall power supply while the power switch is on. Doing this will cause errant operation.

3-If you program a certain sound clip and nothing happens when you activate it using the spring-return lever switch, check the following:

1- Does the sound clip name have the .mp3 at the end of its name?

2- Did you program a suitable volume level when you pressed the STORE?

NOTE: Cinnamon Hill Art reserves the right to change design or function in order to improve this product. This includes the addition or removal of sound files to the library and the initial arrangement and selection of the numbered sound files.

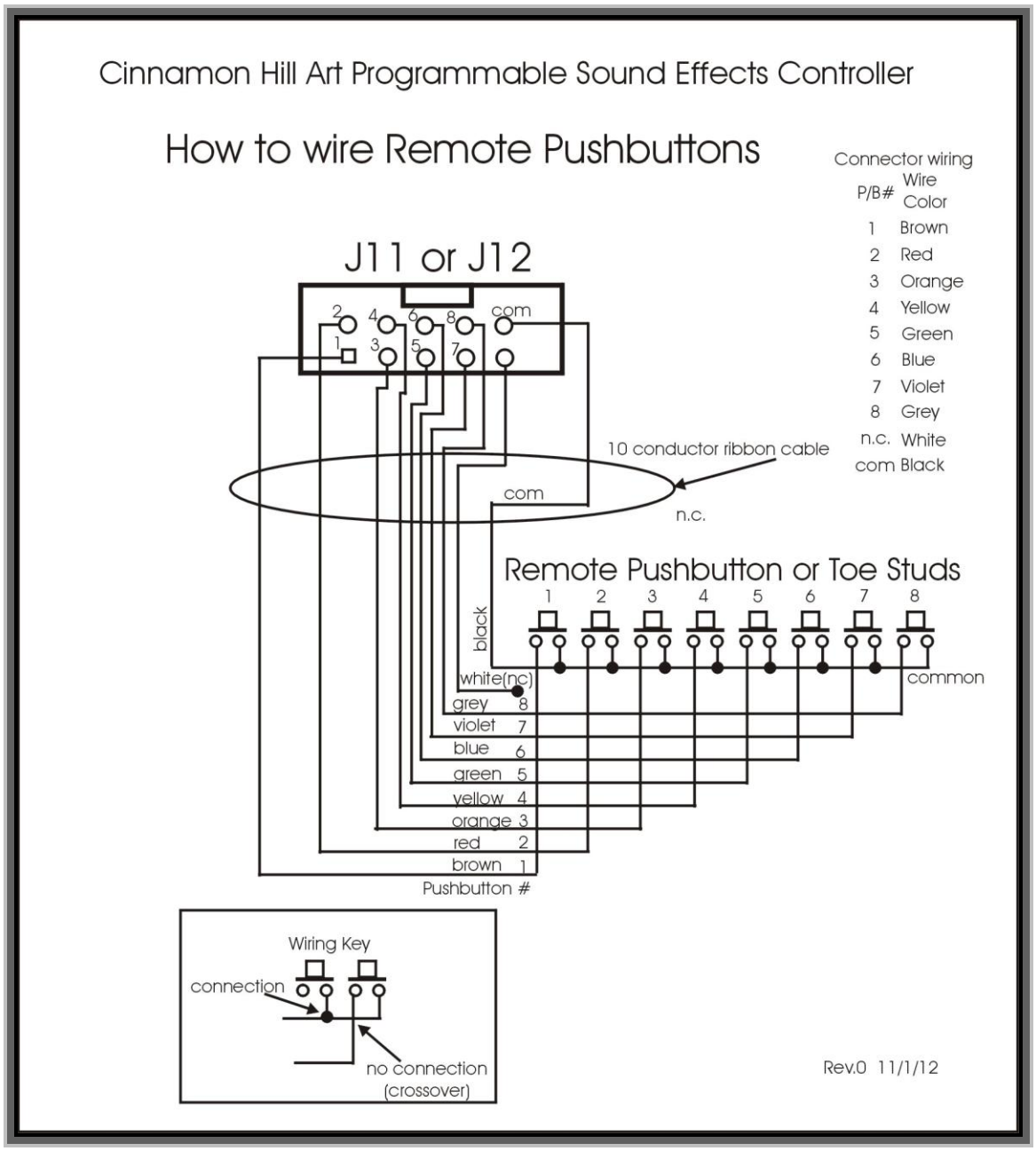
Section 15

Example of a Typical Sound Clip List
(Yours may be slightly different)

PSEE Sound Clips R0

01	AC 100 inch Blower
02	Acme Siren
03	Ahooga Horn short
04	Ahooga
05	Applause 21sec
06	Applause short
07	Barge Horn
08	Bass Drum1
09	Screaming Woman
10	Bell Glissando long2
11	Bell Glissando Short
12	Bicycle Bell
13	Bicycle Horn
14	Bird singing
15	Birds
16	Boing1
17	Boing2
18	BottleBlow
19	Bubbles 7 sec
20	Bubbles 22 sec
21	Bugle Charge1
22	Bugle Charge 2
23	Bundt Bell aluminum
24	Car Horn
25	Church Chimes down
26	Coffee Perk
27	CowMoo
28	Crash Cymbal Roll 1
29	Curly Joe
30	Cymbal Crash Roll 2
31	Cymbal Crash
32	Cymbal Hit
33	Cymbal Roll and Hit
34	Driveby and Crash
35	Factory Whistle
36	Fanfare
37	Fart
38	Fire Bell
39	Fog Horn1
40	Fog Horn2
41	Fog Horn3Low
42	Fog Horn4Low
43	Footsteps
44	Glass Bell
45	Gong1
46	Gong BIG 12 sec
47	Gong Roll
48	Gong 2
49	Harp Glissando Up Dn
50	Horse Whinny
51	Klaxon Horn1
52	Laughing Man
53	Lion Roar
54	Long Gong1
55	Mallet Cymbal
56	Old Car Bulb Horn
57	Open Triangle 1
58	Open Triangle 2
59	Party Noisemaker
60	Police Whistle
61	RainWindThunder 33 sec
62	Rooster Crow
63	Schoolbell
64	Short Gong1
65	SkiddyDo
66	SleighBellsShake
67	Sleigh JingleBells (entire song)
68	Slide Whistle DOWN UP
69	Small Train Whistle
70	Snare Drum Hit
71	Snare Drum Roll 1
72	Snare Drum Roll 2
73	Steam Train and Whistle 7 sec
74	Strong Cymbal
75	Tambourine Hit
76	Tambourine Shake
77	Telephone Bell old
78	Thunder 1
79	Thunder 2
80	Thunderbolt
81	Train Bell 1x
82	Train Bell 4x
83	Train Whistle 1
84	Train Whistle 2 Aluminum
85	Triangle Dinner Call
86	Tubular Chime Large “C”
87	Tubular Chime Small “C”
88	Up Scale Whistle
89	Wind 5 sec
90	Wind 6 sec
91	Wind 20 sec
92	Wolf Call Whistle
93	Wolf Whistle
94	Zimbelstern 1min 30 seconds
95	Zimbelstern 15 sec.
96	Hey Stella
97	That’s All Folks
98	WoodyWoodpecker
99	Frankly My Dear

Section 16


Cinnamon Hill Art Programmable Sound Effects Controller
How to wire Remote Pushbuttons
Connector wiring
P/B# Wire Color
1 Brown
2 Red
3 Orange
4 Yellow
5 Green
6 Blue
7 Violet
8 Grey
n.c. White
com Black
J11 or J12
2 4 6 8 com
1 3 5 7
10 conductor ribbon cable
com
n.c.
Remote Pushbutton or Toe Studs
1 2 3 4 5 6 7 8
black
white(nc)
grey 8
violet 7
blue 6
green 5
yellow 4
orange 3
red 2
brown 1
Pushbutton #
common
Wiring Key
connection
no connection
(crossover)
Rev.0 11/1/12

Section 17

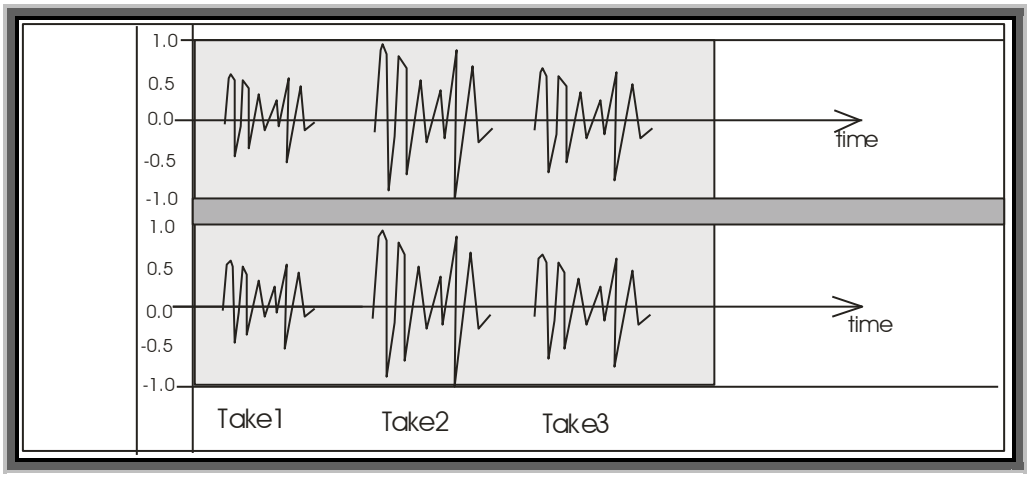
How to add a sound clip using Audacity

Software needed: Audacity Digital Audio Editor (1.2.6). Download it free at http://audacity.sourceforge.net/
You will also need Daniusoft MP3 WAV Converter. You can find this free software at www.daniusoft.com
Recording device: Digital recorder with microphone
Acoustical sound device such as a drum, klaxon horn, etc.

Note: Audacity can also be setup to record from your sound card. This means that any sound that you can hear on your computer speakers can be sent to Audacity for editing. The procedure to do this will be apparent as you get experience using Audacity.

Steps:

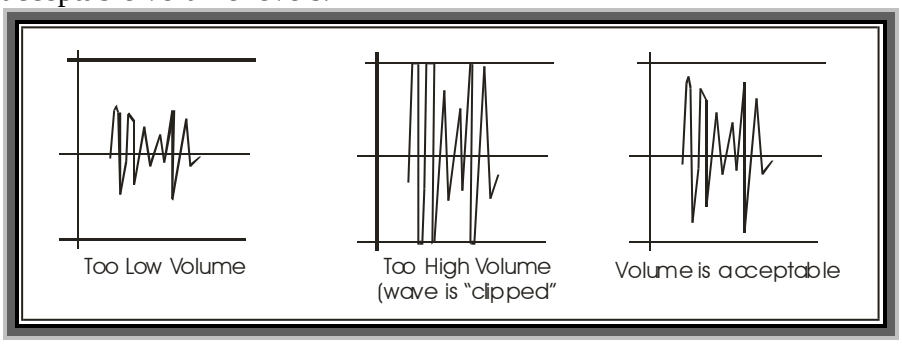
1- Use a digital recorder to record the sound you want. It would be best to record several variations of the sound on the same file.
2- Connect your digital recorder to your computer and set it up to download the audio file (in WAV format most likely) from your digital recorder to your computer..
3- Place the sound clip in a new folder on your computer and label it according to the sound it produced.
4- Start Audacity. Go to the FILE menu and then OPEN the sound clip.
5- Audacity will look approximately like this:



These are the raw sound clips. They will need some work such as removing unwanted clips, increasing or decreasing the volume, removing the silence at the beginning of the clip, adding silence to the end of the clip, converting clip to MP3, etc.

Changing the Volume of an Audacity sound clip:

a) It has been my experience that the sound clip should be about ¾ of the way up from the zero line for best results. Here are some examples of too soft, too high, and acceptable volume levels.



To increase the volume:

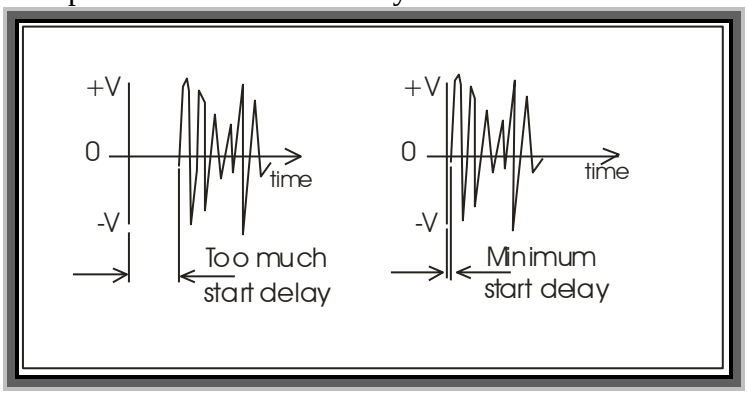
Select the sound clip, go to EFFECT menu, then AMPLIFY, and click on OK.

To decrease the volume:

Select the sound clip, go to EFFECT menu, set a "-" number , then click OK. If it does not reduce it enough then go to EDIT menu and UNDO, are repeat the above with a larger "-" number.

Reducing the startup delay:

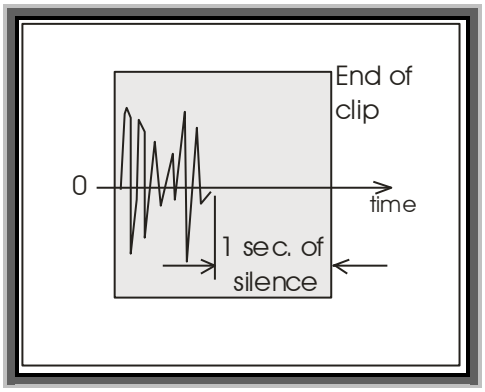
b) The sound clip should start immediately:



Highlight the start delay and then CUT.

Prevent the sound clip from ending too abruptly during playback:

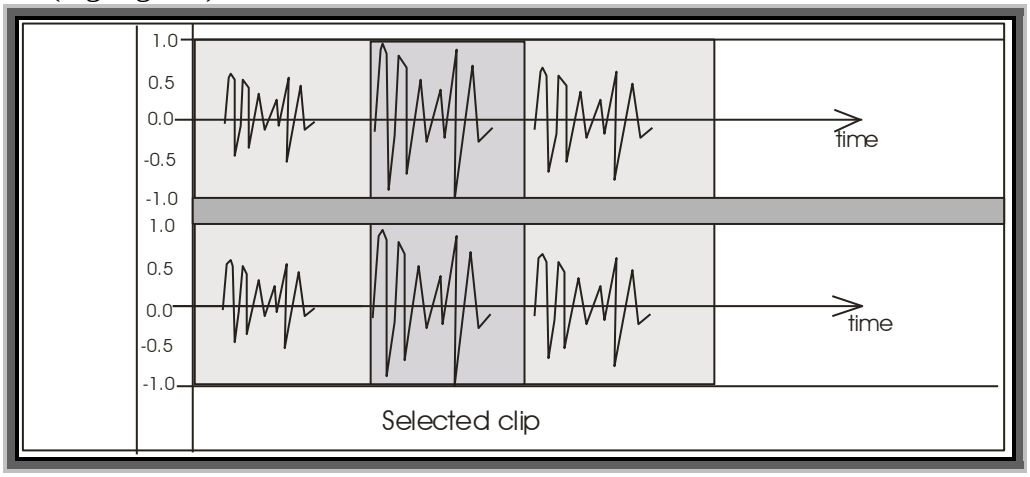
c) Add at least 1 second of silence after the sound track ends:



Click on the end of the sound clip. Go menu item, Generate, then “Silence”, pop up appears for you to insert the number of seconds of silence, then click on “Generate”.

How to Export and Save your sound file:

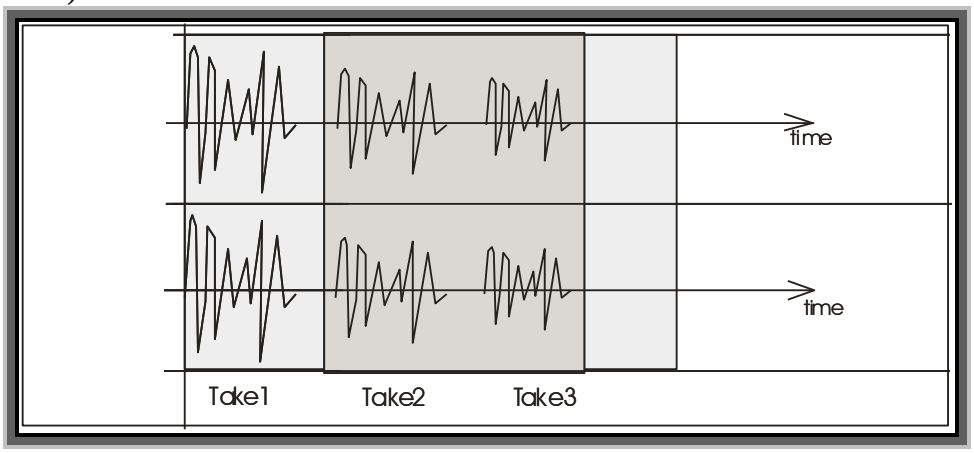
While in Audacity, copy the sound file by right clicking at the end of the sound file and then drag the mouse to the beginning. Release the button. Now the entire sound file is selected (highlighted).



To export as a WAV file: Go to FILE menu, click on EXPORT SELECTION as WAV FILE.
In order to use this sound clip on the DTC or PSEE, it must be converted to a MP3 file. This is done by using the free program called Daniusoft MP3 WAV Converter. If you Google Daniusoft, you will find it or go to www.daniusoft.com

Selecting the desired track from several takes:

d) Remove the unwanted sound tracks:



-select the sound clips to eliminate (i.e.: Take 2 and Take 3).
-Cut using EDIT menu, then CUT.

Section 18

Troubleshooting

No sound is heard when a console pushbutton is pressed.

1) Is a sound file assigned to that pushbutton?
2) Is the volume level control too low?
3) Is the volume level of the sound file too low?
4) Is the main circuit board receiving power?
   i. Check the +5v power led to the left of the large black heatsink. The should be lighted. If not then check the power plug on the main circuit board. Is it loose, unsoldered, not there?
5) Does the MP3 player board (the red board on top of the main printed circuit board) have power?
   i. The "Power" led should be lit.
   ii. If the "Power" led is not lit then check that the power connector is fully pushed into the power jack at the bottom left of the MP3 player board. (Always support the jack when you insert the plug – the hardware on this board is delicate).
   iii. There is a power select mini-mini slide switch to the right of the power jack on the MP3 player board. It should be in the "EXT" (external power source) position. It may have been moved into the "USB" position in error. If so then the MP3 player will receive no power.
   Also, if it is in the "EXT" position and the board still does not have power then try sliding the switch to "USB" position and then back to "EXT". Then re-apply power to the unit.
6) Is the Mini SD card plugged into the MP3 player board?
   i. Release the mini SD card and reinsert it. Again, this is a delicate mechanism. Use care.
7) Are there MP3 sound files on the mini SD card?
   i. Test this by switching off the power, wait 10 seconds then apply power. Watch for the green "STATUS" light on the red MP3 player board. It should blink 3 times after a few seconds (it may look like two times because they are fast blinks). If the led blinks several times (3 times-difficult to count, it looks like two) then the MP3 files on the mini SD card are present.
   ii. Check the audio output jack. Make sure the plug is fully inserted. (Always support the jack on the circuit board when you insert the plug – the hardware on this board is delicate).
   iii. If the led blinks continuously then there is a hardware problem with the MP3 player board.
   iv. If the led blinks one long blink, then there are no formatted MP3 files present on the mini SD card.
   Check the mini SD card by using your computer to observe the files. (One customer took all the files and put them into a

folder on the mini SD card. The MP3 player can not open a file folder).

v. If the led blinks one long blink followed by one short blink then media has been found but there are no MP3 files on the media. See iv above.

8) Check the audio cables from the PSEC main board. Is your amplifier operational?