

Selecting Blocks

Before you can edit or play a Voice block, it is necessary to learn how to select blocks. You can select blocks from the keyboard or with a mouse. You can select more than one block at a time. However, selected blocks must be next to each other. You cannot select terminator blocks. Each line is numbered in descending order. The screen below shows blocks three and four selected. The double rule box indicates selected blocks. The reverse (highlighted) text, line two, is the current block. You can define or select both current block and selected blocks at the same time. The windows on the right side show the location of selected blocks and the cursor.

Selecting blocks may be a bit confusing at first, but it gets easier with practice. You can use either the mouse or the keyboard.

Block Type	Information	
Voice	8000 Hz	UPK 8275
Silence	0.383 Sec	
Voice	8000 Hz	UPK 3458
Voice	8000 Hz	UPK 1938
Silence	0.292 Sec	
Terminator		

Cursor

Bgn Blk

End Blk

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TIP: Place the mouse cursor at this point, press and hold the mouse button and move the pointer to the left off the screen to select all block from that point to the top.

TIP: Place the mouse cursor at this point, press and hold the mouse button and move the pointer to the right off the screen to select all block from that point to the bottom.

Mouse

1. To select blocks, place the cursor on a block, click and hold, then drag the pointer over the blocks you want to select and release the mouse button.
2. To select a current block, place cursor on block, click and release the mouse button.

Keyboard



1. Press the **B** key then type the number of the beginning block and press **Enter**.
2. Press the **E** key then type the number of the ending block and press **Enter**.
3. To select current block, use the **Up** and **Down Arrow** keys.

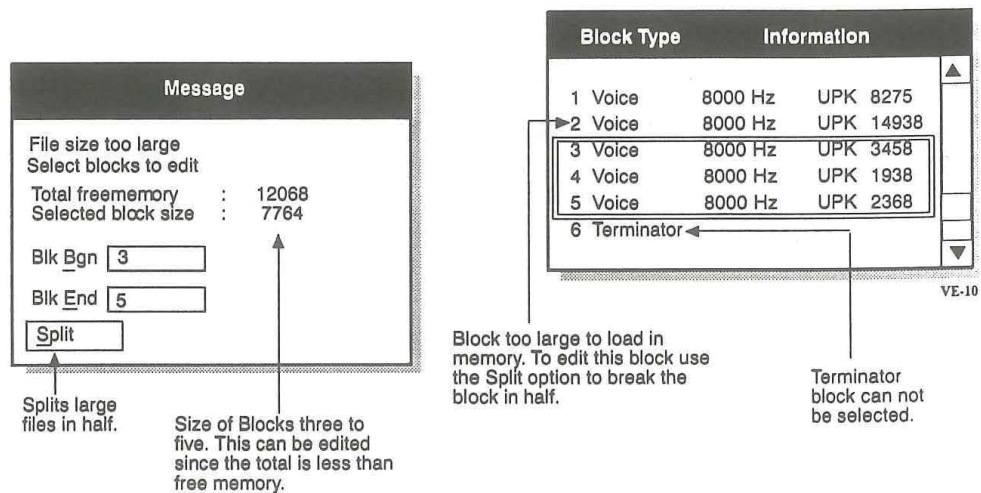
Loading Large Files

Since, recorded files can be as large as available hard disk storage space, files can be too large to load in to memory. To get around this limitation, Voice Editor II provides a method that lets you edit a portion of the file.

Loading a file too big for available memory causes two screens to display.—the Block Type Screen that has each block numbered and the Message Screen that lets you select blocks and split files.

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You select blocks the same way you did in the Block Information Screen. You can split files too large for memory using the Split option in the **Message** box. After selecting blocks, press the **O** key or select **OK** with the mouse. The normal Block Information Screen then displays.



Load
Save
Save as
Write
Intro
Exit

Now that you know how to load a file, what blocks are and how to select them, the rest of the options are easy.

Save

This does exactly what it says. It does not give you a chance to change your mind and overwrites the file saving the changes to disk.

Save as

This gives you the opportunity to give a new filename to a changed file. Selecting this option causes the Directory/Drive screen to display.

Write

This option lets you save selected block from the Block Information screen to a file.

	Block Type	Information	
	Voice	8000 Hz UPK 8275	▲
Current block →	Silence	0.383 Sec	
	Voice	8000 Hz UPK 3458	
Selected blocks →	Voice	8000 Hz UPK 1938	
	Silence	0.292 Sec	
	Terminator		▼

Cursor

Bgn Blk

End Blk

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Intro

This displays the Copyright Screen

Exit

This is the option you select to quit Voice Editor II.

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The Settings Screen lets you choose between three sources and four sound types. You cannot select Microphone and Stereo at the same time. Line In and CD Mixer in the mono mode can select either low or high frequency filter. In the stereo mode, unfiltered and 22.05KHz are automatically selected.

Filter selection is dependent on the sampling rate you select when recording. Use the chart to determine filter selection.

Sampling Rate	Select Filter
less than 18KHz	Low - 3.2KHz filter
18KHz to 36KHz	High - 8.8KHz filter
36KHz and above	No filter

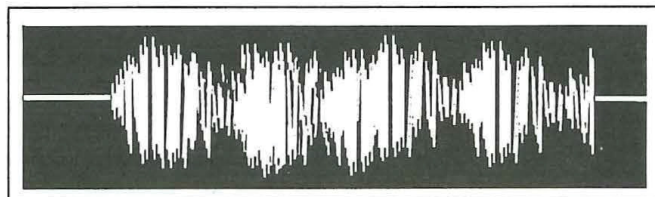
When setting the Sampling Rate, you will notice that the higher the sampling rate, the lower the recording time. Also, remember to set the sampling rate to coincide with your filter selection (Refer to the filter chart described earlier). For a better understanding of Sound Sampling refer to the Sound Basics section. Generally, the higher the sampling rate, the better the recorded sound quality.

3. After making selections, select **OK**.

Scan Input

The next thing you need to do is make sure there is sound input to the Sound Blaster Pro card. If you have selected CD or Line-In, you can hear the sound. You cannot hear output from the microphone through the speakers. However, if you want to see a graphic representation of the sound for the select source:

1. Select **Scan Input** from the option menu. A screen displays an active waveform. If you are using a microphone, you need to speak into it before you can see the waveform.



Note: The Sound Blaster Pro board has a built-in self-attenuation system to prevent spiking. When you speak or play sound, you may notice a line touch the bottom of the waveform screen. However, the Sound Blaster Pro card will begin rounding out the signal to prevent this.

Once you are satisfied with the input:

2. Press **Escape** or press the mouse button to remove the Input Scan Screen.

Recording to Memory

Now you are ready to record. If you selected **To Memory** in the Settings screen, remember you only have a certain amount of available memory. Voice Editor II does not yet support extended memory. Naturally, if you select the hard disk, you will have a longer recording time since you can fill an entire hard disk with a sound file.

To record to Memory:

1. Make selections in Setting Screen and select **To Memory** and select **OK**.
2. Select **To Memory** in the option menu under **Record**.

Once you make the selection, Voice Editor II begins recording. A screen will be displayed while recording. This screen also lets you stop the recording. The Block Information Screen displays the new block information.



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Recording to Disk

1. After making the initial settings, select **To Disk** and select **OK**.
2. Select **To Disk** in the option menu under **Record**
3. When the Directory/Drive Screen displays, enter **Filename** and select **OK**.

Note: If you select an existing file name in the Directory /Drive Screen, Voice Editor II will ask if you want to overwrite the existing file. When you start recording, any file in memory will remain. If you have a file in memory when loading, Voice Editor II warns you if you have not saved the file in memory. It will replace the file in memory with the file you are loading. You can choose to save the file in memory, or replace it with the new file.

Play

Now that you have learned how to load a file, select blocks and record files, naturally you want to play them.

From Memory
Selected Blocks
From Disk

From Memory

To play a file from memory:

1. Select **From Memory** in the option menu.

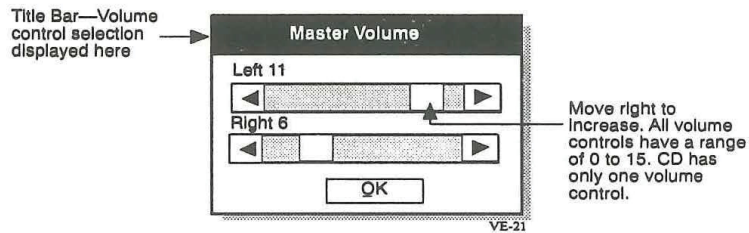
If you don't hear any sound, you may need to set the volume. Access the Volume controls from the Main Menu.

Master
Voice
CDisc
Line In

To set volume:

1. Select Volume from the Main menu.
2. When the option menu pops down, select one of the following:
 - ▶ **Master** You need to set the master volume control to an audible level before individual volume controls can take effect.
 - ▶ **Voice** Controls voice output.
 - ▶ **CDisc** Controls CD Player. You cannot control left and right volume separately.
 - ▶ **Line In** Controls devices connected to the Line-in jack.

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Important: Set the manual volume control located on the back of the Sound Blaster Pro card to at least midrange for software volume controls to take effect. The software volume controls have a range of 0 to 15.

Selected Blocks

To play selected blocks:

1. Select any combination of blocks in the Block Information Screen.
2. Select **Selected Blocks** in the option menu

It is necessary to load a file in memory before you can play selected blocks. The only individual blocks you can play and hear are Voice blocks. You can select individual Silence, ASCII and Marker blocks and try to play them, but don't expect to hear anything.

You can play a group of Voice blocks or even select a combination of Voice, Silence, ASCII and Marker blocks, but you will only hear the Voice block mixed with silent periods.

From Disk

To play from disk:

1. Select **From Disk** in the option menu.
2. When the Directory/Drive Screen displays, select a file to play.
3. Select **OK**.

Note: Playing a file from disk will not affect a file loaded in memory.

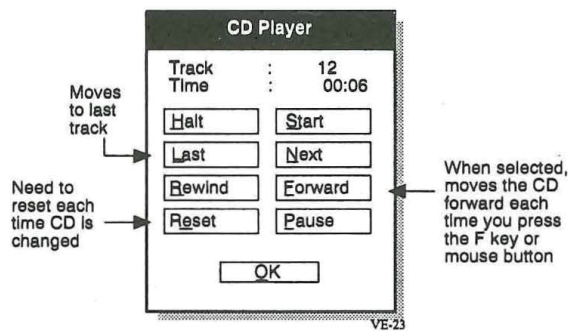
CD Player

CD Player

If you select CD Mixer as a sound source, you can control the CD player from this menu.

1. Select **CDisc** from the Main menu.
2. Select **CD Player** in the option menu to display CD Player Control Screen.

Note: The CD Player can play in the background. For additional information regarding the CD Player connection, the CD Section of this manual.



Edit

- | |
|---------|
| Insert |
| Delete |
| Modify |
| Move |
| Copy |
| Combine |

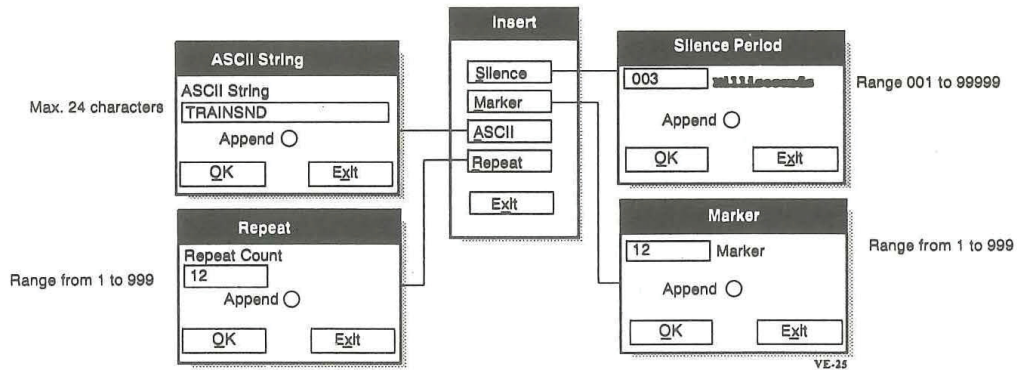
Now that you can load a files, select blocks, play and record files, we are to the point where we change and rearrange your voice files.

Before we can edit anything, a file must be in memory, either a recorded file or a file loaded from disk.

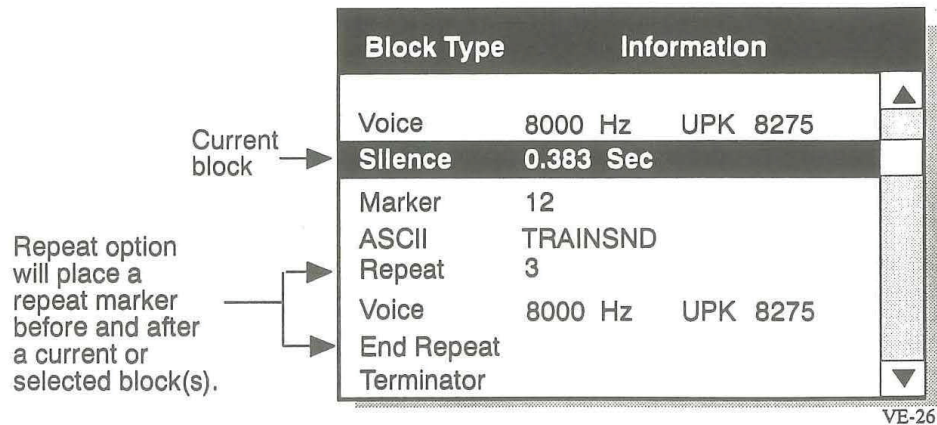
If you do not have any blocks selected, the options Move, Copy and Combine are grayed out and cannot be selected. We will cover them later, but first we will cover Insert, Delete and Modify. These options affect the Current block (Current Block, the block reversed or highlighted in the Block Information Screen.)

Insert

Using Insert, you can add additional blocks of information to your existing voice file. Selecting any one of these options displays an entry screen with an append option. Selecting append places the block beneath the Current Block. Enter the data you desire and select **OK** or **Exit** to return to the previous screen. You can also press **ESC** to exit to the previous screen.



Selecting the Insert options creates new blocks and places them in the Block Information Screen.



Delete

If there are no blocks selected, this option asks if you want to delete the Current Block. If there are blocks selected, it asks if you want to delete selected blocks.

Modify

You can modify any block shown in the Block Information Screen, except the Terminator.

If you modify Silence, ASCII, Marker or Repeat blocks, an entry screen is displayed giving you the opportunity to change the data in those blocks. When modifying the Silence block, you can change the sampling rate. If there are no Selected blocks, an entry screen displays for the Current block.

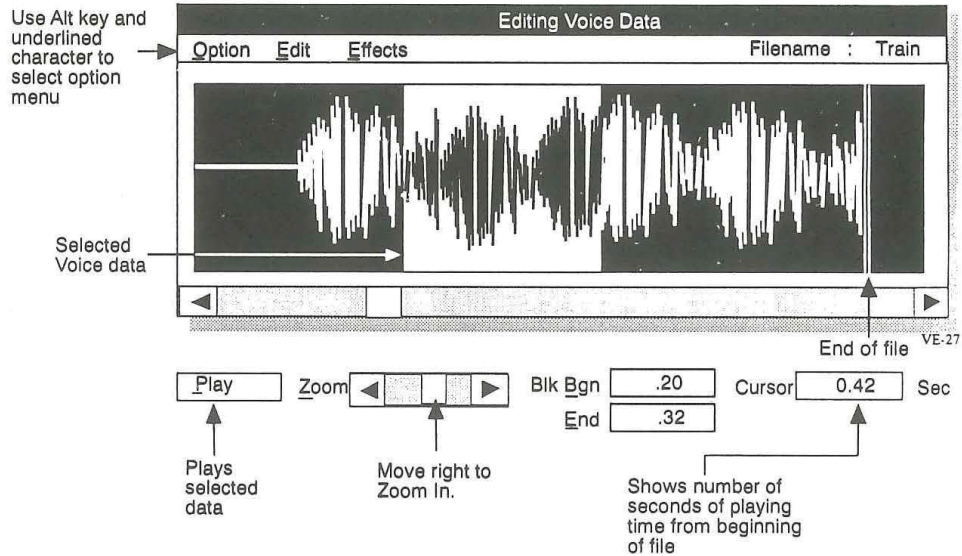
Note: Remember, the double-ruled box defines the Selected block(s).
The reversed or highlighted block is the Current block.

To modify a Voice block:

1. Select a Voice block in the Block Information Screen.
2. Select **M**odify from the **E**dit options

When the screen displays the waveform, you can cut, paste and rearrange the waveform to create special effects.

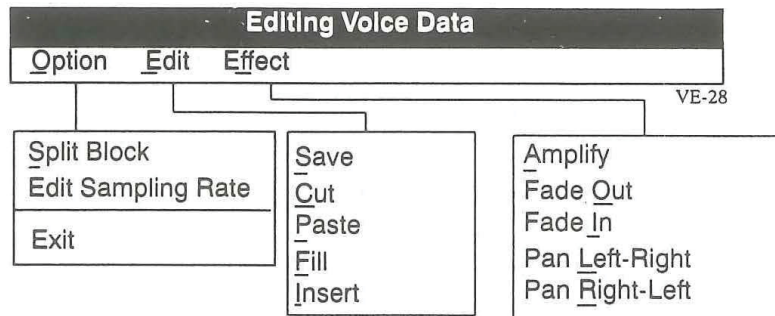
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Note: Only unpacked voice blocks can be displayed as a waveform.

The Modify Menus

There are three menus in the Modify Waveform Screen: Option, Edit and Effect. Use the mouse or Alt key and underlined character to select option menus.



Split Block
Edit Sampling Rate
Exit

Split Block

With this option, you can split a Data block at any location on the Waveform Screen.

To Split a Data block:

1. Click at any point in the waveform with the mouse.
2. Select **Option** from the menu and then select **Split Block**.

Note: From the keyboard, use the **Tab** key to move the cursor to the right in big jumps. Press and hold the **Shift** key and press the **Tab** key to move the cursor to left in big jumps. Use the < and > keys to move the cursor left or right in small increments. Once you have moved the cursor to the desired position, press the **Alt** and **O** to select **Option** and then press the **S** key.

You will notice that there is now another Voice block in the Block Information Screen. If you decide that you do not want to do this, you can select the two Voice blocks that you have split and use the **Combine** command in the **Edit** Menu from the Main Screen to put them back together. We'll cover Combine a little later in this manual.

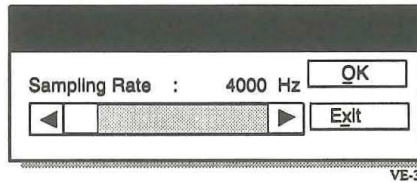
Edit Sampling Rate

You can change the sampling rate of Voice blocks using this option. Using this option will change the tone or pitch. You cannot change the sampling rate of selected portions of waveform. Any change affects the whole Voice Block.

To Edit Sampling Rate of a Voice block:

1. Select the **Option** Menu then select **Edit Sampling Rate**.
2. Select the new sampling rate from the entry screen.

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Edit



Before you can use these Edit options, you need to know how to select a portion of the waveform or voice data using the mouse or the keyboard.

Using the mouse you simply move the cursor to a beginning point, click and hold the mouse button while dragging the mouse left or right. Once you reach the desired ending point, release the button. You can also use the scroll bar below the waveform.

From the keyboard, move the cursor using the **Tab** or **Shift** and **Tab** key, or the **<** and **>** keys to a beginning point. Now press and hold the **Ctrl** key then press the **B** key to select the beginning point.

To select the ending point, move the cursor to an ending point and press and hold the **Ctrl** key then press the **E** key.

Another method is to enter the location values into the **Blk Bgn** and **End** windows. Press **B** and type in a value and then press **Enter**. Press **E** and type in a value then press **Enter**.

Save

The Save option lets you save the selected data in the waveform.

To Save selected sound data:

1. Select a portion of the waveform.
2. Select **Edit** from the Menu and then select **Save**.
3. When the Directory/Drive screen displays, enter a new filename or select a file and overwrite the file.

Important: When you select to overwrite a file, you can not recover the original sound.

Cut

With this option you can cut a portion of the waveform.

To cut sound data from the waveform:

1. Select a portion of the waveform.
2. Select **E**dit from the Menu and then select **C**ut.

Note: The cut portion of the waveform is held in memory unless you decide to paste it at some point in the waveform.

Paste

This option lets you paste cut voice data any place in the wave form.

Important: You can only paste once. There is no copy option. You can, however, copy selected blocks in the Block Information Screen.

To select a spot to paste:

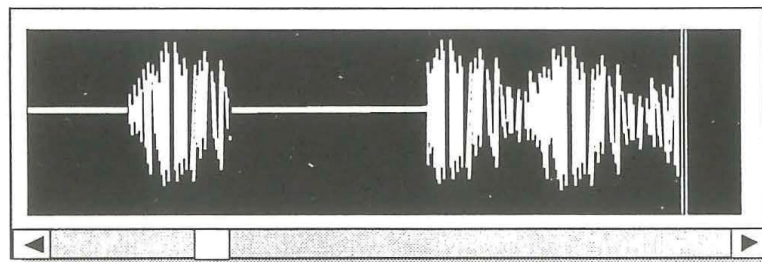
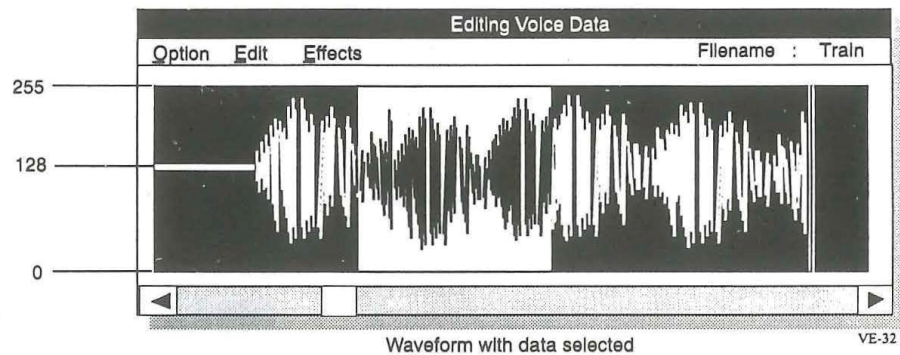
1. Place the pointer at any point on the waveform and click. This is the insertion point. (To use the keyboard, type the **B** key and use the left and right arrow key or simply enter the location in the **Bgn Blk** window.)

Fill

Selecting this option displays an entry screen where you can enter a value from 0 to 255. The default is 128 which is the silence point. If you use the default it will put a straight line in your waveform at the portion you selected.

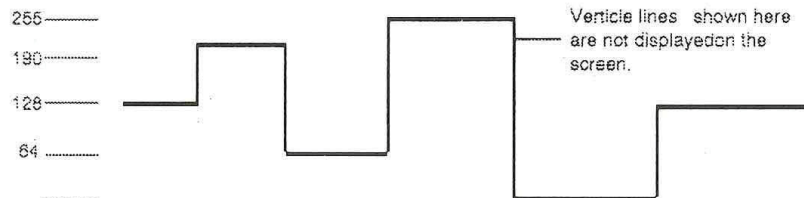
Insert

This option is almost the same, except it places the value at the cursor location in the waveform.



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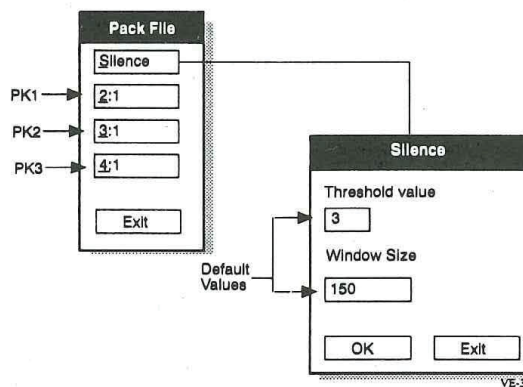
Using Fill and Insert you can create your own square waveforms similar to that shown below.



Packing Files

Memory
Disk

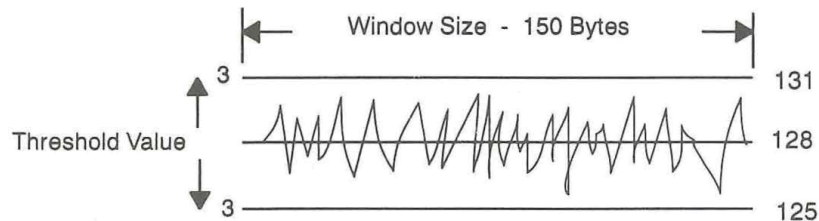
Voice Editor II provides four methods for compressing voice files. Three are compression techniques that compress files in ratios of 4:1, 3:1 and 2:1. The 4:1 ratio reduces the size of the file by 75%, 3:1 by 66% and 2:1 by 50%. You can pack files in memory or disk. The Block Information Screen reflects whether a Data block is packed or unpacked by placing PK1, PK2 or PK3 in the block.



Important: While packing files can save space, you can not unpack files. Also, you can not modify the waveform of a packed file. If you want to pack a disk file, but don't want to overwrite the original file, you need to save it using a different file name.

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Silence is another method of reducing file size. When you select the silence option, an entry screen is displayed. Defaults are 3 and 150. What this does, at this default setting, is look at every 150 bytes of voice data and remove any that falls within the threshold setting. That is, it removes data that falls between 125 and 131 with 128 as the silence value.

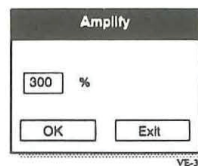


Effects

Amplify
Fade Out
Fade In
Pan Left-Right
Pan Right-Left

These special effects can change your sound. Selecting Amplify increases the volume of a sound. You can amplify a portion of the waveform or the entire Voice block.

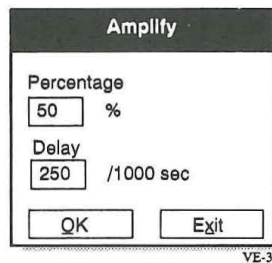
Amplify



Selecting Amplify displays an entry screen with the default set at 200%. Selecting this will increase the volume of your sound.

Echo

Selecting Echo displays an entry screen to set the percentage of echo and a delay time. The best way to learn this is by playing with different percentages and time delays. One way to produce a good echo is to add some silence data to the end of the sound before applying the Echo effect. This provides time for the sound to fade gradually. Use the **Insert** option under **Edit** on the Main Menu.



Fade Out

This option takes the selected portion of the waveform and gradually reduces the sound volume until it fades out.

Fade In

The reverse of Fade Out, this option gradually increases the volume of the selected portion of the waveform to its highest setting.

Pan Left-Right

Use this option to create the effect of sound moving from left to right. It takes a selected portion of the waveform and moves it gradually from the left speaker to the right speaker.

Pan Right-Left

This does the same as the Pan Left-Right option, except it moves sound from right to left speaker.

Back to Block Editing

Load
Save
Save as
Write
Intro
Exit

Now that we have learned to modify waveforms and other blocks of information, this returns us to the last three options under Edit on the Main Menu Screen: Copy, Move and Combine. These options do exactly what they say and effect the selected blocks in the Block Information screen.

Copy

With this option you can copy a Selected block(s) and move them to a different location. After copying, the copied block(s) appear beneath the Current block location.

Move

This option lets you move one or more blocks to a different location. The Current block location determines the location they move to.

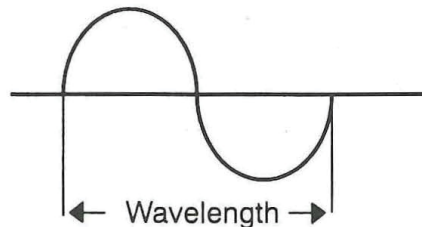
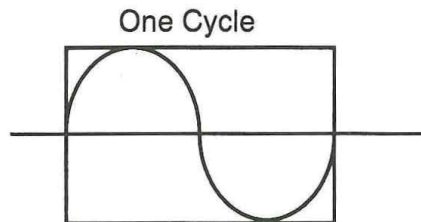
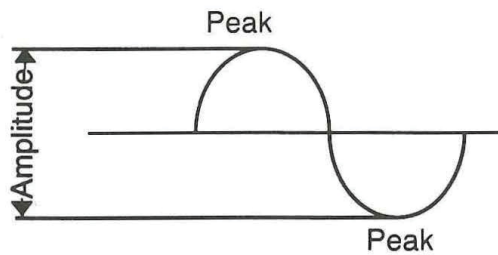
Combine

This lets you combine Voice blocks only. Voice blocks must have the same sampling rate before you can combine them.

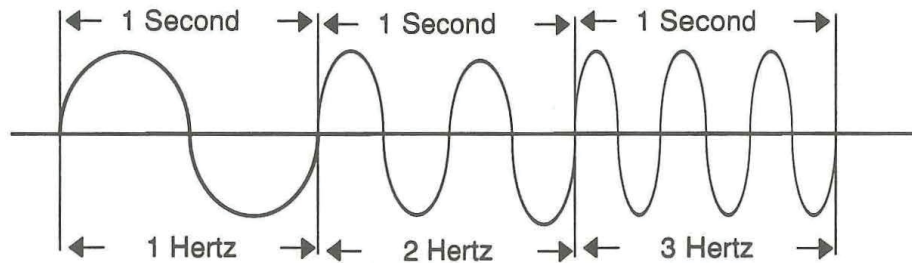
Sound Basics

Sound is nothing more than the movement or vibration of molecules in the air that cause other things to vibrate—like your auditory nerves that let you hear sound.

Sound is, for our purpose, represented by sine waves. Sine waves have two characteristics—frequency and amplitude. Frequency is the number of cycles per second and has an effect on the pitch or timbre of a sound. Amplitude, represented by the height of a sine wave, is also the loudness of a sound.



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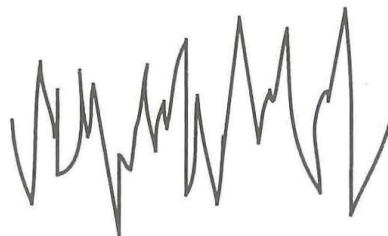
Frequency equals number of cycles per second

Sampling Rate

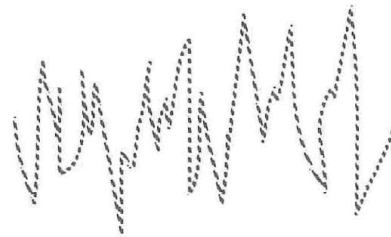
Sound waves are not simple sine waves, but complex waves. When you record a sound with the Sound Blaster Pro, it changes analog signals into digital signals.

Sampling is the number of times the Sound Blaster Pro looks at a sound and recreates a digitized version or image of the sound. For example, recording sound at 4KHz, create 4000 digitized images or samples in one second. When looking at a standard sound waveform, compared to a digitized image you can see bits of information make up the digitized image. In the case of Voice Editor II, you can select between 4KHz (4,000 Hertz) and 44.1KHz when recording. This sampling rate affects the quality of sound—the higher the sampling rate, the better the sound. A CD has a sampling rate of 44KHz at 16 bits.

Since sampling rate is measured in frequency (Hertz), changing the sampling rate after recording changes the sound's pitch. If you decrease the sampling rate of a recorded voice file, you change the pitch to a lower tone.



Original Sound waveform



Digitized waveform

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Chapter

10

VOICE UTILITIES

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JOINTVOC	10-4
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VPLAY	10-6

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VOICE UTILITIES

These voice utilities are helpful in creating and changing recorded sounds. They can be used in creating special batch files for multimedia applications. The following programs are found in the VEDIT2 subdirectory:

- ▶ **VOC-HDR** : Adds headers to raw voice files
- ▶ **JOINTVOC** : Joins or combines voice files
- ▶ **VREC** : Records voice to disk from the command line
- ▶ **VPLAY** : Plays digitized voice from disk

Important: Most of the programs in this section have optional parameters that can be set. To eliminate some of the confusion the following conventions and standards are used to describe files and parameters:

- ▶ **filename.voc** : refers to a voice file. These can also be shown as sourcefile.voc, targetfile.voc and file1.voc. The **.VOC** extension refers to a Creative Voice File Format. All voice files are shown in bold.
- ▶ **Options** : refers to optional settings for voice files. These options are usually listed inside brackets-you do not type the brackets when setting options. The lower case letters refer to variable settings for each option. The options will be shown in bold italics.

VOC-HDR

This program adds the CT-VOICE header to a raw sound file recorded from other sources. With the header added, Voice Editor II and other programs using the CT-VOICE driver can then play the sound file.

Entry format:

VOC-HDR sourcefile targetfile.voc

Important: It is necessary to put the **.VOC** extension on the target file.

JOINTVOC

With this utility you can combine two or more voice files into a new file.

Entry format:

JOINTVOC / Ttargetfile.voc file1.voc file2.voc [/Saa /Mbb /Rcc /RE]

Note: The parameters **[/Saa/Mbb/Rcc/RE]** can be added to each voice file to be combined. Decimal values for aa, bb and cc cannot be greater than 32767.

Example: If you want to join three files, where file2.voc repeats five times and then pauses for two seconds after playing file2.voc, this is entered as:

JOINTVOC / Ttargetfile.voc file1.voc /R5 file2.voc /RE /S20 file3.voc

Option	Description/Specifications
Saa	Adds a silence period to a voice file in units of 0.1 seconds.
Mbb	Adds a marker to the file. During playback of the voice, if the marker is encountered, it sends a 2-byte flag. An application program can then decide how to act when encountering these flags.
Rcc	Requests a block to be repeated. If cc equals -1 and requests non-stop repeating.
RE	Ends the repeat command.

VREC

With this utility you can record a voice from the DOS command line. The voice is recorded directly to the diskette or hard disk using a double-buffering technique. The length of the recorded voice file is limited only by the disk capacity.

VREC filename.voc [/B:kk] [/A:ii] [/F:hh] [/S:hh] [/M:mm] [/L:nn] [/T:ss] [/Q] [x="command line"]

Option Parameter	Description/Specifications
filename	Is the filename to store the recorded voice. The default extension is .VOC. The voice is stored in the Creative Voice File format.
/B:kk	Sets the buffer size used for recording. The program uses two buffers during the recording process. <i>kk</i> is the size of the buffer in 2K units. If the buffer is not specified, a default value of 16 is assumed for <i>kk</i> (32K bytes per buffer). You can enter a range from 1 to 32 for <i>kk</i> .
/A:ii	Selects the recording source. The default setting is MIC . <i>ii</i> must be one of the following sources: MIC - Microphone, CD - CD, LINE - Line in.
/F:hh	Selects the recording filter. <i>hh</i> can be either LOW or HIGH . The default is LOW . The cut-off frequency for LOW is 4 kHz. The cut-off frequency for HIGH is 8 kHz.
/S:hh	Sets the recording sampling rate (frequency). The range for <i>hh</i> in MONO mode is from 4000 Hz to 44100 Hz. In the STEREO mode, the sampling rate is fixed at 22050 Hz.

Option Parameter	Description/Specifications
<i>/M:mm</i>	This option selects either recording mode. Enter MONO or STEREO for <i>mm</i> . Default is MONO .
<i>/L:nn</i>	This option controls the LINE input volume. <i>nn</i> can be from 0 to 15 . The default is 0 .
<i>/T:ss</i>	Set the recording time in one second units. The range for <i>ss</i> is from 1 to 65535 , giving a maximum recording time of about 18.20 hours. (Note: This function will not work when <i>/X</i> switch is specified.)
<i>/Q</i>	Specifies Quiet screen mode operation. When specified, except for error messages, all other messages are suppressed.
<i>/X="command line"</i>	Go to DOS to execute a DOS command or another program after the voice process is activated. <i>command line</i> specifies the DOS command or a program to be executed containing up to 16 parameters.

VPLAY

You use this program to play a voice file from the DOS command line. The voice file can be any size and must be a Creative Voice File Format.

Entry format:

VPLAY filename.voc [B:kk] [T:ss] [Q] [X="command line"]

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Option	Description/Specifications
filename.voc	This is the voice file to play. The default extension is .VOC. The voice file must be in the Creative Voice File format.
/B:kk	Sets the buffer size used for playback. The program uses two buffers during the playback process. <i>kk</i> is the size of the buffer in 2K units. If the buffer is not specified, a default value of 16 is assumed for <i>kk</i> (32K bytes per buffer). You can enter a range from 1 to 32 for <i>kk</i> .
/T:ss	Sets the playback time in one second units. The range for <i>ss</i> is from 1 to 65535. (Note: This function will not work when /X switch is specified.)
/Q	Specifies Quiet screen mode operation. When specified, except for error messages, all other messages are suppressed.
/X="command line"	Go to DOS to execute a DOS command or another program after the voice process is activated. <i>command line</i> specifies the DOS command or a program to be executed containing up to 16 parameters.

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FM INTELLIGENT ORGAN STEREO VERSION

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FM INTELLIGENT ORGAN STEREO VERSION

The FM Intelligent Organ transforms your computer into an organ of incredible power and you into an instant musician. With one finger—or all ten, if you can manage—you can learn to play complex musical pieces on your computer keyboard—the software adds the accompaniment (bass, chord and rhythm) in real time.

We have included a Learn Mode to help you master the keyboard—without stopping to learn music theory. And, if you have a MIDI-compatible keyboard, using our MIDI interface, increases your music-making capabilities tenfold.

Getting Started

To load:

1. Go to the `\SBPRO\PRO-ORG` directory.
2. Type **PRO-ORG** and press **Enter**.

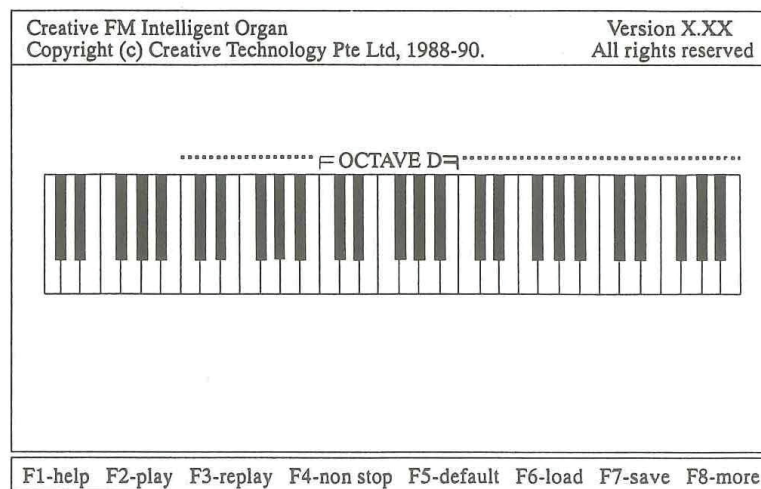


Figure 1 Intelligent Organ Main Menu

If you have no fear of computers or keyboards, set this manual aside, press **F2** and begin playing with the keyboard. You can press the **F1** and the **Page Up/Down** keys to display a brief help summary of key definitions.

After playing around for a while, you will have feel a for the keys and how they are used. Then, when you need additional information, come back to the manual.

There is a song provided in your Intelligent Organ disk called **DEMO**. Feel free to load it in for replay, non-stop replay with all kinds of effects; changing instruments, accompaniments, tempo, etc. Go on and have a good time — you can't damage anything by playing the organ, and the **HELP** menu is always there to guide you.

To load a song:

1. Press **F6**.
2. Use the **Arrow** keys, **Page Up** and **Down** keys to highlight and select a song from the list of songs displayed.
3. Press **F4** to play the song.

Important: After loading, if you press **F2** to play the song, you will hear only the rhythm and arpeggio—*NOT* the melody. If you press **F2**, you will have to reload the song to play it with melody.

Play Mode

Before you start to key in anything, you need to know which keys to play. Figure 2 gives you a good picture of the PC keyboard representation of the normal piano keys.

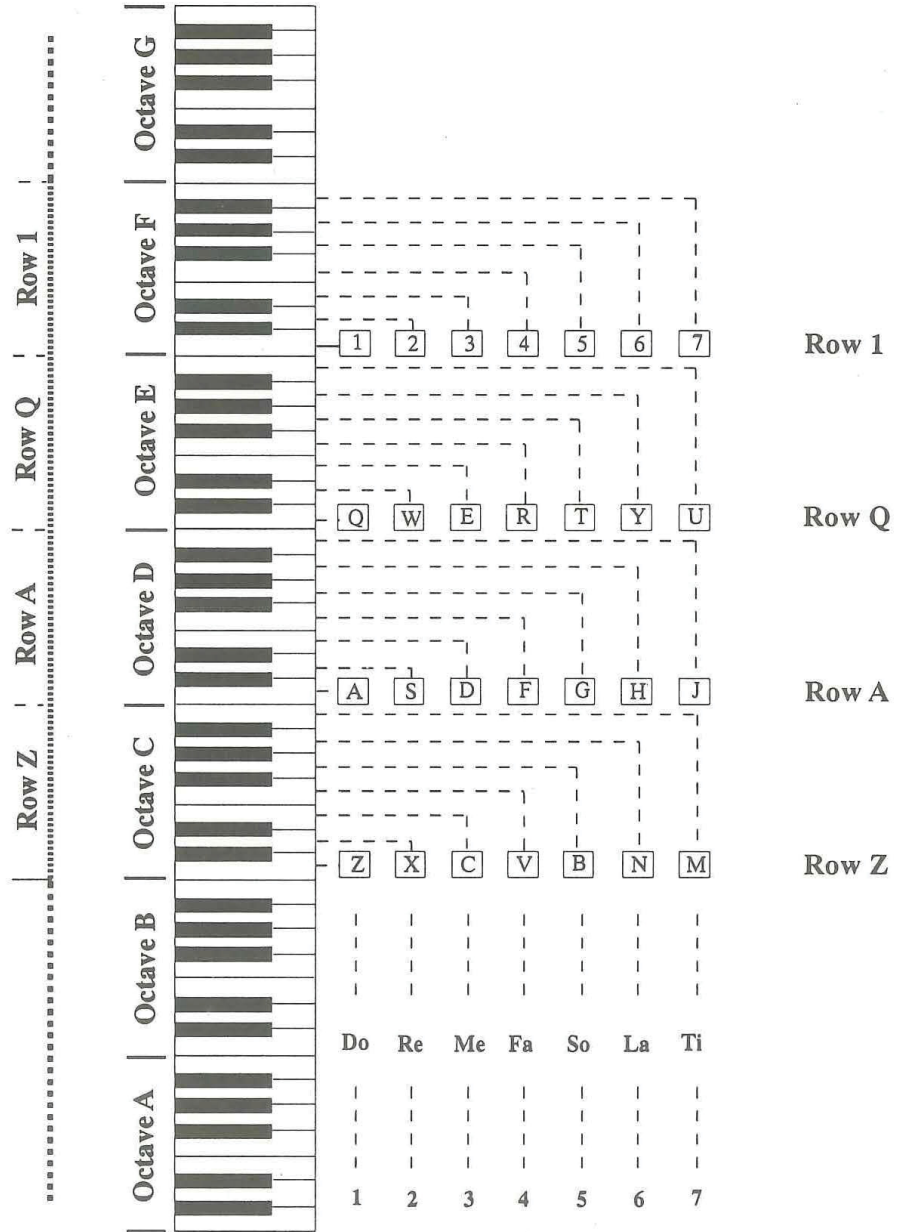


Figure 2 - Seven Octave Piano Keyboard on Your PC

Keyboard Terminology

All keys of keyboard instruments are arranged in groups of 12 keys (5 black & 7 white keys). Each of this group is called an Octave and the 1st white key of each Octave is a "DO", the second white key "RE", the third "MI" followed by "FA", "SO", "LA", "TI".

The Middle C is the "DO" note located at the middle of a piano keyboard and in the case of the Intelligent Organ, it is the "DO" note of the D Octave. This Organ program has a very large keyboard; the equivalent of a large organ keyboard. There are 7 Octaves available and for convenience, we named them as Octave A, B, C, D, E, F and G.

Getting to Know Your Keyboard

At the main menu, hit the **F2** function key to enter play mode.

Press the ← or → keys on the numeric keypad to shift the green color bar above the organ keyboard. Notice that the position of the D-Octave is always indicated. If you observe carefully, you will also notice that the length of the moving green bar always covers 4 octaves. These four octaves represent the four rows of keys on you PC keyboard, namely row **1**, row **Q**, row **A**, row **Z**, used for playing the organ.

For example, if the D-Octave is at the left hand side of the green bar, it means that the row **Z** represents the D-Octave. On the other hand, if the D-Octave is shifted to the right hand side of the green bar, then row **1** represents the D-Octave.

Have you pressed **F2** yet? Go ahead, press **F2** and start messing around with those "piano keys".

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Try playing any of these keys on your PC and you should hear the corresponding notes. If you cannot hear any sound, please check the volume control on your sound card and refer to Appendix C: Quick Reference for Problems Solving.

You can actually go on playing (or messing around) for hours, but let us stop for a while so that you can “show off” your musical talent by getting a bit more sophisticated (and I’ll “show off” what this organ can do for you).

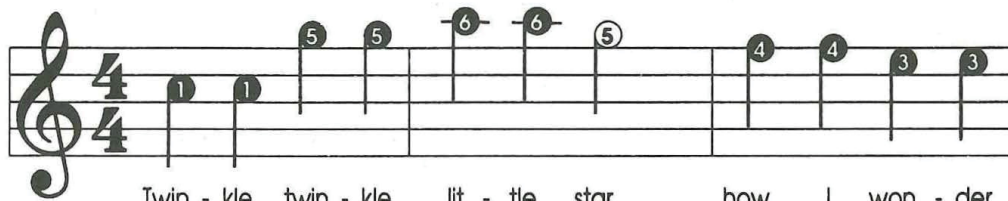
For those of you who don’t seem to be able to find something to play, you can try one of my favourite tunes on the next page.

TWINKLE, TWINKLE, LITTLE STAR

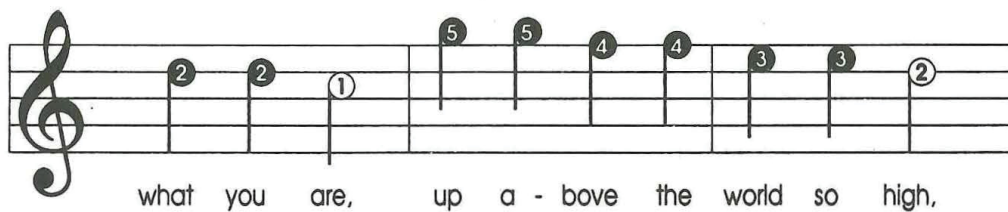
(filename : TWINKLE)

KEY 1=C

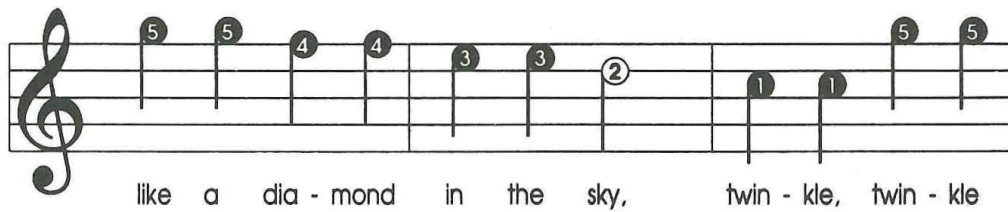
Rhythm = March



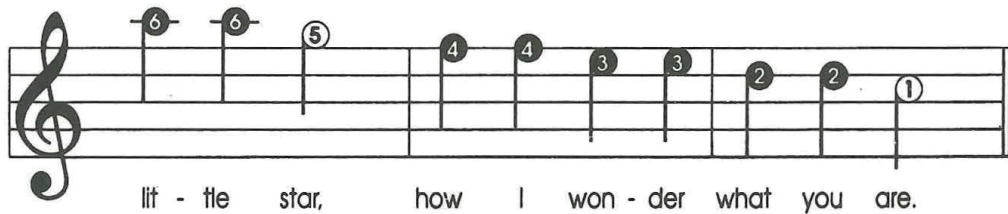
Twin - kle, twin - kle lit - tle star, how I won - der



what you are, up a - bove the world so high,



like a dia - mond in the sky, twin - kle, twin - kle



lit - tle star, how I won - der what you are.

'WHEN THE SAINTS GO MARCHING IN

(filename : SAINTS)

KEY 1=C

Rhythm = March

Oh, when the saints go march - ing in, _____

_____ Oh, when the saints go march - ing in, _____

_____ I want to be in that num - ber _____

_____ when the saints go march - ing in _____

The musical score consists of four staves of music in 4/4 time, written in treble clef. Each staff includes a melody line with fingerings (1-5) and lyrics. The lyrics are: "Oh, when the saints go march - ing in, _____", "_____ Oh, when the saints go march - ing in, _____", "_____ I want to be in that num - ber _____", and "_____ when the saints go march - ing in _____".

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Play by pressing the keys corresponding to the number on the notes.

E.g. The first 7 notes are (① ① ⑤ ⑤ ⑥ ⑥ ⑤)

You can use any of the 4 octaves, that is, any of the 4 rows to play.

If you chose row "1", type: (1 1 5 5 6 6 5)

If you chose row "Q", type: Q Q T T Y Y T

After you have played the whole song, let's try playing it differently one more time. This time hit the space-bar first and start playing when the number counting on the top-left corner is 1. You will hear beautiful background music being added to what you are playing. Press **ESC** to quit PLAY mode after playing the song.

Save, Load & Replay

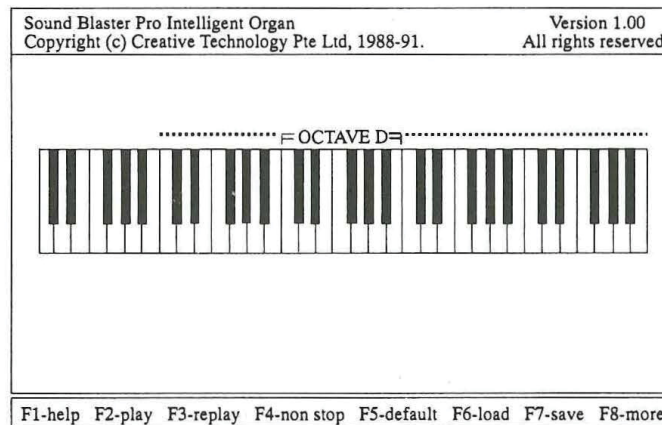


Figure 3 Intelligent Organ Main Menu

Save

Wonderful, isn't it?! Since this is your first song on the Organ, I am sure you would like to save it to show your friends. Press function key **F7** and you will be prompted to key in the name of the song.

Type "MYSONG1" and press **Enter** and the song that you've just played will be saved onto the disk. The Intelligent Organ actually "remembers" the song you are playing by storing it temporarily in a reserved memory area in your computer. We call this area the "BUFFER" and during a 'SAVE' operation, the contents in the buffer is transferred onto the disk.

Perhaps you would like to play the song again before you save. Hit **F2** to play again. Then press **Esc** to quit; and use **F7** to save the song.

Load

Just to make sure that you have saved your song correctly, press **F2** to go to the PLAY mode and then press the **Esc** key to return to the main menu;- going to the PLAY mode will wipe out the song that is stored in the buffer. Now press **F6** to load back the song that you have just saved.

A pop up menu containing all the song titles on your disk will be displayed. Simply move the cursor to the song you want and hit **Enter**. That song will be loaded into memory.

Non-Stop Replay

To hear the song that you have loaded, press **F4**. The song will be played back repeatedly until you press the **Esc** key. You may make changes to your song while in this "non-stop" mode but the changes made are temporary and will not be saved in the buffer.

Have you tried loading the "DEMO" song on the Intelligent Organ disk yet? If not, let's do it now! At the main menu hit **F6** and select DEMO. The song DEMO will be loaded from the disk. Next, hit **[F4]** for non-stop replay. You are now invited to modify the song by changing the instrument, rhythm etc. Isn't it fun? Go on, the power is with you, turn the song upside down.

Try loading other songs for a non-stop replay. Have fun with them. To make "permanent" changes you will have to press **F3** to replay. In this mode, the song will only be replayed once and to hear the song again, you will have to press **F3** once more. Changes made in this 'replay' mode are stored in the buffer and are therefore permanent. To avoid changing the DEMO song permanently, enter a different song title such as "DEMO2" when a filename is asked for during saving.

Instruments and Accompaniments

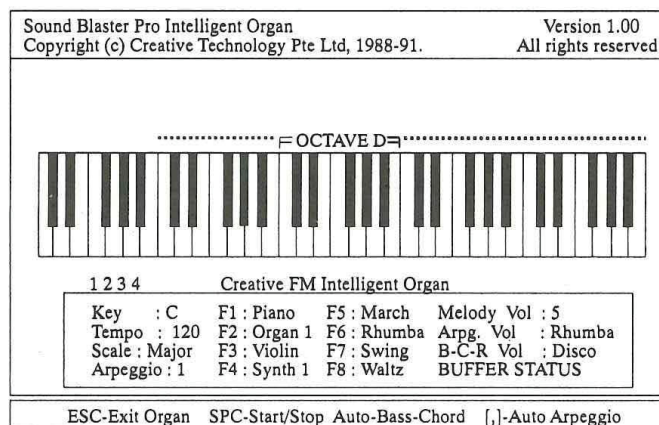


Figure 4 Intelligent Organ Play Menu

Instruments

Press **F2** to get to PLAY mode. Notice the menu in the PLAY mode? Try pressing function keys **F1** to **F4** and what do you notice? Some words in the main menu begin to change color or in the case of a monochrome monitor, highlighted.

Go on, choose something and start to play your tune. You can change instruments any time you fancy — simply press any of the keys **F1** to **F4**.

Each function key actually supports 5 instruments giving a total of 20 instruments. Pressing a function key continuously allows you to switch among the five instruments.

Auto-Bass-Chord

Playing a simple tune is not so difficult after all, but most tunes you've heard are not simple. They normally come with some background sound which is what we call accompaniment. The accompaniment enriches the quality (in most cases) of the main melody by adding bass, chord and rhythms to it.

Bored? For some action simply press the space bar and the accompaniment will be turned on. To stop, press the space bar once more.

The intelligence of the Intelligent Organ lies in the fact that it is capable of adding correct accompaniments to what you are playing — in real-time!

Certain accompaniment will suit some songs better than others and the Intelligent Organ gives you a choice of 16 different accompaniments to choose from. Try changing the accompaniment by pressing any of the function keys **F5** to **F8**.

Notice that most songs have a proper ending so that they sound right when ended and not abruptly interrupted. Try ending the auto accompaniment for various types of Auto-Bass-Chord accompaniment by hitting **Enter** key.

Now, with more power at your finger tips, you are ready to take on the "Twinkle, Twinkle, Little Star" again and mesmerize your audience with a vastly sophisticated version. Choose an instrument you like and select "March" for your Auto-Bass-Chord accompaniment. Don't forget to give your song a proper ending before saving it. Name it MYSONG2.

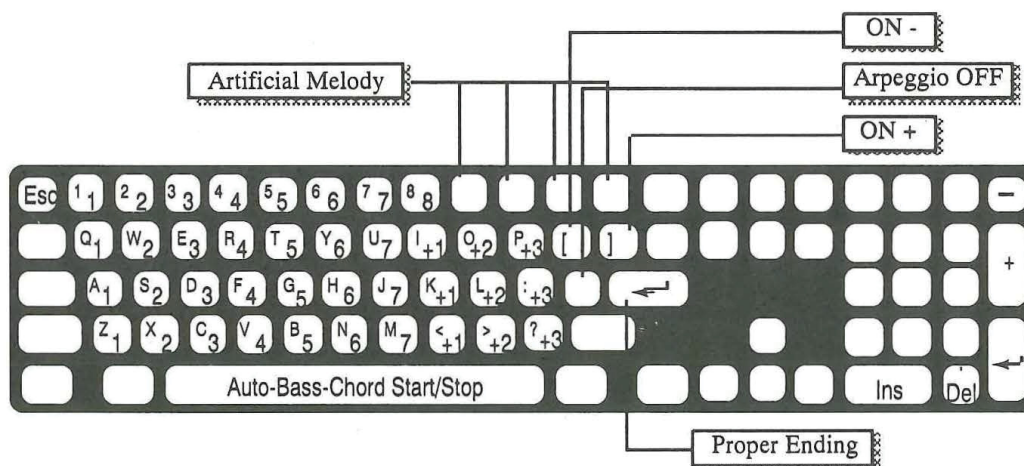


Figure 5—Keys for Auto-Bass-Chord, Auto-Arpeggio and Artificial Melody

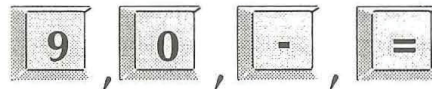
Auto Arpeggio

Ready for more fun now? In addition to the Auto-Bass-Chord accompaniment, the Intelligent Organ gives a further enhancement to your songs by providing an Auto Arpeggio — automatically adding a built-in harmonious melody to accompany your main melody. You can select any one of the six arpeggios using the [and] keys. How about adding more spice to MYSONG2 using Auto Arpeggio. That's a good way to get to know them better.

Use the " to stop the Auto-Arpeggio

Artificial Melody

Instead of the Auto-Arpeggio, you can also add a string of melodies to what you are playing. This artificial melody is provided by the following four keys:



The best effect is achieved by pressing one of the artificial melody keys during the long notes of your song.

E.g.

Press **9** to get a trill on the last note you play.

Tempo Control

You might have noticed the jumping numbers at the top left hand corner of your PLAY menu. The numbers are actually the beat count provided by the Intelligent Organ to assist you in getting your tempo correct. You can vary the tempo by pressing:

Ins — Increase Speed

Del — Decrease Speed



Figure 6—"Piano Keys" equivalent on a PC Keyboard

If you are still struggling to get your song right, because you cannot keep up with the pace of the song, don't despair. Simply decrease the tempo until you can key in your song comfortably. Add Auto-Bass-Chord and Arpeggio and you will still get to your sophisticated piece somehow. You can then increase your tempo gradually as your skill gets better. (Let me show a "crooked way" — play your song in a slow tempo and replay it in a regular tempo).

Volume Control

Besides the master volume control on the Music Card itself, the Intelligent Organ has three individually adjustable volume controls for the Melody, the Auto-Bass-Chord and the Auto Arpeggio. You can adjust them individually to get the best sound effect for your songs.

Now for some serious advice: Spend some time to master one song. If you can master one, you can master them all.

However, when you want to know more about other functions available on your organ, you can refer to the next two chapters.

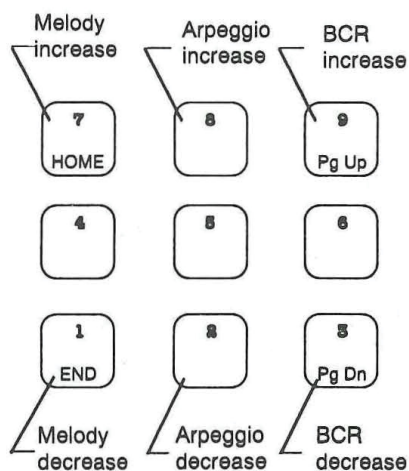


Figure 7—Volume Control

Time Signatures

At the beginning of a musical score, there is always a Time Signature. The most common are:

$\frac{3}{4}$ and $\frac{4}{4}$ which denote 3 beats and 4 beats respectively.

For songs with $\frac{3}{4}$ time signature, you should use only the waltz-type rhythms found on **[F8]**.

Major/ Minor Scale Selection

F9 — Major Scale Accompaniments

F10 — Minor Scale Accompaniments

Most songs can be categorized as a major-scaled song or a minor-scaled song.

As a rule of thumb, major-scaled songs begin with a major chord or end with "1" (DO) — the first note of its key.

Minor-scaled songs begin with a minor chord (Eg. Am, Em, Dm,...) or end with "6" (LA) — the sixth note of its key.

For major-scaled songs, use Major Scale Accompaniment **F9**, and for minor-scaled songs, use Minor Scale Accompaniment **F10**, so that the accompaniments sound proper.

Generally speaking, we use **F9** major accompaniment unless the songs ends with "6" (LA) or begins with a minor chord. Only then we choose **F10** minor accompaniment.

Transposing

Not every song is written in C key (1=C) — i.e. C is the “DO” note. Some tunes sound better if they are played in a higher key while others sound better in a lower key. Moving your “DO”, “RE”, “MI”, etc to a higher or lower tone is called TRANSPOSING. The Intelligent Organ gives you a very convenient one-touch way of transposing:

On the numeric key-pad, press

- | | |
|------------------------|-----------------------------------|
| [+] | Transpose music one-semitone up |
| [-] | Transpose music one-semitone down |
| [shift] [+] | Transpose a perfect fourth |
| [shift] [-] | Transpose a perfect fifth |

To hear the effect of transposing go to the main menu and press **F6** to load in a song. Next press **F4** for a non-stop replay and, while the song is being played, press the +, -, **Shift** + and **Shift** -

Changing Octaves

There are 7 Octaves playable from the Music Card and 4 Octaves are directly accessible at any time from your PC keyboard. You can gain access to all seven by using the ← and → keys on the numeric key pad to shift to the rest of the octaves.

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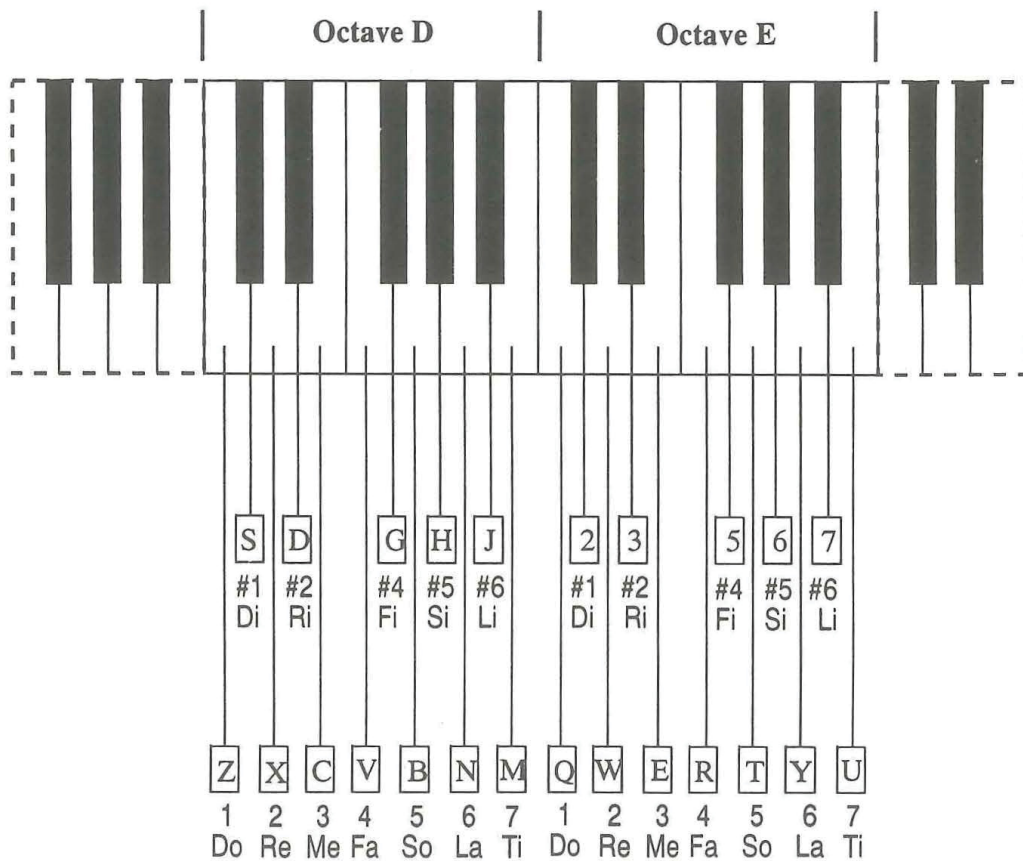


Figure 8—Small Keyboard Layout

Black Keys and the Small Keyboard

Besides the four octave keyboard, the Intelligent Organ also provides users with a small keyboard with directly accessible "Black Keys". Those who would like to play the "Black" Keys directly can hit the **Tab** key to toggle to a small keyboard (see fig. 9) with only 2 octaves.

The 4 rows hence becomes:

- Row 1 - Black keys (Octave E)
- Row Q - White keys (Octave E)
- Row A - Black keys (Octave D)
- Row Z - White keys (Octave D)

If the black keys are accidentals, which occur rarely in your songs, you can play the black keys on the big keyboard by holding **Shift** down while playing.

Buffer Status

The song you played is stored automatically in a memory buffer. The size of this buffer is 64 K bytes.

Under normal conditions, the word "Buffer Status" appearing on the bottom right corner is blue in color. When the buffer is almost full, it will flash in red color. When the buffer is full, it will appear as red.

When the buffer is full, you can carry on playing, except that what you play subsequently will not be stored in the buffer.

When you activate **F7** - SAVE, the contents of the buffer are saved on the disk. When you load a song from the disk, the song is loaded into the buffer.

Default Settings & Other Functions

The defaults for functions like instruments, rhythm styles, speed, title of songs, etc. can be set by pressing **F5** from the main menu. When in the Default Setting mode, you can use the **↑** & **↓** to select the function. Alternatively you can jump to that function by pressing the highlighted character. Next use the **←** or **→** to rotate the various options available in that function. Stop at the option you want.

To enter the title of the song you must hit **T** and then type not more than 24 characters. After having set all the default settings you desire, hit [Enter] to end.

Hit **Esc** if you wish to abort all changes to the setting and quit.

Hit **O** to restore all values to factory settings.

It is important to set your default settings because:

- ▶ You will be able to change your instruments, accompaniments, etc. to what you want with one touch of a button.
- ▶ The default setting is saved together with the songs.
- ▶ You can change the default settings after you have played a song or loaded a song.

More Functions—F8

When you hit **F8** in the main menu, you will be offered more functions:

- | | |
|------------|--|
| F1 - LEARN | This function allows you to learn an organ song that is loaded in the memory buffer. |
| F2 - PATH | Allows you to set the directory path for SAVE & LOAD. |

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- F3 - SHELL Allows you to SHELL to DOS temporarily;
for example, to perform a DIR command:
Type **EXIT** to return to **ORGAN**
- F4 - QUIT Quit the Organ and return to DOS
- F5 - MIDI TOGGLE Enter or exit MIDI mode

Learn Mode

The learn mode **F8 + F1** is a very easy way to learn to play any organ song without having to know any music theory. It shows you how the notes of the song are to be "typed" on the actual PC keyboard.

First load a song that you like to learn using the **F6** (load) Function.

Then hit **F8** and **F1** to enter the Learn mode.

Hit **F1** (demo) again to see a demonstration of how the keys should be "typed".

Then hit **F2** (learn). You will first see a brown bar on the upper half of a key. This is the warning signal for you to get ready to hit this key. When the bar turns into purple and drops to the bottom half of the key, this is the exact time that you must hit the key. If you do not hit the key in time, the song will wait, until you hit the correct key.

By practising on a song repeatedly, you should be able to play it without assistance after a while. If you have never played a musical instrument before, try it now, this will be really exciting.

MIDI Mode

The FM Intelligent Organ supports the MIDI interface of the Sound Blaster Pro card. You may play the FM Intelligent Organ using a normal organ keyboard. You could play with one hand, and have the Intelligent Organ add the accompaniments for you.

This is what you need to do :

1. You need to get an electronic organ keyboard (or synthesizer) that has a MIDI interface plus the optional MIDI Connector Box for SOUND BLASTER (cables are supplied with the MIDI Box).
2. Connect the MIDI Connector Box to the Joystick Connector on the SOUND BLASTER.
3. Plug the MIDI cable from the MIDI-IN on the MIDI Box to the MIDI-OUT on the MIDI keyboard.
4. Switch on the MIDI keyboard and set it to MIDI mode. (Refer to the keyboard manual if you don't know how to do it.)
5. Next, run the INTELLIGENT ORGAN software.
6. Hit Function Key **F8**-more then **F5**-midi-toggle.

This will activate the MIDI mode of the FM Intelligent Organ and enable it to receive MIDI codes from MIDI keyboards. You can still use the PC keyboard to play notes and change the ORGAN functions.

7. Next, you will see a "MIDI MODE" window on the screen. You are supposed to select the key signature that you are going to play. This is necessary so that the ORGAN can add the correct accompaniments to your song.

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Use the four arrow keys to change to the desired key signature. If you are not sure, count the number of sharps or flats in the key signature of your music score. Match the number of sharps or flats with those on the windows.

- ▶ **up arrow**—incr no. of sharps or decr no. of flats
- ▶ **down arrow**—decr no. of sharps or incr no. of flats
- ▶ **left arrow**—lower a semitone
- ▶ **right arrow**—raise a semitone

When you've selected the desired key signature, hit [Enter] and you will return to the main menu. The MIDI mode is now turned ON.

8. Hit **F2** to play. You can now play on the MIDI keyboard as well. The use of the MIDI keyboard will not hamper the functions of the FM Intelligent Organ. Change of instruments, rhythms, tempo, keys, etc. can still be executed using the PC's keyboard.
9. If your song changes key signature midway through the song, you must also let ORGAN know. Use the transpose functions; - **Shift +** or **Shift -** on the numeric keypad to match the key signature on the screen with that you are playing.
10. When you save a song after you have played on the MIDI keyboard, you may play back the song like any other ORGAN song played on the PC's keyboard. You will not hear the tunes from the MIDI keyboard. MIDI-OUT to the MIDI keyboard is not implemented.
11. The song that you have saved has been transposed to its "natural key signature":- the key signature whereby the song may be played without any black keys. During playback, ORGAN transposes it back to the original key signature. This has the advantage, that your song could be easily "LEARN"ed by others.
12. To end the MIDI-MODE, hit **F8** and **F5** one more time.

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Chapter

12

CD PLAYER

CD PLAYER 12-3

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CD PLAYER

This program gives you full control over an attached compact disc player. Before running this program, however, you need to install a CD player and two drivers—the first one is the hardware-dependent device driver packaged with your CD-ROM drive. Normally, device driver are placed in your config.sys file. (Please consult your CD Player's documentation for the correct settings and entry format.) The second driver is an executable program, MSCDEX from Microsoft. The format of this command is as follow (parameters are enclosed in brackets):

MSCDEX /D:device-name [M:n][E][V][L:drive-letter]

Parameter	Description/Specification
/D:device-name	Specify a name for the device driver. This name must be identical to the device name used in the CONFIG.SYS file.
/M:n	Specify the number of sector buffers used to catch the path table of a CD-ROM disc. Typically, each drive should have a minimum of 4 to 5 buffers. The larger this number is, the less your PC will have to read directly from the CD-ROM drive.
/E	Tell MSCDEX.EXE to use expanded memory if your system is using expanded memory.
/V	Specify this switch to display information on memory usage when you boot your PC.
/L	Specify the letter you wish to assign to the first CD-ROM Drive.