



Soundworks

FZ1



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1. Introduction

1.1 Preface

When it first came on the market, the CASIO FZ1 set a new standard in sampling technology as the first 16 bit stereo sampler to be offered at such a reasonable price. Its exceptional sound quality and innovative features make it a popular instrument for use in many different areas.

However, as with all samplers of its class, its use is hampered by one basic drawback, the fact that it only has limited capabilities with regard to its visual representation of recorded acoustic material. Although it has an LCD display which is able to present various parameters as well as small sections of a sample, its display unit is not really suitable for processing complex sounds in a speedy and precise fashion.

With its product, SOUNDWORKS FZ1, STEINBERG now provides you with a user interface which not only does justice to the sound capabilities of the FZ1, but also meets users' demands for a convenient and easy-to-use means of controlling all the processes involved in sampling.

You will now be able to save time (and of course, money) as a result of having complete and much easier access to your sound data as well as a variety of means of saving and transferring it. SOUNDWORKS FZ1 has by no means been developed in an environment far removed from the practical world of music. It has been produced in close cooperation with working musicians and you will no doubt soon find that it has become an indispensable tool which you rather not do without.

The manual is meant to enable you to begin work with this easy-to-use FZ1 editor as quickly as possible. Its major functions - ranging from the initial settings to making fine adjustments on the digital level and the creation of complete banks on screen - are all explained in logical steps. What you will read below should enable you to gain a clear understanding of the program so that you can begin experimenting with it straight away.

We hope you will have a great deal of fun working with SOUNDWORKS FZ1!

1.2 Updates & product information

We offer a continual update service as part of our efforts to provide STEINBERG customers with the very best products available. In order that you will be able to take advantage of this offer without delays, we would ask you to return the enclosed Update Service Form to our distributor immediately on purchasing our product. You will then automatically be informed when a new version of the program appears.

Information about STEINBERG products and software updates is also available through the Music Mailbox of the Music Mail Service. This system is specially oriented to the interests of musicians who use computers and can be used by anyone who has a telephone, a modem and a computer with the appropriate software. For further information about the MMS please contact

MUSIC MAIL SERVICE GMBH
Billwerder Neuer Deich 228
D-2000 Hamburg 26
F.R. Germany

Tel. (40) 782 530

1.3 Data security & backups

The many woeful tales of faulty disks or disks which have suddenly gone astray or been formatted by mistake should make it clear how important it is to make backup copies. You should always take the extra trouble to make a backup, by doing so you can secure your valuable material with very little effort.

STEINBERG software is hardware protected which means that you will have no problem in making a backup copy of your program disk - either on another disk or a harddisk. The steps involved are described in your ATARI ST handbook; it is however also possible to use one of the other copy programs on the market, which are generally faster and easier to use.

Copy the following files to the destination drive:

FZ1 BW .PRG
FZ1 BW .RSM
FZ1 BW .EXE
FZ1 BW .SET

Only use high quality disks for both backup copies and sample data. The relatively small saving made by buying "cheap" disks bears no relation to the problems you can experience as a result of a loss of data.

We recommend that you work with your backup copy and only make use of the original disk in the event of an emergency.

1.4 Installing & starting the program

In order to use SOUNDWORKS FZ1 you need:

- The original SOUNDWORKS FZ1 disk or a working copy,
- the STEINBERG key,
- an ATARI ST computer with at least 1 megabyte of RAM,
- a monochrome monitor,
- a means of mass storage, i.e. a disk or harddisk. In view of the huge amounts of data which are produced when using a sampler the use of a harddisk with a capacity of 40 MB or more is to be recommended. The speed factor should not be underestimated here.
- Finally, of course, a CASIO FZ1. Although sample editing may also be possible without a sampler, for reasons which should not need to be explained, it would be rather pointless.

First insert the KEY in the expansion port on the lefthand side of the (switched off) ATARI ST.

You can either connect the FZ1 to the computer directly or via a STEINBERG SMP 24 processor.

Connect the
MIDI OUT port of either the ST or the SMP 24 to the
MIDI IN port of the FZ1.

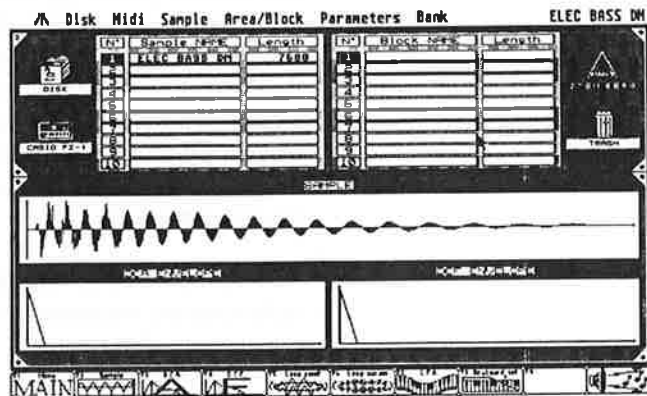
Then connect
MIDI OUT of the FZ1 to
MIDI IN of the ST/SMP 24.

If you use an SMP 24, you should also run sample data through the processor.

It is best to avoid cable lengths of more than 10 meters and ladder networks or delta connections involving too large a number of MIDI machines. Due of the large amounts of data involved in sample transfer, "misunderstandings" cannot be ruled out in systems configured in this way.

Turn on the sampler, monitor and computer, and then start the 'FZ1 BW.PRG' program on the SOUNDWORKS FZ1 disk with a double click on the appropriate icon.

1.5 The structure of the program



When the program is loaded you can see SOUNDWORKS FZ1's Main Page. From here you can carry out most transfer operations (reading, saving and transferring sound data) and call up all the other working screens (which will be referred to in this handbook as "pages").

The Main Page is the heart of the program, not only because a great deal of information is presented here, but also because it provides you with opportunities to enter other parts of the program.

As you can see, SOUNDWORKS FZ1 is able to deal with up to 10 different SAMPLES and 10 additional sample BLOCKS. Next to the name of each sample (or sample block) you will find information about its length (in WORDS, i.e. individual sample values). A graphic representation of the selected sample is displayed directly beneath this, and underneath that you will find the DCA and DCF envelopes.

By either clicking the mouse on the sample display, the envelope graphics or the icons on the lower edge of the screen you can call up other parts of the program in order to make very fine adjustments to the data displayed.

Initially, however, let's remain on the Main Page in order to take a closer look at the main functions which SOUNDWORKS FZ1 has to offer. We will begin by looking at the transfer of samples as "acoustic raw material" from and to disk as well as to the FZ1 itself and will then examine the wide-ranging possibilities for digital modification. After that we will explain how the "analogue" parameters of voices and banks (i.e. complete sound programs) can be created and edited.

Each function will be described in detail and where user techniques are mentioned which may be unknown to you an explanation will be given.

Nevertheless, you should try to avoid working with several things which are new to you at the same time. If you are unsure about the basic handling of the computer, particularly the GEM user interface and the desktop, and the FZ1's structure, please learn something about them before beginning work with SOUNDWORKS FZ1. You will thus avoid the disappointment which can result from making unnecessary operating errors.

Here are a few basic hints which should make it easier for you to find your way around the program:

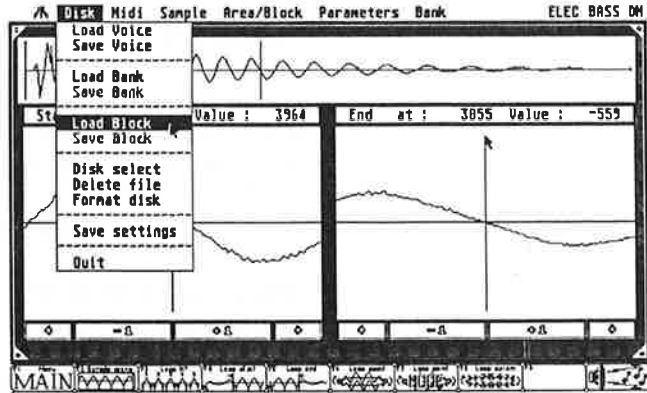
1. Most pages and functions can be called or activated by clicking on the icons at the lower edge of the screen. The most important parts of the program can also be called using the function keys F1 - F10. The functions assigned to the keys at any one time can be seen at the bottom of the screen.
2. The ten voices and sample blocks can be accessed by double clicking on the appropriate number.
3. Where the value of a number needs to be changed, this can generally be done by clicking the left (=to decrease it) or right (=to increase it) mouse button. In the case of some three figure or larger numbers it is possible to adjust each digit separately to carry out very large or fine adjustments. Using the function LEFT +1/-1 you are able to reverse the way this function works so that the right button decreases numbers and the left increases them.
4. There are basically two ways in which the menus which control most SOUNDWORKS features function:
 - a. "Real" functions, which are carried out immediately, and
 - b. Functions which branch off into other parts of the program (this generally involves the appearance of a new window on the screen).
5. In windows where a choice can be made between different options one of them is usually more strongly emphasized (the so-called default value), and this option can be selected by simply pressing the RETURN key. As a rule the "positive" decision path is marked so that you can reach the appropriate function more quickly with the RETURN key than by using the mouse.

6. Using the F10 key or the icon in the bottom righthand corner of the screen you are able to activate a monitor function in the truest sense of the word. The current sample is output through the loudspeaker in the monitor; the quality of the sound, however, is relatively low (something which is due to the monitor and not SOUNDWORKS FZ1). In order to achieve better sound quality it is possible to re-direct the computer's audio output using the appropriate hardware and, for example, play it through your hi-fi system. Suitable connections are described in ATARI ST books and computer magazines. This function can be activated on all pages.

If a looped sample is involved, the current loop (i.e. the one on which you are working) will be repeated as many times as has been set under the heading SPEAKER SET in the Parameters menu. This value can be increased or decreased in steps of one.

7. When text appears in square brackets in this handbook, it stands for the keys to be pressed. "Press [CONTROL] and [O]" thus means that you should press the CONTROL key and the letter "O" on the ATARI keyboard.

2. File handling



All operations connected with the saving and loading of data on disks, harddisks or ramdisks, can be controlled using the Disk menu or the two icons in the top righthand corner of the Main Page ("DISK" and "CASIO FZ1").

2.1 Loading and saving voices

You can load a voice by either

- clicking on LOAD VOICE in the Disk menu,
- clicking on the DISK icon and dragging it to the field containing the ten voice names, or
- clicking on the DISK icon twice.

A voice can be saved by either

- selecting SAVE VOICE in the Disk menu, or
- clicking on the appropriate voice on the Main Page and dragging it to the DISK icon.

When saved, voices are given the file extension ".FZV".

2.2 Loading and saving blocks

You can load a block by either

- selecting LOAD BLOCK in the Disk menu,
- dragging the Disk icon to the block field, or
- clicking on the Disk icon twice.

A block can be saved by either

- selecting SAVE BLOCK in the Disk menu, or
- dragging the appropriate block to the DISK icon.

Blocks are saved with the file extension ".FZK".

2.3 Loading and saving banks

You can load a bank using LOAD BANK in the Disk menu and the bank currently in the ST can be saved using SAVE BANK.

FZ1 banks are given the extension ".FZB".

2.4 Additional functions in the Disk menu

Each of the six functions described above activates what is known as the FILE SELECTOR BOX, which you will probably be acquainted with from other programs. It enables you to start the desired loading or saving process after entering or clicking on the appropriate file name and confirming it with OK. You can abort the operation with CANCEL.

NOTE: Because of the standard format used by SOUNDWORKS for saving sample data FZ1 samples can also be used by other samplers (or vice versa). For example, you will have no problem in loading samples produced with SOUNDWORKS FZ1 into the SOUNDWORKS S900 editor; the only limitation is that the additional analogue parameters of the sample concerned cannot be transferred.

If you call the **DISK SELECT** function in the Disk menu, a "number block" appears on the screen which you will often meet in the course of using this program. In this case its purpose is to determine the disk drive which should be accessed in order to save and load sample data. Simply click on the abbreviation for the desired disk drive.

DELETE FILE, the next function in the Disk menu, makes it possible to delete files which are no longer required. Simply select the file to be deleted in the FILE SELECTOR BOX and confirm your choice with "OK".

FORMAT DISK is used to format disks ready for use - something which is particularly useful in that classic situation when you have spent hours creating a wonderful sound only to find that you have no formatted disks available to save it. You can also initiate a format by dragging the DISK icon to the trashcan on the righthand side of the screen. The formatting process can be cancelled by pressing the [SPACE] bar.

SAVE SETTINGS allows you to save important initial settings for the program, among other things the MIDI channel number and the default display and mouse settings. If you would like these settings to apply the next time you run the program, the program disk must be in the disk drive when they are saved.

QUIT, the last entry in the menu, is used to leave the program.

3. MIDI

3.1 Setting up the system

In order to ensure that there are no problems in transferring data between the FZ1 and the computer you must adjust the settings of the FZ1 as follows:

- a. Switch the FZ1 to MODIFY MODE,
- b. Select the Data Dump menu, and then
- c. Select the Select Device submenu.

There you should change

- DUMP DEV = DISK to DUMP DEV = MIDI.

Then switch to REMOTE MODE. This mode must remain selected during all data transfer operations, otherwise the FZ1 is not able to send or receive any data!

It is of course possible to switch between REMOTE and PLAY MODE. Simply press the Call/Set menu key whilst in the Select Device menu; if you then press this key later whilst in PLAY MODE, you can immediately return to the Select Device menu.



If you click on the first line of the MIDI menu, i.e. CHANNEL, a block of numbers appears which is used to select the MIDI channel where your FZ1 is located.

MIDI THRU re-directs the data received through MIDI IN to MIDI OUT. If you can see a tick here, the function has been activated.

3.2 Data transfer

There are a total of three different levels at which you are able to modify sample data.

In order to modify a VOICE (i.e. a looped sample with filter and amplifier envelopes) you must first request it from the FZ1. When this is done the data from the sample itself and the appropriate voice parameters are transferred to the computer's working memory.

If you only modify the additional parameters (envelopes, loop points), you only need to send these parameters back to the FZ1, and not the complete sample. However, in order to use the FZ1 to play a modified sample - i.e. one which has been altered at a digital level - the complete sample has to be transferred back.

In order to avoid waiting for this to be done after every small modification - which can involve a considerable amount of time - SOUNDWORKS FZ1 provides you with a monitor function which enables you to obtain a rough impression of the sample's quality.

BANKS (multiple samples with keyboard, volume and MIDI channel assignments) "only" involve additional data defining which sample should be used in which position and how. They can be very quickly loaded, modified and sent back.

3.3 Transferring voice data

You can REQUEST a voice (i.e. a sample with its accompanying parameters) from the FZ1 by either

- selecting RECEIVE TOTAL in the MIDI menu, or
- dragging the FZ1 icon to one of the ten voice fields.

A number block then appears with which you enter the number of the voice which you would like to load into the computer. Confirm that the transfer should take place with "OK" or abort the process with "NO".

In order to SEND a voice to the FZ1

- select SEND TOTAL in the MIDI menu,
- click on the FZ1 icon, or
- drag the voice to be transferred from the voice field to the FZ1 icon.

Here also the number block enables you to enter directly the "destination address" to which the sample should be sent.

At the top edge of the Main Page you will find the name of the selected sample and the time still needed to transfer it. Should errors occur during the transfer process, simply repeat the procedure once more.

In order to send only the voice PARAMETERS to the FZ1

- select SEND PARAM in the MIDI menu, or
- press [CONTROL] and [S].

3.4 Transferring bank data

In order to read in bank parameters select RECEIVE PARAM in the MIDI menu.

In order to send bank parameters

select SEND PARAM in the MIDI menu, or

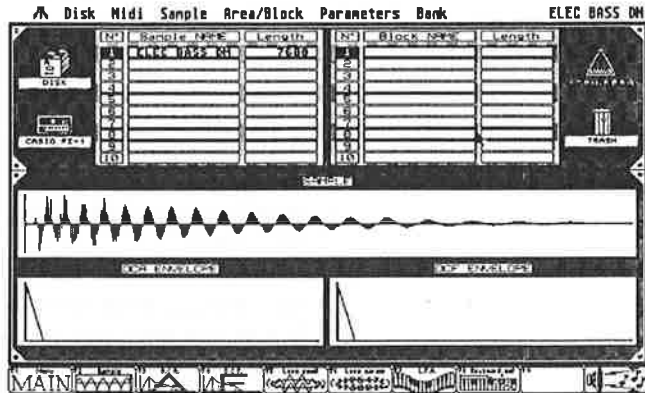
press the [CONTROL] and [S] keys - WHILST YOU ARE ON THE BANK PAGE.

In order to transfer bank no. 8 select SEND NO. 8 in the MIDI menu.

Now that you know how sample data can be transferred to SOUNDWORKS FZ1 (from disk or via MIDI) we can turn to the different ways of editing it.

4. Sample editing

4.1 First steps



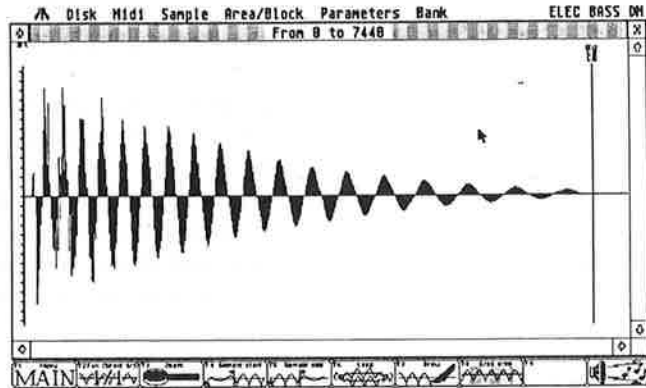
Naturally you need to have a sample available before you can start editing. You can either load a sample from the FZ1 through MIDI or from disk (as explained above) - or you can create a blank sample in which you can then insert sample blocks, mix samples or draw new wave forms.

This is done using the **CREATE BLANK** function in the Sample menu. When this function is called, you are asked about the desired length of the sample and the sampling frequency. A new sample produced in this way is automatically given the name "CREATE".

Obviously you have to be able to (re)name a sample and this is done by selecting **RENAME** in the Sample menu and typing in the new name. Press [RETURN] to complete the operation.

INFORMATION in the Sample menu displays the name, length and other important data about the current voice in a window on the screen. You can also activate this window by pressing the [?] key. Pressing the [RETURN] key will close the window.

Now we come to the "real" editing functions.



In order to modify the sample in a digital form you first have to move to the SAMPLE PAGE. This can be done by either

- clicking on the sample display (in the middle of the screen) on the Main Page,
- clicking on the sample icon at the bottom edge of the screen or pressing F2,
- selecting EDIT in the Sample menu, or
- pressing [CONTROL] and [E] at the same time.

The Sample Page displays the complete sample - with the time shown along the x-axis and amplitude (volume) shown along the y-axis. On this screen you will once again find various menu functions, mouse functions and - partially different - icon functions (at the bottom of the screen).

4.2 Basic functions

Here we should first mention two functions which affect the way in which the samples are displayed:

FILL/NORMAL in the Sample menu simply determines whether the sample should be displayed as an outline or whether it should be filled (i.e. each sample value is represented as a bar and not as a point).

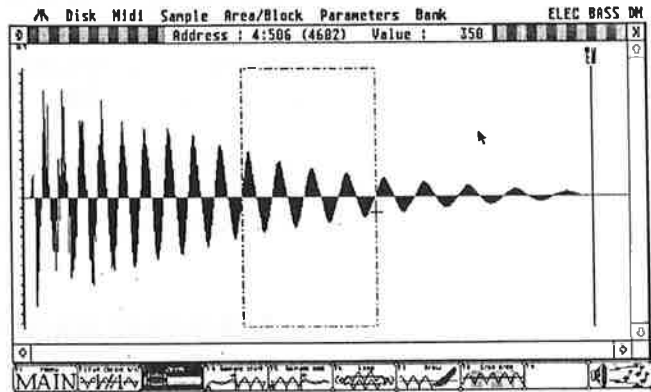
The **MAXIMIZE** function is generally made use of at the beginning of any digital editing session. It increases a sampled signal - which may, for example, be too low - to the maximum possible level and thus improves the noise/signal ratio. However, it should be borne in mind that if there is background noise present in the sample, it will also be increased by the same amount.

The **SAMPLING FREQUENCY** in the Parameter menu makes it possible to change the sampling frequency which has already been set, in other words, to adjust the speed at which the sample is played. The FZ1's three sampling frequencies of 9, 18 and 36 KHz can be used.

This function is not to be confused with "re-sampling", in which the sample is stepped down to another frequency and thus also modified. **SAMPLING FREQUENCY** is a parameter which only affects the way a sample is played.

SOUND STYLE in the Parameter window makes it possible to change the sound characteristic to **NORMAL**, **REVERSED**, **CUE** and **SYNTHESIZED**.

4.3 Zoom



In order to carry out detailed work it is often necessary to increase the size of a section of the sample. This can be done using the ZOOM function, which can be activated by pressing F3 or clicking on the appropriate icon.

Click on the ZOOM icon and move the cursor to the sample window. Press down the left mouse button and then frame the area of the sample that you would like to expand. When you are satisfied that you have outlined the area which you want to examine, simply release the button and the area selected will be enlarged.

You can always see which section you have enlarged in the horizontal grey bar at the top of the screen; in addition to this you are also informed here when maximum zoom has been reached.

Note: At maximum resolution one screen point along the x-axis represents one sample value; in other words the section is displayed on a 1:1 basis. The DRAW function can only be activated when this resolution has been set.

You can use what is known as the scroll bar at the bottom edge of the window to move your "magnifying glass" through the sample. In order to do this you can either click on the small arrows at the ends of the bar or drag the white area representing the currently visible section to the position you would like.

In order to cancel the zoom feature (and return to the default display) simply press F2 or click on the FULL SCALE icon at the lower edge of the screen.

4.4 Defining start/end

Some menu and icon functions can only be activated if the appropriate sample value has already been defined previously. These functions are marked by a small arrow.

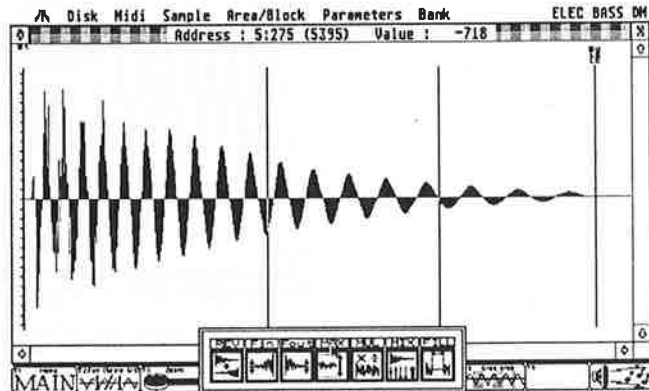
The first two functions of this type are DEFINE SAMPLE START and SAMPLE END. Click the mouse button at the point within the sample window which you would like to make the beginning or end. Its address (i.e. its position in the sample relative to point 0 at the beginning of the sample) will appear in the grey horizontal bar at the top of the screen. If you then click on the icon for SAMPLE START or SAMPLE END at the bottom edge of the screen (or press F4 or F5 respectively), this address will then be used as the new starting or finishing point.

4.5 Draw mode

In DRAW MODE, which is activated by F7 or the DRAW icon, the cursor can be used to correlate loop points, eliminate undesirable peaks from a sample and even to draw new wave forms.

DRAW MODE can only be activated at maximum zoom level. You can exit from DRAW MODE by activating any other menu.

4.6 Area operations



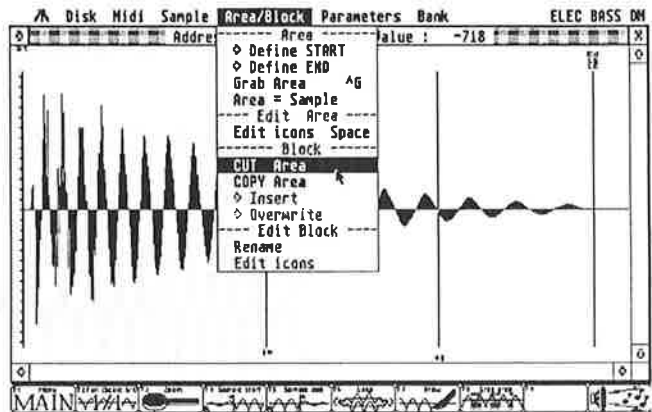
Within a sample it is possible to define a specific section - here referred to as an "Area" - in order to then be able to work on it in more detail (however, these "working areas" should not be confused with the areas represented by specific keyboard zones within an FZ1 bank!).

There are three ways of defining an Area:

Click on the desired starting point in the sample window and then select DEFINE START in the Area/Block menu. The end of the section to be worked on can be fixed by following the same procedure with DEFINE END.

GRAB AREA is a faster, although somewhat less exact method of defining an Area. The function is activated using F8 or GRAB AREA in the Area/Block menu. "Surround" the Area desired by keeping the mouse button pressed down in the same way as for defining a zoom section outlined above.

It is also possible to define a complete sample as an Area using the AREA=SAMPLE function in the Area/Block menu. This enables you to carry out global modifications very quickly.



With the help of the EDIT ICONS (which can be called by selecting the menu item of the same name or pressing the [SPACE] bar) a "working area" which has been defined by the above means can then be modified in the following ways:

REVERT

REVERT reverses the Area along its x-axis - it then runs backwards.

FADE IN/ FADE OUT

These two functions allow you to use fade-in and fade-out within an Area. You can determine in advance what percentage of the Area is to be affected by this operation.

MAXIMIZE

This corresponds to the function of the same name in the Sample menu.
(See Sec. 4.2)

**MULTIPLY/
DIVIDE**

This function makes it possible to multiply an Area by a value of your choice. Multiplication can easily lead to individual sample values far exceeding upper limits and thus produce - generally undesirable - distortions. However, in the case of certain percussion sounds this can produce rather interesting effects; if these are not wanted, however, it is best to slowly work your way towards the desired effect by trying out small increases one step at a time (e.g. by multiplying by 1.2, 1.4, 1.6, etc).

As you can probably remember from mathematics at school it is also possible to carry out division by multiplying a number by a value between 0 and 1. This is how this function can be used to carry out both mathematical operations.

The relative intervals between individual sample values are increased by using multiplication. Division, on the other hand, "compresses" the signal by reducing the gaps between them.

**MIX WITH
BLOCK**

What a block is, the way it is defined and how you can work with one is explained in section 4.7. However, using this function it is possible to mix one of up to 10 blocks with the defined Area, in order, for example, to move the sound created by the plucking of a string instrument into the attack phase of another. Please note that the mixing of well-recorded signals can lead to maximum levels being exceeded - which results in distortion. If you want to avoid this, if necessary adjust one or both of the signals using the MULTIPLY/MIX function.

FILL

This function fills the Area with a constant value which has to have been determined in advance.

4.7 Block operations

If you have defined an Area, you can cut it out of the sample or copy it and save it separately as a block in another section of the computer's memory. Depending on the amount of memory available SOUNDWORKS FZ1 is able to cope with up to ten such blocks in addition to ten voices. On the Sample Page it is possible to switch between these blocks by pressing the [CONTROL] key in combination with the number keys 1-0; this is done on the Main Page with a double mouse click on the block number.

Using the Area/Block menu function CUT AREA the section of the sample defined as an Area can be cut out and transferred to a temporary store, from which it can be taken and re-used by using the functions INSERT and OVERWRITE.

COPY AREA is also a function which transfers an Area to a temporary store in memory, however, in doing so it does not delete it from the sample. In other words, it provides you with a copy with which you can work without changing the original.

Two functions can be used to insert a block defined using CUT or COPY back in its original position or within another sample.

The **INSERT** function in the Area/Block menu makes it possible to insert a block at a specific address in the sample. (The address has to have been previously defined by clicking it on with the mouse. If this has not yet been done, the fact that an address still needs to be defined is indicated by a small arrow in front of this item on the menu).

OVERWRITE inserts the block at the address you have specified and in doing so writes over the section of the sample taken up by the length of the block.

RENAME enables you to rename a block in the same way as this is done with voices. It is always best to use a block's name to make it clear which sound fragment is involved (eg "guitar pluck").

Edit icons are also available for work on blocks. They make it possible for blocks to be reverted, multiplied, divided, mixed and faded in or out. They function in exactly the same way as the Area Edit icons described above and should thus require no further explanation.

We now leave the field of digital modification and move up "one stage higher" to the various voice parameters, the most important of which probably are:

5. Loops

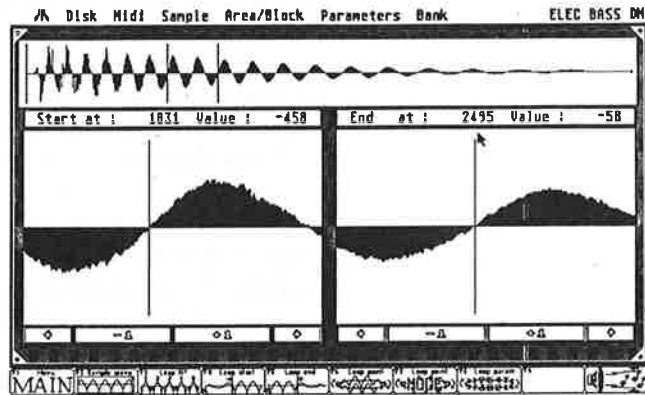
The CASIO FZ1 provides a very extensive loop section. In order to edit it press F6 or click on the appropriate icon at the bottom edge of the screen.

You will then find several new icons at the bottom of the screen which can be used to set up and modify loops.

F3 and its corresponding icon enable you to select one of 8 loops. You can also use keys 1-8 to do this.

By pressing F4 and F5 or using the appropriate icon functions LOOP START and LOOP END you can define the length of a loop in the same simple way that we fixed the length of a complete sample earlier: first, click into the sample window and you can then define an address as the starting or ending point of the loop using one of the means described in section 4.4.

5.1 Loop Point Page



An additional page makes it possible to set up loops extremely precisely in a very uncomplicated way. This screen, the Loop Point Page, can be entered by either

- pressing [CONTROL] and [L],
- selecting LOOP POINT in the Parameters menu,
- pressing F5 or using the corresponding Loop icon from the Main Page, or
- pressing F6 or selecting the appropriate icon from the Sample Page.

You will then find yourself in a new page which presents a complete overview of the sample in the top quarter of the screen and has two larger windows underneath. These windows show the ending and starting points of a loop section (in the highest resolution possible); a status line above them displays their addresses and other important information.

The order in which they are displayed ("end/start") was selected for a very good reason. It enables you to carefully examine the section of the sample which will be looped and as such is much more important here than the "outer" areas. Using "+1", "-1" and the two arrow boxes you can now precisely adjust the loop points. Ideally this will result in the link between the beginning and end of the loop occurring without large differences in values or phase differences.

If desired, it is also possible to switch to start/end display using LOOP POINT MODE or F7. The loop points are then displayed at the centre of their relevant boxes so that you can see what happens in front of and behind the two loop points.

The loop points can also be set - in a relatively inexact fashion - in the top window on the screen. Simply use the mouse to drag the two bars representing the beginning and end of the loop to the desired positions.

On this page it is also possible to switch between the 8 loops by either

- pressing the number keys 1-8 or
- changing to another loop by means of F3 or the appropriate icon.

5.2 Loop Parameter Page

^A Disk Midi Sample Area/Block Parameters Bank ELEC BASS DM

1	2	3	4	5	6	7	8
Edit							
0001031	0007423	0007423	0007423	0007423	0007423	0007423	0007423
0001031	0007423	0007423	0007423	0007423	0007423	0007423	0007423
0002495	0007423	0007423	0007423	0007423	0007423	0007423	0007423
00070447	00070255	00070255	00070255	00070255	00070255	00070255	00070255
End	01600 ms	01600 ms	01600 ms	01600 ms	01600 ms	01600 ms	01600 ms
0000	0000	0000	0000	0000	0000	0000	0000
TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE

MAIN [L1] [L2] [L3] [L4] [L5] [L6] [L7] [L8] [L9] [L10] [L11] [L12] [L13] [L14] [L15] [L16] [L17] [L18] [L19] [L20] [L21] [L22] [L23] [L24] [L25] [L26] [L27] [L28] [L29] [L30] [L31] [L32] [L33] [L34] [L35] [L36] [L37] [L38] [L39] [L40] [L41] [L42] [L43] [L44] [L45] [L46] [L47] [L48] [L49] [L50] [L51] [L52] [L53] [L54] [L55] [L56] [L57] [L58] [L59] [L60] [L61] [L62] [L63] [L64] [L65] [L66] [L67] [L68] [L69] [L70] [L71] [L72] [L73] [L74] [L75] [L76] [L77] [L78] [L79] [L80] [L81] [L82] [L83] [L84] [L85] [L86] [L87] [L88] [L89] [L90] [L91] [L92] [L93] [L94] [L95] [L96] [L97] [L98] [L99] [L100] [L101] [L102] [L103] [L104] [L105] [L106] [L107] [L108] [L109] [L110] [L111] [L112] [L113] [L114] [L115] [L116] [L117] [L118] [L119] [L120] [L121] [L122] [L123] [L124] [L125] [L126] [L127] [L128] [L129] [L130] [L131] [L132] [L133] [L134] [L135] [L136] [L137] [L138] [L139] [L140] [L141] [L142] [L143] [L144] [L145] [L146] [L147] [L148] [L149] [L150] [L151] [L152] [L153] [L154] [L155] [L156] [L157] [L158] [L159] [L160] [L161] [L162] [L163] [L164] [L165] [L166] [L167] [L168] [L169] [L170] [L171] [L172] [L173] [L174] [L175] [L176] [L177] [L178] [L179] [L180] [L181] [L182] [L183] [L184] [L185] [L186] [L187] [L188] [L189] [L190] [L191] [L192] [L193] [L194] [L195] [L196] [L197] [L198] [L199] [L200] [L201] [L202] [L203] [L204] [L205] [L206] [L207] [L208] [L209] [L210] [L211] [L212] [L213] [L214] [L215] [L216] [L217] [L218] [L219] [L220] [L221] [L222] [L223] [L224] [L225] [L226] [L227] [L228] [L229] [L230] [L231] [L232] [L233] [L234] [L235] [L236] [L237] [L238] [L239] [L240] [L241] [L242] [L243] [L244] [L245] [L246] [L247] [L248] [L249] [L250] [L251] [L252] [L253] [L254] [L255] [L256] [L257] [L258] [L259] [L260] [L261] [L262] [L263] [L264] [L265] [L266] [L267] [L268] [L269] [L270] [L271] [L272] [L273] [L274] [L275] [L276] [L277] [L278] [L279] [L280] [L281] [L282] [L283] [L284] [L285] [L286] [L287] [L288] [L289] [L290] [L291] [L292] [L293] [L294] [L295] [L296] [L297] [L298] [L299] [L300] [L301] [L302] [L303] [L304] [L305] [L306] [L307] [L308] [L309] [L310] [L311] [L312] [L313] [L314] [L315] [L316] [L317] [L318] [L319] [L320] [L321] [L322] [L323] [L324] [L325] [L326] [L327] [L328] [L329] [L330] [L331] [L332] [L333] [L334] [L335] [L336] [L337] [L338] [L339] [L340] [L341] [L342] [L343] [L344] [L345] [L346] [L347] [L348] [L349] [L350] [L351] [L352] [L353] [L354] [L355] [L356] [L357] [L358] [L359] [L360] [L361] [L362] [L363] [L364] [L365] [L366] [L367] [L368] [L369] [L370] [L371] [L372] [L373] [L374] [L375] [L376] [L377] [L378] [L379] [L380] [L381] [L382] [L383] [L384] [L385] [L386] [L387] [L388] [L389] [L390] [L391] [L392] [L393] [L394] [L395] [L396] [L397] [L398] [L399] [L400] [L401] [L402] [L403] [L404] [L405] [L406] [L407] [L408] [L409] [L410] [L411] [L412] [L413] [L414] [L415] [L416] [L417] [L418] [L419] [L420] [L421] [L422] [L423] [L424] [L425] [L426] [L427] [L428] [L429] [L430] [L431] [L432] [L433] [L434] [L435] [L436] [L437] [L438] [L439] [L440] [L441] [L442] [L443] [L444] [L445] [L446] [L447] [L448] [L449] [L450] [L451] [L452] [L453] [L454] [L455] [L456] [L457] [L458] [L459] [L460] [L461] [L462] [L463] [L464] [L465] [L466] [L467] [L468] [L469] [L470] [L471] [L472] [L473] [L474] [L475] [L476] [L477] [L478] [L479] [L480] [L481] [L482] [L483] [L484] [L485] [L486] [L487] [L488] [L489] [L490] [L491] [L492] [L493] [L494] [L495] [L496] [L497] [L498] [L499] [L500] [L501] [L502] [L503] [L504] [L505] [L506] [L507] [L508] [L509] [L510] [L511] [L512] [L513] [L514] [L515] [L516] [L517] [L518] [L519] [L520] [L521] [L522] [L523] [L524] [L525] [L526] [L527] [L528] [L529] [L530] [L531] [L532] [L533] [L534] [L535] [L536] [L537] [L538] [L539] [L540] [L541] [L542] [L543] [L544] [L545] [L546] [L547] [L548] [L549] [L550] [L551] [L552] [L553] [L554] [L555] [L556] [L557] [L558] [L559] [L560] [L561] [L562] [L563] [L564] [L565] [L566] [L567] [L568] [L569] [L570] [L571] [L572] [L573] [L574] [L575] [L576] [L577] [L578] [L579] [L580] [L581] [L582] [L583] [L584] [L585] [L586] [L587] [L588] [L589] [L590] [L591] [L592] [L593] [L594] [L595] [L596] [L597] [L598] [L599] [L600] [L601] [L602] [L603] [L604] [L605] [L606] [L607] [L608] [L609] [L610] [L611] [L612] [L613] [L614] [L615] [L616] [L617] [L618] [L619] [L620] [L621] [L622] [L623] [L624] [L625] [L626] [L627] [L628] [L629] [L630] [L631] [L632] [L633] [L634] [L635] [L636] [L637] [L638] [L639] [L640] [L641] [L642] [L643] [L644] [L645] [L646] [L647] [L648] [L649] [L650] [L651] [L652] [L653] [L654] [L655] [L656] [L657] [L658] [L659] [L660] [L661] [L662] [L663] [L664] [L665] [L666] [L667] [L668] [L669] [L670] [L671] [L672] [L673] [L674] [L675] [L676] [L677] [L678] [L679] [L680] [L681] [L682] [L683] [L684] [L685] [L686] [L687] [L688] [L689] [L690] [L691] [L692] [L693] [L694] [L695] [L696] [L697] [L698] [L699] [L700] [L701] [L702] [L703] [L704] [L705] [L706] [L707] [L708] [L709] [L710] [L711] [L712] [L713] [L714] [L715] [L716] [L717] [L718] [L719] [L720] [L721] [L722] [L723] [L724] [L725] [L726] [L727] [L728] [L729] [L730] [L731] [L732] [L733] [L734] [L735] [L736] [L737] [L738] [L739] [L740] [L741] [L742] [L743] [L744] [L745] [L746] [L747] [L748] [L749] [L750] [L751] [L752] [L753] [L754] [L755] [L756] [L757] [L758] [L759] [L760] [L761] [L762] [L763] [L764] [L765] [L766] [L767] [L768] [L769] [L770] [L771] [L772] [L773] [L774] [L775] [L776] [L777] [L778] [L779] [L780] [L781] [L782] [L783] [L784] [L785] [L786] [L787] [L788] [L789] [L790] [L791] [L792] [L793] [L794] [L795] [L796] [L797] [L798] [L799] [L800] [L801] [L802] [L803] [L804] [L805] [L806] [L807] [L808] [L809] [L810] [L811] [L812] [L813] [L814] [L815] [L816] [L817] [L818] [L819] [L820] [L821] [L822] [L823] [L824] [L825] [L826] [L827] [L828] [L829] [L830] [L831] [L832] [L833] [L834] [L835] [L836] [L837] [L838] [L839] [L840] [L841] [L842] [L843] [L844] [L845] [L846] [L847] [L848] [L849] [L850] [L851] [L852] [L853] [L854] [L855] [L856] [L857] [L858] [L859] [L860] [L861] [L862] [L863] [L864] [L865] [L866] [L867] [L868] [L869] [L870] [L871] [L872] [L873] [L874] [L875] [L876] [L877] [L878] [L879] [L880] [L881] [L882] [L883] [L884] [L885] [L886] [L887] [L888] [L889] [L890] [L891] [L892] [L893] [L894] [L895] [L896] [L897] [L898] [L899] [L900] [L901] [L902] [L903] [L904] [L905] [L906] [L907] [L908] [L909] [L910] [L911] [L912] [L913] [L914] [L915] [L916] [L917] [L918] [L919] [L920] [L921] [L922] [L923] [L924] [L925] [L926] [L927] [L928] [L929] [L930] [L931] [L932] [L933] [L934] [L935] [L936] [L937] [L938] [L939] [L940] [L941] [L942] [L943] [L944] [L945] [L946] [L947] [L948] [L949] [L950] [L951] [L952] [L953] [L954] [L955] [L956] [L957] [L958] [L959] [L960] [L961] [L962] [L963] [L964] [L965] [L966] [L967] [L968] [L969] [L970] [L971] [L972] [L973] [L974] [L975] [L976] [L977] [L978] [L979] [L980] [L981] [L982] [L983] [L984] [L985] [L986] [L987] [L988] [L989] [L990] [L991] [L992] [L993] [L994] [L995] [L996] [L997] [L998] [L999] [L1000]

The last component of the loop section is the Loop Parameter Page, which holds all the parameters of all 8 loops. In order to call this page

- press [CONTROL] and [P],
- select LOOP PARAM in the Parameters menu,
- from the Main Page select F6 or the corresponding LOOP PARAM icon, or
- from the Sample Page select F7 or the corresponding icon.

On the top line of the page you can see which loop is ready to be edited. Below this you will find the following information for each loop:

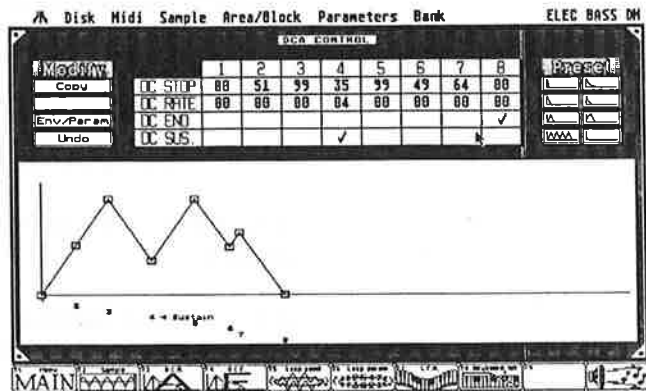
- The start and end point addresses. The upper figures represent the address in decimal values, the lower - smaller - figures give them in the system used by the FZ1.

TIME displays the loop's length in milliseconds. Each digit can be increased or decreased directly using the two mouse buttons, thus enabling you to make large changes very rapidly as well as very precise fine adjustments.

Using the two small boxes beneath the numerical values you can define any loop as a sustain or end loop.

In addition to this, on this page you can also program the CROSSFADE value and the NEXT option (SKIP or TRACE).

6. DCA and DCF



The DCA and DCF sections are very similar; the main difference is that PARAMETER MODE is not available on the DCF Page.

In order to call the DCA Page

- press [CONTROL] and [A] or select DCA ENV in the Parameters menu,
- click on the DCA envelope display on the Main Page, or
- press F3 or click on the corresponding DCA icon.

In order to call the DCF Page

- press [CONTROL] and [F] or select DCF ENV in the Parameters menu,
- click on the DCF envelope display on the Main Page, or
- press F4 or click on the corresponding DCF icon.

6.1 Editing envelopes

Envelopes can be edited in two different ways.

❑ Click on one of the two small boxes in the graphic envelope display and drag it

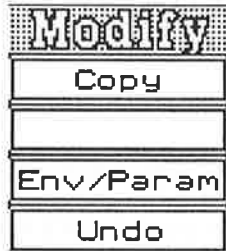
❑ to the left or right to adjust the time (RATE), or

❑ up or down to adjust the LEVEL of this envelope segment.

❑ Using graphic editing as outlined above the numerical values next to the envelopes also change, and naturally it is also possible to alter these values directly using the two mouse buttons as explained earlier.

In addition to this, each of the maximum of eight envelope phases can also be defined as a SUSTAIN or END segment by clicking on one of the lower boxes.

The following functions can be called from the MODIFY box:



COPY - this can be used to transfer the DCA to the DCF envelope (and vice versa),

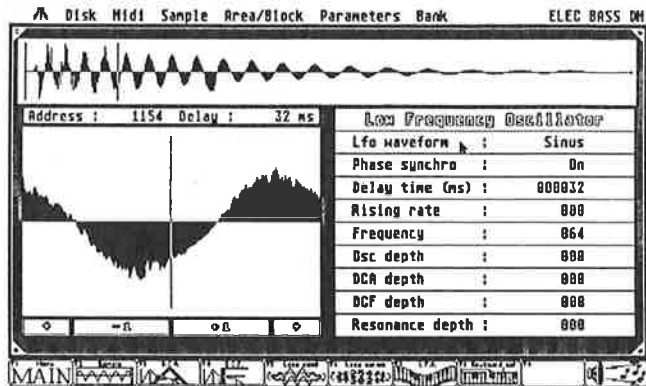
UNDO - this function cancels the previous modifications, and

PARAMETER - a function which - as mentioned above - only works on the DCF Page. It opens an additional window which makes it possible to adjust the **CUTOFF**

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FREQUENCY and filter **RESONANCE**. Simply click onto the cut point with the mouse and drag it to the desired position or move the cursor to the number display in order to increase or decrease their values using the mouse buttons with the method described above. A second click on **PARAMETER** switches the display back to envelope editing.

7. LFO Page



The program also includes a separate page for programming the FZ1's LFO. It can be called using

- [CONTROL] and [O] or the LFO SET item in the Parameters menu,
- the function key F7 or the LFO icon.

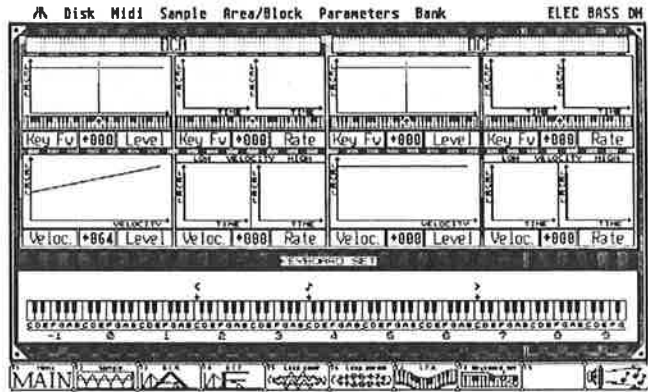
The LFO Page presents an overview of the complete sample in the top part of the screen and beneath this one section is displayed in detail thus enabling you to move to the exact sample value of the LFO starting point. The current address is displayed in sample values and milliseconds. The "+1", "-1" and arrow boxes can be used in exactly the same way as on the Loop Point Page. Next to this window there is a list of all LFO parameters, which can be selected directly and modified using the two mouse buttons.

These parameters are

- LFO WAVEFORM,
- PHASE SYNCHRO ON/OFF,
- DELAY TIME (in milliseconds),
- RISING RATE (the time until full intensity is reached),
- FREQUENCY,
- OSC DEPTH (intensity of pitch modulation),
- DCA DEPTH (intensity of amplitude modulation),
- DCF DEPTH (intensity of filter modulation) and
- RESONANCE DEPTH.

8. Keyboard Page

This page is used to program the way in which the parameters Velocity and Note Number affect the DCA and DCF envelopes.



As you can see, the DCA and DCF sections are structured in an identical fashion. A total of 8 graphs are visible (four for the DCA on the left, four for the DCF on the right). In each section two graphs are used to display the note number/envelope ratio and velocity/envelope ratio.

The first box displays the relationship between signal level and note number (KEY FOLLOW). To change this ratio click the mouse on the number in the appropriate box (between "KEY FW" and "LEVEL").

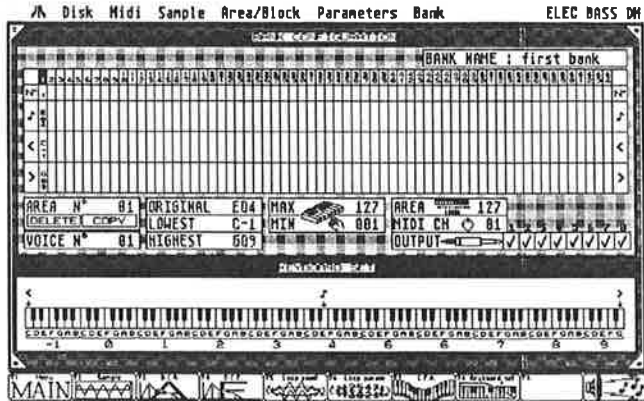
In the box next to this you are able to adjust the envelope rates to the keyboard in order to create more realistic simulations of real instruments.

The third box in the DCA section displays the relationship between velocity and level. A "linear" setting here means that the signal will become louder as velocity increases.

The fourth box is used to determine the ratio between velocity and envelope rates. Thus, by programing this parameter you can vary the length of the envelope with your style of play.

The way the DCF section of the page is organized follows exactly the same pattern so that further explanation should not be necessary. It is used to program the variation of the filter and its envelope.

9. Bank Page



All functions relating to a bank are activated from the Bank Page.

Work can also begin here using the **CREATE BLANK** function which enables you to produce a new bank.

The **RENAME** function is obviously used to name and rename banks.

Using the **CONFIGURATION** function in the Bank Menu or the key combination [CONTROL] and [B] enables you to call the Bank Page. It presents all bank parameters in compressed form and it is also possible to edit them directly here.

Each bank can consist of up to 64 areas. In order to select or define an area simply click on its number in the top line.

You can then carry out the following operations:

- Using the small **DELETE** box you can delete the area from the program.
- Using **COPY** you can create a copy of the area within the bank and thus, for example, very easily produce layers consisting of several sounds.
- Using **VOICE NO.** enables you to define which voice should be allocated to this area. We would like to emphasize once more that only voice allocations and not the voices themselves are part of a bank.
- Using the keyboard in the lower part of the screen (which displays the complete range which can be controlled by the MIDI controller) you can determine the original note and the lowest and highest key of each area. To do this, click on one of the small symbols above the keyboard and drag it to the desired position.
- The small box at the centre of the screen can be used to define the "Velocity Window", within which the area can be accessed. The two values involved (**MINimum** and **MAXimum** velocity) can be altered using the mouse buttons.
- The next parameter (located next to the representation of a VU meter) determines the **LEVEL** of the area.
- Each area can be allocated its own MIDI channel, and in addition to this you are also able to allocate each area to as many of the FZ1's 8 individual outlets as you would like by simply clicking them on; a tick here means that the signal will be directed to the appropriate outlet.

DISK MIX in the Bank menu is a rather interesting feature which makes it possible to mix a bank which has been saved on disk with the one currently in the computer's memory. Simply load the desired bank, and its area data will be appended to the bank currently being worked on.

10. Hints on using the program

Finally we would like to give you a few tips which should make it easier for you to work with SOUNDWORKS FZ1.

Basically, a certain amount of irreverence is the best precondition for getting to know how to use this program (or any other, for that matter). It is almost impossible to cause serious damage; if you load a sound from disk (and then take the disk out of the drive just to make ABSOLUTELY sure that nothing can go wrong), you are then free to experiment with all the possibilities the program offers without being involved in any risks.

Particularly in the digital section, i.e. when editing samples on the work page, you should try out any ideas which come into your head - the possibilities are almost unlimited and a great deal of the things which are possible with the FZ1, but were otherwise extremely complicated because of the limited capabilities of its user interface, can be realized in a matter of seconds.

For example ...

Copy sections of samples into a block buffer, place several of them one after the other and then turn the complete sample or parts of it around with REVERT. You then obtain scratch or other extreme sound effects.

Transfer a complete sample into the buffer and then using MIX BLOCK re-insert it a few sample values behind its original position. This creates flanging and slapback effects.

Mix together extremely different sounds, allocate unorthodox envelopes to natural instruments, mix, expand and compress signals with MAXIMIZE and MULTIPY/DIVIDE until they are no longer recognizable, draw a wave form, form a loop with it and mix the whole thing with sound components (eg a pluck) in order to obtain complex sounds using very little memory ... In short, simply try out everything! Whatever the results you will gain experience and learn new ways of using sampling creatively.

11. Assignment of keys

[CONTROL] + [A]	Activates the DCA Page
[CONTROL] + [B]	Activates Sample Page
[CONTROL] + [F]	Activates the DCF Page
[CONTROL] + [G]	GRAB AREA on Sample Page
[CONTROL] + [K]	Activates the Keyboard Page
[CONTROL] + [L]	Activates the Loop Point Page
[CONTROL] + [P]	Activates the Parameters Page
[CONTROL] + [O]	Activates the LFO Page
[CONTROL] + [S]	Send voice parameters on Main Page
[CONTROL] + [S]	Send voice parameters on Bank Page

Using [HELP] you can display a page which informs you about all the program's key assignments.

With the [UNDO] key it is possible to cancel the last operation which modified data. Please note that only the last modification can be undone in this fashion - thus if you first worked on a sample with the DRAW function and then maximized it, UNDO will only bring back the version which existed before it was optimized.

