E-mu Professional

SOFTWARE UPDATE
S100-V2.0
STEREO DIGITAL SAMPLER

WARNING

To prevent fire or shock hazard, do not expose this appliance to rain or moisture.

Operator's Manual

ADDENDUM TO S1100 VERSION 2.00 MANUAL

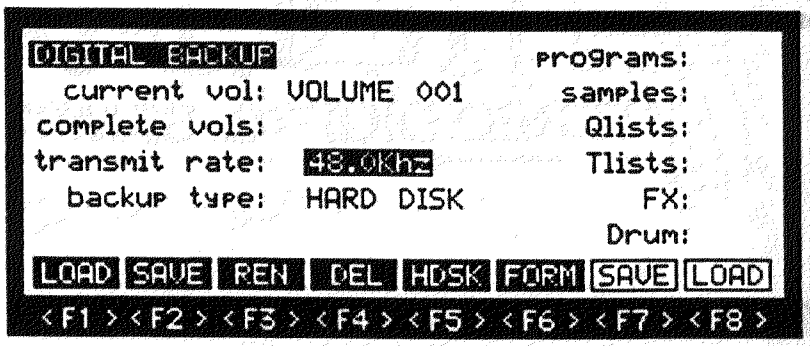
NEW DAT BACKUP PROCEDURES

Several changes have taken place in the DAT back-up pages for backing up programs and samples etc.. It is also possible to back up takes.

BACKING UP PROGRAMS, SAMPLES, EFFECTS, QLISTS AND SONGS

It has been possible to back up these items to DAT via the IB104 digital interface for some time now but these procedures have now been improved.

It is now possible to back up not only programs and samples but also effects files, Qlists, Songs (or Tlists) and drum settings. This is done in the normal way by going to the DISK page, pressing F5 - HDSK - and then pressing F5 again - BACK. This will display this screen:



The fields are:

current vol:

This shows the disk volume currently selected.

complete vol:

This shows the number of volumes transferred to or from DAT

transmit rate:

Here you may select the transmit rate for the backup/restore function. The options are 44.1 and 48kHz. Select the appropriate one according to your DAT player.

backup type:

Here you may select whether you wish to back up a complete partition on your hard disk or just the contents of the S1100's memory.

> ***IMPORTANT NOTE:*** *If you select HARD DISK as the back up type, you cannot then restore the contents of individual volumes separately and you will have to restore the entire contents. Similarly, if you back up the contents of only the S1100's internal memory, you will have to separately restore each individual volume one by one.*

The other fields show the status of the back up or restore as it is in progress and, as each program. sample, Qlist, Tlist, effects and drum settings are either transferred to or from DAT, these fields will show the number of items.

BACKING UP THE HARD DISK TO DAT

To transfer the contents of a hard disk to DAT, assuming the correct connections are made between the DAT's digital input and the IB104 output, select HARD DISK as the back up type, press RECORD on your DAT machine followed by SAVE (F7) on the S1100. You will see each item as it is transferred to DAT - this will register as incoming audio on the DATs level meters and you will also see each item as it is being transferred in the list of items down the right of the screen. It is also possible to monitor the audio. You will also see the name of the item displayed along the bottom of the screen as it is backed up.

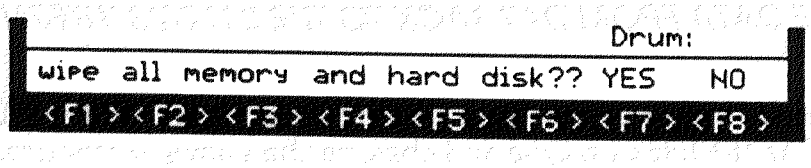
NOTE: In the case of programs, short samples and other small items, they may be transferred so quickly that the S1100 does not have time to display the name properly. In this case, the bottom line will flicker - this is normal so don't worry about it if and when it happens.

BACKING UP THE CONTENTS OF THE S1100'S INTERNAL MEMORY

To transfer the contents of the memory to DAT, first load up the appropriate files from disk (hard or floppy) and select MEMORY as the back up type. Now press RECORD on your DAT followed by SAVE - F7 - on the S1100. Again you will see the items as they are transferred.

RESTORING THE DATA FROM DAT BACK TO HARD DISK

To restore data from the DAT to a hard disk, assuming the digital output of your DAT is connected to the IB104's digital input, select HARD DISK as your back up type, press LOAD - F8 - on the S1100 followed by PLAY on your DAT. When you press LOAD, you will get the following prompt:



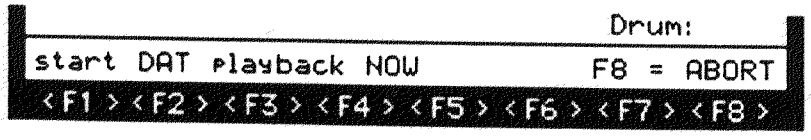
You may respond YES or NO accordingly.

IMPORTANT NOTE:

PRESSING 'YES' WILL IRREVOCABLY ERASE THE HARD DISK CONTENTS.

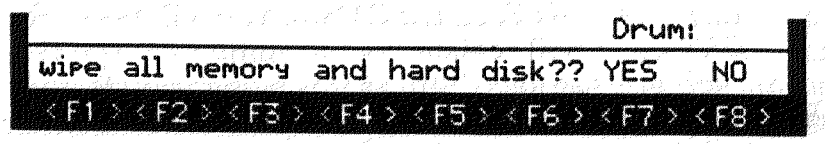
BE VERY CAREFUL IN YOUR SELECTION

The display will then show:

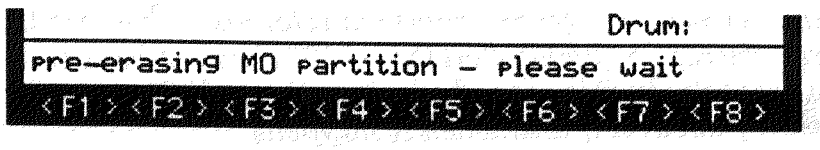


Press PLAY on your DAT machine to start the transfer or press F8 - ABORT - to cancel the procedure.

NOTE: *If you are using the Sony Magneto Optical disk drive, the S1100 can automatically 'sense' this. When you attempt to restore the contents of a DAT to the MO, you will receive this message:*

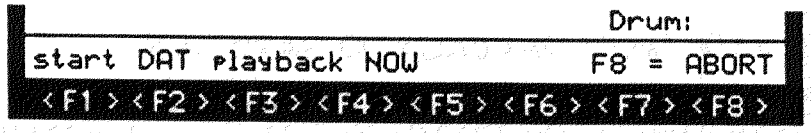


Pressing F7 - YES - will cause this message to be displayed:



Here, the S1100 is pre-erasing space on the disk to make way for the restored data. The MO drive takes twice as long to write as it does to read because it is performing a pre-erase. By separately performing the pre-erase, it is possible to backup and restore using the MO disk.

When the pre-erase is finished, you will receive this screen display:



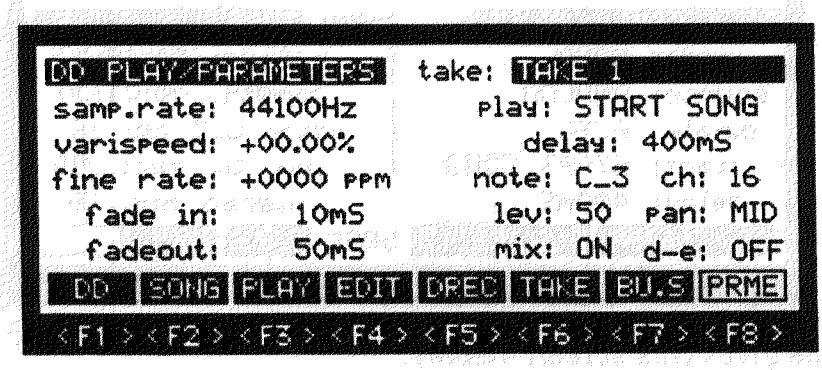
and you may proceed as normal.

RESTORING THE DATA FROM DAT BACK TO THE S1100'S INTERNAL MEMORY

To restore the contents of the S1100's internal memory from DAT, select MEMORY as the back up type and observe the above procedure. At the end of the first memory restore stop the DAT. It will probably be necessary to save the contents of the memory to disk (hard or floppy) before restoring the next memory contents from DAT. Having done that, repeat the procedure for the next memory contents restore.

BACKING UP TAKES TO DAT

Back up of takes to DAT is done in the PLAY page of the disk record functions. The soft key F7 - BU.S - takes you to the BACKUP SAVE page. I.e:

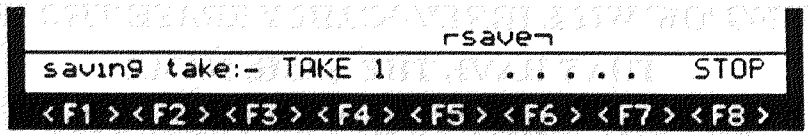


Press F7 - BU.S:

This simple page displays the transmit rate for the back up to DAT and can be set to 44.1 or 48Khz. When a take is backed up to disk, all data related to it is also backed up, of course. This includes start and end edit points, MIDI parameters, fade in/out, etc..

To back up takes to DAT, you can either do them individually or all of them. To back up a single take, select the appropriate take in the take field at the top right of the screen. Press RECORD on your DAT machine and then press F5 - ONE. This will back up only the selected take to DAT.

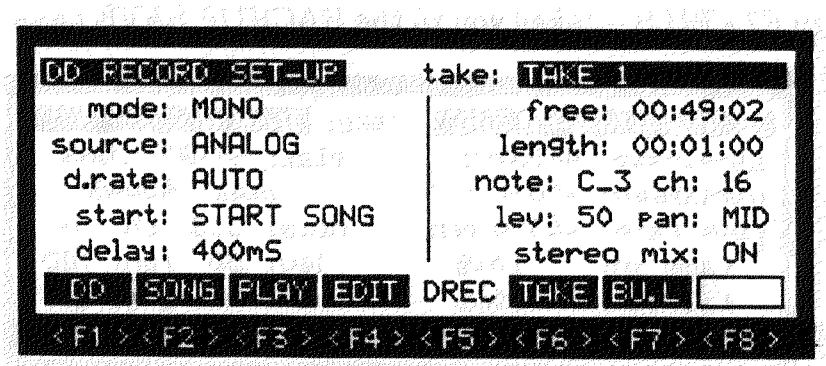
To back up all the takes on disk to DAT, irrespective of the take selected in the take field, press RECORD on the DAT machine and then press ALL (F6). The S1100 will then systematically back up all the takes contained on that disk. When either of the above is taking place (i.e. a single take or all takes are being backed up), you will receive the following display:



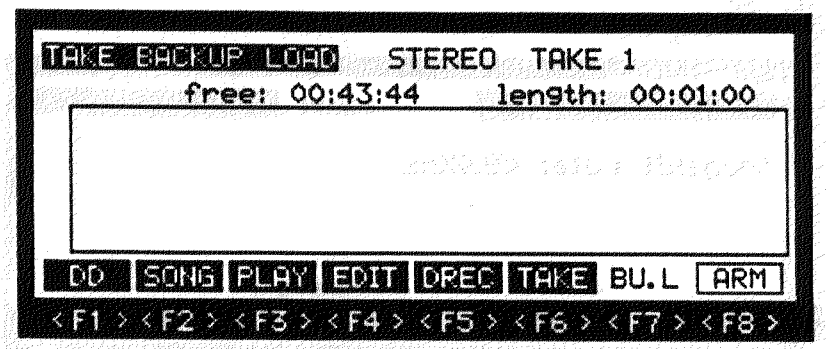
This shows the current take being backed up. At any time, you may abort the procedure by pressing F8 - STOP.

RESTORING TAKES BACK FROM DAT TO DISK

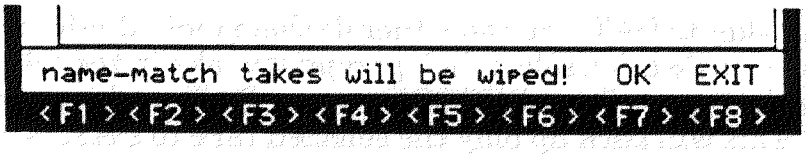
The take restore functions are found in the DREC page on F7 - BU.L. I.e:



Pressing this gives this screen display:



This page looks very much like the normal record page except that you have lost the threshold field. To perform a restore of either a single take or all takes, line the DAT up to the appropriate point and press ARM (F8) on the S1100. You will receive the following message:



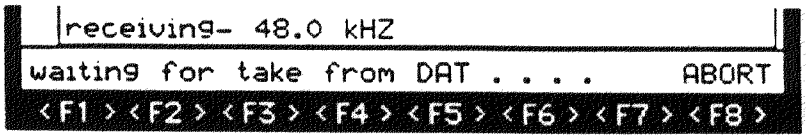
indicating that any takes currently on disk that have the same name as those backed up on DAT will be overwritten and replaced with those from DAT. Press OK or EXIT as appropriate.

IMPORTANT NOTE:

PRESSING 'OK' WILL IRREVOCABLY ERASE THOSE TAKES THAT HAVE THE SAME NAME.

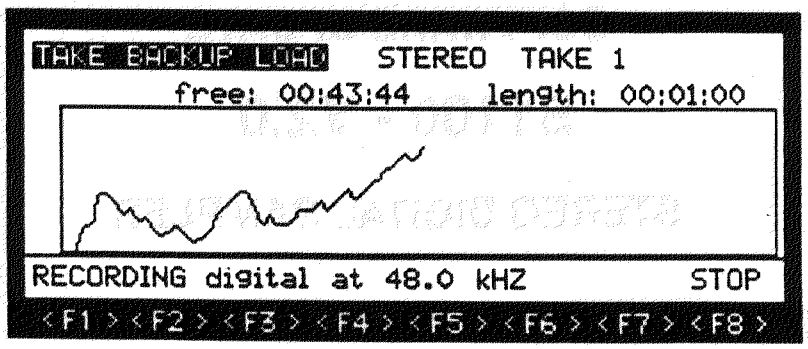
BE VERY CAREFUL IN YOUR SELECTION

Immediately after you press OK, the display will show:



This indicates that the S1100 is receiving the digital signal through the IB104 digital interface. If the display shows WAITING FOR CARRIER, this indicates that the correct digital connection has not been made. Please check your connections and also please check the settings of the IB104 interface in the DIGI page of REC1 in EDIT SAMPLE. You may press F8 - ABORT - to exit this screen.

Assuming you wish to proceed with the restore, press PLAY on your DAT machine. When the take is being restored to disk, the screen will show:



This is virtually identical to the normal record page when a recording is being made and the takes waveform envelope will be displayed as it is being restored. The DAT restore function is, actually, just another way of recording and this 'confidence monitoring' keeps you informed of progress during the DAT restore process. At any time, you may press STOP (F8) to abort the restore.

You can hear the audio through the S1100's outputs as is is being both backed up to DAT and restored to disk although you will note that recording made at 44.1Khz and backed up or restored at 48Khz will play back faster than normal. This is normal. The DAT back up/restore transmit rate has nothing whatsoever to do with the recordings sample frequency. In fact, backing up 44.1Khz recorded takes at 48Khz is recommended because it is faster.

SOFTWARE UPDATE

S1100 - V2.0

STEREO DIGITAL SAMPLER

To show our support for the protection of the earth's environment, this manual has been printed entirely on recycled paper.

Contents

INTRODUCTION

Thank you for purchasing the Version 2.00 software for your Akai S1100 sampler. It features unique hard disk recording facilities which allow you to utilise all the functions of the S1100 plus the ability to record and edit audio material on a hard disk. The S1100 is the only sampler of this kind that can perform these functions.

FEATURES

The hard disk recording functions include:

1. Full functional operation of the S1100 sampling facilities whilst simultaneously recording to or playing back audio material from a hard disk with no loss of polyphony or internal RAM.
2. Advanced editing of audio material on disk.
3. MIDI triggering of takes recorded on disk.
4. SONG mode which allows sequential chaining of takes with repeats.
5. Takes may be played alongside programs in a QList.
6. Advanced editing of take parameters that includes level, pan, fade in, fade out.
7. Mono or stereo recording.
8. Varispeed playback of recordings from disk
9. Disk recordings can be processed on an external mixing console via individual outputs 7 and 8.
10. The hard disk can be especially partitioned to contain a certain amount of space for sound library and a certain amount for disk recordings. The size of each partition may be set by the user. In this way, disk recordings can be associated with programs.

Other new features introduced in Version 2.00 include:

1. Improved back up to DAT that allows you to back up data including the effects files and QLists to DAT via the optional IB104 digital interface.
2. Improved back up to DAT that allows the use of the Sony Magneto Optical disk 5.25 inch or 3.5 inch.

APPLICATIONS

The disk record/playback functions have many applications:

1. Triggering takes whilst sequencing programs. I.e. 'spinning in' backing vocals and the like over sequenced backing tracks either live or in the studio.
2. Music editing in the form of simple 'topping and tailing'
3. Extended remix work using the sequential playback and step repeat capabilities of the SONG functions.
4. In A/V post production when using the Qlist, long dialogue or music tracks can be played from disk whilst simultaneously triggering short, one shot effects and/or looped atmos effects from within programs.

INSTALLING VERSION 2.00

Unlike other software upgrades we have released for our samplers, the S1100 Version 2.00 requires a hardware change to be made as well as having the two ROMs fitted. This operation must be carried out by your dealer or local Akai distributor.

MAKING COPIES OF VERSION 2.00

You may, if you wish, make copies of the operating system onto floppy disk. This is done in the DISK mode simply by selecting OPERATING SYSTEM and then saving it to a suitably formatted floppy disk (a simple double density disk will be enough). With this floppy in the disk drive during power up, the operating system will automatically load from floppy. This may be useful if you wish to customise certain aspects of the software for your own personal use (see below).

CUSTOMIZING THE VERSION 2.00 SOFTWARE

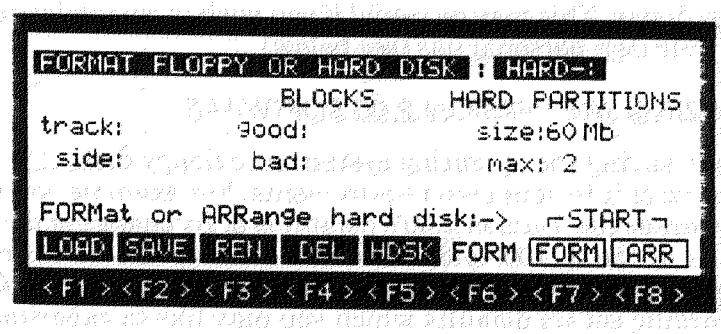
When saving the operating system onto floppy disk, it is possible to customise certain aspects of it to your own requirements. For example, your hard disk's SCSI ID may be 3 whereas the Version 2.00's default is 5. By changing the SCSI DRIVE ID in the DISK mode of the S1100 to 3, when you boot up the software, it will default to 3. Other parameters may also be modified such as SCSI DRIVE SECTOR SIZE and sampling and recording set-up defaults which you may like to experiment with.

BEFORE YOU GET STARTED - FORMATTING THE HARD DISK

ALLOCATING PARTITIONS FOR SOUND LIBRARY AND DISK RECORDINGS

Before you can use the disk record functions, it is necessary to format your hard disk. The Version 2.00 software allows you to allocate a certain part of your hard disk for sound library and a certain part for disk recordings. In this way, you may conveniently have takes and sound library on one disk which is particularly useful if you plan to use the disk record functions to 'spin in' recordings over sequenced material because you can have takes and the programs associated with them on one disk.

Pressing DISK and then F6 - FORM - will give you this screen:



The screen is much the same as in previous version of software but a new field is introduced - MAX: Now, you may set the size and the number of partitions you wish to allocate for the storage of sound library.

For example, say you have a 300Mb hard disk - you can allocate maybe 4 x 50Mb partitions for library leaving 100Mb free for disk recording. This would give you 200Mb for library and around 20 minutes of stereo recording at 44.1kHz or twice that in mono. You can, of course, set the disk up as you like depending on whether you want more or less sound library relative to takes.

When the formatting is taking place, a message now shows to say:

FORMATTING (typical 10-30 min)....

to indicate that the disk is being formatted.

When the formatting process is finished, the screen display will show you how much space is available for disk recording.

VERY IMPORTANT NOTE

Formatting the disk will, of course, erase everything on it. MAKE SURE YOU HAVE EITHER COPIED THE CONTENTS ONTO FLOPPY DISK OR HAVE MADE A DAT BACK-UP BEFORE FORMATTING A DISK THAT CONTAINS SOUND LIBRARY. You have been warned!!

MPROVEMENTS WITH THE DAT BACK-UP PROCEDURE

Vhilst it was possible to make back-ups of your hard disk to DAT in previous versions of the S1100 software, it was not possible to back-up the effects files or Qlists. In Version 2.00, all data is backed up. This includes all samples, programs, drum settings, effects files, Qlists and Songs.

Also, in previous versions of the S1100 software, it was not possible to back-up data to the Sony MO disk. This is because the write time of the MO is about twice that of a normal hard disk. The result of this was that every other bit of data was not backed up. Now, in Version 2.00, this problem has been overcome and so it is possible to back up the contents of an MO disk to a normal DAT.

VHICH HARD DISKS CAN BE USED?

Basically, virtually any hard disk can be used to record audio onto. The Version 2.00 should work equally well with fixed hard disks or removable hard disks including the Sony Magneto Optical (MO) disk. However, because of the many different makes of hard disk drives available today, it is difficult to categorically guarantee that all drives can be used. Your dealer or local Akai distributor will be able to advise you.

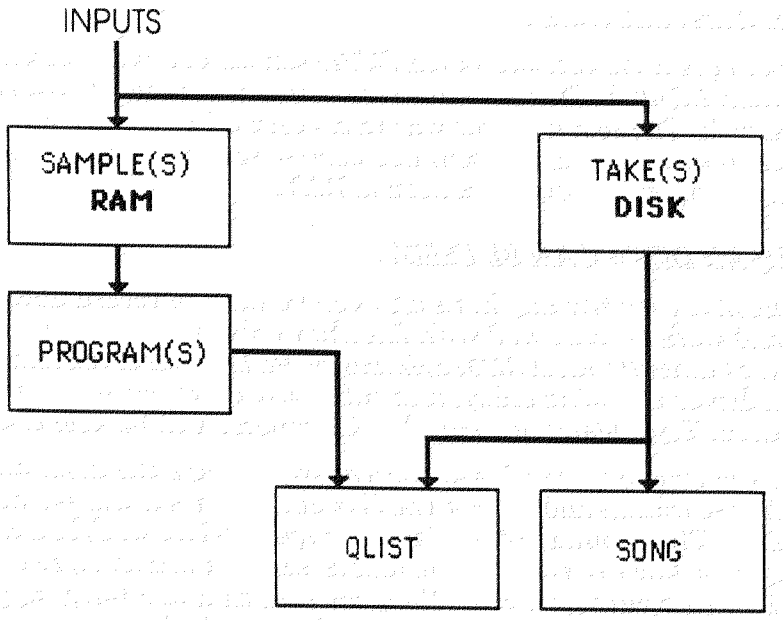
The removable types of disk storage are perhaps the most interesting in that you can make recordings and remove the disk at the end of a session much like you can with tape or DAT. The popular 40Meg Syquest type of drives would allow you to store a particular project on one cartridge. For example, set the partition size to 10Mb and the MAX field to 1 - this would give you 10Meg for sounds and 30Meg (approximately 3 minutes of stereo audio) for disk recordings which is an ideal size for storing an average song. The Sony MO drive is perhaps the most interesting because its large storage capacity (650Mbytes - 325Mbytes per side) gives it all the benefits or a large hard disk but with the advantage of removability. Also, because it is double sided you could, for example, reserve one side for sound library and the other for sound library and disk recordings. Formatting one side for disk recordings only would give you approximately 30 minutes of stereo recording at 44.1kHz.

With a fixed hard disk, once it is full, you will have to erase the data before you can proceed onto another project.

The maximum size hard disk you can use is 500 Mb.

HOW THE DISK RECORD FUNCTIONS WORK

The S1100 flowchart is now something like this



The following, therefore, is now possible within the S1100:

1 You can record samples into RAM and place them into programs which can be played or triggered from MIDI as normal.

2 You can record samples into RAM, place them into programs and trigger those programs from within a Qlist as normal.

3 You can record takes directly to a hard disk. These can be played in a number of ways:

i. Takes can be placed into what we call a SONG and triggered from MIDI. By assigning a take a MIDI note number and channel, incoming MIDI can be used to initiate playback. This can take place whilst ordinary programs are also being played via MIDI and so, in this way, you could, for example, be sequencing several multi-timbral programs as a backing track whilst simultaneously 'spinning in' backing vocals, brass riffs, solos, breakbeats, etc., from disk.

> ***Note:*** *It is also possible to record a take whilst sequencing programs. For example, you may record a guitar solo directly to disk whilst listening to sequenced programs coming from the S1100.*

ii. Takes can be also be run sequentially in a song and, in this application, several takes can be 'butt edited' to each other and caused to playback sequentially. Furthermore, each step in a song may be set to repeat any number of times so this can be used very effectively for the easy creation of extended remixes.

iii. Takes may also be placed into a Qlist and triggered from SMPTE times. Normal programs may also be placed into the same Qlist. In this way, you could, for example, playback long dialogue or music tracks from disk whilst simultaneously triggering short, one shot sound effects (such as footsteps, etc.) or longer looped atmos sound effects from RAM. This will be of particular use to audio visual post production applications.

iv. Takes can be placed into a Qlist for triggering to SMPTE times. The S1100's internal SMPTE generator could then be used to synchronise a sequencer which is playing multi-timbral programs. In this way, the sequencer plays the backing track whilst the takes playback from disk according to SMPTE times. This may be more convenient than using method (i) described above which uses MIDI to play takes alongside sequenced programs.

There are some important things to note when using the disk record functions, however.

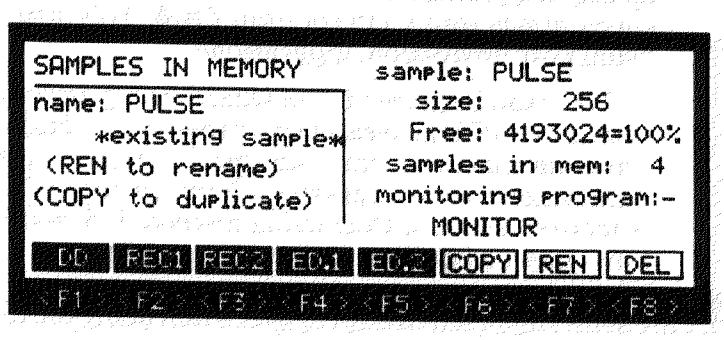
1. Because the disk record functions utilise the S1100's DSP capabilities, it is not possible to use the internal effects when using the disk record functions.
2. Takes playing back from disk do not appear at the real time digital outputs. This is due to certain hardware restrictions.
3. It is only possible to playback one take at a time from disk - two takes cannot be played simultaneously. If another take is triggered whilst another is playing, the new one will take priority. Crossfades between takes are therefore also not possible.
4. When triggering takes via MIDI, there is always a delay in the take playing back. This is due to disk access time (i.e. the speed with which the disks heads can find the audio material and get it ready to playback). It is possible to accurately set fixed delays so that these can be accommodated when triggering takes from, say, a MIDI sequencer and the sequencers track shifting functions can cater for this.
5. It is not possible to use the S1100EX in Mode 2 when connected to the S1100 while it is playing takes from disk. This is because both units will be contending to use the same SCSI buss. Similarly, it is not possible to program an S1100EX in Mode 1 whilst using the disk record functions but, once you have set your S1100EX, you may play or sequence it in Mode 1 using MIDI.
6. The disk functions are not able to be used with the Akai S-FMAC Apple Macintosh™ front panel emulation software. Again, this is because there would be SCSI conflicts with two contending SCSI devices sharing one buss simultaneously.

USING THIS MANUAL

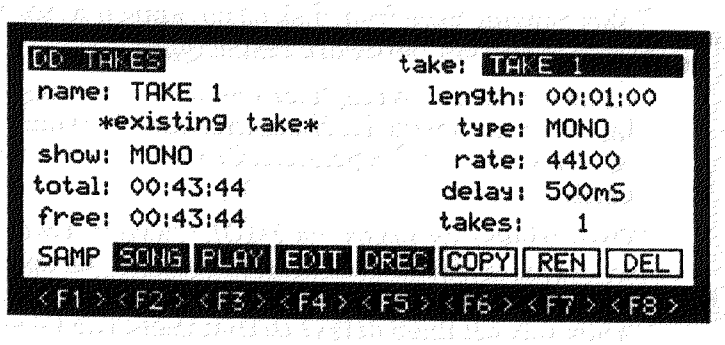
It is assumed you have a basic working knowledge of the S1100 by now. If you are at all unsure about certain functions, please refer to the S1100 operators manual for more information.

USING THE DISK RECORD FUNCTIONS

The disk record functions are to be found with the EDIT SAMPLE pages. Pressing EDIT SAMPLE now gives you this screen:



All other functions are as normal but F1 - DD - takes you directly to the disk record functions and will display this screen:



Here you may select takes and view their record parameters as well as select new takes for recording or deletion, etc.. To return to the main sample editing functions, either press F1 again (SAMP) or simply press the EDIT SAMPLE key.

The fields on the DD page are:

take: TAKE 1

This shows the name of the currently selected take and you may select others by scrolling through them with the data knob. If this is the first time you have used the disk record functions or you are using a freshly formatted disk, the name field will be blank.

name: TAKE 1
existing take

This shows the name of the selected take and here you may copy or rename a take. To copy or rename a take, press the NAME key (this field will become highlighted and - new name - will be displayed beneath as soon as a unique name is created) and type in a new name from the front panel and then press ENT. To copy or rename the take, simply press COPY (F6) or REN (F7) as appropriate. You may also select takes from here by typing in their names and pressing ENT but remember that the name you type must be the correct one for an existing take otherwise you will be creating a new take. This will be indicated by this field displaying - new name -

show: MONO

This allows you to see the free time left on disk or the amount of disk space used expressed as mono or stereo. For example, if you have 10 minutes free on disk

when STEREO is selected here, if you select MONO, the free: field (described below) will show 20 minutes.

No other fields are accessible but merely show the takes parameters. These are:

length: 00:01:00

This shows the length of the currently selected take.

type: MONO

This shows whether the take is a stereo or mono recording.

rate: 44100

This shows the take's sampling rate.

delay: 500mS

This shows the MIDI offset delay selected for the recording.

These parameters are explained in detail later in this manual.

The other fields are:

total: 00:43:44

This indicates how much disk space has been allocated for disk recording.

free: 00:43:44

This shows how much space is left on the disk for recording onto.

takes: 1

This shows how many takes are on disk. When you use the disk record functions for the first time or use a freshly formatted disk, this field will say 0.

SOFT KEYS IN THE DD PAGE

The soft keys on this page are:

F1 - DD — Shows the currently selected page

F2 - SONG — This takes you to the SONG mode where you may compile takes forsequential playback or MIDI triggering

F3 - PLAY — This takes you to the play pages where you may play takes

F4 - EDIT — This takes you to the take editing display

F5 - DREC — Takes you to the record pages for recording new takes

F6 - COPY — This allows you to copy a take

F7 - REN — This allows you to rename a take

F8 - DEL — This allows you to delete a take off disk

At any time, you may play the selected take by holding down the ENT/PLAY key. The take will only play for as long as you hold the key down. Also, at any time you may return to sample editing simply by pressing the EDIT SAMPLE key.

CREATING NEW TAKES

You may create a new take for recording here if you wish simply by typing in a new, unique name. Whether the take is an existing one or a new one will be indicated in the display. It is possible to create new takes in any of the DD functions pages simply by typing in a new and unique name.

COPYING TAKES

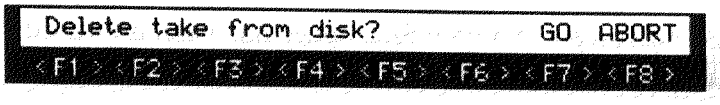
You may copy takes only within this DD page. This is done by pressing the NAME key, typing in a unique name and pressing COPY - F6. The process is a little longer than real-time.

RENAMING TAKES

Takes may be renamed only in the DD page. This is done by pressing the NAME key, typing in a new, unique name and pressing REN -F7.

DELETING TAKES FROM DISK

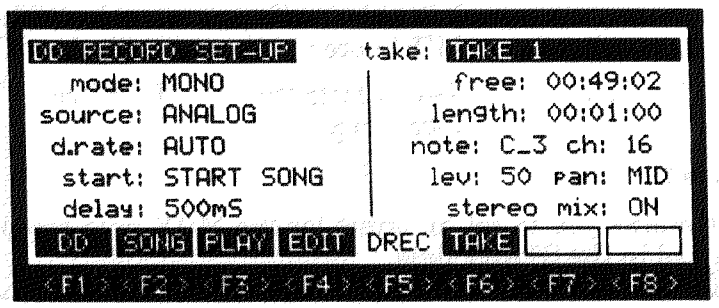
You may delete takes from within the DD page. This is done by pressing F8 - DEL. The display will prompt you:



Pressing GO will delete the take from disk. Pressing ABORT will cancel the deletion. Be very careful using this feature as deleted takes cannot be retrieved.

MAKING A RECORDING

To prepare for a recording, press DREC - F5 - in any of the DD pages. You will receive this screen display:



This is the disk record set up page and here you may select and create takes to record as well as set their record parameters. The fields are:

take: TAKE 1

This shows the currently selected take. To select another, you can either scroll through the takes on disk using the data knob or type in their names from the front panel by pressing the NAME key, typing in the name and then pressing ENT. You may also create new takes for recording in the same way but by entering a unique take name.

mode: MONO

This selects whether the recording will be in mono or in stereo.

source: ANALOG

This selects the input for the recording - whether it will be through the analogue inputs on the front panel or via the optional IB104 digital interface. The selection choices are ANALOG or DIGITAL.

> ***NOTE:*** *If you wish to record through the digital inputs, you will have to adjust the parameters for the IB104 as appropriate. The IB104's parameters are accessed in REC1 using F8.*

d.rate: AUTO

This selects the way the S1100 will lock to external digital word clock when recording through the IB104 digital interface. When set to AUTO, the default, it will automatically adjust itself to the incoming digital signal. For example, when set to AUTO, if you record from a CD, it will set itself to 44.1kHz but then, on the next recording, if you record from a DAT player, it will adjust itself to 48kHz. If you are unsure of the source machines sampling rate, it is best to select AUTO. It is also possible to manually set the sampling rates and the options you have are 32kHz, 44.1kHz and 48kHz.

start: START SONG

This selects the method by which recording will commence. The options are:

INPUT LEVEL	This will cause recording to commence once a certain threshold level has been exceeded. The threshold level is set in the TAKE page (see below).

FOOTSWITCH1	This allows you to use the footswitch input on the back of the S1100 to initiate recording.
MIDI NOTE	This selects that a MIDI NOTE will initiate recording. The MIDI note number is set in the NOTE field described below.
M. NOTE+DEL	This selects that recording will start when it receives a MIDI note but with an offset as set in the DELAY field described below. The MIDI note number is set in the NOTE field described below.
START SONG	This selects that a MIDI SONG START command will initiate recording.

delay: 500mS

This allows you to set an offset for the MIDI note reception when M.NOTE+DEL is selected in the START field.

> ***NOTE:*** *Because it takes time for a hard disk to actually find the data and play it back, it is necessary to be able to set a fixed offset so that the disk always has enough time to find the take and play it back in sync with any other material that may be playing (for example, when sequencing programs in the S1100). The DELAY field is of use in that you can set the S1100 to start recording after a certain delay when it receives a MIDI note-on. This same note-on can then be used to playback the take in sync with other material.*
>
> *By setting a fixed offset of, say, 500mS in the DELAY field and advancing the MIDI note-on in the sequencer by the same amount (i.e. making it 400mS earlier), you can start recording at a predetermined time. After you have made the recording, you can have that take play back from the same point. The SONG mode (described later) always uses these delays to ensure accurate synchronised playback so being able to select to initiate recording with a fixed delay in the RECORD SETUP page allows you to record a take with the offset and then assign it to a SONG (where the offset is always used) without constantly having to re-edit the position of the note on your sequencer.*

free: 00:49:02

This shows the amount of free time left on disk.

length: 00:01:00

Here you may set the length of the recording you wish to make. If you are unsure of the length of the recording you are about to make, simply set a long record time. Wasted disk space can always be edited out and retrieved afterwards in the EDIT page.

note: C_3

This field sets the note that will initiate the recording when either MIDI NOTE or M. NOTE+DEL is selected in the START field. It also sets the note that will trigger playback after it has been recorded. This may be edited after you have made the recording if you wish.

ch: 16

This is an abbreviation of CHANNEL and sets the MIDI channel for the recording when triggering from MIDI. The default is 16 but you may select from 1-16.

lev: 50

This sets the playback level of the recording. This does not affect the record levels which are set using the front panel REC LEVEL control.

pan: MID

This sets the pan position of a mono recording and the left/right balance of a stereo recording.

stereo mix: ON

This selects whether the recording will be output through the stereo outputs or not.

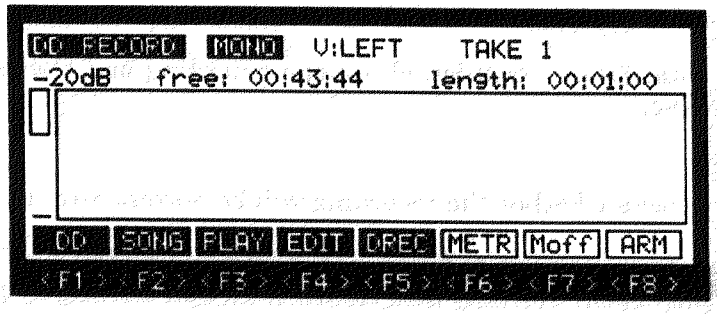
At any time, you can audition a take by pressing the ENT/PLAY key which will cause it to play back. You may also return to sample editing by pressing the EDIT SAMPLE key.

SOFT KEYS IN THE DREC PAGE

F1 - DD	This takes you to the DD TAKES view page
F2 - SONG	This takes you the SONG mode where you may compile takes for sequential playback or MIDI triggering
F3 - PLAY	This takes you to the play pages where you may play takes
F4 - EDIT	This takes you to the take editing display
F5 - DREC	This shows the currently selected page
F6 - TAKE	Takes you to the record pages for recording new takes
F7/F8	No function

RECORDING A TAKE

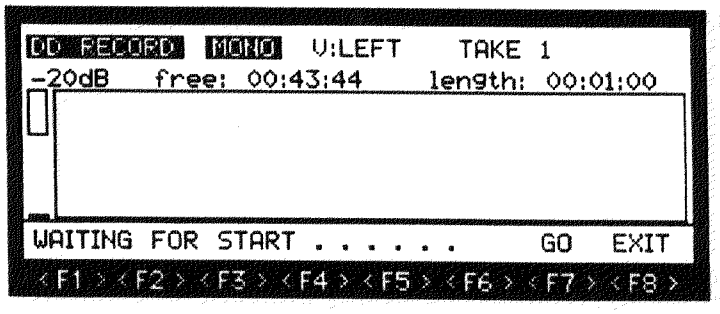
Actual recording is done within the TAKE page. Pressing TAKE - F6 - gives you this screen display:



This is very much like the REC2 page you will probably already be familiar with in the sample recording pages. It shows you the type of recording you are about to make (i.e. stereo or mono), the take name, the threshold level (if INPUT LEVEL is selected in DREC), the free time left on disk and the length you have set for the new recording. With the exception of the FREE field, all of these parameters may be changed prior to making a recording. You may also create a new take to be recorded by pressing the NAME key, typing in a suitable name and pressing ENT.

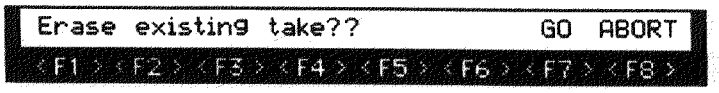
To setup for a recording, set the levels by playing the source to be recorded and adjusting the front panel REC LEVEL control - the incoming signal level will be shown in the bargraph display to the left of the LCD. If you have selected to start recording using INPUT LEVEL in the DREC page, you should set the threshold level by moving the cursor to the field marked -20dB and adjusting it accordingly.

To initiate a recording, press ARM - F8. You will receive this screen display:



Here, the S1100 is either waiting for a MIDI NOTE or a SONG START command or for the footswitch to be triggered or the input level to exceed the threshold level. This all depends on the type of START you have selected in DREC. You may manually initiate a recording by pressing GO (F7). You may get out of this display by pressing EXIT (F8).

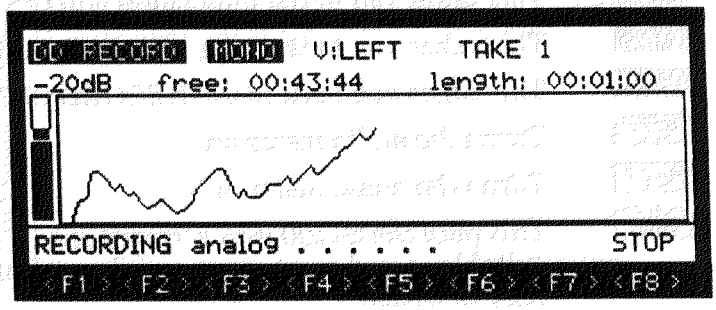
If the take selected for recording already exists when you press ARM you will receive this prompt:



and you may respond accordingly. Pressing GO (F7) will cause the existing take to be erased and replaced with the new one you are about to record and pressing

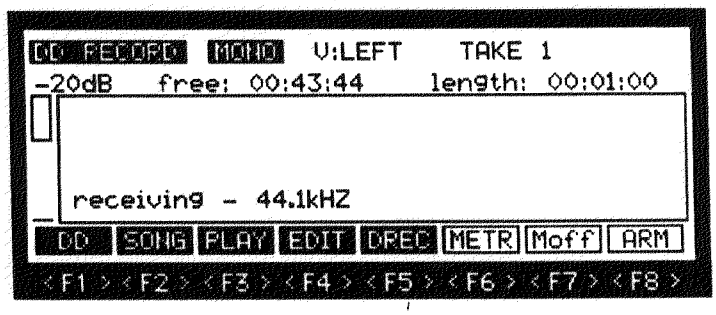
ABORT (F8) will take you back to the TAKE screen shown above where you may create a new take for recording.

When a recording is being made, the screen shows the incoming waveform as it is being recorded. I.e:



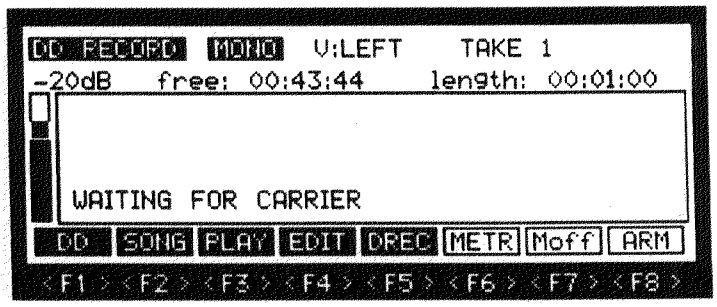
You may stop recording by pressing F8 at any time.

If you are going to record digitally through the IB104, when you enter the TAKE page, the screen will show:



or whatever sample rate is being received.

If no digital connection has been made or has become disconnected, the display will tell you:



When recording digitally, the bottom line of the display shows:

and the screen draws the incoming waveform envelope as it is being recorded.

Once a recording has been made, you may use the ENT/PLAY key to play it back. You may also return to sample editing by pressing the EDIT SAMPLE key.

SOFT KEYS IN THE TAKE PAGE

F1 - DD — This takes you to the DD TAKES view page

F2 - SONG — This takes you the SONG mode where you may compile takes for sequential playback or MIDI triggering.

F3 - PLAY — This takes you to the play pages where you may play single takes

F4 - EDIT — This takes you to the take editing display

F5 - DREC — This takes you back to the RECORD SETUP page

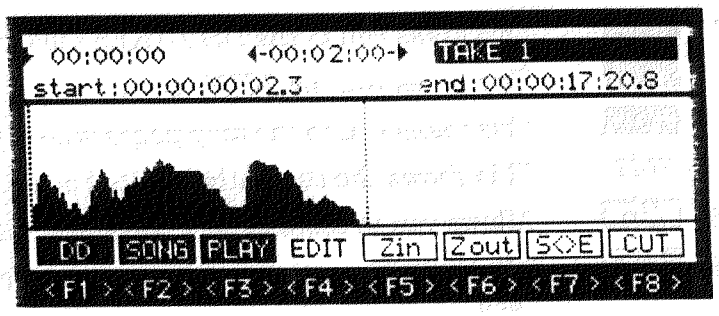
F6 - METR — Turns the audio meter on

F7 - Moff — Turns the audio meter off

F8 - ARM — This puts the S1100 into a 'record ready' state awaiting the arrival of a suitable record start command depending on the setting of the START field in DREC

EDITING A RECORDING

After you have recorded a take, you may need or want to edit it. This is done by adjusting the takes start and end times and is done within the EDIT page. Pressing F5 in any of the DD pages will display this screen:



When you enter this page, you see a graphic representation of the takes waveform and you may move the start and end points around freely. The start and end points are shown both as time values in the START and END fields respectively and are also shown as flashing vertical lines in the waveform display. You may zoom in or out on a waveform for greater editing accuracy. The fields are as follows:

00:00:00

This shows the 'now' position of the left edge of the screen. By adjusting this parameter, any part of the waveform can be placed as the 'now' position. Used in conjunction with the zoom in and zoom out keys, this function can be used for identifying key points in a take you want to edit without upsetting the start and/or end marks. When the cursor is placed on this field, pressing ENT/PLAY will cause the take to play back from the left of the screen - i.e the cursor will play from the 'now' position up the end mark.

-00:02:00-

This shows the 'width' of the screen display in time. Here it is showing that the screen width is equivalent to 2 minutes. As you zoom in and out, this field changes to show the equivalent size of the screen.

TAKE 1

This shows the name of the take selected for editing. You may select another by scrolling through the available takes.

start:00:00:00:02.3

This allows you to adjust the start time of the take. As you adjust this parameter, a flashing vertical cursor moves across the waveform display. You will note that if you move the start point past either extreme of the waveform display, the waveform will scroll. When the cursor is on this field, pressing ENT/PLAY will cause the take to play back from the start point set here.

end:00:00:17:20.8

This sets the end point of the recording. As you adjust this field, a vertical flashing cursor moves across the screen. If the end point is moved past either extreme of the waveform display, the waveform will scroll. When the cursor is on this field, pressing ENT/PLAY will cause the take to play UP TO the end point from the point shown on the far left of the screen and you can use the ZOOM

IN/OUT functions as a variable pre-roll function. For example, if you want to audition the last ten seconds or so of a take to check if your end point edit is satisfactory, use the ZOOM keys to set a value close to this in the ◀-00:02:00-▶ field and press the ENT/PLAY key.

You may quickly switch between the start and end fields by pressing the S<>E key.

SOFT KEYS IN THE EDIT PAGE

F1 - DD — This takes you to the DD TAKES view page

F2 - SONG — This takes you the SONG mode.

F3 - PLAY — This takes you to the play pages where you may play takes

F4 - EDIT — This shows the currently selected page

F5 - Zin — Allows you to zoom in on a waveform for greater editing resolution

F6 - Zout — Allows you to zoom out of a waveform for a more general overview of the take

F7 - S<>E — This moves the cursor to the start or end mark

F8 - CUT — This will cause data either side of the start and end points to be discarded. This is a destructive process so be careful when using this function

PLAYING A TAKE IN THE EDIT PAGE

As in all other DD pages, it is possible to play a take directly by holding down the ENT/PLAY key. In the EDIT page, however, when the take is actually playing, a flashing vertical cursor moves across the screen. When you take your finger off the ENT/PLAY key, playback stops and the play cursor stays at the point where it is stopped. You can use this position to place the start or end mark at a suitable position. There are other differences as discussed above but to recap:

1: If the cursor is on the ▶ 00:00:00 field, pressing ENT/PLAY will cause the take to playback from the point shown on the left of the screen regardless of the setting of the start field. Use this as a means of playing back from anywhere in the take without upsetting edit points.

2: If the cursor is on the end field, pressing the ENT/PLAY key will cause the take to playback from the point shown at the left of the screen up to the end point. You can use this facility to audition the end of an edit and use the ZOOM IN/OUT as a variable preroll function.

USING THE EDITING FUNCTIONS

The editing functions have been kept deliberately simple to use. Basically, you can trim a recordings start and end points and, to assist in this, a graphic representation of the waveform is shown.

Once you have successfully made a recording, the chances are you will want to edit it so go to the EDIT page. Move the cursor to the START field and adjust the start time so that cursor is right at the start of the take. You may use the editing of the start point as well to edit out count-ins to a song or breaths from a backing vocal 'spin in' or whatever. Of course, you can zoom in for greater accuracy.

You may audition your edit at any time simply by pressing the ENT/PLAY key.

Once you have successfully edited the start mark, move the cursor to the END field either by using the cursor knob or by pressing the S<>E soft key and you may set a suitable end point, again, zooming in for greater editing accuracy. Again, use the ENT/PLAY key to hear the result of your edit. Of course, in the case of a very long take, it is very inconvenient to have to hear all of it just to check the end point. When the cursor is on the END field, pressing the ENT/PLAY key will cause the take to play back from the left side of the screen only. In this way, by adjusting the zoom factor accordingly, you may use this as a form of pre-roll so that you only need to audition the last 10 or so seconds of the take in order to assess your end point edit.

HELPFUL HINT: *If you are editing a take for use in a song where takes are sequenced, you might find it helpful to quickly place the edit you are working in an empty song and have it repeat a few times. If it cycles round with no glitches or tempo disruption, then you probably have a good edit that will work well with other takes appended to it. If there is a glitch on the repeat, return to this EDIT screen to fine tune the start and / or end points. The process can be a bit hit and miss but as all editing is non-destructive here, it certainly beats using a razor blade!*

Once you have decided that the edit you have done is right, you may wish to discard the unwanted portions in order to free up disk space.

IMPORTANT NOTE: *The discard function is destructive and non-retrievable. Be careful when using it!!*

HELPFUL HINT: If you are recording in small sections to be compiled as a song later on, please be careful when using the discard function. For example, you may make an edit which, in isolation in the EDIT or PLAY pages, sounds fine but glitches slightly and needs adjustment when playing back-to-back with another take in the SONG mode . If you use the discard function, you may lose the ability to adjust the edit at a later stage. It is recommended, therefore, that you don't use the CUT function until you have successfully compiled your song.

Of course, you may want to set a start point some way into the recording. An easy way to do this is to press the ENT/PLAY key and let the take play back up the point where you want to set the start point. When you take your finger off the ENT/PLAY key, the play cursor will stop at that position and you can move the start point to that position. It is unlikely that such an edit will be particularly precise but you can zoom in for more precise editing. The same thing can be done when editing the END point.

PLAYING TAKES

There are a number of ways you can play a take within the S1100's DD functions:

1 You can play a take in ANY page using the ENT/PLAY key

2 You can assign a series of takes to a SONG for sequential playback or for triggering from MIDI

3 You can play 'raw' takes from within the PLAY page and this is accessed in any of the DD pages by pressing F3 - PLAY. Pressing this soft key will give this screen display:

In the PLAY page, you may audition 'raw' takes using the START option selected during the record process. The fields on this page are as follows:

take: TAKE 1

This shows the selected take. You can select other takes for playback by scrolling through them using the data knob.

samp.rate: 44100 Hz

This shows the sampling rate at which the selected take was recorded. If the take is an analogue recording, this will always show 44100Hz. If the take was recorded digitally it will show the rate at which it was recorded (i.e. 32kHz, 44.1kHz or 48kHz). You may adjust this in the event that a take recorded digitally was, for some reason, recorded at the wrong sampling rate.

varispeed: +00.00%

This allows you to set the playback rate for the selected take and may be used like a tape machines varispeed control. Normally, this will be 00.00% but, for special effects, you may wish to set a playback rate that is different to the takes sampling rate. This parameter may be adjusted in real-time as the take is playing.

fine rate: +0000 ppm

This allows you to fine tune the playback rate very precisely. This field is here to compensate for minute discrepancies between different units internal crystals when playing a take alongside another recording or a sequenced backing. The 'ppm' refers to 'parts per million' and so this field allows you to really fine tune the playback rate. This field need only be used if you find a recording wanders very slightly out of time with the other material. If this happens, try adjusting this parameter. Unfortunately, there are no guidelines as to how to adjust this - you will just have to experiment until you get it right.

fade in: 10mS

This allows you to set a fade-in time for the take. The range is 0-9999 milliseconds (i.e. 0 to 10 seconds).

fadeout: 50mS

This allows you to set a fade-out time for the take. The range is 0-9999 milliseconds (i.e. 0-10 seconds).

play: START SONG

Here, you can set the method by which a take will commence playback. The options are:

IMMEDIATE	This will cause the take to commence playback as soon as you press PRME - F8.
FOOTSWITCH1	This will cause the take to start playback when you press the footswitch connected to the footswitch input after PRME is pressed.
MIDI NOTE	This will cause the take to playback when it receives the MIDI note number set in the NOTE field below after PRME is pressed.
M. NOTE+DEL	This will cause the take to play back upon receipt of a suitable MIDI note but with a delay offset set in the DELAY field described below. If PRME is pressed, however, playback is immediate in the PLAY page.
START SONG	This will cause the take to playback when it receives a MIDI song start command after PRME is pressed.

In all the above selections, the PRME key must be pressed first before a take is played.

delay: 500mS

This sets the delay offset used for triggering a takes playback when M. NOTE+DEL is selected in the START field described above.

note: C_3

This allows you to set which MIDI note will cause the take to playback when MIDI NOTE or M. NOTE+DEL is selected.

ch: 16

This allows you to set the MIDI channel for the take. In this way, you can set a specific MIDI channel for the MIDI triggering of takes.

lev: 50

This field allows you to set the playback level of the take.

pan: MID

This allows you to set the pan position of a mono recording or the left/right balance of a stereo recording.

mix: ON

This allows you to select whether the take will play out through the stereo outputs. When ON is selected, the take will appear through the left/right outputs. With it switched to OFF, the take will only appear through individual outputs 7 and 8. This can be useful if you want, for example, several sequenced programs to appear out of the main left/right outputs but you want the take to sound through outputs 7 and 8 for processing on an external mixing console.

:-e: OFF

In this field, you may select whether de-emphasis is applied or not. This only applies to takes recorded through the IB104 digital interface. For example, if a DAT that was recorded with pre-emphasis is recorded into the S1100, it will be necessary to turn this field to ON when playing it back. If pre-emphasis is not used, then this field should be set to OFF.

SOFT KEYS IN THE PLAY PAGE

F1 - DD — This takes you to the DD TAKES view page

F2 - SONG — This takes you the SONG mode where you may compile takes for sequential playback or MIDI triggering

F3 - PLAY — This shows the currently selected page

F4 - EDIT — This takes you to the take editing display

F5 - DREC — This takes to the record setup page

F6 - TAKE — Takes you to the record pages for recording new takes

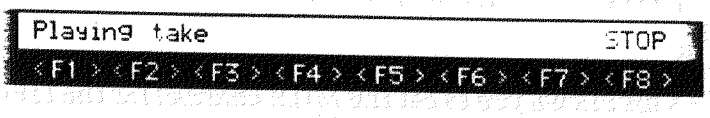
F7 — No function

F8 - PRME — This primes the take for immediate playback from within this page

USING THE PLAY PAGE

Although you may play takes from within any page of the DD functions and whilst the SONG mode is provided either for sequential playback of many takes 'back to back' or for setting up lists of takes that you may wish to trigger from MIDI, the PLAY page is provided for playing individual takes in isolation and for setting their playback parameters prior to assigning them to a song.

Assuming you have successfully recorded and edited a take, to play it back from the PLAY page simply press PRME (an abbreviation of 'prime'). This gets the S1100 ready for the incoming MIDI note or song start command by searching for the take selected here. As soon as it receives the appropriate signal (i.e that set in the START field), it will start playing back. As it is playing, the display will show:



You may press F8 (STOP) at any time to stop playback of the take. You may adjust any of the parameters in the PLAY page as you wish and these are automatically saved as soon as you leave this page.

If the take does not play back successfully, the reason is probably that the S1100 has not received the appropriate start command as set in the START field. For example, if MIDI NOTE is selected and C3/Channel 16 is set but, for some reason, the sequencer does not send this note on this channel (i.e. maybe the track set aside for take triggering on your sequencer has been muted or switched off or the wrong note or channel are being transmitted), the selected take will not play back. Similarly, if you have selected SONG START to trigger the take but your sequencer does not send out a SONG START command in certain modes of operation, the take will note trigger.

> ***NOTE:*** *Akai MPC60 owners will please note that a SONG START command is only issued when the MPC60 is in its SONG mode. If you revert to the main screen to play an individual sequence, the SONG START selection will not be operative. The same is true of other sequencers so please check your sequencers manual for more information.*

EDITING A TAKE FOR SYNCHRONISED PLAYBACK

1 If the START selection is M. NOTE+DEL, you may adjust the DELAY parameter in millisecond steps to achieve accurate playback start times.

2 If the START selection is M. NOTE+DEL, you may shift the note or track within your sequencer.

3 Whatever the START selection is, you may use the EDIT page to trim a take for better playback start synchronisation.

4 If the take 'wanders' during playback, this will be because the external reference's clock is not stable. For example, if you record a take referenced to an external sequencer playing programs in the S1100 but, after recording has been done, the take wanders out of sync after a few minutes, it is most likely that the sequencers clock is not entirely accurate and so, eventually, the two will drift apart. In this case, use the FINE parameter to adjust the takes playback speed by minute amounts. Unfortunately, there are no guidelines on setting this up. You will have to make an adjustment, see if it improves - if it does not, you will have to try again with a new value. All being well, however, this is only likely to occur if you use a different sequencer to that which was used during the record process. In this case, the FINE RATE parameter may help overcome such difficulties.

NOTES ABOUT SYNCHRONISING TAKES TO EXTERNAL AUDIO MATERIAL

In most cases, there should be no problems in synchronising takes to external audio material because the playback response time of the S1100 is extremely fast and sync accuracy is in the region of a few milliseconds. Also, the take editing and parameter adjustments described above should overcome any discrepancies you may encounter.

You will note, however, especially when running takes alongside sequenced material that if you change the tempo of the sequence, the takes will be completely out of sync, even if the tempo change is very small. Of course, you can use the VARISPEED or FINE controls to bring them back in sync but then, of course, they will be out of tune with each other unless you transpose or retune all the sequenced material. Be sure to only make recordings once you have finally settled on the tempo of your sequencer.

Similar considerations must be borne in mind when syncing takes to other audio material such as material off tape. If you use varispeed on the tape machine, you will have to set a suitable varispeed setting on the S1100 to accommodate this. Another consideration is that tape transports are rarely very stable so if you are running a sequencer synchronised to code on tape and also running takes from the S1100's disk, you may find that takes will wander slightly out of sync, especially if they are long recordings.

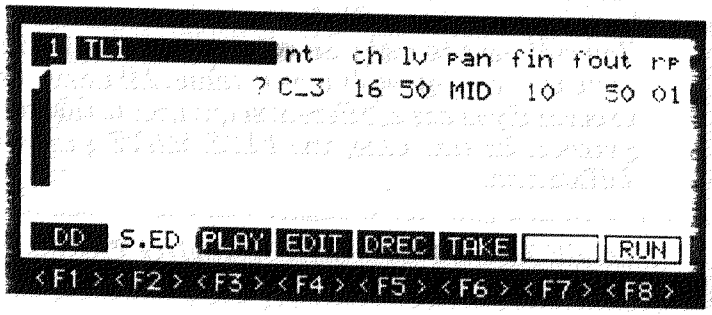
Hardware limitations in the S1100 prevent it from being able to automatically compensate for changes in sequencer tempo or tape speed.

USING THE SONG MODE

The SONG mode is where you can compile a list of takes for playback. The SONG mode has two functions, in fact. You may use the SONG mode to compile a list of takes for triggering from MIDI notes or you may use the SONG mode to append and playback a sequence of takes 'back to back'. The first application, triggering from MIDI, is most likely going to be used when 'spinning in' recordings from a sequencer over other sequenced material. In this way, you may set aside one or more tracks on your sequencer for playing back audio over a sequenced backing track. The other application, sequencing takes, is for creating alternative and extended song remixes.

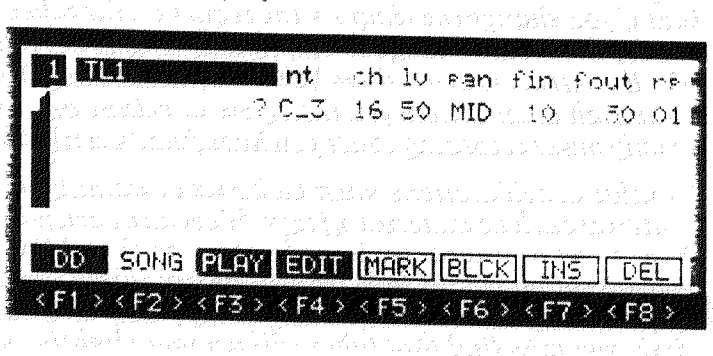
CREATING A SONG

Regardless of the application you have in mind, the method for creating a song is identical. Pressing F2 - SONG - in any of the disk record pages will give you this screen:



This shows a blank, empty song file. Nothing can actually be done here other than triggering the selected takes from MIDI or running the song. To create a song, you must press F2 (S.ED) to take you to the SONG EDIT page as this is where all the work takes place.

Pressing F2 gives this screen display:



The fields across the top of the screen are as follows:

TL1

This is the name field for the song. Names of up to twelve characters can be entered here in the normal way by pressing NAME, typing in the name and pressing ENT/PLAY.

nt NOTE - This sets the MIDI note the take will trigger from. This parameter has no function when sequencing takes.

ch CHANNEL - This sets the takes MIDI channel. This has no function when sequencing takes.

lv LEVEL - This sets the playback level of the take

pan PAN - This sets the pan position of the take if it is a mono recording or sets the left/right balance if it is a stereo recording.

fin FADE IN - This sets the fade in time for the take and is variable up to 9999mS (or 10 seconds)

fout FADE OUT - This sets the fade out time for the take and is also variable up to 10 seconds.

rp REPEAT - Although not operative when triggering takes from MIDI, this field sets the number of times a take will repeat itself when you run it as a SONG from the RUN key (see below for more information on this function).

You will have to excuse the somewhat cryptic and abbreviated nature of these field descriptions on the S1100's screen but it was felt better to design the screen this way and have all these useful functions available within one page rather than you having to keep switching back and forth between various pages when trying to compile your takes - this would have been highly inconvenient as you can imagine.

NOTE: *Values set in these fields do not affect the 'raw' takes parameters; these always remain the same whatever you set in the SONG mode. In this way, each take in the list can be set to its optimum playback characteristics in a song without affecting the raw take.*

Soft keys F1 to F4 take you to different pages. The soft keys F5 to F8 have the following functions:

F5 - [MARK] This marks a step in the song for inserting or deleting.

F6 - [BLCK] This allows you to mark a block of cues for inserting or deleting.

F7 - [INS] Pressing this will insert the marked step or block at the point of the cursor on the scroll bar.

F8 - [DEL] Pressing this will delete the marked step or block.

To create a song, whether it is for MIDI triggering or for sequential playback, the method is exactly the same. Follow these steps to create a song.

In the SONG EDIT page, move the cursor to the first empty take field. This is done by moving the cursor one position to the right. You may now select a take using the data knob (or the +/< or -/> keys found on the numeric keypad). Having done that, the takes parameters will be loaded into the step and so the note, level, pan and other fields may change if the raw takes parameters are different from those set as the default shown above. You may change these as necessary. If you are triggering from MIDI, you will most likely want to edit the MIDI note and channel and if you are creating a song to run takes sequentially, you will possibly want to set a repeat for that step. If you are at all unsure of the take you have selected, you can press the ENT/PLAY key to audition the selected take.

NOTE: *Depending on what field you are on, you may have to press ENT/PLAY twice to hear the take - once to take you to the scroll bar, twice to play the take.*

There are several ways you can create the next step but the easiest method is probably this:

Press the ENT/PLAY key to move the cursor to the scroll bar (if it isn't already there). The scroll bar is the vertical bar with the pointer in it running up the left of the screen display. Now press F5 - MARK. This will mark the first step and a small block will appear beside it. Now press F6 - INS(ert) - and this will copy that step and you will see it appear beneath the first step. Now press 1 on the numeric keypad - this will move the pointer down to the new step - and you may now move the cursor into the take field and select another take as the next step in the list. Of course, you may edit that takes parameters if you wish. Repeat the above:

Press ENT/PLAY - press MARK - press INSERT - press 1 - move the cursor to the take field to select the next step - edit the parameters accordingly using ENT/PLAY to audition.

You may repeat that process as many times as you like until you have created your song.

If, at some point, you wish to delete a take from the list, simply move the cursor to the required step, press MARK and press DEL.

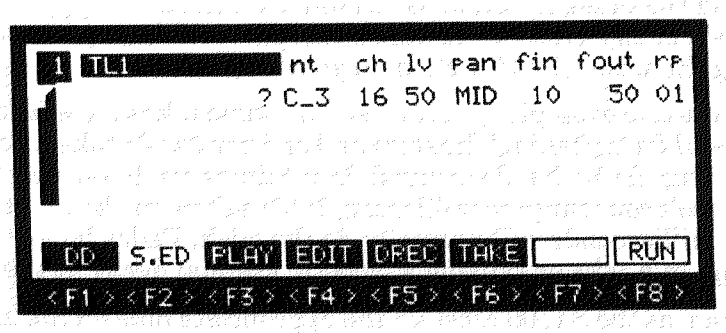
> ***NOTE:*** *If you do not press MARK you may find that you delete the wrong step. Be careful because although this is not ultimately destructive (after all, it's easy enough to insert the step back in again) it can be annoying.*

You may give the song a name (if you haven't already) and then save it to disk.

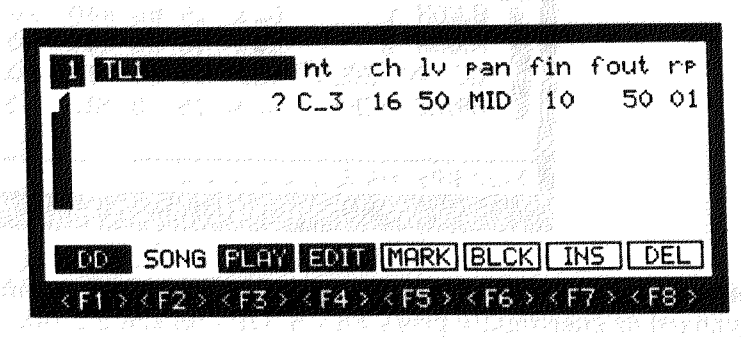
It really is quite simple and whatever your application, whether it be sequencing takes or triggering them, you will soon build up quite complex lists very quickly. Advanced editing such as block editing, copying, deleting and shifting are explained later. You will also want to refer to the section USING THE KEYPAD TO GET AROUND THE SONG which appears later in this section. For the time being, practice the above until it becomes a natural process.

TRIGGERING TAKES FROM MIDI

This powerful function of the S1100's disk recording capabilities allows you to be simultaneously be playing back audio from the hard disk whilst sequencing programs in the S1100 with no loss of polyphony. To set a up a list of takes for MIDI triggering, press the SONG key (F2 in all disk record pages) to get the following screen:



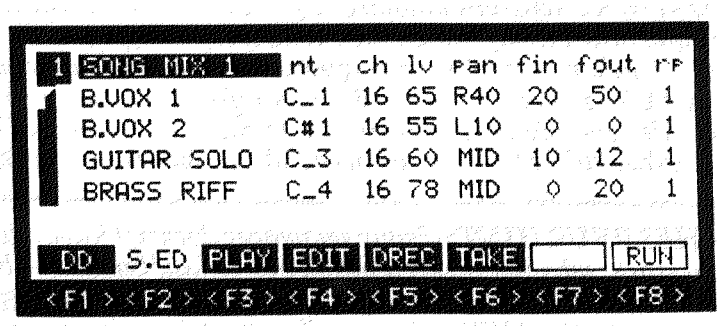
This shows a blank, empty song or take list. To create a new list of takes, press F2 again. This takes you to the S.ED or SONG EDIT page where you may assemble your list. Pressing S.ED gives you this display:



Here we can see that the first take is blank and has some default parameters assigned to it. Assign your takes as described above and edit the parameters if necessary.

USING THE MIDI TRIGGERING FACILITIES

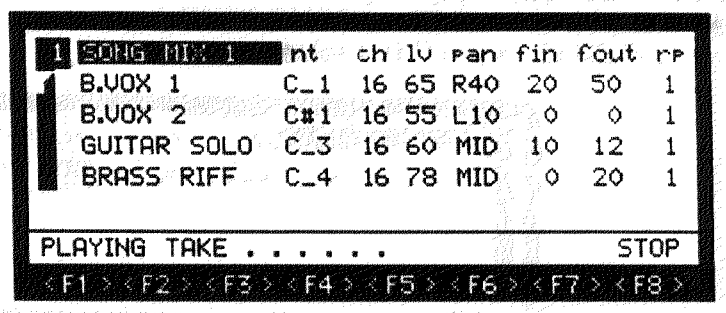
Once you have set up a series of takes for MIDI triggering, simply sending the appropriate MIDI notes on the selected channel(s) will cause them to play back. Typically, a list of takes for MIDI triggering may look something like this:



Here we can see a typical setup for spinning in material over a sequenced backing track. We can see that there are two backing vocal recordings which will trigger when they receive C1 and C#1 and a guitar solo will start to playback on C3 with a brass riff playing off C4. All the takes are on MIDI channel 16 although, in practice, there is nothing to stop you setting different MIDI channels for some or all of the takes. For example, you could have set the backing vocals to MIDI channel 15, the guitar solo to MIDI channel 14 and the brass riff on MIDI channel 16. In this way, you can reserve tracks on your sequencer especially for certain audio parts. This may be useful if you need to slip parts using the track shift function on your sequencer.

In the above example, you can see that some takes have fades set for them. This facility is useful for 'softening' the start and end points of a take whose edit may be a bit abrupt. The range for both fade in and fade out times are 10 seconds (actually 9999 milliseconds but who's counting one millisecond!). To soften an abrupt attack or end, fades of around 5-20 milliseconds will normally do the trick. Fades longer than that can be useful for fading in a take or causing a smooth, gradual decay at the end of a take's replay.

As soon as the S1100 receives the appropriate note on the appropriate channel (i.e. one that is assigned to a take in a song), the following screen will be displayed:



You may either issue a MIDI ALL NOTES OFF command from your sequencer/ keyboard or specifically press F8 - STOP - on the S1100.

> ***NOTE:*** *To play takes from MIDI in this way, the takes MUST be set to start from MIDI NOTE or M.NOTE+DEL in the PLAY page.*

When playing back in this way, triggering from MIDI, there is ALWAYS a fixed delay and the delay is that set in the DREC or PLAY pages. Normally, it is probably best to offset the delay by the same amount for each take. By doing this, you can shift one or all tracks by a consistent amount. If you wish, however, each take may be set to have its own unique offset delay which may help in syncing up some takes. Remember that you can use a combination of your sequencer's track shifting and the variable delay parameter to get takes exactly in sync. For example, your sequencer's track shifting functions may not offer enough resolution to obtain precise triggering of the take(s). In this case, adjust the takes delay time in milliseconds to obtain precise sync.

> ***HELPFUL HINT:*** *If your sequencer does not have a wide enough range for shifting a track, why not insert a blank bar or half bar at the beginning of the sequence and then delete that bar only on the track(s) devoted to triggering takes. You can then use the S1100's MIDI delay to offset the triggering time.*

One thing to remember, of course, is that if you wish to trigger the same take several times (i.e. in the case of a backing vocal you wish to spin in over every chorus), you do not have to specify it in the list several times when triggering it from MIDI. You only need to select it once and, when the S1100 receives the appropriate note, that take will play.

You will note that, when triggering takes from MIDI, the repeat field has no function - this is for use when running takes sequentially in a song (see below).

IMPORTANT NOTES ABOUT TRIGGERING TAKES FROM MIDI

When triggering takes from MIDI, if you stop the sequencer and restart it somewhere in the middle of where a take should be playing, it will not sound. This is because it requires the MIDI note-on to trigger it. In such circumstances, it will be necessary to 'rewind' the sequencer to a point somewhere before the MIDI note to ensure that the take receives the note on and will trigger. The same, of course, is true if you are running your sequencer synchronised to tape and triggering takes from MIDI. If you stop the tape, you will need to rewind it to a point before the MIDI note required to trigger the take

When a take is triggered from a MIDI note, when you stop the sequencer, assuming your sequencer sends out a MIDI ALL NOTES OFF command, the take will stop playback. If however, your sequencer does not issue an ALL NOTES OFF, the take will continue to play but you may specifically stop playback from the S1100 front panel using F8 - STOP.

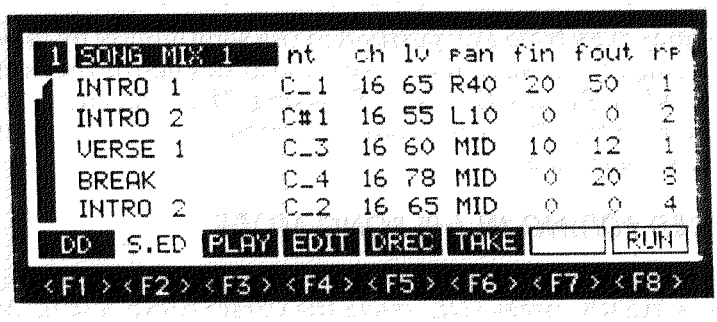
Because the S1100 can only play one take at a time, crossfading between takes is not possible. Also, if one take is playing while another is triggered, the new take will take priority although please note that there will be a short gap between the one take finishing and the next take starting.

USING THE SONG MODE TO CHAIN TAKES TOGETHER

This unique mode of operation allows you to playback takes sequentially 'back-to-back'. This mode will be invaluable to remix engineers for the creation of extended remixes. It will also be of use to jingle writers and TV theme music writers who often have to provide several versions of one piece of music with different lengths.

The simplest method of using the song mode is to 'top and tail' an entire recording (i.e. record a song into the S1100 and edit its start and end points) and have it play back from within the SONG mode. At a more advanced level, you could use the SONG mode to play back a whole series of entire songs recorded and edited this way and the SONG mode can be a convenient method of sequencing the tracks on an album. A more advanced application for the song mode, however, is to create extended remixes.

A typical song will look something like this:

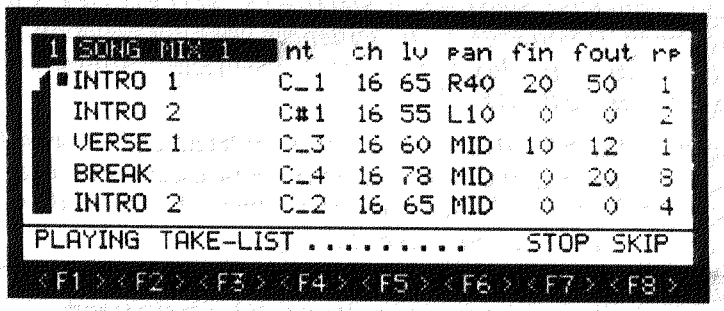


Normally, the takes will be recorded onto disk in sections, one by one, edited and then compiled into a song within the S.ED page. Here we see a series of such takes running 'back to back' to form a typical extended remix. You can see that some

steps are set to repeat several times and the repeat field can be used to good effect in this way - it certainly beats having to print several versions of a section onto tape and splicing them all together!!

Crossfades are not possible in the song mode but this isn't a big disadvantage for most remix work where the material is usually quite percussive and butt editing can be very effective. Of course, a good edit depends on the accuracy of the cuts you make in the EDIT page and hearing a cut out of context may not always give you a true impression of how it will sound back to back with another cut. A typical editing session will probably involve a bit of switching between the EDIT page and the SONG page to fine tune some edits which, on their own sound fine but alongside other takes, exhibit some form of glitch. When you switch from the SONG page to the EDIT page, the take just played will be in the EDIT window and then, when you return to the SONG page, the step you are working on will still be current so a fine edit should only take a few seconds. Often, the fade in and fade out parameters can come in useful for smoothing out such problems. Experimentation is the name of the game here!

Once you have a few takes in your song, pressing RUN (F8) in the main SONG page will cause them to play back sequentially. When this happens, you will receive the following screen display:



Pressing F7 will stop playback of the song and pressing F8 - SKIP - will cause the song to skip the current step and proceed playback from the next step.

> ***NOTE:*** *The SKIP function causes playback to start from the next step, not the next repeat of any step.*

As the song is playing, a small highlighted box appears to the left of the step to indicate your playback position. If the song exceeds five steps, the list of steps will scroll up the screen with the currently playing step being placed in the centre of the screen. The step number at the top left of the screen also changes to show the step currently playing. If a series repeats have been set for a step, they will count down as they are played so you can easily keep track of progress during playback.

You may play from any position in the song simply by moving the pointer up or down the scroll bar. This can be done using the data knob or the numeric keypad (see later USING THE NUMERIC KEYPAD). Pressing RUN will cause the song to commence playback from that step. At the top of the screen to the left of the song name is an indicator showing which step you are on.

ADVANCED EDITING IN THE SONG MODE

So far we have seen how to create songs in a fairly simple fashion - i.e. in the S.ED page, press MARK, press INS, move the cursor down a step, select a new take - and this will get you through creating a song. Even if that is all you learn to do, you should find song creation quite straightforward. There are other editing techniques available in the SONG mode, however, that makes this mode even more powerful.

Using the MARK and BLOCK keys, you may identify whole blocks of steps and copy and shift them around a song very conveniently. The easiest way to explain this is by example. Let us say you have the following:

TAKE 1 This is a 1 bar drum section with a cymbal at the down beat of bar 1

TAKE 2 This is a 2 bar drum section without the cymbal

TAKE 3 This is a 1 bar drum beat with a small fill at the end

You have set the steps up as follows:

TAKE 1 No repeat

TAKE 2 6 repeats

TAKE 3 No repeat

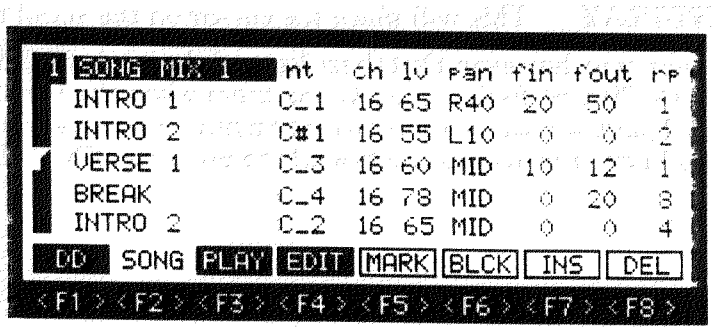
You have created a 8 bar drum section complete with a cymbal at the start and ending with a fill out of a 4 bar drum section. Let's say you now want that whole section to repeat 4 times. You could do it the hard way and mark and insert each step sequentially but the easiest method is this:

Ensuring the cursor is on the scroll bar (simply press ENT/PLAY to quickly achieve this), move the cursor to the first step in the block, TAKE 1, and press MARK. Now move the cursor down two steps by pressing 2 on the numeric keypad and press BLCK. This marks the three steps as one block. Now move the cursor down a step (press 1 on the keypad) and press INS. You will copy that block at the end of TAKE 3.

You can now do one of two things to copy it twice more. You can either move the cursor to the end of the second block (press 3 on the numeric keypad) and press INS again and then move it to the end of the third block (press 3 again on the keypad) and press INS once again. The other way to achieve the same effect is to move the cursor back to TAKE 1 and press MARK and then move the cursor to the second occurrence of TAKE 3 (press 5 on the numeric keypad) and press BLCK, press 1 on the keypad to move the cursor down a step and press INS. This will append the whole block onto the end of itself. Either way is equally effective so choose whichever is easiest for you.

This method of block copying and inserting has even more uses than just appending block onto themselves. Again, another example should demonstrate this.

Let us say you have the three takes sequenced as above - TAKE 1 once, TAKE 2 four times, TAKE 3 once - and you wish to insert this just before VERSE 1 in your extended mix. Move the cursor to TAKE 1 and press MARK. Press 2 on the numeric keypad to take you to TAKE 3 and press BLCK. Now move the cursor to the point just before VERSE 1 - i.e. with the arrow pointing just above it thus:



Now press INS and the whole block will be inserted before VERSE 1.

You will find these editing functions extremely useful when creating complex remixes as they allow you to shift whole sections and place them anywhere you like in a song very quickly and easily. It means that you can regard what are small, short takes appended together as one long take which can be inserted as you wish.

> ***NOTE:*** *It is only possible to mark contiguous steps as a block - you cannot mark a series of steps, skip a few and then mark another few steps as one block.*

Naturally, this block editing function can be used to delete blocks of steps as well.

USING THE NUMERIC KEYPAD TO GET AROUND THE SONG MODE

The numeric keypad can be used as a shortcut method of moving around the song steps. You can use the cursor knob if you wish but this will mean you have to go through every field to get to a certain step which could be inconvenient. Sometimes, it may be quicker to use the cursor knob in this way, especially if you are only moving one step down, for example, but when you wish to move several steps down or up, the keypad will become very useful to you.

The shortcuts are simple and easy to remember:

With the cursor on the scroll bar...

pressing 1 on the numeric keypad will move you one step down

pressing 2 will move you two steps down

pressing 3 will move you three steps down

pressing 4 will move you four steps down and so on through to 9 which, of course, will move you nine steps down.

pressing the -/> key and 1 simultaneously will move you UP one step

pressing -/> and 2 will move you up two steps

pressing -/> and 3 will move you up three steps

pressing -/> and 4 will move you up four steps and so forth through to -/> and 9 which will move you up 9 steps.

Other keys you can use are:

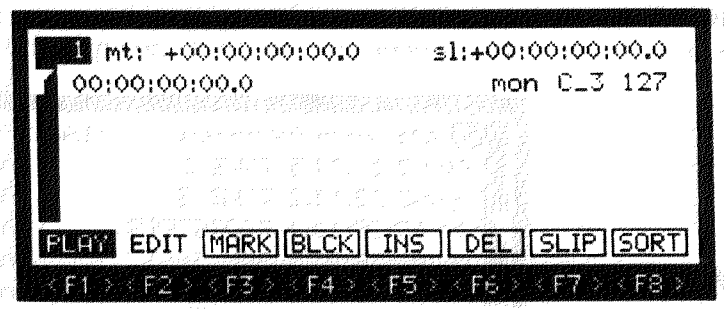
0	This will take you to the first step in a song
+/<	This will take you to the last step in a song
ENT/PLAY	This will place the cursor on the scroll bar

Please note, however, that these keypad shortcuts ONLY WORK WHEN THE CURSOR IS ON THE SCROLL BAR. Using them when the cursor is on a parameter field in the S.ED page will cause them to input a numeric value. To ensure that the cursor is on the scroll bar, it is always worthwhile to press the ENT/PLAY key first.

USING TAKES IN QLISTS

You may play takes from within a Qlist as well as the many other options available for playback. No new features have been introduced in the Qlist pages other than the ability to assign a take for playback to a specific SMPTE time.

To assign a take to a step in the Qlist, go to the UTILITY mode and press EDIT (F2) to take you to the QLIST EDIT PAGE. Assuming you have not already loaded in an existing Qlist from disk, you will receive a blank Qlist display thus:



By moving the cursor to the field where it shows `mon`, you may select from the following options:

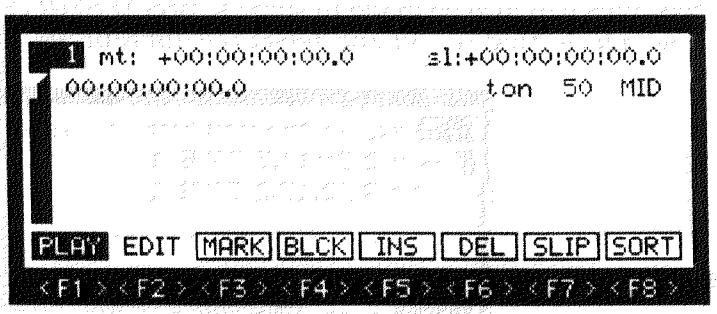
`mon` allows a program to be selected for triggering at the shown SMPTE time for that step.

`moff` allows a program that may be sounding (i.e. a looped sample) to be turned off (i.e. stop sounding) at the shown SMPTE time for that step.

`ton` allows a take to be selected for playback at the shown SMPTE time for that step.

`tof` allows a take that may currently be sounding to be turned off at the shown SMPTE time for that step.

As soon as you change `mon` to `ton`, the display changes:



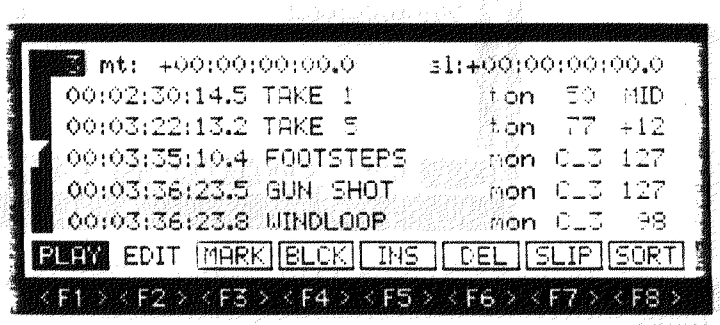
The note number and MIDI velocity parameters are replaced with level and pan parameters for the take. In this way, you can conveniently set individual level and pan for every cue in the list.

For more information regarding setting up, creating, editing and playing Qlists, please refer to the S1100 operators manual. All other functions remain the same with the exception of the above which has been introduced to differentiate between programs to be triggered and takes to be played back from disk.

USING THE QLIST

If you have already used the Qlist facilities in the S1100, you will already know how to create, edit and play back Qlists. In the past, you will have used this to trigger samples in programs relative to a specific timecode position. Now, of course you may also trigger takes directly from disk.

To do this, in QLIST EDIT, simply insert a cue into the list and switch mon to ton. When you move the cursor to the name field, you will now only be able to select takes for that cue. Set a suitable time for the cue and, in QLIST PLAY, press Pint or Pext and the take will play once the appropriate SMPTE time is reached. You may continue this process until all your takes and programs are assigned and you may freely mix programs and takes to create a Qlist something like that shown in the screen below:

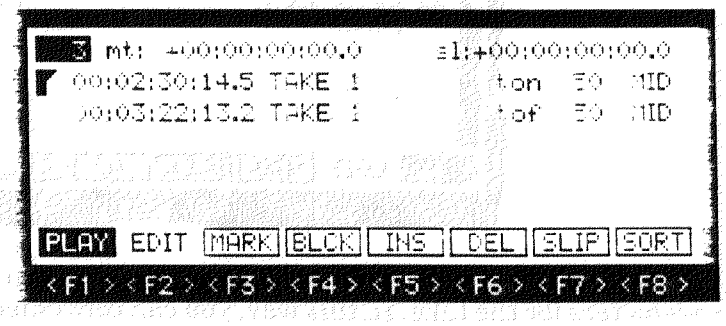


Here we have two takes playing one after each other and, whilst TAKE 5 is playing, some sound effects start. Of course, at any time, you may edit a SMPTE start time to ensure precise synchronisation of takes to SMPTE.

This method of operation is probably of most use to A/V engineers for placing long music tracks or dialogue plus sound effects to picture - in this case, the sound effects are being triggered from RAM via programs and the music and/or dialogue from the hard disk.

NOTES ON USING THE QLIST

Not only can takes be triggered to start playback at specific SMPTE time within the Qlist, they can also be made to stop at specific SMPTE times. To do this, simply insert a cue and set that to toff and select the appropriate take. For example:



Here, the same take is specified twice but one is specified as toff which indicates that at 00:03:22:13.2, the take will stop playing. In this way you can set exactly how long a take is to play for regardless of any edits made to that take within the DD pages of EDIT SAMPLE.

You may, at any time, change a take cue into a program cue simply by changing ton to mon and vice versa.

If you try to start playback of a Qlist midway through where a take should be playing, you will note that the take will pick up from that point regardless of where it is started. You will note, however, that this will not happen with MIDI cues (i.e. triggered programs) which need to wait until reception of the next MIDI note on command.

If two takes overlap in a Qlist, when the second (i.e. the later cue) plays, the first will be cut giving priority to the latest one triggered.

For more information on the use of the Qlist, please refer to the appropriate section in the S1100 Operators Manual.

LOADING AND SAVING SONGS TO DISK

Only one song can reside in the S1100's memory at any one time but you may save as many songs to disk as you like. This is done in the normal way in the DISK mode just as though you are saving or loading individual programs, samples, QLists or effects files.

Press the DISK key and you will receive the usual disk page. To save a song, select CURSOR ITEM ONLY and move the cursor to the song name. If you have given your song a name this will be displayed and you may save it to disk. If you have not given your song a name, the default TL1 will be displayed and this may be saved in the usual way. Songs may be loaded by selecting LOAD, moving the cursor to the song and pressing GO. Of course, you may wish to load or save an entire volume in which case the song will be loaded or saved along with any other material in the S1100's RAM.

> ***NOTE:*** *Any number of songs may be saved to disk but they must all have unique names. If you create one song and then create an alternative version, be very careful to give it a new, unique song name otherwise, should you try to save the new version without giving it a new name, the other version will be overwritten.*

APPLICATIONS

So far we have seen the functions of the disk record and playback facilities offered in Version 2.00. Let us now look at some typical sessions and how these functions might be used.

REMIXING

The basic premise of the disk functions for remixing is very simple. Make your recordings in sections, trim the start and end for each section and then chain them together in any order you wish with or without repeats for each step using the sequential SONG mode. For example:

Let us say you are mixing down a track for an extended remix. Typically, you will mix each section separately, muting some channels on your mixer, opening up other channels and so forth. For example, you may be working on the intro and have only the basic instruments of drums, bass and some guitar. Give the take a new name and record this onto the hard disk. Now, rewinding the master multi-track to the start of the intro again, open up some channels so that, for example, some keyboard parts are introduced. Give the take a new name and record that onto the hard disk. You may then want to go straight to an accappella chorus so locate the master multi-track to that position, mute all channels except the vocal parts you want, name the new take and record that onto the hard disk. At this point, you may want the intro to come back in so rewind to that and set the channels as necessary and record it onto hard disk or, of course, simply use an existing version of the intro you have already recorded in the SONG mode later on. Keep on doing this until you have all the sections separately recorded on disk. At any time, you may audition the recording you have just made using the ENT/PLAY key.

You should now edit the start and end points in the EDIT page using the functions described above. You may audition your edits using the ENT/PLAY key. Having done that to your satisfaction, go to SONG, press F2 - S.ED - to take you to the SONG EDIT page and assign the takes in the order you want them to play back with or without repeats as you wish. You may go directly to the main SONG page simply by pressing F2 again to hear the results of your efforts. If some edits are not smooth, move the cursor to the offending step and then go directly to the EDIT page where you may trim the start and/or end points again (you will probably need to zoom in quite a bit to set these times accurately) and return to the SONG page. The cursor will still be on that step so you can immediately check it using the RUN key (F8).

Of course, you don't have to record the sections in the order you want - you may record them in any order and then sequence them later within the SONG mode.

Having done all this, save the SONG to disk. You may only have one song in the S1100's memory at one time but you may save as many as you wish to one disk. In this way, you may have several alternative remixes saved to disk which can be loaded very quickly for comparison purposes.

HELPFUL HINTS WHEN REMIXING

1. *Record a second or so of material either side of the section so that you have 'handles' either side of the recording with which to play with when editing.*
2. *Don't use the CUT function to discard unwanted audio either side of the edit until your SONG is fully assembled. This is because although the edit may sound good in isolation in the EDIT page, you may need a bit of leeway to play with when sequencing the takes in the SONG mode. Using the CUT function too early may prevent this and so you may need to re-record that section again if you cannot get a smooth transition between steps.*
3. *To check if an edit works or not, quickly move to the SONG mode and assign the take you are editing and have it repeat several times. If the take loops round smoothly then you have created a good edit which should also work well sequenced back to back with other steps. It is a good idea to do this for every edit to ensure that edits are smooth. This 'sketch pad' song can be replaced or erased later.*

TRIGGERING TAKES FROM MIDI

Typically, this method of playback of disk recordings will be used to spin in such things as backing vocals, solos, etc., over sequenced material and, of course, as you know, you may simultaneously be sequencing programs in the S1100 whilst recording to disk or playing back from disk.

It is, of course, possible to actually record to disk whilst simultaneously sequencing programs in the S1100's memory and this powerful feature allows you to drop into record over sequenced material while it is playing. This can be used to record a guitar part or vocal line over sequenced material. To do this, ensuring that your programs are all properly selected for playback from your sequencer in the SELECT PROG display, go to the DD functions (via EDIT SAMPLE - F1) and select DREC. Set up the recording as appropriate.

As an example, let us say you wish to record a short guitar part over part of your sequence. Locate the sequence to the required point. Now there are several ways in which you can set the recording. You may wish to set it so that the sequencer triggers recording by sending out a MIDI note at a suitable point - you may like to use the M. NOTE + DEL function as this can then subsequently be used to trigger playback later on without you having to edit your sequencer. You could select INPUT LEVEL, however, and simply drop into record manually or you could use the footswitch selection for hands free operation.

So, locate the sequencer to the appropriate point (give yourself a few bars intro to get ready) and press PLAY on the sequencer. Depending on the type of START selection you have made, make your recording playing along with the sequenced material. When you have finished, stop the recording.

At this point, you may wish to edit the start and/or end point to ensure a clean edit. Having done that, go to the SONG mode, press F2 to get to S.ED and assign the take. You may select the MIDI note number and channel here as well as set fade in and out times and level and pan position.

NOTE: *When you assign the take to the SONG for playing back from a MIDI trigger, to ensure an accurate and consistent trigger, you must select M.NOTE+DEL. If you do not, the take may trigger erratically and slightly at the wrong time. This is because of disk access speeds.*

You must, of course, also offset the MIDI note in the sequencer used to trigger this recording. Using a combination of your sequencers track shift and the S1100's predelay function, you should be able to get very accurate and precise triggering.

HELPFUL HINT: *You can set up the song BEFORE you actually make the recording. For example, let us say you wish to overdub a short guitar solo over the top of sequenced material. Go to the S.ED mode and move the cursor to the take name field where you will want the new recording to be assigned after it has been made. Press NAME and type in a suitable name into that field - i.e. GUITAR 1. A question mark will be shown to indicate that the take does not yet exist. Now go to the DREC / TAKE pages and name the recording you are about to make exactly the same (i.e. GUITAR 1). Now make the recording. Once the recording is completed, you may go straight to the SONG page and have it playback immediately.*

PROCESSING DISK RECORDINGS ON AN EXTERNAL MIXING CONSOLE

There are times when it might be desirable to process disk recordings externally. For example, on a vocal line triggered from MIDI you may wish to add some reverb or EQ or whatever. The disk recordings always appear at outputs 7 and 8 and so these can be routed through an external mixer for processing. To stop them also appearing at the left/ right mix outputs, switch STEREO MIX to OFF in the PLAY pages. You will need to specifically set this for every take you wish to process.

EDITING DAT RECORDINGS

Although they offer superb sound quality and are relatively inexpensive these days, the big problem with DAT machines is that it is impossible to edit them. When mixing down directly onto DAT this can be a real problem. You can use the S1100's disk record function to edit DAT recordings simply by transferring the recording into the S1100, editing the start and end points (and maybe setting a nice, clean fade out to clean up the end of the track) and then transferring it back to the DAT tape if you wish. In this way, your DAT recordings can be very professionally edited and presented to a record company or pressing plant.

CREATING AN ALBUM COMPILATION TRACK LIST

You can use the S1100's SONG mode to create an album compilation track list for mastering. Record all your songs into the S1100 (or transfer them from DAT). Now record a 6 second 'dummy' take of silence called SPACE or GAP or something similar. You may now create a song, assigning the recordings in the order you want them to play back and, in between each one, inserting the silent 'dummy' cue. In this way, you may create several versions of an albums running order for presentation to the record company. Remember, of course, that each track in the list may have its own fade in and fade out set and its own level adjusted to create a perfectly balanced master for the pressing plant.

IMPORTANT NOTE: *Although it is possible to transfer a DAT or CD recording into the S1100 digitally via the IB104, unfortunately, it is not possible to play it back from the S1100 digitally via the IB104. This is due to hardware restrictions that prevent the digital audio coming from disk reaching the IB104. Transferring material back to DAT afterwards will have to be done using the analogue outputs.*

MIXING DOWN THE CONTENTS OF THE S1100'S RAM TO DISK

One very useful feature of the disk record functions is that you may record sequenced programs in the S1100 directly to its own disk. To do this, set the DREC page so that STEREO MIX is OFF. Now connect the left/right mix outputs to the inputs on the front of the S1100. Start recording and then start the sequencer - the sequenced programs will be recorded to disk where they may be subsequently edited.

An advance on this is to take the outputs of the S1100 (including individual outputs, of course, but with the exception of 7 and 8) through a mixer and into the front panel inputs. In this way, you may add effects such as reverb and delay (to compensate for the fact that the S1100's internal effects are disabled during disk recording) and you may also, of course, mix in the sounds from other samplers, synths, modules and drum machines to be recorded onto disk.

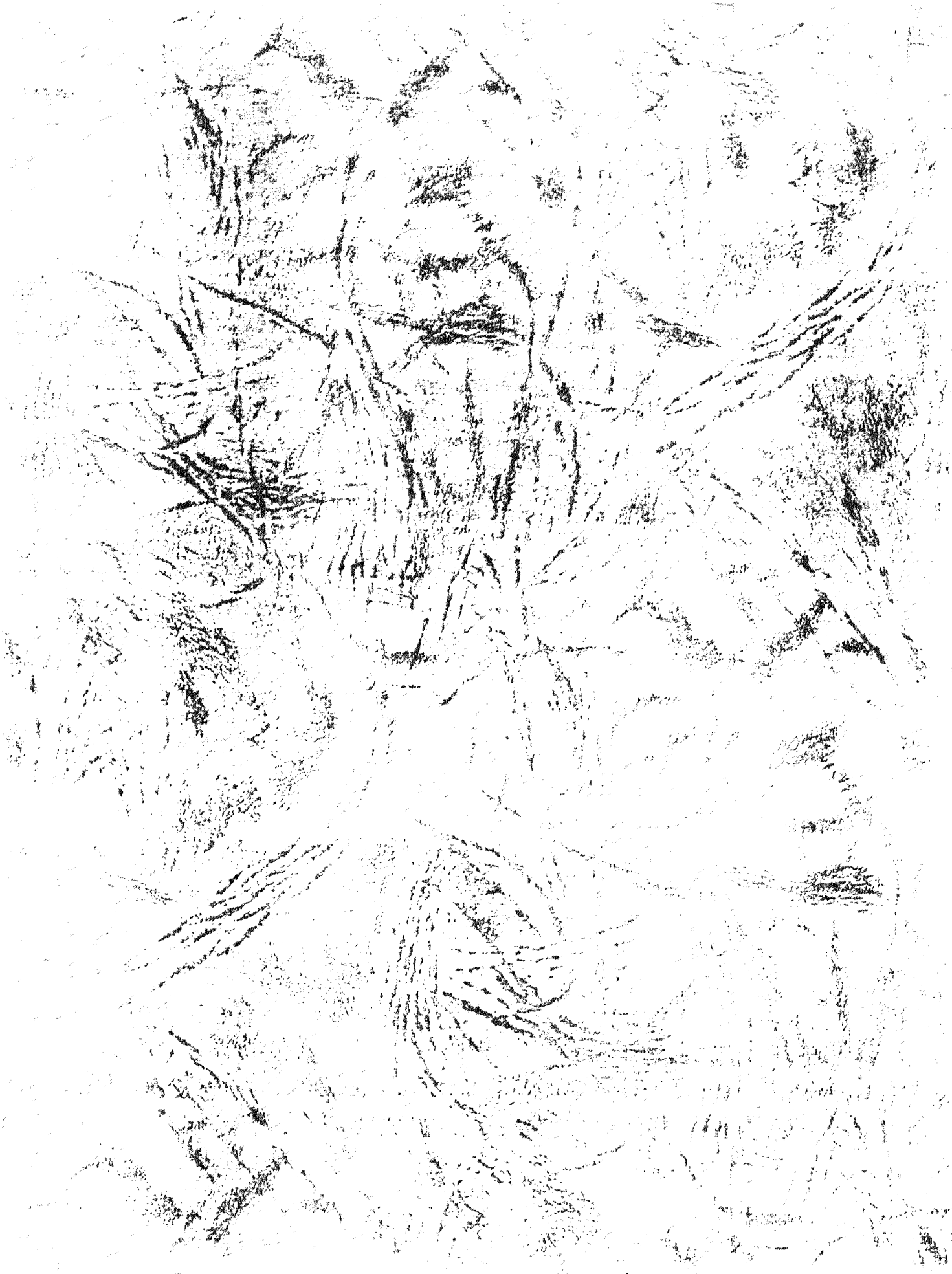
> ***NOTE:*** *In this application, it is absolutely essential to turn the STEREO MIX to OFF otherwise severe 'howl around' feedback will occur!!*

IMPORTANT NOTES REGARDING USING THE PRE-DELAY FUNCTION

Some hard disk are not capable of accessing new takes fast enough when triggered from MIDI, especially when another take is already playing. This is because some disk drivesv Ignore the SCSI ABORT command that is issued by the S1100 when a new take is triggered whilst a take is currently playing. To overcome this, it is strongly recommended that longer PRE-DELAY times in excess of 700 milliseconds are used in order to ensure accurate triggering response of takes in this way.

You will note, however, that this does not apply to the Sony (*) Magneto Optical drive which does act upon receipt of the SCSI ABORT command and so can use smaller pre-delay times.
Somewhere in the region of 400 milliseconds is recommended as being acceptable.

(*) You will note that the reference to Sony MO drives means actual Sony drives not other manufacturers drives that use the Sony mechanism. Whilst other manufacturers drives should work according to specification, because some drives of this nature use custom SCSI driver circuitry, predictable results cannot be guaranteed.



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