TECHNO SOUND *Turbo*

The complete sampling and mixing system

USER GUIDE

NEW DIMENSIONS

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INDEX

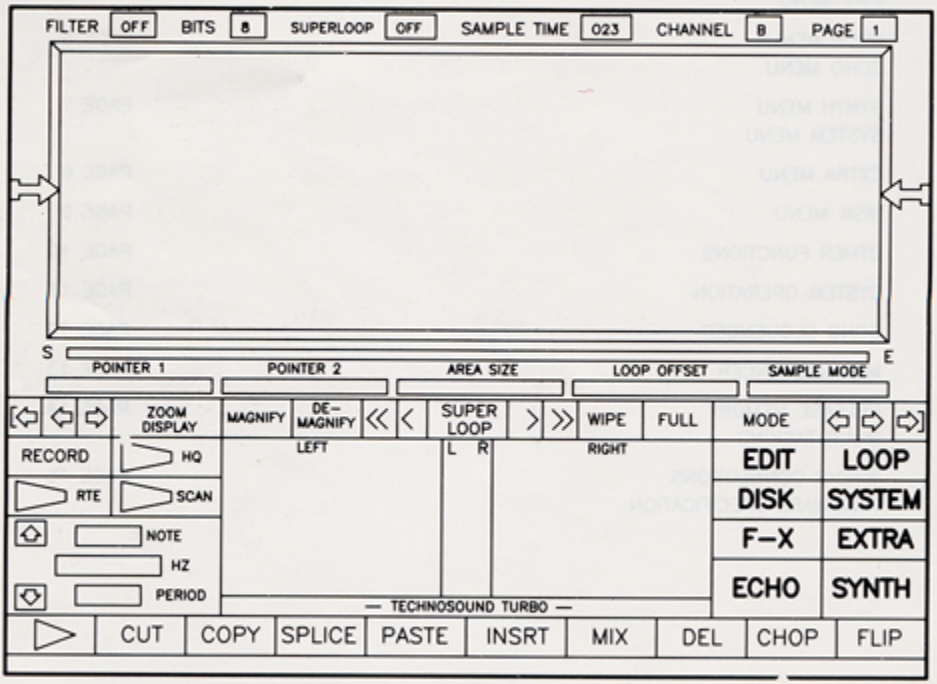
TECHNOSOUND TURBO TUTORIAL

INTRODUCTION

Welcome to TECHNOSOUND TURBO – The following tutorial is intended to give you a quick insight into the system's capabilities, whilst the reference section at the back provides you with in-depth information on all aspects of the system. However, in order to avoid the duplication of information, the tutorial will, from time to time, refer you to the appropriate reference section.

START UP

First you must plug your Technosound module into the printer port before switching the computer on. on. Although it is not essential at this stage, you may find this a convenient time to connect up your sound source. A cassette deck or CD player is ideal, but make sure the source is not situated too close to the computer or monitor, in order to minimise the risk of interference.



MAIN MENU

Now insert the Technosound disk into the disk drive and switch the computer on. The program will autoboot to the title screen, after which you can load the the main program by depressing the right hand button of the mouse.

Once the program has been loaded, the main menu shown above, will appear on the screen, and you will be ready to proceed. At this stage a message will ask if you want to clear the sample memory – reply "Yes" by pressing the Y key.

The icons shown on the menu are activated by positioning the arrow over the function required and "clicking on" the left hand button of the mouse.

MAIN MENU AND DISPLAY WINDOWS

The menu is used for display and editing purposes – and for the selection of various routines.

The main display window in the top half of the screen, is used for editing samples, and the two smaller windows below, are used to monitor the input waveforms for each channel. These two windows can be replaced by other displays and menus when alternative routines are required.

Technosound Turbo uses a sub–menu system which is controlled from the eight main buttons on the right hand side of the menu –

EDIT – LOOP – DISK – SYSTEM – F–X – EXTRA – ECHO – SYNTH

Try selecting each button in turn, starting with LOOP, and you will see a new menu scroll along at the bottom of the screen.

You are now in a position to load a sample and explore the other functions.

LOADING A SAMPLE

Select the DISK menu and press the IFF load button – 

You will now see that the two lower display windows have been replaced by a single window which shows the directory of the Technosound disk. Point the arrow at SAMPLES (DIR) and click , to show the Voice directory. Now click on the sample file " GAMEOVER " – you will see confirmation of your selection in the box at the bottom of the window.

To load the sample simply press "return" or click on the O.K box.

If you wish to exit the file selection process, without loading, simply press cancel.

Once the sample has been loaded, the window will revert back to a twin channel oscilloscope, and the sample waveform will be displayed in the main window. The space occupied by the waveform will vary according to the amount of memory available.

MAGNIFYING THE SAMPLE

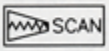
You will now need to expand the display until the waveform runs the full length of the window. In order to achieve this, position the mouse arrow at the right hand end of the waveform, and click on the right hand button of the mouse. Hold the button down, and you will see Pointer 2 jump across to to the new position. Note that the pointer will follow the mouse until the button is released. Similarly Pointer 1 may be re–positioned using the left hand button, but for now it must remain on the left hand edge.

Select the magnify icon –  – you will see the screen expand to show only the waveform between the two pointers.

PLAYING THE SAMPLE

Select the PLAY HQ button (HIGH QUALITY) – 

you will now hear the sample being played through the monitor speakers or hi–fi. At the same time the screen will go blank to improve the quality of playback.

Select PLAY SCAN button – 

– in addition to hearing the sample, you will also observe a vertical bar scanning across the window, which is indicating the section of sample currently being heard.

The PLAY RTE BUTTON – 

– is used in more advanced editing procedures and is described in detail in the reference section.

THE POINTERS

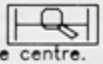
When you create loops and mix samples, you will need to section off areas of the waveform very accurately. Position the two pointers a few inches apart, in the centre of the screen, so that roughly one third of the sample is sectioned off. The size of the section is shown under "AREA SIZE", and the pointer memory locations are shown on the left.

Below Pointer 1 indicator, you will see three arrows, which control the left hand button. Select the left and right buttons in turn, in order to move the pointer by one byte at a time.

Reset the pointer to the edge of the window by pressing the outside arrow – [⇦]
Repeat the procedure with the right hand pointer, which is controlled by the arrows on the right.

Experiment with the sample by sectioning off different parts of the waveform and playing them back, using the various commands previously mentioned. You will observe that only the section between the pointers is replayed.

Try expanding the picture several times using the MAGNIFY button. Reposition the pointers at each stage and observe the change in area size.

Then contract the picture back to its original size, using the DE–MAGNIFY button – 

Magnify part of the sample again and reposition the two pointers somewhere near the centre.

This time select the FULL button –  – this will reset the pointers to the start and end of memory – and reset the screen to clear the magnification.

Finally clear the sample from memory using the WIPE button –  – you will see the waveform disappear.

THE ZOOM DISPLAY

A very useful feature of the system is the ZOOM display facility. Load in the "GAME OVER" sample again and magnify the waveform to run the entire length of the window. Reposition the pointers somewhere near the centre and click on the ZOOM button. You will see a new display replace the oscilloscopes in the lower window. The display provides an incredible close up of each pointer and it will enable you to produce very accurate loops. Press ZOOM again to clear the display.

CREATING LOOPS

Reset the pointers at each end of the sample, then call up the LOOP menu. Select each of the LOOP icons in turn – 

Forward Play Forward Loop Sweep Reverse Loop Reverse Play

Observe how the scan bar performs differently in each mode. Then reposition the pointers and create your own alternative loops. Exit each routine by pressing the right hand mouse button.

SUPER LOOP

The next option will enable you to create repetitive and sustained effects within a loop. Position the two pointers a few inches apart, somewhere near the centre of the waveform.

Select – [SUPER LOOP] – then click on the right hand double arrow – [»] – using the left button of the mouse.

Then position the new pointer approximately three–quarters of the way along between the other two pointers. Finally select LOOP FORWARD from the Loop menu, and observe how the scan bar now returns to the new pointer, instead of pointer 1.

Experiment with the pointers in different positions and try out the REVERSE LOOP. Repeat the procedure with the left hand SUPER LOOP arrows. Note for reference – the double arrows move the pointer by one pixel at a time, whilst the single arrows move it by one byte at a time.

Click on the ZOOM display and practise very accurate looping – you will see a close up of the SUPER LOOP pointer in the centre window. In general terms you should aim to produce natural sounding loops. You will probably find the "GAME OVER" sample a bit limited for this purpose, but when you create loops from your own samples, try and synchronize the beat at the start and at the end of the sample. Also adjust the pointers so that the amplitude of the waveform corresponds in the two windows – otherwise "clicking" may be heard at the beginning of the loop.

ADDING EFFECTS TO THE SAMPLE

Select the F–X menu and section off the first half of the waveform. Click on – ECHO and then press PLAY SCAN. You will hear the ECHO effect added to the first section.
Now section off the second half of the waveform and click on – REVB . Press PLAY SCAN and listen to the REVERB effect added to the last section. WIPE the sample from memory and load it in again. Section off the first half again and add the HALL effect – and replay. Continue with this

procedure and try out the remaining effects on the menu. Refer to the reference section for further information about each effect. Avoid adding more than one effect to the same section, as distortion may occur.

EDITING THE SAMPLE

Load the sample again, and magnify the waveform as before. Select the EDIT menu and section off part of the waveform somewhere near the centre. The cut buffer is initially limited to 50k of memory space – so check that the AREA SIZE is less than 50,000.

Select CUT from the menu, and you will see that the section between the pointers disappears from the screen. In reality it has been transferred to the Cut Buffer. You can verify this by selecting PLAY SCAN – you will find out that nothing happens!

Now select CUT BUFFER PLAY – from the Edit menu –  – the section will now play.

Explore all of the other editing functions, using the reference section for guidance , and loading in the sample where appropriate . The Cut Buffer size may be increased, details of which may also be found in the reference section.

REAL TIME MODE

Connect your sound source to the Technosound cartridge, as described earlier. Then select the ECHO menu and click on THRU. The input waveforms will be displayed on the twin oscilloscopes.

You will now hear the source playing through the computer, and out through the monitor or hi–fi speakers. Adjust the volume control of your sound source to its loudest setting before distortion occurs – then adjust the volume level of your speakers to a comfortable listening level.

Click on the right hand mouse button to exit THRU , and press the MODE button. The system will now revert to MONO mode, which can be heard by clicking on the THRU button again. Repeat this procedure again to hear SIMULATED STEREO mode (memory saving) . Then finally revert back to STEREO mode. Select each of the effects in turn from the menu, leaving USER ECHO until last, and assess their individual characteristics.

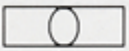
When you call up USER ECHO, you will see a new display replace the oscilloscopes. By adjusting the height of the bars, you can control the volume and delay of the ECHO effect, or alternatively you can modify the depth and speed of the voice synthesis.

Make a few adjustments to the Echo bars, and press DIGITAL DELAY to hear the results.
Do likewise to the Synth bars, and press VOICE SYNTHESIS to hear the results. You will find that the Voice synthesis is only really effective with vocal inputs, and for best results you need to connect up a microphone via an amplifier , to control the volume.

This also applies to the other REAL TIME effects which can be found by selecting the SYNTH menu. These are all primarily novelty effects, which speak for themselves! – Have fun!

RECORDING A SAMPLE

You are now in a position to record a sample, but first you must clear the existing sample from the memory. Click on the WIPE button and set the SAMPLE RATE in the box to 15k, using the two arrows.

Start the source and click on the RECORD icon – 

A message will appear on the screen "Monitoring input, click left mouse button to start recording" Carry out this instruction when you are ready to record.

During recording you will hear the sample playing through the speakers. When the memory has been filled, the sample waveform will be displayed in the main window, and the sampling will have been completed. Alternatively you can finish the sample by clicking the right hand mouse button.

SAVING A SAMPLE

Once you have your sample in memory, you can save parts of it, or all of it, by positioning the two pointers around the part you want to save, selecting the DISK menu, and clicking on the SAVE IFF button – 

– Type a new file name in the box at the bottom, and finally click on O.K.

Well done! You have now covered the basic elements of the system. The remaining features are explained in full in the reference section.

REFERENCE SECTION

EDIT MENU

Plays the contents of the CUT BUFFER

CUT — CUTS the area between the two pointers into the cut buffer.

COPY — Similar to CUT – but copies the area between the two pointers into the cut buffer, leaving the original sample intact.

SPLICE — Cuts the area between the two pointers into the cut buffer. It then moves the remaining part of the sample across from the right, to close the gap. Useful for swapping samples around memory.

PASTE — Takes the contents of the cut buffer and pastes it onto the sample memory, using the left pointer as the starting position. Any data already in memory will be overwritten, but the buffer will remain intact. If the area between the pointers is smaller than the contents of the cut buffer, the full contents of the buffer will not be copied.

INSRT — Takes the contents of the cut buffer and inserts it into the sample memory, using the left pointer as the starting position. Any data already occupying this position will be moved across to the right, and any data at the end of the memory will be lost. The full contents of the buffer will be transferred across unless it exceeds the area between the two pointers. In which case data from the buffer will only be copied across as far as the right hand pointer.

MIX — Takes the contents of the cut buffer and mixes it with the data already in sample memory. Stunning effects can be achieved – such as reverb, delay and the famous N–N–N–Nineteen effect. Copy a sample into the cut buffer (try a vocal) – move the left pointer a little to the right and hit MIX – move it further to the right and hit MIX again. Make sure the right pointer is sufficiently far right so that it does not truncate the mix.

DEL — Deletes the area between the pointers.

CHOP — Deletes the area outside of the pointers – and moves the area between to the start of free memory.

FLIP — Reverse the sample between the pointers.

F–X MENU

ECHO — Adds an ECHO effect to the sample between the two pointers – the software produces an echo by repeating the signal after a short delay. The process can be repeated to add more and more echo to the sample – but Pointer 2 may need to be moved further right in order to accomodate the extended sample. Caution is advised as the process is non–reversible.

REVB — Adds a REVERB effect to the sample between the pointers – the software produces thousands of echoes linked together – resulting in a cavernous, ringing effect.

HALL — Adds a reverb effect to the sample between the pointers – the concert HALL type effect is more pronounced than standard reverb.

ROOM — Adds a reverb effect to the sample between the pointers – the ROOM type effect is shorter than the other two reverbs.

AMP	Amplifies the sample between the pointers – very useful for samples recorded at low volume – or for samples that have been extensively edited. Use sparingly to avoid distortion and the amplification of background noise.
PACK	Reduces the sample between the pointers to half of its original size – the software removes every other byte in order to save memory space. When you replay the packed sample, you must reduce the sample rate to half of the original recording rate.
IN	Creates a FADE IN effect on the sample between the pointers. The wider apart the pointers, the slower the fade. The sample size is drastically reduced in the display area.
OUT	Creates a FADE OUT effect on the sample between the pointers – the comments relating to FADE IN apply here, too.
SOFT	Reduces the volume of the sample between the pointers – avoid too much softening as this may result in an increase in noise.
FILT	Passes the sample between the pointers through a low pass FILTER this passes the low frequencies and filters out the high ones. Noise tends to reside in the high frequencies, so use this facility to improve noisy samples. The sound will also be softened.

LOOP MENU

	Plays the sample between the two pointers – in FORWARD mode.
	Plays the sample between the pointers – and then returns to Pointer 1 in order to repeat the cycle again in a FORWARD LOOP.
	Plays the sample between the pointers – forwards and then backwards – in a SWEEP LOOP.
	Plays the sample between the pointers – backwards from Pointer 2 – then returns to pointer 2 in order to repeat the cycle again in a REVERSE LOOP.
	Plays the sample between the pointers – starting from Pointer 2 – in REVERSE.

ECHO MENU (Real Time)

ECHO	Adds a mono ECHO effect to an external sound source – in real time.
REVERB	Adds a REVERB effect to an external sound source – in real time.
HALL	Adds a HALL reverb effect to an external sound source – in real time.
ROOM	Adds a ROOM reverb effect to an external sound source – in real time.
THRU	Plays an external sound source – THROUGH – the computer – in real time.
VIBRATO	Varies the pitch of an external sound source – in real time.
PHASER	Adds a spectacular PHASER effect to an external sound source – in real time. The Phaser sweeps through the harmonics – changing the tone of the sound.

STEREO ECHO

Adds a STEREO ECHO effect to an external sound source – in real time.

MEGA ECHO

Adds a multiple ECHO effect to an external sound source – in real time.

USER ECHO

The USER ECHO selector button provides access to the VARIABLE DIGITAL DELAY facility. This enables you to set the time delay and volume of your own echo effects in real time. It also enables you to control the speed and depth parameters for voice synthesis.

When the facility is activated, a visual display chart scrolls down to replace the oscilloscopes. The left hand part of the display shows two groups of four bars. The bars represent the four audio channels of the computer, and can be adjusted up or down with the aid of the mouse pointer.

The DELAY bars set the time delay before the channel plays – the higher the bar the longer the delay. The VOLUME bars set the volume for each channel – the higher the bar the higher the volume.

Computer Voice allocations – CHANNELS 1 & 4 = LEFT CHANNELS 2 & 3 = RIGHT

When you have completed your adjustments, click on DIGITAL DELAY to hear your echo.

The right hand part of the display labelled "SYNTH" shows bar D to indicate depth of synthesis – the higher the bar the deeper the synthesis – and bar S to indicate speed of synthesis – the higher the bar the slower the speed.

Click on VOICE SYNTHESIS after you have made your adjustments.

SYNTH MENU (Real Time)

The SYNTH menu provides five novelty effects for real time use. Each effect will distort or enhance a voice input in a characteristic manner, through changes in pitch. As such the best results can be obtained by connecting a microphone, via an amplifier, to the Technosound cartridge, and adjusting the volume to suit. The effects produced are very entertaining and will liven up any party or disco!

DALEK

When you hear how your voice sounds you may want to find a doctor!

EXTERMINATOR

Even Arnie may be scared by this sinister voice!

VOICE SYNTHESIS

Sounds as if you've been at the helium!

INTOXICATION

You'll fall about laughing when you hear this one!

LEGLESS

You'll probably fall over and go to bed!

SYSTEM MENU

CROSS FADE

This feature enables you to cross fade the start and end of a sample. Use it to reduce the click when looping samples, in order to achieve a smooth transition from the end of the sample to the start.

SEEK ZERO

The pointers are moved towards each other until a zero state is found.

Use this facility to set accurate loops.

SEEK LOOP

Similar to SEEK ZERO except that it searches for peaks in the sample data.

Complimentary to SEEK ZERO when creating accurate loops.

RELEASE MEMORY — See Appendix C.

MULTI TASK — See Appendix C.

RAMSCAN — Displays the whole of the computer's memory in the display window – allowing access for editing purposes. This is a particularly useful facility for retrieving samples from programmes previously situated in memory.
** WARNING ** The use of RECORD and PASTE functions can overwrite system memory if used incorrectly whilst in RAMSCAN mode and cause a system crash.

PAGE — If you have expanded the memory of your Amiga, this function will display the chipmem available. This allows you to access more memory to sample with than any other sampler on the market. Over 700Kbytes available on a 1Meg Amiga using Technosound Turbo as opposed to just 400K on other sampling packages used with 1 Meg.

Unexpanded Amiga.	Expanded Amiga.
Page 1 = Chip Memory.	Page 1 = Chip Memory.
Page 2 = Not Available.	Page 2 = Fast Memory.

When Technosound Turbo boots up, the default page that is selected for sample memory varies depending on which page is biggest. Either chip memory or fast memory could be selected, depending on your memory set–up.

Users are reminded that if your Amiga has expanded memory, then the use of the page facility will access more memory for storing samples.

BITS — Toggles between 4 and 8 bit sampling – the standard default mode is 8 bit – but when memory space is at a premium, switching to 4 bit will reduce the sample size by half, although a slight reduction in quality may be experienced. Whilst in this mode, the effects menu will be inoperable.

SONG SEQ — Pulls down the song sequencer window. See Appendix A.

MIDI SEQ — Pulls down the midi sequencer window. See Appendix B.

EXTRA MENU

FLIP CHANNEL — Flips the right and left channels between the pointers.

X–FADE PASTE — This feature is similar to cross fade except that it pastes the cut buffer between the pointers, in the same manner as the normal paste command, but cross fades the start of the cutbuffer with the sample ending at pointer 1.

RETREAT — Moves the active channel back 1500 bytes between the pointers. and has the effect of knocking the channel off phase. If used more than once it creates artificial echos.

ADVANCE — Moves the active channel forward 1500 bytes between the pointers, and has the opposite effect to RETREAT. Both retreat and advance are used to emphasise the stereo effect on samples.

PHASE SHIFT — Adds a spectacular PHASER effect to a sample – it sweeps in and out of the harmonics and changes the tone of the sample.

OCTAVE UP/DN

Click this icon with the left hand mouse button to move the sample between the pointers, up by one octave, or down by one octave, using the right mouse button. A gap of twice the sample length should be left on the right hand side of the sample, when going down an octave, otherwise it will become truncated.

NOISE REDUCE

Reduces the background hiss between samples.

ACTIVE CHANNEL

Toggles the active channel for editing purposes and displays it in the top right hand corner of the screen:

L = Left Channel active R = Right Channel active B = Both Channels active (Default)

When using the EDIT menu and EXTRA menu , you can use this function to edit a single channel, or both if required.

INVERT WAVE

Inverts the waveform between the pointers.

SUPER FLIP

Flips the sample to produce a psychodelic type effect!

DISK MENU

INTERCHANGE FILE FORMAT LOAD – Produces a file selector window from which a sample may be loaded. The directory can be scrolled, using the arrows at the side of the window. Selection is made using the mouse or alternatively by typing the name in the confirmation box at the bottom of the window. Loading takes place when the OK button is selected.

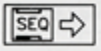
BINARY FILE LOAD – Enables Binary files to be loaded – useful for transferring files from other programs – use the same procedure as for IFF files.

INTERCHANGE FILE FORMAT SAVE – Enables the sample between the two pointers to be saved – Type the file name when the prompt appears – then click on the OK button.

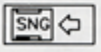
BINARY FILE SAVE – Enables binary files to be saved in the same manner as IFF files.

DELETE FILE – Enables any selected file to be deleted – click on the OK button after selection.

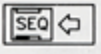
LOAD SONG – loads a song sequence.



LOAD SEQUENCE – loads a midi secuence.



SAVE SONG – saves a song file.



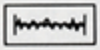
SAVE SEQUENCE – saves a midi sequence.

QUIT

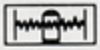
QUITS the program – without saving to disk.

OTHER FUNCTIONS

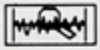
MODE — Toggles between STEREO – MONO – and SIMULATED STEREO (Memory saving).



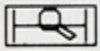
FULL – Restores the pointers to the start and end of memory – it also resets the display beck to it's default mode, if there is any magnification present.



WIPE – Empties the whole of memory – and also resets the pointers to the start and end of memory. The process is non–reversible – so caution is urged. Use the CUT function from the EDIT menu to delete only the area between the pointers.



MAGNIFY – Expands the sample area between the pointers – this can be repeated up to 15 times, enabling very accurate editing of samples to a level of around 320 bytes. During magnification, the bar indicator shows the relationship between the sample and total memory.



DE–MAGNIFY – Reverses the magnification process – step by step – Follow the overall process on the bar indicator.

FILT — LOW PASS AUDIO FILTER – Toggles the audio filter in the computer ON or OFF – All frequencies above 7kHz are removed.

SUPER LOOP — Introduces a third pointer between the two main pointers – a very useful feature for the creation of LOOPS where a sustained effect is required – the buttons on either side of the SUPER LOOP button, are marked with arrows, which control the position of the new pointer – these are activated by clicking on the left button of the mouse.

< — Moves the Super Loop pointer LEFT – 1 byte at a time.

> — Moves the Super Loop pointer RIGHT – 1 byte at a time.

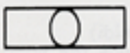
« — Moves the Super Loop pointer LEFT – 1 pixel at a time.

» — Moves the Super Loop pointer RIGHT – 1 pixel at a time.

Initially the Super Loop pointer is located beneath Pointer 1 – Re–position it between the other two pointers and click on FORWARD LOOP – the loop will start at Pointer 1 – on to Pointer 2 – and then return to the Super Loop pointer – to form a continuous loop between the last two pointers. Similarly selection of REVERSE LOOP will have the opposite effect.

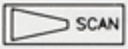
Use SUPER LOOP in conjunction with ZOOM to achieve precise looping effects.

ZOOM — Provides a very close up view of each pointer and the sample waveform – thus enabling fine tune adjustment for looping and editing purposes. The outside windows show the input waveforms for each channel, in real time, whilst the three central windows show the sample waveform. The central pointer corresponds with SUPER LOOP, whilst those on either side correspond with the left and right pointers.



RECORD – Connect a suitable sound source to the Technosound module, and click on the ECHO menu. Select THRU from the menu, and click on the RECORD button to start the initial sequence. Listen to the incoming sound,and press the left button of the mouse when you are ready to start recording.

PLAYS the sample with the screen blank for high quality.



PLAYS the sample and displays the waveform. A scan bar shows the section currently playing.

PLAYS the sample under interrupts. This means that you can continue editing the sample whilst hearing the effects of your editing. Also the sample automatically loops at the end. Although there is a slight reduction in quality, and the effective sample rate is limited to 23kHz, you will find this play mode invaluable during the creation of loops.

SAMPLE RATE

This enables samples to be recorded and played at various frequencies or musical notes. The rates are adjusted by clicking the arrows in the box, located in the lower left portion of the screen, either up or down.

Samples can be taken at any rate within the ranges shown below:

8 – BIT	Stereo	5,000 to 42,224 Hz	4 – BIT	Stereo	5,000 to 29,557 Hz
	Mono	5,000 to 57,207 Hz		Mono	5,000 to 41,242 Hz

In general you will find that the higher you set the frequency, the better will be the quality. However setting the frequency high will reduce the available sample time.

The period setting indicates the value which must be placed in the computer's hardware register, to correctly replay the sample at its correct speed.

SYSTEM OPERATION

VARIABLE CUT BUFFER

The cut buffer size can be varied to suit particular requirements, by editing the file: Cutbuffer.Inf

It contains the statement – Cutbuffer= #50000# (ie 50kB)

Change the number to suit. eg If you require 250kB simply change the number to #250000#

The sampler reads this file when booting. If it is not there, then a 50kB will be used.

VARIABLE SEQUENCER MEMORY

The length of sequencer can also be changed by editing the Cutbuffer.Inf file, but this time the second number is changed. Refer to the file for full instructions.

COPYING TECHNOSOUND TO A HARD DRIVE

Enter the amigados CLI shell and type the following:

```
makedir dh0:technosound
copy df0:technosound to dho:technosound
copy df0:sampler2.map to dho:technosound
copy df0:cutbuffer.inf to dho:technosound
```

RUNNING TECHNOSOUND FROM A HARD DRIVE

```
cd dh0:technosound
technosound
```

PHASESHIFT MODES

The most effective modes for using PHASESHIFT on the EXTRA menu, are MONO or SIMULATED STEREO.

CLEARING SAMPLE MEMORY – EXTRACTING SAMPLES FROM GAMES

The message displayed on boot up "Do you want to clear sample memory?" can be used in conjunction with the RAMSCAN facility to extract samples previously stored in memory.

DEMOPLAYER

The program "DEMOPLAYER" loads in a song, created on the SONG SEQUENCER (not midi) It loads in a 32 colour (256x320 pixel) binary picture file, displays the picture, and plays the song. Use the right mouse button to exit the program. NB. It will not load IFF picture files.

APPENDIX A

SONG SEQUENCER

The song sequencer enables the user to link sets of samples together to form a song. Nine different samples can be stored in all, though these can be repeated whenever necessary.

The icons with the numbers 1–9 indicate the nine samples with which the sample positions can be stored. The sample is not copied to another part of memory when programmed, its position is simply noted.

To program a sample, simply position the two pointers around the sample and press the PROG icon. The status display will show "RE–PROGRAM SAMPLE". Simply click the desired number (1–9) to store its position.

When you have programmed all the samples you require, you can the go on to create the song.

SONG CREATION

Click on the CLR icon to clear the song memory and keep the programmed samples intact. The song is represented on screen as a sequence of samples to play as follows:

```
SAMPLE 1 00 --- Position in song 00–48
          :
          :
          :------ Sample number to play 1–9
```

To add a sample to a song , click on it's number 1–9. The status will display "ADD SAMPLE TO SONG" Then click on the top line of the song window where it says "SAMPLE X 00" . The X will change to the number of the sample selected earlier. Other lines in the song can be programmed in the same manner until your song is complete.

You can scroll through the song with the up and down arrow keys.

To delete a sample in the song , simply click with the right button over the line of the song you wish to erase. The sample number will then be replaced with an X.

When playing a song with the PLAYSONG icon, the positions in the song , with SAMPLE X inserted, will be ignored, and the next line will be interpreted. ie. If you had "SAMPLE 1 00" at the top of your song, and "SAMPLE 2 48" at the bottom, with "SAMPLE X" in between them, then sample 2 would be played directly after sample 1, with the sample X s having no effect on the song.

All functions using pull down windows, such as LOAD & SAVE , ZOOM, MIDI SEQ and USER ECHO, will be in–operative until the EXIT icon is clicked.

APPENDIX B

MIDI SEQUENCER

The samples 0–19 are programmed in the same way as described in the song sequencer section, except that if SUPER LOOP is enabled, then the samples will be looped when they end . The super loop offset is ignored in this instance.

Four samples can be played simultaneously using the four audio channels of the computer.

The channels can be selected with the "C" icon.

Clicking on the REC icon will start recording a sequence into the selected channel 0–3. By playing on your midi keyboard, the samples are played and stored in the channels sequence.

3 Midi Octaves are accounted for , starting at middle C (C3).

The MIX icon has the same effect as PLAY, except that previous data is not overwritten, so a sound channel can be overlaid with different samples.

MODE

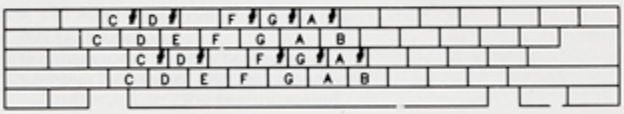
NORMAL – Allows you to play the selected sample over 3 octaves.

ASSIGNED – All 20 samples are available by pressing different keys on the midi keyboard as follows:

C3 --	Sample 0	
C#3 --	Sample 1	
D3 --	Sample 2	etc
C4 --	Sample 12	
G4 --	Sample 19	

All samples are played in the middle C pitch.

KEYBOARD DESIGNATIONS



APPENDIX C

RELEASE MEMORY

This icon is used in conjunction with the MULTITASK icon.

When Technosound Turbo boots up, it reserves all available memory to run other programs. Hence the RELEASE MEMORY icon releases memory for other programs to use.

To release memory, simply set the two pointers anywhere in the sample window, and set the gap between the pointers, to the size you wish the new sample window to be. All memory outside the pointers is released. The released memory can now be used to run other programs.

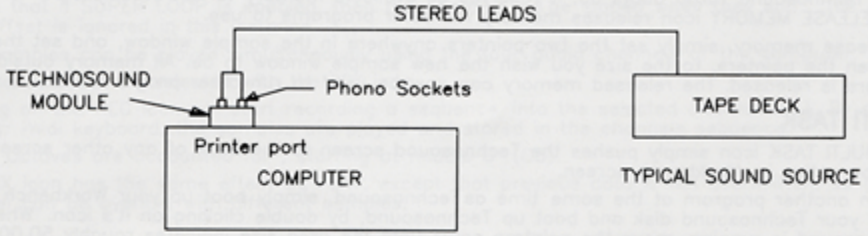
MULTI TASK

The MULTI TASK icon simply pushes the Technosound screen to the back of any other screens that may be active ie. Workbench screen.

To run another program at the same time as Technosound, simply boot up your Workbench disk, then insert your Technosound disk and boot up Technosound, by double clicking on it's icon. When Technosound is running, move the pointers apart until the area size indicates roughly 50,000. Then click on RELEASE MEMORY.

Finally click on MULTI TASK, and you will see the Workbench screen. Boot up another program which has multi tasking facilities, and you will then have two programs working at the same time.

TECHNOSOUND TURBO CONNECTIONS



HARDWARE SPECIFICATION

SIGNAL TO NOISE RATIO	30.48 dBs
MAXIMUM FREQUENCY	98.5 kHz
FREQUENCY SELECTION	Software controlled
RESOLUTION	8 bits
LINEARITY	+/− 0.5 LSB
MAXIMUM INPUT SIGNAL	2.5V RMS
ANTI−ALIASING FILTER	yes
MULTIPLEXED STEREO INPUT	