HD FREQUENCY RELEASE 2

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Contents

1.

1.1 Preface

HDFrequency is a "Harddisk-recording-system" for Amiga(r) computers. Many HD recording systems do exist for amiga of course, but they all need external hardware (16 bit audio cards). So I decided to write a program that makes use of standard 8bit audio digitizers in combination with a harddiskrecording system. To my mind you can do lots of things with this program, and the quality is not so bad at all .....

1.1.1 Hardware requirements

This program makes use of many features from Kickstart 2.0 .You should have at least Kickstart 37.175 to run this program. Lots of free space on your harddisk recommanded as well.

There are existing 4 versions of the program:

- •68000 For amigas with at least 320 kB Chip & 450 kB other memory free for the program.
- •68000e For amigas with 1MB Chip and at least 1 MB other ram.
- •68020l For amigas with 1MB Chip + 1MB Fast + 68020+. This version contains a 4 track CPU replayer.
- •68020 For amigas with 1MB Chip + 1MB Fast + 68020+. This version contains a 3 track CPU replayer.

68020+ versions of the program contain instead of a dma fourtrack that allows to replay 4 samples with 30 KHz at the same time, a cpu replay routine that allows replaying fourtracks with >30 KHz if your processor is fast enough. Fast means, that a 68030 25 MHz ist slow, a4000/040 would be a fine thing. For all those who do not own a4000/040, but an 68030, there is a version that only replays 3 cpu voices at the same time with sampling rates > 30 KHz. For all those who do not need sampling rates >30 KHz use the 68000 versions, they allow replaying 4 voices with max 30 KHz at the same time, even on an old a500, 2mb. Once again, if you only need sampling rates < 30 KHz, use 68000 versions of the program package. Another point worth beeing noticed: The Speed of your HD, if possible use addbuffers XXX 1000, never use stacker(r) systems like xfh(r), epu(r), diskexpander(r), they will slow down your hd quite a lot.

1.1.2 Contents

This archiver should contain the following files:

- Documentation
- HD Frequency 68000
- HD Frequency 68000e
- HD Frequency 68020l
- HD Frequency 68020
- Install-script
- Revision Hostory

1.1.3 Installation

Boot your machine as usual then click on the install-script icon from your hd-Frequency disk. This script uses the Commodore utility installer that should be available in the C: directory of your harddisk. If you are running an interlaced Worbench screen, HD Frequency will also open an PAL or NTSC interlaced screen. –> If you prefer others, please promote (I do so as well ..)

2. The Audio Dock

After calling the program from workbech you can watch a window with two VU meters, and on the right hand side of this window a small icon list. If this window is activated you are in the main control area of HDFrequency. All other program functions can be called from this window.

2.1 Project Menu

2.1.1 About

This window gives closer information about the program and so on ..

2.1.2 Quit

Here you can quit the program, what else ?

2.2 Sampler Menue

This program supports standard sound samplers. In other sampling software you may find these so called standard samplers searching for 'generic samplers'. Perfect Sound® compatible samplers are not supported (yet).

2.2.1 Channel

If you are using a stereo sound sampler you can decide using either the right or the left channel for recording samples.

2.3 Audio Menue

2.3.1 Replay Sample

This routine replays a sample selected before. Position and time are displayed while replaying the sample. Replaying is controlled by using the icons on the audio dock window: <<, >>, stop and pause. You can start the replay routine also from the main dock window selecting the '>' icon. This routine uses DMA for replaying the sample. This means that samples recorded before with

more than 30876 Hz are replayed with 30876 Hz, because normal amiga dma is not able replaying the samples faster. On 68020+ versions samples > 30876 will be replayed with the correct sample rate upto 62 kHz.

2.3.2 Replay Sample HQ

This routine replays a sample, that was previously selected from sample editor. Now a CPU replay routine is used replaying a sample. The top sampling rate is now 65000 Hz (a1200+). DMA switched off and screen blanked to raise the quality of the sample. On a normal a500 the replay rate is round about 32000 Hz, because the processor is not fast enough. A sample of 30KHz replayed in HQ mode sounds rellay better than replayed in DMA mode.

2.3.3 Record Sample

This function records a sample using the sample rate selected in 2.3.2. You can also enter this function by pressing the 'o' icon the the main window. Next you have to enter the filename of the sample to be recorded right now. Now you can control the input signal using the VU Meter and overpeak box. If the overpeak box look black the sample is overpeaked. After this, start the recording with the right mouse button or quit using the left one. To stop recording also press the left mouse button. If your processor is too slow for the sample rate you requested the program will let you know. Samples are recorded in standard IFF8SVX format. In this case you also can use iff-samples from other programs.

2.3.4 Playlist Editor

Through calling this function you will enter the playlist editor. Within this option you can create 4 fourtrack tune.

2.3.5 Sample Editor

After selecting this option you enter the sample window to manipulate samples.

2.3.6 Replay Fourtrack

This function, you even may call this the main part of the program, replays a sequence created once before in the playlist editor. After picking this function a small window appears on the screen presenting you the current position of the playlist. With right mousebutton you can cue forward. Left mouse button aborts replaying.

Some words about the 68020+ version:

Holding down the Tab key before starting this routine will blank the screen and disable nearlly all DMA channels to improve quality. It is possible that the 68020+ routine is not able to replay the fourtrack correctly because your processor may not be fast enough. As an example it is not possible to replay two 40 KHz samples on a1200. In this case the interrupt routine will loop and loop and ..... press left mouse button to escape.

2.4 Sample Editor

First select a sample to be edited using the asl file requester. After this you can watch the sample beeing displayed in a window. Using the size button of the window it is possible to change the size of the window. Using the mouse you can range a certain part of the sample to cut it off or something the like. Mark the sample by pressing the mouse botton somewhere on the sample window and releasing it somewhere else on the window. The intervall between the mouseclick will be displayed now, it is ranged.

2.5 Playlist Editor

Right in this part of the program you can create the sample lists required for the replay fourtrack routine. For each item of the viewlist you can choose its own channel and starting time, this is done by selecting the channel by clicking the mx-gadgets and to edit the time gadgets.

2.5.1 New

Add a sample to the viewlist structure, choose your desired sample from asl-requester.

2.5.2 Delete

A sample is deleted from the viewlist.

2.5.3 Get File

Nearlly the same but here no new entry will be created, only the sample name will be changed.

2.5.4 Channels

By clicking on the mx-gadgets you can select the replay channel for a selected sample from the viewlist. Default value is channel 1 after creating a new entry.

2.5.5 Time

Enter the starting time of the sample and confirm by pressing return. The syntax is as follws 1.45'20" = 14520

2.5.6 Start

This one gives you the chance to change the start time of the playlist, this means that you can skip some samples. If the start time is 20000 all samples untill 2.00.00 are Skipped. Syntax is as in 4.5.

2.5.7 Project Menu

2.5.7.1 Load Playlist

A playlist saved before with option 4.7.2 will be reloaded.

2.5.7.2 Save playlist

A playlist created before can be saved to harddisk. Use asl-request to enter a name.

2.5.7.3 Disable Sorting

This feature allows to disable the automatical sort algorithmusthat is used if a new entry fits into the list.

3.

3.1 Technical information

This programs makes use both of your processor and harddisk in quite an intense way. So be aware of using tools that reduce the performance of your processor such as stacker® systems like xfh® epu® (diskexpander®). If you are using epu or diskexpander use "epu device XXX chng nosave" to beware epu from crunching files while saving.

Some things about speed: If you want to echo a 5 mb sample you need at least the following time

$$\frac{2 * Length - of - the - sample}{Speedof HD} = \frac{2 * 5120KB}{750KB * s^{-}1} = 14s$$

Then you have to add the time the effect needs.

The result is: The better hd and processor you have is, the better is the performance of the system.

This version has been completely enforcer debugged.

Program tested using

- a500 7.09 MHz 1 MB Chip 2 MB Fast 85 MB Quantum ELS Multi E.
- A1200 14.18 MHz 2 MB Chip 4 MB Fast 120 MB Connor IDE
- A1200/030 28.00 MHz 2 MB Chip 4 MB Fast 120 MB Connor IDE
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Program tested using both kickstart 37.230 and 39.106. SetPatch 40.14 and 37.38 was installed on these machines.