

altiverb



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Making Impulse Responses from (reverb and EQ) gear.

This documentation :

Making IR's from gear.pdf

This manual describes how to create Impulse Responses from hardware effects processors such as reverb and EQ units.

Related documentation :

Making post production IR's.pdf

This manual describes how to make Impulse Responses in locations such as film sets, bathrooms and outdoor spaces in order to use them for post production purposes (i.e. for ADR and Foley purposes). It focuses on quick and practical ways to use portable equipment to obtain Impulse Responses.

Making IR's for music.pdf

This manual describes how to make Impulse Responses in acoustic spaces such as concert halls, Studios, and churches in order to use the resulting files to process music using the Altiverb. We are assuming that you want to create the highest possible quality Impulse Responses.

Making starter Pistol IR's.pdf

This manual describes how to make Impulse Responses by making recordings of starter pistol shots. While this is the quickest way to obtain impulse responses, it gives lesser quality than the sine wave sweep method, described in *Making post production IR's.pdf* and *Making IR's for music.pdf*

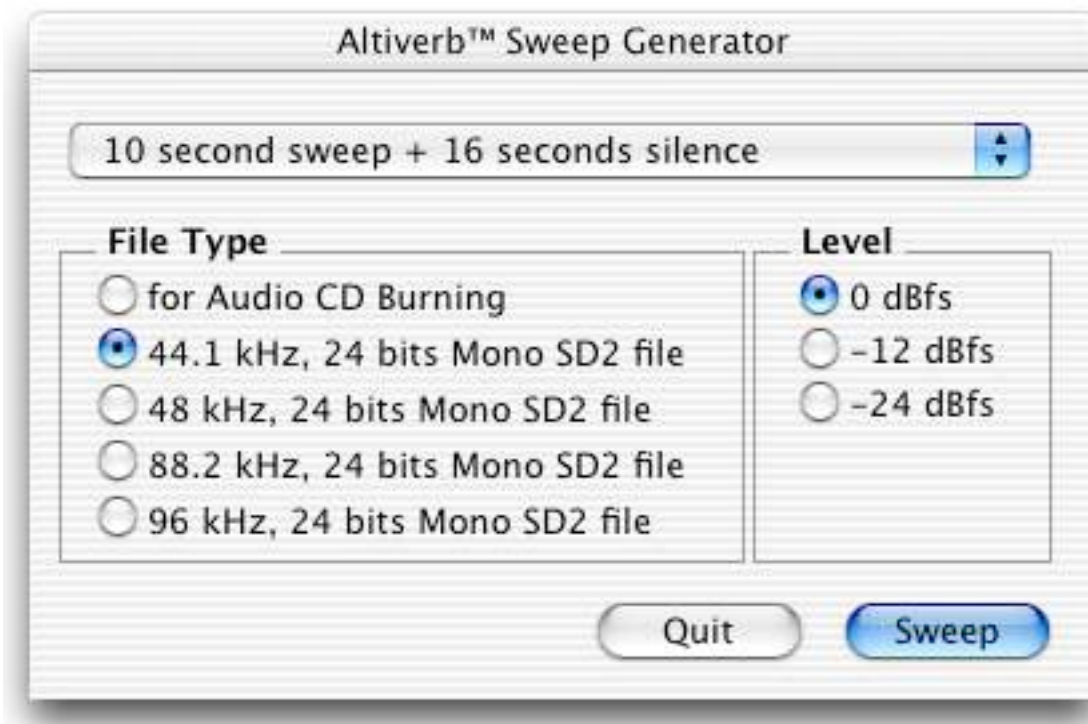
This manual describes how to create Impulse Responses from hardware effects processors such as reverb and EQ units.

Outline:

1. Creating the sweep.
2. Playback Level adjustment
3. Recording the processed sweeps
4. Naming the files
5. Assembling the takes in folders
6. The Altiverb™ IR Preprocessor.
7. About editing the takes

1. Creating the sweep

Launch the Altiverb™ Sweep Generator, set it up as shown below and click *sweep*:



Note 1:

If you intend to use the resulting samples in 48 kHz sessions mostly, you want to record and produce the sweep at 48 kHz rather than at 44.1 kHz. Switching between Impulse Responses in Altiverb will be quicker as a result.

Note 2:

In case you are certain that none of the presets reverb tails will be longer than 7 seconds, you can choose 10 second sweep + 7 second silence instead. This will save you time during the recording.

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2. Playback level adjustment

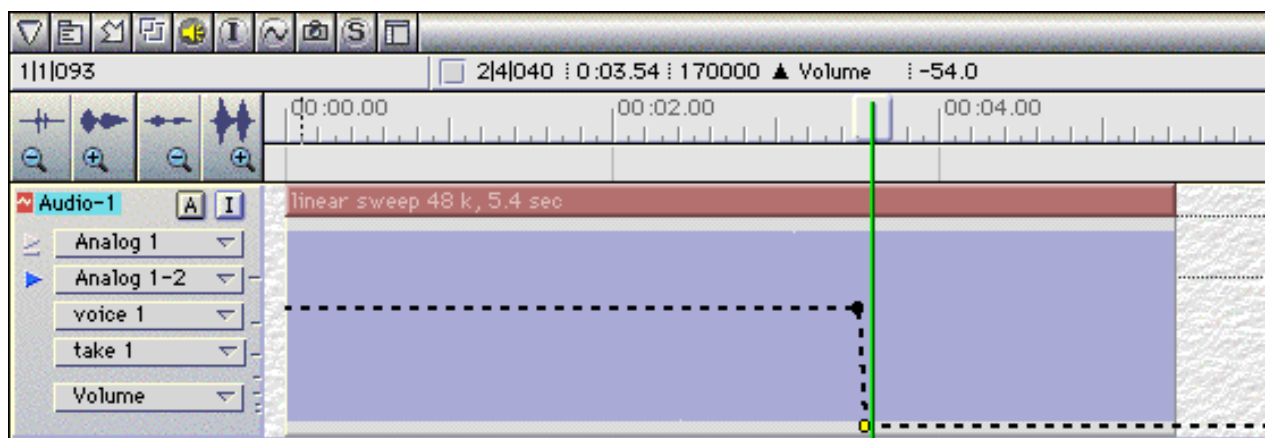
The sine sweep should be connected directly to the input(s) of the reverb unit. The reverb unit should be set so that no dry signal passes through it (unless you feel that the circuitry that passes the dry signal is worth sampling as well as the reverb unit).

Side sweeps and aliasing

When you listen to the sine sweep processed by the reverb unit, it is possible that you will notice additional sweeping sounds descending in pitch instead of rising. It is also possible that the sweep seems to distort into white noise. Side sweeps can have several causes:

- When you run a sweep through vintage digital reverb equipment, you may not only hear a sweep going up in frequency, but from a certain point on, the output of your verb may contain a sweep going down as well. This is called *aliasing* and it is a side effect of low quality analog-to-digital converters.
- If you use an analog connection between the output of the sweep and the input of the hardware you want to sample, it is very possible that distortion and aliasing is introduced.
- When you overload the inputs of the reverb device, the distortion introduces third (and possibly even fifth) harmonics, frequencies higher than the sweep itself. If these harmonics start aliasing as well, you will hear several sweeps going up and down simultaneously. Very often the reverb's input overload indicator will not flash when this happens. In addition, turning down the reverb's input gain doesn't make the distortion go away. Only turning down the output volume of the sweep will help in many cases.

The solution is to adjust the sweep output volume until you lose most or all of the aliasing sweeps. If one single aliasing sweep persists, you can trim the end of the sweep file at the point where you hear the descending sweep coming in. This removes the problem frequencies from the sweep.



Because aliasing was heard after the cursor, this sweep should be shortened.
(In this case by volume automation.)

3. Recording the processed sweeps

Wait until the reverb unit is silent. Play back the sweep while recording the reverb unit's outputs. Make sure you do not stop recording until you hear the second 'blip'. The reverb tail of the blip itself does not have to die out. Switch to the next preset and repeat.

In case you want to sample true stereo input units, you should first make a recording of the sweep connected to the left input channel, and then one of the the sweep connected to the right input channel (more on this in paragraph 7).

4. Naming the files

From the recordings you need to create SD2 sound files from before the starting beep until after the stop beep. Below is a picture of a couple of 30 second sweeps surrounded by start and stop beeps. The last one is selected to be exported as a separate take.



Create separate sound files for each channel. Stereo or quad interleaved files are not recognized by the Altiverb™ IR Preprocessor.

5. Assembling the takes in folders.

Each sweep recording should be placed in a separate folder. If you want to produce stereo to stereo Impulse responses, you should not yet put the recordings of left and right reverb input recordings together in a single folder. You can do that after all folders have been processed by the Altiverb™ IR Preprocessor.

6. The Altiverb™ IR Preprocessor

Create a new empty folder in your Altiverb™ Impulse responses folder and call it for instance “Reverb Unit X” This phrase will show up as the gray category item in the Impulse Responses pop-up in Altiverb.

Drag all the folders containing sweep recordings onto the *Altiverb™ IR Preprocessor* application.



Click on the upper Select button and choose the file “*Sweeps - not to be equalized*” located in the *Altiverb IR Pre processor/Pre-processor Correction Files* folder.

Click on the output folder Select button and select the empty “*Reverb Unit X*” folder that you have just created inside the *Altiverb/Impulse Responses* folder.

Optionally you can manually select the sweep you used while recording. This speeds up the sweep determination process. In case you get a sweep determination error this will help processing your files too. Do this by selecting *Settings* from the *edit* menu and choosing the sweep you used during recording.

Click on the Process button.

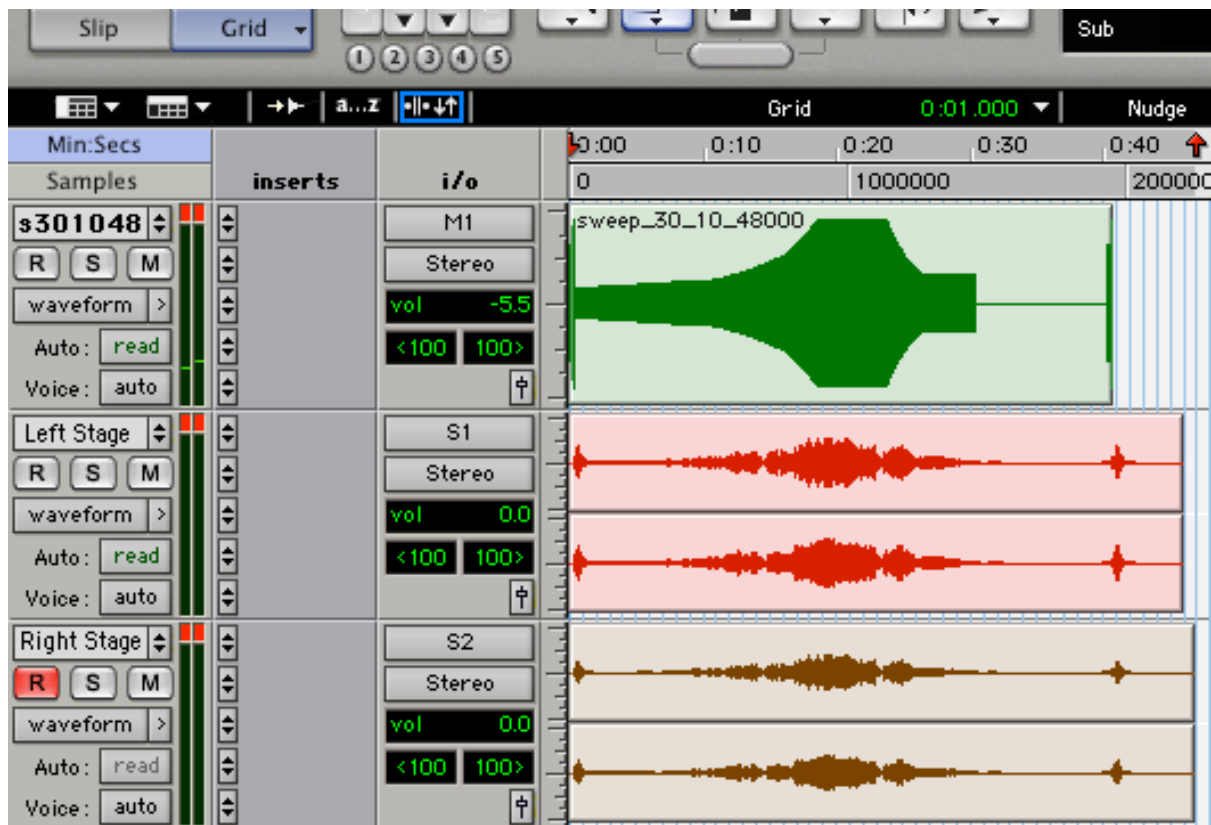
The Altiverb™ IR Pre-Processor will automatically correct playback and recording clock deviations, edit beginnings and endings, fade tails into the noise floor and correct for the characteristics of specific Boomboxes. It will equalize levels to make the Impulse response fit in with other impulse responses, and place the results in your *Altiverb/Impulse Responses/Reverb Unit X* folder.

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```
reverb Unit X.L.1
reverb Unit X.L.2
reverb Unit X.R.1
reverb Unit X.R.2
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You are now ready to launch your sequencer or audio editor to listen to your new IR's in Altiverb.

7. About editing the takes



1. The picture above shows a stereo to stereo impulse response recording session. The original is played back from channel 1. The recording made from the sweep connected to the reverb unit's left input is made on the stereo channel immediately below the original. The second, right-input, recording is made on the bottom stereo track. Both recordings can be used without any editing because left stage and right stage recordings are already in sync with each other (because both are recordings from the same original)
2. If, however, you have recorded by playing back on a CD player while recording on a DAT machine you will have lost the synchronization between left-input and right-input recordings. You should treat left-input and right-input recordings as two mono-to-stereo Impulse Responses. Once they have passed through the Altiverb IR preprocessor you can assemble them in a single folder to create a stereo to stereo Impulse Response, but not before that.