

altiverb



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Venue rights may apply when you sell, lend, hire or give away sampled Impulse Responses from real acoustic spaces. Consult the owner of the venue when you intend to do so.

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Quick ways of making Impulse Responses from real acoustic environments for post production

This 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.

Related documentation :

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*

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 IR's from gear.pdf

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

Portable Sweep Gear.pdf

You can make impulse Responses by playing back a sine wave sweep CD using portable, self powered gear. Audio Ease has created correction equalization curves for three tested playback sets. These curves are accessible in the *Altiverb IR Pre Processor* application that comes with Altiverb. This document lists the tested portable machines, and their availability .

This manual describes the quickest and most practical ways of obtain Impulse Responses from a room. We are assuming you need to sample the acoustics of a film set, with the intention of using the result to do partial ADR. And Foley touch up.

Suppose about 70 % of the dialogue and sound effects that is picked up by the boom operator at a film set is used in the final result of the film mix. This audio is called production sound. However, additional sound effects and foley is needed. There are even a couple of lines of dialogue that need to be replaced. All audio that is produced later needs to fit in well with the production sound. Using samples of the film set can be a great help in matching ADR and Foley to production sound. Being able to obtain a sample on location quickly is of great importance. Especially when people are standing around waiting for you.

Outline:

1. Determining what to record
2. Selecting gear
3. Creating the sweep CD
4. Playback level adjustment
5. Recording the samples
6. Naming the files
7. Assembling the takes in folders
8. The Altiverb IR Pre-Processor

1. Determining what to record

We want to playback and record sine wave sweeps while the crew is around. Them leaving may change the acoustics of the room. We will play back 30 seconds of sine sweep file from a portable boombox while the production sound recording engineer will keep the tape rolling.

2. Selecting gear

Playback

Select a portable and self powered sweep playback device from the list in *Portable Sweep Gear.pdf* next to this manual. The sound from the listed devices has been measured in order to create correction equalization curves that were built into the Altiverb IR Preprocessor.

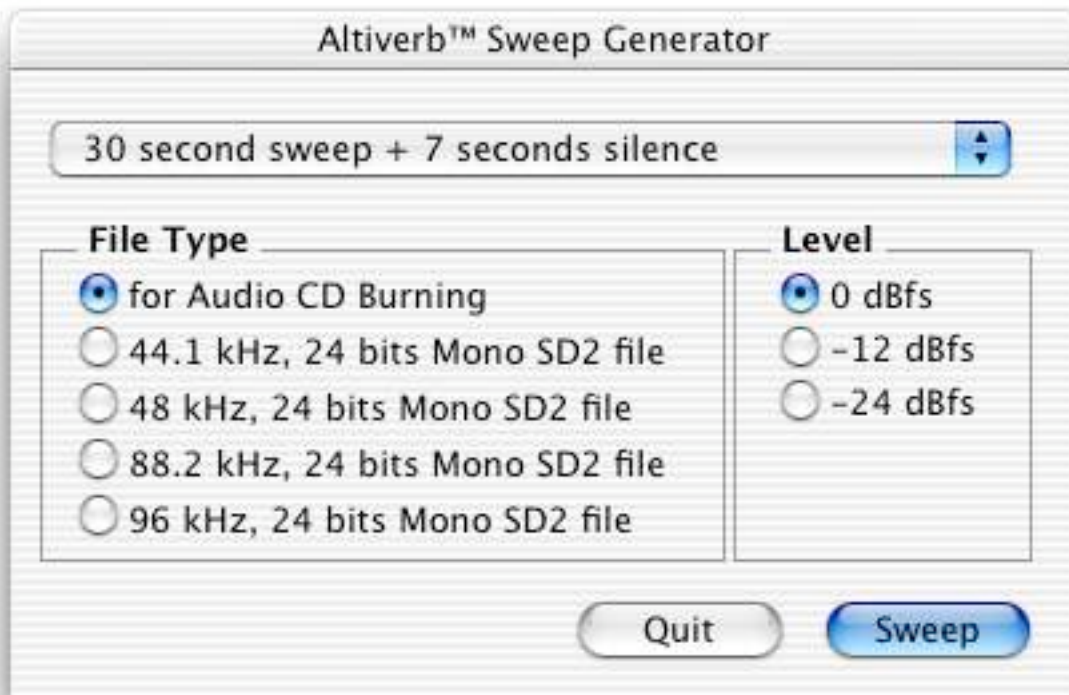
Record

A big advantage of having the production sound engineer record the sweeps is that you are certain that the Impulse Response is made using the same microphone configuration as the production sound itself. It is not a problem if the recording is made on analog tape. The sample rate used when making digital recordings does not matter either.

Now, let's start out by creating the CD that you are going to play back.

3. Creating the sweep CD

To create the sine wave sweep tone, launch the *Altiverb™ Sweep Generator* application, and set it up as follows:



Sweep Length (part of the popup menu)

When choosing the length of time used for a sine wave sweep, you should consider the following:

Using a longer sweep tone will provide a better signal-to-noise ration in the final IR, but you'll need to spend more time at the recording venue and the longer time required for a recording will mean there's less chance of a take free of incidental noise. In practice, you may need to record a couple of longer sweep tones and pick the one with the least incidental noises. In addition, the resulting recordings will require more system memory for processing and consume more processing time when using the Altiverb IR Preprocessor.

If the crew can be convinced to be reasonably silent you can get samples using 10 sec sweeps. a 30 or 100 sec sweep is preferable but may be socially impractical.

Silence length (part of the popup menu)

The length of the silence following the sweep must be longer than the reverb time. The resulting IR will never be longer than the silence length. It is practical to choose this value just higher than the reverb time you expect.

File Type

We want to play back the sweep from the boombox's CD player, so we select '*for Audio CD Burning*'. This will produce a 44.1 kHz 16 bit interleaved stereo AIFF file, with audio in the left channel and silence in the right channel. Only the left speaker of the boombox will play. If both speakers would, you would get all sorts of interference problems. You can burn this file to an audio CD using Apple iTunes or Adaptec Toast.

Level

In case you replace the boombox by an active studio monitor and separate CD-player the sweep level may be too hot for the monitor's input. **Be careful when attaching a CD player directly to your monitors inputs, you may damage the monitor by driving it too hard.**

You should check out if the monitors volume control or input attenuator is sufficient to allow a 0dB CD sweep, but there is hardly any other safe way of finding out then by burning a test CD with all possible levels on it and play them back from softest to loudest.

While it would be best to put an attenuating fader between the player and the monitor, this may not be practical in the field. In a situation like this, you may want to create a sweep tone at a lower amplitude level.

When you have created the sweeps you need you can burn the CD.

4. Playback level adjustment

Setting the sweep playback levels

When you are using a studio monitor instead of a boombox make sure you have read the section 'Level' in the previous paragraph.

Recommended playback levels and settings are described per playback device in the file *Portable Sweep Gear.pdf* next to this manual. If you need to find out the best level yourself, the following considerations apply.

If you crank up the boombox's level to the max while playing back the sweep it will almost certainly distort horribly.

It is not very hard spotting distortion in a sine tone. The tone should remain pure and clean all the way. Play it back softly to listen to the clean sweep. Turn the level up until somewhere along the sweep its character just changes (3rd harmonic distortion will make it sound a bit like a square wave). Then take it down a bit, and verify whether the sine sweep is smooth again.

There is little chance that any boombox will give a reasonably undistorted sine wave sweep at a level that is offensive to the actors and crew.

Make a note of the levels involved, so you'll be able to revert to it for later recordings. It saves time at the recording venue when you have already decided upon these playback levels in your studio before you leave.

5. Recording the samples

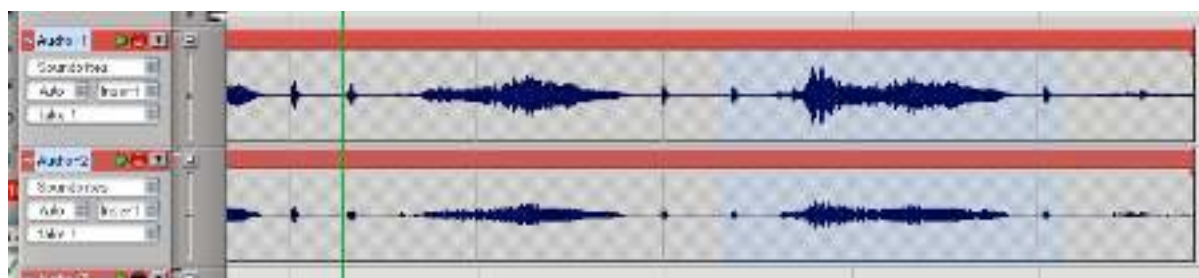
If the production allows you to make the samples while the crew is present the director will need to ask for 20 seconds of silence in case you are recording a 10 sec sweep with a 7 sec silence.

You must ask the recordist to start recording. (You may need a recording level check once, although it is more practical to do this before this moment) you put down the boombox and hit play. After you hit play you'll have two seconds to take one or two steps away from the boombox (to the rear if possible). Try to be silent during the sweep and the gap after the sweep. The recording should not stop until you hear the second blip, even if you detect only about 1 second of reverb tail. The boomboxes that are described in *Portable Sweep Gear.pdf* have remote controls as well.

The further you are from the mics, the 'wetter' your sample will become. If you need stereo input Impulse Responses you need to record two positions. At the post production stage you will be able to pan between these positions.

6. Naming the files.

You will need to obtain the recordings of the sweeps to create the final samples. You need to transfer them to a Digital Audio Workstation and create SD2 sound files out of them 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.

If two microphones were used to make the recording you can name the clippings like this:

Post Office.1 (for the left channel)
Post Office.2 (for the right channel)

If you will be creating stereo input IR's you need to use the following naming convention:

Venue.boombox position.microphone number

Post Office.L.1 (for the left recording channel of the left boombox position)
Post Office.L.2 (for the right recording channel of the left boombox position)

a second recording will then be named

Post Office.R.1 (for the left recording channel of the right boombox position)
Post Office.R.2 (for the right recording channel of the right boombox position)

7. Assembling the takes in folders.

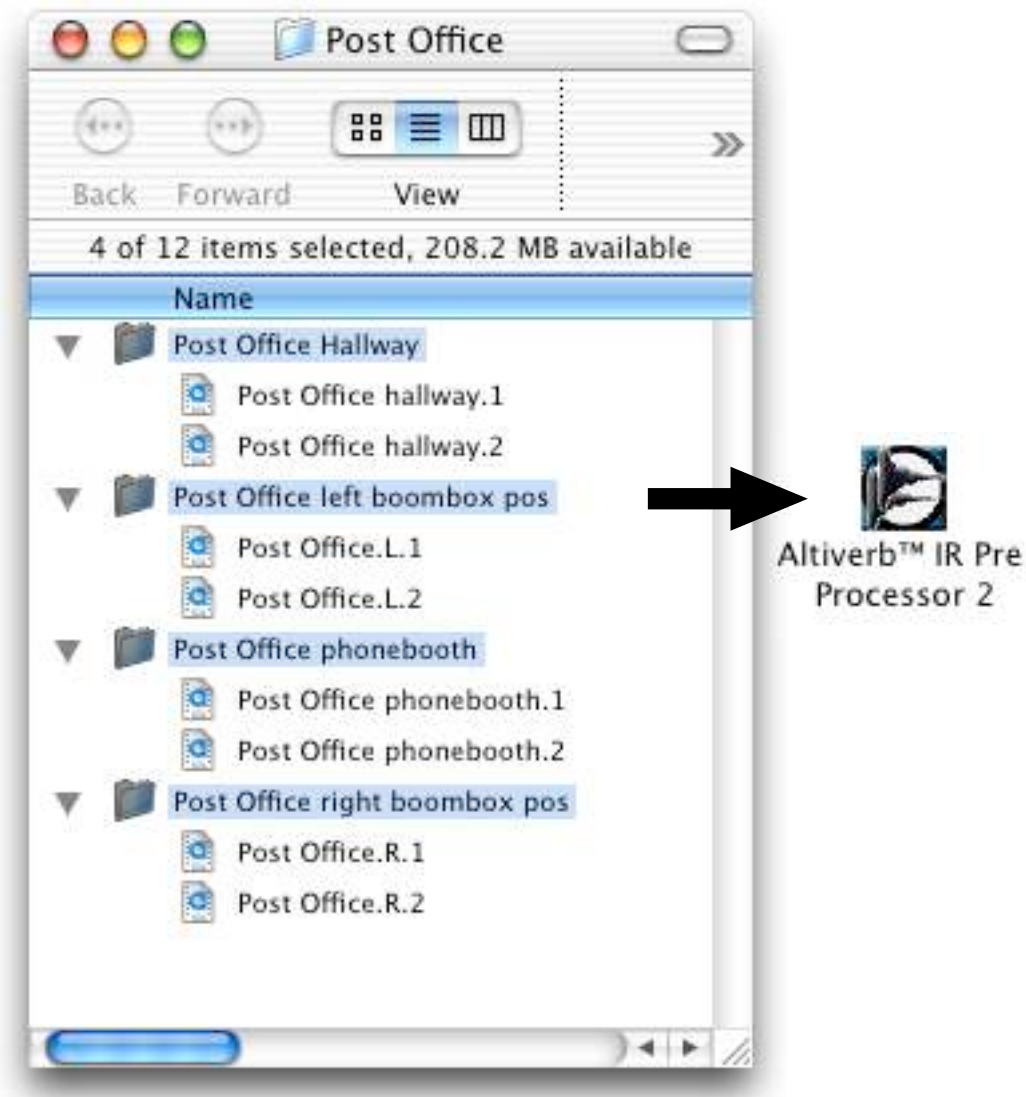
The two clippings (left and right recording channel) of each boombox position should be placed in a separate folder. If you want to produce stereo to stereo Impulse Responses, you should not yet put the recordings of left and right boombox positions together in a folder. You can do that after the folders went through the Altiverb™ IR Preprocessor.

8. The Altiverb™ IR Preprocessor

Create a new empty folder in your *Impulse Responses* folder (located in the *Applications/AudioEase/Altiverb* folder and call it for instance “*Post Office IR's*”

This phrase will show up as the gray category item in the Impulse Responses pop-up in Altiverb.

Drag all the folders you have just created onto the Altiverb™ IR Preprocessor application.





Press the topmost select button and select the input file description that corresponds with the playback gear that you have used. The descriptions are located in the *Altiverb IR Pre processor/Pre-processor Correction Files* Folder.

Refer to *Portable Sweep Gear.pdf* to find out which file you need.

Press the bottom select button and select the empty folder “*Post office*” that you have just created.

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.

Hit Process. The Altiverb™ IR Preprocessor 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* folder.

Any resulting Impulse Responses from left and right boombox positions can now be placed together in a single folder. By doing this you are creating a stereo to stereo Impulse Response from 4 separate files:

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Post Office.L.1
Post Office.L.2
Post Office.R.1
Post Office.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.