

Verberate Basic 2

User Guide

Acon AS

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1 Introduction

Thanks for using *Acon Digital Verberate Basic 2*. *Verberate Basic 2* is a free plug-in based on *Verberate 2*, an algorithmic reverb plug-in from Acon Digital that simulates real acoustical surroundings with an unprecedented degree of realism. The *Basic* edition uses the same *Vivid Hall* as in *Verberate 2*, however, there are only four fixed reverb programs: *Plate*, *Room*, *Hall* and *Lush Hall*.

The early reflections are convincing and the late reverb tail is dense and vivid. Unlike the *Legacy Hall* algorithm used in the first version of *Verberate*, *Vivid Hall* models variations in the reverb tail that can be due to air currents, moving performers or people moving in the audience. By modeling these effects, *Vivid Hall* is able to simulate acoustical spaces very realistically and without the static stiffness that convolution-based reverb algorithms introduce.

1.1 Requirements

Before you install *Acon Digital Verberate Basic 2*, please make sure your computer fulfills the following requirements:

PC Version (Windows)

- Windows 10 / 8 / 7
- Intel Core i3 or AMD multi-core processor (Intel Core i5 or faster recommended)
- 1366 x 768 display resolution (1920 x 1080 or higher recommended)
- 1 GB RAM (4 GB or more recommended)
- 1 GB free HD space
- A host application that is compatible with (32 bit or 64 bit) VST , VST3 or AAX (Pro Tools 10.3.5 or higher)

Macintosh Version (OS X)

- OS X 10.8 or later
- 1 GB RAM (4 GB or more recommended)
- 1 GB free HD space
- A host application that is compatible with (64 bit) AU, VST, VST3 or AAX (Pro Tools 11 or higher)

2 Acon Digital Verberate Basic 2

2.1 Accessing the Plug-In

You can access *Acon Digital Verberate Basic 2* from your host application (audio editor or DAW) of choice. The plug-in is available as a 32 or 64 bit VST, VST3 or AAX plug-in on the Windows platform or as a 64 bit VST, VST3, AU or AAX plug-ins on Mac OS X. Some host applications will require a rescan and possibly adding the *Acon Digital Verberate Basic 2* installation directory to the list of VST directories. Please consult the manual for your host application for further details.

2.2 About Reverberation

Reverberation occurs when sound is produced in an enclosed acoustical environment. Even outdoors, there is likely to be some level of reverberation, however subtle. The sound propagates through the air before it arrives at the listener, but the sound is also reflected when it hits walls or other objects. Due to the propagation time, these reflections arrive at the listener later than the sound from the direct path. After a certain build-up time, there are usually so many reflections that no distinct echoes are distinguishable, but rather a smoothly decaying sound.

The first few reflections, usually called early reflections, are important cues for our perception of an acoustical environment. For that reason, most digital reverberation units differentiate between early reflections and the dense late reverberation. *Verberate 2* simulates both the early reflections and the dense reverberation in a way that comes extremely close to what can be measured in a real acoustical environment. An important tool when analyzing the reverberation of real rooms is the impulse response, which can be measured by playing a very short impulsive sound (the impulse) and recording the resulting reverberation. The figures below are examples of impulse responses obtained from *Acon Digital Verberate 2* as well as from a real measurement of a concert hall.



Results of an impulse response measurement of the Tokoy Hall preset in Acon Digital Verberate 2 (the first 300 milliseconds).

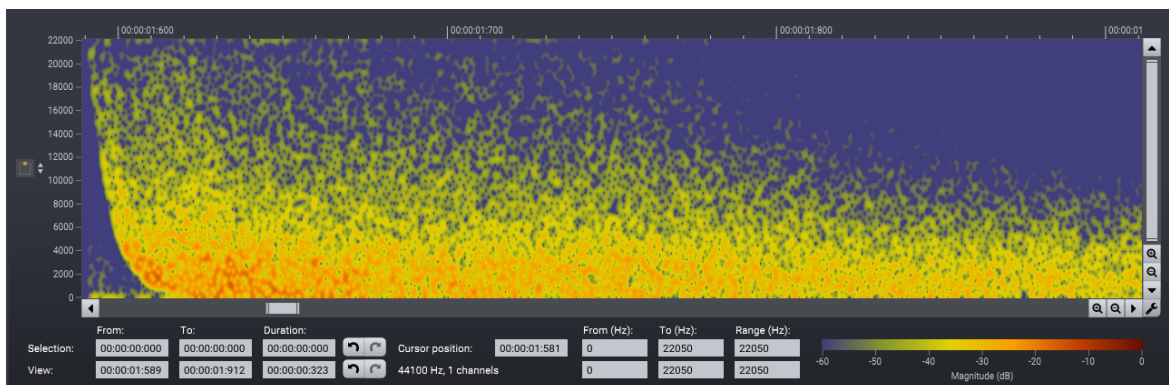


A measured impulse response from a real hall (the first 300 milliseconds).

So-called convolution reverbs can use these impulse response measurements to recreate the acoustical space. However, they only capture a snapshot at a specific time. Real acoustical surroundings will have slight variations due to air currents caused by temperature differences or fans. Also, performers or people moving in the audience will cause slight variations. These small variations may seem subtle. However, the effect towards the end of the reverb tail will be significant, since the sound is reflected a large number of times before the reverb tail fades out. The new *Vivid Hall* algorithm models these random variations without artifacts like chorus effects or pitch changes, and is therefore capable of simulating reverberation of real halls with a higher degree of realism.

Dispersion Effect in Metal Plates

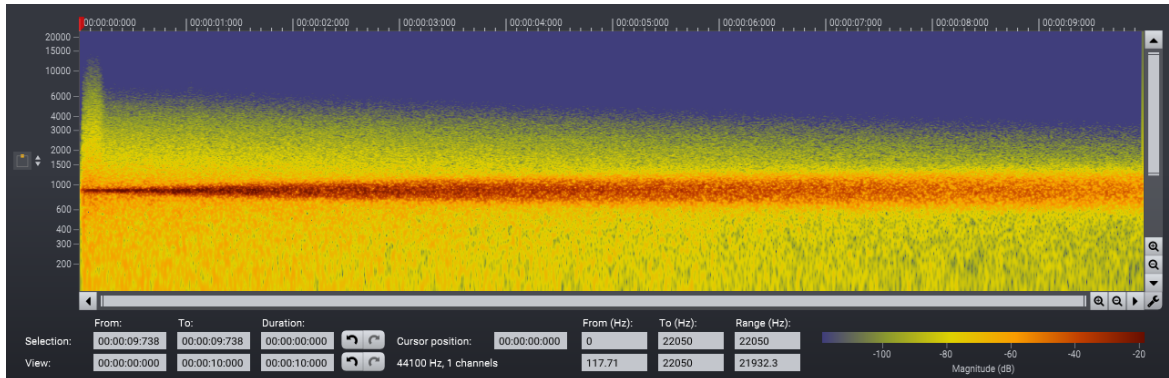
Mechanical plate reverbs are popular for their special sonic qualities. These vintage units produce reverb by placing a transducers on a metal plate. The powerful *Decay Editor* in *Verberate 2* makes it easy to simulate the longer high frequency decay that is special for plate reverbs. However, unlike how sound travels in air, high frequencies travel quicker than lower frequencies in a metal plate. *Verberate 2* lets you simulate this effect using the *Dispersion* parameter that you can set anywhere between 0 and 100% (for maximum time difference between high frequency and low frequency content).



This spectrogram shows how high frequency content arrives earlier than low frequency content when dialing in Dispersion in Verberate 2.

Swirl Effect

Vintage digital reverb units commonly use frequency modulation techniques in the feedback loop to increase echo density without adding too much resonance. Such feedback modulation is no longer required in modern algorithms, but the feedback modulation can be sonically pleasing and desirable. The *Vivid Hall* algorithm makes it possible to simulate the effect of feedback modulation and we call this effect *Swirl*.



This spectrogram shows the effect of the Swirl on a sine wave input (880 Hz). Notice how the red line broadens towards the end of the reverb tail, giving the reverb a cloud-like vintage flair.

2.3 Performance Considerations

Acon Digital Verberate Basic 2 is a zero latency plug-in. Due to implementation internals, however, the CPU consumption will in general be higher when very low latencies is a requirement. If the CPU usage is a problem, we recommend to set up your host to use larger buffer sizes. For maximum performance, the buffer size in samples should be a power of two, such as 256, 512, 1024 or 2048 samples. Please consult the documentation of your plug-in host software if you don't know how to modify the buffer size.

2.4 Using Verberate Basic 2

The graphical user interface of Acon Digital Verberate 2 is designed to give quick and intuitive access to all the parameter settings defining the sonic quality of the reverb.



The graphical user interface of the Verberate 2 plug-in in action.

Reverb Parameters

- **Reverb Program**

The reverb program buttons lets you choose between four fixed reverb programs. These are the equivalent to a preset in the full version of *Verberate 2*. You can choose between *Plate*, *Room*, *Hall* or *Lush Hall* by clicking the corresponding button.

- **Reverb Mix (%)**

The amount of dry (unprocessed) signal to send to the output specified in decibel. You can use the toggle button to exclude the dry signal completely. You can lock the relation between the dry and reverb levels by clicking the lock button between the dry and reverb level sliders.

Undo and Redo

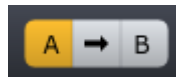
You can undo (or redo) changes to the parameter settings by clicking the circular arrow back or forward buttons:



Undo and redo buttons

A / B Comparisons

It is frequently useful to be able to quickly compare different parameter settings. You can do this using the A / B comparison buttons:



The A / B comparison buttons allows you to quickly compare different settings

You can keep two independent sets of parameter settings, the A and B settings, and switch between them using the corresponding buttons. The arrow button copies the settings from A to B or the other way around depending on which parameter set that is currently active.

The Processor Menu

The last button in the header section displays the processor menu:



You can click the processor menu button for the processor specific menu

The processor menu allows you to access the processor help topic directly along with other processor specific features.

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