

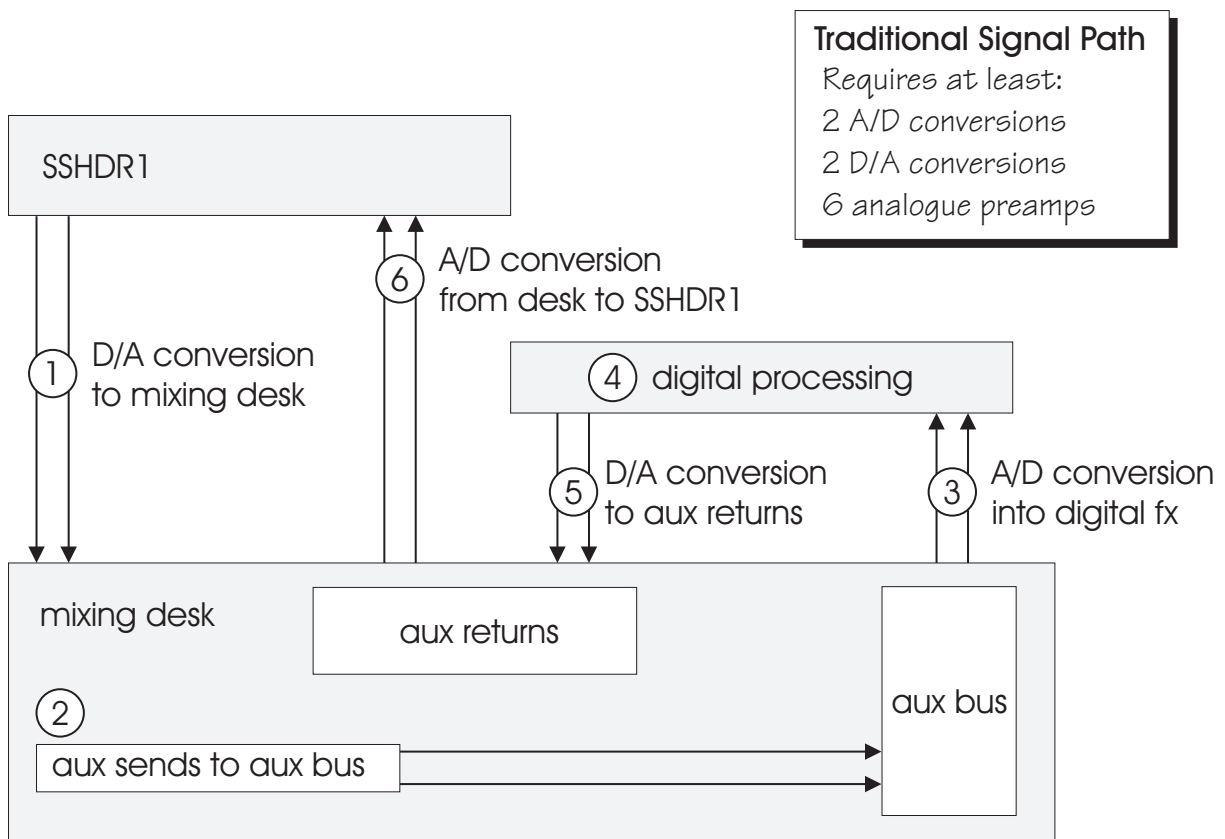
## Stereo Reverb Module by Wave Mechanics (option)

The **Stereo Reverb Module** is an optional DSP processing tool included within the software. The algorithm was developed by US company Wave Mechanics Inc. specifically for the Soundscape SSHDR1, and has extremely high quality digital reverberation with natural, smooth decays comparable to the performance of the highest quality studio effects units.

In order to use the Stereo Reverb Module, you must first obtain a 12 digit password for your Soundscape unit (you may have already received this with your V2.02 floppy disk or CD-ROM), which allows the DSP algorithm to run. The password can be ordered from your Soundscape supplier (authorised dealer or distributor) and for this you must supply the serial number from the rear panel and the internal serial number reported under **About Soundscape...** from the **Help menu** (leading zeros not required).

Enter the same password for the **Reverb Module** and WM Reverb (realtime) in the **Options menu** and click on **OK**. The password will then be saved in the initialisation file, so that it is loaded automatically when you start the software.

The **Stereo Reverb Processor** is quite similar in operation to conventional outboard digital effects but has some distinct advantages. The primary advantage is that it is completely digital and therefore enables you to add reverb to a signal without sending it through several stages of A/D - D/A conversion and analogue circuitry in the traditional outboard fx hookup.



# Soundscape

The Wave Mechanics reverb works both as realtime plug-in for the V2 mixer as well as a process tool (*i.e.* not real-time). The option of creating a limitless amount of preset effects with 100% recall accuracy and no signal loss or analogue noise is extremely useful.



**Presets created with the Stereo Reverb process tool can be loaded into the realtime plug-in, but presets created with the realtime version are incompatible with the process tool.**

Using the Stereo Reverb process tool commits the effect to the SDisk. It is possible to use the reverb in highly creative ways that are just not possible with a standard desk send/return configuration. Basically it is like “printing” the effects to tape, but having the option to go back to the original recording at any time. For example, you could process a vocal with a different setting for each verse, bridge and chorus without trying to hit it “on-the-fly” or with MIDI program changes (not to mention the delays, muting or glitching that most effects produce). It is best to add reverb to copies of the parts you wish to process so you can try out several different settings and still have the original take.



## Stereo Reverb Process Tool “Ctrl+Alt+R”

The **Stereo Reverb Process tool** allows individual or stereo linked parts to be processed using the current reverb parameters to produce a new stereo take on the sounddisk. Click on a part with the reverb tool to display the **Reverb Settings** page, shown below:-

**Reverberation Process Settings - ARENA.RVB**

Main				Normal/Gate On Decay					Gate Off Decay				
Mix (%)	Size (feet)	PreDl (msec)	HiCut (Hz)	Rt60 (sec)	LoDc (ratio)	LoX0 (Hz)	HiDc (ratio)	HX0 (Hz)	Rt60 (sec)	LoDc (ratio)	LoX0 (Hz)	HiDc (ratio)	HX0 (Hz)
23	78	70	11989	4.7	0.9	499	0.9	8000	0.5	1.0	500	1.0	8000

EQ				Advanced			Gate	
LoLvl (dB)	LoFq (Hz)	HiLvl (dB)	HiFq (Hz)	Dens (%)	ChRt (%)	ChDp (%)	Lvl (dB)	Hold (msec)
-20	50	-5	2928	47	19	28	-16	4

Natural  
 Fast  
 Medium  
 Slow

Enable

licensed by **wave mechanics**

## Main Section

**Mix - Mix** **0 - 100%**

Mix controls the balance between the original (dry) signal and the reverberated (wet) signal. A mix setting of 100% is fully wet and a setting of 0% is fully dry. A setting of 50% mixes wet and dry equally.

**Size - Size** **0 to 81 feet**

Size controls the approximate size of the simulated room. The adjustment is in feet and corresponds to the largest dimension of the room. When setting small room sizes, make sure to keep the  $rt60$  small as well, or the reverb will sound unnatural.

**PreDelay - PreDI** **0 to 81 milliseconds**

The pre-delay parameter adjusts the amount of time between the dry signal and the initial reflections of the reverb. Larger pre-delay settings are often used to give the illusion of a larger space.

**HighCut - HiCut** **1000 to 20000 Hertz**

The highcut parameter controls how much the high frequencies are attenuated within the reverberator. This simulates the natural high-frequency absorption of air and of draperies, carpet, human bodies, etc. Leave this setting at its maximum to get a very bright, artificially white sounding reverb. Close it down to get a warmer, more natural sound.

## Normal/Gate On Decay section

### Reverb Decay Parameters (Normal/Gate On)

These parameters control the decay characteristics for the reverb during normal operation. If you are using the reverb gate, see the gate section to see how these settings are affected by gate operation.

These parameters control how the reverb decays within different frequency ranges. Use these to fine tune the sound of the reverb decay.

**Reverberation Time - Rt60** **0.1 to 100 seconds**

Rt60On controls the reverb decay time. It is adjusted in seconds, and is APPROXIMATELY the time for the reverb to decay 60 dB after being hit with a sound. Generally, longer reverb times make the room sound more 'live'. Usually very long reverb times are not found in very small rooms, so settings like this will tend to sound unnatural.

## Soundscape

### Low Frequency Decay - LoDc                      0.1 to 10.0 (ratio)

This controls how fast the low frequencies (below the low crossover frequency) decay relative to mid-band frequencies. The control is in proportion to the  $rt60$  adjustment ( $rt60On$ ). When set to 2.0, the low frequencies will take twice as long to decay as the mid-band frequencies. When set to 0.5, the lows will decay in half the time of the mids. Adjust LoDc to values less than 1.0 if there is too much low frequency "rumble" in the reverb. If the reverb sounds too thin, use higher values.

### Low Frequency Crossover - LoXO                      100 to 1000 Hertz

This controls the crossover frequency between low and mid frequencies for the reverb time control. Frequencies below this setting will be affected by the setting of the Low Frequency Decay control.

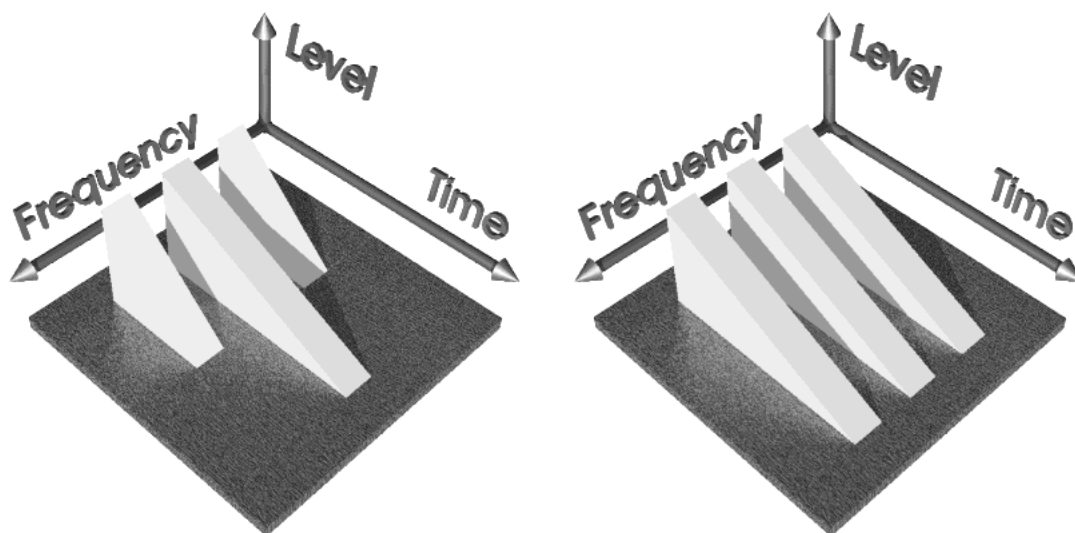
### High Frequency Decay - HiDc                      0.1 to 10.0 (ratio)

Same as Low Frequency Decay, except for high frequencies (those above the High Crossover Frequency.)

### High Frequency Crossover - HiXO                      1000 to 10000 Hertz

This controls the crossover frequency between mid and high frequencies for the reverb time control. Frequencies above this setting will be affected by the setting of the High Frequency Decay control.

The diagram on the left illustrates the reverb decays of the low, mid and high frequencies when the LoDc and HiDc settings are set at 0.5.



The diagram on the right illustrates the reverb decays of the low, mid and high frequencies when the LoDc and HiDc settings are set at 1.0.

## Gate Off Decay section

The following 5 parameters function exactly as the above 5 parameters, except that they are only active when the gate is in the 'off' position. Please see the description of the gate parameters for a more thorough explanation.

Reverberation Time - Rt60	0.1 to 100 seconds
Low Frequency Decay - LoDc	0.1 to 10.0 (ratio)
Low Frequency Crossover - LoXO	100 to 1000 Hertz
High Frequency Decay - HiDc	0.1 to 10.0 (ratio)
High Frequency Crossover - HiXO	1000 to 10000 Hertz

### Gate Related Parameters

The gate is used to get that classic, un-subtle gated reverb effect that is often used on kick or snare drums in pop music.

When the input audio is above the gate threshold, the gate is considered turned 'on', and the normal rt60 parameters are in effect. When the gate is enabled, and the level goes below the gate threshold, the gate turns off, and switches to the 'off' versions of the rt60, rt60Low, rt60High parameters.

*Note: There is not really a gate on the reverb outputs. The gate is simply a device to automatically change the reverb decay settings. The gate is only controlled by the LEFT input.*

To get the classic sound, set the normal rt60 (rt60On) to a high value, like 100 seconds. Set the gated rt60 (rt60Off) to a low value, like 0.1 seconds.

By increasing the 'gate off' rt60 parameter and decreasing the 'gate on' rt60, more subtle versions of the gated sound can be created. This can be very useful for 'beefing up' an otherwise wimpy snare sound.

**Gate Level** **-60 to 0 decibels**

Controls the threshold for the 'gate'. When the gate is enabled, the input signal must be above this threshold for the gate to 'turn on'.

**Gate Enable** **off/on**

Set this to on to enable gate action. When set to off, the gate action is disabled and the 'gate on/normal' parameters are always in effect.

**Gate Hold Time****0 to 1000 milliseconds**

The hold parameter is used to lengthen the amount of time that the gate stays on after the input has dropped below the threshold setting. This is useful to lengthen the gated reverb effect, even when the input hit is very impulsive.

**Reverb Post - EQ Parameters**

These parameters are used to EQ the overall reverb effect. They control a simple low and high shelving EQ. The difference between this and the above decay params is that the decay parameters control how fast the reverb decays at a given frequency, while the EQ simply boosts or cuts a given frequency range, similar to using your mixing console to EQ an effect return.

**Low Frequency EQ Level - LoLvl****-20 to +20 decibels**

Amount of boost or cut for low frequencies, in decibels (dB). A boost of 6 dB will make frequencies below the low crossover point twice as loud as those above the crossover frequency. A setting of -6 dB will make low frequencies half as loud as higher frequencies.

**High Frequency EQ Level - hiLvl****-20 to +20 decibels**

Amount of boost or cut for high frequencies.

**Low Frequency EQ Crossover - LoFq****100 to 1000 Hertz**

This controls the crossover frequency between low and mid frequencies for the EQ. Frequencies below this setting will be affected by the setting of the Low Frequency EQ Level control.

**High Frequency EQ Crossover - HiFq****1000 to 10000 Hertz**

This controls the crossover frequency between mid and high frequencies for the EQ. Frequencies above this setting will be affected by the setting of the High Frequency EQ Level.

**Advanced Reverb Parameters****Shape - natural room, fast, medium, or slow attack**

Controls the overall shape of the reverb. The natural room setting will give an approximately exponential reverb decay, most approximating a real room. It will also give the smoothest decay. The other settings, fast/medium/slow attack will control how hard the initial reverb reflections vary the speed 'hardness' of the initial reverb reflections hit. This is most noticeable when large amounts of pre-delay are used, combined with a percussive input. To get the smoothest attack, use setting 3, slow attack.

**Note:** In order to get a smooth decay with the 'attack' shapes, the density control must be turned up to at least 40 or 50 percent, which may add a bit of colouration to the reverb. The 'natural' setting can be used with low density settings, and will yield smooth, colourless reverberation.

**Density** 0 to 100 percent

Controls the amount of recursion within the reverb structure. Higher settings yield an increased reverb density and smoother attack, at the cost of increased coloration of the reverb.

**Chorus Rate** 0 to 100 percent

Controls the rate at which certain delays within the reverb structure are randomly swept. This randomization reduces long term flutter in the reverb tail. Setting this to zero turns off the delay randomization. Usually, this parameter should be set from 10% to 20% to get a nice reverb without noticeable chorus effects. Higher values give pronounced chorus effects.

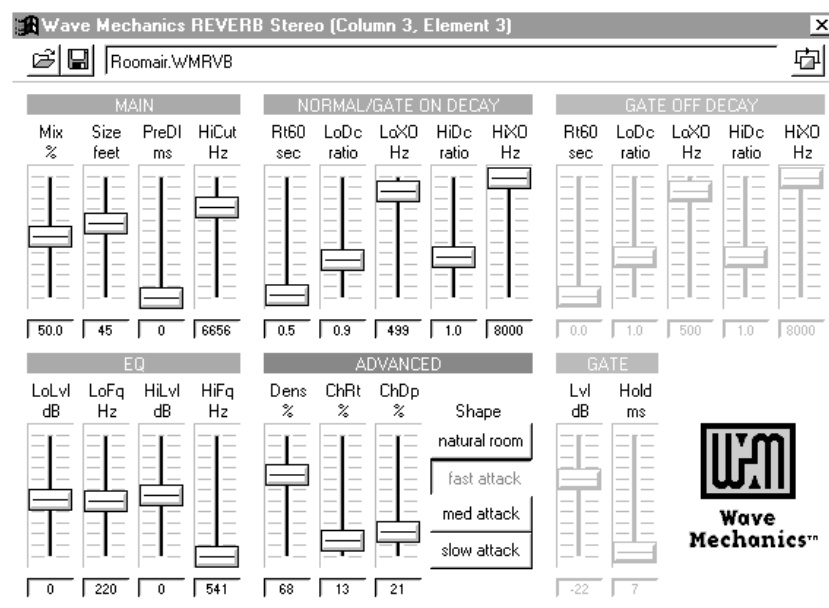
**Chorus Depth** 0 to 100 percent

Controls the amount of modulation for the delays with chorus, as a percentage of their total length. Usually a setting of 10 to 20 percent is recommended.

## Wave Mechanics Reverb Plug-in

WM REVERB	BP
Mix	100.0 %
Size	60 ft
PreDl	18 ms
HiCut	10000 Hz
Rt60	2.0 s

The Wave Mechanics reverb can be placed in a mixer channel as for other real-time mixer elements. Double clicking on the element in the mixer channel pops up a control window with faders rather than numeric parameters.





## Wave Mechanics Reverberation Presets

AMBIENCE		
Air	air.rvb	Adds the sound of air around instruments. Good for synths and other dry sampled sounds.
Ambience 1	ambie1.rvb	A bit larger than Air with a little more "room" sound.
Ambience 2	ambie2.rvb	Similar to ambience 1 but different sounding.
Amp Air	ampair.rvb	The sound of a mic'd amplifier with the mic about 15 inches (40cm) away.
Room Air	roomair.rvb	Similar to Air but larger and with a definite sense of "room"

EFX - Delays and other oddities		
Chorus Double	chrsdbl.rvb	A short slap like reverb similar to a slap delay but with some decay characteristic. High chorus settings make this wobble a bit on sustaining sounds.
Eko Flitz	ekoflitz.rvb	A spacey, panning delay that decays into diffusion Take your dramamine!
Multiply	multiply.rvb	A triple track, rhythmic like multi-tap delay sound with medium feedback.
Pan Delay 1	pandelay.rvb	A neat rhythmic panning delay - Frippertronics? Adjust size to get different tempos. Adjust density for different rhythms.
Pan Delay 2	pandela2.rvb	Like above, with shorter delays and different spatial effect.
Psycho	psycho.rvb	A strange panning pitched resonator - a flashback to the psychedelic era. Adjust room size to control the resonant frequency.
Rezon8	rezon8.rvb	A highly resonant type of reverb that adds a pitched character to drums or percussives. Sounds kind of weird on regular pitched sounds.
Smekel	smekel.rvb	A strange, swept huge sound
Vortex	vortex.rvb	The twilight zone - a strange swelling delay/verb

GATED		
Gate	gate.rvb	A basic gated reverb with a short, tight decay.
Good Gate	goodgate.rvb	A bit longer gate with a longer decay character. Not as clipped as Gate.
Metal Gate	metlgate.rvb	A strange metallic sounding gated reverb specifically good on percussive material. Sounds strange though!
Non-linear	nonlin.rvb	Not quite a gate reverb and not quite a room reverb. A thick short wash with short decay. Great on percussive material.



<b>Perc Gate</b>	percgate.rvb	A short gate with a medium short decay good for, you guessed it, percussive material.
<b>Semi Gate</b>	semigate.rvb	A gate reverb with a relatively smooth decay rather than the normal short decay that is associated with gate reverbs.
<b>White Gate</b>	whitegat.rvb	An intense, uncoloured gate effect.
<b>Zip Gate</b>	zipgate.rvb	Lot's of delays with a gate. Try it on percussion.

<b>LARGE - Halls and other large spaces</b>		
<b>Arena</b>	arena.rvb	The large, highly reverberant hockey arena with a long decay.
<b>Big Hall</b>	bighall.rvb	A large hall reverb similar in size to Carnegie Hall.
<b>Big Room</b>	bigroom.rvb	A large room reverb, bigger than a living room.
<b>Big Space</b>	bigspace.rvb	Big, long and spacey.
<b>Church</b>	church.rvb	A large, highly reverberant space similar to a medium sized cathedral.
<b>Deep Space</b>	deepspce.rvb	A huge wash of reverb good for ambient slow sounds.
<b>Galaxy</b>	galaxy.rvb	Another real reverb with a long decay time, good for those spacey sounds.
<b>Hallish</b>	hallish.rvb	A good all purpose hall like sound. Kind of useful for all types of sounds.
<b>Long &amp; Wide</b>	longwide.rvb	A long reverb with a nice wide stereo field.
<b>Long Silk</b>	longsilk.rvb	A long unnaturally silky decaying verb. Also a bit spacey.
<b>Nice Hall</b>	nicehall.rvb	A really good all around medium sized hall reverb with a smooth decay.
<b>Taj Mahal</b>	tajmah.rvb	No, not the Donald kind, but the real thing. Large, spacious with a long decay time.
<b>Theatre</b>	theatre.rvb	Something like the inside of an old, boingy movie theatre. Use sparingly as it can be somewhat "resonant on certain pitched sounds.

<b>MEDIUM - Rooms and Chambers</b>		
<b>Bloom Verb</b>	bloomvrb.rvb	A medium sized hall like reverb where the attack of the reverb builds up slowly and then decays.
<b>Chamber</b>	chamber.rvb	A medium sized pretty reverberant chamber with the source in the middle of the room.
<b>Empty Room</b>	emptyrom.rvb	The room you just emptied before you paint the walls. Bright and pretty reverberant.
<b>Empty Club</b>	emtyclub.rvb	Sounds like a concrete medium sized club during a sound check.
<b>For Piano</b>	forpiano.rvb	A medium hall like reverb that is good on piano sounds.

## *Soundscape*

<b>Garage</b>	garage.rvb	A empty two car garage, bright, reverberant and a bit "ringy".
<b>Large Room</b>	largeroom.rvb	A large room, semi bright that sound good on drums.
<b>Medium Hall</b>	medhall.rvb	A medium sized hall reverb. Need we say more.
<b>Rehearsal</b>	rehursal.rvb	A larger sized rehearsal room/hall like you might find in your average church basement.
<b>Small Hall</b>	smlhall.rvb	A small, fairly bright hall.
<b>Stairwell</b>	stairwel.rvb	A dark, concrete stairwell.

<b>PLATES</b>		
<b>Bright Plate</b>	brtplate.rvb	A long thin bright sounding plate like reverb, good on vocals, cymbals and such.
<b>Dark Plate</b>	drkplate.rvb	A medium long plate like reverb with a muted high end decay.

<b>SMALL - Room Reverbs</b>		
<b>Bathroom</b>	bathroom.rvb	A small bright highly reflective room sounds like a medium bathroom.
<b>Bedroom</b>	bedroom.rvb	A smallish room sound with a medium dark character.
<b>Booth</b>	booth.rvb	A small semi-dead sounding booth in a recording studio.
<b>Living room</b>	livingrm.rvb	The room you got to when you entertain your in-laws. Slightly large, medium dark form all the furniture, carpets and drapes.
<b>Men's Room</b>	mensroom.rvb	Similar to Bathroom but a bit bigger and a bit more reverberant.
<b>Oil Drum</b>	oildrum.rvb	A very ringy small reverb that sounds like the inside of a medium sized oil drum.
<b>Real Room</b>	realroom.rvb	The name says it all. Sounds like a real, medium small room. Good on guitars and drums among other sounds.
<b>Roomish</b>	roomish.rvb	Sounds something like a smallish room.
<b>Slap Room</b>	slaproom.rvb	A medium sized room with a long pre delay time and a shortest decay time gives a slap delay effect to the reverb.
<b>Small Booth</b>	smlbooth.rvb	A small rather dead sounding booth from your favourite studio.
<b>Store Room</b>	storoom.rvb	A medium, dark room, filled with lots of cardboard.
<b>Studio</b>	studio.rvb	A bright, very short reverb, great for livening up dry instruments or vocals.