



# SONALKSIS

## Digital Grimebox



## Operation Guide

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# Introduction

This guide describes the features, operation and applications of the Sonalksis Digital Grimebox. For detailed installation instructions, please refer to the *Sonalksis Plug-in Manager User Guide*. You can read more about general features common to all Sonalksis plug-ins in the *Universal Plug-in User Guide*.



The Sonalksis Digital Grimebox

The Sonalksis Digital Grimebox is a creative sonic degradation plug-in. The Digital Grimebox features an adaptive bias technology which is psychoacoustically optimised to generate flattering cubesque even-order distortion. It is comprised of a bitcrusher, a downsampler, the adaptive bias distortion and a filter. The plug-in can be used to achieve a variety of sonic effects including, but not limited to:

- Downsampling of audio to create subtle or not-so-subtle lo-fi effects
- Bitcrushing of transient-rich audio to add emphasis
- General bitcrushing tasks
- Clipping of transient signals to enhance and excite top end energy
- introducing harmonic distortion to fatten bass and other tones

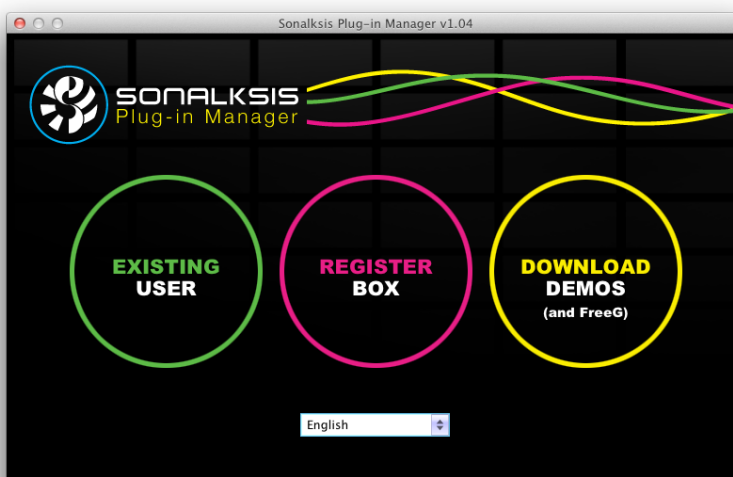
The Digital Grimebox also contains a selectable low pass filter, providing more selective control of the elements to be effected. Like all the plug-ins in the 'Creative Elements' series, the Digital Grimebox is above all efficient, intuitive and direct - and therefore very simple to use, providing great results with minimal effort.

# Installation



All Sonalksis plug-ins are installed using the 'Plug-in Manager'. The Plug-in Manager simplifies the task of managing multiple Sonalksis plug-ins, and takes care of downloading, installing, authorising and updating your Sonalksis plug-ins.

Detailed instructions can be found in the *Plug-in Manger User Guide*.



## Authorisation

If your computer is internet enabled, all license authorisation takes place automatically. When you install Sonalksis plug-ins, any plug-ins for which you have licenses will be authorised by the Plug-in Manager.

If your audio computer is not internet enabled, you must go to the 'Product Activation' section on the Sonalksis website in order to obtain an authorisation file. You will need the 'Activation Code' that is displayed when you run the Plug-in Manager on your offline system. You can then download your authorisation file which you simply need to drag-and-drop onto the Plug-In Manager window.

Unlicensed Sonalksis plug-ins will function for 14 days after installation without authorisation, after which the plug-ins will no longer process audio. After this period, you can still reactivate a plug-in by obtaining a valid license.

# Operation

This section describes the functions of the Digital Grimebox. You can read more about general features common to all Sonalksis plug-ins in the *Universal Plug-in User Guide*.

Bitcrushers and downsamplers are used creatively with audio, and perform a specialist yet vital function in modern sound and music production. The Digital Grimebox is a new generation of audio crusher, using 'adaptive bias' and a hybrid crush algorithm.

Generally speaking, bitcrushing is an integer operation producing very harsh odd order harmonics. Downsampling on the other hand can produce more subtle degradation of the signal and has different uses and is applied in different situations. With the Digital Grimebox Sonalksis has created a hybrid crusher allowing smooth control over the crushing processes, creating unique and more instantly usable effects than previously offered by standard bitcrushers and downsamplers.

The Digital Grimebox also utilises 'adaptive bias' technology, which subtly alters the bias of the distortion depending on settings and signal, allowing each of the four crush types to produce effects ranging from barely noticeable to total signal annihilation.

The hybrid crusher models also provide unique sculpting opportunities by offering combinations of bitcrusher and downsampler within a single mode selection.

Sensitive to the many applications of bit crushers and downsamplers, a number of different crusher 'modes' have been developed. The four modes available in the Digital Grimebox, when used in combination with the other settings, enable a large assortment of sounds to be achieved with a minimal set of parameters - all thanks to the hybrid model and 'adaptive bias' technology.



The DEPTH dial is the primary control for the Digital Grimebox. At the full clockwise position, it sets the depth of the crush effect to zero. The full anticlockwise position sets it to 100% crush.

For bitcrushing modes, the depth determines the number of bits to which the signal is crushed. This can be either integer or non-integer depending on the 'step' control. In downsampling modes the depth determines the downsampling ratio. In hybrid modes the depth alters both in varying amounts.



The CLIP switch selects the threshold above which the integrated clipper-limited circuit activates. The clipper-limiter produces a tight, clip-like limiting effect, particularly useful for achieving a gritty, driven, edgy feeling from drums.



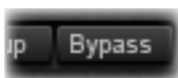
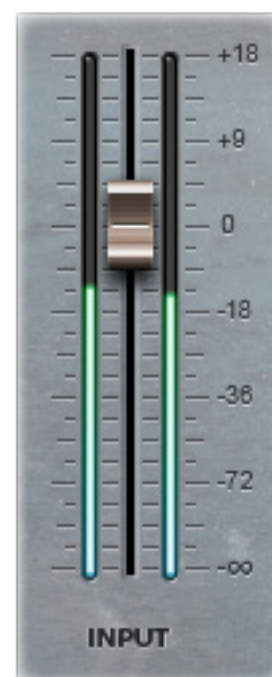
The Low Pass Filter (LPF) switch can optionally switch in a low pass filter based at frequencies of 2kHz, 6kHz or 12kHz. This can be useful for two reasons, firstly if you only want to apply the crush effect to the low frequency elements of the source material, but more usefully it can be used to reduce the sometimes over emphasized high frequencies that are produced from the distortion, taming the highs if they become a little too 'buzzy' or 'fizzy'.

The MODE switch determines the type of crushing effect. CRUSH mode is a pure bitcrusher. DWNS (downsample) mode activates only the downsample crush mode. The SMASH and GRIME modes are hybrid bitcrush/ downsample models, with SMASH being psychoacoustically optimised for more transient material (ie drums or percussive sounds) proving a fatter squelchier effect, while the GRIME mode is more suited to tonal/melodic tasks.



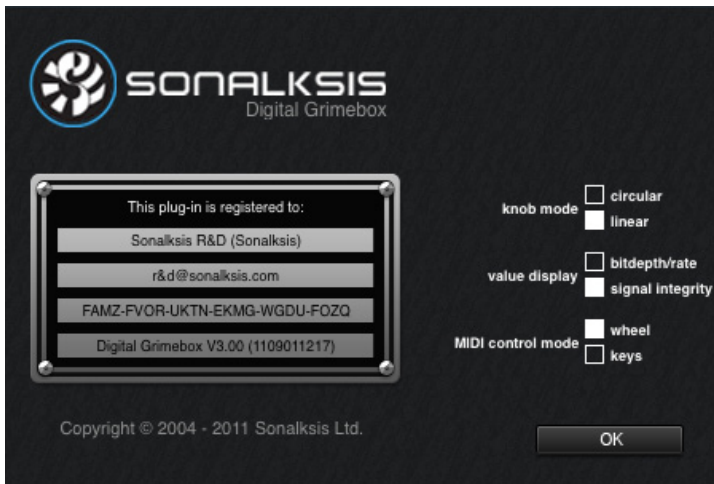
The STEP option selects between integer and non integer operation of the bitcrusher and downsampler. With STEP activated the bitcrusher and downsampler behave in a traditional integer manner, whilst with STEP deactivated non-integer values can be dialed in, for example bitcrushing to 6.75 bits.

The INPUT Gain fader is used to change the level of the input signal. The gain structure within the Digital Grimebox is calibrated so that the output gain is compensated to match the input level regardless of input gain setting; therefore no output level adjustment should be necessary.



The Bypass button switches the entire filter in or out of circuit. When bypassed, the meter will become inactive as an indication of the bypassed state. The Bypass control may be used for simple 'In/Out' comparisons, or automated to effectively switch the filter on or off during use. The Bypass in the the Digital Grimebox should be used in preference to any 'audio host' bypass as it will guarantee glitch-free in/out transitions, thanks to the use of high quality cross-fade circuitry.

# Preferences



The user preferences and registration page is accessed by clicking the SETUP button on the bottom left of the interface. To exit the setup screen click the OK button.

All preferences are stored and recalled according to the current system user, therefore a unique set of preferences is maintained for each system user.

The setup page also displays the software version.

## Control Preferences

- knob mode - sets the default knob mode.

## Display Preferences

- value display – when ‘signal integrity’ is selected, the depth control value will displayed as a percentage between 100% (total signal integrity) to 0% (absolutely no signal integrity whatsoever!). When ‘bitdepth/rate’ is selected, the depth control value will be displayed as the bitcrush depth and the downsample ratio.

## MIDI Options

- MIDI control mode - selects whether the plug-in responds to control wheel midi data or key (note on) midi data.

The Digital Grimebox can react to MIDI messages. The MIDI specification for the plug-in is defined in Appendix B.

Note that in order to feed MIDI into the plug-in, you should refer to your audio host software documentation. [It may be necessary to instantiate the plug-in as a software instrument].

# Support



You can visit the Sonalksis website to find the latest product information. If you are a registered user you will automatically receive relevant information about new releases and updates, unless you unsubscribe from this service.

All Sonalksis plug-ins are installed, authorised and updated using the 'Plug-in Manager' application. You can download this application from the Sonalksis website.



If you encounter any difficulties when installing or using our products, please ensure that you have read all appropriate documentation, including the relevant user guides and FAQ on our website before contacting us.



If you are unable to resolve your issue after reading all appropriate documentation, you can log in to your Sonalksis user account on our website and access the 'Support' section where you can request direct assistance.

**[www.sonalksis.com/support](http://www.sonalksis.com/support)**

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# Appendix A: Technical Specifications

## Sonalksis Digital Grimebox Supported Sample Rates:

- 44.1 kHz
- 48 kHz
- 88.2 kHz
- 96 kHz
- 176.4 kHz
- 192 kHz

## Sonalksis Digital Grimebox Control Ranges:

Clip values	Signal Integrity Range	Low Pass Filter	Operation Modes
+12 0 -12	0% - 100%	off 12kHz, 6kHz, 2kHz	'Crush' 'Smash' 'Grime' 'Downsample'

# Appendix B: Midi Specifications

## WHEEL MODE

	Function	Transmitted	Recognised	Remarks
Basic Channel		X	1-16	
Mode		X	X	
Note Number	48-50 60-64 72-77 84-89	X X X X	O O O O	STEP ON/OFF CLIP THRESHOLD LPF CUTOFF MODE
Velocity		X	X	
After Touch		X	X	
Pitch Bend		X	X	
Control Change	0 1 (MODWHEEL) 2 3 4 5 6	X X X X X X X	O O O O O O O	INPUT GAIN DEPTH STEP ON/OFF CLIP THRESHOLD LPF CUTOFF MODE BYPASS
Program Change		X	X	
System Exclusive		X	X	
System Common		X	X	
System Real Time		X	X	
Aux Message		X	X	

## KEYS MODE

	Function	Transmitted	Recognised	Remarks
Basic Channel		X	1-16	
Mode		X	X	
Note Number	0 - 127	X	O	MIN DEPTH = 0 MAX DEPTH = 127
Velocity		X	X	
After Touch		X	X	
Pitch Bend		X	X	
Control Change	7 16 17 18 19	X X X X X	O O O O O	INPUT GAIN STEP ON/OFF CLIP THRESHOLD LPF CUTOFF MODE
Program Change		X	X	
System Exclusive		X	X	
System Common		X	X	
System Real Time		X	X	
Aux Message		X	X	

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