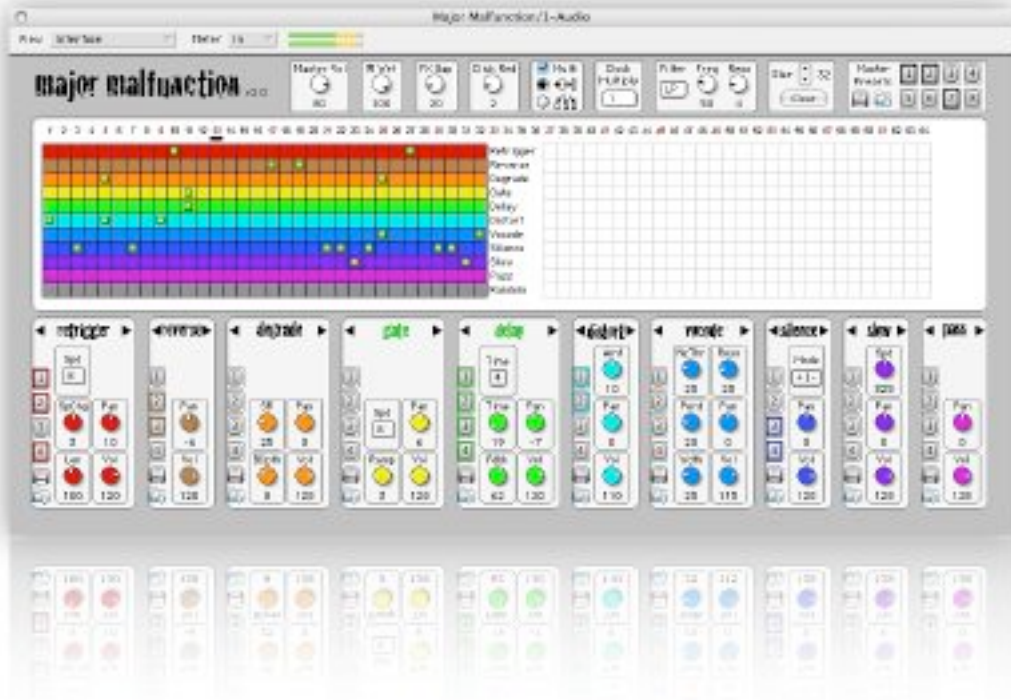


Major Malfunction v2.0.1



major malfunction
*.mangle, glitch & fsu in **ableton live**.*

Table Of Contents

Table Of Contents	2
Overview	5
What's New	6
System Requirements	7
Installation	8
Authorization	9
Demo Limitations	10
Usage	11
General Controls	12
<i>View</i>	12
<i>Meter</i>	12
<i>Master Vol.</i>	13
<i>% Wet</i>	13
<i>FX Gap</i>	13
<i>Click Red</i>	14
<i>Multi</i>	14

<i>Clock Multiply</i>	17
<i>Filter / Freq / Reso</i>	17
<i>Size / Clear</i>	17
Hints	18
Individual Effects	19
<i>Retrigger</i>	19
<i>Reverse</i>	19
<i>Degrade</i>	20
<i>Gate</i>	20
<i>Delay</i>	21
<i>Distort</i>	21
<i>Vocode</i>	22
<i>Silence</i>	22
<i>Slow</i>	23
<i>Pass</i>	23
<i>Random</i>	23
Randomization of Effect Parameters	24
Presets	25
<i>Overview</i>	25

<i>Saving & Loading Master Presets</i>	28
<i>Saving & Loading Effect Presets</i>	29
Automation	30
Known Bugs and Limitations	31
Acknowledgements and Thanks	33
Contact	34
Version History	35

Overview

Major Malfunction is an audio plugin specifically created for use in Ableton Live. It allows you to easily mangle, glitch, slice, and dice your real-time audio. You can use it as either a VST or as an AU plugin in Live on a Macintosh.

Major Malfunction will probably work fine in VST and AU hosts other than Ableton Live, but it is not guaranteed to have perfectly tight timing in all situations on those hosts; Ableton Live is the only officially supported environment. That said, we've had many reports of very satisfied users with other hosts too, so feel free to try and use it in other applications!

What's New

Major Malfunction version 2.0 boasts several exciting new features, as well as some bug fixes:

- Now supports multiple effects per step, "Multi Mode" (our most requested enhancement!)
- In Multi Mode, ability to route audio in Serial or in Parallel through effects
- In Serial Multi Mode, can rearrange effects in any desired order
- Much more efficient than previous versions; now consumes CPU based on which (and how many) effects are active at any moment in time
- Now authorizes correctly for systems using OS X FileVault.
- Now authorizes correctly for systems with User home folder on different volume than boot volume
- Small miscellaneous user interface improvements and fixes

System Requirements



- Mac G4 667 MHz or better; both PowerPC and Intel architectures supported (Universal Binary)
- Mac OS 10.3.9 or greater
- Ableton Live, v4 or greater (earlier versions may work fine, but not tested)
- Cycling '74 Pluggo, Pluggo Jr, or Pluggo Runtime, v3.6.1 (Pluggo Jr and Pluggo Runtime are both free)

Installation

Be sure to download the correct package for your platform and Pluggo status; if you already have installed Cycling '74's Pluggo, Pluggo Jr, or Pluggo Runtime, version 3.6.1, then you do not need the package that includes the Pluggo Runtime. If you don't have a Pluggo installation, be sure to download and the package that includes the Pluggo Runtime.

Locate the Major Malfunction file you downloaded, and double click it to mount the disk image. Then double click on the installer file located in that disk image to begin the install process. You will need to provide the Mac's Administrator password for the installation. At the end of the installation, Pluggo's Audio Unit Scan application will automatically launch and run. This will ensure that you can use Major Malfunction as either a VST or an AU plugin within Live.

Authorization

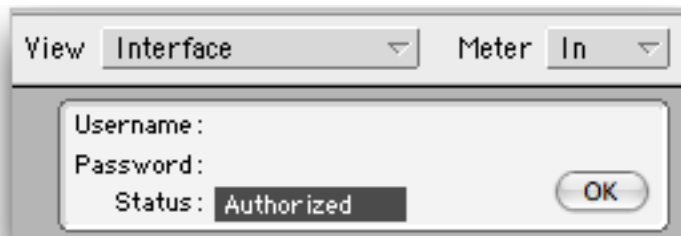
If you're trying the demo version of Major Malfunction, you can start to use it immediately after installing.

If you are installing the full version of Major Malfunction, you'll need to authorize it before being able to use it:

Navigate to /Applications/Major Malfunction/, and double click the Authorize Major Malfunction.app application located there. Supply the requested information, and click Authorize. You should now be able to start up Ableton Live, and use the Major Malfunction plugin.

Please note that all users will need to authorize the version 2.0 Major Malfunction plugin prior to using it, even if you authorized one of the previous versions on your system.

To verify your authorization status, you can either start the Authorize Major Malfunction application, where your status will be displayed, or alternatively click the Major Malfunction logo within the Major Malfunction plugin itself; your authorization information will be revealed directly within the plugin:



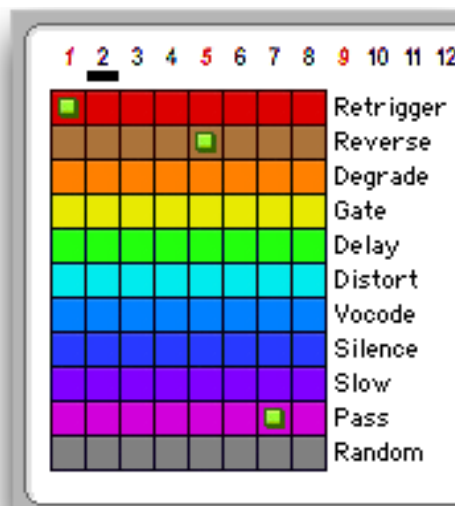
Demo Limitations

The Major Malfunction demo is feature complete; the only difference between it and the full version is that emits a beep every 20 seconds.

Usage

Major Malfunction is used as insert effect on an audio track. It sequentially cycles through the number of steps in its grid (from a minimum of 1 up to a maximum of 64 steps). As it progresses through the steps, you can invoke an effect (or effects) at any step, and that effect will continue until it reaches the next effect(s). A black indicator appears under the number of the step you are currently at. The cycle is restarted at step 1 when Live is restarted at step 1 of its sequence as well. The currently active effect will also have its name turn green in the effect section.

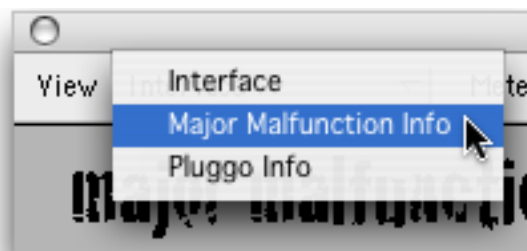
Example: The grid to the right is 8 steps long; for steps 1 through 4, the retrigger effect will be applied to the audio. For steps 5 through 6, the reverse effect will be applied. For steps 7 through 8, the original audio will pass through unaltered, since the pass “effect” is selected. The image shows Major Malfunction currently at step 2; since the retrigger effect is active, the retrigger name turns green to indicate its active status:



General Controls

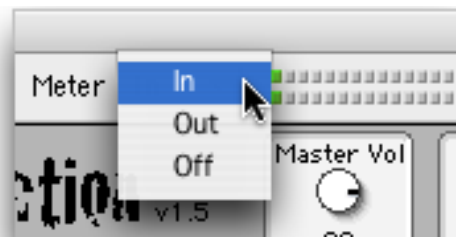
View

The View menu allows you to change what is displayed in the plugin window. The Interface view displays the main plugin window, allowing you to interact with the plugin. The Major Malfunction Info view displays version, copyright, and contact information, as well as acknowledgments. The Pluggo Info view displays information about Pluggo and other Cycling '74 information.



Meter

The Meter menu allows you to change whether the displayed meters show incoming audio levels (In), outgoing audio levels (Out), or whether they are not displayed at all (Off).



Master Vol

Controls the master volume output of the entire plugin.



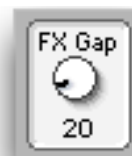
% Wet

Adjusts the wet/dry mix percentage of the audio that is output. A setting of 0 is equivalent to sending the completely dry signal from the plugin. 100 is completely wet.



FX Gap

Creates a period of silence at the end of the first of two abutting effects; the duration is controlled by the dial, and is in milliseconds. This can be used to eliminate clicks and other jarring sounds that occur when a new effect starts. It can also be used creatively (especially at higher amounts), to create rhythmic breaks of silence in your audio stream.





Each blue section corresponds to 20 milliseconds of silence

Click Red

Reduces clicks at the start of each new effect, by reducing the “attack” of the effect; the dial controls the amount of time, in milliseconds, that it takes the effect to ramp up to full volume.



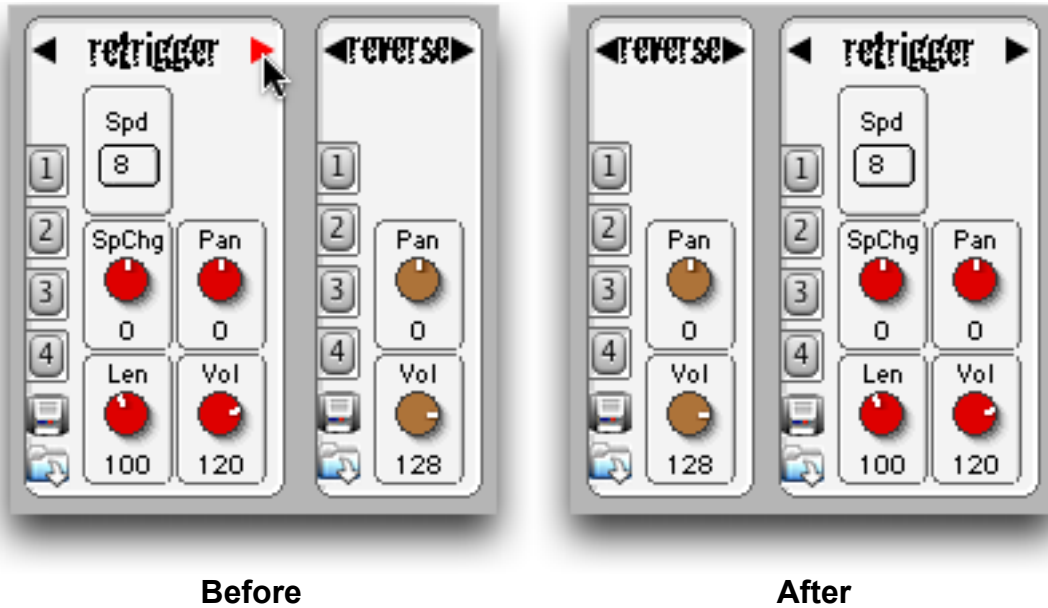
Multi

When Multi mode is off (unchecked), only one effect can be selected for each grid step (column). This is the way Major Malfunction worked in all previous (pre-2.0) versions. When Multi Mode is turned on (checked), more than one effect can be selected for each grid step. Multi Mode works in one of two different modes, selected with the radio buttons beneath the Multi checkbox. The first mode, selected with the top radio button, with arrows flowing from left to right through the effects, indicates *Serial Mode*. The bottom radio button, with arrows flowing downwards through each effect, selects *Parallel Mode*. These modes are described in further detail below.



In Parallel Mode, the audio input to Major Malfunction is routed through each of the selected effects in parallel, and each effect's output is mixed together for the final plugin audio output.

In Serial Mode, the incoming audio is first routed through the *leftmost* active effect; its output is then routed through the next active effect to its right, and so on through each active effect, moving from left to right. The overall order of the effects can be changed (and stored with your Live session and in presets), by using the left and right arrows on the top of each effect. To move the effect leftwards one space, click the left arrow once; to move it rightwards, click the right arrow once. In the example below, the right side arrow of the Retrigger effect was clicked once, moving it from the left of the Reverse effect to the right of the Reverse effect:



When changing from Multi Mode active to inactive (i.e. to Single Mode), if there were multiple effects selected for steps while in Multi Mode, only the topmost effect in each grid column is preserved after switching to Single Mode.

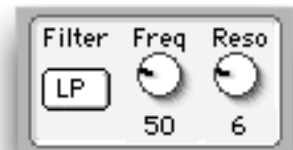
Clock Multiply

Causes the tempo at which the steps in Major Malfunction are cycled through to be at multiples of the Live tempo. Numbers less than 1 cause Major Malfunction's tempo to be slower than Live's; numbers greater than 1 cause Major Malfunction's tempo to be faster than Live's.



Filter / Freq / Reso

A multipass resonant filter that is applied post-effects to the entire Major Malfunction output. You can turn the filter off completely (Off), or select from a low pass (LP), band pass (BP), or high pass (HP) filter. Frequency (Freq) controls the filter's cutoff frequency, and Resonance (Reso) controls the resonance of the filter.



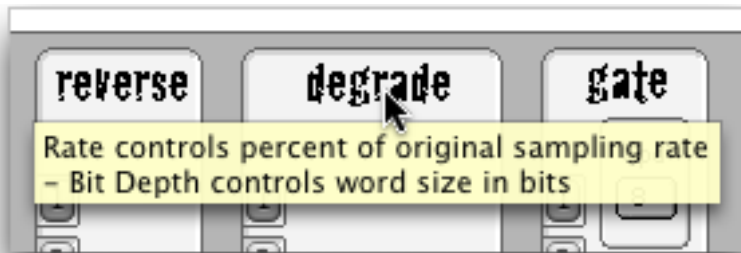
Size / Clear

Adjusts the number of active steps in the grid, within the range of 1 through 64. You can increase or decrease the steps one at a time by clicking on the up or down arrows; you can also move four steps at a time by Ctrl-clicking on the up or down arrows. You can also click and drag up or down on the number itself to increase or decrease the number of steps. The Clear button removes all effects from the grid.

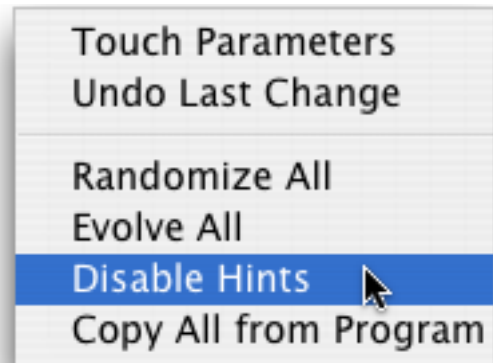


Hints

Major Malfunction has multiple sections of its user interface that contain embedded hints, sometimes known as tooltips, that appear when you hover your mouse over the interface element for a second or two, as in the example below:



To disable hints, Command-Click (⌘-Click) anywhere on the plugin window, and select Disable Hints in the contextual menu that appears. Likewise, choose Enable Hints from within the menu to have the hints reappear. *Please note that hints are currently broken when using the VST version of the plugin.*



Individual Effects

Each of the colored rows in the grid has a similarly colored corresponding effect section below the grid:

Retrigger

This effect retriggers the first part of the incoming audio at regular intervals. The length of the initial chunk of audio that it retriggers is controlled by the *Len (Length)* parameter. The frequency at which it retriggers that audio is controlled by the *Spd (Speed)* dropdown menu; the number selected there indicates how many repetitions will be heard per beat (4 steps). You can successively alter this speed during the effect's period of activation using the *SpChg (Speed Change)* control; positive values will make the retriggers come faster, negative numbers will slow them down. You can also alter panning and volume of the audio as desired.

Reverse

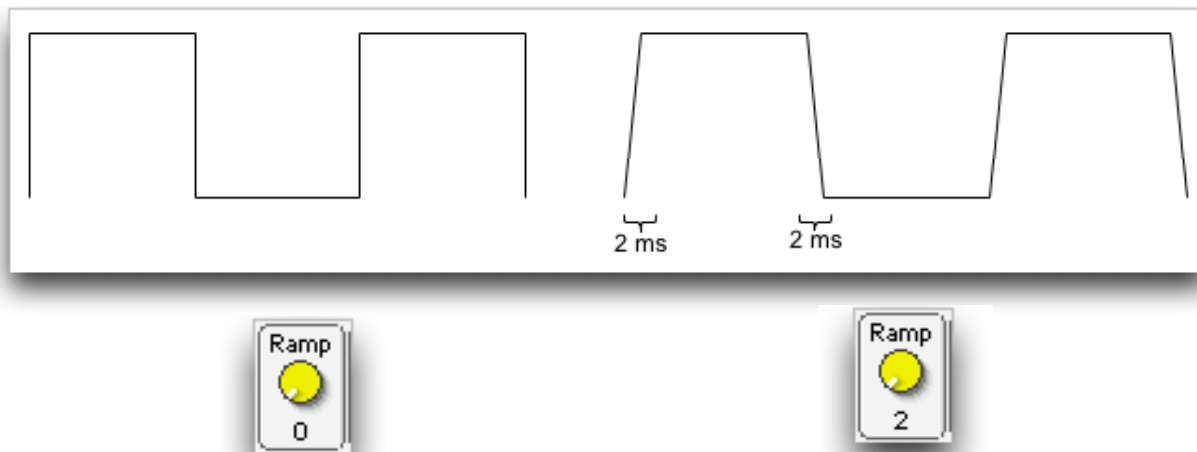
This effect divides the number of steps that it is active for in two; during the first $\frac{1}{2}$ of the steps, it plays the incoming audio forward; during the second $\frac{1}{2}$ of the steps, it plays that same audio in reverse. You can also alter panning and volume of the audio as desired.

Degrade

This effect degrades the incoming audio, by altering both the sample rate and the bit depth. The SR (Sample Rate) parameter is the percentage of the original sampling rate; the BDpth (Bit Depth) parameter controls the word size of the audio, in bits. You can also alter panning and volume of the audio as desired.

Gate

This effect turns the audio on and off, or gates it, at specified intervals. The Spd (Speed) dropdown indicates how many gates will occur per beat (4 steps). The Ramp parameter allows you to specify the ramp up and down time for the gate:



Small Ramp values are helpful at minimizing clicks during the Gate effect. At higher values, the effect can be used creatively. You can also alter panning and volume of the audio as desired.

Delay

This effect passes the incoming audio through, as well as a copy of that audio delayed by a specific number of milliseconds, controlled by the *Time* parameter. You can specify an exact number of milliseconds using the *Time* dial, or you can choose presets from the *Time* dropdown menu; the number chosen in the dropdown indicates the delay time in steps. The Time dial will update if you make a selection from the Time dropdown menu. You can control the amount of delay feedback using the *Fdbk (Feedback)* control. You can also alter panning and volume of the audio as desired.

Distort

This effect distorts the incoming audio, using a nonlinear transfer function; this simulates the sound of an overdriven amplifier. The amount of distortion is controlled by the *Amt (Amount)* parameter. You can also alter panning and volume of the audio as desired.

Vocode

This effect vocodes the incoming audio. It works internally by sending the incoming audio through 15 bands of 4-pole filters, and then using a switching scheme that excites the filter with either noise or a pulse train, depending on the “noisiness” of the incoming audio. Several controls allow you to affect the vocoding: *NzThr (Noise Threshold)* sets the threshold above which noise is introduced into the audio output, *Perd (Pulse Period)* sets the pitch of the vocoded output, *Wdth (Pulse Width)* alters the character of the vocoding and *Reso (Filter Resonance)* introduces resonance to the filters. Each of these parameters can change the sound significantly. You can also alter panning and volume of the audio as desired.

Silence

This effect introduces periods of silence into the audio stream. There are 3 modes of operation, selected using the *Mode* dropdown menu. The duration of the effect is divided into two halves; in “-|-“ mode, no audio is passed through for both halves. In “+|-“ mode, audio is passed through for the first half of the effect duration, and no audio for the second half. Vice versa for mode “-|+“; no audio for the first half, and audio passed through for the second half. You can also alter panning and volume of the audio as desired.

Slow

This effect causes the audio to slow down to a stop, similar to a tape or vinyl effect. You can control the duration of the slow down effect using the *Spd* (*Speed*) dial. You can also alter panning and volume of the audio as desired.

Pass

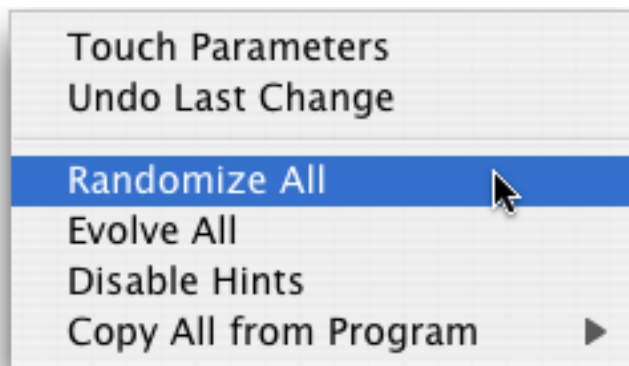
This “effect” just passes the incoming audio through to the output. You can alter the panning and volume of the audio as desired.

Random

When this “effect” is selected, a random effect from the list above (Retrigger, Reverse, Degrade, Gate, Delay, Distort, Vocode, Silence, Slow and Pass) will be selected for each cycle through the grid.

Randomization of Effect Parameters

Major Malfunction provides two ways of randomizing your current effect parameters: Randomize All and Evolve All. These options are available within a contextual menu that appear when you Command-Click (⌘-Click) anywhere on the plugin window:



Randomize All will completely randomize all of the effect parameters; Evolve All will change the effect parameters by a maximum of 5% from their existing values. Both Randomize and Evolve will not affect any of the general controls, including Master Volume, Percent Wet, FX Gap, Click Reduction, Multi, Clock Multiply or Filter controls. It will also not change either the size or content of the grid.

You can also undo your last action using the Undo Last Change function. Currently, Touch Parameters and Copy All from Program have no function.

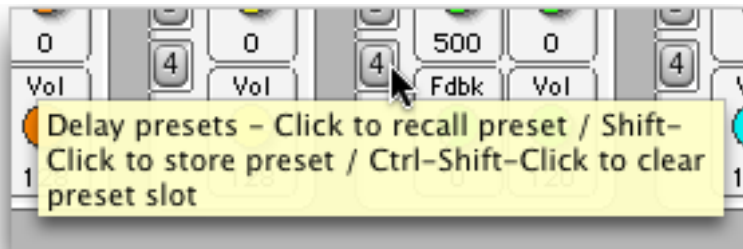
Presets

Overview

You can use presets at both the individual effect level, as well as at a global plugin level. There are four individual effect presets (numbered 1 through 4) for each effect, and eight master presets (numbered 1 through 8). In each case, the presets are used in the same way:

- Click to recall preset
- Shift-Click to store preset (overwrites an existing preset that may have been in that slot)
- Control-Shift-Click to clear preset slot

There are reminders about these conventions in the hints in each respective preset section:



If a preset is being used, a colored ring will appear around it; in each of the following examples, presets 1 and 2 are in use:



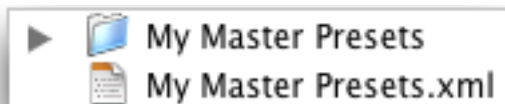
The Effect Presets store all settings for that individual effect. Invoking of these presets can be automated using Live's automation capabilities, and also can be controlled using external MIDI controllers via Live's remote MIDI functionality.

The Master Presets store **all** information about the plugin's state, including general controls, master filter, grid length and state, and all effect parameters.

When a Live session is saved, all parameters, including grid state, are saved along with it. Presets (both Master and individual Effect) are *not* saved with the session.

Saving & Loading Master Presets

You can store sets of Master Presets to disk, and load them manually at a later time if desired. Click the disk icon in the Master Preset section to store the current set of eight presets – you will be prompted for a file name and location at which to store them. An “.xml” suffix will be added to the file name you specify if it doesn’t end in “.xml” already, and additionally a folder with the name you specified (minus the “.xml”) will also be created at that location. Major Malfunction uses the contents of this folder to properly load the presets. As an example, specifying “My Master Presets” in the Save File dialog will yield the following file and folder:



To load a set of Master Presets, click the folder icon within the Major Malfunction Master Presets section, and locate the desired .xml preset file in the file dialog that appears. You should not move the folder that is created when saving a bank of Master Presets to another location, away from its

corresponding .xml file. Likewise, you should not alter its contents. Doing either of these things will cause your Master Presets to not be recalled correctly.

Saving & Loading Effect Presets

You can store sets of Effects Presets to disk, and load them manually at a later time if desired. Click the disk icon on the left side of the Effect panel to store its current set of four presets – you will be prompted for a file name and location at which to store them. An “.xml” suffix will be added to the file name you specify if it doesn’t end in “.xml” already.

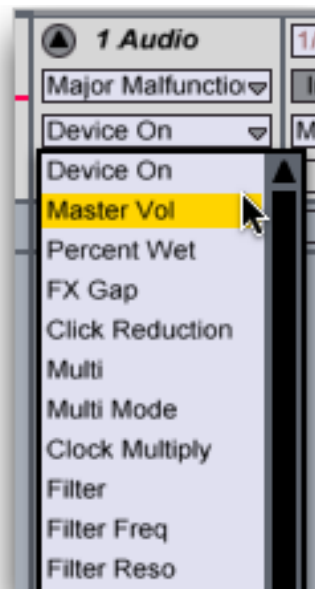
To load a set of Effect Presets, click the folder icon on the left side of the desired Effect panel, and locate the desired .xml preset file in the file dialog that appears. Take care to only load presets saved from the same effect; failing to do so will cause the presets to load incorrectly.

Automation

Major Malfunction allows for automation within Live, including all Effect controls, all Preset controls, and General controls including Master Volume, Percent Wet, FX Gap, Click Reduction, Multi and Multi mode type, Filter Mode, Frequency and Resonance, and Grid Size. The screen shot to the right shows a partial listing.

Please note that a bug in Pluggo currently causes parameters Param97 through Param106 and P107 through P128 to be visible within Live inappropriately, when using the VST version of the plugin; these are meant to be “hidden” parameters, for internal plugin use only. Modifying these parameters may cause the plugin to behave abnormally, and may unexpectedly alter the state of your Major Malfunction grid.

Each parameter responds to MIDI continuous controller messages (CC). Please refer to your Ableton documentation for instructions on how to automate parameters within Live.



Known Bugs and Limitations

- When using the AU version of the plugin, a crash occurs when quitting Live. This is being actively worked on. Although the crash seems to be harmless, the workaround for now is to “deactivate” the Major Malfunction plugin before quitting:



- When using the VST version of the plugin on Intel Macs, the retrigger, gate, and delay effects all calculate their time intervals very slightly off (e.g. 124 msecs, instead of 125 msecs) – this is a Max/MSP/Pluggo bug that Cycling '74 has been informed of. The workaround currently is to just use the AU version of the plugin, which does not exhibit this behavior. Both the VST and AU versions work correctly on PowerPC Macs.
- Hints don't work in the Macintosh VST version, only in the AU version – this is a Max/MSP/Pluggo bug that Cycling '74 has been informed of.
- When using the VST version of the plugin, several “hidden” plugin parameters are inappropriately visible within Live's automation settings. These parameters are named “Param97” through “Param106” and “P107” through “P128”. They should not be changed, as they are for

internal plugin use only. The AU version does not have this problem. This is a Max/MSP/Pluggo bug that Cycling '74 has been informed of.

- If you only have one active effect in the entire grid, and then click on it to clear it, the green indicator of that effect occasionally stays on, even though the grid has been cleared. In addition, even though no effect is heard at that point, CPU consumption may potentially stay elevated as if the last effect was still invoked. The workaround until this bug is fixed is to click the Clear Grid button at that point. This will cause the CPU to drop and the green indicator light to be cleared.
- Major Malfunction only supports 4/4 time.

Acknowledgements and Thanks

Major Malfunction is written using Cycling '74's Max/MSP and Pluggo software. In addition, it uses (with permission) some 3rd party external objects:

- cpPan~, by Nathan Wolek (<http://www.nathanwolek.com/nathanwolek>)
- LBag, LBuild LSame, Bit and Byte, by Peter Elsea (<http://arts.ucsc.edu/ems/music/research/lobjects.readme.html>)
- getpaths and createfolder, by Jasch (<http://www.jasch.ch/dl>)

I was also influenced by a matrixctrl image originally created by Anders Dahl (<http://www.cycling74.com/twiki/bin/view/Share/AndersDahl>), as I created one of my own matrixctrl images.

I borrowed liberally from Marcel Wierckx's Classic Vocoder example patch that is supplied with Max/MSP.

Major Malfunction was inspired in part by:

- Glitch, by dblue (<http://illformed.org/glitch>)
- Livecut, by mdsp (<http://mdsp.smartelectronix.com/2005/07/livecut.php>)
- BBCut, by Nick Collins (<http://www.cus.cam.ac.uk/%7Enc272/bbcut2.html>)
- SupaTrigga, by Bram (<http://bram.smartelectronix.com>)

Thanks to beta testers Andrew Pask, Ali Momeni, Kelvin Russell, Nathan Kil, Vlad Spears, Dylan Gadwa, Krikor Kouchian, Murat Uncuoglu, Jan van der

Major Malfunction v2.0.1

Toorn, Robert Rykowski, Tracy Cox, Niles Hatch, Alex Simu, Roy Bourcier, Vance Galloway, Peter Mohamed, Michael Boland.

Thanks to Andrew Burgess for helping out with the Novation automap compatibility.

Thanks to everyone at Cycling '74 and on the Cycling '74 forums for their invaluable help.

Contact

Dan Nigrin

<http://www.defectiverecords.com>

dan@defectiverecords.com

Version History

Version 2.0.1 (November 23, 2011)

- Updated so compatible with OS X 10.7.x (“Lion”)

Version 2.0 (November 23, 2007)

- New multiple effects per step, “Multi Mode”
- In Multi Mode, ability to route audio Serially or in Parallel through effects
- In Serial Multi Mode, can rearrange effects in any desired order
- Much more efficient than previous versions; now consumes CPU based on which (and how many) effects are active at any moment in time
- Now authorizes correctly for users using OS X FileVault.
- Now authorizes correctly for systems with user home folder on different volume than boot volume
- Small miscellaneous user interface improvements and bug fixes
- First version tested and validated on OS X 10.5 (Leopard)
- Built with Max/MSP 4.6.3, for use with Pluggo Runtime 3.6.1

Version 2.0 beta 1 (September 24, 2007)

- First beta release to beta testers

Version 2.0 alphas (July - October, 2007)

- Internal development

Version 1.5 (July 11, 2007)

- New effects: distortion, vocoder, slow, silence
- New enhancements to gate effect

Major Malfunction v2.0.1

- New master multipass filter
- New click reduction
- New “effect gapping”
- New clock multiplier
- New randomize and evolve functions for effect settings
- Grid state and all parameters now saved with Live session
- Improved preset management
- Improved automation support
- New ability to turn hints on/off
- New undo feature
- Now works correctly with Novation automap controllers
- Now supports multiple instance of plugin in one Live session
- Efficiency improvements “under the hood”
- Small bug fixes

Version 1.5 beta 1 (June 14, 2007)

- First beta release to beta testers

Version 1.5 alphas (February - June 2007)

- Internal development

Version 1.0 (January 13, 2007)

- First official release

Version 1.0 beta 1 (July 14, 2006)

- First beta release to beta testers

Major Malfunction v2.0.1

Version 1.0 alphas (January - July 2006)

- Internal development