



CATARACT // CREDITS

SOFTWARE DEVELOPMENT:

Thomas Hennebert Ivo Ivanov

SOUND DESIGN AND SAMPLE CONTENT:

lvo Ivanov

PRESET DESIGN & BETA TESTING:

Ivo Ivanov Thomas Hennebert Hans Besselink Francisco Godinho

USER GUIDE / AUDIO DEMOS / TUTORIAL VIDEOS:

Ivo Ivanov

PRODUCT GRAPHICS:

Product graphics and interface design: Ivo Ivanov 2D Cataract logo by DMAS3 Additional interface icons via <u>https://tabler-icons.io/</u>

LEGAL:

A

Piracy directly affects us! We need your support to be able to continue to bring you new products - please do not share our plugins and packs illegally. For full Terms & Conditions, please refer to the EULA (End User License Agreement) located in the DOCS folder with this product or visit the Legal page on our website.

This symbol refers to important technical info

This symbol refers to a tip, idea or side note

GLITCHMACHINES ®

SETUP:

- A Please note that Cataract 2.0 is an Audio Unit or **VST3**-only 64bit plugin
- *It is not necessary to uninstall or overwrite previous versions of Cataract (1.x). Cataract 2.0 can coexist with previous (now discontinued) versions of the plugin*
- A The Cataract 2.0 factory sample bank is different from the previous version and both can coexist on your system (presets are **not** cross-compatible between versions)
 - 1. Unpack the CATARACT2 .zip file
 - 2. Via the CATARACT2_INSTALLERS folder, run the installer for your system.
 - **Mac Users:** Note that there is a separate installer for the factory presets, which you should run if you wish to install the presets on your system. If your presets installer fails, follow these instructions: <u>MAC PRESET HELP</u>
 - 3. Manually place the **entire** CATARACT2_SAMPLES folder in any location of your choosing such as an internal or external hard drive where you store your samples.
 - 4. Launch your VST3 or AU DAW and load CATARACT2 on an Instrument Track.
 - 5. Follow the prompt and point to the location of the **CATARACT2_SAMPLES** folder.
 - Upon first launch, you will see a popup that prompts you to point to the CATARACT2_SAMPLES folder on your system. Cataract will remember this path so that your presets & samples can load properly. Should the folder ever need to be moved, simply navigate to the Configuration Menu (gear icon in footer) and use the "change sound library path" command to point to the folder in its new location.
 - Cataract is not played via MIDI keys on a controller. Instead, the plugin is driven by your host's clock (same as our plugin <u>Tactic</u>). To operate the plugin, you must press **PLAY** in your DAW's transport. Cataract will mirror your session's tempo and is effectively locked to your DAW's playhead position.
 - 7. Load some of the factory presets to confirm that you hear audio you're all set!
- ▲ Some hosts disable processing while the transport is idle keep in mind that most actions require the host transport to be active before taking effect.
- If you require tech support, you may reach us at: <u>glitchmachines.sales@gmail.com</u>

SEGMENT MULTIPLEXER CONCEPT:

Cataract is similar to a traditional "sample slicer" with a few key differences. Unlike slicers that typically deal with recalling markers placed within a single audio file, Cataract is driven by your DAW's clock and dynamically scans over **segments** of up to four separate audio files, loaded across two "Scanners". Segments are then distributed in time and sonically manipulated in various creative ways (hence *multiplexing*) by the plugin's numerous modulation sources, sequencers and effects. The final stage of the plugin allows you to crossfade/morph between the two audio signals emanating from the Scanners. This final crossfade can itself be modulated via the dedicated dual LFO, or sequenced via the Parameter Sequencer or DAW Automation.

The following list outlines some ways you may utilize this plugin in your projects:

Textures & Particles:

- Set the gate parameters for each scanner to a short value
- Modulate the filter and delay modules to induce particles and other textural elements
- Randomize with high percentage values (75% and higher)

Generative Layers:

- · Load random selection of samples into scanners
- Use randomized sequencers and "GEN" buttons on multiple parameters
- · Use the filter module to help the sounds/layers fit in the mix
- · Bounce out long regions of the results and edit to taste

Percussive Layers:

- Same as above except sync all possible parameters for less random results
- Use shorter samples that are percussive in nature for best results

Randomized Effects:

- Globally randomize "ALL" with shorter percentage settings (5%-25%)
- Use different samples in each slots for tonal variation
- Sculpt with Graphic EQ to dial in sweet spots for each loaded sample
- Bounce results to disc and edit out snippets to use in your timeline or samplers

Drones:

- · Load sustained & longer samples into scanners
- Modulate morph parameters with smooth random setting
- · Use the delay module with a higher feedback setting
- Scan through the samples quickly with a smaller gate or slowly with WNDW active

Melodic Phrases:

- Similar to drones but pick samples with more melodic or resonant characteristics
- Use the sequencers on the Ratio parameters to make short melodic lines

CATARACT SYNOPSIS:

Cataract 2.0 is a segment multiplexer plugin geared toward electronic music production and experimental sound design.

Cataract features an arsenal of sample scanners with various integrated effects and a global parameter sequencer that allows you to step sequence nearly every parameter of the plugin. Version 2.0 gives Cataract a total overhaul, integrating countless refinements while significantly streamlining the redesigned interface and adding exciting new features such as the FX module and its dedicated sequencer.

With its two dual Sample Scanners, X-MOD Morpher, Global Parameter Sequencer, Scan Sequencers, Effects Sequencers, Effects & Dynamics Processors, LFOs, Global Randomizer, specially curated Factory Sample Bank and 100 Factory Presets, Cataract 2.0 constructs architecturally complex patterns ranging from nuanced percussive articulations to intricate particle sound effects and all out generative hyper glitch chaos.

SCANNER A	XMOD	SCANNER B	
K	> RATE	WAVE <	
		\sim	
	RATE	WAVE	
<	> 🕐 🖄	\sim $<$	
	MASTER OUT		
SLOTS A GLOBAL RATIO A	GLOBAL A SCANNER OUT A	SLOTS B GLOBAL RATIO B	GLOBAL B SCANNER OUT B
RATIO 1 LVL 1 RATIO DEPTH	PAN LOW MID HIGH AMP	P RATIO 1 LVL 1 RATIO DEPTH	PAN LOW MID HIGH AMP
() () () () ()		i 🛈 🕞 🚺 👳 🤛	U-B (U (U (O
RATIO 2 LVL 2 RATE WAVE	MORPH 🖌 THRESH RATIO ATT REL	RATIO 2 LVL 2 RATE WAVE	MORPH 🖌 THRESH RATIO ATT REL
0 0 2 1			
SCAN A SCAN SEQUENCE		SCAN B SCAN SEQUENCE B	
/ 16 → GATE 1 BAR → C⊋		(/16 √ GATE 1 BAR √ ℃⊋	
RATE WAVE		RATE WAVE	
چ <u>ک</u> لک		چه <u>۲)</u> آله	
FLT/DLY A FX A FX SEQ A	MODS A PARAM SEQ	RANDOMIZER FLT/DLY B	FX B FX SEQ B MODS B
FILTER			TER DELAY
CUT RES MORPH TIME	FEED MIX		RES MORPH TIME FEED MIX
	0		
P P P	P P		\$ \$ \$ \$
X Ø	SCAN	A Main Ratio	X Z
CATARACT	- ¢ (INIT > @	GLITCHMACHINES
CAIARACI			

CATARACT INTERFACE:

Cataract is horizontally divided into 4 sections:

• SCANNER & XMOD - situated at the top of the user interface

SCANNER A	XMOD -			SCANNER B
	RATE		WAVE	×
	٥			
	RATE		WAVE	
				< >
	MASTER OL	TL		

SCANNER CONTROLS - situated around the center of the interface

SLOTS A		— GLO	AL RATIO	Α ———	GLOBA	LA —	SCANN	ER OUT .	Α ——		SLOTS B		- GLOB	AL RATIO	B ———	GLOBA	L B —	SCANN	ER OUT	в ——	
RATIO 1	LVL	l RAT	0	DEPTH	PAN		LOW	MID	HIGH	AMP	RATIO 1	LVL 1	RATIO	c	DEPTH	PAN		LOW	MID	HIGH	AMP
۲	e	` (C		0		æ	٢	٢		Ø	٢	0	Ċ		\bigcirc		β	۲	٢		Ø
RATIO 2	LVL :	RAT	E	WAVE	MORPH	S	THRESH	RATIO	ATT	REL	RATIO 2	LVL 2	RATE		WAVE	MORPH	S	THRESH	RATIO	ATT	REL
۲	e	` (e	<u>IX</u>		\bigcirc	ቅ	\bigcirc	()	0	€	۲	0	e	لک		\bigcirc	ዎ	0	()	0	€
SCAN A			SCAN SE	QUENCE /	۹						SCAN B			SCAN SE	QUENCE I	3					
/ 16 ~		GATE	1 BAR ~) Ç ə							/ 16 ~	(GATE	$1 \text{ bar} \sim$) ¢⊅						
۵	9	\bigcirc									۵	ছ – (\bigcirc								
RATE		WAVE									RATE	١	WAVE								
											€										
Ш	<u>[X</u>	¢၃									Ъ	<u>I</u> Z	çð								

• SEQUENCERS, PROCESSING & MODULATION - situated above the footer

FLT/DLY	A	FX A	FX SEQ A		MODS A	PARAM	SEQ	RANDOMIZER		FLT/DLY	3	FX B	FX SEC	В	MODS B
	FILTER			DELAY			с ^р	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			FILTER			DELAY	
CUT	RES	MORPH	TIME	FEED	MIX				~	CUT	RES	MORPH	TIME	FEED	MIX
\bigcirc	\sim	\sim	()	\checkmark	\sim					\bigcirc	\sim	\sim	(>)	\sim	 Image: A second s
æ	æ	æ	୫	୬	୫					æ	æ	æ	æ	æ	æ
	Ø		<u>I</u> X				SCAN A P	Main Ratio			Ø		Ľ		

• FOOTER SECTION - access to the Preset Browser and Configuration Menu

CATARACT-	< INIT	> @	GLITCHMACHINES
-----------	--------	-----	----------------



Cataract is vertically divided into 2 sections: A & B

Parameters that are relevant to **SCANNER A** are located on the left side of the user interface and labeled "**A**" where applicable.

Parameters that are relevant to **SCANNER B** are located on the right side of the user interface and labeled "**B**" where applicable.

Globally applicable elements are situated at the center of the interface and include the XMOD, Parameter Sequencer and Randomizer sections.

While this analogy dramatically oversimplifies the concept of the plugin, sonically speaking it may be helpful to think of the two sides (A/B) as decks in a traditional DJ setup. In this context, the XMOD module represents the mixer section that allows you to crossfade the signals coming from the two decks. We chose to call this crossfading process "morphing" because, thanks to the flexibility of the two cross-modulated LFO and sequencer, it yields much more complex results than a simple linear 1:1 crossfade.

PARAMETER VALUE DISPLAY:



Parameters that may require precise adjustments have been equipped with a parameter value popup display. To reveal the current value of such parameters, click on the corresponding knob. Likewise, as you adjust the relevant parameter, its value will appear in a transparent popup.

Note that some parameters don't feature this display - these parameters either have a value range from 0-1 (i.e. ON/OFF) or from 0-100%.

GEN MODE:



A

A

A

Leaf icons are situated near certain parameters. When active, these buttons set the respective parameter to a random value on each new segment trigger.

SCALABLE INTERFACE:



You may scale the Cataract user interface by dragging the bottom-right corner of the window until you reach the desired proportions. This setting is automatically saved and the plugin will launch with the set dimensions until altered.

Should the interface ever exceed the boundaries of your screen, you can trash the preferences to reset its dimensions. To do this, navigate to the preferences via the Config Menu option and trash the corresponding file before relaunching the plugin.

In some situations (on older machines or laptops with lower resolution screens), it's possible that the default UI dimensions don't allow the user interface to fully display on screen, thereby usually impeding your ability to access the Configuration Menu. In this event, it's possible to alter the preferences file by manually typing in the desired dimensions. Contact our support team if you need assistance with this.



The Config Menu, explained later in this guide, offers various options that allow you to quickly reset various plugin elements to their factory default **INIT** states.

Hold the Control/Command (Win/Mac) key to gain finer control over a parameter.

Double click a knob to reset it to its default value.

You can drag & drop samples directly onto the waveform displays.

GLITCHMACHINES ®

CATARACT OVERVIEW:



Cataract features two dual sample scanners. The set of loaded samples within a scanner play in tandem and the output can be modulated in numerous creative ways. The XMOD section signifies the final stage of the plugin where you can utilize two linked LFOs to modulate a crossfade between the audio signals emitting from the two scanners. Together with the numerous modulation, sequencing and processing facilities, Cataract can achieve complex manipulation of the source material.

SLOTS A		GLOBAL	RATIO A		GLOBA	L A —	SCANN	ER OUT /	۱ — ا		SLOTS B		GLOB	AL RATIO	B	GLOBA	L B —	SCANN	ER OUT	в ——	
RATIO 1	LVL 1	RATIO		DEPTH	PAN		LOW	MID	HIGH	AMP	RATIO 1	LVL 1	RATI	0	DEPTH	PAN		LOW	MID	HIGH	AMP
۲	\bigcirc	٢		\bigcirc		φ	٢	٢	۲	Ø	۲	0	C	-	\bigcirc		φ	۲	٢	0	Ø
RATIO 2	LVL 2	RATE		WAVE	MORPH	S	THRESH	RATIO	ATT	REL	RATIO 2	LVL 2	RAT	E	WAVE	MORPH	S	THRESH	RATIO	ATT	REL
۲	0	€	Ľ		\bigcirc	ዎ	\bigcirc	()	0	€	۲	0	Ę	<u>IX</u>		\bigcirc	Ъ	\bigcirc	()	0	
SCAN A		sc	CAN SEQ	UENCE A	۹						SCAN B			SCAN SE	QUENCE E	3					
/ 16 ~	G		1 BAR ~	Ç							/ 16 ~		GATE	1 BAR V) ¢þ						
٨	ହ – (٨	₽-(\bigcirc								
RATE	w	AVE									RATE	١	VAVE								
											€										
Ш	Ľ∕ (₹Þ									Ð	<u>X</u>	ද්ද								

Each scanner (A/B) features dedicated controls section where you're able to manipulate various key parameters, sequence scan coordinates and sculpt the audio signals from both Scanners via dedicated EQ and Compressor modules.



Below and in the center of the core parameters, you'll find the Parameter Sequencer, which is one of the most powerful aspects of Cataract. This sequencer allows step sequencing and/or realtime recording of parameter values. Here you'll also find the freshly overhauled Randomizer, as well as the Modulation sources and various effects processors, featuring a brand new dedicated effects sequencer with five new effects.

SCANNERS A/B:



The Scanner modules feature two sample slots where you can load audio files included in the Factory Sample Bank or from your own collection.

Each of the 2 sample slots are located at the top of Cataract's UI and relevant parameters are numbered elsewhere on the interface to correspond with the vertical order of the slots where 1 is the slot on top and 2 is the slot on bottom.

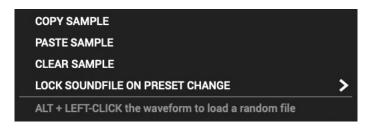
Click in the **LOAD SAMPLE** field to load a sample, or drag & drop .wav sample files directly onto the waveform display from your DAW or desktop. Once you load a .wav file, the < > arrows increment/decrement through the files in the currently active folder.

- ▲ While other audio file types that are supported by your operating system may work as expected, we tested the plugin exclusively using industry standard .wav files and we suggest that you stick with this file type on both Mac and Windows machines.
- Sample slots are tied to the 4 respective factory sample bank folders to ease operation
- Cataract's maximum sample file size is governed by your system RAM. To avoid performance issues it is generally advised not to load massive, high resolution files.

WAVEFORM DISPLAYS:

Adaptive waveform zooming (as seen in our other sampler plugin, <u>Polygon</u>) is not applicable here. This is due to how the plugin works and makes sense once you understand the fundamental concept that Cataract dynamically scans over *segments* of a *static* wave file. From this vantage point, we are adjusting the size of the segments rather than zooming in on a region of the audio file. Thus, the displayed waveform must be static and reflect the entire length of the file. Since the size and positioning of any one particular scan point are the most significant factors of interest within the context of Cataract, scaling the waveform itself would ultimately impede the plugin from working as intended, as it would obstruct the necessary visibility of the entire file.

Right-clicking on any of the waveform displays brings up the following menu:



COPY SAMPLE: copies the currently loaded sample file from the respective slot

PASTE SAMPLE: pastes the currently copied sample file to the respective slot

CLEAR SAMPLE: clears the currently loaded sample file from the respective slot

LOCK SOUNDFILE ON PRESET CHANGE:

This is a useful sound design tool that allows you to lock the sample slots in various combinations. A practical application for this would be trying out some different presets with the currently loaded samples. Locking the slots keeps the current samples loaded instead of switching them with each preset. This can quickly and easily allow you to iterate on your patches and/or stimulate many happy accidents.

Here you have access to a nested submenu which offers the following options:

SCANNER A1	
SCANNER A2	
SCANNER B1	
SCANNER B2	
LOCK ALL	
UNLOCK ALL	

ALT+Click in the waveform display to load a random file from the currently referenced folder. This is a useful creative tool for when you like a patch but want to quickly audition random files within that context.

SCANNER CONTROLS:



Previous versions of Cataract nested Scanner controls, which was not optimal since it only displayed controls for a single scanner at a time. For 2.0, we totally revamped the interface to allow both Scanner's controls to be visible at all times.

SLOTS:



This section contains controls for the individual sample slots within a Scanner.

Here you can adjust the playback speed (RATIO) and output level for each sample.

RATIO : a proportion of the regular audio file's speed and relevant pitch:

- 2 = double speed and pitch is one octave higher
- 0.5 = half speed and pitch is one octave lower
- 0 = fully stops playback

LEVEL: set the desired amplitude for each sample slot. Range = 70.00dB-12.00dB

GLOBAL RATIO:



RATIO : affects the **collective** playback speed for both sample slots.

This section has a built-in modulation LFO with dedicated modulation depth, rate and waveform controls.

LFO controls are detailed later in this guide - please refer to the modulation section



LINK : When the link icon in the center of the module is engaged, this LFO will be re-triggered each time a new segment is triggered.

GLOBAL:



PAN: Adjusts the panoramic position of the output signal of the scanner module.

MORPH: Crossfades between the two Sample Slots' signals. All the way **counterclockwise** will only play **SLOT1** and all the way **clockwise** will play only **SLOT2**.



When **GEN** mode is active for the **MORPH** parameter, its behavior depends on the current ALTERNATE/INTERPOLATE mode:



ALTERNATE : randomly alternates between both slots on each new trigger

INTERPOLATE : randomly blends both slots on each new trigger

SCAN:



A This is the most significant section of the controls and can be considered to be the "heart" of the plugin since its settings play the most fundamental role in the process.

In standard operation, Cataract scans through the samples loaded into the Scanners by using this LFO. the output of the LFO is mapped to the segment coordinates, so the currently playing segment is determined by the LFO's output. By default the LFO waveform is set to *Saw Up*, so that it will scan in normal playback order (from the first segment to the last, left to right).

For example, with the LFO rate set to one bar, the segments will be triggered so that the whole sample fits into one bar. Switching the LFO shape to *Saw Down* will do the same thing, but it will play the segments in reverse order. Things can quickly get more interesting when using other LFO waveforms like *Sine, Random* and *Smooth Random*.

DIVISION MENU : the drop down menu at the top-left sets the number of divisions that will be applied for both sample slots (i.e. the number of equal **segments** the audio file is split into). The **translucent overlay** that travels over the waveforms indicates the current size and position of each segment. The size of the segments in this overlay are linked to the **GATE** parameter located on the top-right of the module. This knob lets you reduce the size of each segment (while keeping the starting points in place).

çþ

LOOP : a segment will continue to loop until a new segment is triggered.

WNDW : an amplitude envelope is applied to segments for smoother playback.

Since Cataract is monophonic, applying this envelope may result in a silent output depending on gate and/or scan rate settings. The segments don't overlap, so if a new one is triggered while the envelope is still in its attack stage the output will be quiet. If you experience this, adjust the gate and/or scan rate setting until you find a sweet spot.



SCAN SEQ MODE : By default, this mode is inactive. When active, this mode deactivates the LFO and activates the scan sequencer, which then allows you to sequence the scan coordinates on a per-step basis.

LFO controls are detailed later in this guide - please refer to the modulation section

SCAN SEQUENCER:



As outlined in the previous section, you can enable the scan sequencer if you wish to sequence scan coordinates rather than using the dedicated LFO in the Scan Module.



With SCAN SEQ MODE active (located in the SCAN module to the left), the segment playback will be determined by the dedicated scan sequencer.

To draw a sequence, drag your mouse over a step. The range of each slider represents the range of each sample slot. Thus, positioning a slider at the bottom will prompt the playback of the first segment, while positioning the slider at the top will prompt playback of the last segment. Using this method, you can determine precisely which segment will get triggered at a particular step in the sequence. Active steps are shown in white, providing visual feedback of the current step.

The sequence scales to 1 bar by default and can operate at 4 different lengths :



Click the playback direction icon to cycle through the following options :



Forward Playback

- S Backward Playback
- ? Random Playback

Two buttons at the top-right of the module allow you to manage your sequence:



Clear Sequence Randomize Sequence

Right clicking on the steps activates a popup menu with the following options:

- Copy/paste the sequence
- Generate a ramp up
- Invert the current steps



GLITCHMACHINES ®

SCANNER OUTPUT :



The Scanner Output module features a three band EQ and a utility compressor to help you sculpt the audio output of each scanner.

These processors are used solely to bolster the amount of internal options the user has to shape Cataract's audio signals. They are not intended to match the functionality and fidelity of your favorite EQ and Compressor plugins.

The EQ gives you access to fixed bands situated at the following coordinates:

- LOW : 100 Hz
- MID : 1100 Hz
- HIGH : 11000 Hz

You may have several audio files loaded, but only want one of the scanner's output signals to contain audible low frequency content. In this case, simply attenuate the unwanted low frequency content by decreasing the value of the "LOW" knob.

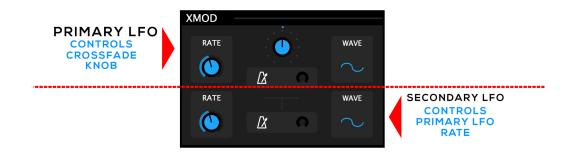
AMP : controls the amplitude of the signal emitting from the respective Scanner

Below the EQ, you will find the compressor controls:

- **THRESH** : sets the level at which the compressor begins to function (-40dB-0dB)
- RATIO: sets the ratio of gain reduction based on the input signal (1:1-1:12)
- **ATT** : determines how quickly the compressor will engage (0.01ms-100ms)
- REL: determines how quickly the compressor will disengage (0.01ms-1000ms)

Use the compressor to gain control over the dynamic behavior of a scanner's output signal, much like in a traditional scenario where a compressor is used at a mixer channel's insert to boost/attenuate the signal beyond a specified threshold.

XMOD MODULE:



The XMOD module features crossfade-style morphing between the signals coming from both Scanners. This function is governed by the centralized "**MORPH**" knob at the top-center of the XMOD module. The MORPH parameter can then be modulated via the dedicated dual LFO. This is the "final stage" of Cataract's workflow which allows you to set up complex interactions between the scanner A/B signals.

These parameters can also be targeted by the PARAM SEQ explained later in this guide

The **PRIMARY LFO** (top) is hardwired to the top/center **MORPH** knob. The amount of modulation applied can be scaled by adjusting the value of the small crescent *modulation depth dial*, located at the right side of the metronome (SYNC) icon.

The sole purpose of the Secondary LFO (bottom) is to modulate the **RATE** parameter of the Primary LFO (top). This process is called cross-modulation (hence "XMOD") and yields complex shapes that exceed the scope of what a single LFO is capable of. You can scale the amount of modulation applied to the primary LFO's RATE parameter by adjusting the value of the small crescent *modulation depth dial* in the Secondary LFO.

You can keep things simple by only using the Primary LFO without any cross modulation (i.e. DEPTH dial on secondary LFO is fully CCW). Or don't modulate MORPH at all and use it as a static "MIX" knob to blend the Scanner signals instead.

A blue line at the top of the XMOD module dynamically indicates the trajectory of the Morph parameter, thus providing important visual feedback about which scanner is currently audible:



Try setting the Secondary LFO (bottom) to a lower rate value than the Primary LFO (top) for some very interesting modulations. Take your time with this section, as there are many possibilities which you can achieve by carefully dialing in various sweet spots.

LFO controls are detailed later in this guide - please refer to the modulation section

FILTER & DELAY:



This module features a standard LP/HP filter with Cutoff and Resonance and a delay line with feedback and clock sync. All of Cataract's effects processors are intended to be used as internal creative effects rather than traditional utilities; their behavior and parameters reflect this. They are applied to the global output of the respective Scanner modules (i.e. it's applied to both slots of the Scanners) and the order of these effects, as they appear on the UI, is consistent with their signal flow.

CUTOFF : alters the cutoff frequency of the Filter (20Hz-11000Hz)

RESONANCE : adds emphasis to the cutoff frequency of the Filter (0-100%)

MORPH : crossfades between the LPF and HPF filter modes

Bypasses the filter

TIME : sets the delay time in milliseconds (from 1 ms to 120 ms)

FEEDBACK : sets the amount of signal that is fed back from the output (0 to 100%)

MIX: blends between regular and processed signals (0 to 100%)



Syncs the delay to your host's clock

In **tempo free mode**, the range is limited to a max of 120 ms in order for the effect to result in more of a "resonator" type of effect, while the values in **sync mode** can achieve more traditional "echo" effects.

If using the window option in the scan section, you could put a synced delay on top to provide a more granular feel to the sound (like a sort of pseudo grain overlap).



Leaf icons (explained in the Interface section) activate "GEN" mode for the respective parameter, setting it to random values on each new segment trigger.

FX:



The FX module is new as of version 2.0 and it features five effects that are situated after the Filter & Delay module in the signal flow. This module works in tandem with a dedicated FX Sequencer, giving you the ability to send scan segments to one of the five effects on a per-step basis. Despite their relative simplicity, these effects are optimized to work within the context of Cataract (rather than processing external signals) and really come to life when combined with various other facets of the plugin.

MIX & AMP : these are common parameters in all five effects. They allow you to set the amplitude of each effect in the mix and/or blend the wet signal with dry signal.

CRUSHER : a classic sample rate reduction effect

• AMT - sets the division factor of the reduction (1-64)

RINGMOD : a ring modulation effect

- PTCH the frequency of the oscillator expressed as a musical note (C1-G9)
- WAVE the waveform of the oscillator (Sine, Triangle, Saw, Square)

CHORUS : a classic chorus effect

- TIME offsets the processed signal from the original signal (1-40ms)
- RATE scales the rate of delay time fluctuation (0.1Hz-20.0Hz)
- FEED scales the amount feedback (output signal fed back to input) (0-100%)
- DEPTH scales the depth (intensity) of the chorus effect (0-100%)

PHASER : a static phaser effect

- PITCH the center frequency of the phaser expressed as a musical note (C1-G9)
- FEED scales the amount feedback (output signal fed back to input) (0-100%)

FORMANT : a formant filter

- VOW selects the vowel sound to simulate (A, E, I, O, U)
- RES sets the amount of resonance applied to the vowel filter (0-100%)

FX SEQUENCER:



The FX SEQ module is new as of version 2.0. This module features a sequencer dedicated to the FX processors (outlined in the previous section of this guide) allowing you to modulate between the five effects in various interesting ways.

LENGTH MENU : scales the length of the sequence based on the host clock

DIRECTION : plays the sequence steps in forward, backward or random order

- CLEAR : clears the values of all sequencer steps
 - RND : randomizes the values of all sequencer steps

To designate a step to a particular effect, simply drag the slider while observing the small label below it. As you move the slider up/down, you will notice the labels switch to reflect one of the five available destination effects:



- --: Sends respective step to None
- **CR** : Sends respective step to **Crusher** effect
- RI : Sends respective step to Ringmod effect
- CH : Sends respective step to Chorus effect
- PH : Sends respective step to Phaser effect
- VO : Sends respective step to Formant effect
- **??** : Sends respective step to **Random** effect
- We are aware of a bug that causes some the FX labels to display dashes intermittently. While we were not able to fix this prior to releasing 2.0, the functionality is not affected and the labels will be swapped with icons in a forthcoming free update.

MODULATION:



The MODS module offers 2 additional LFOs along with a modulation matrix. These LFOs allow you to build complex modulation layers on top of the Scan and Ratio LFOs.

The following applies to all LFOs in Cataract; all common parameters work as follows:

RATE: The speed at which the LFO cycles **SYNC:** Synchronize to your host clock at various divisions **WAVE:** The shape in which the LFO will cycle

Click on the waveform button to cycle through the following wave shapes: Saw Up, Saw Down, Triangle, Sine, Square, Random, Smooth Random

Syncs the LFO Rate to your host's clock (illuminated green when active)

When Sync is active, the Rate parameter will switch to display relevant beat divisions

DEPTH: where applicable, this set the amount of modulation applied to the target

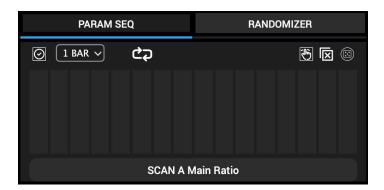
As with all LFOs in Cataract, the current value of the target parameter is used as a base offset for the modulated signal, and the range is set by the mod depth knob. For full range, set the depth to 100% and the target control to its minimum value.

The **MODULATION MATRIX** sends a scaled output of LFO1/2 to the following targets:

LFO1/LFO2>>>Scan Module's LFO Waveform LFO1/LFO2>>>Scan Module's LFO Rate LFO1/LFO2>>>Global Ratio Module's LFO Waveform LFO1/LFO2>>>Global Ratio Module's LFO Rate

You can cumulate LFO1 and LFO2 on the same target for even more complex results.

PARAMETER SEQUENCER:



The Parameter Sequencer is one of Cataract's highlights. It allows you to sequence and/or realtime record parameter value changes across nearly every parameter.



This sequencer is nearly identical to the Scan Sequencer, but here you must activate a sequence with the **ACTIVE** button before it will become functional.

If a targeted parameter's values are not changing as expected, check to ensure that the ACTIVE button is **ON** (illuminated in fuchsia).

The bottom of the module features a menu with every possible target parameter:

PAI	SCAN & Main Ratio SCAN & Main Ratio SCAN & Ratio Mod Death	RANDOMIZER
Ø 1 BAR	SCAN B hulo Mod Sync SCAN B hulo Mod Bync SCAN B hulo Mod Byncyd Run SCAN B scan Gwd Wwe SCAN B Scan Run SCAN B Scan Run SCAN B Scan Run SCAN B Scan Rync SCAN B Scan Rync SCAN B Scan Rync SCAN B Scan Rync SCAN B Scan Rync	8 0 3
	SCAN 8 Gate Gen SCAN 8 Divisions SCAN 8 Ratio Mod Link SCAN 8 Churk Loop SCAN 8 Churk Window SCAN 8 Phon SCAN 8 Phon Gen	ı Ratio

To assign a parameter as a target, simply choose the desired parameter from the menu or move the desired knob or button on the plugin's interface to bring it into focus.

You can use the sliders to sequence parameter changes for the targeted parameter, where the bottom of the slider range represents minimum value and the top of the slider range represents maximum value (independent of current parameter settings).

Targeted parameters are illuminated in fuchsia on the interface and in the parameter list to make it easy to identify which parameters are actively being sequenced.

Refer to the Scan Sequencer section for explanation of the other sequencer controls

REAL-TIME MODULATION RECORDER:



A

Pressing the **REC** button activates real-time recording of parameter changes. This allows you to capture any parameter changes as you make them.

Changing values on the interface (i.e. moving a knob, etc.) will put the respective parameter into focus and the sequencer will begin recording parameter changes as they occur until a new parameter is targeted or the mode is deactivated.

Changes you make will continually be updated in the sequencer until REC is disabled. Be sure to deactivate REC Mode during normal use to avoid forgetting that it's on and accidentally overwriting settings or otherwise causing disarray in your patch.

GLOBAL RANDOMIZER:

PARAM	SEQ	RANDOMIZER						
CORE A	FX A	CORE B	FX B					
MODS A	ALL A	MODS B	ALL B					
? CTL	? SMP	? ALL	100 %					

The Randomizer module is a useful creative tool that clusters various elements of the plugin for parameter randomization. The first two rows of buttons represent the eight parameter clusters (four per Scanner) while the remaining three function as follows:

?CTL: randomizes all scanner controls and the parameters in the XMOD section **?SMP:** randomizes all samples loaded into the scanner slots **?ALL:** randomizes all scanner controls, sample slots and the XMOD parameters

The numeric field at the bottom-right of this module represents the percentage of randomization. Click and drag to adjust this value between 0-100%.

MASTER OUT:

MASTER OUT		

Adjusts Cataract's audio output signal between -70.0dB - 6.0dB

FOOTER:



Cataract's footer section contains the preset system and configuration menu:

PRESETS:



Navigate through the presets either by accessing the drop-down menu, or by using the navigational arrows to increment/decrement through the list.

SAVE PRESET: Opens a dialog box that will let you save the current preset on your hard drive using the extension ".ctrp".

NOTES ON DAW AUTOMATION :

- Due to Cataract's architecture, it's not advisable to use DAW automation in conjunction with the Parameter Sequencer because this is prone to cause various conflicts, especially when REC mode is active. To avoid any unwanted behavior, we suggest making a decision (per patch) whether you'll be using your DAW's automation - **OR** the onboard facilities to animate the plugin's parameters.
- Automation schemes vary from DAW to DAW, so we ask that you please refer to your software's user manual for info on how to set up plugins for automation in your host.

CONFIGURATION MENU:

INIT ALL CONTROLS
CLEAR ALL PARAMETER SEQUENCES
CLEAR ALL SAMPLES
CLEAR EVERYTHING
OPEN PRESETS FOLDER
SHOW PREFERENCES FILE
CHANGE SOUND LIBRARY PATH
Glitchmachines Cataract v2.0.0



The Configuration Menu is accessed by clicking the small gear icon in the footer. This menu gives you access to several useful options that affect various global plugin settings.

INIT ALL CONTROLS: initializes all of the plugin's parameters to their default values

CLEAR OPTIONS :

A

- · Parameter Sequences: clears and resets all internal sequencers simultaneously
- Samples: clears all samples loaded into slots
- Everything: clears all samples and resets all sequencers and parameters to default

OPEN PRESETS FOLDER: navigates to Cataract's default presets folder.

SHOW PREFERENCES FILE: opens the file browser to location of the preferences file.

CHANGE SOUND LIBRARY PATH: opens your OS file browser, from where you need to navigate to and select the CATARACT2_SAMPLES folder on your system.

The plugin's current version number is displayed at the bottom of the list

SAMPLE CONTENT OVERVIEW:

Cataract 2.0 comes with a specially curated collection of material derived from our broad selection of sound effect packs.

The Cataract factory sample bank consists of 4 sound categories:

- **DESIGNED:** processed, layered and designed sound effects
- FOLEY: unprocessed Foley recordings derived from a huge list of objects
- BENT: circuit bent, glitch synth and modular synth recordings
- NOISE: digital noise derived from synth kits and electromagnetic fields

We like to think of samples as a collection of *ingredients* from which you can craft your patches. As such, when you are designing patches, it is helpful to take things like texture, frequency content, energy and motion into consideration.

While we made sure to include samples that work particularly well within the context of Cataract, you can of course load any of your existing samples or check out our website to take a look at our diverse range of <u>sample pack products</u>.

Thanks for purchasing CATARACT 2.0!

Please check out the rest of our products at our website: https://glitchmachines.com