

# discoDSP Bliss

Sampler and Virtual Instrument Recorder

Users Manual

<https://www.discoDSP.com/>

## Description

Bliss is a sampler and virtual instrument (VST/VST3/AU) recorder for Audio Units, VST, VST3, AAX hosts featuring a scalable & theme-able GUI, VSTi sampling, 8 Macro controls, dual zero delay feedback filters, sample editor, 7 built-in effects, flexible modulation, parameter morphing and the highest offline resampling quality using 512 points SINC algorithm.



# Features

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Bliss boasts the following powerful feature set:

## Overview

- 64-bit VSTi / Audio Units compatibility.
- Built-in VST host / VSTi sampling (freezing). Record your favorite VST without any sound quality loss!
- Built-in wave editor.
- Scalable and theme-able GUI.
- Morphing (velocity-dependent parameter control) / automatable zone parameters.
- 128 Programs with unlimited zones.
- 32-bit floating point based wavetables.
- Full MIDI Input triggering control.

## Playback engine

- Up to 64 voices polyphony (multilayered zone sampling engine).
- Oversampling voice generation: up to 4x oversample factor.
- Selectable interpolation engines: up to 512 points SINC interpolation.
- Full mono / poly / legato operation.
- Glide with auto-switch control.
- 4 voices Unison with detuning.

## Filters

- Dual filters.
- 24dB / Oct filter modes: Lowpass / Highpass / Bandpass 1 / Bandpass 2 / Notch / Peaking / Disabled. Stepping-free Cutoff / Resonance and Drive parameters.
- Velocity and Keyboard tracking to the Cutoff parameter.

## Modulation

- 8 assignable Macro knobs. Multiple controls can be assigned to each.
- Independent amplitude / modulation envelope / LFO and filter settings.
- 2 syncable LFOs with configurable Phase.
- Stepping-free modulation sends / pitch bend / modulation to morphing wheels.
- ADSR amplitude and modulation envelope.
- ADSR envelope filter / pitch assignable (both bipolar).

## Effects

- Wow effect: Rock Da Disco.
- Soft clipper to tame the output.
- Stereo rotation effect.
- High quality chorus / delay / reverb.
- Selectable Pre Post Effects: Bit reducer, Phaser, Distortion.
- Chorus / Delay / Reverb sends, settable for all or individual zones.

## Key Mapper Editor

- Visual grid-based interface with integrated keyboard display.
- Complete MIDI note mapping range (C0 to C8, notes 24-120).
- Full velocity range control (0-127) with visual representation.
- Color-coded zone visualization with distinct borders and labels.
- Drag-and-drop functionality for note boundaries, velocity ranges, and root keys.
- Real-time value feedback with bubble messages during adjustments.
- Visual distinction between black/white keys and octave boundaries.
- One-click zone selection with synchronized list box integration.
- Root key position indicators highlighted in green.
- Efficient handling of multiple overlapping zones.

## Sample Editor

- Built-in wave editor with full undo history.
- Zoom up to 1:1 resolution.
- Selection of Left, Right or both channels for editing.
- 7 Loop types (one shot / forward / bidirectional / backward / forward w/sustain / crossfade / static).
- Clipboard: Cut / copy / paste / mix paste / sample / trim.
- Amplitude: Fade in / fade out / normalization / mute / insert silence.
- Effects: Reverse / Invert polarity / Swap channels / Remove DC.
- Cues / Loop edit / Auto-slice to tempo / transients.
- Automatable zone parameters / cue / loop points.
- Automatable start / end / loop points.
- Automatic loop point finder.
- Audio slicer analyzing beats and transients.

## Import formats

- Auto / drum mapping when multiple files are opened at once.
- Internal new program/bank formats with lossless encoding.
- LUA scripting engine for program loading: add new file formats easily.
- Samples: .WAV / .BWF / .AIFF / .AIF / .FLAC / .OGG / .MP2 / .AMR / .AC3 / .QT / .ADTS / .MP3 / .M4R / .3GP / .MPA / .SD2 / .MPEG / .M4A / .MP4 / .MOV / .SND / .AIFC / .CAF / .M4B / .3G2 / .MP1 / .AAC / .AU / EMU .EBL.
- Programs: .AKP (AKAI S5000-S6000) / .EXS / .SFZ / .SF2 (SoundFont2) / .XRNI (Renoise Instruments)

## Export formats

- Programs: .SFZ / ZBP programs and ZBB banks (24-bit lossless FLAC) / Encrypted ZBP and ZBB for 3rd party soundware.
- Samples: 16-bit, 24-bit WAV.

## Installation

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- **Apple OS X**

Run the installer and follow the instructions.

The following files will be installed in your user account:

**/Library/Audio/Plug-Ins/Components/Bliss.component** replacing existing files.

**/Library/Audio/Plug-Ins/VST/Bliss.vst** replacing existing files.

**/Library/Audio/Plug-Ins/VST3/Bliss.vst3** replacing existing files.

**/Applications/Bliss.app** replacing existing files.

**~/Documents/discoDSP/Bliss/** any existing files will not be replaced.

- **Microsoft Windows**

Run the installer and follow the instructions.

- **Linux**

Run **install.sh** script.

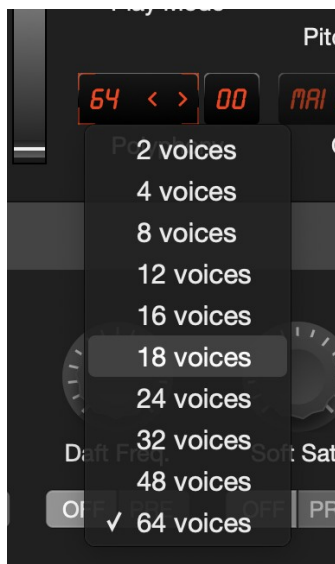
The demo version of the Bliss Sampler plugin imposes several restrictions. All file export options are disabled, preventing users from exporting their work in any format except for SFZ, which is available in 16-bit format only. Additionally, the plugin state cannot be restored, meaning that files won't be recalled, and users cannot save or retrieve their work settings within the plugin.

## Basic Concepts

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### Channel Limiting

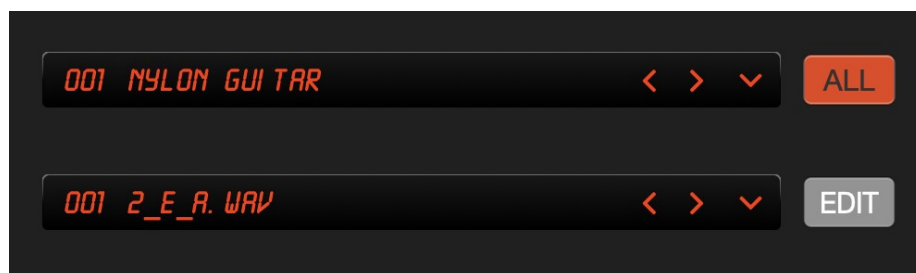
Bliss has 64 notes polyphony by default. This number can be changed by clicking the LCD above the POLYPHONY label.



A drop down menu will appear with the number of notes to enable. Select the desired number. Be aware that more voices use more CPU power.

### Quick bank / program zone select

Bliss displays two main LCDs. The top one contains the name of the currently selected program in the bank and bottom one the name of currently-selected zone in the program. Clicking ALL will enable or disable editing all zone parameters at once (global edit). Clicking the EDIT button will open the sample editor.



### Bank / program browser

Programs or zones can be browsed by clicking the arrows in the LCD or by clicking its name to display a drop down menu. Using **CTRL / Command** on Mac will open the import dialog window directly and using **SHIFT + click** on < / > buttons in the zone selector will select the previous / next sample in the same directory as the current sample.

## Knob and fader editing

To have finer control of parameter adjustments, hold **SHIFT** key while moving. Double click resets the control to its default position.

## Pitch Bend

Pitch bender allows you to change the pitch of the current patch in real-time. You can modify the pitch bend range to be from 1 to 24 semitones up and down.

## Play Mode

MONO	1 voice of the sampler is used. In this mode any note played will discontinue the previous one.
LEGATO	A monophonic mode in which envelopes are not restarted when new keys are played.
POLY	Polyphonic mode allows multiple notes to be played at once.


## Glide

The glide knob glides the pitch between the current note and a newly played note. The higher the value, the slower the transition progresses.

## Master Gain

Below the MASTER label there is a knob where gain can be set.

## Bliss configuration

The overall Bliss setup can be found by clicking the  icon in the top-left corner.

### Engine Quality

Sample Interpolation mode and Oversampling	Multiplies internal working sample rate twice (2x) or four times (4x), resulting in higher playback quality and main algorithm responsible of playback quality. The higher the better.
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### Options

Select Library folder location	Changes folder location for Bliss Library drop down menu.
Select Samples folder location	Changes folder location for Bliss Sample Library drop down menu.
Panic	Mutes all notes.
Global Edit	When enabled, all knobs and tweaks will be applied to all program zones at once.
Morph Edit	Switches between Normal edit and Morph edit. Morph is a secondary knob state that changes based on MIDI velocity amount slider located in the MASTER section..

### Interface

Interface Scaling	Switches between 60-200% GUI sizes. It can also be changed by clicking and dragging the triangle located at the bottom right corner.
Themes	Selects one of the available themes located at Documents > discoDSP > Bliss > Themes folder.
Open Sample in Editor Window	Switches between opening the zone sample edit window on Bliss GUI or a separate, independent window.



## Editing functions

Bank /program and zone edit functions can be found by clicking the downwards-pointing arrows to the right of the program and zone names.

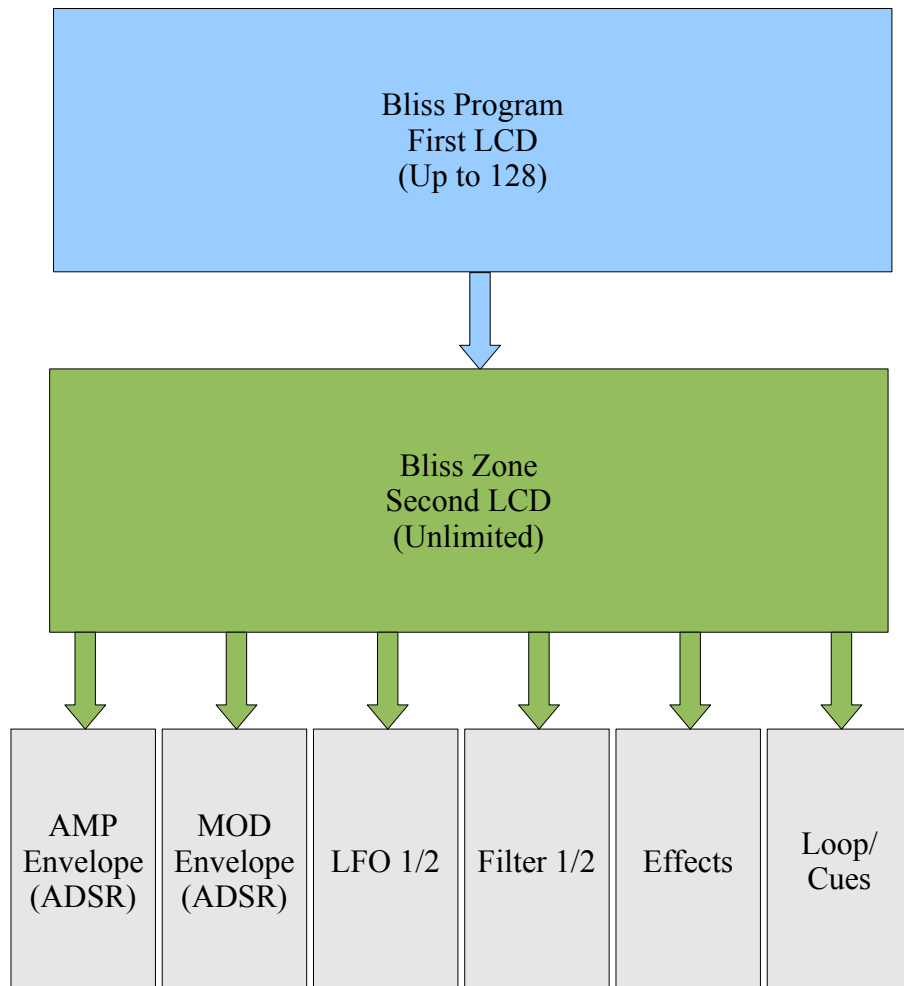
Main LCD options:

Bank / Program	Description
Load Bank...	Imports a Bliss .ZBB bank.
Recent Banks...	Shows a list of recently loaded banks.
Save Bank As...	Exports Bliss .ZBB bank with its 128 programs.
Save Encrypted Bank As...	Exports Bliss .ZBB bank with its 128 programs in an encrypted format, where only the same user can modify its contents.
Reset Bank...	Sets all Bliss programs to their original state.
Load Program...	Imports a AKP (AKAI S5000-S6000) / .EXS / .SFZ / .DLS / .SF2 (SoundFont2) / .XRNI (Renoise Instruments) / .ZBP (Bliss program).
Recent Programs...	Shows a list of recently loaded programs.
Save Program As...	Exports Bliss .ZBP program.
Save Encrypted Program As...	Exports Bliss .ZBP program with in an encrypted format, where only the same user can modify its contents.
Export Program to 16-bit SFZ...	Exports to .SFZ with 16-bit WAV.
Export Program to 24-bit SFZ...	Exports to .SFZ with 24-bit WAV.
Rename Program	Opens a dialog box to change current program name.
Reset Program	Sets current program to its original state.

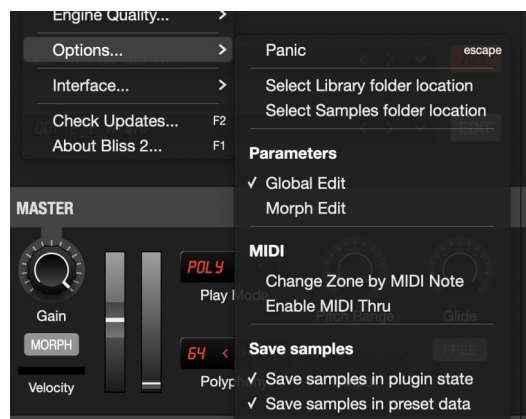
<b>Zone</b>	<b>Description</b>
Load Sample...	Imports a .FLAC / .WAV / .MP3 / .RAW / .OGG file.
Replace Sample...	Imports and replace the sample in the current zone.
Recent Samples...	Shows a list of recently loaded samples.
Add New Zone	Inserts a new zone into the active program.
Rename Zone	Renames zone.
Duplicate Zone	Creates a new zone with the same parameters and sample as the active one.
Delete Zone	Deletes current active zone.
Delete All Zones	Removes all program zones.
Export Zones to WAV	Saves all Zones to WAV files.

## Bliss Bank Structure

A Bliss bank contains 128 programs each, divided into zones, each with independent parameters such as ADSR, LFO, Filter, Effects, Cue and Loop points.



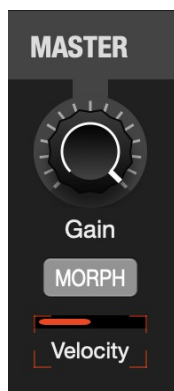
All zone parameters are edited at once by default, but this behavior can be changed by disabling **Global Edit** from the Bliss Options... menu or using **right mouse button** with the knobs, buttons or drop down menus.



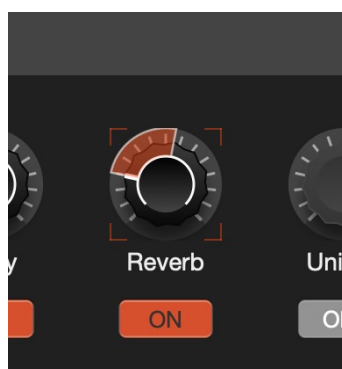
## Morphing

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Morphing is a secondary parameter state that changes with MIDI Note velocity if the Velocity slider value (below the MORPH button) is higher than zero, or with the MIDI Modulation wheel. Setting up is very easy by clicking MORPH button located in the MASTER section.



Once it's on, knob parameters will be able to be changed in a bipolar way, that is positively or negatively from the existing knob parameter position.



The amount can be set up by clicking and dragging the Velocity slider located below the MORPH button. It's like a velocity curve, but affecting parameters which have been modified with morphing. After all morphing has been set up, Morph mode can be switched off by clicking MORPH button again.

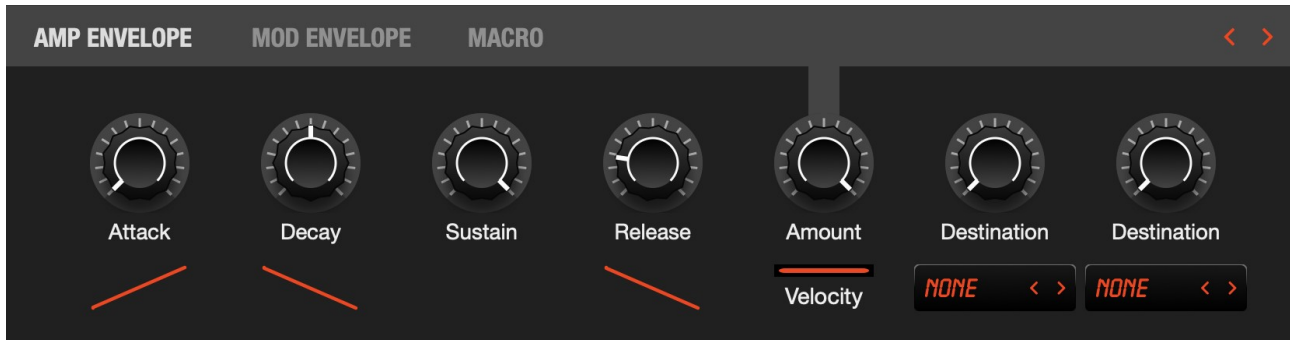


Once Morphing is set up, the Modulation wheel or MIDI Note velocity affects the parameter's setting. The higher the Morph velocity slider the more the Modulation Wheel value or MIDI Note velocity will move the parameter towards its Morph setting.

- A Morph slider value of 0%, there is no change from the knob position.
- A Morph slider value of 50% and a note velocity of 10, there is a small change.
- A Morph slider value of 50% and a note velocity of 100, there is a larger change.
- A Morph slider value of 100% and a note velocity of 127, there is the maximum change, to the Morph position.

## Amplitude and Modulation Envelopes

Every zone has an independent Amplitude envelope, able to change the sound and also modulate two different parameters and a Modulation envelope, able to modulate two different parameters. The other difference in the Modulation envelope is that MIDI Velocity does not affect the ADSR Amount.



- **Attack:** Controls the time that envelope moves from note press (0) to full volume. (Does not apply to legato mode).
- **Decay:** This knob controls the time that the envelope moves from full volume (end of Attack) to Sustain level.
- **Sustain:** Sets the point at which the envelope stays while note is held. This state is held until the note is release.
- **Release:** Once the note is released, this knob will control the time in which the gain will fall from current envelope level (Sustain) into complete silence, finishing the voice use. Longer releases can result in many simultaneous voices, resulting in higher CPU usage.
- **Amount:** ADSR amount that will be applied.
- **Velocity:** Amount of MIDI velocity affecting ADSR Amount. 0% will apply max values to all notes. 100% applies from a range of 0 to 100%.
- **Destinations:** ADSR envelope can be also be applied to more additional parameters with a different amount, such as: Amplitude, Pitch, Filter 1/2 Frequency / Resonance / Drive, LFO 1 / 2 Rate or Loop Start / End points.

By default, all zones are edited by default at the same time. Disable **Options > Parameters > Global Edit** to edit parameters for individual zones. It's also recommendable to turn on **Options > Parameters > Change Zone by MIDI Note** to find a zone out more easily.

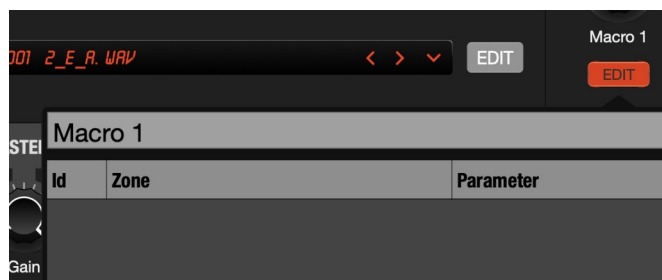
## Macro

Bliss has 8 macro knobs assignable to any of over 100 Bliss parameters. A macro can have its own name, as well as modulate several destinations at once each with different ranges for each destination parameter.

To access the macro controls, click the MACRO label in the Envelope title bar or navigate using the < > arrows contained on the same bar.



Configuring a macro is very easy. Click any EDIT button below and a dialog box will then appear for setting it up.



In the screen above, the macro name can be edited by selecting the text (double click will select the entire label) and typing a new one.

Macro destination parameters can be then added by using the **Add** button. A new Id will appear.

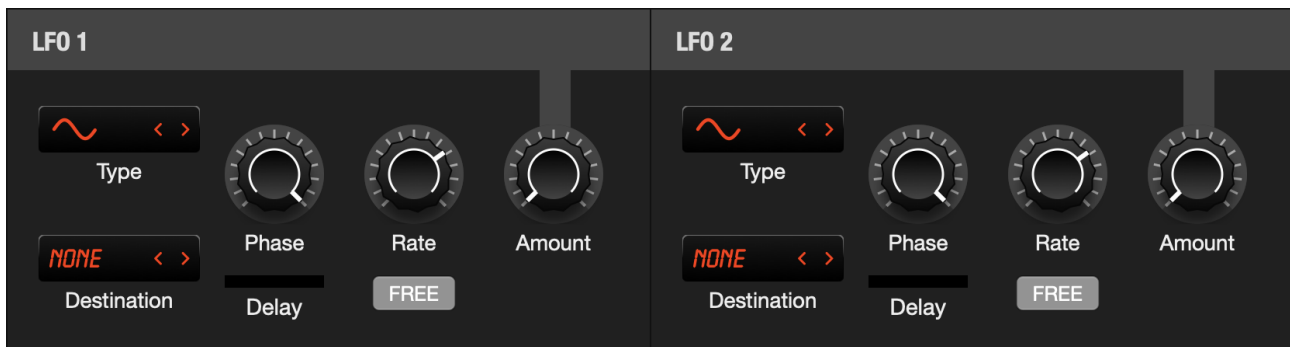


Parameter	Description
Name	Top text box with an editable name
ID	Macro destination ID number. This field can be clicked for selection and removal by using Remove button.
Zone	Destination Zone. Can be a specific zone or all zones.
Parameter	Destination parameter selectable from a drop-down list.
Min	Minimum range. This field can be clicked to input a numerical value or set by clicking and dragging the mouse left/right
Max	Maximum range. This field can be clicked to input a numerical value or set by clicking and dragging the mouse left/right.

Once the macro has been configured, clicking the **X** button will apply all the changes.

## LFOs

Every Bliss zone has two LFOs, each of which can be routed to a different destination parameter.

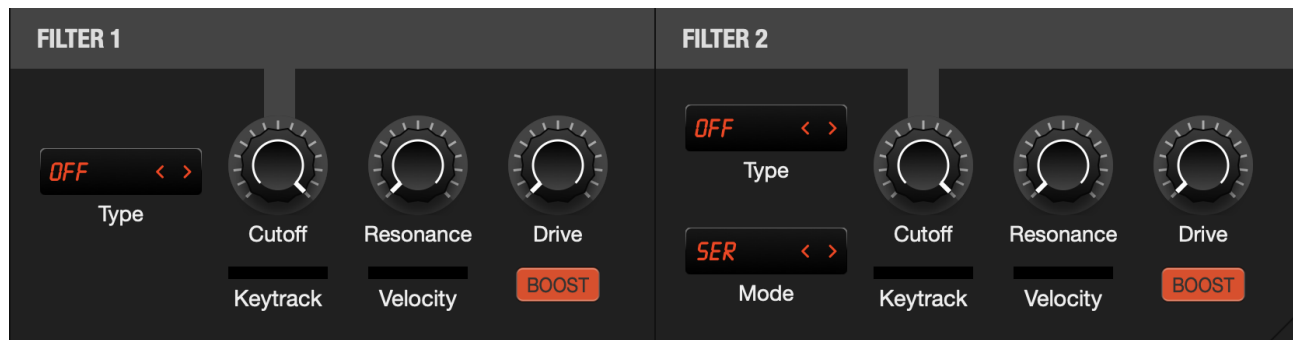


Parameter	Description
Type	Switch between 5 different oscillators: Sine, Triangle, Saw, Square or Random waveforms.
Destination	Parameter affected by LFO: Amplitude, Pitch, Filter 1/2 Frequency / Resonance / Drive, LFO 1 / 2 Rate or Loop Start / End points
Phase	Starting waveform point of Type waveform. It can run freely when set to its max value or from a certain degree.
Delay	Amount of time in ms before the LFO is triggered.
Rate	LFO frequency in Hz, which can be switched to the host tempo by clicking the button below. Label will then change to SYNC and the rate can range from 1 to 256 ticks (each tick is 1/16 of a 4/4 bar, that is a quarter note).
Amount	LFO amount applied to destination based on Type, Phase and Rate. It's a <b>bipolar value</b> , starting from zero at center, and negative to the left / positive to the right.



## Filters

Every Bliss zone has two independent filters.



Parameter	Description
Type	Switch between 5 different filters: Lowpass, Hipass, Bandpass 1, Bandpass 2, Notch and Peaking.
Cutoff	Filter frequency range affected by the filter type.
Resonance	Filter resonance amount.
Drive	Filter overdrive. The BOOST button below applies a stronger algorithm to the sound.
Keytrack	Changes filter Cutoff depending on which note is playing. The higher the note the higher the Cutoff frequency
Velocity	Changes filter Cutoff depending on MIDI velocity. The higher the MIDI velocity the higher the Cutoff frequency.
More	Determines whether the 2 filters are applied in series or in parallel.

## Effects

Every Bliss zone has a broad range of effects. The main send levels can be set in the EFFECTS section. The zone effects amount as well as Chorus / Delay / Reverb can be set by clicking the ZONE button located in the MASTER EFFECTS title bar.



Parameter	Description
Chorus	Set chorus effect levels from -Inf. dB to 0 dB.
Delay	Set delay effect levels from -Inf. dB to 0 dB.
Reverb	Set reverb effect levels from -Inf. dB to 0 dB.
Unison	Enables unison by clicking ON and knob sets how much the 4 voices are detuned.

## Global

Parameter	Description
Bits Reduction	Set output bit reduction from 16 to 1-bit.
Daft Frequency	Set a phaser alike speed from 0.01Hz to 220 Hz.
Soft Saturation	Set a saturation from 0% to 100%.
Stereo Rotation	Set a stereo panning effect from -90 to 0 to 90°.
Clip	Enables a soft clipping effect.
Rock	Enables multi-band compressor effect with high punch.

## Chorus

A chorus effect (sometimes chorusing or chorused effect) occurs when individual sounds with approximately the same timbre, and very similar pitch converge and are perceived as one.

Parameter	Description
Delay	Set time before effect is applied.
Phase	Set delay oscillator phase.
Feedback	Determines how much of the effected signal is fed back through the effect, providing multiple repetitions of the processed signal.
Rate	Set chorus rate in Hz.
Depth	Set amount of effect applied to the signal.

## Delay

Delay is an audio effect which records an input signal to an audio storage medium, and then plays it back after a period of time. The delayed signal may either be played back multiple times, or played back into the recording again, to create the sound of a repeating, decaying echo.

Parameter	Description
Time L / R	Set delay time.
Free / Sync	Enables Delay time to be driven by host tempo in ticks. (Each tick is 1/16 of a 4/4 bar, that is a quarter note).
Feedback L / R	Determines how much of the effected signal is fed back through the effect, providing multiple repetitions of the processed signal.
Frequency	Set frequency amount.
Resonance	Set resonance amount.

## Reverb

A reverberation, or reverb, is created when a sound or signal is reflected causing a large number of reflections to build up and then decay as the sound is absorbed by the surfaces of objects in the space – which could include furniture and people, and air. This is most noticeable when the sound source stops but the reflections continue, decreasing in amplitude, until they reach zero amplitude.

Parameter	Description
Room Size	Set the size of the simulated room.
Pre-delay	Delays the onset of the reverberation for the set time after the start of the original input. This also delays the onset of the reverb tail.
Early Reflections	When an impulse signal (IE music) produces sound pressure in an ambient space surrounded by reflective surfaces, the sound propagates in all directions around the space then bounces off each of the surfaces to be returned to a position of listening reference. These multiple returns are called early reflections. They continue to bounce all over the room in an accumulative manner while decaying over time, forming diffuse or late reflections. These reflections mixed with the direct impulse signal defines reverb.
Decay	Set how long it takes for the reverb to drop from its maximum level. Increasing this time increases the sense of size of your virtual room. Think of the difference between a small stone church and a massive cathedral.
Density	Controls the time displacement and number of the discrete closely spaced reflections in an ambient space. Higher density settings creates richer sounding reverbs with more even natural reverb tails. As density is lowered the reverb sound thins out and the reverb tail may "flutter".
Damping	Increasing the damping produces a more "muted" effect. The reverberation does not build up as much, and the high frequencies decay faster than the low frequencies. Simulates the absorption of high frequencies in the reverberation.
Bandwidth Frequency	Provides some kind of "tone" control. Small values cause a smaller frequency range to be processed. In general, the effect of this control can be heard in the treble band. Smaller values cause a "muffled" and less bright reverb.

# Sample Editor

Every Bliss zone contains a sample that can be edited by opening the Sample Editor. Click the EDIT button to the right of the Zone name LCD.



The sample Editor will open on a separate window or inside the GUI, depending how it's configured at **≡ > Interface... > Options > Open Sample Editor in Window**.

The Window is divided into three parts:

Menu and Zone parameters	Top area containing editing functions including zone Gain, Panning, Tuning (Coarse, Fine-tune, Key Cents), Tempo Sync, Loop Type, Group Off and Key Range / Root.
Zone List	Left area to navigate between all zones. Several can be selected and edited together by holding <b>CTRL / Command</b> on Mac and clicking their names.
Sample area	Right area displaying the waveform, cues and loop start / end points.

Applying changes to multiple zones in the editor can be done by selecting them individually on the Zone List using **CTRL / Command** on Mac + clicking their names or by selecting a consecutive set of zones by clicking the first and **SHIFT**-clicking the last.

Deleting a cue can be quickly made using **SHIFT + click** on its number.

Play a zone by double clicking the name at the listbox item.

Both loop points can be dragged by holding **CTRL / Command** on Mac + mouse.

<b>Zone Parameters</b>	<b>Description</b>
Gain	Gain -Inf. dB to 96 dB.
Pan	Panning. A bipolar control, ranging from 50 Left, through Centre to 50 Right.
Solo	Mutes unselected zones.
Coarse	Semitone shift from -36 to 0 to +36.
Resample	Switches from pitch shift to time stretch mode.
Finetune	Cent shift from -50 to 0 to +50.
Key Cents	Range of cents between notes. 0 will result in the same root note for all keys. 100 equals to a single note.
Tempo Sync	When Tempo Sync is enabled, this setting (in units of 1/16th bar, in 4/4 time) determines the playback length of the sample, when played by its root key. Increasing the Tempo Sync value will lengthen the playback; decreasing the value will shorten the playback. Higher notes in the zone's range will shorten the playback time in proportion and lower notes will lengthen it. Any length change will change the pitch too.
Loop Type	A choice of loop types for the sample zone: OneShot, Forward, Bidirectional, Backward, Sustained, Crossfade (with a range slider) and Static.
Off By	Playback of this zone is stopped when any zone in the selected group is triggered (for example, for Drum choke groups).
Group	Sets the group for this zone.
Root Note	Sample Root note.
Range	MIDI velocity and keyboard range for the current zone.

## Menu Descriptions

<b>File</b>	<b>Description</b>
Load Program...	Opens the program load dialog box.
Recent Programs	Display a list of recently opened programs.
Save Program As...	Opens the program save as dialog box.
Export Program to 16-bit SFZ	Opens the SFZ export dialog box.
Export Program to 24-bit SFZ	Opens the SFZ export dialog box.
Rename Program	Renames the active program.
Reset Program	Resets the current program to initial blank value.
Exit...	Exits the sample / zone editor.

<b>Zone</b>	<b>Description</b>
Load Sample...	Opens the sample load dialog box.
Replace Sample...	Open the sample replace dialog box, swapping the current zone sample by the selected sample.
Recent Samples	Shows a list of recently loaded samples.
Add New Zone	Adds a new zone to current program.
Rename Zone	Renames the active zone.
Duplicate Zone	Creates a new zone using the same sample and values as the active one.
Delete Zone	Deletes the selected zone.
Delete All Zones	Deletes the program zones.
Export Zone to WAV...	Exports current zone to 24-bit WAV files.

<b>Zoom</b>	<b>Description</b>
Zoom In	Zooms the sample window in.
Zoom Out	Zooms the sample window out.
Zoom All	Displays the full waveform in the sample window.
Zoom Selection	Zooms to the selected area.

<b>Edit</b>	<b>Description</b>
Undo	Reverses the last action.
Redo	Repeats the last action.
Repeat...	Repeats the last used action a number of times.
Cut	Copy and deletes the selected sample area.
Copy	Copy the selected sample area from selected area.
Paste	Pastes the selected sample area at cursor position.
Mix Paste	Pastes and mix the selected sample area at cursor position.
Trim	Removes sample data from outside of the selected area.
Select All	Selects the complete waveform waveform.
Select None	De-selects the complete waveform.

These actions below can be undone using the **Undo** menu choice but they are 'destructive' and cannot be reversed later.

<b>Volume</b>	<b>Description</b>
Insert Silence	Inserts a period of silence at current cursor position.
Mute	Mutes the selected area of the sample.
Normalize	Set maximum peak volume of the selected area to 0dB and adjust the volume of the rest of the area accordingly.
Fade In	Applies a volume ramping starting at -Inf. dB to the current selection.
Fade Out	Applies a volume ramping ending at -Inf. dB to the current selection.

<b>Effects</b>	<b>Description</b>
Reverse	Reverses the selected sample selection.
Invert Polarity	Inverts the selected sample selection.
Swap Channels	Swaps the stereo channels.
Remove DC	Tries to center the waveform position.

<b>Cues</b>	<b>Description</b>
Insert Slice at selection	Adds a new cue at the selection point.
Remove slices from selection	Removes cue points from the selected area of the sample.
Remove all slices	Removes all cue points.
Slice sample at beats	Adds the same number of cues as set in the Tempo Sync parameter.
Slice sample at transients	Analyzes sample transients and adds a cue to each one.
Destructively Render Slices	Creates individual zones from cue points.
Export MIDI File From Slices	Saves a MIDI file containing chromatic notes for triggering the zones in sequence.
Stop Playback when Slice Ends	Stops the sounds once next cue is reached on playback.
Use White Keys Only	Bypass black keys for cue playing
Loop selection	Adds start and end loop points to the selection.



## VST Sampling

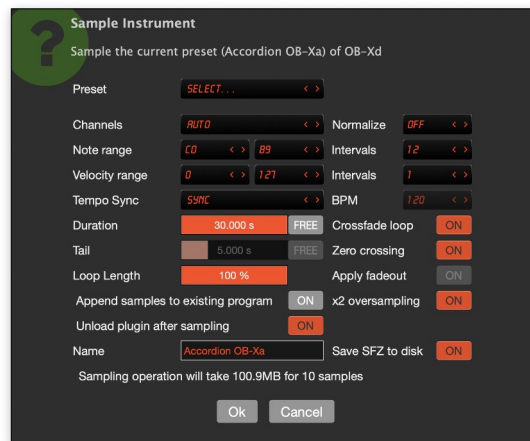
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A very special Bliss feature is the ability to record a VST, VST3 or AU instrument without any quality loss, using the **Sampling** feature located on the Sample Editor menu bar.

Sampling	Description
Sample Instrument...	Opens the VST sampling dialog box.
Programs	Selects the loaded VST plug-in program.
Use Static Processing Buffers	Enable if the VST has issues on the sampling.
Load Instrument...	<p>Loads a VST instrument. Default file extension and locations are:</p> <p><b>Windows (dll):</b> Program Files/Steinberg/VST/ Program Files/Common Files/VST3/</p> <p><b>Linux ( .so)</b> ~/.vst/ ~/.vst3/</p> <p><b>MacOS (.vst .vst3 .component):</b> ~/Library/Audio/Plug-ins/</p>
Recent Instruments	Shows a list of the recently loaded plug-ins.
Close Instrument / Effect	Close the currently loaded plug-in.
Open Instrument / Effect	Opens the plug-in editor window.
Close Instrument / Effect	Closes the plug-in editor window.
Unload Instrument	Removes instrument from Bliss.

Be aware Bliss won't be able to sample 100% of the 3<sup>rd</sup> party virtual instruments as they can feature incompatibilities like offline sampling protection, custom preset handling or other internal functions that make it not possible for Bliss to work properly.

Once **Sample Instrument...** is selected, a new dialog box will appear with information about how the current VST preset will be sampled.



Sample Plugin	Description
Preset	Select a preset with a range of options.
Channels	VST audio channels to be sampled: Automatic, Mono (mixing the stereo channel), Mono (left or right) or Stereo.
Normalize	Finds and sets maximum volume when possible.
Note Range	Key range to be sampled based on intervals number. By default a C-0 to B-9 range with 12 intervals will sample 1 note each octave. Use <b>fewer intervals</b> to get more fidelity from the original VST. 6 intervals will sample 2 notes each octave and 1 interval 12 notes each octave.
Velocity Range	Velocity range to be sampled based on interval numbers. 1 interval will sample a single velocity range for each triggered note.
Tempo Sync	SYNC will get BPM tempo from host. FREE from BPM field.
Duration	Number of seconds of sampling for each sampled note. This can be switched to the host tempo by clicking the FREE button. The label will then change to SYNC and the rate can range from 1 to 128 ticks (each tick is 1/16 of a 4/4 bar, that is a quarter note).
Crossfade Loop	Apply a crossfade loop to each sampled note
Tail	(Only available if Crossfade Loop is Off) Number of seconds (up to 20) to be applied after duration, triggering each note off. A fadeout can be applied, getting a perfect tail end if enabled.
Append samples to existing program	Adds the samples to the current program.
x2 Oversampling	Applies twice the current sample when sampling the plugin.
Name	Zone names after sampling the plugin.
Unload plugin after sampling	Disables and unloads the sampled VST plug-in after sampling.

# Keyboard Mapping

The Sample Editor Key Mapper is a powerful tool for managing MIDI note and velocity mappings for your sample zones. It provides a visual interface for precise control over how your samples respond to MIDI input.



The Key Mapper can be accessed from the Sample Editor by clicking the “**Keyboard Mapping**” tab. The interface is divided into three main areas:

## 1. Zone Grid Area (Top 95%)

- Visual representation of note and velocity ranges.
- Interactive zone boundaries.
- Root key indicators.
- Zone names and parameters.

## 2. Keyboard Display (Bottom 5%)

- Visual keyboard representation.
- Active note range indicators.
- Black and white key distinction.

# Keyboard Mapping Features

## Zone Management

- **Note Range Mapping:** Map samples across the keyboard (C0 to C8, notes 24–120).
- **Velocity Range:** Set velocity response from 0–127.
- **Root Key Assignment:** Set the root note for each zone.
- **Multiple Zone Selection:** Select and edit multiple zones simultaneously.

## Interactive Controls

### *Note Range Adjustment*

- Drag the left/right edges of zones to adjust note ranges.
- Visual feedback shows current note values.

### *Velocity Range Adjustment*

- Drag the top/bottom edges of zones to adjust velocity ranges.
- Real-time feedback of velocity values.

### *Root Key Adjustment*

- Drag the green root key indicator to change the root note.
- Root key must stay within the zone's note range.
- Visual feedback shows current root note.

## Keyboard Mapping Shortcuts

Action	Shortcut
Select Zone	Click inside zone
Adjust Note Range	Drag zone edges
Adjust Velocity Range	Drag top/bottom edges
Move Root Key	Drag green indicator
Select Multiple Zones	Ctrl/Command + Click
Select Range of Zones	Shift + Click

## Keyboard Mapping Visual Feedback

### *Bubble Messages*

- Shows current note values during adjustments
- Displays velocity values when modifying ranges
- Indicates root key changes
- Provides feedback for zone selection

### *Cursor Changes*

- Changes to indicate draggable elements
- Shows when hovering over interactive areas
- Indicates valid drop zones
- Provides visual feedback for active operations

## Themes

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Bliss GUI colors can be customized and modified. The Configuration files are located in the **Documents > discoDSP > Bliss > Themes** folder using a standard XML file format. New themes are installed by placing the XML file in that folder and reloading Bliss. Most relevant elements are described and indicated below. Colors can be edited using Opacity + Color code (RGB) in hexadecimal format (OO-RRGGBB).

## Keyboard + Mouse combination summary

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### Knobs in performance view

Shift	Fine-tune.
Control (Command on Mac)	Morph.
Left drag	Current zone value.
Left drag + Control (Command on Mac)	Current zone morph.
Right drag	All zones value.
Right drag + Control (Command on Mac)	All zones value morph.
Left double click	Reset to default current zone.
Right double click	Reset to default all zones.

### Combobox in performance view

Left mouse button select (also pressing < and >)	Change for current zone.
Right mouse button select (also pressing < and >)	Change for all zones zone.

### Buttons in performance view

Left mouse button click	Change for current zone.
Right mouse button click	Change for all zones zone.

### Components in sample editor

Shift	Fine-tune.
Select multiple samples in list view	Change values for selected samples.

## MIDI CC Mapping

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Bliss supports the listed MIDI messages described below:

- Program change, modulation wheel and pitch bend.
- Sustain pedal (CC64), gain (CC7), pan (CC10), balance (CC8 > stereo rotation).
- Macros 1-8 (CC102-109). These MIDI CC values can be changed by editing the Settings.xml file from Documents > discoDSP > Bliss 2 folder with a text editor.

## Version History

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### 2.9.1

- MTS-ESP critical issue has been resolved and is now functioning properly.
- Added the VST3 path to the Load Instrument VST host sampling path.

### 2.9

- Key Mapper View:
  - Introduced a visual Key Mapper grid within the Sample Editor for intuitive zone management.
  - Visualize and edit zone key ranges (low/high key), velocity ranges (low/high velocity), and root keys directly on a piano roll-style interface.
  - Supports interactive drag-and-drop resizing of zone boundaries on the grid.
  - Allows direct dragging of the root key indicator within the grid.
  - Provides clear visual feedback for the currently selected zone.
- SFZ Compatibility:
  - Added import and export support for ampeg\_attack, ampeg\_decay, ampeg\_sustain, and ampeg\_release opcodes.
  - Corrected SFZ export to place ADSR envelope parameters in the <global> section for enhanced compatibility.
- Sample Editor:
  - Improved visual handling and interaction logic for overlapping Loop Start/End and Cue Point markers.
  - Optimized playback cursor performance by reducing the repaint area during playback visualization.
- UI/UX:
  - Enhanced knob value display strings (bubbles) for Panning, Tuning, LFO Rate, etc., for improved readability.
  - Standardized UI font sizes, removing Windows-specific overrides for better cross-platform consistency.
  - Adjusted font sizes in the Zone List Box for better fit.
  - Removed separators from the main global menu for a cleaner look.
  - Ensured Key Mapper view updates reactively to zone changes and listbox selections.
- Bug Fixes:
  - Fixed AAX support.
  - Sample Editor: Fixed inaccurate playback cursor position reporting when sample pitch shifting was active.
  - Macro Editor: Corrected a visual glitch where Min/Max sliders were missing their background color.
  - Fixed minor grammatical errors in menu item text.

## 2.8

- Major Framework Upgrade for Enhanced Stability and Performance.
- Upgraded Engine Quality System:
  - Fast Mode (Lagrange with optional 2x/4x oversampling)
  - High Quality Mode (32-point SINC with optional 2x/4x oversampling)
  - Mastering Mode (512-point SINC)
- Implemented Optimized 512-point SINC Interpolation (2x faster).
- Replaced Spline with Advanced Lagrange Interpolation Algorithm.
- Added Automatic High-Quality Mode During Bouncing.
- Improved Sample Editor:
  - Added Beat Slicing System (4 to 128 beat divisions).
  - Smart Normalization with Selection Analysis.
  - Enhanced Waveform Display.
- Performance Improvements:
  - Implemented Library Menu Caching.
  - Enhanced Mono Legato with Improved Zone Compatibility.
  - Optimized Memory Usage.
- UI Enhancements:
  - Refined Typography and Dialog Clarity.
  - Redesigned Voices Counter LED.
  - Updated Standalone Plugin Appearance.
  - Optimized Filter and LFO Waveform Visualization.
  - Added kHz Display for Filter Frequencies Above 1000 Hz.
  - Enhanced Visual Feedback.

## 2.7

- Optimized SINC Interpolator Engine.
- Updated Core Framework for Enhanced Stability and Performance.
- AAX Support: Pro Tools users can now employ Bliss as a sampler and AU, VST2, and VST3 host for content sampling. Note that Master Gain and Master Pan are locked to fixed values due to Pro Tools parameter design.
- Refined Popup Menus and Font Design.
- Fixed Library and Sampler Popup Menu Browsers: Now with Proper Sorting and Program Load.
- Enhanced License System.
- Added Shortcuts for Zoom All (Shift+X) and Zoom Selection (Shift+V).



## 2.6

- Updated the core framework.
- Included a standalone for Windows 32-bit, enabling support for legacy 32-bit plugins hosting and sampling.
- Resolved an issue where the demo version could not save 16-bit SFZ files.

## 2.5

- Buffer output is now cleared on load to prevent noise on certain hosts during activation.
- Boundaries of the activation window have been corrected when zoom is set at 150% or higher.
- File dialogs have been upgraded to use native OS functionality.
- Issue causing the activation window to appear in the background upon loading has been addressed.
- Math functions have been updated.
- Monospace font has been updated.
- Popup menu separators' colors have been modified.
- Titles of dialog windows have been simplified.
- Waveform display now has a cached view.

## 2.4

- Major framework updated.
- New macOS app icon (Big Sur style).
- Updated URL for checking updates.
- Loading of Instruments and Effects now points to default system folders.
- Fixed Virtual Instrument sampling bug where plug-ins that didn't return a program slot weren't sampled.
- New built-in feature for online license activation.
- GUI enhancements.

## 2.3

- Loop points are now embedded on exported wave files.
- Added recursive search of library folder.
- Added file browser in tree format to Library selection.
- Added Sample Library folder menu including selectable location in Options.
- Double click on Sample edit zone name will play or stop the sample.
- Fixed macOS Custom Temp Sync field not displaying properly.
- Fixed Legato/Mono behavior with MIDI off notes.
- Fixed polyphony on different zones with Legato/Mono play modes.
- Load Sample shortcut now uses Shift+Q to avoid issues with macOS standalone app.
- New main GUI layout swapping effects panels for better consistency.

## 2.2

- Custom Macro MIDI CC values editable at Settings.xml (Macro1-2MIDICC).
- Standalone app enhancements.
- Framework update with enhanced VST and VST3 instrument loading compatibility.

## 2.1

- New note range selection drop down design.
- Drop down now available in instrument sampling BPM, Note Interval and Velocity Interval.
- Fixed amp\_env\_dest1 XML parameter issue.
- Added Library menu at main Program drop down with configurable path at Bliss Options.
- Added Export SFZ to disk on instrument sampling.
- Fixed .ZBB bank and .SFZ files not able to be opened via Program drop down.

## 2.0

- Native Apple Silicon M1 and later support.
- Added dragging behavior for velocity, key range and tempo selection.
- Added export single selected file.
- Added exported file to recent sample list.
- Added Program name as default filename after exporting.
- Added Rubber Band time stretch library license string.
- Added save selected zone in Bliss program.
- Adjusted sample edit GUI controls to fit window.
- Fixed amp\_env\_dest1amt XML parameter saving.
- Fixed incorrect parameter range initialization.
- Fixed note sharp character not displayed correctly.
- Fixed note sharp character not exported correctly.
- Fixed Replace Sample function.
- Fixed standalone background color settings.
- Fixed VST sampling settings preset combo box.
- Last SFZ exported folder now recalled correctly.
- Minor fixes and enhancements.
- Sample and zone export now uses 24-bit instead 16-bit.
- Set zone by MIDI note now mirrored in Options and Zone menu.
- Standalone tweaks.
- Wider loop type LCD value display.

## 1.8

- Enhancements

- Added Export Program to mapped WAV files.
  - Added Linux JACK support for standalone.
  - Added Windows ASIO support for standalone.
  - Auto glide mode enabled by default.
  - Delay default value SYNC to 3 ticks.
  - Delay FX synced to host tempo by default.
  - Dialog warning after selecting Extreme Mastering.
  - Full width character display on Program and Zone LCD.
  - Improved Unison speed.
  - Max polyphony changed to 64 voices.
  - More musical Chorus FX default value.
  - New voice Legato and Mono handling.
  - RAM memory per instance reduced to 7.7x.
  - Redistributed VST sampling menu.
  - Removed Linux WebKit component for extra distro compatibility.
  - Updated LUA import scripts.
- Fixes
    - Bliss asked replacing current program with empty slots on file drag & drop.
    - Crash exporting as SFZ using Windows Build 1909.
    - Note and velocity weren't displayed to main ZONE drop down.
    - SFZ import added .wav extension to zone name.

## 1.7

- macOS Catalina ready. Notarized installer and standalone app.
- Fixed LUA based import not working.
- Fixed crash loading recent banks from drop down menu.
- Fixed macOS standalone issue loading VST plug-ins.

## 1.6

- Windows standalone.
- Linux 64-bit build.
- Digital Code Signed Windows and macOS standalone apps.
- Updated framework.
- Compiled with XCode 10.3, VS 2019 and Ubuntu 18.
- Rename Zone from main GUI drop down (Command-R) renames active zone correctly.
- Tail time works as expected.
- Normalize dB < > buttons work as expected.
- Cancelling drag & drop files into GUI working as expected.

## 1.5

- Loop size parameter for VSTi sampling.
- Snap to zero crossing loop when sampling.
- Raise sampling time to 30s.
- Normalize lower e.g -6 dB when sampling plugins.
- Large files progress bar.
- User define naming rendered exported VSTi.
- Export samples with correct Zone Note Name.
- Drag and Drop VST.dll support.
- VST effect chain support.
- Enhanced key / VSTi sampling presets.
- Ability to rename sampled VSTi.
- Render sample crossfade loop.
- Save samples with full zone name.
- Auto assign root by file name.
- AIFF root note Fix.
- VST effect plugin chain.
- Option to not save samples in plugin state.
- Zone Solo.
- Export SFZ applying crossfade values.
- Select all zones, rename zones, save in SFZ crash fixed.
- Fixed Macro automation bugs.
- x2 VSTi oversampling.
- Polyphony increased to 256 voices.

## 1.2

- Removed License.dat copy protection.
- Added option in the menu to disable logging.
- Small improvements to mouse handling.

## 1.1

- New Bliss Library available at Members Area.
- Mac standalone app.
- 32 and 64-bit VST3 support.
- Multi-out support selectable per zone (1 Master with effects and 4 individual outs).
- Disk browser for searching and loading preset files on disk with pre hear and sample preview with metadata.
- Rewritten voice management engine.
- Easier license installation using drag and drop.
- Full keyboard driven controls navigation and editing (move between controls with TAB / Shift+TAB, set knobs and sliders with arrows, enter value in text with ENTER).
- Better focus indication on controls.
- Added resample zone in sample editor.
- Batch rename selected zones in sample editor.
- Prettified balloon parameter display.

- Improved look and feel of wave drawing and GUI controls.
- Enhanced EXS import.
- Exporting slices to MIDI adds .mid extension.
- Fixed Linux file dialog issues.
- Fixed note hangs.
- Fixed legato/mono behavior.
- Fixed crashes loading program from Bliss Online Library with Cubase 8.
- Fixed problems muting output when switching presets in Cubase 8.
- Fixed EXS24 import with notes stuck using MIDI keyboard.
- Fixed sampling from Arturia SEM V or Spire.
- Fixed sampling from Sonatina Symphonic Orchestra.
- Fixed exporting instruments to sfz as .wav.wav instead of .wav.
- Fixed association between the audio files and the .sfz.
- Fixed replace program dialog appearing after dropping .zbp file into empty location.
- Fixed sample window getting transparent when no samples are loaded.
- Fixed sample window not clearing itself when no samples are selected.
- Fixed sample window not fitting to performance window when it's set to be opened in the same area.
- Fixed a problem with glide mode button not displaying when enabled.
- Minor GUI fixes and enhancements.

## 1.0.4

- Reset voices state when changing play mode.
- Fix glide rate not following morph changes.
- Fix glide mode button not responding to changes.
- Fix in some cases the background of the sample editor is not paint.
- Fix sample editor wave not always repainting correctly.
- Changed appearance of sample editor exit button icon.

## 1.0.3

- Improved VST host sampling including progress bar.
- Improved file naming when sampling
- Fixed EXS importing.
- Fixed VST host sampling bugs.
- Fixed crossfade loop clicks in some configurations.

## 1.0.2

- Updated license check.
- Fixed the problem in some hosts blocking the transport (high cpu usage when sample editor was open).
- Minor fixes.

## 1.0.1

- Fixed problem with 1.0.0 still remembering for beta expiration.
- Fixed wave window redraw when deleting zones from the sample editor.
- Fixed drawing of wheels by making the handle more visible.
- Fixed avoid loading plugins with no MIDI inputs in plugin host.
- Fixed high CPU usage with wave redraw in Mac OS X with HiDPI displays.
- Fixed alert windows controls dimensions now respect global GUI scale factor.
- Fixed installer overwriting settings.xml.
- Changed sanity check metadata in wave files when wrong note/velocity ranges are specified.
- Changed avoid using program name and slot in SFZ sample export (use only zone name and append numbers when already existing).

## 1.0.0

- Added knob bipolar vales (LFO) to middle instead -100 when switching destinations.
- Added sample editor **CTRL / Command on Mac + left click** to add/remove slice points on the sample display.
- Added static processing buffers for problematic plugins sampling.
- Fixed change on midi note option causing considerable lag on edit window.
- Fixed drag & drop files with capital extension letters not working.
- Fixed playing cursor freezing of various DAWs when sample edit window is open and samples are being triggered.
- Fixed putting a loop and then adding a cue point for sample start before the loop not making it play again.
- Fixed saving program, bank or zones using previous file names instead actual one on the dialog box.
- Fixed SFZ crashes on exporting.
- Fixed shift+click on LCD arrows changing zone name at LCD but not at sample editor list names.
- Removed Classic theme.

## 1.0 Beta 6

- Added multiple zones can be deleted with multiple list box selection.
- Added outline color to wheel controls.
- Added per voice effect on / off send state.
- Added threshold option for slicing based on transients.
- Changed the name of glide button from OFF to FREE.
- Disabled filtering when importing a sample.
- Disabled send effect level when global effects are shut off.
- Fixed sample editor getting smaller on every switching.
- Fixed external sample editor window not being able to drag midi slices.
- Fixed plugin not updating correctly after a sample freeze.
- Fixed problems with undo disabled was still working under the hood.
- Fixed some issue with UTF-8 encoding of strings in some part of the interface.
- Programs and zones will not have 000 in their name anymore, the number is added automatically.
- Sample list scrollbar now using theme color.

## 1.0 Beta 5

- Added global on/off buttons in send effects section.
- Added export slices to midi file using sync to ticks and host BPM as reference.
- Added drag and drop slices to midi clip from plugin to host (**CTRL / Command** on Mac + shift drag with mouse left button when the sample is sliced, taking into account SYNC and host BPM).
- Added Sample editor > Cue > Destructively render slices to zones.
- Added button to enable and disable sync to ticks in sample editor.
- Added scrollbar to sample editor.
- Added sample editor now remember its size when opened inside the plugin window.
- Added sample editor remember if it was open when the plugin window is closed.
- Added highlight text indicate when a value is already assigned in macro editor.
- Added allow load by dropping multiple samples or programs (not both).
- Added flag to enable or disable undo useful when working with huge instruments.
- Added delay to LFO.
- License.dat accepted with .txt extension.
- Changed bank/zone < > triangles by slim < > ones as they appear on combo boxes.
- Fixed a problem with pitch bend when re-triggering new idle voices.
- Fixed problem with macros not recalling.
- Fixed better handling of memory units in undo actions.
- Prettified zone names by leaving number, program name, root note and key range for freezed samples.
- Restored cue options in menu to top level instead of submenu to ease access.

## 1.0 Beta 4

- Added text highlight to visualize zone activity in sample editor.
- Added plugin freeze allow ticks/beats option instead seconds.
- Added plugin freeze allow specify custom BPM.
- Added plugin freeze will automatically open the plugin editor when a plugin is loaded.
- Added plugin freeze options saved with properties.
- Added auto drum spread dialog have a start from note combobox to allow stacking more drum kits easily.
- Added **CTRL / Command** on Mac + drag on loop points will drag the other end at the same time.
- Added exposed unison voices in zone parameters.
- Added shift + click will now delete a cue point.
- Added **CTRL / Command** on Mac + click on program and zone name to open program/sample import dialog.
- Added shift + click on < > buttons in zone selector will select samples in the same directory of the current zone sample.
- Improved selection in sample editor.
- Improved cut/copy/paste operations with selections and empty zones.



- Changed off by group handling now works only with polyphonic play.
- Changed tick to tempo menu with logical values and a custom one.
- Fixed sample editor window opening always in front in all hosts.
- Fixed delay when opening sample editor in windows machines.
- Fixed wrong display of macro display value.
- Fixed macro sliders are click editable with value 0..1.
- Fixed some labels are disappearing at certain zoom.
- Fixed allow loop end to be set at very last sample.
- Fixed more precise cue and loop move with mouse with no jumps.
- Fixed cue triggering problem always triggering cue 0.
- Fixed EXS import.
- Fixed problem with program import in LUA scripts.
- Fixed accelerators keys display on Mac having wrong font height.

## 1.0 Beta 3

- Added option to bypass black keys when triggering cues.
- Added remind position of zone list width from sample editor.
- Added sample freeze now allow one shot with tail (no looping samples).
- Added sample freeze now allow selecting sample normalization.
- Fixed replace sample now respect midi mapping and other properties.
- Fixed problem with single cue triggering when only one trigger is present (sample offset start).
- Fixed menu labels capitalization.
- Fixed Mac OS X popup menu accelerators display.
- Changed opening sample editor in window disabled by default.
- Changed unison detune knob disabled when unison is OFF.

## 1.0 Beta 2

- Added Samples and SFZ export with 24-bit resolution.
- Added an options to play slices until the end of the sample or only at the next slice boundary.
- Added an option to unload automatically the plugin after sampling.
- Added an option to freeze plugin appending samples to current program to create multi layered sound easily.
- Added keyboard focus indication to wave view.
- Added crossfade loop range slider.
- Added sustain pedal midi support (sample will sustain indefinitely until pedal is switched to off, which will then trigger release stage).
- Added GUI size allowed to go as low as 60%.
- Added macro editor min and max sliders now display real parameter values.
- Improved interpolators (normal and high for real time / extreme for offline).
- Improved voice generation speedup.
- Improved support for plugin hosting.

- Improved modulation destination amount display of unipolar/bipolar values.
- Changed macros controls moved to envelope section.
- Changed downsampling filter passband to allow more frequencies near nyquist while still decrease aliasing.
- Changed beta release expiration dialog appears when 7 days are left instead of 30.
- Fixed bug LFO2 amount behaving incorrectly in some cases.
- Fixed SF2 import for files with more than a single program.
- Fixed SFZ import.
- Fixed oversampling messing up plugin hosting.
- Fixed the use of slices and loop modes at the same time.

## 1.0 Beta 1

- First public release.

## Copyright

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Special thanks to [DarkStar](#) for his assistance.