

discoDSP Corona

Users Manual

Virtual Analog + Wave Synthesizer

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

Description

Corona is a virtual analog and wave synthesizer for Audio Units, VST and VST3 hosts. It features 3 VA + WAVE oscillators and offers up to 16 combine modes between the oscillators, resulting in extensive timbres. Additionally, it includes a 32-step arpeggiator with MIDI out, 8 destination matrix modulations, 4 LFOs, 4 ADSR envelopes, unison, distortion, chorus, delay, and limiter effects. The synthesizer boasts high-quality sound and utilizes dual zero feedback delay analog-modeled filters. All of these features are presented through a straightforward and easy-to-use interface.



Features

Corona boasts the following powerful feature set:

- 3 Oscillators (sine / saw / triangle / PWM / square / parabolic / noise) with random phase.
- Oscillator combination using operators with 12 phase mode algorithms / 16 detune mode algorithms.
- Oscillator WAV / SF2 loading capabilities / including a factory wave bank.
- Analog modeled oscillator drift.
- Analog modeled oscillator leakage.
- 32 steps arpeggiator with MIDI out / 10 modes / 3 trigger types / 4 octaves range / velocity mix / bipolar swing / 13 clock sync types / editing and preset management. Since R4 can send up to two modulation sources to mod matrix.
- 13 Dual resonant filters with bipolar drive / key tracking / 10 shaping modes / pre/post volume ADSR routing and zero delay feedback filters (ALT mode).
- ADSR for amplitude / filter and modulation with up to 6 curve types.
- 4 LFOs with host time sync (vibrato / filter / modulation) and 12 waveform types with smoothing.
- Unison with voice octaving / stereo spread and voice detune and Super Saw mode.
- 5 velocity curves (hard / normal / soft / fixed 100 / fixed 127).
- Dual pitch bend with linking.
- Modulation matrix.
- 5 portamento modes: linear / exp 99% / exp 1 cent / linear oct and glissando
- 128 patch memories per bank and bank browser.
- Two poly / mono / legato modes.
- Built-in distortion / chorus / panning and limiter effects.
- Mouse wheel support for knobs / sliders and LCD menus.

Installation

- **Apple Mac OS X**
 - Run the installer app.
- **Microsoft Windows**
 - Run the installer executable.
- **Linux**
 - Run the install.sh script.

Demo version has the following limitations:

- Active preset will not be restored after a project is reloaded.
- Preset position and bank will not be restored after a project is reloaded.
- Programs can't be stored or exported.
- Parameter automation is not available.

Basic Concepts

Channel Limiting

Corona has 16 notes polyphony by default. This number can be changed by clicking the LCD below POLYPHONY. These fonts turn cyan once all voices have been used.

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

Quick program select

Click program LCD to see a list of available patches.

< > arrows will browse presets or banks one by one.

Bank browser

Banks can be browsed by clicking the arrows in the status LCD or clicking its name to display a drop down menu.

Knob and fader editing

To have more detailed parameter adjustments, hold **ALT** key while moving.

Double click resets to default position.

Pitch Bend

Pitch bender allows you to drastically change the pitch of the current patch in real-time. You can modify the pitch bend up and down range from 1 to 24 semitones by clicking numbers on the drop-down menu. Both can be linked using the LINK button.

Modulation Wheel

Modulation wheel can be assigned several Modulation Matrix destination parameters.

Programming Tips



Holding **Shift** key while clicking any drop down LCD will switch to the next option. **Shift+Alt+Click** will go to the previous one.

Play Mode

MONO	1 voice of the synthesizer 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.

Alternative MONO2/LEGATO2/POLY2 modes are the same except that portamento is only active when there is a key down. There is no portamento when the first note of a phrase is played.

Portamento Type

LINEAR	Linear mode. Pitch reaches destination note in 'portamento time'.
EXP 99%	Exponential mode. Pitch reaches 99% of the portamento interval in 'portamento time'.
EXP 1CENT	Exponential mode. Pitch gets within 1 cent of destination note in 'portamento time'.
LINEAR OCT	Constant rate linear mode. Pitch changes an octave in 'portamento time'.
GLISSANDO	Like linear mode, but pitch is rounded to nearest note.

Portamento Time

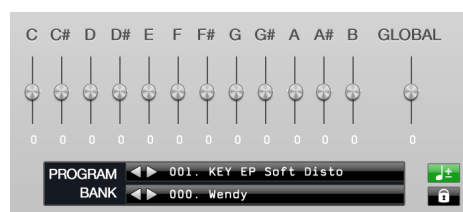
Portamento glides the pitch between the current note and a newly played note. The higher the value, the slower the transition progresses.

Master Gain

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

Program Tuning

Since Corona R5.1, every octave note as well as the global program can be tuned using a new section available pressing the tuning button close to to PROGRAM / BANK display and locked to the current tuning using the lock button.



Editing functions

Edit functions can be found below MASTER knob. There are several program options and shortcuts. This menu can also be accessed by right clicking on any GUI part.

Program

File

Rename...	Open a Rename dialog box asking to change the current preset name.
Store...	Stores the current preset on disk. If there is no preset at the current position, it will be saved as a new file. If there is an existing file, it will ask to overwrite.
Restore...	Reverts Corona status back to the original preset.
Import Wave...	Incorporate custom waveforms (WAV) into the USER waveform folder, typically located at: Documents > discoDSP > Corona > Waves > User.dwb. This inclusion of personalized waveforms enriches the sonic choices available, fostering increased creative exploration.

Edit

Cut	Puts current preset into memory and reset Corona to factory state.
Copy	Puts current preset settings into memory, preserving the state.
Paste	Overwrites current preset with the settings placed on memory.

Settings

GUI

Scale	Switches GUI to dark background.
Appearance	Switches between several GUI sizes: 75%, 125%, 100%, 150% or 200%. Sizes bigger than screen resolution will limit zoom options. Auto: Dynamically adjusts the theme based on the system theme. Light: Applies a bright and vibrant color scheme to the interface. Dark: Applies a sleek and subdued color scheme to the interface.
Theme	Selects theme.
Tooltips	Shows tooltips on GUI where cursor is placed.

Help

Manual	Opens PDF users manual.
discoDSP.com	Opens discoDSP website in your default Internet browser.

Oscillators

Oscillators are the basis of sound generation in synthesis. OSC 1, 2 and 3 are the primary sound source in Corona, each with various combination modes and waveform types. These oscillators use the incoming note pitch and plays in the specified waveform type. TODO change image.



Waveforms available in Corona are:

Type	Timbre
Sine	Leads, percussion, organs.
Triangle	Smooth sounds, bass, flutes.
Square	Smooth basses, leads, synced waves.
Parabolic	Smooth sounds, pads.
Noise	Ambient FX, percussion. When used FINE knob sets decay time.
Saw	Rough bass, edgy leads.
Pulse	Vintage synths, pads. Pulse can be synthesized using a sawtooth SUB combined to another sawtooth.
WAVE	Custom wave based from Factory list or user SF2 / WAV files. Font LCD will change from white to green when a wave is used.

Oscillators Random Phase can be set by clicking RANDOM button.

Adding Custom WAVE Oscillators

- Go to **Documents/discoDSP/Corona/Waves/User.dwb/**
- Place any **SF2 / WAV** files.

They will be available at Oscillator drop down next time Corona is instanced.

Making additional WAVE categories

- Go to **Documents/discoDSP/Corona/Waves/**
- Make a folder with **.dwb** extension (like Stabs.dwb) and place any **SF2 / WAV** files on.

They will be available at Oscillator drop down next time Corona plugin is instanced. Files zipped to a single ZIP archive and renamed to **.dwb** extension will also be loaded.

Combine

Oscillators can be combined using operators. There are 10 for Phase mode or 14 for Detune mode (DT), by clicking the Combine drop down LCD menu or using the mouse wheel over it.

Phase mode

Phase knob controls phase difference of **a** (Oscillator 1) and **b** (Oscillator 2) to Output (O).

Type	Process
ADD	$O = a + b$
SUB	$O = a - b$
MUL	$O = a * b$
AND	$O = a \text{ AND } b$
OR	$O = a \text{ OR } b$
XOR	$O = a \text{ XOR } b$
ABS AND	$O = a \text{ AND } b $
ABS OR	$O = a \text{ OR } b $
ABD XOR	$O = a \text{ XOR } b $
PYTHAG	$O = \text{SQRT}(a * a + b * b)$
MOD ADD	$O = (a+b) \text{ MOD } 1$
ROTATE	$O = a \text{ ROL } b$ (bitwise rotate)

Detune mode (DT)

Phase knob controls detuning of A (Oscillator 1) and B (Oscillator 2) to Output (O). All the previous algorithm are be applied in addition to the following 4 ones.

Type	Process
SYNC	Hard Sync.
RINGMOD	Analog modeled ring modulation.

PM	Phase modulation.
BROKEN PM	Alternative phase modulation.

Oscillator 3 is combined using Oscillator 1 and 2 as a single group element, resulting in A taken the previous reference tables.

Leakage

Corona Oscillator Leakage fader sets the amount leaked for Oscillators 1 and 2.

Analog Drift

An analog synthesizer is a relatively unstable device, as its components tend to be imprecise, never producing a truly constant value. Synthesizer enthusiasts refer to this tendency as drift, and it is often cited as a significant factor contributing to the warm sound of analog synths compared to the cold sound of digital synths. In Corona, you can adjust the Analog Drift using the DRIFT slider. While it may not be very noticeable when using single oscillators, it becomes more apparent in combined oscillator modes.

Vibrato/Volume LFO

See **LFO/Envelope sections** for details.

Unison

Corona can easily fatten up their sounds by using an easy to use Unison feature that's divided into four parameters.

Octave	Adds one or two sound octave transposed based on unison voices.
Voices Drop Down	Multiplies the sound to up to 4 voices. Super 7 mode applies to VA oscillators: saw, parabola, square, triangle and sine, modeling the classic Super Saw sound.
Detune Knob	Sets voice pitch range spreading amount.
Stereo Spread Fader	Widen ups the sound across the stereo field.

Randomizer

Corona can apply oscillator waveforms or timbre randomization by using the buttons below Randomizer labels. They behave like virtual presets and can be navigated backwards and forward using their buttons.

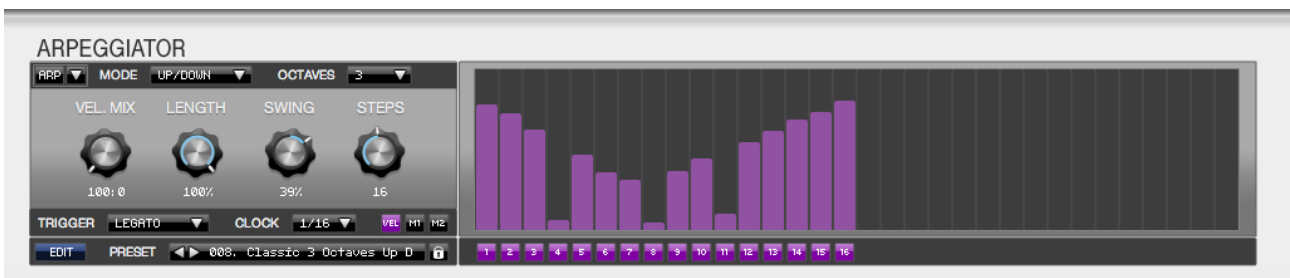
Arpeggiator

Corona features a 32 steps arpeggiator with tempo sync, swing, 3 trigger modes and 10 modes.

Basic Arpeggiator controls

Click ARP button below ARPEGGIATOR or OSCILLATOR labels to activate or deactivate it. Arpeggio will be activated when ARP button turns green.

Each active bar represents one arpeggiator step. Height configures Velocity. They can be activated or deactivated by clicking the number below.

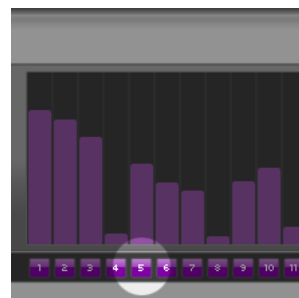


Click the drop down arrow next to ARP button to switch from Oscillator view to Arpeggiator view.



Click numbered buttons to enable or disable arpeggiator steps.

Ctrl+Click numbered buttons to enable or disable **glide**. Bars will be shown as gradient if glide is enabled.



Click the MIDI icon below MASTER label to mute Corona and output MIDI only. Corona MIDI Out works for the VST plugin version.



The following parameters control the overall arpeggio.

Vel. Mix	Arpeggio step velocity / key velocity mix.
Length	Length for each arpeggiator step.
Swing	Bipolar value. Adds shuffle for each triggered step.
Steps	Number of steps for the arpeggio sequence.

Arpeggiator Modes

CHORD drop down sets how notes are played.

Chords	Single chord for each arpeggiator step.
Up	Upwards only.
Down	Downwards only starting with the highest octave first.
Down2	Downwards only starting with the lowest octave first.
Up/Down	Upwards then downwards.
Up/Down+	Upwards then downwards. Notes at the end are repeated.
Down/Up	Upwards then downwards.
Down/Up+	Downwards then upwards. Notes at the end are repeated.
Random	Randomly.
As Played	As played.

If keys C, E and G are held down with 'octaves' set to 2, notes will play as listed below.

Up	C1 E1 G1 C2 E2 G2
Down	G2 E2 C2 G1 E1 C1
Down2	G1 E1 C1 G2 E2 C2
Up/Down	C1 E1 G1 C2 E2 G2 E2 C2 G1 E1
Up/Down+	C1 E1 G1 C2 E2 G2 G2 E2 C2 G1 E1 C1
Down/Up	G2 E2 C2 G1 E1 C1 E1 G1 C2 E2
Down/Up+	G2 E2 C2 G1 E1 C1 C1 E1 G1 C2 E2 G2

Arpeggiator trigger and clock

TRIGGER drop down sets how the arpeggiator plays. Clock sets the timing.

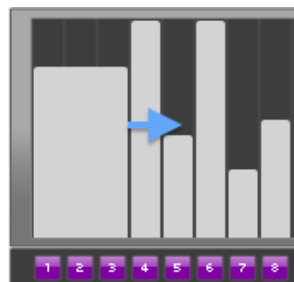
Song Position	Arpeggio is synced to host song position.
Legato	Arpeggio starts when there are no keys down and a key is pressed.
Note	Arpeggio restarts each time a key is pressed.

Arpeggiator preset management

Corona has his own preset category for arpeggios that will be stored at **My Documents > discoDSP > Corona > Arpeggios** on Windows and **~/Documents/discoDSP/Corona/Arpeggios/** on Mac/Linux.

Rename...	Renames active arpeggiator preset.
Store...	Stores active arpeggiator preset
Reload...	Loads the stored preset on disk from the active preset number.
Cut	Resets and stores active arpeggiator configuration on memory.
Copy	Stores the current arpeggio configuration on memory.
Paste	Writes the arpeggio state from memory to the active arpeggiator preset.

Programming Tips



Arpeggio steps can be joined by using the mouse cursor over any bar border, clicking and dragging to the right.



Mouse wheel can be used over arpeggio bars for easy fine-tune.



Arpeggiator can be combined with Modulation Matrix using Velocity as source for an additional step based modulation.



There are two additional Modulation Sources since R4. They can be configured used M1 and M2 buttons. M1 outputs MIDI CC 22 and M2 MIDI CC 23.



Arpeggiator state can remain when switching presets and banks by enabling the lock button.



Filter

Filter section will transform signal frequency response. A filter is a unit that changes the magnitude of a range of frequencies of the sound, boosting or cutting these frequency values. Once oscillators are mixed, sound is next routed through Corona filter section.

Corona has dual filters and they are divided into two tabs called 1 and 2. A green border around the button displays the active one.

Filter is enabled once the button turns green. Click 1 and 2 buttons to switch filters and click again to enable or disable them.



PRE button will change Volume ADSR order and will be processed before Filter hanging its name to POST.

Basic Filter controls

Most common filter parameters are the Frequency and Resonance controls

Frequency	Sets the frequency point affected by the filter response.
Resonance	determines the amount of amplification of the range of frequencies surrounding the frequency (cutoff) point.
Drive	Filter overdrive. Bipolar values.
Key track	Keyboard Tracking amount will increase the filter cutoff frequency based on incoming note pitch. Higher notes will add higher frequencies to the current filter cutoff point.

Corona has 13 filter types. They can be toggled by clicking the drop down menu and selecting one, or placing the mouse at the LCD name and using the mouse wheel. The active filter is also showed in the display.

Programming Tips



A correctly tuned filter drive with ASYM2 filter shape will get good sounds.
Small positive Filter Drive values will result in more dynamic sounds.

Filter Types

Corona can use several filter types to shape the sound coming from oscillators.

Type	Description
LP6	Lowpass filter that will cut all spectrum range above the Cutoff frequency, with a rolloff of -6dB per octave.
LP12	2-pole Lowpass filter that will cut all spectrum range above the Cutoff frequency, with a rolloff of -12dB per octave.
LP18	Lowpass filter that will cut all spectrum range above the Cutoff frequency, with a rolloff of -18dB per octave.
LP24	4-pole Lowpass Filter with -24dB per octave rolloff. This functions similar to the LP 12db, but with a steeper frequency curve response.
BP12	2-pole Bandpass Filter, which allows only the frequency range surrounding cutoff point to pass through. Resonance controls the size of this bandwidth.
BP24	4-pole Bandpass Filter, which allows only the frequency range surrounding cutoff point to pass through. Resonance controls the size of this bandwidth.
HP12	Will pass frequencies above the cutoff point and will cut all range below. This filter type has a rolloff of -12dB per octave.
HP24	The opposite of the Lowpass filters, the Highpass will pass frequencies above the cutoff point and will cut all range below. This filter type has a rolloff of -24dB per octave.
BS24	Special 4-pole lo-fi Band Smash filter.
LP303	303 modeled filter.
PH6/8/12/16	Special 6 to 16 stages Phaser filter. Resonance controls phaser feedback. Filter shape types are in the feedback loop and every one makes the sound very different. Also note Filter ALT mode uses a slightly different algorithm.

ALT button will switch the current filter to a **Zero Feedback Delay Filter** mode.

Filter ALT mode is more CPU intensive and outputs a higher quality, liquid analog alike, sound.

Filter LFO

See **LFO section** for details.

Filter Envelope

See **Envelopes section** for details.

Modulation Matrix

Corona modulation matrix features a simple 2 page, 8 parameters configuration.

Each configuration is divided into one **Modulation Destination** blue violet colored drop down, and two **Modulation Sources**, followed by a bipolar slider amount.

A **destination** can be modified by **one** or **two sources**. When **two** of them are used, their values plus slider amount are **multiplied**.



Modulation Destination

NONE	Disabled
LEVEL	Oscillators 1, 2 and 3 Level.
PITCH	Oscillators 1, 2 and 3 Pitch.
FINETUNE	Oscillators Fine Tune.
PANNING	Stereo Position.
O2PITCH	Oscillator 2 Pitch.
PHASE	Oscillators 1 and 2 Phase.
O2LEVEL	Oscillator 2 Level.
O3PITCH	Oscillator 3 Pitch.
O3LEVEL	Oscillator 3 Level.
UNISON	Unison Detune Level.
CUTOFF 1/2	Filter 1 / 2 Cutoff.
RESONANCE 1/2	Filter 1 / 2 Resonance.
DRIVE 1/2	Filter 1 / 2 Drive.
F1/2ENVMOD	Filter 1 / 2 Envelope Modulation.
F1/2LFODEPTH	Filter 1 / 2 LFO Depth.
VIBDEPH	Vibrato Depth.
F1/2LFOFREQ	Filter 1 / 2LFO Frequency Rate.
MLFOFREQ	Filter 1 Modulation Frequency Rate.
VIBFREQ	Vibrato Frequency Rate.
VENVSPEED	Volume Envelope ADSR time.
F1/2ENVSPEED	Filter 1 / 2 Envelope ADSR time.
MENVSPEED	Modulation Envelope ADSR time

Modulation Sources

KEY	MIDI Note.
VELOCITY	MIDI Velocity.
PTCHWHEEL	Pitch Wheel.
MODWHEEL	MIDI CC#1 Modulation Wheel.
AFTERTOUC	MIDI Aftertouch.
FOOTCTRL	MIDI CC#4 Foot Controller.
EXPRESSION	MIDI CC#11 Expression.
BREATH	MIDI CC#2 Breathe.
RND UP	Constant unipolar random values per voice.
RND BP	Constant bipolar random values per voice.
MOD LFO	Modulation LFO.
MOD ENV	Modulation Envelope.
FLT LFO	Filter LFO.
FLT ENV	Filter Envelope.
VIB LFO	Vibrato LFO.
VIB ENV	Vibrato Envelope.
OSCMIX	Oscillator output.
ABS OSCMIX	Oscillator ABS output.
OSC3	Oscillator 3 output. Can be used independently from combine state.
ABS OSC3	Oscillator 3 ABS output.
ARP MOD 1	Arpeggiator Modulation Source 1 (see arpeggiator).
ARP MOD 2	Arpeggiator Modulation Source 2 (see arpeggiator).



Programming Tips

Modulation sources RDN can be used for random note fine-tuning.

OSCMIX, ABS OSCMIX, OSC 3 and ABS OSC 3 are good for special FX.

Setting V/F1/F2/MENVSPEED with source KEY and 100 amount will make ADSR times halve going an octave up from C4 and double going an octave down.

Modulation LFO

See **LFO section** for details.

Modulation Envelope

See **Envelope section** for details.

LFO

Low Frequency oscillation (LFO) is an electronic signal, that creates a rhythmic pulse or sweep, used to create vibrato, tremolo and other effects.

Corona has 3 dedicated LFOs.

Vibrato LFO	Modifies oscillator pitch.
Filter LFO	Modifies filter cutoff.
Modulation LFO	Modifies an assigned parameter from modulation matrix source.

LFO Mode Triggers

LFO waveforms can be configured to run using several triggering options.

Voice	When voice starts.
Legato	When no keys are down and a key is pressed (i.e. the first note of a phrase).
Global	When the synth is started and never re-triggered.

LFO Mode Sync to Tempo

Every LFO mode trigger can also be combined several tempo sync in addition.

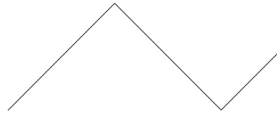
16 th	16 th note unit.
64 th	64 th note unit.
32 th T	32 th triplet note unit.

LFO Controls

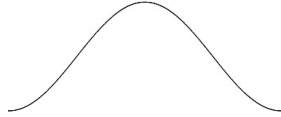
Depth	Amount applied. Bipolar for filter and modulation LFO.
Delay	Holding time until LFO takes effect in milliseconds.
Frequency	LFO Frequency in Hertz or synced to tempo if 16 th / 64 th / 32 th T are selected.
Decay	Decay amount in milliseconds.
Smooth	LFO waveform smoothing.

LFO Waveforms

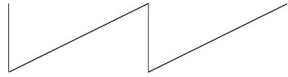
TRIANGLE



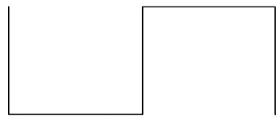
SINE



SAWTOOTH



SQUARE



RND

Random values.

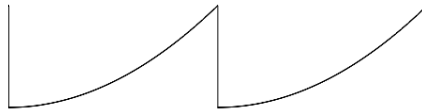
RND^2

Alternative random values.

RND^2 UP

Alternative random values for positive only values.

SAW^2



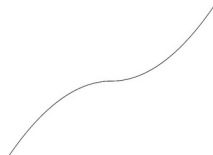
SAW^0.5



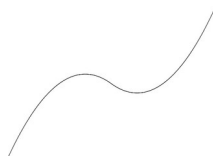
PARABOLA



$X \cdot |X|$



$X \cdot (|X|^2 - 1)$



Envelopes

When an acoustic musical instrument produces sound, the loudness and spectral content of the sound change over time in ways that vary from instrument to instrument.

The attack and decay of a sound have a great effect on the instrument's sonic character. Corona employs 3 envelope generators that controls a sound's parameters at any point in its duration.

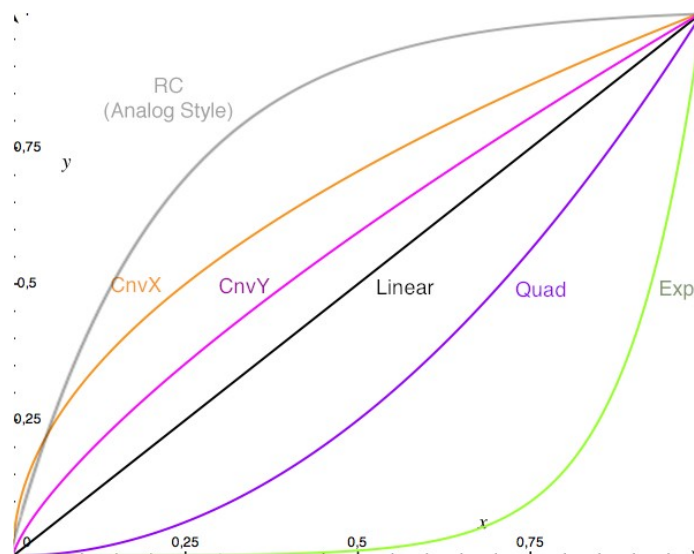
Contour of an ADSR envelope is specified using four parameters.

Attack	Time taken for initial run-up of level from nil to peak, beginning when the key is first pressed.
Decay	Time taken for the subsequent run down from the attack level to the designated sustain level.
Sustain	Level during the main sequence of the sound's duration, until the key is released.
Release	Time taken for the level to decay from the sustain level to zero after the key is released.

Corona **Volume Envelope** is assigned to the overall **volume**. **Filter envelope** modulation knob determines the **amount sent** to **Filter Cutoff**. **Modulation Envelope** is a custom **Modulation Matrix** ADSR destination. See **Modulation Matrix** section for details.

Envelope Curves

Attack, Decay and Release have several curves able to be changed using a drop down menu.



Built-In Effects

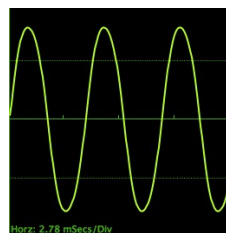
Corona has built in distortion, chorus, stereo delay and limiter effect units. A purple border reflects the active page. Clicking the same button again will enable or disable it.



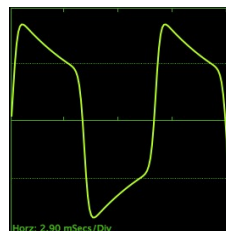
Distortion

Distortion is an effect altering the original shape.

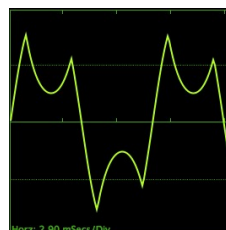
Mix	Controls distortion effect amount.
Type	Switch between different distortion types. Below there is a sine wave and their distortion result.



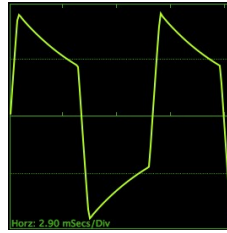
Overdrive



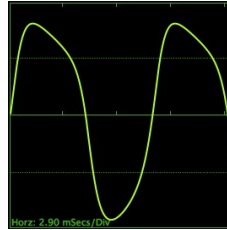
Foldback



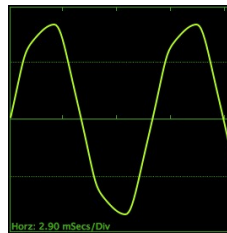
Clip



Asymmetric



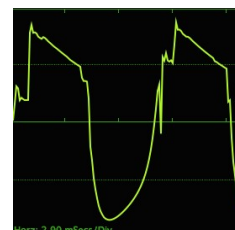
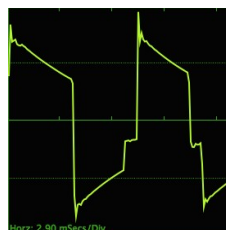
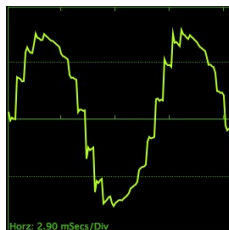
Scream



Quantize



Sample and Hold / Clip / Asymmetric



Amount

Controls distortion amount.

Tone

Controls distortion tone.

Chorus

Corona chorus is an effect that combines a delay set to a relatively short time to create a doubling effect, and a LFO set relatively slow which modulates the delay time. The resulting sound gets a warmed up character to it.

Mix	Controls chorus effect amount.
Depth	Controls chorus depth.
Frequency	Controls chorus frequency.

Delay

Delay can be used to add spacey echo effect, or widen a sound. You can sync left or right Delay to host tempo by clicking **SYNC** button. **CROSS** button adds a cross-feed to the feedback output, resulting in a stereo bouncing delay, useful for 3D effects.

Mix	Controls delay effect amount.
Left / Right Delay	Controls each stereo channel delay time.
Feedback	Controls delay tail time. The higher the value the longer the tail.

Limiter

A limiter is a compressor with a high ratio and, generally, a fast attack time. It will avoid peaks and clipping or saturating the signal.

Release Time	Controls limiter release time.
Release Shape	Switch between linear or exponential release shape.
Look-ahead	Compromise amount between slow attack rates that produce smooth-sounding gain changes and fast attack rates capable of catching transients.



Programming Tips

Using a moderate distortion amount will result in a more subtle tone. A recommended starting point amount is 30 to 40.

Version History

Release 6.2

- Classic skin now correctly switches to the dark variant in auto mode.
- Minor look and feel theme adjustments.
- Optimized macOS GUI CPU usage.
- New Bank function added.
- Upgraded core framework.

Release 6.1

- Framework: Upgraded core framework.
- SDK Updates: Transitioned to the most recent versions of VST3 and AAX SDKs.
- Rendering: Resolved macOS Metal rendering anomalies.
- MIDI: Addressed an issue where MIDI Out was non-functional.
- UI Enhancements:
 - Rectified the limiter button meter's display issue.
 - Fixed non-responsive sliders in the modulation matrix.
 - Introduced 125% GUI scaling.
 - Streamlined the GUI menu for enhanced user experience.
 - Augmented skin theme selector with Auto, Light, and Dark variants.
 - Adjusted the mod matrix position of GUI slider on the default skin.
 - Included a highlighted color for menu items.
 - Fixed Edit and Arpeggio popup menu scaling.
 - New Standalone app icon.
 - Edit > File > Import Wave... function.
 - WAV files, whether single or in batches, can be imported via drag and drop.

Release 6.0

- macOS Universal Binary (ported to native ARM, including all DSP).
- 64-bit builds for macOS, Windows, and Linux, including Standalone, Audio Units VST2, and VST3 versions.
- ASIO (Windows) and JACK (Linux) support for standalone app.
- Corona Wave Expansion is now included with the installer.
- Corona Sound Expansion is now included, featuring 256 presets across 3 banks.
- Major framework update.
- New online license activation via plug-in or standalone app.
- Settings location moved to Documents > discoDSP > Corona folder.
- HiDPI is fully supported wherever available, with 2x/4x assets being used.
- GUI size setting is limited by detecting the system screen size.
- GUI dark and light automatic switch based on macOS theme.
- GUI enhancements and fixes.

Release 5.1

- New default bank by Dominique Huchet aka tinga.
- New Tuning Lock button.

- Fixed multiple Dark Theme GUI glitches.
- Fixed Arpeggiator on/off buttons with 150% / 200% GUI sizes.
- Delay now mutes on All Sound Off MIDI message.

Release 5.0

- New GUI size options (beta): 75%, 100%, 150%, 200%.
- New LP303 filter type.
- New distortion types: S&H Clip, S&H Asymmetric.
- Sound quality optimizations.
- Wave Expansion now included with Demo version.

Release 4.7

- New envelope curve type: RC (Analog Style). Check Manual > Envelope section.
- Vibrato Depth values behave correctly with Mod Matrix destination amount.
- Mod Matrix Envelope Speed behaves correctly with modulation wheel.

Release 4.6

- New portamento modes: exp 99% / exp 1 cent / linear oct / glissando types.
- New arpeggiator glide mode. Ctrl+Click arp numbers to switch it.
- New tuning menu. Each octave note can be tuned individually now.
- Minor graphic enhancements.

Release 4.5

- New Low Pass filter types: LP 6 / 18.
- New special 6 to 16 stages Phaser filter: PH 6 / 8 / 12 / 16.
- New fader bitmaps.

Release 4.4

- New Modulation destination: Envelope Speed. Sets envelope ADSR times.
- Fixed Arpeggiator sustain pedal behavior.

Release 4.3

- New Distortion effect with 7 types: overdrive, foldback, clip, asymmetric, scream, quantize and sample & hold.
- New knobs.
- Performance optimizations.
- Manual revision.

Release 4.2

- Arpeggiator lock button. State won't change when switching presets or banks.
- Filter and Modulation LFO fade-in buttons.
- Documented Arp M1 and M2 sending MIDI CC 22 and 23.
- Vibrato depth background gradient.
- New discoDSP logo.
- Corrected OSC 2 Level gradient background and label alignment.

Release 4.1

- Fixed arpeggiator stuck notes.
- Fixed wave oscillator muting.

Release 4

- New zero-delay filter mode.
- Second filter with Envelope and LFO.
- New filter shape: asym3.
- Chorus and Limiter parameters.
- M1 and M2 arpeggiator modulation sources.
- Fine-tuned factory bank.

Release 3.1

- Fixed random arpeggio mode (Mac only).

Release 3

- Added 32 steps arpeggiator with MIDI out, 10 modes, 3 trigger types, 4 octaves range, velocity mix, bipolar swing, 13 clock sync types, editing and preset management. MIDI out is supported on VST plugins only.
- Added MIDI Solo icon below MASTER label to send MIDI only.
- Added EDIT > Settings > Tooltips.

Release 2.3

- MIDI Program Change supported.
- Out of voices signal indicator by changing polyphony drop down font color.
- Automatic wave search from other banks if original is not found.
- Wave not found warning message.

Release 2.2

- Two new oscillator combination modes: Modular addition and bitwise rotation.
- Two new filter shapes: Quantize and asymmetric quantize.

Release 2.1

- Fixed modulation matrix filter envelope modulation (FENVMOD) destination range.
- Free wave extension for registered customers at members area.

Release 2

- SoundFont 2 (SF2) supported by wave oscillators.
- Support for folders with .dwb extension for custom oscillator WAV / SF2 load.
- Super 7 Unison. Modeled Super Saw for parabola, saw, square and sine oscillators.
- Additional ADR curves on modulation envelope.
- LFO smoothing.
- Phase parameter now working with wave oscillators.
- Modulation matrix unison detune destination.
- Factory and Creation bank presets sorted by type.
- GUI enhancements, sub pixel rendered fonts, new logos and module reallocation.

Release 1.1

- OS X 10.5 compatibility in addition to 10.6 and 10.7.
- CPU won't spike when not playing.
- Smaller menu fonts for Mac build.
- Sound resets correctly after preset switching.
- Added EDIT > Settings > Dark Theme.

Acknowledgments

Special thanks to the following sound designers and engineers for their support and help:

- Bastiaan Barth <https://www.solidtrax.nl/>
- Daniel Stawczyk <https://www.stawczyk.com/>
- Erik Putrycz
- Jeff Purser <https://www.vstsoundbanks.com/>
- Ilkka Rosma
- Martin Breuhahn <https://www.cfa-sound.com/>
- Miles Dyson <https://www.plasmapool.com/>
- Ronei Leite <https://www.facebook.com/roneimusic/>
- Tinga <http://zabumba.free.fr/>

Copyright

Corona is © [discoDSP](#). All rights reserved.