TONE2

Electra2

Legal notice & Contact

If you have any difficulties installing or using Electra2, please contact us by visiting our website and clicking the Support button.

Tone2 website   http://www.tone2.com

Tone2 forum   http://www.tone2.org/forum/index.php

Support   support@tone2.com

http://www.youtube.com/user/Tone2Audiosoftware

https://www.facebook.com/Tone2Audiosoftware

https://plus.google.com/b/117394698401069212106

https://twitter.com/Tone2Audio

https://soundcloud.com/tone2-1

https://www.facebook.com/groups/502514813211643/ (Tone2 Usergroup)

Credits

Development: Markus Krause, Bastiaan van Noord
Programming & Graphics: Markus Krause
Manual: Bastiaan van Noord, Markus Krause, Daniel Sammut

Thanks go to: Anna Krause, family and friends, all sounddesigners & beta testers, and of course to all Tone2 customers for their continued support.

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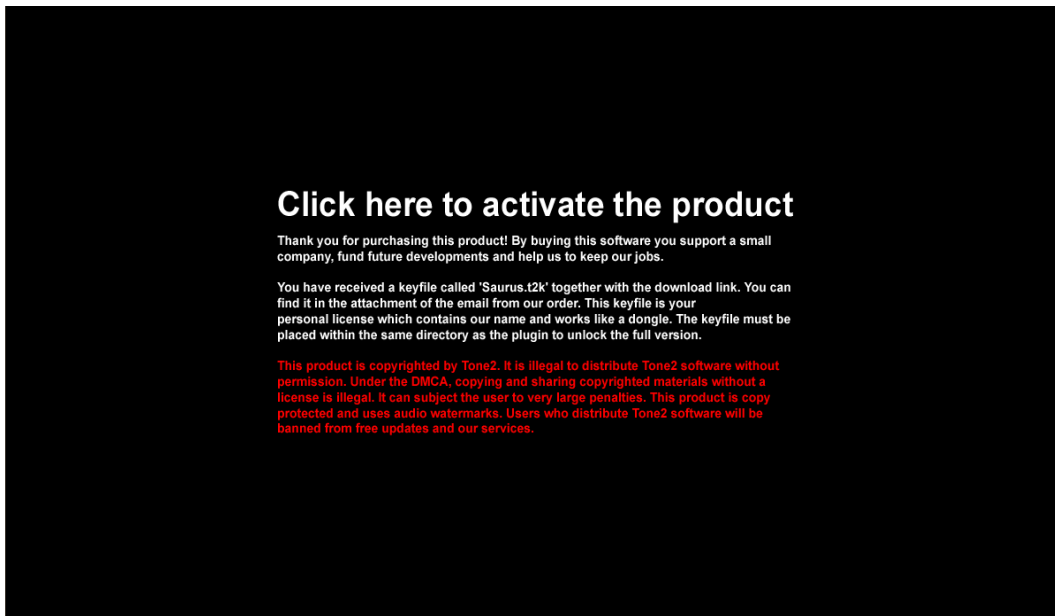
Installation & Authorization procedure

Together with the download link from Share-it you have received attached to the product delivery email a keyfile called 'Electra2.t2k'.
This file contains your personal serial number & your name and is used to unlock the full version.

Automatic Installation (recommended) for PC & Mac

1. Close your host (Logic, Live, Cubase, etc.)

2. Install the full version of the plugin. Note: the demo version cannot be unlocked

3. Open your host program

4. Do a plugin rescan in the host if it does not list Nemesis. Detailed instructions on how to perform a rescan can be found in your host's manual

5. Open Electra2

6. Click on the activation box in the middle

7. Select your keyfile 'Electra2.t2k' to activate the full version

8. Restart the plugin. Note that some host programs may require a complete restart

Click here to activate the product

Thank you for purchasing this product! By buying this software you support a small company, fund future developments and help us to keep our jobs.

You have received a keyfile called 'Saurus.t2k' together with the download link. You can find it in the attachment of the email from our order. This keyfile is your personal license which contains our name and works like a dongle. The keyfile must be placed within the same directory as the plugin to unlock the full version.

This product is copyrighted by Tone2. It is illegal to distribute Tone2 software without permission. Under the DMCA, copying and sharing copyrighted materials without a license is illegal. It can subject the user to very large penalties. This product is copy protected and uses audio watermarks. Users who distribute Tone2 software will be banned from free updates and our services.

Click inside the activation screen to browse – select your Electra2.t2k keyfile.

Manual installation for PC

1. Close your host (Logic, Live, Cubase, etc.)

2. Install the full version of the plugin. Note: the demo version cannot be unlocked

3. Copy 'Electra2.t2k' to the VST directory. Steinberg hosts often use C:\Program files\Steinberg\VSTplugins as the default plugin path. You can also take a look at your host's folder configuration. Note that the 'Electra2.t2k' keyfile should be inside the same folder that the Electra2 dll is in.

4. Open your host program.

5. Do a plugin rescan in the host if it does not list Electra2. Detailed instructions on how to perform a rescan are found in your host's manual.

6. Open Electra2. Now the normal user interface appears. If this is not the case, close your host and go back to step 3, as most likely you did not copy the keyfile to the right place.

Manual installation for Mac

1. Close your host (Logic, Digital Performer, Live, Cubase, etc.)

2. Install the full version of the plugin. Note: the demo version cannot be unlocked

3. Copy 'Electra2.t2k' to 'Library/Audio/Plug-ins'. The correct path for the file is: '/Library/Audio/Plug-ins/Electra2.t2k'.

4. Open the host.

5. Do a plugin rescan in the host if it does not list Electra2. Detailed instructions on how to perform a rescan can be found in your host's manual

6. Open Electra2. Now the normal user interface appears. If this is not the case, close your host and go back to step 3, as most likely you did not copy the keyfile to the right place.
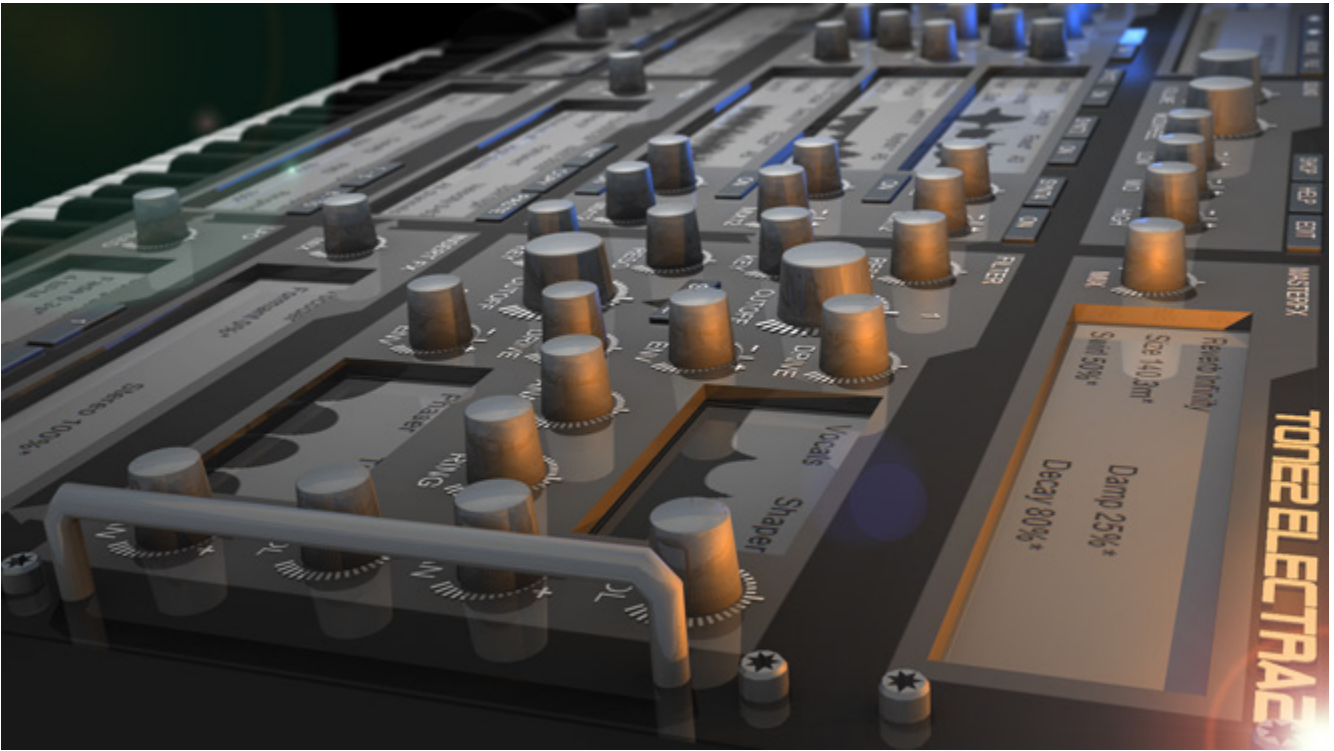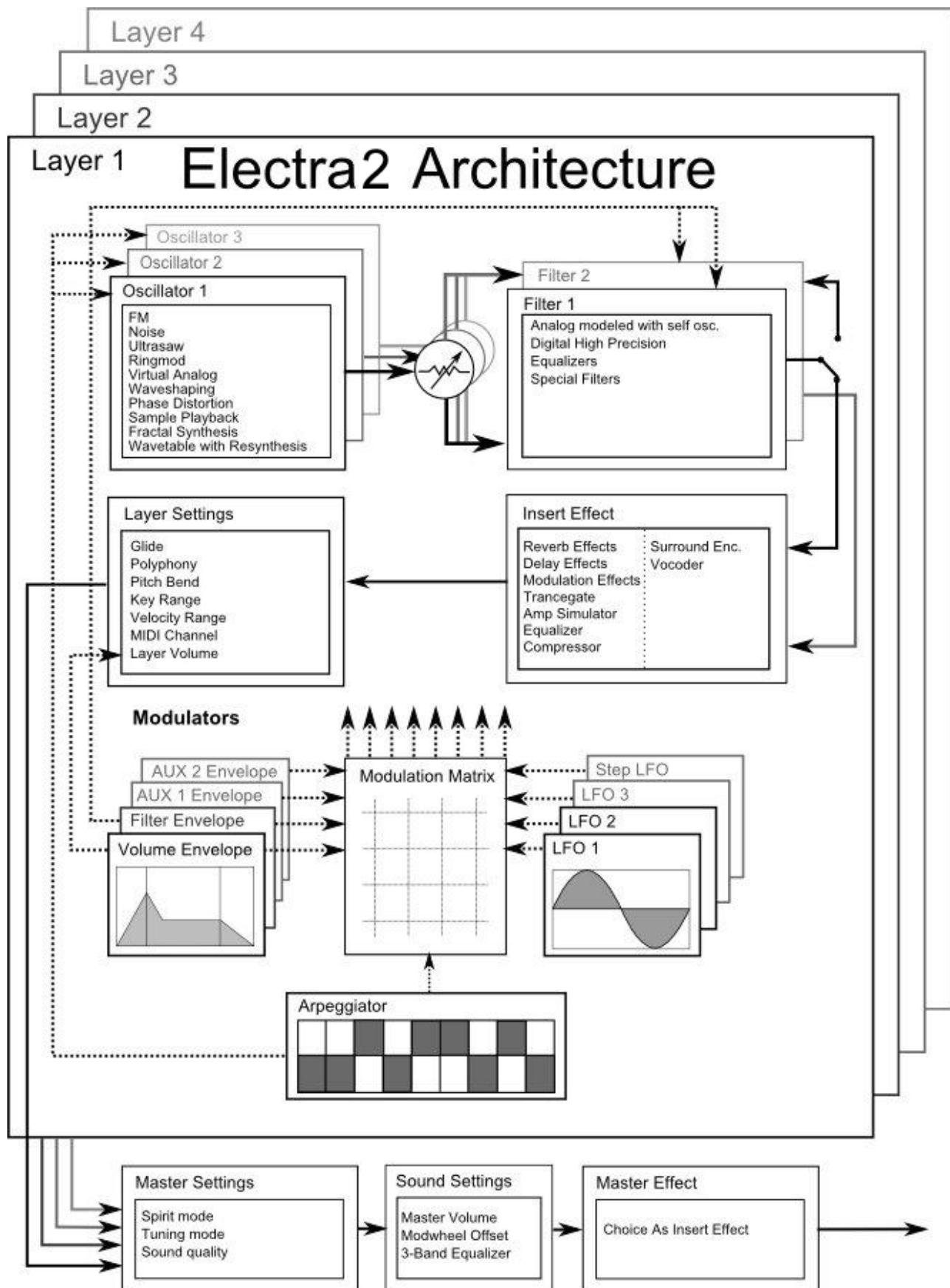
Welcome to Electra2

Electra2 is equipped with a high quality sound engine, multilayer support and a large range of music production features, yet designed in a way that puts you in control. Using a friendly hands-on interface that ensures first-timers can easily create sounds and experts can take their designs as deep as they want to. And with Tone2's high quality sound technology at its core, you're not only working with a greater palette for creating original sounds. But also the best sound quality and lower CPU usage than any other type of workstation or synthesizer has to offer.

Packed with an astounding sound collection of over 1200 production-ready sounds designed by professional sound designers. A comfortable patch browser is provided to give you an instant overview of all available categories and sounds, together with an on-screen keyboard to audition them from within the patch browser. Picking the sound you want is as easy as it can be.

In addition to its authentic sound library, Electra2 is equipped with many user-friendly control options in case you want to tweak sounds or craft your very own. Each of its 4 layers consists of a powerful multitimbral synthesizer with no fewer than 14 different synthesis methods.
Create your own synth sequence complete with percussion, use multiple arpeggiators to produce that massive bass line or import your own voice samples into its vocoder. The sky is the limit...literally.

Electra2 Architecture

Layer 4
Layer 3
Layer 2
Layer 1

Oscillator 3
Oscillator 2
Oscillator 1

FM
Noise
Ultrasaw
Ringmod
Virtual Analog
Waveshaping
Phase Distortion
Sample Playback
Fractal Synthesis
Wavetable with Resynthesis

Filter 2
Filter 1

Analog modeled with self osc.
Digital High Precision
Equalizers
Special Filters

Layer Settings

Glide
Polyphony
Pitch Bend
Key Range
Velocity Range
MIDI Channel
Layer Volume

Insert Effect

Reverb Effects	Surround Enc.
Delay Effects	Vocoder
Modulation Effects	
Trancegate	
Amp Simulator	
Equalizer	
Compressor	

Modulators

AUX 2 Envelope
AUX 1 Envelope
Filter Envelope
Volume Envelope

Modulation Matrix

Step LFO
LFO 3
LFO 2
LFO 1

Arpeggiator

Master Settings

Spirit mode
Tuning mode
Sound quality

Sound Settings

Master Volume
Modwheel Offset
3-Band Equalizer

Master Effect

Choice As Insert Effect

How to use this manual

This manual has been designed to provide a "quick start" guide to start making great sounds straight away with Electra2, followed by a more detailed explanation of Electra2, the user interface and its functions for power users and those who like to go beyond the presets.

What this manual doesn't do is explain the fundamentals of synthesis – there are plenty of good information available elsewhere. A good search on the internet will provide all the information you ever need for learning the basics.

Information and Warnings in the manual are shown with a grey background and speaker icon.

Electra2 interface controls

Buttons

Buttons in Electra2 are toggle-type buttons which switch between 2 states, active (*On*) and inactive (*Off*).

Clicking a button changes from the current state to the alternate state: if a button is currently "*On*" then clicking it will change it to "*Off*".

Active buttons are clearly shown as 'glowing' as if illuminated by a lamp.

Rotary Knobs

Unipolar knob   Bipolar knob

The rotary knob control increments a parameter value linearly from a minimum threshold value to a maximum threshold value.
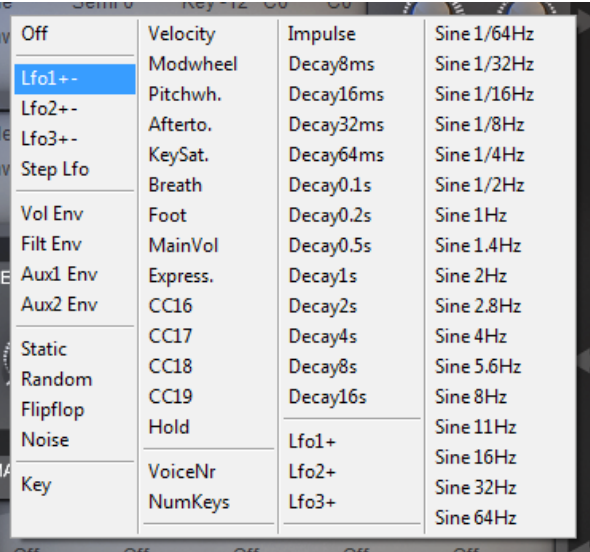
To increase a knob's setting value, turn it clockwise: click-and-hold the knob with your mouse and then move it up and/or to the right. To decrease, move down and/or to the left, or anti-clockwise.

If you press the *Shift* key on your keyboard and then click-and-hold the left mouse button on a knob, you will have fine control.

There are two type of value ranges for the rotary knobs, depending on the parameter the knob is controlling. There is the *unipolar* knob – that goes from zero to a positive value or the *bipolar* knob – that goes from a minus value to through zero and then to a positive amount. Bipolar values are useful for setting modulation amounts (which can be positive or negative) or pan where zero is the center.

Context Menus

The small LCD-style screens contain some parameters that are actually context menus (excluding the PARAMETER DISPLAY section).

Off	Velocity	Impulse	Sine 1/64Hz
Lfo1+-	Modwheel	Decay8ms	Sine 1/32Hz
Lfo2+-	Pitchwh.	Decay16ms	Sine 1/16Hz
Lfo3+-	Afterto.	Decay32ms	Sine 1/8Hz
Step Lfo	KeySat.	Decay64ms	Sine 1/4Hz
	Breath	Decay0.1s	Sine 1/2Hz
Vol Env	Foot	Decay0.2s	Sine 1Hz
Filt Env	MainVol	Decay0.5s	Sine 1.4Hz
Aux1 Env	Express.	Decay1s	Sine 2Hz
Aux2 Env	CC16	Decay2s	Sine 2.8Hz
	CC17	Decay4s	Sine 4Hz
Static	CC18	Decay8s	Sine 5.6Hz
Random	CC19	Decay16s	Sine 8Hz
Flipflop	Hold		Sine 11Hz
Noise		Lfo1+	Sine 16Hz
	VoiceNr	Lfo2+	Sine 32Hz
Key	NumKeys	Lfo3+	Sine 64Hz

Click on a parameter to show a context menu of options. Click on the desired setting to select and close the menu.

The display changes to show the current value.

Previous/Next

In Electra2, the left and right arrows in it's browser are used to select the previous and next patches.

Click the *left arrow* to select the previous patch in the current category. Click the *right arrow* to select the next patch in the current category. The browser display changes to shows the newly selected patch.

Display Parameters
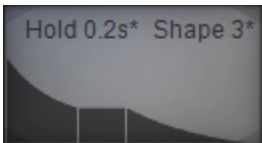
Hold 0.2s* Shape 3* Any parameters shown in Electra2's displays can be changed by a click-and-hold action on them and then dragging up or down.

Welcome Tutorial

By now, I'm sure you've spent some time trying out many of the presets included with Electra2 and are itching to create your own! Luckily, Electra2 is very easy to understand and within a very short space of time you'll have a good grasp of how Electra2 works.

To give you a push in the right direction, we've included a welcome tutorial. This quick-start tutorial is by no means comprehensive as it is simply a walk through of the creation of your very first Electra2 patch from scratch, and to show you the synth's basic functionality along the way so you can start familiarizing yourself with it.

For our first patch we'll make a simple bass sound.

Let's begin by loading an empty patch (INIT patch)

1. On top of Electra2's Settings panel, click on *INIT* to select Reset Layer. Reset layer will reset all controls on the active layer to their default settings.
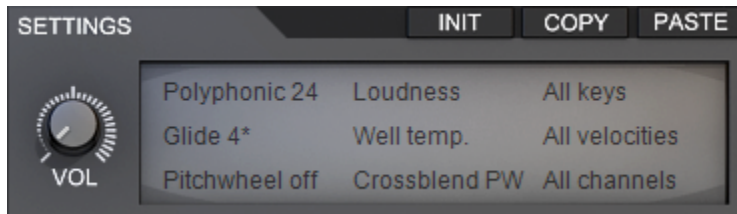
Now that we have all controls set to their default state, we can start building our bass patch. We will use a single oscillator for this bass, oscillator 1 is currently the only active Oscillator and it's set to the TriSaw type.
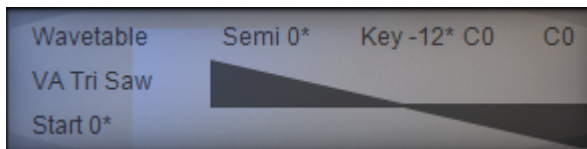
2. Turn the pulse-width control, the knob labelled PW, clockwise to a value of 100, this will change the oscillator shape from a triangular to a saw. We now have our basic sound selected, but how the sound starts is all wrong. This is because the part of the synth that determines how the oscillator's volume behaves; the volume envelope, needs to be adjusted to the proper settings.

3. Go into the envelope section, make sure the volume envelope (VOL) is selected and set it up as pictured below:

With our volume envelope set up, we will add a filter next.

4. Go to Electra2's analog filter section and inside filter1 click on the word 'bypass', a list with available filter types will now open, select the LP 18dB filter from this list.

5. Close the filter a bit more by turning the CUTOFF knob counter-clockwise till the value in the value display (top left of Electra2's interface) reads 135 Hz.

The same way our oscillator's volume has an envelope for precise control, the filter section also makes use of an envelope, called the filter envelope (FILT).

6. Before we set up this envelope, we need to adjust how much of the filter envelope will be applied to our filter, we'll do this by turning the knob right below cutoff1 and labelled ENV to a value of 35.


Next we will set up our filter envelope:

7. In Electra2's envelope section, click on the FILT tab to select & display the filter envelope. Set the filter envelope's controls as pictured below: We now have a very basic bass sound, let's add some extra control to the patch.

Let start by assigning the modulation wheel to the filter, that way we can open and close our 18dB filter by simply using the modulation wheel on our controller.

8. Electra2 uses a modulation matrix for this, so let's take a look at the Mod Matrix and make the necessary adjustments to include Mod Wheel control. Assignments in the Mod Matrix are done from the top to the bottom:
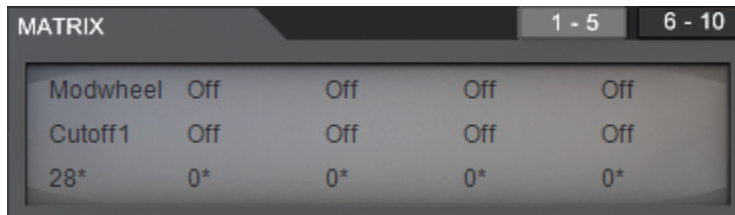
9. Inside the Mod Matrix, click on the top Off (top left of the matrix) and select Modwheel as your Source, then click on the Off below what now says 'Modwheel' and choose 'cutoff1' as the destination. The only thing now left is setting up how much our Source (Modwheel) should modulate our Destination (Cutoff1), this is done by clicking on the value below cutoff1 and moving the mouse up or downwards, set this value to 30. If you play some notes while using the modulation wheel on your controller you should hear Filter 1 opening and closing.

10. The final step is to save your freshly minted sound. Click on the FILE button in the Browser section and then click 'Save patch' in the menu. A file browser window will appear which will be navigated to the 'User' folder ready to save the patch. Type in 'My first Bass' and click 'Save'.

The Electra2 User Interface

Overview

The Electra2 user interface is designed to make patch designing and editing intuitive and fun. All the sound editing parameters for a single layer are kept on a single page so that you can see the signal flow without getting lost in multiple tabs and pages. Each of the four layers are identical in function and has it's own page which can be selected by the 'SYNT select' buttons above the oscillator section.

Layers can be edited per layer or you can edit multiple layers at the same time. To edit multiple layers, go into the 'Copy' menu and switch on 'Multilayer Edit', changes you make on the current layer are now automatically applied to the other layers. To return to single layer edit mode, switch off ' Multilayer Edit'.

The Electra2 UI (User Interface) is larger than most software synthesizers but once your patch is built you can switch off the EDITOR view (click the EDIT button in the *Sound* section) leaving just the Rack GUI which saves considerable screen real-estate.

Parameter changes are always displayed in the top right section of the BROWSER display, values are displayed as soon as the mouse pointer is hovered over one of Electra2's controls.

The Rack View shows just the file management and basic sound editing functions of Electra2 – if you're just loading a patch, or browsing for inspiration, this is all you'll need.

The Rack UI – which is also visible at the top of the full UI – holds the following controls:


Browser

There are four buttons directly above the BROWSER display window:

- **_Previous button_** – loads the previous patch in the current category

- **_Next button_** – loads the next patch in the current category

- **_Brows_** – switches Electra2 to the Patch Browser window. The Patch Browser gives you an instant overview of all available categories and sounds, together with an on-screen keyboard to audition them from within the Browser. To exit the Patch Browser and return to Electra2's rack/editor view click on the Exit button. More information on the Patch Browser window is found in the next section.

- **_FILE button_** – this menu offers several patch load/save options, as well Electra2's Quick Import Sample and Vocoder wizards. The menu options are:
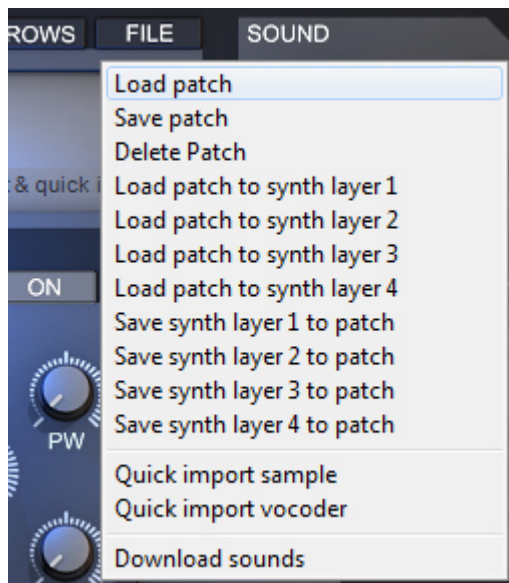
- ○ *Load patch*- this opens the standard file browser for your operating system so that you can load single patches in the standard .fxp format from your hard drive. You can browse anywhere on your computer to load Electra2 patches.

- ○ *Save patch* – this opens the standard file browser for your operating system so that you can save patches in the standard .fxp format onto your hard drive.

- *Delete patch* – this deletes the currently loaded patch. When you click *Delete Patch* a dialog box appears to ask for confirmation. Click on Yes to confirm and delete the patch, click on No to cancel the delete request.

- *Load patch to synth layer 1* – this loads an external patch into synth layer1

- *Load patch to synth layer 2* – this loads an external patch into synth layer 2

- *Load patch to synth layer 3* – this loads an external patch into synth layer 3

- *Load patch to synth layer 4* – this loads an external patch into synth layer 4

- *Save synth layer 1 to patch* – this saves layer 1 to a patch file

- *Save synth layer 2 to patch* – this saves layer 2 to a patch file

- *Save synth layer 3 to patch* – this saves layer 3 to a patch file

- *Save synth layer 4 to patch* – this saves layer 4 to a patch file

- *Quick import sample* – this entry in the menu quickly allows you to import a sample and play it immediately on your controller keyboard or sequencer saving you a couple of steps when you quickly want to start playing. When you click *Quick import sample* the following happens:
  - The first oscillator in the first layer is set to the *sample* type.
  - A default sample is loaded in the oscillator.
  - A standard file browser window opens to allow you to load your own sample.

- *Quick import vocoder* – Electra2 can be set up to act as a vocoder which sounds great with percussive or vocal material. Manually setting it up in Electra2 can take a bit of time so using the *Quick import vocoder* can save a lot of time when inspiration strikes. When you click on *Quick import vocoder* the following happens:
  - The *MASTER EFFECT* is set to *Vocoder*.
  - On the second layer, the first oscillator is set to the *Ultrawave* type with the *Six pulses* setting. The output of this oscillator is sent to the first filter and panned to the right.
  - On the first layer, the first oscillator is set to the *Sample* type. The output of this oscillator is sent to the first filter and panned left.
  - A dialog box appears with the message:
    "Now choose a vocal sample or drumline....."
  - When you click 'OK' a standard file browser will open where you can choose a wave sample file to use as the 'modulator'. Any file will do but vocal or percussive sounds work best.
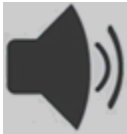
What is a vocoder?

Simply put, a vocoder puts the 'characteristics' of one sound onto another.
Originally designed in the 1930s as a method of encoding a person's voice for secure communication over a telephone network, it found a home in modern music during the 1970's.

A more detailed explanation goes like this. A vocoder needs two inputs, a carrier and a modulator. The tonal characteristics of the modulator are impressed onto the sound of the carrier. The modulator is usually a voice, drum loop or other percussive sound. This sound is passed through many parallel filters to create a 'signature' of the modulator from the frequency content and volume of the frequency components. This multi-frequency, time-varied 'signature' is then used to filter the carrier which is usually a frequency rich sustained sound (like chords played using a sawtooth wave). If you use a voice as the modulator the output sounds like the sawtooth wave modulated by the filter created by the voice.

- ○ **Download sounds** – this takes you to Tone2's website where you can buy additional sound banks to be used with Electra2.

Patch Browser

Electra2 comes with a comfortable patch browser that allows you to see all patches and patch categories in one window. This gives you an quick overview of all patches available, together with an on-screen keyboard to play your sounds using a mouse.

The Patch Browser is split up into 3 sections:

Type: displays the current patch category / type of patch.

Patch: displays the list of patches available in the currently selected category.

Info: the Info window displays all information on the selected patch, e.g. used playmode, synthesis type, etc..

To exit the Patch Browser, click on the Exit button (bottom left of the screen)

Patch Organization

Electra banks and presets can be organized with your standard file browser. In the 'Tone2/ElectraX_sounds' folder are sub-folders with the different banks as seen in Electra2's Bank Select in the Browser display. Both the folders and the .fxp patch files contained inside can be renamed and re-organized and the changes will be reflected the next time you start Electra2.

Sound Section

The SOUND section holds some master settings that shape the overall sound of the current patch.

- *VOLUME* – This knob control is the master volume for Electra2. It controls the sum output of all four layers.

- *MODWHEEL* – This knob control transmits MIDI Continuous Controller 1 messages (*modulation wheel)* when modified. Controlling this knob with your mouse does the same job as moving the modulation wheel on your keyboard controller. The *MODWHEEL* knob also acts as a visual indicator for your modulation wheel. By default, MIDI Continuous Controller 1 is used to change, or 'morph' between one timbre and another.

- The **EQ** section gives a broad tone control over the output of all four layers. The three controls gives a boost or cut over the low, middle and high frequencies.

- *SHOP –* The SHOP button will take you to Tone2's sound shop, where you can purchase new soundsets or expansions for Electra2.

- The *HELP* button opens up a menu that gives the following options:
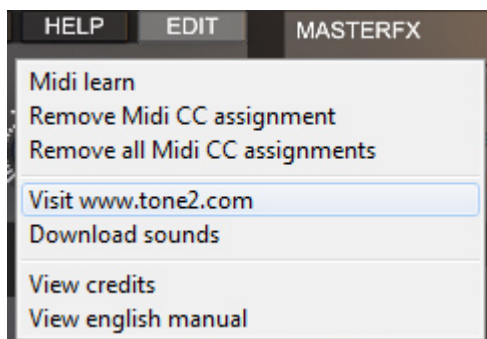
- *Midi learn* – midi learn will enable Electra2's midi learn mode, once selected it will ask you to right-click on the knob you want to midi-learn and move the knob/slider on your midi controller to assign a midi CC to it.

- ◦ ***Remove Midi CC assignment*** – select this option to remove a previously assigned midi CC from one of Electra's controls.

- ◦ ***Remove all Midi CC assignments*** — select this option to remove / reset all midi CC assignments.

Midi-learn

There are two ways to midi-learn controls in Electra2. You can use the EDIT>Midi Learn menu option but can also right-click on a knob to enable Midi-learn mode.

Right-click on a knob, move the knob you want to assign your midi CC to and then move the knob / slider on your controller to complete the midi-learn.

Electra2 stores its midi configuration in the ElectraXmidi.cfg file, deleting this file removes all assigned midi CC data. This file is automatically generated after Electra2 is started

- ◦ ***Visit www.tone2.com*** – clicking on this option will open your default web browser and take you to the Tone2 website.

- ◦ ***Download sounds*** – this will take you to Tone2's website where you can buy additional soundsets / expansions for Electra2.

- ◦ ***View Credits*** – will open Electra2's backpanel and display the production credits.

- ◦ ***Online Video Tutorial*** - clicking on this option will open your default web browser and take you to the Electra2 Video Tutorial on the Tone2 website.

- ◦ ***View English Manual*** – will open the English PDF manual

- • ***EDITOR*** – This button toggles between the full size editor screen and the reduced rack view that can save a lot of screen real-estate if you just need to browse and select patches.

Master Effect

The MASTER EFFECT adds an effect over the summed output of all layers. The effect can be chosen by by clicking the effect name ('Reverb Big' in the example above or 'Off' by default) and choosing from the list.

Once you have selected an effect, the available parameters will update accordingly in the *MASTER EFFECT* window. The parameters can be changed by click-and-holding your left mouse button and dragging your mouse up or down.

• The **MIX** knob controls the wet/dry balance of the effect

Effect list

○ *Reverb Hall* - A large reverb simulating a hall, designed for general purpose use.

○ *Reverb Cathedral* - Models a huge space of a cathedral with dense reflections.

○ *Reverb Room* - Simulates a small room with a small number of reflections.

○ *Delay* - Stereo delay synced to your host's tempo.

○ *Delay Band*- Filtered stereo delay synced to your host's tempo. The frequency bandwith gets more and more narrow over time. Useful for classic psychedelic sounds from the 60's.

○ *Pingpong –* A tempo synced delay which alternatively pans from left to right.

○ *Multitap* - Very powerful multistage delay with rhythmic beats. Also includes a number of pingpong types and a reverse delay mode.

○ *Chorus* - A warm stereo chorus with a rich sound.

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- *Ensemble* - Simulates a large number of detuned voices playing at the same time. Adds richness and movement to sounds. Very useful for vocal pad sounds.

- *Phaser* - Creates a series of peaks and troughs in the frequency spectrum. The position of the peaks and troughs is modulated so that they vary over time creating a sweeping effect.

- *Flanger* - Peaks and notches are produced in the resultant frequency spectrum related to each other in a linear harmonic series. Creates a sweeping effect.

- *Rotary* - Simulates a rotary speaker/Doppler effect made famous by the Hammond organ.

- *Compressor* - Boosts the volume of lower volume notes, while capping the louder ones, giving a more even level of volume.

- *Amp Sim* - Simulates a guitar amplifier.

- *Equalizer* - Parametric 3-band equalizer.

- *Surround Encode* - Dolby Prologic II compatible surround encoder. It is also useful to add a more spatial effect to your stereo recordings. If you encode to 'Back' the channel will come from the rear speaker if you play your song on a surround system. The sound remains fully stereo compatible.

- *Vocoder* – A 10 Band Vocoder. Modulator signal/Voice/Drum loop must be routed to the left channel, carrier/synthesizer must be routed to the right channel.

- *Reverb Infinity* – A reverb with an infinitely long reverb tail (great for Pads, FX and Ambient tracks)

- *Reverb Big* - Simulates a huge room with lots of diffusion.

- *Reverb Glass* - Smulates a bright room which absorbs low frequencies.

- *Reverb Band* - Simulates a room which absorbs low and high frequencies.

- *Reverb Real* - Simulates a realistic room.

- *Reverb Hall old* - A large Reverb simulating a Hall, designed for general purpose use. This version was featured in ElectraX1.

- *Reverb Cath old* - Models a huge space of a Cathedral with dense reflections. This version was featured in ElectraX1.

- *Smart Unison* - Creates the sound of several detuned stereo voices, with very low CPU demands .

- *Phaser FB* – A great sounding phaser with feedback.

- *Phaser Stereo* – A stereo phaser with a vocalic sound.

- *Vibrato* - Detunes the sound with an LFO.

- *Vibrato stereo* - Detunes the sound with an LFO, can be used instead of chorus if a tight timing is needed.

- *Tremolo* - Modulates the amplitude with an LFO.

- *Tremolo stereo* - Adds stereo panning to the sound.

Okay, that takes care of the main Rack section. Now click on the EDITOR button so that we can go over the rest of Electra2.

The Editor View

The *EDITOR* view is enabled by clicking the EDITOR button in the *SOUND* section.

The *EDITOR* view shows all the available Electra2 parameters of a layer on a single screen. Each section and its elements are discussed in detail in the following pages.

The Oscillator Section

Electra2's oscillators generate tones through a multiple of different methods which can later be shaped by the filters and effects processors.

Each layer has three oscillators each offering identical synthesis methods along with inter-oscillator sync and audio-rate frequency modulation (FM).

The oscillators hold a lot of controls so an explanation will be given for each section:

General Controls

The three oscillators have the same general controls except for *FM* and *SYNC*. They are:

- *OCT* - knob control allows you to select the pitch octave at which the sample will be played back, with a range of 8 octaves to choose from: 4 up for the positive values and 4 down for the negative values.

25

- **INTER –** This knob controls the pitch interval of the oscillator which is used for controlling the harmonic relationship between oscillators essential for creating interesting frequency modulated sounds.
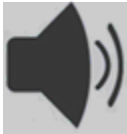
> In the browser window, the parameter readout for the **INTER** control is showed as a ratio. This ratio shows the *INTERval* between the frequency of the carrier oscillator and the modulating oscillator *(for an explanation of the basics of FM synthesis, see below).*   The intervals with a harmonic relationship with the bottom (fundamental) note will sound consonant or 'pleasing' to the ear. If the interval doesn't have a harmonic relationship then the sound will be dissonant. This is useful in FM synthesis for creating bell type tones.
> The classic names of the intervals are given below and whether they are consonant or dissonant:
>
> | | | |
> |---|---|---|
> | 1 | Unison | Consonant |
> | 6/5 | Minor Third | Consonant |
> | 5/4 | Major Third | Consonant |
> | 4/3 | Perfect Fourth | Consonant |
> | 3/2 | Perfect Fifth | Consonant |
> | 5/3 | Major Sixth | Consonant |
> | 7/4 | Augmented Sixth | Dissonant |

- **FINE** – This knob controls the fine tuning of the oscillator. The range is plus or minus 100 cents. There are 100 cents per semitone.

- **TONE** - This knob is a basic tone control that can make the oscillator darker or brighter. This can be used to give an oscillator a bit more 'bite', or can be used to control the higher harmonics for frequency modulation.

- **PW** is short for Pulse Width and has various functions depending on what synthesis method is selected for the oscillator:

  - In the **Wavetable** mode, the *PW* controls either:
    - Waveform pulsewidth.
    - Wavetable position (when Waveshapes prefixed with WT are used)

  - In the **Ultrasaw** mode, the *PW* controls both:
    - Oscillator detune.
    - The waveform pulsewidth.

  - In **Noise/Fractal** *mode PW controls Noise configuration or Fractal chaos level*

  - In **Sample** mode *PW* has no effect.

  - In the **Custom Wave** mode, the *PW* controls the sample waveform pulse-width.

- *FM –* This knob appears between oscillators 1 & 2 and between 2 & 3. The knob between oscillator 1 & 2 controls the amount of FM (Frequency Modulation) applied from OSC1 > OSC2.The knob between oscillator 2 & 3 controls the amount of FM applied from OSC2 > OSC3.

FM Synthesis

FM or Frequency Modulation synthesis is a method of synthesis that uses *audio-rate modulation* of one or more oscillators by one or more oscillators.

If you modulate an oscillator with an LFO (Low Frequency Oscillator), you'll hear the pitch slowly rise and fall – like the sound of an ambulance, for example. Increase the pitch of the LFO and you'll hear vibrato. Continue to increase the speed of the LFO above the threshold of human hearing (about 20Hz) you'll notice that the sound gains extra harmonics.

In it's most simplest form, interesting FM sounds can be created by modifying the *frequency* and the *volume* of the modulating oscillator. Of course, it can get a lot more complicated with multiple modulating oscillators connected in multiple ways but that's way beyond the scope of this manual.

- The *SYNC* (short for oscillator hard-sync) button appears between oscillators 1 & 2 and 2 & 3. It switches on the oscillator sync feature between these oscillators. It creates hard 'biting' tones and can be used to make classic 'sync sweep' patches.

🔊 **Oscillator Sync**

Oscillator sync works using a 'master' oscillator and a 'slave' oscillator. The master oscillator will 'reset' the slave oscillator so that it will start it's wave cycle back to the beginning.

What this means is that the slave oscillator will have the same base frequency as the master oscillator.

Interesting things happen when the pitch of the slave is changed either manually or through modulation. The classic 'hard sync' sound can be created this way.

Note that there are two types of sync – hard and soft. Hard sync is the most common and is the one most people recognize as the definitive 'hard sync sound'.

Oscillator volume and routing controls

VOL – This knob controls the volume of the oscillator.

MIX12 – This knob controls where the audio output from the oscillator is routed. With the knob turned all the way to the left, the oscillator is routed totally to Filter 1.
With the knob turned all the way to the right, the oscillator is routed totally to Filter 2.
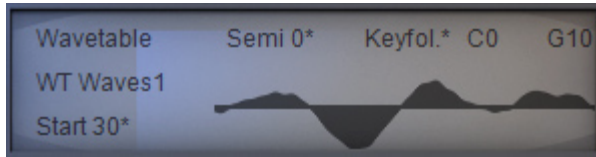Any position in between proportionately routes to both Filter 1 and Filter 2.

- The **ON** button turns the oscillator on or off.

🔊 **Saving CPU**

If you don't need an oscillator in a patch – turn it off. You will save CPU processing power. The same goes for any layers you don't need. If you don't need it, turn it off!

Oscillator waveform controls

The central 'display' of each oscillator contains the more advanced settings and layer options including which oscillator type to use, keysplits, velocity settings, and so forth.

The waveform display updates in real-time (like an oscilloscope) to give you a visual representation of the oscillator waveform and any modulators that are affecting it.

Oscillator mode selector
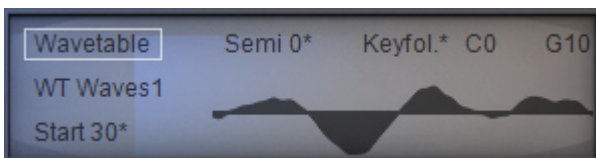
Clicking on the **Oscillator Mode Selector** (which is set to *Wavetable here*) by default will bring up a context-menu of the available oscillator types in Electra2:
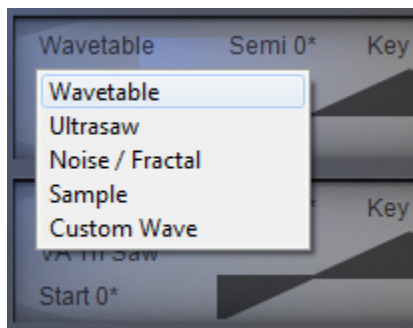

The choices are:

- **Wavetable** – this type emulates oscillators from classic synthesizers.

- **Ultrasaw** – this type generates multiple detuned sawtooth or pulse waves.

- **Noise/Fractal** – this type generates noise of different types.

- **Sample** – this type plays back user samples.

- **Custom Wave** – this type analyzes & resynthesizes user waveforms, which can then also be PW modulated.

An explanation of each Oscillator Mode is as follows:

Wavetable

This oscillator mode choice of different types of waveforms based on classic synthesizers and ways to modulate the waveforms using the *PW* parameter. The different types of waveforms clan be selected from the oscillator display.
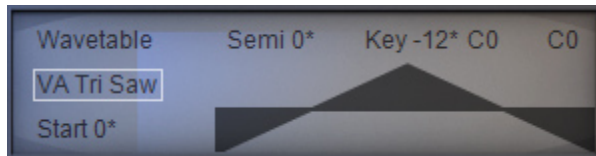
The waveforms are split into different categories differentiated by the letters in front of the waveform name. They are:
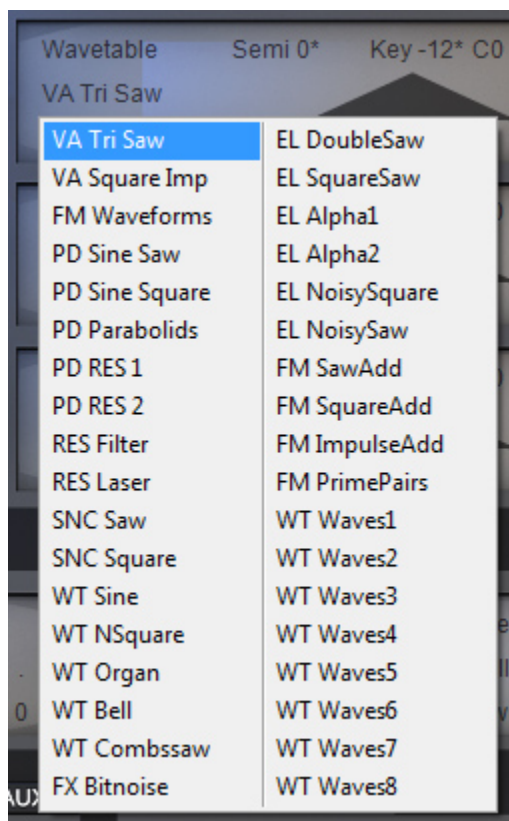

- **VA** – Virtual Analog. Waves from classic analog synthesizers.

- **FM** – Frequency Modulated waveforms.

- **PD** – Phase Distortion. Waves from classic phase distortion synthesizers.

- **RES** – Resonant. These are highly resonant waveforms with the *PW* knob controlling the amount of resonance.

- **SNC** – Sync. These are oscillator-synced sounding waveforms with the *PW* controlling the amount of sync.

- **WT** – Wavetable. These are a selection of wavetable waveforms. The *PW* knob steps or morphs through them.

- **FX** – Effects. These are special effects or special purpose waveforms.

- **EL** – Electronic. These are a various selection of waveforms based purely on other forms of synthesis e.g. additive synthesis.

Ultrasaw

The Ultrasaw oscillator type creates the modern classic sound of many complex detuned waveforms playing together to create a huge sound. In Electra2, the *PW* is used to detune the waveforms.

There are three Ultrasaw modes available. They can be selected in the oscillator display:
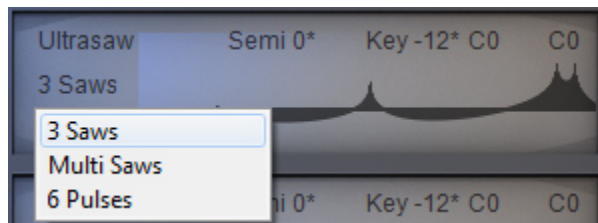
The three modes are:

- *3 Saws* – Three sawtooth waveforms.

- *Multi Saws* – Many sawtooth waveforms with a wide-range of detuning available.

- *6 Pulses* - 6 pulse waveforms. The *PW* knob controls both the detuning and the pulse-width of the waveforms.

Noise/Fractal

The *Noise/Fractal* oscillator type provides different types of noise either for audio or for FM modulation purposes. Fractal synthesis is a completely new and unique method of synthesis based around the mathematics of chaos theory.

Chaos Theory

Chaos theory is a field of study in mathematics, physics, economics and philosophy that studies the behavior of dynamic systems that are highly sensitive to initial conditions. This sensitivity is popularly referred to as the butterfly effect. Small differences in initial conditions yield widely diverging outcomes for chaotic systems, rendering long-term predictions impossible in general. This behavior is known as chaos. Chaotic behavior can be observed in many natural systems, such as the weather, plants, lightning or analogue circuits from synthesizers.

There are 13 noise and Fractal modes available selected in the oscillator display.
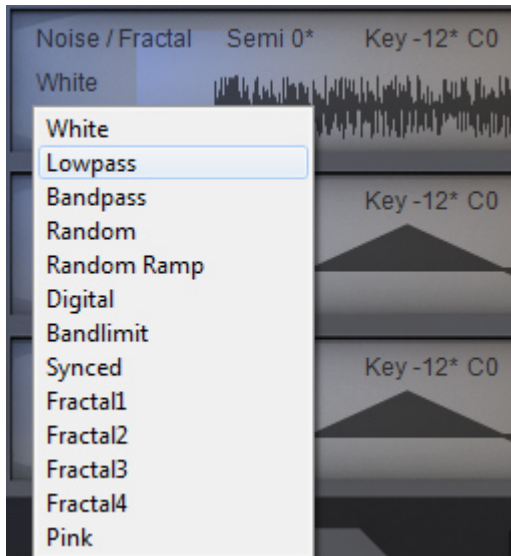
- *White* – White noise with more energy in the higher spectrum.
- *Lowpass* - Low-pass filtered noise. The cut-off frequency follows the pitch of the oscillator. The *PW* control alters the resonance.

- *Bandpass* - Bandpass filtered noise. The cut-off frequency follows the pitch of the oscillator. The *PW* control alters the resonance.

- *Random* - Noise which sounds like old low-bit computer hardware. The *Semi* and *INTER* parameters control the tuning. Useful for snare drums.

- *Random Ramp* - Similar to *Random*, but with a darker sound. It's useful as an FM source for breathy type sounds.

- *Digital* - Digital noise. The *Semi* and *INTER* parameters control the tuning.

- *Bandlimit* - Band-limited noise. The *Semi* and *INTER* parameters control the tuning. The *PW* control alter the bandwidth. Very useful for creating drum sounds.

- *Synced* - Synced noise. The *Semi* and *INTER* parameters control the tuning. The *PW* control changes the start point.

- *Fractal1* - Models a real crazy analogue circuit which cannot make up it's mind! It simply can't decide if it wants to be a square wave, a sine, a sawtooth, noise or feedback. *PW* controls it's undecided mood. The tuning mostly follows oscillator pitch.

- *Fractal2* - Can be sine, feedback, granular, screaming, flute or sawtooth waveforms. *PW* controls the level of chaos.The tuning is mostly predictable and rudely follows pitch.

- *Fractal3* - Can be sine, square, band-limited noise, granular or feedback waveforms. *PW* controls the level of chaos. The tuning is mostly predictable and crudely follows pitch.

- *Fractal4* - Can be square, granular or low-passed noise waveforms. *PW* controls the level of chaos. The tuning is mostly predictable and crudely follows pitch.

- *Pink* – Pink Noise. Useful for general purpose and plucked string simulation when used in combination with the Phys String filter type.
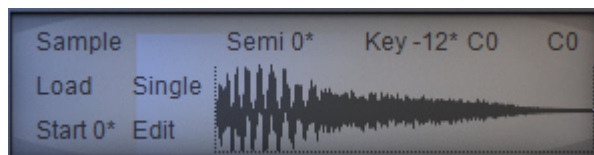
Sample

The *Sample* oscillator allows the playback of user samples. Unlike the Custom Wave oscillator type, the *Sample* oscillator is designed for straight playback without any resynthesis or waveform modulation.
Once a sample is loaded you'll see two small dotted lines inside of the sample display, these two dotted lines represent the start and end position markers of the sample loop
They can be edited by clicking on one of the markers and moving the mouse on the wave display.
Whenever a sample is loaded a dialog box "Autotune Yes/No?" will appear, this allows you to automatically tune the sample upon import (Yes) or leave the sample as-is (No)

The *Sample* oscillator type has the following controls in the Oscillator display:

- The *Load* function will open a standard file browser where you can browse for and load your own standard sample files (.wav file extension).

- The loop mode can either be *Single* or *Loop*. The *Single* setting will play the sample from beginning to end and then stop. The *Loop* setting will play the loop from beginning to end infinitely (as long as you hold the key down!). If a sustain loop is active the sample will loop between the 2 loop markers.

- The Start function will determine from which point sample playback will start, drag its value up or down to edit the start point.

- The Edit menu contains a selection of Sample edit options, these can be used for setting default loop points, editing its volume or processing the sample with effects.

Sample edit menu options

- Edit-> **Autotune**: automatically tunes the sample
- Edit-> **Autoloop**: automatically loops the sample using a crossblend
- Edit-> **Export as wav**: stores the sample content to a wav file
- Edit-> **Reverse**: makes the sample play backwards
- Edit-> **Volume**: maximizes the sample volume without clipping it
- Edit-> **Volume** +6dB: doubles the sample volume with clipping

- Edit-> **Volume** -6dB: lowers the sample volume
- Edit-> **Fade in**: fades the selected area in
- Edit-> **Fade out**: fades the selected area out
- Edit-> **Silence**: mutes the selected area
- Edit-> **Trim**: cuts everything but the selected area
- Edit-> **Cut**: removes the selected area

- Edit-> **Tube saturate**: applies soft tube saturation to the sample
- Edit-> **Differenciate**: makes the sample sound more bright
- Edit-> **Square**: doubles all frequencies
- Edit-> **Sinoid shaper**: is a soft waveshaper
- Edit-> **Alias**: makes the sample sound like an old sampler
- Edit-> **Crush**: is a digital vintage effect reduces the bitdepth of the sample
- Edit-> **Selfsync**: applies soft selfsyncronisation to the sample
- Edit-> **Remove DC**: removes DC from the sample
- Edit-> **Noisify**: fills the envelope of the sample with noise
- Edit-> **Loop all**: resets the loop points
- Edit-> **Loop to 100%**: sets the loop points
- Edit-> **Tune C5 44100Hz**: sets sample tuning to a C5 sampled at 44.1Khz samplerate
- Edit-> **Tune C5 96000Hz**: sets sample tuning to a C5 sampled at 96Khz samplerate

Active Sample edit area

Most sample edits are applied to the selected marker area. Click on the sample display and move the mouse to change the selection.

How large can my samples be?

10 seconds with a 44 kHz sample rate
20 seconds with a 22 kHz sample rate
40 seconds with a 11 kHz sample rate

Electra2 uses mono .wav sample files. If you load a stereo file, Electra2 will sum the left and right sides to make a mono sample.

If the sample file has loop information embedded in it, Electra2 will use this information in the *Sample* oscillator when loop mode is set to *Loop.*

Custom Wave

The **Custom Wave** oscillator type allows you to load user samples which Electra2 then automatically tunes, stretches and loops the sample. The *PW* control can be used to modulate the pulsewidth of the sample.
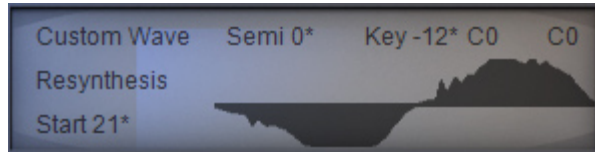
- The Custom Wave control will open a standard file browser when clicked where you can browse for and load your own standard sample files (.wav file extension).
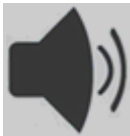
More on Electra2's resynthesis

How Electra2 resynthesizes your sample depends on the size of the sample file.

File with less than 4096 samples:

Electra2 will treat these sample files as a single cycle waveform and will automatically, stretch and loop it.You can use the *PW* control to change the pulse-width of the waveform.

File with 4096 samples or more:

Electra2 will automatically tune, stretch and loop the sample. It will then resynthesize a custom waveform from the middle section of the sound. You can use the *PW* control to change the pulse-width of the waveform.

- *Start* - The start point control changes the start phase of the resynthesized waveform so that, depending on the sampled sound, can drastically change the character of the waveform. A setting of *Free* will cause the phase to be randomly changed every time a note is played.

Physical Modeling

Physical modeling synthesis uses a different approach to sound generation and therefore is available from Electra2's Filter section.

Two special filter types are featured for this task:

- **Phys String** - simulates a plucked string. "Cutoff" controls tuning, "Reso" controls damping and "Analog" controls decay.
  To tune a resonator set "Cutoff" to 50% (control+left click) and "filter key follow" to 100%.

- **Phys Flute** - simulates a blown tube. "Cutoff" controls tuning, "Reso" controls damping and "Analog" controls decay.
  To tune a resonator set "Cutoff" to 50% (control+left click) and "filter key follow" to 100%.

To give you an easy start with Physical Modeling synthesis Electra2's INIT menu includes two quick-start patch templates.

Use *Init->"Create patch: PhysicalGuitar"* to initialize a Physical Guitar Modeling default patch.

Use *Init->"Create patch: PhysicalFlute"* to initialize a Physical Flute Modeling default patch.

Pink noise

When used in combination with the Phys String filter type, the Pink Noise included inside of the Oscillator Noise/Fractal mode is useful for plucked string simulations,

Key controls

Also in the oscillator display are various controls for setting oscillator transpose, key range and keytracking.

- The ***Oscillator Transpose*** *(pic: white box on the left)* control allows you to change the transposition of the oscillator upwards in semitone steps up to one octave.

- The *Oscillator Keytracking* control *(pic: white box in the middle)* sets how the oscillator tracks your keyboard. If set to *fixed* the same pitch will be heard regardless of what note you play on your keyboard. If set to *Keyfol* then the oscillator will track the keyboard as normal i.e. 100 cents per semitone. Other settings allow you to use micro-tonal tunings where playing across an octave on your keyboard will increase the pitch by 100 cents, for example. Positive values will increase the pitch as you play up the keyboard, whereas negative values will decrease the pitch.

- The ***Keyrange Start*** and ***End*** *(pic: white box on the right)* controls allow you to set the range of the oscillator. The ***Start*** sets the lowest note which the oscillator will play and the ***End*** will set the highest. This allows to set keysplits across a single layer.

The Filter Section

The next stop on the audio route is the filter section.

Electra2 has two identical filters per layer, each with an excellent range of filters to sculpt your sound. These filter types range from traditional analog filters like Moog Low Pass, High Pass and Bandpass, up to digital ones like Vocal, Phaser, Aliaser and Fractal filters. A large number of these filter types are exclusive to Tone2 and not available in any other product.
The output from each oscillator can be routed to either filter 1 or 2 or any proportion in between (60% to Filter 1, 40% to Filter 2 for example).

The filters can either be routed in parallel or in series. When routed in parallel the output from each filter is independently sent to the next stage in the audio chain (the Insert Effect). In serial mode, the output of Filter 1 is sent to the input of Filter 2.

To switch between parallel/series mode, click the *SERIAL* button. When the button is in the 'on' position the filters are in series, in the off position the filters are in parallel.

General Controls

The controls are:

- The **CUTOFF** control knob changes the frequency at which the filter character changes relative to the filter type.

- The **RESO** (resonance) control knob increasingly alters the characteristic of the filter the more this value is increased. In traditional analog-style filters (low pass, high pass and band pass filters), the *RESO* control makes the cut off point more pronounced by increasing the volume of the *CUTOFF* frequency.

- The **DRIVE** control knob increases the amount of extra gain to the oscillator audio signal before it enters the filters. This can drastically change the characteristics of the filter. There are different drive 'models' that can be selected in the filter display.

- The **KEY** knob is a bi-polar control that determines how the note played on the keyboard affects the filter cut off frequency. At positive values above 0, higher note values will increase the cut off frequency. At negative values below 0, higher note values will decrease the cut off frequency.

- The **ENV** control knob is also bi-polar that determines how much influence the filter envelope has on the *CUTOFF* control and in which direction. Positive values over 0 will increase the filter cut off value as the envelope outputs a positive value. Negative values under 0 will decrease the cut off value as the envelope outputs a positive value.
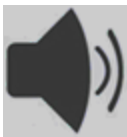
The Filter and the Envelope

Remember that as you increase the *ENV* control you'll probably need to turn down the *CUTOFF* otherwise you won't hear much of the envelope affecting the cut off. However, you'll need to *increase* the *CUTOFF* if you want to use negative *ENV* amounts

- The **ANALOG** knob controls how much of the circuit-modeled characteristics of hardware analog filters are added to the current filter.

- The **RING** knob controls the amount of ring modulation on the filter outputs.
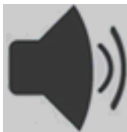
The Ring Modulator

The ring modulator gets it's name from the ring of four diodes in the original modulator circuit. The ring modulator makes a sound from

The **VOL** knob controls the output volume of the filter. The **PAN** control knob places the filter's audio output in the stereo field. Turning the knob to the left moves the sound to the left. Likewise turning the knob to the right moves the sound to the right.

The Filter Display

Each filter has it's own filter display that has the dual purpose of selecting parameters and shows the real time shaping of the filter as you alter the *CUTOFF* and *RESO* parameters. The horizontal axis show frequencies from lowest to highest, while the vertical axis represents the gain. This really innovative feature from Electra2 gives you immediate visual feedback on your actions and helps you to learn about the specifics of each of Electra2's first class and versatile filters.

- **Filter Type Select**

Click on the filter name (the default setting is *Bypass*) to select a filter from the context menu.

Here you have a selection of classic analog-style filters in low pass, band pass and high pass and with multiple slopes – 12dB, 18dB and 24dB.

In addition to the analog filters, various EQ filters are available as well as the more unusual filter types such as the Phaser, Combs, Vocal filter, etc.

About the basic filter types

In a Low Pass Filter (LPF), the *CUTOFF* control will set the frequency at which the filter begins to 'close' and allow less and less of the higher frequencies through. When the frequencies are high enough past the cut off point, no more sound will be allowed through the filter.

A High Pass Filter (HPF) allows high frequencies to be heard, but blocks the lower frequencies. It is frequently used to create hi-pitched whistle sounds, and piercing synthesizer leads.

A Band Pass Filter (BPF) allows the frequencies within a specific range to be heard, and blocks out all the other frequencies above and below it. It can be used to create a variety of effects, from the subtle to insane! Also, the filter's *slope* is important. Basically, *slope* is the amount of attenuation at certain frequencies. We usually discuss slope in terms of decibels per octave. The lower the dB per octave, the more 'gentle' the filter sounds. e.g. a 12dB per octave filter will remove 12dB of harmonics per octave above the filter cut off frequency.

Electra2's analog filter types – LP12 /18/ 24, HP12 /18/ 24 and BP12 /18/ 24 are circuit modelled. Great care was taken to emulate the characteristics of hardware analog filters down to the circuit level. These characteristics to the filter's sound can be reduced or augmented by the *ANALOG* control knob.

Next to basic filter types Electra2 also features a range of exotic filter types, like Vocal, Phaser, Aliaser and Fractal filters.

Two special Resonator filter types are featured (Phys String & Phys Flute) for Physical Modeling purposes, these will work best in conjunction with a input signal setup suitable for Physical Modeling synthesis. Use one of the INIT menu patch templates as a starting point for this. You can read more about the Physical Modeling option inside the Oscillator Section chapter.

- **Drive Type Select**

Electra2's drive section adds additional harmonics to the audio before it enters the filter. There are various distortion modes available. Click on the drive type to open a list of available filter drive types. They are:

- *Off* – No distortion added.

- *Tube* – This models a tube/valve amplifier with soft saturation.

- *Soft* – This model has a very soft saturation. This is good for warm, analog style sounds.

- *Fuzz* – Modelled after the fuzzbox guitar stomp-pedals. It creates a very harsh sound with lots of treble.

- *Asym* – This is modelled after asymmetric distortion found in old analog equipment.

- *Crush* – This is a bitcrusher effect which is modelled after old digital equipment with a low bit rate. Think of the early digital samplers with 8-bit sound.

- *Shaper* – A waveshaper which adds an FM-type timbre to the audio.

The Insert Effect Section

The Insert Effect section allows a single effect to be inserted after the filter before being sent to the Master section.
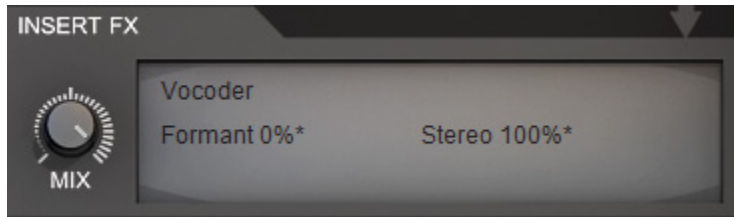
The Insert Effect section follows the exact same layout and choice of effects as the Master Effect section.

Click on the Effect Type Select parameter to open a context list of available effects types.

Once you have selected an effect, the available parameters will update accordingly in the *INSERT EFFECT* window. The parameters can be changed by click-and-holding your left mouse button and dragging your mouse up or down.

- The **MIX** knob controls the wet/dry balance of the effect

Effect list

- ○ *Reverb Hall* - A large reverb simulating a hall, designed for general purpose use.

- ○ *Reverb Cathedral* - Models a huge space of a cathedral with dense reflections.

- ○ *Reverb Room* - Simulates a small room with a small number of reflections.

- ○ *Delay* - Stereo delay synced to your host's tempo.

- ○ *Delay Band*- Filtered stereo delay synced to your host's tempo. The frequency bandwith gets more and more narrow over time. Useful for classic psychedelic sounds from the 60's.

- ○ *Pingpong* – A tempo synced delay which alternatively pans from left to right.

- ○ *Multitap* - Very powerful multistage delay with rhythmic beats. Also includes a number of pingpong types and a reverse delay mode.

- *Chorus* - A warm stereo chorus with a rich sound.

- *Ensemble* - Simulates a large number of detuned voices playing at the same time. Adds richness and movement to sounds. Very useful for vocal pad sounds.

- *Phaser* - Creates a series of peaks and troughs in the frequency spectrum. The position of the peaks and troughs is modulated so that they vary over time creating a sweeping effect.

- *Flanger* - Peaks and notches are produced in the resultant frequency spectrum related to each other in a linear harmonic series. Creates a sweeping effect.

- *Rotary* - Simulates a rotary speaker/Doppler effect made famous by the Hammond organ.

- *Trancegate* - Adds a rhythmic volume gated pattern to the sound.

- *Compressor* - Boosts the volume of lower volume notes, while capping the louder ones, giving a more even level of volume.

- *Amp Sim* - Simulates a guitar amplifier.

- *Equalizer* - Parametric 3-band equalizer.

- *Surround Encode* - Dolby Prologic II compatible surround encoder. It is also useful to add a more spatial effect to your stereo recordings. If you encode to 'Back' the channel will come from the rear speaker if you play your song on a surround system. The sound remains fully stereo compatible.

- *Vocoder* – A 10 Band Vocoder. Modulator signal/Voice/Drum loop must be routed to the left channel, carrier/synthesizer must be routed to the right channel.

- *Reverb Infinity* – A reverb with an infinitely long reverb tail (great for Pads, FX and Ambient tracks)

- *Reverb Big* - Simulates a huge room with lots of diffusion.

- *Reverb Glass* - Smulates a bright room which absorbs low frequencies.

- *Reverb Band* - Simulates a room which absorbs low and high frequencies.

- *Reverb Real* - Simulates a realistic room.

- *Reverb Hall old* - A large Reverb simulating a Hall, designed for general purpose use. This version was featured in ElectraX1.

- *Reverb Cath old* - Models a huge space of a Cathedral with dense reflections. This version was featured in ElectraX1.

- *Smart Unison* - Creates the sound of several detuned stereo voices, with very low CPU demands .

- *Phaser FB* – A great sounding phaser with feedback.

- *Phaser Stereo* – A stereo phaser with a vocalic sound.

- *Vibrato* - Detunes the sound with an LFO.

- *Vibrato stereo* - Detunes the sound with an LFO, can be used instead of chorus if a tight timing is needed.

- *Tremolo* - Modulates the amplitude with an LFO.

- *Tremolo stereo* - Adds stereo panning to the sound.

The Settings Section
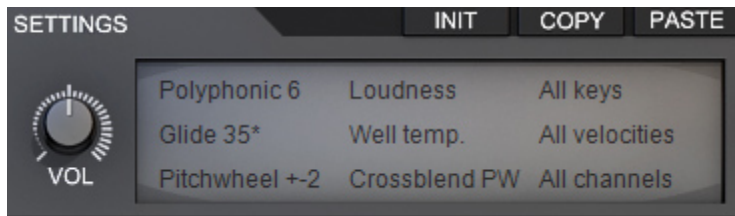
The settings section in a layer in Electra2 covers the general performance settings for both the current layer and for the whole of Electra2.

The central column of settings I.e. the Sound Mode, the Microtuning and the Quality settings affect every layer in Electra2.

All other settings only affect the selected layer.

The controls are:

- **VOL** – Master volume for the current layer.

- **INIT** - This manages all the patch initialization options for Electra2. Clicking this buttons opens up a context-menu:
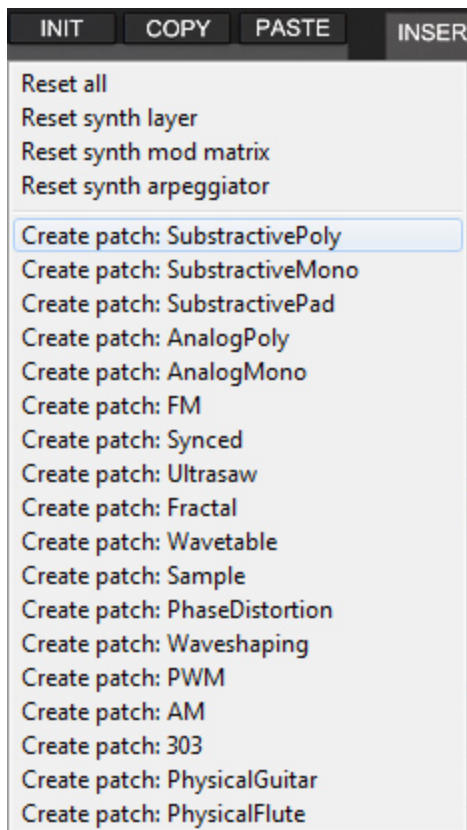
- ○ **Reset all** – this option resets all layers to their default values.

- ○ **Reset synth layer** - this option resets the current layer to its default settings.

- ○ **Reset Synth mod matrix** – this option resets only the mod matrix in the current layer to its default values.

- ○ **Reset Synth arpeggiator** – this option resets only the arpeggiator in the current layer to its default values.

The remaining options in the menu all create an initialized patch based on various 'types' of sound. These are intended to be a starting point for your own patches. You could start with an initialized FM patch or Physical Modeling patch and then go from there!

- **COPY** – This opens a context-menu for all copy related functions. They are:

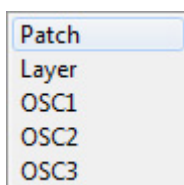| Patch |
| --- |
| Layer |
| OSC1 |
| OSC2 |
| OSC3 |
| Multilayer edit |
| 2x mono unsion light |
| 2x mono unsion medium |
| 2x mono unsion heavy |
| 2x stereo unison light |
| 2x stereo unison medium |
| 2x stereo unison heavy |
| 4x mono unison light |
| 4x mono unison medium |
| 4x mono unison heavy |
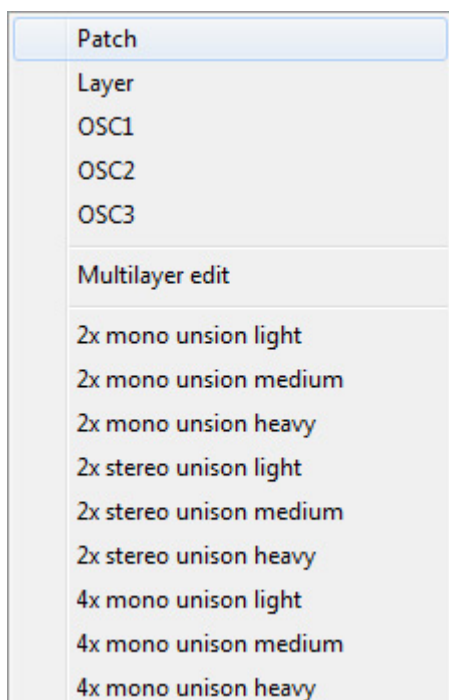
- ○ *Patch* – This copies the entire patch i.e. all parameter values on all layers into the clipboard. This is useful if you want to create a new patch based on the settings of an old patch.

- ○ *Layer* – This copies all parameter values from the current layer into the clipboard.

- ○ *OSC1,2,3* – This copies only parameter values from oscillator 1, 2 or 3 respectively.

- ○ Multilayer edit – selecting this option enables the multilayer edit mode, all other layers will follow the edits made on the current layer.

  - ○ The different Unison modes will automatically copy/paste the settings from layer one and distribute these over either 2 layers (2X) or 4 layers (4X) The Light, Medium or Heavy option will determine the amount of detuning applied to the layers.

- **PASTE** – This opens a context-menu for all paste related functions. They are:

Patch
Layer
OSC1
OSC2
OSC3

- ○ *Patch* – This pastes the patch currently stored in the clipboard. If there isn't a patch stored in the clipboard a warning dialog-box will appear telling you that you need to copy a patch before you can paste it.

  - ○ **Layer** – This pastes the layer currently stored in the clipboard into the current layer. Note that, if an oscillator only is in the clipboard, it will be pasted into the current layer and all other values will be set to default. If a patch is the clipboard then only the current layer will be pasted e.g. if you are layer 2, then layer 2 from the patch in the clipboard will be pasted.

  - ○ *OSC1,2,3* – This pastes the oscillator values in the clipboard to oscillator 1, 2 or 3. If a layer or patch is in the clipboard then the selected oscillator clicked will be pasted from the layer or patch stored in the clipboard.

The controls in the SETTINGS display are:

- **Play Mode –** The play mode sets the polyphony of the layer and how Electra2 reacts to you playing your keyboard controller. The options are:

  - *Monophonic* – This mode sets the polyphony to 1 note (monophonic) which mimics the way the classic analogue synthesizers of the past behaved.

  - *Legato* – This mode is also monophonic but if a new note is played while an existing note is still being played, Electra2 will *glide* to the new note. The time it takes to glide from one note to another is set with the *Glide Time* parameter.

  - *Polyphonic 2 – 64* – This sets how many notes can be played at the same time on this layer. Settings from 2 notes to 64 notes are available. You can save CPU processing power by lowering the polyphonic count.

  - *Polyphonic 1* – This mode is suitable for punchy bass sounds. Because the Monophonic mode does not always re-trigger the oscillators when you play a new key, it sometimes lacks punchiness and precision.

- **Glide Time** - Also called 'Portamento', this will set how long it will take for one note to 'glide' or 'slide' to another. A setting of '0' (default) means that the glide function is turned off.

- **Pitchwheel Range –** This will set how many *semitones* the pitchwheel on your keyboard controller will transpose up or down. *+-2* means that the pitchwheel will transpose the pitch up or down two semitones. *+-12* is one octave and *+-24* is two octaves.

- **Sound Mode** – The Sound Mode sets the overall sound 'character' of Electra2. The options are:

  - *Linear sound* – This mode has a 'technically perfect' linear frequency and phase response.

  - *Loudness* – Equalizes the non-linearities of the human ear, offers a more fat sound and raises the perceived volume.

  - *Bass Boost* – Equalizes the non-liearities of the human ear in the low frequency range, offers a more fat sound and raises the perceived volume.

  - *Bright Sound* – This mode adds high-end and removes a bit of sharpness from the sounds. This mode is useful for leads and pads.

- ○ *Psychoacoust.* - Equalizes non-linearities of the human ear, making the patch sound thicker and louder, without raising the overall volume.

- ○ *Analog sound* – This mimics the character of analog synths, with a warmer sound and beefier bass.
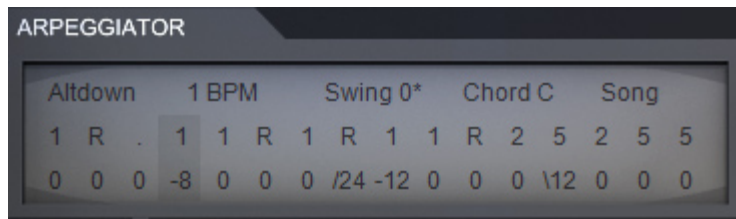
What is Psychoacoustics?

Psychoacoustics is the study of the subjective human perception of sounds. Hearing is not a purely mechanical phenomenon of wave propagation, but is also a sensory and perceptual event. When a person hears something, that something arrives at the ear as a mechanical sound wave travelling through the air, but within the ear it is transformed into neural action potentials. These nerve pulses then travel to the brain where they are perceived. Hence, in many problems in acoustics, such as for audio processing, it is advantageous to take into account not just the mechanics of the environment, but also the fact that both the ear and the brain are involved in a person's listening experience.

- • *Microtuning* – This sets the how Electra2 is tuned. The options are:

  - ○ *Well temp.* - This is the standard Western 'Equal Temperament' scale.

  - ○ *Analog light* – This mode emulates a fairly 'stable' analog synthesizer with minimal tuning drift and circuit instabilities.

  - ○ *Analog medium* – This emulates an analog synthesizer with a greater amount of tuning drift and instability.

  - ○ *Analog heavy* – Similar to *Analog light* and *medium* but emulates an analog synth in need of repair! This mode emulates heave oscillator drift and instability
  .
  - ○ *Fat tune 1, 2* - Fat tune makes chords sound 'fuller' and more 'fat' but at the same time they sound harmonically pure. *Fat tune 2* has more of the effect than *Fat tune 1*.

  - ○ *Just inton.* - Just intonation. This is a musical tuning in which the frequencies of notes are related by ratios of small whole numbers. Bagpipes, when tuned correctly, uses a system of just intonation.

- • *Quality* – This parameter sets the 'sound quality' of Electra2. With computer-based digital synthesizers a compromise must usually be made between the best sound quality and the amount of CPU resources that it consumes. The better the sound quality, the more CPU resources it needs. The options are:

- ○ *Low CPU* – This setting is the most CPU efficient mode but with a sacrifice of sound quality.

- ○ *High quality* – This is the default setting. This gives the best sound quality but with a higher usage of CPU resources compare to *Low CPU*.

- ○ *Crossblend PW* - This mode allows the smooth morphing or blending of waves in the wavetables if this effect is desired. This does use a higher amount of CPU resources so use with caution.

- • **Layer Split** – This setting allows you to set up keyboard splits so that the layer only plays across a certain range of your keyboard controller. If different layers have different settings, you can set up bass/lead splits, for example. The settings are:

  - ○ *All keys* – This will allow you to play the entire range of your keyboard controller. This is the default setting.

  - ○ *Split low* – This splits the layer at key B2. Keys from B2 downwards can be played. All keys from C3 upwards will not play.

  - ○ *Split high* – This splits the layer at key C3. Keys from C3 upwards can be played. All keys from B3 downwards will not play.

  - ○ *Octave 0-4* – This allows you to play from the bottom octave (octave 0) to octave 4. All other octaves will not play.

  - ○ *Octave 5* – This option plays only octave 5.

  - ○ *Octave 6* – This option plays only octave 6.

  - ○ *Octave 7-10* – This will play the top four octaves.

- • **Velocity Range** – This sets the range of velocity in which the layer will play. Anything outside this range and this layer will not produce any sound. The options are:
  - ○ *All velocities* – This option will play the layer regardless of what velocity you play your keyboard controller. This is the default option.

  - ○ The other options show a lower limit and a higher limit e.g. *64-128*. The layer will play if the received velocity is between these two values.

- • **MIDI Channel** – This sets the MIDI channel for the layer. Electra2 will play if it receives MIDI information on this channel, all other channels it will ignore. The default value is 'All Channels' which means that the layer will play MIDI received on any channel.

The Arpeggiator Section

ARPEGGIATOR

| Altdown				1 BPM			Swing 0*		Chord C		Song				
1	R	.	1	1	R	1	R	1	1	R	2	5	2	5	5
0	0	0	-8	0	0	0	/24	-12	0	0	0	\12	0	0	0

Electra2's arpeggiator is an incredibly powerful arpeggiator capable of an astounding range of note sequences including classic up/down variations, typical acid lines with accents and slides, very advanced chord combinations, polyphonic gates, and everything in between.

The basics of Electra2's Arpeggiator

The basic idea behind the ARPEGGIATOR section is a sequence of a maximum of 16 tempo-synced steps triggered by incoming MIDI keys where individual notes or chords and specific behaviors can be assigned to each step independently. What the ARPEGGIATOR will play and how will play is defined by the interactions between the notes being fed to Electra2 and the values of its ARPEGGIATOR controls. The possibilities are immense...

The controls of the *ARPEGGIATOR* are as follows:

Off
Up
Up 2
Up 3
Up 4
Down
Down 2
Down 3
Down 4
Altup
Altdown
Pop
Pop2
Chordgate
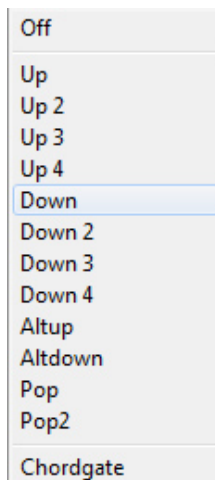
- **ARP Type** – This sets how the arpeggiator will play. The choices are:

  - *OFF* **–** The ARPEGGIATOR is disabled. This is the default option.

  - *UP types* - the ARPEGGIATOR cycles through all the notes being fed to Electra2 in increasing order, assigning one to each activated step in the arpeggiator. You can choose the octave range to be covered, i.e. "Up 1oct" will play the incoming notes in increasing order through the original octave and one octave higher.

  - *Down types* - the ARPEGGIATOR cycles through all the notes being fed to Electra2 in decreasing order, assigning one to each activated step in the sequencer. You can choose the octave range to be covered, i.e. "Down 1oct" will play the incoming notes in decreasing order through the original octave and one octave lower.

  - *Alt types* - These types are similar to the Up and Down types, but the ARPEGGIATOR will cycle through the notes from first to last and then back to first, instead of from first to last only.

- *POP types* - These types alternate the incoming notes instead of cycling through them, creating familiar patterns used in countless hit tracks.

- *Chordgate* - All the incoming notes will be played at the same time on each active step as a chord. This could be best described as a "polyphonic mode".

- **TEMPO** - The tempo function sets the speed for the arpeggiator in multiples of the tempo of your host program.

| 1/4 BPM |
|---|
| 1/3 BPM |
| 1/2 BPM |
| 2/3 BPM |
| 1 BPM |
| 4/3 BPM |
| 3/2 BPM |
| 2 BPM |
| 3 BPM |
| 4 BPM |
| 6 BPM |
| 8 BPM |
| 16 BPM |

- Whole divisions of the tempo (default is 1 BPM – the ARPEGGIATOR's tempo which is the same as the host's tempo). 2 BPM is twice the host's tempo. 8 BPM is eight times the host's tempo, etc.

- Divisions of the tempo e.g. 2/3 BPM is two thirds of the hosts's tempo.

- **Swing Amount** – To create a more 'human' feel to the arpeggiator, you can increase the amount of 'swing' from 0 (no swing) to 99 (full swing). The swing feature alternately delays and rushes the arpeggiator steps to add feel.

Key
Chord A
Chord B
Chord C
Chord D
Chord E
Fifth A
Fifth B
Fifth C
Third A
Third B
Third C
Third D

- **Chord Mode** - The Chord Mode control offers a range of pre-defined chords that will be played in response to single incoming notes. Hitting a single key with this functionality on is the equivalent of feeding full chords into Electra2 when it's switched off... so a complete chord can be played with one finger!

- *Key* – This is the default mode. This is standard behaviour where one note played on the keyboard will play one note in Electra2.

- *Chord A, B, C, D, E* - These will play chords in different inversions by pressing a single key on your keyboard controller.

- *Fifth A, B, C* - These will play Fifth chords in different inversions by pressing a single key on your keyboard controller.

- *Third A, B, C, D* - These will play Third chords in different inversions by pressing a single key on your keyboard controller.

- *Retrigger Mode* – This will tell the arpeggiator how to restart the arpeggiator after you take your fingers off the keyboard.
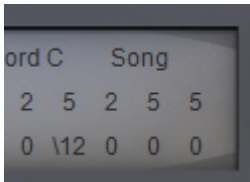
  - *Song* – This is the default mode. Electra2 will follow the position of the host clock. e.g. if you play a key on the third beat of the bar in your host, Electra2 will play the step corresponding to the third beat of the bar.

  - *Trigger* – This mode will always make the arpeggiator play from the beginning regardless of when you play a note on your keyboard controller.

- *Velocity* – This determines the velocity of the step plus a few other loop functions. The options are:
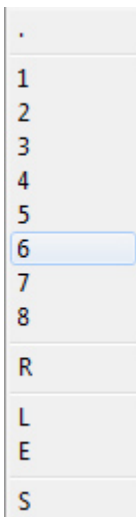
  - **.** - This denotes a TIE. A tie step continues playing the note from the previous step.

  - *1 – 8* – These set the velocity or 'accent' of the step. The lower the number, the quieter the velocity.

  - *R* – This denotes a RELEASE step. When the arpeggiator plays this step, it will trigger the release phase for the envelopes as if the key on your keyboard controller was released.

  - *L* – This denotes a LOOP step. When the arpeggiator reaches this step, it jumps back to Step 1.

  - *E* – This denotes an END step. It's function depends on the Retrigger mode. If it is set to Trigger, the arpeggiator will be in SINGLE-SHOT mode. It will reach the *E* step and will stop until a new note is played. If the Retrigger mode is set to Song the **E** step will behave the same as a LOOP step.

  - *S* – This forces a resorting of the notes.

- *NOTE* – The note parameter sets the transposition of the step. The values are in semitones. The 0 value (default) means that there is no transposition.

0	-9	/6
1	-8	/7
2	-7	/12
3	-6	/24
4	-5	
5	-4	
6	-3	
7	-2	
8	-1	
9		
10	\24	
11	\12	
12	\7	
16	\6	
17	\5	
19	\4	
24	\3	
-24	\2	
-19	\1	
-17	/1	
-16	/2	
-12	/3	
-11	/4	
-10	/5	

- The *positive* numbers (from 1 to 24) show how many semitones the step will be transposed **UP**.

- The *negative* numbers (from -24 to -1) show how many semitones the step will be transposed **DOWN**.

- The numbers with a *forward slash* (/) prefix show how many semitones the step will **GLIDE UP**. The step will slide smoothly up the selected number of semitones. This slide is also called *portamento*.

- The numbers with a *back slash* (\) prefix show how many semitones the step will **GLIDE DOWN**.

Arpeggiator Reset

The arpeggiator on the current layer can be reset to its default values by using the INIT menu > Reset Synth Arpeggiator option.

The Envelope Section

The envelope section has four envelopes which can be used to modify many of Electra2's parameters. Two of the envelopes are 'hard-wired'; Envelope 1 is fixed to control the Amplifier and Envelope 2 controls the Filter. The other two filters are not connected anywhere by default and can be freely assigned using the MOD MATRIX. Electra2's envelope section has a display that shows the shape of the selected envelope.

What is an Envelope?

An envelope generator allows a synthesizer to mimic acoustic instruments' properties of changing volume and timbre over time. Traditionally, an envelope generator produced a control voltage that varied over time which could be used to automatically change the filter cut off or amplifier volume.

There are many different types of envelopes but the most common one is known as an ADSR which is an acronym for Attack, Decay, Sustain and Release which describes the four controls of the envelope. Another variant is the AHDSR which is an acronym for Attack, Hold, Decay, Sustain and Release. The AHDSR is used in Electra2. A description of these are as follows:

Attack – Is a time value which states how long it takes for the envelope to go from zero to maximum peak when a key is pressed.
Hold – Is a time value which states how long it takes for the envelope to wait at maximum peak value.

Decay – is a time value which states how long it takes for the envelope to drop to the sustain level.

Sustain – Is a level value which states the highest value while the key is being held down after the Attack, Hold and Decay stages.

Release – Is a time value which states how long it takes for the the envelope to drop back down to zero after the key has been released.

The button controls are used to switch between the four different envelopes:

- **VOL –** This selects the envelope that controls the current layer's volume.

- **FILT** – This button selects the envelope that controls the current layer's filter cut off.

- **AUX1** – This selects the *Auxiliary 1* envelope which doesn't have a preset routing. It can be routed to many destinations using the **MOD MATRIX**.

- **AUX2** – This selects the *Auxiliary 2* envelope. Like *AUX1,* it doesn't have a preset routing. It can be routed using the **MOD MATRIX**,

The knob controls are used for the main envelope controls:

- **A** – This controls the *Attack Time* of the envelope.
- **D** – This controls the *Decay Time* of the envelope.
- **S** – This sets the level of the *Sustain* section.
- **R** – This sets the *Release Time* of the envelope.

The display window controls are:
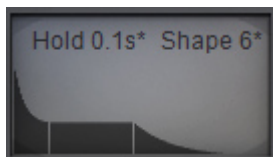
- **Hold**- This specifies the hold time of the envelope.

- **Shape** – This specifies the *shape* of the envelope curves. The values are from 0 which is a linear curve or pure straight line, up to 9 which is a logarithmic curve or a curved lin

The Mod Matrix Section

The **MOD MATRIX** or MODulation Matrix is a system that allows you to flexibly assign different modulators (such as LFOs or envelopes) to different destinations (such as the filter, amplifier or even other modulators).
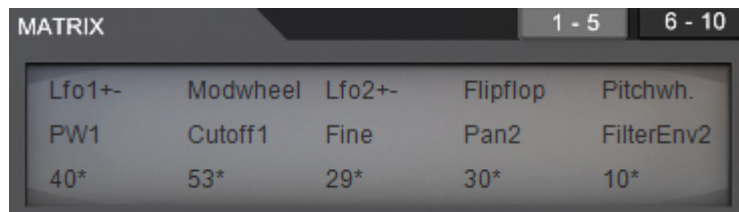
Electra2's modulation Matrix has 10 slots to allow you to make 10 modulation assignments. The procedure for assigning modulation is very simple:

1. Choose a modulator (modulation source) in the drop-down menu. *This is what causes the modulation or changing effect.*

2. Choose a target (destination) in the drop-down menu. *This is what gets affected by the modulation or changing effect.*

3. Specify an amount other than Zero by clicking and dragging the Modulation Amount value. *This is how much modulation gets sent to the destination. The lower the value the more subtle the effect.*

The controls for the modulation Matrix are:

- *Modulation Slot Selection Buttons A and B* – There are ten modulation slots overall arranged in two pages of five. Click on button *A* to access slots 1 to 5. Click on button *B* to access slots 6 to ten.

- *Modulation Source Selector Menu* – If you left-click on one of the modulation source areas on the Matrix display, a selector menu appears. The menu options are:

  - *Off* – No modulation source selected. This is the default selection.

  - *Lfo1,2,3* - This selects either LFO 1, 2 or 3 as the modulation source.

  - *Step Lfo* – This selects the Step LFO as the source. The Step LFO is located in the LFO Section (see below).

  - *Vol Env* – This selects the Volume Envelope as the modulation source. Although the *Vol Env* is hard-wired to the amplifier, it can also be used to modulate another destination at the same time.

  - *Filt Env* – This selects the Filter Envelope as the modulation source. Although the *Filt Env* is hard-wired to the Filter, it can also be used to modulate another destination at the same time.

- *Aux1 Env, Aux2 Env* – These select the Auxiliary Envelopes 1 or 2 as the modulation source. Unlike the *Vol Env* and the *Filt Env* the Auxiliary Envelopes are not hard-wired to anything so they must be routed in the Mod Matrix for their effect to be heard.

- *Static* – This option uses a static value as the modulation source. The value is taken from the *Modulation Amount* parameter. This option is useful if you need a paramter *offset* to any modulation destination.

- *Random* – This option selects a new random value when a key is pressed on your keyboard controller. Note that the value will be static until you play a new note when a new random value will be created.

- *Flipflop* - This option 'flips' between two values. The value is determined by the *Modulation Amount. e.g.* a *Modulation Amount* of 10 would 'flip' between +10 and -10. However, the parameter that is going to be modulated acts as a value offset.

- *Noise* – This option generates white noise. This is a continuously varying random value.

- *Key* – This will use the note value of the key you play on your keyboard controller as a modulation source. A low note will generate a low number, a high note will generate a high number.

- *Velocity* – This will use the velocity value (how hard you play the keys) as a modulation value. The harder you play your keyboard controller, the higher the value of velocity.

- *Modwheel* – This will use the modulation wheel from your keyboard controller as a modulation source. Note that you will only *change* the value if you *move* the modwheel, otherwise the value will be static (which will be the last value transmitted by the modwheel).

- *Pitchwheel* – This will use the pitchwheel from your keyboard controller as a modulation source.

- *Afterto.* - This will use the aftertouch messages from your keyboard controller as a modulation source. Please check the operating instructions of your keyboard controller to see if it generates aftertouch information. Not all keyboard controllers do.

- *KeySat.* **-** This will use the note value of the key you play on your keyboard controller as a modulation source. A low note will generate a low number, a high note will generate a high number. KeySat is a variation on the Key source.

- *Breath* - Responds to Breath controller as modulation

- *Foot* - Responds to Foot switch controller as modulation source

- *MainVol* - Responds to Main Volume controller (CC#7) as modulation source

- *Express.* - Responds to Expression controller (CC#11) as modulation source

- *CC16-CC19* - Responds to CC#16 to CC#19 (continuous controllers) as modulation source

- *Hold* - Responds to Hold pedal (sustain) on/off (CC#69) as modulation source

- *VoiceNr.* - This will use the aftertouch messages from your keyboard controller as a modulation source. Please check the operating instructions of your keyboard controller to see if it generates aftertouch information. Not all keyboard controllers do.

- *NumKeys* - Uses the amount of key pressed as modulation source

- *Impulse* - A short impulse is used as modulation source; could for example be applied to sharpen the attack portion of a sound.

- *Decay8ms-16s* - Decay will use an internal envelope to modulate, options are envelopes that run from 4 milliseconds to 16 seconds.

- *Lfo1+* - LFO1 in unipolar mode as modulation source, only uses LFO1's positive values.

- *Lfo2+* - LFO2 in unipolar mode as modulation source, only uses LFO1's positive values

- *Lfo3+* - LFO3 in unipolar mode as modulation source, only uses LFO1's positive values

- *Sine1/64Hz – Sine64Hz* - Uses a sine shape as modulation source, the amount of Hz denotes the modulation speed used.

- **Destination Selection Menu -** If you left-click on one of the destination areas on the Matrix display, a selector menu appears. The menu options are:

Off	PW1	Lfo2Speed	Aux1 D
Volume	PW2	Lfo3Speed	Aux1 S
Pitch	PW3	Matrix1	Aux1 R
	FM2	Matrix2	Aux2 A
Oct1	FM3	Matrix3	Aux2 D
Oct2	OscVol1	Matrix4	Aux2 S
Oct3	OscVol2	Matrix5	Aux2 R
Interval1	OscVol3	Matrix6	FilterEnv1
Interval2	Cutoff1	Matrix7	FilterEnv2
Interval3	Cutoff2	Matrix8	
Semi1	Reso1	Matrix9	Fine
Semi2	Reso2	Matrix10	Start1
Semi3	Drive1		Start2
Fine1	Drive2	Vol A	Start3
Fine2	FiltVol1	Vol D	Mix1
Fine3	FiltVol2	Vol S	Mix2
Pitch1	Pan1	Vol R	Mix3
Pitch2	Pan2	Filt A	
Pitch3	Analog	Filt D	
Tone1	Ringmod	Filt S	
Tone2		Filt R	
Tone3	Lfo1Speed	Aux1 A	

- *Off* - No modulation destination selected. This is the default selection.

- *Volume* – The volume of the current layer.

- *Pitch* – The master pitch of the current layer.

- *Oct1,2,3* – The *Octave* setting of Oscillator 1, 2 or 3.

- *Interval1,2,3* – The *Interval* setting of Oscillator 1, 2 or 3.

- *Semi1,2,3* – The *Semitone* setting of Oscillator 1,2 or 3.

- *Fine1,2,3* – The *Fine Tune* setting of Oscillator 1,2 or 3.

- *Pitch1,2,3* – The *Pitch* control setting of Oscillator 1, 2, or 3.

- *Tone1,2,3* – The *Tone* setting of Oscillator 1, 2, or 3.

- *PW1,2,3* – The *Pulse Width* setting of Oscillator 1, 2, or 3.

- *FM2,3* – The *FM* setting for FM2 or FM3.

- *OscVol1,2,3* – The *Oscillator Volume* setting of Oscillator 1, 2, or 3.

- *Cutoff1,2* – The *Filter Cut Off* setting of Filter 1 or 2.

- *Reso1,2* – The *Filter Resonance* setting of Filter 1 or 2.

- *Drive1,2* – The *Filter Drive* setting of Filter 1 or 2.

- *FiltVol1, 2* – The *Filter Volume* setting of Filter 1 or 2.

- *Pan1,2* – The *Pan* setting of Filter 1 or 2.

- *Analog* – The *Analog* setting in the Filter section.

- *Ringmod* – The *Ringmod Amount* setting in the Filter section.

- *LFO1,2,3Speed* – The *Speed* setting of LFO 1, 2, or 3.

- *Matrix1,2,3,4,5,6,7,8,9,10* – The *Modulation Amount* setting of Modulation Matrix slot 1, 2, 3, 4, 5, 6, 7, 8, 9 or 10.

- *Vol A,D,S,R* – The Volume Envelope's *Attack, Decay, Sustain* or *Release* parameters.

- *Filt A,D,S,R* – The Filter Envelope's *Attack, Decay, Sustain* or *Release* parameters.

- *Aux1 A,D,S,R* – Auxiliary 1 Envelope's *Attack, Decay, Sustain* or *Release* parameters.

- *Aux2 A,D,S,R* – Auxiliary 2 Envelope's *Attack, Decay, Sustain* or *Release* parameters.

- *FilterEnv1,2* – The *Filter Envelope Amount* setting in the Filter section.

- *Fine* – This is the master *Fine* control of the current layer.

- *Start 1,2,3* – The start position control for OSC1, 2 or 3.

- *Mix* – The mix control for OSC1, 2 or 3.

- **Modulation Amount** – This is a bipolar control that ranges from -100 to 100. Click and drag the amount to change it. A positive number will give *positive modulation* and a negative number will give *negative modulation.*

Modulation Tips

You can use *Modulation Amount* as a destination if you wish to use one modulation source to control the amount of modulation of a parameter. e.g. Use the Modwheel to control the amount of vibrato:

Note that the *Modulation Amount* for Slot1 is 0. This value is modulated by the Modwheel, which is assigned in Slot2.

| MATRIX			1 - 5	6 - 10
Lfo1+-	Modwheel	Off	Off	Off
Fine	Matrix1	Off	Off	Off
0*	45*	0*	0*	0*

Negative *Modulation Amount* values are useful if you wish to reduce the value of a parameter with positive modulation. e.g. You can lower the filter cutoff when you use the Modwheel.

LFO Section

The LFO is an acronym for Low Frequency Oscillator. LFOs are oscillators that operate below the threshold of human hearing (20 Hertz). They are used as modulators and are assigned in the *Mod Matrix.*
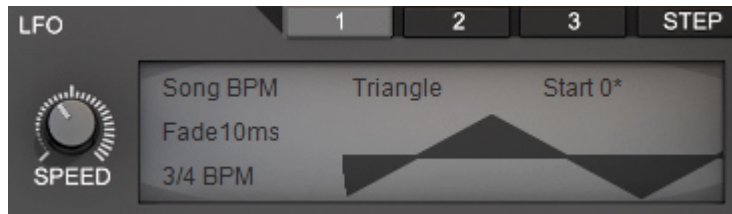
Electra2 has three identical LFOs and a Step LFO. The waveform display shows a visual representation of the waveform. The Step LFO looks slightly different and will be explained seperately.
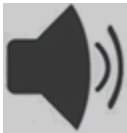
A little bit about Electra2's LFOs

Electra2 has three very flexible high-end LFOs that support 256x oversampling for a clean sound. The LFOs even can be used as additional sources for sound generation (FM/Filter FM/AM) since they can support frequencies up to 440 Hz.

It is possible to modulate the LFO frequency in the Mod Matrix.

LFO Triggering

There are two ways to trigger an LFO in Electra2; per voice or global.

Per Voice is when a new LFO is triggered every time you press a key on your keyboard controller. If you play and hold the notes of a chord one at a time, the LFO of each note would be out of time with each other as they are independent.
Global triggering is when all the LFOs of each voice play together at the same time. So, with our example above the LFOs of our chord would play together 'in sync'.

Note that the Mode setting is per LFO so that each of the three LFOs per layer can have it's own setting.
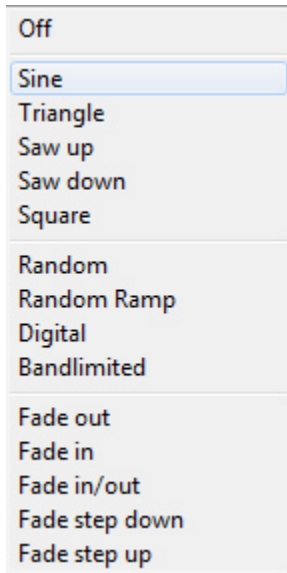
- *LFO 1,2,3 Selector Buttons* – The buttons select which one of the three LFOs is selected for editing.

- *Step LFO Selector Button* – This button selects the Step LFO.

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- **SPEED** – This knob controls the speed of the LFO. The range depends on the *LFO Mode:*

  - *In a BPM Mode* – The range will be shown as a multiple of the host's tempo. e.g. 1/2 BPM is half of your host's tempo, 4 BPM is four times your host's tempo.

  - *In a non-BPM Mode* – The range will be shown in Hertz (Hz). The range is 0.1Hz to 440.1Hz

- **LFO Mode** – The LFO Mode sets how it will behave and whether it will synchronize to your host's clock or not. If you click on it a menu will appear. The options are:
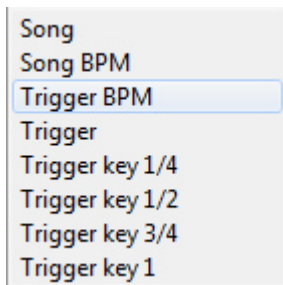
  - *Song* - One global LFO which affects all voices.

  - *Song BPM* - One global LFO which affects all voices and is synchronized to your host's tempo.

  - *Trigger BPM* - Each voice has it's own LFO which is synced to synchronized to your host's tempo. It is retriggered every time a new note is played.

  - *Trigger* - Every voice has it's own LFO. It is retriggered every time a new note is played.

  - *Trigger Key 1/4* - Every voice has it's own LFO with 25% key follow routed to frequency. Higher notes result in a higher frequency. This setting is useful if you want to modulate *PW*. The LFO is retriggered every time a new note is played.

  - *Trigger Key 1/2* - Every voice has it's own LFO with 50% key follow routed to frequency. Higher notes result in a higher frequency. This setting is useful if you want to modulate *PW*. The LFO is retriggered every time a new note is played.

  - *Trigger Key 3/4* - Every voice has it's own LFO with 75% key follow routed to frequency. Higher notes result in a higher frequency. This setting is useful if you want to modulate *PW*. The LFO is retriggered every time a new note is played.

  - *Trigger Key 1* - Every voice has it's own LFO with 100% key follow routed to frequency. Higher notes result in a higher frequency. This setting is useful if you want to modulate **PW**. The LFO is retriggered every time a new note is played.

- **Fade** - The *Fade* parameter fades in the effect of the LFO over a period of time. The range is from 1millisecond to 21 seconds.

- • *Waveshape* - This selects the shape of the LFO. The selection is chosen from a context menu. The options are:

Off
Sine
Triangle
Saw up
Saw down
Square
Random
Random Ramp
Digital
Bandlimited
Fade out
Fade in
Fade in/out
Fade step down
Fade step up

- ◦ *Off* - No waveform selected. The LFO is turned off. This is the default setting.

- ◦ *Sine* - A sine wave.

- ◦ *Triangle* - A triangle wave.

- ◦ *Saw up* - A saw wave ramping up.

- ◦ *Saw down* - A saw wave ramping down.

- ◦ *Square* - A square wave.

- ◦ *Random* - A square wave but of randomly varying amplitudes. This is similar to 'Sample and Hold' effect found on many synthesizers.

- ◦ *Random Ramp* - The same as *Random* but uses a triangle wave. The frequency is constant but the amplitude is randomly varied.

- ◦ *Digital* - A square wave where the pulse width (hence the frequency) randomly varies.

- ◦ *Bandlimited* - A triangle wave where the frequency randomly varies.

Fade LFOs

Fade LFOs are a special type of 'one-shot' oscillator that oscillates just once during the time that the key is held down. They are more like simple envelope shapes than oscillators and are best used as extra envelopes if the regular envelopes are being used for other duties.

To control the fade or ramp time, use the *Fade* control.

- ◦ *Fade out* - A ramp down envelope.

- ◦ *Fade in* - A ramp up envelope.

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- *Fade in/out* - A ramp up immediately follwed by a ramp down envelope.

- *Fade step down* - A single on-off shape.

- *Fade step up* - A single off-on shape.

- **Start** - The start parameter changes the start phase of the LFO. The value can be changed from 0 to 99. The value after 99 is *Free*. The *Free* setting will make the LFO behave more 'analogesque' as such as the start phase is randomly varied.
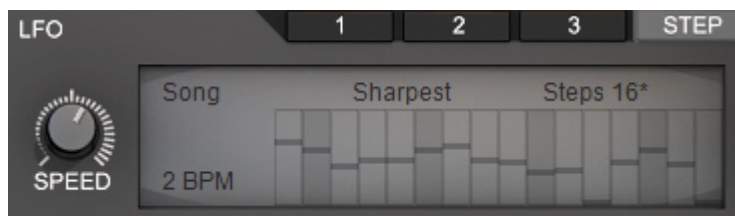
The Step LFO

The STEP LFO is inspired by the old analog step sequencers that existed in the pre-MIDI world.

The main idea is to modulate a target sound parameter with a 1 to 16 step sequence pattern synced to your host's tempo. Each of the 1-16 steps of the sequence can be given a precise value. This way you can build custom rhythmic patterns and use them to modulate any parameter of the synth available in the Modulation Matrix.

Like LFOs, A STEP LFO doesn't produce any sound in itself, a STEP LFO is used to modulate another sound parameter to achieve cyclic modulations (changes) of this parameter over time, according to the *SPEED* Knob settings.

Please note that the STEP LFO is always synced to your host's tempo.

The controls are:

- **Step Mode** - This sets how the STEP LFO retriggers if you play a new note. Clicking on this parameter will open a context menu. The options are:

  - *Free* - The STEP LFO will continue running (in synchronization with your host's tempo) regardless of when you play a note.

  - *Retrigger* - The STEP LFO will start from the beginning whenever you play a new note.

- **Speed** - The range will be shown as a multiple of the host's tempo. e.g. 1/2 BPM is half of your host's tempo, 4 BPM is four times your host's tempo. Click and drage the *Speed* control knob to change the setting.

- **Steps** - The majority of the STEP LFO display is taken up by a row of sixteen columns. A single column represents a step. A line is displayed in each column to show the value of the step. Click and drag the line up or down to change the value. The higher the line, the higher the value.

- **Step Shape** - The step shape sets how one step 'flows' into another. The values are:

Sharpest
Sharp
Soft
Softer
Softest
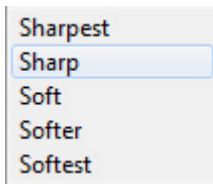
  - *Sharpest* - No smoothing. One steps jumps immediately to the next.

  - *Sharp* - A tiny amount of smoothing.

  - *Soft* - A small amount of smoothing is applied.

  - *Softer* - The steps are smoothed out so they glide from one to another.
  -
    Softest - An exaggerated amount of smoothing is applied.

- **Step Pattern Size** – Here you can set how large the pattern will be. The value can be from 2 steps to 16 steps. The pattern will repeat from the beginning once it's reached the end step.

Tone2 Product Catalog

Nemesis: NeoFM synthesizer

The next step in FM Synthesis: Nemesis ®

Nemesis takes FM synthesis to its next evolutionary step: NeoFM synthesis .

Nemesis includes traditional FM synthesis as well as a completely new and improved approach to FM called NeoFM synthesis. NeoFM and several other innovative synthesis methods are exclusively available in Nemesis.

NeoFM is extremely powerful and intuitive. It is now easier than ever to get very good sounding results. The sound quality of Nemesis surpasses conventional synths, making it easy to locate the sonic sweet spot.

Nemesis features an easy-to-use interface, which ensures that you will experience synthesis at its best and most entertaining.

- Contains 1065 inspiring patches from professional designers.
- Provides all important sounds from the history of digital synthesizers.
- Unique signature sound: Nemesis features a large number of exclusive sounds that are not possible with other synthesizers.
- Perfect for modern, as well as all other music styles.
- High-End sound quality with low demands on your CPU.
- The user-friendly interface makes tweaking accessible to everyone, regardless of skill level or experience.
- Extremely versatile: No fewer than 22 combinable synthesis types.
- An extensive number of high-end quality effects, with flexible routing options.
- NeoFM covers all important aspects of traditional FM synthesis, but is in no way limited

to bell-style sounds only. It offers a much larger sonic range and does not suffer from metallic sound or other weaknesses.

- Wave import, resynthesis and the additive spectral editor offer unlimited sonic possibilities.
- True 4x stereo unison.
- Expandability.
- Trancegate with an extensive selection of setup options.
- Powerful, easy-to-use arpeggiator.
- Manual in three languages: English, German and French

Sound

Nemesis features pristine tonal quality and offers sonic possibilities far beyond the scope of conventional FM synthesizers. A uniquely silky signature sound is generated by Nemesis' synth engine, which is capable of providing warm, smooth, and creamy tones as well as the classic 'cold' sounds FM synthesis is well known for. Whether you desire a crisp, clean sound or downright nasty tones, the NeoFM engine delivers with the highest sound quality possible!

As quick and easy as it is to dial-in good sounding results with Nemesis, sometimes you just want to rely on a good and inspiring sound library. This is why Nemesis comes bundled with more than 1065 sounds. Each sound is carefully built by a professional sound designer and is crafted with great attention to detail. The result is a sound library that is inspirational to work with and that will fuel your creativity.

Since it is impossible to describe a sound with words, and because a demo-song cannot show the dynamic expression and huge sonic range that Nemesis provides, we recommend that you download the free demo to hear Nemesis' unique sonic capabilities for yourself!

Synthesis

Nemesis offers an innovative approach called 'neoFM' synthesis which is genuine FM synthesis.
Most conventional FM synths such as the DX7, use phase modulation (PM) instead of genuine FM synthesis, yet such synths are branded as FM synthesizers for marketing reasons. However, the traditional PM approach is limited to using dark sounding waveforms like sinoids or triangles, which results in a dull or bell-like sound. Classic waveforms like a sawtooth do not work well with it because they result in an unpleasant, sharp and excessively metallic sound.
'Real analog FM' suffers from drift and lacks precision, resulting in a disharmonic sound, which is musically not very useful.
The innovative neoFM approach, exclusive to Nemesis, combines only the advantages of both types of synthesis without suffering from any of the weaknesses associated with PM or 'Real analog FM' synthesis.

Aside from NeoFM synthesis, Nemesis features an astounding selection of no fewer then 22 combinable synthesis types. From Waveshaping, Phase Distortion, Sync, Wavetable, Ringmod, Vintage FM, up to the Reso and Advanced Formant Synthesis exclusive to

Nemesis.
Each synthesis type is built with attention to sound quality, musical potential and the capability to produce a wide variety of sounds not possible with other synths.
Resynthesize a waveform from your own samples, or use the comfortable additive spectral editor to further manipulate & shape your wave by editing its partials.
With several play modes like polyphonic, monophonic & legato, true 4x stereo unison, 22 synthesis types, and an unlimited number of waveforms and the sky is the limit...literally.

Effects

As important as anything else within a synth are the effects. We spent a great deal of time ensuring that Nemesis featured a suite of high quality FX.
No less then 33 effects are available from the effects section, ranging from Reverb, Delay, Chorus, and Phaser, to Tremelo, Vibrato, Distortion, Amp-Simulation, Bitcrush, Degrader and Compressor.
To complete these effects, several flexible routing options are included. The innovative Ducking Mode makes your mix sound more transparent and fat.

Nemesis offers smart microtuning, exclusive to Nemesis, which makes chords sound both fatter and more transparent at the same time. It also offers optional punch and psychoacoustic features to add a little kick to your sound.

Arpeggiator

Almost a synth by itself, the arpeggiator section holds the key to all of your arpeggio needs. It offers a way to set up your own arpeggios that is both powerful and easy to work with.
We developed smart algorithms which return melodies that are more useful musically than conventional arpeggiators.
Working with the arpeggiator is extremely simple. Just lay down your notes inside the note sequencer as you normally would and select the play direction. The arpeggiator also supports optional advanced features such as autochords, polyphonic playback, pitch slides, legato, swing-shuffle, split, matrix integration and it gives you very precise control over note-sorting, play direction and velocity.

Don't feel like programming your own patterns? Use one of the built-in patterns or load one of the many external pattern presets to use as a starting point.
Working with an arpeggiator should be fun and inspiring. The arpeggiator in Nemesis is as fun and inspiring as it is powerful, flexible, and easy to use.

Gate

Nemesis also offers a dedicated Gate section. As with the arpeggiator, we aimed to make this as intuitive and flexible as possible.
The Gate section provides advanced features like Contour, Fading, Swing and Shuffle to fine-tune your gate to perfection.
Arpeggiator, gate and modulation run in perfect sync with each other. This allows you to use the three together in all kinds of creative ways and it makes them easy to use and fun to play with.

Modulation

Modulation is where the true power of a synthesizer emerges. By using the modulation matrix, Nemesis allows you to connect dozens of modulation sources to all-important sound parameters.
Want to use an LFO to wobble your filter? Simply set the proper assignments inside of the modulation matrix and you're on your way.

Modulate almost any parameter well up into the audio-rate speed, from internal modulation sources like the LFOs, to a wide variety of MIDI messages. We've also included midi-learn, so assigning CC's is as simple as a right-click and a knob-turn.
Modulation can be as simple or complex as you want it to be. Nemesis' modulation system is there to provide whichever modulation routing you require to create your perfect sound.

CPU

CPU load is always an important factor to consider, especially in light of today's complicated multi-track projects.

We made sure that Nemesis is as easy on your CPU as possible. Nemesis offers a rich, deep sound, the very best sound quality, AND low CPU usage. What is the advantage of good sound quality if it consistently brings your system to a halt with a mere single instance of the synth?
The low CPU requirement ensures that you can easily use multiple instances of the synth without overloading your project and without the need to render tracks right in the middle of a creative session.

For more information visit the Nemesis product page: https://tone2.com/html/nemesis%20synthesizer%20%20vst%20au.html

Rayblaster: Impulse Modelling synthesizer

RayBlaster - a radically new form of synthesis!

Impulse Modelling Synthesis (IMS) is far more than a marketing buzzword - it represents a radically new and different approach in sound generation.

What is Impulse Modeling Synthesis ?

Offering a new world of high quality sounds and limitless creative potential for all styles of music,IMS goes well beyond traditional forms of synthesis.
Conventional synthesizers employ what is known as subtractive synthesis, in which the oscillator source is a looped waveform that is filtered to create a sound. By contrast, RayBlaster utilizes an entirely new and fresh approach to sound generation and creates its distinctive sound from many short bursts of energy, which combine to form a more complex sound. In fact, this innovative approach to synthesis is very close to how our human inner ear perceives sound. Because of its radically new method of synthesis, RayBlaster offers a wide range of original sounds, sounds that have never been heard before.

Sounds

RayBlaster ships with an inspiring library of over 500 outstanding presets from some of the world's top sound designers. Many complex sounds such as arpeggiators, vocals or drumloops automatically synchronize to the BPM. For fast & easy access to the specific sound you desire, all sounds are arranged into categories, making them easy to locate whether for live performance or within a professional studio environment.

Filters

IMS has no need for a separate filter section because its oscillators are capable of authentically reproducing the filter sound of other synthesizers by using one of the factory impulse presets or simply by importing one of your own impulses. Not only is RayBlaster capable of modeling the sound of existing filters – it also makes it possible to create completely new artificial 'fantasy' filters that are exclusive to RayBlaster. This renders its filter capabilities virtually unlimited.

Waveforms, Samples & Resynthesis

In addition to importing filter characteristics into RayBlaster's oscillators, you can also import the waveform of any other synthesizer into RayBlaster. This gives you an unlimited number of possible waveshapes, all of which are capable of being morphed in real-time. You can resynthesize short samples like a drumloop or a vocal phrase. RayBlaster also offers you many possibilities to synchronize complex sounds to BPM as well as providing the ability to manipulate the pitch, timing and the timbre of all your sounds in real-time.

Features – summary

- A revolutionary new method of synthesis
- Provides access to completely new sonic territory
- High-end sound quality with low CPU usage
- Create distinctive sounds that are impossible to produce with other synthesizers
- Allows your music to stand out from the crowd!
- Delivers professional sound quality that is never muddy and fits well into the mix
- Sounds more detailed, appealing, fat and louder than conventional synths
- Allows for Independent control over pitch, timing and timbre
- Filter import: Mimic filters of other synthesizers or create your own fantasy filters.
- Resynthesis allows easy import & manipulation of your own sounds
- Huge sonic range and very flexible
- Easy to use & fun to play
- Over 500 ready-to-use sounds created by professional designers
- Psychoacoustic processing
- Expandability
- Fair price

For more information: http://tone2.com/html/rayblaster_synthesizer_vst_au.html

Saurus Analog Synthesizer

True analog sound with state of art functionality!

Saurus takes the high regarded analog sound from the past into the unlimited digital realm, fusing them together with a user interface that invites to tweak and a multitude of unique sound sculpting tools exclusive to Saurus. All without placing heavy demands on your CPU or budget.

It has been the aim of developers the world over to bring the best "Virtual Analog" synths possible to re-create the sound of classic hardware.
However, unlike many competitors who sell 'Virtual Analog Synthesizers' which are at best mere approximations of what happens in the real world, we set out to create not just another synthesizer with character, but one that truly represents the sound of analog hardware.
We carefully measured and modeled the circuits of many classic performance synthesizers, even including single capacitors and resistors to provide an extremely accurate analog model, faithfully capturing the spirit and character of these old machines.

What are the advantages that Saurus offers?

- True Analog Modelling Technology™
- High-end sound quality
- Saurus replaces a large number of expensive analog synthesizers
- Low CPU and high reliability
- Low price
- Free personal support and updates
- Easy-to-use interface
- Unique sounds which no other synthesizer can create

- Huge sonic range
- Flexibility, expandability
- Ships with 563 outstanding presets from 21 top sound designers

Features

- Covers all important aspects of traditional analog synths
- Mono, Legato & Polyphonic modes employing analog voice management
- Two Syncable Oscillators and two Sub Oscillators
- Not just standard waveforms but also a large number of exotic ones
- Pulse Width Modulation and Oscillator Sync applicable to every waveform
- Oscillator Drift, Phase and Noise Modulation controls
- Noise FM, AM and Ring Modulation for Oscillators
- Analog filter with self-oscillation, nonlinearity, 6 filter types, FM and feedback
- LFOs and modulation capable of running at audio-rate
- Powerful Arpeggiator with extensive configuration possibilities
- Flexible Modulation Matrix with new features, including a filter
- Programmable gate
- 4x Stereo Unison modes with spread and panning control
- Analog modeled Distortion and Tube amp
- Optional Psycho-Acoustic processing
- High-end quality Effects

For more information: http://tone2.com/html/saurus_synthesizer__vst_au.html

Gladiator2 Synthesizer

The award winning Gladiator gives you a groundbreaking approach to sound generation. Its exclusive HCM synthesis technique covers new and unique aural territory, only possible with Gladiator. The innovative synthesis, design and unmatched sound quality, make this not only the perfect instrument, but also the best virtual synthesizer and go-to instrument for all those looking for the ultimate creative tool.

Synthesis types supported by Gladiator 2 are:

- Tone2's award winning Harmonic Content Morphing synthesis (HCM)
- Frequency Modulation (FM) & Amplitude Modulation (AM)
- Pulse Width Modulation (PWM)
- Analog osciallators
- Resynthesized instruments
- Vocoder sounds
- Oscillator sync
- Phase Distortion
- Phase Modulation
- Waveshaping

- Super-saw
- Additive synthesis
- Sample playback

Filters

The analog modeled filter section uses high-end quality stereo filters, most of which are exclusive to Tone2 products.
Gladiator 2 ships with 40 different filter types: Moog, Low Pass, High Pass, Band Pass, Vocals, Comb, EQ, FM, AM, Phaser, Resample, Analog, ...

Sounds

Gladiator 2 ships with an inspiring library of 1105 outstanding presets from top sound designers. Besides that a variety of expansion banks is available to further expand Gladiator's features and preset library. All sounds are arranged into categories for easy access to the sound you require.

Modulation

Gladiator 2 has a powerful and flexible modulation section which is easy to setup. The analog modeled envelopes sound punchy. LFOs offer 22 different waveforms and can be synced to BPM. The Step LFO's design was inspired by the old analog step sequencers and can be used to create rhythmic sequences and trance gates.
With 'midi-learn' you can assign your hardware controller with a single mouse click.

Psychoacoustic processing

The exclusive IQM algorithm (Intelligent Microtuning) makes the synthesizer sound fatter and cleaner by automatically detuning notes for lush chords.
The innovative phase modulator module in the OSC section is based on the latest knowledge in phonetic science. It makes a digital spectrum sound warm, silky and analogue.
A special post-processing module in Gladiator mimics effects of the human ear. It creates deeper basses and more transparency.

- True high-end quality: Analog, warm, crystal clear, rich sound
- New synthesis method (HCM)
- New unique sounds which no other synthesizer can create
- Huge sonic range
- Boundless possibilities
- Psychoacoustic processing
- Different synthesis methods can be combined freely
- Flexibility, expandability
- Easy to use
- Low CPU and high reliability
- 1135 professional preset sounds included

For more information: http://tone2.com/html/gladiator_2_vsti_au_synthesize.htm

Warmverb Multi Effect

Warmverb is a multi-effect unit which gives you the flexibility to create unique sounding custom effects with a mouse click. Not only can it do classic effects with pristine sound quality - it can do crazy stuff like a 'distorted-reverb-phaser-feedback-vocoder'!
Equipped with the high quality reverb technology which can be found in our Gladiator synthesizer, Warmverb improves upon it by including an ultra version of the reverb.

With an easy to use interface, an intelligent randomize function and over 150 presets, Warmverb gives you instant access to a large selection of essential effects and inspiring new sounds.

Effect modules

- 3 high-end quality Reverbs
- Vocoder and Vocoder L-R
- Delay, Ping pong delay, Filtered Ping pong
- Chorus, Ensemble
- Flanger, Stereo Flanger
- Superstrings
- Phaser, Stereo phaser
- LFO Low pass, Band pass and High pass
- Talkbox
- Tubeamp, Transistor, Presence, Hardclip
- Bitcrush, Waveshape
- Rotary
- Dolby Prologic II surround encoding
- Tremelo
- Autopanning
- Stereo enhancing
- Stereoizer
- Equalizer
- Ringmod

- Trancegate
- Early reflections (3 different types)
- Pitch shifter
- Feedback module

For more information: http://www.tone2.com/html/warmverb_vst_au_effect_synthes.html

AkustiX Enhancer Effect

Tone2 AkustiX is a collection of six essential enhancement tools combined into one intuitive user interface. Ideal for tracks as well as full mixes AkustiX features six powerful effects: Psycho EQ, Ultra Stereo, Phase Enhance, Multi Exciter, Smart Filter and Stereo Width. Each effect is based on the latest developments in research and offers multiple ways to enhance the sound of your recordings drastically by using psycho-acoustic processing. Unlike competing enhancers AkustiX is easy to use and works well with nearly all kinds of material. It's a one-click solution to make your mix sound professional without knowing about mastering-voodoo.

- Six essential effects to complement your track and mastering process
- Add brightness, transparency, fatness, vibrancy and depth to your mix
- Restore and revitalize old recordings
- Drastically enhances stereo mixes
- Exclusive new technology based on the latest in psychoacoustics research
- High-end quality processing
- Powerful spectrum analyzer & phase meter to visualize imaging and phase
- Ships with professional presets for a broad range of mix & mastering tasks

For more information: http://tone2.com/html/akustix_enhancer_vst_au_effect.html

Filterbank 3 Effect
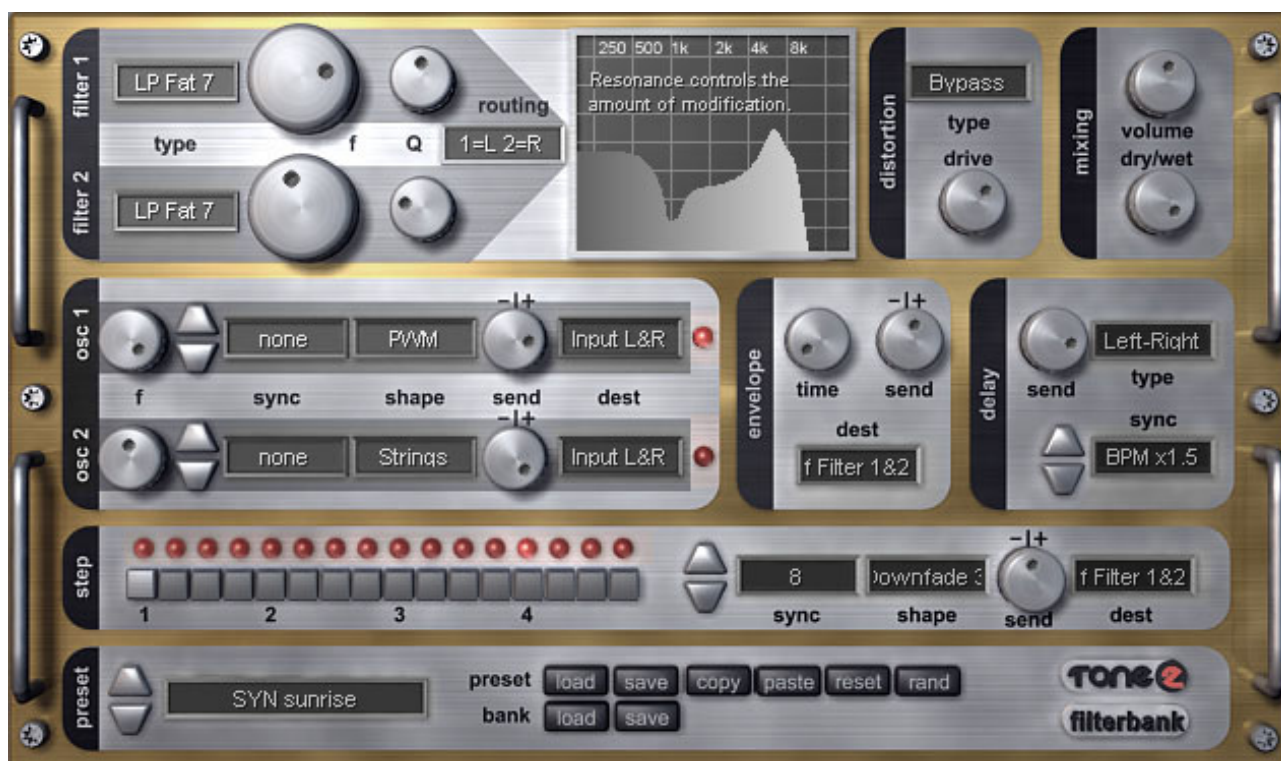
Tone2 FilterBank3 is more than an analog modeled filter plugin - it is a complete VST synthesizer and a flexible multi-effect unit. The modular design and flexible modulation routing give you nearly unlimited possibilities. With self-oscillating filters, oscillators and feedback it can create complete sequences and textures. FilterBank sounds impressive and unique. The built-in step sequencer can create rhythmic sequences with some mouse clicks.

- 58 different high-end quality dual-stereo filters
- Outstanding sound quality
- Flexible, semi - modular architecture and routing
- Virtual-analog OSCs/LFOs
- FM, AM, feedback
- 20 Delay types, Reverb, 12 Distortion types
- 320 presets included
- Can be loaded as synthesizer as well as effect
- Vocal filtering, equalizing, phasing, flanging, compressing, envelope following
- 303-like step sequencer
- Midi learn
- Syncable to BPM
- Realtime frequency display
- Dolby Prologic II compatible
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For more information: http://www.tone2.com/html/filterbank3_vsti_vst_au_synthe.html