Electric Vintage is a virtual instrument based on a reproduction of a famous vintage electric piano (1976) with a full range of dynamics (from soft to distorted sounds), release noise and pedal resonance.

Electric Vintage is the iOS version of VINTAGE ELECTRIC by Paolo Principi. www.psound.it

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Audio Unit Extension support

Since iOS 9 Apple introduced the Audio Unit V3 format which enables multiple instances of the same plug-in running at the same time.
You can load with compliant hosts like Apple's own GarageBand or other audio editing and mixing apps, compatible with the host-automations, host-save/load presets and host-save/load state in the session.

WARNING:
The memory limit imposed for AU Extensions on iOS is 300 MB for 32-bit devices and 360 MB on 64-bit devices.
These are performance considerations as you can expect from iOS devices having limited shared resources.

We do not recommend loading more than 10 instances.

File Management
In order to accommodate Full Audio Unit Integration, the file management for User Audio and All Preset Banks required a major structural change. The '**Documents**' folder has now been replaced by a shared '**App Group**' folder.

IMPORTANT: The shared '**App Group**' folder cannot be accessed by iTunes nor the built-in iOS Files app, but users can access files as usual, using the 'Open In ...', 'Document Picker', 'E-Mail' etc.

Tips & Tricks

- **MAINS Toggle** on/off DSP (Digital Signal Processing). *Electric Vintage* supports mixed audio with other applications, you can also disable DSP in order to save battery and CPU consumption. You cannot toggle off the Audio Engine when it's connected to Audiobus or Inter-App Audio.

- When the app is terminated just before to exit the whole status of parameters are saved and reload to the next opening. See Settings for more explanations.

- Double tap on the **Knobs** to show the options. In the '**Edit**' field you can enter the value from the keyboard. Tap '**Random**' to generate a random value, '**Default**' to reset to the factory settings and configure the knobs dragging behavior. Step fine resolution sets how many points of movement

result in a one degree rotation in the knob's position. Only used in the horizontal/vertical slider modes. You can set Knobs behavior from Settings.

- Long Press Tap on the **Toggles** to open Control Manager Assignations

- *Electric Vintage* can play audio in background and mix it's own audio with other iOS apps. *Electric Vintage* also supports Apple IAA (i.e. Inter-App Audio for iOS 7 or higher) and Audiobus 2 and 3, so you can send and receive audio through applications.

- Swipe gesture (right to left) on a preset or bank to rename/duplicate/delete it. See Presets for more details.

- You can load Presets (current selected bank) by remotely sending a MIDI Program Change message. See MIDI section, below for further details. You can select the MIDI channel where you can receive PC messages. A PC value of zero will select the first preset in the list, a value of 1 for the second etc… The range is from 0 to 127.

- **Init** will reset to default values

- **Create Random Sound** values for all of the parameters including the FX parameters. The result can be very interesting and wayward.

Enable/Disable Accelerometer X/Y and LFO, see the Control Manager for more details.

Captures Output stereo signal (post Effects) and creates an audio file *wav* format 44.1 kHz 16 bit in the App Group folder. Files created by *Electric Vintage* are saved with an id-name followed by a number, for example:
Output Rec 1.wav, Output Rec 2.wav etc…
Each new file will be numbered with the next consecutive number.

MAIN LEVEL
This logarithmic knob is used to set the global volume of the output sound.

PITCH TRIM
Pitch trim Reset – (diapason icon)
This parameter controls the master tune of the synth. It is possible to vary the master tune in a range of +2 / - 2 half-steps. To quickly return to default pitch

(A4 = 440 Hz), you can tap on the icon-switch on the left side of the Pitch Trim knob.

RELEASE

This parameter controls the level of the keys attack and release sound. You can appreciate it by playing staccato.

RESONANCE

Controls the amount of the sustain pedal sound, which is produced by the dampers felts.

1️⃣ 2️⃣   Show the FX section (iPad).

▭   Show the FX section (iPhone).

SYNC

⊖⊖   The goal of SYNC is to setup a global Metronome (MASTER BPM). This will affect the LFO (Low Frequency Oscillator) and/or the Sampler (or Sequencer etc…) when enabled to receive SYNC.

You can set the BPM (Beats Per Minute) by scrolling up/down (or left/right) the label value (♩ 120 ←○→) or tap out the tempo.

Single Tap or Long Tap the minus/plus buttons to increase or decrease by 0.25. By default 120 BPM corresponds to 1 Hz frequency for the LFOs.

Ableton Link description
Ableton Link is a new technology that synchronizes the beat, phase and tempo of Ableton Live and Link-enabled iOS apps over a wireless network. It lets you play devices together with the freedom of a live band. Anyone can start and stop their part while others keep playing, and anyone can adjust the tempo and the rest will follow. You can use Link to play with several copies of Ableton Live, with Live and iOS apps, or with iOS apps together – even without Live in your setup.

MIDI Clock description
The clock signal is broadcasted via MIDI to ensure that several MIDI-enabled devices such as a synthesizer or music sequencer stay in synchronization.

The iOS implementation is designed to provide precise, jitter-free MIDI clock transmission and robust, error-tolerant MIDI clock reception.

Quantization
When you are connected to an Ableton Live Session, the Play/Stop/Rewind transport will wait until the next sync quantum boundary before starting.

The 'Sync' button waits for the next beat (Tempo Forte) from the MIDI Clock or Ableton Link and resets all phases for LFOs, Sequencer etc.

Send MIDI Clock
Will create a virtual MIDI port for the MIDI Clock Output.
In Play/Stop mode the MIDI Start/Stop Clock messages
are sent according to Transport Play/Stop (Sampler, Sequencer etc…). In 'Always' they will not be sent every time, but only at start.

Please note when you are connected to Ableton Link, the incoming MIDI Clock is disabled while you can send MIDI Clock out, converting the Ableton Link to MIDI Clock.

Receive Sync
1) Local-Host
2) MIDI Clock signal
3) Ableton Link.

When the Ableton Link its enabled the Local-Host and MIDI Clock will be disabled and viceversa.
In Local-Host when the app is connected through Inter-App Audio, will receive the Sync from the HOST (if available, i.e. tempo/start/stop) and the current BPM is overridden.
When MIDI Clock is activated, you cannot change the BPM (Slave) since is controlled by the MIDI Clock (Master). Through the 'CLOCK' button you can select a MIDI Clock Source.

Presets

Preset Manager will collect all the **Banks** *(i.e. .electric suffix)* and **Snapshots.** A *Snapshot* is a simple "photo" of the parameters in the UI (i.e. User Interface). Both the Matrix and Keyboard/Sequencer are included but they can also be excluded, see the Settings for more details.
So, once you find an interesting sound you can take a snapshot (i.e. save this new preset) by touching the 'plus' icon and this new preset will be added to the selected Bank. The top four elements of the Snapshots list are assigned

for 'HV Snapshot Pad', you can then sort or delete the Snapshots in the List by tapping the 'List Icon'. You can even share the selected Bank and you can restore the factory Built-In Banks from the 'Cloud' icon.

Backup

Factory preset-banks (Excluded from iCloud back up)

Library preset-banks (if available as In-App Purchasing) (Excluded from iCloud back up)

User preset-banks (Included in iCloud back up)

If you delete, overwrite, rename or save new presets in factory/library banks, the icon will change as User preset-banks , being backed up.

Snapshot banks are located in App Group folder, you can access files via built-in tools as 'Open In ...', 'Document Picker', 'E-Mail' etc.

Use iTunes to share files between your computer and your device
1) Open iTunes on your Mac or PC.
2) Connect your iPhone, iPad, or iPod touch to your computer using the USB cable that came with your device.
3) Click your device in iTunes.
4) In the left sidebar, click File Sharing.
5) Select an app to see which files are available for sharing in that app on your device.

After you have added files through iTunes in the Documents App folder, you need to move them to the shared directory ('App Group').
This action will move all files from 'Documents' to 'App Group' folder. If an item with the same name already exists (in the 'App Group'), the file will not be overwritten.

Load a preset, randomly from the banks list.

Delete all Presets for a selected bank. A warning message will be displayed.

The Snapshots bank file is a kind of Property List format (*.electric*), you can edit as text and modify the values just rename in *.plist*

Swipe (right to left) on a preset or bank to rename/duplicate/delete it.

The purpose of the unique **Snapshot Pad** is to obtain intermediate values between four snapshots (corners). You can change snapshots assigned in the corner through the Snapshots list (see above).
The Snapshots Pad performs complex interpolations between four snapshots on a two-dimensional space. By scrubbing your finger on the Snapshots Pad a temporary new snapshot will be created by mixing the four snapshots depending on distance. Thus you can modify hundreds of parameters with a single touch, this is also called *Hyper Vectorial Synthesis.*
Snapshots Pad can be resized on fullscreen for detailed controls (left bottom icon).

N.B. Snapshot Pad have no effect on Toggles.

Samples

N.B. *Electric Vintage* does not have any Built-In audio files.
N.B. Samples Manager serves for only files sharing.

Samples manager can read/write in the App Group folder, you can also share files through AudioCopy, Document Picker (iCloud, Dropbox etc…) and AudioShare. Samples manager can also read the Built-in files, but you cannot rename or delete them. Touch on a file in the list to show the actions popup. Open In... contains all system actions over the file, according to file type. For example you can send files as an e-mail, open file with a listed app etc…

You can rename files in the App Group folder, if you omit the file extension then Samples Manager will fill the original audio file extension for you. N.B. Samples manager shows only audio files supported, the other files in the App Group folder will not be seen.

You can pre-listen to the samples before you load them.

Starts audio capture from the microphone immediately and saves new stereo audio file in wav format 44.1 kHz, 16 bit in the App Group folder. Files created are composed by id-name followed by a number, for example:

Input Rec 4.wav, Input Rec 5.wav etc…
Every new file will be numbered with the next consecutive number.

N.B. You can record a mono or stereo file in wav format 16 bit 44.1 kHz according to the iDevice channels. Even if the *Electric Vintage* is connected to Audiobus or IAA, the Grab Audio will record always from iPad microphone/line

You can import files from AudioCopy, Music Library, Document Picker (iCloud, Dropbox etc…) and AudioShare.

Access to the iPod library, this allows the application to read user's songs, audio books, and audio podcasts. The file can be converted in *.wav* (PCM 16 bit 44.1 kHz) or *.caf* formats and stored in the local app App Group folder. If the file exist at path then progressive number will be attached to the file name.

The document picker feature lets users select documents from outside your app's sandbox. These include documents stored in iCloud Drive and documents provided by a third-party extension. Users can open these documents directly, editing them in place. This access simplifies sharing documents between apps and easily enables more complex workflows.

Use iTunes to share files between your computer and your device
See 'Presets' for more informations.

# Control

MIDI

Scrub Y

Accelerometer X

Accelerometer Y

LFO

After selecting **MIDI**, *Electric Vintage* enters into "learn mode" i.e. it "hears" incoming MIDI Control Change messages. It's then possible to send messages with MIDI hardware, Virtual MIDI and Network MIDI. Flashing screen means the association between the parameter and the MIDI message

has been successful and displays the corresponding control Change and Channel. Alternatively you can enter direct CC and MIDI Channel number through number keyboard. You will also receive an additional setting: 'Widget Range' that allows you to resize the range of action on the parameter. This is because you can use all 128 steps MIDI to control precisely particular part of the parameters.
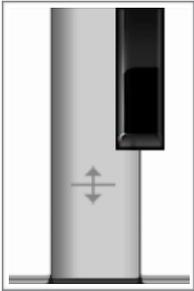
Scrub Y binds the widget to vertical movement on the keyboard (Scrub Y). An additional setting allows you to specify the speed (gravity) of the action.

Aftertouch Y Scrub, you **can** assign one or more *Electric Vintage* parameters to aftertouch scrub Y, so after a played note, you can scrub in the vertical axis (Y) by controlling one or more of the parameters. An additional setting allows you to specify the speed (gravity) of the action.

N.B. Playing keys from top to bottom, you can change the amplitude of each note i.e. key velocity (0 ÷ 127). The same with black keys.

Accelerometer X and **Y** are used to control the parameters through the horizontal or vertical inclination of the device.

LFO, Low Frequency Modulation is a table look-up oscillator with seven built-in shapes. The frequency of LFO is expressed in Hz and BPM (Beats per Minute). You can get the period time by dividing 1/freq. The LFO Frequency value is converted in BPM (Beats Per Minute), you can adjust this value through the minus/plus buttons, these will replace current value with the integer BPM (previous/next) or you can TAP to set your own Tempo.

φ   Will reset to zero the phase of current LFO.
Φ   Will reset to zero the phase of ALL LFO actives.

Enabling the Link symbol, you will disable the 'Low Frequency Oscillator in Hz' Slider, so the value of the current LFO is sampled from the global 'MASTER BPM'. You can adjust the BPM value from SYNC view. When the MIDI Clock or Ableton Link is enabled (see MIDI Manager and SYNC) the BPM value will affect all LFO enabled for SYNC mode. The goal of the 'SYNC Subdivision' Slider is to rescale the 'MASTER BPM' from SYNC according to the relative symbol (abbreviate musical note time values):

Normal : 1/1, 1/2, 1/4, 1/8, 1/16, 1/32, 1/64

Triplets : 1/1T, 1/2T, 1/4T, 1/8T, 1/16T, 1/32T, 1/64T
Dotted : 1/1D, 1/2D, 1/4D, 1/8D, 1/16D, 1/32D, 1/64D

Where 'D' is a **dotted** note and 'T' is **triplet**.
With 1/4 (Default), the BPM follows the 'SYNC BPM' or 'MIDI Clock' BPM when enabled, i.e. 120 BPM corresponds to 1 Hz.

-     1/4 - each step is a quarter note (or BPM), e.g. 60 BPM is 0.5 Hz
-     1/4D - each step is a dotted quarter note (or 1.5 x BPM),
-     1/4T - each step is a triplet quarter note (or 0.5 / 3) etc.

♩ Reset default value (1/4 = 120 BPM)

MIDI

You can enable/disable the incoming MIDI signal from all the physical, virtual and network ports available. The MIDI Clock is managed by SYNC, see the SYNC section for more details.

If the Core MIDI Network is connected a wifi symbol will appear in the Network port cell.

Channel sets the input channel for the selected port, the Piano Keyboard will receive the Note On/Off messages in OMNI (from all 16 channels) or, one of the 16 channels.

Configure Bluetooth LE MIDI
With the release of iOS 8 and OS X Yosemite, sending and receiving MIDI data is supported using Bluetooth Low Energy connections on any iOS device or Mac that has native Bluetooth Low Energy support. All established connections are secure which means that pairing is enforced and connections cannot be made to your devices without your explicit consent. After a connection is established, it simply appears as an ordinary MIDI device that any MIDI application can communicate with.

Enable NRPN
NRPN stands for "Non-Registered Parameter Number" and is part of the MIDI specification for the control of electronic musical instruments. NRPNs allow for manufacturer-specific or instrument-specific MIDI controllers that are not part of the basic MIDI standard.
Unlike other MIDI controllers (such as velocity, modulation, volume, etc.), NRPNs require more than one piece of controller data to be sent. First,

controller 99 - NRPN Most Significant Byte (MSB) - followed by 98 - NRPN Least Significant Byte (LSB) sent as a pair specify the parameter to be changed. Controller 6 then sets the value of the parameter in question. Controller 38 may optionally then be sent as a fine adjustment to the value set by controller 6.

This fine adjustment is part of the conventional MIDI controller specification, where any of the first 32 controls can be optionally paired with a control offset 32 higher. This is the rare 14-bit Continuous Controller feature of the MIDI specification, and NRPNs simply take advantage of that existing option in the same way offering 16,384 possible values instead of only 128. (http://en.wikipedia.org/wiki/NRPN)

When you enable NRPN, you should not employ CC 99 and 98 as the normal CC in order to avoid an undesired overlap. An NRPN message must be sent with this order: CC 99 98 6 38 where the first couple is the CC number and the second couple is the data. You can MIDI learn as for the normal CC, and NRPN works for all knobs and parameters. Although an NRPN CC number can be greater than 127, you will not be able to learn CC beyond 127.

Program Change for Presets Selection

You can select Presets (current selected bank) by remotely sending a MIDI Program Change. You can select the MIDI channel where you can receive PC messages. A PC value of zero will select the first preset in the list, a value of 1 for the second etc… The range is from 0 to 127.

N.B. When *Electric Vintage* is connected to Audiobus 3 through the MIDI receiver slot, the Core MIDI functionality is bypassed to prevent receiving Core MIDI events twice, once via Audiobus and once from the Core MIDI system itself.

Keyboard
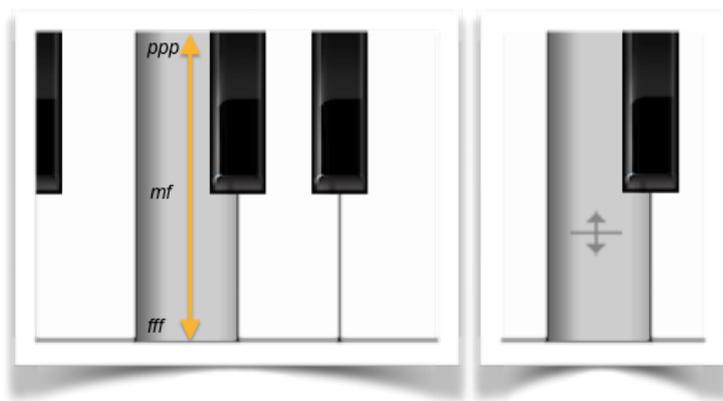
Playing keys from top to bottom, you can change the amplitude of each note i.e. key velocity (0 ÷ 127). The same with the black keys. The **Aftertouch Y Scrub,** is designed to be assign to one or more parameters, see Control Manager. After played a note, you can scrub the vertical axis

(Y) by controlling one or more parameters. See also <u>Key Velocity</u> for more details.

We have three Keyboard operations mode: Classic �, Elongated ||||| and Ribbon ♂, please note: in Ribbon mode *Electric Vintage* will play mono even if the poly switch is selected, thus you can play poly through a remote MIDI keyboard and use the iTouch Display to play the Ribbon Mono.

The ♭ and ♯ transposition keys allows to change the base note of the keyboard (C) and the Scale button 𝄞, opens a menu where from you can choose among several scales. The first item on the list (User Defined Scale) is a special feature which allow you to setup your own scale through the Musical Keyboard.

N.B. The transposition keys WILL AFFECT incoming MIDI notes.

Expression and Key Velocity

MIDI Panic sends a general Message 'All Notes Off', resets the DSP and Keyboard.

Locking the Keyboard means that every note is sustained. So when you play a note it will hold the last pressed key even when you lift your finger from the keyboard. When the Keyboard is locked, Snapshots will not save/restore touched keys.

BEND
Controls the MIDI Pitch-Bend, this parameter is pre-assigned to MIDI pitch Bend. You can set the Pitch Bend Range.

Tremolo/Panning

DEPTH→
Controls the amount of the low frequency amplitude or panning modulation, this parameter is pre-assigned to the MIDI CC #1.

FREQ
Controls the frequency in Hz of the low frequency amplitude or panning modulation.

Select the Tremolo mode for the the amplitude modulation.

Select the Panning mode for the stereo panning modulation.

You can select Sine or Square shape for the LFO (Low Frequency Oscillator).

Open the XY pad for more expressive control over the DEPTH and FREQ. The FREQ is mapped on the horizontal axes while the DEPTH on the vertical and the curve of the X pad is exponential.

VELOC - When toggled on, the amplitude of the notes is controlled according to the vertical touch of the UI Keyboard or incoming MIDI Velocity. It is possible to map the touch sensitivity with three shapes. When it is disabled the key-velocity is fixed. When the VELOC is switched off you can use the curve shapes selector to set the fixed values for the MIDI Velocity expressed as % of the MIDI range (0 to 127). Thus the Linear is 50%; Log is 80% and Exp is 20%. Since the MIDI goes from 0 to 127, the 80 % of 128 is 102; 20% is 25 and 50% is 64.

SUSTAIN - Electric Vintage responds to the Sustain MIDI CC 64. When you are playing from an external MIDI keyboard you can use the sustain pedal which will send a CC64 with the value 127 if is pressed or 0 if released. However you can also simulate the sustain pedal when you are playing from the built-in keyboard. If you have not an external MIDI sustain pedal you can use the SUSTAIN button to open and close the pedal manually, viceversa you can play from UI keyboard and use the external sustain pedal. You can automate the SUSTAIN pedal by sending a MIDI Control Change 64.

AMPLITUDE ENVELOPE (ADSR)

In this panel are located the controls for the amplitude envelope. This is a true ADSR envelope generator. That is, while in all other envelope generators there are only three control parameters because decay and release share the same time value, in this envelope generator it is possible to independently control decay and release.
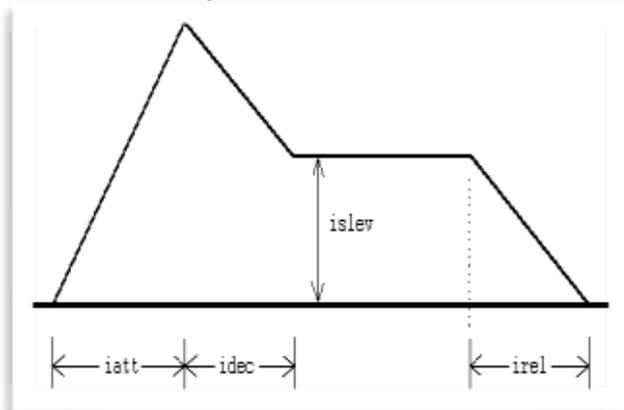
ATTACK , DEC / REL, SUSTAIN, RELEASE

These four controls are used to set up the ADSR values for the amplitude contour. The Attack / Decay / Release values ranges from few millisecond to 16 seconds. The Sustain values ranges from 0 to 1. Release occur when you send Keyboard note Up or MIDI note off.

EQUALIZER

Three band equaliser consisting in a low-shelf filter for the LOW parameter with cutoff to 350 Hz, an hi-shelf for the HIGH at 1000 Hz and a 2nd order peaking filter for the MID with cutoff to 700 Hz and band-width of 2000 Hz.

MONO - Enable the pseudo-stereo effect on the main audio output.

SLICER

Realtime re-triggering and reversing of samples in a style similar to audio trackers.

Phrase
The phrase duration is the delay of re-triggered sample in seconds

Amount
This sets the mixing amount of processed signal.
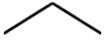
Repeat
Number of repetitions every Phrase time.

Direction
Buffer reading direction, can be forward, Backward or Random.
Random will trigger a randomly direction for every Phrase.

⌃

Enable/Disable the fade in-out to smooth the slicer segmentation artefact.

CHORUS/FLANGER

Chorus is an effect which attempts to make one instrument sound like more than one instrument. The resulting sound is thicker than the original sound. Flanging was originally produced by taking two tapes with the same music on them and playing at them at the same time. By pushing on the flanges of one of the tape reels the playback speed of one of the copies of the sound was modulated. This detuning of the signal results in areas of constructive and destructive interference as the different frequencies move in and out of phase with each other. This produces notches in the audio spectrum. As the frequency of the modulated signal is swept back and forth these notches move closer together and farther apart. This produces the characteristic "jet airplane" effect. In this implementation the original signal is added to a delayed signal. The delay time is modulated by a sine wave so that the pitch of the delayed signal is modulated. The combined signal is then fed back into the beginning of the delay path which makes a more pronounced flanging effect. Typical delay times are 10 msec.
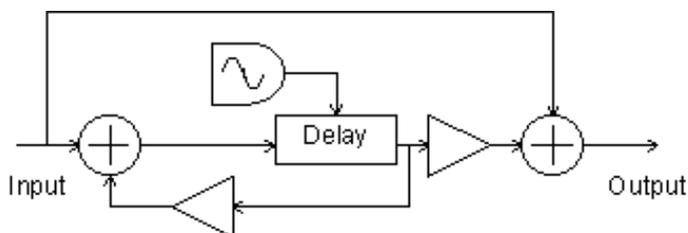
FREQ
Sets the frequency of the sinusoidal oscillator.

DEEP

Using this knob to choose the amount modulation in milliseconds. It is the delay of the flanger which is modulated bu the LFO. so a value of zero produce no modulation.

FEEDBACK

The feedback amount (in normal tasks this should not exceed 1) to produce the a flanging sound. A value of zero produce a Chorus sound, increasing the feedback to produce Flanging sound.

WAH-WAH

The legendary WAH-WAH effect, the signal is passed through a band pass filter whose frequency is controlled by a Low Frequency Oscillator. In the post-audio chain, the WAH is placed before the distortion for a subtler, classic sound.

RATE

Sets the frequency of the filter cutoff modulation, relative to the minimum and maximum frequencies. This produce the classical auto-wah effect.
The min/max frequency range is 396 - 2369 Hz and the modulation wave is sinusoidal.

DEEP

Using this knob to choose the amount of modulation, 0 it mean no modulation and the cutoff is the minimum frequency i.e. 396 Hz. A value of 1 it means the oscillator will scan all the min/max range.

LEVEL

This sets the amount of processed signal.

VELOC

When toggled on, the amplitude of the last note you are playing is used to rescale the DEEP factor thus the DEEP is controlled by the key-veloc.

PHASER

Implements *N-number* of first-order all-pass filters sections, serially connected, all sharing the same coefficient.

Stages is the number of all-pass in series. These are first-order filters.

Rate (in Hz) of low frequency modulation.

Depth of LFO modulation.

Offset (in Hz) of the filter(s). This is the frequency at which each filter in the series shifts its input by 90 degrees

Shape of the LFO: "Triangle", "Sine", "Square", "Saw Up", "Saw Down", "Rand.Int", "Rand.S&H"

Feedback is the amount of the output which is fed back into the input of the all-pass chain. With larger amounts of feedback, more prominent notches appear in the spectrum of the output.

Level is the amount of the phaser output

Mix between dry (no effect) to wet (full effect)

STEREO DELAY

This panel contains the controls of a stereo delay in a ping-pong arrangement with including a feedback lowpass filter. The sequence of the repetition is L / R / L / R .. etc.

Delay Time
This control sets the time delay between the repetitions.

Feedback
This control sets the feedback amount (regeneration factor).

Delay Mix
This control sets the mixing amount of direct (dry) and processed (wet) signal.

Level
This control sets the global level of the processed signal.

!

The hard reset cleans the delay lines to prevent a damages sound as eccessive feedback etc…

REVERBERATION (REVERB)

This panel contains the controls for the dual reverberation module. Two different type of reverberation are available: a "vintage" type and a "modern" . You can select one of these by tapping on the label-switch (modern / vintage)

Reverb decay
This parameter controls the length of reverberation (or the T60)

Hi-Frequency Damp
This parameter controls the dynamic absorption of the hi-frequency components of the generated reflections.

Reverb Mix
This control sets the mixing amount of direct (dry) and processed (wet) signal.

DISTORTION

This panel includes the controls of a distortion process that implements a non-linear wave shaping of the incoming signal.

Pre Gain – [PRE GAIN]
The control sets the amount of signal gain before wave shaping

Shape + – [SHAPE +]
This control sets the shape of the positive portion of the distortion function.

Shape - – [SHAPE -]
This control sets the shape of the negative portion of the distortion function.

Post Gain – [POST GAIN]
The control sets the amount of signal gain post wave shaping

Settings

Sampling Rate, for full-range audio, the recommended sampling rate is 44.1 kHz. Using a lower rate *Electric Vintage* will reduce the number of samples that has to calculate, this will facilitate your Device's burden, but it will also reduce the frequency range. If your device is struggling at 44.1 kHz, you should try a lower rate and/or increase Buffer Size.

Buffer Size set the Audio Device latency. When you run *Electric Vintage* from **Audiobus**, or **Inter-App** this value will be taken from **Audiobus** or **Inter-App**

Host. Warning! When an app runs first and keeps running in the background, the Sampling Rate and Buffer Size will impose for the whole iOS while running.

Include Keyboard in Presets
Include or exclude Keyboard state (not the notes) in presets. The Keyboard state is composed to split, keys zoom and Keyboard Mode.

Snapshot Pad Resolution Update sets the time interval for the interpolations, from about 15 to 350 milliseconds. Short times for higher resolution but higher consumption of CPU.

Save/Restore the Last App Setup, when you exit from the application, save the status (all *Electric Vintage* Parameters) and reload when next opening the app.

Knobs Interactions Mode
Use this to configure the Knobs dragging behavior. Step fine resolution set's how many points of movement result in a one degree rotation in the knob's position. Only used in the horizontal/vertical slider modes.