UATOMATOR

USER'S GUIDE

1 INTRODUCTION

1.1 ABOUT VATANATOR

Vatanator is a unique drum machine with advanced MIDI functionality. It features 140 built-in presets emulating every classic vintage hardware. It is aimed for simplicity and instant results.

1.2 KEY FEATURES

- Audio Unit Extension compatible
- Record patterns in real-time with quantization, MIDI assignable
- 16/32 steps sequencer with advanced MIDI options
- Fast loading of presets on the fly
- Full MIDI implementation, Bluetooth MIDI
- Background audio
- Audiobus, Audiobus Remote, Inter-App Audio and Ableton Link support
- Ability to import samples via Files, AudioShare, AudioCopy, Dropbox or iTunes Share
- Real-time effects with envelope follower and XY pads, MIDI assignable
- Song arranger, ability to store a sequence of patterns and play them in order
- 8 channel mixer with volume control and mute/solo for any individual instrument

1.3 PANEL SCREENS OVERVIEW

The main view screen of Vatanator consists of three sections – navigation menu, advanced options and main panel. **Figure 1** shows a combination between Pads and Effects screens loaded by default on the application startup.

Figure 1 Startup screen

Using the buttons in Navigation menu, one can navigate through different views.
Navigation menu consists of:

- list of build-in and user presets
- import user preset button
- metronome
- sequencer steps resolution switch
- buttons for pads, steps, mixer, song, MIDI learn function and preferences view
- navigation of Inter-App Audio Apps (visible when active)

Advanced options consist of:

- effects (shown in Figure 1)
- mixer
- song

Main panels consist of:

- drum pads (shown in Figure 1), X/Y pads
- steps
- preferences

In the upper left corner of the screen, there is a drop down menu for loading the build-in or user presets. Press on the "⊕" sign will open a menu for importing presets with its own sounds from iTunes File Sharing or Dropbox location. Preset folder have to consist eighth sub-folders with names from "1" to "8" for each instrument. Up to eight samples per instrument is supported, total of 64 samples per preset. User presets could be deleted or renamed sliding left the name of the preset. Below are the steps for successful import of custom sounds.

1. Create your own preset folder and inside creating instrument folders from 1 to 8
2. Copy your custom sounds (WAV and AIFF audio files) instrument folders.
3. Open iTunes and select iPad device. Go to Apps in File Sharing section and select Vatanator
4. Drag and drop your preset folder in Vatanator Documents in iTunes
5. Sync the iPad
6. Select "⊕" button from Vatanator presets menu.

Navigating through the import menu guides you to import the copied samples. On the last step, click on done button and selected presets with your own sound will be available in presets drop down menu ready to load and play.

Inter-App Audio navigation menu will be visible when Vatanator is added to IAA host session (Vatanator is acting as sender). Navigation include shortcut to open audio host application, rewind, record and play/stop.

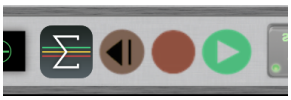


Figure 2 - Inter-App Audio navigation menu

2 PADS

Figure 2 describes the components and controls in Vatanator Pads screen.

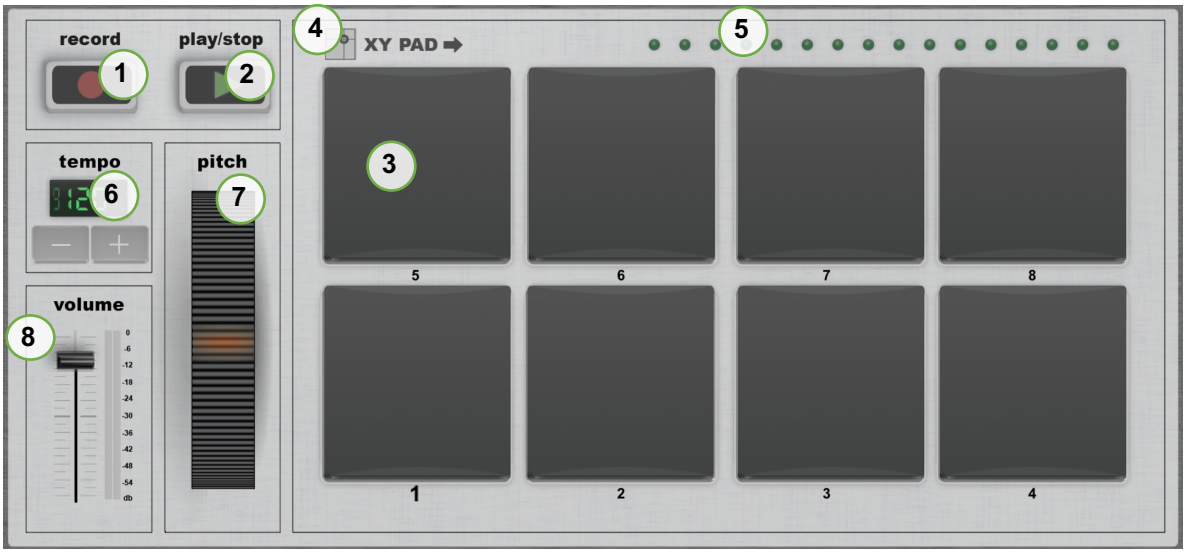


Figure 3 - pads

1 - record button; 2 – play/stop button; 3 – drum pads; 5 – beat step counter indicator; 6 – tempo indicator and control; 7 – pitch control for pads; 8 – master volume

2.1 RECORD DRUM PADS

Push Record button (button will lit in red) while playing is started and pads can be recorded in real-time. You can either play with touchscreen or use external MIDI controller (have in mind that the app can recognize only Class-Compliant MIDI devices). The Recorded notes are quantized by 16th note and added in the 'STEPS' mode.

2.2 PLAY/STOP SEQUENCE

Play/Stop button will play the sequence when is pushed once (button will lit in green) and will stop sequence when pushed again (lit is off). Beat step indicator is related to play/start button. When the button is on, beat step indicator will indicate step movement in sync with the tempo.

2.3 TRIGGER SAMPLES

By touching the drum pads, correspondent samples configured for a particular instrument will be played. Vatanator provides eight instrument polyphony and all pads can be played at same time.

2.4 X/Y PAD BUTTON

X/Y pad button will open additional screen for sound effects control and automation. See Chapter 4 - XY EFFECTS PAD.

2.5 BEAT STEP COUNTER INDICATOR

Indicate the current step that is playing. When record mode is enabled steps indicators will turn on red.

2.6 REAL-TIME PITCH

When you play with pads, pitch control wheel can be used to produce pitched sound.

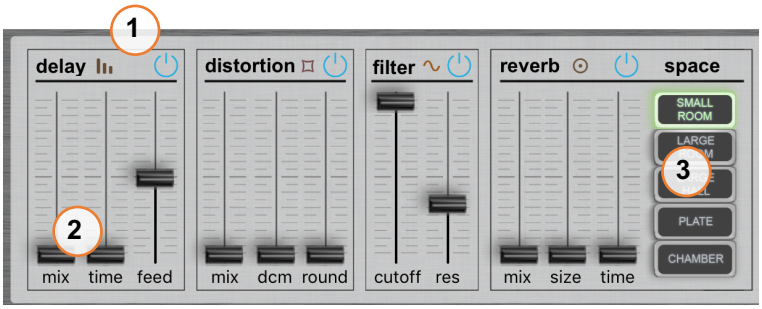
2.7 CHANGE THE TEMPO

Use buttons “+” and “-” to change song tempo real-time.

2.8 VOLUME CONTROL

Vatanator master volume. On the right of the slider there is a volume level indicator for left and right audio channels.

3 EFFECTS PANEL



1 – on/off switch and effect follower button
2 – effect parameter sliders
3 – reverberation effect room size

Figure 4 - effects

Real-time audio effects provided by Vatanator includes:

- delay
- distortion
- filter
- reverb
- ring modulation with LFO

Each of the effects contains parameters controlled by sliders and buttons. Same are assignable via MIDI Learn function described in the manual in Chapter 8.

3.1 DELAY

There are three parameter sliders. ‘mix’ controls dry/wet parameter of the effect. ‘time’ controls the time between the repetitions of the delay effect. ‘feed’ is controlling the feedback time needed for the effect to fully fade away.

3.2 DISTORTION

There are three parameter sliders. mix’ is controlling dry/wet parameter of the effect. ‘dcm’ adjusts the amount of sample rate reduction for the incoming signal. The higher the value, the larger the number of audio samples that are thrown out, and the coarser the waveform. ‘round’ slider adjusts the amount of "rounding" to smooth out the resulting sound.

3.3 FILTER

There are two parameter sliders. ‘cutoff’ controls the cutoff of the frequency and ‘res’ is controlling the resonance of the frequency.

3.4 REVERB

Reverb control parameters are dry/wet mix, room size and delay time.

3.4.1 REVERB SPACE

Five reverb space presets are assigned for quick load via buttons. They are Small Room, Large Room, Large Hall, Plate and Chamber.

3.5 MOD

Mod effects is a classical ring modulator with LFO. Control parameters are dry/wet mix, ring mod frequency, LFO rate and depth.

4 XY EFFECTS PAD

XY PAD is additional menu available from PADS screen. It contains two pads for multi-touch control of effects parameters real-time. When record is enabled, Vatanator SX will record movement of XY pad control. Once record is done, you can turn on the repeat button and recorded movement will start to repeat. To clear the pad recording press red “X” button.

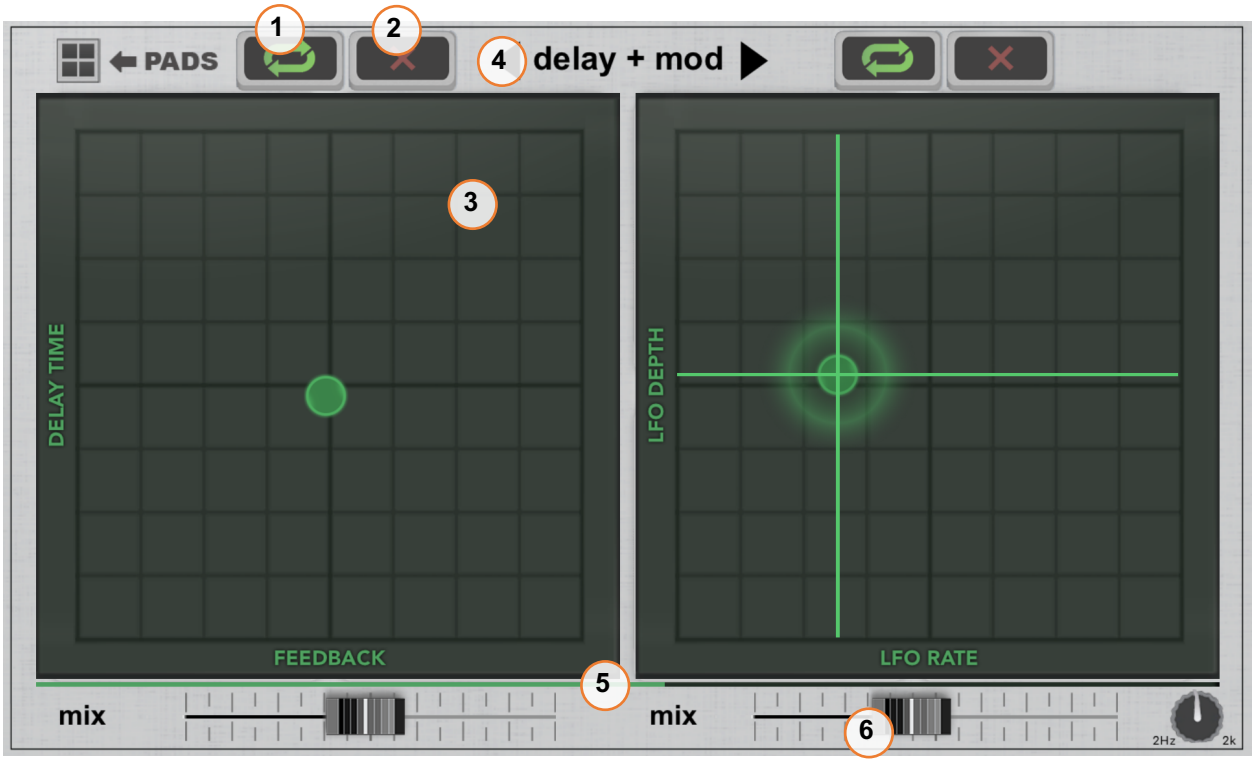


Figure 5 - XY pad *1 – repeat recorded XY movement; 2 – reset recorded effect parameters; 3 – XY pad control; 4 – select effect couple; 5 – beat progress indicator; 6 – dry/wet effect slider;*

5 EFFECTS STEP GRAPHICS FOLLOWER

When you tap on the icon in effect module as shown in Figure 6 an new view will load (Figure 7).

Figure 8 - effect module navigation

Follower function is very useful for adding automation when working with the effects rack.

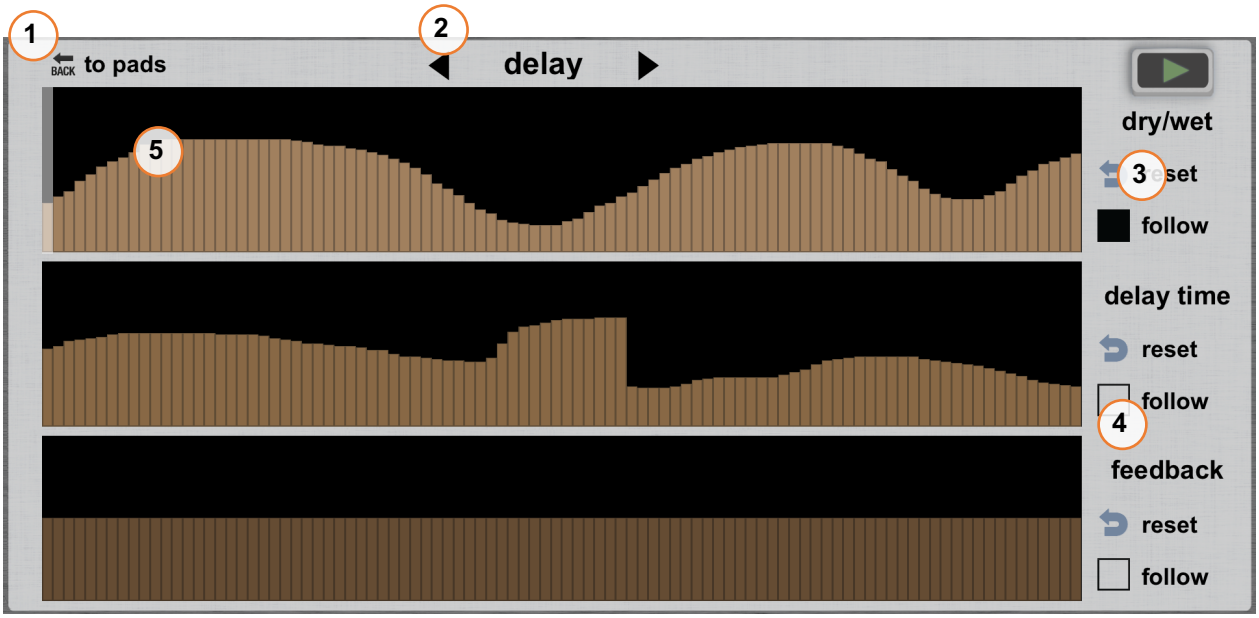
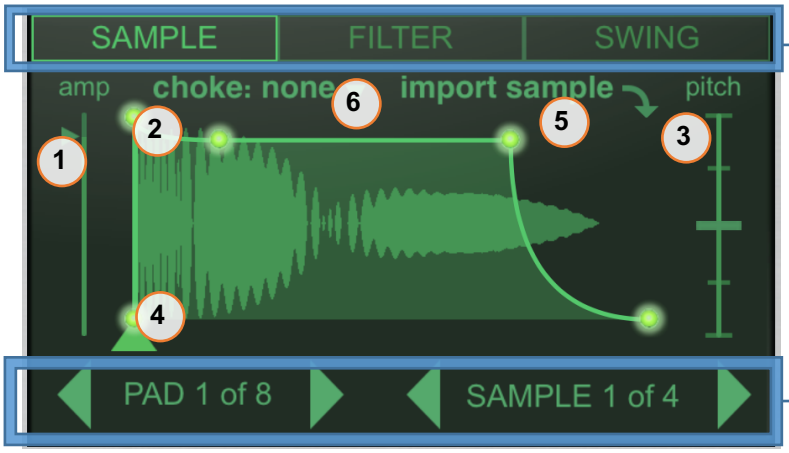


Figure 9 - effect parameter follower *1 - back button; 2 – switch between effects; 3 – reset to default; 4 – enable following; 5 – parameter graphics to be followed*

6 ADVANCED FUNCTIONS DISPLAY

Functional display in upper right screen of effects panel gives possibility to edit instrument samples and swing the rhythm of the song.



sample editor, filter and swing select

1 – instrument volume amplification
2 – ADSR (attack, sustain, decay, release)
3 – extended pitch effect
4 – adjustable sample start position
5 – import sample
6 – choke group

pad and sample select

Figure 10 - sample editor

6.1 SAMPLE EDITOR

Edit the available samples per selected pad.

6.1.1 INSTRUMENT VOLUME AMPLIFICATION

There is an individual volume amplification for every of the eight instruments. The number of current pad (the value of 'pad selector') controls which instrument volume is controlled at the moment. Vertical slider 3 controls the amplification of the sample in the display. Double tap the slider will reset it to default position.

6.1.2 CONTROL GRAPHICS OF ATTACK, DECAY, SUSTAIN, RELEASE (ADSR)

Sample editor menu gives possibility to apply ADSR to the chosen sample. The graphics can be manipulated touching and moving the key points. Each instrument has its own independent ADSR and is memorized when edited.

6.1.3 EXTENDED PITCH EFFECT

Pitch parameter is in range -24->24 semi-tones. The number of current pad (the value of 'pad selector') controls which instrument pitch is controlled at the moment. Double tap the slider will reset it to default position.

6.1.4 ADJUSTABLE SAMPLE START POSITION

Moving the control to the left or right position to adjust sample play start. It is per instrument.

6.1.5 IMPORT SAMPLE

Import menu can be used for importing user presets with its own sounds. When "import" is selected, a new menu window will be opened with a list of available options. The steps below describe what needs to be done for successfully importing custom sounds.

- **Files**
  Use iOS 11 Files app to browse and import sample
- **Factory Presets**
  Browse a built-in collection of 2922 samples
- **Documents Folder**
  Access the samples in Vatanator via iTunes File Sharing
- **AudioShare**
  Import samples from AudioShare application or general pasteboard
- **AudioPaste**
  Use AudioPaste function to import your custom sample
- **Dropbox**
  Browse with listen preview the sample files in App/Vatanator Dropbox folder

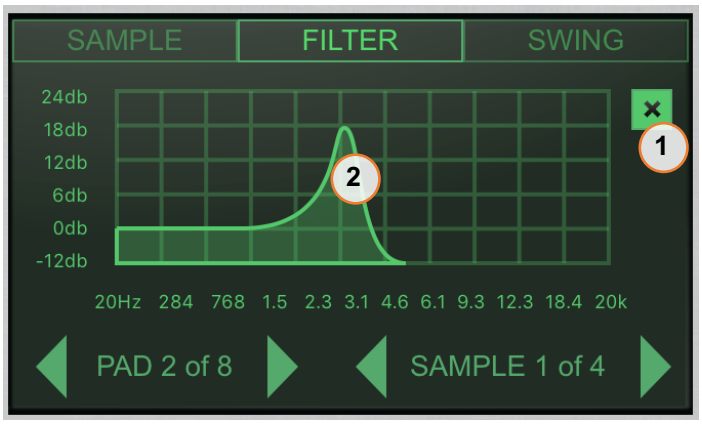
Navigating through import menu guides you to import already copied new samples. Once select "import" on done and selected presets with your own sound will be available in presets drop down menu ready to load and play.

6.1.6 IMPORT SAMPLE

Choke groups allows an old drum machine function. Choking is when one sample is triggered to cut off another, helping to minimize sound overlap keeping your drums tight. Vatanator have 8 groups and "none" as default. From samples menu, tap on choke and select a group for each instrument.

6.2 FILTER

Low pass filter per instrument.

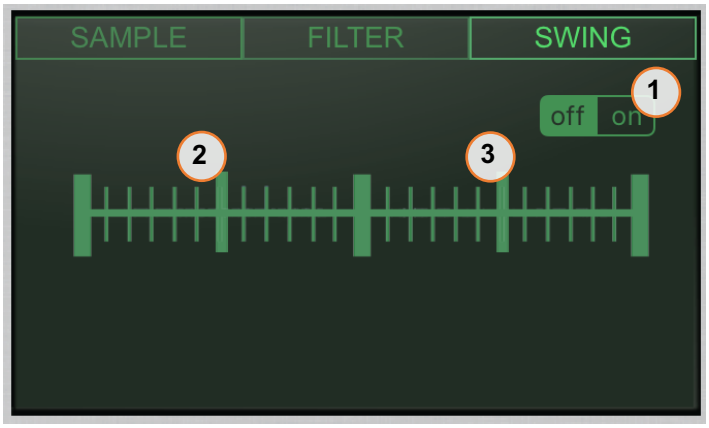


1 – enable/disable swing mode
2 – left swing time scale selector
3 – right swing time scale selector

Figure 11 - low pass filter

6.3 SWING

When swing tab is selected, the shown scale is representing a fragment with time of a quarter note from the bar length (24 PPQN - pulses per quarter note). Moving the left and the right selector will lead to change in time(pulses) between each note.



1 – enable/disable swing mode
2 – left swing time scale selector
3 – right swing time scale selector

Figure 12 - swing select

7 MIXER

A classical audio mixer is in place for easy control of Vatanator instruments. 8 channels with volume, panorama, mute and solo.

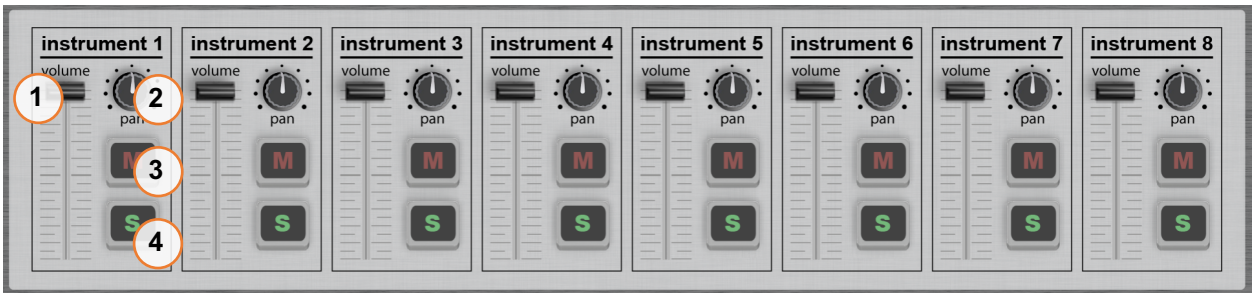


Figure 13 – mixer *1 – volume; 2 – panorama; 3 – mute; 4 – solo*

8 STEPS

Steps view includes step sequencer matrix with extended editor, steps page select, volume, tempo and play/stop button.

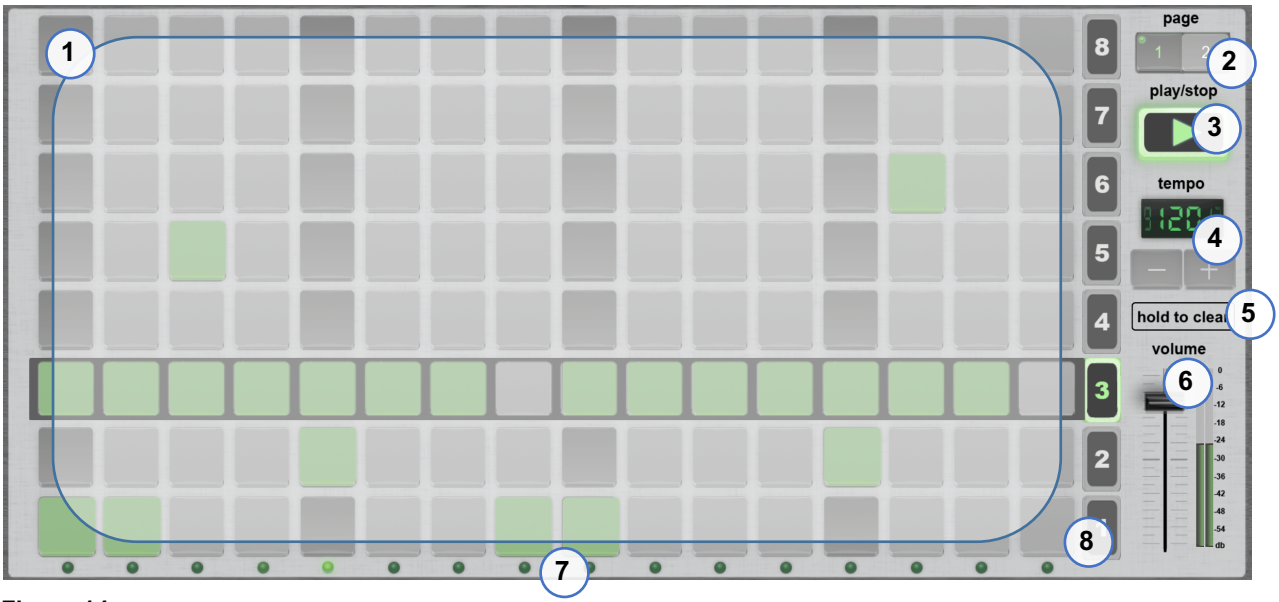


Figure 14 *1 – instruments and steps matrix; 2 – steps page selector; 3 – play/stop button; 4 – tempo indicator and control; 5 – pattern clear button; 6 – master volume; 7 – beat step indicator; 8 – extended instrument editor button*

8.1 STEP SEQUENCER

Vatanator sequencer can be 16 or 32 step resolution (switchable via page selector control from Figure 7). 'Step' view shows matrix of eight instruments (8 rows) and sixteen steps (16 columns).

8.1.1 EXTENDED INSTRUMENT STEP SEQUENCER EDITOR

Extended step editor can be used to modify each step instrument volume, pitch and panorama per selected instrument.

8.1.1.1 VOLUMES

Volumes of steps are represented in green color as individual vertical indicators. Volumes can be edited real-time by touching.

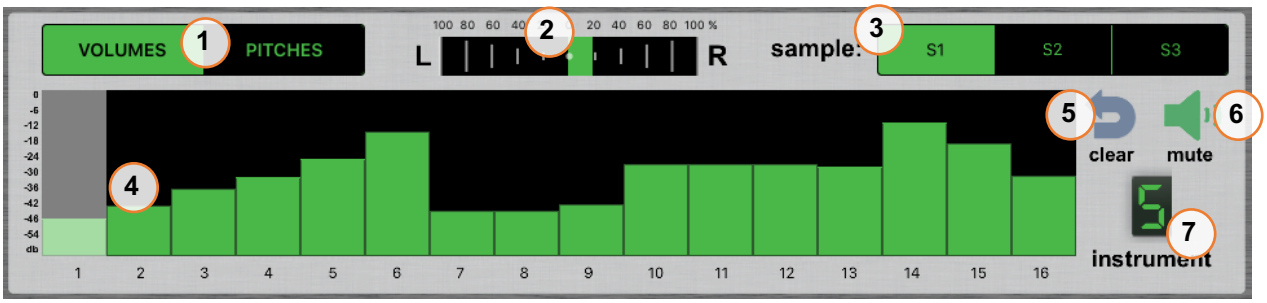


Figure 15 – volume steps *1 – instrument steps matrix; 2 – panning; 3 – sample select for instrument; 4 – step editor; 5 – clear edited steps; 6 – mute instrument; 7 – indicator for selected instrument*

8.1.1.2 PITCHES

Any of the steps can have particular pitched sound during sequence play. This is done when pitches button is selected for the instrument.

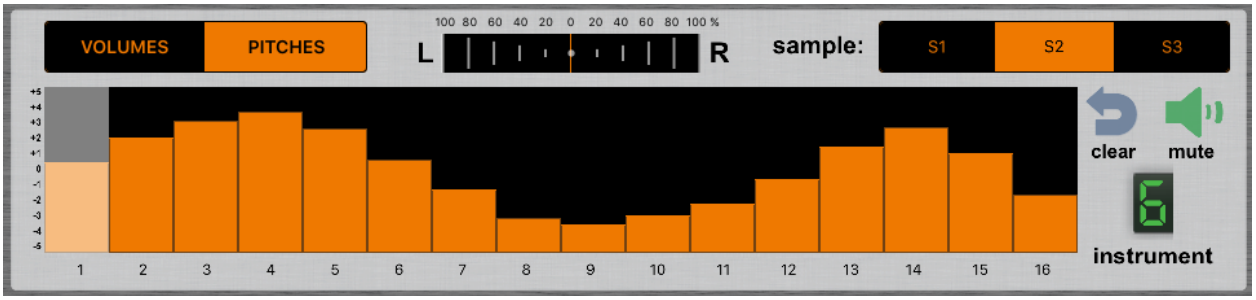


Figure 16 – pitch steps

8.1.1.3 PANORAMA

Sliding left and right on panorama field will cause the sound to be more audible on the left or right channel.

8.1.1.4 SAMPLE

Sample shows and select through the available samples for selected instrument.

8.1.1.5 CLEAR AND MUTE

Clear button can be used for resetting steps volumes and pitches to default positions (volume: 100 and pitch: 0). Mute will set the instrument volume to 0.

8.2 PAGE SELECT AND CONTROLS

In the steps view there are additional controls for page select, play/stop button, change of tempo and master volume. If pattern is set to 32 steps, page selector can switch which pattern page to be displayed. Long press on page select button gives ability to copy pattern sequencer steps.

9 SONG

In this section user can load, save and arrange patterns sequence play order. Also song can be saved and loaded via menu “4” on the right.

Figure 17 - song view *1 – pattern select buttons and steps matrix; 2 – duplicate button; 3 – export audio file; 4 – set save/load menu; 5 – pattern sequence; 6 – sequence automation on/off; 7 – sequence automation scope*

9.1 PATTERN SELECT BUTTONS

Load pattern by tap on respective button.

9.2 PATTERN DUPLICATE

Press duplicate button to duplicate loaded pattern to other pattern (from P1 to P8).

9.3 EXPORT AUDIO FILE

Pressing record ● button will export the current pattern or song to audio file (WAV 16bit Stereo 44100 Hz). Recorded audio file can be re-recorded, played, deleted and shared via iTunes File Sharing, AudioCopy or Dropbox. The audio file name is timestamp formatted.

Figure 18 – export audio file

9.4 SET SAVE AND LOAD MENU

Patterns (P1 to P8) can be saved in SETS for easy access. Song pattern sequence will also be included in the saved set. After the application is closed, saved SETS will be available again on next starts.

9.5 PATTERN SEQUENCE

Play order of the patterns can be automated via pattern sequence function. Creating the play order can be done by dragging the numbered patterns (1 to 8) to the pattern sequence line. Sequence range selector marks the sequence loop that will be played.

Activating the sequence can be done with on/off button. Select “clear” to reset pattern sequence to default empty state.

9.6 PATTERN SEQUENCE ON/OFF BUTTON

ON / OFF will enable or disable the sequence of dragged patterns. Sequence can be enabled only when Vatanator playback is stopped.

10 PREFERENCES

Application preferences menu includes MIDI devices, MIDI network and Bluetooth. Some additional global options can be found on the right side of view.

Figure 19 – preferences *1 – MIDI devices; 2 – MIDI network sessions; 3 – Bluetooth MIDI control; 4 – app global options;*

10.1 MIDI DEVICES

Vatanator provide interface where MIDI devices and flow can be customized. In navigation window on the left any available MIDI device will be shown. Devices list is separated to input and output. MIDI channel for input and output are editable and can be changed. Each device has useful buttons for filtering MIDI messages.

Recommended default for new attached device will be all send/receive “off” (no any MIDI send or MIDI receive will be done for the device).

10.2 MIDI NETWORK

One of the exciting futures of Vatanator is the support of MIDI Network. In menu “2” from preferences network can be switched “on” and “off”. When it’s “on” a list of available peers that you can joint to will be listed. For example, you can create MIDI Network session on your studio workstation and this will be available in Vatanator. To connect successfully to network peer “Who may connect to me” should be selected to “Anyone” on OS X. iPad device name where Vatanator is running will be available on studio workstation.

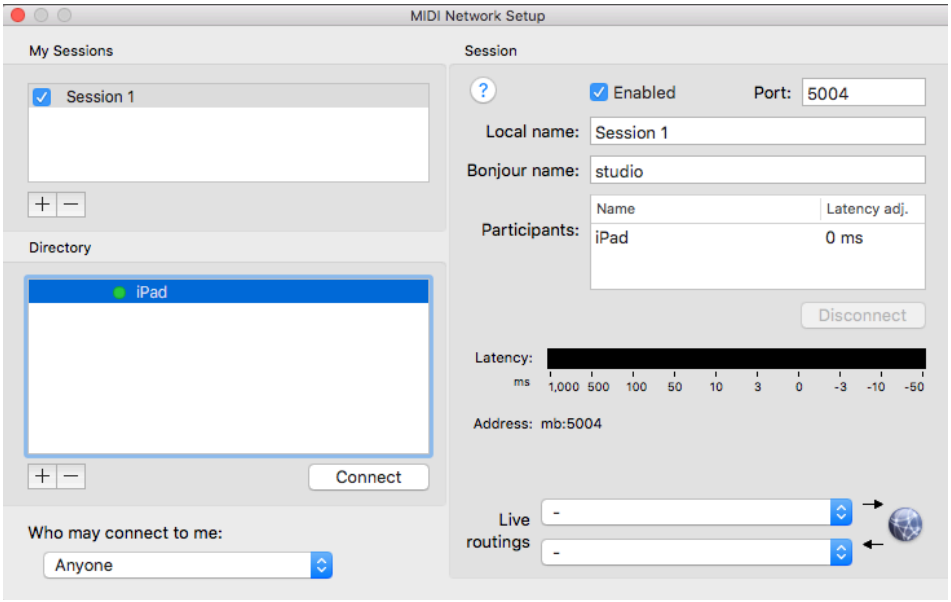


Figure 20 – Midi Network Setup on OS X

You can connect and disconnect from both devices independently and as extra future connection status will be aware real-time. If you connect from the workstation, the peer name will be selected and connection will become active (for example this can be disconnected from iPad as well).

10.3 BLUETOOTH MIDI

Vatanator can be connected with Bluetooth MIDI devices. Use present and connect buttons to establish the connection. When the device is connected, it will appear in the left list with devices.

10.4 ADDITIONAL GLOBAL OPTIONS

Additional functionality options in application are another part of preferences menu. They can be switched regarding the user requirements.

10.4.1 INTERNAL SEQUENCER

Enable Vatanator internal sequencer. When it is enabled, Vatanator will use its own sequencer for playing the song. The sequencer will also send sync, notes and control MIDI messages on Vatanator output port.

10.4.2 EXTERNAL CLOCK

Receive MIDI clock from external device.

10.4.3 BACKGROUND AUDIO

Continue play audio when Vatanator is switched to background.

10.4.4 NOTE IN VELOCITY LOCK

Incoming note velocity will be locked to selected value.

11 MIDI LEARN

Vatanator brings advanced MIDI implementation and MIDI Learn function. You can connect your external MIDI device to Vatanator and use it to control all sliders and parameters in real-time. It is important to read the provided Vatanator MIDI Implementation Chart for more details on page 15.

Keep in mind that if you use MIDI CC in range of Load/Save patters (57 to 72), you will also trigger Load or Save buttons.

12 VATANATOR AUDIO UNIT EXTENSION

Vatanator is compatible with Audio Unit extension version 3 and can be loaded inside every application which supports AU v3 hosting. Full screen mode is supported or iOS 11 and above. Main functions include pads, effects, XY pads, mixer, advanced samples editor, import of sound banks and MIDI learn.

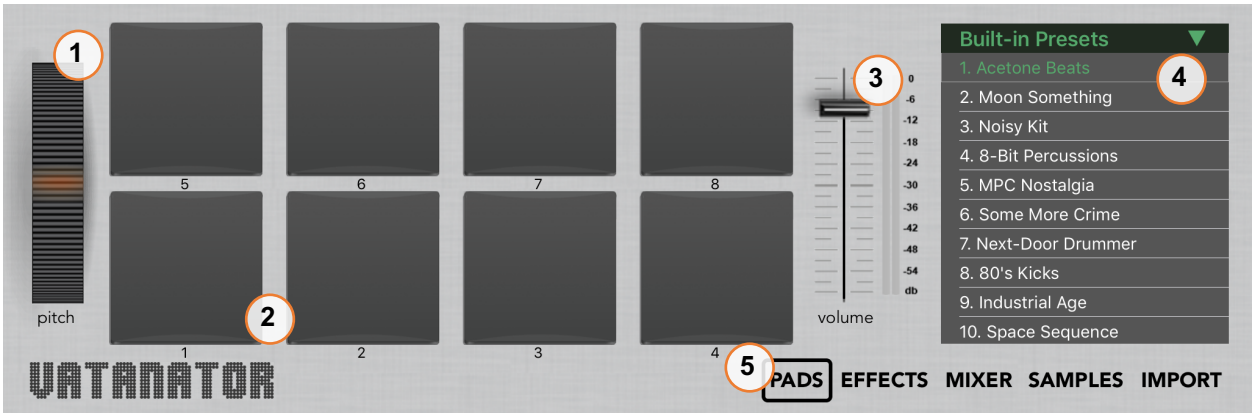


Figure 21 – AU Pads *1 – pitch modulation wheel; 2 – instruments pads; 3 – master volume control; 4 – menu for selecting built-in and user sound presets; 5 – navigation menu*

The pads in first menu can trigger instrument sounds as configured in “samples” menu. For iOS 11 and above they can be used for recording in AU host (below iOS 11 are just for preview).

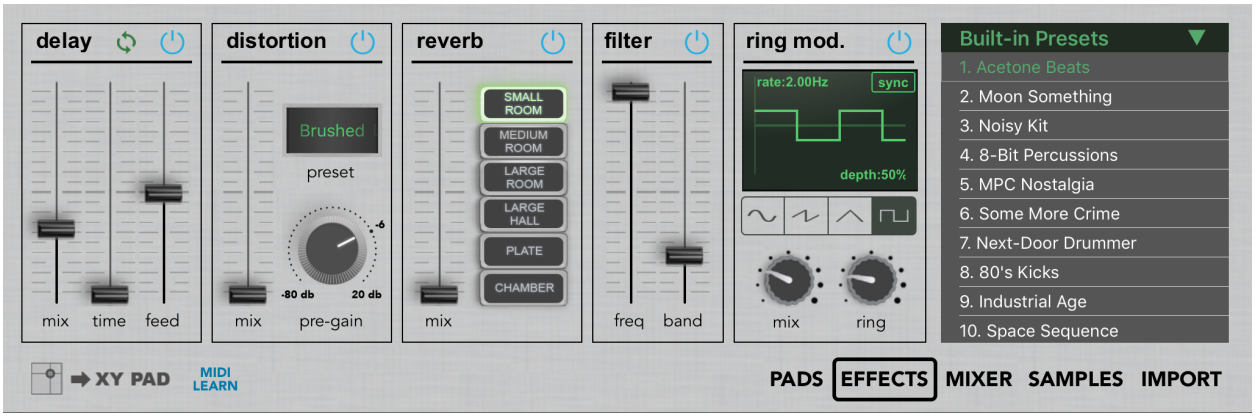


Figure 22 - AU effects

All effect controls included in AU are MIDI assignable.

Figure 23 – XY effects pads

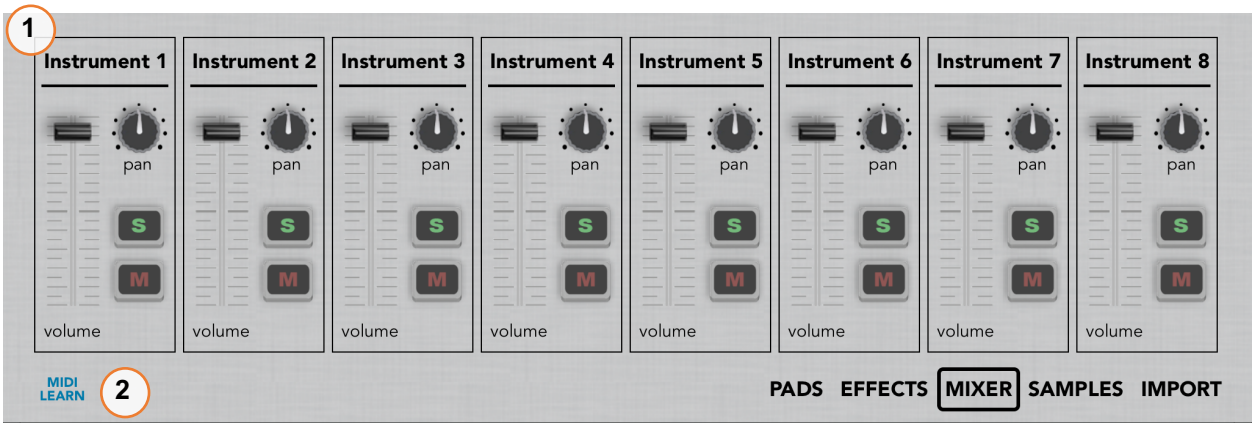


Figure 24 - AU mixer *1 – channel strip; 2 – MIDI learn menu;*

All mixer controls included in AU are MIDI assignable.

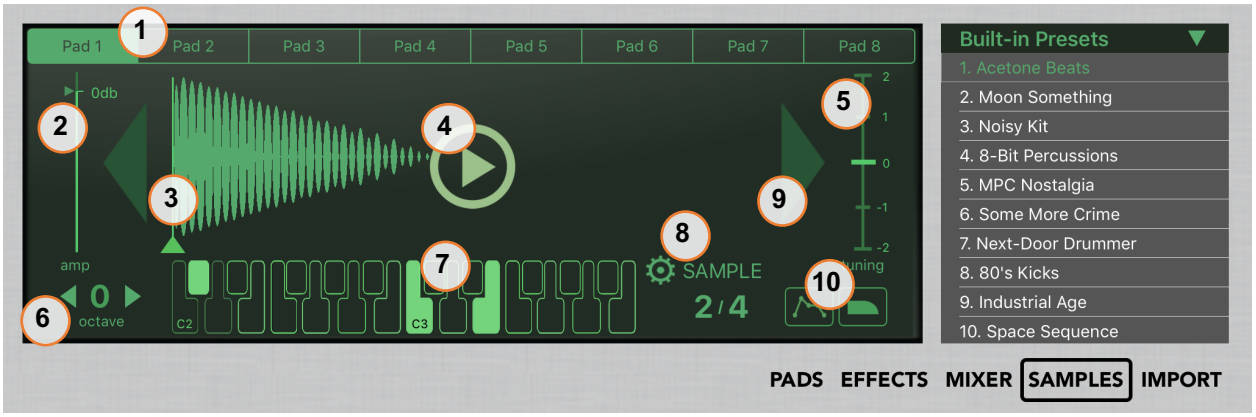


Figure 25 - AU samples

1 – edit pad; 2 – instrument volume amplification; 3 – sample start position; 4 – sample preview
5 – tuning; 6 – select octave; 7 – sample assignment editor; 8 – save/reset MIDI assignments;
9 – sample select; 10 - ADSR (attack, sustain, decay, release) and instrument filter

The “samples” menu has advanced features for tweaking the sound.
Every pad contains up to eight samples and every sample can be assigned to be triggered by one or more specific notes. You are not limited to use only one note per sample, for example, you can assign the same note on different sample from different pad and this allows configuration in which one note can trigger more than one sample (up to eight since there are eight pads).

- Default configuration

When the AU extension is loaded for first time, it uses preloaded default note configuration. The pattern in figure below shows the mappings between pads and samples in the default configuration. Mapping model is repeated trough whole octave range (from C-2 to C6).

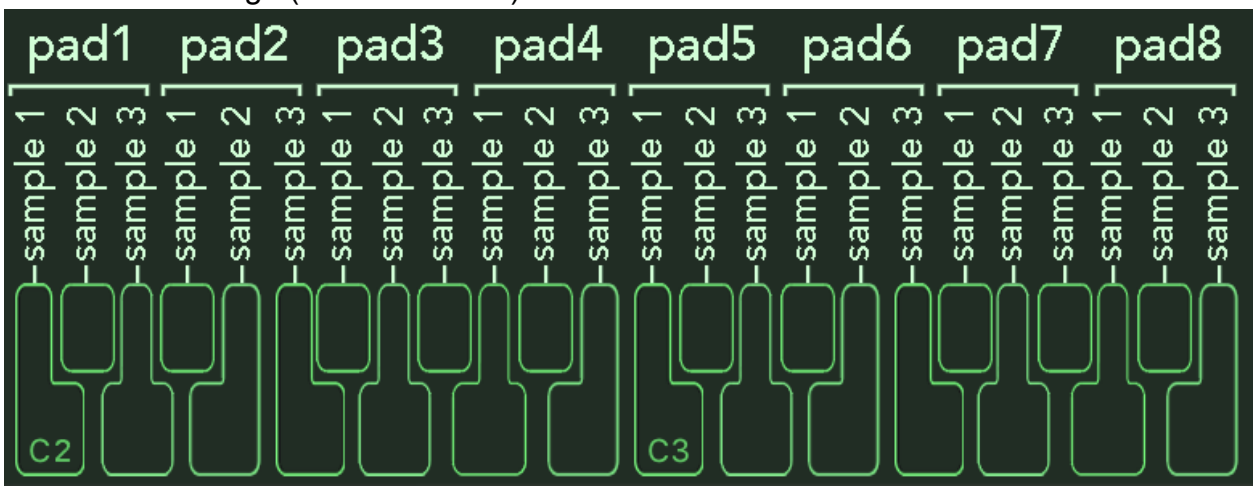


Figure 26 - AU note default configuration

- Custom configuration

You can create your custom mapping configuration. This is useful in scenarios when you need to control the app from MIDI device with predefined MIDI notes/CC controls. When the custom configuration is set, there is an option to save the mapping (gear icon button) and it will be available to all instances of Vatanator AU in every host. Reset to default will recall the default Vatanator AU startup configuration from Figure 26.

Figure 27 - AU MIDI configuration menu

In import menu, samples can be rearranged in the preset, import or delete custom sounds.

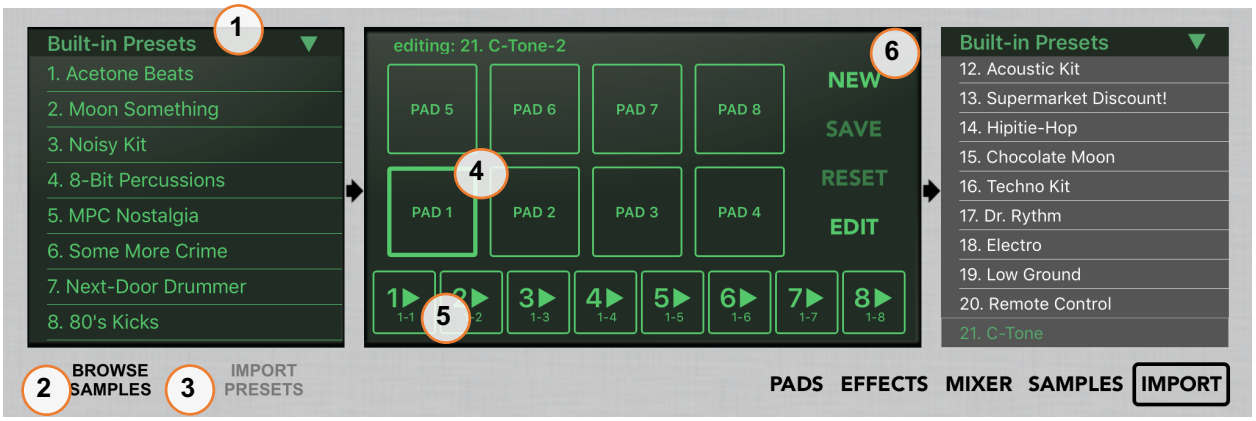


Figure 28 - AU import *1 – browser; 2 –import samples menu; 3 – import presets menu; 4 – pads 5 – samples; 6 – import menu controls;*

Custom presets from the standalone app can be exported to AU extension. Just slide left a custom kit in Vatanator standalone app and there is new option '-> to AU'. Then go in AU extension and you can see the exported custom presets in Import->Import Presets.

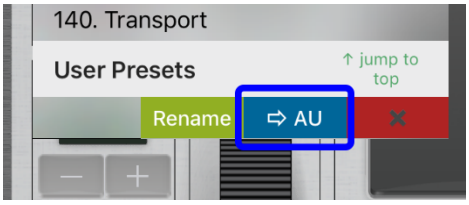


Figure 29 - Vatanator stand-alone sharing option

- Importing samples

  When in Import->Browse Samples, drag the desired sample and drop it to one of the available sample slots as shown in Figure 30.

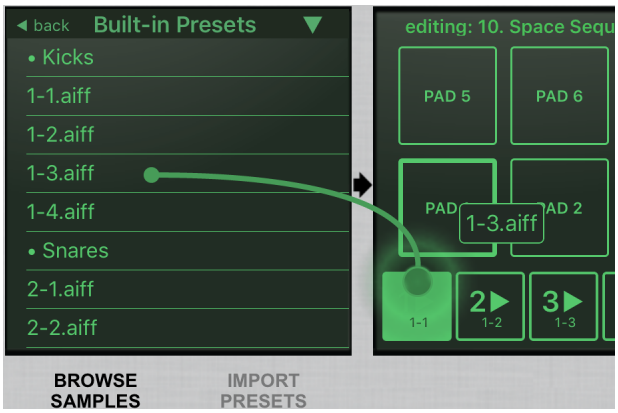


Figure 31 - AU importing samples

For iOS 11 and above samples can be imported also by drag and drop or browse from Files app.

- Rearranging samples

When in Import menu, press “EDIT” to rearrange or delete samples that are currently assigned to the selected pad.

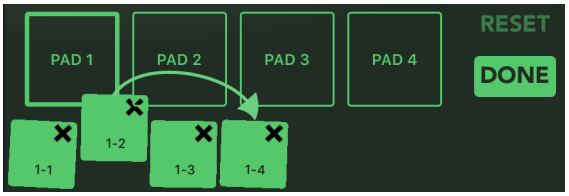


Figure 32 - AU rearranging samples

Remember to save the preset after done editing if you want to keep the changes.

Most of the controls are available as AU parameters and can be controlled by the AU host app if it supports it. Total of 85 parameters are available.

13 FEEDBACK AND SUPPORT

If you have questions or suggestions about Vatanator application, please contact us.
Website address: http://www.vatanator.com
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14 MIDI IMPLEMENTATION CHART

MIDI Implementation Chart Date: 22, Mar 2017
version: 1.1

Function		Transmitted	Recognized	Remarks
Basic	Default	1	1-16	
Channel	Changed	1-16	1-16	Memorized
Mode	Default	X	X	
	Messages	X	X	
	Altered	**********	X	
Note		0 – 127	0-127	
Number:	True voice	**********	X	
Velocity	Note ON	O 9n, v=1-127	O 9n, v=1-127	
	Note OFF	O 8n, v=127	O 8n, v=127	
After	Key's	X	X	
Touch	Channel	X	X	
Pitch Bend		X	X	
Control Change	-- *3	X	O	delay dry/wet
	--	X	O	delay time
	--	X	O	delay feedback
	--	X	O	delay on/off
	--	X	O	distortion dry/wet
	--	X	O	distortion decimation
	--	X	O	distortion rounding
	--	X	O	distortion on/off
	--	X	O	filter cutoff
	--	X	O	filter resonance
	--	X	O	filter on/off
	--	X	O	reverb dry/wet
	--	X	O	reverb room size
	--	X	O	reverb time
	--	X	O	reverb room type
	--	X	O	reverb on/off
	--	X	O	channel mixer panning
	--	X	O	channel mixer mute
	--	X	O	channel mixer solo
	--	X	O	channel mixer volume
	--	X	O	master volume
	--	X	O	bpm-
	--	X	O	bpm+
	--	X	O	record
	--	X	O	play/stop
	--	X	O	pages
	--	X	O	steps
	--	X	O	load patterns 1-8
Program		O 0 – 127	O 0 – 127	*1, *2

Change	True Number	**********	X	
Function		**Transmitted**	**Recognized**	**Remarks**
System Exclusive		O	O	
System Common	Song Position	X	X	
	Song Select	X	X	
	Tune Request	X	X	
System Real-time	Clock	O	O	
	Commands	O	O	O (Start / Stop), X (Continue)
Aux Messages	Local On/Off	X	X	
	All Notes Off	X	X	
	Active Sense	X	X	
	System Reset	X	X	

Notes:

*1: Received if in preferences CC IN button for particular device is ON and transmitted when is CC OUT is ON.

*2: Send and receive on Channel 10 (first 128 presets) and Channel 11 (presets from 129 and above).

*3: Initial values are empty. MIDI assignable and memorized

Mode 1: OMNI ON, POLY Mode 2: OMNI ON, MONO O: Yes

Mode 3: OMNI OFF, POLY Mode 4: OMNI OFF, MONO X: No