NLogSynth RPO
User Manual

Preface

This manual describes NLogSynth PRO version 5.0

NLogSynth PRO is a professional level software synthesizer for Apple's iPad.

NLog models a classical analogue style synthesizer with 4 oscillators, noise generator, frequency modulation, ring modulator, 2 filter, 4 envelope generators, 4 LFOs, a modulation matrix and a stereo effect section containing reverb, 4-band parametric EQ, distortion, phaser, flanger, chorus and delay.

We believe in high quality audio and sound synthesis. It is our aim to provide highest standards possible on the used hardware. Carefully tuned algorithms and efficient machine level programming gives us the freedom we need.

Great user interface design and graphics by David Boldini provides for intuitive and appealing GUI experience. Maximizing user's creativity is what we want to achieve in our interface design.

NLogSynth PRO was created by Rolf Wöhrmann in 2010.

Frankfurt, July 2012

Content

What's new in 5.0?

Here is a short overview for the new features of update 5.0 Please refer to the individual chapter to get more details:

- **True Mono/Legato Mode**

The "Mono" and "Legato" modes are now modified to fully simulate what classical monophonic analogues synthesizers do: The release tail of each sounding note is stopped when next note is played. Before, NLog was overlapping release tails which couldn't be achieved with monophonic synthesizers.

- **MIDI Learn & Default Values**

Hold your finger down on any control and a little panel opens which lets you assign next incoming MIDI CC controller value to this parameter. Thus, you do not have to know which CC number your controller sends, just activate MIDI learn in NLog and play your controller.

All controller mappings are stored in a table which you can reach from "Sys" section "MIDI" and then press "MIDI Learn". You can delete specific mappings from this table or just look at them to get an overview.

When you hold you finger down on a control to show the MIDI Learn panel, there is also a second option with which you can reset the parameter to its default value. This is useful for example for bipolar parameters to get quickly and exact back to the zero position.

- **Overdub Recording & Looping**

There is now an overdub mode for wave recordings. When activated, a new recording will mix into the existing. This also works with looped audio. With the "undo" button you can get back to the state before doing the overdub recording session.

- **Sound Bank Import & Export**

You can now export and import complete banks of 32 sound patches like you can do already in the OSX versions. You can im- & export them via email or iTunes file transfer. Also loading of 3rd party sound banks like from "App Sounds" now becomes very handy.

- **Core MIDI Network**

NLog now automatically activates Core MIDI Network in order to connect via WiFi to a Mac or another iOS device. Still, you can configure inout and output settings for network MIDI in "Sys" section "Devices."

- **Full MIDI CC Range**

You can now assign the full range of MIDI Controllers from 0-127 to NLog parameter either via MIDI learn or in the "Sys" page section "MIDI".

- **Open Media Files in Another App**

In the media file list you can reach from the "Tape" screen there is now a new export option to open a midi or wave file in another app. If there are apps on your iOS device installed which implement standard iOS file handling for audio or MIDI files, then you can select from these apps to open a specific file from NLog. iOS will the automatically open then other app for further processing of this file.

- **Better Default Sound**

The "default" sound has been changed and improved to a much easier starting point for own sound designs. However, this applies only for new installations.

- **Fixes & Other Improvements**

Among many other fixes and improvements:

The modulation amount of the keytrack source has been much increased within the modulation matrix.

The "Running Phase" parameter has been improved and fixed.

The "flat" setting for envelope slopes has been fixed.

Update to new Akai SDK for Akai SynthStation 25 and further optimizations for this device.

Setting Up Your Environment

There are many ways you can use NLog. This chapter describes a couple of them:

- On Screen Keyboard
- External MIDI Controller & DAWs
- From other apps via Virtual Core MIDI running in background
- Synchronized to other iOS devices via WIST
- Synchronized via MIDI Clock to other apps or connected MIDI Hardware or DAWs

On Screen Keyboard

First, NLog can be played from the on-screen keyboard which is further described in the sections "Keyboard Settings" and "Arpeggio" further below in the manual.

External MIDI Devices

NLog supports external input and output from external MIDI interfaces like Line6' Midi Mobilizer 1&2, Akai's SynthStation25, Alesis' iO Dock, IK Multimedia's iRig MIDI, iKingdom's iConnectMIDI and all other Core MIDI compliant interfaces. With Apple's Camera Connection Kit you can also connect class compliant USB MIDI interfaces.

Camera Connection Kit

Apple's Camera Connection Kit lets you connect your iPad to USB MIDI compatible devices. Thus, you can connect most MIDI devices with USB ports to your iPad. However, due to implementation details of Apple not all all USB devices work with the Camera Connection Kit. http://iosmidi.com/devices collects some information about which devices are supposed to work. The are also cheap USB MIDI interfaces which you can connect to Apple's Camera Connection Kit which gives you then classic 5-pin DIN MIDI Connectors.

Line6' MIDI Mobilizer, iRig MIDI, iConnectMIDI and other

These interfaces are plugged into the docking station connector of your iPad. They typically provide 5-pin DIN MIDI cables for MIDI In & Out which are connected to your MIDI equipment. Please refer to the manual of interface manufacturer.

MIDI Wiring

When using classic MIDI 5-pin DIN wiring here is some advice:

- For playing NLog from a MIDI keyboard connect the MIDI Out socket of the keyboard to the MIDI In port of the interface in use with NLog
- For playing an external sound module from the NLog onscreen keyboard connect the MIDI Out port from the interface in use with NLog to the MIDI In socket of the sound module.
- You can utilize both MIDI ports In & Out of an interface in use with NLog simultaneously. In the "Sys" page you find under the "MIDI" tab the "MIDI Through" setting. When enabled, NLog forwards external incoming MIDI messages to the MIDI Out port. Since

this can cause unwanted MIDI message loops this setting is disabled by default. Please check your MIDI setup carefully when enabling this setting.
• You can also connect to any MIDI interface like from your desktop or laptop computer.

For further information about MIDI wiring please refer also to the documentation provided by your interface vendor.

Akai's SynthStation 25

You can connect your iPad to the SynthStation with a Docking cable extension. NLog detects the Akai SynthStation 25 automatically and you can play the synth from the keyboard.

NLog interpreted the "program" and "octave" buttons as labeled. The upper row of buttons are interpreted as follows from left to right:

• Switch to "Filt" section
• Switch to "Eff" screen
• Start/Stop recording
• Start/Stop playback

WiFi MIDI Connections

You can connect via WiFi to a Core MIDI compatible computer like Macs running OSX. NLog will automatically create a link which is called "Network Session" in NLog's device selector ("Sys"->"Devices").

Please make sure that your WiFi network is not congested and fast enough. For best results please create a peer-to-peer network with your computer. Otherwise network latency may create note and sync latencies. For creating peer-to-peer networks on a Mac, please go to the WiFi menu on top of the Mac screen and select "Create network..." from the menu. Afterwards go to the Settings app on your iOS device and link to this WiFi network.

On the Mac you have to go to the Audio/MIDI Setup app (Finder->Utilities) and configure a network session. You have to activate the checkbox of the session and then add your device. The setup should look similar like below.
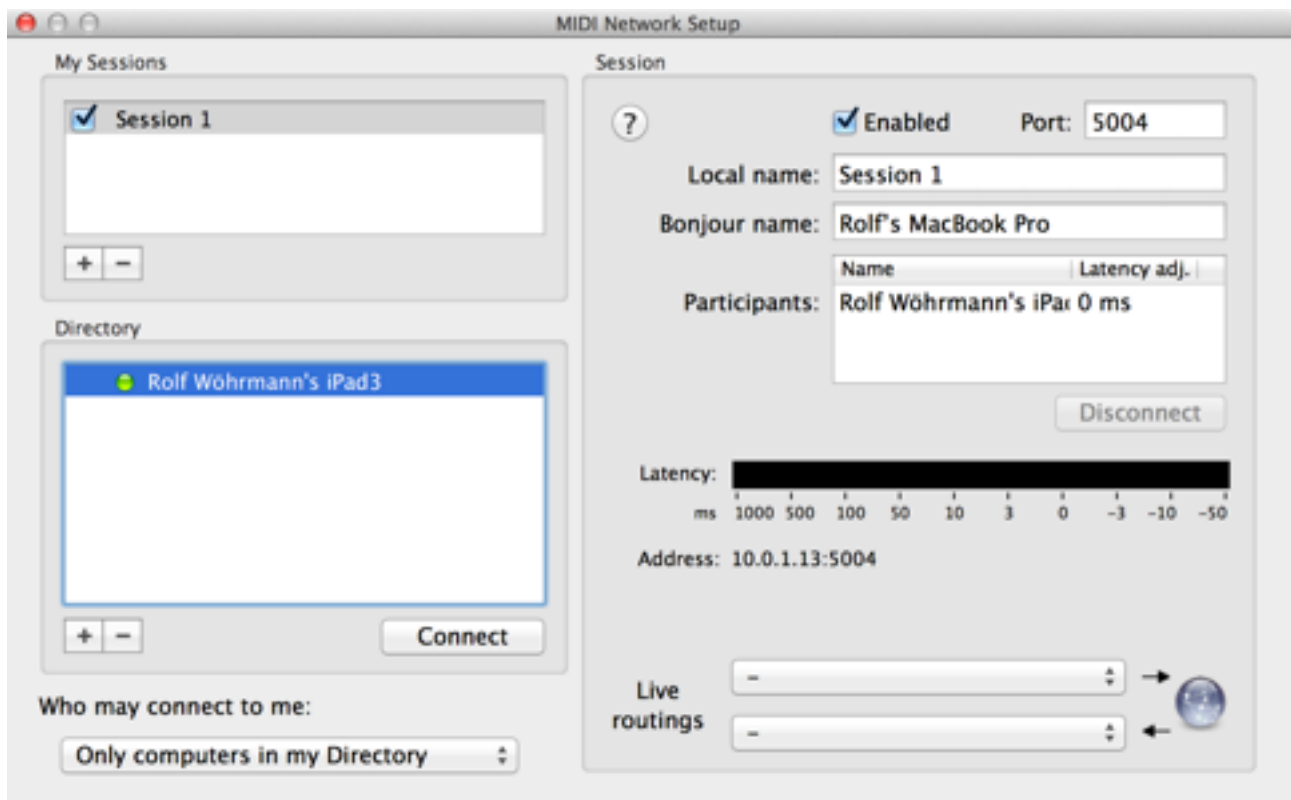
Virtual MIDI Connections

NLog implements virtual MIDI in & out ports. This means, that other apps running on the same device can send to NLog MIDI data. There are several use cases for this. One is to have a controller app like SoundPrism PRO, polychord, Genome MIDI Sequencer or PolyStepArp running in the foreground playing NLog running in the background.

Please make sure that the virtual connection is created only once to NLog. You can create the connection from both apps, so please do it just from either one.

Other apps like SoundPrism PRO are just connecting to everything. So, there is no setup needed here.

MIDI Configuration

Please check the MIDI channel setting of your device and set it within NLog's "Sys/MIDI" tab to the same value. NLog uses MIDI channel numbering from 1-16 which is used by most MIDI devices. If you set NLog to "omni" it plays back MIDI messages received on any channel.

NLog interprets all incoming MIDI note on & off, modulation wheel, pitch bend, sustain pedal, program and bank change messages. MIDI Controller messages are interpreted according to the settings within "sys/MIDI" page. Please see the according section for more on these settings.

When using NLog for MIDI Output, it will send note on & off messages, modulation wheel, pitch bend and XY-pad movements into MIDI Controller messages according to the settings.

Menu Structure

The NLog Synth is structured into different screens. Each screen can be activated by a menu button on the top. After startup the main menu is shown:

The „Info" menu button activates an info panel with useful information about the software. By clicking on the icons the respective web page will open.

All other menu screens will be described in the following sections.

Performance Section

The performance section is always displayed. It provides the main controls for performing with NLogSynth PRO:

The performance section contains two wheels, an XY-pad, main volume, pan & glide control, four assignable performance knobs, keyboard and arpeggio settings. The performance knobs let you control quickly four main aspects of the selected sound patch without going into the detailed edit sections.

Performance Knobs

The four performance knobs to the right can be assigned in the "Knobs" subpage of the "Sys" section to various synth parameters of NLog. The selection which parameters will be assigned is saved within user preferences. The individual values of the selected parameters will be saved within each sound patch.

Wheels

The pitch wheel on the very left lets you bend the pitch of the currently played notes. After releasing the wheel it snaps back into neutral middle position. The maximum bend interval can be set in the "Control" section of the "Sys" menu and will be saved within user preferences.

The other wheel controls a specific parameter of the sound patch like filter cutoff. The respective parameter can be set in the "Control" section of the "Sys" menu. The parameter type and position of the wheel parameter will be saved within the sound patch.

Keyboard Settings

The keyboard settings within the performance section lets you control the configuration of the keyboard. Some of the settings are stored in the user preferences. Please check the appropriate paragraph.

Arpeggio

Please see the following chapter.

Lock Mode

The keyboard scrolls normally by dragging a key left or right while holding the key. However, if the lock button is activated the keyboard stays fix. Sliding your finger over the keyboard will allow for performing glissando effects.

Press the button for toggling between locked and sliding mode. The lock mode setting is stored in the user preferences as well as the last scroll positions of both keyboards.

Size

With the "size" button you can control the size of the keyboard. It toggles between four different sizes in increasing order. The size setting is stored in the user preferences.

Second Keyboard

The button showing two keyboard rows will enable a second keyboard on top. Both keyboards can be scrolled independently. They share same size, lock mode and velocity setting:

If hold is activated, only the lower keyboard is in hold mode. Thus, you can press several keys on the lower keyboard for constant harmony or bass and freely play melody with the second keyboard on top.

The second keyboard can be deactivated by clicking again on the dual keyboard button.

Poly / Mono / Legato

By default NLog Synth runs in polyphonic mode. Some classical analogue synths were not able to do polyphony. Thus, for the lower keyboard there are two non-polyphonic modes called "Mono" and "Legato." You can toggle between all three modes by pressing the button.

In mono mode each new key stroke will trigger a new envelope onset. In legato mode a new key stroke triggers only a new envelope onset if there has no previous key been still pressed. Otherwise just the pitch is changed.

If hold is activated and you are in mono or legato mode, each new key stroke will stay hold, but will release the previously hold key.

If "Unisono" is activated in the "Pitch" submenu of the "Sys" page, the sound by default is non-polyphonic even if "Poly" is activated. The "Unisono" setting is stored with the sound patch, while the Poly/Mono/Legato setting is stored in the user preferences.

Velocity

The "Velo" button toggles between on and off state. If activated the vertical position of the initial touchdown of the key determines the velocity. Thus, dynamic performance is enabled.

The velocity setting is stored in the user preferences.

Hold

The "Hold" button toggles between on and off state of keyboard hold. While activated all keys of the lower keyboard will be sticky. After release of your finger the key keeps pressed and the note continues to sound. For deactivating a note press the key again.

The hold function is applied only for the lower keyboard. See also the Poly/Mono/Legato section and Arpeggio chapter for specific behavior in these modes.

You can activate as many keys as you like. However, depending on the speed and hardware capabilities of your device, only a certain maximum number of notes will be able to sound. If this maximum number is reached, voice stealing will occur and keep the number for sounds below that maximum. In any case, keys stay pressed.

Octave Control

The NLog Synth covers a range of 6 1/2 octaves. Depending on the size setting only a certain portion can be displayed on screen.

There are several ways to control which portion of the full range is displayed:

• If lock is not activated, you can slide the keyboard while holding one key pressed.
• With the "Oct +1" and "Oct -1" buttons you can increase or decrease by one octave.
• The gray area in the keyboard pictorial depicts the visual portion of the overall octave range. Sliding that gray area will change the visual portion accordingly.

Arpeggio

The "Arp" button within the keyboard settings leads you to the arpeggio subpage:

Press the "ArpOn/Off" button to toggle to "Arp On" mode. Now just press a few keys. The keyboard is automatically switched to "hold" mode in arpeggio. With the other buttons on the arpeggio subpage you control the arpeggio style. With "Exit" you will leave the arpeggio subpage.

Sync On/Off

The "Sync" button activates sync mode. If NLog is setup (see "Devices" Settings section) either as MIDI or WIST slave, the arp tempo and downbeat position is sync'ed
to the incoming messages. If arp sync is activated and no sync signal is received, there are no notes emitted from NLog. Thus, you can start & stop NLog's arpeggio from start & stop of the sync master.

Algorithm

The "Algo" button toggles through a set of different arpeggio algorithms from simple up or down to more complex ones. Here is the list with schematic explanations:

Up -> 1 2 3 4 1 2 3 4 1 2 3 4 ...
Dwn -> 4 3 2 1 4 3 2 1 4 3 2 1 ...
UpDo -> 1 2 3 4 3 2 1 2 3 4 3 2 1 ...
Up2 -> 1 3 2 4 1 3 2 4 1 3 2 4 ...
Dwn2 -> 4 2 3 1 4 2 3 1 4 2 3 1...
OrgU -> 1 1 2 1 3 1 4 1 1 1 2 1 3 1 4 1 ...
OrgD -> 4 4 3 4 2 4 1 4 4 4 3 4 2 4 1 4 ...
Rand -> random like 3 4 1 2 3 1 3 2 4
OrgR -> random with fixed note 4 1 2 1 3 1 4 1 1 1 2 1 1 1 4 1 ...
Chrd -> chord mode

Octave

The "Oct" button toggles between the range of used octaves. In the "Org..." algorithms every second notes are never affected by the octave setting. Thus, in the "Org..." algorithms every second note a constant key is repeated independent of the octave settings.

Rhythm

The "Rthm" button toggles between different rhythmic patterns including accent patterns.

Repeat

The "Rept" button toggles between the number of repetitions of a note before the next note of the algorithm is played.

Humanize

The "Hum" button toggles between different level of "humanizing" playback in terms of temporal precision, length variation and accents.

Swing

The "Swng" button controls the swing from even notes (50%) to heavily punctuated notes (95%).

Note Length

The "Len" button controls the length of the notes relative to the beat from 5% to 95%.

Tempo

The "+" and "-" buttons controls the BPM from 40 to 320. Keeping the button hold will automatically count the BPM up rsp. down. Alternatively you can tap the tempo in between both buttons.

To the right side of the "+" button you control the metrical division from 1/4 to 1/32 including some triplets.

Transposition Modes

The "Trans" button controls the transposition modes. In transposition mode you transpose the arpeggio by simply pressing a single key to which the arpeggio is transposed.

There are three states "Off", "Chrm" and "Diat". The latter two modes puts the keyboard into a transposition controller:

First, the hold arpeggio notes are moved invisibly to the upper manual (dual keyboard). Second, the lowest note of the arpeggio is hold on the keyboard.

If you are now changing the hold note by pressing a different key, the arpeggio will be automatically transposed. Thus, you can play the arpeggio much like a pattern based player.

The two modes "Chrm" and "Diat" differs in the way the transposition is executed. In "Chrm" mode the arpeggio is simply transposed chromatically. In "Diat" mode NLog tries to identify the tonality of the arpeggio and stays in that tonality if the transposition key is also in that key, e.g.:

Arpeggio is C-E-G-B , thus NLog is detecting a C-Major key. If you now press D as the transposition key NLog will transpose to D-F-A-C.

In chromatic mode NLog would have transposed this example to D-F#-A-C#

If you switch to "dual mode" with both keyboards on the screen, you can actually see and control the arpeggio keys at the upper keyboard. However, once you switch transposition mode to "Off" the arpeggio keys are swapped back to the lower keyboard.

Arpeggio Storage

The arpeggio settings are stored within each sound patch. When transposition mode is activated, also the arpeggio keys are stored in the patch. Thus, you can store the transpositional patterns with your sound and make them an inherent ingredient.

Delay Sync Mode

The delay has been extended with a synchronized mode. Please see delay description within the „Edit" section.

XY Pad

The XY-pad provides a two dimensional controller based on two selected sound parameters. The parameters can be selected in the "Sys" menu on the "Control" subpage. The selected parameter are stored within the sound patch. Thus, each sound patch has it's individual XY parameter settings.

Both parameters are controlled via moving the knob in the XY-pad. You can either drag the knob for a continuous movement or single tap in the display. Double tapping in the display returns the knob to the default values of the two parameters stored in the sound patch.

Loading Sounds

NLog Synth organizes all sounds within several sound banks each containing 32 sounds. There are predefined read-only factory banks as well as three user banks in which you can save your own creations. Press "Load" to display the sound selection page:

In the display the top row buttons let you select the bank. The left side buttons represent the factory banks. The right side buttons toggle between the three user banks.

The 32 sounds in each bank are divided into three pages. On the bottom right you can select between the pages of each sound bank.

In the main area of the sound screen the patches of the selected page / bank are displayed. Tapping on a patch button will load this patch. All current edits will be lost, so please make sure that you have saved edits in case you want to keep them.

On the bottom left there are three buttons for exporting specific sound patches via email or iTunes. You can either export the current sound patch or a whole bank.

Email Export

When choosing email export, the standard email editor opens. The to be exported sounds are attached to the email as .nlogpro files rsp. as a single .nlgbankpro file for bank export. The recipient of the email simply loads the attachments after receiving the email on their iPad touch device.

For patch files, NLogSynth PRO will be opened with the save panel preselected. To constantly save the sound the recipient simply saves the sound in one of his user banks.

For banks files, NLog will ask in which user bank slot the file should be loaded.

The .nlogpro and .nlgbankpro files can also be exported to Mac OSX computer where *NLogPoly Synth* is installed. *NLogPoly Synth* is the Mac OSX version of NLogSynth and can also import and export .nlogpro patches as well as .nlgbankpro files.

iTunes Export

When selecting *iTunes* as export target, the patch rsp. bank will be saved in the iTunes export folder. When you connect your iOS devices with the docking USB cable to your computer with iTunes installed, select your device in iTunes, click on the „Apps" tab and

select „NLogSynth PRO" in the app list at the bottom. On the right you will find then all exported sound patches and banks as well as recordings saved with NLogSynth PRO. With the respective buttons you can save & load files including .nlogpro patches and .nlgbankpro files from and to your computer for further work like loading into NLogPoly Synth.

iTunes Import

If you select „Import" in the „Load" screen, a page opens with a list of all patches & banks within your iTunes folder. Select a patch in the list and click on load. It will then load the patch or bank into NLog. However for persistent storage of patches, you have to save the patch into a sound bank. Just navigate to the „Save" page.

In the iTunes import list you can also rename or delete patches found in the iTunes folder. This does not affect any patches or banks in your user bank. In addition, different sorting options are available.

NLog MIDI Synth Patches

NLogSynth PRO imports via Email attachments or iTunes also sound patches from NLog MIDI Synth with .nlog extension as well as sound banks with .nlgbank extension.

Importing from iOS Apps

You can also import files into NLog from within other iOS applications if they support the appropriate iOS standard for doing this. For example, in Mobile Mail you can click and hold on email attachments for opening them in NLog. If they are sound patch or bank files, you can select NLog from the list of apps being able to open the attachment. Afterwards NLog will be automatically opened and the attached file is loaded.

Saving Sounds

For storing sound edits permanently select „Save" from NLog's main menu:

First, select the user bank, page and the slot where you want to save your patch edits. Then select the „Save" button and type in name or optionally accept the existing name. Last, you have to press „Return" to permanently save the patch.

Tape

The tape screen can be reached from main menu via the "Tape" button. It provides recording facilities as well as the link to the metronome and media list for export and pasteboard support:

There are two recording modes: Audio waveform and MIDI notes. You can select between both modes with the top buttons „Wave" and „MIDI". Both modes have their independent recording buffers. Thus a MIDI recording is not overwriting the last Wave recording and vice versa. MIDI records all keyboard events, Pitch-Bend, Modulation Wheel, Perf Knobs and XY-Panel. It also saves the current sound patch into the MIDI file.

Recording

Pressing the "Rec." button activates recording mode. The actual recording starts with the first key pressed. Any played sound will be recorded including all used wheels, performance knobs, xy controller and sound parameter. It is no problem to leave the tape page while recording, but you have to come back to stop the recording.

If the metronome is activated, its sound is not included in the recording.

In „Wave" mode, depending on the used hardware the maximal recording length is restricted. If the maximal length is reached the recording automatically stops and informs the user by a dialog panel.

In recording mode the "Rec." button changes its label to "Stop" which needs to be pressed to finish the recording. It is a good practice to wait after the last pressed note has been played its release tail and not to cut it off by pressing stop too early.

After the recording has been finished the display is updated with the waveform of the recording rsp. the MIDI events recorded. It is automatically scaled to the dimensions of the display.

You have to save the recording to keep it permanently.

Overdub

There is an overdub mode for wave recordings. When activated, a new recording will mix into the existing. This also works with looped audio. With the "undo" button you can get back to the state before doing the overdub recording session.

Playback

The last recording can be played back by pressing the "Play" button. In playback mode the button title changes to "Stop" for finishing playback. If the end of the recording is reached the playback stops automatically.

The slider on the right controls the playback volume. You can play-along with the actual sound patch. You can leave the tape screen anytime while playback.

Playback also works with former recordings you have loaded from the media list panel into the tape display.

Looping

If the "Loop" button is activated playback will operate in loop mode. If activated the button will be highlighted in blue.

In the tape display the loop is displayed in dark blue. Looping is implemented for both modes, „Wave" and „MIDI" :

On the left and right side of the loop there are handles which you can drag to control start and end positions of the loop. This can be done even while playback. To avoid clicks in „Wave" mode, playback automatically applies very short fade in and fade outs with a crossfade at each loop cycle.

Other Buttons

The "Save" button lets you save a recording permanently on your device. Please enter an appropriate name for the recording followed by the return key. The correct file extension will be added automatically. After performing save operation the media list screen will be displayed with the saved recording selected in the list.

The "Click" button activates the metronome control. The "Files" button leads to the media list. See the following sections for detailed description.

Metronome

The metronome panel will be displayed when the "Click" button is pressed from the tape screen. It displays controls to activate and configure the metronome:

Activation

The left button activates the metronome and toggles between three states of operation: "Off", "On" and "Rec."

In off state the metronome is deactivated. In on state the metronome runs all the time. In rec state the metronome runs only while recording in the tape screen is activated.

BPM Control

To the right of the activation button there are three controls for modifying the tempo of the metronome expressed in BPM (beats per minute).

The plus and minus buttons in- and decrease the tempo. A single tap with operate by a single BPM unit. When holding one of these buttons after a short delay the BPM is modified continuously. Thus, you can quickly change the tempo.

In the middle the actual BPM is displayed. Tapping on this display will modify the tempo according to the speed of the tapping.

Accentuation

The "Acc" button controls accentuation. Pressing the button toggles between various states. In the "Acc 0" state the accentuation is deactivated. In the "Acc 2" state every second beat is accentuated, in the "Acc 3" state every third and so on up to every sixth beat.

Volume Control

The slider controls the playback volume of the metronome.

Media List

The media list can be accessed via the "Files" button from the tape screen. It displays all saved Wave and MIDI recordings as well as imported files:
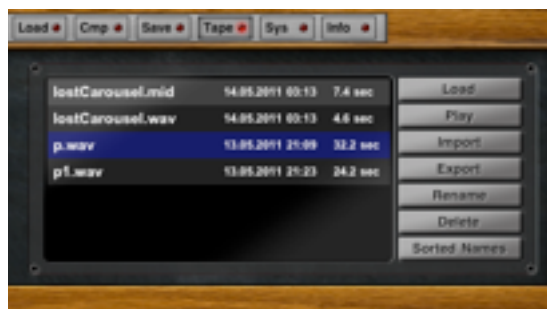
Each file is displayed with its name, last modification date and playback length.

Own Wave recordings are stored in „.wav" format with CD audio quality in 16 bit stereo and sampling rate of 44.1 kHz. For imported audio files all formats are supported which Apple's Core Audio in iOS supports.

Own MIDI recordings are stored as standard MIDI files with „.mid" file extension. Imported MIDI files are listed if they are compatible with standard MIDI file format.

The list can be scrolled by a swiping gesture. For performing further actions on files you have to select a file by tapping on its file name. The selected file is highlighted in blue.

Load

The "Load" button loads the selected file into to the tape screen. There you can playback and play-along the file.

Audio files will be automatically converted to 44.1 kHz stereo files when loading them into the tape buffer. However, the original file in the media list is not changed or converted. Also, NLog loads only the maximum recording length into the tape buffer.

For MIDI files which have been recorded with NLog, the sound patch stored in the MIDI file is loaded.

For imported MIDI files which contain more than one track, the user has to select the respective track before loading.

Play

The "Play" button plays the selected file for quick audition before loading the file. Press stop for ending the playback before the file has finished.

Rename

The "Rename" button activates a dialog in which you can rename the file. The appropriate file extension will be automatically set and therefore does not need to be typed in.

Delete

The "Delete" button removes the selected sound file. There is no way to restore it. So, please think twice before deleting a file.

Sorting

The file list can be sorted by different categories: Date, length, type and name. Pressing the "Sort" button toggles between these states.

Export

The "Export" button exports the selected file. It will bring up a panel to select the export destination.

Wave files:

• Email
• SoundCloud
• Sonoma Pasteboard
• BeatMaker Pasteboard
• WiFi

MIDI files:

• Email
• WiFi

iTunes

In addition to these export options, all files in the file list are automatically exposed to the iTunes file sharing mechanism. When you connect your iOS device with the docking USB cable to your computer with iTunes installed, select your device in iTunes, click on the „Apps" tab and select „NLogSynth PRO" in the app list at the bottom. On the right you will find then all files from the media list as well as exported sound patches. With the respective buttons you can save & load files to and from your computer.

BeatMaker Pasteboards

Pressing on the BeatMaker pasteboard option the panel returns. That's all to be done in NLog Synth. Quit the app and start BeatMaker 1/2 or any other app compatible to Intua's pasteboard definition, for a list see here: http://code.google.com/p/intua-audio-sharing/wiki/CompatibleApps.

In BeatMaker version 1 you go to the "Pad" display from the top menu. Press "File" on the left side and move to the "CLIPBOARD" section by clicking the arrow down button on the bottom left side a few times. Select "PASTE" and navigate to your preferred folder like "My Audio Recordings". Press "PASTE" and give the recording an appropriate name. From the "Sample" menu on the left you can now load your NLog recording by pressing "LOAD" and navigate to the folder where you have saved the file. Don't forget to select the appropriate pad button first.

In BeatMaker 2 go to the main menu and select the „sharing" icon on the top right, press „Pasteboard" and then „Import iOS to BM2". After pressing „Save" you can assign a name to the file and use it in BeatMaker 2.

Sonoma Pasteboards

Pressing on the Sonoma pasteboard option show the Sonoma standard AudioCopy panel. You can give the audio an own name if you like. Otherwise press simply „Copy Audio."

Press afterwards „Done" and return to NLog or alternatively select an App from the list to launch by pressing the respective „launch" button.

The list shows Sonoma's AudioCopy/AudioPaste compatible apps like FourTracks etc. A full list can also be found here: http://www.sonomawireworks.com/iphone/audiocopy/#apps

In Sonoma compatible apps like "FourTrack" you navigate to "SongTools" and select "AudioPaste". Select your options and simply press "Paste" and you are done.

The Sonoma AudioPaste standard is currently restricted to 44.1 kHz sampling rate. So, if you have a Wave file imported from other sources in a different sampling rate, you will not be able to export it to the Sonoma Pasteboard.

Email Export

Selecting „Email" will bring an email composing screen with an attachment for the Wave rsp. MIDI file. Simply complete the email. Pressing „Send" or „Cancel" returns to NLog Synth.

SoundCloud Export

Pressing on the SoundCloud export option show the SoundCloud export panel:

You can get a SoundCloud account here: http://www.soundcloud.com The first time you access SoundCloud functionality from NLog you have to authenticate yourself at SoundCloud. NLog will open a Mobile Safari window with the standard SoundCloud authentication screen. When logged in successfully, Safari returns automatically to NLog and shows the SoundCloud export panel. For all further activities, this panel is shown automatically unless you log out from SoundCloud.

With the „Rename" button you can optionally change the name of the sound file.

The „License" button toggles between different licensing and copyright options you can set for your sound file within SoundCloud.

The „Sharing" setting toggles between „public" and „private."

Press „Upload" to start the uploading process. When done successfully, it returns to the file list. You can cancel the uploading process with the „Cancel" button.

The „Log Out" button logs you out from SoundCloud. This is an optionally step you do not have to perform.

WiFi Export

Selecting „WiFi" export will show a panel which gives information about the URL to be selected in a computer connected to the same WiFi network like your NLog Synth device. Keep the panel open until you have finished your downloads.

In the web browser there will be a link for each file. Depending on your browser's configuration you have to click or right-click (rsp. option-click) on the links for downloading the files.
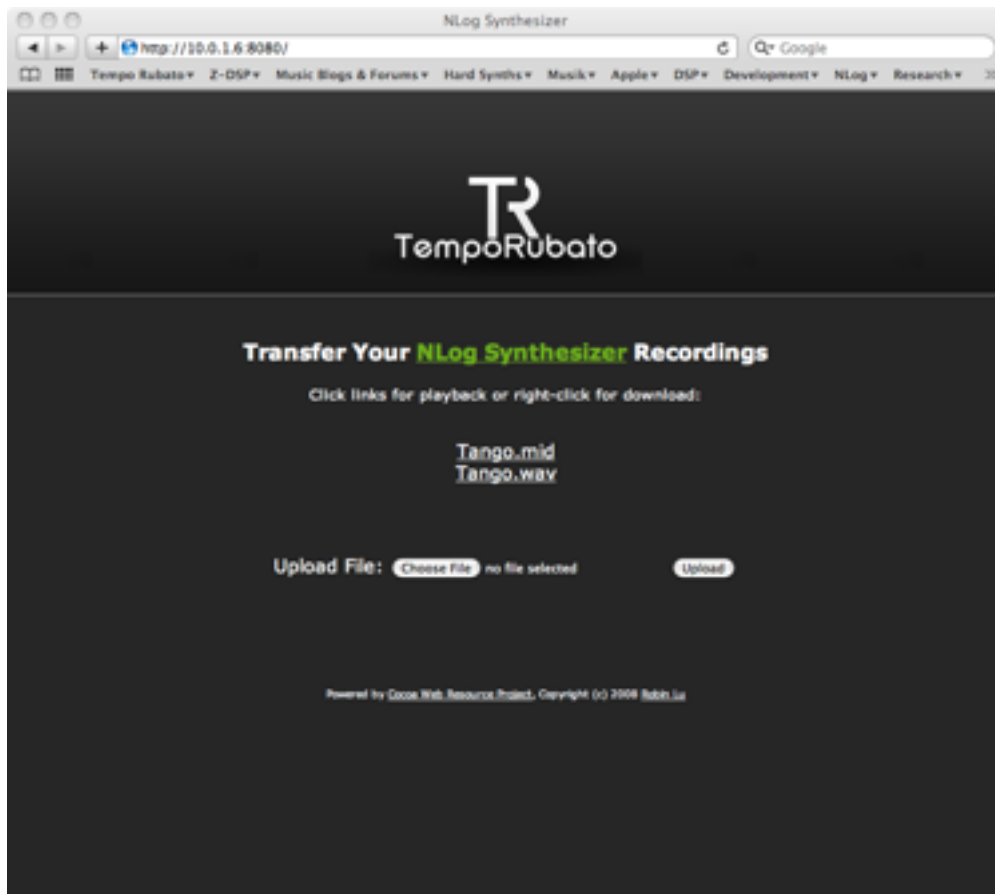
Open in Another App

If there are apps on your iOS device installed which implement standard iOS file handling for audio or MIDI files, then you can select from these apps to open a specific file from NLog. iOS will the automatically open then other app for further processing of this file.

Import

The "Import" button will show a list of import sources you can select from:

- SoundCloud
- Sonoma Pasteboard
- BeatMaker Pasteboard
- WiFi

For importing audio files all formats are supported which Apple's Core Audio standard in iOS supports.

For importing MIDI all files are supported if they are compatible with the standard MIDI file format.

You can also import files into NLog from within other iOS applications if they support the appropriate iOS standard for doing this. For example, in Mobile Mail you can click and hold on email attachments for opening them in NLog. If they are Audio or MIDI files, you can select NLog from the list of apps being able to open the attachment. Afterwards NLog will be automatically opened and the attached file added to NLog's media list.

iTunes

In addition to these import options, all files loaded via the iTunes file sharing mechanism as described in the *iTunes* section in the *Export* chapter will be automatically shown in the media list if the format is accepted. Just connect your iOS devices with the docking USB cable to your computer with iTunes installed, select your device in iTunes, click on the „Apps" tab and select „NLogSynth PRO" in the app list at the bottom. On the right you will find then all files from the media list as well as exported sound patches. With the respective button you can load files into NLog.

Sonoma Pasteboard

Pressing on the Sonoma pasteboard option show the Sonoma standard AudioPaste panel. You can select from the list of audio files in the pasteboard and pre-listen them. Otherwise press simply „Paste." Press afterwards „OK" and a new file is added to the media list which you can assign an appropriate name.

BeatMaker Pasteboard

After pressing the BetaMaker pasteboard option a new file is added to the media list which you can assign an appropriate name assuming there was appropriate content in the pasteboard.

SoundCloud

Selecting „SoundCloud" for import will show the SoundCloud import panel:

You can get a SoundCloud account here: http://www.soundcloud.com The first time you access SoundCloud functionality from NLog you have to authenticate yourself at SoundCloud. NLog will open a Mobile Safari window with the standard SoundCloud authentication screen. When logged in successfully, Safari returns automatically to NLog and shows the SoundCloud export panel. For all further activities, this panel is shown automatically unless you log out from SoundCloud.

Select the file you like to download and press „Import." You can cancel the download with the „Cancel" button.

If you do not see a file in the list for download you have actually in SoundCloud, please make sure within the track settings in SoundCloud, that the track is enabled for download.

„Play" lets you pre-listen a file before downloading it.

The „Log Out" button logs you out from SoundCloud. This is an optionally step you do not have to perform.

WiFi

Selecting „WiFi" import will show a panel which gives information about the URL to be selected in a computer connected to the same WiFi network like your NLog Synth device. Keep the panel open until you have finished your uploads.

In the web browser press first „Choose File", select the file to be uploaded and then the „Upload" button. After successful upload the file become listed in the webpage.

Closing the panel in NLog will then list the uploaded file in the media file list.
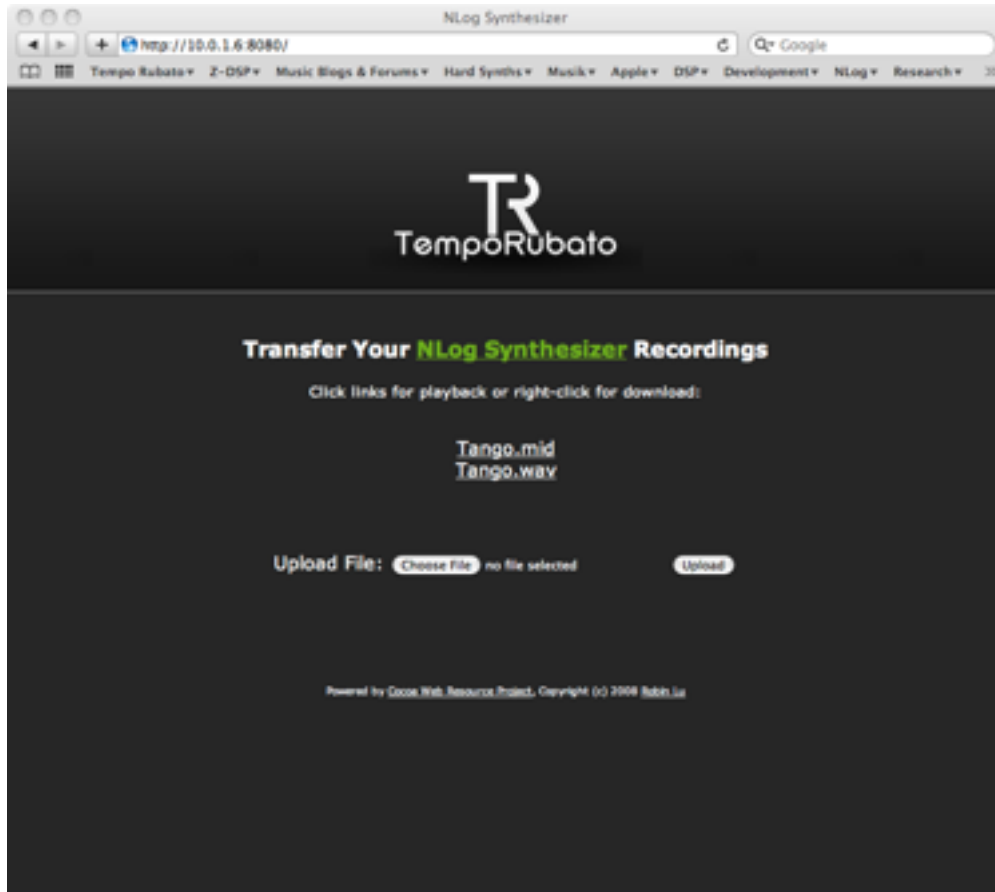
System Settings

The system settings page can be accessed from the main menu with the "Sys" button. It is divided into the subpages "Pitch", "Knobs", "Control", "Devices", „MIDI" and „Env." They can be reached pressing the appropriate buttons:

Pitch Settings

Tuning

The pitch page controls the overall tuning. By pressing the plus and minus buttons the pitch is modified in steps of one Hertz. This setting is stored within user preferences.

Transpose

Press the +/- buttons to apply a global transposition +/-12 semitones. Setting is stored within user preferences.

Unisono

The unisono parameter controls two to four unisono voices. When activated each key stroke plays not only one note, but the number of unisono voices. For performance reasons the synth is operated in monophonic mode when unisono is activated. All unisono settings are stored within the sound patch.

The unisono voices are controlled by detune, pan and delay parameter which modify each individual unisono voice slightly to the others. Thus, rich and fat sounds can be easily produced.

Osc Running/Reset Phase

Use reset phase for percussive sounds, and running phase for analogue style sounds. The difference is very subtle to hear, but important for sound designers. In running phase the oscillators are kept running after release end that each new note starts with a different phase as in analogues oscillators. In reset phase mode oscillators are started always with same phase, which is important for sharp attacks or percussive sounds.

Setting is stored with each patch individually.

Knobs Settings

The four performance knobs on the performance screen can be assigned to four sound parameters. The parameter assignments will be saved within user preferences.
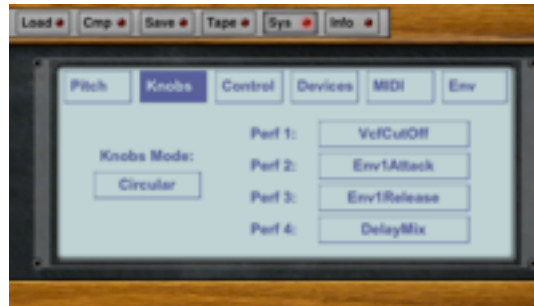
Pressing one of the parameter assignment buttons will open a dialog for selecting the sound parameter:

The possible sound parameters are organized in four pages. The pages can be switched by pressing the page buttons at the right bottom. A parameter is selected by pressing the respective parameter button which is accordingly highlighted.

Once your are finished with the parameter selection press the "OK" button in the bottom left corner to assign the parameter or simply "Cancel" to leave the dialog without any change.

Knobs Mode

Switch between circular & vertical knob modes. Setting is stored permanent.

Control Settings

Pitch Bend Interval

The interval setting of the pitch bend wheel determines the bend interval when the wheel
is at maximum or minimum. The interval can be set with the plus / minus buttons in
halftone steps from 1 to 12. The setting will be stored within the sound patch.

Wheel Parameter

The second wheel can be assigned a specific sound parameter. Pressing the parameter
button leads to a parameter selection dialog similar to the one described for the "Knobs"
settings page. However, the wheel parameter assignment is stored within the sound patch.

XY Parameter

The XY settings assigns the sound parameters controlled in the XY screen by dragging in
the respective directions. Pressing one of the parameter buttons leads to a parameter
selection dialog similar to the one described for the "Knobs" settings page. However, the
XY parameter assignments are stored within the sound patch.

Devices Settings

The "Device" settings submenu lets you configure each available Core MIDI port.
You can enable/disable receiving MIDI channel data (notes, CCs etc.) with the "IN: Notes" button as well as MIDI Sync data with the "IN: Clock" button. You can also enable/disable sending MIDI channel data (notes, CCs etc.) to other devices with the "OUT: Notes" button.

NLog itself does not act as MIDI Sync master, but only slave. Thus, there is no "OUT: Clock" button.

On top you find the device selector. All the IN/OUT settings selected made individually per device. Settings are stored permanently even if the device becomes unavailable, NLog will remember next time when it becomes available again.

When while running a new device becomes available or disappears this will be reflected in the devices settings. If there are existing preferences for the new device, they will be used. If the new device is used with NLog for the first time the default is that "IN: Notes" is enabled. Thus, for simple setups, the user has nothing to do and it is plug-and-play.

When using "Network Session" with WiFi like connecting a laptop or desktop computer please make sure that your WiFi network is not congested and fast enough. For best results please create a peer-to-peer network with your computer. Otherwise network latency may create note and sync latencies.

When „MIDI Through" is set to „ON", NLog forwards external incoming MIDI messages to the MIDI Out port. Since this can cause unwanted MIDI message loops this setting is disabled by default. Please check your MIDI setup carefully when enabling this setting.

WIST

WIST is a non-MIDI sync protocol used and conceived by Korg to sync two iOS devices for common start/stop and tempo. It is Bluetooth-based and works with apps like iMS20, iElectribe and also TableTop.

NLog can act as WIST master & slave. Please activate WIST by pressing "WIST" button and also on the other device. After a while you will see a list of found WIST devices. Now, initiate the connection from the to be slave device by selecting the name of the master hardware. After a while on the master hardware a panel opens to accept the slave device. Please do so.

Pressing again on the "WIST" button will cancel the WIST connection. The "About" button shows a WIST info page from Korg.

In slave mode, NLog's arpeggio is sync'ed and started from the WIST master device. Please see Arpeggio section above for Arpeggio sync in general.

WIST technology does not by definition update the tempo while running (in contrast to MIDI Sync), so it keeps the tempo started with. Also WIST is implemented by having a little delay after pressing start on
the master device.

If NLog is WIST master, you can start/stop the slave device with the button aside of the "WIST" button. The tempo is the one set in arpeggio.

MIDI Sync

As an alternative to WIST, MIDI Sync slave mode can be used to synchronize NLog's arpeggio with other MIDI devices or apps. NLog keeps track of tempo changes as much as possible and syncs to it in arpeggio mode. Please make sure "Sync" is set to "On" in arpeggio controls.

NLog is running only in MIDI Sync slave mode and does not send or forwards MIDI Sync messages.

Background Mode

You can activate & deactivate background mode for NLog. In background mode NLog keeps running and reacts to incoming MIDI events, be it from external devices or other apps using NLog's virtual MIDI ports.

Please remark, that NLog can receive only from Core MIDI devices when running in background mode. Non Core MIDI devices like Line 6' Midi Mobilizer v1 or Akai's SynthStation25 cannot control NLog in background mode due to their non-Core MIDI nature. Line6' new Midi Mobilizer 2 will be Core MIDI compliant and works with NLog's background mode.

When running in background mode, NLog is consuming CPU resources. So, please make sure to deactivate it or kill NLog in order not to waste energy and drain battery.

MIDI Settings
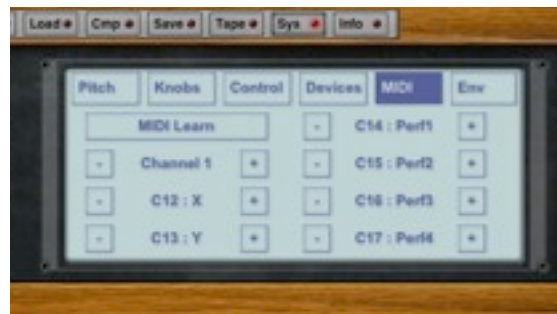
The channel setting selects the channel for receiving MIDI In and sending MIDI Out messages. When set to „omni" NLog will interpret all incoming MIDI messages regardless of their channel setting. MIDI Out messages are sent on channel 1 when setting is „omni".

The other settings map different MIDI Controller numbers to the X&Y-pad parameters as well as to the 4 „perf" parameters. They control the same sound elements of NLog as their onscreen equivalents.

MIDI Learn

Hold your finger down on any control and a little panel opens which lets you assign next incoming MIDI CC controller value to this parameter. Thus, you do not have to know which CC number your controller sends, just activate MIDI learn in NLog and play your controller.

All controller mappings are stored in a table which you can reach from "Sys" section "MIDI" and then press "MIDI Learn". You can delete specific mappings from this table or just look at them to get an overview.

When you hold you finger down on a control to show the MIDI Learn panel, there is also a second option with which you can reset the parameter to its default value. This is useful for example for bipolar parameters to get quickly and exact back to the zero position.

Envelope Settings

The envelope settings let you control the steepness of the envelope curves. There are four options for each:

- Flat
- Normal
- Square
- Steep

Try different slopes for different sound types, e.g. steep slopes for percussive sounds.

Sound Editing

NLog models a classical analogue style synthesizer with 4 oscillators, noise generator, frequency modulation, ring modulator, 2 filter, 4 envelope generators, 4 LFOs, a modulation matrix and a stereo effect section containing reverb, 4-band parametric EQ, distortion, phaser, flanger, chorus and delay.

NLogSynth PRO Diagram
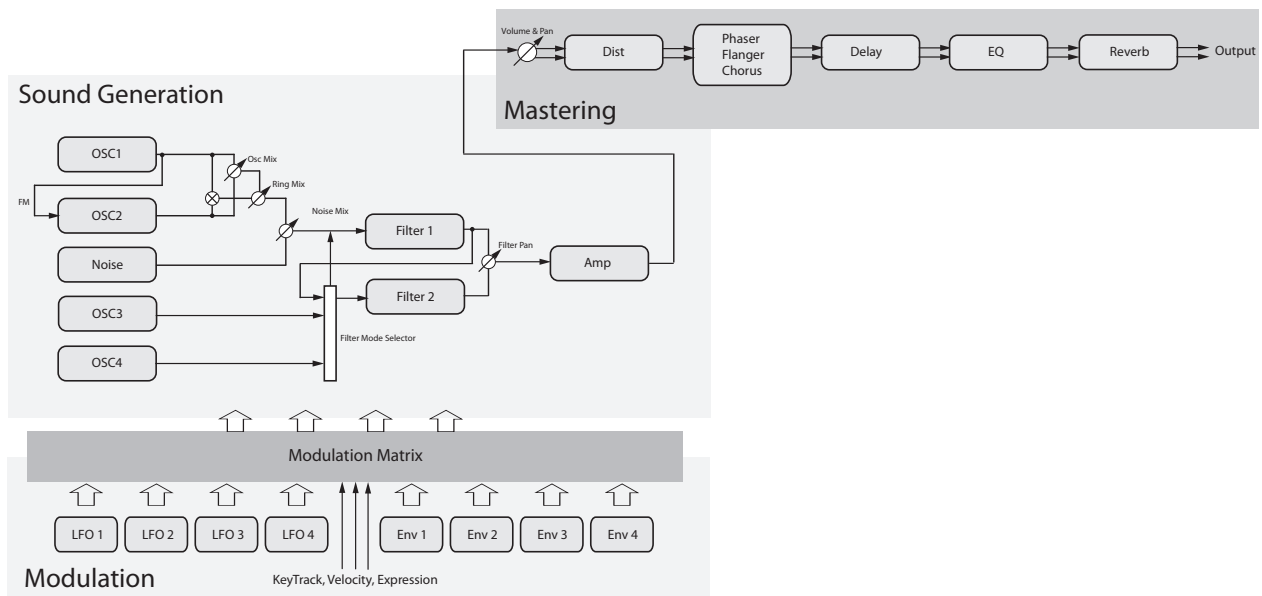
Oscillators

The oscillator section is shown by pressing the 'Osc' menu button:

All oscillators are implemented based on a custom, studio quality alias-free algorithm. They are separately tunable ("Pitch") with fine grained detuning ("Detune") at the second, third and fourth one. All provide 20 waveforms ("Wave") including classic analogue style sine, triangle, sawtooth and square as well as complex waveforms. The first osc, when waveform is set to square ("sq."), also provides pulse-width ("PW") control which can be modulated by LFO1 directly or by various sources within the modulation matrix. The blend between oscillators 1 & 2 can be controlled by the "Osc Mix" button and modulated with LFO2 directly or via modulation matrix. Oscillators 3 & 4 can be individually switched on or off and controlled in volume which can be modulated via modulation matrix as well. You can alternatively turn off an oscillator without modifying the blend by simply selecting the "off" waveform.

Frequency Modulation Synthesis

Osc1 can modulate Osc2's frequency. For classical FM synthesis turn "Osc Mix" to 1.0 to isolate FM-controlled output of oscillator 2. Intensity of modulation is controlled by "FM" knob. Play around with different "Pitch" and "Detune" settings as well as different waveforms. Start with "sin" wave in the beginning, then move to more complex ones. By modulating the "FM" or Osc1's pitch parameter with LFOs or Envelope 3 you can create highly complex and fantastic sounds and patches. Blend Osc1's modulation signal into the mix by turning "Osc Mix" back from 1.0 to lower values. The blend can be modulated by LFO2. All FM parameters can also by modulated within modulation matrix.

Ring Modulation

Blend with the "Ring" knob into the ring modulated signal of both oscillators. Use this classic electronic music effect for example to add additional higher partials and make sounds more crisp and brilliant. You can modulate the "Ring" parameter with LFO2, Envelope 3 or within modulation matrix.

Noise Generator

NLog Synth contains a generator for white noise. The "Noise" knob blends between oscillator mix 1&2 and noise. The blend can be modulated by LFO2, Envelope 3 or within modulation matrix.

Filters

The filter section is shown by pressing the 'Filt' menu button:

The two filter carefully implement classical analogue filters. There are 6 genuine filter types for each: A lowpass (LP) which damps higher frequencies, a high-pass (HP) which removes low frequencies, and a bandpass (BP) which selects only a specific range of frequencies. All LP, HP and BP filter types come in two modes where the steepness of the frequency reduction is different like LP2 has less steepness than LP4. For compatibility of pre-2.0 versions of NLog there is the "LPv1" compatibility mode for keeping older patches consistent. By selecting "OFF" as filter type you bypass the filter. The "Cutoff" parameter selects the respecting frequency range while "Resonance" adds additional frequencies by adding feedback, which is a classic analogue style effect.

The filter 1 has its own envelope 2 below in the screen. It modulates the cutoff frequency by the amount controlled with "-> Cutoff" parameter. The modulation can be positive or negative for rising or lowering the cutoff frequency. Cutoff can be further modulated by the note you play. With the "Keytrack" parameter the cutoff rises for higher notes, with the "Velocity" knob louder notes rise cutoff. Finally, LFO 1 and LFO 2 can modulate the cutoff as well.

Below filter 2 there are various controls for setting up the filter architecture. First, there are 3 filter modes to select from: parallel, serial and split.

In parallel mode both filter have input from all oscillators and run in parallel. The 'FiltPan' then blends between the outputs of both filters.

In serial mode filter 1 is taking the output of all oscillators and feeds input of filter 2. The filter panning then blends between direct output of filter 1 (in which filter 2 has no effect) and the output of filter 2 (in which the output of filter 1 is indirectly contained by feeding input of filter 2).

In split mode filter 1 takes the output of oscillators 1 & 2 only, while oscillators 3 & 4 are fed into filter 2. The filter pan is blending between filter outputs 1 & 2.

The filter pan can be modulated within the modulation matrix. Thus, highly complex sound structures can be achieved.

When activating the 'CfSync' switch, both filter cutoff frequencies are synchronized. The cutoff knob of filter 2 then changes into 'CfDelta' which controls a fixed difference between

cutoff frequencies. Thus, when you modify cutoff frequency of filter 1 while 'CfSync' activated, cutoff frequency of filter 2 is modified accordingly plus/minus the filter delta value.

The last two knobs below filter 2 let modulate its cutoff frequency by envelopes 2 & 3 directly.

All filter cutoffs and resonance parameters can also be modulated within modulation matrix, e.g. modulating the resonances results into interesting sound textures.

LFOs

NLog has 4 LFOs. The first two LFOs are shown when selecting menu button 'Lfo' while the other two are shown at the modulation matrix page:

LFO stands for low frequency oscillator which are used to modulate various parameters of NLog Synth. They can be controlled in frequency and waveform. The "Delay" parameter lets the LFO's modulation fade in smoothly controlled by the delay time set. LFOs 1, 3 & 4 have also a "Sync" switch. When selected, the LFO phases like in a vibrato are synchronized when you play multiple notes at once.

The LFO 2 has a "Keymod" switch. When activated, the amount of modulation is controlled by sliding on keys vertically when you play notes. This gives additional expression control. LFOs 1 & 2 have some preset modulation target options at the 'Lfo' menu section. In addition, all four LFOs can individually target many different sound parameters within the modulation matrix.

Envelopes

The envelope section of envelopes 1-3 is shown by pressing the 'Env' menu button, while envelope 4 is edited at the modulation matrix page:

All NLog Synth' envelopes are based on the classic analogue ADSR model: 'A' means 'Attack' and controls the time to rise to full level when a key is pressed. 'D' means 'Decay' and controls the time for falling again after peak has been reached. 'S' means 'Sustain' and controls the level Decay is falling to. 'R' means 'Release' and controls the time the note sounds after a key has been released.

The specific "Velo->A" parameter lets modulate the "Attack" time by velocity of keys pressed.

Envelope 1 is pre-routed to the amplifier while envelope 2 is pre-routed to cutoff filter 1. For envelope 3 the 'env' shows some pre-defined modulation targets above.

All four envelopes can be individually set to different targets within the modulation matrix.

Experiment with modulation of oscillator pitch for implementing drum or sci-fi sounds. The "Noise", "FM" and "Ring" targets let the envelope modulate various aspects and character of a sound patch.

Amplifier & Glide

The amplifier controls are shown within the performance section and control simply volume and panning:

Use the "Glide" parameter to control speed of the portamento effect when you play notes legato.

Modulation Matrix

Press 'Mod' in the main menu and the modulation matrix page will be shown:

As already mentioned, the modulation matrix page shows you also the controls for LFO 3 & 4 as well as Envelope 4.

But the main function is the modulation matrix itself on the right side. Here you have 4 modulation slots which can be selected with the button at the top right. Each slot is defined by a modulation source which you can pick from a list when pressing the source button:

All four LFOs as well as Envelopes can function as modulation sources. In addition, keyboard parameters like 'Key Track' (note pitch), 'Velocity' and 'Expression' can be used. The latter relates to the vertical movement while holding a key at the onscreen keyboard.

Within each slot, you can route the modulation source to up to 3 destinations which you can pick from a list of destination parameters by pressing the respective button:

Apart from sound editing parameters you already know from their respective editing page, there are some specific ones for the modulation matrix: The amount LFOs and Envelopes control various sound parameters can be modulated individually, e.g. the modulation target "Lfo1 Amnt" controls the amount of how much Lfo1 modulates to what it is assigned to.

For example: Lfo1 modulates the pitch of Oscillator 1 & 2 in a vibrato like manner. Now you can use the modulation matrix to let envelope 3 modulate the amount of this vibrato. Thus, the vibrato is evolving in its pitch amplitude over time according to the settings of envelope 3. To put this even further, you can then use at the "Env" page the 'Velo->A' parameter of Envelope 3 in a way that the attack time of introducing the vibrato is controlled by note velocity.

For each destination the amount of modulation can be controller by the horizontal sliders to the right. It can be positive or negative.

With the modulation matrix you have sheer endless options to modulate your sounds and put all your creativity into sound design.

Effects Section

The "Eff" button at the main menu lets access you an effects section with a stereo delay, reverb, a four band parametric EQ, phaser, flanger, chorus and distortion:

The delay section is shown to the left while all other effects are selected by the respective sub-menus to the right. The latter have also a 'bypass' button which let you switch them off individually.

Delay

The delay section contains a stereo delay with cross-feedback and damping. "Delay L" and "Delay R" control the delay time of the respective stereo channel.

A switch toggles between time driven and synchronized mode. In the latter the delay times left & right are relative to the tempo setting of the arpeggiator. The „DelayL" & „DelayR" parameter can be set to different relationships to the tempo. The „Decouple" parameter add in synchronized mode some extra time to the delay in order not to be too mechanical. It does so by adding slightly different values to the right and left channel. Thus, some extra stereo effect is heard.

"Feed" controls the amount of feedback within each channel, while "X-Feed" controls the feedback send from one channel to the other.

"HiCut" adds damping to the feedback by implementing a simple lowpass filter within the feedback loop. With "HiCut" the delayed signal gets smooth and prevents overdriven feedback.

Be careful with adding feedback, it can become very noisy!

The "Dry/Wet" knob in the right bottom blends between original and delayed signal.

Reverb

The reverb can be controlled by size of the room, damping factor ('dullness' of the room), stereo width and controls for amounts of dry & wet signal.

EQs

The two EQ pages gives you control to a four band parametric equalizer.

The first page shows high- and low-shelf parameters for controlling the very high and low end of the frequency spectrum. You can control the frequency cutoff point as well as a positive or negative gain factor for amplifying rsp. attenuating frequency components.

The second page shows two peak elements. Each of them can be controlled in terms of center frequency, Q-factor (the spread of the peak) and gain factor for amplifying rsp. attenuating frequency components.

Phaser

The phaser implements a typical 'phasing' effect by applying a set of allpass filter to the sound.

On the left side, the phasing effect can be controlled in terms of speed and depth of phasing as well as the color ('timbre').

On the right side positive or negative feedback can be added to intensify the phasing. The 'Phase' parameter controls the phase difference between the two stereo channels. Thus, the stereo width can be influenced. The 'Dry/Wet' parameter controls the mix between the phased signal and the original signal.

Flanger

The flanger is mimicking the old effect of playing the same sound on two tape reels and slightly delaying and accelerating the speed of one the two tape reels.

On the left side, the flanging effect can be controlled in terms of speed and depth as well as the 'phase' which controls the phase difference between the two stereo channels. Thus, the stereo width can be influenced.

On the right side positive or negative feedback can be added to intensify the flanging. The 'Dry/Wet' parameter controls the mix between the flanged signal and the original signal.

Chorus

The chorus section is simply controlled by "Speed" and "Depth" parameters which control the speed and intensity of the time varying delay. You can use the chorus to make sounds more rich and fat.

Distortion

The amount of distortion is controlled by the "Drive" parameter. "Dry/Wet" blends between the distorted and and original signal. Please be careful with distortion, since sound can be harsh and loud!