

stw-audio

REFLEX PRO V2.2

User Guide



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Introduction

REFLEX PRO V2 is a powerful 4 channel multi effect delay unit. Predefined feedback routings and a clear structured signal flow make it easy to design unique organic and living feedback cascades. Audio parameters can be modulated from 6 modulation sources. REFLEX PRO V2 covers a wide variety of effects including spacey endless reverberation up to hard distorted or phasing modulations. Four distinctive LFOs can generate smooth transitions or trance-gate like effects.

REFLEX PRO V2 provides easy access to complete stereo signal paths which allows fast and creative sound design combined with ease of handling.

General

Beside individual feedback setting REFLEX PRO provides five „hard-wired“ feedback routings. The 4 inputs are routed into two stereo paths (A&B) which represent the general signal flow through the unit. These stereo paths are controlled with one knob on most sections of the PlugIn. However at some parts channels are controlled individually like „Delay Time“ and the Frequency shifter frequencies.

Enabled sections of REFLEX PRO V2 are coloured. Disabled parts (if possible) are displayed grey.

IMPORTANT:

If feedback goes out of control use the „Panic“ button to reset all audio streams!

Knobs:

Common knob actions:

Left click: The actual value is shown in a floating display.

Left click-drag: Sets the knob value while moving.

Left click-drag+“shift“: Sets the knob value while moving with fine scaling.

Right click: Sets the default value of the knob.

Right click+“control“: Brings up a [Midi controller](#) selector drop box.

Modulation:

Most parameters of REFLEX PRO V2 can be modulated from the built in modulation sources LFO or RMS.

The modulation settings can be set on the modulation panes besides the knobs. The left selector determines the modulation source and the fader controls the amount of the selected source. Available inputs are [LFO1-4](#) and [RMS 1&2](#). These can be normal (+) or phase inverted (-) modulators. Phase inverted means all positive values become negative and vice versa.

Normal sources are displayed with white letters on black background, inverted sources are displayed with black letters on a white background where „L“ stands for LFO and „R“ for an RMS source. The modulation pane follows the colouring rules as described in „General“.

Midi controller:

If applicable a midi controller selector window is shown with a „right-control-click“ on a knob. If „Midi learn“ is selected the next incoming midi controller will be set as controller for that parameter. The controller can be „unlearned“ at the same menu.

The direction of an applied controller can also be inverted.

A list of all assigned midi controllers is shown on the [vendor page](#) . A complete controller reset is available there too. *The Midi controller set-up is preset independent..*

Sections

1. Input Controls the Input level and sources.



Level range goes from -180dB to +3dB.
Selectable Inputs are (L)eft, (R)ight, (M)ono, and (L)eft, (R)ight, (M)ono phase inverted. The inputs are routed to the stereo paths A&B.

2. Filter

REFLEX PRO V2 has two filter sections (In/Out). Each Filter section provides 16 single filter algorithms and 8 parallel double filter modes!

The input filter is located right after the Input section and in front of the Delay section.

The output filter is located after the Delay section in front of the combined stereo out.



Head row:

Filter on/off (LED)

Filter Types:

Single Filter:

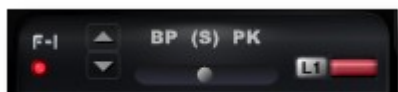
18dB State Variable Filter (SVF) (Lopass,Hipass,Bandpass,Peak,Notch)

24 dB Chebychev (CHB) (Lopass,Hipass,Peak)

18dB Butterworth (BUT) (Lopass,Hipass,Notch)

12 dB Ladder (LAD) (Lopass,Hipass)

Phase Bandpass (PHS) (1pole,2pole,3pole)



Double Filter:

18dB State Variable Filter (S) (Lopass-Hipass,Lopass-Bandpass, Bandpass-Hipass,Bandpass-Peak)

18dB Butterworth (B) (Lopass-Hipass,Lopass-Notch,Notch-Hipass)

12dB Ladder (L) (Lopass-Hipass)

Double Filter modes provide some additional settings:

Right click into the filter type area exchanges the selected filter types.

Filter crossfade slider: Fades between both filter types, This can be modulated by the modulation source parameters on the right side of the slider. A right click into the slider area „hard-wires“ the filters to the left and right side.

FREQ: Cutoff frequency of the filter. Frequency can be modulated from two sources..
RES: Resonance amount.
SPREAD: Cutoff offset between the left and the right signal path.
 Turned in any direction out of the centre lowers the cutoff frequency on one side and raises it on the other side. That parameter can also be modulated from two modulation sources

Routing (general):

A: Section (e.g. Filter) is set in the A stereo path.
B: Section is set in the B stereo path.
AB: Section acts on both input paths.

Routing Filter: Based on the general routing both filter sections can be placed pre/post the saturation section or at the feedback path. The output filter additionally provides a serial or parallel routing to the input filter when routed to the feedback line.

3. Wave shaper

Adds wave shaping to the signal which ranges from smooth saturation up to heavy distortion.



REFLEX PRO V2 has two shaper sections (In/Out). Each shaper section provides 7 shaping types.

Left column:

Shaping on/off (LED)

Routing: A,B, or A&B (See Filter routing)

Shaping Types:

- WarmSaturation:** Saturation with enhanced low end..
- Distortion:** Feedback Distortion
- SoftSat:** Soft Saturation
- Diode:** Diode type overdrive
- Tube:** Tube emulation
- Destroy:** A combined Samplerate reducer and Bit crusher

4. Band splitter ***Separates the signal into a low and a high band. Turned in any direction out of the centre passes the signal below the set frequency on one side (L/R) and above that frequency to the other side.***

Left column:

Band split Position:

IN: The Splitter is located right after the Input section

FB: The Splitter is located in the feedback line

Out: The Splitter is located at the Output section, after the delays and before the out Filter/Saturation section



Routing:

A,B: Split frequency moves in the panorama of the set path.

L/R: Splitter moves in the panorama of both paths.

A/B: Split frequency moves between the A and B path (left & right).

Split Frequency: 500Hz, 1kHz, 2kHz

Mid/right column:

Band split on/off (red LED)

Filter slope (Yellow LED):

18dB/Oct (LED off) - a plain slope with a smooth crossfade between the bands.

36dB/Oct (LED on) - a steeper slope with harder separating

SPLIT: Turned in any direction out of the centre moves the low band to one side and the high band to the other of the chosen path.

5. Delay

Time: *Delay time and sync options*



Left side:

Phase: Normal (LED off), or inverted (LED on)

Time: These knobs work in different modes depending on the chosen time base in the time display.

If the time base is „ms“ (milliseconds) the knob covers the range from 1 sample up to 1000 ms (based on 100% size).

If the time base is set to sync (displayed as note lengths) the knob covers the range from 1 to 8.

However the hard sync can be disabled when pushing the *shift* button while dragging the knob.

The time display now shows the note length factor in the mid pane *italic* if an offset is active. The knob display shows the fraction in % of the next lower factor.

The offset will be reset when the time knob is dragged without shift! (Note: This is different than in REFLEX Pro V1)

Right side:

A left click on the time display let you choose between fixed time (milliseconds/samples) and note synced values. If the delay time is in sync mode and changed to fixed mode it will take over the according time.

E.g. ¼ with tempo 120bpm = 500ms

Mode: Sets the feedback mode. From top to bottom it follows these routings:



- Cascading 4 network: Each delay output is sent to each delay input. Useful for reverb ambiances and rooms.
- A to B: A and B straight feedback. Additionally A goes into B. Use this e.g. if you want a chorus modulation on the A delays which should be repeated by the B delays.
- Straight: A simple „each path feeds itself“. Two independent stereo delay blocks.
- Straight X: Like the „Straight“ mode but with shuffling left and right sides. Use this e.g. for left/right Cross Delays.
- Cross A/B: The A path is fed into B and vice versa. Left goes to left and right goes to right.
- Circle: All delays are feed into the next neighbour. Left A → Right A → Left B → Right B → Left A...
- Individual: Left click sets the feedback mode to the individual values which can be set on the edit page. You can open the edit page with a right click on the same button.



Individual Feedback Edit:

Each channel (A/B - left/right - AL/AR,BL/BR) provides four sliders for individual feedback levels into each of these four channels. Settings right of the centre line are positive levels, settings on the left side are negative (phase inverted) levels. All individual A/B levels are multiplied with the Decay A/B (see below) levels ***Be careful with the individual feedback levels! Wrong settings can lead to very loud and heavy distorted feedback signals!*** Right click on a slider sets it to 0 (centre).

(x): closes the edit page.

Black „i“ buttons initialize either the channel (left side) or all sliders (right side). Blue „r“ buttons randomize the sliders in a limited range. Buttons 1-5 provide memory slots for storing your preferred individual settings. Pushing one loads a setting. Hitting the red „w“ button and one of the slots afterwards stores the actual setting to the chosen location.

Level:

- Vol A/B:** Input level to the delay lines.
- Decay A/B:** Decay (level) from the delay output into the feedback logic.
- Link:** Links Decay B to Decay A with A as master.
- Size:** Multiplies the time setting from the „time“ panel. Depending on the time mode the range goes from 33% - 300% respective x0.5 - x2. ***Modulation amount fader work exponential here!***



Modulation: *Adds the REFLEX typical modulation to the delay times. This is a special kind of LFO which provides individual dependent sinus like waves to all 4 delay channels.*

On/Off: (LED) Enables/disables the modulation.
Rate: Speed of the modulating OSC.
Depth: Modulation amount.
Route: General A,B routing.



Damping:

Lo cut: Cuts low frequencies at the delay output.
Hi cut: Cuts Hi frequencies at the delay output.

Feedback: *This is an additional feedback loop located after the damped delay output. The result of this section is very dependent on the used delay feedback mode and delay times. Use this with caution because it can sum up to heavy overdrive!!*



On/Off: Enables/disables the feedback loop.
Mode: Four different feedback modes are available:
I: direct feedback
II: delayed signal feedback (more low end)
III: direct feedback with shuffled delay paths.
IV: feedback cascade.

6. Limiter: *The limiter is located at the end of the signal path. It provides a soft knee limiting and affects the sum of dry and wet signal.*

On/Off: Enables/Disables the limiter.
Limit: Sets the limiting and make-up volume amount.



7. Output:



OUT A/B: The output volume of the stereo path.
LEFT A/B: Places the left side of the path in the panorama.
RIGHT A/B: Places the right side of the path in the panorama.

8. Ambience:



Feeds reverberation into the selected path.

On/Off: (LED) Enables/disables the section.
Mix: Reverb level.
Size: Room size.
Decay: Decay time of the reverb.
Spr(ea)d: Size offset between left and right channel.
Mod: Modulation amount.
Damp: Amount of Hi frequency damping.

In: „Hook-point“ of the signal send.

IN : After the Input section
FILTER IN : After the In Filter
PRE DELAY : At the Delay Input
POST DELAY : At the Delay Output
FILTER OUT : After the Out Filter
OUT : Before the Output

Out: „Hook-point“ point of the Ambience return.

IN A : Same as the Ambience Input only Path A
IN B : Same as the Ambience Input only Path B
IN A/B : Same as the Ambience Input Path A & B
MAST : Before the Master Input
OUT : Before the Output

9. Master:

Width:

Width: Stereo amount of the summed output
Rotate: Rotates the left and right side of the summed output.



Mix:



Dry: Amount of the dry input signal.
Wet: Amount of the wet input signal.
Send: (red LED) toggles the dry throughput on and off. This is a global parameter and not active on individual presets. Use this button to quickly adapt the Plugins use as a insert or send effect. LED on means the Dry Signal is muted (usual setting for REFLEX Pro V2 being used as a send effect).

10. Frequency shifter:



Shifts the incoming signal frequencies at the set amount up or down.

Amount: Up or down shift in Hz. Depending on the master and factor settings the knob range is -10Hz<>10Hz, -100Hz<>100Hz, or -1000Hz<>1000Hz

- Route:** Insert point of the frequency shifter.
In: Shifter is inserted after the input section.
FB: Shifter is inserted in the feedback loop. This creates a cumulative shifting and can create infinite up or down rising effects.
Out: Shifter is inserted after the delay section.
Master: Scaling of the multiply factor.
Factor: Multiplier of the shift amount (x1,x10,x100)

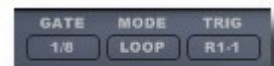


11. LFO:

Reflex Pro V2 provides four LFO modulation sources.



- Selector:** (1-4) Displays the selected LFO.
Mute: Enables/disables the appropriate LFO. The mute button also contains a trigger flash. As soon as a LFO trigger is received it flashes red.



- LFO Gate:** A gate envelope can be applied on the LFO output. This runs independently from the LFO rate but the start is synced to the LFO triggers.

Left click into the gate box opens the timing menu, right click opens the gate settings page.



- Gate :** Duration of one gate pulse.
Attack : Time to raise to full level.
Hold : Time to hold full level until the decay starts.
Decay : Time to fall to zero.
Shape : Shape of Attack and Decay curve. Fades between linear and exponential shape.
Shuffle: Introduces a 'shuffle groove' into the gate steps by pulling every second step slightly forward in time.

The shape of the above settings is shown in the lower right displays.

- LFO Mode:** Running mode of the LFO
Loop: LFO runs continuously
1 shot: LFO runs once from start to end if a trigger is received.
Gate: LFO runs once from start to end but restarts immediately after a new trigger is received.
Sync: LFO runs in sync to the Song Position

Trigger: Choose between different sources for (re)triggering the LFO start. Available sources are RMS1/2 (level hits 1 or 0) for internal triggering, and Bar,2Bars,Quarter note for VST host synced triggering.

Wave: The LFO wave can be directly selected from a drop down menu when left clicking in the wave display. The left/right arrows step through the next waves.

Inverse: The buttons on the right of the wave invert the wave in the shown direction.

Phase: (Top horizontal bar) Adds a phase offset to the wave. This is divided into eight steps. Moving the slider with the shift key held disables stepping.

Pol(arity): Positive (0<>1),Negative (-1<>0) or Bipolar wave values (-1<>1)

Depth: Output level of the LFO.



The white ball indicates the actual level of the LFO output as a sum of „Depth“, gate envelope and modulation.



Glide: A lo pass filter at the LFO output. Useful for smoothing „sharp“ edges from step waves.

Rate: LFO speed in Hz (0-20) in unsynced mode or note multiples in synced mode. Right click in the rate display pops a drop down menu for time mode selection.

LFO Modulation: *At this pane you can enable modulation for the LFO rates or depths.*

This works similar to the modulation of audio parameters. Select the modulation source on the left and move the slider for the amount.

This can be used e.g. for controlling the overall modulation on different targets of an LFO by the level of the incoming or side chained signal.



Open/close the LFO modulation pane.



The red ring indicates active settings

12. RMS:

REFLEX PRO V2 provides two „Root Mean Square“ detectors. These calculate the power of the chosen input signal which triggers an Envelope follower.



Selector: Displays the selected RMS source.

G(ain): You can attenuate or amplify the incoming signal from -19dB to +19dB.

A(ttack): Sets the attack time of the envelope follower. The higher the value the slower the envelope raises.

D(ecay): Sets the decay time of the envelope follower. The higher the value the slower the envelope falls.

Input: Available Inputs are:

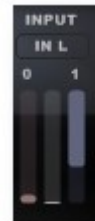
IN L,R,M: The same as at the Input section.

SC: REFLEX PRO V2 provides an additional side chain input for feeding the RMS with another signal than the processed inputs.

(Consult your host manual for establishing a signal routing to the side chain)

A,B: The summed outputs of the individual delay paths.

OUT: The mono overall delay output from the wet mix.



linear/dB: Click into the (grey) level meter to toggle the output between linear and logarithmic mode. The dB scale gives you an exponential raise and fall of the envelope follower while the linear scale has linear fading times. To achieve equal peak values the linear version usually needs a more amplified input signal.

Clip: The clippers are placed on the left and the right side of the level indicator. Use these e.g. for triggering LFOs.

(Clip) 0: Sets the RMS output to 0 if the input level falls beyond the clip value.

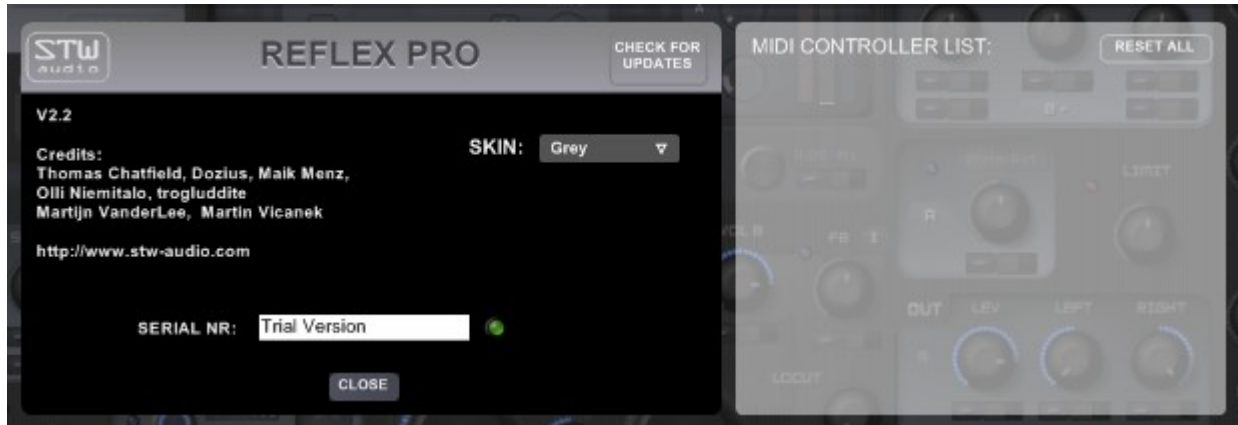
(Clip) 1: Sets the RMS output to 1 if the input level raises above the clip value.

13. Panic



Whenever you run into unwanted modulation or feedback loops push the Panic button to reset the current audio streams. It can also be used as a shortcut for killing unfinished feedback signals.

14. Registration/Controller list



The „stw-audio“ label brings you to the credits and registration screen. Here you have to put in the serial number which came with your purchase at stw-audio. REFLEX PRO will stay in „Trial Mode“ until a valid serial number is entered.

The split screen also shows a summary of all assigned midi controller. The reset button in the upper right corner will reset all midi controller assignments at once.

The „check for updates“ button brings you to the „stw-audio“ homepage which will tell you if There're updates available for REFLEX PRO V2.

Skin: You can select different GUI “skins” at the registration screen. Just click into the drop down menu and choose your favourite REFLEX PRO appearance. The selected skin stays persistent until changed.

15. Presets



Presets can be accessed directly from the drop down menu which opens when clicking in the preset name. You can also step through all presets using the arrow buttons above the preset name.

Presets are stored as individual files in categorized sub folders at the Data folder inside your install location. These folders can be renamed extended or merged to your personal preferences.

The following buttons are only visible if a license key was entered!

- Save:** Saves the actual settings. If acknowledged the actual preset will be overwritten!
- Save As:** Opens a drop down menu for target folder selection. Afterwards the new name can be set. The actual settings will be saved under the entered name at the selected folder.
- Options:** „Open Data folder“ opens the preset folder inside the windows explorer.
„Rescan“ scans the Preset folder and rebuilds the internal database.
Use that if you changed the Preset folder direct from your OS (e.g. after creating new folders or moving presets to other locations)

VST Preset management is disabled in REFLEX PRO V2!

Have fun!!