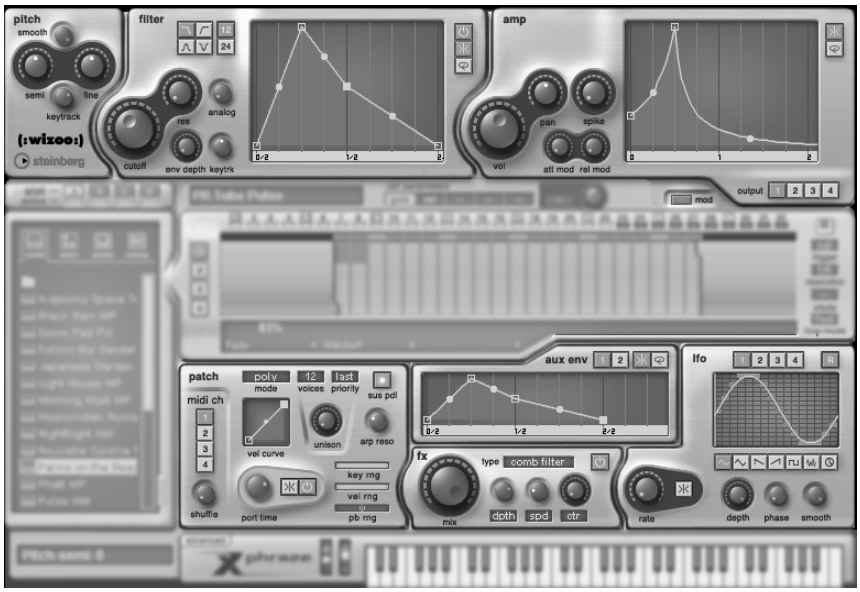
The Patch Modules



A look at Xphrazes user interface with everything but the patch modules „washed out“.

We have mentioned before that while the Phraze Generator „creates“ the sound, the patch modules in Xphraze are in charge of the sound „shaping“. We’ve dealt with loading, playing and saving patches in chapter ›Patches and Combis‹ on page 14. The following paragraphs explain the modules, their parameters and how they work.

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p In the following chapters, modulatable parameters (knobs with a corona) are marked with an asterix in the headline. These parameters can be assigned as modulation destinations in the Mod Section (more on this in chapter ›Mod Section‹ on page 13)

Pitch Section

This section controls the overall pitch of the Phraze Generator.

Semi*

Sets the basic pitch of the Phraze Generator in semitone increments within a range of -24 and + 24. This knob is modulatable, so this knob is what you want to use as a destination for pitch modulations.

Pitch Smoother

Usually modulating the semi parameter with an LFO or envelope would result in the pitch to change in semitone steps. By turning up the smooth knob you can, well, smooth the transitions.

When fully turned up, modulating the semitone parameter results in smooth pitch modulation with no semitone quantization.

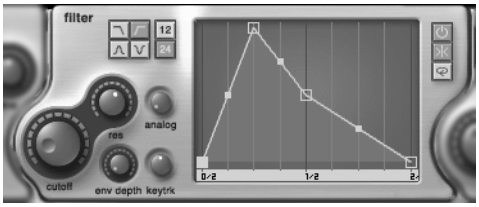
Fine*

Fine tunes the pitch in cent increments from -50 to 50. This knob is also modulatable, but the maximum modulation range is pretty limited, so you may prefer it for slight random modulation or changes of the detuning.

Keytrack

Determines how pitch is affected by the keyboard (i.e. MIDI note numbers). The default setting is 100 cent per key, resulting in normal transposition. The range of the knob is -200 cents to 200 cents.

Filter Section



ENGLISH

Xphraze features high-quality moog-style filters which offer both an amazing sound quality and also extra-ordinary sound shaping flexibility. The Filter Section also includes a loopable multistage envelope.

On/Off

The filter can be switched on or off using the button in the top right corner of the Filter section.

You should make sure to switch off the Filter Section if you don't need it in the patch (rather than just setting it to neutral values). Filters need a significant amount of CPU performance (up to 50% more than unfiltered voices). Switching off unneeded filters in a patch frees up a reasonable amount of CPU for more voices or effects (or for more filters in other patch slots).

Filter Mode

The four filter modes (clockwise from top left):

Lowpass

The most common mode for musical sound shaping. It cuts off the frequencies above the cutoff frequency, leaving the lower range unaffected. Lowpass controls the harmonic content of a sound much like dynamic playing on an acoustic or electric instrument does.

Highpass

Opposite of Lowpass - cuts off the frequencies below the cutoff frequency, leaving the higher range unaffected. Highpass makes the sound sharp and thin and can be used to remove the fundamental respectively the lower harmonics of a patch so it can be used for adding brilliance to another one without affecting the pitch of the resulting sound.

Notch

As the name indicates, a notch around the cutoff frequency gets cut off the harmonic spectrum. The notch filter, especially when used at higher resonance settings, creates a filter effect without actually making the sound duller or brighter, so it's very useful for LFO sweeps.

Bandpass

Being the opposite of Notch respectively a combination of Lowpass and Highpass, the Bandpass only leaves the frequency range close to the cutoff frequency. Bandpass can be used to create or stress formants or narrow frequency bands.

Slope

These buttons switch the steepness of the filter curve:

- 12 (dB/Octave): This is the shallower setting which is useful for a more „natural" filter sound, particularly used in acoustic and electric musical instrument sounds or whenever a less pronounced filtering is desired.
- 24 (dB/Octave): This setting creates a saturated, fat filter sound known from vintage analog synthesizers.

Cutoff*

This knob controls the cutoff frequency of the filter. In Lowpass mode e.g., a lower Cutoff value results in the sound to become less brilliant, while in Highpass mode, a higher value cuts off the lower portions of the sound. The cutoff knob is the most effective control when it comes to shaping the signal from the phraze generator.

Resonance*

Resonance means that the filter resonates at the cutoff frequency, resulting in the frequency area around the Cutoff frequency to become sharper and more pronounced/present. But that's the theoretical point of view - in practice, turning up resonance creates that juicy sweeping filter sound and makes the filter cut the sound through more audibly.

Analog

This parameter adds a little noise to the filter resonance mimicing the behaviour of unstable electronic parts in an analog filter. Practically it makes the sound a bit more dirty, which becomes more audible with increased resonance.

Env Depth*

This control adjusts how deep the Filter Envelope modulates the Cutoff Frequency.

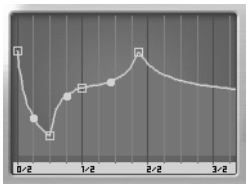
---

p Modulate Filter Env Depth with velocity for dynamic control of the sound color. Filter Env Depth is a multiplication (all others except for Amp Volume are additions) , therefore the mod range display works slightly different.

Keytrack

This knob determines how the Cutoff frequency is controlled by the MIDI note played (i.e. how it tracks the keyboard). At 100%, the Cutoff is transposed with the keyboard, while at -100% Cutoff is transposed opposed to the keyboard.

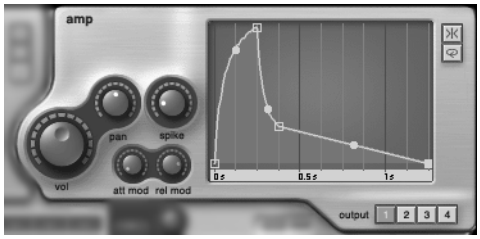
Filter Envelope



The filter envelope controls the curve of the cutoff frequency over time. Its output signal is hard-wired to the Env Depth control.

p A detailed explanation of how to program Xphrazes envelopes is provided in chapter ›Programming Xphraze Envelopes‹ on page 24.

Amp Section



The Amp section controls the volume of the patch, it’s panning, its volume curve over time and its output assignment.

Volume*

Determines the overall volume of the patch.

Pan*

Determines the stereo position of the patch.

p In patches with a high FX mix level, the pan position knob might be less effective than in dry patches.

Spike*

This knob adds a little spike to the attack volume of a note. Use it to make drums, basses or any percussive sounds more punchy.

p Modulate Spike with velocity to add spike dynamically depending on how hard you hit the key.

Attack mod* / Release mod*

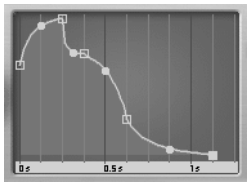
Some real-world-instruments vary their attack or release times according to dynamic articulation or playing style. By using these knobs, you can accordingly vary the attack and release time of the Amp Envelope.

When turning up the Att mod knob, it shortens the attack time of the envelope. You can now use a modulation source to modulate the attack time between the envelope setting and the knob setting.

The Rel mod knob works accordingly, but affects the Release Time.

p For more information about setting modulations refer to chapter ›Mod Section‹ on page 13.

Amp Envelope



The Amp Envelope controls the behaviour of the patches' volume over time, i.e. after a key is pressed resp. released. The Amp Envelope is hard-wired to volume, therefore you can not adjust any depth (like in the Filter section) here. Another difference between the Amp Envelope and all other envelopes lies in the fact that the last point of the Amp Envelope is fixed to zero level - for obvious reasons.

p For a detailed explanation of how to program Xphrazes envelopes refer to chapter ›Programming Xphraze Envelopes‹ on page 24.

You can use the Amp Envelope as a mod source.

Output

Xphraze offers four separate stereo outputs. They are reflected as channels named Xphraze 1 ... 4 in your hosts mixer.

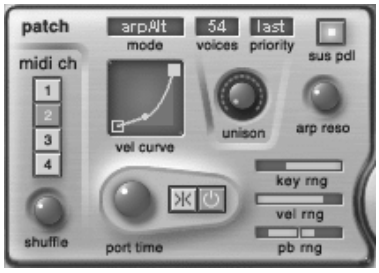
By clicking one of the output buttons you can assign the patch slot to any of these outputs.

p Each of the four Master FX on the Advanced Page (see ›Master FX Section‹ on page 6) is assigned to the corresponding output. By assigning patches to outputs you can also route them through different master FX.

Xphraze and Surround

It goes without saying that by using the 4 outputs - preferrably together with Vector Synthesis (see ›Vector Synthesis‹ on page 1) - you can create amazing, realtime controllable surround panning effects with Xphraze.

Patch Settings Module



This section contains a number of parameters that determine how a patch is played.

MIDI Channel

Clicking one of these buttons assigns the patch to a MIDI channel between 1 and 4. You can assign multiple patch slots to one MIDI channel in order to layer them.

p When MIDI data on a channel is received, its MIDI button subtly glows.

Voice mode menu

The Voice Mode menu determins how incoming MIDI notes are assigned to Voices. In addition to polyphonic, monophonic and legato modes you can activate the built-in mini-arpeggiator here.

Mode	Description
Poly	Patch is played polyphonically. Set the maximum polyphony with the voice number parameter.
Mono	Patch is monophonic (one note only). When played legato, notes get retriggered
Legato	Like Mono, but notes that are played legato don't get retriggered.
Arpeggiator modes	Refer to Arpeggiator section

Voices

Limiting the number of voices for a patch is one of the most effective means to save CPU performance. In polyphonic patches, you should use a voice setting between 8 and 16 unless you're sure you need more.

When the Voice limit is reached, Xphraze applies clever voice stealing algorithms which save voices almost inaudibly.

p Keep in mind that long release time settings can lead to the number of voices lieterally exploding during quick chord changes. The voices parameter is an effective means of preventing this.

Voice Priority

This parameter is only effective when the Voice Mode is set to either Mono or Legato.

It determines which note gets played when you press more than one key. The settings High, Low, First and Last are pretty self explaining.

p Voice priority comes in handy e.g. when you want to put a lead or bass line on top of a pad playing them from the same keyboard.

Unison*

The Unison function creates an extraordinarily fat sound: For each note played, 5 voices get stacked, detuned against each other and spread across the stereo image.

- In position 0 of the knob, Unison is switched off.
- Any position other than 0 switches Unison on. The Unison value determines the amount of detuning and panning spread between the Unison voices.

p Note that the Unison function multiplies the number of voices used by 5. You can limit the number of voices with the Voices parameter.

Arpeggiator

Xphraze features a simple but effective built-in arpeggiator which is totally independent from the Phraze Generator.

p The arpeggiator does not trigger envelopes or control any other parameters (e.g. keytracked ones) - it only controls the pitch of the notes played.

The Arpeggiator is only active when you select one of the Arp modes in the Voice Mode menu. The settings determine the order in which the notes you hold on the keyboard are arpeggiated:

Voice Mode Setting	Note order
ArpUp	Notes get arpeggiated from lowest to highest and back
ArpDown	Notes get arpeggiated from highest to lowest and back
ArpAlt	Notes get arpeggiated from lowest to highest and back and forth
ArpOrd	Notes get arpeggiated in the order they've been played
ArpRnd	Notes get arpeggiated in random order

p There is no octave range parameter available, but you can extend the range of the Arpeggiator by sending notes in more than one octave.

Arp Reso

With this knob you can adjust the note resolution of the Arpeggiator. If you set it to the resolution of the Phraze Generator, Phraze Generator and Arpeggiator play in sync, while each cell plays a different note.

Sustain Pedal Bypass

With this button you can deactivate the Sustain Pedal for individual patch slots. This comes in handy e.g. when you play a keyboard split and don't want the lead sound to be affected by the sustain pedal.

Velocity Curve

For each patch you can program an individual velocity curve. This opens up a range of possibilities from adjusting the velocity response of patches within a combi each other to velocity crossfades.

The default velocity curve is linear. By moving the outer handles you can adjust the output velocity range and direction, while the center handle adjusts the curve between left and right handles.

Shuffle

The shuffle knob creates a shuffling, swinging timing.

Technically spoken, turning up the shuffle knob shifts the start point of the even-numbered cells towards their successing cells - at a maximum value of 127, this amounts to 50% of the phraze generators' resolution.

Key Range

You can set the keyboard range of each patch to create splits. Just drag the left or right end of the slider to the desired edge note.

From top to bottom: Key Range, Velocity Range, Pitchbend Range sliders

Velocity Range

You can set the velocity range for each patch to create velocity switching. Just drag the left or right end of the slider to the desired velocity value.

Pitchbend Range

The pitchbend range can be adjusted individually for both directions of the pitchbend wheel.

Drag the little handle in the left half to adjust the Down range, drag the right one to adjust the Up range.

Set it to Lo -24 and High 2 for a guitar whammy bar effect.

Portamento

Xphraze features a syncable Portamento effect (pitch glide between two subsequent notes) available in Mono and Legato voice modes.

This is how you set up Portamento:

1. Activate Portamento by clicking the on/off button and make sure Voice Mode is set to Mono or Legato.
2. If you want the portamento time to match to your song tempo, also activate the sync button next to the porta time knob.
3. Use the port time knob to adjust the glide time.

Mod Section

Xphraze features an extraordinary powerful and flexible modulation section. You can use every modulation source to modulate any modulation destination. One modulation source can modulate any number of destinations at the same time, while you can adjust the modulation range for each destination separately. Vice versa, any modulation destination can be modulated by any number of modulation sources at the same time. Or in short terms: Unlimited modulation flexibility.

Funny enough, this powerful feature is usually invisible, so let's open it:

- Click the mod button above the phraze generator.

Programming Modulations

You can only set modulations while the mod panel is open. To set a modulation ...

1. Set the knob you want to modulate to its „unmodulated“ (default) position.
2. Open the mod panel.
3. Click a mod source button so it looks „pressed“.

The button for LFO1 shows that it’s assigned (small LED lighted). LFO2 is about to be assigned (pressed).

4. Turn the destination knob to set the maximum value (the value it shall adopt when the modulation source sends the maximum value).
The corona around the knob becomes yellow when the mod source is set up to turn the knob up, and blue if vice versa.

Three knobs, each with a different modulation range assigned

While the mod source button is pressed, you can adjust as many other destination knobs as you like.

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p Example: You can set the modwheel to turn down filter cutoff, turn up the volume while moving the pan to the right at the same time - each parameter with it’s own range.

p If possible, have the modulation source turned fully up when setting the modulation range. This way you can monitor the modulation while adjusting the range.

Shortcuts

Key ...	... plus mouse action ...	... does
ctrl	click on source	Deletes all modulations of this source
ctrl	click on destination knob	Initializes knob range for this destination
alt	turn destination knob	Turns knob including mod range

Modulation Sources

No less than 24 modulation sources are available from the Modulation source menu.

Source	Comment
lfo 1...4	Output of the selected LFO. Note that this signal works bipolar, i.e. the LFO signal doubles the modulation range (mirroring it at default position). Example: If Cutoff is set to 50 and you set the Cutoff knob mod range to 80 (+30 values), the LFO will move the cutoff frequency between 20 .. 50 ..80.
aux env 1/2	Output of Aux Envelope 1 or 2
filter env	Output of the Filter Envelope
amp env	Output of the Amp Envelope
aftertouch	Aftertouch controller events received from a MIDI keyboard or MIDI track
modwheel	Modwheel controller events (cc# 1) received from a MIDI keyboard or MIDI track
pitchbend	Pitchbend controller events received from a MIDI keyboard or MIDI track
keytrack	Value representing the MIDI note
velocity	Velocity data received from a MIDI keyboard or MIDI track
release velocity	Release velocity data received from a MIDI keyboard or MIDI track (not all keyboards send release velocity)
key toggle	Value toggling between 0 and 127 whenever a key is pressed.
key random	Random value calculated whenever a key is pressed.

cell timer	Value corresponding to the current playback position within a cell. Cell Start = 0, Cell End = 127 You can use the cell timer to create a ramp that repeats with each cell.
cell num	Value corresponding to the currently played cell number. 0 = Cell 1, 127 = Cell 32.
cell mod 1/2	Cell Values of a Cell Mod parameter. Works only if according Cell Mod 1/2 is selected in the cell parameter menu
cc#16 ... 19	MIDI controller events from an external control source. Only cc# 16 .... 19 are accepted.

Modulation Destinations

All mod destination knobs are highlighted and assigned.

The modulation destinations available in Xphraze are the 16 knobs with a LED corona on a dark-grey background.

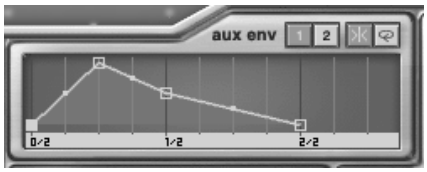
These are (from top left to bottom right):

- Pitch Section: Semi, Fine
- Filter Section: Cutoff, Res, Env Depth
- Amp Section: Vol, Pan, Spike, Att Mod, Rel Mod
- Phraze Generator: last cell parameter

- Patch: Unison
- FX Section: Mix, 3rd parameter (changes with effect type)
- LFO Section: Rate, Depth.

p Note that the volume modulation is a multiplication (all others except Filter Env Depth are additions). Therefore the display of the mod range works slightly different.

Aux Envelope Section



Xphraze offers two Aux envelopes which you can use in addition to the Filter and Amp envelope. Although they look a bit smaller on-screen, they're identical to the Filter and Amp Envelope.

The Aux envelopes are not hard-wired, you have to set them up in the Mod Section for them to take effect.

p For detailed information about the Xphraze envelopes refer to ›Programming Xphraze Envelopes‹ on page 24.

FX Section

Each patch in Xphraze has its own dedicated and modulatable effect section. This means that effects are not just a means of brushing up the sound but an integral part of the patch design just like LFO or envelopes.

You can choose from 24 algorithms from reverb, delay, chorus over wah, EQs to compressor and even Ring Modulation. All effects are simple to use, tweaked for effective sound shaping and very low on CPU load.

Mix

The Mix knob balances between dry and effect signal. At maximum position you only hear the effect signal, which means you can use any effect like an insert effect. The knob is modulatable in the Mod Section as well as available as a cell parameter so you can control the FX balance for each individual cell - a real cool feature.

This means that if you send a cell into the reverb effect (FX Mix value in cell = 127) while the subsequent 8 ones are dry, the reverb does not get cut off by the FX mix being turned down.

Selecting an effect

Select effects by clicking the type display and choosing an effect from the context menu that opens.

Editing and Controlling Effects

Each effect has 2-3 effect parameters. These depend on the selected effect type (see table below).

The third effect parameter - which depending on the effect type is the one that changes the effect most drastically - is modulatable and also available as a cell parameter, giving you outstanding control over the effects' character in realtime.

Effect Type Overview

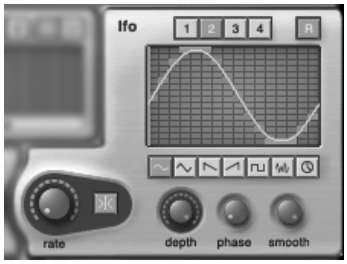
The following table explains all effect types and lists their parameters.

- M>S effects merge the input signal into a Mono signal while Stereo effects process both channels separately. Use M>S effect types when you use a lot of panning but don't want the effect signal to pan along with the direct signal.

Type	Description	Parameter 1	Parameter 2	Parameter 3
Reverb	Simple but effective reverb algorithm offering a range of room ambience effects	Damping	Predelay	Reverb Time
M>S Delay	Mono-Stereo Delay	Delay Time	-	Feedback
Stereo Delay	True Stereo Delay. You can set delay times separately for left and right channel.	Left Delay Time	Right Delay Time	Feedback
Cross Delay	Cross delay - effect signal is crossfed between the stereo channels.	Left Delay Time	Right Delay Time	Feedback
M->S Flanger	Mono-to-Stereo Flanger	Delay Time	Feedback	Speed
Stereo Flanger	True Stereo Flanger.	Delay Time	Feedback	Speed
M>S Chorus	Mono-to-Stereo Chorus	Delay Time	Mod Depth	Speed
Stereo Chorus	True Stereo Chorus	Delay Time	Mod Depth	Speed
Ensemble	Combination of three chorus effects with slightly different speed and depth settings. The Width parameter adjusts the speed difference between the three chorusses.	Width	Depth	Speed
Wah Wah	Resonant filter with the cutoff frequency following the gain of the input signal (envelope follower), creating a „Wah“ like effect.	Env Depth	Env Speed	Center Freq
Auto Wah	Resonant filter with the cutoff frequency modulated by a built-in LFO	Center Freq	LFO depth	LFO Speed
Comb Filter	Flanger with very low delay time and very high feedback setting creating a comb filter (jet) effect.	LFO Depth	LFO Speed	Center Freq
Talkbox	Talkbox effect mimicking the effect of the signal being fed into a human mouth that changes the vowels.	LFO Speed	-	Formant

3 Band EQ	Lo, mid and high frequencies can be boosted or attenuated. The center position of the knobs leaves the gain unaffected.	Low Gain	Mid Gain	High Gain
Peak EQ	Parametric EQ for boosting or attenuating a specific frequency band (formant) of the signal. The center position of the Attenuation knob leaves the gain unaffected.	Attentuation		Center Frequ
M>S Phaser	Mono-Stereo Phase Shifter	Depth	-	Speed
Stereo Phaser	True Stereo Phase Shifter	Depth	-	Speed
Rotary	Simulation of a rotary speaker cabinet. You can set the slow and the fast speeds and switch between them by using the modulatable parameter.	Slow Speed	Fast Speed	Switch
Overdrive	Valve overdrive, producing a warm, harmonic distortion.	Drive	Gain	Cutoff Frequ
Distortion	Transistor distortion, producing a sharper, more brilliant distortion.	Distortion	Gain	Cutoff Freq
Degrader	Signal processor degrading the quality of the signal in terms of adjustable bit resolution and sample rate plus distortion.	Bit Reso	Sample Rate	Distortion
LoFi	LoFi effect limiting the higher frequency range of the signal (like old analog tape machines). Great for creating old school drumloops.	-	-	Sample Freq
Compressor	Simple but effective compressor	Threshold	Release Time	Ratio
Ring Mod	Ringmodulator modulating the input with an adjustable oscillator signal. „Freq“ sets the basic frequency of the modulator signal, „Harmonic“ multiplies this frequency by integer numbers.	Harmonic	-	Freq

LFO Section



Xphraze features no less than 4 independent, identical LFOs. They are not hardwired - LFO modulations have to be set in the Mod Section for the LFOs to take effect.

Selecting an LFO

Click on one of the selector buttons to select an LFO for editing.

Rate*

This knob sets the modulation rate of the LFO. The rate itself is modulatable, which means you can for example use an envelope, a controller or even another LFO to modulate the speed of the LFO.

By clicking the Sync button right next to the Rate knob you can sync the LFO to the hosts tempo. In Sync Mode, the parameter display shows LFO rates in note values.

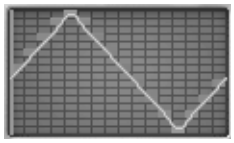
Waveform Selectors

The LFO Waveforms from left to right:

Sine	Smooth modulation with slightly stressed edges

Triangle	Smooth, balanced modulation
Saw Down	Descending Modulation
Saw Up	Ascending Modulation
Square	Triller Modulation
Random	Random Values
Clocked Random	Seemingly random, but the value for each song position is always the same, allowing you to reproduce a random curve e.g. in multiple audio exports of the same passage

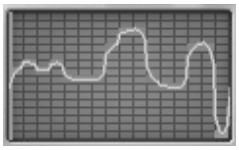
Waveform Display



The Waveform Display is a 16x16 grid display. The LFO Waveform actually consists of 16 values. Smoother LFO curves like Triangle or Sine are achieved by smoothing the transition between the steps (see below).

p The Waveform Display does not display Random waveforms.

Drawing the LFO Curve



You can freely draw the LFO curve with the mouse to adapt the modulation or to create totally new LFO curves - you might even use the LFO as an additional 16-step sequencer.

Drawing an LFO curve is easy:

1. Select the waveform you'd like to use as a template
2. Draw by click-dragging within the Waveform display.

Depth*

The depth control is pretty self-explaining. Usually you would set the depth/range of an LFO modulation in the Mod Section by adjusting the mod range of the destination knob. The depth knob allows you to control/ modulate the overall depth of the LFO modulation, e.g. for introducing a vibrato with the Modwheel or Aftertouch.

Phase

This parameter sets the start phase - e.g. the point within the waveform cycle where the LFO modulation starts when the LFO is triggered. This way you can create phase-shifting of pan- or pitch modulation between synced LFOs.

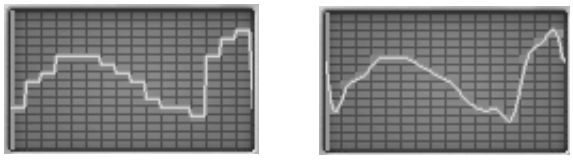
Retrigger

The R button right next to the LFO selectors determines whether an LFO runs free or gets retriggered on key on for each note. To activate the retriggering function

1. Select an LFO
2. Click the R button (dark grey = activated).

Smooth

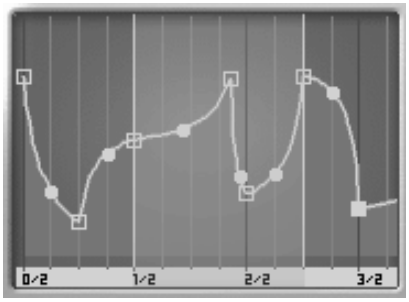
Technically the LFOs Waveforms are quantized to 16 steps. This allows you to create step-sequences - a feature that conventional LFOs don't offer.



Stepped and smoothed (right) LFO waveform

For modulations like vibrato, tremolo or auto-pan however, you will want the LFO waveform to be a smooth curve. This can be achieved by turning up the Smooth knob.

Programming Xphraze Envelopes



The Envelope Modules are an extraordinarily powerful and unique feature of Xphraze:

- Envelope times can be set in time or note units (synced). When synced, envelopes will automatically adjust to tempo changes
- Each envelope can have up to 128 points
- Each stage has an individually adjustable curve
- An adjustable portion of the envelope can be looped (forward, alternate)

Setting Tempo or Time Base

By default, envelopes are set to sync mode, recognizable by the sync button being activated and the envelope times in the ruler being displayed in note values. This is Xphrazes normal operation.

In some situations however, it may be preferrable to display and adjust envelope times in time units. By deactivating the Sync button, you can set any Xphraze envelope to time mode. The ruler will change to „second“ units, and envelope times will no longer adapt to the song tempo.

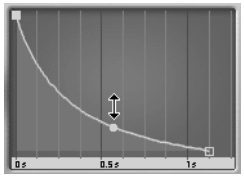
Editing envelope points

Here's how to change and create envelope points:

- Move an existing point (squared dot) in time by dragging it horizontally. Subsequent envelope points move along as you drag a point horizontally.
  Hold Alt while dragging to prevent subsequent envelope points from moving.
- Change the value of an envelope point by dragging it vertically. Hold Shift additionally to fine-tune values (slower mouse movement). Ctrl-click an envelope point to set its value to 50%.

p The horizontal positions of envelope points will automatically snap to the grid displayed. For fine-tuning envelope points zoom in the envelope (see ›Zooming in and out‹ on page 26).

- Adjust the curve between two points by dragging the little round dot between them vertically, like shown below.
  By Ctrl-clicking the dot you can reset it to linear position.



p For a better attack curve, move the dot a bit upwards. For release move it downwards.

- Create a new point by double-clicking on a line between two existing points
- Delete a point by double clicking it. The first and the last point of the envelope cannot be deleted.

Sustain Level and Release Stage

The second-last point of an envelope automatically becomes the Sustain Level, i.e. the envelope runs through to this point and stays there as long as a note is held. After releasing the note, the envelope continues to the last point (release stage).

Adjusting the envelope view

The more complex an envelope, the more you will have to move and zoom the envelope display. Therefore we have numerous convenient functions to adjust the envelope view quickly and easily:

Zooming in and out

To zoom the envelope view,

- Right-click or Shift-click into the empty area and move the mouse vertically. Moving it down zooms out, moving it up zooms in.
- Even more convenient: Use the mousewheel (scroll function) if available.

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p As mentioned before, the zoom level determines the horizontal grid resolution for dragging envelope points. The minimum increment is 1/128 note (sync mode) respectively 7.8 ms (time mode)

- Double-clicking the ruler auto-zooms the entire envelope to fit into the window.

Moving the envelope around

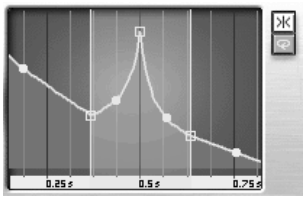
You can move the visible portion of the envelope by clicking somewhere in the empty area and moving the mouse horizontally.

Looping envelopes

You can loop a portion of an envelope by defining a loop start and end point.

To activate and edit the loop:

1. Click the loop button once. The currently looped area becomes turquoise, as does the loop symbol on the button.
   You may have to zoom in or move the envelope to see the looped area
2. Click on the left and right margins of the loop area and drag them as desired to set the loop area - the margins automatically snap to envelope points:



3. The loop button toggles between off, forward loop (turqoise) and alternate loop (orange button symbol and olive loop area). Set as desired.

Copying envelopes

You can copy an envelope to any other envelope module - e.g. from amp to filter envelope, even between patches and combis.

To copy an envelope to another one:

1. Right-click into the ruler area of the source envelope and choose „Copy Envelope“ from the context menu.
2. Right-click into the ruler area of the destination envelope and choose „Paste“ from the context menu.

p When copying from Filter or Aux Envelopes to the Amp Envelope, the last envelope point is automatically set to zero.

Halving/Doubling Envelope Tempo

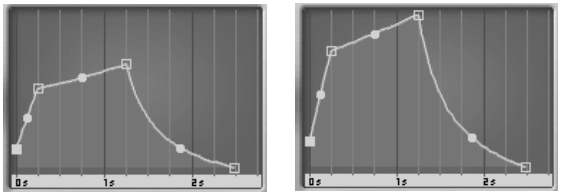
You can squeeze or stretch the overall envelope length, resulting in halved respectively doubled tempo (resp. envelope times when time-based).

- Right-click into the ruler area and choose „Halve tempo (50%)“ or „Double Tempo (200%).

Normalizing Envelopes

You can normalize the overall level of the envelope in one go:

- Right-click into the ruler area and choose „Normalize peak“.



Envelope before (left) and after normalization.

p Technically speaking, Xphraze moves up all envelope points equally until the highest point (peak) reaches full level. Normalizing preserves the relative level differences between the envelope points and the overall shape of the envelope.

This function comes in handy if you have programmed an envelope that doesn’t make full use of the possible level range. Using this function saves you tediously adjusting all envelope points one by one.