Vintage Keyboard FX Suite

User Manual
rev. 1.0

OVER LOUD™
AUDIO TOOLS

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THE CONCEPT

VKFX is a eight module multi effect plugin. Each effect module has been painstakingly crafted using the inspiration of devices which history has proven to be leaders in their class. The engineering behind this expensive looking rack interface is without peer, combining a wealth of experience in DSP coding for audio, virtual instrument environments and electonic musical instruments development.

Why combine all these effects in a 'single screen multi module virtual rack'?

The multi module approach has several advantages over other methods:

1. Loading just a single plugin gives you immediate access to one or all of the VKFX effects processors. This ergonomic approach means you'll be spending more time working on your sounds and music, and less on the configuration of your virtual studio effects chains.
2. Because each effect is generated by a unique module, any unused effect can be powered down to minimize cpu load, but still be available at the touch of a switch, should you decide to add a little more juice to your sound.
3. Recalling a complex sound effects setup which was the result of a combination of up to eight different interactive effects involves loading just one preset. That's all – one.
4. Most importantly, not only are all the different processors available in a single plugin insert, but each device and all of its settings remain visible on screen at the same time. While you're working on your chorus settings you can adjust the preamp EQ. Once you tweak the preamp EQ, a sideways glance is all it takes to confirm that you need to move over to the overdrive tone – all without leaving the current screen! This approach has tremendous implications for those of us who like to experiment. A single screen interface makes for a lot quicker movement back and forth in the FX chain. It's simply a more player-oriented approach – one which puts the fun and creativity back into tweaking your sounds. (remember when tweaking FX was fun?)

   This single screen setup has allowed us to include a very funky tool which lets you design two complete sets of effects and morph from one to the other in real time, or under automation. Trying to do this kind of thing with a set of discrete inserts would probably lead to grey matter meltdown. With the VKFX single screen rack it's so easy it's kind of addictive!
5. The single screen set up makes rearranging the order of your FX chain child's play. Imagine that you decide that you'd like the overdrive before the chorus instead of after: just drag it into place and you're done! Try that with 8 inserts ;)

But wait! There's more!….

We've supplemented the multi module rack with a master section that has some cool extras, including:

VUs and LED meters that can be switched to monitor either input or output levels, helping keep an eye on elements like the compressor's makeup gain.

Linkable Master Level controls, allow you to set a stereo balance and then adjust overall rack output by altering a single control.

Undo and redo options allow you to move backwards and forwards through your edit history with ease.

Sophisticated file management options allow you to save or load individual module presets, groups of modules, or a whole rack setup.

Both context sensitive help and an online manual are available directly from the VKFX front panel.

The VKFX can sync to the host application's clock, it's own internal master clock, or each module can run independently. Stomp boxes of the 70s and 80s simply weren't designed to run with synced LFOs. The VKFX's independent clock mode gives you the option to recapture a little of that same sonic anarchy.

INSTALLATION

To install the Overloud Vintage Effects VST plugin, locate the file called VKFX setup.exe. Double clicking on the file name will initiate the automated install program. Please read the license and FAQ information before agreeing to installation. The setup program will guide you through a relatively simple install process, at the end of which you will be ready to load your preferred VST host and take VKFX for its first spin.

If you need support please refer to FAQ information first. If you can't find your case, contact the technical support at: **support@overloud.com**.

REGISTRATION

When initially installed, Overloud VKFX will run in unregistered mode without authorization. It will sound bypassed (no effects). After you registered with the serial number you received with the plugin, it will work fully functional.
As musicians ourselves, we know that many contemporary music systems need to 'distribute' the production workload over multiple CPUs, and as a result, often consist of more than one PC.

With this in mind, Overloud has decided that the VKFX license shall allow the user to install and run the software on up to three systems simultaneously. Yes, you can authorize VKFX on three of your PCs from a single purchase. Of course, the user of these PCs must always be the owner of the VKFX license.

How To Register

Load Vintage Keyboard FX and then push the "Prefs" button. A dialog box will appear prompting you to type in the Serial Number. After you typed in the code and confirmed pushing the "OK" button, the plugin will be registered and ready to use.

QUICK START

Short attention span? Itching to get into some new sounds? Don't care how long it took us to write the manual? Then this Quick start guide is for you! You'll get far more useful detail from reading the full manual, but the VKFX is designed to be a fairly intuitive piece of gear, so a little quick start should go a long way.

VKFX is designed to work as a standard FX plugin, so after installation, it should appear in your particular host's list of plugins just like any other FX plugin. You'll be inserting it across either a standard audio track, a group track, or the audio channel of a VST instrument.

Once inserted, the VKFX front panel should appear on screen, with all modules powered down. Use the red power switches to activate individual modules. When a module is switched off, CPU load is reduced.

Before going further, take a look at the master section (at the bottom of the VKFX interface). This is command central, and has facilities for altering output level, balancing stereo image, checking input levels, overall tempo sync settings, preset morphing, preset management, setting preferences, accessing help files, and other useful information.

Overall output and stereo balance are controlled by the volume knobs in the master section.

If you plan on doing any tempo synchronized work, note the condition of the sync component of the master section.

Sync Options

Host
When syncing, VKFX modules reference the host application's clock, and tracks any tempo changes.

Internal
When syncing, VKFX modules reference the tempo set using the knob to the right of the sync button in the master section.

Off
Each module runs independently, just like in the good old days. If the module syncing is switched on, the LFO will run at 120 BPM.

Preset Management

Preset management in the VKFX is a little more extensive than in your average VST plugin. If you can possibly manage the time, please take a look at that section of the manual before you start saving the results of your creative hours.

The first preset in the factory preset list is called 'reset'. As the name implies, this preset sets all values to a factory default position.

Knobs can be individually set to factory default positions by holding the Ctrl key on the keyboard at the same time as clicking on the knob in question.

That's it for the quick start. For the real meat and potatoes, read on…

GENERAL OPERATION

To sync, or not to sync

Matching the speed of your effects to the tempo of your music was not something which was generally possible 'back in the old days', but it is something we wanted to include because tempo sync can be a very powerful musical tool. You can choose either the 'new millennium lock step', or the 'vintage free-run' – it's your choice.

In the VKFX, any module with cyclical or timed effects includes a set of controls which allow you to choose whether its clock runs freely, synchronized (synced) to the tempo set in the master section, or synced to the tempo you have set in your host application.

On sync-able modules, the window below the word 'sync' displays the current sync status. The square led sync button to the left of the sync readout window determines whether the module is in sync mode of not. If the switch and window are unlit, the module is in 'free-run' mode, and all rates on the module reference its individual clock. If the switch is lit, the sync readout window will contain text related to musical divisions of the clock tempo, and the module will be referencing either the internal master section clock, or the external clock of the host application. This choice is made using the sync parameters in the master control section.

When a module is set to sync, the led switch to the right of the sync window is also active and by clicking on it you can drop down a list which represents musical divisions of the clock tempo, indicating either the length of time it will take for an LFO based effect to complete a single cycle, or (in the case of the delay module) the length of time between repeats.

When a module is set to sync, the rate control for the LFO no longer sets the freerun tempo. In the case of the Preamp, Wah, and Phaser, the rate knob now alters the phase position of the LFO waveform. Although this may sound like an esoteric function, when using LFO waveforms to create rhythmic effects, we feel the ability to determine the musical position of those waveforms is critical to the groove.

Sync values can range from as quick and small as a 32nd triplet to as slow and large as four bars, i.e. one cycle or repeat every four bars.

Standard sync values are represented with a fraction sign – 1/4 equals a crotchet = 4 times in every bar, 1/8 = a quaver = 8 in every bar etc.

Triplet values display an additional trailing small letter 't' – 1/4 t = a crotchet triplet = 6 in every bar, 1/8 t = a quaver triplet = 12 in every bar etc.

Dotted values display an additional trailing small letter 'd' – 1/4 d = a dotted crotchet = a value of three quavers = 3 x 1/8th notes. 1/8 d = a dotted quaver = a value of three semiquavers = 3 x 1/16th notes etc.

The Mode Switch

Several modules sport a 'mode' switch. The function of the mode switch varies depending on which module you're using, but generally it makes significant changes to the architecture of the underlying algorithm of that section of the plugin.

You can select modes either by clicking on the relevant mode led directly, or by using the mode button to step through the modes sequentially.

THE MASTER SECTION

The Master Section is VKFX command central - where you can set global options for level and synchronization, morph between programs, undo and redo program edits, and manage your preset library. It also gives you direct access to the user manual, context sensitive help and background information on the development of the VKFX rack.

Morph

Although deceptively easy to use, preset morphing is an extremely powerful (and addictive!) feature. Using the morph fader you can gradually transmute one preset into another. When you have the rack set up the way you like it, click either the A or B button and the VKFX will commit all settings to that memory location. Now set the rack up again and click on the other button to commit the new settings to the second memory location. You now have two full presets in memory. To use either preset you simply move the morph fader all the way to the A or B position. However, things become far more interesting when you try sliding the fader slowly between A and B while watching the knobs gradually rotate from one preset' location to the other and back again.

You can also load a preset, assign it to one button, and then load a completely new preset and assign it to the other, which makes morph setup between complex programs a breeze.

The implications of this feature for real time manipulation are probably obvious by now. You can use morph to quickly create coordinated changes across several effects parameters simultaneously. VST integration means that all these changes can be written to automation from a single fader in a single pass.

Something to keep in mind: Morphing works best when transformations involve manipulating continuous controllers - like rate, depth, time etc. The changes are smooth and

can be as quick or slow as you want to make them. Morphing can also be performed using VKFX functions which only have two states (eg on/off), or where modes jump from one state to another, or even with the module chain being reordered. In these cases, if you are passing

a continuous signal through the VKFX while morphing, you're very likely to hear switching taking place as modules are powered on/off, removed from the chain, or audio is cut off as signals are rerouted.

Sync

The master sync switch cycles between three sync modes, allowing you to choose whether the modules' time based effects are synchronized to the host tempo, the VKFX internal tempo setting, or allowed to freerun independently. You can also select a sync mode by clicking directly on the relevant mode's led. If you can't set precise value with mouse you can always left-click on the display and set the value in the pop-up window.

The master sync readout displays the VKFX internal tempo, accurate to two decimal places. Use the knob to the right of the readout to make tempo adjustments ranging from 0 to 512 BPM, accurate to 1/100 of a beat.

Try this:

Set the Preamp section as it is in the example. Set your Host tempo to 180 bpm and then set the Internal tempo of VKFX to 60 BPM. Now hold a sustained chord on your input instrument as you switch between the three mode switch settings, and you'll hear the tempo of your tremolo change as the module locks with each new clock source.

VU Input/Output Switch

This switch allows you to switch between monitoring your levels at either the input or the output of the rack.

L/R Link Switch

When set to 'In' the L/R Link switch links both left and right volume controls so that moving one moves the other, allowing you to maintain stereo balance while making overall level changes. When set to 'Out', volume controls remain independent.

Volume Knobs

The volume knobs set the left and right channel output levels of the VKFX.
The range of the volume controls is from -inf. to +15 dB.

Metering

In combination with the VU Input/Output Switch , you can use either the LED or VU meters to monitor input and output levels.

A brief note on gain structure:

When using the form of 32 bit floating point calculation that is employed in the VKFX modeling, it is a practical impossibility to overload the signal within the plugin. Only when the signal exits the VKFX and returns to the host environment will you need to monitor for the type of 'overs' which result in a clipped signal. However, to help you obtain a broad (and we do mean broad!) view of gain structure within the module chain, we have included a 'peak' led on each module. This led lights if either the left or right channel of the module's input signal exceeds -3 dB. Please remember that (a) a lit led doesn't indicate clipping, simply that the module's input is approaching 0 dB and (b) if you do exceed 0 dB at the input to a module, you cannot cause distortion within the VKFX.

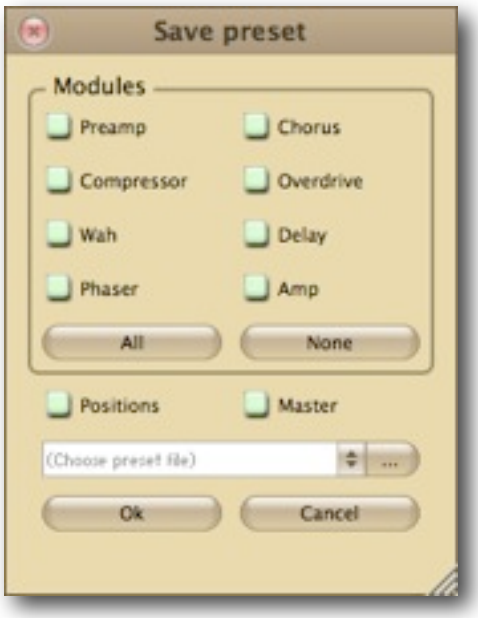
Preset

Clicking on the Preset button displays the list of factory presets.
Factory presets use prefixes to help in grouping FX types together. Of course, these are only a suggestion as to how the presets could be used. You'll probably find other uses for them. The first preset in the list is a 'reset' preset which initializes the VKFX to its factory settings.

AG Acoustic Guitar
BS Bass
CL 70s Funky 'Electric Harpsichord'
CP 70s Electric Grand
DR Drums
EG Electric Guitar FX Special Effects PF Piano
OR Organ
RD 70s 'Tine Piano'
SY Synth VX Vocals
WL 70s 'Reed Piano'

Save

Saving a preset in the VKFX is generally as quick as two clicks, type a name, click OK – and your done. However, in order to really take advantage of our multi module approach, the VKFX has a couple of file management wrinkles you may not find elsewhere.



As the VKFX is essentially several independent effects processors marshaled under a unified interface, we were presented with several opportunities in this area of preset management. The VKFX interface allows you to save or load either a whole rack, a limited number of modules, or a single module. It also allows you to save the module position within the rack. Modules can be saved or loaded in either powered or bypassed states. It even lets you decide whether or not to load the Master Section settings.

The Save button in the Master Section calls up the 'Save Preset' dialog, which is divided into two frames: 'Whole Preset' – which saves the complete rack, or 'Individual Modules' – which saves only the module/s you specify using the checklist. This feature allows you to 'mix and match' your favorite settings between different racks with ease.
Checking 'Module Positions' in the 'Whole Preset' section will cause modules to be saved with their current rack location. If left unchecked, the modules will be saved without rack positions. Why save module positions? Imagine you've designed a killer overdrive sound which is the result of chaining three modules in a particular order and balance. You can save both their settings and the order in which they are chained. Without saving positions, you may find yourself needing to move a bunch of modules around once you load them.

Checking 'Master Section' in 'Whole Preset' will cause the settings in the Master Section of the VKFX to be saved along with the modules in the preset.

Use the 'save' button to the right of these two options to save your preset.

The 'Individual Modules' section of the 'Save Preset' dialog allows you to be more particular about what you save. Save all, some, or just one of the modules which have been created, and load it/them later without disturbing modules which weren't included in the save. Although individual modules can always be loaded from within a saved 'Whole Preset', individual module saves rely less on your memory at load time.
When you first enter the save preset dialog area, modules which have been bypassed in the rack will be unchecked, this way you don't have to remember which modules were in use when you decide to make a selective save. The 'All' and 'None' buttons are shortcuts for quickly selecting or deselecting all modules.

Check the module(s) you want to save, and click on the lower section's 'save' switch to save them. Keep in mind that a module doesn't have to be powered to save it. This, for example, allows you to save a whole rack preset with 'optional' modules initially disabled but always ready to be turned on.

Checking the 'Master Section' of the 'Individual Modules' frame will cause the master section settings of the VKFX to be saved with the module(s). The 'Individual Modules' section of the 'Save Preset' dialog allows you to be more particular about what you save. Save all, some, or just one of the modules which have been created, and load it/them later without disturbing modules which weren't included in the save.
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allows you to save a whole rack preset with 'optional' modules initially disabled but always ready to be turned on.

Checking the 'Master Section' of the 'Individual Modules' frame will cause the master section settings of the VKFX to be saved with the module/s.

Load

The "..." button calls up the standard operating system file browser dialog, allowing you to navigate to the folder where you keep your VKFX
patches. Selecting a patch brings up the 'Load Preset' dialog, which is divided into two frames:
'Whole Preset' – which loads the complete rack, or 'Individual Modules' – which loads only the module/s you specify using the checklist. This feature allows you to 'mix and match' your favorite settings with ease.
Checking 'Module Positions' in the 'Whole Preset' section will cause modules to be loaded into the same rack location they had when the preset was first saved. If left unchecked, the modules will be loaded into the current rack position for the same module type.

Checking 'Master Section' in 'Whole Preset' will cause the master section of the saved preset to be loaded and replace the current rack's master section settings.

Use the 'load' button to the right of these two options to load your preset.
The lower half of the 'Load Preset' dialog allows you to be more particular about what you restore. Load all, some, or just one of the modules which have been previously saved in a preset. The 'All' and 'None' buttons are a convenient shortcut to either selecting or deselecting all modules.

Checking the 'Master Section' of 'Individual Modules' will cause the Master Section of the saved preset to be loaded and replace the current rack's Master Section settings.

Check the box(es) for the module(s) you want to load, and click on the lower section's 'load' switch to load them.

Undo

Clicking on the Undo button will undo the last change you made to the VKFX. The number of undos is virtually unlimited.

Redo

Clicking on the Redo button 'undoes' the last undo you did - dig dat?
Again, the number of redos is virtually unlimited. The combination of unlimited undo and redo allows you to casually 'browse' back and forward through all the changes you've made, comparing sounds and saving what you like at any point in this process, without fear of losing critical edits.

Info

Clicking on the Info button displays the VKFX' version number, as well as background information on the team behind the VKFX development. A second click will return you to the main interface.

Help

Clicking on the Help button toggles two functions:

1. A shortcut to the online manual for the VKFX. Clicking on the grey button next to the word 'Manual' will load this manual for easy reference.

2. A context sensitive 'tool tips' display which offers a brief (usually one line) description of each function on the VKFX panel. Hover your mouse over a switch, knob or readout to see specific information about that function.

Prefs

The Preferences button is currently used to access and input registration details. Please see the Registration section for more information.

PREAMP/STEREO TREMOLO

This module is inspired by the classic preamp section of a 70s tine-based electric piano and its unique style of stereo panning tremolo, as well as the 'vibrato' circuit found on a well known 70s reed-based electric piano and the custom 'hotrod' preamp EQ developed and popularized in the 80s. The preamp module is particularly well suited to tine pianos, as several of the Scarbee C.E.P. patches uses samples which were recorded directly from the harp, bypassing the preamp's EQ and inherent noise. If the EQ found on vintage and 'hot-rodded' tine pianos is a part of your sound, you should be very pleased with the VKFX preamp.

Preamp Section - Controls

Volume
A passive control which takes the input signal from 0 to –40 dB.

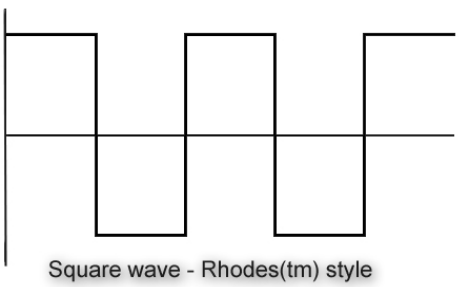
EQ
The VKFX preamp's EQ model is designed to help capture both the classic factory tine based electric piano timbre and the ultra dynamic sound of a particular type of 'hot-rodded' electric piano which was popular in the 80s. Hot-rodded tine pianos were re-engineered from the ground up, and were most distinguishable by their exaggerated bass, tine bell frequencies and 'bark'.

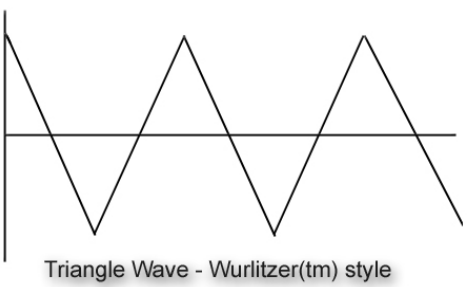
Bass
On the original tine based electric pianos, this knob was mislabeled 'Boost'. As the preamp circuitry in these early preamps was passive, the bass knob could only remove bass, not boost it. The VKFX achieves a similar effect, affecting a frequency range from 400 Hz to 5 kHz, with the amount of cut varying from -0.4 dB to -15.5 dB depending on frequency. When the bass knob is set hard right (fully clockwise) there is no bass cut.

Treble
There is an audible difference between the classic factory tine based electric piano sound when recorded from the preamp output, and the same sound when recorded direct from the piano's harp (bypassing the preamp). The preamps on early tine based electric pianos had no treble knob, but the simple act of passing the output of the piano's harp through the preamp's passive circuitry had the effect of dampening the top end. The VKFX preamp's treble knob actually does double duty in this instance. When cutting, it acts much like a 1 pole lowpass filter, affecting frequencies ranging from 1.2K Hz to 20 KHz.
When boosting as a shelving filter, it adds up to 24 dB in the 10 KHz area. With the treble knob at 12 o'clock you have a largely unaffected signal. Turn it anti-clockwise and you'll get a warmer more 'old school' tone – like the one from the preamp output. Turn the knob clockwise from 12 o'clock for a tone with much more dynamic tine sound and 'bite' – like a hot-rodded electric piano.

Sync
Please refer to the Sync section for more information.

Tremolo Section - Controls
Tremolo is a cyclic change in volume, i.e. amplitude modulation. The VKFX tremolo pays homage to both the stereo tremolo of the classic tine based electric pianos and the signature 'vibrato' tremolo found on vintage reed based electric pianos – with the addition of a few wrinkles to spice things up.
Choose between a classic square wave tremolo for which the tine-based electric piano is well known, and the triangle waveform characteristic of the reed based electric piano.


Square wave - Rhodes(tm) style


Triangle Wave - Wurlitzer(tm) style

Amp/Pan switch

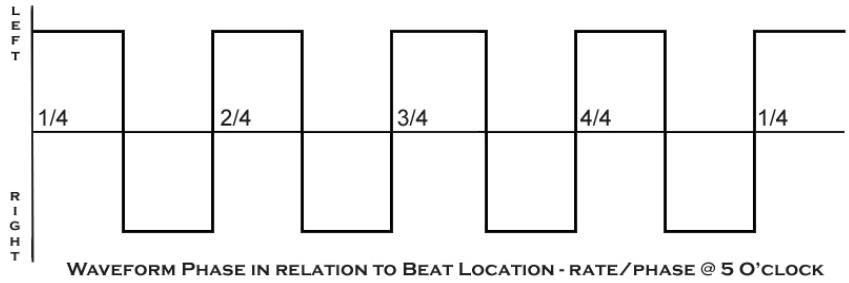
Choose between stereo panning style tremolo of the tine based electric piano, which bounces back and forth sharply across the stereo image, and the more traditional mono amplitude style tremolo which characterized reed based electric pianos. Yes, they named it 'vibrato' on these pianos, but as there was no pitch fluctuation on the piano its vibrato was in fact tremolo. Just as the 'tremolo' arm on most guitars is, strictly speaking, a vibrato arm…

Rate

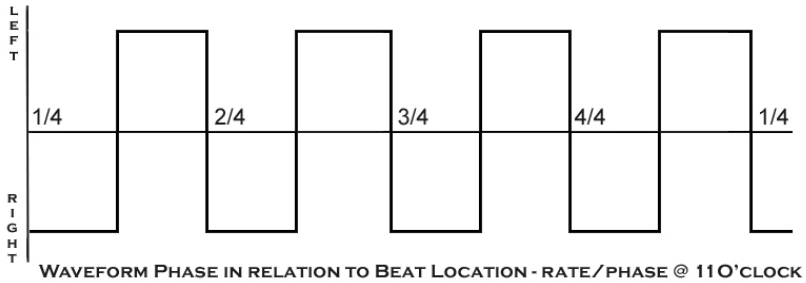
Here you can set either the free-run speed of your tremolo, or (in conjunction with the left-hand sync section) the tempo division as it relates to the Master clock/Host clock. In Free-run, tremolo rate is variable from 0.3 Hz to 22.2 Hz.

LFO Phase Offset

When the Stereo Tremolo LFO is set to sync to an external clock, the rate knob takes on a different functions (as it is no longer required for LFO speed). In sync mode the rate knob alters the phase of the LFO in relation to the incoming clock. Basically, this allows you to match your LFO cycle to the beat. With this control, not only can you put your LFO effects perfectly in sync with the host's tempo, but you can also adjust the actual position of your LFO waveform so that it's in the rhythmic 'sweet spot' that you prefer.



Waveform Phase in relation to Beat Location - rate/phase @ 5 O'clock



Waveform Phase in relation to Beat Location - rate/phase @ 11 O'clock

The illustration shows a square wave tremolo effect which is set to pan in stereo, synced to the host at quarter notes, so that there are four complete panning cycles per bar. In one instance, with the rate/phase knob set at 5 O'clock, the waveform is offset to the point that the signal jumps to the left channel exactly on each quarter note.

In the second instance the rate/phase knob has been turned back to 11 O'clock, and now the signal appears at the right channel on every quarter note. Of course, it's possible to set the knob at many other positions.

Below is an example of a patch which simulates the bright tines of a hot-rodded vintage electric piano combined with the hypnotic stereo panning tremolo for which that piano was so well known.

If your thing is the reed piano's 'vibrato' sound, try your favorite Scarbee E.E.P. samples through this patch:

COMPRESSOR

A compressor alters the dynamic range of an audio signal. For example, you might feed it a signal which has a dynamic range of 120 dB, and after processing find that its dynamic range has dropped to 60 dB. Basically, what happens is that below the 'threshold' setting of the compressor, changes in the level at the input are simply passed unaffected to the output. However, above the threshold, changes in the level at the input will produce smaller changes in the level at the output. How much smaller depends on the type of compressor and its settings.

Why reduce your dynamic range? The usual (and perhaps most controversial) reason for using compression in broadcast audio is the attempt to raise the average level of the signal, helping to make it stand out from background noise, or make it stand out from other (softer) tracks broadcast around the same time.

In an effects chain such as the VKFX, compression can have other, more musical applications, such as evening out the dynamics of a part, or adding more punch to an instrument's attack.

The VKFX compressor is modeled on early optical style compressors, rather than the VCA compressor/limiter style used in a lot of more recent designs. VCA compression is constantly linear – the more input you feed it, the more the transients get squashed. Compressors based on optical circuits are non linear. They compress predictably at lower levels, but at higher and higher input levels, they start to allow the transients through. The bottom line is that optical

style compressors tend to sound more 'lively' and less muddy than VCA based compressors. It's not uncommon to hear people refer to optical compressors as the 'more musical' choice.

The VKFX compressor uses a 'soft knee' approach, rather than 'hard knee'. These terms refer to how quickly the compressor transitions from no compression to its set value once the threshold has been breached. A hard knee compressor instantaneously switches from no compression prior to the threshold, to full compression once the signal passes the threshold.

This can make the use of compression very obvious. The solution is soft knee compression, where the compressor actually moves into a lower ratio of compression as the input signal approaches the threshold, and increases the compression ratio as the signal level increases, until the maximum compression is reached. This gradual increase in compression ratio makes the use of compression more transparent. The term 'knee' refers to the shape of the curve you get on a graph when you plot changes in the compression ratio as the input level is raised.

So, to be clear, the VKFX's compression curve ranges from 1:1 to inf.:1 according to the input level, the higher the input level, the higher the compression you can obtain.

Controls

There are five elements to the VKFX Compressor module:

Threshold

With a range of 0 to –30 dB, this control basically determines the minimum input level at which your compressor starts to kick in and introduce gain reduction. When set fully clockwise (about 4-5 o'clock on the dial), the threshold is at its highest setting, allowing most signals through unaffected and only compressing the highest input signals. As you turn the threshold knob anti-clockwise, the compressor will 'grab' proportionately lower level signals until - at its minimum setting – it will attempt to compress most input signals.

Attack

Ranging from 5 ms to 200 ms, this control determines how quickly the compression will be applied once the input signal exceeds the threshold level. It's a critical control, as the attack portion of any sound conveys a lot of information about the brightness of that sound to the listener. If you apply a fast attack to percussive sounds, which means you're squashing the level of the signal as soon as the sound hits, it may seem as if the compressor is dulling the sound off. In cases like this, slowing the attack time a little can bring back that perceived brightness by allowing a bit of the transient through before the compression grabs. Also, if you compress a percussive sound with a fast attack, sometimes it will seem like you actually have less attack on the sound. Your meaty 'thwack' at the beginning of the sound has turned into a girly 'ick'. If you 'open up' the attack time a little, so that the compressor isn't reducing the level of the attack portion of the sound, you'll get your 'thwack' back. Not only that, but as the compressor is clamping down on the material after your thwack, it will seem proportionately louder, making it poke through the mix a bit. Be warned though, if you take your attack time too high, you may end up with an attack so slow your compressor can't do its job. The attack time ranges from 5 ms to 200 ms.

Release

Ranging from 40 ms to 4 seconds, this control sets how quickly the signal will return to its uncompressed level once the input level drops below the threshold setting. Usually, engineers like to set the compressor's release so that the compressor gets out of the way of the music as quickly as possible, but again – take care. Fast release times can do unpleasant things to sounds like sustained bass notes. Of course, release times which are too long can

mean that the compressor stays clamped down on those same sounds when you least want it. Heavy compression, with fast attack and release times, is usually responsible for the compression artifact known as 'pumping'. Compression with a long release that causes a noticeable rise of the noise floor as the music returns to its normal level is called 'breathing'. Both pumping and breathing are best heard in the gym.
The release times range from 40 ms to 4 sec. It's worth taking care in the fine tuning of your attack and release times.

Makeup

Because this style of compression reduces dynamic range by making the loud portions of the signal softer, the makeup knob allows you to adjust the post-compression output level so that your average level is maintained. Watch the VUs while switching the module on and off to check that you are making up gain lost through compression. The makeup gain ranges from 0 dB to 24 dB.

The led meter supplies visual feedback as to how much compression is being applied to the input signal. More LEDs = more compression.

When processing an instrument whose attack you'd like to enhance (e.g. a CEP playing a comping rhythm part), try setting your VKFX compressor as we have in the illustration at the beginning of this section. Now try turning the threshold knob further to the left as you play. You should notice progressively more of a 'pop' on the attack of the piano. What's happening here is that the threshold on the compressor has been lowered to the point hat almost the whole piano note is being reduced in gain. A certain amount of the beginning of the note - determined by the attack time - is being allowed through the compressor unaffected. We're effectively reshaping the envelope of the sound by making the body softer, which makes the attack relatively louder and more pronounced. If the body of the sound starts to seem too soft, adjust the amount of makeup gain. If your attack now seems to loud, move between the attack knob and threshold until you feel you have a balanced sound.

WAH

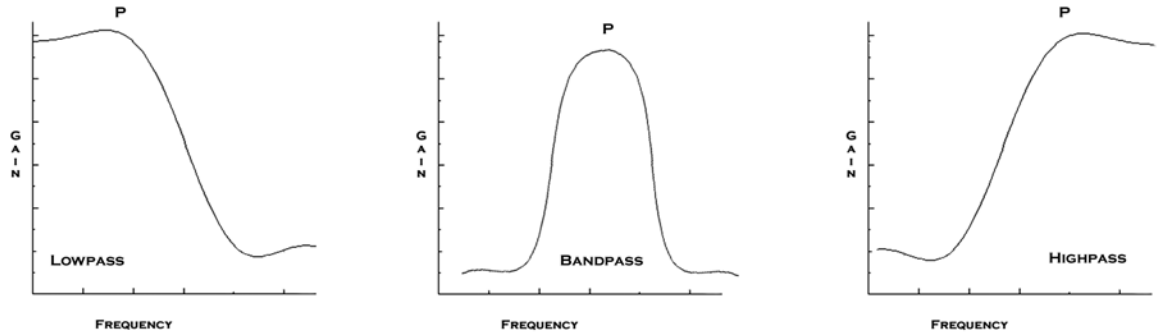
Remember the funky stuff from the 70s? If you do, then you'll remember one sound which is at the heart of this VKFX module. It's been given different names, like Envelope Filter, Auto Filter, Wah Filter, Triggered Filter, Envelope Follower, Auto Wah, Touch Wah, Dynamic Filter, Dynamic Wah, and just plain Funky Filter. Whatever the title, it's the sound that counts – and that 'whicka whacka' sound just jumps out of a mix, whether it's on guitar, bass or clavinet. The classic auto wah pedal responds to variations in the input signal level and uses those level changes to move the cutoff frequency of a resonant filter. Play softly, and the filter just mumbles away, play more sharply and the filter quickly sweeps open and closed, creating the classic 'wah' sound. In the 70s, keyboard players found the auto wah a boon, as it really bought some instruments to life, helping cut through a mix like nothing else.

The VKFX Wah expands the user's control beyond the one or two knobs commonly found on the original auto wahs. You can now choose filter types, change envelope polarity, sweep the filter frequency with an LFO and sync that sweep to an internal or external clock source. You can even assign a midi control source (perhaps a pedal or wheel) to the sweep.

Controls

Sync
Please refer to the Sync section for more information.

Mode
Switches between three different filter models, examples of which can be found in the accompanying illustrations:



P = FILTER CUTOFF FREQUENCY, OR 'POSITION'

Lowpass
As the cutoff frequency (position) of this filter is moved lower, frequencies above its setting are blocked and lower frequencies are passed. It tends to have the warmest tone, as the bottom end is the last thing to disappear.

Bandpass
Removes all frequencies outside of a set band around the cutoff frequency (position). Not as warm as the lowpass filter, but not as thin as the high-pass. It has a very present sound when used for the auto wah effect.

Highpass
Works in reverse of the low pass filter. Frequencies below the cutoff frequency (position) are removed, while frequencies above it are allowed to pass through. Regarded as 'thin' in the 70s and 80s, high-pass filters have become much more popular in the last decade and are at the core of many dance music basses and melodies.

Position
This knob sets the initial cutoff frequency of the filter, from low when set fully counter clockwise to high when set fully clockwise. Its ideal position will vary greatly depending on the instrument being processed, the type of filter, the range of modulation, the polarity setting of the envelope, and your LFO depth. The Position knob is extremely interactive with the range knob. Using a midi controller pedal, sweeping this function would create quite a reasonable emulation of a manual wah pedal.

Range
This knob sets the 'throw' of the effect, or the distance that the filter cutoff frequency will be moved based on how much input signal is received. If you use a low range setting, there won't be much movement of the filter. If you us a very high range setting, depending on your Position setting, you may find that, while you get plenty of filter movement, the filter spends too much time 'open' at such a high frequency that it isn't operating within the frequency spectrum of the instrument being processed (assuming you have a positive envelope polarity and no LFO depth set). To find a good range for your instrument, start with the Position knob set low and gradually turn up your Range as you play. As your input signal increases, the filter movement will be wider and wider depending on this setting. You should soon begin to hear the filter respond more and more to your dynamics. Also notice how, when you sustain a fading chord, the filter closes proportionately with the drop in input signal level.

Release
This knob determines how long it takes for the envelope to reset after the input signal causes the filter to peak. A fast release will make the filter envelope 'reset' quicker and seem more responsive and aggressive, a slow release will make it 'smoother' and less prominent. Release actually affects two aspects of the Wah's response. Release is working both to reset the filter position in the pauses between input signals, and to determine the amount of time it takes for the filter to return to its initial position while you maintain an input to the effect (e.g. while you sustain a chord). From this point of view you need to strike a balance between a release which is fast enough to reset the filter for quick passages, and slow enough to give you a nice long filter sweep on sustained notes.

Polarity
This switch inverts the direction in which the filter travels.

In the '+' position, the filter frequency is swept in a positive direction, from low to high, and then back down again as the input signal fades. This is the setting most people are used to hearing. The settings on the illustration at the beginning of this section are a good starting point if you're looking for the classic envelope filter sound. The three aspects of this patch which have the greatest impact on the effect are: Input Level, Position and Range. Altering any of these slightly is usually very noticeable.

In the '-' position, the filter frequency is swept in a negative position from high to low, and then back UP again as the input signal fades. This setting fools a lot of people, because to be effective it requires the filter to start in a more open position.

When using the negative option, try setting the Position knob fully clockwise (as in the illustration), and then make adjustments between it, the range and release knobs. The effect of a negative direction envelope is more of a 'chomping' sound than a 'wah', as it initially shuts the filter down when the input is hit hard, and gradually fades open as the input level drops off. It's quite a different , almost percussive sound. With the right input level, the example above should give you a good place to start for this effect. In this patch, the input

level and range knob settings are highly interactive. If your input signal is as high as you want to set it and you need more 'throw' on the wah, turn the range knob further clockwise.
This causes the filter travel to increase for the same input level.

LFO
The VKFX lets you sweep the filter with an LFO, either in sync or free-run.
Again, the LFO's effectiveness will greatly depend on the Position knob setting.

Rate
Here you can set either the free-run speed of your wah modulation, or (in conjunction with the left-hand sync section) the tempo division as it relates to the Master clock/Host clock.

LFO Phase Offset
When the Wah LFO is set to sync to an external clock, the rate knob takes on a different functions (as it is no longer required for LFO speed). In sync mode the rate knob alters the phase of the LFO in relation to the incoming lock. Basically, this allows you to match your LFO cycle to the beat. With this control, not only can you put your LFO effects perfectly in sync with the host's tempo, but you can also adjust the actual position of your LFO waveform so that it's in the rhythmic 'sweet spot' that you prefer.

Depth
Determines the maximum distance that the LFO will cause the filter cutoff frequency to travel. Keep in mind that this function is highly interactive with the Position and Range settings, and it's worth spending a bit of time getting used to how one affects the other.

PHASER

A phaser creates a sweeping effect by modulating a comb filter. A comb filter is a filter with a frequency response that has a number of sharp dips and peaks. (when plotted, the result looks like the teeth of a comb). As the filter cutoff frequency is swept (usually by an LFO), you get varying degrees of harmonic cancellation and reinforcement, which results in the 'phasing' effect we've all come to know and love. If more than one phase shifting circuit is used, the effect becomes more complex. The VKFX uses a 4 stage phase circuit, as did the most popular vintage stomp box phasers of the 70s.

Controls

Sync
Please refer to the Sync section for more information.

Mode
This switch changes the whole architecture of the phase shifting model, altering both the LFO waveforms and the frequencies at which they operate on each stage.

Mode 1
Is reminiscent of a popular vintage phaser, in which each stage uses the same LFO frequency.

Mode 2 and 3
Are inspired by another vintage phaser which applies different LFO frequencies to each stage.

Center
This knob sets the centre frequency of the filter sweep. If you want phasing on an instrument with a deep tone, you'll probably lower the center frequency. If it's a bright instrument, you'll

probably move the center frequency up higher. Think of the center knob as a way of 'tuning' the phaser in to the unique frequency range of your instrument.

Feedback
This knob feeds the effected signal back into the filter. The minimal delay (a fraction of a sample) caused by this process results in a noticeably 'thicker' and more pronounced phase shift effect.

Rate
Here you can set either the free-run speed of your phase shifter, or (in conjunction with the left-hand sync section) the tempo division as it relates to the Master clock/Host clock.

LFO Phase Offset
When the Wah LFO is set to sync to an external clock, the rate knob takes on a different functions (as it is no longer required for LFO speed). In sync mode the rate knob alters the phase of the LFO in relation to the incoming clock. Basically, this allows you to match your LFO cycle to the beat. With this control, not only can you put your LFO effects perfectly in sync with the host's tempo, but you can also adjust the actual position of your LFO waveform so that it's in the rhythmic 'sweet spot' that you prefer.

Depth
Determines the maximum distance that the LFO will cause the center frequency of the filter to travel.

Mix
Allows you to balance the 'wet' or effected signal with the 'dry' or unaffected signal.

The example at the top of this section is a good starting place for a slow, resonant phasing effect. The position of the center frequency knob should suit most clavinet and electric piano sounds. Switching to mode 2 or 3 will give you a deeper tone, but you'll need to adjust the center and depth knobs to find the 'sweet spot' for these modes.

CHORUS

Chorus gets its name from the fact that instruments processed through the effect often sound as if they have been double tracked, or as if there is a 'chorus' of voices being played. Chorus is another cyclical effect which adds movement to sound. In most cases it is subtler than phase shifting, and can compliment it well. Whereas phase shifting is achieved by the use of filters, chorusing is achieved by mixing the original signal with delayed and modulated versions of itself. Usually the delay is extremely short (perhaps 5-40 ms), the speed of the modulating LFOs is slow (perhaps 1- 5Hz) and the depth of pitch modulation of the delayed signal is not great.

Chorus character is largely dependent on the number of discrete versions of the signal which are being modulated, and the waveform of the modulating LFO. Classic examples of simple chorus units can be found in solid state guitar amps from the 70s, and certain classic stomp

boxes from the same period. A more sophisticated chorus device designed specifically for keyboards was the 'ensemble' circuit found in the 'string machines' of the 70s.

Controls

Mode
Switches between three chorus models.

The first two modes are very similar: They have a modulated delay line which is mixed with the dry signal by an amount (mix) chosen by the user.
The waveform of the LFO in the first mode is based on a sine wave, and gives the smoothest cycle.

In the days of the first analog effects pedals the discrete circuitry available made it quite difficult to achieve a true sine LFO waveform, so manufacturers applied a triangle waveform and simply attempted to 'round t off' so that it sounded smoother. The second mode is inspired by the classic stereo chorus ensemble foot pedal which used this type of 'smoothed triangle' modulating waveform.

The third mode is quite different, and simulates the classic complex 'string machine' ensemble circuit. This circuit has three independent delay lines modulated with three independent LFOs with different frequencies and depths. The output of the three lines is mixed together without the dry signal, As there is no single modulation source , when sync mode is activated the three LFOs are preset to run at the 'classic' string ensemble frequencies. When sync is deactivated, these 'classic' frequencies can be obtained by setting the rate knob at about 2 O'clock.

Center
This knob alters the frequency range within which the chorus effect will operate. When set fully counter clockwise, the chorus effect is limited to a relatively narrow band of frequencies – from 400 Hz to 1000 kHz. As you turn the knob clockwise, the chorus effect is applied to a gradually widening range of frequencies. At its maximum clockwise point, the chorus effect is applied across the whole frequency range (20 Hz to 20 kHz). This knob is best thought of as a 'tuning' knob which helps you find the 'sweet spot' at which the chorus sounds best on the particular instrument being processed.

Depth
This knob controls the amount of pitch modulation applied to the delayed signal. At extremes, you can create anything from a drunken warble to a bar room piano effect. Conservative use can lend an otherwise two dimensional tone a lot of depth and space.

Rate
Here you can set either the free-run speed of the chorus LFO(s), or (in conjunction with the left hand sync section) the tempo division as it relates to the Master clock/Host clock.

Feedback
This knob feeds increasing amounts of the already effected signal back into the delay line. This increases the depth of effect.

Mix
This knob allows you to balance between the delayed and dry signals. This helps to 'center' the pitch of the chorused sound.

The patch shown at the head of this section illustrates a general purpose soft chorus, which adds dimension to a sound without having an obvious cycle or pitch modulation. The examples below show more extreme applications of chorus. The first patch will mutate your elegant grand piano into a poorly maintained bar room honky tonk keyboard, whereas the second patch will turn the simplest sawtooth synthesizer waveform into classic string ensemble machine. Stand back – for this kraft to work, we need a little oxygen for the dream weaver please.

Bar room piano patch. Note the extreme LFO depth - the source of detuning.

String Machine patch. Note the use of mode 3, and the wet mix.

OVERDRIVE

The harmonic distortion produced by a valve amplifier when it's overdriven is an attractive sound to most musicians (but not their neighbors at 3 am!). Unfortunately, it's generally only achieved by turning the amp up loud. For those of us looking for a little dirt in our sound, the 70s saw the birth of stomp boxes offering 'solid state' distortion. There were basically two types of distortion units available through this period – those with soft clipping characteristics, and those which utilized hard clipping. Soft clipping devices were often termed 'overdrive' units, exhibiting a smoother distortion sound and a noticeable compression characteristic. They were sometimes used to 'overdrive' the input signal of a valve amp in order to obtain heavier distortion at lower volumes. Keyboard players of the time were able to get a very cool distortion sound when running their tine based electric piano into a classic twin channel valve amp, or their tone wheel based organ into a rotating speaker system with a valve amp. As keyboard rigs got smaller and amps became more powerful (and solid state) more than a few keyboard players attempted to replicate the valve sound of their vintage amp or rotating speaker system via a distortion pedal of some kind.

One of the most popular overdrive pedals of all time was a small green stomp box, a source of inspiration in the design of the VKFX Overdrive module.

Controls

Drive
This knob controls the amount of signal being fed to the distortion circuit.

Tone
As this knob is turned clockwise, in general it alters the tone of the distorted signal. Specifically it boosts high frequencies over 1.5 kHz and creates a slight dip in the mid range.

Level
This knob sets the output volume of the distorted signal.

DELAY

The Delay module harkens back to the days of tape echo. The original tape echo effect was created by recording an input signal to tape via a tape head and then replaying that signal through another tape head. The physical distance between the record head and the playback head determined the delay time. It was not uncommon to walk into a studio and see long tape loops strung from one tape machine to another as an engineer attempt to achieve a nice long delay. This messy situation was partially solved when companies worked out ways to force the tape to travel greater distances between heads by following a 'long and winding road' within the tape machine itself. This meant tape echo machines the size of a bread box could achieve quite long delays. By placing several heads at different distances along the tape path, they were also able to create different syncopations of delay depending on which heads were monitored. However, the days of the tape delay were numbered, as solid state bucket brigades and, eventually, digital delay lines proved to be more reliable and convenient than tape loops in the long run. One feature of tape delays which was lost in the digital move forward was the effect on the sound of the tape itself. In tape delays, the signal is delayed by keeping it on the magnetic tape for a time. For every repetition of the delay, the signal is recorded to and played back from the tape. The more repetitions, the more intense is the effect of the tape on the sound.
Some manufacturers of digital delay lines attempt to reproduce this by simply damping the high frequency component of the delayed signal, but the actual sound of tape delay is much more complex than a simple loss of top end.
The VKFX delay utilizes an intelligent tape simulation algorithm which reproduces both the compression effects and frequency response of analogue tape for each repetition of the delayed signal.

Controls

Mode
The VKFX simulates the multiple head approach available on vintage tape echoes. These were the forerunners of today's 'multi tap' delays, where varying 'sub' delay intervals are

derived from the main delay time. The VKFX model is a tape delay with three playback heads spaced at even intervals. Modes can be accessed by either clicking directly on their corresponding led, or by using the mode switch to step through them sequentially. Each mode represents a different head configuration which in turn determines the rhythmic syncopation of the delays. You'll probably find it easier to visualize this if you run the delay module synced to your host apps tempo and play against a click or loop while switching modes. We've also included a graphic illustration of each mode. Note that Modes 1 through 5 are mono, with each delay panned to the center of the stereo field, whereas modes 6 through 8 are stereo.
Mode 1 is a simple single delay, with mode 2 being identical, but half the time interval, and mode 5 also identical, but running at a quarter the time interval of mode 1. Mode 7 is the classic stereo 'ping pong' delay, and mode 8 is identical to mode 7, but running at half the time interval. Mode 6 ping pongs in stereo reverse of mode 8, but after ping ponging plays an extra delay panned to the centre of the stereo field.
Modes 3 and 4 are syncopated – play them and see ;)

VKFX Delay Modes Illustration

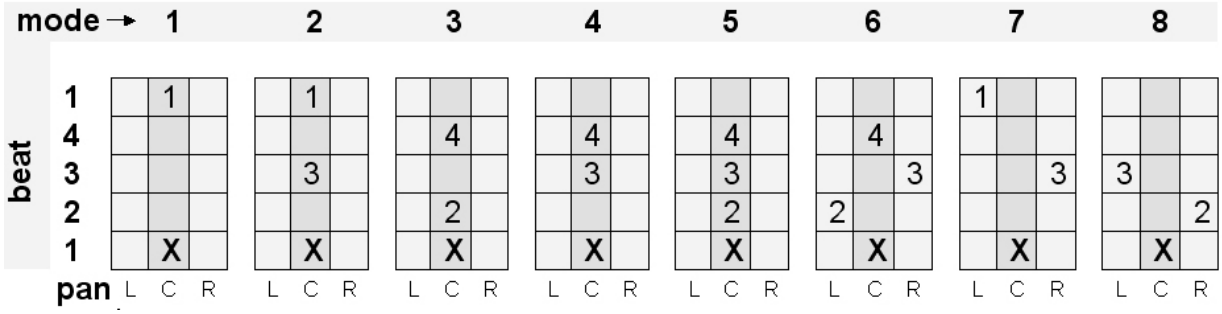
Modes 1-5 are mono.
Modes 6-8 are stereo.
'X' represents the input signal – occurring on the downbeat.
The numbers in the squares represent individual repeats.
The specific number assigned to the repeat shows on which beat in the bar the repeat occurs.
The three vertical columns represent stereo positions - Left, Center and
Right.

For example, with a signal input on beat 1:

In mode 1:
There is only one repeat, which will be heard exactly one bar (four beats)
after the original signal, and is placed in the center of the stereo image.

In mode 5:
The first repeat will be heard on beat 2, in the center of the stereo image.
The second repeat will be heard on beat 3, in the center of the stereo
image.
The third repeat will be heard on beat 4, in the center of the stereo image.

On the other hand, in mode 6, although the repeats occur with the same timing pattern as mode 5:
The first repeat will be heard on beat 2, from the left speaker.
The second repeat will be heard on beat 3, from the right speaker.
The third repeat will be heard on beat 4, in the center of the stereo image.



Sync
Please refer to the Sync section for more information.

Time
When the module is in free-run mode, the time knob sets the base delay time, which can range from 0 to 2.7 seconds.

When the module is in sync mode, the time knob selects delay intervals using the table of musical tempo divisions referred to in the sync section.
With sync mode on, the maximum delay time is determined by the sample rate of the host application.

Sample Rate (kHz)	Delay Time (sec)
44,1	59
48	55
88	23
96	27

Feedback
This knob controls the amount of output signal being added back to the input of the delay module. The effect of feedback is an increase in the number of delays, with a changing tonality determined by the VKFX tape simulation algorithm.

Tone
This knob allows the user to reduce the brightness of the delayed signal.
When set full clockwise, the initial delay will sound similar to the original signal. When turned counter clockwise, the top end of the delayed signal will drop away. Using this knob in tandem with the Mix knob will help you determine the overall position of the delayed signal in relation to the original.

Mix
This knob varies the balance between the original signal and the delayed signal, from 100% original signal (no delay at all) when set fully counter clockwise, to an 100% delayed signal (no original at all) when set fully clockwise.

The patch illustrated at the head of this section is a very basic dub style delay setting, with the delay synced to the host sequencer's tempo, timing set to a quarter note triplet and lots

of feedback. In dub, this kind of delay is usually ridden throughout the mix – something VST automation makes quite easy ;)

The patch illustrated at the end of this section would be a good place to start if you were looking for the polyrhythmic delay approach used by U2's The Edge. Delay is locked to the host sequencer, sync rate is dotted eighth notes, and feedback is set to deliver four or five delays. To get closer, you might want to load a few instances of the VKFX simultaneously, running some short delays and EQ as well.

A delay using dotted timing and feedback to achieve a polyrhythmic build up while synced to a master tempo

AMP

Before the advent of solid state amplifiers, the running mate of any classic keyboard was a good valve amp, either something like a twin channel valve amp to go with a vintage tine based electric piano, or a rotating valve amp/speaker combo for organs. Amps like the classic twin channel valve amp didn't just amplify the original tone of an instrument, they colored and changed it in a variety of ways. Between the EQ circuit, the valves, speakers and cabinet, the sound of an instrument like a vintage tine based electric piano was significantly altered. So much so that when solid state amplifiers arrived on the scene, many a electric piano aficionados complained that their pianos lacked 'life' and 'bite' when they used these new 'improved' designs.

Behind the deceptively simple façade of the VKFX's Amp module is some very mature amplifier modeling code which will instantly take many players back to the 'comfort zone' of their original twin channel valve amp with integrated 2x12" speaker cabinet and spring reverb.

Amp/EQ section - Controls

Out/In
This switch removes the amplifier and EQ models, allowing you to use the spring reverb model in isolation. Note that this module is constantly modeling a valve amplifier. Even

without increasing the channel EQ and volume settings, you will hear an increase in the 'amp' sound by simply driving more signal into the module's input.

Low, Mid and High

The knobs are reminiscent of the EQ found on a vintage twin channel valve amp. They play a huge part in shaping your sound since they have a very characteristic quality to them. A lot of 'meat' and 'grit' comes from this EQ, which is why the classic twin channel valve amp is still used by so many musicians. We're sure you'll find yourself wondering, once you start using it, how you ever got by without it!.

Volume

This knob models the channel volume control on a classic valve amp. The results you get from altering volume at this point will vary a fair bit depending on your EQ settings and how hard you drive the input level.

Reverb section - Controls

Spring reverb units were historically the result of telecommunications engineers' attempts to simulate the delay conditions inherent in long distance calls. They used a combination of electromagnets and springs to delay an audio signal. After seeing one working in the lab in the 1930s, one organ manufacturer incorporated a spring reverb device into an organ design specifically to emulate the ambient effect accompanying any live performance in a concert hall. Back in those days, the cabinet for such a spring reverb unit was over four feet tall! In the 60s, a popular guitar manufacturer added a smaller version of this device to his twin channel valve amplifier, and the rest - as they say – is history.
The VKFX modeling is inspired by the signal processing properties of a vintage 4 coil spring reverb unit.

Time

This varies the length of the spring reverb's decay from 1.2 to 4.8 seconds. This process used to be done by varying the amount of oil in a tube connected to the springs. Luckily, we've been able to dispense with such a messy process, and you can now do the same thing with your mouse instead. The decay time for the classic Type 4 spring reverb was 2.4 seconds, which you can recall by setting the time knob to its center position (12 o'clock).

Mix

This knob introduces an increasing amount of reverb signal into the mix as you turn the knob clockwise. At fully counter clockwise the signal is dry. A fully clockwise setting will give a 100% reverb signal.

MIDI AND THE VKFX

Virtually all parameters on the VKFX - knobs, switches and sliders are midi controllable. The table below lists control destinations on the right and their default midi continuous controller assignment on the left. If your preferred midi controller lacks the ability to assign the controller of your choice (a wheel, slider or pedal perhaps) most of the popular sequencers will allow you to assign completely different midi profiles to incoming controllers through the use of 'transform', 'logical edit' or similar functions.

Please refer to your VST host or sequencer's manual for further information on this.

Default Routing of MIDI Continuous Controllers to Parameters

PREAMP

CC#	Parameter
12	On/Off
13	Preamp Section On/Off
14	Bass
15	Volume
20	Treble
21	Tremolo Mode
22	Tremolo Wave
23	Tremolo Speed
24	Tremolo Intensity
112	Tremolo Sync Speed
119	Tremolo LFO Phase

COMPRESSOR

CC#	Parameter
25	Compressor – On/Off
26	Compressor – Threshold
27	Compressor – Attack
28	Compressor – Release
29	Compressor – Makeup

WAH

CC#	Parameter
30	Wah – On/Off
31	Wah – Position
44	Wah – Depth
45	Wah – Release
46	Wah – Mode
47	Wah – Polarity
48	Wah – LFO Speed
49	Wah – LFO Depth
113	Wah – LFO Sync Speed
120	Wah – LFO Phase

PHASER

CC#	Parameter
50	Phaser – On/Off
51	Phaser – Speed
52	Phaser – Depth
53	Phaser – Feedback
54	Phaser – Center
55	Phaser – Mix
56	Phaser – Shape
114	Phaser – Sync Speed
121	Phaser – LFO Phase

CHORUS

CC#	Parameter
57	Chorus – On/Off
58	Chorus – Speed
59	Chorus – Depth
60	Chorus – Feedback
61	Chorus – Center
62	Chorus – Mix
63	Chorus – Shape
115	Chorus – Speed BPM Sync

OVERDRIVE

CC#	Parameter
75	Overdrive – On/Off
76	Overdrive – Drive
77	Overdrive – Tone
78	Overdrive – Level

DELAY

CC#	Parameter
79	Delay – On/Off
85	Delay – Speed
86	Delay – Feedback
87	Delay – Mode
88	Delay – Tone
89	Delay – Mix
116	Delay – Sync Speed

AMP

CC#	Parameter
90	Amp – On/Off
102	Amp – Low
103	Amp – Mid
104	Amp – High
105	Amp – Volume
106	Amp – Reverb
107	Amp – Amp Section On/Off
108	Amp – Reverb Time

MASTER

CC#	Parameter
109	Master – Morph A/B
110	Master – Input Level
111	Master – Output Level
117	Master – Internal BPM
118	Master – Sync Mode

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Also a special thank goes to Anne Skarbye who made the original product Cover Art and Design.

FREQUENTLY ASKED QUESTIONS

Q. Does Vintage Keyboard FX use any kind of copy protection?
A. Yes. You must 'authorize' the plug-in to make it fully functional. When initially installed, Scarbee VKFX will run in unregistered mode without authorization and sound bypassed (no effects). After you registered with the serial number you received with the plugin, it will work fully functional.

Q. I have two computers and a Notebook that I use for music – do I really need to buy three copies of the plugin?
A. No, we have tried to be as fair as possible, so you can actually install Vintage Keyboard FX on up to 3 computers and even use them at the same time as long as you are the ONLY user of the plugin.

Q. Can I transfer my authorization from one computer to another?
A. Yes. Our license policy just limits to up to 3 different authorizations.

Q. Will changing hardware in my computer affect my authorization?
A. No, you just have to carefully keep the serial number stored. In case of hardware changes you'll have to re-authorize with that serial number.

Q. What happens if I run out of authorizations?
A. Please email us at **support@overloud.com**

Q. If I compose or produce with someone else - can he/she use my plugin in their computer?
A. No....the license to use Vintage Keyboard FX is on a per person basis. They would need their own copy.

Q. I and several other composers/producers have our studios in the same facility. Can we all use Vintage Keyboard FX from our main server?
A. No, Each user needs to have his or her own registered copy of Vintage Keyboard FX.

Q. Can I install Vintage Keyboard FX on my studio or rental computer for clients to use?
A. No....the license to use Vintage Keyboard FX is only granted to the buyer. Your clients aren't licensed to use it on their own.

Q. If I don't use it anymore - can I resell Vintage Keyboard FX used to someone else?
A. No, the VKFX is licensed only to you. You cannot transfer the license to someone else. If you sell your computer, you must delete VKFX from the hard drive.

Q. Who do I talk to if I have more questions about licensing or authorization?
A. You can email us at **support@overloud.com**

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