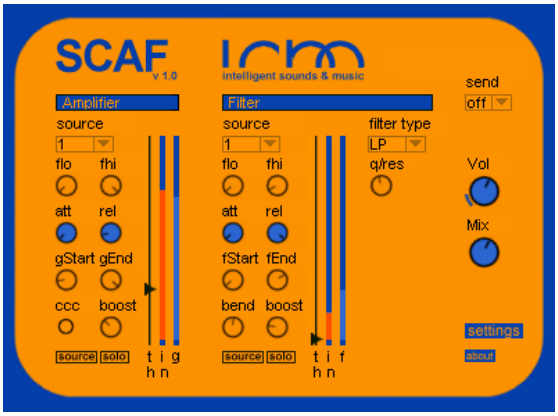
SCAF - Side Chain controlled Amplifier & Filter



User Manual for
SCAF v 1.0 Windows

Contents

Introduction

SCAF consists of a filter and an amplifier section. Both can be controlled by any track in your project. The routing between the tracks is done via internal host-independent side chains.
The sections are independent so the filter's cutoff frequency might follow the volume envelope of one track's signal while an other track conducts the amplifier.
You set the start and endpoints for gain and cutoff frequency. So the amp section can work in compressing or expanding mode. And the filter can sweep from low to high frequencies or vice versa while the controlling signals volume rises from zero to full scale.

Quick Start

To get a quick start we'll use the presets. Just a matter of 15 minutes.

The project

Please set up a project with two audio tracks. The first should contain a dynamic sound like drums. It will be used to control filter and volume on the second track. This should be a constant sound containing the whole frequency range. For the first an unfiltered synth pad will do the best job.

The side chain transmitter

Now insert SCAF into your first track. The first preset sends it's audio material to side chain 1.

Filter section

Next insert SCAF into your second track and select the second preset. Now a low pass filter's frequency should move with the volume envelope of the signal coming from the first track. That's cause side chain 1 is selected as the source for the filter section.
If you select a different source for the filter the input signal will be zero - so the cutoff frequency will remain at fStart.
If the control signal has a low volume so that the frequency doesn't move very much use the boost knob. It amplifies the control signal.
The side chain signal's volume is displayed by the orange vu meter (in) the filter frequency by the light blue one (f).

Pre filtering

Let's have a closer look at the incoming side chain signal. Click on the filter section's source button and you'll hear it. Use the prefiltering knobs fLo and fHi to select a part of the signal e.g. turn down fHi to select the kick drum out of a whole drum set.
Then click the source button again to return to the filter's action.

Upside down

Try out what happens when you change the fStart/fEnd settings. Especially when you turn fStart to a high frequency and fEnd to a low one. Now the cutoff frequency is high when the controls signal's volume is low and vice versa.
You might even switch to the third preset that contains these settings.

Volume section

With fStart = 0 the output signal was low when the control signal was low cause a low pass filter with a cutoff frequency near zero mutes the tracks signal. To have an output signal that pumps with the control signal again use the volume section. Or let

the next preset: >lp upside down + volume< do that for you.
Probably the signal will be a bit low - try the volume section's boost knob.

With the sections' solo buttons you can hear their activities seperately. The volume section has become something like an expander.

Threshold attack and release

Try the threshold (th) slider (left to the orange vu meter that shows the control signal's envelope). Push it to a higher value so that the orange bar just reaches it every now and then. Now the sound is chopped. The gain will just go beyond gStart when the control signal exeeds the threshold. Use the attack (att) and release knobs (rel) to let the gain vary in a softer way.
Now try the same with these controls in the filter section.

Then listen to the next two presets with high and band pass.

SCAF - self related

With the next preset SCAF sends to side chain 6 and the volume section also receives from it. The filter section is switched off.
So the channel's own signal controls the volume section. The pre filter (flo, fhi) selects a very low band from the signal e.g. to seperate a bass drum.
The start gain (that will be applied as long as the incoming volume is lower then the threshold) is at 0 dB while the end gain is lower. These settings apply a ducking compression effect to a mix on the track.
Of course you can switch the volume section's source to any side chain - number 1 in our case.
The next preset does the same in expanding mode without pre filtering.

Parameters

Common parameters

send — select the destination side chain from this dropdown list. Or select off if you don't want the track's signal to be sent to a side chain.
If you select an occupied side chain (already used by another instance of SCAF) the dropdown list switches back to off.

Vol — the overall gain. Up to 18 dB cause narrow band pass filters can lead to a quite low signal.

Mix — a dry/wet mix.

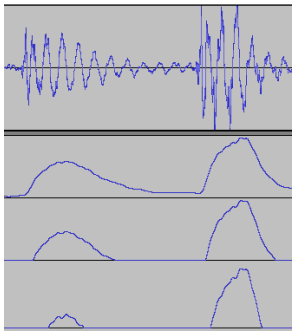
Both sections

source — selects the source signal from the side chains. If no instance of SCAF sends to the selected side chain the input will be zero.

boost — a pre amplification for the controlling side chain signal. Klick on the source button to hear the pre amp's effect.

flo, fhi — the pre filtering band pass for the side chain signal will have these cutoff frequencies. Klick on the source button to hear the filter's effect.

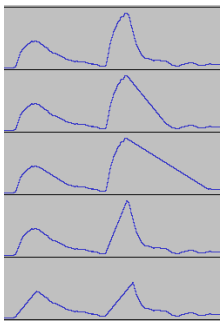
th — while the control signal is lower than the threshold the envelope will reside at the start value. This start value is fStart for the filter and gStart for the volume section. When the control signal moves from threshold to maximum the envelope moves from start to end value.



This picture shows a control signal and envelopes for
threshold = -∞ dB, -12 dB and -6 dB

Of course the start value (fStart or gStart) is low and the end value (fEnd or gEnd) is high. If we'd exchange these values the envelopes would be upside down.
And attack = 0 and release = 0.

att, rel — these parameters set the maximum velocity for the envelope. If the incoming signal's volume rises faster than attack (att) or falls faster than release (rel) the envelope will follow with these parameters' values.
A value of 500 ms for attack means that the envelope can't move faster from zero to maximum than in 500 ms.



This picture shows envelopes with
att = 0, rel = 0
att = 0, rel = 100 ms
att = 0, rel = 200 ms
att = 50 ms, rel = 0
att = 100ms, rel = 0

You see: if the attack value is too high the envelope won't be able to reach the top until the signal returns to the bottom. So the resulting volume will be low.

source — when the source monitor is switched on you'll hear the contolling side chain signal after it is pre filtered and boosted.
The output volume control still works here - keep in mind that it might get loud if you turned the boost knob to the right.

solo — this will monitor the results of the corresponding section.

Filter section

fStart, fEnd — start and end values for the filter envelope. If fStart = 1000 Hz and fEnd = 100 Hz the filter cutoff frequency will reside at 1000 Hz until the pre filtered control signal's volume exeeds the threshold. While the control signal's volume increases furthermore the frequency will approach 100 Hz.

bend — this will bend the filter envelopes to reside a bit more in the most interesting band 50 to 1000 Hz.

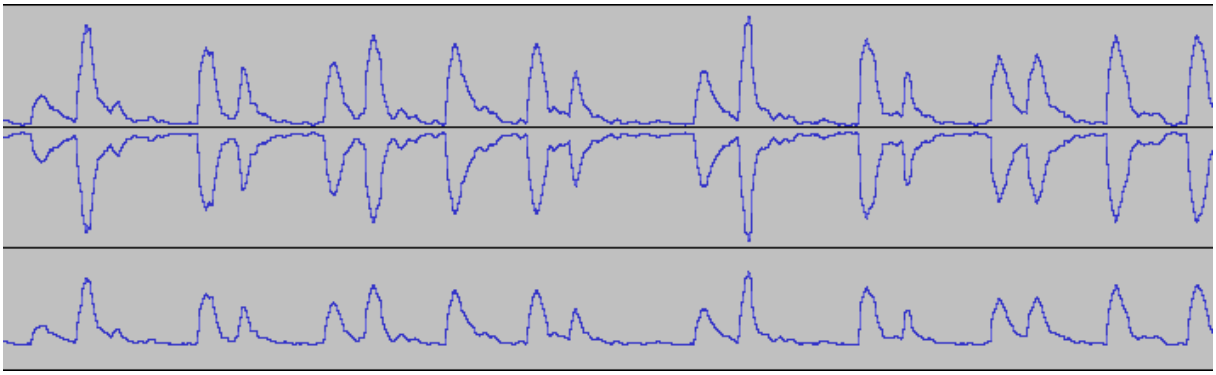
Volume section

gStart, gEnd start and end values for the gain.

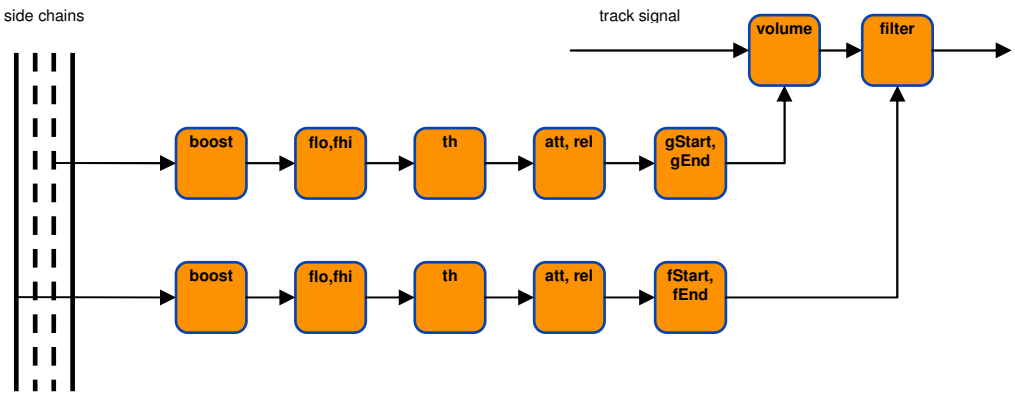
ccc couple control channels. Switch this on to control both stereo channels with the same envelope. The maximum of both stereo envelopes will be taken.

This picture shows envelopes with

fStart = 0, fEnd = 20 kHz	or	gStart = -∞ dB, gEnd = 0 dB
fStart = 20 kHz, fEnd = 0	or	gStart = 0 dB, gEnd = -∞ dB fStart = 0,
fStart = 1 kHz, fEnd = 10 kHz	or	gStart = -12 dB, gEnd = -3 dB



Signal chain



mono/stereo

SCAF is mono and stereo compatible. For a better overview the vu meters only show the maximum of the channels.
When the controlling side chain signal and the track signal are stereo the filter- and volume envelopes of both channels are independent. Switch on the amplifier section's ccc to control both stereo channels with the maximum of the side chain channels' envelopes.
A stereo track signal will be treated identically by a mono side chain signal.
And a mono track will be controlled by the left channel of a stereo side chain.

latency compensation / host buffer size

SCAF has a latency of one host buffer size. So the host buffer size should be minimized in every case.
The latency compensation is switched off by default cause it adds the same latency to the host. Press the settings button and the settings dialog will pop up where you can switch on the latency compensation. After that you'll have to restart your project and then the compensation will work for every instance of SCAF.

And there's one more issue regarding the host buffer size: the vu meters get their informations after a host buffer has been processed. The bigger the buffers are the more the display flickers.

Controls

Just a few words:

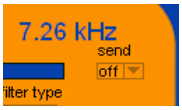
Knobs:

To change a knob's value move the mouse vertically. Holding the shift key down while moving the mouse provides fine tuning here as it does for all the controls of this plugin.

Controls that looks like this:

are disabled because the section has been switched off.

The controls' values will be displayed in the upper right of the user interface while it is changed or the mouse pointer hoovers over the control:



program change

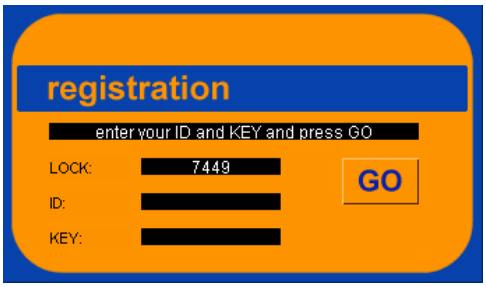
SCAF reacts to program change Midi messages as long as the program number is below 11.

Registration, License and Demo

After installing SCAF (copying it to your VST folder and restarting the VST host), SCAF runs in demo mode. The demo version emits a low background noise and a click every now and then. And it's user interface shows the register button:

Everything else works like in a registered version.
Please try out the demo before buying SCAF. Especially if you're using an unconventional host. If there are problems, we'll try to work them out. And we never failed up to now ☺
If the demo works fine, the registered version will also do.
SCAF is tested on different hosts in different versions: Cubase, Live, Reaper.

For registration please click the register button in the lower right of the user interface. The registration dialog appears:



Just copy the lock number and go to shareit:
http://www.shareit.com/product.html?productid= 300361428
Here you can pay via paypal or credit card.
Don't forget to leave your lock number.
We'll return the id and key for the registration dialog.