



ClipStar was developed by **de la Mancha**

It is a Soft Clipper effect plug-in in VST format for Microsoft Windows based hosts.



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Introduction

ClipStar is a soft clipper effect plugin, designed to prevent peaks in a subtler way than hard clipping, increase loudness and add pleasing saturation.

Where ClipStar differs from other clippers is that it can leave the low frequencies untouched, where distortion is more evident, and allow a greater boost in gain without noticeably degrading the signal.

You can use ClipStar for peak protection, for loudness gain or for sympathetic distortion depending on your mood and the phase of the moon.

Features

- Vintage style soft clipper with low frequency bypass and comprehensive metering
- In gain & Out gain adjustable to +/- 30 dB
- Soft clip limit can be set from 0 to -30 dB
- Low frequency bypass cut off from 0 to 1000 Hz
- Low frequency gain can be adjusted from +/- 30 dB
- Subtle colouring from a home-made blend of harmonics, saturation and noise
- Optional hard limiting on final output
- Metering covers stereo input, output and gain reduction. All meters show actual and peak levels
- Adjustable peak meter hold time
- Double-click knob resets
- Developed with SE 1.1

Installation

Installation is simple, just extract *ClipStar.dll* from the zip file and copy it into your VST directory. Install and load in your host program as you would any other VST effect.

As ClipStar will auto-install some module files into a sub-directory with the dll, you need to make sure that Windows folder permission rights for your VST directory allows this, especially in Vista / 7 where it may default to block this process

To uninstall, simply delete the *ClipStar.dll* file and the associated *ClipStar* folder from your VST directory

Presets and Tweaking

The presets demonstrate the range of ClipStar, from subtle peak limiting to extreme distortion. These presets can sound totally different depending on the source material and may not have any effect or could distort depending on the level of the material that you try it on. The settings will almost always need to be adjusted to the volume and dynamic range of the audio you are running through it. So the presets are a demonstration and a starting point, but you should expect to tweak each one a little if you want to get the best out of ClipStar (see *Suggested Methods*).

Controls

Main Controls

In Gain (dB) - adjust the volume of the incoming audio signal. Usually used to push the volume up to or over the clipping limit. Double-click to reset to zero.

Soft Limit (dB) – sets the signal level at which soft clipping will start. Incoming audio over the limit will be reduced in level, however it may overshoot the soft limit by a small amount (usually less than 0.5 dB). Double-click to reset to zero.

Setting at -0.5 dB should ensure there are no overs (output greater than 0dB)
Setting very low (eg -20 to -30dB) will likely induce distortion, which you may or may not desire

Out Gain (dB) - adjust the volume of the outgoing audio signal. This is usually used to bring up the overall volume if the clipping limit is low. Double-click to reset to zero.

Hard Limit – this adds a stereo hard clipper at the end of the signal chain, which can help to prevent any small overs not caught by the soft clipper.

Other Options

Lo Freq (Hz) - adjust the cut-off value to bypass low frequencies from the soft clipper, directly to the output. This is used when the clipping causes the low frequencies to noticeably distort, so you can bypass them and maximise the overall signal volume in a cleaner way. Double-click to reset to zero.

Lo Gain (dB) - adjust the volume of the bypassed audio signal. This gain is applied AFTER the In Gain, so it is usually used to balance the effect of the In Gain without clipping (see *Suggested Methods*). Double-click to reset to zero.

Meters

There are 3 buttons to select between metering for Input, Output or Gain Reduction. The meter shows the actual level (needle) and peak level (sweep) in decibels. The peak hold time can be adjusted by turning the screw on the meter.

Suggested Methods

These are just some examples of how ClipStar could be used, but feel free to experiment or use your own preferred methods for soft clipping.

Loudness

A clipper can be useful to gain loudness by boosting the input gain beyond the headroom and limiting anything over 0dB.

The advantage over simply turning up the volume is that you can raise the volume of the quiet bits even more but prevent the loud bits from going over 0dB. This can get a decent boost in overall volume (about 3 to 5 dB RMS) without noticeable degradation of the signal.

The process also adds some pleasing saturation, which can add a little mojo to your audio.

The disadvantage can be the distortion when pushing the clipper hard, which is very noticeable in the lower frequencies. ClipStar allows you to bypass the lower frequencies and allows you to really push the signal for maximum loudness and impact without low freq distortion.

1. Start with the INIT patch
2. Set the SOFT LIMIT knob to about -0.5 to -1.0 dB to give a little space for anything that gets over the soft clip limit
3. Take a look at the IN meter peaks to see how much you could boost.



In this example, the peak signal (grey sweep) is showing about -5dB

This means that there is still 5dB of headroom (difference between the peak and 0dB)

If you used a simple volume gain, you could boost by a maximum of 5dB without getting any overs.

However with ClipStar you can go beyond a 5dB boost, probably 8 to 10dB or more depending on the material

4. Use the IN GAIN knob to increase the gain by (headroom + 5 dB). The IN meter should be mashed into the red
5. Switch to the OUT meter, hopefully it isn't clipping, or maybe just on occasional peaks
6. How do the low frequencies sound? If they are distorting, drop the LOW GAIN knob to minimum (-30dB) and then slowly turn the LO FREQ knob up from 0Hz until you cannot hear distortion any more, maybe somewhere around 80Hz or more.
7. Then increase the LO GAIN knob again until the bass frequencies are balanced again in the mix. In this example, if you boosted the IN GAIN by 5dB more than the headroom, you would probably set LO GAIN at -5dB to compensate as the bass signal is no, however also use your ears to get the best mix.
8. Now look at the OUT meter again, are you getting any clipping in the red? If not, then you might even be able to push the OUT GAIN knob a few dB
9. If you are getting very occasional clipping, you could just flick the HARD LIMIT knob on without hearing any degrading
10. If the red zone clipping is more problematic, you could lower the OUT GAIN slightly

Peak protection

This is like loudness, except the object isn't to push the gain up, just a safety limit to stop overs at current gain

1. Start with the INIT patch
2. Set the LIMIT knob to about -0.5 to -1.0 dB to give a little space for anything that gets over the soft clip limit
3. Leave IN GAIN, OUT GAIN and LO GAIN at 0dB
4. Set LOW FREQ to about 80-90Hz to prevent low freq distortion
5. Set HARD LIMIT to on
6. Relax, ain't no peaks coming through here

Distortion

This is also similar to the loudness example, but this time really pushing the gain to get deliberate distortion

1. Start with the INIT patch
2. Take a look at the IN meter peaks to see where you need to limit. If the peak is -5 dB and the low is -20dB, then you can set the SOFT LIMIT within this range.
3. Set the SOFT LIMIT knob below the peaks, the lower you go, the more of the signal will distort
4. Use the IN GAIN knob to increase the gain and the amount of distortion.
5. Switch to the OUT meter, it shouldn't be clipping, in fact there should be some headroom as the LIMIT knob is so low.
6. Increase the OUT GAIN so that peaks on the OUT meter are close to 0dB
7. How do the low frequencies sound? If they are distorting too much, then slowly turn the LOW FREQ knob up from 0Hz until you get a more balanced distortion.
8. Now look at the OUT meter again, are you getting any clipping in the red? If not, then you might even be able to push the OUT GAIN knob a few dB
9. If you are getting very occasional clipping, you could just flick the HARD LIMIT knob on without hearing any degrading
10. If the red zone clipping is more problematic, you could lower the OUT GAIN slightly

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Credits

Thanks to **Jeff McClintock** for creating SynthEdit and to the 3rd party SE module developers, without which this plug-in wouldn't exist.

Also a big thanks to **Jonathan Styles** at SUKaudio, for the brilliant toggle graphic used on the GUI and to **g200gk** for the fantastic **knobman** programme

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Links	
SynthEdit	http://www.synthedit.com/
Dave Haupt Modules	http://www.dehaupt.com/SynthEdit/semmodules.htm
Chris Kerry Modules	http://www.chriskerry.f9.co.uk/
K D Lynch	http://www.rubyhex.com/synthedit/
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Knobman	http://www.g200kg.com/en/software/knobman.html

About the developer

de la Mancha lives, eats, dreams and breathes VST plugins, seeking to bring randomization and modulation to the masses. He is also a producer of odd-skool breakbeat, downtempo glitchy beats and other assorted bleeps and noises. You can find his music at www.papadodo.co.uk www.3x0.co.uk and www.mono-log.co.uk

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