



Golden Peak-Pressor | GPP-1

Professional Soft-Limiter / Peak Compressor Plugin

Users Manual

Table of Contents

1. INTRODUCTION.....	3
FOREWORD.....	3
GENERAL DESCRIPTION.....	4
<i>Main Features</i>	4
TOP BAR.....	5
<i>Overview and descriptions</i>	5
KNOB OPERATION	5
<i>Description</i>	5
2. DETAILED DESCRIPTION.....	6
ADJUSTING THE COMPRESSION	6
<i>Overview and descriptions</i>	6
<i>More about Over-Compression (O.C.)</i>	6
RELEASE CONTROLS	7
<i>Overview and descriptions</i>	7
<i>More about Program Dependent Envelope (PDE)</i>	7
MAKEUP GAIN	7
<i>Overview and descriptions</i>	7
<i>More about Brick-Wall</i>	8
STEREO LINK	8
<i>Overview and descriptions</i>	8
ENVELOPE TYPES	8
<i>Overview and descriptions</i>	8
PARAMETER HANDLING.....	9
<i>Overview and descriptions</i>	10
METERS.....	10
<i>Overview and descriptions</i>	10
3. DATASHEET.....	11

1. Introduction

1. Introduction

Thank you for buying the Golden Peak-Pressor | GPP-1 by Kjaerhus Audio

Foreword

While most limiters these days seem to be made for maximizing loudness, the GPP-1 works in a much gentler way. We wanted to design a plug-in that would tame the peaks without squelching the sound. In analog equipment there is natural peak-compression achieved by the saturation in the analog circuitries and overdriven tape recordings. Because of this, the “worst” peaks are naturally tamed, and the sound seems warmer / softer than digital. To soften up the sound in the digital domain, we designed the Golden Peak-Pressor | GPP-1.

Instead of trying to push the RMS level to extreme heights, the GPP-1 can compress the peaks in a gentle and musical way that allows the sound to “breathe”. The result is an open and live sound that hasn’t lost all of its dynamics.

The GPP-1 can be used on any track that has peak signal levels too high to mix well with other tracks. It can also be used to “melt” tracks together in sub-groups / tracks, which is good for drums & bass, vocals, guitars etc. Used on the final mix, it can squish the highest parts a little, bringing the lowest parts forward in the mix. The GPP-1 can be used very subtly to give you a few more dB, or it can be used to give you the “in your face” sound, which is very popular.

One of our prime goals in the Gold Series has been to avoid latency. In the GPP-1 we worked very hard on the algorithms to produce a soft sound without too much look ahead / latency time, which would disqualify the plug-in for live performance. As a result, the GPP-1 has only has 0.5ms of latency, which is about the time it takes sound to travel 17cm (7inch), which is considered real time.

The GPP-1 is made easy to use with a few good controls that make a difference. We hope that you will enjoy the GPP-1 and find many great uses for it!

Kjaerhus Audio.

1. Introduction

General Description

The GPP-1 is a high quality soft-limiter / peak compressor designed for peak-taming / compression during real-time tracking, sub-tracking and mixing, live or in the studio. It can compress troublesome peaks, soften the sound, and bring out instruments that would have been buried in the final mix. It offers five different release types designed for different material and taste. Program dependent envelope times for increased loudness and minimum pumping are also included.



Main Features

- Feed forward compression and limiting
- Five envelope types including Opto-coupled
- Very short release times
- Program dependency to avoid pumping and increase loudness
- Over Compression Indicator
- Brick-Wall Limiter
- Stereo Link
- A/B comparisons
- Presets with recall function
- Silent knobs
- 64 Bit Internal Processing
- Supports sampling rates up to 192 kHz
- Full VST automation
- Low CPU usage
- Very low latency

1. Introduction

Top Bar

On the top bar, you will find information about the product, together with links to the Users Manual, the about box, and the website.

Overview and descriptions



- Logo:** Kjaerhus Audio logo. For your convenience, we have added a hyperlink to our web site allowing you to check for new products and updates (you will need an open Internet connection to use this).
- Manual:** Click here to open the Users Manual.
- About:** Click to get an info dialog with registration details and the product version number. If you have not yet registered you will see the remaining trial time, and be able to open a license key to register from this dialog.

Knob operation

All knobs are operated with vertical mouse movement, holding down the left mouse key. It is possible to change the sensitivity adjustment of the mouse and reset the knobs using interaction from the keyboard.

Description

- No Key:** Under normal operation (no keyboard interaction) the knob will turn relatively fast and the parameter increase / decrease will be relative large (but fine enough for most purposes).
- Ctrl:** Hold down the Ctrl key while pushing the left mouse key to make fine adjustments.
- Alt:** Hold down the Alt key while pushing the left mouse key to reset the knob.

2. Detailed Description

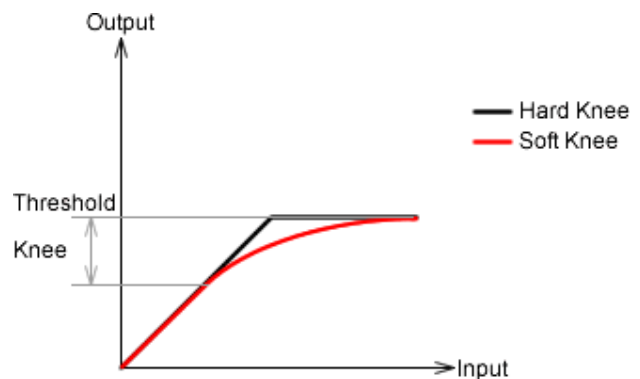
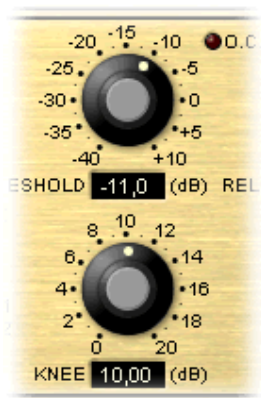
2. Detailed Description

In this chapter we will have look at the features and controls of the GPP-1 and discuss how to use it optimally.

Adjusting the compression

The Threshold and Knee are used to control the amount of compression. It should be noted that the GPP-1 has no ratio control, which makes the setting of the knee a more important part of the compression than on most other compressors.

Overview and descriptions



- Threshold:** The absolute ceiling of the output level (before makeup gain).
- Knee:** Forms the transition from the non-compressed levels to threshold. The Knee value indicates how many dB below threshold the compression will begin, i.e. setting this control to 0dB will give a hard limiting often used for mastering while a higher value will make it work as a peak compressor.
- O.C.:** Indicates if the signal is over compressed (read below).

More about Over-Compression (O.C.)

As a rule of thumb, when working with compression, the input signal should never be compressed below its effective level (RMS). If this happens, distortion and pumping effect will increase and the output level (loudness) will not get significantly higher. This state of “over-compression” is detected by the GPP-1 and the O.C. LED will light up. If the O.C. LED lights up you should consider increasing the Threshold or lowering the Knee, unless the sound of over-compression is a wanted effect.

2. Detailed Description

Release Controls

Setting the right release time is an important part of the compressors character. Generally a low release time gives a higher RMS output / loudness and limited pumping with more low frequency distortion / warming. A higher release gives a smoother sound with less RMS output. With the built-in PDE algorithm, it is possible to minimize pumping and get a higher RMS output when used with a medium to high release time.

Overview and descriptions



Release: The time it takes for the compression to stop after the input has dropped lower than the threshold.

PDE: Program Dependent Envelope times to reduce the pumping effect and maximize loudness.

More about Program Dependent Envelope (PDE)

Program Dependent Envelope times are used to reduce the pumping effect and maximize loudness. Basically it will reduce the attack time if there is a short time of lower signal level, and reduce the release time if there is a short peak with a higher signal level (such as a kick drum). This behavior is particularly desirable with mixed program material. In this scenario it will apply fast and effective compression to peaks, while giving a more natural sounding release phase with lower harmonic distortion after a harder or longer lasting compression.

Makeup Gain

After compression, the output level will naturally be lower than the input level. In most cases it is desirable to add some gain to the signal to make up for the signal lost during compression. We have added two controls to do just that, an auto-gain and a manual fine adjustment.

Overview and descriptions



2. Detailed Description

Auto-Gain:	Auto-Gain will increase the output gain by the same amount of dB as the threshold amount below 0. Auto-Gain <u>does not</u> ensure that the output will go exactly to 0dB! Generally a soft knee would give a lower peak output reading, while the classic envelope type could give a higher reading in the peak output, especially if the release time is low.
Gain:	+/- 10dB fine adjustment.
Brick-Wall:	Enabling Brick-Wall will ensure that no output samples exceed the selected output level.

More about Brick-Wall

During normal operation (Brick-Wall off), short peaks might exceed the selected output level. In most cases these peaks are so low that they would not even show up on the output meter, but in some cases they might reach a few dB (especially if the compression is high, release time low and the Classic Release type is selected). These peaks are a result of the gentle approach of the GPP-1, and sonic advantages are gained by allowing them. We recommend only enabling the brick-wall limiter when peak levels above the selected output level are not acceptable (i.e. if used for mastering).

Stereo Link

Stereo Link will make the compression in the left and right channel depending on the signal in the other channel as well as its own. This is very useful to avoid strange panoramic or panning effects if one channel is compressing more than the other.

Overview and descriptions



Stereo Link:	When stereo link is off each channel will be compressed independently of the other (as in Dual Mono Compressors). When the stereo link is on, both channels will be equally compressed based on the highest signal of the two channels.
--------------	---

Envelope Types

The type of envelope is very important for the sound character. We have included five different envelope types for different results and tastes.

Overview and descriptions

2. Detailed Description



Classic: The classic type is emulating discrete RC envelope circuitry used on various analog compressors. Due to its exponential release curve it has a minimal pumping effect, and leaves a minimum “hole” in the sound after compression. It will add a great deal of harmonics to the low frequencies, especially on high compression with a low release time.

This type can really “warm up” a signal, producing maximum loudness!

Smooth 1: Smooth 1 has a soft initial release curve, giving it lower distortion while still maintaining a low pumping effect, and a minimal after compression sound “hole”.

Use this whenever you want a softer tone than the classic type can give you!

Smooth 2: This type is really smoothed out and will distort low frequencies minimally, even with very low release times.

The sound is round and punchy, and works fine with all instruments and final mixes!

Pumper: As the name suggests, this is the type of envelope to use if you are going for a pumping effect. It has a very slow initial release and then a faster release, which increases the pumping effect.

Use this for music styles where a pumping effect is desired!

Opto: This type emulates the two-stage release used especially in vintage gear where compression was done with a Light Dependent Resistor and an EI-panel as the active compression components.

Use this for a nice “warm” vintage sound!

Parameter handling

You can have two sets of alternate parameters for a track, allowing you to switch back and forth between the two to decide which sounds best.

2. Detailed Description

Overview and descriptions



A|B: Select either the A or B set of parameters.

Copy: Copy the current actual parameters to the other set of parameters.

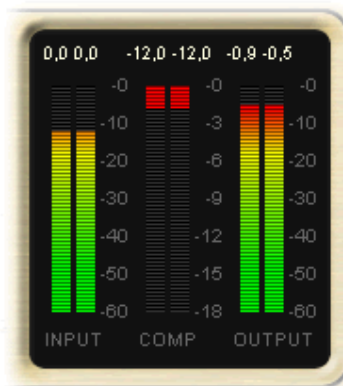
Recall: Will load the original factory parameter values for the present patch.

Important! One patch can only hold one set of parameters. When closing the user interface of the equalizer or the Host, it will only remember the parameters that were last selected. When the user interface is opened after it has been closed, the last selected set of parameters will be shown as 'A' parameters, despite what it was before. The 'B' set will be empty. If you want to keep both 'A' and 'B' parameter sets, save them in one of the banks before closing the user interface.

Meters

Three peak level meters and a peak hold label are available in the meters section for visualizing the compression.

Overview and descriptions



Input & Output Meters: Shows the peak input and output levels. The numbers over the top of the meters shows the highest peak level since it was last reset. Reset the peak labels by a left click.

Compression Meter: Indicates how much the output has been compressed. The numbers over the top of the meter will show the biggest peak compression since it was reset. Reset the peak label by left clicking it.

3. Datasheet

3. Datasheet

Threshold:	-40 – +10dBFS (full scale digital)
Makeup Gain:	-10 – +10dB (manual) and -10 – 40dB (auto-gain)
Release:	5ms – 5s ¹
Knee:	0 – 20dB ²
Stereo Link:	Peak detection
Processing:	64 Bit Floating Point
Supported sampling rates:	44100, 48000, 88200, 96000, 176400 and 192000 Hz
Latency:	0.5ms (22 samples reported to Host)
CPU usage on AMD Athlon XP2000+:	2% typical (may vary from 1.6% to 2.7% depending on parameter settings, CPU can be saved by closing the editor)

- 1) Release Time is defined as the time it takes to reach 63.2% of the destination level (natural RC time constant “ τ ”). Smoothing filter time coefficients are not included in this time.
- 2) This is the starting point below threshold. The compression will move from 1:1 to ∞ :1 within the selected dB range.