



Golden Audio Channel | GAC-1

Professional Dual Processing Channel Strip

Users Manual

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1. Introduction

1. Introduction

Thank you for buying the Golden Audio Channel | GAC-1 by Kjaerhus Audio

Foreword – Why Dual Processing?

Processing with compressors and equalizers has been the “secret” in many of the greatest sounds heard in recordings. Skilled engineers have spent endless hours interconnecting effects in every possible way, making new and interesting sounds, and making their tracks something special. With the GAC-1 you get the best techniques right in your DAW without the hassle of making complex interconnections yourself (if possible at all in your host). It also makes it easy to save your favorite setups and use them on other tracks.

So what can you do with more compressors and equalizers? One often-used application is to use more serial connected compressors to get a deeper transparent compression than one compressor can do by itself. One of the compressors could also be used to lift up quiet parts of the signal while another compressor could compress the loudest parts. In parallel connection, mixing a deeply compressed signal with a less compressed one can create interesting effects. But even more interesting sounds are accomplished when we use one of the equalizers as a side chain filter for one of the compressors. In one of the presets, all frequency areas boosted on one of the equalizers are expanded, while frequency areas that are cut on the equalizer are compressed; interesting, isn't it? But there are many more possibilities, just check the presets for some of them. The GAC-1 also supports side chaining through two of its three variants, which makes it even more interesting. Of course ordinary ducking is possible, but what about ducking the fundamental frequencies in an el-bass with a side chain kick drum filtered out from a drum loop? Of course the bass harmonics are left untouched. How about a pad sound expanded by the rhythm of the side chain signal? The possibilities are endless, and with ten strong routings right at your fingertips, you can create great new sounds on the GAC-1 within seconds (apart from the comprehensive factory presets).

We are sure you will find this big plugin to be a strong tool for your tracks, and won't find it more complex to use than a single processing channel strip, once you get used to it.

Kjaerhus Audio.

1. Introduction

General Description

The Golden Audio Channel | GAC-1 includes all you need to make top-notch audio tracks and mixes. It features two equalizers, two compressors, a noise-gate and a de-esser. All components of the GAC-1 are of the highest quality. The internal effects are interconnected with ten selectable routings, including normal instrument setups, dual band setups, and special setups like mid-side processing and compression based on side chain filtering. With the double EQ and Compressor architecture, the GAC-1 offers outstanding sound possibilities that are not possible with single processing. But even with all of these features, it is still easy to use. Three versions are available: stereo, stereo with side chain, and mono with side chain. There is no latency, which makes this the ideal tool for real time performance in the studio or on stage.



Main Features

- Two Compressors with VCA and Opto models
- Two four band parametric EQ's with five filter types
- Noise Gate with soft knee
- Wideband De-esser
- Ten routings (interconnection between effects)
- Side chain compression
- Individual On (Bypass) switch for each effect
- A/B comparisons
- Silent knobs and buttons
- 40 Presets
- 64 Bit Internal Processing
- Supports sampling rates up to 192kS/s
- Full VST® automation
- Low CPU usage
- No latency

2. Getting Started

2. Getting Started

This chapter contains general info about the GAC-1 and how to use it. We will also have a look at its main section and discuss its ten selectable routings (interconnection between effects). Lastly we will talk about the side chain possibilities.

Variants

The installation package includes three variants of the GAC-1. The variants will display as individual effects in the effects list as GAC1, GAC1_SC and GAC1_SCM. Here is a short description of each:

- GAC1: This is the standard stereo version without side chain support. It has two inputs and two outputs.
- GAC1_SC: This is a stereo version with side chain support. It has four inputs and two outputs.
- GAC1_SCM: This is a mono version with side chain support. It has two inputs and one output but will still work on a normal mono track.



Banks saved by one variant cannot be loaded into other variants, so remember to select the right variant for the job when starting your project.

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.



1. Logo: Kjaerhus Audio logo. For your convenience, we have added a hyperlink to our web site. This allows you to check for new products and updates (you will need an open Internet connection to use this).
2. Manual: Click here to open the Users Manual.
3. About: Click to get an info dialog with registration details and the product version. 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.

2. Getting Started

Knob operation

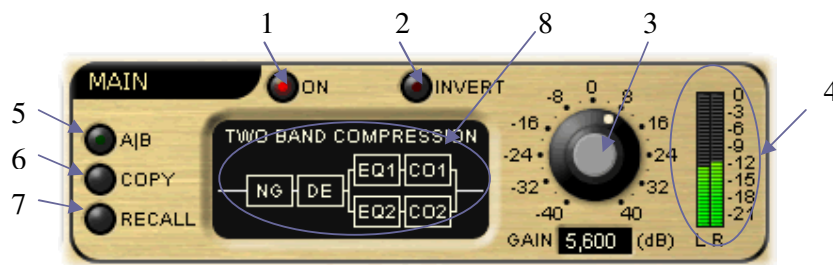
All knobs are operated with vertical mouse movement, holding down the left mouse key. It is possible to change the sensitivity adjustment of the mouse and reset the knobs using interaction from the keyboard.



- 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).
- Shift: Hold down the Shift key while pushing the left mouse key to make fine adjustments.
- Ctrl: Hold down the Ctrl key while pushing the left mouse key to reset the knob.

Main Section

This is where the action begins and ends. Let's have a look at the features.



1. On: Shifts between processed and unprocessed signal (bypass when off).
2. Invert: Inverts the output (180 deg. phase shift).
3. Gain: Output gain adjustment.
4. Meter: Shows the peak level output for left and right channel.
5. A/B: Select either the A or B set of parameters.
6. Copy: Copy the current actual parameters to the other set of parameters.

2. Getting Started

7. Recall: Will load the original factory parameter values for the current patch.
8. Routings: Here you will see the actual routing (how the effects are interconnected).

A to B comparisons

You can have two sets of alternate parameters for a track and switch back and forth between the two to decide which sounds best. Use “A/B” to swap between the two preset sets and “Copy” to copy the current parameters (those you see now) to the other set.



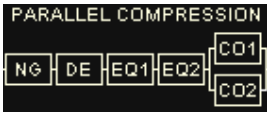




One patch can only hold one set of parameters. When closing the user interface of the equalizer or the Host, it will only remember the parameters that were last selected. When the user interface is opened after it has been closed, the last selected set of parameters will be shown as ‘A’ parameters, despite 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.

Routings

The first step in making a sound would be to select a routing that fits the purpose. Ten routings are available with some being instrument setups, some advanced setups used for special vocal processing, or problem solving tools for mixes. The routings are described in the table below.

	<p>All effects are connected in serial. This routing will work on instruments, vocals, drums and mixes. It can also be used for single processing.</p>
	<p>Special setup where the signal is split into two after the ordinary equalizing. Run your vocal track through the preset “Fat Vocal” to see why this setup is something special.</p>
	<p>Splits the channel in two, right after Noise Gate and De-esser. This is the setup to use for individual compression based on two different equalized spectrums.</p>
	<p>Compressor 2 uses equalizer 2 as a side chain filter. This way the compression can be made frequency dependent.</p>
	<p>First 8 bands of equalizing to work with (one could be a low-cut filter to remove subs and the other one used for normal tonal correction). In the end, two compressors shape the dynamics.</p>

2. Getting Started

 <p>PARALLEL COMPRESSION</p>	<p>This Routing can be used for upward compression, lifting up quiet passages of music. If one compressor is inverted (phase swapped), expansion or funny cancellation effects can be accomplished.</p>
 <p>SELECTIVE COMPRESSION</p>	<p>EQ2 splits the signal. The normal equalized signal goes directly to output and a difference signal (in – out on EQ2) goes to Compressor 2. The result: frequency areas boosted by EQ2 are expanded, while cut areas are compressed.</p>
 <p>SEL. COMP. W. SIDE FILTER</p>	<p>It looks complex indeed but it is just like the routing above, except that this time EQ1 is used as a side chain filter. This way the compression depth will depend on the equalized spectrum of EQ1.</p>
 <p>SPLIT STEREO SETUP</p>	<p>Two channels are processed by their own equalizer and compressor. This is a tool for special stereo effects or to solve special problems in the stereo field.</p>
 <p>MID-SIDE SETUP</p>	<p>The signal is encoded into mid-side, the two bands processed with each equalizer and compressor, and then decoded to Left-Right again. This is good for solving special problems in the stereo mix or can be used for special effects.</p>

Side Chaining

The GAC-1 supports side chaining in two special variants named “GAC1_SC” and “GAC1_SCM” the last one being a mono version (see “Variants” in this chapter).

Side chaining is used to compress one signal depending on the signal level of another. Often used applications are to duck a bass guitar when there is a kick drum, or to duck music whenever a speaker talks (often used for background music in radio- and television programs). There are of course many more applications that are not mentioned here.

How to use side chaining

First you will need a track that supports the amount of inputs in the side chain plugin (four in the stereo version and two in the mono version). The side chain signal is always applied to the last input(s) of the plugin. On each compressor and equalizer is a button that enables side chaining. Enabling side chaining on one of the compressors will lead the side chain input(s) to the level detector of that compressor. This makes compression based on its level instead of its normal input level. Enabling side chain on one of the equalizers will replace its normal input (according to its routing) with the side chain signal.



The mono side chain version can always be inserted on a mono track, as the host will always supply both inputs with the same signal.



Not all hosts support four inputs. Refer to the manual of your Host applications.

3. Getting Into the Details

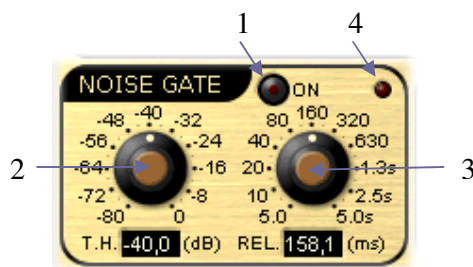
3. Getting Into the Details

In this chapter we will go through the internal effects one by one and discuss their features, and how to use them optimally.

Noise Gate

A Noise Gate is available to take care of the noise that inevitable will be on a track recorded from an analog source. It has soft attenuation below threshold which produces a more musically sounding gate than the classic on / off type.

Overview and descriptions



1. On: Turns the Noise Gate on and off. If off, the signal passes unprocessed.
2. Threshold: Inputs below this level will be attenuated significantly.
3. Release: How fast the gate closes (fades out) after the input level has fallen to below threshold.
4. LED: This LED will begin to light up if the input is attenuated less than 40dB. At only 3 dB of attenuation, the gate is considered open and the LED will be fully lit.

Adjusting the Noise Gate

Start with a release time of around 1 sec. Turn the threshold up (starting from -80dB) until you hear that the noise is attenuating enough. Listen carefully to your material to find the optimal point for noise attenuation without hurting the audio material. Next, adjust the release time. A low release time will give a fast noise cut-off when the main signal is not sounding. If it's too low, the gate might sound "choppy" because it opens and closes all the time. The goal is finding the optimal setting that fits your material.



The Noise Gate can also remove or dampen the breath noise from vocalists.



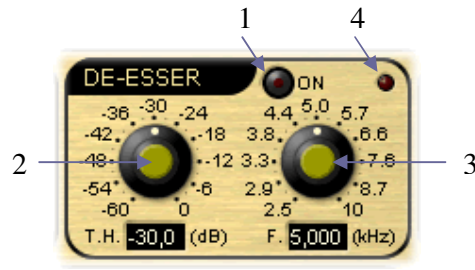
A Noise Gate can also be used for drum shaping. Use a low release time to chop of the end of the sound. If a little reverb is added to the drum first, the effect is very clear and effective.

3. Getting Into the Details

De-esser

Vocal “s’s” and “t’s” might need some dampening, so we have included a de-esser. It works by detecting the signal level in the high frequency area and compresses the signal if it gets too high. It uses all-band compression to avoid phase modulation and distortion of the tonal balance.

Overview and descriptions



1. On: Turn the De-esser on and off. If off the signal passes unprocessed.
2. Threshold: The input level where the de-esser will compress significantly.
3. Frequency: The lowest frequency that will be detected significantly.
4. Compression LED: This LED will appear dimly lit when at least 1dB compression takes place and appear fully lit at 4dB compression.

Adjusting the De-esser

A good starting point is to set the Frequency knob to 5 kHz. Turn down the Threshold knob until you think the vocalists “s’s” and “t’s” are under control. If you see the red LED turning on too often on non-sibilant sounds, then adjust the frequency knob a little.



Always equalize your vocal tracks to the desired sound before turning on the de-esser. In many cases you might find that de-essing is not needed.



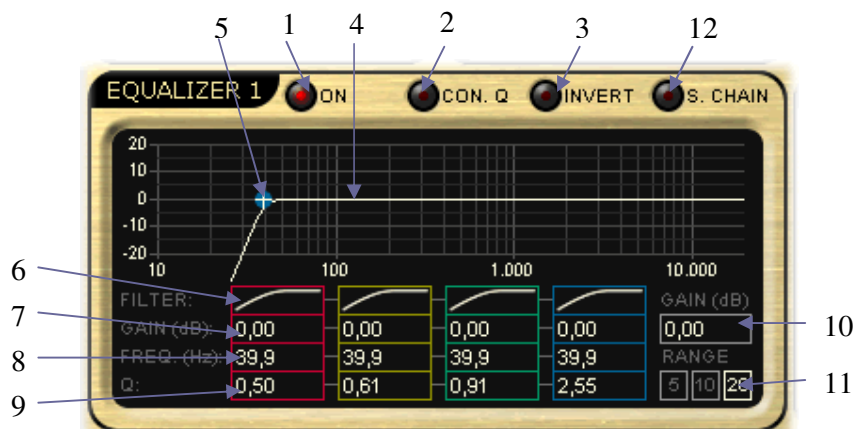
As the de-esser uses all-band compression it is less suitable for mixed material. If you for instance want to de-ess or fix a hi-hat that has become too loud in a final mix, use the routing “Selective Compression” to make a compression directed on the frequency band of interest. However, it is always best to solve problems like these on a single instrument than on the full mix whenever possible.

3. Getting Into the Details

Equalizers

Two equalizers are available on the GAC-1. They feature four parametrical bands with five filter types, drag-able notes for adjustment, and a graph showing the resulting amplitude response. All bands have unlocked frequencies, and you can select any filter type. A wide Q range makes this equalizer suitable for all instruments, vocals, drums, or final mixes wherever soft tonal correction or surgical problem solving is the goal.

Overview and descriptions



1. On: Turn the equalizer on and off. If off, the signal passes unprocessed.
2. Constant Q: Keeps the Q constant under all gains. This produces an asymmetrical boost and cut character.
3. Invert: Inverts the output (180 deg. phase shift).
4. Amplitude Response: Graph that shows the resulting amplitude response for all filters.
5. Drag able Note: A fast and easy way of adjusting the filters. Just drag the note around holding down left mouse button and the filter and gain of the filter will follow.
6. Filter Selector: Left click to toggle through the five filters (and off), or right click to get a menu.
7. Filter Gain: Shows the gain of each filter ¹.
8. Frequency: Shows the corner / center frequency of each filter ¹.
9. Q: Shows the filter Q ¹.
10. Gain: Gain to adjust the output level ¹.







3. Getting Into the Details

11. Range: Here you can select the amplitude range displayed on the graph. Changing Range won't change the resulting filter characteristic.
12. Side Chain: If on, the equalizer's input is connected to the side chain channel instead of the signal displayed in the actual routing.

¹⁾ These fields also works as knobs (see more under "Knob Operation" in the "Getting Started" chapter).

Filters

Five filters types are available for selection on any of the four bands in the equalizer. One can browse through the filters by a left mouse click, or right mouse click to get a menu. A description of each filter can be found in the box below.

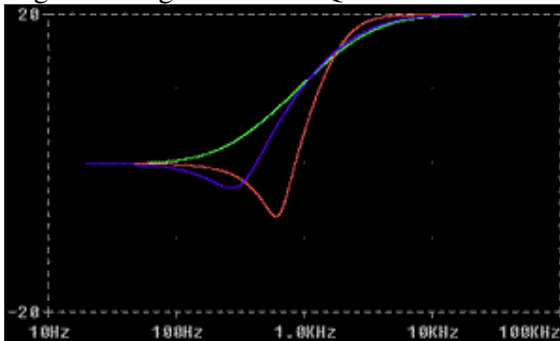
Filter	Name	Description
	Off	Filter is off and bypassed.
	Low Cut	The low cut filter attenuates frequencies below the selected frequency. This filter can be used to remove rumble, low frequency noise, or DC. This can improve the definition of an instrument or mix.
	Low Shelving	Boost or cut frequencies from the corner frequency and lower. Use Q to control 'undershoot' (more about this later).
	Peaking	The band pass filter can boost or cut around the selected frequency. Use the Q control to narrow or widen the pass-band. This filter is also known as a Bell filter.
	High Shelving	Boost or cut frequencies from the corner frequency and higher. Use Q to control 'undershoot' (more about this later).
	High Cut	Frequencies above the corner frequency are attenuated. Can be used to soften the sound, remove hiss, or make vintage sounds. This filter is also known as a low-pass filter.

3. Getting Into the Details

Undershoot on shelving filters

In shelving operation, the Q control will control the amount of undershoot, as shown in the frequency response below. The amount of undershoot is an important factor of the sound differences between shelving sections in different equalizers. In these equalizers, you can adjust undershoot to your own taste.

High shelving at different Q values

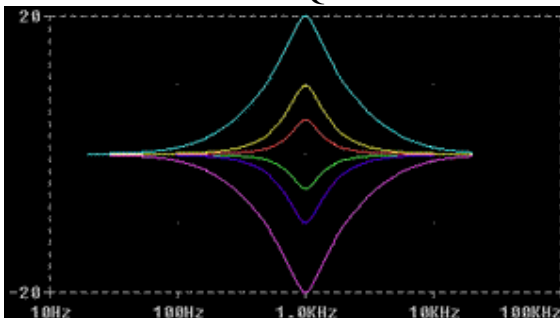


This equalizer has undershooting shelves that are, by many engineers, considered less harsh and more musically sounding than a clean shelf. A similar character was present in the famous Pultec[®] equalizers, where it was obtained by boosting and cutting at the same frequency.

Gain to Q dependency

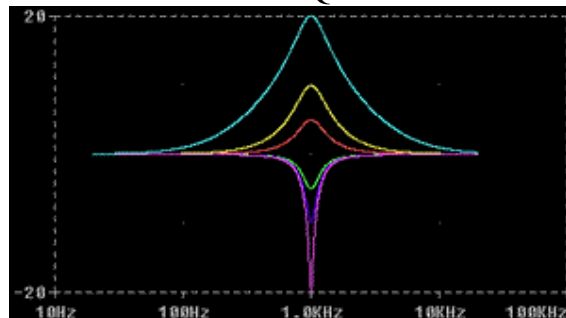
Gain to Q dependency is used on most professional equalizers to make bell (band-pass) filters behave and sound more natural and musical. A filter with a fixed Q simply does not sound as if it really has the same Q at all gains and when making a cut and boost with the same filter Q, this will become evident to the eye too (just look at the graphs below). This equalizer has an amount of gain to Q dependency that makes it sound natural (produces what your ears expect). However in some cases, a constant Q value is preferred for its ability to make very surgical cuts while maintaining a softer boost curve. For that we have included a “Constant Q” button that will turn off the Gain to Q dependency.

Bell filter with Constant Q Off



Gain to Q dependency gives this filter a natural and musical character that is preferred in most cases.

Bell filter with Constant Q On



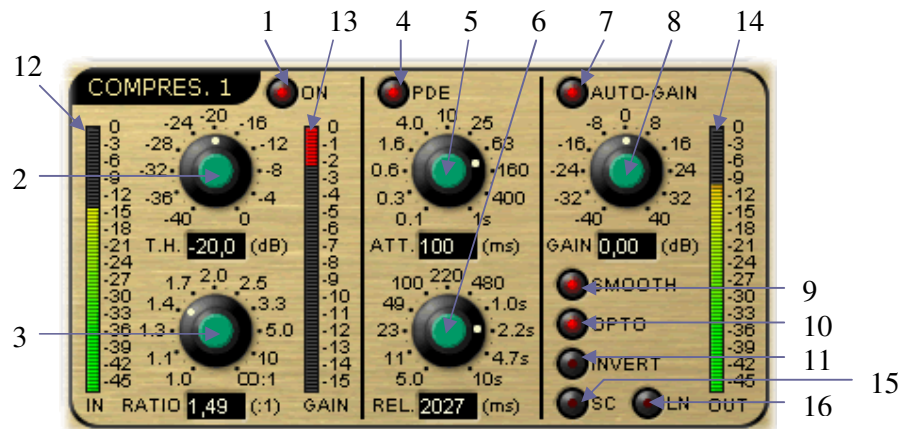
This filter can cut very narrow troublesome frequencies while maintaining a softer boost characteristic.

3. Getting Into the Details

Compressors

Two identical compressors are available. They are made for transparent compression as well as compression for character. Included are VCA and Opto models that can be run in a Warm or Smooth mode. This compressor works well with all instruments, drums, vocals, or mixed material, and the PDE algorithm helps avoid a pumping effect and increases loudness.

Overview and descriptions



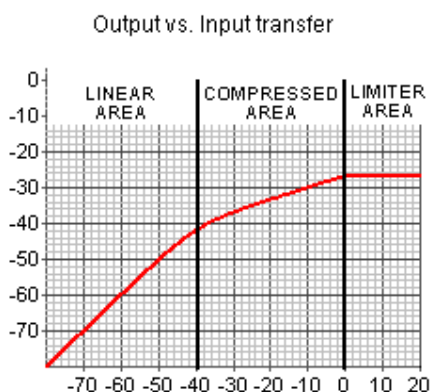
1. On: Turn the compressor on and off. If off the signal passes unprocessed.
2. Threshold: The level where the compressor will begin compressing significantly. As the compressor has a soft knee characteristic, lower levels will also be affected (more about that later).
3. Ratio: The input level increase that will lead to one extra dB of output level i.e. if the ratio is 4:1 the input should increase 4dB in order to get the output level increased by 1dB.
4. PDE: Program Dependent Envelope used to minimize pumping and increase loudness.
5. Attack: The time it takes for the compressor to compress effectively. Signal peaks shorter than the attack time won't be compressed as much as continuous signal levels.
6. Release: Time it takes for the compression to cease once the input level no longer exceeds the threshold.
7. Auto-Gain: Makeup gain based on the actual threshold and ratio setting.

3. Getting Into the Details

- 8. Gain: Adjustment of output gain used to make up for the level lost during compression.
- 9. Smooth: Switches between a smooth (clean) sound when on, and a warm sound when off.
- 10. Opto: Switches between Opto compression when on, and VCA compression when off.
- 11. Invert: Inverts the output (180 deg. phase shift).
- 12. Input Level Meter: Shows the peak input level.
- 13. Gain Meter: Shows the peak Gain (Compression).
- 14. Output Level Meter: Shows the peak output level.
- 15. Side Chain: If on, compression will be based on the side chain signal instead of the input signal.
- 16. Side Chain Listening: Listen to the Side Chain signal. This signal is routed directly to the output of the compressor (post Gain and pre meter).

Adjusting compression (Threshold & Ratio)

The amount of compression is controlled by the Threshold and Ratio knob alone. The compressor will begin to compress significantly when the input level exceeds threshold, but also levels below threshold will be slightly compressed due to the soft knee of these compressors. Soft knee compression is considered more musically sounding than a hard knee compression, which is mostly used for mastering. As an extra feature, both compressors have a limiting characteristic for input levels higher than 0dBFS.



The output level vs. input level transfer can be divided into three areas:

1. Linear area below threshold (where little or no compression takes place),
2. Compressed area (where the signal is compressed according to the ratio) and
3. Limiter area (where hard knee ∞ :1 compression takes over).

3. Getting Into the Details

Adjusting Attack and Release

Setting the right attack and release time is an important part of the compressor's character. Attack is used to allow shorter peaks in the signal to pass uncompressed. With a decent amount of attack, quite high compression can be accomplished without squelching the sound. Release is the time it takes for the compression to cease and the output level to be brought up to its original level, once the input level no longer exceeds the threshold. Generally a low attack and release time gives a higher RMS output (loudness), limited pumping, and relatively high harmonic distortion. A higher attack and release gives a smoother sound with less RMS output and minimum distortion. With the built-in PDE algorithm, it is possible to minimize pumping and get a higher RMS output while still retaining minimal distortion, when used with a medium to high release time.

Setting the output gain

After compression, the signal is obviously lower than when it entered the compressor, and you will probably want some makeup gain to bring the output level up to a reasonable level (peaks around 0 dBFS). For that we have two parameters: Auto-Gain and Gain (manual).

Auto-Gain will calculate a default makeup gain to ensure that the transfer ends up giving 0dBFS out for 0dBFS continuous input. Auto-Gain does not ensure that the output won't go over 0dBFS! First, the input signal might already be over 0 dBFS, and peaks in the input material might be allowed to pass uncompressed or less compressed by the chosen attack time. What auto-gain will do is give a better offset for the final makeup gain, which might have to be adjusted on the manual gain control.

4. Presets

4. Presets

The GAC-1 includes 40 factory presets. Presets are always difficult to make for compression and equalizing, as the final sound depends primarily on the input material. We have done our best to put together some presets that should at least make a good starting point for your own sound. They may also inspire you to make sounds you never thought of before. Below you will find a description of each preset together with suggestions on how to adjust each to fit your material and taste.

Full Reset

This is a good starting point for your own patches.

Master Mix – Mixes

This is a preset to use during mix down or mastering. Use EQ 2 to make tonal corrections (we added some bass and “air”). Adjust threshold on Compressor 1 to give around 3-4 dB compression.

Quiet Up and Loud Down – Mixes

Compressor 1 brings up the softest passages of the music and Compressor 2 compresses the loudest passages a little. This can be a fine solution for mastering and other postproduction. Adjust gain on Compressor 1 to bring up the softest parts to the desired level. Adjust threshold on Compressor 2 to work only on the loudest parts.

Two Band Compression – Mixes

This preset splits the frequency band into two and compresses each band individually. This technique is mostly used on mixes and during mastering. The corner frequency on EQ 1 and EQ2 can be adjusted to any frequency, but should always be the same. Compressor 1 and 2 can be adjusted individually to any desired setting.

M-S Air Exchange (MK) – Mixes

Mid channel is moderately compressed but its air (around 20 kHz) has been cut off. The side channel is then compressed by a ridiculous amount and the air is lifted here resulting in “air exchange”.

Magic Clear-up (MK) – Mixes

Side channel magic for especially rumbling and muddy material. The side channel contains mostly high frequency content. All rumble has been removed, and excessive movement has been tamed on the compressor. Mid channel has fairly moderate settings.

Mix Sparkles (MK) – Mixes

Is that sound lacking width and air? Try this if it's too late to fix it in the mix. Excessive rumble is removed from both mid and side channels, and there's a bit of "air exchange" going.

Mix Placement 1 & Mix Placement 2 (MK) – Mixes

Sometimes it might be difficult to place a stereo sound source in the mix. These two presets offer a good solution. Left and right channels exchange frequency content, and they both have very different compression settings.

4. Presets

Give and Take – *Mixes*

First we add some bass, and then we compressed it. This gives a higher bass RMS level. Adjust gain on EQ 1 band 1, and the threshold on Compressor 2.

Gentle M-S Mastering (NS) – *Mixes*

Some gentle mid-side balancing using the compressors. Compressor 1 controls the middle signal, and Compressor 2 the side signal. Nominal gain reduction is roughly 1 dB compression on both channels. It's a delicate balancing act. By compressing each channel with different attack and release settings, one can achieve some gentle movement in the stereo image. This can be very beneficial to most mixes. This preset can also be used as a buss compressor for binding elements, while at the same time creating some movement in the stereo field.

Loud Mix – *Mixes*

This preset makes your mix real loud and hot. Use EQ 2 to make tonal corrections (we added some bass and “air”). Adjust threshold on Compressor 1 to the desired loudness.

Soften the Top – *Mixes / Instruments*

Limits the high frequencies and makes it sound softer. Adjust threshold on Compressor 2 to taste.

Much More Room (MK) – *Mixes / Instruments / Drums / Vocals*

So you recorded that bad sounding room with that amazing stereo pair of microphones? Rescue the material by boosting only the good sounding acoustics of the room on the Side channel and cut them on the mids. Find the good sounding frequency pockets of the audio (cut mid channel, boost side channel). Compression isn't necessary here, but if required, go for the invisible. Low threshold and low ratio should do the trick.

Fat Vocal – *Vocals*

With this preset your vocalist will get a fat and energetic voice he / she will thank you for. Set the threshold of Compressor 2 about 30 dB below the level shown in its input meter (if the signal is too low you can increase output gain in Equalizer 2). Set the threshold to the level of the quietest words sung (the maximum compression should read -3 to -6 dB). Adjust the output gain of Compressor 2 to the desired fatness of the vocal. Use EQ 1 to make the tonal balance and turn on the Noise Gate and De-esser if necessary.

Breathing Vox (MK) – *Vocals*

Starting point for invisible vocal compression and ‘hype’ (massive boost of high shelf air combined with crushed dynamics). Use EQ 1 to create the initial hype: hi-shelf, air lift, and bass cuts. EQ 2 provides corrections after the first “leveling” compressor (long attack, short release). The Compressor 2 with a short attack creates the final push. Play with thresholds.

Soft Vocal with Air – *Vocals*

EQ 1 adds some bass and air to the vocal (adjusted for male vocals). EQ 2 and Compressor 2 are used to soften the high end. Adjust EQ 1, Compressor 1 and the De-esser as a normal channel strip. Adjust Compressor 2's threshold to modify the “softness”.

Hard Vocals (MK) – *Vocals*

This can work very well on extremely dynamic vocals that need to be tamed. The EQ 2 settings depend entirely on your mix.

4. Presets

Biting Male Vocal (NS) – Vocals

Makes any deep, slightly loose male vocal a bit more aggressive. Compressor 1 does the 'low-level' compression of the vocal (low threshold, very small ratio). This stabilizes and thickens the voice. Compressor 2 gives the vocal an aggressive edge when set to gain reductions over 3 dB. The gain of Compressor 2 adjusts just how aggressive the vocal is. When one desires a heavily compressed (but not much pumping) vocal, turn the PDE switch on for both compressors. One can also lower the gain of EQ 2's bottom band to reduce the deliberate pumping effect.

Kiss FM Radio Speaker (NS) – Vocals

Makes just about anyone's voice sound like they are a DJ on a Kiss FM / Energy radio station, aka, "The Deep Voice". Keep gain reduction on Compressor 1 between 1-2 dB. Compressor 2 creates the real "pumping/breathing" underneath. Make sure it compresses at least 3 dB and compensate with the gain accordingly.

Instant Lift (MK) – Instruments / Drums / Vocals

Works with pretty much anything. Play with EQ 2's hi-pass to find the "magic" frequency area that needs to be lifted.

Lead Synth FX Ducking (NS) – Instruments

This is a weird one, a lead synth sound that has a delay. The idea is that while the lead sound is playing, it has no audible delay. But, as soon as one stops playing, the delay jumps out from 'beneath'. This preset can be a bit tricky to set up. Compressor 1 should have a gain reduction of around 4-5 dB. The release control of Compressor 1 determines how quickly the delay 'jumps out' once the lead stops playing. Compressor 2 should have maximum gain reduction (exceeding 15 dB on the meter). The trick is to balance the two compressor's GAIN knobs. As Compressor 1 feeds into Compressor 2, you need to drive it with the gain. Do not touch the threshold or ratio settings of Compressor 2, but rather drive it with Compressor 1's gain to achieve 15 dB or more gain reduction. Now compensate with Compressor 2's gain. Both compressor's outputs should 'hit the roof', that is, both output meters should constantly be red.

Lows Expanding Highs – Instruments

The high-end level is moving up and down to the rhythm of the bass (opposite pumping). Adjust threshold and release on Compressor 2. Play with filters etc.

Generic Magic Lift (MK) – Instruments

This setting creates a generic hyped sound. Both EQ's are used for loudness lift, while the compressors lift the floor of any material. Use this type of setting to create focus in a mix, but only in one track.

Synth Pad Enhancer (NS) – Instruments

Enlivens the stereo image of any pad-like sound using the 'split stereo setup' routing. By having different compression settings and different EQ settings for the two channels, we can achieve some stereo width effects. The equalizers are static enhancers, but the compressors give certain 'movement' to the stereo image. This is very nice on any synth pad sound. Nominal gain reduction on both compressors is around 1-2 dB. This is just enough to make the pad 'move' in a nice way.

4. Presets

Bass Solidify (NS) – Instruments

Solidifies most synthbass-like patches and keeps them under control. Two compressors in series provide the stabilization / solidity. Compressor 1 feeds into Compressor 2, which in turn has a side-chained EQ (EQ 2) section. The equalizer boosts around 100Hz to drive the Compressor 2 and thus keeps the bass under control. Gain reduction should be around 1-2 dB on both compressors.

Parallel Room Lift (MK) – Instruments / Drums

One possible solution to room lifting: Moderate settings on Compressor 1, and absolutely crazy compression / limiting on Compressor 2. First make sure none of the parallel compressors sound bad on there own.

Liquid Boost (MK) – Drums

Run of the mill drum compression. Liquid is the goal here. Compressor 1 is a simple leveler: very short release and long attack. Compressor 2 gets the equalized side chain signal resulting in fluid and fast moving dynamics. Play with thresholds.

Room on Fire (MK) – Drums

Two stage drum compression with EQ adjustments (modify to taste). Compressor 1 acts as a fairly invisible leveler using very short release time. Adjust attack for transparency. Compressor 2 acts as the breather. The combination of low threshold and low ratio results in tasty “room lift” movement.

DrumBus Compression (NS) – Drums

Gives some "slap" to the drum bus. Compressor 1 provides low-level compression, binding the drums together. Compressor 2 provides an aggressive SSL[®] like slap to the drums. Gain reduction on Compressor 1 is nominal at around 2 dB. Compressor 2 can be hit much harder to give the slap. Nominal gain reduction to achieve that SSL[®]-like sound is about 5-7 dB. Compensate with gain.

Kick Thumper (NS) – Loops

Makes most sloppy kick drums "THUMP" a bit more. Compressor 1 does the gentle compression, while Compressor 2 creates the 'slap'. Nominal gain reduction on Compressor 1 is around 2-3 dB. Compressor 2 must be driven much harder. Nominal gain reduction on Compressor 2 is around 8-10 dB. Compensate with gain where appropriate. For acoustic kicks that are un-treated, one can turn on the Noise Gate to remove some of the 'ringing'. EQ can be used for some low-end boost.

Loop Lofinizer (NS) – Loops

Makes lo-fi trash (in a nice way!) of any loop. It can be drums, synth, or anything else. The secret to this preset is the abusing of the De-esser. Its threshold controls the amount of “lo-finisation”. Compressor 1 then drives the output hard into the built in Limiter, which further enhances the lo-fi effect.

Pumping Loop Breakup (NS) – Loops

Abuses the De-esser and makes anything sound a bit old and trashed. Similar to the preset above, it abuses the De-esser to achieve its Lo-Fi nature. However, in this preset, the EQ section retains a bit more bass than the one above (Lofinizer). Gain reduction has no real nominal setting, so just adjust it until it sounds good.

4. Presets

Funk Lift (MK) – *Guitars*

Generic funk guitar pump. This should generate pretty good movement for fast rhythm funk guitars. You will need to adjust EQ to taste, and compressor gain reduction should be around 5-10 dB on both compressors.

Plexi Magic (MK) – *Guitars*

This might work well when trying to tame crunched guitar tracks.

Press the Guitar (MK) – *Guitars*

A starting point for fitting a clean electric guitar into a mix. Play with compressor attacks to find the right smack and bite.

Strum Acoustics (MK) – *Guitars*

Background strummed acoustic guitars usually need to be compressed to death in pop music. This starting point will try to make the compression very organic and pumping. Hype up those guitars!

Biting Heavy Guitar (NS) – *Guitars*

Gives most heavy guitar licks a bit more bite and solidity. Nominal gain reduction is around 1-2 dB on Compressor 1, and around 4 dB on Compressor 2. The Noise Gate can be turned on to fine tune the tightness of the guitar tails. This can help in making a palm muted rhythm guitar track even tighter. The bite and edge comes from EQ 1. Adjust the hi-shelf to taste.

Guitar Distortion – *Guitars*

Yes, we know, it's really not what the GAC-1 is made for, but we could not help ourselves from trying. Adjust EQ 2 to the desired sound. Adjust the Noise Gate threshold to match the actual noise level.

Bass Snap (NS) – *Bass Guitar*

Adds some “snap” to too soft percussive bass notes. Compressor 1 provides the snap. Nominal gain reduction is around 3-4 dB, but even more can be used. Setting the release time to reflect the bass line is essential. A quick bass line needs a fast release, but a slower one needs a slower release. The second compressor provides some gentle low-level compression.

5. Specifications

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Main Section:

Gain: +/- 40 dB
Meter: Peak sensing output level

Noise Gate:

Threshold: -80 – 0 dBFS peak
Release: 5 – 5000 ms
Internal Filter: Low cut at 40 Hz with 12dB / oct. (Butterworth)
Gain reduction: 3 dB at threshold, 4 dB pr. dB input below threshold.

De-esser:

Threshold: -60 – 0 dBFS peak
Filter: 2.5 – 10 kHz, low cut 36 dB / oct.
Compression: Peak sensing, all band.

Equalizers:

Parametric sections: 4
Gain: +/- 20 dB on each section and one master gain
Frequency: 20 – 20 kHz
Q: 0.25 – 10 Peaking and Cutting, 0.1 – 1.4 Shelving

Compressors:

Threshold: -40 – 0 dBFS peak
Ratio: 1:1 – Limiting
Attack: 0.1 – 1000 ms
Release: 5 – 10000 ms
Makeup Gain: -40 – 40 dB
Meters: Peak sensing input level, gain and output level

Processing: 64 Bit Floating Point

Supported sampling rates: 44100, 48000, 88200, 96000, 176400 and 192000 S/s

Latency: 0