

UNISUM

MASTERING COMPRESSOR

Plugin Manual

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INTRODUCTION



Unisum is a modern mastering compressor for engineers who don't like to compromise. After years of development and careful fine-tuning in collaboration with a team of experienced mastering professionals, Unisum delivers transparent, beautiful, and ultra-flexible mastering compression in a class of its own.

The Concept

Every song is different. No mix has the same ups and downs. Unisum embraces the complexity of modern mixing and mastering, and puts the creative control of the dynamic shaping into the hands of the engineer.

As a highly tweakable compressor, Unisum is in stark contrast to both automated “AI” tools and oversimplified one-size-fits-all compressors. We believe that the magic of mastering starts with you, the engineer, being equipped with the right tools to be able to precisely respond to what your ears and emotional understanding tell you is needed, for the most impactful sound. Whether you want to add cohesive glue or movement tailored to the track, shape the dynamic contours, or solve a challenge in the mix, Unisum helps you achieve your goals with precision and integrity.

Features

- State of the art digital compressor suited for mastering applications
- Wideband compression driven by flexible multi-band detector scheme
- Multi-band detector with adjustable RMS and Peak detectors for each frequency band
- Variable Knee, GR Limit, and Linearity offering full control over transfer curve
- Frequency dependent ratio
- Release Curve continuously variable between linear and logarithmic
- Detailed level dependent control over Attack and Release response
- Controllable Memory Effect for Attack and Release to mimic behaviour of opto compressors
- Transient Override for separate Attack and Release times for transients only
- Parallel secondary envelope useful for smoothing without sacrificing responsiveness
- Switchable HYGGE circuit for a warm and thick sound inspired by tubes and transformers
- Stereo or Mid/Side mode with separate controls for each channel
- Continuously variable channel linking, including advanced controls to filter and limit linking
- Sidechain high-pass, low-pass, and emphasis/dip filters
- Dry/Wet control for easy parallel compression
- Loudness based Auto-Gain.
- 3 quality modes, ranging from Real-Time to Pristine using high fidelity linear phase oversampling
- Gain reduction meter switchable between True GR, PPM, and VU ballistics.
- A/B preset switching
- Built-in Style presets with easy to use starting points for advanced parameters
- Presets by experienced mastering engineers

GETTING STARTED

Install and Authorise

Unzip and double-click the downloaded installer and follow the on-screen instructions. Once installed restart your DAW (or refresh its list of plug-ins) and insert the plugin on a track. The controls will be hidden and audio output will be disabled until you have activated the plug-in.

To activate, simply copy and paste the license information you received after purchasing the plug-in and click **Activate**.

Once the activation is successful, the plugin interface will appear and audio output will be enabled.

Basic Operation

Buttons and switches are controlled simply by left clicking to cycle through states. Knobs can be controlled either by dragging up and down, or by double clicking to enter values directly.

Shortcuts

- Reset to default: **Right Click (or Alt+Click)**
- Reset to default of loaded preset: **Shift+Right Click (or Alt+Shift+Click)**
- Fine control when dragging knob: **Ctrl+Drag**

Tool Tips

A good way to learn about all the parameters in Unisum is to enable tool tips. When enabled you get a small explanation for any parameter when you hover the mouse cursor over the control. Enable tool tips by clicking on the question mark icon in the lower right corner of the interface.

User Interface Scaling

Unisum allows you to adjust the size of the user interface. Click the small “i” in the bottom right corner of the user interface to open the info screen. Use the “UI 100%” dropdown menu to select different levels of scaling.

PRESETS AND STYLES

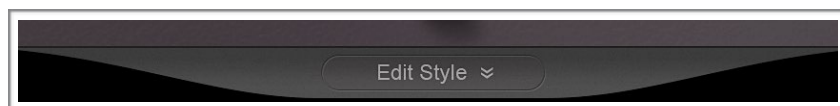
Unisum ships with a selection of presets and styles that offer a wide range of excellent sounding compression setups with just a few clicks. However, to get the most out of Unisum it is strongly recommended that you get familiar with the controls and it to suit your material.

Presets

A Unisum preset stores the state of all parameters into one of the two available A and B slots. Loading a Unisum preset into one slot does not change the preset stored in the other slot. You can toggle between the presets stored in the A and B slot by clicking the **A/B** button, and the **Copy** button allows you to copy the preset in the currently active slot to the opposite slot.

Styles

The bottom part of the Unisum interface contains an expandable section that includes advanced parameters offering deep control of the compression characteristics. You can access this section by clicking the **Edit Style** button.



Unisum provides a set of built-in Styles that only change the parameters in the bottom Style section. The purpose of these Styles is to provide quick and easy starting points for your own settings within the Style section. Click the name of the style to open a menu allowing you to choose between different Styles.

Note: *Once you start tweaking style parameters the Style will be renamed to "Custom". You can revert back to one of the built-in Styles at any time, but if you want to store your custom style you need to save it together with other parameters in a global Unisum Preset.*

Dragging Presets to Load Individual Sections

So you like the Multiband Detector settings of one preset, but would like to keep your Threshold, Attack and Release settings? Or maybe you have tweaked the perfect custom style but want to combine it with another preset?

Unisum allows you to mix your current settings with a stored preset by loading only parts of a preset. Drag a stored Unisum preset to a specific section on the interface, and Unisum will load only the parameters within that section.



Image showing the different sections supporting dropped presets.

GLOBAL PARAMETERS



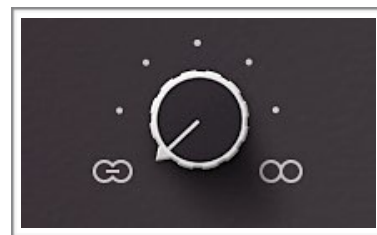
In the top menu bar you'll find parameters to control overall operation modes. Note that these parameters are also stored in presets.

Mode

Unisum is a two channel compressor capable of operating in either **Stereo (LR)** or **Mid/Side (MS)** mode. Both modes allow either fully linked, partially linked, or completely separate processing of each channel by using the continuously variable Channel Link control.

Channel Link

Although this knob is not part of the top menu bar it is relevant to mention here. This knob is the main parameter to control the linking between channels, but it should be noted that channel linking is also affected by parameters in the Style section. With Channel Link turned fully left (100% linking) Unisum will apply the same amount of gain reduction to both channels (provided that no channel link filtering is applied in the Style section). Turned fully right (0% linking) Unisum will compress each channel completely independently, i.e. dual mono (provided that no other channel link setting is active).



Note: *Unlinked operation requires more CPU.*

Parameter Link

The interface also offers separate controls for each channel. Parameters on the left side of the interface control the Left/Mid channel, whereas parameters on the right side is responsible for the Right/Side channel.

Often you'll need to adjust parameters similarly for both channels, and so Unisum defaults to linking the left and right controls. This means that if you turn a knob on the left side then the corresponding knob on the right side will move to the same setting. This behaviour can be disabled at any time by

changing **Params** to **Unlink**. You may want to unlink the parameters just to change a few parameters separately on each channel and then turn Parameter Link back on, or leave it unlinked if you prefer. The Parameter Link only affects the controls across left and right side, and has no impact on the linking of gain reduction between channels.

Important: *When channels are fully linked the parameters on the right side will have no effect, except for output **Gain**, **Mix**, and **Solo** parameters. You can check whether the right side parameters are active by looking for the small purple indicators around the Threshold, Ratio, Attack, and Release knobs. When these indicators are visible it means that channels are being processed differently and the parameters on the right side are active.*

Quality

Unisum offers 3 different quality settings which changes the amount of oversampling employed throughout the compressor.

Realtime: zero latency and lowest CPU usage. Not ideal when using fast compression or when the Hygge circuit is engaged.

High: High quality with very low aliasing while keeping CPU usage balanced. Useful for most applications.

Pristine: Superior quality with very high precision and alias-free compression but with significant CPU usage.

Note: *It's important to note that oversampling is far from being the only determining factor for the quality or the amount of aliasing produced by a digital compressor. Even without oversampling Unisum will produce very little distortion.*

Power

Works as a global on/off switch allowing you to smoothly bypass processing for "in/out" comparisons.

THE MAIN SECTION



Threshold

Sets the level above which compression is applied. The lower the threshold, the more of the signal will be compressed. A small input level meter is displayed around the knob to help guide your setting.

When using a knee to soften the transition into compression, the knee will be centered around the threshold.

Tip: Use the **SC Emphasis/Dip** and detector **Weight** controls to setup a frequency dependent threshold.

Ratio

Sets the amount of gain reduction applied as the signal exceeds the threshold.

You can use the detector **xRatio** parameters to modulate the ratio based on the frequency content of the incoming signal. A small light indicator around the knob indicates the current Ratio value as it is being modulated.

Tip 1: Use **Relax** and **GR Limit** to reduce the maximum amount of gain reduction applied.

Attack and Release

These two parameters control the timing of the compression envelope. **Attack** sets the speed at which gain is reduced when signal exceeds the threshold. **Release** sets the speed at which gain is returned to unity after the signal drops below the threshold.

The speed and sensitivity of the detector greatly influences how responsive Unisum is when reacting to signal changes, so consider **RMS Speed** and **Peak Gain** when adjusting both Attack and Release.

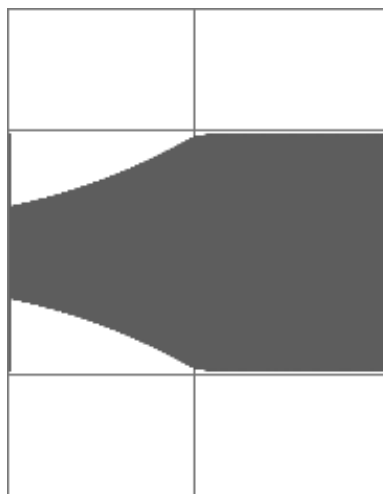
Tip 1: Experiment with the **Rel. Curve** to find the right balance of linear (often energetic) and logarithmic (often smooth) release.

Tip 2: Further adjust the attack and release using the **Att/Rel Modifiers** section to fine-tune the way Unisum reacts to different levels of compression.

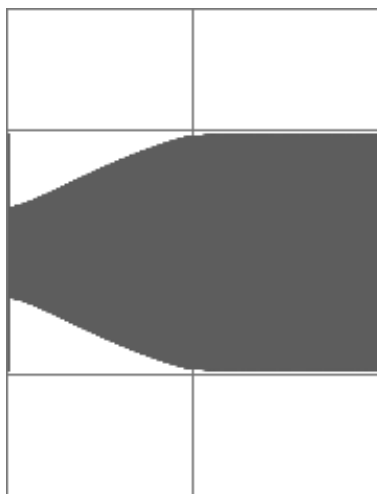
Rel. Curve

Sets the release curve, continually variable between linear and logarithmic.

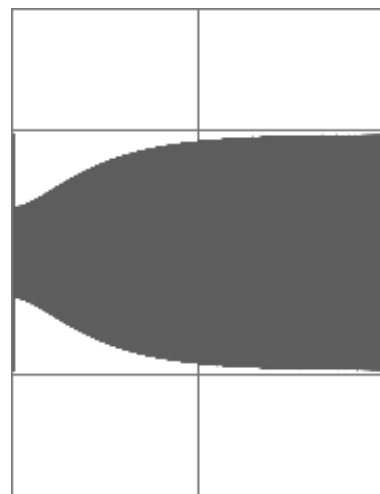
Tip: A logarithmic curve often results in a smooth sounds whereas a linear curve often sounds more energetic. Experiment to find the right feel for the track.



Linear (500 ms, no att/rel mods)



50% lin/log (500 ms, no att/rel mods)



Log. (500 ms, no att/rel mods)

SC HP

Sets the frequency of a 6 dB/oct highpass filter on the sidechain signal. Turn this up to reduce pumping caused by low frequencies. When turned fully left the filter will be bypassed.

SC Emphasis, SC Dip, SC LP

Unisum offers 3 additional filters on the sidechain signal which can be selected by clicking on the name below the knob. Only one filter can be active at any given time.

SC Emphasis: Sets the center frequency of a boosting bell filter on the sidechain signal. Use this to increase the detector's sensitivity to a certain frequency area.

SC Dip: Sets the center frequency of a cutting bell filter on the sidechain signal. Use this to decrease the detector's sensitivity to a certain frequency area.

SC LP: Sets the frequency of a 6 db/oct lowpass filter on the sidechain signal. Use this to decrease the detector's sensitivity to high frequencies.

When the **Soft** button is engaged the filter amount will be reduced.

Knee

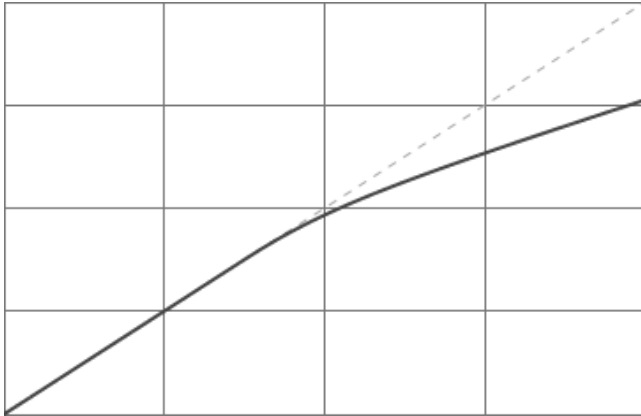
Sets the softness of the transition into compression. A low knee value creates a sharp transition, while a high knee value creates a soft and gradual compression.

Note: *The knee is centered around the threshold point.*

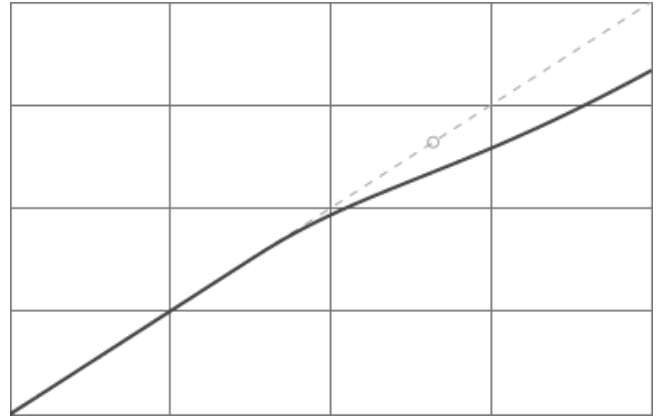
Relax

Sets the linearity of the transfer curve as it approaches maximum compression. This is inspired by characteristics found in some analog compressors, typically opto compressors. A non-linear setting (lax) will softly reduce the maximum gain reduction applied, resulting in a more relaxed sound.

Tip: Increase this setting to reduce the "crushing" of transients.



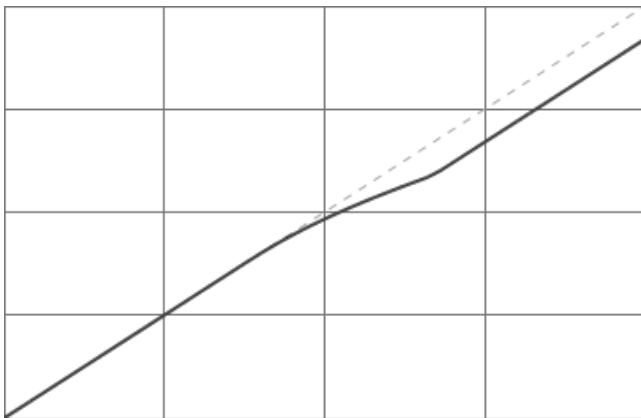
Linear (10 dB knee, 2:1 ratio)



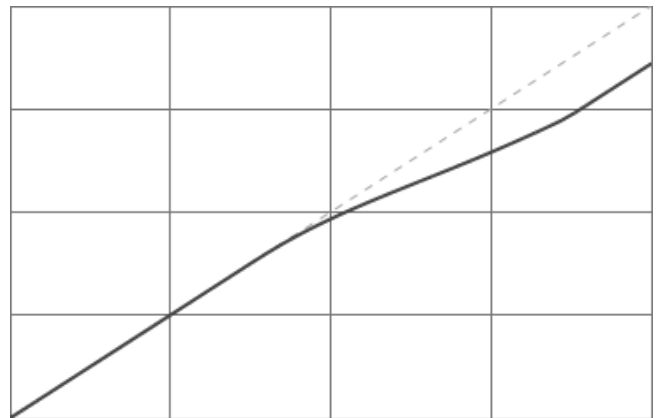
Lax (10 dB knee, 2:1 ratio)

GR Limit

Limits the maximum amount of gain reduction to the set value.



4 dB GR Limit (Linear, 10 dB knee, 2:1 ratio)



7 dB GR Limit (Lax, 10 dB knee, 2:1 ratio)

Hygge

Enables the HYGGE circuit which offers a warmer and thicker sound by subtly altering harmonics, transient, and frequency response. It consists of several stages of frequency and level dependant saturation and filtered feedback setups, inspired by transformer and tube characteristics.

Gain

Sets the output gain used to compensate for the applied gain reduction. This gain is applied before the **Mix** control.

The **Auto** button provides a fast way to automatically match the loudness of the processed signal to the unprocessed signal. Click the Auto button and Unisum will measure the loudness difference for 2-3 seconds and set the Gain accordingly. The Gain will not be updated until you click Auto again.

Mix

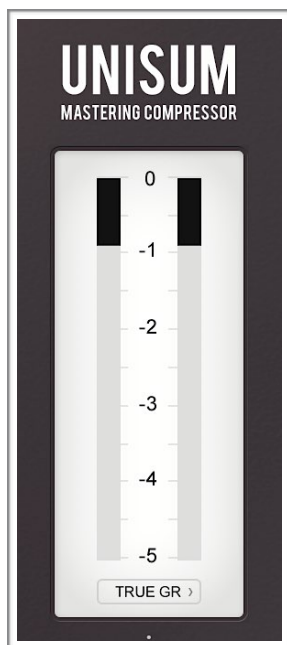
Mixes the unprocessed (dry) and the compressed (wet) signal for easy parallel compression.

Solo

Enable this to monitor the processed sound of a channel in isolation.

The Gain Reduction (GR) Meter

This meter shows the gain reduction applied to both channels. You can click on the meter to toggle between 3 different zoom modes: -20 dB, -5 dB, and -2.5 dB.



Unisum allows you to change the ballistic of the GR Meter:

True GR: This is a very accurate representation of the applied compression, but may appear visually busy and difficult to read in some situations.

PPM: This meter type gives an accurate indication of signal peaks but with a slow fall back time providing a smoother response.

VU: This meter type offers a response similar to some vintage equipment with a medium-slow rise and fall back time.

THE MULTIBAND DETECTOR



The level detector path in Unisum is split into 3 frequency bands, each having separate RMS and Peak detectors from which the loudest signal will be used. The RMS detector offers variable speed and while it can be very fast it is typically used in a fairly slow setting to track the average and perceived loudness of a signal. The Peak detector on the other hand is fixed in a very fast configuration which makes it effective at catching transients. The combination of the RMS and Peak detectors allows for very flexible and musical detection of signal level.

Lo/Mid Freq

Sets the 12 dB/Oct crossover frequency between the Low and Mid frequency detector bands.

Mid/Hi Freq

Sets the 12 dB/Oct crossover frequency between the Mid and High detector bands.

RMS Speed

Sets the speed of the RMS detection within the frequency band. Lower values result in a slower and smoother response.

Peak Gain

Sets the gain of the peak detector for the corresponding frequency band. Boosting the peak detector means more of the level detection will be peak based, whereas attenuating the Peak Gain will push more focus to the RMS detection. For most uses it's recommended to keep Peak Gain below 0 dB.

Tip: *The RMS Speed and Peak Gain greatly influences how responsive Unisum is when reacting to signal changes. The leds indicate which detector circuit is currently being used for each frequency band. Use them to help find the right balance between RMS and Peak.*

You can think of the RMS Speed as the overall smoothness of the compressor. It affects both how fast Unisum reacts to loud signals and how long the gain reduction will be held after the signal drops in level. Since Peak Gain mostly influences how fast Unisum reacts to relatively loud signals you can use the Peak detector to ensure fast detection of loud signals even when the RMS Speed is low. This way the combination of RMS and Peak detectors on different bands can be used for frequency dependent attack (Peak) and release (RMS) timings.

Weight

Sets the weight of corresponding frequency band. This controls how much each frequency band influences the overall level detection.

Tip: *The Weight parameters essentially allow you to set up frequency dependant threshold levels, and thereby make the compressor more or less sensitive to specific frequency bands.*

xRatio

Sets the amount of modulation of the Ratio based on the energy within a particular frequency band. Use this to setup frequency dependant ratio. The knob works as a multiplier, so a setting above 1.0 means that the overall Ratio will be higher when the incoming audio is dominated by high frequency content. Below 1.0 means that the Ratio will be lower.

The small light indicator around the Ratio knob shows the current Ratio value as it is being modulated. The **Speed** setting offers a range of different modulation speeds and changing this can greatly change the sound and versatility of the xRatio controls.

Tip: *Faster settings allows the dynamic ratio to track the frequency distribution more closely, which often adds punch and energy to the sound but may also result in more distortion. The bottom options use the RMS Speed and Peak Gain detector settings for an adaptive xRatio speed. The "Slow + Peak" option minimises distortion while allowing responsive ratio changes on peaks.*

THE ATTACK/RELEASE MODIFIERS



The Attack and Release modifier section offers a variety of ways to change and modulate the characteristics of the Attack and Release times. This can be highly useful for tailoring the attack/release to the unique needs of a track, or to carefully add an extra sense of movement and energy without hyping the sound too much.

The **Loud/Quiet xTime** changes the attack and release times based on compression intensity, allowing control of the attack and release curves.

Loud xTime

Sets the multiplier for the Attack/Release time when gain reduction needs to change a lot. This allows control of the beginning of the curve.

Quiet xTime

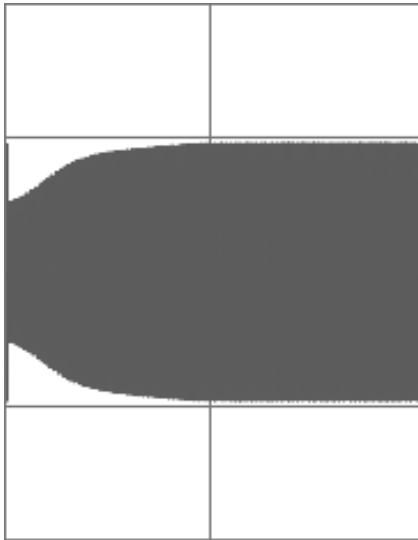
Sets the multiplier for the Attack/Release time when gain reduction is close to the desired level. This allows control of the end of the curve.

X-Over Level

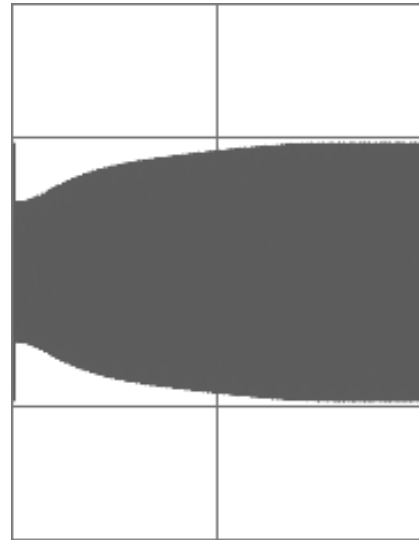
Sets the crossover point between loud and quiet for the attack/release curve. Turn left to push more signal into the Loud part of the curve, and turn right to push more into the Quiet part.

TIP: The leds indicate the modulation of the attack/release time. E.g. a fully lit Loud led indicates that the attack/release time is now multiplied with the full value set by the Loud xTime control, whereas a partly lit led indicates that it is gradually fading between the Loud and Quiet xTime values.

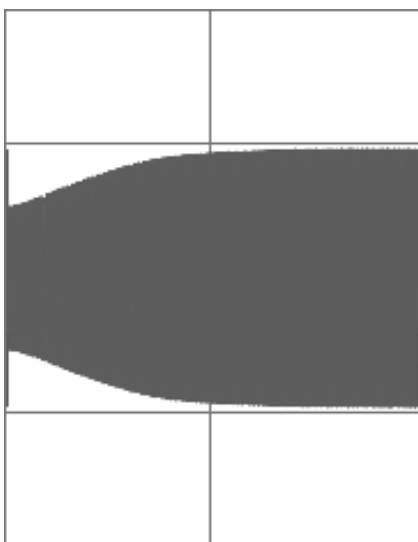
EXAMPLES USING THE RELEASE MODIFIERS



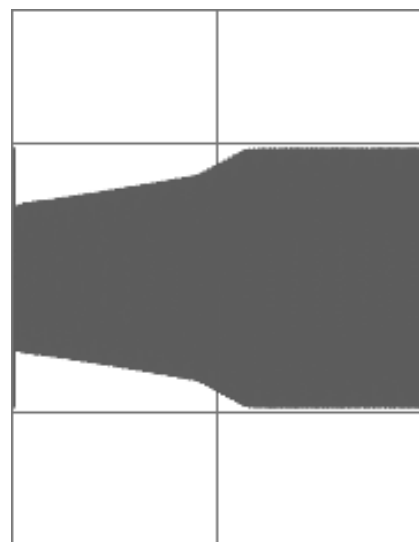
0.5x Loud, 2.0x Quiet, 4dB X-Over
(50% lin/log)



0.5x Loud, 2.0x Quiet, 10dB X-Over
(50% lin/log)



1.0x Loud, 4.0x Quiet, 4dB X-Over
(50% lin/log)



1.6x Loud, 0.6x Quiet, 1.5dB X-Over
(linear)

Memory Effect

Modulates the attack/release time based on the duration and intensity of the compression. Turn left to reduce attack/release time, and turn right to increase.

The small light indicator around the Attack and Release knobs show the current value as it is being modulated, and the **Speed** option allows you to choose the modulation speed.

Tip: Use positive value to mimic the behaviour of opto compressors where the timing is increased after long and large amounts of compression as the photo cells build up heat over time.

Transient Override

Overrides the attack/release time on transients with either very fast (turned left) or a slower setting (turned right). This allows transients to be compressed with a different timing than the rest of the material.

The knob sets the threshold of the transient detection, so the further it's turned to either side the more of the signal will be affected. The led will light up whenever the transient override is in action and the small light indicator around the Attack and Release knobs will show an approximation of the current value as it is being overridden.

Tip: Since the peak detectors are part of the transient detection you can use **Peak Gain** to alter the transient sensitivity of each frequency band. Increase Peak Gain to trigger more transients in a frequency band, or reduce it to trigger less.

2nd Env Mix

Unisum includes a secondary slower envelope running in parallel with the main envelope. The mix knob sets the amount of this second envelope being mixed in with the main envelope.

Reducing the 2nd Env Mix usually results in a snappier and more pronounced compression sound, whereas higher values can be used to smoothen the envelope without losing responsiveness.

Note: The secondary envelope is always using logarithmic release and is not affected by any of the Att/Rel Modifiers. You can use the **Env Smooth** control to further smooth out the combined mix of main and secondary envelope.

2nd Env +Time

Sets the attack/release time of the secondary envelope. The times are based on the main Attack and Release knobs and works by adding the set value to those timings. A value of 0 means that the secondary envelope will have the same timing as the main envelope without any active modification.

Env Smooth

Sets the frequency of a smoothing filter on the combined main and secondary envelope. High values allows rapid changes in the envelope signal, whereas low values limit the rate of change for a smoother but slower reacting envelope.

Note: *This filter is applied post Attack and Release.*

THE CHANNEL LINK SECTION



The most important parameter for controlling the linking between channels is the Channel Link knob in the main section. There are additional parameters in the Channel Link style section that offers advanced options to further refine the linking, but it's worth noting that these parameters are tightly connected to the Channel Link knob.

With **Channel Link** turned fully left to 100% Unisum will apply the same amount of gain reduction to both channels (provided that no channel link filtering is applied in the Style section). Turned fully right Unisum will compress each channel completely independently, i.e. dual mono (provided that no other channel link setting is active).



RMS/Peak Bias

Allows separate control over the channel linking for the RMS and Peak detectors, based on the current setting of the **Channel Link** knob.

Turn left to increase the RMS detector linking while leaving the Peak linking as set by the Channel Link control. Turn right to increase the Peak linking instead.

Note: This control is only active when **Channel Link** is below 100%.

Filter

Allows control of the high and low frequency influence on channel linking. Turn left to reduce linking of the Low band. Turn right to reduce linking of the High band.

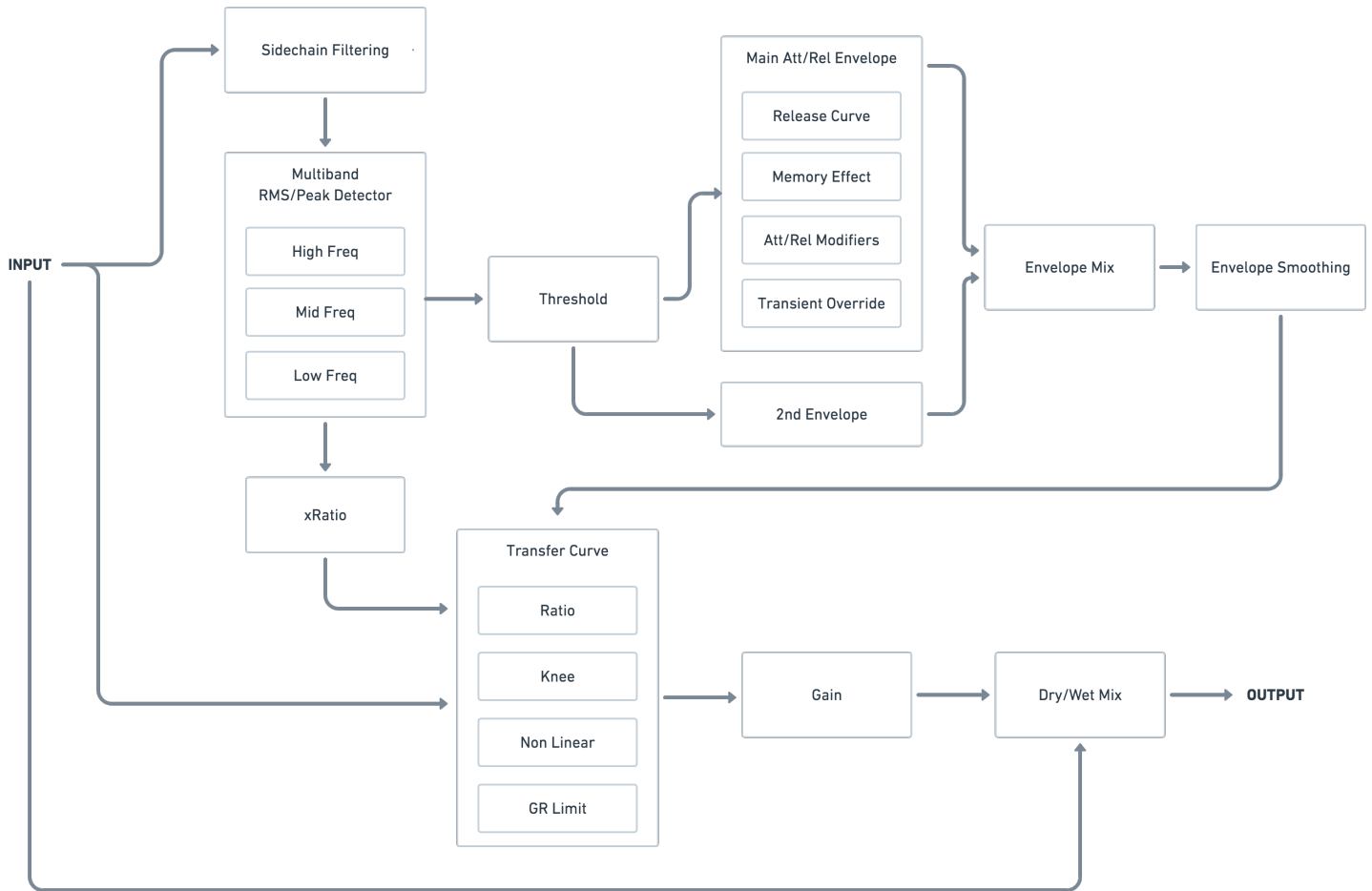
Note: *Setting this knob to anything other than the 12 o'clock Off position will force Unisum to process the two channels at least partially unlinked. This is worth remembering in case you wonder why setting Channel Link to 100% doesn't always fully link the two channels.*

Limit

Sets the max allowed difference in gain reduction between the two channels. The led will light up whenever the limit is reached.

APPENDIX A: SIGNAL FLOW

This chart shows a simplified version of the basic signal flow in Unisum.



CONTACT & SUPPORT

Get in Touch

You're always welcome to get in touch if you have questions, feedback or feature requests. We would love to hear from you!

General Contact:

contact@toneprojctcs.com

Technical Support

If you're experiencing problems or found a bug please do let us know! Drop us an email and we'll try to get back to you within 48 hours - usually within 24 hours.

Technical Support:

support@toneprojects.com

Visit us online

Remember to check out the Tone Projects website. It's also a good idea to sign up to our newsletter to get news, product announcements and tips.

<http://www.toneprojects.com/>

END CREDITS

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Many Thanks to

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