



GTX was developed by **de la Mancha**

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

This manual applies to Revision C of GTX



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Introduction

GTX is a vintage style RMS compressor, designed like its muscle car name-sake for brute power, pure speed and to make a loud noise. Like its brother GTO, it has everything you'd expect in a thorough-bred compressor, but tuned for maximum control and ease of use, with its own unique vintage colouring on top. Unlike the peak compression of GTO, it has a smoother RMS delivery and also has further refinement in the shape of a knee control.

It has a super-fast attack and release and a wide range of threshold, ratio and output boost, so it can cover everything from subtle correction to death-by-compression, with everything in between. It also has an adjustable RMS window for customised response and a knee setting to add further refinement. With an external sidechain, wet/dry mix for NY compression and a hard limiter too, you can really push this baby to get pumping bass and block-rockin' beats. The metering covers input, output and gain reduction, showing real-time and peak levels.

Revision C updates GTX to SynthEdit 1.1 which eliminates any possibility of a bug with multiple instances on multi-core processors.

Revision B of GTX offers some upgrade features, such as release curve shaping, dynamic noise modelling and peak meter hold time (see Change History).

Features

- Vintage style RMS compressor with adjustable RMS and knee, external sidechain, parallel compression and comprehensive metering
- Subtle colouring from a home-made blend of harmonics, saturation and noise *[updated in rev. B]*
- RMS window can be set for smooth cruising or sharp response
- Knee amount can be changed from gentle curve to sharp edge
- Wet/Dry mix control allows blending of dry uncompressed signal for NY style parallel compression
- Choice of 2 attack/release curves *[rev. B]*
- Stereo input detection can be linked or unlinked
- Distortion reduction for very short release times
- Internal or external sidechain routing
- Additional 'Internal sidechain only' versions *[rev. B]*
- 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 *[rev. B]*
- Non-linear knobs for precise control at small values
- Presets covering all functions and different configurations
- Updated to SE 1.1 *[rev. C]*

Installation

Installation is simple, just extract *GTX_revC.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. (There is also a *GTX_revC_int.dll* which is an Internal Sidechain Only version for hosts that are not compatible with multi-input plugins)

As GTX will 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 where it may default to block this process

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

Presets and Tweaking

The presets demonstrate the range of GTX, from subtle to extreme. These presets can sound totally different depending on the source material and may not compress enough or could clip/distort depending on the level of the material that you try it on. The compressor 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 GTX.

Compression basics

I am far from an expert in compression, but here is my little primer before describing the controls of GTX

A compressor is a form of automatic volume control. It is the equivalent of someone listening to music and turning the volume down for the bits that get too loud. Of course, a machine or plug-in is much quicker and more reliable than a human for this and GTX has the ability to react incredibly quickly to trigger compression.

Compression works by detecting the loudness of the signal, and trying to keep it below a certain limit, called the threshold. If the music is below the threshold, the compressor does nothing. If it is above the threshold, it turns the volume down until it goes back below the threshold. This reduces the dynamic range (the difference between the quietest and loudest bits) which can be useful for things like vocals, where the performance might vary in volume over the song, or as a sound design effect to make drums more powerful.

There are two signals in a compressor

- Audio
- Sidechain (also called Key or Control signal)

The Audio is the sound you want to compress, in stereo or mono.

The Sidechain is the signal that is used to trigger the compression if it goes over the threshold

Often, these signals are one and the same. The Audio is fed into the sidechain, and if it goes over the threshold, the audio is reduced in volume. However, you may want to use a different audio signal for the sidechain and GTX lets you do this by allowing an external sidechain signal.

For example, you might want a vocal signal as the external sidechain, triggering compression of the music track. When the singer sings, the music is turned down slightly to allow focus on the voice. Radio stations use this for the when the DJ speaks over the music. Another common example is the kick drum as an external sidechain, triggering compression of the bass line. When the kick drum hits, the bass is reduced in volume (ducked) so the two are not competing.

Another use for an external sidechain is to process the Audio signal before it becomes the sidechain signal, so that only certain parts of the audio will trigger the compression. For example, in a drum loop, maybe you only want the kick drum to trigger the compressor, or you don't want the cymbals to trigger it. On a vocal track, maybe you only want sibilant sounds to trigger the compressor, as a form of de-esser. GTX lets you do this by allowing an external sidechain signal. Simply route the audio through whatever filter, stereo imager, gate you wish before routing back into the external sidechain.

Main Controls

In gain (dB) - adjust the volume of the incoming audio signal. Can be used to raise the volume of a quiet sample in order to cross the threshold, or when using GTX as a limiter to push the volume up to the threshold. Double-click to reset to zero

Threshold (dB) – sets the signal level at which the compressor is triggered. Incoming audio over the threshold causes the compressor to compress the audio until the level drops below the threshold again

Ratio (X:1) – sets the ratio of compression. A ratio of 4:1 means a signal 4dB over the threshold will be reduced to only 1dB over the threshold. 1:1 = no compression and 30:1 means the signal at 30dB over the threshold will be compressed to 1dB over. The higher the ratio, the less the compressor will allow the signal to exceed the threshold. A lower ratio will gently compress but allow the signal to exceed the threshold. A higher ratio will act more like a limiter to prevent all but the highest spikes to exceed the threshold

Attack / Release (ms) – the time for the compressor to reach full compression and release again. Short attack times mean the initial transient can be lost (the initial whack of a snare for example), long attacks mean the transient can exceed the threshold. Short releases can give distortion or pumping (may or may not be desired), long releases mean the compressor may always be on!

RMS (ms)

GTX is an RMS compressor, which stands for Root Mean Squared. In simple terms, instead of reacting to the instantaneous level like a peak compressor, it reacts to the average level, taken over a few (or many) milliseconds. This has the effect of making the compressor less twitchy to react to peak changes as the average levels usually change in a much smoother way. The advantage is to make the compression smoother and less noticeable, the disadvantage is that transients can easily escape the compressor. The larger the RMS window, the smoother the behaviour. You can drop the value down to zero or near zero to get peak compressor like behaviour too

Knee (dB)

The knee control acts to make the compressor start progressively compressing *before* the threshold is reached. The effect again is to make the introduction of compression smoother and less noticeable. Without a knee, a compressor will wait until the threshold is reached, and then bang, kick in. A knee of 5dB means that it will start gently compressing at 5dB below the threshold and smoothly increase to full compression by the time the threshold is reached. Higher settings will be smoother, lower settings more responsive.

Out gain (dB) - adjust the volume of the outgoing audio signal. This is usually used to bring up the overall volume when the compressor has reduced volume to the threshold setting. Double-click to reset to zero

Other Options

Link / Unlink – This determines if there is separate detection for the stereo L and R channels, or if a mono detection is used. Linked means that a single sidechain signal is generated from the input, This control signal is then applied to the compression of both L and R audio channels, even if one of them has not exceeded the threshold. By selecting 'Unlink', both L and R have a separate sidechain signal, which means that the L audio channel is only compressed when the L sidechain exceeds the threshold, and the R audio channel is only compressed when the R sidechain exceeds the threshold.

Internal / External – Here you decide where the sidechain signal comes from. Internal means it uses the incoming audio. External means it uses the signal you have routed to the 2nd stereo input of GTX. This could be a completely different audio signal (see *Compression basics* above) or a processed version of the audio.

Shape – this affects the curvature of the attack / release response. When up, the curve is the same non-linear response that was standard in rev. A of GTO. When down, the curve is more S shaped, for a different flavour.

Wet (%) – this controls the wet/dry mix level, where the wet signal is the output of the compressor and the dry is the uncompressed incoming audio. This allows parallel or NY compression without the phase issues you might otherwise get using your host send or mix levels. A mix of wet and dry can be powerful on drums, giving you both the compressed powerful sound and the preserved transients of the dry sound.

Limit – this adds a stereo hard limiter at the end of the signal chain, which can help to reduce clipping at the output

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.

Change History

Rev. C changes

Updates GTX to SE 1.1, eliminating any possibility of a bug with multiple instances on multi-core processors

Rev. B changes

- Added option to chose from 2 attack/release curves with the SHAPE toggle
- Added peak meter hold time control, using the screw on the meter to adjust sensitivity
- Noise level is now dynamic to output level plus random element, was previously static
- Added a ground loop to remove the 60Hz mains hum ;)
- Fixed bug where zero release time would disable the sidechain
- Internal sidechain only versions for hosts that don't allow multi-input plugins
- Meter selection isn't now saved with preset

Internal Sidechain / External Sidechain

There are 2 versions of GTX included in the download

- *GTX_revC.dll* – the standard version that allows external sidechaining, which has 2 stereo inputs
- *GTX_revC_int.dll* – the modified version that has internal sidechaining only and 1 stereo input

The latter is intended for the few hosts that are not compatible with multiple input plugins
You can install both simultaneously if you wish.

There is an issue when using the standard version of GTX with the energyXT2 host, where the inputs are seen by the host as dual mono inputs. As a workaround, you can download a free converter plug-in called 'Stereo to Dual Mono' from my website: <http://www.delamancha.co.uk/S2DM.htm>

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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.

Thanks also go to **Niklas Silens** (bmanic) for the advice and suggestions that went into rev.B

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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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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