

ThrillseekerXTC

MANUAL

revision 1.0

Content

Chapter 1: Introduction	5
1.1. LICENSE	5
1.2. DISCLAIMER	5
1.3. INSTALLATION	6
1.4. CREDITS	6
1.5. OVERARCHING TOPICS	6
1.6. INTRODUCTION	6
Chapter 2: Reference	9
2.1. JUMP START	9
2.2. INTERNAL ARCHITECTURE	9
2.3. UTILIZING DRIVE AND MOJO	10
2.4. INTERNAL GAIN STAGING	10
2.5. METERING AND BALLISTICS	11
Chapter 3: Addendum	13
3.1. GETTING THE MOST OUT OF IT	13
3.2. KNOWN ISSUES	13
3.3. UPDATES AND FURTHER INFORMATION	13

1 Introduction

1.1. LICENSE

Copyright (C) 2012 by H. L. Goldberg.

The contained software is given to use under a freeware license.
This software is provided free of charge but the author retains copyright.

You are not allowed to make any copies or redistribute this software including but not limited to making the software available for download or making this software part of a software CD compilation.

You are not allowed to sell or to rent this software. You are not allowed to reverse engineer this software.

You are allowed to use this software for any artistic application including commercial music production.

This software is provided 'as-is', without any express or implied warranty. In no event will the author be held liable for any damages arising from the use of this software.

1.2. DISCLAIMER

'VST' is a Technology and Trademark by Steinberg.
All other mentioned trademarks and brands belong to their respective owners.

1.3. INSTALLATION

Requirements:

- Win32 compatible system with SSE2 (or higher) instruction set support.
- The software is tested and known to work in many VST compatible hosts.

Installation on Windows 32bit systems:

Put the DLL files contained in this archive in the VST plug-in folder of your host.

Installation on Win7 64bit systems:

Put the DLL files in the VST plug-in folder in the *Program Files (x86)* part of the file system. If you would like to use it in a 64bit host just use a wrapper, e.g. jBridge.

1.4. CREDITS

Algorithms, made in Germany - H. L. Goldberg, varietyofsound.wordpress.com

Interface, made in Switzerland - Patrick Barca, www.subpixel.ch

Many thanks to the international beta crew for two and a half month painstakingly testing, sorting out the bugs and helping to improve the user experience!

Special thanks for suggestions and inspiration goes to:

- Dax Liniere, www.puzzlefactory.com.au
- Roland Löhlbach, Deutschland
- Kewl Jules, Reunion Island (974)
- sink, sinkmusic.com
- Horatiu-Cristian (3ee), www.3ee-sounddesign.blogspot.com

1.5. OVERARCHING TOPICS

Warning: Lower your listening volume while operating the plug-in to avoid hearing damage or damage of speakers or any other equipment.

Usage tips:

- Use the power switch on the right side for handy A/B comparisons.
- Use *<ctrl> + mouse left click* on a knob or switch, to restore default position.
- Use *<shift> + mouse left click* on a knob to fine adjust values.
- Use this plug-in as an insert effect in any stereo channel of your VST host.

1.6. INTRODUCTION

Bringing mojo back – Thrillseeker XTC is a contemporary exciter build around a true parallel analog style equalizer design.

The analog parallel equalizer design goes back to the very beginning of the audio mixing history (referring devices from e.g. Pultec and Lang) and is famous for the very musical and interacting frequency response between all bands. Beside the usual suspects (Pultec style EQs), one can also find similar designs in modern classics like the Chandler Tone Control or the UBK Clariphonic, just to name a few. While some are rather clean by design, others take advantage of all the mojo a full analog signal path (including transformer coupled tube stages) has to offer.

Thrillseeker XTC resembles these parallel analog equalizer designs and includes full control about sonic color and mojo. In each parallel EQ band, a dedicated tuned *stateful saturator* takes care of all those specific audio transient affairs which are frequency and state dependent in the analog domain and are summing up to the unique color and width/depth impression of such devices.

Rather than being a full-blown equalizer, Thrillseeker XTC *only* offers three parallel bands with pre-selected frequency ranges for the low, upper-mid and high frequency spectrum, which can only perform boosts. However, on top of that, all bands can be excited by simply activating the DRIVE/MOJO section, which applies delicate stateful harmonic distortion to beautifully enhance the signal .

No matter what selections were actually made on each band - you always can mix this back safely (phase coherent) to the dry signal with the MIX control in the output section of the plug-in, not unlike the popular *fade filter* function in graphics software.

Lowering the output gain control allows A/B control at equal volume levels and the IN/OUT metering supports this visually by showing *loudness units*. The switch in this section acts as the global plug-in bypass (On/Off) switch.

The DRIVE/MOJO section contains two controls to manage color and distortion: The DRIVE control adjusts the internal gain driving the saturation in the three parallel equalizers, while the MOJO control dials in additional *analog signal path* idiosyncrasies and also increases the appearance of 2nd and 3rd order harmonics. If set to 0 the MOJO circuit is disabled. Switching the whole section off will give you a super clean parallel EQ!

Unlike each and every other known exciter, Thrillseeker XTC does not perform any phase tricks, poor static waveshaping and similar. Instead, it is based on a sophisticated non-linear and frequency dependent algorithm with memory, which is performed on the signals transient information. It also takes our hearing sensitivity into account, in respect to signal frequency and volume changes over time.

The magic is, where the transient is.

2 Reference

2.1. JUMP START

The plug-in is available in two different versions which are exactly the same but just offer different internal gain staging.

Use the black version if you mix at rather conservative target levels around -18dB RMS.

Use the blue version instead if you mix at hotter levels above.

On the left side there are three individual sections for the EQs. Switch them on to boost the selected frequency region. The curves are very smooth and you can't harm any audio content even at highest BOOST amounts and in mastering situations. LOW and AIR perform with shelving filter characteristics while MID performs a bell-shaped curve which morphs into a shelving filter at higher frequency settings.

On the right side you'll find two sections, one for controlling the exciter algorithms (DRIVE/MOJO) and one to control overall output (OUT), dry/wet level (MIX) and bypassing the whole plug-in.

The two meters in the middle allow you to monitor the incoming and outgoing audio. The little screws inside each meter control the ballistics.

2.2. INTERNAL ARCHITECTURE

As already mentioned, Thrillseeker XTC contains a true parallel EQ design. This means that the three EQs are not following each other in a serial cascade but are working in parallel and

are summed together afterwards. Each EQ has its very own stateful saturator and they are activated as soon as the DRIVE/MOJO section is on. If an EQ is bypassed, a dry signal is summed to the other EQs instead.

Tip: If you would like to take most advantage of the stateful saturation process then always activate **all** EQs whether you apply a boost with them or not.

The summed signal can be safely mixed back to the dry signal by adjusting (lowering) the MIX control in the output section. However, the MOJO option produces some additional content which is not phase coherent, so this is excluded from the MIX control and always applied as soon as some MOJO is dialed in.



2.3. UTILIZING DRIVE AND MOJO

If the DRIVE/MOJO section is disabled, Thrillseeker is a super clean EQ w/o any ripple and distortion. Utilizing this section you can obtain different levels of harmonic distortion and artifacts:

1. Super clean plain parallel EQ – Switch the whole section off.
2. EQ with stateful saturation – Switch this section on but leave MOJO off (knob snaps into zero position) and use DRIVE to adjust the gain, going from -9 to +9dB.
3. Further phase distortion, signal path idiosyncrasies and increased 2nd and 3rd harmonics – Dial in MOJO to taste.

Personally, I wouldn't use the MOJO option in a mastering situation a lot, but for mixing it is great to add a little more texture and animation on rather static sources. It may seem subtle but can really do wonders if applied selectively in the right places.

2.4. INTERNAL GAIN STAGING

The black version is provided to mix at rather conservative target levels around -18dB RMS opposed to the blue version which is designed to mix at hotter levels around -9dB RMS or to be used on a master bus where peak performance might be even above 0dBFS upfront the final limiter.

In both versions, 18dB headroom (at least) is guaranteed and above that level IMD/ALI-ASING/CLIPPING artifacts may drastically increase depending on the DRIVE and MOJO settings.

Use the DRIVE option to adjust the internal gainstaging for the three stateful saturators within a range of +/-9dB. The absolute headroom is also controlled via the MOJO option, by an amount of 9dB.

The metering should give a rough indication if you are using the right version in a specific situation: There should be some needle movement in the grey section of the scale. Also, avoid continuous RMS levels in the red area.

2.5. METERING AND BALLISTICS

Metering is individually provided for the incoming and outgoing audio. Each meter has a screw in the middle to obtain different ballistics. Each screw can be turned around by 360 degrees. The left screw controls the right one also. The right screw can be turned independently. This design allows both, turning them in sync or adjusting them differently.

In left most position the meter acts as a classic VU meter with 300ms integration time. Above this setting, 'K-weighting' loudness filtering is activated and the integration time continuously increases up to 3 seconds. Given this design, two other important settings can easily be obtained:

1. In *one o'clock* position which is the plug-ins default position in all presets (it slightly snaps into this position and one could also simply use `<ctrl> + mouse left click` to get there) the metering accords to the so-called *momentary loudness* using a window of 400ms as specified by the ITU-R BS.1770-2 standard¹.
2. In the fully clockwise (right most) position the metering accords to the so called *short-term loudness* using a window of 3sec as specified by the ITU-R BS.1770-2 standard².

1 including the proposed filtering and no gate

2 dito

3 Addendum

3.1. GETTING THE MOST OUT OF IT

Use the device as if you would use the good old console to drive a signal into the sweet spot where it gets fatter and more focused. If too much boosting is applied, just back it off with the MIX knob.

ThrillseekerXTC is heavily CPU optimized to allow high instance counts in a mix. It's good practise to use it in varying, slight doses on each channel instead of applying just one instance on a bus and expecting miracles.

3.2. KNOWN ISSUES

Known issues in version 1.0.0:

- Automation parameters don't show values.
- If MOJO is activated, switching the section (or the complete plugin) on/off can cause crackles in certain cases.
- Using the plug-in bridged with Samplitude's x64 integrated bridge, bypassing causes problems.

3.3. UPDATES AND FURTHER INFORMATION

Refer to my Blog at <http://varietyofsound.wordpress.com> for some additional information and updates on this plug-in, or leave a note there if any issues did occur.

Peace,
Herbert