

Thrillseeker VBL

MANUAL

revision 1.0

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1 Introduction

1.1. LICENSE

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1.2. DISCLAIMER

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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 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
- cytoSonic for his contributions in the developer community
- Mario for proof-reading the manual

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 VBL is an emulation of a “vintage broadcast limiter” following the classic Variable-Mu design principles from the early 1950's. They were used to prevent audio overshoots by managing sudden signals changes. From today's perspective, and compared to brickwall limiters, they are rather slow and should be seen as more of a gain

structure leveler, but they still are shining when it comes to perform gain riding in a very musical fashion - they have warmth and mojo written all over.

Thrillseeker VBL is a “modded” version, which not only has the classic gain reduction controls but also grants detailed access to the amount and appearance of harmonic tube amplifier distortion occurring in the analog tube circuit. Applied in subtle doses, this dials in that analog magic we often miss when working in the digital domain, but you can also overdrive the circuit to have more obvious but still musical sounding harmonic distortion (and according side-effects) for use as a creative effect.

On top, Thrillseeker VBL offers an incredibly authentic audio transformer simulation which not only models the typical low-end harmonic distortion but also all the frequency- and load dependent subtleties occurring in a transformer coupled tube circuit, and which add up to that typical mojo we know from the analog classics. This would not have been possible with plain waveshaping techniques but has been realized with my innovative Stateful Saturation approach, making it possible to model circuits having a (short) sort of memory.

2 Reference

2.1. JUMP START

Just insert the plug-in on one of your VST host's audio channels – both mono or stereo are supported. To understand the plug-in, you just have to know one thing - the COMPRESSOR and AMPLIFIER are working hand in hand and both are affecting the resulting gain reduction, which gets computed and is shown by the “VU style” gain reduction meter.

In fact it's just one single circuit controlled by these two parameters. COMPRESSOR sets the threshold where the compressor action starts, while AMPLIFIER increases non-linear amplifier distortion artifacts.

2.2. BASIC WORKFLOW

Depending on the task at hand, I would recommend two different workflows:

1. Audio leveling and limiting purposes – Start with the COMPRESSOR setting first and then dial in AMPLIFIER afterwards, depending on the amount of harmonic distortion and mojo which is allowed/wanted.
2. Adding musical sounding distortion – Start with the AMPLIFIER first and, if desired, level out and smooth the distortion by dialing in smaller COMPRESSOR amounts. That way, distortion might appear more consistent over the entire volume changes.

If you prefer to keep things simple, you can use Thrillseeker VBL just by adjusting these two controls, but don't hesitate to read further for the gory details.

2.3. GAINSTAGING

There are two controls to adapt the plug-in to the actual audio level situation in your plug-in chain:

- **IN GAIN**, which is the input gain adjustment and can be used to align gain-staging and to drive the whole unit
- **OUTPUT**, which basically is a plain digital output amplifier to match input/output levels for proper A/B testing or gainstaging.

2.4. METERING

The “VU style” meter shows the gain reduction amounts. The actual GR amount is determined by COMPRESSOR and AMPLIFIER settings. Driving the whole unit with the IN-GAIN knob also affects the actual GR amount.

2.5. STEREO OPERATION

The plug-in could be used on mono or stereo audio tracks. If used on stereo tracks the internal circuit can be linked for more consistent compression behaviour between both channels, yielding a better stereo image as well.

STEREO links the two audio channels, affecting both compression and distortion. DUAL MONO on the other hand offers two completely independent audio paths.

On a mono track, the state of the switch doesn't matter.

2.6. AMPLIFIER FINE CONTROL

There are three parameters to fine tune the AMPLIFIER section:

1. **EMPHASIS** – The emphasis is a sort of highpass filter in the sidechain (affecting both, compression and amplifier distortion). Exclude low frequency content from being processed by simply turning the knob clock-wise.
2. **BIAS** – Sets the tube amplifier pre-load. The actual effect of the BIAS dial is that the HF distortion gets more pronounced, and the signal distortion might appear tighter and brighter the more it gets turned clock-wise. It does not affect the compression directly.
3. **BRILLIANCE** – Dialing in the AMPLIFIER effect causes high frequency loss, just like a hardware tube circuit would. The BRILLIANCE shelving filter is there to compensate for this effect, according to taste.

2.7. TRANSFORMER SIMULATION

Given the TRAFO switch, one can dial in all kind of artifacts related to an audio transformer coupled circuit. If it's on, the distortion increases with lower frequency and higher system load. This circuit also introduces phase distortion and various types of frequency- and level dependent effects in the gain reduction computer (including amplifier distortion generation). In case you don't want a lot of color and mojo this can be switched off.

2.8. DRY/WET MIXING

When the TRAFO switch is on, phase distortion occurs making it impossible to use external dry/wet mixing outside the plug-in without causing drastic frequency changes of the signal. Use DRY:WET instead, this offers safe, phase coherent internal mixing of unprocessed and processed signals.

3 Addendum

3.1. GETTING THE MOST OUT OF IT

Use the device like you would use the good old outboard stuff to drive a signal into the sweet spot where it just gets fatter, wider and more dimensional. If too much gain is applied, just back it off with the DRY:WET control.

Utilizing native Assembler code, Thrillseeker VBL is heavily CPU optimized to allow high instance counts in a mix. It's a good practice to use it in varying, slight doses on numerous channels instead of applying just one instance on a bus and expecting miracles. However, it's an awesome effect on the mastering or summing bus, too.

3.2. KNOWN ISSUES

Known issues in version 1.0.0:

- none

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