VARIETY OF SOUND & TOKYO DAWN LABS

Slick EQ GE

Owner's Manual

Product version: 1.3.0

Revision: 24, last update: September 9, 2015
Editors: Herbert Goldberg, Fabien Schivre

Thank you for choosing a Tokyo Dawn Labs product!

THE CONCEPT

TDR VOS SlickEQ - Gentleman's Edition is a mixing/mastering equalizer designed for ease of use, musical flexibility and impeccable sound. It combines the three semi-parametric filter-bands known from the standard editions with an exotic "Tilt"-filter flanked by lowpass and highpass filters. Five distinct EQ models provide a rich set of pre-defined EQ curves and behaviors for the three main filter bands.

In order to "warm up" the material with additional harmonic content, SlickEQ offers a switchable EQ non-linearity as well as an output stage with various output stages. These options are meant to offer subtle and interesting textures, rather than obvious distortion, the typical "mojo" often associated with high quality analogue audio gear.

An elaborate auto gain option automatically compensates for changes of perceived-loudness during EQ (within reasonable limits) and a gain-trim feature helps controlling peak overloads with ease. The 64bit multi-rate processing scheme (a.k.a. "internal resampling") practically eliminates typical problems of digital EQ implementations such as frequency-warping, quantization distortion and aliasing.

Beside the primary controls, the plug-in comes with an array of additional helpers: Advanced preset management, frequency magnitude plots, undo/redo, quick A/B comparison, copy & paste, an online help, editable labels, mouse-wheel support and much more. Finally, SlickEQ GE allows to exclusively process the stereo sum or stereo difference without additional sum/difference encoding (see "M/S" microphony).

SlickEQ GE is a collaborative project by *Variety of Sound* (Herbert Goldberg) and *Tokyo Dawn Labs* (Vladislav Goncharov and Fabien Schivre).

MAIN CONTROLS

EQ MODEL

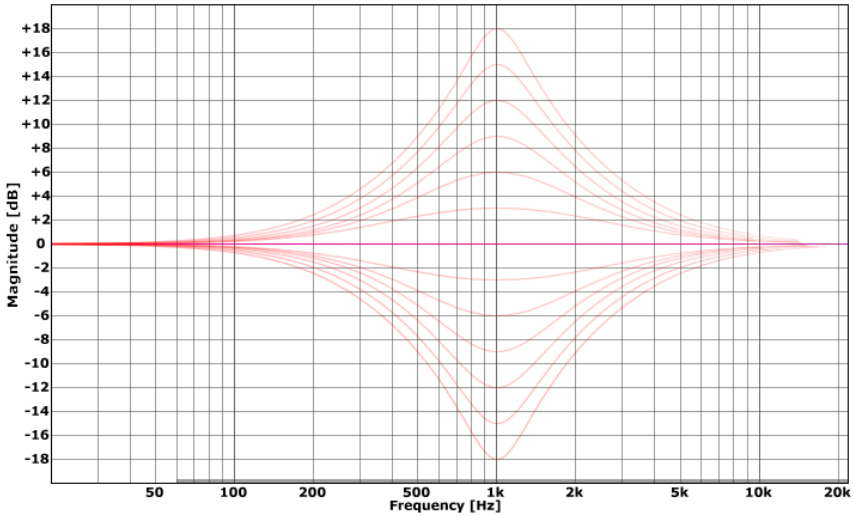
One of **five different EQ models** can be selected via the central drop down menu or cycled through with the help of previous/next buttons. The interface's background color changes depending on the selected model.

The models represent a specific set of curves and EQ behaviors each providing their own musical "feel". The different names and colors have no deeper meaning, they are meant to help with memorization and identification of the different models. The EQ model affects all filters with a colored background only (i.e. LP/HP/Tilt is not affected).

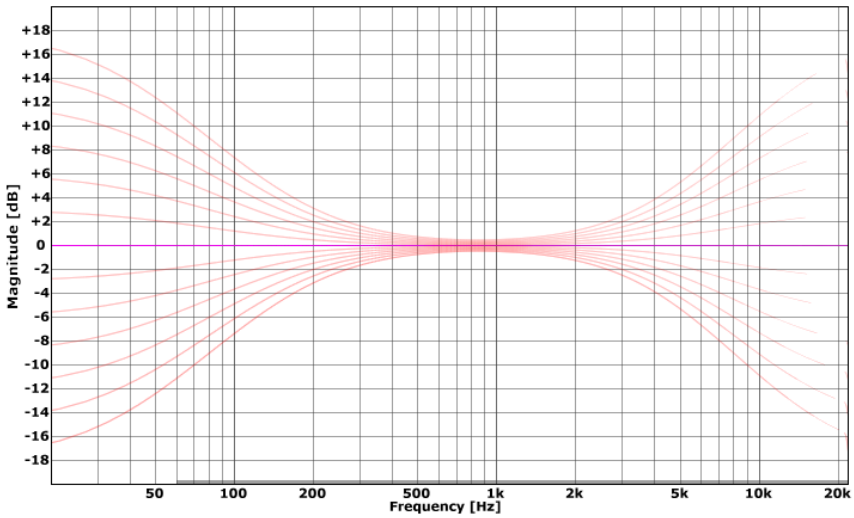
MODEL: AMERICAN

Classy and gentle slopes, American style. This is a traditional proportional Q design without surprises. A reliable all-rounder, a good choice for mastering applications.

American model: Bell filter cut/boost range



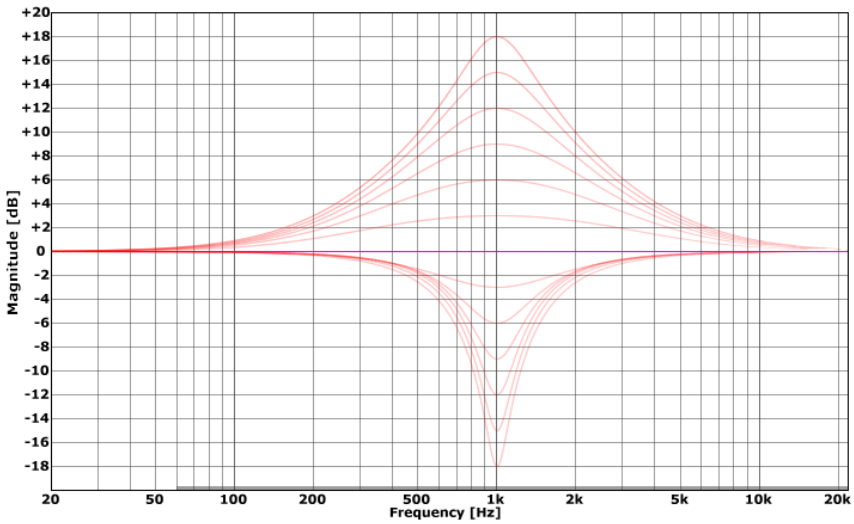
American model: Shelving filter(s) cut/boost range



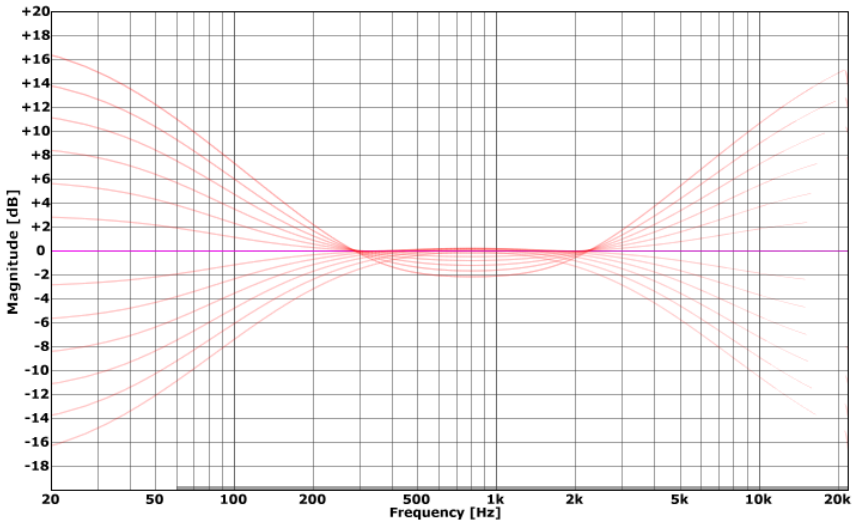
MODEL: BRITISH

The British model's distinct features are the bell filter's asymmetric cut/boost shape and the subtle "dip" in the shelving filters. Note that the latter only appears during boost operation. This model is a well suited to creative tasks, Mixing in particular.

British model: Bell filter cut/boost range



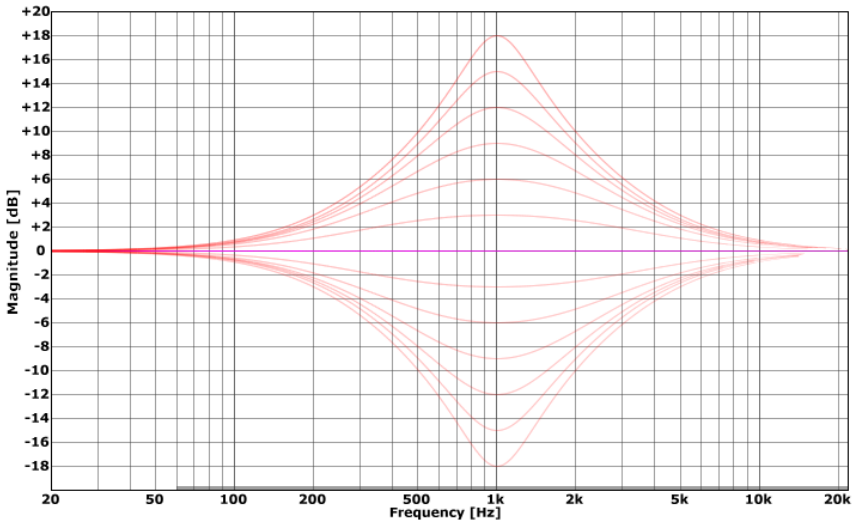
British model: Shelving filter(s) cut/boost range



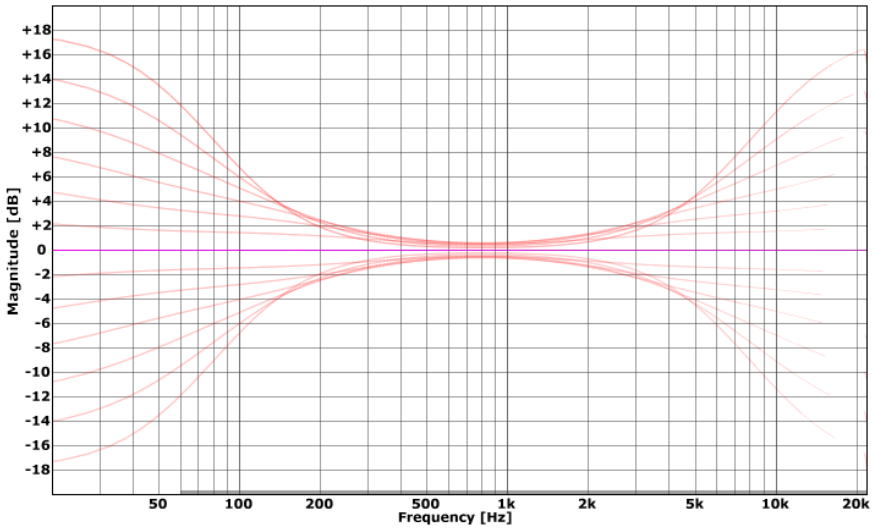
MODEL: GERMAN

The German model offers special “tilt” shelving filters with large linear transitions (at low amounts of boost/cut). Well suited for broad spectral balancing or smooth shaping during mastering tasks. This also mode also produces the lowest amount of phase distortion (compared to other options).

German model: Bell filter cut/boost range



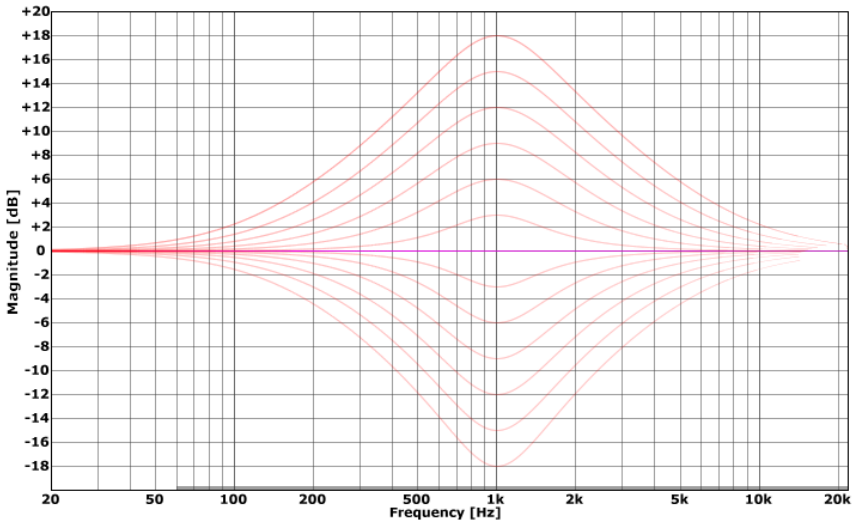
German model: Shelving filter(s) cut/boost range



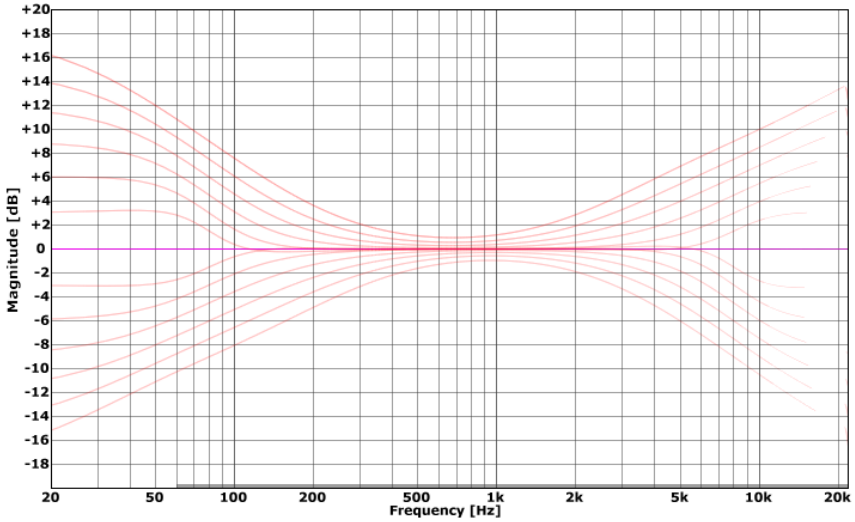
MODEL: SOVIET

The Soviet model features unique inverse proportional curves. That means, small boosts/cuts respond with very steep shapes, while larger values are producing increasingly wider curves. This exotic behavior makes it a perfect candidate for creative purposes, and it is surprisingly useful during mixing.

Soviet model: Bell filter cut/boost range



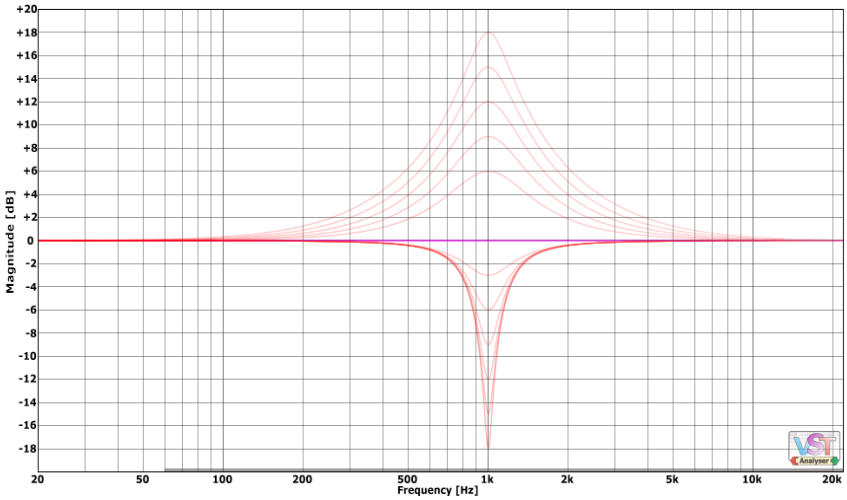
Soviet model: Shelving filter(s) cut/boost range



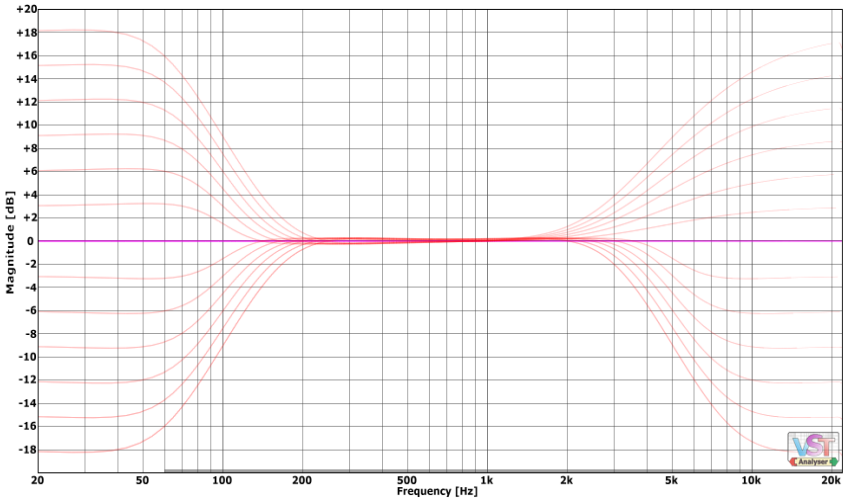
MODEL: JAPANESE

The Japanese model features SlickEQ's sharpest blades. This model is specifically fine-tuned for surgical control over the frequency spectrum. Note the asymmetric filter behavior of both bell and shelf modes.

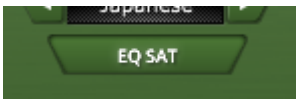
Japanese model: Bell filter cut/boost range



Japanese model: Shelving filter(s) cut/boost range



EQ SATURATION



Pressing **EQ SAT** activates a smooth non-linearity inside the filter network. This generates "musical" amounts of harmonic distortion, which purely affect EQ boosts. In other words, no EQ boost = no saturation.

LOW FREQUENCY BAND

Frequency controls the both center frequency of the selected filter-shape as well as the optional phase-shift (see 'Phi' below).
Gain controls the amount of boost or reduction applied to the selected frequency region.
Shape buttons control the filter shape. The low band section features both low-shelving and bell shapes.
Pressing **ON** enables/disables the filter.

The button labeled φ (Phi, lowercase) represents **phase shift** and deserves special attention. It activates a special filter network meant to distort the phase in a musically useful manner. It does not affect the frequency magnitude (all-pass). However, the network delays low frequencies relative to higher frequencies. In other words, low frequencies lag behind.

This seemingly boring filter covers a surprising range of uses such as waveform symmetrization; attack softening and subtle bass sustain extension; correction of phase issues in the mix and creative doubling/layering trickery. Last but not least, it can even correct certain forms of "dullness" and offers a useful alternative "color" to the low band section. This function is best discovered by ear.

Note: φ can be tuned with **Frequency,** but does not depend on **Gain** (!).

MID FREQUENCY BAND

F**requency** controls the center frequency of the bell.
Gain controls the amount of boost or reduction.
Shape buttons give access to two different bell shapes, wide and narrow (notch).
Pressing **ON** enables/disables the filter.

HIGH FREQUENCY BAND

F**requency** controls the center frequency of the selected filter-shape. Note that SlickEQ's filters offer a wide range up to 40 kHz.
Gain controls the amount of boost or reduction applied to the selected frequency region.
Shape buttons control the filter shape. The high band section features both high-shelving and bell shapes.
Pressing **ON** enables/disables the filter.

Note: The exact shapes of all three bands depend on the selected **EQ Model**, as well as on the selected corner frequency and gain.

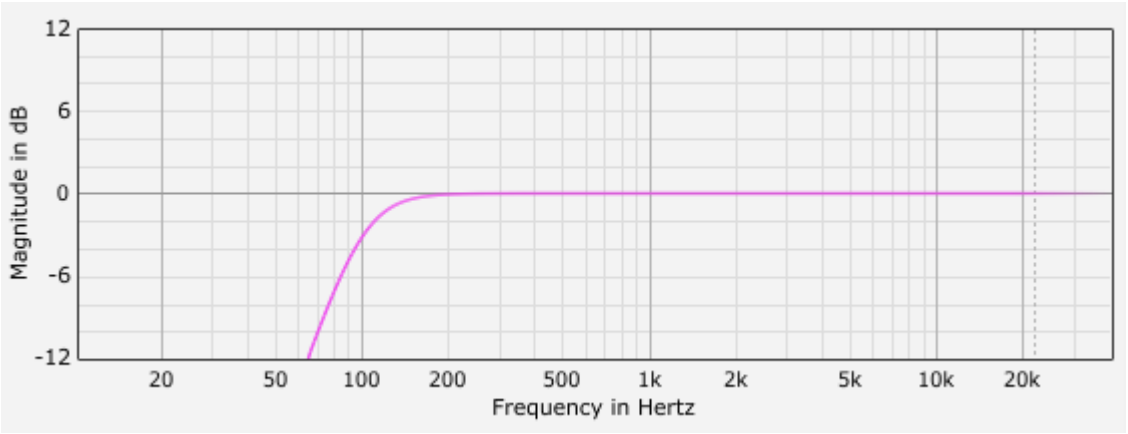
HIGH PASS FILTER

The high-pass filter section features the classic 18db/Octave Butterworth filter known from SlickEQ standard edition. The second mode is a 12dB/Octave filter with a subtle “bump” common to magnetic-tape playback.

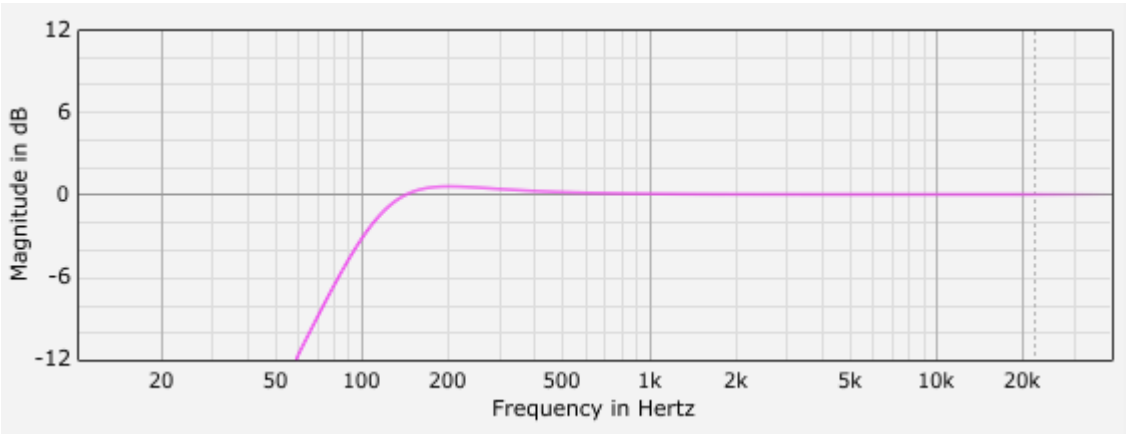
Pressing **ON** enables/disables the filter.

An interesting detail: the high-pass filter does its work after the main EQ section. That means, if "EQ Saturation" is turned on and a low-frequency boost is used, generated harmonics will follow the original signal and thus help the listener to psychoacoustically re-construct some of the content later removed by the hi-pass filter.

High-pass, standard mode (18dB/Octave)



High-pass, bump mode (12dB/Octave)



Note: The “bump” is centered one octave above the specified cutoff frequency. In this specific example, you can see that the high-pass filter’s -3dB point is set to 100Hz. The bump itself is centered at 200Hz.

TILT FILTER

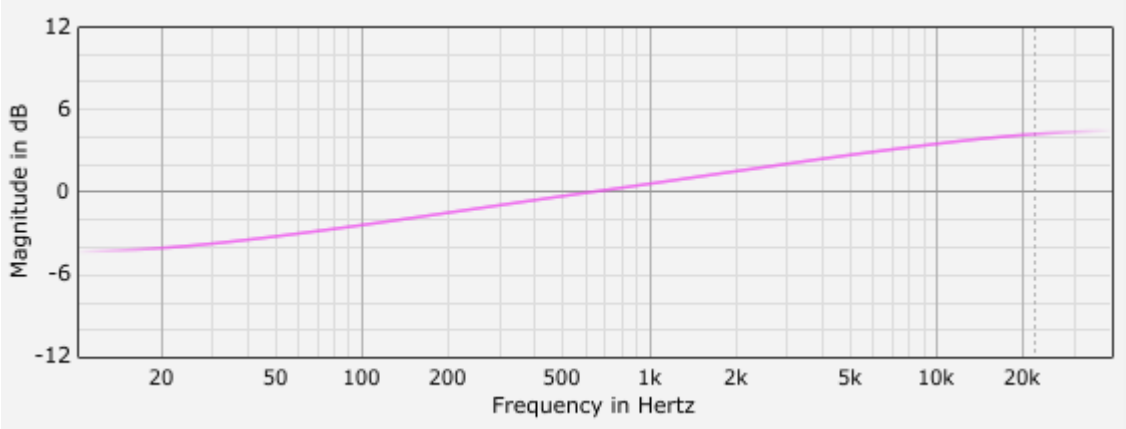
Tilt filter allows shifting the full frequency spectrum in an almost linear manner. The section also features an interesting derivate of the traditional tilt-filter, the so-called "V" filter. The latter can work as crude "loudness" filter.

Center controls the filter's center frequency. Note that a seemingly strange behavior appears as soon one tries to control the center frequency of the "/" mode in conjunction with auto-gain: The center frequency won't change! This is perfectly normal, because auto-gain compensates the loudness change.

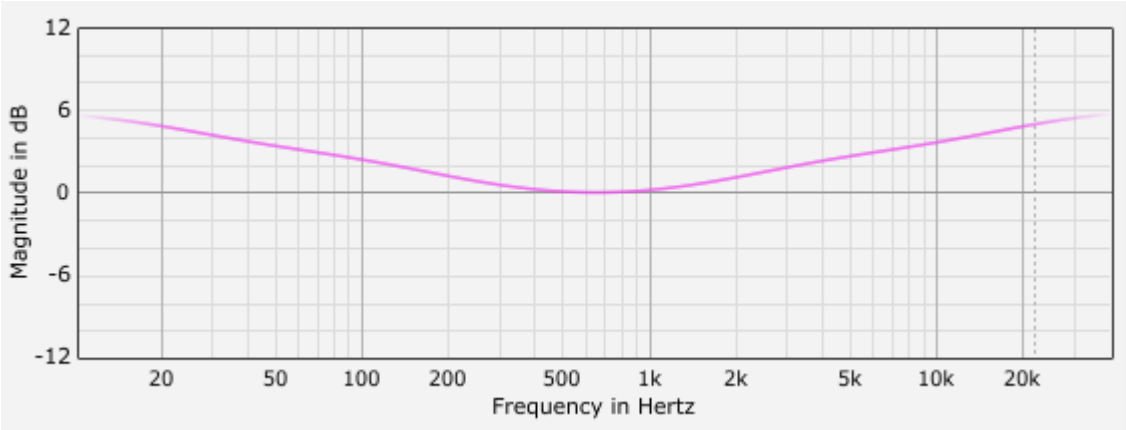
Amount controls the strength of the effect in dB per decade.

Pressing **ON** enables/disables the filter.

"/" shape, amount 3dB



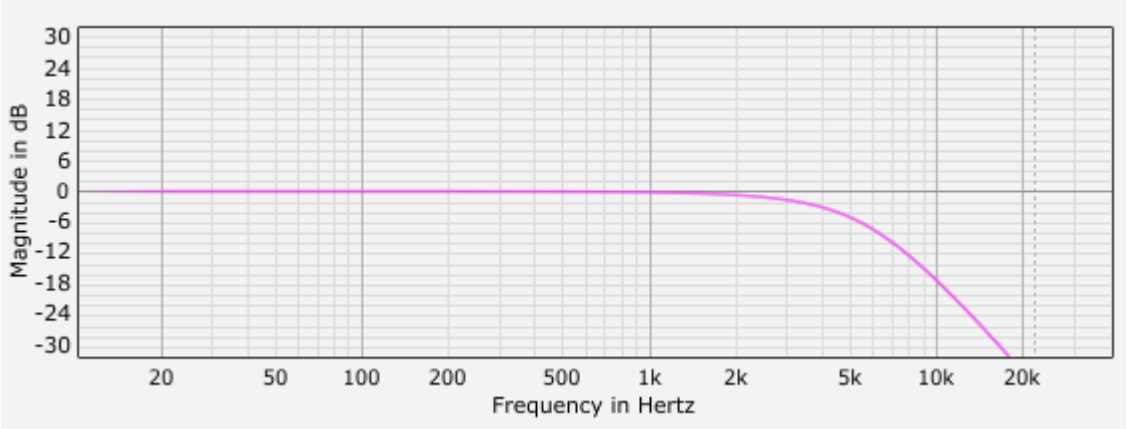
"V" shape, amount 3dB



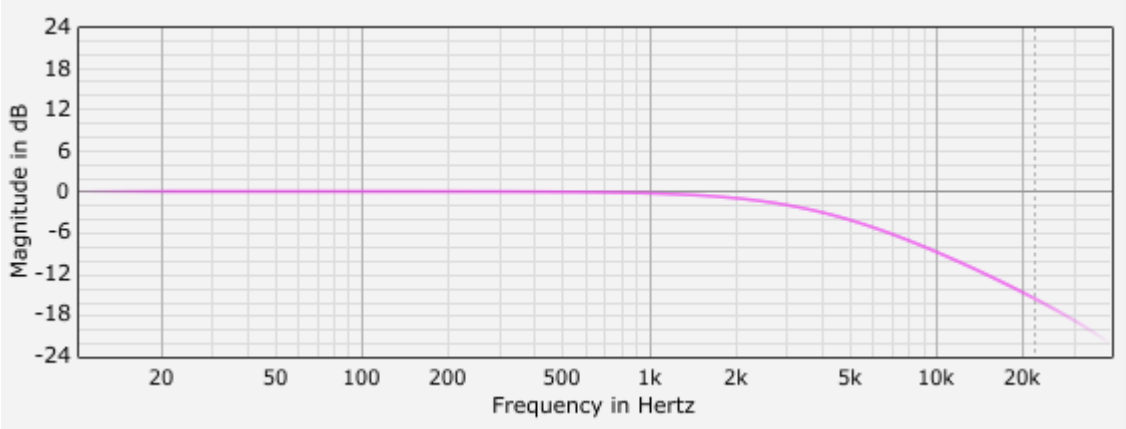
LOW PASS FILTER

Low-pass filter section allows to smoothly control the high frequency region. The shape buttons offers access to a 18db/Octave Bessel filter or a smooth 6dB/Octave filter. Clicking the ON button enables/disables the section.

4kHz low-pass, steep mode (18dB/Octave, Bessel)



4kHz low-pass, smooth mode (6dB/Octave)



OUTPUT STAGE

The **output stage** section offers access to six different output stages. Each option is meant to provide a more or less subtle sound texture. They do not saturate in the traditional sense.

Calibrate allows to adjust the output stage model "drive" in decibel. It gives control over the amount of generated harmonic content without the need for clumsy input/output drive techniques.

- **Linear**: As clean as it gets, absolutely linear.
- **Silky**: Dynamic saturation with an "open" character. Generates low order, even and odd harmonics (average case).
- **Mellow**: Subtle warming. Generates a very low level odd order harmonics series with a dominant 3rd partial (average case).
- **Deep**: Dynamic odd order distortion with a distinct frequency dependent touch for increased depth and dimension.
- **Excited**: Exciter style saturation, enhances the perceived bandwidth.
- **Toasted**: Crudely approximates the behavior of in/out transformers.
- **Funky:** Input transformer behavior including magnetic hysteresis.

OUTPUT GAIN AND AUTO GAIN

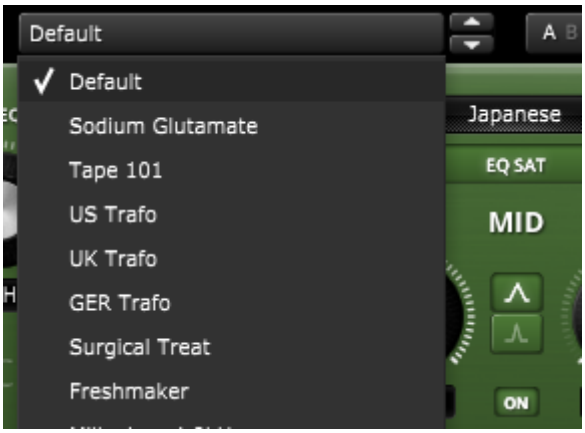
Output gain adjusts the output gain in decibel.
A red overload-hold LED activates whenever the output signal exceeds 0dBfs, and remains active until re-set. The max-peak history is automatically reset as soon an as audio parameter changes. A left-click on the LED forces a re-set manually.

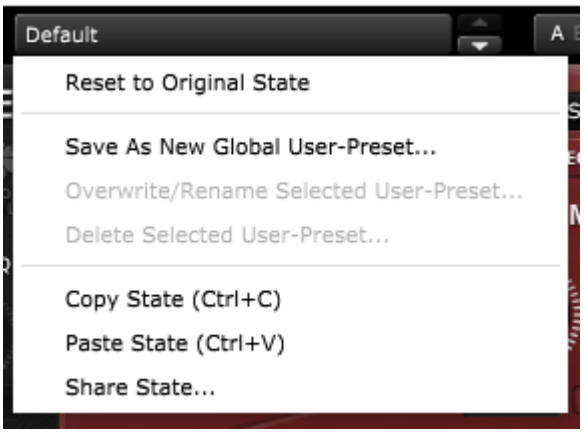
The **A** (auto) button activates the **auto-gain** compensation. This mode tries to preserve the subjective loudness during EQ while operating the EQ. This mode gives a much better idea of what the EQ is really doing to the material, because it strongly reduces perception issues related to gain differences. In other words, boosts don't automically give the impression to sound better and cuts tend to sound far less "boring" than they seem without auto-gain (or careful manual loudness matching). A blue LED indicates auto-gain activity.

Holding the mouse-cursor over the overload LED enables a secondary **output gain trim** mode which shows the difference between 0dBfs and the current max peak history value. A left click on the trim display sets the output gain as indicated (which practically "normalizes" the plugin's output gain). Any click outside the region disables the trim mode again.

SECONDARY CONTROLS / TOOLBAR

PRESET MANAGEMENT





The preset drop-down list gives quick access to factory and user presets. Alternatively, up/down buttons allow to cycles through them with a single click.

Advanced preset management options can be accessed from the context menu (right-click):

Reset to Original state re-sets the preset to its original state.

Save As New Global User-Preset opens a dialog used to create User Presets. These presets persist across sessions and DAWs (presets are saved on your machine). The total amount of user presets is limited to ten.

See section “Context Menu” below for details about the **Copy/Paste/Share State** options.

FREQUENCY MAGNITUDE DISPLAY

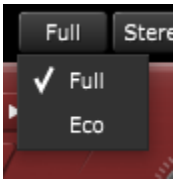
Click the frequency magnitude button to open the frequency magnitude display.

This view primarily draws the frequency magnitude of the current filter setting. The graph rescales automatically if needed. A realtime output analyzer can be activated via the “Analyzer On/Off” button top right. Note that the analyzer has been designed to give an idea of the energy distribution of the current output.

BYPASS

Bypasses the whole processor. Processor latency is accurately compensated and the actual processing is never interrupted (gap-less) to enable better comparisons.

QUALITY

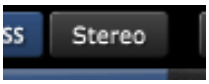


"Full" activates SlickEQ's high fidelity processing.

"Eco" activates a particularly lightweight audio processing mode having almost zero latency. It doesn't support saturation options and "phi" mode. "tilt"/"v-shape" curves are simplified and the "steep" low-pass filter shape becomes 12 dB/Oct.

NOTE: Both quality mode have different processing latency. You'll be asked should restart audio to restart playback in order to refresh DAW latency compensation.

PROCESS-TARGET



The plugin can be processed in Stereo, Mono, Left, Right, Sum and Diff mode. Sum and Diff represents Mid/Side processing.

UNDO/REDO

Use the undo/redo buttons to navigate previous control states. The exact event is shown in a tool-tip. Note that certain controls are not tracked by this function (e.g. "Bypass").

A/B CONTROL

A/B allows to quickly compare two alternative control settings.
A>B or B<A copies one state to the other.

HELP MODE

The online help mode offers detailed information about the various elements of the user-interface. Click "?" to activate the online help and move the mouse-cursor above the control of interest. A small info bubble will appear. A left-mouse click closes the help-mode again.

SETTINGS

The settings button opens a dialog which gives control over additional user interface settings such as knob/slider behavior and latency information.

INFO/ABOUT PAGE

Shows information about the plug-in version, your registration status and external links.

CONTEXT MENU

Right click over a “blank” area of the user interface to open the general context-menu. **Copy and paste** allow copying control states (i.e. “pre-sets”) across plugin instances and plug-in hosts.

Additionally, **share state** opens a dialog with additional preset sharing options via e-mail or internet forums.

FACTORY PRESETS

While there are some common patterns to utilize an EQ during mastering, applying EQ presets during mixing is always a delicate matter because mixing an instrument or voice depends always on the context. Most of the presets within SlickEQ should rather be seen as starting points.

SODIUM GLUTAMATE, FRESHMAKER, MOJO

These are really great audio enhancers/exciters each with their own color. They work on almost everything whether its vocals, instruments or the 2bus.

TAPE 101

Recreates typical distortions and color of a tape machine.

UK/US/GER TRAFO

Three distinct templates recreating the sonic thumbprint of typical transformer circuits found in consoles and preamps. They can be used across a whole mix.

SURGICAL TREAT

Preset to correct certain "problematic" frequencies by cutting with SlickEQ's steepest EQ model - the Japanese one.

MILLENIUM 4.8KHZ, COOLTEC 5KHZ, PRE 73

Those are emulating the HF curve shapes of some beloved and famous outboard.

ADDING WEIGHT

A great example of how sum/difference processing can be utilized. In this case just the sum is processed to create a more defined audio image by equalizing the center.

GERMAN MASTERING, CLEAN SMILE, VINTAGE SMILE

Typical starting points for mastering duties. While the first one takes advantage of SlickEQ's ability to boost very high frequencies, the latter ones are offering those typical smile shaped curves by two different approaches (Shelving filters vs. tilt EQ).

TANGERINE REAL, TRUE GRIT, MR. BASS

These are examples to start with on single instruments offering some decent preset frequencies.

INSTALLATION

First of all, make sure to download both the key file and the plugin binary. All files can be downloaded from your customer area.

Windows installation:

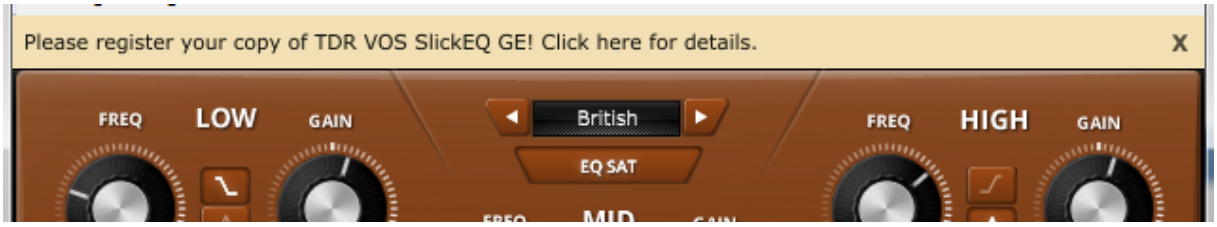
1. Run the provided installer and follow the instructions.

Mac OS installation:

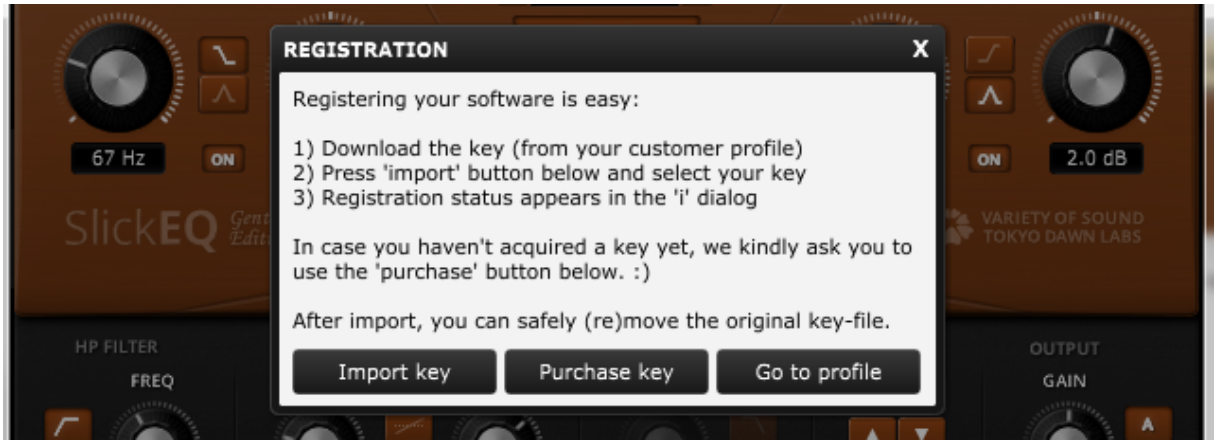
1. Open the dmg archive (double-click).
2. Double-click "Install TDR VOS SlickEQ GE" to install the VST, AU and AAX plugins on your system.
3. Follow given instructions.

PRODUCT REGISTRATION

Registering your product is easy. After installation, open your favorite audio plugin host and run TDR VOS SlickEQ GE.



Click the yellow banner to access the registration dialog and follow the instructions.



Click **Import key** and select the key file you've downloaded before. You can now safely delete or move key file can move/delete the key file after import.

Successful registration is indicated in the info-dialog (i).

Note that the copy protection will never affect the integrity of your music. No matter the registration status!

GET IN TOUCH!

We want to hear your opinion! Reach us via one of the websites below:

Check out the Tokyo Dawn Labs website for feedback, news, updates and downloads:
http://www.tokyodawn.net/tokyo-dawn-labs/

You can also directly head to the TDR VOS SlickEQ GE page:
http://www.tokyodawn.net/tdr-slickeq-ge/

TECHNICAL SPECIFICATIONS

Available binaries:	VST, AU and AAX, 32bit and 64bit
Input / Output resolution:	32bit floating point
Internal resolution:	64bit floating point
Latency (44.1 – 48 kHz):	183 samples / 16 samples (eco mode)
Latency (88.2 – 96 kHz):	171 samples / 16 samples (eco mode)
Latency (176.4 – 192 kHz):	no latency
Supported sample-rates:	From 44.1 kHz to 192 kHz
Supported processing configurations:	Mono, Stereo, Sum, Difference, Left, Right

CREDITS

Original idea by Vladislav Goncharov and Herbert Goldberg.
DSP code by Vladislav Goncharov, Herbert Goldberg and Fabien Schivre.
GUI design and implementation by Fabien Schivre.
Evaluation and quality assurance by: Dax Liniere (Puzzle Factory), Dean “necromachine”, Gregg Janman (Hermetech Mastering), Ilpo Karkainen (Resoundsound), Ilya Orlov, Jeff Rippe "Nonlinear", Jerry Mateo, Jonas Ekström (Mastertone), Laurent Sevestre (Maximalsound), Mario "EvilDragon", Mario "susiwong", Miguel Marques (Bender Mastering Studio), Murray Campbell "Beatworld", Niklas Silen "bmanic", Nil Hartman, Rich Prewett, Roland Löhlbach “Compyfox”, Shane Johnson and Vitaly Zolotarev.

VoS logo designed by Patrick Barca.

“VST” is a Technology and Trademark by Steinberg.
“Audio Unit” is a Technology by Apple.
“AAX” is a Technology and Trademark by Avid.

Some frequency magnitude plots were made with Christian Budde’s VSTPluginAnalyser.
All other mentioned trademarks and brands belong to their respective owners.