

SPL Vitalizer Mk3-T

Plugin Manual



spl **BRAINWORX**



Developed by Brainworx Audio in partnership with SPL Audio.
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1. Welcome to SPL Vitalizer Mk3-T

The SPL Vitalizer Mk3-T plug-in by Brainworx is the successor to the SPL Vitalizer Mk2-T, a program equalizer that offers a unique approach to improving sound clarity, volume, and bass foundation. It is renowned for its ability to make mixes sound more vibrant and detailed.

The Mk3-T version not only swaps the classic gold exterior of its predecessor for the new, black design of the SPL Studio Series, but also offers a higher internal audio voltage of ± 18 V, giving the SPL classic a better sound. The plug-in version is precisely modeled after the newly improved hardware and also benefits from additional plug-in-only features and a scalable UI. Most notably, the bass split function offers the exclusive ability to process soft and tight bass simultaneously.

In summary, the SPL Vitalizer Mk3-T made by Brainworx is a powerful audio enhancement plug-in that offers a unique combination of psycho-acoustic techniques, frequency shaping, and bass processing, making it a valuable tool for mixing and mastering applications.

Thank you for choosing SPL Vitalizer Mk3-T. We hope you enjoy it!



2. Key features

The following list gives you an overview of SPL Vitalizer Mk3-T's key features:

- Patented technology for automatic sound correction and optimization
- Unmasking of overlapping sounds for more detail and clarity
- Simple control of complex psychoacoustic processing
- Processing of mid and high frequencies plus harmonics
- Reinforcement of less audible frequency ranges to achieve more loudness
- Adjustable soft and/or contoured low frequency sounds
- Independent processing of high frequencies and harmonics
- Plugin-Only Features:
 - Top-Toolbar with
 - Undo/Redo and Banks
 - optional Mk2-T model in addition to Mk3-T
 - Auto Bypass with interval switching
 - Split Bass function to setup SOFT and TIGHT Bass simultaneously
 - Brainworx' patented TMT technology
 - Headroom Mono Maker and an additional output gain setting
 - Input, output, correlation and balance metering
 - Mono, stereo or multi-channel operation

3. SPL Vitalizer Mk3-T overview

SPL Vitalizer Mk3-T consists of the following areas and main controls:



1. **Top toolbar:** Additional global controls relevant to the plugin's processing. For more information, refer to [Top toolbar](#).
2. **Hardware section:** The SPL Vitalizer Mk3-T program equalizer and its genuine controls. For more information, refer to [Hardware Section](#).
3. **Plugin-only section:** For exclusive plugin-only features and controls, refer to [Plugin-only section](#).

4. Hardware Section

Whether live or in the studio, adding details and transparency as well as gaining a higher perceived loudness and, if required, a stronger bass fundamental are the main tasks of the SPL Vitalizer Mk3-T and its eight controls of the original hardware.

This section consists of the following controls:



1. **Drive:** controls the level going into the filter network. The control range of the level is between -20dB and +6dB. In the center position (0dB) the drive level is identical to the input level.
 - **OVL [LED]:** This LED indicates a potential overload of the input stages as well as internal overloads. This LED lights up 3dB before an overload. This ensures that the SPL Vitalizer Mk3-T always delivers the perfect sound.
2. **Bass Sound:** This control can be used to adjust between two bass sound colors:
 - Moving the Bass Sound control from the center position (0) to the left makes bass sounds soft and warm, referred to as **SOFT**.
 - If the Bass Sound control is moved from the center position (0) to the right, it makes bass sounds dry and percussive, referred to as **TIGHT**.



The plugin's exclusive **Bass Split**-mode enables the control of both colors. For more insight, refer to [The Bass Split mode](#)

3. **Bass Comp:** The SPL Vitalizer Mk3-T features an easy-to-use and effective "one-knob" compressor that is integrated solely into the bass processing path, leaving the original bass content untouched. Attack, Release and Threshold are preprogrammed. Increasing the Bass Comp value on the one hand increases the compression ratio and at the same time lowers the threshold value. The compressor works with a soft knee control characteristic to sound as unobtrusive as possible.
By integrating it into the bass path, the high end remain lively and airy even at strong compression rates.
 - **GR [LED]:** The Gain Reduction LED indicates that the compressor is operating.
4. **Mid-Hi Tune:** This control is used to set the starting frequency of a broad-band shelving filter. In line with the setting of **Process** control, all frequencies above this value right through to the end of the audio range are processed. The control range is between 1.1 kHz (hard right) and 22 kHz (hard left).



One of the Sovtek 12AX7 double triode tubes is used within the Mid-Hi Tune filter and gives the mid frequencies even more accurate transparency with a soft and silky sound pattern.

5. **Process:** This control determines the ratio between **Bass Sound** and **Mid-Hi Tune** to the original signal and attenuates dominant mid frequencies.



6. **LC-EQ:** The LC equalizer is a mid-high processing stage built around a passive coil-capacitor (LC) network. The LC-EQ creates more presence and definition in the mid-range, especially for speech intelligibility and transparency. In the high frequency range, the coil convinces with extremely low noise. The frequency can be controlled between approximately 2 kHz (**Low**) when panned hard left stop and approx. 20 kHz (**High**) when panned hard right. The high frequency structure improved with the LC-EQ ensures a cleaner separation of the instrumentation and provides silky highs.

i Coils are known for their pleasant sound in filter circuits. In the 60's, coil filters were often used, later replaced by RC filters (resistor-capacitor network) due to their high pricing. Nowadays, the coil sound is desired again, especially for the mid and high frequencies, since saturating the coil produces a harmonic behavior that is pleasant for the listening sensation. This can be compared to the difference between a tube stage and a transistor stage.

7. **Intensity:** The parameter determines the level of the **LC-EQ**. As the intensity increases, the gain of the set high and mid-hi frequencies increases. At the same time, the perception time is shifted so that soft high-frequency components are not masked by loud ones. This improves speech intelligibility and clarity. The brilliance of any audio signal can be increased without sounding sharp.
8. **Stereo Expander:** To increase the width of the stereo image. Working on established inter-channel phase principles, the Stereo Expander control is used to increase the subjective sound stage width of any stereo source.

i A Sovtek 12AX7 double triode tube is also used in the stereo expander. In it, the right and left channels are mixed together. The tube now adds its typical tube harmonic spectrum to the stereo signal, which consists mainly of straight harmonics.

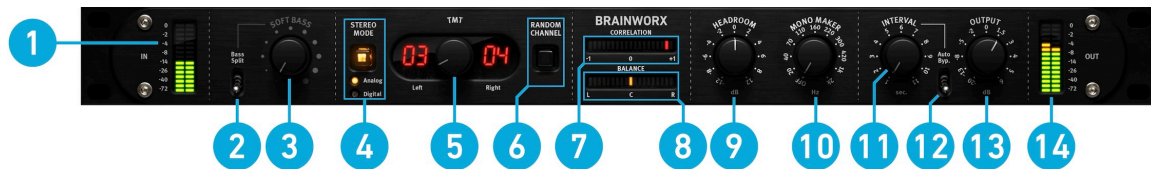
In addition to widening the stereo image, the tube also produces a greater range of low frequencies, a clearer definition of reverb spacing and a softening of the high-frequency range, which has a very positive effect when processing digitally recorded material.

9. **[Activity] On:** The On switch is used to activate the SPL Vitalizer Mk3-T. When activated, the switch lights up. If the device is in bypass mode, the switch is not illuminated.

5. Plugin-only section

Increase the functionality of the hardware with additional Brainworx tools.

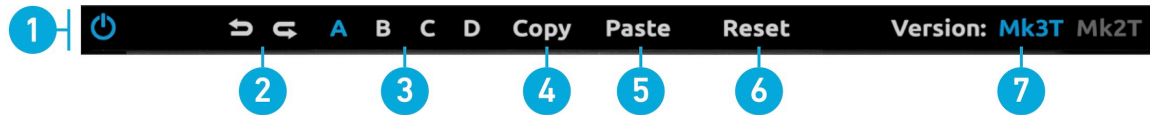
This section consists of the following controls:



1. **Input [Meter]:** Shows the level of the incoming audio between -72 to 0 dBfs.
2. **Bass Split [On]:** When switched on, a second Vitalizer for soft-bass control is switched in line to the main unit of the hardware section.
3. **Soft Bass:** The bass control in the plugin only module is taking care of the **SOFT** bass range of the signal when Bass Split is activated. The bass control parameter in the hardware section is now responsible to control the **TIGHT** bass range. For more details and use cases refer to Bass Split in the [Technical insights](#).
4. **[TMT] Stereo Mode:** Toggles between using the same TMT channel for both units (D=digital) and using two adjacent, differing TMT channels (A=analog).
5. **TMT [Channel]:** Switches between 20 different analog channels. In a Stereo instance, two adjacent Channel numbers will be displayed. Each channel has its own, different character.
6. **[TMT] Random Channel:** Whenever a TMT-featured plugin on a channel gets inserted, it will start with the default setup, which is channel 1 in a flat setting. You can randomize a channel by clicking the Random Channel button. The plugin instance you click on will switch to any unused channel number in that session randomly, until you reach 20 channels.
7. **Correlation [Meter]:** Displays the correlation / stereo-compatibility of the processed audio.
8. **Balance [Meter]:** Displays the center-weighting of the stereo-signal.
9. **Headroom:** Adjusts the volume before processing is applied and adds inverted gain to the output signal. This feature lets you adjust the level of audio material to work with different presets.
10. **Mono Maker [frequency]:** Sweepable from 2000, this parameter folds the processed sound to mono below the selected frequency. The most common setting is between 100-200 Hz.
11. **[Bypass] Interval:** To be able to make an objective judgment of the processed material, it is best not to have to be toggling between the original and processed signals by yourself, but rather have it done automatically. The Interval control determines the time that needs to elapse before the compressor toggles between the processed and unprocessed signals. Hard left is the shortest setting. To increase the interval, turn the knob clockwise.
12. **Auto Bypass:** Activates the Auto Bypass function.
13. **Output [Gain]:** Adjusts the output level of the plugin.
14. **Output [Meter]:** Shows the level of the processed audio from -72 to 0 dBfs.

6. Top toolbar

Additional global controls related to plugin settings and processing are available in the top toolbar.



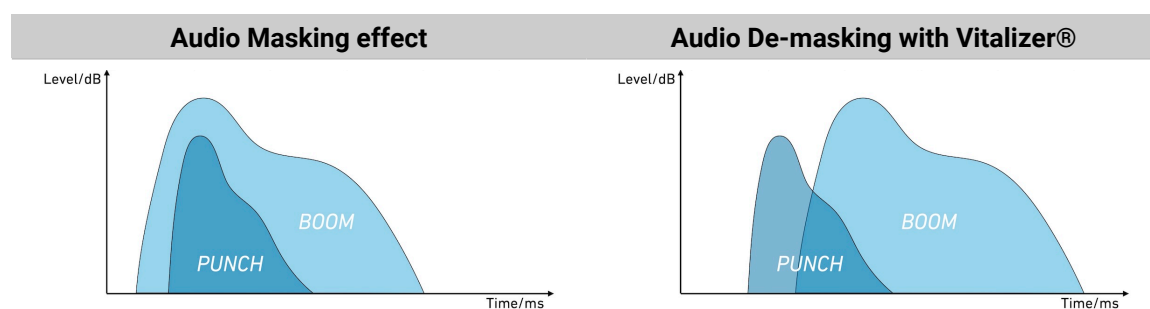
1. **Power:** Bypasses the processor when disengaged.
2. **↶ ↷:** Undo and redo changes made to controls up to 32 steps.
3. **Bank A B C D:** Each preset allows you to switch between four banks (A, B, C, D) of controls.
4. **Copy:** Copy the active settings to memory.
5. **Paste:** Paste the copied settings to the active bank.
6. **Reset:** Reset the current bank.
7. **Version:** Switches the user interface and the processing of the SPL Vitalizer Mk3-T to its predecessor.

7. Technical insights

In this chapter the Vitalizer series' De-Masking effect and the structure of the exclusive Bass Split as well as the adapted Fletcher Munson Curve get a closer look for a better understanding and successful application.

The De-Masking effect

A key feature of the Vitalizer technology is the unmasking of superimposed sound components. The Vitalizer thereby relates the time of perception of a frequency to its amplitude. Through a minimal temporal offset of loud frequencies, quieter, previously superimposed sound components are "de-masked" and thus become audible.

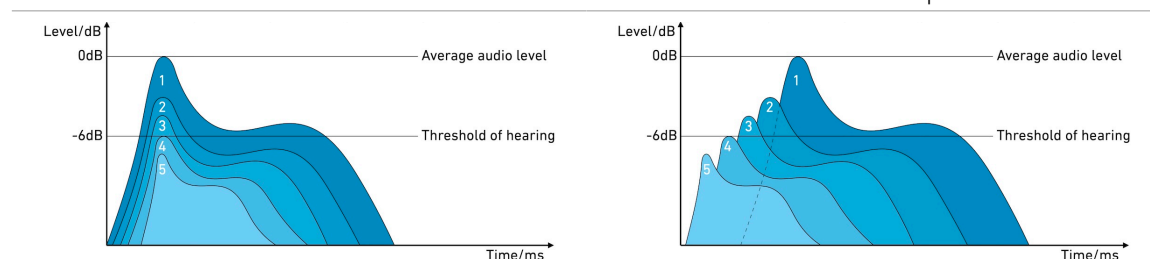


Example: BOOM and PUNCH in the bass range

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The BOOM is louder than the PUNCH and therefore shifted, making the PUNCH audible again.

Result: More accented and powerful sound



Example: Vocals or instruments (choir, brass, guitars)

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Vocal 1 masks the lower vocals. 2 and 3 will still be audible, but 4 and 5 will not be audible.

All vocals are audible.

Result: More Detail, more transparency

The Bass Split mode

A plugin-only feature with an analog backstory.

The new **Bass Split** mode in the SPL Vitalizer Mk3-T plugin is more than just a digital enhancement – it's a creative tool born from a rare piece of analog history. When we were developing the plugin version of the Mk3-T, we asked Hermann from SPL to think about a unique plugin-only feature – something that wouldn't be possible in traditional analog hardware. He recalled a special prototype they had built in the 1990s based on the Vitalizer Mk2. This prototype included two full Vitalizer circuits, allowing them to split and process the bass frequencies separately as **Soft Bass** and **Tight Bass**. This dual-path approach unlocked entirely new sonic possibilities, especially in complex or demanding mixing scenarios.

That analog prototype never made it into production – but in the digital domain, we were finally able to bring this idea to life.

With **Bass Split**, you can divide and shape the low-end with added precision:

- **Soft Bass** enhances warmth and fullness – ideal for adding low-end body and weight.
- **Tight Bass** provides definition and control – keeping the bass punchy and focused.

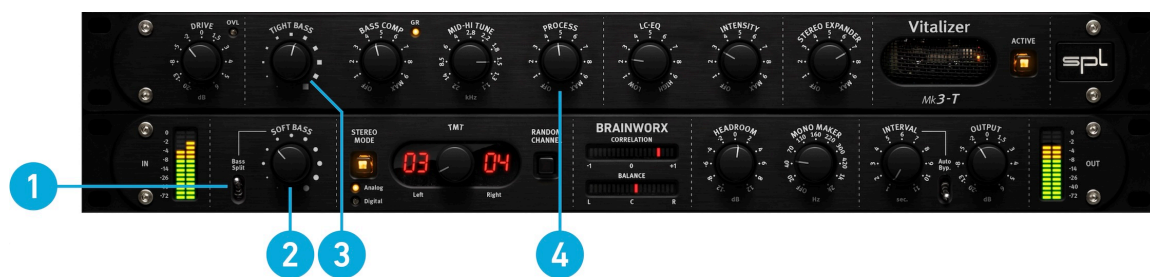
This feature shines when the standard Vitalizer processing doesn't quite deliver the desired results. It gives you extra headroom for low-end sculpting – whether you're mixing drums, bass guitars, full mixes, or anything that needs both fatness and control.

And while it's not as easy to explain as a traditional EQ, it rewards hands-on experimentation. The more creatively you approach it, the more intuitive it becomes – and soon you'll get a feel for when and how to use it to unlock the full potential of your low-end.



When you need more bass without more mud, try using the **Soft Bass** to add warmth and depth, while using **Tight Bass** to clean up and tighten the low end.

The SPL Vitalizer Mk3-T plug-in enables this trick within a single instance by implementing the exclusive **Bass-Split** mode:



1. Enable the Bass-Split function.
2. Add Soft Bass with the dedicated **Soft-Bass** parameter from the Plugin-only section.
3. Control the attenuation or boost of the **Tight Bass** range with the parameter formerly called **Bass Control** and now **Tight Bass** in the upper hardware section.
4. Find a value that enhances the bass range to your needs.

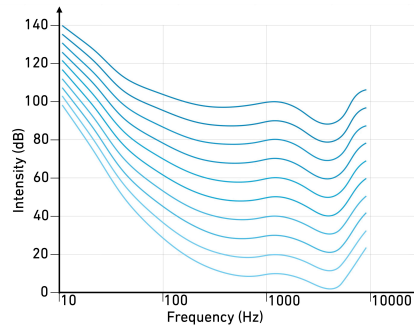


It's important to note that the interaction between **Mid-Hi-Tune** and **Soft Bass** is audible in the first unit. To find a balanced starting point for working with Bass Split, you'll find the **Bass Split - Start Here** preset, along with some use cases, within the factory presets.

Fletcher-Munson curves

The Vitalizer adapts the frequency spectrum to the curves of equal loudness, which improves the loudness perception in particular.

The non-linear sensitivity of the human hearing is described already in the 1930s by the “Fletcher-Munson curves”. These “curves of equal loudness” (today defined by the standard ISO 226:2003) illustrate the equal perception of loudness as a measure of sound pressure level, over the frequency spectrum, for which a listener perceives a constant loudness when presented with pure steady tones.



8. Credits

Hardware Concept: Hermann Gier, Wolfgang Neumann

Programming and Algorithms: Dustin Malucha, Yunus Proch, Michael Massberg

Product Management: Christoph Tkocz, Albert Gabriel