

# TRILEVELER 2

## User Manual



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# 1. INTRODUCTION

TriLeveler 2 is a "semi-real time" stereo signal leveler for voice broadcasting. It operates with latency of 105 ms. This is the trade-off for maintaining target level with minimum audible artefacts. Your host should handle the latency compensation automatically.

TriLeveler 2 offers three ITU 1770 (EBU-R128) driven dynamics sections chained in series. Each section has a slightly different purpose in the chain. When signal progresses from section to next, it becomes more and more compressed and tied to the target LUFS level.

## 2. INPUT TRIM

The *Input Trim* adjusts the level of program material entering to TriLeveler 2. It is used for adjusting optimal levels before the leveling process. Input Trim operates within +/- 20dB range. See chapter 14 about the optimal input level.

## 3. TARGET

The *Target* slider sets the operating target you wish your output level to be. The default value is -23 LUFS, which is the standard in broadcasting industry.

## 4. GATE THRESHOLD & GATE SPEED

The *Gate Threshold* slider sets the minimum peak input value that can get thru without being affected by the gate. This slider is working in dBfs domain. The need for gating is being evaluated before the signal enters into the leveling process. The actual process of gating is applied to the output, after leveler. While signal is being gated, the leveler process is automatically frozen.

The *Gate Speed* slider affects the speed the gate is able to react. What value to choose depends on the background noise of program material. Feel free to experiment which value produces the most transparent results.

## 5. OUTPUT TRIM

The *Output Trim* adjusts the final output of program material. It has a range of +/- 6dB.

## 6. AUTO INPUT

The *Auto Input* button activates an automatic adjustment of the *Input Trim* slider. This feature is continuously sniffing the program material and adjusts the input trim to achieve optimal settings. It is also possible to let TriLeveler 2 automatically adjust the optimal input trim value and then later disable it. But leaving it on will give TriLeveler 2 more adaptability to broader dynamic range.

The auto input feature reacts very slowly to changes in input, so there won't be any sudden or audible jumps to be heard. Please see chapter 14 about optimal input levels.

## 7. AUTO THR.

The *Auto Thr.* button activates an automatic continuous adjustment of the *Gate Threshold* slider. This feature tries to estimate an optimal threshold setting for the gate based on the ratio of current gated and ungated signal. It works well for human voices but may cause problems for musical content. If such content have to be processed with TriLeveler 2, it may be advisable to disable this feature.

The auto threshold operates very slowly, thus you may need a longer period for the adaptation process.

## 8. CONFIG

The *Config* button opens a screen for adjusting some internal parameters of TriLeveler 2

## 9. FAST DYNAMICS MAX ATTENUATION & FAST DYNAMICS MAX GAIN (CONFIG)

The fast dynamics in TriLeveler 2 means sudden transients or syllables that may usually occur at the beginning of spoken words. The *Fast Dynamics Max Attenuation* slider will tame these syllables.

The *Fast Dynamics Max Gain* slider on the other hand will increase volume for the parts where no loud transients or syllables are occurring. Thus these two sliders work in symbiosis without interfering each other.

It is to be noted that these sliders may affect the actual sound quite prominent way. If you are looking for very transparent leveling performance, you might want to turn them down. By default, only *Fast Dynamics Max Attenuation* slider is set. This is the recommended setting for voice.

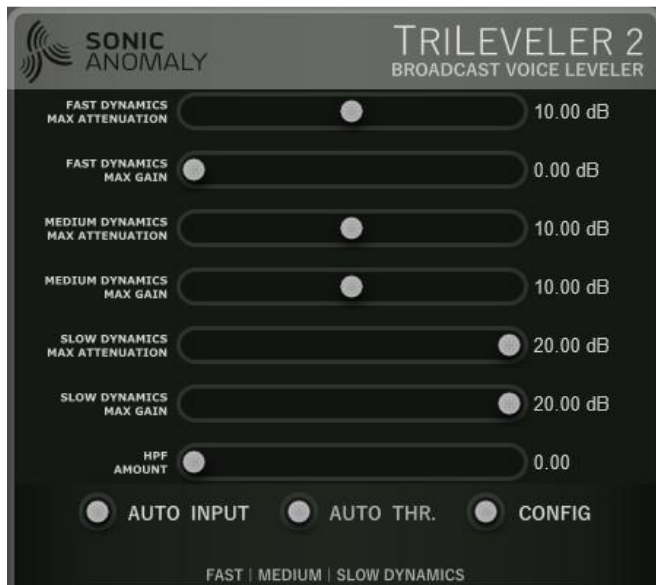
## 10. MEDIUM DYNAMICS MAX ATTENUATION & MEDIUM DYNAMICS MAX GAIN (CONFIG)

The medium dynamics in TriLeveler 2 means the actual body of the program material. This is the main working horse of TriLeveler 2 and responsible for compressing the dynamics so that each word can be heard at equal loudness. It operates with 400 ms integration time. The *Max Attenuation* and the *Max Gain* slider determines how much attenuation or gain is allowed to be applied to program material. The larger these values are, the more "effective" and audible the compression will be. For maximum transparency, values between 0 - 6 dB can be set.

For very noisy program material it may be a good idea to try with *medium dynamics max gain* at 0 and only let it attenuate.

## 11. SLOW DYNAMICS MAX ATTENUATION & SLOW DYNAMICS MAX GAIN (CONFIG)

The slow dynamics in TriLeveler is the final leveling stage. It operates with a 3 sec. integration time. The sliders in this section do the same as the relevant sliders on the fast and medium dynamics. The slow dynamics section is the most transparent of all three. Thus it is recommended leave the values here at their default positions; they are unlikely to cause any audible artifacts like pumping, but are necessary for TriLeveler 2 maintaining the target output volume.



## 12. HPF AMOUNT (CONFIG)

The *HPF Amount* slider applies a high pass filter into input signal, thus filtering out low frequencies. There is no frequency scales in this slider because the filter frequency is fixed. The slider affects the steepness of the filter. At the position of 0.1, the frequencies below 30 Hz are being filtered out. At the position of 1.0, the frequencies below 200Hz are getting filtered out. When the slider is at 0 position, no filtering is active.

## 13. THE METERS



The meters are displaying the operation of all three leveling sections. There you can see how much gain or attenuation is currently happening.

Below the meters are displays for current output level. The left side box shows LUFS value, which should be close to the value that has been set with the *Target* slider. On the right side, the output is being shown relative to the target value. When the target has been reached, 0 LU is being displayed.

At the bottom of the UI there is the gating meter. When any gating is happening, a blue bar appears. Sometimes it is possible to see a blinking text below the meter:

"EXCESSIVE GATING!"

This means that TriLeveler 2 thinks there is quite intense gating happening. This may or may not mean that the current gating settings are too tight. Basically it's just an alert so the user can be cautious and make intelligent decisions. The blinking can sometimes happen after long periods of silence or when starting playback, and in such cases can be safely ignored.

## 14. OPTIMAL INPUT LEVELS

With the default settings TriLeveler 2 can accept a wide range of dynamics in input. But setting up input levels properly will give it more headroom to react for sudden changes in program material.

When adjusting the *Input Trim* slider, try to set it so that the ***medium dynamics meter*** (the one in the middle) is fluctuating as closely around 0 as possible.

If the *Auto Input* feature is active, then the input trim will be automatically adjusted to the optimal value. The setting will be remembered and saved along project.

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