

Unlimited

STEREO / SURROUND MASTERING LIMITER



Introduction

Sonic Anomaly Unlimited is a loudness maximizer and limiter for stereo and 5.1 surround material. It also offers an ITU-R BS.1770 compliant loudness meter in addition to RMS output meters.

Unlimited aims to have balanced characteristics: avoiding audible distortion typical to hard limiting and clipping to the extent it is feasible, yet still not sounding compressed or vigorless. This makes it a favourable choice for (but not limited to!) music with classical instruments, ambiences or anything with prominent tonal content where distortion is more easily perceived.

Even though Unlimited supports 5.1 configuration, it should not be considered to be usable only for this type of material. Normal stereo configuration is fully supported and the additional channels won't consume any CPU when they are not in use.

The controls

THRESH

The threshold will set the maximum level of signal than can pass thru without being limited. In the normal operation (not using the "Classic Mode"), it can be considered as a "Drive" control. The output will be approximately that much louder what is the value of threshold.

OUT

The Output slider adjusts the maximum output level. The maximum output level always stays at (or below) this value.

WEIGHT - CENTER, LFE & SURROUND

The weight controls can be considered as additional threshold offsets for center, LFE and surround channels. With the weight controls you can increase or decrease limiting. When using stereo material, these controls should be left unused.

Positive values of weight will **increase** the limiting for the channel in question. Negative values will **decrease** it in the same manner.

Notice: if you use negative weight values while the limiter if not in the "Classic Mode", then an extra headroom is being added to the output - leading into quieter total output. Practically this means that the threshold of that specific channel(s) is lower than the global threshold set with the master threshold slider. For this reason, extra headroom must be added.

CHARACTER

The character controls the aggressiveness of the algorithm. With small values the transients will sound more prominent (at the expense of some distortion) and larger values give cleaner but duller transients. The difference may be quite subtle with most material.

RESPONSE

The response allows Unlimited to use some compression instead of always hard limiting. Yet, even when set to maximum value, high peaks are still being hard limited. But allowing some compression to be added, it can result a cleaner output - especially when limiting content with classical instruments like piano. The higher the response is, the more it attenuates the total output loudness.

MONITOR

With the monitor buttons, individual channel groups (front, center, LFE and surround) can be soloed.

CLASSIC MODE

By default Unlimited operates in loudness maximizer mode. This means that the output will be maximized to 0 dBfs and the threshold slider acts as a "drive" control. When engaging the Classic Mode, Unlimited will act as traditional limiter and will not maximize the output signal level.

SMPTE ITU / Film

This button will change the channel mapping of Unlimited to comply with either of the standards.

SMPTE ITU:	L, R, C, LFE, Ls, Rs
Film mode:	L, C, R, Ls, Rs, LFE

The usage of this button must be determined by the channel order of input material. It cannot be used for re-mapping from one format to another.

TRUE PEAKS

The True Peaks will engage an extra layer of processing which will catch any inter-sample peaks. This function will increase the total amount of limiting.

GUI SCALING

Unlimited GUI can be freely scaled by dragging the small handle at the bottom right corner.

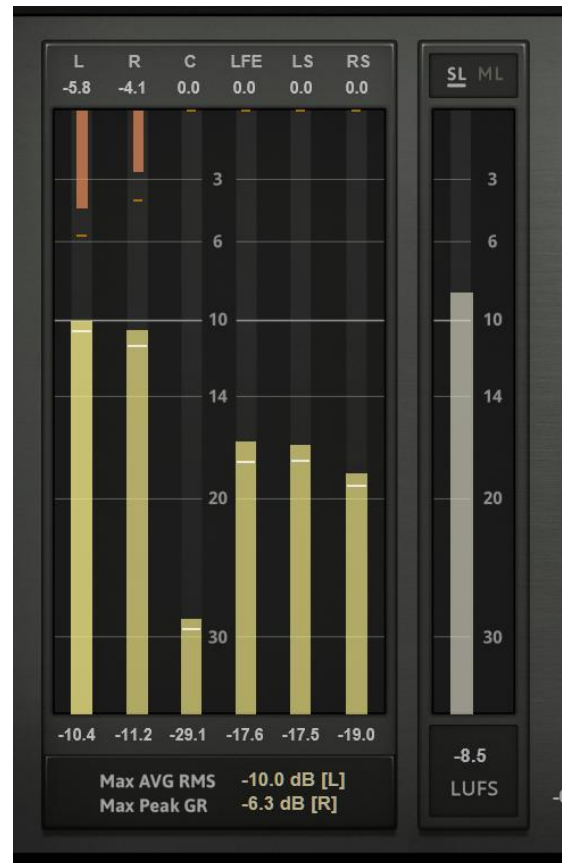
The Meters

There are several different types of meters in Unlimited. At the very top of the metering section are the orange peak reduction meters. These will tell you how much of actual limiting is happening.

In the middle are the RMS level meters. The yellow bar indicates "momentary" RMS level and the short white line is an averaged RMS value. Below the RMS meters are the value readouts, which will indicate the averaged RMS value.

At the very bottom are some statistics. The "Max AVG RMS" will tell the maximum averaged RMS value since it was last time reseted. The "Max Peak GR" will indicate the maximum amount of peak reduction occurred since it was last reseted. The meters can be reseted by clicking the statistics area.

On the right side of the metering section is the ITU-R BS.1770 compliant loudness meter. On top of it there is a selector where short-term loudness or momentary loudness can be selected.



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