

Level Magic

Applicability

This description applies to the Mono, Stereo, Surround, and Immersive versions of the Level Magic module.

Depending on the Processor, Level Magic may be used for a complete program path, a voice path, a downmix path, or an output processing path. In block diagrams and Processor layouts, the module may appear as Level Magic, LM, or Leveler, depending on its role in the signal chain.

Overview

Level Magic is a module for automatic loudness control with optional true peak limiting. It is used to keep the processed signal close to a controlled loudness target level while preserving a natural-sounding result.

The module combines long-term level control with short-term transient processing. In many Processors, it is placed near the end of the signal chain, after equalization and dynamics processing and before output conditioning or output metering. Its output signal can be considered “broadcast ready”.

Processing Principle

The leveler stage analyzes the input signal and applies automatic gain control to move the signal toward the configured loudness target. The amount and timing of the gain correction are controlled by the leveler settings. The transient processor controls short-term signal changes that may occur during loudness processing. It can help the module react to sudden level changes without relying only on long-term gain control.

The limiter stage controls output peaks and helps prevent the processed signal from exceeding the configured maximum true peak level.

Parameters

Leveler

Parameter - Leveler	Description
Enable Leveler	Enables or disables the Level Magic loudness control stage.
Input Gain	Adjusts the signal level before loudness processing.
Mode	Selects the loudness processing mode used by the module.
Processing Profile	Selects the processing profile used for transient handling in the leveler stage.
Loudness Target	Sets the target loudness level for automatic level control.
Leveler Time	Sets the response time of the automatic leveler.
Leveler Max Gain	Limits the maximum positive gain applied by the leveler.
Leveler Freeze Level	Sets the level below which the current leveler gain can be held or frozen.
Transient Processor Max Gain	Limits the maximum gain applied by the transient processor.
Transient Processor Response	Sets the response behavior of the transient processor.
AGC Recovery	Selects how the automatic gain control recovers after gain correction.
Processing Threshold	Sets the input level threshold used to determine when loudness processing is active.
Below Threshold Mode	Controls how the module behaves when the signal is below the processing threshold.
Initial Dynamic Gain	Sets the initial dynamic gain value used when processing starts or is initialized.
Clear Processing History	Clears the internal loudness analysis history and restarts processing from the current signal state.

Limiter

Parameter - Limiter	Description
Limiter Enable	Enables or disables the limiter stage.
Limiter Processing Profile	Selects the limiter processing profile.
Limiter Max True Peak	Sets the maximum true peak level for the limiter output.
Limiter Low Latency Mode	Enables or disables low-latency limiter operation.

Related Processors

Level Magic is used in the following Processors:

- Automixer - Surround
- Automixer - Stereo
- FM Conditioner Channel Strip - Stereo
- Program Processing Channel Strip - Stereo
- Program Processing Channel Strip - Surround
- Program Processing Channel Strip - Immersive
- Voice Over Mixer - Stereo
- Voice Over Mixer - Surround
- Voice Processing Channel Strip - Mono
- Voice Processing Channel Strip - Stereo

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