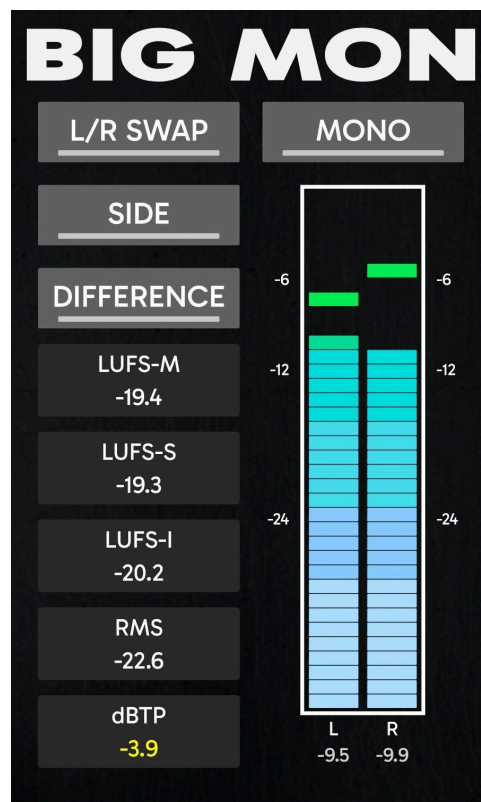


Big Mon

Ultimate Free Monitoring Tool

User Manual



Version 1.0.0

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1. Introduction

Big Mon is a professional monitoring and metering plugin designed for critical listening during mixing, mastering, and quality control. It provides accurate loudness measurement conforming to EBU R128 / ITU-R BS.1770-4, true peak detection per ITU-R BS.1770-5, and a suite of monitoring modes for stereo analysis—all in a compact, resizable interface.

Whether you need to check mono compatibility, isolate the side signal, verify stereo balance, or confirm your mix meets broadcast loudness standards, Big Mon delivers the tools you need without coloring your audio. When no monitoring modes are active, the plugin operates in true bypass with zero processing overhead.

2. Installation

Supported Formats

Big Mon is available as a VST3, AU and CLAP plugin for Windows, macOS, and Linux.

Installation Steps

1. Download the installer from www.bigman-labs.com.
2. Run the installer and follow the on-screen prompts. The plugin files will be placed in your system's default plugin directories.
3. Open your DAW and rescan plugins if necessary. Big Mon will appear under the Big Man Labs manufacturer category.

4. Insert Big Mon on your master bus or any channel you wish to monitor. It is designed to sit at the end of your signal chain.

Channel Configuration

Big Mon supports stereo (2-in / 2-out) and mono-to-stereo (1-in / 2-out) configurations. When inserted on a mono track, the input is duplicated to both channels for full monitoring and metering functionality.

3. Interface Overview

The Big Mon interface is divided into two main columns. The left column contains four monitoring mode buttons arranged across three rows, followed by five loudness/level readout boxes. The right column houses a dual-channel segmented peak meter with L/R labels and numerical readouts beneath.

The button layout is as follows:

- **Row 1:** L/R SWAP (left) and MONO (right)
- **Row 2:** SIDE (left) — the peak meter begins at this row on the right
- **Row 3:** DIFFERENCE (left) — the peak meter continues on the right

The peak meter extends from the second button row all the way down to the bottom of the dBTP readout, providing a tall, detailed level display.

The interface maintains a fixed aspect ratio and can be freely resized by dragging the window edges. The base resolution is 252 × 415 pixels at 1.0x scale, with a default scale factor of 1.5x. The UI can be scaled up to 3.0x.

About Panel

Right-click the Big Mon title area at the top of the plugin to open the About panel, which displays the plugin version, developer information, and links to the website and online manual. Click anywhere on the panel to close it.

4. Monitoring Modes

Big Mon provides four monitoring modes, accessible via the toggle buttons at the top of the interface. All monitoring modes are mutually exclusive—activating one will automatically deactivate any other active mode. Clicking an active button again deactivates it, returning to normal stereo passthrough. All transitions between modes use smooth parameter crossfading to prevent clicks and pops.

Button	Description
L/R SWAP	Swaps the left and right channels. Useful for checking stereo balance and identifying panning issues by flipping the image.
MONO	Sums left and right to mono: $(L+R)/2$ on both channels. Essential for checking mono compatibility of your mix. Elements that disappear or change character in mono may have phase issues.
SIDE	Isolates the side (difference) signal: $(L-R)/2$. Outputs the side signal on the left channel and the inverted side on the right. Use this to audition what exists only in the stereo field—reverbs, panned elements, stereo widening effects, and any content that would be lost in a mono fold-down.
DIFFERENCE	Inverts the polarity of the right channel (phase difference mode). When combined with an identical signal on both channels, silence indicates perfect mono correlation. Any residual signal reveals differences between left and right. A powerful tool for A/B comparisons and checking processing artifacts.

5. Metering

Big Mon provides five loudness and level measurements, displayed in the readout boxes on the left side of the interface. All loudness measurements are derived from the processed output (after any active monitoring mode), so you can meter the side or mono signal directly.

LUFS-M (Momentary Loudness)

Measures loudness over a sliding 400ms window, updated every 100ms. This is the most responsive LUFS reading and is useful for tracking dynamic changes and catching loud transient passages. Conforms to EBU R128 / ITU-R BS.1770-4 using K-weighted filtering.

LUFS-S (Short-Term Loudness)

Measures loudness over a sliding 3-second window, updated every 100ms. Provides a more stable reading than Momentary and is commonly used for evaluating the loudness of musical phrases and sections. This measurement helps identify passages that might feel too loud or too quiet relative to the rest of the mix.

LUFS-I (Integrated Loudness)

Measures the overall loudness of the entire program from the moment meters are reset, using the EBU R128 gating algorithm. This applies a two-pass gating process: an absolute gate at -70 LUFS removes silence, then a relative gate at -10 dB below the absolute-gated mean removes quiet passages. The result represents the perceived average loudness of your

program material. Big Mon automatically resets the integrated measurement every 30 minutes to prevent unbounded memory growth.

RMS

Displays the root mean square level over a 300ms window, calculated from the mono sum $(L+R)/2$ of the unweighted signal. RMS provides a measure of average signal energy and is useful alongside LUFS measurements for understanding the dynamic character of your audio. The difference between peak and RMS levels gives an indication of your mix's crest factor.

dBTP (True Peak)

Displays the maximum true peak level detected since the last reset, measured in dBTP (decibels relative to true peak). Big Mon implements the ITU-R BS.1770-5 algorithm using 4x polyphase oversampling with the official 48-tap FIR interpolation filter to detect inter-sample peaks that would be missed by sample-accurate peak meters.

The dBTP readout is color-coded for quick reference:

Level	Color
Above -0.1 dBTP	Red — clipping / inter-sample overs
-3.0 to -0.1 dBTP	Orange — caution, near clipping
-12.0 to -3.0 dBTP	Yellow — moderate headroom
Below -12.0 dBTP	Green — safe headroom

6. Peak Meters

The right side of the interface features dual segmented peak meters (L and R) with a shared white border. The meter extends from the second button row (alongside SIDE) all the way down to the bottom of the dBTP readout, providing a tall, detailed level display.

Meter Characteristics

- **36 segments** with a gradient color scheme: light blue at the bottom (-48 dB region), transitioning through cyan, teal, and green as the level increases, with bright green at the top near 0 dB.
- **Peak hold indicator** that displays the highest level reached, held for approximately 1.7 seconds before falling. The peak hold segment appears red when the level exceeds -1 dB.
- **Ballistics:** Fast attack (85% coefficient) for responsive transient tracking, and a steady release rate of 0.35 dB per frame at 60fps.
- **Scale labels** at 0, -6, -12, -24, and -48 dB positioned alongside each meter bar.
- **Numerical readouts** below each meter showing the current smoothed level in dB. The readout uses separate smoothing for a stable, readable display.

- **Non-linear scaling** expands the display resolution in the critical upper range (−12 to 0 dB) while compressing the lower range, matching how the ear perceives level differences.

7. Resetting Meters

Each metering readout box supports double-click to reset its associated measurement. This allows you to selectively reset individual meters without affecting others.

Double-Click Target	What Resets
LUFS-M box	Resets all LUFS measurements (Momentary, Short-Term, and Integrated)
LUFS-S box	Resets all LUFS measurements (Momentary, Short-Term, and Integrated)
LUFS-I box	Resets all LUFS measurements (Momentary, Short-Term, and Integrated)
RMS box	Resets the RMS measurement only
dBTP box	Resets the True Peak measurement only

8. Tips & Workflow

Placement

Insert Big Mon as the last plugin on your master bus for final output monitoring. You can also place it on individual tracks or submixes when troubleshooting stereo issues or checking loudness of specific elements.

Mono Compatibility Check

Engage MONO mode and listen for any elements that disappear, lose energy, or change tone. Elements that are significantly affected likely have phase issues between left and right channels. This is especially important for content that will be played back on mono devices such as phone speakers, PA systems, and broadcast radio.

Stereo Field Analysis

Use SIDE mode to audition everything that exists only in the stereo difference signal. If you hear too much content here that should be centered (like lead vocals or bass), your stereo image may have issues. Conversely, if the side signal is weak, your mix may lack width.

Balance Verification

Use L/R SWAP to flip the stereo image. If the mix sounds noticeably different when swapped, your left-right balance may need attention. Compare the L and R peak meter readouts—large persistent differences indicate an imbalanced mix.

Broadcast & Streaming Compliance

Reset the integrated LUFS meter (double-click any LUFS box) at the start of your program, then play through the entire piece. The LUFS-I reading at the end gives you the program loudness. Common targets: -14 LUFS for streaming platforms, -23 LUFS for broadcast (EBU R128), -24 LUFS for ATSC (US broadcast). The dBTP meter should read below -1.0 dBTP for most delivery formats, and below -2.0 dBTP for lossy codec delivery.

A/B Comparison with DIFFERENCE Mode

To compare two versions of a signal: route version A to the left channel and version B to the right channel using your DAW's routing. Engage DIFFERENCE mode to hear only what is different between them. Silence means the signals are identical.

9. Technical Specifications

Specification	Detail
Plugin Formats	VST3, AU
Channel Configuration	Stereo (2-in / 2-out), Mono-to-Stereo (1-in / 2-out)
Monitoring Modes	L/R Swap, Mono, Side, Difference (mutually exclusive)
Loudness Standard	EBU R128 / ITU-R BS.1770-4
K-Weighting	Two-stage biquad: high shelf pre-filter + RLB high-pass weighting
Momentary Window	400ms (4 × 100ms blocks)
Short-Term Window	3 seconds (30 × 100ms blocks)
Integrated Gating	Absolute gate: -70 LUFS; Relative gate: -10 dB
Integrated Auto-Reset	Every 30 minutes
RMS Window	300ms, mono-sum, unweighted
True Peak Standard	ITU-R BS.1770-5 (Nov 2023)
True Peak Method	4x polyphase oversampling, 48-tap FIR
Peak Meter Range	-48 dB to 0 dB
Peak Meter Segments	36

Peak Hold Duration	~1.7 seconds
UI Refresh Rate	60 Hz
UI Base Size	252 × 415 pixels
UI Scale Range	1.0x to 3.0x (fixed aspect ratio)
CPU Impact	Zero when no monitoring mode active (true bypass)
Transition Smoothing	~5ms crossfade (0.95 coefficient at 44.1 kHz)
Sample Rate Support	All standard rates (coefficients recalculated via bilinear transform)
State Recall	Full parameter state saved/restored with DAW session

10. Support & Contact

For support, feature requests, or bug reports, please visit the Big Man Labs website or reach out through the contact channels listed below.

Website: www.bigman-labs.com

Manual: bigman-labs.com/products/big-mon/#manual

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