



NUKE MULTIBAND

Three Bands. One Feedback Core.

USER MANUAL

Version 1.1.3

Side Key System / sidekey.fr

Made in France

INTRODUCTION

Nuke Multiband is a precision multiband compressor, built for mixing and mastering engineers who want to shape each part of the spectrum independently, without ever losing the musical character that made Nuke MK1 what it is.

Unlike a simple equalizer followed by a compressor, Nuke Multiband splits the signal into **three bands** (Low, Mid, High) using an **analog style crossover**, then runs each band through its own **feedback topology** compressor. That is the very same compression engine that made Nuke MK1 what it is, simply repeated three times, once per band, each one fully independent.

What is a feedback compressor?

In a classic (feedforward) compressor, the detector listens to the signal *before* it gets compressed. In a feedback compressor like the one inside Nuke Multiband, the detector listens to the signal *after* compression instead, almost as if it were constantly checking the result of its own work to adjust its reaction. This loop produces a smoother, more glued and more musical behaviour, the hallmark of the most sought after vintage analog compressors.

Why an analog crossover?

The split between the three bands is not a surgical cut like a digital equalizer. The Nuke Multiband crossover reproduces the soft, progressive slope of a reference analog crossover: the bands overlap slightly instead of cutting cleanly, which avoids the patched together sound that overly surgical multibands can have, and keeps the result sounding natural to the ear.

General architecture

The Nuke Multiband interface is organized as follows, from top to bottom.



- 1 **Header.** Main power switch, A/B comparator, crossover, Dry/Wet, Link Out, saturation lamp and IN/OUT VU meters.
- 2 **LOW.** FEEDBACK CORE compression chain dedicated to the low frequencies.
- 3 **MID.** FEEDBACK CORE compression chain dedicated to the midrange frequencies.
- 4 **HIGH.** FEEDBACK CORE compression chain dedicated to the high frequencies.
- 5 **THD VALVE.** A single saturation and limiting stage, shared by all three bands once they are recombined.
- 6 **Preset bar.** Browse, save and manage your own settings.

HEADER AND MONITORING



- 1 **AZ-5.** Main power switch that turns all processing on or off (full bypass). In bypass, the output level is automatically adjusted to stay comparable to the processed level, so your On/Off comparisons stay honest.
- 2 **Nuke logo.** Glitches briefly whenever a peak is detected at the input or the output.
- 3 **A/B switch.** Toggles between two independent configurations of every parameter, to compare two settings in one click.
- 4 **Xover Lo.** Crossover frequency between the Low band and the Mid band.
- 5 **Xover Hi.** Crossover frequency between the Mid band and the High band.
- 6 **Dry/Wet.** Blend between the uncompressed signal and the signal processed by the three bands (see next page).
- 7 **Link Out.** Links the three Output knobs (Low, Mid, High): moving one moves the other two by the same number of dB, keeping their relative difference.
- 8 **THD lamp.** A genuine filament style lamp that glows faintly as soon as the plugin is active, and grows brighter as the THD Valve stage saturates.

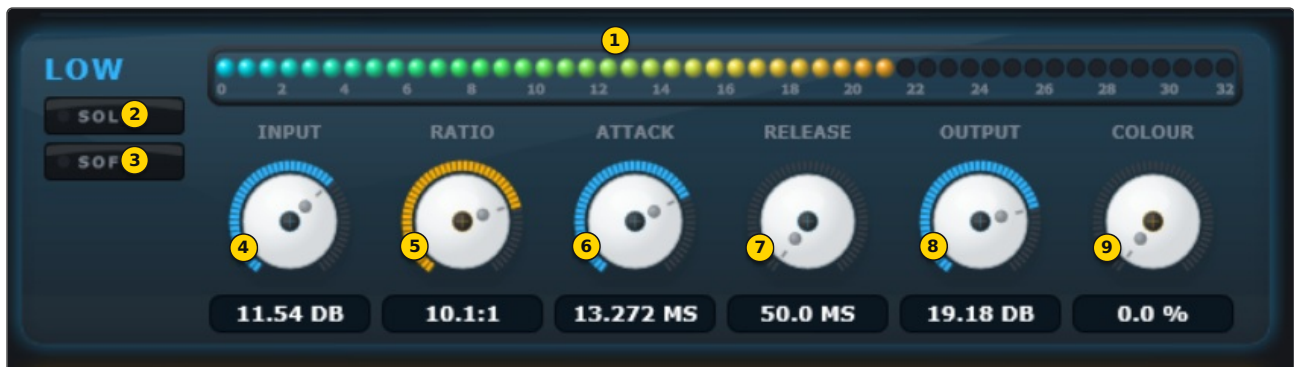
The IN and OUT VU meters (input and output level, shown as LED columns) are found in the vertical column on the right side of the interface.

PRO TIP

The AZ-5 bypass automatically compensates the perceived loudness, and that is intentional. The human ear almost always prefers whatever sounds louder, even unconsciously. Without this compensation, your Bypass versus Active comparisons would be skewed by a simple level difference rather than by the actual quality of the processing.

FEEDBACK CORE: THE THREE BANDS

Each band (Low, Mid, High) has its own **complete, independent compression chain**. Changing a setting on one band does not affect the other two at all. All three chains work in exactly the same way: only the portion of the spectrum they receive, set by the crossover, differs from one band to the next.



- 1 Gain Reduction LED strip.** Visual history of this band's gain reduction, from 0 to 32 dB.
- 2 Solo.** Isolates this band so you can hear it alone, or paired with another soloed band.
- 3 Soft.** Widens the compression knee for a more gradual compression curve, similar to an API 2500 style compressor in soft mode.
- 4 Input.** Drives the signal level going into this band's detector.
- 5 Ratio.** Nine stepped positions, up to the extreme NUKE position.
- 6 Attack.** Reaction time to a rising signal level, specific to this band.
- 7 Release.** Time to return to rest after compression, specific to this band.
- 8 Output.** This band's output gain, which can be linked to the other two through Link Out.
- 9 Colour.** Harmonic coloration that adds analog character to this band.

Parameter	Range	Default	Description
Input	-36 dB to +36 dB	0 dB	Drives the signal level going into the band's detector, the same way a Distressor does.
Ratio	1.1:1 to 20.1:1, then NUKE	4.1:1	Nine stepped positions, then the extreme NUKE position (near limiter ratio, nuclear icon).
Attack	0.05 ms to 40 ms	~28 ms	Reaction time to a rising signal level, specific to each band.
Release	50 ms to 3000 ms	variable	Time to return to rest after compression.
Output	-36 dB to +36 dB	0 dB	Band output gain, makes up for the gain reduction applied.
Colour	0% to 100%	0%	Harmonic coloration (2nd and 3rd order), adds analog character.

PRO TIP

In mastering, avoid over compressing a single band to fix a mix problem. Prefer small gain reductions spread across all three bands (1 to 3 dB each) rather than pushing one band alone down to -10 dB. The result stays coherent and natural, without artificially carving out a region of the spectrum. Use each band's Solo to check, in isolation, what each compressor is really doing before judging the overall result.

THE ANALOG CROSSOVER

Xover Lo and Xover Hi set the two crossover frequencies that split the spectrum into three bands. Their light ring follows the colour code of the bands they separate: Xover Lo goes from blue (Low) to amber (Mid), Xover Hi from amber (Mid) to purple (High), so you can instantly see which band gains ground as you turn the knob.

Parameter	Range	Default	Description
Xover Lo	20 Hz to 400 Hz	121.5 Hz	Crossover frequency between the Low band and the Mid band.
Xover Hi	300 Hz to 6000 Hz	2521 Hz	Crossover frequency between the Mid band and the High band.

PRO TIP

For a wide, natural sounding master, spread the two crossover points apart, Xover Lo low and Xover Hi high. The Mid band, now the widest, carries most of the body of the mix and stays the most stable. For more surgical work, such as rebalancing a drum bus, narrow the two crossovers instead to isolate a tight region of the spectrum inside the Mid band.

Dry / Wet

The Dry/Wet knob blends the original signal, before the crossover and compression, with the signal processed by the three recombined bands. It sits right before the THD Valve stage, so it is the dry/wet blend that feeds the saturation, not only the processed part.

GOOD TO KNOW

The gain from the three Output knobs still applies even at a low Dry/Wet setting. Only the *dynamics*, meaning the compression effect, is what Dry/Wet blends, not the output level. That means you can push a band's Output to drive the THD Valve stage harder, even while keeping very little audible compression.

Link Out

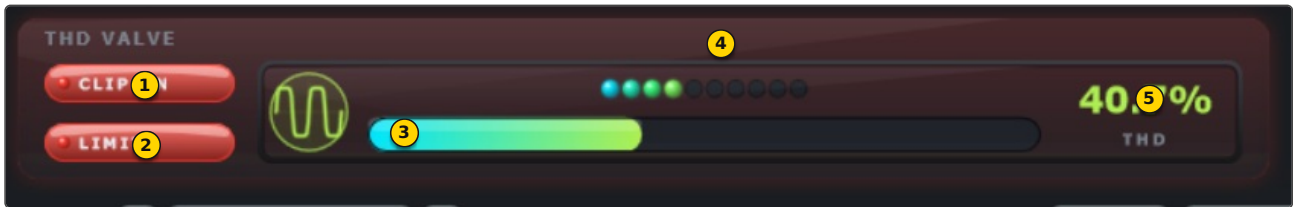
Once Link Out is enabled, moving any one of the three Output knobs moves the other two by the same number of dB, in the same direction. The gap between the bands stays the same, only the overall level changes. All three knobs turn red while Link Out is active, as a clear visual cue.

PRO TIP

Set the balance between your three bands first with Link Out off, then turn it on to adjust the overall output level without ever losing that balance. Handy right before driving the THD Valve stage, or to compensate for an overall gain change without rebalancing everything by hand.

THD VALVE: SHARED SATURATION

THD Valve is a soft clip and limiting stage applied only once, after the three bands have been recombined. Unlike the Input, Ratio, Attack, Release, Output and Colour controls, which exist in three copies (one per band), THD Valve is a single, shared module. It is Nuke Multiband's final sonic signature, the same no matter which band is driving it the hardest.



- 1 CLIP ON.** Activates the soft clip saturation stage (tanh curve).
- 2 LIMIT.** Activates a true peak brickwall limiter, set at -0.5 dBFS, on top of the soft clip.
- 3 Oscilloscope.** Circular visualization of the saturated waveform.
- 4 Diode row.** Quick visual read of the saturation intensity.
- 5 THD reading.** Harmonic distortion rate, shown as a percentage, measured in real time on the recombined signal.

Control	Type	Description
CLIP ON	Switch	Activates the soft clip saturation stage (tanh curve).
LIMIT	Switch	Activates a true peak brickwall limiter set at -0.5 dBFS.
THD reading	Display	Harmonic distortion rate shown in real time, as a percentage.

PRO TIP

As with Nuke MK1, it is best to enable both CLIP ON and LIMIT together. The saturation amount is then set from the three bands' Output knobs, linked through Link Out if needed, rather than from this module itself. For a subtle mastering touch, aim for a THD rate between 1% and 5%. Beyond that, the colour becomes clearly audible, which can be desirable on a drum bus or a synth bass, but is rarely what you want on a finished master.

GOOD TO KNOW

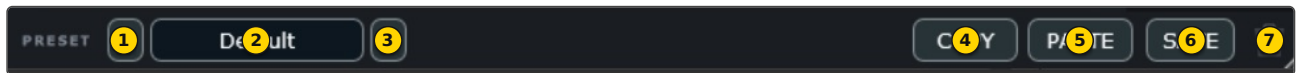
The THD reading only measures the saturation produced by Nuke Multiband itself, on the already recombined signal from the three bands. Any saturation present upstream, before the plugin's input, is not included in this reading.

ADVANCED PRO TIP

To get the most out of Nuke Multiband on a snare, a drum bus or an electronic bass, start by setting each band with the Input knob. On clean, well recorded electronic sources, do not hesitate to push the gain reduction to -16 dB or beyond on the Low and Mid bands, while keeping a lighter margin on the High band. Once that balance feels right, turn on CLIP ON and LIMIT, then enable Link Out and bring up the Output to drive the THD Valve stage to its full potential. On synth basses, especially in D&B, House or Metal, you can push the THD reading to 90% or beyond without clipping any peaks, for a massive RMS gain.

PRESETS

The preset bar, at the bottom of the interface, lets you browse, save and manage your settings.



- 1 **Previous arrow.** Moves to the previous preset in the list.
- 2 **Preset name.** Click it to open the full preset list and pick one directly.
- 3 **Next arrow.** Moves to the next preset in the list.
- 4 **COPY.** Copies all of your current settings to your computer's clipboard.
- 5 **PASTE.** Pastes previously copied settings onto another instance of the plugin, another track or another session.
- 6 **SAVE.** Saves your current settings as a new personal preset, under a name of your choice.
- 7 **Trash.** Deletes the currently selected personal preset. Factory presets, marked Side Key, can never be deleted: the icon stays greyed out while one of them is selected.

GOOD TO KNOW

Every preset shows its author, Side Key for the factory presets shipped with the plugin, or your own name for the ones you save.

PRO TIP

Use COPY and PASTE to quickly duplicate a chain of settings across several similar tracks, for example several drum busses in the same song, without having to save a named preset every time.

ABOUT



Nuke Multiband is developed by **Side Key System**. At Side Key System, calibration is not a final tweak, it is part of the engineering process itself. Every tool is designed, measured, tested and calibrated with meticulous attention to precision, stability and measurement consistency.

sidekey.fr

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