

SM6 / User manual

Three-band dynamics for mastering, mix buses and individual tracks.



Control low, mid and high dynamics independently, then shape the overall response with master threshold, parallel mix and level compensation. Choose modern or vintage controls without changing the sound.

Start here

1. Load Mastering - Gentle Glue or Init - Clean Start.
2. Play a representative loud section.
3. Move MASTER THRESHOLD gently and watch each processing meter.
4. Use GAIN MATCH for a level-compensated comparison.
5. Compare BYPASS at similar loudness before keeping a change.

This manual describes v0.3.6. Sections: signal flow; input and thresholds; band controls; monitoring and output; presets and appearance; practical workflows; setup and troubleshooting.

01 / Signal flow & dynamics

What SM6 does

SM6 splits stereo audio into three complementary bands. Each band has a stereo-linked detector, dynamics control, manual gain and optional soft saturation. The bands are summed, blended with the dry signal and sent through output gain. This is an original digital design; it is not a circuit-identical hardware emulation.

Compression and expansion

Turn RATIO to the left of 1:1 for compression, reaching 6:1. Turn it to the right for upward expansion, reaching 1:2. Compression reduces above-threshold level; expansion increases it. At 1:1, the dynamics curve produces no gain change. A soft knee makes the transition gradual.

The threshold relationship

Effective band threshold = reference + master offset + band offset. The reference lives in REFERENCE / TRIM; MASTER THRESHOLD is the visible global offset. Example: -18 dBFS reference, -2 dB master offset and -1 dB band offset give a -21 dBFS threshold.

With compression, lowering the threshold usually increases processing. With expansion, it allows more signal to receive upward gain. Input trims also change how strongly the detector is driven.

Crossovers

LOW / MID spans 60-800 Hz; MID / HIGH spans 600 Hz-12 kHz. The lower crossover is internally limited below 80% of the upper one if their settings overlap. These are complementary first-order splits, not brick-wall or linear-phase filters.

Keep comparisons useful

Allow level compensation to settle after a change. Check loud and quiet sections. SM6 is not a final true-peak limiter; use an appropriate final limiter and loudness meter when your delivery requires them.

02 / Input & calibration

Control	Purpose / range
LOW / MID	Low crossover: 60-800 Hz.
MID / HIGH	High crossover: 600 Hz-12 kHz.
MASTER THRESHOLD	Global offset: -10 to +10 dB.
REFERENCE / TRIM	Reference: -48 to 0 dBFS. Input drive: -12 to +12 dB.
LEFT / RIGHT GAIN	Independent input trims: -10 to +10 dB.
LINK	Mirrors manual left/right trim adjustments. Independent host automation lanes stay independent.
CUT L / CUT R	Mutes the corresponding processed/mixed output channel. Global BYPASS restores the original channels.

Sidechain link modes

Off: bands respond independently.

Low to Mid / Low to High / Low to Mid+High: the selected bands follow the low band's requested gain change.

All Linked: follows the greatest attenuation; if none is attenuating, follows the greatest expansion.

Fine control

Double-click a knob to reset it. Shift-drag for fine adjustment. Right-click to enter a value with units. A thin red ring marks hover, dragging or keyboard focus. Bipolar dB scales place zero at noon, with 1 dB ticks and 2 dB labels; band gain uses half-dB graduations. Readouts show tenths of a dB.

03 / Band controls

Control	Purpose / range
RATIO	Continuous 6:1 compression through 1:1 to 1:2 expansion.
THRESHOLD	Band offset: -10 to +10 dB.
GAIN	Manual band makeup: -2.5 to +2.5 dB.
ATTACK	Low: 1-200 ms. Mid: 0.5-100 ms. High: 0.3-100 ms.
RELEASE	Low: 0.1-3.2 s. Mid: 0.05-1.6 s. High: 0.025-0.8 s.
SOLO / blue	Auditions processed bands. Multiple solos combine.
IN / green	Enables band dynamics. Turning it off does not remove manual gain or optional THD colour.
SC / blue	Auditions detector signals. Multiple SC selections sum.
THD / red	Applies Shark soft saturation to that band. It is an on/off colour option, not a measured THD percentage.

Detector shaping

SUB CUT applies a 60 Hz first-order high-pass to the low-band detector. SC BOOST adds approximately 6 dB to the high-band detector. They change what drives dynamics, rather than directly EQing the main audio.

Listen, then return to the mix

Use SC to understand the detector input and SOLO to hear the processed band. Turn both off before evaluating the complete mix. SC monitoring overrides wet/dry mixing and suspends overall automatic level matching.

04 / Meters, level & output

Processing and level meters

Each processing meter shows compression or expansion from +12 to -24 dB. Reduction beyond the visible range stays at the bottom. IN and OUT meters show stereo sample peaks down to -64 dBFS. They are not LUFS or true-peak meters.

SPECTRAL AUTO

Provides slow per-band gain compensation, bounded to +/-6 dB with approximately 0.8-second smoothing. The blue numerical displays show the corrections. Compensation relaxes toward zero during SOLO or SC listening.

LEVEL AUTO and GAIN MATCH

Both request the same overall RMS-energy level compensation. Enabling both does not double the effect. The correction is bounded to +/-12 dB and suspended while SOLO or SC is active. These functions support comparisons; they do not guarantee identical perceived loudness.

MIX and OUTPUT

MIX blends 0-100% wet signal. OUTPUT ranges from -10 to +10 dB. At 0% MIX, output gain and channel cuts still apply. Global BYPASS restores the original audio after its transition.

Oversampling

Select 1x, 2x, 4x or 8x. Higher factors can reduce aliasing from nonlinear processing such as THD, while increasing CPU use. Switching fades through aligned dry audio. Reported host latency remains constant across modes at the selected sample rate.

Choose a mode your session can sustain and compare by ear. Oversampling does not make the output true-peak limited.

05 / Presets & workspace

104 factory starting points

The factory bank covers mastering, mix bus, drums, bass, vocals, guitars, keys and creative uses. It includes 20 in-house Studio Collection presets across Precision, Punch, Warmth, Electronic and Natural, plus four Chart Preset comparisons. The Studio names do not represent guest-engineer endorsements.

The preset browser

Open the preset name to browse, search and filter categories. Use the star for favorites. Save New stores a user preset; Rename and Delete apply to user presets. Factory presets are protected. User files use the .sm6preset XML format in the Shark Plugs/SM6/Presets application-data folder.

Compare ideas

A/B/C/D hold independent snapshots. UNDO and REDO retain up to 100 changes. Use these with level matching to compare settings without losing your starting point. Preset loading and saved sessions restore parameter state.

Six looks, one sound

Choose Modern Black, Modern Silver, Vintage Black, Vintage Silver, Vintage Blue or Vintage Green in MENU, or click the logo to cycle looks. Modern modes use original Apex knobs; vintage modes use the scalloped knobs. Appearance is retained in session state and does not change audio processing.

Sizing and overlays

MENU offers 50-150% zoom. New instances start at 75% (1200 x 690). EXPAND opens a live full-screen view sharing the same processor; Escape returns to the normal view. Click outside overlays or press Escape to close them. ABOUT sits alongside the oversampling selectors.

06 / Practical starting points

Gentle mastering control

Start with Mastering - Gentle Glue. Keep the ratios modest and lower MASTER THRESHOLD until only the desired peaks are controlled. Adjust a band offset if one region needs more attention. Compare with GAIN MATCH and BYPASS.

Low-end stability

Try Mastering - Low End Safe or Mastering - Deep Bass Anchor. Adjust LOW / MID to include the bass region you want to control. Use low-band SOLO briefly, then listen in context. Try SUB CUT if deep energy dominates the detector.

Parallel mix-bus density

Start with Mix Bus - Parallel Density. Shape the wet signal, then reduce MIX to restore dry impact. Check OUTPUT and compare at matched level. Avoid assuming that a louder result is automatically better.

Open transients with expansion

Try Mastering - Transient Lift or Mix Bus - Open Transients. Ratios on the expansion side increase above-threshold energy. Watch output peaks and leave room for the next processor.

Tame an insistent top end

Try Mastering - Smooth Top or Mastering - Cymbal Restraint. Set MID / HIGH to locate the region, then adjust high-band threshold and timing. SC BOOST makes the high detector more sensitive; it is not an audio treble boost.

Add colour deliberately

Enable THD on one band at a time. Compare sustained tones and transients at similar loudness. Audition oversampling modes if nonlinear colour is prominent. All examples are starting points; the source material determines the settings.

07 / Setup & troubleshooting

Current package

v0.3.6 is a JUCE source checkpoint, not an installer. AU/VST3 targets are configured; macOS deployment target is 12.0. CMake configures Intel and Apple Silicon architectures on Mac. A source configuration is not a compatibility certification. Mac compilation and broad DAW validation remain pending.

To build: open Shark_SM6.jucer in Projucer, set the JUCE modules path, save/export to Xcode, then build the required AU/VST3 target. No trial timer or serial activation is included in this checkpoint.

Why did the level barely change?

Check GAIN MATCH and LEVEL AUTO: either can compensate input level changes. Also inspect MIX, band IN, ratios and effective thresholds. At 1:1, no dynamics gain change occurs.

Why am I hearing only part of the mix?

Clear SOLO and SC selections. Check CUT L/R and host routing. SC intentionally replaces normal monitoring with detector audio.

Why does IN off still sound different?

IN disables band dynamics, while manual makeup and THD remain available. Use global BYPASS to compare against the original signal.

Updates and support

Changes from 0.3.1 through 0.3.6 are visual; DSP, preset settings and automation ranges are retained. For sessions from 0.2.0, keep the older plugin and review automation: some ranges changed, and out-of-range values are clamped.

For support, include SM6 version, operating system, DAW/version, format, sample rate, buffer size, oversampling mode and steps to reproduce. Include a screenshot and a minimal session where possible. Visit sharkplugs.com for product resources.