

SHARK 670

Vari-Mu Bus Processor · User Manual

Version 0.6.0 / Development preview



Concept artwork. The current build adds three enlarged rustic engage switches and Air control; its live appearance may differ.

01 / Start here

Load Init – Clean Start for unity, with compression and color off. Or choose START HERE – Velvet Bus Glue for a musical starting point. Feed a mix or mastering bus, raise Threshold until the GR display shows about 1–2 dB on stronger moments, then compare with Gain Match. Trim Output if peaks become too hot.

This guide documents the source checkpoint, not a customer installer. AU, VST3 and Standalone are configured for macOS 12+; Xcode build, DAW recall, current graphics and listening approval still require verification.

02 / Signal path and channel setup

Stereo input input gain transformer color variable-mu compression tube drive stereo Air/Width/Mono Bass Mix with latency-aligned dry Output meters. The three engage switches enable the stereo, compressor and color blocks independently. Bypass fades to aligned dry.

Control	What it does
L/R · M/S	Process left and right, or mid and side. Width and Mono Bass affect the decoded stereo field.
Link Controls	Couples manual Input, Threshold and Time Constant edits across channels; host automation remains independently addressable.
SC Link (0–100%)	Controls how closely both channels share gain reduction; at 100%, GR is equal on both.
Input I / II (-24 to +24 dB)	Drive each channel into its dynamics and color stages.
Threshold I / II (0–10)	Clockwise adds compression. Adjust on actual programme material.
Time Constant 1–6 / VAR	Fixed timing modes 1–4; 5–6 have program-dependent recovery. VAR uses the shared Attack/Release controls.

03 / Shape the envelope

Choose Classic for feedback detection or Modern for feed-forward response. DC Knee changes the ratio/knee feel. Headroom offsets the detector reference by ± 12 dB. SC Filter (0–500 Hz) high-passes the detector only, reducing bass-triggered gain reduction without directly EQing the audible signal.

In VAR, Attack covers 0.1–50 ms and Release covers 50–10,000 ms; both channels set to VAR share these controls. In fixed positions the shared Attack and Release controls do not replace the chosen timing mode.

04 / Color, space and the metal toggles

Control	Range / action
Transformer	0–10; nonlinear color before compression.
Tube Drive	0–10; asymmetric saturation after compression.
Air	0–6 dB gentle high shelf around 8 kHz.
Width	0–200%; 100% is the neutral width.
Mono Bass	0–500 Hz; progressively removes low-frequency side content.
Stereo Engage	Switches Air, Width and Mono Bass together.
Compressor Engage	Switches compression while leaving other stages available.
Color Engage	Switches Transformer and Tube together.

The hardware switches are deliberately independent: you can audition stereo shaping alone, color alone, compression alone, or combinations. Increase Width with care and check mono translation, especially on bass-rich material.

05 / Parallel level and meters

Mix blends the full processed path with an aligned dry path. Output provides ± 24 dB after the blend. Gain Match estimates RMS difference against the input, settles over several seconds and is capped at ± 12 dB; it is not a loudness or LUFS measurement. Bypass crossfades to latency-aligned dry.

Each channel meter selects IN, GR or OUT. IN/OUT are calibrated so 0 VU corresponds to -18 dBFS sine peak. GR moves left from zero with numeric GR beneath. These meters and Gain Match do not replace peak or true-peak metering in a mastering chain.

06 / Presets and gain staging

97 factory starting points: 22 Mix Bus, 24 Mastering, 30 Featured Engineers (five original Shark personas × six), 8 Drum Bus, 4 Group Bus, 8 START HERE and 1 Init. The Featured Engineers names are original creative collections, not endorsements or presets supplied by real engineers.

Musical factory presets enable Auto Makeup and add +2 dB Output. Auto Makeup compares pre-output RMS and adjusts over several seconds, with a ± 18 dB correction limit. The measured 46 Mix Bus and Mastering presets settled around +2 dB on synthetic multitone tests at three input levels; real music may behave differently. Init stays neutral. Watch downstream peaks and lower Output as needed. Gain Match removes the added lift for level-matched evaluation.

Browser order: Mix Bus Mastering Featured Engineers named collections Drum Bus Group Bus START HERE All Favorites User. Search and favorite factory presets; save, rename and delete user presets. Deleted user presets move to Deleted Presets. Double-click loads and closes the browser.

07 / Oversampling and appearance

The OS selector offers 4×, 16× and 32× FIR processing. 4× is the default; higher rates use more CPU. All report compensated latency of 68 samples in this build, and rate changes briefly fade through dry audio. Quality is a session setting, unchanged by preset loads and A/B/C switches.

Click the Shark logo to cycle Blue, Green and Red rustic chassis themes. The theme is stored with the session independently of presets and A/B/C. The active knob has a red focus ring. The hamburger menu provides Quick Manual, Credits/About, Auto Makeup and Zoom.

08 / Working gestures

Gesture	Result
Double-click a knob	Return to its default.
Shift-drag	Fine adjustment.
Right-click a knob	Type a value.
A / B / C	Keep three complete processing states for comparison.
Undo / Redo	Step through parameter edits.
Escape or outside click	Close open panels.

09 / Practical starts

Mix bus: Start with Velvet Bus Glue. Set the strongest passages around 1–2 dB GR. Keep SC Link near 100% for stable imaging; reduce if independent movement suits the mix. Evaluate Air and Width at matched level.

Mastering: Begin with a Mastering category preset at level-matched monitoring. Use small Threshold and color changes. Check the centre, low-frequency translation and actual downstream sample/true peaks. The built-in processor does not include a final limiter.

Parallel drums: Increase compression and color, then lower Mix. Turn Compressor Engage off briefly to isolate what the color and stereo stages add.

10 / Build and release status

Open Shark670.jucer in Projucer, save and open in Xcode, then create a Release build. The source includes CMake project files, assets and DSP checks. JUCE 8.0.9 C++17 source checks and synthetic DSP/preset level tests passed at this checkpoint. This is not a verified Mac installer; final DAW integration, live switching, appearance and listening tests remain to be completed.

Independent Shark design inspired by the variable-mu tradition; it is not a circuit-identical Fairchild emulation. Plugin Creator: Alex Raven.
Product Design & Production: Sharky. sharkplugs.com