Shape the spectrum. Finish the record.

Eight-band EQ, dynamic and spectral processing, tone, compression, stereo control and loudness in one mastering workspace.

Start with the mix. Listen for what needs changing. Use a few deliberate moves, then compare at a matched level. SPECTRAL brings the tools and the meters together so those decisions stay close to the music.

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Your first mastering pass

1 / Begin clean

Insert SPECTRAL on a stereo mix or master bus. Choose Init - Clean Start from the preset browser. Check Input and Output Trim, and lower your monitoring level before increasing loudness.

2 / Shape the balance

Use the EQ graph for broad tonal moves. A low cut can clean subsonic energy; a high shelf can adjust openness. Keep boosts and cuts small until you have compared the result.

3 / Add control and character

Bring in Glue for compression, Tone for broad bass/treble changes and De-Harsh, then Color if the mix needs saturation. Each module has its own ON/OFF switch.

4 / Set the stereo picture

Adjust Width and audition in mono. Enable Mono Bass to reveal its cutoff knob. Start at 100 Hz, then listen as you move it from 40 to 300 Hz.

5 / Finish and compare

With Loudness ON, raise Gain gradually and watch the output meters. Use Gain Match to compare the processing at similar RMS energy. Allow it to settle after large changes. Turn it off before setting the final delivery level.

6 / Measure a complete pass

Reset the loudness meter, then play the song from the start. Review integrated LUFS, range and maximum dBTP as well as the sound. The limiter controls sample peaks; check true peaks separately when delivery requires it.

EQ: work directly on the curve

Eight colored bands

Each band has its own color, node and compact floating information card. The curve and spectrum share a logarithmic frequency display. The selected band controls below the graph give direct access to frequency, gain, Q and shape.

Gestures

Click a node to open its band menu. Drag to adjust frequency and gain. Use Shift-drag for Q, or the mouse wheel over the graph to adjust the selected band Q. Shift-click adds a band to a selection; drag a rectangle on empty graph space to select a group. Select all or Cmd/Ctrl+A selects active bands. Group dragging preserves spacing and stops the group at its limits.

Shapes and slopes

Choose Low cut, Low shelf, Bell, High shelf or High cut. Band frequency spans 20 Hz to 20 kHz, gain -18 to +18 dB and Q 0.15 to 18. Cut bands offer 6, 12, 24 and 48 dB/octave slopes. Slope replaces gain in the cut-band readout. Shelves and bells use gain and Q.

Band menu and information card

The menu provides enable, invert gain, Dynamic, Spectral, shape, cut slope, Stereo/Left/Right placement, solo, copy, paste, duplicate, reset and delete. Duplicate needs a free band. The floating card exposes quick controls for power, solo, shape, values and mode.

Reset EQ

Reset EQ disables the EQ bands and separate mastering HPF and restores their defaults. It leaves the other mastering modules alone. Init restores the full clean-start state, including the default low-cut/high-shelf arrangement. Saved sessions retain their own band settings.

Dynamic and spectral EQ

Dynamic: level-dependent band gain

Enable Dynamic on a bell or shelf when the correction should change with signal level. Threshold determines when it responds; Range controls the direction and maximum amount of gain change. Attack and Release control timing. Use a negative range for attenuation and audition small amounts before making the response more aggressive.

Dynamic controls

The band menu provides useful steps: Threshold -48/-36/-24/-18/-12 dB; Range -12/-6/-3/+3/+6 dB; Attack 5/15/30/60/120 ms; Release 60/120/220/400/800 ms. EQ setup allows numeric entry across the wider parameter ranges: threshold -60 to 0 dB, range -18 to +18 dB, attack 1-250 ms and release 20-1200 ms.

Spectral: frequency-selective reduction

Spectral mode uses FFT processing to reduce resonant energy around the selected band. Frequency and Q locate the area; the displayed spectral reduction reports activity. Audition the result rather than assuming a moving trace always means a better balance. Dynamic and Spectral are alternative modes for a band in the native controls.

EQ setup

Open EQ setup for band slope, channel placement, solo, mode and detailed dynamic controls. Linear phase enables the alternative EQ processing path. The same panel includes console character, character Drive and 1x/2x/4x/8x/16x character oversampling. This oversampling applies to EQ character, not to every mastering module. Console character is unavailable while Linear phase is active.

Separate HPF

The HPF button enables an additional mastering high-pass filter. Set its cutoff from 20 to 200 Hz and slope to 12, 24 or 48 dB/octave in EQ setup. This is separate from an EQ band set to Low cut. Freeze spectrum holds the analyzer display for inspection.

The mastering assistant

Choose style Learn Preview Apply EQ

Select a style in the assistant, start playback, and press Learn. SPECTRAL captures 20 seconds of incoming audio. The flowing wave overlay shows capture progress and blocks plugin editing. It waits for audible audio to begin and pauses capture when the host reports stopped playback. Cancel learning or Escape exits without applying a suggestion.

Make the final decision

On completion, SPECTRAL prepares a restrained EQ suggestion. The orange curve is the preview. Apply EQ commits the suggestion; it is not applied automatically. EQ Amount scales the proposed correction when the suggestion is calculated. If you change style or amount after learning, press Suggest again before applying.

20 starting profiles

Jazz, Classical, Rock, Classic Rock, Pop, Hip-Hop, Alternative Rock, Grunge, House, EDM, Techno, Trance, R&B, Soul, Funk, Reggae, Metal, Acoustic / Folk, Trip-Hop and Ambient. Choose by musical intent rather than treating the genre name as a rule.

What this build does

The assistant performs local tonal analysis and proposes broad EQ changes based on the captured audio and selected style. It uses no trained AI model and does not upload the song. Suggestions use four bands; the low-tone suggestion uses a spare band so the first low-cut band remains available.

Target LUFS and Keep dynamics

The displayed Target LUFS and Keep dynamics controls are reserved settings in this build. They do not calculate limiter settings, reach an automatic loudness target or alter the assistant result. Set final loudness manually with the Loudness module and meters. A style profile is a starting point, not a mastering guarantee.

Glue, Tone, Color and Space

Glue

Amount increases compression intensity. Response sets release timing from 20 to 500 ms; the default is 120 ms. The GR readout shows compression gain reduction. Start gently, then listen to the kick, snare and vocal movement. The ON/OFF switch bypasses this stage.

Tone

Low and High offer broad -4 to +4 dB tonal adjustments. De-Harsh applies a broad attenuation centered near 3.5 kHz, reaching about 3 dB at full amount. It is a static tonal filter. Its glowing top trace combines the filter response with spectrum-driven motion; this is not an additional dynamic gain-reduction meter.

Color

Choose Clean, Tape or Tube. Drive controls the amount of waveshaping in the colored modes. Clean does not add that saturation. Compare with Gain Match and listen for whether extra density helps the mix; different amounts can change transients and harmonics.

Space

Width spans 0-150%, with 100% as the normal stereo width. Mono Bass reduces low-frequency side content while retaining the mid signal. Its mini cutoff knob appears when enabled, defaults to 100 Hz and spans 40-300 Hz. The transition is gradual, not a brick-wall boundary. Turning it off retains the stored cutoff.

Use module switches to judge each move

Switch one stage off and on while listening at a comfortable level. A more impressive sound is not always a louder sound. Reduce the amount if clarity, groove or depth suffers. Use A/B/C to compare complete alternatives.

Loudness, comparison and meters

Loudness module

Gain spans 0-18 dB and drives the sample-peak limiter. Ceiling spans -6 to 0 dBFS. The module starts ON in a new instance or Init. OFF bypasses both the boost and limiter; stored Gain is retained. Input Trim spans -24 to +24 dB and Output Trim -24 to +12 dB. Output Trim follows limiting, so positive output trim can lift the final level above the limiter ceiling.

Gain Match, Delta and Bypass

Gain Match compares time-aligned dry and processed stereo energy and compensates the output for an RMS-matched audition. It follows the signal with smoothing; allow brief settling after large changes. It does not guarantee identical perceived loudness. Delta auditions the difference between aligned dry and processed audio. Bypass returns the latency-aligned dry signal.

Read the footer

LUFS Short is the prominent 3-second reading. Moment is momentary loudness over 400 ms. Integrated is gated average loudness since Reset. Range LU describes loudness variation. Max dBTP is the estimated maximum reconstructed peak since Reset. RMS is a separate smoothed dBFS reading. Correlation indicates the relationship between left and right; check mono compatibility when it becomes negative.

Reset and silence

Reset clears the measurement history on the next audio callback. It does not reset processing. Unavailable measurements display --; silence readings settle down. Momentary and short-term need their respective windows to fill. Integrated and maximum peak continue until Reset or audio preparation and are not part of a preset.

True-peak measurement is not true-peak limiting

The dBTP meter uses oversampled peak estimation. The limiter itself is sample-peak based. Intersample peaks may exceed its dBFS ceiling, especially after gain compensation or output trim. For a strict delivery specification, verify the final file with a trusted meter. This build has not completed a full EBU conformance test suite.

Presets, sessions and troubleshooting

Preset browser

Click the preset name to open the browser. Start Here contains Init and 20 gentle style contours; Favorites marks preferred styles. User holds saved presets. Type a name in User and choose Save new. Import and Export use .spectral files. Clicking a preset row loads it and closes the browser. The arrows cycle the factory styles.

A/B/C, Undo and display

A/B/C keeps three comparison states during use. These comparison slots are not a substitute for saving presets; the host stores the current state. Undo and Redo recall supported parameter edits. Click the bar logo to cycle Purple, Green, Red and Blue. Menu provides 75/100/125/150% zoom, Quick manual, Credits/About and the Shark website.

If something seems inactive

No learning progress: start audible playback and check host transport. No De-Harsh trace: enable Tone and raise De-Harsh. No mono cutoff knob: enable Mono Bass. Gain changes seem quieter than expected: check Gain Match, Bypass and module ON/OFF. Too much latency or CPU: inspect spectral/linear-phase modes and character oversampling, then compare using simpler settings.

Build and support scope

This guide describes source build 0.7.6. The project targets JUCE AU, VST3 and Standalone; available installers and platform qualification must be confirmed separately. User listening feedback has confirmed operation in Studio One, while full cross-host, platform and release qualification remains open. No installer, trial duration or price is promised by this guide.

Before sending a mix out

Save the preset and host session. Turn off Solo, Delta and Gain Match unless intentionally required. Set the final output level, reset meters and measure the full song. Listen to the rendered file and check the delivery format. Visit sharkplugs.com for current product materials.