TV Spektrum EQ

Reason Rack Extension by Shane TV



Introduction

TV Spektrum EQ is a 16-band parametric and dynamic equalizer for Reason 14 or later, presented as a 5U studio effect. Its large interactive graph lets you add, select and shape bands directly on the spectrum. Bell and Shelf bands can also respond dynamically to the device input, an external sidechain or an Analysis In reference.

Use it for ordinary tonal shaping, dynamic resonance control, stereo processing, creative modulation and ducking between tracks. The first three knobs edit the selected band. OUTPUT and MATCH control the whole device.

Main features

- Sixteen bands with eleven filter shapes: Bell, Low Cut, High Cut, Low Shelf, High Shelf, Notch, Band Pass, Band Stop, Tilt, Comb and Scale EQ.
- Per-band Stereo, Left, Right, Mid or Side processing.
- Bell and Shelf dynamics with signed Range, threshold, attack, release, knee and a filtered detector.
- Independent Internal, External or Analysis detector selection for each dynamic band.
- Optional spectral dynamics with three FFT sizes and global lookahead.
- Input and output analyzers, spectrum Freeze, output metering and adjustable graph range.
- Four internal modulators, each with four routes, plus eight CV inputs and four CV outputs.
- Independent A/B setups, undoable Copy, EQ Amount, polarity inversion and Mono.
- Draw mode for generating bands from a sketched curve, and Tools for reference analysis and ducking.

Finding your way around this manual

Start with Quick start and Front panel. EQ bands and Dynamics explain everyday editing. Spectral dynamics and latency covers SPEC and LOOK. Global controls explains level matching and A/B. Internal modulation, Draw, Tools and Rear connections cover the deeper features. Parameter reference and Troubleshooting provide quick answers while working.

Quick start

1. Insert TV Spektrum EQ on a track or in a mix channel's insert section. Reason automatically routes the main audio input and output.
2. Play audio. The faint analyzer trace shows the input; the brighter trace shows the processed output.
3. Double-click an empty part of the graph to create a Bell band. Its frequency and gain follow the clicked position, and Q starts at 1.0.
4. Drag its dot left or right for frequency and up or down for gain. Hold Shift while dragging for 1 Hz frequency steps.
5. Use FREQUENCY, GAIN and Q under the graph for more precise editing. OUTPUT adjusts the level of the whole device.
6. To make a Bell or Shelf dynamic, click DYN. The Dynamics editor opens. Choose a negative Range for reduction or a positive Range for increase, then adjust the threshold until the band reacts. A new band's Range starts at 0 dB, so enabling dynamics alone does not create an audible gain change.
7. Let audio play until MATCH is ready, then click MATCH beside OUTPUT to match the measured input and output levels.

Init is a blank EQ. The numbered factory patches, from 01 Kick Boost through 25 Master Low Control, are mixing starting points for drums, bass, guitars, vocals, keys, synths and the mix bus. Unnumbered patches such as Breathing Glass, Comb Cathedral and Telephone Dream explore modulation and the special filter shapes. Adjust any patch to suit the source.

Front panel

Power and patch strip



The top strip holds the Off / On / Bypass switch, patch name and patch browser.

State	Behavior
Off	Silences the main outputs and Analysis Send. The screen goes dark and ignores clicks and drags. The visible lower buttons, type selector and knobs remain usable.
On	Processes audio with the current settings.
Bypass	Passes the main signal without EQ processing and displays BYPASS. Analysis Send continues working. Processing latency remains accounted for.

Screen header

The header contains SPEC and its settings arrow, CV IN, the selected band number and stereo placement, MODULATE, MONO, the graph dB-range control, INV and EQ AMT. Each band's detector source is selected inside its Dynamics editor.

Band controls and output controls

The lower-left panel contains the filter-type selector and two rows of buttons. The upper row contains ON, Delete, DYN and Tools. The lower row contains A, B, Copy, Freeze and Draw. Tools is the gear directly above Draw.

ON, Delete and DYN act on the selected band. A/B, Copy, Freeze, Draw and Tools serve the device as a whole. FREQUENCY, GAIN and Q form the selected-band knob group. OUTPUT and the square MATCH button occupy the separate output section.

Contextual help

Pause the pointer over a control to display a short explanation in the dark help box inside the screen. The explanation follows the selected band, current page and visible editor. Help disappears while dragging and returns after the pointer rests again.

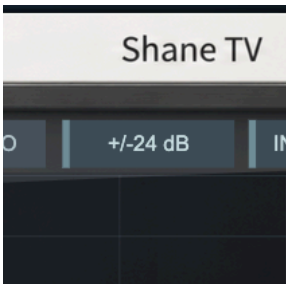
Only one main popup or editor is shown at a time. Opening the type menu, Dynamics, CV IN, spectral settings, MODULATE, Tools or Draw closes the previous one.

Reading the graph



The horizontal scale runs logarithmically from 20 Hz to 20 kHz. The vertical scale shows response in dB. The output meter on the right has its own level scale.

Display range



Use the dB-range control beside MONO to select +/-6, +/-12, +/-24 or +/-36 dB. Click to cycle, drag to adjust, or double-click to restore +/-24 dB. This changes only the display, not the sound or the stored gain values. Band gain can reach +/-30 dB even when the visible graph uses a narrower range.

Curves and traces

Display element	Meaning
Faint analyzer trace	Input spectrum before EQ.
Brighter analyzer trace	Processed output spectrum.
Thin colored curve	One band's own response, in that band's color.
Thick yellow curve	Combined response of the audible bands.
Very faint colored curve	A bypassed band's response, excluded from the audible combined curve.
Violet live-dynamics curve	Combined response including the current dynamic gain changes.
Dynamic range shading	The selected dynamic band's possible gain movement.
Amber analyzer trace	Frozen snapshot of the output spectrum.
Magenta and teal spectral bars	Spectral gain reduction and gain increase.
Blue reference trace	Spectrum arriving at Analysis In, enabled in Tools.
Red collision shading	Estimated simultaneous overlap with Analysis In, enabled in Tools.

Below about 300 Hz, a higher-resolution analyzer provides roughly 6 Hz detail to separate low-frequency fundamentals. Above that region, the faster analysis follows transients.

Band markers

A filled circle marks a static band. A diamond marks a dynamic band, with a violet halo indicating activity. A hollow ring marks a bypassed band that can still be selected and moved.

A modulated band can show a hollow marker at its current position, joined to its saved position. Guides show frequency, gain, Q, threshold or Range movement. Assignable CV uses the same visual guides as the internal modulators.

The selected band has a number beside its marker. The headphone icon is Isolate. A small additional icon identifies non-Stereo placement. Tilt bands show their pivot, while Scale EQ shows the selected key near the band's frequency.

Output meter and messages

The stereo output meter shows a moving peak, a darker RMS body and a short peak-hold marker for each channel. Messages at the lower left explain unavailable actions, such as having no free bands or needing a connected Analysis In reference.

EQ bands

Each of the sixteen bands has its own filter shape, frequency, gain, Q and stereo placement. Bell and Shelf bands also support dynamics.

Adding and selecting bands

Double-click an empty spot in the graph to create a band. Click an existing band's marker to select it. The type selector, first three knobs and band buttons then edit that band. Clicking empty space once does not deselect it.

Drag a marker horizontally for frequency or vertically for gain. Hold Shift for 1 Hz frequency steps. A band keeps its own color as you move between editors.

Bypassing and deleting bands



ON bypasses or restores the selected band without deleting its settings. A bypassed band remains visible as a hollow ring and does not contribute to the audible response.

Delete removes the selected band and frees its slot. Selection moves to another existing band when possible. Deleting an isolated band also turns off Isolate.

Knobs and readouts

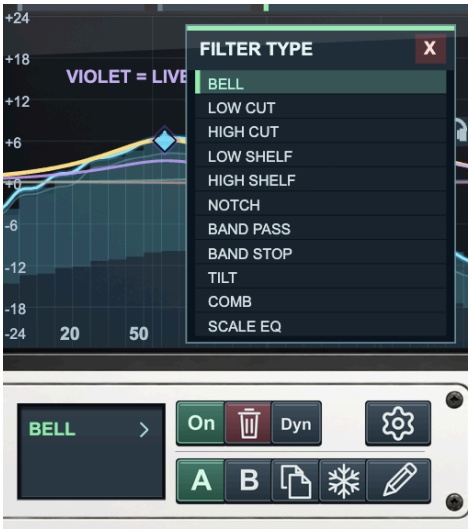


Drag a knob up or down. The value strip below the knobs shows the exact values for the selected band and device output.

Knob	Range	Use
FREQUENCY	20 Hz to 20 kHz	Band frequency or filter cutoff. Hold Shift for 1 Hz steps.
GAIN	-30 to +30 dB	Band gain. Not used by Low Cut, High Cut or Notch.
Q	0.2 to 18	Width or resonance. Its label changes to RES, ANGLE, NOTE Q or TEETH Q where appropriate.
OUTPUT	-24 to +12 dB	Level of the entire device, not the selected band.

Shift provides fine adjustment where supported. Double-clicking editable values or knobs returns them to their applicable default or neutral value.

Filter shapes

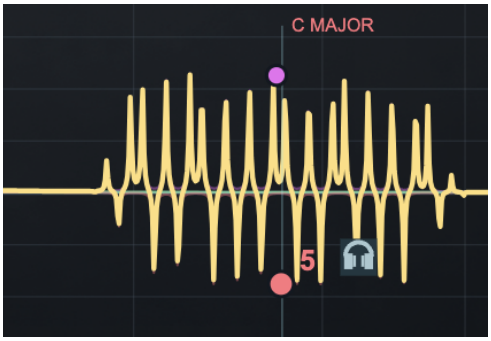


Click the shape name to open FILTER TYPE, then choose a shape. Some shapes have an extra control under the name. Click or drag that control to adjust it.

Shape	Response	Additional control
Bell	Boosts or cuts around the selected frequency. Q sets width. Supports dynamics.	None.
Low Cut / High Cut	Removes frequencies below / above the cutoff. RES controls cutoff resonance; GAIN is unused.	Slope: 6, 12, 24, 36, 48, 72 or 96 dB/oct.
Low Shelf / High Shelf	Raises or lowers frequencies below / above the corner. RES colors the corner resonance. Supports dynamics.	Shelf slope S: 0.25 to 1.00.
Notch	Produces a deep, narrow cut. Q controls width; GAIN is unused.	None.
Band Pass	Keeps the area around the frequency. Q sets width; GAIN trims its level.	None.
Band Stop	Removes the area around the frequency. Q sets width; GAIN trims its level.	None.
Tilt	Tilts the spectrum around the selected pivot. GAIN sets the level at the pivot. ANGLE controls the tilt.	Angle: -3 to +3 dB/oct.
Comb	Alternates boosts and cuts in evenly spaced teeth from roughly 0.4 to 1.6 times the selected frequency. TEETH Q controls sharpness.	DENS: 3 to 21 teeth.
Scale EQ	Places narrow responses on musical notes near the selected frequency. NOTE Q controls peak sharpness.	Root and scale.

Changing to a shape without dynamics disables that band's dynamics.

Scale EQ



Positive gain boosts notes in the chosen key. Negative gain cuts notes outside the key. The pattern covers about sixteen semitones on either side of the band frequency.

Choose the root in the left field below the shape name and the scale in the right field. Available scales are Major, Natural Minor, Dorian, Phrygian, Lydian, Mixolydian, Locrian, Harmonic Minor, Melodic Minor, Major Pentatonic, Minor Pentatonic and Minor Blues.

Stereo placement



Each band can process Stereo, Left, Right, Mid or Side. The header shows the selected band number beside its current placement. Click the placement field to cycle through the five choices.

Mid is the common center information; Side is the difference between the left and right channels. For example, a Side low cut can reduce low-frequency width while leaving the center less affected.

Isolate



Click the headphone icon beside the selected band's number to audition that band's contribution. The graph displays ISOLATE MONITOR. Selecting another band while isolated moves the audition to that band. Click the icon again to stop. Isolate is a monitoring function; turn it off before using MATCH.

Dynamics



Dynamics changes a Bell or Shelf band's gain in response to its detector. A negative Range reduces gain above the threshold; a positive Range increases it.

Enabling dynamics and opening the editor

Click DYN once to enable dynamics and open the editor. Click DYN again to disable dynamics while leaving the editor open. The band's Range, threshold, timing and detector settings are retained when toggled off and on. Click X to close the editor without switching dynamics off.

A new band's Range starts at 0 dB. Set a nonzero Range to hear dynamic gain movement. Bands created by CREATE DUCKING BAND are initialized differently, with a -3 dB Range.

Drag the editor header to reposition it. The source button, band number and live gain-change readout appear across its top.

Detector source

Click the source button to cycle INTERNAL, EXTERNAL and ANALYSIS. This choice belongs to the selected band, so different bands can listen to different sources.

Source	Detector signal
INTERNAL	The device's main input.
EXTERNAL	The rear External Sidechain inputs. Without a sidechain cable, detection falls back to the main input. One connected sidechain jack feeds both detector channels.
ANALYSIS	The rear Analysis In inputs. The editor shows the reference-oriented layout used for ducking and reference-triggered processing.

The EXTERNAL button is highlighted amber when the external source is unavailable. Drag the header to move the editor; click and release the source button to change its input.

Main dynamics controls



Drag values to adjust them. Ref and Filter also support selector gestures. Hold Shift for fine movement.

Control	Range	Meaning
Range dB	-18 to +18 dB	Maximum gain movement. Negative cuts; positive boosts.
Thr dB	-60 to 0 dB	Detector threshold.

Control	Range	Meaning
Atk ms	1 to 201 ms	Speed of movement toward greater gain change.
Rel ms	10 to 1010 ms	Speed of recovery toward no dynamic gain change.
Knee dB	0 to 24 dB	Softens the transition around the threshold.
Ref	ABS, BAND, REL	How the detector threshold is referenced.
Filter	BP, LP, HP	Detector band-pass, low-pass or high-pass filtering.
Hz	20 Hz to 20 kHz	Detector frequency.
Q	0.2 to 18	Detector width.

There is no ratio control. Range sets the maximum movement and threshold sets where it begins. The band approaches its full Range when detector level is about 12 dB above the threshold.

Threshold reference modes

ABS uses the threshold value directly. BAND follows that band's long-term detector level over about two seconds, responding to bursts rather than a part simply being louder overall. REL references the overall input level so a louder program does not automatically produce more processing.

Detector frequency and Q follow

By default, the detector follows the band's frequency and Q. Lit link icons indicate following. Adjusting the detector's Hz or Q unlinks that value, allowing one frequency range to trigger processing elsewhere. Click its link icon or double-click the cell to link it again.

For example, a band at 250 Hz can reduce low-mid buildup when an independently tuned 80 Hz detector becomes loud.

Activity and detector listening

The activity bar shows how much of the available Range is being used. LISTEN auditions the filtered detector signal. Listening stops when you close the editor, select another band or change A/B; the listening state is not saved.

The graph shows the selected band's full dynamic range as shading, a threshold marker at the detector frequency and a live response curve. These are guides to the current processing; use the activity readout and listening to set the threshold.

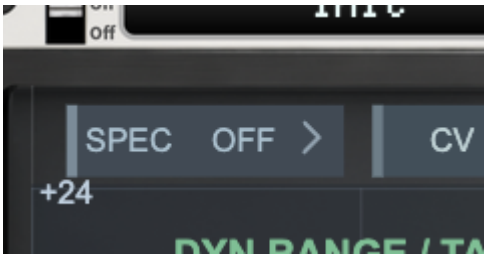
Analysis dynamics

ANALYSIS uses a compact layout with Range dB, Threshold dB, Attack ms, Release ms, Frequency Hz and Width Q, plus detector listening and live reduction information.

Range remains signed: negative values duck when the reference exceeds threshold; positive values boost. A Range of 0 dB produces no movement. Frequency and Width edit the band's frequency and Q, which the reference detector follows. Analysis-keyed bands continue using their time-domain detector when SPEC is enabled.

Spectral dynamics and latency

SPEC





Click SPEC to enable or disable spectral dynamics for the Internal and External dynamic bands. Spectral processing applies gain changes selectively across FFT frequency bins rather than relying only on a single moving filter. It is useful for narrow resonances, harshness and changing tonal detail.

Analysis-keyed bands keep their dedicated time-domain dynamics path. Enabling SPEC does not change their detector source.

Click the small SPEC arrow to open its settings. Settings can be edited while SPEC is off and take effect when it is enabled.

Setting	Range	Meaning
FFT	512, 1024 or 2048 samples	Larger sizes provide finer frequency detail and more latency. Click to cycle.
SMOOTH	0 to 100%	Smooths gain changes across neighboring frequency bins.
ATTACK	10 to 300%	Multiplies the dynamic bands' attack times.
RELEASE	10 to 300%	Multiplies the dynamic bands' release times.

Spectral SMOOTH is frequency smoothing. It is different from a modulator's waveform smoothing or envelope attack.

LOOK

Lookahead gives the detector advance notice by delaying the processed audio. Use it to catch the beginning of drum hits, plucks and sibilants.

Drag LOOK to choose 0 to 20 ms. Clicking while it reads OFF selects 5 ms; double-clicking switches it off. The setting is global, appears in each band's editor and is saved with the song. LOOK is not part of A/B.

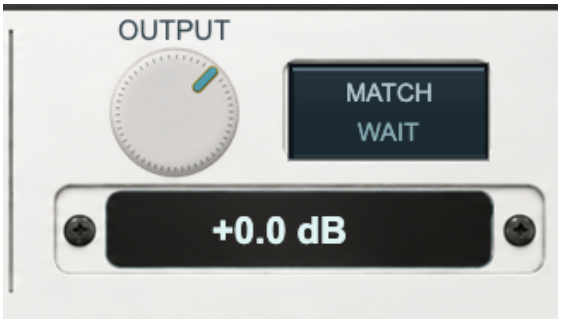
Delay compensation

With SPEC enabled, the device's declared latency includes the FFT size plus any LOOK delay. Without SPEC, LOOK still adds its selected delay. The pre-EQ Analysis Send shares the declared delay of the main outputs.

Reason can compensate for that latency when Delay Compensation is enabled and the routing supports it. Latency settings can change during playback, including through A/B recalls with different SPEC settings. A change may produce an audible transition while the device and host adapt. Stop playback before changing latency when an uninterrupted transition is important.

Global controls

OUTPUT and MATCH



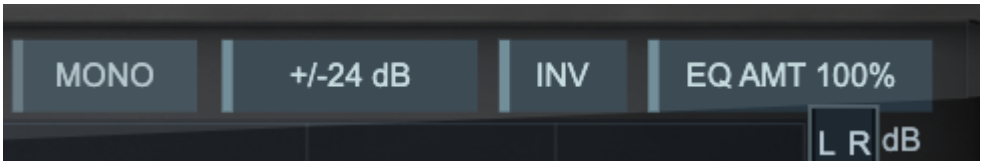
OUTPUT adjusts the device level from -24 to +12 dB. It is independent of which band is selected.

MATCH compares measured input and output stereo RMS and, when clicked, changes OUTPUT to reduce their level difference. It never adjusts your EQ bands. The engine measures level in the background but does not apply a correction automatically.

WAIT means it needs more usable audio or is waiting for a fresh measurement. MATCH indicates a correction is available. MATCHED indicates that a correction has been applied for the current settings. RMS matching is a useful comparison aid; it does not guarantee identical perceived loudness for every sound.

MATCH is unavailable while Off or bypassed, while a band is isolated, and while listening to a detector. Edits affecting the sound invalidate the previous measurement. Turn off monitoring modes and let suitable audio play again before matching.

EQ AMT



EQ Amount scales the static response of all eleven band shapes. At 0%, the static EQ response is neutral. At 100%, it reproduces the saved band settings. Values above 100% intensify the response, up to 200%. This does not move the stored controls or replace OUTPUT gain.

The amount also affects cuts, Notch, Band Pass, Band Stop, Tilt, Comb and Scale EQ, not only Bell and Shelf gains. A neutral static response does not by itself disable dynamics or other modulation.

Drag EQ AMT in the header up or down, hold Shift for finer adjustment, or double-click to restore 100%.

INV and MONO

INV reverses output polarity. MONO sums the output to mono for checking compatibility. Both affect the whole device. Neither changes the pre-EQ Analysis Send.

A and B



A and B hold independent sound setups: bands, dynamics, detector sources, stereo placement, spectral settings, modulators, CV assignments, OUTPUT, EQ Amount, INV and MONO.

Click A or B to audition that setup. Switching creates no Undo entry, so returning to an earlier setup does not hide an undoable edit or Copy command behind selection changes. LOOK is shared, and display-only controls such as graph zoom are not sound comparisons.

A/B can be switched during playback even when SPEC settings differ, although a latency change can create a transition. Switching is blocked while a Draw preview is awaiting Keep or Discard.

Copy



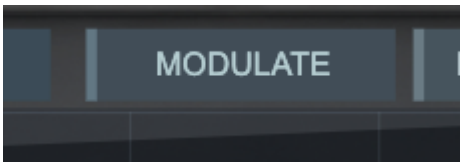
Copy transfers the active setup into the other A/B setup. Its button lights briefly as confirmation. Copy is one undoable action. Switching A/B afterward does not add another Undo step.

Freeze



Freeze captures the current output spectrum as an amber reference trace. Click it again to clear the snapshot. It freezes the reference trace, not the audio or EQ controls.

Internal modulation



Four internal modulators can move parameters over time. Each has four independent routes. Click MODULATE to open the page; click it again to return to the graph.

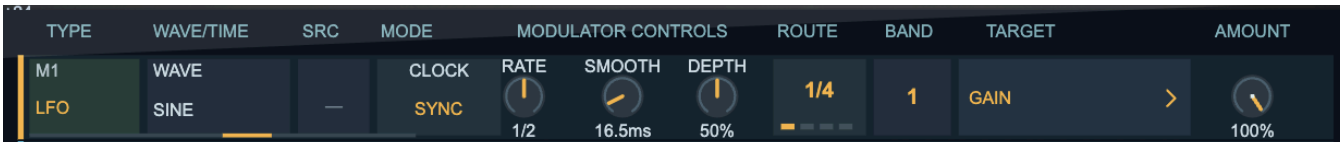


Modulator types

OFF disables a modulator. LFO cycles continuously. TRIG ENV fires on a transient and decays. FOLLOW tracks the level of its source smoothly.

In SYNC mode, an LFO follows song position while the transport runs so its pattern lines up with the song. FREE mode uses an independent rate in Hz.

Row controls



Control	Use
TYPE	Choose OFF, LFO, TRIG ENV or FOLLOW.
SHAPE	For LFO, choose Sine, Triangle, Saw Up, Saw Down, Square, S&H or Smooth Rnd. For envelope types, select a release time from 35 to 1200 ms.
SRC	For envelope types, choose IN, SC or OUT: main input, external sidechain or device output.
Clock or detection mode	For LFO, choose SYNC or FREE. Envelope rows show detection sensitivity instead.
RATE or sensitivity	LFO: 0.02 to 20 Hz when free, or 1/64 note to 16 bars when synced. Envelope sensitivity makes quieter signals trigger more readily as it increases.
SMTH	LFO waveform smoothing. FOLLOW attack, approximately 1 to 150 ms. TRIG ENV does not use this control because its attack is immediate.
DEPTH	Overall strength from 0 to 100%.
ROUTE	Select which of the four routes is being edited.
BAND	Destination band, OFF or B1 to B16. Ignored by global targets.
TARGET	Parameter to modulate.
AMT	Bipolar route strength from -1 to +1. Negative values invert the movement.

A thin meter under each row shows the live modulator output. Type and Target open menus. Other selectors support clicking or dragging where applicable; drag continuous values to adjust them. Contextual help explains controls that are unavailable for the current type.

Route targets

The following amounts are maximum nominal movement at full DEPTH and AMT of +/-1. Actual movement also depends on the modulator output, the base value, combined routes and parameter limits.

Target	Maximum movement	Destination
Frequency	+/-2 octaves	Selected route band.
Gain	+/-12 dB	Selected route band.
Q	Multiply or divide by 4	Selected route band.
Threshold	+/-18 dB	Dynamic band.
Dyn Range	+/-18 dB	Dynamic band.
Tilt Angle	+/-3 dB/oct	Tilt band.
Comb Dens	About half the density range	Comb band.
Output Gain	+/-12 dB	Whole device; BAND is ignored.
Attack	+/-90 ms	Dynamic band.
Release	+/-450 ms	Dynamic band.
Spec Smth	+/-75%	Whole device; BAND is ignored.

Modulation works around the stored settings without rewriting them. The graph can show the moving marker and frequency, gain, width, threshold and Range guides. Multiple routes can combine, with the result constrained to the supported processing range.

Draw

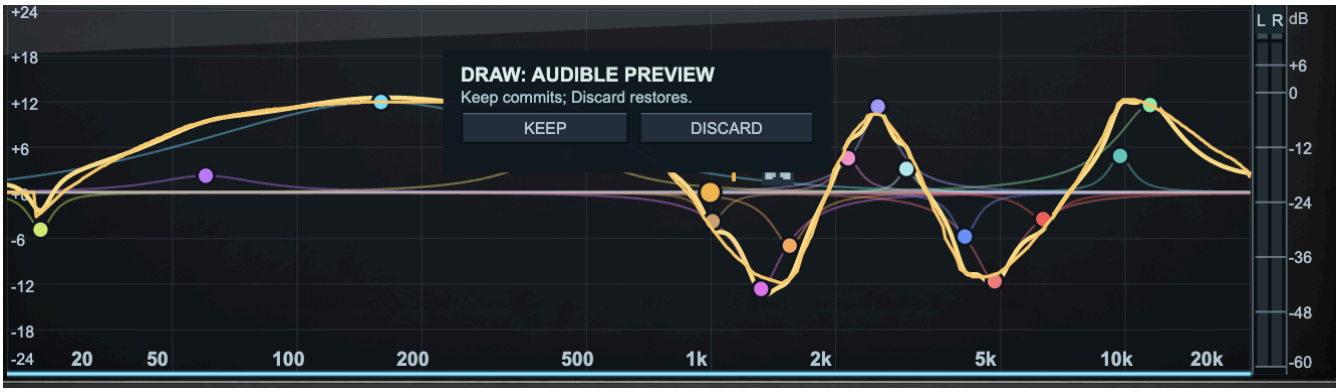


Draw creates EQ bands from a curve you sketch. It uses free band slots and lets you hear a preview before keeping it.

1. Click the pencil button.
2. Drag across the graph to paint the curve. Paint over sections again to refine them.
3. Release to open DRAW PREVIEW CURVE.
4. Click PREVIEW to generate and hear the proposed bands.
5. Click KEEP to retain the generated bands, or DISCARD to restore the previous setup.
6. Before generating an audible preview, CANCEL closes the panel without applying it.

The fitter stops when the response is sufficiently close to the target, approximately within 0.5 dB, and avoids adding corrections smaller than about 1 dB. It does not necessarily use every available slot.

Draw requires at least one free band and EQ Amount above 0%. While an audible preview awaits a decision, A/B and the other lower workflow buttons are locked. Use Keep or Discard before continuing. If you close another view and need the preview decision controls again, use the Draw button.



Tools and reference ducking



Tools compares the device input with audio arriving at Analysis In. It can display the reference spectrum, estimate frequency overlap and create a reference-triggered dynamic band.

Connecting two EQs



Place a TV Spektrum EQ on each of two tracks. Connect the source EQ's Analysis Send L/R to the receiving EQ's Analysis In L/R. Reason does not automatically connect these reference sockets.

Analysis Send carries the source device's pre-EQ input. Its level is unaffected by the source EQ, OUTPUT, INV, MONO or listening modes. It is delayed to match the source device's declared processing latency, including SPEC and LOOK. Bypass continues feeding it; Off silences it.

For kick and bass ducking, send the kick EQ's Analysis Send to the bass EQ's Analysis In. Avoid routing a send back into the main input it came from.

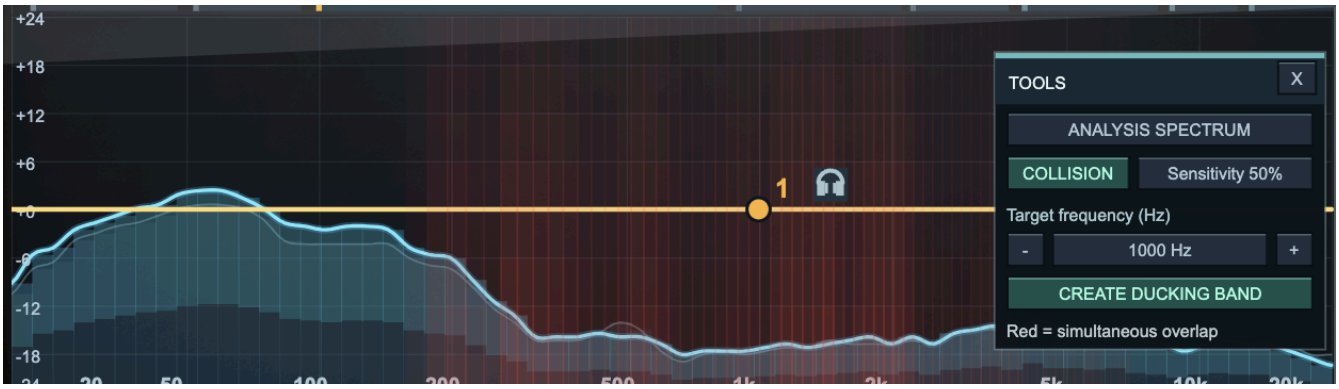
Tools controls

Click the gear above Draw to open Tools. Drag its header to move it; click X to close it. Enabled overlays remain visible after closing the panel.

Control	Use
ANALYSIS SPECTRUM	Shows Analysis In as a blue reference spectrum.
COLLISION	Shows estimated simultaneous overlap in red.
Sensitivity	Adjusts the visibility of the red overlay without altering audio.
Target frequency	Choose a red region, drag the Hz value, or use minus/plus for 1 Hz steps. Without a reference connection, the panel prompts you to connect Analysis In.
CREATE DUCKING BAND	Creates an Analysis-keyed dynamic Bell at the selected target, or chooses the strongest unresolved overlap when no target is selected.



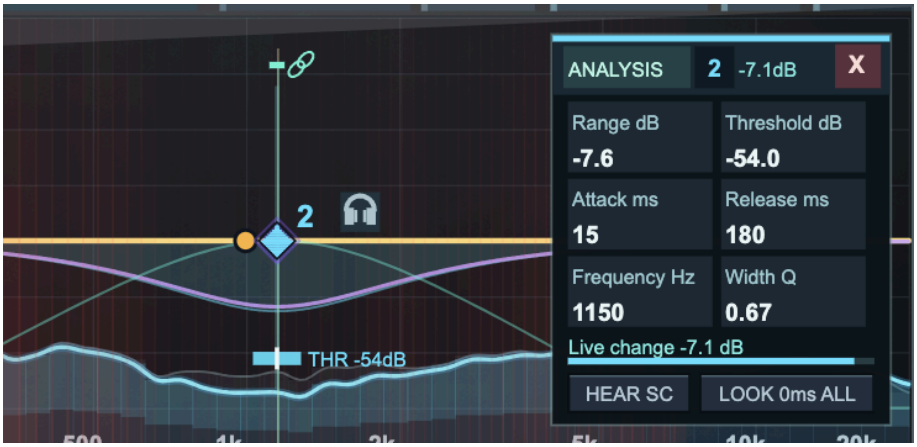
Understanding collision shading



Red indicates simultaneous frequency overlap, not proof of audible masking. Use your ears to decide whether a correction helps.

The overlay estimates how much overlap remains after the EQ's modeled response. A 3 dB cut halves the redness and a 6 dB cut leaves roughly a quarter. Dynamic cuts clear red while they act; boosts do not add redness. This display is an aid to finding remaining overlap rather than a calibrated measure of masking.

Creating a ducking band



Creation requires a connected reference, Collision enabled with usable overlap, and a free band slot. The generated band starts as a Bell with 0 dB static gain, Q 1.2, Range -3 dB, attack 15 ms and release 180 ms.

Its detector listens to Analysis In and follows the band's frequency and width. The initial threshold is roughly 6 dB below the measured reference level near the target, constrained between -54 and -6 dB. Treat that threshold as a starting point and adjust it against the live activity.

The Analysis editor opens automatically. Negative Range ducks when the reference exceeds threshold; positive Range boosts. You can edit the band, compare A/B, Copy and Undo it like other bands. A silent or disconnected reference does not trigger ducking. To change its detector source, cycle the editor's source button to INTERNAL or EXTERNAL.

Rear connections



The rear panel contains five audio pairs, eight CV inputs and four CV outputs. When the rear panel is folded, connected cables converge at the central opening.

Audio sockets

Sockets	I/O	Function
Input L/R	In	Main audio input, automatically routed by Reason.
Output L/R	Out	Main processed output, automatically routed by Reason.
External Sidechain L/R	In	Detector input for bands set to EXTERNAL; also available to envelope modulators through SRC SC.
Analysis In L/R	In	Reference input for Tools and bands set to ANALYSIS.
Analysis Send L/R	Out	Pre-EQ input feed with the device's declared processing delay, for another device's Analysis In.

External Sidechain and Analysis In are separate inputs. Selecting EXTERNAL does not make a band listen to Analysis In, and selecting ANALYSIS does not use the External Sidechain sockets.

CV inputs

CV is smoothed and added to the stored settings; it does not overwrite them. Input values beyond +/-1 are limited to that range.

Input	Effect at full CV
Frequency Shift	Moves all band frequencies by up to +/-2 octaves.
Dynamic Amount	Scales dynamic Range: -1 gives none, 0 gives the stored amount, +1 gives twice the amount.
Output Trim	Adds up to +/-12 dB to the output level.
Bypass Gate	Engages bypass above 0.6 and returns below 0.4, avoiding rapid switching around one threshold.
CV A to D	Four assignable lanes, each targeting one band's Frequency, Gain, Q, Threshold or Range.

Assigning CV A to D

Click CV IN to open the compact routing panel. Drag its header to move it. Click or drag BAND to select B1 to B16, and TARGET to select FREQ, GAIN, Q, THR or RNG. Connected lanes show a live value; unconnected lanes show NO CV. Click X to close.

Target	Nominal movement at +/-1 CV
FREQ	+/-1.5 octaves.
GAIN	+/-12 dB.
Q	Multiply or divide by 4.
THR	+/-18 dB.
RNG	+/-18 dB.

Assignable CV and internal modulation share the graph's movement guides, including Q/width. Combined modulation is limited to supported parameter ranges.

CV outputs

Output	Signal
Input Envelope	Main input level, 0 to 1.
Output Envelope	Main output level, 0 to 1.
Dynamic Activity	Signed dynamic gain: -18 dB corresponds to -1 and +18 dB to +1.
Clip Gate	1 when clipping is detected, held for about one second; otherwise 0.

ACT OUT in the CV panel selects what Dynamic Activity follows. Choose MAX for the band with the greatest movement, or B1 to B16 for a specific band.

Practical workflows

Find a problem frequency

Create a narrow Bell with a temporary boost and sweep its frequency until the problem stands out. Then reduce its gain. Use Isolate to audition the band and turn Isolate off before making a final full-signal judgment.

Tame a resonance only when it rings

Enable dynamics on a Bell, choose a negative Range and put the threshold just below the unwanted peaks. Try SPEC for narrow or moving resonances. Use detector listening to confirm what is triggering the band.

De ess a vocal

Use a Bell or High Shelf around 5 to 8 kHz, a negative Range, fast attack and a short release. The 16 Vocal De-Esser factory patch is a starting point. Lower the threshold until sibilants trigger the desired reduction without dulling the whole performance.

Control low frequency buildup

Use a dynamic Low Shelf with negative Range. Try BAND reference mode to respond to bursts rather than the part's normal level. A few milliseconds of LOOK can help catch the leading edge.

Duck bass from a kick

Connect the kick EQ's Analysis Send to the bass EQ's Analysis In. Enable Collision on the bass EQ and create a ducking band at the overlap. Adjust its Range and threshold while listening to both tracks together.

Use a classic external sidechain

Connect a source to External Sidechain, select the receiving band's EXTERNAL detector and choose a negative Range. Tune the detector independently when one frequency region should control another.

Adjust the strength of a whole EQ

Lower EQ Amount below 100% to soften the static curve, or raise it above 100% to intensify it. This works with all filter shapes. Check the result with MATCH so an output-level difference does not dominate the comparison.

Shape stereo width

Select Side placement and reduce low-frequency energy to narrow the low end. A gentle Side high-frequency boost can add spaciousness. Use MONO to check the result, and remember that processing Side cannot create stereo information from a strictly mono signal.

Create rhythmic movement

Route a synced LFO to a band's Frequency or Gain. Set a modest DEPTH first, then increase AMT as needed. The Neon Tremolo patch provides a rhythmic starting point.

Drive another device

Route Dynamic Activity CV Out to another device so it reacts to the EQ's dynamic movement. Use Input or Output Envelope for level-following control, or Clip Gate for a held trigger when the output overloads.

Parameter reference

Values below describe the stored controls before additional modulation. Existing factory patches can use different settings. Newly created graph bands use the defaults shown unless the frequency or gain comes from the clicked position.

Per band settings

Parameter	Range	Default
Shape	Eleven shapes	Bell.
Frequency	20 Hz to 20 kHz	Clicked position for a new graph band.
Gain	-30 to +30 dB	Clicked position for a new graph band.
Q	0.2 to 18	1.0.
Cut slope	6, 12, 24, 36, 48, 72, 96 dB/oct	12 dB/oct.
Shelf slope	0.25 to 1.00	Approximately 0.74.
Tilt angle	-3 to +3 dB/oct	0 dB/oct.
Comb density	3 to 21 teeth	13 teeth.
Scale root / scale	C to B / twelve scales	C / Major.
Stereo placement	Stereo, Left, Right, Mid, Side	Stereo.
Dynamics	On / Off	Off.
Dynamic Range	-18 to +18 dB	0 dB. Retained when dynamics is toggled.
Threshold	-60 to 0 dB	-24 dB.
Attack	1 to 201 ms	12 ms.
Release	10 to 1010 ms	160 ms.
Knee	0 to 24 dB	6 dB.
Reference mode	Absolute, Band, Relative	Absolute.
Detector source	Internal, External, Analysis	Internal for a newly created band.

Parameter	Range	Default
Detector filter	Band Pass, Low Pass, High Pass	Band Pass.
Detector frequency / Q	20 Hz to 20 kHz / 0.2 to 18	Follows the band.

Global settings

Parameter	Range	Default
OUTPUT	-24 to +12 dB	0 dB.
EQ Amount	0 to 200%	100%.
INV	On / Off	Off.
MONO	On / Off	Off.
SPEC	On / Off	Off.
Spectral FFT	512, 1024, 2048 samples	1024.
Spectral SMOOTH	0 to 100%	30%.
Spectral attack / release	10 to 300% each	100% each.
LOOK	0 to 20 ms	0 ms. Shared across A/B.
Graph display range	+/-6, +/-12, +/-24, +/-36 dB	+/-24 dB. Display only.

Use Reason automation for the available sound parameters. Remote groups organize controls under Band 1 to Band 16, Global, CV Routing and Modulator 1 to Modulator 4. Display zoom and temporary monitoring or editor state are not sound parameters.

Troubleshooting

Dynamics is enabled but nothing changes

Check that Range is not 0 dB, the band is a Bell or Shelf, and the threshold is low enough for the selected detector signal. Confirm that the band is not bypassed. For ANALYSIS, connect the correct reference input. Use LISTEN to hear what the detector receives.

MATCH stays at WAIT

Play suitable audio and allow a fresh measurement after sound changes. Turn the device On and turn off Isolate and detector listening. Very quiet or silent material cannot provide a useful correction. MATCH only adjusts OUTPUT; it does not continuously ride the level.

A control seems to do nothing

Check the filter shape and modulator type. Low Cut, High Cut and Notch do not use GAIN. TRIG ENV does not use SMTH. Global modulation targets ignore BAND. Check the displayed value and contextual help for the selected control.

A B or other buttons will not respond

Finish the audible Draw preview with KEEP or DISCARD. A/B selection itself is not an undoable edit; Copy is.

No red collision overlay or no ducking band

Connect Analysis In, enable Collision and play both sources. A useful overlap must be present and a band slot must be free. Raise the overlay sensitivity if needed. External Sidechain is not the same input as Analysis In.

The sound changes briefly when changing SPEC or LOOK

Those settings change processing latency. The device transitions between processing states and Reason updates compensation. Make latency changes while stopped when a seamless transition is necessary.

Reason reports a device error

Save the song. Note the TV Spektrum EQ version, exact Reason version and the action that caused the error, and report them to Shane TV (shanetvmusic@gmail.com). Remove and recreate the affected device only after preserving any settings you need. A disabled instance is a failure state, not the normal Off or Bypass mode.