USER MANUAL

MONARCH

The controls. The response. The listening decisions.

WEIGHT. GLUE. GRACE.

Variable-mu inspired compression for mixing and mastering.

135 presets / Six rectifier families / Four color themes

Documentation for Monarch 0.2.6 7 September 2026

YOUR GUIDE

Inside Monarch

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Start with the music

The character of Monarch

Monarch is a stereo compressor inspired by variable-mu behavior. Its soft knee, level-dependent compression ratio and release memory let the response change with the material. Six rectifier selections, three bias settings and two tonal voicings give you several ways to shape the same passage. It is designed for mix-bus cohesion, mastering adjustments and individual sources.

A useful first pass

Insert Monarch on a stereo bus. Select a preset, leave LINK on, choose Tone Off and listen to a repeatable passage. Lower Threshold until the gain-reduction needles move modestly on the loudest moments. For a restrained starting point, try roughly 1-3 dB of reduction, then adjust by ear. This is a listening target, not a required operating level.

Make a fair comparison

Use Gain Match, allow it to settle, then compare with Bypass. Also check the actual output with your DAW meter. A louder setting often seems better immediately; listen for the snare attack, vocal position, bass consistency and depth at similar playback level. Save a user preset before trying a different factory recipe.

What this guide covers

This edition documents Monarch 0.2.6, including 135 presets and the revised three-position switches. It describes the current software behavior. Circuit-equivalent hardware modeling, true-peak limiting and loudness normalization are not features of this edition.

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Find your way around

Two channel strips

Each side has Input, Threshold, Attack, Release, Rectifier, Sidechain EQ, Tube Bias and Output. The curved meters above the Threshold knobs show gain reduction. The central strip contains Tone, LINK and the two channel-enable buttons. With LINK enabled, the left compression controls govern both channels; both Input controls remain usable.

The bottom row

STEREO and M/S select the processing coordinates. Gain Match supports level comparisons, Delta auditions the difference, and Bypass returns to the dry input. SC Filter shapes detection. Mono Bass and Width work on the stereo image. Mix blends the processed path with the original input.

The top row

The preset field opens the browser. Arrows step through visible factory presets; the star toggles a favorite. A/B/C holds three parameter states. Undo and Redo navigate parameter edits. The hamburger contains zoom, preset-file actions, hide/restore and Manual / About. Either Shark logo cycles the color theme.

Working with the controls

Drag a knob vertically; use Shift-drag for finer adjustment. Double-click a knob to reset its parameter default. Double-click a continuous numeric readout to type dB, Hz or percent. The timing and selector readouts show steps or names. Mouse-wheel adjustment is disabled. Switch clicks travel through the middle position in both directions.

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Input, Threshold and Output

Input: drive before compression

Input ranges from -12 to +12 dB in 0.1 dB steps. It changes the signal feeding both the compressor and its internal detector. Increasing it can produce more reduction and change the level reaching the nonlinear stage. It is not a clean output-volume control. If a preset feels too forceful, reduce Input and reassess Threshold.

Threshold: where reduction begins

Threshold ranges from -40 to +10 dB. Lower values make the detector trigger compression more readily. The soft knee spreads the transition around the threshold, so some reduction can begin before a sharply defined boundary. The number is a digital detector reference, not an output ceiling or a calibrated analog operating level.

Output: trim after tone

Output ranges from -12 to +12 dB in 0.1 dB steps. It follows compression, nonlinear shaping and Tone, but precedes the global stereo processing and Gain Match. Left and right Output remain independent under LINK. In stereo, equal trims usually make comparison easier; in M/S they affect the center and side paths separately.

Try this: two routes to similar reduction

Save a moderate setting in A. In B, raise Input a little, then raise Threshold until the needles show similar reduction. Match the final level using Output or Gain Match. Listen for changes in body and transient texture. Similar meter readings do not mean the internal signal levels or sound are identical.

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Compression that follows the program

A moving ratio

There is no Ratio knob. The current algorithm increases its ratio as the signal moves further above the knee; Tube Bias also increases the compression strength. A quiet phrase and a loud hit can therefore receive different effective ratios without a mode change. Avoid treating Monarch as a fixed-ratio precision limiter.

Soft-knee action

The internal knee is approximately 8 dB wide. Its gradual onset is useful when you want compression to become audible progressively rather than switch abruptly. A threshold setting may leave softer material nearly untouched while shaping the loud section. Evaluate both the verse and the chorus.

Release memory

The release response depends on accumulated gain reduction. Sustained compression increases the recovery time relative to the nominal rectifier/step value. This helps explain why the same release selection can feel more relaxed after a dense chorus than after an isolated transient.

Watch, then listen

The needles help establish a repeatable amount of action, but they cannot tell you whether the groove is better. If the mix loses movement, reduce the amount of compression or allow more recovery. If peaks feel detached, try a faster attack family or step. Change one control at a time so the cause remains clear.

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Attack, Release and rectifier families

Attack

Attack has six positions, from Step 1, fastest, to Step 6, slowest within the selected rectifier. Slower attack often leaves more of the initial hit before reduction develops; faster attack acts earlier. A slow step in one rectifier family can still be faster than a middle step in another.

Release

Release also has six positions. Faster recovery can restore movement between hits but may make dense material breathe conspicuously. Slower recovery can create a steadier envelope but may hold the next phrase down. Listen to what happens just after the snare or vocal syllable, not only at the peak.

Rectifier

The six labeled choices select different nominal attack/release timing families. In this software they primarily define the time constants. The component-style labels identify response families; they do not establish a component-by-component physical simulation. The timing tables on the following pages are the current nominal values.

An efficient audition

Set modest reduction, keep the same passage looping, then change Rectifier. Retune Threshold if needed and level-match before deciding. LED 3.3mF offers the longest nominal times; Ge/Si 100nF is among the quickest. These are starting directions, not genre restrictions.

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Nominal attack times

RECTIFIER	1	2	3	4	5	6
Ge 1mF	0.1	6	10	18	30	50
Ge 2mF	1	15	30	40	50	70
LED 3.3mF	3	35	70	100	150	220
Si 330nF	0.5	3	5	8	9	12
Ge 220nF	0.3	1.5	3	5	7	9
Ge/Si 100nF	0.2	0.7	1.5	2.5	4	6

Read the table correctly

All values below are milliseconds, ordered by the six Attack steps. They are algorithm time constants from this edition, not measured promises about every transient or a specification for the reference hardware. Detector filtering, signal level and the nonlinear compression law also affect the audible onset.

How to use it

Choose a family first, then a step. For example, LED Step 3 is 70 ms nominal, whereas Si Step 3 is 5 ms. If changing the rectifier makes the front of the sound disappear, return to the previous family or move to a slower step before changing several other controls.

Listening exercise

Use a drum bus with kick, snare and cymbals. Keep Bias Low, Tone Off and the detector EQ fixed. Compare Step 1 and Step 6 in one family, then compare the same numbered step across two families. Listen for the attack-to-body balance and the position of the cymbals.

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Nominal release times

RECTIFIER	1	2	3	4	5	6
Ge 1mF	100	150	180	200	220	250
Ge 2mF	300	450	500	600	700	900
LED 3.3mF	600	1000	1700	2500	3200	5000
Si 330nF	80	120	160	180	220	300
Ge 220nF	30	50	70	80	120	130
Ge/Si 100nF	20	40	60	80	100	170

Recovery after the hit

All values below are milliseconds for the six Release steps. The actual recovery can be longer because the release-memory mechanism responds to sustained reduction. These values should guide your listening; they are not tempo-sync settings.

Find the space between phrases

Start with a moderate release and listen through a pause after a loud phrase. If the next phrase arrives while the sound still feels held down, try a faster step or family. If the level audibly surges back between hits, try a slower step or reduce the amount of reduction.

Keep the comparison honest

Retain the same Input, detector EQ and Bias when assessing Release. If several settings change together, you cannot reliably assign the result to recovery time. Use A/B/C to hold nearby choices, then compare at a matched output level.

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Tube Bias and Tone

Tube Bias

Low, Mid and High increase three parts of the current algorithm: detector sensitivity, effective compression ratio and nonlinear drive. Higher Bias can therefore increase gain reduction as well as coloration. For a useful comparison, retune Threshold to a similar amount of reduction and compensate the output level.

Tone: Air / Off / Tape

Tone acts after compression and the mild nonlinear stage. Air adds a small low- and high-frequency lift; Off disables this extra voicing; Tape reduces the upper-frequency component. These are broad flavors, not a corrective EQ or a full tape-machine model. Off does not remove the compressor or its nonlinear stage.

The switch sequence

Bias clicks move Low > Mid > High > Mid > Low. Tone follows Air > Off > Tape > Off > Air. Clicking an end position always moves to the center. At the center, the next click continues in the last travel direction. Parameter recall still selects the stored position directly.

Try this: weight without losing definition

Start with Low Bias and Tone Off. Try Mid Bias, then reduce the added compression if it becomes too dense. Compare Air when the result needs a little openness, or Tape when the top feels overly insistent. Check cymbal decay and vocal consonants at a matched level.

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Sidechain EQ and SC Filter

The detector listens separately

Sidechain processing changes what drives reduction. It does not directly apply the same EQ curve to the output. The output can still sound different because the compressor now reacts differently. Internal detection follows Input gain and includes partial gain-reduction feedback.

Off, Bass 80 and Bass 180

Off removes the extra Sidechain EQ voicing; the global SC Filter still applies. Bass 80 and Bass 180 reduce low-frequency influence in the detector. They can help keep a kick or bass note from dominating bus compression. Excessive low-frequency de-emphasis may also let bass level swings pass with less control.

Presence and Dark

Presence increases emphasis above the detector voicing split; Dark reduces upper-frequency influence. Presence may make sharp attacks or upper content trigger more action. Dark can reduce sensitivity to brighter material. These labels describe broad detector weightings, not isolated bands of an audio EQ.

SC Filter: 20-666 Hz

SC Filter is a first-order detector high-pass, with a 20 Hz minimum. Raise it gradually when the low end pulls the entire mix down. It is separate from Mono Bass. Even at Sidechain EQ Off, this high-pass remains active. Use your DAW output meter to check that you have not traded pumping for uncontrolled peaks.

External sidechain and stereo linking

External detection

Choose External in Sidechain EQ and feed the plug-in sidechain from a DAW send. The host must expose and route the stereo sidechain bus. Start with audible main audio, a simple trigger source and modest Threshold. If there is no routed sidechain signal, the external detector receives no useful trigger.

What LINK actually links

LINK combines detector levels using the larger channel amplitude and applies the left Threshold, Attack, Release, Rectifier, Bias and Sidechain EQ to both channels. Engaging it copies left Input to right; subsequent adjustment of either Input changes both. Output trims and L/R enable buttons remain independent.

Unlinking

When LINK is off, the channels use their independent compression settings. The right settings stored before linking become active again; they may differ from what the linked display showed. Inputs keep their synchronized values until you adjust them separately. Check balance immediately after unlinking.

Routing check

In linked mode, choose External on the left and verify that the host sidechain is active. In M/S mode, external sidechain channels are not automatically converted into Mid and Side. Establish the routing deliberately instead of assuming an L/R send has become an M/S detector feed.

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Stereo, M/S and the width section

STEREO and M/S

STEREO processes the left/right paths. M/S encodes the main input before channel processing and decodes it afterward. In M/S, the left strip governs Mid and the right strip governs Side, although the faceplate retains its LEFT and RIGHT labels. Use LINK off when you want independent Mid and Side compression.

Mono Bass

At zero, Mono Bass is Off. Above zero, up to 400 Hz, it progressively removes low-frequency material from the Side signal after decoding. Its first-order transition is gradual: it does not create a brickwall mono boundary. Audition kick and bass weight as well as stereo ambience.

Width

Width ranges from 0% to 200% and scales the Side signal. At 0%, the processed path is mono; 100% is unity side gain at this stage. Values above 100% increase side energy. A mono source has no side content for this control to create. Always check the result in mono.

Mix changes the result

Mono Bass and Width affect the processed path before Mix. Blending dry signal back in can restore some original stereo information. Thus Width at 0% with Mix below 100% does not necessarily produce a fully mono final output. The global width section remains active even if both channel-enable buttons are off.

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Mix, Gain Match, Delta and Bypass

Mix

Mix blends the original input and the processed result from 0% to 100%. At 0%, the normal output is dry; at 100%, it is fully processed. For parallel compression, establish a useful fully wet sound, then reduce Mix. Match the final level after finding the blend.

Gain Match

Gain Match compares running dry and processed signal energy and can boost or attenuate by up to 12 dB. Its energy averaging and gain smoothing need time to settle. It is not a LUFS meter, a peak ceiling or a guaranteed perceptual match. Near silence the target compensation returns toward unity. Recheck after a large change in arrangement.

Delta

Delta auditions dry minus the compensated, mixed result. It can reveal changes in envelope, tone and stereo image, not only the gain-reduction envelope. With Mix at 0%, the difference approaches silence after settling. A large Delta signal does not, by itself, establish an improvement or a defect.

Bypass and channel enable

Global Bypass smoothly returns the dry input and takes precedence over Delta. Each L/R button bypasses its own channel input/compression/tone/output section, but the global stereo and audition controls remain active. The compressor meters can continue moving under global Bypass because the engine still processes internally.

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Read the meters, protect the output

Gain reduction, not output level

The two curved meters show positive gain reduction from 0 to 20 dB. They are not calibrated output VU meters, LUFS meters or true-peak meters. If internal reduction exceeds 20 dB, the needle reaches the display limit. Channel disable makes the associated reduction readout return to zero.

What the meters leave out

Input gain, Output trim, tone, Mix, stereo processing and Gain Match can all change the final level. The GR needles cannot tell you whether your next processor is being overloaded. Put a suitable output meter after Monarch and leave adequate headroom.

Use a limiter when needed

Monarch has no output ceiling or true-peak protection. For a final master, use a dedicated limiter later in the chain when you need peak control. Raising Threshold is not a limiter bypass switch, and adding Input is not a guaranteed loudness target.

A practical comparison loop

Choose a loud section, match levels, then check a quieter section. Note the largest reduction, listen to the transition into the next phrase, and inspect the downstream peak meter. Repeat after changing Bias, rectifier or stereo mode. Trust both the listening comparison and the independent meter.

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Presets and engineer collections

135 starting points

The bank contains the original 100 presets plus 35 Shark-created engineer-style recipes. Five fictional collections each contain four Mastering and three Mix Bus presets: Mark Davis, Sarah Collins, Daniel Brooks, Laura Bennett and James Wilson. These names identify collections, not real contributors or endorsements.

Gain staging is part of the preset

Mastering presets load +5 dB Input on both channels; Mix Bus presets load +2 dB. This includes the new engineer collections. A preset can therefore sound louder or more compressed immediately. Adjust for the level and crest factor of your source before judging the recipe.

Browse and audition

Click the preset field. Use the category sidebar, All, Favorites or User, and type into Search to narrow the list. The sidebar scrolls to reveal more collections. A single click auditions; double-click or Enter loads and closes. Escape, Close or a click outside dismisses the browser.

Protect your work

Loading a preset replaces the current parameter settings. Save a user preset first if you want to return to an edited sound. The displayed factory name is a label, not proof that the controls still match the original recipe. Some original bank categories are most easily found through All or Search.

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Save, compare and recall

User presets

In the browser, type a name and choose Save new. Choose a user preset before Rename or Delete; Delete requires Confirm delete. Load imports a valid Monarch preset XML from another folder into the user collection with a unique name when necessary. Factory presets cannot be overwritten through the user-save controls.

Favorites and hidden recipes

The star marks a favorite. The hamburger can hide the current factory preset or restore hidden presets. Hidden entries are skipped by the browser and preset arrows. Favorites, hidden entries and user XML files are separate from the host session; include them in your own backups.

A/B/C

Selecting another slot stores the outgoing parameter state and recalls the destination. All three parameter states are included in host session data. Match loudness when comparing slots. Theme and window size are session preferences, rather than different sonic settings for each slot.

Undo, automation and sessions

Undo/Redo covers parameter transactions. Changing A/B/C slots or loading user state clears the current undo history. Host session recall restores parameters, slots, theme and zoom. Knobs are exposed as host parameters; confirm your DAW automation workflow, especially when changing linked inputs. Save the DAW project after choosing the intended state.

Three practical sessions

Mastering: controlled movement

Choose a Mastering recipe and account for its +5 dB Input. Leave LINK on, Bias Low and Tone Off while establishing the amount of reduction. Begin around 1-3 dB on peaks, compare a few timing choices, then try the tonal voicing. Check the loudest chorus and the quietest exposed section before committing.

Mix bus: retain the groove

Choose a Mix Bus recipe, which starts at +2 dB Input. Set Threshold against the loud section. If the kick makes the mix collapse, raise SC Filter gradually or try Bass 80. If the snare loses its edge, slow Attack or reduce the amount of reduction. Check that bass de-emphasis has not left uncontrolled low-end swings.

Parallel drums: add body

Work at 100% Mix first. Try a quicker rectifier family, then use slower Attack within that family to keep the hit. Establish a stronger compressed body and turn Mix down until the blend supports the original. If cymbal tails surge, slow Release or reduce Bias. Recheck output level after blending.

Keep one variable stable

For each exercise, save a usable baseline to A before experimenting in B. Do not change Input, Bias, timing and Tone at once. An organized comparison makes the cause of the improvement easier to remember and reproduce.

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Troubleshooting and working limits

Too quiet, too loud or too compressed

Inspect Input, Output, Mix, channel enable and Gain Match. Confirm that Delta is off for normal listening. A low Threshold or higher Bias can hold down the signal; a Mastering preset also adds +5 dB Input. Use the DAW output meter instead of interpreting the GR needles as output level.

No reduction, imbalance or pumping

For no reduction, lower Threshold and check whether External was selected without a routed trigger. For imbalance, check independent Output trims, channel enable, M/S mode and previously stored right-channel settings after unlinking. For pumping, adjust Release and detector bass weighting before adding more processing.

Performance and sound limits

The current engine has no oversampling or lookahead and reports zero latency. Strong nonlinear drive can produce aliasing, particularly on bright material; reduce drive and compare if you hear unwanted edge. Switching routing or character modes uses an approximately 20 ms crossfade. This transition is not reported delay.

Compatibility and support

This guide covers the 0.2.6 source checkpoint. The signed customer installer and a published Mac/Windows compatibility matrix are still pending. Mac use has been reported during development; this guide does not certify every host, OS or processor. For support, use the Support section on sharkplugs.com and include version, DAW, OS, sample rate, buffer size and steps to reproduce.

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Technical reference and edition notes

Processing order

Main input > optional M/S encoding > channel Input > compression > mild nonlinear shaping > Tone > channel Output > optional M/S decoding > Mono Bass and Width > Gain Match > Mix > Delta > smoothed Bypass. Internal detection branches after Input with partial reduction feedback; external detection replaces that detector source.

Interface and storage

100% zoom is 1026 x 557 design pixels; menu options are 80%, 100%, 120% and 140%. Either logo cycles Amber, Red, Blue and Purple. On macOS, user data is under ~/Library/Application Support/Shark Plugs/Monarch/Presets. On Windows, JUCE resolves the user application-data directory. Back up the whole Monarch Presets folder.

Documentation basis

Control ranges, timing tables, processing order, preset counts and interaction descriptions were checked against Monarch 0.2.6 source and its included test records. The developer reported Linux JUCE 9.0.2 compilation and targeted checks; the standalone harness has documented message-queue assertions. This is not a substitute for final host validation or listening.

Edition

Documentation edition 1.0, 7 September 2026. Product behavior described: Monarch 0.2.6. The approved hero is a promotional rendering; the interface overview is an actual software capture. The AR-1 manual served as an editorial-depth reference only. All instructions here describe Monarch, and no AR-1 settings or specifications are transferred.

Editorial reference: Kush AR-1 User Manual (thedataofkush.com).