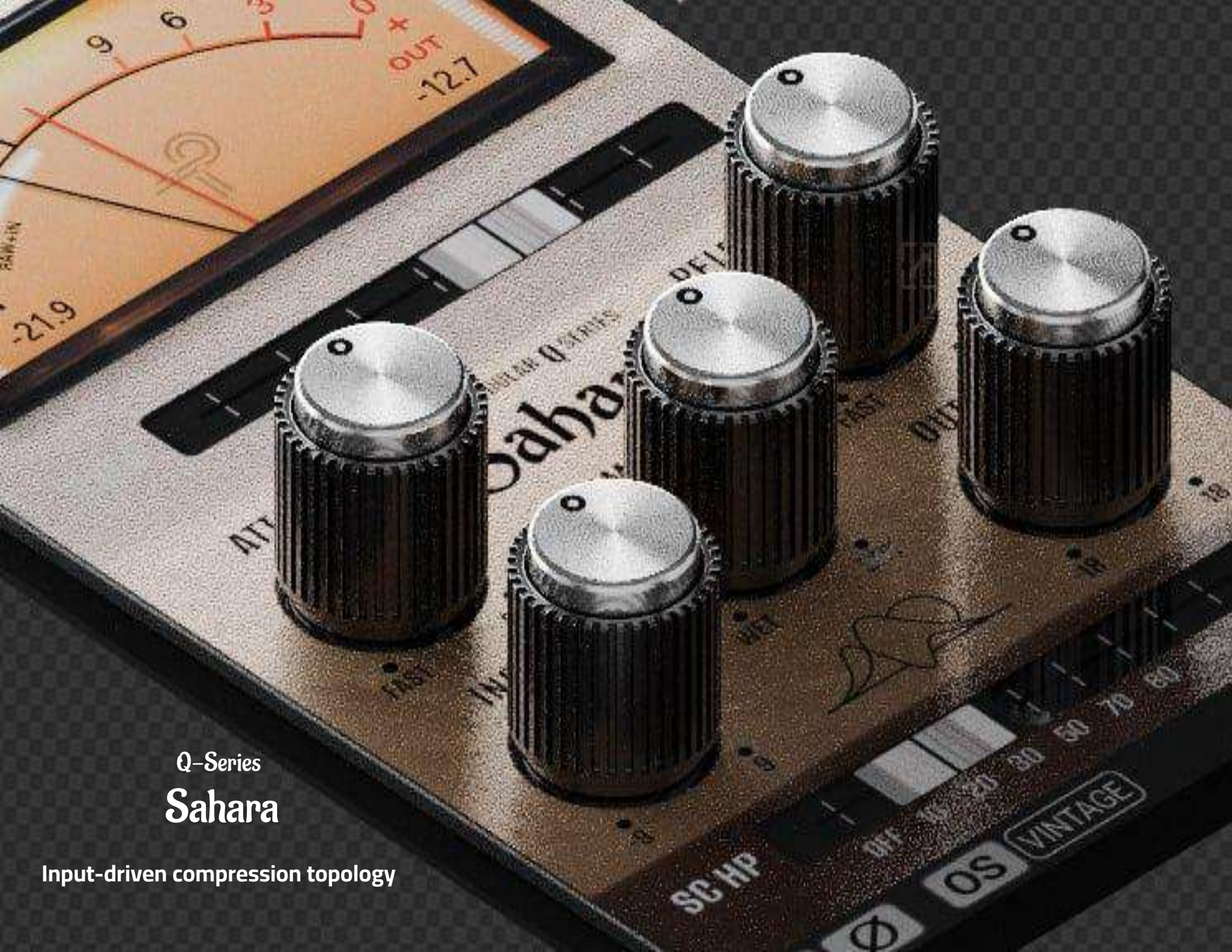


Q-Series

Sahara

Input-driven compression topology

PREFACE

Sahara is a streamlined, musically responsive compressor designed for speed, intuition, and decision-making by feel. It is the first release in the Q-Series, a line of focused, affordable tools built around a single idea: remove distractions, keep what matters, and let sound guide the process.

At its core, Sahara is built around the custom Recoil compression circuit originally developed for the P19 Igloo, re-voiced here for immediacy and simplicity. Rather than offering a traditional threshold-based workflow, Sahara uses an input-driven compression topology with a fixed internal threshold. Dynamics are shaped by how hard you drive the input, much like classic analog compressors, encouraging an instinctive, hands-on approach.

Attack and Release in Sahara are program-dependent, not fixed time values. There are no milliseconds to interpret and no threshold to chase. Instead, the controls bias the compressor toward faster or slower behavior, allowing the dynamics to breathe naturally with the material. This makes Sahara particularly well suited to musical sources where groove, phrasing, and articulation matter more than numerical precision.

Engineered with ultra-low CPU usage, Sahara is intended as a true channel compressor, capable of running across large sessions without compromise. It does not attempt to cover every possible use case. It focuses on compression, and only compression, delivering a fast, tactile, and musically grounded experience.

Like its namesake, Sahara shapes the landscape it touches, smoothing peaks, connecting phrases, and bringing flow and continuity to your sound.

Ziad Sidawi—Audio Equipment Designer & CEO
Pulsar Modular

PULSAR MODULAR

Peak input level in dBFS.

Real-time gain reduction LED display

Displays gain reduction in dB with short peak hold for precise readings

Black needle: raw input signal (RMS)

Red needle: output signal (RMS)

Peak output level in dBFS.

Curved White Meter: Displays RAW input + Input knob gain

Vertical meters: real-time peak level of in/out signal

RMS input and output level in dBFS

Controls compression amount and knee; gentle for smooth leveling, higher for punchier control

Controls how quickly peaks are compressed; faster = tighter, slower = punchier

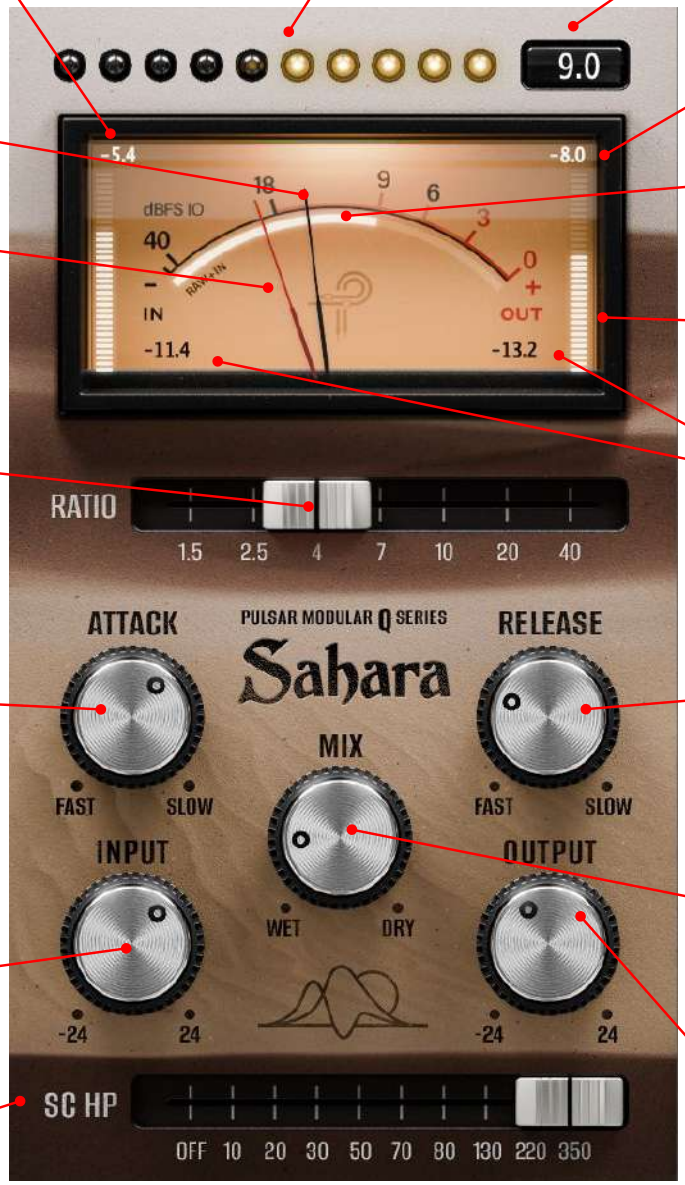
Controls how quickly compression eases off; Fast = more reactive; Slow = smoother

Drive the input level into the internal threshold. Press the SHIFT key to compensate with the output knob

Blends compressed & dry signals

Adjust post-compression level to compensate for gain reduction

HPF for the detection circuit; reduces LF triggering



PULSAR MODULAR

Core Design Philosophy

- Fixed internal threshold: –18 dBFS
- Input-driven compression: Amount of compression is determined by how hard you drive the Input control
- Program-dependent attack and release: Time behavior adapts to the material
- Feed-forward topology with musical workflow: Inspired by classic input-driven compressors
- Ratio controls knee hardness: Higher ratios progressively harden the knee; Sahara is not a limiter

Because of this design, Sahara may apply gain reduction immediately when inserted on modern, hot material. This is expected behavior.

Quick Start (Important)

1. Insert Sahara on your track or bus
2. Select a preset
3. Hold the Shift key and adjust the Input knob until the Output meter overlaps and moves in tandem with the Raw Input meter
4. Release Shift and listen

This calibration step lets you hear the preset as intended, without loudness bias. Sahara's meters are designed to make this process visual and intuitive.

Understanding the Meters

Sahara's metering system is designed to support its input-driven workflow and to make gain staging and compression behavior immediately visible.

The meter provides the following information:

- Raw Input: Signal level before the Input control
- Trim-In: Signal level after the Input control
- Output: Final output level
- Gain Reduction: Amount of compression applied

Holding Shift and adjusting Input until the Output needle overlaps and moves in tandem with the Raw Input needle ensures proper gain staging and lets you hear presets as intended, without loudness bias.

GR Meter (LEDs)

Sahara's gain reduction display combines real-time visual feedback with precise peak monitoring. A 10-segment LED bar shows instantaneous gain reduction, with the scale intentionally emphasizing the 0–6 dB range, where most musical compression occurs.

A dedicated numeric readout displays the current gain reduction in dB and briefly holds peak values before returning to real-time tracking. This dual-display approach allows you to judge compression by feel while still providing accurate readings for transient control and detailed monitoring.

Controls Explained

INPUT

Input controls how hard the signal hits Sahara's fixed internal threshold.

- Turning Input up increases compression
- Turning Input down reduces compression
- Holding Shift links Input and Output in opposite directions for level-matched gain staging

Think of INPUT as a drive control, not a trim.

OUTPUT

Output compensates for level changes caused by compression. When used with Shift, it automatically counterbalances Input so you can focus on feel instead of loudness.

RATIO

Available ratios: 1.5, 2.5, 4, 7, 10, 20, 40

Ratio sets both compression strength and knee hardness:

- Lower ratios are softer and more forgiving
- Higher ratios tighten control and harden the knee
- Even at high ratios, Sahara is not a true limiter

ATTACK

Attack biases how quickly compression engages in response to the signal.

- Negative values (fast): Sharper articulation, more transient detail
- Center (0): Neutral behavior
- Positive values (slow): Rounded transients, smoother entry into compression

On delicate material like brushed drums or vocals, Attack influences tone as much as dynamics.

RELEASE

Release biases how quickly compression lets go.

- **Negative values (fast):** Tighter tails, more control, less air
- **Center (0):** Balanced recovery
- **Positive values (slow):** Preserves air, space, and groove

Release strongly affects groove and phrasing. Large positive values are normal and often desirable, especially on acoustic and bus material.

MIX

Mix blends the compressed (wet) and uncompressed (dry) signals using a **Sin 6 dB constant-power rule** for smooth perceived loudness.

- Lower values retain more of the original signal
- Higher values emphasize compression
- For heavy parallel compression, increasing the dry contribution preserves punch and low end

Sidechain HPF

Applies a stepped HPF to the signal feeding the compressor's detection circuit. This prevents low-frequency content from triggering unnecessary gain reduction. Useful for preserving punch and preventing pumping.

The bypass button allows the unaffected audio signal to flow through without processing.

Dry polarity inverts the unaffected dry audio signal.

The external sidechain button enables the use of an external source as the signal feeding the compression detector circuit. Consult the documentation for your DAW for external routing options and instructions.

Q Sahara includes an internal **20 Hz high-pass filter with a gentle resonant bump** for musical low-end shaping.

- **SUB Off:** Engages the 20 Hz HPF, adds controlled weight above cutoff
- **SUB On:** Bypasses the HPF, preserving true sub-bass content

SUB is especially useful on modern kick-heavy material and parallel compression.

The Hammer circuit applies a frequency-dependent emphasis to the detector, optimized for vocal and natural instrument intelligibility. It is frequency dependent and is optimized for voice and natural instrument frequencies.

Oversampling applies to the whole signal.

- Improves low-end definition
- Reduces intermodulation artifacts under heavy compression
- Recommended for aggressive and parallel presets

Vintage operates at 2X the host sample rate and applies gentle high-frequency filtering for a smoother, rolled-off character. Aliasing components are intentionally left unfiltered, introducing subtle inharmonic content that contributes to a classic, vintage-inspired tone.

Intelligent operates at 2X the host sample rate and dynamically attenuates aliasing across the full frequency spectrum. The filtering adapts to both signal frequency and intensity, preserving clarity while minimizing artifacts.

HD does 8x for 44.1, 48; 4x for 88.2, 96; and 2x for 192 kHz.

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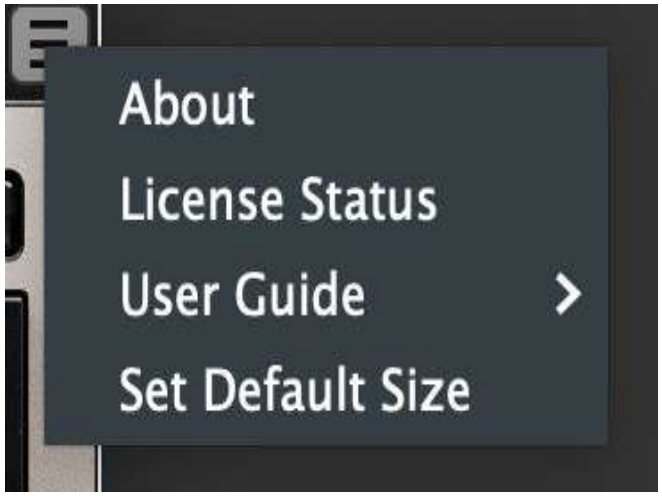
A/B enables temporary storage (not stored within the preset) to facilitate quick comparisons between A and B. Click on the A | B area to alternate between the two (no need to move the mouse). The arrow button allows for copying the active side to the inactive side. Presets can also be loaded into either of the A or B placeholders for comparison.



About: Displays the version number and the expiration date.
License Status: Authorize/deauthorize your plugin.
User Guide: Open the user guide.
Set Default Size: This global setting defines the current GUI window size as the default for all new instances.

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Advanced Workflows

The following techniques highlight deeper ways to use Sahara once you are familiar with its core workflow.

- **High Ratios:** Ratios above 20:1 do not act as limiters. Instead, they subtly harden the knee, increasing control and density without brickwall behavior. This can add firmness and focus without obvious limiting artifacts.
- **External Sidechain:** Using an external sidechain allows you to redefine what triggers compression. This can be used creatively for rhythmic interaction, ducking, or frequency-focused control, depending on your DAW's routing capabilities.
- **Automating Input:** Automating the Input control while using Shift-linked Output enables dynamic compression rides without changing Sahara's fixed internal threshold. This behaves like gain riding through an analog compressor, shaping dynamics over time while maintaining consistent loudness.
- **Parallel and Bus Use:** Sahara excels on buses and parallel paths, where its program-dependent timing helps glue sources together naturally. Subtle Mix settings can enhance density while preserving groove and punch.

Program-Dependent Behavior and Buffer Size

Sahara's dynamics respond to your DAW's buffer size:

- Smaller buffers feel tighter and more immediate
- Larger buffers feel smoother and more glue-like

This behavior is intentional and contributes to Sahara's musical responsiveness. Presets remain valid across buffer sizes, but feel may subtly adapt to the session context.

Using Presets Effectively

Sahara presets are designed as **starting points**, not static solutions.

After loading a preset:

1. Hold Shift
2. Adjust Input until Output matches Raw Input movement
3. Fine-tune Input, Attack, or Release by ear

Presets are grouped by musical intent, not by genre alone.

Preset Philosophy

- Presets are calibrated for modern material
- Gain staging is part of the workflow
- Extreme settings are intentional and musical
- Large Attack and Release values are normal

Trust your ears. Let groove and phrasing guide your decisions.

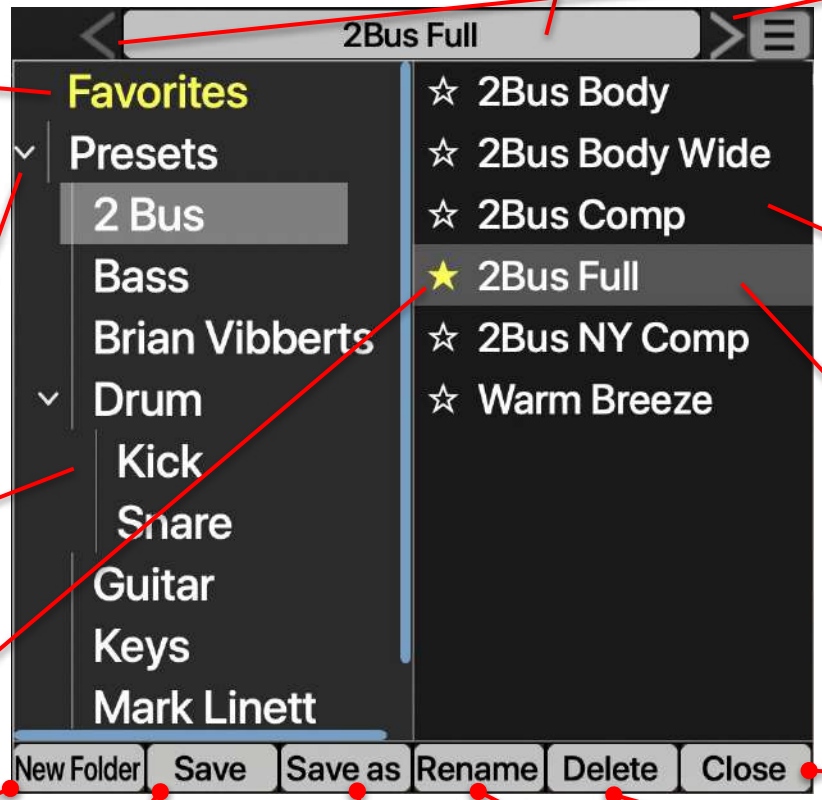
Final Notes

Sahara is not about chasing numbers. It is about interaction, feel, and musical timing. Use the meters as guides, but make decisions based on rhythm, articulation, and emotion.

If it grooves, it is correct.

The Preset Manager

You can drag and drop presents between the different folders/subfolders/root. Click to load a preset, and double-click to load and close the preset manager window.



Preset Name Field – Displays the currently loaded preset name and opens the Preset Manager when clicked.

Arrow Buttons – Navigate to the previous or next preset within the same folder.

Favorites Folder Automatically shows your favorite presets

Expand/Collapse Arrow – Opens or closes the folder/subfolder.

Left Panel (Tree View) – Displays folders and subfolders

★ **(Active Star):** The preset is also in your favorites.

Right Panel (List View) – Shows presets contained in the selected folder.

Selected Preset – Single-click loads it; double-click loads and closes the Preset Manager.

Close: Close the Preset Manager window.

New Folder: Create a new folder.

Save: Overwrite the selected preset.

Save As: Save current settings as a new preset.

Rename: Change the preset or folder name.

Delete: Remove the selected preset/folder.

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Modifier keys

Temporarily bypass a parameter
CTRL+ALT (Windows) or CMD+OPTION (macOS) + Mouseover:

- INPUT (defaults to 0).
- MIX (defaults to WET).
- S/C HPF (defaults to OFF).

Cycle between options
Left-Click for forward, Right-Click for backward.

- OS VINT, INTEL, HD

Gain compensate
SHIFT

- INPUT (countered by the OUTPUT knob)
- OUTPUT (countered by the INPUT knob)

Enable parameters for automation (Pro Tools only)
Control + command + option (⌃ + ⌘ + ⌥) on macOS or CTRL + ALT + START on Windows.

Fine adjustment of knobs, sliders and other controls
Hold control (⌃) on macOS or CTRL on Windows, then click and drag. Alternatively, right-click and drag without a key modifier

Return controls to their default state
Press option (⌥) on macOS or ALT on Windows and left-click. Alternatively, double-click without a key modifier.

Managing Presets

Basics

During installation or updates, factory presets may be overwritten if the **Install Presets** option is enabled. User-created presets are not affected.

If you have modified factory presets and wish to preserve them, deselect the **Install Presets** option when running the installer. It is also recommended to save modified presets under a new name using the **Save As** function in the preset browser.

Backing Up Presets

Presets can be backed up and restored manually using your operating system's file manager. You may copy individual preset files or the entire presets folder to a backup location of your choice.

Preset locations:

- **Windows:** C:\Users\Public\Documents\Pulsar Modular\Q Sahara\Presets
- **macOS:** /Users/Shared/Pulsar Modular/Q Sahara/Presets

Pro Tools Preset Management

When using Q Sahara in Avid Pro Tools, note that Pro Tools handles plugin preset management differently from most other DAWs. To ensure the Q Sahara's internal preset system works seamlessly with Pro Tools' own preset management, follow these steps:

1. Set Plugin Default Behavior
    - In the plugin's header bar (top of the plugin window), open the Preset drop-down menu in Pro Tools.
    - Navigate to Settings Preferences ➜ Set Plug-In Default to ➜ User Setting.
    - This ensures that the Q Sahara recalls your most recent or user-defined settings instead of reverting to the factory default every time the plugin is inserted.
2. Save Presets to the Session Folder
    - Again, open the Preset menu and go to Settings Preferences ➜ Save Plug-In Settings to ➜ Session Folder.
    - This ensures all custom Q Sahara settings are stored within the current Pro Tools session folder, rather than the global root settings directory.
    - This is especially useful when collaborating or moving sessions between systems, as your Q Sahara settings will automatically travel with the session.

> Tip: Enabling both options allows Pro Tools and Q Sahara's internal preset browser to work hand in hand, ensuring consistent recall and smooth preset workflow across sessions.

Uninstalling Q Sahara

For Windows

- VST3: 'C:\Program Files\Common Files\VST3\Pulsar Modular', locate the 'Q Sahara.vst3' folder and delete it.
- AAX: 'C:\Program Files\Common Files\Avid\Audio\Plug-Ins\Pulsar Modular', locate the 'Q Sahara.aaxplugin' folder and delete it.
- Shared: 'C:\Users\Public\Documents\Pulsar Modular', locate the 'Q Sahara' folder and delete it. This folder contains the user guide and presets. If no other folders exist under 'Pulsar Modular', this can be deleted as well.

For macOS

- AU: '/Library/Audio/Plug-Ins/Components', locate the 'Q Sahara.component' file and delete it.
- VST3: '/Library/Audio/Plug-Ins/VST3/Pulsar Modular', locate the 'Q Sahara.vst3' file and delete it.
- AAX: '/Library/Application Support/Avid/Audio/Plug-Ins/Pulsar Modular', locate the 'Q Sahara.aaxplugin' folder and delete it.
- Shared: '/Users/Shared/Pulsar Modular', locate the 'Q Sahara' folder and delete it. This folder contains the user guide and presets. If no other folders exist under 'Pulsar Modular', this can be deleted as well.

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Plugin Development:	Mesut Saygıoğlu
GUI Development:	Max Ponomaryov / azzimov GUI design – www.behance.net/azzimov
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Please kindly report any errors or omissions in this user guide to psupport@pulsarmodular.com

PULSAR MODULAR

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