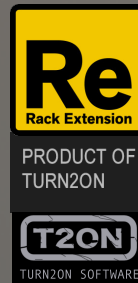




SVF107

STATE VARIABLE FILTER

[RACK EXTENSION]
MANUAL



FX device by Turn2on Software



The **SVF107** is a modern audio plugin inspired by the well-known Q107 State Variable Filter (Synthesizers.com), a modular filter revered for its versatility and impeccable sound quality. The Q107 was designed as a key component in modular synthesis systems, offering classic filter modes like low-pass, high-pass, and band-pass, with adjustable resonance and a smooth, musical response. Its ability to shape sounds with precision made it a staple for sound designers and musicians exploring modular synthesis.

Drawing from the rich history of the Q107, the **SVF107** filter takes the essence of this classic module and brings it into the digital domain, enhancing its functionality and flexibility for modern music production. By blending the timeless characteristics of the original hardware with advanced digital features, the SVF107 expands the possibilities of creative sound shaping.

New Possibilities with SVF107:

Enhanced Control: Take advantage of per-bus phase inversion and independent processing to craft perfectly balanced or wildly unpredictable filter combinations.

Phaser-Like Effects: Use modulated cutoff frequencies and phase inversion to create dynamic, moving notches and peaks across the spectrum.

Sonic Depth and Stereo Imaging: Route filter outputs across the stereo field and apply independent modulation for rich, immersive sound design.

Experimental Sound Design: Push the boundaries of traditional filtering by exploiting phase interactions and parallel processing to discover entirely new textures.

Users can explore pseudo-phaser effects, spectral shaping, or completely unconventional sounds by leveraging the phase and frequency interactions.

The **SVF107** pays homage to the iconic Q107 while reimagining its capabilities for today's producers and sound designers. With its advanced features like phase inversion, parallel filter processing, and modulation options, the SVF107 is more than just a state variable filter – it's a gateway to limitless sonic exploration.

PHASE INVERSION

Why Use Phase Inversion After Filtering?

Phase Alignment:

Filters naturally introduce phase shifts based on their type and cutoff/resonance settings.

When mixing the outputs of multiple filters (e.g., HP, BP, LP), overlapping frequency ranges can lead to phase cancellations (signal dips) or reinforcements (boosts).

Adding phase inversion after filtering ensures users can align signals correctly for a balanced, coherent mix.

Prevent Signal Loss:

Without proper phase alignment, parts of the frequency spectrum may cancel out, resulting in a weaker or uneven output signal.

Enhanced Control:

Phase inversion provides users with a way to address these issues without modifying the filter settings, offering flexibility and precision in the mix.

How to Use Phase Inversion

Phase Alignment: Apply phase inversion selectively to buses (e.g., invert the HP or BP Peak output) to minimize cancellations in overlapping frequency regions.

Precision Mixing: Test the summed signal with and without inversion on each bus. Focus on achieving a flat, balanced output free of cancellations or unwanted peaks.

Creative Use:

Enhance or Reduce Specific Frequencies: Deliberately invert the phase of one bus (e.g., BP Notch) to create creative cancellations or emphasize resonances in the mixed output.

Dynamic Tonal Shaping: Experiment with inverting combinations of buses (e.g., HP and LP) to add unique tonal variations, creating motion or depth in the sound.

Pseudo-Stereo Effects: Route inverted signals to opposite stereo channels to create spatial effects and a wider stereo image.

Comparison to Traditional Phaser

A traditional phaser typically uses all-pass filters to introduce phase shifts and create moving notches. In your setup, HP, BP, and LP filters perform a similar role, though they may also add amplitude shaping (boosts/cuts) in addition to phase shifts. This creates a phaser effect with a unique tonal character.

In traditional phasers, notches are created by mixing phase-shifted and dry signals.

Here, the interaction between your 4 filtered outputs creates similar phase cancellations and notches, especially with overlapping cutoff frequencies and dynamic modulation.

This approach offers a unique flavor of phaser, focusing on filter interactions instead of relying on a dry signal, providing an opportunity for both standard and experimental effects.

MIXED FILTERS OUT

Mixed Filters Output:

The SVF107 includes a Mixed Output that sums the signals from all active filter modes (LP, HP, BP Peak, BP Notch).

This mixed signal can be processed in two modes:

Normal Mixed Output Level: Provides a straightforward summation of the filter outputs.

Auto-Level Mode: Automatically adjusts the output level to prevent volume increases or decreases due to summing, ensuring a consistent output regardless of filter combinations or levels.

Inspired by legendary Q107™ state variable filter, improved in modern way

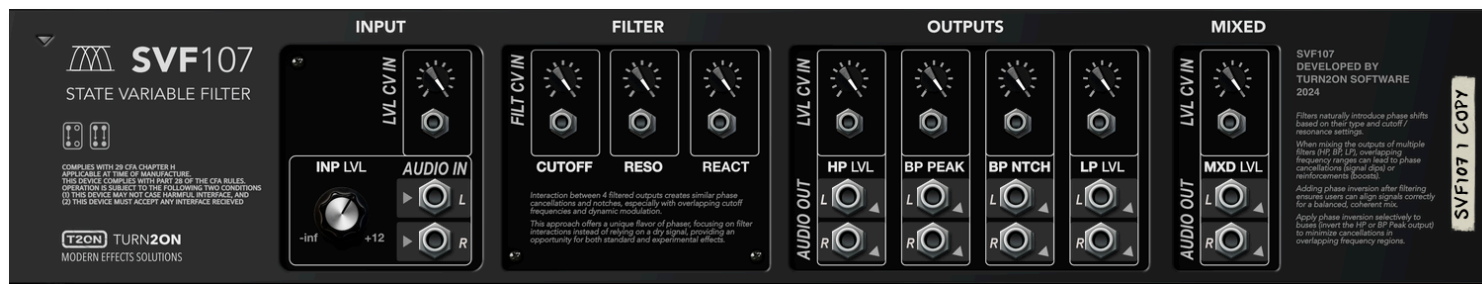
SVF107



MAIN CONTROLS

CUTOFF FREQUENCY (20 Hz - 25 kHz):	Adjusts the central frequency point of all filter modes. This control determines which part of the audio spectrum is affected by the filters. Whether creating deep bass cuts, sharp treble accents, or nuanced mid-range tweaks, the Cutoff control is your primary tonal sculpting tool.
RESONANCE (0-100%)	Boosts the frequencies around the cutoff point, adding a distinct peak. Low settings provide smooth transitions, while higher values create pronounced, resonant effects, ideal for sweeps, growls, and other dynamic sound manipulations with filter self-oscillation.
REACTION (Filter Smooth Time)	Controls the filter’s response speed to changes in Cutoff and Resonance. Short times yield fast, precise reactions suitable for rhythmic modulation, while longer times create smooth, flowing adjustments for pads and ambient textures.
FILTERS LEVEL	Adjust the output level for each filter mode, balancing the contributions of each to the overall sound (-inf to +12 dB).
PHASE INVERT (Off, On, Left Only, Right Only)	Manage the phase alignment for each filter output. Use this to fine-tune the phase relationships between filters for creative cancellations, reinforcements, or spatial effects. Options allow full phase inversion, or targeted inversion for left or right channels only.
LED Level Meters	Visual feedback for each filter’s output level, ensuring precise adjustments and preventing unwanted distortion or imbalance
MIXED OUT LEVEL	Adjusts the overall level of the combined signal from all active filter modes. This control ensures the final output blends seamlessly into your mix or processing chain.
Auto-Level Mode	Activate this mode to automatically manage the Mixed Output level. The auto-leveler compensates for variations in summed levels from the filters, maintaining consistent output volume regardless of individual filter adjustments.
INPUT LEVEL	Set level of the incoming signal to the effect

REAR PANEL



CONNECTORS

AUDIO I/O

Mono or Stereo connections for audio signals.



CV INPUTS

Use these CV inputs to control the main parameters by external CV source curves



SIGNAL ROUTING

True stereo fx



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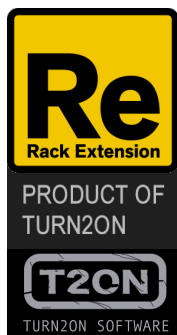
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Reason Studios Add-on Shop



Turn2on

Rack Extension Developer

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Thanks to all beta-testers



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