SuperFreq Manual

Synthetic FX

November, 2026

SuperFreq Users Manual

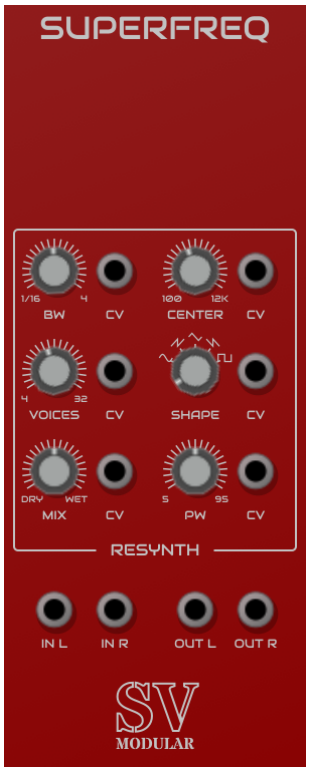


Figure 1: SuperFreq

SuperFreq listens to a narrow band of its input, finds the strongest spectral peaks inside that band, and re-plays them with a bank of oscillators in the waveform of your choice. Drums become pitched, bass gains overtones, vocals get a tonal companion. Few voices give a stark synthetic shadow; many voices give a thick, chorused copy.

Inputs and Outputs

- `IN L` and `IN R`: audio in. If only `IN L` is patched, it feeds both sides.
- `OUT L` and `OUT R`: stereo audio out (dry/wet mix).

Each side is analysed and re-oscillated separately, with shared settings. Polyphonic cables are summed to one signal per input. The display shows the sum of both outputs.

The wet signal lags the dry signal by about one analysis frame (2048 samples), and a single sine comes back at half its input level.

The Display

The LCD shows the spectrum of the output on a logarithmic axis (20 Hz – 20 kHz), with a slow peak-hold line. The shaded region is the band being analysed. The top line reads out the centre frequency, bandwidth, voice count and waveform, including any CV that is patched.

Parameters

Every parameter has a CV input to the right of its knob. The CV is additive, and `10 volts` sweeps the full range of the parameter from the knob position. Stepped parameters (VOICES, SHAPE) round after the CV is added, so SHAPE moves one step per 2.5 volts. PW only has an effect while SHAPE is Square.

Parameter	Range	Default	Notes
BW	1/16 – 4 octaves	1	Width of the analysed band around CENTER. Squared knob curve.
CENTER	100 – 12000 Hz	1000	Centre of the analysed band. Cubed knob curve.
VOICES	4 – 32	16	Number of peaks re-oscillated.
SHAPE	Sine, Saw, Triangle, Reverse saw, Square	Sine	Oscillator waveform.
MIX	0 – 100%	50%	Dry/wet balance.

Parameter	Range	Default	Notes
PW	5 – 95%	50%	Pulse width of the Square shape: the part of each cycle spent high. 50% is a plain square (odd harmonics only); narrower or wider pulses add even harmonics and a thinner, nasal tone. The other shapes ignore it. The waveform icon on the display shows the current width.

Context Menu

The panel colour and the output limiter can be chosen from the module's context menu, as with the other Synthetic FX modules.