

1.0.0

USER MANUAL

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## 1.1 INTRODUCTION

Welcome to **Sonic Surge**, a sophisticated audio processing plugin developed for modern music producers and sound engineers. This plugin employs advanced dynamic saturation techniques and precise filtering controls to offer versatile sound shaping capabilities.

**Sonic Surge** features tape-like saturation, tone curve shaping for dynamic control, enhanced saturation options, and smart adaptive limiting for precise audio processing. Whether your goal is subtle enhancement or significant transformation of your tracks, **Sonic Surge** provides the necessary flexibility and sound quality to become a valuable asset in any audio production setup.

## 1.2 KEY FEATURES

### ADVANCED DYNAMIC PROCESSING

Sonic Surge incorporates sophisticated algorithms to modify audio dynamics subtly or aggressively, depending on user settings. This feature allows for significant enhancements in perceived loudness and impact without compromising the natural dynamics of the source material.

### DUAL BAND DRIVE CONTROL

With separate drive controls for low and high frequency bands, users can finely tune the harmonic content and texture of their audio. This dual-band approach ensures that both warmth and clarity are within easy reach.

### FLEXIBLE CROSSOVER ADJUSTMENT

The adjustable crossover control allows users to precisely set the frequency at which the signal splits into low and high bands, ranging from 60 Hz to 8000 Hz. This flexibility is critical for tailoring the processing to different types of audio content.

### RICH HARMONIC SATURATION

The Harmonic Drive feature simulates the characteristics of analog Tape Saturation, adding harmonic complexity and richness to the audio signal. This can be adjusted to enhance everything from subtle nuances to bold, vintage textures.

### COMPREHENSIVE TONE SHAPING

The Tone Curve parameter adjusts the dynamic impact across the frequency spectrum, enabling users to boost either the louder or quieter parts of a track, thereby enhancing overall presence or revealing hidden details.

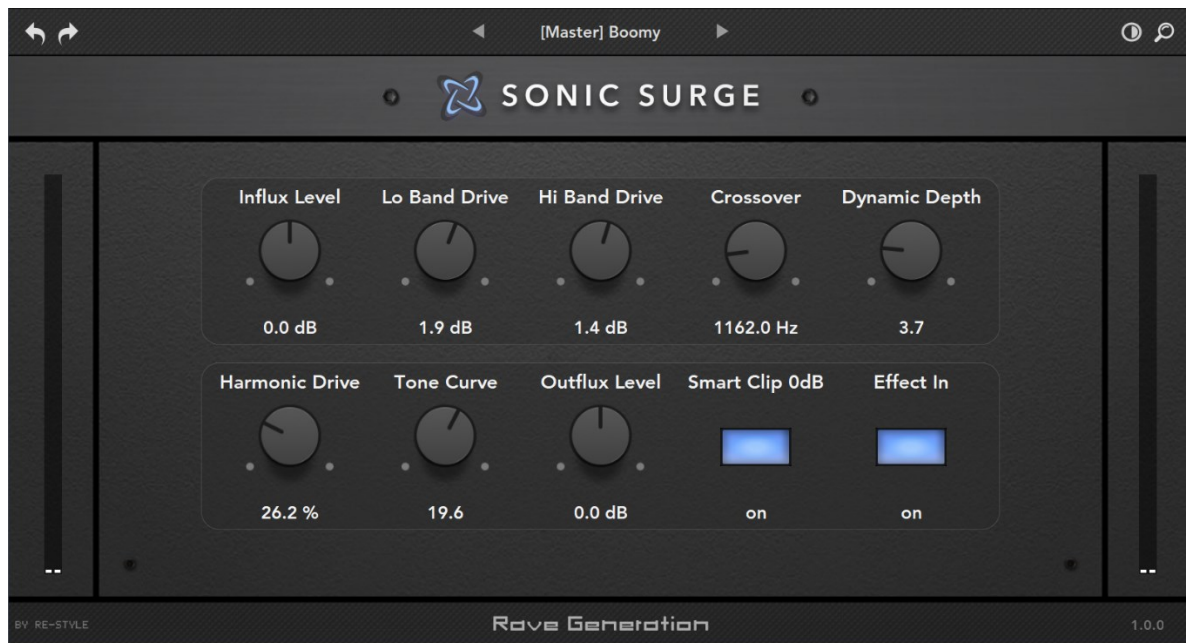
### INTEGRATED CLIPPING CONTROL

Smart Clip 0dB functionality provides both soft and hard clipping options to prevent digital clipping and maintain pristine audio quality at high output levels.

### VERSATILE APPLICATION

Sonic Surge is suited for a broad range of audio processing tasks, from mixing and mastering in studio settings to live sound reinforcement and creative sound design.

## 2.1 USER INTERFACE - MAIN CONTROLS



**Influx Level (dB):** Adjusts the initial input gain level before any processing is applied, setting the stage for how subsequent effects like dynamic saturation and filtering interact with the signal.

**Lo Band Drive (dB), Hi Band Drive (dB):** Controls the amount of drive applied to low and high frequency bands, respectively. Increasing these settings enhances the harmonic content and perceived warmth or brightness, tailored by the adjustable crossover frequency.

**Crossover (Hz):** This control sets the frequency at which the signal is divided between low and high bands. It is adjustable from 60 Hz to 8000 Hz, allowing users to fine-tune the division point based on the material being processed.

**Dynamic Depth (%):** Modulates the depth of dynamic processing applied, influencing how pronounced the dynamic changes are. This control can affect both the subtlety and aggressiveness of the dynamic enhancement.

**Harmonic Drive (%):** Determines the level of harmonic saturation applied to the signal. As this control is increased, it adds richness and texture, simulating the effect of tape-like saturation.

**Tone Curve:** Dynamically shapes the audio by influencing the amplitude distribution across the frequency spectrum. Positive settings emphasize louder parts, enhancing presence and punch, while negative settings bring out quieter details, useful in mastering contexts.

**Outflux Level (dB):** Sets the final output gain level after all processing has been applied, essential for maintaining consistent output levels regardless of the processing intensity.

**Smart Clip 0dB (on/off):** Engages a dual-stage clipping mechanism that combines soft and hard clipping to ensure the output does not exceed digital zero, preventing unwanted distortion and maintaining clarity.

## 2.2 USER INTERFACE - ADDITIONAL CONTROLS

### PRECISE MOVEMENTS

Holding down the 'Shift' key while adjusting a knob will enable you to make precise movements. Allowing for finer control over the audio processing parameters.

### RESET KNOB

Right clicking a knob will reset its value. This action will restore the knob or fader to its default or initial position. Alt + click also works (MacOS: 'option' + click).

### ADJUST VALUE

Double-clicking a knob allows you to adjust its value directly. This action provides a quick and intuitive way to fine-tune parameters with precision.

### UNDO/REDO

Access Undo and Redo from the menu bar to easily correct or reapply changes. Undo reverses the last adjustment, preventing errors, while Redo restores it, essential for efficient workflow and precise edits.

### GUI OPACITY

From the menu bar, users can adjust the GUI Opacity from 0% to 100%. This control allows for varying the transparency of the plugin interface, offering better visibility of underlying work areas or personal preference adjustments.

### RESIZE

The interface can be resized from 70% to 200% of its original size via the menu bar. This feature accommodates different screen sizes and resolutions, ensuring Sonic Surge is accessible and comfortably usable on a wide range of devices and display settings.

### PRESET MENU

Accessible from the menu bar, the Preset Menu provides a comprehensive interface for browsing, loading, and selecting factory presets, enhancing the ease of finding the right settings for any session. Additionally, users can Load/Save, and Copy/Paste presets.

Presets can be downloaded from [ravegeneration.io](https://ravegeneration.io) and are regularly updated.

The 'Presets' folder will be auto-generated after launching the plugin for the first time, the folder is stored at:

**Windows:** C:\Users\[username]\Documents\Rave Generation\Sonic Surge\Presets

**MacOS:** /Users/[username]/Documents/Rave Generation/Sonic Surge/Presets

### DYNAMIC PROCESSING TECHNIQUES

The plugin utilizes advanced dynamic processing algorithms to enhance perceived loudness without compromising dynamic integrity. This is achieved through careful application of dynamic saturation and adaptive limiting.

### DYNAMIC RANGE CONTROL

Experiment with "Tone Curve" to manage the dynamic range effectively without traditional compression.

### MASTERING

Use subtle settings to enhance clarity and warmth without altering dynamics significantly.

## **MIXING**

Apply more aggressive settings to individual tracks or buses to shape and define the sound.

### **Important Note on CPU Usage**

Sonic Surge features zero latency and advanced real-time audio processing, leading to high CPU usage. This is due to its advanced filter stages with multiple filters to ensure smooth crossover transitions and prevent phase issues, maintaining minimal phase distortion and precise frequency separation. The plugin also incorporates dynamic saturation, dynamic curve adjustments, and a combination of adaptive soft limiting, hard clipping, and soft clipping. Additionally, it performs rapid updates of filter parameters, drive gains, and output levels, delivering exceptional sound quality.