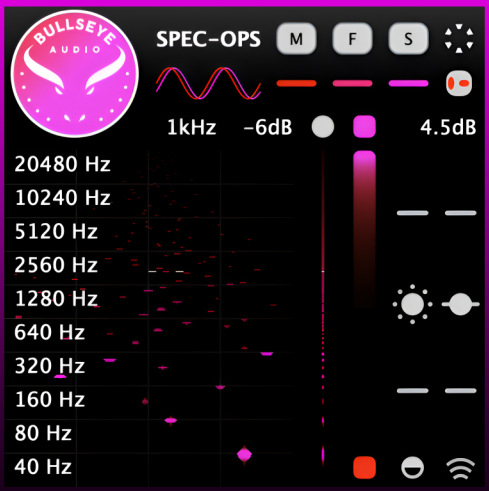
SPEC-OPS
v1.01

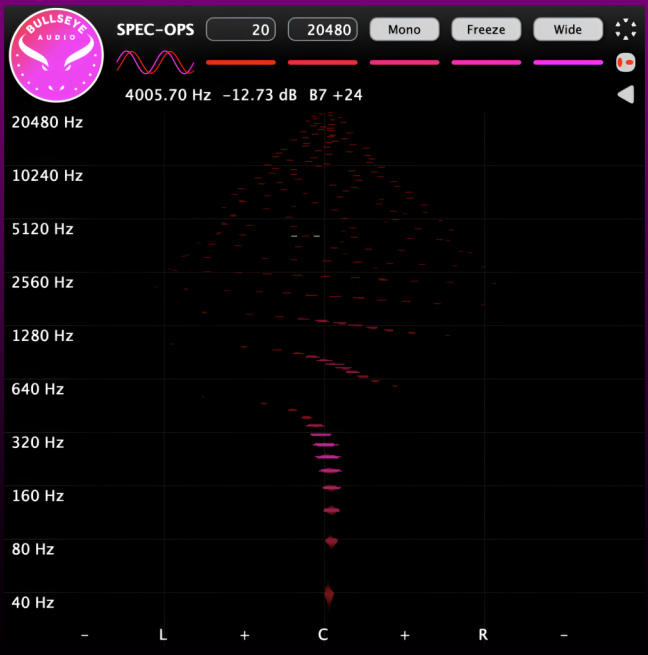


User Manual

SPEC-OPS v1.01

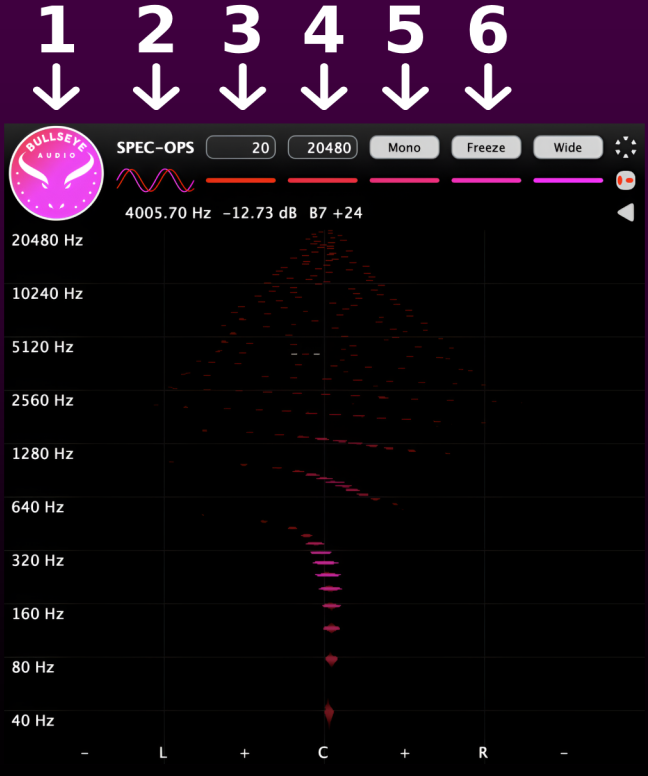
Overview

SPEC-OPS is an audio analyzer that displays sound visually as you percieve it sonically. Every frequency that is audible to you will appear within the spectrogram window with its coordinates corresponding to the frequency's pitch on the y-axis and the stereo field location on the x-axis. The colors and width of each frequency represent its overall loudness.



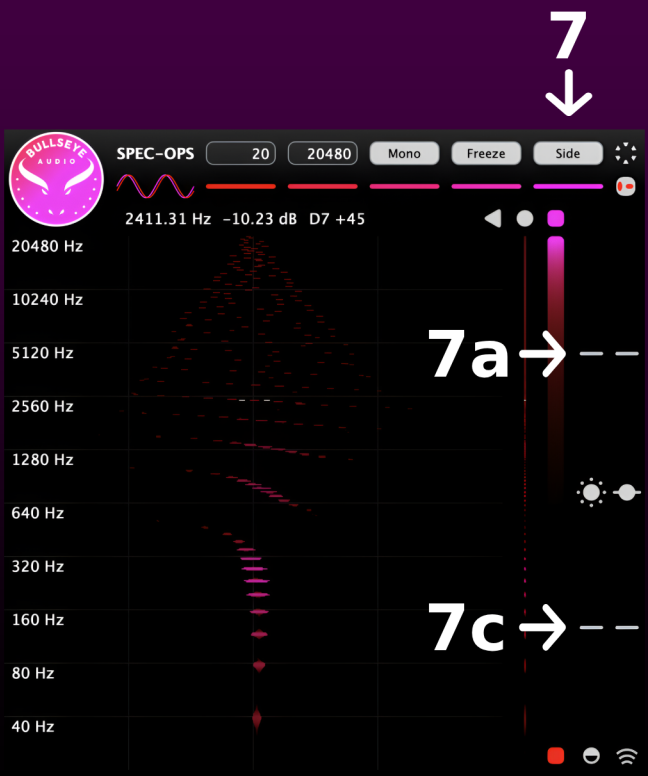
INTERFACE - Part 1 of 6

1 - Bullseye Audio Logo: Clicking this minimizes the top bar for a full screen display
2 - SPEC-OPS Logo: Clicking this will open the registration or account window
3 & 4 - Minimum and Maximum Frequency Textboxes: Changing these will change the range of frequencies displayed (note: the smallest interval is 30Hz)
5 - Mono Button: Clicking this will display your audio as if the audio input was mono (note: does not alter the audio output)
6 - Freeze Button: Clicking this will pause the spectrogram from updating until further user action



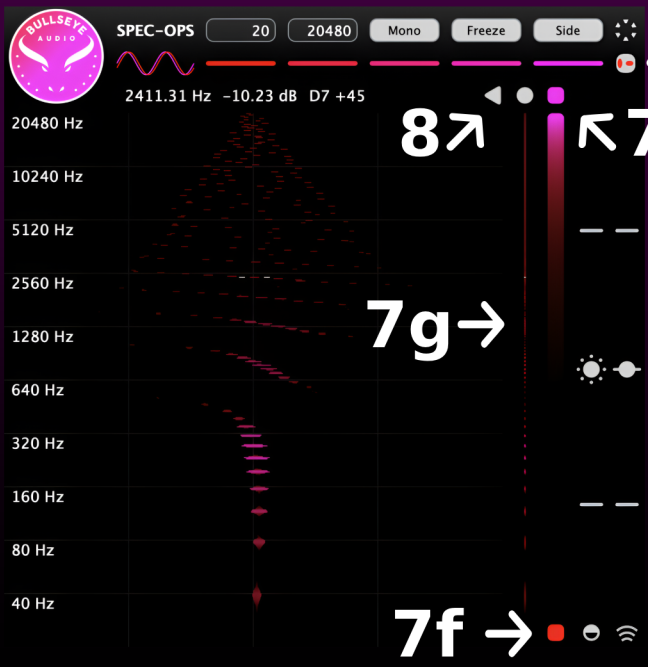
INTERFACE - Part 2 of 6

7 - Sidebar/Widescreen Button: Clicking this opens and closes the sidebar
7a - Brightness Slider: Controls the brightness of frequencies louder than the dynamic range floor
7b - Slope Weight Slider: Controls the amplitude weighting from low to high frequencies (note: the default 4.5dB is recommended
7c - Dynamic Range Slider: Controls the lowest amplitude to be displayed on the spectrogram
7d - Volume Slider: Controls the volume of the audio input (note: this does not effect the audio output volume)



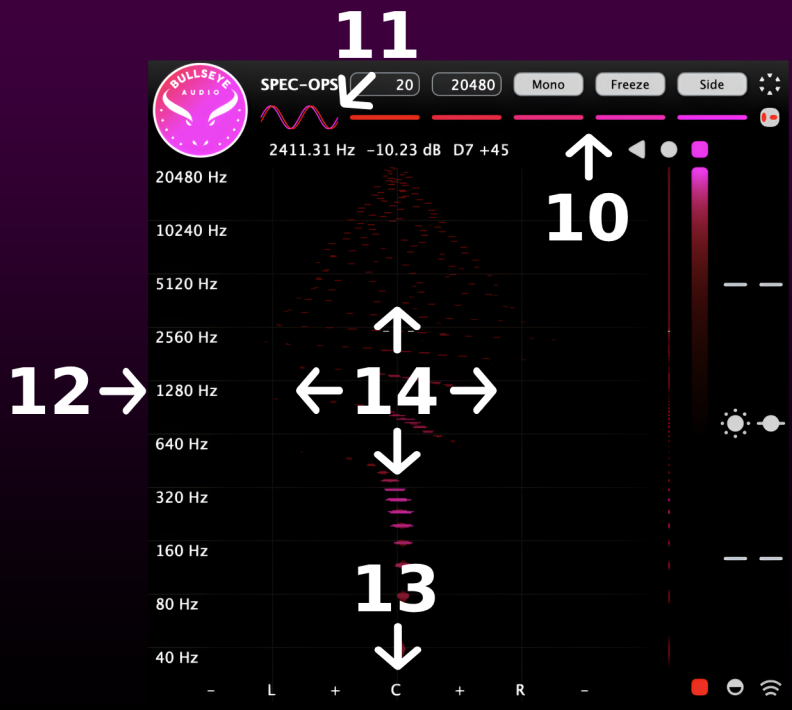
INTERFACE - Part 3 of 6

7e - Primary Color Button: Clicking this opens the color slider for the primary color
7f - Secondary Color Button: Clicking this opens the color slider for the secondary color
7g - Sidebar Mono Reference: A fixed width mono display bar
8 - Frequency Statistics Pointer: Clicking this toggles where the frequency, amplitude and note value of the selected frequency will appear
9 - Headphone/Speaker Button: Clicking this will determine how the stereo imaging will be calculated (note: speaker mode applies the same crossfeed from Crossfire and Neptune to the audio input to emulate stereo positioning)



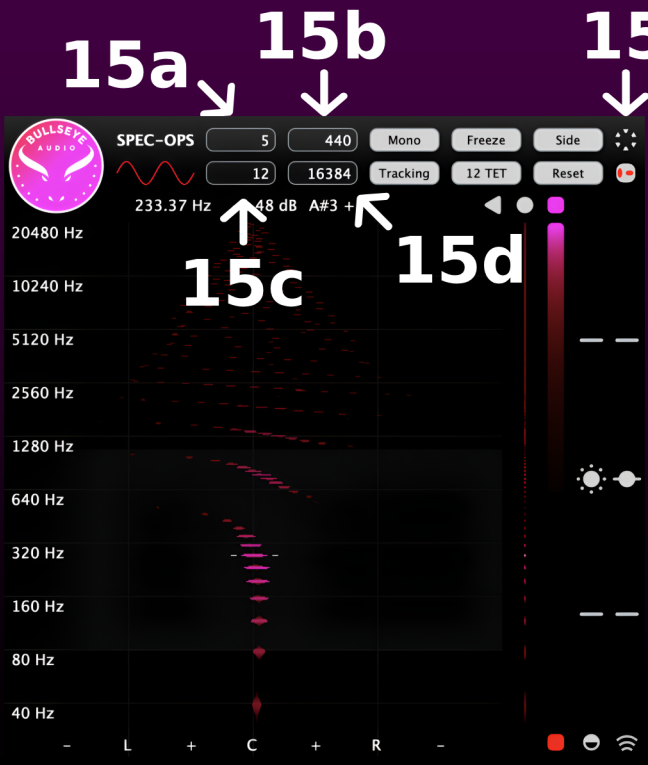
INTERFACE - Part 4 of 6

10 - Amplitude Bars: Displays the audio input volume with each bar representing 6dB increments from -30dB on the left to 0dB on the right (note: the headphone/speaker button will light up with the secondary color when the audio input is clipping)
11 - Stereo Waveform: Displays the amplitude and phase differences of the selected frequency's left and right channel
12 - Frequency Labels: Show the upper frequency bound of the grid they exist within (note: toggle the labels by clicking them)
13 - LCR Labels: Show the stereo positioning of the grid (note: toggle the labels by clicking them)
14 - Grid Lines: Toggle the grid lines by double clicking within the spectrogram



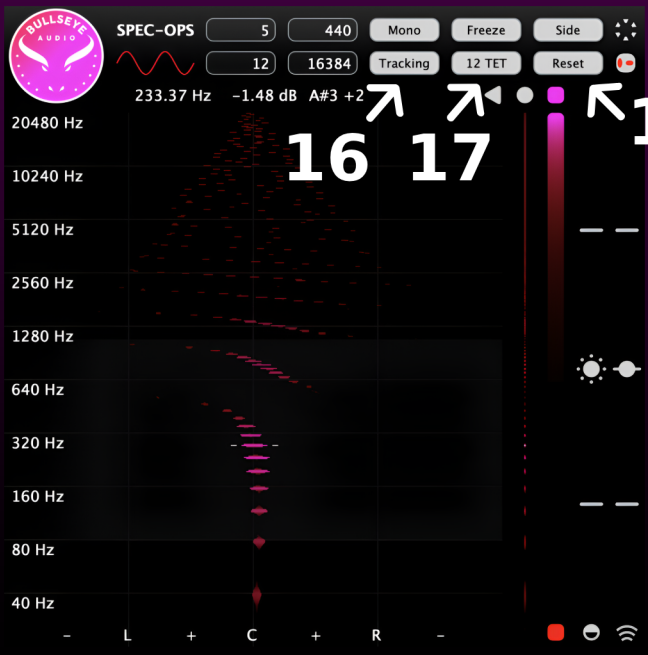
INTERFACE - Part 5 of 6

15 - Settings Gear Button: Clicking this reveals additional settings
15a - Buffer Speed Textbox: Changing this will determine how many samples are used for averaging of frequency statistics
15b - A4 Tuning Textbox: Changing this will alter how the frequency note values are calculated (note: 440Hz is standard)
15c - Pixel Width Textbox: Changing this will determine the width of a given frequency at 0dB
15d - Latency Alignment: Changing this will set the latency of the plugin in samples (note: some DAWs require additional user action)



INTERFACE - Part 6 of 6

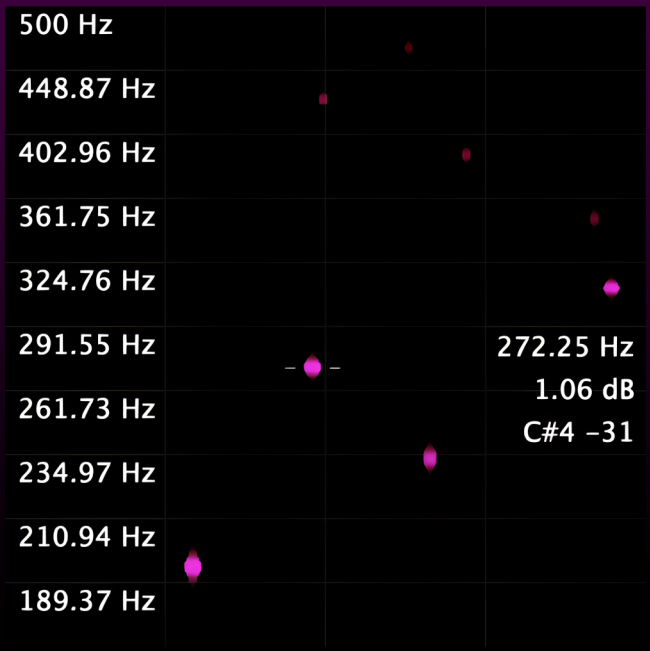
16 - Frequency Tracking Button: Clicking this toggles frequency tracking (note: frequency tracking is on by default)
17 - Tuning System Button: Clicking this toggles from 12 Tone Equal Temperment to a 16 Tone Fractional System
18 - Reset Button: Clicking this restores the default values and resets the size of the plugin



Mouse Events

SPEC-OPS is designed to update seamlessly as you make changes. Below is a list of things SPEC-OPS will respond to.

~ Clicking inside the spectrogram locks/unlocks the frequency tracker within its defined range
~ Clicking and dragging or scrolling inside the spectrogram will dynamically modify the frequency bounds
~ Double clicking inside of the spectrogram toggles grid lines
~ Clicking towards the left of the spectrogram toggles frequency labels
~ Clicking towards the bottom of the spectrogram toggles LCR labels
~ Hovering over the current color bar will reveal the amplitude associated with the color you are hovering over



Frequency Tracking

With frequency tracking enabled, SPEC-OPS will scan within a frequency range and identify the frequency with the highest relative amplitude. The exact frequency, dB and note value associated with that peak are then displayed in realtime.

~ Frequency tracking is turned on by default with a range of approximately +/-1 octave from your mouse's y-position
~ To enable/disable frequency tracking, click the settings gear and click the tracking button
~ While the tracking button is visible, scrolling inside of the spectrogram window will adjust the tracking range (note: to adjust the minimum and maximum frequency bounds while the tracking range is visible, either click and drag inside of the spectrogram or scroll while hovering over the frequency labels)
~ Clicking inside of the spectrogram will lock in the tracking range