



SurferEQ v1.2



User Manual

Overview

SurferEQ is an innovative pitch-tracking equalizer plug-in, with built-in monophonic pitch-detection engine, enabling pitch relevant equalization and harmonic balancing in real-time.

Up until now, EQ's were set to a fixed frequency range. In reality, the fundamental and harmonic series frequencies of an instrument change with it's pitch. This characteristic makes the standard, fixed-frequency EQ ineffective tool to manipulate instruments or vocals harmonics.

Enter SurferEQ.

SurferEQ tracks the pitch of the instrument or a vocal track and can ride the EQ frequency accordingly, making it possible for the first time to naturally control the harmonic balance of a recorded instrument in real-time. Just set any of the EQ bands to a desired harmonic and watch SurferEQ move with the track, staying always relevant to the music.

For over a year, we've meticulously developed an accurate, real-time pitch detection engine with virtually no octave errors. There's no need for endless parameters tweaking. It just works.

When developing our original analog-behaving asymmetric EQ algorithms (No cookbook EQ here!), we've made every effort to preserve the size and energy of the original recording. SurferEQ sounds natural even when it is pushed to its extremes. In addition to the HP, LP, shelf and bell shaped filters, we've developed a unique four mode harmonic filter. It takes on a whole new life when it moves with the pitch and makes it possible to achieve new sounds as never heard before.

Version 1.2 brings MIDI capabilities to SurferEQ. It's now possible to control SurferEQ's frequencies via MIDI notes for easy detection manipulation, frequency ducking and even use is as a whole new class of a creative EQ instrument.

We are excited and proud to put our creation in your hands. We hope you'll find it inspiring and creative as we have. Surf on!

Features

- Groundbreaking Pitch-Tracking Equalizer
- Original Asymmetric EQ Algorithms
- Innovative Harmonic Filter
- 3 Mode MIDI Control, Including a new class EQ Instrument Mode
- 64 Bit Double Precision Internal Processing

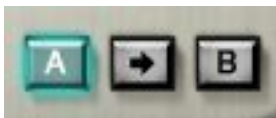
SurferEQ is Compatible with Mac & PC and available in 32 and 64 bit AAX, RTAS, VST and Audio Units formats.

Minimum Requirements:

Mac Intel, OS X 10.6 or higher, 2GB RAM, AAX, RTAS, VST or AU compatible DAW

PC Windows 7 or higher, 2GB RAM, Graphics Card supporting OpenGL 2.1 and above, AAX, RTAS or VST compatible DAW.

A/B



Comparing settings made easy. Use the arrow button to copy the current selected setting to another.

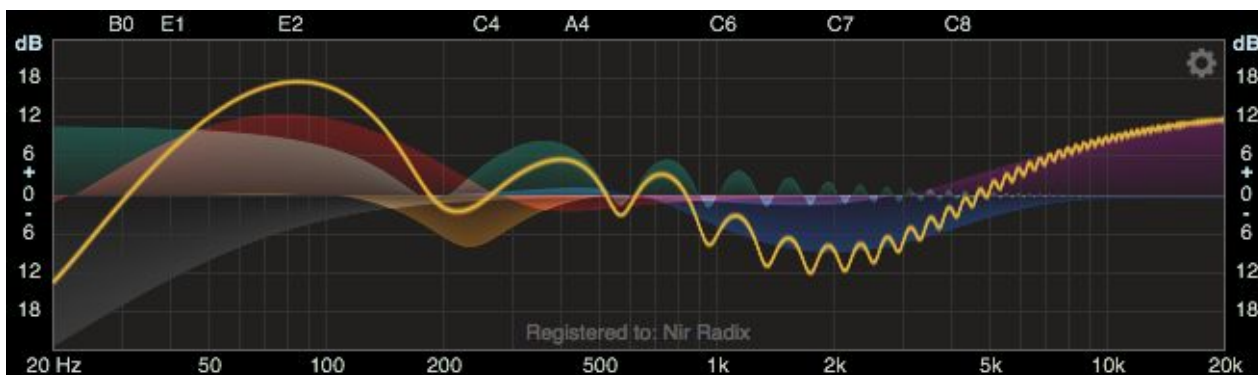
Pitch & Frequency Detection Display



Displays the detected fundamental pitch and frequency or MIDI note when at least one EQ band is set to Surf. The display and detection is turned off when none of the EQ bands are in Surf mode.

A MIDI indicator icon will show up on MIDI input receive.

EQ Curve Display



Displays the actual EQ curve of each band and the resulting combined EQ curve.

EQ Section



There are total of seven bands, comprising of high-pass and low-pass filters and five asymmetrical bell shaped bands - two are switchable to shelf mode and the center band switchable to harmonic filter mode. Each filter has four slopes or modes, ranging from gentle & broad to steep and sharp.

Band On/Off



Toggles unused bands to conserve CPU cycles.

Surf On/Off



Clicking on the Surf button engages the pitch detection engine, locking the frequency band to the selected harmonic. When engaged, the frequency knob is auto-piloted by the pitch detection engine.

Shelf On



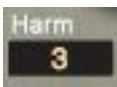
Toggles between Shelf and Bell modes.

Harmonic Filter On



Engages our unique Harmonic Filter. Four different types are available, selectable from the Q selector.

Harmonic (Harm) Display



Displays the harmonic the EQ band is set to track. Click on the window to enter values directly into display.

Pitch/ Hz (Freq.) Display



Displays the bands frequency or pitch. Click on Pitch or on Hz to toggles between pitch or frequency display mode respectively. Click on to the display window to directly enter a pitch or a frequency. You can enter any type of value (i.e A4 or 440) regardless of display mode.

Slope/ Q Selector



Toggles between 6dB/Oct, 12dB/Oct, 18dB/Oct and 24dB/Oct HP/ LP filters, four types of bell and shelf bands and four types of harmonic filter.

Band Gain



Controls the amount of boost or cut of the EQ band.

Global Power Switch



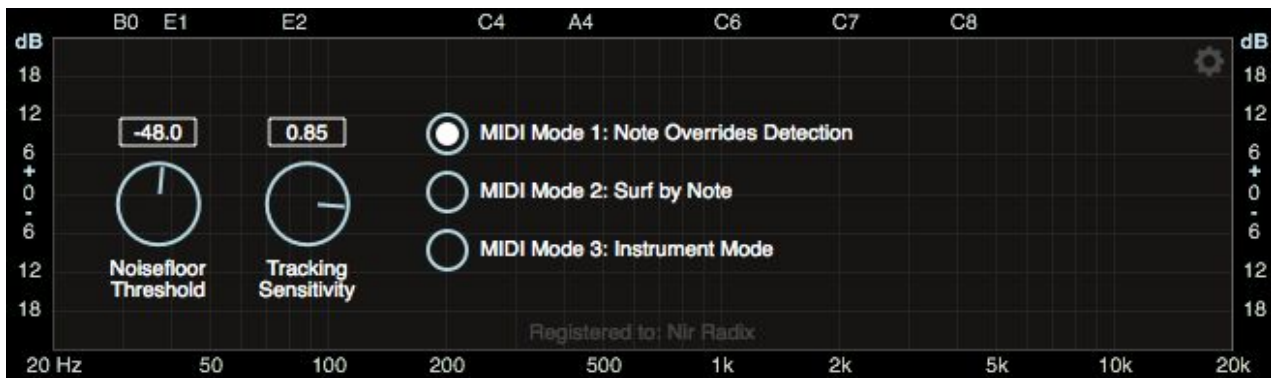
Toggles between On and Off states smoothly for uninterrupted, click-free comparison.

Global Gain



Adjusts the overall gain.

Additional Settings & MIDI Control



Noise Floor Threshold

Sets the noise floor level for the pitch-detection engine. Filters out noise or bleed from entering into the pitch-detection engine for better detection accuracy.

Tracking Sensitivity

Adjust the sensitivity of the pitch tracking algorithm. Decrease for faster, more sensitive detection, increase when more relaxed tracking is required.

MIDI

Version 1.2 brings MIDI capabilities to SurferEQ. It's now possible to control SurferEQ's frequencies via MIDI for easy detection manipulation and frequency ducking. You can even use it as a whole new class of EQ instrument!

MIDI Mode 1 : Note Overrides Detection

Designed for easy correction of the pitch-detection engine when required. A MIDI Note On input will override the internal pitch-detector. On MIDI Note Off, the pitch-detection engine will resume its operation.

MIDI Mode 2 : Surf by Note

Designed for frequency specific ducking. Pitch / Frequency is controlled by MIDI, Internal pitch-detection engine is disabled. MIDI Note On / Off toggles Surf-enabled bands.

MIDI Mode 3 : Instrument Mode

Designed to be played like an instrument where the source audio acts as an oscillator. Pitch / Frequency and sound are controlled and triggered by MIDI Notes.

Additional Automation Parameters

Override ON

Overrides SurferEQ's pitch detection for cases where a noise throws SurferEQ's pitch detection off.

Override Pitch

Sets the global pitch frequency of SurferEQ when Override On is On. Leave at 0 for no frequency change (Stay at last detected frequency).

Notes

- Automatic Delay Compensation has to be turned on in your host. In Pro Tools the latency compensation settings has to be set to large.
- Pitch detection is intended for monophonic sources.

Acknowledgements

SurferEQ uses the following libraries:

- JUCE by ROLI Ltd. - <http://juce.com>
- Cg SDK by NVIDIA Corporation - <https://developer.nvidia.com/cg-toolkit>
- KISS FFT by Mark Borgerding - <http://sourceforge.net/projects/kissfft>
- Protocol Buffers by Google - <https://developers.google.com/protocol-buffers/>

Resources

<http://en.wikipedia.org/wiki/Harmonics>

http://youtu.be/i_ODXxNeaQQ



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