# Neo EQ

## Next Generation Pitch Tracking EQ with Dynamics



Developed by

Operational Manual

The information in this document is subject to change without notice and does not present a commitment by Sound Magic Co. Ltd. The software described in this document is subject to a License Agreement and may not be copied to other media. No part of this publication may be copied, reproduced or recorded, for any purpose, without prior written permission by Sound Magic Co. Ltd.  All product and company names are trademarks of their respective owners.

Sound Magic Co. Ltd

http://www.supremepiano.com

http://www.soundemon.com

webmaster@soundemon.com

support@soundemon.com

206, Min 4, People Daily, ChaoYang, Beijing

P.R.China

Version 2.0

## Introduction

Neo EQ is a revolutionary concept in equalizer technology. Totally different from traditional EQ, Neo EQ is able to automatically detect and lock in the most audible/sensitive frequency. This makes the whole EQ process much easier and more effective than traditional EQ.

Mixing engineers spend years learning how to hear individual frequencies and fine tune the EQ. To get that perfect EQ, you have to acquire a lot of professional knowledge, which can be quite time consuming and relies heavily on having "golden ears". Then the tweaking starts, boosting or cutting each targeted frequency by just the right amount. Too much or too little boost/cut will not do a good job. And that's not the end of the nightmare: there's also bandwidth/Q to consider and this alone can make or break a sound, the track - the entire mix! EQ is always where the value of the mixing engineer is put under the microscope.

Neo EQ does a lot of the work that a mixing engineer did in the past. Send an audio signal to Neo EQ and it will analyze that input and find just the right frequencies for you. You won't need to hunt for the right frequency by yourself anymore or worry about whether you can find the correct one. After Neo EQ finds that perfect frequency for you, you can adjust the bass, the basic frequency and the harmonic for it. This not only saves a lot of time, it can give you amazing insight on how those with years of training zero in on exactly what needs fixing. And Neo EQ takes the guesswork out of messing with the Bandwidth/Q settings. Sound Magic has analyzed hundreds of mixing engineer's EQ methods and developed three special algorithms for bandwidth. Pick your musical/engineering style and Bandwidth will be automatically calculated for you.

Neo EQ is REALLY totally dynamic. The cutoff frequency in Neo EQ is always changing as the input audio changes. Common parametric EQ units remain static, even those that are called "dynamic EQ". Because of its ability to automatically lock up with the right frequency, Neo EQ is more efficient, giving you way more effect with much smaller changes. A 2dB boost sounds similar to an 8dB boost on a common parametric EQ. The bottom line? You end up with much less distortion by increasing the efficiency of the EQ. Less boost/decay and narrower bandwidth makes any distortion far less than traditional EQ. Measurement results prove that Neo EQ only brings around 5% of the distortion of a traditional parametric EQ unit.

Neo EQ2.0 Features an improved pitch tracking algorithm. This gives Neo EQ the ability to better track the right frequency for solo, vocal or a whole mix situation. For example, when the signal is a solo instrument, Neo EQ will track the right basic frequency and harmonic. When the signal changes to a whole mix, Neo EQ will focus on the most sensitive frequency, not on the harmonics. Different modes enable Neo EQ2.0 to do a great job on all kinds of music tracks.

One of the Neo EQ2.0 key features is the dynamic interaction between Boost/Cut and Q. By adding this, Neo EQ2.0 adds a whole new dimension to the words "Dynamic EQ". This really adds life to the whole sound and helps you to shape your unique sound style.

Another key feature that Neo EQ provides is that you can analyze a piece of audio first, then hold the frequency characteristics of it and apply that setting to other audio tracks. In this way, you can clone a static EQ setting from one audio track to another easily. This is a way of clone tonal balance from one piece to another.

Neo EQ2.0 also features a special designed EQ for high frequencies. Different modes give you full control of these high frequencies. If you only need a brief but effective boost/cut on highs, Mixing Mode would fit you best. If you want to have gentle improvements of highs during mastering, then Mastering Mode is the right choice. If you are seeking to add beautiful air/space feeling to your highs or make the highs transparent, then the unique A.I.R Mode will put a smile on your face.

Neo EQ2.0 has 3 stereo modes for different usages in different situations. Stereo is the common mode we mostly use to process stereo or mono signal. M/S Mono Mode will transfer the stereo signal into an M/S signal, then only process the M (Mono) channel. This is often useful in mastering and will let you process the instruments located in the middle while the ones located on left or right are not influenced. M/S Side mode will only process the S (side) channel of the signal. This is very useful when you need to adjust the stereo field of the whole mix.

Equipped with the Sound Magic Auto Distortion Correction Peaking Filter Technology, Neo EQ provides the lowest distortion rate ever. This leads to a rich, natural sound - the sort of sound you know you want - and your music deserves.

**Features**
- Internal 64Bit floating point processing
- Innovative pitch detection algorithm can track the right frequency for solo, vocal and even a whole mix, provides different modes for different cases.
- 4 pitch detectors focus on bass, basic frequency, harmonic and higher harmonic, give users full control on the whole frequency range.
- Innovative dynamic interaction between boost/cut and Q. Provides controls on the peak follower so users can design their own interaction.
- Innovative EQ design for high frequency. Provides 3 modes for mixing and mastering usage.
- Innovative Auto Distortion Correction Peaking Filter Technology brings lower distortion rate than common filters.
- Artificial Intelligence Assisted Bandwidth/Q control based on the behavior modeling on over hundreds mixing engineers and users can choose 3 styles for their own use
- Freeze function enables users to analyze an audio signal first, then hold its harmonic information and apply to another audio track

● Simple and friendly GUI design
● Up to 32Bit/384KHz resolution

**Important! Limitation on Demo Version**
**1. Audio Dropouts every 8 -12 seconds**
**2. 3 important features have been disabled**

**Install Neo EQ**
Neo EQ is provided as a zip package. After downloading it
1. Unzip it
2. Copy it into your VST folder.
   *Note: the location of the VST folder depends on your DAW/Hosts.
3. The     AU     version     must     be     copied     into
   the"Library/Audio/Plug-Ins/Components/" folder

**Purchasing Neo EQ**
There are two ways to purchase Neo EQ
1. In the demo version, when you first load the plugin, the information page
   will be displayed where there is a 'buy now' button, simply click the button
   to go to PayPal payment page. *Note: internet connection is required.



2. Go to our website, http://www.supremepiano.com/product/neoeq.html
   Click the 'buy now' button to go to PayPal payment page.

**Register Neo EQ**

Neo EQmust be registered before it will operateotherwise audio is bypassed. You can complete the registration by the following steps
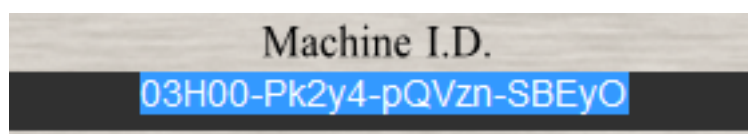
First, if you are not registered, the info page will open by default. If you need to open the info page, simply click the 'INFO' button (as highlighted below) and the info page will slide down.
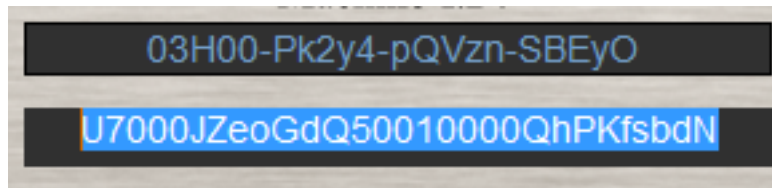


The Info page is shown below



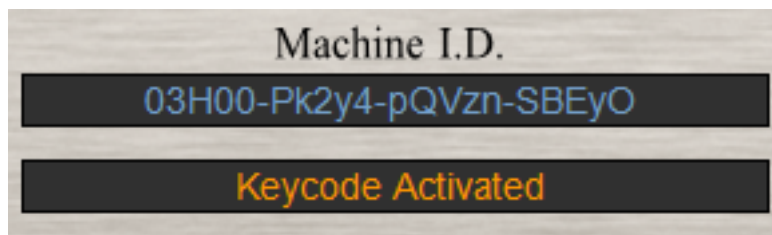Click in the the text box below 'Machine I.D' and copy the I.D.



Paste the I.D code into an email and send it to our customer service:

You will receive a Keycode from our customer service department, copy and paste the Keycodeinto the text box where it says"Enter Keycode Here", as shown as below.



If the Keycode has been entered correctly, it will display"Keycode Activated" as shown below.



If the text box still shows "Enter Keycode Here", it means the Keycode you entered was not correct. Copy & Paste the Keycode again making sure you copy the whole Keycode and only the Keycode. If after several tries it will not activate you should contact customer services.

**Controls**

**Reset**:Resets all the 5 sliders to the 0dB position (In the middle). This control is useful when you need a good start point in an empty preset.

**Bass**: Boost or decay bass frequency. The frequencyranges from 40Hzto 120Hz depending on the input signal.

**Basic Frequency**: Boost or decay the fundamental frequency of the audio signal. Thisbandis within the 200Hz-1500Hz range depending on the input signal. Adjusting this control will influence the whole sound very much.

**2nd Harmonic**:Boost or decay the 2nd harmonic of the input signal. Changing 2nd harmonic will also influence the overall sound very much.

**Higher Harmonic**: Boost or decay the higher harmonic of the input signal, often the 3rdor 4th harmonic. This band ranges from 3000Hz to 7000Hz.

**Highs**: Boost or decay the high frequencies above 8000Hz.

**Response**: The smoothness of the pitch changing speed. Left is the slowest while Right is the fastest. Please note too fast may cause more distortion.

**Bandwidth**: The overall bandwidth control.

**Styles**: Choose the type of behaviour of Neo EQ.
American is a rather free style;sounds open and warm. Cutoff Frequency, Gain and Q are independent.
German loves to be accurate; this setting tends to strictly follow a mathematic rule between the three factors of EQ.
British are always gentlemen. Under this setting, Neo EQ tends to sound gentle, not harsh. Neo EQ will tend to boost less with a wider bandwidth under this setting.

**Dynamic**: When turnedOn, Peak Levels will be utilized in the processing of each band.

**Dynamic Rate**: This is a combination control for the attack time and release time of the peak follower, thus influence the whole dynamic.

**Freeze**: Holds the current pitch detection values. This is very useful foranalyzingone piece of audio first, then 'Freezing'the EQ in order to apply those settings to a different piece of music/audio.

**LookAhead**: Choose the look forward type. Realtimehas no latency. Small

indicates that there will be 4ms delay for the audio signal. Large means there will be 30 ms delay for the audio signal.

**High Mode**: There are three types for the Highs. Mixing adjusts around 8000Hz. Mastering adjusts around 12000Hz while A.I.R is a special mastering technology for high frequencies.

**Multi Mode**: Above the 2nd Harmonic and Higher Harmonic sliders are two mode buttons. When turned ON, Neo EQ will use a separate pitch detection circuit for the respective band, and not use predictive analysis.

**Stereo Mode**: Neo EQ provides 3 different stereo modes.
Stereo: In this mode, Neo EQ will work as a stereo or mono EQ.
M/S Mono: In this mode, Neo EQ will only process the "M" or 'Centre' channel of the signal. This is very useful in mastering.
M/S Side: In this mode, Neo EQ will only process the "S" or 'Side' channel of the signal. This is very useful in mastering.

**Info**: Click this button to open the information page. On this page, you can enter your registration and access the Sound Magic Website by clicking on the logo. If you are not registered, each time you open the plugin or switch presets, the information page will appear to remind you registration is required before the VST will function.

**Bypass**: You can use this bypass button to do A/B comparison. When Bypass is active, the button will flash to indicate you are hearing the un-processed signal.

**Presets:**
Neo EQ provides 12 basic presets to help you get started:

**Default Flat**: The first preset appears when you load Neo EQ. It is a good start point because all sliders are in the 0dB position so it sounds like a bypass effect.

**Bass Enhancer**: This is a good starting point if you want to enhance your bass frequencies.

**Basic**: This is good for making your instrument stronger because it will emphasize the basic frequency.

**Light Weight**: Good for reducing bass frequencies if you feel there is too much bass.

**Bright**: If you want your tracks to sound bright, this preset is the right starting point.

**Dynamic EQ**: German Style with Full Dynamics.

**British Gentle**: An example of the British style, a good for a starting point if you reset all slider to 0dB position.

**M/S Mono**: An example of M/S Mono mode.

**M/S Side**: An example of M/S Side mode.

**LookAhead:** An example of How to use the LookAhead function.

**Warm**: An example of how A.I.R technology can be employed to make the sound warm.

**Exciter**: An example of an exciter, by emphasizing the $2^{nd}$ harmonic.