

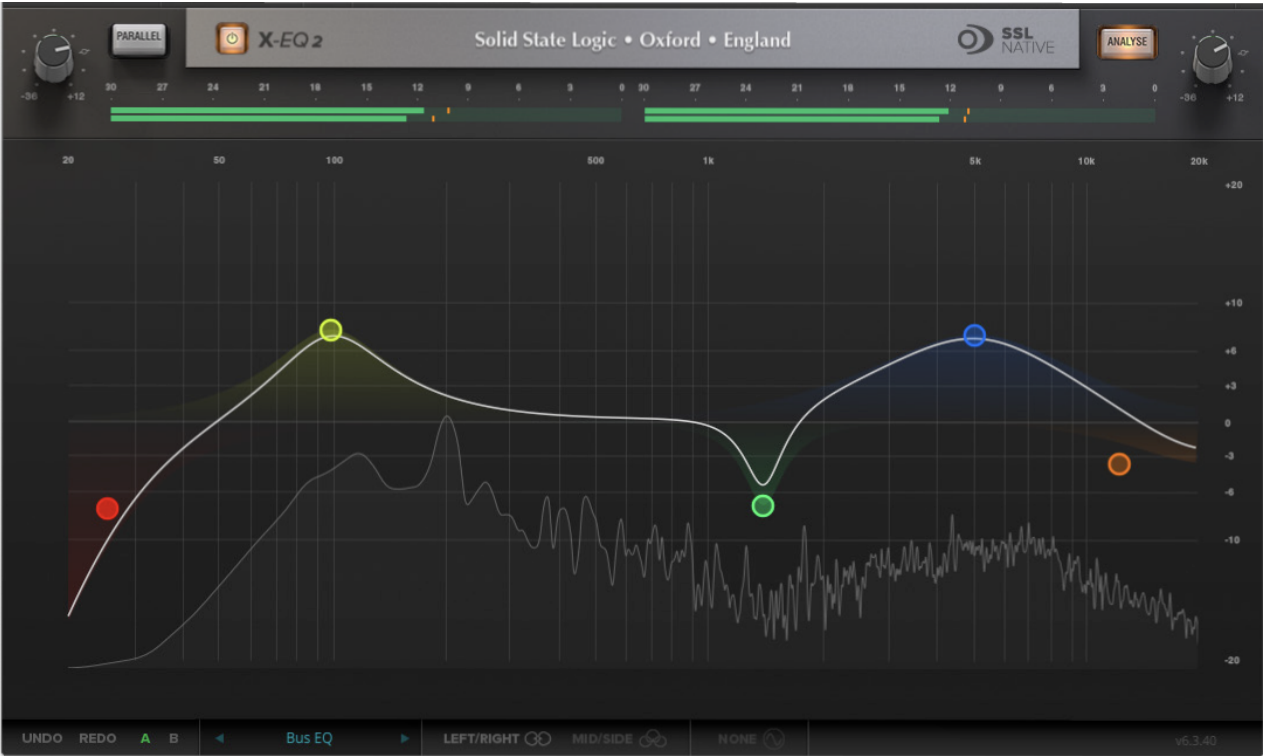


X-EQ 2 User Guide

Introduction

About SSL X-EQ 2

X-EQ 2 is a versatile and highly configurable EQ plug-in that allows you to create up to 24-bands per instance. X-EQ 2 now features SSL's proprietary 'anti-cramping' algorithms for an unparalleled open and transparent sound. X-EQ 2 is the ultimate EQ toolkit, with 17 different EQ types and filter shapes, giving you the best of analogue in an unrestricted and versatile digital environment. Each band is switchable between bell, shelf, low pass or high pass filter types, so you can create the EQ you need for the task at hand. X-EQ 2 also features brand new spatial processing options, band soloing, as well as the classic X-EQ 'Parallel' mode for recreating the cherished sound of parallel passive EQ circuits.



Key Features

- 24-band fully parametric high quality digital EQ, featuring unique anti-cramping algorithms with no additional CPU processing cost.

- A total of 17 different filter types: 5 different cut filters, 9 bell shapes, shelving filters, a parallel mode, and custom HPF/LPF modes.
- Extensive control options including draggable EQ graph nodes, mouse wheel adjustment and numerical data entry.
- Extremely low noise and low non-linear distortion filter algorithms resulting in the residual THD+N significantly lower than 24-bit quantisation noise.
- Proprietary preset management functions providing compatibility between all major DAW platforms.
- A/B functionality for easy comparison of any two settings.
- Mid/Side and Left/Right spatial processing options.
- Individual band solo and bypass.
- Real-time FFT Analyser showing the result of the EQ processing on the audio spectrum.
- Phase & Step response graphs to show the effect of EQ processing.
- Superb mastering-grade audio quality delivered by 64-bit floating point engine.
- Preset library based on settings used by some of the world's top mix engineers.

Installation

You can download installers for a plug-in from the [website's Download page](#), or by visiting a plug-in product page via the [Web Store](#).

All SSL plug-ins are supplied in VST, VST3, AU (macOS only) and AAX (Pro Tools) formats.

The installers provided (macOS Intel .dmg and Windows .exe) copy the plug-in binaries to the common VST, VST3, AU and AAX directories. After this, the host DAW should recognise the plug-in automatically in most cases.

Simply run the installer and you should be good to go. You can find more information about how to authorise your plug-ins below.

Licensing

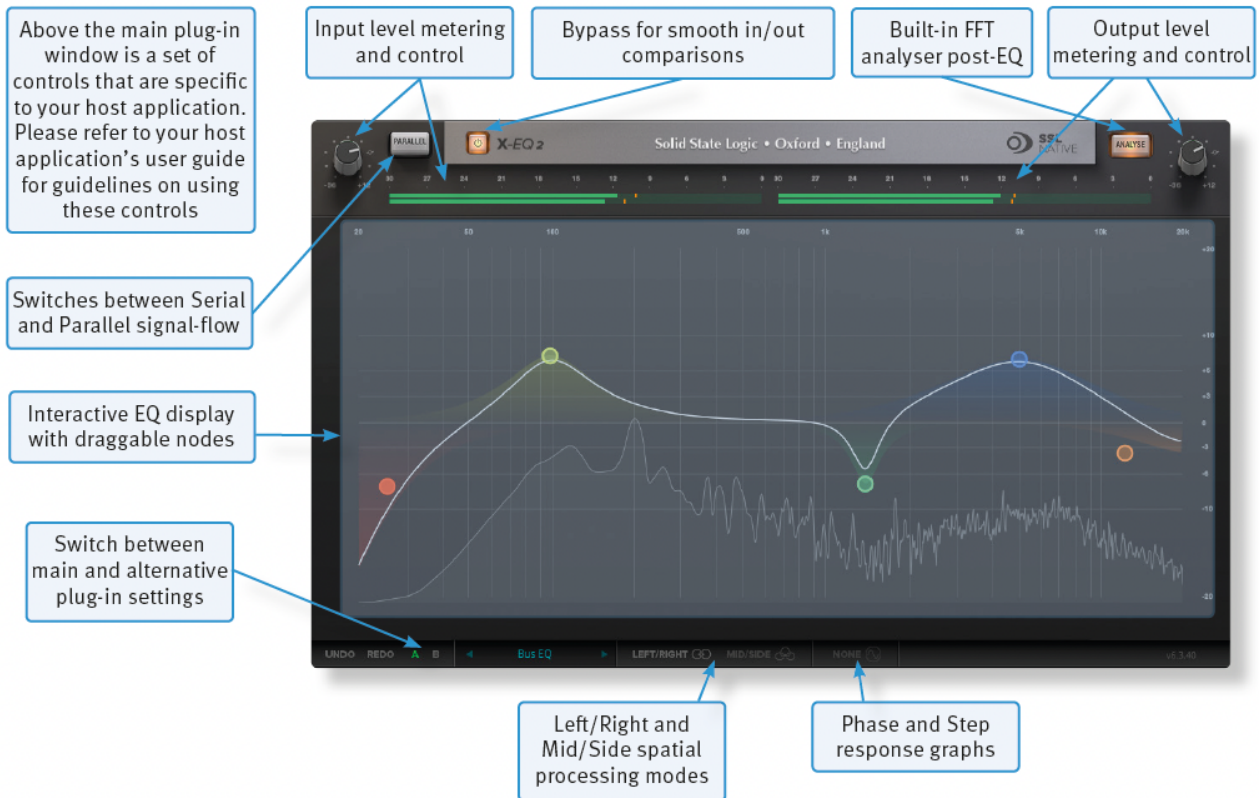
Visit the [online plug-ins FAQ](#) for guidance in authorising your SSL plug-in.

Using SSL Native X-EQ 2

Overview

X-EQ 2 is a highly configurable 24-band EQ plug-in, featuring unique 'anti-cramping' algorithms for an unparalleled open and transparent sound. It's the ultimate EQ toolkit, with up to 17 different EQ types and filter shapes available derived from a wide variety of vintage analogue equipment. Each of the 24 bands is switchable between bell, shelf, low

pass or high pass filter types, with both classic and customisable shapes available for each band. The illustration below introduces the X-EQ 2 plug-in features, described in full over the following sections.



Interface Overview

The basic interface techniques for the X-EQ 2 are largely identical to those for the Channel Strip. In addition to these basic techniques, the following are also available:



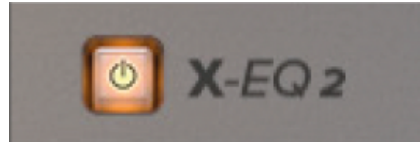
To control **Input** and **Output** levels, click and drag upwards or downwards.

To enter a precise value for any parameter, double-click on the parameter, enter a value on your computer keyboard and press the Return key.

Automation

Every plug-in parameter can be automated in host applications that support automation. The method for recording and editing automation varies from host to host. For specific instructions on using automation within the host, consult the host application's documentation.

Plug-in Bypass



The **In/Out** switch located above the **Input** section provides a plug-in bypass. This allows for smooth In/Out comparisons by triggering the host application's Bypass function.

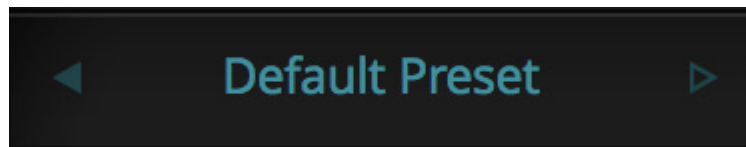
The button must be 'lit' for the plug-in to be in circuit.

Presets

Factory presets are included in the plug-in installation, installed in the following locations:

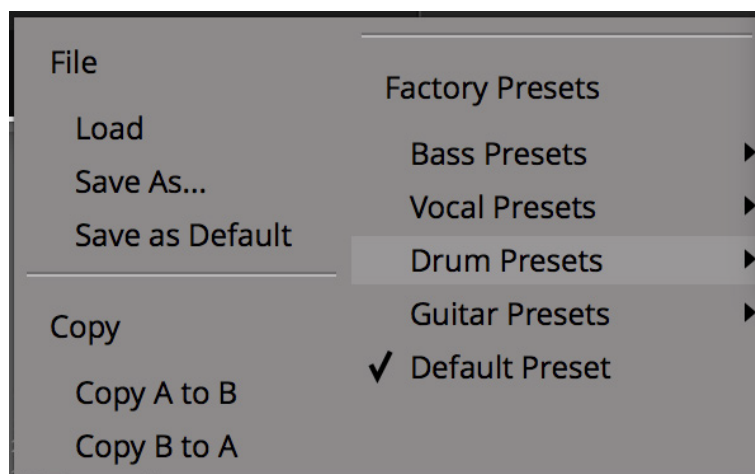
Mac: Library/Application Support/Solid State Logic/SSLNative/Presets/X-EQ2

Windows 64-bit: C:\ProgramData\Solid State Logic\SSL Native\Presets\X-EQ2



Switching between presets can be achieved by clicking the left/right arrows in the preset management section of the plug-in GUI, and by clicking on the preset name which will open the preset management display.

Preset Management Display



There are a number of options in the Preset Management Display:

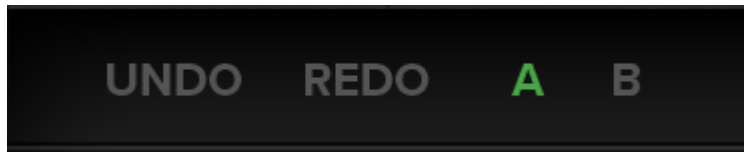
Load allows loading of presets not stored in the locations described above.

Save As... allows for storage of user presets.

Save as Default assigns the current plug-in settings to the Default Preset.

Copy A to B and **Copy B to A** assigns the plug-in settings of one comparison setting to the other.

A-B Comparisons

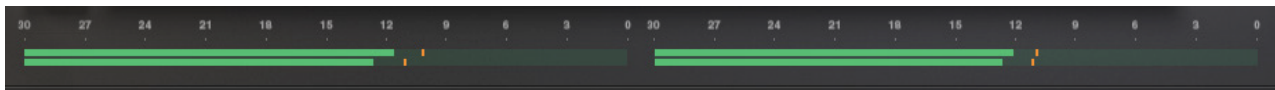


The **A B** buttons at the base of the screen allows you to load two independent settings and compare them quickly. When the plug-in is opened, setting **A** is selected by default. Clicking the **A** or **B** button will switch between setting **A** and setting **B**.

UNDO and **REDO** functions allow undo and redo of changes made to the plug-in parameters.

Input and Output Sections

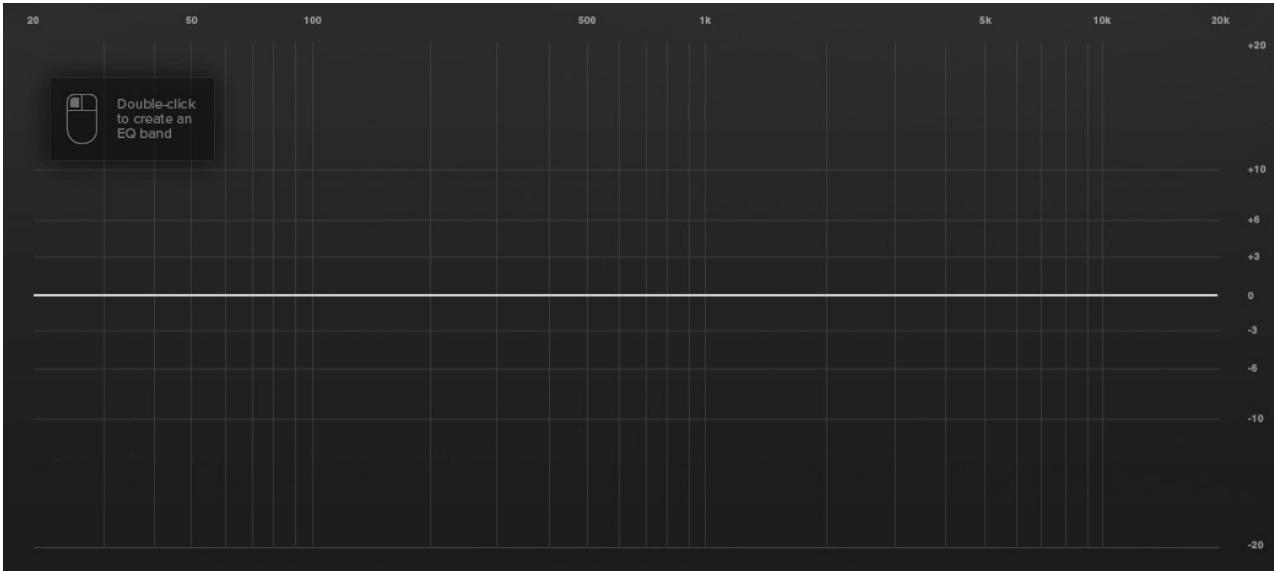
The input and output sections at the top of the plug-in window provide input and output gain control and metering.



- When clipping occurs, the meter will turn red. It will remain red until the meter is reset by clicking on the meter.
- Turn the **GAIN** knob in the input section to control the level of the incoming audio signal. The post-gain signal level is shown on the input meter,
- Turn the **GAIN** knob in the output section to ensure that the signal retains a good signal level post-processing. The output signal level is shown on the output meter.

Getting Started

The initial state of X-EQ 2 is without any frequency bands created. To add a frequency band, double-click with the mouse anywhere on the graphical interface. This will create a frequency band node at the click-point, with a curve type dependant on where you clicked on the graphical interface - this can be changed after the node has been created. X-EQ 2 can have up to 24 nodes.

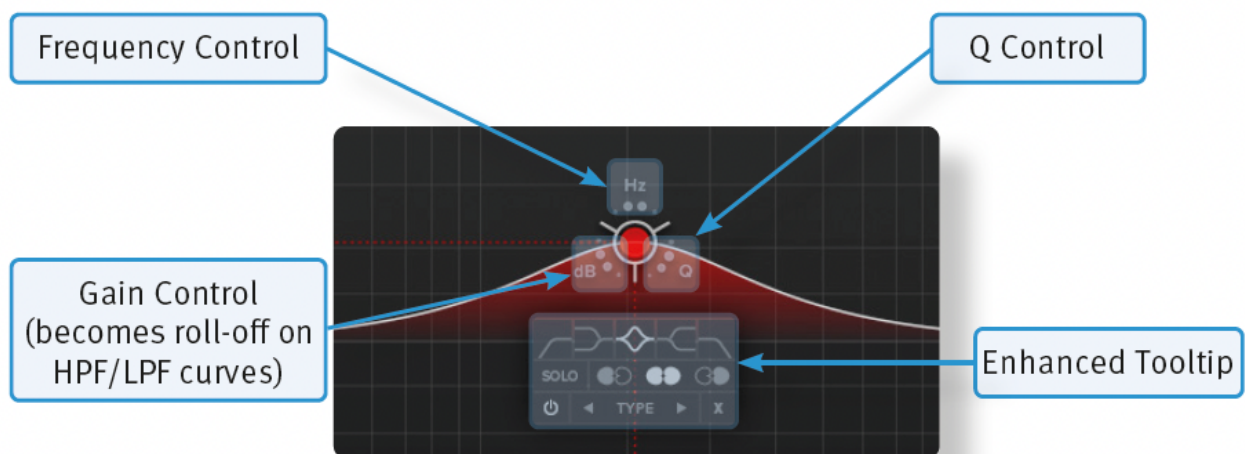


The node can be dragged around the graphical interface to adjust the gain and frequency of the band, whilst using the mouse-wheel to adjust the band Q factor. To lock the frequency of a node, hold down shift; this is useful for changing the gain or Q factor / roll-off of a node, without changing the frequency.

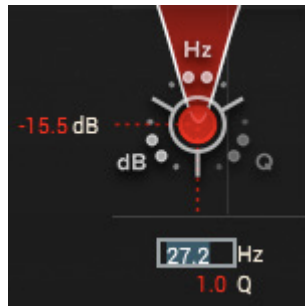
Alternatively, you can use the Puck Control.

The Puck Control

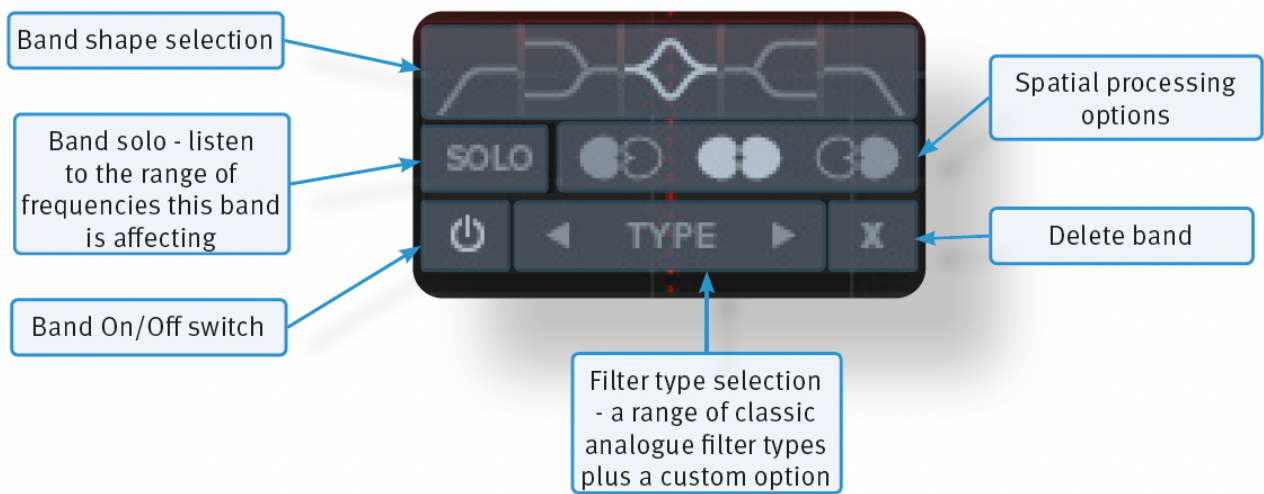
X-EQ 2 features a brand new user interface element called the Puck Control. When a frequency node is created, the frequency, Q factor, and gain (or roll off on high-pass/ low-pass filters) for that node are displayed around it and can be adjusted by clicking and dragging on the parameter. The Puck Control display will disappear when not in use to leave a clean and uncluttered plug-in window; to bring it back, simply click on the node again.



Double-clicking on the frequency, Q, or gain section of the Puck control will open up the numerical entry for that parameter. The gain / roll off values can be entered on the left side of the EQ graph, the frequency and Q on the bottom of the EQ graph.



Clicking on the node will also open an Enhanced Tooltip for that frequency band. From the Enhanced Tooltip, the EQ shape and filter type can be selected, as well as the band solo enable and spatial processing options. The 'power' icon is a band bypass for quick A/B, whilst the cross (or 'X' icon) deletes the band.



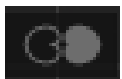


Spatial Processing Options

At the bottom of the plug-in window, there are two spatial processing options; Left/Right and Mid/Side.



When Left/Right mode is enabled (the default mode when initialising the plug-in) the following icons are displayed in the Enhanced Tooltip:

- 
 This option applies the EQ band to both left and right (a standard stereo EQ).
- 
 This option applies the EQ band to the left side only.
- 
 This option applies the EQ band to the right side only.

With Mid/Side mode enabled, these icons change (as shown):



This option applies the EQ band to both mid and side (a standard stereo EQ).

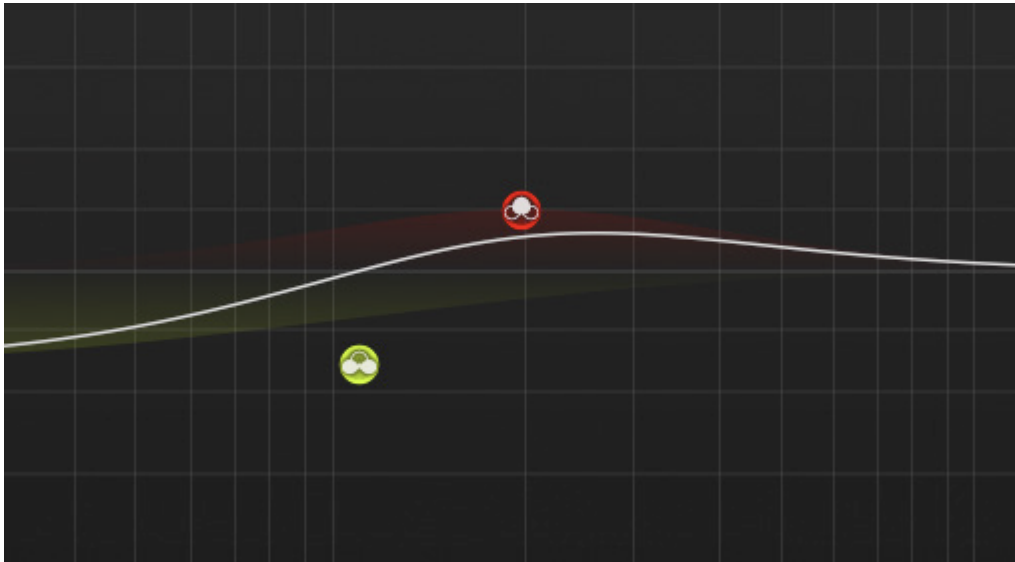


This option applies the EQ band to the mid signal only.



This option applies the EQ band to the side signal only.

When a spatial processing option is selected (either left-only, right-only, or mid-only or side-only), the icon is displayed on the node for easy reference.



Mid/Side, otherwise known as Sum and Difference, is a two channel format. Rather than each of the two channels carrying either the Left or Right side of a stereo signal, the Mid (or Sum) carries all signals common to both left and right channels (typically elements panned centre), and the Side (or Difference) carries all signals 'on the sides'. The Mid/Side format can be derived from a stereo left and right signal, and can be turned back into a stereo signal. This allows for some really cool spatial processing techniques when processing the Mid and Side signals differently, then recombining them back to a stereo signal - this has been a crucial mastering technique for years!

Band solos

Each frequency band can be solo'd; this allows you to listen to only the frequencies that band is affecting and the effect of the EQ curve on those frequencies. This is particularly useful for honing in on problem frequencies, and can be used to great effect when combined with the Mid/Side mode!



Tip: Pressing the Shift Key whilst dragging a node will lock it to that frequency, allowing for precision notching of resonant frequencies.

EQ Graph Display

The EQ graph provides a visualisation of several elements:

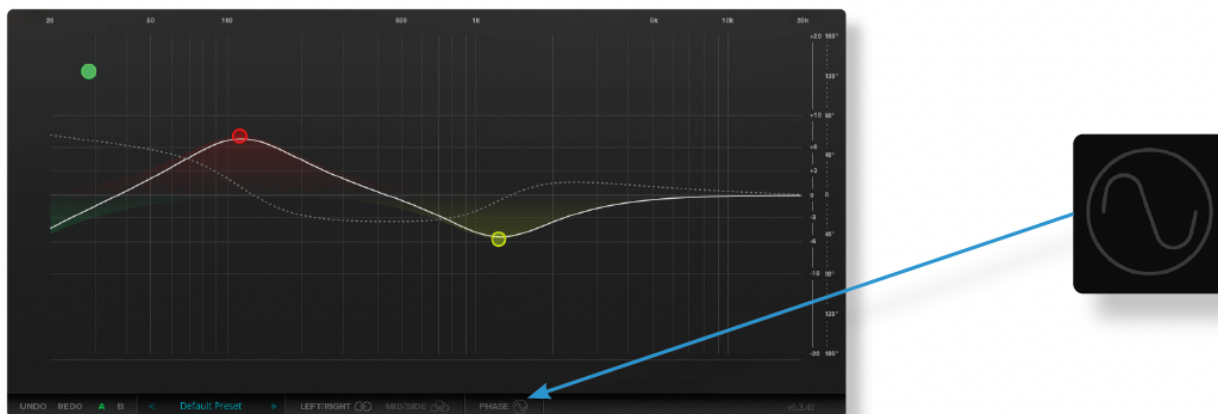


- The coloured shade areas show the impact of each individual node.
- The white line across the graph shows the resultant EQ curve from all frequency band nodes.
- With the Analyse switch enabled, an FFT display of the post-EQ signal is shown within the EQ graph. If a band solo is enabled, you will see this on the analyser.

There are two additional responses that can be displayed on the EQ graph; the phase response and the step response. These are shown by clicking on the icon at the bottom of the plug-in window.

Phase Response Graph

The phase response shows the degree of phase shift across the frequency range of X-EQ 2. Click on the icon once to display the phase response on the EQ graph display.



All frequency bands cause some degree of phase shift; this does not audibly affect a mono audio source in isolation, but does affect the way two sources with similar audio content combine (two drum overhead microphones, for example). Whilst 'phase issues' are something to be wary of, slight phase adjustments at some frequencies can be desirable, causing cancellation at unwanted frequencies (room mode build-up, for example), and rigidity at desirable frequencies (the root notes of a bass instrument, for example).

The phase response graph can be used as a technical aid on critical EQ'ing tasks during mixing or mastering.

Step Response Graph

The step response graph shows the effect your EQ choices are having on the step response of the audio signal. Click on the icon twice to display the step response on the EQ graph display (this function toggles between 'None', 'Phase', and 'Step').



Different filters types have different effects on the step response/transients of your audio signal; some filters slow transients down (something called 'transient slewing'), others are more transparent. Transient slewing is not necessarily a bad thing, it can have desirable effects; many vintage analogue audio circuits cause a great deal of transient slewing that was undoubtedly part of the sound!

The step response graph can help you make better informed mix decisions about which filter type is better for the task in hand.

EQ Parameter Values

Band	Gain / Roll-off	Frequency	Q
High-pass filter	0 - 48dB/ octave, 6dB steps	20Hz - 20kHz	0.3 - 10.3
Low-pass filter	0 - 48dB/ octave, 6dB steps	20Hz - 20kHz	0.3 - 10.3
Low shelf	+/-20dB	20Hz - 20kHz	0.3 - 10.3
High shelf	+/-20dB	20Hz - 20kHz	0.3 - 10.3
Parametric Bell	+/-20dB	20Hz - 20kHz	0.3 - 10.3