

DUY



USER'S MANUAL

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1. Quick start

Please read the installation guide to install the software. You will find it included both in the Downloaded version or in the CD you purchased, according to the version you chose when you bought the software.

If you have purchased Deep Analog EQ as an online download, make sure that the software has been downloaded correctly. Once you have uncompressed the downloaded file, which may come as a ZIP or DMG file, it should look like this:



Install Deep Analog EQ

If the icon looks different, it means that you may have had some problem during the download and the file may be corrupted. Therefore, please download the file again and repeat the process.

To install the software, double-click on the Install icon. Read the License Agreement very carefully and click on the “Agree” button only if you agree to accept the terms and conditions of the provided license agreement.

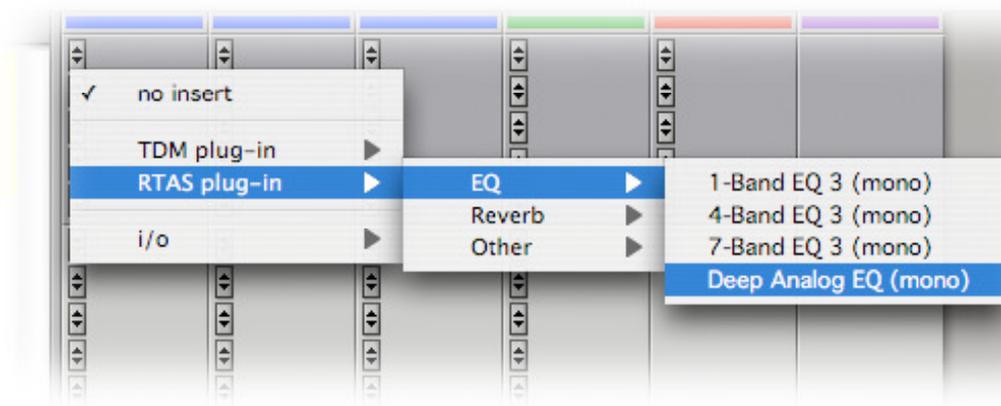
You will be asked to enter your serial number. Please enter it. Make sure the serial number is inserted in capital letters, with no spaces and looking similar to this: XXXXX-XXXXX-XXXXX, where “X” can be a capital letter or a number. The serial number will be provided at the top of your registration card, if you have purchased a boxed CD, or in the email we provided if you have purchased the software as an online download. If you have bought the software online and have access to your User Area of our website (*expected as from June 2011), your serial number will be automatically displayed on your personal User page after you log in.

Please make sure you also install Deep Analog EQ’s settings. These are included in a separate installer, which may be named “Deep Analog EQ Settings” or “Deep Analog EQ Presets”. To install, use the same procedure as as for installing the software.

2. Inserting Deep Analog EQ in Audio or Aux tracks

Deep Analog EQ is presented as an Equalization (EQ) plug-in effect, available as “Mono to Mono” or “Stereo to Stereo”.

Depending on your version of ProTools or other host program, the process of inserting the plug-in is done in one way or another. Look for DUY Deep Analog EQ either in the list of “Mono to Mono” plug-ins or “Stereo to Stereo” plug-ins or, if they’re arranged by categories/families, you will find it in the “EQ” section, as shown in the image below, which corresponds to an example using AVID’s ProTools software.



3. First approach to Deep Analog EQ's interface

This is DUY's Deep Analog EQ's edition window:



Deep Analog EQ's interface is formed by:

- An **Analog Model** control section.
- An **Input Gain** control knob.
- 10 specific **EQ Filters** control segments, two of which belong to the upper and lower frequency cutoff, and the remaining 8 bands are user-configurable, with a great degree of control and flexibility over the selected frequencies.
- Two output **Meters**.
- A detailed **graphic display** with the result of the EQ curve, which is also graphically editable.
- An **Edition Bar**, at the top of the interface.

4. Quick-use guide

In order to begin using DUY's Deep Analog Eq, insert it in a track and hit the Play button in your Transport bar on your host program. In order to EQ your sound correctly, you may need to test the resulting sound by listening to your audio material in SOLO (with the rest of sounds completely muted) and, later, integrated in your entire mix.

The fastest way to create your EQ curve is by using the mouse: simply click on any of the coloured "dots" that appear on the graphic window and drag the point. By moving the dot vertically, you will be modifying the filter's gain, whereas by modifying the dot's position horizontally, you will actually be modifying the frequency where your filter will be centered or positioned.

The Resonance control ("R" parameters), the filter will scope a wider or narrower bandwidth. In general, lower resonances will imply greater frequency changes surrounding the cutoff or central frequency. As in any EQ, values above 0 dB will mean you are gaining signal for that frequency or group of frequencies, and values below 0 dB will mean you're reducing the level of your signal.

All the available EQ parameters within sight can be modified by using the provided analog-like knobs, and you may even fine-adjust these values with certain shortcuts. You may also activate or deactivate any of the EQ's "dots" (which represent each one of the 10 available filters or "EQ Bands").

Please note that any process involving EQ'ing may result in your increasing the peak levels of your input signal depending on your handling of the bands. Therefore, you should pay special attention to make sure that no "Overflows" occur in your EQ processing, which would be shown in the "Meters" section (right of the interface). For best results, if you're happy with your current settings, simply lower the input signal by tweaking the "Input Gain" knob at the left hand side of the user interface to avoid these unwanted peaks. The "Overflow" LEDs can be reset by clicking on them at any time.

5. What is Deep Analog EQ and what makes it so special?

DUY's Deep Analog EQ is an equalizer which can be used like any other standard EQ, including 10 filtering channels or bands:

- 6 multiform band-pass filters.
- 1 Low-pass
- 1 High-Pass
- 1 Lower Shelf
- 1 High-Shelf

Its applications are vast and range from subtle changes in “colour” to severe operations such as even modifying spectral tuning, or high-quality Mastering.

Deep Analog EQ includes, however, a set of important advantages in comparison to other EQs in the market:

- 1) Deep Analog EQ guarantees phase coherence, which is extremely important for Mastering applications.
- 2) DUY's Deep Analog EQ is based on advanced Analog Models techniques, for which DUY has been renowned since the early 90's.

And... What's the secret? How do we fit all these features onto one EQ? DUY's Deep Analog EQ has been developed using an advanced and proprietary technique based on Active Circuit Synthesis, applied to the Electronics involved in modifying Spectral Contents. This means that the modelling is actually integrated within the EQ's own circuits and, therefore, it isn't part of a separate stage in the processing of the signal.

At the same time, the design allows the user to choose the type of analog device to be used for the processing, as well as the depth or “Amount” of its weight over the signal, controlling each one of the circuit component's polarization and power supply voltage.

You may also bypass the Analog component of the EQ, making the process behave entirely as a purely digital device.

Deep Analog EQ features a very complete set of filter shapes, with different slopes and tonal characters. The plug-in uses quadratic and cubic-like shapes, Bell-shaped filters, and others, with 4 different types of morphologies.

The provided resonance filters, which are unique to DUY's Deep Analog EQ, have a lobular decay, which are original matches of discrete electronics produced between the 40s and 60s. This feature allows to slide certain areas of the frequency spectrum without altering the fundamental frequencies.

6. Deep Analog EQ sections

Deep Analog EQ is formed by the following sections:

- Analog Model
- Input Gain
- EQ filters
- Analog EQ graphic display & edition
- Meters
- Edition Bar

In general, the rotary knobs are handled by clicking on the knob and dragging upwards (to increase the value) or downwards (to decrease the value).

The following key commands are to be considered:

- Option + Click: sets the knob to the default value.
- Clicking and dragging while holding the Command (Cmd) key will allow to fine-tune the value.

There are two dropdown menus (“Analog Model” and “Filter Shape”), which show several models or shapes to select. By clicking on the related icon, a set of extra icons will appear, allowing you to choose the new model or shape you would like to select by simply pointing with the mouse and clicking on them.

The other sections of DUY Deep Analog EQ are explained in greater detail in the following chapters.

6.1. Analog Model

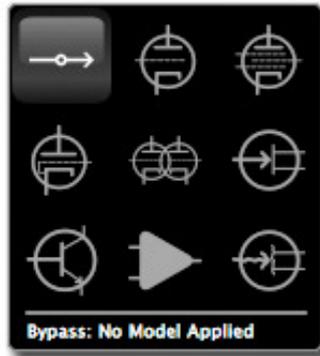
The Analog Model section of the plug-in is extremely easy to use: it includes two elements:

- 1) The Analog Model Menu: As explained in the introduction to chapter 6, the dropdown menu allows you to select which type of analog model you would like to use for the processing of your sound.
- 2) The “Depth” knob: This control allows you to set the amount of “Analog effect” you would like to add to your sound. The possible values range from 0 to 100%, where 0% means that the signal will not enter the analog-modelled circuit, including the active electronics. You should consider that analog models can be polarized in a fairly aggressive way for values above 60%, so unless you want to obtain a considerable amount of Analog effect in your sound, you would generally be using this value set below approximately 50%.



When you select a Model and a certain amount of Depth, its effect is always dependant on the EQ curve you have set. As you may imagine, this is obviously the consequence of the fact that it is actually the EQ that has been analogically modelled. Therefore, if you have a flat EQ (a straight flat line at 0 dB gain), the Analog Model section will not produce any change in the sound, even if you change the Depth or the Analog Model itself. As soon as your EQ curve is not flat, the analog circuit of the EQ will have a certain voltage or electronic intensity (OTA-based models, which are Operational Transconductance Amplifiers) which will be processed. Therefore, the “Depth” value will only act on those frequencies which are not set at 0 dB (as long as you don’t have, of course, the Analog Model set to “Bypass”).

There are 9 different Analog Models you can choose from the dropdown menu, as seen in the following image:



1. **Bypass:** This process is purely digital. No analog model is used during the equalization process. Use this setting if you wish to use Deep Analog EQ as a conventional digital EQ without any analog feel to the sound.
2. **Valve Triode:** provides a clean analog saturation due to the conservative and exquisite polarization of this variety of valves (“tubes” in the USA).
3. **Valve Pentode:** Its “Soft Distortion” feature turns this model into a convenient “rounder” for certain output levels.
4. **Valve Ultralinear:** Contrary to what one may think by its name, the “Ultralinear” valve behaves in a very non-linear fashion, due to its radical polarization. As a matter of fact, their design didn’t please its own creators, in search of a linear response. However, the sonic response of these valves was more than impressive, because they excited odd harmonics, which created a very pleasant-to-the-ears variation of the original sound.
5. **Dual Valve:** The original intention of its classic design was to obtain a very important signal gain, but its double configuration and the inexact pairing of both units made them very difficult to calibrate. Additionally, feedback loops caused them electronic harm. However, in our carefully matched model of the original analog device, we will never burn the component, and at the same time we will obtain a somewhat uncontrolled level of distortion. This can make the resulting distortion slightly more organic in relation to the plain input signal. Of course, by using the Depth control, you can adjust the amount of this effect you would like to include in your sound.
6. **FET:** Field-Effect Transistors are not perceived as perfect amplification devices by engineers. However, we have studied that a properly-polarized FET can deliver a certain amount of magic to the sound. You have to try it to understand the special “colour” obtained, which is complex to describe in words in this manual. “A certain mild harshness combined with a smoothed non-linearity” would probably be the best description. If you choose this option, you should know that the device we have modelled corresponds to a version from a transistor-based amplifier prior to the pre-digital era.
7. **Transistor:** This model corresponds to the standards used in the 1970s decade, where transistors worked mostly with a linear behaviour for most of the signal’s range, and prone to controlled distortion in certain ranges.

8. **Op Amp:** Let's get philosophical... You may love or hate the 80s sound. We, at DUY, are great fans of that decade, especially due to the great improvements in sound and video electronics. This was mostly thanks to the use of operational amplifiers ("Op-Amps"). Their applications were extraordinarily extensive: Voltage Followers, Integrators, Differentiators, Impedance converters, Oscillators... All these blocks allowed engineers to create linked blocks that would, in conjunction, deliver a certain effect. For electro-nostalgic users, you should know that the device we modelled is NOT the LM741.

9. **Rotten FET:** Accidents may occur. Have you ever tried to see what happens if you polarize a theoretically-clean element with inverted polarity? We have been lucky enough to model a partially-damaged semiconductor which sounded with a totally excessive amount of distortion, but certainly usable to create certain effects. Of course, you should only use this effect if you want the distortion to be highly noticeable.

6.2 Input Gain

This control allow you to modify the signal's input level by applying a gain reduction or increase that ranges from -24.1 to +24.1 dB.

Please note that you should always check the Overflow leds, displayed in the Metering section of the plug-in's interface, at the right. If the Overflow leds are highlighted in red, this means you have surpassed the maximum signal limit, creating an unwanted peak in the signal. In this case, you should reduce the Input Gain level to a more secure level that will not turn your leds to red.

IMPORTANT: please note that the Input Gain is not part of the information stored in your settings. This allows you to change or load a new setting (either via the Patch Manager or the Paste + Recall temporary memories provided) without interfering with the input level you have set.

However, the Input Gain is always stored when you save your session and maintained when you load your session again.

6.3 EQ Filters

Deep Analog EQ has 10 channels of filtering points. Four of these filters are fixed functions, and 6 are highly modifiable and editable by the user:

- A High-Pass filter is located in the plug-in's interface at the left of the available bands, corresponding to a filter that will cut frequencies below the one you set in this channel. Of course, this filter has a certain slope, as well as a reference frequency at which you will wish to apply the filter to. These 2 parameters can be controlled using the Central Frequency (Fc) and Resonance (R) controls available. Normally, you would use this filter in order to cut-off unwanted signals below a certain frequency.
- A Low-Pass filter, located at the right of the available bands, which corresponds to a filter that will cut frequencies above the one you select with the Fc (Central Frequency) control, and with the character set by the Resonance (R) knob. You would normally use this filter to remove unwanted signals above a certain frequential value.
- A Low Shelf filter, in the lower part of the frequency spectrum. The available controls are: Gain (G), Cutoff Frequency (Fc), Resonance (R) and the filter's shape.
- A High Shelf filter, in the higher part of the frequency spectrum. The available controls are: Gain (G), Cutoff Frequency (Fc), Resonance (R) and the filter's shape.
- SIX Equalization points or bands. We tend to call them "points" because the visual representation of the selected frequency values can be displayed on the lower part of the interface as coloured dots. The available controls are: Gain (G), Cutoff Frequency (Fc), Resonance (R) and the filter's shape.

Let's look into some of the filters' controls in depth:

6.3.1 EQ Channel State

All of the 10 channels or filters have an ON/OFF button located at the top, which allows to enable or disable the desired effect to the selected band.

6.3.2 Resonance (R)

The Resonance parameter can vary from 0.00 to 1.00. This is a proprietary control that has a varying interpretation, depending on the type of filter applied. As a whole, if you increase its value for the 6 central channels, its effect is comparable to the Q factor of certain parametric filters. However, given the fact that we provide different types of filter shapes from the dropdown menus, the "R" value is relative to the shape of the chosen filter, and therefore it also involves the bandwidth assigned to that

specific band. Our advice is to visualize the result in the graph at the lower part of the user interface to see the final curve applied to your sound.

Warning: You should be aware that “R” values close to 1.00 will behave as resonant filters. This could imply your hearing outstanding tones at the selected frequencies when you insert your signal through the filter. Generally for values above 0.95, filters may become unstable, delivering very high gains, independent from the G (Gain) control. For this reason, you will see a red circle surrounding your frequency dot on the graph, to alert you about this circumstance. At the same time, if you hover the mouse over the dot, a “Peak Warning” message will appear, and a “*” sign will appear next to the value on the knob.

6.3.3 Frequency (Fc)

This is the value of the characteristic frequency of your filter. Its meaning is different in high-pass, low-pass, high-shelf, low-shelf or band-pass filters (see their descriptions), but in all cases this value indicates the reference frequency value over which you are acting with your filter. In the case of the 6 central adjustable bands, this is the central frequency.

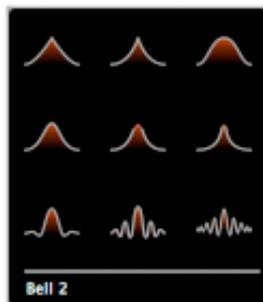
6.3.4 Gain (G)

Indicates the Gain applied to the selected frequency, ranging from -24.1 (decreasing the level) to +24.1 dB (level increase).

Important!: Please remember that high values of “R” may result in very high resonance conditions, and therefore you should adjust the gain in such a way that no undesired effects (especially high levels at narrow bands) occur.

6.3.5 Filter Shape

All filters (except the Low and High Cut filters) have a selectable filter shape. By clicking on the icon, you will obtain the following menu:



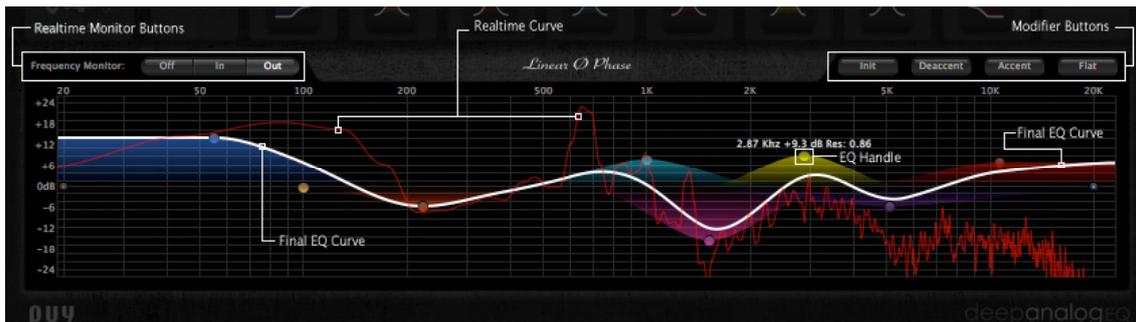
The 9 different types of filter shapes are the following:

1. **Square:** The filter's slopes follow a quadratic behaviour. This kind of shapes outstand the central frequency as if it were slightly more resonant than expected.
2. **Cubic:** This geometry makes the central frequency outstand even more than in the Square type, even when the band's range is quite extended over the frequency range.
3. **Bell 1:** All the "Bell" series types of filters follow the shape of a Gaussian bell. However, we provide 4 different types of Bell filters with very different behaviours, depending on the nature of the slope associated to the model. The "Bell 1" type has the greatest frequency range, behaving very smoothly with relatively modest gains.
4. **Bell 2:** This shape is considered the analog standard for the vast majority of parametric EQs.
5. **Bell 3:** This type of filter is more useful for rejecting frequencies, given its non-intrusive behaviour surrounding the cutoff frequency.
6. **Bell 4:** With the same use as Bell 3, but designed for greater precision (narrower bandwidths).
7. **Resonant 1:** This is probably the most hyperrealistic filter, which belongs to a traditional EQ net. There are no modern electronics involved in its modelling: only passive filters, for which we have removed all possibility of unwanted noise, inductance or capacitance.
8. **Resonant 2:** This filter includes a softer damping of the passing lobes. Its use depends on the type of instrument you want to emphasize. In general, this type of filter adds extra harmonics. You can use this shape to emulate very analog-like decays.
9. **Resonant 3:** This type of filter produces many harmonics around the central frequency. You can use this to create sound effects, generating unexpected sonic impressions. However, the great advantage of this type of filter is that you can use it to re-tune certain percussion instruments such as hi-hats, cymbals, gongs or any instrument whose harmonics are not multiples of a fundamental frequency.

6.4 Analog EQ Graph

The Analog EQ Graph displays the final resulting EQ curve in the form of a white line throughout the audible frequency spectrum.

With the use of different colours associated to each one of the 10 different bands, you can also see the contribution of each band highlighted in their respective colours individually, as well as the associated “dots”, which represent the central frequency (Fc) at the height given by the gain (G) for that band.



6.4.1 Frequency Monitor

This section, located at the top left of the Graph, lets you select from 3 options: OFF/IN/OUT. If you activate the IN option, you will visualize the input signal's frequency realtime response in gray. If you activate the OUT option, you will see the output signal's frequency response in red. Both the IN & OUT modes can be very useful to control specific peaks in the signal. Of course, the OFF option will not display any signal in realtime.

6.4.2 “Dots” or “Points”

Each one of the outstanding large-coloured “dots” or “points” that appear on the graph can be edited. You can click on any of these points with your mouse and drag it vertically to modify its gain, or horizontally to modify its central frequency.

You may also change the “R” value of a certain band by holding the Command (Cmd) key, clicking on that “dot” and dragging it.

If you wish to enable or disable a certain band, you may also double-click on its representative “dot” to change its state.

6.4.3 Modifier Buttons

The Modifier buttons located at the top right of the Graph section allow you to make fast changes on the curve at any given time, as well as the possibility to initialize and reset all the channels or bands.

6.5 Meters

The vertical meters at the right of the plug-in's interface represent the output level in realtime. At the top, two leds indicate if there is a signal Overflow, alighting in bright red in that case. If the Overflow lights are red, it means that the output level has been above the permitted level. For the sake of audio quality, it is highly advisable not to have any of these peaks present. You may need to adjust your input gain (preferred) or modify some of the settings for the bands in order to decrease certain levels.

In order to reset the Overflow leds, simply click on them.

6.6 Edition Bar

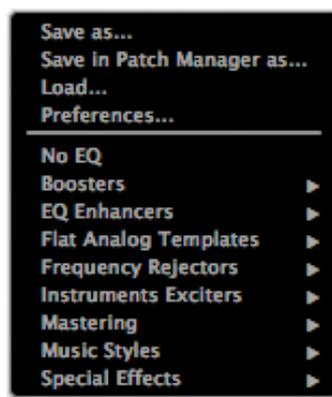
The Edition Bar allows to rapidly access the fast-edition functions and the edition, organization and search of settings/presets.

Deep Analog EQ's Edition Bar consists of the following parts:

6.6.1 Patch Manager Pop-Up Menu



The Patch Manager arranges the presets/settings documents. During the installation process, the presets will be placed in a folder named "Deep Analog EQ patches" in the Preferences directory. Note that with all DUY products, we also name "presets" as "patches" or "settings".

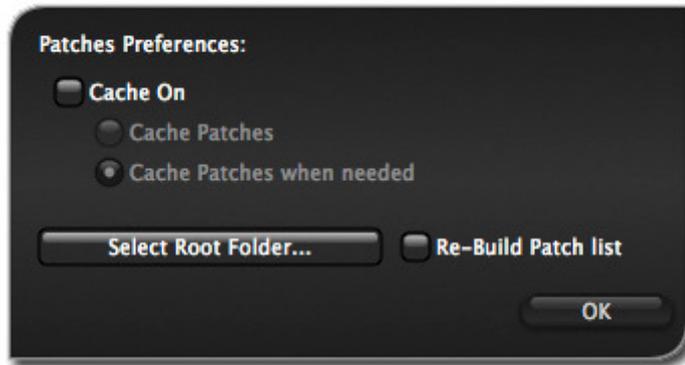


This folder contains a series of subfolders that contain the presets themselves. The subfolders correspond to the categories of presets within the main (root) Settings folder.

The first part of the menu (above a separation line) includes the managing options, such as saving presets. Below the separation line you'll see the list of presets, grouped in families (see image above)

The functions you can use are:

- a) **Save as:** saves the active setting . A window will appear, allowing you to change the name you would like to give the preset and where you would like to store it on your drive.
- b) **Save in Patch Manager as:** Does exactly the same as the standard "save as" function, but the setting is saved directly into the main folder where the current settings are stored.
- c) **Load:** allows you to select a settings document and open it to apply it.
- d) **Preferences:** Shows the options you have within the patch manager.



- **Cache On:** allows you to activate the loading of all the presets in memory, so that the system doesn't have to read from disk each time a setting is used. This is helpful to reduce the time of reading to disk.
- **Cache Patches:** When the "cache on" is active, if you select this option, all the presets will be loaded when you use Deep Analog EQ for the first time.
- **Cache Patches when needed:** If you select this option, only the presets that are called or used during a session will be saved in the cache.
- **Select Root Folder:** allows you to choose the folder that contains the structure of subfolders that holds the presets. You can have an infinite presets folders in your hard disk, but only one can be active at a time. So, if you prefer to change the name of the folder or where it is stored in your hard drive, you can manually move it and then select the position where it's located by using this option. Once you have done this, click on the "Re-build Patches List" when you click OK if you would like the list of presets to be refreshed.

6.6.2 Edit Buttons (Copy, Paste, Undo, Redo)

These buttons allow you to copy, paste, undo or redo. If it's not possible to use a certain function, the button will be tagged in lighter gray. This will occur, for example, if there is nothing to Paste (which would mean you haven't clicked "Copy" first).



"Copy" will copy the state of a whole screen. This information can then be pasted using the "Paste" button in this instance of Deep Analog EQ or in another. The "Undo" and "Redo" buttons allow you to return to the "previous" or "next" state after your last edition. A history of the last 10 editions is stored. Therefore, you have 10 levels of Undo or Redo. If you would like to clean the history or stored states, click on the Copy button while holding the Opt key.

6.6.3 Memory Buttons (A, B, C, D, E, F)



The A, B, C, D, E, F buttons are temporary memories which can be used in many cases. For example, if you would like to compare several settings.

To save a screen state to one of these memories, simply click on the memory button (A, B, C, D, E or F). If the memory is empty, the button will be highlighted in gray. Once you click on the button and save the content of the screen, the lettering will turn black. If you want to empty a memory, click on the button while holding the Opt key.

If you would like to load all the memories in a circular way, click on the Rotate button. If you only have memories A and B full, the sequence in rotation from one memory to another will be A, B, A, B...

6.6.4 Help

Deep Analog EQ has Help Balloons and also Spoken Help (you will need the Speech Manager in your system for Spoken Help to function). To use any of these two, click the respective icons.



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