DQ1

Operation Guide

Contents

Sonalksis DQ1

Introduction

This operation guide describes the features, operation and applications of the DQ1. For detailed installation instructions, please refer to the Sonalksis *Plug-in Manager* User Guide. You can read more about general features common to all Sonalksis plug-ins in the *Universal Plug-in User Guide*.

The Sonalksis DQ1 is a multi-band dynamic equaliser, an extremely versatile processing tool that can be used for precision sculpting, creative moulding, ambient enhancement or restoration – maintaining the same unparalleled audio quality expected from Sonalksis plug-ins and making the DQ1 a unique and indispensable addition to any audio processing toolbox.

Dynamic equalisation allows frequency sculpting beyond the limits of standard 'static' equalisers, by linking the user-defined frequency response to the dynamically varying signal level; thus frequency imbalances can be corrected psychacoustically, altering an equalisation response curve dynamically (and automatically) on the basis of programme loudness.

The parameters available on the DQ1's four filter bands are intuitive yet sophisticated, with several levels of graphical feedback to aid the set up process. Each filter band is able to act independently, with separate control over individual filter threshold, attack and release parameters. This makes the DQ1 extremely flexible and suitable for a variety of sound design roles, working as a perfect compliment alongside the Sonalksis SV-517 multi-style (static) EQ
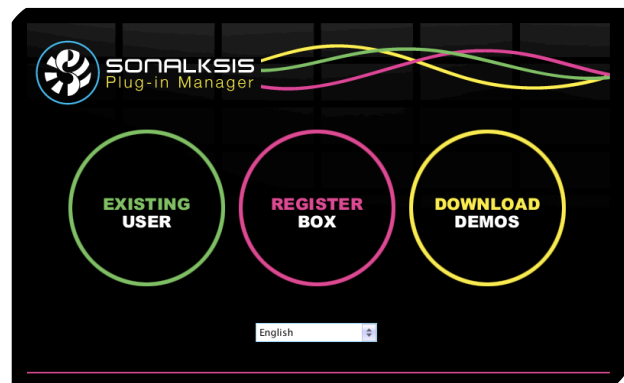
Installation

...with the *Plug-in Manager*

All Sonaksis plug-ins are installed using the 'Plug-in Manager'. The Plug-in Manager simplifies the task of managing multiple Sonalksis plug-ins, and takes care of downloading, installing, authorising and updating your Sonalksis plug-ins.

Detailed instructions can be found in the *Plug-in Manger User Guide*.

If your audio computer is not internet enabled, you must go to the 'Product Activation' section on the Sonalksis website in order to obtain an authorisation file. You will need the 'Activation Code' that is displayed when you run the Plug-in Manager on your offline system. You can then download your authorisation file which you simply need to drag-and-drop onto the Plug-In Manager window.

Authorisation

If your computer is internet enabled, all license authorisation takes place automatically. When you install Sonalksis plug-ins, any plug-ins for which you have licenses will be authorised by the Plug-in Manager.

Unlicensed Sonalksis plug-ins will function for 14 days after installation without authorisation, after which the plug-ins will no longer process audio. After this period, you can still reactivate a plug-in by obtaining a valid license.

Operation

This section describes the functions of the DQ1. You can read more about general features common to all Sonalksis plug-ins in the Universal Plug-in User Guide.

The DQ1 presents users with a sophisticated set of controls with which to refine dynamic signal equalisation. Users can define a standard (static) filter, with the addition of a range parameters to determine the effect of this filter at differing signal levels. Using all four available equaliser bands a precise frequency response can be fixed, but with the addition of threshold and attack/release parameters this response can be adapted to vary according to the level of the audio signal (or with the use of the side-chain-filter according to the level of selectable frequencies in the input signal).

The DQ1 is a frequency sculpting processor first and foremost, appropriate more for dynamic-filtering purposes than frequency-selective dynamics, and although these two applications are to some extent interchangeable, the DQ1 will be more at home as a tool to provide gentle but precise sculpting of the audio spectrum. If greater dynamic impact is required it can be achieved with the Sonalksis CQ1, the sister product of the DQ1, which is designed first and foremost as a frequency-selective compressor/expander, providing a means to aggressively shape the signal dynamics of explicit frequency bands.

Dynamics Equaliser Sections

There are four dynamic equaliser filter sections, each with definable frequency and bandwidth parameters, plus a set of controls that determine the filter gain at varying signal levels. A dynamic filter band is set up in exactly the same way as a standard equaliser, with the addition of controls to select the filter gain applied at a low (adjustable) threshold and the amount of gain to be applied at a higher threshold.

The *IN/OUT* button switches the entire dynamic equaliser band in or out of circuit. When a filter band is switched out, the meters and text displays will dim, giving a clear indication of the excluded status of the band.

The **Freq** and **Q** controls are the standard equaliser parameters, used to define the range of frequencies influenced by the respective band.

Dynamics Band 1 and Band 4 both have '**bell / shelf**' selectors to switch between standard parametric and shelving filter styles.

Each equaliser band is capable of 'static' operation in addition to the normal dynamic operating mode. In static mode, the filter band acts like a 'standard' EQ, with a fixed gain independent of signal level.

The static/dynamic switch underneath the 'Gain' faders enables each equaliser band to act either statically or dynamically. When set to 'stat', the respective gain setting above the switch becomes the static gain parameter for the filter; the alternate gain, the threshold and attack/release parameters are not effective when in static mode.

When a filter band is set for dynamic operation, the instantaneous gain used by the filter is determined by the threshold and gain settings with respect to the input signal level. The low-gain parameter determines the filter gain when the input signal is below the low-threshold. The high-gain parameter determines the filter gain when the input signal is above the high threshold. When the input signal falls between the low and high thresholds, the filter 'morphs' smoothly between the low and high gain settings, thus providing true dynamic operation.
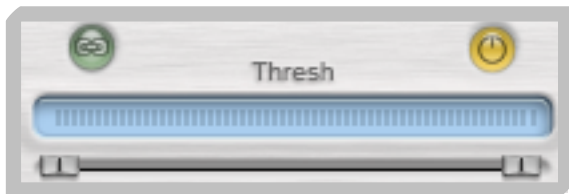
The 'input meter' monitors the signal used to key the filter band. The sliders beneath this meter are used to set the low and high threshold values.

Threshold levels may be linked across dynamics bands: when the 'Link' button is activated, the threshold of any other dynamics band with a Link also activated will be set identically to this band.

The low and high gain faders set the filter gain that is used at the low and high thresholds. The low-gain parameter sets the filter gain that is active when the audio signal falls below the low threshold. The high-gain sets the filter gain that is active when the audio signal reaches the high threshold.

The LED meter situated between the gain faders monitors the actual instantaneous filter gain.

Attack and Release parameters allow control over the level detection time-constants. These parameters determine the speed with which the filter morphs between the high and low gain settings when the low threshold is exceeded or the signal descends below the high threshold.

The attack-time determines the time taken to initiate the filter response change from the low gain setting to the high gain setting, once the signal level exceeds the low threshold. The release parameter determines the time taken to initiate the change from high gain setting to the low gain setting once the signal level falls below the high threshold.

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Side-Chain filter section
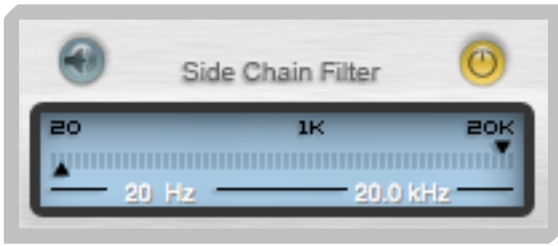
The side-chain filter section can be switched in circuit, allowing the user to select or remove a particular frequency band from the signal level-detection circuits. Therefore with careful use of the side-chain filter, the equaliser filters can be activated *by* a specific frequency band, as well as acting *on* an independent selected frequency band. This feature is enormously flexible, as it effectively allows any frequency to determine the dynamic behaviour of any other frequency.

- *The left hand side and right hand side black 'pointer' sliders control the cut-off frequencies of the low cut and high cut filters respectively.*

- *The **in/out** control switches the filters in and out of circuit*

- *The **listen** button allows you to hear the currently filtered side-chain signal.*

When the 'listen' mode is activated, the side-chain filters will automatically be switched in circuit (otherwise there would be no side-chain signal to hear). When the side-chain circuit is in 'listen' mode, the icon on the 'listen' button will flash, indicating that the side-chain signal is being routed directly to the plug-in output. The graph in the LCD window will also display the (static) frequency response of the side-chain filter section while in 'listen' mode.

Global Programme Section

This section includes the graphical 'LCD' display, the **Setup** and **Presets** buttons, and three buttons that affect global parameter settings: **A/B**, **Copy**, and **Reset**.
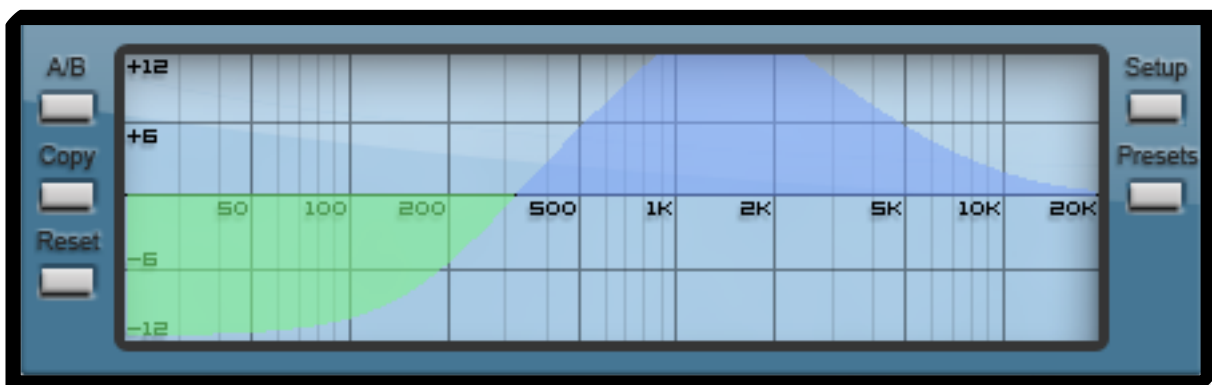
In general use, the graphical display provides real-time visual feedback on the dynamic amplitude-frequency response of the plug-in. A graph shows the response across the audible spectrum – from 20Hz to 20kHz. The effect of the individual equaliser bands on this global response can be determined by viewing the gain meters situated in the separate EQ sections.

The **Setup** button is used to access the global preferences for the plug-in. One of these preferences allows the user to set the scale of the graphical display. See Preferences for further details on the application of preferences.

The **A/B**, **Copy**, and **Reset** buttons relate to a snapshot of the plug-in parameters as a whole. The collection of all parameter settings is known as a 'programme'. The DQ1 is equipped with a temporary programme buffer [buffer 'B'] that can store an entire set of control parameter values at the touch of a button. The active parameter storage buffer [buffer 'A'] can be copied to or swapped with buffer 'B' with one click of the mouse. This is particularly useful when auditioning two different settings in quick succession in order to decide on the most appropriate sound.

Clicking the **Reset** button will set all plug-in parameters to their default values.

Output Section

The 'Output Section' consists of a master **Power** (on/off) switch, a meter that monitors the signal level at the output of the processor, and a control to change the gain of this output level.

The Output meter defaults to a PPM ballistic, with a range from –96dBFS to 0dBFS. An 'Over' indicator LED illuminates when the output signal reaches 0dBFS. Ideally the output signal should not exceed 0dBFS, hence the **Output** gain control should be used to attenuate the signal when high levels of equaliser gain are applied. Conversely the **Output** gain may be used to increase the signal level if significant equaliser cut is applied.

The master **Power** button is an effective 'bypass' control that may be used for simple 'In/Out' comparisons. When the equaliser is switched off, the numerical parameter displays will disappear and the meters and graphical display will darken, giving a clear visual indication of the bypassed status of the plug-in. Your host software may also provide a bypass to the plug-in, however using the bypass on the DQ1 can provide superior results, as it guarantees a glitch-free on/off transition. This is imperative if you are automating the control.

Preferences
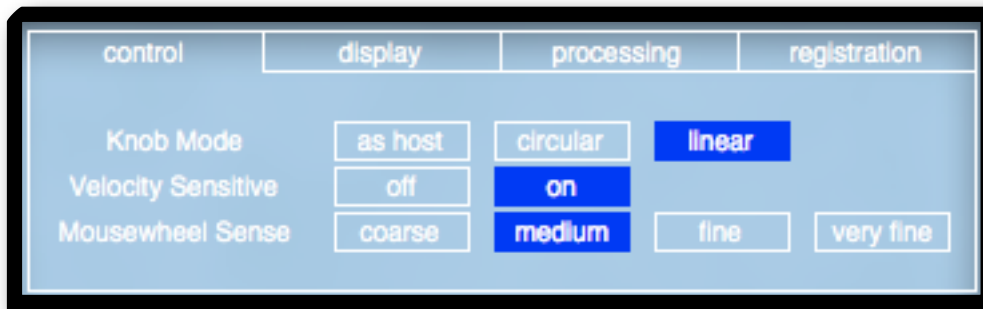
There are a number of setup options and preferences that are user-definable. The preferences are accessed with the **Setup** button on the right of the graphical display. Click the button first to access the preferences, and again to exit the setup screen once the preferences are set.

Control Preferences

These preferences relate exclusively to mouse control settings.

• **Velocity Sensitive Mode** – Selecting this preference enables the size of any knob/slider control adjustments to be relative to the speed of mouse movement. Thus when enabled, a very slow mouse movement will induce a very small change in the respective parameter value, while a fast movement will induce a large change.

• **Knob Mode** - sets the default knob mode. When 'as host' is selected, the knob mode is requested from the host software (assuming the host supports this feature). Otherwise the knob mode defaults to the selected setting.

• **Mousewheel Sense** - controls the sensitivity of the mouse wheel. When set to 'very fine', a large move of the mouse wheel will introduce a very small change in the respective parameter. When set to 'coarse', a small movement will introduce a relatively large change in the parameter.

Display Preferences

These preferences relate exclusively to settings that directly affect the interface display.

• **Graph Range** - The graph (displaying the overall gain reduction or expansion with respect to frequency) is drawn to scale, with a maximum or minimum gain set via this preference. So when set to '12' dB, the graph is drawn showing a maximum gain or attenuation of 12dB, and when set to '24' dB the graph is drawn showing a maximum gain or attenuation of 24dB.

• **Meter Type** - allows the user to set the ballistic of the output meter. The PPM meter type gives a fairly accurate indication of peaks while preserving a visual signal dynamic that reasonably resembles the audible dynamic. The 'True Peak' setting will ensure that the meter displays an entirely accurate depiction of the signal peaks, however this meter type may appear visually less coupled with the audio.

- **Clip Led** - When set to 'instant', the clip LED will illuminate only when the output signal exceeds 0dBFS, switching off the instant the signal falls below this level. When set to '5 Sec', the clip LED will stay illuminated for a minimum of 5 seconds, regardless of how briefly the signal exceeds 0dB. When set to 'clicked', the clip LED will remain illuminated once the signal exceeds 0dBFS, and will only switch off when the user clicks on it.

Processing Preferences

These preferences relate exclusively to settings that directly affect the audio processing.

- **Symmetric EQ** – Switches the general operating mode of the filters between standard symmetric or traditional analogue cut response.
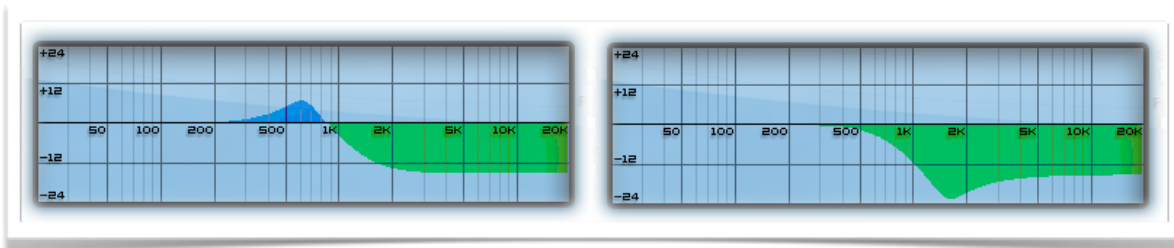
Shelving cut response with symmetric filter   Shelving cut response with asymmetric filter

- **Thresh Separation** – Determines the minimum separation between low and high threshold settings for each filter band.

> Note that small separations between low and high threshold settings may have undesirable effects if there is a large differential between the low and high gain settings, as this can induce rapid changes in the filter gain during fast attack or release cycles. Minimum threshold separations of less than 6dB are therefore not recommended unless very subtle gain changes are desired.

Support

You can visit the Sonalksis website to find the latest product information. If you are a registered user you will automatically receive relevant information about new releases and updates, unless you unsubscribe from this service.

All Sonalksis plug-ins are installed, authorised and updated using the 'Plug-in Manager' application. You can download this application from the Sonalksis website.

If you encounter any difficulties when installing or using our products, please ensure that you have read all appropriate documentation, including the relevant user guides and FAQ on our website before contacting us.

If you are unable to resolve your issue after reading all appropriate documentation, you can log in to your Sonalksis user account on our website, and access the 'Support' section where you can request direct assistance.

www.sonalksis.com/support

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Appendix: Technical Specifications

DQ1 Supported Sample Rates:

- 44.1 kHz
- 48 kHz
- 88.2 kHz
- 96 kHz
- 176.4 kHz
- 192 kHz

DQ1 Control Ranges:

Band No.	Filter Response Type/s	Low/High Gain (dB)	Frequency Range	'Q' / Slope	Attack Range (ms)	Release Range (s)	Low/High Thresh (dBFS)
1	Bell / Shelf	+/- 18	15 Hz - 510 Hz	0.4 – 10.0 / 0.5 – 5.0	1.0 – 100.0	0.05 – 2.5	-60 - 0
2	Bell	+/- 18	50 Hz – 8.5 kHz	0.4 – 10.0	1.0 – 100.0	0.05 – 2.5	-60 - 0
3	Bell	+/- 18	100 Hz - 18.0 kHz	0.4 – 10.0	1.0 – 100.0	0.05 – 2.5	-60 - 0
4	Bell / Shelf	+/- 18	1.0 kHz - 22.0 kHz	0.4 – 10.0 / 0.5 – 5.0	1.0 – 100.0	0.05 – 2.5	-60 - 0

NOTICE

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