moveq+

2, 4 & 8 band fully dynamic equalizers

User Manual

DERKNOTT

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Introduction

Thank you for purchasing **MOVEQ+** and Congratulations! Whether you're a producer, musician, sound engineer or installer, you've just added a powerful new weapon to your arsenal of devices for the Scope platform.

MOVEQ+ is a series of three devices which are the first parametric equalizers for SCOPE that have dynamically controlled gain, frequency and quality settings. The 8-band version is the largest in the series & is an incredibly versatile tool, capable of an extremely wide range of both creative & precision processing & audio engineering tasks.

For less complex tasks which require fewer EQ bands, 2 & 4-band versions of MOVEQ+ are available. These smaller versions are based on the same architectural principles, but are significantly less DSP intensive, which can be crucial if you're moving towards the limits of your system's DSP power.

The MOVEQ+ series are the first dynamic equalizers for the SCOPE platform which are capable of MIDI-note-controlled parameter value changes. (when used in combination with the MOVamily device "MIDI-4-kick")

With the use of dynamically moving parameter values MOVEQ+ can bring life in a very musical manner to single instruments, multiple instruments such as grouped percussion and drums or even to a whole mix! You can make your tracks respond to each other dynamically or easily get types of dynamic movement which can make them more interesting.

With some detailed work on the way specific sounds react to each other, you can improve the 'musical communication' between acoustic instruments. Examples are explained in Chapter 7 - "Examples of use".

There are an almost endless number of possibilities with MOVEQ+, many of which (especially to beginners with dynamic equalisation) will be completely experimental until the user builds his or her own feel for the potential in the MOVEQ+ and MOVamily devices.

Martin Knott

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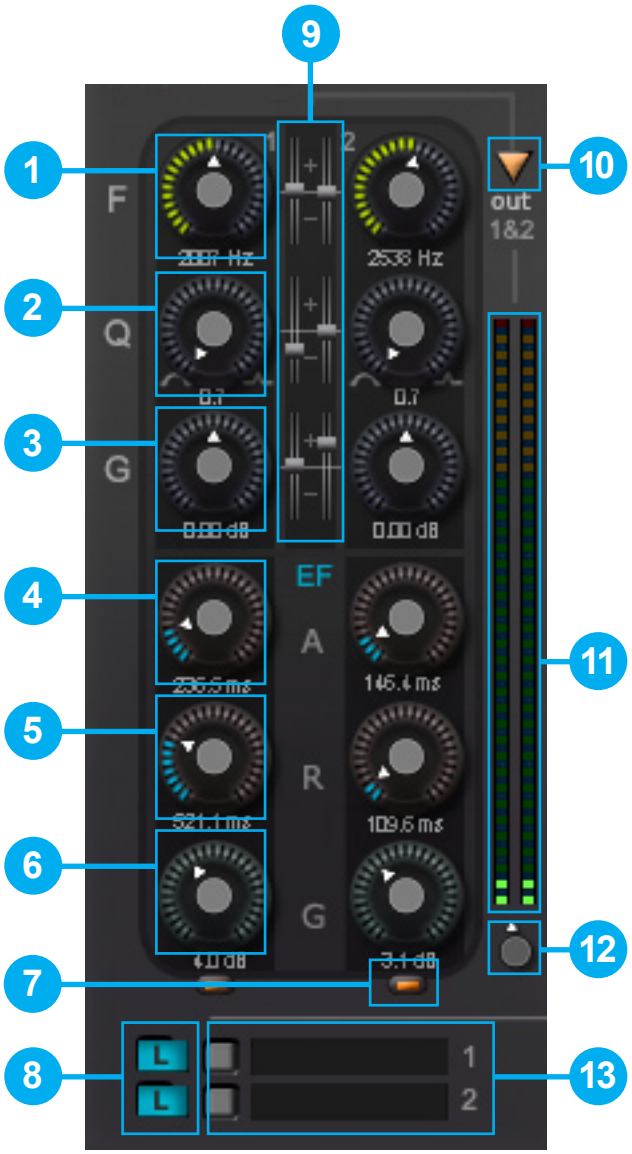
Controls



EQ Section

Each EQ Section consists of a pair of Parametric Equalizers (EQ) and a pair of Envelope Followers (EF).

1 - **EQ Frequency** - [20 - 20,000 Hz]
2 - **EQ Quality (Q-Factor)** - [0.1 - 20.0]
3 - **EQ Gain** - [-12 - +12dB]
4 - **EF Attack** - [0.1 - 5000.1 ms]
5 - **EF Release** - [0.1 - 5000.1 ms]
6 - **EF Gain** - [-inf - +12dB]
7 - **EF Bypass** - [on/off]
8 - **EF Input Select** - [L, R, Sidechain (SC)]
9 - **EQ Modulation** - +/- EF Modulation of EQ parameters
10 - **EQ Section Bypass** - [on/off]
11 - **EQ Section VU** - Metered display of EQ Section Output
12 - **EQ Section Gain** - Attenuate / Boost EQ Section Output
13 - **Pre-Follower Inserts** - Inserts for the Envelope Followers

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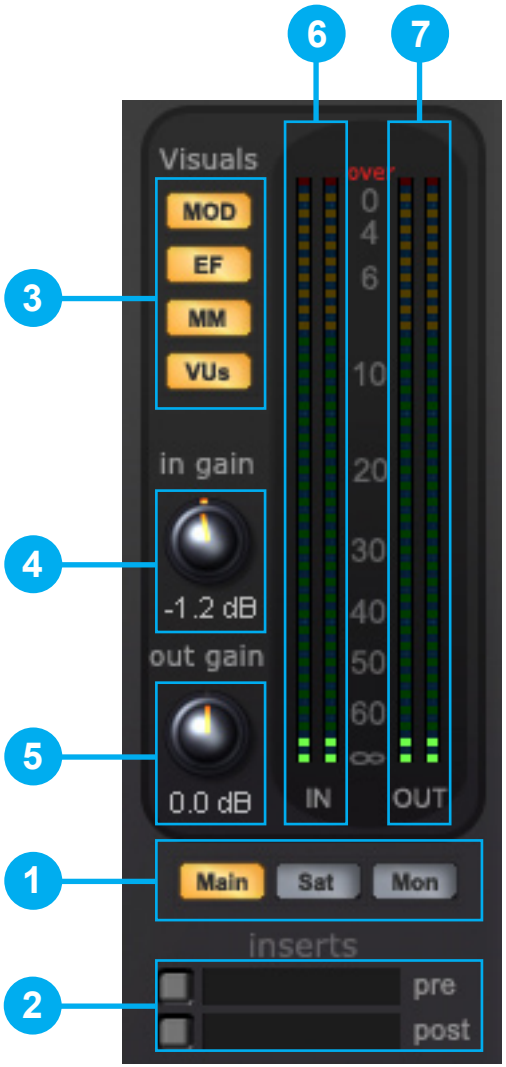
Controls (Cont'd)



Master Section

The Master section consists of 3 pages for Global adjustments and monitoring of MOVEQ+

1 - **Buttons for switching between the 3 Master Pages** - [Main / Sat / Mon]

2 - **Master Inserts** - Pre & Post EQ Inserts

Main Page

3 - **Visuals Buttons** - Switch on/off moving elements of MOVEQ+
[MOD (EQ Modulation Meters), EF (EF Gain meters), MM (Main i/o VU's), VUs (EQ Section VU's)

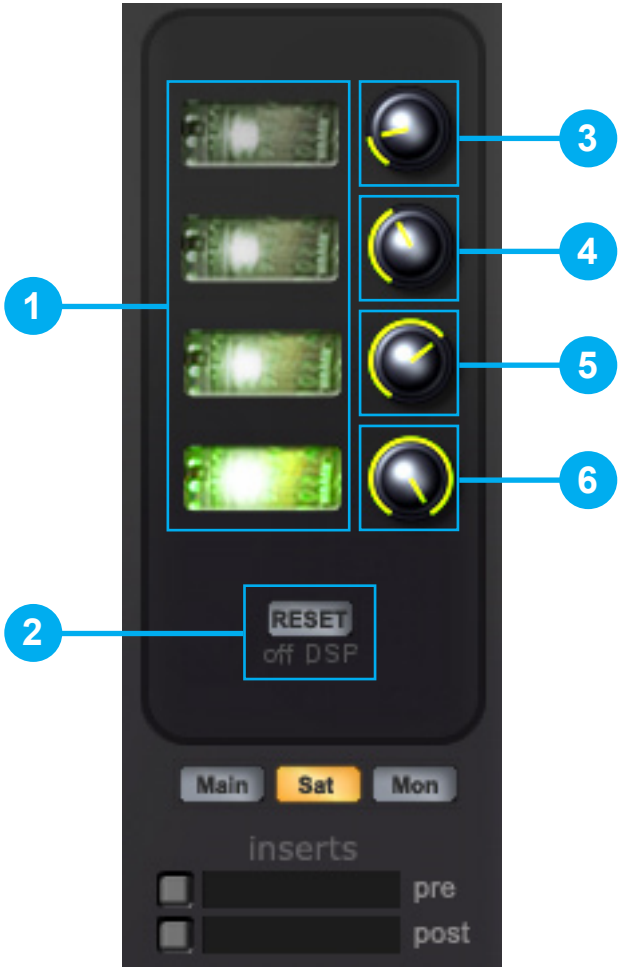
4 - **In Gain** - Master input gain control [-inf - +24dB]

5 - **Out Gain** - Master output gain control [-inf - +24dB]

6 - **Master Input VU** - Metered display of Master Input

7 - **Master Output VU** - Metered display of Master Output

Controls (Cont'd)



Sat Page

1 - **Tube Displays** - Provide a modern tube style representation of saturation amount for each EQ section.

2 - **Reset button** - Switches off all saturation

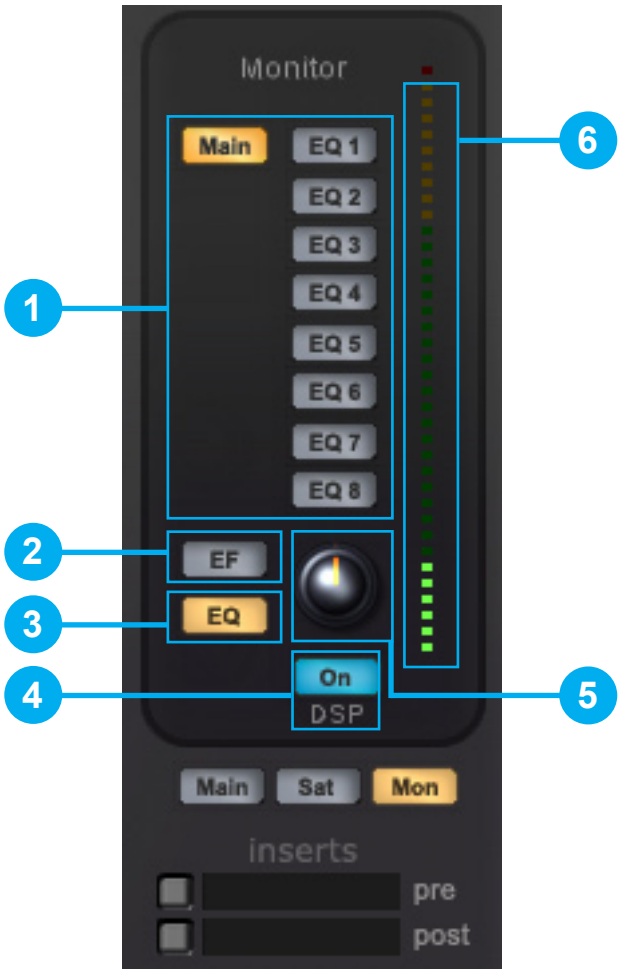
3 - **Saturation Amount (bands 1 - 2)** - [0 = off]

4 - **Saturation Amount (bands 3 - 4)** - [0 = off]

5 - **Saturation Amount (bands 5 - 6)** - [0 = off]

6 - **Saturation Amount (bands 7 - 8)** - [0 = off]

Controls (Cont'd)



Mon Page

1 - **Monitor Select** - Selects between Main & bands 1 - 8 to monitor
2 - **EF Monitor** - Allows Monitoring of EF signal on selected band
3 - **EQ Monitor** - Allows Monitoring of EQ signal on selected band
4 - **On / Off Button** - Switches on / off Monitor section to free up DSP
5 - **Monitor Gain Control** - attenuates / boosts monitor signal
6 - **Monitor VU** - Metered display of Monitor selection

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Chapter 1

Dynamic movement of the EQ parameters

With it‘s basic settings, EQ parameter values can be set in varying amounts to move in either positive or negitive directions by the small fader next to each of the 3 EQ parameter-knobs per band.

Movement amount, shape & speed depend on the control signal derived from the envelope-structure of the input signal to the envelope follower stage (“EF”) for each band.

It would be too boring if all of the EQ parameters were only able to move based on the same envelope-curve, so with an EF stage per band, MOVEQ+ allows you to manipulate the control-signals individually for every EQ-band in a multitude of ways!

On each of the EF stages you can set the amount (gain), attack and release time for every control signal.

By toggling the control-input selector, the input signal to each of the EF stages can be set to either L or R main input, external sidechain (SC) input or pre-follower insert slot. More will be explained about the insert slots & sidechain inputs in the following chapters.

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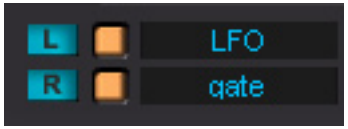
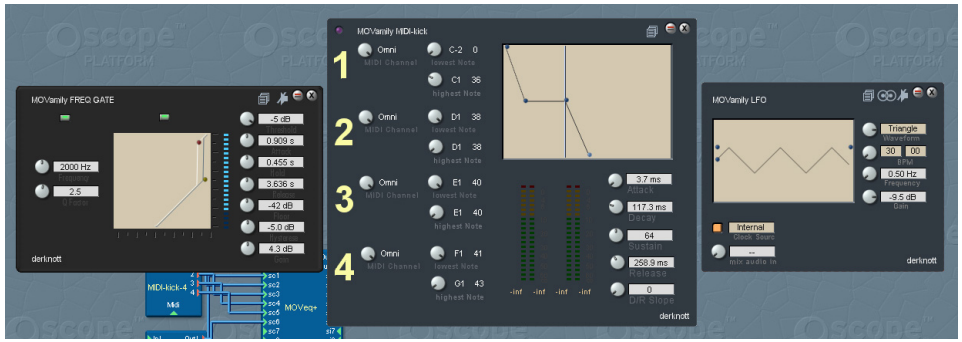
Chapter 2

Using the pre-follower Inserts

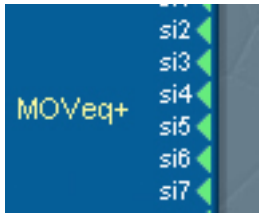


The pre-follower inserts are primarily for changing the signal which controls the movement of the EQ parameters. With standard insert modules from the SCOPE library or one of the MOVamily devices which have been developed expecially for MOVEQ+, you can influence the control signal with exchangable modules inserted in the pre-follower insert slots.

The growing collection of MOVamily devices are FREELY AVAILABLE to download from www.derknott.de



It is important to know that you will not hear the sound of an insert device when using it in one of the pre-follower insert slots except when you monitor it in the monitor section of MOVEQ+ or use the single outs of the inserts which are labelled “si” on the Scope routing window module for your MOVEQ+ device.



Below are a few simple examples of what you can do with the pre-follower inserts:-

- Insert a standard SCOPE mono-delay to achieve a delayed control-signal... This can then be set to generate a delayed movement of whatever EQ parameter values you’ve set to modulate on that particular band.

- Insert a distortion-module to lower dynamic response of the signal.

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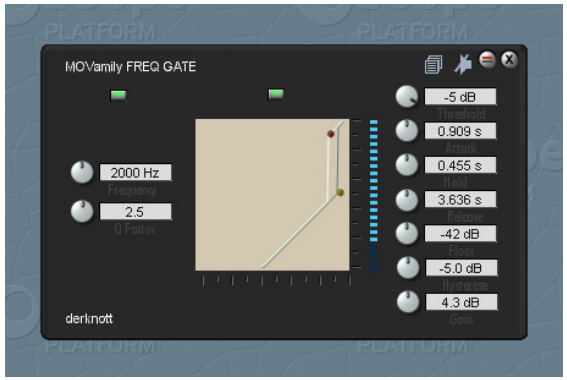
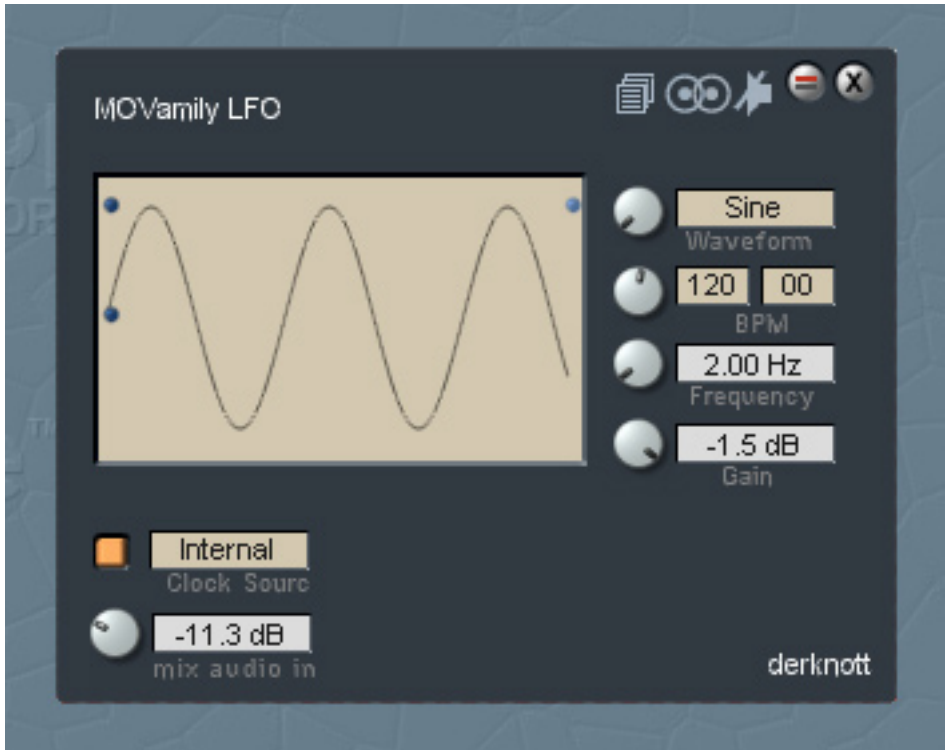
Using the pre-follower Inserts

- Insert a filter (bandpass, highpass or lowpass) to select the frequency bands which are let through to control EQ movements or modulations. You can easily build a deesser by inserting a highpass filter and setting the control-signal to subtract gain values from an EQ which is set to high frequencies.



- Insert the frequency dependant gate from the MOVamily and you can set a frequency controlled offset value for the control-signal. For instance, the deesser example above should only reduce gain, when incoming high frequencies excede a certain level.

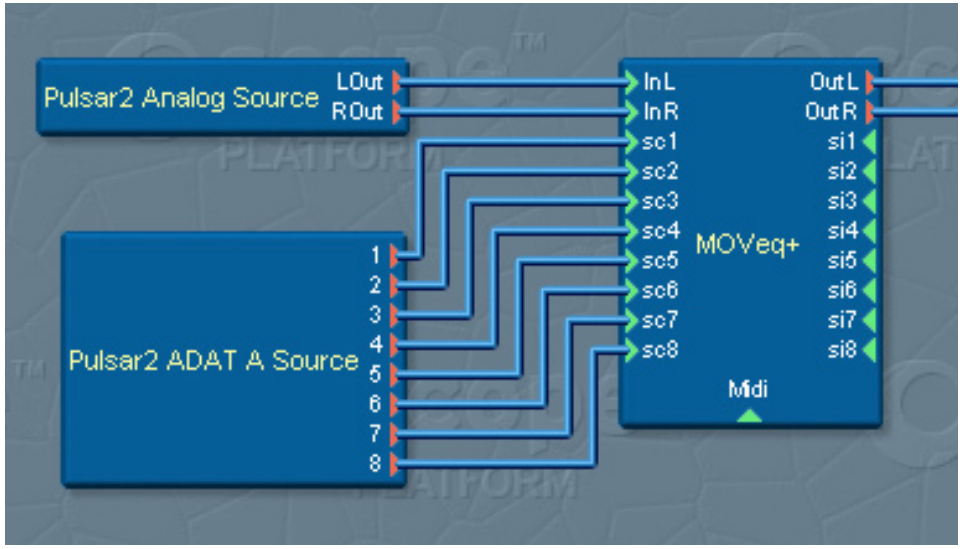
- Insert the MOVamliy LFO-module to get everything from freaky to tightly controlled, bpm-synced modulating EQ parameters!



Chapter 3

Using the external sidechain (SC) inputs

As long as you're using MOVEQ+ standalone and not as an insert in your mixer, you can connect any sound source to the sc-inputs. To do this, connect a sound source to a MOVEQ+ SC input in the Scope routing window & set the control-input selector on MOVEQ+ to "SC". Now the control-values are derived from the dynamic structure of the incoming SC signal & you can make EQ parameter values change depending on the external input.



An interesting example would be that perhaps you would want to let incoming vocals push down certain frequencies in an instrumental track, so that the vocals become more clearly audible while the volume of the instrumental track stays almost the same.

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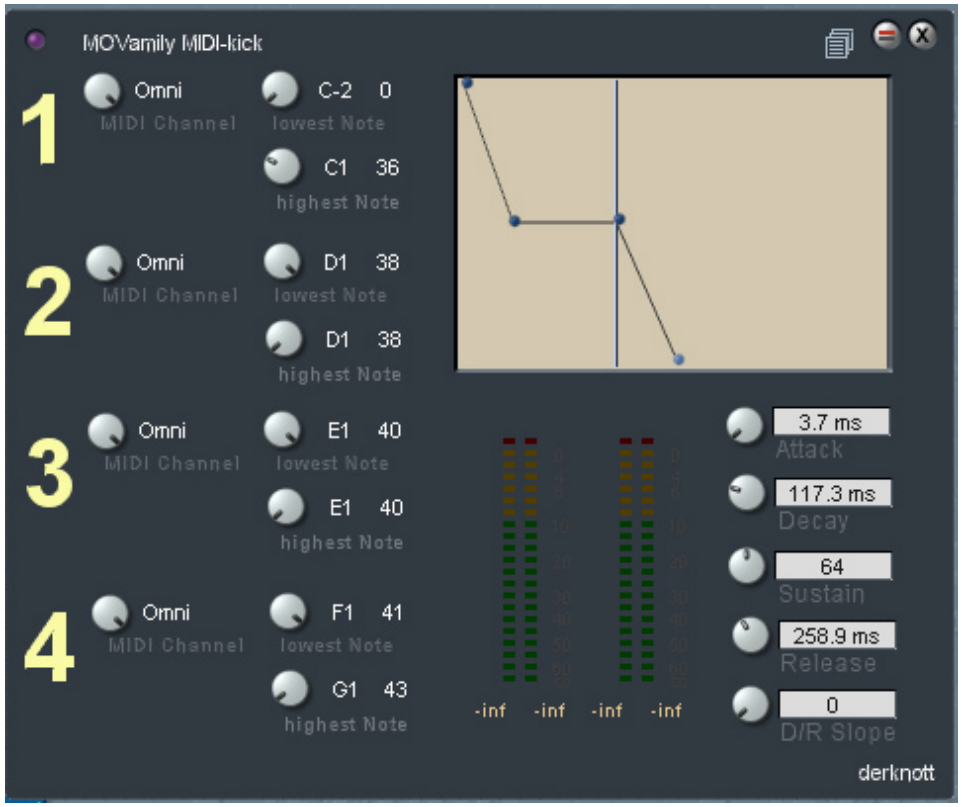
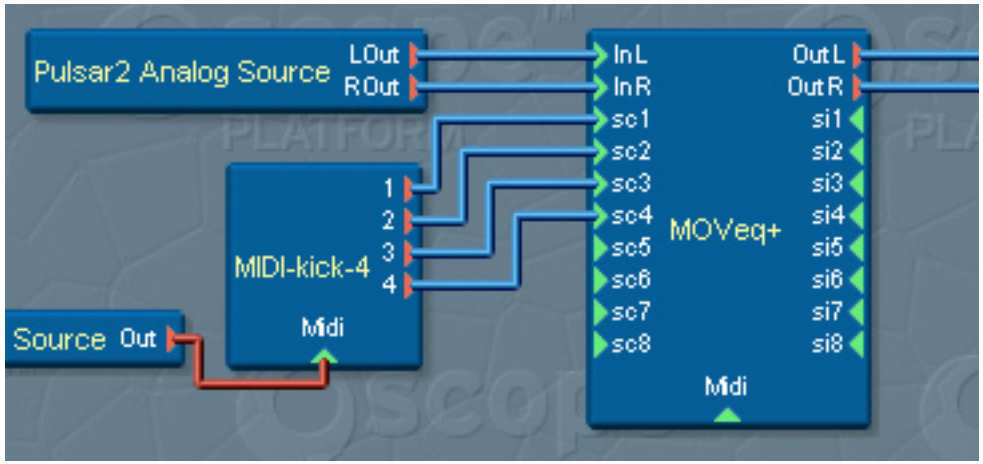
Chapter 4

Controlling parameter value changes with MIDI notes

To obtain a MIDI-note-controlled MOVEQ+ you should use the “MIDI-4-kick” module from the MOVamily collection.





In the Scope routing window, connect the MIDI-4-kick module to the MIDI source which has the MIDI signal from your keyboard or sequencer and connect the output of MIDI-4kick to the sidechain-input of the band you want to control. Then on the MIDI-4-kick module, simply setup the desired notes which should lead to pushing or diminuing the values of the EQ-band depending on the Envelope-settings and the velocity of the played MIDI-notes.

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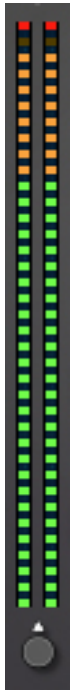
Monitoring

The monitor section allows you to monitor each single control-signal and each single EQ band. This way you can easily set your pre-follower-inserts or you can monitor/solo individual EQ bands. Please be very carefull when monitoring the signal of MIDI-4-kick – It is not an audible signal, it is DC! You could damage your studio speakers at high volume with the MIDI-4-kick signal. A gain control is provided in the monitor section to compensate for weak/ strong signals in the selected EQ or EF. The monitor-section can be taken from DSP as a whole using the on/off DSP button.

Note: *When monitoring EQs you will hear the effect of the selected EQ on the input before the EQ-group. Monitoring in MOVEQ+ is for better estimation of the specific band-settings. The monitor signal may slightly differ from the result within the whole context of MOVEQ+ -circuit.*

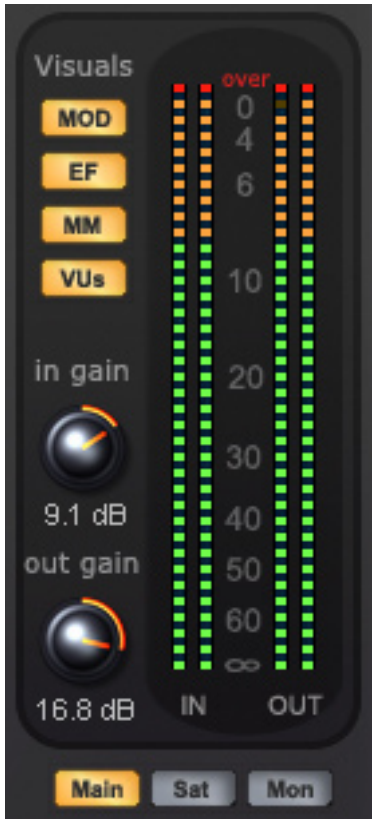
Chapter 5

Gain Setting



Setting of gain is something which has to be done carefully in a device which can add dozens of decibels of gain as a whole. You can adjust the gain level for every 2-EQ-group and you can set a global input & output gain.

Clipping will be shown on the VUs between every 2-EQ-group and on the in & out VUs on the master section (access via “Main” button).



Preset handling

MOVEQ+ is (like most SCOPE devices) able to handle Presets to save complex settings you make for specific tasks or tracks within your recordings.

Note: *MOVEQ+ does not remember the settings on the monitor page (access via “Mon” button) so that when you’re zapping through presets you do not have to switch on/off the monitor-buttons with every new preset.*

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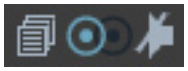
Chapter 6

Special Settings

MOVEQ+ is a very versatile tool in your studio environment. The list of special settings below refers to the 8-band version of MOVEQ+. The same settings apply to the 2 & 4-band versions, but obviously (and logically) to their reduced number of bands where relevant.

1. The Mono-Mode is not just a mono-mode like in most other SCOPE devices. It has a more flexible approach. When you set the device to mono, it takes off all right EQ algorithms from DSP, so that you can use the MOVEQ+ device as a mono or stereo EQ without wasting too much DSP recources.



2. The Stereo-Split-Mode allows you to set parametric EQs 1-4 for the left side and EQs 5-8 for the right side. So you can even musically influence the stereopanorama of your input or obtain some weird & wonderfull stereo sounds when making individual settings for L&R!

3. The SAT settings (access via “Sat” button) enable you to get saturated sounds, while not wasting too much DSP-power. You can vary the amount of saturation for each stage and individually enable & disable all four SAT stages. When a Saturation amount control is set to zero, this will remove it’s SAT stage from the DSP. All saturation can be disabled at once using the ‘reset’ button. A small click may be heard while enabling or disabling Saturation, therefore care must be taken when using these controls during performance.

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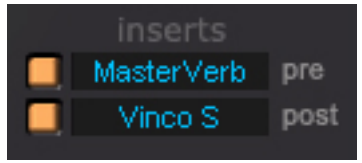
Special Settings

4. Every 2-EQ-group can be taken from DSP as well as every Envelope follower if it's not needed. That way you can save DSP resources in a flexible manner depending on your individual needs!

5. All moving visuals can be turned off on the "Main" page of the master section. This may be important for older, slower computers or for systems with slow graphics cards. Disabling the moving visuals may also be useful during extended periods of use, as it can help to reduce eye fatigue.

6. The two master-inserts allow you to add some effects before and after editing the sound with MOVEQ+.



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Chapter 7

Examples of use

Various examples of use have already been briefly explained in several sections of this manual, but understandably most users of MOVEQ+ will require some more detailed examples of what can be achieved with this complex device. Below are some examples in slightly more detail.

1. Correcting volume inbalances of instruments in a recording:

This can be achieved through changing the spectral balance of the recording or music by attenuating or boosting certain instruments. Since most instruments overlap in their frequency ranges, trying to affect just one instrument without affecting others is normally next to impossible. To tackle this problem, you can set up MOVEQ+ so that boost is only applied if the loud instrument pauses or some dynamic attenuation is only applied whenever the loud instrument plays.

NOTE: *This technique is not solely applicable to correcting volume inbalances in recorded material, but can also be used creatively in many ways for achieving more lifelike and desirable live instrument recordings.*

2. Altering perceived proximity relationships with dynamic gain:

Frequency bands with dynamic gain is one thing that you'll find in deessers, multiband compressors & several other kinds of filter layout. With a versatile dynamic EQ like MOVEQ+, moving the gain of certain frequencies in one track by the beat or groove of another (a drum track for instance) can make them react in such a way that they perceivably get closer. IE: they can be forced to blend together in a more musically pleasing and lifelike manner which can close the perceived distance that they previously had from each other.

Chapter 7 (Cont'd)

Examples of use

3. DeEssing:

"Ess"-sounds usually occur on recordings with human vocals. They are the product of over-compression, or similar effects. These sounds are characterised by an exaggerated hiss or "s"-pronunciation. They mostly occur in the band between 1kHz - 10kHz. Since high frequency content is very important, it's normally undesirable to simply attenuate high frequencies, as this will often reduce quality by making the material sound dull or muffled. By setting up a dynamic cut EQ, the "ess"-sounds can be reduced, without affecting low-level high-frequency content.

NOTE: *Applying DeEssing with MOVEQ+ is a technique which is not only heavily dependant on your source material, but also takes very careful fine tuning based on your perception of the problems in the material. To fine tune MOVEQ+ for this purpose it's recommended that you adjust values incrementally using the cursor keys on your keyboard.*

4. Multiband compressor/expander:

MOVEQ+ is not as fast as a multiband compressor with it's value movements, but for some jobs it's capable of holding the frequency gain of selected frequencies at certain levels.

Chapter 7 (Cont'd)

Examples of use

You get an 8-band slow but very good sounding multiband compressor. To achieve this just put multiple instances of the frequency controlled gate in the pre-follower inserts, set the same frequency in the inserts & in MOVEQ+ bands set the frequencies which should be manipulated. Set the gate threshholds to the point where MOVEQ+ should begin to push or pull the frequency gains and set the movement amount with the small sliders in MOVEQ+. This is similar to a deesser implementation but also working with mid & low frequencies.

5. Imitating a (dynamic) loundness switch on your hi-fi:

At lower listening levels our ears do not recognize very high & low frequencies so well, so it's sometimes desirable to push these frequencies a bit. Set up MOVEQ+ so that when a given signal becomes lower, bass & treble is pushed up.

6. Autowah:

Take several bands and push frequencies from around 200-500 HZ up while moving Q from wide to narrow. Yes, it takes more DSP than CW autowah, but sounds better to my ears.

Examples of use

7. Filter sweeps using LFOs:

Inserting LFOs in the inserts is an easy way to achieve nice sweeping filter effects. Leave gain and Q (you can move them too - it's just a matter of taste) and just make the band frequencies move to your taste. Doing this with very narrow Q values you can also get phase-like effects which sound much better than 'normal' CW phasers.

8. Weird special effects:

Experiment in detail with MOVEQ+ and the MOVamily devices & all sorts of weird & wonderfull creative effects are possible.

Dig deep & enjoy using your MOVEQ+!