

# Scheps Omni Channel

## User Guide



# Scheps Omni Channel

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## Introduction

Thank you for choosing Waves! In order to get the most out of your new Waves plugin, please take a moment to read this user guide.

To install software and manage your licenses, you need to have a free Waves account. Sign up at [www.waves.com](http://www.waves.com). With a Waves account you can keep track of your products, renew your Waves Update Plan, participate in bonus programs, and keep up to date with important information.

We suggest that you become familiar with the Waves Support pages: [www.waves.com/support](http://www.waves.com/support). There are technical articles about installation, troubleshooting, specifications, and more. Plus, you'll find company contact information and Waves Support news.

### A note from Andrew Scheps

Hello and welcome to the Scheps Omni Channel user guide! I'm really excited about this plugin, and so is everyone at Waves. It took a lot of hard work to bring it to life, and I think the final product has not only met, but exceeded, all of our expectations. The genesis of Scheps Omni Channel came from our desire to fulfill the classic definition of a channel strip (EQ, Dynamics, and more—in one plugin), while giving the user the sonic color options and flexibility that you get from mixing and matching equipment or plugins. The real breakthrough came when we redefined “channel strip” to mean “everything you need to make your tracks sound better, all in one easy-to-use unified interface.” We think Scheps Omni Channel lives up to that definition, and then some!

Scheps Omni Channel is a powerful channel strip plugin that was developed in collaboration with multi-Grammy®-winning mixing engineer Andrew Scheps. It's made up of the kinds of tools that Andrew has used over the years to craft the sound of his legendary mixes; tools that help get the mix done, and get it done really well. Scheps Omni Channel is made up of five processing modules, an input/output section, and an insert point for an additional plugin. All of these hold up on their own, but together they shine. This is not just a collection of useful, great-sounding processors, nor is it just an artist signature plugin that delivers the taste and attitude of a specific engineer—It's both.



You can start with the presets to get an idea of how Andrew (and other world-class engineers) would use the plugin. There's also a Focus mode that highlights the go-to controls best suited for the loaded preset. This points your eyes and fingers in the right direction and helps you learn how the modules work together. You can, of course, explore the plugin on your own. You'll quickly see just how much freedom you have to create the sound you're looking for.

## Startup Condition

When you instantiate Scheps Omni Channel on a track, all processing modules and all sections within modules are switched off. A module that's off does not consume any CPU power. Sections within a module can be bypassed independently—this does not affect CPU.



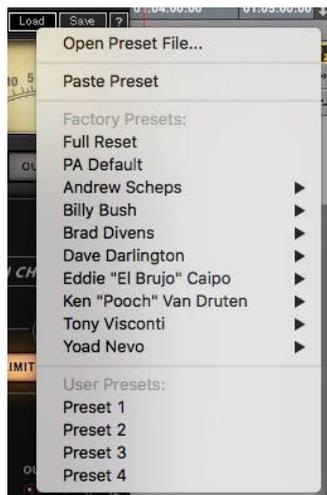
## Using Presets

Use the WaveSystem Toolbar at the top of the plugin to save and load presets, compare settings, undo and redo steps, and resize the plugin.



Saved presets can easily be shared between instances, whether in the same session, in a different session, or in a different host application.<sup>1</sup> To learn more about managing presets, click the icon on the upper-right corner of the window and open the WaveSystem Guide. This tiny toolbar can really help you, so it's worth investigating.

The arrows on the left side of the toolbar provide 32 levels of undo and redo. This includes all plugin functions, including resequencing the Omni Channel modules.



All presets—factory and user-created—are recalled from the **Presets** menu (far left) Access the Presets menu with the big button in the middle of the toolbar. To restore all controls to their factory default status, select “Full Reset.”

Use the **Save** menu to create presets from existing plugin settings and to copy presets to other instances of Scheps Omni Channel. To delete a preset, hold Cmd while opening the Presets menu (Mac).

“Set as Default Preset” saves the current settings as the default preset. It will load each time Scheps Omni Channel is instantiated. Stereo and mono components have different default presets. If you do not want any default preset, use the host computer’s operating system to delete the file. Preset files are located here:

Mac: Users>Shared>Waves>Plug-In Settings

Windows: C:\Users\Public\Waves Audio\Plug-In Settings

<sup>1</sup> When working with Pro Tools, you must close and relaunch the application after creating a user preset in order to hear the results.



# Components

Scheps Omni Channel has two components: Mono and Stereo.

## Mono Component Collapsed View



# Stereo Component Collapsed View

Stereo Mode Select 



Processing Modules

Insert Point

Master Section



## Expanded View



A module can also be controlled from its Expanded view. It provides more control options than the Collapsed view, as well as giving you access to the Left and Right (in Stereo or Duo mode) or Mid and Side controls (in M/S mode) separately. Knobs are bigger than in the Collapsed view, so it's easier to read and it's better suited for touch displays.

To open the Expanded view, click on the window symbol at the top right-hand side of a module strip.



At the top of the Expanded view panel is a bar that controls basic window functions. It varies slightly by module.

- |               |  |
|---------------|--|
| Bypass module | Click on module name.  |
| Stereo mode   | Select between the three stereo modes: Stereo, Duo, and M/S. |
| Link          | Click to link/unlink the left and right controls.            |
| EXT SC        | Click to turn on or off the module's external sidechain.     |
| Close window  | Click on the window symbol to return to the Collapsed view.  |



## Stereo Mode and Stereo Controls Linking

There are two controls that affect stereo channels: Stereo Mode and Stereo Controls Linking.

### Stereo Mode Select



In the Scheps Omni Channel stereo component, there are three modes for processing a stereo signal within a module: Stereo, Duo, and M/S.

**In all modules**, the Stereo Mode switch sets whether the stereo input signal will be processed as L/R stereo (Stereo and Duo modes) or will be converted to M/S for separate control of the mid and side channels (M/S mode).

Additionally, **In the dynamics modules** (DS<sup>2</sup>, Compressor, and Gate), the Stereo Mode selection determines how the sidechain is processed.

- Stereo** Left and right channels are summed in the sidechain. The sidechain values are the same for left and right, so dynamic processing will apply equally to both channels.
- Duo** Left and right channels of the sidechain are processed separately, so dynamic processing may not be the same for the left and right channels.
- M/S** Mid and side channels of the sidechain are processed separately, so dynamic processing may not be the same for the mid and side channels.<sup>2</sup>

Regardless of a module's Stereo Mode, its output is always stereo. If needed, it will be converted to M/S at the input of the next module in the chain. This allows re-ordering of the modules on the fly with no impact on the stereo processing.

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<sup>2</sup> Pro Tools provides only a mono sidechain.



## Linking Controls

In the Collapsed view, there is one control per function (e.g., frequency, gain, SC listen, thump), whether the signal is mono or stereo. Both channels of a stereo signal are controlled together, and by default, with the same values.



Use the Stereo Linking button in the Expanded view to decouple left and right controls so that you can adjust the sides separately.

When you relink variable controls, such as knobs and faders, their offsets will be maintained.

When Stereo Linking is on, switches are linked, clicking a left or right switch will set both controls to the same value (e.g., EQ type, filter on/off, SC on/off, and dynamics processing mode).

In Stereo or Duo stereo modes, the left and right control sections are labeled L and R.

In the M/S mode, the labels will change to M and S, for mid and side

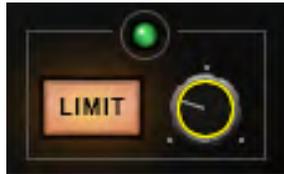
Left and right, or mid and side, are always linked in the Collapsed view.



## Common Controls

To activate a module, click on its name button and the light will go on. When the light is off, the module is bypassed. In addition, certain sections can be bypassed individually:

- In the **Pre** module, the Saturation and Thump sections can be bypassed.
- In the **EQ** module, each band can be bypassed individually.
- In the **DS<sup>2</sup>** module, each band can be bypassed individually.



Switches are illuminated when active or selected. The switch, fader, knob, that's currently being controlled is outlined in yellow

## Copy Channel Parameters



You can copy plugin parameters between left and right sides of any module. While in the collapsed view, right-click in a blank space of the module. This opens the Stereo Copy drop-down menu. Copy the parameters of the left side to the right, or vice versa. Copying overwrites the parameters of the target channel.



## Sidechain

Compressors, gates, and de-essers use a gain attenuation device to alter the level of a given signal. This gain attenuator can be a VCA, an FET, a tube, or an opto-resistor, depending on the design of the unit. This device is controlled by a circuit that looks at the input signal and determines how much to attenuate the gain, based on different settings (attack, release, ratio, and threshold). This circuit is known as the **internal sidechain**.

*Example: Using an internal sidechain to reduce kick bleed in a snare track*

A snare track often contains bleed from the kick. When gating the snare, this bleed can carry enough energy to open the snare's gate. This can create a non-musical gate effect, since it should be the snare, not the kick, controlling the gate. By applying a high-pass filter to the internal sidechain, the kick's energy is reduced to the point that it no longer opens the gate. The snare alone is now opening the gate and there is no impact on the gate's sound.

### External Sidechain

Sometimes you need to control the dynamics of a channel based on the activity of another channel. This is known as an external sidechain. This process is particularly useful when one channel is interfering with another and you want to bring it forward or push it back without altering the dynamic characteristics of the entire track. Each of the Scheps Omni Channel dynamics modules can accept an external sidechain. All modules in a plugin instance receive the same external sidechain signal.

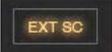
*Example: Using an external sidechain to reduce bass gain to prevent it from clashing with the vocal*

It's common for a bass to interfere with a vocal track. You can, to an extent, tame this problem with level control or EQ, but this undeniably compromises the performance. What you want is gain reduction on the bass, based on the vocalist's activity. Hence, an external sidechain.



This does the trick, but you're compressing the bass in places where you don't need to. Only at low frequencies is there a conflict between the bass and the voice, so you want to trigger compression only when the vocalist sings low notes. Add a sideband EQ boost around 200 Hz to 400 Hz, which is where bass and voice are most likely to collide. This biases the sidechain to activate the compressor mostly at low-frequency vocal sounds.

Set the Threshold so that only this accentuated low-frequency boost triggers gain reduction.

 Turn the external sidechain on or off with the EXT SC button.

## Shaping the Sidechain

The compressor and gate sidechain EQ controls that are located in the SC section of the Expanded view. Use these filters to shape the frequency content of the sidechain that's going to the attenuation device. This applies to both internal and external sidechains. This equalization assigns different compression priorities for different frequencies.



By default, all sidechain controls are inactive: SC on/off; EXT SC; and all SC EQ controls. Touch any EQ control in the sidechain panel and the sidechain EQ section will become active. The SC Filters button—at the top of the Expanded view, or at the bottom of the Collapsed view—will light, indicating activity in the sidechain.

Click the SC Filters button to turn all sidechain filters on or off. This lets you audition the sidechain to hear how sidechain EQ is influencing sidechain performance.





Switch the external sidechain on or off from the Expanded view or the Collapsed view.

Once you've set up a sidechain EQ, you can use the Filters button in the Collapsed view to turn sidechain filters on or off.



Click the **Sidechain Listen** switch to hear only the sidechain and how it's influenced by the SC filters. To easily locate a side band frequency, hold Ctrl and slide vertically over the Frequency control knob. This engages the Sidechain Listen mode and lets you sweep across the entire frequency range. Let go and the side band frequency is set.

This is particularly useful in the DS<sup>2</sup> module, since a precise side band frequency is very important. You can use the same technique in the EQ module to quickly and accurately locate a frequency.



When Sidechain Listen is engaged, the output faders control monitor level for the sidechain. This is indicated by a change in color.



# Channel Strip Modules

## Pre Module

The **Pre** module is used primarily to add harmonic distortion, much like analog devices add odd or even harmonics, or clipping, to a signal. The name “Pre” suggests the type of harmonic distortion that one would normally associate with driving preamps. But don’t be misled by this module’s default position at the beginning of the chain. Think of it instead as a processor that adds warmth and color that can be located at any point in the signal path. At the heart of the module is the **Saturation** section, which controls the type and amount of added harmonic distortion. There are also HP/LP filters and an EQ that adds a gentle low-frequency “thump” or resonance.



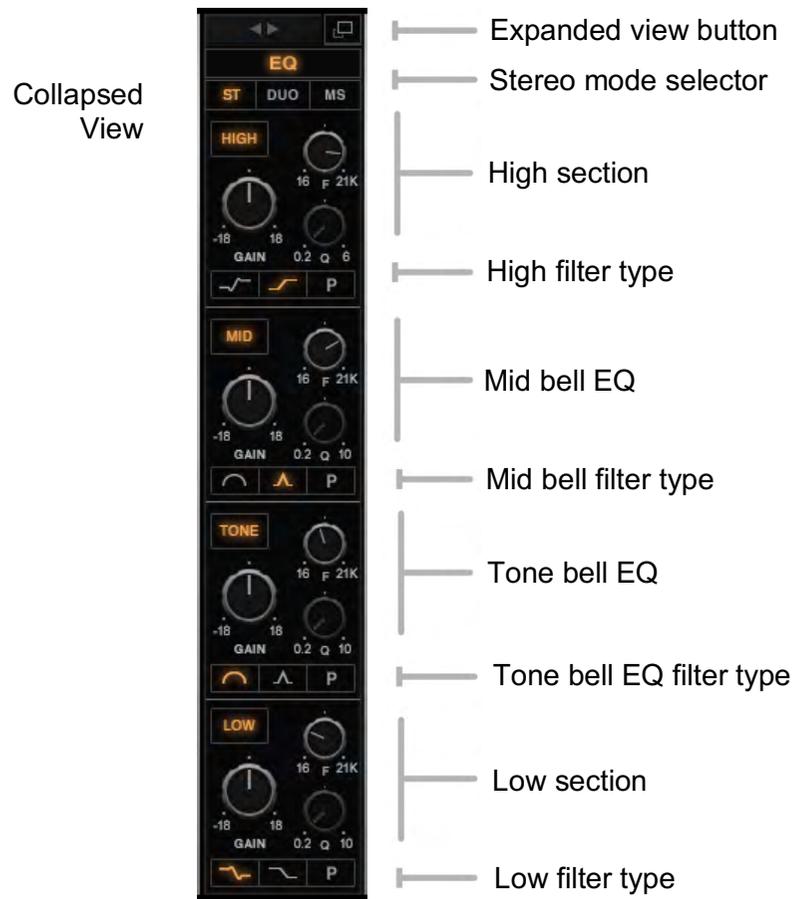
Expanded View



## EQ Module

The **EQ** module is a four-band equalizer. Each band provides a distinct musical sound that holds up on its own, while blending well with the other bands. Rather than being restricted to certain frequency ranges per band, each band can be centered at any audio frequency. Plus, any band can become fully parametric.

The **High** and **Low** sections each have shelves with fixed Q, as well as one adjustable parametric bell. There are two other EQ sections: **Mid** and **Tone**. They are identical except in the wide mode, where **Mid** is a wider, cleaner filter, best suited for enhancing the characteristic sound of the source. **Tone** is a bit narrower and can really help a source pop out of the track without too much EQ. Since it's somewhat smeary, it's good for coloring and gluing a track together.

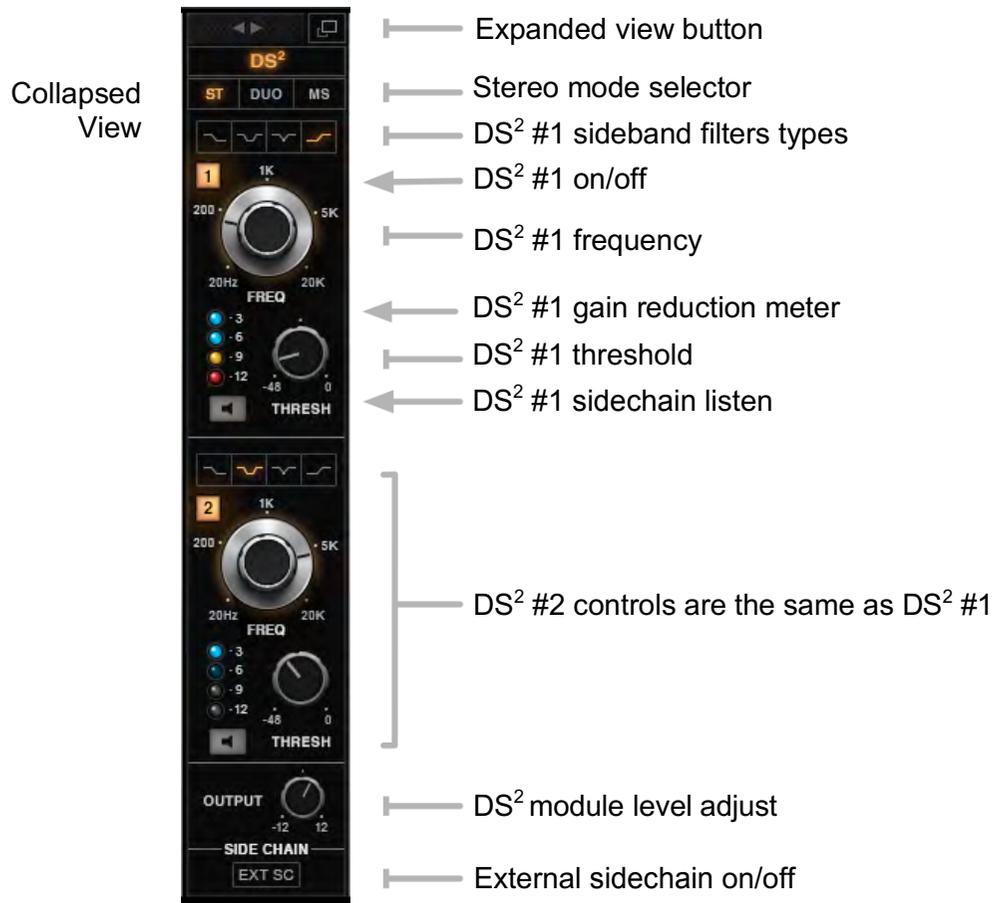


Expanded View



## DS<sup>2</sup> Module

The DS<sup>2</sup> module has two identical dynamic processing sections. Like a de-esser, gain reduction is activated based on a frequency-defined sidechain. Unlike a de-esser, each of the two DS<sup>2</sup> processors can selectively control dynamics at any frequency, with adjustable bandwidth and shape. The sidechain for the module can be an internal or an external source. One external side band supplies both processing sections.



Expanded View



## Compressor Module

The Compressor module is made up of three different compressor units, each with very different characteristics.

- **VCA** is a very fast, transparent, linear compressor.
- **FET** is a slightly slower compressor. It has more distortion and color than the VCA, and it's smoother.
- **OPT** (opto) is slow and very smooth, so transients are maintained.

Changing the compressor type does not alter the parameter settings, so you can efficiently compare the impact of each compressor type on the signal.

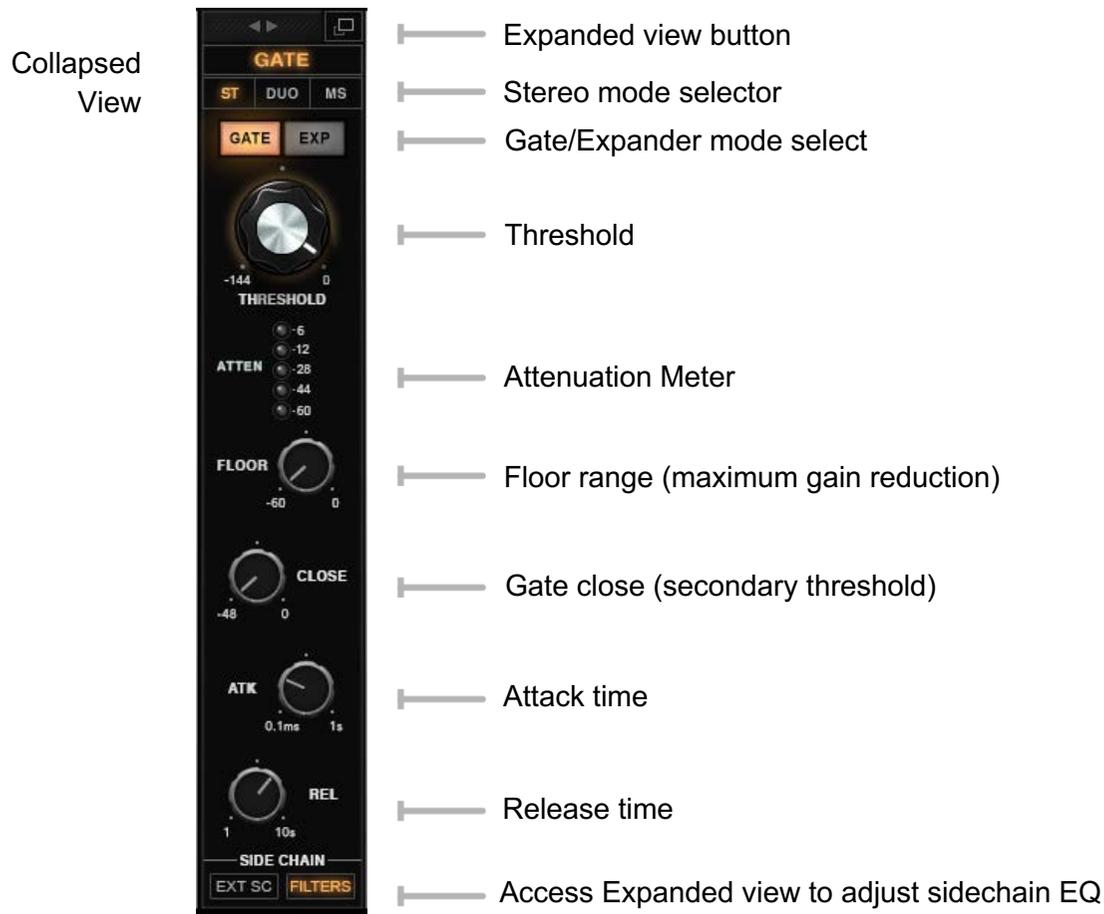


Expanded View



## Gate Module

The Gate module is a standard gate/expander with controls for threshold, attack and release. It also has controls for Range and Close, which let you adjust the maximum reduction to maintain a consistent noise floor. The sidechain can be internal or external and also can be filtered. Its ability to gate in M/S can yield some amazing results.



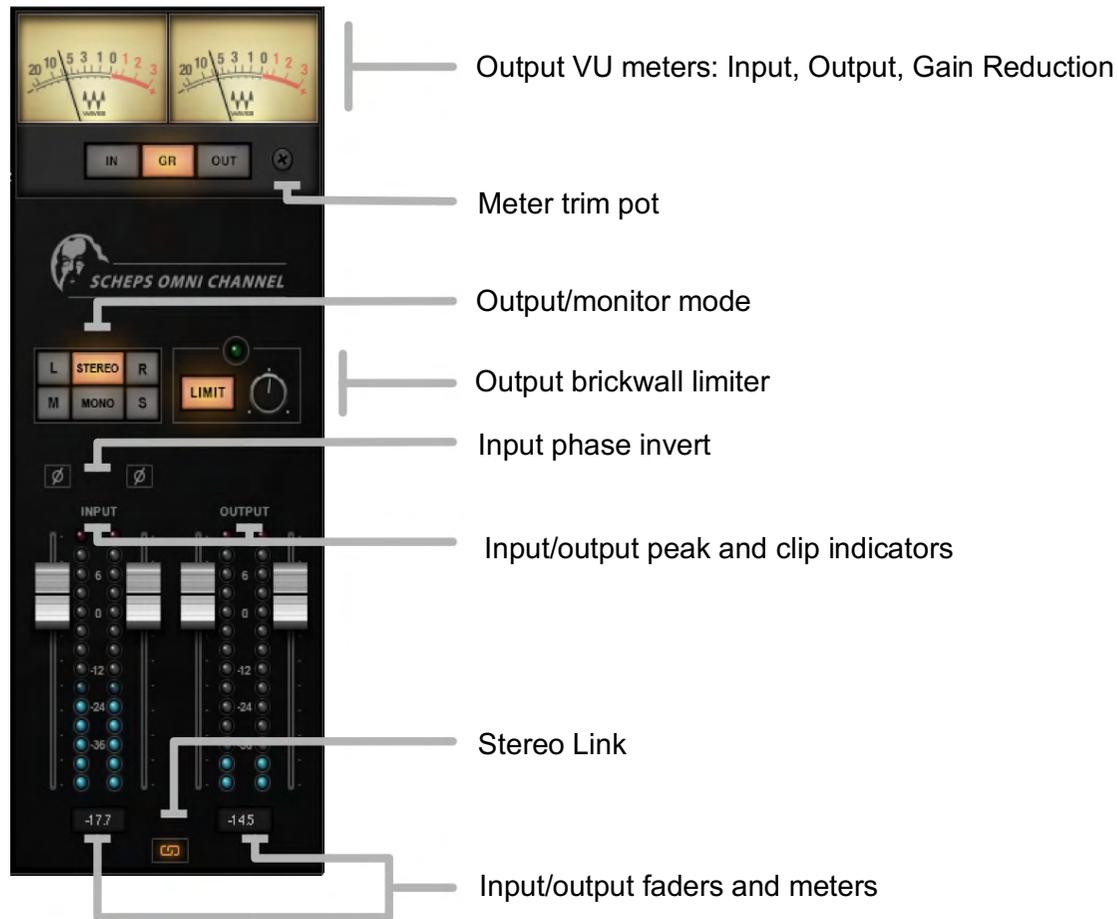
Expanded View



## Master Module

The Master module is divided into four sections:

- Twin VU meters that display input, gain reduction, and output level
- A Monitor section for selecting the output and monitoring format
- A brickwall limiter
- Input and output faders and meters



## Insert Plugin Slot

You can add one plugin in the channel strip to provide additional, specific processing. To insert a plugin, click the plus (+) sign at the top of the slot and select a plugin from the menu. This allows you to, for instance, add a second EQ plugin so you can have one before and one after dynamics processing, or double-compress a signal.



## Rearranging Processing Sequence

You can change the position of a module in the channel strip, and thus its place in the signal flow. Click+Drag on the left/right arrows above the module's name. In this example, we move the EQ module to the last place in the plugin's signal flow.



1. Grab arrows at the top of module.

2. Move module to its new position.

3. Let go. Other modules move left.

The position of a module in the proceeding chain can dramatically alter its influence on the overall sound of the signal. Experiment!



# Using Scheps Omni Channel

## Practical examples

Andrew Scheps gives us a few examples of using Scheps Omni Channel in the studio.

### Example #1: Kick Drum

- When mixing a kick drum, you'll usually want to start with the EQ.
- You can get to work right away on the main interface and start with the EQ while completely ignoring the rest of the modules in the strip. Maybe boost a little 60 Hz shelf, boost 12 kHz shelf for air, and somewhere around 5 kHz to 7.5 kHz broad tone for the beater.
- While adjusting the low shelf, you may notice it's getting a little messy in the low end. Head over to the Pre module and dial in the HPF at 30 Hz with an 18 dB-per-octave slope to clean up the sub while keeping the boom.
- While still in the Pre module, check out the Saturation and the Thump sections to see if either gives you more of what you're looking for. You might find that with the Thump engaged you can reduce gain of the low shelf a bit.
- Now that the EQ is sculpted (with some other goodies along the way), you can decide whether or not to compress with a slow attack time to bring out a little punch (quickly auditioning the three compressor types to see what suits this recording), or possibly use the gate to try to better isolate the drum mic.
- Now, with dynamics engaged, you're into processing where the order can really make a difference. Therefore, drag the Compressor module pre- and post-EQ and see what works better for you. You can even expand the dynamics controls and see if putting a high-pass filter on the compressor sidechain keeps it from pumping too much. You can also try smashing a little more than you otherwise would and then dialing back the wet/dry control to turn it into a parallel compressor.
- While trying to tweak the gate, you realize that it's working OK, but what you're really trying to get rid of is bleed ringing from the floor tom that happens every time the drummer plays the kick drum. A gate can't help



with that, but the DS<sup>2</sup> certainly can. Use the Ctrl modifier (Mac) to solo the sidechain while finding the trouble frequencies. Try a couple of different filter shapes to isolate the bleed as much as possible, and then use the threshold control to suck out the bleed as much as you can without taking too much tone away from the drum.

### Example #2: Vocal

- Here you might reach for the high pass filter first just to control the boom of the recording and some plosives, but the first major port of call would probably be the compressor.
- Set up a 4:1 compressor with relatively slow attack and fast release for presence and then try out the compressor types to see what works best on this voice.
- Now it's time for the rest of the preamp controls, using a little Saturation to add some grit and maybe even a little thump to add some body.
- From here, you move to the EQ, open up the top with the resonant high shelf, and try the two different mid-range bands to see which the voice responds to best. Then, it's on to the DS<sup>2</sup>. Band 1 can be set up for classic de-essing, and then dial in Band 2 in the 2.5 kHz to 3.5 kHz range and just crack the threshold to handle the increased nasal quality of the voice when the singer sings loudly.
- Try moving the DS<sup>2</sup> module pre- and post-compressor to see which placement handles the artifacts better.
- Lastly put the Expander first in the chain to help duck the headphone bleed for you automatically to cut down on the amount of fader rides you'll need to do later.



### Example #3: Overheads

- Dealing with overheads can be tricky and every recording is different. But let's assume this is a relatively straight-ahead recording acting as cymbal mics, as opposed to trying to capture a complete, full-frequency picture of the drum kit.
- The first thing to do might be to put a 12-dB-per-octave HP filter on both sides to take care of any sub from the kick or toms.
- Next, let's EQ in M/S mode. This will let you add a little low mid in the middle of the image to give body to the kit. Then add some top shelf to the sides in order to open up the cymbals without stepping on the snare or vocal. Then, in Expanded view, put one midrange band in parametric mode, link the controls, and find the harsh area around 3 kHz using the Ctrl solo shortcut, and then suck some of it out to make things clearer.
- From here, make sure your Compressor is post EQ and start with the VCA compressor for some clean punch, or maybe the FET compressor for some dirt. Really play with the attack and release times to get the excitement that the compression can add without destroying the transients and dynamics.
- Also, don't forget to try the compressor in Duo mode instead of Stereo mode. Unlinking the compressors might make the drums feel wider.



## Working with M/S

M/S mode can be tricky if you're new to it. Below are some general guidelines that can help get you started thinking in M/S for each module.

### Using the Pre module in the M/S mode

You're working with the stereo overheads track and you want to add a bit of separation and "attitude" to the kick and snare that are on the O/H track. Choose M/S audio format. Open the Expanded view and add Clip to the Mid part of the signal only until you find the right amount of crunch that comes with a clipped signal. This will certainly draw attention to the kick and snare.

Try adding some Even harmonics to the side. This may defocus the edges a bit.

### Using the EQ module in the M/S mode

EQ processing a mid/side signal is a classic way to open up a track and make space for an instrument that's at the center of a stereo image. You can use M/S EQ processing to help focus and separate the bass drum and snare from the overheads. You will have pretty good control of the mono tracks, but add the stereo overhead and the mix can become mushy, since the bass and snare are less focused in the O/H. To reconcile these two types of tracks, set the EQ module audio format to M/S for the O/H, and then brighten up the sides and pull back the mid.

You can also think of it as helping an instrument work with the rest of the tracks. On a piano, adding low mids and some focused upper mids can make it sound more powerful and have more tone. But this can fight with the bass and vocal. Try adding these frequencies just to the sides and actually dialing back the low end in the middle. This will leave more room for bass and vocals in the middle while still giving you a present, powerful piano.



## Using the Compressor module in the M/S mode

Compressing in M/S can be harder to conceptualize than some of the other processes. But you can use it in very creative ways, especially when you have a source like a loop that has multiple elements to it. With M/S compression you can really focus on one set of elements in the Mid and the rest on the Sides. For instance, use a slow attack VCA compressor in the middle to add attack to the kick and snare in a loop, while quickening up the attack and slowing down the release on the sides to even out and add sustain to percussion and cymbals.



## Focus Mode

Click the blue button on the WaveSystem Toolbar to enable the **Focus** mode. This mode simplifies working with Scheps Omni Channel presets. Load a preset in this mode and certain controls will be highlighted. These are the controls that you are most likely to use with this particular preset. All other controls will also remain active.



The Focus mode leads you to the relevant controls as soon as a preset is loaded. Your eyes know where to go so no time is wasted.

It helps you understand the interaction between controls and between modules, so you can quickly get to know the plugin and develop your own strategies.



# Controls

## Controls common to all modules

### Module on/off



Click on the module name to bypass the module.  
Range: Not illuminated=bypass; Illuminated=not bypassed

### Access the Expanded view

Click the window icon at the upper right corner to open the module's Expanded view.

### Stereo Mode

This selection serves two purposes:

**In all modules**, the Stereo Mode switch sets whether the stereo input signal will be processed as L/R stereo (Stereo and Duo modes) or will be converted to M/S for separate control of the mid and side channels (M/S mode).

**In the dynamics modules** (DS<sup>2</sup>, Compressor, and Gate), the Stereo Mode selection also determines how the signal will be used in dynamics processing for calculating the signal as it relates to threshold.

- Stereo** Left and right are summed. This value is used for establishing internal side band gain. This value is the same for left and right, so gain reduction detection will apply equally to both channels. This affects dynamics processing only, not processing adjustments.
- Duo** Left and right are considered separately in calculating internal sidechain. Each side can have its own dynamic ranges, so dynamic processing may behave differently for left and right. It does not alter the stereo signal itself. The L/R stereo signal is converted to M/S so that the middle part of the signal can be dynamically processed differently than the side part of the signal.
- M/S**

Regardless of a module's Stereo Mode, its output is always stereo. If needed, it will be converted to M/S at the input of the next module in the chain.

### Section on/off

Many individual sections can be bypassed. Click on the section name to turn it on or off. Turning off a section will reduce CPU load.  
Range: Not illuminated=bypassed; Illuminated=not bypassed

Most modules use one control for both left and right channels (when using the stereo component). To access channels independently or to create offsets between the two, open the Expanded view window.



## Pre Module

The Pre module uses harmonic distortion, HP/LP filters, and a low-frequency “thump” to add depth and warmth to a recording.

### Saturation section

Analogue devices typically produce odd and/or even harmonics. Adding some harmonic distortion to mix elements can keep a mix element from sounding “too clean.” This sound is, in a way, reminiscent of analog circuits.

### Saturation section on/off

Bypasses saturation processing

Range: off or on



### Saturation level

Adjusts the amount of harmonic distortion added to the original signal.

Range: 0 to 100%

### Saturation type

- Selects between **Odd** and **Even** harmonics. The impact of odd vs. even harmonics on a signal is very content-dependent.
- In contrast to Even and Odd, **Heavy** is less about adding harmonics and is more of a traditional clipper. It has a custom response to give you a different sound than most clippers, allowing you to shape the sound in ways a simple clipper can't.

Range: Radio switch selects between the three saturation types



## HP/LP filters



### Filter on/off

Individual on/off switches for HP and LP filters.  
Range: on or off

### Filter frequency

Sets HP/LP frequency  
Range:  
HP: 20 Hz to 20 kHz  
LP: 20 Hz to 20 kHz

### Filer slope select

Select between 6 dB, 12dB, or 18 dB per octave.  
Separate L/R select controls in Stereo component.

## Thump section



### Thump on/off; Thump gain

Thump introduces a wide boost that feels more like resonance than EQ. This adds warmth and color.  
Range: off or on  
Boost: +2 dB or +4 dB

The Pre module Collapsed and Expanded views are identical in functions and controls.



## DS<sup>2</sup> Module

The DS<sup>2</sup> module works much like a de-esser: when sound at a specified frequency surpasses a threshold, gain is reduced by a defined amount. DS<sup>2</sup> differs from a de-esser in that any frequency can serve as the side band that triggers the compressor. It can, of course, be used as a standard de-esser. There are two identical DS<sup>2</sup> sections, so that low-frequency and high-frequency sounds can be addressed simultaneously.



### Filter type select

Selects shape of filter for sidechain detection.  
Range: low shelf, bell, narrow cut, high shelf

### Frequency

Sets the roll-off start point for a high-pass filter or the center frequency for the band-pass filter.  
Range: 20 Hz to 20 kHz

### Threshold

Sets the processor's engagement level.  
The processor's threshold uses adaptive sensing to provide more natural results.  
Range: -48 dB to 0 dB

### Sidechain listen

Click to audition the sidechain filter.  
Range: off or on  
Hold Ctrl while moving the Frequency control vertically to audition the side band and sweep through frequencies. This helps locate accurate frequency settings.

### DS<sup>2</sup> module output level adjust

Range -12 dB to +12 dB

### Gain reduction meter

Indicates gain reduction imposed by the compressor.  
Range: -12 dB to -3 dB (four steps)

### Sidechain control access

Click on the SC button to access the DS<sup>2</sup> Expanded view for sidechain control.

DS<sup>2</sup> Expanded View



The DS<sup>2</sup> Expanded view consists of four identical sections (two sections in the mono component) that are used to control frequency and threshold independently for the left and right or mid and side channels in both DS<sup>2</sup> sections, and to set the filter types used for sidechain detection.



The **External Sidechain** button at the top of the window enables and disables external sidechain for the entire DS<sup>2</sup> module. All sections share the same sidechain.

Independent DS<sup>2</sup> module **engage/bypass** switches.

Independent **Sidechain Filter** select for the left and right channels of both DS<sup>2</sup> sections.

#### Filter type

Range: low shelf, notch, bell, high shelf

Independent **Sidechain Listen** buttons

Select sidechain listen for the left and right channels of both processors. The section's signal is band limited to enable you to focus on a specific side band. Main outs are muted and only sidechain is heard.

#### Frequency sweep

To precisely locate a sidechain frequency, hold Ctrl and drag vertically on a frequency control. This activates sidechain listen and lets you sweep across frequencies.



## EQ Module

### High section



#### Gain

Adjusts the gain of the high-shelf filter.  
Range: -18 dB to +18 dB

#### Frequency

Sets the frequency of the shelf filter.  
Range: 20 Hz to 20 kHz

### High filter types:

#### Resonant shelf

This shelf adds a small emphasis just prior to the beginning and end of the shelf. Usually this results in a more aggressive shelf.

#### Shelf

This standard shelf tends to be smoother, and lacks the “bump” of the resonant shelf. These two shelf types use a fixed Q that’s part of the filter design. As a result, the Q control is not available. It’s very difficult to make generalizations about the effect that a type of shelf will have on a sound. Experiment.

#### Parametric

This is a bell-shaped EQ, and unlike the shelf filters, the Q control is available.

#### Q (parametric mode only)

Range: 0.2 to 10



## Bell-shaped EQs

There are two Bell EQ sections in the middle of module: **Mid** and **Tone**. Both have three shape options: Wide, Narrow, and Parametric.

The Mid and Tone sections are identical in the **Narrow** and **Parametric** modes.

When the **Wide** bell shape is selected, the character of the two EQs diverges.

- **Mid** is a relatively wide, clean filter, best suited for enhancing the characteristic sound of the source.
- **Tone** is a bit narrower and can really help a source pop out of the track without too much EQ. Since it's somewhat smeary, it's good for coloring and gluing a track together.

## Mid and Tone Controls



### Gain

Adjusts the gain of the bell.  
Range: -18 dB to +18 dB

### Frequency

Sets the center frequency of the bell filter!  
Range: 20 Hz to 20 kHz

### EQ filter type

Selects the shape of the bell filter.  
Range: Wide, Narrow, Parametric (In the Parametric mode, the Q control is available for adjusting the width of the bell.)

**Q** (parametric mode only)  
Range: 0.2 to 10



## Low section



### Gain

Adjusts the gain of the low-shelf filter.

Range: -18 dB to +18 dB

### Frequency

Sets the frequency of the shelf filter. Hold Ctrl and drag vertically over the Frequency control to easily isolate a desired frequency.

Range: 20 Hz to 20 kHz

### Low filter types

Resonate Shelf (fixed Q), Shelf (fixed Q), Parametric (bell with adjustable Q)

**Q** (parametric mode only)

Range: 0.2 to 10

The EQ module Collapsed and Expanded views are identical in functions and controls.



## Compressor Module



The Compressor module consists of three different compressor modes.

**VCA** is a modern-sounding compressor. It's the most transparent of these three compressor types. Its "feed-forward" processing can yield very fast attacks and there's very little distortion. Because of this design, there is no compression in the sidechain.

**FET** sounds slower than a VCA compressor due to its "feed backward" processing. It actually operates more quickly than VCA, but it takes a bit longer to activate. There's more distortion and color than in the VCA compressor type, and it tends to be more "peaky." There is compression in the sidechain.

The FET compressor can be used to create a deep, pumpny compression sound. Set Ratio between 20:1 and infinity:1. Start with a very slow attack and a fast release. Experiment with these time values, since they can have an impressive effect on the sound.

**OPT** is based on photocell compressors. It's the slowest and smoothest of these three compressors. It has a long "memory" so it tends to be soft and quite rich. Because of its slower attack, transients are more easily maintained. There is compression in the sidechain.

Range: three-position radio switch

### Threshold

Sets the compressor's engagement level.

Range: -50 dB to 0 dB

### Gain reduction meter

Shows the amount of gain reduction introduced by the compressor.

Range: -15 dB to -1 dB

### Ratio

Determines how hard the signal is compressed.

Range: 1:1 to infinity:1

### Attack

Determines how quickly the compressor reacts to a signal.

Range: 0.4 ms to 150 ms

### Release

Determines how fast the compressor reduces processing after the signal falls below the threshold.

Range: 50 ms to 5000 ms



## Output mix ratio

Determines the wet/dry ratio of the compressor module output

Range: 0% to 100%

## Compressor output level

Trims the output level of the compressor module

Range: -12 dB to +12 dB

## Compressor sidechain adjust

Click on the SC button in the Collapsed view to open the Expanded view for sidechain adjustment.

## Sidechain filters

There are identical sidechain filter sections for left and right channels (mid and side in the M/S stereo mode). Use the Link button to decouple left and right channels. Hold Ctrl and drag vertically over the Frequency control to easily isolate a desired frequency.



## Sidechain listen

Solos sidechain signal only. Click to lock. Hold Ctrl and drag to sweep across side band frequencies.

Range: off or on

## Low-shelf filter

Filter active: (off or on)

Gain (range -18 dB to +18 dB)

Frequency (range: 20 Hz to 20 kHz)

## Bell filter

Filter active: (off or on)

Gain (range -18 dB to +18 dB)

Frequency (range: 20 Hz to 20 kHz)

## High pass filter

Filter active (off or on)

Frequency (range: 20 Hz to 20 kHz)



## Gate Module



### GATE/EXP Select

Toggles between Gate and Expander modes.

Range: Gate or Expander

A **gate**, sometimes called a "noise gate," is a downward expander with an extremely high ratio. When the signal level reaches the threshold, the gate goes from "closed" (no signal passes through) to "open" (all of the signal passes through). It's all or nothing, on or off.

An **expander** increases the dynamic range of the audio signal. Expanders are generally used to make quiet sounds even quieter by reducing the level of an audio signal that falls below a set threshold level.

### Threshold

Sets the Gate open and close level.

Range: -Infinity to 0 dB

### Attenuation meter

Shows the gain reduction introduced by the gate.

Range: -60 dB to -6 dB

### Floor

Sets maximum gain reduction. Floor limits the amount of gain reduction brought on by the gate. It can preserve some "air" in the track.

Range: -60 dB to 0 dB

### Close

This is a secondary close threshold. If Close is set to zero, the open and close threshold is unaffected. But if it is set to any value other than zero, the Close value will determine the closing threshold. This value must be lower than the Threshold for the Close function to take effect.

### Attack

Determines how quickly the Gate opens.

Range: 0.1 ms to 10,000 ms

### Release

Sets how fast the Gate closes (fades out) after the signal falls below Threshold.

Range: 0.1 ms to 10,000 ms



### **Sidechain filters**

Click on the SC button to open the Expanded view for sidechain adjustment. Hold Ctrl and drag vertically over the Frequency control to easily isolate a desired frequency.

### **External sidechain On/Off**

Range: off or on

### **HP/LP sidechain filters**

HP Range 20 Hz to 15,000 Hz

LP Range: 20 Hz to 15,000 Hz

### **Link HP and LP filters**

Allows you to keep the bandwidth between the HP and LP filters, but use either knob to sweep the frequency spectrum. This essentially turns the HP and LP filters into a band pass filter.



## Master Module



The **VU Meter** section has three metering sources: plugin **input**, plugin **output**, and total **gain reduction**. This selection affects VU meters only. It does not affect full-scale meters or audio output.

Use the meter trim pot on the right to align the meters to a reference tone.  
Range 4 dB to 26 dB.

Use the **Monitor** section (stereo component only) to select how audio is monitored. Options are: stereo or mono, left or right, mid or side. This selection is reflected in the VU meters and the Output full scale meters.

The **Limiter** is an adjustable brickwall limiter that is positioned just before the plugin's output. Lower the Limit setting significantly and you will likely hear distortion.  
Limiter Range: -30 dB to 0 dB

Full-scale **Input and Output Meters** are at the bottom of the module. Link the left and right input faders or output faders with the Link button at the bottom. When faders are unlinked, you can establish an offset between left and right faders, and then relink them. The offset between the two faders will be maintained as they move.

Clipping is indicated at the top of the meter and peak level hold is at the bottom. Click on the meter to clear all indicators.

