

SAND 4
U L T R A

1. INTRODUCTION

Thank you for choosing Sand 4 Ultra!

With the Sand 4 Ultra suite we have faithfully recreated the sound characteristics of classic British high-end mixing consoles and recording studio hardware. It includes a powerful channel-strip featuring a combination of many devices into a single plugin, characterized by unique color with incredible new features.

Enhanced with our state-of-the-art Hyper technology, Sand 4 Ultra offers unmatched performance, introducing groundbreaking features that cater to the most discerning audio professionals and enthusiasts.

Introducing the Sand 4 Ultra plugin suite, a significant advancement from Sand 4. This suite boasts a modern visual design and sets a new benchmark for sound quality, particularly with the introduction of new features, enhanced flexibility, and user interaction made even more immediate and intuitive.

Our goal is to meet and exceed our latest standards in quality and performance, a commitment encapsulated in the term 'Ultra.'

To ensure you fully harness the capabilities of your new plugin suite, we strongly advise a thorough read of this user manual.

1.1. OVERVIEW

Sand 4 Ultra is the latest Acqua plugin suite (VST/VST3/AAX/AU) based on the third-generation Hyper technology and the New 'Aria' engine.

It reproduces the sonic behavior of a series of high-end British consoles that dominated the pop and rock scenes from the 1980s onward. Sound engineers from all over the world swear by their forward, slightly "aggressive" sound, and their logical layout.

Thanks to the continuous evolution of our technology, we are very happy to offer you a fresh and updated version of our already well appreciated Sand, one of the best and complete high-quality professional plugin suites in your audio workstation.

It incorporates the New 'Aria' engine supporting our new interactive EQ display with adjustable parameters, dynamic and real-time metering displays, our powerful "Anti-Aliasing" algorithm with reduced CPU consumption.

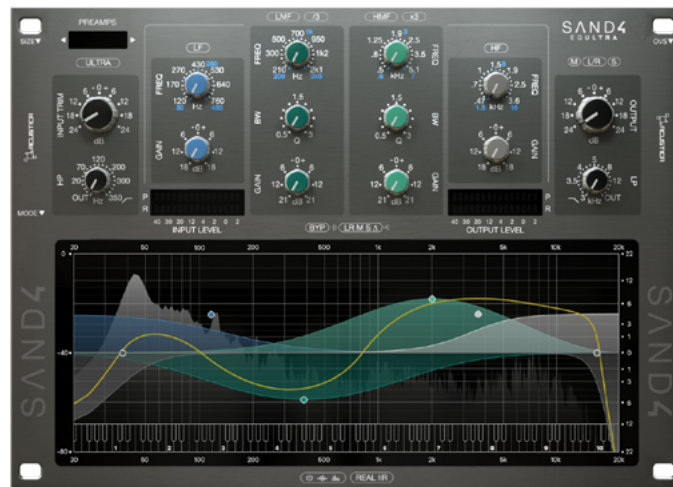
1.2. KEY FEATURES

- Hyper 3 technology.
- New Anti-Aliasing algorithm that significantly reduces the plugin's aliasing issues.
- The new 'Aria' engine includes support for dynamic/real-time and metering displays, featuring a flexible high-definition spectrum analyzer with adjustable parameters that allow you to showcase spectral content in various ways (including one-third octave bands).
- New Option to show ideal IIR equalization frequency response curves.
- New interactive EQ display with adjustable parameters.
- New totally re-sampled EQ, Filters, Comps and Preamps.
- Listening modes (Δ , LR, M, S).
- New resizing feature and responsive GUI.
- Factory Presets available.

2. SAND4 ULTRA

2.1. ABOUT THE SUITE

The Sand 4 Ultra suite is the natural choice for all those who “mix in the box” and musicians in need of authentic emulations of classic devices, improved with Acustica technology and equipped with new parameters. It is a powerful bundle consisting of 3 different plugins: a Channel strip, an EQ and a Compressor.



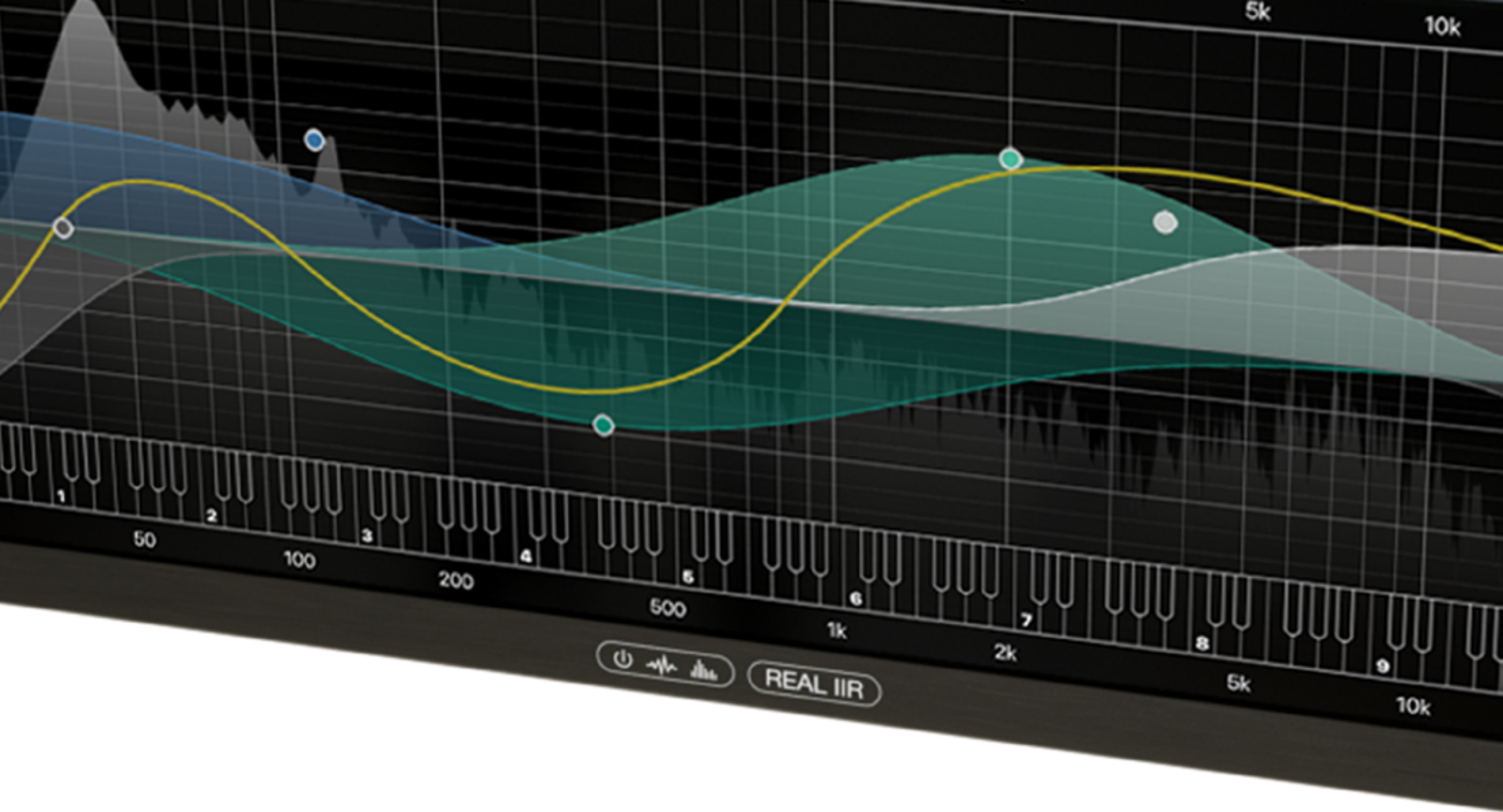
SAND4 Eq Ultra



SAND4 Comp Ultra



SAND4 Hyper Channel Strip



2.2. PACKAGE CONTENT

Sand 4 Ultra is an Acqua plugin suite that includes:

SAND4 EQ Ultra

A re-designed 4-band Parametric EQ, with wide-ranging High Pass - Low Pass filters, several preamp options and a powerful interactive EQ display with adjustable parameters improved with our Hyper tech.

SAND4 Comp Ultra

2 switchable comprehensive Compressors improved with our Hyper tech, including new powerful controls adding new contemporary features lacking in the original hardware counterparts.

SAND4 Hyper Channelstrip

Full channel strip with EQ, High Pass - Low Pass filters, Compressors and preamp options, re-designed with our Hyper EQ tech to deliver sonic excellence with very low CPU usage.

Each plug-in included in the Sand 4 suite comes in a "Standard version" or an alternative "ZL*" version which operates at *zero latency and is thus suitable for use when tracking, at the cost of extra processing resources.

(For details about ZL version refer to Chapter 4).

2.3. THE HYPER TECHNOLOGY

Hyper 3 technology is a groundbreaking advancement in the world of Acustica equalization. It brings forth a new era of sonic perfection, offering astonishing results that surpass traditional methods and unlock new levels of quality and efficiency. At its core, a Hyper 3 equalizer is a sampled equalizer that utilizes convolutions using a series of mathematical tricks.

It combines both IIR (Infinite Impulse Response) and FIR (Finite Impulse Response) to handle the impulses' tail with IIR and keeps the significant section in FIR mode. This approach overcomes computational limitations, allowing for exceptionally long FIR lengths that were previously unattainable.

We ensure that the transient, which is the most audible part of the IR (Impulse Response), remains completely identical to the FIR version, and the reconstruction of this IR through the IIR does not change in any way.

Instead, we now add a part of the IR through IIR that was not handled correctly by the FIR approach.

This improvement enhances the response at lower frequencies and the result is a harmonious blend of the advantages of both methods, delivering superior audio quality across the frequency spectrum.

With Hyper 3 equalizers, high frequencies remain identical to the original machine, while low frequencies are significantly improved, offering a level of sound quality that is indistinguishable from the reference analog equalizer. Notably, fewer artifacts, such as ripple, are present, resulting in a more authentic and natural sound.

2.4. EQ MODES IN DETAIL

Equalization Modes:

Choose from the following equalization models (for Sand4 Ultra).

0 - Hyper Equalizer:

An equalizer similar to our standard equalizers. It has a FIR component to adjust the transient response to be as close as possible to that of the original machine. Essentially, it seems that the result obtained is an EQ similar to our classic traditional ones but with Hyper technology.

1 - Hyper EQ Eco:

A digital mode where a FIR approach has not been used. This reduces power consumption but increases phase issues at high frequencies and is less faithful to the original equalizer. Both this mode and the previous one accurately reproduce only the sampled frequencies, so they are not very precise in representing the intermediate frequencies (between those sampled).

2 - Hyper EQ Digital:

This mode, on the other hand, allows for continuous representation of all frequencies of the machine and also corrects all artifacts present in the original EQ. Therefore, if you set +5 dB of gain, with this mode, it is truly 5dB. However, in this mode, the shape of the original machine is retained.

3 - Hyper EQ Digital 2X:

Since even the previous mode may have some artifacts at high frequencies (especially when working with high sample rates), this fourth mode is like the previous one but with 2X oversampling. Clearly, this comes with higher power consumption.

We suggest:

- Use the Hyper mode (the first one) for tasks where you want to keep power consumption low and where very high precision is not required.
- Use the Digital 2X mode (the last one) for situations that demand greater precision, especially at high frequencies.

Why SAND?

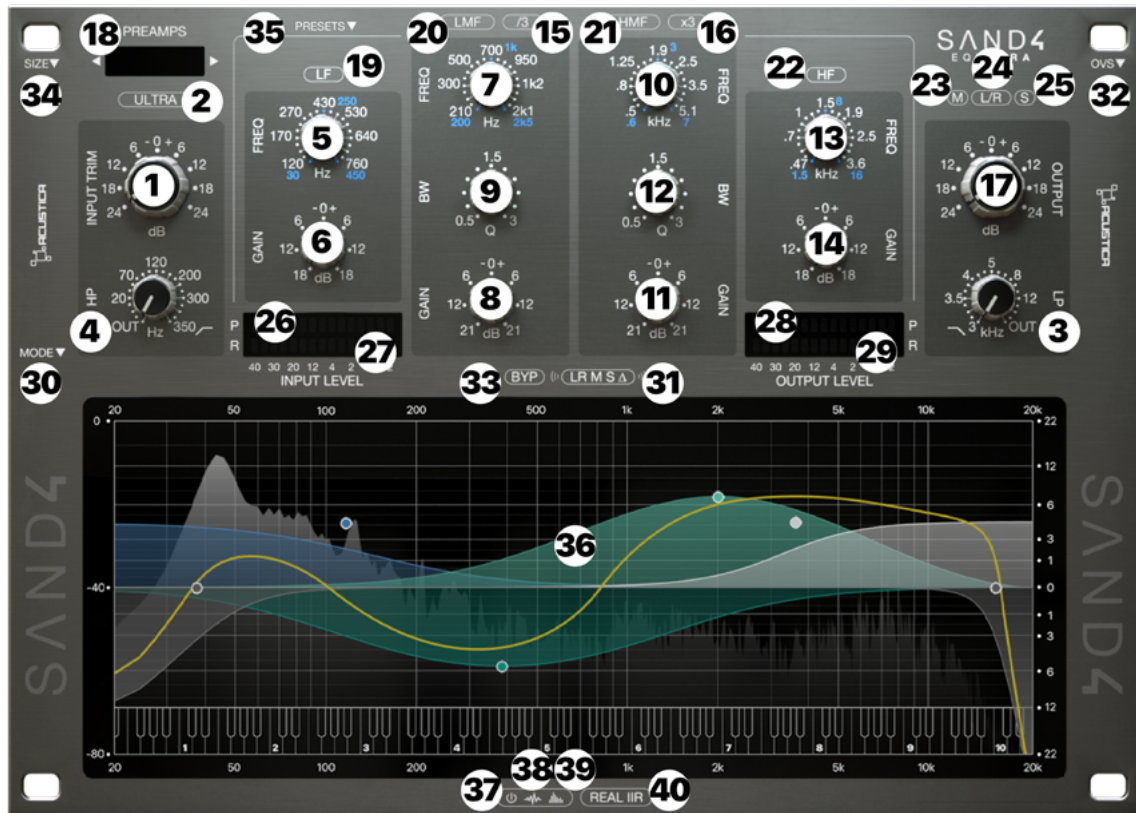
SAND is derived from the term “AUX-SEND” (short for “Auxiliary Send”) [/ɔ:g'zɪljəri//sænd/]: it is an electronic signal-routing output used on multi-channel sound mixing consoles used in recording and broadcasting settings and on PA system amplifier-mixers used in music concerts. The signal from the auxiliary send is often routed through outboard audio processing effects units and then returned to the mixer using an auxiliary return input jack, thus creating an effects loop. This allows effects to be added to an audio source or channel within the mixing console (source: Wikipedia). The analogy with this term in our case is that the signal is routed to an external bus to the same channel which the effect is applied to. The routing is therefore the cornerstone of this plugin.

S-AND deriving from “SUPER-AND” [/'su:pə/ /ænd/]: in “Boolean algebra” the values of the variables are the truth values true and false, usually denoted 1 and 0 respectively. One of the main operations of Boolean algebra is the conjunction and denoted as \wedge . So the and of a set of operands is true if and only if all of its operands are true (source: Wikipedia). In our case this term denotes a “super-conjunction” to define a set of modules merged into a single product.

3. OPERATION

3.1. SAND4 EQ ULTRA

The Sand 4 dual-mono Parametric EQ draws inspiration from a legendary parametric equalizer, the core of one of the finest British mixing consoles ever developed in the Pro Audio industry. This iconic equalizer has been utilized on numerous hit records and remains a preferred choice among elite engineers and globally acclaimed artists.



*NOTE: The white-labeled frequencies on the GUIs of plugins (for the EQ and Channel-strip) represent the the filter turnover frequency in the digital domain, while the additional blue frequency values on the GUIs represent the analog notation of the hardware EQ. These have been added to facilitate matching with the original units.

Controls:

1 - Input Trim: A one-knob internal gain structure control linking the input and output gain stages with an inverse law. The control sets the input level from -24dB to +24dB, and it is used to adjust the internal level of the plug-in.

Note that this is different from a standard input gain control and always ensures that whatever gain change is introduced at the input, the output level is automatically compensated so that there is no perceived change in volume. Note: when the preamp stage is bypassed, the 'Input Trim' mode has no effect.

2 - Ultra: Pressing this button shapes the preamplifier stage (Input Trim) more accurately when it passes the breakpoint to better simulate preamp saturation.

3 - Low Pass: 3 KHz – 22 KHz, 12 dB/octave, first knob step (OUT) bypasses the filter.

4 - High Pass: 16 Hz – 350 Hz, 18 dB/octave, first knob step (OUT) bypasses the filter.

5 - Low Frequency range*: from 120Hz to 760Hz.

6 - Low Frequency gain: ± 18 dB, shelving.

7 - Low Medium Frequency range*: from 0.21KHz to 2.1KHz. Note: Pressing the LMF /3 button the LMF frequency range changes to 50Hz - 500Hz.

8 - Low Medium Frequency gain: ± 21 dB, peaking.

9 - Low Medium Frequency bandwidth: Bell Q, continuously adjustable from 0.5 to 3.0.

10 - High Medium Frequency range*: from 0.6KHz to 5.1KHz.

Note: Pressing the HMF x3 button the HMF frequency range changes to 1.8KHz – 17.3KHz.

11 - High Medium Frequency gain: ± 21 dB, peaking.

12 - High Medium Frequency bandwidth: Bell Q, continuously adjustable from 0.5 to 3.0.

13 - High Frequency range*: from 0.47Hz to 3.6KHz.

14 - High Frequency gain: ± 18 dB, shelving.

15 - LMF/3 button: divides the LMF frequency by 3.

16 - HMFx3 button: multiplies the HMF frequency by 3.

17 - Output: controls the output level of the EQ from -24/+24 dB.

18 - Pre menu: A drop-down menu including 24 different Line and 24 Mic Preamp emulations to choose from plus an extra Stereo Bus preamp. OFF mode to bypass the preamp stage. You can use the left and right arrows on the preamp display to switch from one preamp to the next or previous.

19 - LF activation button: activates the LF of the EQ.

20 - LMF activation button: activates the LMF of the EQ.

21 - HMF activation button: activates the HMF of the EQ.

22 - HF activation button: activates the HF of the EQ.

23 - MID button: When the MID button is selected, the processing is applied to the center of the soundstage.

24 - L/R button: Left/Right processing is enabled by selecting the L-R button (default processing mode). When enabled, the input signal is split into two channels, left and right, which are summed back to stereo at the output.

25 - SIDE button: When the SIDE button is selected, the processing is applied to the sides of your soundstage (the stereo content like ambiences, effects, reverbs, panned instruments etc).

26/27 - Input Meters (Peak-RMS): they display the input levels (P=Peak and R=RMS) entering the plug-in. Range IN (Peak-RMS): -40dB to +0dB.

28/29 - Output Meters (L-R): they display the output levels (P=Peak and R=RMS) of the plug-in. Range OUT (Peak-RMS): -40dB to +0dB.

30 - Mode: Choose from the following equalization models (explained above) :

0 – Hyper Equalizer

1 – Hyper EQ Eco

2 – Hyper EQ Digital

3 – Hyper EQ Digital 2x

31 - Listening modes:

- LR: Default listening.

- M: Listen to only the centre of the soundstage (Mid component).

- S: Listen to only the edges of the soundstage (Side component).

- Δ: Listen to the difference between original signal and processed signal.

32 - Oversampling (OVS) menu: This menu allows you to change the oversampling rate to improve the audio quality, increasing the sampling frequency of the plugin and minimizing aliasing artefacts:

- The 1x mode bypasses the oversampling functionality. - The oversampling mode increases the sampling frequency of the compressor being processed by a fixed multiple of 2x 4x 8x.

33 - Bypass: Bypasses the whole plugin.

34 - Size: Adjust the whole plugin-GUI size. Choose between 7 magnifications (0.8x - 1x - 1.25x - 1.5x - 1.75x - 2x - 2.25x) from the top left SIZE dropdown menu. Once the desired size has been selected, the plugin must be removed and re-loaded in order to apply the new size.

Note: Sand4 suite introduces a new resizing feature that allows you to adjust the size of the plugin's graphical interface to your exact needs. You can easily change the size of the plugin GUI by dragging the bottom right corner. This bypasses the need for a size dropdown menu, enabling you to display the plugin as large or small as you desire, effortlessly.

35 - Presets: By clicking on the 'Preset' drop down menu on the left hand side you can select a preset from the displayed list. Note: View these presets as starting points that can assist you in specific situations, not as the ultimate solutions to your challenges.

36 - EQ Display: The display shows the EQ curves. Its graphs displays the EQ frequency response for all bands. The bottom half of the SAND 4 EQ Ultra GUI is taken up by the frequency response curve display and analyzer. This section allows you to:

View and edit the frequency response of the equalizer.

Visualize the spectrum of the output signal on 2 different scales.

Equalization using the frequency response curve display:

Each EQ band is characterized by a different color. Drag each point of every band to the right and left to define the frequency and up and down to determine the amount of gain. Use the mouse wheel when hovering your cursor over a band to change its bandwidth. You can also activate the REAL IIR mode (39) to display the ideal digital equalization curve.

The spectral content of the signal processed by the machine is displayed behind the frequency response curve.

37 - Analyzer Bypass: Press first button to bypass the Spectrum visualization.

38 - First Analyzer mode: Press the button for normal Spectrum visualization.

39 - Second Analyzer mode: Press the second button for 1/3 octave Spectrum visualization.

40 - IIR (REAL IIR): Press this button to display the ideal digital equalization curve.





3.2. SAND4 COMP ULTRA

The Sand 4 Comp Ultra combines inspiration from two high-end British compressor modules, enhanced with our Hyper technology for optimal sound quality and unmatched versatility:

- **Comp A** (CA) mode meticulously replicates a line channel compressor from one of the most celebrated British consoles first introduced in 1987.
- **Comp B** (CB) mode emulates a VCA unit known as the quintessential bus compressor. It captures the distinctive British sound characteristic of one of the premier mixing consoles from the 1980s. This bus compressor is unparalleled in its ability to cohesively blend your tracks, making it a standout choice for your mix bus and likely to become your new go-to compressor.



Controls:

- 1 - Input Trim:** One-knob internal gain structure control linking the input and output gain stages with an inverse law. The control sets the input level from -24dB to +24dB, and it is used to adjust the internal level of the plug-in. This is different from a standard input gain control and always ensures that whatever gain change is introduced at the input, the output level is automatically compensated so that there is no perceived change in volume. Note: when the preamp stage is bypassed (OFF), the 'Input Trim' mode has no effect. This knob behaves in a different way if the ULTRA button is pressed, which sets the amount of distortion of the preamp. The ULTRA button shapes the preamplifier stage more accurately when it passes the breakpoint to better simulate saturation.
- 2 - Ultra:** Pressing this button shapes the preamplifier stage (Input Trim) more accurately when it passes the breakpoint to better simulate preamp saturation.
- 3 - Pre Trim:** A Global boost (Trim) of the harmonic content and linear material of the Preamp.

4 - Attack: Adjusts the compressor attack time according to the chosen model.

-CA: from 1 to 20 mSec.

-CB: 0.1 to 20 mSec.

5 - Release: Adjusts the compressor recovery time according to the chosen model.

-CA: from 0.14 to 9.98 Sec.

-CB: 0.3 to 1.7 Sec.

6 - Comp Bypass (OFF): Bypasses the compressor.

7 - Comp Modes: Choose between 2 compressor emulations (CA= Line channel comp – CB= Bus compressor).

8 - SHMOD: alters the shape of the attack envelope, enabling you to fine-tune the attack behavior in order to adapt it to any audio source. Position 2 gives the original attack time of the modeled compressor. Position 1 gives the fastest setting. Going from 1 down to 0, a look-ahead function is enabled. The global range of the look-ahead zone goes from 0 to 4 milliseconds. Values above 2 will slow down the attack times.

9 - Threshold: Adjusts the point of operation (range: -64 dB to 0 dB).

10 - Ratio: Adjust compression ratios according to the chosen model.

-CA: from 1.3:1 to full limiting (20:1).

-CB: from 2:1 to 10.

11 - MakeUp: After compression, up to 24dB of additional make-up gain can be added.

12 - Pre: Activates the preamplifier.

13 - SC: enables the external sidechain.

14 - (SC) Filter: This control sets the cut frequency of a very gentle 1-pole high-pass filter inserted in the side-chain path. Filters out the low frequencies which can affect the action of the compressor. Range: 50 -250 Hz. In the leftmost position (labeled 'OFF'), the filter is bypassed.

15 - Mix: This controls the proportion between the original (dry) and effected' (wet) signal. In other words, it lets you balance the compressed with the uncompressed signal. Range: 0% to 100%.

16 - Attack Hold / Release Hold: These controls enhances transient handling through adjustable timing. "Attack Hold" preserves transients that are shorter than the set time, preventing them from being compressed immediately. "Release Hold" keeps the output stable for a designated period after an input spike, independent of further input changes. Both controls contribute to a more dynamic and impactful sound, with the ability to finely tune how transients are processed in the audio mix.

17 - Stereo Link: Stereo linking synchronizes the gain reduction applied across both channels, ensuring that both the left and right channels receive the same amount of gain reduction. Turning the knob fully counterclockwise to the OFF position activates the LINKED mode, while turning it fully clockwise to the FULL position sets the UNLINKED mode.

18 - Mid / L-R / Side: This control allows you to choose different processing modes.

Left-Right: Left/Right default processing mode. Mid: MID processing mode, the dynamic control is applied to the centre of your soundstage (Mid component). Side: SIDE processing mode, the dynamic control is applied to the sides of your soundstage (Side component).

19 - Power: The power function allows you to change the general characteristics of the detector. Power ranges from 1 to 5, where the value 1 corresponds to the typical PEAK-type detector. The times written for attack and release are calculated on the PEAK mode and are derived from sampled curves from the real hardware.

20 - Morph: This implements an intuitive morphing control (MORPH) that allows each of the dynamic elements to be seamlessly transformed from a compressor, to a limiter, to a saturator while simultaneously handling the stereo-link intuitively.

This control allows for a continuous action of further transformation of the detector's attack and release curves. In the first half of the run, they transform the attack curves up to an attack time of zero length; in the second half, they bend the release curves, reaching a release time of zero length. Interestingly, the transformation of the attack and release curves always maintain the original proportions.

21 - Gain Reduction meter: the Gain Reduction meter measure the gain reduction level applied by the compressor. The meter indicate '0' in the absence of an input signal or any gain reduction. If the signal exceeds the compression threshold or limit level, the amount of gain reduction is displayed.

22 - Knee display: The Knee displays show the input/output transform of the detection circuits.

23 - Listening modes:

- LR: Default listening.
- M: Listen to only the centre of the soundstage (Mid component).
- S: Listen to only the edges of the soundstage (Side component).
- Δ: Listen to the difference between original signal and processed signal.

24 - Oversampling (OVS) menu: This menu allows you to change the oversampling rate to improve the audio quality, increasing the sampling frequency of the plugin and minimizing aliasing artefacts: The 1x mode bypasses the oversampling functionality. - The oversampling mode increases the sampling frequency of the compressor being processed by a fixed multiple of 2x 4x 8x 16x.

25 - Bypass: Bypasses the whole plugin.

26 - Size: Adjust the whole plugin-GUI size. Choose between 7 magnifications (0.8x - 1x - 1.25x - 1.5x - 1.75x - 2x - 2.25x) from the top left SIZE dropdown menu. Once the desired size has been selected, the plugin must be removed and re-loaded in order to apply the new size. Note: Sand4 suite introduces a new resizing feature that allows you to adjust the size of the plugin's graphical interface to your exact needs. You can easily change the size of the plugin GUI by dragging the bottom right corner. This bypasses the need for a size dropdown menu, enabling you to display the plugin as large or small as you desire, effortlessly.

27 - Input - Output meters: These Peak and Rms meters show the INPUT and OUTPUT levels of the plugin. Range: -99dB + 20dB.

28 - Output: controls the output level of the plugin from -24/+24 dB.



3.3. SAND4 HYPER CHANNELSTRIP

The Sand 4 Hyper Channelstrip is a must-have plugin thanks to its precise and powerful tone, embodying a legendary console that has earned its reputation as the gold standard in rock music production over the years. Its versatility also makes it ideal for genres like electronic, R&B, and dance, which require dynamic control, clarity, and definition. This channel strip version by Acustica offers all the necessary tools to create professional and sophisticated tracks, akin to having the physical console at your fingertips, without compromising the quality standards of the original hardware and capturing its true essence.

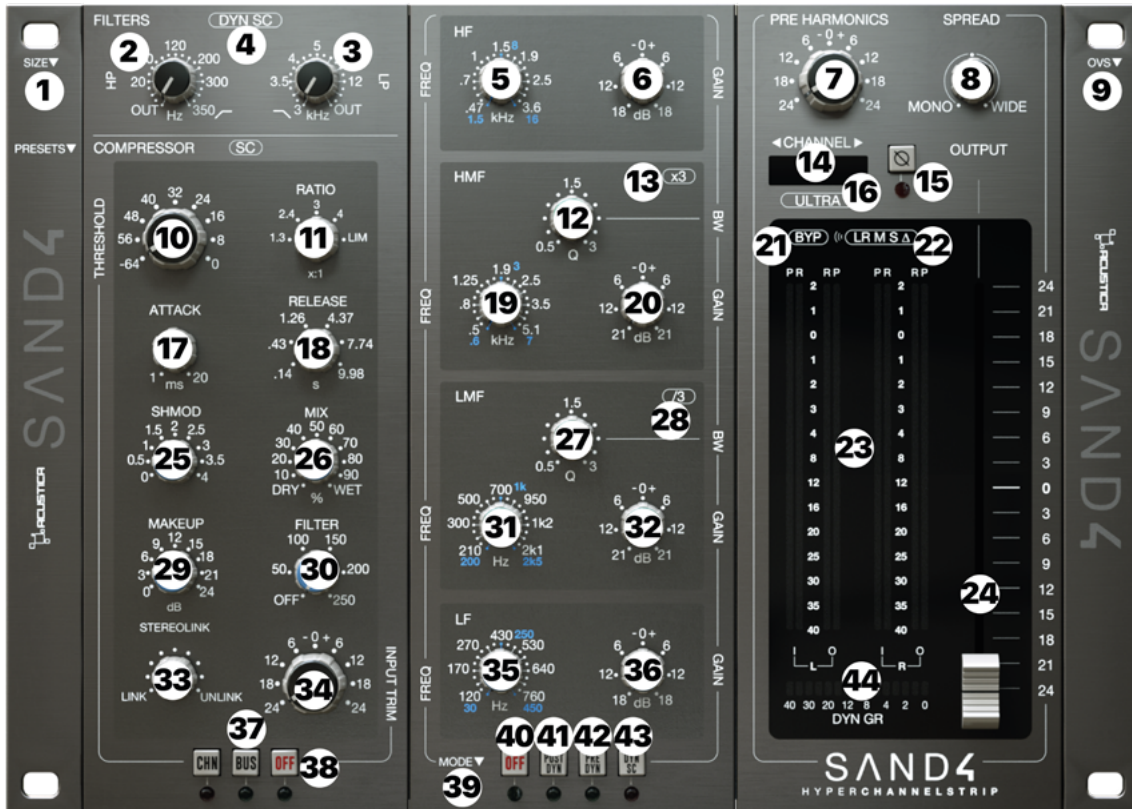
-This channel strip offers a comprehensive selection of 24 line preamps, 24 mic preamps, and one stereo bus, totaling 49 unique emulations. Preamps play a critical role in defining the sonic identity of a console. Each one is meticulously sampled to preserve the distinctive sound of the original hardware, allowing for sequential use that replicates the original layout, or for creative application as desired.

-The included EQ and additional high and low pass filters are exceptionally musical, offering full, mighty, and punchy sound characteristics. It is forgiving even when heavily adjusted, making it suitable for a wide range of musical genres.

The compressor module includes two distinct emulations: a line channel compressor and a bus compressor from one of the most iconic consoles in Pro Audio history. This VCA bus compressor, with its extremely smooth knee response, excels at unifying tracks, making it an indispensable tool for your mix bus and likely to become your new favorite.

From Sweden to Italy: The Remarkable Journey of a Mint-Condition Console

The emulations included in the Sand 4 Ultra suite are the result of a complete resampling of a console in near-mint condition, a real gem located at Digital Lake Studio S.r.l. in Italy. This console has an interesting origin, having been commissioned from Sweden. Swedish Radio Television ordered 12 nearly identical consoles between 1994 and 1997. The sampled console, dated 1997, was installed in a mobile broadcast van (OB Van) based in Ystad, in southern Sweden. It was used approximately three days a week for two years before being decommissioned. Prior to its transfer to our studio in Italy, it was finely calibrated to a tolerance of 1/10 of a dB between channels using a sophisticated and highly professional system, and it has always been meticulously maintained to keep the mixer in perfect technical and functional condition. As it was commissioned by a broadcaster, it features several customizations tailored to its use, including a master section that is more compact to fit within the 200 cm width requirement of an OB Van.



*NOTE: The white-labeled frequencies on the GUIs of plugins (for the EQ and Channel-strip) represent the the filter turnover frequency in the digital domain, while the additional blue frequency values on the GUIs represent the analog notation of the hardware EQ. These have been added to facilitate matching the original units.

Controls:

- 1 - Size:** Adjust the whole plugin-GUI size. Choose between 7 magnifications (0.8x - 1x - 1.25x - 1.5x - 1.75x - 2x - 2.25x) from the top left SIZE dropdown menu. Once the desired size has been selected, the plugin must be removed and re-loaded in order to apply the new size. Note: Sand4 suite introduces a new resizing feature that allows you to adjust the size of the plugin's graphical interface to your exact needs. You can easily change the size of the plugin GUI by dragging the bottom right corner. This bypasses the need for a size dropdown menu, enabling you to display the plugin as large or small as you desire, effortlessly.
- 2 - High Pass:** 16 Hz - 350 Hz, 18 dB/octave, first knob step (OUT) bypasses the filter.
- 3 - Low Pass:** 3 KHz - 22 KHz, 12 dB/octave, first knob step (OUT) bypasses the filter.
- 4 - DYN SC:** switches the filters into the dynamics sidechain path.
- 5 - High Frequency range*:** from 0.47Hz to 3.6KHz.
- 6 - High Frequency gain:** ±18 dB, shelving.
- 7 - Pre Harmonics:** A Global boost (Trim) of the harmonic content and linear material of the Preamp.

8 - Spread: varies the balance between the Mid and Side signals: Mono, Normal, Wide

9 - Oversampling (OVS) menu: This menu allows you to change the oversampling rate to improve the audio quality, increasing the sampling frequency of the plugin and minimizing aliasing artefacts:

10 - Threshold: Adjusts the point of operation (range: -64 dB to 0 dB).

11 - Ratio: Adjust compression ratios according to the chosen model.

-CA: from 1.3:1 to full limiting (20:1).

-CB: from 2:1 to 10.

12 - High Medium Freq bandwidth: Bell Q, continuously adjustable from 0.5 to 3.0.

13- HMFx3 button: multiplies the HMF frequency by 3.

14 - Pre menu: A drop-down menu including 24 different Line and 24 Mic Preamp emulations to choose from plus an extra Stereo Bus preamp. OFF mode to bypass the preamp stage. You can use the left and right arrows on the preamp display to switch from one preamp to the next or previous.

15 - Phase Reverse (Ø): reverses the phase of the input signal.

16 - Ultra: Pressing this button shapes the preamplifier stage (Pre Harmonics) more accurately when it passes the breakpoint to better simulate preamp saturation.

17 - Attack: Adjusts the compressor attack time according to the chosen model.

-CA: from 1 to 20 mSec.

-CB: 0.1 to 20 mSec.

18 - Release: Adjusts the compressor recovery time according to the chosen model.

-CA: from 0.14 to 9.98 Sec.

-CB: 0.3 to 1.7 Sec.

19 - High Medium Freq range*: from 0.47Hz to 3.6KHz.

20 - High Medium Frequency gain: ±21 dB, peaking.

21 - Bypass: Bypasses the whole plugin.

22 - Listening modes:

- LR: Default listening.

- M: Listen to only the centre of the soundstage (Mid component).

- S: Listen to only the edges of the soundstage (Side component).

- Δ: Listen to the difference between original signal and processed signal.

23 - Input - Output meters (L-R): These Peak and Rms Left-Right meters show the INPUT and OUTPUT levels of the plugin. Range: -40dB + 2dB.

24 - Output: controls the output level of the EQ from -24/+24 dB.

25 - SHMOD: alters the shape of the attack envelope, enabling you to fine-tune the attack behavior in order to adapt it to any audio source. Position 2 gives the original attack time of the modeled compressor. Position 1 gives the fastest setting. Going from 1 down to 0, a look-ahead function is enabled. The global range of the look-ahead zone goes from 0 to 4 milliseconds. Values above 2 will slow down the attack times.

26 - Mix: This controls the proportion between the original (dry) and effected' (wet) signal. In other words, it lets you balance the compressed with the uncompressed signal. Range: 0% to 100%.

- 27 - Low Medium Freq bandwidth:** Bell Q, continuously adjustable from 0.5 to 3.0.
- 28- LMF/3 button:** divides the LMF frequency by 3.
- 29 - MakeUp:** After compression, up to 24dB of additional make-up gain can be added.
- 30 - (SC) Filter:** This control sets the cut frequency of a very gentle 1-pole high-pass filter inserted in the side-chain path. Filters out the low frequencies which can affect the action of the compressor. Range: 50 -250 Hz. In the leftmost position (labeled 'OFF'), the filter is bypassed.
- 31 - Low Medium Frequency range*:** from 0.21KHz to 2.1KHz. Note: Pressing the LMF /3 button the LMF frequency range changes to 50Hz - 500Hz.
- 32 - Low Medium Frequency gain:** ± 21 dB, peaking.
- 33 - Stereo Link:** Stereo linking synchronizes the gain reduction applied across both channels, ensuring that both the left and right channels receive the same amount of gain reduction. Turning the knob fully counterclockwise to the OFF position activates the LINKED mode, while turning it fully clockwise to the FULL position sets the UNLINKED mode.
- 34 - Input Trim:** One-knob internal gain structure control linking the input and output gain stages with an inverse law. The control sets the input level from -24dB to +24dB, and it is used to adjust the internal level of the plug-in. This is different from a standard input gain control and always ensures that whatever gain change is introduced at the input, the output level is automatically compensated so that there is no perceived change in volume. Note: when the preamp stage is bypassed (OFF), the 'Input Trim' mode has no effect. This knob behaves in a different way if the ULTRA button is pressed, which sets the amount of distortion of the preamp. The ULTRA button shapes the preamplifier stage more accurately when it passes the breakpoint to better simulate saturation.
- 35 - Low Frequency range*:** from 120Hz to 760Hz.
- 36 - Low Frequency gain:** ± 18 dB, shelving.
- 37 - Comp Modes:** Choose between 2 compressor emulations (CHN= Line channel comp – BUS= Bus compressor). Note, the CHN compressor model in the Sand channel-strip is equivalent to CA in the Sand standalone compressor and the BUS compressor model in the Sand channelstrip is equivalent to CB in the Sand standalone compressor,
- 38 - Comp Bypass (OFF):** Bypasses the compressor.
- 39 - Mode:** Choose from the following equalization models (explained above):
- 0 – Hyper Equalizer
 - 1 – Hyper EQ Eco
 - 2 – Hyper EQ Digital
 - 3 – Hyper EQ Digital 2x
- 40 - EQ Bypass (OFF):** Bypasses the Equalizer.
- 41 - Post Dyn:** moves the equalization to the output, making EQ post-Dyn/Compression.
- 42 - Pre Dyn:** moves the dynamics to the output, making EQ pre-Dyn/Compression.
- 43 - Dyn SC:** switches the Eq into the dynamics sidechain path.
- 44 - Gain Reduction meter:** the Gain Reduction meter measure the gain reduction level applied by the compressor. The meter indicate '0' in the absence of an input signal or any gain reduction. If the signal exceeds the compression threshold or limit level, the amount of gain reduction is displayed.



4. WHAT IS A ZL PLUGIN

Acustica plugins come in two versions: ZL (zero latency) and a regular version. While the ZL version does not introduce any latency to your system, the standard version does. This buffer varies in size for each plugin and helps reduce the CPU and system load of your computer significantly. We recommend that you use a ZL instance when tracking. Basically, both plugin instances are identical, but the current Acqua engine can work either with or without an audio buffer. The idea behind a ZL instance is to give you the option to run an Acqua Effect with minimal latency, which is helpful for tracking or direct monitoring.

5. HOW TO DOWNLOAD, INSTALL, AND AUTHORIZE YOUR PRODUCTS

Acustica Audio products can be downloaded, installed, and authorized using the Aquarius Desktop application. The Aquarius Desktop application is a free standalone application that will manage every step in an automatic way without user intervention.

Download Aquarius Desktop Application

www.acustica-audio.com/pages/aquarius

5.1. HOW TO DOWNLOAD A PRODUCT IN AQUARIUS DESKTOP APP

To download a product using the Aquarius Desktop application go to the purchase page and select the product and format (VST2, VST3, AAX, AU) to install.

In case you can't find your product on the purchase page use the search page.

5.2. HOW TO INSTALL A PRODUCT IN AQUARIUS DESKTOP APP

The installation is done automatically by the Aquarius Desktop application after the download. As the Aquarius Desktop application creates a temporary file of the downloaded products, known as the stage area, at the moment you want to reinstall a product it will not be necessary to download it again.

5.3. HOW TO AUTHORIZE A PRODUCT IN AQUARIUS DESKTOP APP

The authorization is done automatically by the Aquarius Desktop application after the product installation. You can manage your authorizations using the Aquarius Web Service. Click [HERE](#) or a complete installation user guide.

6. SYSTEM REQUIREMENTS

Modern computers are powerful enough to run many plugins at once.

However, our technology requires more resources than algorithm-based software, so we recommend optimizing your system to work with high CPU loads and low audio latency.

Before starting the installation process, please confirm that your system meets the minimum system requirements to run the plugins please consult the following link:

<https://app.box.com/v/AASYSTEMREQUIREMENTS>

7. CUSTOMER CARE

To contact Acustica Audio, always use the single point of contact, which is this help-desk portal: <https://acusticaudio.freshdesk.com/>

We do not provide official assistance via social networks, public forums, or email accounts. For troubleshooting and issue reporting, check the available solutions in the knowledge base.

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