User Manual

(Version 1.2)

dStream

airplain acoustics ltd.

airplain

Content

dStream

Thank you very much for purchasing our dStream. This has been carefully crafted and is built to provide many years of enjoyment. The dStream is a streamer with extensive DSP setting options and can directly drive active speakers or power amplifiers with digital input. The Speaker Link can be used to directly connect the phli active speaker series. The other two digital outputs are intended for the connection of third-party products.

Safety Notice

airplain products are built according to the latest standards and in compliance with the prescribed norms and are carefully tested before delivery. Nevertheless, a malfunction or failure may occur due to a technical defect or other reason. In any case, the mains plug must be disconnected immediately if a malfunction is detected, such as high heat generation, disturbing noises or other phenomena. In this case the company airplain acoustics ltd. has to be contacted immediately to discuss the further procedure. Furthermore, blown fuses must not be replaced without consulting airplain support.

It is prohibited to remove or modify parts or components of airplain products and to remove covers. This is to be left exclusively to trained service personnel. In case of problems or non-functioning, contact airplain acoustics ltd directly.

Inside the products there are parts which are under life threatening voltage.
The products may only be operated in a dry place inside. Likewise, the system may only be operated with the specified voltage.

These loudspeaker systems are capable of producing permanently high sound pressure and may cause irreversible damage to hearing if listened to at high volumes for too long.

The manufacturer declines all liability if the above points are not observed.

Connection Panel
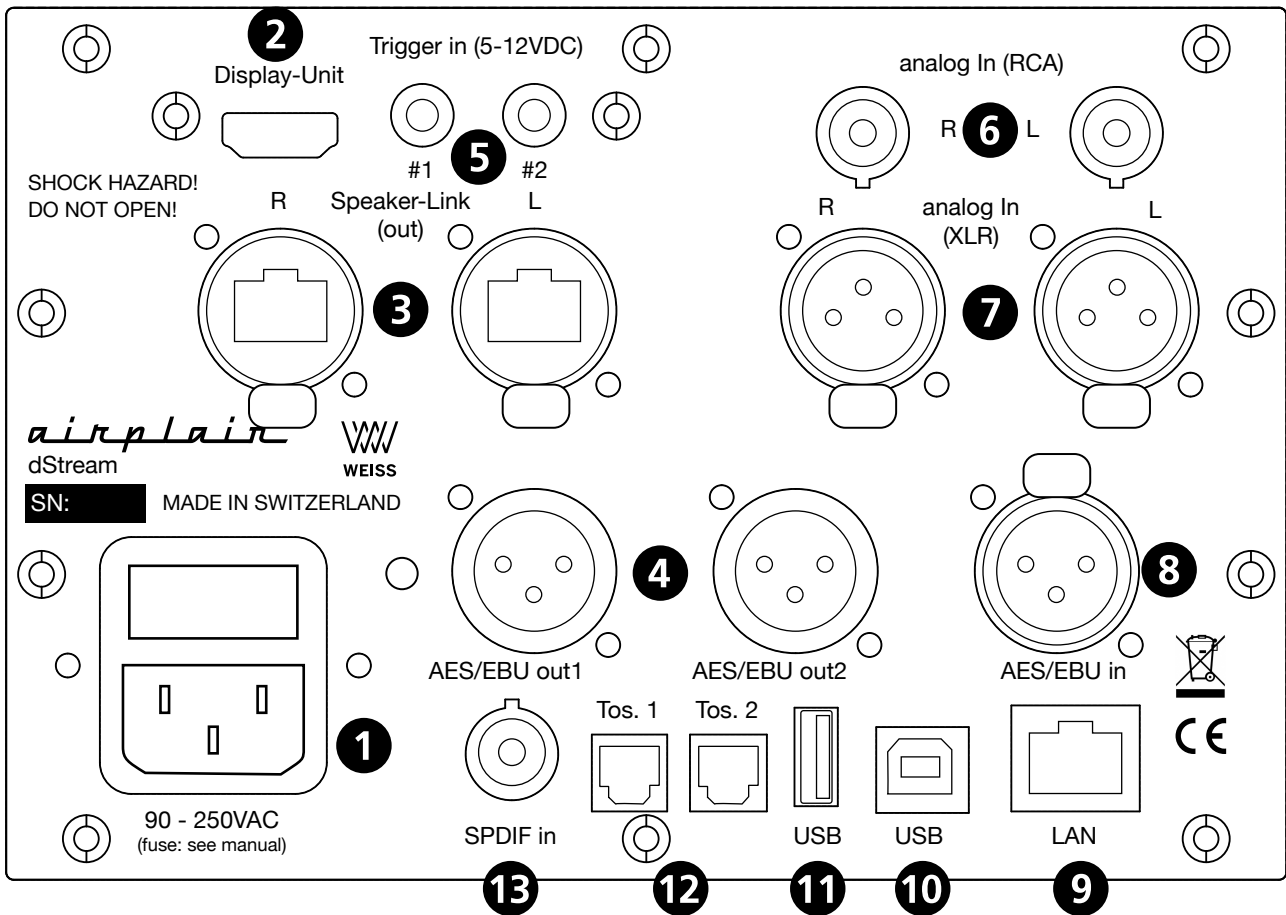
1. Mains connection/fuse compartment
2. Display unit connection
3. Speakerlink (Speaker L/R)
4. digital outputs 1 & 2 (AES/EBU)
5. trigger inputs (5 to 12V DC)
6. analog inputs L/R (unbalanced)
7. analog inputs L/R (balanced))
8. digital input (balanced)
9. network connection (TCP/IP)
10. USB port (Mac)
11. USB port (for update purposes only)
12. digital input (Toslink optical 1 & 2)
13. digital input (SPDIF coaxial)

Remote Control

An infrared remote control is included in the scope of delivery. This requires direct visual contact with the display unit.
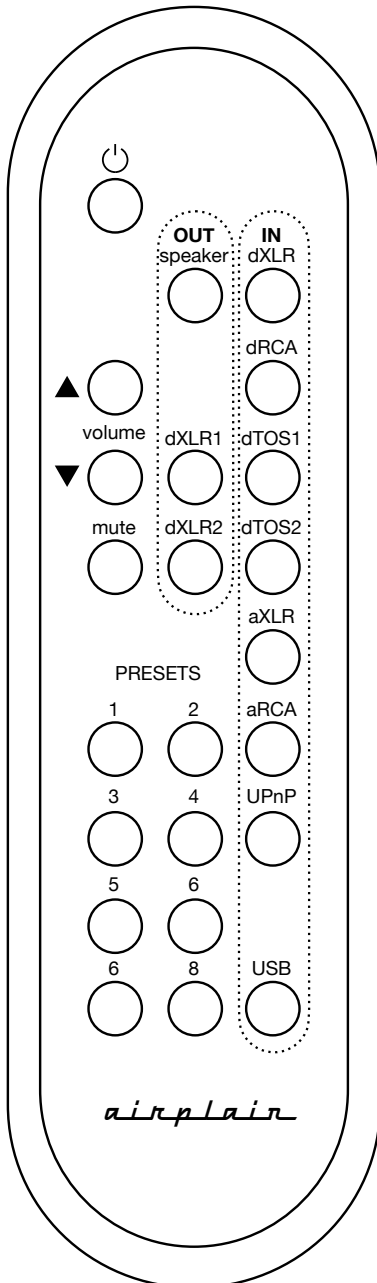
Top left:

$\mathbf{\circlearrowleft}$: power on/off

volume: volume + / -

mute: activate/deactivate mute

The buttons in the rightmost column are for input selection (IN):

dXLR: AES/EBU

dRCA: SPDIF (Coax)

dTOS1: Toslink (optical) 1

dTOS2: Toslink (optical) 2

aXLR: analog balanced

aRCA: analog asymmetric (Cinch)

UPnP: audio streaming via Universal Plug 'n' Play

USB: USB A (input)

The first three buttons in the middle column are for output selection (OUT):

speaker: (de-)activate digital link to speaker

dXLR1: (de-)activate AES/EBU Out 1

dXLR2: (de-)activate AES/EBU Out 2

Display-Unit

The display unit can show the selected input, the volume and the mute state. The brightness can be set separately via the web interface in the event of an input change and in constant operation, as can the selected display mode.

Main Unit and detachable Display

The dStream consists of a main unit and a detachable display part. Both are connected with a standard HDMI cable. The display can be magnetically attached to the main unit or detached by means of a stand bracket. The approx. 1m long HDMI connection cable can also be replaced by a longer one. To do this, remove the cover fastened with four screws and the cable can then be replaced with a longer one (max. 3m). Important: only passive HDMI cables may be used (without built-in signal amplifiers etc.). No HDMI video signal is output! The HDMI socket on the dStream can only be used for the connection to the display unit. The display unit should only be plugged in and unplugged when it is switched off.

Connections to Speakers

The dStream unit was developed, among other things, for operation with the phli speaker series. These contain one power amplifier and one DA converter per path. The dStream-Unit takes over the division of the corresponding frequency ranges for woofer, midrange and tweeter as well as for the sub-out. The speakers cannot be operated without dStream.
The connection is made with a network cable (Ethercon) via connector (3). Four digital streams in AES/EBU format and an on/off signal are transmitted.
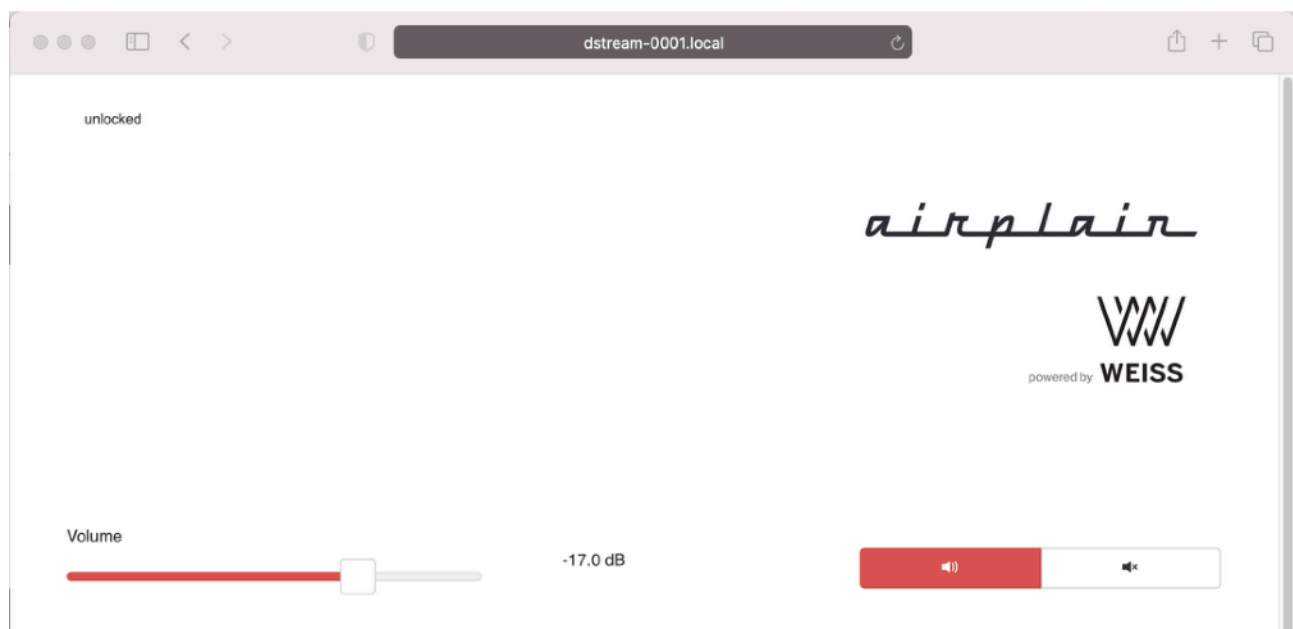For all the active speakers and amplifiers with digital Input you can use the digital Outputs 1 & 2 (4).

Control

The control is done via the supplied infrared remote control or via the web interface. To access the web interface the following URL is entered in the browser:
dstream-[serial number].local
e.g. dstream-0001.local for the serial number 0001:

Switching on/off

Switching on and off is done via the supplied remote control or as described below via the two trigger inputs. The display switches on after approx. 10 s, the status LEDs at the speakers switch from red to green after approx. 1-2 s, if the speakers are in standby mode (main switch must be on).

External power on/off

The dStream unit has two trigger inputs (5). As soon as 5 to 12 V DC is applied to one of these two inputs, the entire system switches on and goes to a previously defined setting, see the PRESETS item below. The dStream is now in automatic mode. If the source is changed during automatic mode, the dStream goes into manual mode. In this case, the dStream must be turned off with the remote control.

As soon as the trigger signal from the source device is switched off, the dStream goes into a 10-second shutdown delay. If a change is made to the input via remote control or the web interface during the 10 s, the system will not turn off. The dStream then switches from automatic to manual mode and must be turned off with the remote control.

The shutdown delay is provided so that the unit does not automatically turn off and then have to be turned on again if another source is to be listened to afterwards. If there are voltages at both trigger inputs, the last activated trigger has priority.

Example 1:

TV set: via an adapter cable, the USB port of a TV set can be used to switch on the system automatically. In the menu of the TV set, the USB port must be configured in such a way that the 5V voltage at the USB socket is switched off when the TV set is in standby. For example, Toslink input 1 can be used for this.

Example 2:

AV receiver: many AV receivers have a 12V trigger output and analog preamp outputs. With this the dStream can also be activated and e.g. to the input analog XLR. The volume control then happens via the AV receiver.

Audiostreaming

Audio streaming

There are two primary options for audio streaming directly via network.

UPnP
If the UPnP input is selected, music can be streamed via the UPnP protocol. Via third-party software (app), the dStream becomes visible as an audio renderer if the UPnP server, control software and dStream are on the same network.

Roon
Roon is a widely used audio streaming software that allows you to stream music from your own music server or via the music streaming service QOBUZ or TIDAL to various audio devices. To operate with Roon, a Roon license is necessary and a device (PC, Mac, NAS or Roon Nucleus) on which the Roon server software is running. For more information please visit: https://roonlabs.com

Webinterface

Versatile options are available via the web interface. In addition to basic functions such as volume, input and output selection, input and output-related filter options are also available. To activate the speakers, the "Speaker" button must be active (phli Series).

The phli music system is designed in such a way that the highest possible theoretical digital level produces the maximum output power at the power amplifier modules in the loudspeakers.However, it may be the case with quiet recordings that this maximum volume cannot be achieved.For this purpose, a boost function is available, which makes it possible to digitally increase the level by 10 dB. To do this, activate the "Allow-Boost" function. However, this can lead to overdriving in very loud recordings (audible distortion of the music signal). The volume should only be turned up so loud that the system still sounds clean.

An input volume control is also available for the analog inputs. This should be set so that the highest input level of the connected source just sounds undistorted. The boost function should only be used when the level control at the speakers (rear) is set to 0 dB. If the level control is set to -10 dB or lower, it should first be set to 0 dB.
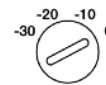
If you are using other powered speakers, refer to their respective manuals.

SOURCE

Under SOURCE, various filters such as a parametric equalizer, a vinyl emulator, a de-esser function or a loudness control are available. These only affect the selected source and are described in Appendix I.

OUTPUTS

Under the OUTPUTS section, a room equalizer is available for each output. The sampling frequency can also be selected for the external digital outputs. A basic volume setting is also available for all outputs. For the Airplain Speaker output, this should always be set to maximum (0.0 dB). Source Encancement" can be used to set whether any filters are to be bypassed (see Appendix I).

PRESETS

Under PRESETS you will find the possibility to save any filter settings like EQ, Dynamics etc. (see appendix I). After a desired setting has been defined, the first step is to create a "Snapshot" and save it with "Save As" with its own name.

In a second step, the stored snapshot is assigned to a preset and/or a trigger.

In the above example, the preset 1 (remote control) was assigned the snapshot "Setting 1" and the trigger 1 the "Setting 2". In addition, the desired input can be selected for the triggers (in the example "dTOS 1".
If now the trigger is activated, the dStream starts and selects the input "dTOS 1" and the snapshot "Setting 1".
Under the menu item "Save/Load/Delete..." the snapshots can be managed.

DEVICE

Here you will find device-specific settings, such as the brightness of the LED display and the selection for the display unit.

If the menu item "Master Volume Throttle" is selected, the dStream sets itself to a fixed volume (-24 dB) when starting up, otherwise the last set volume value is used.
The button "Check for Update" can be used to check for software updates. For this, the dStream must be connected to the Internet. If an update is available, it will be displayed and can be downloaded and installed. Afterwards the dStream is restarted (Reboot with Update). The default settings remain untouched by this process.

Firmware
Release Notes

	Version	Revision	Date	Status	
Current	v0.1.0	r1080	2023-01-11 12:20:18+0100		Check for Update Abort
New					0 %

	Version	Revision	Date	Status	
Current	v0.1.0	r1080	2023-01-11 12:20:18+0100		Install Update Abort
New	v0.1.1	r1153	2023-02-14 17:35:58+0100	New FW verified	0 %

	Version	Revision	Date	Status	
Current	v0.1.0	r1080	2023-01-11 12:20:18+0100		Reboot with Update Abort
New	v0.1.1	r1153	2023-02-14 17:35:58+0100	New Firmware installed	100 %

The service mode is only accessible to specialists and is protected with a password. Under no circumstances may changes be made here, as otherwise the product may be damaged.

Technical Data

Accepted input signals:	PCM 16, 24, 32 bit, 44.1 to 384 kHz
	DSD 64x/128x
Output format:	
Out 1/ Out 2 :	PCM 24 bit, 44.1 to 192 kHz
Speaker link:	24 bit / 96 kHz fixed
Supply voltage:	90 to 240 V AC (50/60 Hz)
Power: Standby :	<0.5 W
Maximum: approx.	25 W
Dimensions:	
Main unit	125 x 180 x 250 mm (H x W x D)
Display unit	125 x 180 x 30 mm (H x W x D)
Weight:	
Main unit & display	approx. 2 kg
Permissible room temperature:	+10° to +40°C
Relative humidity:	max. 75% (non-condensing)
Fuse (at 200...240V)	1 A slow blow

*lower cut-off frequency variable (-3 dB)

**dependent on set lower cutoff frequency

Limited Warranty

The warranty granted by the manufacturer is 10 years from the date of purchase for mechanical and electromechanical components and 5 years for electronic components (dStream). This warranty does not cover defects caused by improper operation or use.

Service

In the event of a defect or malfunction, contact airplain acoustics ltd. directly:

airplain acoustics ltd.
Kempttpark 3
8310 Kemptthal

Tel. +41 52 511 13 18
email: support@airplain.ch

# Appendix I

FILTER-PLUGINS

To activate the filters, the "Source Enhancement" must be switched on (Enable) under the respective output (Aiprlain Speaker / Out 2 / Out2).

De-esser
The De-Esser plugin reduces critical, sharp sounds that can occur in the high frequency range of music. So this plugin can be beneficial if your favorite recording contains some unpleasant sharp sounds. However, sharpness can also occur during mastering or due to unfavorable constellations in the playback room.
The De-Esser plug-in offers you two setting options - the Amount and the Mode of the De-Esser.

The two modes behave differently when critical sharpness is detected and can be selected by tapping the desired mode. The red mark indicates which mode is active. For selective removal of unpleasant sharpness, the Surgical mode is preferred. If an overall softer sound of the high frequency component is desired, the Smooth mode is recommended. The differences between the two modes and their use are described in detail in section 4.7. By changing the Amount slider, you can change the effect of the De-Esser effect. When the slider is at the 0dB position, the effect of the De-Esser is maximum.
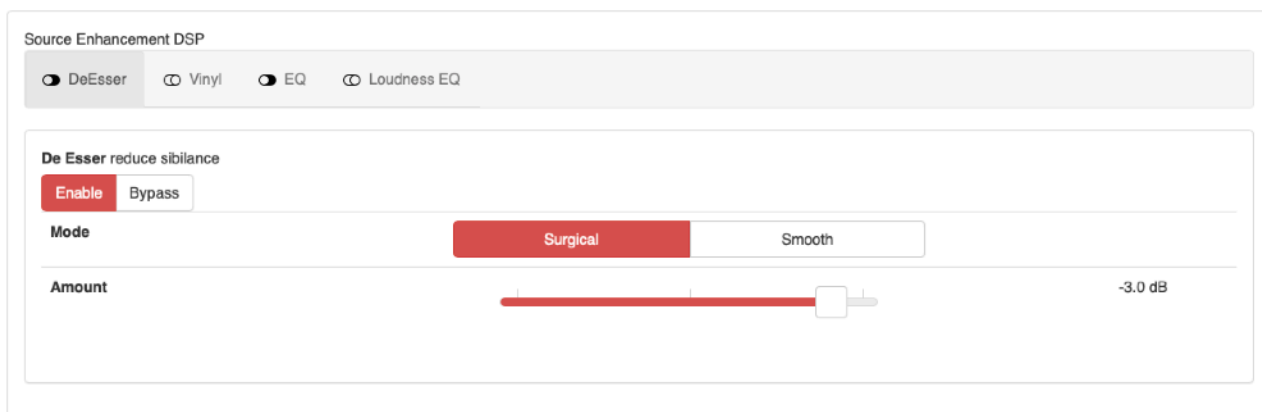
Vinyl-Emulator

Tapping or touching the desired plugin on the light gray tab displays its specific functions and user parameters below the gray tab.

To highlight which plugin is displayed, the selected plugin is highlighted in a darker gray. In this screenshot, the Vinyl plugin is selected. To turn a plugin on or off, simply tap the Enable/Bypass tab. The selection is highlighted in red.

By moving the slider you can set the user parameter Saturation. The Saturation parameter sets the strength of the vinyl emulation effect. It must be adjusted according to the volume of the recording and according to the effect expected by the listener.

Note that if the saturation settings are too high, the audio quality may become poor. For example, start with the 0dB setting. The degree of saturation is displayed in dB on the right side.
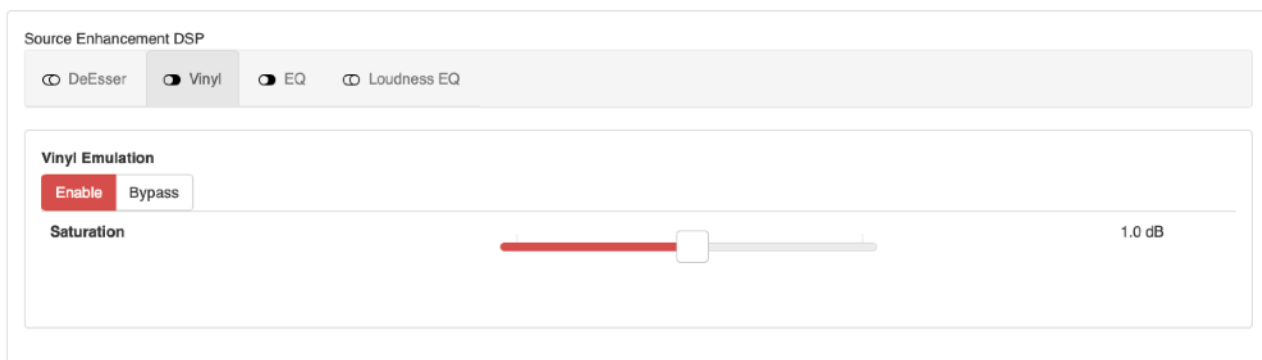
EQ

In the screenshot below, the EQ plugin is selected. This plugin offers you 3 bands for equalization. All settings can be defined by you.

A frequency response diagram over all bands gives an informative overview of your EQ settings. A small example should give you an impression of the functionality and the many possibilities of the EQ:
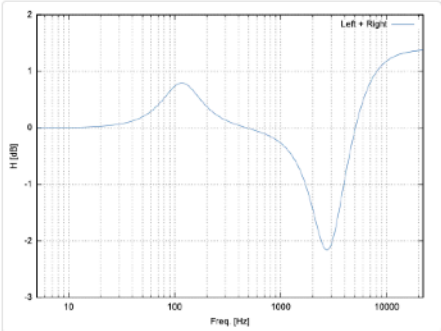
- The 1st band is a bell-shaped peaking filter that boosts by 0.8 dB at 117 Hz. The Q value indicates the width of the bell shape. The smaller the Q value, the wider the bell.
- The 2nd band is a bell-shaped peaking filter that attenuates by 2.3 dB at 2.79 kHz.
- The 3rd band is a high-shelf filter that boosts frequencies above 4.98 kHz by 1.4 dB.

Loudness-EQ

The loudness EQ shown below is based on the equalizer patent of Bernhard Schwede. The idea behind this equalization is based on psychoacoustic principles.

Especially the psychoacoustic quantity loudness is eponymous and essential for Schwede's EQ design. In acoustics, this loudness describes the subjective perception of sound pressure. Schwede's EQ design then takes this subjective perception into account to create a more pleasant reproduction in terms of sound intensity. The specific design of Schwede's patent is implemented in the plugin presented here.

In summary, this EQ offers you the possibility to influence the playback volume in such a way that the resulting loudness impression becomes more authentic across the entire audible frequency spectrum.

Use the drop-down menu to select your desired loudness level. These ten different level settings in dB are illustrated with comparisons that allow intuitive use of the plugin. Starting with the lowest level of 60 dB, you can increase the loudness up to 105 dB.
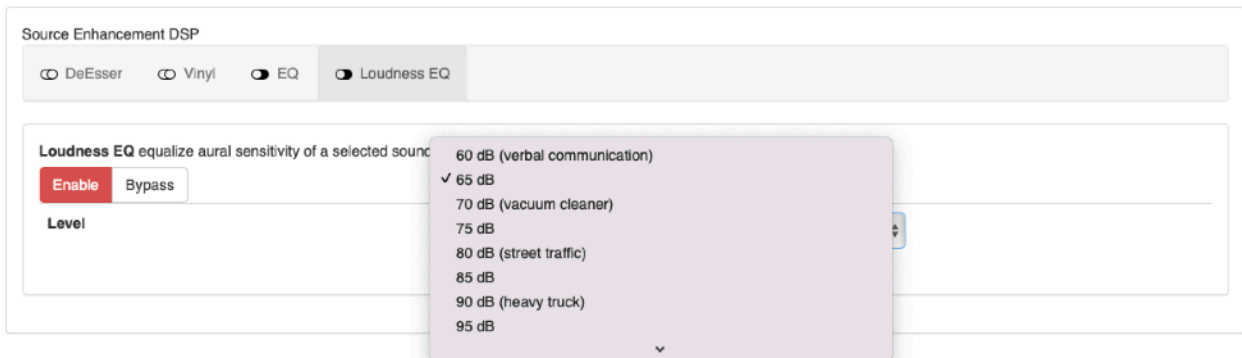
Room EQ (Rubrik OUTPUTS)

The Room EQ is available for the speaker outputs and Digital 1&2 outputs. It works similar to the EQ described above, but offers five instead of three settings. The Room EQ is primarily used to adjust the speakers to the listening room. Room modes and tonality can be adjusted. Ideally, the room should be measured for this. The company airplain and distributors offer such a measurement on request.