

Monacor PA-4125DX

4-zone mixing amplifier for installed sound applications

author and photos: Peter Kaminski



With the PA-4125DX, Monacor offers a compact (220 * 44.5 * 320 mm, 1.95 kg) 4-zone mixing amplifier with DSP technology for fixed installations which can be controlled via network.

Connections and Specifications

The rear panel provides a good overview of the general features and immediately shows you every connection available. The 4 analogue unbalanced inputs are designed both as RCA jacks and 2 terminal strips for 2 channels each, which then also allow balanced connection. The maximum input level is +24dBu. Furthermore, SPDIF input and output are also available, e.g. for connecting a CD/DVD player.



The PA-4125DX is equipped with 4 amplifiers. It can be operated in LoZ mode for connection of speakers with an impedance of 4 or 8 Ohms or using HiZ mode for 70V or 100V operation. However, this is only possible with 2 instead of 4 output channels. In LoZ mode, each amplifier features an output power rating of 125W and 250W for 70/100V operation.

It is possible to connect switches for mute or standby operation via GPIO switch as well as to connect an external potentiometer for volume control. Control signals can also be received or transmitted. Furthermore, the scope of delivery also includes plug-in screw terminals for connection of the input and output jacks or terminal strip.

The device is supplied directly with mains operating voltage (100 ... 240V AC, 50 - 60Hz, 150W). The mixing amplifier can be connected to LAN via RJ45 Ethernet jack on the rear panel. The front panel features 5 LEDs for indicating the functionality of the device.

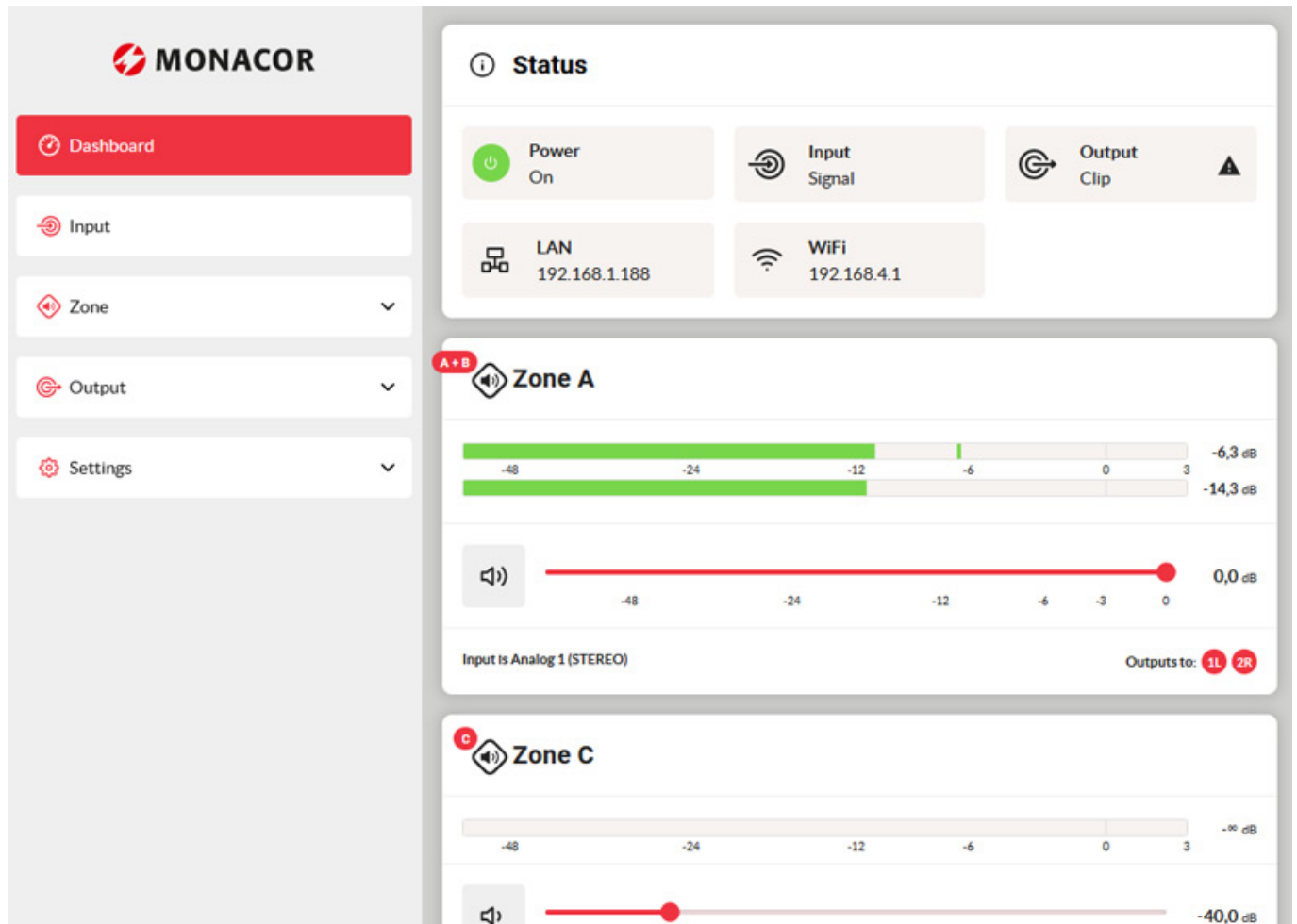


The device is operated completely via the built-in HTML5 web server. There is also an Ethernet connection on the rear panel for integrating it into a local network as well as a 2.4 GHz WLAN which operates as an access point or as a client. The device is delivered in access point mode. Initial configuration is done using a standard password.

Handling


We would like to use the operation via web browser to explain the features of the

PA-4125DX.



The dashboard (see image above) gives you an overview of the status of the device including virtual faders for the output level and bar graph displays. There is a menu section on the left for selecting various dialogues. In these dialogues, it is possible to select corresponding dialogue sections for the respective zone or for certain features.

Settings

 **System Information**

Device Name
Monacor PA-4125DX 2349-00037

Venue Name
|

Customer Name

Asset Tag Number

Installer Name

Installer Contact Info

Date of Installation

Installation Notes

The user can enter the basic data for the amplifier via 'Settings'. The product name with serial number are default settings.

Power Management

AUTO ON

- Audio (Eco)**
The Amplifier will power on if more than 2.5mV is applied to any of the analog inputs. Complies with European ErP standby regulations (<0.5W standby consumption). **WARNING: Network will not work during standby!**
- Audio**
The Amplifier will power on if more than 2.5mV is applied to any of the analog inputs. Complies with European ErP standby regulations for networked equipment (<2W standby consumption).
- Audio (Digital)**
The DSP is always on. The amplifier will power on if any of the outputs is above -80dBFS. Note: Does not comply to the European ErP standby requirements for networked equipment (<2W)
- Trigger (Eco)**
The Amplifier will power on when a 12V trigger is activated - please see the GPIO page. Complies with European ErP standby regulations (<0.5W standby consumption). **WARNING: Network will not work during standby!**
- Trigger**
The Amplifier will power on when a 12V trigger is activated - please see the GPIO page. Complies with European ErP standby regulations for networked equipment (<2W standby consumption).
- Network Only**
The amplifier will power on when receiving network API commands. Complies with European ErP standby regulations for networked equipment (<2W standby consumption).

Standby Time (Minutes)

OFF 5 15 30 60

Mute Time (Minutes)

OFF 1 2 5 10

Extensive settings relating to power management can be made via selecting an operating mode as well as times for standby and audio mute (see image above). By the way, the power consumption in standby mode is under half a watt.

GPIO

PIN 1
Soft Ground
Use for 12V trigger and standby/mute input reference

PIN 2

- Off**
Pin has no functionality (Default)
- Standby (NO)**
Amplifier will enter standby when Pin 2 is connected to GND.
- Standby (NC)**
Amplifier will enter standby when Pin 2 is unconnected (floating).
- Mute (NO)**
All amplifier outputs are muted when Pin 2 is connected to GND.
- Mute (NC)**
All amplifier outputs are muted when Pin 2 is unconnected (floating).

PIN 3
Ground
Use as reference for Volume Control and Trigger Out.

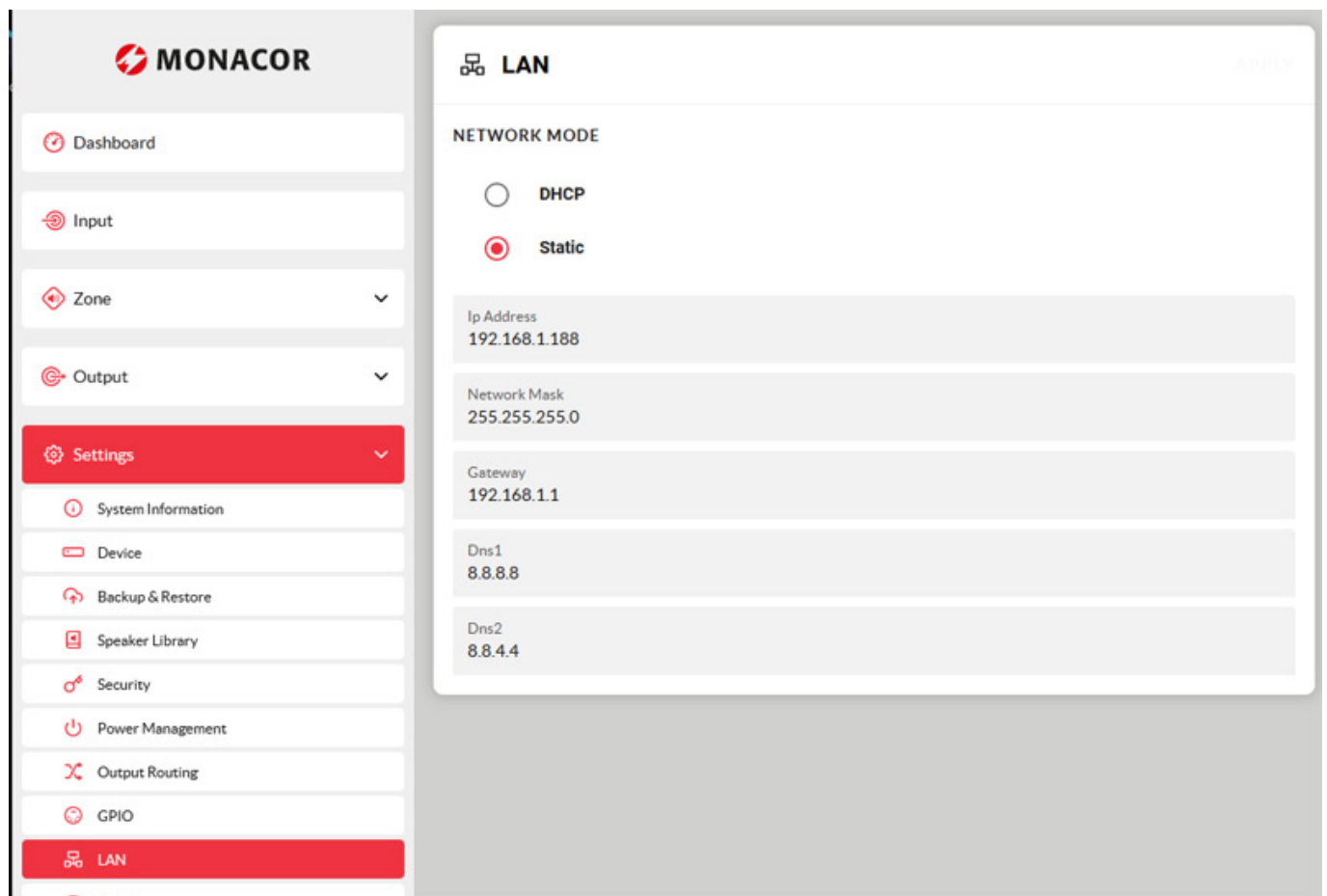
PIN 4

- Volume Control**
When selected the pin is used for external volume control
- Off**
Pin has no functionality (Default)


PIN 5

- Volume Control**
When selected the pin is used for external volume control
- Off**
Pin has no functionality (Default)

The GPIO can be set via an additional dialogue to meet certain user requirements.



The IP address can either be set statically or assigned automatically via DHCP.

 **WIFI** APPLY

ENABLE WIFI

When WiFi is disabled the only way to connect to the amplifier is using the LAN port. The setting can be reset by pressing the Factory Reset button during startup or connecting via LAN and enabling WiFi again.

WHEN LAN CONNECTED

Disable WiFi

Do Nothing

DISABLE WIFI AFTER

5 min 10 min 30 min **Always On**

If set to any other value than "Always On" - WiFi will be turned off after the selected duration. Amplifier will be need power cycling to turn WiFi on again.

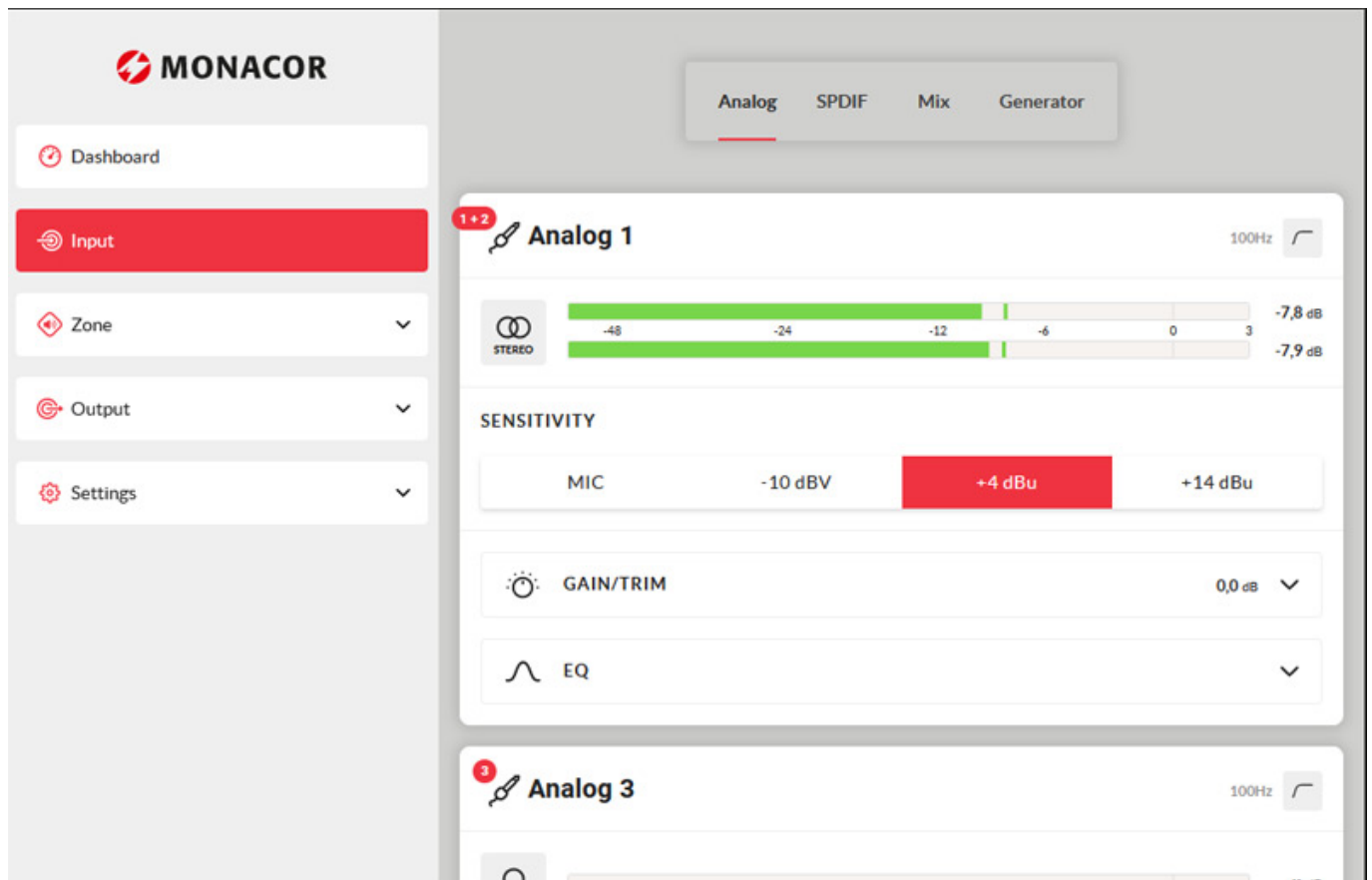
WIFI MODE

Access Point	Client
<hr style="border: 1px solid red;"/>	
Access Point Name (SSID) Monacor PA-4125DX 2349-00037	
Password password	

After initial connection via WLAN, it is also possible to make adjustments here. Once LAN has been set up, it is possible to deactivate WLAN completely or use it as a client in the existing WLAN.

Inputs

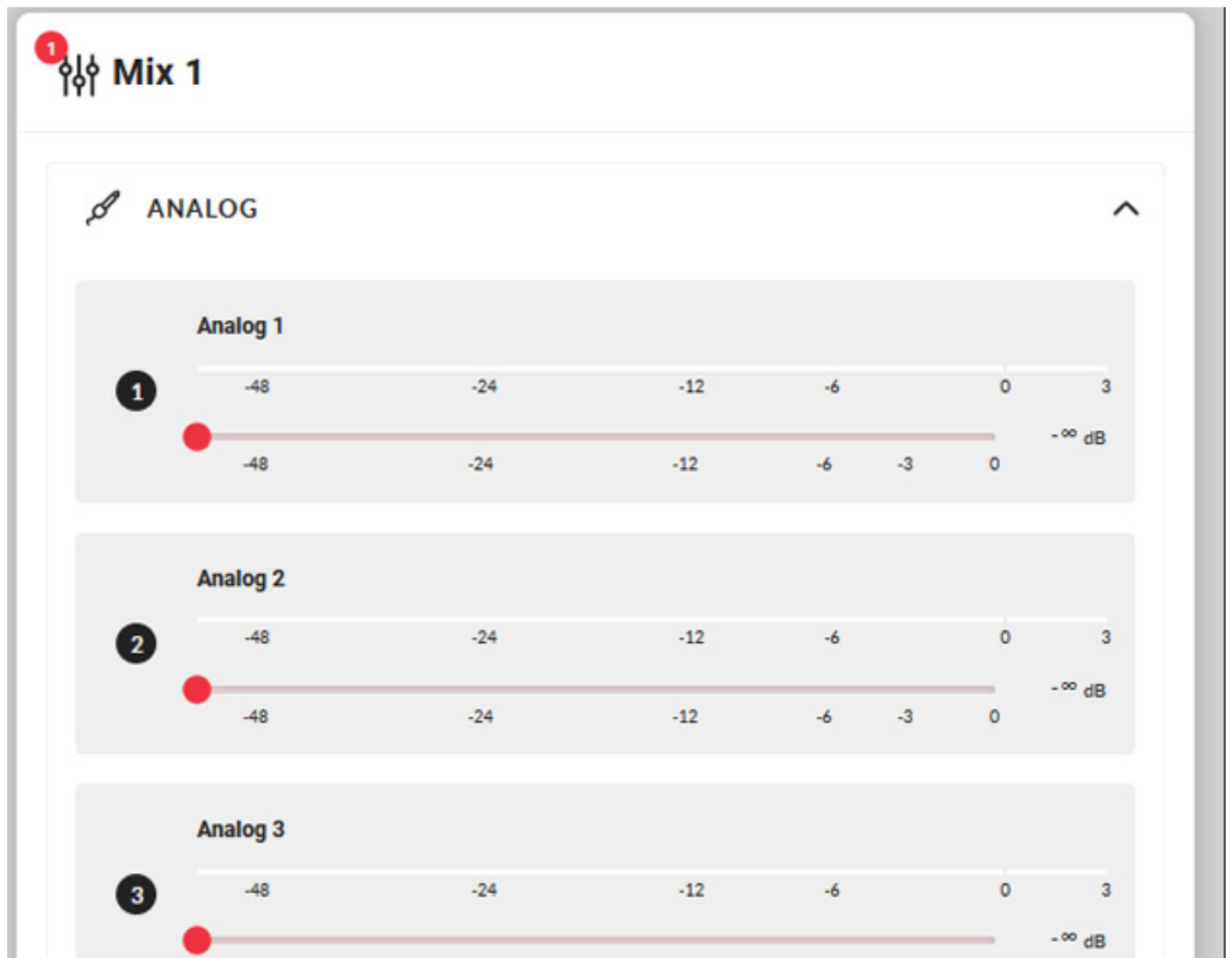
Let us start with the inputs and integrated mixers.



The sensitivity range of each analogue input can individually be adjusted via 4 virtual switches including microphone sensitivity and nominal line level +14dBu.

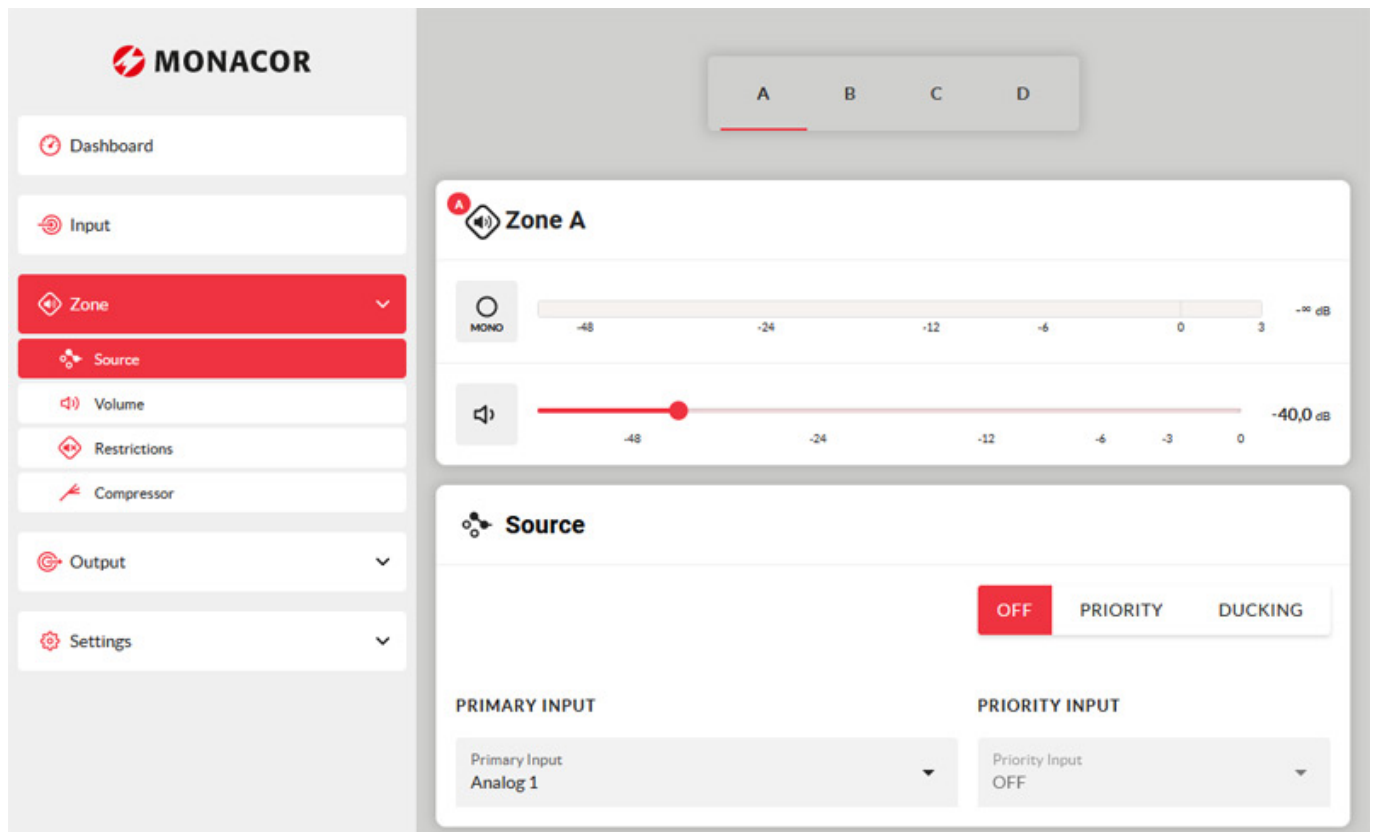
The sensitivity can be fine-tuned via trimming. For stereo operation, 2 adjacent channels can also be linked. A 5-band equalizer is available for each analogue input. Equalizers are also available for the output where we will explain the features of the equalizer in detail. It is also possible to add a 100Hz high-pass filter to each analogue channel, e.g. for reducing impact noise or for suppressing microphone handling noise.

With the digital SPDIF input, it is possible to switch inputs to stereo or two separate mono inputs. There is also a level trim available. However, it does not feature an equalizer. An audio generator is also available for testing and levelling. This is where you can either activate a noise signal with adjustable level or a sine signal also with adjustable level and adjustable frequency as a source.



The PA-4125DX features 4 integrated mixers, each with 4 analogue inputs and SPIDF inputs as input sources. The names of the input sources and mixers can also be user-defined, i.e. click the mouse onto the name and select a different one, if required. However, the mixer does not feature a virtual mute button for the inputs. Instead, you have to move the fader all the way down.

Zones



The PA-4125DX supports 4 zones (A ... D). The user can select a zone at the top of the dialogue. Afterwards, the first of 4 settings can be selected in the menu (source, volume, restrictions and compressor).

Volume

RANGE RESET

-80,0 dB 0,0 dB

CURRENT VOLUME

↑ SET MIN -40,0 dB SET MAX ↑

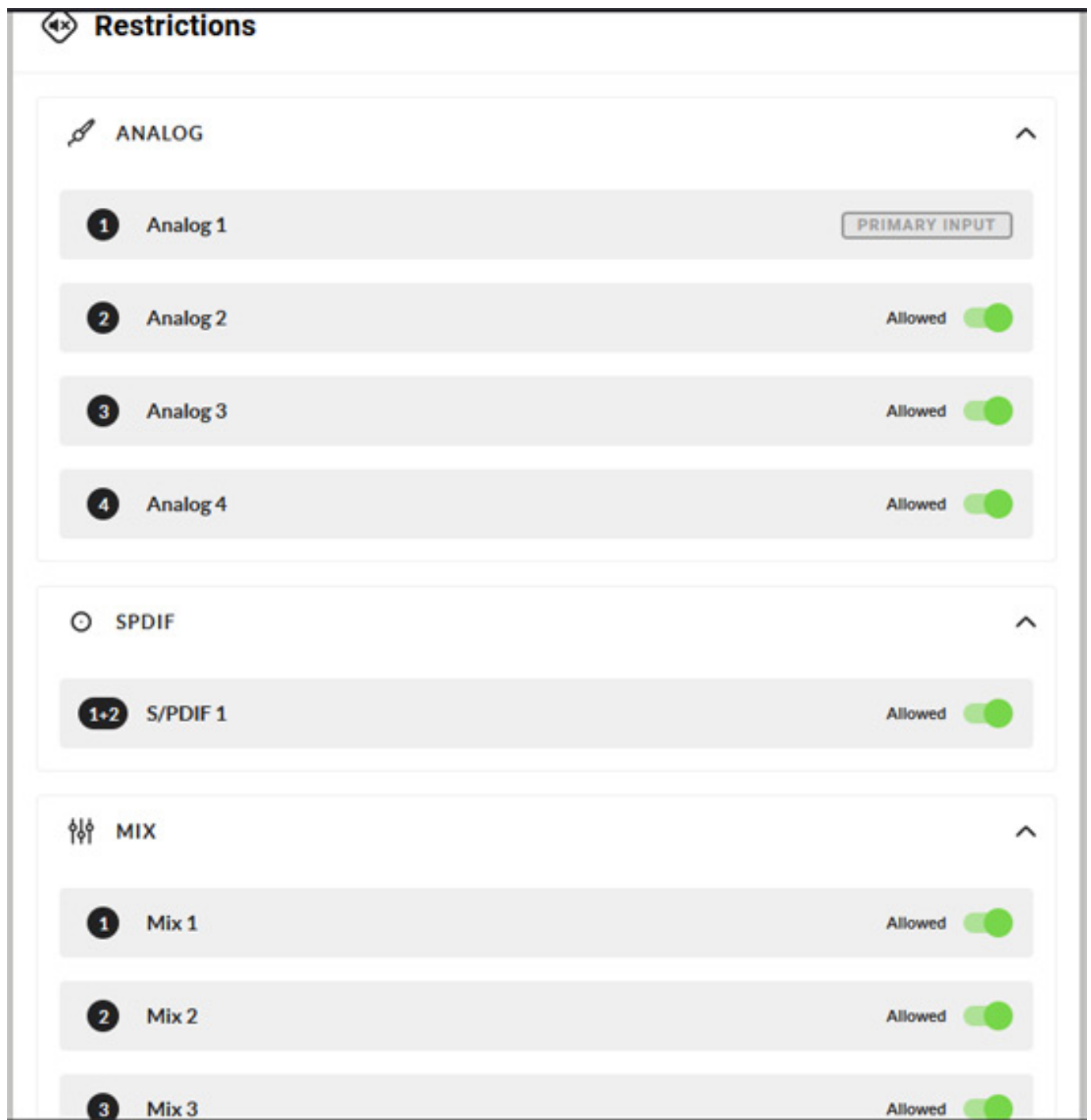
MUTE

"Allow mute" is ON

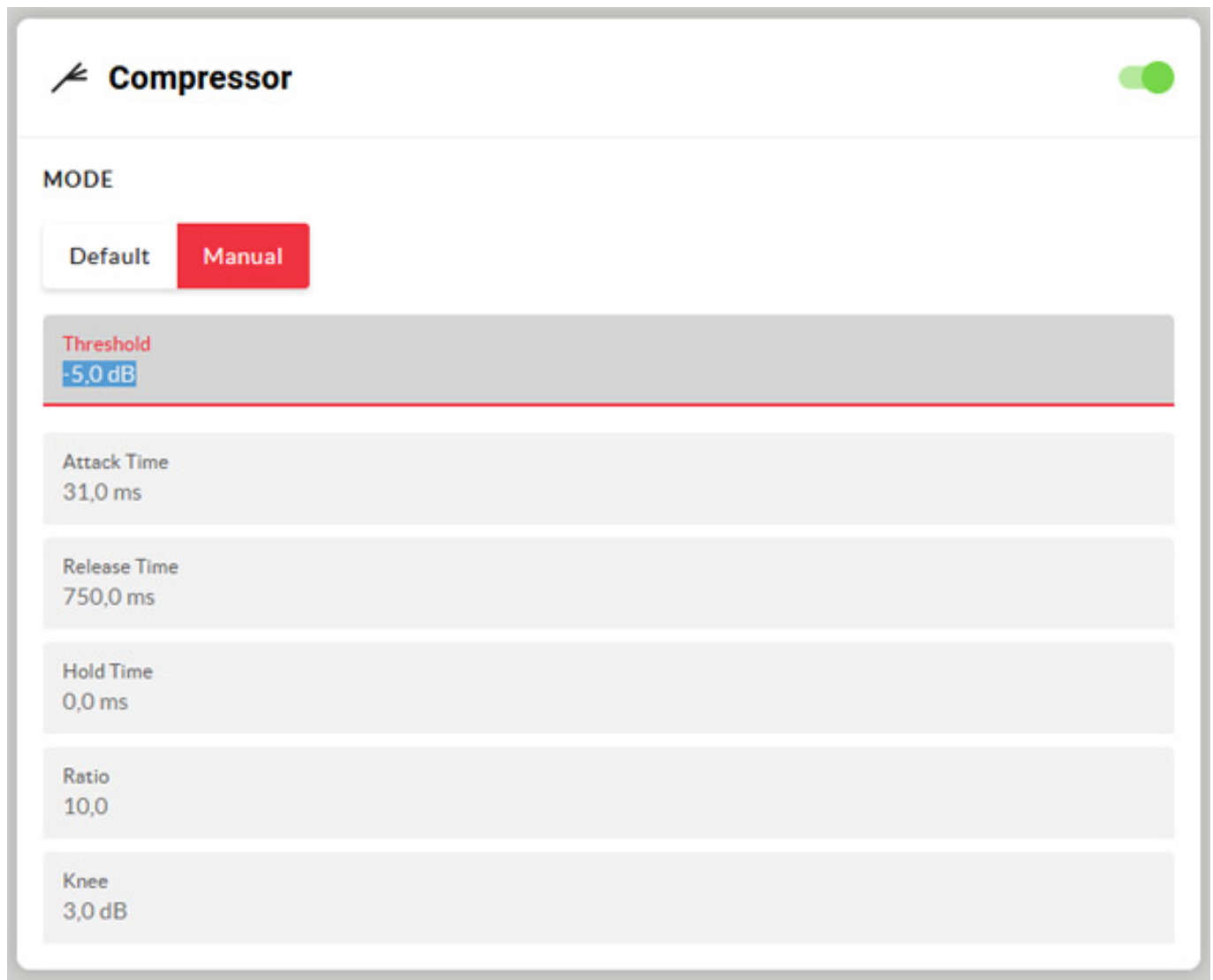
CONTROL

- OFF**
No Volume Control by GPIO
- GPIO 4**
Volume controlled from GPIO 4.
- GPIO 5**
Volume controlled from GPIO 5.
- GPIO 6**
Volume controlled from GPIO 6.
[Please set GPIO6 as Volume Source to enable.](#)
- GPIO 7**
Volume controlled from GPIO 7.
[Please set GPIO7 as Volume Source to enable.](#)

The dialogue 'Volume' of the respective zone allows the user to restrict the adjustable level range.



The dialogue 'Restriction' can be used to activate or deactivate individual inputs and mixers for the respectively selected zone (see image above).



A compressor is also available for each zone. In 'Default' mode, the user can set the threshold. The remaining parameters are set to standard values, i.e. no level adjustments. In addition to the threshold value, the user can also adjust parameters for the compressor in 'Manual' mode, e.g. attack time, release time, hold time, compression ratio and knee point.

Outputs

Let us have a look at the outputs now. Their level can be adjusted. Dialogue 'Routing' (see image below) can be used to assign the outputs to the 4 zones.

The screenshot displays the control interface for the Monacor PA-4125DX. It is divided into two main sections: 'Output 1' and 'Routing'.

Output 1 Section:

- At the top left, there is a red circle with the number '1' followed by the text 'Output 1'. To the right is a mute icon (a circle with a diagonal line).
- Below this is a horizontal volume slider. The scale ranges from -48 to 3 dB, with major tick marks at -48, -24, -12, -6, 0, and 3. The current value is 0 dB.
- Underneath the slider is a speaker icon and another horizontal volume slider. This scale ranges from -30 to 15 dB, with major tick marks at -30, -24, -18, -12, -6, 0, 6, 12, and 15. The current value is 0,0 dB.
- At the bottom of this section, it says 'Signal from Zone A' on the left and 'Speaker is CUSTOM' on the right.

Routing Section:

- The section is titled 'Routing' with a list icon to the left.
- Below the title is the instruction 'Select Zone Signal source for Speaker'.
- There are four radio button options:
 - Zone A
 - Zone B
 - Zone C
 - Zone D

A delay time can be set for each output. The specification can be switched between number of samples, milliseconds and respective distance of the sound distribution (metres/feet).

The screenshot displays two control panels for the Monacor PA-4125DX. The top panel, titled 'Output 1', features a volume slider ranging from -48 dB to 3 dB, with a current setting of 0,0 dB. Below the slider is a speaker icon and a red volume bar. The signal source is identified as 'Signal from Zone A' and the speaker type is 'CUSTOM'. The bottom panel, titled 'Delay', has a toggle switch that is currently turned off. It includes a 'UNIT' selector with options for 'Samples', 'Ms', 'Feet', and 'Meter', where 'Ms' is selected. A delay slider is set to 0,00 ms, with a scale from 0 to 100. Below the slider, four lines of text provide equivalent values: 'Delay equals 0 samples', 'Delay equals 0,00 ms', 'Delay equals 0,00 feet', and 'Delay equals 0,000 meter'.

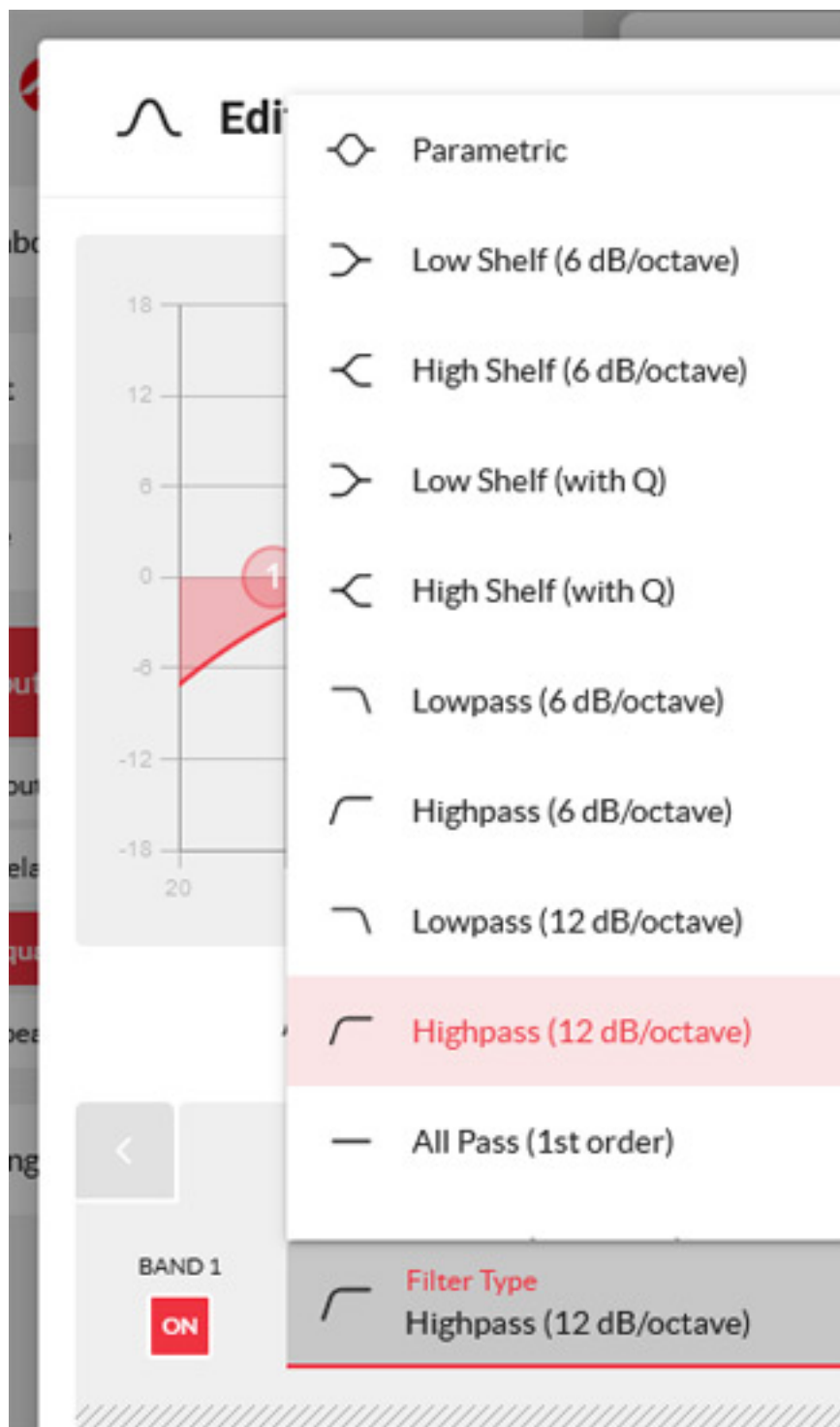
Each output also features a 5-band equalizer. The resulting curve is displayed graphically.

The screenshot displays the control interface for the Monacor PA-4125DX. On the left is a sidebar menu with the following items: Dashboard, Input, Zone, Output (highlighted in red), Routing, Delay, Equalizer (highlighted in red), Speaker Preset, and Settings. The main area is divided into two sections. The top section, titled '1 Output 1', features a volume slider ranging from -48 to 3 dB and a speaker icon with a volume knob set to 0.0 dB. Below this, it indicates 'Signal from Zone A' and 'Speaker is CUSTOM'. The bottom section, titled 'EQ', has a green toggle switch turned on. It contains a frequency response graph with a logarithmic x-axis (20 to 20k Hz) and a y-axis from -18 to 18 dB. The graph shows a red curve with a slight boost around 100 Hz and 2 kHz. At the bottom right of the EQ section are three buttons: 'EDIT' (red), 'COPY' (red), and 'CLEAR' (grey).

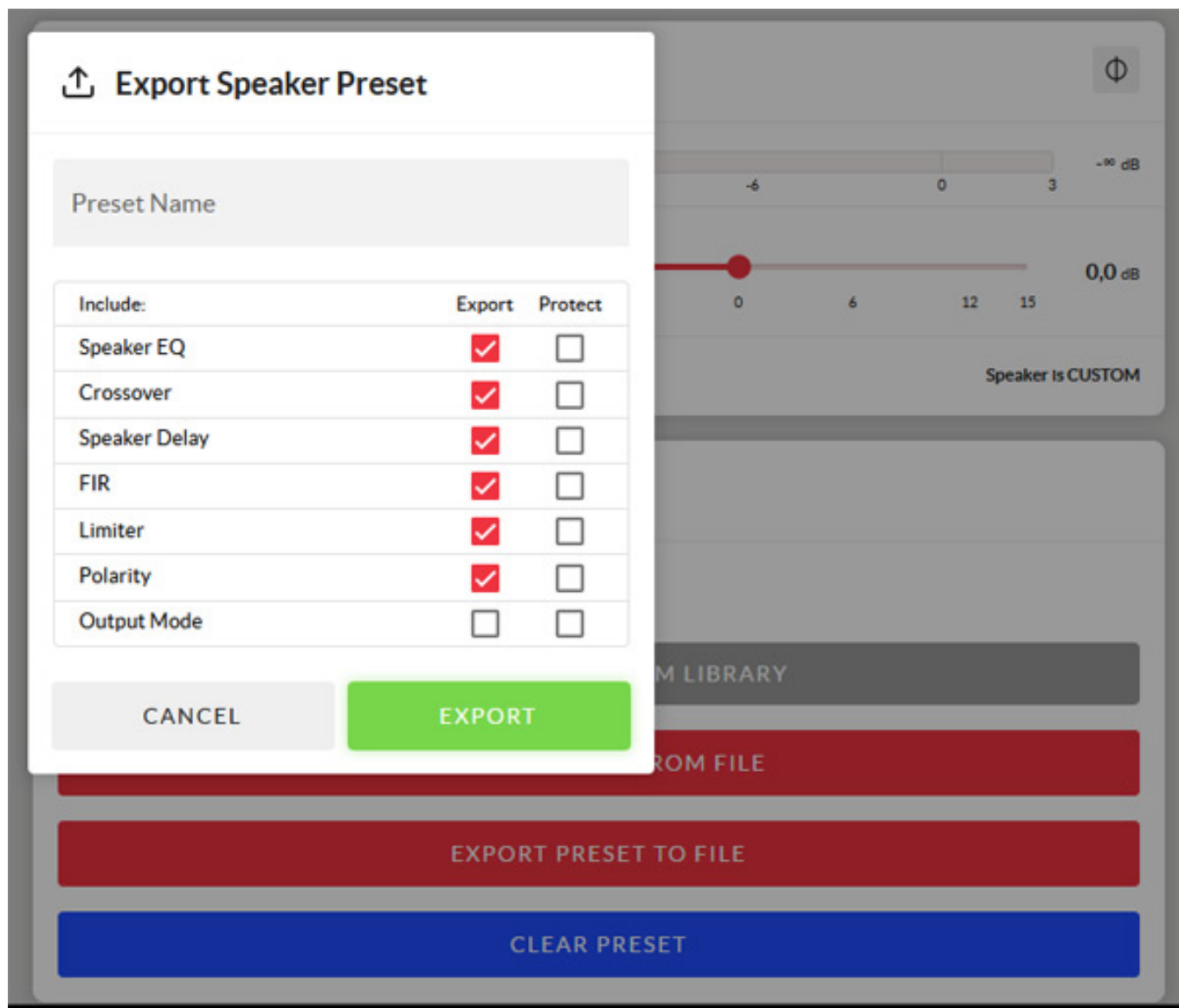
With a click on 'Edit' the settings dialogue will be available.



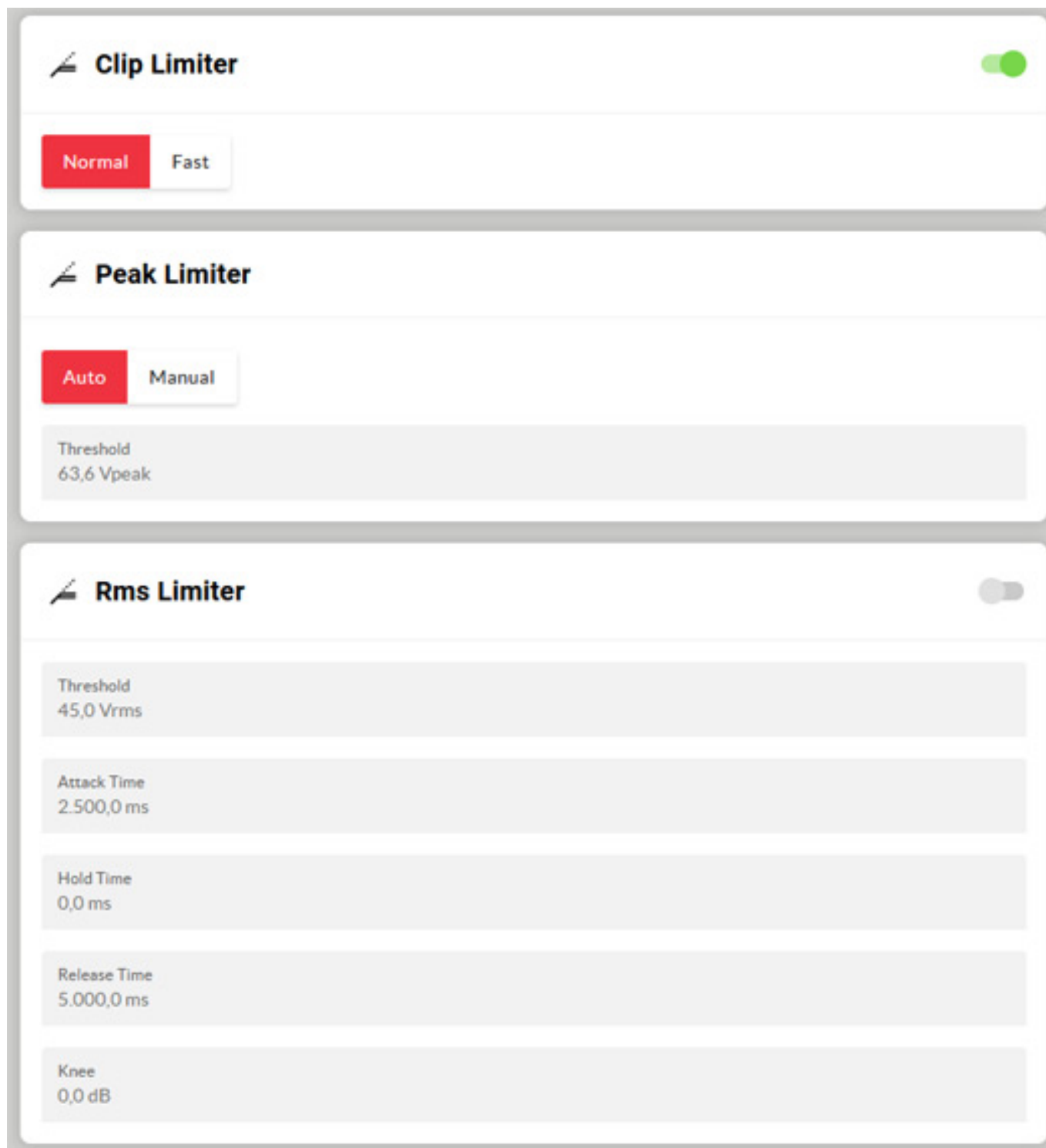
Various types of filters are available here (see image below).



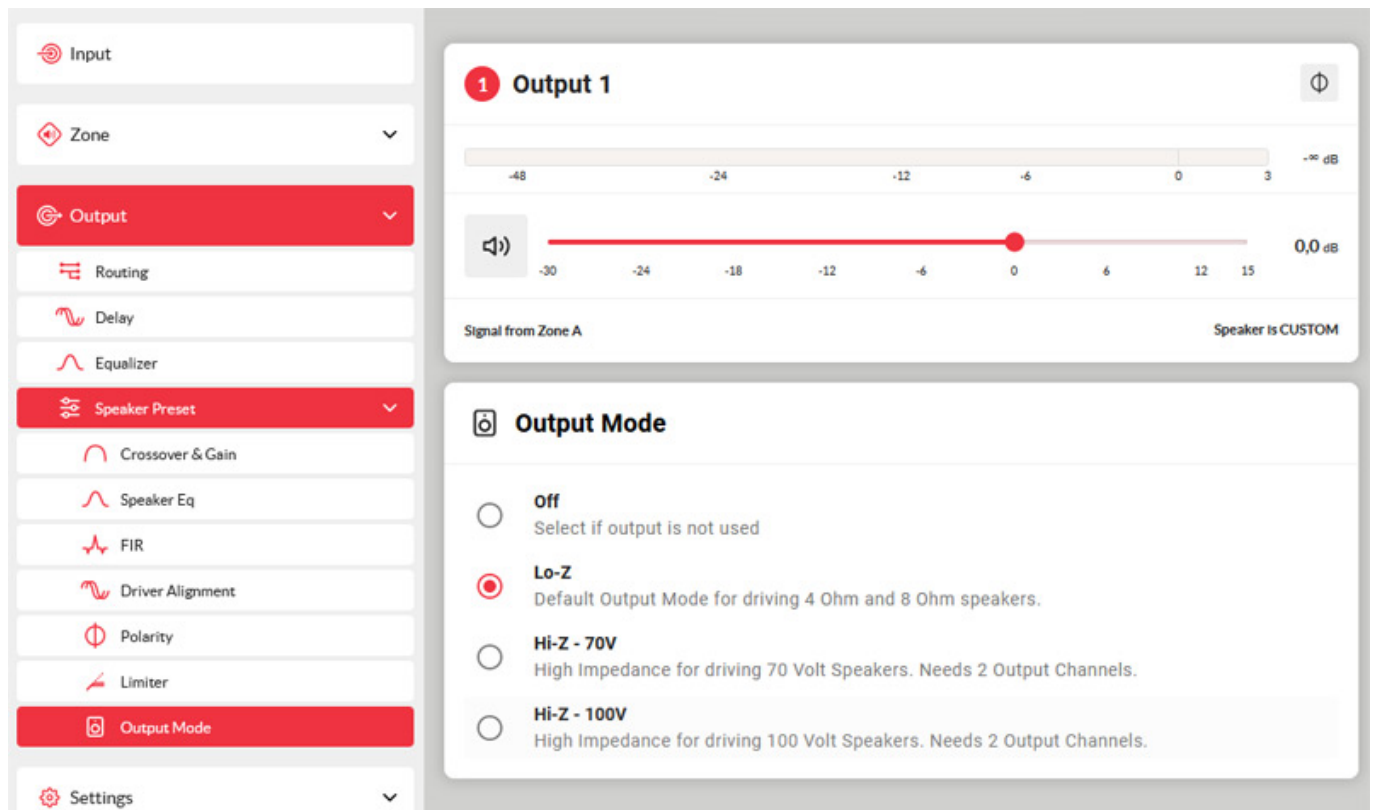
The user can adjust gain, Q and filter frequency, depending on the selected type of filter.



Speaker presets can also be loaded and stored. The user can set the data to be exported or to be protected against overwrite in a dialogue.



Furthermore, versatile things can be adjusted as presets, e.g. crossover frequencies, equalizer (also a 5-band equalizer), import of FIR filter coefficients and various limiters (see image above).



An output can also be deactivated completely, if required (see image above).

Practice

Mixing amplifier PA-4125DX has got a lot to offer. It features various threads on the bottom and sides for installation purposes. The scope of delivery also includes 4 self-adhesive rubber feet in case you want to place the device on a surface without fixed attachment.

Operation via the integrated web server is self-explanatory for qualified experts. An instruction manual in German and English clarifies any questions which may arise. WLAN and integrated WLAN as well as HTML5 web server allow you to remotely control one or several mixing amplifiers within the network, independent of the operating system.

This compact device provides very comprehensive adjustment options and perfectly meets all requirements. It features every useful DSP processing option. With 4 x 125W, you will also have some nominal output power available - a really impressive device.

Conclusion

The list price is just under 900 Euros which is very reasonable for a 4-zone mixing amplifier with analogue and digital inputs and a very comprehensive range of

features with practical DSP functionality.

It should also be mentioned that there are going to be rack-mount and wall-mount brackets as well as control panels for wall mounting available this autumn. There is also going to be a version with Dante interface available by the end of the year 2024.

www.monacor.com