8.12 ADD A PARAMETRIC EQUALIZER

8.12.1 WHAT IS A PARAMETRIC EQUALIZER?

A Parametric Equalizer, or PEQ, is an equalization done by setting parameters, mostly 3: frequency, gain and Q.

There are 3 types of PEQ available:

- **The peak notch**: Parametric equalizers are multi-band variable equalizers which allow users to control the three primary parameters: amplitude (gain), center frequency and bandwidth (Q).

- **The shelving high** (1st or 2nd order): Shelving high filters cut or boost all frequencies equally above a desired cutoff point.

- **The shelving low** (1st or 2nd order): Shelving low filters cut or boost all frequencies equally below a desired cutoff point.
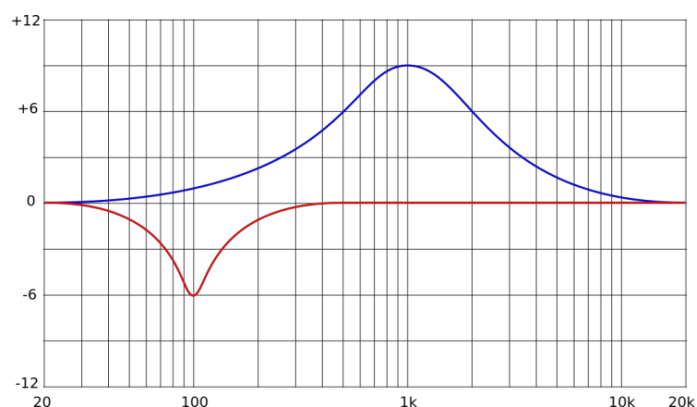

Figure 69: **Peak notch**: with positive gain (blue) and negative gain (red): The red one has a higher Q (the higher the Q, the narrower the bandwidth impacted)
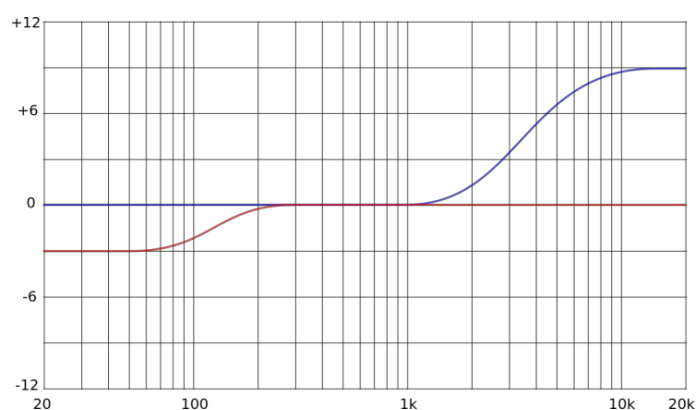

Figure 70: **Shelving**: high in blue (1st order), low in red (2nd order)

Each parametric equalization band will have the following settings:

- Frequency: the center of the frequency range to be cut or boosted

- Gain: the amount of boost or cut

- Q: the "sharpness" of the boost or cut, with higher Q meaning a narrower filter (not available for shelving second order)

- Order (Only available for High and Low shelving filters): The order of a shelving filter is changing the shape of the curve.

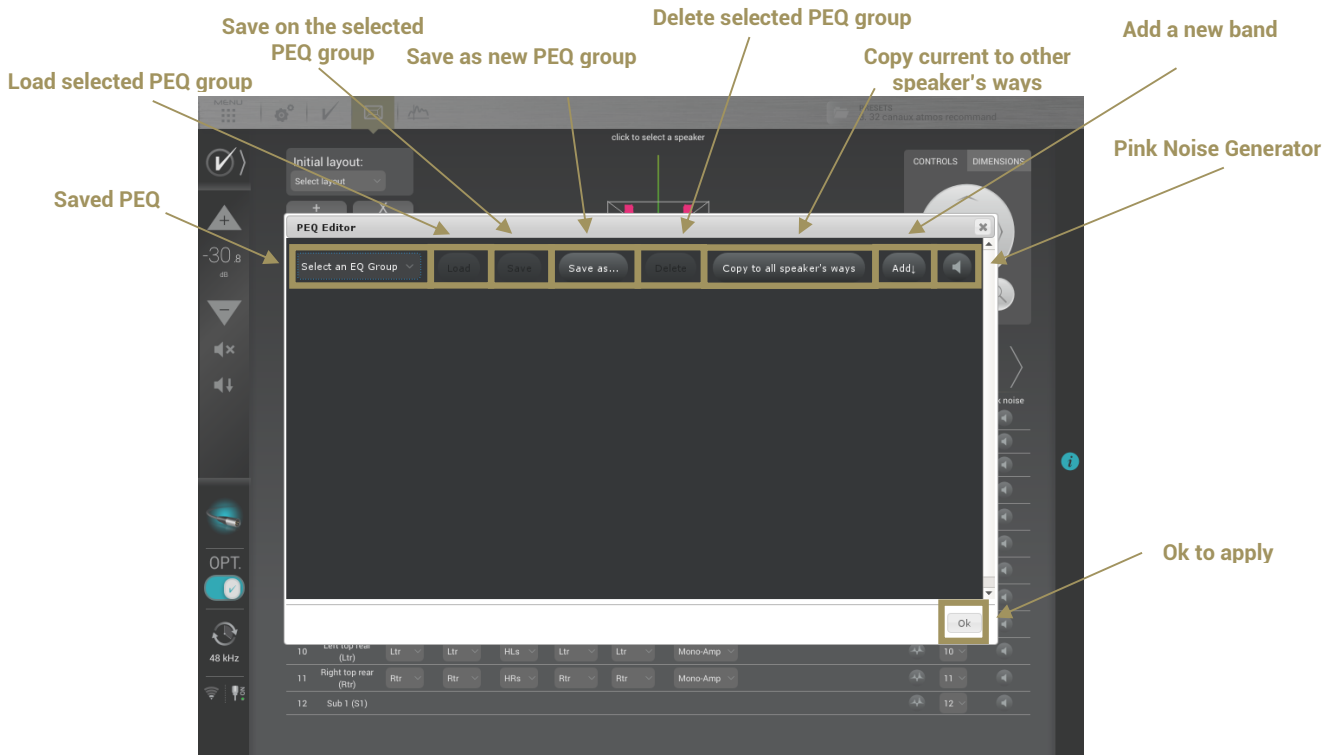All of these settings are saved with the preset.

8.12.2 OPEN THE PARAMETRIC EQUALIZERS EDITOR

The PEQ editor is accessible from the 3D view of the speaker layout editor. One editor is available for each output, which means that in case of active multi-amplification, one PEQ editor is available for each driver of the speaker.

Parametric EQ

To open the PEQ editor, click on the PEQ icon ▨ of the speaker or driver you want to edit. The PEQ editor will be displayed as a pop-up which overlay the 3D view, as followed:

Load selected PEQ group

Save on the selected PEQ group

Save as new PEQ group

Delete selected PEQ group

Copy current to other speaker's ways

Add a new band

Saved PEQ

Pink Noise Generator

Ok to apply

8.12.3 ADD A PEQ

To add a PEQ, click on the **Add↓** button. A new line will appear in the table. This line is a Parametric Equalizer band. You can add as many bands as possible per channel.

The overall procedure to configure a PEQ is as follows:

- Open the PEQ editor of the speaker (or driver) you want to edit;

- Add as many band as needed using the **Add↓**;

- Set the parameters of each band as wanted or as needed by the speaker's manufacturer. The parameters are explained bellow;

- Eventually control the result with the pink noise using the [🔊] button ;

- If needed, save the settings as an EQ group, this makes easier to duplicate a setting on several speakers (procedure explained later in this chapter);

- Close the PEQ editor with the **Ok** button at the bottom of the page.

Each PEQ band has the following parameters:

- **Filter Type**:
  - **The peak notch**: Parametric equalizers are multi-band variable equalizers which allow users to control the three primary parameters: amplitude, center frequency and bandwidth.
  - **The shelving high** (1st or 2nd order): Shelving high filters cut or boost all frequencies equally above a desired cutoff point.
  - **The shelving low** (1st or 2nd order): Shelving low filters cut or boost all frequencies equally below a desired cutoff point.

- **Frequency**: the center of the frequency range to be cut or boosted

- **Gain**: the amount of boost or cut (in dB)

- **Q**: the "sharpness" of the boost or cut. Higher Q meaning a narrower filter (not available for shelving second order)

- **Order** (Only available for High and Low shelving filters): The order of a shelving filter is changing the shape of the curve.

The PEQs are saved in a presets.

8.12.4 DELETE A PEQ

To delete a PEQ band, please click on the **Delete** [Delete] button at the end of the line. Delete a band is a definitive action that cannot be undo.
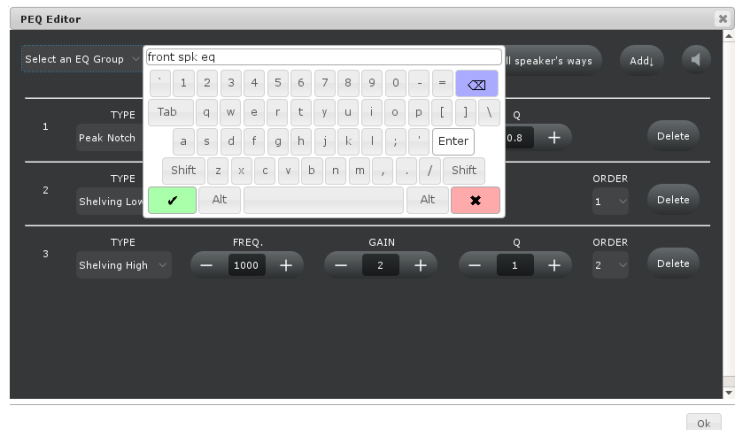
8.12.5 SAVE A NEW PEQ GROUP

In case several similar speakers would need to have the same PEQ settings applied, it is possible to save a PEQ group to have the possibility to load on another channel.

Once the PEQ has been fully edited, to save it as a new PEQ Group click on the **Save as...** button;

A virtual keyboard will appear. Please give a significant name;

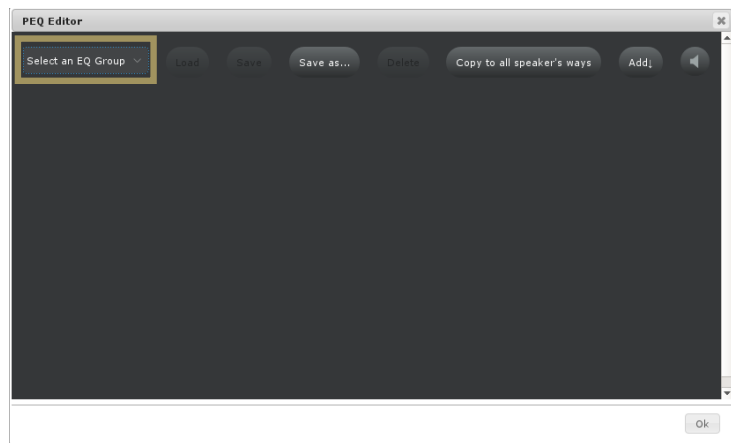Once it is done, click on the green validate ✓ button;

You are now back to the PEQ Editor. This means that the EQ Group has been saved. It is available in the **Select and EQ Group** drop-down list. To load it, check the next chapter *Load a PEQ Group*.

8.12.6 LOAD A PEQ GROUP

Once an EQ group has been saved, it is possible to load it on another channel. Here is the procedure:

Open the PEQ editor of the interested channel. The saved EQ group are available in the drop-down menu of the top left corner called **Select an EQ Group**;

Select the EQ group you would like to load in the drop-down list;

Once the desired EQ group is selected, please click on the **Load** button;

The EQ group is now loaded on this channel. Repeat the procedure on other channel if needed. Close the PEQ editor by clicking on the **Ok** button.
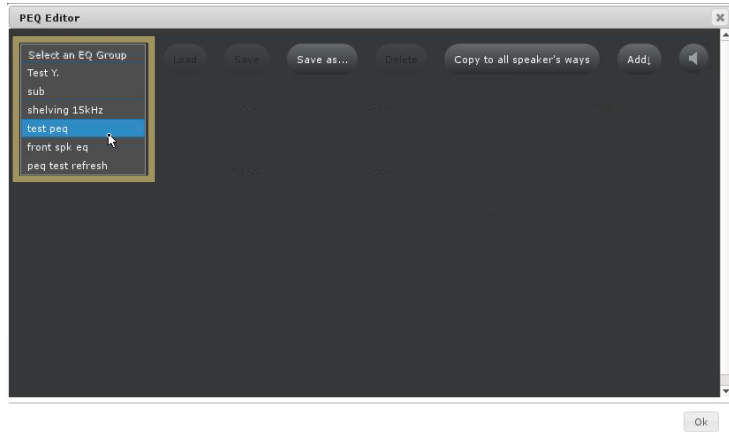
8.12.7 DELETE A PEQ GROUP

If an EQ group is not valuable anymore, it is possible to delete it to keep a clean and effective list of EQ group. To do so, please follow this procedure:
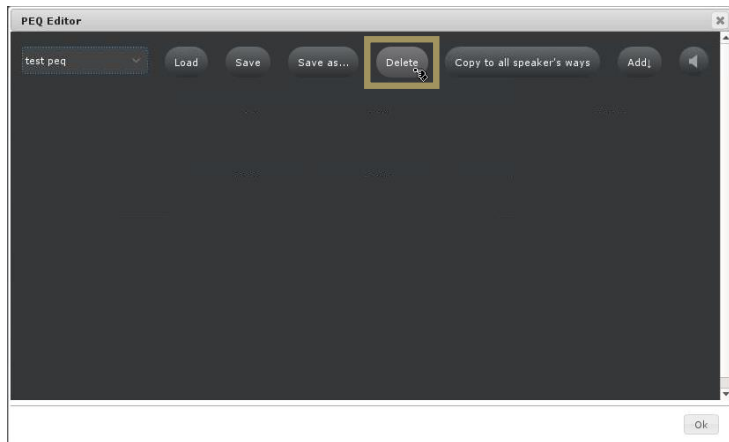

Open any PEQ editor. The saved EQ group are available in the drop-down menu of the top left corner called **Select an EQ Group**;

Select the EQ group you would like to delete in the drop-down list;

Once the desired EQ group is selected, please click on the **Delete** button;

The EQ group is now deleted. Repeat the procedure on other EQ Group if needed. Close the PEQ editor by clicking on the **Ok** button.

8.12.8 SAVE A PEQ GROUP ON AN EXISTING ONE

If an existing EQ group needs modification, it is possible to overwrite it with the new parameters. To do so, please follow this procedure:

Once you are sure the modifications are fine, you can now overwrite this group of EQ on an existing one. The saved EQ group are available in the drop-down menu of the top left corner called **Select an EQ Group**;
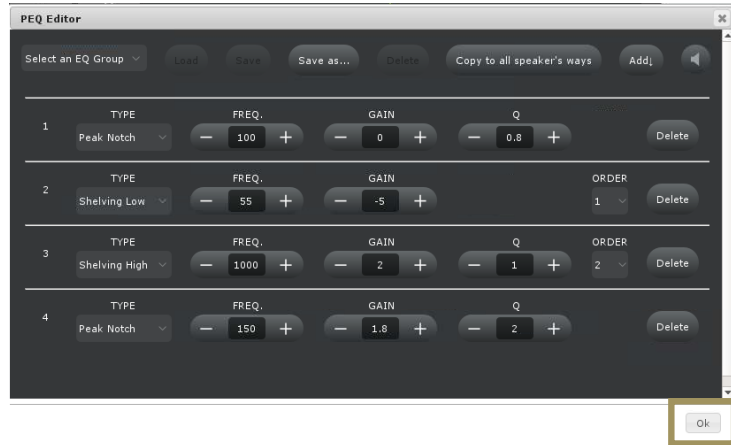

Use the drop-down menu to select the group of EQ to overwrite;

Use the **Save** button to overwrite the selected EQ group. It means that the current state of the PEQs will be saved on the selected EQ group. The previous save will be erased.
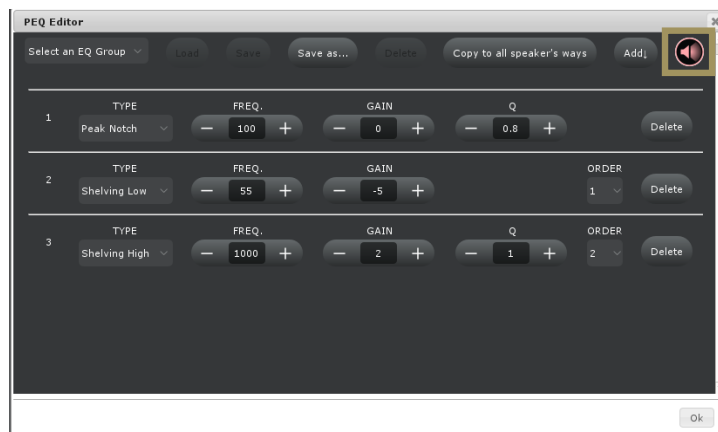
The EQ group is updated. Close the PEQ editor by clicking on the **Ok** button.

8.12.9 GENERATE PINK NOISE

The PEQ Editor has its own quick access to the pink generator. Click on the *speaker* button to generate pink noise on the selected speaker. Please note that in case of multiway speaker, the pink noise will be generated on the whole speaker.

8.13 SAVE THE PRESET

Last but not least, don't forget to **save** the preset to make sure the settings of your speaker layout won't be lost.