

QUICK START GUIDE
PC SOFTWARE



 **VERS 1.0**

1. First Steps

After downloading the PC software, proceed as follows:

- 1** Unpack the file **DSP Master.zip** on your PC/laptop.
- 2** Connect your PC/laptop to the DSP device using the USB cable included with the DSP device. Make sure that the PC/laptop has a stable Internet connection.
- 3** Turn on your DSP device and start the **DSP Master.exe** application on your PC/laptop. The devices will be connected automatically.
- 4** If you are starting the software for the first time and a notice for a firmware update appears, you must perform this. The process takes about 20-30 seconds and is carried out automatically.

If the firmware update is interrupted unexpectedly, you can repeat the process after restarting the PC software.

- 5** The DSP device is successfully connected to the PC/laptop when a green **Connected** area appears in the top right corner of the main window.

2. Main Menu

The main page is displayed first after starting the software.

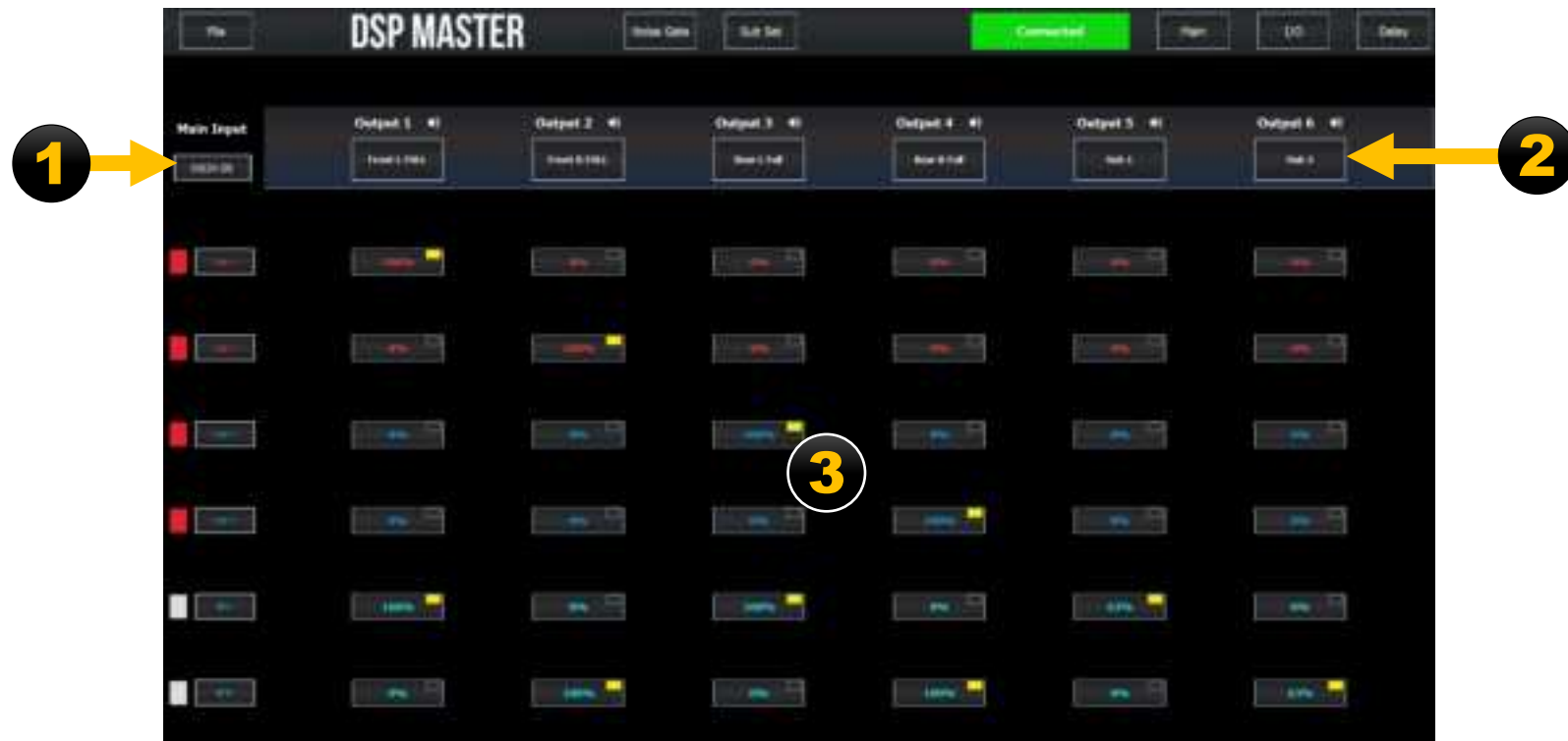


1 Under **Language** you can choose between German and English as the menu language.

2 Start your basic setup by clicking the **I/O** button.

3. I/O Menu

Here you can configure the inputs and outputs of the DSP



- 1** Under **Main Input** you can select the desired signal inputs.
- 2** Here you can rename the outputs of the DSP or assign them to the respective loudspeaker types. Depending on the selection or configuration, preset HP/LP filters are activated at the same time to protect the loudspeakers.
- 3** In this area you can sum or mix the input signals for the respective outputs.

4. Main Input & Mix Input Section

Here you can configure the main input source.



- 1** Under **Main Input** you can select the desired input source.
- 2** Under **Mix Input** you can select another input source such as AUX or BT audio, which you can then mix into the main input source.
You have the option of adjusting the crosstalk of this signal.
The following settings are possible: 30% / 50% / 80% / 100%.
If OFF is selected, Main Input has priority and no mixing takes place.
- 3** Using the sliders under Input and Output you can adjust the input sensitivity and output level of the selected input source.

Note: Use the settings carefully and avoid clipping and overloading the audio signal!

5. Sub Setup Menu

Configure the outputs for subwoofer operation here.



- 1 Click **Sub Set** at the top to open the menu.
- 2 Select the channels you want to configure as subwoofer outputs and confirm your selection with **OK**. With the two lower buttons you can mute the subwoofer outputs or rotate the phase by 180 degrees upfront.

6. Channel Pair Section (in the Main Menu)

Here you can link the channel pairs of the output section.



1 Go back to **Main**.

2 **Example linking Output 1 with Output 2:**
Under Output 1, click ∞ next to the speaker symbol. Repeat this for Output 2. The two linked outputs are now marked in the same color. Repeat this process for the other channel pairs if necessary. To make it easier to identify the linked channel pairs, they are all marked in different colors.

Benefits of linking channel pairs:

- The output level controls are synchronized
- All HP or LP filter settings are synchronized
- All EQ settings are synchronized

7. Filter Section (in the Main Menu)

Here you can adjust the filter settings for each channel pair.



Filter settings:

Active filters of the selected channel pair or the selected channel are displayed as **ON** and the checkbox turns orange.

Frequency:

You can use the slider to select the desired crossover frequency in Hz. Alternatively, you can enter any crossover frequency by double-clicking on the value.

Filter type:

Here you can choose between three filter characteristics:

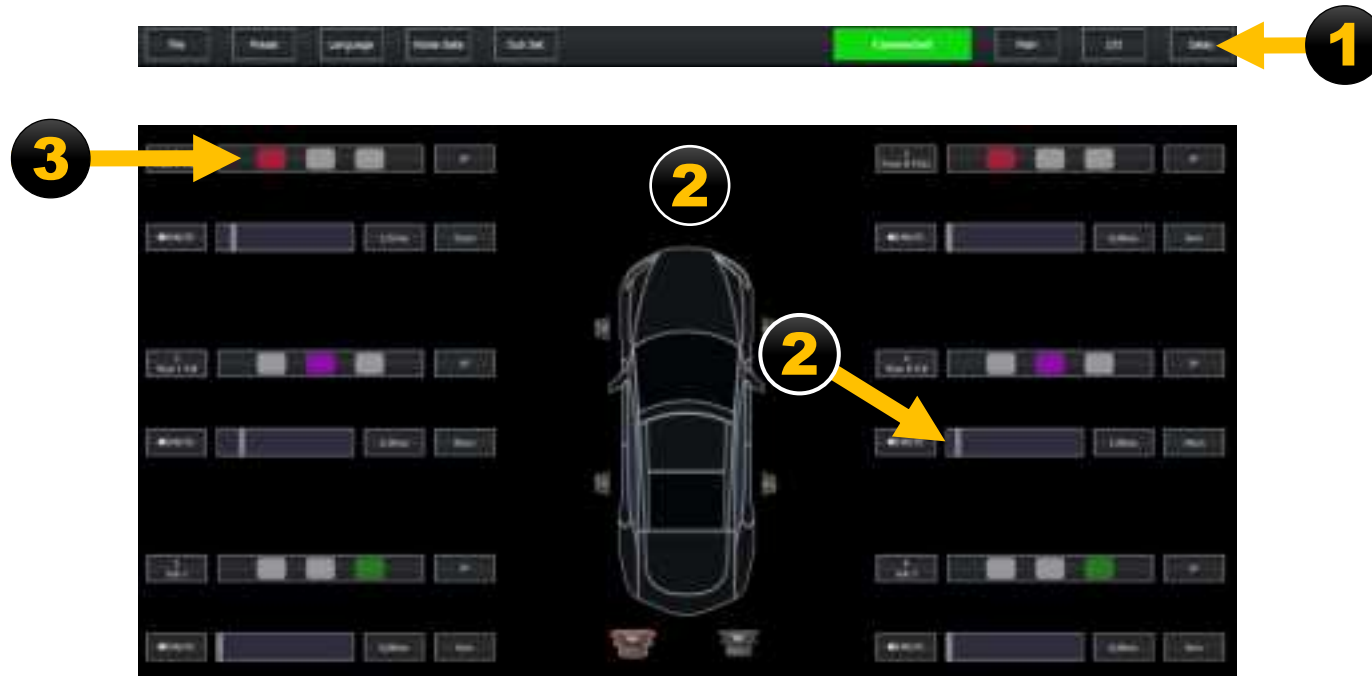
Butterworth – Bessel – Linkwitz

Slope:

Use this slider to adjust the slope of the selected filter in 6 dB steps:
– 6 dB to – 48 dB.

8. Delay Menu

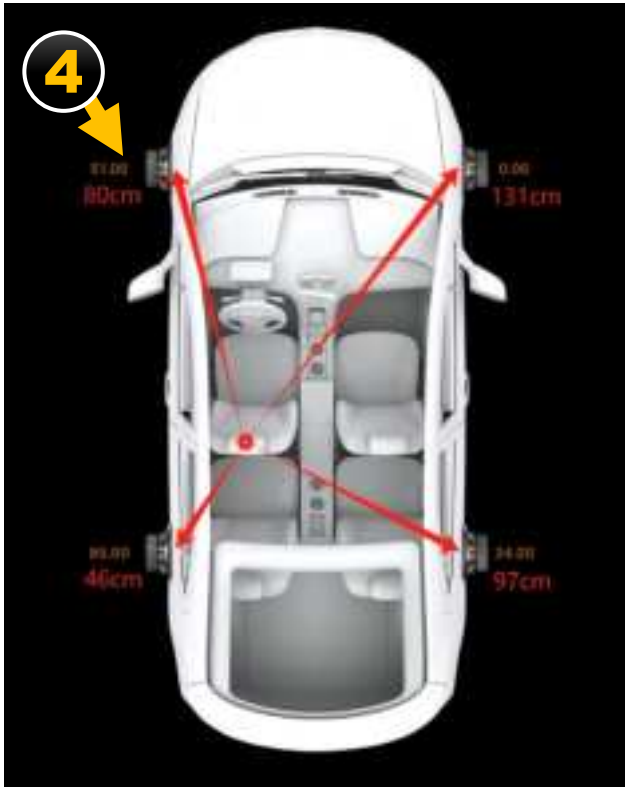
Make the settings for runtime/delay adjustment here.



- 1** On the main page, click the **Delay** button.
- 2** Here you can adjust the desired runtime delay for all active outputs using the slider or mute them.
- 3** In this field you can activate the **Delay Group** function. You can create up to three groups. The respective groups are displayed in different colors. If this mode is activated, all settings are synchronized from now on.

8. Delay Menu

Distance measurement to enter the delay adjustment of the respective loudspeaker.



- 4** Measure the distance between the speakers and the listening position with a tape measure and note it down. In the example shown, the measured distance to the speakers is marked in **red**.

The furthest speaker represents the reference value and is not delayed. In the example shown, this is the speaker **FR** with a reference value of **131 cm**.

- 5** Now it's about how many centimeters or milliseconds the speaker needs to be delayed to have the same value as the furthest away speaker. You then enter this in the relevant section:

FR 131 cm - FL 80 cm = 51 cm
FL must be delayed with **51 cm**

FR 131 cm - RL 46 cm = 85 cm
RL must be delayed with **85 cm**

FR 131 cm - RR 97 cm = 34 cm
RR must be delayed with **34 cm**



9. Parametric Equalizer (on the main page)

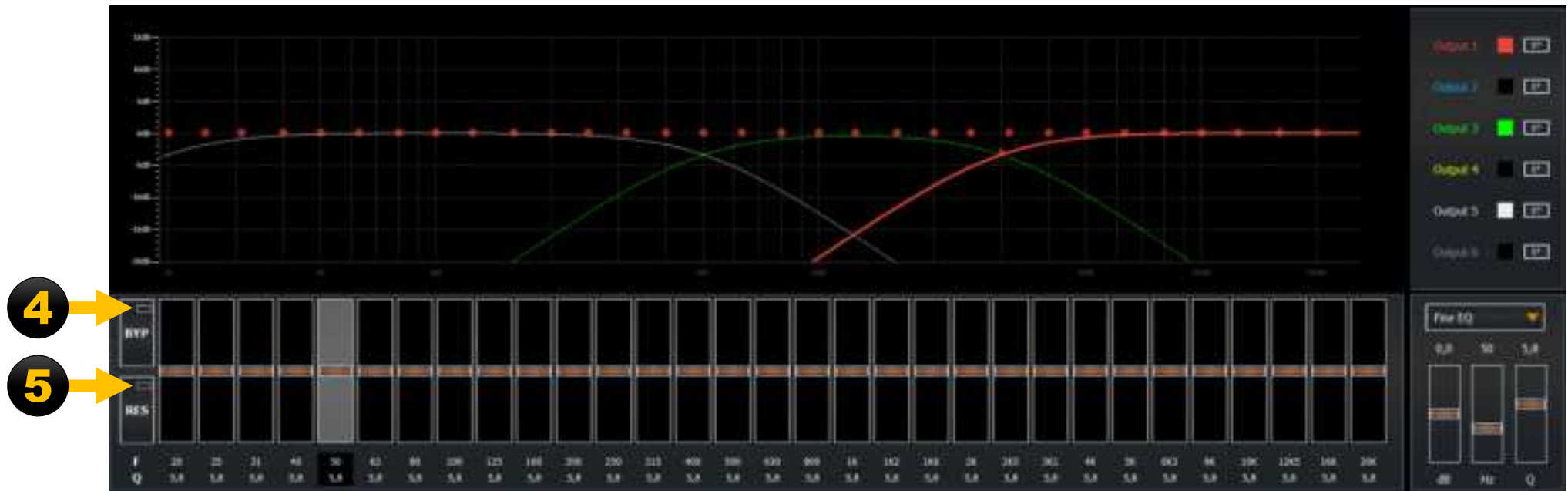
Here you can adjust the sound to your individual taste.



- 1** In the graphic display, the frequency response of the channels is shown in different colors. The individual colors on the right can be hidden or shown for better orientation.
- 2** **31-band** graphic EQ between 20 Hz and 20 kHz for each selected channel pair or channel. All 31 bands allow **+/- 12 dB** boost or cut.
- 3** Under **Fine EQ** you have the option of fine-tuning the **dB – Hz – Q** settings in the previously selected EQ band. You also have the option of switching to the **Allpass EQ**. With the Allpass EQ you can influence any phase errors that may exist.

9. Parametric Equalizer (on the main page)

Here you can adjust the sound to your individual taste.



4 **BYP: Bypass function of the EQ**

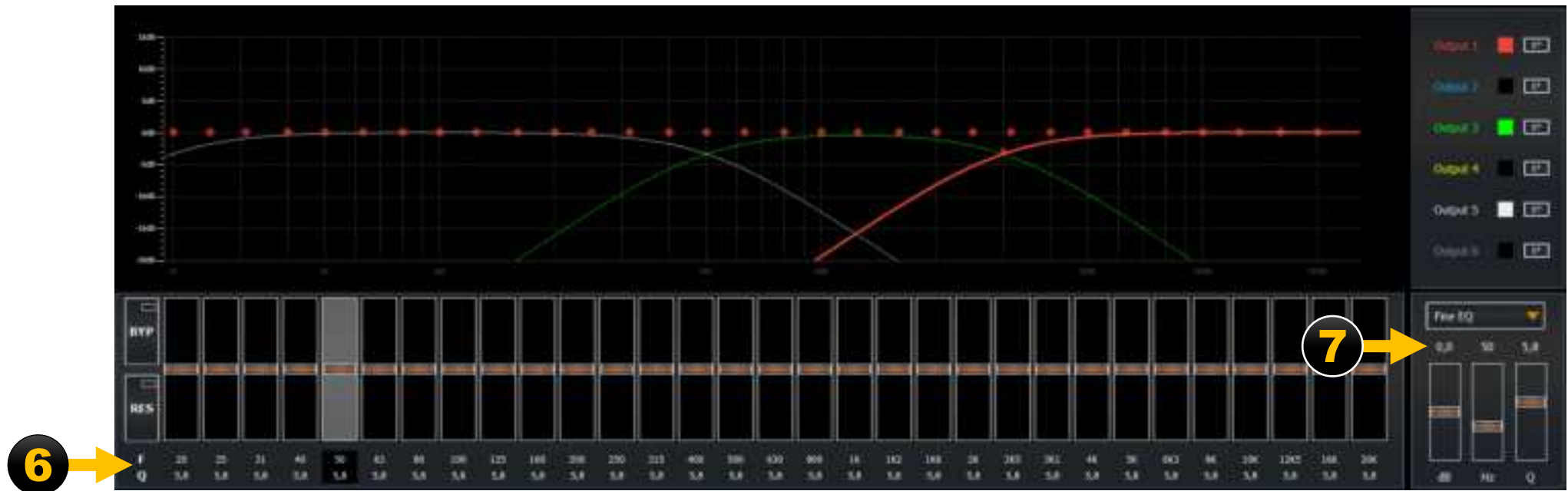
By clicking the **BYP** button, all EQ settings are deactivated. This gives you the opportunity to make a direct comparison of the sound with or without EQ.

5 **RES: Reset function of the EQ**

By clicking the **RES** button, you can reset all EQ settings of the output section. If channel pairs were previously activated in link mode, these will also be reset.

9. Parametric Equalizer (on the main page)

Here you can adjust the sound to your individual taste.



6 F = Frequency

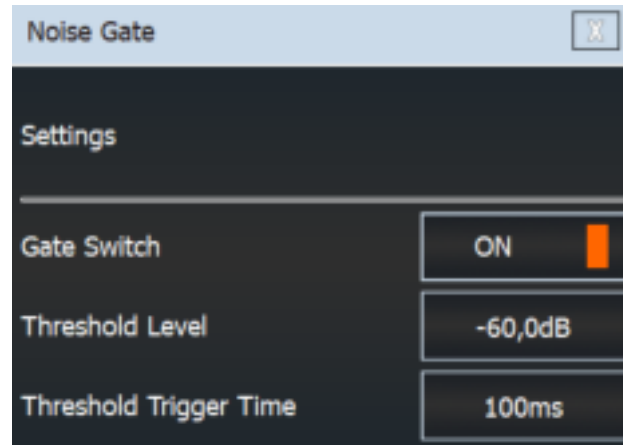
Here you can precisely adjust each of the 31 bands of the EQ in 1 Hz steps. This can be controlled using the arrow keys on your PC keyboard: left/right = band selection, up/down = db/gain of the active band.

Q = Q factor

The Q factor influences the bandwidth of the frequency band. A small Q factor affects a wide frequency range, a high Q factor affects a narrow frequency range. The Q factor can be set from 0.7 - 9.0 in 0.1 steps.

7 dB, Hz and Q can also be entered directly via the keyboard.

10. Noise Gate Menu



1 Noise Gate:

Threshold Level

Here you can specify the threshold up to which unwanted noise should be minimized or suppressed.

Threshold Trigger Time

Here you can set the fade-out time when the signal falls below the set threshold.

Benefits of a noise gate:

A noise gate is a type of dynamic processor that filters out unwanted noise within the audio signal. This is particularly useful when noise is caused by the vehicle's electronics.

11. Preset Menu



1 Save Presets

- Click in the Mein Menu on **Preset**.
- To save your preset on the DSP, click on the preset name for **Preset 1** and enter a name of up to 8 characters.
- Confirm with **Save**. Up to 10 memory locations can be assigned to the DSP. These can then be selected using a smartphone app independently of the PC software. An optional remote control is also available for certain models, which can be used to switch between presets.

Load Presets

- Click on the name of the preset you want to load. An active preset is displayed in orange or as an orange box next to **Current Preset**.
- Confirm your selection by clicking Load.. Confirm your selection by clicking **Load**.

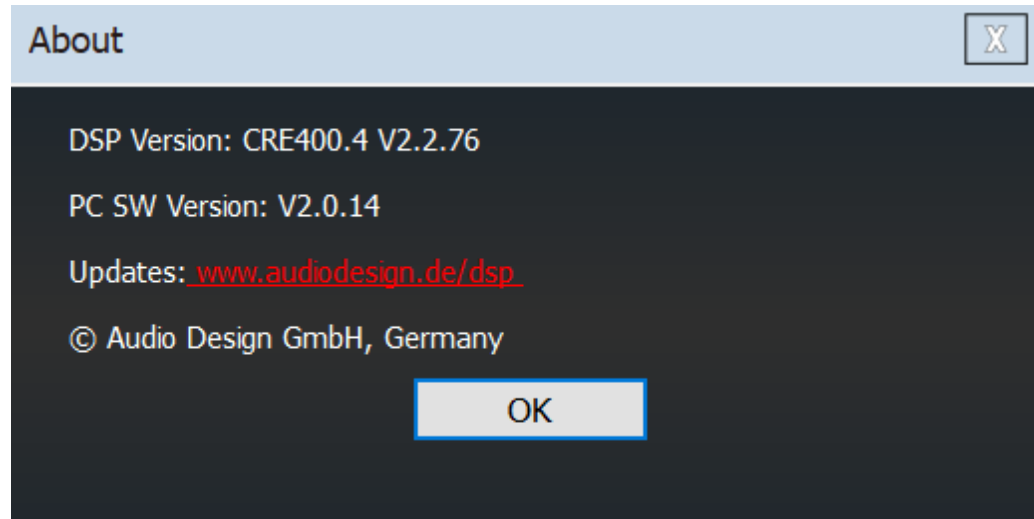
Load and save presets locally

- Under **File** in the main menu, you can also save or load presets locally on your PC/laptop. However, this does not affect the 10 memory locations of the DSP.



12. About Menu

Here you can find information about the software version and the DSP firmware



1 About

- In the main menu, click **File** and then click **About**. Here you will find information about the software version and the firmware installed on the DSP.
- Please visit www.audiodesign.de/dsp regularly to check whether an update or upgrade of the PC software is available.

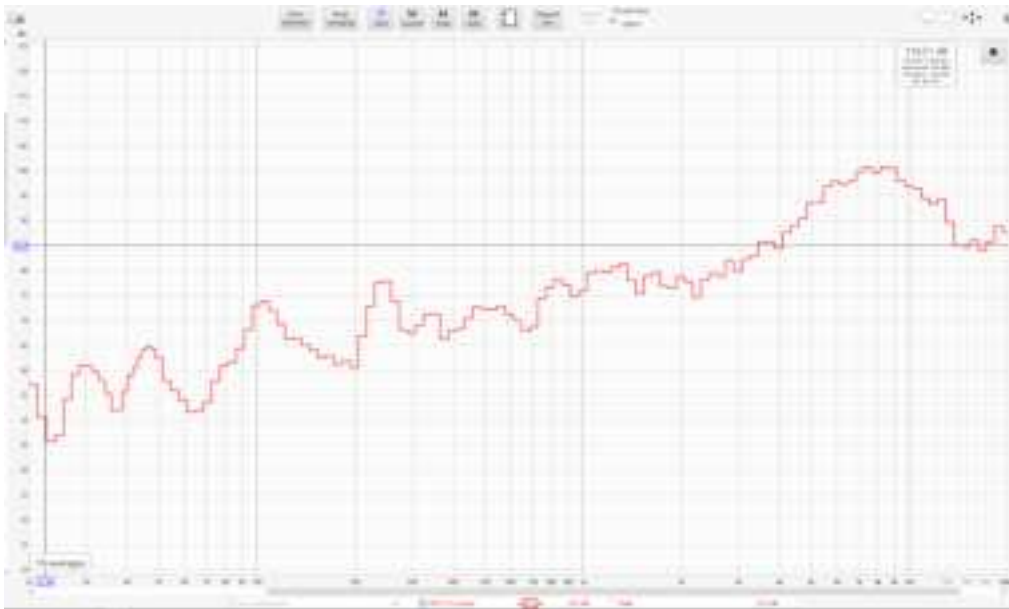
13. Calibrating the sound system (optional)

With the current **REW Software** you can measure your sound system in the vehicle with the help of a USB measuring microphone and adapt it to your individual taste with **DSP MASTER** software.

Required equipment

- PC/laptop with Windows or macOS and sound card
- USB measurement microphone **Behringer ECM8000** or similar
- REW – Room EQ Wizard Software (<https://www.roomeqwizard.com>)
- Music CD or USB stick with pink noise as test signal

Frequency response of original sound system ex works:



Frequency response after calibration and adjustment using the DSP

