Audio Design DSP Master App User Guide

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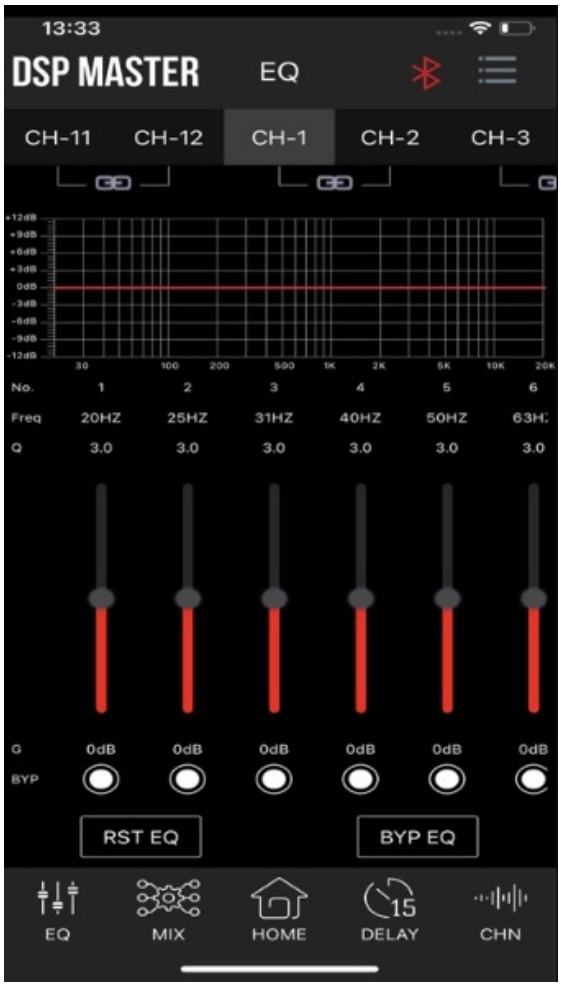
Audio Design DSP Master App



Product Information

Specifications

- App Version: DSP Master V1.0
- Compatibility: iOS and Android devices
- Input Sources: High Level Inputs, Low Level Inputs, Bluetooth
- Functionality: Control master level, subwoofer level, load presets, mix inputs and outputs, configure individual outputs

Product Usage Instructions

First Steps

To begin using the DSP Master App:

1. Download DSP Master App from Apple App Store or Google Play Store.
2. Ensure the latest firmware is installed on your DSP device by controlling it with PC software via USB.
3. Open the App Store app on iOS or Play Store app on Android, search for DSP Master, and download and install the app.
4. Grant permission for Bluetooth usage when opening the app for the first time.

HOME Menu

The HOME menu is the starting point after opening the app:

- Tap the red Bluetooth icon, scan for Bluetooth devices, and select DSP-BLE-1 to connect.
- Wait for synchronization which may take up to a minute. The Bluetooth symbol will turn blue when complete.

Main Input

In the Main Input section:

1. Select your main input source from available options like HIGH-IN, LOW-IN, or BT (Bluetooth).
2. Choose the desired input source by tapping on it. The active source will be marked with a red dot.

HOME Menu – Basic Functions

Basic functions in the HOME menu:

- Mute Function: Tap the speaker icon to mute/unmute outputs.
- Master Level Control: Adjust master output levels.
- Subwoofer Level Control: Manage subwoofer output levels.
- Load Preset: Select and load presets for configuration.

MIX Menu

In the MIX Menu:

1. Access the main input by tapping on MIX at the bottom.
2. Select desired output channels by swiping left or right at the top.
3. Sum or mix input signals for respective outputs in the designated area.

CHN Menu

In the CHN Menu:

1. Access crossover settings by tapping on CHN.
2. Select output channels for adjustments by swiping left or right.
3. Link channel pairs for output sections if needed for uniform settings.
4. Assign speaker types under CH TYPE to configure outputs and activate preset filters.

First Steps

Download DSP Master App from Apple App Store or Google Play Store

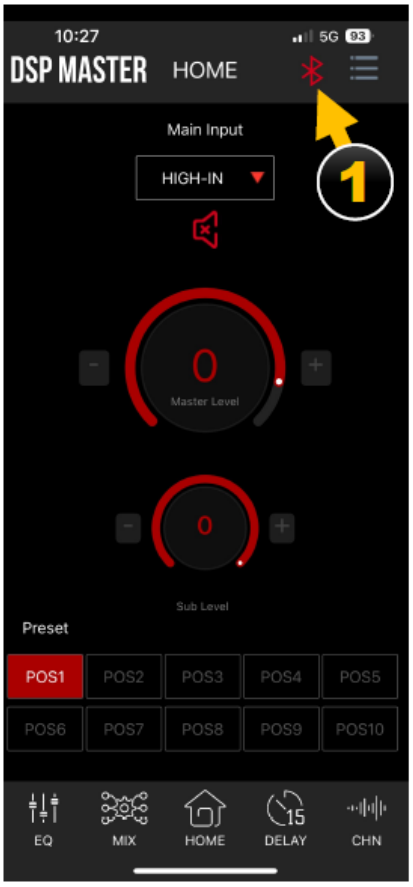
Important Note: To ensure that the latest firmware is installed on your DSP device, you must first control the device with the PC software via USB. Then carry out the update if a dialog appears when you start the PC software.

1. Open the App Store app on iOS devices and the Play Store app on Android devices.
2. Enter DSP Master in the search window and confirm the search.

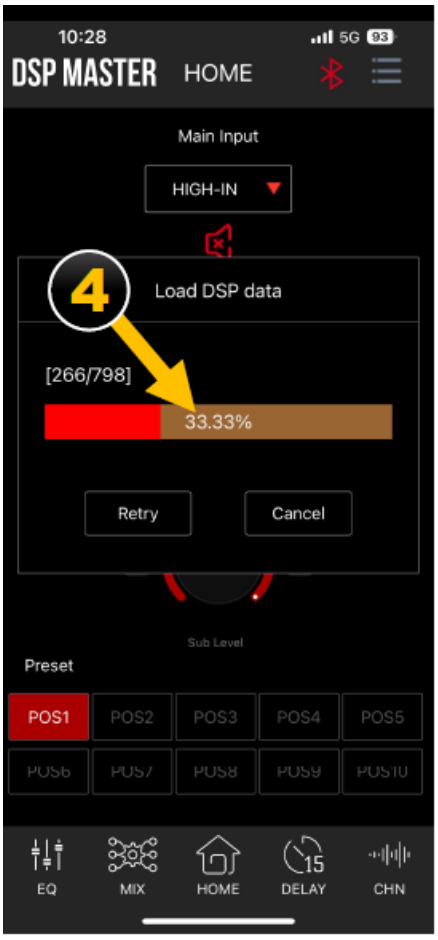
3. Download and install the Master DSP app on your device.
4. When you first open the DSP Master app, you must grant permission for the app to use Bluetooth.

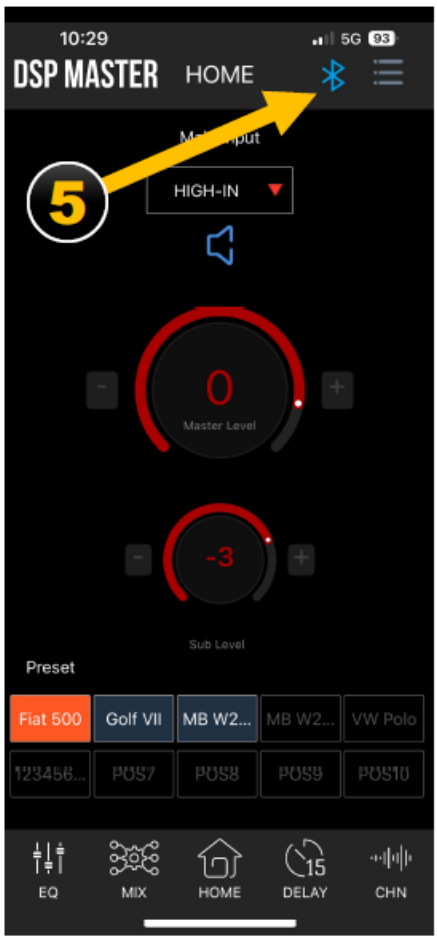
HOME Menu

The HOME menu is displayed first after starting the app.



1. Tap the red Bluetooth icon
2. Tap scan Bluetooth device
3. Then, after DSP-BLE-1 is displayed, tap Not connected

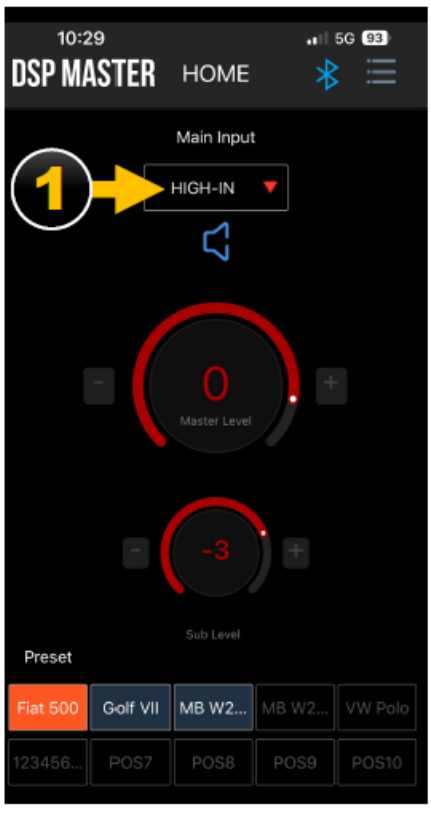


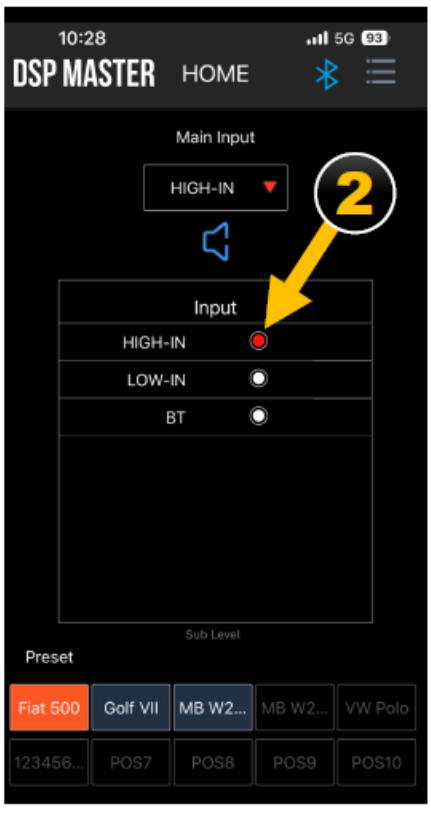


4. The app connects to the DSP and then synchronizes the data. This process can take up to a minute.
5. Once synchronization is complete, the Bluetooth symbol will appear blue.

Main Input

Here you can switch the main input source.

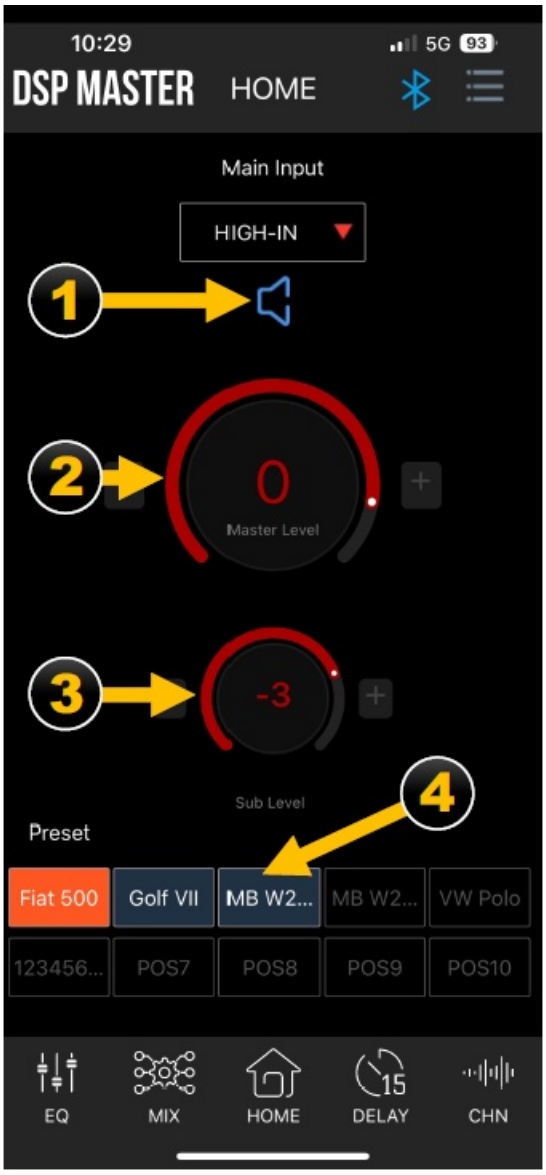




1. Under Main Input you can select the available input sources:
    - **HIGH-IN:** High Level Inputs
    - **LOW-IN:** Low Level Inputs (if the device has RCA outputs)
    - **BT:** Bluetooth input for audio streaming from a mobile device
2. Select the desired input source by tapping it.
3. The active input source is marked with a red dot.

HOME Menu

Basic functions in the HOME menu.

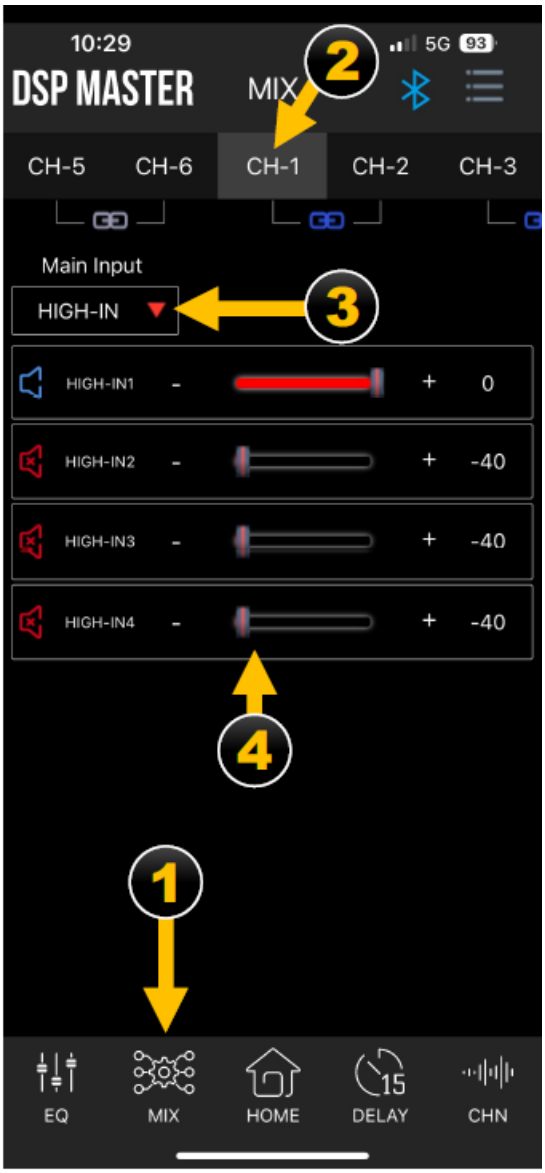


1. Mute Function
    - Tapping the blue speaker icon will mute all outputs and turn the icon red.
2. Master Level Control
    - Controls the master level for all outputs.
3. Subwoofer Level Control
    - Controls the level for all subwoofer outputs.
    - **Note:** The outputs must be assigned as subwoofer under CH TYPE (see section 5. CHN menu, point 4).

4. Load Preset
    - Tap the name of the preset you want to load. An active preset is highlighted in orange.

MIX Menu

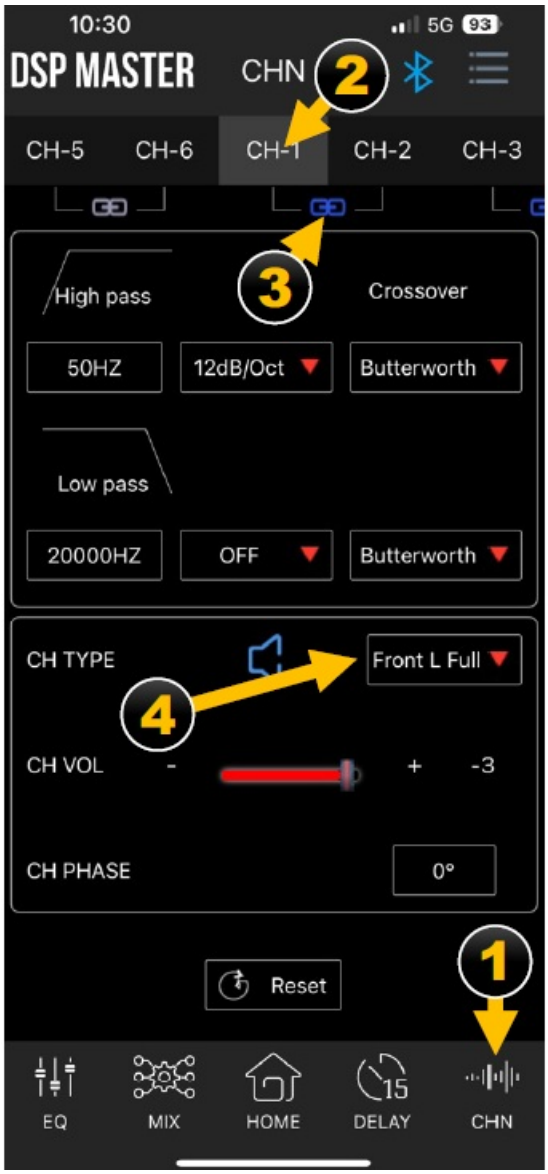
Here you can sum or mix the inputs and outputs of the DSP.



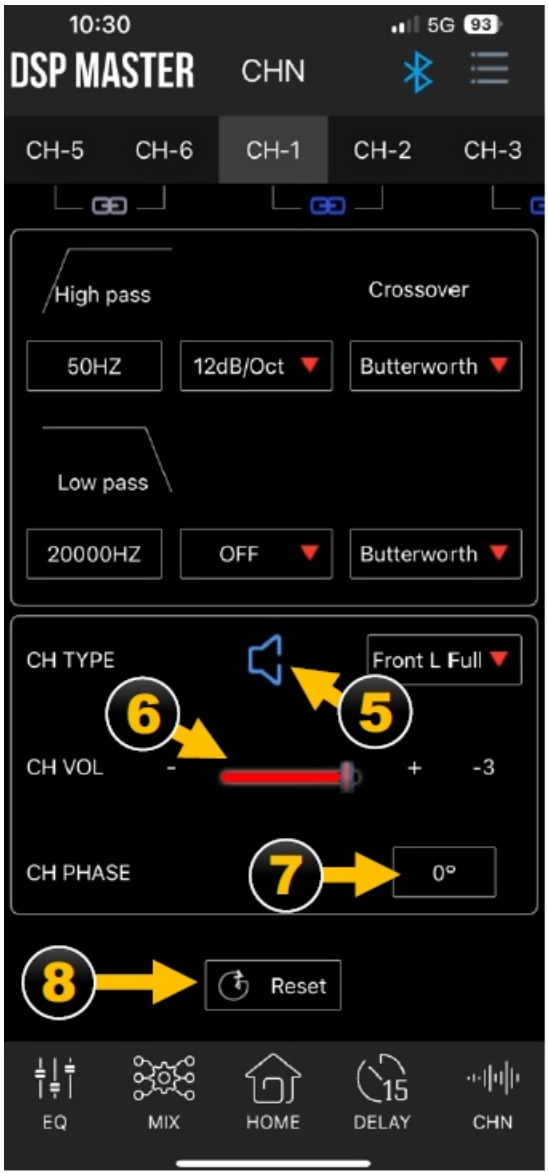
1. Tap on the MIX at the bottom to go to the main input
2. Swipe < left or right > on the channels at the top to select the desired output channel for which you want to make the settings.
3. Under Main Input you can select the desired signal input.
4. In this area you can select, sum or mix the input signals for the respective outputs.

CHN Menu

Here you can configure the individual outputs of the DSP



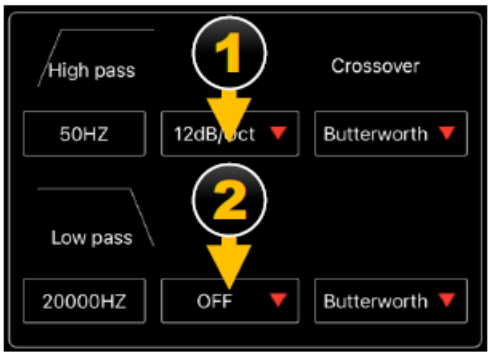
1. Tap CHN below to access the crossover settings.
    - Swipe < left or right > to select the desired output channel for which you want to make adjustments.
2. Link channel pairs of the output section.
    - To link channel pairs, tap the gray symbol under the channel pairs (e.g. CH1 / CH2). If the symbol is displayed in blue, the respective channel pairs are linked. Repeat this process for the other channel pairs if necessary. Linking is useful if, for example, you want to use the same settings for channel CH1 and channel CH2.
3. **CH TYPE:** Assign speaker types
    - Here you can rename the respective 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.
4. Mute
    - Tapping the blue speaker icon mutes the channel or linked channel pair and the icon turns red.



5. CH VOL
    - By moving the control or by tapping – or +, the output level of the selected output or the linked channel pairs can be adjusted. The control range is – 60 to + 6.
6. CH PHASE
    - Here you can set the phase of the selected output or the linked channel pairs by 0° to 180°.
7. Reset
    - Tap Reset to reset the speaker type of the respective output channel. However, to protect the speakers, the previously activated or preset HP/LP filters are not reset. A dialog then opens. Then confirm with CLEAR.

CHN Menu / Slope

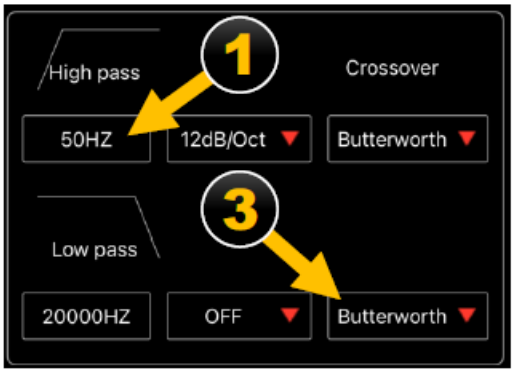
Here you can adjust the slope of the individual channels.

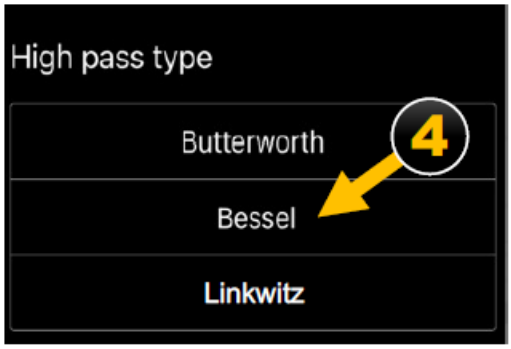


1. Slope of high pass filter
    - Here you can set the slope of the activated low-pass filter on the selected channel or the linked channel pair. Tapping on the field opens the slope menu. There you can select the desired value in 6dB steps up to 48dB per octave.
2. Slope of low pass filter
    - Here you can set the slope of the activated low-pass filter on the selected channel or the linked channel pair. Tapping on the field opens the slope menu. There you can select the desired value in 6dB steps up to 48dB per octave.
    - **Caution:** If OFF is selected under Slope, no HP/LP filters are activated, which could lead to a defect in the speakers. This particularly affects tweeters and midrange speakers. Only use this function if the connected speakers can be operated with the full frequency bandwidth.

CHN Menu / Crossover

Here you can adjust the frequency and filter settings for each channel.





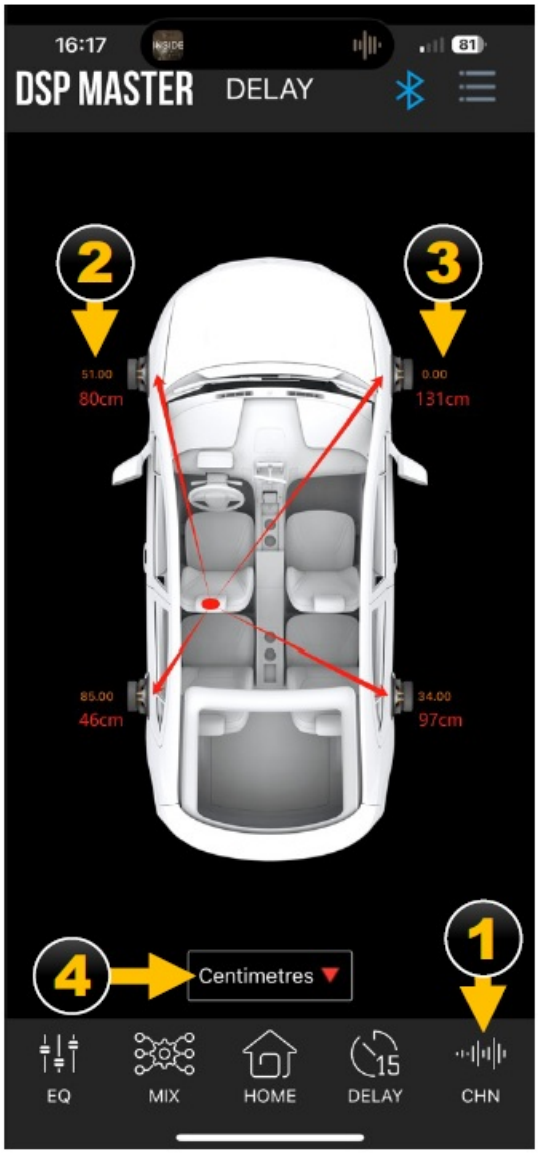
1. Frequency:
    - Here you can set the cutoff frequency of the activated high-pass or low-pass filter on the selected channel or the linked channel pair.
    - Tapping the field opens the Frequency menu.
2. The crossover frequency can be adjusted by moving the control or by tapping – or +. The control range is 50 Hz to 20.000 Hz.
3. Filter type:
    - Tapping this field opens the filter type menu.
4. Here you can select three filter characteristics:
    - **Butterworth:** Rapid bending at the crossover frequency
    - **Bessel:** Smooth frequency response in the passband
    - **Linkwitz:** Double cascaded Butterworth filter, flat amplitude response.

Note: The most commonly used filter characteristic is Butterworth.

DELAY AND EQ MENU

DELAY Menu

Make the settings for runtime/delay adjustment here.



1. Tap on DELAY.
2. Measure the distance between the individual speakers and the listening position with a tape measure and note it down. In the example on the left, the measured distance is marked in red.
3. The furthest speaker represents the reference value and is not delayed. In the example shown, this is the FR speaker with a reference value of 131 cm. 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 accordingly in the Delay setting dialog.
    - 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
4. Here the unit of the runtime adjustment can be changed.

EQ Menu

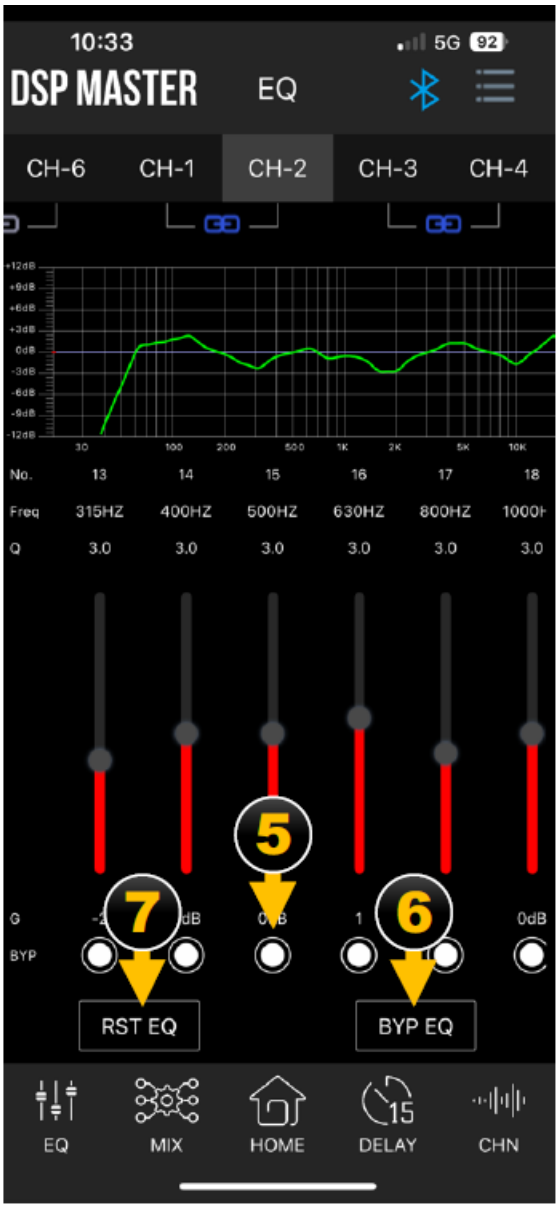
Here you can adjust the sound to your individual taste.

1. On EQ in the Home menu.
2. In the graphic display, the frequency response of the channels is shown in different colors.
3. 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.

4. Tap the frequency value or the Q factor and the FINE EQ window will open.

   In the FINE EQ you have the possibility to make the following settings in the selected EQ band:

- **G:** -12 to +12 dB (gain / volume increase)
- **Freq:** 20 to 20000 Hz (frequency)
- **Q:** 0.7 to 9.0 (Q factor / quality)



5. Bypass Function (Band-related)
    - Tap the white dot under the corresponding EQ band to deactivate the EQ setting. This allows you to make a direct comparison of the sound with or without EQ setting.
6. BYP EQ: Bypass Function of the complete EQ
    - Tap BYP EQ to disable all EQ settings. This allows you to perform a direct comparison of the sound with or without EQ.
7. RST EQ: Reset Function of the EQ
    - Tap RST EQ if you want to reset all EQ settings. If channel pairs were previously activated in Link mode, they will all be reset as well.

Preset Section

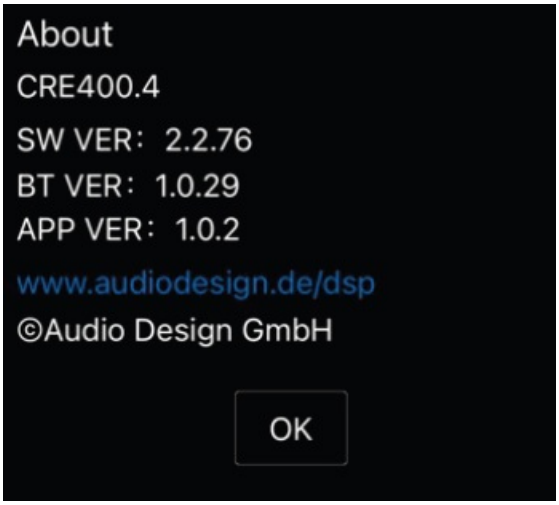
Loading and saving presets

1. Save Presets
    - To save the currently set and active preset, tap the three lines in the top right of the HOME menu. Select Save preset and enter a preset name of up to 8 letters in the window that appears. Confirm with OK. You can add a note about the preset under Remark.
    - With Share preset you can send and share saved presets via common messaging apps.
    - You can access the local storage for presets on your mobile device using Local preset, in which you can save as many presets as you like.
    - To save a preset to one of the 10 memory locations on the DSP, select Apply preset. These can then be selected using a smartphone app independently of the PC software. An optional remote control is also available for certain DSP models, which can be used to switch between presets.
2. Load Presets
    - Click on the name of the preset you want to load below. An active preset is shown in orange.

About Menu

Here you can find information about the app, Bluetooth version and DSP firmware

- In the HOME menu, tap the three lines at the top right and then About at the bottom.
- 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, because updates to the DSP firmware must be installed using the PC software.
- The app updates automatically via the respective app store if you have activated this function.



Calibrating the sound system

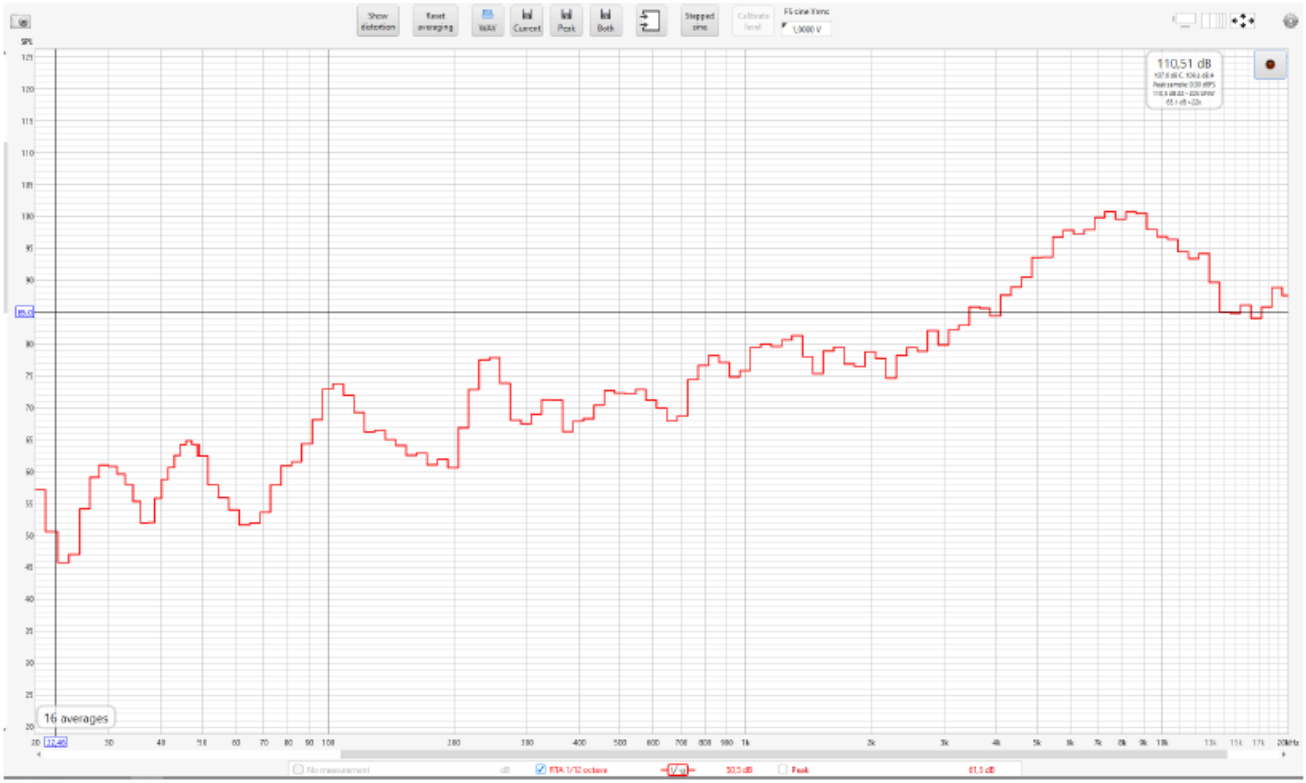
Calibrating the sound system (optional)

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.

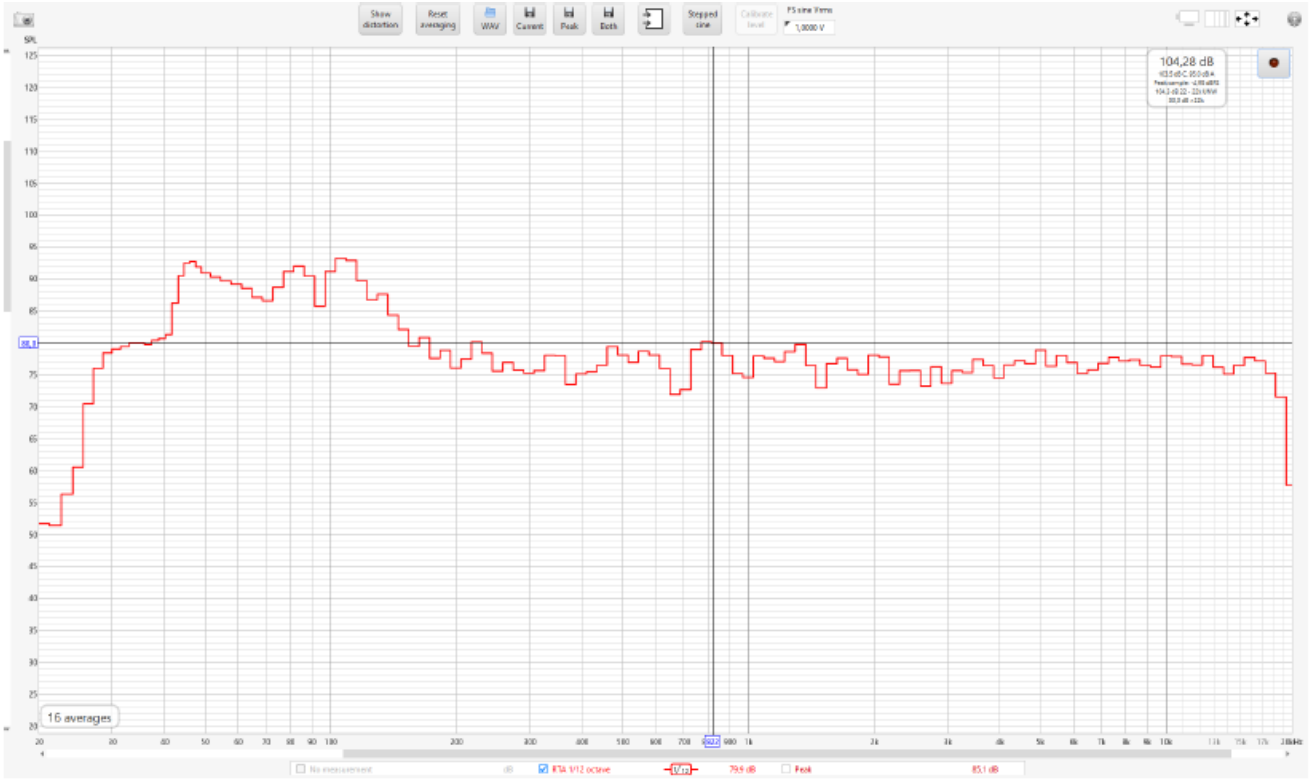
Required equipment

- 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



FAQ

- **Q:** How do I update the firmware on my DSP device?
  - **A:** To update firmware, control the device with PC software via USB and follow on-screen prompts for updates.
- **Q:** How do I mute all outputs using the app?
  - **A:** Tap the blue speaker icon in the HOME menu to mute all outputs; tap again to unmute.

Documents / Resources

DSP MASTER	Audio Design DSP Master App [pdf] User Guide DSP, Master, DSP Master App, App

References

- audiodesign.de/dsp
- User Manual