

ESX ToolKit Apps User Guide

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TOOLKIT
APP – QUICKSTART GUIDE
Version 1.0.35

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DOWNLOAD

1. Download the ESX Toolkit app to your smartphone or tablet from the Google Play Store or App Store.



ESX Toolkit
Audio Design



2. Turn on the Bluetooth feature on your mobile device.
3. . Switch on your ESX DSP product by switching on the head unit/car radio in the

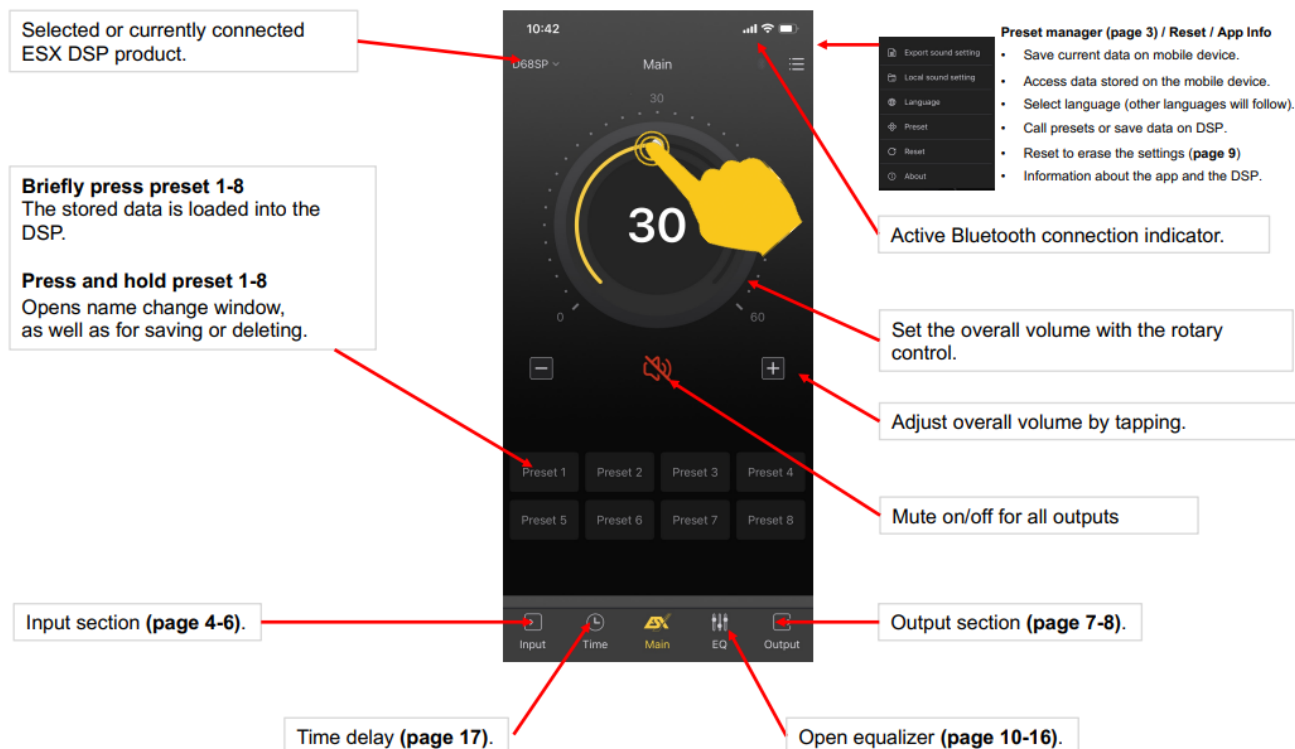
vehicle. The DSP product's Power LED lights up.

- The app then automatically connects to the DSP product via Bluetooth.

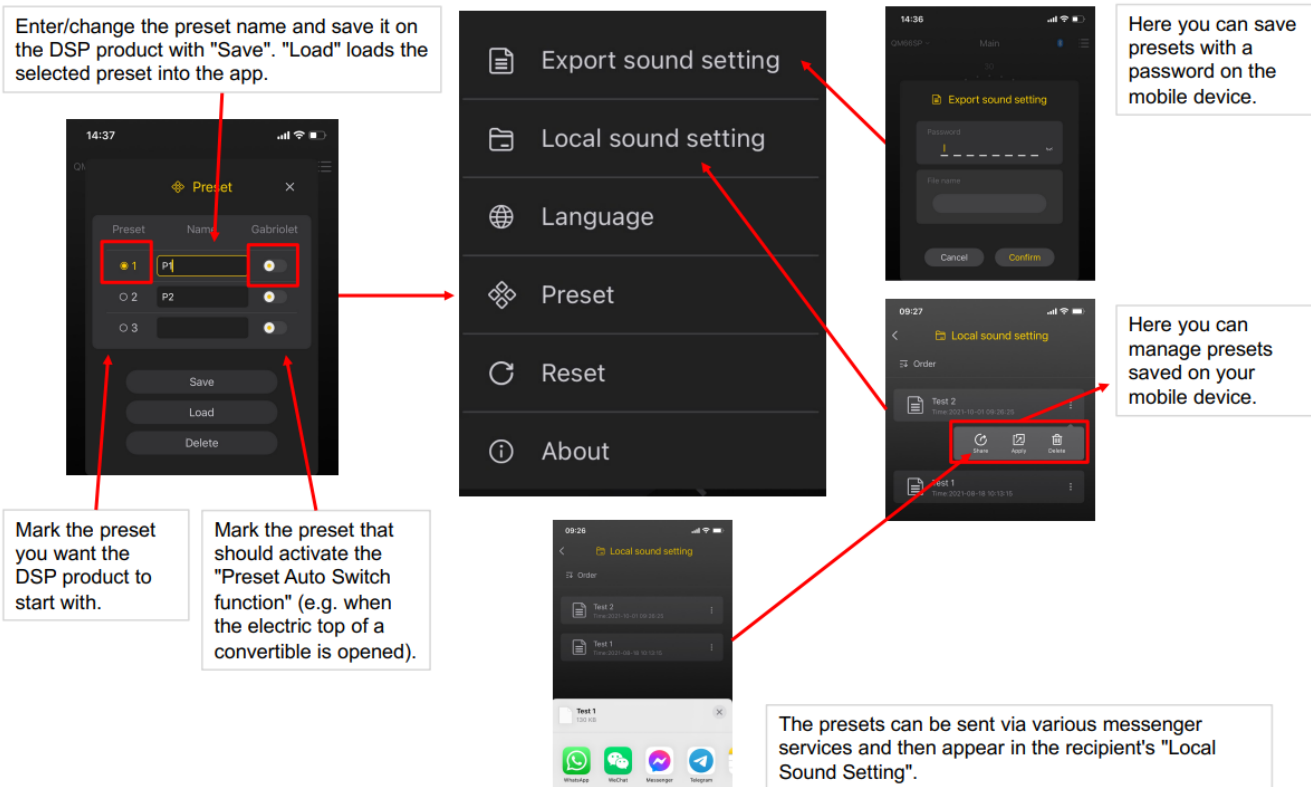
Exception: If your mobile device was previously connected to another ESX DSP product. In this case, go into Bluetooth settings, remove the previous DSP product, and then manually connect the new DSP product.

- Once the connection is established, the app automatically recognizes the currently connected DSP product and establishes the connection.

START MENU



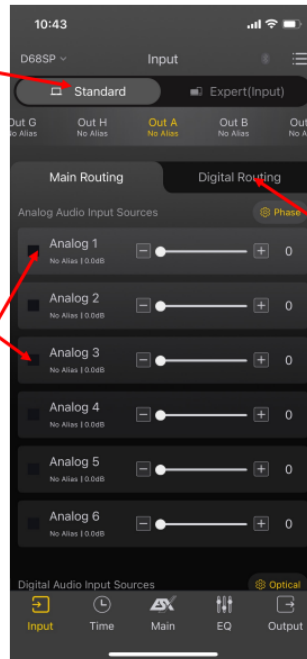
PRESETS



INPUT SECTION

Standard or Expert mode
Standard: All analog inputs are with 15/31 band EQ (depending on model).
Expert: 2/4 analog inputs are with 30/31 Band EQ + Staging EQ (depending on model).

Assignment of the inputs to the selected output. One or more inputs (analogue and digital) can be linked to an output and thereby mixed.



Selected digital source.

Here you can set what percentage of the digital input signal should be used.

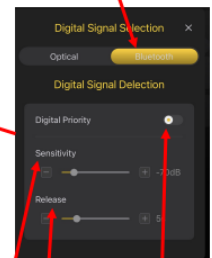


Allocation of the digital input (L / R) to the selected output.

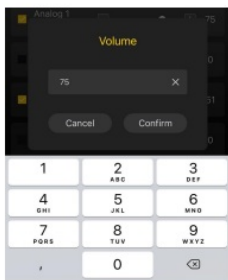
Signal sensitivity for switching the signal.

Time until switching back to the MAIN routing when no digital signal is present.

Enables automatic switching to digital input when digital signal is detected.

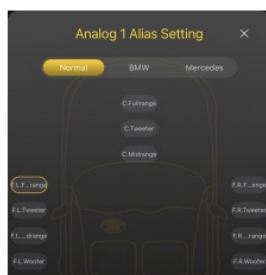


INPUT SECTION

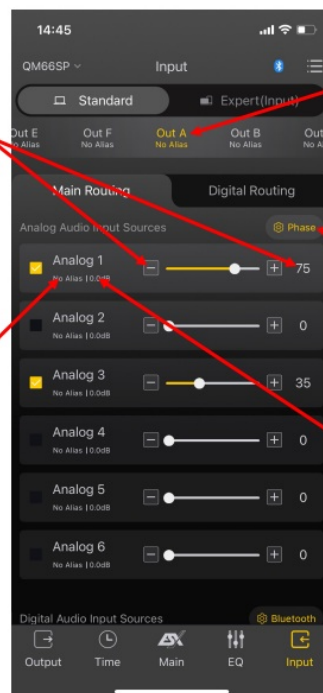


Here you can set what percentage of the analog input signal should be used.

By tapping on the number, the value can also be entered numerically.

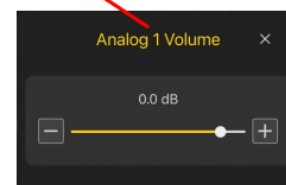
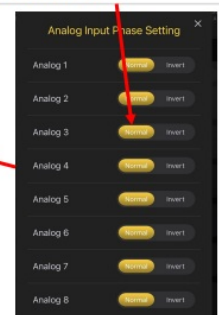


By tapping on "Alias" under the respective input, the corresponding setting is called up.



Selected output (yellow).

The phase of the input can be inverted here.



Here the channel level can be set in dB steps.

INPUT SECTION / ALIAS SETTING

Allocation of the input signal for a better overview.
E.g. front left full range.

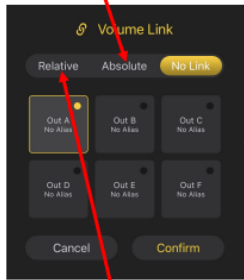


Selection of vehicle type for special signal channels.

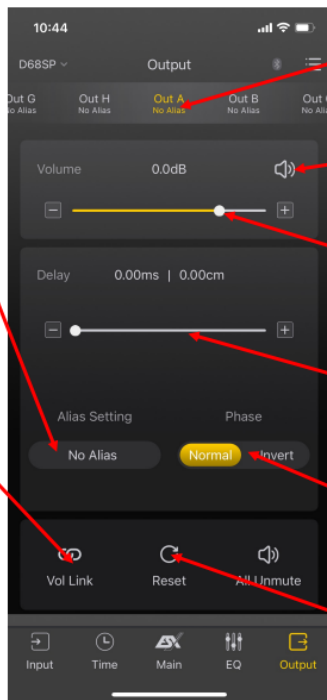
OUTPUT SECTION

Alias setting of the output

Absolute linked outputs:
All outputs deliver the level that is set in the current output channel.



Relatively linked outputs:
When adjusting the level, the difference between the linked channels is retained. The levels of the linked channels are changed accordingly by the adjustment value. This allows linked channel pairs to be changed together.



Selected output channel (yellow).

Mute the selected output channel

Level of the selected channel, adjustable from -20 - +6dB.

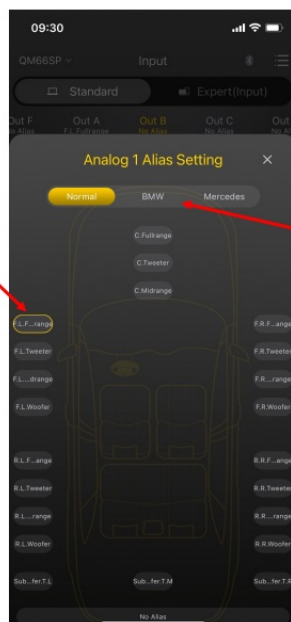
Time delay of the selected output channel.

The phase of the output can be inverted here.

Reset the output section

OUTPUT SECTION / ALIAS SETTING

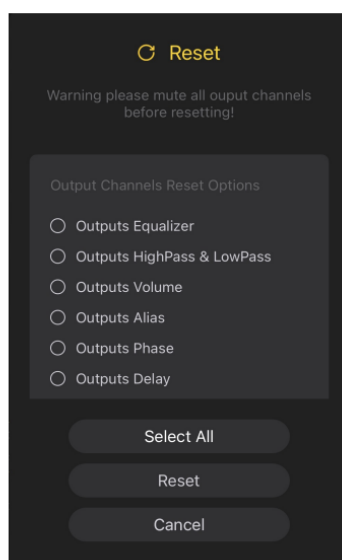
Allocation of the input signal for a better overview.
E.g. front left full range.



Selection of vehicle type for special signal channels.

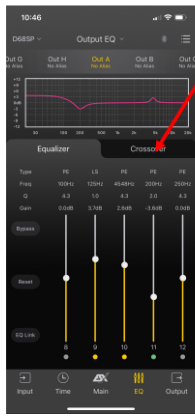
RESET MENU

All or individual data stored in the app can be deleted in the **"Reset"** menu. The memory of the DSP product is not affected unless an empty preset is saved to it and the data is overwritten.



Swipe up and down to see all options.

ACTIVE CROSSOVER



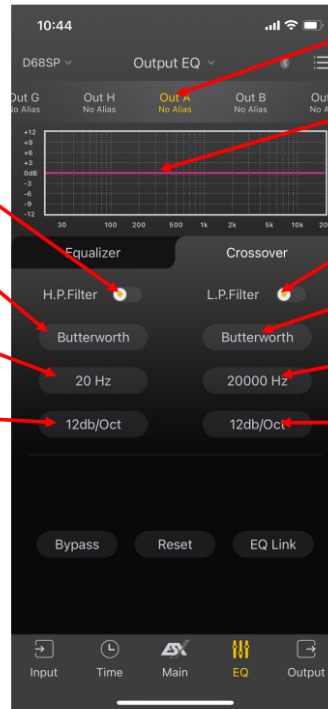
Call active crossover.

High pass on/off

Filter characteristic HP

Crossover frequency HP

Crossover slope HP



Selected output channel (yellow)

Electrical frequency response of the selected channel.

Low pass on/off

Filter characteristic LP

Crossover frequency LP

Crossover slope LP

ACTIVE CROSSOVER

Crossover frequency HP at -3dB



Crossover slope HP:
Level drop in dB at $\frac{1}{2}$ crossover frequency

Crossover frequency LP at -3dB



Crossover slope LP:
Drop in level in dB at twice the crossover frequency

EQUALIZER

Switching input/output EQ



Call up the EQ mid frequency and adjust it in 1Hz steps.

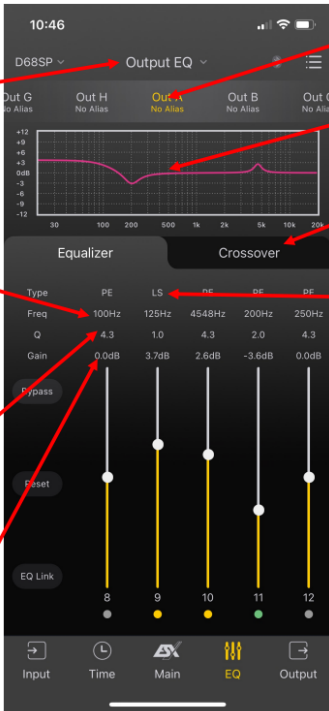


Call up the EQ quality and set the effective range from 0.3 (broad) to 15 (very narrow).



Call up EQ levels and adjust freely from -12 to +12dB.





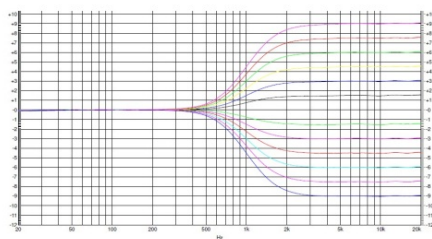
Selected output channel (yellow)

Electrical frequency response of the selected channel

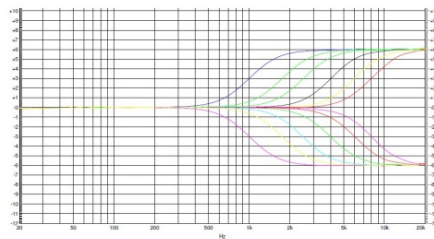
Call active crossover

Switching EQ type :
PE = Parametric EQ
HS = High Shelf
LS = Low Shelf
 Each EQ band can be switched freely

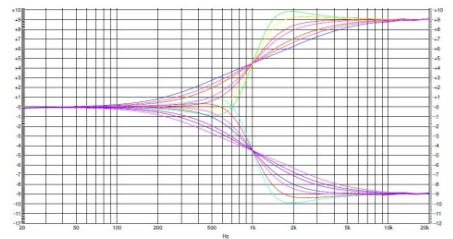
EQUALIZER SHELF FEATURE



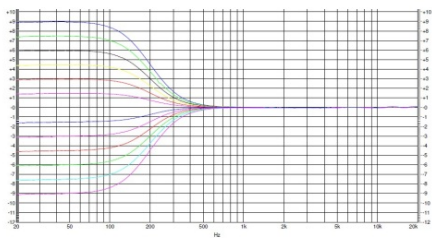
Level change HighShelf



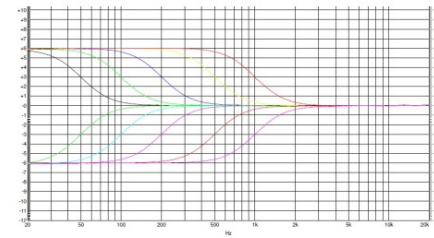
Frequency change HighShelf



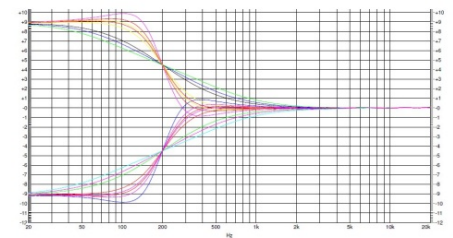
Change in quality (Q) HighShelf



Level change LowShelf

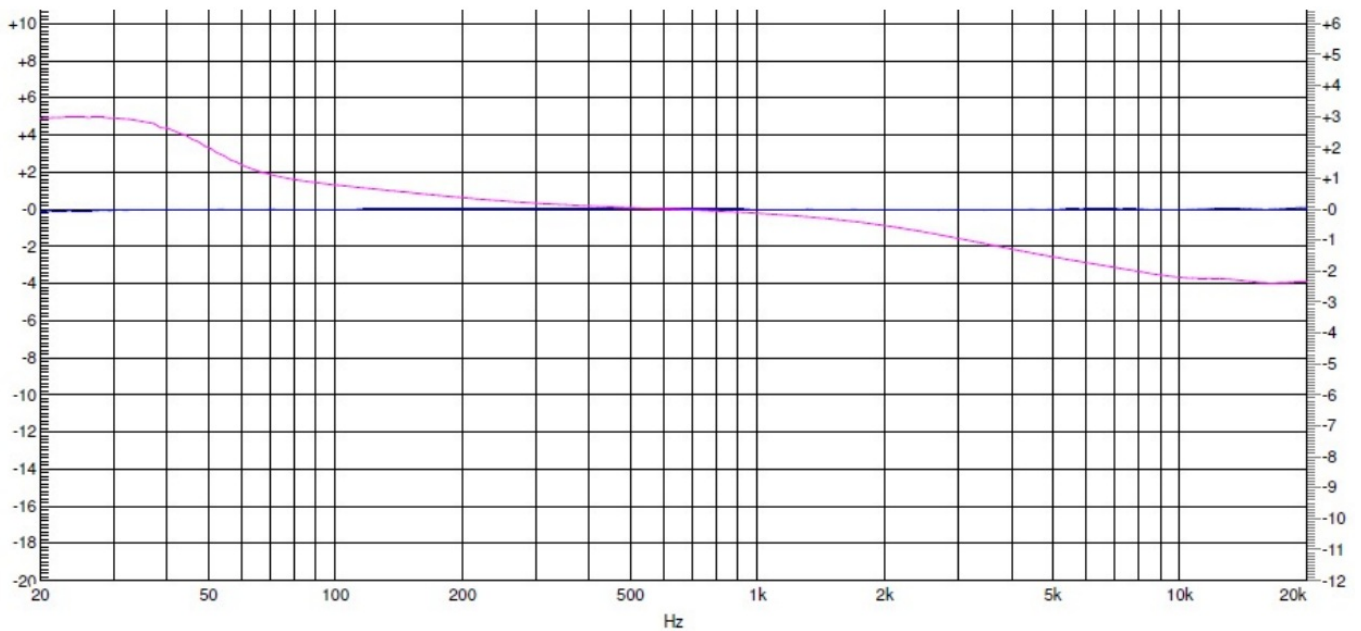


Frequency change LowShelf

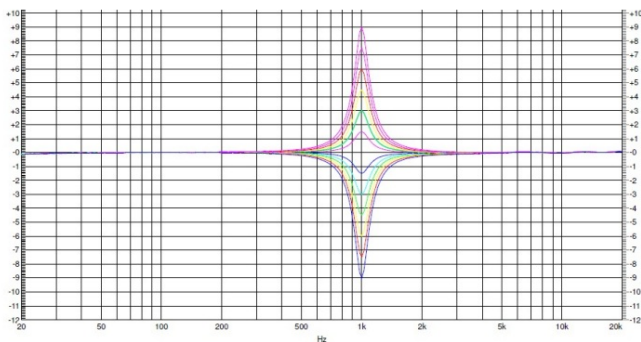


Change in quality (Q) LowShelf

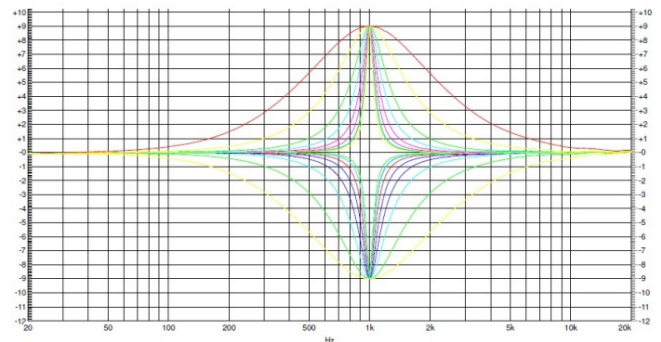
EQUALIZER



Example of tonal adjustment with 2 x LowShelf + 1x HighShelf

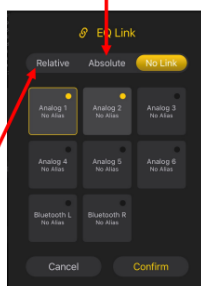


Level change EQ

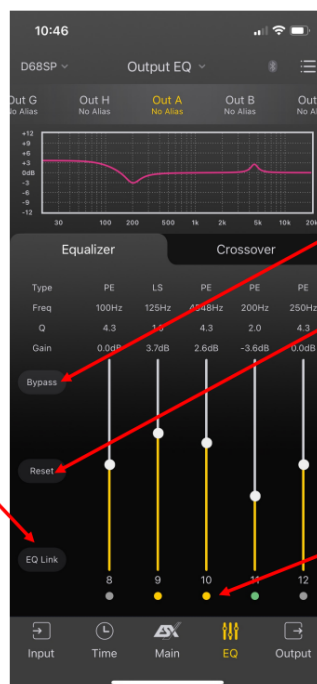


Change of quality "Q"

Absolutely Linked Output EQ:
Linked bands with the same band number get the same parameters that are adjusted on a band.



Relatively linked outputs:
When changing a value, the difference between the linked channels is retained. For example, the level of the linked channels is changed by the adjustment value, but the difference remains.



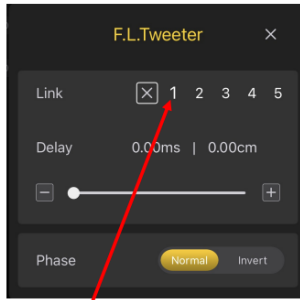
Bypass EQ

Call up the "Reset" menu

Status of each EQ band:
gray = band not used
yellow = band active
green = currently selected band
red = band occupied but not active
Active and not active can be changed by pressing the dot under the EQ band number.

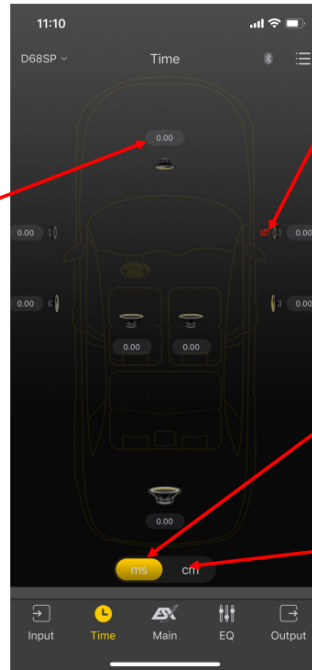
TIME DELAY

The respective parameter menu is called up by clicking on the number field.



Assignment to a link group. This is visually indicated by a change in the color of the number field. Time Alignment changes to one speaker in the group affect all speakers in the group 1 to 1.

Touching the speaker icon enables or disables muting of the individual output channel.



In "ms" mode, the selected channel is delayed in 0.01 millisecond increments.

In "cm" mode, the selected channel is moved virtually in 6.8 mm steps from the acoustic center of the stage.

FIRST STEPS

Preparation:

- It is advisable to start by making a small sketch of your entire sound system and assigning the inputs and outputs.
- Then specify which turn-on mode* of the DSP product should be used (e.g. via auto turn-on function).
- The electrical connection of the DSP product*
- When using the DSP product for the first time, it is recommended not to connect its REM OUT connection to the amplifier(s) yet.
- If a fully active multi-channel system is set up, it is advisable to install a 10 μ F audio frequency capacitor in the speaker cable to protect the tweeter when first used. This can be dismantled again after successful commissioning and the correct high pass crossover frequency.
- Set the input sensitivity of your DSP inputs to "MIN".
- Also, set the connected amplifiers to minimum input sensitivity. Refer to the manual of the amplifier
- Switch on the DSP product by starting up your connected head unit/car radio.
- Connect your smartphone/tablet as previously described in the instructions.

Refer to the DSP product's manual

Create basic setup:

- Start with the first output and use the alias setting to assign it its use. See page 7 / 8
- Carry out the assignment for all outputs used.
- In the next step, select the "Input" icon.
- Assign the appropriate input to each output. See page 5 / 6
- Select the "EQ" icon and then the "Output EQ" tab in the top center to call up the active crossover menu. See page 10
- Assign the appropriate crossover frequency, desired characteristics, and edge steepness for each output. Depending on the specification of the loudspeakers and the installation location, different parameters are required. When setting up for the first time, pay attention to the speaker manufacturer's recommendations.

- After configuring the active crossover, the electrical separation is displayed in the frequency diagram for you to check.
- Before connecting the REM OUT connection to the amplifiers, it is recommended to check the set crossover configuration for each output and its correct assignment again.
- Now select the “Time” icon and check the graphic assignment of your sound system. See page 17

Create basic setup:

- In the “Main” menu, initially set the output volume to a rather low level, e.g. to a value of 30.
- It is now advisable to save your preset on the DSP product and, if necessary, on your smartphone/tablet. See page 3
- Exit the app and turn off your controller.
- Now connect the REM connections of the DSP product to the amplifier(s) and switch on the control unit. Then start audio playback there. Make sure you keep the output volume low.
- You should now hear audio playing through your sound system.
- Ensure that all sound system devices are switched on. Restart the app to connect it to the DSP product.
- After starting the app, select the “Time” icon, where the overall overview of the sound system can be seen.
- Now check the connected speaker components with the mute function.
- To do this, starting with the subwoofer or woofer, tap on the respective icon for the individual components. This allows you to use an acoustic check to determine whether the assignment of the outputs is set correctly. See page 17

Create basic setup:

After you have ensured that the correct crossover setting is set for the tweeters, the protective capacitors can be removed again.

- In the next step, set the time correction for the individual speakers under “Time”. See page 17
- Important note on setting the time correction: ms = delay in 0.01-millisecond steps to the acoustic center of the stage
cm = virtual distance in 6.8 mm steps to the acoustic center of the stage
- By selecting the “Output” icon, you now set the appropriate relationship between the speaker levels. See page 7
- You can also make this adjustment and adjust the final volume of your sound system by changing the input sensitivity of the amplifiers. Refer to the manual of the amplifier
- Under “EQ” you can adapt the electrical frequency response of the individual speakers with parametric EQ, high or low shelf to your wishes and the acoustic conditions in the vehicle. See pages 12-16
- Under “Input EQ” (top center) you have the option of counteracting any factory EQ settings that may not suit you or making a general tonal correction. See page 14.

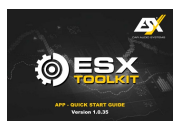
Tips:

- It is recommended that you save the intermediate status on your smartphone and in the DSP product from time to time after individual changes to the parameters. See page
- Use the different presets to compare by always switching them back and forth. · Use different styles of music to

adjust the parameters to optimally tune the sound system according to your listening habits.

- Take a break from time to time, as human hearing changes depending on the mood of the day and has to recover from sounds that are too loud.

Documents / Resources



[Apps ESX ToolKit Apps](#) [pdf] User Guide
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