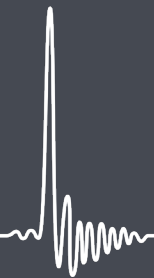




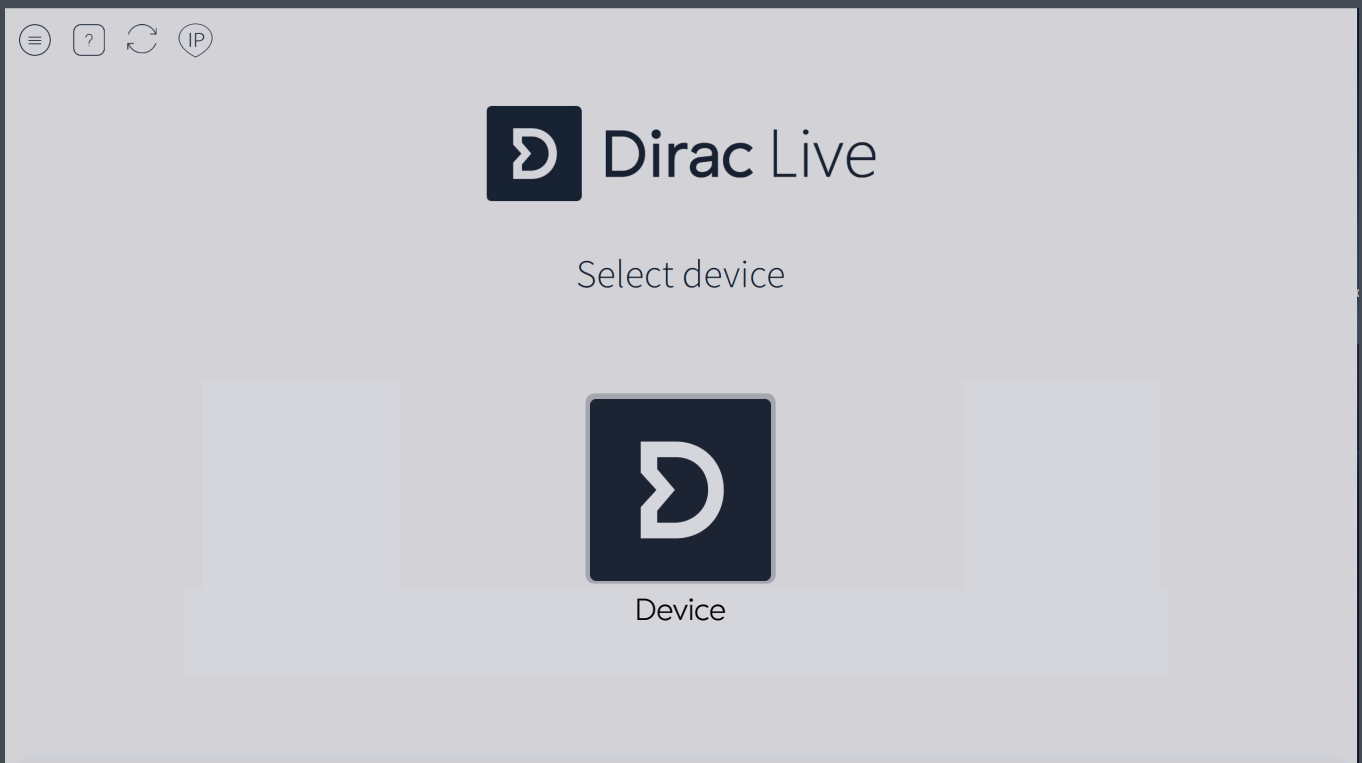
Dirac Live
Quick Start Guide
Version 2.x



1

Initial setup and device detection

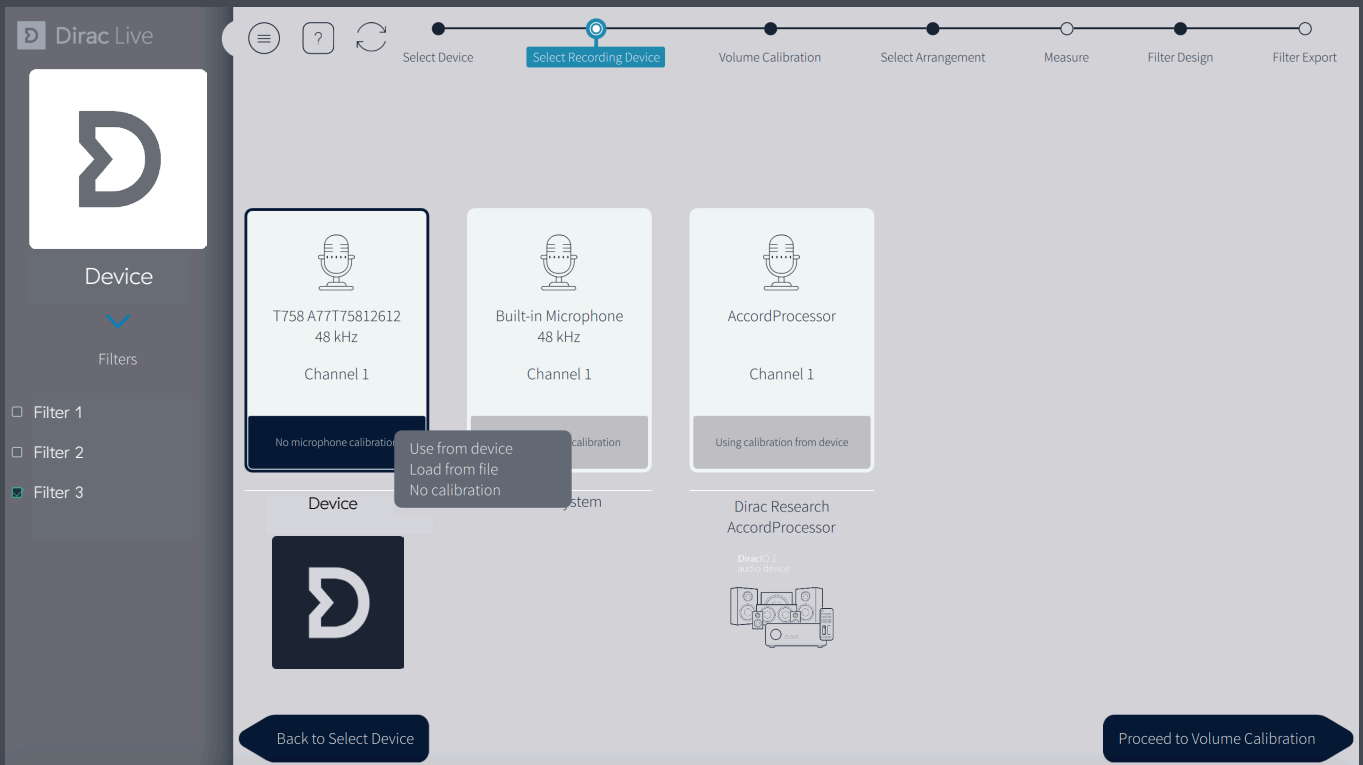
- If you have not already installed the software, download Dirac Live from live.dirac.com/download. After installation, make sure your AVR is connected to the same local network as your computer — your computer also needs to be connected to the internet for licensing purposes.
- The microphone can be connected either to the computer or to the AVR itself, depending on brand and/or microphone.
- In the first screen after launching Dirac Live, you will be able to enter your account details. Login is required in order to use purchased features, but also to save/restore any project.
- Dirac Live will scan the network for compatible devices — the resulting list can be refreshed by clicking the refresh icon. Clicking the device selects it and proceeds.
- If the device for some reason cannot be detected, there is also the possibility to enter an IP address manually.



2

Select recording device

- Select the microphone that you wish to use, either the one connected to the device or the one connected to his computer
- Please avoid the computer's built-in microphone
- All available recording devices will appear in this step. If available, a microphone calibration file (.txt) can be loaded by pressing the button with the text "No microphone calibration" in the illustration.



3

Volume calibration

In this step the output volume of each speaker is set. This is important as too low or high volumes can result in poor or failed measurements, excessive volume could possibly even damage the speakers.

The following procedure is meant to make sure that the playback volume for all speakers is reasonable. It is sufficient that the speakers are approximately of a level since the software will automatically adjust this, typically all speakers but subwoofers can be expected to be of roughly equal level. Usually no adjustments are needed beyond the master output and the subwoofer channel.

The screenshot displays the Dirac Live software interface during the Volume Calibration step. The top navigation bar includes: Select Device, Select Recording Device, **Volume Calibration** (highlighted), Select Arrangement, Measure, Filter Design, and Filter Export. The main workspace shows five speaker channels: Master output, Mic gain, Left, Right, and Subwoofer. Each channel has a vertical volume slider and a dB value. The Master output slider is at -6 dB. The Mic gain slider is at +20 dB. The Left channel slider is at 0.0 dB. The Right channel slider is at 0.0 dB. The Subwoofer slider is at 0.0 dB. Below the sliders, there are play/pause buttons for each channel. At the bottom, there are two navigation buttons: "Back to Select Recording Device" and "Proceed to Select Arrangement".

Dirac Live

Device

Filters

- Filter 1
- Filter 2
- Filter 3

Select Device Select Recording Device **Volume Calibration** Select Arrangement Measure Filter Design Filter Export

Master output Mic gain Left Right Subwoofer

-6 dB +20 dB 0.0 dB 0.0 dB 0.0 dB

-17.0 dB -25.0 dB -21.4 dB -15 dB -15 dB -15 dB

-50 dB 0.0 dB -15 dB -15 dB -15 dB

Back to Select Recording Device Proceed to Select Arrangement

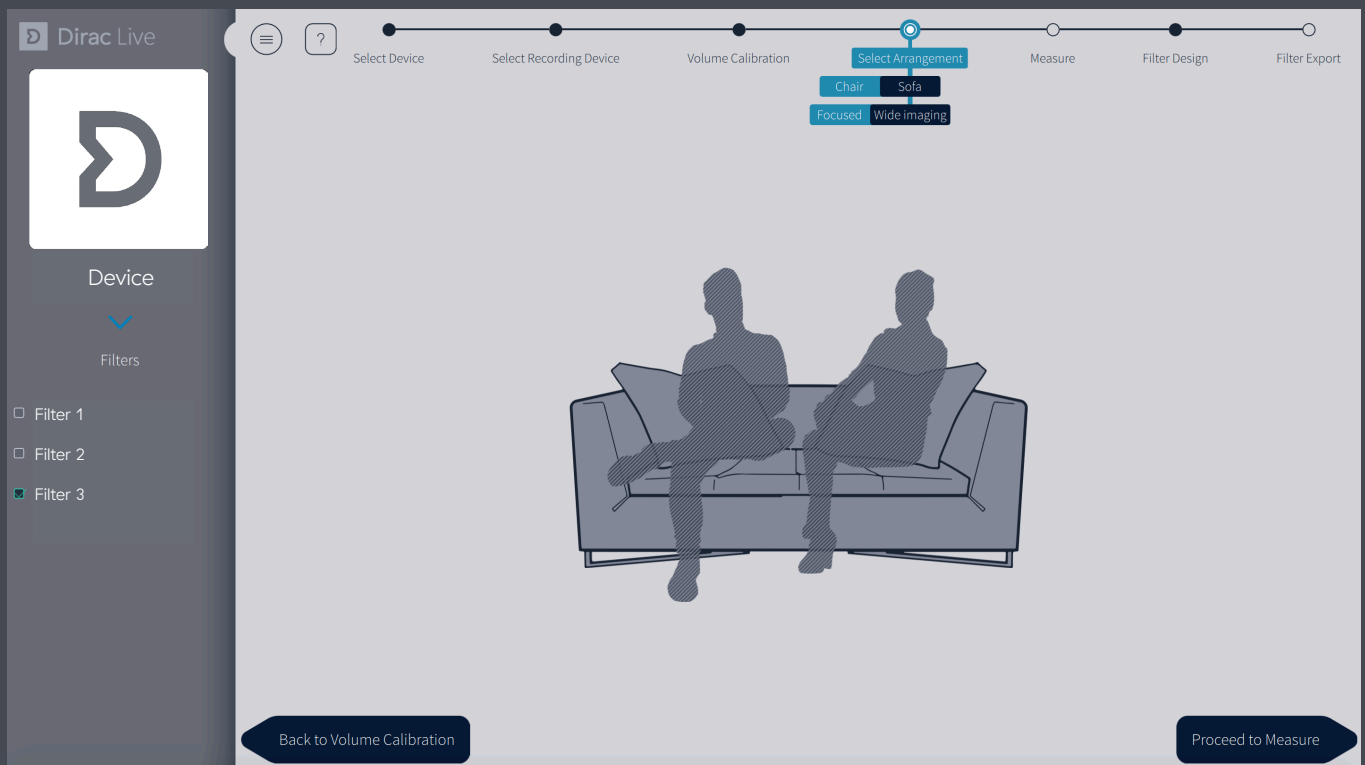
Volume calibration cont.

1. Place the microphone in the middle of the listening area.
2. Make sure the master output level is at a low setting.
3. Select a speaker, for instance front left, and press the “play” button for that speaker
 - o You should now see a reading above the play/stop button that represent the recording level. If you slowly increase the Master Output level you should see the level bar for the selected speaker increase. If not, go back and check the microphone connection.
4. Increase the Master output until either:
 - o The level bar for the selected speaker is in the green area, or
 - o The output level is loud, but not uncomfortably so
 - If this happens, use the microphone gain slider to increase the recording level so that it is in the green area.
5. If you have a Subwoofer
 - o Reduce the master output to a low level again
 - o Press the “play” button for the subwoofer
 - o Read the level bar for the subwoofer and increase the master output until the subwoofer can be clearly heard.
 - o Now compare the level bar for the subwoofer to that of the first speaker; they should be roughly equal. If they are not, use the level knob located on your subwoofer until they are about the same level.
6. For remaining speakers start with the master output at a low level and make sure the recording levels roughly matches the subwoofer(s) and the first speaker. If they don't, use the individual gain slider for that channel until they do.
7. When the process is done the level bars for all speakers should read roughly the same value, as in within 15dB.

4 Select arrangement

Select the most suitable listening arrangement:

- **Chair:** Represents a more confined area, where you can measure nine positions in total.
- **Sofa:** Represents a wider setting for one or more persons, where you can measure up to 17 positions in total. The Focused option can be considered for a smaller sofa, whereas the Wide imaging could be for a larger area.



5 Measurements

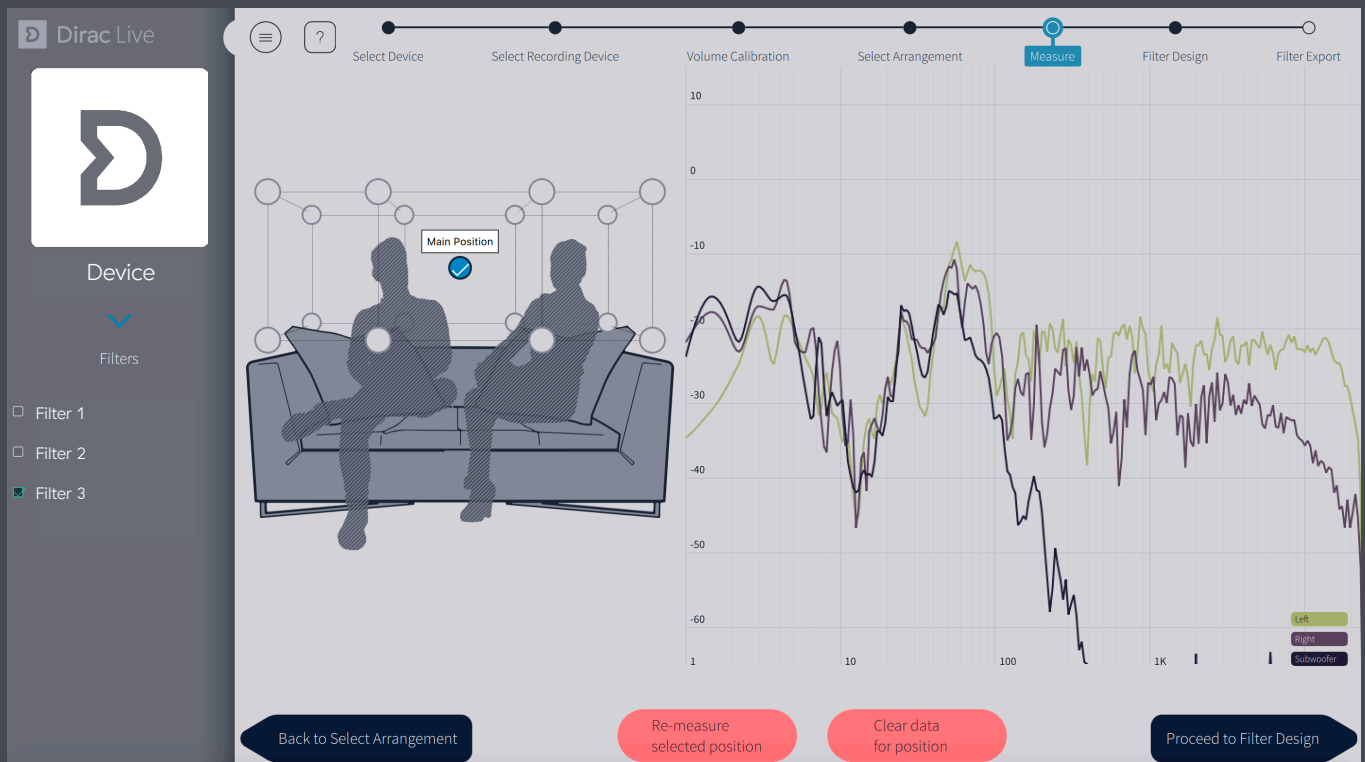
Make sure there is a clear line-of-sight between microphone and speaker, no background noise (tv, radio, AC, etc.) while doing the measurements and remember to keep the microphone still, preferably using a stand or similar. A sweep will be played in turn through each speaker and a final sweep will be played through the first speaker once more.

- **The main position:** This is where your head is most likely to be, and it is the most important position to place correctly.
- **Spacing and order:** In general, the positions should be 40 – 60 cm apart, however the exact placement or order of the remaining positions is not crucial, and the position layout is there only as a guide.
- **Number of measurements:** You may do fewer measurements than the full set before proceeding to Filter Design, but we recommend going through the full set for best results.

The screenshot shows the Dirac Live software interface during the 'Measure' step. The interface is divided into several sections:

- Top Progress Bar:** Shows the current step 'Measure' highlighted in blue, with other steps: 'Select Device', 'Select Recording Device', 'Volume Calibration', 'Select Arrangement', 'Filter Design', and 'Filter Export'.
- Left Panel:** Contains the Dirac Live logo, a 'Device' section with a dropdown arrow, and a 'Filters' section with three checkboxes: 'Filter 1' (unchecked), 'Filter 2' (unchecked), and 'Filter 3' (checked).
- Main Area:** Displays a 3D visualization of a listening room. Two silhouettes of people are seated on a sofa, facing a speaker arrangement. A microphone icon is positioned in the center of the room, with a checkmark indicating it is selected. The room is filled with sound waves.
- Right Panel:** A large empty grid for data visualization. The vertical axis is labeled from -60 to 10, and the horizontal axis is labeled with 1, 10, 100, 1K, and 10K.
- Bottom Bar:** Contains four buttons: 'Back to Select Arrangement' (dark blue), 'Measure selected position' (blue), 'Clear data for position' (pink), and 'Proceed to Filter Design' (dark blue).

Measurements cont.



- There is an autosave function to prevent losing work, however, after completing the measurements would be a good time to save your project by selecting Save project in the hamburger menu (upper left corner).

Potential problems and workarounds during measurement:

Clipping: If the level is too high during measurement, the signal will clip, and the measurement will be terminated. Return to Volume calibration to reduce the gain of the corresponding speaker or master volume of the system.

Low SNR (signal-to-noise ratio): If the level is too low during measurement, it is difficult for the application to discern signal and background noise. Return to Volume calibration to increase gain of the corresponding speaker or master volume of the system.

6

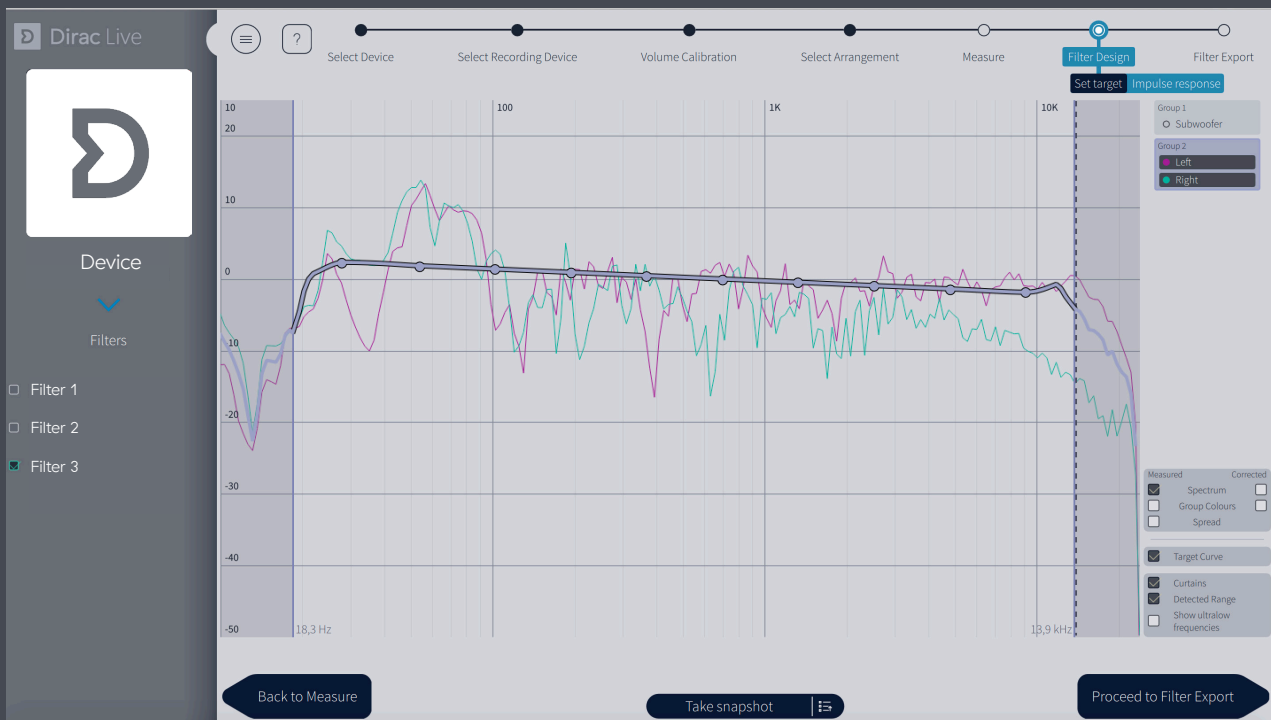
Filter design

After completing the measurements, Dirac Live will automatically generate suggested target curve(s) (frequency response) and resulting filters intended to make the sound image in your room as even as possible. These curves can be adjusted to your preferences.

Set target view:

- **Grouping:** The initial grouping of channels is provided by your equipment and is typically based on typically similar speakers such as left/right, rear or satellites. You are free to rearrange these:
 - Each group will have a common target curve
 - It is possible to move speakers in/out of groups by drag-and-drop
 - You can create a new group by dragging a channel to an empty area in the group column
 - Any one speaker can be selected by clicking on it. It is also possible to select specific speakers by using ctrl + click. Hover over and click on a group will select all speakers in this group and display their frequency response.
- Add/delete control points by right clicking on the curve
- Modify any target curve by dragging the control points
- Modify the frequency range that Dirac Live will compensate by dragging the curtains (left/right). The dotted lines indicate the automatically detected sound thresholds. Outside of these limits no correction will be applied, i.e. the audio signal will not be adjusted in the frequency area on either side of the curtains (shadow area).
- The frequency response will be calculated in real-time in order to continuously see the expected result and to be able to continue to make adjustments before settling on a filter design.
- Custom target curves (.txt or .targetcurve format) can be loaded, see option in hamburger menu (top left).
- Take snapshot function will create a snapshot of the current state — if a change is made to a target curve, it is possible to switch between snapshots without having to save/load projects.
- Zoom in/out by using pinch zoom on touchpads and scroll wheel if using a desktop mouse, panning can be achieved by hold+drag.
- Select different display options depending on preference in the lower right corner.

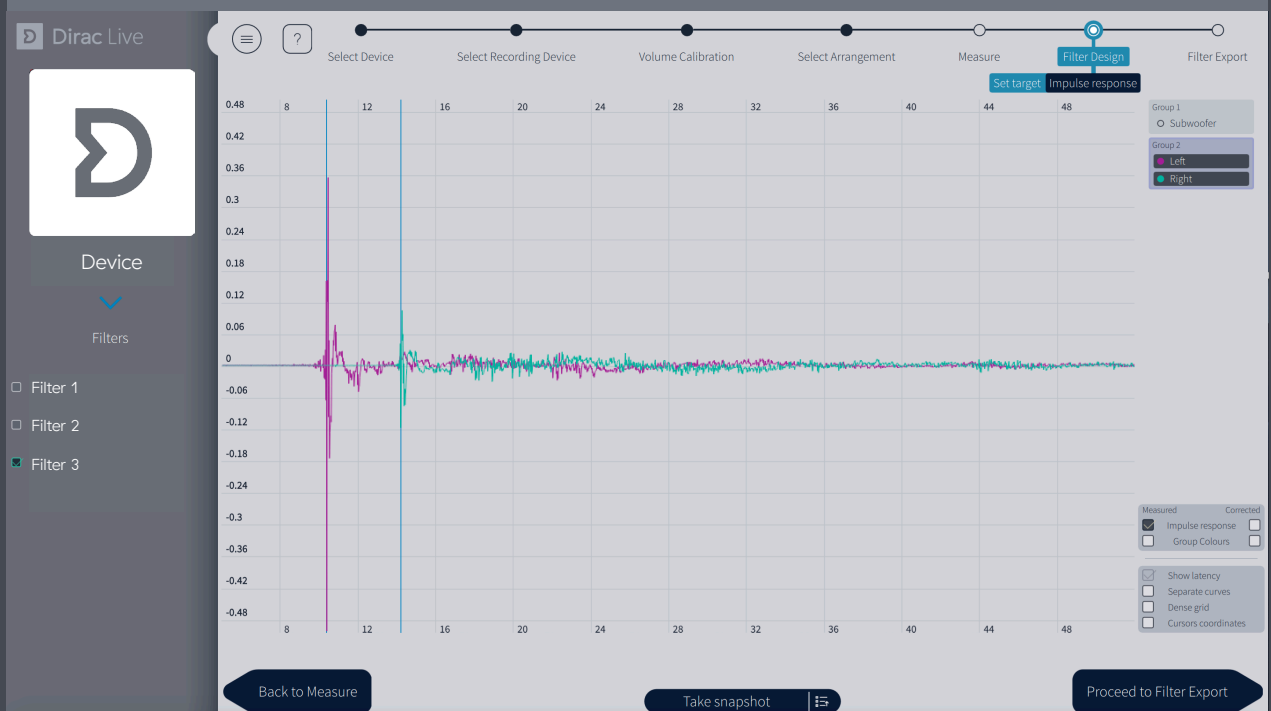
Filter design cont.



Impulse response view:

The impulse response illustrates the precision and distinctness to the sound before and after Dirac Live compensation.

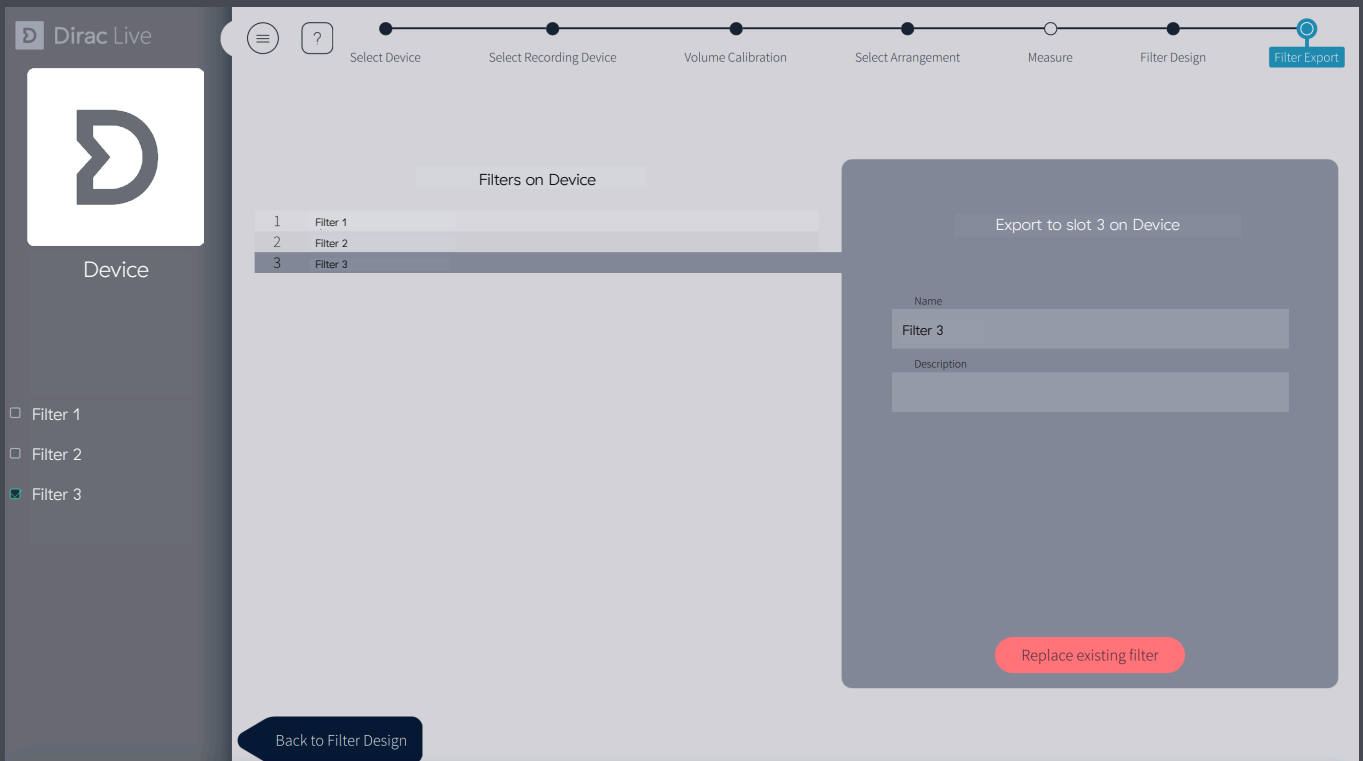
- To inspect the impulse response, you can compare the measured and corrected response side-by-side or separately and more, by selecting the different options in the lower right corner.
- Zooming in/out works the same way as in the target view



7

Filter export

The last step is to export the filter for a listening test. Select a slot and save under desired name (there may be an auto-generated name, which can be replaced). When export is complete, the application will return to the Filter Design view. Do not forget to save your project before closing the application.



8

General tips

- You can save the project at any time by selecting “Save project” in the hamburger menu, upper left corner.
- The down arrow icon in the left side panel will list the current configuration and sample rate.
- Depending on your device, changing the configuration may clear the filter list or switch to a configuration-specific filter list. You should never change device configuration while performing a room correction.
- You can always get a context aware help by pressing the question mark “?” in the upper left corner.

End of Quick Start Guide!

Now sit back and experience the sound as the artist intended!

Dirac is a world-renowned audio technology company on a mission to invent the future of sound. Dirac's team of engineers and scientists deliver optimized sound solutions for mobile, automotive, residential and commercial environments through inspired innovation and a keen sense of evolving market trends and demands. Dirac's digital sound optimization technologies have been adopted by some of the most respected and recognizable electronics manufacturers spanning the globe, achieving dramatically improved sound quality and a shortened time-to-market. Dirac Research maintains its headquarters in Sweden and has representatives in China, Denmark Japan, Korea, Germany and USA.



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