

DIRAC LIVE

ART setup guide



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Short Guide

This Short Guide will get you up and running with Active Room Treatment in just a few minutes. For detailed explanations and advanced tuning, see the Full Guide below.

Prerequisites

- Dirac Live software installed from [Downloads - Dirac](#)
- ART-compatible device with license, updated and ready for Dirac Live calibration
- Room Correction license & Bass Control license (if using subwoofers with ART)

Setup steps

1. **Connect to your device** – Open Dirac Live and select your device in the “Select Device” screen.
2. **Take measurements** – Measure at least the minimum number of points required for ART (shown as a notification in the top right). Then click “Proceed to Filter Design.”
3. **Verify ART is selected** – ART should be automatically selected in the correction technology section of the right sidebar if your device and license support it.
4. **Configure support groups** – Each ART group (main speaker group) shows support group sliders at the bottom of the graph. These control which speakers can help other speakers in specific frequency ranges.
5. **Start with default settings** – For your first calibration, use the default parameters. The system automatically detects optimal support ranges.
6. **Adjust target curve (optional)** – Use the bass and treble sliders to adjust the target frequency response to your preference.
7. **Calculate the filter** – Click “Calculate” and wait for processing to complete (this may take a few minutes).
8. **Export to your device** – Click “Proceed to Filter Export,” then “Export filter” to send the calibration to your device.

Short Guide

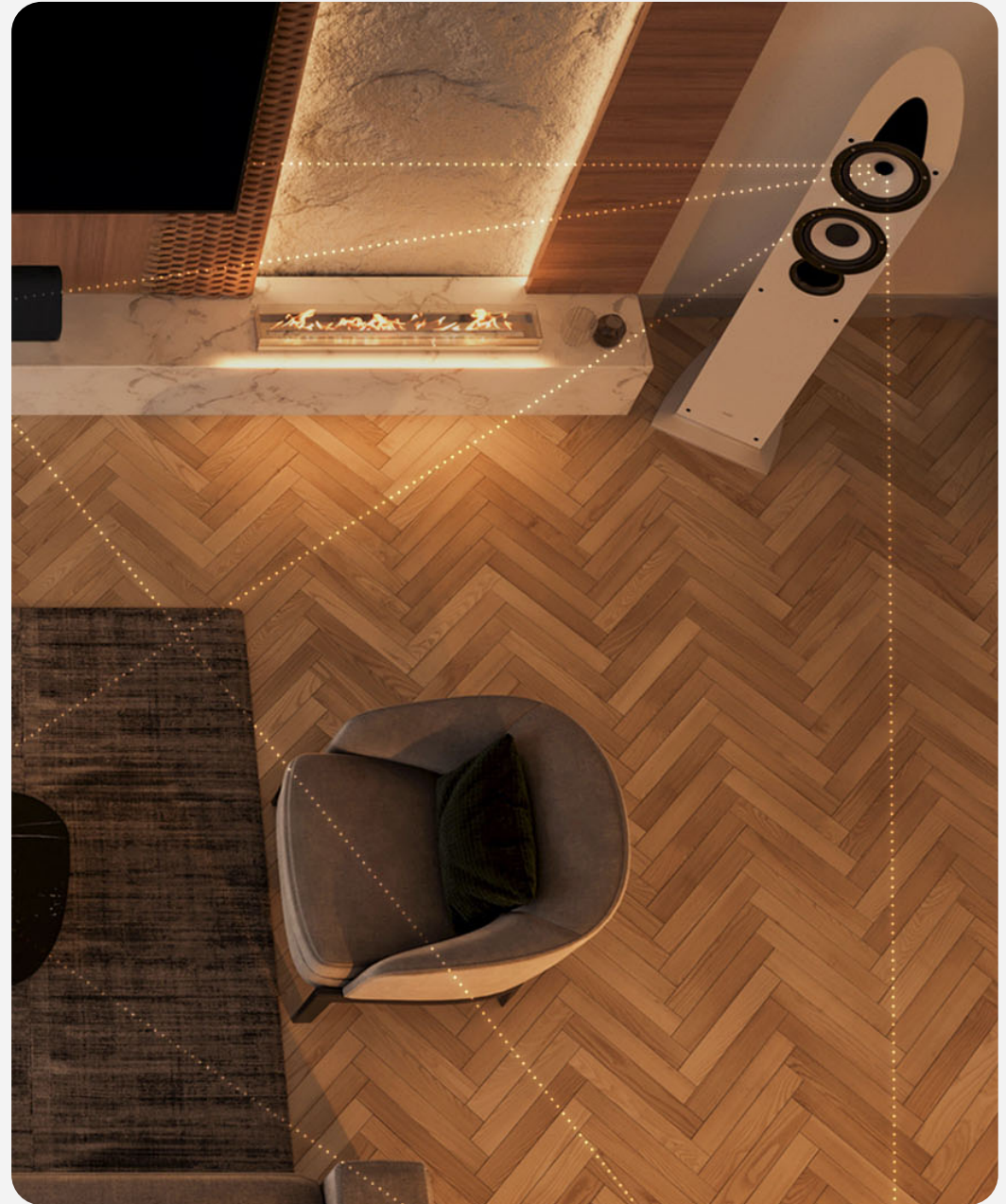
Key Parameters to Know

If you want to fine-tune beyond defaults, these are the most important parameters:

- F_{iso} (50-150 Hz): The highest frequency where speakers can support each other. Start with the default (typically 150 Hz) and lower it if you hear supporting speakers coloring the output.
- Support Level (-24 to -1 dB): Controls how much a support speaker contributes. -18 dB is the default balance. Use -24 dB for maximum support, -1 dB for minimal support.
- F-support Low/High: Defines the frequency range where a speaker can provide support. Use the sliders at the bottom of the graph to adjust these ranges visually.

Quick Tips

- Start with default settings for your first calibration.
- Compare the result to “Dirac off” using the filter selection menu to hear the improvement.
- If you hear small speakers reproducing bass they shouldn’t, lower the F-support High value for those speakers.
- For advanced tuning and parameter details, see the Full Guide below.



Full Guide Setup

Installation

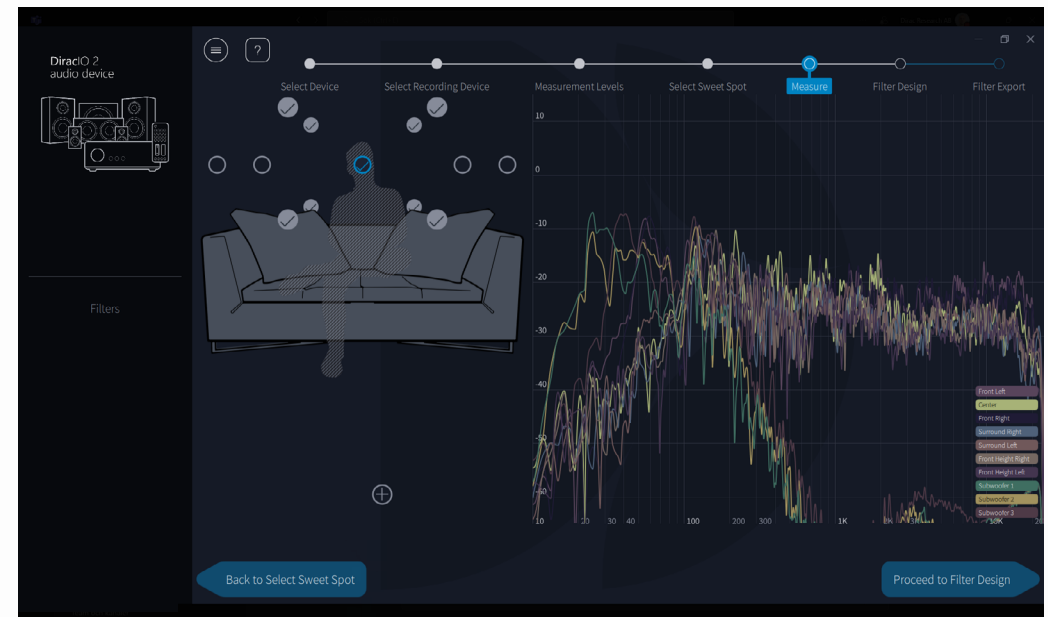
[Download](#) and install the latest version of Dirac Live.

Connecting to your device

Refer to your AVR's owner's manual for a description of how to prepare the device for Dirac Live calibration. This setup is the same for Dirac Live Room Correction, Bass Control, and ART.

Setting up Dirac Live

1. Once your device is ready for calibration, open Dirac Live and select it in the “Select Device” screen.
2. At this point, you have two options:
 - a. Proceed through the steps of Dirac Live up to **Measure**
 - b. Alternatively, load a previous Dirac Live project. If at least 9 mic positions have been captured and nothing has changed in the system since that project was measured, then you can skip past the Measure step (since you're re-using your old measurements instead) and go directly to **Filter Design**
3. Measure all points needed for your system, noting how many measurement points ART requires for your setup (shown as a persistent notification at the top right).
4. When your measurements are complete, click **Proceed to Filter Design**



Active Room Treatment Filter Design

1. If your device and license capabilities include ART, then ART will be selected by default in the correction technology section of the right-side sidebar of the Filter Design screen.
 - a. If you have less than 3 valid measurements, including the sweetspot, you will not be able to select the ART option.
 - b. Note also that in order to use ART with one or more subwoofers, you will also need to hold a Bass Control license. You then need to either:
 - 1) purchase and activate a Bass Control license, or
 - 2) deactivate the subwoofers by removing them from the device's speaker configuration.
2. **ART groups** (also referred to as main groups) are speaker groups containing at least one input channel. They are shown on the right side panel and can be managed just the same as in Dirac Live, by dragging individual speaker channels in and out of each group. See also the section below about channel grouping.



- ART achieves powerful control of decay time by co-optimizing speakers to reach the desired impulse response and target curve by assigning speaker support groups to each ART group.

The frequency range at which a support group is allowed to contribute to an ART group is called the Support Range. The Support Range is automatically detected from the measurements and set as default upon initializing the ART filter design.

Note that the default Support Range for non-subwoofer speakers will not be lower than 50Hz.

- Each ART group has a set of sliders at the bottom of the Filter Design graph area. They allow the user to control the Support Range at which each support speaker group is allowed to contribute to the selected ART group. See also the section below describing the support range parameters.



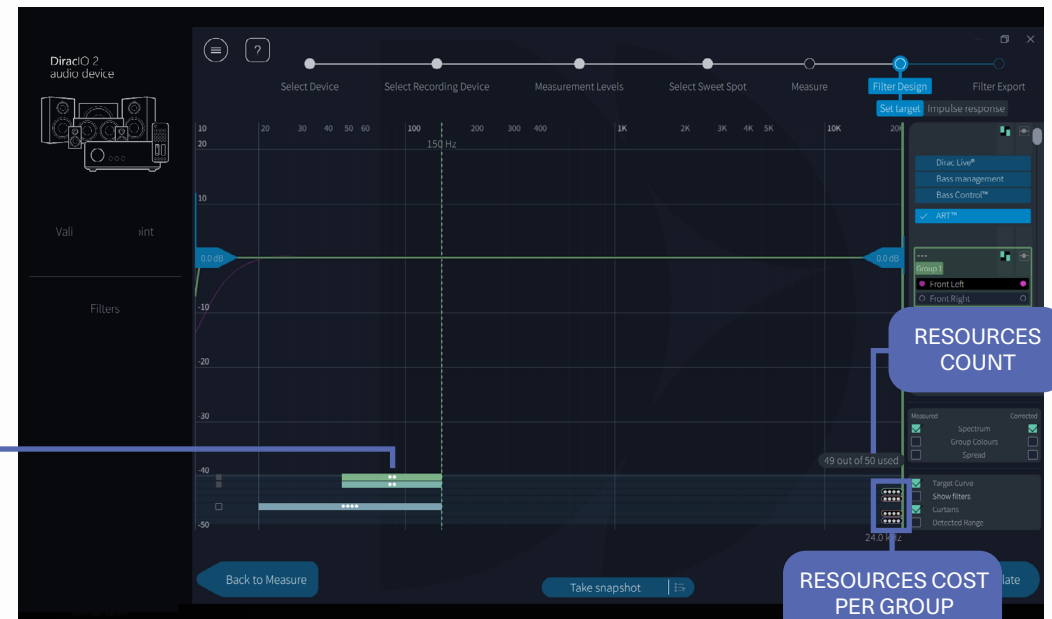
3. **b.** Each support group can be enabled or disabled from providing support to a particular ART group by toggling a checkbox that appears when the mouse pointer hovers over its slider track.

TOGGLE



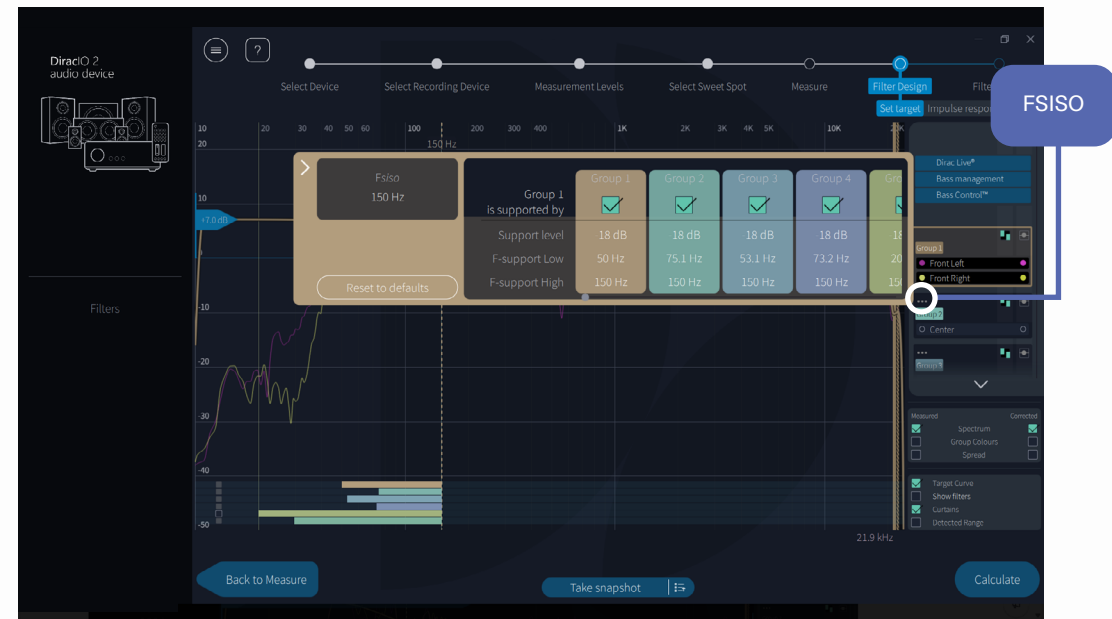
- c.** There may appear “dots” on the support assignment slider track. They only show up if the number of speakers in the system is so large that all speakers cannot support all other speakers. The purpose of the dots is to represent the amount of device resources that a support assignment would utilize, if assigned. The number of total available and used dots is presented on top of the right end of the support assignment slider rails. With the help from this dot feedback, the user can choose which speaker groups to prioritize.

RESOURCES USED

RESOURCES
COUNTRESOURCES COST
PER GROUP

4. ART groups have parameters that are accessed by clicking the triple-dot button  in the top left corner of its box. This button is only available on ART groups and clicking it unfolds the parameter panel. For a full description of ART parameters, see the [“ART Parameters”](#) section below.

Every ART Group (main group) can be supported by any other channel group (support group) and the main group itself. As a common setting, the upper limit to which the supporting groups are allowed to support the main group is specified in the Fsiso setting.



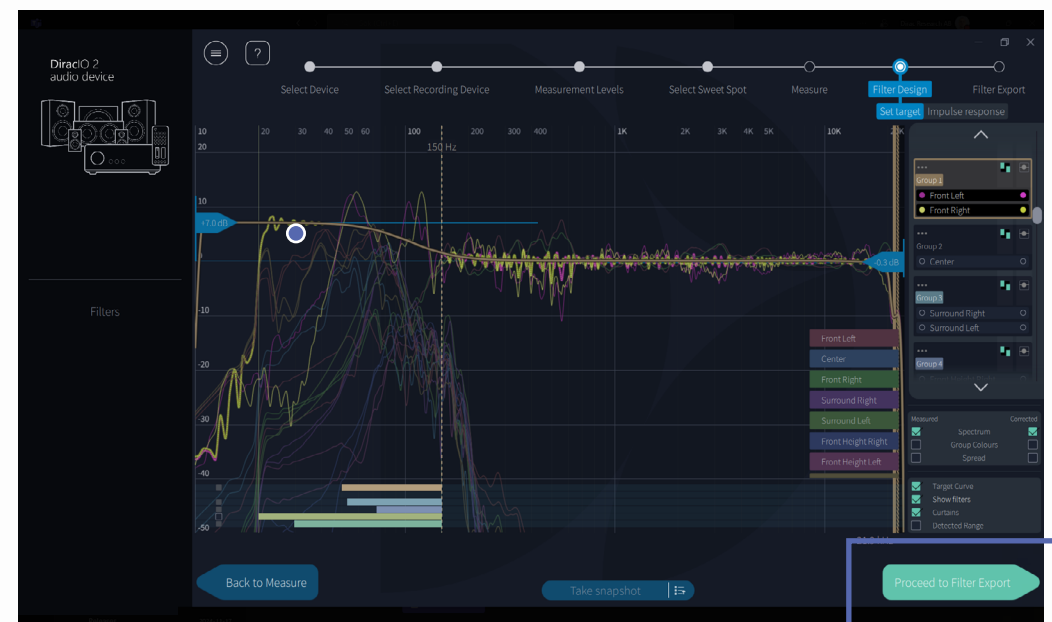
- The bass and treble sliders in the Filter Design view can be adjusted to draw a simplified target curve. The target curve is used in the filter design representing the desired final frequency response after applying the designed filters on the connected device.

Each main group has its own target setting. It is common to set them to the same values as the first group, to get the same sound character from all speakers, but that is a matter of personal preference.

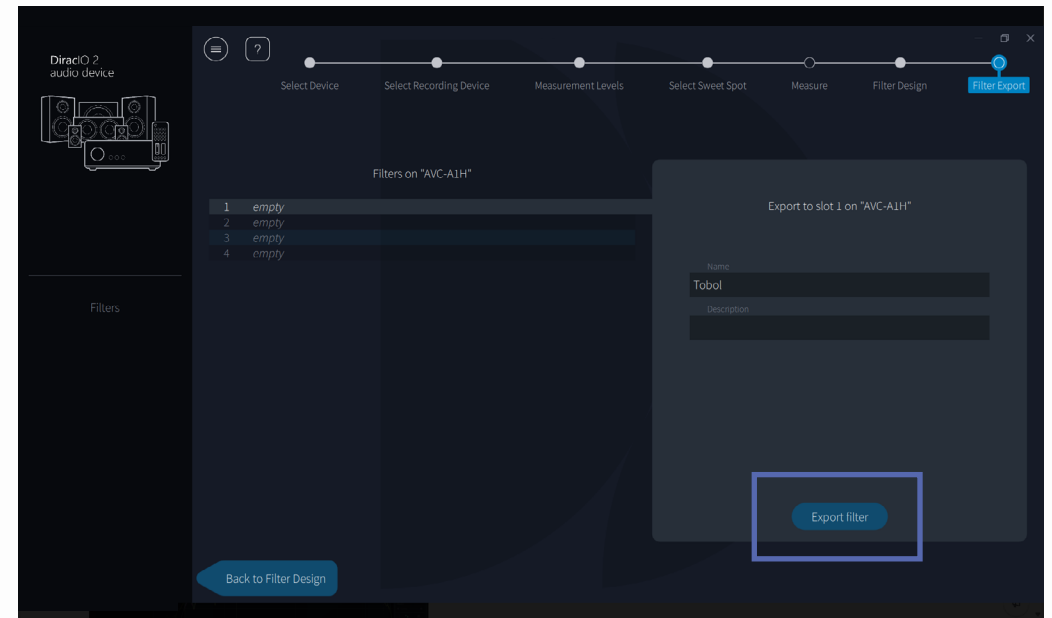
- After these edits, press **Calculate**. It will take a little while to calculate the filter.

HOLD AND
DRAG

- When your filter has been calculated, press **Proceed to Filter Export**.



8. Export the filter to your device.



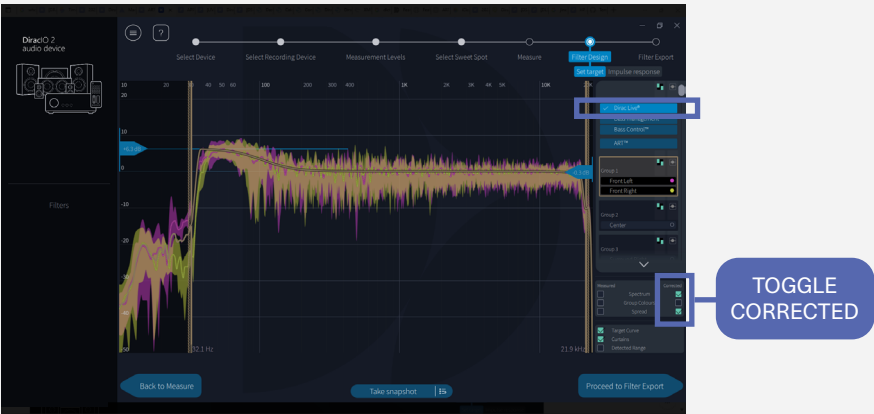
9. Your filter is now exported to your device. It is also shown on the left side of the Dirac Live screen.



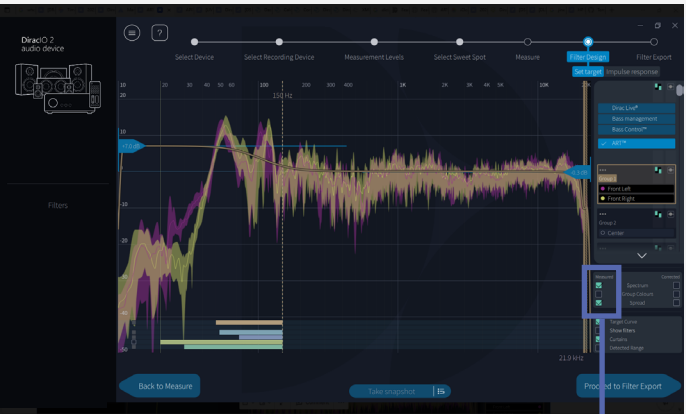
Compare the difference

When complete, make sure to visualize the improvement achieved by ART and compare it with Dirac Off (original measurements), Dirac Live Room Correction, and Dirac Live Bass Control. In these examples, the improvement is visualized using the Spread graph, which shows how the resulting response varies across the different microphone positions.

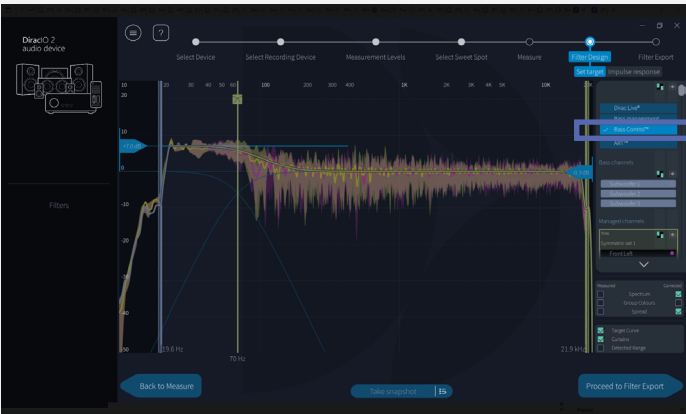
DIRAC LIVE
ROOM CORRECTION



DIRAC LIVE
OFF



DIRAC LIVE
BASS CONTROL



DIRAC LIVE
ACTIVE ROOM TREATMENT



Comment on Grouping

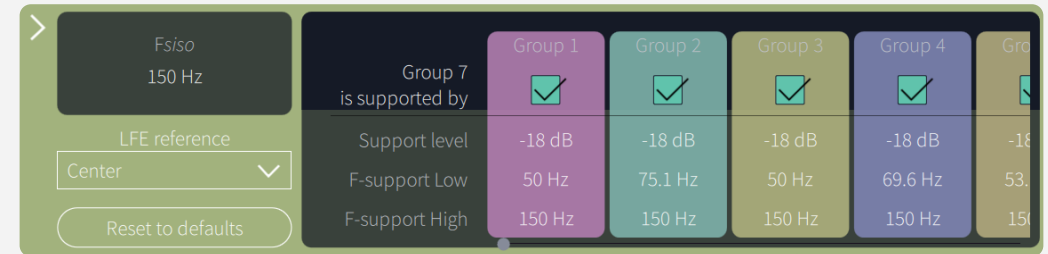
ART groups are designed to simplify parameter settings for multiple speakers. Group speakers with similar parameters together for easier management.

For example, in a 2.2 system, you could use two or three groups:

- Two groups: Combine Left and Right speakers in one group, and Subwoofers in the second group if you want to use the subwoofers the same way.
- Three groups: Combine Left and Right speakers in one group, and place each subwoofer in separate groups if you want to control their interaction with front speakers independently.

For larger systems, the concept remains the same. Group speakers based on their usage and position, considering speaker location's impact on settings like F_{iso} and F_{support} High. Choose groups that make the most sense for your system and listening position.

ART Parameters



Support Group parameters.

Parameter	Meaning	Comment	Default	Legal input
Fsiso	The maximum frequency where speakers can support each other. Above this frequency, impulse response correction is applied to each speaker individually.	Fsiso is a critical parameter that acts as a crossover frequency in a bass-managed system. The goal is to find the highest Fsiso value for your system that still provides a great result. Lower Fsiso values are more robust but offer less benefit, while higher values provide more benefits but may reveal supporting speakers in the output.	150 Hz	50 to 150 Hz
LFE reference (only available in the main subwoofer group)	The selected speaker will serve as reference for the time target of the LFE channel. Thereby, LFE content will be optimised to propagate through the listening area as if it was played from the selected reference speaker.	The selected LFE reference can be used as a tuning parameter, finding the reference speaker that best fits the desired LFE content propagation. - A full-range speaker is preferred over a subwoofer as LFE reference, since the impulse response is then better defined across the listening area. - Not selecting one of the subwoofers also potentially improves the LFE load distribution across all subwoofers. By having a speaker outside the set of subwoofers defining the time target, one particular subwoofer will not be contributing more than the others because of its response fully matching the time target.	Center (if it exists), otherwise either of Front Left or Front Right.	Any speaker
Group <i>n</i> is supported by	Turns on or off the channels of the group supporting the input channels of the ART group. That is, the speakers in this group will act to support the this groups main speakers.	The use of this parameter depends on your specific speaker grouping. When adjusting this setting, it's important to consider the F-support High parameter in each group to achieve the desired effect.	On	On or Off

ART Parameters

The screenshot shows a control interface for ART parameters. On the left, there's a section for 'Fsiso' set to 150 Hz, an 'LFE reference' dropdown set to 'Center', and a 'Reset to defaults' button. The main area displays a table of speaker group parameters:

	Group 1	Group 2	Group 3	Group 4	Group 5
Group 7 is supported by	☒	☒	☒	☒	☒
Support level	-18 dB	-18 dB	-18 dB	-18 dB	-18 dB
F-support Low	50 Hz	75.1 Hz	50 Hz	69.6 Hz	53.1 Hz
F-support High	150 Hz	150 Hz	150 Hz	150 Hz	150 Hz

Support Group parameters.

Parameter	Meaning	Comment	Default	Legal input
Support level	Controls the amount of support the speakers in this groups gives to the main speaker. -1 dB will contribute a minimal amount, -24 dB will contribute a maximal amount.	Support level determines how heavily a speaker is used by the algorithm. To balance speaker usage and avoid distortion, change the support level values according to the position of speakers in the room. This helps in achieving the desired output without overloading specific speakers.	-18 dB	-24 to -1 dB
F-support Low	Controls the lowest frequency of the Support Range, where the support speakers in this group will contribute to the selected main speaker group. It has the same value as the low end of the corresponding Support Range slider.	F-support Low defines the lowest frequency at which a speaker can support another speaker. This parameter helps prevent small speakers from overloading with bass they're not designed to handle. Keep in mind that setting this value low doesn't guarantee the speaker will be used at that low frequency.	Subwoofer: Detected range; full-range speaker: Detected range, but not lower than 50 Hz	20 Hz to Fsiso
F-support High	Controls the highest frequency of the Support Range, where the support speakers in this group will contribute to the selected main speaker group. It has the same value as the high end of the corresponding Support Range slider.	F-support High sets the highest frequency at which a speaker can support another speaker. For subwoofers, this value acts like a lowpass filter applied to the input signal. For full-range speakers, this parameter can be adjusted based on speaker position to prevent revealing support speakers in the final result.	Detected range, but not higher than Fsiso.	F-support Low to Fsiso



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