Rotel Product

Power on the unit and follow below steps:

Configure the Audio

• Configure the Audio Configuration to match the audio system you are using for calibration supporting options from 5.1 to 7.1.4. For more details please refer to Audio Configuration section in the Owner's Manual .

Configure the Speakers

• Setup the Speaker Configuration to match the audio system. Available options for each pair of speakers include Large, Small, None. For more details please refer to Speaker Configuration section in the Owner's Manual .

1) Large - The pair of speakers is capable of passing a full range of frequencies(Highs, Mids, Lows).
2) Small - The pair of speakers can pass mid-range and high range frequencies. For example satellite speakers, small bookshelf speakers.
3) None - This option allows you to configure a custom audio system that isn't offered in the Audio Configuration setting. The minimum system you can configure is a 2 channel stereo audio system.

Configure the Network

• Attach the supplied network cable to the rear panel Network port.
• Go to the Network Configuration setting, navigate to IP Address Mode to set the mode. Available options include DHCP(Default) and static IP.
• Navigate to View Network Settings to check if the network is working properly.

PC or Laptop Computer

Please visit *www.rotel.com/dirac* to download the Dirac Live for Rotel Windows or Mac application and Quick Start Guide. Follow the on-screen instruction to install the Dirac Live App on your computer.

Next, connect the supplied calibration microphone or your own microphone to your computer.

NOTE: *Make sure you connect the microphone to your computer BEFORE launching Dirac so your computer will recognize it as a valid audio source.*

Make sure your Rotel product is connected to the same network as your computer. It doesn't matter if the computer is connected via Ethernet or WiFi, as long as it is on the same network.

Dirac Live

Launch and Device Detection

Launch Dirac Live. In the first screen, you will be able to enter your account details. Login is required in order to use Dirac features and to save/restore any project.

Dirac Live will scan the network for compatible devices – the resulting list can be refreshed by clicking the refresh button. Clicking the unit selects it and proceeds. Below is RSP-1576MKII as an example.
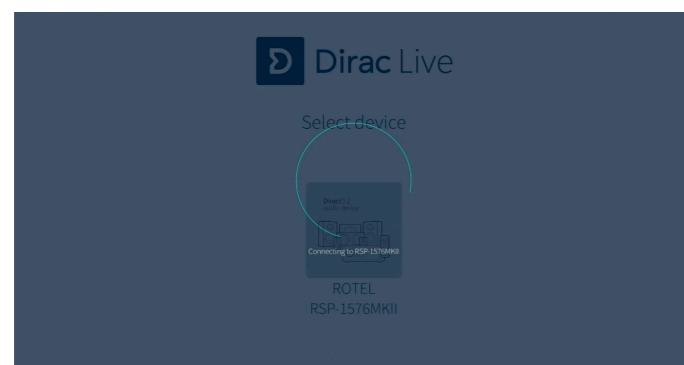
The unit should be located within about 60 seconds. If it is not, the unit is either not on the same network or there is something in the network blocking communication.

If the unit cannot be detected, there is an option to enter an IP address manually.

NOTE: *Only one computer running Dirac will be able to see the unit at one time. If you try to run Dirac on a different computer while another computer is connected, Dirac will not be able to find the unit.*

After selecting the unit you can proceed to the next step..

Select Recording Device

In this step you can select the microphone you wish to use.
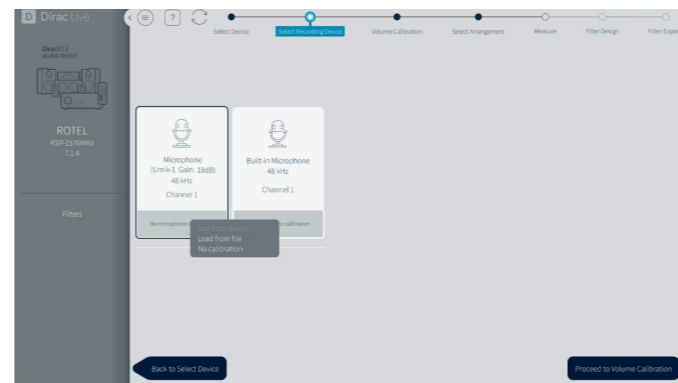
NOTE: *Do not use the computers built in microphone for Dirac setup.*

After you have selected the microphone, a microphone calibration file (.txt) can be loaded by pressing the button with the text "No microphone calibration" on the screen. If your microphone does not have a calibration file please proceed to the next step.

NOTE: *The supplied microphone does not have a calibration file.*

Volume Calibration

In this step you will need to calibrate the output volume of each speaker. The following procedure is meant to ensure the playback volume for all speakers is reasonable. It is sufficient that the speakers are approximately the same 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.

• Place the microphone in the middle of the listening area at listening height. Use a stand or stable platform as needed to ensure the microphone does not move during the calibration process.
• Make sure the master output level is at a low setting before the calibration starts avoiding damage to the speakers near the listening position during the calibration.
• Select a speaker, for instance Left Top Rear, press the "▷" button, You should now see a reading above the ▷ button that represent the recording level. Increase the Master output slider until the level bar for the selected speaker is in the green area. If the output level is loud but not uncomfortably, use the microphone gain slider to increase the recording level so that it is in the green area.
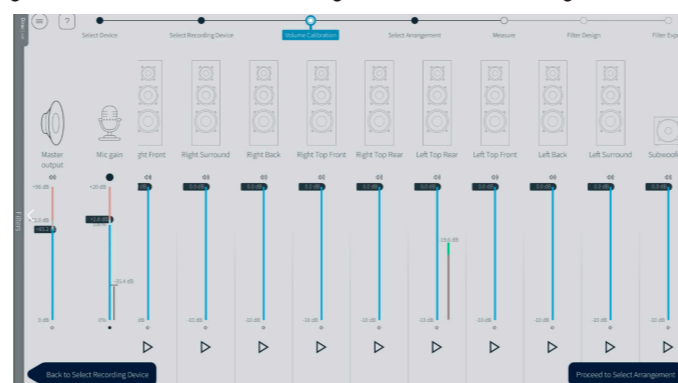

NOTE: *You should calibrate the levels starting with the speaker farthest away from the listening position.*

NOTE: *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.*

NOTE: *During level calibration, it is recommended to NOT adjust the input gain of the microphone. The input gain adjusts the sensitivity of the microphone which could ultimately just make things more difficult to achieve equal levels with all speakers. You should be able to get all channels calibrated to roughly equal in the green zone without having to adjust the input gain.*

• For remaining speakers make sure the recording levels roughly matches the first speaker. If they don't, use the individual gain slider for that channel until they do.
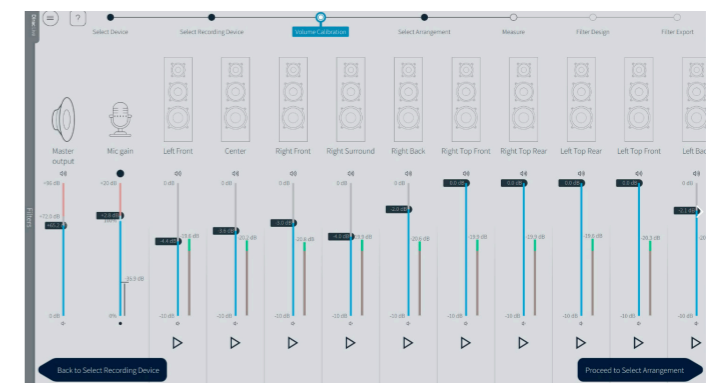
**NOTE:** *If the Subwoofer has volume control, adjust the volume level directly from the Subwoofer.*

• When the process is done the level bars for all speakers should read roughly the same value, as in within 15dB and be in the green area.

Click the "Proceed to Select Arrangement" button to the next step.

Select Arrangement

NOTE: *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.*

In this step, you will be able to choose between three different listening areas:
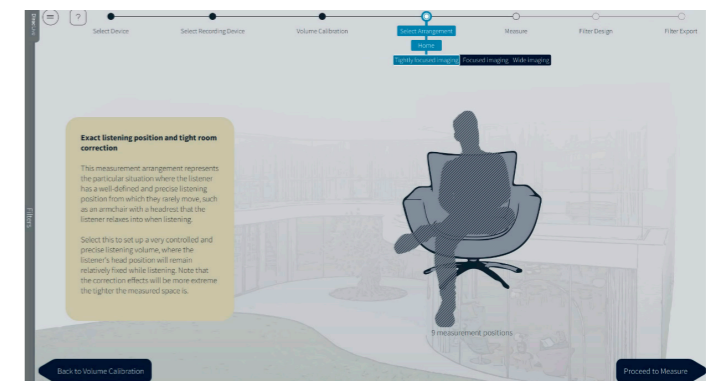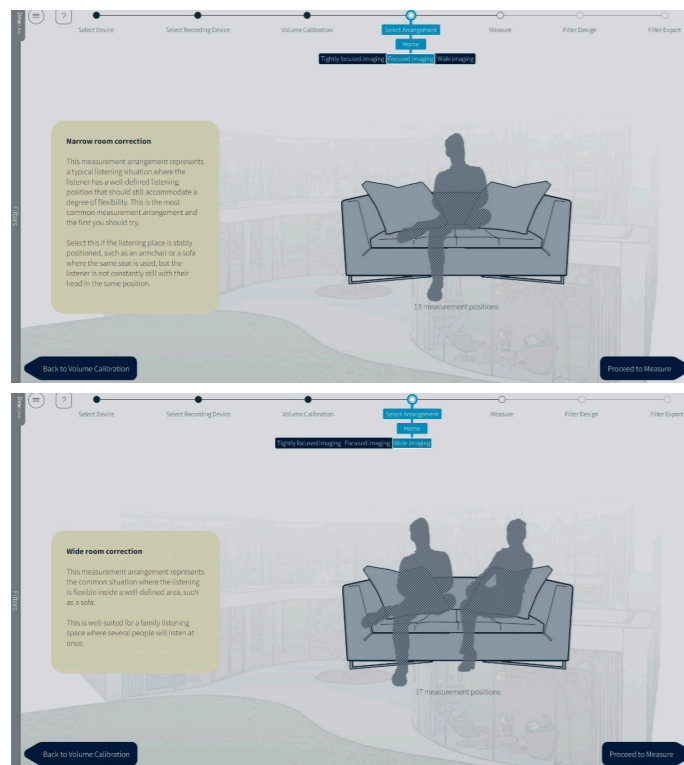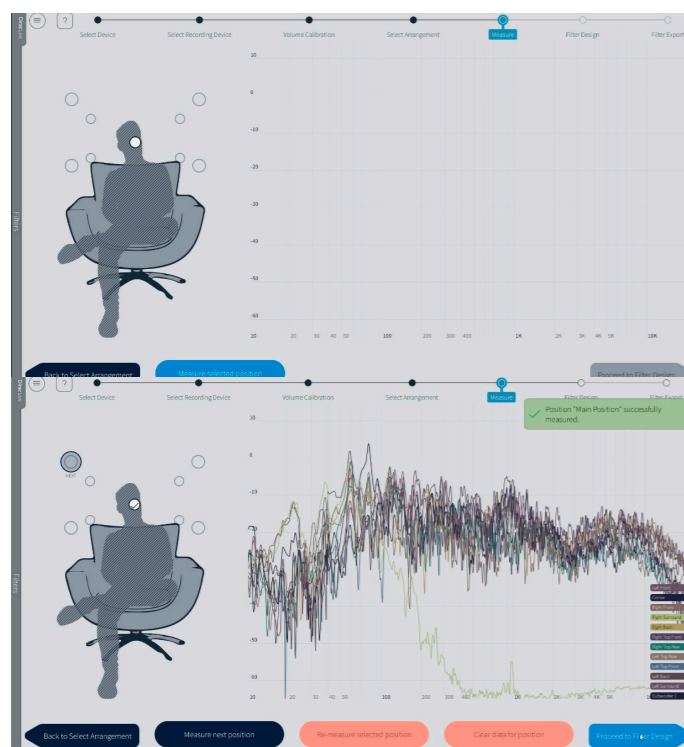
MEASUREMENTS

Larger listening areas require more measurements than smaller, focused listening areas. We will choose Focused Imaging as an example on this step, which will take 9 measurements from each speaker.

- 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.

To start the first recording pass, just click the "Measure selected position" button on the screen:

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 from the 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.

After all 9 mic positions have been measured, click the "Proceed to Filter Design" button to go to the next step.

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.

NOTE: *While it is expected the Dirac created filters will be sufficient the options below provide advanced target curve changes. It is suggested you have an understanding of the measurements and frequency response to make manual adjustments to the filters.*

Set target:
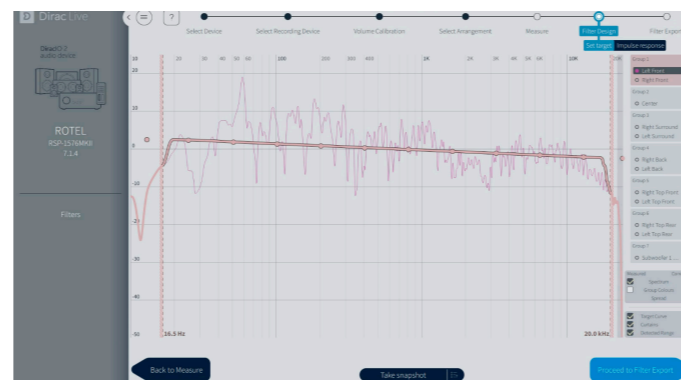
- Grouping: The initial grouping of channels is provided by your equipment and is typically based on similar speakers such as left/right, rear or satellites.
- Add/delete control points by right clicking on the curve
- Modify any target curve by dragging the control points
- Modify the frequency range 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).

NOTE: *Rotel products support different versions of Dirac with various range of frequencies available to adjust. Upgrade options may be available directly from Dirac at www.dirac.com.*

- 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 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.

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.

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.

Rotel products can save multiple Dirac Live filters. You can select a slot to export your filter below to load the optimization into the unit. Saving a new filter to a slot removes any previous filter settings saved in that slot.
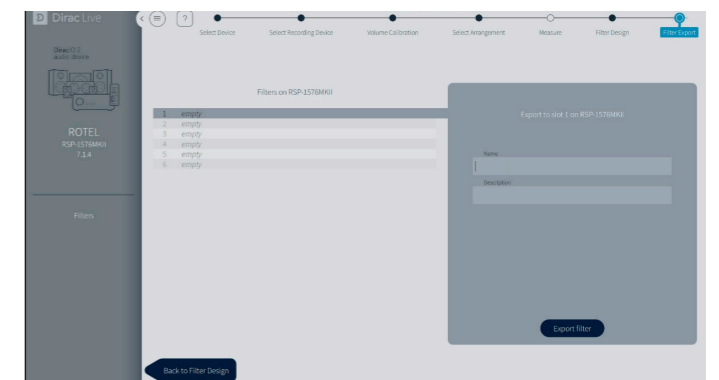
General

- You can save the project at any time by selecting "Save project" in the 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.

After calibration is complete and Saved to the Rotel product the selected filter can be enabled using the Input Setup menu. Any of the saved filters can be applied to the source inputs allowing custom filters for movies, dynamic or other listening modes.

NOTE: *When changing a filter or renaming a previously saved filter it is advised to confirm the active filter on the Rotel device from the Input Setup menu.*