

DENON[®]

Dirac Live Room Correction

Ensure that your AVR's firmware is up to date to access all functionality in this manual.



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Dirac Live

This unit supports Dirac Live®Room Correction.

You will need to purchase Dirac Live license in order to use Dirac Live Room Correction.

■ What is Dirac Live Room Correction?

Dirac Live is the leading digital room correction solution used in premium home theaters by applying state-of-the-art, patented algorithms that analyze and digitally reduce room impact and enhance speaker performance.

Dirac Live delivers a larger sweet spot, accurate staging, clarity, voice intelligibility, and a deeper, tighter bass not otherwise possible.

■ Unique features of Dirac Live

- Runs on your PC/Mac computer
- User customizable target curves
- Save 3 customizable filters for easy comparison



- Refer to the information below to learn more about Dirac Live.

1. Dirac Live instruction top page
<https://helpdesk.dirac.com/>
2. Dirac Live software download page
<https://www.dirac.com/live/downloads/>
3. FAQ
<https://helpdesk.dirac.com/>



Measuring with Dirac Live

Equipment required for Dirac Live Room Correction

■ Computer (Windows or Mac)

You will need to install Dirac Live software on your computer in order to measure with Dirac Live Room Correction.

Your computer must have an internet connection.

■ Microphone for measurements

A USB microphone (sold separately) is required in order to measure with Dirac Live Room Correction. If your microphone comes with a calibration file, make sure the calibration file is available.

Recommended microphone: mini DSP UMIK-1*

* Download the unique calibration file for your UMIK-1 from the miniDSP web site by entering its serial number. **Please select the “_90deg” file.**

Calibration file download

Serial number:

<https://www.minidsp.com/products/acoustic-measurement/umik-1>

NOTE

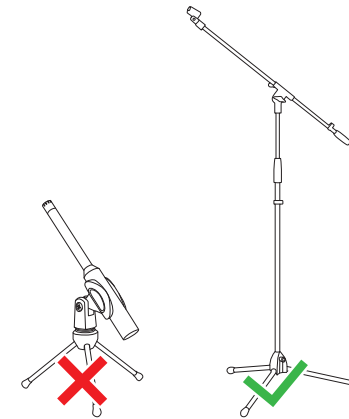
- The supplied Audyssey microphone is NOT compatible with Dirac Live.
- If you need a USB extension cable for the UMIK-1, please use an ACTIVE USB 2.0 or 3.0 cable.

Recommended USB Extension cable: Cable Creation Active USB Extension Cable 16.4 FT

<https://www.cablecreation.com/products/active-usb-extension-cable-16-4-ft>

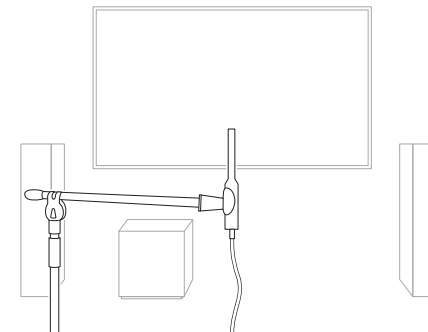
■ Microphone stand

- For best results do NOT use the miniature mic stand that comes with the UMIK.
- Use a standard boom mic stand (sold separately).
- Do not hold the microphone in your hand while taking measurements.



NOTE

- The microphone should be mounted on a stand facing the ceiling.



■ Dirac Live account, Dirac Live license and Dirac Live Software

If you are using Dirac Live Room Correction, you will need to create a Dirac Live account, purchase a Dirac Live license, activate your Dirac Live license and download Dirac Live software from following web page.

www.dirac.com/denon/



- You can create a Dirac Live account by selecting “Don’t have an account?” in the login screen of the Dirac Live web page.
- Make sure the Dirac Live software is updated to the latest version.
To check whether you are using the latest version, go to:
www.dirac.com/live/downloads/

To make sure your AV receiver is updated to the latest version, go to Setup Menu, select, General, Firmware and then Check for Update.



Configuring AVR settings

Before using Dirac Live software, follow the steps below to set up this unit.

1 Connect to a network.

Connect this unit and the computer where Dirac Live software is installed to the same network.

(Setting items: Setup Menu - Network - Connection)

2 Set the speaker preset (excluding the first time measurement is performed).

Select the speaker preset where you want to save the measurement results. If two speaker presets are already being used, the speaker preset you have selected will be overwritten with the measurement results.

When performing calibration with Dirac Live for the first time, saving to Speaker Preset 2 is performed automatically.

(Setting items: Setup Menu/Speakers/Manual Setup/Speaker Preset)

NOTE

- When performing calibration with Dirac Live for the first time, the Speaker Layout and Crossover values from Preset 1 are copied.
- When performing calibration with Dirac Live for the first time, overwriting is performed even when Preset 2 is in use.

3 Set the speaker layout.

Set the layout of the speakers you want to measure in Speaker Layout in the menu.

(Setting items: Setup Menu - Speakers - Manual Setup - Speaker Layout)

NOTE

- The optional Dirac Live room correction feature calculates the proper gain and delay time for each speaker, however it does not calculate the crossover points. Please adjust the crossover points for your speakers using the AVR's Setup Menu before performing Dirac Live calibration.
Setting Item : Setup Menu – Manual Setup – Crossovers
- The measurement cannot be conducted when headphones are connected. If headphones are connected, unplug them before performing the Dirac Live measurement.



Measuring with Dirac Live software

The Dirac Live software is used for the measurement. Follow the instructions in the Dirac Live software to take the measurements.

1 Start the Dirac Live software on your PC/Mac.

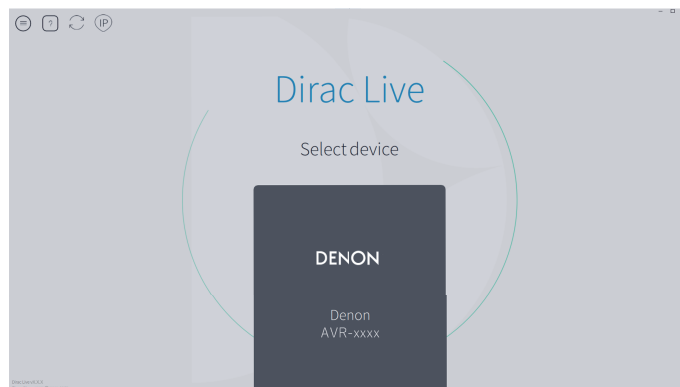
2 Log in to your Dirac Live account.





Enter the account details you created on the Dirac Live website.




3 Select the product you want to take measurements for.

The software detects products compatible with Dirac Live on the same network as the computer and displays them on the screen.



- If this unit cannot be found, click  (Rescan). Make sure your PC/Mac is on the same network as your AVR.
- Click the  (IP) button to detect this unit manually by entering the IP address.
- Click the  (Menu) button to display the menu. This allows you to select the language and save and import projects.
- Click the  (Help) button to view a help page for each screen.

■ If you have already taken measurements with Dirac Live

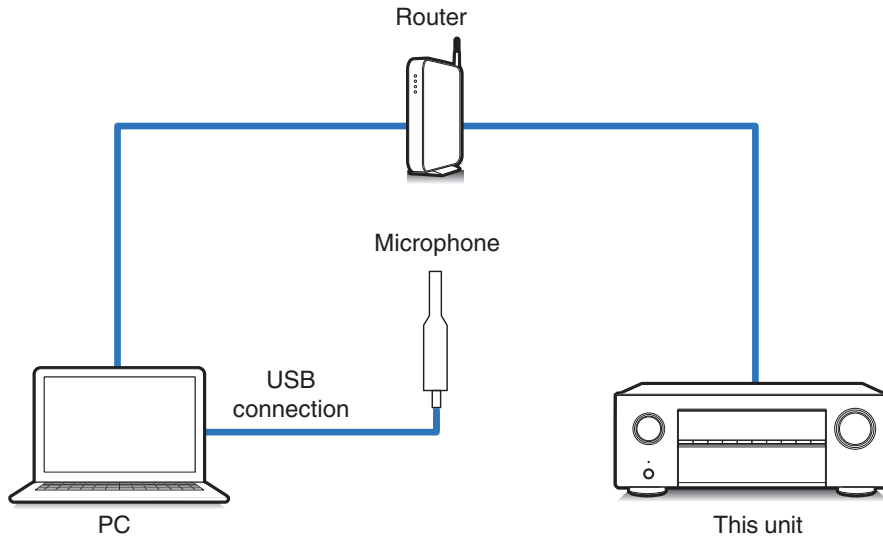
You can skip the measurement process by loading the project file you saved with your previous measurements after selecting this unit. “Creating a filter using an existing project file” ( p. 14.)



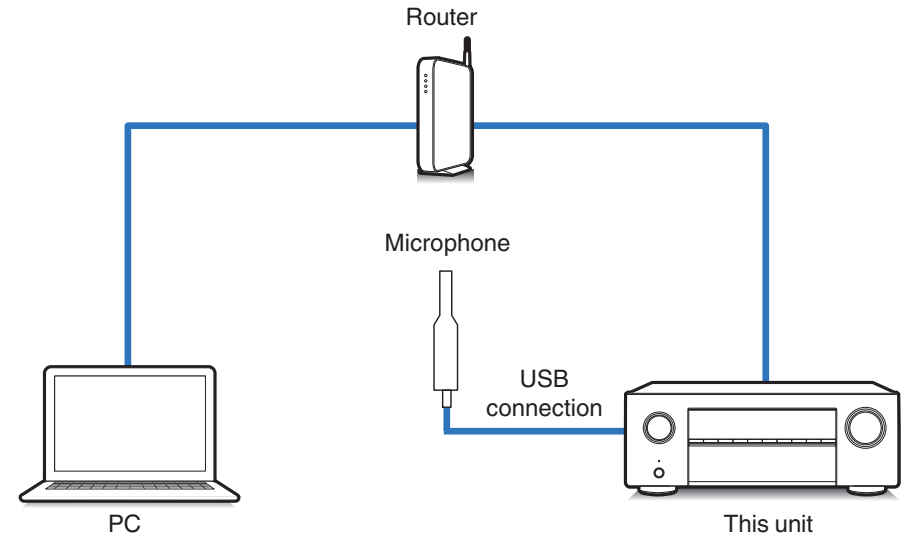
4 Connect the microphone that will be used for the measurements to a USB port on the computer or this unit.

The microphone is displayed in the Dirac Live software when it is connected.

■ If connecting the microphone to the computer



■ If connecting the microphone to this unit

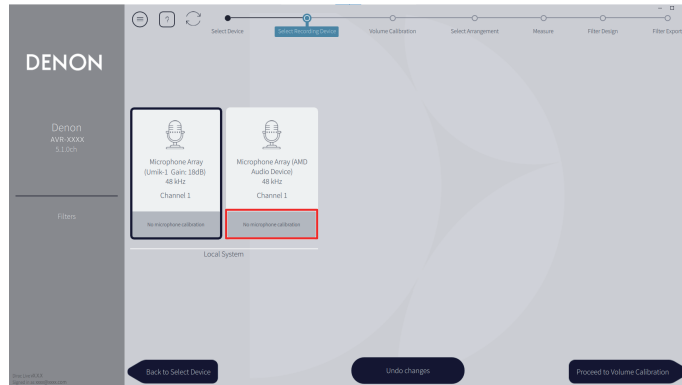


NOTE

- If your unit has two USB ports, connect the microphone to the USB port on the front panel.

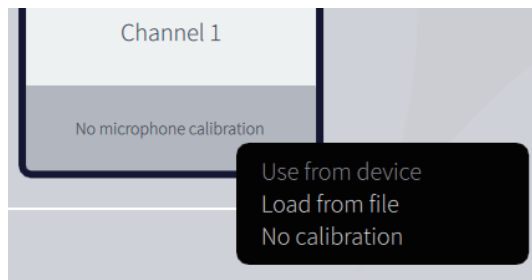


5 Select the microphone you will use for the measurements.



If the microphone you are using for the measurements comes with a calibration file, you will need to load the calibration file in the Dirac Live software too.

- Click “No microphone calibration” of the microphone (shown in red) to load the calibration file.



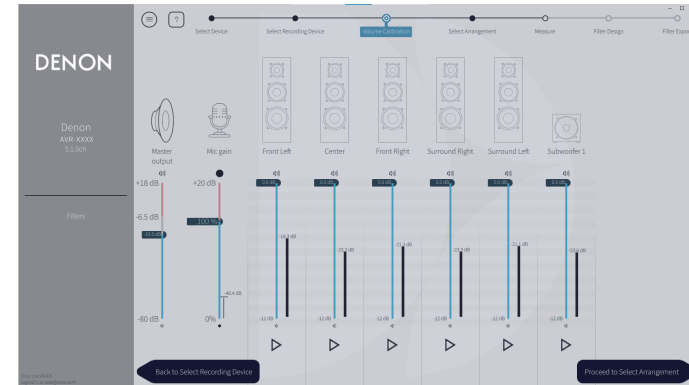
After selecting the microphone, click “Proceed to Volume Calibration”.

NOTE

- The internal microphone of the computer and other recording devices connected by USB are also displayed. Be sure to select the microphone you connected for these measurements.

6 Adjust the output level for the measurements and the input level for the microphone.

Adjust the output of all of the speakers that are connected to a suitable level so that proper measurements can be taken.



- ① Put the microphone you will use for the measurements on the microphone stand and place the stand at the main listening point.
Point the tip of the microphone toward the ceiling and adjust the height to match the height of the ears of a listener in a seated position.
- ② Set Mic gain to 100%.
- ③ Set Master output to around -55.0dB.
- ④ Select one speaker and press the ▷ button.
A test tone will be output from the speaker you selected and the audio that is detected will be displayed on a level bar.
- ⑤ Adjust the master output so that the audio that is detected is around -15.0dB to -30.0dB.
- ⑥ Play the test tone of the next speaker and check that the output displayed in the level bar is between -15.0dB and -30.0dB.
If it is outside this range, adjust the output level using the volume controls for each channel in the Dirac Live software.
- ⑦ Repeat step 6 for all of the speakers and adjust each speaker so that the output level is between around -15.0dB and -30.0dB. When you have finished adjusting the output levels, click “Proceed to Select Arrangement”.

NOTE

- The output displayed on the level bar is a guide only, and the level bar may not reach -30dB depending on your computer or environment. In this case, adjust all channels to approximately the same level.
Set the volume level a little higher than the level you would typically use.

**About the main listening position**

- The main listening position is the position where listeners would normally sit or where one would normally sit alone within the listening environment.
- To ensure that the measurement results are correct, put the microphone for measurement on a microphone stand.

7 Select a listening area

After selecting the listening area, click “Proceed to Measure”.

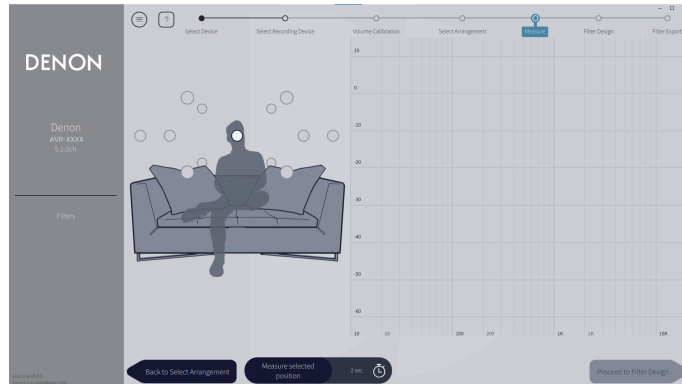
NOTE

- Use the “Wide Imaging” arrangement in Dirac Live if your room has more than one row of seating or is large enough for more than two people.



8 Take the measurements.

Take measurements in each position.



- ① Put the microphone you will use for measurement in the main listening position and point it straight upward.
- ② Select the circle in the center of the illustration on the screen.
- ③ Click “Measure Selected position”.
A test tone will be output from each speaker and the measurement will start.
- ④ When the measurement is finished, move the microphone to the next position.
- ⑤ Select the next position on the screen and take the measurement.
- ⑥ Repeat steps 4 and 5 to take measurements in all of the positions.
When you have finished taking the measurements, click “Proceed to Filter Design”.

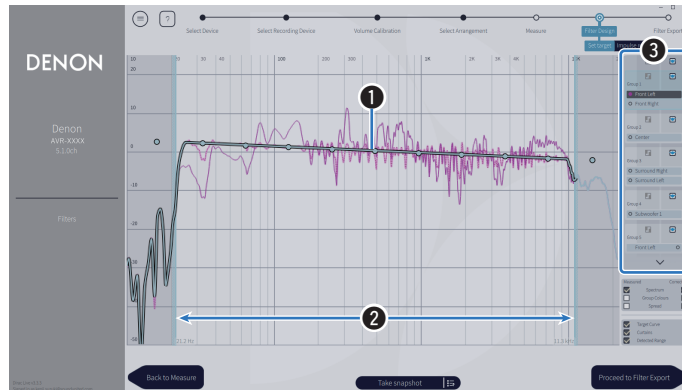
NOTE

- You can proceed to the next step (“Filter Design”) without taking measurements in every position. However, we recommend taking measurements in every position, because the more measurements that are taken, the more accurate the calibration is.
- Keep the room as quiet as possible during measurements. Other noise will interfere with measurements. Close the windows and turn off electrical products (radios, air conditioners, fluorescent lights, etc.) Noise from these products may affect measurements.
- Do not stand between the speakers and the microphone or place large items there while taking measurements.



9 Adjust the filters.

Adjust the filters of each channel.



1 Target curve

The target curve is the curve used to decide the frequency characteristics of the speakers after calibration by Dirac Live. You can adjust the target curve according to your preferences.

2 Curtains

Use the sliders on the screen to adjust the frequency range across which the filter will be applied.

3 Speaker selection

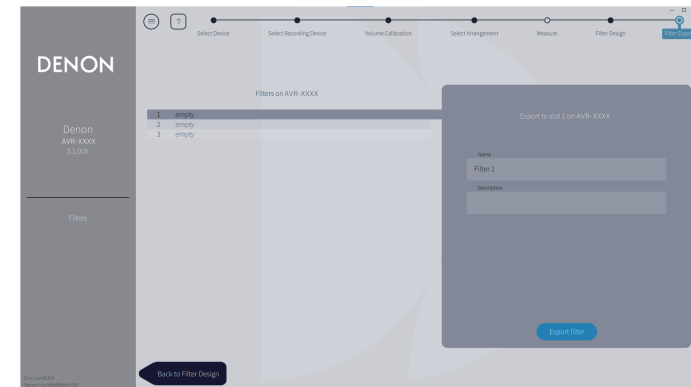
Select the speaker for which you want to edit the target curve. You can also group together specific speakers. The same target curve will be applied to all of the speakers in the group.

When you have finished adjusting the filters, click “Proceed to Filter Export”.

NOTE

- “Crossovers” are not calculated by the Dirac Live software when Dirac Live is set as the filter option. Set them manually on the unit if necessary.

10 Export a filter to this unit.



1 Select the slot of a filter you want to export.

2 Enter a name for the filter.

You can enter any name in Dirac Live software, but this unit has a character limit. We recommend entering a name that is 20 characters or less.

3 Click Export Filter.

The filter is exported to this unit. The Filter Design page is displayed automatically when the export is completed.

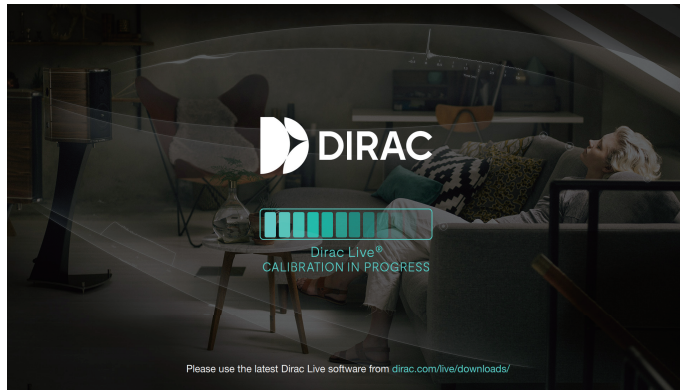


11 Create multiple filters.

Up to three filters can be created in Dirac Live according to the measurement data. After creating new filters in the Filter Design page, select the numbers of unused slots in the Filter Export screen and export the filters.

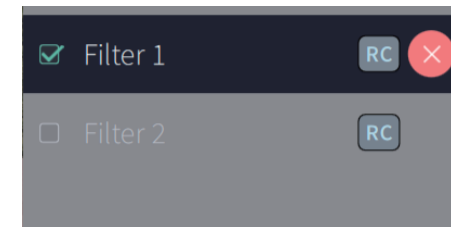


- The following screen appears in the display (GUI) of this unit while the unit is communicating with the Dirac Live software. This unit cannot be operated while this screen is displayed.
- If a network issue or other issue disrupts the process while this screen is displayed, press the BACK button on the remote control to return this unit to normal mode and start the Dirac Live software again.



NOTE

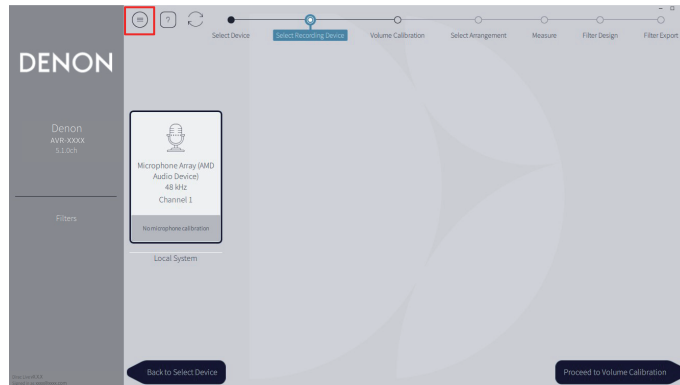
- You can save and import measurement projects at any time from the menu in the Dirac Live software. Saving a project file allows you to resume measurements if they are interrupted or export measurement results again if necessary.
- When importing a project file, set the speakers of this unit in the same layout as when the project file was saved.
- If you try to overwrite an exported filter with the same filter after editing it manually, there may be some cases in which the saved settings are not applied. In this case, select the filter you want to overwrite from "Filter" displayed in the lower left of the Dirac Live software screen. The filter can be deleted from this unit by clicking the X mark. Then export a new filter.




Creating a filter using an existing project file

If you have a project file with earlier measurement results, you can load this project file to adjust a filter without taking measurements.

1 Select the menu in the Dirac Live software.

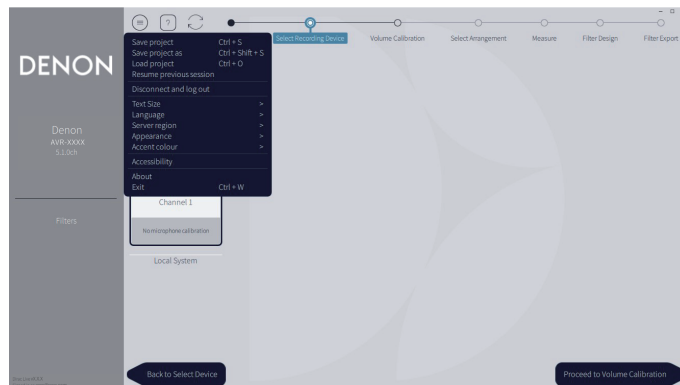


3 Adjust the filter

After the project is loaded, a screen to adjust the filter opens. Adjust the filter for each channel. “Adjust the filters” ( [p. 12](#))

2 Load the project file

Select Load Project in the menu and then select the project file you want to use. (The file must have the extension “.liveproject”.)



Setting up Dirac Live on this unit

Dirac Live

Filters exported from the Dirac Live software can be set by selecting Audio - Dirac Live in the Setup Menu.

These settings are enabled after the filter is sent to the unit from the Dirac Live software.

| | |
|-----------------|---|
| Slot 1*: | The Dirac Live filter that was exported to Slot 1 will be used. |
| Slot 2*: | The Dirac Live filter that was exported to Slot 2 will be used. |
| Slot 3*: | The Dirac Live filter that was exported to Slot 3 will be used. |
| Off: | Dirac Live filter will not be used. |

* Filter names created in Dirac Live Software will be displayed in the user interface.



- You can store a maximum of 3 filters when using Dirac Live Software.
- Only the slot to which the filter was exported can be selected.
- In addition to acoustic filters that correct frequency and time responses, Dirac Live also stores the output level and distance of each speaker for each filter.
- The Dirac Live filter settings are stored for each input source.
- When the sound mode is “Direct”, “Pure Direct”, “DTS Virtual:X” or sound modes that have “+Virtual:X” in the sound mode name, only Distances and Levels will be applied. The acoustic filter will not be applied.
- Dirac Live is automatically turned off when headphones are used.
- Graphic EQ cannot be set when Dirac Live is being used.
- You can also set filters in Option Menu - Dirac Live.

1. Press OPTION.

An option menu screen is displayed.

- When the input source is “HEOS Music”, an option menu for online music is displayed. Select “AVR Options...”, then press ENTER.

2. Use cursor Up/Down to select “Dirac Live”, then press ENTER.

The “Dirac Live” screen is displayed.

3. Use cursor Left/Right to select your favorite filter.

NOTE

- Dirac Live setting data will be deleted when the speaker configuration is changed in “Speaker Layout” in the menu after performing Dirac Live Room Calibration. The measurement must be performed again if the speaker configuration has changed. It does not need to be performed again even when the settings of “Distances”, “Levels” and “Crossovers” in the menu are changed after the Dirac Live measurement.



Troubleshooting

Frequently asked questions

Where can I purchase a Dirac Live license?

- You can purchase a Dirac Live license on the Dirac website (www.dirac.com/denon).

Can I apply Dirac Live to multiple AVRs with one Dirac Live license?

- No. Dirac Live licenses are registered to the AVR itself. To apply Dirac Live to multiple AVRs, you will need to purchase a license for each AVR.

My AVR is not detected by the Dirac Live software.

- Make sure your AVR and your computer are connected to the same network and that both can connect to the internet. “Connect to a network.” (🔗 p. 6)
- Restart the Dirac Live software.
- Restarting the device may improve the problem.
Continue pressing the ⏻ button on the unit until “Restart” appears in the display, or remove and re-insert the power cord of the unit.
- Your router or its settings may be incompatible with the Dirac Live software or your AVR. Use a different router or check the settings of your router.

Can Dirac Live measure crossover frequencies?

- Dirac Live Room Correction does not support automatic measurement of crossover frequencies. You will need to manually configure the settings in the AVR setup menu before or after measuring.

Can target curves be edited offline?

- No. Your AVR needs to be connected to your computer to edit target curves.

An error message is displayed in the Dirac Live software.

- Make sure the Dirac Live software is updated to the latest version.
To check whether you are using the latest version, go to:
www.dirac.com/live/downloads/

I can't use Dirac Live filters.

- Dirac Live filters can be set in “Setup Menu” - “Audio” - “Dirac Live” or “Option Menu” - “Dirac Live”. “Setting up Dirac Live on this unit” (🔗 p. 15)



Does this unit support Dirac Live Bass Control or Dirac Live Active Room Treatment?

- No, it doesn't support Dirac Live Bass Control and Dirac Live Active Room Treatment.

I can't find the Dirac Live filter(s) stored on my AVR anymore.

- Your Dirac Live filter(s) are automatically deleted on your AVR if you change your AVR's speaker configuration. For example, if you modify the Speaker Layout settings on your AVR, your filter(s) will be deleted.

To recover your filter(s):

Dirac Live filters do not work if the speaker configuration has been changed. You can either create new Dirac Live filter by performing a new Dirac Live calibration, or you can change your AVR's speaker configuration back to the initial Dirac Live calibration that the filter(s) were built for. If you go back to your previous Dirac Live calibration, you can access your original Dirac Live filter(s) stored on your PC and export again to your AVR.

What does the “Device data inconsistent or unsupported” error message on Dirac Live software mean?

- You will see this error message when the speaker configuration on your AVR has been changed. The Dirac Live software sees that the speaker configuration on your AVR doesn't match its stored configuration.

To troubleshoot this error, do one of the following:

- Set the speaker configuration back to the original.
- If you want to keep the new speaker configuration, you must reinitiate the Dirac Live calibration process to create new filters.

If you're sure that the speaker configuration has not been changed, but you're still getting the error message, try power cycling your AVR to see if the error message disappears. To power cycle, press and hold the AVR's power button for more than 5 seconds or unplug and plug back in the AVR.

Msg 180, error code 200004

Device data inconsistent or unsupported

The connection was refused due to the device reporting data that is either inconsistent or insufficient for use with Live.

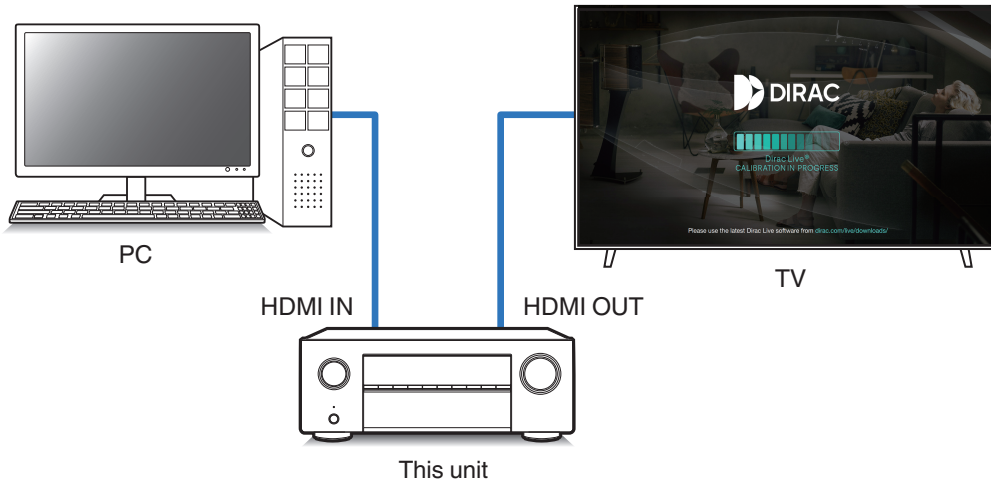
If you are an end user, contact the manufacturer of your device. If you are the manufacturer, check the log for details.

Dismiss



Can I connect my PC to my AVR and perform Dirac Live calibration on my TV?

- You can connect your PC to your AVR via HDMI. However, once Dirac Live calibration starts, the AVR outputs the Dirac status screen (the image shown below) on your TV until the calibration finishes. You cannot continue to see your PC screen on your TV. You must use a separate PC monitor or a laptop for the calibration.



Can I use Dirac Live when my AVR is using pre-outs?

- Yes.

Can I use the Dirac Live iOS or Android app instead of the Dirac Live software for PC or Mac?

- Yes. However, during calibration, the app will not accept the built-in microphone on your iOS or Android device. Please have your choice of USB microphones, such as Mini DSP's UMIK-1, ready and connected to the AVR's front panel USB input to perform calibration.

! Invalid recording device.
AVR was selected to record measurements but has no recording capabilities.
Dirac Live requires a microphone connected to the audio device.

Dismiss



Inquiries

Click the following link for more detailed information on Dirac Live.

www.dirac.com

If you experience trouble with anything not mentioned in this guide, please feel free to contact support team at

<https://www.dirac.com/contact/>

Trademark information



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