



## Getting Started with the Dirac Series audio processors

The *Dirac Series* of high-resolution audio processors from miniDSP incorporating [Dirac Live®](#) are an advanced hardware/software solution for digital room correction (DRC). In this application note, we'll give a quick run-down on how to use one. We'll assume that you've already obtained your Dirac Live software license and installed the **Dirac Live Calibration tool for miniDSP** software.

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## 1. Get your calibration file

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Go to the [UMIK-1 page](#) and enter your microphone's serial number. It is in the form xxx-yyy and labeled on the microphone. Use "Save As" in your browser to save the numbers as a text file e.g. UMIK-7001870.txt.

The calibration file ensures that your microphone is as accurate as possible. Each microphone has a unique calibration file, which is why the serial number must be entered.

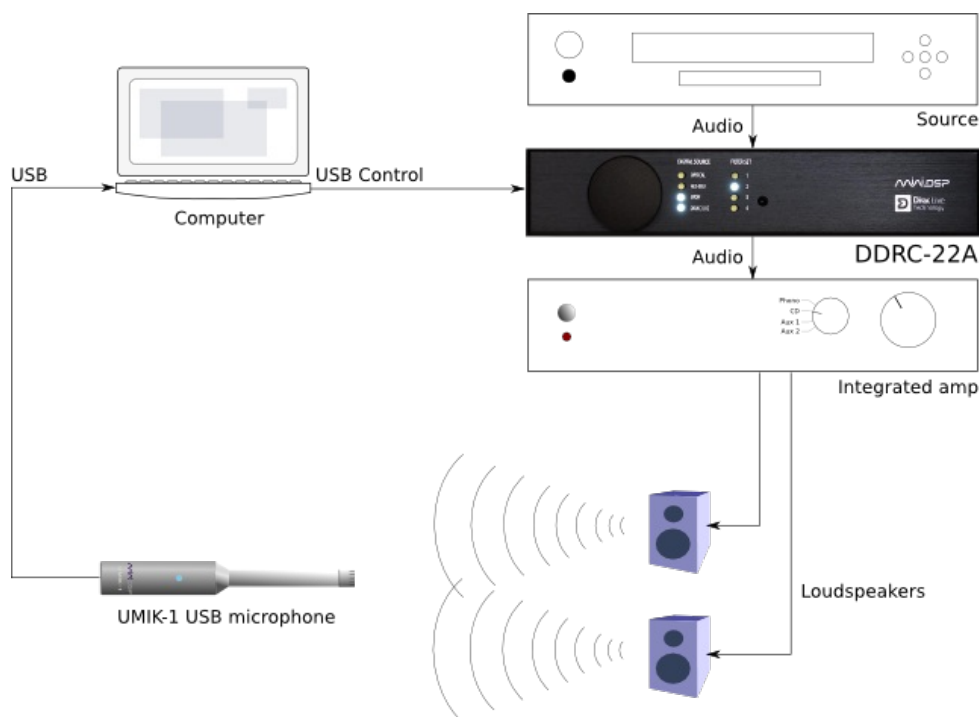
## 2. Get connected

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Connections to a *Dirac Series* audio processor are straightforward:

- Audio input using either digital or analog connections (depending on the model)
- Audio output using either digital or analog connections (depending on the model)
- USB from your computer to the processor
- USB from the UMIK-1 to the computer

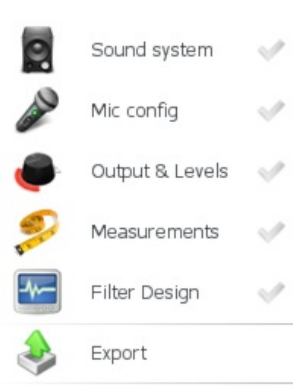
The following diagram illustrates a typical setup, in this case for the DDRC-22A. (Refer to the User Manual if you require more information on these connections.)



## 3. Configure

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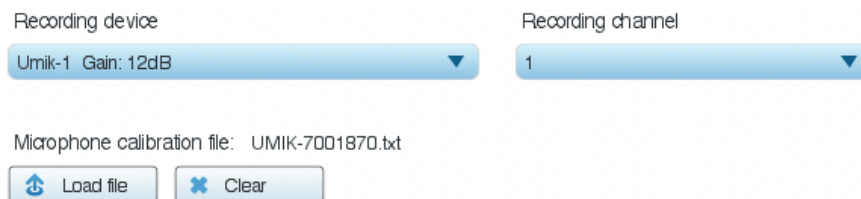
Install the downloaded software and verify your license. Upon running it, you will see six clickable icons that select different tabs for configuring, measurement, and filter generation:



Typically, these are worked through in order from top to bottom. On the **Sound system** tab, verify that **DDRC-22 (miniDSP Ltd)** is selected:

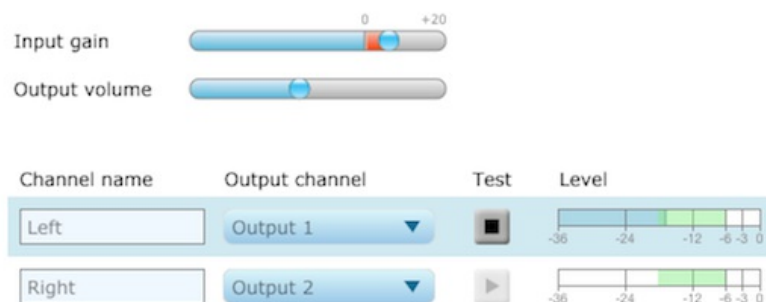


On the **Mic config** tab, select the UMIK-1 as the recording device. Click on the **Load file** button and locate the unique microphone calibration file that you downloaded from the UMIK-1 webpage in Step 1.



On the **Output & levels** tab, set the output volume to low. Click on the **Test** button for the left channel and gradually increase the output volume until it is at a moderate level, such that your voice would have to be raised to converse with someone sitting next to you.

Now increase the input gain so that the blue level bar reaches into the green section of the level meter for the left channel. With the UMIK-1, you may need to put the slider all the way up - this is normal. If there is insufficient input level, increase the output volume. (You can also check the microphone gain in the Windows Control Panel.)



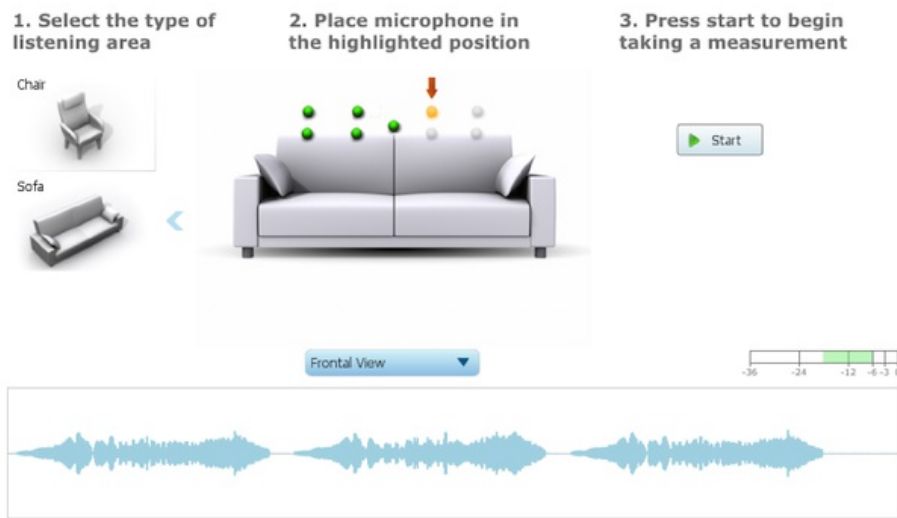
Repeat the test signal for the right channel. The level should be correct without any further adjustment needed.

## 4. Run the measurements

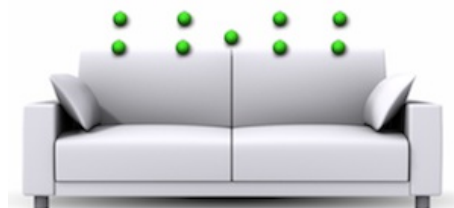
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You are now ready to run the acoustic measurements! You will need to take nine sets of measurements spread around the listening position. On the **Measurements** tab, select the most appropriate listening area (chair or sofa). Position the microphone at the location indicated by the arrow. For detailed advice and instructions on performing measurements, please read the **User Manual**.

Then click on the **Start** button. The program will run three measurement sweeps, through the left speaker, then right, then left again, and display the measurement result as a plot.



The arrow indicating the microphone position will then move to the next location. You can then press **Start** again to run another measurement. Proceed methodically through all nine measurements:



**Note:** It is important that the measurement locations be well spread out. Even for the Chair listening setup, spread measurement locations across a circle of *at least* a meter (three feet) across and up and down by +/- 30 cm (+/- one foot).

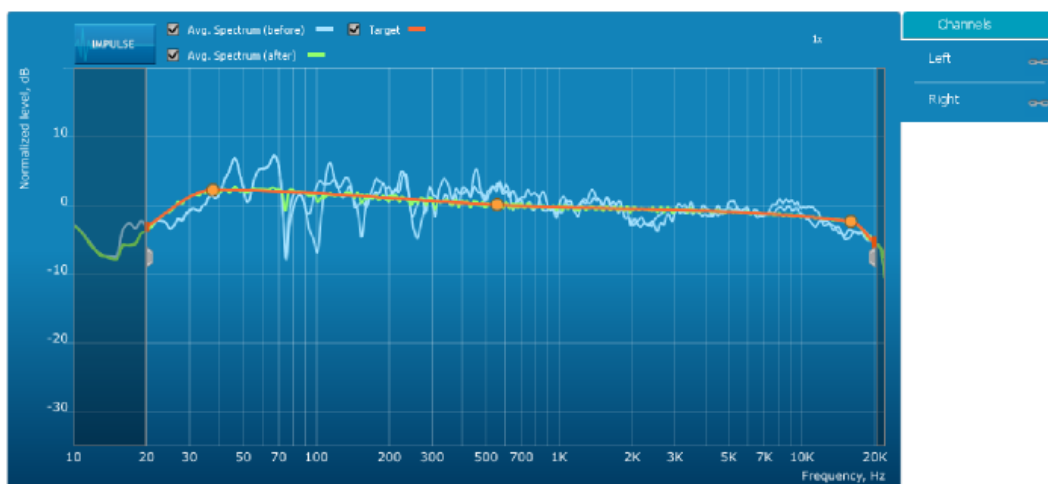
At this point, you should save your project by clicking on the **Save...** button.

## 5. Generate correction filters

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On the **Filter Design** tab, you will initially see the average of the measurements for the left and right channels in light blue.

Also displayed is a *target curve* in red. This is the desired *in-room* frequency response after correction. Typically, target curves have a small boost in the bass region, and a gentle fall to the extreme treble. You can adjust the target curve by clicking and dragging on the orange anchor points. Double-clicking on the curve will create another anchor point. Drag-selecting a region will zoom in on that region of the graph, and double-clicking will zoom back out again.



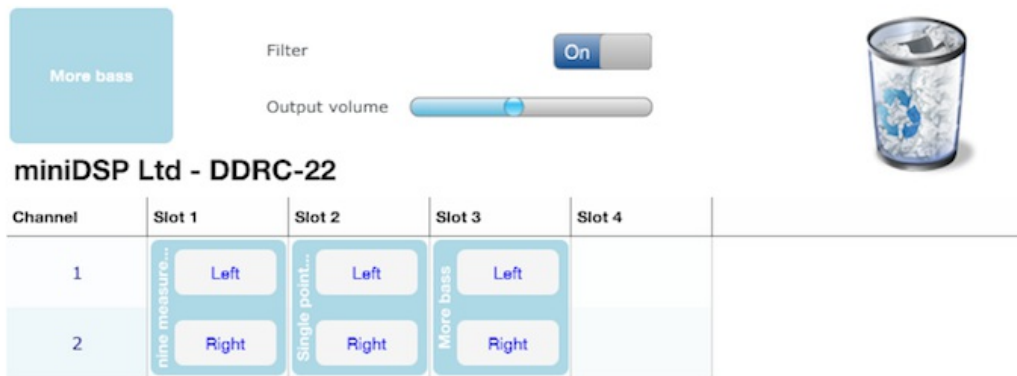
For detailed advice and instructions on setting a target curve, please read the **User Manual**. Once you have the target curve set, click on the **Optimize** button. This will generate the correction filters and display the predicted response as the green curve.

You will need to experiment with different target curves to determine what works best for *your system* in *your room*, as there is no universally "correct" in-room response.

## 6. Load and listen!

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On the **Export** tab, you can load up to four different sets of correction filters into the DDRC. Simply drag the box at the top left into an empty slot - this will automatically download the filters to the DDRC hardware unit. To delete a filter, drag it from the slot onto the trash can icon at the top right.



Be sure to set the **Filter** button to **On**. Start playing some audio, sit back, and listen! You can now go back to the **Filter Design** screen, modify your target curve, and download a new set of filters to the DDRC. You will want to experiment with different target curves to determine what works best with your system and room. You can use a remote control to select between different correction filters to easily audition the differences.

Note that if you move your speakers or make other changes to your listening room, you may well want to redo your measurements in a new project. So keep that UMIK-1 handy!

## Related Products - Dirac series



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