



Setup of a 2D – FOA system with three cardioid small diaphragm condenser microphones

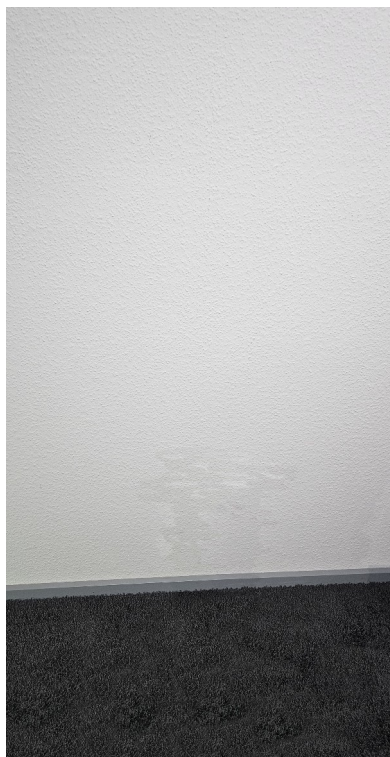
When you are new to ambisonic, then this might be a little bit special, but you can still use it and enter a new world of ambiance and sound.

A little remark about the shown gear: This is our own gear and we bought it with our own money. If you like the gear and want to buy it, we provide a “shopping list” on our website. You may buy this gear, but any other gear is fine as well.





Okay! Let's start.



First we need a regular microphone stand and adjust it to a comfortable height.



Okay. Now we need to build a tri-star and as a base we use the red ball from the Manfrotto Kit.



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When you look a little bit closer, you will see, that all threats are either at an angle of 45° or 90° . To have three pipes for three microphones, this is not too obvious to solve. But bear with us for some minutes.

Now we screw in the first pipes.



Alright, now we have three pipes in place and now we are going to fix the rapid adapters onto it.



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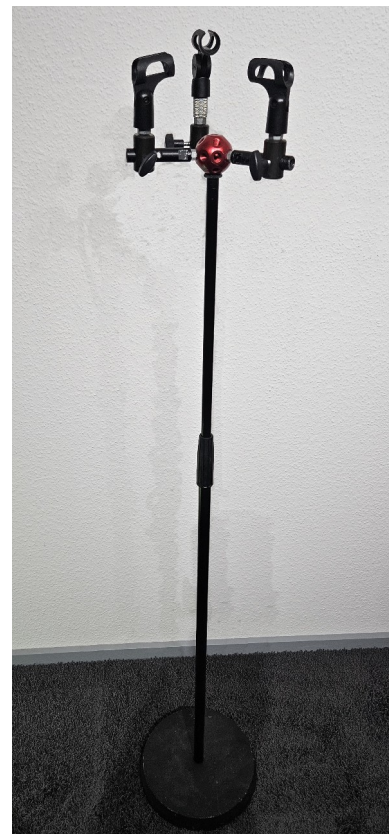


In this picture we show you the three rapid adapters and how to provide the different heights for the three microphones. The one on the left, has a little silver extension, which could be something else. For information what parts we use, please refer to our “shopping lists”.

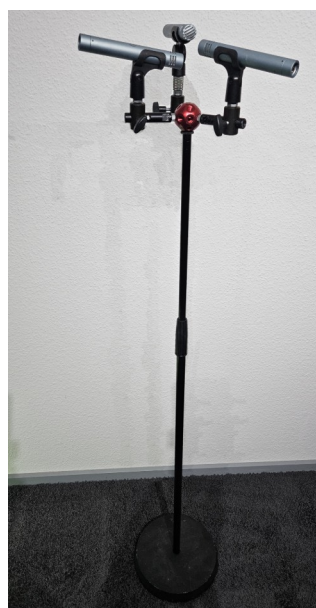
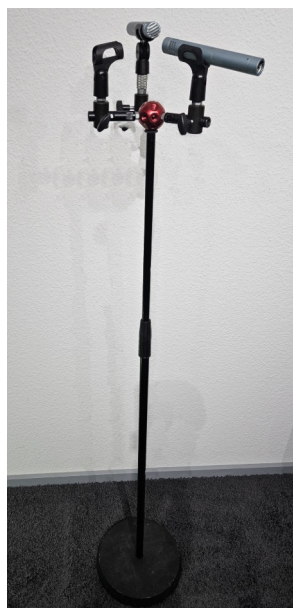
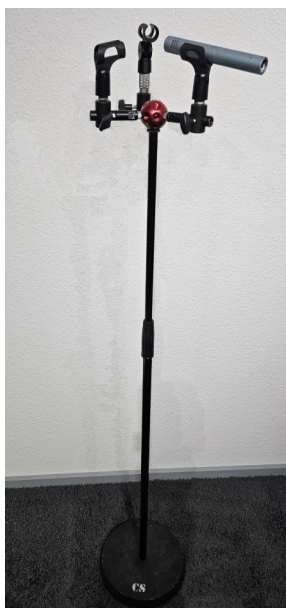
The one in the middle is turned a little more down than the others, so it is not only less high, but provide also an other angle.

Now we put all three rapid adapters with the microphone clamps in the right places.

With this we finished the hardware part of the setup of this 2D-FOA system.



Now let's add the microphones.



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Now we need to bring them into the desired position.



All microphones are in a different level, but the diaphragms are aligned to the Y-axes, just imagine the microphone stand is sending out a laser beam to the ceiling and you have to align all diaphragms to it.

With this, all signals hit the diaphragms at the very same time. This provides a so-called “coherent” sound image. This is important for further processing.

We setup everything up and now we are connecting the microphone-cables.

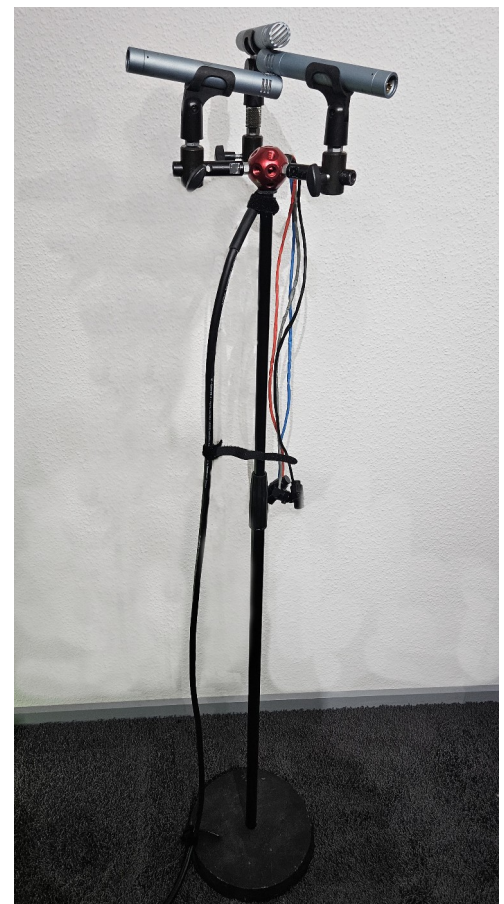
We use a 4-channel multicore. This is a thicker cable, containing four microphone cables in one. This is handy and convenient, but NOT necessary.

You may, of course, use regular microphone cables. This doesn't make any difference in sound, just the handling is not as convenient as it is with a multicore.

The different channels have different colors for easier differentiation. This is simply our choice; you can also use other colors or just one color.

If you look closely, you will see a cable tie directly below the red ball. This is used to fix the cable in the correct position and to provide strain relief. For safety reasons, we have attached a second cable tie, but it is difficult to see behind the red ball. It is wrapped around the rear pipe to hold it securely in place.

Now the cables can be attached elastically.





Here, the microphones are already wired up and the multicore is also secured to the microphone stand with additional cable ties.

If the cables hang in a loose arc, any vibrations from the floor will not be transmitted to the microphone as strongly.

In strong winds, however, you should make sure that they cannot hit the stand anywhere.

If the wind is so strong that this cannot be avoided, wrap the cables around the pipes and clamps so that they are tight but not too tight.

Now connect the microphones to the handheld recorder, quickly adjust the levels, and you're ready to record great atmospheric sounds.

Post-processing is a bit more complex, and since this is rarely done at the same time, we've created a separate tutorial for it.

Now make sure your batteries are charged, check if there is an empty sd-card in your recorder and it has been formatted already.

You should have a suitable wind-protection with you and ... then good luck!

May your recordings be greater than you every expect it to be.



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