Setup of a 2D – FOA system with two figure of eight and an omni microphone

This 2D First Order Ambisonic microphone system is pretty straight forward and easy to handle.

I provides an ambisonic surround ambience in B-format, so no conversion is necessary.

This setup is great for an accappella group, a band with accoustic instruments or for recording just an ambience, where there is no need for height information.

We recommend, that you do some test recordings upfront to gain some experience.

We know, that small diaphragm condensor microphones with the charateristic of “figure of eight” are hard to get, especially if you are on a tight budget; if you can get them at all.

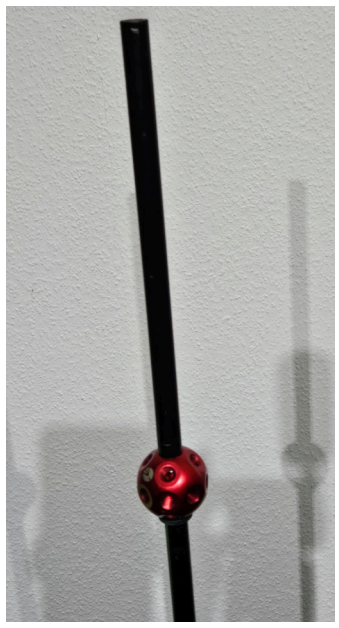
But if you have some at hand … here is a short tutorial.

This is where it all starts. A regular, upright microphone stand, or what ever is on hand.

The red ball has been already mounted.

If you just have the Manfrotto kit (as described in the shopping list), you need three of the pipes.

If you have the alternative a K&M 20002, you may use this as well. Also the extension of a telescope of a microphone stand may serve you well here, too.



Now we mount the first microphone clamp and let it point upwards.

We also attached the 4-channel multicore, as this is our most favorite way to work. You may use regular microphone cables as well, it doesn’t matter.

The additional microphone clamps with their pipe-to-microphone clamp adapters have been mounted.

As a rule of thumb, you may keep the distances equal between the adapters .

The clamp in the middle has been turned by 90° in relation to the other adapters and the clamp has an angle of about 45° as shown here.

Here we see the omni microphone already mounted.

The diaphragm should be in the vertical axis between the other clamps (rule of thumb)

The two figure of eight microphones have been mounted and aligned.

For best results, make sure the microphones are as close together as possible, B U T they won't touch each other.

This is VERY important, so we took a close up.

The figure-of-eight microphones must be twisted by 90°, as the x-axis is twisted by 90° to the y-axis.

The omni is in the middle.
You may put it aside and bring the two figure-of-eight microphones even closer together.

This is the final setup.

The great thing about it, is it so fast to setup. With some training you can make it within a minute, if everything is on hand.

You can also prepare it at home, mount the microphones and cables on the set and you are ready to go.

Some remarks:

Due to their technical specifications, most of the figure-of-eight microphones have a limited frequency range, which usually rolls off at ~ 15 kHz. If you need the details in the high frequencies you should consinder Sennheisers MKH 8030s or you use the setup with four cardioids and an omni as described in an other tutorial.

If you want to render 5.1 surround ambiences, you may use the omni as the LFE channel, if needed.

It's not decorrelated which makes it a little bit uneasy to handle.

If you DO need an LFE, we recommend a separte omni in 2-3 m distance, so the decorrelation is good enough. This could be accomplished with any 4 channel hand held recorder.

This setup needs just three channels, which leaves one channel for some extra recordings. We use this setup especially when we need some low-frequencies to be recorded with a „geo-fone". For example the pounding of the hooves of a herd of horses.

Have fund and enjoy!