

ORTF-3D

8ch ambience recording setup for 3D-Audio



*Windshield WSC ORTF-3D
(picture without black fabric and fur)*

Excellent spatial sound, compact size

- „Plug and Play“ solution for 3D-Audio
- Wind and weatherproof with internal heating
- 8 discrete recording channels for L, R, Ls, Rs and Lh, Rh, LSh, RSh. If a Center channel is needed, add the downmix L+R at a low level.
- Optimal imaging characteristics, similar to those of the “ORTF Stereo” and „ORTF Surround” setups: very good 360° imaging with a pleasant, natural-sounding spatial impression, large listening area.
- Uses 8 SCHOEPS CCM 41(V) supercardioid studio quality microphones.
- **“ORTF-3D Outdoor Set”**
Complete set includes windshield with suspension and fur, 8 microphones, two multicore cables, two breakout cables; additional rain protection available as an option.
- Applications: Ambience for sports events, film sound, etc.
- Demo recordings are available on our website www.schoeps.de/orft3d



ORTF-3D windshield with fur

Specs: (Windshield with fur)

- weight ca. 1000 g
- size (mm): 440 × 360 × 210

ORTF-3D

Using ORTF-3D for VR and 360° videos

In a virtual reality („VR“) environment, 3D video and binaural sound are reproduced via VR glasses with headphones. Head position and rotation are processed in real time. Also 360° videos can come with binaural sound.



VR glasses (Samsung)

If binaural sound is to respond to head tracking, a dummy head cannot be used as the recording method since it allows only for one head angle. Instead, the following sound components are gathered separately and assembled:

- “Audio object” with dry sound
- Binaural filters: “HRTF” (with room: “BRIR”)

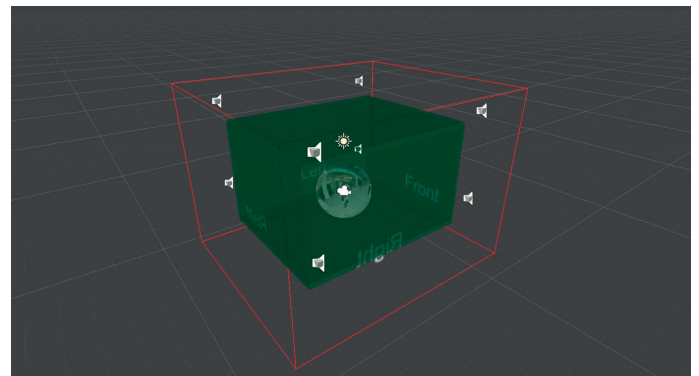
Usually the audio object e.g. a character in a VR video game, is a single source with a certain distance and 3D direction. It consists of dry sound, which is then processed via binaural and room filters (=“binauralized”) depending on its 3D direction. This direction is determined by the position of the audio object and the position and head rotation of the listener within the VR scene.

The acoustical background signal of a scene, or “ambience”, is a very special kind of audio source. It cannot be recorded dry, nor can it be mapped to a single point source. In principle it could be produced by the superposition of numerous audio sources in space, but this might be either inefficient (e.g. trees in a forest) or impossible (live ambience from a venue).

Instead, a group of several audio objects forming an array of virtual loudspeakers is used to reproduce a stereophonic recording of the “ambience”. These group of loudspeakers can be chosen from a 3D preset, for example the Dolby setup 5.1.4, or the Auro3D setup 9.1, in each case without a center loudspeaker. If no preset is available, one can define an equal-sided cube around the listener.

These “ambience” audio objects are „diegetic“ like their visual counterparts, i.e. relative to the scene as a whole, they don’t move in response to head rotation. But their angle of incidence relative to the listener’s head does change—thus the HRTFs must change as well. The eight signals of the ORTF-3D microphone are utilized in this way to build up an optimal 3D live “ambience” in the VR environment.

The use of a first-order Ambisonic microphone for this purpose cannot be recommended. Being a small, coincident setup, its output lacks sufficient separation among channels, thus reducing the quality of its spatiality and 3D stereophonic imaging.



Virtual 8.0 loudspeaker setup to reproduce live recorded “atmo” within a binaural environment

For more information:
www.hauptmikrofon.de/stereo-3d/3d-audio/ortf-3d