



[Press Release]

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NHK develops 3D sound 22.2 multichannel one-point microphone

- For an efficient Super Hi-Vision relay production -

NHK has been conducting research and development for a 22.2 multichannel sound system* as the audio system for Super Hi-Vision (SHV)—the next-generation television system. This research has led to the development of a small-sized one-point microphone into which many microphones integrated to pick up 22.2 multichannel sounds. This new microphone enables highly mobile sound recording and relaying, which contributes to an increase in the variety of SHV content production.

With 3D sound systems—including this 22.2 multichannel sound system—it is necessary to capture different sounds coming from many directions: front and back, right and left, above and below. Thus, many microphones had to be located to capture those sounds, necessitating large-scale telecast equipment. In order to overcome this difficulty, NHK has been engaged in the development of a microphone array system featuring several microphones arranged in a radial pattern (see Fig 2 on the next page).

However, some relay broadcasting sites have only limited space, which makes the use of large-size microphone arrays difficult. In addition, more compact equipment is needed in order to achieve more mobile TV relay production.

Under these circumstances, NHK has developed a new one-point microphone. This microphone features sound-insulating plates that divide a single area into several spaces, each containing a small-sized microphone. Despite its compact size, this device prevents interference between adjacent microphones and enables us to capture 3D sound.

The new microphone is being displayed at the NAB (National Association of Broadcasters) show in Las Vegas, April 20 - 23. The newly devised prototype is planned to be placed at an outdoor relay point near the venue of the trade show and transmit the captured sound along the video image from an SHV camera live to an SHV theater within the venue.

Further research and development of SHV will be carried out by repeating field tests to identify the device's sound characteristics and study its operability.

* 22.2 multichannel sound

The 3D sound system being developed as the sound system of the Super Hi-Vision. It achieves 3D sound by using three layers of speakers, with nine channels in the upper layer, ten in the middle layer, three in the lower layer, plus two-channel Low Frequency Effects

(LFE) loud speakers. This system reproduces sounds beautifully with high fidelity not only from the front and back, and right and left, but also from above and below. The system is standardized as the SMPTE2036-2-2008.

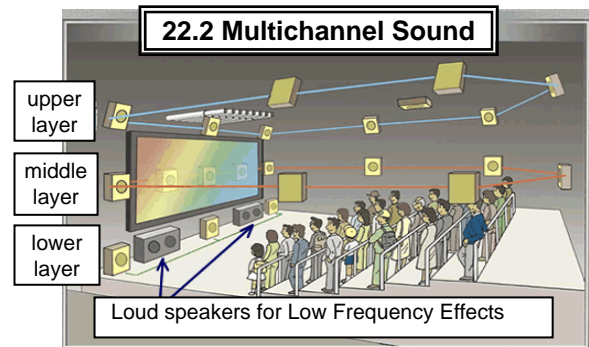


Fig. 1) Our newly developed one-point microphone

Sound-insulating plates divide the area into small spaces with a small-sized microphone placed in each. The diameter of the microphone array is 60 cm.



Fig. 2) A conventional microphone array with many microphones

The microphones are far enough apart to prevent interference. The diameter of the microphone array is approximately two meters.

