Alan Pierce
pierceaj@techtoday.us; on Twitter @ TechToday_US

Samsung's S-Ray Demonstrated at CES 2018

The Consumer Electronics Show (CES) is held in January in Las Vegas. When it comes to consumer electronics, CES is the place to go to see evolutionary, revolutionary, and/or incremental technology advances.

In the 1965-1970 TV series *Get Smart*, the "cone of silence" was a fictional device that was supposed to keep a conversation completely secret by preventing anyone outside of the cone from hearing what was said inside the cone. Like most of the tools that the bumbling secret agents of the show used, the cone of silence didn't work. You can find an episode that includes Agent 99 and the Chief using the cone of silence online at https://www.youtube.com/watch?v=HWtPPWi6OMQ .

The concept behind this prop, designed to make the audience laugh when they watched the show, was actually unveiled by Samsung at this year's CES. Samsung's S-Wave focuses sound waves into a directional wave that can be projected as if the sound was a focused narrow beam of light. The light beam is a tool to help you understand how the sound is focused into a directional beam. Their directional sound beam, which is totally invisible, can only be heard if you are located in a physical sweet spot aligned with the beam of sound.

At the Samsung Creative Lab booth I had the opportunity to discuss S-Wave with the project team that developed the S-Ray. I also tried out the prototype units they brought with them to demonstrate their technology. The black neck band I am wearing in Photo 1 focuses the sound so it reaches only my ears. A person standing next to me wouldn't be able to hear the audio coming from the head band.

To show just how small the sweet spot for sound can be, Dr. Tae-Young Kim, the project leader, used a Mini S-Ray sound speaker that was designed to have an extremely narrow beam. He moved the sound speaker as if he was shining the sound wave beam toward my ear. When he moved the sound speaker, which was about 2' from my ear, so it was no longer aimed at my ear, the sound disappeared. A small movement in either direction from the sweet spot eliminated my ability to hear the music. Photo 2 shows the different size units that the Creative Lab team brought to CES to demonstrate their technology.

Photo 1—The black band around the author's neck projects the audio directly into his ears.

Samsung

Photo 2—To demonstrate this technology, the engineers from the Samsung Creative Lab brought three different sized and shaped sound projectors.

To be honest, if this demonstration was taking place at a booth without Samsung's reputation, I would have had difficulty believing what I was hearing and seeing. They were showing me that sound waves could be corralled into a tight beam. Besides the obvious use of eliminating ear buds and headsets, this technology can be used in museums to provide audio for the exhibits, on airplanes to provide individual audio that matches the movie playing at your seat. It could also be used in stores to provide customers with information about a specific product that they are looking at.

In each case people in close proximity to each other could all hear different audio beamed to their location. Everyone outside of the sweet spot for sound would be completely oblivious that a person sitting or standing inches from them is hearing what they cannot hear. Samsung did not have pricing, or even a date when this technology will become available to the public. This Samsung YouTube video can provide some more insight into this new technology: https://www.youtube.com/watch?v=3dbZuzs46E4.

Taking It a Step Further

1. How do you see this technology being adopted for use in all the different areas of technology?

2. What do you see as the most unusual applications for this technology?

3. Active noise cancellation is now used to silence environmental sound. Do you feel the engineers who developed this technology should explore using their system to not only coral sound waves into a directional beam but also to silence environmental noise that is not part of their audio? Why?

If this column sparked an activity please email me photos and a short description for posting on my website.

