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## TWO WAY HEADSET AUDIO USAGE IN VR

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# *Two Way Headset Audio Usage In VR*

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## **Abstract**

An audio system can allow user switch HMD build-in headset into 2 different usage; most of the host which connect with VR without build-in speaker. So, this concept can base on user's intention to choose share game sound in loud speaker mode or use headset mode to play VR game privately.

## **Details**

Most of hosts which connect with VR HMD is no build in speaker, so when setup VR environment, need prepare a pair of speakers if user wants share HMD sound to public or friends. And need staff help to operate at host side or take off HMD to operate it by himself.

And 2 way audio system actually is a known technology in audio industry, but never implement into current VR device. And the difference with audio product, in VR device; it can switch 2 different audio usage by user's behavior. (Example: take off headset from original position on VR and hang on ear will change to headset mode automatically.)

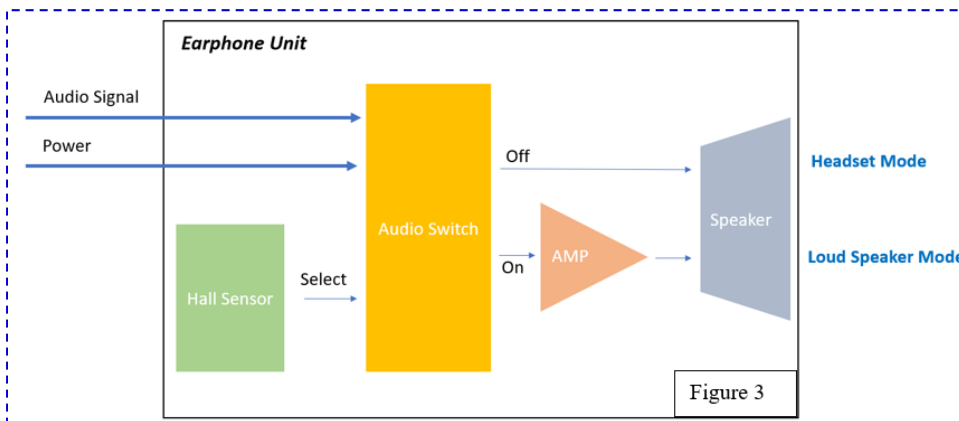
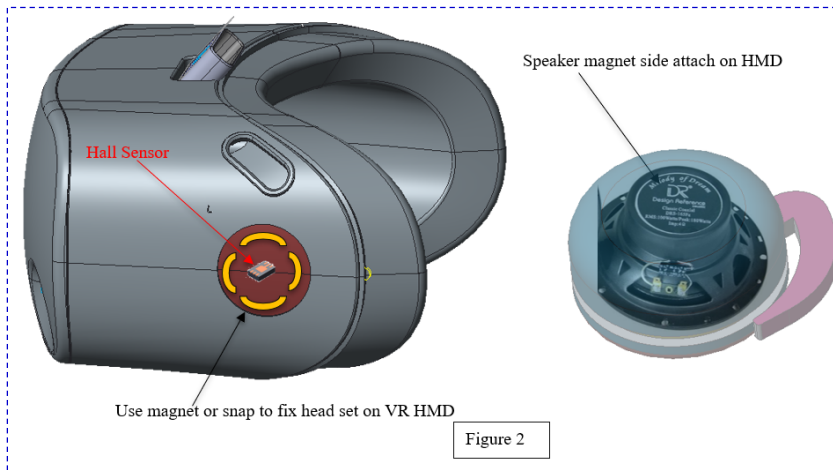
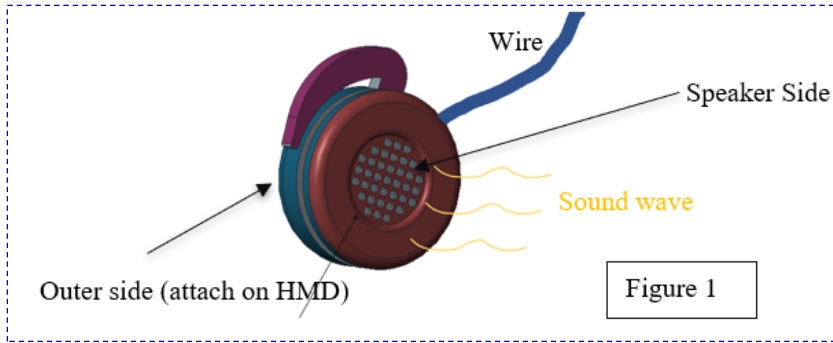
This invention can improve user experience, you don't have to take off HMD and use mouse to switch to loud speaker mode at host side and also no need to prepare a pair of speakers or find a build-in speaker host to play loud speaker mode.

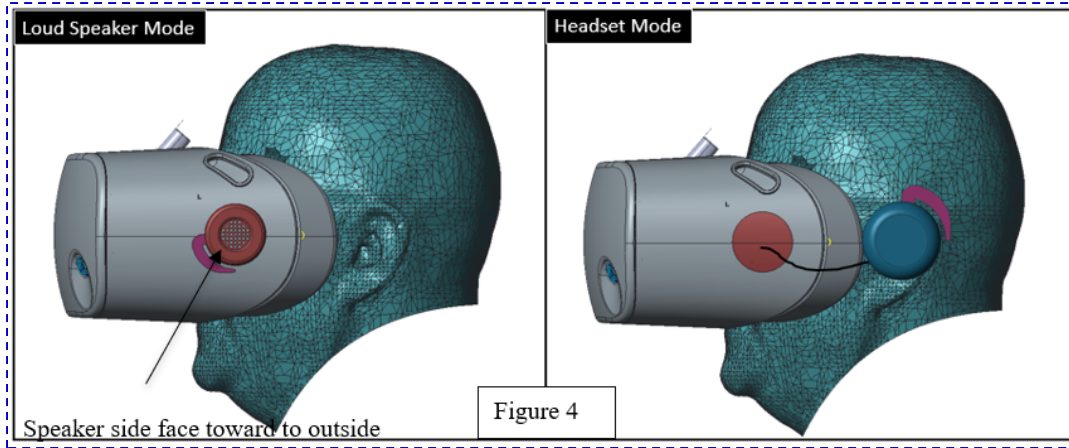
The idea of this invention describes as below. This headset is normal headset, used in most of VR HMD.it can be wireless headset or wired headset. In this patent concept I will use wired headset as example.

Shown as figure 2, VR HMD will reserve a space to place this headset, Due to speaker include magnetic material, so we can place a magnet as a feature to lock headset on VR HMD (Snap design also can be used. If magnet will impact hall sensor performance).and reserve space inside the HMD to hidden headset wire (if use wireless headset, can ignore it). and place a hall sensor at headset placing position on HMD side, when headset lock on HMD, the speaker magnet will be detected by hall sensor, system will switch to loud speaker mode

Figure 3 shows simple electrical block diagram. Hall sensor will be the element to decide which mode should be active. If hall sensor detects headset magnet; audio switch will turn on. before audio signal arrive at headset speaker, will add an amplifier on signal path to increase speaker volume to achieve loud speaker mode.

And figure 4 shows total working concept. Loud Speaker Mode When outer side of headset attach on the VR HMD, Speaker side of headset will face toward to outside, meanwhile hall sensor detect headset already placed on HMD. System will output bigger volume of sound. So, user can share what sound he heard in the HMD to his friends. Headset mode if user wants to play VR privately, he just needs hang headset on his ear. Same as normal behavior of music listening.





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