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Noise Cancellation For Tv Output

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NOISE CANCELLATION FOR TV OUTPUT

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ABSTRACT

A system and method are disclosed to cancel noise other than speech in a TV. The method uses technology used in noise cancelling headphones to cancel noise delivered with dialogue through the TV's audio output. The system includes electronics, placed between the TV's audio signal and the speakers, to sense the audio content and generate a "fingerprint" of the noise, noting the frequency and amplitude of the incoming wave. The system then creates a new wave that is 180 degrees out of phase with the waves associated with the noise, to cancel the noise out. The cancelling feature may be used for content rendered (decoded) by the TV itself or audio input to the TV from HDMI, analog audio in, etc. The system may apply the filtering function very selectively to automatically highlight voice frequencies.

BACKGROUND

A problem with the hearing impaired is simple speech comprehension. Most shows have music or suspenseful music playing while people are talking in certain scenes. The hearing impaired may find it difficult to comprehend speech in such scenes. Previous solutions include using graphic equalizers to boost frequencies in the voice range while lowering the volume outside that range. However, not all frequencies are suppressed and the method is not automatic.

DESCRIPTION

A system and method are disclosed to cancel noise other than speech in a TV. The method uses technology used in noise cancelling headphones to cancel noise delivered with dialogue through the TV's audio output. The system includes electronics, placed between the TV's audio signal and the speakers, to sense the audio content and generate a "fingerprint" of the noise,

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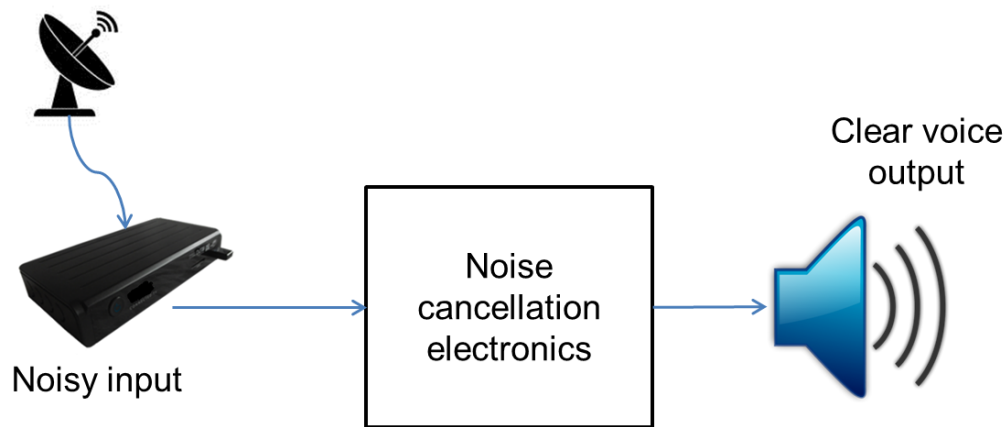

FIG. 1: Method of using noise cancellation on TV to help the hearing impaired

Advantages of the system and method include better user experience due to clear voice rendition, especially for the hearing impaired.