Abstract
Hearing loss can be defined as total or limited loss of hearing capacity. Noise is one of the causes of hearing loss. Hearing aid is defined as an electro acoustic device which amplifies sound. 5.3 percent of earth’s population suffer from hearing loss. DSP hearing aids are desirable compared to analog hearing aids because of their technicality and functionality. The digital hearing aid can be programmed conveniently using digital signal processing and this accounts to self adjustable nature of digital hearing aid. Adaptive filtering is used which effectively cancels out the additive noise. The algorithms used here will help in changing the filter coefficients to adapt to the audio signal. Gain is selectively added at higher frequency according to the person's hearing loss. This makes digital hearing aid flexible. Finally, the processed is made to fit user’s hearing range. Spectrogram is plotted to show the change in frequency of the signal with time. The MATLAB provides plenty of the toolboxes to carry out engineering calculations for various applications. Thus MATLAB is used for simulation.

References


Index Terms

Computer Science  Bio Medical

Keywords

Adaptive Filter  Lms Algorithm  Fast Fourier Transfer  Nlms Algorithm.