

FPGA Implementation of Sound Signal Localization

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Abstract

This paper proposes an algorithm, which can be used to compute Direction of Arrival of a sound source in real time. Comparing to existing algorithms this algorithm takes lesser time for implementation and therefore is much suitable for real time applications. Algorithm essentially computes the Time Delay of Arrival (TDOA) which is subsequently used to find the direction of the sound source. This algorithm results in better accuracy where our experimentation showed the accuracy is around 8 degrees. Statistical analysis further revealed that the error is more often distributed around 0 degrees.