

## 基于数字式MEMS声传感器阵列的声源定位系统设计

作者: 汪明, 陈建辉, 王广龙, 高风岐, 陶巍, 李翼辰

单位: 军械工程学院

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摘要:

在研究声源定位算法模型的基础上, 搭建了声源实时定位系统。采用空间锥形六元阵并结合数字式MEMS声传感器构建定位阵列。以DSP作为系统算法实现平台, 完成数据采集模块和数据处理模块设计, 分析了IIS音频数据传输的实现, 包括数据传输通道的建立和DMA工作方式。通过测试, 验证了系统核心模块的性能达到预期效果, 具有较好的实用性。

关键词: 声源定位; MEMS声传感器; DSP; 系统设计

## Sound Source Localization System Design Based on Digital MEMS Acoustic Sensor Array

**Author's Name:**

**Institution:**

**Abstract:**

Based on sound source localization algorithm model, a real-time sound source localization system using digital signal processor (DSP) was established. Combining with digital MEMS acoustic sensor, this paper used spatial cone six-element microphone array to build localization array. DSP was used as system platform of algorithm implementation, completing the data acquisition module and data processing module design. IIS audio data transmission was analyzed, including the establishment of data transmission channel and the DMA way to work. Test results verified the performance of the system core modules achieved the expected results, having good usability.

**Keywords:** Sound source localization; MEMS acoustic sensor array; DSP; System design

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