An Audio-Based Security System

Overview
The Audio-Based Security System uses sound waves to map a room and detect intrusion. This provides a simpler, cheaper alternative to home and business security.

How It Works
An audio signal fills the room in a way that is unique to each room. The DSP board can recognize differences between a normal room and the same room with an intruder, and will trigger an alarm.

Setup

Process:
1. Sound is projected into room
2. Sound fills room and returns to microphone
3. Alarm sounds when movement is detected

System Diagram

Speaker  
Room  
Microphone  
Sound  
Modified Sound  
DSP Board  
User Interface

Conclusion
Where to go from here:
- Better GUI (as shown in Instruction Manual)
- Account for pets, external disturbances, etc.
- Different, “silent” chirp frequency

Future Applications:
- Business Security
- Home Security

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