DJ T-SHIRT

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Concept

A t-shirt that allows you to “DJ” right in front of you.

By using a grid of sensors, we can recognize the hand gestures of the user and manipulates music accordingly

Motivation

Lack of interactive T-shirts

“DJing” is cool

Portable “DJing” would be awesome

Competitive Analysis

- Imogen Heap's Musical Glove
  - Music Manipulation through gloves (sensors, accelerometer, gyro)
  - Demonstrated Summer 2011
  - Not on market for at least a few years

- Thinkgeek Personal Soundtrack T-shirt
  - Plays a pre-recorded selection of tones using wired remote control hidden in a pocket
  - No manipulation of music

COMPETITIVE ANALYSIS

Product	Hands-free Control	Plays Music	Audio Manipulation	Gesture Control
Imogen Heap's Musical Glove				
Thinkgeek personal Soundtrack T-shirt				
DJ T-shirt				

Requirements

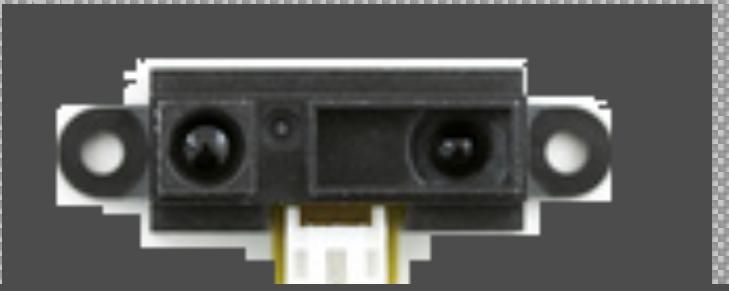
Functional:

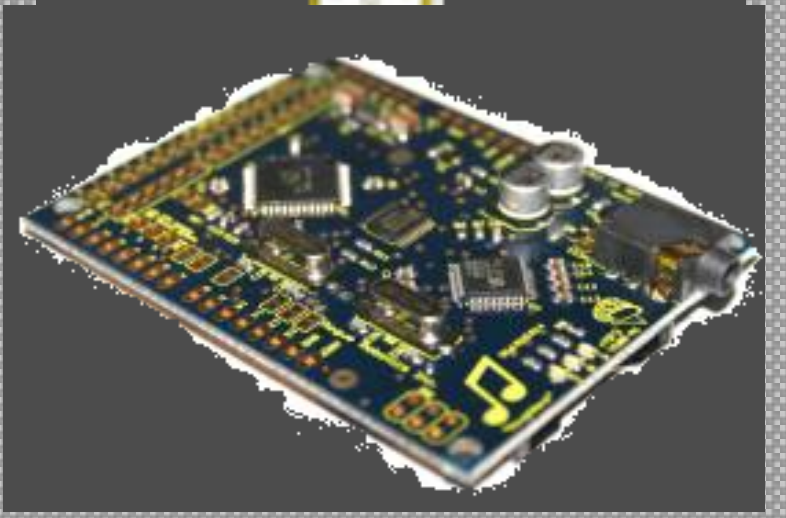
- Plays music
- Battery should lasts for up to 4 hours
- Recognizes hand movements (aim for mid-sem demo)
- Manipulates the music playing based on specific hand movements
  - Play/Pause, FF/RW, Pitch, Speed, etc.

Aesthetic:

- Lightweight, portable and wearable.

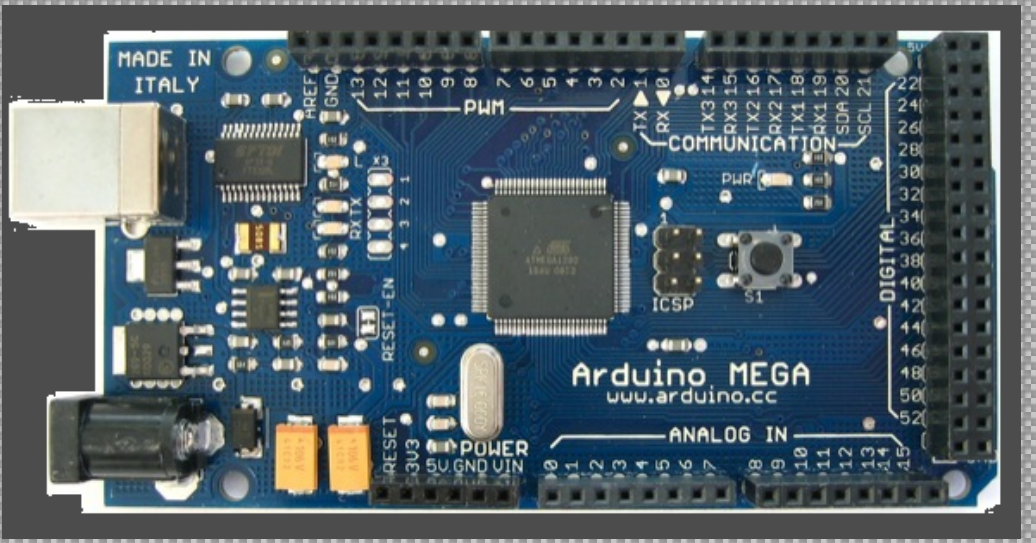
Technical Specifications





Hardware:

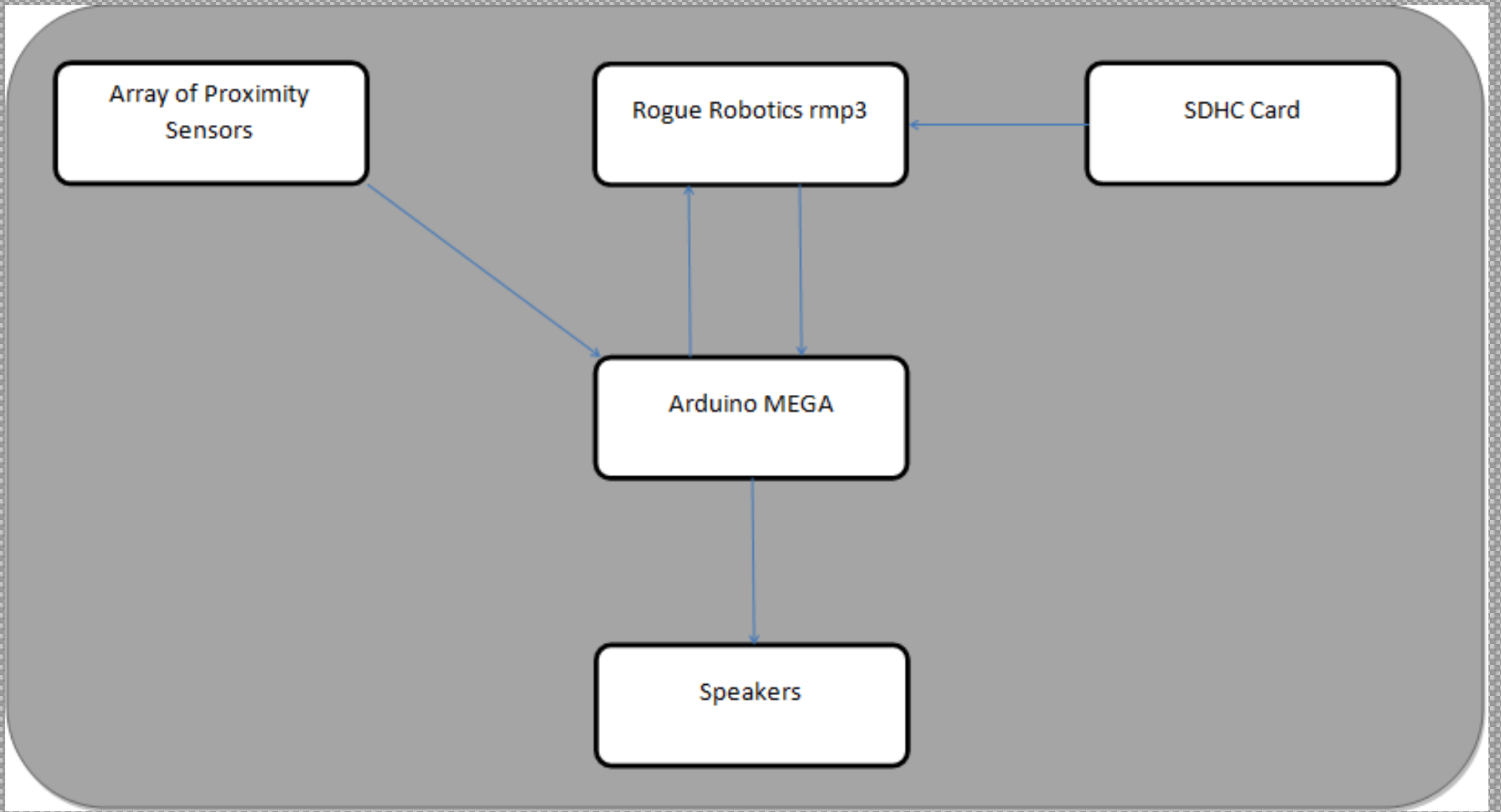
- Infrared Proximity Sensor
  - Sharp GP2D120XJ00F
- Rogue Robotics rmp3
  - Mp3 shield
- Arduino MEGA 2560 Board
- SDHC Flash Memory Card
- Speakers



Software:

- Music manipulation
- Motion sensing

Architecture



Risks & Mitigation

Risks	Mitigation
Motion sensing Inaccurate	Add more sensors/other types of sensors
Motion sensing fails completely	Use gloves
Error reading files	Restart board, use led light to show on/off
Speakers not loud enough (DEMO)	Use Headphones

Questions?