Collapsible, Lockable Tent
Microwave Metal Detector

Red B
Safety & Security
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Microwave Metal Detector
The Idea and Motivation

- A system which shuts off a microwave if sparks are detected

- Microwaves caused ~7,400 fires in 2005
  - 87 injuries and $18 million property damage.
Customer and Market

- **Customer:** Original Equipment Manufacturer
  - Major microwave producers
    - GE and Sharp have >40% market share
- **End-User:** households
  - 13.5 million microwaves sold last year in US
  - $3.8 billion sales
Can We Detect Sparking?

- Light intensity
- Sound
- IR
- Magnetron power draw
- RF emission
Light Intensity
False Positives?
Future Work

- Try other sensing methods
- Establish detection thresholds
- Test for false positives
- Design of sensing and control circuitry
Questions, Clarifications, Concerns?