The Magic Mouse

Revision 0 Demonstration

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February 9, 2015

Outline

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Project Description

- Temperature and electrical conductivity sensors integrated into a mouse shell with accelerometer
- Collect temperature, accelerometer, and electrical conductivity data remotely in a database on a per user basis
- Visualize data on a web interface – personal or administrator views
- Manage user accounts and data from administrator view

Proof of Concept Demonstration

1. Microcontroller development board
2. Two temperature sensors
3. Data streaming over UART (serial) to a text file
4. Live data visualization by watching text file
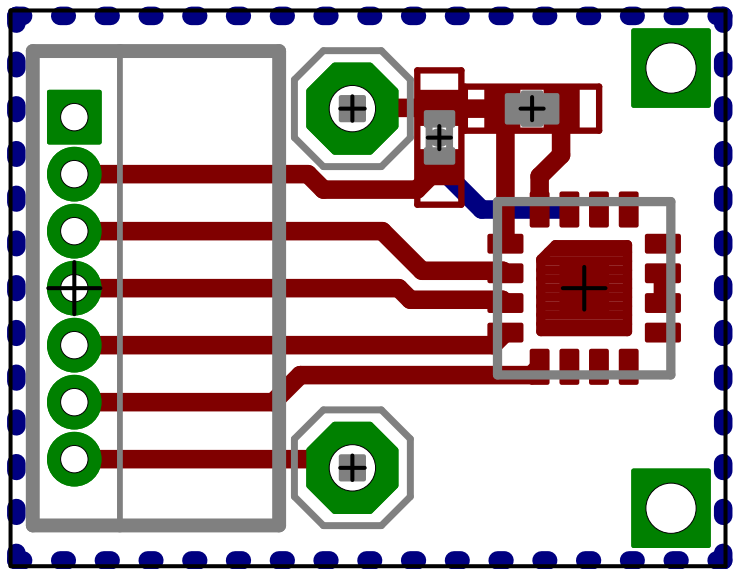5. Static data visualization on webpage

Progression from Proof of Concept

- Microcontroller development board
  - ▶ Circuit board design complete and boards ordered
  - ▶ CAD word to be completed with known circuit board dimensions
- Two temperature sensors
  - ▶ Two temperature sensors
  - ▶ Two electrical conductivity values
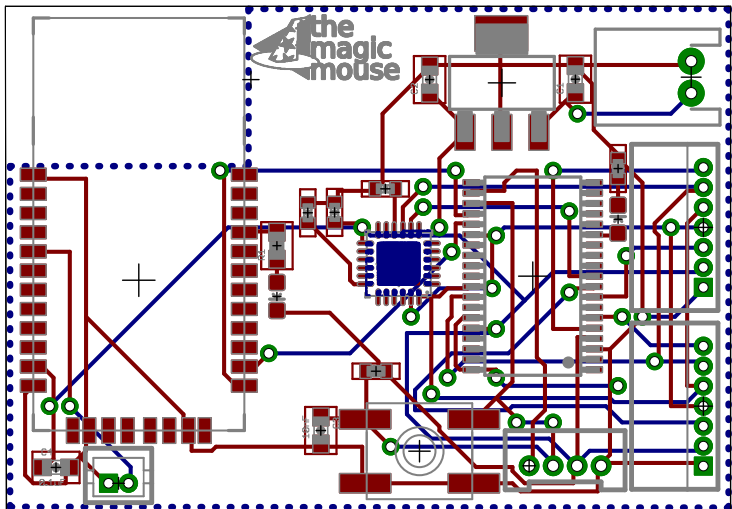 - ▶ Accelerometer values (x,y,z)

Progression from Proof of Concept Continued

- Data streaming over UART (serial) to a text file
  - ▶ Data streams using Bluetooth
  - ▶ Data logged in remote database
- Live data visualization by watching text file
  - ▶ No live data visualization
- Static data visualization by watching text file
  - ▶ Web interface retrieves information from database
  - ▶ Data shown on web interface reflects latest data in database

Sensor Board Design

Main Board Design

Looking Forward

- Circuit boards to arrive in two weeks
- CAD for mouse body can be completed
- Electrical conductivity integration
- Data windowing
- Beautification of the web interface
- Data filtering for more meaningful display

Demonstration

- Magic Mouse Web Interface