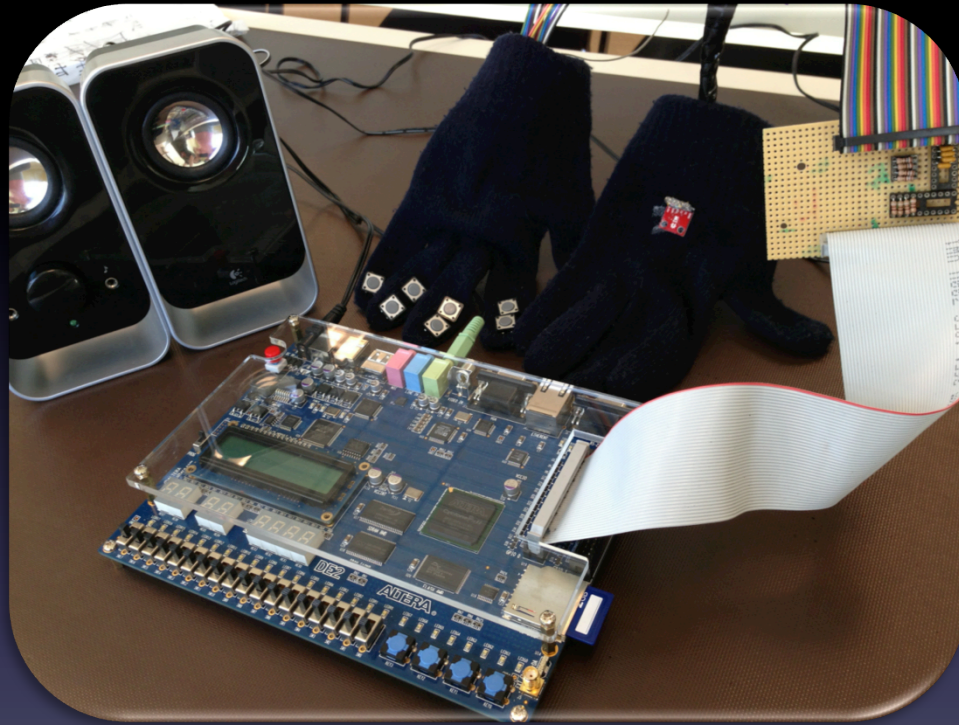


G7 Virtual Guitar Gloves

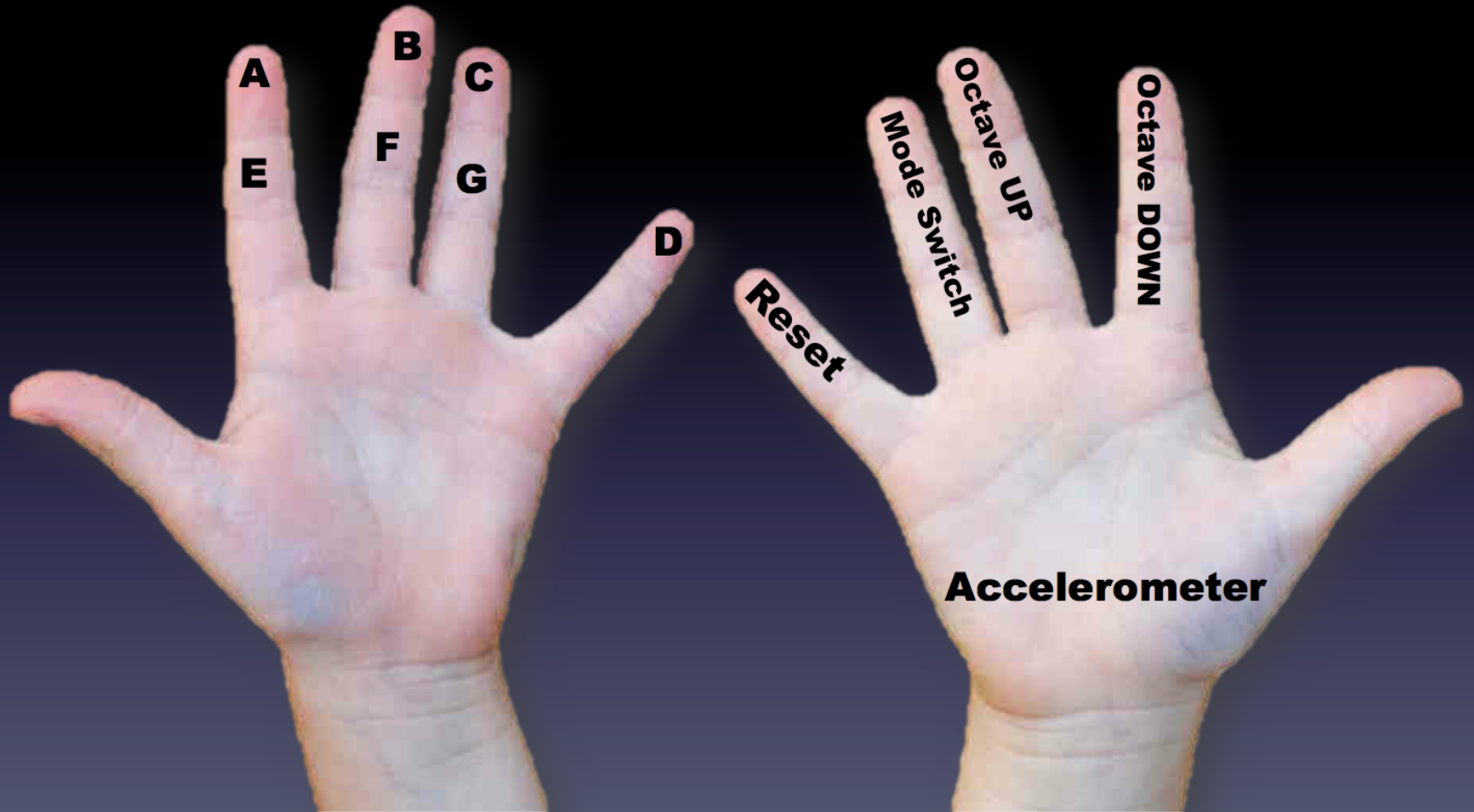


Presented by:

Elysia Jong

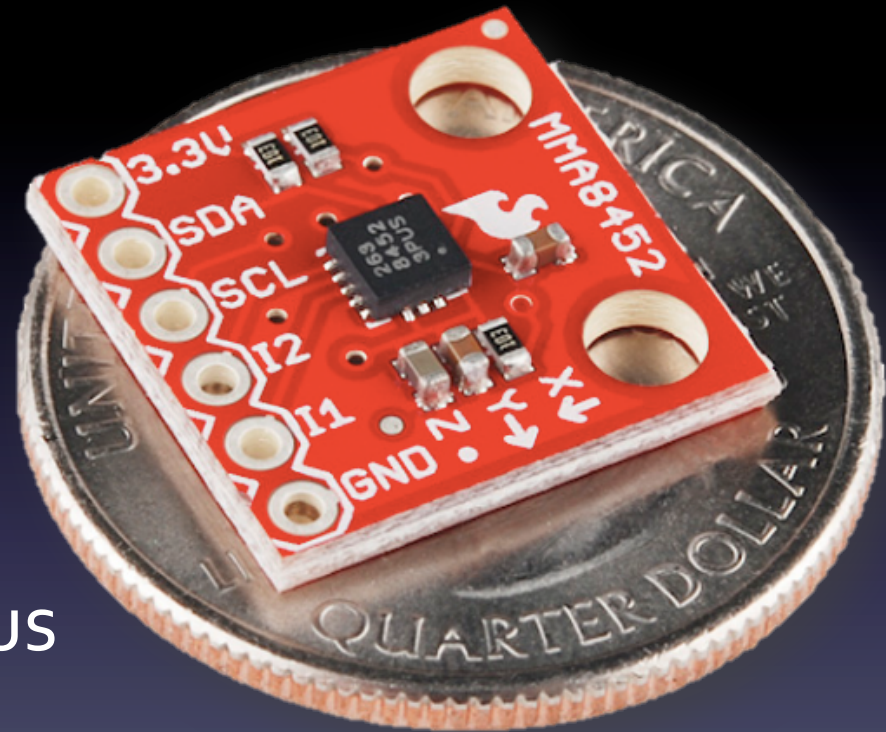
Eric (Qingyue) Zhou

Functionality



Challenge

- Accelerometer
- 3 axis
- Digital signal
- Interface to I2C bus



Backup plan

- Average current consumption: 33 mA
- Factory set trigger point: 15°
 - Digital Output
 - Range: 4 to 30 cm
 - Typical response time: 39 ms
 - Typical start up delay: 46 ms



SHARP GP2D120

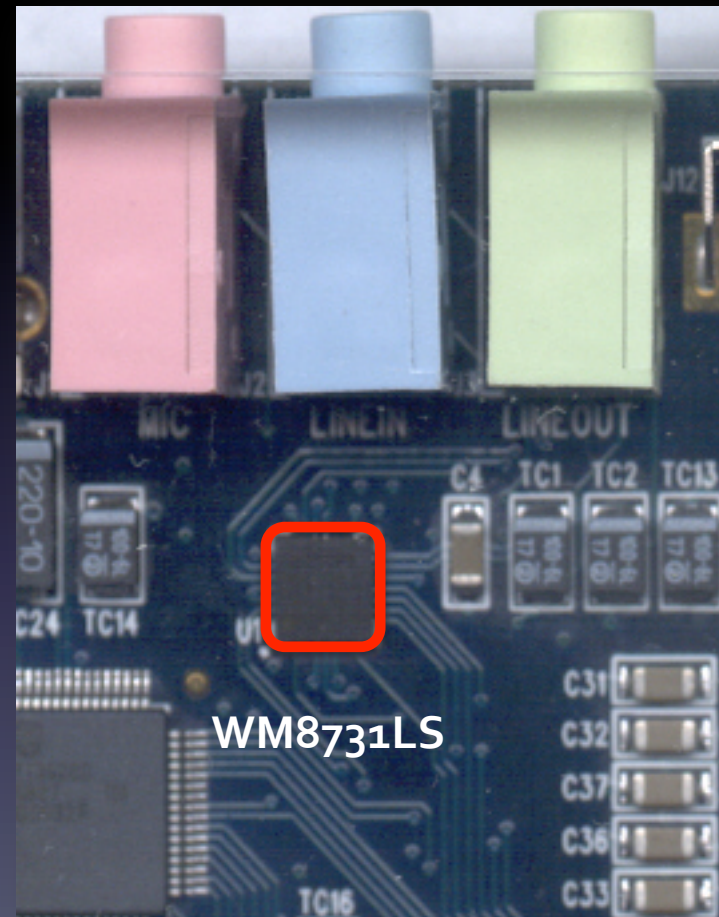
- 2 GB
- FAT 16
- Do not "Quick Format"
- Offsets for each sound files
- SD card stores 512 bytes each block

Note A	Note B	Note C
2500-3000	3100-3400	3450-3800

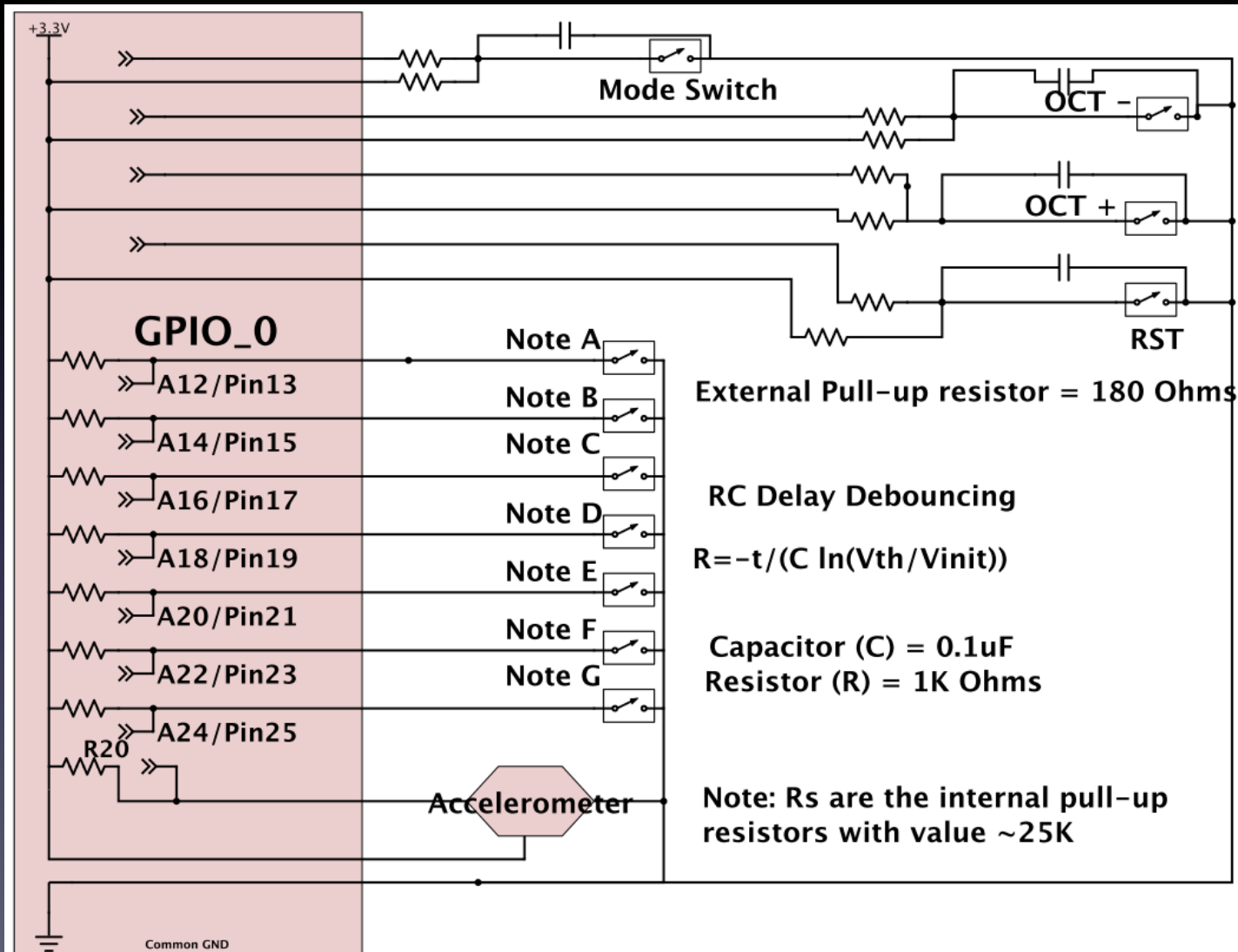


Audio Codec

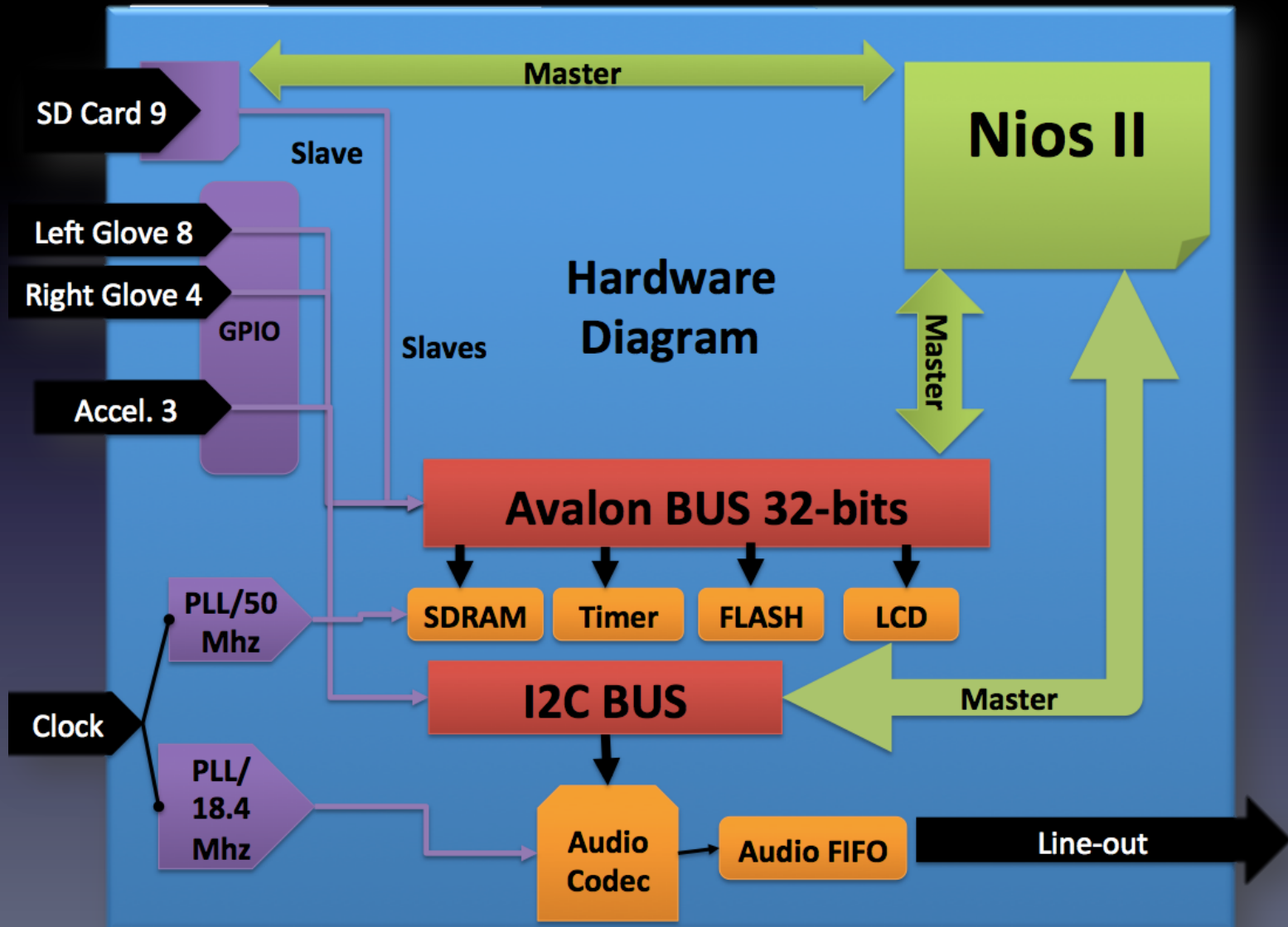
- Wave file
- I2C bus
- Sample rate: 48 KHz
- Data width: 16 bit
- Noises/Distortion



Schematics



Hardware Block Diagram



Software design

- Message Queues-polling
- Interrupts

Optional features

- Wireless
- Sharp/flat notes
- Strumming acceleration (volume)
- Up/down strum differentiation

Demo