

Team Leader: **Tom Blanford**

Secretary: **Eric Nolan**

Team members in attendance:

Tom Blanford, Michael Sizemore, Mark Wurzelbacher, Sara Taylor, Eric Nolan

### **Review of Last Meeting**

- Packaging/case design
- See Natalie to obtain key for team boxes
- Put development kit into team box
- Email Schafer microphone part number/specs
- Email order form for development board to Schafer
- Look into headphones most suitable for modification
- Schafer will email website information soon
- Fill out Action items
- Order form for parts - finalize parts
- Microcontroller debate

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Tom communicated with Schafer regarding the microphone packaging - feasibility still in question (small pads w/ solder paste and hot air)

Keys from Natalie have yet to be picked up

No development kit obtained

Schafer was emailed

Development board order not complete

No website email received

No action items filled out

No parts ordered

### **Meeting Summary**

Tom unveiled a MEMS microphone similar to the microphone to be used in our prototype ~3x the size of the device to be used

Headphone models were discussed

JVC HA-NCX78 was considered for demonstrating noise cancelling subsystem

- Active noise cancelling
- Bypass noise cancelling and use our own
- Won't have to mount microphones

[http://www.newegg.com/Product/Product.aspx?](http://www.newegg.com/Product/Product.aspx?Item=N82E16826262116&nm_mc=KNC-GoogleAdwords&cm_mmc=KNC-GoogleAdwords- -pe- -NA- -NA)

[Item=N82E16826262116&nm\\_mc=KNC-GoogleAdwords&cm\\_mmc=KNC-GoogleAdwords- -pe- -NA- -NA](http://www.newegg.com/Product/Product.aspx?Item=N82E16826262116&nm_mc=KNC-GoogleAdwords&cm_mmc=KNC-GoogleAdwords- -pe- -NA- -NA)

Tom mentioned that Schafer was working on figuring out how to make round pad for keeping microphone sound hole free. Schafer will get back to us

Analog Devices no longer sells the desired microphones to DigiKey

- Might be able to obtain through Tom's connections
- Larger version has more low frequency response - harder to work with in stereo

- Other microphone should still be considered as backup

There is a limit on the noise cancelling capability of the system

- In running mode once this limit is reached system will rely on boosting music volume to compensate for outside noise.

Tom sketched out an overview of each modes' signal chain

- See Photograph

Sara lounged with blanket and missed a portion of the conversation

Package

- Potential target 6cm x 8cm - size of iPod mini
- Or possibly iPhone - 2.4" x 4.5"
- Inputs needed (DSP has 12 multi-purpose pins)
  - 2 pins for mode switching - 2 bits gives 4 states to use
    - Slide button
  - External volume control
    - Knob
    - 1 pin on DSP
    - Mike wants one pin for fun
  - 4 pins needed for music signal
    - Pass through A/D
  - 2 dedicated I2C pins - to use SPI must use 4 pins
    - External memory communication

Development board order form sent to Schafer

Sara found potential rechargeable batteries within suitable price range

- Average around \$20
- Thin, aerodynamic for maximum running speeds

USB component should be added even if not implemented - designated for future development

## **Unresolved Issues**

Things to ask Schafer

- 3D plastic printing for case
- Solder paste on tiny MEMS
- Battery Options (phone, camera)