Crystal Breath

12th Meeting: DSP and finishing the DSP board

4/11/2013
12:30 PM – 1:30 PM

Meeting called by: Crystal Breath

Attendees: Nicholas Castro, Suong Do, Joe Duffy, Joe Levri, John Mullaney

Agenda/Meeting Leader: Nick Castro

Minutes: Suong Do

Time:	**Question/Task:** Design DSP board and begin DSP programming	**Location:**

12:30	**Since last week:**
	We began using MPLAB to figure out how to modify the original code in the starter kit and gain familiarity with the software.
	We have constructed numerous schematics using the schematics for the original board as a reference.
	We modified out microcontroller. The components of the board include:
	- USB connection to computer and power
	- Two headphone jacks; one for the input and one for the output
	- LEDs as indicators for breath
	- Pre-amplifying circuit following the input signal
	- Potentiometer for adjusting microphone gain
	- Anti-aliasing Low-Pass Filter for the input
	- Microcontroller
	  • ADC
	  • Fourier Transform Capabilities to identify breath frequencies and amplitudes at those frequencies
	- PWM Low-Pass Band Filter
	- Amplifying circuit for the output signal
		Stinson Remick

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Action Items:

- Continue work with MPLAB
- Figure out exactly which devices we are going to use for the board.
    - For which components are we using the same models as those from the Starter Kit and for which components are we using different devices?
    - Where can we find existing libraries containing necessary components? If not we need to use an existing package to create the part. (how?)
    - Understand what is necessary to finish schematic and board design.