Test Plan

- Personal Electronic Stethoscope

Project Team: Real Yuen
Chao Yang
Guntae Park
Jungjoo Lee
Seven Yao

Contact Person: Real Yuen
yky1@sfu.ca

Submitted to: Dr. Andrew Rawicz - ENSC 440
Steve Whitmore – ENSC 305
School of Engineering Science
Simon Fraser University

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Hardware Tests
Unit Test 1: Correct audio output in a quiet area
User Input: A healthy heart beat
Conditions: Two channel oscilloscopes are used to capture the input and output. Compare the result.
Expected Observations: From the Oscilloscopes, the output should look exactly same as the input but with scaling.

Unit Test 2: Correct audio output in a noisy area
User Input: A healthy heart beat
Conditions: Two channel oscilloscopes are used to capture the input and output. Compare the result.
Expected Observations: From the Oscilloscopes, the result from the output will contain some noise, but should still look alike compared to the input.

Unit Test3: Output sound signal is going into smart phone as input signal.
4pin audio cable will be used and this cable will be made by two 4pin earphones.

Unit Test4: Drop test with specific condition.
The device with hard case will be dropped from 70 height on concrete covered by carpet.

Unit Test 5: EMC (Electromagnetic Compatibility)
See if the product will interface with other electronic product.

Software Test
Unit Test6: Feature the sound input data from a makeshift sensor in the form of an apple microphone.
Sound will be fed into the microphone to provide sound data to the app, in place of the actual heartbeat sensor. The app should be able to display information corresponding to the heart rate and the sound amplitude, and display the data in the Test Page, and provided a conclusive result regarding the health status of the user. The vocal input from the microphone will intentially go over the acceptable amplitude limit, which will display the corresponding warnings and send out an emergency message to the user's emergency contacts.