***FourOneSixPlayer***

Software and Hardware Specification Sheet

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Study: Computer Engineering Technology

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**Declaration of Joint Ownership**

We, Romario Tulloch and Andrew Le, confirm that the work we are submitting for assessment is the work created by ourselves, and is from our own words. Any work taken from any other author (programs, figures, techniques, illustrations, or any other material) are properly cited at the point of it’s use. A bibliography is provided at the end of this report, which would contain all sources used in this report.

**Approved Proposal**

1. The name of our project will be the FourOneSix Sound.
2. The summary of the project that we will be putting together is to implement the use of our firebase database to be operating on our hardware. Our hardware is an audio amplifier that will be operating from the raspberry pi 3. The courses that are related to out project are Software project (CENG 319), hardware production tech (CENG 317) and Embedded Systems (CENG 252).
3. Our plan to implement the project is to ensure that the mobile application is working as it should then to ensure that the hardware (audio amplifier) is also operating as it should. The next step will be to figure out how to use the raspberry pi to read from the firebase database automatically. The project will me managed in a systematically way as the critical path will be used as a guide to implement all the steps in putting the project together.

1. In regards to the timeframe of completing the project, it seems very likely as out application needs to undergo a few alterations and the hardware aspect is basically finished. If there are any problems that arises we will be dedicated more time and effort to fix the problem and implement measures to reduce problems in the future.
2. There are few similar products in the market right now such as Spotify and Sound cloud but the difference with our app is that is tailored for the specified hardware.
3. For test cases so far, we can test that App streams the media from the database and use a hard connection from a mobile device to the amplifier to test that the amplifier is still working as it should.
4. In conclusion this project will be a 14-week long project that we will try to incorporate our previous software with the hardware to make a fully functional system that satisfies the need of real world problems.

**Abstract**

The purpose of this project was to create a device(hardware) that would work with a raspberry pi and an app on our phone(software) as an assignment for the computer engineering technology program at Humber College. The hardware device we are creating is a speaker using an audio amplifier that was chosen as our hardware device. The phone app allows for users to send music files to an offset database. This database will store all the account information and also the music files that each account uploads into the database. When command by the phone app, the music files in the database will be downloaded and played through the audio amplifiers/speakers. We feel that this is a great product as many people listen to music regularly and speakers are in very high demand and our product is an easy and user-friendly product. The rest of the report will go through a more thorough analysis of each separate part of the project and will provide more general details about the product.

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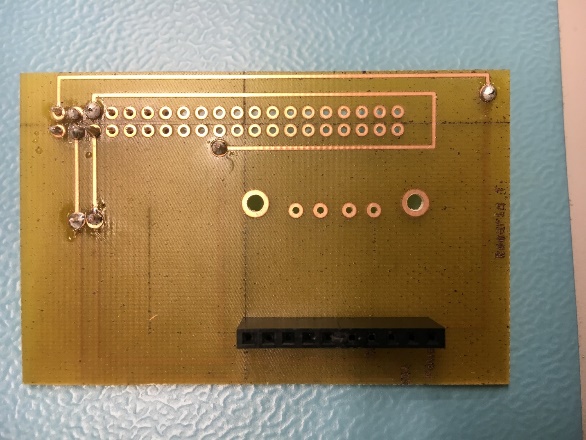
**Introduction**

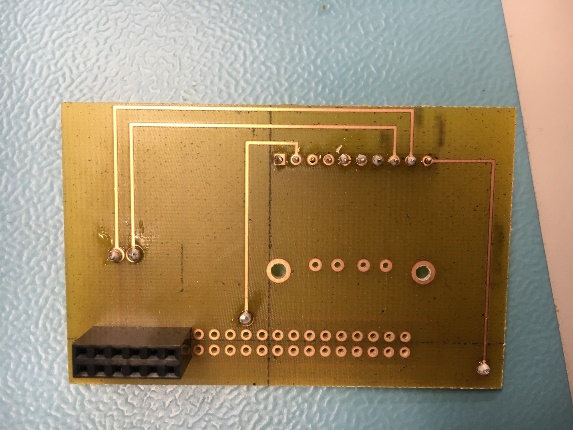
The task of testing auto sound systems can be a very tedious task. Plenty of steps that are needed to be take can be monitored and logged to ensure the proper testing of a system especially in the essence to optimize the amplifier levels. This process can even be very expensive in terms of using special hardware to test decibel levels.

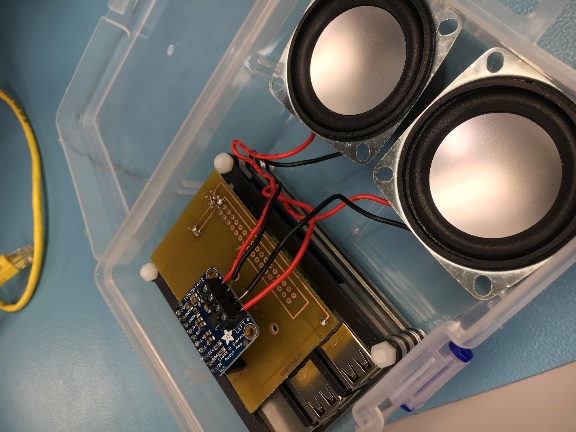
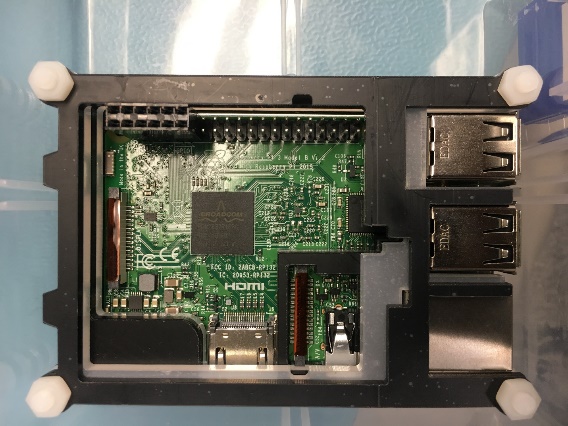
We have developed a system that will play specific audio files via the amplifier. The specialized software that we have created will log volume levels manually to a database to keep track of how high the amplifier can go before distortion or clipping occurs.

There are other options that are available to the public that can test amplifier output but does not include the option of logging to a database. We feel that this can be a valuable resource in the audio industry.

**Illustrations**







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