

Background

Installing permanent external home speakers typically requires you to run wires through internal and external walls. This process requires damaging both internal and external walls leading to costly repairs.

Project Goal

Our solar-powered speaker aims to eliminate the need for internal-to-external wiring on a house while providing audio entertainment outside the home.

- Using a source connected to a secondary device, the speaker will play audio transmitted over a wireless network connection.
- The speaker will have an internal battery that will be charged using a solar panel

Materials Needed

Hardware:

Custom Designed Speaker **Class-D Amplifier** Raspberry Pi Digital-to-Analog Converter Solar Panel Battery Charging Board

Software:

Operating System Raspbian Lite Shareport Sync

Sonido: Solar Speaker

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"BOM Tool," All About Circuits. [Online]. Available: https://www.allaboutcircuits.com/projects/how-tobuild-a-class-d-power-amplifier/. [Accessed: 05-Nov-2019].

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Department of Electrical Engineering and Computer Science

Our Products

We plan to construct: Enclosure for all components **Class-D Amplifier** Transmitting Device Program for Managing the Speaker

Milestones

Fall Quarter:

Completed construction of a testing speaker Developed a basic app for audio control Installed and configured a web server stack Connecting App to Controller

Winter Quarter:

- Wireless Network Integration
- Connecting Solar Power and Battery
- Testing and Fine-Tuning Audio Output

References

Instructables, "Raspberry Pi Android App Communication," Instructables, 08-Oct-2017. [Online]. Available: https://www.instructables.com/id/Raspberry-Pi-Android-App-communication/. [Accessed: 05-