

Playback Switch

DESIGN RATIONALE

Introduction

The Playback Switch project is an attempt to design an assistive switch that can also provide audio feedback when pressed.

Research

Commercially Available Options

BIGmack

Overview



2 minute message playback

Switch output

Quick Ready mounting plate

Price

155 USD

Link

<https://www.ablenetinc.com/bigmack/>

Playback Switch

DESIGN RATIONALE

LITTLEmack

Overview



2 minute message playback

Switch output

Quick Ready mounting plate

Price

155USD

Link

<https://www.ablenetinc.com/littlemack/>

Playback Switch

DESIGN RATIONALE

Big Talk

Overview



20 seconds recording time

Switch output

Price

149.95 USD

Link

<https://enablingdevices.com/product/big-talk/>

DIY Options

None found with similar functionality

Research Summary

All commercial options with similar functionality were priced at over 150 USD. No DIY options with similar functionality were found.

Requirements

Goals

G01	Create an assistive switch that can also record and play back audio messages
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Playback Switch

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Functional Requirements

F01	Device must be able to record messages
F02	Device must be able to play back messages
F03	Device must be able to function as an assistive switch

Constraints

C01	Device must cost less than \$20 dollars
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Ideation

Key Features

- Record audio
- Play audio on button press
- Activate connected accessible device on button press

Prototyping

Three options were initially considered for adapting the playback button. The first option was physically stacking a second button onto the existing button so both were pressed when the button topper was pressed, which was possible because of the large flat surface on the initial button. The second option was to attach the second button in parallel to the initial button, with a 3D printed piece to distribute the press from the topper to both buttons. The final option was to attach a photo isolator to the initial button to activate both circuits with one button press while still keeping them separate.

After the first method with the stacked buttons was shown to work well with no noticeable drawbacks, the next two methods were not explored further as they would just add complexity with no gain in performance.

Opportunities for Improvement / Future Work

- Mounting interface that allows the switch to work with various mounting hardware