

OpenAT-Switch-Latch

SUMMARY

Title

OpenAT-Switch-Latch

Subtitle

A device that allows a momentary switch to act as a toggle switch

Device Specifications

Build Time:

< 1hr

Cost:

\$26 - \$50

Stage: Recently Added

Skills:

Need: Electronics, Soldering, 3D Printing, Custom PCB, Engineering

Disability: Mobility / Physical, Cognitive / Learning

Difficulty: Intermediate

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Usages: Aids for Daily Living, Environmental Control, Recreation and Leisure, Computer Access

Type:

Designer: Makers Making Change

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Device Details

Overview

The OpenAT-Switch-Latch intended to convert a momentary switch input into a toggle switch output. The device was developed as several assistive switch users requested the ability to control lights and other devices in a semi-permanent manner, but do so, utilizing their preferred momentary assistive switches.

The intended users of the OpenAT-Switch-Latch are those who require a momentary switch to act as a toggle switch (aka latched switch), allowing the user to turn on for an extended time with a quick tap, and off again with another quick tap.

Usage

To use the Switch Latch, a momentary switch is plugged into the 3.5 mm input jack. A switch adapted device is then plugged into the 3.5 mm output jack. The power switch must be enabled to use the device. However, the device will turn itself off if there is no plug inserted into the input jack.

Cost

\$26.54 (\$20.54 Components and 3D prints; ~\$6 for custom PCB)

Build Instructions

The OpenAT Switch Latch consists of 3D printed parts, electronic components. The Assembly Guide is available at the GitHub repository.

Skills Required

- 3D Printing
- Soldering
- Custom PCB

Time Required

3D Printing Time: 2 Hours and 40 Minutes

Assembly Time: 1 Hour

Tools

- Soldering Iron and 60/40 electronics solder
- Needle nose pliers
- Side cutters
- Medium Phillips screwdriver

Components

1. 1X 470K Resistor
2. 1X 22K Resistor



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Files available at <https://makersmakingchange.com/project/OpenAT-Switch-Latch/>

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3. 1X Texas Instruments CD74HC73E Flip-Flop
4. 1X 1uF Capacitor
5. 1X #4-3/6" Pan Head Screw
6. 1X OpenAT-Switch-Latch PCB (Printed Circuit Board)
7. 1X CR2032 Battery holder
8. 2X IRLD-110 MOSFET
9. 1X 10K Resistor
10. 1X 0.1uF Capacitor
11. 2X SJ-3566AN 3.5mm Audio Stereo Jack
12. 1X Slide Switch
13. 1X LED (green, super bright)
14. 4X #4-3/8" Pan Head Screw

3D Printing

1. 1X 3D Printed Enclosure Top
2. 1X 3D Printed Enclosure Bottom
3. 1X 3D Printed LED Spacer
4. 1X 3D Printed Switch Slide
5. 1X 3D Printed Battery Cover

Custom PCB

This design utilizes a custom PCB. Five boards (minimum quantity) can be obtained for approximately \$6 CAD (shipping included).

Design

The PCB was designed using Autodesk EAGLE, and the enclosure was designed using Autodesk Fusion 360.

Attribution

Designed by Makers Making Change

Designer:

Derrick Andrews, Makers Making Change

Contributors:

Jake McIvor, Makers Making Change

Milad Hajihassan, Makers Making Change

