**Title**

Wearable Clap Switch

**Subtitle**

The Wearable Clap Switch allows a user to wirelessly activate a switch activated device with a clap.

## Device Details

### Overview

The Wearable Clap Switch is a wireless assistive switch designed for users that have difficulty using traditional pressure based switches. It consists of a hand mounted transmitter, and a receiver box. When the transmitter detects a clap motion, it sends a signal to the receiver which activates the mono jack. The receiver can be used to activate an 3.5 mm assistive device like a switch adapted toy.

The original version of this project is called the Wearable Bluetooth Controller for Switch Adapted Toys. It was released by [r570sv](https://www.instructables.com/member/r570sv/) on [Instructables](https://www.instructables.com/Wearable-BLE-Controller-for-Switch-Adapted-Toys/) under a [CC-BY-NC-SA](https://creativecommons.org/licenses/by-nc-sa/4.0/) license.

### Usage

When a clap motion is detected by the hand-mounted transmitter, the receiver will activate the connected assistive device.

**Transmitter**

Attach the transmitter to the users hand or wrist using the strap.

To activate the transmitter, slide the switch on the bottom of the transmitter. The transmitter will start looking for a connection, and if a receiver is broadcasting, the two will connect. Once the two have connected, the transmitter will send a signal to the receiver whenever it detects a clap.

The sensitivity of the clap detection can be adjusted using the two buttons on the top of the case. Pressing the increase sensitivity button will cause the number of illuminated LEDs in the circle to increase. Pressing the decrease sensitivity button will cause the number of illuminated LEDs in the circle to decrease.

**Receiver**

Connect the assistive device to the output port on the receiver using a 3.5 mm cable.

To active the receiver, flip the toggle switch from off to on. The receiver will start looking for a connection, and if the transmitter is broadcasting, the two will connect. Once they have connected, the receiver will power a relay to activate the mono jack.

To change how long the jack stays activated, adjust the potentiometer labeled Duration. To change the cooldown between activations, adjust the potentiometer labeled Delay.

### Cost

~$110

### Build Instructions

The transmitter is assembled with mostly off the shelf parts, the only addition being the soldering of a power switch onto the battery line. All the shell and other mechanical components are 3D printed. For the receiver, there is medium soldering to assemble the protoboard

#### Skills Required

* 3D Printing
* Soldering

#### Time Required

* 3D Print Time: 12h 8min
* Assembly Time: 1h

#### Tools

* 3D printer
* Soldering iron
* Hobby knife
* Multimeter
* Flush cutters
* Flux

#### Components

* 1X Transmitter
* 1X Receiver

#### 3D Printing

All components can be printed with no support at 20% infill with a 0.2mm layer height. All pieces can be printed using PLA filament Programming

### Attribution

The original design of the [Wearable Bluetooth Controller for Switch Adapted Toys](https://www.instructables.com/Wearable-BLE-Controller-for-Switch-Adapted-Toys/) was released by [r570sv](https://www.instructables.com/member/r570sv/)  under a [CC-BY-NC-SA](https://creativecommons.org/licenses/by-nc-sa/4.0/) license.

Updated 3D Printed Receiver Design, code, and documentation by Brad Wellington / Makers Making Change.