This document is intended to be a summary of a device to make it easier to add to the website.

# Product Information

## Product Name

Birch Sliding USB Joystick

## Device Category

Mark any relevant categories with an “X”:

|  |  |
| --- | --- |
|  | Adapted Toys |
|  | Aids for Daily Living (ADL) |
|  | Assistive Switches |
|  | Communication Aids (AAC) |
| X | Computer Access |
|  | Environmental Controls |
| X | Gaming |
|  | Keyguard |
|  | Kits |
|  | LipSyncs |
|  | Mounting |
| X | Recreation and Leisure |
|  | Seating and Positioning |
|  | Switch Interfaces |
|  | Writing Aids |

## User Value Statement

If you're looking for a USB joystick with a very small range of motion we'd like to point you to the Birch Sliding USB Joystick.

## Designer

Makers Making Change

# Device Info

## Overview

The Birch Sliding USB Joystick is a small USB joystick that moves in a sliding motion instead of the typical pivoting motion of a joystick or thumbstick. It can be used for adapted gaming, either with the [Xbox Adaptive Controller](https://www.xbox.com/en-CA/accessories/controllers/xbox-adaptive-controller) or used directly with PC.

The PSP-style game controller sliding thumbstick joystick has a range of motion of ±2 mm and requires approximately 115 grams-force to fully deflect. A range of toppers are available for this joystick.

## Disability Type

Select one or more disability types and mark with an “X”:

|  |  |
| --- | --- |
| X | Agility / Dexterity |
|  | Arthritis |
|  | Cognitive |
|  | Hearing |
|  | Mobility |
|  | Mobility |
|  | Pain |
| X | SCI |
|  | Vision |
|  | Other |

## Disability Type Description

## For joystick users who require a joystick with a very small range of motion for gaming.

## How To Use

To use the Birch Sliding USB Joystick, first position the joystick for the user, mounting if needed. Then, plug in the USB-C to USB-A cable to both the joystick and the host device, such as the Xbox Adaptive Controller. Wait for the joystick to initialize, then move the joystick like a thumbstick on a standard controller.

For full instructions, please refer to the User Guide. <link>

## Estimated Cost

The estimated material cost of the device for a single build:

|  |  |
| --- | --- |
|  | $0 - $10 |
| X | $11 - $25 |
|  | $26 - $50 |
|  | $51 - $100 |
|  | $101 - $250 |
|  | $250+ |

## Attribution

Designed by Neil Squire Society / Makers Making Change

Contributors

* Josie Versloot, Neil Squire. Hardware and enclosure design, coding, documentation.
* Tyler Fentie, Neil Squire. Hardware and enclosure design.
* Milad Hajihassan, Neil Squire. Coding.

The software utilizes the [Adafruit TinyUSB Library for Arduino](https://github.com/adafruit/Adafruit_TinyUSB_Arduino) which is made available under an [MIT license](https://github.com/adafruit/Adafruit_TinyUSB_Arduino/blob/master/LICENSE).

The documentation template was created by Makers Making Change / Neil Squire and is used under a CC BY-SA 4.0 license. It is available at the following link: <https://github.com/makersmakingchange/OpenAT-Template>

# Maker Info

## Project Skills

Mark the required project skills with an “X”:

|  |  |
| --- | --- |
| X | 3D Printing |
|  | Custom PCB |
| X | Electronics |
|  | Laser Cutting |
|  | Mechanics |
| X | Software |
| X | Soldering |
|  | Woodworking |
|  | Other |

## Skills Description

## This is an intermediate build requiring electronics, mechanics, 3D printing, and using the Arduino IDE.

## Tools Needed

|  |  |
| --- | --- |
| X | 3D Printer |
| X | Common Hand Tools |
|  | Common Power Tools |
|  | Laser Cutter |
| X | Soldering Iron |
|  | Specialized Tooling |

## Print time (hrs)

4.0

## Assembly time (hrs)

1.0

## Build Instructions

This build consists of a number of off-the-shelf electronic components that are soldered into a protoboard and connected together using wires and solder bridges. The electronics are then assembled into a 3D printed enclosure and the firmware is flashed to the microcontroller using the Arduino IDE.

Detailed step-by-step instructions are available in the Maker Guide <link>.

## Download Link

<Link to direct download of all project files e.g., Github Zip folder>

## Project Link

< Link to GitHub repository>

# License

## License

This repository describes Open Hardware:

* Everything needed or used to design, make, test, or prepare the Birch Sliding USB Joystick is licensed under the [CERN 2.0 Weakly Reciprocal license (CERN-OHL-W v2) or later](https://cern.ch/cern-ohl) .
* All software is under the [GNU General Public License v3.0 (GPL-3.0)](https://www.gnu.org/licenses/gpl.html).
* Accompanying material such as instruction manuals, videos, and other copyrightable works that are useful but not necessary to design, make, test, or prepare the Birch Sliding USB Joystick are published under a [Creative Commons Attribution-ShareAlike 4.0 license (CC BY-SA 4.0)](https://creativecommons.org/licenses/by-sa/4.0/) .

You may redistribute and modify this documentation and make products using it under the terms of the [CERN-OHL-W v2](https://cern.ch/cern-ohl). This documentation is distributed WITHOUT ANY EXPRESS OR IMPLIED WARRANTY, INCLUDING OF MERCHANTABILITY, SATISFACTORY QUALITY AND FITNESS FOR A PARTICULAR PURPOSE. Please see the CERN-OHL-W v2 for applicable conditions.