**Title**

FreedomWing Joystick Adapter

### Subtitle

An adapter for connecting a DB9 powerchair joystick to a gaming system.

### Overview

The FreedomWing Joystick Adapter provides a way to connect a powerchair joystick to a gaming system. This can enable someone to game with the same joystick they use to control their powerchair. This adapter is compatible with joysticks that attach to the powerchair via a DB9 connector.

The FreedomWing was designed by [ATMakers](http://atmakers.org/) in collaboration with [The AbleGamers Charity](http://ablegamers.org/) and [GRA-V Robotics](https://www.facebook.com/grav.robotics/). Makers Making Change updated the design of the PCB and created a basic set of documentation for FreedomWing 1.1.

### Usage

1. Disable wheelchair motors.
2. Disconnect the joystick DB9 connector from wheelchair.
3. Connect the joystick DB9 connector to the FreedomWing Adapter Input.
4. Connect the FreedomWing Adapter USB cable to the host device. (Use a suitable adapter if necessary.)

### Cost

The approximate cost of materials to make a single FreedomWing Joystick Adapter is $75.

### Build Instructions

As Open Source Hardware, all of the code and files necessary to construct the device are available for free at the linked repository. Refer to the Bill of Materials, 3D Printing Guide, and Assembly Guide.

#### SKILLS REQUIRED

* 3D Printing
* Custom PCB
* Soldering

#### TIME REQUIRED

* 3D Printing Time: 2h30m
* Assembly Time: 1h

#### TOOLS

* 3D Printer
* Soldering Iron
* Small screwdriver
* Side Cutters

#### 3D PRINTING

This design utilizes a 3D printed enclosure. The enclosure consists of a total of four parts, with a print time of approximately 2h30m.

#### CUSTOM PRINTED CIRCUIT BOARD (PCB)

This design utilizes a custom printed circuit board (PCB). These may be obtained in small quantities (typically 5) from custom PCB manufacturers.

### Attribution

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