

Stepper Motor Driver for RP2040

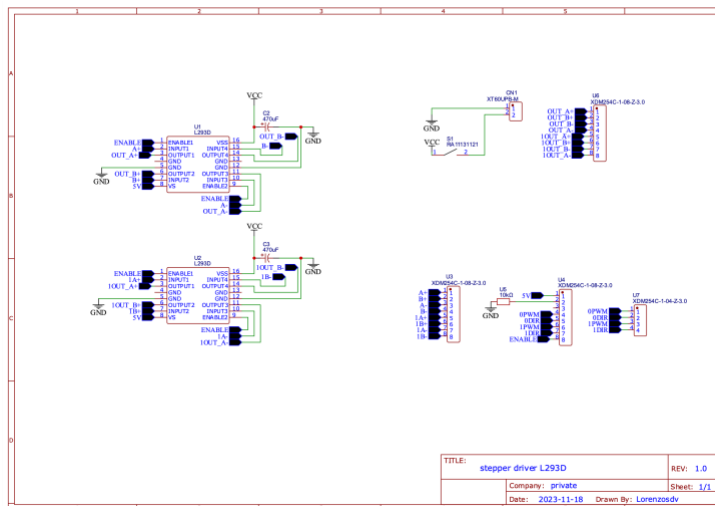
This project demonstrates how to control stepper motors using the Raspberry Pi Pico and the L293D motor driver. The design is specifically intended for small stepper motors, such as those used in CD drives and NEMA 8 motors that require low current.

Components

- **Raspberry Pi Pico (RP2040)**
- **L293D Motor Driver**
- Stepper Motor (CD drive stepper motor or NEMA 8)

Note: Although the L293D is used in this project, any H-bridge motor driver can be used to control larger stepper motors.

Schematic



Code

The code for this project is written in C. To compile the code, follow the Getting Started with Pico guide from the Raspberry Pi Foundation.

The complete code can be found in the **stepper.c** file in this repository.

Getting Started

1. **Set up your development environment:**
 - Follow the Getting Started with Pico guide to set up the C SDK for the RP2040.
2. **Clone this repository:**

```
git clone https://github.com/yourusername/stepper-motor-driver.git cd stepper-motor-
```

3. **Open the project in your preferred IDE:**
 - Load the **stepper.c** file and ensure the development environment is correctly configured.
4. **Compile and upload the code:**
 - Use the Pico SDK tools to compile the code and upload it to your Raspberry Pi Pico.
5. **Connect the components as per the schematic:**
 - Refer to the schematic provided in this repository to connect the Raspberry Pi Pico, L293D motor driver, and the stepper motor.
6. **Run the program:**
 - Once everything is connected and the code is uploaded, run the program to control the stepper motor.

Usage

- This driver can be used for various small stepper motors, including those found in CD drives and NEMA 8 stepper motors.
- For larger stepper motors, ensure you use a compatible H-bridge motor driver that can handle the required current.

License

This project is licensed under the MIT License - see the LICENSE file for details.

Contributing

Contributions are welcome! Please open an issue or submit a pull request.

Acknowledgements

- Raspberry Pi Foundation for the Pico SDK and documentation.