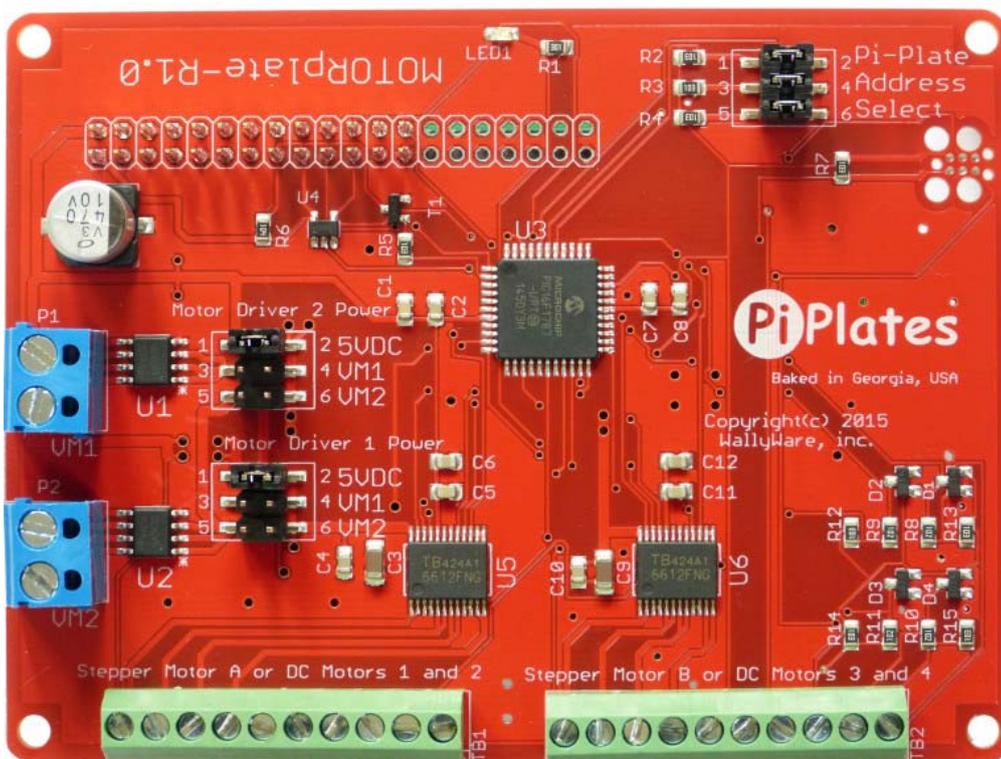


MOTORplate



MOTORpla

The most powerful motion controller available for the Raspberry Pi

The Pi-Plates MOTORplate brings a rich set of professional motion control features to your Raspberry Pi. These plates can each control a combination of two stepper motors, four DC motors or one stepper and two DC motors. Plus, they can be stacked eight high and are compatible with all of our other boards. An onboard microprocessor does all the hard work including controlling acceleration trajectories and microstepping. By offloading these functions, your Raspberry Pi is free to perform other tasks. Use this board to control a precision XY stage driven by stepper motors. Or, drive the treads of your killer robot.

General

- Can drive 2 stepper motors or 4 DC motors or a combination of the two.
- Output currents as high as 1.2 amps (avg) and 3.2 amps (peak)
- Motor driving MOS transistors ensure cool and efficient operation

- Auxiliary power inputs with selectors and reverse-voltage-protection allow each motor controller chip to be powered by either the:
 - The Raspberry Pi 5VDC supply
 - A dedicated power input (15V MAX)
- Dedicated onboard processor
- Calculates and provides real time acceleration trajectories
- Allows for future code updates
- Only needs two dedicated RPI pins (GPIO 25 and CE1)¹
- All features accessible via rich Python command set
- Compatible with all versions of Raspberry Pi
- Design allows up to eight MOTORplate boards to be stacked together for eight times the drive capability: 16 stepper motors or 32 DC motors!
- Uses less than 10mA of DC current during standby²
- Conforms to ROHS, FCC Part 15 Class A, and CE standards
- All inputs ESD and overvoltage protected
- +5 and ground available on terminal blocks for powering hall effect sensors, optoisolators, and limit switches
- Includes programmable LED
- Compatible with ServoBlaster
- 100% Tested
- [Detailed Online Users Guide with Examples](#)
- Dimensions: 100mm long x 75mm wide X 15mm high

Stepper Motor Driver

- Up to two dedicated bipolar stepper drivers
- Step rates as high as 2000sps
- Acceleration and Deceleration from 0 to 5 seconds
- Supports full and half steps
- Supports 4 and 8 microstepping resolutions
- Functions include MOVE, JOG, STOP, and OFF
- Supports dynamic speed changes
- Coil drive voltages as high as 15VDC

DC Motor Driver

- Up to four dedicated DC motors
- Bidirectional direction control
- Ten-bit PWM speed control for each motor
- Acceleration and Deceleration from 0 to 5 seconds
- Functions include START and STOP
- Supports dynamic speed changes
- Motor drive voltages as high as 15VDC
- Dedicated tachometer for each motor allows for speed control

Sensor / Tachometer Inputs

- 4 protected inputs
- Can be used for closed loop speed control of DC motors
- Can be used to send a stepper motor to a “home” position
- 3.3 and 5.0 logic compatible
- 10K Ohm pullup resistors on each input
- Can be polled or programmed to generate an interrupt on change³
- Frequency counter on each input for measuring tachometer signals. Coarse

reading available 8 times per second with accurate value available once per second.

Compatibility

- DAQCplate
 - RELAYplate
 - PROTOplate
 - CASEplate
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Notes

1. More pins may be required if additional features are enabled
2. Current will increase as LEDs are turned on or if 5VDC is used to power open collector loads
3. GPIO 22 is required when interrupts are enabled