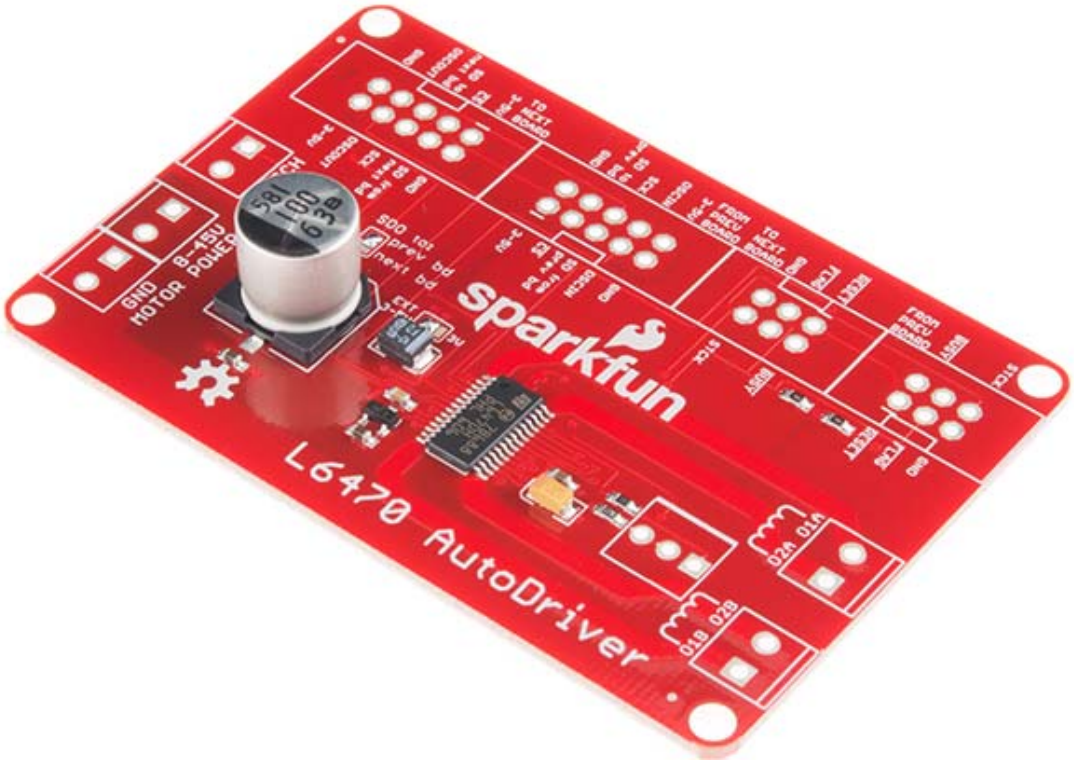

SparkFun AutoDriver - Stepper Motor Driver (v13)

BOB-13752 ROHS

The SparkFun AutoDriver board is based on the STMicro L6470 dSPIN stepper motor driver. This powerful chip allows you to control a stepper motor with a voltage from 8 to 45V at 3A_{rms} over an SPI connection. The AutoDriver board has been designed to be easily integrated into a project, even with multiple boards. Just connect your motors and your SPI-capable microcontroller and get steppin'!

STMicro's L6470 is a 3A, 8–45V bipolar stepper motor driver. It has built-in overcurrent detection, undervoltage detection, overtemperature detection, stall detection, a 5-bit ADC, and a switch input that can be used for either user jog control or as a hard stop function. As if that weren't enough, it also features microstepping support (up to 128 microsteps per full step) and PWM drive voltage limiting. Please keep in mind that the L6470 requires a great deal more configuration and adds software complexity to your system.

Unlike most stepper motor drivers, the dSPIN is controlled over an SPI link. It has an onboard 16MHz oscillator, which allows it to autonomously execute movement commands. That means no more counting steps in your code! It also supports customized acceleration and deceleration profiles to prevent jerky starts and stops. Onboard registers track current speed and location.

This new version of the SparkFun AutoDriver's hardware is slightly different from the previous revision. It has been modified to make it easier to daisy-chain multiple boards together with simple 10-conductor ribbon cables for data and 6-conductor ribbon cables for control. The library has been updated as well, with more information found in the Hookup Guide below.

The logic supply voltage supports both 3.3V and 5V I/O levels.

FEATURES

- Supports up to 128 Microsteps per Full Step
- Daisy-Chain Capable
- Over-Temperature Detect
- Over-Current Detect
- Under-Voltage Detect
- PWM Drive-Voltage Limiting
- SPI Controlled
- Onboard Oscillator and Speed/Location Registers
- Stall Detection
- 5-bit ADC