

# GRBLDuino Stepper Driver Breakout Board Datasheet



This module allows you to use a DRV8825 or A4988 stepper motor driver as a standalone driver with any CNC controller providing step and direction signals. This module has full microstepping functionality. Genuine Nichicon capacitors are used to allow for maximum supported stepper motor voltage up to 50v (based on driver input voltage limitations).

## Connections

When looking at the PCB from the top with the mounting holes up, the left side of the board is for connections to the CNC controller 5v, GND, Step, and Direction lines.

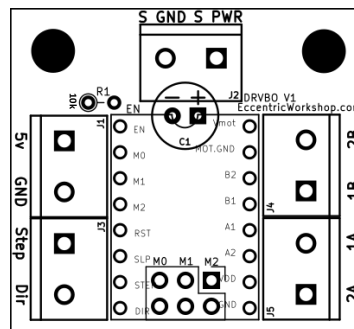
The right-side terminal blocks are for connections to a stepper motor. From top to bottom, the connections are the standard 2B, 1B, 1A, 2A.

For Always Enabled, the top terminal is for stepper motor power connection. For Selectable Enable, the top right terminal is for stepper motor power. The input voltage is determined by the stepper driver you are using but should be no more than 45v DC to avoid damage. There is no protection so be sure to connect power and ground correctly or the capacitor and driver will be destroyed.

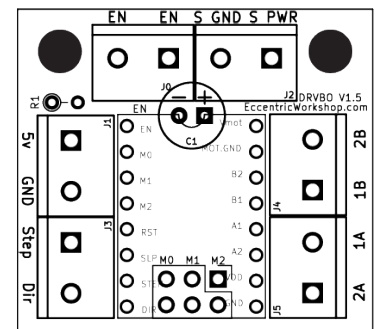
On Selectable Enable, the top left terminals are for the CNC controller driver enable signal. Either may be used.

## Bill of Materials

- 1 DRVBO PCB
- 5/6 2 position screw terminal blocks
- 1 100uF, 50V capacitor (C1)
- 1 2x3 male header
- 2 1x8 female header
  
- R1 is 10k ohm and only used if the stepper driver enable line is active high. For DRV8825 and A4988 on Always Enabled, this will be unused and steppers will be active whenever powered.



Always Enabled



Selectable Enable

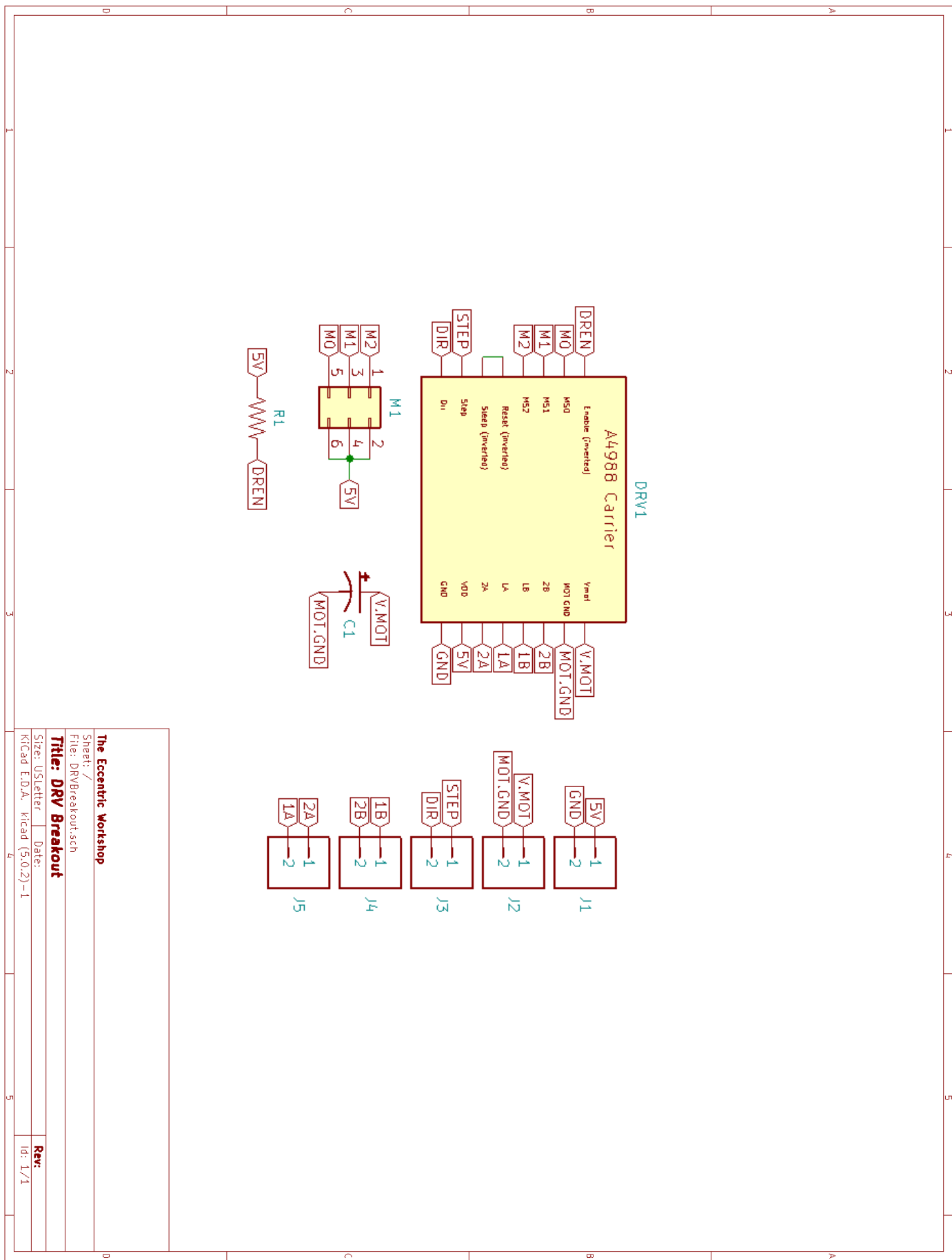
## Microstep Settings

DRV8825 Microstepping Settings

Resolution	M0	M1	M2
Full Step	Low	Low	Low
1/2 Step	High	Low	Low
1/4 Step	Low	High	Low
1/8 Step	High	High	Low
1/16 Step	Low	Low	High
1/32 Step	High	Low	High
1/32 Step	Low	High	High
1/32 Step	High	High	High

A4988 Microstepping Settings

Resolution	M0	M1	M2
Full Step	Low	Low	Low
1/2 Step	High	Low	Low
1/4 Step	Low	High	Low
1/8 Step	High	High	Low
1/16 Step	High	High	High



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