GRBLDuino Stepper Driver Breakout Board Datasheet   V1

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 your driver limitations).
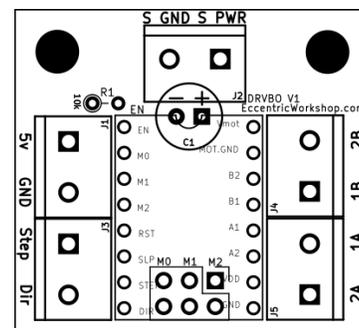
Connections

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

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

The top terminal is for your stepper motor power connection. 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.

Bill of Materials

- 1   DRVBO PCB
- 5   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 your stepper driver enable line is active high. For DRV8825 and A4988, this will be unused and your steppers will be active whenever powered.
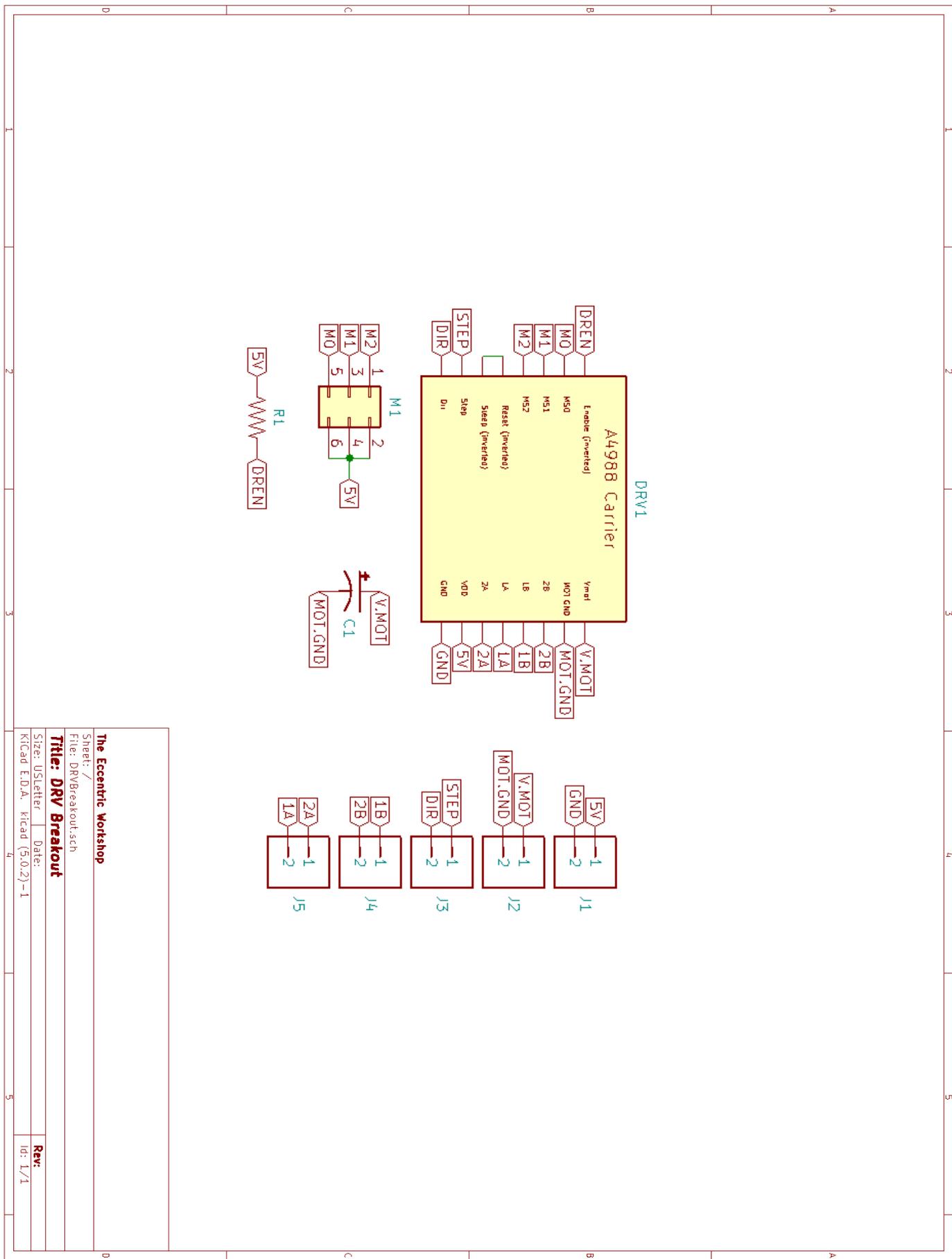

Microstep Settings

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

DRV1

A4988 Carrier

Enable (inverted)
MS0
MS1
MS2
Step
Dir
Reset (inverted)
Sleep (inverted)
GND
VDD
2A
1A
1B
2B
MOT GND
Vmot

DREN
M0
M1
M2
STEP
DIR

GND
5V
2A
1A
1B
2B
MOT.GND
V.MOT

M1

M0 M1 M2
5   3   1
6   4   2
5V

R1

5V
DREN

C1

V.MOT
MOT.GND

J5
1A 2A
2   1

J4
2B 1B
2   1

J3
DIR STEP
2   1

J2
MOT.GND V.MOT
2   1

J1
GND 5V
2   1