

GRBLDuino Uno Lite V1 – GRBL v1.1 Compatible



GRBLDuino Uno Lite is a GRBL v1.1 compatible 4-axis external driver CNC shield for the Arduino Uno platform.

The GRBLDuino Uno Lite is designed to provide easy access to the pins required for complete machine control. Terminal blocks are provided to allow for easy connections to control buttons and dual-axis limit switches.

Bill of Materials

• 1	GRBLDuino Uno Lite PCB	• 24	2 Position Screw Terminal Blocks
• 1	1x3 Pin Male Pin Headers	• 3	Long 2 Pin Jumper Shunts
• 1	1x6 Pin Male Pin Headers	• 1	Tact Switch
• 2	1x8 Pin Male Pin Headers	• 1	10k Ohm Resistor (R1)
• 1	1x10 Pin Male Pin Headers	• 1	680 Ohm Network Resistor (RN2)
• 2	2x4 Pin Male Pin Headers	• 4	150nF Ceramic Capacitors (C5-8)

Stepper Driver Connections

GRBLDuino Uno Lite is designed to be used with any external stepper driver supporting step and direction signals as produced by GRBL. Step and Direction terminals are provided for each of the 4 axes. Additional terminals are provided for driver enable (DR EN), ground (GND), as well as 5v and 3.3v outputs.

A Axis Jumper Settings

The 4th axis (the A axis) can be driven as an independent axis (with customized GRBL firmware) or cloned from the X, Y, or Z axis. Through the A Step and A Dir jumper settings, the A axis step and direction pins can be independently slaved to any other axis step or direction, or can be driven separately through Arduino pins A3 and A4. Please be aware Coolant Enable is tied to pin A3 and is unavailable when the independent A axis is in use.

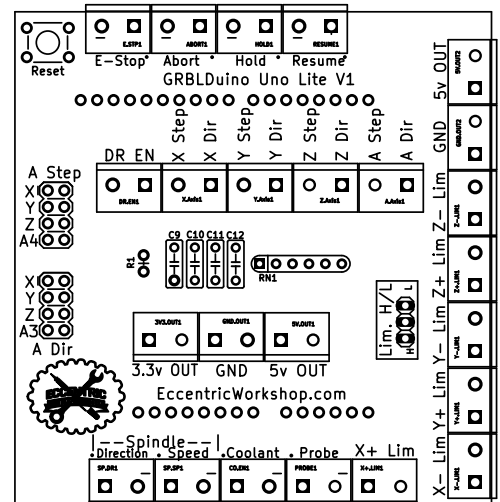
To clone an axis, place the A Step and A Dir jumpers on the X, Y, or Z header pins to select that axis.

Machine Connections

8 machine functions are provided: Emergency Stop, Abort, Hold, Resume, Spindle Direction, Spindle Speed, Coolant Enable, and Probe.

If you wish to perform more advanced functions, the control pin is marked by a dot.

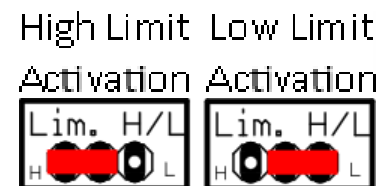
Spindle Speed is GRBL PWM spindle speed control ready to connect to a spindle motor driver PWM input. On these terminal blocks, the control pin is the left terminal in each block when viewed from the top of the board and is also marked with a dot. The right (unmarked) pin is ground.

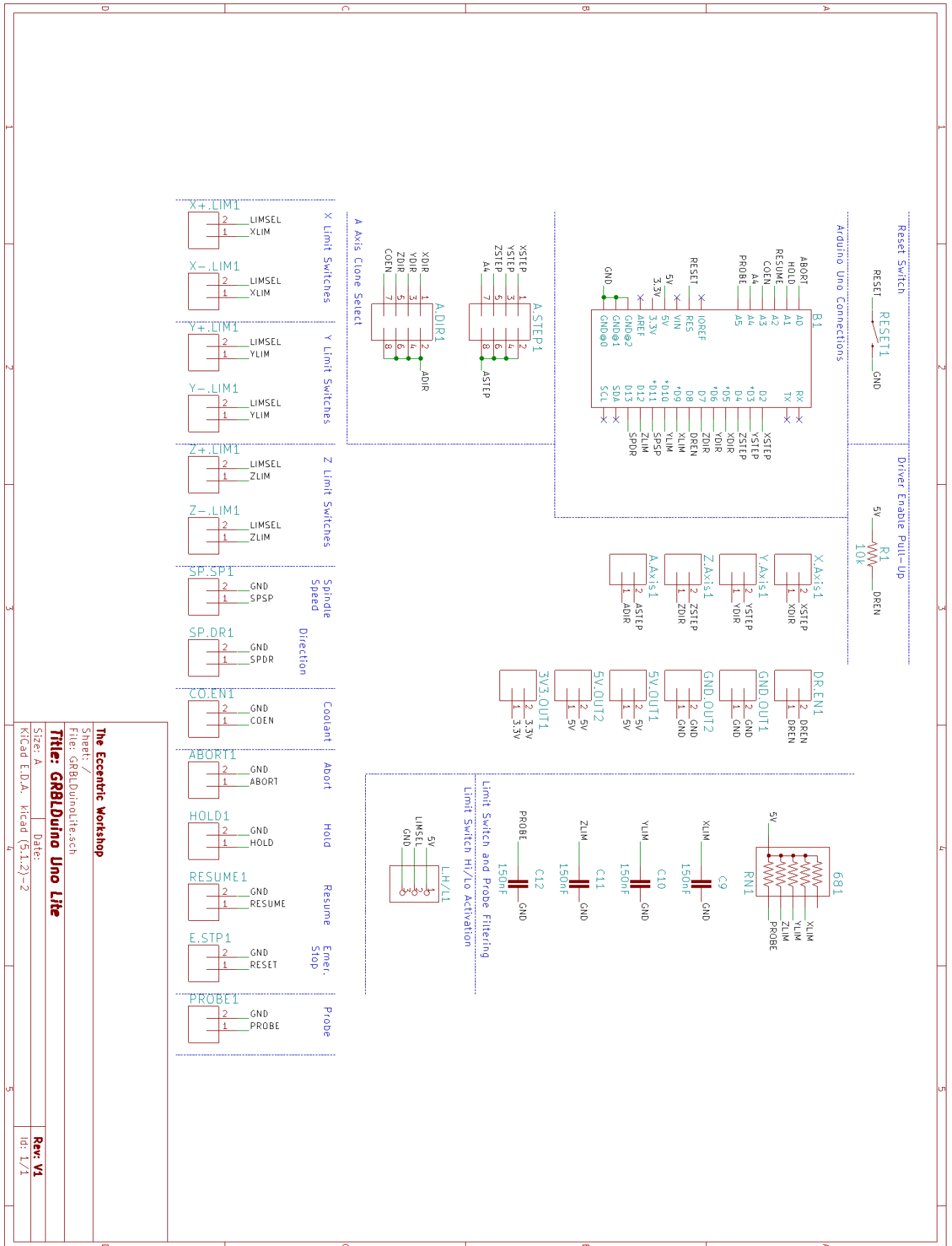


Limit Switch Settings

GRBLDuino Lite allows for connection of 6 limit switches: two (+ and -) per X, Y, and Z axis. Because each switch is on an independent terminal block, either switch wire can go into either terminal without regard to polarity.

GRBL default is for limit switch activation through a normally-open switch connecting the limit switch pin to ground. This mode is picked by using the Lim. H/L jumper to select the center and top pints. If you prefer to have high activated limit switches, use the Lim. H/L jumper to select the center and bottom pins.





The Eccentric Workshop
 Sheet: /
 File: GRBLDuinoLite.sch
Title: GRBLDuino Uno Lite
 Size: A Date: / /
 Kicad E.O.A. kicad (5.1.2)-2

Rev: V1
 Id: 1/1