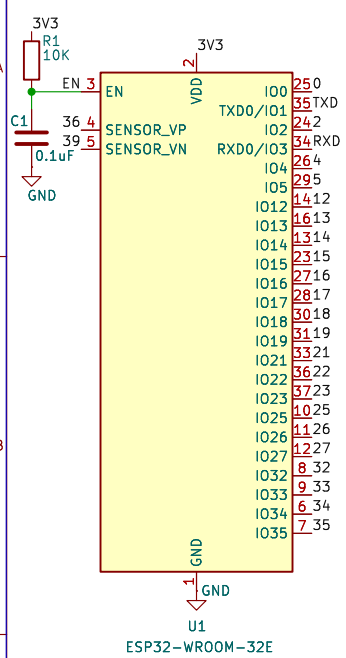


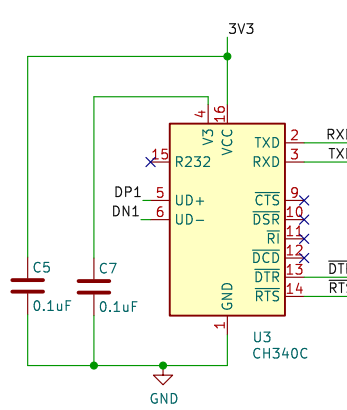
# GANTRY PCB – 2025

## MICROCONTROLLER

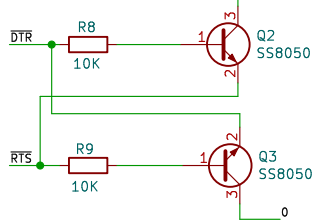
### ESP32 Module



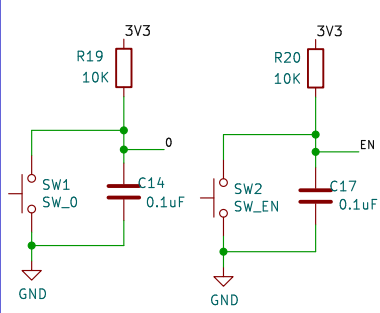
### USB to TTL(Serial)Converter



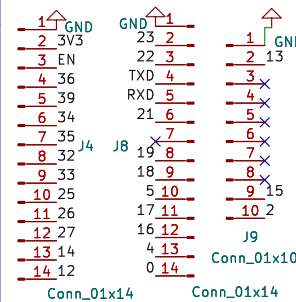
### Serial Boot



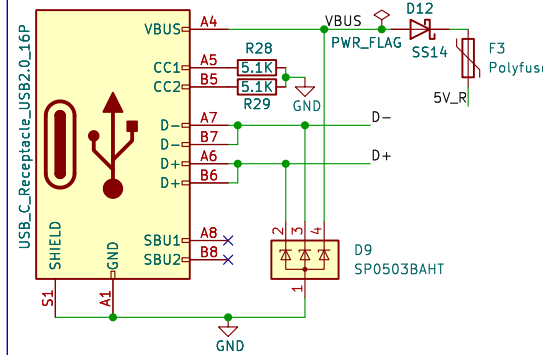
### Switching Circuitry



### Headers for ESP-32

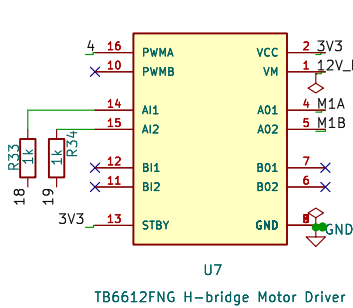


## Type-C Port



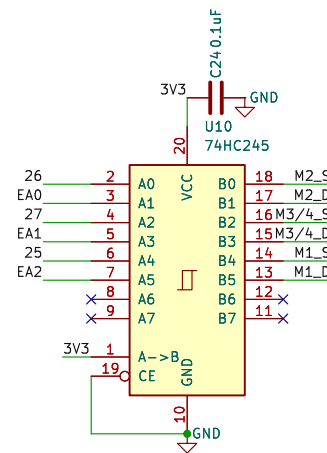
## MOTOR DRIVER

### TB6612FNG

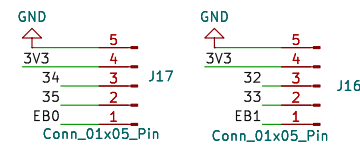


## BUFFER IC

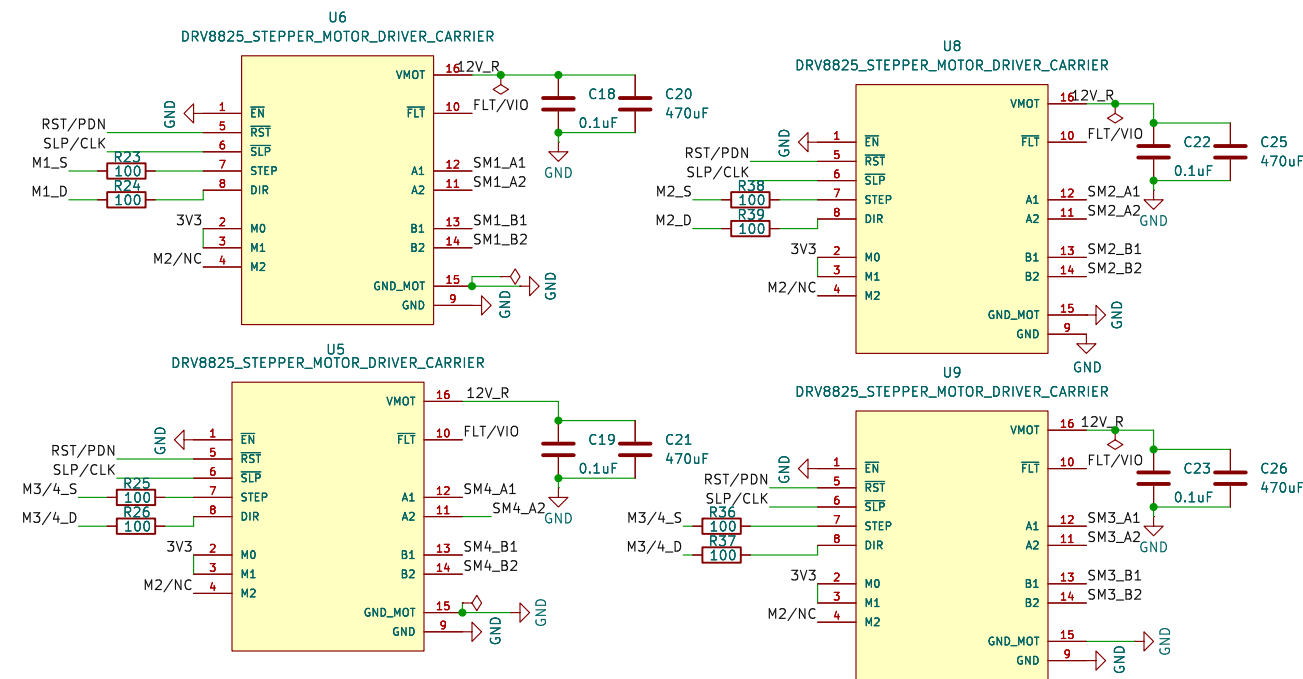
### 74HC245



## JOYSTICK

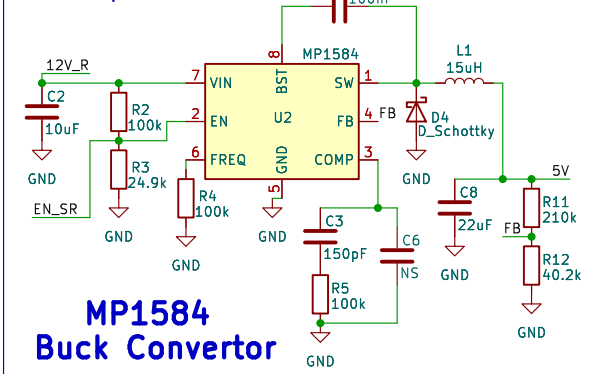


## STEPPER MOTOR DRIVER DRV8825

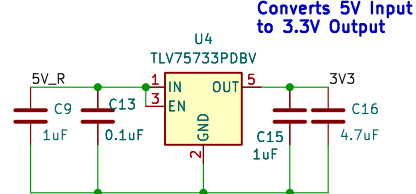


## POWER CIRCUITRY

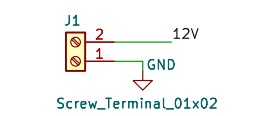
### Converts 12V Input to 5V Output



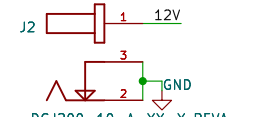
### TLV75733: LDO Regulator



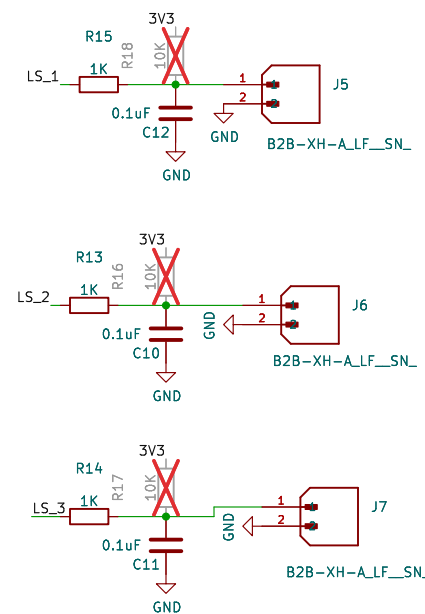
### 12V-GND Terminal



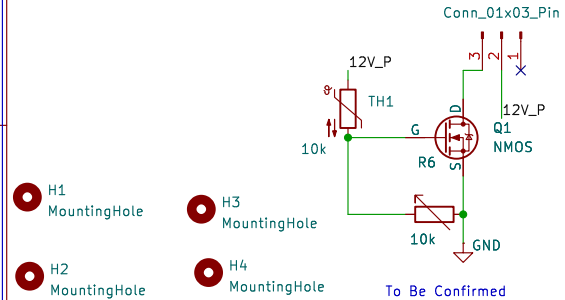
### 12V-DC Power Jack



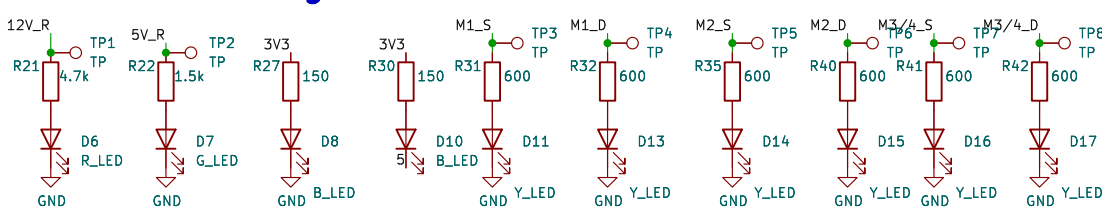
## LIMIT SWITCHES



## COOLING FAN

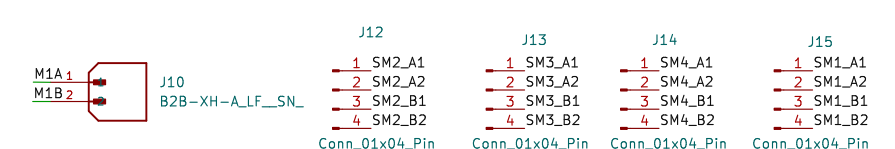


## Diagnostic LEDs & Test Points



## SCREW DRIVER MOTOR PORTS

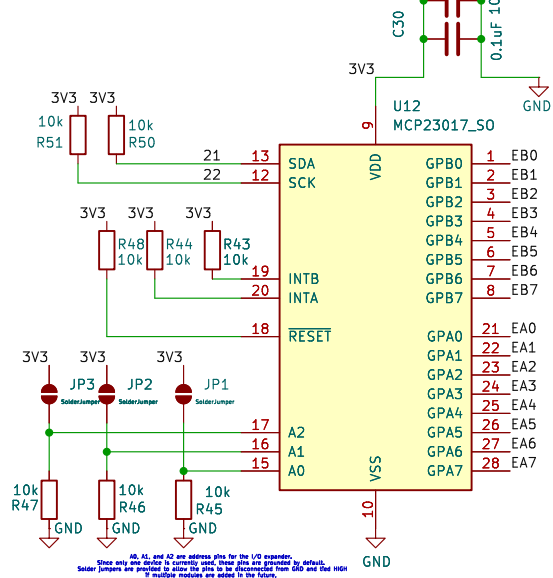
## STEPPER MOTOR PORTS Output Terminal Blocks



## Pin Connections

GPIO	Usage
35	VRy joystick 1
34	VRx joystick 1
33	VRy joystick 2
32	VRx joystick 2
27	Motor 3/4 Step
26	Motor 2 Step
25	Motor 1 Step
23	
22	SCL
21	SDA
19	Screw Driver A2
18	Screw Driver A1
17	TX for TMC2208
16	RX for TMC2208
15	
14	
13	CLK for TMC2208
12	
5	LED Blink
4	PWM for Screw Motor
3	
2	
1	
0	

## GPIO Expander MCP23017

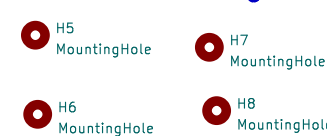


## DPDT SWITCHES



When DPDT Switch is pressed, PCB is configured in UART mode for TMC2208 and in off state for DRV8825

## DRILLS-Mounting Holes



Sheet: /  
File: Gantry\_PCBv2.kicad\_sch

Title:

Size: User Date:  
KiCad E.D.A. 9.0.2

Rev:  
Id: 1/1