

[illegible]

Lever Shifter AND 8V POWER

VDD33

VDD8

GPIO7

R5 10k

Q1 BSS138

R6 10k

SV_0

VDD8

GND

J5 SRVO

VBUS

U3 AMS1117

VI

ADJ

VO

C4 10uf

R7 1k

R8 5k1

VDD8

C5 10uf

GND

Vout = Vref(1 + R8/R7) + Iadj * R8

Vref = 1.25V

Iadj = 50nA

Vour = 7.9V

DRV8825 FOR Stepper Motor

U4
DRV8825

GPIO45 1 EN
5 RST
GPIO41 6 SLP
7 STEP
GPIO42 8 DIR

VDD33 ←

GPIO48 2 M0
GPIO47 3 M1
GPIO46 4 M2

VMOT 16
GND_MOT 15
A1 12
A2 11
B1 13
B2 14
FLT 10
GND 9

VBUS
C6
100uf
GND

NEMA17
A1 1
A2 2
B1 3
B2 4

M0 M1 M2 Microstep Resolution
0 0 0 Full step
1 0 0 Half step
0 1 0 1/4 step
1 1 0 1/8 step
0 0 1 1/16 step
1 0 1 1/32 step
0 1 1 1/32 step
1 1 1 1/32 step

AS5600 ENCODER I2C

J1
AS5600
1 SDA VDD33
2 SDA
3 SCL
4 GND

[illegible]

BTS7960 FOR Linear actuator

The diagram illustrates a circuit for driving a linear actuator using two BTS7960 MOSFETs (U5 and U8) and a 74LS244 buffer (U7). The circuit is powered by a VBUS supply and includes a GND reference.

Components and Connections:

- U5, U8 (BTS7960 MOSFETs):** Two MOSFETs used for driving the actuator. Their VS pins are connected to VBUS. Their IN pins are connected to GPIO12 through resistors R9 and R10 (for U5) and R13 and R14 (for U8). Their SR pins are connected to GND through resistors R11 and R12 (for U5) and R15 and R16 (for U8). Their IS pins are connected to GND through 100pf capacitors C8 and C10.
- U7 (74LS244 Buffer):** A 3-state buffer used for the actuator's control. Its VCC pin is connected to VDD33. Its GND pin is connected to GND. Its inputs are connected to GPIO13 (I0a), GPIO14 (I1a), and a common ground (I0b, I1b, I2b, I3b). Its outputs are connected to the actuator's control lines (OUT1, OUT2) through resistors R17, R18, R19, and R20. The outputs are also connected to the actuator's control lines (OUT1, OUT2) through resistors R21, R22, R23, and R24.
- Actuator:** A linear actuator connected to the circuit. Its control lines are connected to the outputs of the MOSFETs (OUT1, OUT2) and the buffer (OUT1, OUT2). The actuator's power supply is connected to VBUS and GND.

Legend:

- GPIO12 EN PIN
- GPIO13 PWM1 PIN
- GPIO14 PWM2 PIN
- POT FOR CLOSELOOP

VDD33 ← 1
GPIO15 ← 2
GND ← 3

J7 Analog

POT FOR CLOSELOOP

```
GPI012 EN PIN
GPI013 PWM1 PIN
GPI014 PWM2 PIN
```

Open hardware

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