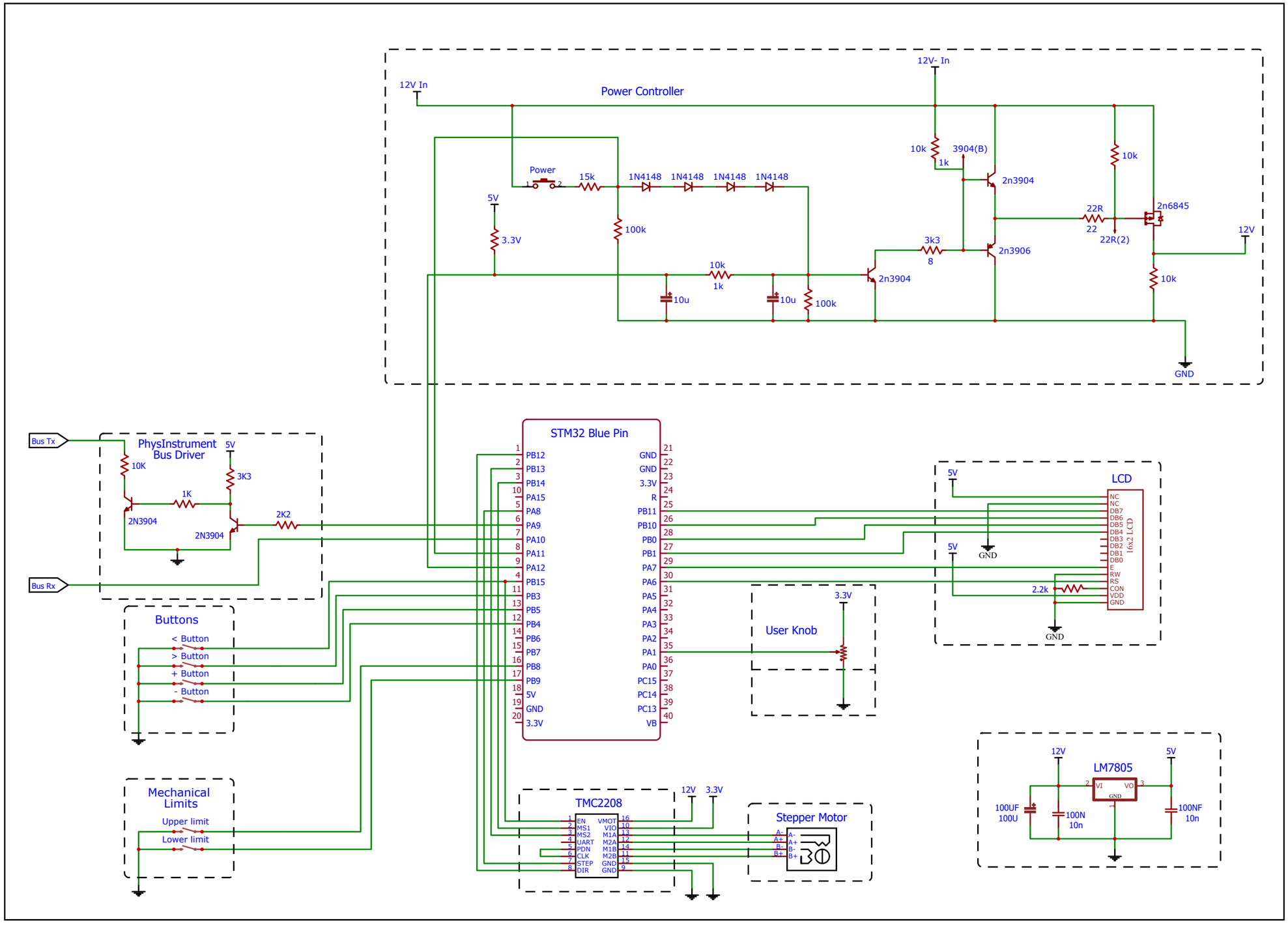
Power Controller
12V In
12V- In
Power
15k
1N4148
1N4148
1N4148
1N4148
5V
3.3V
100k
10k
1k
3904(B)
2n3904
10k
22R
22
22R(2)
2n6845
12V
3k3
8
2n3906
2n3904
10k
10u
10u
100k
GND
PhysInstrument
Bus Driver
Bus Tx
Bus Rx
10K
3K3
1K
2N3904
2N3904
2K2
5V
STM32 Blue Pin
PB12
PB13
PB14
PA15
PA8
PA9
PA10
PA11
PA12
PB15
PB3
PB5
PB4
PB6
PB7
PB8
PB9
5V
GND
3.3V
GND
GND
3.3V
R
PB11
PB10
PB0
PB1
PA7
PA6
PA5
PA4
PA3
PA2
PA1
PA0
PC15
PC14
PC13
VB
LCD
NC
NC
DB7
DB6
DB5
DB4
DB3
DB2
DB1
DB0
E
RW
RS
CON
VDD
GND
16x2 LCD
2.2k
Buttons
< Button
> Button
+ Button
- Button
User Knob
3.3V
Mechanical
Limits
Upper limit
Lower limit
TMC2208
EN
MS1
MS2
UART
PDN
CLK
STEP
DIR
VMO1
VIO
M1A
M2A
M1B
M2B
GND
GND
12V
3.3V
Stepper Motor
A-
A+
B-
B+
LM7805
VI
VO
GND
12V
5V
100UF
100U
100N
10n
100NF
10n