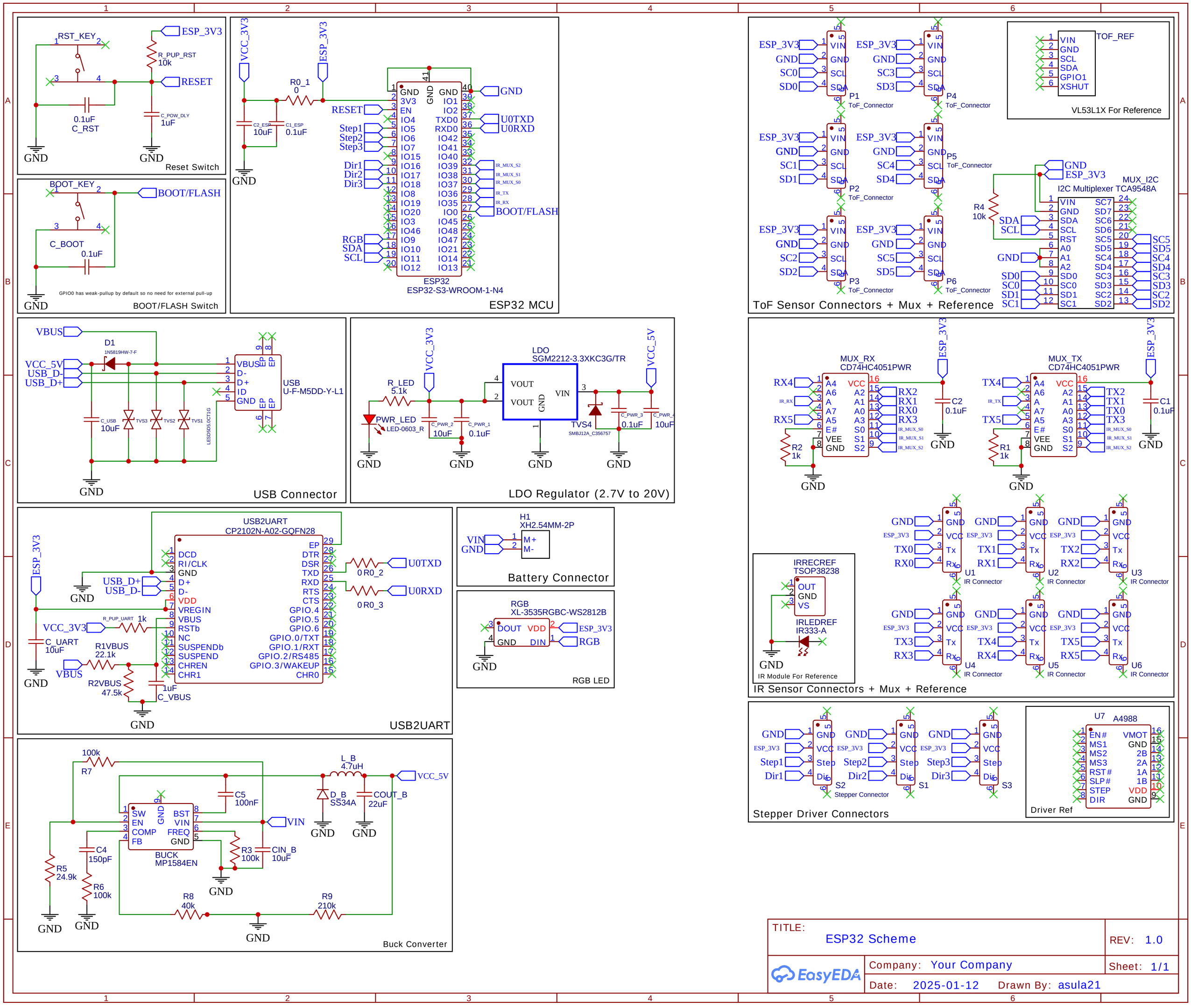
Reset Switch
RST_KEY
ESP_3V3
R_PUP_RST
10k
RESET
0.1uF
C_RST
C_POW_DLY
1uF
GND
BOOT/FLASH Switch
BOOT_KEY
BOOT/FLASH
C_BOOT
0.1uF
GPIO0 has weak-pullup by default so no need for external pull-up
ESP32 MCU
VCC_3V3
ESP_3V3
R0_1
0
C2_ESP
10uF
C1_ESP
0.1uF
ESP32
ESP32-S3-WROOM-1-N4
Step1
Step2
Step3
Dir1
Dir2
Dir3
RGB
SDA
SCL
U0TXD
U0RXD
IR_MUX_S2
IR_MUX_S1
IR_MUX_S0
IR_TX
IR_RX
ToF Sensor Connectors + Mux + Reference
ToF_Connector
VL53L1X For Reference
TOF_REF
VIN
GND
SCL
SDA
GPIO1
XSHUT
I2C Multiplexer TCA9548A
MUX_I2C
R4
10k
USB Connector
VBUS
D1
1N5819HW-7-F
VCC_5V
USB_D-
USB_D+
USB
U-F-M5DD-Y-L1
C_USB
10uF
TVS3
TVS2
TVS1
LESD5D5.0CT1G
LDO Regulator (2.7V to 20V)
LDO
SGM2212-3.3XKC3G/TR
R_LED
5.1k
PWR_LED
LED-0603_R
C_PWR_2
10uF
C_PWR_1
0.1uF
TVS4
SMBJ12A_C356757
C_PWR_3
0.1uF
C_PWR_4
10uF
MUX_RX
CD74HC4051PWR
MUX_TX
CD74HC4051PWR
RX4
RX5
TX4
TX5
R2
1k
R1
1k
C2
0.1uF
C1
0.1uF
IR Sensor Connectors + Mux + Reference
IRRECREF
TSOP38238
IRLEDREF
IR333-A
IR Module For Reference
IR Connector
Stepper Driver Connectors
Stepper Connector
Step1
Dir1
Step2
Dir2
Step3
Dir3
Driver Ref
A4988
EN#
MS1
MS2
MS3
RST#
SLP#
STEP
DIR
VMOT
2B
2A
1A
1B
VDD
USB2UART
CP2102N-A02-GQFN28
USB_D+
USB_D-
VCC_3V3
C_UART
10uF
R1VBUS
22.1k
R2VBUS
47.5k
1uF
C_VBUS
R_PUP_UART
1k
0 R0_2
0 R0_3
Battery Connector
H1
XH2.54MM-2P
M+
M-
RGB LED
RGB
XL-3535RGBC-WS2812B
DOUT
DIN
VDD
Buck Converter
BUCK
MP1584EN
100k
R7
C5
100nF
L_B
4.7uH
D_B
SS34A
COUT_B
22uF
VIN
CIN_B
10uF
R3
100k
C4
150pF
R5
24.9k
R6
100k
R8
40k
R9
210k
TITLE:
ESP32 Scheme
REV: 1.0
Company: Your Company
Sheet: 1/1
Date: 2025-01-12
Drawn By: asula21
EasyEDA