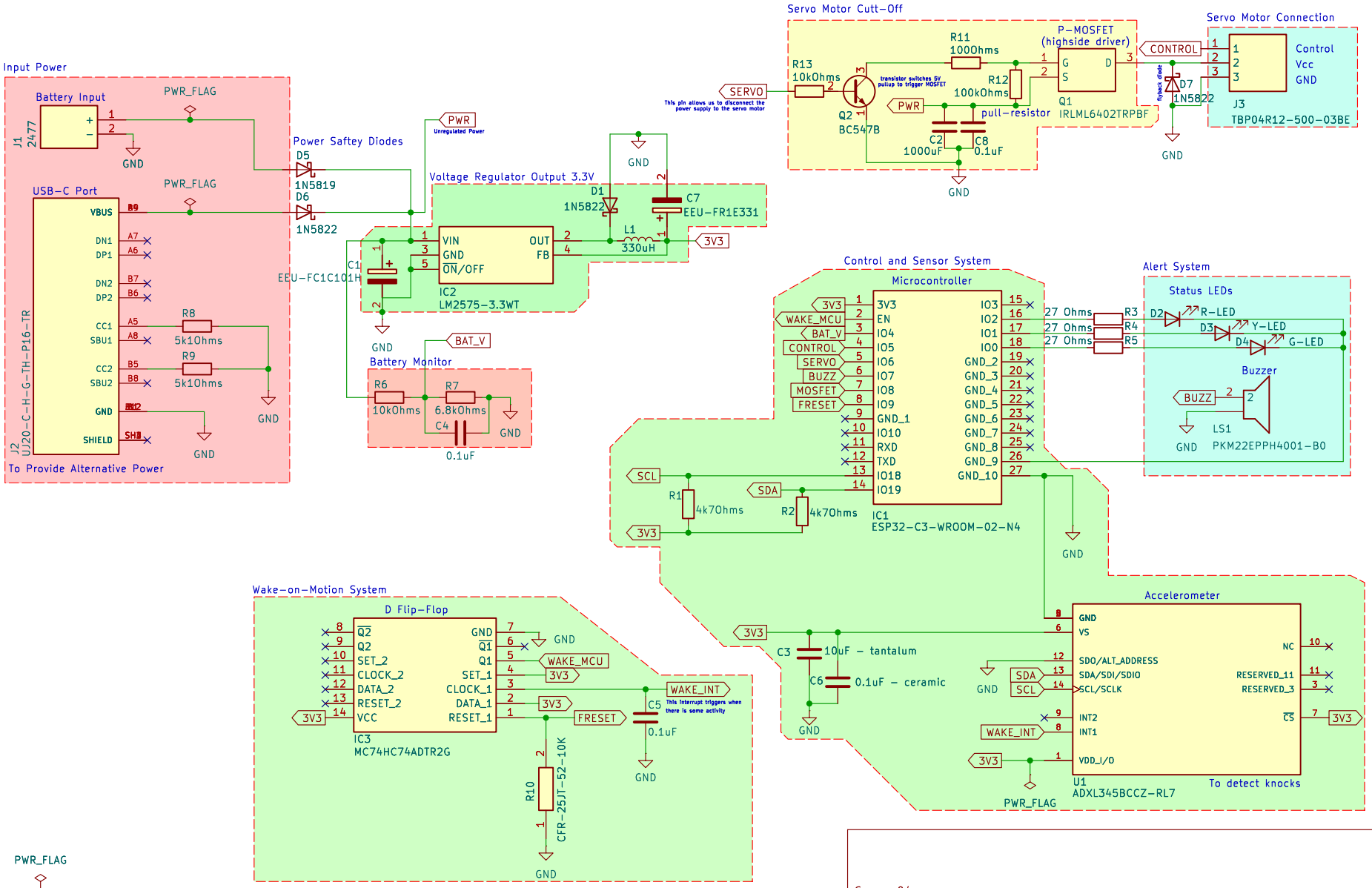
Input Power
Battery Input
J1
2477
PWR_FLAG
GND
USB-C Port
VBUS
DN1
DP1
DN2
DP2
CC1
SBU1
CC2
SBU2
GND
SHIELD
R8
5k1Ohms
R9
5k1Ohms
J2
UJ20-C-H-G-TH-P16-TR
To Provide Alternative Power
Power Saftey Diodes
D5
1N5819
D6
1N5822
PWR
Unregulated Power
Voltage Regulator Output 3.3V
D1
1N5822
C7
EEU-FR1E331
L1
330uH
3V3
C1
EEU-FC1C101H
VIN
GND
ON/OFF
OUT
FB
IC2
LM2575-3.3WT
BAT_V
Battery Monitor
R6
10kOhms
R7
6.8kOhms
C4
0.1uF
Servo Motor Cutt-Off
SERVO
This pin allows us to disconnect the power supply to the servo motor
R13
10kOhms
Q2
BC547B
transistor switches 5V pullup to trigger MOSFET
R11
100Ohms
R12
100kOhms
pull-resistor
P-MOSFET
(highside driver)
Q1
IRLML6402TRPBF
C2
1000uF
C8
0.1uF
Servo Motor Connection
CONTROL
flyback diode
D7
1N5822
J3
TBP04R12-500-03BE
Control
Vcc
GND
Control and Sensor System
Microcontroller
3V3
WAKE_MCU
BAT_V
CONTROL
SERVO
BUZZ
MOSFET
FRESET
IO4
IO5
IO6
IO7
IO8
IO9
GND_1
IO10
RXD
TXD
IO18
IO19
IO3
IO2
IO1
IO0
GND_2
GND_3
GND_4
GND_5
GND_6
GND_7
GND_8
GND_9
GND_10
IC1
ESP32-C3-WROOM-02-N4
SCL
SDA
R1
4k7Ohms
R2
4k7Ohms
Alert System
Status LEDs
R3
R4
R5
27 Ohms
D2
R-LED
D3
Y-LED
D4
G-LED
Buzzer
BUZZ
LS1
PKM22EPPH4001-B0
Wake-on-Motion System
D Flip-Flop
Q2
SET_2
CLOCK_2
DATA_2
RESET_2
VCC
GND
Q1
SET_1
CLOCK_1
DATA_1
RESET_1
WAKE_MCU
FRESET
WAKE_INT
This interrupt triggers when there is some activity
C5
0.1uF
IC3
MC74HC74ADTR2G
R10
CFR-25JT-52-10K
Accelerometer
C3
10uF - tantalum
C6
0.1uF - ceramic
VS
SDO/ALT_ADDRESS
SDA/SDI/SDIO
SCL/SCLK
INT2
INT1
VDD_I/O
NC
RESERVED_11
RESERVED_3
CS
U1
ADXL345BCCZ-RL7
To detect knocks
PWR_FLAG
GND
Common GND
Group 04
HSRW
Sheet: /
File: KnockLock.kicad_sch
Title: KnockLockSchematic
Size: A4
Date: 2025-10-26
Rev: 1.3
KiCad E.D.A. 9.0.5
Id: 1/1