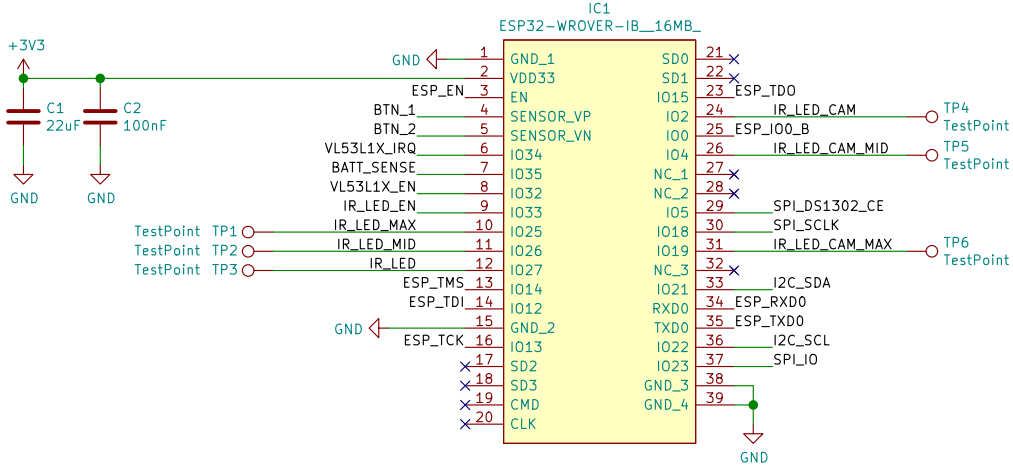
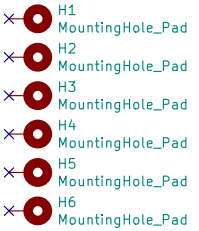
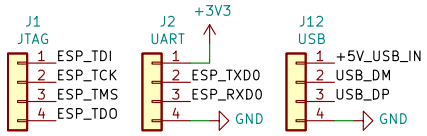
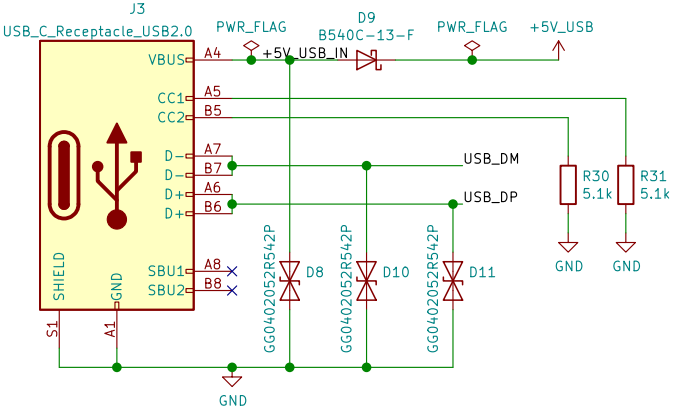
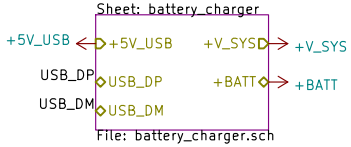
BEACON

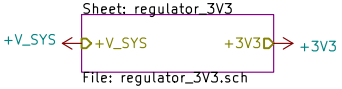


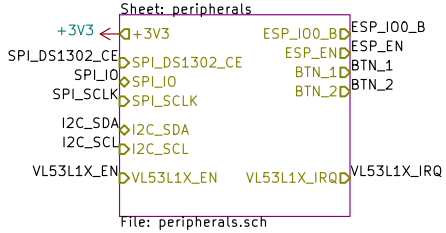


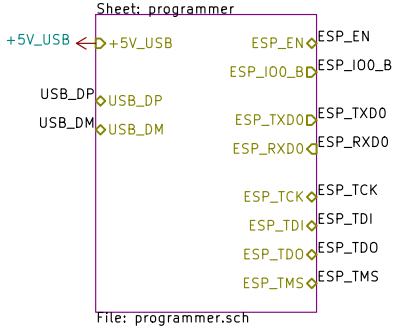


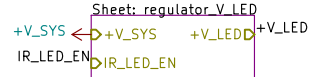


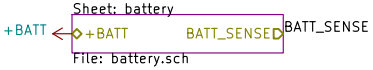


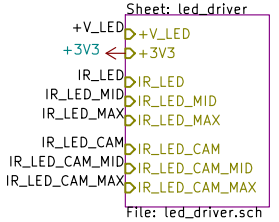












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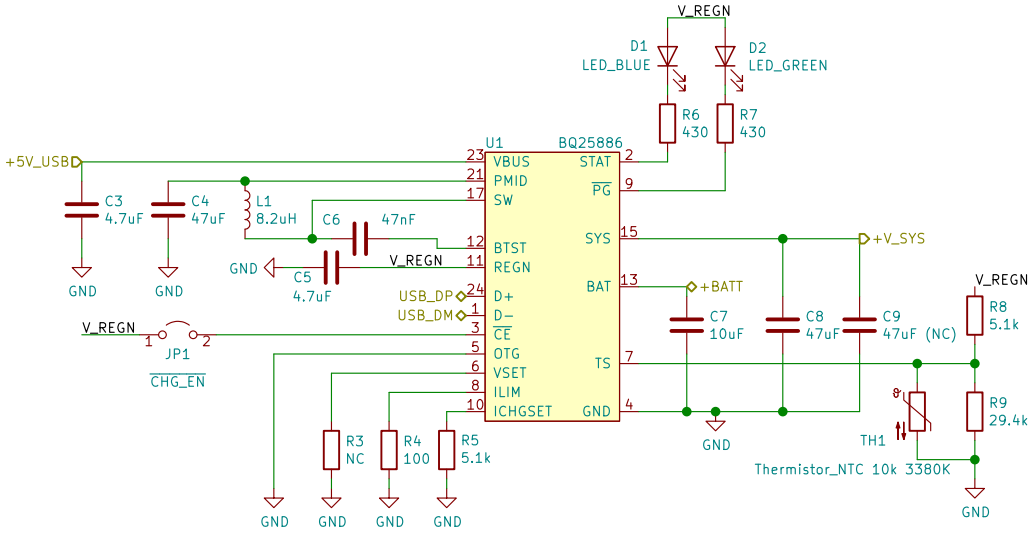
BATTERY CHARGER



RVSET< 18kΩ (short to GND) = 8.2 V
RVSET= 39kΩ (±10%) = 8.8 V
RVSET= 75kΩ (±10%) = 8.7 V
RVSET> 150kΩ (floating) = 8.4 V

I_inmax = 1110 / R_ilim
measure I_in = (1110 * V_ilim) / (R_ilim * 0.8)

I_chg = R_ichgset / 3810

V_REGN = 4.8 V (20mA)

Sheet: /battery_charger/		
File: battery_charger.sch		
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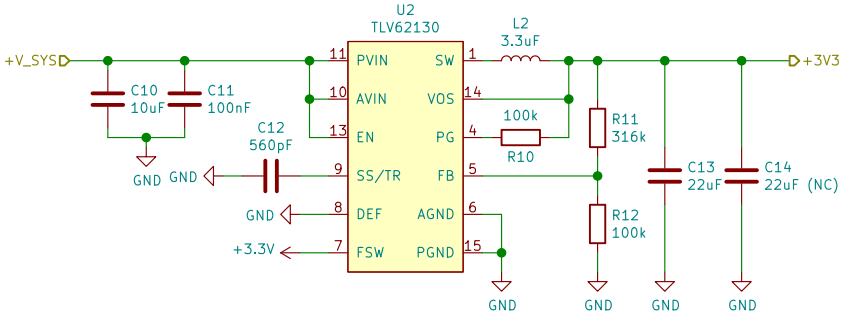
3V3 REGULATOR



R1 = R2 (Vout/0.8 – 1)
Vout = (R1/R2 + 1) * 0.8
(Vout – R1 – FB – R2 – GND)

Css = tss * 2.5uA/1.25V

Sheet: /regulator_3V3/ File: regulator_3V3.sch		
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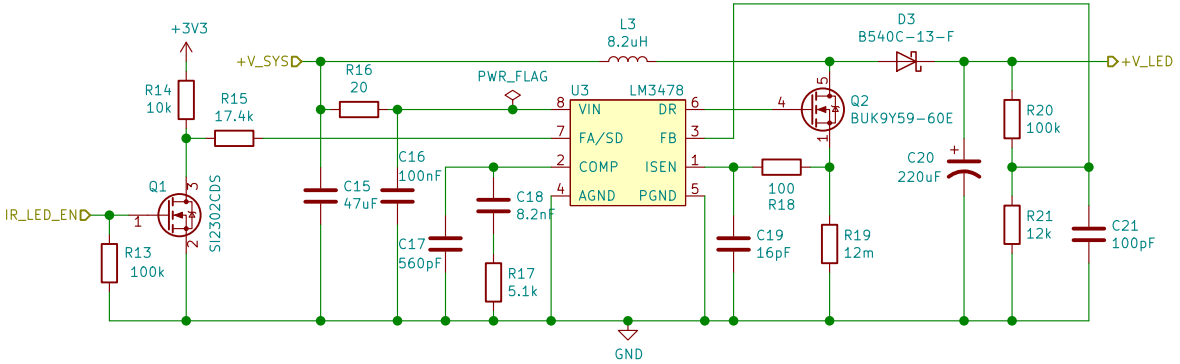
V_LED REGULATOR



+V_LED = 2.65*4+0.7=11.3

2.65 V forward voltage

switching frequency =(4.503 * 10^11 / R) ^ (1/1.26)
R = 4.503 * 10^11 * f^-1.26

Vfb = 1.26V
Rf2 = (1.26 * Rf1) / (Vout - 1.26)
Vout = (1.26 * Rf1) / Rf2 +1.26
(Vout - Rf1 - Vfb - Rf2 - GND)

Sheet: /regulator_V_LED/ File: regulator_V_LED.sch		
Title:		
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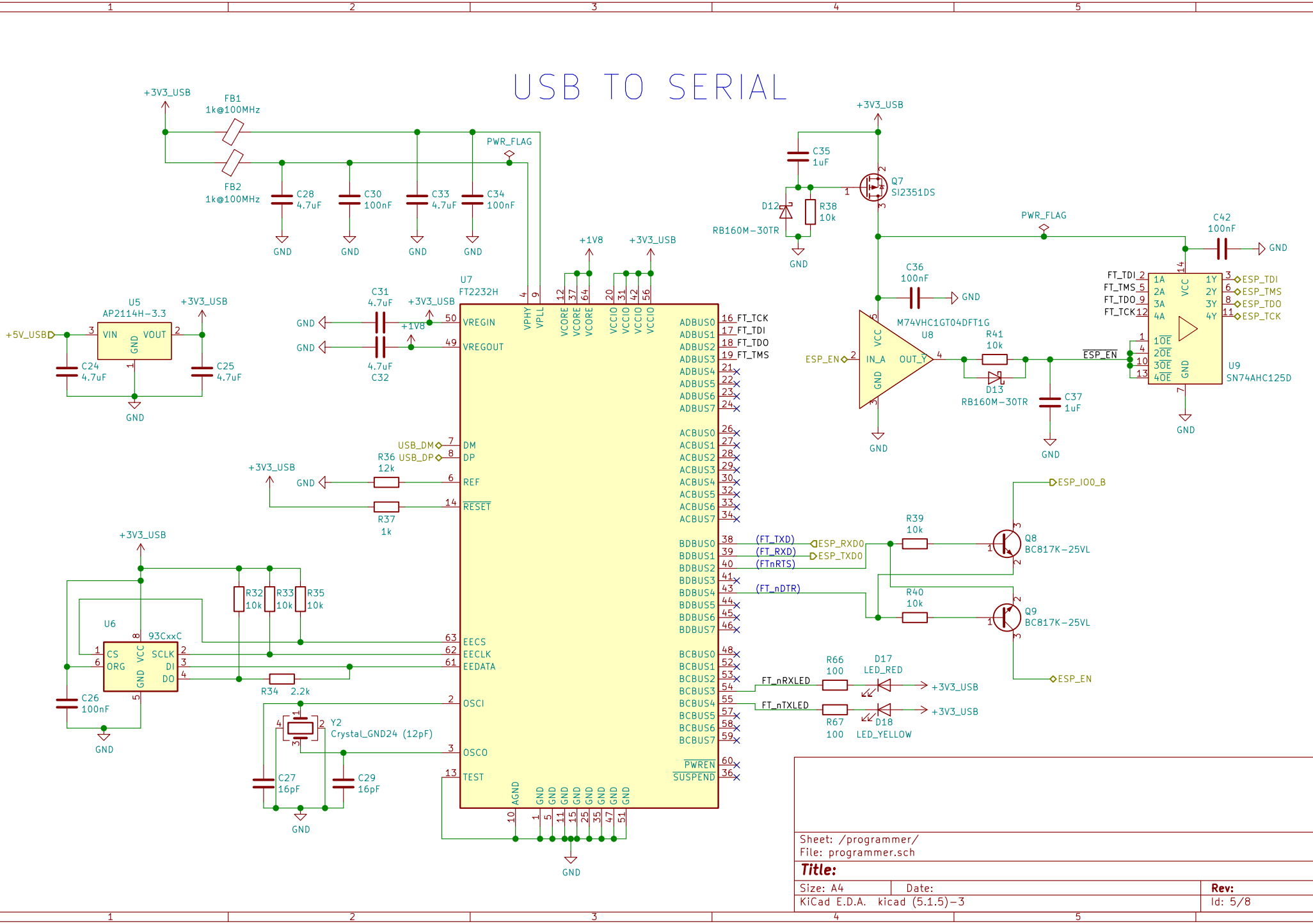
USB TO SERIAL
+3V3_USB
FB1
1k@100MHz
FB2
1k@100MHz
PWR_FLAG
C28
4.7uF
C30
100nF
C33
4.7uF
C34
100nF
GND
+1V8
U7
FT2232H
VREGIN
VREGOUT
VPHY
VPLL
VCORE
VCCIO
C31
4.7uF
C32
4.7uF
U5
AP2114H-3.3
+5V_USB
VIN
VOUT
C24
4.7uF
C25
4.7uF
USB_DM
USB_DP
DM
DP
R36
12k
REF
RESET
R37
1k
ADBUS0
ADBUS1
ADBUS2
ADBUS3
ADBUS4
ADBUS5
ADBUS6
ADBUS7
FT_TCK
FT_TDI
FT_TDO
FT_TMS
ACBUS0
ACBUS1
ACBUS2
ACBUS3
ACBUS4
ACBUS5
ACBUS6
ACBUS7
BDBUS0
BDBUS1
BDBUS2
BDBUS3
BDBUS4
BDBUS5
BDBUS6
BDBUS7
(FT_TXD)
(FT_RXD)
(FTnRTS)
(FT_nDTR)
ESP_RXD0
ESP_TXD0
BCBUS0
BCBUS1
BCBUS2
BCBUS3
BCBUS4
BCBUS5
BCBUS6
BCBUS7
PWREN
SUSPEND
EECS
EECLK
EEDATA
OSCI
OSCO
TEST
AGND
U6
93CxxC
CS
SK
DI
DO
ORG
VCC
GND
R32
10k
R33
10k
R35
10k
R34
2.2k
C26
100nF
Y2
Crystal_GND24 (12pF)
C27
16pF
C29
16pF
C35
1uF
Q7
SI2351DS
D12
RB160M-30TR
R38
10k
C36
100nF
C42
100nF
M74VHC1GT04DFT1G
U8
ESP_EN
IN_A
OUT_Y
R41
10k
D13
RB160M-30TR
C37
1uF
U9
SN74AHC125D
FT_TDI
FT_TMS
FT_TDO
FT_TCK
ESP_TDI
ESP_TMS
ESP_TDO
ESP_TCK
R39
10k
R40
10k
Q8
BC817K-25VL
Q9
BC817K-25VL
ESP_IO0_B
R66
100
R67
100
D17
LED_RED
D18
LED_YELLOW
FT_nRXLED
FT_nTXLED
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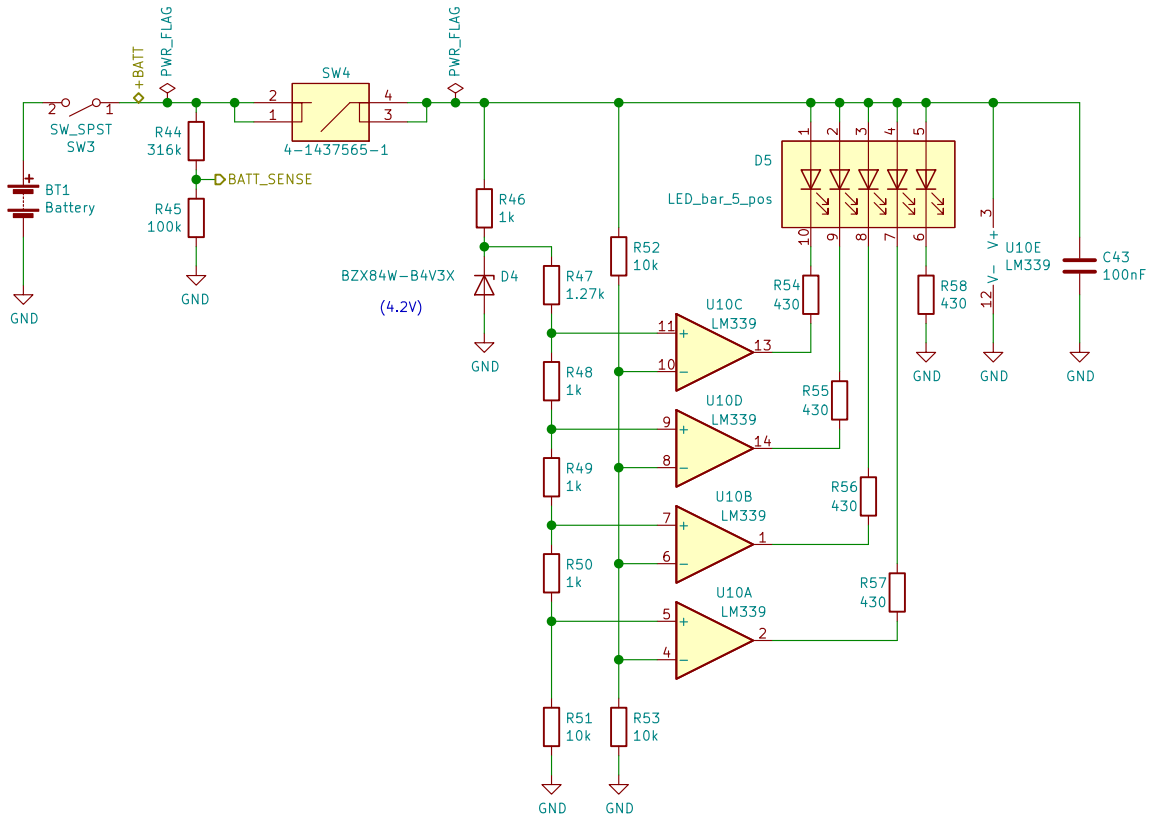
BATTERY



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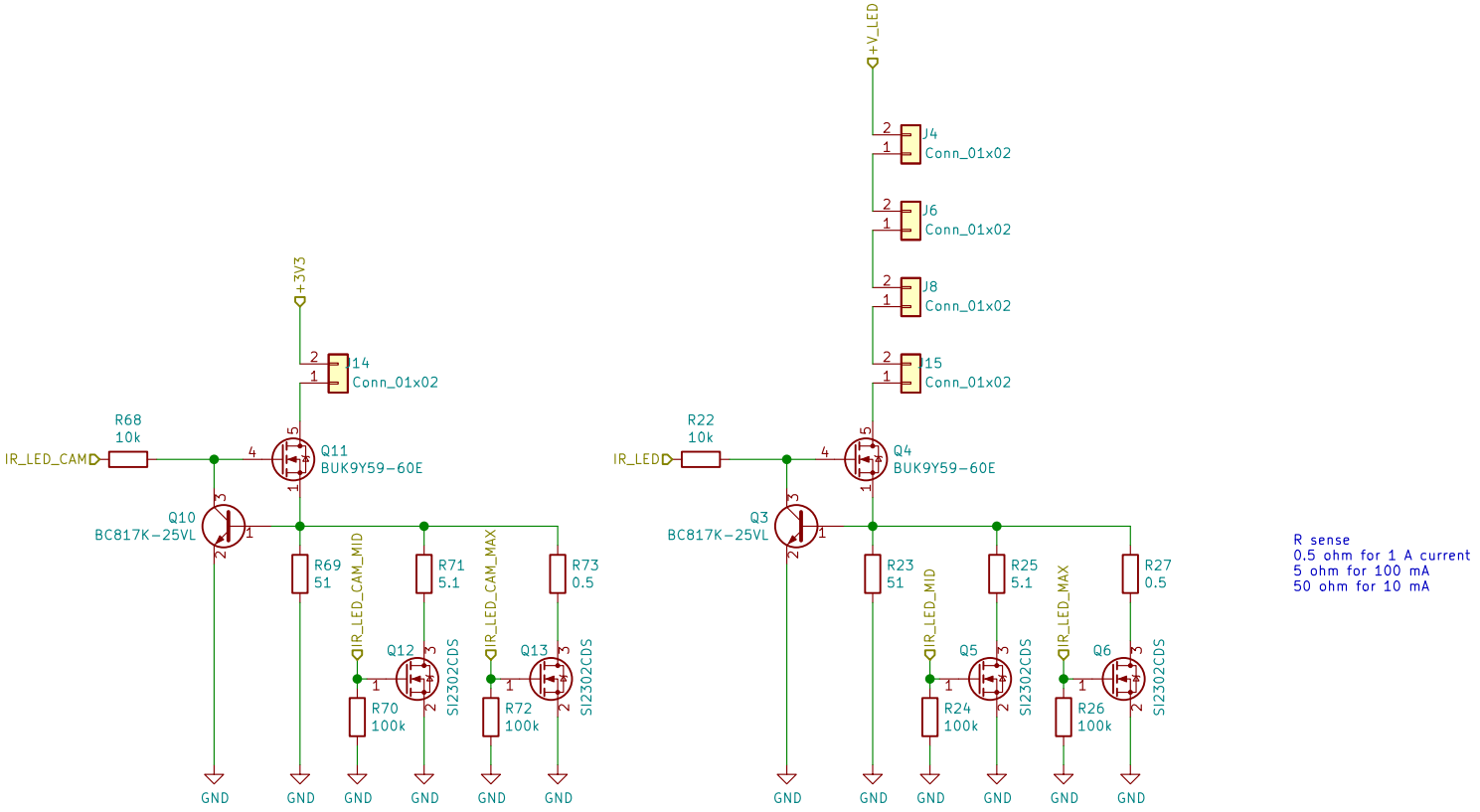
LED_DRIVER



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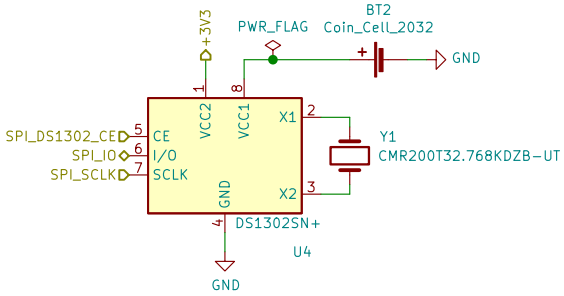
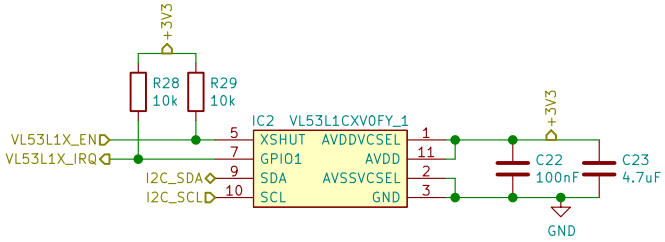
PERIPHERALS

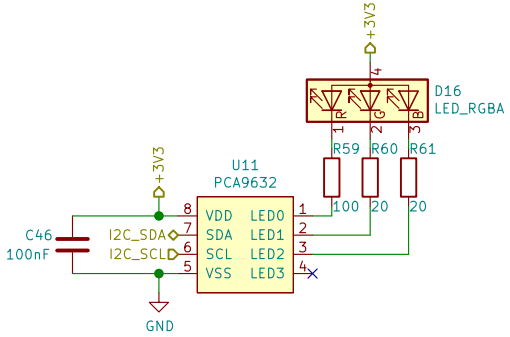
RTC CLOCK



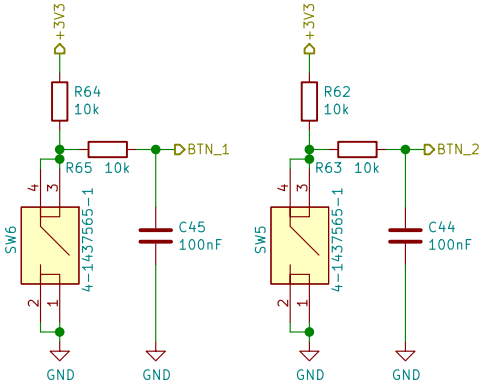
DISTANCE SENSOR



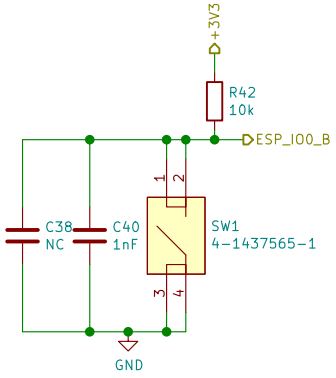
STATUS LED



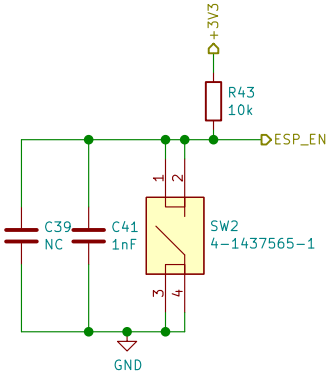
USER BUTTONS



BOOT BUTTON



RESET BUTTON



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