Power Input

Power_Input.sch

POS3P3 Power Supply

POS3P3_Power_Supply.sch

Microcontroller Programming

Microcontroller_Programming.sch

WiFi Module

Wi_Fi_Module.sch

USB UART Isolation

USB_UART_Isolation.sch

USB UART Bridge

USB_UART_Bridge.sch

Panel Data Connectors

Panel_Data_Connectors.sch

LED POS5 Monitoring

LED_POS5_Monitoring.sch

Microcontroller Power

Microcontroller_Power.sch

Microcontroller A

Microcontroller_A.sch

Microcontroller B

Microcontroller_B.sch

External SRAM

External_SRAM.sch

External Flash 1

External_Flash_1.sch

External Flash 2

External_Flash_2.sch

External Flash 3

External_Flash_3.sch

External Flash 4

External_Flash_4.sch

External Flash 5

External_Flash_5.sch

External Flash 6

External_Flash_6.sch

External Flash 7

External_Flash_7.sch

External Flash 8

External_Flash_8.sch

Status LEDs 1

Status_LEDs_1.sch

Panel Data Level Shifters 1

Panel_Data_Level_Shifters_1.sch

Panel Data Level Shifters 2

Panel_Data_Level_Shifters_2.sch

Panel Data Level Shifters 3

Panel_Data_Level_Shifters_3.sch

Test Points

Test_Points.sch

Pushbuttons

Pushbuttons.sch

POS5 Power Supply

POS5_Power_Supply.sch

Mechanical

Mechanical.sch

Internal Rail Monitoring

Internal_Rail_Monitoring.sch

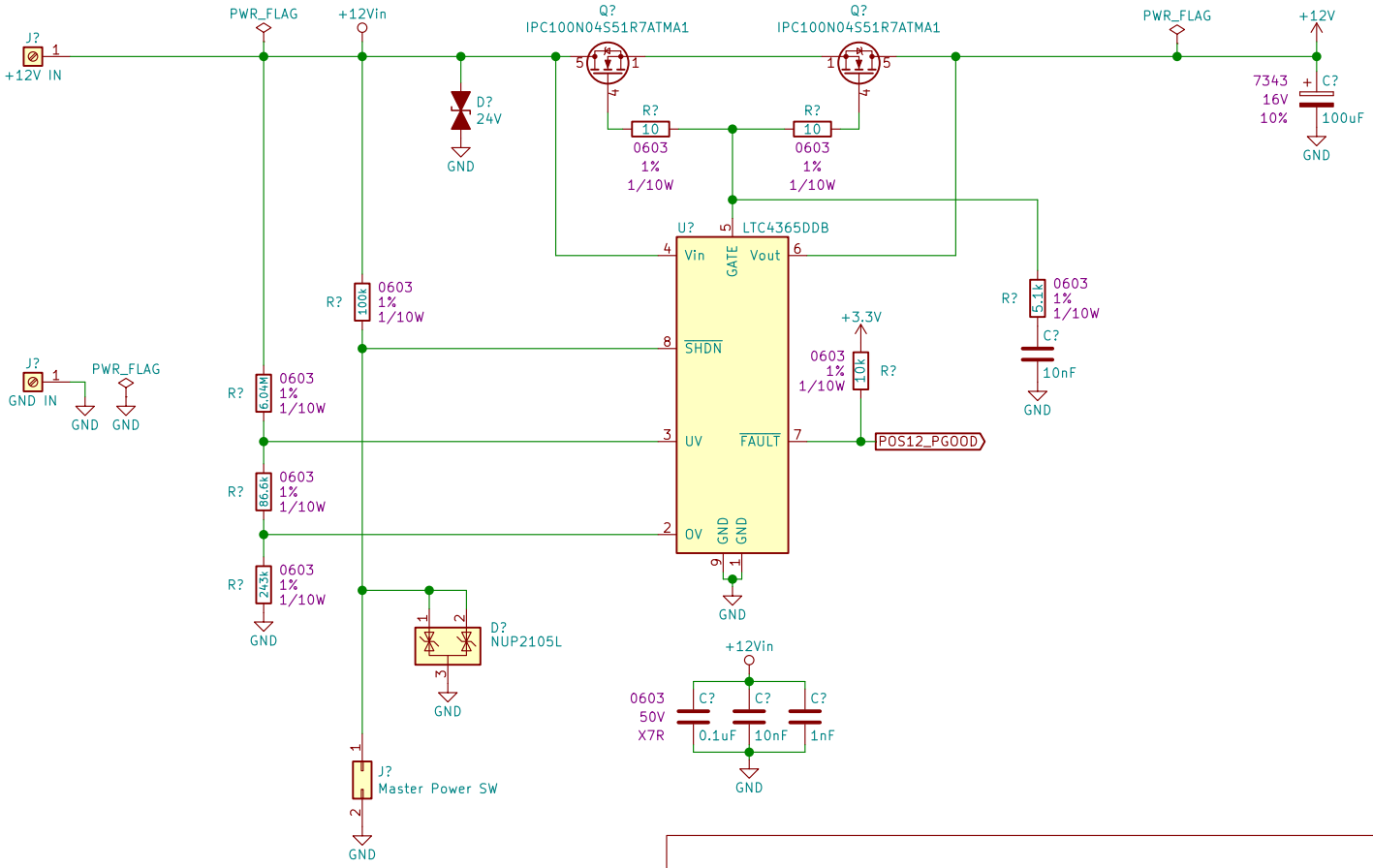
To Do List:
* Mechanical sheet
* Decide on input power supply (AC/DC)
* Add status LEDs, PGOOD stuff
* Add LED 5V Monitoring
* Add small 5V supply for level shifters (LDO? Charge pump? Small Buck?)
* Add voltage rail ADC dividers/filters
* Power board fan control?
* ESD protection on input and output signals
* Add tank cap for micro
* AND OE (PWM AND Force disable)
* Add graphical items to certain sheets (ESD warning, heat, etc)
* Add MU Logo to each sheet
* Add Titles to each sheet
* Add relevant design notes/routing notes to sheets
* Add test points sheet
* Re-order sheets
* Wire everything to Micro
* Assign Refdes's
* Draw custom footprints
* Assign footprints
* Assign Digi-Key Partnumbers
* Run ERC, resolve errors
* Add firmware notes sheet
* Add COM port settings notes to USB sheet
* Generate netlist
* Generate BOM
* Layout PCB

Sheet: /
File: LED_Display_Controller.sch

Title:

Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 1/30

Power Input



Sheet: /Power Input/		
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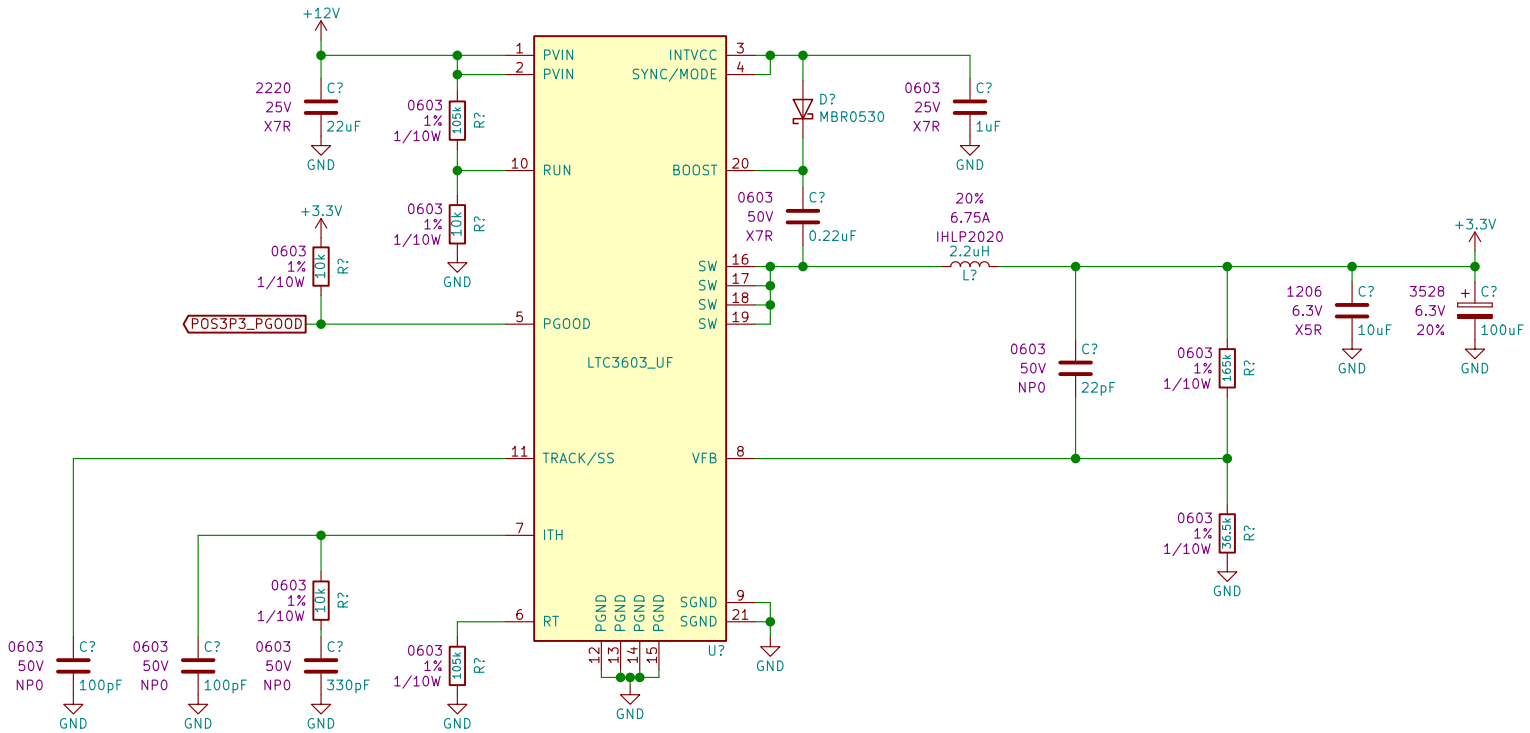
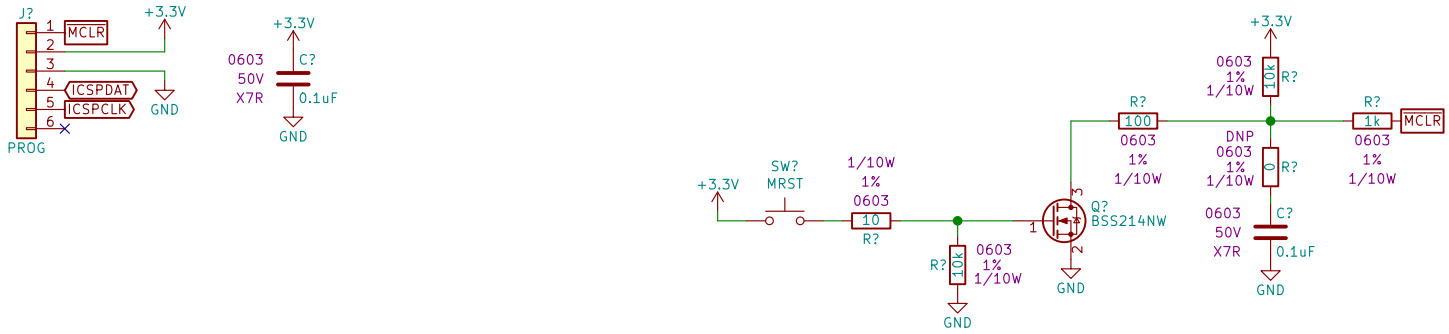
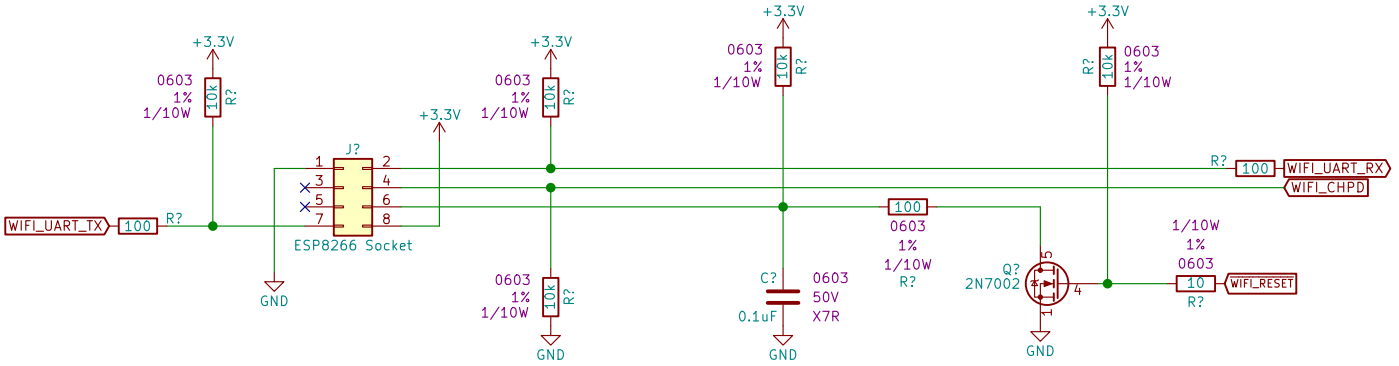
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 2/30



Sheet: /POS3P3 Power Supply/		
File: POS3P3_Power_Supply.sch		
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 3/30

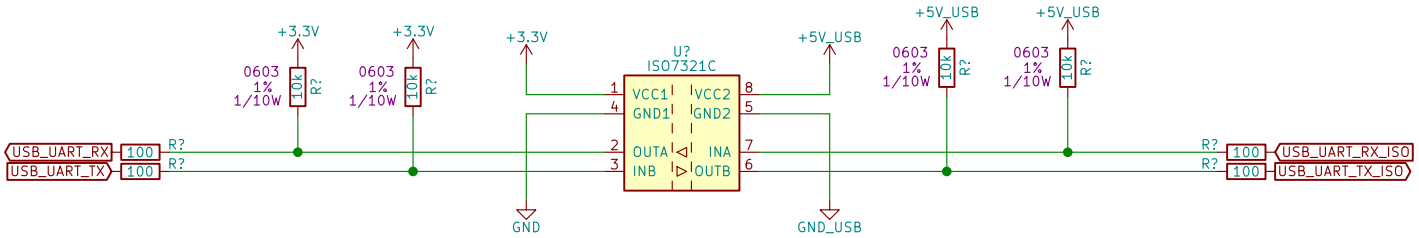


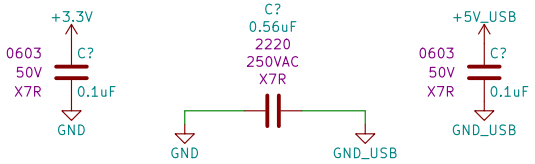
Sheet: /Microcontroller Programming/		
File: Microcontroller_Programming.sch		
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 4/30



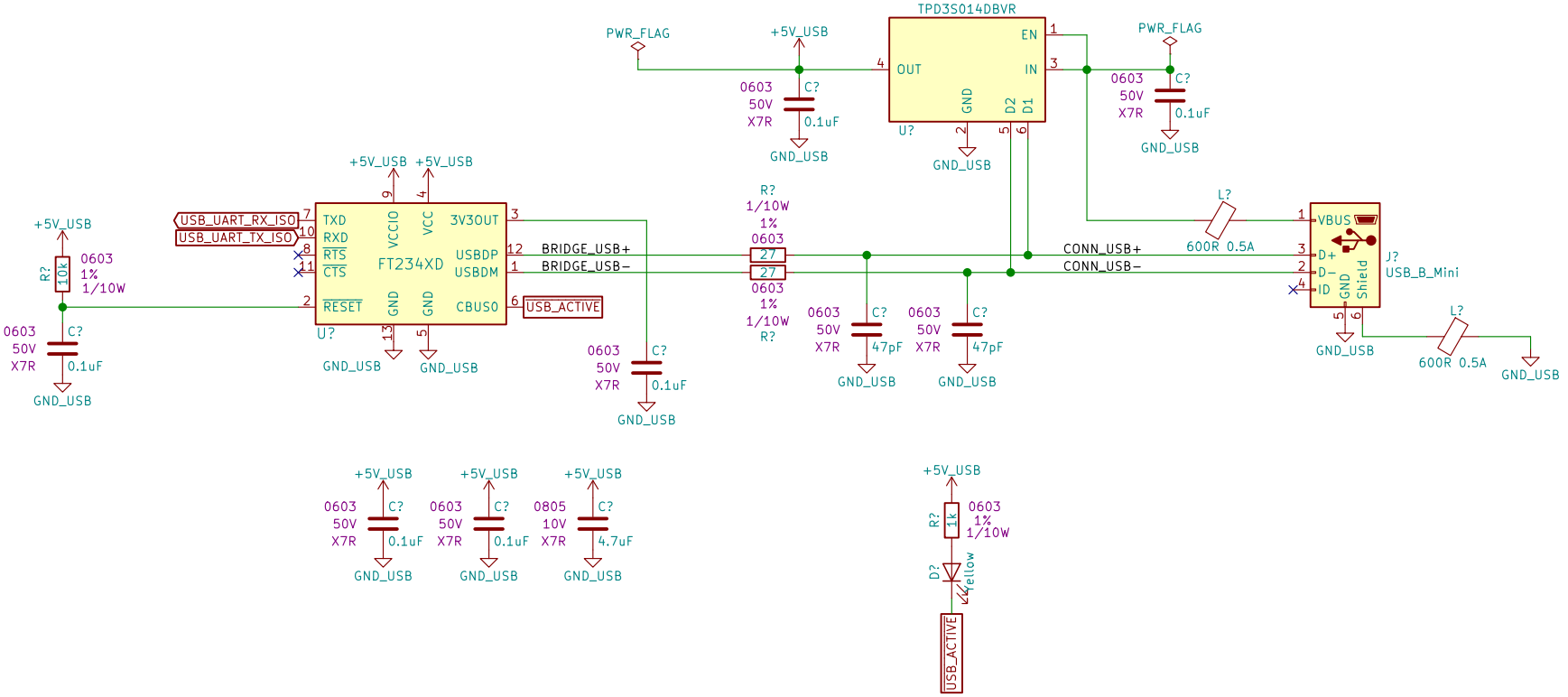
ESP8266 Pinout does not match default KiCad pin socket footprint.
Alter the pin numbers in layout

Sheet: /WiFi Module/		
File: Wi_Fi_Module.sch		
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 5/30

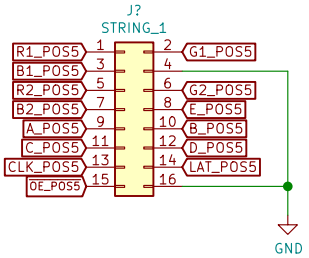


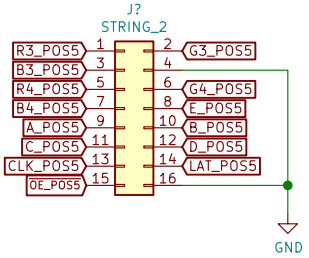


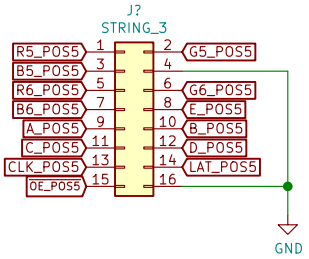
Sheet: /USB UART Isolation/		
File: USB_UART_Isolation.sch		
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 6/30

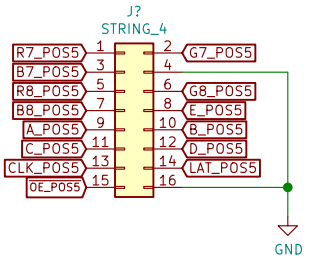


Sheet: /USB UART Bridge/	
File: USB_UART_Bridge.sch	
Title:	
Size: A	Date:
KiCad E.D.A. kicad (5.0.1)−3	Id: 7/30





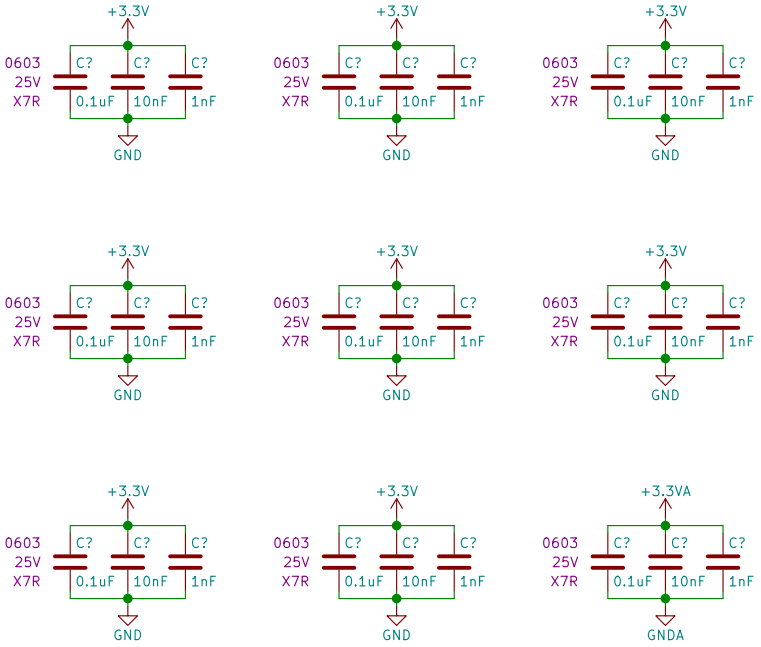


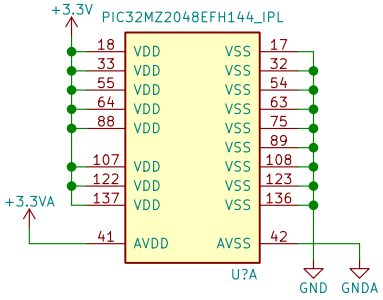


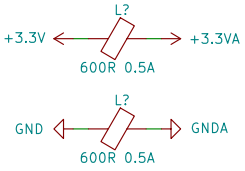
Sheet: /Panel Data Connectors/
File: Panel_Data_Connectors.sch

Title:

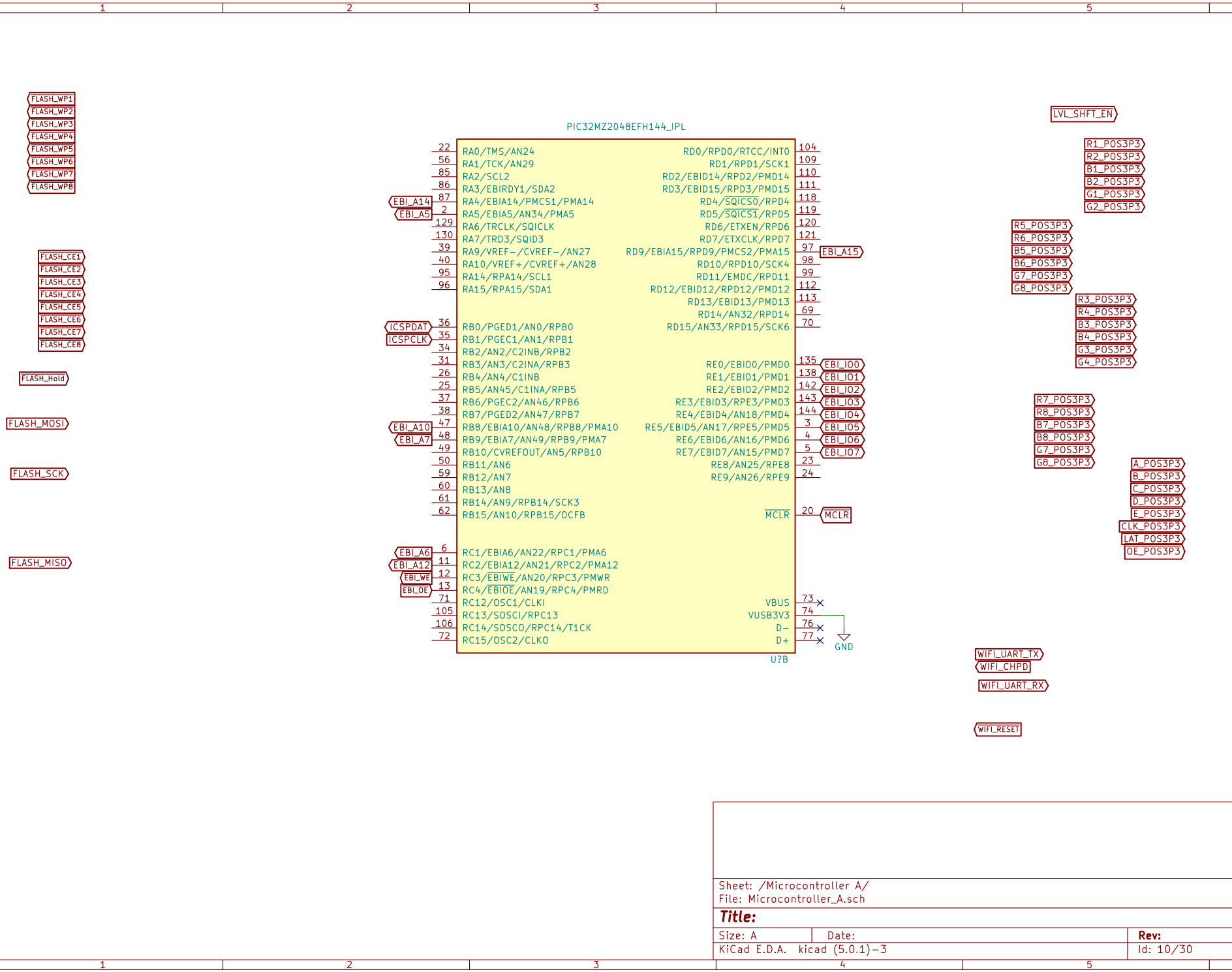
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 8/30

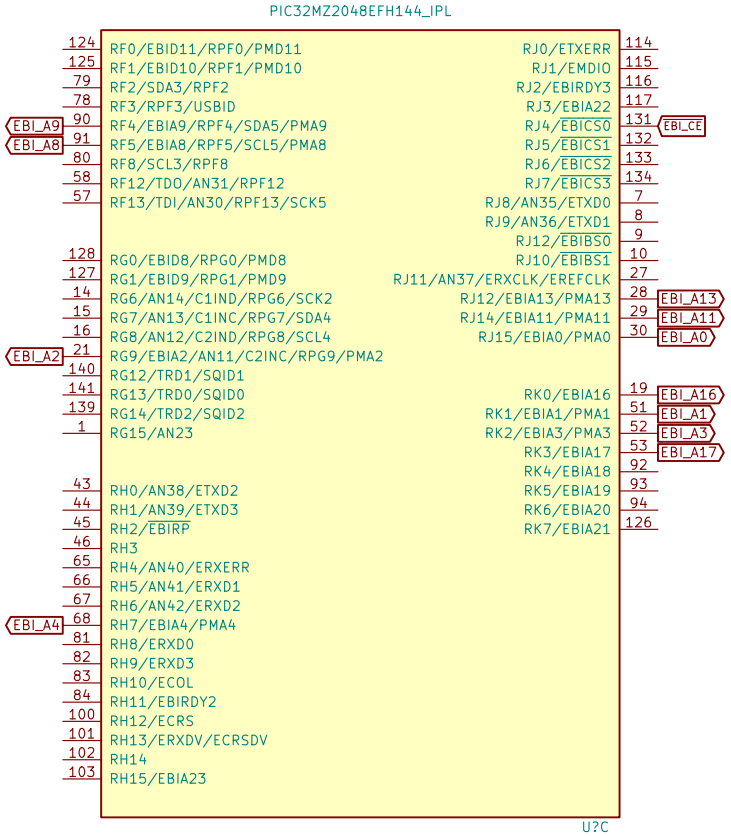






Sheet: /Microcontroller Power/ File: Microcontroller_Power.sch		
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 9/30

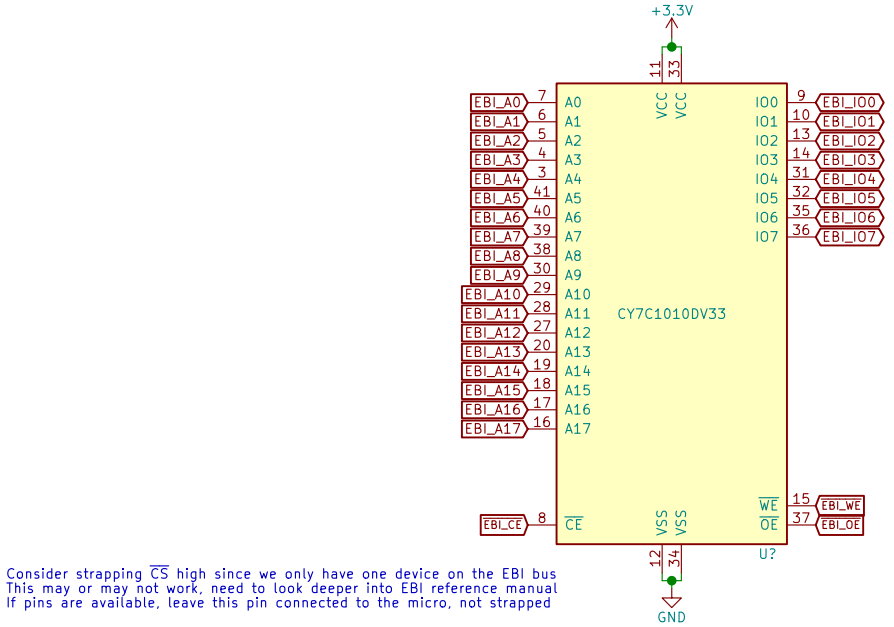

FLASH_WP1
FLASH_WP2
FLASH_WP3
FLASH_WP4
FLASH_WP5
FLASH_WP6
FLASH_WP7
FLASH_WP8
FLASH_CE1
FLASH_CE2
FLASH_CE3
FLASH_CE4
FLASH_CE5
FLASH_CE6
FLASH_CE7
FLASH_CE8
FLASH_Hold
FLASH_MOSI
FLASH_SCK
FLASH_MISO
PIC32MZ2048EFH144_IPL
22 RA0/TMS/AN24
56 RA1/TCK/AN29
85 RA2/SCL2
86 RA3/EBIRDY1/SDA2
87 EBI_A14 RA4/EBIA14/PMCS1/PMA14
2 EBI_A5 RA5/EBIA5/AN34/PMA5
129 RA6/TRCLK/SQICLK
130 RA7/TRD3/SQID3
39 RA9/VREF-/CVREF-/AN27
40 RA10/VREF+/CVREF+/AN28
95 RA14/RPA14/SCL1
96 RA15/RPA15/SDA1
36 ICSPDAT RB0/PGED1/AN0/RPB0
35 ICSPCLK RB1/PGEC1/AN1/RPB1
34 RB2/AN2/C2INB/RPB2
31 RB3/AN3/C2INA/RPB3
26 RB4/AN4/C1INB
25 RB5/AN45/C1INA/RPB5
37 RB6/PGEC2/AN46/RPB6
38 RB7/PGED2/AN47/RPB7
47 EBI_A10 RB8/EBIA10/AN48/RPB8/PMA10
48 EBI_A7 RB9/EBIA7/AN49/RPB9/PMA7
49 RB10/CVREFOUT/AN5/RPB10
50 RB11/AN6
59 RB12/AN7
60 RB13/AN8
61 RB14/AN9/RPB14/SCK3
62 RB15/AN10/RPB15/OCFB
6 EBI_A6 RC1/EBIA6/AN22/RPC1/PMA6
11 EBI_A12 RC2/EBIA12/AN21/RPC2/PMA12
12 EBI_WE RC3/EBIWE/AN20/RPC3/PMWR
13 EBI_OE RC4/EBIOE/AN19/RPC4/PMRD
71 RC12/OSC1/CLKI
105 RC13/SOSCI/RPC13
106 RC14/SOSCO/RPC14/T1CK
72 RC15/OSC2/CLKO
104 RD0/RPD0/RTCC/INT0
109 RD1/RPD1/SCK1
110 RD2/EBID14/RPD2/PMD14
111 RD3/EBID15/RPD3/PMD15
118 RD4/SQICS0/RPD4
119 RD5/SQICS1/RPD5
120 RD6/ETXEN/RPD6
121 RD7/ETXCLK/RPD7
97 EBI_A15 RD9/EBIA15/RPD9/PMCS2/PMA15
98 RD10/RPD10/SCK4
99 RD11/EMDC/RPD11
112 RD12/EBID12/RPD12/PMD12
113 RD13/EBID13/PMD13
69 RD14/AN32/RPD14
70 RD15/AN33/RPD15/SCK6
135 EBI_IO0 RE0/EBID0/PMD0
138 EBI_IO1 RE1/EBID1/PMD1
142 EBI_IO2 RE2/EBID2/PMD2
143 EBI_IO3 RE3/EBID3/RPE3/PMD3
144 EBI_IO4 RE4/EBID4/AN18/PMD4
3 EBI_IO5 RE5/EBID5/AN17/RPE5/PMD5
4 EBI_IO6 RE6/EBID6/AN16/PMD6
5 EBI_IO7 RE7/EBID7/AN15/PMD7
23 RE8/AN25/RPE8
24 RE9/AN26/RPE9
20 MCLR MCLR
73 VBUS
74 VUSB3V3
76 D-
77 D+
GND
U?B
LVL_SHFT_EN
R1_POS3P3
R2_POS3P3
B1_POS3P3
B2_POS3P3
G1_POS3P3
G2_POS3P3
R5_POS3P3
R6_POS3P3
B5_POS3P3
B6_POS3P3
G7_POS3P3
G8_POS3P3
R3_POS3P3
R4_POS3P3
B3_POS3P3
B4_POS3P3
G3_POS3P3
G4_POS3P3
R7_POS3P3
R8_POS3P3
B7_POS3P3
B8_POS3P3
G7_POS3P3
G8_POS3P3
A_POS3P3
B_POS3P3
C_POS3P3
D_POS3P3
E_POS3P3
CLK_POS3P3
LAT_POS3P3
OE_POS3P3
WIFI_UART_TX
WIFI_CHPD
WIFI_UART_RX
WIFI_RESET
Sheet: /Microcontroller A/
File: Microcontroller_A.sch
Title:
Size: A
Date:
Rev:
KiCad E.D.A. kicad (5.0.1)-3
Id: 10/30



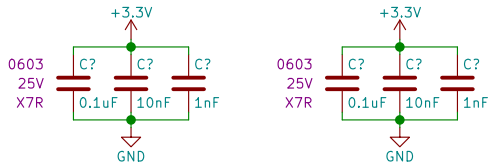
Sheet: /Microcontroller B/
File: Microcontroller_B.sch

Title:

Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 11/30



Consider strapping $\overline{CS}$ high since we only have one device on the EBI bus
This may or may not work, need to look deeper into EBI reference manual
If pins are available, leave this pin connected to the micro, not strapped

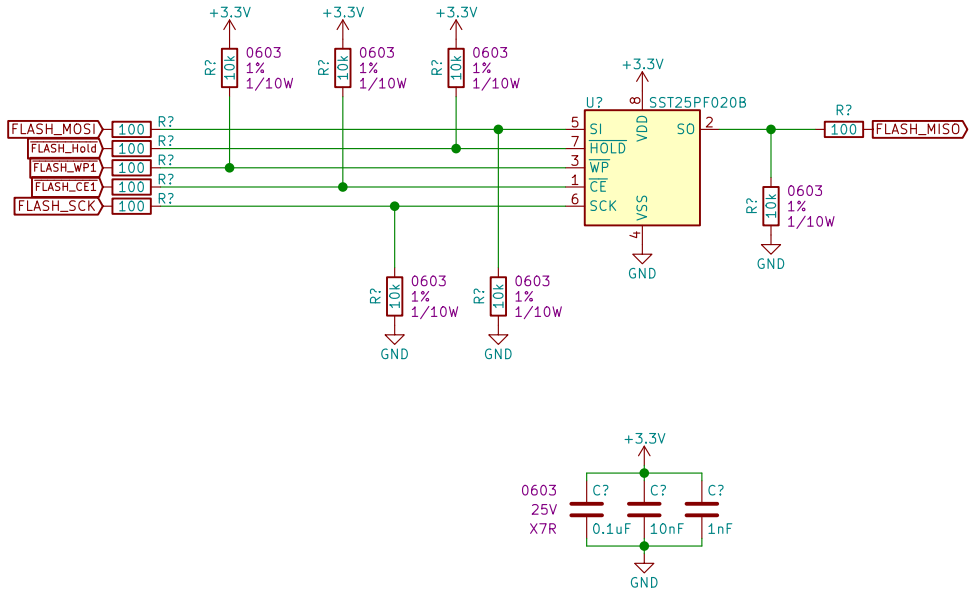


Sheet: /External SRAM/
File: External_SRAM.sch

Title:

Size: A | Date: | **Rev:**

KiCad E.D.A. kicad (5.0.1)-3 | Id: 12/30



Sheet: /External Flash 1/		
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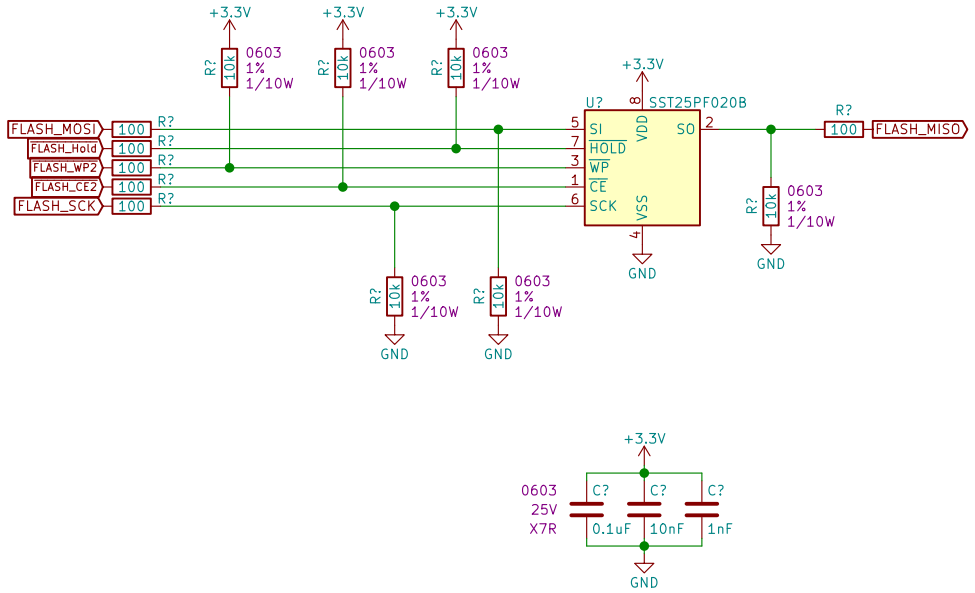
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 13/30



Sheet: /External Flash 2/		
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Title:		
Size: A	Date:	**Rev:**
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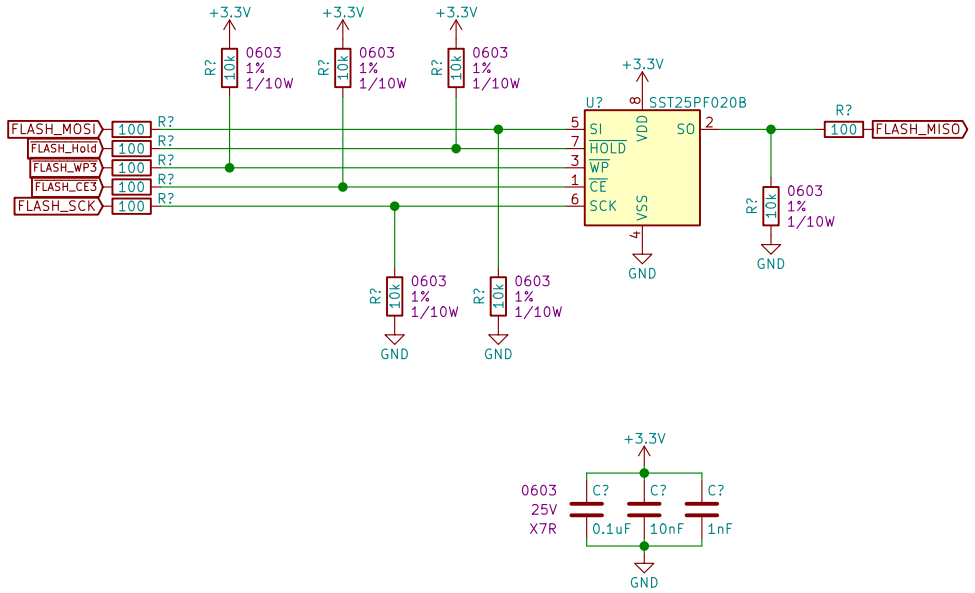
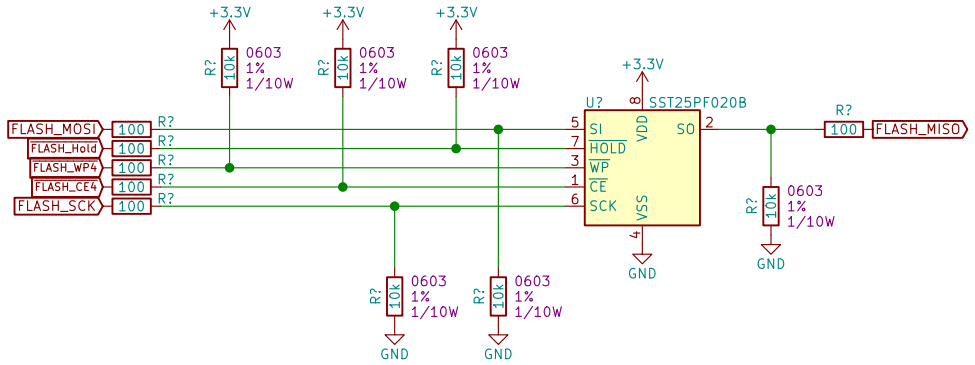
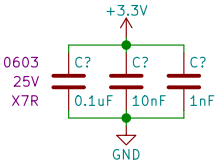


Sheet: /External Flash 3/		
File: External_Flash_3.sch		
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 15/30





Sheet: /External Flash 4/		
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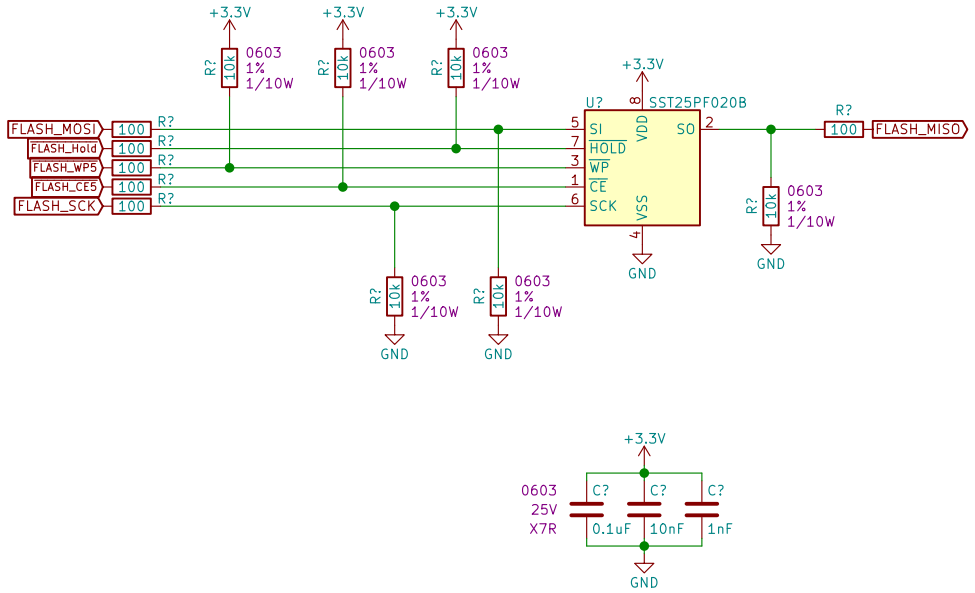
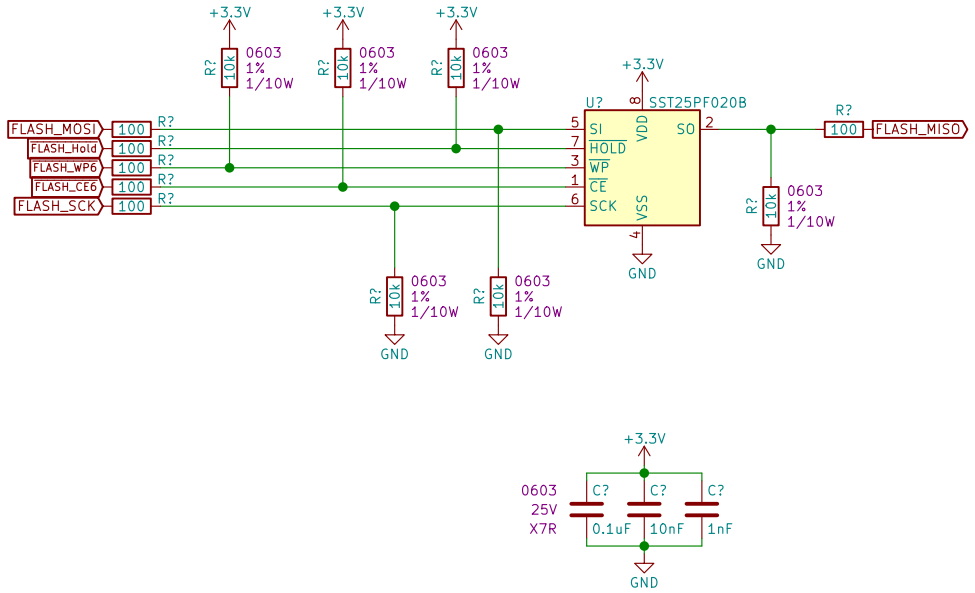
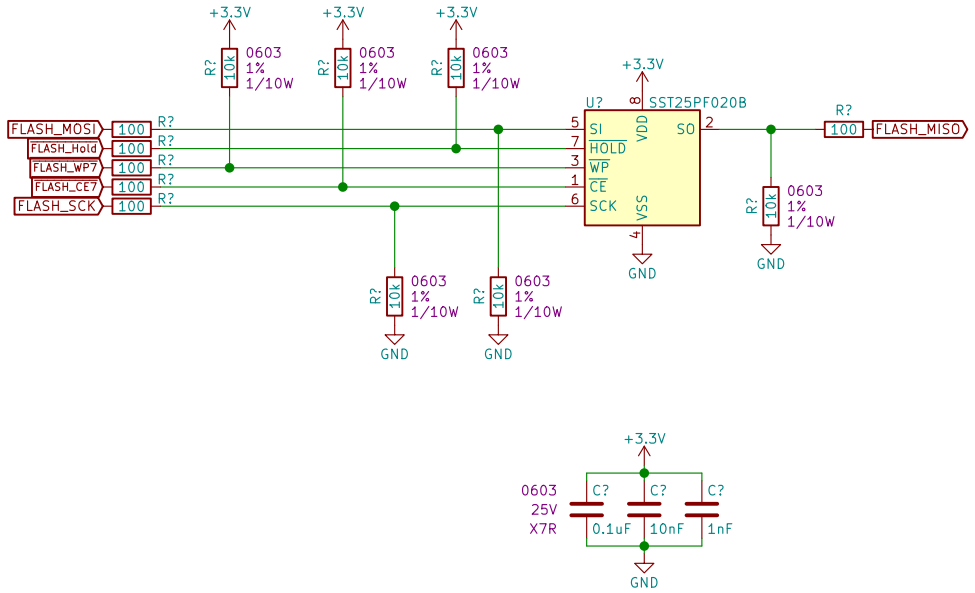
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 16/30



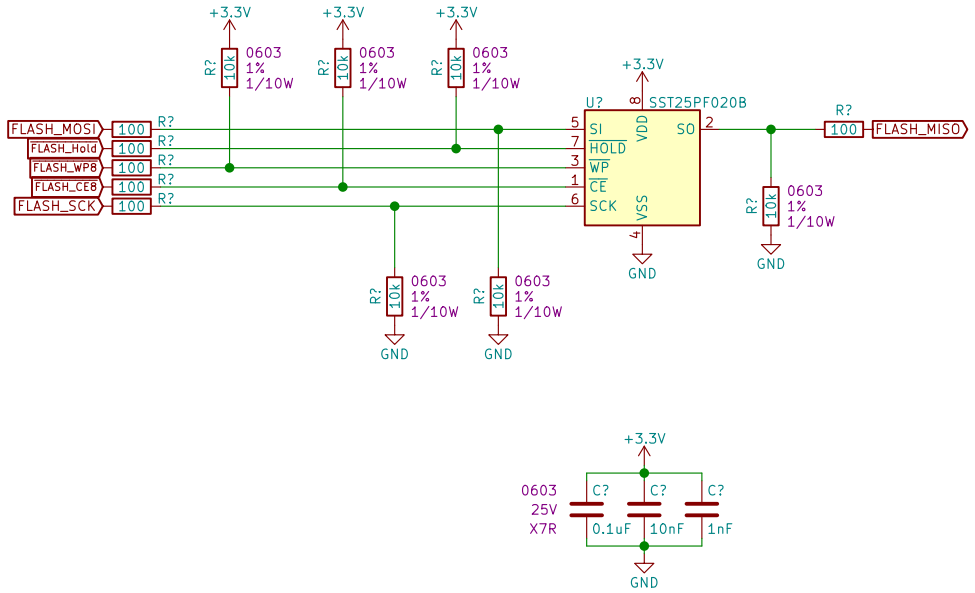
Sheet: /External Flash 5/		
File: External_Flash_5.sch		
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 17/30



Sheet: /External Flash 6/		
File: External_Flash_6.sch		
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 18/30



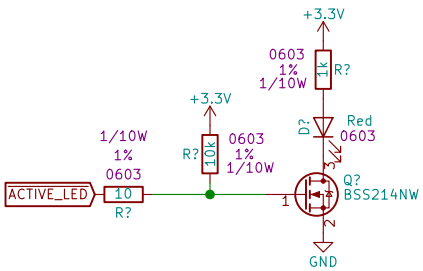
Sheet: /External Flash 7/		
File: External_Flash_7.sch		
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 19/30



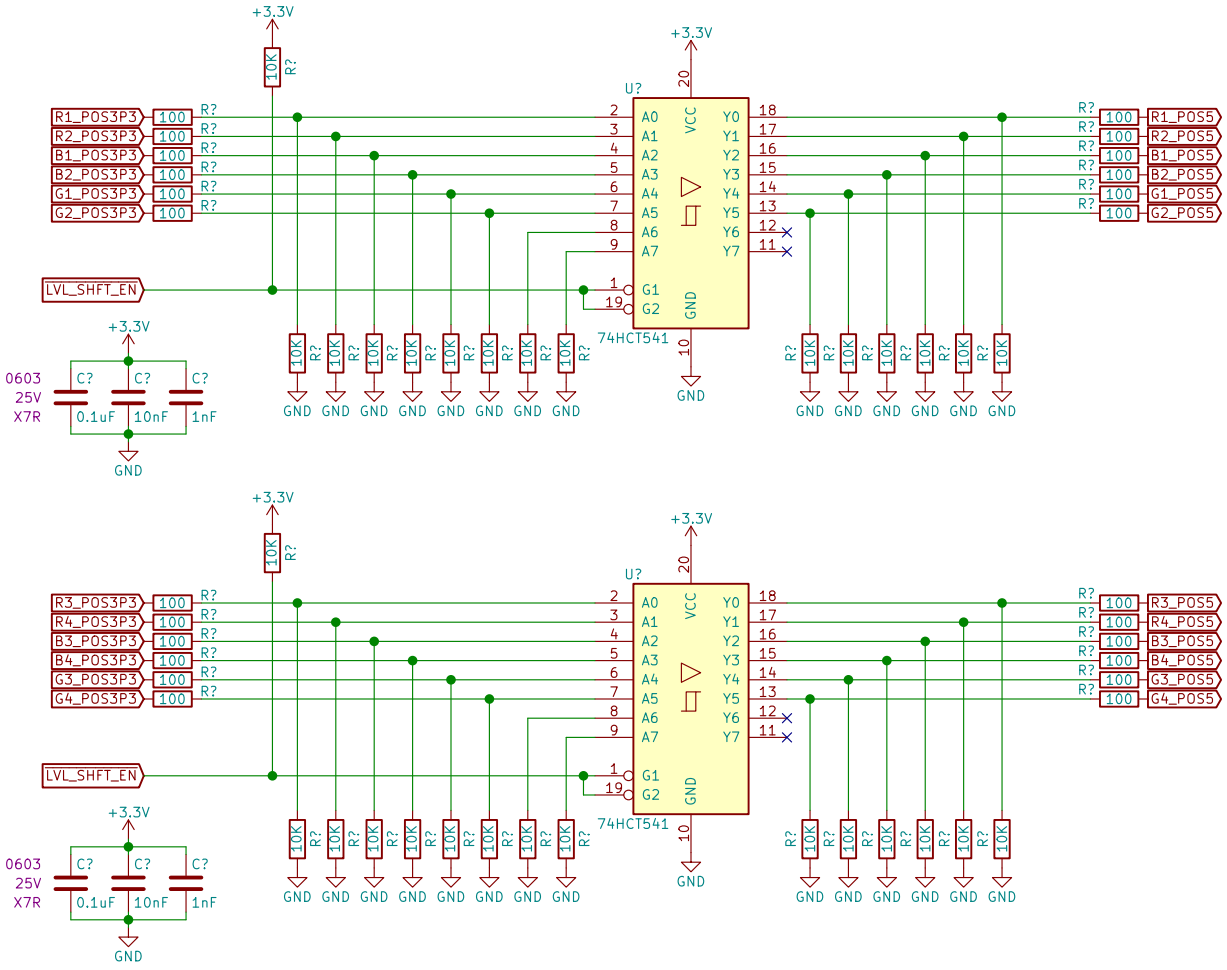
Sheet: /External Flash 8/
File: External_Flash_8.sch

Title:

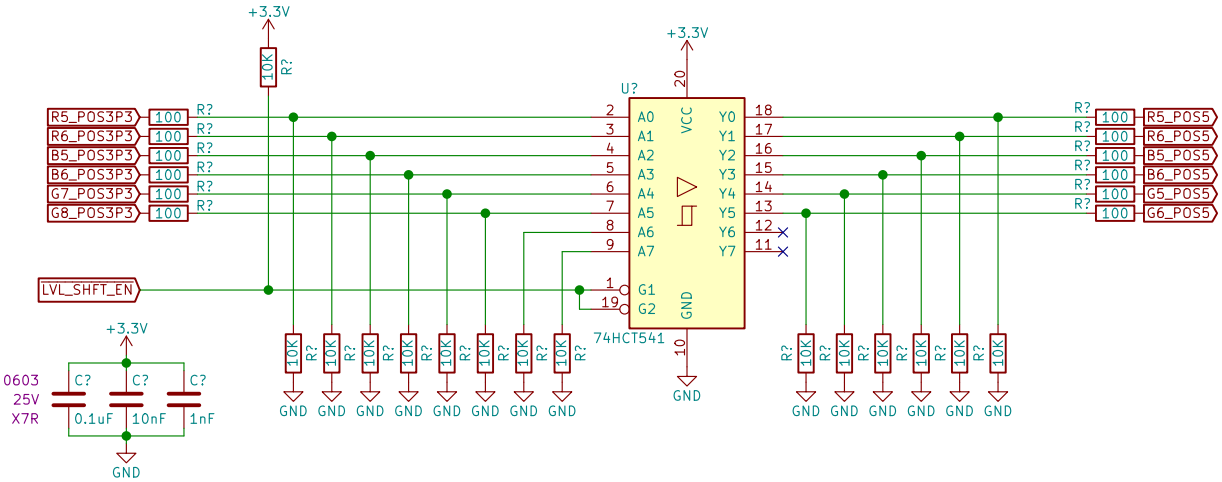
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 20/30

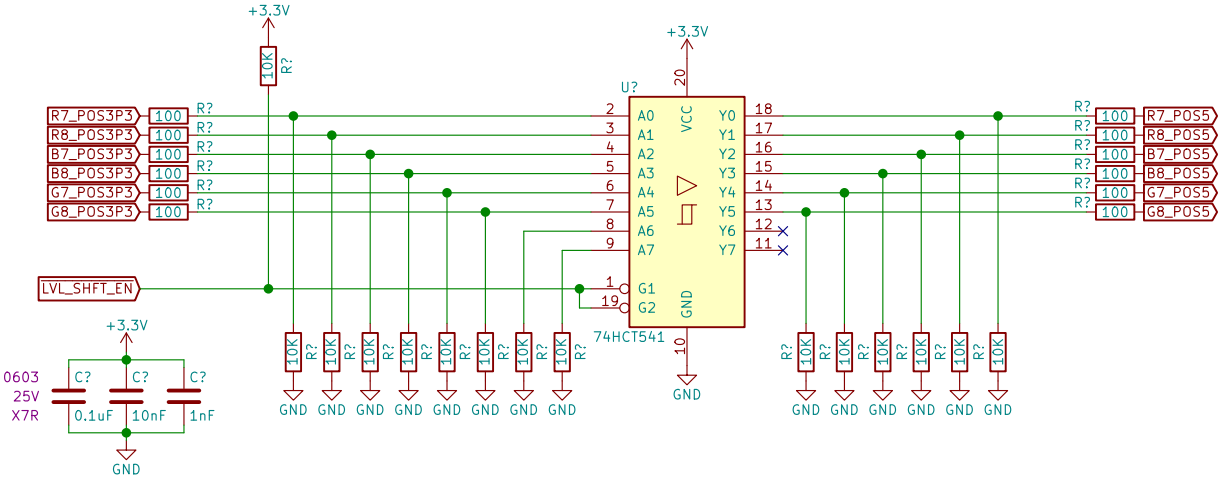


Sheet: /Status LEDs 1/		
File: Status_LEDs_1.sch		
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 21/30



Sheet: /Panel Data Level Shifters 1/		
File: Panel_Data_Level_Shifters_1.sch		
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 22/30





Sheet: /Panel Data Level Shifters 2/		
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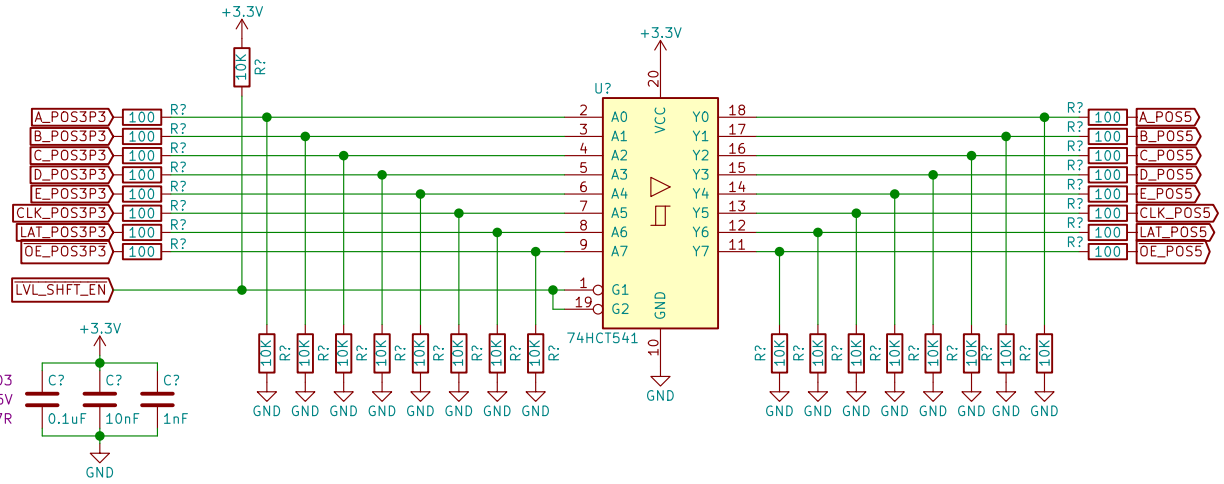
KiCad E.D.A. kicad (5.0.1)-3		Id: 23/30



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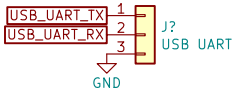
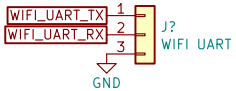
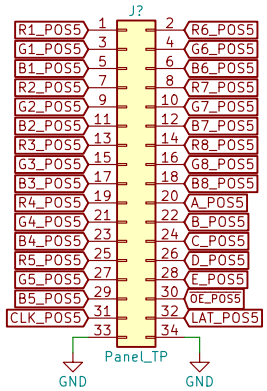
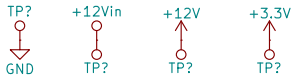
KiCad E.D.A. kicad (5.0.1)-3		Id: 24/30









Sheet: /Test Points/		
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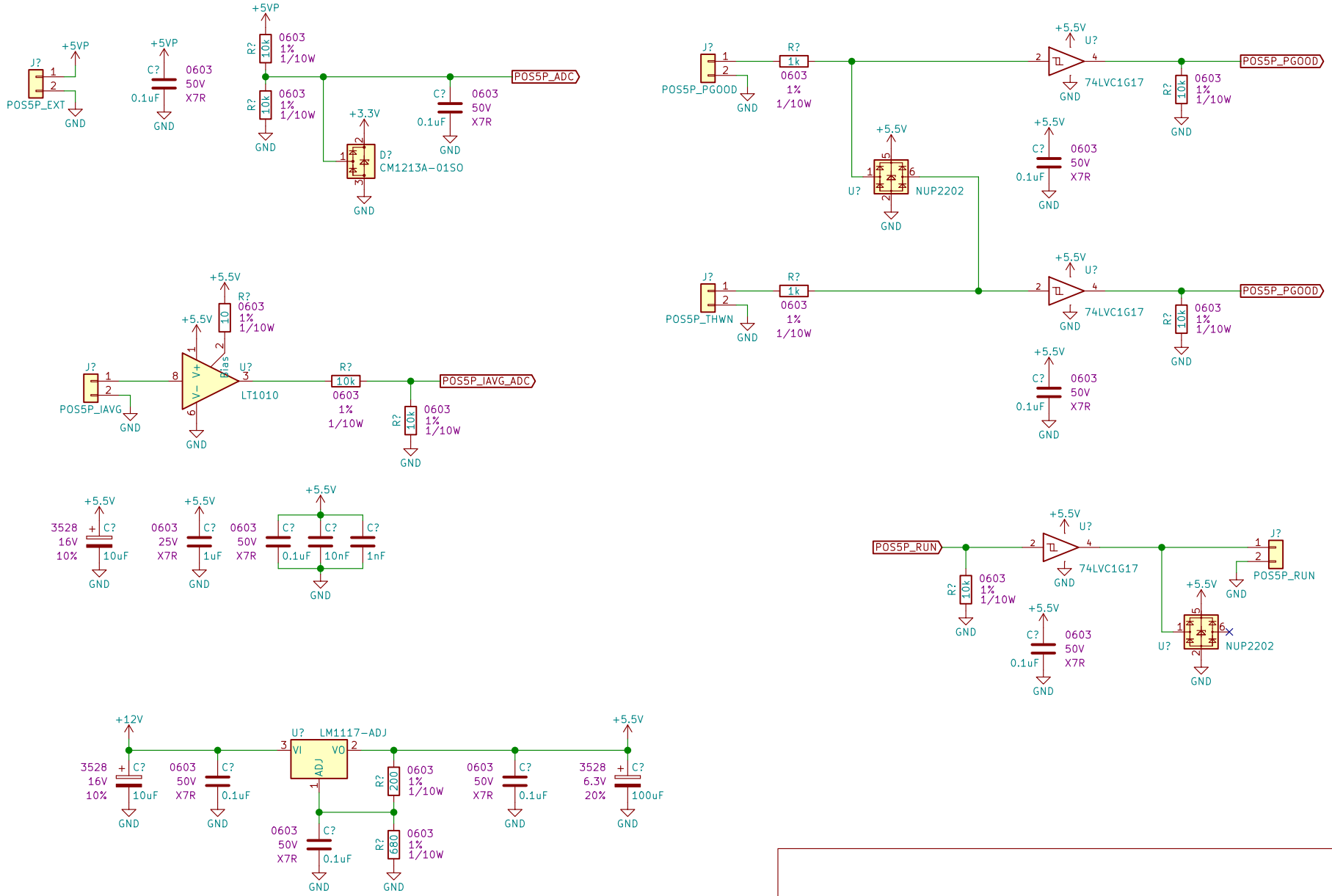

Sheet: /LED POS5 Monitoring/	
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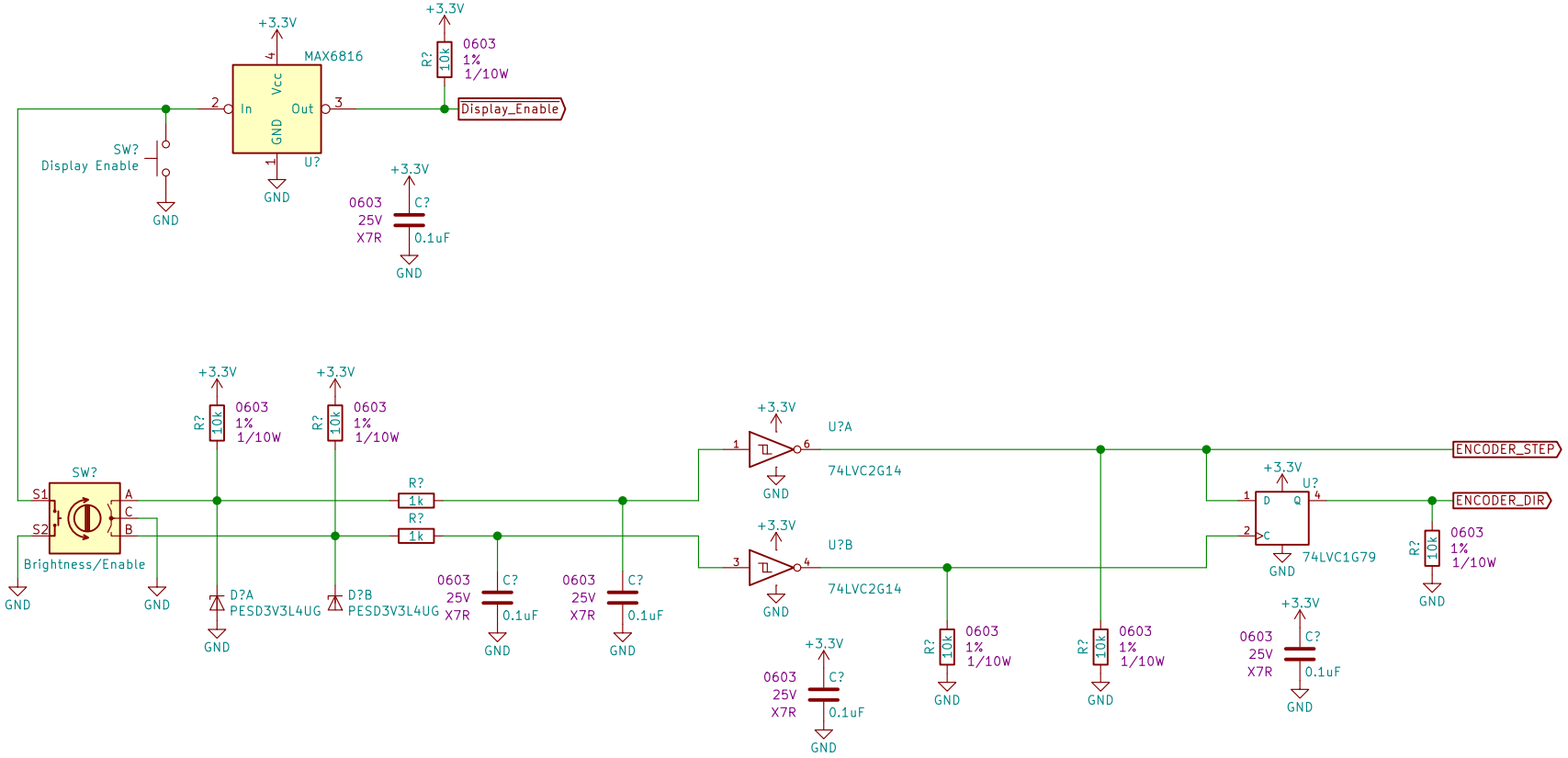

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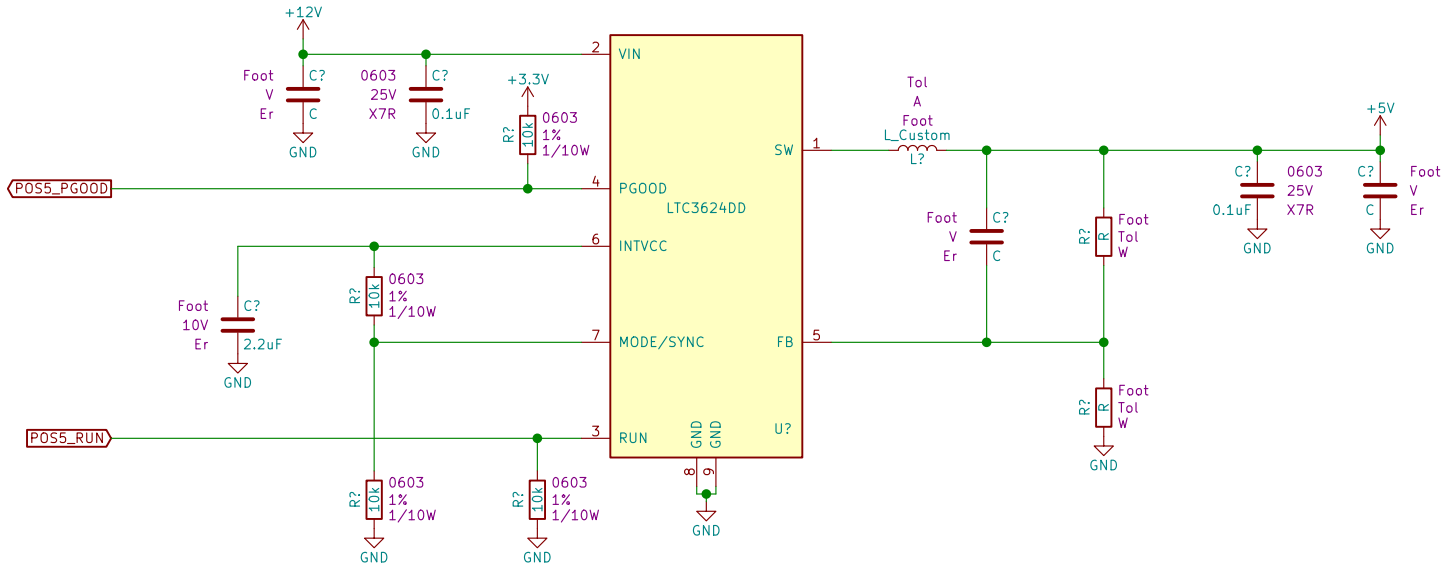

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Sheet: /Mechanical/
File: Mechanical.sch

Title:

Size: A	Date:	**Rev:**
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Sheet: /Internal Rail Monitoring/	
File: Internal_Rail_Monitoring.sch	
Title:	
Size: A	Date:
KiCad E.D.A. kicad (5.0.1)-3	Id: 30/30

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