02. Power Input

Power Input
Power_Input.sch

03. +3.3V Power Supply

POS3P3 Power Supply
POS3P3_Power_Supply.sch

04. +5V Power Supply

POS5 Power Supply
POS5_Power_Supply.sch

5. Microcontroller Programming

Microcontroller Programming
Microcontroller_Programming.sch

6. Microcontroller Power

Microcontroller Power
Microcontroller_Power.sch

7. Microcontroller IO Bank 1

Microcontroller 1
Microcontroller_1.sch

8. Microcontroller IO Bank 2

Microcontroller 2
Microcontroller_2.sch

9. WiFi Module

WiFi Module
Wi_Fi_Module.sch

10. USB UART Digital Isolation

USB UART Isolation
USB_UART_Isolation.sch

11. USB UART Bridge

USB UART Bridge
USB_UART_Bridge.sch

12. Status LEDs Bank 1

Status LEDs 1
Status_LEDs_1.sch

13. Status LEDs Bank 2

Status LEDs 2
Status_LEDs_2.sch

14. Pushbuttons

Pushbuttons
Pushbuttons.sch

15. Internal Rail Monitoring

Internal Rail Monitoring
Internal_Rail_Monitoring.sch

16. LED Power Supply Monitoring

LED POS5 Monitoring
LED_POS5_Monitoring.sch

17. External SRAM

External SRAM
External_SRAM.sch

18. External FLASH 1

External Flash 1
External_Flash_1.sch

19. External FLASH 2

External Flash 2
External_Flash_2.sch

20. External FLASH 3

External Flash 3
External_Flash_3.sch

21. External FLASH 4

External Flash 4
External_Flash_4.sch

22. External FLASH 5

External Flash 5
External_Flash_5.sch

23. External FLASH 6

External Flash 6
External_Flash_6.sch

24. External FLASH 7

External Flash 7
External_Flash_7.sch

25. External FLASH 8

External Flash 8
External_Flash_8.sch

26. Panel Data Level Shifters 1

Panel Data Level Shifters 1
Panel_Data_Level_Shifters_1.sch

27. Panel Data Level Shifters 2

Panel Data Level Shifters 2
Panel_Data_Level_Shifters_2.sch

28. Panel Data Level Shifters 3

Panel Data Level Shifters 3
Panel_Data_Level_Shifters_3.sch

29. Panel Data Connectors

Panel Data Connectors
Panel_Data_Connectors.sch

30. Test Points

Test Points
Test_Points.sch

31. Mechanical

Mechanical
Mechanical.sch

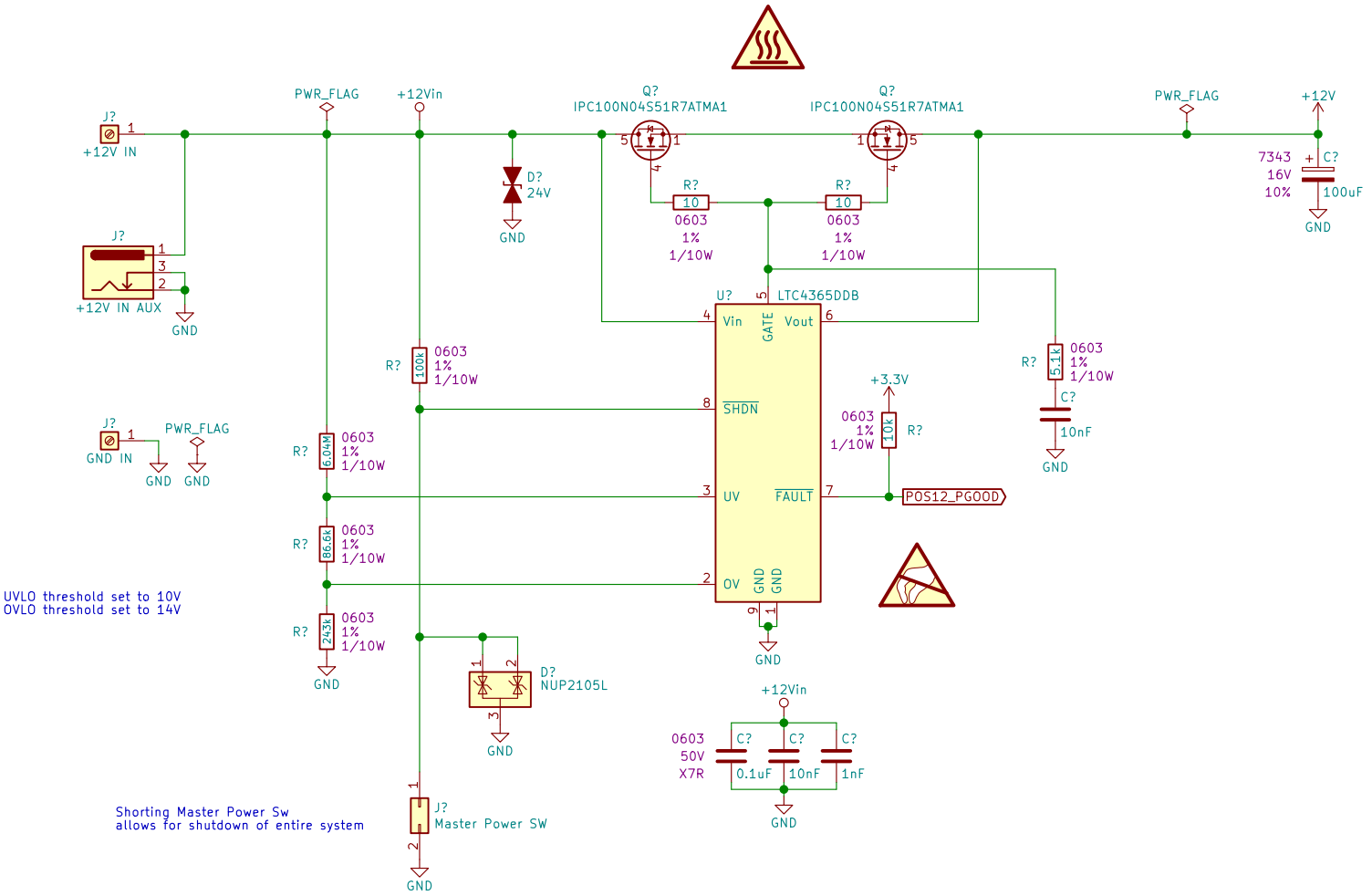
To Do List:
* Add MU Logo to each sheet
* Add Titles to each sheet
* Re-order sheets
* Assign Refdes's
* Verify pinouts
* Verify peripheral wiring on micro
* Draw custom footprints
* Assign footprints
* Assign Digi-Key Partnumbers
* Run ERC, resolve errors
* Generate netlist
* Generate BOM
* Layout PCB

Sheet: /
File: LED_Display_Controller.sch

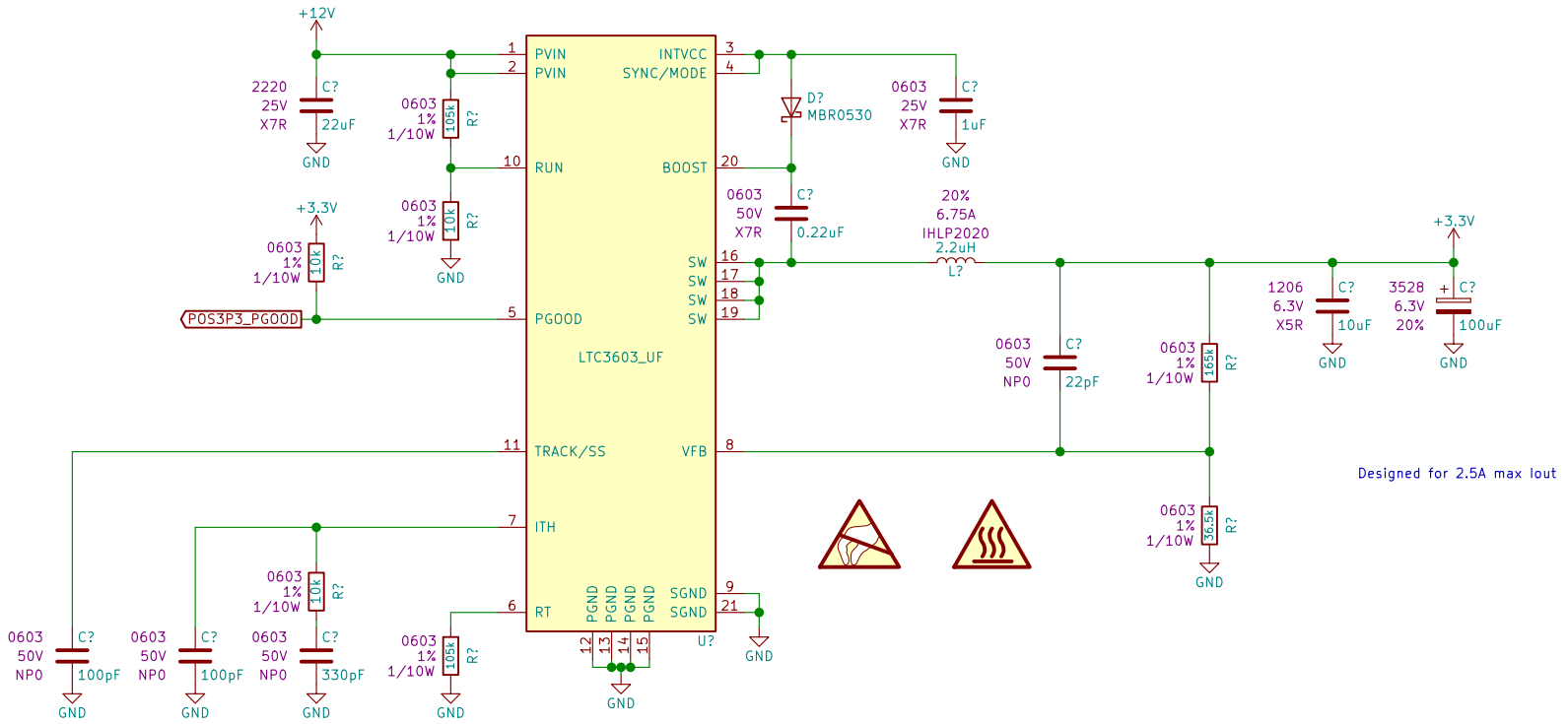
Title:

Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 1/31

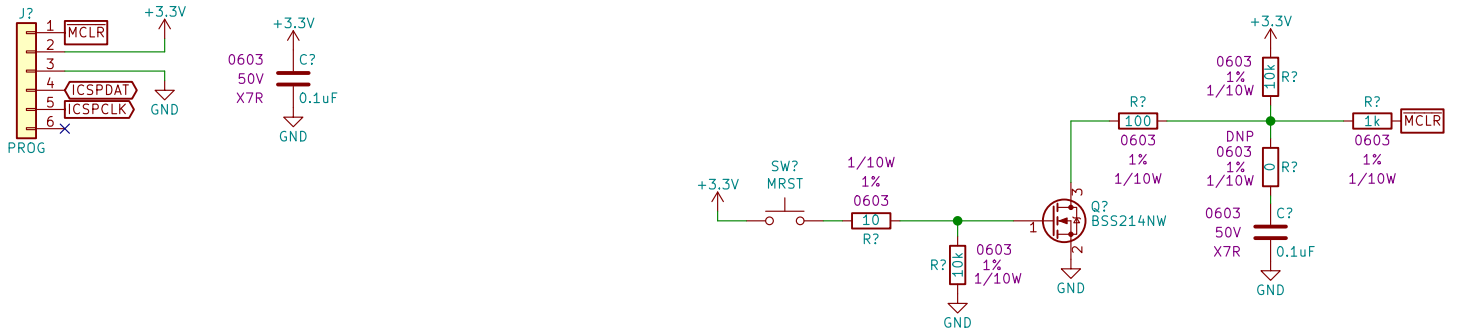
Power Input



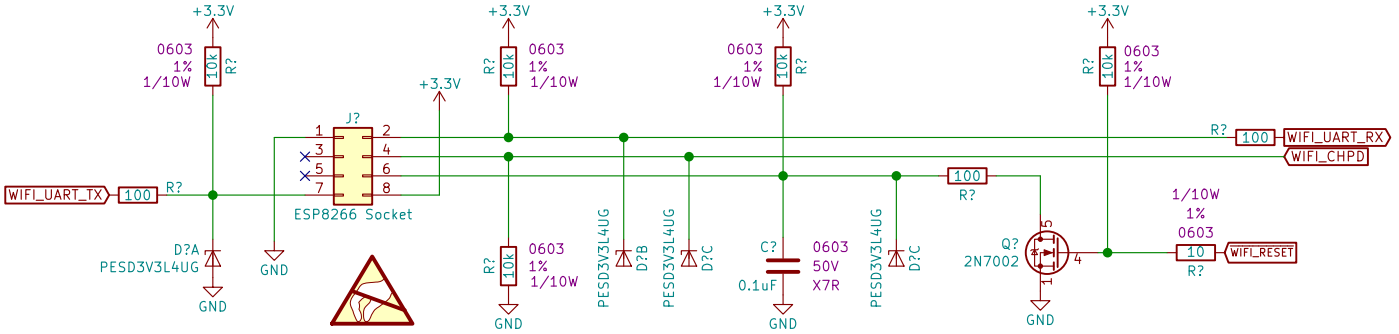
Sheet: /Power Input/		
File: Power_Input.sch		
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 2/31



Sheet: /POS3P3 Power Supply/		
File: POS3P3_Power_Supply.sch		
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 3/31

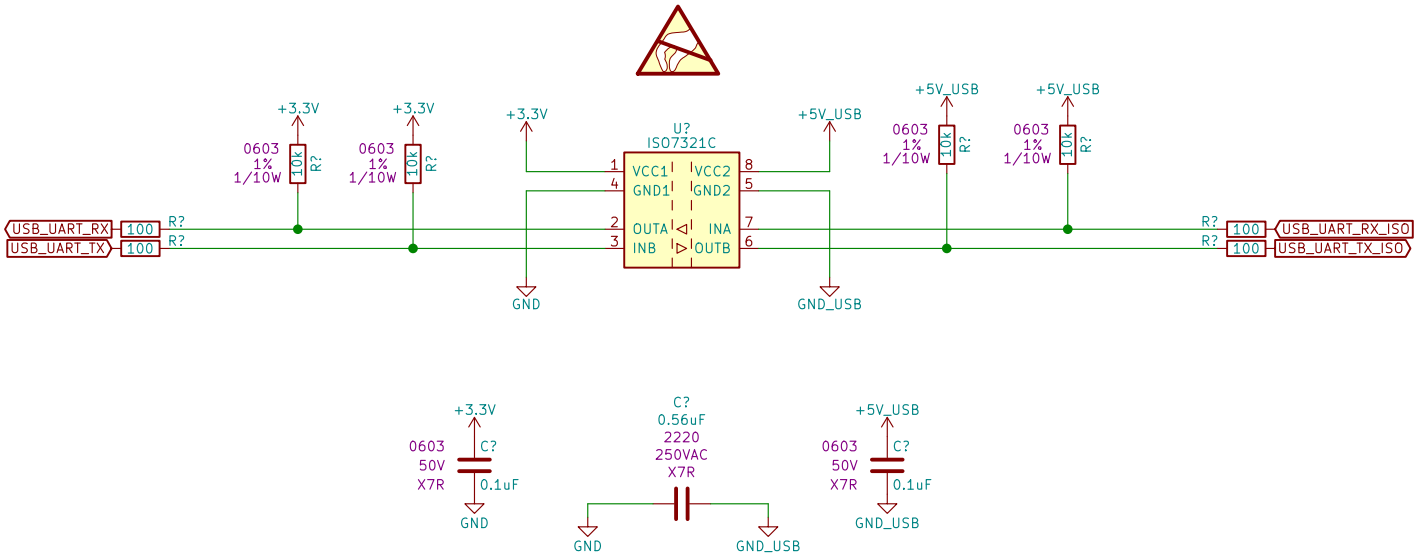


Sheet: /Microcontroller Programming/		
File: Microcontroller_Programming.sch		
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 4/31

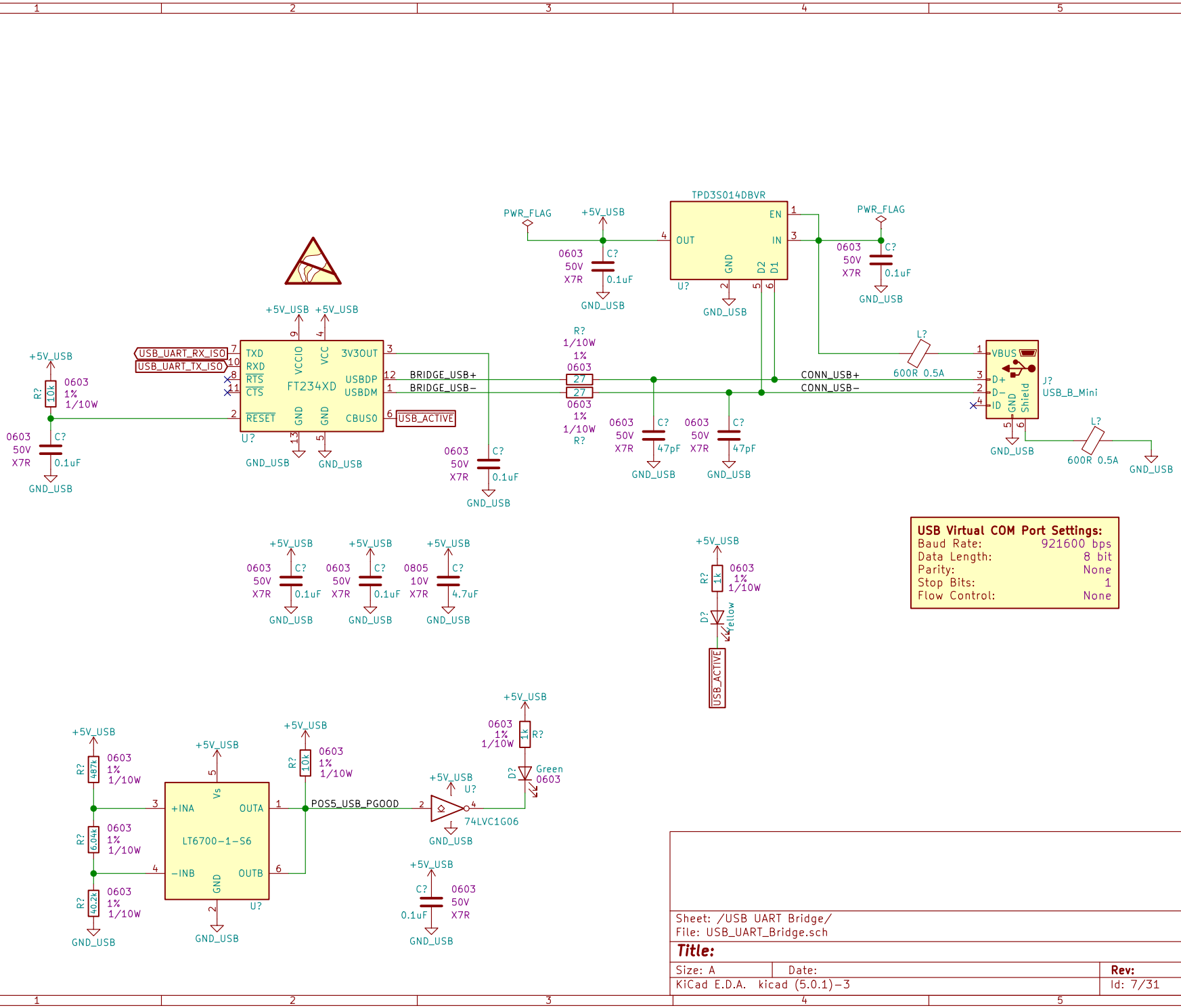


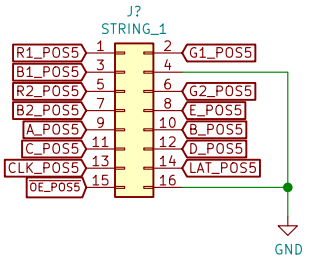
ESP8266 Pinout does not match default KiCad pin socket footprint.
Alter the pin numbers in layout

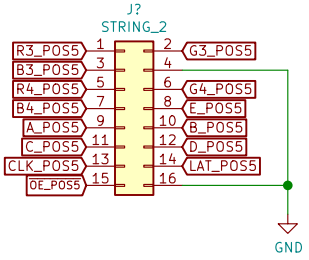
Sheet: /WiFi Module/		
File: Wi_Fi_Module.sch		
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 5/31

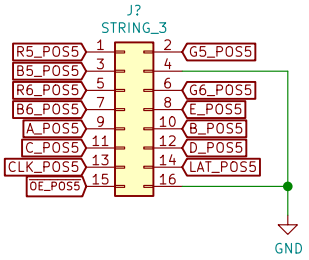


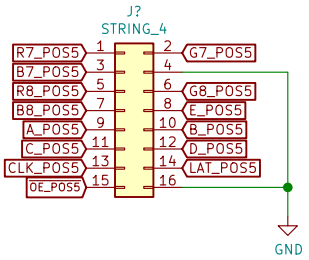
Sheet: /USB UART Isolation/ File: USB_UART_Isolation.sch		
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 6/31

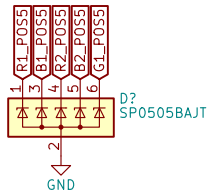

TPD3S014DBVR
PWR_FLAG
+5V_USB
GND_USB
FT234XD
USB_UART_RX_ISO
USB_UART_TX_ISO
BRIDGE_USB+
BRIDGE_USB−
CONN_USB+
CONN_USB−
USB_ACTIVE
600R 0.5A
USB_B_Mini
LT6700−1−S6
74LVC1G06
POS5_USB_PGOOD
USB Virtual COM Port Settings:
Baud Rate: 921600 bps
Data Length: 8 bit
Parity: None
Stop Bits: 1
Flow Control: None
Sheet: /USB UART Bridge/
File: USB_UART_Bridge.sch
Title:
Size: A
Date:
Rev:
KiCad E.D.A. kicad (5.0.1)−3
Id: 7/31

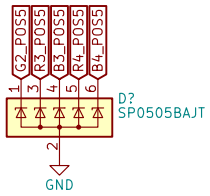


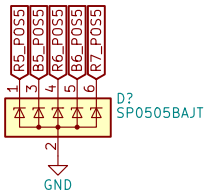


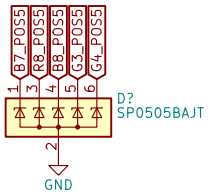


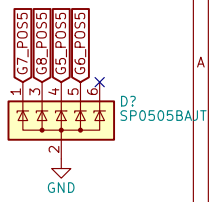


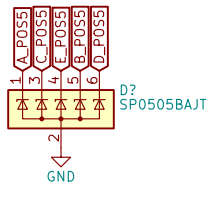


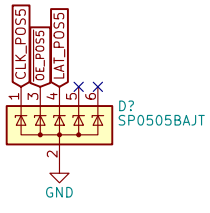






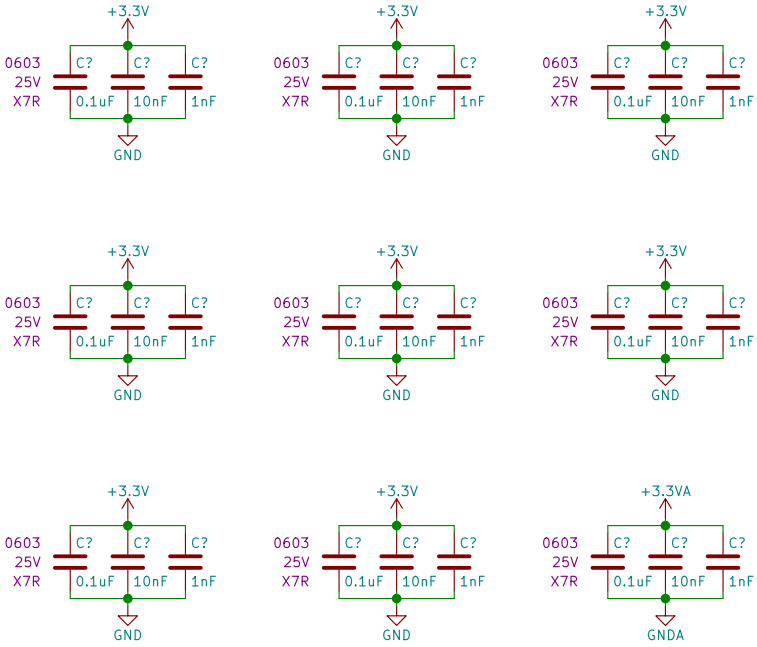


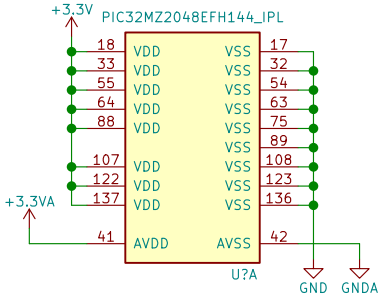


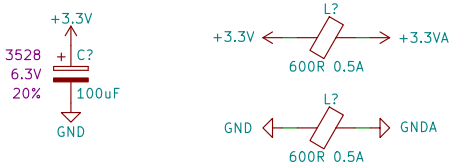


String 1 is the top string.
String 4 is the bottom string.
Each string is 5 panels long
Each panel is 64x64 pixels
This yields a 320x256 pixel overall display resolution

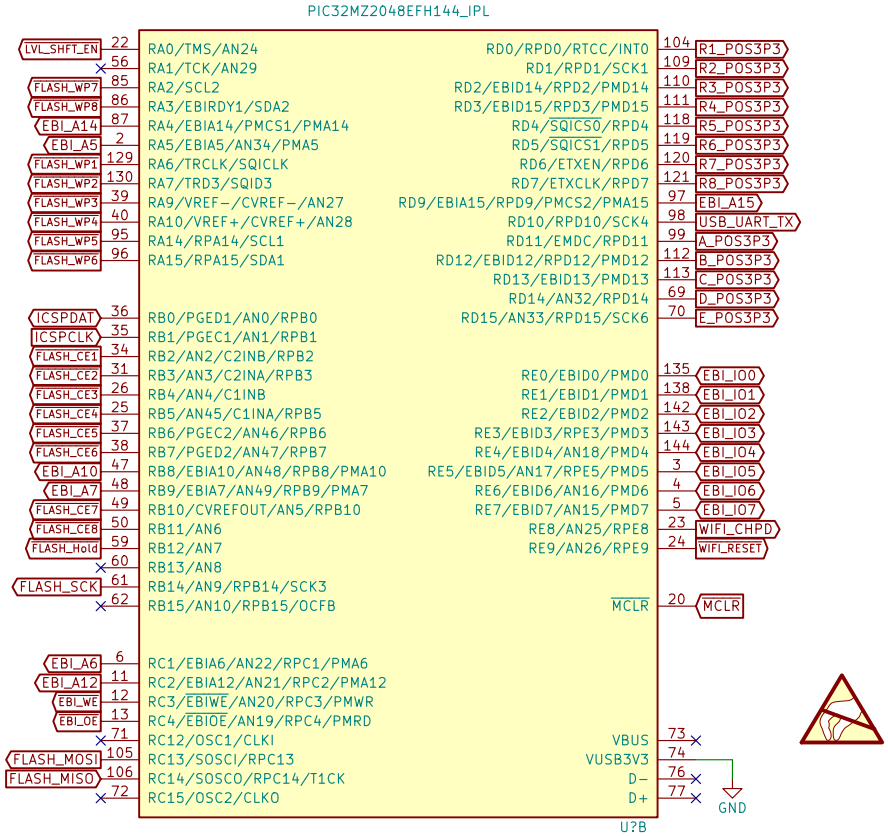
Sheet: /Panel Data Connectors/ File: Panel_Data_Connectors.sch		
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 8/31



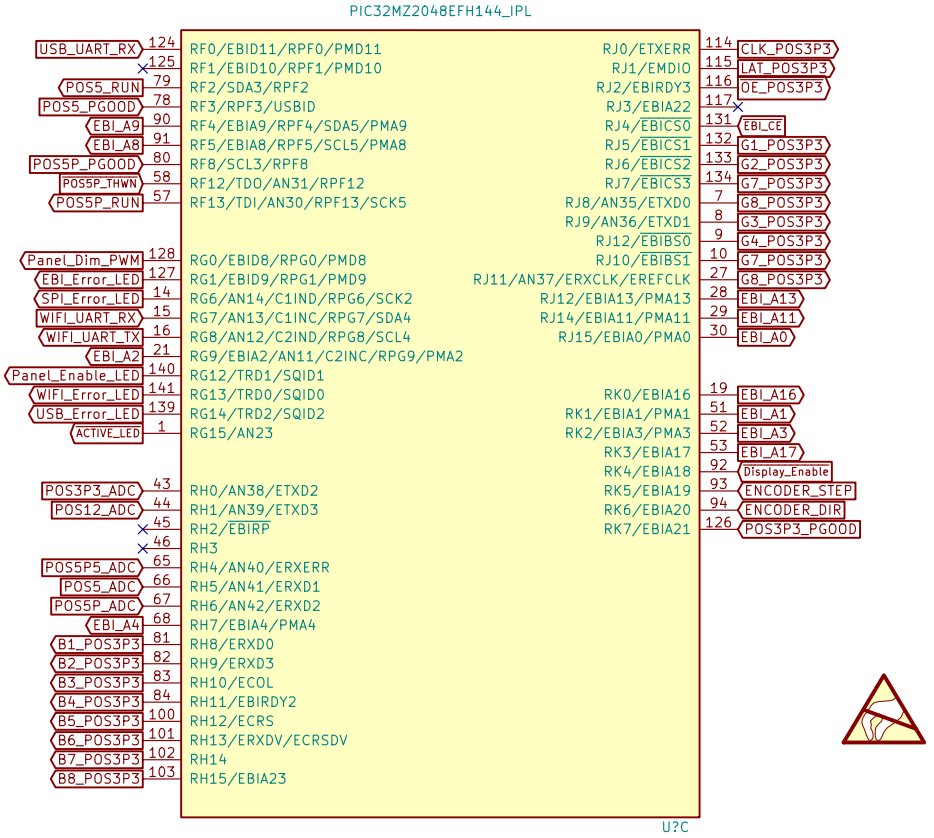




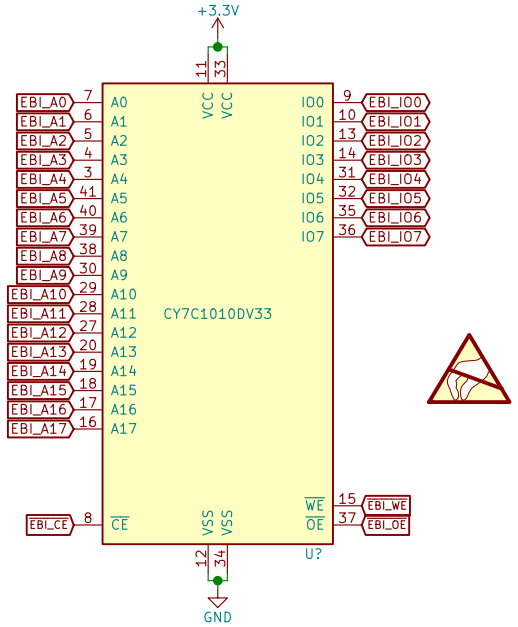
Sheet: /Microcontroller Power/		
File: Microcontroller_Power.sch		
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 9/31



Sheet: /Microcontroller 1/		
File: Microcontroller_1.sch		
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 10/31

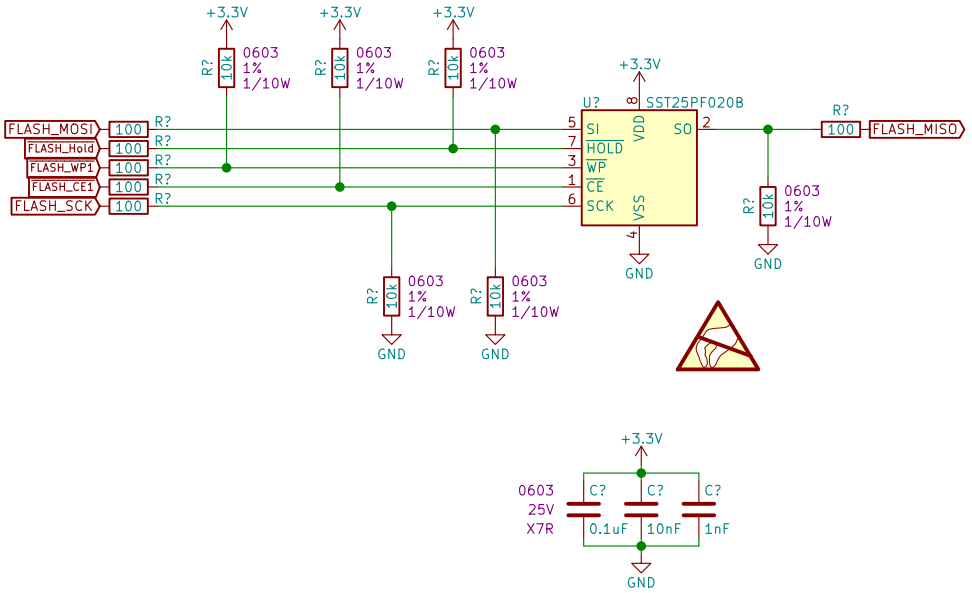


Sheet: /Microcontroller 2/		
File: Microcontroller_2.sch		
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 11/31

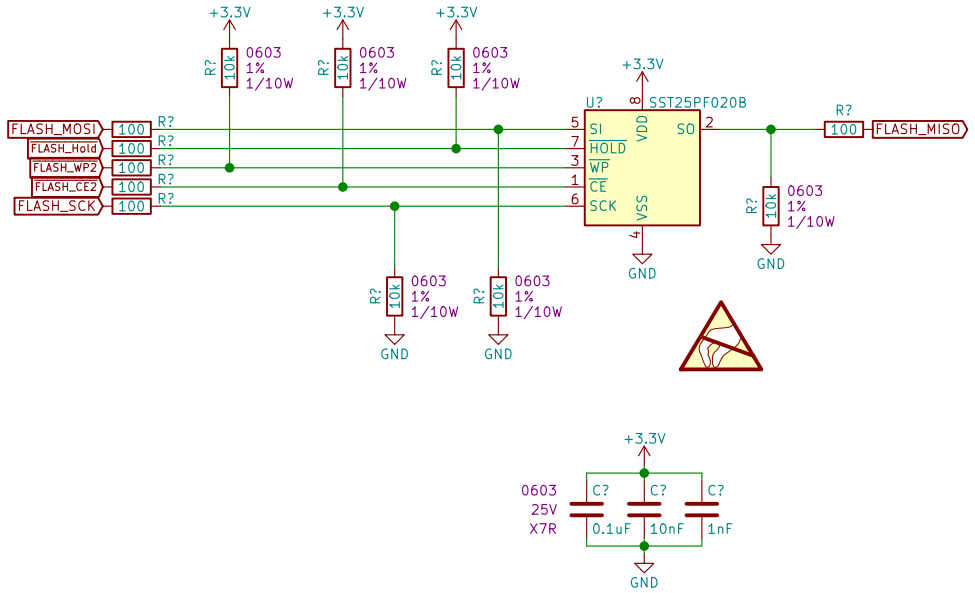


External SRAM stores the current slide being displayed
Each of the eight programmed slides are stored in external serial flash

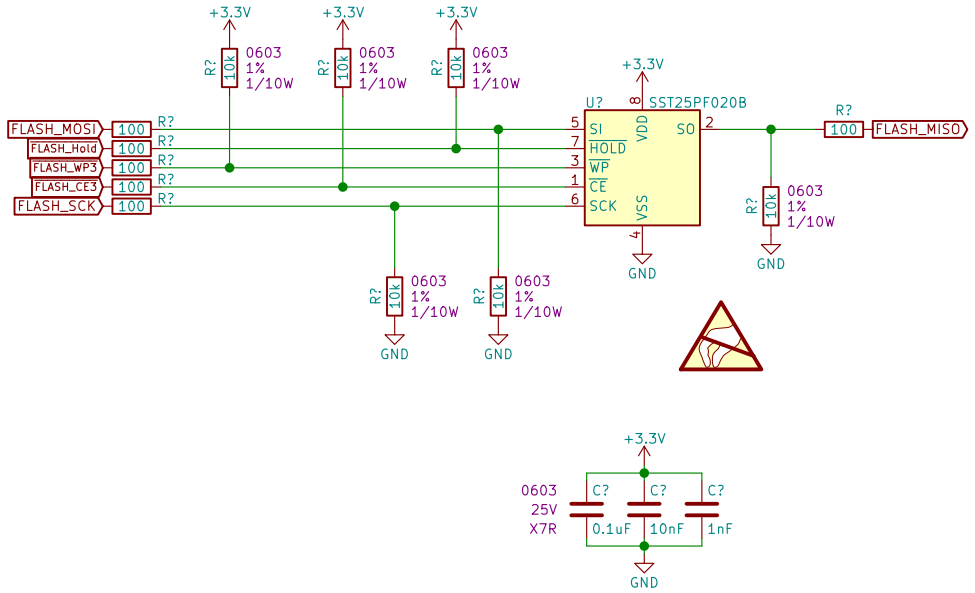
Sheet: /External SRAM/ File: External_SRAM.sch		
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 12/31



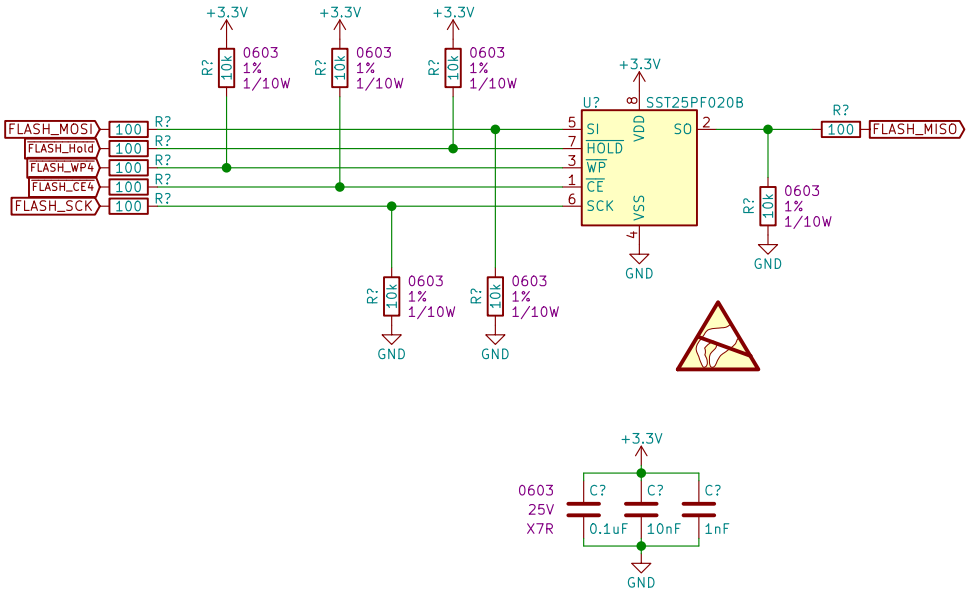
Sheet: /External Flash 1/		
File: External_Flash_1.sch		
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 13/31



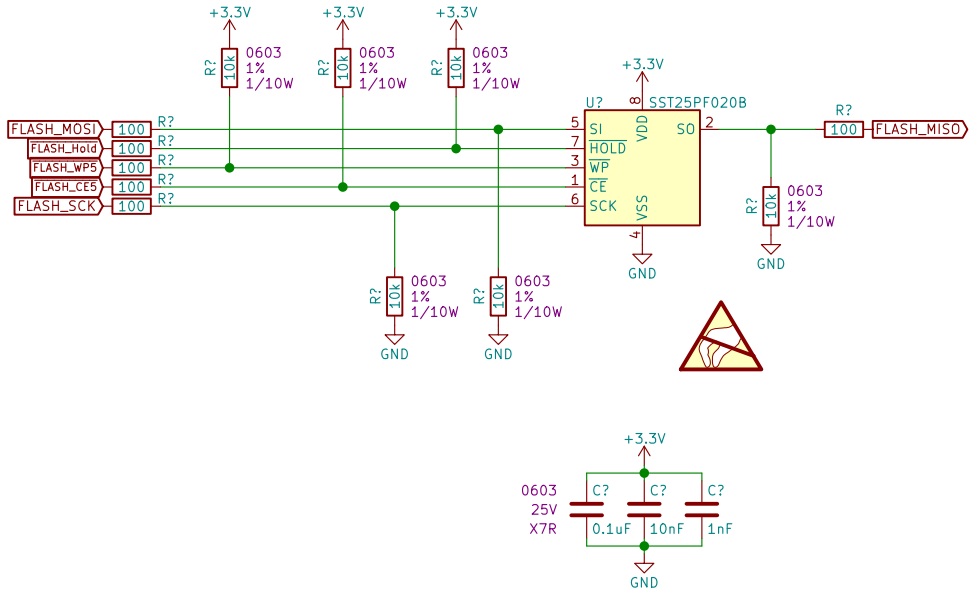
Sheet: /External Flash 2/		
File: External_Flash_2.sch		
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 14/31



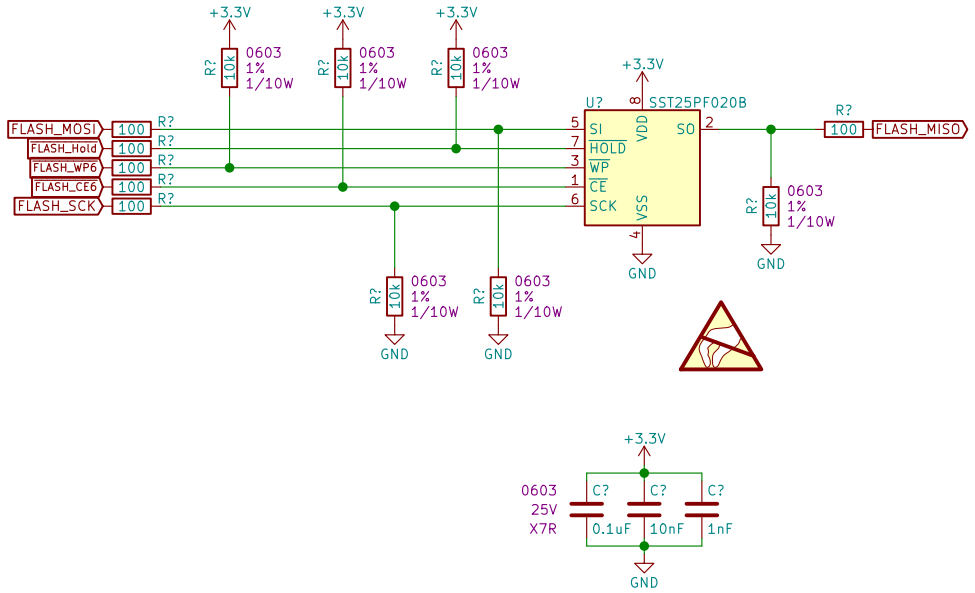
Sheet: /External Flash 3/		
File: External_Flash_3.sch		
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 15/31



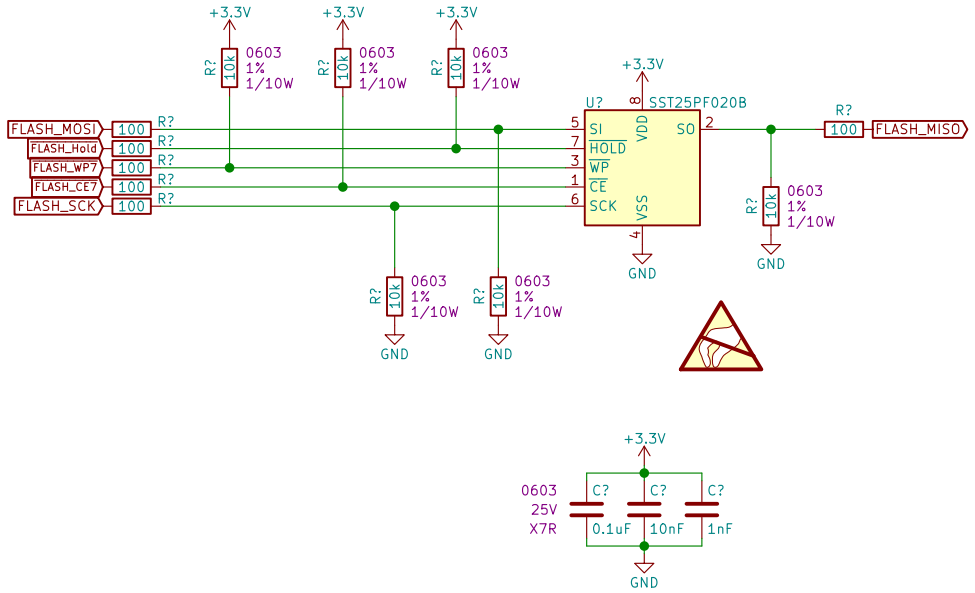
Sheet: /External Flash 4/		
File: External_Flash_4.sch		
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 16/31



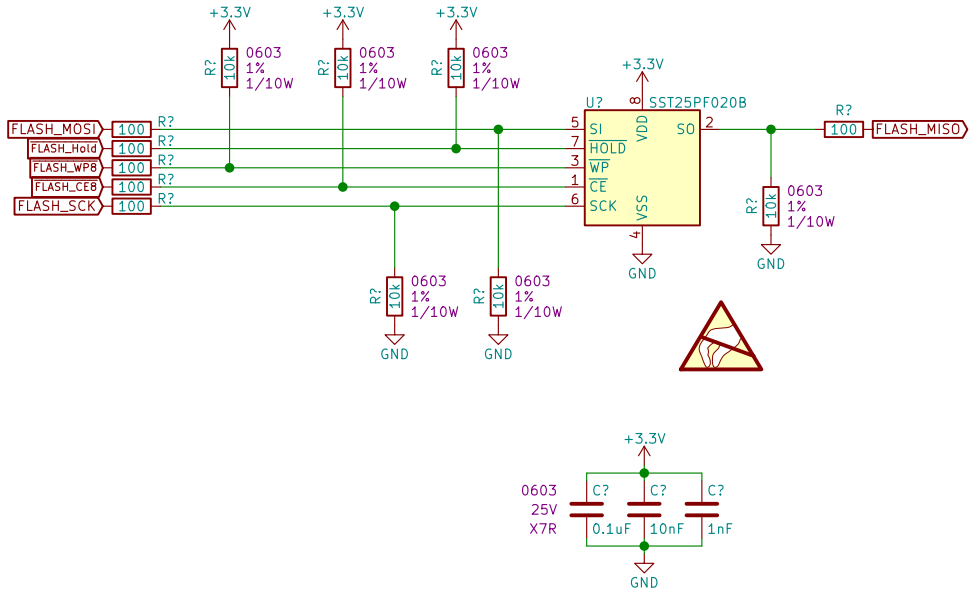
Sheet: /External Flash 5/		
File: External_Flash_5.sch		
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 17/31



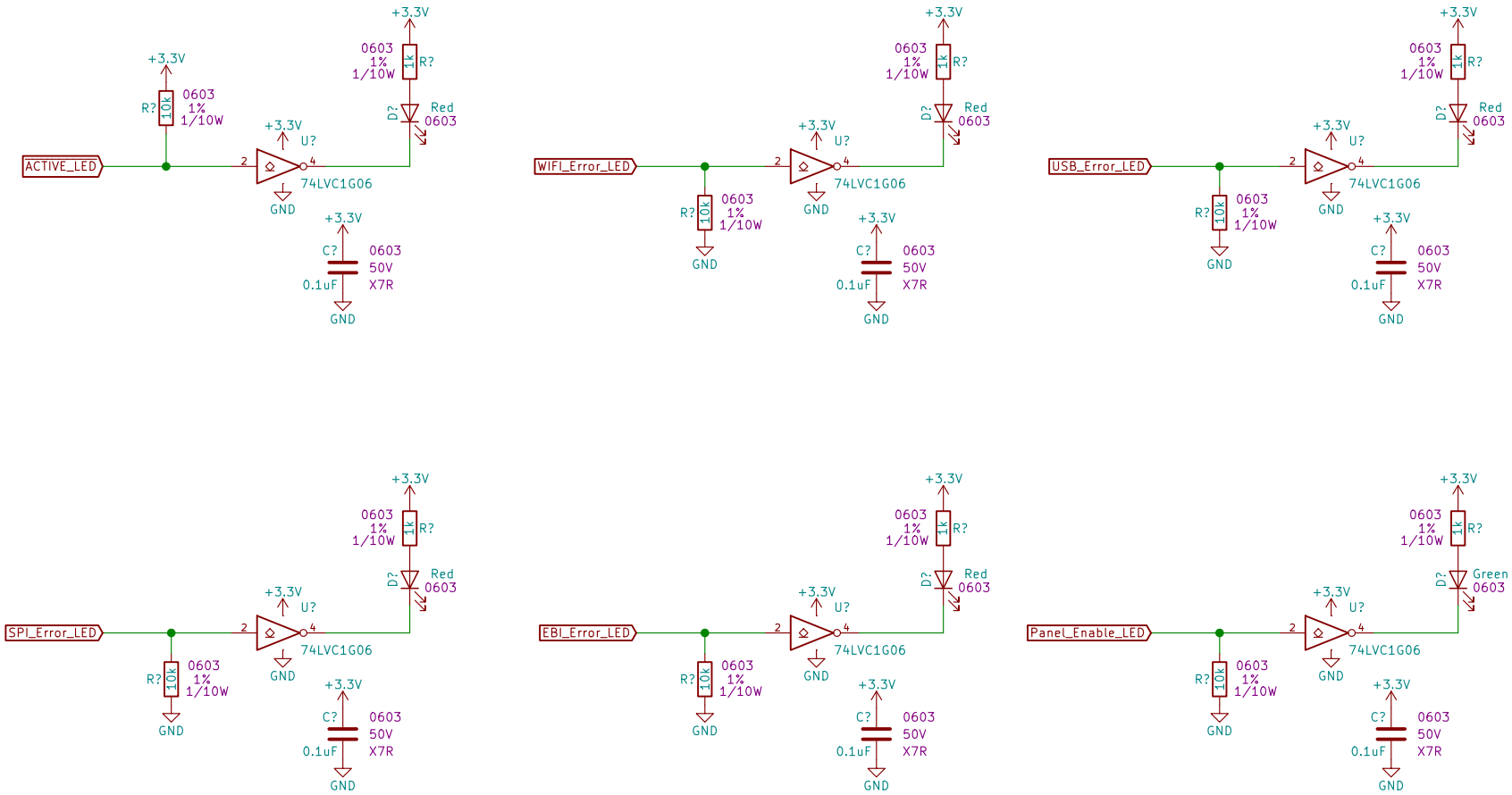
Sheet: /External Flash 6/		
File: External_Flash_6.sch		
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 18/31



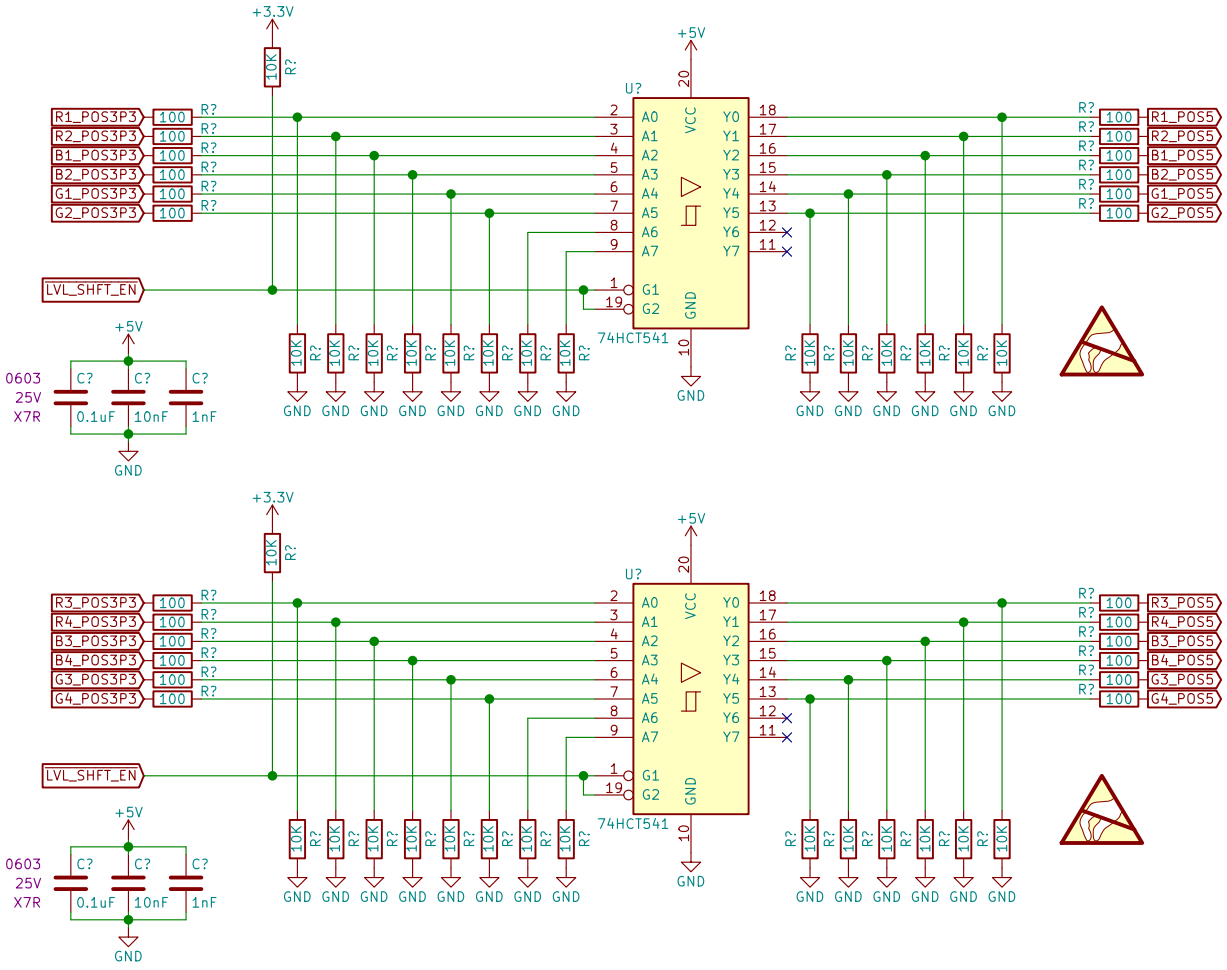
Sheet: /External Flash 7/		
File: External_Flash_7.sch		
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 19/31



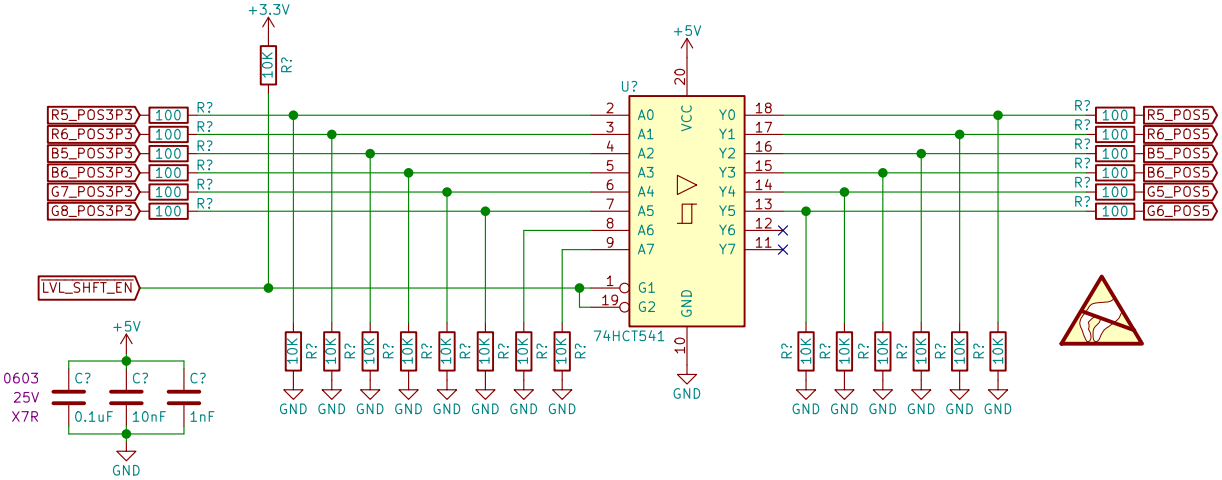
Sheet: /External Flash 8/		
File: External_Flash_8.sch		
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 20/31

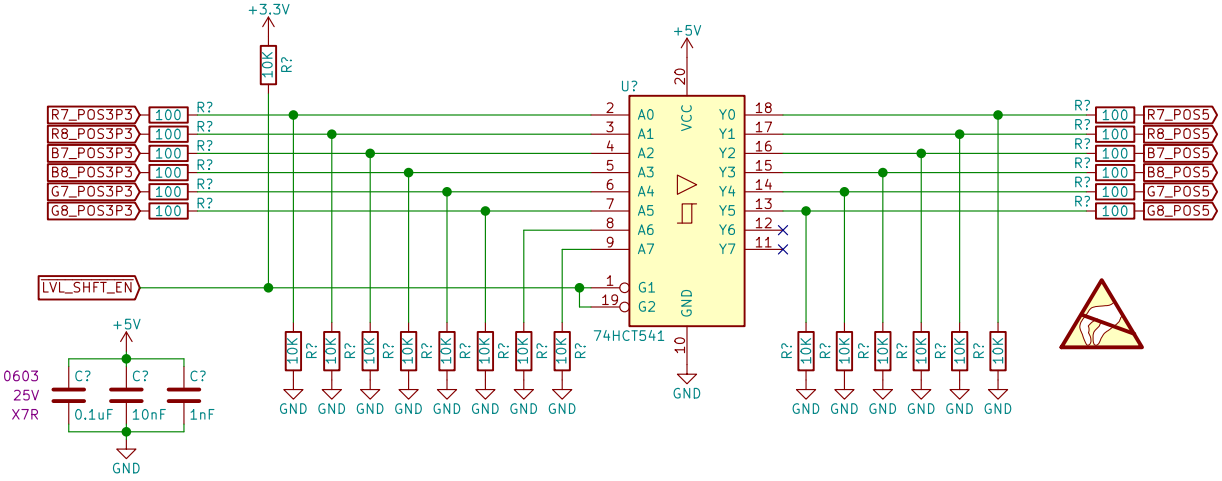


Sheet: /Status LEDs 1/		
File: Status_LEDs_1.sch		
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 21/31

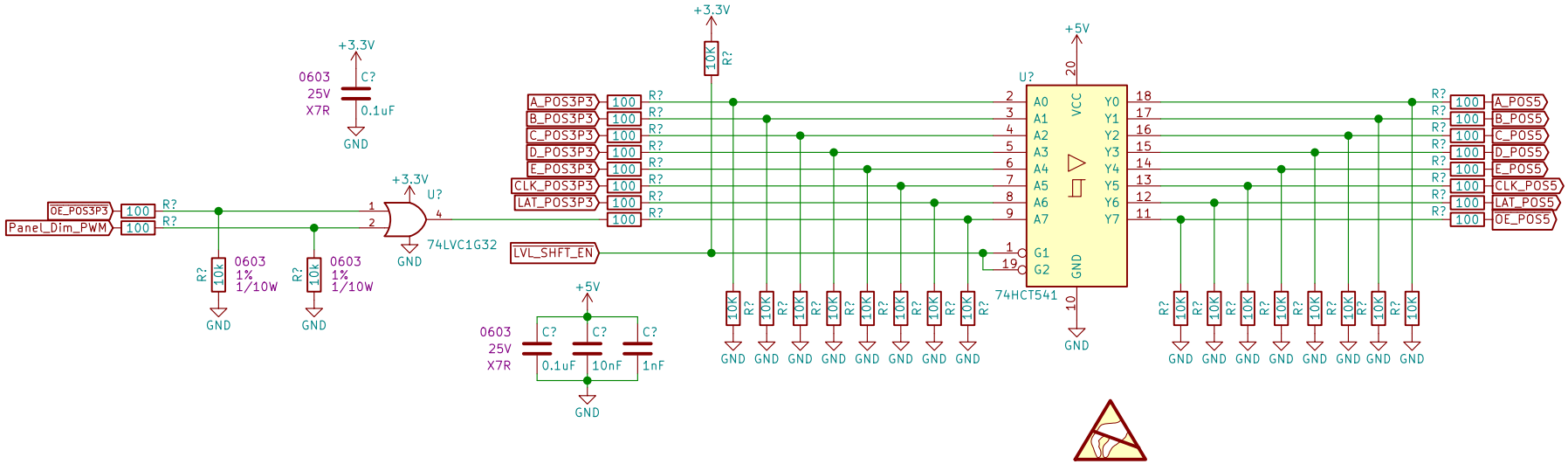


Sheet: /Panel Data Level Shifters 1/		
File: Panel_Data_Level_Shifters_1.sch		
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 22/31

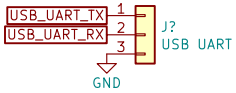


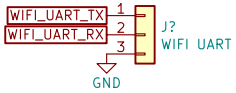


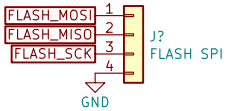
Sheet: /Panel Data Level Shifters 2/		
File: Panel_Data_Level_Shifters_2.sch		
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 23/31

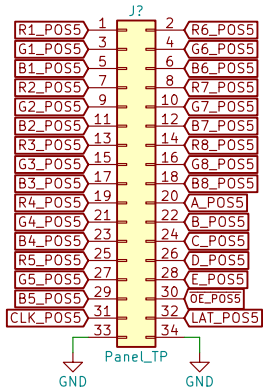


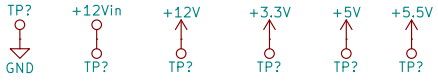
Sheet: /Panel Data Level Shifters 3/		
File: Panel_Data_Level_Shifters_3.sch		
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 24/31



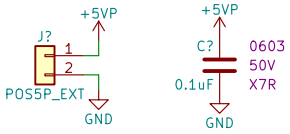


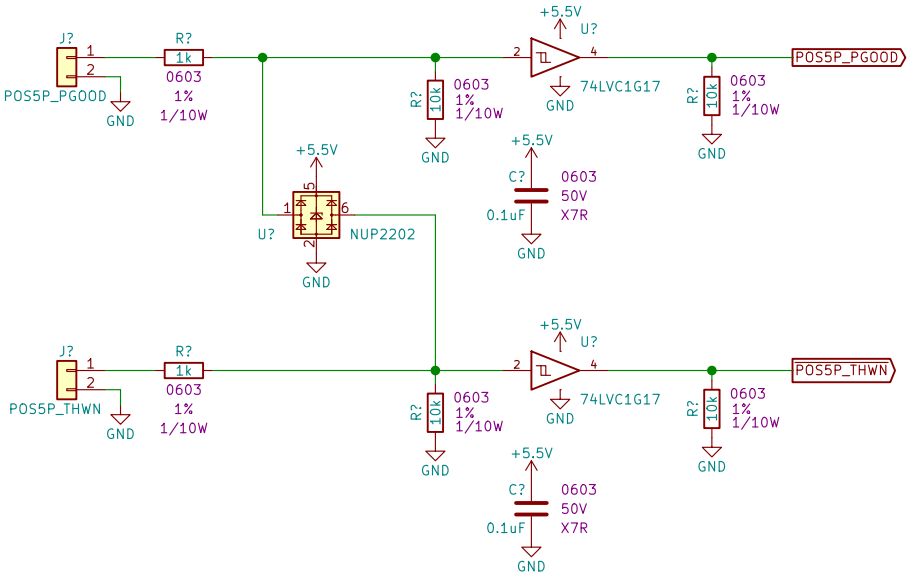


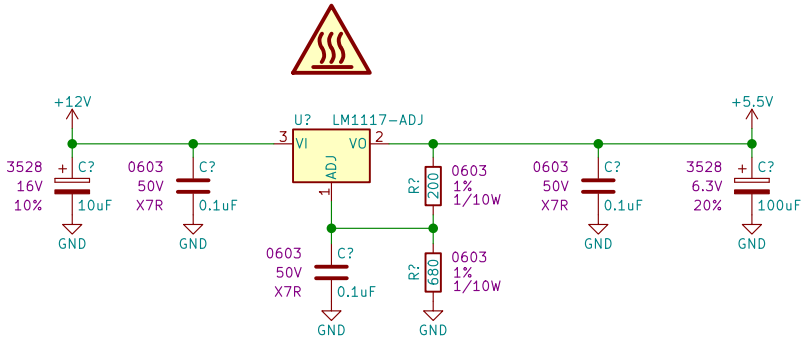


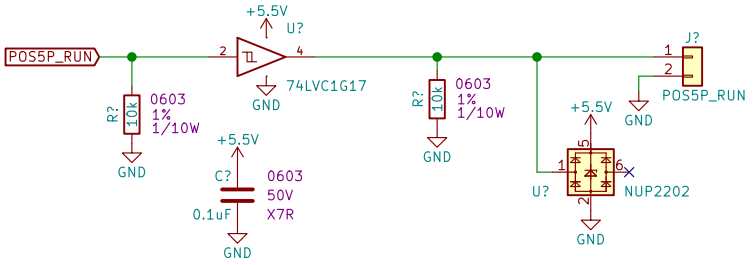


Sheet: /Test Points/ File: Test_Points.sch		
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 25/31



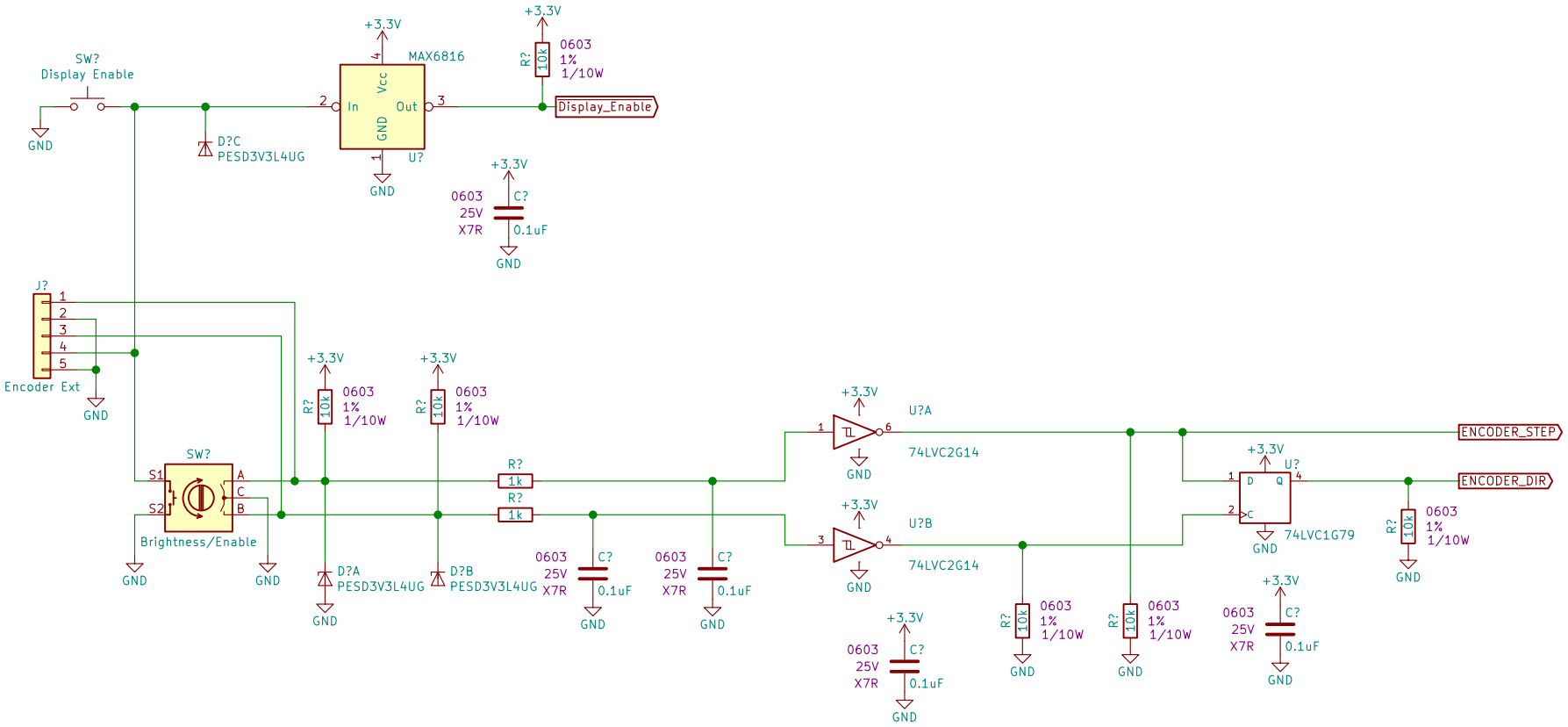






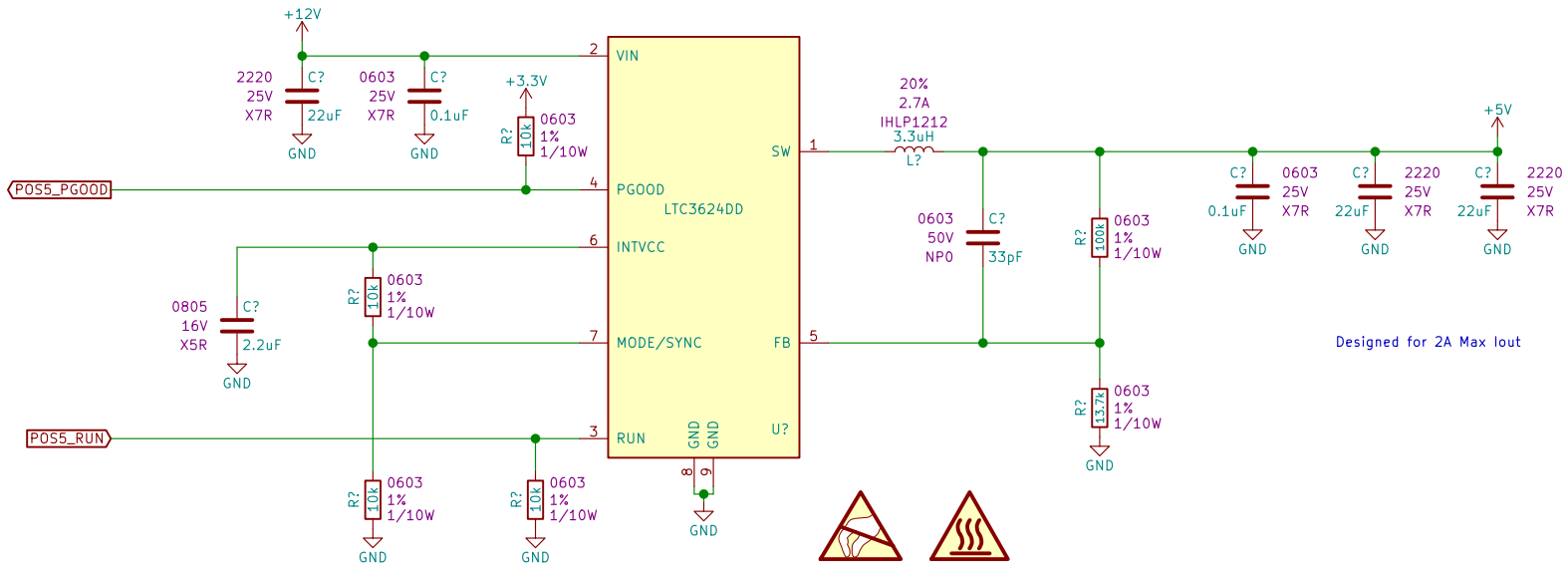
All headers on this sheet interface with power board to power panels

Sheet: /LED POS5 Monitoring/ File: LED_POS5_Monitoring.sch		
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 26/31



Turning rotary encoder will adjust display master brightness
Pressing encoder switch will toggle display on/off state

Sheet: /Pushbuttons/	
File: Pushbuttons.sch	
Title:	
Size: A	Date:
KiCad E.D.A. kicad (5.0.1)-3	Id: 27/31



Sheet: /POS5 Power Supply/		
File: POS5_Power_Supply.sch		
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 28/31

4-40 Standoff
MK?

4-40 Standoff
MK?

4-40 Standoff
MK?

4-40 Standoff
MK?

4-40 Standoff
MK?

4-40 Standoff
MK?

4-40 Standoff
MK?

4-40 Standoff
MK?

4-40 Standoff
MK?

4-40 Standoff
MK?

4-40 Standoff
MK?

4-40 Standoff
MK?

4-40 Screw
MK?

4-40 Screw
MK?

4-40 Screw
MK?

4-40 Screw
MK?

4-40 Screw
MK?

4-40 Screw
MK?

4-40 Screw
MK?

4-40 Screw
MK?

4-40 Screw
MK?

4-40 Screw
MK?

4-40 Screw
MK?

4-40 Screw
MK?

H?
3mm Mounting Hole

H?
3mm Mounting Hole

H?
3mm Mounting Hole

H?
3mm Mounting Hole

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3mm Mounting Hole

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3mm Mounting Hole

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3mm Mounting Hole

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3mm Mounting Hole

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3mm Mounting Hole

H?
3mm Mounting Hole

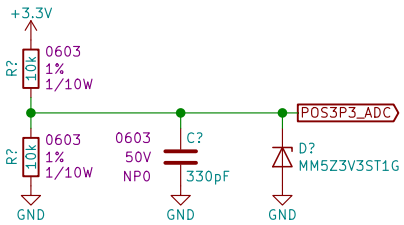
H?
3mm Mounting Hole

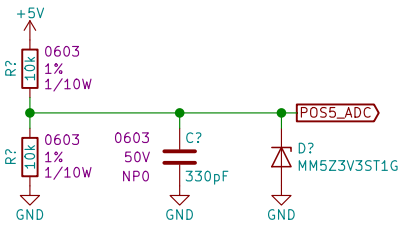
H?
3mm Mounting Hole

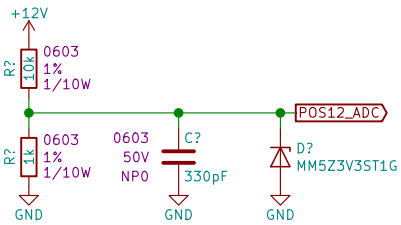
Sheet: /Mechanical/
File: Mechanical.sch

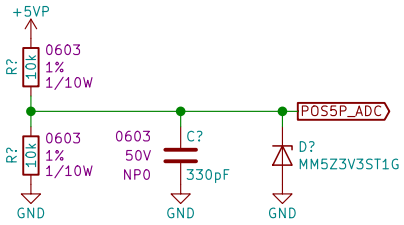
Title:

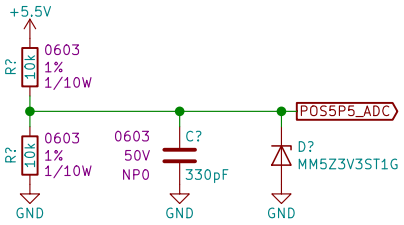
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 29/31







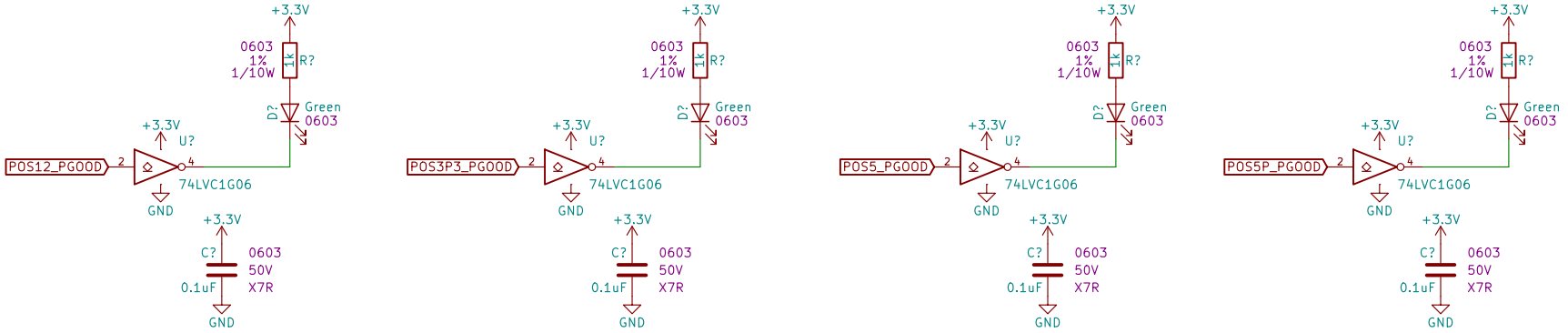




Sheet: /Internal Rail Monitoring/
File: Internal_Rail_Monitoring.sch

Title:

Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 30/31



Sheet: /Status LEDs 2/		
File: Status_LEDs_2.sch		
Title:		
Size: A	Date:	**Rev:**
KiCad E.D.A. kicad (5.0.1)-3		Id: 31/31