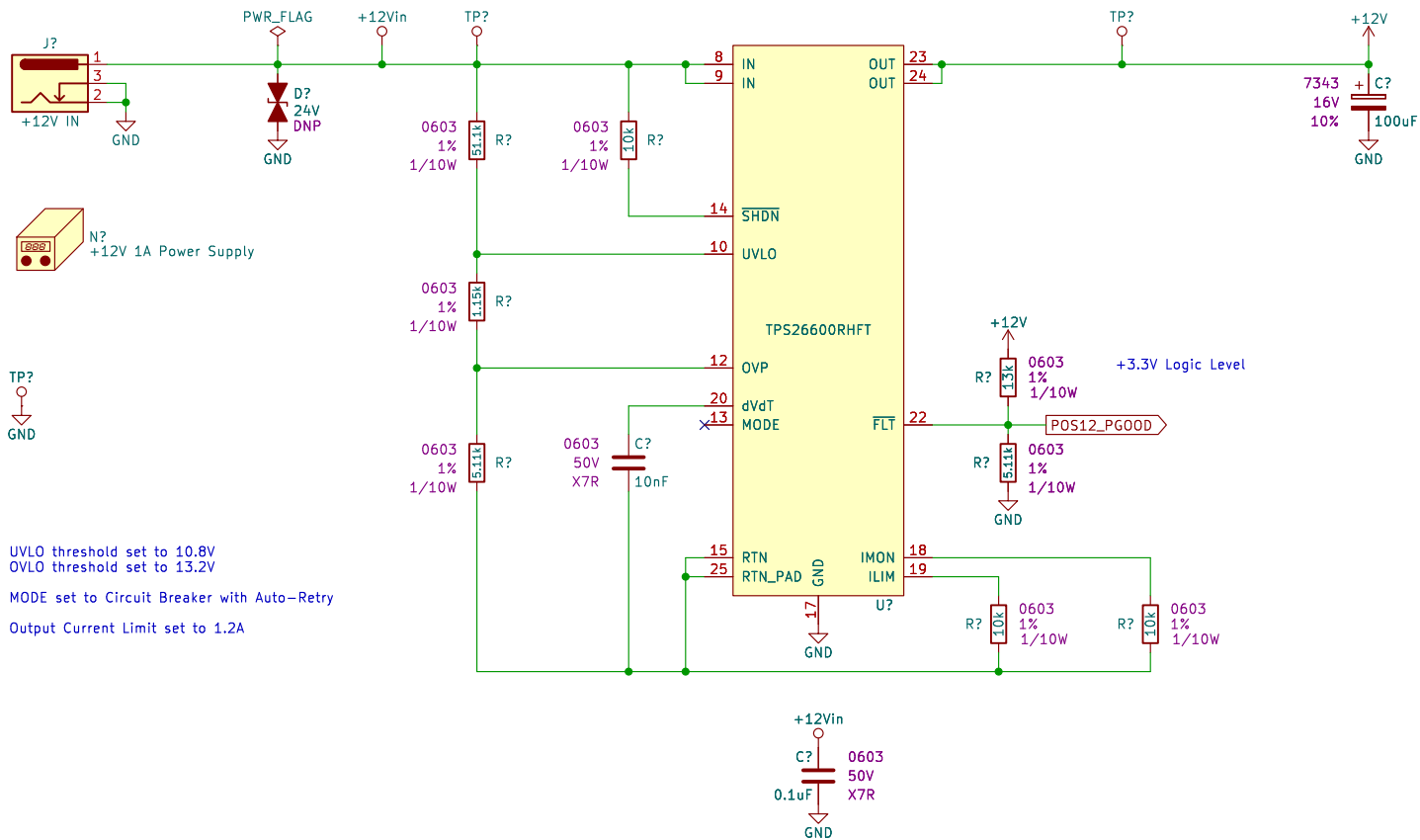


	1	2	3	4	5	
<h1>Thermal Camera</h1> <p><a href="https://github.com/drewsum/Thermal_Camera">https://github.com/drewsum/Thermal_Camera</a></p>						
A	01. Table of Contents					
	02. POS12 Input	POS12_Input	14. LCD Backlight Power Supply	LCD Backlight Power Supply	26. FLIR Lepton Sensor	FLIR Lepton Sensor
	03. POS12 Telemetry	POS12 Telemetry	15. LCD Backlight Telemetry	LCD Backlight Telemetry	27. USB Hub	USB Hub
	04. POS3P3 Power Supply	POS3P3 Power Supply	16. Battery Management	Battery Management	28. PGOOD LEDs	PGOOD LEDs
	05. POS3P3 Telemetry	POS3P3 Telemetry	17. PIC32MZ DA Programming	PIC32MZ DA Programming	29. Status LEDs	Status LEDs
B	06. POS1P8 Power Supply	POS1P8 Power Supply	18. PIC32MZ DA Clocking	PIC32MZ DA Clocking	30. Mechanical	Mechanical
	07. POS1P8 Telemetry	POS1P8 Telemetry	19. PIC32MZ DA Power	PIC32MZ DA Power		
	08. POS3P0 Power Supply	POS3P0 Power Supply	20. PIC32MZ DA 1	PIC32MZ DA 1		
	09. POS3P0 Telemetry	POS3P0 Telemetry	21. PIC32MZ DA 2	PIC32MZ DA 2		
	10. POS2P8 Power Supply	POS2P8 Power Supply	22. External Storage	External Storage		
C	11. POS2P8 Telemetry	POS2P8 Telemetry	23. Graphic LCD	Graphic LCD		
	12. POS1P2 Power Supply	POS1P2 Power Supply	24. USB UART	USB UART		
	13. POS1P2 Telemetry	POS1P2 Telemetry	25. Elapsed Time Counter	Elapsed Time Counter		
D						
<div>Drew Maatman and Michael Laffin</div> <div>Sheet: /</div> <div>File: Thermal_Camera.kicad_sch</div> <div>Title: Thermal Camera</div> <div>Size: ADate: 2023-11-13</div> <div>KiCad E.D.A. kicad 7.0.9</div> <div>Rev: PRELIM</div> <div>Id: 1/30</div>						
	1	2	3	4	5	



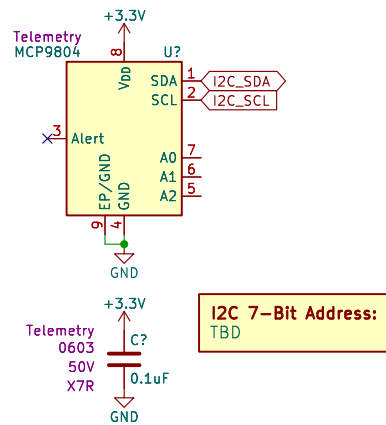
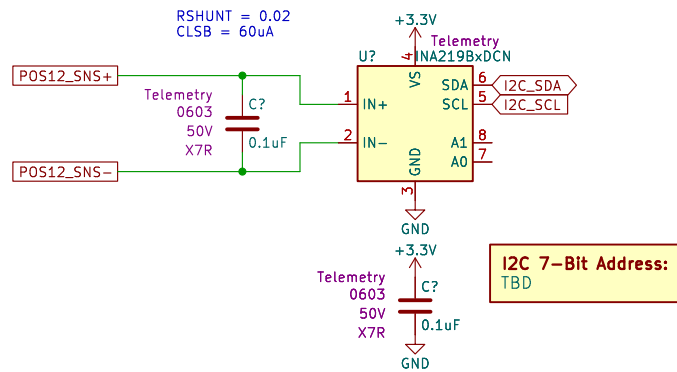
Drew Maatman and Michael Laffin

Sheet: /POS12\_Input/  
 File: POS12\_Input.kicad\_sch

**Title: Thermal Camera**

Size: A Date: 2023-11-13  
 KiCad E.D.A. kicad 7.0.9

Rev: PRELIM  
 Id: 2/30



Drew Maatman and Michael Laffin

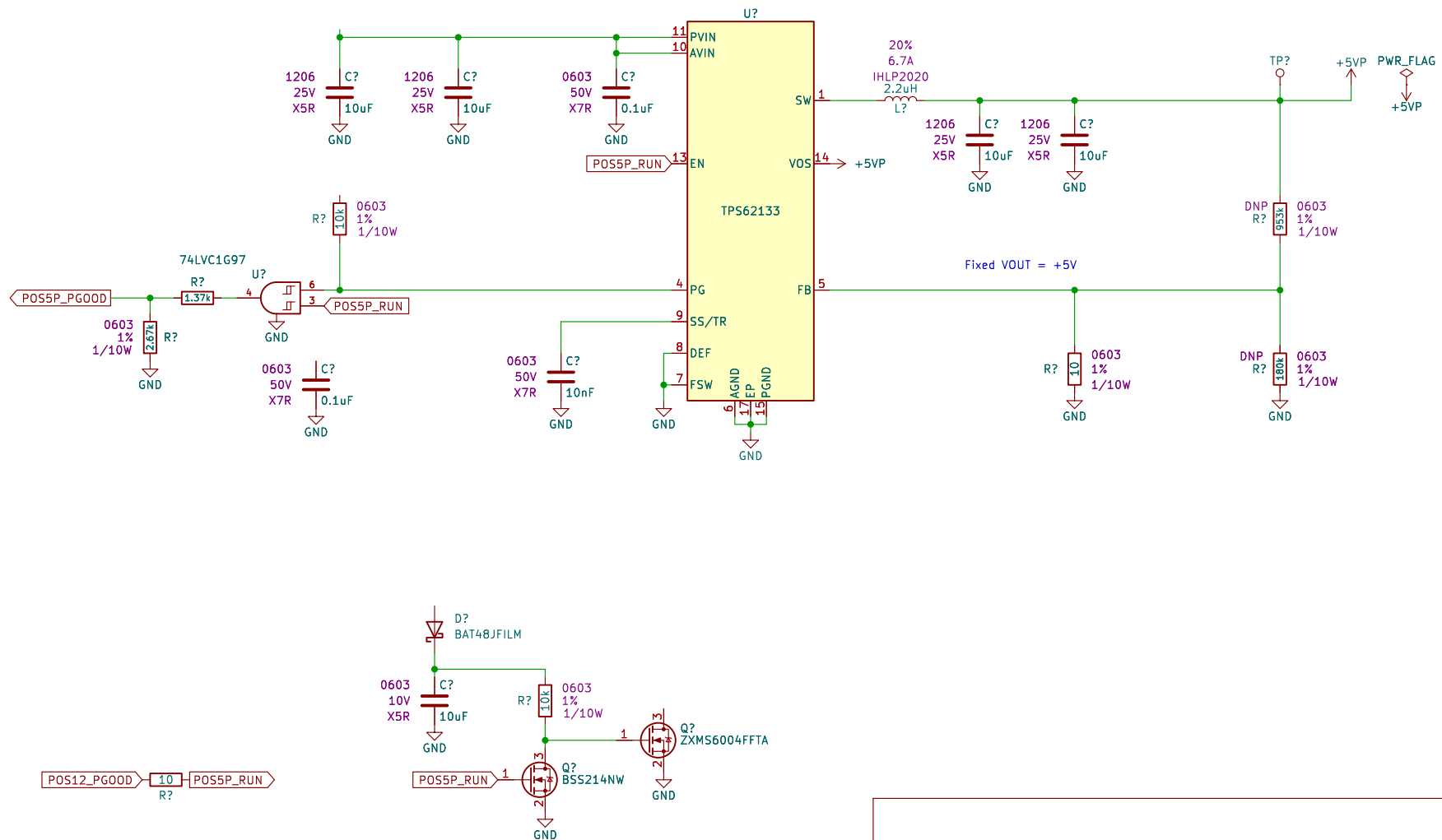
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**Title: Thermal Camera**

Size: A Date: 2023-11-13  
KiCad E.D.A. kicad 7.0.9

Rev: PRELIM  
Id: 3/30

## CHANGE TO +3.3V



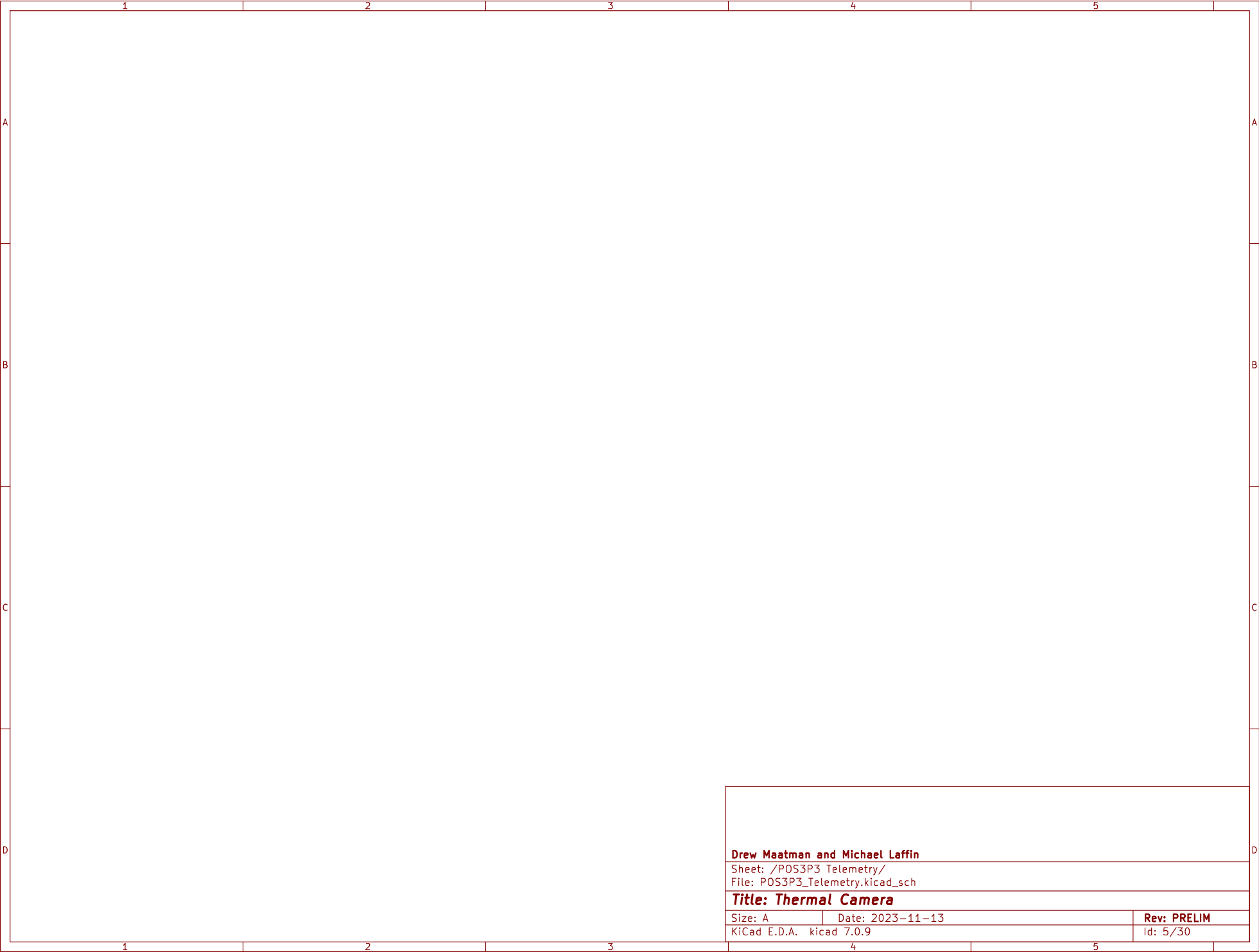
**Drew Maatman and Michael Laffin**

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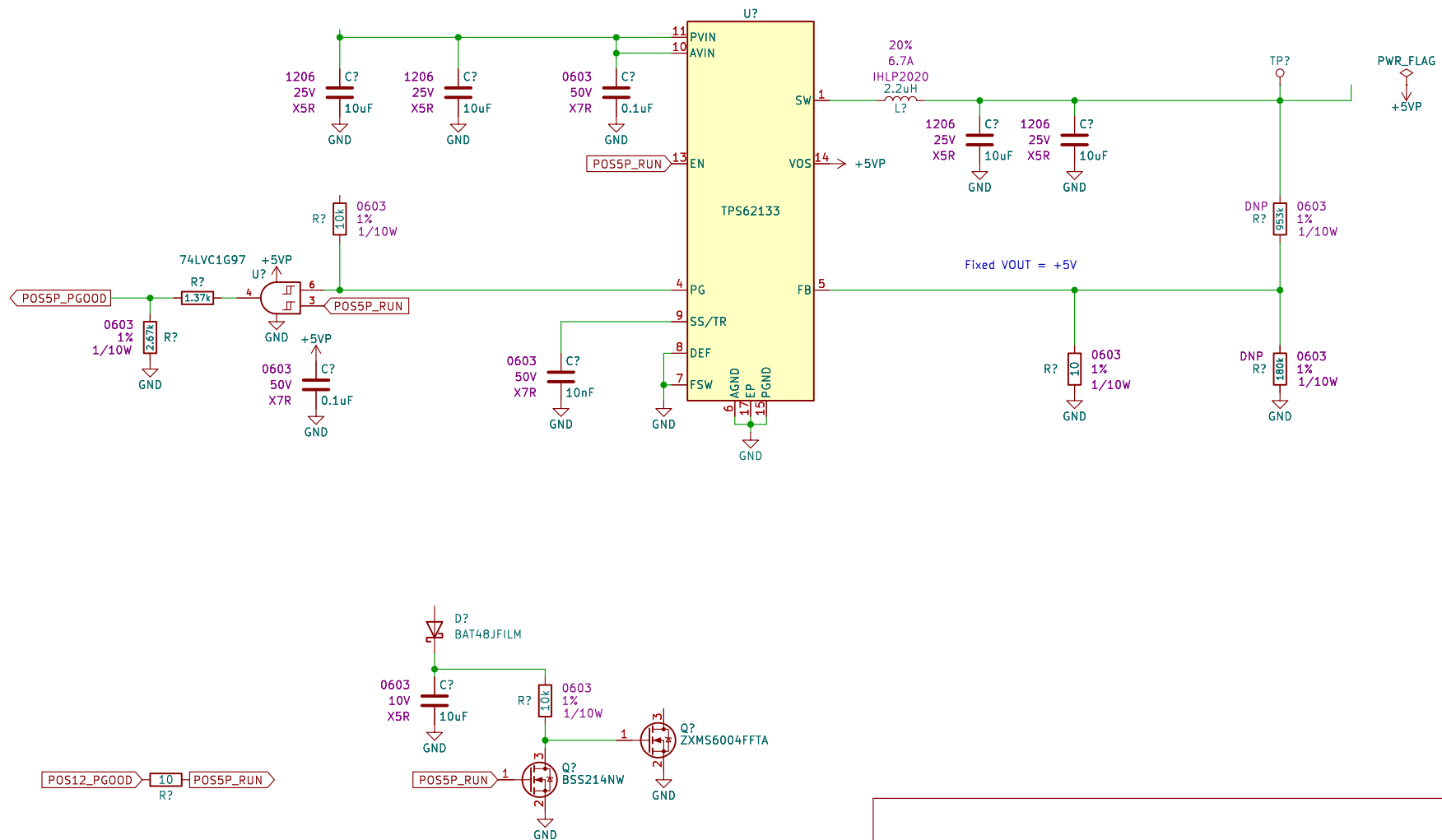
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Size: A	Date: 2023-11-13
KiCad E.D.A. kicad 7.0.9	

Rev: PRELIM  
Id: 4/30



## CHANGE TO +1.8V



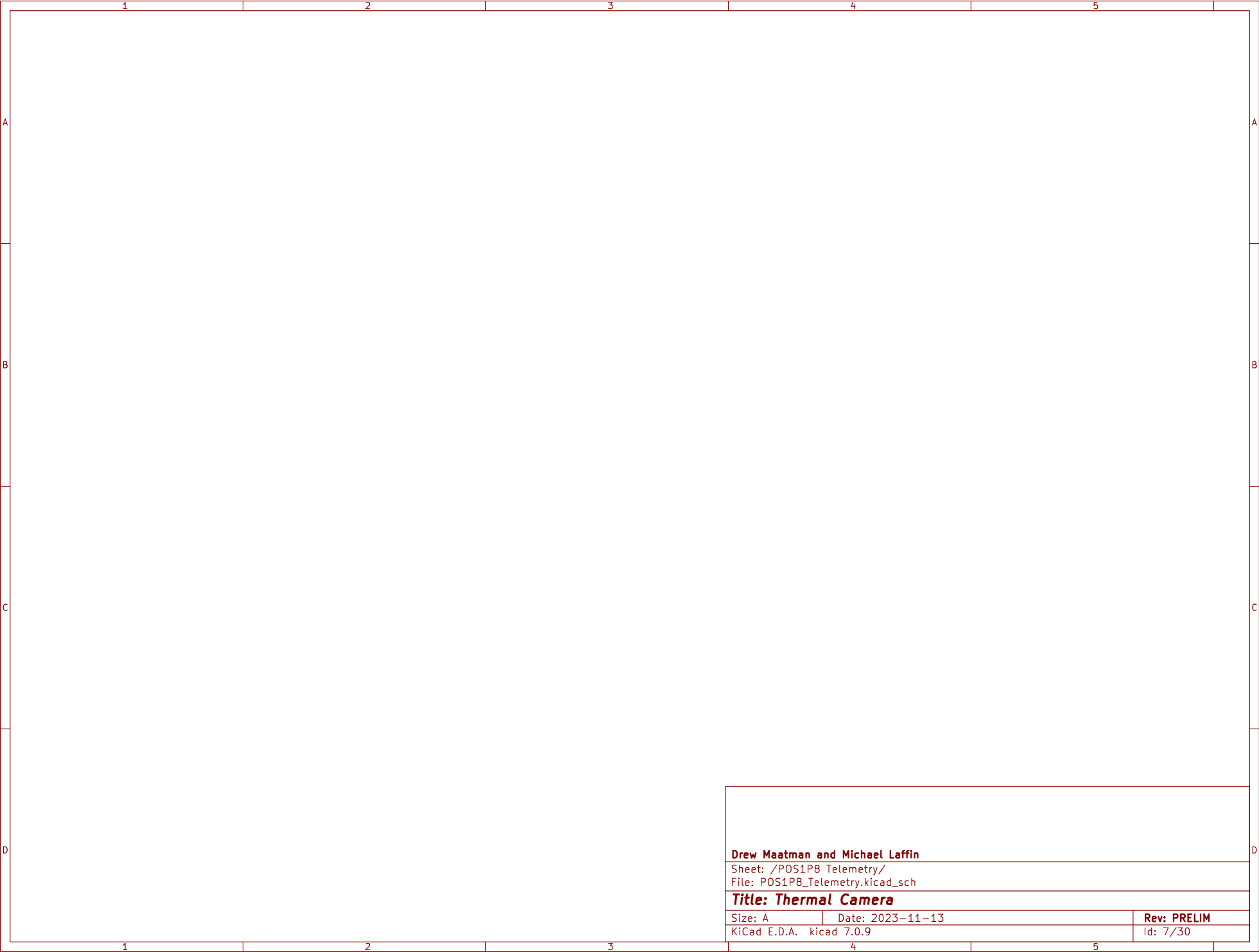
**Drew Maatman and Michael Laffin**

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Size: A	Date: 2023-11-13
KiCad E.D.A. kicad 7.0.9	

Rev: PRELIM  
Id: 6/30



Drew Maatman and Michael Laffin		
Sheet: /POS1P8 Telemetry/ File: POS1P8_Telemetry.kicad_sch		
Title: Thermal Camera		
Size: A	Date: 2023-11-13	Rev: PRELIM
KiCad E.D.A. kicad 7.0.9		Id: 7/30

A

B

C

D

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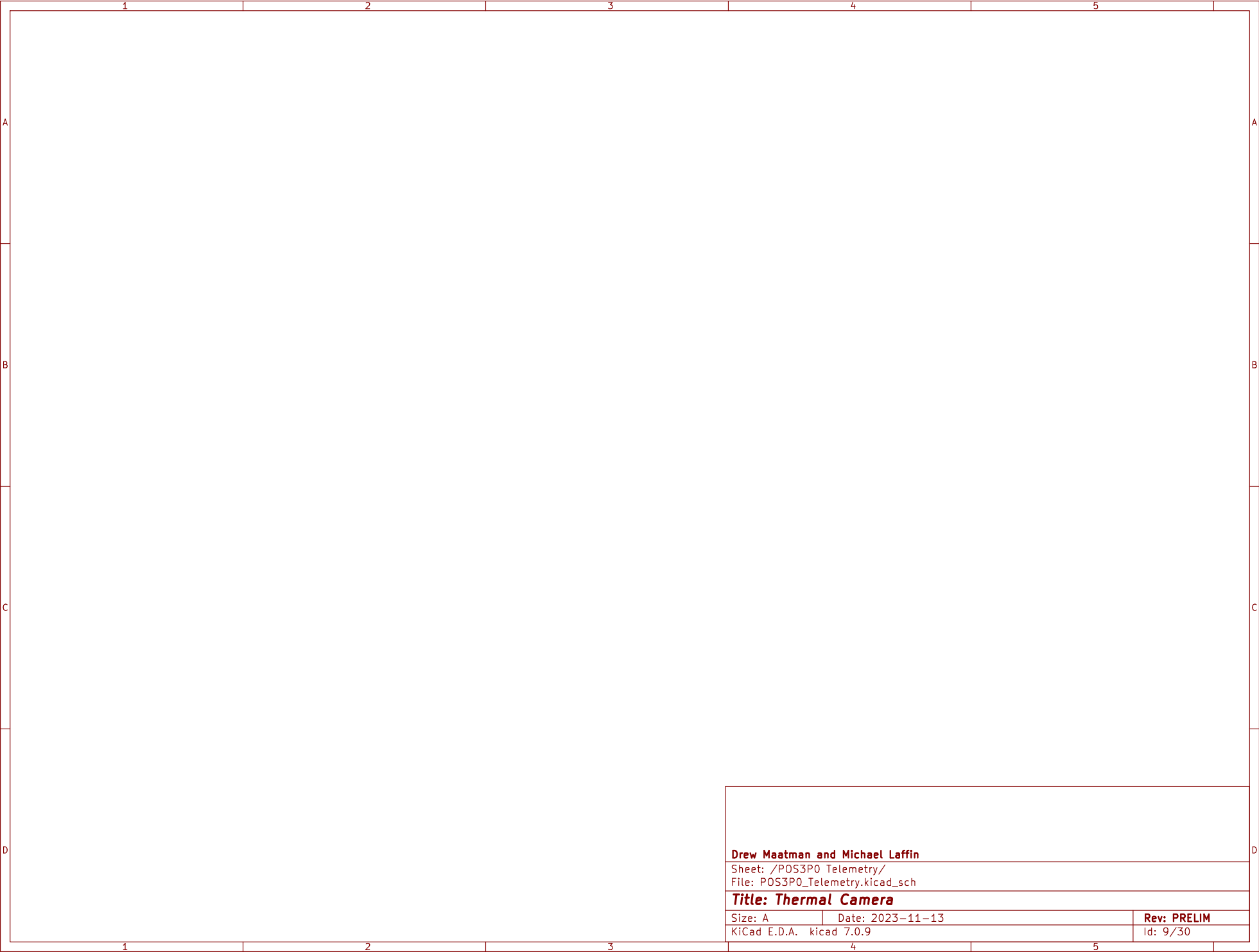
**Drew Maatman and Michael Laffin**

Sheet: /POS3P0 Power Supply/  
File: POS3P0\_Power\_Supply.kicad\_sch

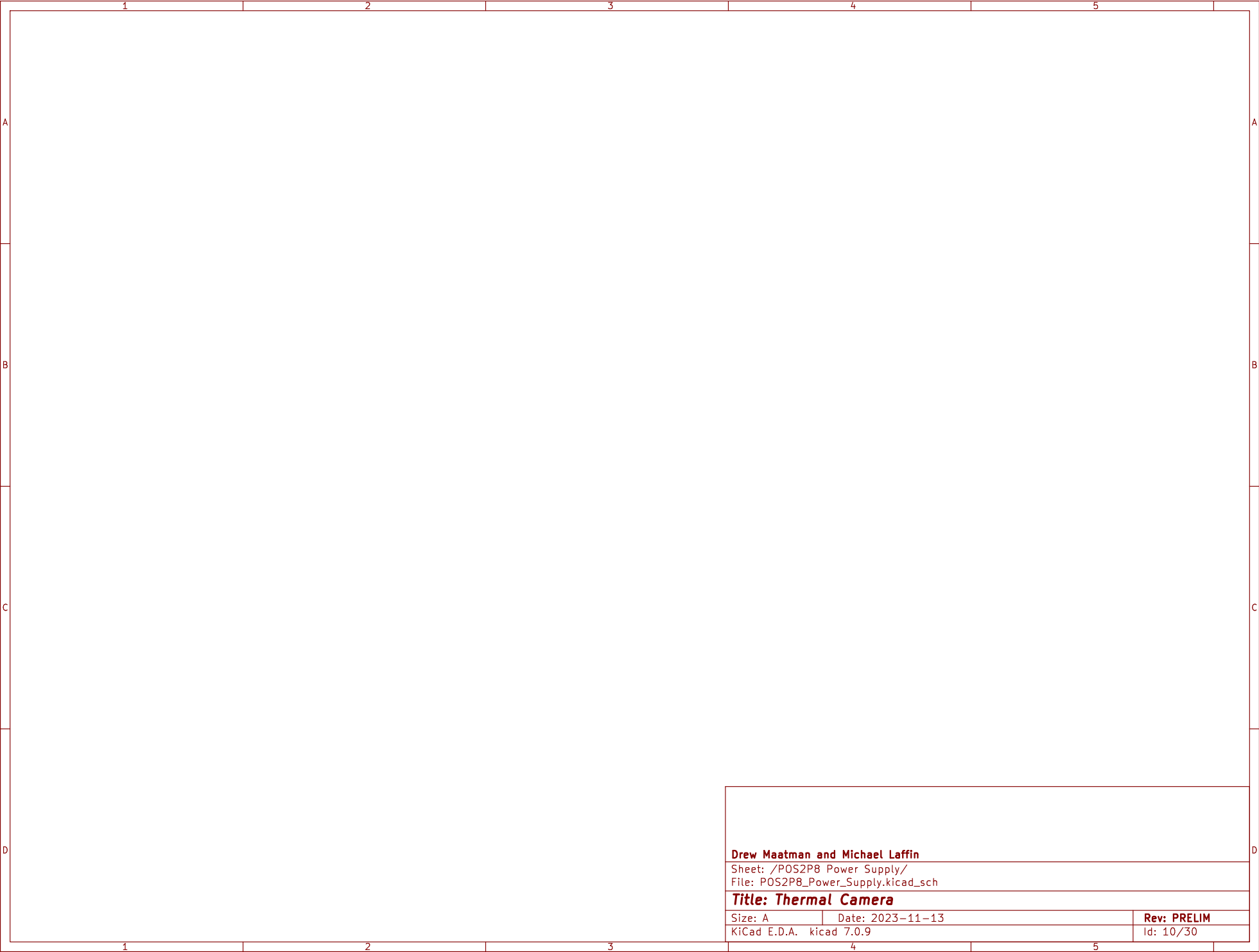
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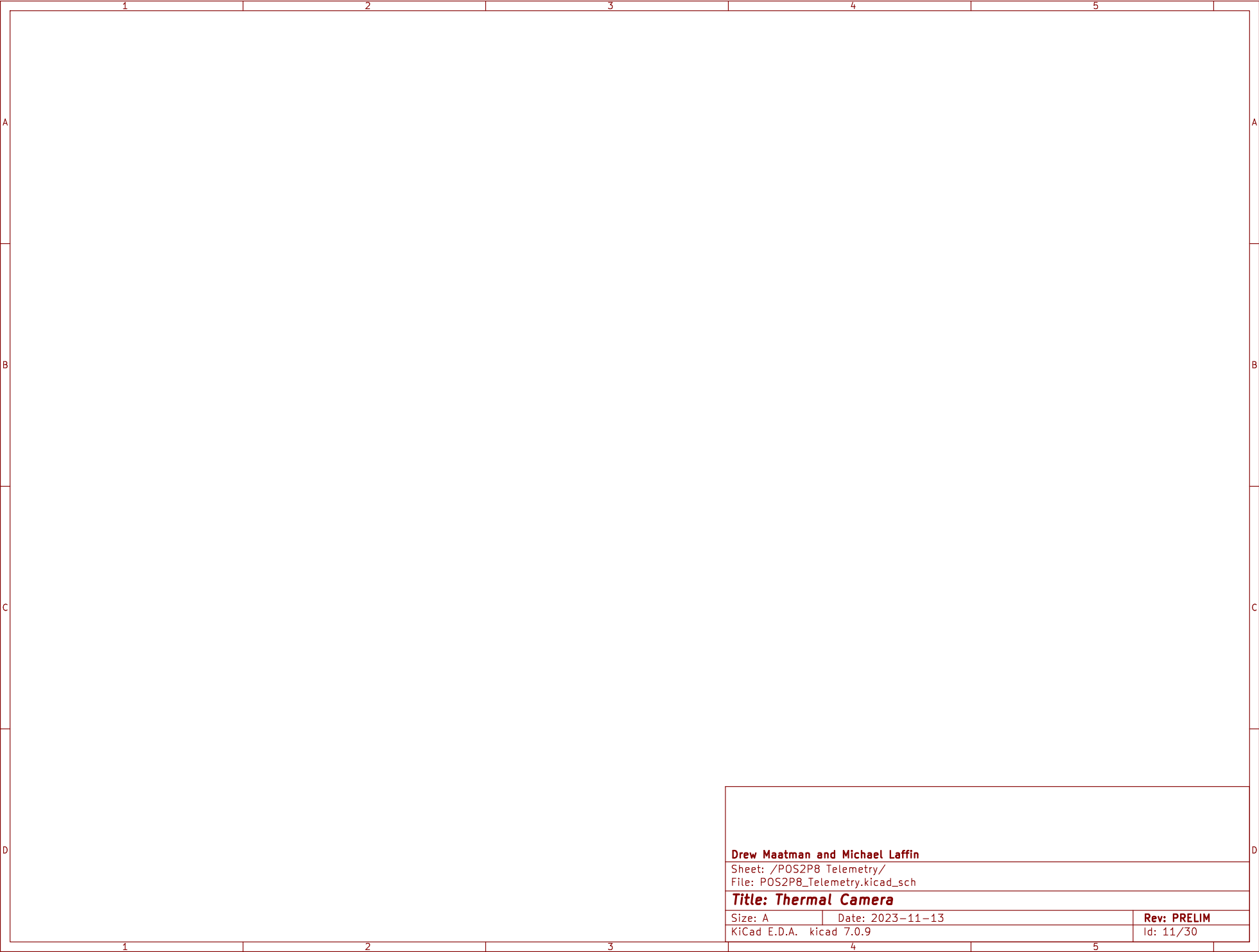
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KiCad E.D.A. kicad 7.0.9	Id: 8/30	

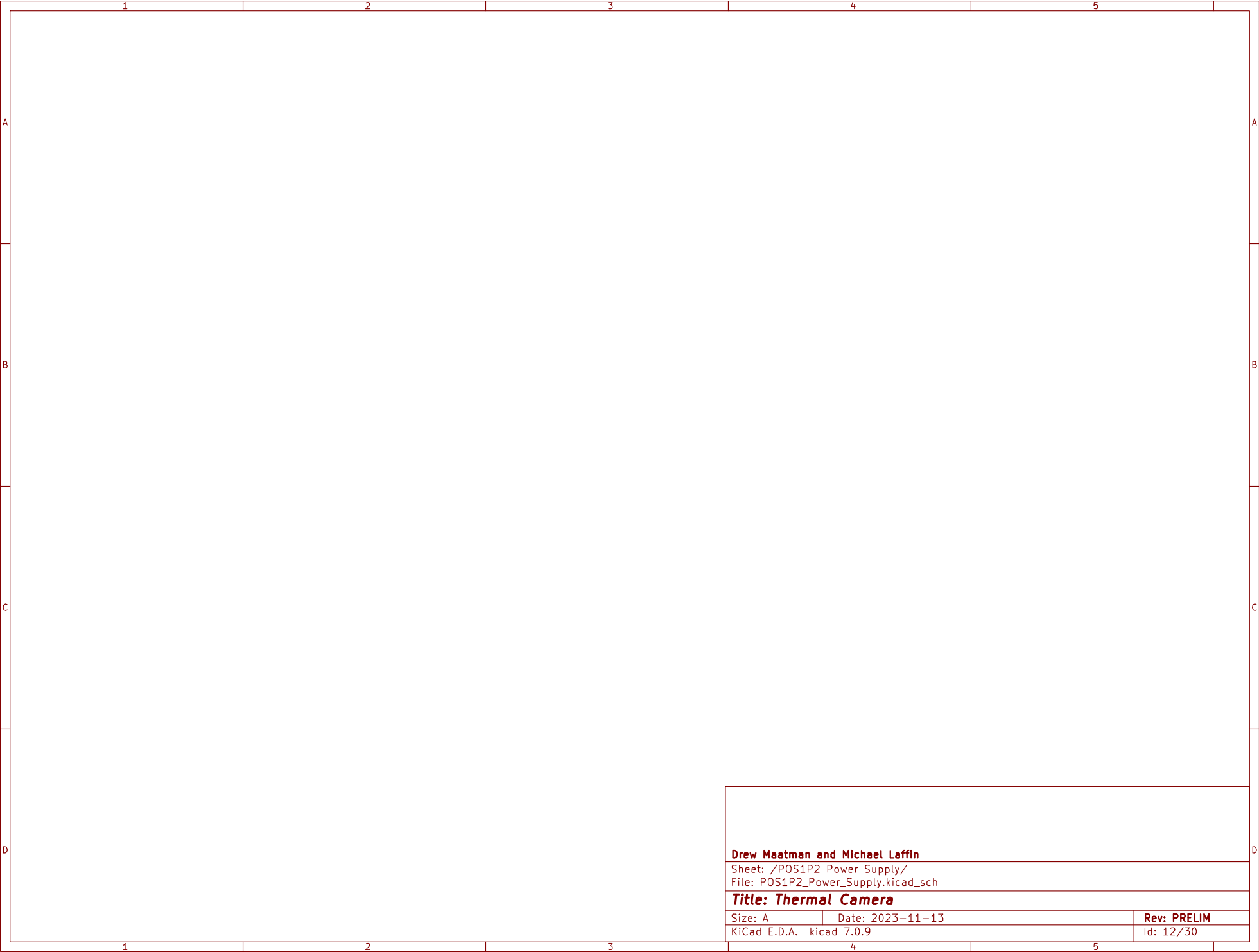




Drew Maatman and Michael Laffin		
Sheet: /POS3P0 Telemetry/ File: POS3P0_Telemetry.kicad_sch		
Title: Thermal Camera		
Size: A	Date: 2023-11-13	Rev: PRELIM
KiCad E.D.A. kicad 7.0.9		Id: 9/30



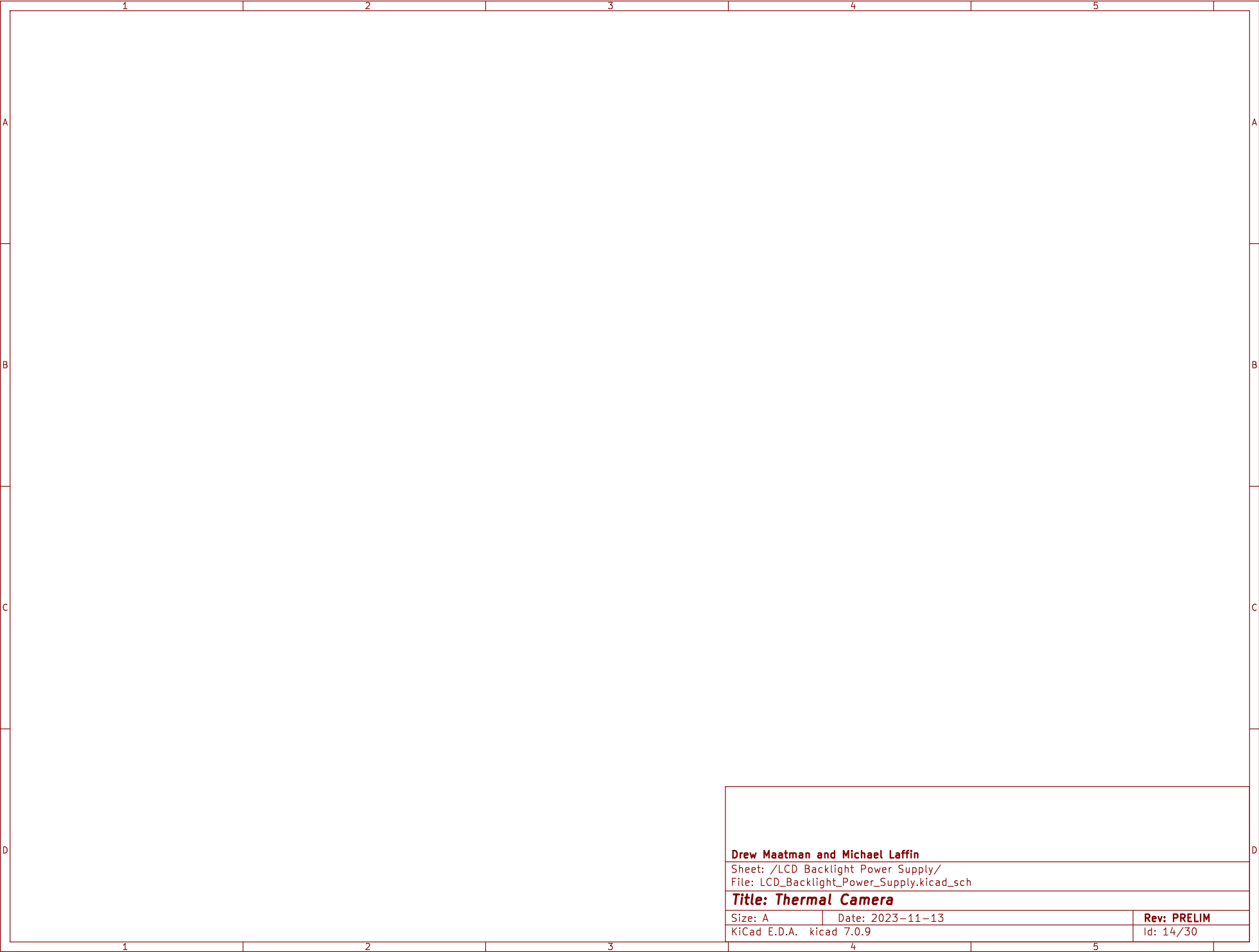


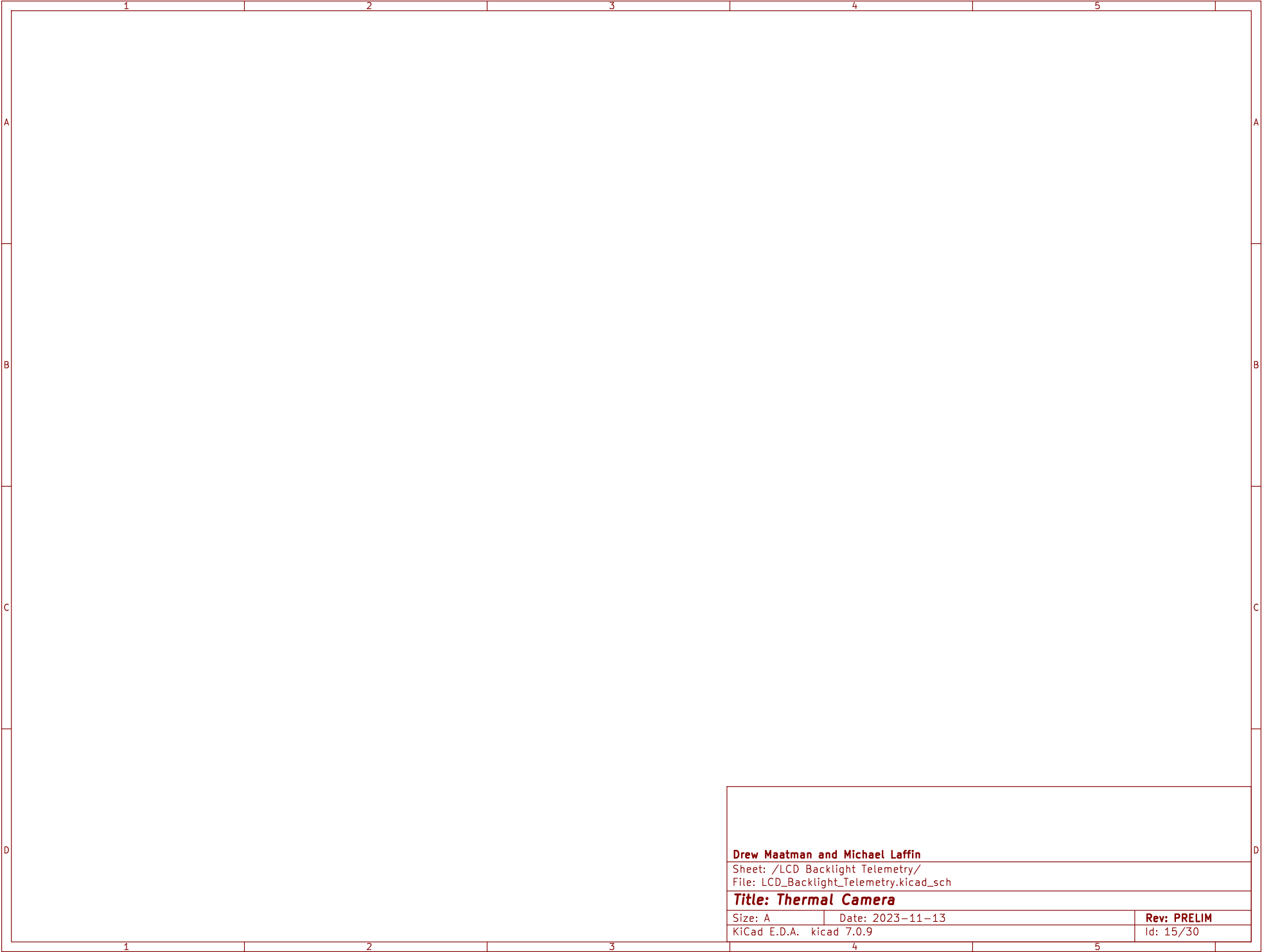


1					2					3					4					5					
A																									A
B																									B
C																									C
D																									D
1					2					3					4					5					

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Drew Maatman and Michael Laffin		
Sheet: /POS1P2 Telemetry/ File: POS1P2_Telemetry.kicad_sch		
Title: Thermal Camera		
Size: A	Date: 2023-11-13	Rev: PRELIM
KiCad E.D.A. kicad 7.0.9		Id: 13/30





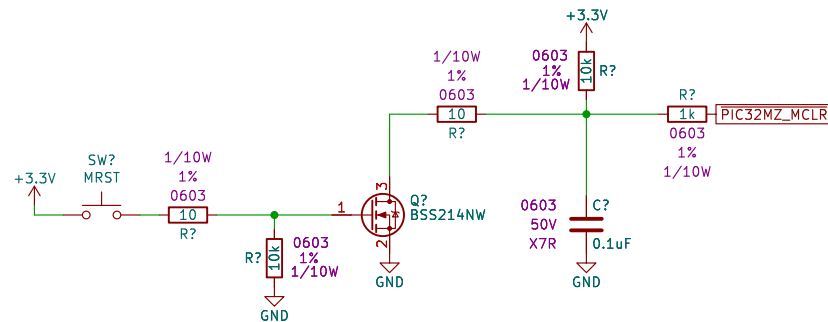
Drew Maatman and Michael Laffin		
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File: LCD_Backlight_Telemetry.kicad_sch		
Title: Thermal Camera		
Size: A	Date: 2023-11-13	Rev: PRELIM
KiCad E.D.A. kicad 7.0.9		Id: 15/30

1					2					3					4					5					
A																									A
B																									B
C																									C
D																									D
1					2					3					4					5					

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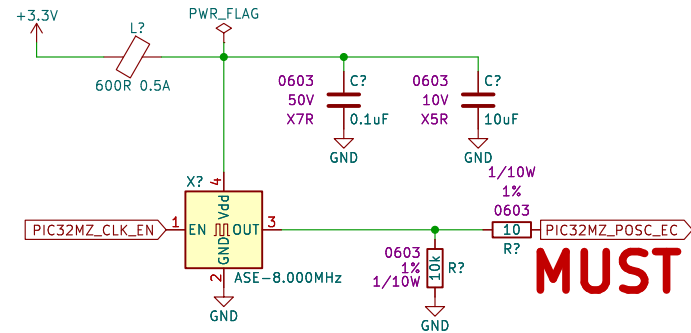
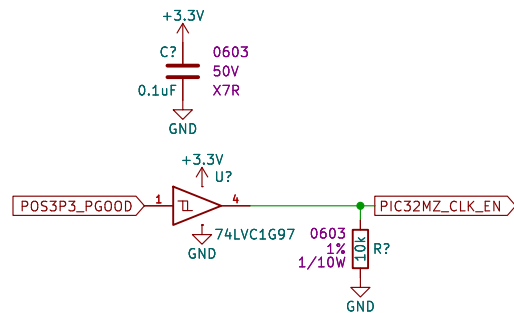
Drew Maatman and Michael Laffin		
Sheet: /Battery Management/		
File: Battery_Management.kicad_sch		
Title: Thermal Camera		
Size: A	Date: 2023-11-13	Rev: PRELIM
KiCad E.D.A. kicad 7.0.9		Id: 16/30



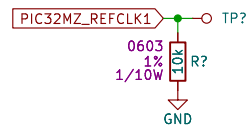
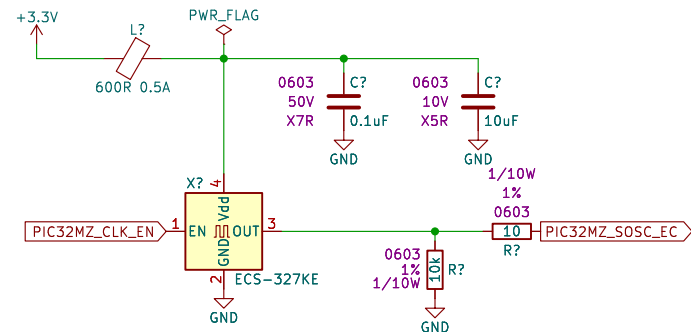


Rev: PRELIM  
Id: 17/30

# COPIED FROM PIC32MZ EF FIX FOR PIC32MZ DA



**MUST BE 24MHZ**



Drew Maatman and Michael Laffin

Sheet: /PIC32MZ DA Clocking/

File: PIC32MZ\_DA\_Clocking.kicad\_sch

**Title: Thermal Camera**

Size: A Date: 2023-11-13

KiCad E.D.A. kicad 7.0.9

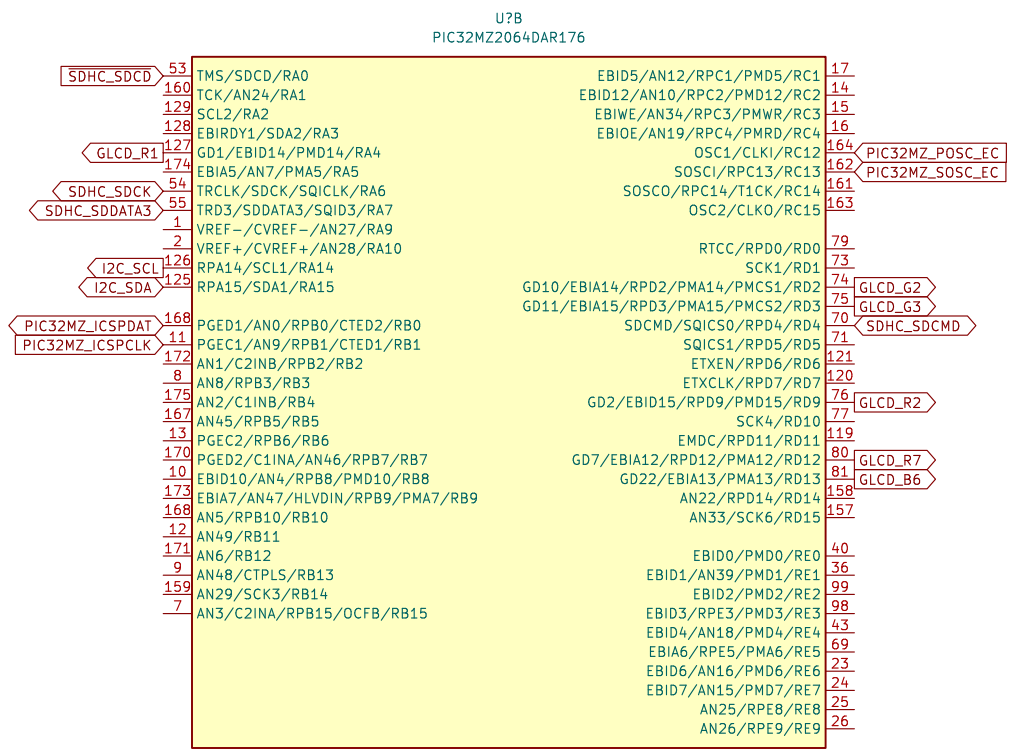
Rev: PRELIM

Id: 18/30

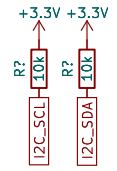


Id: 19/30

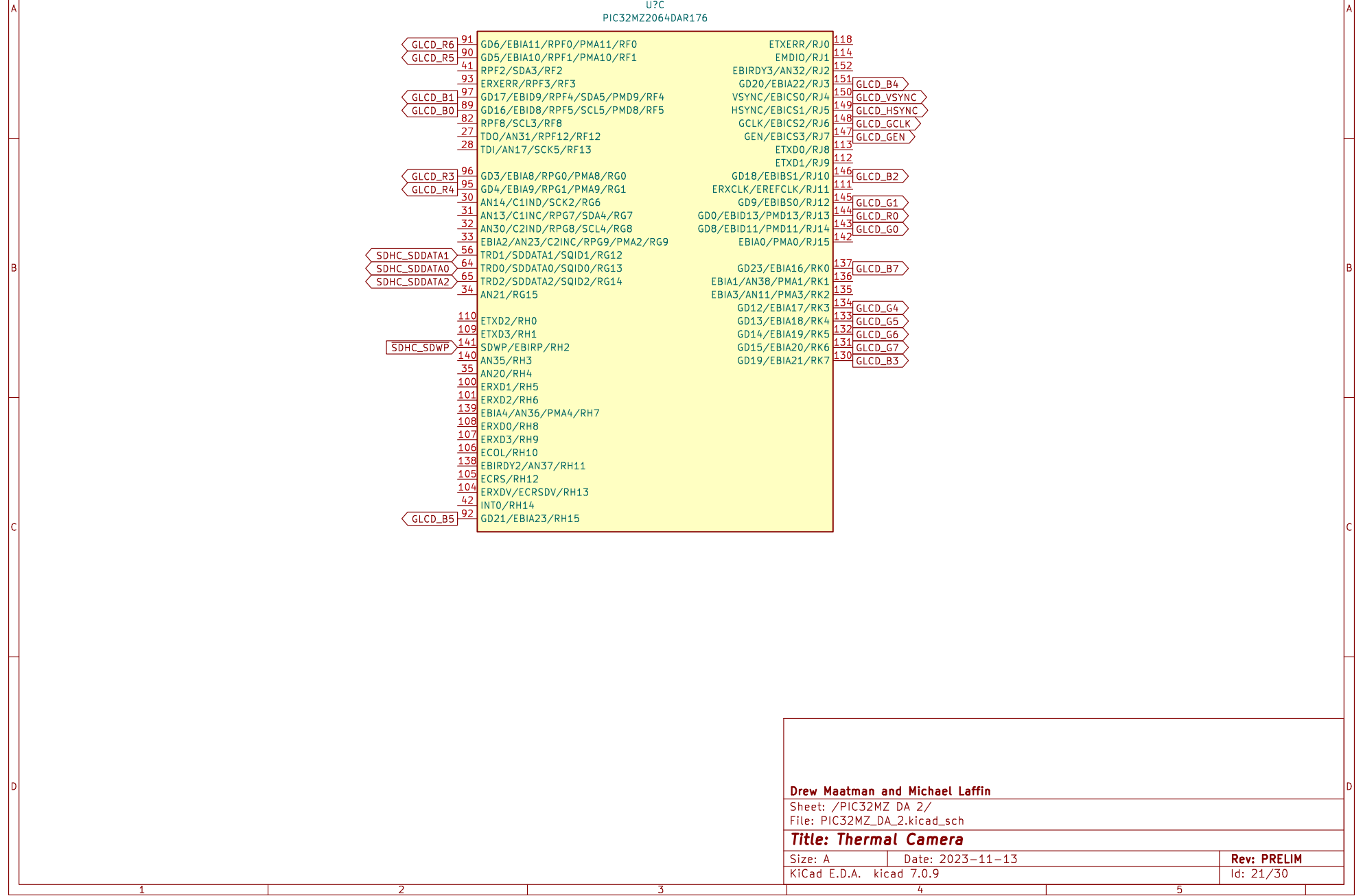
See TABLE 36-1:RGB COLOR MAPPING for Graphic LCD Pin Mapping

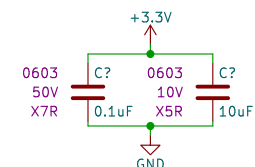


DOUBLE CHECK  
SOSC PIN

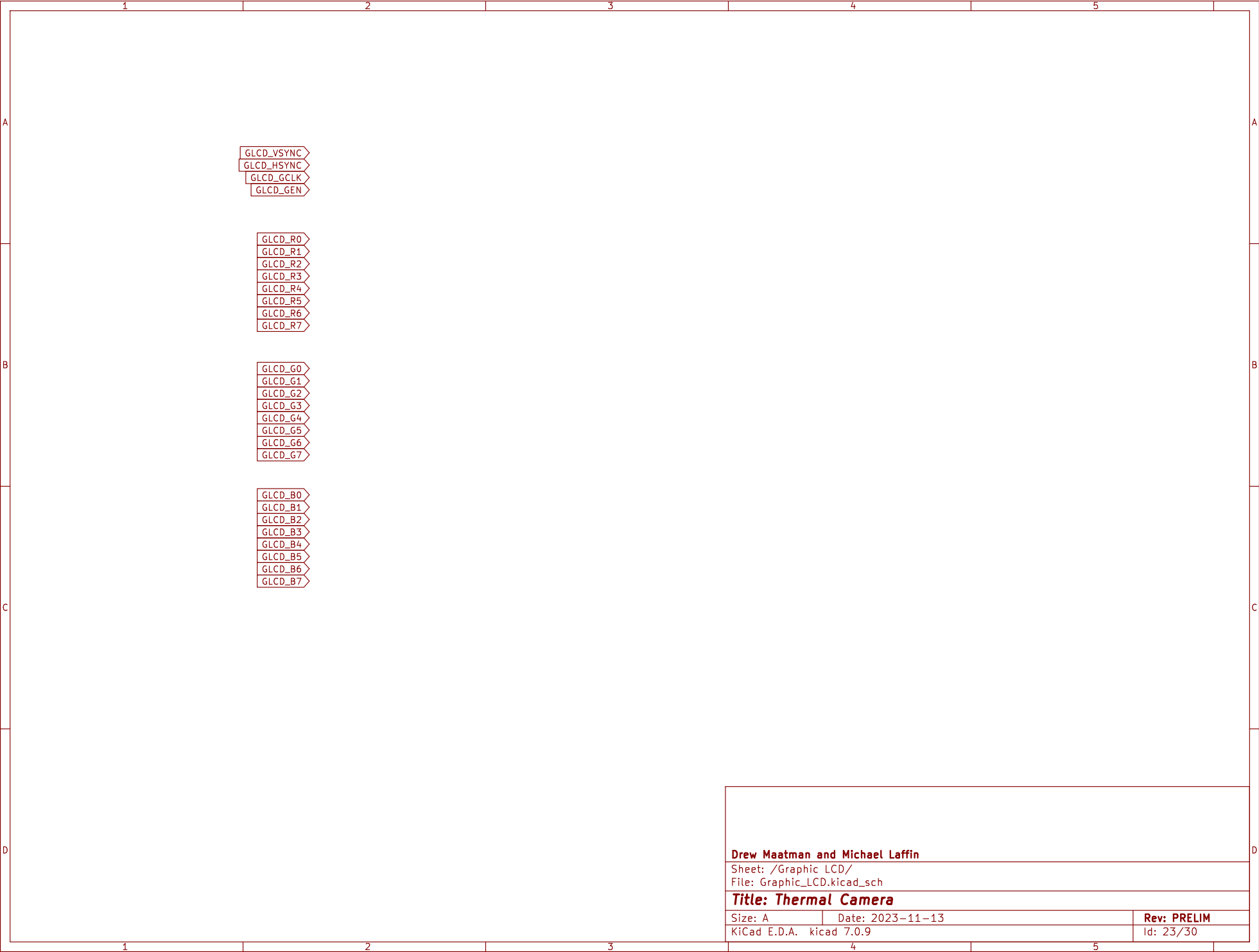


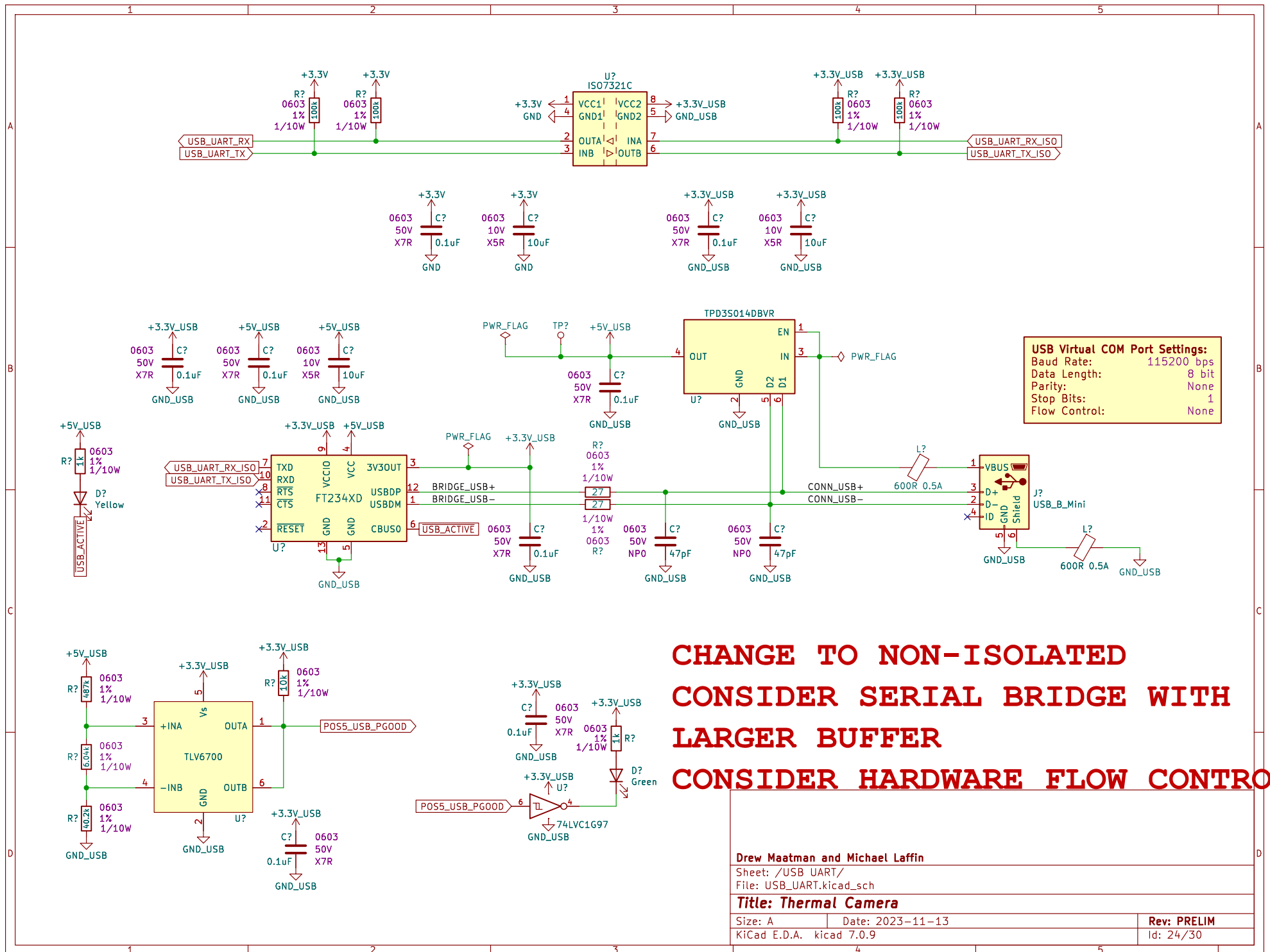
See TABLE 36-1:RGB COLOR MAPPING for Graphic LCD Pin Mapping





Id: 22/30





Drew Maatman and Michael Laffin

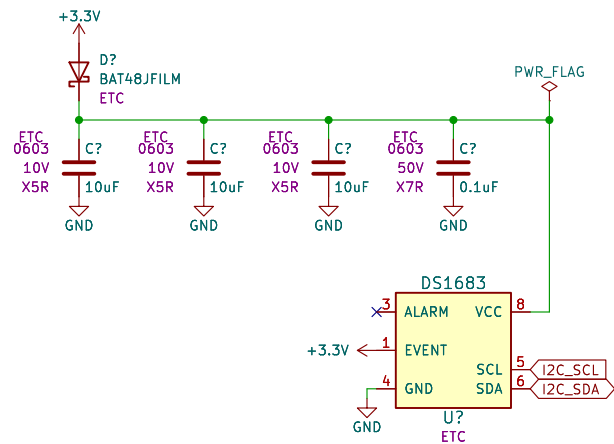
Sheet: /USB UART/  
 File: USB\_UART.kicad\_sch

**Title: Thermal Camera**

Size: A Date: 2023-11-13  
 KiCad E.D.A. kicad 7.0.9

Rev: PRELIM  
 Id: 24/30





I2C 7-Bit Address:  
0x6B

Drew Maatman and Michael Laffin

Sheet: /Elapsed Time Counter/  
File: Elapsed\_Time\_Counter.kicad\_sch

**Title: Thermal Camera**

Size: A Date: 2023-11-13  
KiCad E.D.A. kicad 7.0.9

Rev: PRELIM  
Id: 25/30

Power Supply Considerations:  
VDDC: 1.20V (1.14V min, 1.26V max), 50mVpp max ripple, 110mA max draw  
VDD: 2.80V (2.72V min, 2.88V max), 30mVpp max ripple, 16mA max draw  
VDDIO: 2.8V min, 3.1V max, 50mVpp max ripple, 310mA max draw

### Power Supply Considerations:

VDDC: 1.20V (1.14V min, 1.26V max), 50mVpp max ripple, 110mA max draw

VDD: 2.80V (2.72V min, 2.88V max), 30mVpp max ripple, 16mA max draw

VDDIO: 2.8V min, 3.1V max, 50mVpp max ripple, 310mA max draw



Sheet: /FLIR Lepton Sensor/  
File: FLIR\_Lepton\_Sensor.kicad\_sch

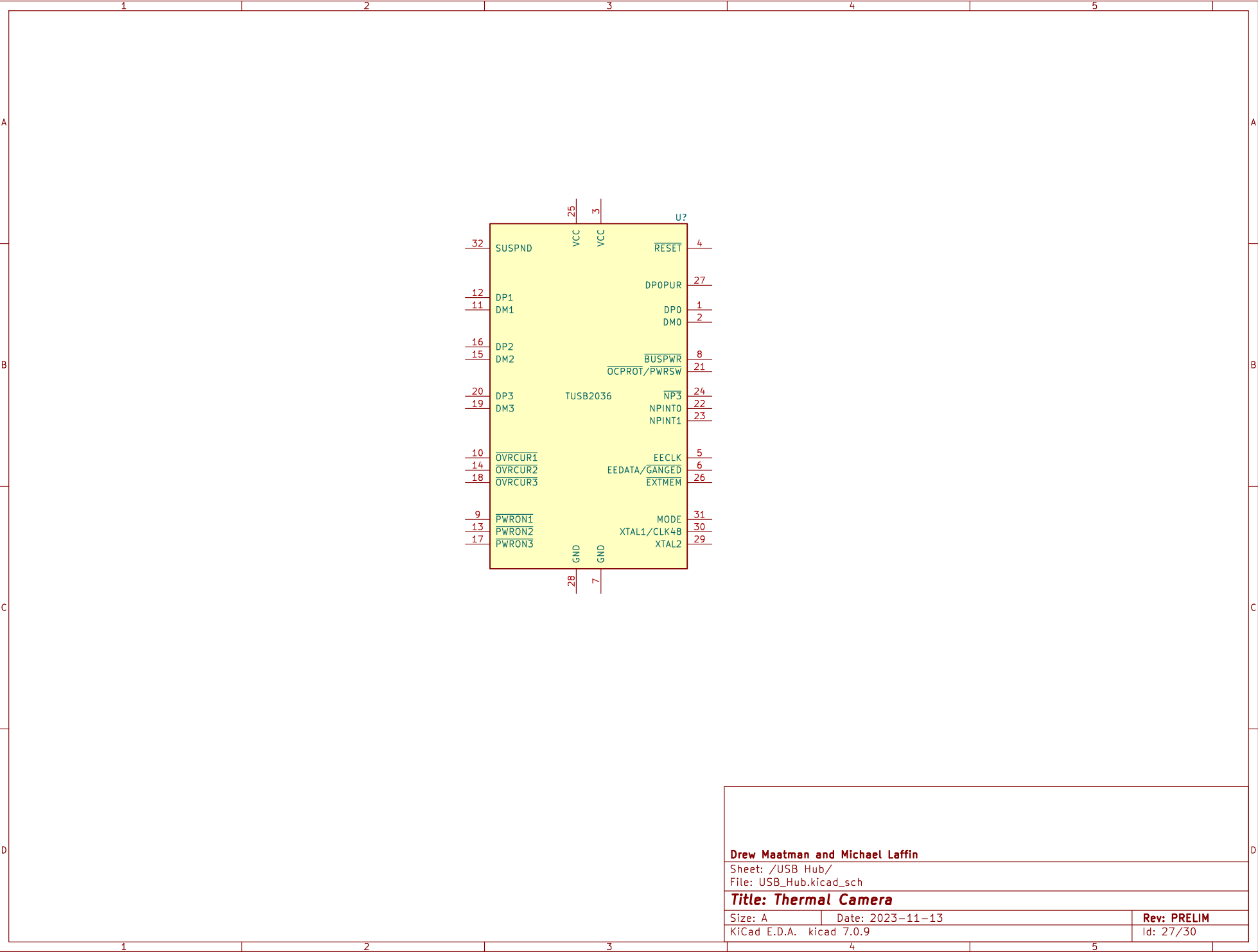
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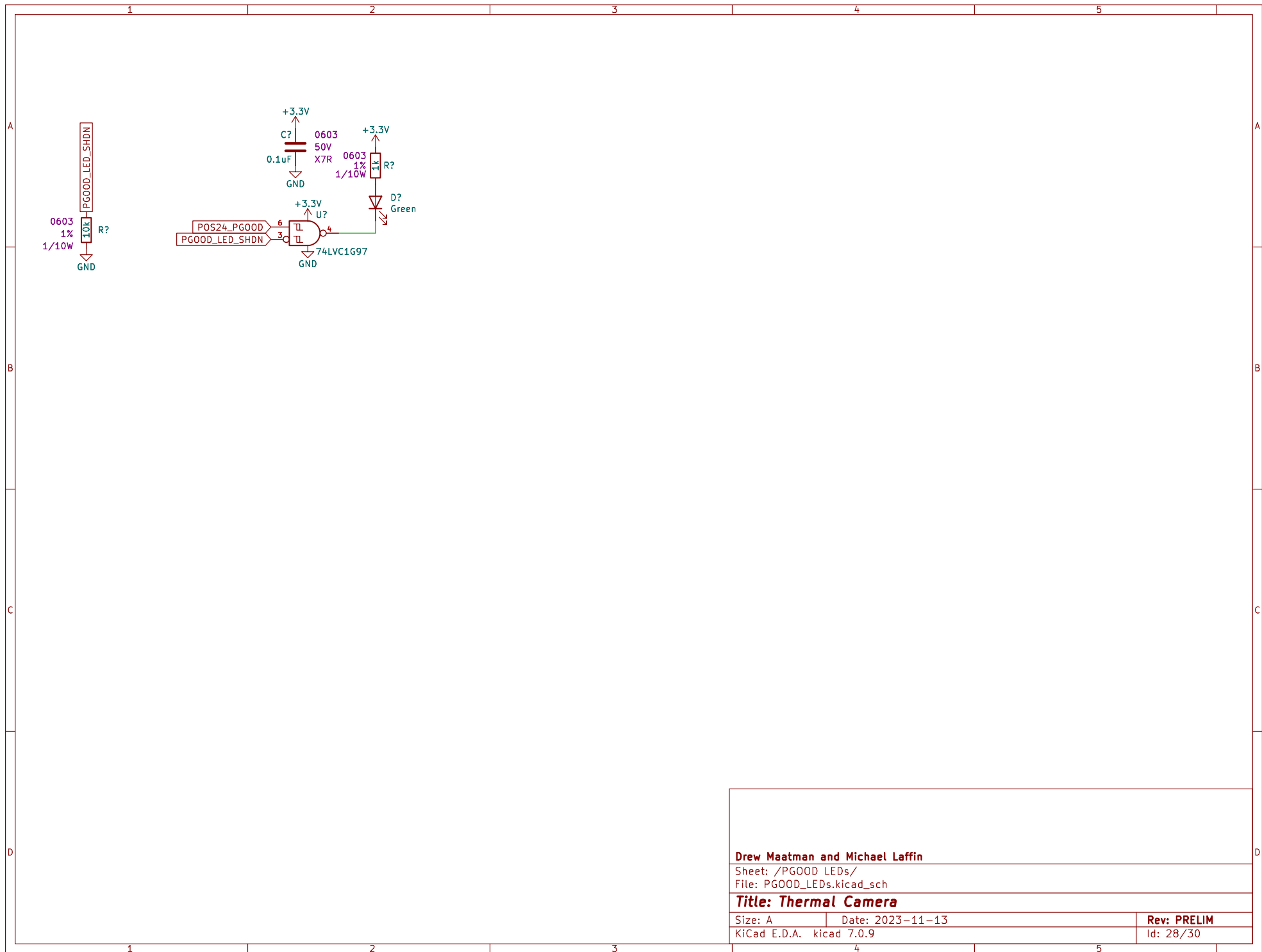
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Size: A	Date: 2
KiCad E.D.A.	kicad 7.0.9

Rev: PRELIM

Id: 26/30





Drew Maatman and Michael Laffin

Sheet: /PGOOD\_LEDs/

File: PG00D\_LEDs.kicad\_sch

**Title: Thermal Camera**

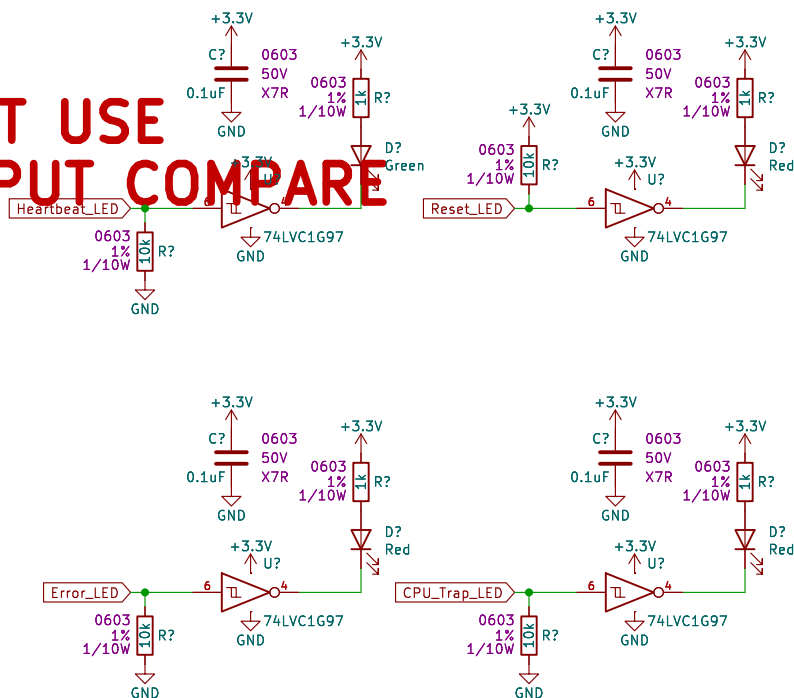
Size: A Date: 2023-11-13

KiCad E.D.A. kicad 7.0.9

Rev: PRELIM

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**MUST USE  
OUTPUT COMPARE  
PIN**



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Sheet: /Status\_LEDs/

File: Status\_LEDs.kicad\_sch

**Title: Thermal Camera**

Size: A Date: 2023-11-13

KiCad E.D.A. kicad 7.0.9

**Rev: PRELIM**

Id: 29/30

