

Thermal Camera

https://github.com/drewsum/THERMAL_Camera

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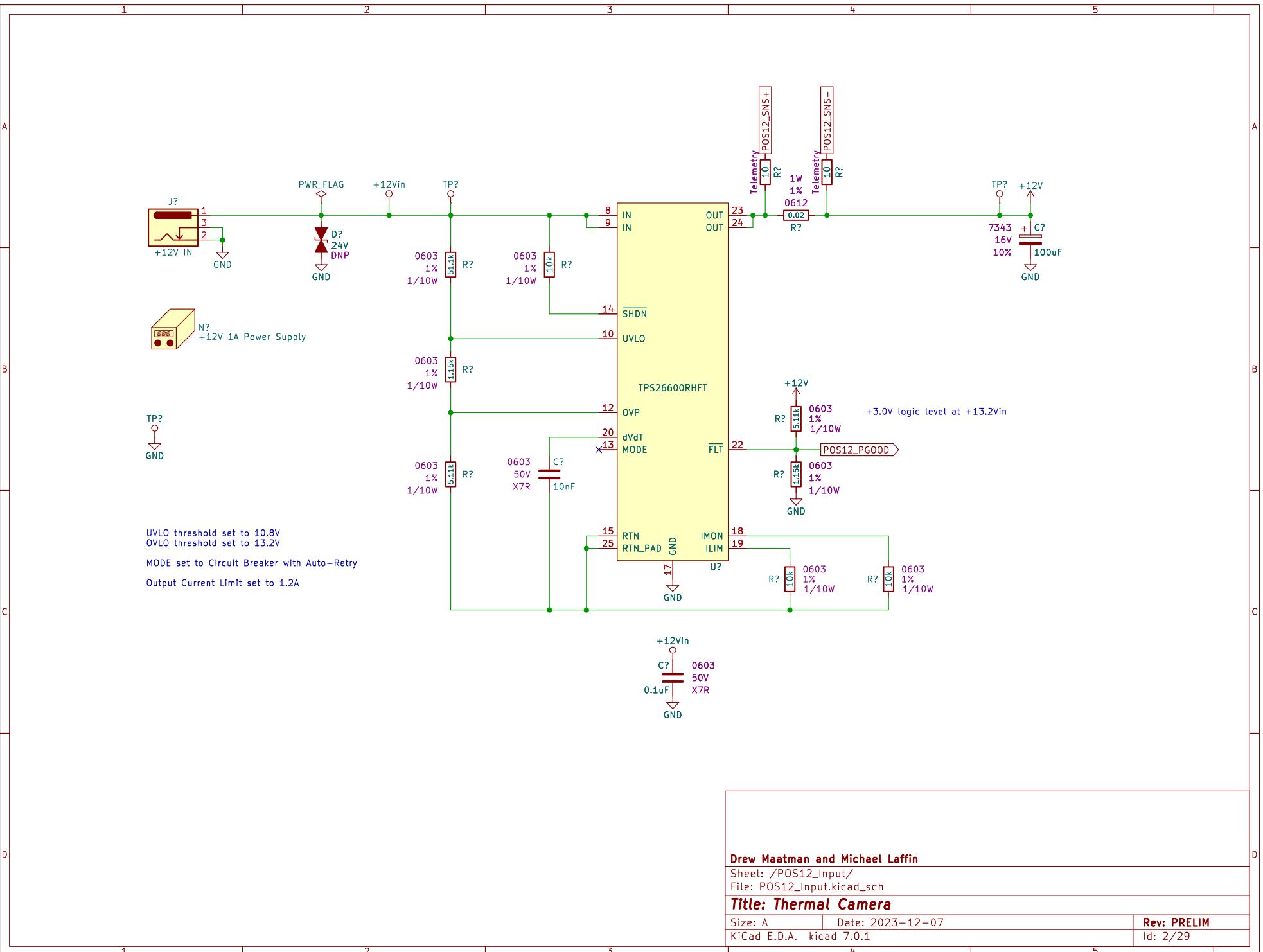
Drew Maatman and Michael Laffin

Sheet: /
File: Thermal_Camera.kicad_sch

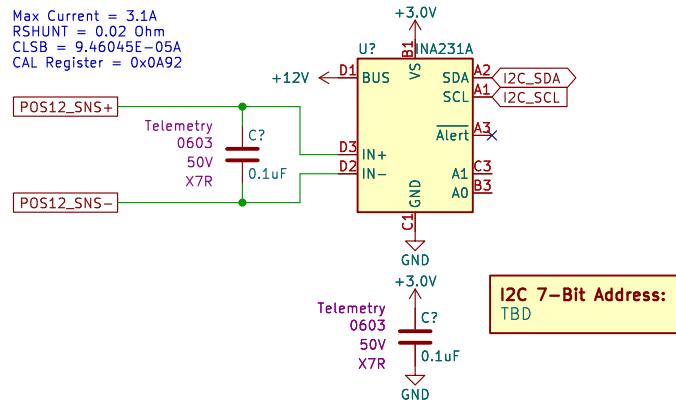
Title: Thermal Camera

Size: A | Date: 2023-12-07
KiCad E.D.A. kicad 7.0.1

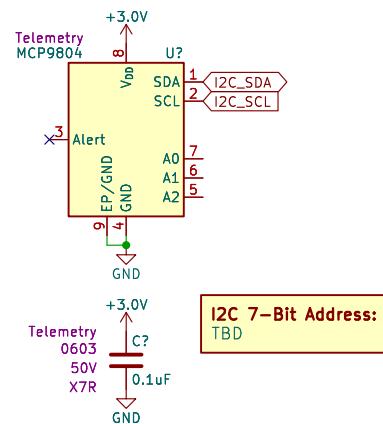
Rev: PRELIM
Id: 1/29



A



B

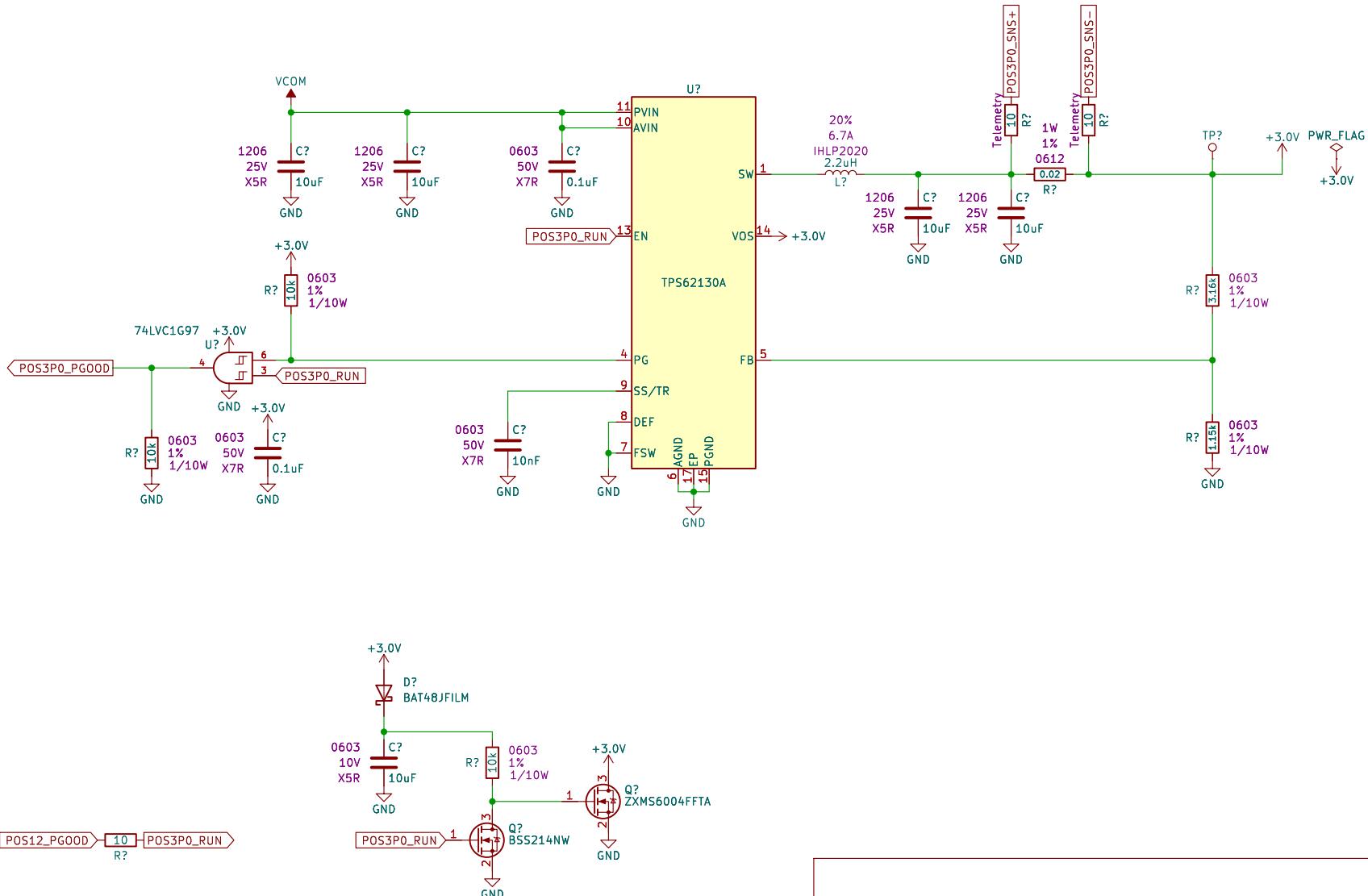


C

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Sheet: /POS12_Telemetry/
File: POS12_Telemetry.kicad_sch**Title: Thermal Camera**Size: A | Date: 2023-12-07
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figure out sequencing



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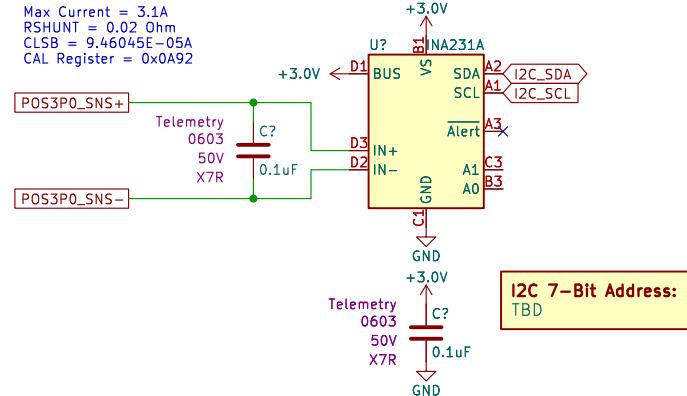
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File: POS3P0_Power_Supply.kicad_sch

Title: Thermal Camera

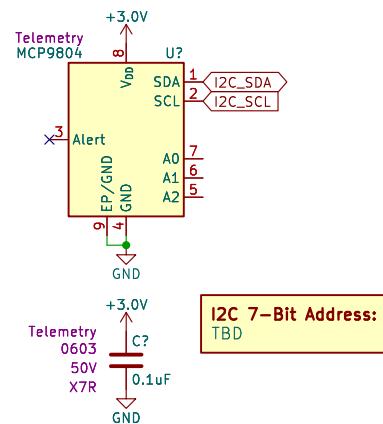
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KiCad E.D.A. kicad 7.0.1

Rev: PRELIM
Id: 4/29

A



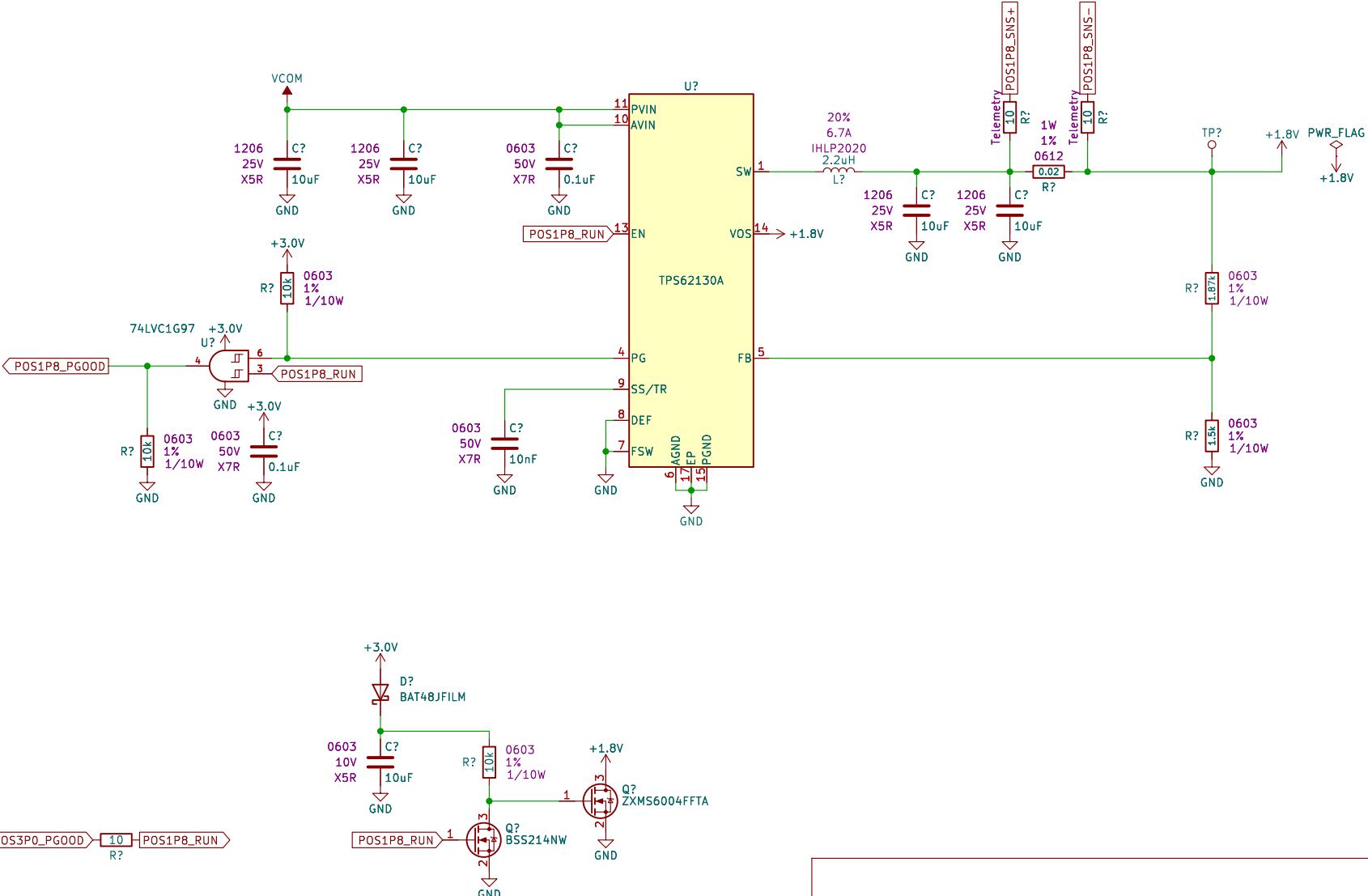
B



C

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Sheet: /POS3PO_Telemetry/
File: POS3PO_Telemetry.kicad_sch**Title: Thermal Camera**Size: A | Date: 2023-12-07
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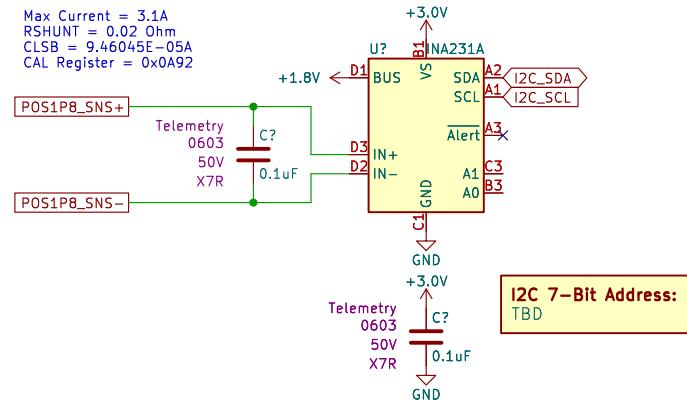
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Title: Thermal Camera

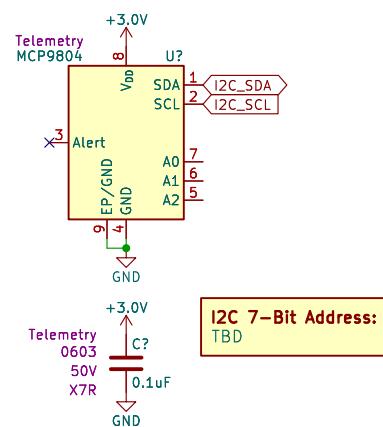
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KiCad E.D.A. kicad 7.0.1

Rev: PRELIM
Id: 6/29

A



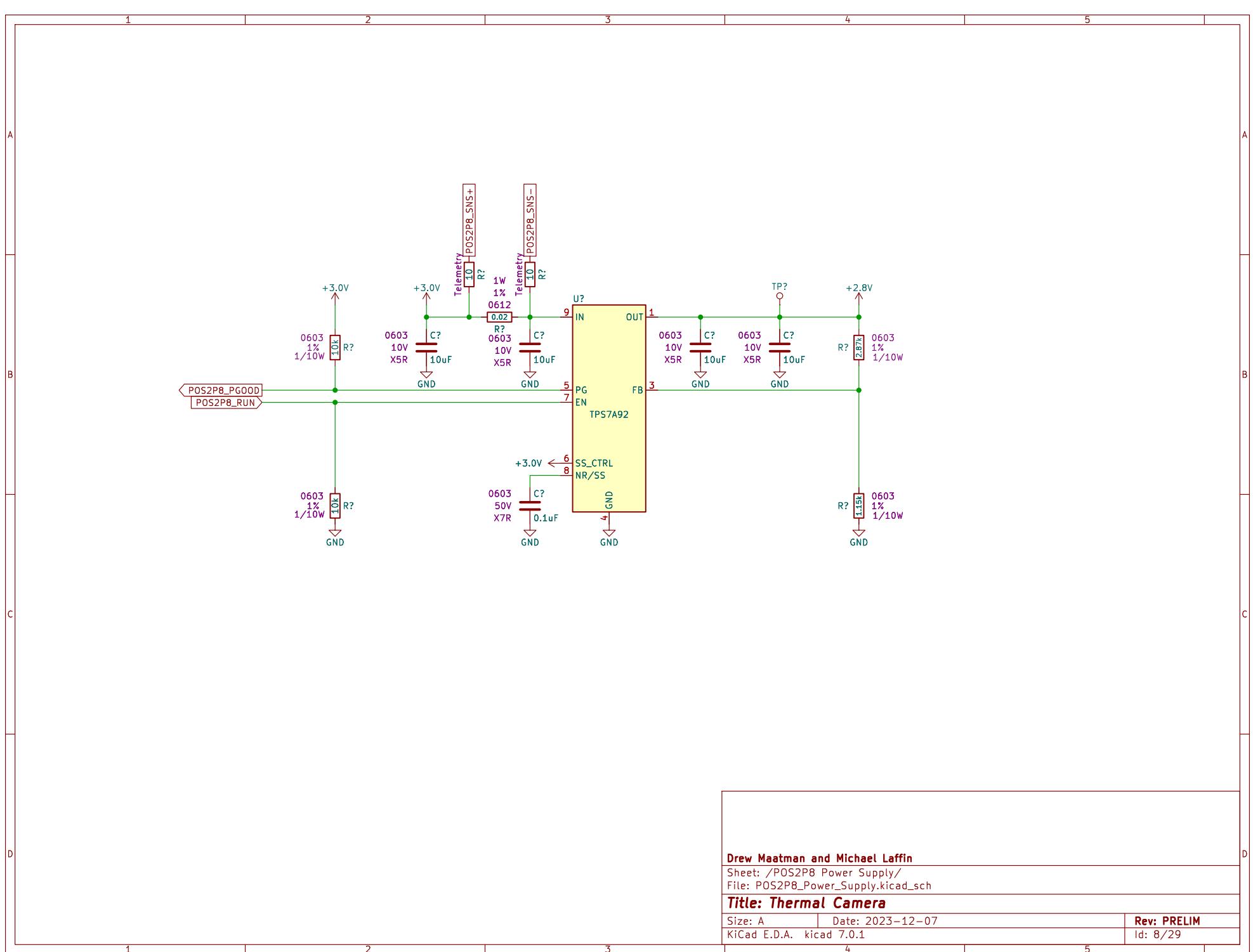
B



C

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Sheet: /POS1P8_Telemetry/
File: POS1P8_Telemetry.kicad_sch**Title: Thermal Camera**Size: A | Date: 2023-12-07
KiCad E.D.A. kicad 7.0.1Rev: PRELIM
Id: 7/29



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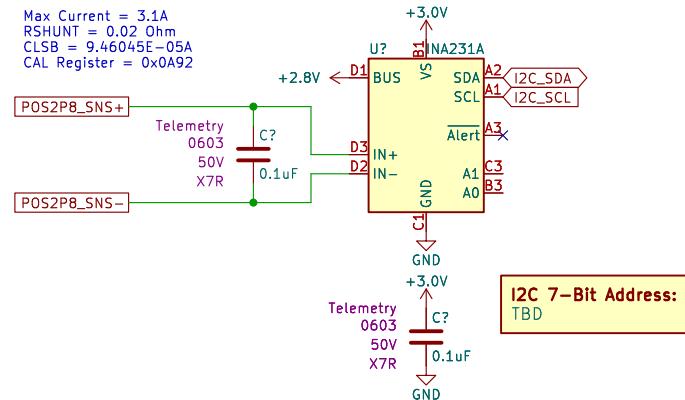
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File: POS2P8_Power_Supply.kicad_sch

Title: Thermal Camera

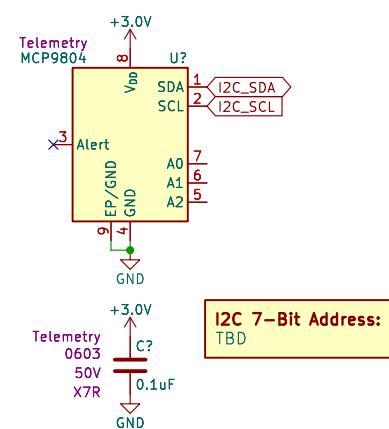
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KiCad E.D.A.	kicad 7.0.1

Rev: PRELIM
Id: 8/29

A



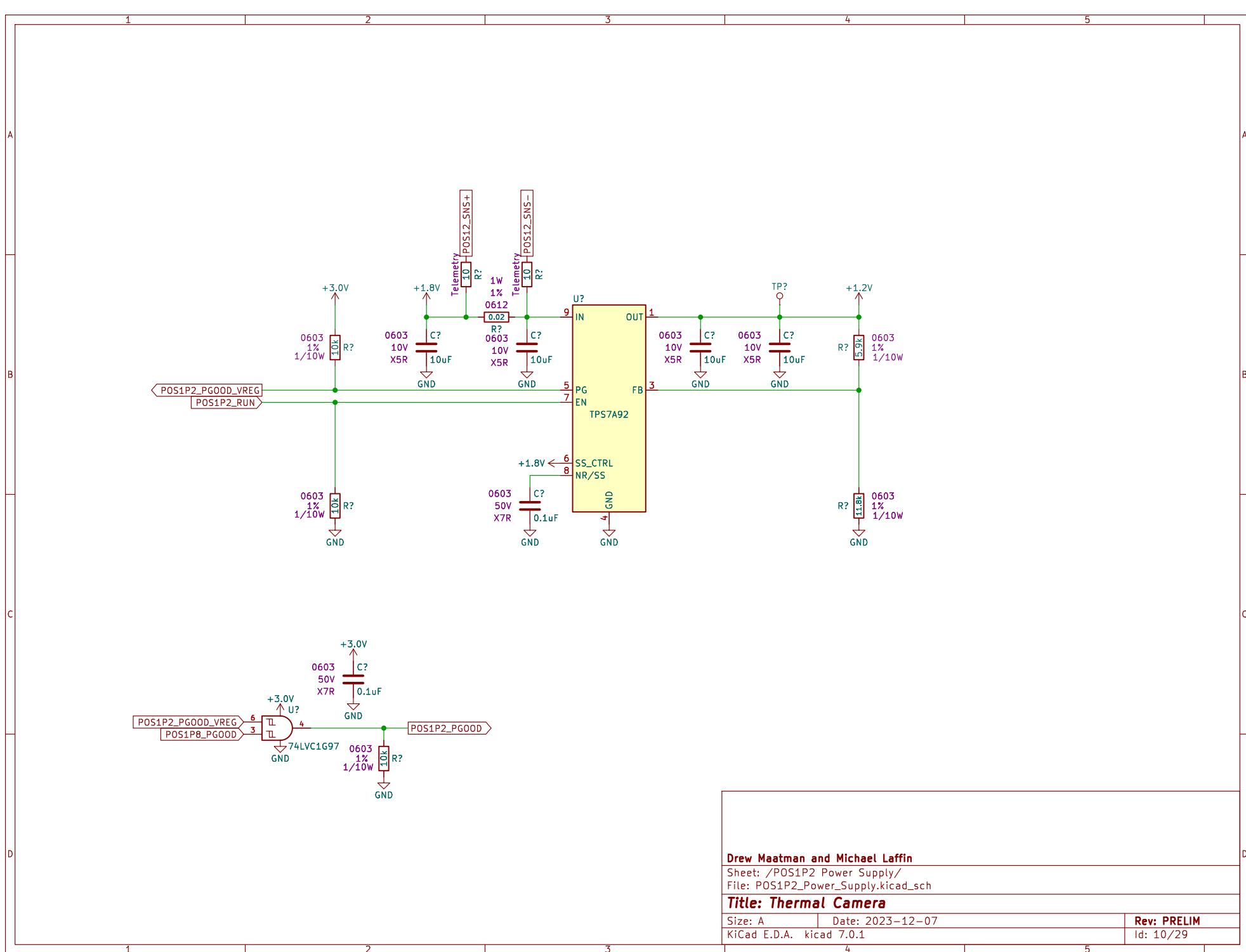
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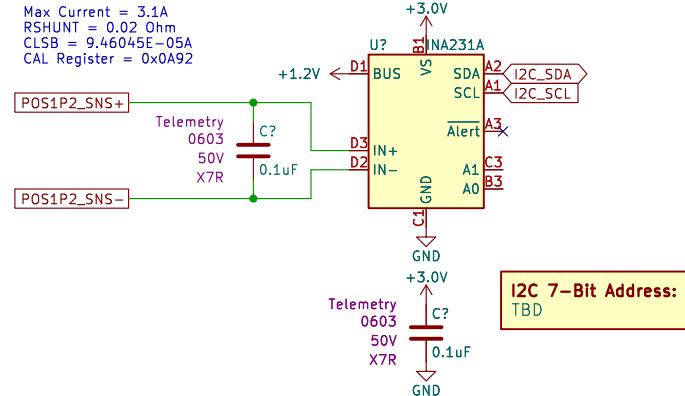
C

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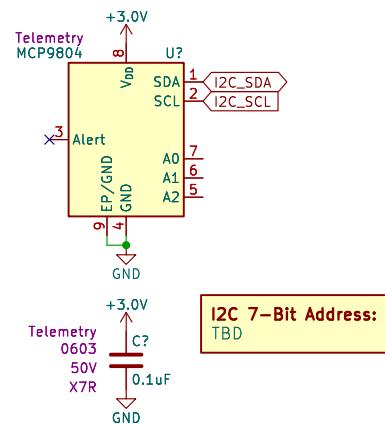
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KiCad E.D.A. kicad 7.0.1Rev: PRELIM
Id: 9/29



A



B



C

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Sheet: /POS1P2_Telemetry/
File: POS1P2_Telemetry.kicad_sch**Title: Thermal Camera**

Size: A | Date: 2023-12-07

KiCad E.D.A. kicad 7.0.1

Rev: PRELIM

Id: 11/29

A

A

B

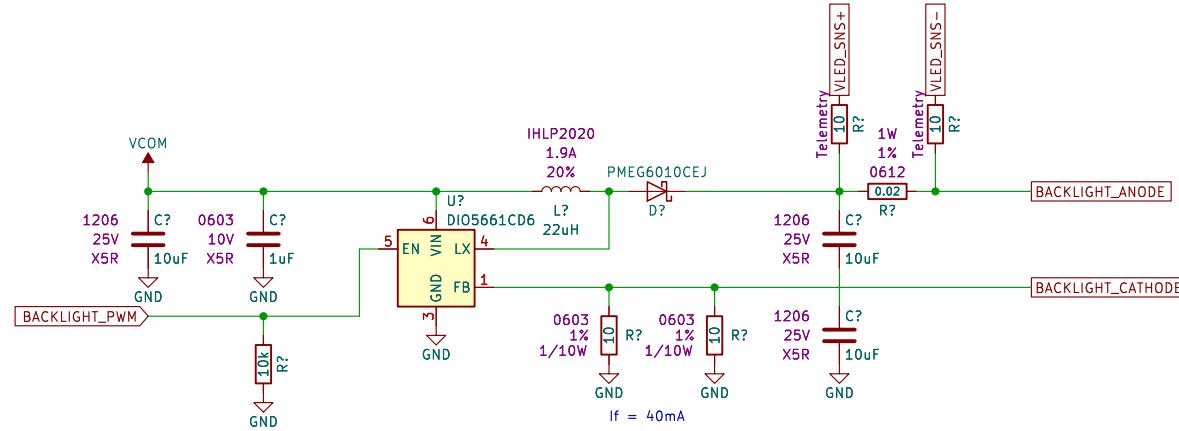
B

C

C

D

D



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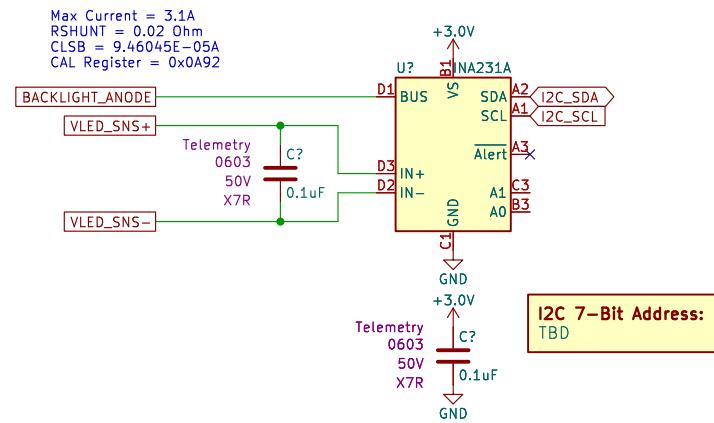
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 File: LCD_Backlight_Power_Supply.kicad_sch

Title: Thermal Camera

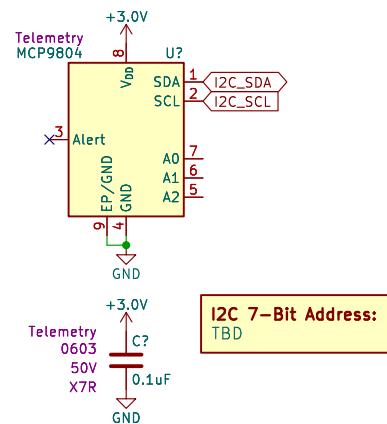
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 KiCad E.D.A. kicad 7.0.1

Rev: PRELIM
 Id: 12/29

A



B



C

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Sheet: /LCD Backlight Telemetry/
File: LCD_Backlight_Telemetry.kicad_sch

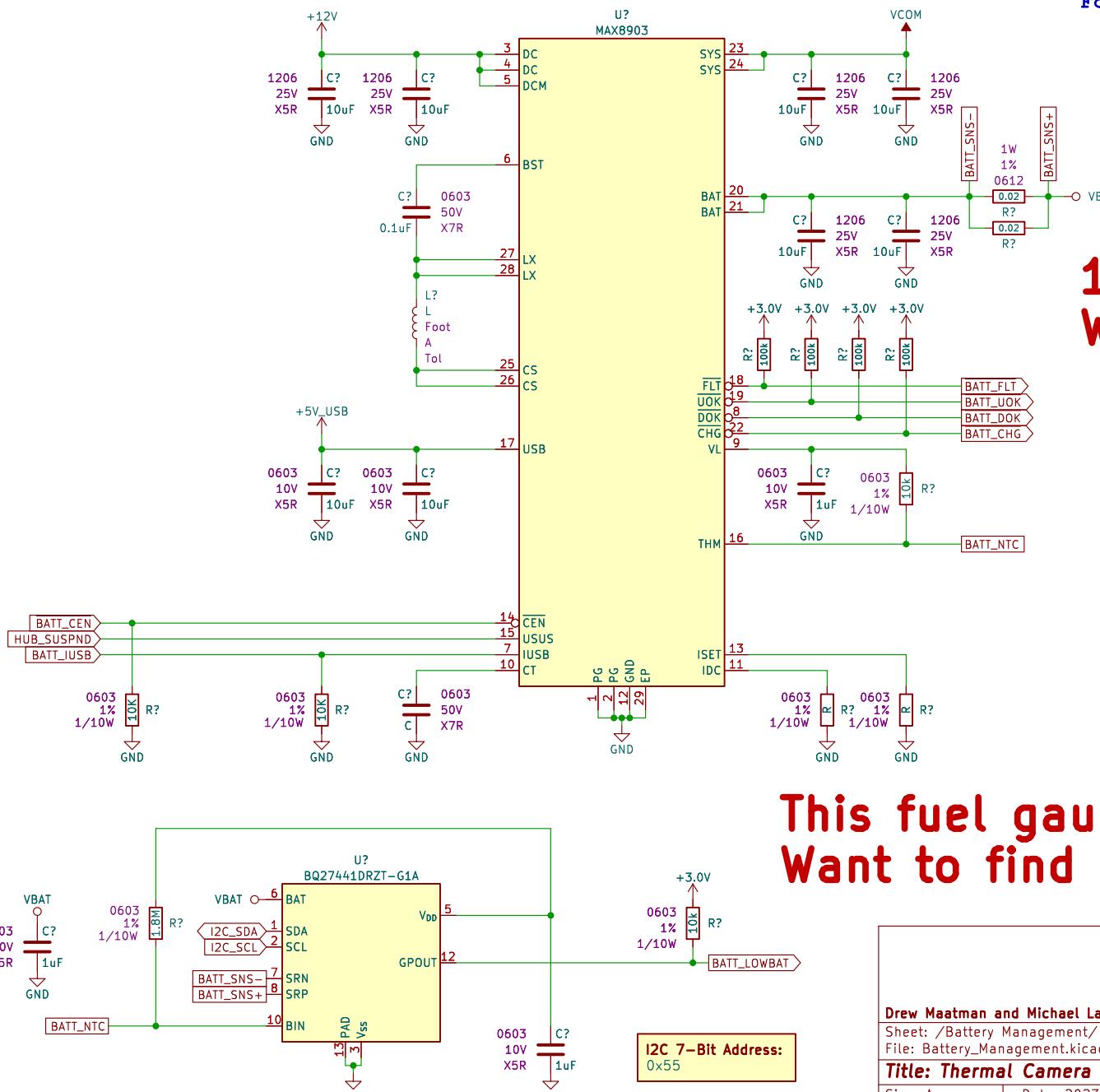
Title: Thermal Camera

Size: A | Date: 2023-12-07
KiCad E.D.A. kicad 7.0.1

Rev: PRELIM
Id: 13/29

For +4.2V Battery

18650 Cell?
Would pair with BQ297



This fuel gauge is sketchy
Want to find battery with NTC

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Sheet: /Battery Management/
File: Battery_Management.kicad_sch

Title: Thermal Camera

Size: A Date: 2023-12-07

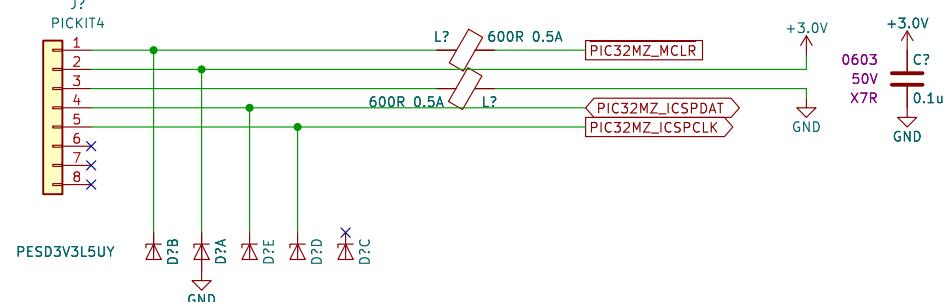
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Rev: PRELIM

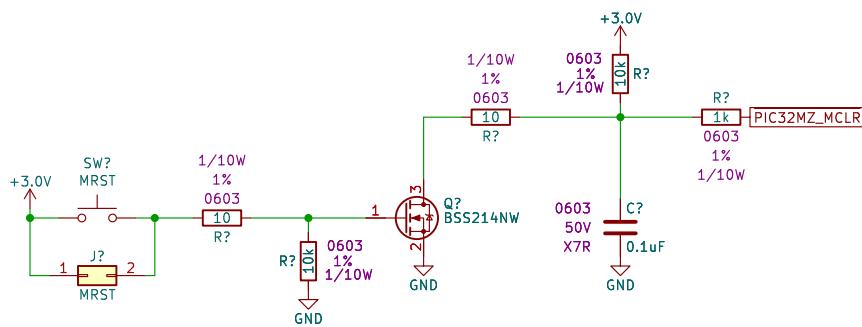
Id: 14/29

1 2 3 4 5

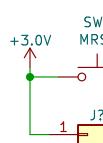
A



B



C



D

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Sheet: /PIC32MZ_DA_Programming/
File: PIC32MZ_DA_Programming.kicad_sch

Title: Thermal Camera

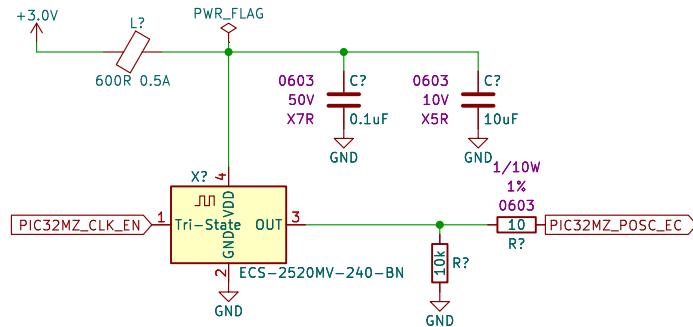
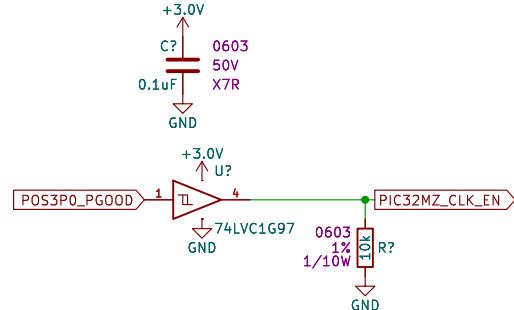
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KiCad E.D.A. kicad 7.0.1

Rev: PRELIM
Id: 15/29

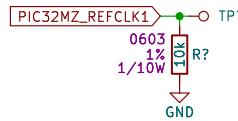
1 2 3 4 5

1 2 3 4 5

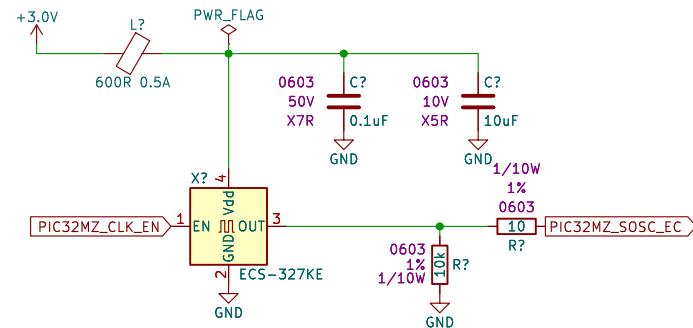
A



B



C



D

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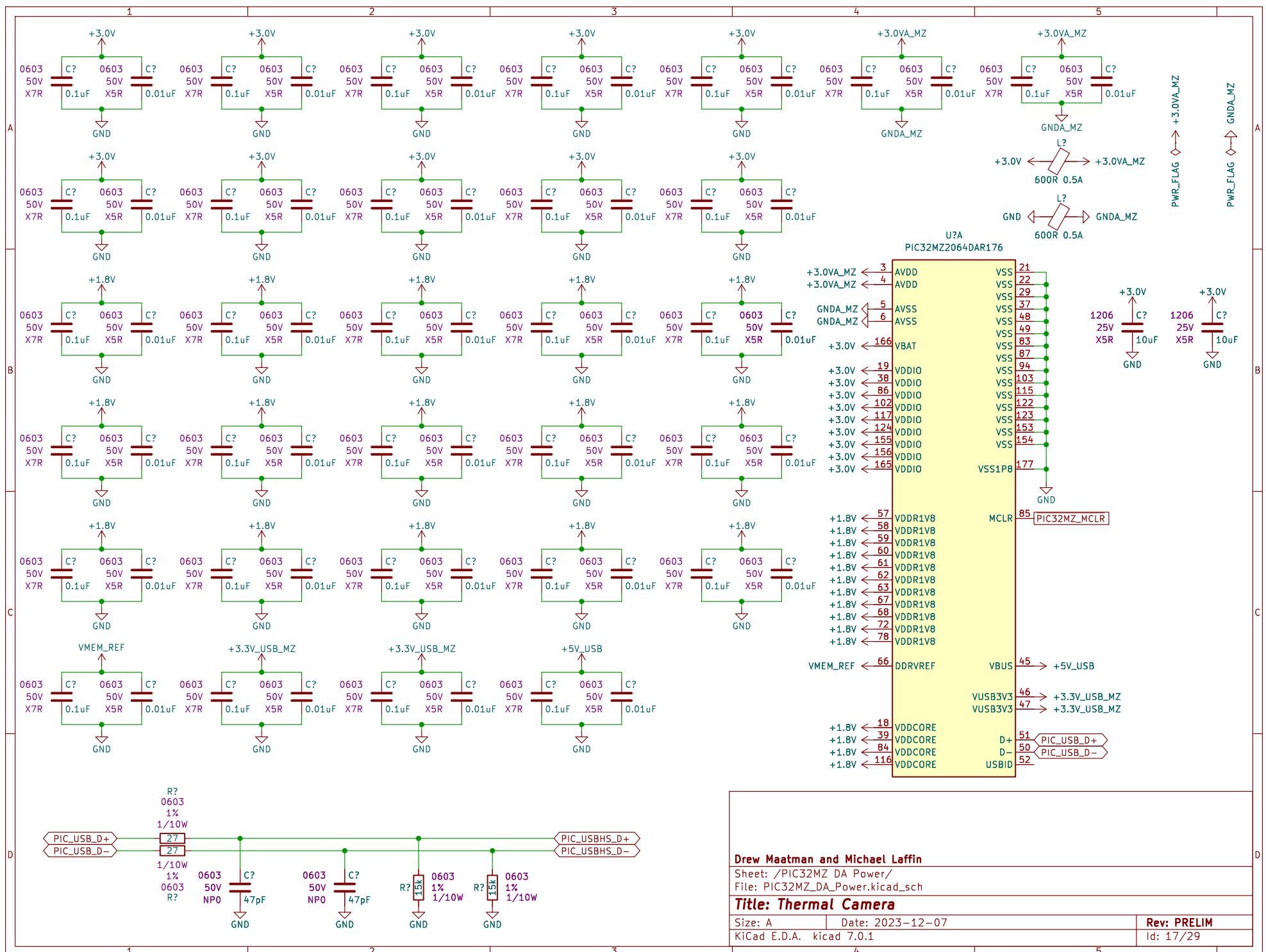
Sheet: /PIC32MZ DA Clocking/
File: PIC32MZ_DA_Clocking.kicad_sch

Title: Thermal Camera

Size: A Date: 2023-12-07
KiCad E.D.A. kicad 7.0.1

Rev: PRELIM
Id: 16/29

1 2 3 4 5



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Sheet: /PIC32MZ DA Power/
File: PIC32MZ_DA_Power.kicad_sch

Title: Thermal Camera

Size: A Date: 2023-12-07

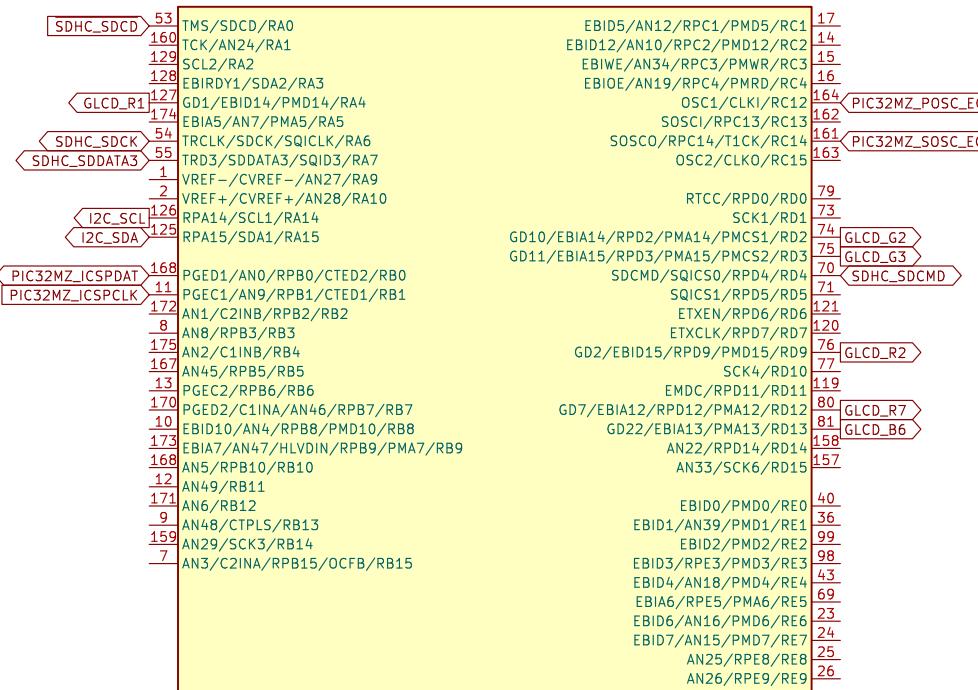
KiCad E.D.A. kicad 7.0.1

Rev: PRELIM

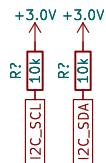
Id: 17/29

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

U?B
PIC32MZ2064DAR176



DOUBLE CHECK
SOSC PIN



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Sheet: /PIC32MZ_DA_1/
File: PIC32MZ_DA_1.kicad_sch

Title: Thermal Camera

Size: A Date: 2023-12-07

KiCad E.D.A. kicad 7.0.1

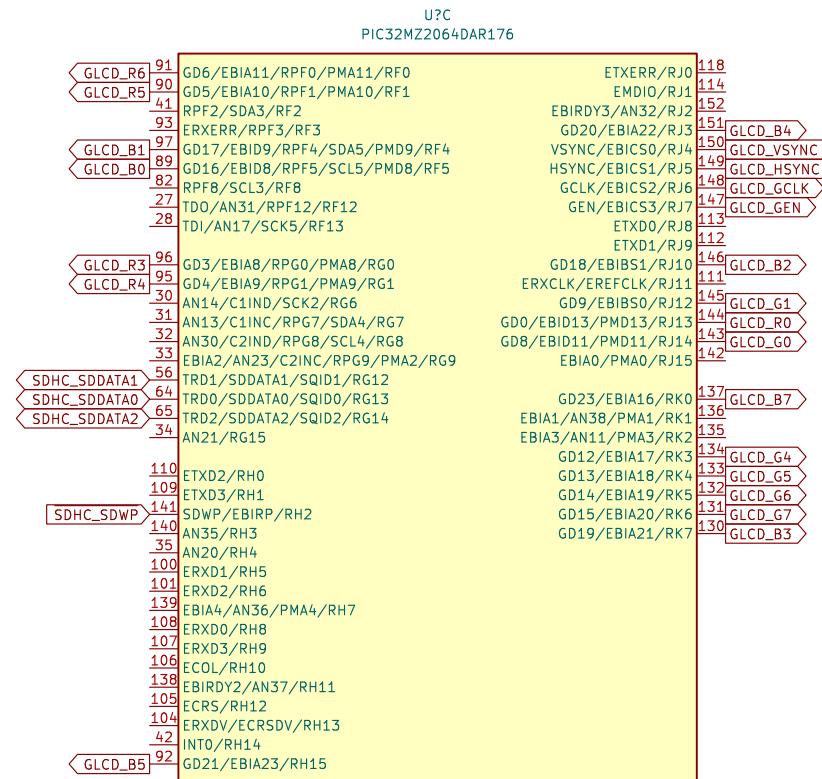
Rev: PRELIM

Id: 18/29

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

A

A



B

B

C

C

D

D

Drew Maatman and Michael Laffin

Sheet: /PIC32MZ DA 2/

File: PIC32MZ_DA_2.kicad_sch

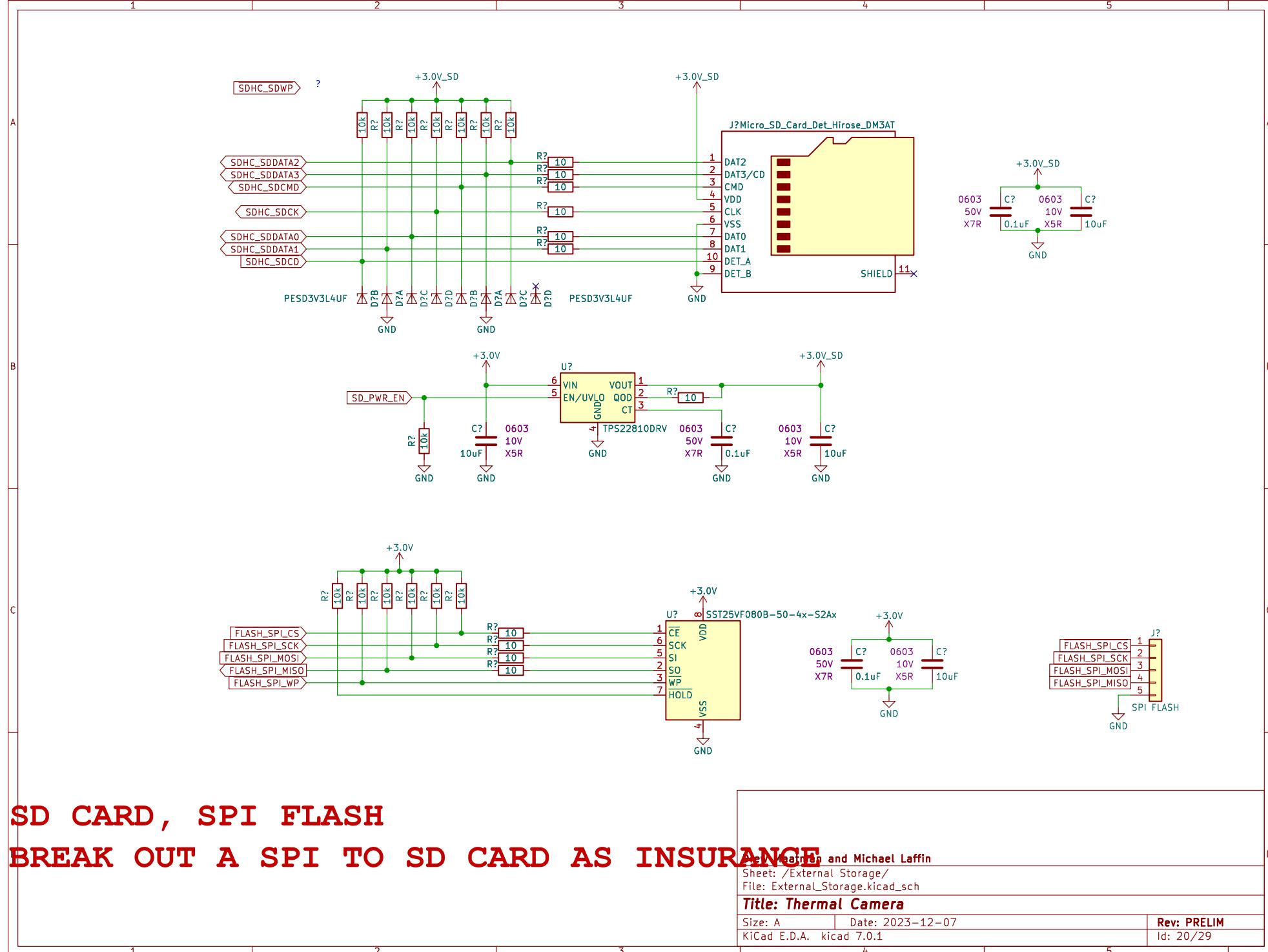
Title: Thermal Camera

Size: A Date: 2023-12-07

KiCad E.D.A. kicad 7.0.1

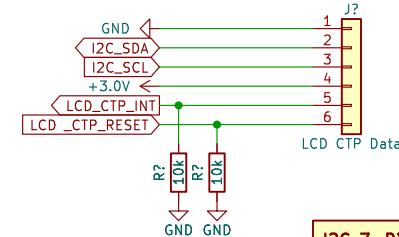
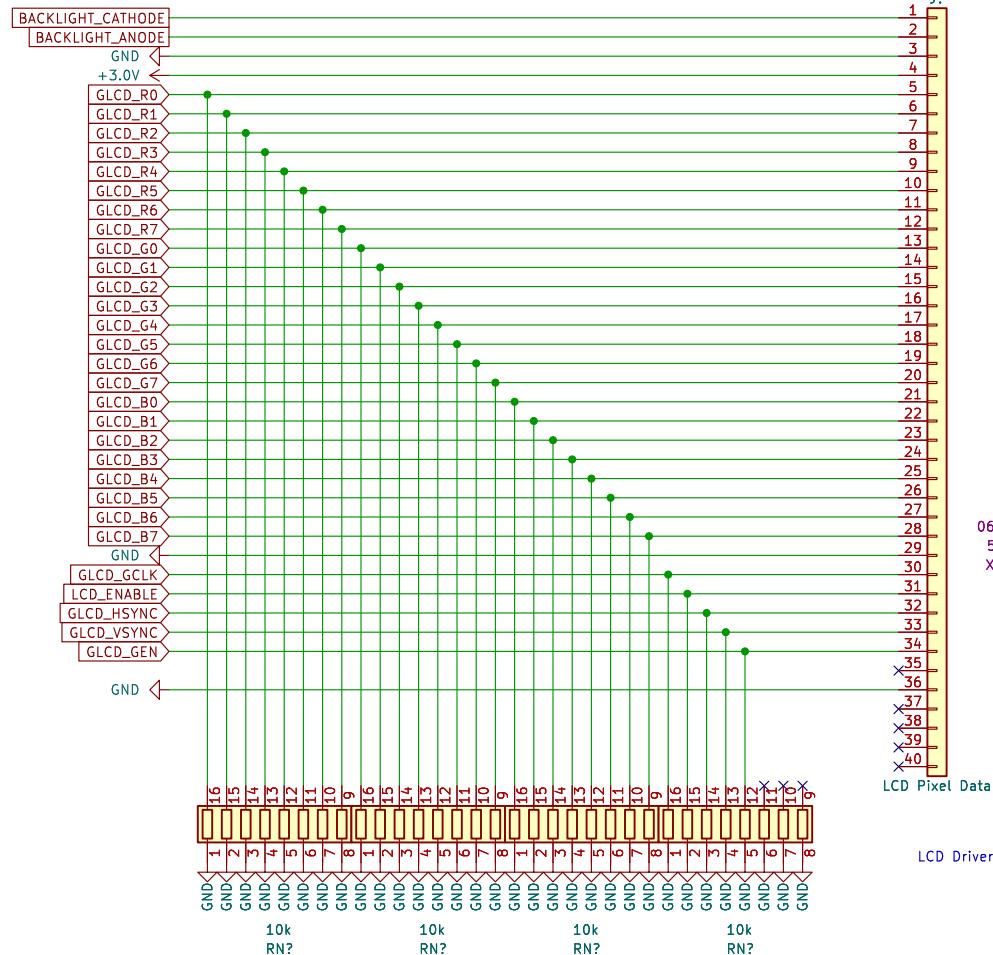
Rev: PRELIM

Id: 19/29



1 2 3 4 5

GLT043800480IS1-CTP



LCD Driver: HX8264-D06 + HX8664-B

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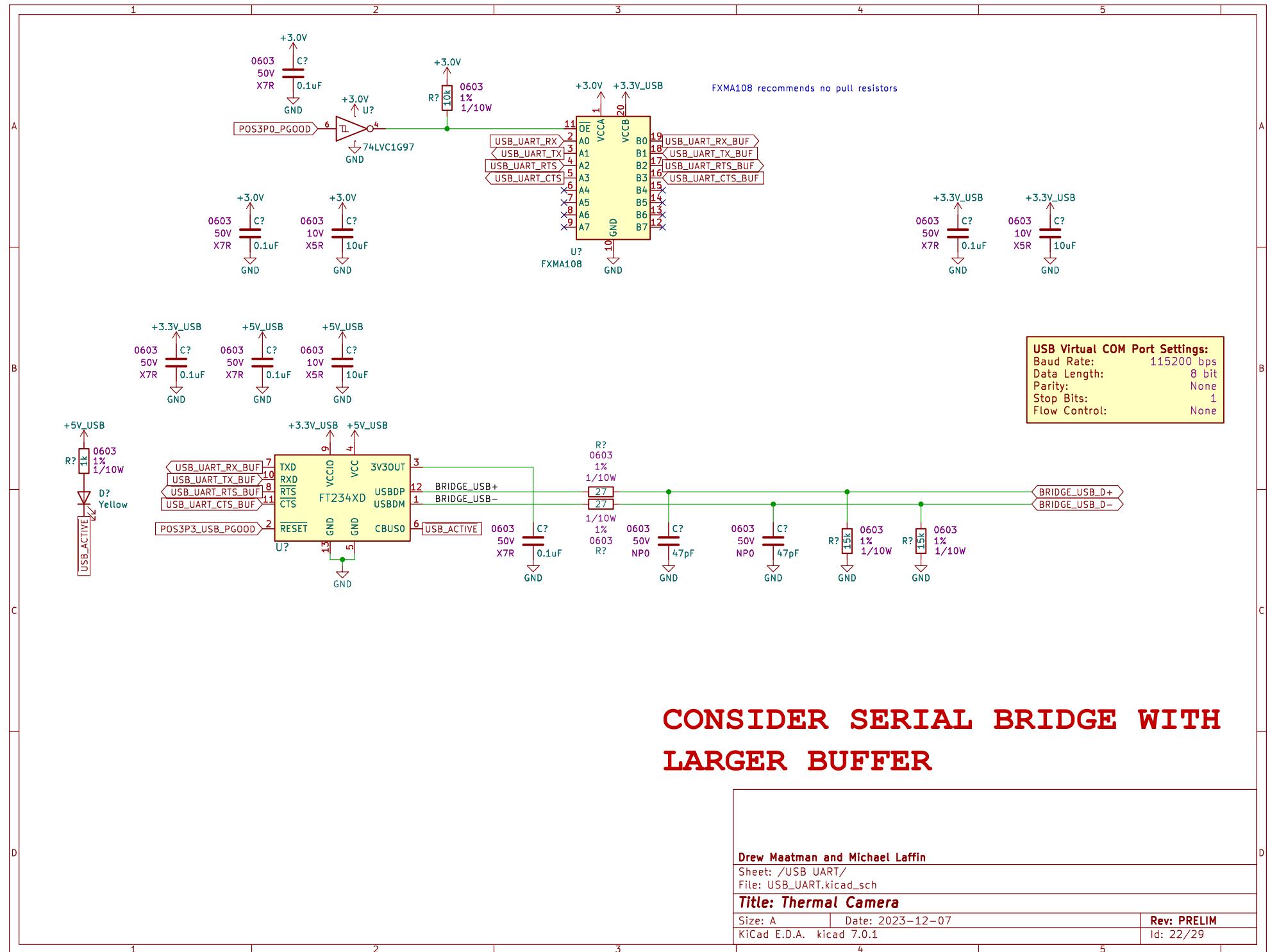
Sheet: /Graphic LCD/
File: Graphic_LCD.kicad_sch

Title: Thermal Camera

Size: A Date: 2023-12-07
KiCad E.D.A. kicad 7.0.1

Rev: PRELIM
Id: 21/29

1 2 3 4 5



A

A

B

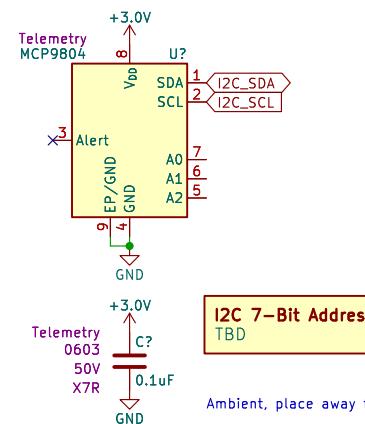
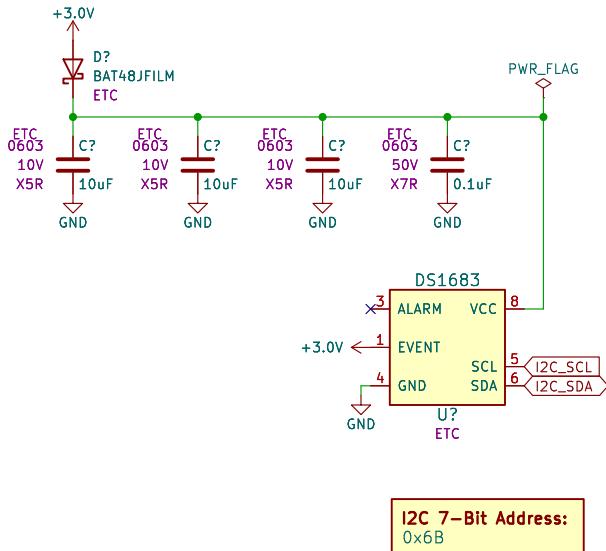
B

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C

D

D



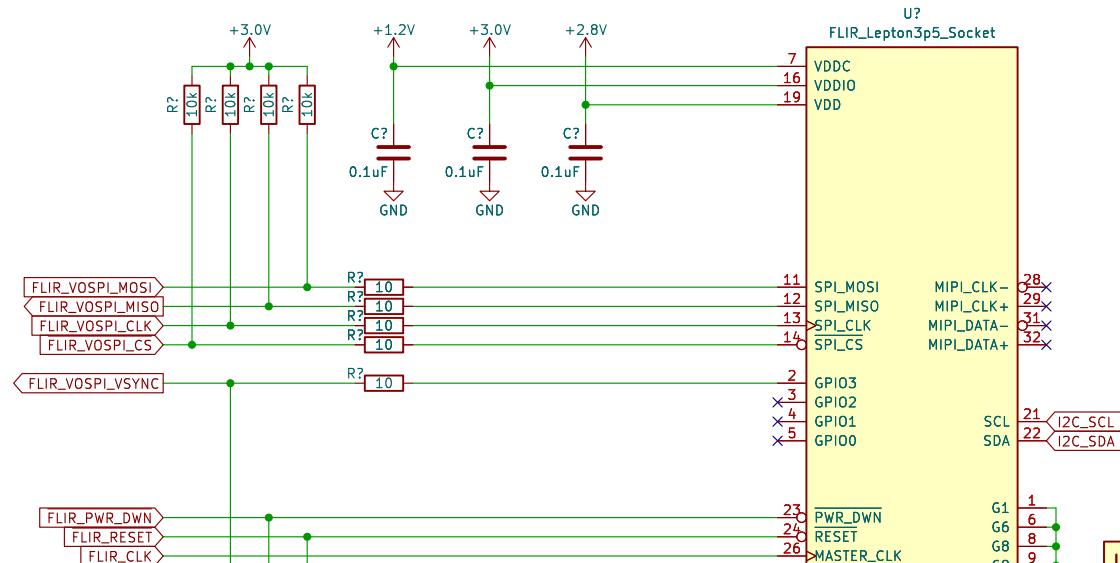
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Sheet: /Elapsed Time Counter/
File: Elapsed_Time_Counter.kicad_sch**Title: Thermal Camera**Size: A | Date: 2023-12-07
KiCad E.D.A. kicad 7.0.1Rev: PRELIM
Id: 23/29

1 2 3 4 5

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

A



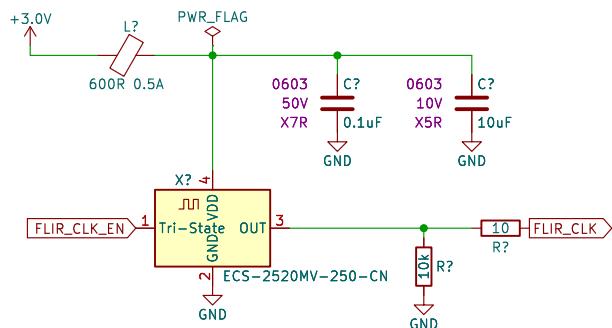
B

I2C 7-Bit Address:
0x2A

See FLIR document #110-0144-04 for I2C register map



C



D

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Sheet: /FLIR Lepton Sensor/
File: FLIR_Lepton_Sensor.kicad_sch

Title: Thermal Camera

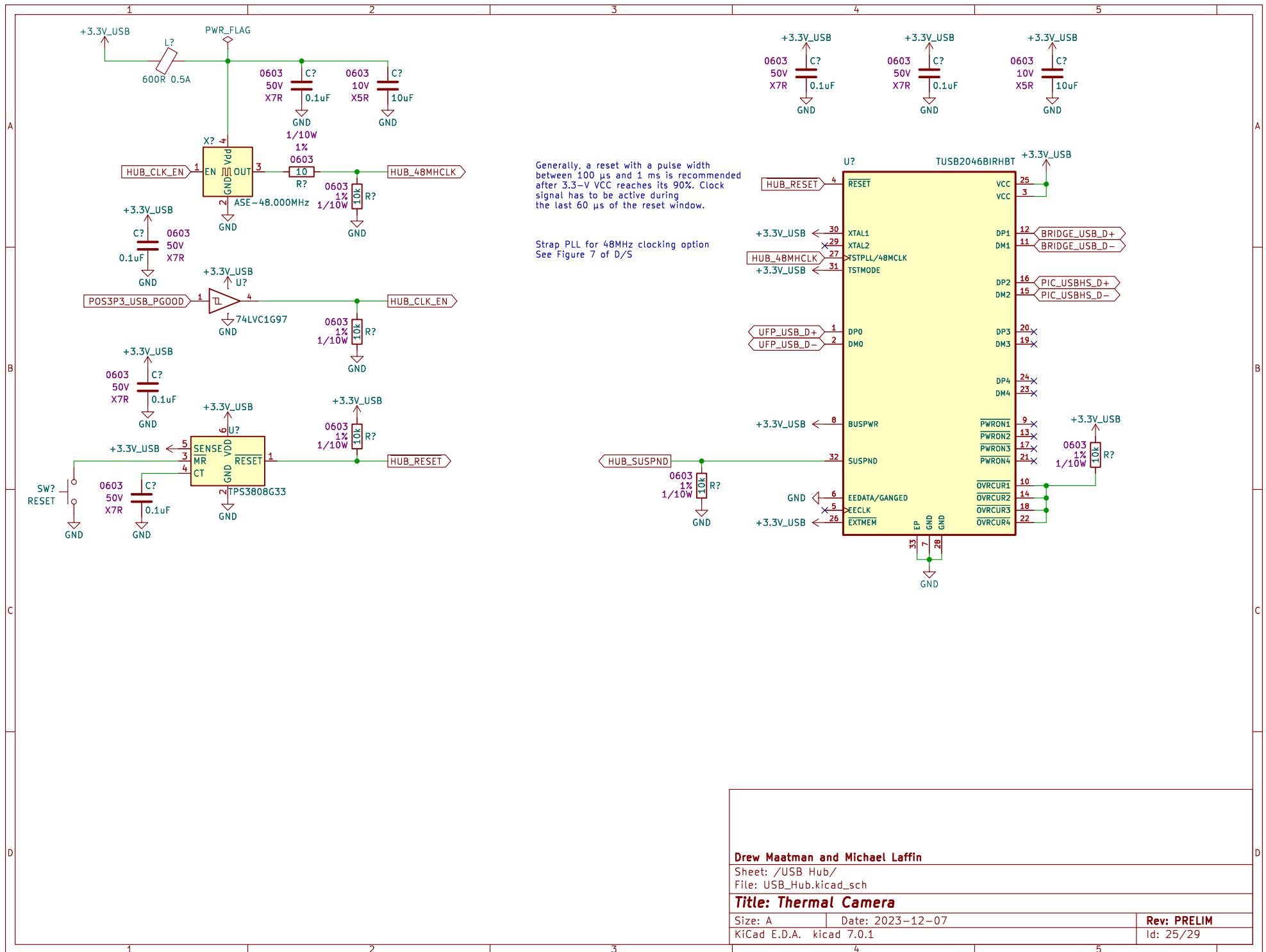
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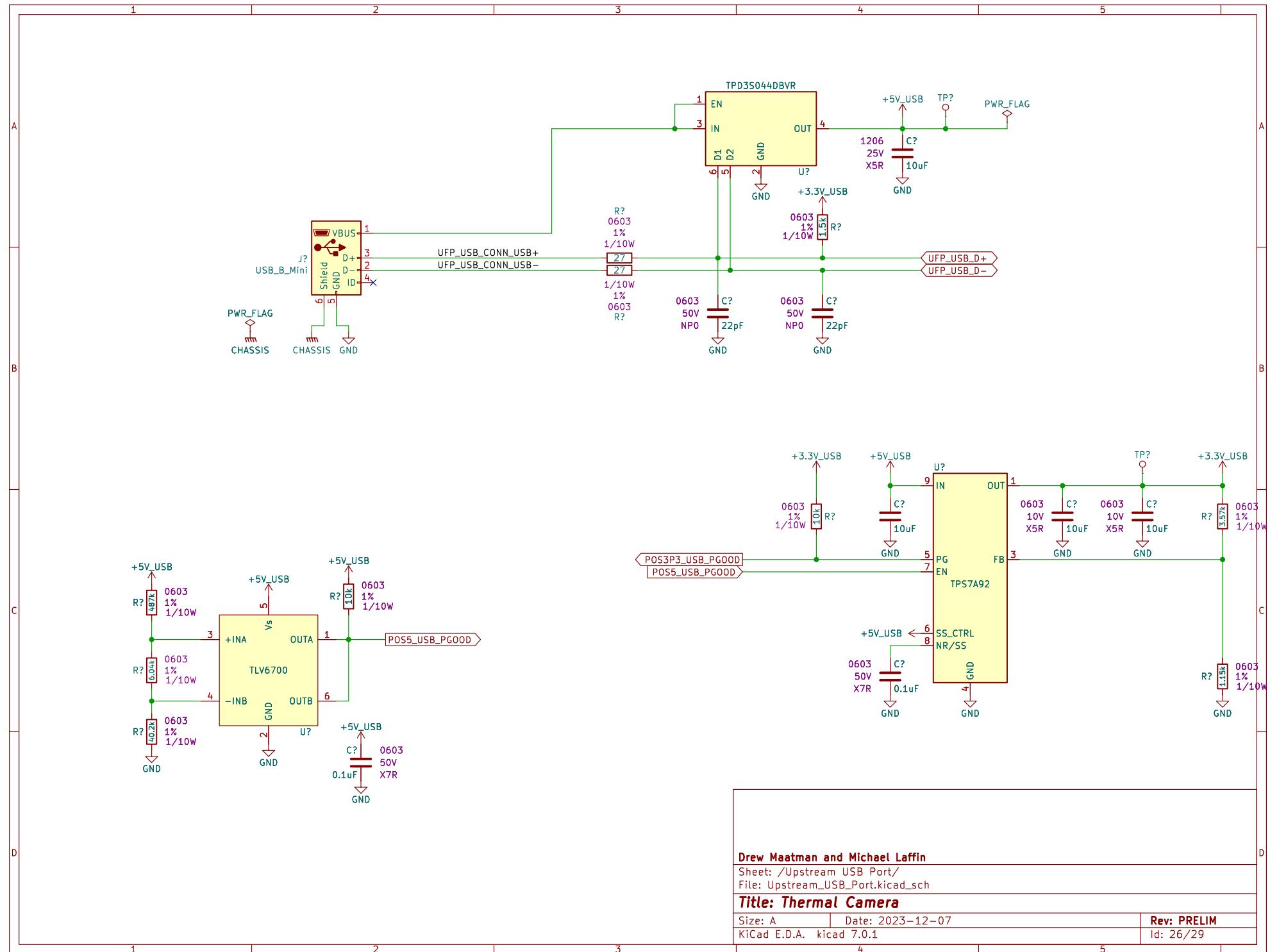
KiCad E.D.A. kicad 7.0.1

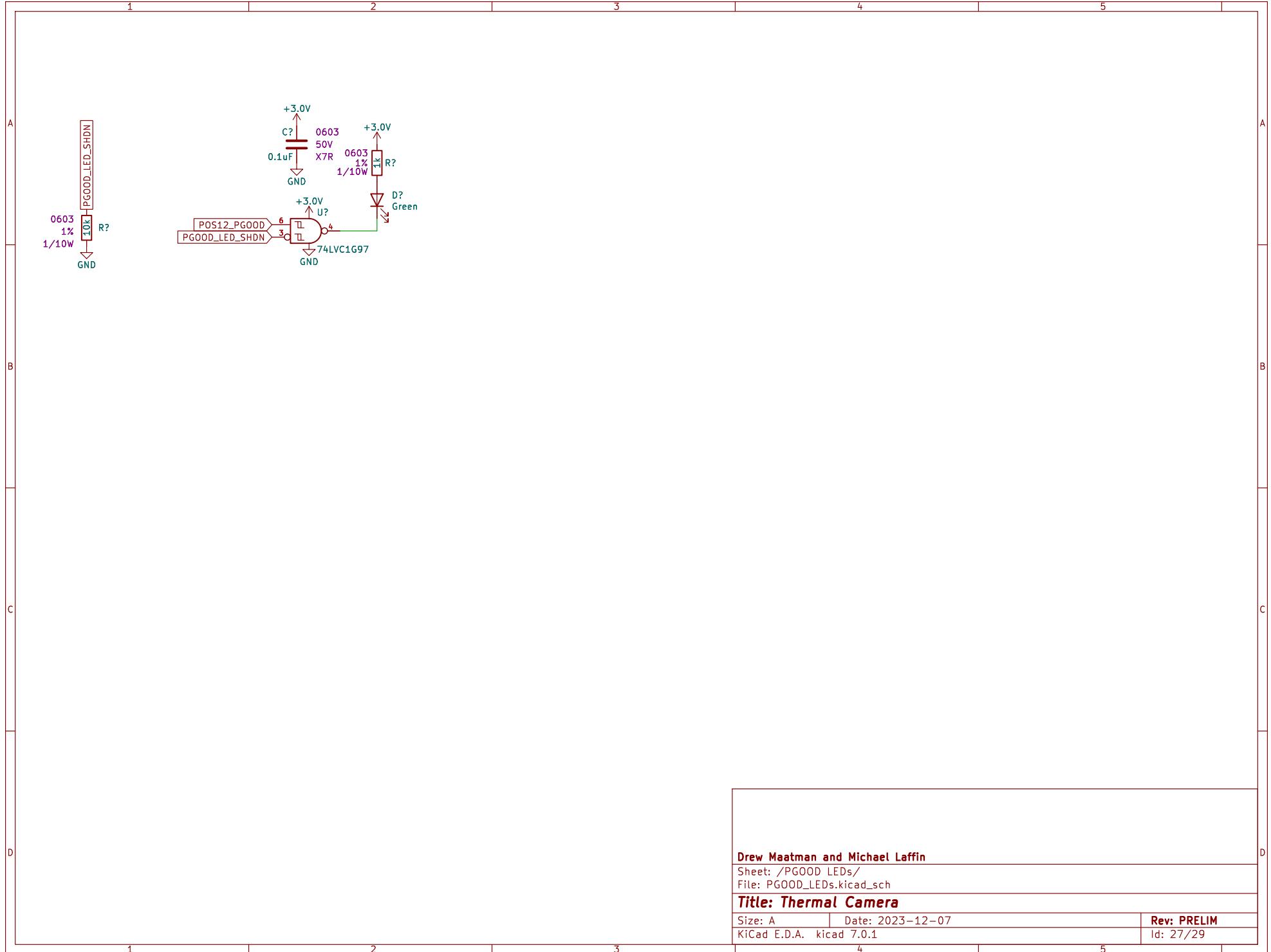
Rev: PRELIM

Id: 24/29

1 2 3 4 5







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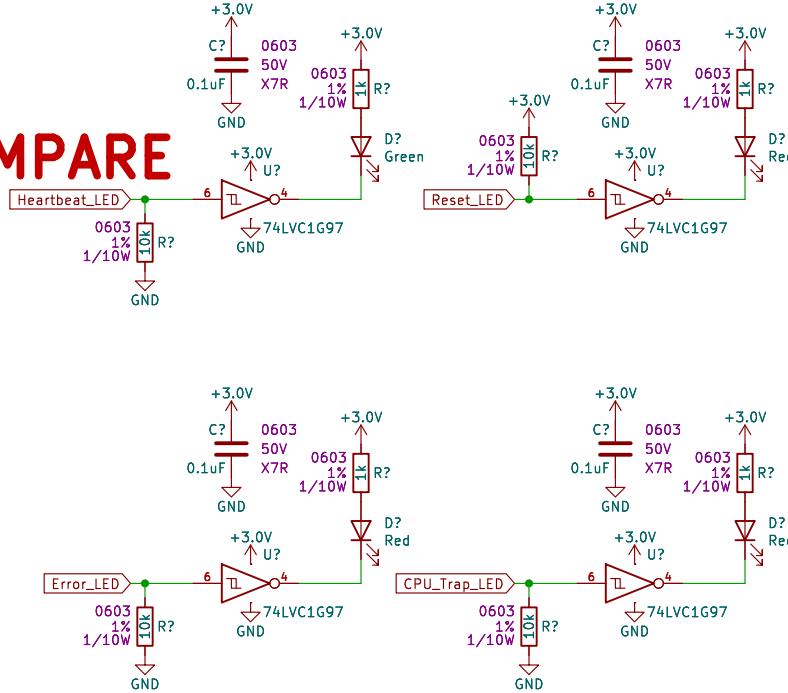
Sheet: /PGOOD LEDs/
File: PGOOD_LEDs.kicad_sch

Title: Thermal Camera

Size: A	Date: 2023-12-07
KiCad E.D.A.	kicad 7.0.1

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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: 2023-12-07
KiCad E.D.A. kicad 7.0.1

Rev: PRELIM
Id: 28/29

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Sheet: /Mechanical/
File: Mechanical.kicad_sch

Title: Thermal Camera

Size: A | Date: 2023-12-07
KiCad E.D.A. kicad 7.0.1

Rev: PRELIM
Id: 29/29

1

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5