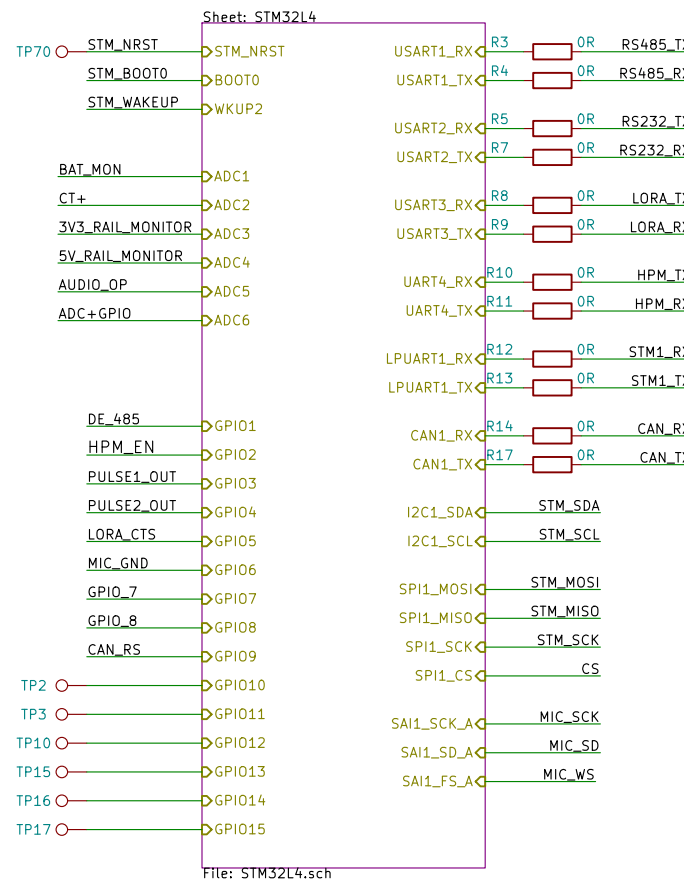
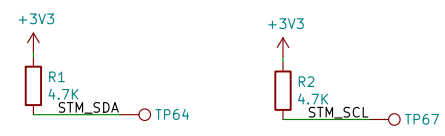


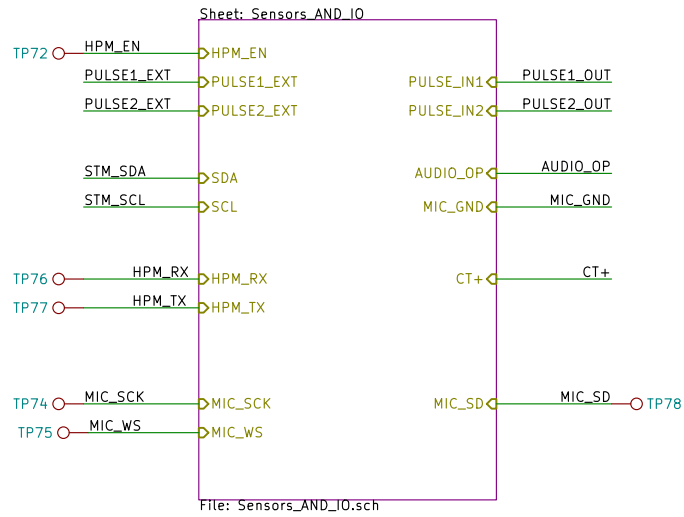
STM



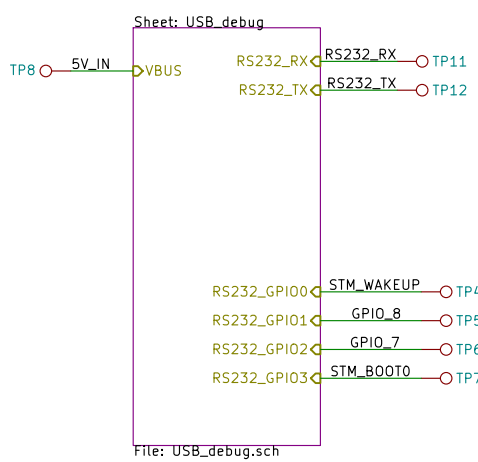
STM I2C Pullup



Sensors and IO

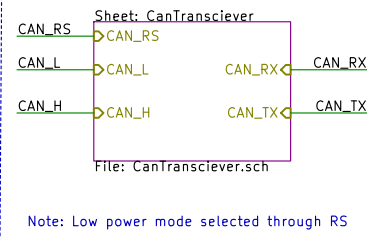


USB Debug

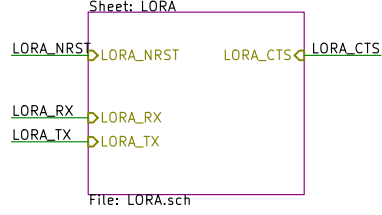


Communication

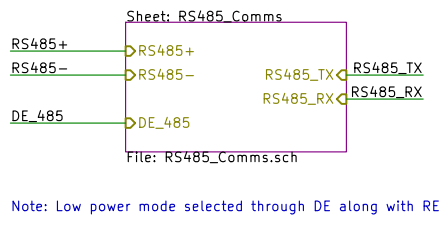
CAN Transciever



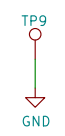
LORA



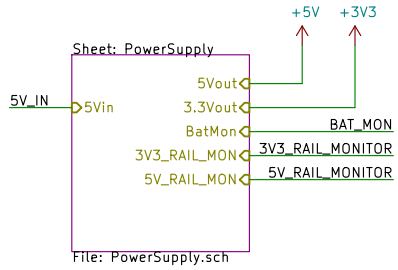
RS485 Transciever



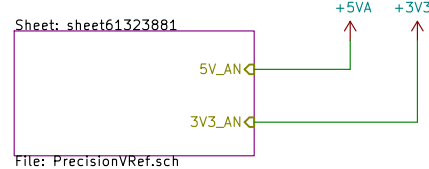
Easy access gnd pins for debug



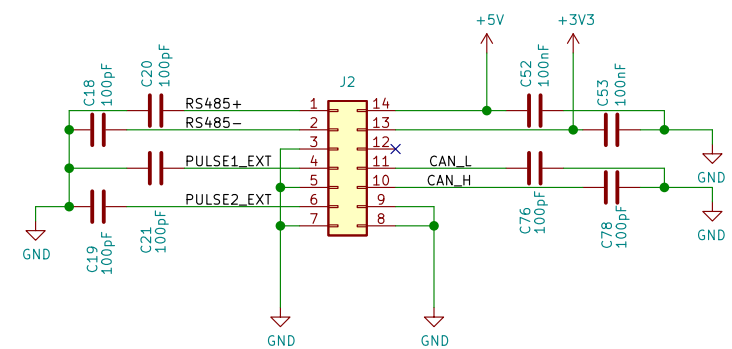
Power Supply and Battery



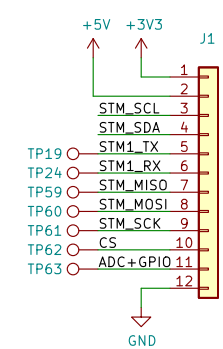
Analogue Voltage Reference



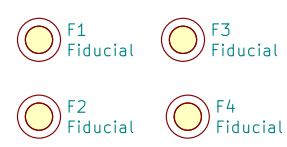
External Connector



Optional module



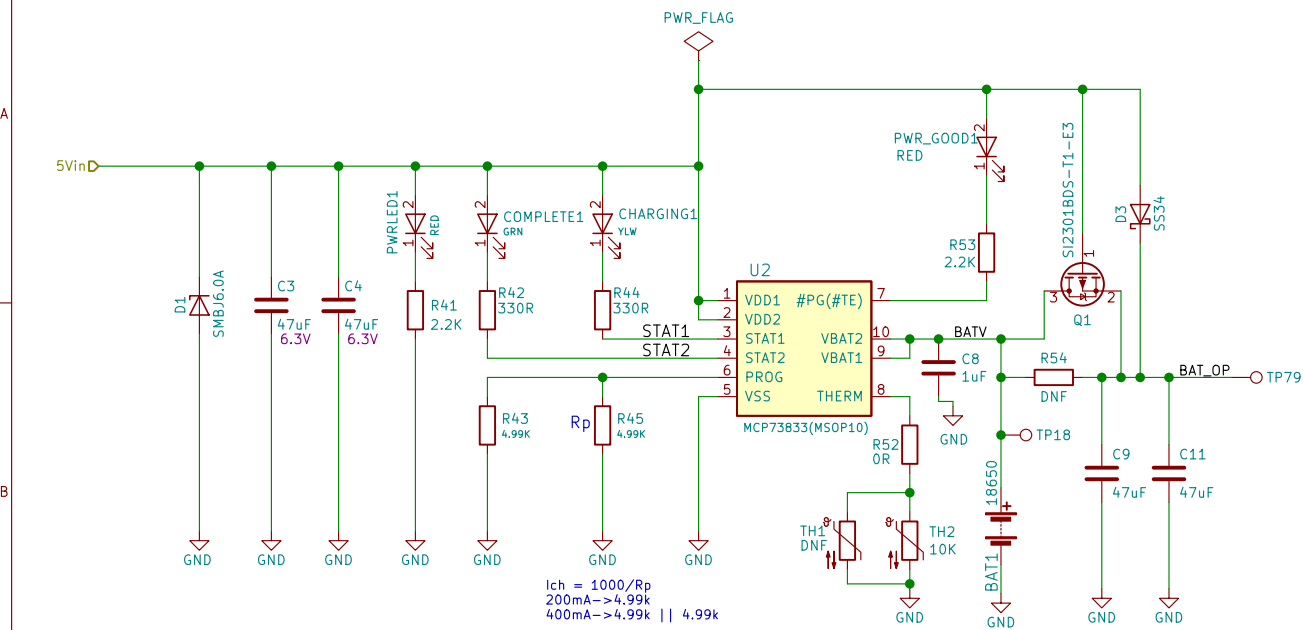
Fiducials



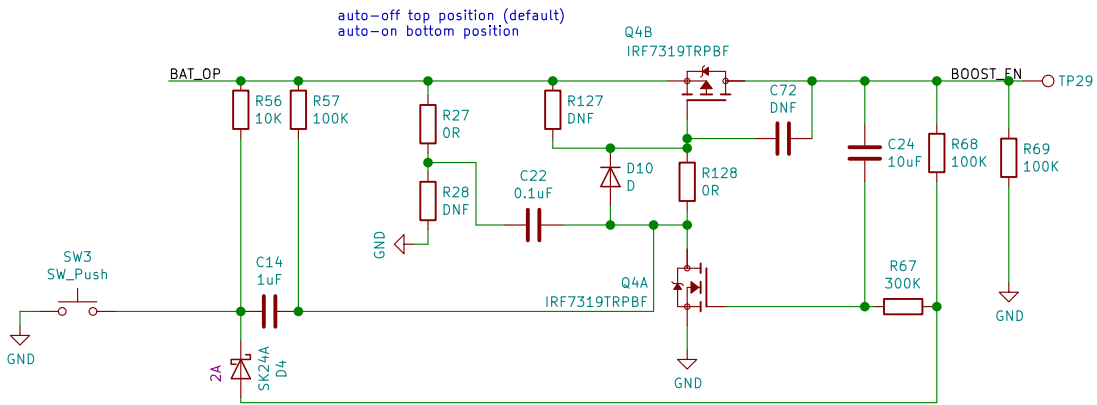
Parts to add:
-Fiducial
-Fix particulate in rush issue
-lora rst not routed and rst through hardware

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Sheet: /
File: OSM_env01.sch
Title: Open Smart Monitor
Size: A3 Date: **Rev: A**
KiCad E.D.A. kicad 5.1.5+dfsg1-2build2 Id: 1/11

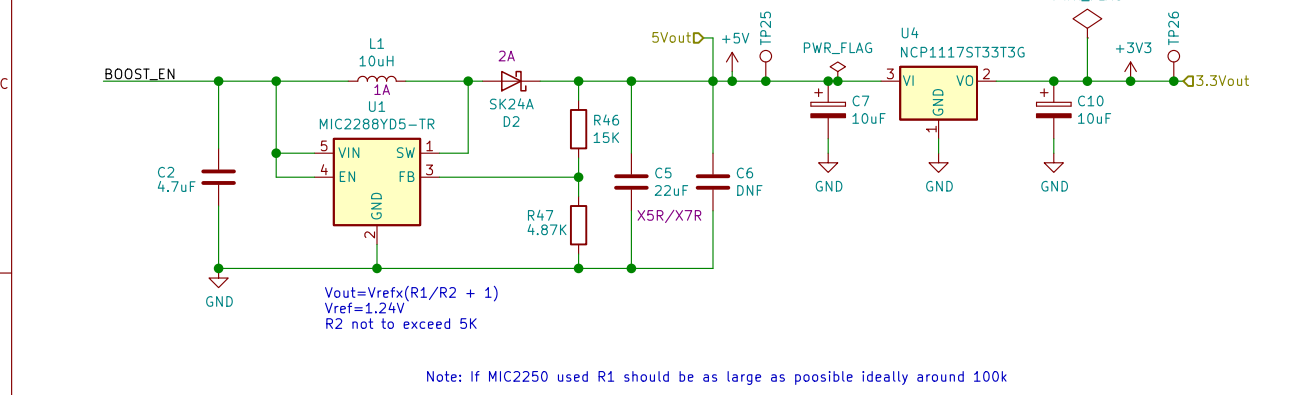
Li_Ion Battery Charge Controller



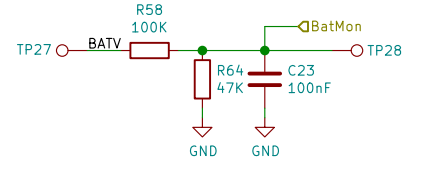
Latched powerbutton Circuit



5V and 3V3 Power Supplies

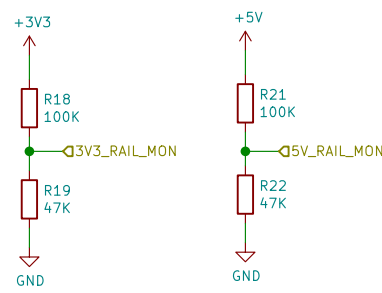


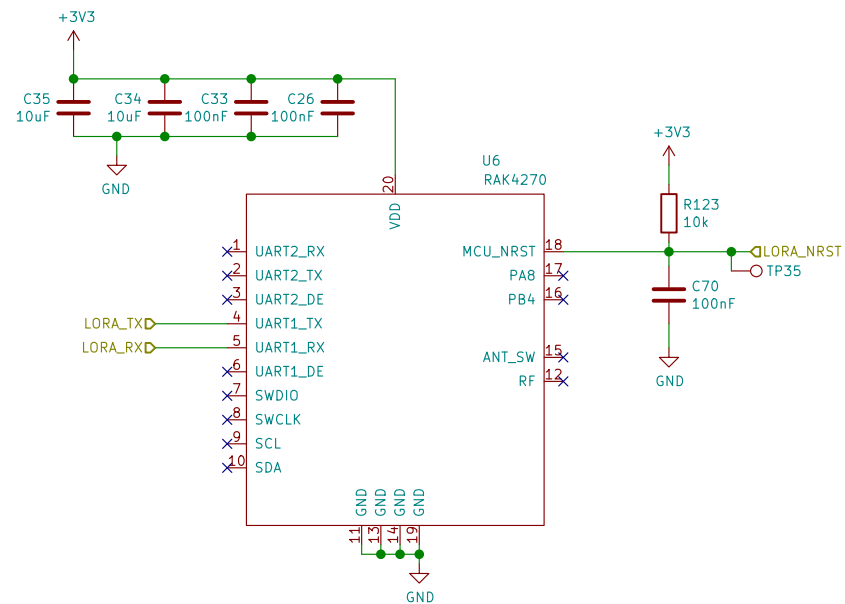
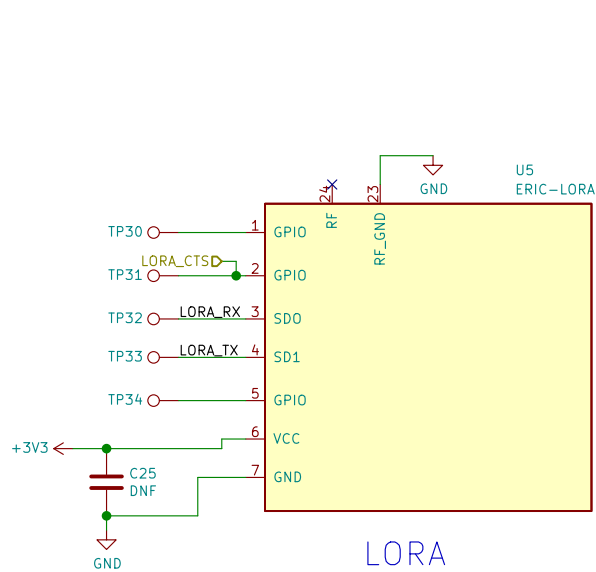
Battery Voltage Monitor



divider ratio=47/147=31.97
5/1024=1adc=4.88mm
(4.2/4.88m)*0.3197=275.15adc=fully charged and above

Voltage Rail Monitor





Sheet: /LORA/
File: LORA.sch

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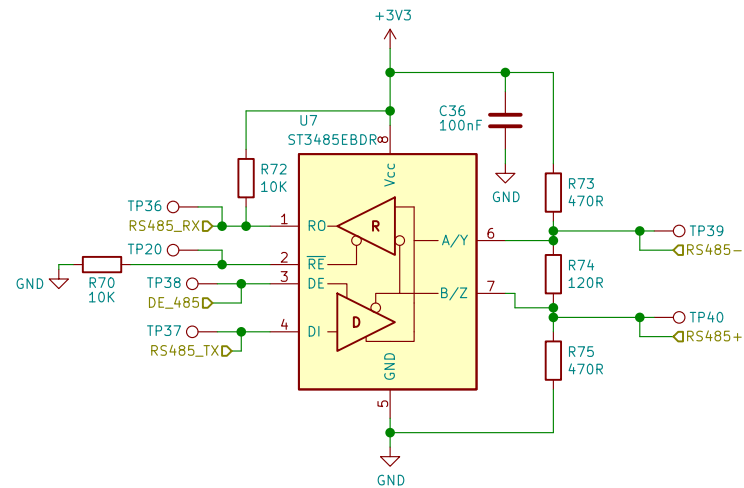
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Date:

KiCad E.D.A. kicad 5.1.5+dfsg1-2build2

Rev:

Id: 3/11



Sheet: /RS485_Comms/
File: RS485_Comms.sch

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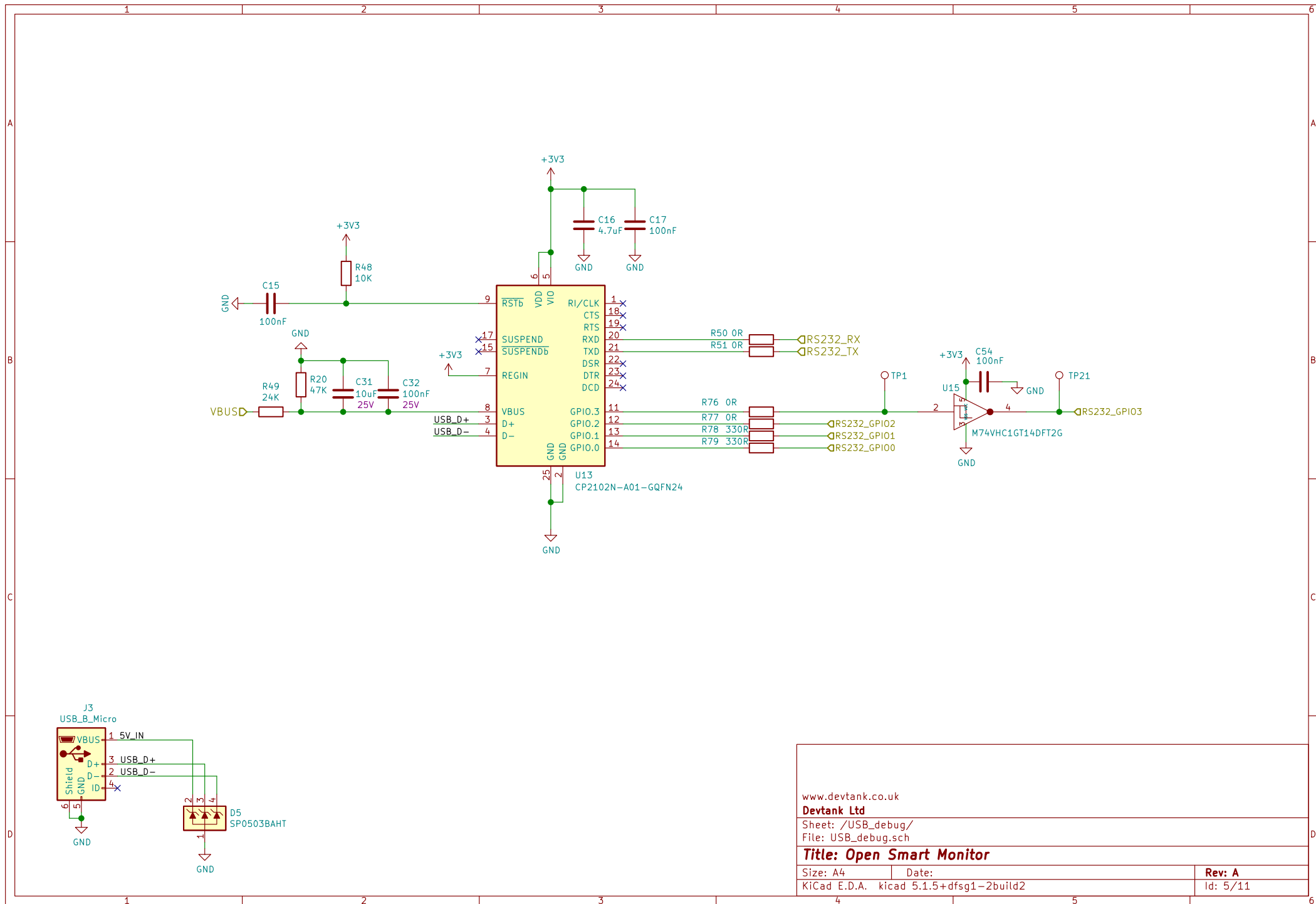
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KiCad E.D.A. kicad 5.1.5+dfsg1-2build2

Rev:

Id: 4/11



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Sheet: /USB_debug/

File: USB_debug.sch

Title: Open Smart Monitor

Size: A4

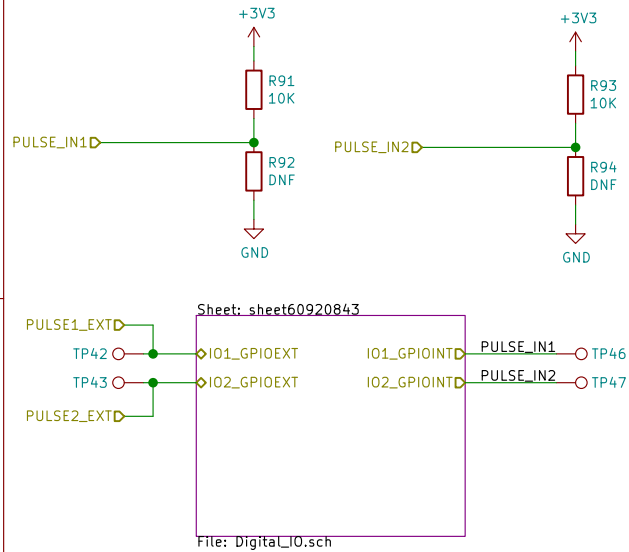
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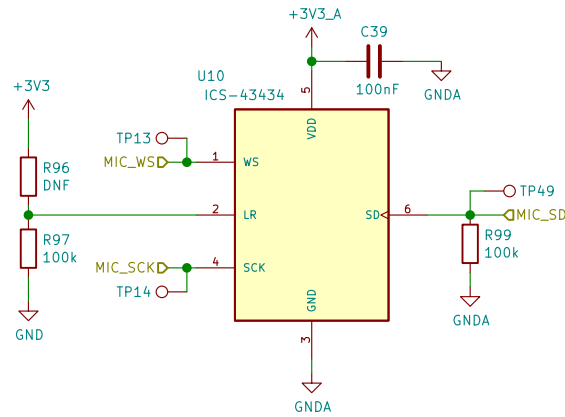
Rev: A

Id: 5/11

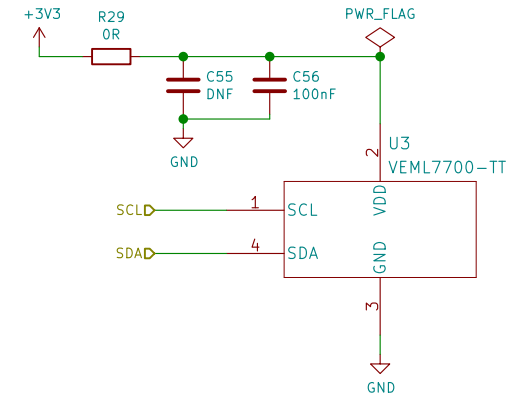
Pulse Inputs



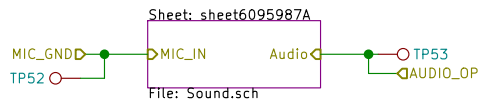
Microphone module



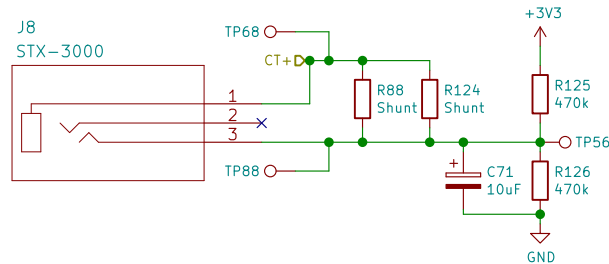
Light Sensor



Sound Level Meter

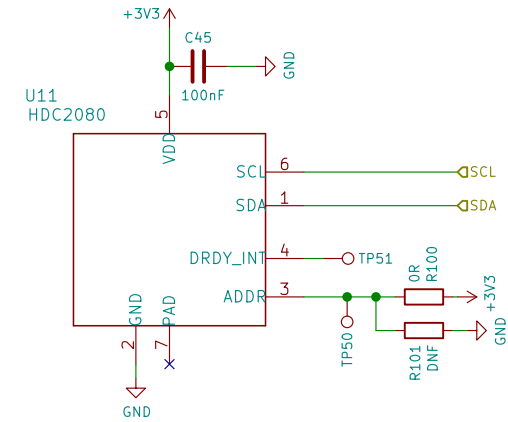


CT Clamp



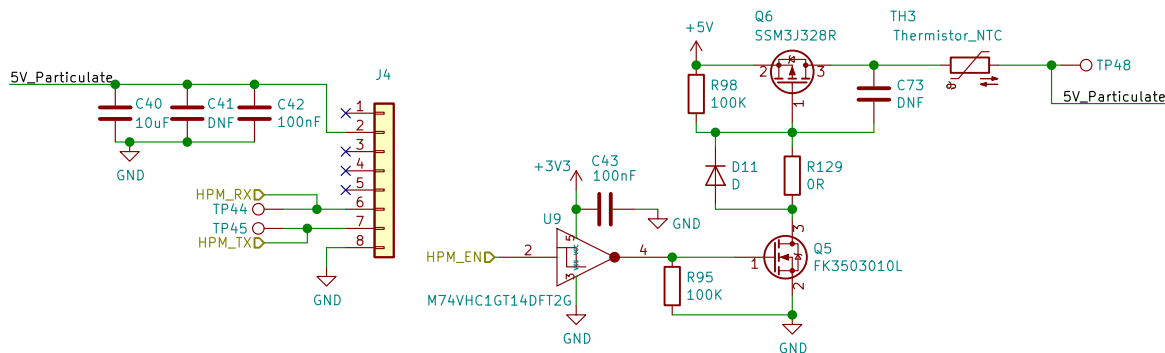
bypass capacitor few hundred ohms
<https://learn.openenergymonitor.org/electricity-monitoring/ct-sensors/interface-with-arduino>

Temp and Humidity



Note: Can use HDC1080/2080. For HTU21D leave pad 3,4 and ep unconnected

Particulate Sensor



Sheet: /Sensors_AND_IO/
File: Sensors_AND_IO.sch

Title:

Size: A4

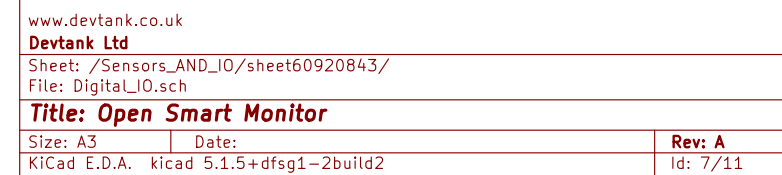
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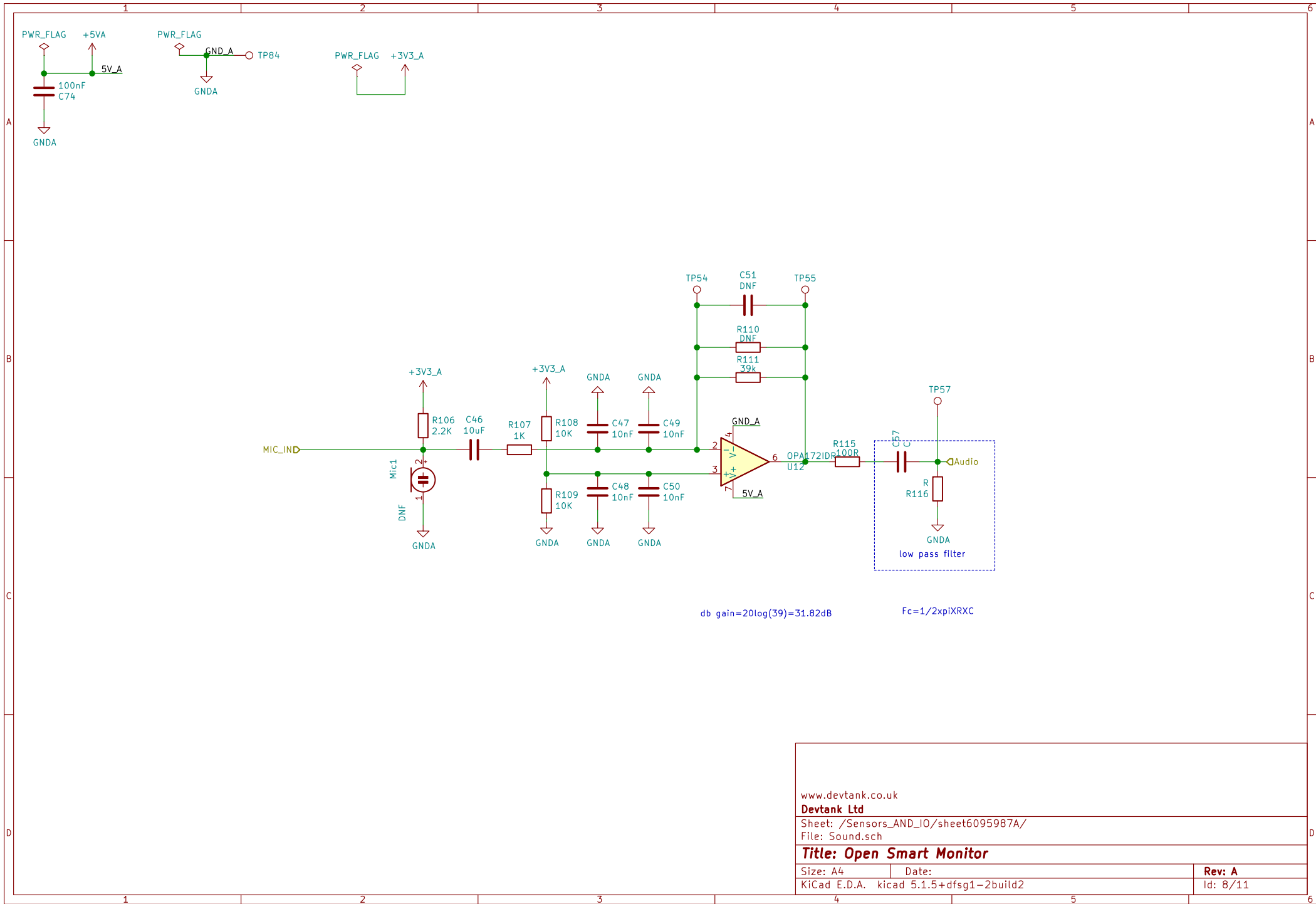
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Rev:

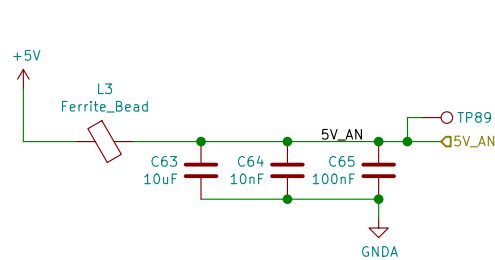
Id: 6/11

Max 3mA per GPIO

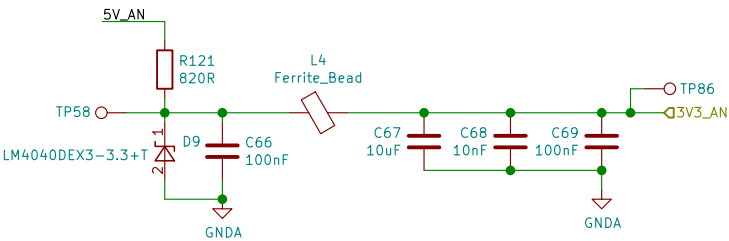




5VA Ref

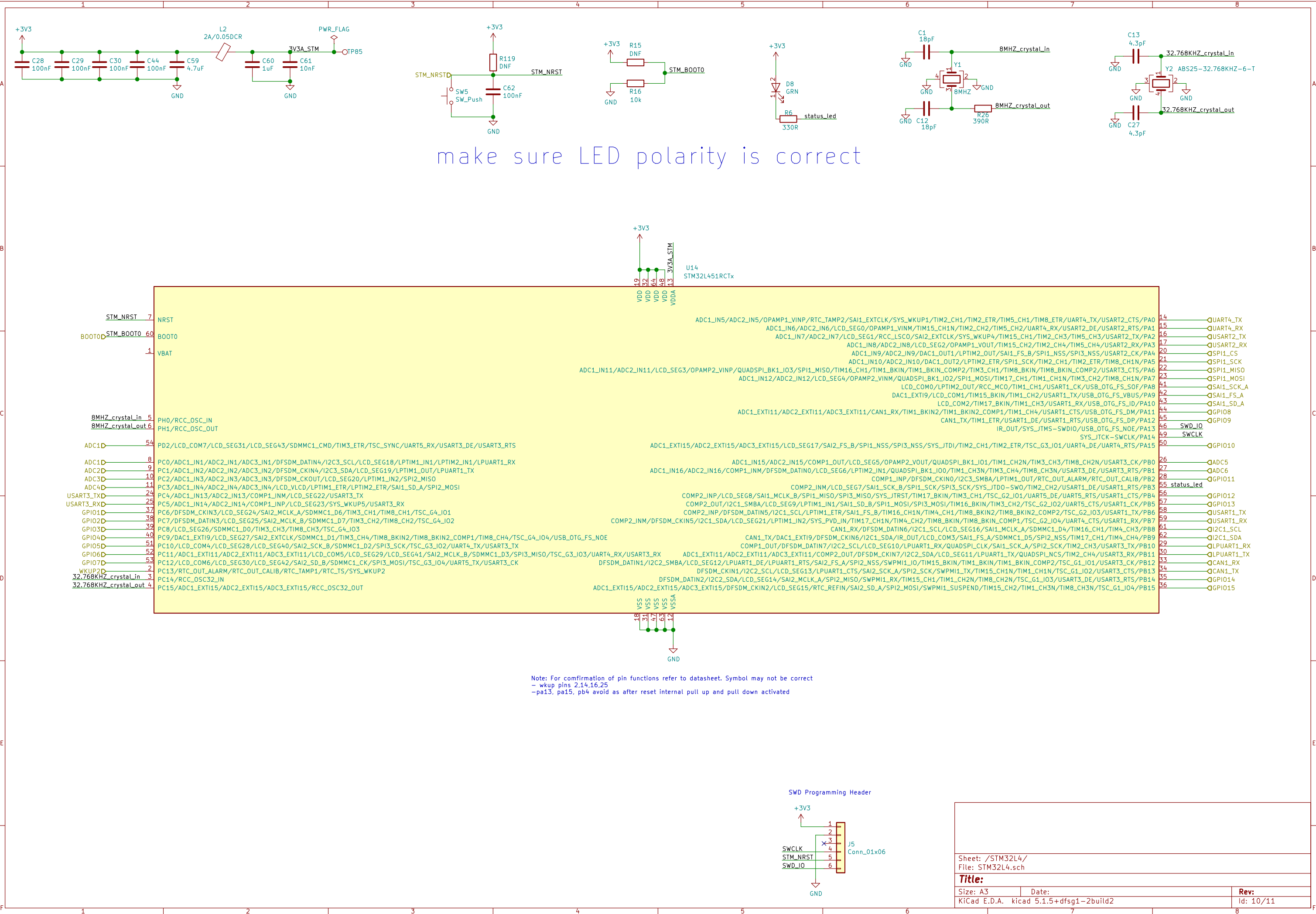


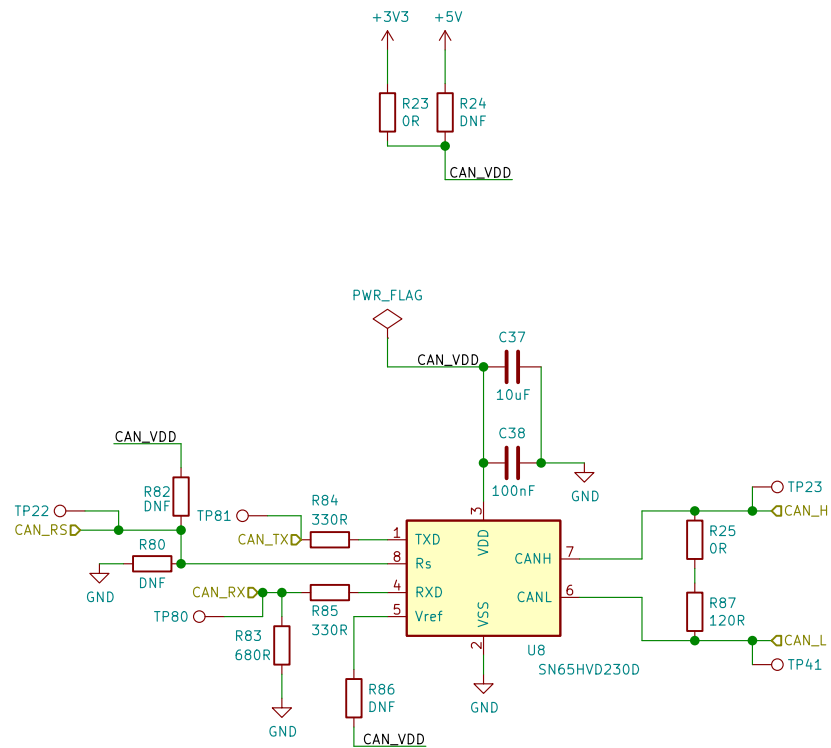
3V3A Ref



R=Vs/I
5-3.3/2mA=850mA
R=820R

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Size: A4	Date:	Rev:
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Sheet: /CanTransciever/
File: CanTransciever.sch

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Size: A4 Date:
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Rev:
Id: 11/11