

# X2E Reference Sensor

## Variant: Default

06.03.2024  
V1.2

DRAFT

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DESIGN CONSIDERATIONS

DESIGN NOTE:  
Example text for informational  
design notes .

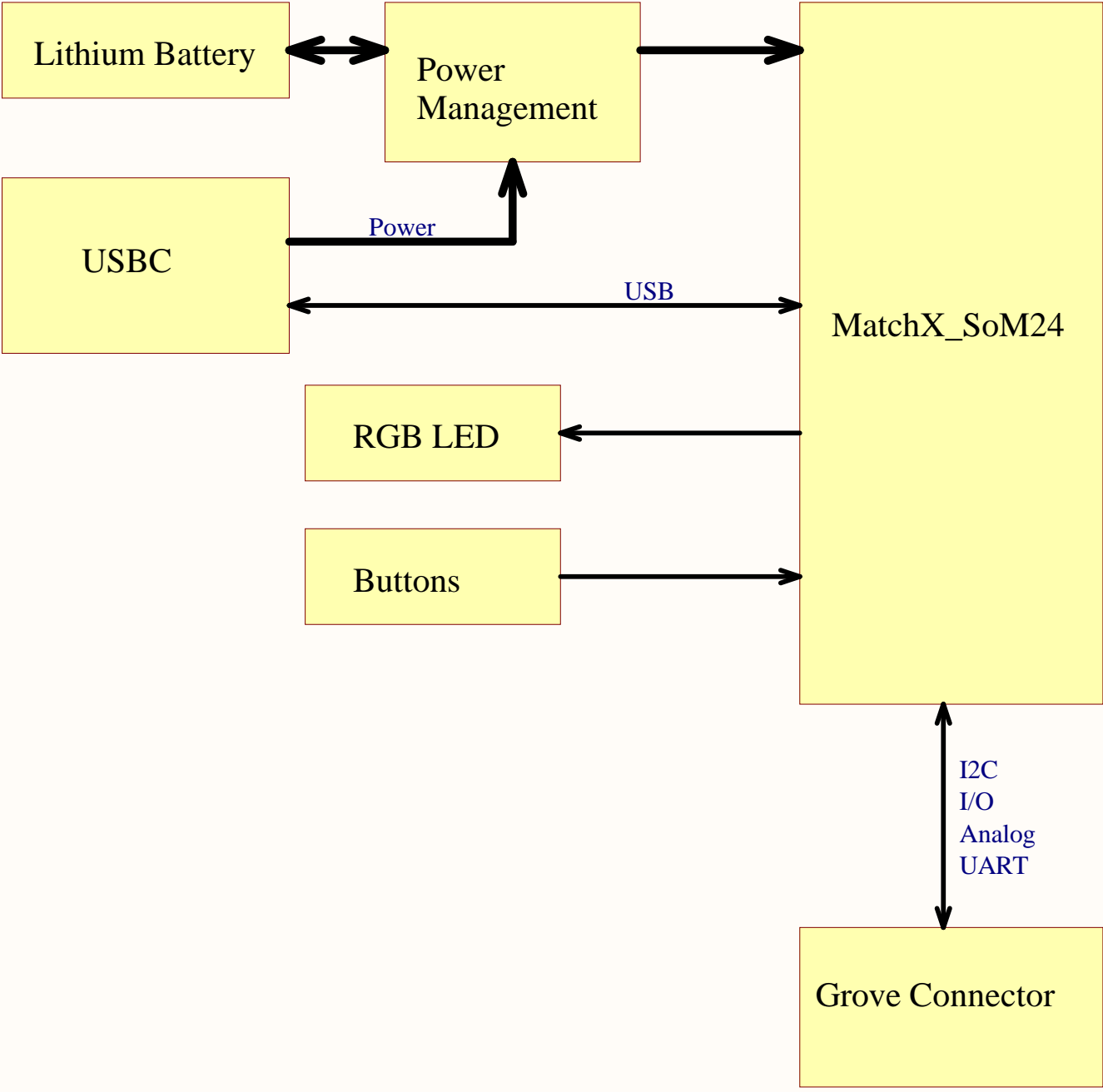
DESIGN NOTE:  
Example text for critical  
design notes.

DESIGN NOTE:  
Example text for cautionary  
design notes.

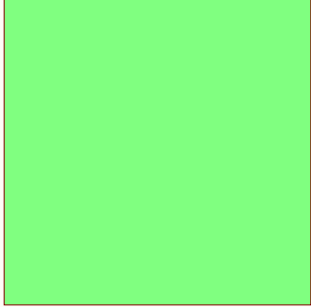
LAYOUT NOTE:  
Example text for critical  
layout guidelines.

# X2E Reference Sensor

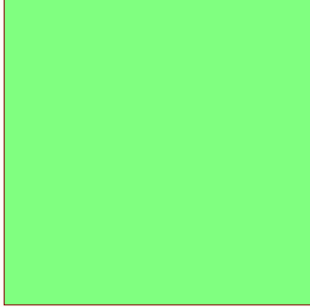
## (Block Diagram)



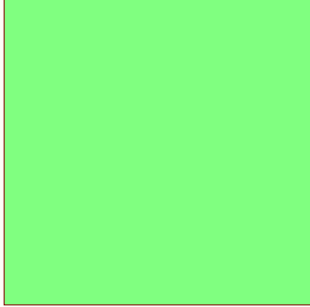
Designator  
COVER PAGE.SchDoc



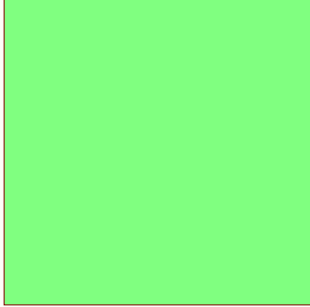
Designator  
BLOCK DIAGRAM.SchDoc



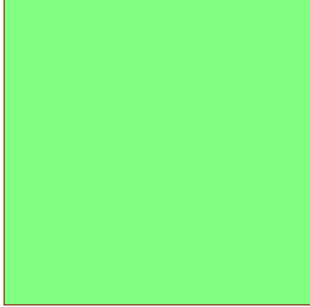
Designator  
DOC REVISION HISTORY.SchDoc



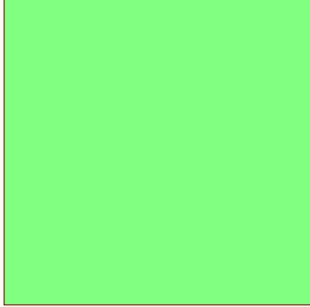
Designator  
ESP32\_S3.SchDoc



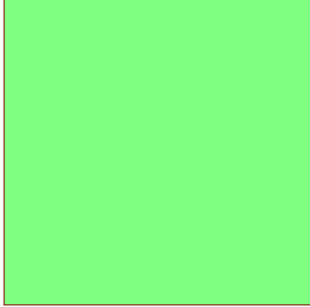
Designator  
SENSORS.SchDoc



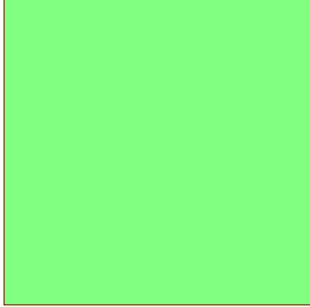
Designator  
POWER.SchDoc



Designator  
LoRa.SchDoc



Designator  
GPS.SchDoc



# TEMPLATE NOTES

## Set Project Parameters

- 1) Go to Project -> Project Options -> Parameters
- 2) Set Company, Project and VersionRevision

Mark Not Fitted Components as  
**NF**

## Net Class Example



## Differential signal example




TITLE Examples (You can change the color to reflect your company color)

**PAGE TITLE**  
*Peripheral / Group of component title*  
*Smaller Ttitle*

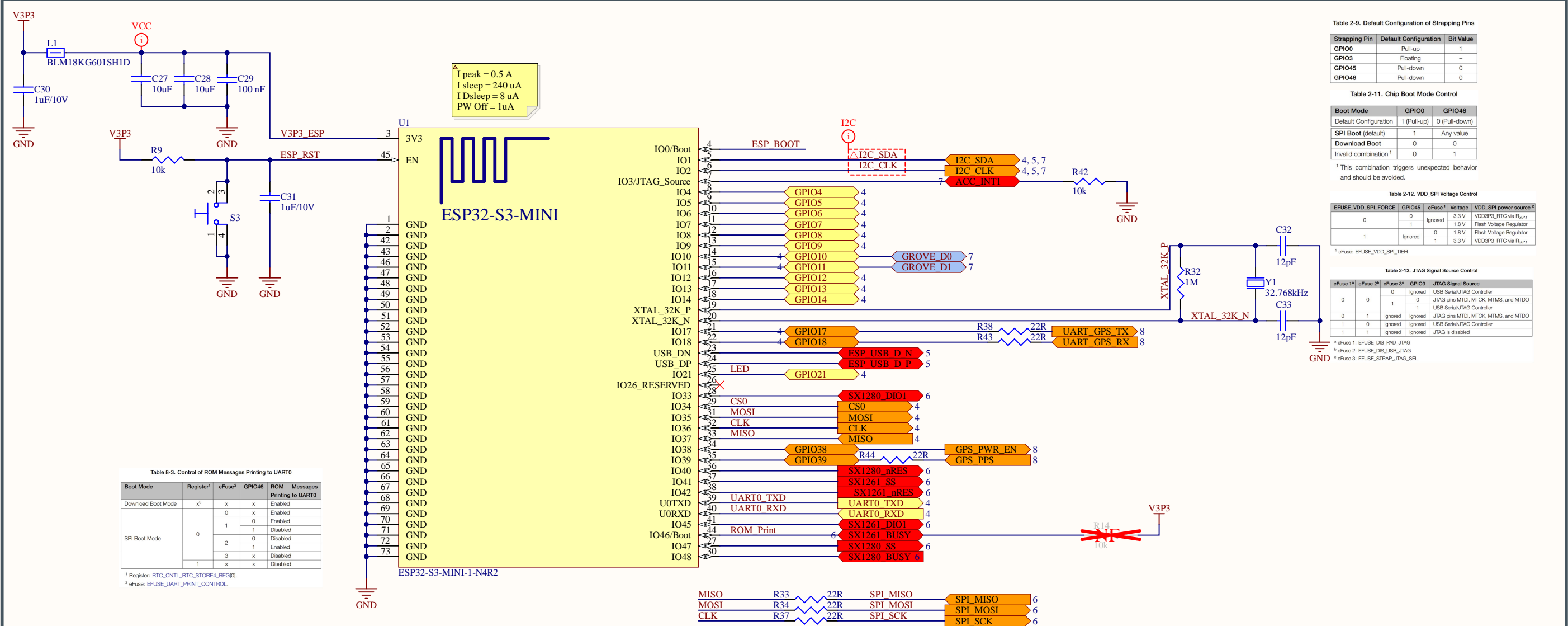
## Schematic Status Explanation

- DRAFT** - Very early stage of schematic, ignore details.
- PRELIMINARY** - Close to final schematic.
- CHECKED** - There should not be any mistakes. Tell the engineer if you find one.
- RELEASED** - A board with this schematic has been sent to production.

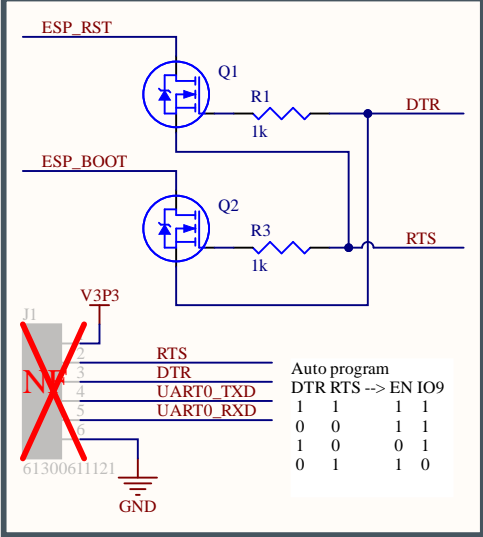
Company: <i>MatchX</i>			CONFIDENTIAL. Do not distribute.	
Title: <i>X2E Reference Sensor</i> Variant: Default			<i>MatchX</i> * * * *	
Size: A3	Number: 3	Revision: V1.0		
Date: 06.03.2024	Time: 19:21:48	Sheet 3 of 9		
File: TOPSHEET.SchDoc				
			Engineer: PSB	

# ESP32\_S3.SchDoc

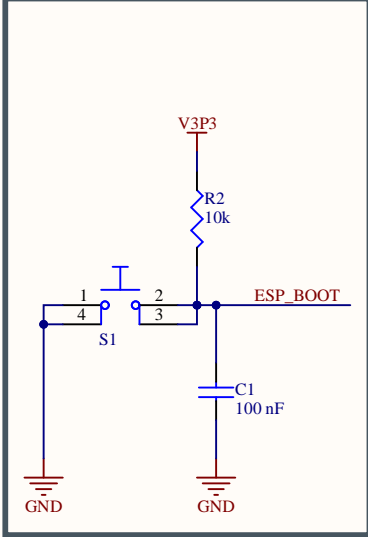
## ESP32-S3 Module



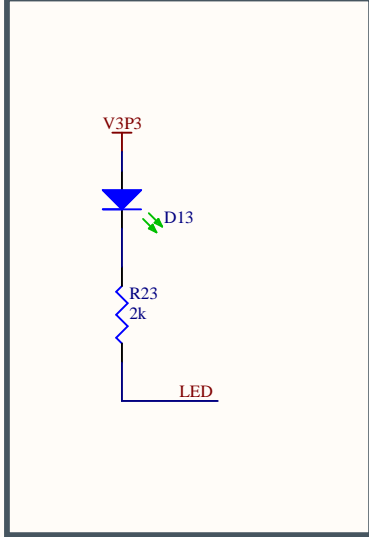
## Programming interface



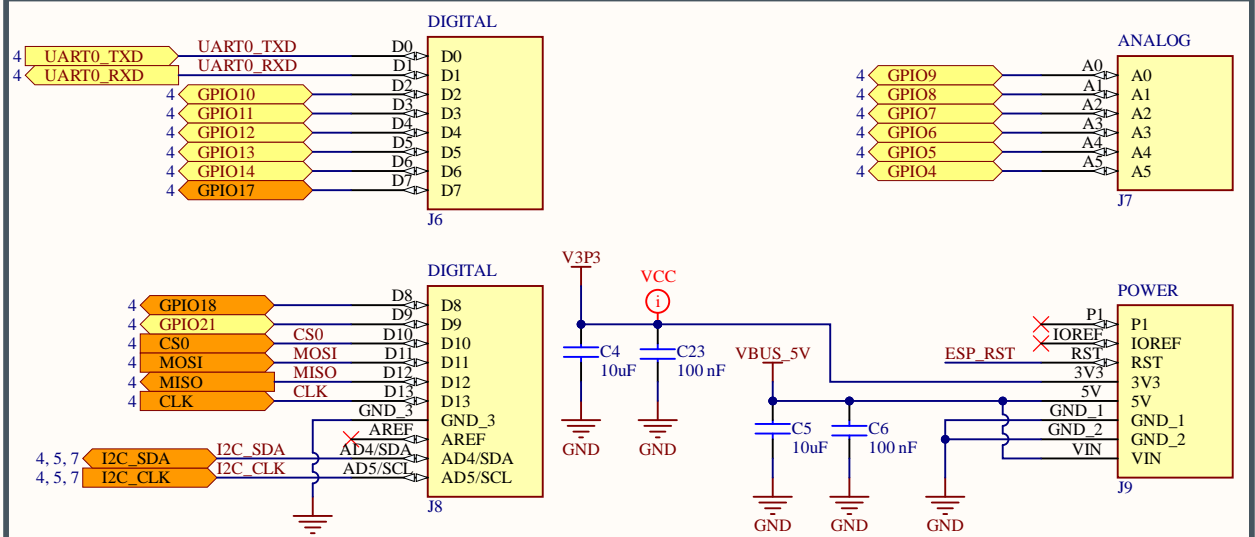
## Boot



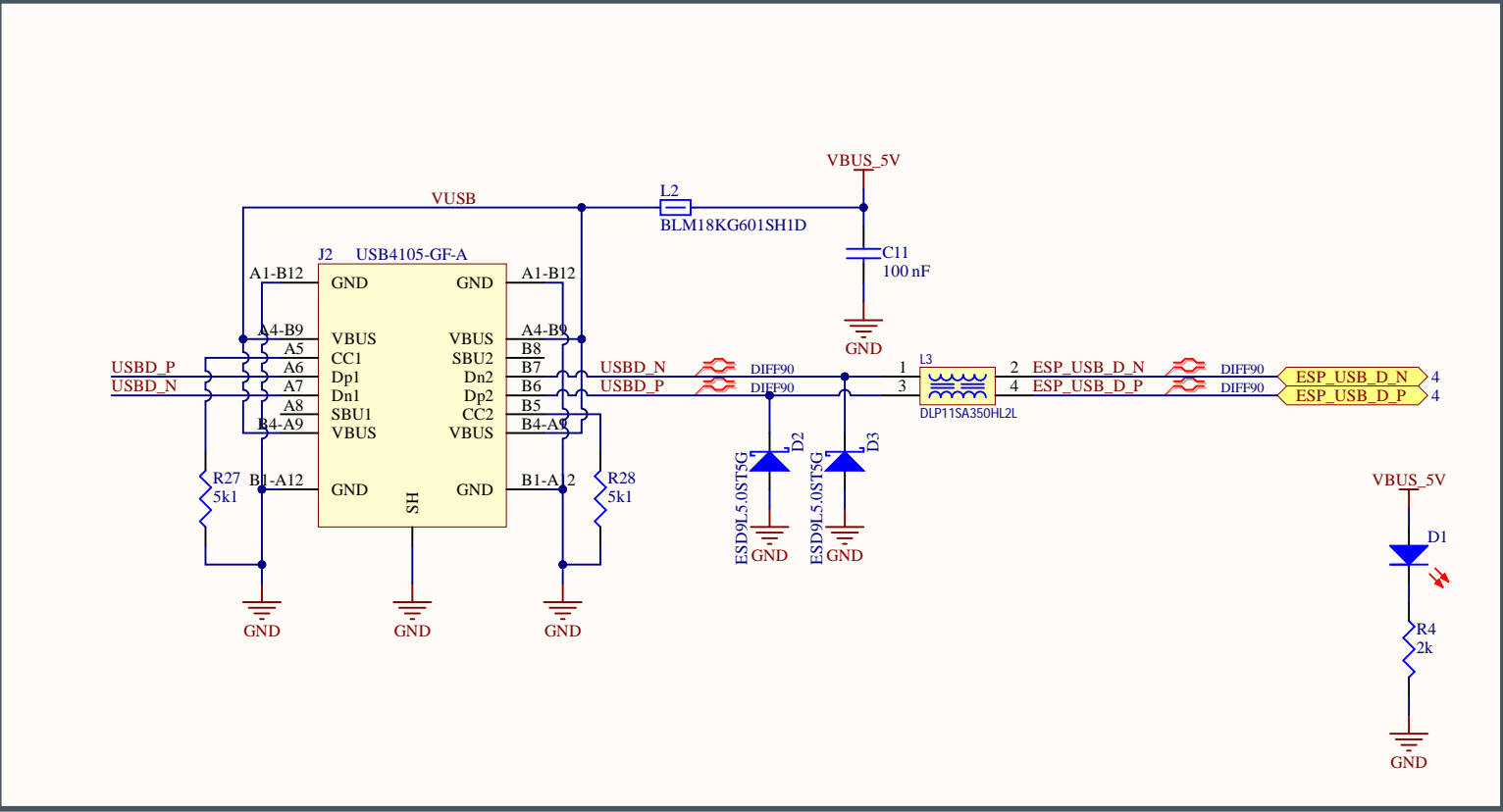
## LED



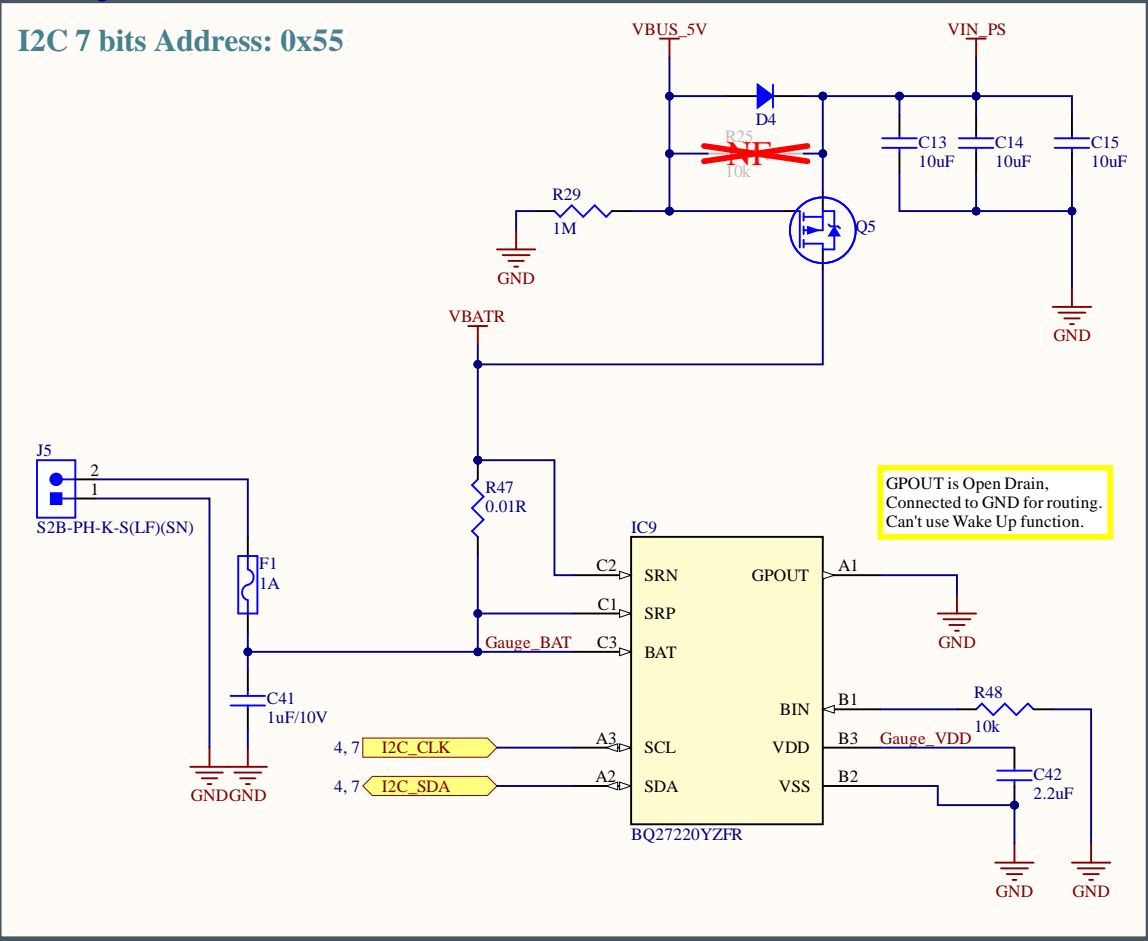
## Arduino Header



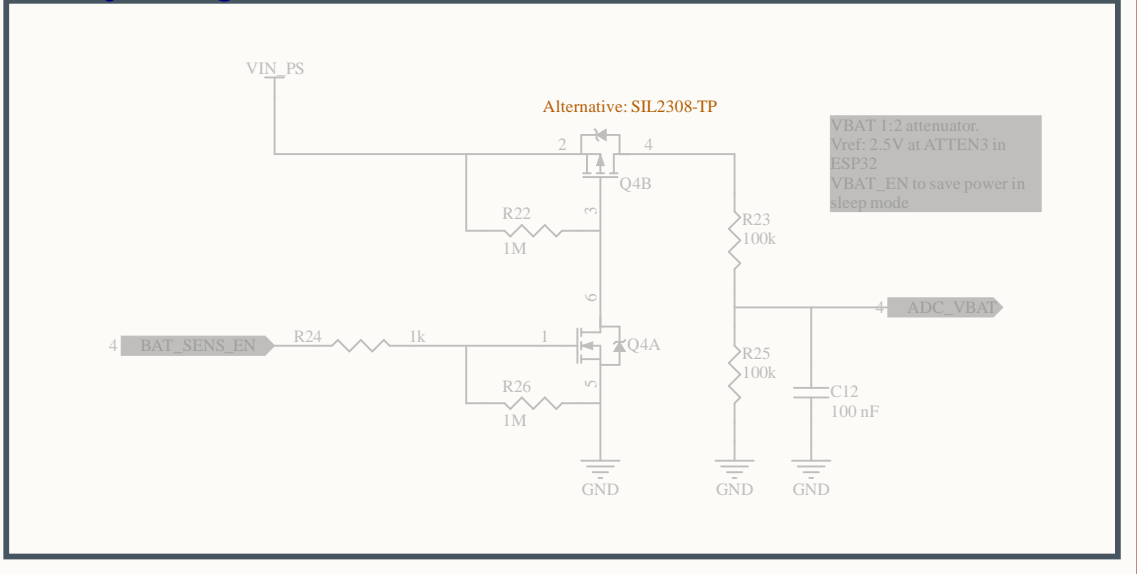
USB-C Connector



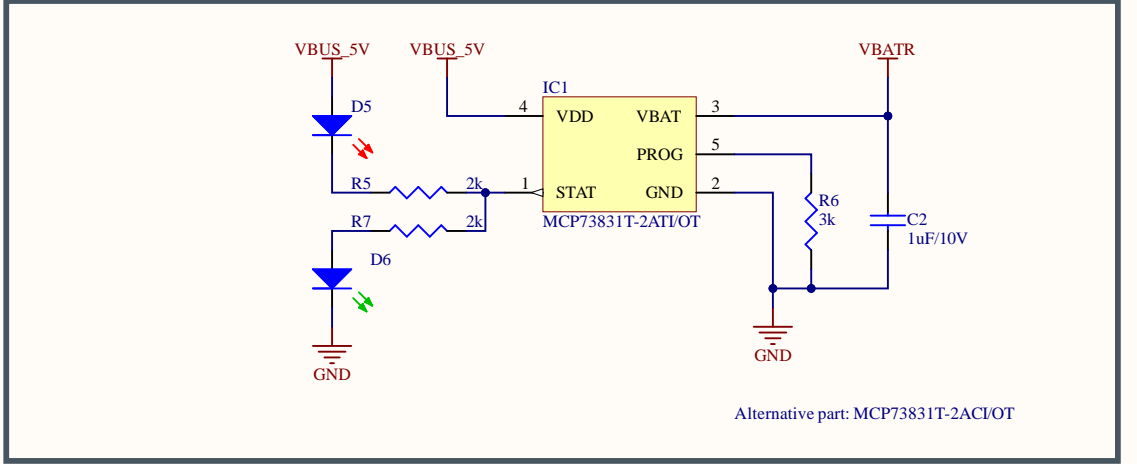
Battery Connector



Battery Voltage Measurement

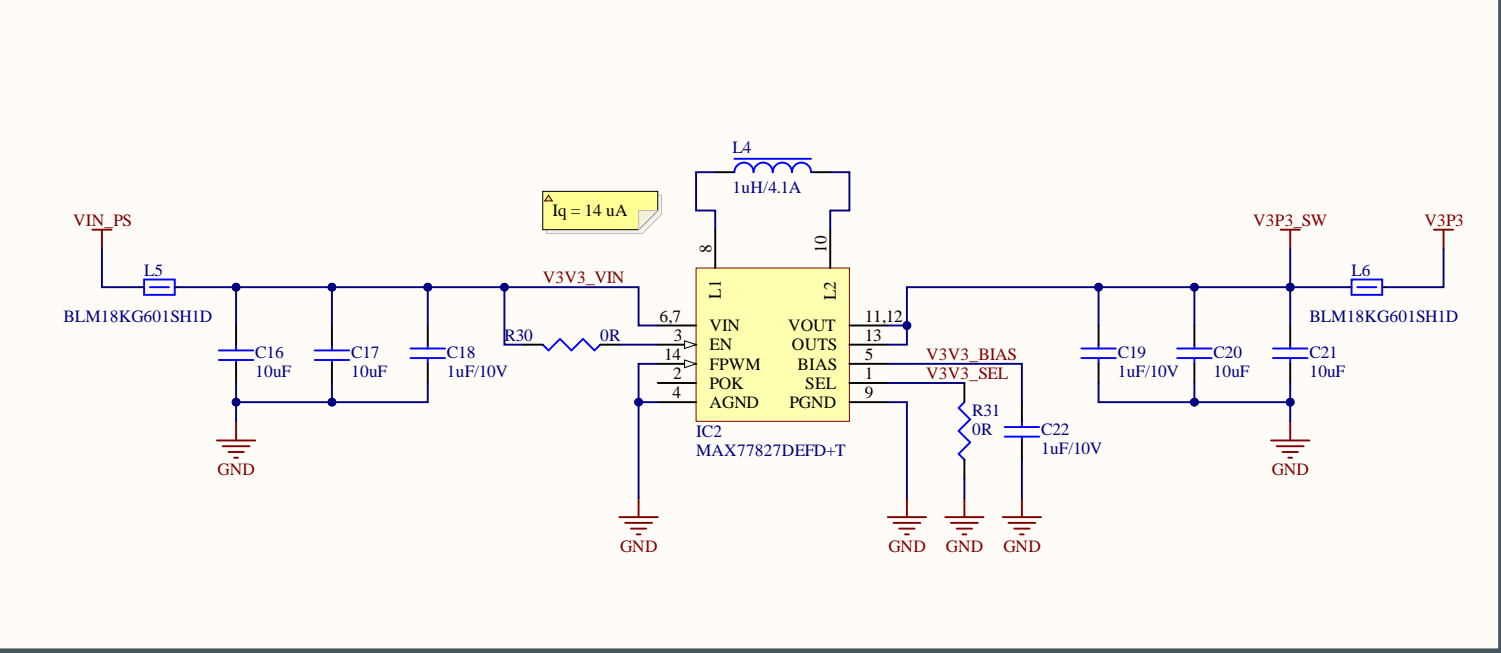


Battery Charger

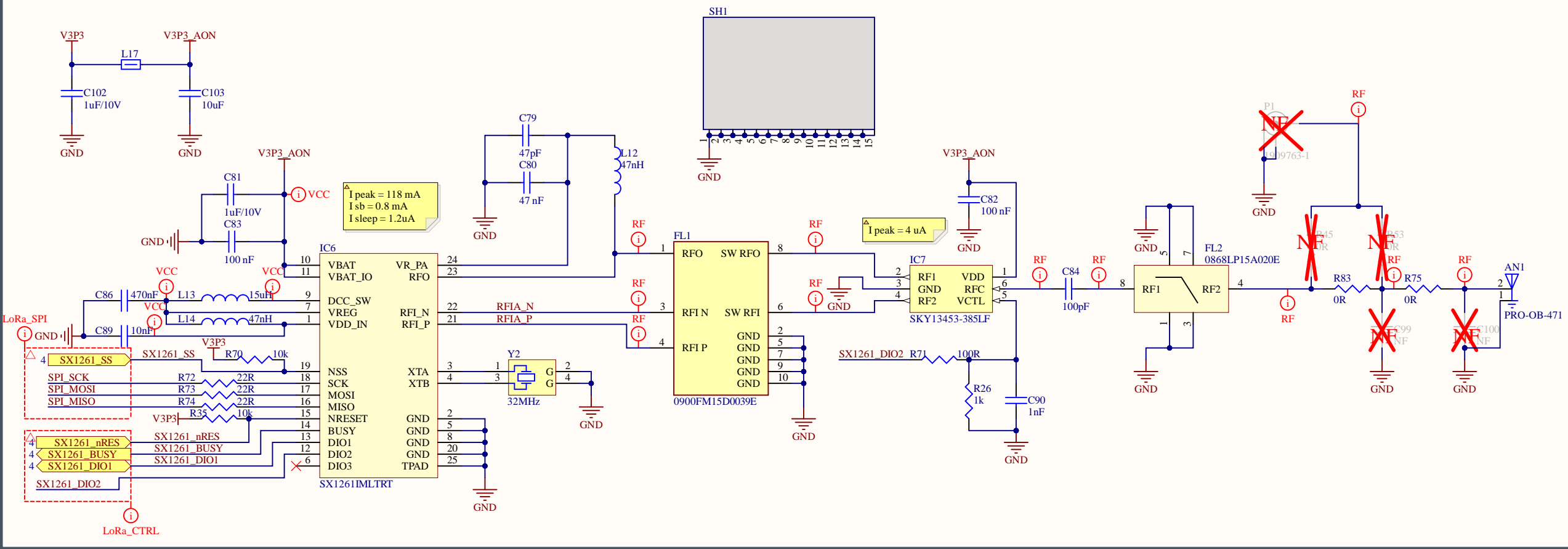


3.3V Buck-Boost Always On

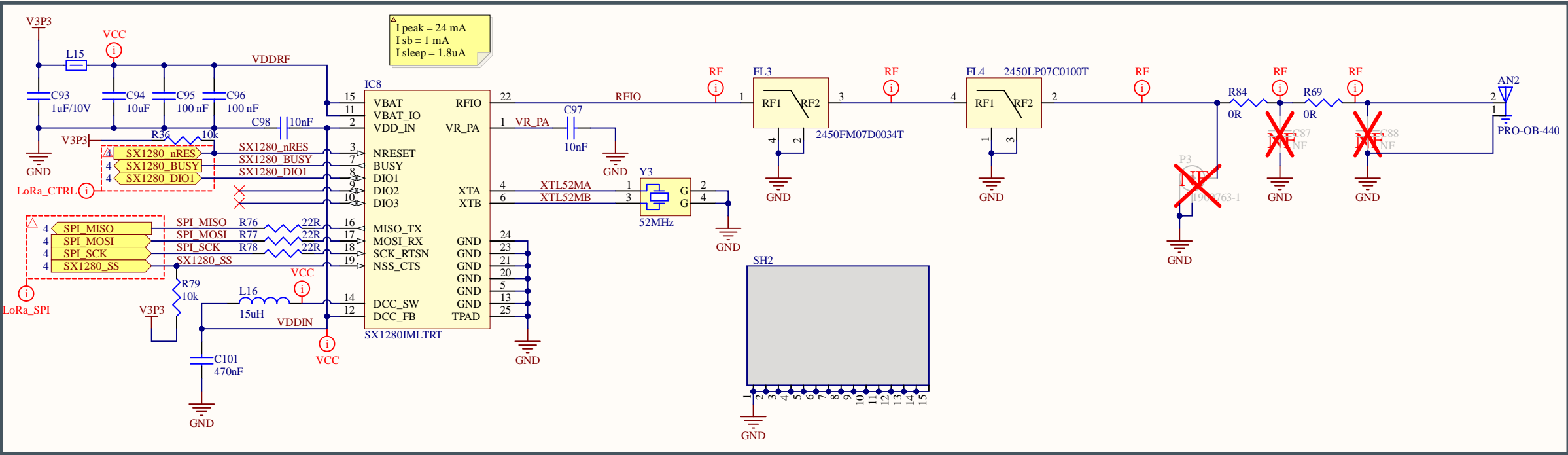
1.8V to 5.3V Input, 900mA Out, 6µA Iq, 2.5MHz Fsw



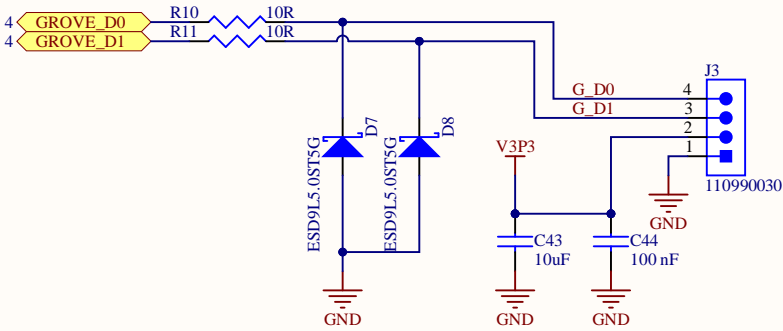
LoRa Sub-GHz Module



LoRa 2.4GHz

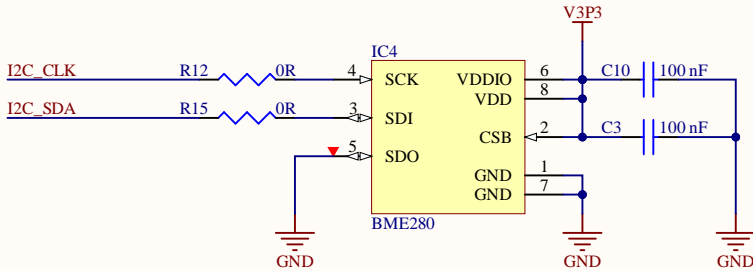


Grove Connector



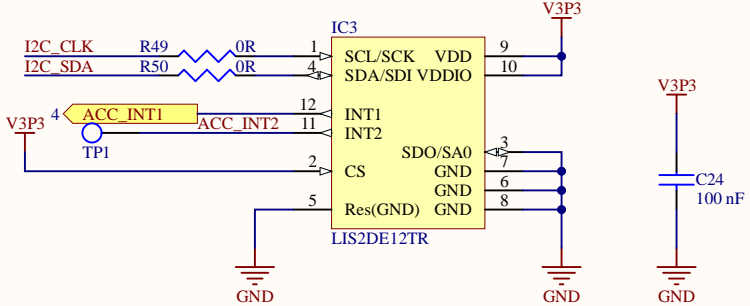
Pressure/Temp/Humidity Sensor

I2C 7 bits Address: 0x76

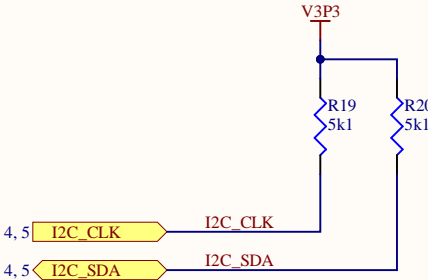


Accelerometer

I2C 7 bits Address: 0x18

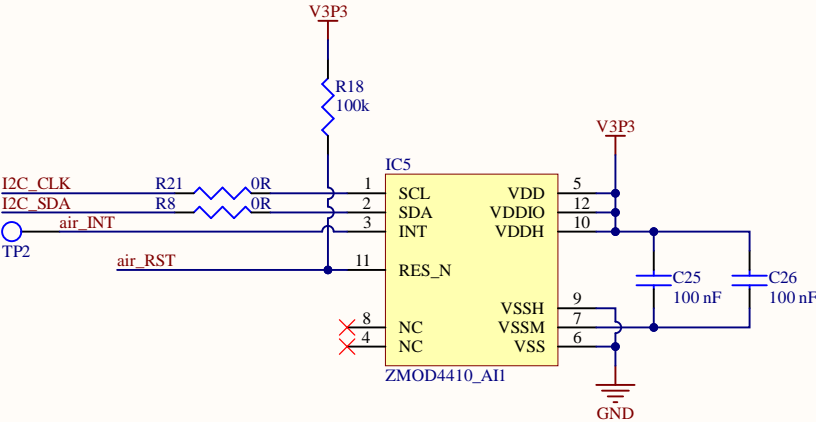


I2C Pull-Ups

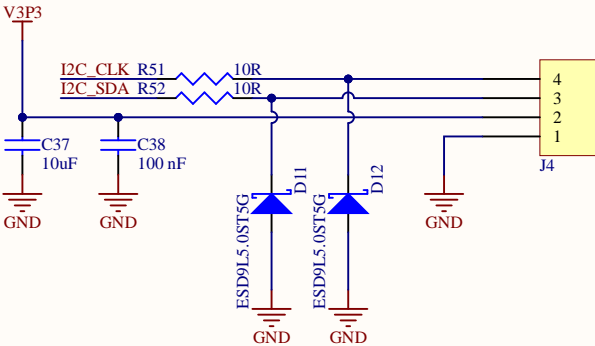


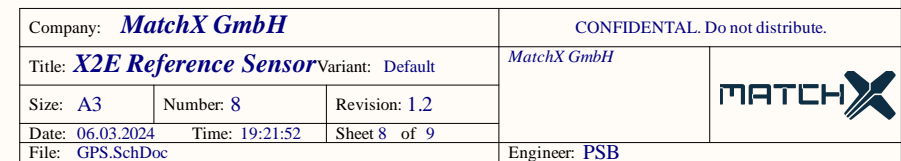
Air Quality Sensor

I2C 7 bits Address: 0x32



STEMMA 4-Pin








# DOC: REVISION HISTORY

## Revision History

## TODO in rev.1.1

CLOCKS (CPU & PCIe)

Company: <i>MatchX GmbH</i>			CONFIDENTIAL. Do not distribute.	
Title: <i>X2E Reference Sensor</i> Variant: Default			<i>MatchX GmbH</i>	
Size: A3	Number: 9	Revision: 1.2		
Date: 06.03.2024	Time: 19:21:52	Sheet 9 of 9		
File: DOC REVISION HISTORY.SchDoc				