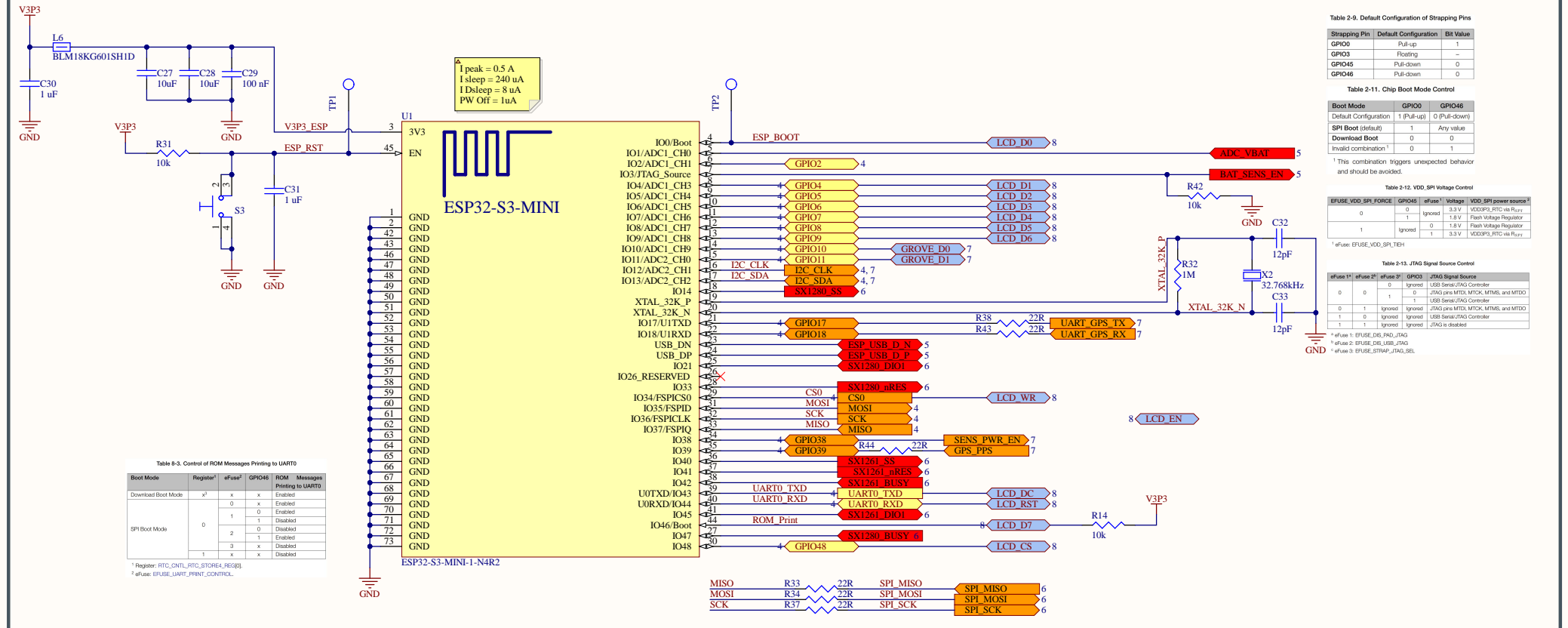
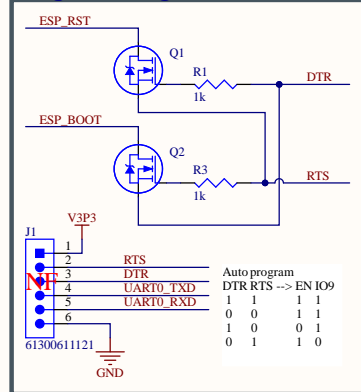


ESP32_S3.SchDoc

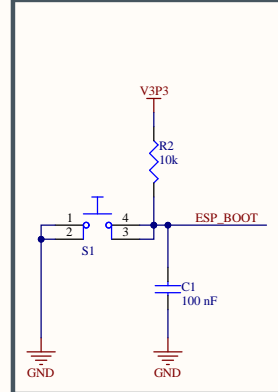
ESP32-S2 Module



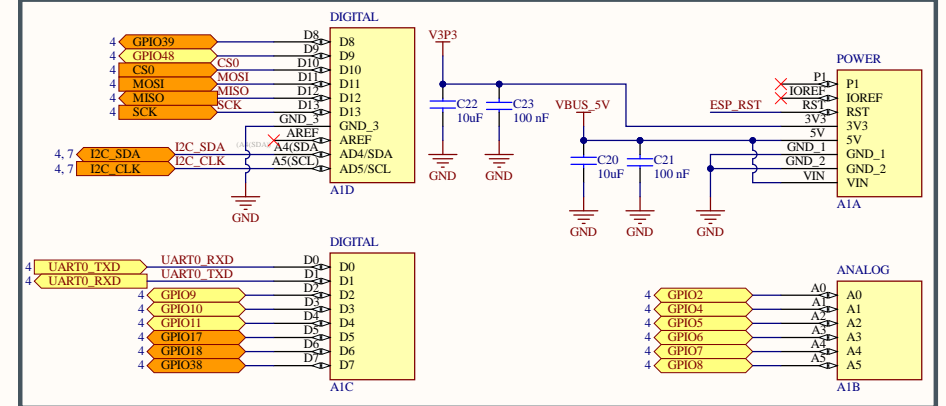
Programming interface



Boot



Arduino Header



A

B

C

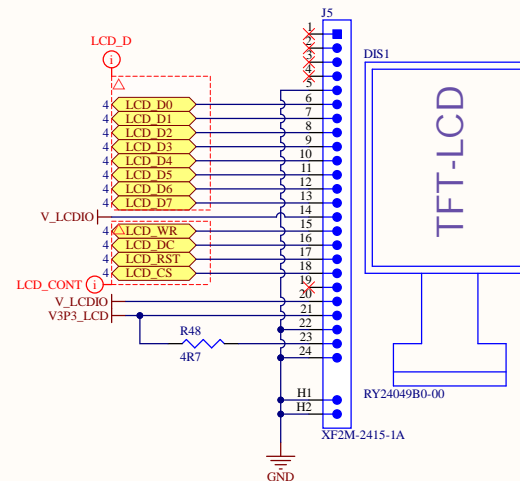
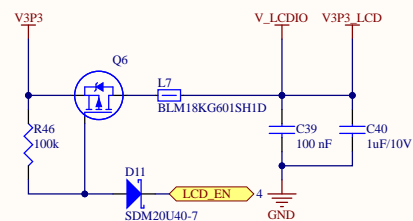
D


A

B

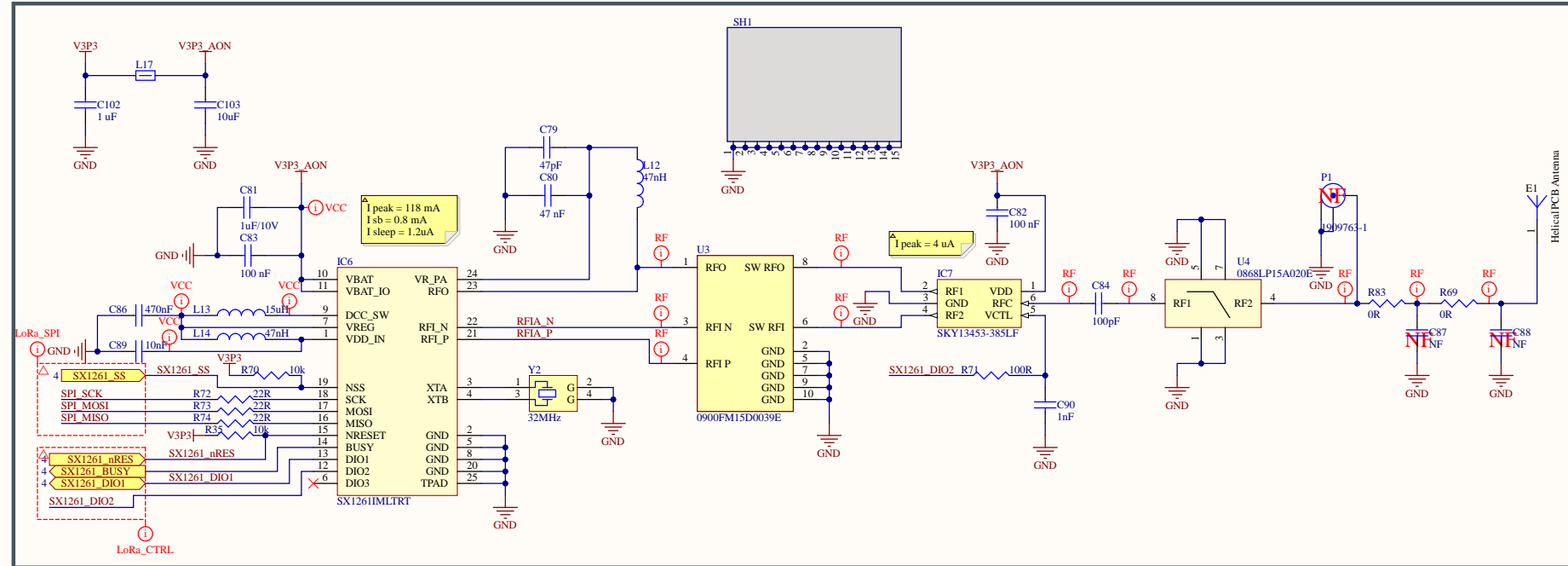
C

D

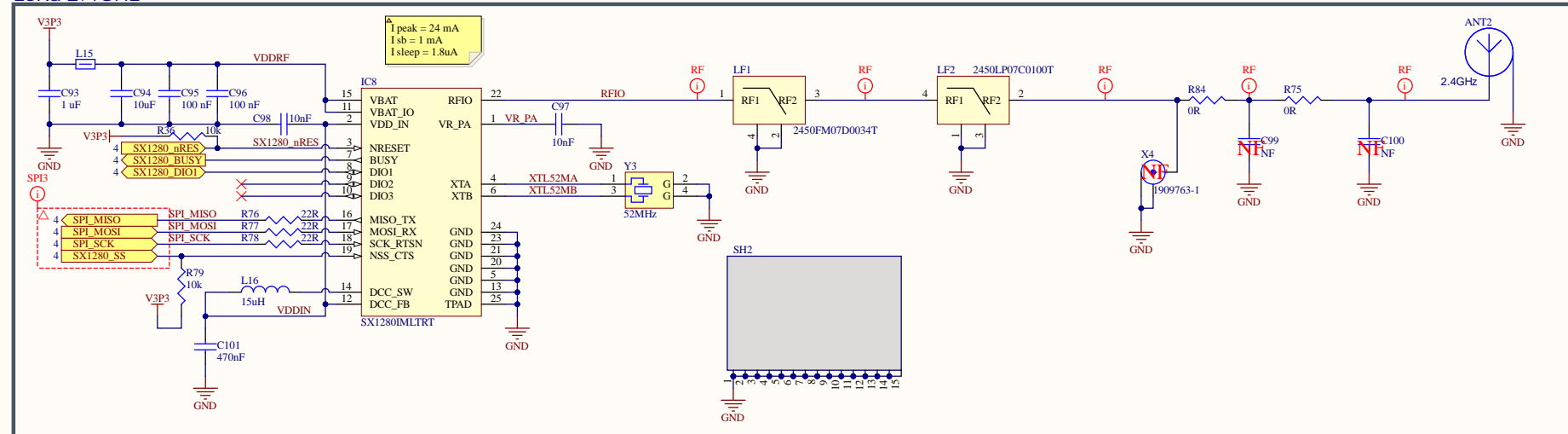


Company: MatchX GmbH			CONFIDENTIAL. Do not distribute.	
Title: X2E Reference Sensor Variant: [No Variations]			MatchX GmbH	
Size: A3	Number: 7	Revision: 1.0		
Date: 13/04/2023	Time: 17:02:21	Sheet 8 of 9		
File: LCD.SchDoc			Engineer: PSB	

LoRa Sub-GHz Module



LoRa 2.4GHz



DESIGN NOTE:
2xAA

X1
S2B-PH-SM4-TB(LF)(SN)

PH2
PH1
2

GND

VBUS_5V

D4

R29
1M

GND

Q5

VIN_PS

C13
10uF

C14
10uF

C15
10uF

GND

F1
1A


VBATR

Alternative: SIL2308-TP

VBAT 1:2 attenuator.
Vref: 2.5V at ATTN3 in ESP32
VBAT_EN to save power in sleep mode

4 BAT_SENS_EN R24 1k 1 Q4A R26 1M GND

2 4 Q4B R22 1M R23 100k R25 100k C12 100 nF GND

Company: <i>MatchX GmbH</i>			CONFIDENTIAL. Do not distribute.	
Title: <i>X2E Reference Sensor</i> Variant: [No Variations]			<i>MatchX GmbH</i>	
Size: A3	Number: 4	Revision: 1.0		
Date: 13/04/2023	Time: 17:02:40	Sheet 5 of 8		
File: POWER.SchDoc				
			Engineer: PSB	

The schematic diagram illustrates the ZMOD4410_A11 module, a yellow rectangular component with various pins. The module is connected to an I2C bus and power sources.

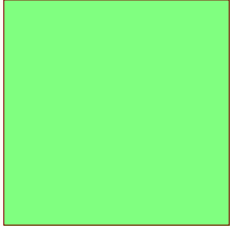
- I2C Interface:**
 - I2C_CLK:** Connected to pin 1 (SCL) via a 0Ω resistor (R21).
 - I2C_SDA:** Connected to pin 2 (SDA) via a 0Ω resistor (R30).
 - air_RST:** Connected to pin 11 (RES_N).
- Power and Ground Connections:**
 - V3P3_SENS:** Connected to pin 5 (VDD) and pin 12 (VDDIO) via a 100kΩ resistor (R18).
 - V3P3_SENS:** Connected to pin 10 (VDDH) via a 100nF capacitor (C25).
 - V3P3_SENS:** Connected to pin 9 (VSSH) and pin 7 (VSSM) via a 100nF capacitor (C26).
 - GND:** Connected to pin 6 (VSS).
- Other Pins:**
 - Pin 3 (INT) is marked with a red 'X' and is not connected.
 - Pin 8 (NC) is marked with a red 'X' and is not connected.
 - Pin 4 (NC) is marked with a red 'X' and is not connected.

The schematic diagram illustrates the I2C interface circuit for the B4B-PH-SM4-TB(LF)(SN) module. The circuit includes the following components and connections:

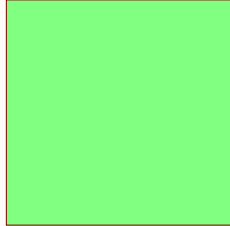
- Connectors:**
 - J4:** A 4-pin connector with pins 1, 2, 3, and 4. Pin 1 is labeled I2C_CLK, pin 2 is labeled I2C_SDA, pin 3 is labeled PH1, and pin 4 is labeled PH2.
 - Module Connector:** A 4-pin connector labeled B4B-PH-SM4-TB(LF)(SN) with pins PH1 and PH2.
- Termination:**
 - Capacitor **C37** (10uF) is connected to the I2C_CLK line (pin 1 of J4) to ground (GND).
 - Capacitor **C38** (100 nF) is connected to the I2C_SDA line (pin 2 of J4) to ground (GND).
- Signal Lines:**
 - The **I2C_CLK** signal is connected to pin 1 of J4.
 - The **I2C_SDA** signal is connected to pin 2 of J4.
 - The **PH1** signal is connected to pin 3 of J4.
 - The **PH2** signal is connected to pin 4 of J4.
- Grounding:**
 - Ground (GND) is connected to the bottom of capacitors C37 and C38.
 - Ground (GND) is connected to the bottom of the PH1 and PH2 pins of the module connector.
- Other Signals:**
 - A **V3P3_SENS** signal is connected to the I2C lines (pins 1 and 2 of J4).



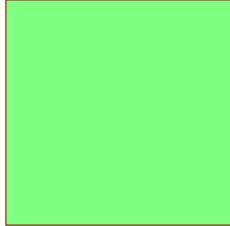
Designator
COVER PAGE.SchDoc



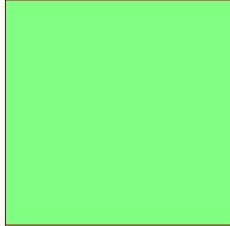
Designator
BLOCK DIAGRAM.SchDoc



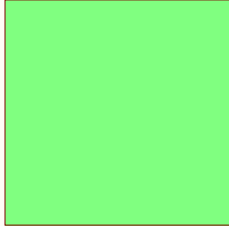
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DOC REVISION HISTORY.SchDoc



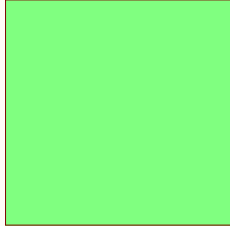
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ESP32_S3.SchDoc



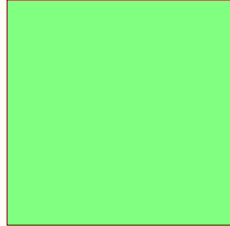
Designator
SENSORS.SchDoc



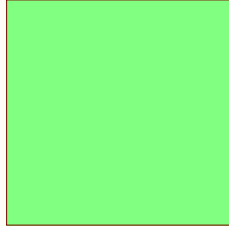
Designator
POWER.SchDoc



Designator
LoRa.SchDoc



Designator
LCD.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 Tittle


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: MatchX			CONFIDENTIAL. Do not distribute.	
Title: X2E Reference Sensor Variant: [No Variations]			MatchX * * * *	
Size: A3	Number: 1	Revision: V1.0		
Date: 13/04/2023	Time: 17:02:49	Sheet 1 of 8		
File: TOP SHEET.SchDoc				
			Engineer: PSB	