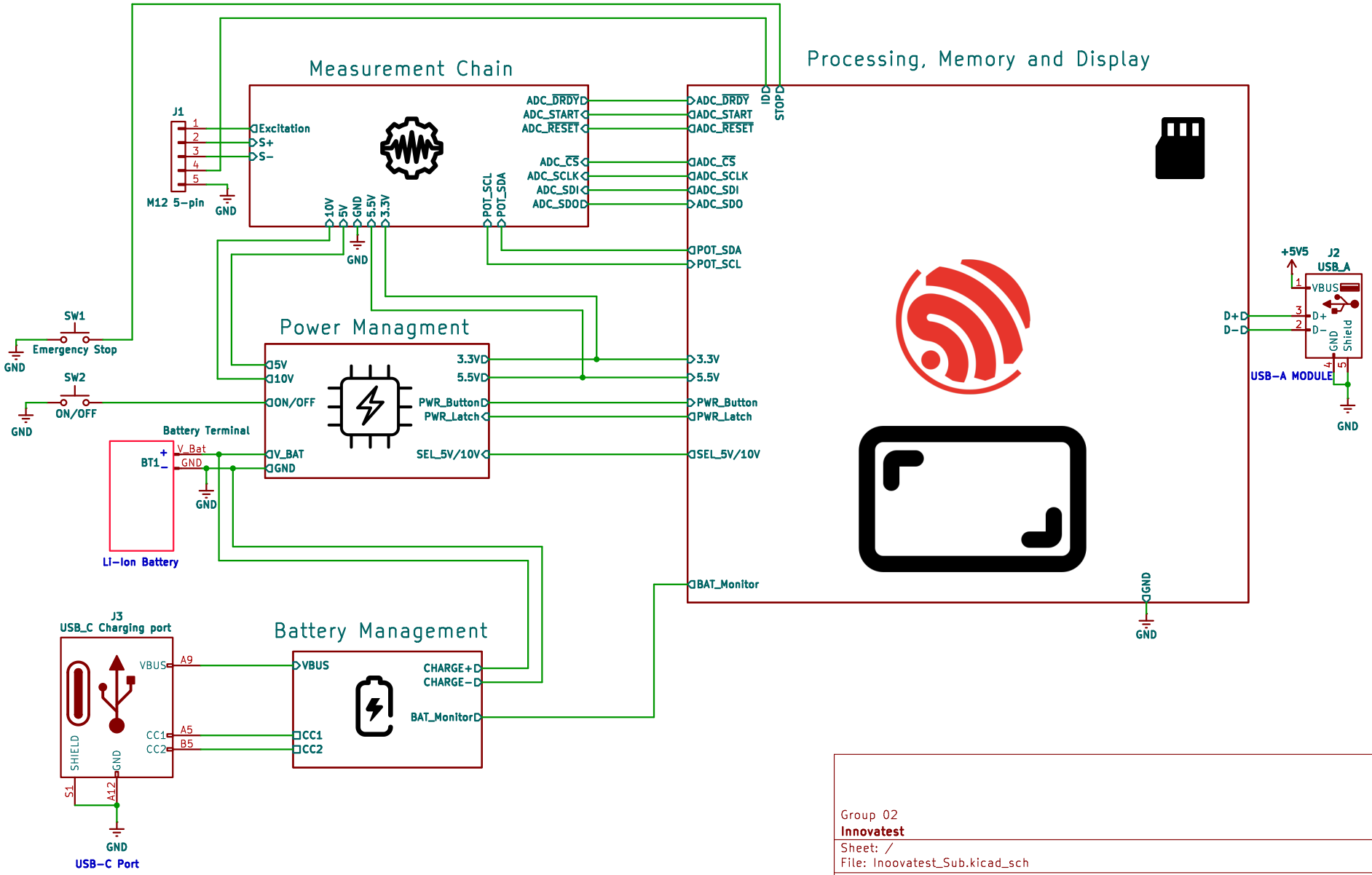
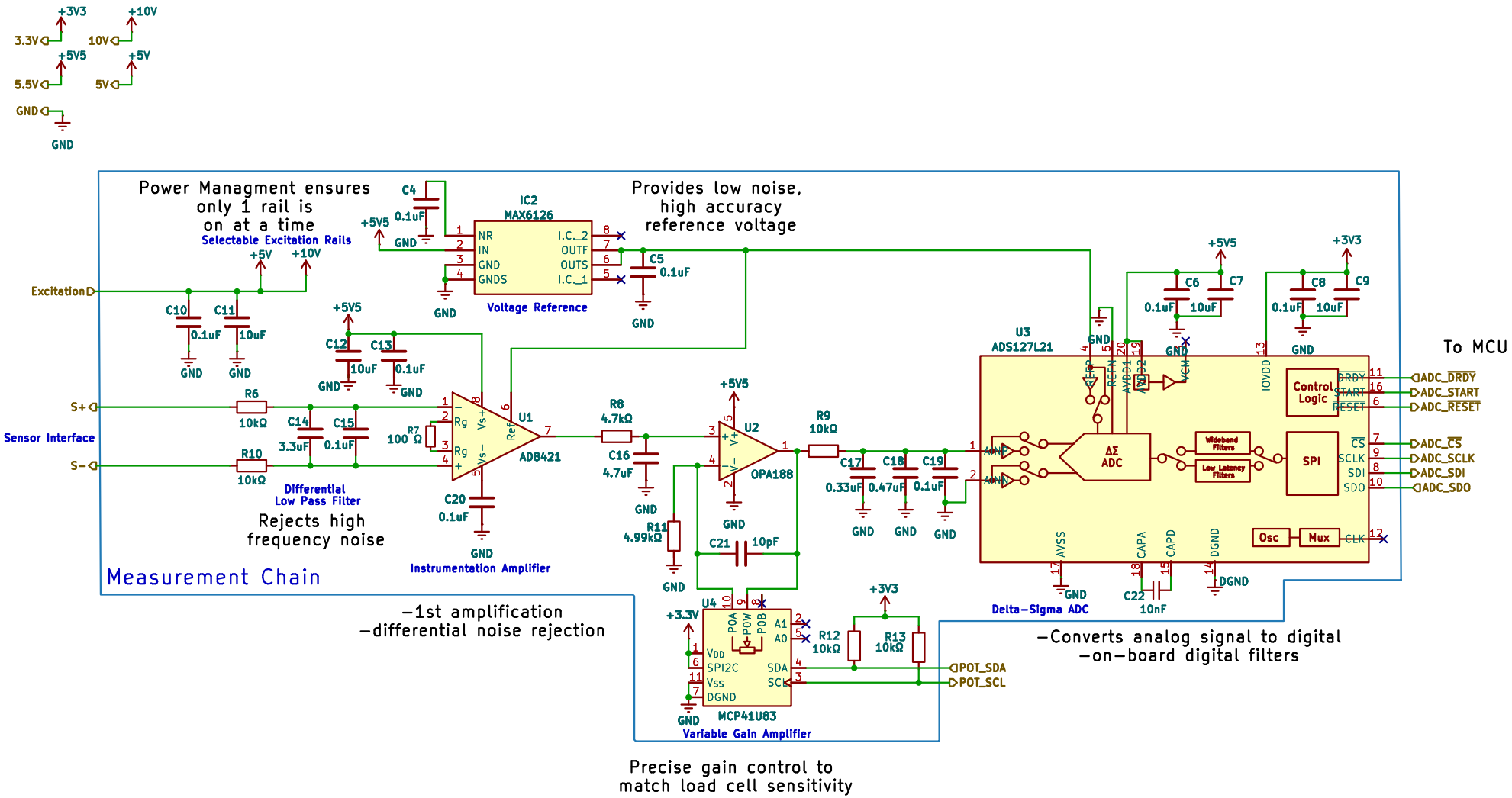


Group 02
Innovatest
Sheet: /
File: Inoovatest_Sub.kicad_sch

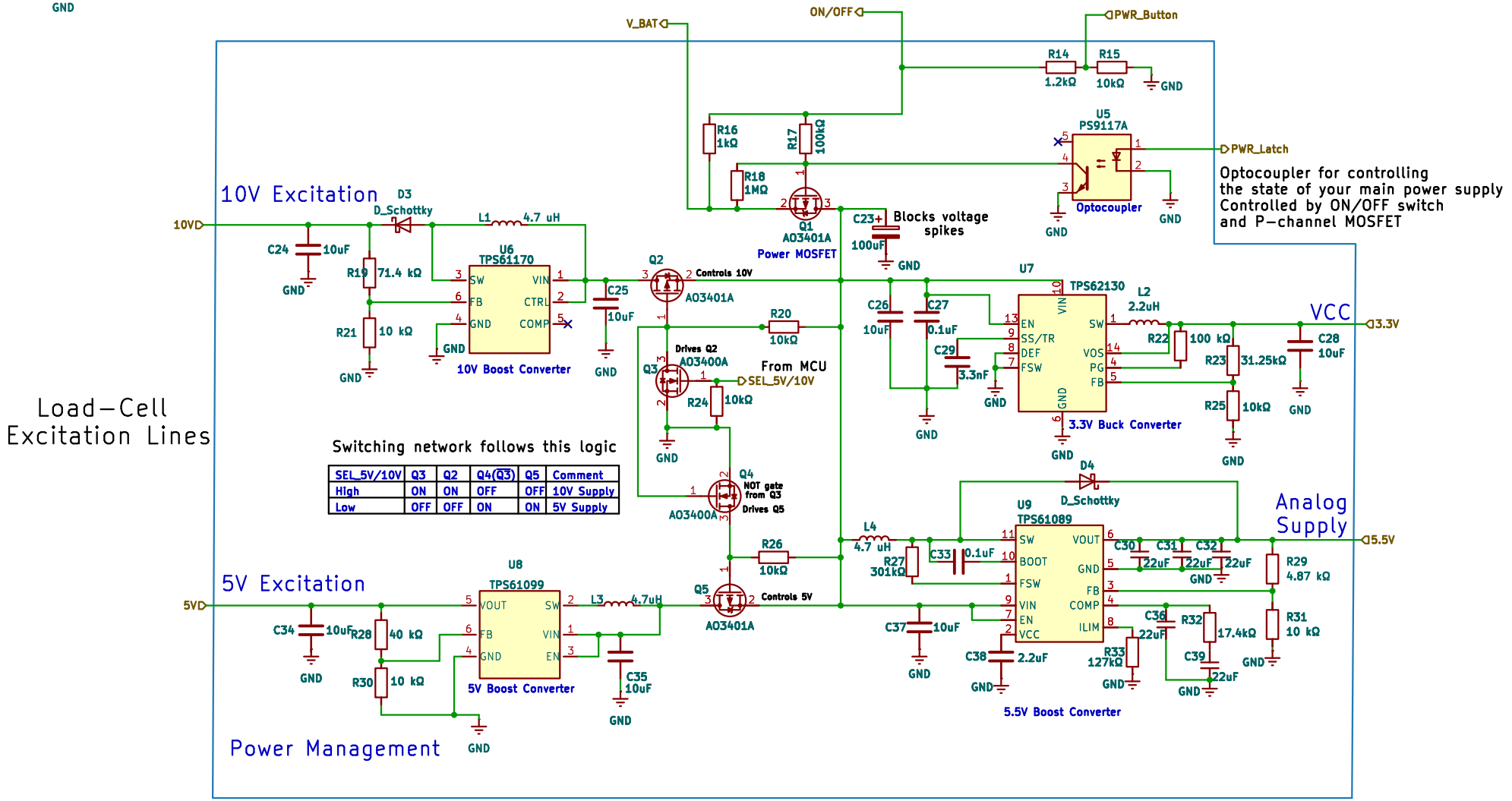
Title: Mobile Force Verification Unit

Size: A4	Date: 2025-11-30	**Rev: 1.0**
KiCad E.D.A. 9.0.3		Id: 1/5



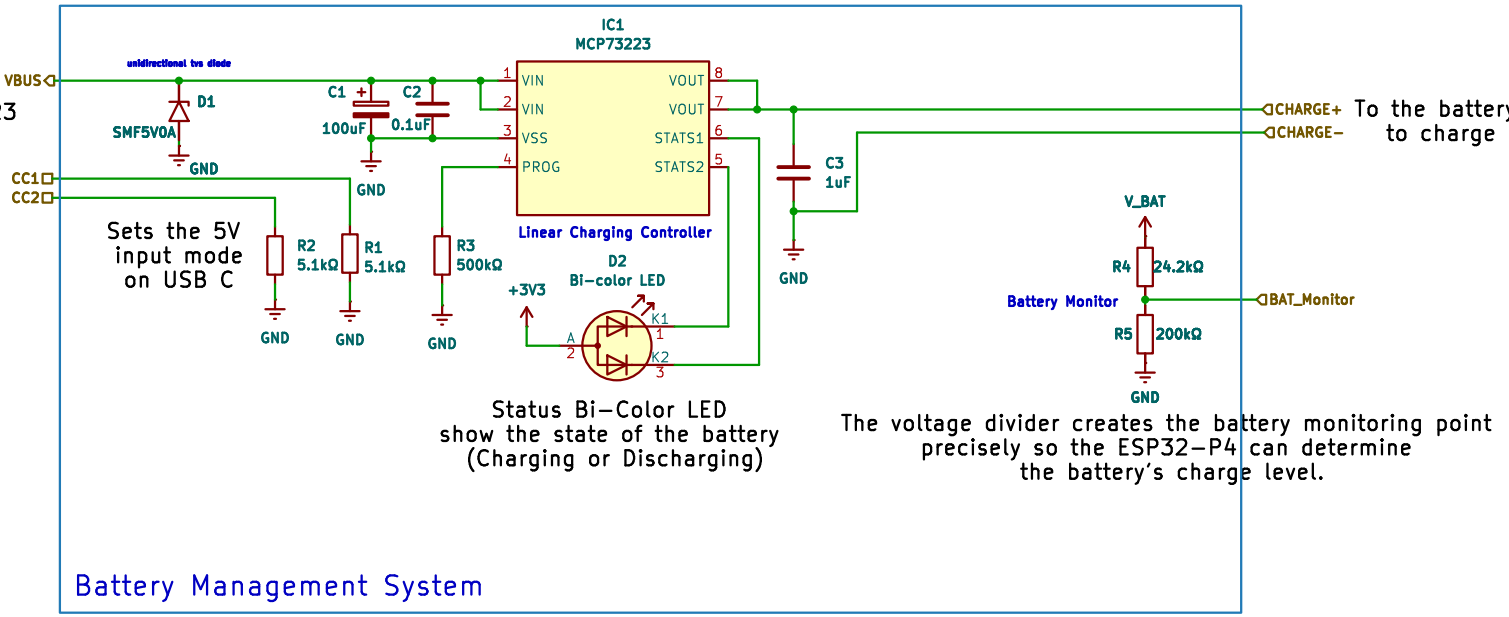
Sheet: /Measurement Chain/		
File: measurement−chain.kicad_sch		
Title: Measurement Chain		
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.3		Id: 4/5

Power Mangment IC's to mange and regulate power, each channel regulates Power based on our components specfic Specificatioon and ensures that each component in our Main circuit and Measuremtnt chain is supplied with Noise clean specfic Voltage



Sheet: /Power Managment/		
File: power-regulation.kicad_sch		
Title: Power Management		
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.3		Id: 4/5

USB C Supplying 5V into MCP73223
battery charge management
controller feeding the Battery



Sheet: /Battery Management/		
File: battery−management.kicad_sch		
Title: Battery Managment		
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.3		Id: 3/5

Connect to ID line in M12
to identify load cell model

To control ADC

To Receive
ADC Data
(SPI)

To control
digital poti
(I2C)

To Monitor
Battery level

To Monitor and Control
main power
switching circuit

To select whether to
use 5V or 10V excitation
at load cells

Short delay for
smooth start-up

Non-Volatile Storage to:
-Store User settings
-UI static images, Fonts and Menu Layout
-Data Logging

ESP32-P4 :
-Controls entire system
-Retrieves the program and graphics
from the Flash memory
-Processes the high-precision sensor data
-Drives the 10-inch screen to present
the results to the user.

Data lines
USB_A point for Data EXPORT
(also programming during assembly)

Connector for
TFT 10'' Touch LCD Screen
HMI

Processing, Memory and LCD

Sheet:	/Processing, Memory and Display/
File:	MCU_and_display.kicad_sch
Title:	Processing, Memory and Display
Size:	A3
Date:	2025-11-28
Rev:	
KiCad E.D.A.	9.0.3
Id:	5/5