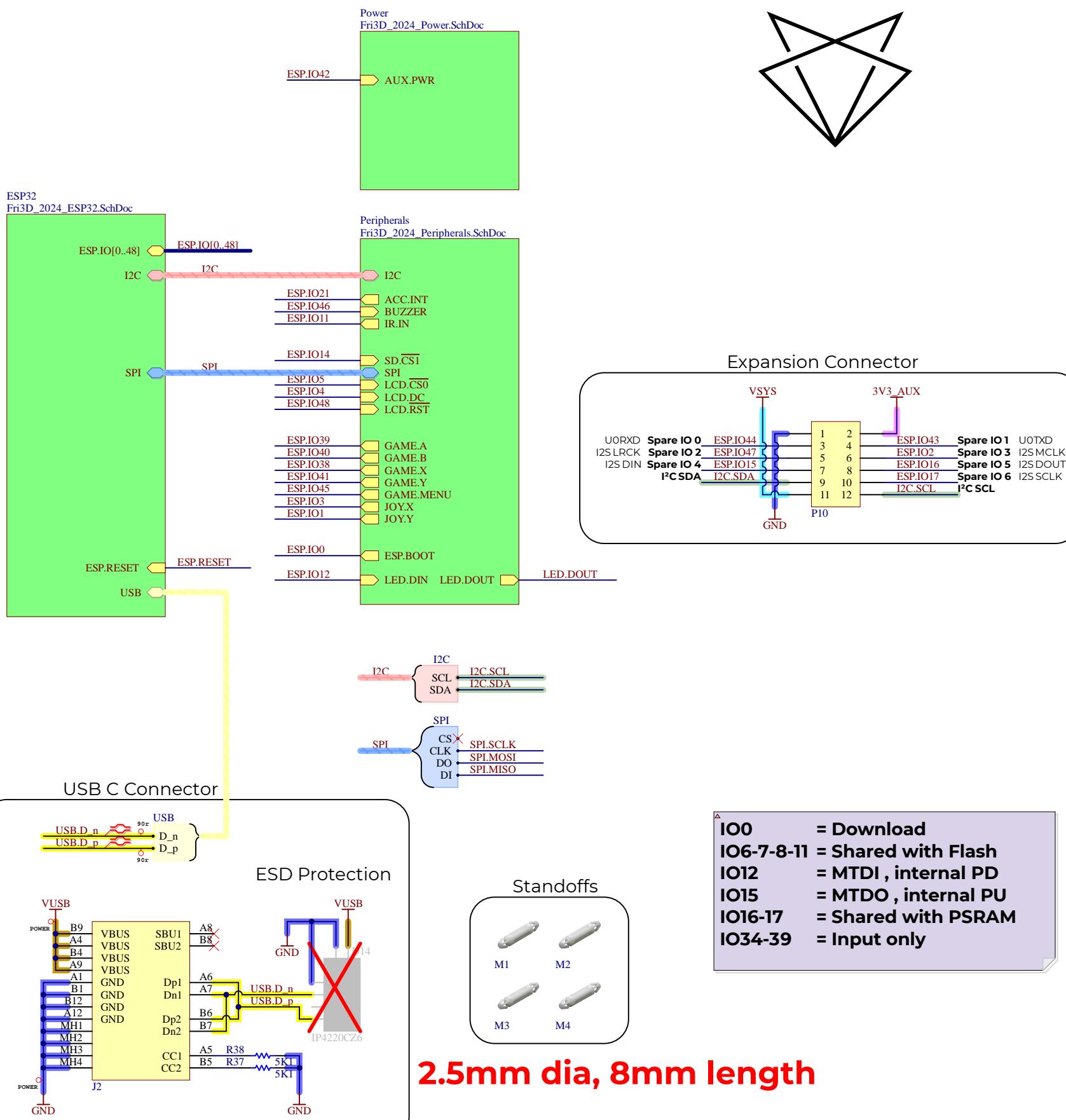


Rev. 00 : Initial release

Rev. 01 : Minor fixes, ready for mass production

Fri3D Badge 2024

Top Level

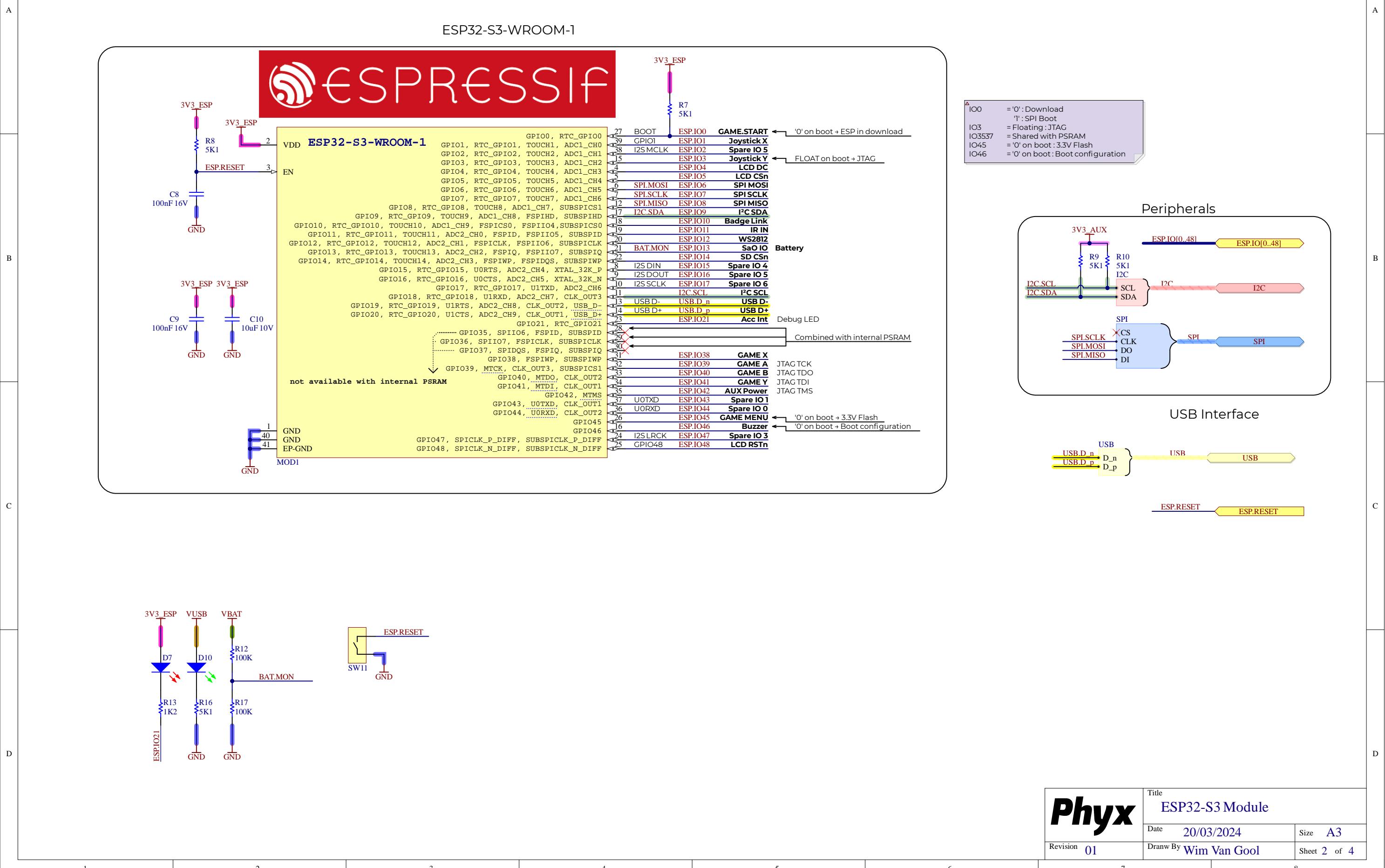


M5 M6 M7

Phyx		Title	
		Top Level	
		Date	Size
		20/03/2024	A3
Revision	01	Drawn By	Wim Van Gool
		Sheet	1 of 4

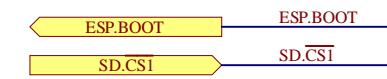
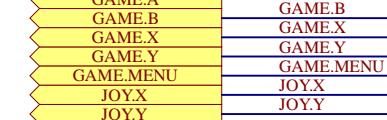
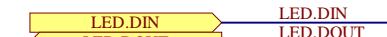
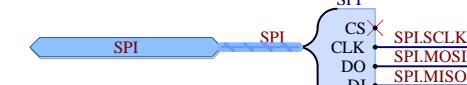
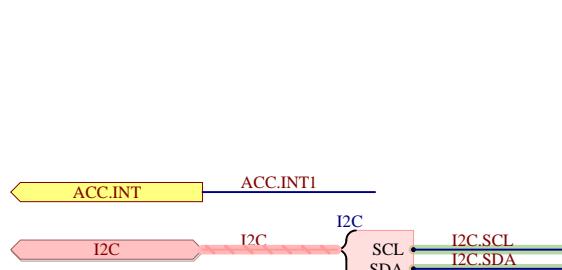
Fri3D Badge 2024

ESP32-S3 Module

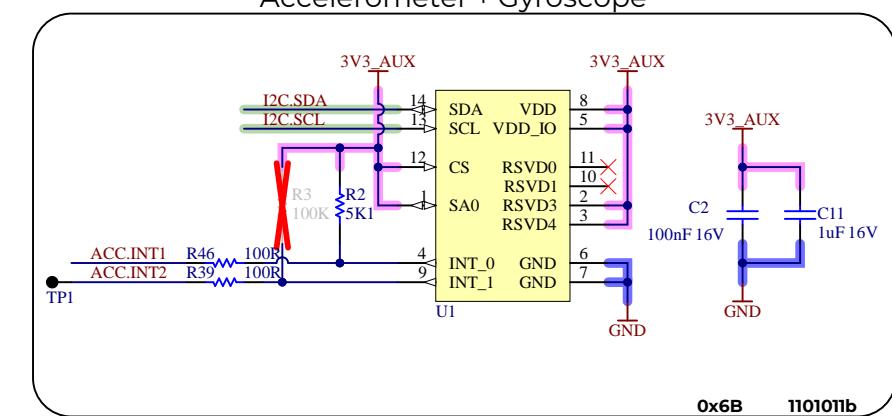


Fri3D Badge 2024

Peripherals

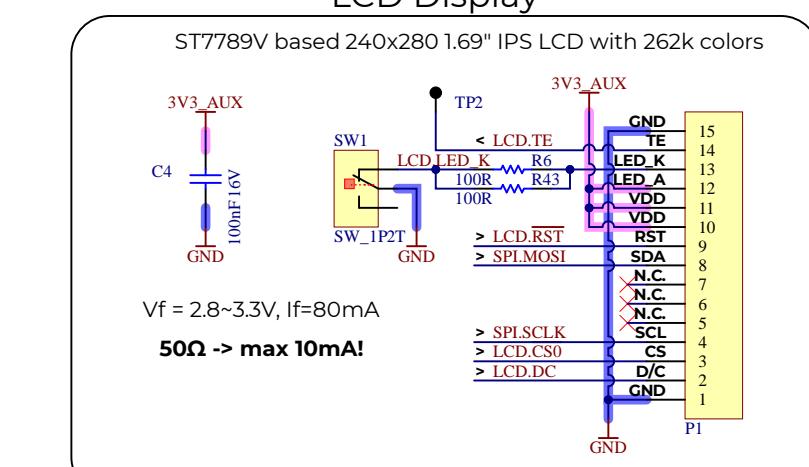


Accelerometer + Gyroscope

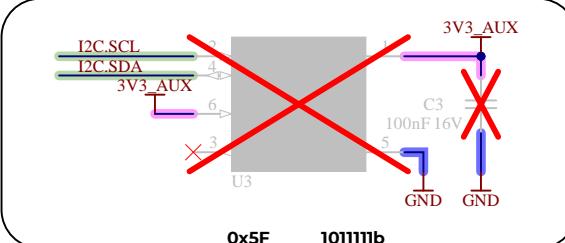


LCD Display

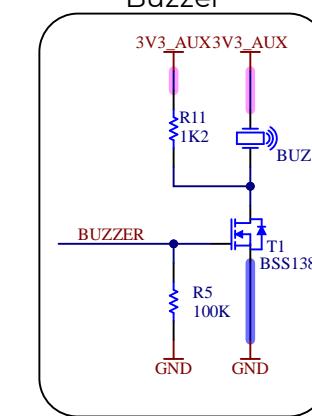
ST7789V based 240x280 1.69" IPS LCD with 262k colors



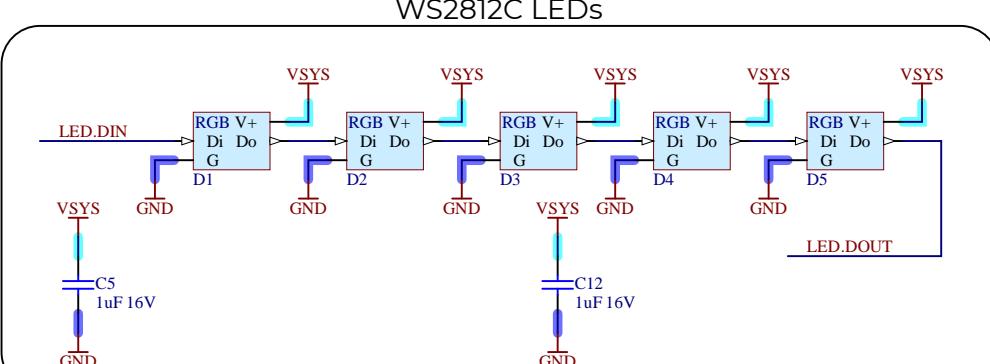
Temperature & Humidity



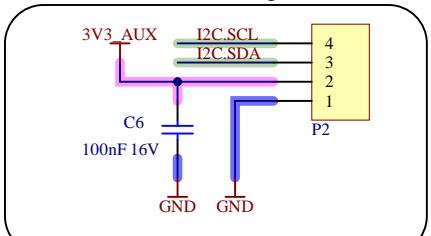
Buzz



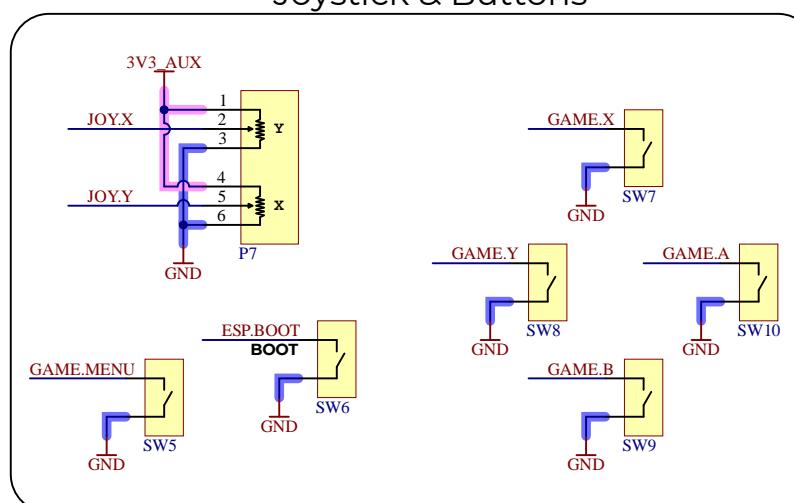
WS2812C LEDs



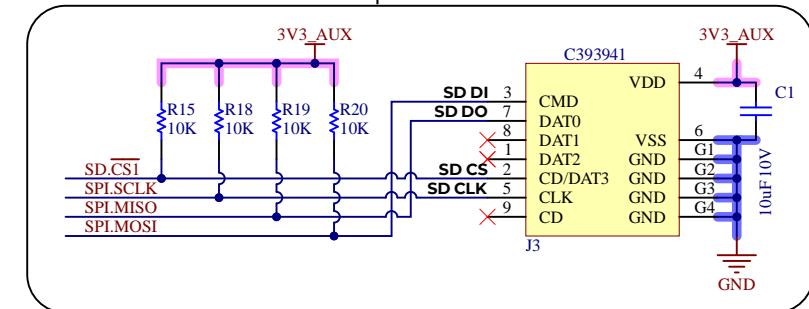
Stemma OT



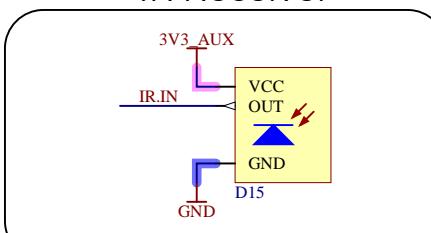
Joystick & Buttons



μSD CARD

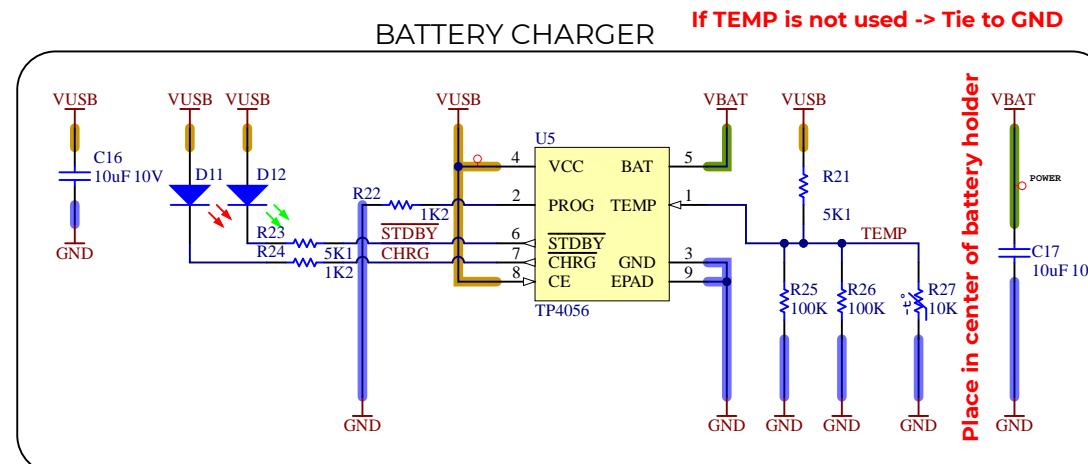


IR Receiver



Fri3D Badge 2024

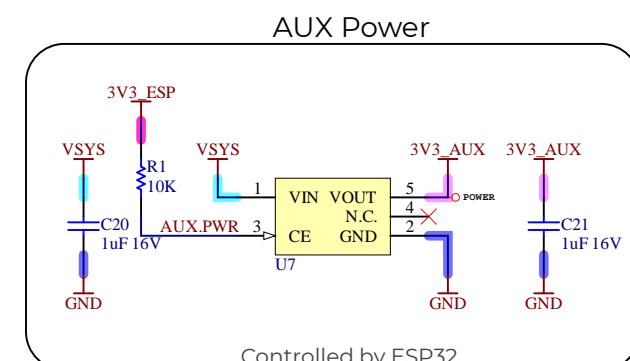
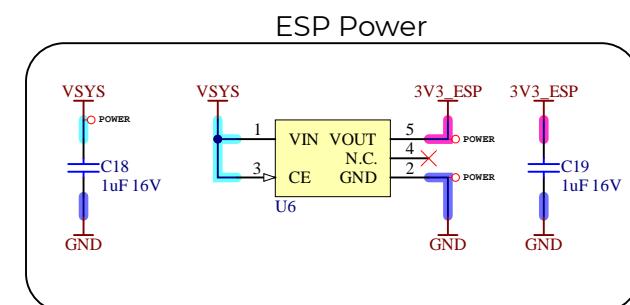
Power



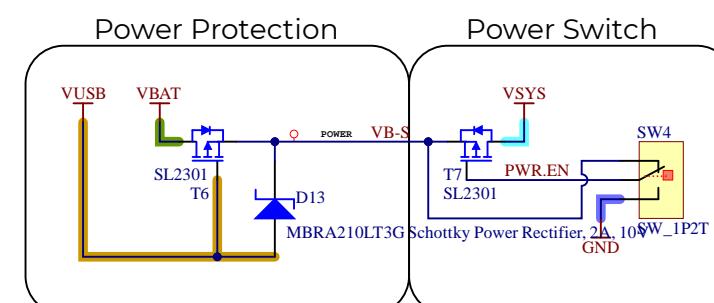
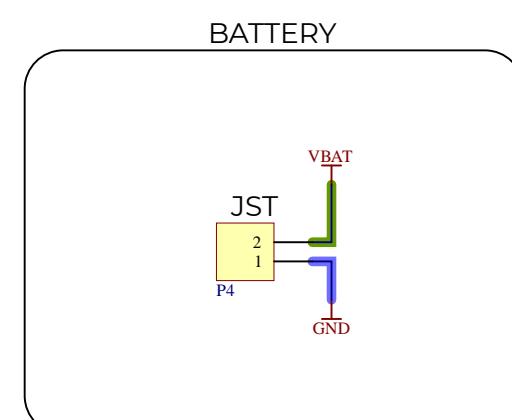
Max. 1A Charge current
1K2 = 1A Charge current
2K4 = 0.5A Charge current
10K = 0.13A Charge current

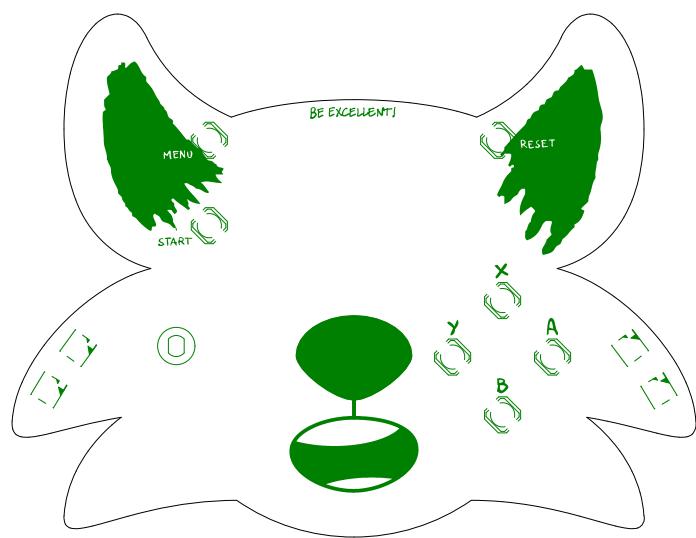
Charge State	RED	GREEN
Charging	ON	OFF
Done Charging	OFF	ON
Not Charging	OFF	OFF
No Battery	Blink	ON

Stop charging if TEMP pin's voltage is below 45% or above 80% of supply voltage VIN
NTC specs:
2K521 @ 60°C V temp = $(5V * R2) / (R1+R2)$ V temp @ 60°C = 1.59V
4K401 @ 45°C V temp @ 45°C = 2.21V
10K @ 25°C V temp @ 25°C = 3.101V
32K33 @ 0°C V temp @ 0°C = 3.97V
45% of 5V = 2.25V R1 = 5K1
80% of 5V = 4V R2 = 50K // NTC

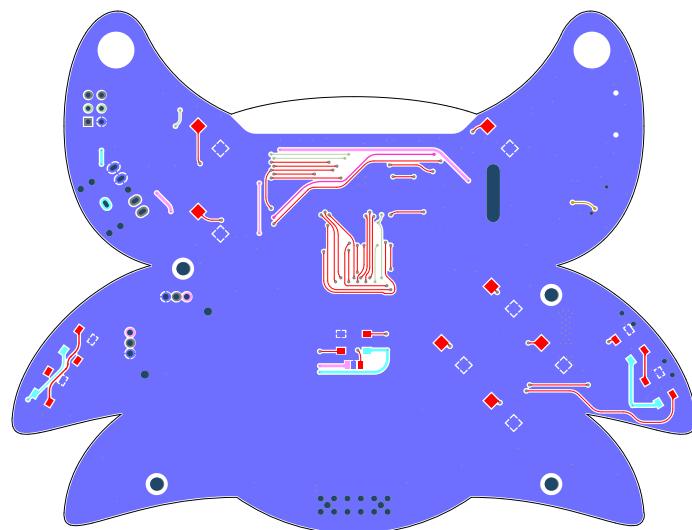


AUX.PWR → AUX.PWR

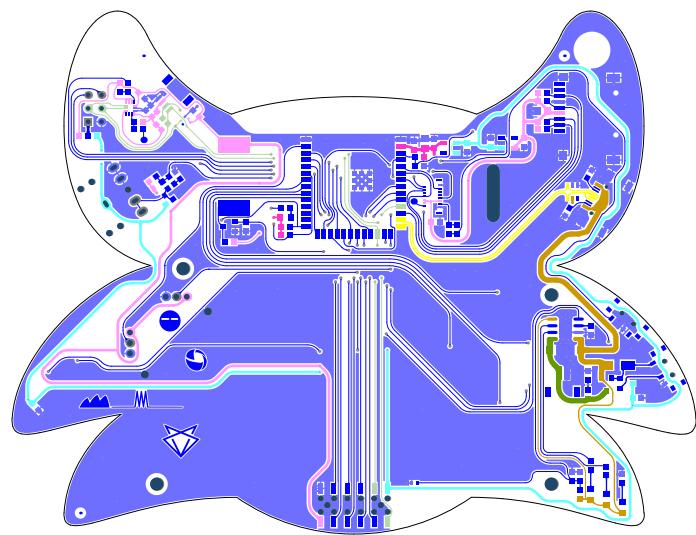




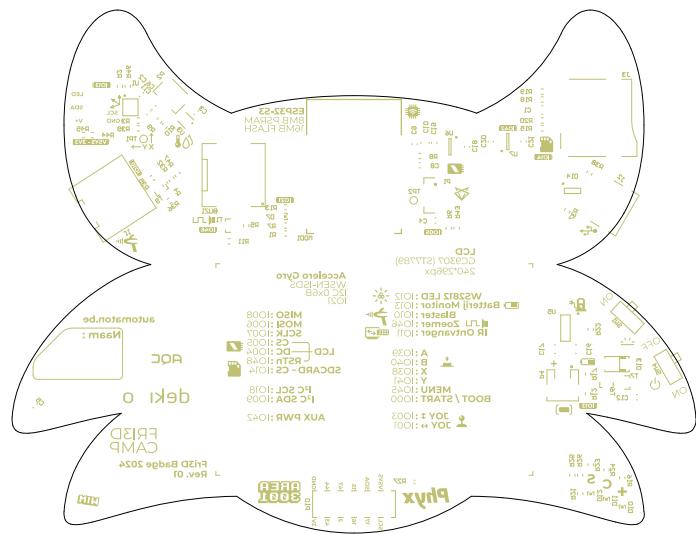
Phyx	Document Fri3D Badge 2024
Layer Name	Top Overlay
Date	16/04/2024
Rev	01
Designer WimUG	Document Fri3D_2024_01.PcbDoc



Phyx	Document Fri3D Badge 2024
Layer Name Top Layer	
Date 16/04/2024	Rev 01
Designer WimUG	Document Fri3D_2024_01.PcbDoc

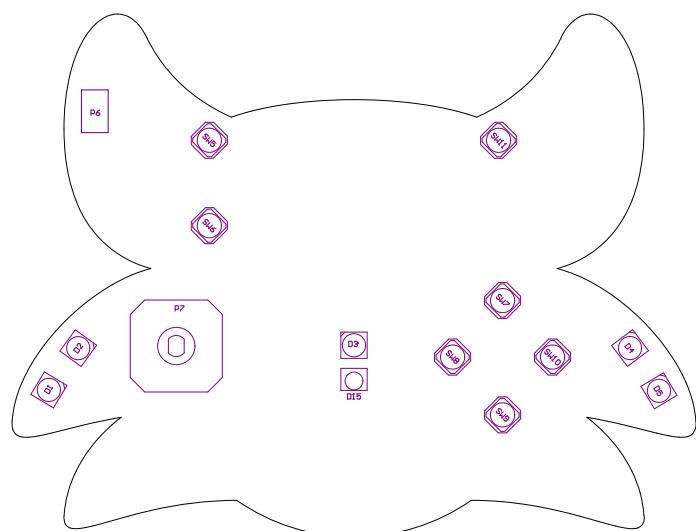


Phyx	Document Fri3D Badge 2024
Layer Name	Bottom Layer
Date	16/04/2024
Rev	01
Designer WimUG	Document Fri3D_2024_01.PcbDoc

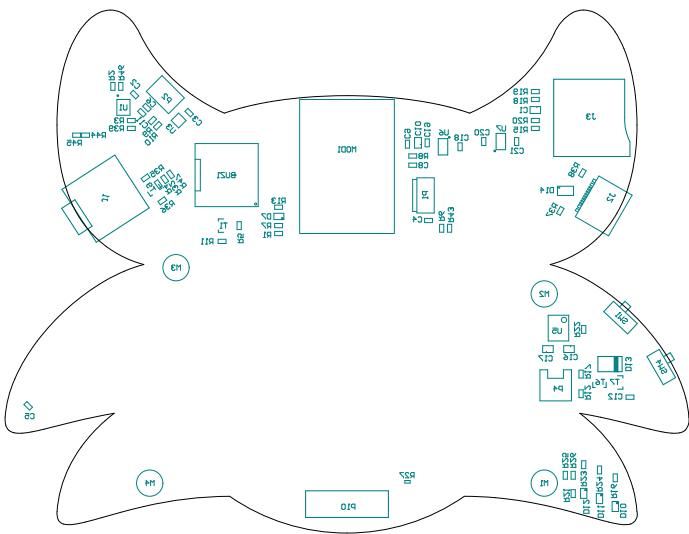


Phyx

	Document	Fri3D Badge 2024
	Layer Name	Bottom Overlay
Date	Rev	01
16/04/2024		



Phyx	Document	Fri3D Badge 2024
	Layer Name	Top Assembly
Date	16/04/2024	Rev 01
Designer	WimUG	Document
		Fri3D_2024_01.PcbDoc



Phyx

	Document	Fri3D Badge 2024
	Layer Name	Bottom Assembly
	Date	Rev
	16/04/2024	01
Designer WimUG	Document	
	Fri3D_2024_01.PcbDoc	

