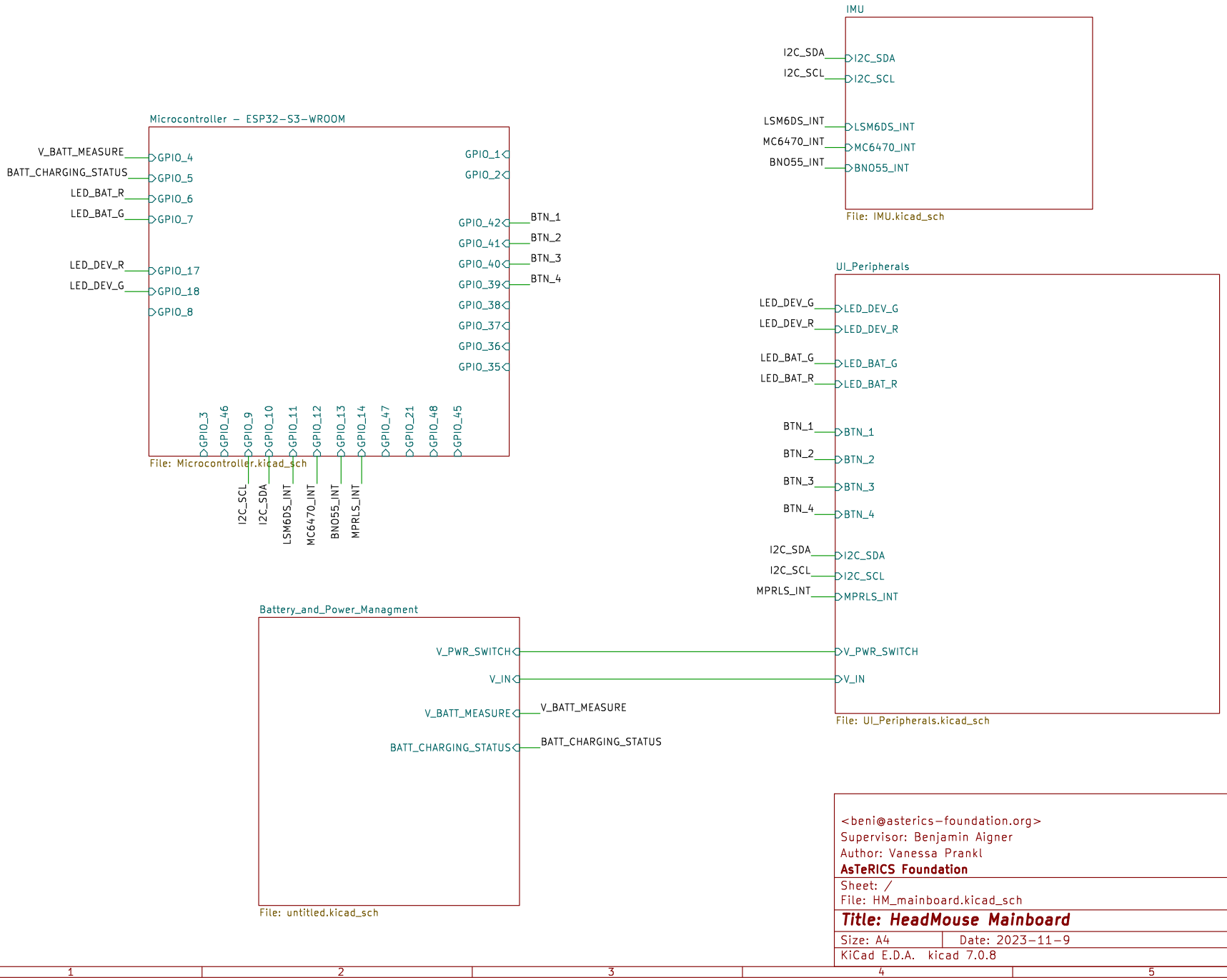


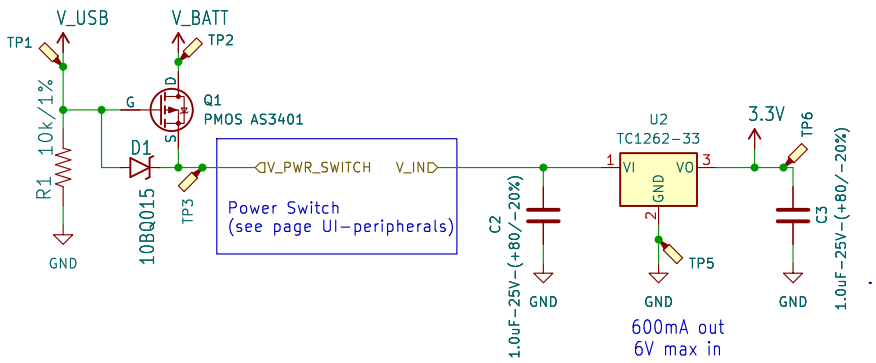
<beni@asterics-foundation.org>
Supervisor: Benjamin Aigner
Author: Vanessa Prankl
AsTeRICS Foundation

Sheet: /
File: HM_mainboard.kicad_sch

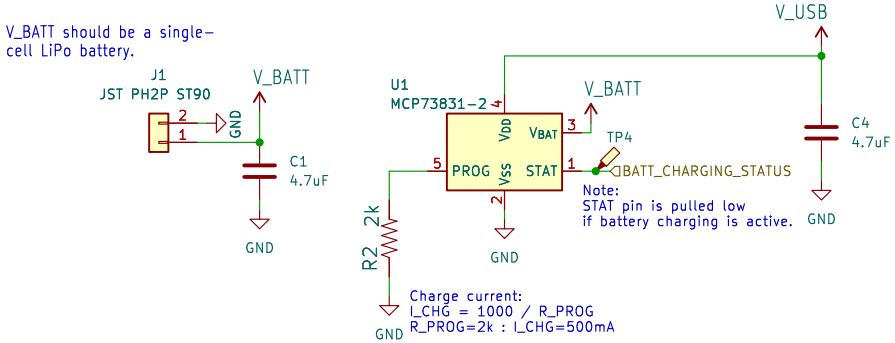
Title: HeadMouse Mainboard

Size: A4	Date: 2023-11-9	**Rev: 1**
KiCad E.D.A. kicad 7.0.8		Id: 1/5

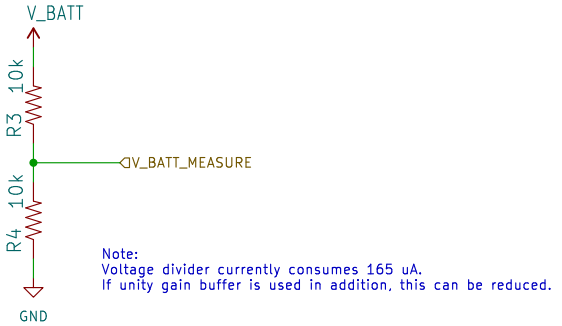
Voltage Regulator



Lithium-Polymer Battery Charger (1-cell)



Battery Charge Level Measurement



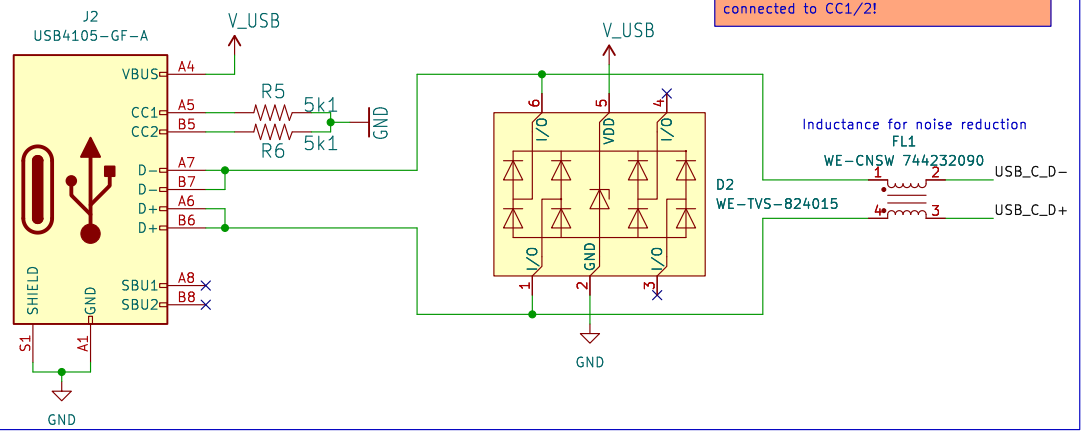
Sheet: /Battery_and_Power_Managment/
File: untitled.kicad_sch

Title: Battery and Power Management

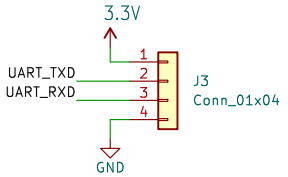
Size: A4	Date:	Rev: V1
KiCad E.D.A. kicad 7.0.8		Id: 2/5

USB-C Plug for flashing and battery charging

NOTE
USB-C suplly max. 2,5 W (= 5V, 500 mA)
Otherwise PD-Controller needs to be connected to CC1/2!

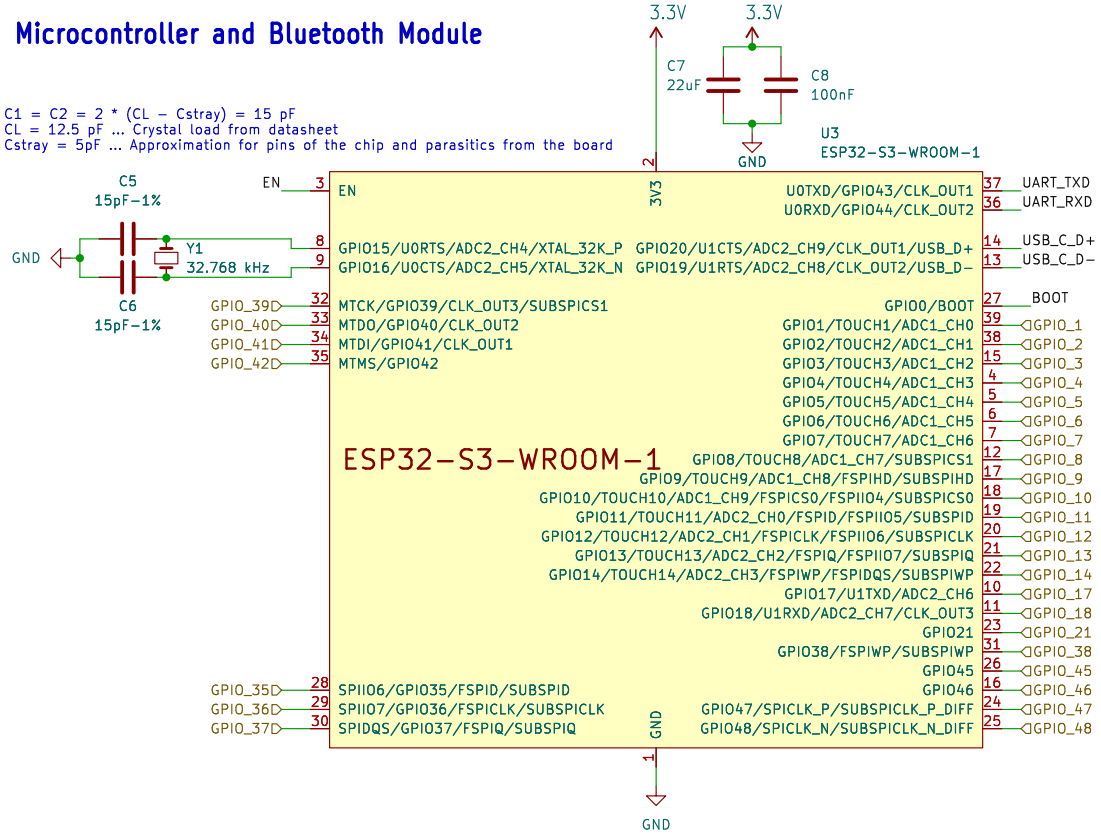


UART Pin-Header

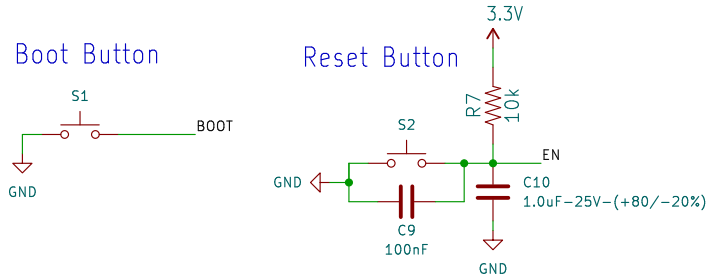


Microcontroller and Bluetooth Module

C1 = C2 = 2 * (CL - Cstray) = 15 pF
CL = 12.5 pF ... Crystal load from datasheet
Cstray = 5pF ... Approximation for pins of the chip and parasitics from the board



Manual-Reset

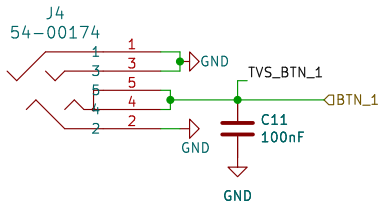


Sheet: /Microcontroller - ESP32-S3-WROOM/
File: Microcontroller.kicad_sch

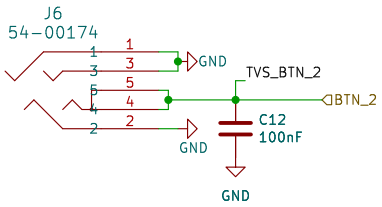
Title: Microcontroller and USB-C Connector

Size: A4	Date:	Rev:
KiCad E.D.A. kicad 7.0.8		Id: 3/5

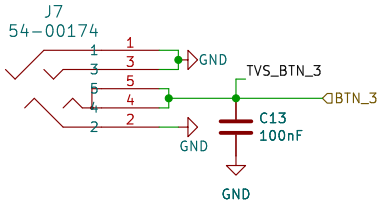
Button 1 (external)



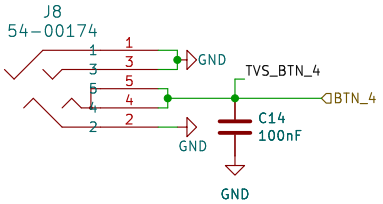
Button 2 (external)



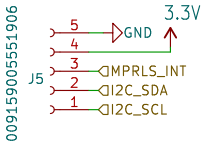
Button 3 (external)



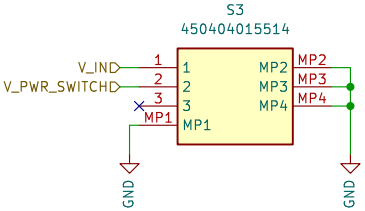
Button 4 (external)



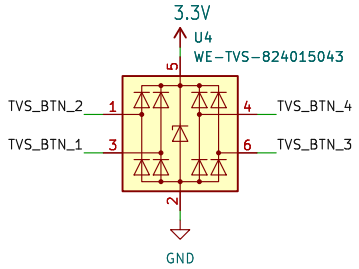
MPRLS (sip&puff sensor) connector



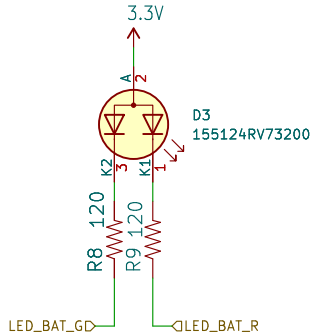
Power Switch



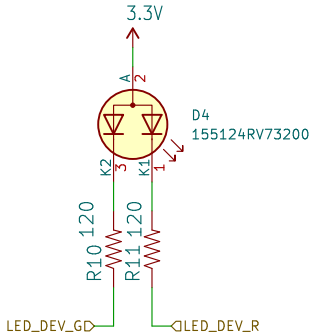
TVS Diodes for Button Jacks



Battery Status LED (bi-color red-green)



Device Status LED (bi-color red-green)



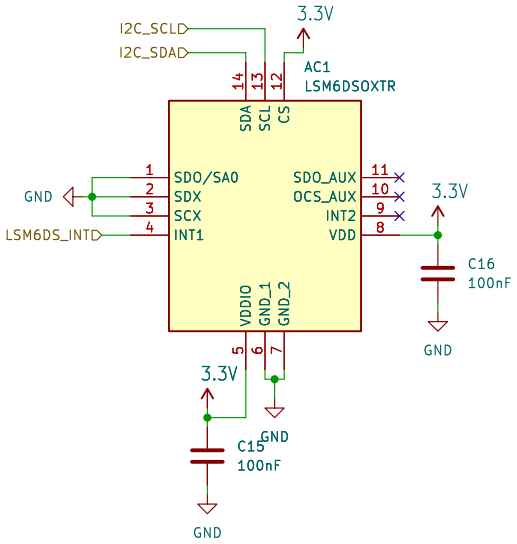
Sheet: /UI_Peripherals/
File: UI_Peripherals.kicad_sch

Title: User_Interface_Peripherals

Size: A4	Date:	Rev:
KiCad E.D.A. kicad 7.0.8		Id: 4/5

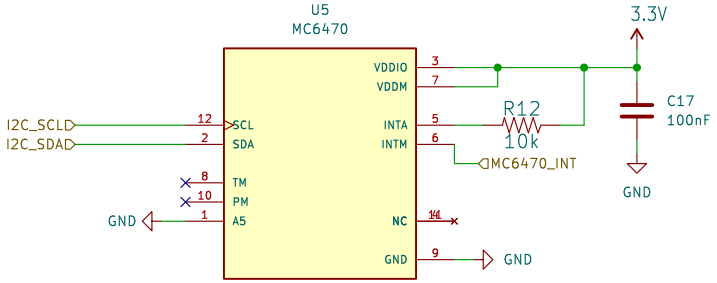
6-Axis IMU

I2C slave addr.: 0b1101010 = 0x6a = 0d106



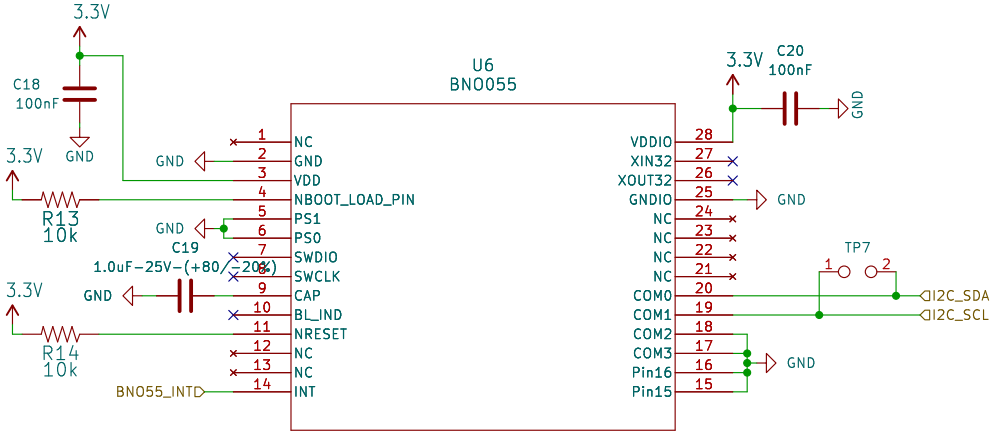
6-Axis IMU

I2C slave addr.: 0b1001100 = 0x4c = 0d76



9-Axis IMU

I2C slave addr.: 0b101000 = 0x28 = 0d40



Sheet: /IMU/
File: IMU.kicad_sch

Title: Intertia_Measurement_Unit

Size: A4	Date:	Rev:
KiCad E.D.A. kicad 7.0.8		Id: 5/5