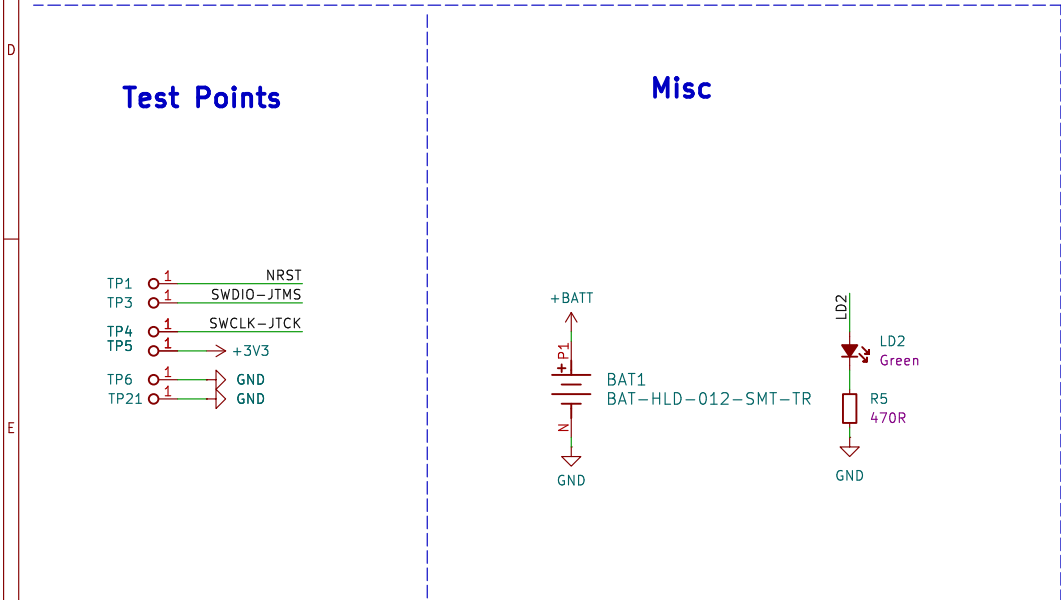


[illegible]

The diagram illustrates the MYRA SIP board layout, centered around the U1 MYRA-231F1F08 chip. The chip is a yellow rectangle with various pins connected to external components and test points (TP).

Chip Pin Connections:

- Left Side (A, L, F, D, A pins):**
 - A9: VBUS
 - L17: +BATT
 - F17: +3V3
 - D17: NRST
 - A8: FTDI_RESET
 - E1: CLK_EN
 - Q12: USB_MCU_P
 - Q11: USB_MCU_N
 - A13: USB_D_P
 - A12: USB_D_N
 - A16: CBUS1
 - A15: CBUS2
 - C17: SWCLK-JTCK
 - B17: SWDIO-JTMS
 - Q17: GND
- Right Side (H, I, Q, J, K, LD, N, D, P pins):**
 - H17: I2C1_SDA
 - I17: I2C1_SCL
 - Q8: I2C2_SCL
 - Q7: I2C2_SDA
 - I1: SPI_CS2
 - H1: SPI_CS3
 - L1: SPI2_MISO
 - J1: SPI2_MOSI
 - K1: SPI2_SCK
 - LD2: LD2
 - LD1: LD2
 - N17: GPIO_PC10
 - D17: GPIO_PC12
 - P17: GPIO_PC11
 - A3: MP

Test Points (TP) and Connections:

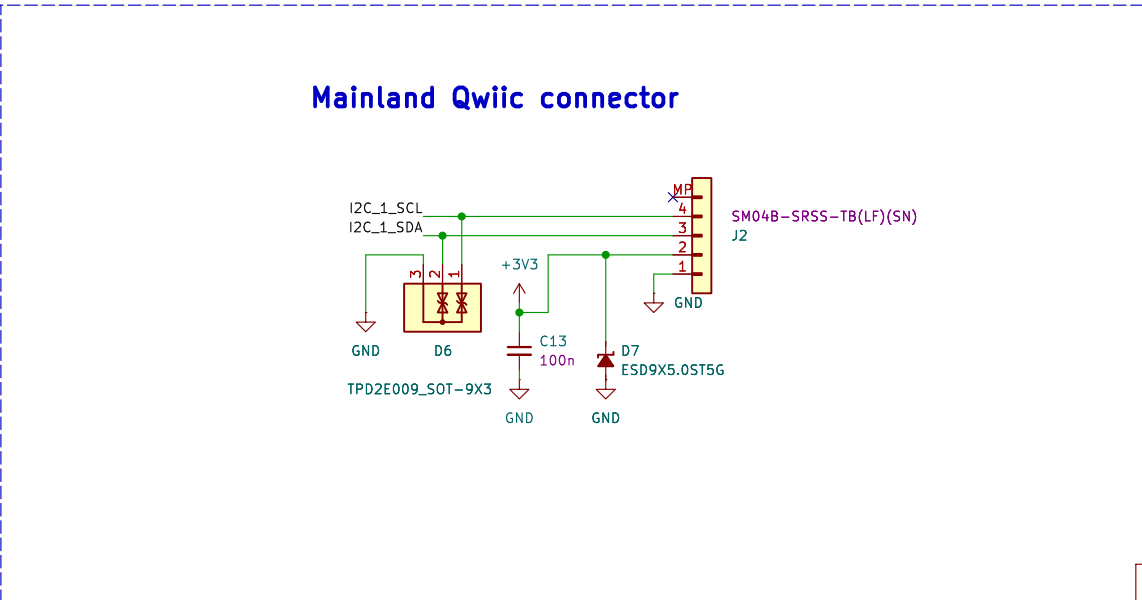
- TP15: FTDI_RESET (A8)
- TP14: USB_MCU_P (Q12)
- TP13: USB_MCU_N (Q11)
- TP11: CBUS1 (A16)
- TP12: CBUS2 (A15)
- TP17: SPI_CS2 (I1)
- TP16: SPI_CS3 (H1)
- TP20: SPI2_MISO (L1)
- TP18: SPI2_MOSI (J1)
- TP19: SPI2_SCK (K1)
- TP10: GPIO_PC10 (N17)
- TP9: GPIO_PC12 (D17)
- TP8: GPIO_PC11 (P17)

Other Components and Connections:

- Power and Ground:** VBUS, +BATT, +3V3, GND, and MP are connected to the chip.
- SWCLK-JTCK and SWDIO-JTMS:** These pins are connected to the SWCLK and SWDIO lines, which are also connected to the R2 8MHz generator.
- CLK_EN:** This pin is connected to the CLK_EN line, which is also connected to the R2 8MHz generator.
- GPIOs:** GPIO_PC10, GPIO_PC12, and GPIO_PC11 are connected to the chip and have pull-down resistors (R2, R3, R4) to GND.

Legend:

- Pull-down to disable
- 8MHz generator
- Leave floating to enable



SENSOR ISLAND

The diagram illustrates the hardware setup for the Sensor Island, which is connected to a Raspberry Pi 4B. It features two sensors: an SHT45 (U5) and a BME280 (U6).

SHT45 Sensor (U5): This sensor is connected to the Raspberry Pi's I2C bus. The SDA pin (1) is connected to I2C_1_SDA, and the SCL pin (2) is connected to I2C_1_SCL. The VDD pin (3) is connected to +3V3, and the VSS pin (4) is connected to GND. A 100nF capacitor (C26) is connected between VDD and GND. The sensor's I2C address is 0x44.

BME280 Sensor (U6): This sensor is connected to the Raspberry Pi's I2C bus. The SCK pin (4) is connected to I2C_1_SCL, the SDI pin (3) is connected to I2C_1_SDA, and the SDO pin (5) is connected to a pull-up resistor (R35, 100k) to +3V3. The CSB pin (2) is connected to GND. The VDDIO pin (6) is connected to +3V3, and the GND pin (1) is connected to GND. A 100nF capacitor (C27) is connected between VDDIO and GND. The sensor's I2C address is 0x77 (High) or 0x76 (Low).

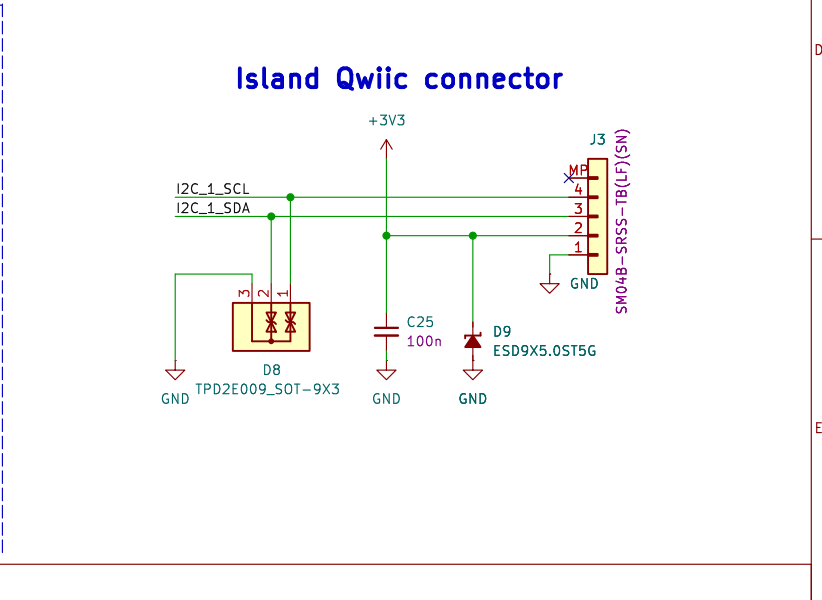
Power and Grounding: Both sensors are powered by +3V3 and grounded to GND. The BME280 also has a 100k pull-up resistor (R36) on its SDO pin.

Software Configuration: The sensor addresses are configured in the code as follows:

```

// SHT45 sensor address
const uint8_t SHT45_I2C_ADDR = 0x44;

// BME280 sensor address
const uint8_t BME280_I2C_ADDR = 0x77;
  
```



www.antmicro.com	
Antmicro	
Sheet: /	
File: environment-sensor-sip-baseboard.kicad_sch	
Title: MYRA SiP Baseboard	
Size: A3	Rev: 1.0.0:c359fe0
Date: 2024-06-28	Id: 1/1
KiCad E.D.A. 9.0.6	

Id: 1/1