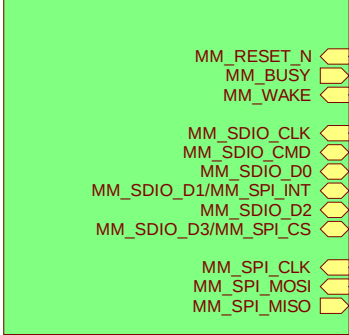
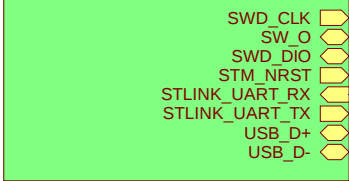


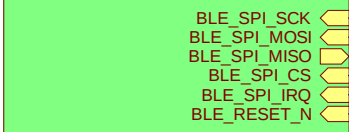
U_HaLow_Module
HaLow_Module.SchDoc



U_Power
Power.SchDoc



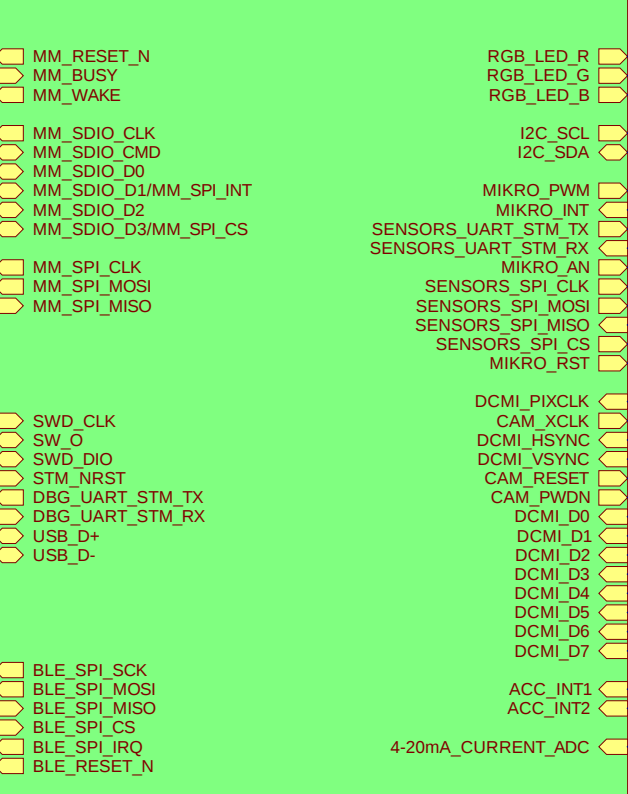
U_BLE_Module
BLE_Module.SchDoc



U_Revision_History
Revision_History.SchDoc



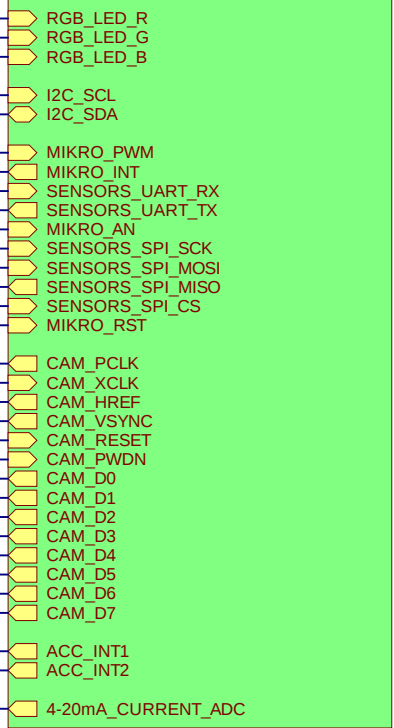
U_STM_MCU
STM_MCU.SchDoc



U_Mechanical
Mechanical.SchDoc



U_Sensors
Sensors.SchDoc

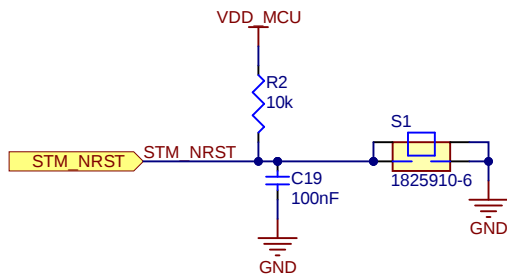


Morse Micro

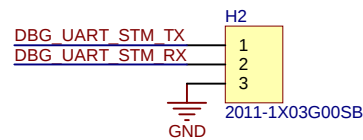
Level 8, 10-14 Waterloo Street
Surry Hills, NSW 2010
AUSTRALIA (c) Copyright 2024

Drawn: J. Garnier	Title Top Level		
Checked: Matthew Jay	PCBA No: MM8108_EKH05.PrjPcb	Drawing Revision: 2.1	Size: A4
Approved: Chad O'Neill	Drawing No:		
Date Released: 20/09/2024	File: Main.SchDoc	Sheet 1 of 8	

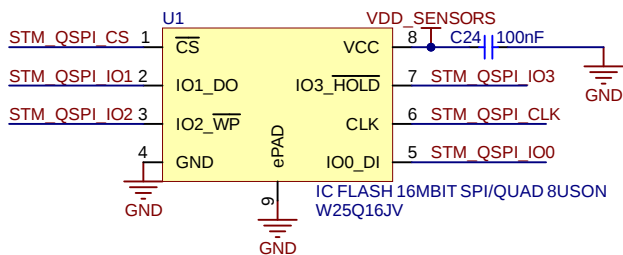
STM RESET BUTTON



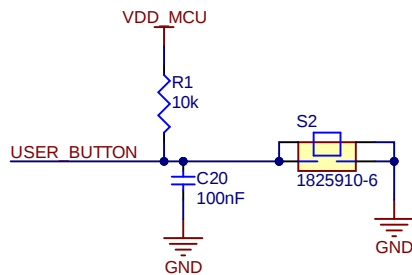
UART HEADER



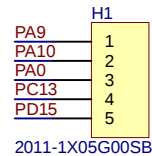
SPI FLASH



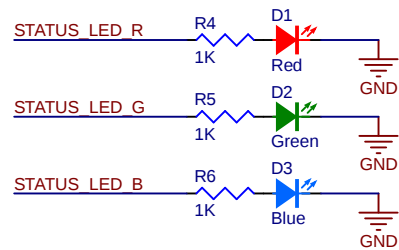
USER BUTTON



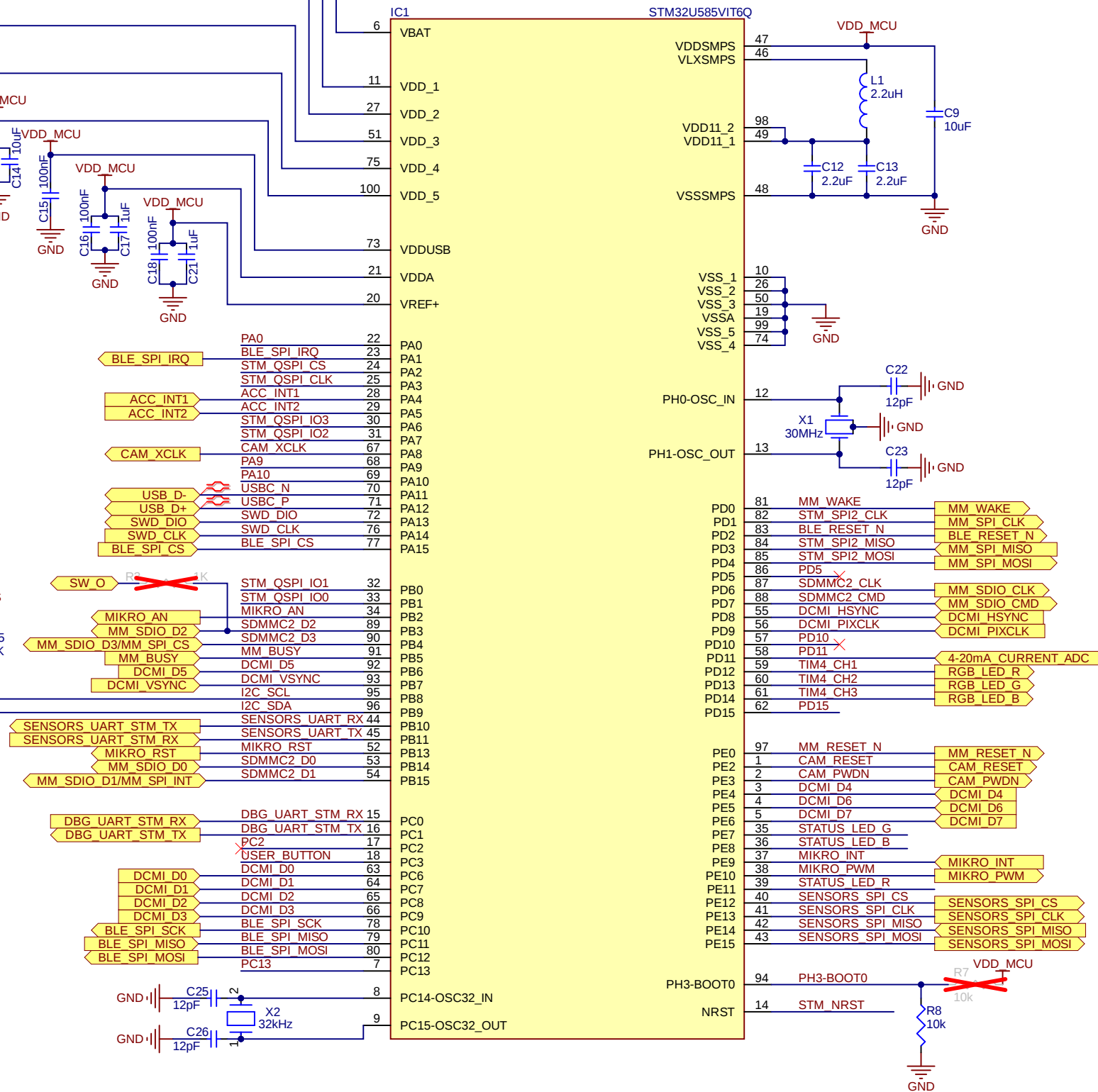
UNUSED GPIOs



STATUS LEDS



MCU



Level 8, 10-14 Waterloo Street
Surry Hills, NSW 2010
AUSTRALIA
(c) Copyright 2024

Drawn: J. Garnier	Title: STM_MCU		
Checked: Matthew Jay	PCBA No: MM8108_EKH05.PrfPcb		Size: A3
Approved: Chad O'Neill	Drawing No:	Drawing Revision: 2.1	
Date Released: 27/09/2024	File: STM_MCU.SchDoc		Sheet 2 of 8

Table 8. Pin connection

Pin #	Name	Function			
		Mode "000"	Mode "001"	Mode "100"	Mode "010"
1	ADC2	ADC input 2			
2	ADC1	ADC input 1			
3	DIO4	GPIO4	UART_RXD	I2C2_CLK	PWM0
4	DIO5	GPIO5	UART_TXD	I2C2_DAT	PWM1
5	VIN	Power Supply			
6	ANATEST0/DIO14	GPIO14	I2C1_CLK	SPI_CLK	ADC_DAT
7	DIO7/BOOT ⁽¹⁾	GPIO7	UART_CTS	I2C2_DAT	PDM_CLK
8	GND	Ground			
9	DIO6	GPIO6	UART_RTS	I2C2_CLK	PDM_DAT
10	DIO8	GPIO8	UART_TXD	SPI_CLK	PDM_DAT
11	DIO11	GPIO11	UART_RXD	SPI_CS1	
12	DIO9	GPIO9	SWCLK	SPI_IN ⁽²⁾	
13	DIO10	GPIO10	SWDIO	SPI_out ⁽³⁾	
14	ANATEST1	Anatest1			
15	DIO0	GPIO0	UART_CTS	SPI_CLK	
16	DIO2	GPIO2	PWM0	SPI_OUT	PDM_CLK
17	DIO3	GPIO3	PWM1	SPI_IN	ADC_CLK
18	DIO1	GPIO1	UART_RTS	SPI_CS1	PDM_DAT
19	RESETN	Reset			
20	DIO12	GPIO12 ⁽⁴⁾		I2C1_CLK	
21 ⁽⁵⁾	GND	Ground or leave unconnected			
22 ⁽⁵⁾	N.C.	Leave unconnected			
23 ⁽⁵⁾	N.C.	Leave unconnected			

1. The pin DIO7/BOOT is monitored by bootloader after power-up or hardware reset and it should be low to prevent unwanted bootloader activation.

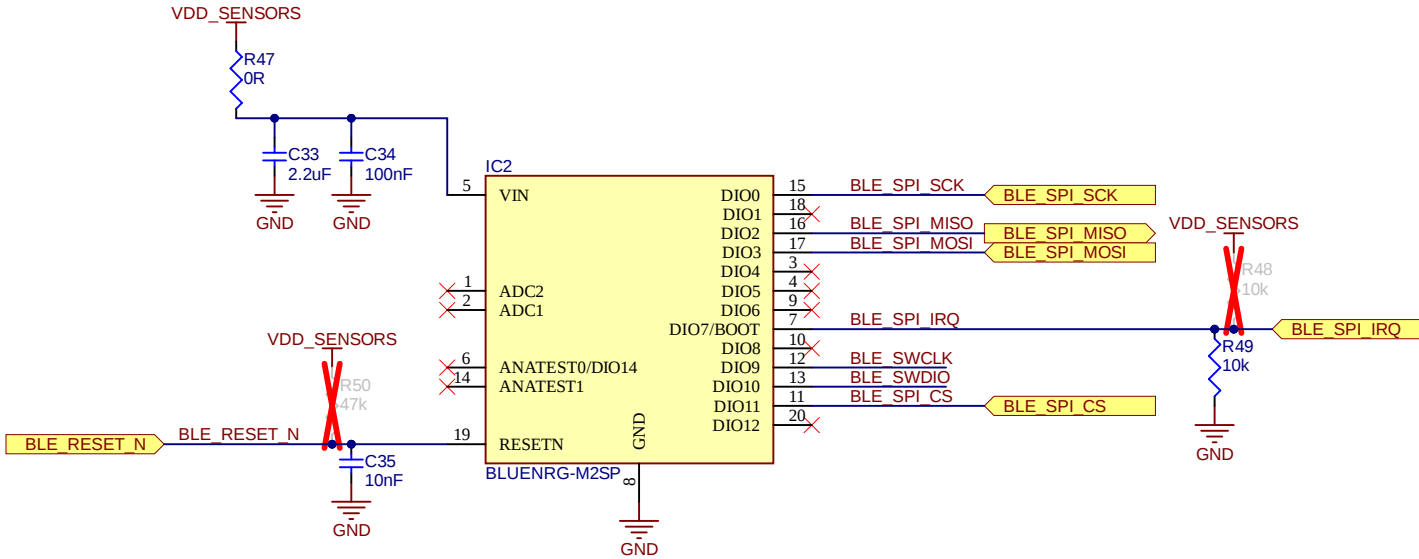
2. The function SPI_IN indicates that the pin is always an input when configured for SPI. Thus in case of SPI master role, it acts as MISO pin. In case of SPI slave role, this pin act as MOSI

3. The function SPI_OUT indicates that the pin is always an output when configured for SPI. Thus in case of SPI master role, it acts as MOSI pin. In case of SPI slave role, this pin act as MISO.

4. DIO12 can only be general purpose input pins (not output), or I2C1 clock pin.

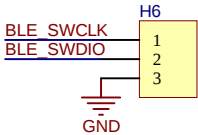
5. BLUENRG-M2SA only.

BLE MODULE

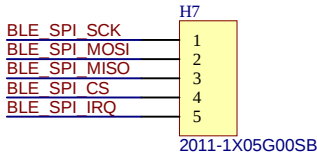


- Note:
- All unused pins should be left floating; do not ground
 - All GND pins must be well grounded
 - The area around the module should be free of any ground planes, power planes, trace routings, or metal for 6 mm from the module antenna position, in all directions.
 - Traces should not be routed underneath the module

BLE SWD HEADER



BLE SPI HEADER



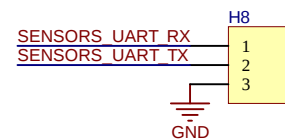


Morse Micro

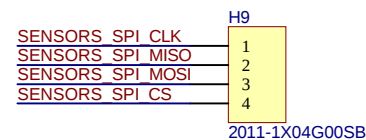
Level 8, 10-14 Waterloo Street
Surry Hills, NSW 2010
AUSTRALIA (c) Copyright 2024

Drawn: J. Garnier	Title BLE		
Checked: Matthew Jay	PCBA No: MM8108_EKH05.PrjPcb	Drawing Revision: 2.1	Size: A4
Approved: Chad O'Neill	Drawing No:		
Date Released: 27/09/2024	File: BLE_Module.SchDoc	Sheet 4 of 8	

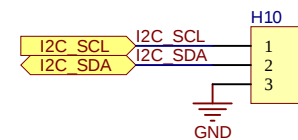
SENSORS UART HEADER



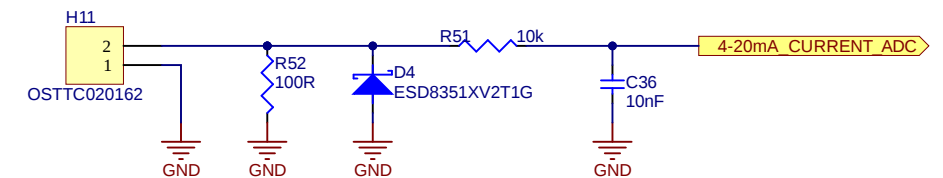
SENSORS SPI HEADER



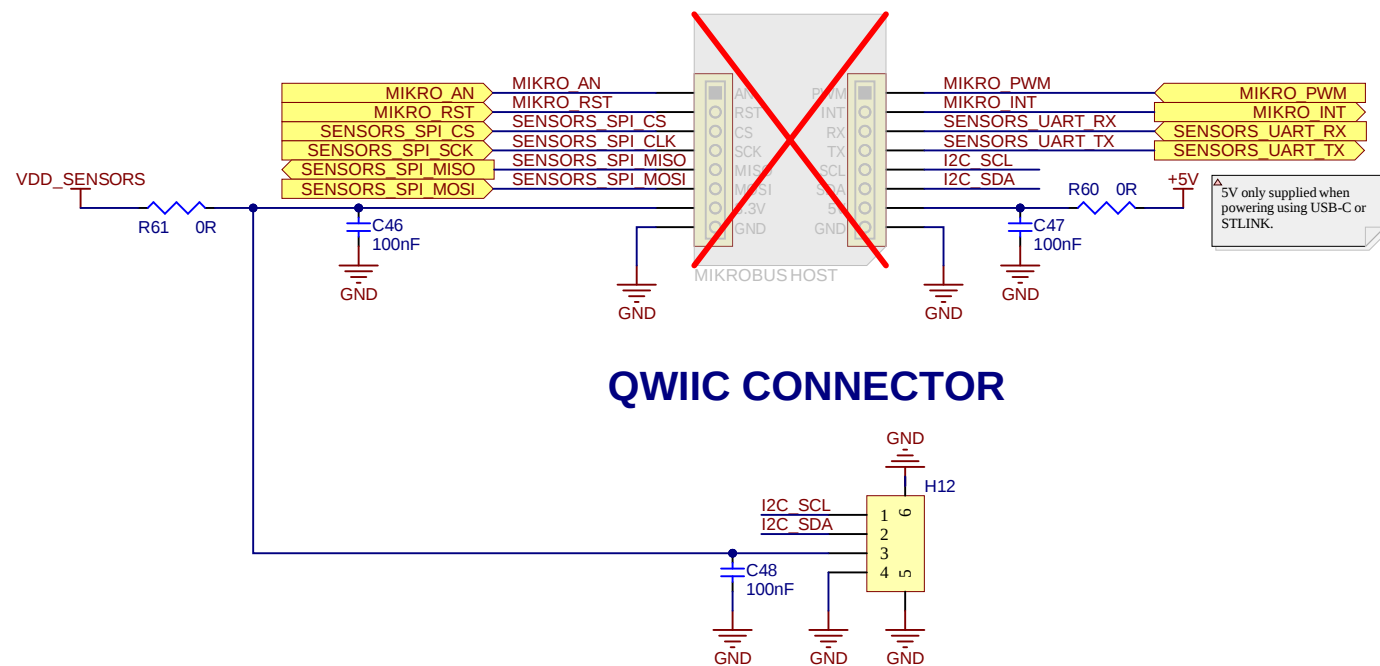
SENSORS I2C HEADER



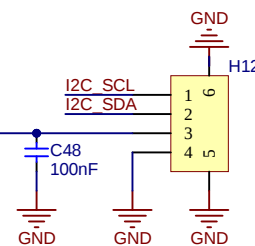
4-20mA CURRENT MEASUREMENT



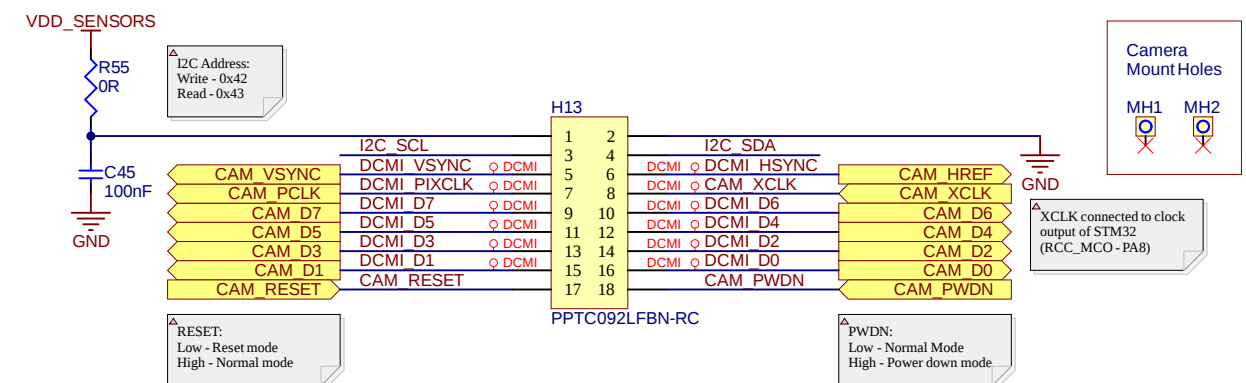
MIKROBUS HEADER



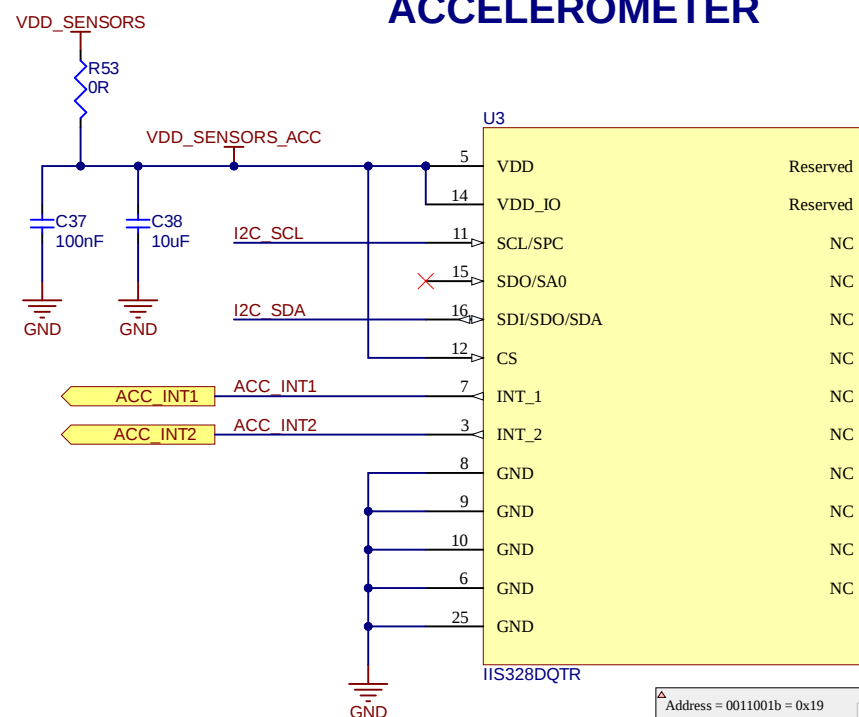
QWIIC CONNECTOR



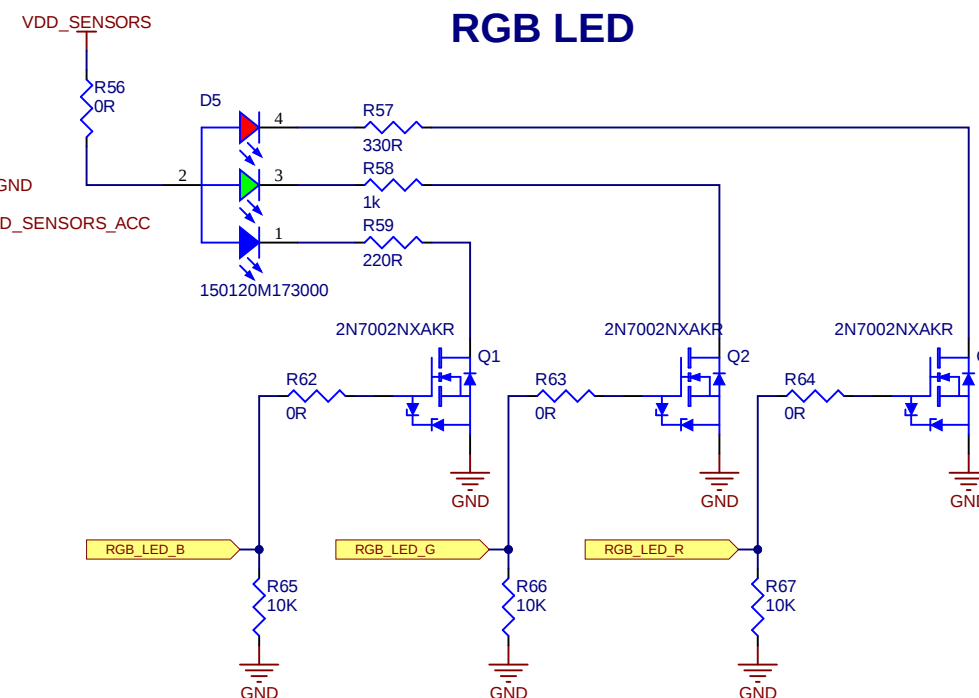
CAMERA HEADER



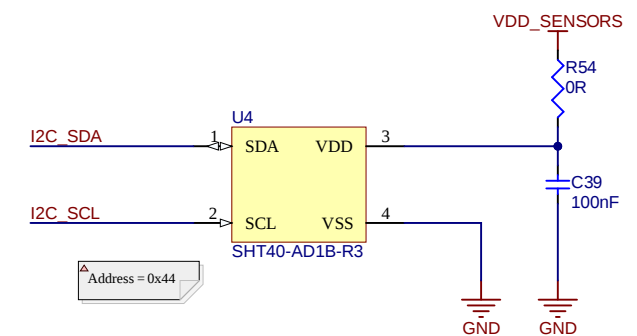
ACCELEROMETER



RGB LED

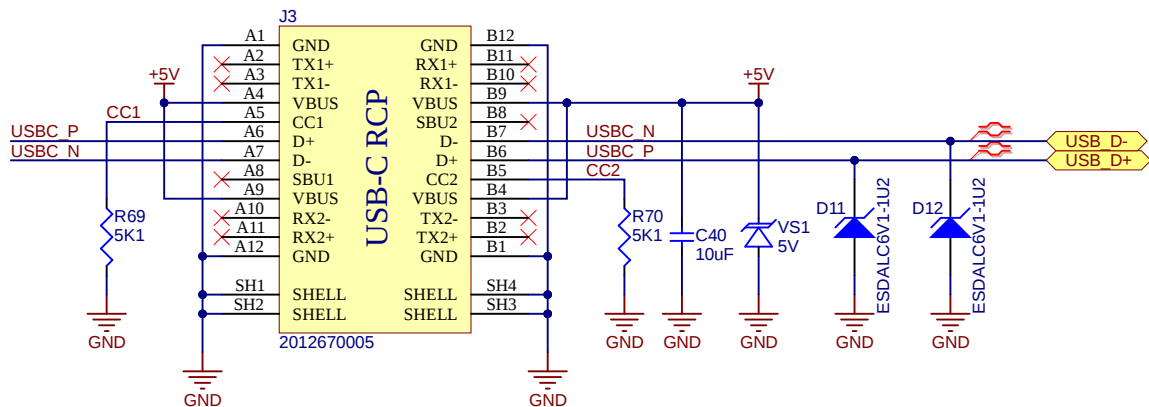


TEMPERATURE AND HUMIDITY SENSOR

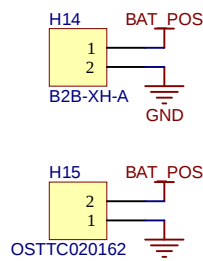


 Morse Micro Level 8, 10-14 Waterloo Street Surry Hills, NSW 2010 AUSTRALIA (c) Copyright 2024	
Drawn: J. Garnier Checked: Matthew Jay Approved: Chad O'Neill Date Released: 27/09/2024	Title: Sensors PCBA No: MM8108_EKH05.PrjPcb Drawing No: Drawing Revision: 2.1 Size: A3 File: Sensors.SchDoc Sheet 5 of 8

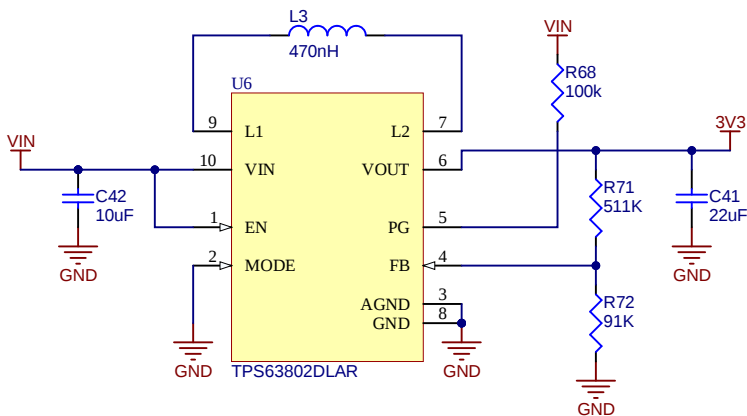
USB TYPE-C



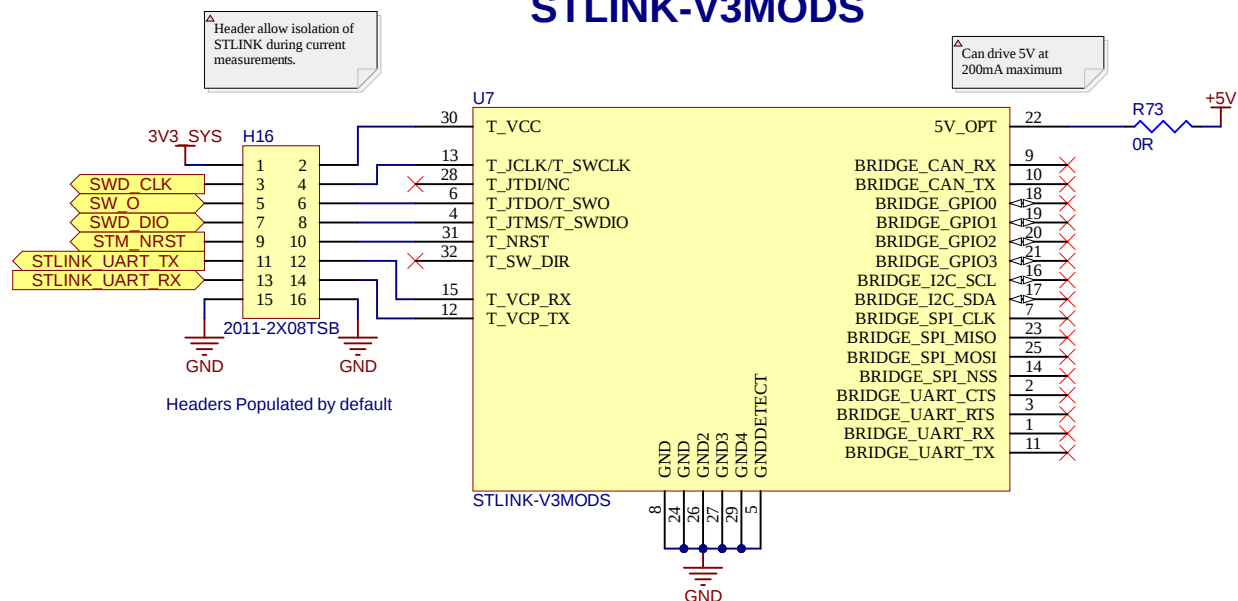
BATTERY CONNECTORS



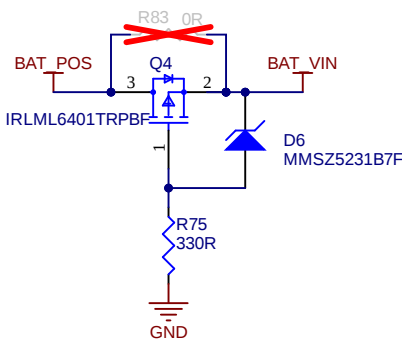
3V3 BUCK BOOST REGULATOR



STLINK-V3MODS

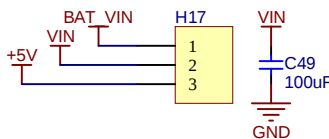


BATTERY REVERSE POLARITY PROTECTION

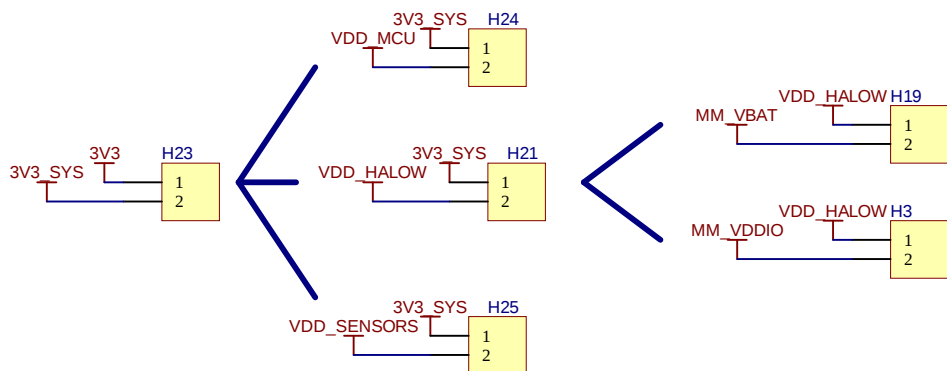


POWER INPUT SELECT

Options: Battery or USB



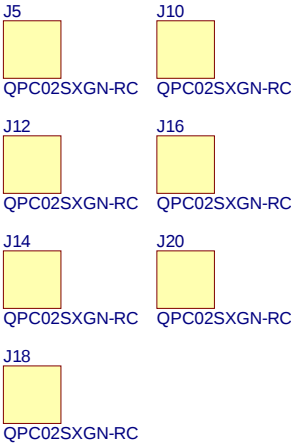
CURRENT MEASUREMENTS



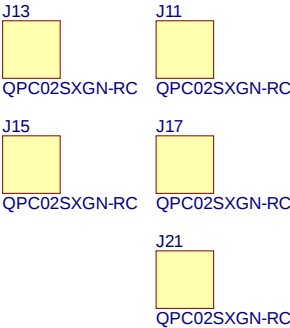
Morse Micro		Level 8, 10-14 Waterloo Street Surry Hills, NSW 2010 AUSTRALIA		(c) Copyright 2024	
Drawn: J. Garnier		Title Power			
Checked: Matthew Jay					
Approved: Chad O'Neill		PCBA No: MM8108_EKH05.PrjPcb		Size: A3	
Date Released: 27/09/2024		Drawing No:		Drawing Revision: 2.1	
		File: Power.SchDoc		Sheet 6 of 8	

JUMPER HEADERS

STLINK



CURRENT MEASURE HEADERS



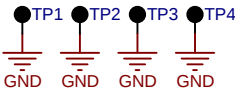
POWER INPUT SELECT



HaLow RF POWER SELECT



GND TEST POINTS



MOUNTING HOLES



FIDUCIALS



		Morse Micro		Level 8, 10-14 Waterloo Street Surry Hills, NSW 2010 AUSTRALIA (c) Copyright 2024		
Drawn: J. Garnier		Title Mechanical				
Checked: Matthew Jay						
Approved: Chad O'Neill		PCBA No: MM8108_EKH05.PrjPcb		Drawing Revision: 2.1	Size: A4	
		Drawing No:				
Date Released: 27/09/2024		File: Mechanical.SchDoc			Sheet 7 of 8	

	1	2	3	4
A				
B				
C				
D				

Revision History	
1.0	- Initial release.
2.1	- Exchanged VDD_USB from VDDIO to VBAT - Removed unneeded SPI pull-up resistors



Morse Micro

Level 8, 10-14 Waterloo Street
Surry Hills, NSW 2010
AUSTRALIA (c) Copyright 2024

Drawn: J. Garnier	Title Revision History		
Checked: Matthew Jay	PCBA No: MM8108_EKH05.PrjPcb		Drawing Revision: 2.1
Approved: Chad O'Neill	Drawing No:		Size: A4
Date Released: 4/08/2025	File: Revision_History.SchDoc		Sheet 8 of 8