

# 3V3 Generation

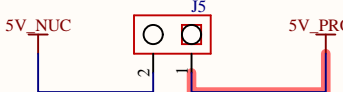
5V Input Choice Jumper

3V3 Choice Jumper

PCB Note:  
Routing must be carefully done following P.11 of the datasheet

Design Note:  
Use CL = 20uF or more when VIN-VOUT (T) <1.5V. Otherwise : CL = 10uF

# 5V Nucleo jumper



The diagram shows a 5V\_NUC pin connected to a 5V\_PROT pin via a jumper. The jumper is represented by a red line. A blue line connects the 5V\_NUC pin to a 5V\_PROT pin. A yellow box labeled J5 is shown with two pins. A red line connects the 5V\_PROT pin to the J5 pin. A blue line connects the 5V\_NUC pin to the J5 pin. A yellow box labeled J6 is shown with two pins. A red line connects the 5V\_PROT pin to the J6 pin. A blue line connects the 5V\_NUC pin to the J6 pin.

J5

5V\_NUC

5V\_PROT

J6

SNT-100-BK-T-H

# 1V8 Generation

**PCB Note:**  
Routing must be carefully done following P.12 of the datasheet

The diagram illustrates a 1V8 voltage generation circuit. A 3V3 supply is connected to a 150Ω resistor (R6) and a 4.7μF capacitor (C3) to ground. The 3V3 line is connected to the VIN pin (pin 6) of the MYRGP180100W21RA (U2). The CE pin (pin 4) is connected to ground. The AGND and PGND pins (pins 2 and 3) are connected to ground. The VOUT pin (pin 3) is connected to a 100MIL trace (TP8) and a 10μF capacitor (C4) to ground. The Lx pin (pin 1) is connected to ground. The L1 pin (pin 7) is connected to ground. The EPAD pin (pin 9) is connected to ground. The 1V8 output is connected to a 10k resistor (R7) to ground and a MOSFET (Q4, BSS138LT1G) gate. The MOSFET source is connected to ground, and its drain is connected to the 1V8 output. A diode (D5, SML-D12P8WT86) is connected in parallel with the MOSFET drain to ground.

**Component Values:**

- R6: 150Ω, 0402, 1%
- C3: 4.7μF, 25V, 0603
- C4: 10μF, 16V, 0805
- R7: 10k, 0402, 1%
- D5: SML-D12P8WT86
- Q4: BSS138LT1G

**Pin Connections for U2 (MYRGP180100W21RA):**

- VIN (6): 3V3
- CE (4): GND
- AGND (2): GND
- PGND (3): GND
- VOUT (3): 1V8
- Lx (1): GND
- L1 (7): GND
- EPAD (9): GND

|                         |  |         |            |           |  |          |  |
|-------------------------|--|---------|------------|-----------|--|----------|--|
| Sheet Name              |  |         |            | POWER     |  |          |  |
| Project Title           |  |         |            | HiveSight |  |          |  |
| Global Project          |  |         |            | PMC       |  |          |  |
| Size                    |  | Group   |            |           |  | Revision |  |
| 11x17                   |  | SwarmUS |            |           |  | 1.000    |  |
| Date                    |  |         | 2020-07-13 |           | Sheet  |          |  |
|                         |  |         |            |           | 1 of 10  |          |  |
| Filename                |  |         |            |           | Designers  |          |  |
| HIVE_SIGHT_POWER.SchDoc |  |         |            |           | Philippe Arsenault<br>Hubert Dube<br>Louis-Daniel Gaulin |          |  |

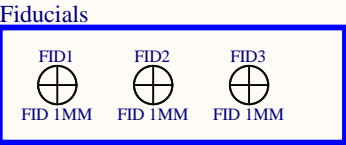
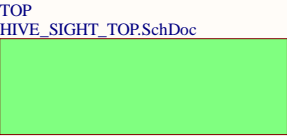
# HiveSight

## PMC

*SwarmUS*

*Revision 1.000*

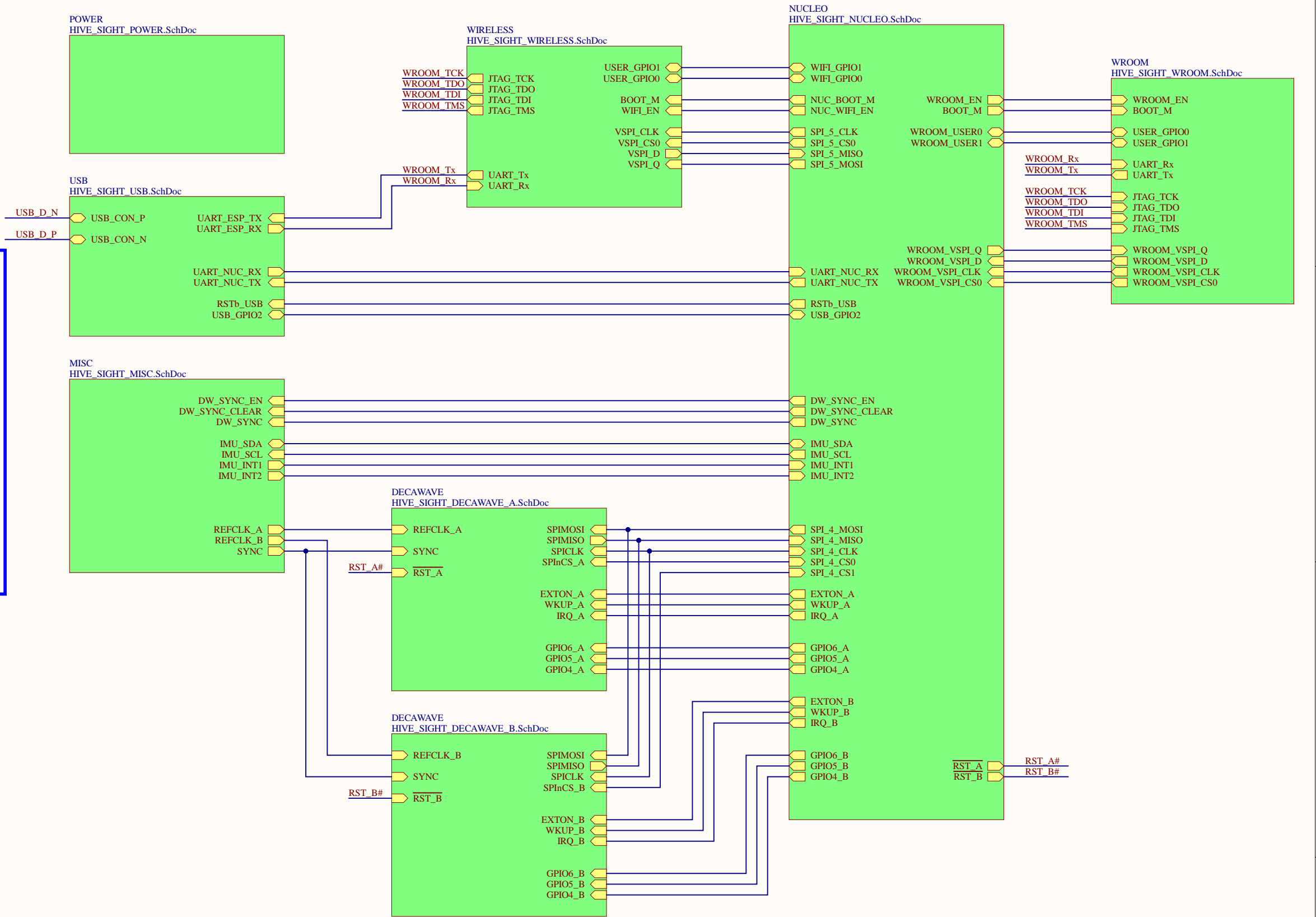
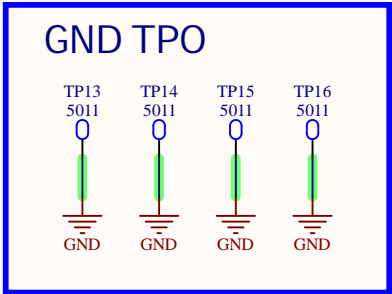
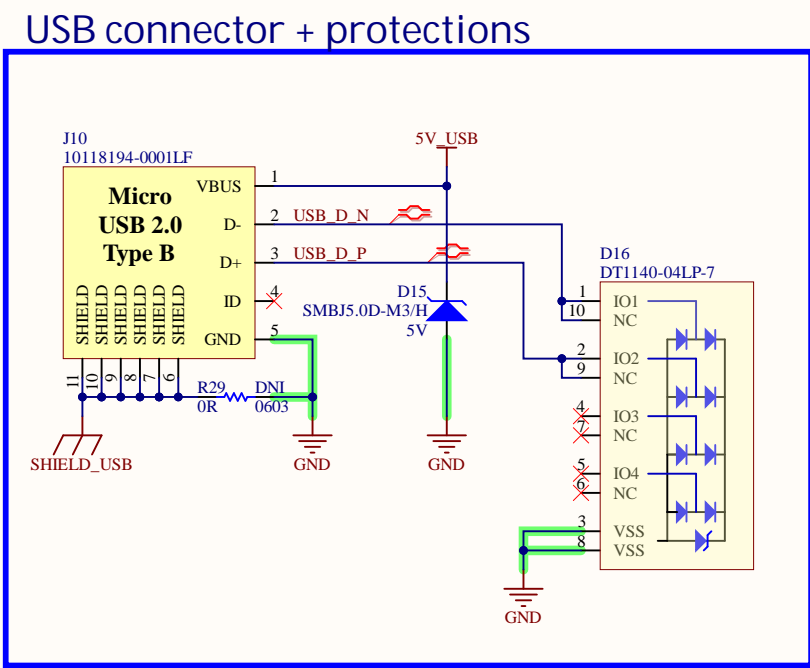
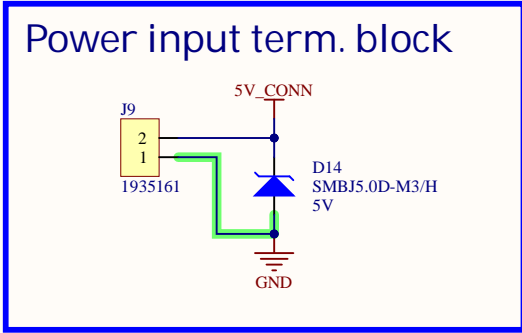
*Date : 2020-07-13*



| Revision history |  |
|------------------|--|
|                  |  |
|                  |  |
|                  |  |
|                  |  |
|                  |  |
|                  |  |
|                  |  |

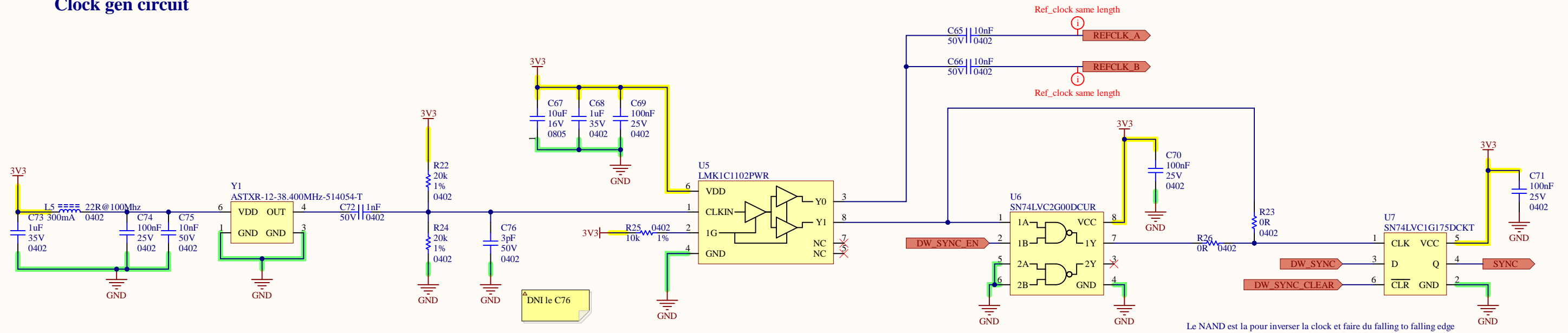
| Package size conversion |                 |
|-------------------------|-----------------|
| <i>Metric</i>           | <i>Imperial</i> |
| 1005                    | 0402            |
| 1608                    | 0603            |
| 2012                    | 0805            |
| 3216                    | 1206            |
| 3225                    | 1210            |
| 6432                    | 2512            |

|                |                         |            |   |
|----------------|-------------------------|------------|---|
| Project Title  |                         | HiveSight  |   |
| Global Project |                         | <i>PMC</i> |   |
| Size           | 11x17                   | Group      | SwarmUS   |
| Revision       |                         | 1.000      |   |
| Date           | 2020-07-13              |            | Sheet 2 of 10   |
| Filename       | HIVE_SIGHT_TITLE.SchDoc |            | Designers<br>Philippe Arsenault<br>Hubert Dube<br>Louis-Daniel Gaulin |

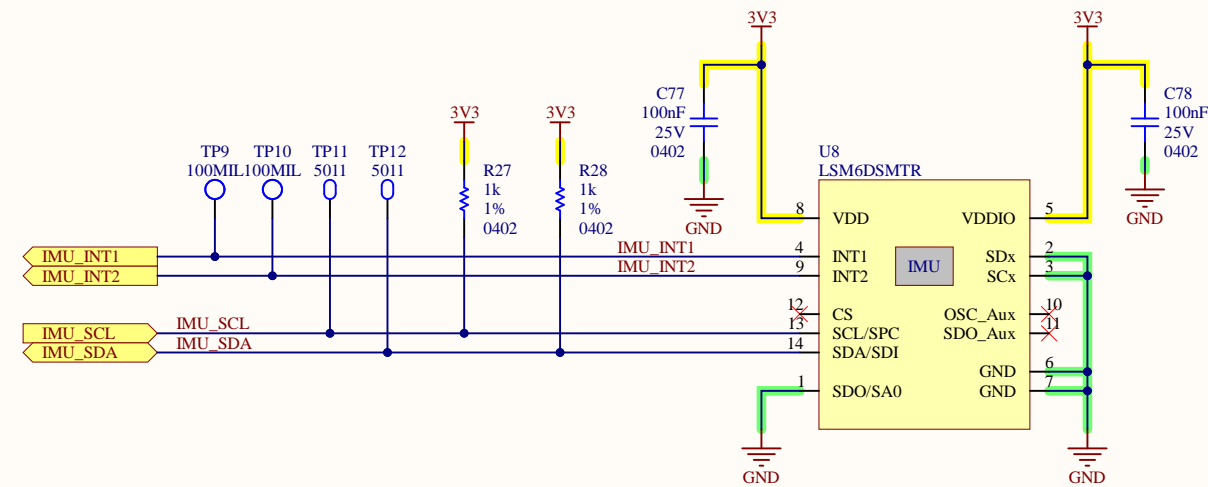


|                |                       |       |           |           |  |
|----------------|-----------------------|-------|-----------|-----------|--|
| Sheet Name     |                       |       | Top       |           |  |
| Project Title  |                       |       | HiveSight |           |  |
| Global Project |                       |       | PMC       |           |  |
| Size           | 11x17                 | Group | SwarmUS   | Revision  | 1.000  |
| Date           | 2020-07-13            |       |           | Sheet     | 3 of 10  |
| Filename       | HIVE_SIGHT_TOP.SchDoc |       |           | Designers | Philippe Arsenault<br>Hubert Dube<br>Louis-Daniel Gaulin |

## Clock gen circuit

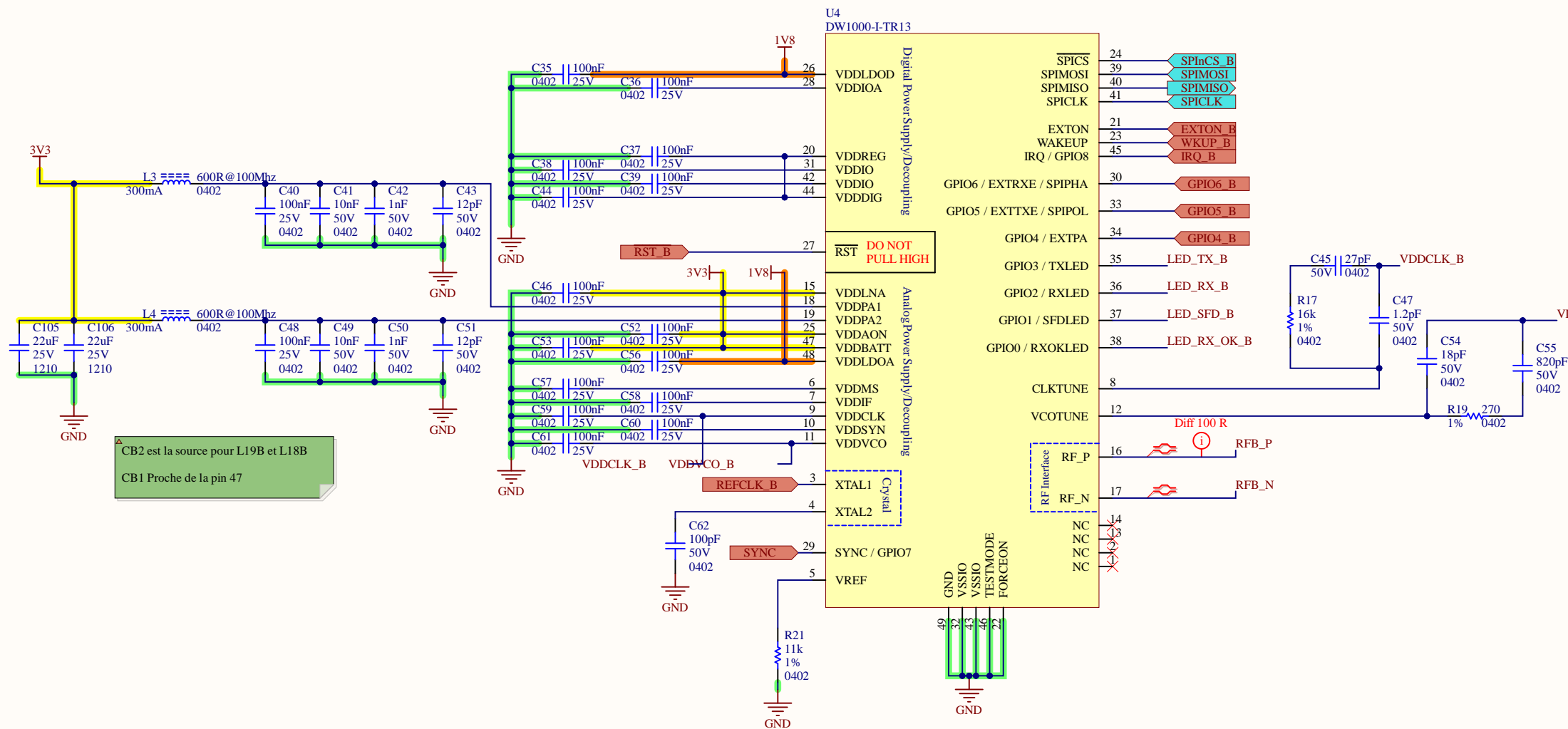


## IMU

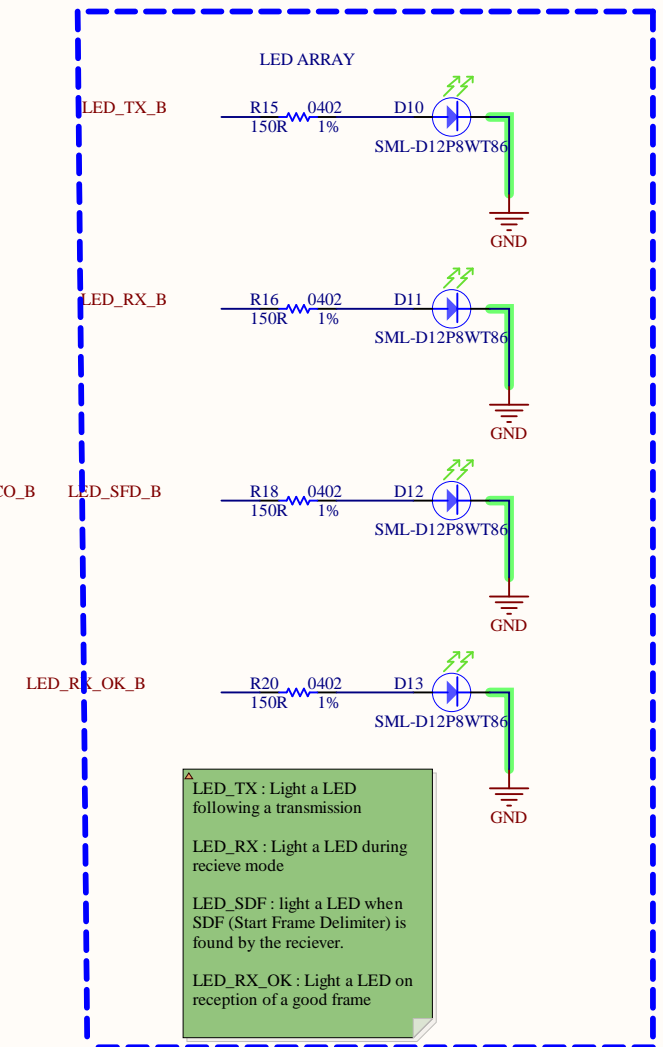


|                        |            |  |  |   |       |
|------------------------|------------|--|--|---|-------|
| Sheet Name             |            |  | DECAWAVE   |   |       |
| Project Title          |            |  | HiveSight  |   |       |
| Global Project         |            |  | PMC  |   |       |
| Size                   | Group      |  | Revision   |   |       |
| 11x17                  | SwarmUS    |  | 1.000  |   |       |
| Date                   | 2020-07-13 |  | Sheet  | 4 | of 10 |
| Filename               |            |  | Designers  |   |       |
| HIVE_SIGHT_MISC.SchDoc |            |  | Philippe Arsenault<br>Hubert Dube<br>Louis-Daniel Gaulin |   |       |

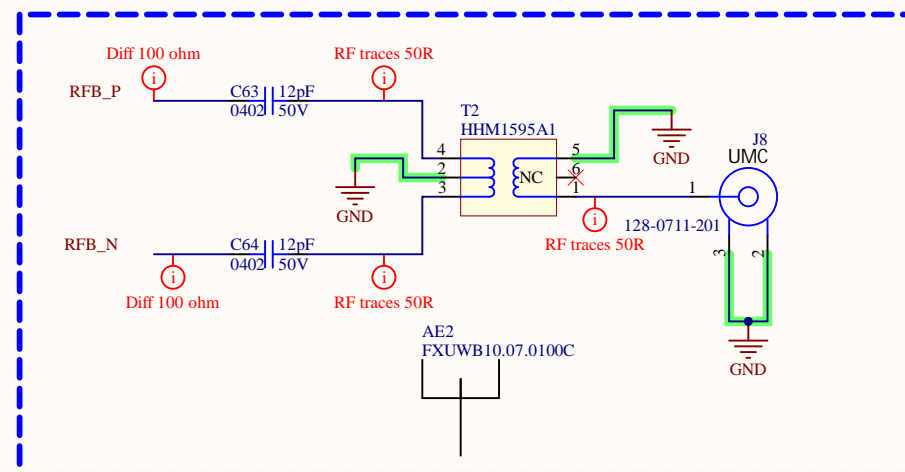
# Decawave B



## DEBUG LED

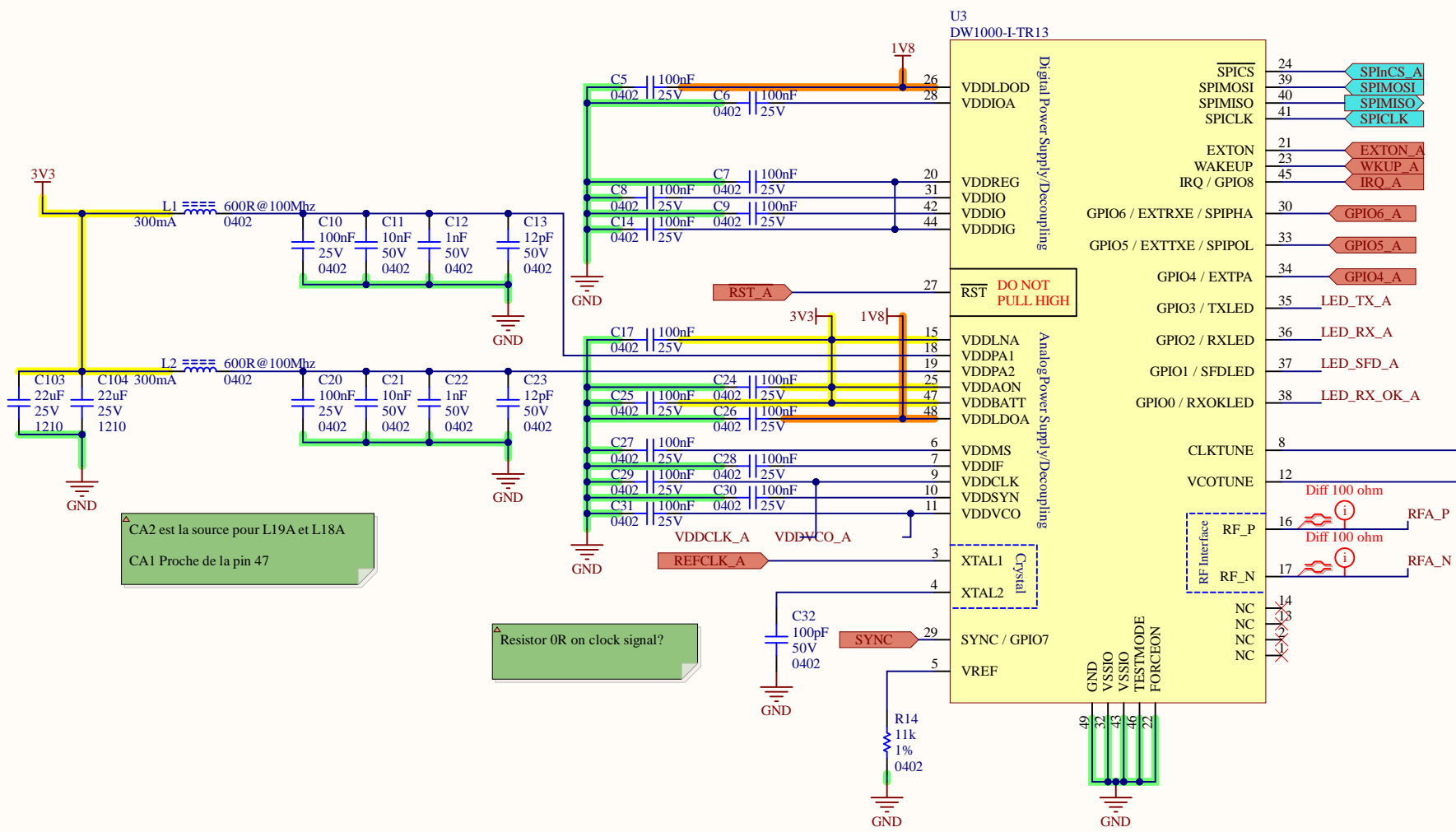


## RF Circuit

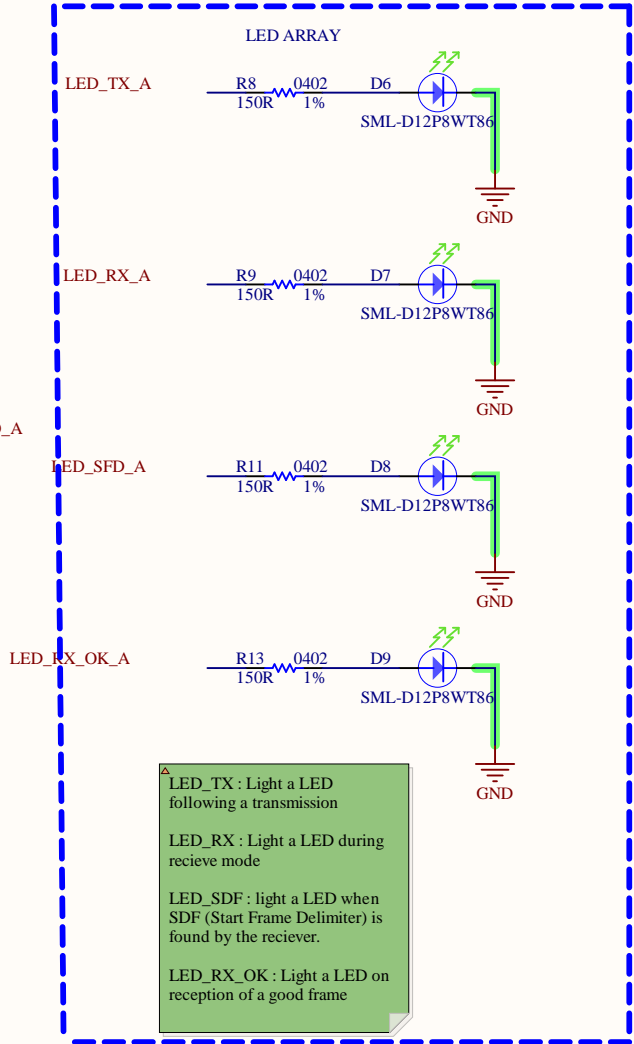


|                              |            |          |  |    |    |
|------------------------------|------------|----------|--|----|----|
| Sheet Name                   |            |          | DECAWAVE   |    |    |
| Project Title                |            |          | HiveSight  |    |    |
| Global Project               |            |          | PMC  |    |    |
| Size                         | Group      | Revision |  |    |    |
| 11x17                        | SwarmUS    | 1.000    |  |    |    |
| Date                         | 2020-07-13 | Sheet    | 4  | of | 10 |
| Filename                     |            |          | Designers  |    |    |
| HIVE_SIGHT_DECAWAVE_B.SchDoc |            |          | Philippe Arsenault<br>Hubert Dube<br>Louis-Daniel Gaulin |    |    |

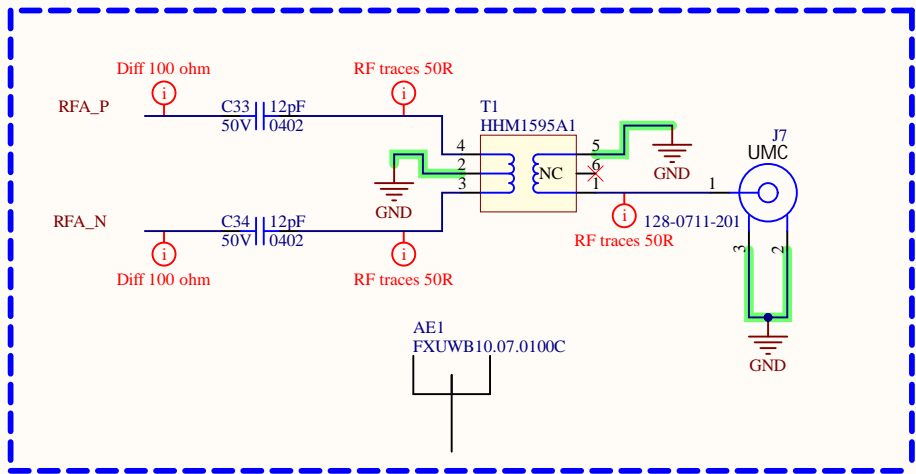
Decawave A



DEBUG LED

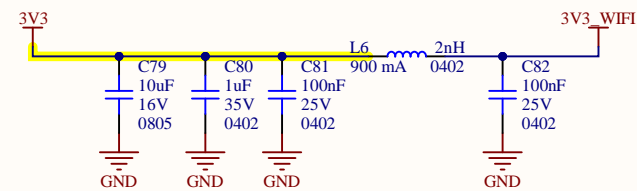


RF Circuit

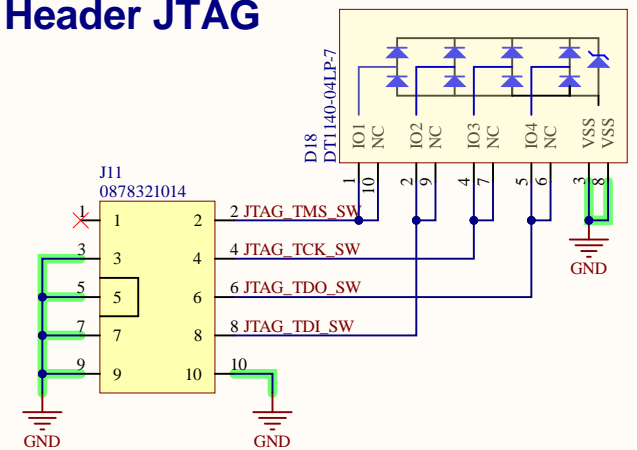


|                              |            |          |  |    |    |
|------------------------------|------------|----------|--|----|----|
| Sheet Name                   |            |          | DECAWAVE   |    |    |
| Project Title                |            |          | HiveSight  |    |    |
| Global Project               |            |          | PMC  |    |    |
| Size                         | Group      | Revision |  |    |    |
| 11x17                        | SwarmUS    | 1.000    |  |    |    |
| Date                         | 2020-07-13 | Sheet    | 4  | of | 10 |
| Filename                     |            |          | Designers  |    |    |
| HIVE_SIGHT_DECAWAVE_A.SchDoc |            |          | Philippe Arsenault<br>Hubert Dube<br>Louis-Daniel Gaulin |    |    |

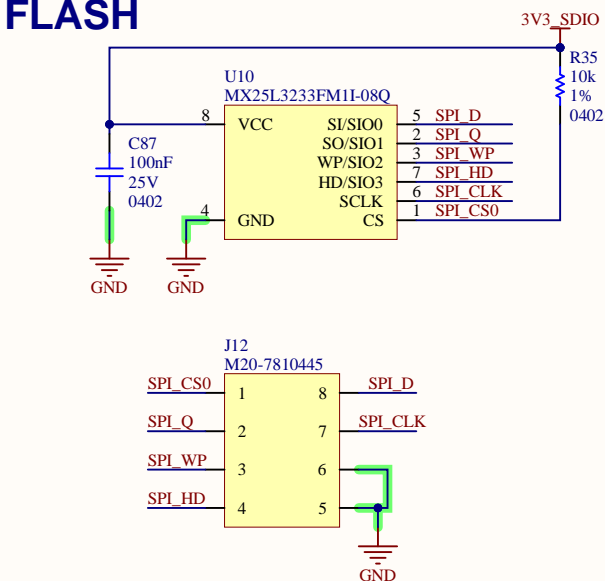
## POWER



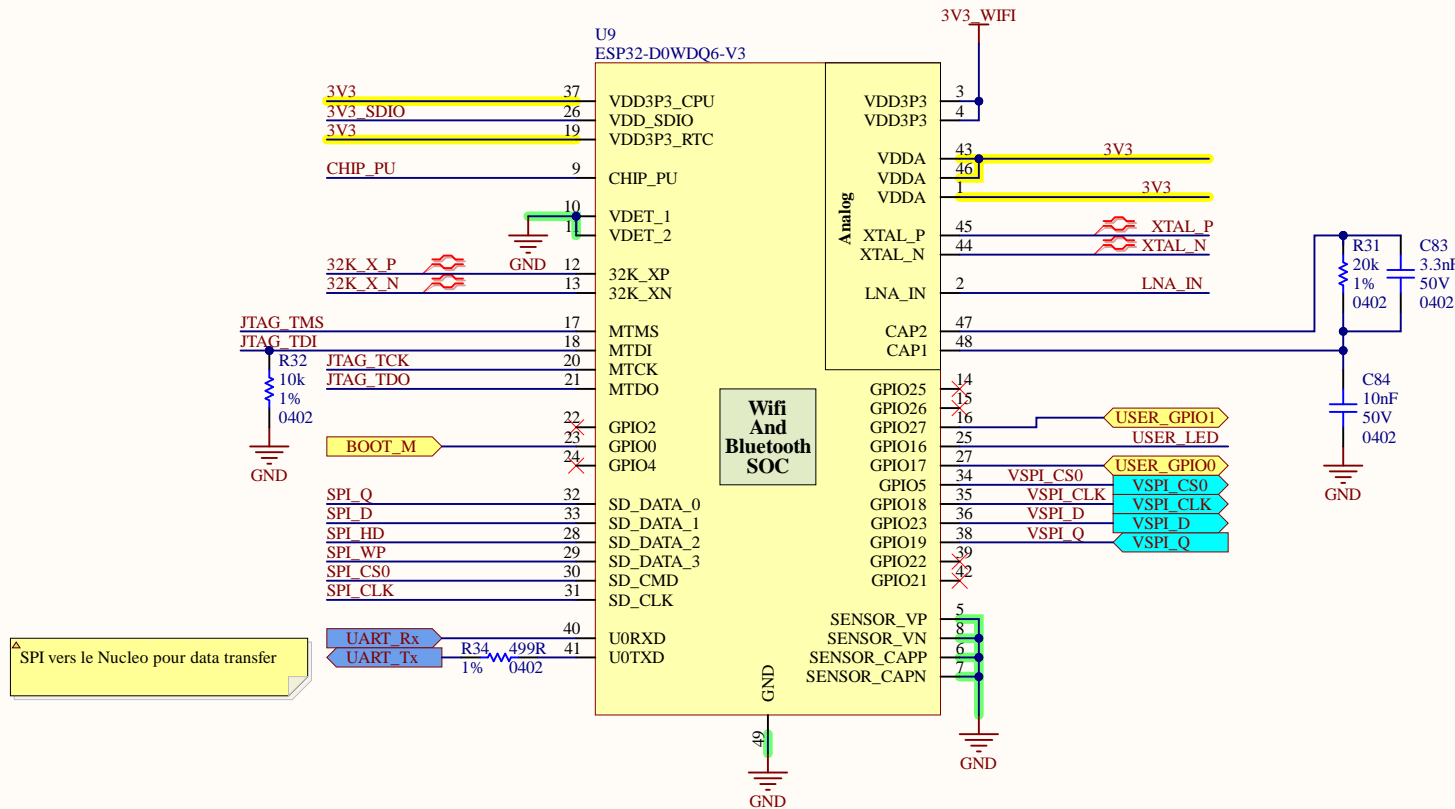
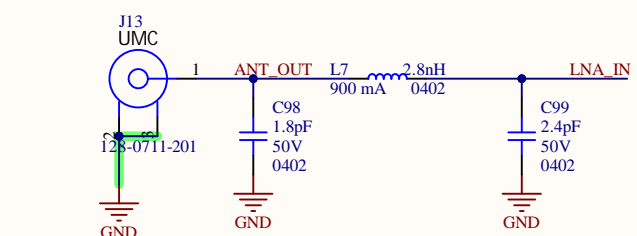
## Header JTAG



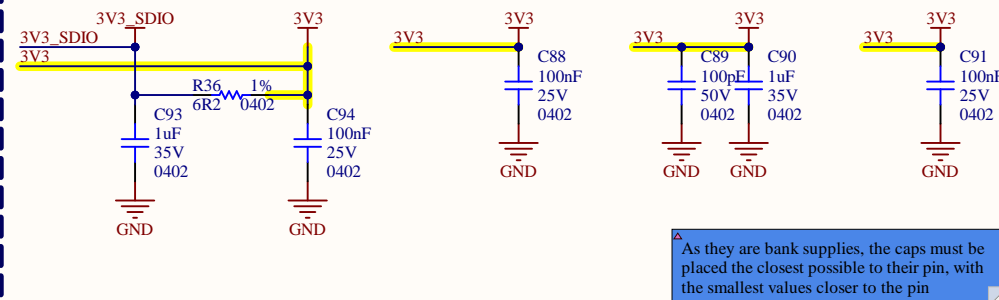
## FLASH



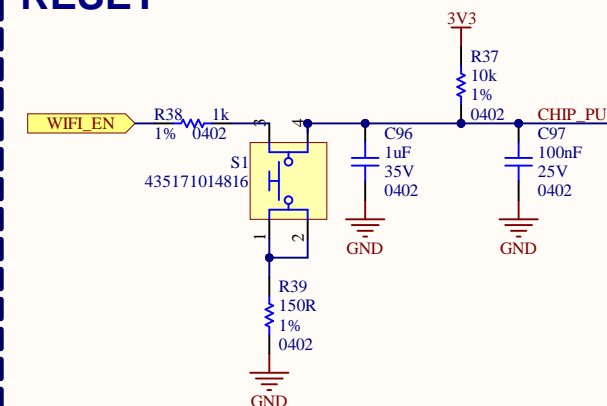
## Antenna



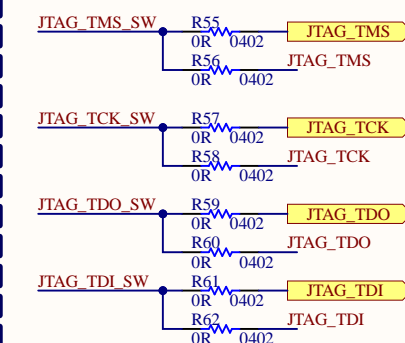
## BANK SUPPLIES



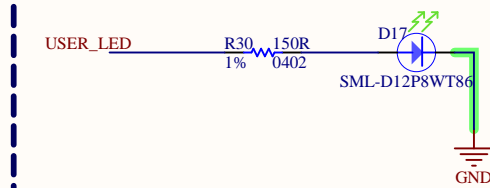
## RESET



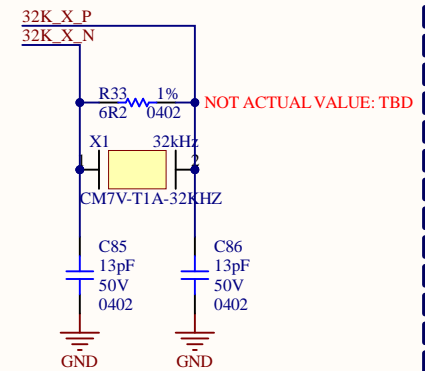
## JTAG SELECT



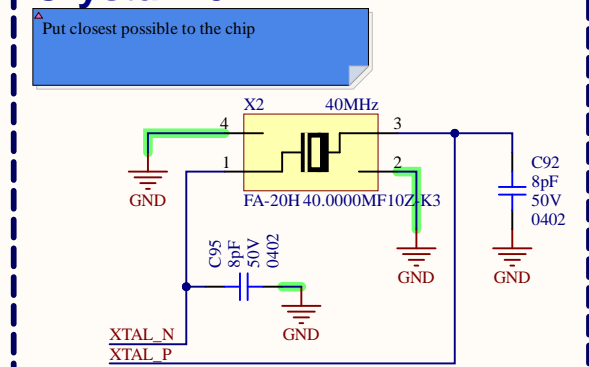
## LED



## Crystal 32kHz



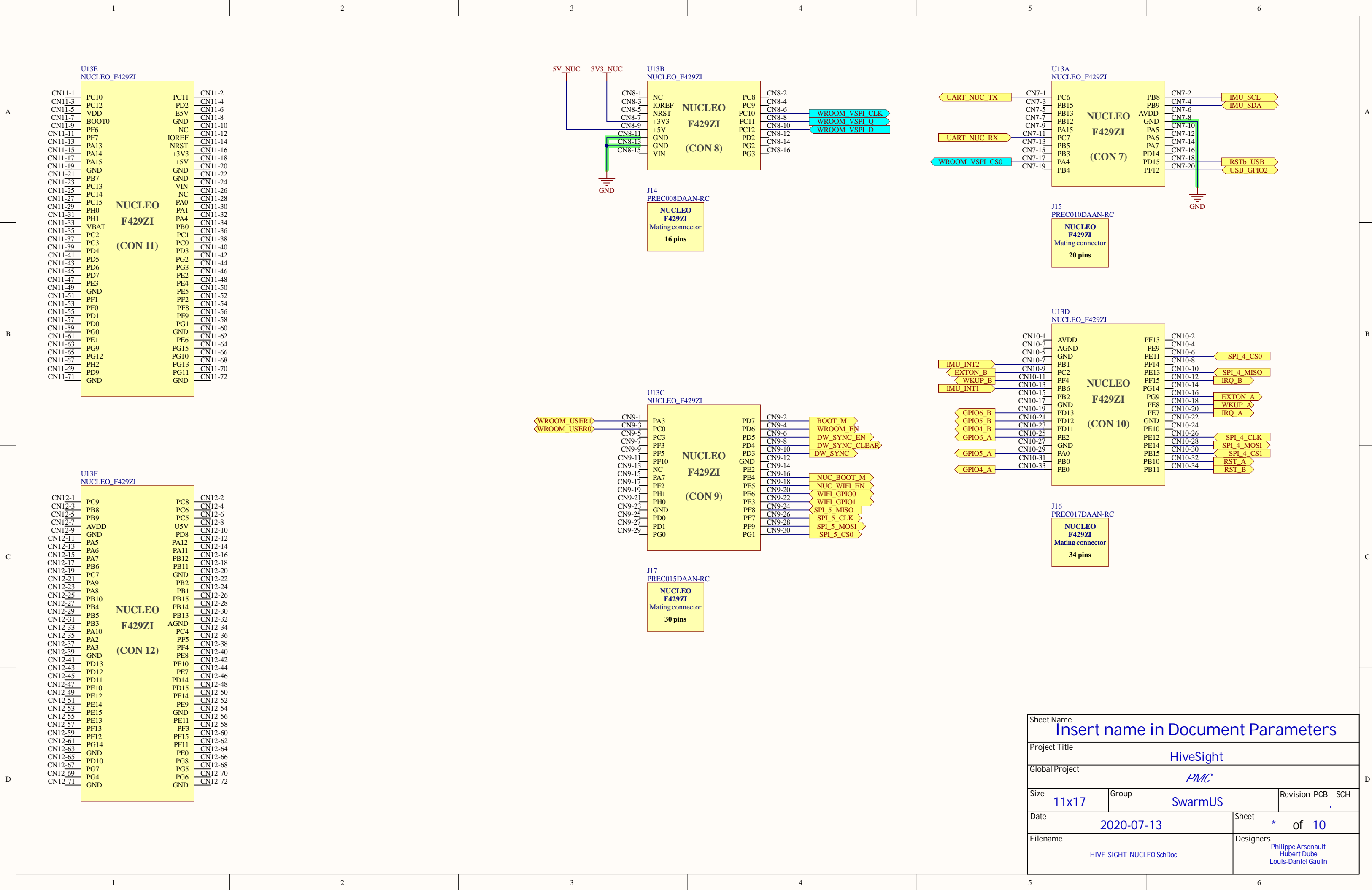
## Crystal 40MHz

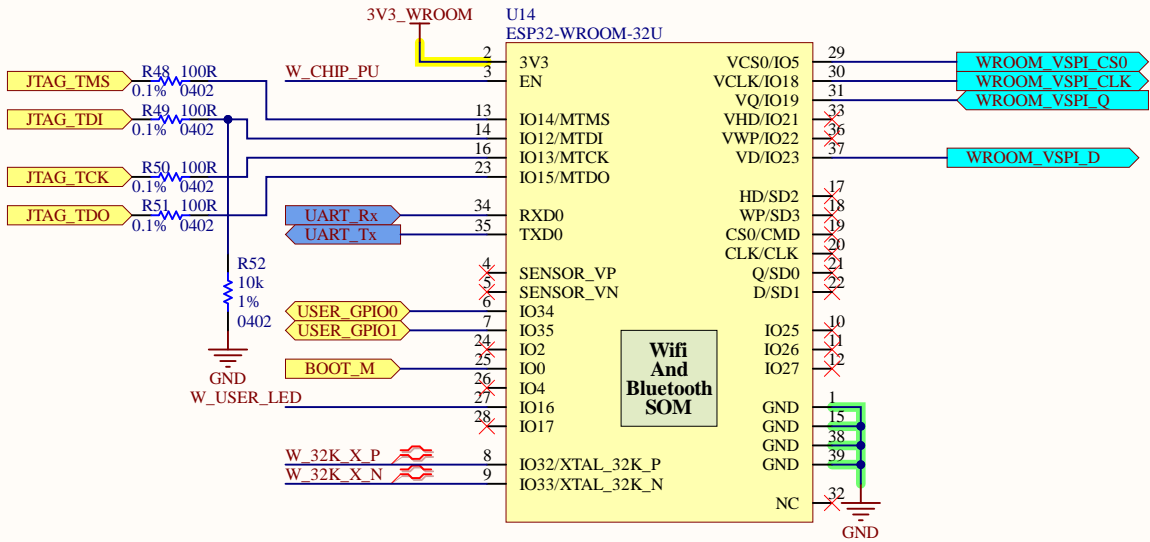
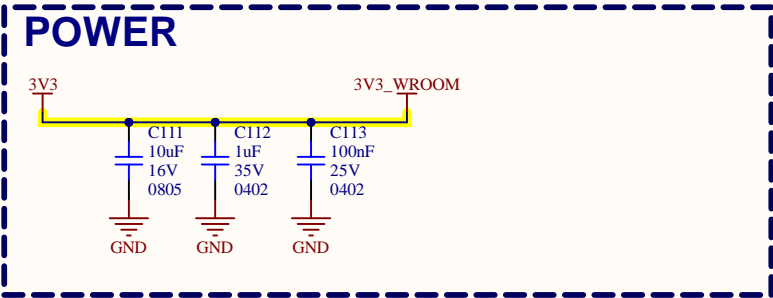
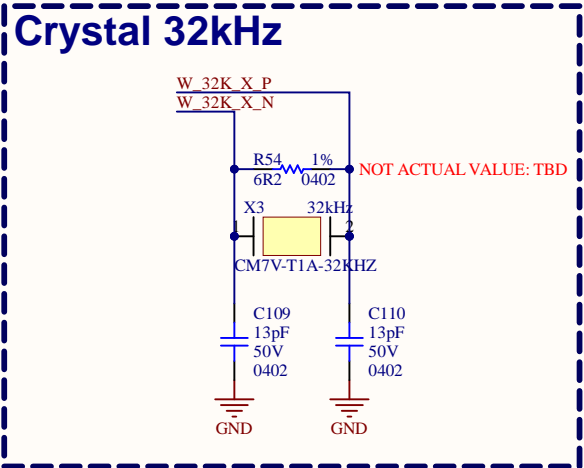
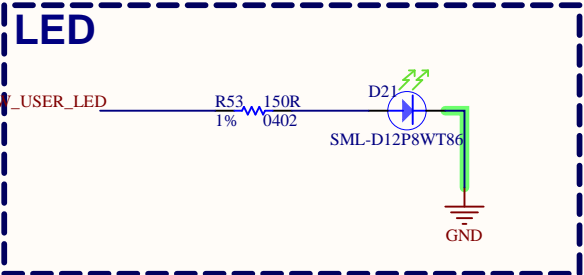
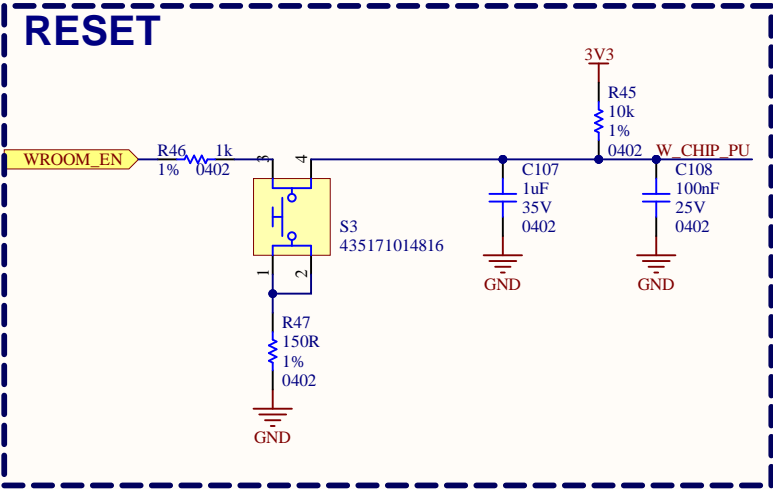


|                            |            |  |         |
|----------------------------|------------|--|---------|
| Sheet Name                 |            | WIRELESS   |         |
| Project Title              |            | HiveSight  |         |
| Global Project             |            | PMC  |         |
| Size                       | Group      | Revision   |         |
| 11x17                      | SwarmUS    | 1.000  |         |
| Date                       | 2020-07-13 | Sheet  | 5 of 10 |
| Filename                   |            | Designers  |         |
| HIVE_SIGHT_WIRELESS.SchDoc |            | Philippe Arsenault<br>Hubert Dube<br>Louis-Daniel Gaulin |         |









|                         |            |  |         |
|-------------------------|------------|--|---------|
| Sheet Name              |            | WROOM  |         |
| Project Title           |            | HiveSight  |         |
| Global Project          |            | PMC  |         |
| Size                    | Group      | Revision   |         |
| 11x17                   | SwarmUS    | 1.000  |         |
| Date                    | 2020-07-13 | Sheet  | * of 10 |
| Filename                |            | Designers  |         |
| HIVE_SIGHT_WROOM.SchDoc |            | Philippe Arsenault<br>Hubert Dube<br>Louis-Daniel Gaulin |         |