TUDelft Tag To Tag

Report

Board TUDelft Tag 2 Tag V0

Electrical specifications :

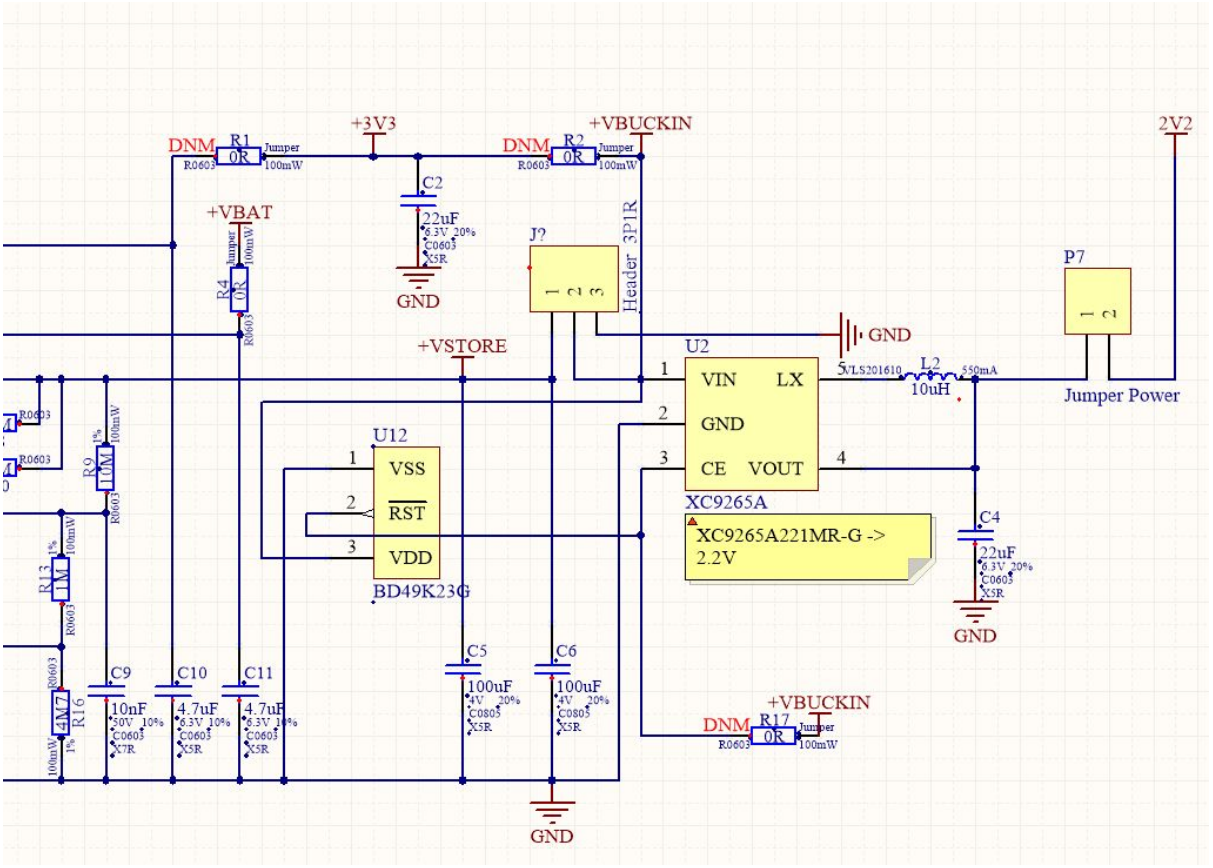
Power supply :

-3.7V Li-on or Supercap / Harvesting chip is triggered for :
- UVP = 3.38 V
- EOC = 4.11 V

LDO (2v2) :
-2.0-6V on J?-2

Solar panel : Max 20V

Harvesting Circuit output :



Jumper P7 must be set to link the LDO to the circuit power supply.

LDO or unregulated outpout from the harvesting chip :
Jumper between P?1 and P?2 if Vstore is used .
No jumper if the regulated 3v3 LDO from the harvesting chip is used.

Digital

Microcontroller :

Pinout :
P1.0 : Switch power sensors
P1.1 : Interrupt accelerometer
P1.2 : RF_RX Pin
P1.3 : unused pin
P1.4 : RF switch enable pin
P1.5 :unused pin
P1.6 :SDA
P1.7 :SCL
P2.0 :Battery charging state (active low)
P2.1:Battery connected state (active low)
P2.2 :unused pin
P2.3 :unused pin
P2.4 :unused pin
P2.5 :unused pin
P2.6 :unused pin
P2.7 :unused pin
PJ.0 : TDO
PJ.1 :TDI
PJ.2 :TMS
PJ.3 :TCK

P3.0 : TX using MOS path
P3.1 :RF Control 1
P3.2 :RF Control 2

Table 3. Truth Table

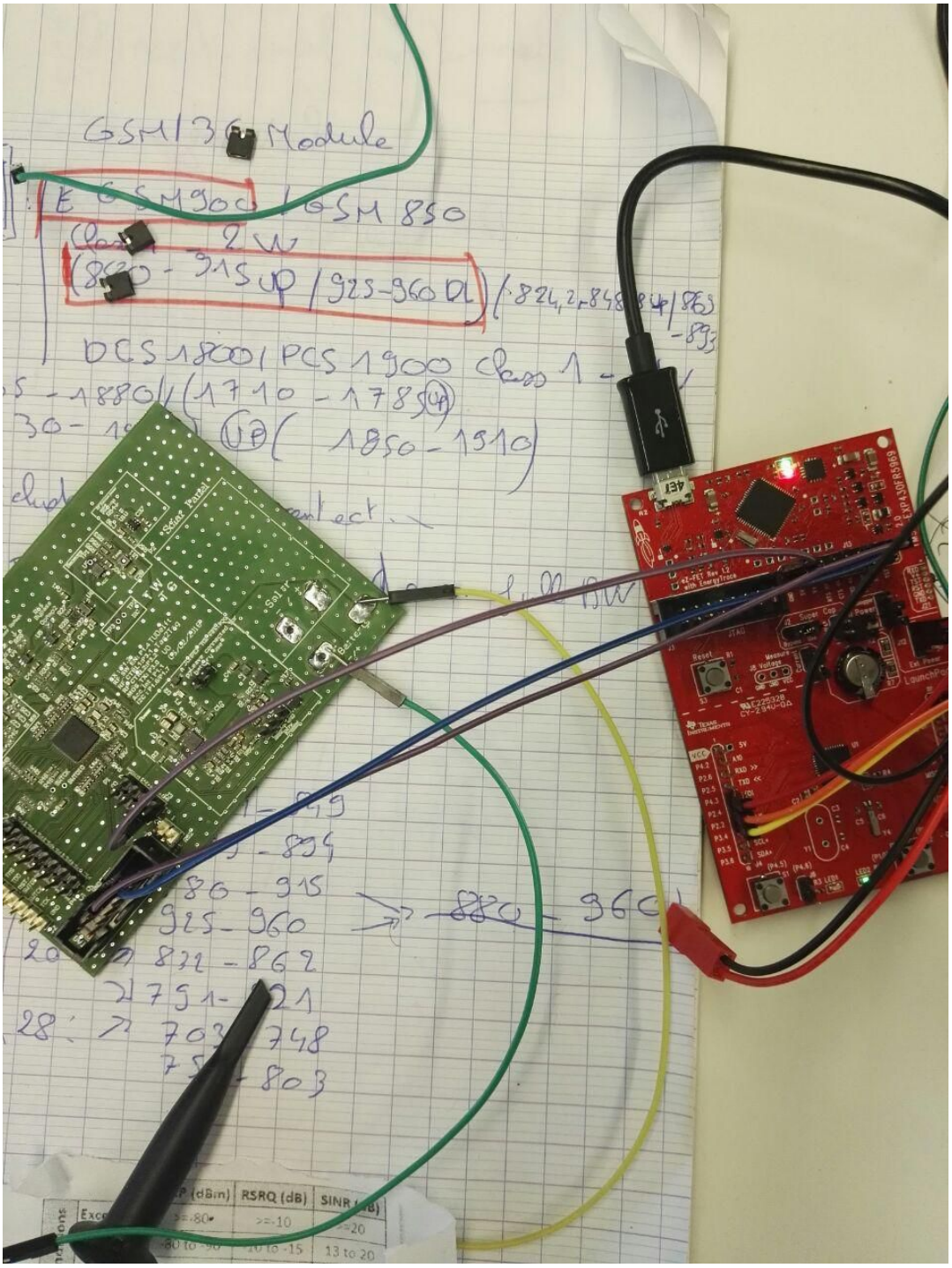
A1	A0	$\overline{EN}$	ON Switch[1]
X	X	1	None
0	0	0	RF1
0	1	0	RF2
1	0	0	RF3
1	1	0	RF4

[1] Off switches have: 50 Ω termination to GND (ADG904); shunt to GND (ADG904-R).

RF 1 = Input (RX mode)
RF 2/3/4 = Reflective mode with different impedances
P3.3 :unused pin
P3.4 :unused pin
P3.5 :unused pin
P3.6 :unused pin
P3.7 :unused pin

P4.0 :unused pin
P4.1 :unused pin
P4.2 :unused pin
P4.3 :unused pin
P4.4 :unused pin
P4.5 :unused pin
P4.6 :unused pin
P4.7 :unused pin
All the unused pins are mapped to headers.

Programming :



The chip can be programmed using the launchpad board.
To do this remove the jumpers on RST & TST and connect respectively to SWDIO & SWTCK. Connect also a GND from launchpad to GND on the board.
Then you can use Code Composer Studio to upload code.
You can also use a 14-pins JTAG programmer.

I2C sensors adresses :
Accelero 0x0011001x
Temp /Humidity : 1000 011x

RF :
The RF chain lays on the left top
Sensors are on the top right.