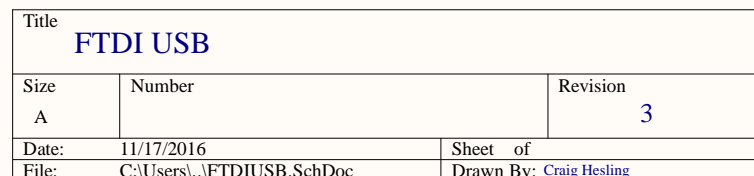
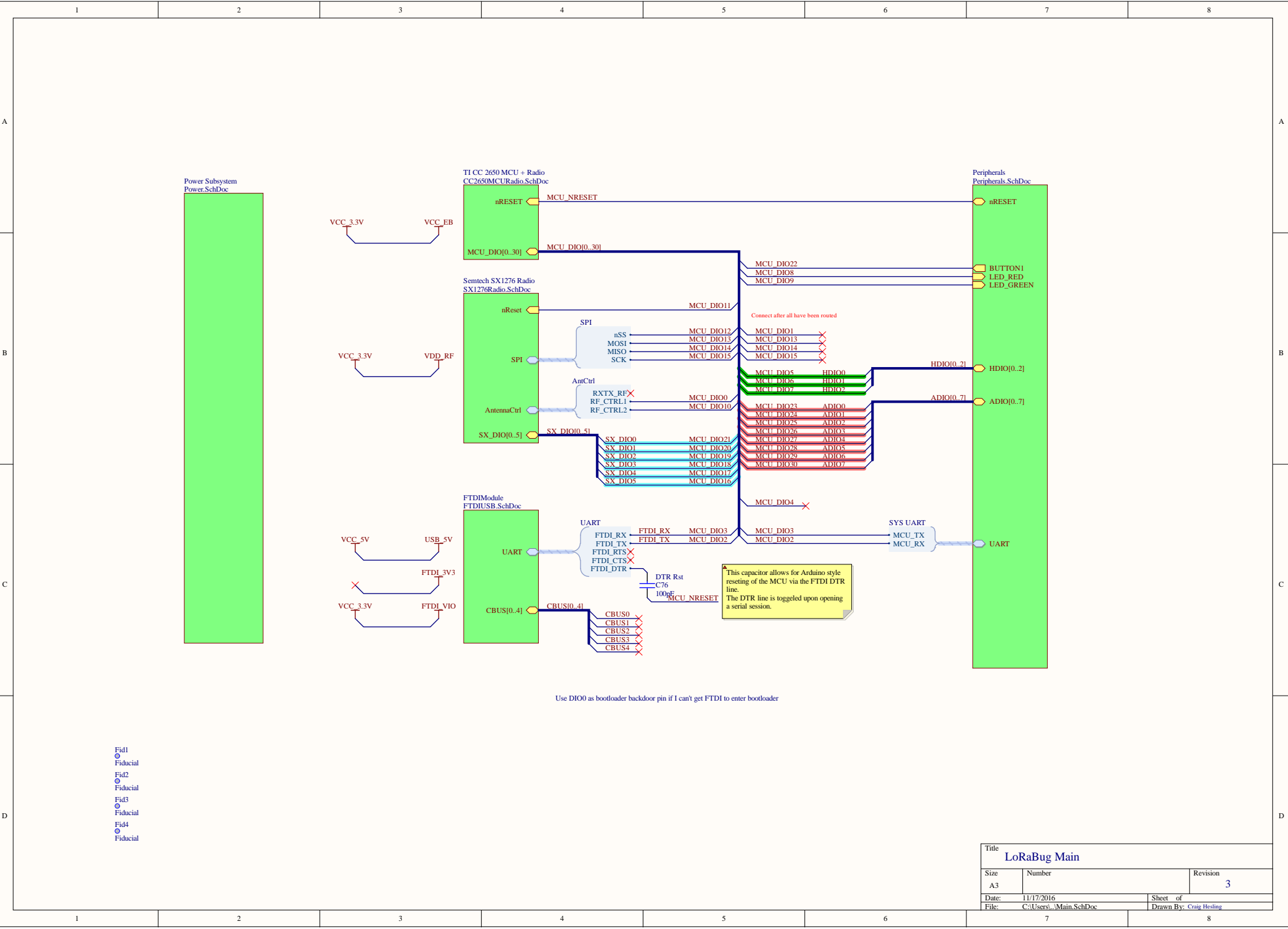


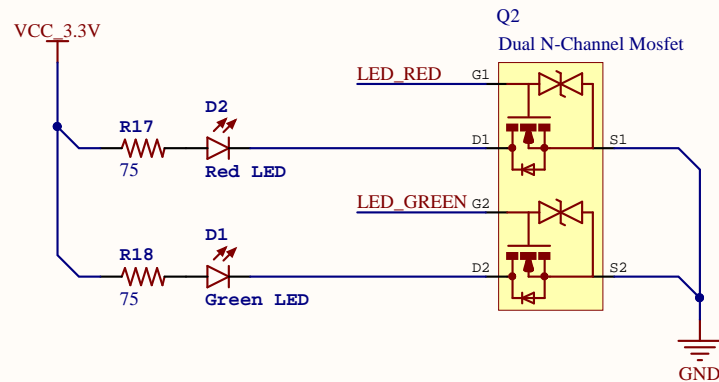
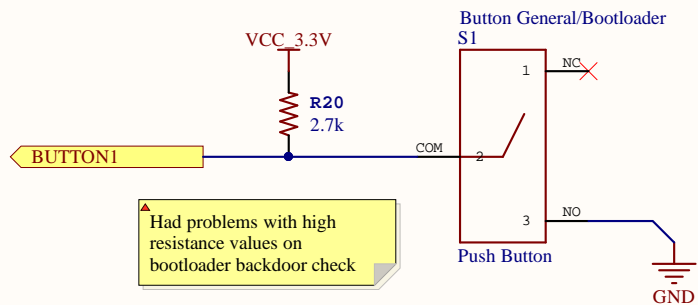
Title		
TI CC2650 Radio and MCU		
Size	Number	Revision
A3		3
Date:	11/17/2016	Sheet of
File:	C:\Users\... \CC2650MCURadio.SchDoc	Drawn By: Craig Hesling



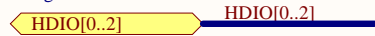


Fid1  
Fid2  
Fid3  
Fid4

Title		
LoRaBug Main		
Size	Number	Revision
A3		3
Date:	11/17/2016	Sheet of
File:	C:\Users\Main\SchDoc	Drawn By: Craig Hesling



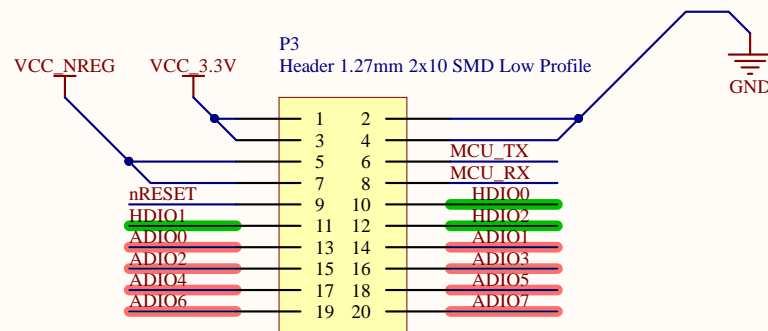
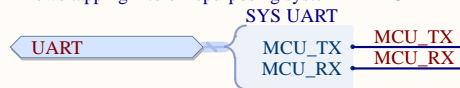
3 High-Drive I/O Pins



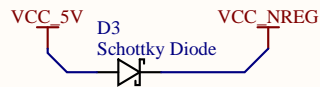
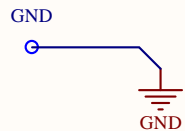
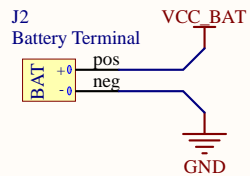
8 Analog Capable Pins



Allows tapping into or repurposing system FTDI UART



Title Peripherals		
Size A	Number	Revision 3
Date:	11/17/2016	Sheet of
File:	C:\Users\...\Peripherals.SchDoc	Drawn By: Craig Hesling

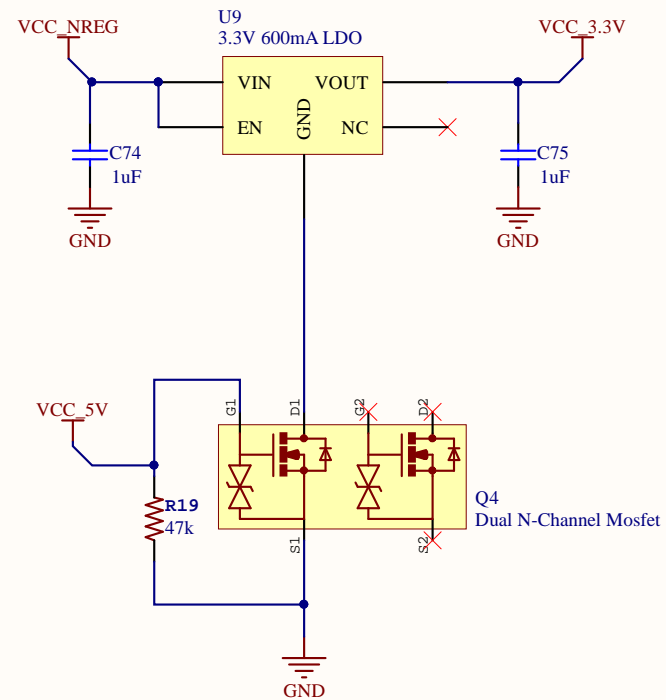


▲ FIX the diode part to reflect  
new better diode.  
It is a normal didode

▲ Battery connects directly to 3.3V rail

### Voltage regulation when USB present

Typically 60-80nA reverse leakage w/ 2AA batteries



Title <b>Power</b>		
Size A	Number	Revision <b>3</b>
Date:	11/17/2016	Sheet of
File:	C:\Users\...\Power.SchDoc	Drawn By: <a href="#">Craig Hesling</a>

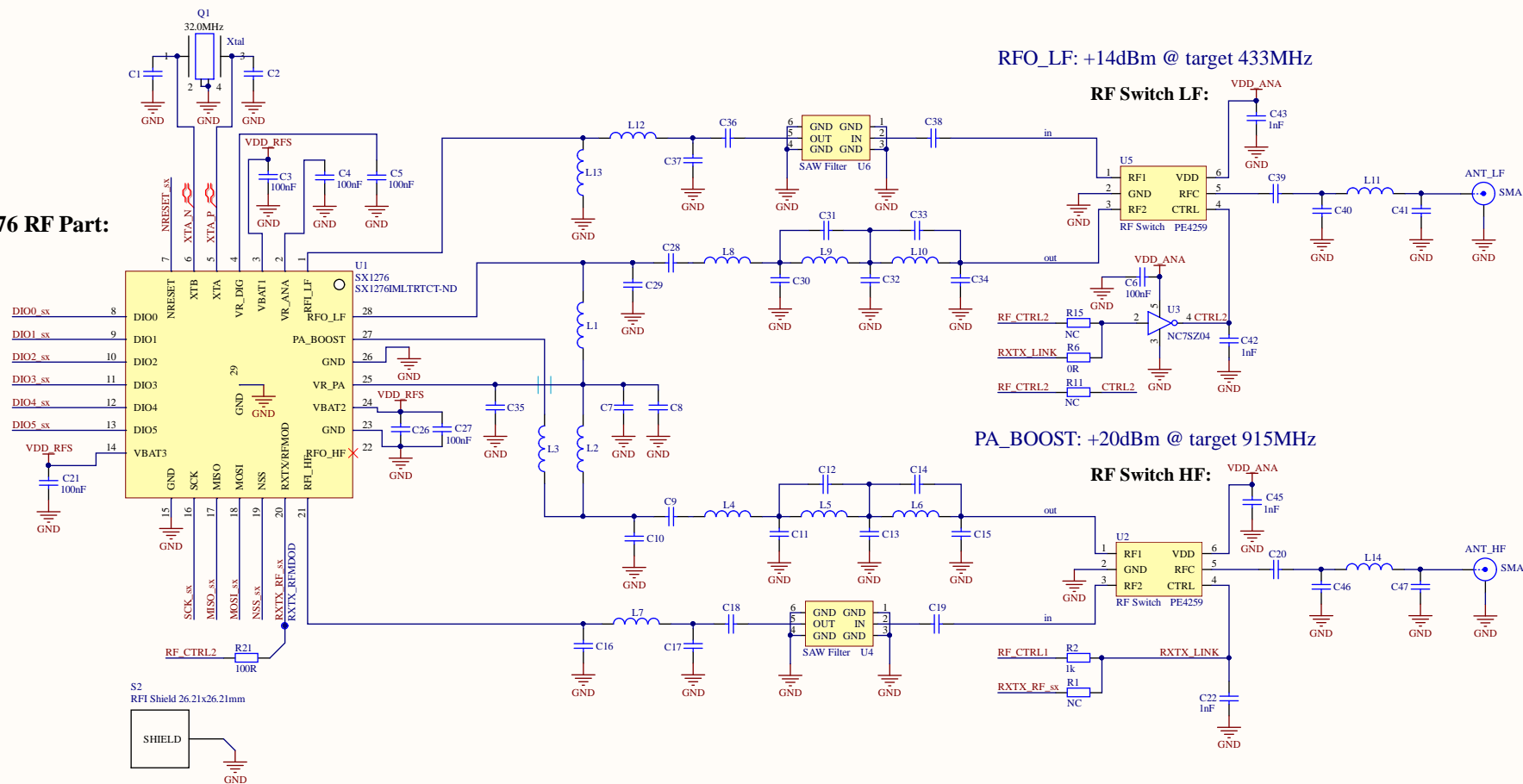


Figure 10 shows the pin connections for the 100R module. The module has two 8-pin headers, R4 and R3. Header R4 is connected to the DIO pins, and Header R3 is connected to the NSS, MOSI, MISO, and SCK pins. The connections are as follows:

Header	Pin	Signal
R4	1	DIO3 <sub>sx</sub>
	2	DIO2 <sub>sx</sub>
	3	DIO1 <sub>sx</sub>
	4	DIO0 <sub>sx</sub>
	5	DIO0
	6	DIO1
	7	DIO2
	8	DIO3
R3	1	NSS <sub>sx</sub>
	2	MOSI <sub>sx</sub>
	3	MISO <sub>sx</sub>
	4	SCK <sub>sx</sub>
	5	NSS
	6	MOSI
	7	MISO
	8	SCK

The module is labeled 100R. The central pin is labeled EXBN8V<sub>sxxdX</sub>. The pin Y1001TR-ND is also shown.

Diagram illustrating the pin connections for the Antenna module:

- DIO0, DIO1, DIO2, DIO3, DIO4, DIO5** are connected to **DIO[0..5]**, which is then connected to **SX\_DIO[0..5]**.
- SCK, NSS, MOSI, MISO** are connected to **SPI**, which is then connected to **SPI**.
- RF\_CTRL1, RF\_CTRL2, RXTX\_RF** are connected to **AntCtrl**, which is then connected to **AntennaCtrl**.
- NRESET** is connected to **nR\_reset**.

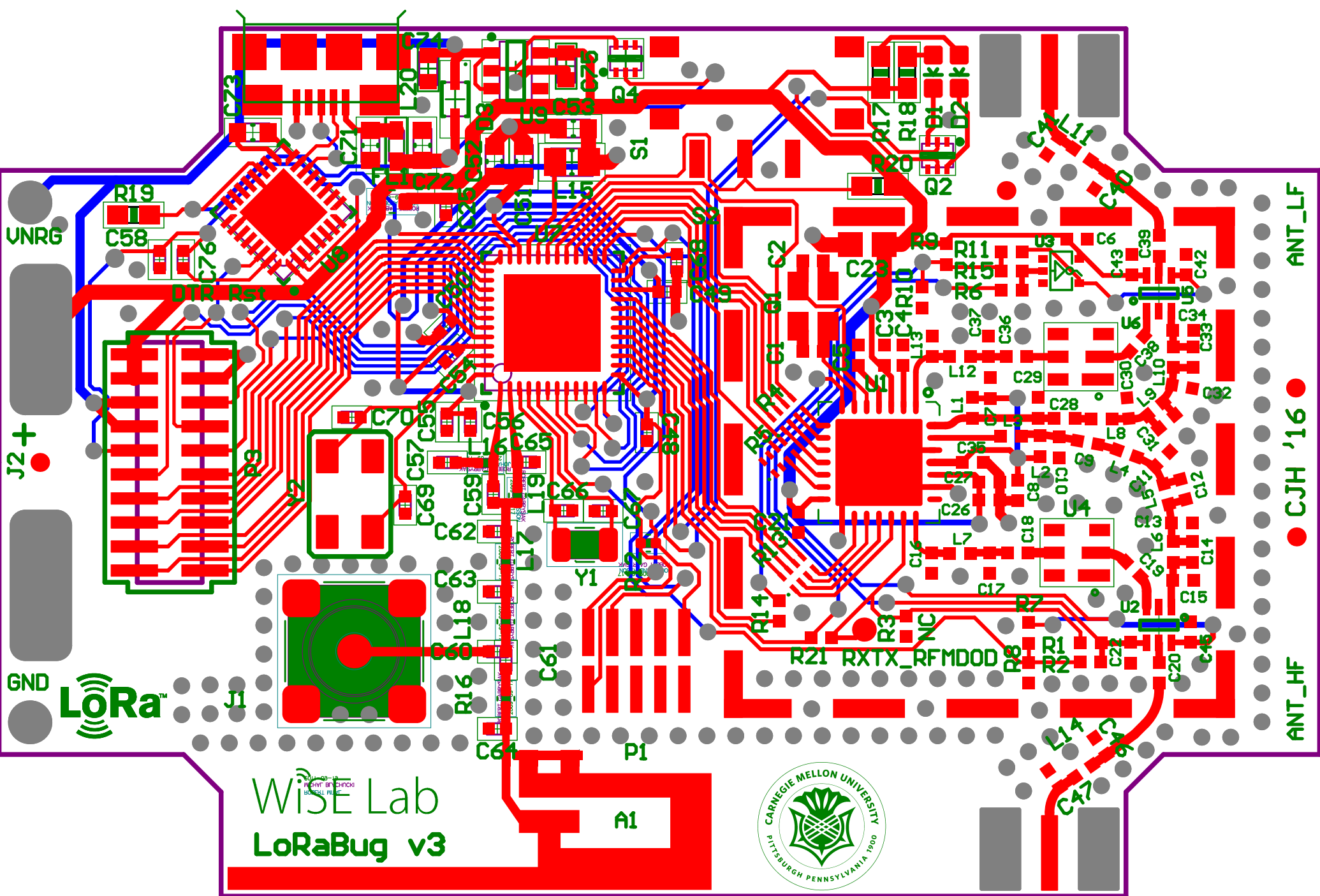
VDD\_RF  
C23  
10uF  
GND

- \* PA BOOST (Power Amplifier Boost) is configured for the high frequency(HF) side. This provides the +20dBm to the HF side. So, we do not use RFO\_LF.
- \* The LF side can only do +14dBm with the RFO\_LF
- \* Saw filter U4 should be 16MHz wide and centered at 915MHz
- \* Saw filter U6 should be centered at 433MHz
- \* When RF Switch CTRL1 is high RF1 is selected

**RF Switch Configuration:**

- \* The given resistor configuration is for linked control of both RF switched through RF\_CTRL1.
- \* This is to mimic the controls of the Semtech nibble board.
- \* RF\_CTRL2 is connected to the SX1, RXTX, RF to get feedback from the SX.
- \* When RF\_CTRL1 is high, both are in TX mode.

Title <b>Semtech SX1276 Radio</b>			
Size <b>A3</b>	Number	Revision <b>3</b>	
Date: <b>11/17/2016</b>	Sheet of		
File: <b>CAUsers\...SX1276Radio.SchDoc</b>	Drawn By:		<b>Craig Hesling</b>



LoRa  
LoRaBug v3



ANT\_HF  
CJH '16  
ANT\_LF