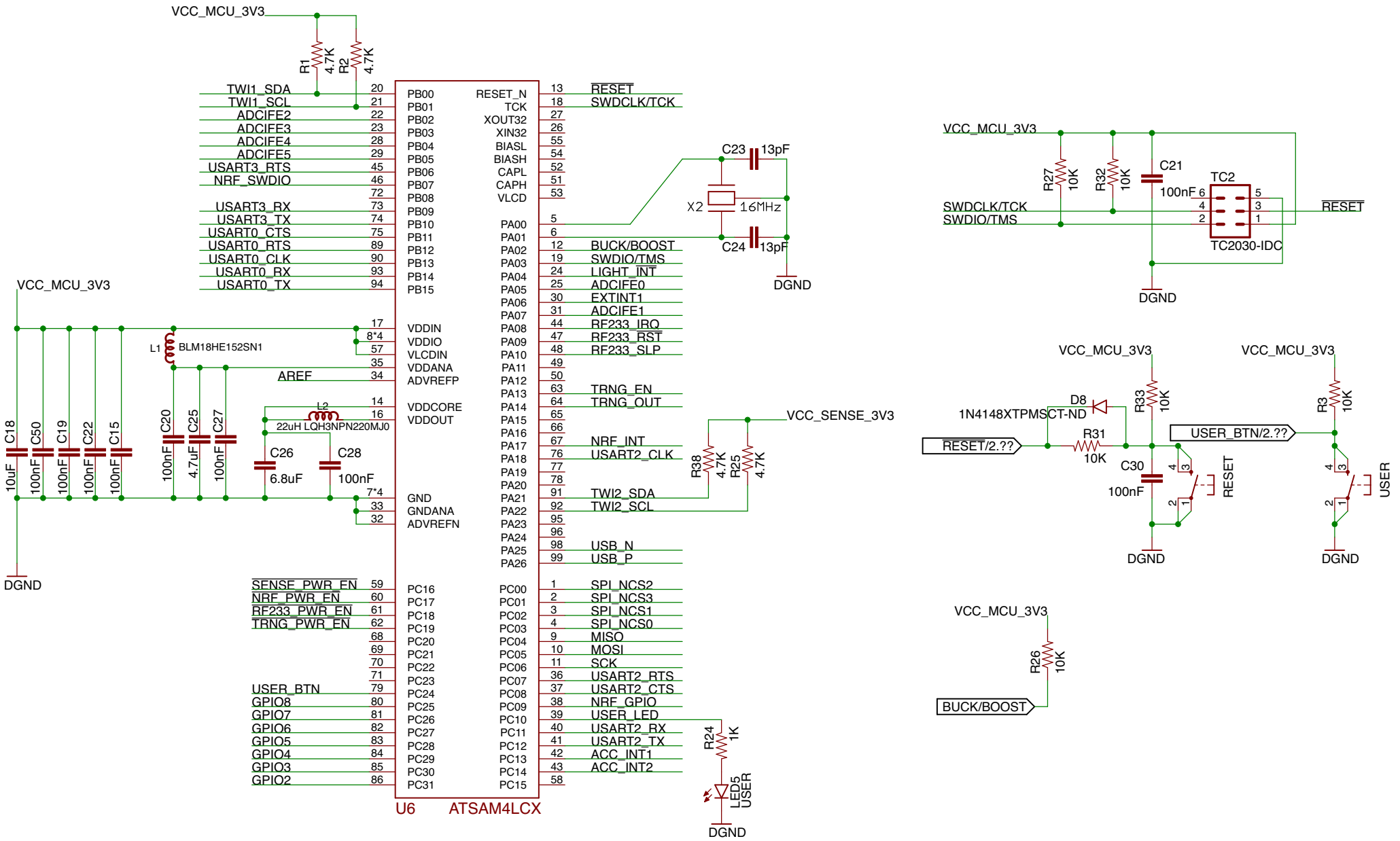
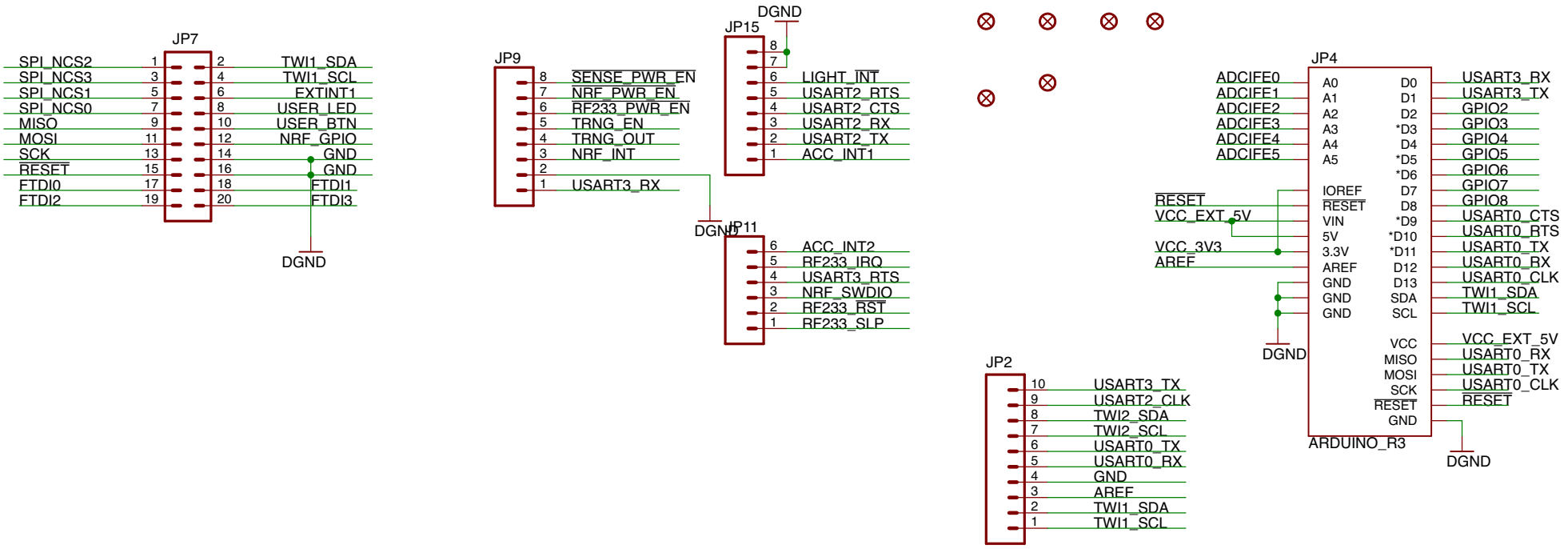
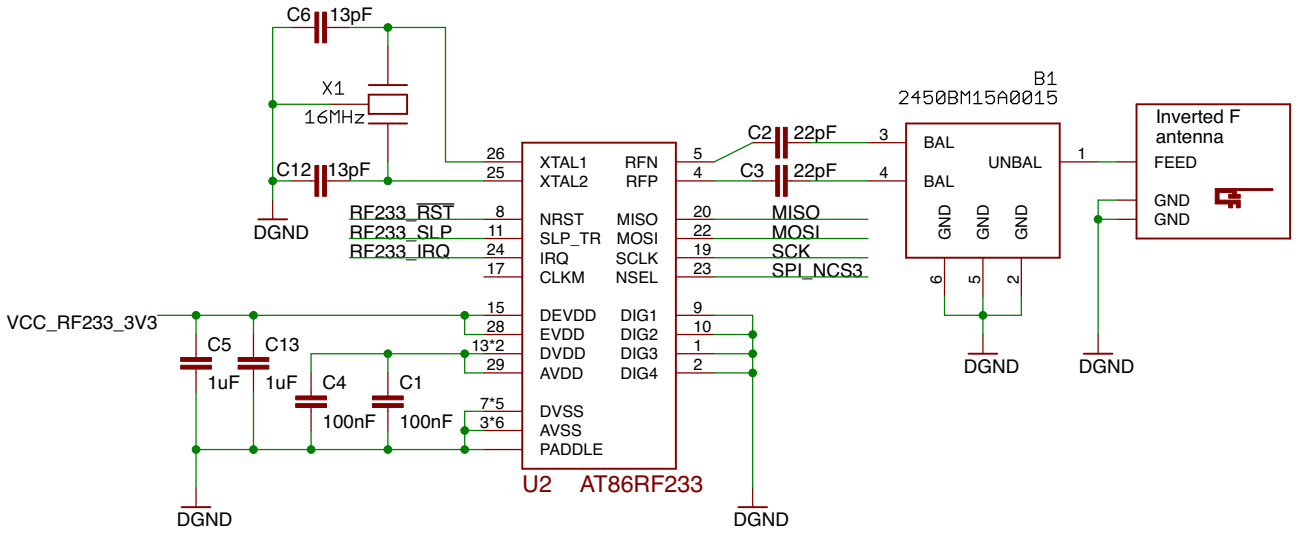
MCU

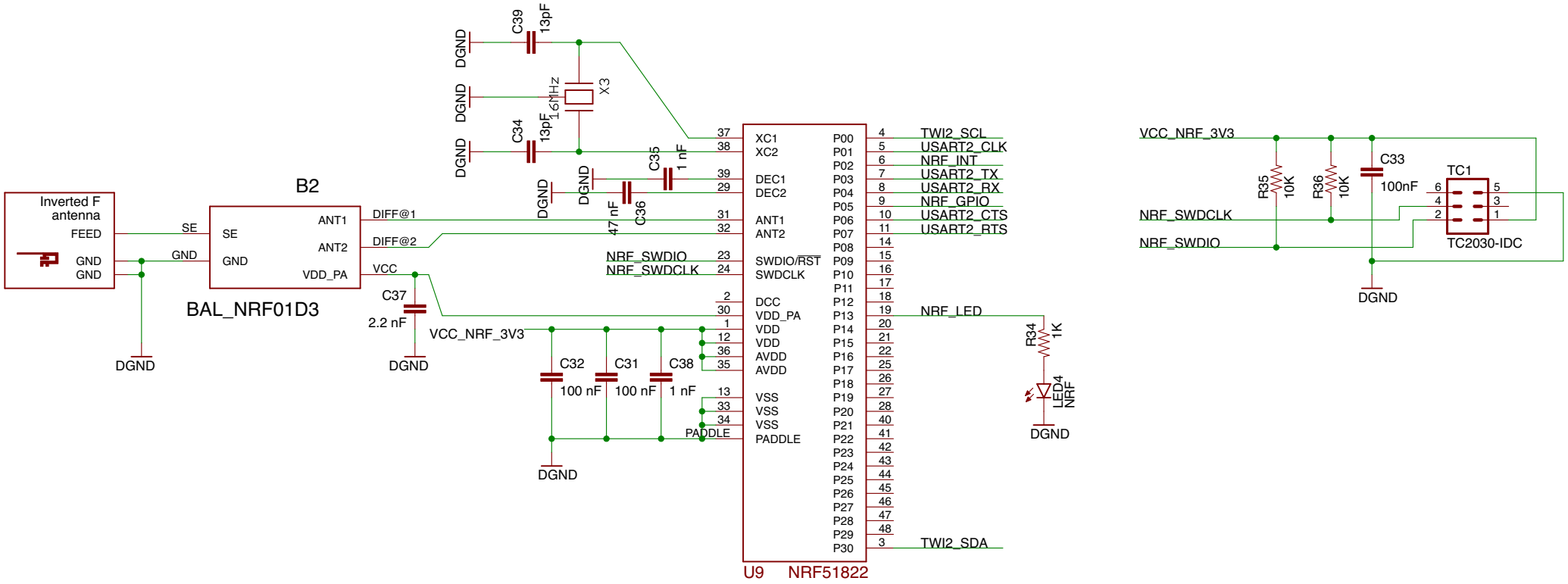

VCC_MCU_3V3
R1 4.7K
R2 4.7K
TWI1_SDA
TWI1_SCL
ADCIFE2
ADCIFE3
ADCIFE4
ADCIFE5
USART3_RTS
NRF_SWDIO
USART3_RX
USART3_TX
USART0_CTS
USART0_RTS
USART0_CLK
USART0_RX
USART0_TX
C23 13pF
X2 16MHz
C24 13pF
DGND
VCC_MCU_3V3
L1 BLM18HE152SN1
AREF
L2 22uH LQH3NPN220MJ0
C18 10uF
C50 100nF
C19 100nF
C22 100nF
C15 100nF
C20 100nF
C25 4.7uF
C27 100nF
C26 6.8uF
C28 100nF
DGND
PB00 PB01 PB02 PB03 PB04 PB05 PB06 PB07 PB08 PB09 PB10 PB11 PB12 PB13 PB14 PB15
VDDIN VDDIO VLCDIN VDDANA ADVREFP VDDCORE VDDOUT GND GNDANA ADVREFN
PA00 PA01 PA02 PA03 PA04 PA05 PA06 PA07 PA08 PA09 PA10 PA11 PA12 PA13 PA14 PA15 PA16 PA17 PA18 PA19 PA20 PA21 PA22 PA23 PA24 PA25 PA26
PC16 PC17 PC18 PC19 PC20 PC21 PC22 PC23 PC24 PC25 PC26 PC27 PC28 PC29 PC30 PC31
PC00 PC01 PC02 PC03 PC04 PC05 PC06 PC07 PC08 PC09 PC10 PC11 PC12 PC13 PC14 PC15
RESET_N TCK XOUT32 XIN32 BIASL BIASH CAPL CAPH VLCD
RESET
SWDCLK/TCK
BUCK/BOOST
SWDIO/TMS
LIGHT_INT
ADCIFE0
EXTINT1
ADCIFE1
RF233_IRQ
RF233_RST
RF233_SLP
TRNG_EN
TRNG_OUT
NRF_INT
USART2_CLK
TWI2_SDA
TWI2_SCL
USB_N
USB_P
SPI_NCS2
SPI_NCS3
SPI_NCS1
SPI_NCS0
MISO
MOSI
SCK
USART2_RTS
USART2_CTS
NRF_GPIO
USER_LED
USART2_RX
USART2_TX
ACC_INT1
ACC_INT2
SENSE_PWR_EN
NRF_PWR_EN
RF233_PWR_EN
TRNG_PWR_EN
USER_BTN
GPIO8
GPIO7
GPIO6
GPIO5
GPIO4
GPIO3
GPIO2
R38 4.7K
R25 4.7K
VCC_SENSE_3V3
R24 1K
LED5 USER
DGND
U6 ATSAM4LCX
VCC_MCU_3V3
R27 10K
R32 10K
C21 100nF
TC2
SWDCLK/TCK
SWDIO/TMS
RESET
TC2030-IDC
DGND
VCC_MCU_3V3
D8
1N4148XTPMSCT-ND
R33 10K
R31 10K
RESET/2.??
C30 100nF
RESET
DGND
VCC_MCU_3V3
R3 10K
USER_BTN/2.??
USER
DGND
VCC_MCU_3V3
R26 10K
BUCK/BOOST

Headers

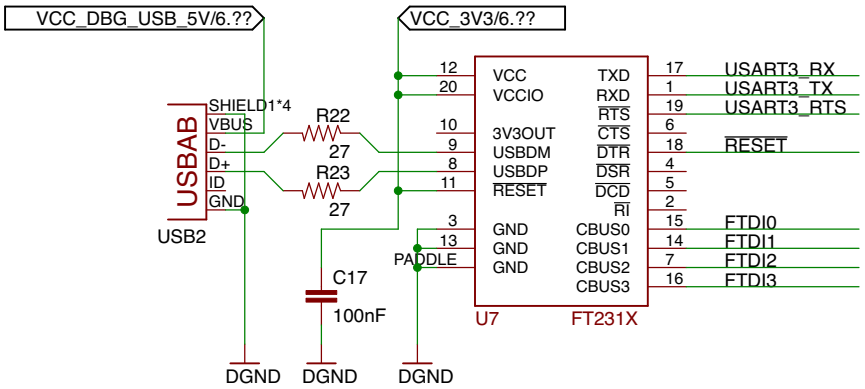

JP7
SPI_NCS2 1
SPI_NCS3 3
SPI_NCS1 5
SPI_NCS0 7
MISO 9
MOSI 11
SCK 13
RESET 15
FTDI0 17
FTDI2 19
2 TWI1_SDA
4 TWI1_SCL
6 EXTINT1
8 USER_LED
10 USER_BTN
12 NRF_GPIO
14 GND
16 GND
18 FTDI1
20 FTDI3
DGND
JP9
8 SENSE_PWR_EN
7 NRF_PWR_EN
6 RF233_PWR_EN
5 TRNG_EN
4 TRNG_OUT
3 NRF_INT
2
1 USART3_RX
DGND
JP15
DGND
8
7
6 LIGHT_INT
5 USART2_RTS
4 USART2_CTS
3 USART2_RX
2 USART2_TX
1 ACC_INT1
JP11
6 ACC_INT2
5 RF233_IRQ
4 USART3_RTS
3 NRF_SWDIO
2 RF233_RST
1 RF233_SLP
JP4
ADCIFE0
ADCIFE1
ADCIFE2
ADCIFE3
ADCIFE4
ADCIFE5
RESET
VCC_EXT_5V
VCC_3V3
AREF
A0 A1 A2 A3 A4 A5
IOREF RESET VIN 5V 3.3V AREF GND GND GND
D0 D1 D2 *D3 D4 *D5 *D6 D7 D8 *D9 *D10 *D11 D12 D13 SDA SCL
VCC MISO MOSI SCK RESET GND
USART3_RX
USART3_TX
GPIO2
GPIO3
GPIO4
GPIO5
GPIO6
GPIO7
GPIO8
USART0_CTS
USART0_RTS
USART0_TX
USART0_RX
USART0_CLK
TWI1_SDA
TWI1_SCL
VCC_EXT_5V
USART0_RX
USART0_TX
USART0_CLK
RESET
ARDUINO_R3
DGND
JP2
10 USART3_TX
9 USART2_CLK
8 TWI2_SDA
7 TWI2_SCL
6 USART0_TX
5 USART0_RX
4 GND
3 AREF
2 TWI1_SDA
1 TWI1_SCL

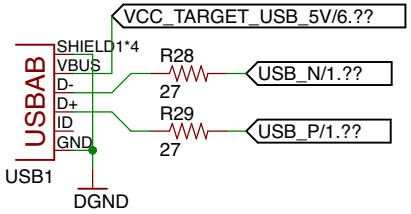

C6 13pF
X1
16MHz
C12 13pF
DGND
RF233_RST
RF233_SLP
RF233_IRQ
26
25
8
11
24
17
XTAL1
XTAL2
NRST
SLP_TR
IRQ
CLKM
RFN
RFP
MISO
MOSI
SCLK
NSEL
5
4
20
22
19
23
C2 22pF
C3 22pF
3
4
B1
2450BM15A0015
BAL
BAL
UNBAL
GND
GND
GND
6
5
2
1
Inverted F
antenna
FEED
GND
GND
DGND
DGND
MISO
MOSI
SCK
SPI_NCS3
VCC_RF233_3V3
15
28
13*2
29
7*5
3*6
DEVDD
EVDD
DVDD
AVDD
DVSS
AVSS
PADDLE
DIG1
DIG2
DIG3
DIG4
9
10
1
2
C5 1uF
C13 1uF
C4 100nF
C1 100nF
DGND
DGND
U2 AT86RF233

BLE

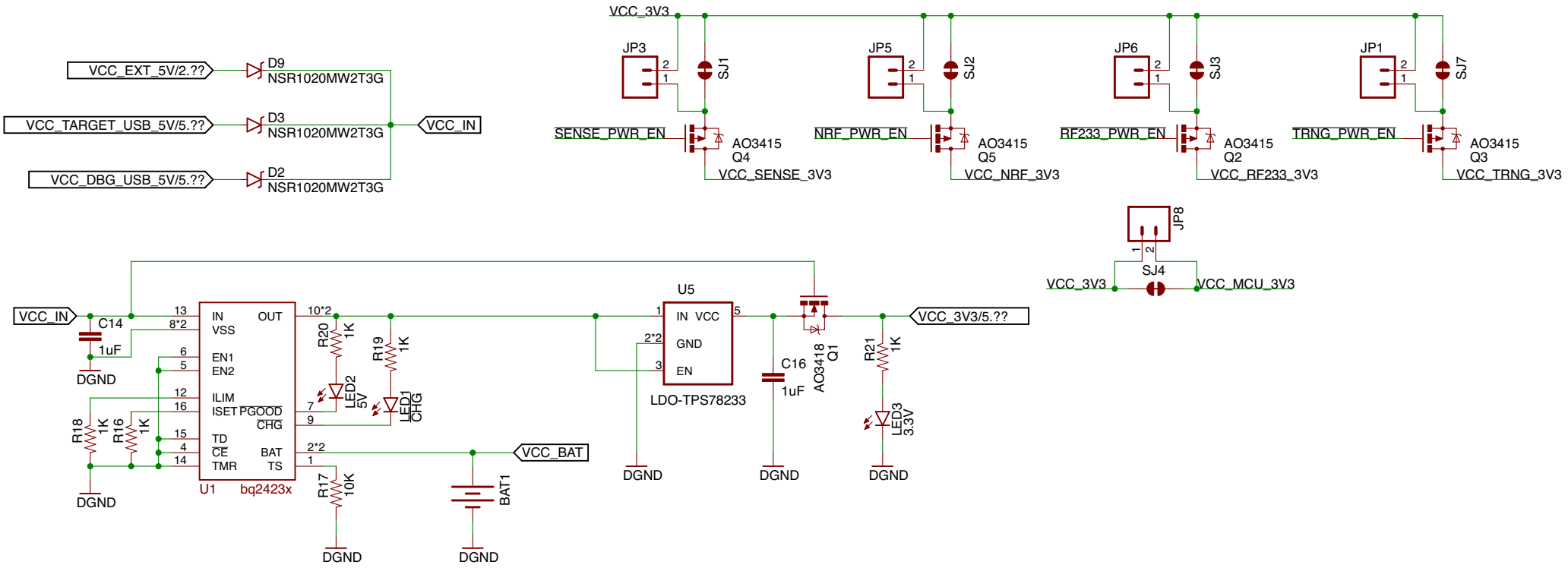

Inverted F antenna
FEED
GND
GND
SE
GND
B2
SE
GND
ANT1
ANT2
VDD_PA
BAL_NRF01D3
DIFF@1
DIFF@2
VCC
C37
2.2 nF
DGND
VCC_NRF_3V3
C32
100 nF
C31
100 nF
C38
1 nF
C39
13pF
C34
13pF
X3
16MHz
C35
1 nF
C36
47 nF
NRF_SWDIO
NRF_SWDCLK
U9 NRF51822
XC1
XC2
DEC1
DEC2
ANT1
ANT2
SWDIO/RST
SWDCLK
DCC
VDD_PA
VDD
VDD
AVDD
AVDD
VSS
VSS
VSS
PADDLE
P00
P01
P02
P03
P04
P05
P06
P07
P08
P09
P10
P11
P12
P13
P14
P15
P16
P17
P18
P19
P20
P21
P22
P23
P24
P25
P26
P27
P28
P29
P30
TWI2_SCL
USART2_CLK
NRF_INT
USART2_TX
USART2_RX
NRF_GPIO
USART2_CTS
USART2_RTS
NRF_LED
TWI2_SDA
R34
1K
LED4
NRF
VCC_NRF_3V3
R35
10K
R36
10K
C33
100nF
TC1
TC2030-IDC
NRF_SWDCLK
NRF_SWDIO

USB

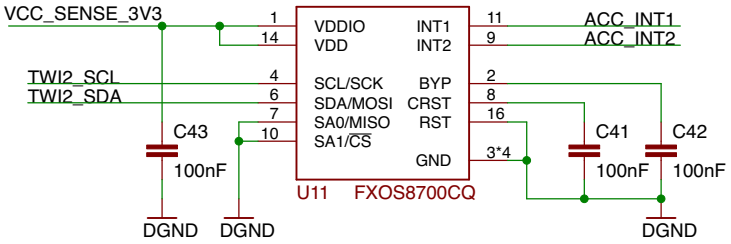

VCC_DBG_USB_5V/6.??
VCC_3V3/6.??
USBAB
SHIELD1*4
VBUS
D-
D+
ID
GND
USB2
R22
27
R23
27
C17
100nF
DGND
DGND
DGND
12
20
10
9
8
11
3
13
PADDLE
VCC
VCCIO
3V3OUT
USBDM
USBDP
RESET
GND
GND
GND
TXD
RXD
RTS
CTS
DTR
DSR
DCD
RI
CBUS0
CBUS1
CBUS2
CBUS3
17
1
19
6
18
4
5
2
15
14
7
16
USART3_RX
USART3_TX
USART3_RTS
RESET
FTDI0
FTDI1
FTDI2
FTDI3
U7
FT231X

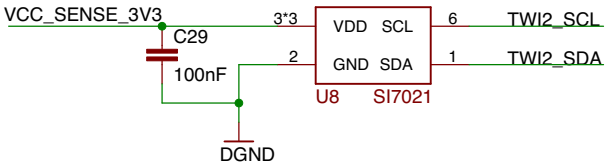

VCC_TARGET_USB_5V/6.??
USBAB
SHIELD1*4
VBUS
D-
D+
ID
GND
USB1
R28
27
R29
27
USB_N/1.??
USB_P/1.??
DGND

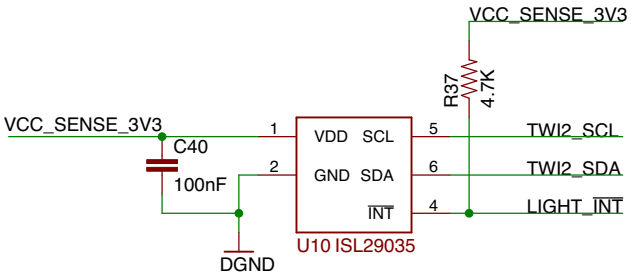
Power


VCC_EXT_5V/2.??
D9
NSR1020MW2T3G
VCC_TARGET_USB_5V/5.??
D3
NSR1020MW2T3G
VCC_DBG_USB_5V/5.??
D2
NSR1020MW2T3G
VCC_IN
VCC_3V3
JP3
SJ1
JP5
SJ2
JP6
SJ3
JP1
SJ7
SENSE_PWR_EN
AO3415
Q4
VCC_SENSE_3V3
NRF_PWR_EN
AO3415
Q5
VCC_NRF_3V3
RF233_PWR_EN
AO3415
Q2
VCC_RF233_3V3
TRNG_PWR_EN
AO3415
Q3
VCC_TRNG_3V3
JP8
SJ4
VCC_3V3
VCC_MCU_3V3
VCC_IN
C14
1uF
DGND
IN
VSS
OUT
EN1
EN2
ILIM
ISET
PGOOD
CHG
TD
CE
TMR
BAT
TS
U1
bq2423x
R18
1K
R16
1K
R20
1K
R19
1K
LED2
5V
LED1
CHG
R17
10K
BAT1
VCC_BAT
U5
IN
VCC
GND
EN
LDO-TPS78233
C16
1uF
AO3418
Q1
R21
1K
LED3
3.3V
VCC_3V3/5.??

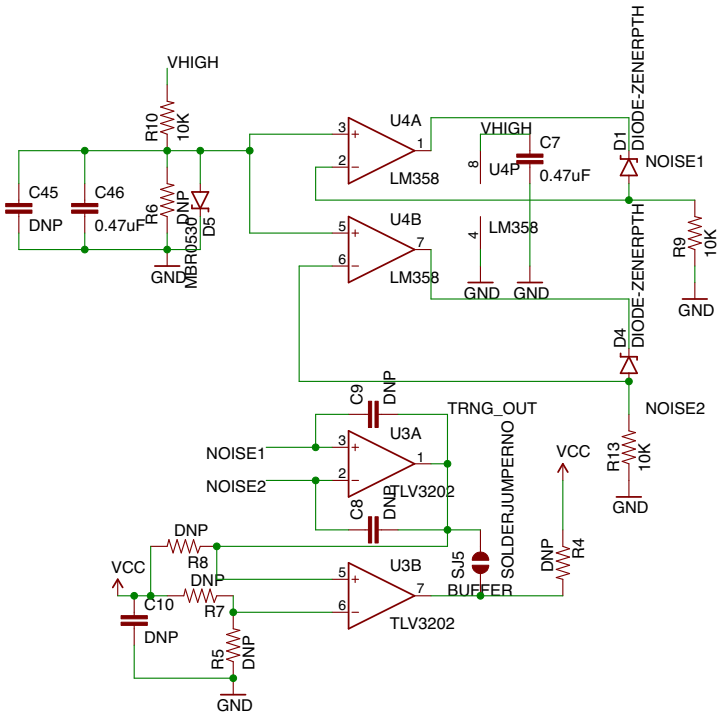
Sensors

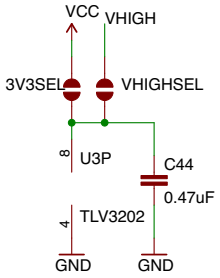

VCC_SENSE_3V3
1
14
VDDIO
VDD
INT1
INT2
11
9
ACC_INT1
ACC_INT2
TWI2_SCL
TWI2_SDA
4
6
7
10
SCL/SCK
SDA/MOSI
SA0/MISO
SA1/CS
BYP
CRST
RST
GND
2
8
16
3*4
C43
100nF
C41
100nF
C42
100nF
U11 FXOS8700CQ
DGND
DGND
DGND

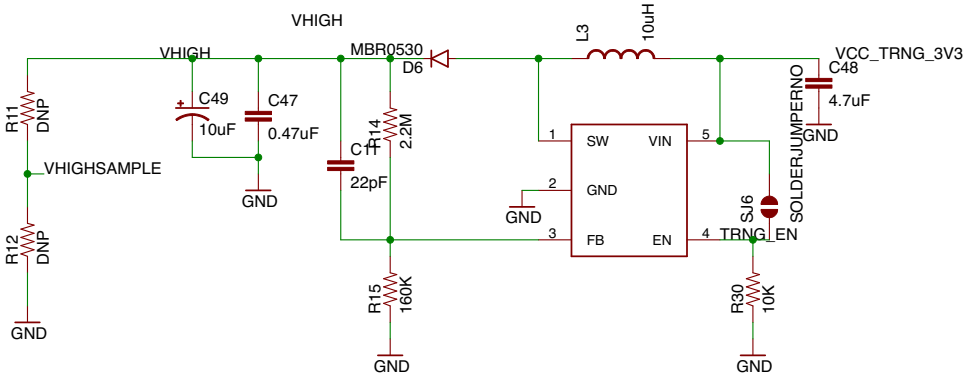

VCC_SENSE_3V3
3*3
2
VDD SCL
GND SDA
6
1
TWI2_SCL
TWI2_SDA
C29
100nF
U8 SI7021
DGND


VCC_SENSE_3V3
R37
4.7K
VCC_SENSE_3V3
1
2
VDD SCL
GND SDA
INT
5
6
4
TWI2_SCL
TWI2_SDA
LIGHT_INT
C40
100nF
U10 ISL29035
DGND

TRNG


VHIGH
R10
10K
C45
DNP
C46
0.47uF
R6
DNP
D5
MBR0530
GND
U4A
LM358
U4B
LM358
VHIGH
C7
U4P
0.47uF
LM358
GND
GND
D1
DIODE-ZENERPTH
NOISE1
R9
10K
GND
D4
DIODE-ZENERPTH
NOISE2
C9
DNP
TRNG_OUT
U3A
NOISE1
NOISE2
TLV3202
C8
DNP
SOLDERJUMPERNO
VCC
R13
10K
GND
DNP
R8
VCC
DNP
R7
C10
DNP
U3B
TLV3202
SJ5
BUFFER
DNP
R4
R5
DNP
GND


VCC
VHIGH
3V3SEL
VHIGHSEL
U3P
TLV3202
C44
0.47uF
GND
GND


VHIGH
VHIGH
MBR0530
D6
L3
10uH
VCC_TRNG_3V3
C48
4.7uF
GND
SOLDERJUMPERNO
R11
DNP
VHIGHSAMPLE
R12
DNP
GND
C49
10uF
C47
0.47uF
GND
C11
22pF
R14
2.2M
R15
160K
GND
SW
VIN
GND
FB
EN
GND
SJ6
TRNG_EN
R30
10K
GND