PQBH40 Bus

+5V_SAT +3V3_SAT

J1
Conn_02x20_Odd_Even

SAT_PWR_EN	5	6 AREF
INT_IMU_OBC	7	8
D0_OBC	9	10 A0_OBC
D1_OBC	11	12 A1_OBC
D2_OBC	13	14 A2_OBC
D3_OBC	15	16 A3_OBC
D4_OBC	17	18 A4_OBC
D5_OBC	19	20 A5_OBC
	21	22 SPI_BUS_SDO
D6_OBC	23	24 SPI_BUS_SCK
D7_OBC	25	26 SPI_BUS_SDI
D8_OBC	27	28 OBC_D30
	29	30 OBC_D31
	31	32
I2C_BUS_SDA	33	34 OBC_OVTEMP
I2C_BUS_SCL	35	36 nRST
D9_OBC	37	38 SWCLK
	39	40 SWDIO

+3V3_SAT GND GND

+5V_SAT +3V3_SAT

J2
Conn_02x20_Odd_Even

SAT_PWR_EN	5	6 AREF
INT_IMU_OBC	7	8
D0_OBC	9	10 A0_OBC
D1_OBC	11	12 A1_OBC
D2_OBC	13	14 A2_OBC
D3_OBC	15	16 A3_OBC
D4_OBC	17	18 A4_OBC
D5_OBC	19	20 A5_OBC
	21	22 SPI_BUS_SDO
D6_OBC	23	24 SPI_BUS_SCK
D7_OBC	25	26 SPI_BUS_SDI
D8_OBC	27	28 OBC_D30
	29	30 OBC_D31
	31	32
I2C_BUS_SDA	33	34 OBC_OVTEMP
I2C_BUS_SCL	35	36 nRST
D9_OBC	37	38 SWCLK
	39	40 SWDIO

+3V3_SAT GND GND

nRF52832 Header

+3V3_SAT

nRF_SWDIO	2
nRF_SWDCLK	3
nRST	4
P0.26	5
P0.27	6
P0.28	7
P0.29	8
	9

J7
Conn_01x09_Female

GND

RFM Sub-GHz Radio Module

+3V3_SAT

U2
RFM96

RFM96 868 MHz as default, can be replaced

D7 will be used for IRQ
when packets are received
D8 as CS

C2 100nF
GND

13	3V3	
2	MISO	DIO2 16
3	MOSI	DIO1 15
4	SCK	DIO0 14 D7_OBC
5	NSS	DIO5
6	nRST	DIO4 12
		DIO3 11
7	DIO5	
1	GND	
10	GND	ANT 9
8	GND	

D8_OBC
nRST

L1 0R

C5 DNP   C6 DNP

J4 Conn_Coaxial

GND

USB-C 2.0 connector + USB-to-UART converter

+3V3_SAT VBUS +3V3_SAT

J5
USB_C_Receptacle_USB2.0

U4
CH340E

VBUS A4	
CC1 A5	R4 5.1k
CC2 B5	R6 5.1k
D- A7	USB_D-
D- B7	
D+ A6	
D+ B6	USB_D+
SBU1 A8	
SBU2 B8	
SHIELD	
S1	A1

GND GND GND

C8 100nF USB_D+ USB_D-

7	VCC	TXD 8 nRF_RX
10	V3	RXD 9 nRF_TX
1	UD+	CTS 4
2	UD-	RTS 5
3	GND	TNOW 6

GND GND

Since nRF52832 doesn't have native USB, we have to use
a serial to USB bridge

SKB369 nRF52 Radio SoC

+3V3_SAT

U3
SKB369

C4 100nF
GND

2	VCC	SWDIO 25 nRF_SWDIO
3	D8_OBC P0.25	SWDCLK 24 nRF_SWDCLK
4	P0.26	RSV 23
5	P0.27	P0.21/RESET 22 nRST
6	P0.28	P0.19 21 SPI_BUS_SCK
7	P0.29	P0.18 20 SPI_BUS_SDO
8	P0.30	P0.17 19 SPI_BUS_SDI
9	P0.31	P0.16 18 D5_OBC
10	P0.02 P0.10/NFC2	17 nRF_TX
11	D9_OBC P0.03 P0.09/NFC1	16 nRF_RX
12	I2C_BUS_SCL P0.06	P0.08 15 OBC_D30
13	I2C_BUS_SDA	P0.07 14 OBC_D31
1	GND	
10	GND	

+3V3_SAT +3V3_SAT

R3 47k   R2 47k

+3V3_SAT

R1 100k   nRST

SW1
SW_Push

GND

D9 used for IRQ when app
writes to device
D5 as CS

Power selection

VBUS

SAT_PWR_EN

DMG2305L
Q2

R7 100k

GND

+5V_SAT

D1 LED   R8 510R   +3V3_SAT

GND

3.3V Buck converter

+5V_SAT

U1
ME6211C33

Q1 DMG2305L +3V3_SAT

3	VIN	VOUT 5
1	CE	
2	VSS	NC 4

C1 10uF   R5 100k   C3 10uF

SAT_PWR_EN

GND GND GND GND

H1 MountingHole_Pad
H2 MountingHole_Pad
H3 MountingHole_Pad
H4 MountingHole_Pad