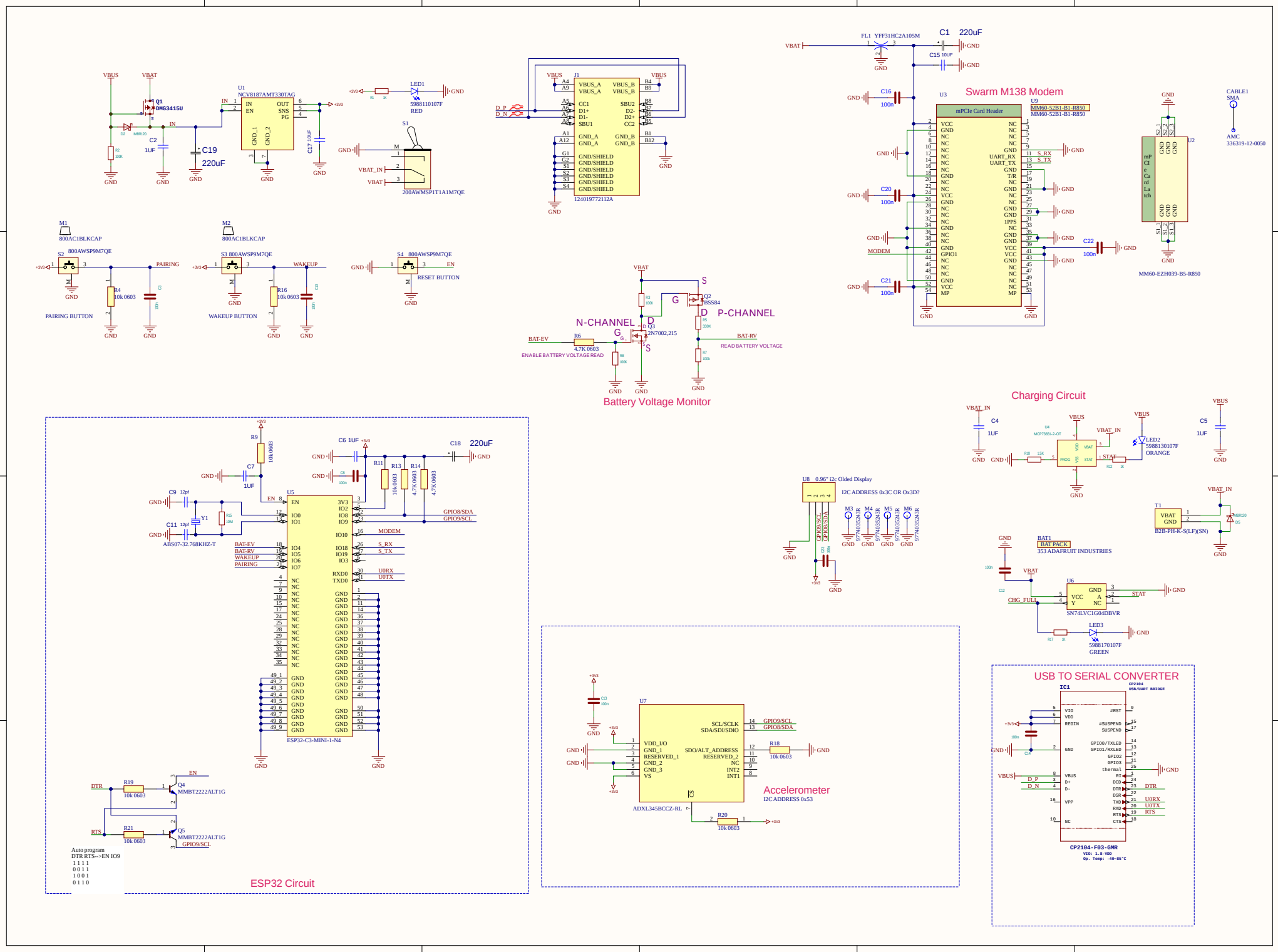
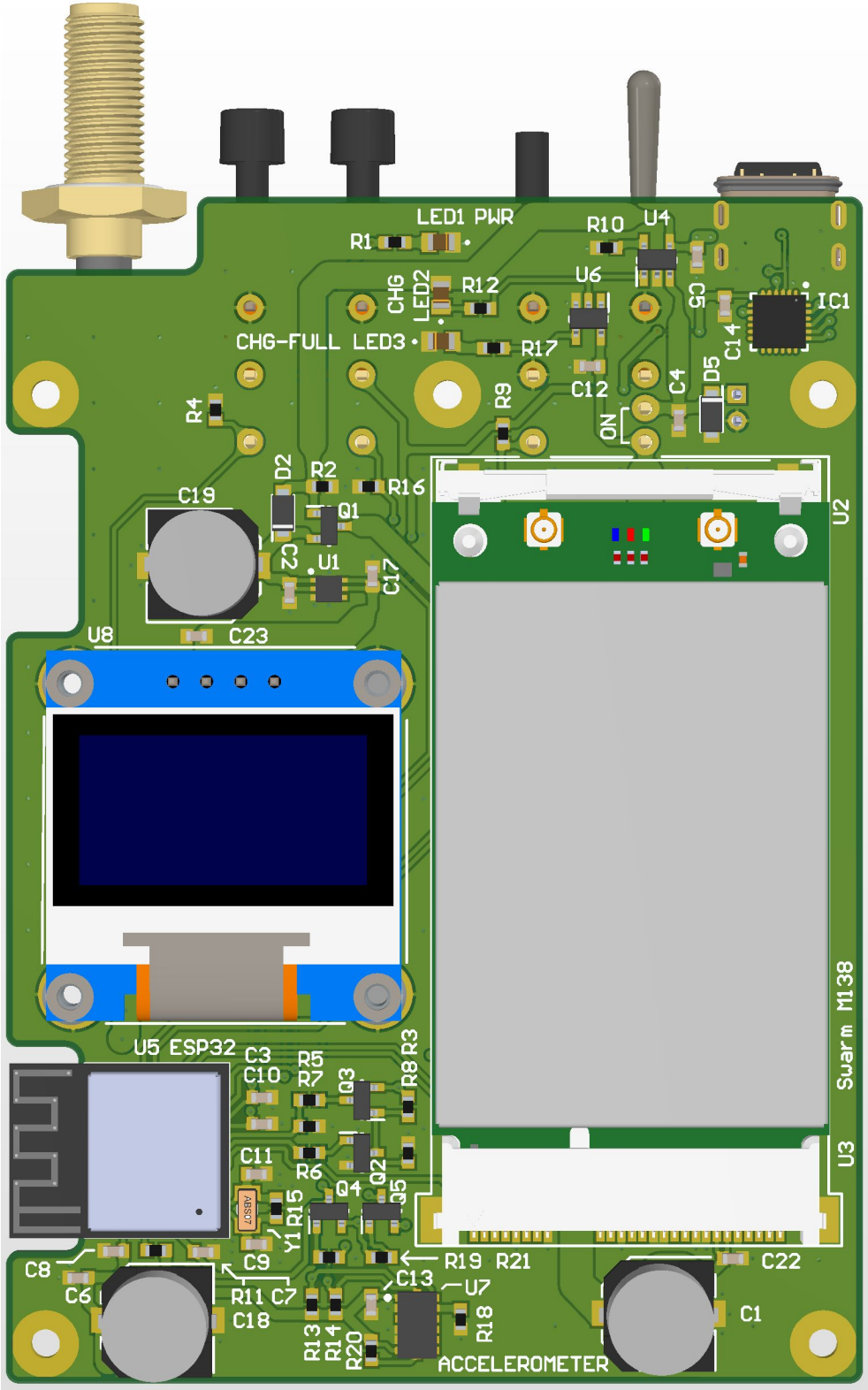
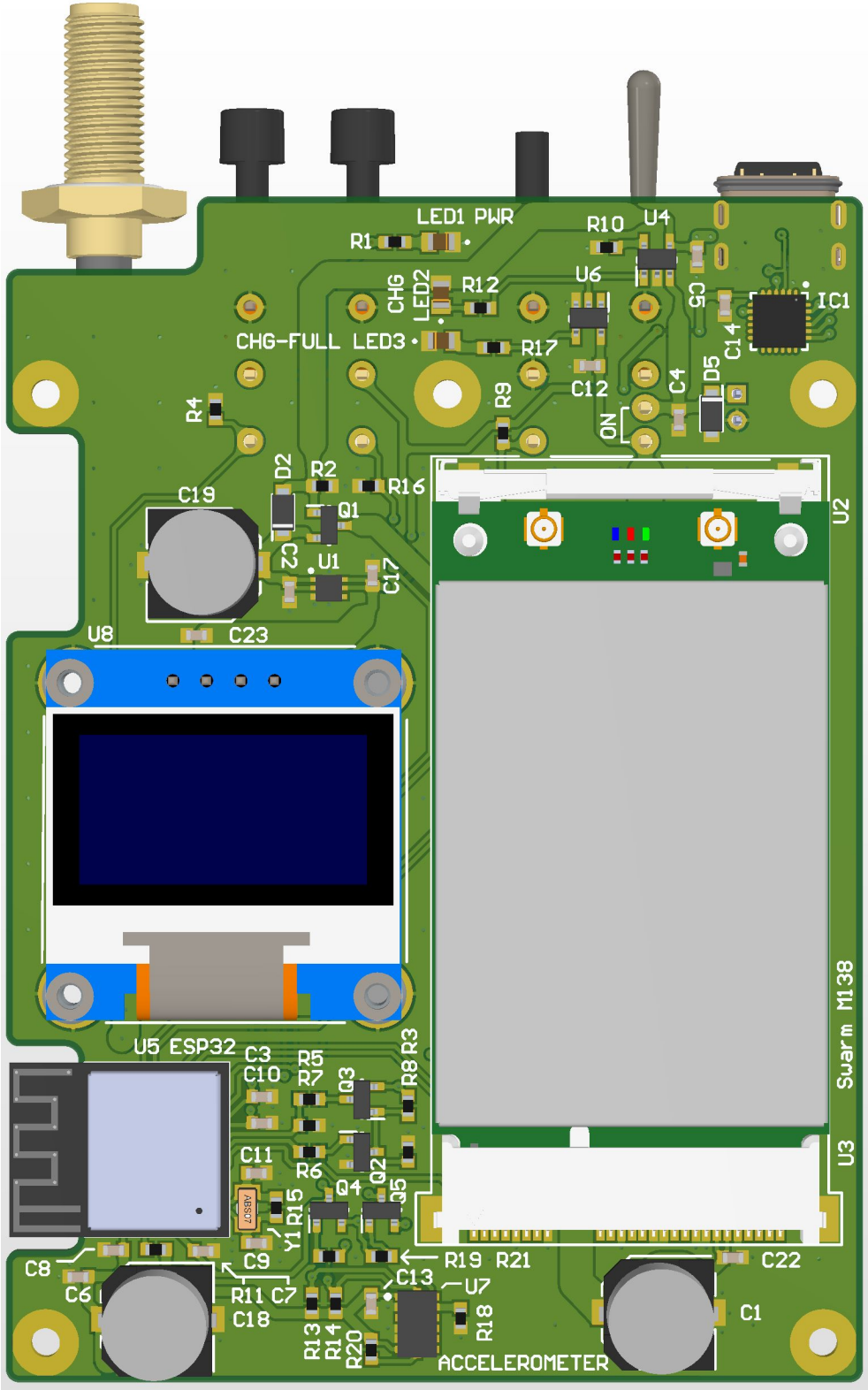
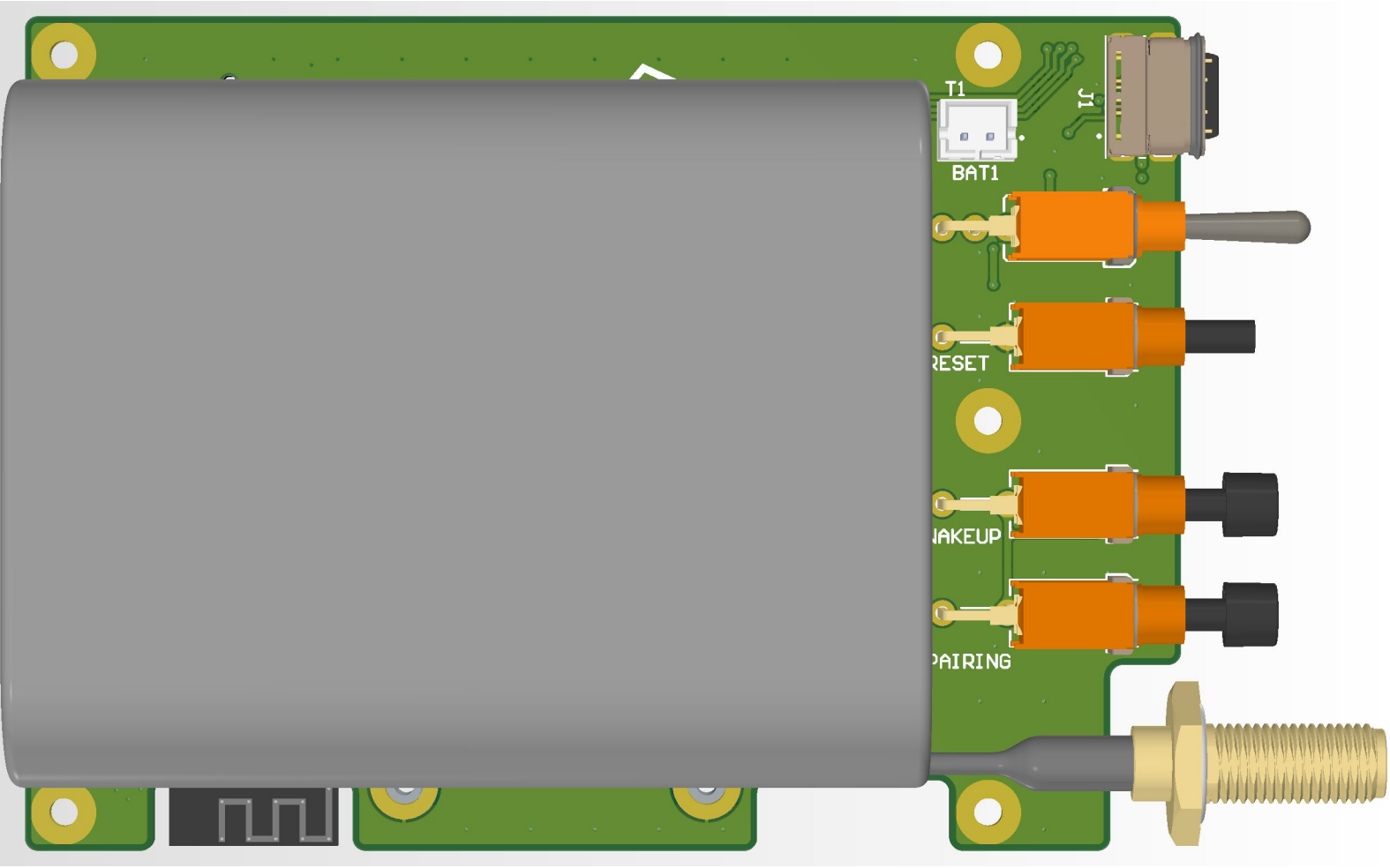
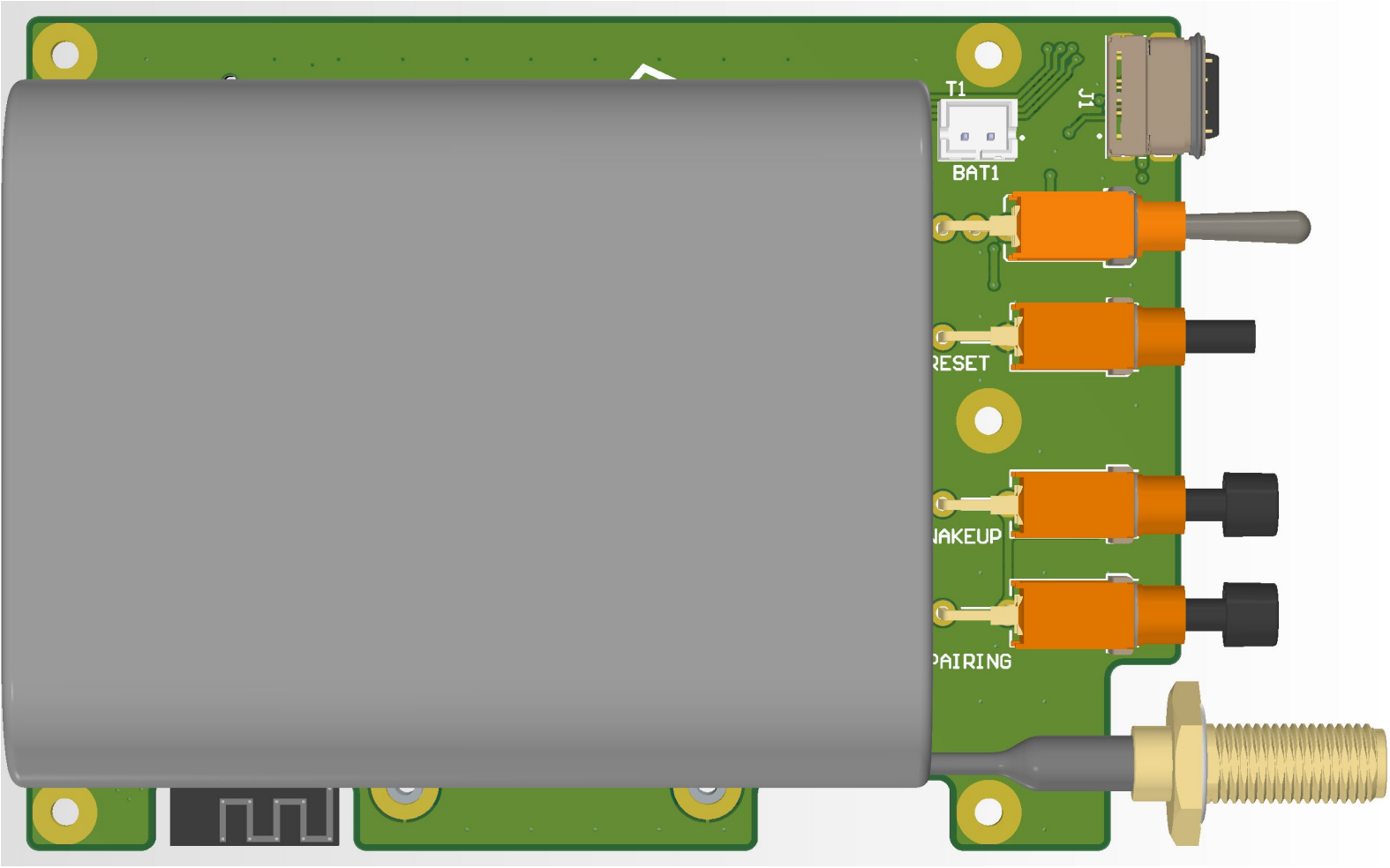
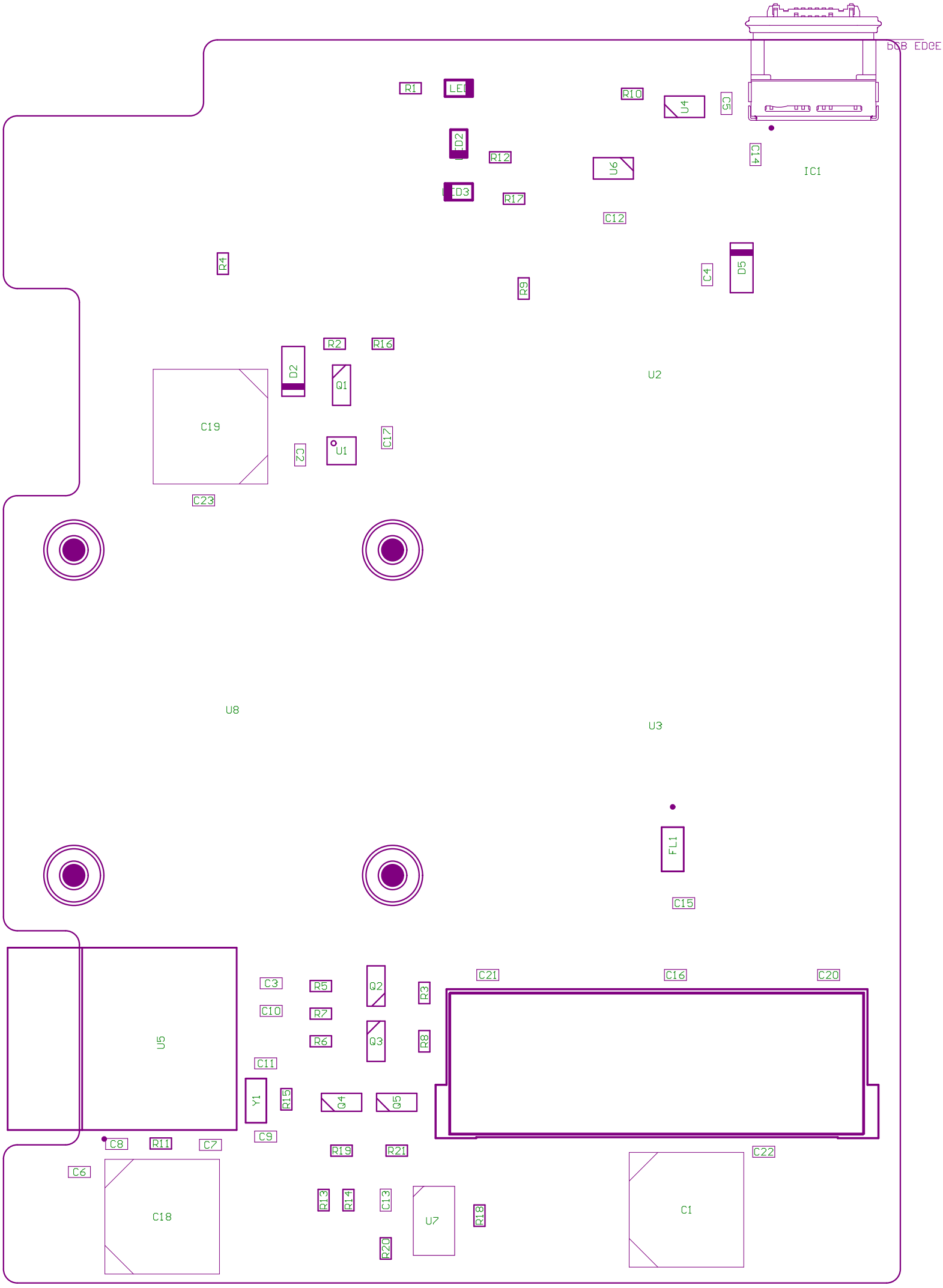

VBUS
VBAT
Q1
DMG3415U
D2
MBR120
R2
100K
C2
1UF
C19
220uF
U1
NCV8187AMT330TAG
IN
EN
OUT
SNS
PG
GND_1
GND_2
C17 10UF
LED1
5988110107F
RED
S1
VBAT_IN
200AWMSP1T1A1M7QE
J1
VBUS_A
VBUS_B
CC1
D1+
D1-
SBU1
SBU2
D2-
D2+
CC2
GND_A
GND_B
GND/SHIELD
12401972112A
D_P
D_N
FL1 YFF31HC2A105M
C1 220uF
C15 10UF
C16
100n
C20
100n
C21
100n
C22
100n
U3
Swarm M138 Modem
mPCIe Card Header
U9
MM60-52B1-B1-R850
VCC
NC
GND
UART_RX
UART_TX
T/R
1PPS
GPIO1
MODEM
S_RX
S_TX
U2
MM60-EZH039-B5-R850
CABLE1
SMA
AMC
336319-12-0050
M1
800AC1BLKCAP
M2
800AC1BLKCAP
S2 800AWSP9M7QE
PAIRING
R4
10k 0603
PAIRING BUTTON
S3 800AWSP9M7QE
WAKEUP
R16
10k 0603
WAKEUP BUTTON
S4 800AWSP9M7QE
EN
RESET BUTTON
N-CHANNEL
Q3
2N7002,215
BAT-EV
R6
4.7K 0603
ENABLE BATTERY VOLTAGE READ
R8
100k
P-CHANNEL
Q2
BSS84
R3
100k
R5
330K
R7
100k
BAT-RV
READ BATTERY VOLTAGE
Battery Voltage Monitor
Charging Circuit
VBAT_IN
C4
1UF
U4
MCP73831-2-OT
PROG
VDD
VSS
STAT
R8 15K
R2 1K
LED2
5988130107F
ORANGE
C5
1UF
T1
VBAT
GND
B2B-PH-K-S(LF)(SN)
D5
MBR120
BAT1
BAT PACK
353 ADAFRUIT INDUSTRIES
U6
SN74LVC1G04DBVR
CHG_FULL
STAT
LED3
5988170107F
GREEN
R17 3K
U8 0.96" i2c Olded Display
I2C ADDRESS 0x3C OR Ox3D?
GPIO9/SCL
GPIO8/SDA
R1 100
M3
M4
M5
M6
9774035243R
R9
10k 0603
C7
1UF
C6 1UF
C18 220uF
C8
100n
R11
10k 0603
R13
4.7K 0603
R14
4.7K 0603
C9 12pf
C11 12pf
Y1
R15
10M
ABS07-32.768KHZ-T
U5
ESP32-C3-MINI-1-N4
EN
IO0
IO1
IO4
IO5
IO6
IO7
3V3
IO2
IO8
IO9
IO10
IO18
IO19
IO3
RXD0
TXD0
GPIO8/SDA
GPIO9/SCL
MODEM
S_RX
S_TX
U0RX
U0TX
BAT-EV
BAT-RV
WAKEUP
PAIRING
DTR
RTS
R19
10k 0603
R21
10k 0603
Q4
MMBT2222ALT1G
Q5
MMBT2222ALT1G
GPIO9/SCL
Auto program
DTR RTS--->EN IO9
1 1 1 1
0 0 1 1
1 0 0 1
0 1 1 0
ESP32 Circuit
U7
ADXL345BCCZ-RL
VDD_I/O
GND_1
RESERVED_1
GND_2
GND_3
VS
SCL/SCLK
SDA/SDI/SDIO
SDO/ALT_ADDRESS
RESERVED_2
NC
INT2
INT1
R18
10k 0603
R20
10k 0603
Accelerometer
I2C ADDRESS 0x53
USB TO SERIAL CONVERTER
IC1
CP2104
USB/UART BRIDGE
VIO
VDD
REGIN
GND
VBUS
D+
D-
VPP
NC
#RST
#SUSPEND
SUSPEND
GPIO0/TXLED
GPIO1/RXLED
GPIO2
GPIO3
thermal
RI
DCD
DTR
DSR
TXD
RXD
RTS
CTS
CP2104-F03-GMR
VIO: 1.8-VDD
Op. Temp: -40-85°C


LED1 PWR
R1
R10
U4
U6
CHG
LED2
R12
C5
IC1
C14
CHG-FULL
LED3
R17
C12
C4
D5
R9
ON
R4
D2
R2
R16
C19
Q1
C2
U1
C17
U2
U8
C23
U5 ESP32
C3
C10
R5
R7
Q3
R8
R3
C11
R6
Q4
Q2
Q5
R15
Y1
C9
C8
C6
R11
C7
C18
R13
R14
R20
C13
U7
R19
R21
R18
ACCELEROMETER
C22
C1
U3
Swarm M1.38


LED1 PWR
R1
R10
U4
U6
CHG
LED2
R12
C5
IC1
C14
CHG-FULL
LED3
R17
C12
C4
D5
R9
ON
R4
D2
R2
R16
C19
Q1
C2
U1
C17
U2
U8
C23
U5 ESP32
C3
C10
R5
R7
Q3
R8
R3
C11
R6
Q2
Q4
Q5
R15
Y1
C9
R19
R21
C22
C8
C6
R11
C7
C13
U7
C18
R13
R14
R20
R18
C1
ACCELEROMETER
U3
Swarm M138


T1
BAT1
J1
RESET
WAKEUP
PAIRING


J1
T1
BAT1
RESET
WAKEUP
PAIRING


PCB EDGE
R1
LED
R10
U4
C5
D2
R12
U6
C14
IC1
D3
R17
C12
R4
D5
C4
R9
R2
R16
D2
Q1
U2
C19
C17
C2
U1
C23
U8
U3
FL1
C15
C3
R5
Q2
R3
C21
C16
C20
C10
R7
U5
R6
Q3
R8
C11
Y1
R15
Q4
Q5
C9
C8
R11
C7
R19
R21
C22
C6
C18
R13
R14
C13
U7
R18
C1
R20

J1
S1
S4
S3
S2
CAP2
CAP1
CABLE1
BAT1