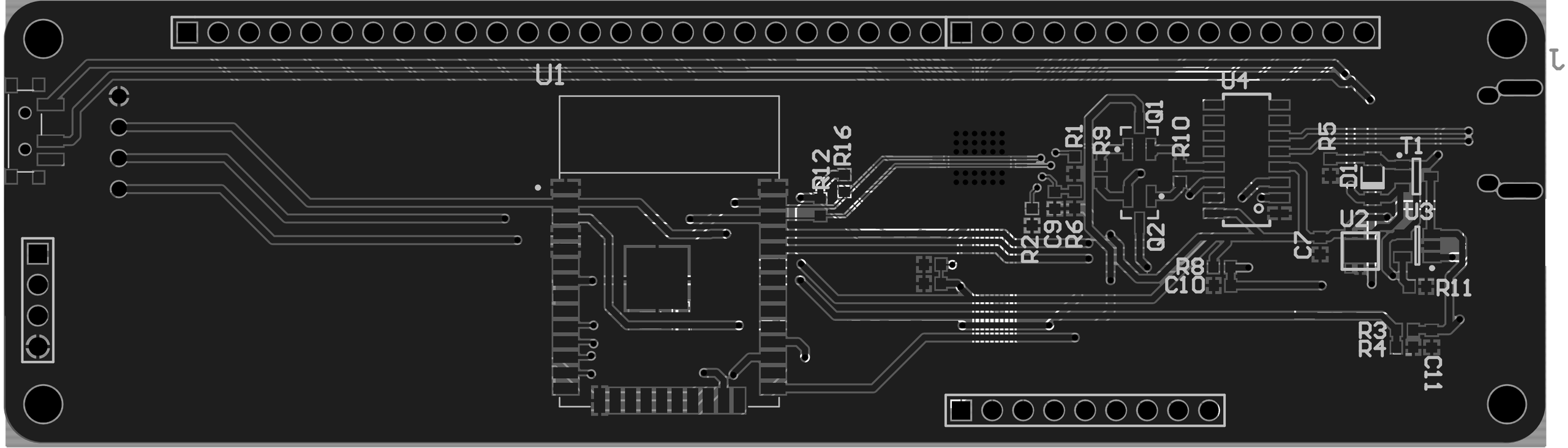
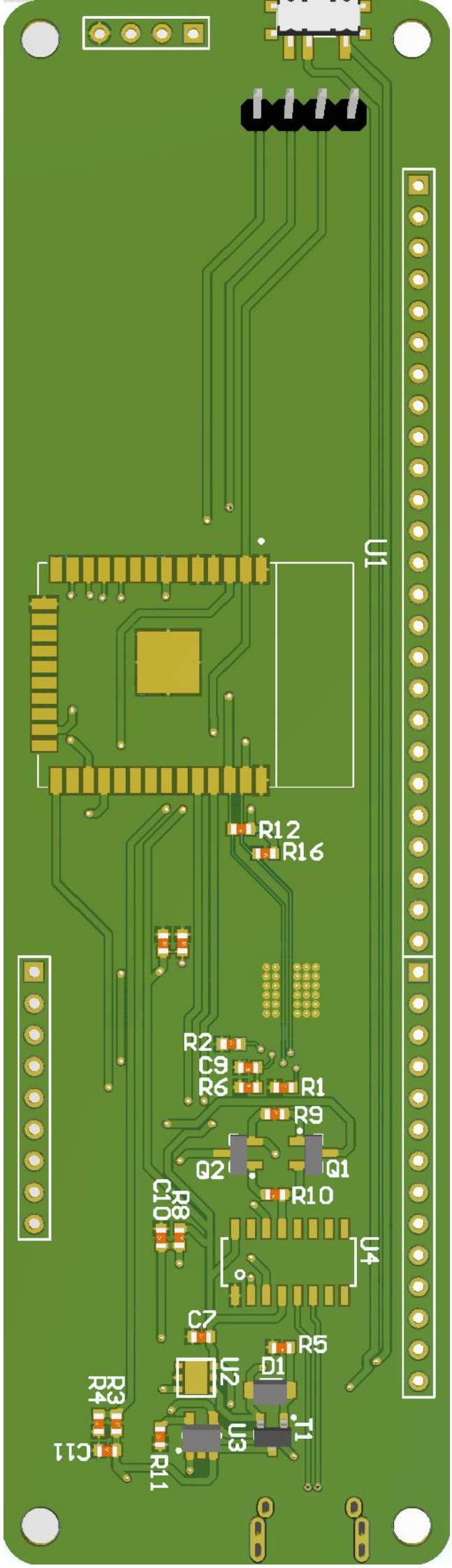
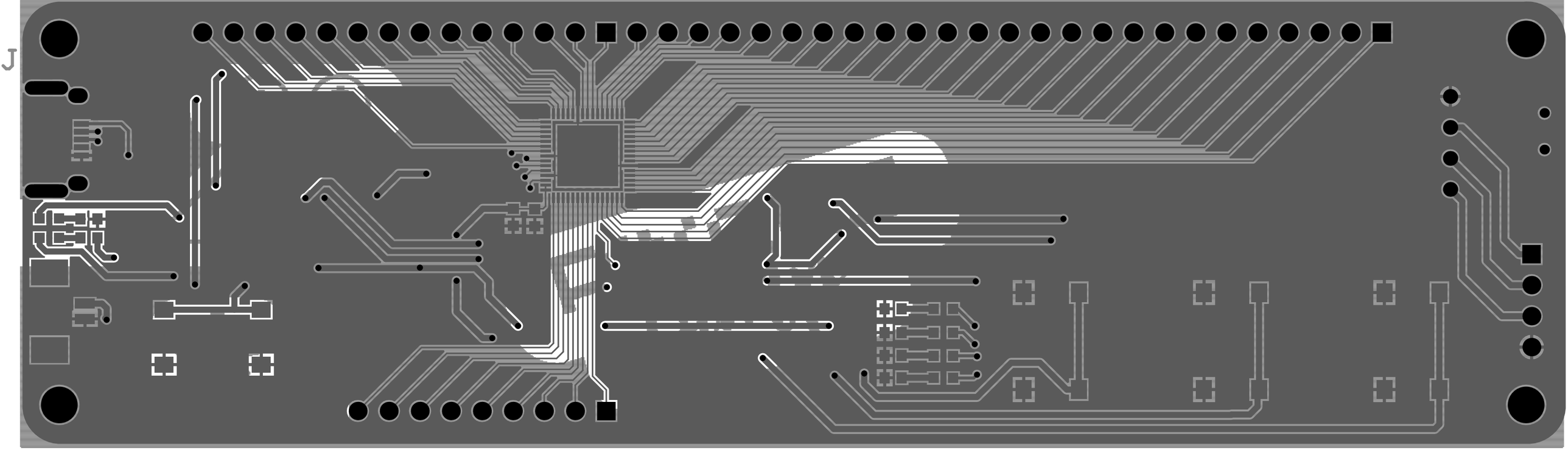
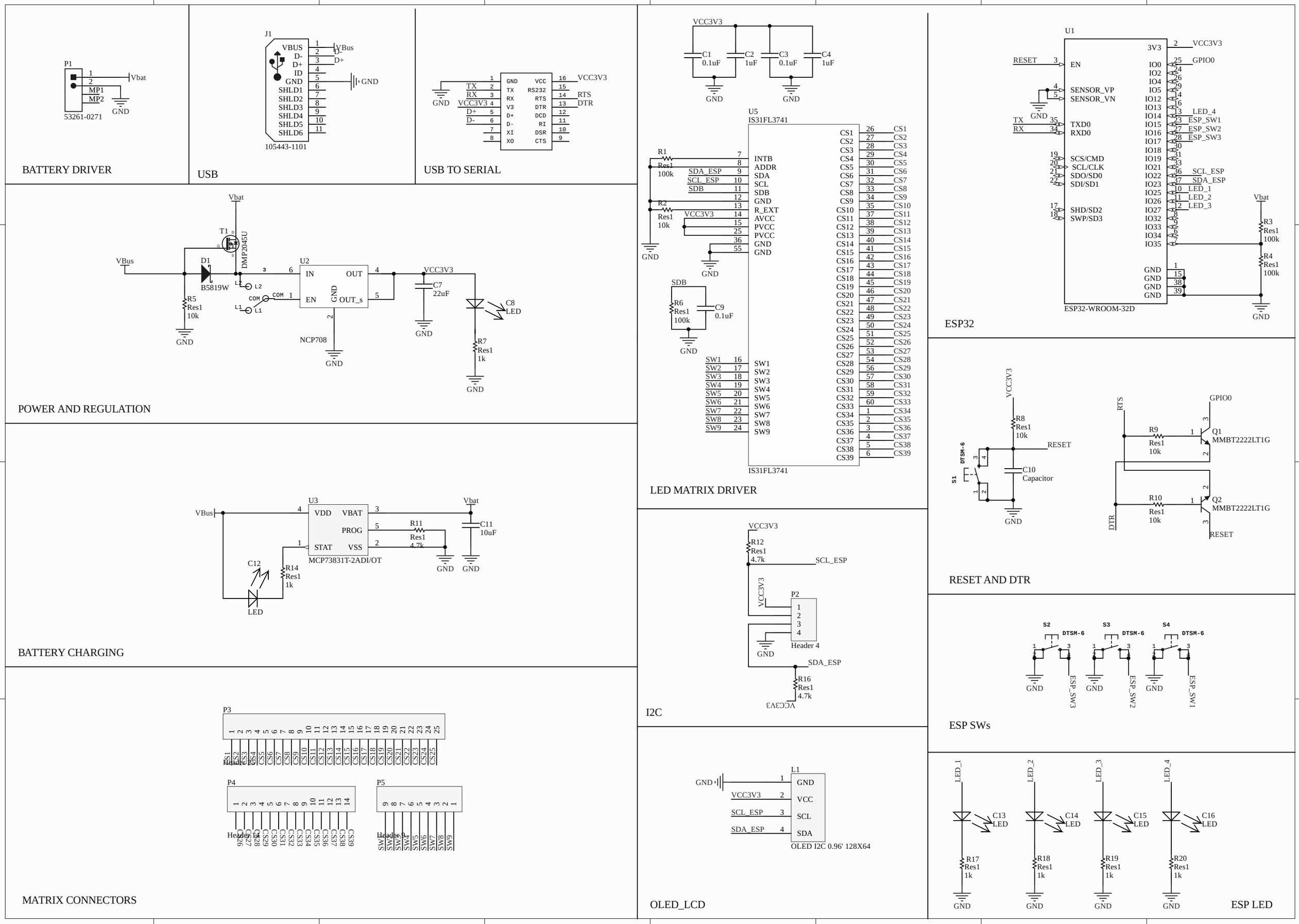

U1
R12
R16
R1
R9
JQ1
R10
U4
R5
T1
D1
U3
U2
C7
R2
C9
R6
Q2
R8
C10
R11
R3
R4
C11


U1
R12
R16
R2
C9
R6
R1
R9
Q2
Q1
R10
R8
C10
U4
C7
R5
U2
D1
R3
R4
T1
U3
C11
R11




BATTERY DRIVER
P1
Vbat
MP1
MP2
GND
53261-0271
USB
J1
VBUS
D-
D+
ID
GND
SHLD1
SHLD2
SHLD3
SHLD4
SHLD5
SHLD6
VBus
GND
105443-1101
USB TO SERIAL
GND
TX
RX
VCC3V3
D+
D-
GND
TX
RX
V3
D+
D-
XI
XO
VCC
RS232
RTS
DTR
DCD
RI
DSR
CTS
VCC3V3
RTS
DTR
POWER AND REGULATION
Vbat
T1
DMP2045U
VBus
D1
B5819W
R5
Res1
10k
GND
U2
IN
OUT
EN
GND
OUT_s
NCP708
GND
COM
L1
L2
VCC3V3
C7
22uF
GND
C8
LED
R7
Res1
1k
GND
BATTERY CHARGING
U3
VDD
VBAT
PROG
STAT
VSS
MCP73831T-2ADI/OT
VBus
Vbat
R11
Res1
4.7k
C11
10uF
GND
GND
C12
R14
Res1
1k
LED
MATRIX CONNECTORS
P3
CS1
CS2
CS3
CS4
CS5
CS6
CS7
CS8
CS9
CS10
CS11
CS12
CS13
CS14
CS15
CS16
CS17
CS18
CS19
CS20
CS21
CS22
CS23
CS24
CS25
Header 25
P4
CS26
CS27
CS28
CS29
CS30
CS31
CS32
CS33
CS34
CS35
CS36
CS37
CS38
CS39
Header 14
P5
SW1
SW2
SW3
SW4
SW5
SW6
SW7
SW8
SW9
Header 9
LED MATRIX DRIVER
VCC3V3
C1
0.1uF
C2
1uF
C3
0.1uF
C4
1uF
GND
GND
U5
IS31FL3741
R1
Res1
100k
SDA_ESP
SCL_ESP
SDB
INTB
ADDR
SDA
SCL
SDB
GND
R_EXT
AVCC
PVCC
PVCC
GND
GND
R2
Res1
10k
VCC3V3
GND
SDB
R6
Res1
100k
C9
0.1uF
GND
SW1
SW2
SW3
SW4
SW5
SW6
SW7
SW8
SW9
IS31FL3741
I2C
VCC3V3
R12
Res1
4.7k
SCL_ESP
VCC3V3
P2
Header 4
GND
SDA_ESP
R16
Res1
4.7k
VCC3V3
OLED_LCD
GND
L1
GND
VCC3V3
SCL_ESP
SDA_ESP
VCC
SCL
SDA
OLED I2C 0.96' 128X64
ESP32
U1
3V3
EN
SENSOR_VP
SENSOR_VN
TXD0
RXD0
SCS/CMD
SCL/CLK
SDO/SD0
SDI/SD1
SHD/SD2
SWP/SD3
IO0
IO2
IO4
IO5
IO12
IO13
IO14
IO15
IO16
IO17
IO18
IO19
IO21
IO22
IO23
IO25
IO26
IO27
IO32
IO33
IO34
IO35
GND
GND
GND
GND
RESET
TX
RX
VCC3V3
GPIO0
LED_4
ESP_SW1
ESP_SW2
ESP_SW3
SCL_ESP
SDA_ESP
LED_1
LED_2
LED_3
ESP32-WROOM-32D
Vbat
R3
Res1
100k
R4
Res1
100k
GND
RESET AND DTR
VCC3V3
R8
Res1
10k
RESET
DTSM-6
S1
C10
Capacitor
GND
RTS
R9
Res1
10k
GPIO0
Q1
MMBT2222LT1G
R10
Res1
10k
Q2
MMBT2222LT1G
DTR
RESET
ESP SWs
S2
S3
S4
DTSM-6
GND
ESP_SW3
ESP_SW2
ESP_SW1
ESP LED
LED_1
LED_2
LED_3
LED_4
C13
C14
C15
C16
LED
R17
R18
R19
R20
Res1
1k
GND