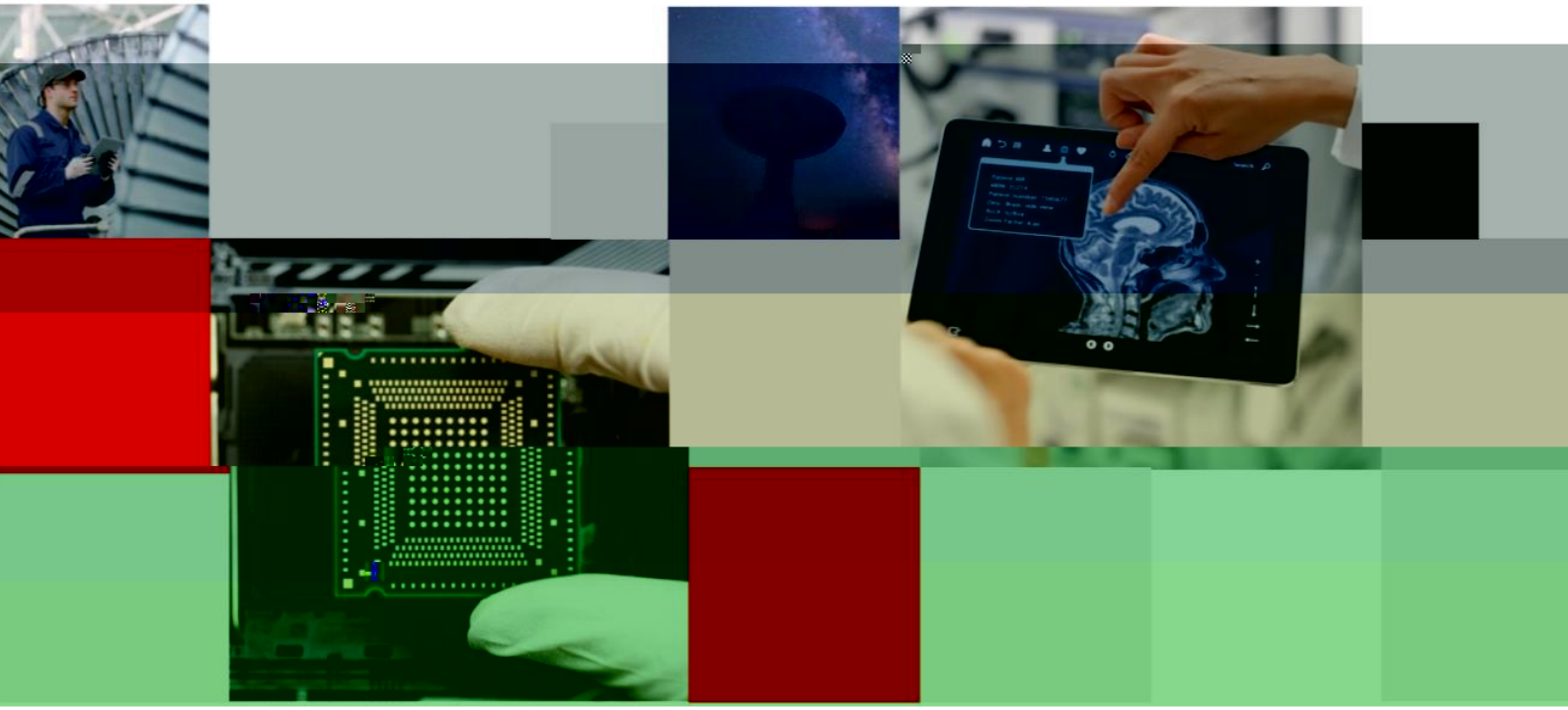
EC800X QuecDuino EVB

EC800X QuecDuino EVB V1.1

2024-12-25

LX



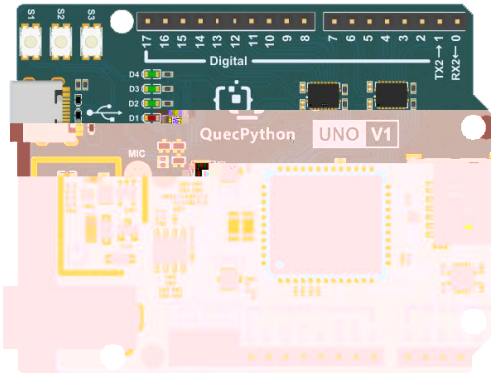
1

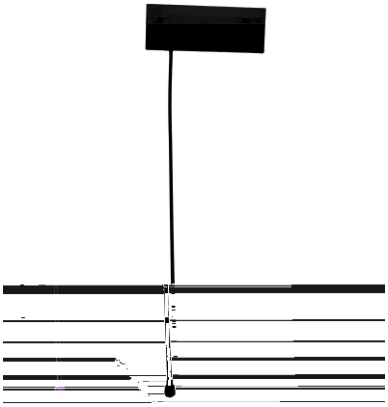
EC800X QuecDuino EVB EC800

EC800M EC800K EG800K EC800E

1.1 EC800X QuecDuino EVB

QuecDuino EVB 4G FPC





1 EVB

Features

CPU

EC800 / EG800 Module Series

Pins

22x digital pins (GPIO), D0-D3,0-17 up to

2x analog input pins (ADC), A0-A1

Peripherals

Antenna Interface,LTE & GNSS(option)

SIM Interface, NANO SIM

USB 2.0, TypeC

Arduino female header Interface

Audio(option)

1xMIC onboard

1x 3W Class-D Stereo Amplifier

Power

Recommended input voltage (VIN) is 4.5-5.25 V/2A

Power via USB-C® at 5 V

Power via DC05® at 5-16V

3.3V/200mA output

Communication

4x UART (pin 0, 7) up to

1x SPI (pin 10-13, ICSP header)

1x I2C (pin 16, 17, SDA, SCL)

3x KEY(S1-S3)

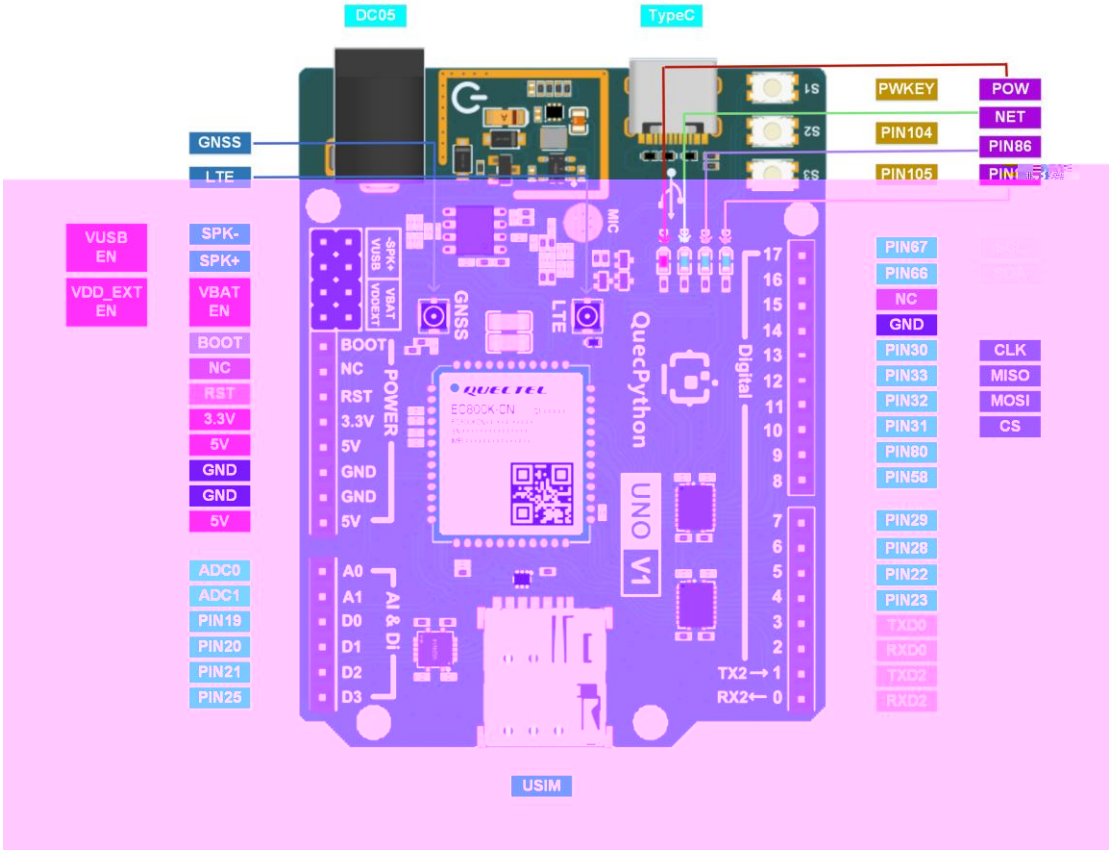
4x LED(D1-D4)

1x RESET(Pull-down reset Module)

1x BOOT(According to different model modules pull up or Pull-down the BOOT pin, Before power-on)

2

2.1



2 EVB

EVB VUBS EN VDD_EXT EN VBAT EN

2.2

1

		DC
BOOT	USB_BOOT	
NC		
RST	RESET	

3.3V		3.3V/200mA
5V	/	5V/2A V1.1
GND		
GND		
5V	/	5V/2A V1.1
A0	ADC0	0-1.2 V
A1	ADC1	0-1.2 V
D0	I/O 19	3.3V
D1	I/O 20	3.3V
D2	I/O 21	3.3V
D3	I/O 25	3.3V
0		3.3V
1		3.3V
2		3.3V
3		3.3V
4	I/O 23	3.3V
5	I/O 22	3.3V
6	I/O 28	3.3V
7	I/O 29	3.3V
8	I/O 58	3.3V
9	I/O 80	3.3V
10	I/O 31	3.3V
11	I/O 32	3.3V
12	I/O 33	3.3V
13	I/O 30	3.3V
14		
15	NC	
16	I/O 66	3.3V

17	I/O 67	3.3V

1

EVB 5V TypeC DC

5V 5V V1.1

2A TypeC DC 5V

USB USB

2

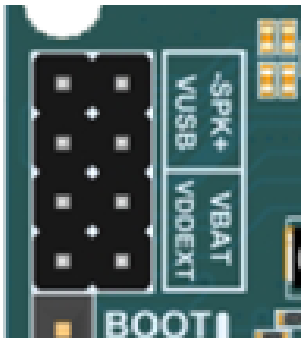
Pin0 Pin1 AT 115200

AT 4800 9600 19200 38400

57600 115200 230400 460800 921600bps AT

open C QuecPython UART2

3

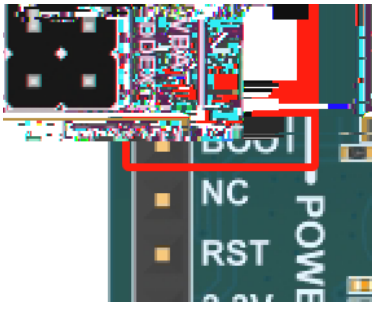


3

VBAT VUSB VDD_EXT

VBAT

4 BOOT



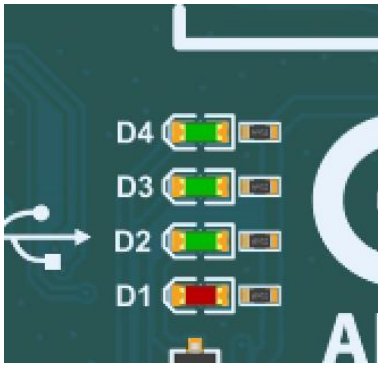
4

BOOT BOOT BOOT GND

BOOT

2.3

EVB 4 D1



5

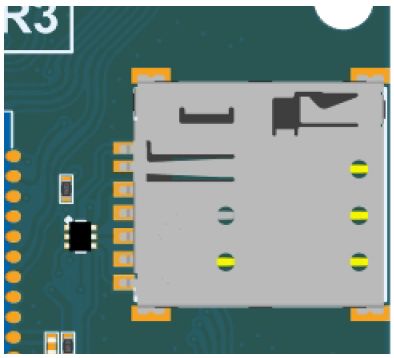
D2

2

D2	200ms /1800ms	
	1800ms /200ms	
	125ms /125ms	

D3 D4 86 87

3 SIM

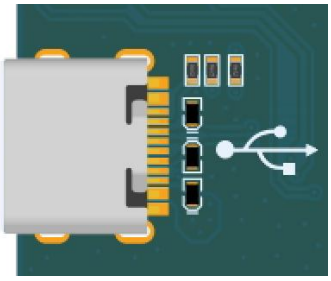


6 SIM

EVB NANO SIM USIM ETSI IMT-2000

1.8 V 3.0 V USIM

4 USB



7 USB

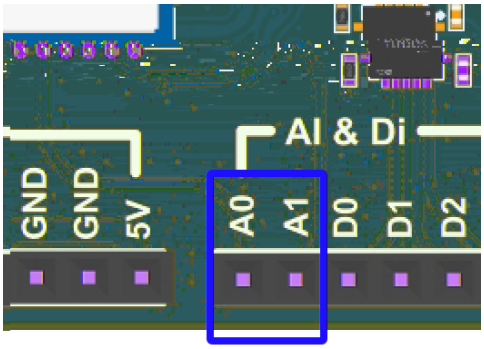
EVB 1 TypeC USB USB USB 2.0

USB 2.0 480 Mbps 12 Mbps

AT GNSS NMEA

5 ADC

EVB 2 ADC



8 ADC

3 ADC

参数	最小值	典型值	最大值	单位
ADC0 电压	0	-	1.2	V
ADC1 电压	0	-	1.2	V
ADC 分辨率	-	-	12	位

6

6.1

6.1.1

5

引脚名	引脚号	I/O	描述	备注
ANT_MAIN	35	AIO	主天线接口	50 Ω 特性阻抗。

备注

模块支持 Wi-Fi Scan 功能。由于共用主天线接口，两种功能不可同时使用，时分复用，Wi-Fi Scan 只接收不发送。

6

工作频段	发送（MHz）	接收（MHz）
1920~1980	2110~2170	LTE-FDD B1
1710~1785	1805~1880	LTE-FDD B3
824~849	869~894	LTE-FDD B5
880~915	925~960	LTE-FDD B8
2010~2025	2010~2025	LTE-TDD B34
2570~2620	2570~2620	LTE-TDD B38
1880~1920	1880~1920	LTE-TDD B39
2300~2400	2300~2400	LTE-TDD B40
2535~2675	2535~2675	LTE-TDD B41

6.1.2

7

频段	最大值	最小值
LTE-FDD B1/B3/B5/B8	23 dBm +/-2dB	< -39 dBm
LTE-FDD B34/B38/B39/B40/B41	23 dBm +/-2dB	< -39 dBm

6.1.3

8

频段	接收灵敏度（典型值）（dBm）			3GPP 要求（主集 + 分集）
	主集	分集	主集 + 分集	
LTE-FDD B1 (10 MHz)	-99.5 dBm	-	-	-96.3 dBm
LTE-FDD B3 (10 MHz)	-99.0 dBm	-	-	-93.3 dBm
LTE-FDD B5 (10 MHz)	-98.5 dBm	-	-	-94.3 dBm
LTE-FDD B8 (10 MHz)	-99.0 dBm	-	-	-93.3 dBm
LTE-TDD B34 (10 MHz)	-100.0 dBm	-	-	-96.3 dBm
LTE-TDD B38 (10 MHz)	-99.0 dBm	-	-	-96.3 dBm
LTE-TDD B39 (10 MHz)	-100.0 dBm	-	-	-96.3 dBm
LTE-TDD B40 (10 MHz)	-100.5 dBm	-	-	-96.3 dBm
LTE-TDD B41 (10 MHz)	-99.0 dBm	-	-	-94.3 dBm

6.2 GNSS

EVB GNSS GNSS

- GPS BDS GLONASS Galileo
- NMEA 0183 NMEA AT USB UART 1 Hz
- GNSS AT

6.2.1

9

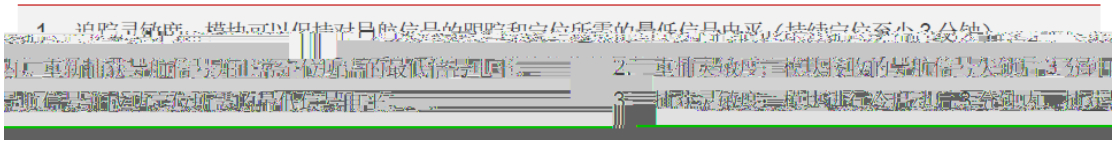
GPS	1575.42 ±1.023 (L1)	MHz
BDS	1561.098 ±2.046 (B1I)	
Galileo	1575.42 ±2.046 (E1)	
GLONASS	1597.5~1605.8 (L1)	

6.2.2 GNSS

10 GNSS

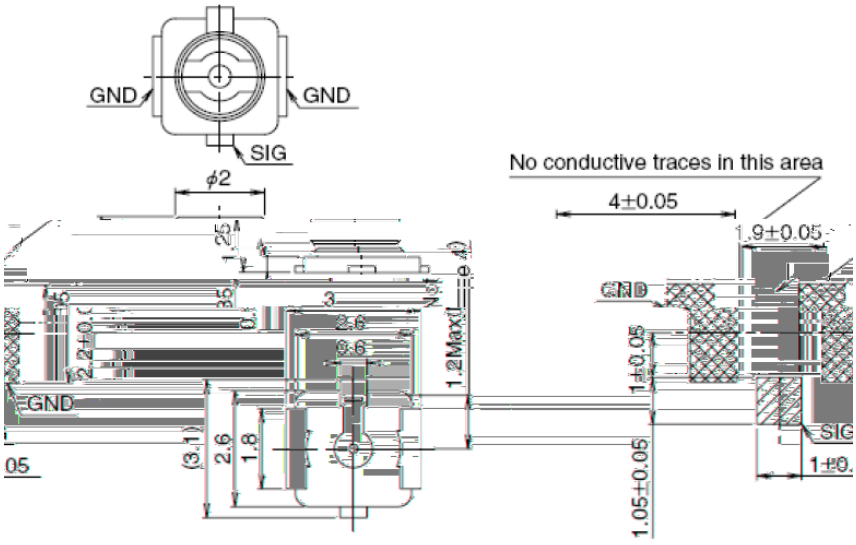
参数	条件	典型值	单位
灵敏度	捕获	-146	dBm
	重捕	-160	
	追踪	-160	
首次定位时间	冷启动 @ 空旷区域	28	s
	温启动 @ 空旷区域	27	
	热启动 @ 空旷区域	3.7 [3]	
[illegible]	[illegible]	[illegible]	

备注



6.3

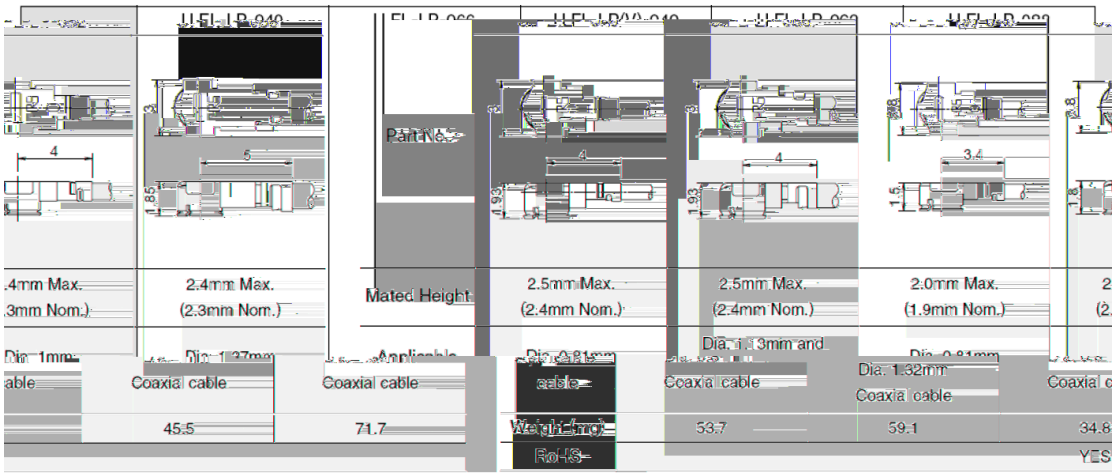
EVB



天线连接器尺寸（单位：毫米）

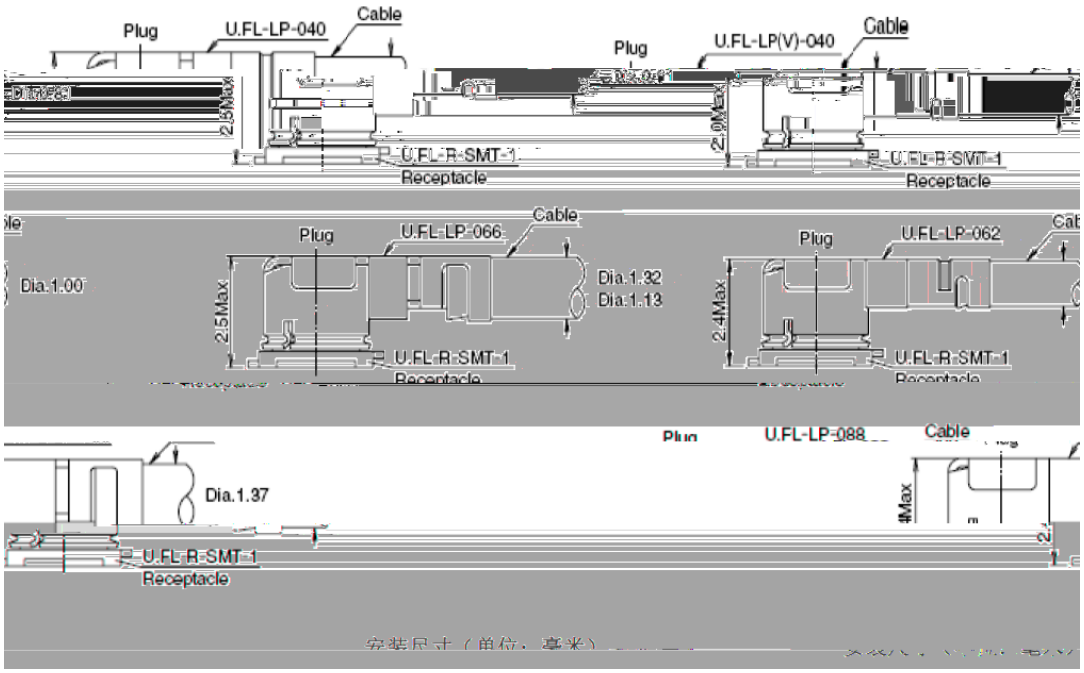
9 mm

U.FL-LP



列 U. FL−LP 连接线系

10 mm



11 mm

IPEX Https://www.i-pex.com

7

7.1

11

TypeC	-0.3	6	V
DC	-0.3	16	V
3.3V	-0.3	3.4	V
	-0.3	3.4	V
ADC0	-	1.2	V
ADC1	-	1.2	V
5V	-	2	A

7.2

12

TypeC		4.5	5.0	5.25	V
DC		4.5	12	16	V
I	LTE	-	1.5	2	A

7.3

13 ESD V

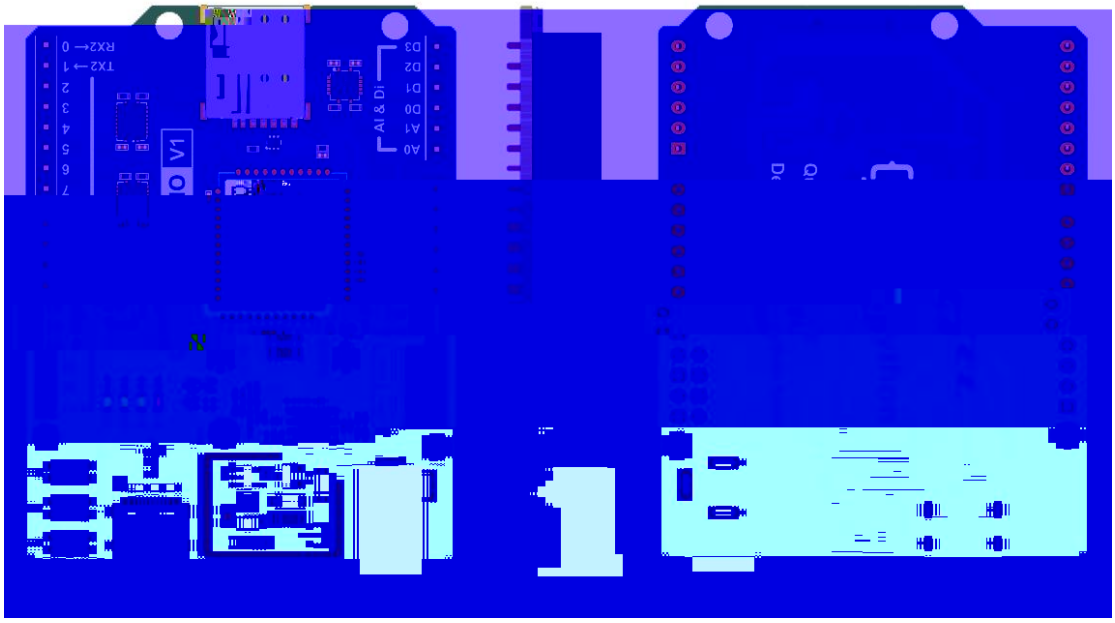
5V GND	± 8	± 10	KV
USB	± 8	± 10	KV

8

8.1

12 EVB

8.2

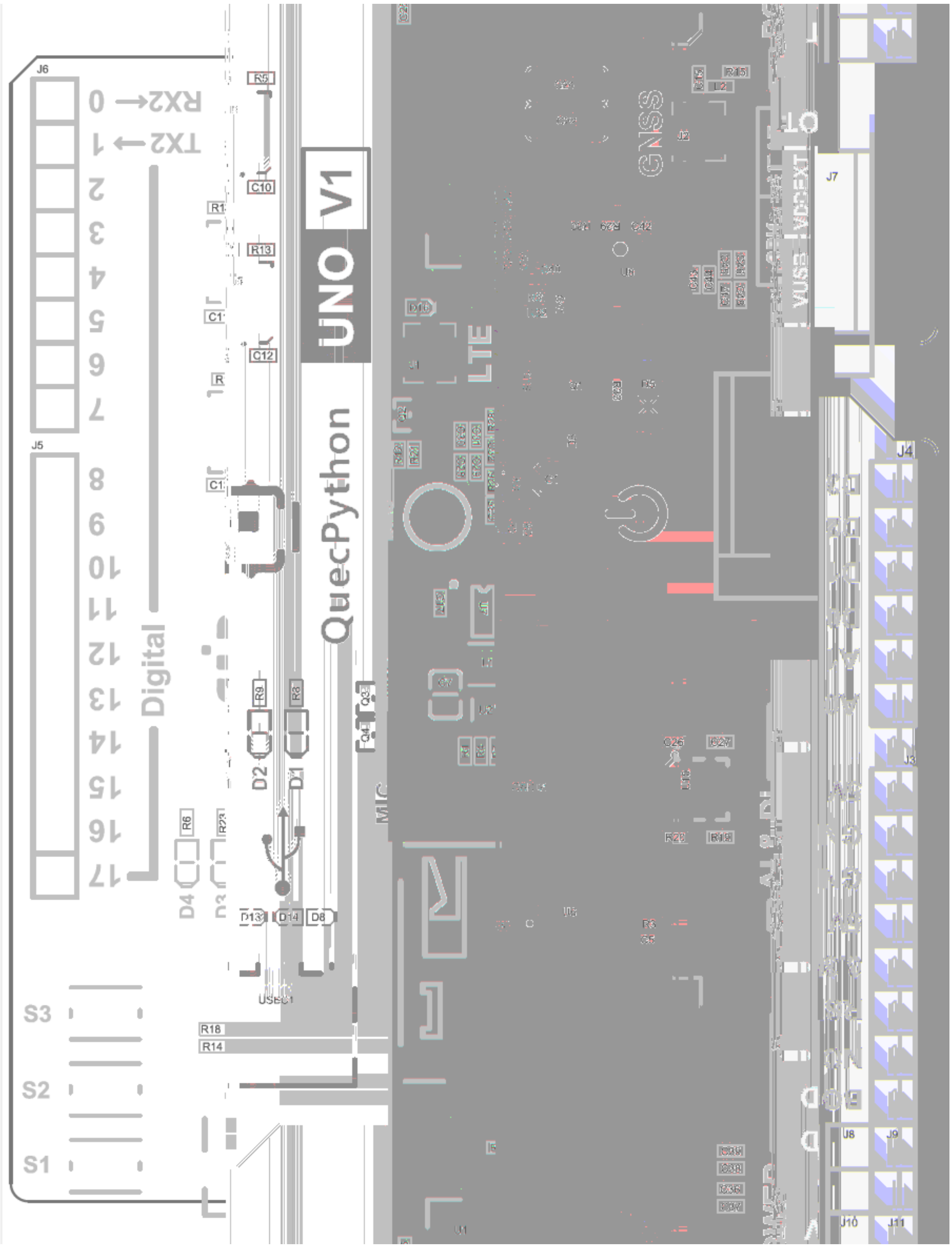


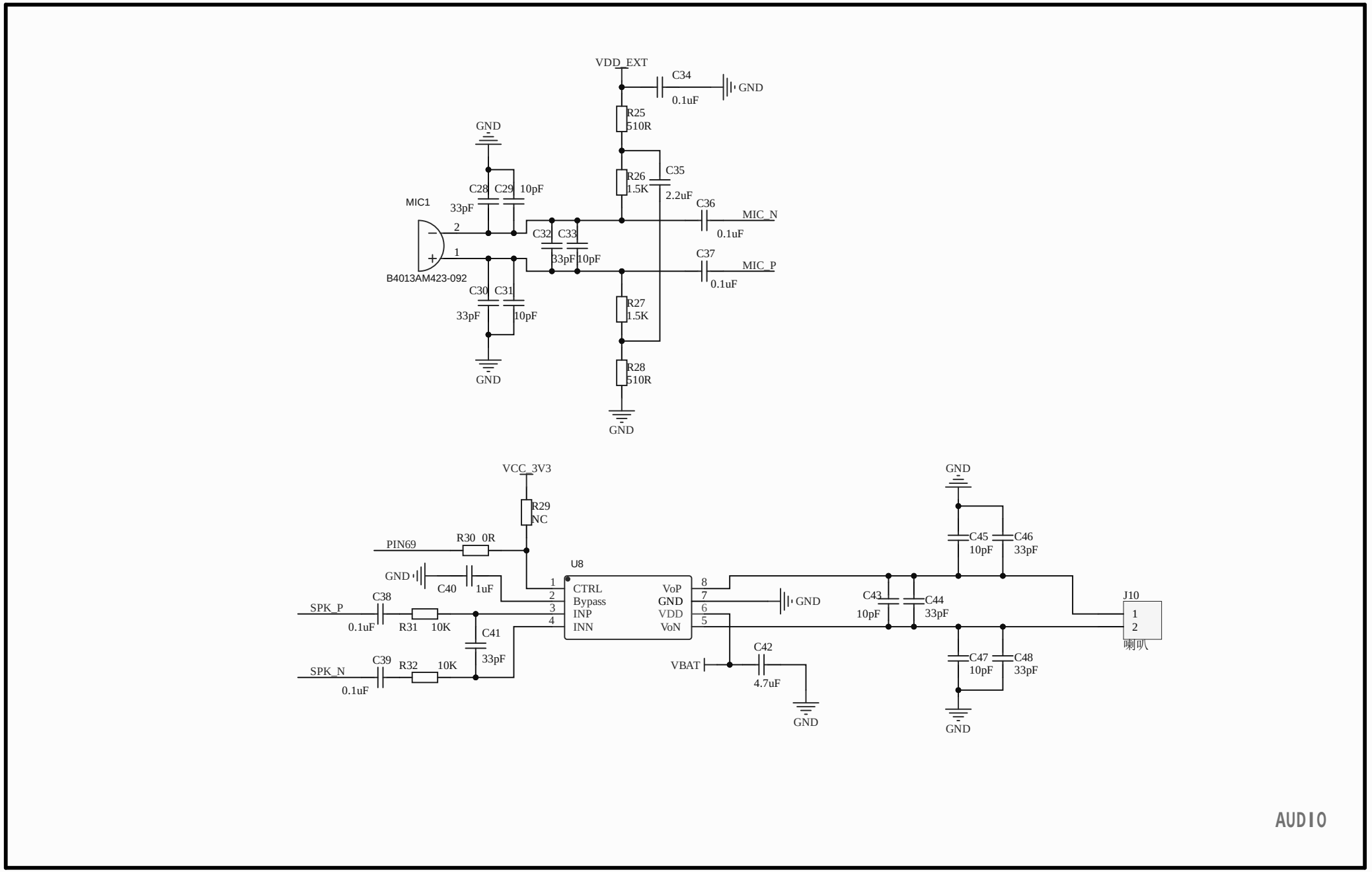
13 EVB

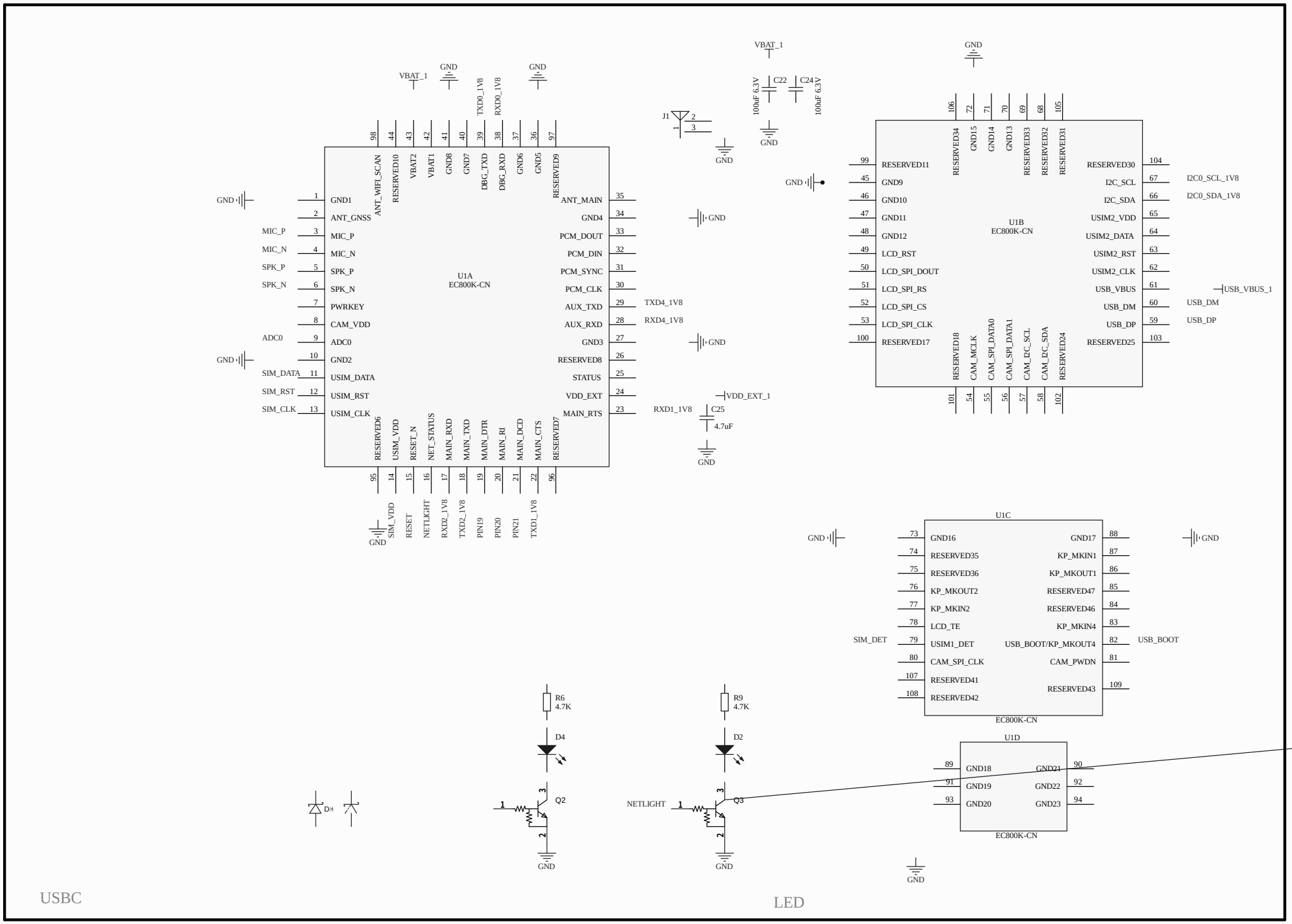
9

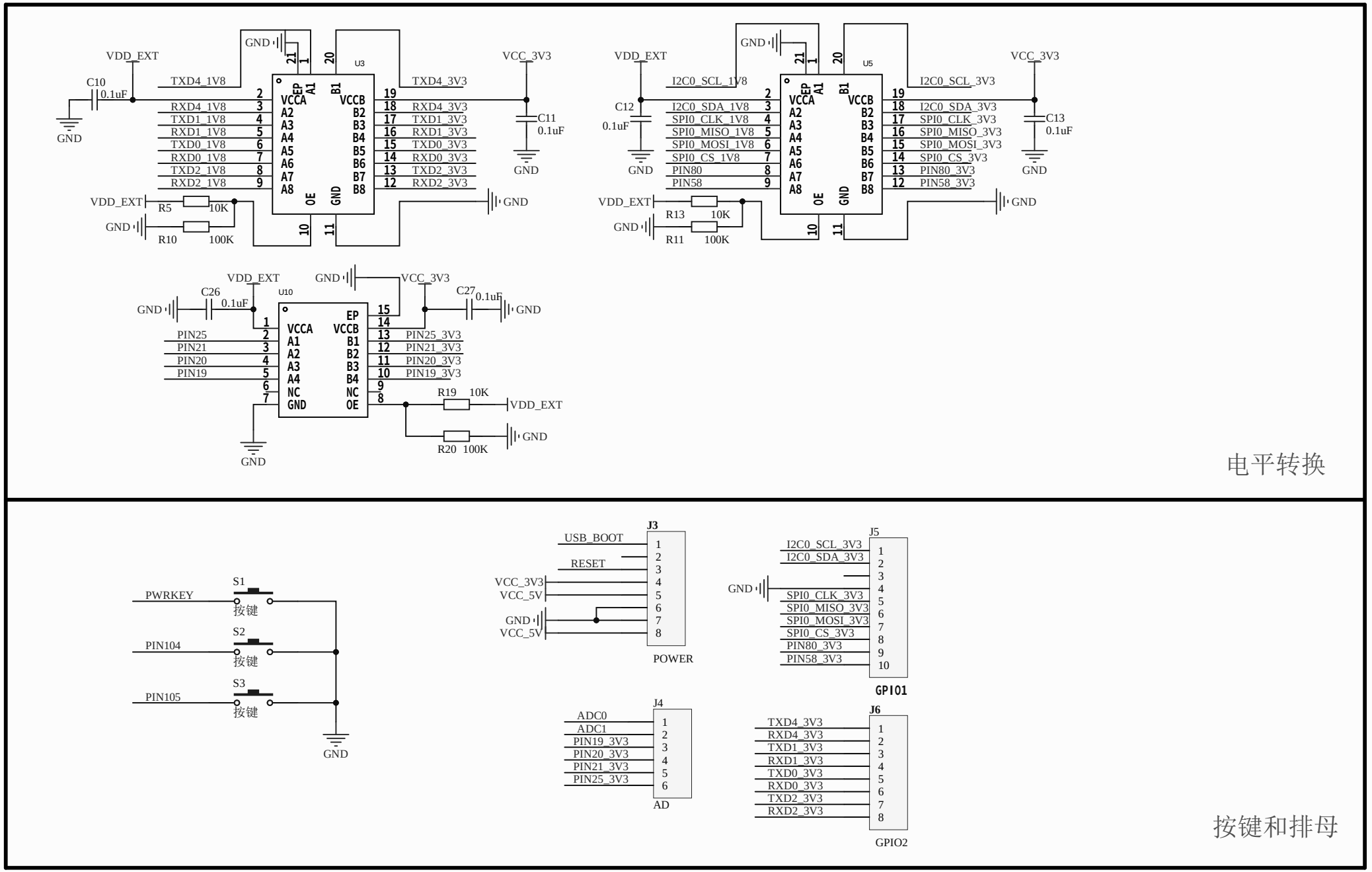
1
2

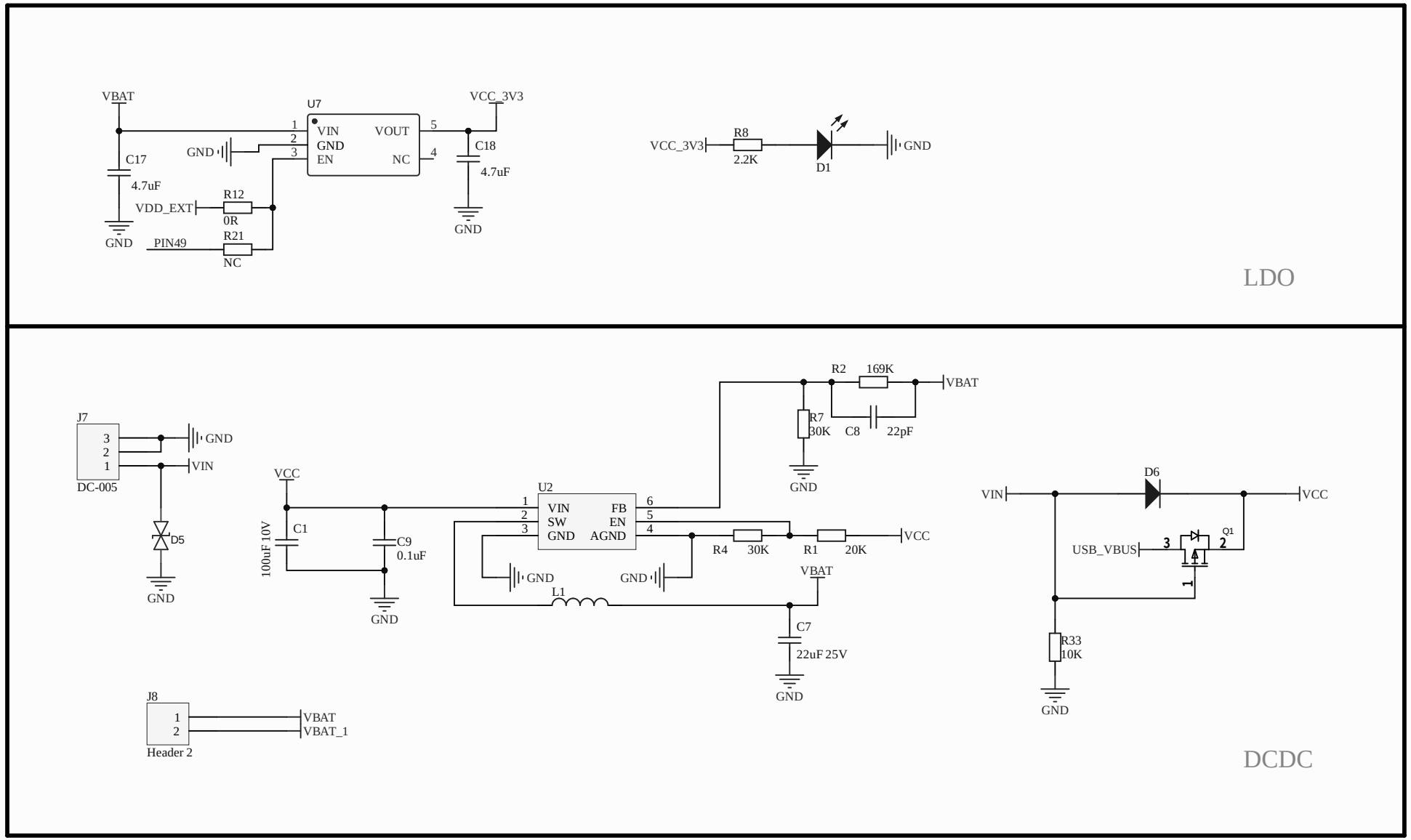
10 EVB

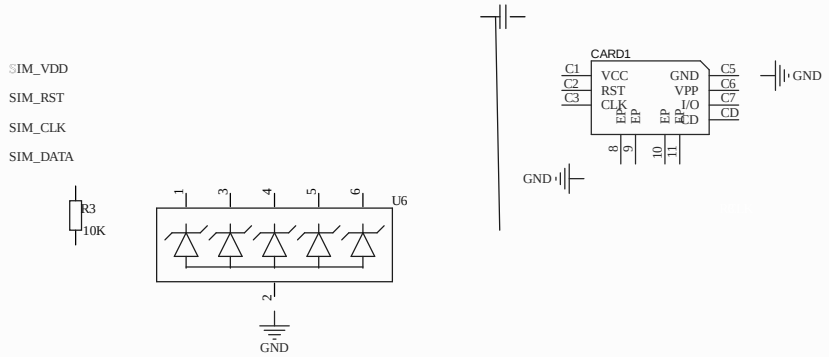

QuecPython
UNO V1
LTE
GNSS
Digital
RX2
TX2
S1
S2
S3


VDD_EXT
C34
0.1uF
GND
R25
510R
GND
C28
C29
10pF
MIC1
33pF
2
1
B4013AM423-092
R26
1.5K
C35
2.2uF
C36
MIC_N
0.1uF
C32
C33
33pF
10pF
C37
MIC_P
0.1uF
C30
C31
33pF
10pF
R27
1.5K
GND
R28
510R
GND
VCC_3V3
R29
NC
PIN69
R30
0R
GND
C40
1uF
U8
1
2
3
4
CTRL
Bypass
INP
INN
VoP
GND
VDD
VoN
8
7
6
5
GND
C38
SPK_P
0.1uF
R31
10K
C41
33pF
C39
SPK_N
0.1uF
R32
10K
C42
VBAT
4.7uF
GND
GND
C45
10pF
C46
33pF
C43
10pF
C44
33pF
C47
10pF
C48
33pF
GND
J10
1
2
喇叭
AUDIO


U1A
EC800K-CN
GND1
ANT_GNSS
MIC_P
MIC_N
SPK_P
SPK_N
PWRKEY
CAM_VDD
ADC0
GND2
USIM_DATA
USIM_RST
USIM_CLK
ANT_WIFI_SCAN
RESERVED10
VBAT2
VBAT1
GND8
GND7
DBG_TXD
DBG_RXD
GND6
GND5
RESERVED9
ANT_MAIN
GND4
PCM_DOUT
PCM_DIN
PCM_SYNC
PCM_CLK
AUX_TXD
AUX_RXD
GND3
RESERVED8
STATUS
VDD_EXT
MAIN_RTS
RESERVED6
USIM_VDD
RESET_N
NET_STATUS
MAIN_RXD
MAIN_TXD
MAIN_DTR
MAIN_RI
MAIN_DCD
MAIN_CTS
RESERVED7
SIM_VDD
RESET
NETLIGHT
RXD2_1V8
TXD2_1V8
PIN19
PIN20
PIN21
TXD1_1V8
TXD0_1V8
RXD0_1V8
TXD4_1V8
RXD4_1V8
RXD1_1V8
VDD_EXT_1
C25
4.7uF
J1
C22
C24
100uF 6.3V
U1B
EC800K-CN
RESERVED11
GND9
GND10
GND11
GND12
LCD_RST
LCD_SPI_DOUT
LCD_SPI_RS
LCD_SPI_CS
LCD_SPI_CLK
RESERVED17
RESERVED34
GND15
GND14
GND13
RESERVED33
RESERVED32
RESERVED31
RESERVED30
I2C_SCL
I2C_SDA
USIM2_VDD
USIM2_DATA
USIM2_RST
USIM2_CLK
USB_VBUS
USB_DM
USB_DP
RESERVED25
RESERVED18
CAM_MCLK
CAM_SPI_DATA0
CAM_SPI_DATA1
CAM_I2C_SCL
CAM_I2C_SDA
RESERVED24
I2C0_SCL_1V8
I2C0_SDA_1V8
USB_VBUS_1
USB_DM
USB_DP
U1C
EC800K-CN
GND16
RESERVED35
RESERVED36
KP_MKOUT2
KP_MKIN2
LCD_TE
USIM1_DET
CAM_SPI_CLK
RESERVED41
RESERVED42
GND17
KP_MKIN1
KP_MKOUT1
RESERVED47
RESERVED46
KP_MKIN4
USB_BOOT/KP_MKOUT4
CAM_PWDN
RESERVED43
SIM_DET
USB_BOOT
U1D
EC800K-CN
GND18
GND19
GND20
GND21
GND22
GND23
R6
4.7K
R9
4.7K
D4
D2
Q2
Q3
NETLIGHT
USBC
LED


U3
VDD_EXT
GND
VCC_3V3
C10
0.1uF
C11
0.1uF
TXD4_1V8
RXD4_1V8
TXD1_1V8
RXD1_1V8
TXD0_1V8
RXD0_1V8
TXD2_1V8
RXD2_1V8
TXD4_3V3
RXD4_3V3
TXD1_3V3
RXD1_3V3
TXD0_3V3
RXD0_3V3
TXD2_3V3
RXD2_3V3
VCCA
VCCB
EP
A1
B1
A2
B2
A3
B3
A4
B4
A5
B5
A6
B6
A7
B7
A8
B8
OE
R5
10K
R10
100K
U5
C12
C13
I2C0_SCL_1V8
I2C0_SDA_1V8
SPI0_CLK_1V8
SPI0_MISO_1V8
SPI0_MOSI_1V8
SPI0_CS_1V8
PIN80
PIN58
I2C0_SCL_3V3
I2C0_SDA_3V3
SPI0_CLK_3V3
SPI0_MISO_3V3
SPI0_MOSI_3V3
SPI0_CS_3V3
PIN80_3V3
PIN58_3V3
R13
10K
R11
100K
U10
C26
C27
PIN25
PIN21
PIN20
PIN19
PIN25_3V3
PIN21_3V3
PIN20_3V3
PIN19_3V3
NC
R19
10K
R20
100K
电平转换
S1
S2
S3
PWRKEY
PIN104
PIN105
按键
J3
USB_BOOT
RESET
VCC_3V3
VCC_5V
POWER
J5
GPIO1
J4
ADC0
ADC1
PIN19_3V3
PIN20_3V3
PIN21_3V3
PIN25_3V3
AD
J6
GPIO2
按键和排母


VBAT
U7
VCC_3V3
VIN
VOUT
GND
EN
NC
C17
4.7uF
C18
4.7uF
R12
0R
VDD_EXT
R21
NC
PIN49
R8
2.2K
D1
LDO
J7
DC-005
VIN
D5
VCC
100uF 10V
C1
C9
0.1uF
U2
SW
FB
AGND
R2
169K
R7
30K
C8
22pF
R4
30K
R1
20K
L1
C7
22uF 25V
J8
Header 2
VBAT_1
D6
USB_VBUS
Q1
R33
10K
DCDC


SIM_VDD
SIM_RST
SIM_CLK
SIM_DATA
R3
10K
U6
1
3
4
5
6
2
GND
CARD1
C1
C2
C3
VCC
RST
CLK
GND
VPP
I/O
CD
C5
C6
C7
CD
EP
8
9
10
11
GND
GND

USIM