EC800X QuecDuino EVB

EC800X QuecDuino EVB V1.1

2024-12-25

LX

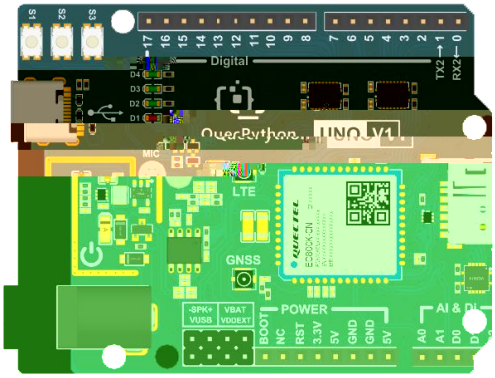
1

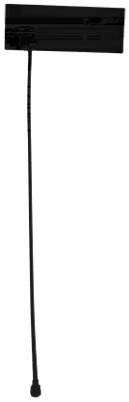
EC800X QuecDuino EVB EC800

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)

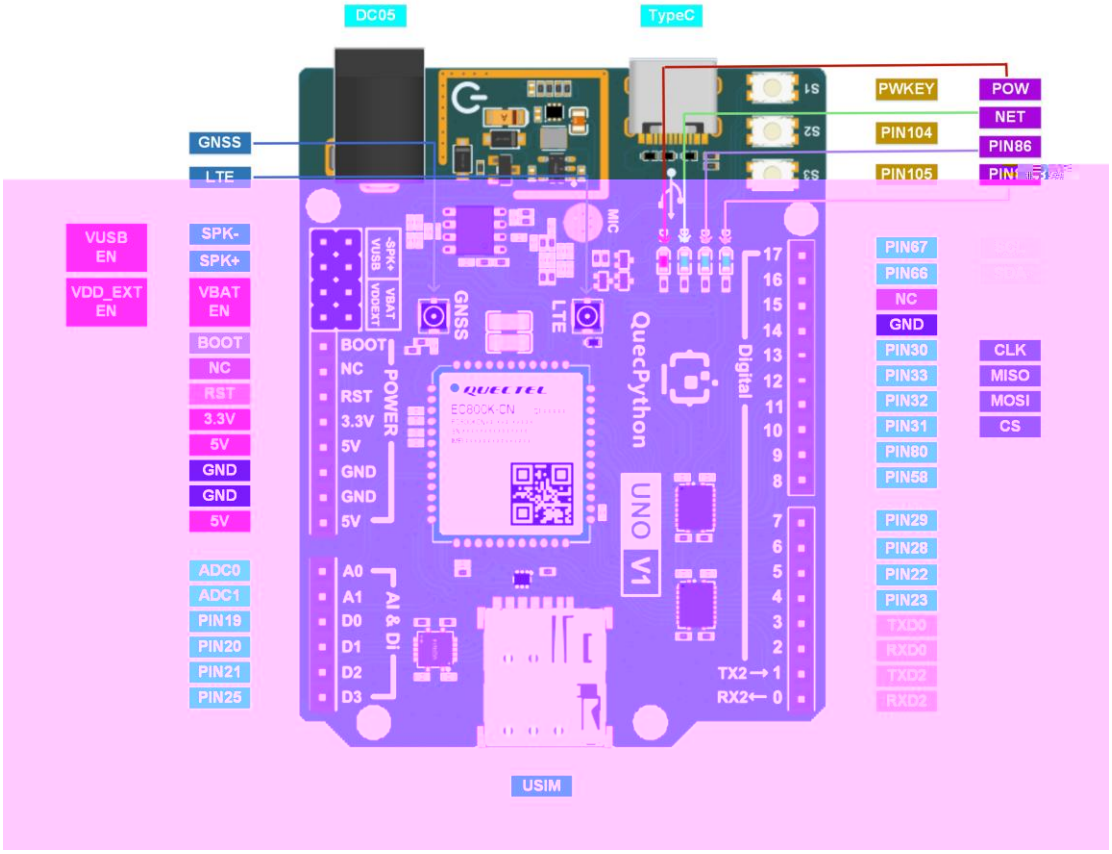
4x LED(D1-D4)

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



2.2

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

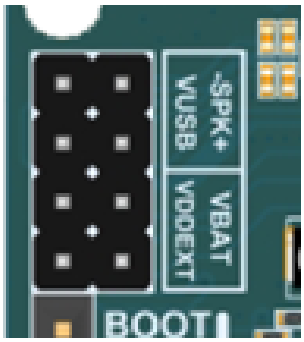
Pin0 Pin1 AT 115200

AT 4800 9600 19200 38400

57600 115200 230400 460800 921600bps AT

open C QuecPython UART2

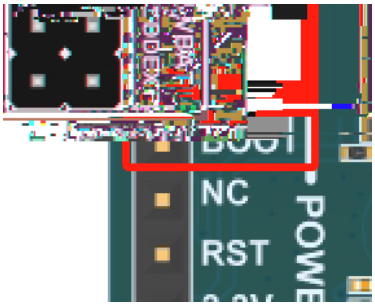
3



VBAT VUSB VDD_EXT

VBAT

4 BOOT

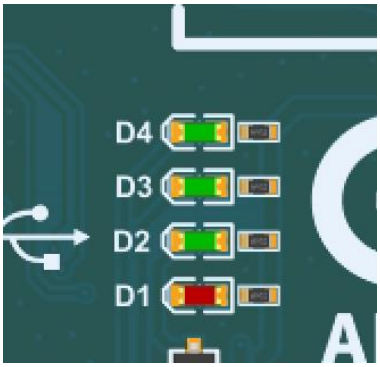


BOOT BOOT BOOT GND

BOOT

2.3

EVB 4 D1



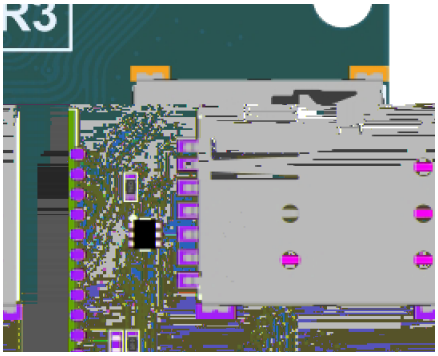
D2

2

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

D3 D4 86 87

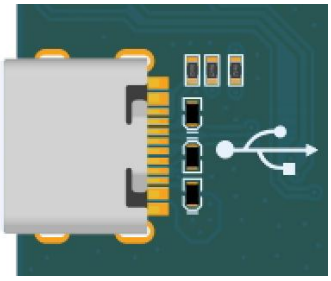
3 SIM



EVB NANO SIM USIM ETSI IMT-2000

1.8 V 3.0 V USIM

4 USB



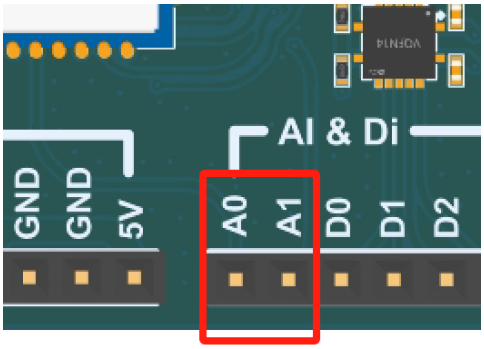
EVB 1 TypeC USB USB USB 2.0

USB 2.0 480 Mbps 12 Mbps

AT GNSS NMEA

5 ADC

EVB 2 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

6

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

6.1.2

7

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

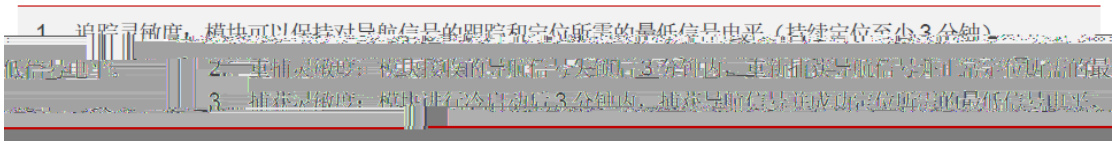
GPS	1575.42 ±1.023 (L1)	MHz
BDS	1561.098 ±2.046 (B1I)	
Galileo	1575.42 ±2.046 (E1)	
GLONASS	1597.5~1605.8 (L1)	

6.2.2 GNSS

10 GNSS

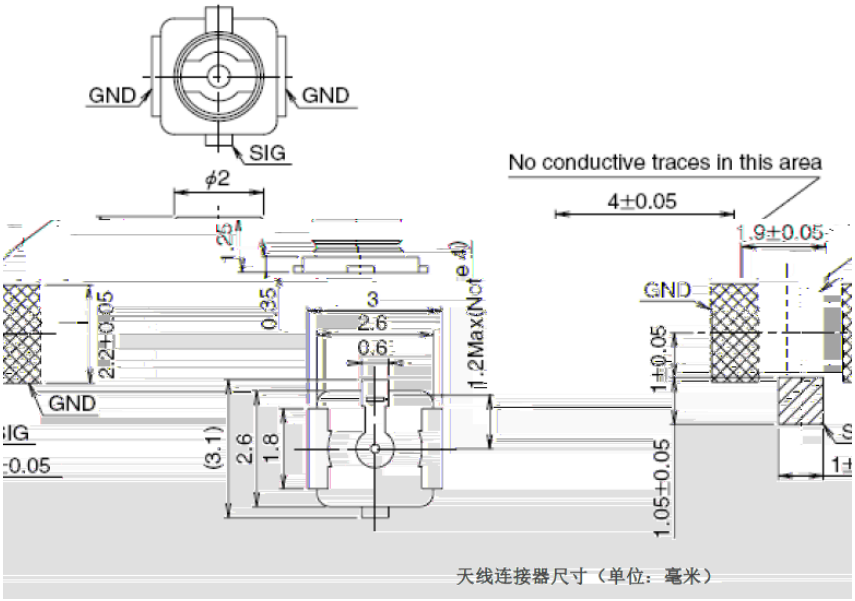
参数	条件	典型值	单位
灵敏度	捕获	-146	dBm
	重捕	-160	
	追踪	-160	
首次定位时间	冷启动 @ 空旷区域	28	s
	温启动 @ 空旷区域	27	
	热启动 @ 空旷区域	3.7 3	
	CEP-50	2	

备注

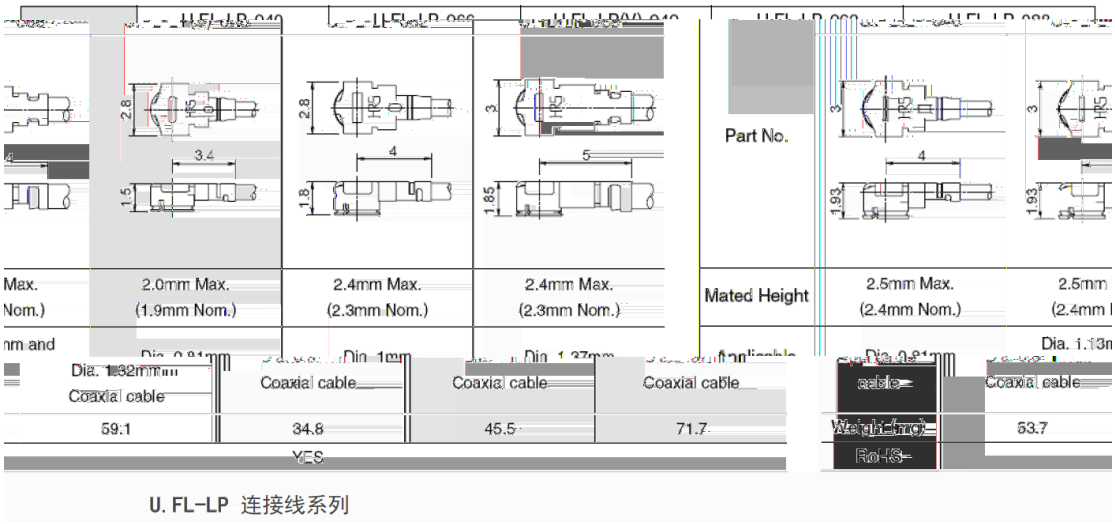


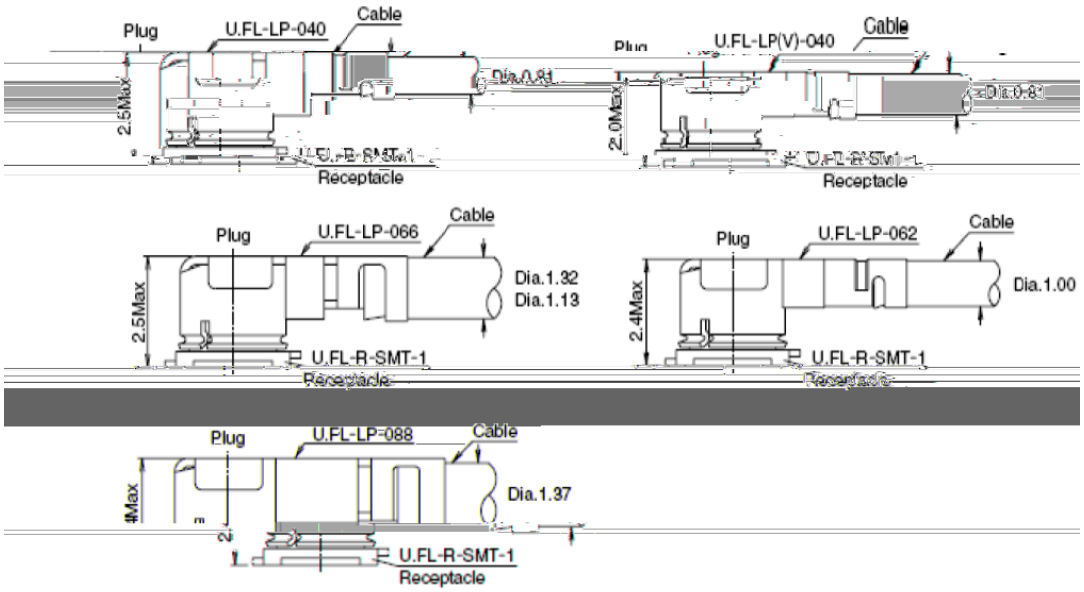
6.3

EVB


GND
GND
SIG
φ2
No conductive traces in this area
4±0.05
1.9±0.05
1.25
0.35
3
2.6
0.6
1.2Max(Not e.4)
2.2±0.05
GND
GND
(3.1)
2.6
1.8
1±0.05
1.05±0.05
-0.05
天线连接器尺寸（单位：毫米）

U.FL-LP


Part No.
Max.
Nom.)
2.0mm Max.
(1.9mm Nom.)
2.4mm Max.
(2.3mm Nom.)
2.4mm Max.
(2.3mm Nom.)
Mated Height
2.5mm Max.
(2.4mm Nom.)
Coaxial cable
Coaxial cable
Coaxial cable
Coaxial cable
59.1
34.8
45.5
71.7
53.7
YES
U. FL-LP 连接线系列



安装尺寸（单位：毫米）

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

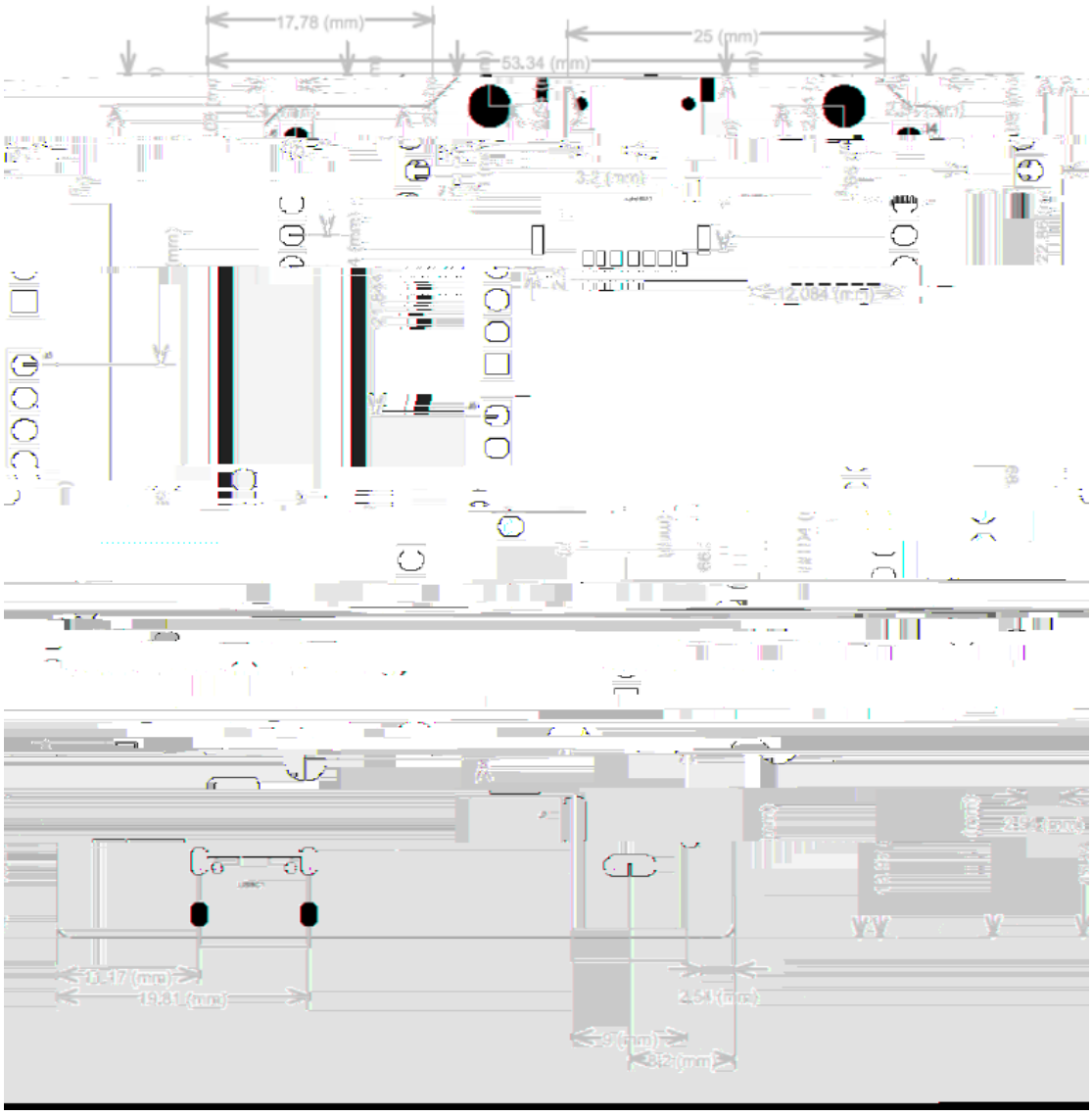
7.3

13 ESD

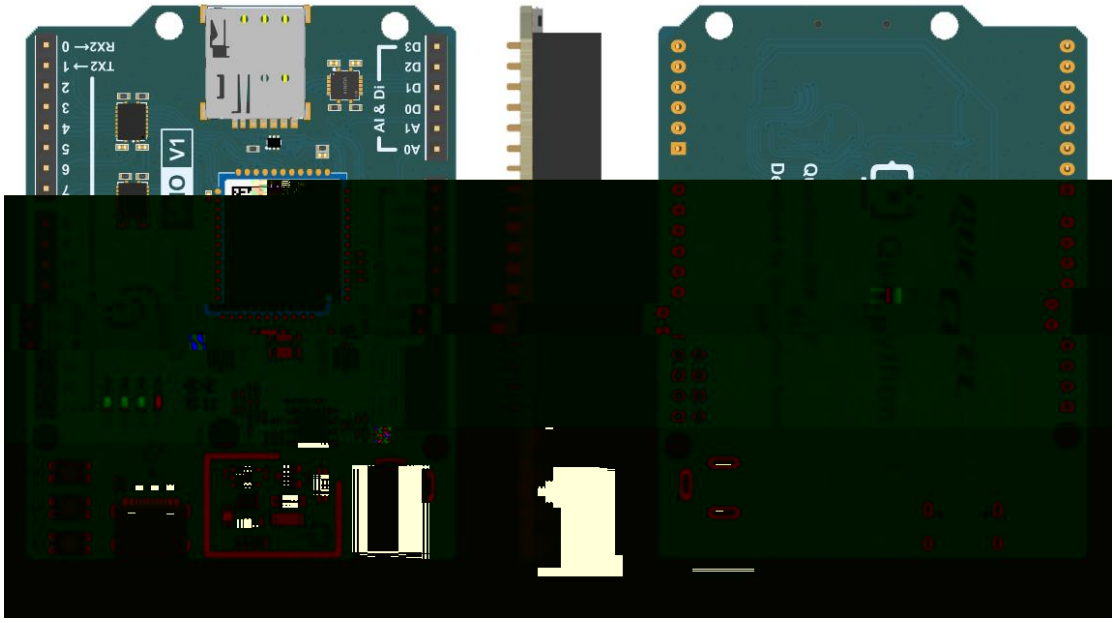
5V GND	8	10	KV
USB	8	10	KV

8

8.1



8.2

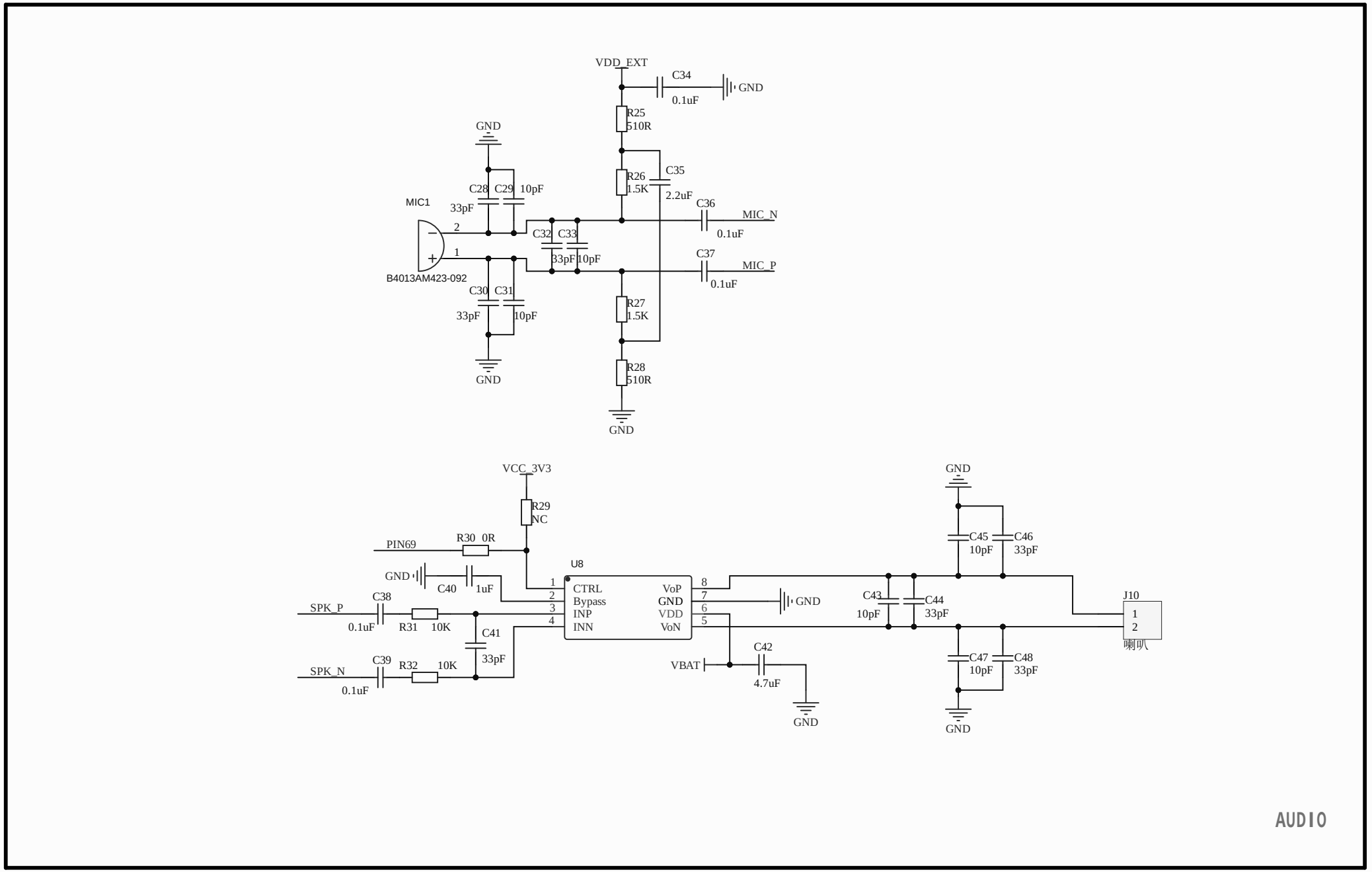


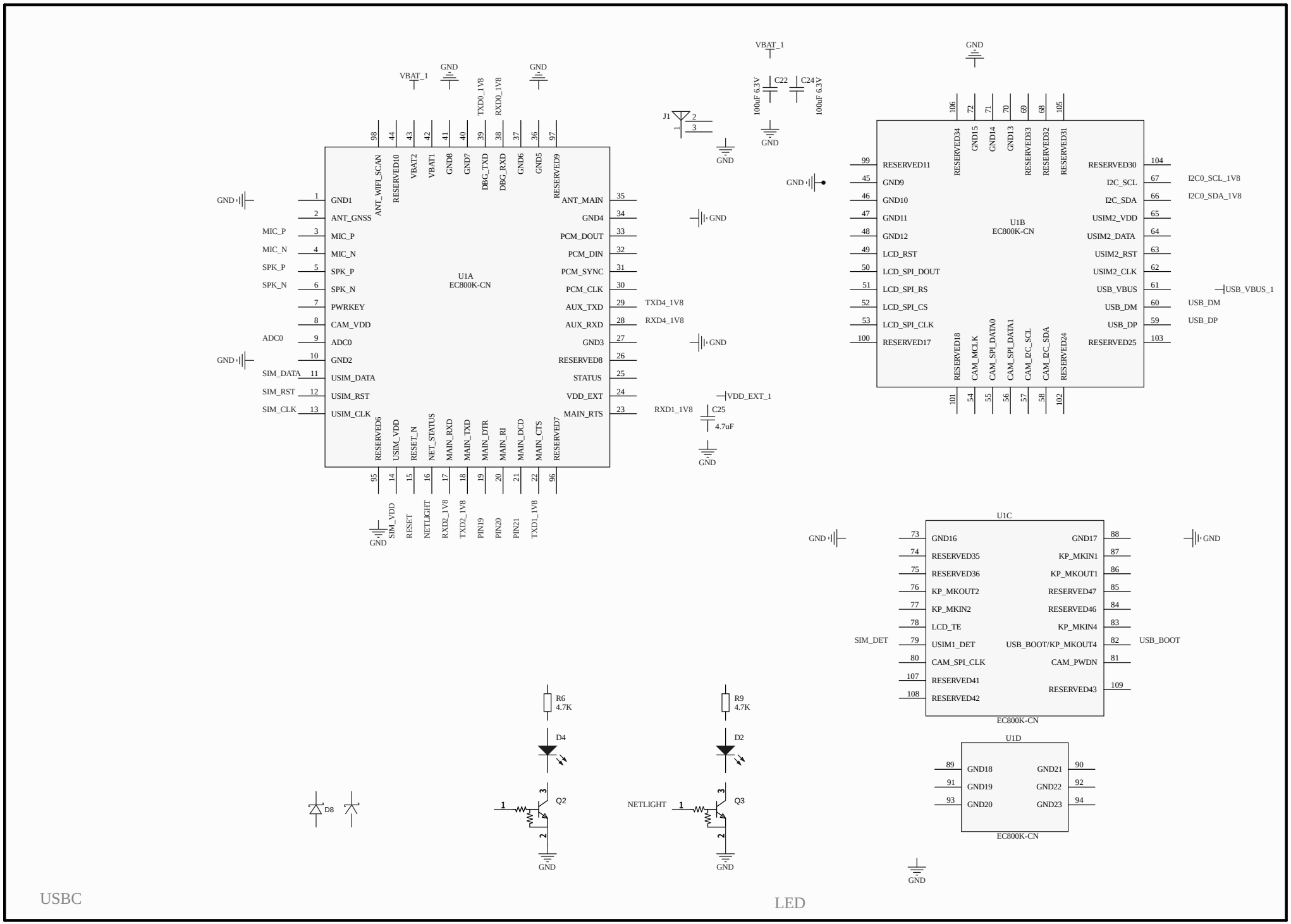
9

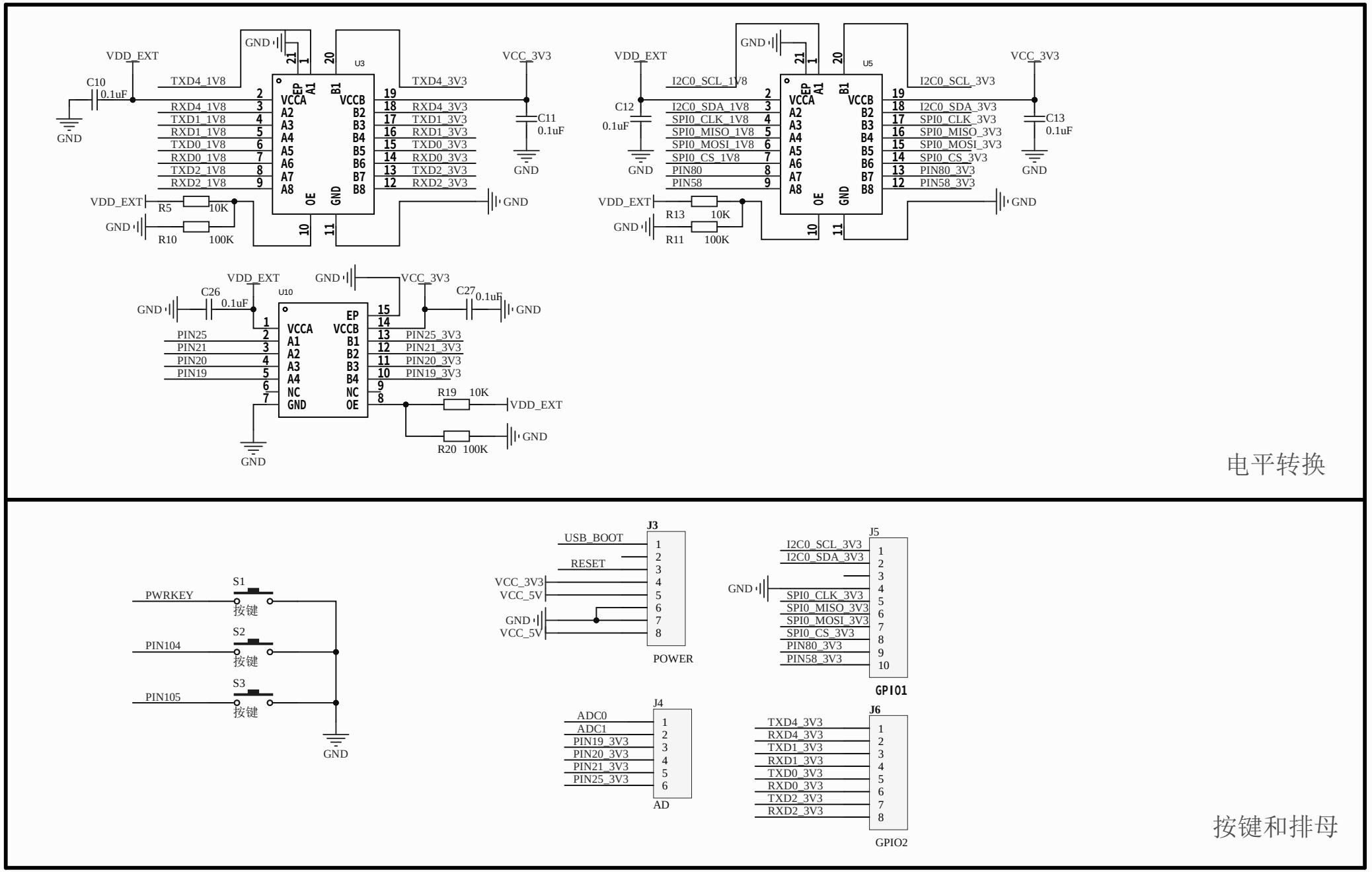
1
2

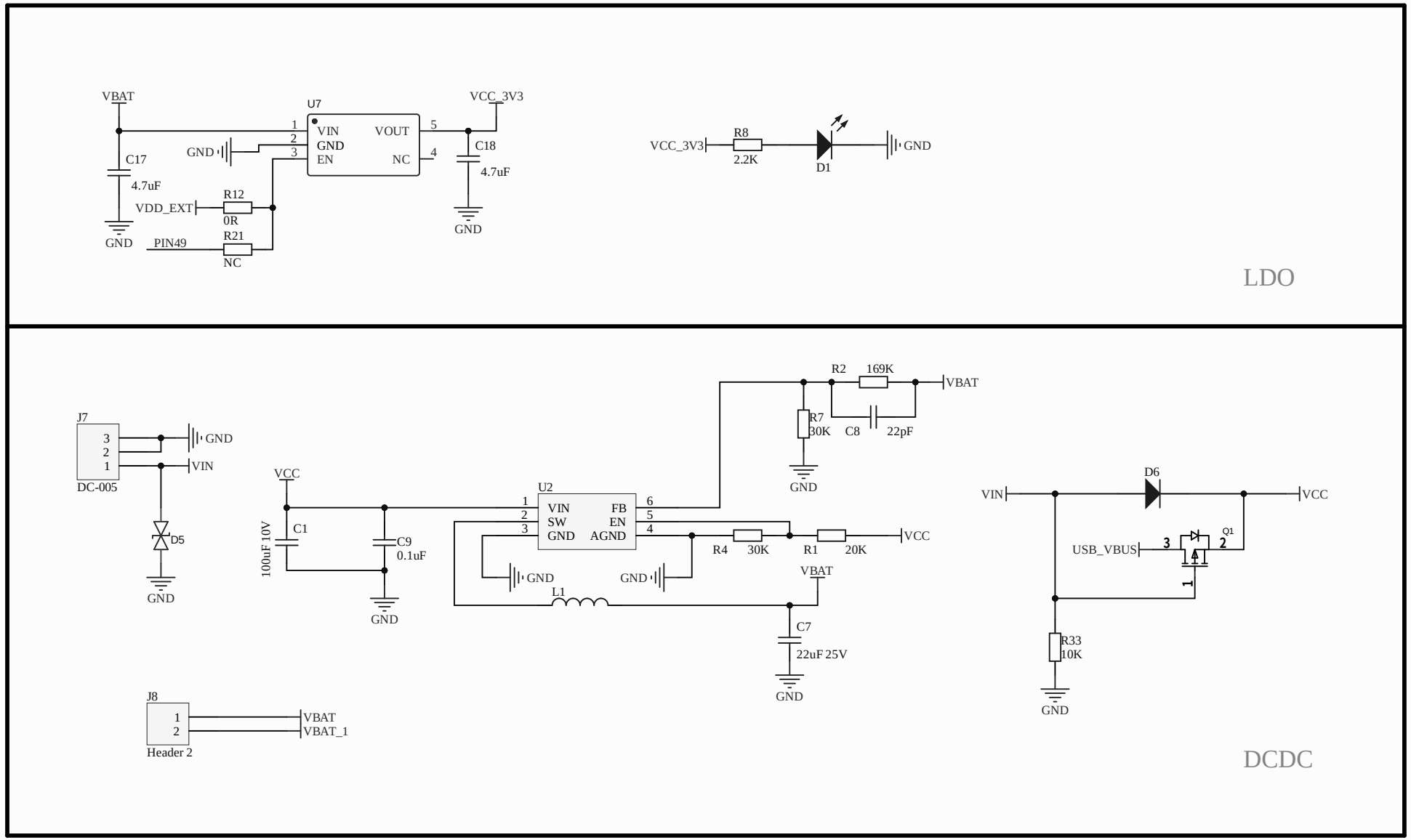
10 EVB

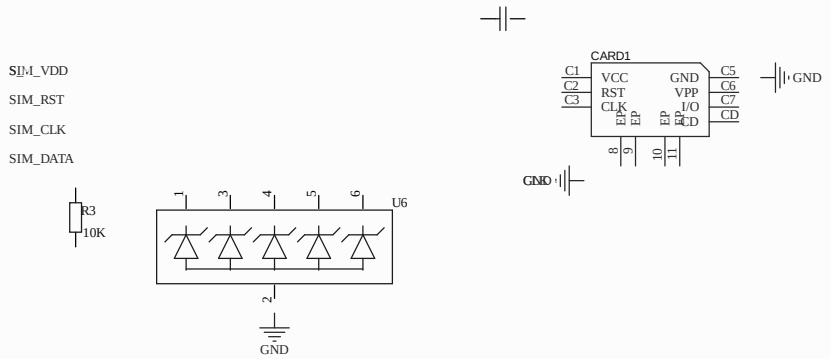
QuecPython
Digital
RX2
TX2
S1
S2
S3
LTE
GNSS
J1
J2
J3
J4
J5
J6
J7
J8
J9
J10
J11
U1
U2
U6
U7
U8
U9
U10
U11
U12
U13
U14
U15
U16
U17
U18
U19
U20
U21
U22
U23
U24
U25
U26
U27
U28
U29
U30
U31
U32
U33
U34
U35
U36
U37
U38
U39
U40
U41
U42
U43
U44
U45
U46
U47
U48
U49
U50
U51
U52
U53
U54
U55
U56
U57
U58
U59
U60
U61
U62
U63
U64
U65
U66
U67
U68
U69
U70
U71
U72
U73
U74
U75
U76
U77
U78
U79
U80
U81
U82
U83
U84
U85
U86
U87
U88
U89
U90
U91
U92
U93
U94
U95
U96
U97
U98
U99
U100
U101
U102
U103
U104
U105
U106
U107
U108
U109
U110
U111
U112
U113
U114
U115
U116
U117
U118
U119
U120
U121
U122
U123
U124
U125
U126
U127
U128
U129
U130
U131
U132
U133
U134
U135
U136
U137
U138
U139
U140
U141
U142
U143
U144
U145
U146
U147
U148
U149
U150
U151
U152
U153
U154
U155
U156
U157
U158
U159
U160
U161
U162
U163
U164
U165
U166
U167
U168
U169
U170
U171
U172
U173
U174
U175
U176
U177
U178
U179
U180
U181
U182
U183
U184
U185
U186
U187
U188
U189
U190
U191
U192
U193
U194
U195
U196
U197
U198
U199
U200
U201
U202
U203
U204
U205
U206
U207
U208
U209
U210
U211
U212
U213
U214
U215
U216
U217
U218
U219
U220
U221
U222
U223
U224
U225
U226
U227
U228
U229
U230
U231
U232
U233
U234
U235
U236
U237
U238
U239
U240
U241
U242
U243
U244
U245
U246
U247
U248
U249
U250
U251
U252
U253
U254
U255
U256
U257
U258
U259
U260
U261
U262
U263
U264
U265
U266
U267
U268
U269
U270
U271
U272
U273
U274
U275
U276
U277
U278
U279
U280
U281
U282
U283
U284
U285
U286
U287
U288
U289
U290
U291
U292
U293
U294
U295
U296
U297
U298
U299
U300
U301
U302
U303
U304
U305
U306
U307
U308
U309
U310
U311
U312
U313
U314
U315
U316
U317
U318
U319
U320
U321
U322
U323
U324
U325
U326
U327
U328
U329
U330
U331
U332
U333
U334
U335
U336
U337
U338
U339
U340
U341
U342
U343
U344
U345
U346
U347
U348
U349
U350
U351
U352
U353
U354
U355
U356
U357
U358
U359
U360
U361
U362
U363
U364
U365
U366
U367
U368
U369
U370
U371
U372
U373
U374
U375
U376
U377
U378
U379
U380
U381
U382
U383
U384
U385
U386
U387
U388
U389
U390
U391
U392
U393
U394
U395
U396
U397
U398
U399
U400
U401
U402
U403
U404
U405
U406
U407
U408
U409
U410
U411
U412
U413
U414
U415
U416
U417
U418
U419
U420
U421
U422
U423
U424
U425
U426
U427
U428
U429
U430
U431
U432
U433
U434
U435
U436
U437
U438
U439
U440
U441
U442
U443
U444
U445
U446
U447
U448
U449
U450
U451
U452
U453
U454
U455
U456
U457
U458
U459
U460
U461
U462
U463
U464
U465
U466
U467
U468
U469
U470
U471
U472
U473
U474
U475
U476
U477
U478
U479
U480
U481
U482
U483
U484
U485
U486
U487
U488
U489
U490
U491
U492
U493
U494
U495
U496
U497
U498
U499
U500
U501
U502
U503
U504
U505
U506
U507
U508
U509
U510
U511
U512
U513
U514
U515
U516
U517
U518
U519
U520
U521
U522
U523
U524
U525
U526
U527
U528
U529
U530
U531
U532
U533
U534
U535
U536
U537
U538
U539
U540
U541
U542
U543
U544
U545
U546
U547
U548
U549
U550
U551
U552
U553
U554
U555
U556
U557
U558
U559
U560
U561
U562
U563
U564
U565
U566
U567
U568
U569
U570
U571
U572
U573
U574
U575
U576
U577
U578
U579
U580
U581
U582
U583
U584
U585
U586
U587
U588
U589
U590
U591
U592
U593
U594
U595
U596
U597
U598
U599
U600
U601
U602
U603
U604
U605
U606
U607
U608
U609
U610
U611
U612
U613
U614
U615
U616
U617
U618
U619
U620
U621
U622
U623
U624
U625
U626
U627
U628
U629
U630
U631
U632
U633
U634
U635
U636
U637
U638
U639
U640
U641
U642
U643
U644
U645
U646
U647
U648
U649
U650
U651
U652
U653
U654
U655
U656
U657
U658
U659
U660
U661
U662
U663
U664
U665
U666
U667
U668
U669
U670
U671
U672
U673
U674
U675
U676
U677
U678
U679
U680
U681
U682
U683
U684
U685
U686
U687
U688
U689
U690
U691
U692
U693
U694
U695
U696
U697
U698
U699
U700
U701
U702
U703
U704
U705
U706
U707
U708
U709
U710
U711
U712
U713
U714
U715
U716
U717
U718
U719
U720
U721
U722
U723
U724
U725
U726
U727
U728
U729
U730
U731
U732
U733
U734
U735
U736
U737
U738
U739
U740
U741
U742
U743
U744
U745
U746
U747
U748
U749
U750
U751
U752
U753
U754
U755
U756
U757
U758
U759
U760
U761
U762
U763
U764
U765
U766
U767
U768
U769
U770
U771
U772
U773
U774
U775
U776
U777
U778
U779
U780
U781
U782
U783
U784
U785
U786
U787
U788
U789
U790
U791
U792
U793
U794
U795
U796
U797
U798
U799
U800
U801
U802
U803
U804
U805
U806
U807
U808
U809
U810
U811
U812
U813
U814
U815
U816
U817
U818
U819
U820
U821
U822
U823
U824
U825
U826
U827
U828
U829
U830
U831
U832
U833
U834
U835
U836
U837
U838
U839
U840
U841
U842
U843
U844
U845
U846
U847
U848
U849
U850
U851
U852
U853
U854
U855
U856
U857
U858
U859
U860
U861
U862
U863
U864
U865
U866
U867
U868
U869
U870
U871
U872
U873
U874
U875
U876
U877
U878
U879
U880
U881
U882
U883
U884
U885
U886
U887
U888
U889
U890
U891
U892
U893
U894
U895
U896
U897
U898
U899
U900
U901
U902
U903
U904
U905
U906
U907
U908
U909
U910
U911
U912
U913
U914
U915
U916
U917
U918
U919
U920
U921
U922
U923
U924
U925
U926
U927
U928
U929
U930
U931
U932
U933
U934
U935
U936
U937
U938
U939
U940
U941
U942
U943
U944
U945
U946
U947
U948
U949
U950
U951
U952
U953
U954
U955
U956
U957
U958
U959
U960
U961
U962
U963
U964
U965
U966
U967
U968
U969
U970
U971
U972
U973
U974
U975
U976
U977
U978
U979
U980
U981
U982
U983
U984
U985
U986
U987
U988
U989
U990
U991
U992
U993
U994
U995
U996
U997
U998
U999
U1000


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_MAIN
GND4
PCM_DOUT
PCM_DIN
PCM_SYNC
PCM_CLK
AUX_TXD
AUX_RXD
GND3
RESERVED8
STATUS
VDD_EXT
MAIN_RTS
U1B
EC800K-CN
RESERVED11
GND9
GND10
GND11
GND12
LCD_RST
LCD_SPI_DOUT
LCD_SPI_RS
LCD_SPI_CS
LCD_SPI_CLK
RESERVED17
RESERVED30
I2C_SCL
I2C_SDA
USIM2_VDD
USIM2_DATA
USIM2_RST
USIM2_CLK
USB_VBUS
USB_DM
USB_DP
RESERVED25
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
U1D
EC800K-CN
GND18
GND19
GND20
GND21
GND22
GND23
J1
C22
C24
C25
4.7uF
100uF 6.3V
R6
4.7K
R9
4.7K
D4
D2
D8
Q2
Q3
VBAT_1
VDD_EXT_1
TXD4_1V8
RXD4_1V8
RXD1_1V8
USB_VBUS_1
I2C0_SCL_1V8
I2C0_SDA_1V8
USB_DM
USB_DP
USB_BOOT
SIM_DET
NETLIGHT
GND
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

USIM