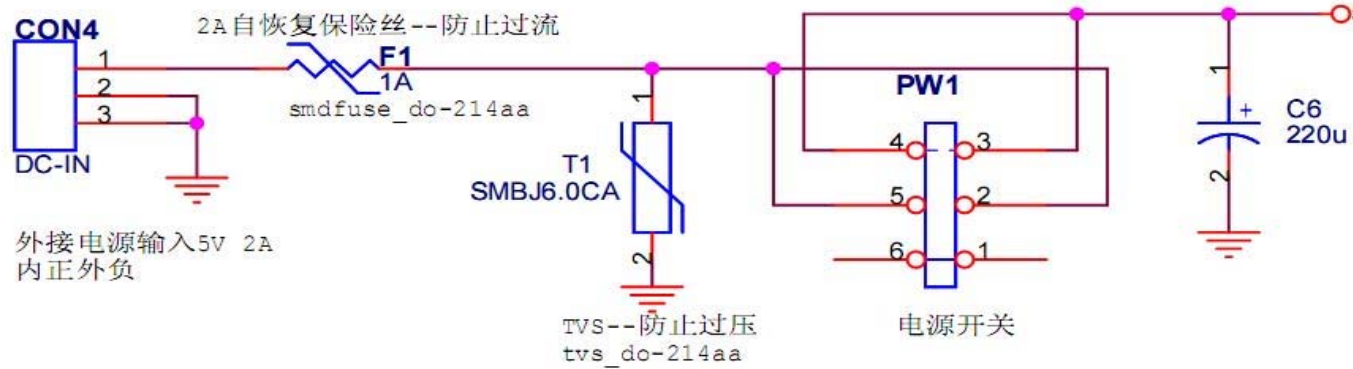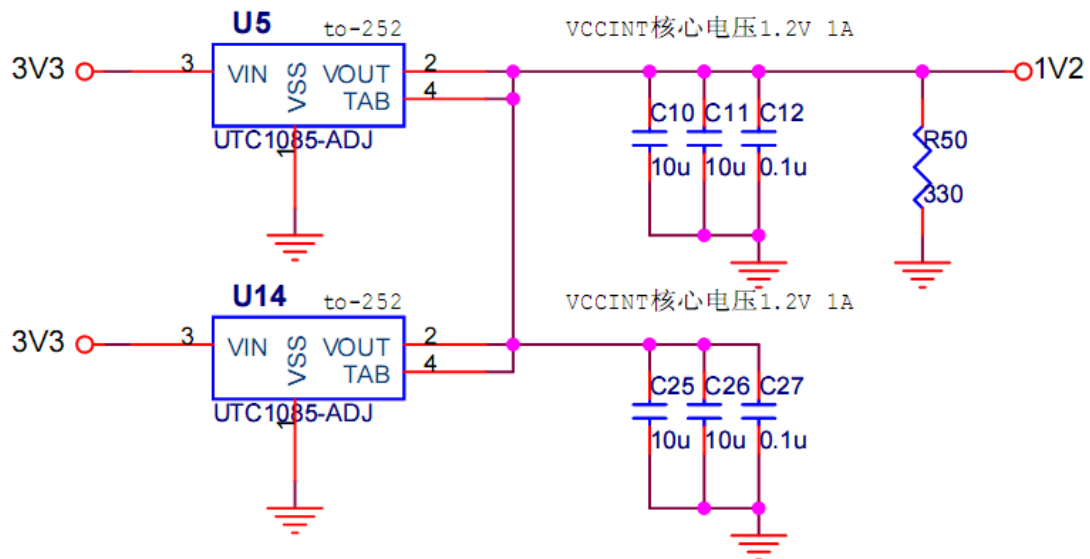# Hardware List V1.2

In the ASK2CB board, FPGA 's VCCINT were connected to 1.2V, which is FPGA's core voltage, FPGA's another voltage is VCCIO, it's FPGA's IO voltage, connected to 3.3V.
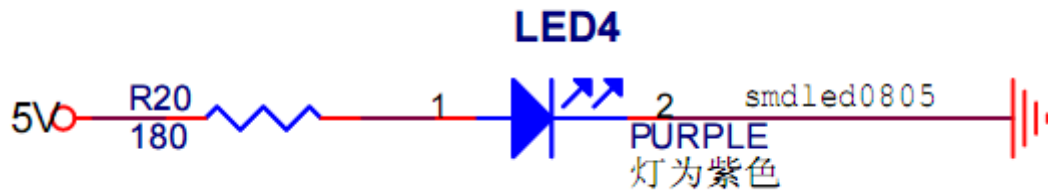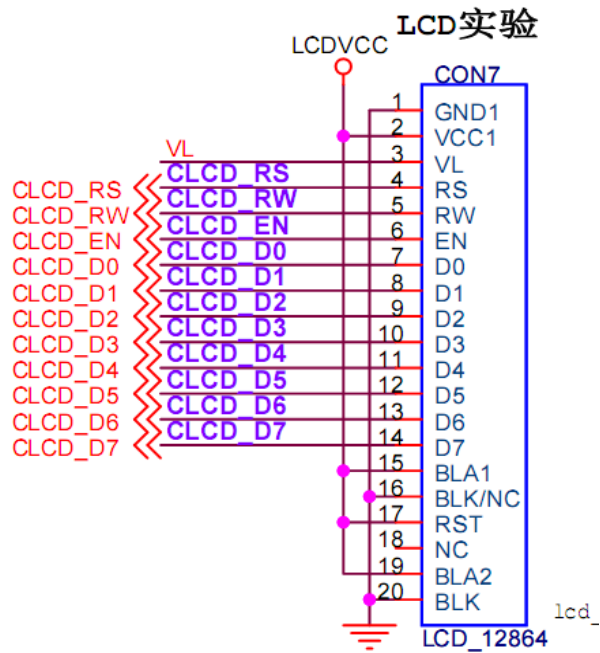
External power Part:

Power Supply:

Power LED:

LED4

5V ──[R20 180]──▷│── smdled0805
1 PURPLE 2
灯为紫色

1602 LCD:

LCD实验

LCDVCC

CON7

Pin	Signal
1	GND1
2	VCC1
3	VL
4	RS
5	RW
6	EN
7	D0
8	D1
9	D2
10	D3
11	D4
12	D5
13	D6
14	D7
15	BLA1
16	BLK/NC
17	RST
18	NC
19	BLA2
20	BLK

VL
CLCD_RS
CLCD_RW
CLCD_EN
CLCD_D0
CLCD_D1
CLCD_D2
CLCD_D3
CLCD_D4
CLCD_D5
CLCD_D6
CLCD_D7

lcd_

LCD_12864

PS2 interface:

PS2实验

5V

R39 R40 2K 2K

R42 R41 2K 2K

CON2

MSCLK 6 5 KBCLK
4 3
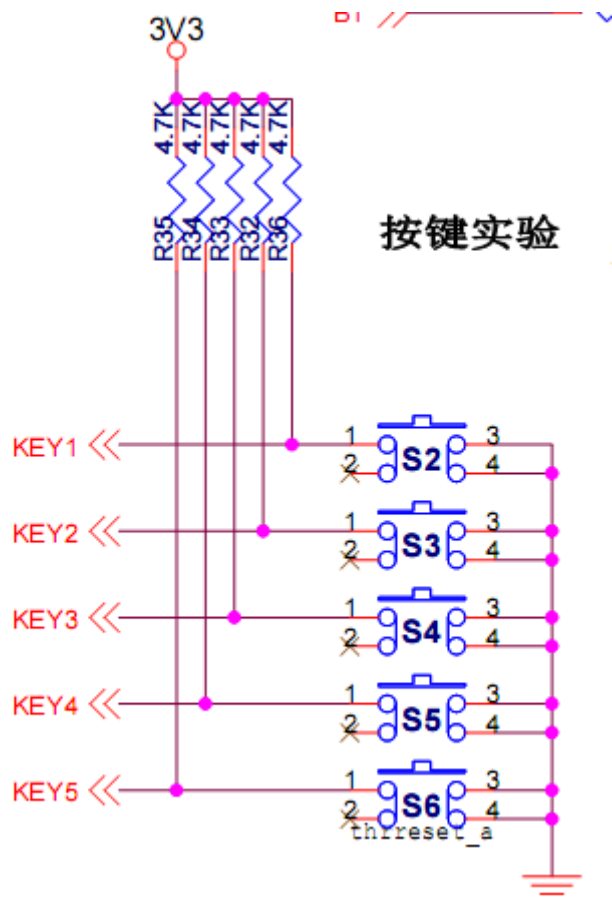MSDAT 2 1 KBDAT
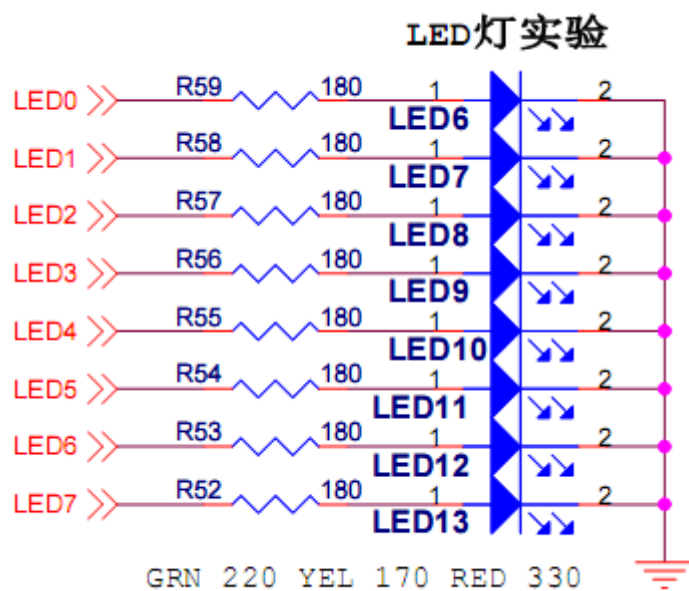
PS2 7 8 9 Female

1.data 2.nc 3.gnd 4.vcc 5.clk 6.nc
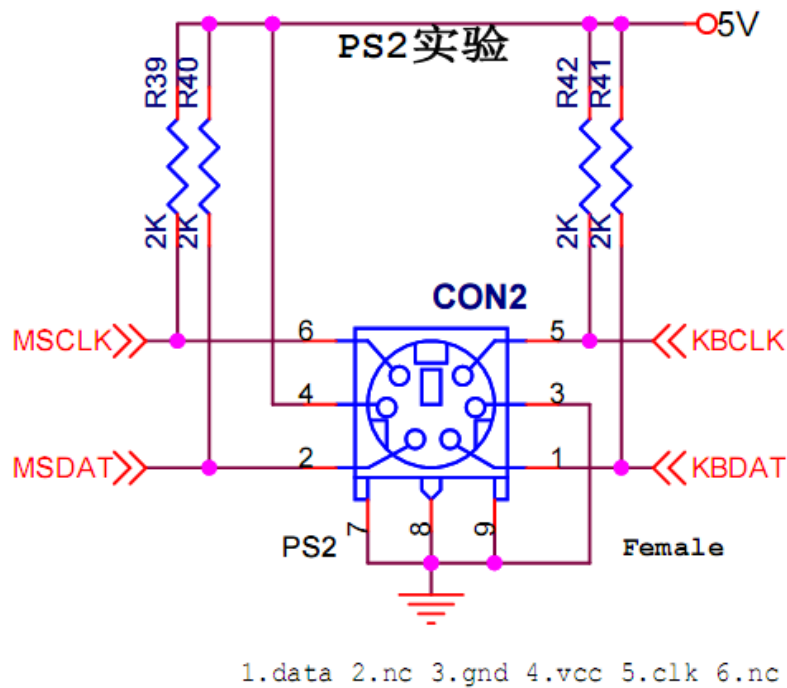
You can use PS/2 devider to use mouse and keyboard at the same time.

RS232:

Button circuit:

按键实验

User LED:

LED灯实验

GRN 220 YEL 170 RED 330

Buzzer:

I2C:

VGA:

VGA circuit uses 8bit color mode, Red for 3 bit, Green for 3 bit, Blue for 2 bit, so total is 256-bit color.

SRAM:

	U9	
3V3		3V3

A1 — 1 — A0   A17 — 44 — A18
A2 — 2 — A1   A16 — 43 — A17
A3 — 3 — A2   A15 — 42 — A16
A4 — 4 — A3 $\overline{OE}$ — 41 — SRAM_nOE
A5 — 5 — A4 $\overline{BHE}$ — 40 — SRAM_nBHE
SRAM_nCE — 6 — $\overline{CE}$ $\overline{BLE}$ — 39 — SRAM_nBLE
D0 — 7 — D0   D15 — 38 — D15
D1 — 8 — D1   D14 — 37 — D14
D2 — 9 — D2   D13 — 36 — D13
D3 — 10 — D3   D12 — 35 — D12
11 — VCC1   GND2 — 34
12 — GND1   VCC2 — 33
D4 — 13 — D4   D11 — 32 — D11
D5 — 14 — D5   D10 — 31 — D10
D6 — 15 — D6   D9 — 30 — D9
D7 — 16 — D7   D8 — 29 — D8
SRAM_nWE — 17 — $\overline{WE}$ NC — 28
A6 — 18 — A5   A14 — 27 — A15
A7 — 19 — A6   A13 — 26 — A14
A8 — 20 — A7   A12 — 25 — A13
A9 — 21 — A8   A11 — 24 — A12
A10 — 22 — A9   A10 — 23 — A11

CY7C1041V33
tsop2-44

SDRAM:

U4

A0	23	A0	
A1	24	A1	
A2	25	A2	
A3	26	A3	
A4	29	A4	
A5	30	A5	
A6	31	A6	
A7	32	A7	
A8	33	A8	
A9	34	A9	
A10	22	A10	
A11	35	A11	
A12	36	A12	

DQ0	2	D0
DQ1	4	D1
DQ2	5	D2
DQ3	7	D3
DQ4	8	D4
DQ5	10	D5
DQ6	11	D6
DQ7	13	D7
DQ8	42	D8
DQ9	44	D9
DQ10	45	D10
DQ11	47	D11
DQ12	48	D12
DQ13	50	D13
DQ14	51	D14
DQ15	53	D15

D[0..15]

tsop2-54

DRAM_BA0 — 20 — BA0
DRAM_BA1 — 21 — BA1

DRAM_DQM0 — 15 — LDQM
DRAM_DQM1 — 39 — UDQM

DRAM_CKE — 37 — SCKE
DRAM_CLK — 38 — SCLK

nSCS — 19 — DRAM_nCS
nSRAS — 18 — DRAM_nRAS
nSCAS — 17 — DRAM_nCAS
nWE — 16 — DRAM_nWE

28 — VSS0
41 — VSS1
54 — VSS2

6 — VSSQ0
12 — VSSQ1
46 — VSSQ2
52 — VSSQ3

VDD0 — 1
VDD1 — 14
VDD2 — 27

VDDQ0 — 3
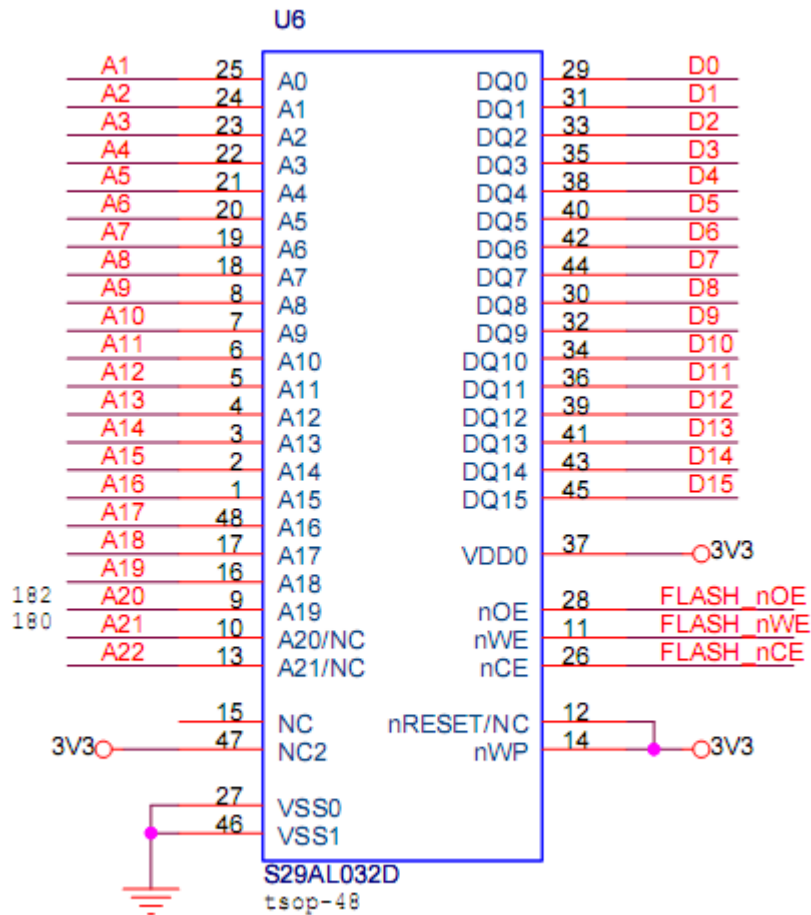VDDQ1 — 9
VDDQ2 — 43
VDDQ3 — 49
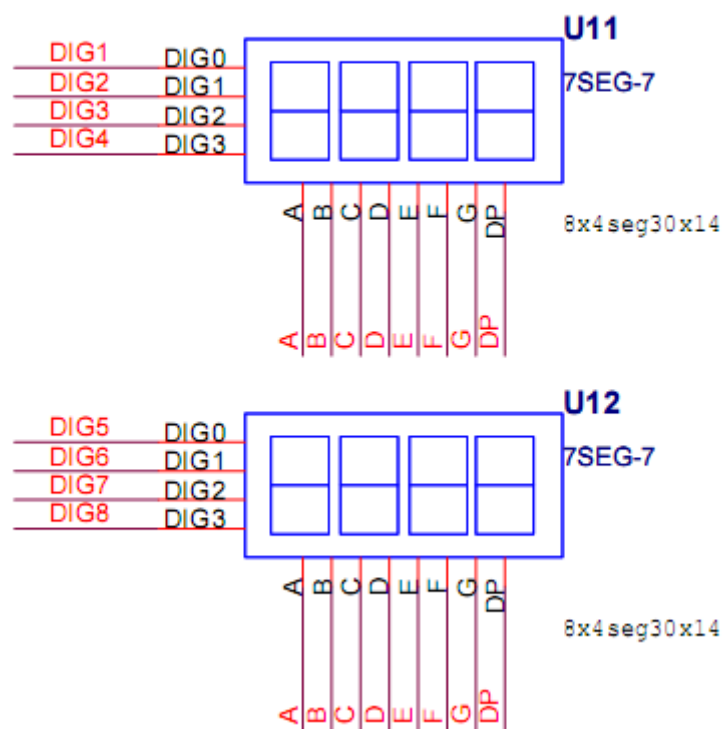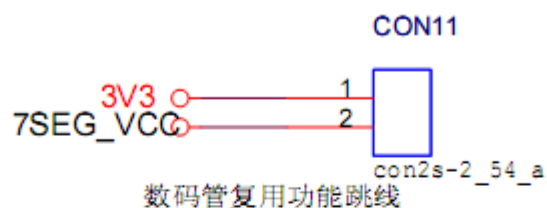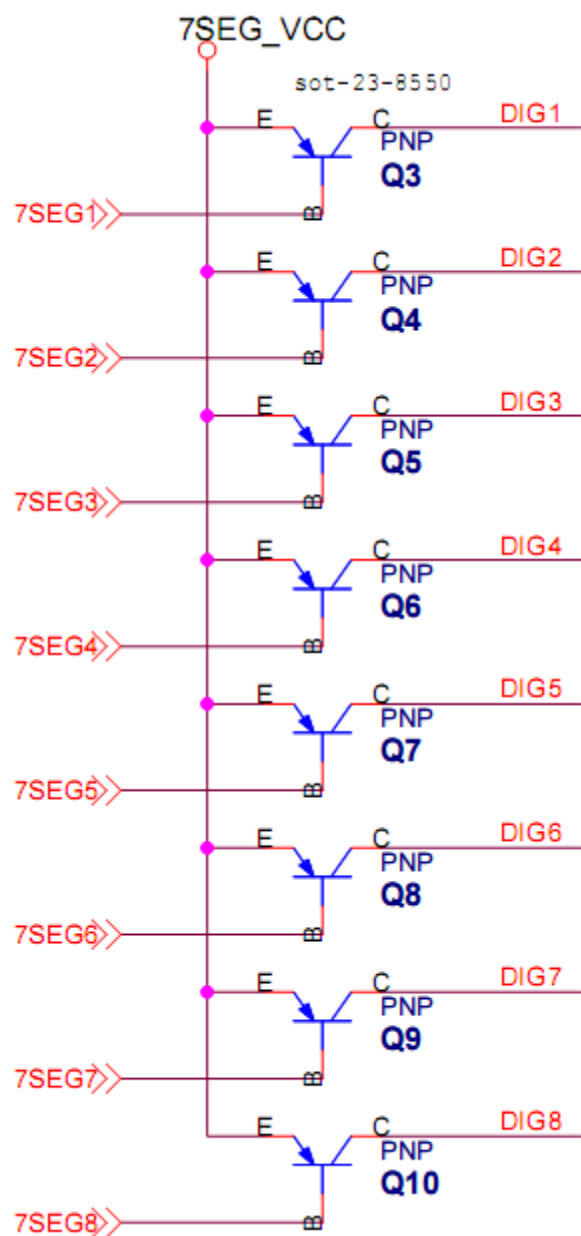
NC — 40

3V3

SDRAM H57V2562GTR-75C

FLASH:

The actual Flash IC is S29AL064DN90：

If you only wan to use SDRAM and FLASH, please discable SRAM's CS to high. If you want to use only SRAM and FLASH, please disable SDRAM's CS to high.
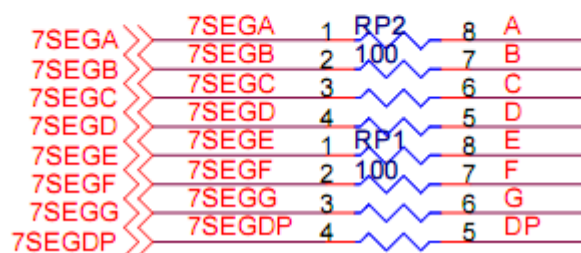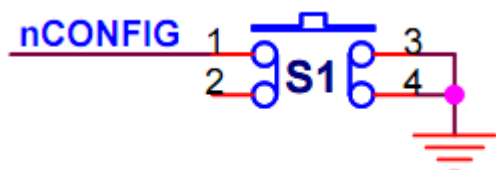
LED Tube:

7段数码管实验

U11

7SEG-7

DIG1 — DIG0
DIG2 — DIG1
DIG3 — DIG2
DIG4 — DIG3

A B C D E F G DP

8x4seg30x14

U12

7SEG-7

DIG5 — DIG0
DIG6 — DIG1
DIG7 — DIG2
DIG8 — DIG3

A B C D E F G DP

8x4seg30x14

7SEG_VCC

sot-23-8550

Q3 PNP — DIG1
7SEG1

Q4 PNP — DIG2
7SEG2

Q5 PNP — DIG3
7SEG3

Q6 PNP — DIG4
7SEG4

Q7 PNP — DIG5
7SEG5

Q8 PNP — DIG6
7SEG6

Q9 PNP — DIG7
7SEG7

Q10 PNP — DIG8
7SEG8

CON11

3V3 —— 1
7SEG_VCC —— 2

con2s-2_54_a
数码管复用功能跳线

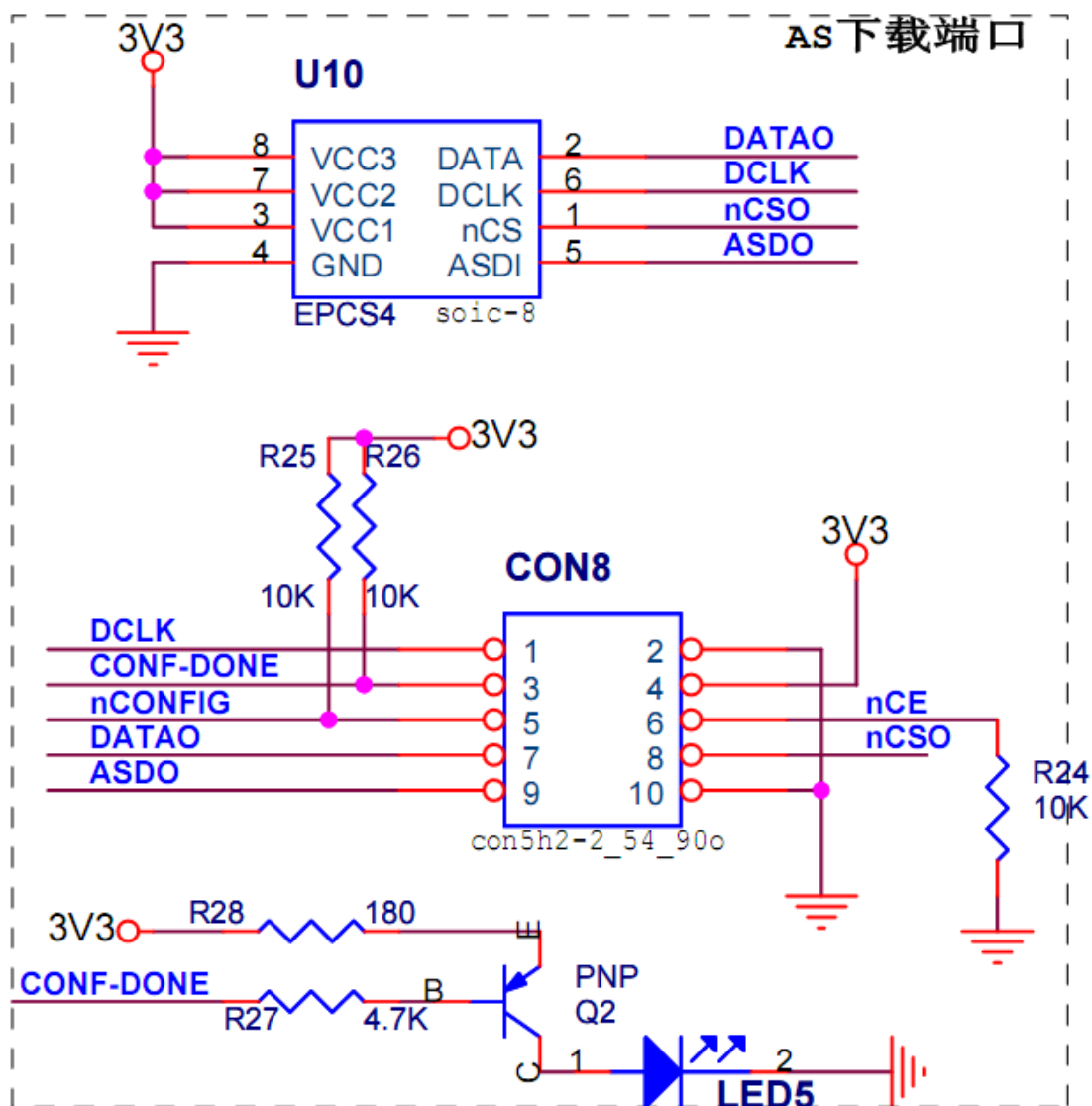|		RP2		
7SEGA	7SEGA	1	8	A
7SEGB	7SEGB	2 100	7	B
7SEGC	7SEGC	3	6	C
7SEGD	7SEGD	4	5	D
7SEGE	7SEGE	1 RP1	8	E
7SEGF	7SEGF	2 100	7	F
7SEGG	7SEGG	3	6	G
7SEGDP	7SEGDP	4	5	DP

7SEGA、7SEGB、7SEGC、7SEGD、7SEGE、7SEGF、7SEGG、7SEGDP are the seg select of the LED tubes, 7SEG1、7SEG2、7SEG3、7SEG4、7SEG5、7SEG6、7SEG7、7SEG8 are the bit select.

Reset:

AS and JTAG:

JTAG下载端口

CON12

3V3

3V3

TCK
TDO
TMS
TDI

R29 4.7K
R30 4.7K
R31 4.7K

1 2
3 4
5 6
7 8
9 10