AC9810EVB32A
VER.A

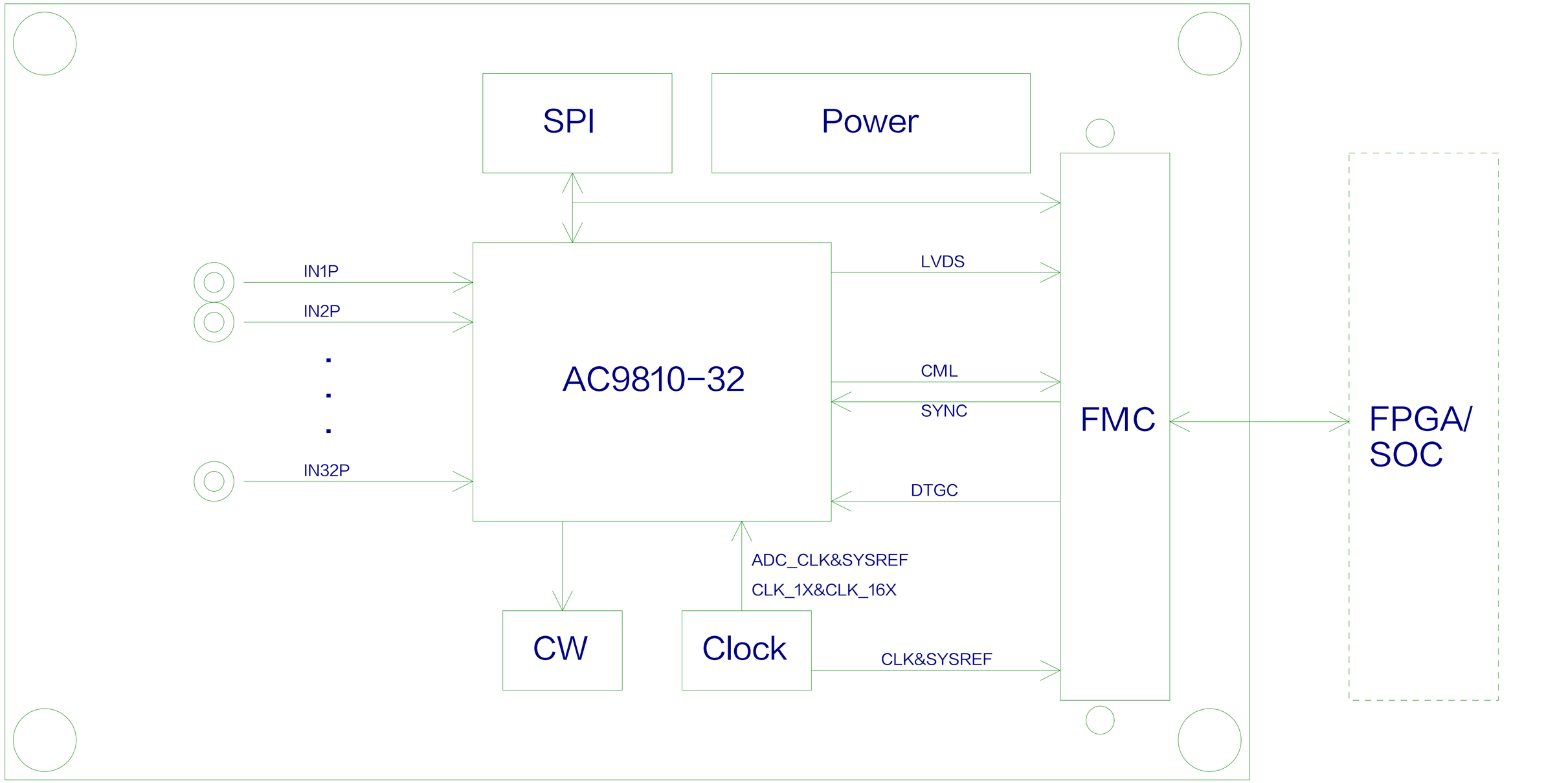
EVB Board for Reference Design

PAGE 1	1-Title_Page	PAGE 10	10-AC9810-32
PAGE 2	2-Block_Diagram	PAGE 11	11-Clock
PAGE 3	3-Power_Tree	PAGE 12	12-Clock_Select
PAGE 4	4-Clock_Tree	PAGE 13	13-CW_1
PAGE 5	5-Power_Sequence	PAGE 14	14-CW_2
PAGE 6	6-Power_1	PAGE 15	15-FMC_1
PAGE 7	7-Power_2	PAGE 16	16-FMC_2
PAGE 8	8-Power_3	PAGE 17	17-Others
PAGE 9	9-Input		

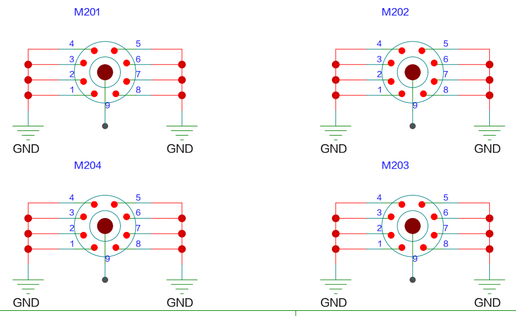
The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
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REVIEWED	LISIXXXXX				
		VER	PART_NUMBER	SHEET 1 OF 17	
		A	03030001		

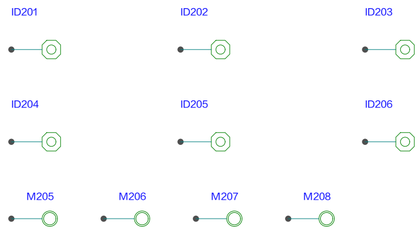
Block Diagram



Mounting_Hole



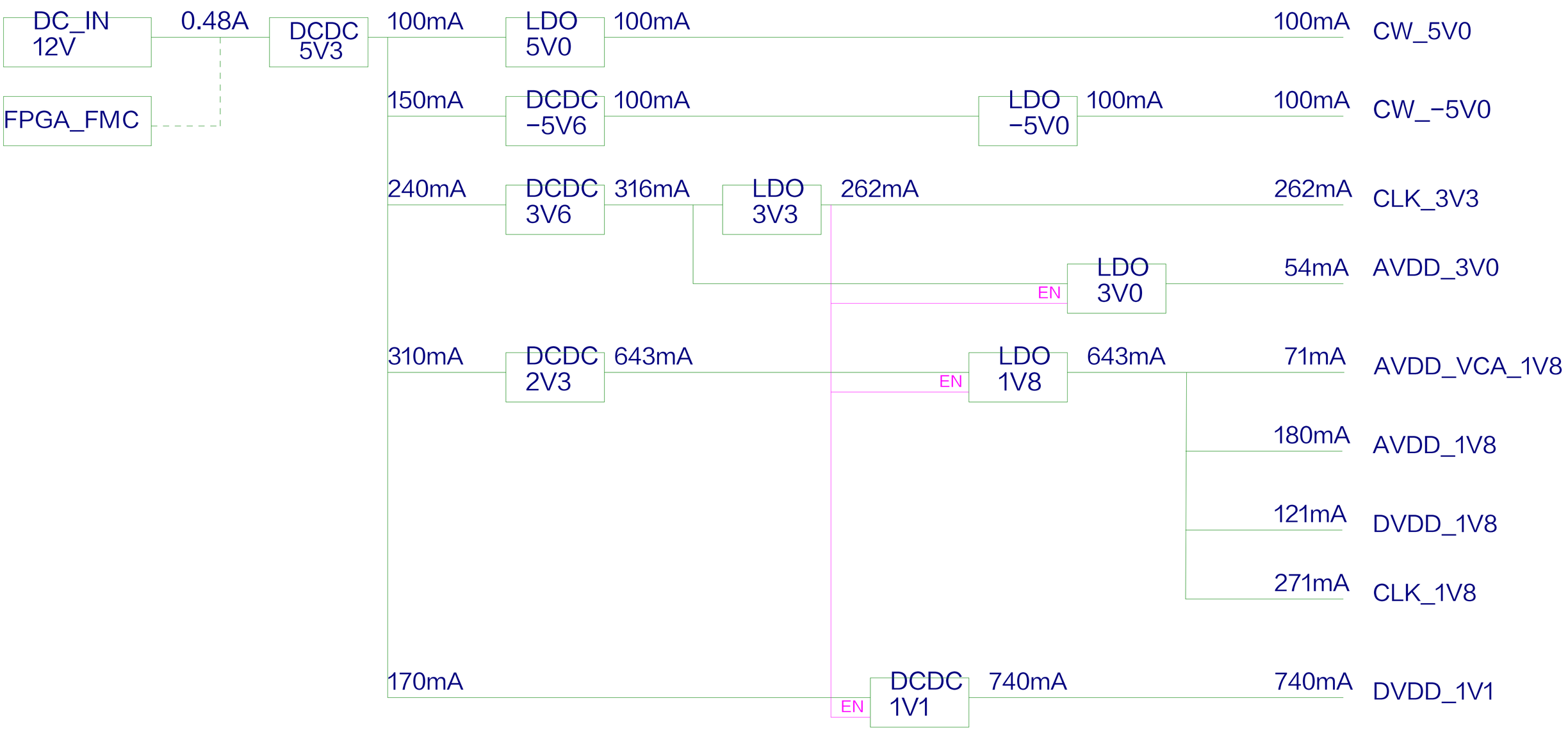
MARK POINT



The type and specification of the components refer to the BOM

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REVIEWED	LISIXXXXX				
		VER	PART_NUMBER	SHEET 2 OF 17	
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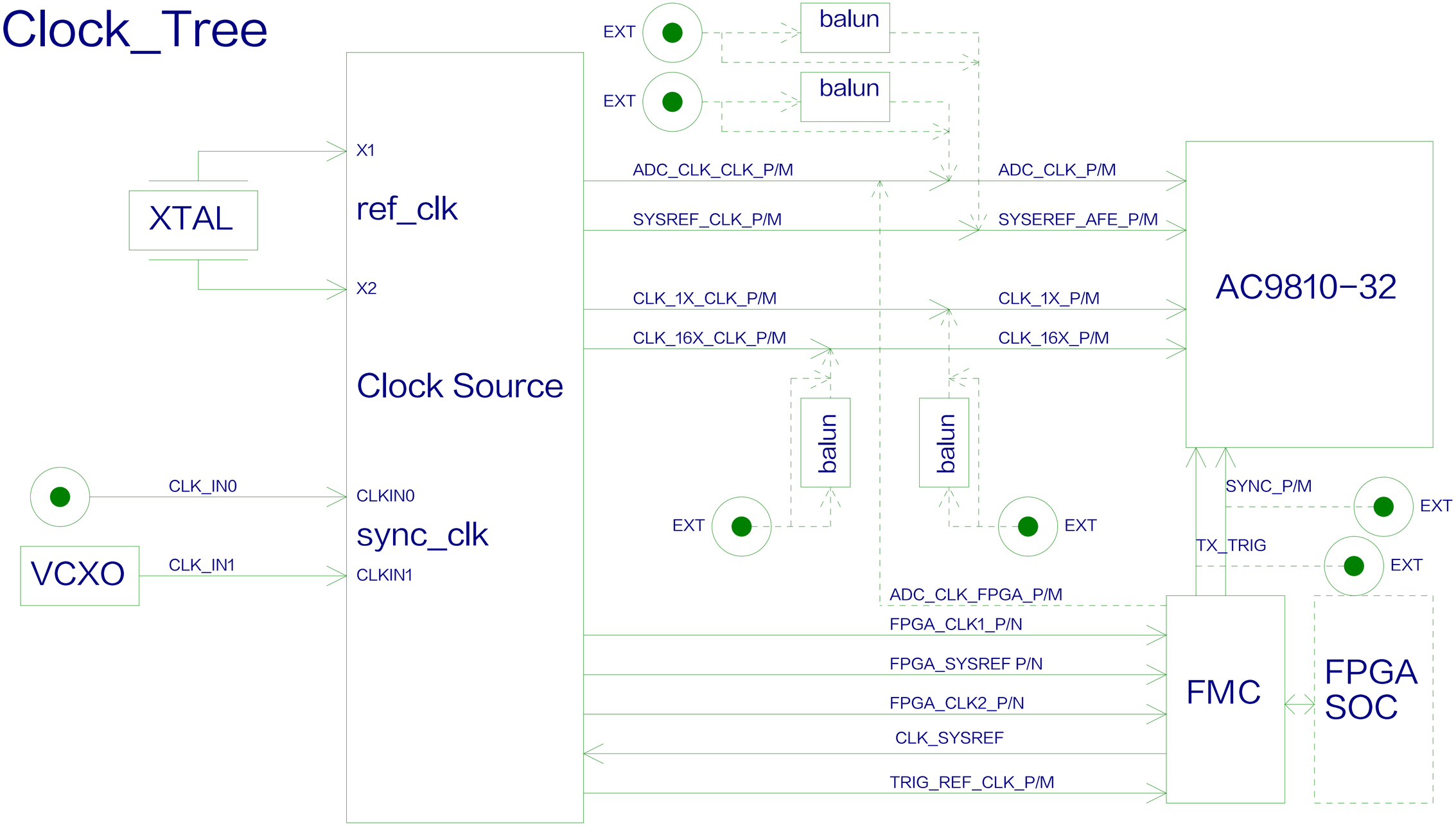
Power_Tree



The type and specification of the components refer to the BOM

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REVIEWED	LISIXXXXX				
		VER	PART_NUMBER	SHEET 3 OF 17	
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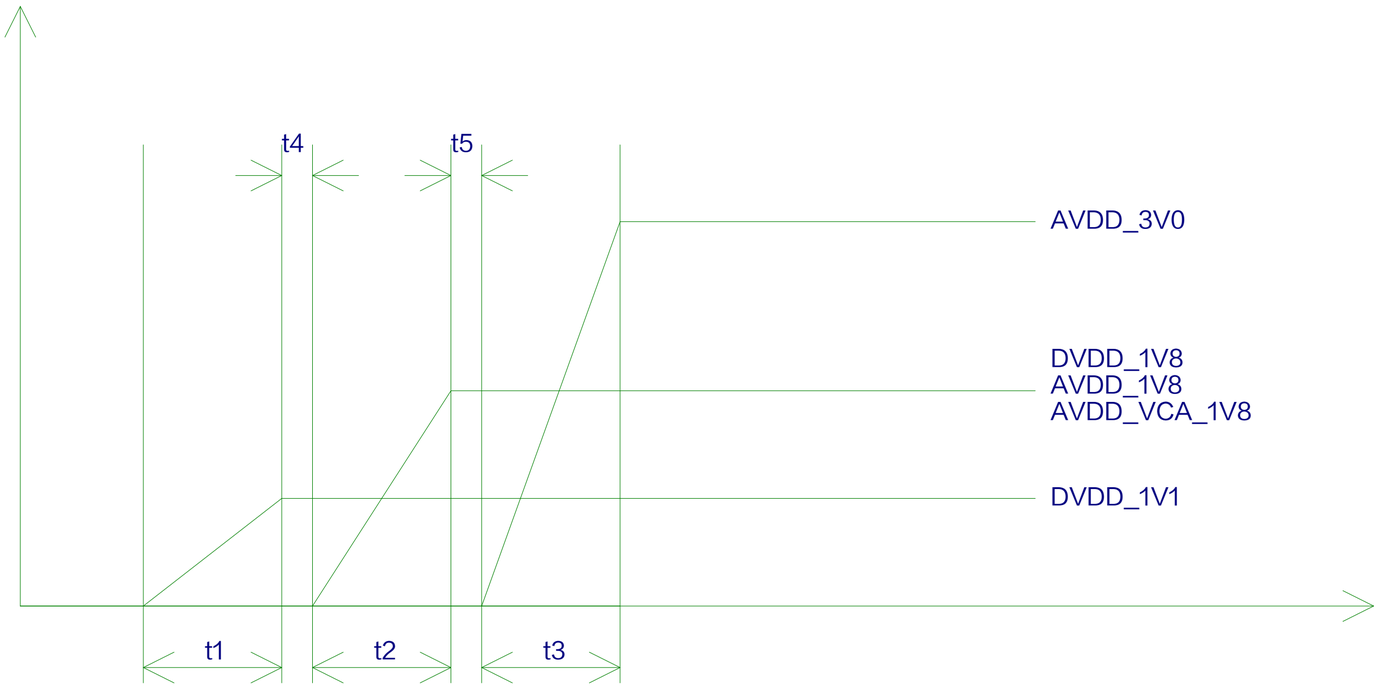
Clock_Tree



The type and specification of the components refer to the BOM

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DESIGNED	ZHANGSANXXXXX	AC9810EVB32A		00001234	
REVIEWED	LISIXXXXX				
		VER	PART_NUMBER	SHEET 4 OF 17	
		A	03030001		

Power_Sequence



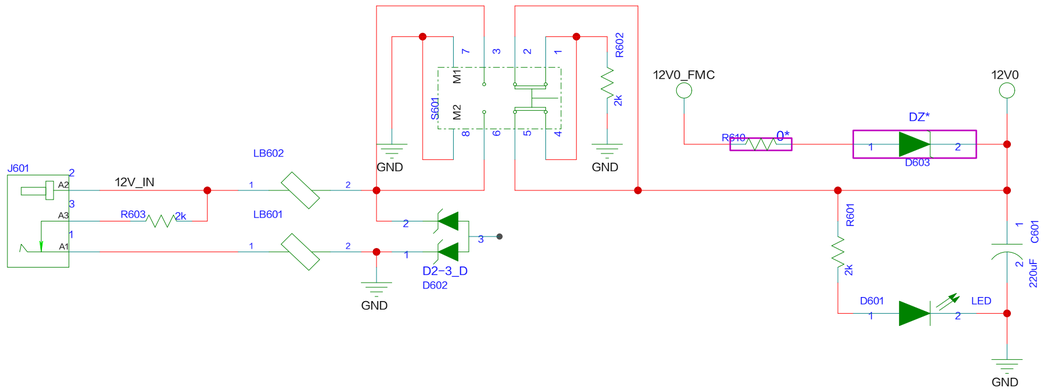
10us<t1<50ms t1=0.6ms
10us<t2<50ms t2=1.6ms
10us<t3<50ms t3=1.6ms
t4>0s t4=1.8ms
t5>0s t5=3.32ms

The type and specification of the components refer to the BOM

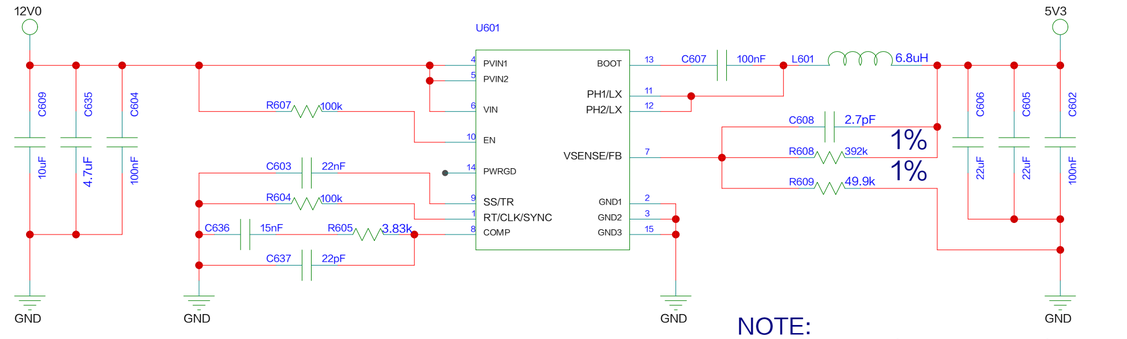
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REVIEWED	LISIXXXXX				
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		A	03030001		

Power_1（5V3、3V6、2V3、1V1）

Power_IN(12V)

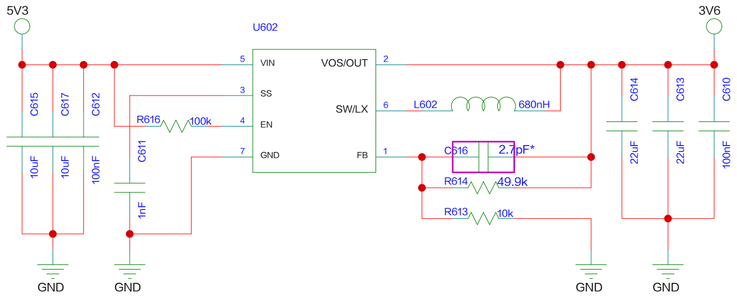


12V to 5V3(DCDC)



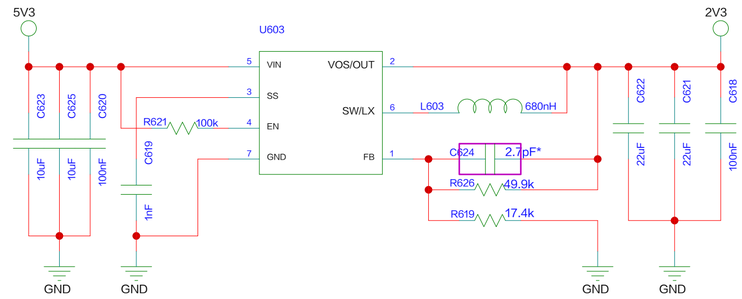
NOTE:
1.Vout1=0.6V*(1+392k/49.9k)=5.3V
2.Ir=970mA
3.Imax=6A

5V3 to 3V6(DCDC)



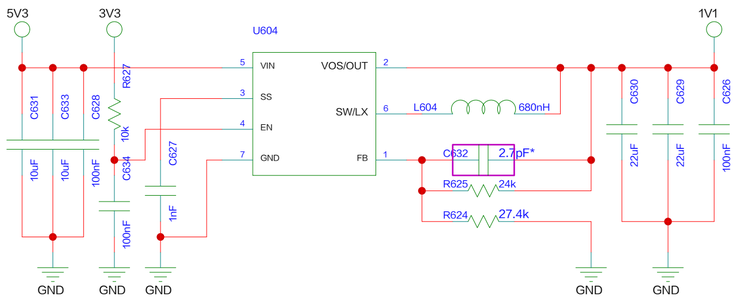
NOTE:
1.Vout1=0.6V*(1+49.9k/10k)=3.594V
2.Ir=320mA
3.Imax=3A
4.Fs=1.5MHz

5V3 to 2V3(DCDC)



NOTE:
1.Vout1=0.6V*(1+49.9k/17.4k)=2.32V
2.Ir=640mA
3.Imax=3A
4.Fs=1.5MHz

5V3 to 1V1(DCDC)



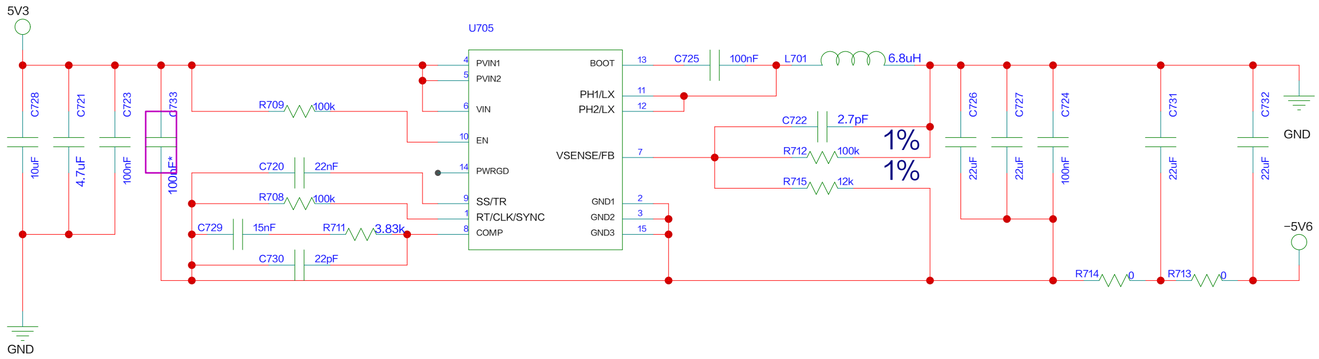
NOTE:
1.Vout1=0.6V*(1+24k/27.4k)=1.13V
2.Ir=740mA
3.Imax=3A
4.Tstartup=0.6ms
5.Fs=1.5MHz

The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	ZHANGSANXXXXX				
		AC9810EVB32A		00001234	
REVIEWED	LISIXXXXX				
		VER	PART_NUMBER	SHEET 6 OF 17	
		A	03030001		

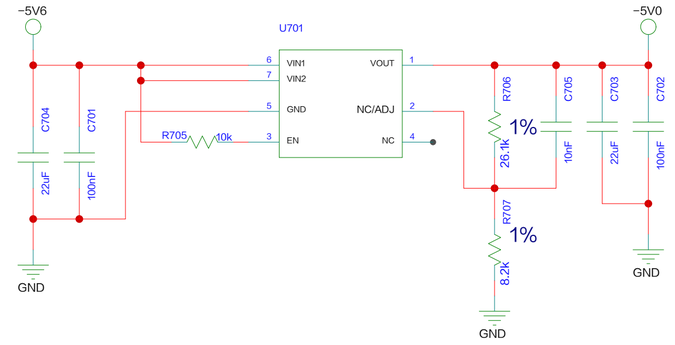
Power_2（-5V6、-5V0、5V0、3V3、3V0）

5V3 to -5V6(DCDC)



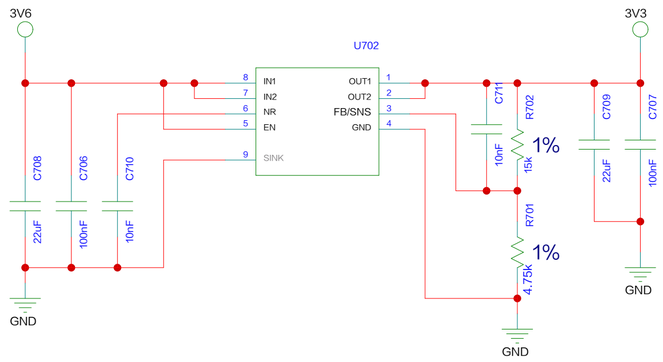
NOTE:
1.Vout1=-0.6V*(1+100k/12k)=-5.6V
2.Ir=100mA
3.Imax=6A

-5V6 to -5V0(LDO)



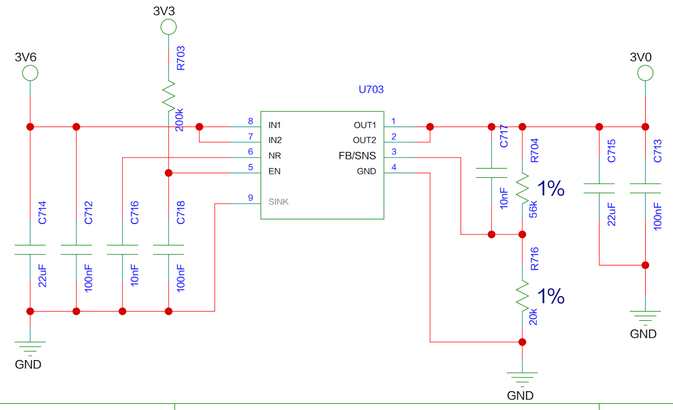
NOTE:
1.Vout=-1.2V*(1+26.1k/8.2k)=-5.02V
2.Ir=100mA
3.Imax=-500mA

3V6 to 3V3(LDO)



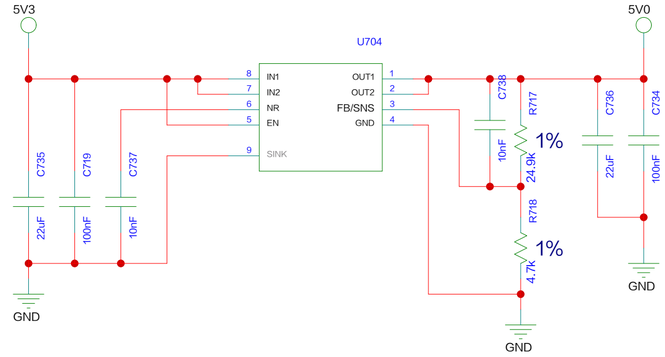
NOTE:
1.Vout=0.8V*(1+15k/4.75k)=3.33V
2.Ir=262mA
3.Imax=1A

3V6 to AVDD_3V0(LDO)



NOTE:
1.Vout=0.8V*(1+56k/20k)=3.04V
2.Ir=54mA
3.Imax=1A
4.Tstartup=1.25*0.8V*10nF/6.2uA=1.61ms

5V3 to 5V0（LDO)



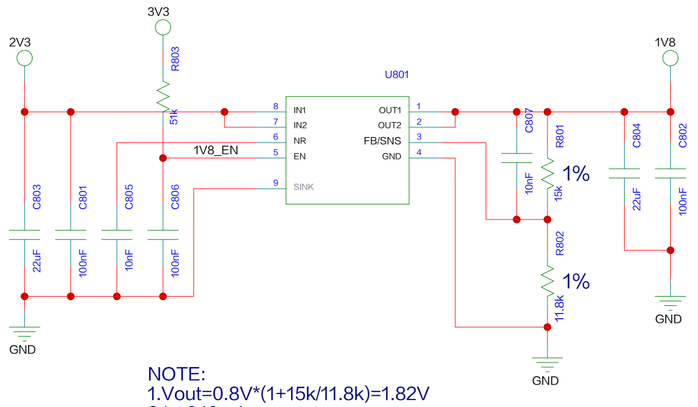
NOTE:
1.Vout=0.8V*(1+24.9k/4.7k)=5.04V
2.Ir=100mA
3.Imax=1A

The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	ZHANGSANXXXXX				
		AC9810EVB32A		00001234	
REVIEWED	LISIXXXXX				
		VER	PART_NUMBER	SHEET 7 OF 17	
		A	03030001		

Power_3 (1V8)

2V3 to 1V8(LDO)

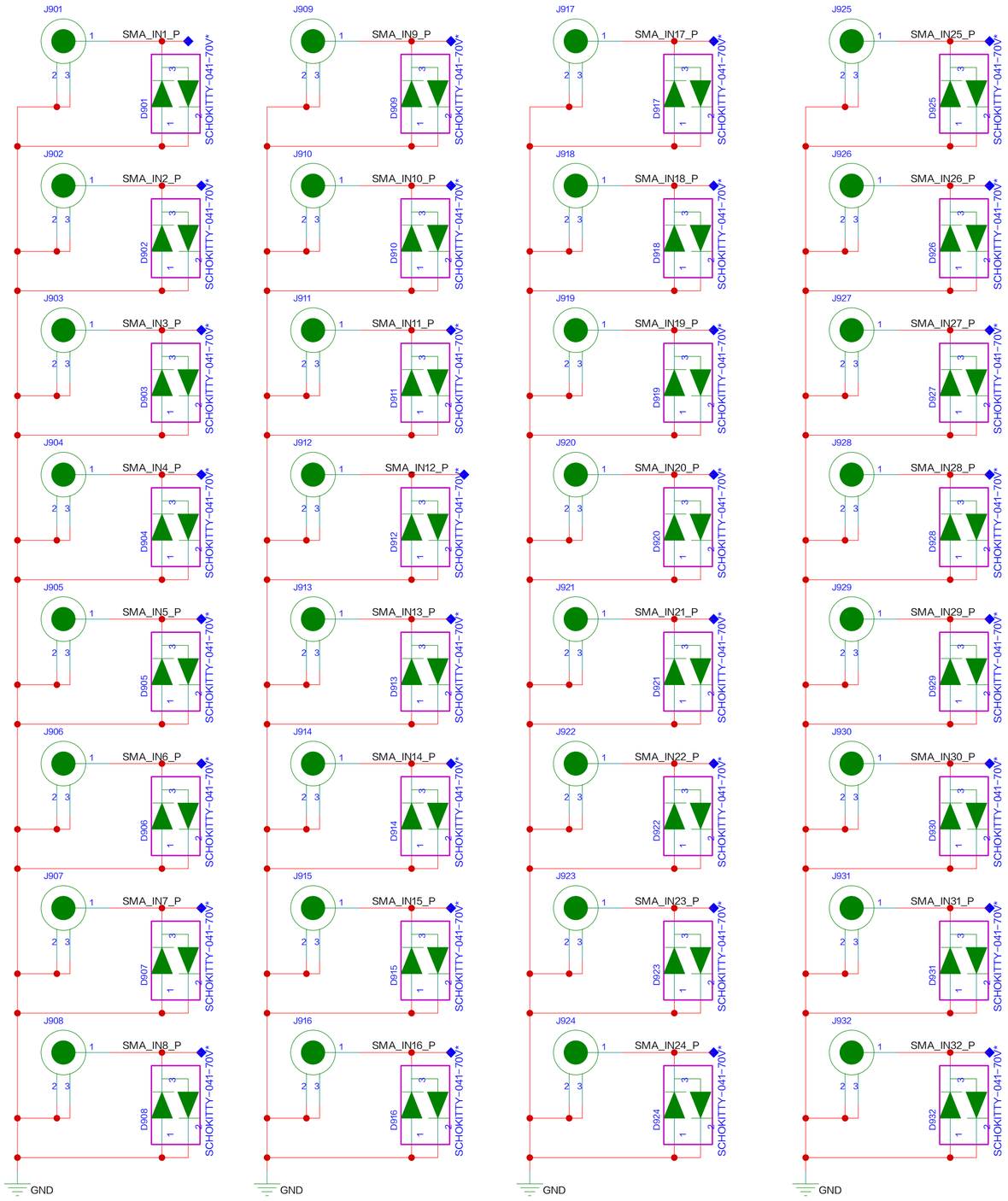


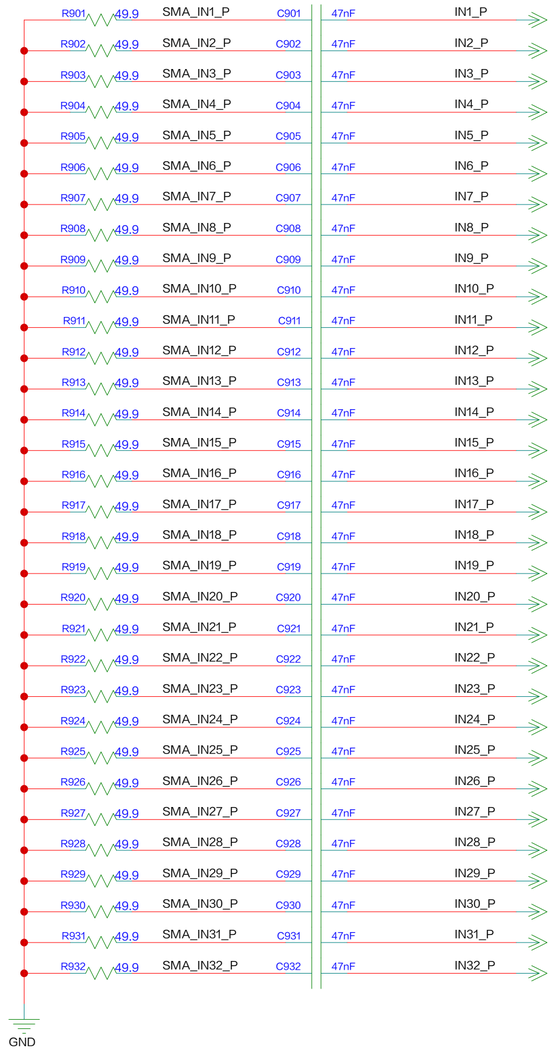
NOTE:
1.Vout=0.8V*(1+15k/11.8k)=1.82V
2.Ir=640mA
3.Imax=1A
4.Tstartup=1.25*0.8V*10nF/6.2uA=1.61ms

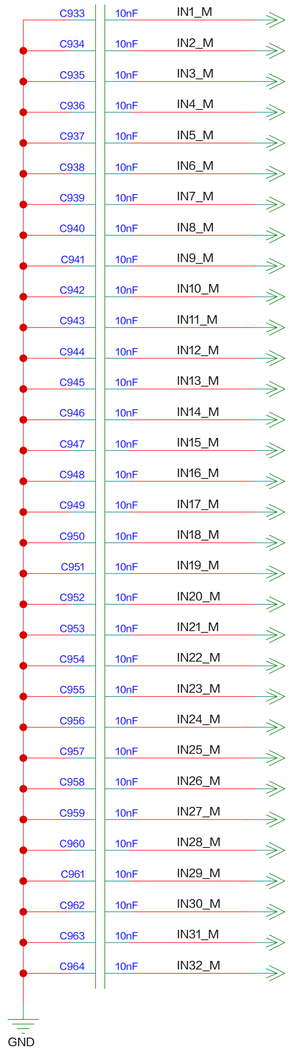
The type and specification of the components refer to the BOM

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DESIGNED	ZHANGSANXXXXX	AC9810EVB32A		00001234	
REVIEWED	LISIXXXXX				
		VER	PART_NUMBER	SHEET 8 OF 17	
		A	03030001		

Input (1-32)





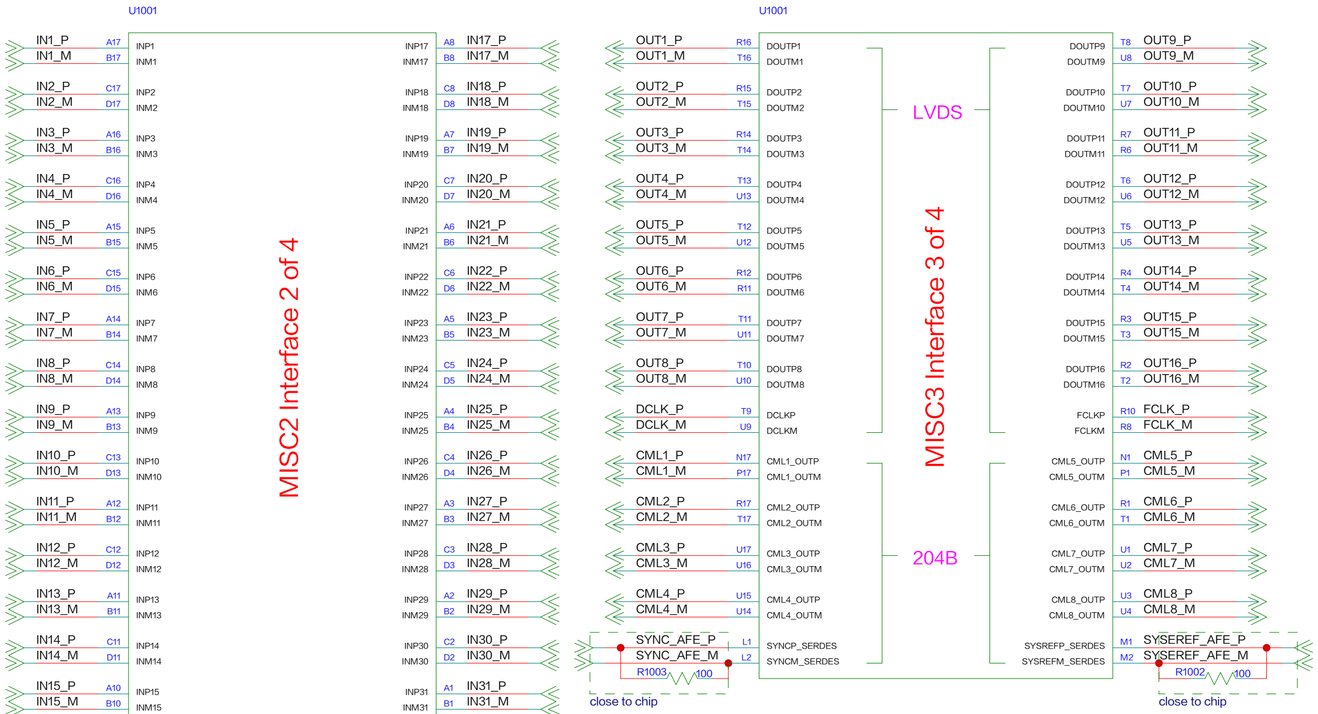


The type and specification of the components refer to the BOM

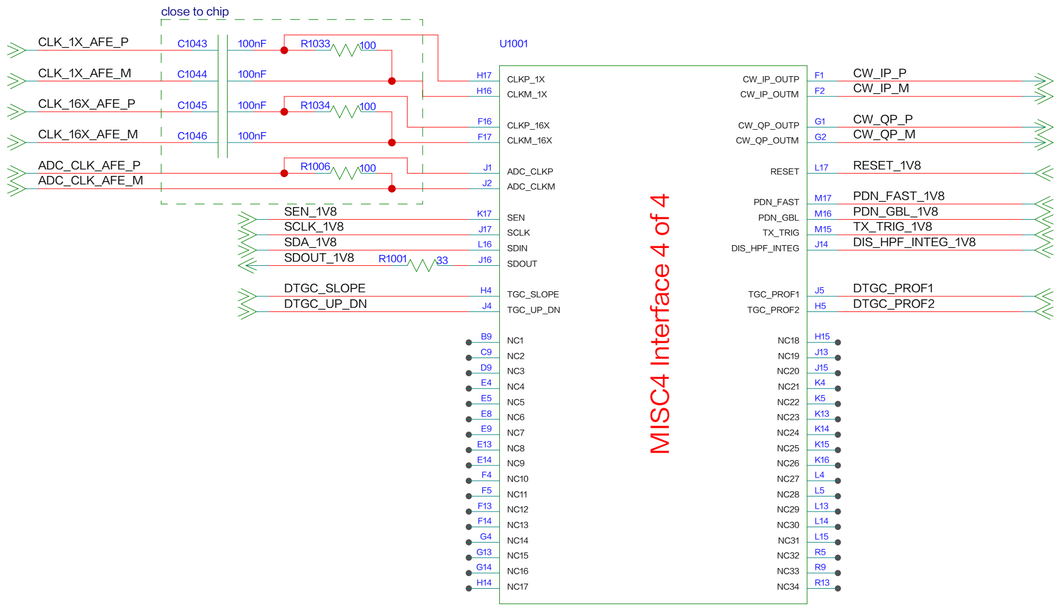
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		VER	PART_NUMBER	SHEET 9 OF 17	
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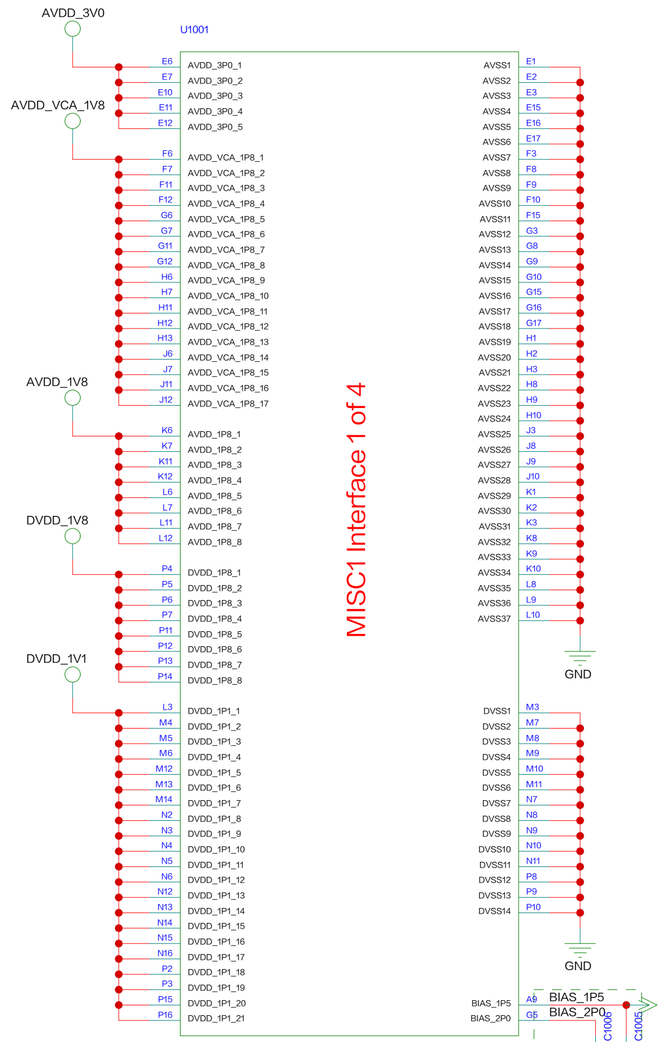
AC9810-32

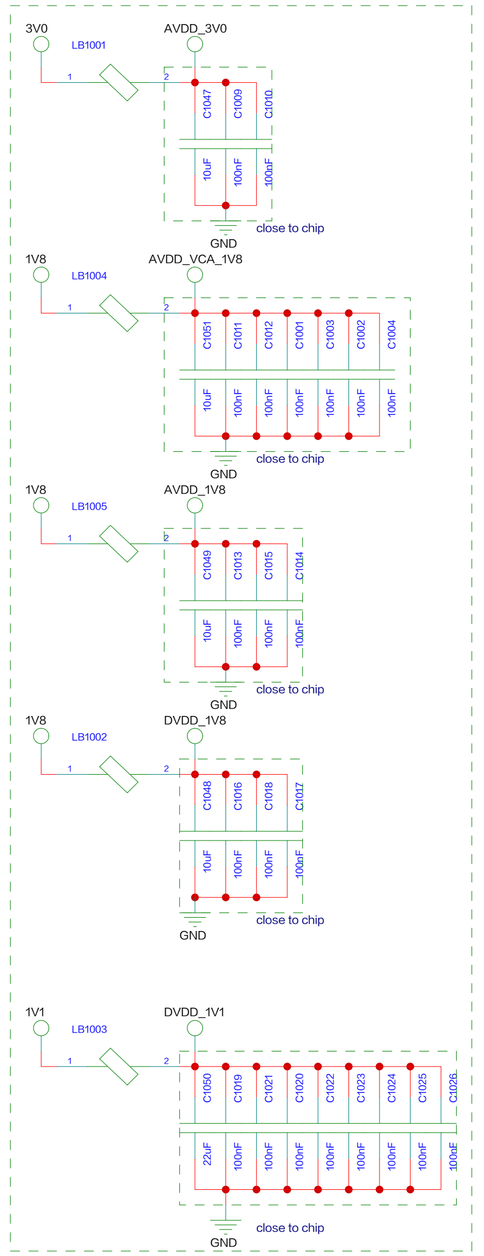
DECOUPLING CAPACITOR



Note:FCLKP FCLKM Non-reversible





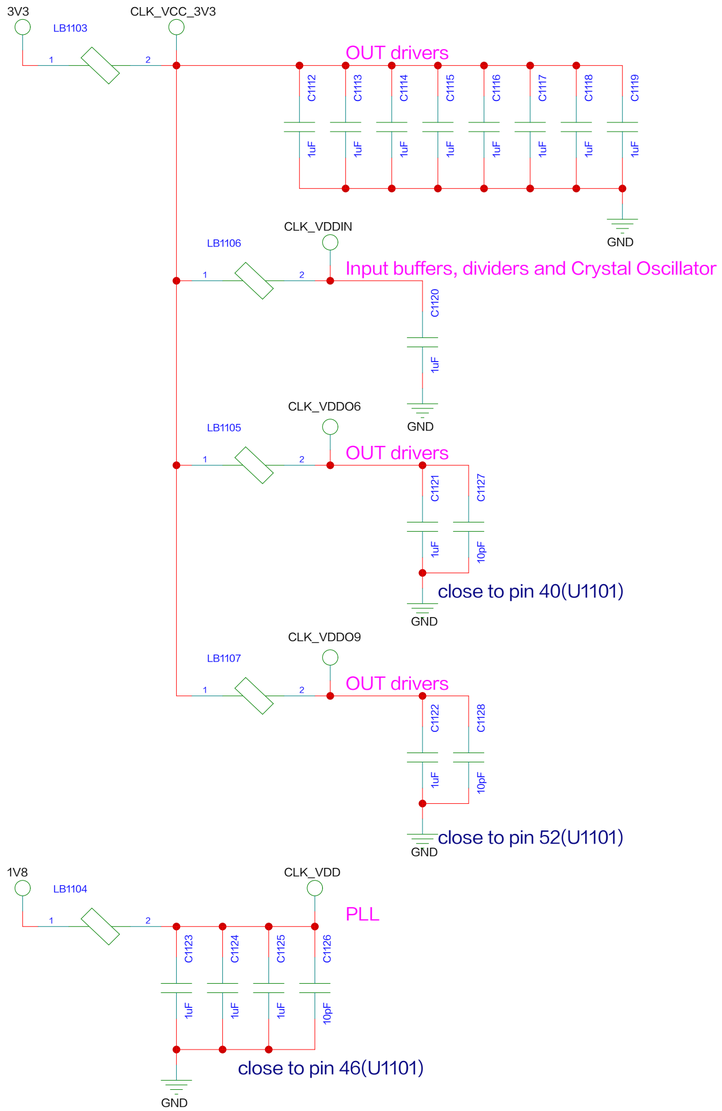


The type and specification of the components refer to the BOM

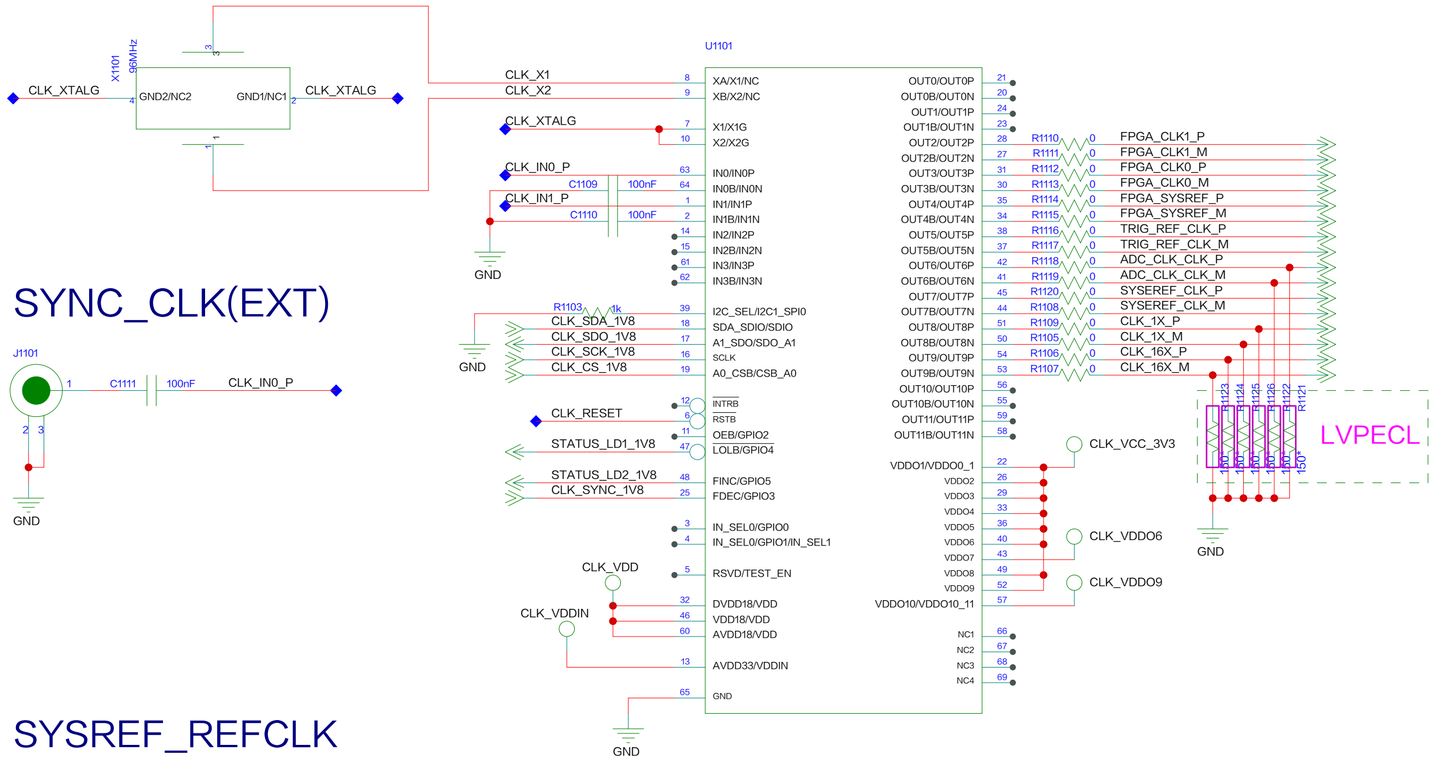
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		VER	PART_NUMBER	SHEET 10 OF 17	
		A	03030001		

Clock

DECOUPLING CAPACITOR

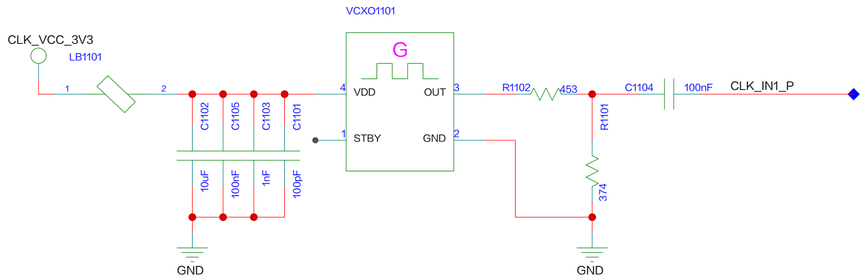


CLKIN−X0

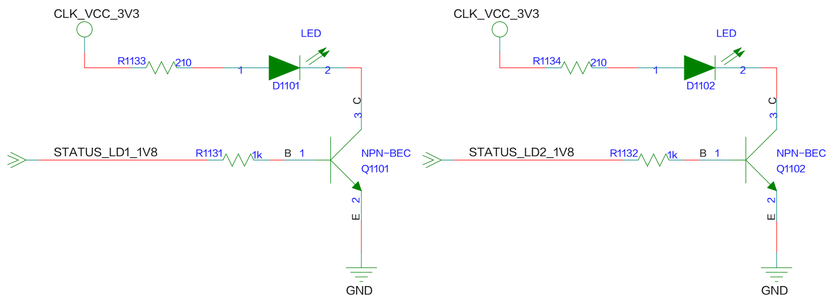


SYNC_CLK(EXT)

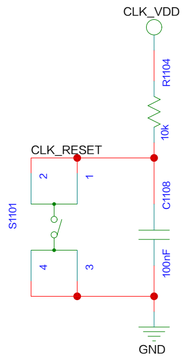
SYSREF_REFCLK



PLL Lock Status LED



Reset



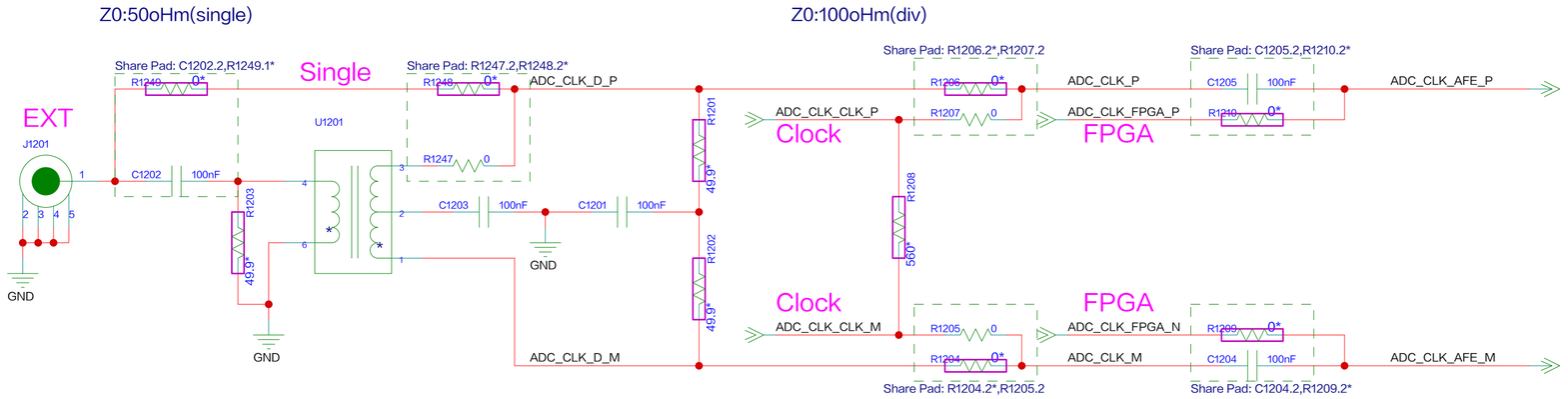
Active low reset Input

The type and specification of the components refer to the BOM

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REVIEWED	LISIXXXXX				
		VER	PART_NUMBER	SHEET 11 OF 17	
		A	03030001		

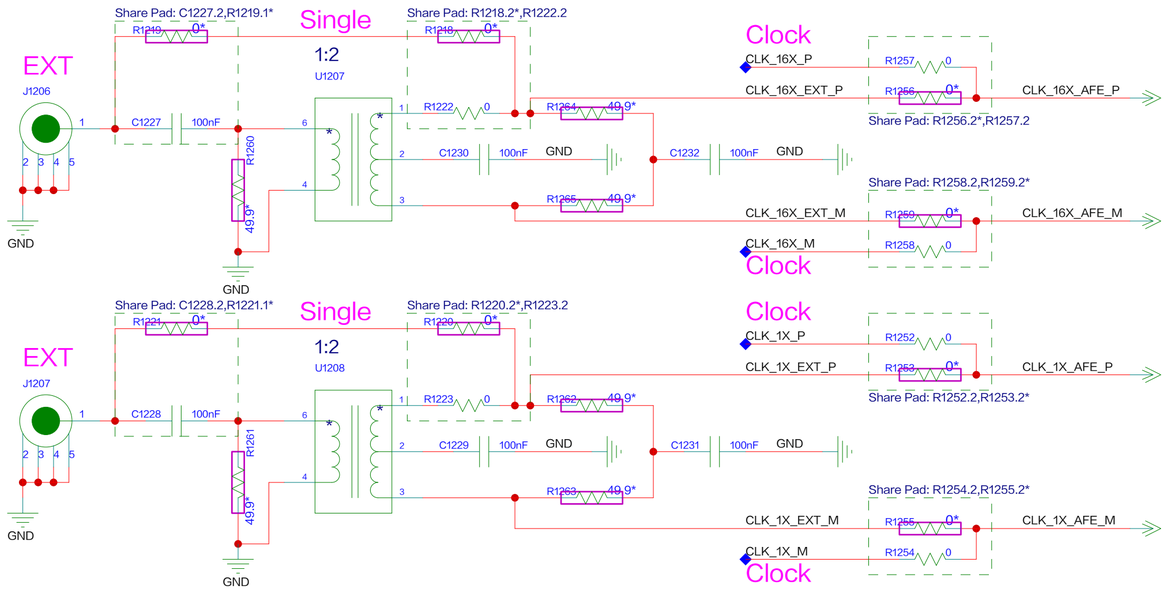
Clock_Select

ADC CLK SELECT



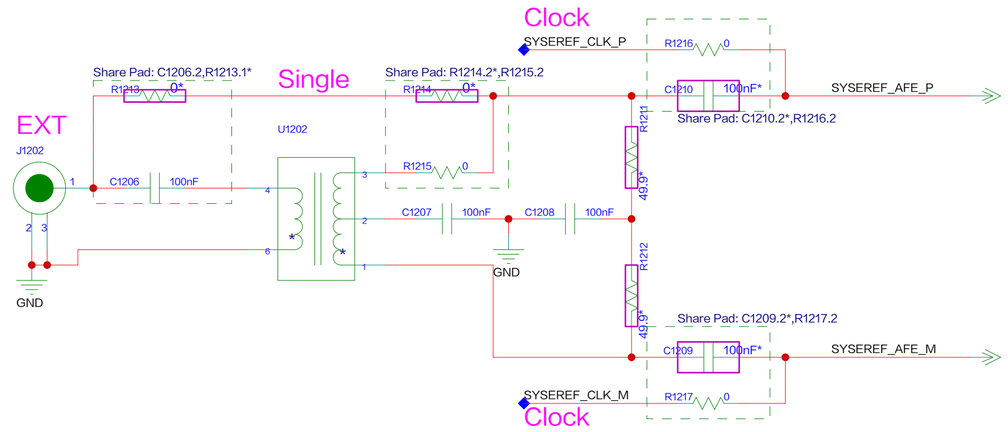
ADC_CLK Select	Logic Levels	Clock Source	Soldering
	LVDS;LVPECL	J1201(Ext)	R1206,R1204,R1247 C1205,C1204,C1202
	LVDS;LVPECL	U1101(CLK)	R1205,R1207 C1205,C1204
	LVDS;LVPECL	FPGA	R1210,R1209
	LVCMOS	J1201(Ext)	R1248,R1249,R1206 R1204,R1202=0ohm C1201=0ohm C1204=0ohm C1205=0ohm

CW CLK SELECT



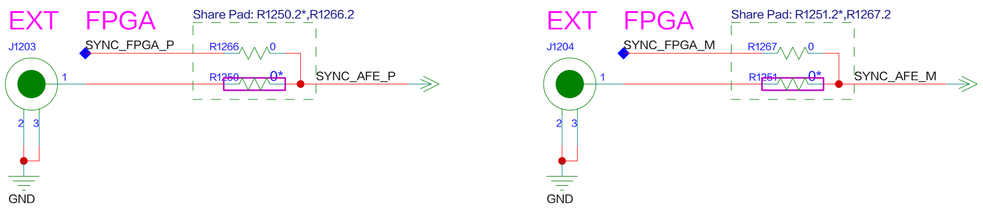
Note:specific selection is on page17

SYSREF SELECT



Note:specific selection is on page17

SYNC SELECT



Note:specific selection is on page17

The type and specification of the components refer to the BOM

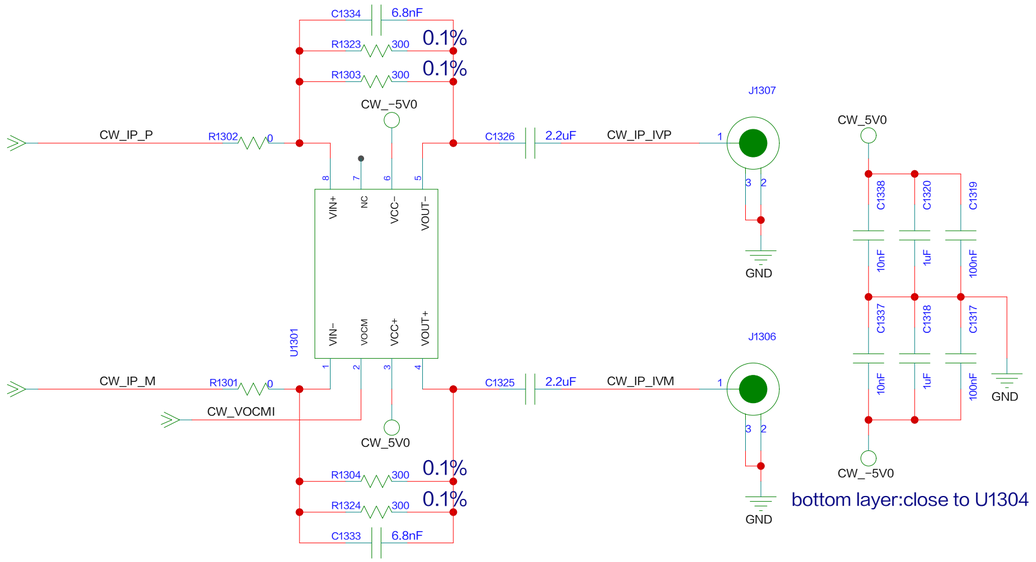
				NA	
				ECA NO	DATE
DESIGNED	ZHANGSANXXXXX				
		AC9810EVB32A		00001234	
REVIEWED	LISIXXXXX				
		VER	PART_NUMBER	SHEET 12 OF 17	
		A	03030001		

CW_1

Symmetrical placement
Resistor precision: 0.1%
Capacitor precision: 5%

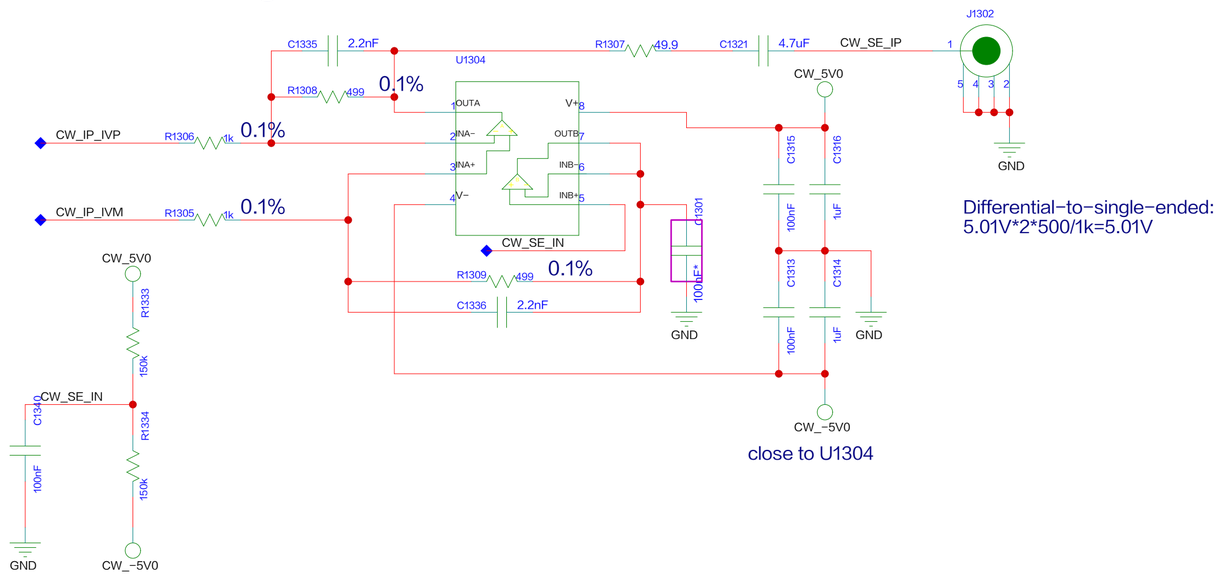
I (I to V)

IV conversion single ended:
1.044mA*32*150ohm=5.01Vpp



bottom layer:close to U1304

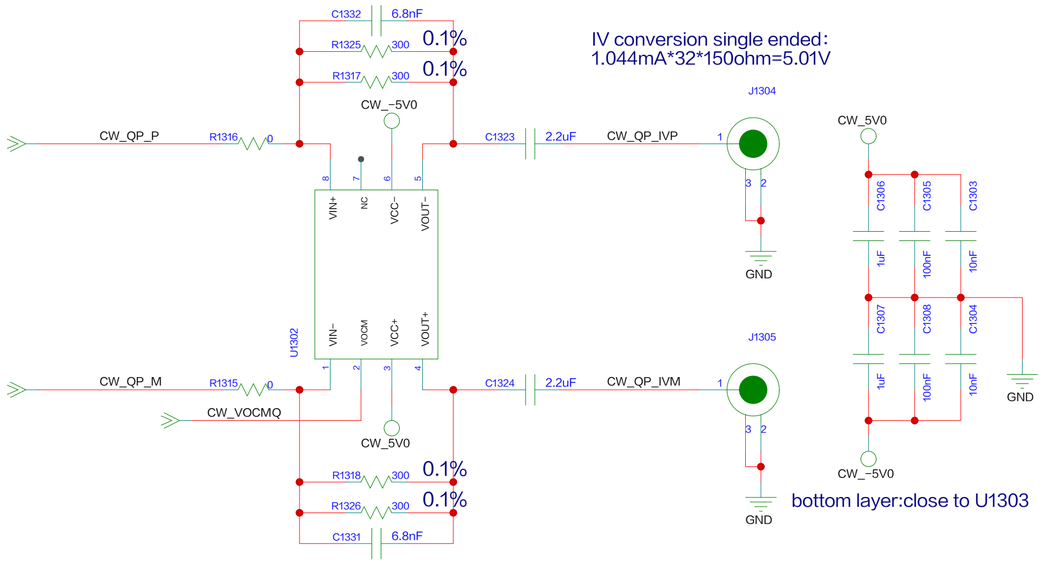
I (Diff to Single)



Differential−to−single−ended:
5.01V*2*500/1k=5.01V

close to U1304

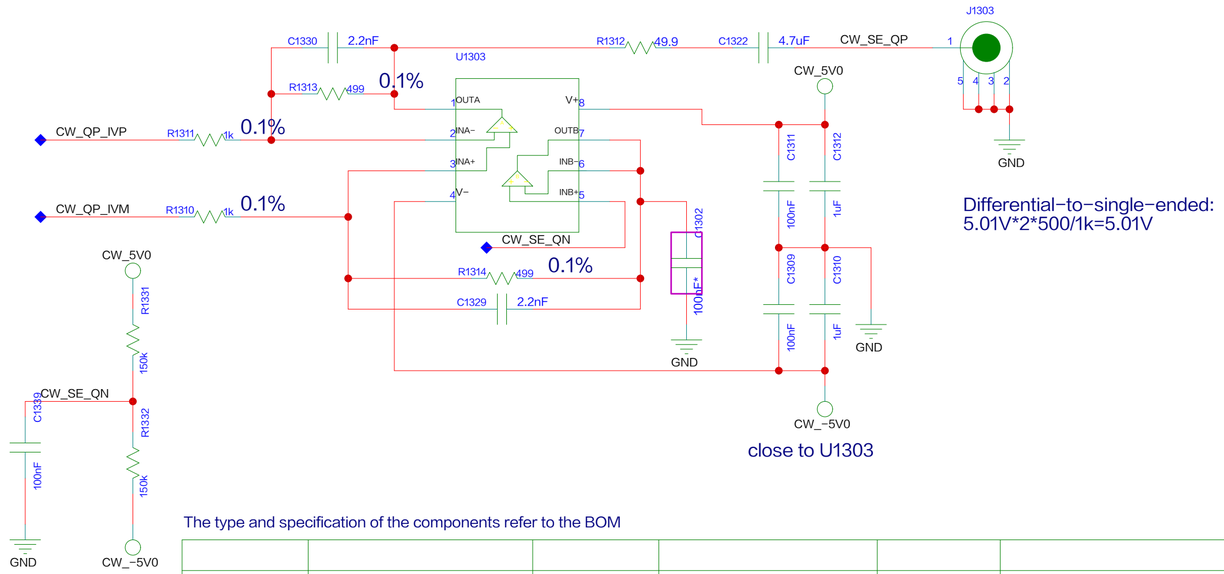
Q (I to V)



IV conversion single ended:
1.044mA*32*150ohm=5.01V

bottom layer:close to U1303

Q (Diff to Single)



Differential−to−single−ended:
5.01V*2*500/1k=5.01V

close to U1303

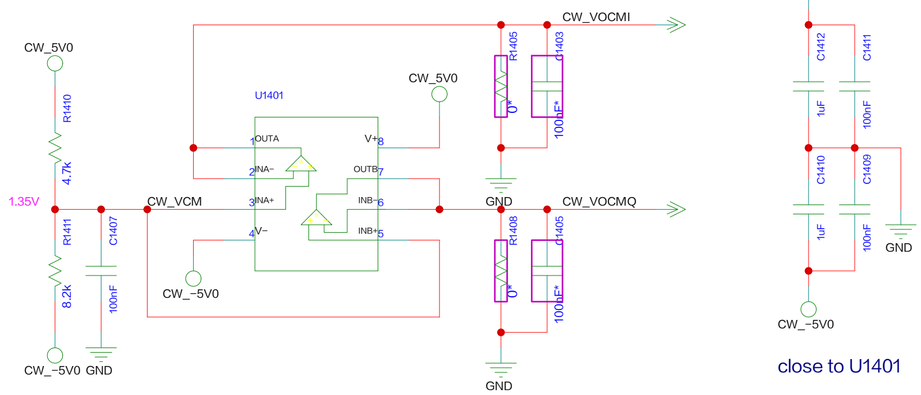
The type and specification of the components refer to the BOM

				NA	
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DESIGNED	ZHANGSANXXXXX	AC9810EVB32A		00001234	
REVIEWED	LISIXXXXX				
		VER	PART_NUMBER	SHEET 13 OF 17	
		A	03030001		

CW_2

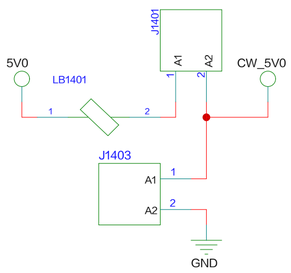
Symmetrical placement
Resistor precision: 0.1%
Capacitor precision: 5%

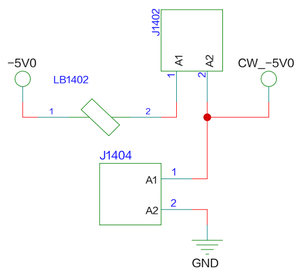
Common-Mode Voltage



close to U1401

EXT (-5V0、5V0)

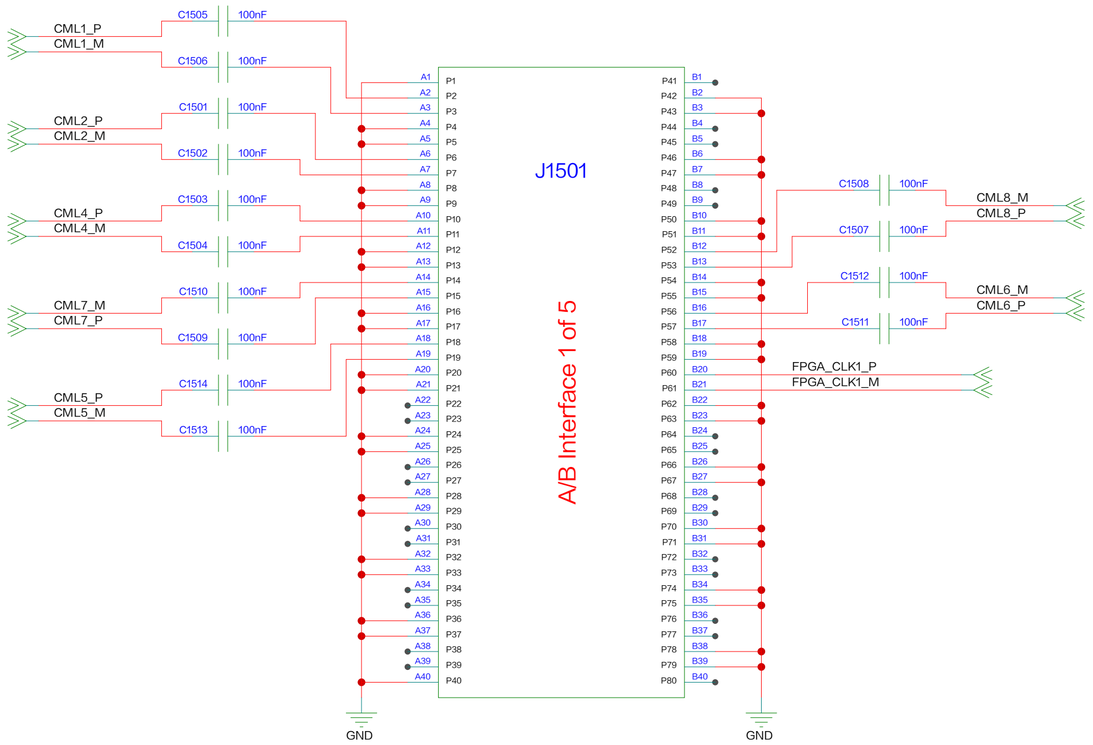


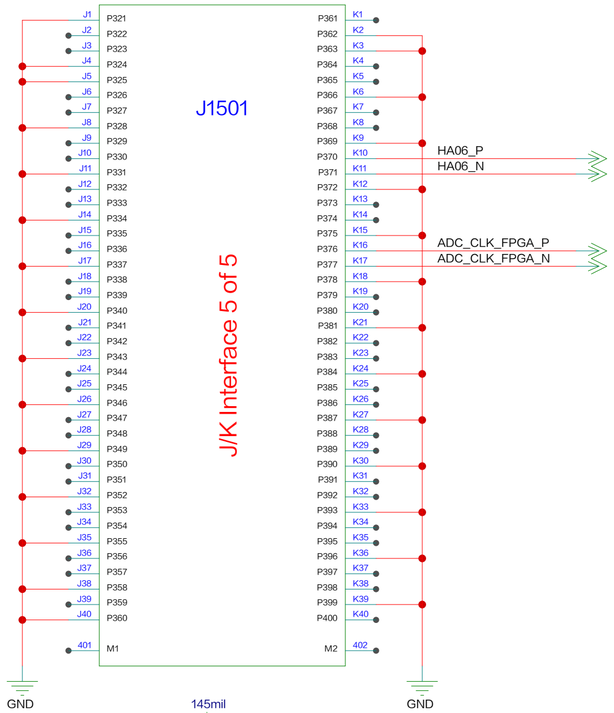


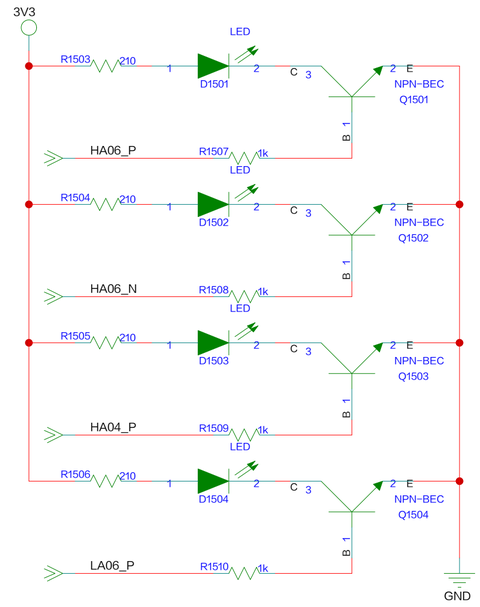
The type and specification of the components refer to the BOM

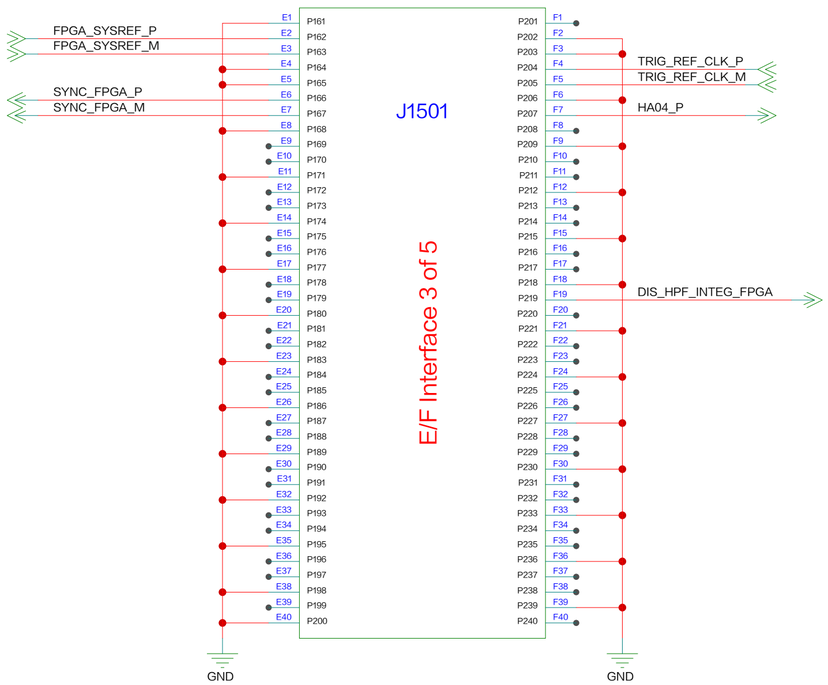
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REVIEWED	LISIXXXXX				
		VER	PART_NUMBER	SHEET 14 OF 17	
		A	03030001		

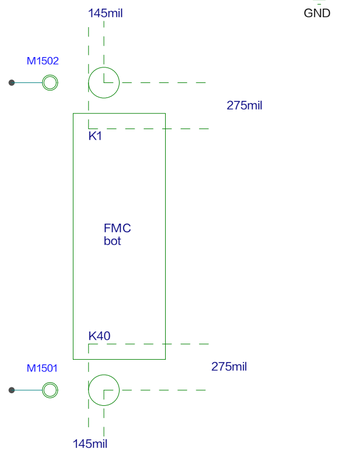
FMC_1







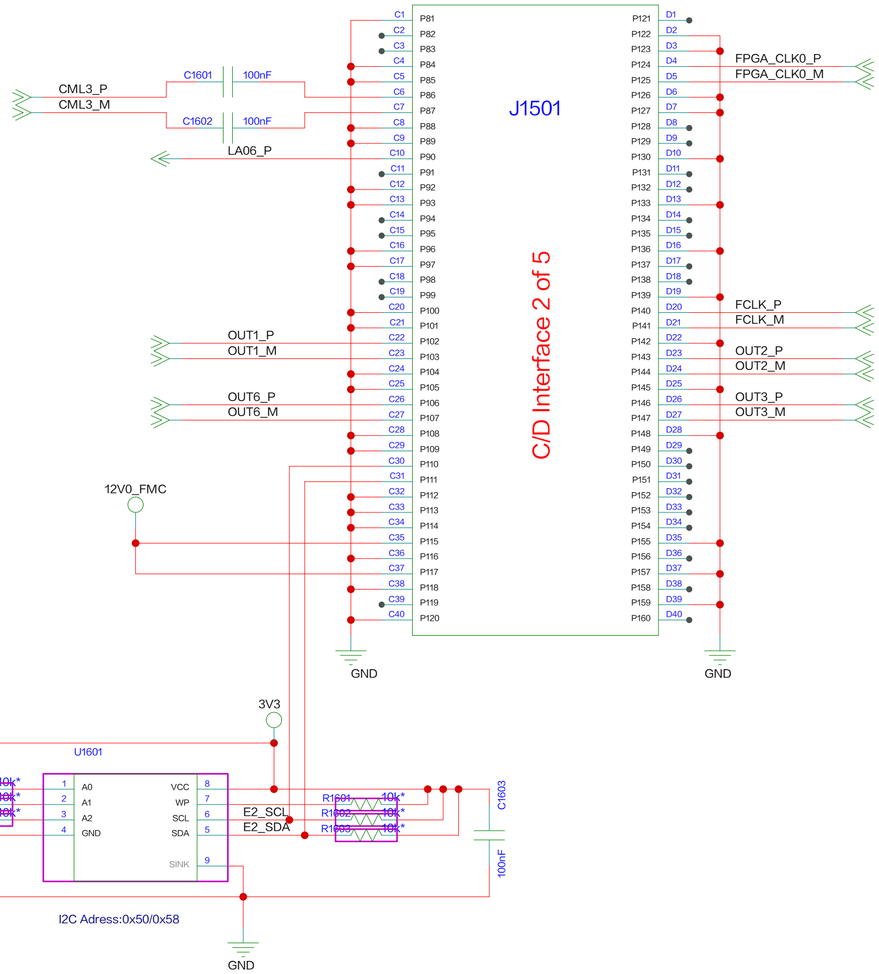


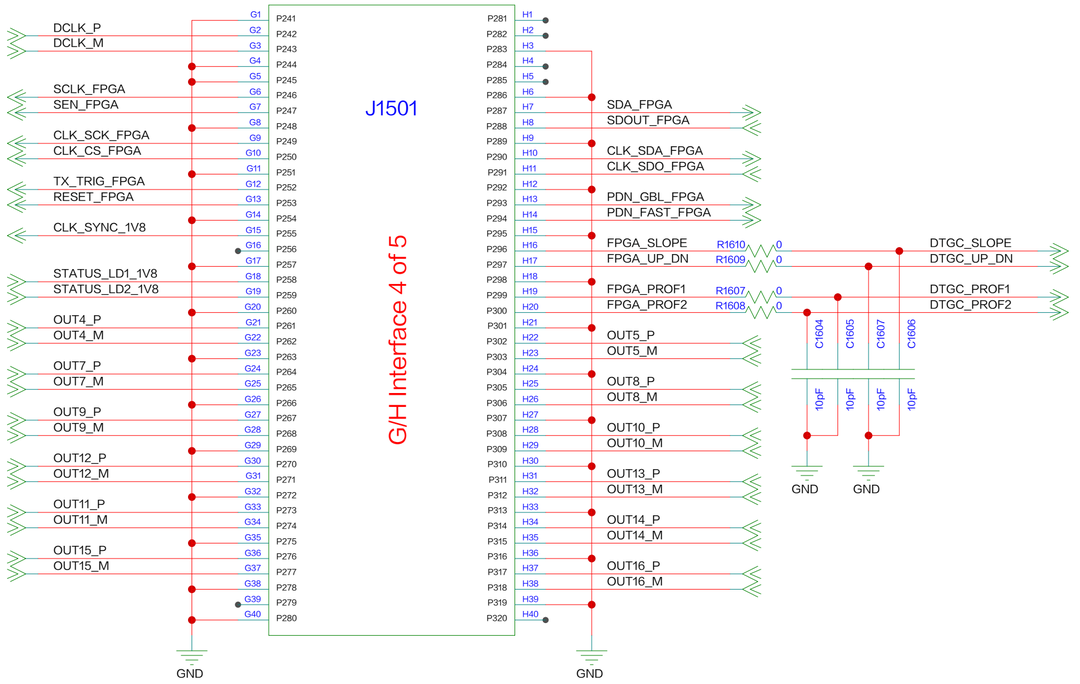


The type and specification of the components refer to the BOM

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REVIEWED	LISIXXXXX				
		VER	PART_NUMBER	SHEET 15 OF 17	
		A	03030001		

FMC_2





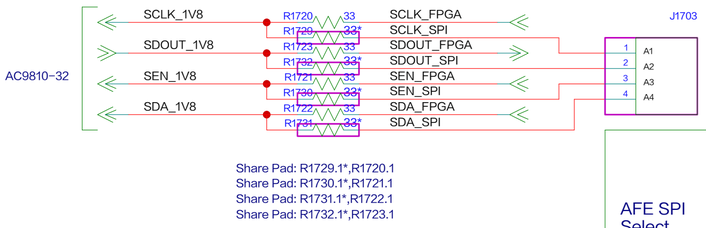
Note:
Compatible with LPC interfaces

The type and specification of the components refer to the BOM

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DESIGNED	ZHANGSANXXXXX	AC9810EVB32A		00001234	
REVIEWED	LISIXXXXX				
		VER	PART_NUMBER	SHEET 16 OF 17	
		A	03030001		

Others

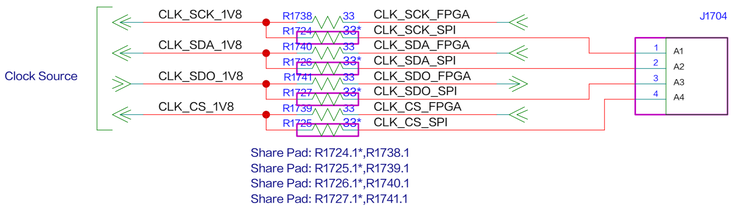
AFE SPI SELECT



Share Pad: R1729.1*,R1720.1
Share Pad: R1730.1*,R1721.1
Share Pad: R1731.1*,R1722.1
Share Pad: R1732.1*,R1723.1

	Source	Soldering
AFE SPI Select	J1703(EXT)	R1729,R1732 R1730,R1731
	FPGA	R1720,R1723 R1721,R1722

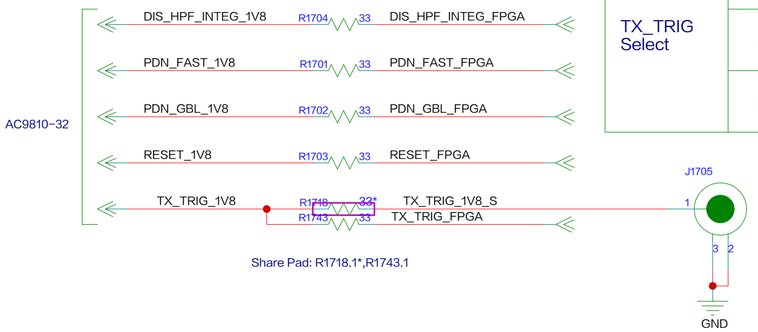
Clock Source SPI SELECT



Share Pad: R1724.1*,R1738.1
Share Pad: R1725.1*,R1739.1
Share Pad: R1726.1*,R1740.1
Share Pad: R1727.1*,R1741.1

	Source	Soldering
CLK SPI Select	J1704(EXT)	R1724,R1726 R1727,R1725
	FPGA	R1738,R1740 R1741,R1739

AFE GPIO SELECT



Share Pad: R1718.1*,R1743.1

	Source	Soldering
TX_TRIG Select	J1705(EXT)	R1718
	FPGA	R1743

SYNC&SYSREF SELECT

	Logic Levels	Source	Soldering
SYSREF Select	LVDS	J1202(EXT)	R1215, C1206,C1210,C1209
	LVDS;LVPECL	U1101(CLK)	R1216,R1217
	LVCMOS	J1202(EXT)	R1213,R1214 R1212=0ohm C1210=0ohm C1209=0ohm C1208=0ohm

	Logic Levels	Source	Soldering
SYNC Select	LVDS	J1203(EXT) J1204(EXT)	R1250,R1251
	LVDS	FPGA	R1266,R1267
	LVCMOS	J1203(EXT) J1204(EXT)	R1250,R1251 J1204 connnet to GND

CW CLK SELECT

	Logic Levels	Source	Soldering
CW CLK Select	LVDS	J1206(EXT) J1207(EXT)	R1222,R1256,R1259 R1223,R1253,R1255 C1227,C1228
	LVDS	U1101(CLK)	R1257,R1258 R1252,R1254
	LVCMOS	J1206(EXT) J1207(EXT)	R1219,R1218,R1256 R1259,R1265=0ohm R1221,R1220,R1253 R1255,R1263=0ohm C1232=0ohm,C1231=0ohm

The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	ZHANGSANXXXXX	AC9810EVB32A		00001234	
REVIEWED	LISIXXXXX				
		VER	PART_NUMBER	SHEET 17 OF 17	
		A	03030001		