PAGE 1	1-Title_Page	PAGE 17	17-CW_1
PAGE 2	2-Block_Diagram	PAGE 18	18-CW_2
PAGE 3	3-Power_Tree	PAGE 19	19-FMC_1
PAGE 4	4-Clock_Tree	PAGE 20	20-FMC_2
PAGE 5	5-Power_up_Sequence	PAGE 21	21-Connector
PAGE 6	6-POWER_1	PAGE 22	22-Input_diodes
PAGE 7	7-POWER_2	PAGE 23	23-Share_Pad_Selection
PAGE 8	8-POWER_3		
PAGE 9	9-Input_1		
PAGE 10	10-Input_2		
PAGE 11	11-AC9810-64_1		
PAGE 12	12-AC9810-64_2		
PAGE 13	13-CLK_SOURCE		
PAGE 14	14-CLK_ADC		
PAGE 15	15-CLK_CW		
PAGE 16	16-SYSREF_SYNC_DTGC		

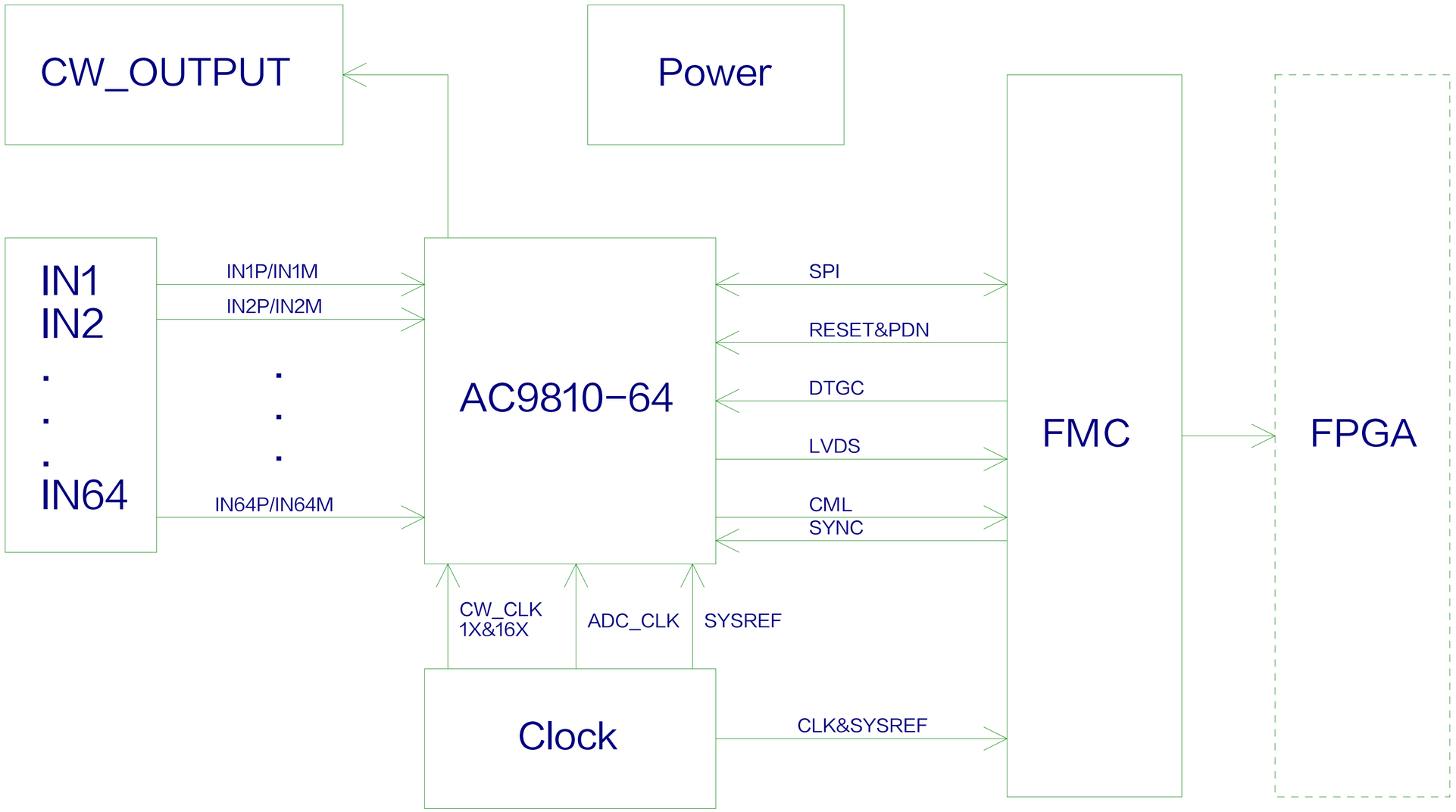
AC9810EVB64A
VER.A

Evaluation board for 64CH

The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	ZHANGSANXXXXX	AC9810EVB64A		00001234	
REVIEWED	LISIXXXXX				
		VER	PART_NUMBER	SHEET 1 OF 23	
		A	03030001		

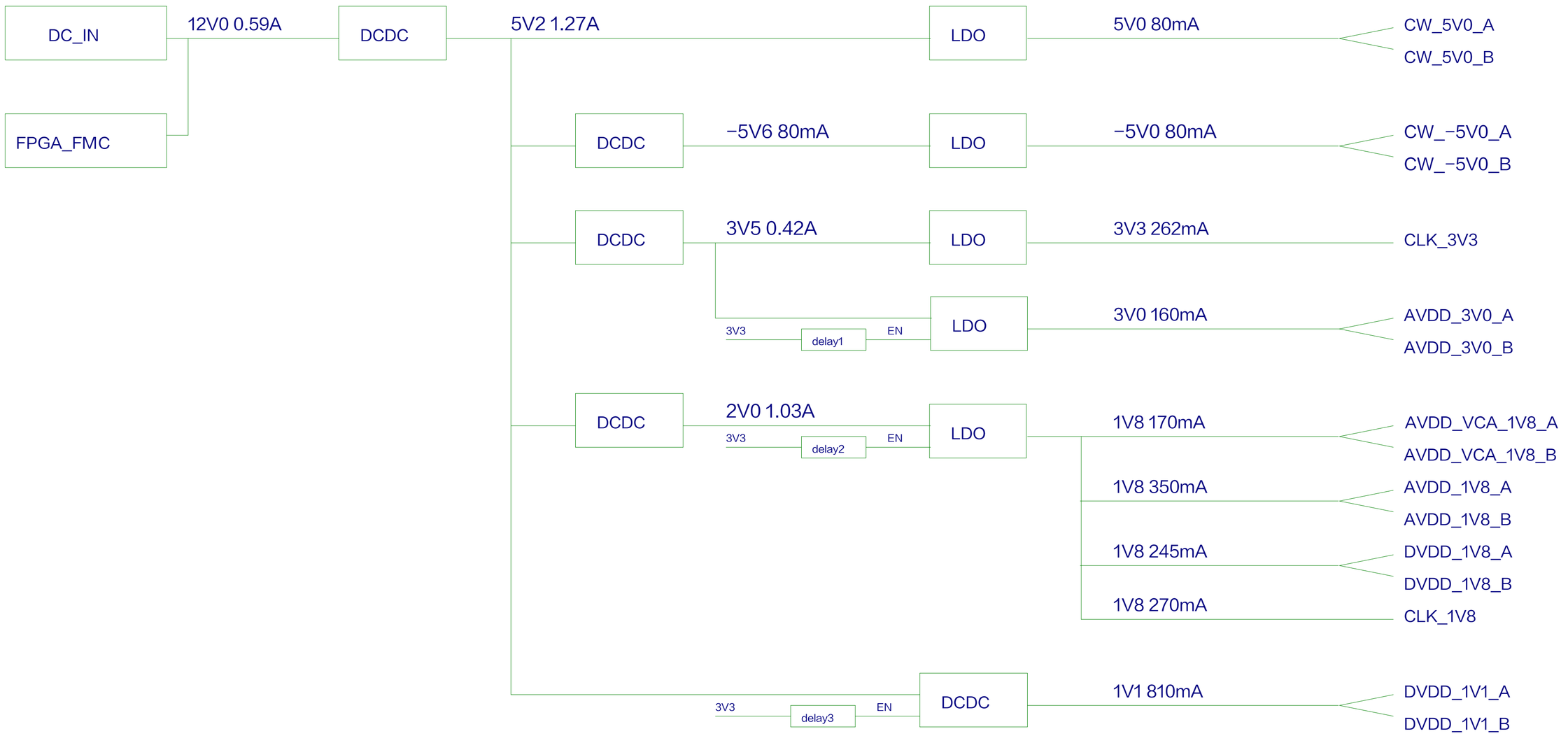
Block Diagram



The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	ZHANGSANXXXXX	AC9810EVB64A		00001234	
REVIEWED	LISIXXXXX				
		VER	PART_NUMBER	SHEET 2 OF 23	
		A	03030001		

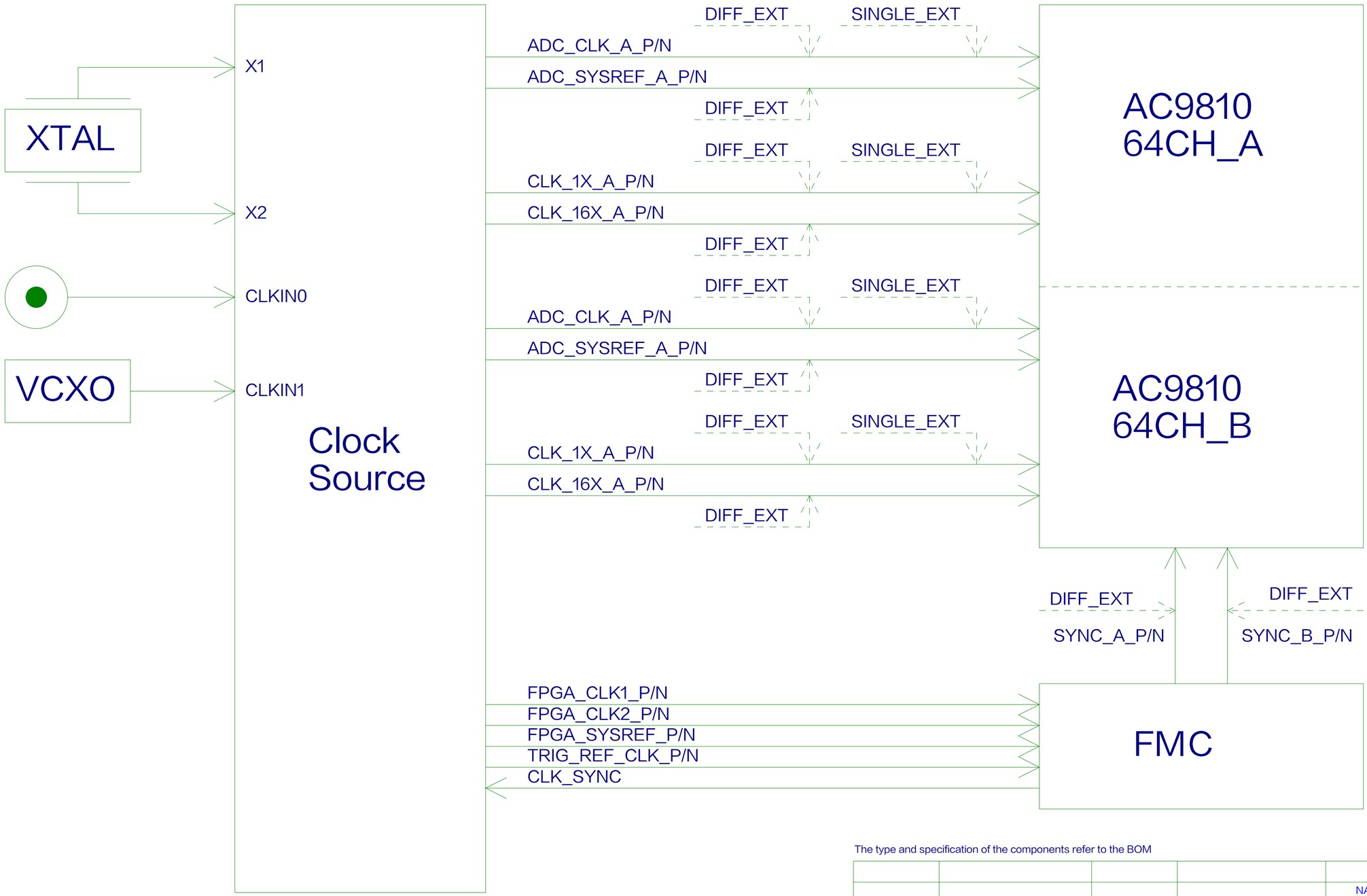
Power Tree



The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	ZHANGSANXXXXX	AC9810EVB64A		00001234	
REVIEWED	LISIXXXXX				
		VER	PART_NUMBER	SHEET 3 OF 23	
		A	03030001		

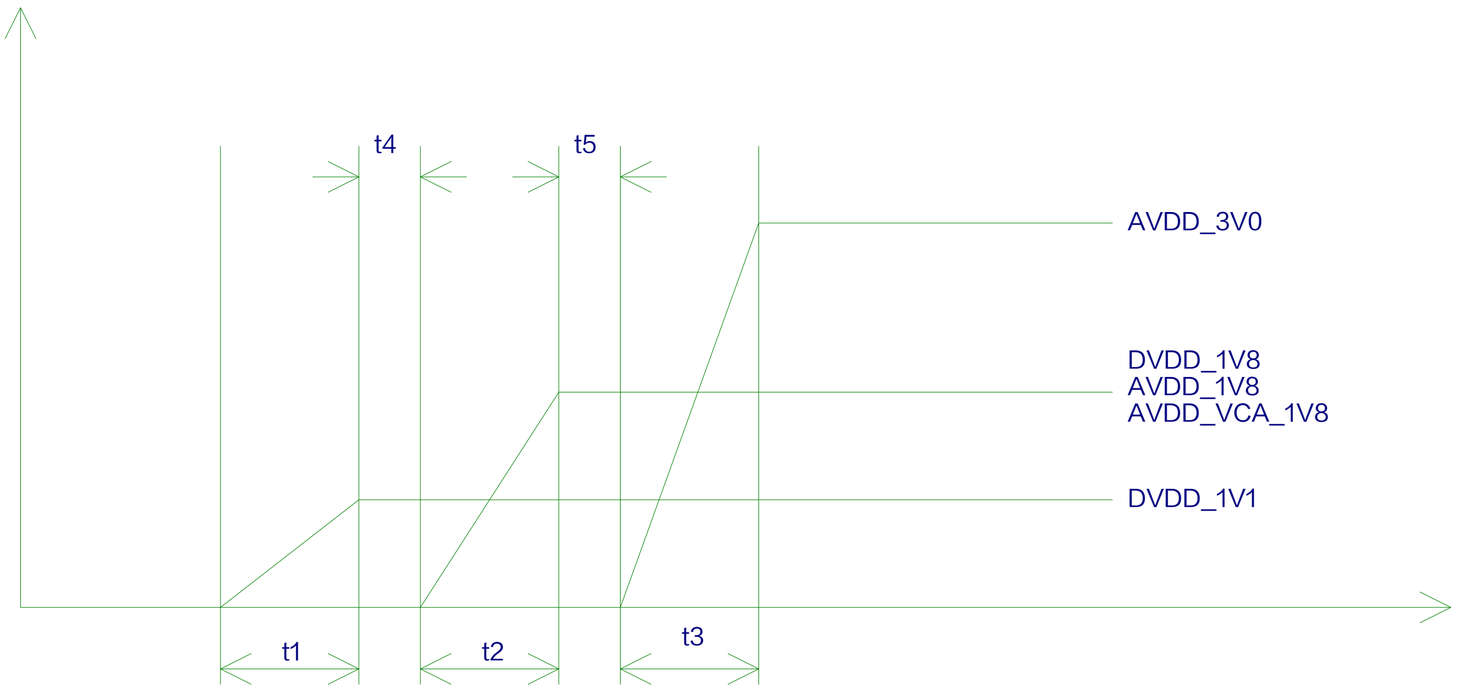
Clock Tree



The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	ZHANGSANXXXXX	AC9810EVB64A		00001234	
REVIEWED	LISIXXXXX				
		VER	PART_NUMBER	SHEET 4 OF 23	
		A	03030001		

Power_up_Sequence



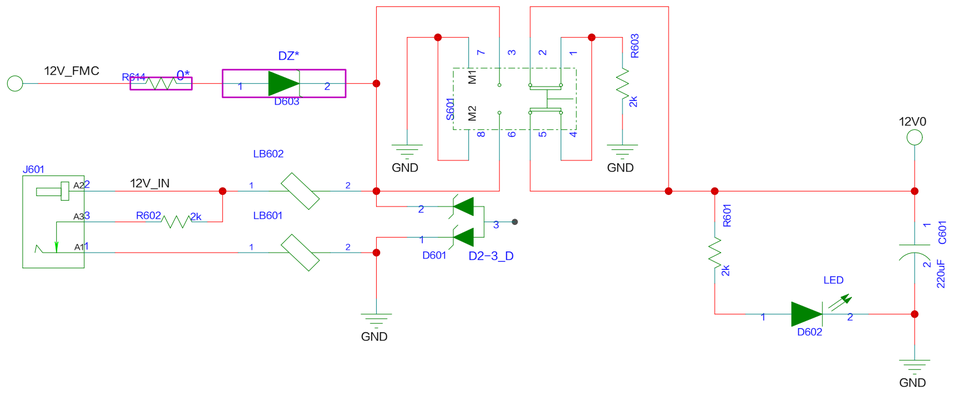
100us<t1<50ms
10us<t2<50ms
10us<t3<50ms
t4>0s
t5>0s

The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	ZHANGSANXXXXX	AC9810EVB64A		00001234	
REVIEWED	LISIXXXXX				
		VER	PART_NUMBER	SHEET 5 OF 23	
		A	03030001		

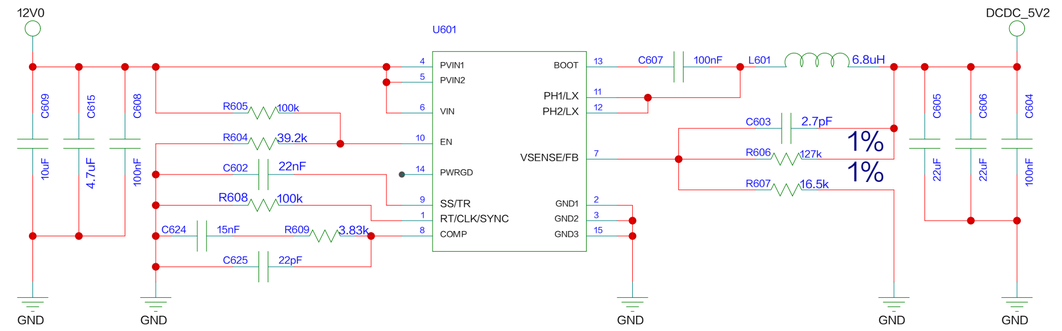
Power_1

12V INPUT



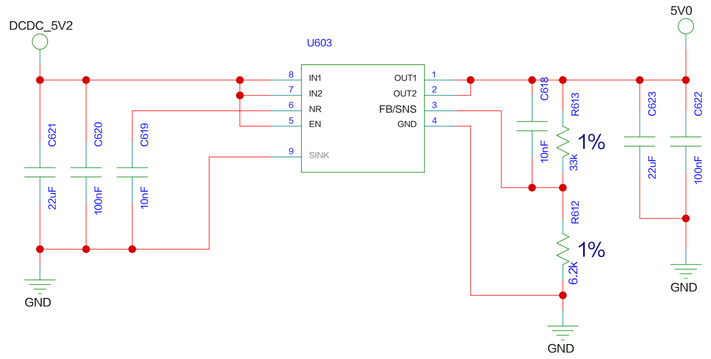
12V to 5V2(DCDC)

1.Vout1=0.6V*(1+127k/16.5k)=5.22V
2.Ir=1.27A
3.Imax=6A



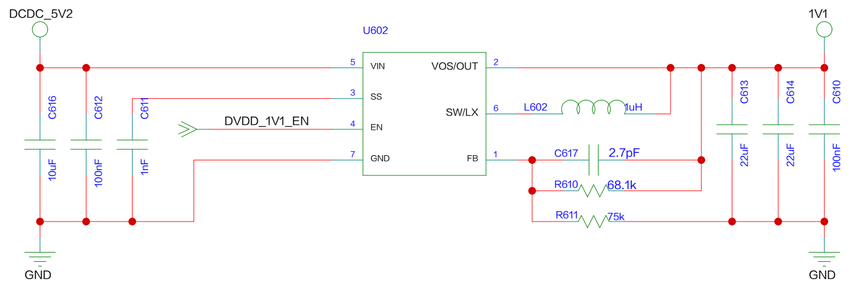
5V2 to 5V0（LDO)

1.Vout=0.8V*(1+33k/6.2k)=5.06V
2.Ir=80.5mA
3.Imax=1A



5V2 to 1V1(DCDC)

1.Vout1=0.6V*(1+68.1k/75k)=1.145V
2.Ir=810mA
3.Imax=3A



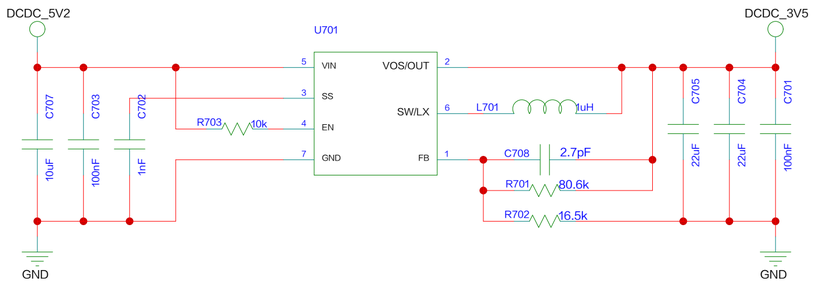
The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	ZHANGSANXXXXX	AC9810EVB64A		00001234	
REVIEWED	LISIXXXXX				
		VER	PART_NUMBER	SHEET 6 OF 23	
		A	03030001		

Power_2

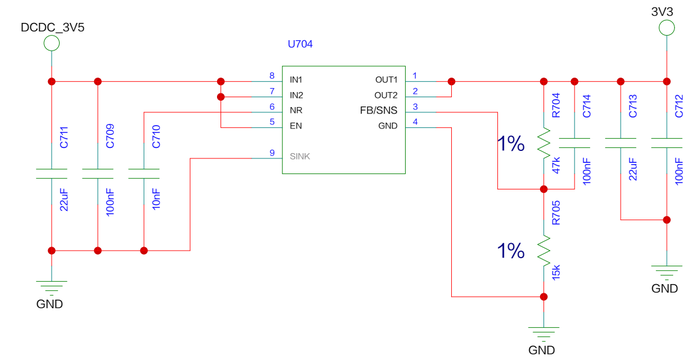
5V2 to 3V5(DCDC)

1.Vout1=0.6V*(1+80.6k/16.5k)=3.53V
2.Ir=0.42A
3.Imax=3A



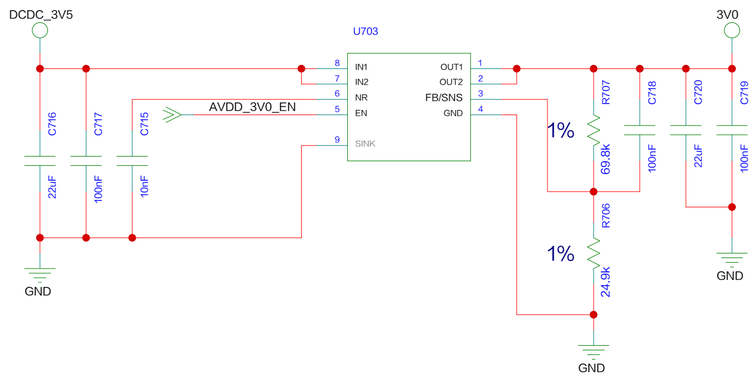
3V5 to 3V3(LDO)

1.Vout=0.8V*(1+47k/15k)=3.31V
2.Ir=260mA
3.Imax=1A



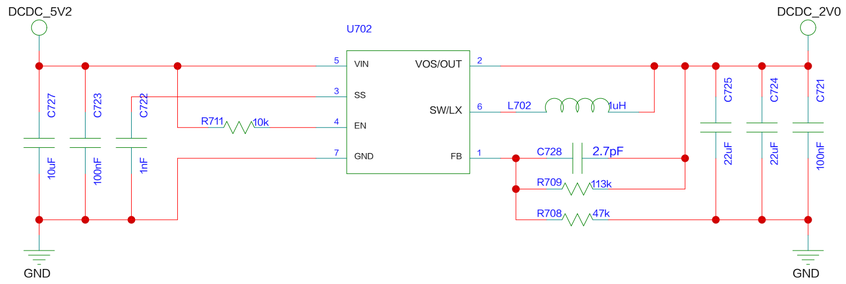
3V5 to 3V0(LDO)

1.Vout1=0.8V*(1+69.8k/24.9k)=3.04V
2.Ir=160mA
3.Imax=1A



5V2 to 2V0(DCDC)

1.Vout1=0.6V*(1+113k/47k)=2.04V
2.Ir=1.03A
3.Imax=3A



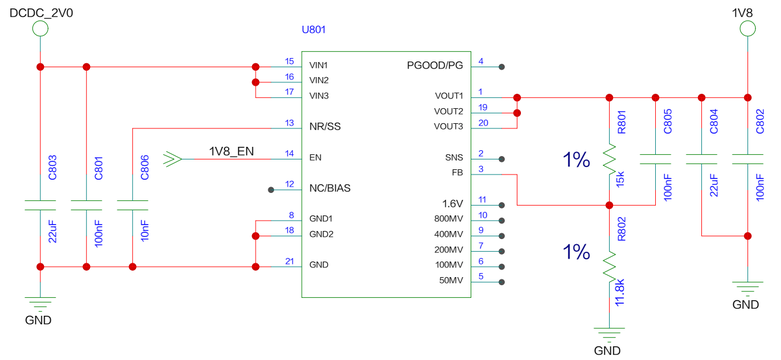
The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	ZHANGSANXXXXX	AC9810EVB64A		00001234	
REVIEWED	LISIXXXXX				
		VER	PART_NUMBER	SHEET 7 OF 23	
		A	03030001		

Power_3

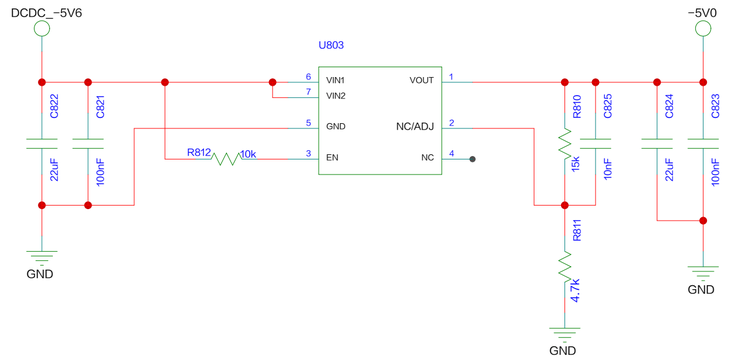
2V0 to 1V8(LDO)

1.Vout1=0.8V*(1+15k/12k)=1.82V
2.Ir=1.03A
3.Imax=2A



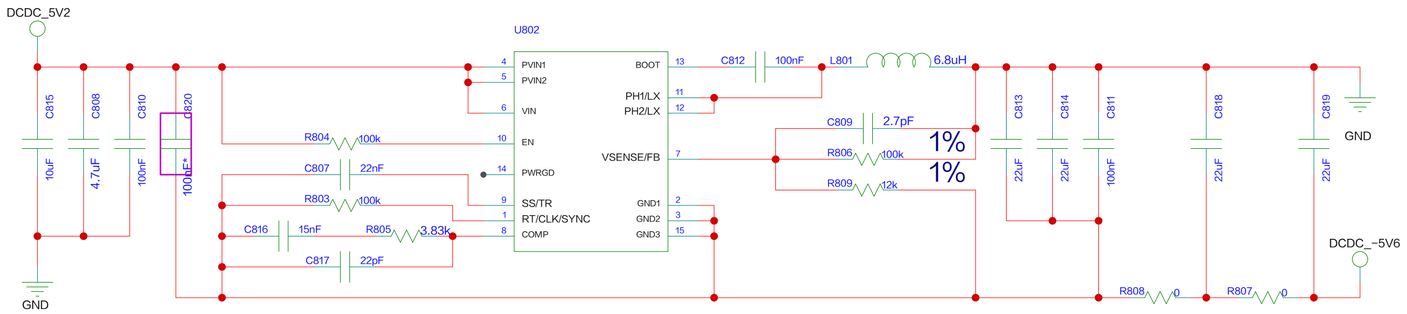
−5V6 to −5V0(LDO)

1.Vout=−1.2V*(1+15k/4.7k)=−5.03V
2.Ir=−80.5mA
3.Imax=−500mA

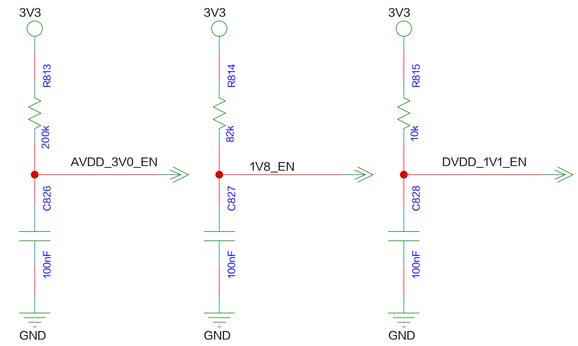


5V2 to −5V6(DCDC)

1.Vout1=−0.6V*(1+100k/12k)=−5.6V
2.Ir=−80.5mA
3.Imax=−3A



EN_Delay

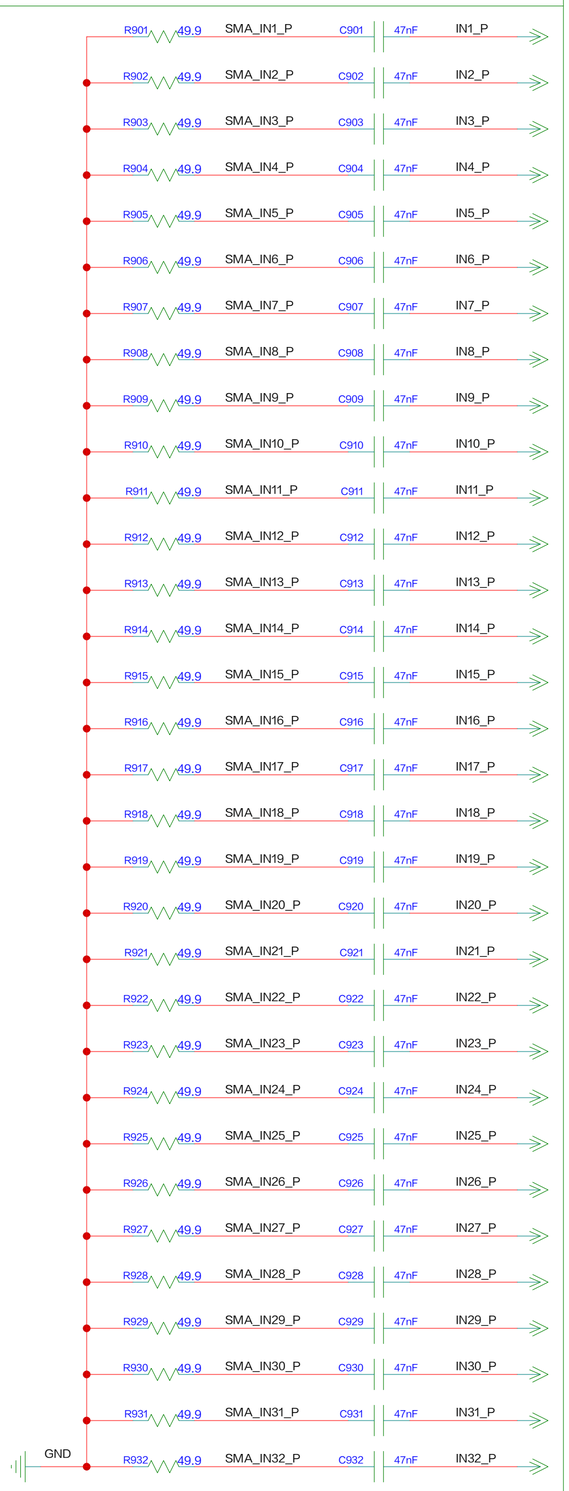


The type and specification of the components refer to the BOM

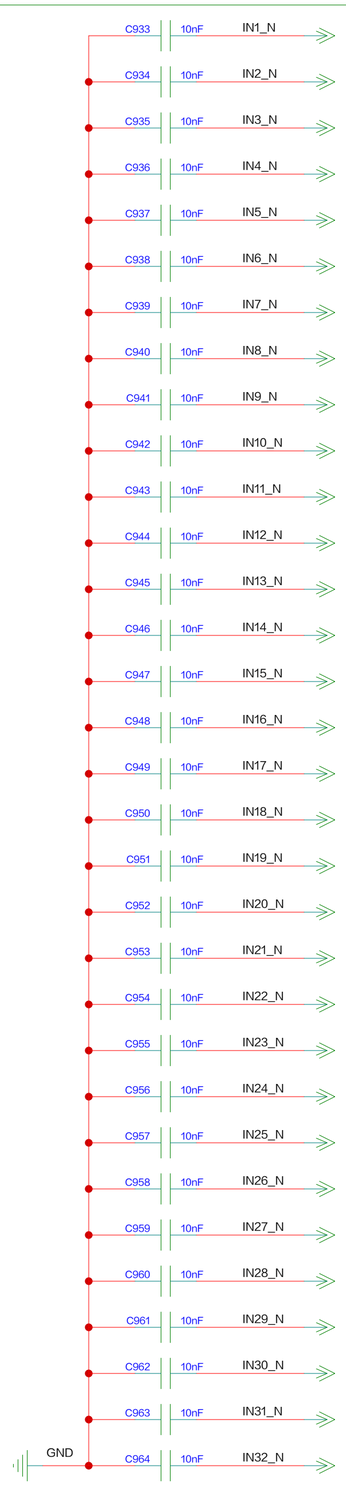
				NA	
				ECA NO	DATE
DESIGNED	ZHANGSANXXXXX	AC9810EVB64A		00001234	
REVIEWED	LISIXXXXX				
		VER	PART_NUMBER	SHEET 8 OF 23	
		A	03030001		

SMA_INPUT (1-32)

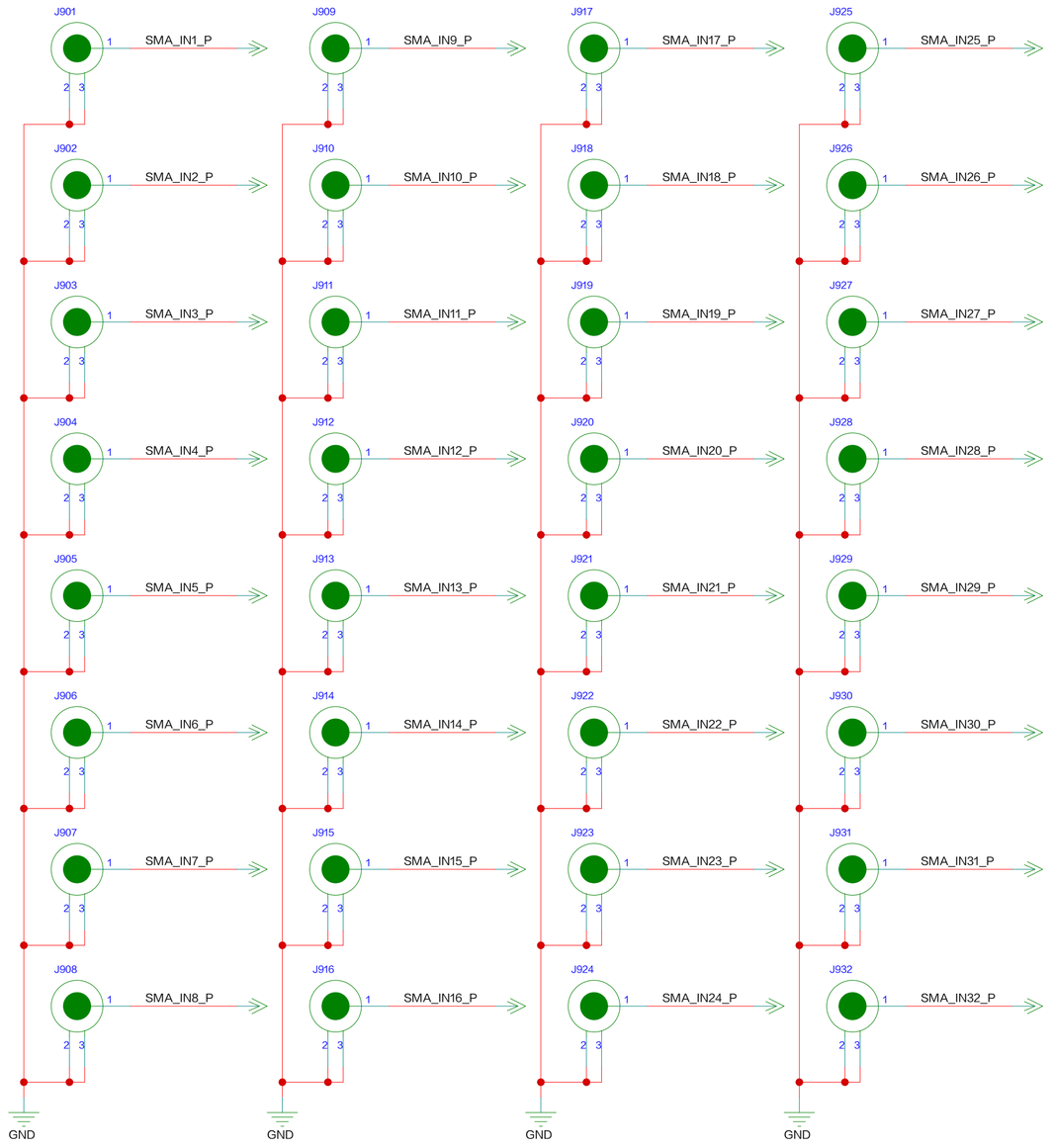
INPUT_CAP_P(CH1-CH32)



INPUT_CAP_N(CH1-CH32)



INPUT_IPEX(CH1-CH32)

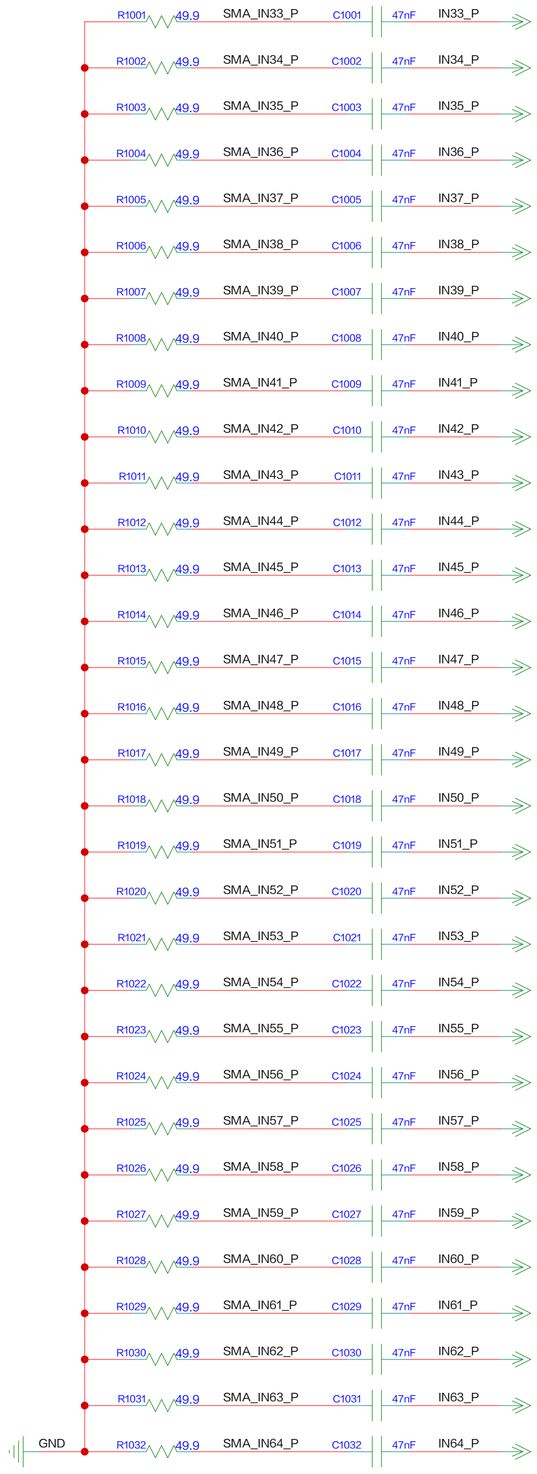


The type and specification of the components refer to the BOM

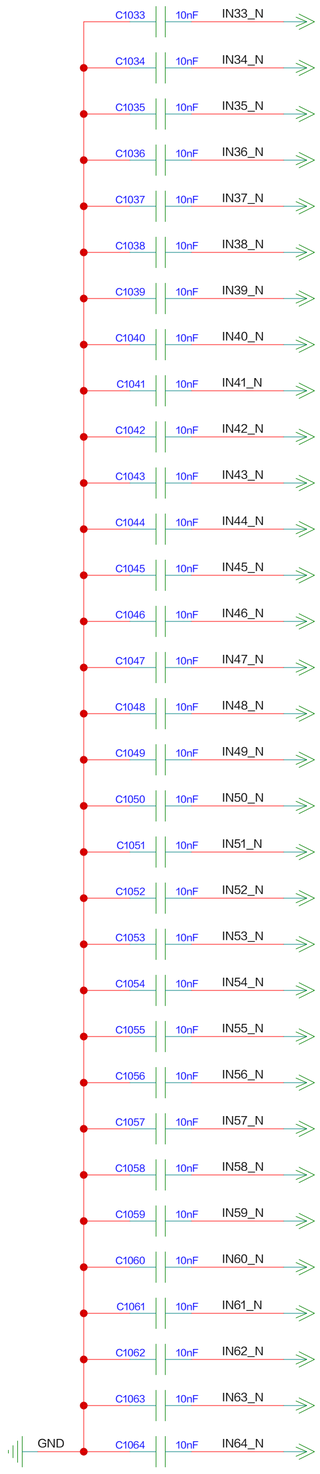
				NA	
				ECA NO	DATE
DESIGNED	ZHANGSANXXXXX				
		AC9810EVB64A		00001234	
REVIEWED	LISIXXXXX				
		VER	PART_NUMBER	SHEET 9 OF 23	
		A	03030001		

SMA_INPUT (33-64)

INPUT_CAP_P(CH33-CH64)



INPUT_CAP_N(CH33-CH64)



INPUT_IPEX(CH33-CH64)

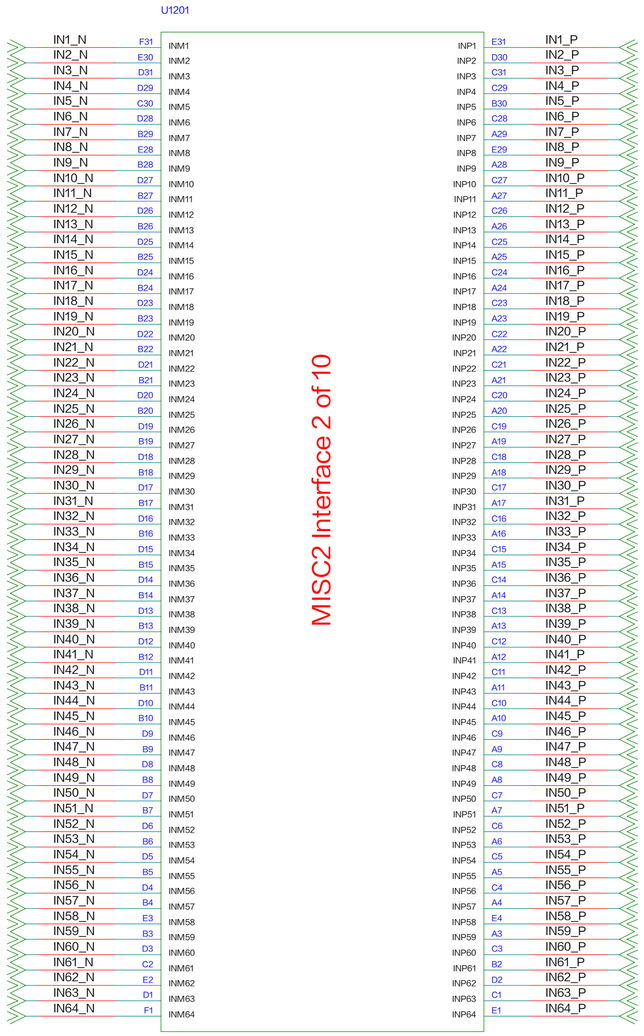


The type and specification of the components refer to the BOM

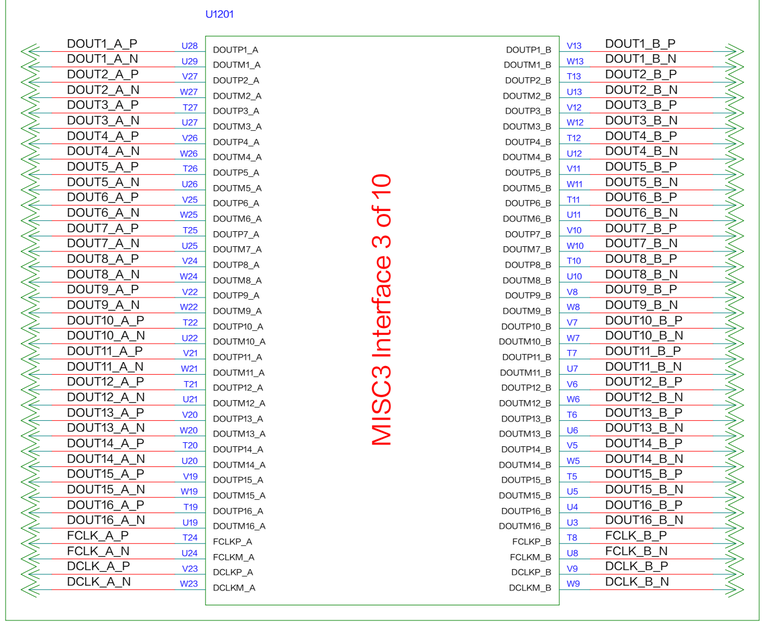
				NA	
				ECA NO	DATE
DESIGNED	ZHANGSANXXXXX				
		AC9810EVB64A		00001234	
REVIEWED	LISIXXXXX				
		VER	PART_NUMBER	SHEET 10 OF 23	
		A	03030001		

AC9810-64CH_1

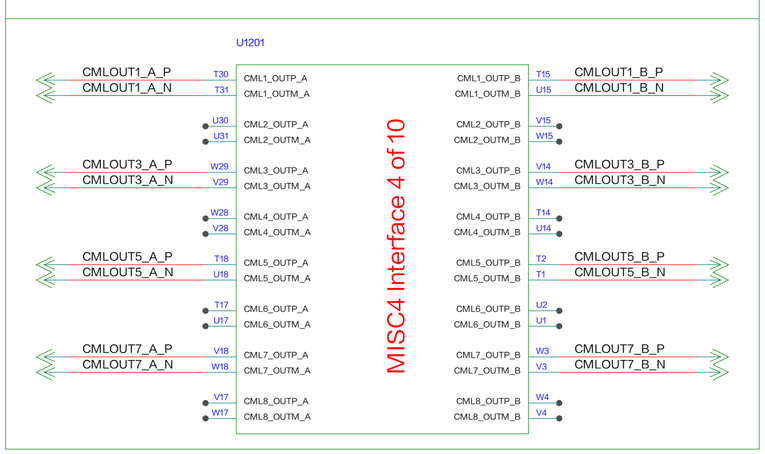
INPUT



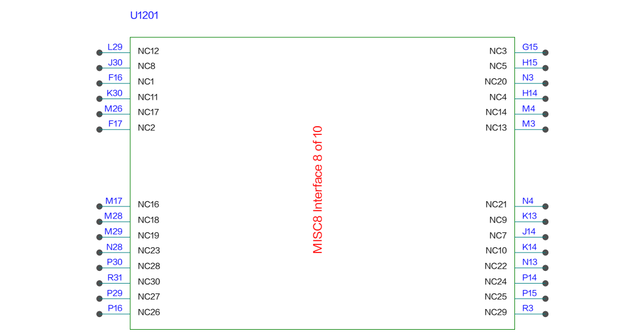
LVDS&LVDS_CLK



JESD204B



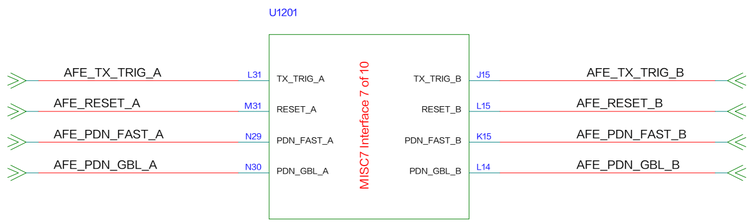
NC



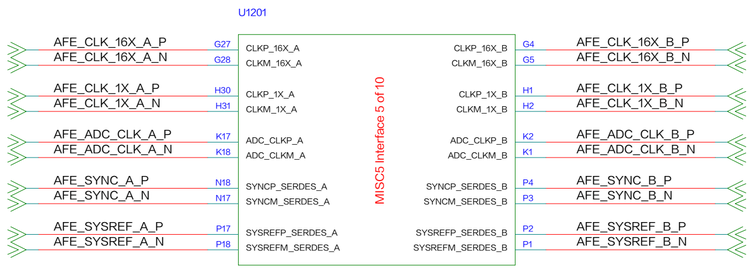
TGC&CW&SPI



RESET&Others



CW_CLK&ADC_CLK&JESD_REF

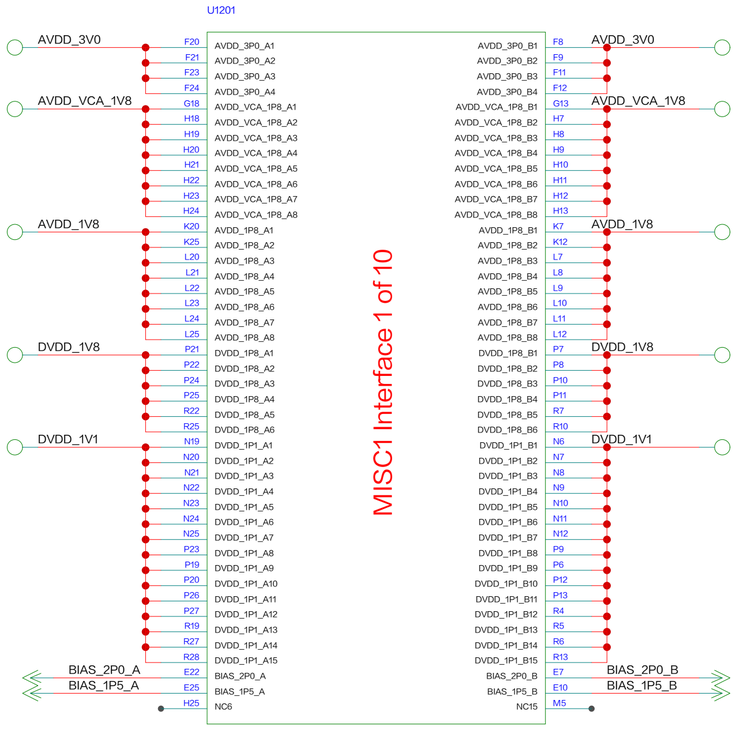


The type and specification of the components refer to the BOM

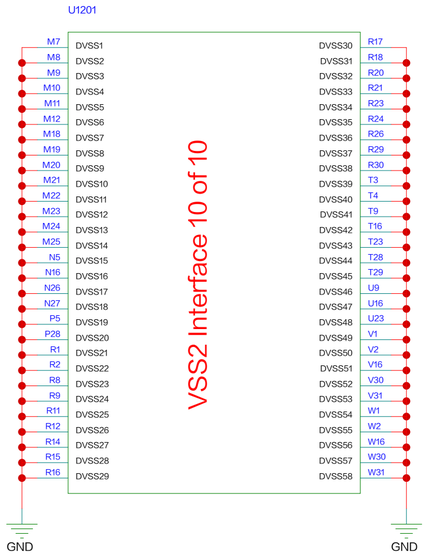
				NA	
				ECA NO	DATE
DESIGNED	ZHANGSANXXXXX				
		AC9810EVB64A		00001234	
REVIEWED	LISIXXXXX				
		VER	PART_NUMBER	SHEET 11 OF 23	
		A	03030001		

AC9810-64CH_2

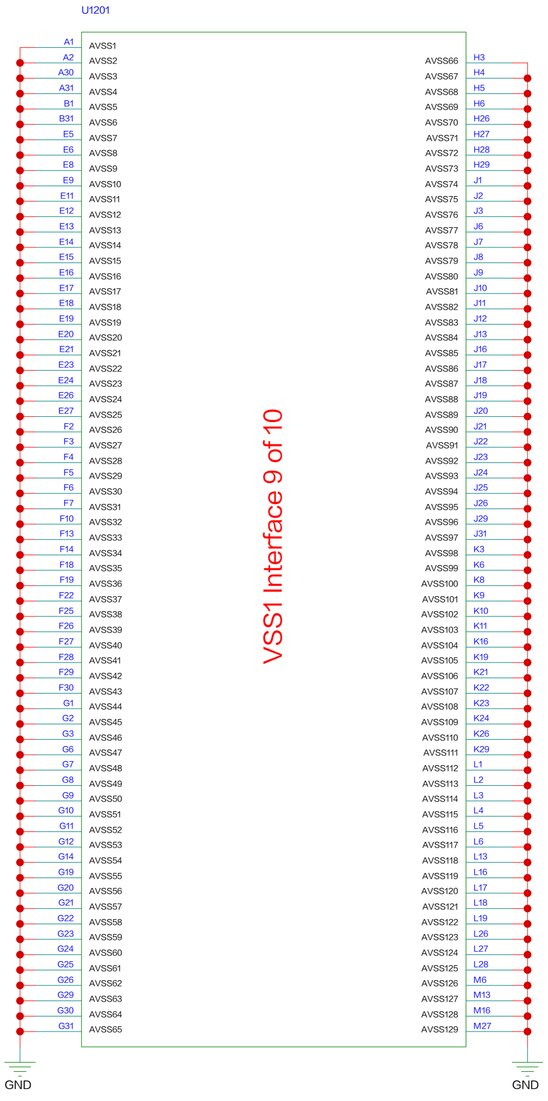
POWER_SUPPLY



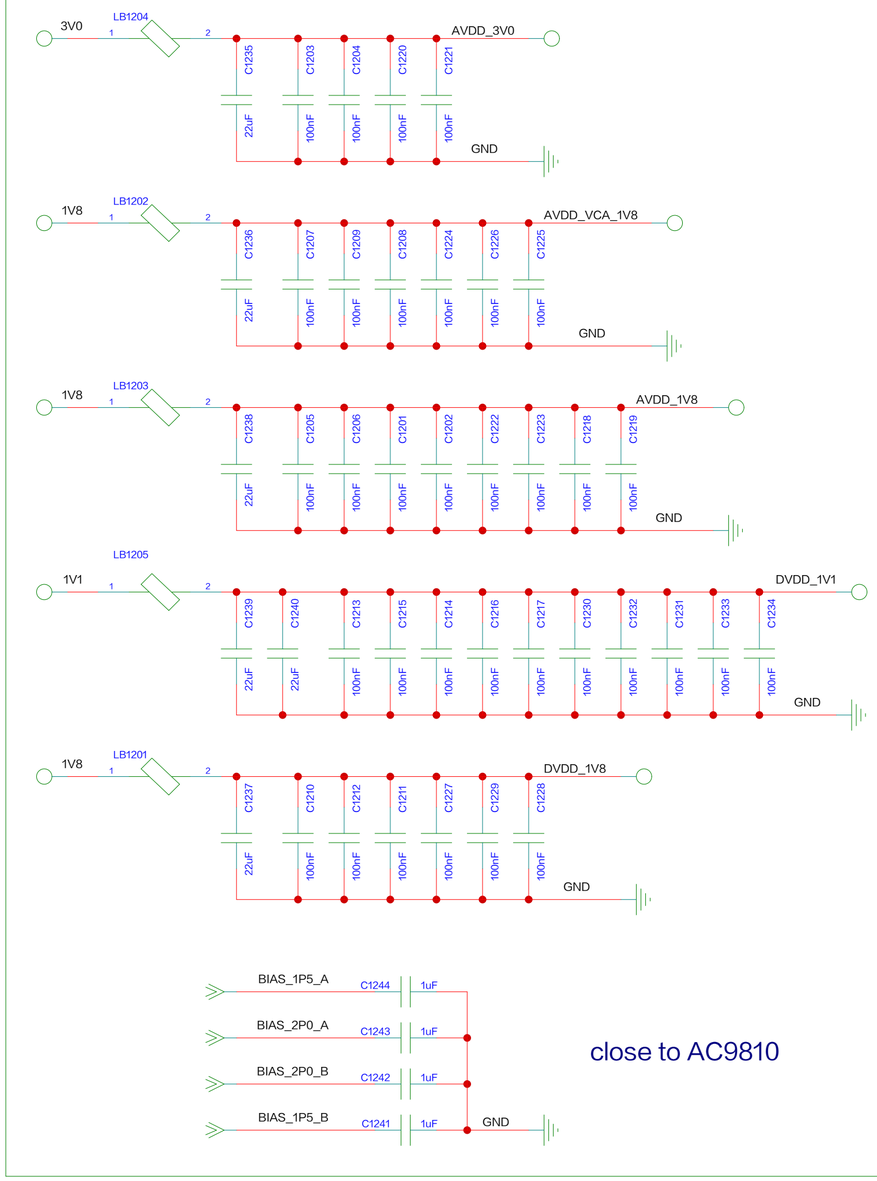
DVSS



AVSS



DECOUPLING CAPACITOR

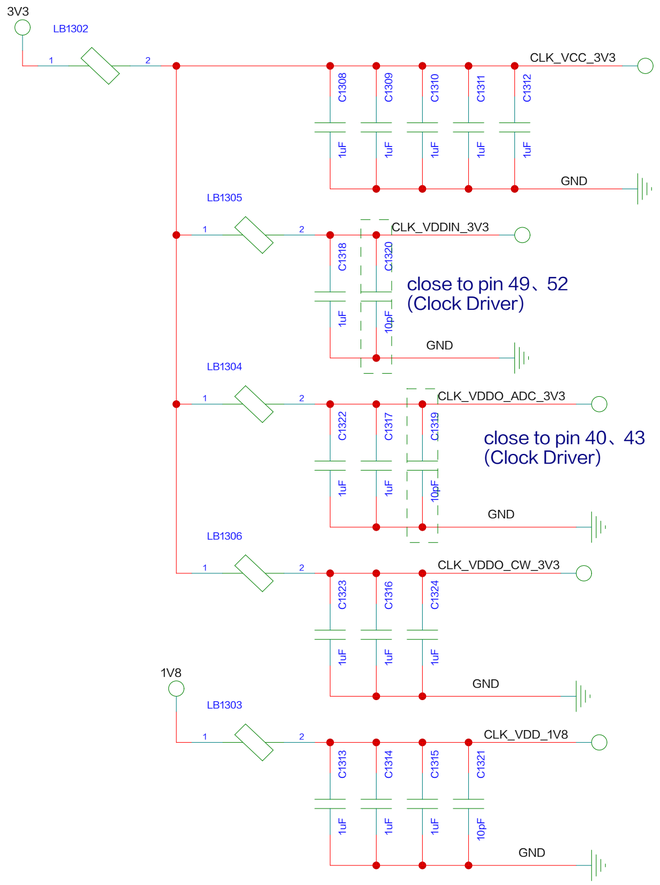


The type and specification of the components refer to the BOM

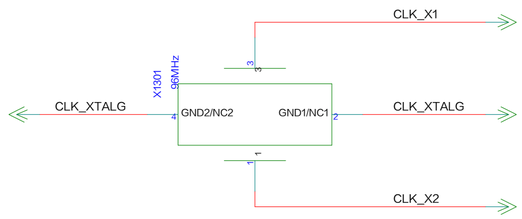
				NA	
				ECA NO	DATE
DESIGNED	ZHANGSANXXXXX				
		AC9810EVB64A		00001234	
REVIEWED	LISIXXXXX				
		VER	PART_NUMBER	SHEET 12 OF 23	
		A	03030001		

CLK_SOURCE

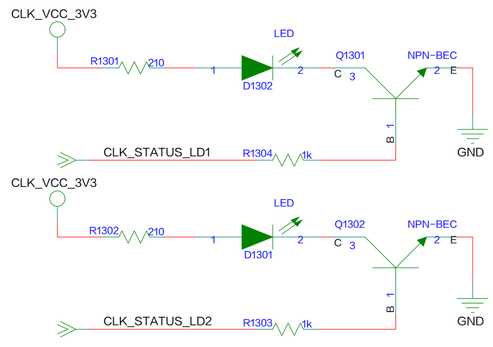
POWER&DECOUPING



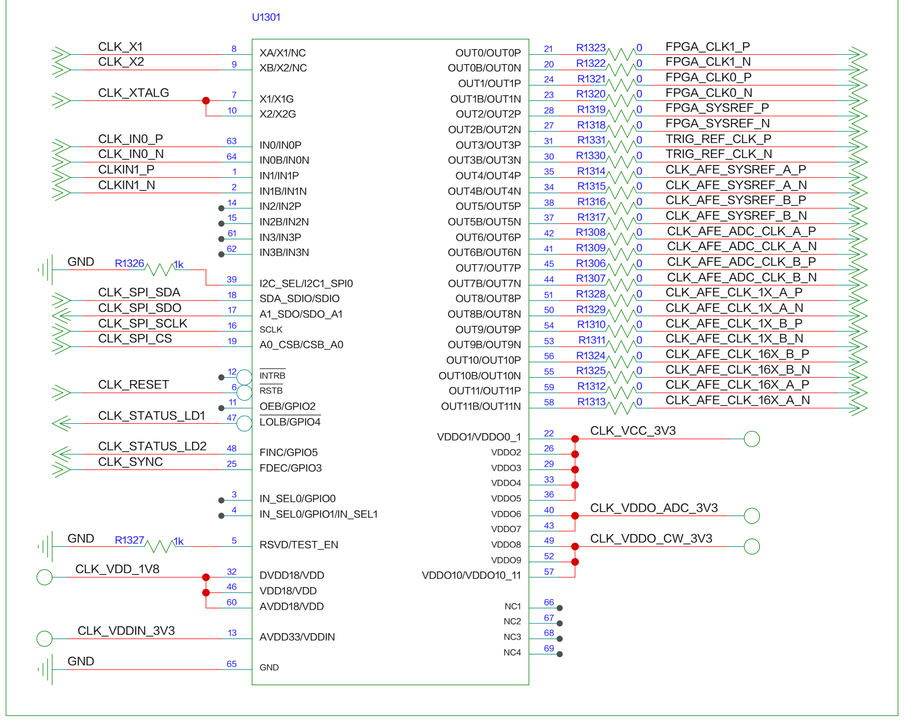
CLK_REF



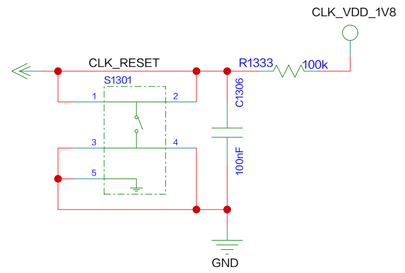
PLL_LOCK_STATUS



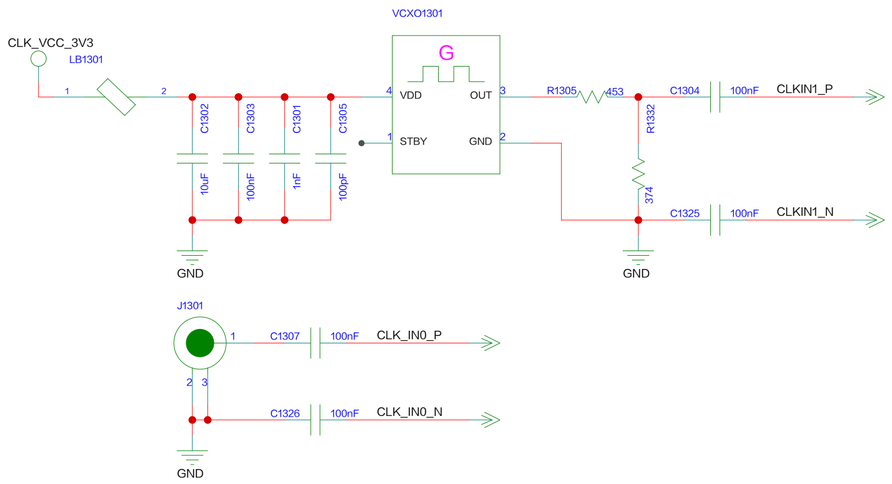
POWER&DECOUPING



CLK_RESET_BTN



SYSREF_REFCLK&SYNC_CLK(EXT)



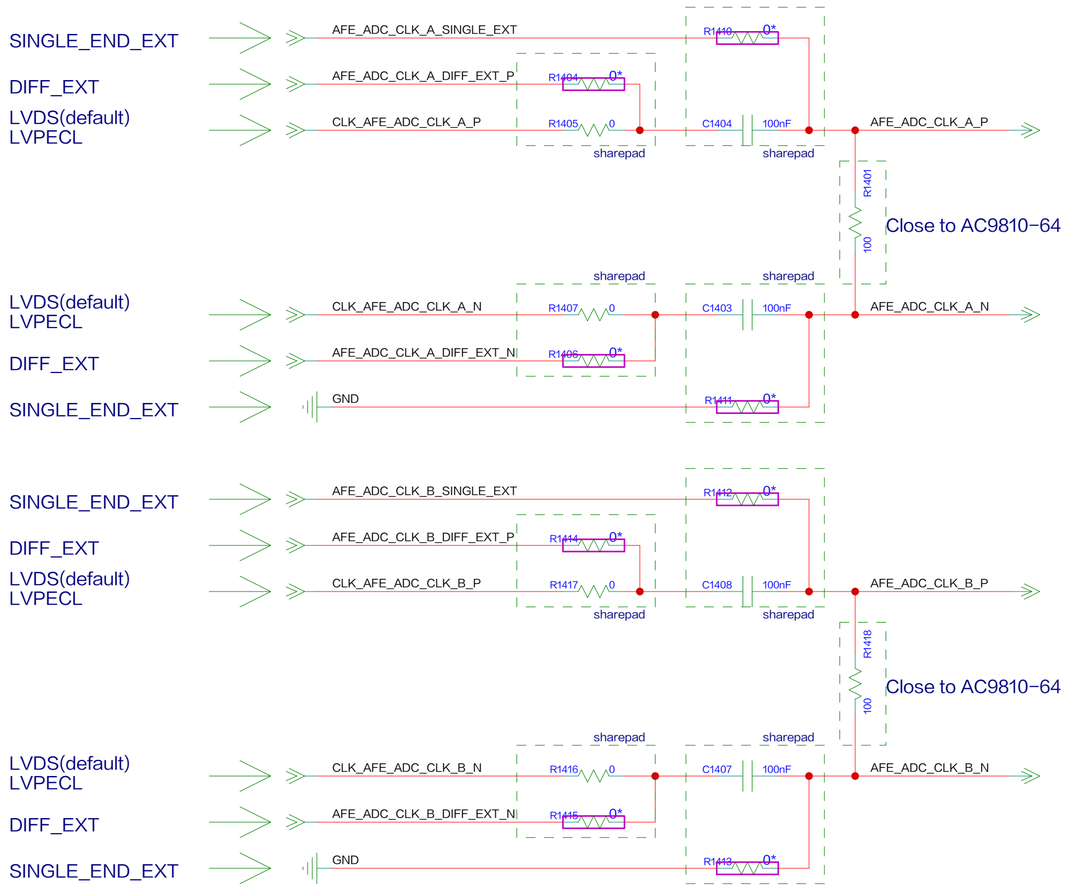
The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	ZHANGSANXXXXX				
		AC9810EVB64A		00001234	
REVIEWED	LISIXXXXX				
		VER	PART_NUMBER	SHEET 13 OF 23	
		A	03030001		

CLK_ADC

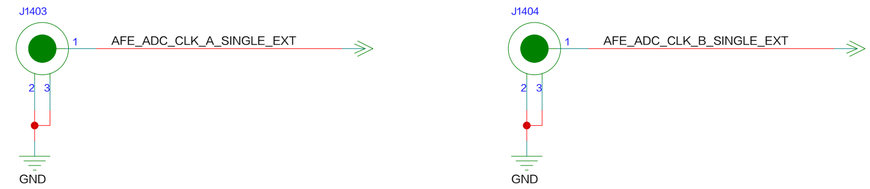
ADC_CLK_CHOOSE

A & B equal length

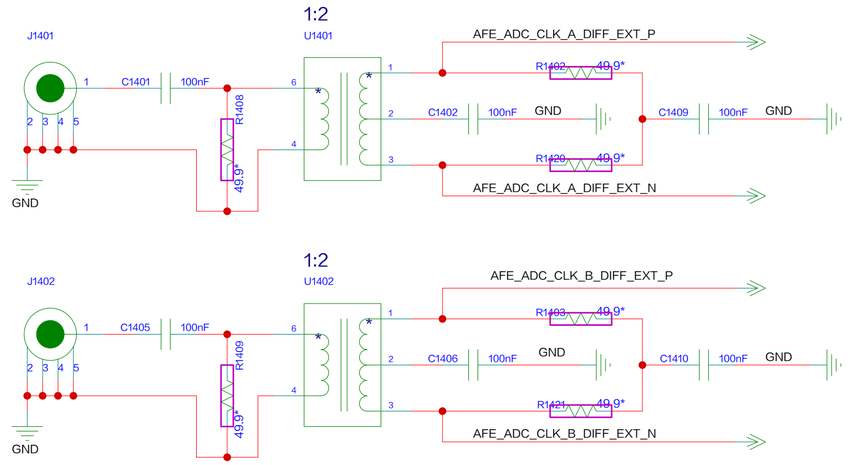


ADC_CLK Select	PART	soldering		Clock Source	Logic Levels
	A	R1405 R1407	C1404 C1403	CLK_SOURCE(default)	LVDS;LVPECL
		R1404 R1406	C1404 C1403	DIFF-Ext	DIFF
		NA	R1410 R1411	SINGLE-Ext	CMOS
	B	R1417 R1416	C1408 C1407	CLK_SOURCE(default)	LVDS;LVPECL
		R1414 R1415	C1408 C1407	DIFF-Ext	DIFF
		NA	R1412 R1413	SINGLE-Ext	CMOS

SINGLE_END_EXT

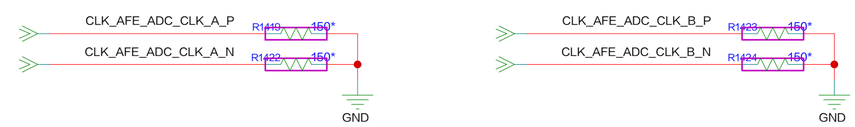


DIFF_EXT



LVPECL

LVDS NEED NC(default)
LVPECL NEED SOLDERING

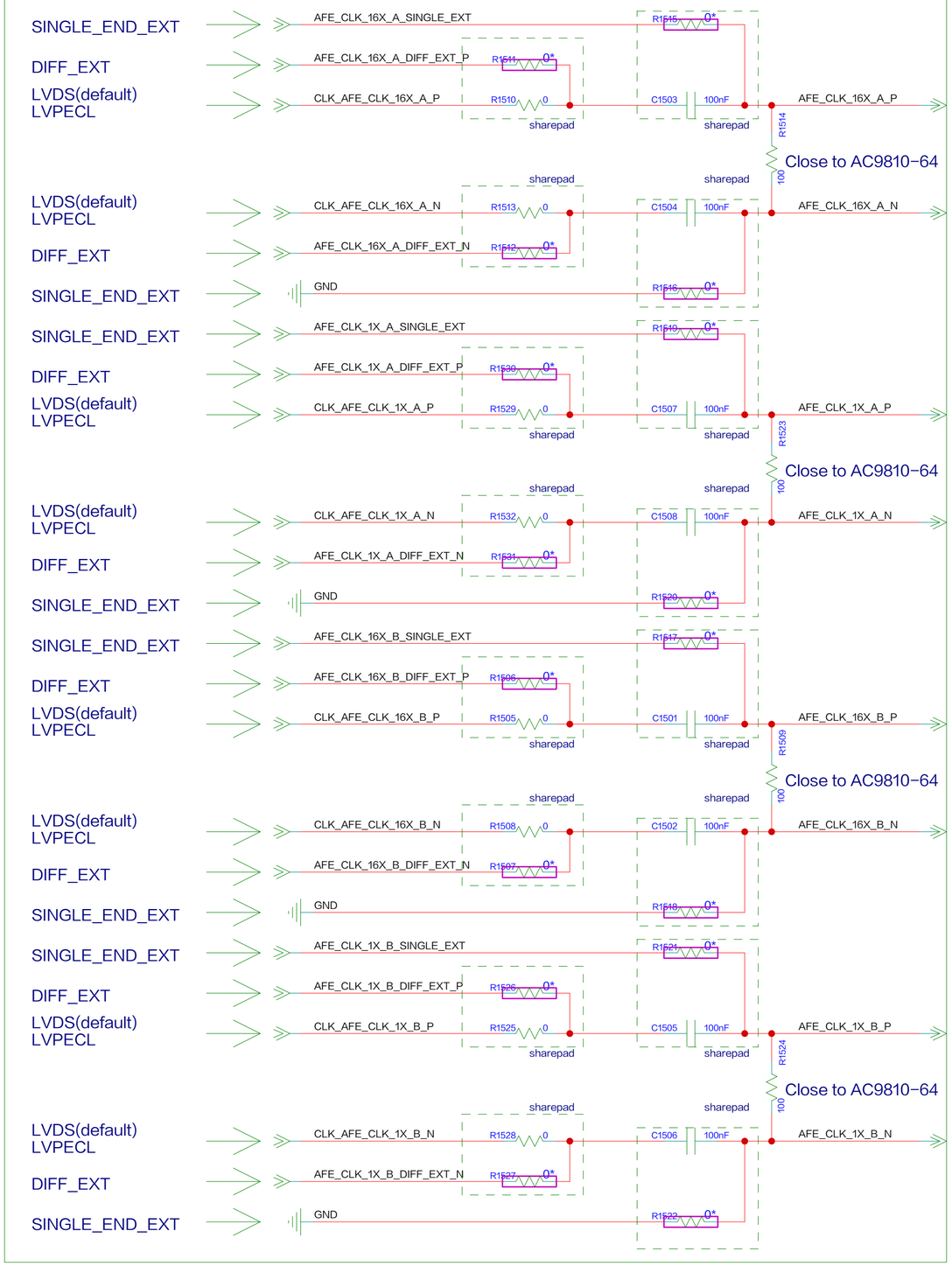


The type and specification of the components refer to the BOM

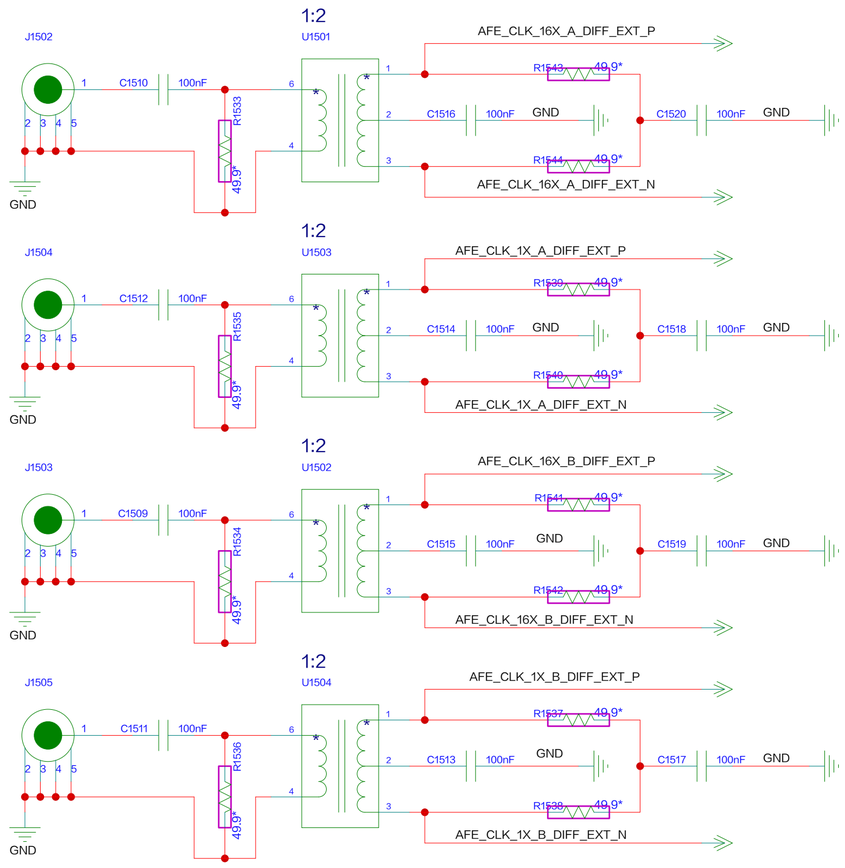
				NA	
				ECA NO	DATE
DESIGNED	ZHANGSANXXXXX	AC9810EVB64A		00001234	
REVIEWED	LISIXXXXX				
		VER	PART_NUMBER	SHEET 14 OF 23	
		A	03030001		

CLK_CW

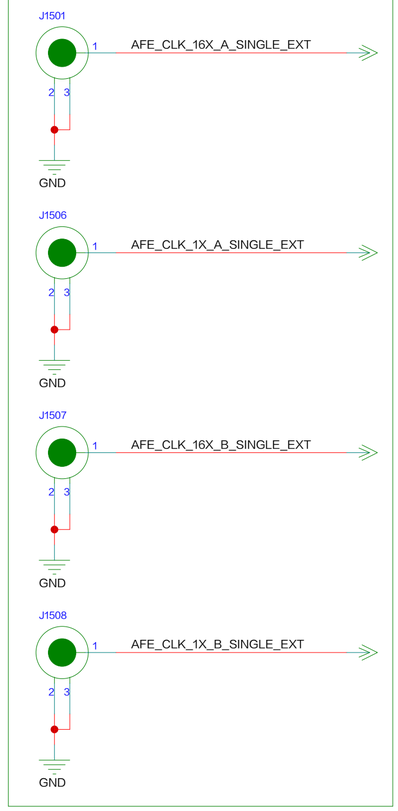
CW_CLK_CHOOSE



DIFF_EXT

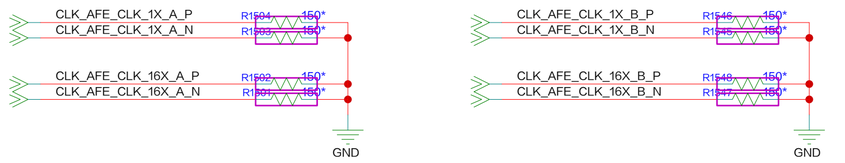


SINGLE_END_EXT



LVPECL

LVDS NEED NC(default)
LVPECL NEED SOLDERING

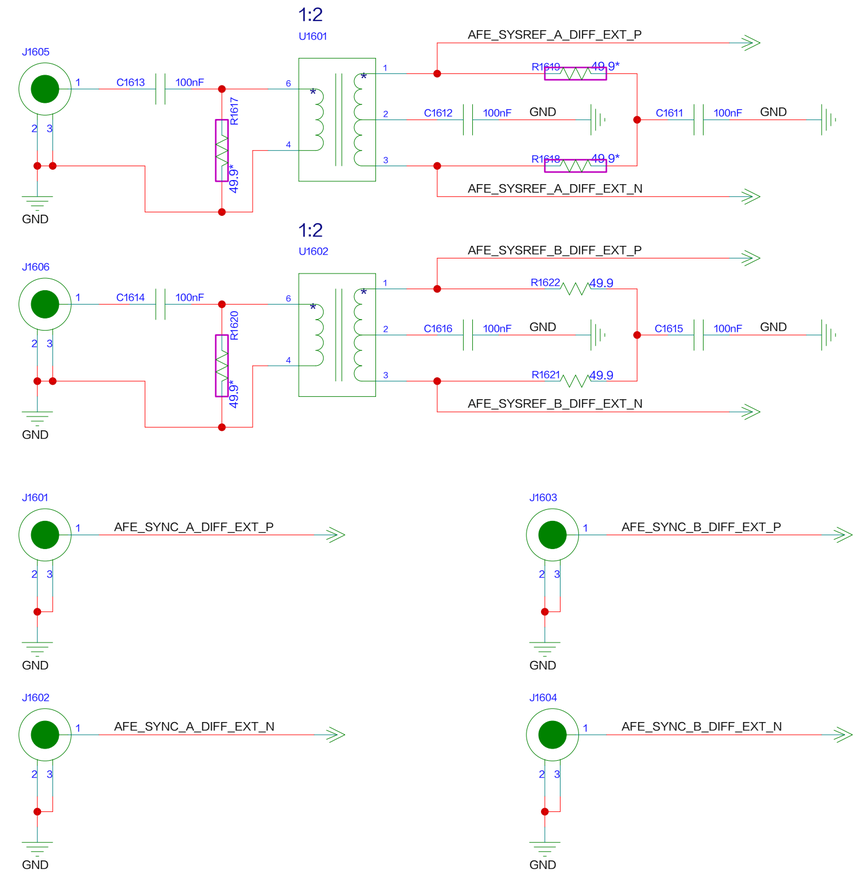


The type and specification of the components refer to the BOM

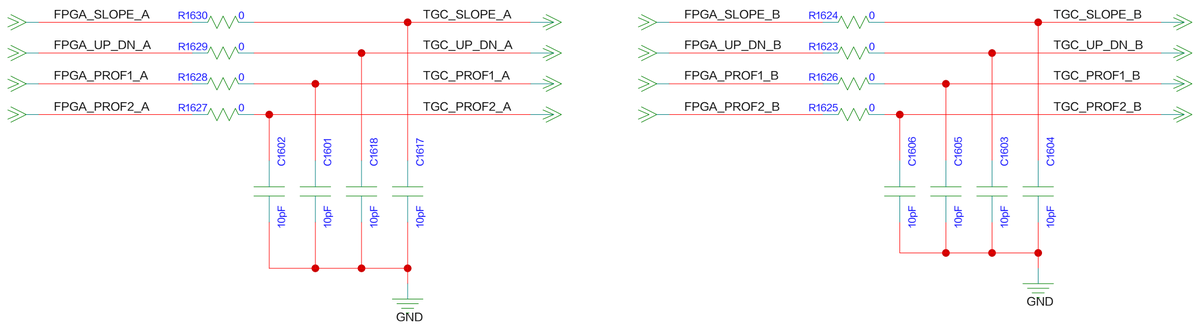
				NA	
				ECA NO	DATE
DESIGNED	ZHANGSANXXXXX	AC9810EVB64A		00001234	
REVIEWED	LISIXXXXX				
		VER	PART_NUMBER	SHEET 15 OF 23	
		A	03030001		

CLK_SYSREF&SYNC

DIFF_EXT

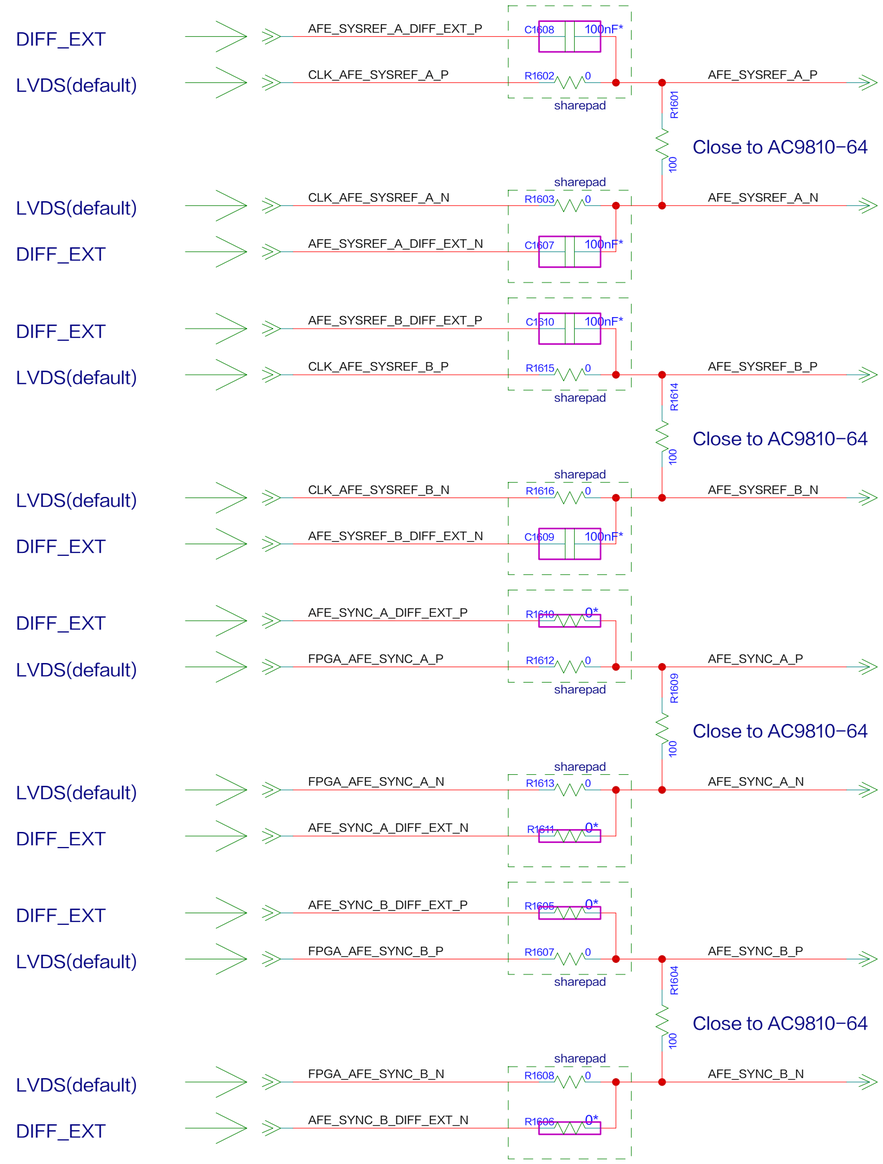


DTGC_CONTROL



Note:
The length of TGC_SLOPE_A & TGC_SLOPE_B should be equal
The length of TGC_UP_DN_A & TGC_UP_DN_B should be equal

SYSREF&SYNC_CHOOSE



The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	ZHANGSANXXXXX	AC9810EVB64A		00001234	
REVIEWED	LISIXXXXX				
		VER	PART_NUMBER	SHEET 16 OF 23	
		A	03030001		

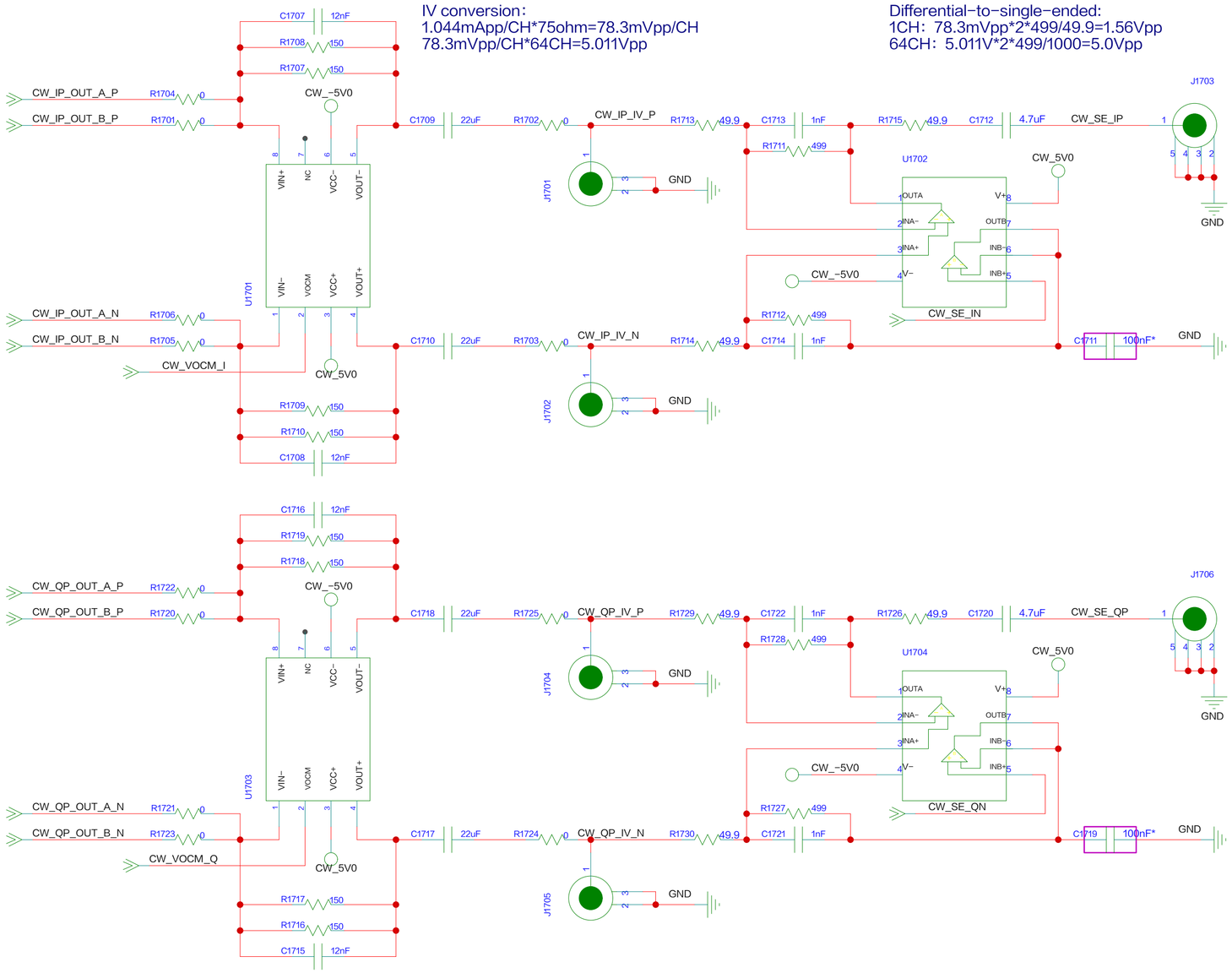
CW_1

CW_OUT

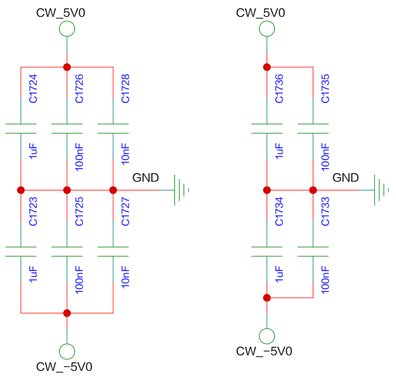
Symmetrical placement
Resistor precision: 0.1%
Capacitor precision: 5%

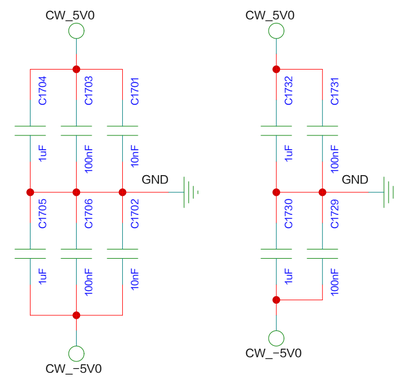
IV conversion:
1.044mApp/CH*75ohm=78.3mVpp/CH
78.3mVpp/CH*64CH=5.011Vpp

Differential-to-single-ended:
1CH：78.3mVpp*2*499/49.9=1.56Vpp
64CH：5.011V*2*499/1000=5.0Vpp



AMP_DECOUPLING CAPACITOR



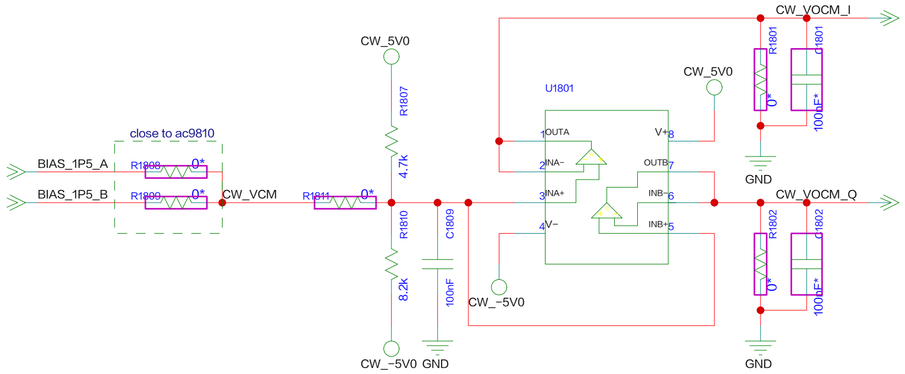


The type and specification of the components refer to the BOM

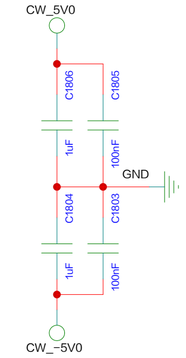
				NA	
				ECA NO	DATE
DESIGNED	ZHANGSANXXXXX	AC9810EVB64A		00001234	
REVIEWED	LISIXXXXX				
		VER	PART_NUMBER	SHEET 17 OF 23	
		A	03030001		

CW_2

CW(Common Voltage)

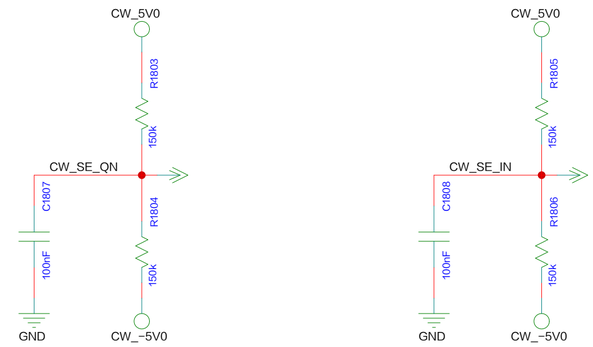


AMP_DECOUPLING CAPACITOR

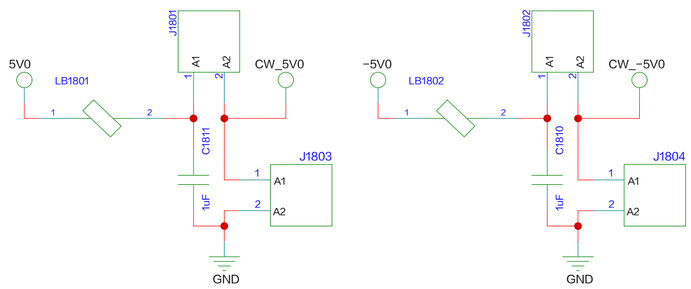


close to U2205

CW(Common Voltage)



CW_POWER

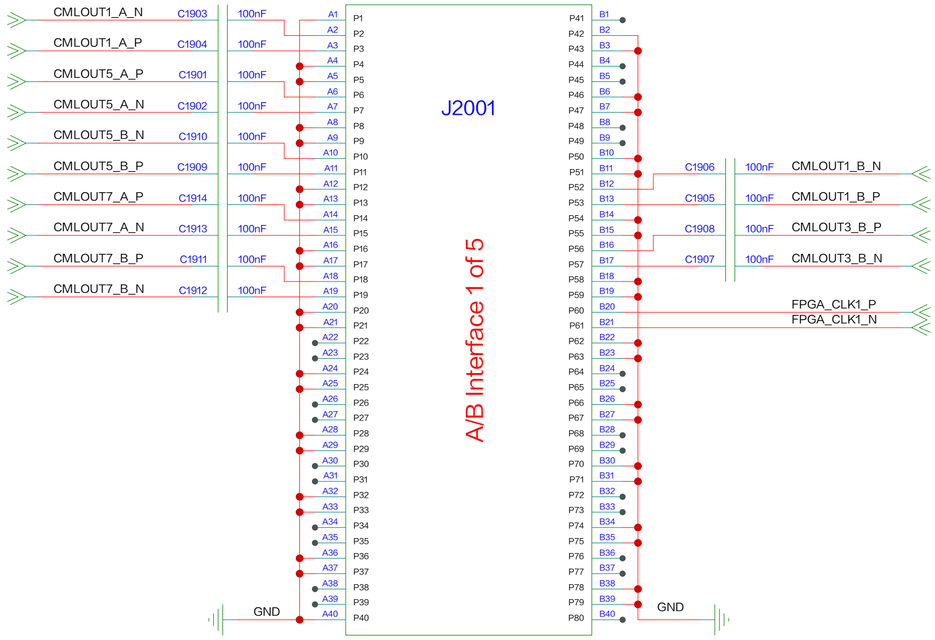


The type and specification of the components refer to the BOM

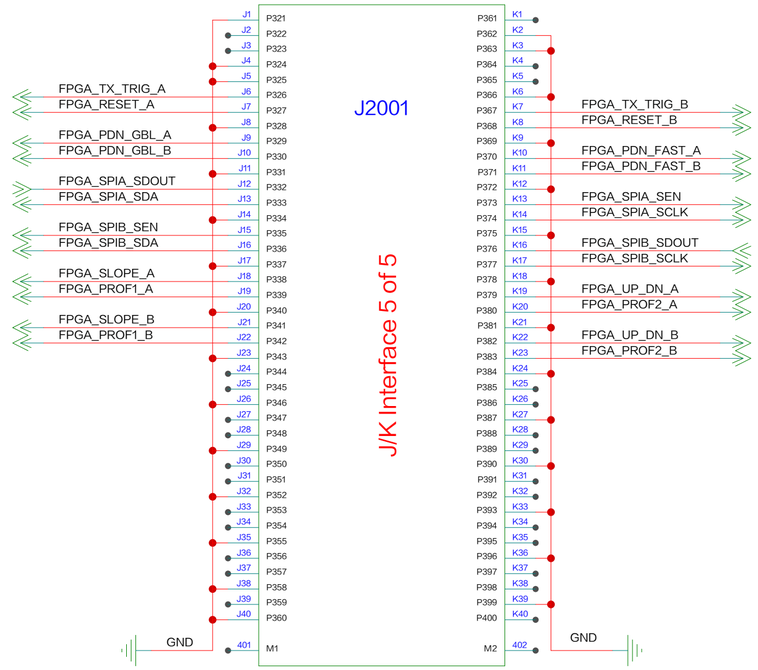
				NA	
				ECA NO	DATE
DESIGNED	ZHANGSANXXXXX	AC9810EVB64A		00001234	
REVIEWED	LISIXXXXX				
		VER	PART_NUMBER	SHEET 18 OF 23	
		A	03030001		

FMC_1

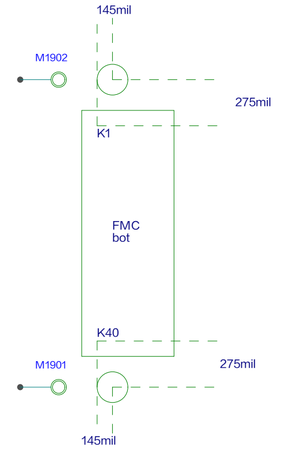
FMC_PART1



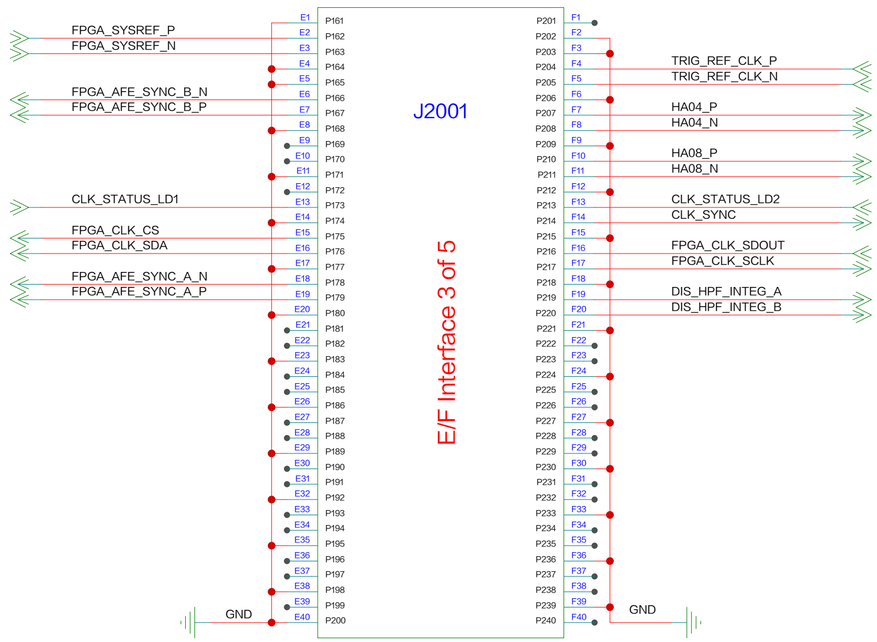
FMC_PART5



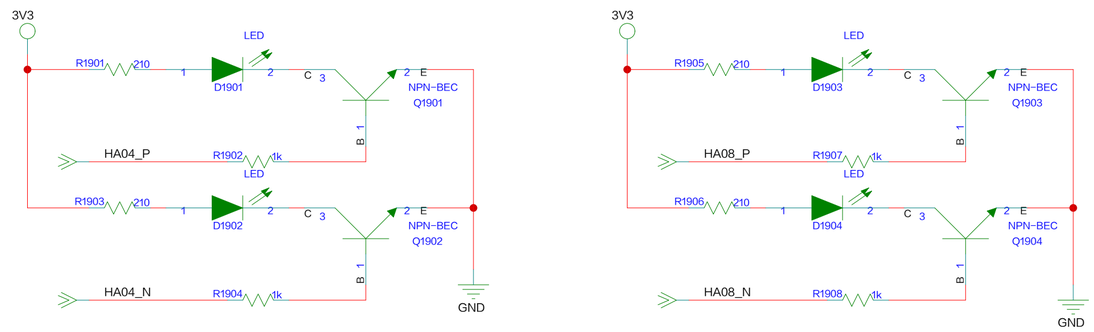
FMC_HOLE



FMC_PART3



FMC_LED



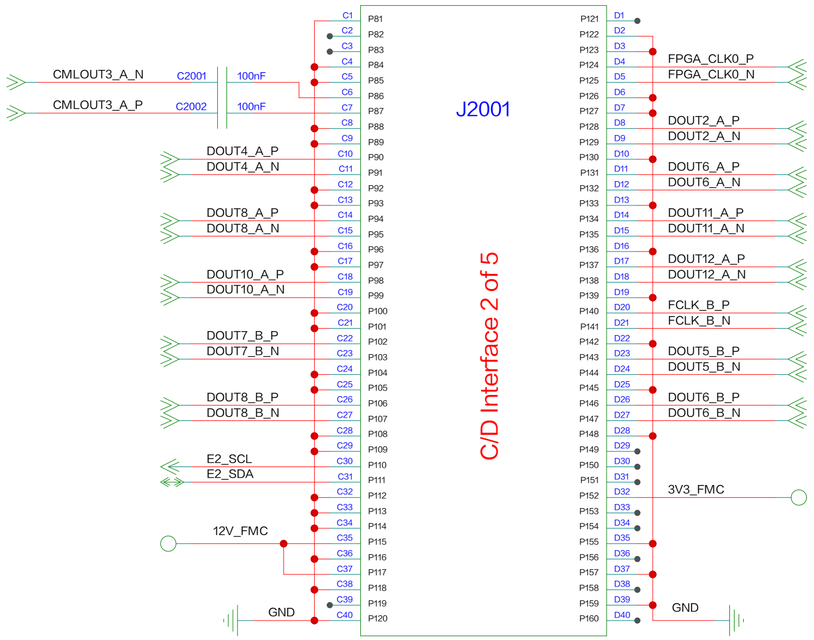
The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	ZHANGSANXXXXX				
		AC9810EVB64A		00001234	
REVIEWED	LISIXXXXX				
		VER	PART_NUMBER	SHEET 19 OF 23	
		A	03030001		

FMC_2

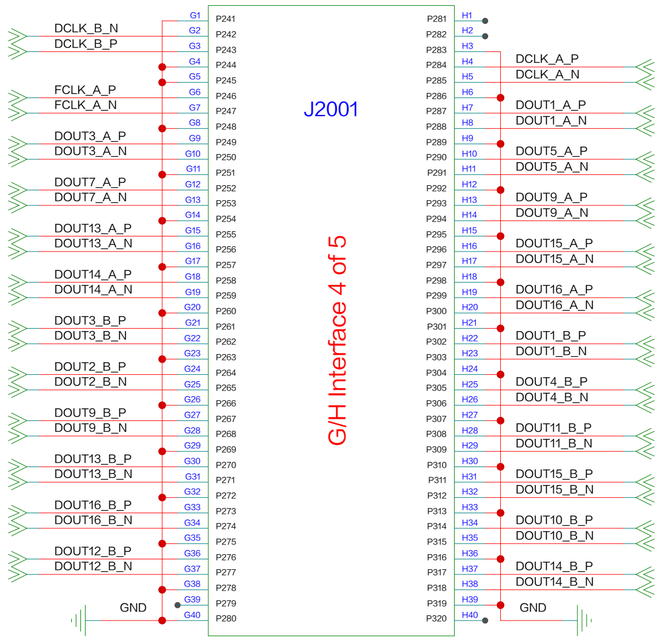
FMC_PART2

Compatible with LPC connectors



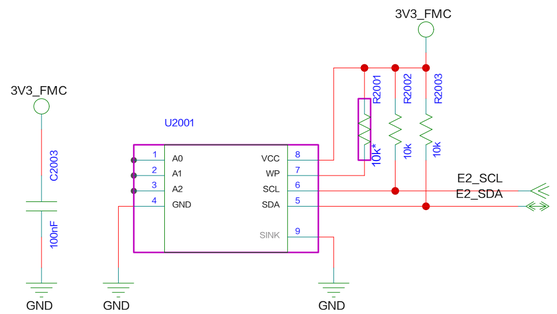
FMC_PART4

Compatible with LPC connectors



E2PROM

I2C Adress:0b1010000

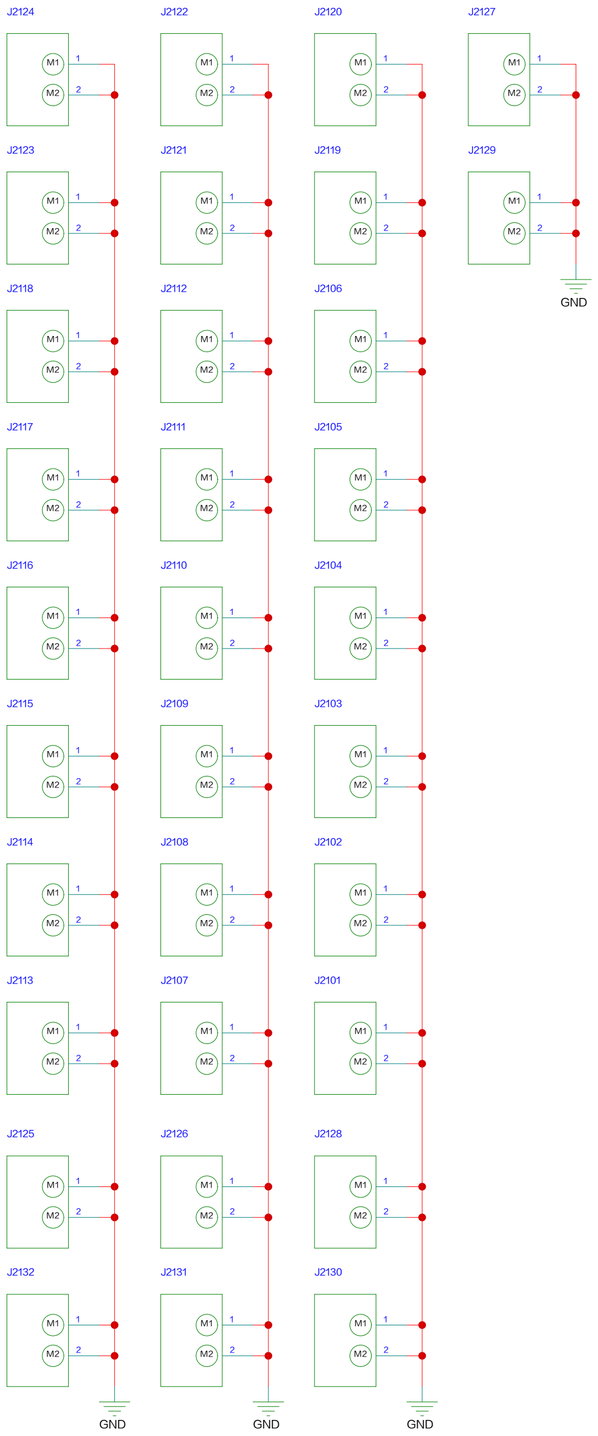


The type and specification of the components refer to the BOM

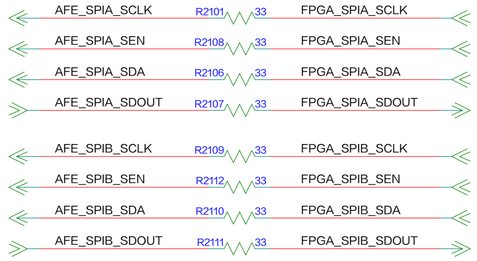
				NA	
				ECA NO	DATE
DESIGNED	ZHANGSANXXXXX	AC9810EVB64A		00001234	
REVIEWED	LISIXXXXX				
		VER	PART_NUMBER	SHEET 20 OF 23	
		A	03030001		

CONNECTOR

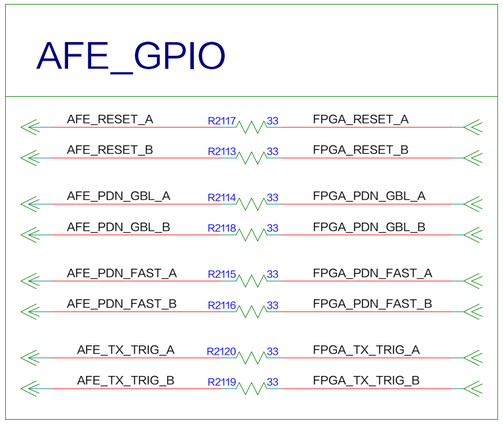
INPUT_CABLE_CLAMP



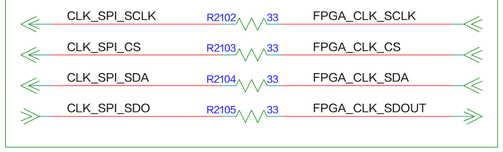
AFE_SPI



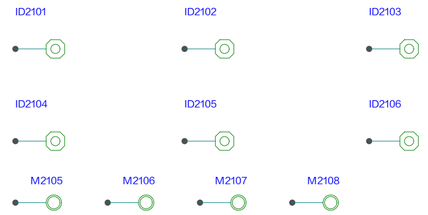
AFE_GPIO



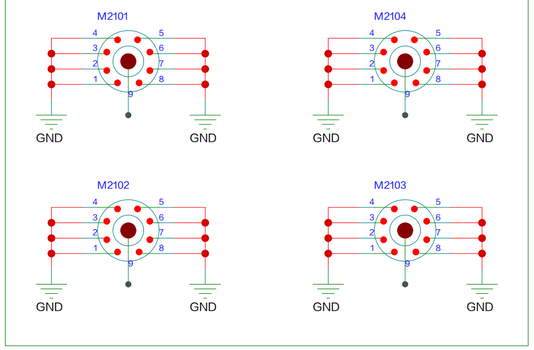
CLK_SPI



MARK_POINT



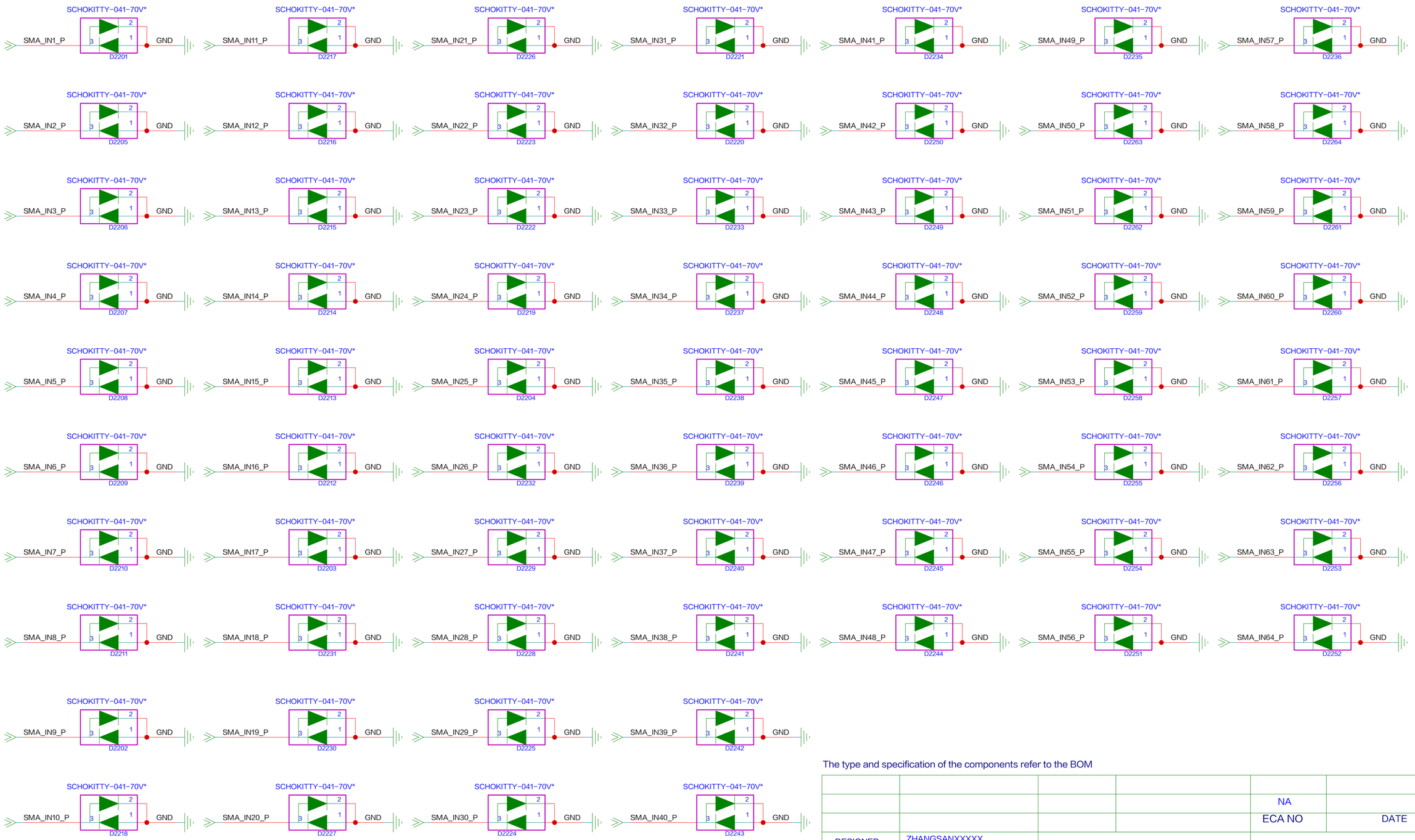
MOUNTING_HOLE



The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	ZHANGSANXXXXX	AC9810EVB64A		00001234	
REVIEWED	LISIXXXXX				
		VER	PART_NUMBER	SHEET 21 OF 23	
		A	03030001		

Input_diodes



The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	ZHANGSANXXXXX	AC9810EVB64A		00001234	
REVIEWED	LISIXXXXX				
		VER	PART_NUMBER	SHEET 22 OF 23	
		A	03030001		

Share_Pad_Selection

	PART	soldering		Clock Source	Logic Levels
ADC_CLK Select	A	R1405 R1407	C1404 C1403	CLK_SOURCE(default)	LVDS;LVPECL
		R1404 R1406	C1404 C1403	DIFF-Ext	DIFF
		NA	R1410 R1411	SINGLE-Ext	CMOS
	B	R1417 R1416	C1408 C1407	CLK_SOURCE(default)	LVDS;LVPECL
		R1414 R1415	C1408 C1407	DIFF-Ext	DIFF
		NA	R1412 R1413	SINGLE-Ext	CMOS

	PART	soldering		Clock Source	Logic Levels
CLK_16X Select	A	R1510 R1513	C1503 C1504	CLK_SOURCE(default)	LVDS;LVPECL
		R1511 R1512	C1503 C1504	DIFF-Ext	DIFF
		NA	R1515 R1516	SINGLE-Ext	CMOS
	B	R1505 R1508	C1501 C1502	CLK_SOURCE(default)	LVDS;LVPECL
		R1506 R1507	C1501 C1502	DIFF-Ext	DIFF
		NA	R1517 R1518	SINGLE-Ext	CMOS

	PART	soldering		Clock Source	Logic Levels
CLK_1X Select	A	R1529 R1532	C1507 C1508	CLK_SOURCE(default)	LVDS;LVPECL
		R1530 R1531	C1507 C1508	DIFF-Ext	DIFF
		NA	R1519 R1520	SINGLE-Ext	CMOS
	B	R1525 R1528	C1521 C1522	CLK_SOURCE(default)	LVDS;LVPECL
		R1526 R1527	C1521 C1522	DIFF-Ext	DIFF
		NA	R1521 R1522	SINGLE-Ext	CMOS

	PART	soldering	Clock Source	Logic Levels
SYSREF Select	A	R1602 R1603	CLK_SOURCE(default)	LVDS
		C1607 C1608	DIFF-Ext	DIFF
	B	R1615 R1616	CLK_SOURCE(default)	LVDS
		C1609 C1610	DIFF-Ext	DIFF

	PART	soldering	Clock Source	Logic Levels
SYNC Select	A	R1612 R1613	FPGA(default)	LVDS
		R1610 R1611	DIFF-Ext	DIFF
	B	R1607 R1608	FPGA(default)	LVDS
		R1605 R1606	DIFF-Ext	DIFF

The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	ZHANGSANXXXXX	AC9810EVB64A		00001234	
REVIEWED	LISIXXXXX				
		VER	PART_NUMBER	SHEET 23 OF 23	
		A	03030001		