

Hi3798MDMO1F

VER_C_V1.0.0.0

Hi3798MV100 DEMO Board(QFP216)

2 layers PCB with 2 DDR3 16bit

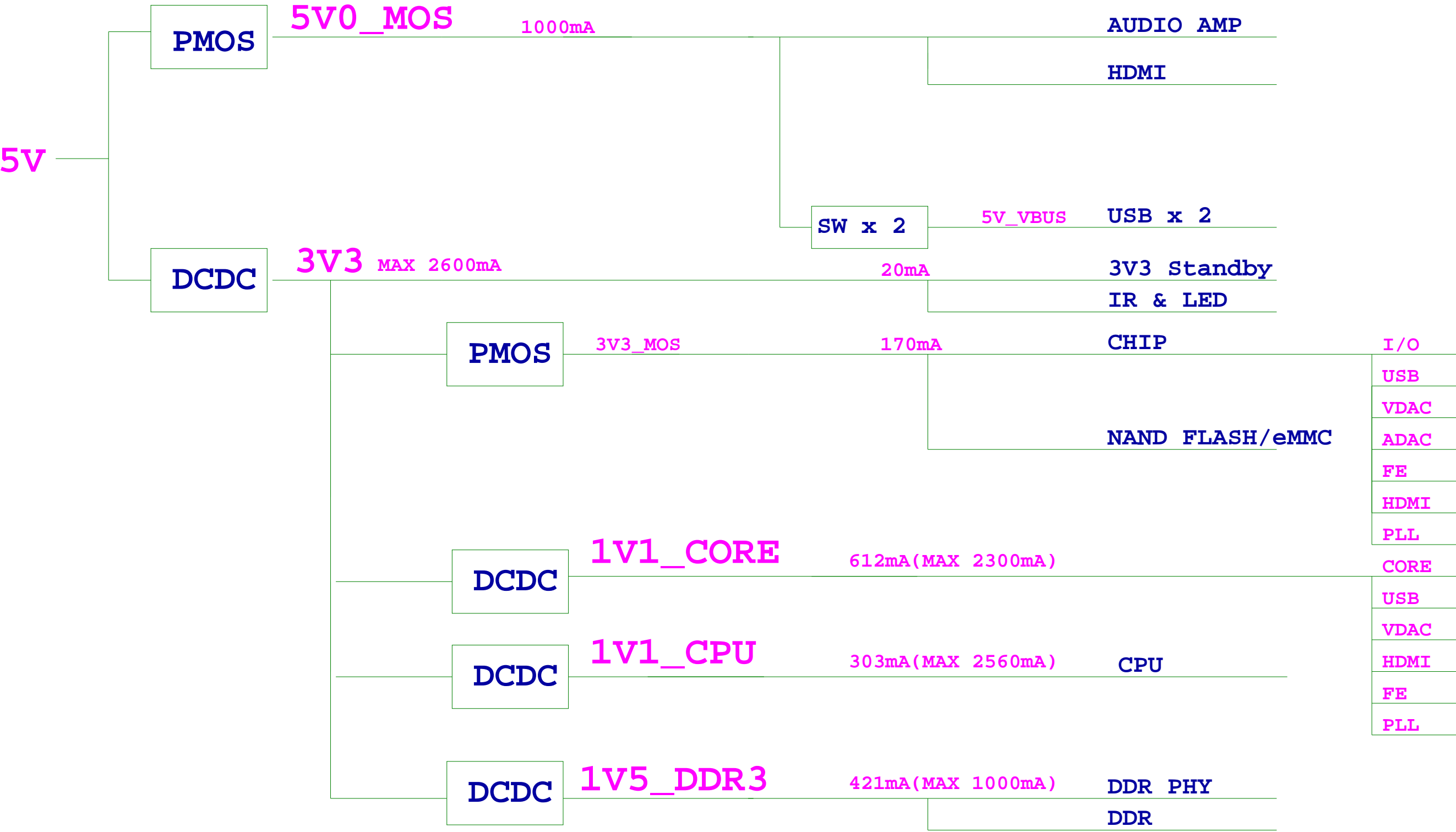
Board Size:130mm x 83mm x 1.6mm

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The type and specification of the components refer to the BOM

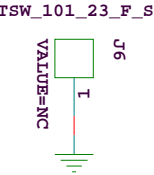
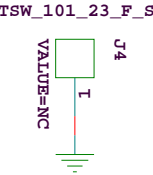
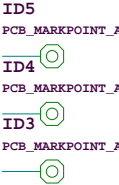
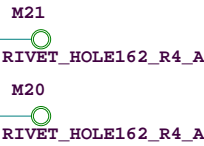
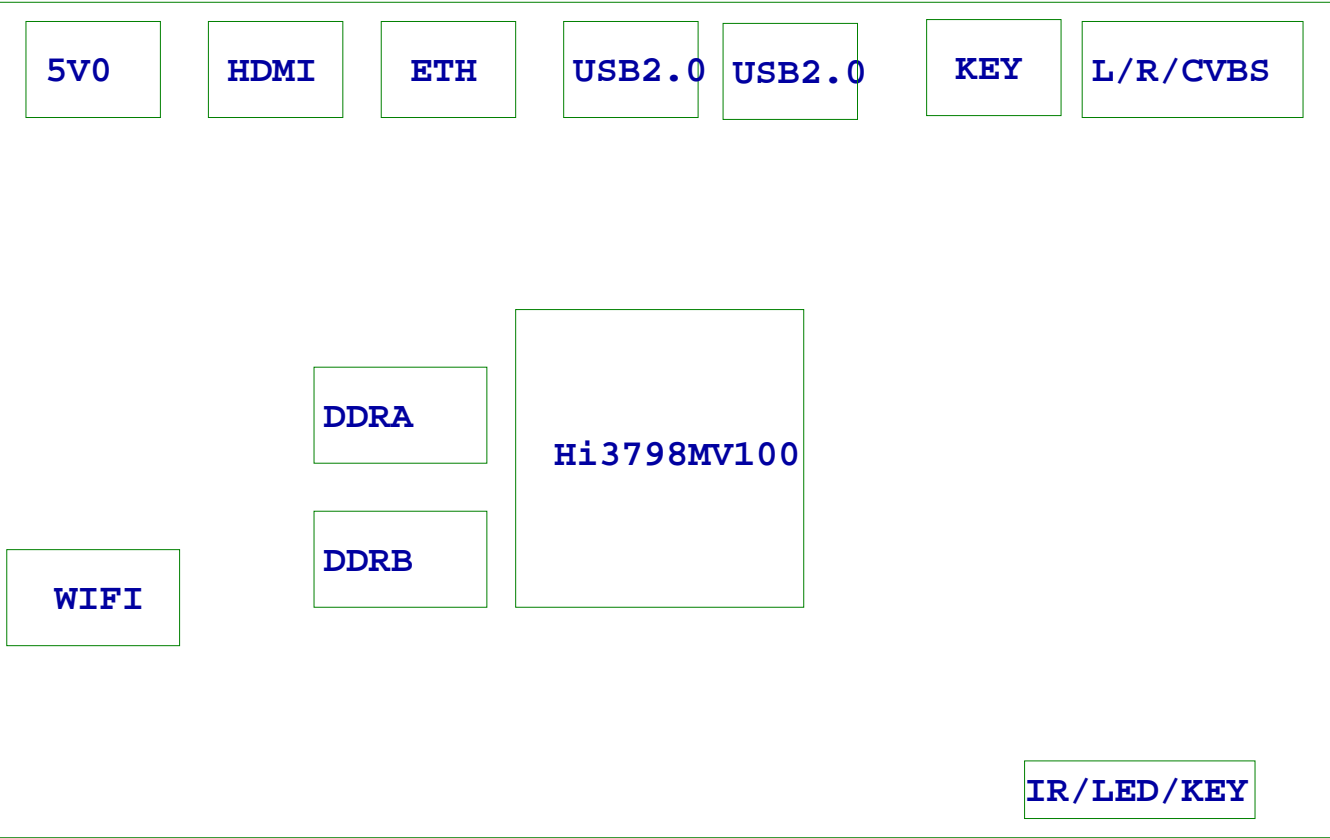
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				ECA NO	DATE
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REVIEWED	CHENYUZHU 149603				
		VER	PART_NUMBER	SHEET 1 OF 18	
		A	03030001	HUAWEI TECH CO.,LTD.	

Power Tree



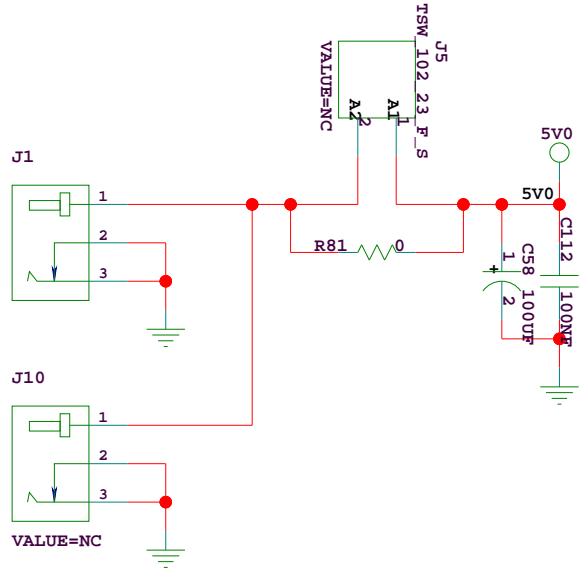
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REVIEWED	CHENYUZHU 149603				
		VER	PART_NUMBER	SHEET 2 OF 18	
		A	03030001	HUAWEI TECH CO.,LTD.	

Block Diagram

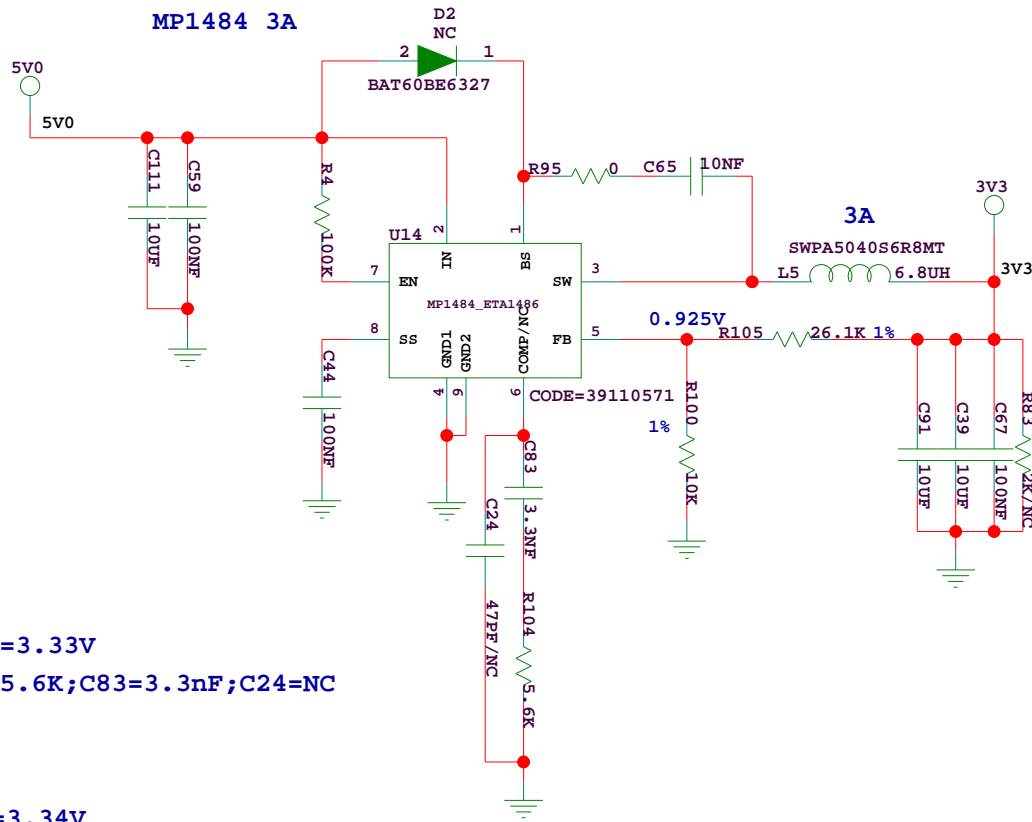


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5V PLUG-IN



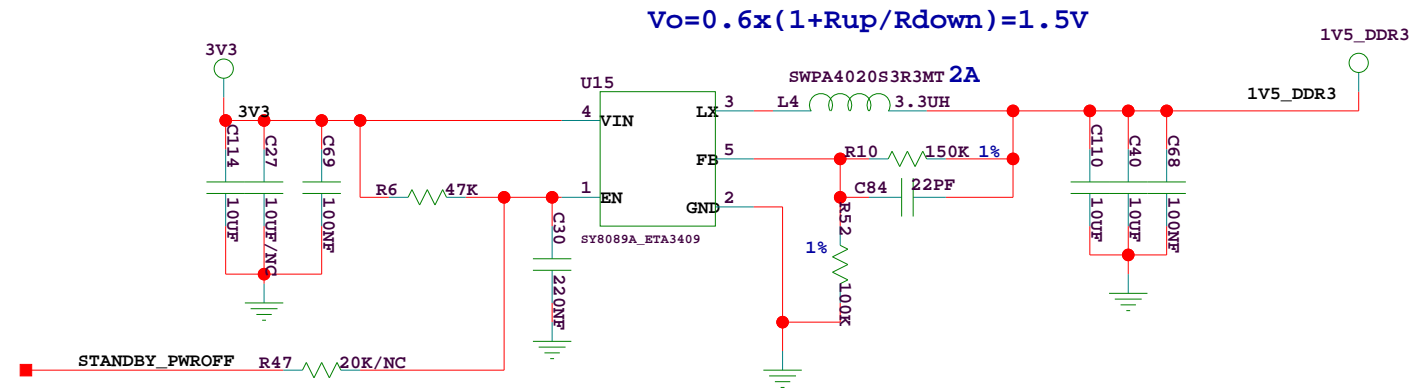
3.3V POWER



ETA1486 4A
VOUT=0.923*(1+26.1K/10K)=3.33V
C44=100nF;C65=10nF;R104=5.6K;C83=3.3nF;C24=NC
R105=26.1K;R100=10K

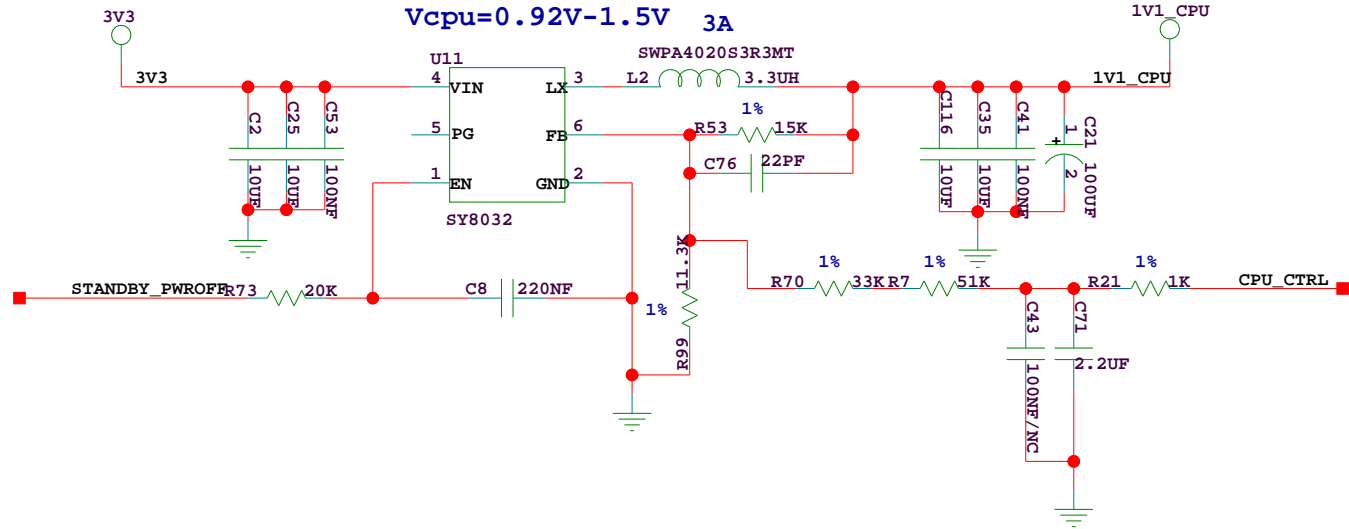
MP1484 3A
VOUT=0.925*(1+26.1K/10K)=3.34V
C44=100nF;C65=10nF;R104=5.6K;C83=3.3nF;C24=NC;R105=26.1K;R100=10K

DDR POWER

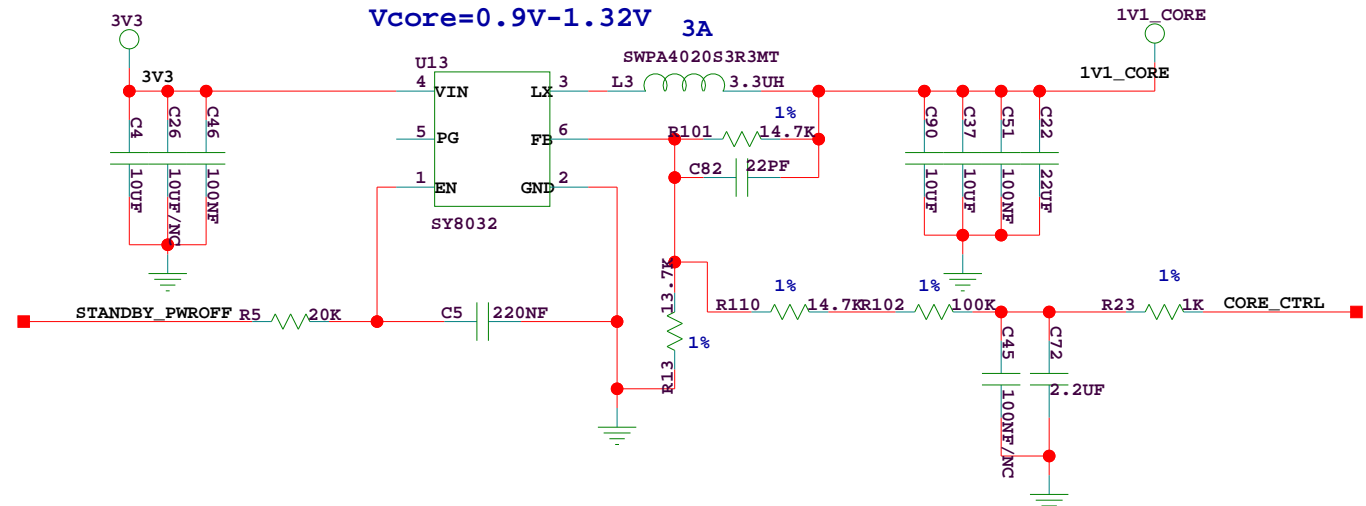


$$V_o = 0.6 \times (1 + R_{up}/R_{down}) = 1.5V$$

CPU POWER



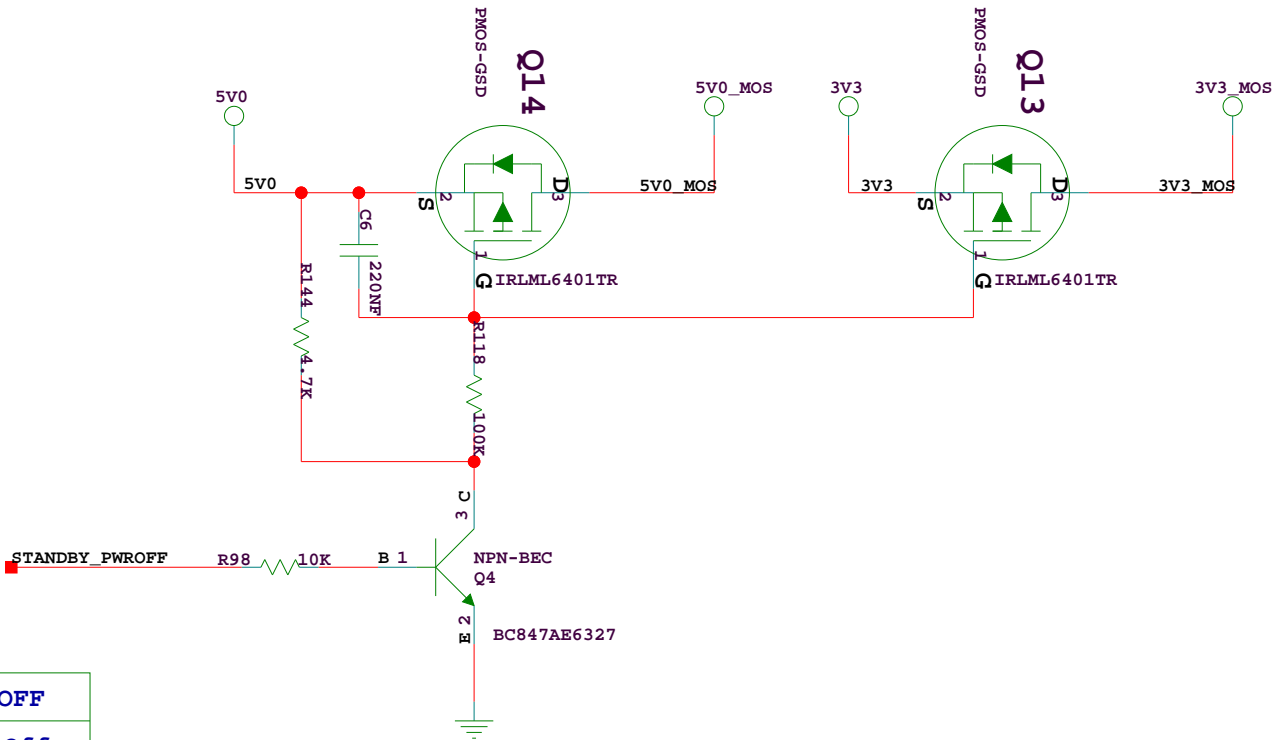
CORE POWER



The type and specification of the components refer to the BOM

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Power Ctrl



STANDBY_PWROFF	
0	Power Off
1	Power On

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A



C

D

- | | | |
|-------------------------------|----|---------------|
| BOOT_DEVICE_SEL BOOT_SEL[1:0] | | |
| BOOT_SEL1 | PD | 11:eMMC |
| BOOT_SEL0 | PU | 01:NAND Flash |
| | | 10:fSD |

The type and specification of the components refer to the BOM

A

B

2

D

Unit 2 of Hi3798MV100(USB/VDAC/HDMI TX/UART/SPDIF/ADAC/LED/IR)

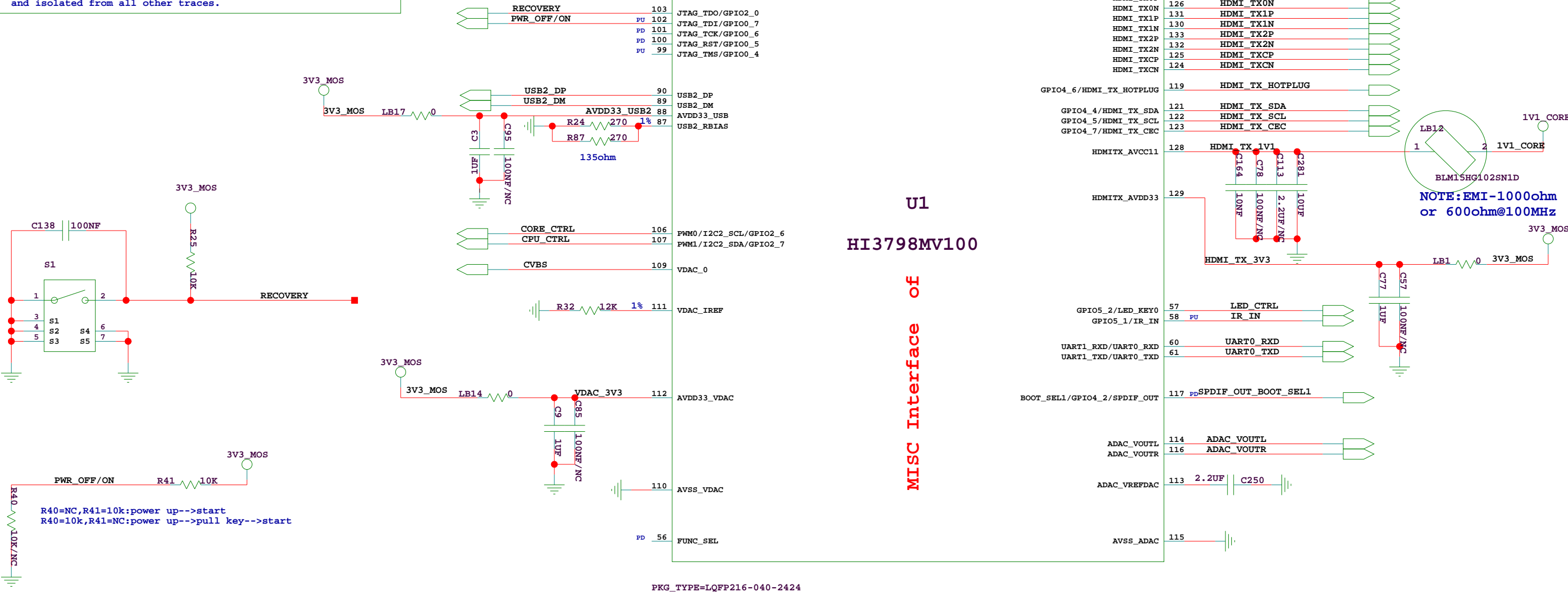
** Audio & Video Design guideline **

A.VIDEO

- 1.VIDEO REXT resistor should be 12K +/-1% precision.
- 2.REXT/COMP should be traced as short as possible, and isolated from all other traces.

B.AUDIO

- 1.VREF should be traced as short as possible, and isolated from all other traces.



** USB Design guideline **

A.routing

- 1.Route as 90 Ohm differential impedance.
- 2.Differential pairs should be routed on TOP layer only.
- 3.Differential pairs should be separated from other traces by GND .

B.trace length

- 1.The length for the differential pairs should be less than 5 inches.
- 2.Match trace length of DP and DM differential pairs, 10 mils max within a pair.

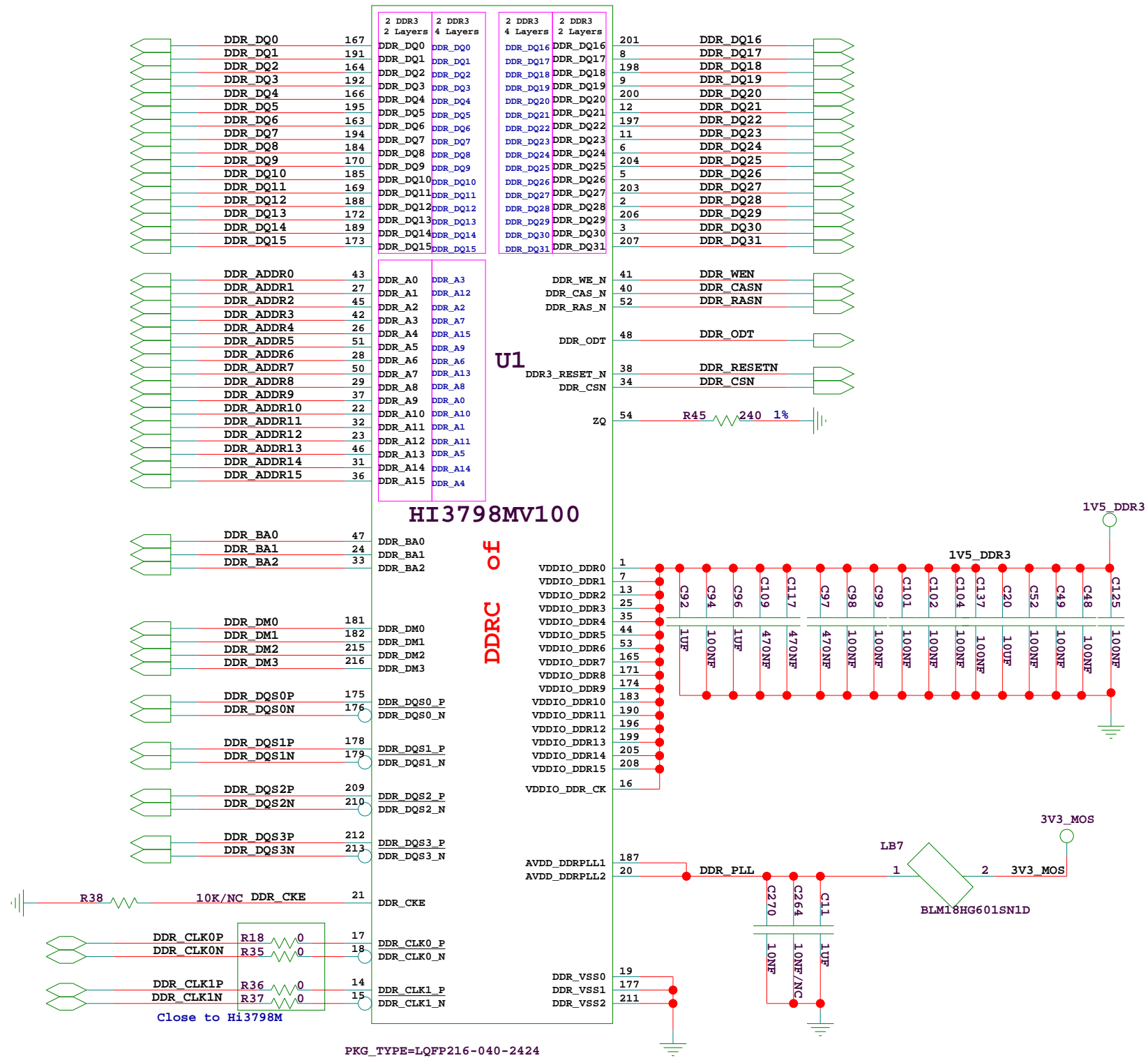
C.component selection

- 1.USB2.0 REXT resistor should be 135 ohm +/-1% and USB3.0 200 ohm +/-1%.
- 2.ESD components are suggested for ports protection.
- 3.Equivalent capacitance of ESD component should be < 1.5pF.

The type and specification of the components refer to the BOM

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Unit 3 of Hi3798MV100(DDR)



** DDR Design guideline **

A.general suggestion

- 1.Hi3798MV100 supports up to 2GB DDR3.
- 2.DDR chip and DDR controller both need at least one 10uF decoupling ceramic capacitor.
- 3.The circuit of DDR_VREF_CA and DDR_VREF_DQ must be independent
4. 3V3 DDRPLL is needed.

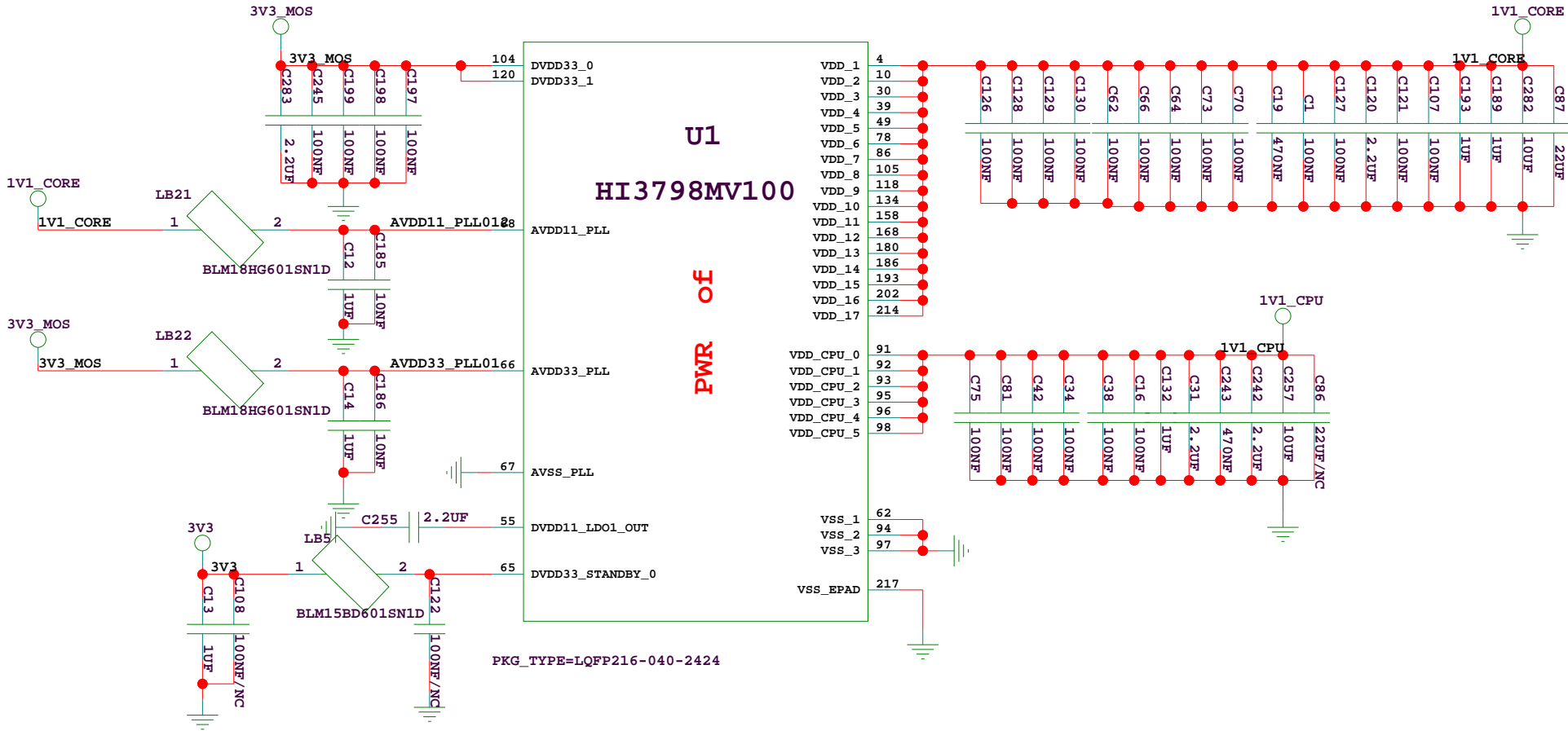
B.Layout suggestion

1. Please copy hisilicon demo board completely

The type and specification of the components refer to the BOM

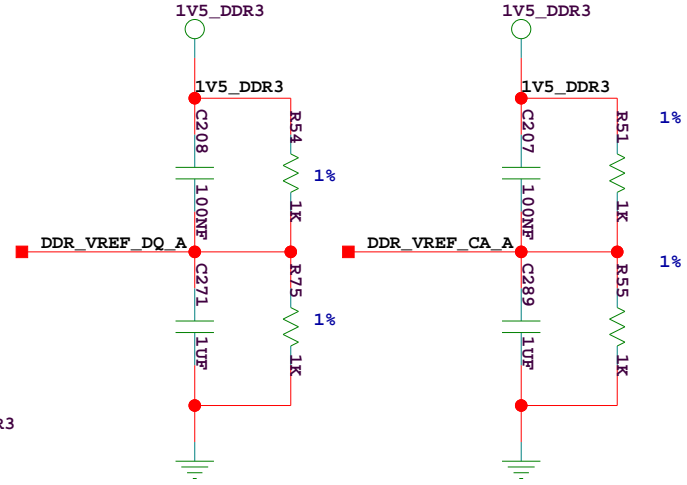
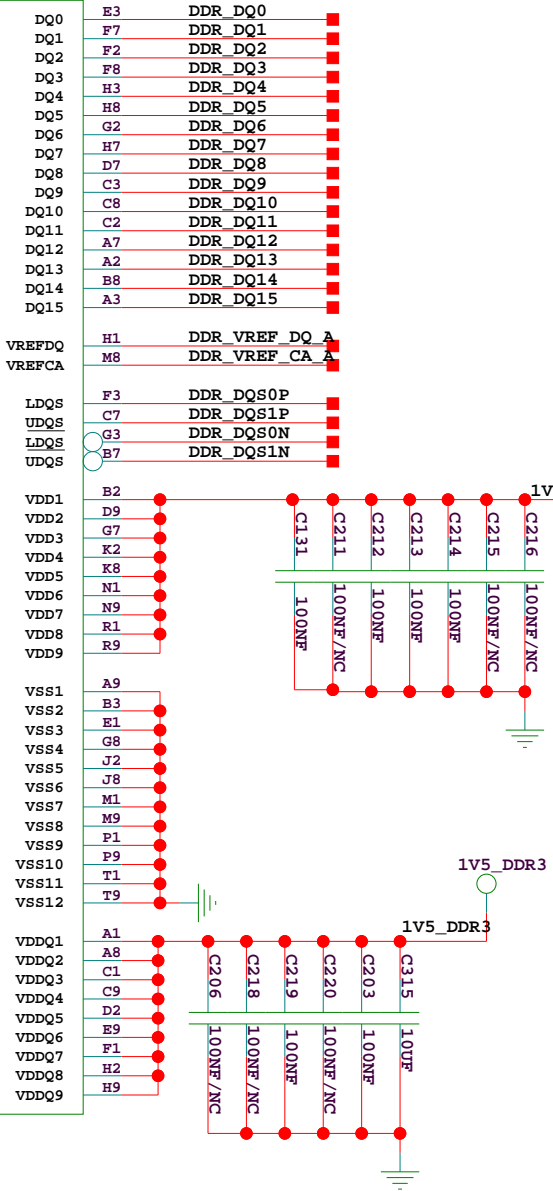
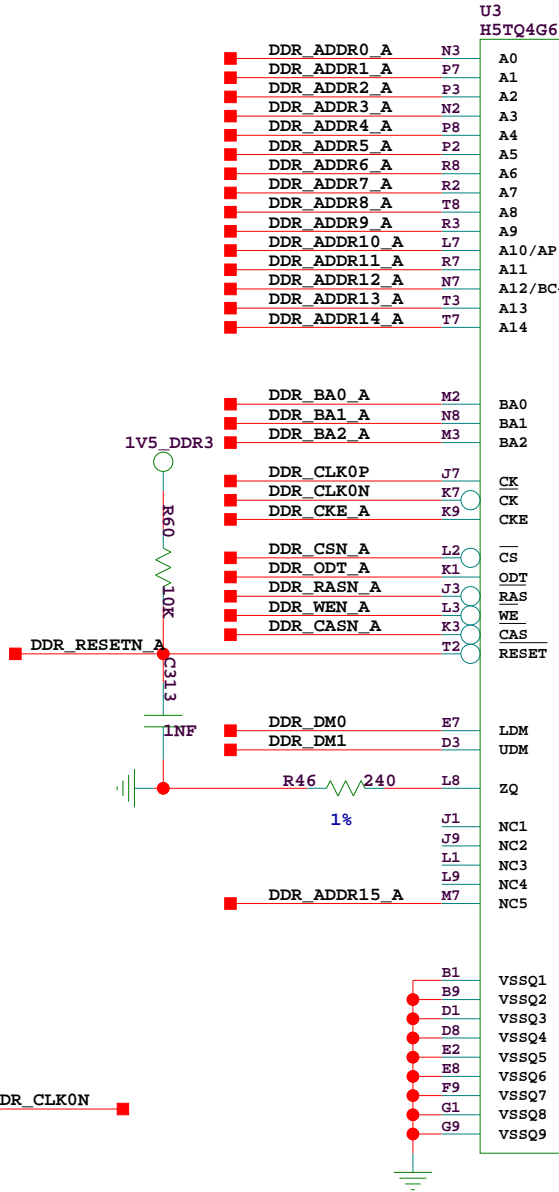
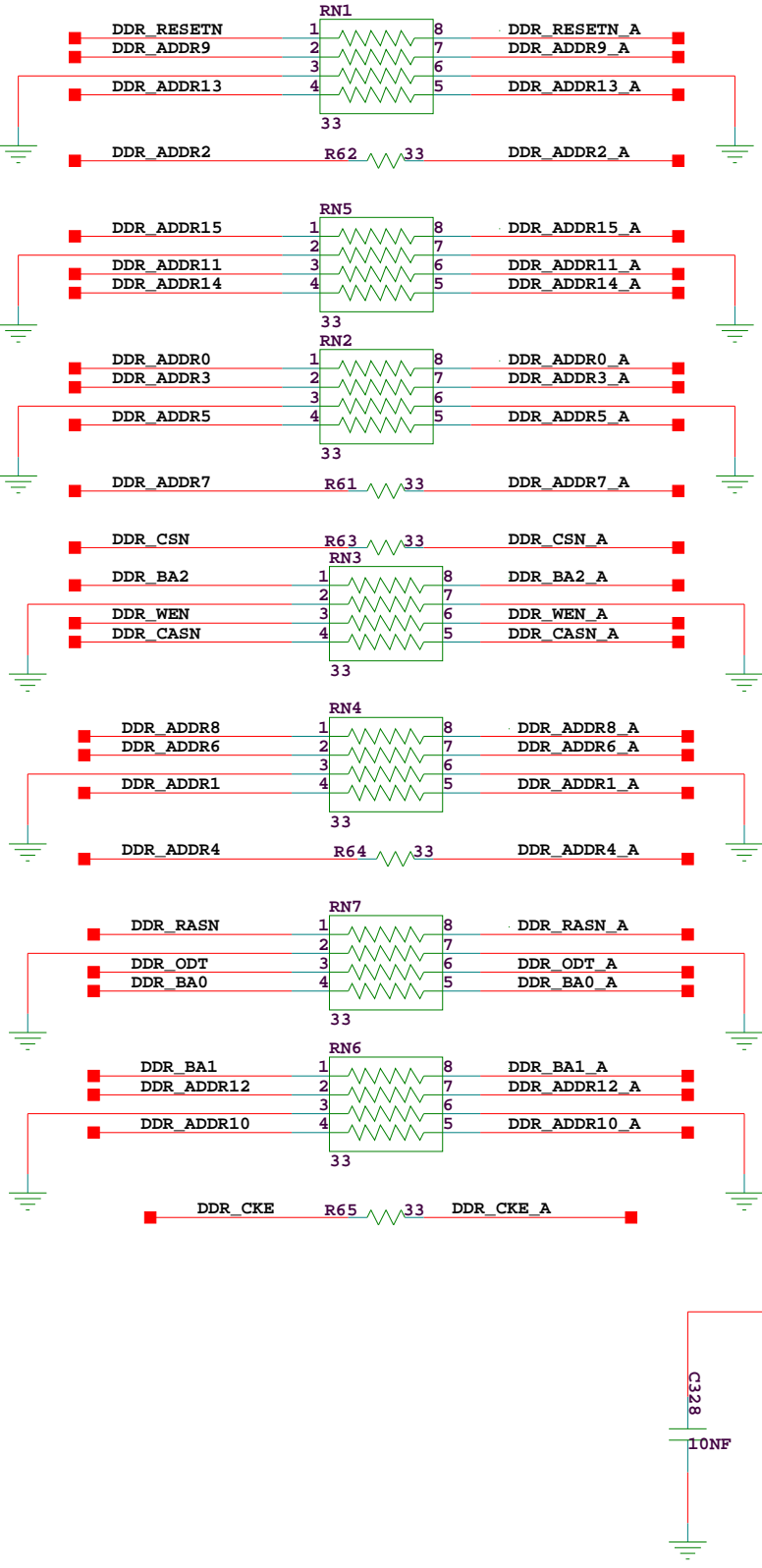
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		VER	PART_NUMBER	SHEET 8 OF 18	
		A	03030001	HUAWEI TECH CO.,LTD.	

Unit 4 of Hi3798MV100(POWER)



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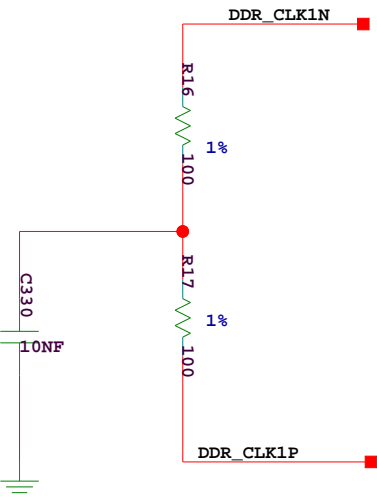
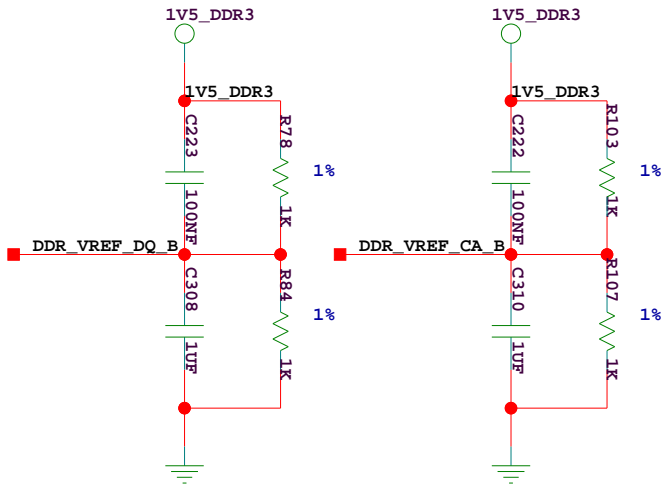
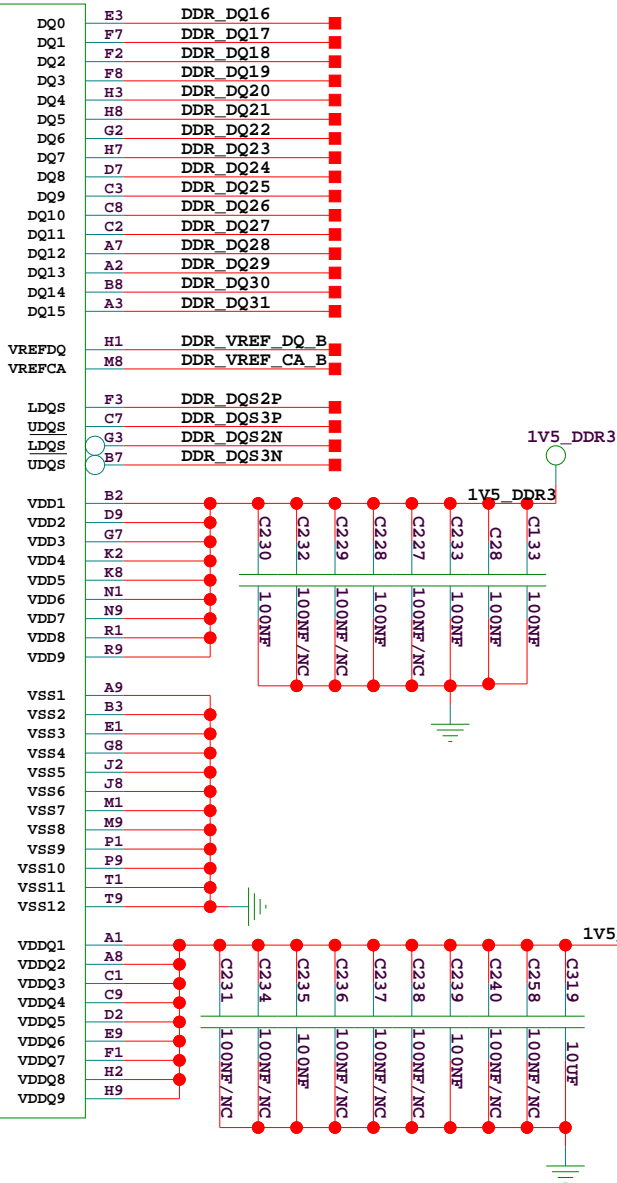
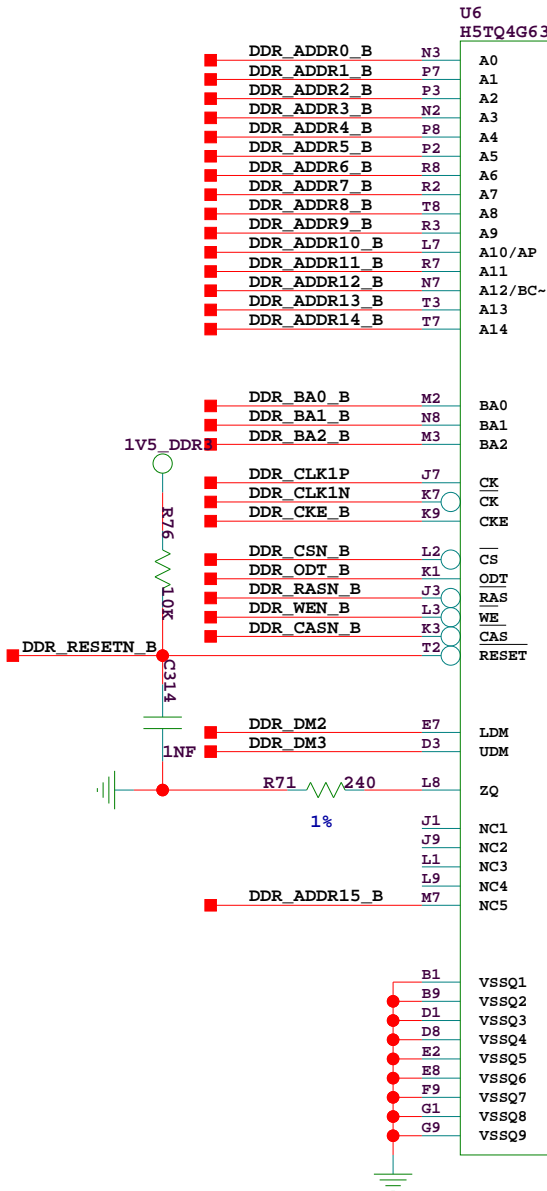
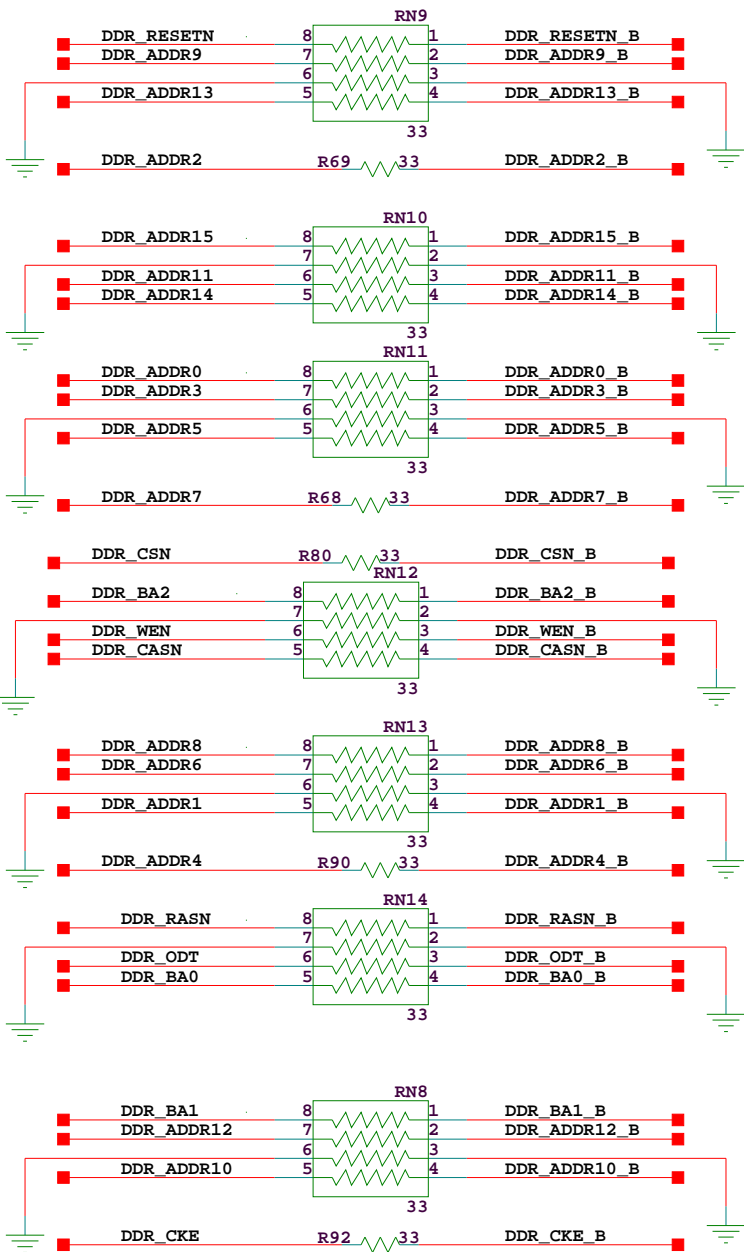
DDRA



The type and specification of the components refer to the BOM

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		VER	PART_NUMBER	SHEET 10 OF 18	
		A	03030001	HUAWEI TECH CO.,LTD.	

DDRB

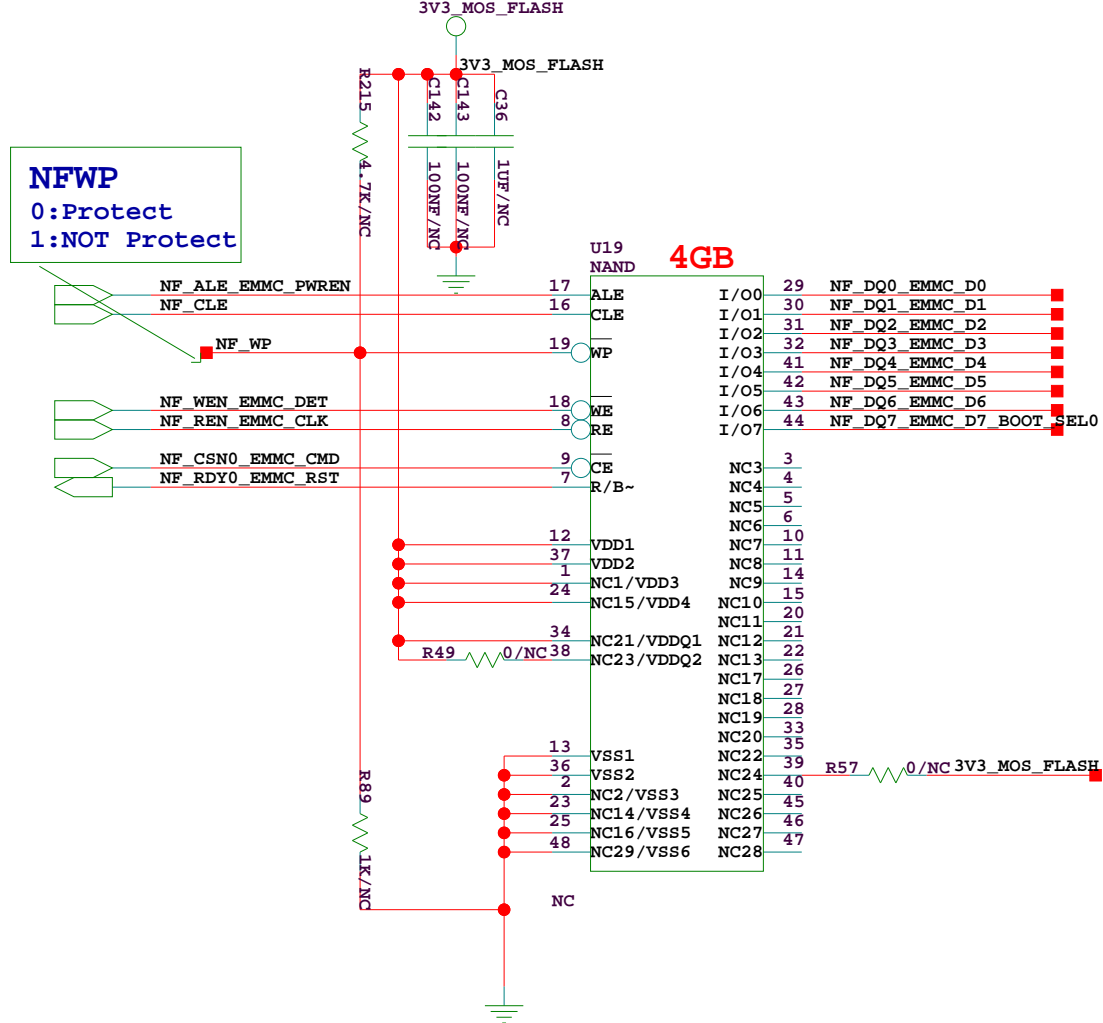


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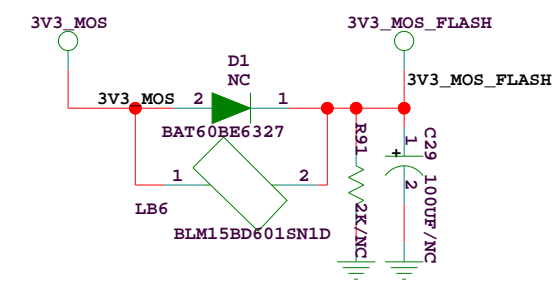
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		VER	PART_NUMBER	SHEET 11 OF 18	
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NAND FLASH/EMMC

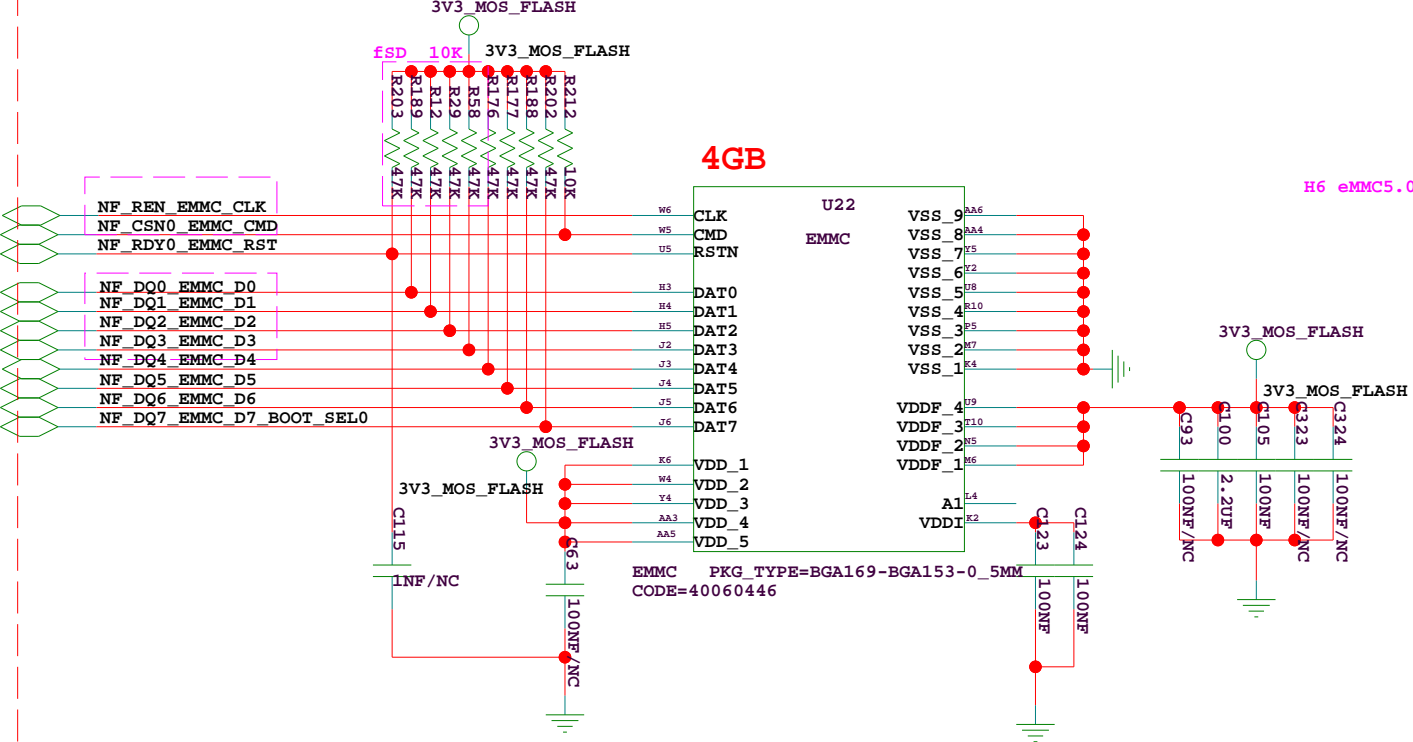
NAND FLASH/tSD



Pay attention to pin38&pin39,these pins are NC for the MLC NAND of some brands(such as Micron),but it should be connected to the VCC of others(such as Toshiba and Hynix). Pls refer to the corresponding datasheet for detail.



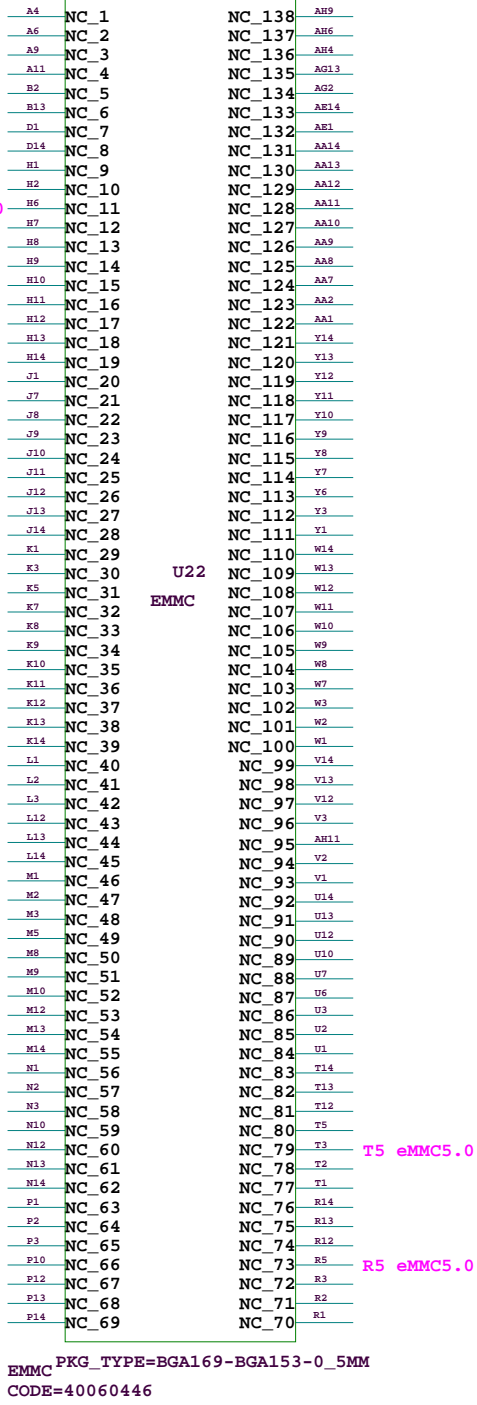
eMMC/fSD



NAND FLASH
C142=C143=100nF,C36=1uF,R215=4.7K,R57=0,C29=100uF,D1=diode,U19=nand others=NC,If use Micron nand flash,R57=NC

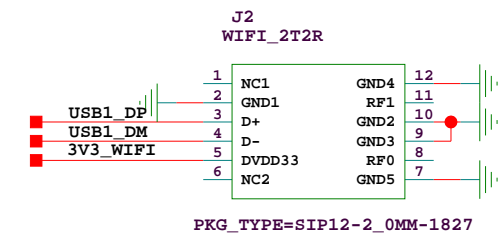
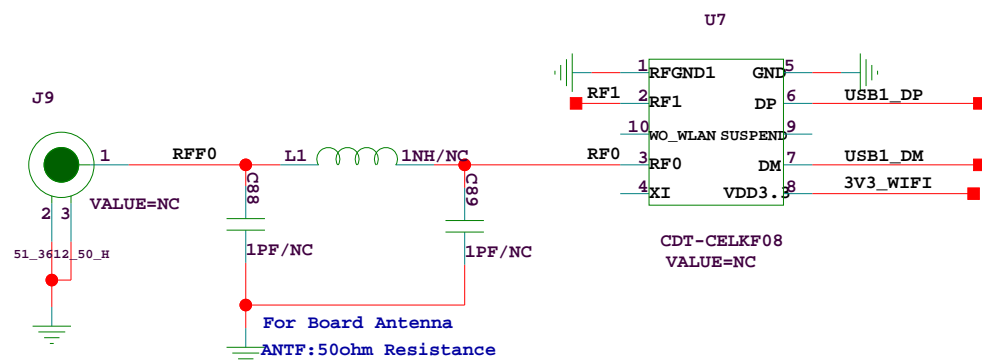
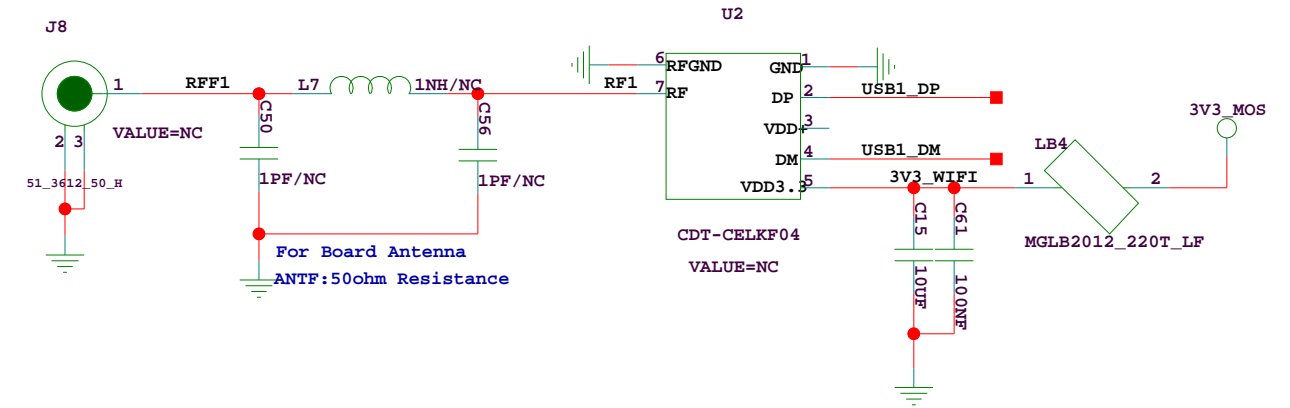
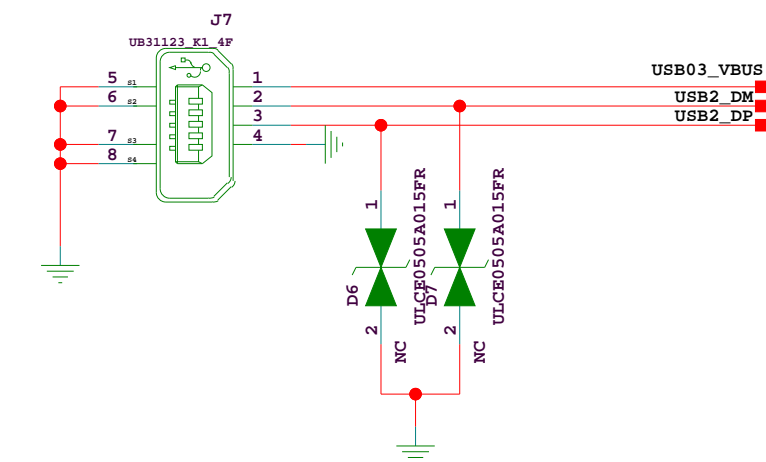
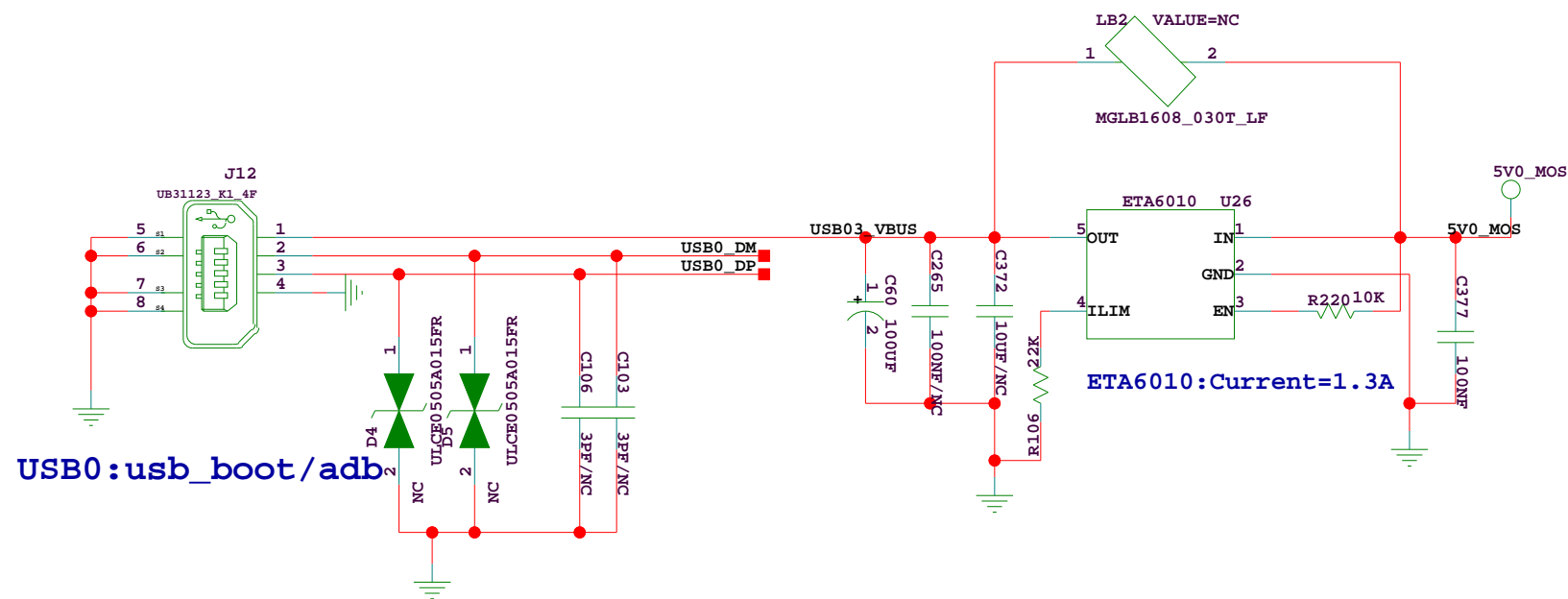
eMMC
C63=C123=C124=C93=C105=C323=C324=100nF,C100=2.2uF ,R203=R189=R12=R29=R58=R176=R177=R188=R202=47K,R212=10K,R86=0,U22=eMMC,others=NC

fSD
C63=C123=C124=C93=C105=C323=C324=100nF,C100=2.2uF ,R203=R189=R12=R29=R58=R212=10K,R86=0,U22=fSD,others=NC



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		ECA NO		DATE	
DESIGNED	TIANSHOU 00171014	HI3798MDM01F_VERC		00001234	
REVIEWED	CHENYUZHU 149603				
		VER	PART_NUMBER	SHEET 12 OF 18	
		A	03030001	HUAWEI TECH CO.,LTD.	

A



The type and specification of the components refer to the BOM

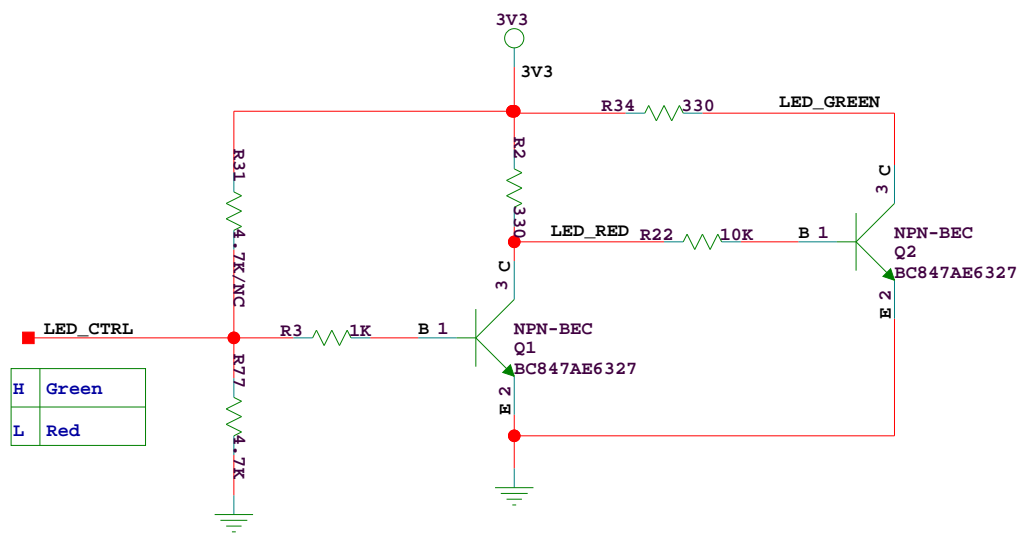
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		A	03030001	HUAWEI TECH CO.,LTD.	

D

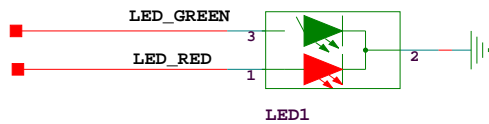
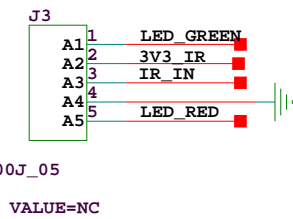
D

LED/IR

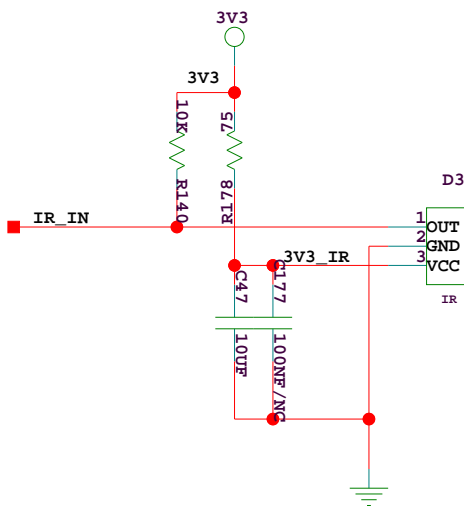
LED



H	Green
L	Red



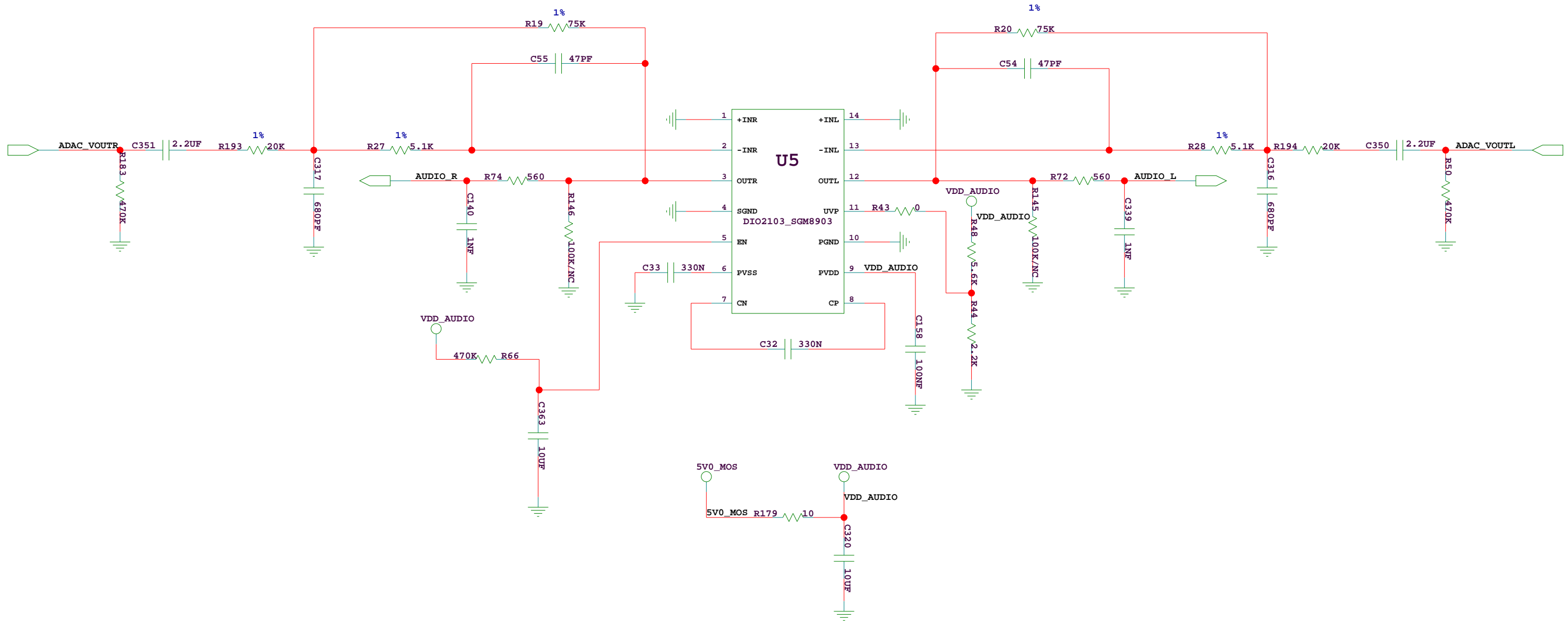
IR



The type and specification of the components refer to the BOM

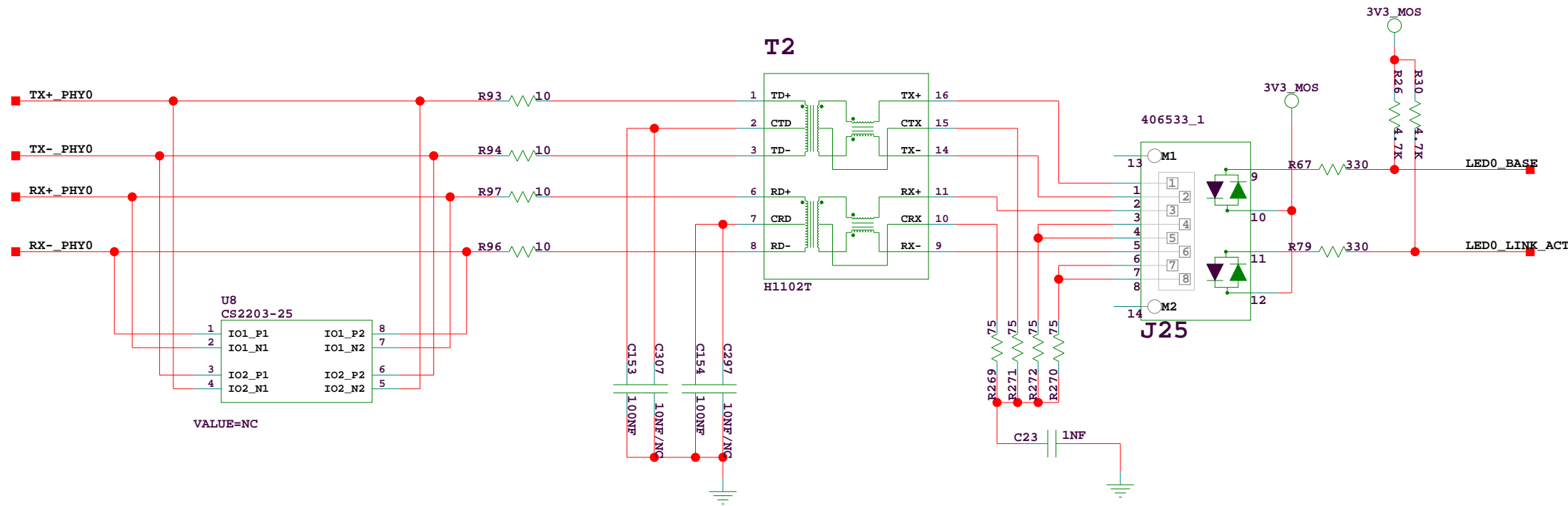
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		VER	PART_NUMBER	SHEET 14 OF 18	
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Audio Output



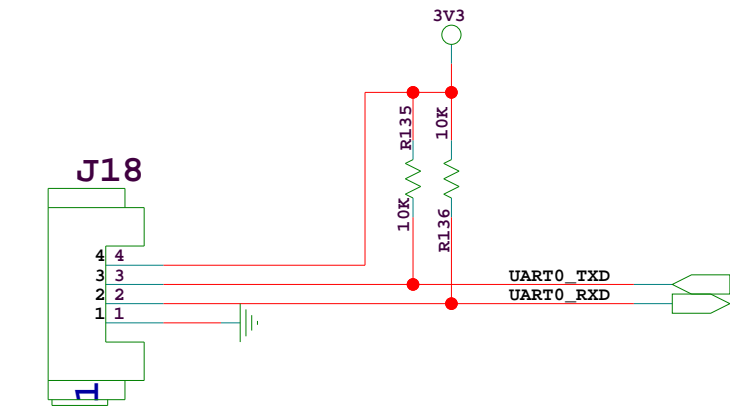
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REVIEWED	CHENYUZHU 149603				
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FE PHY/UART



Put C153 and C154 close to T2

UART

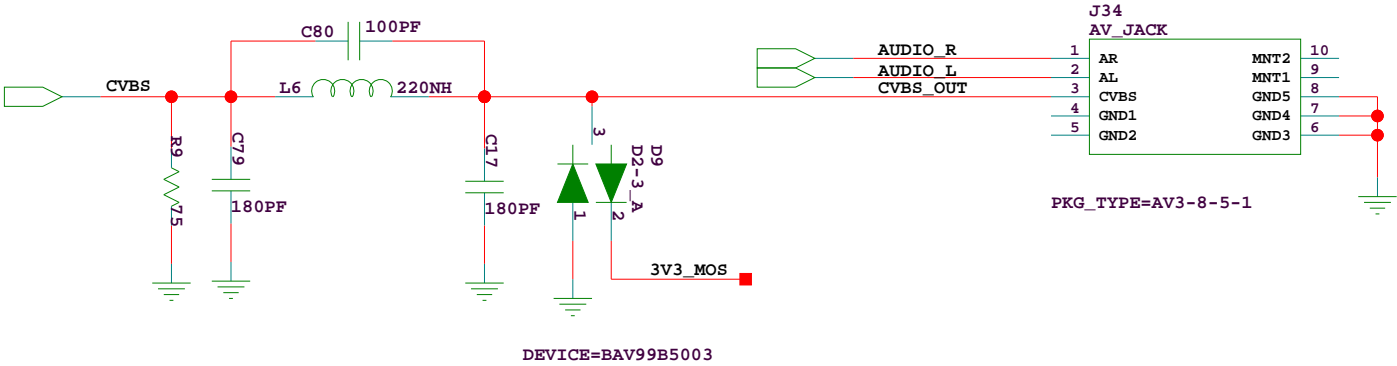


SDW12501_4A_HW

The type and specification of the components refer to the BOM

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VDAC OUTPUT



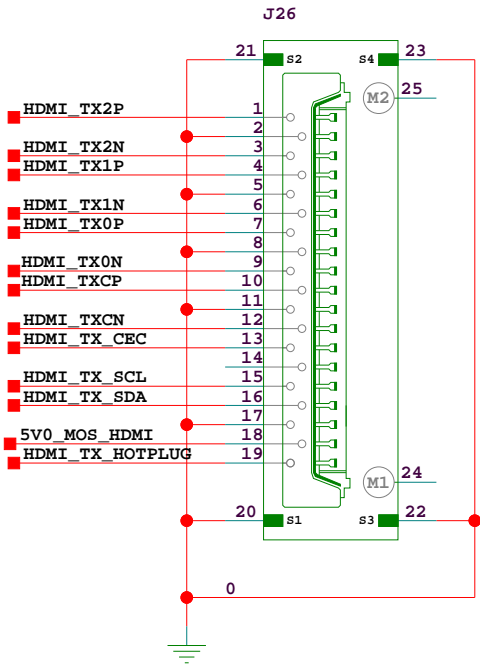
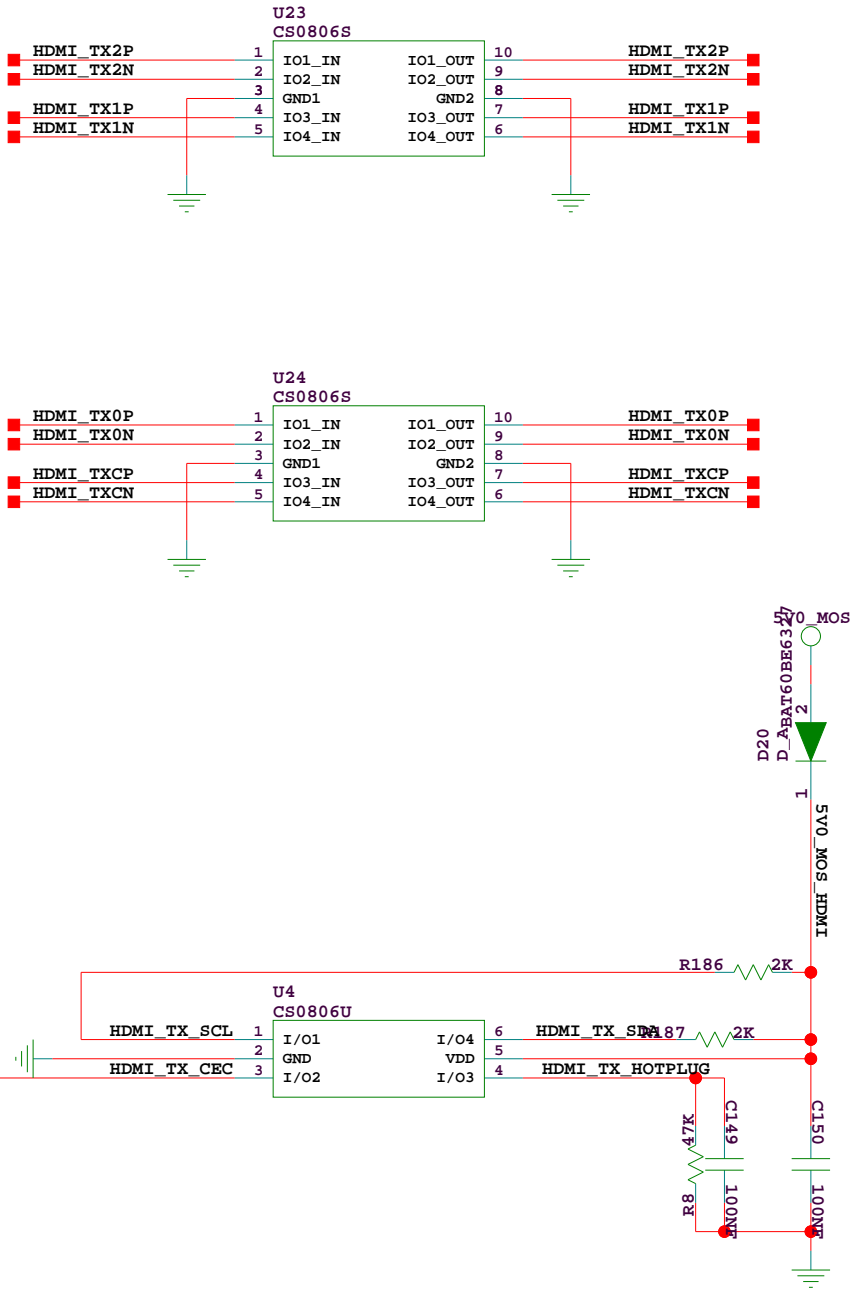
** Design guideline **

- 1.All channel traces should be separated from other traces by GND.
- 2.ESD components are suggested for ports protection, default BAV99.

The type and specification of the components refer to the BOM

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				ECA NO	DATE
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HDMI TX



** HDMI Design guideline **

A.routing

- 1.Route as 100 Ohm differential impedance.
- 2.Differential pairs should be routed on TOP layer only.
- 3.Differential pairs should be separated from other traces by GND .

B.trace length

- 1.The length for the differential pairs should be less than 5 inches.
- 2.Match trace length of differential pairs, 5 mils max within a pair.

C.component selection

- 1.ESD components are suggested for ports protection.
- 2.All equivalent capacitance of ESD components should be < 0.8pF.

The type and specification of the components refer to the BOM

				NA	2013.1.4
				ECA NO	DATE
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