

Hi3798MDMO1D

VER_E_V1.0.0.0

Hi3798MV100 DEMO Board

4 layers PCB with 4 DDR3 16bit

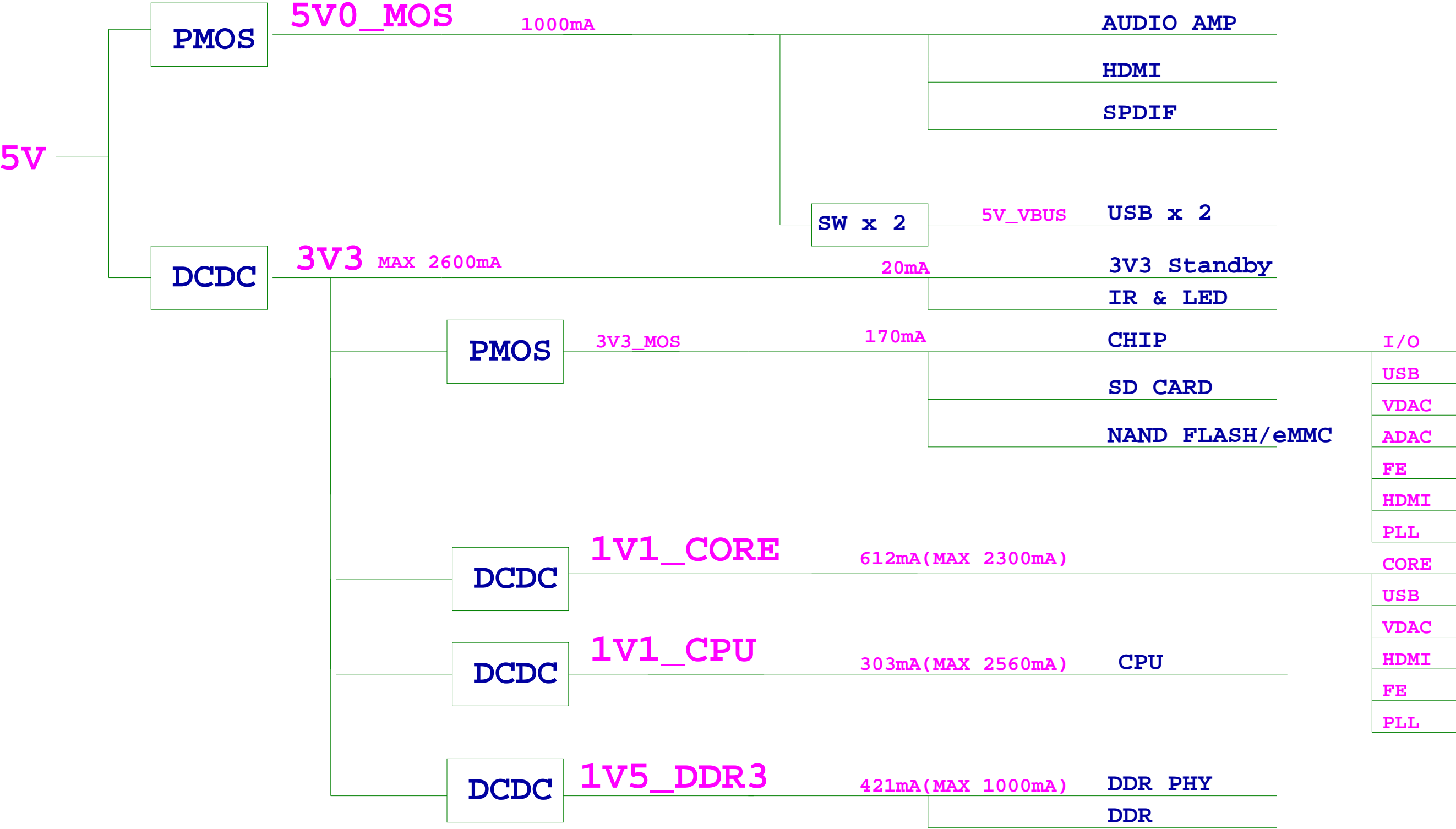
Board Size:86mm x 88mm x 1.6mm

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The type and specification of the components refer to the BOM

				NA	2013-07-04
				ECA NO	DATE
DESIGNED	TIANSHOU 00171014	HI3798MDMO1D_VERE		00001234	
REVIEWED	CHENYUZHU 00149603				
		VER	PART_NUMBER	SHEET 1 OF 19	
		A	03030001	HUAWEI TECH CO.,LTD.	

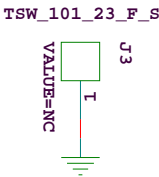
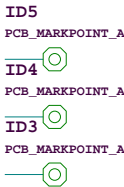
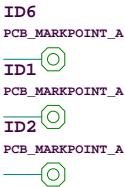
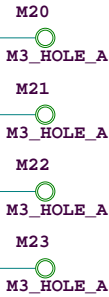
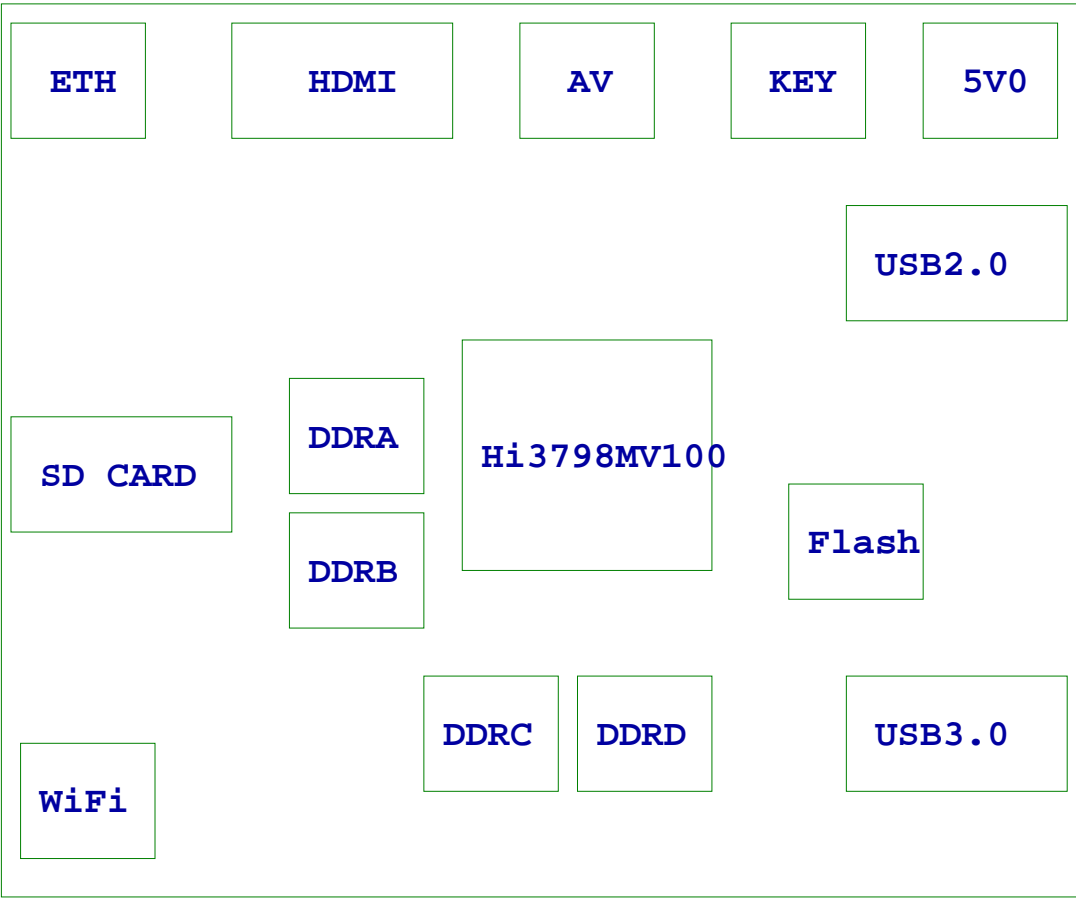
Power Tree



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				NA	2013-07-04
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REVIEWED	CHENYUZHU 00149603				
		VER	PART_NUMBER	SHEET 2 OF 19	
		A	03030001	HUAWEI TECH CO.,LTD.	

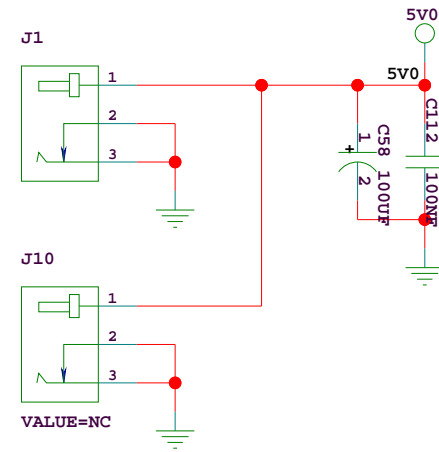
Block Diagram



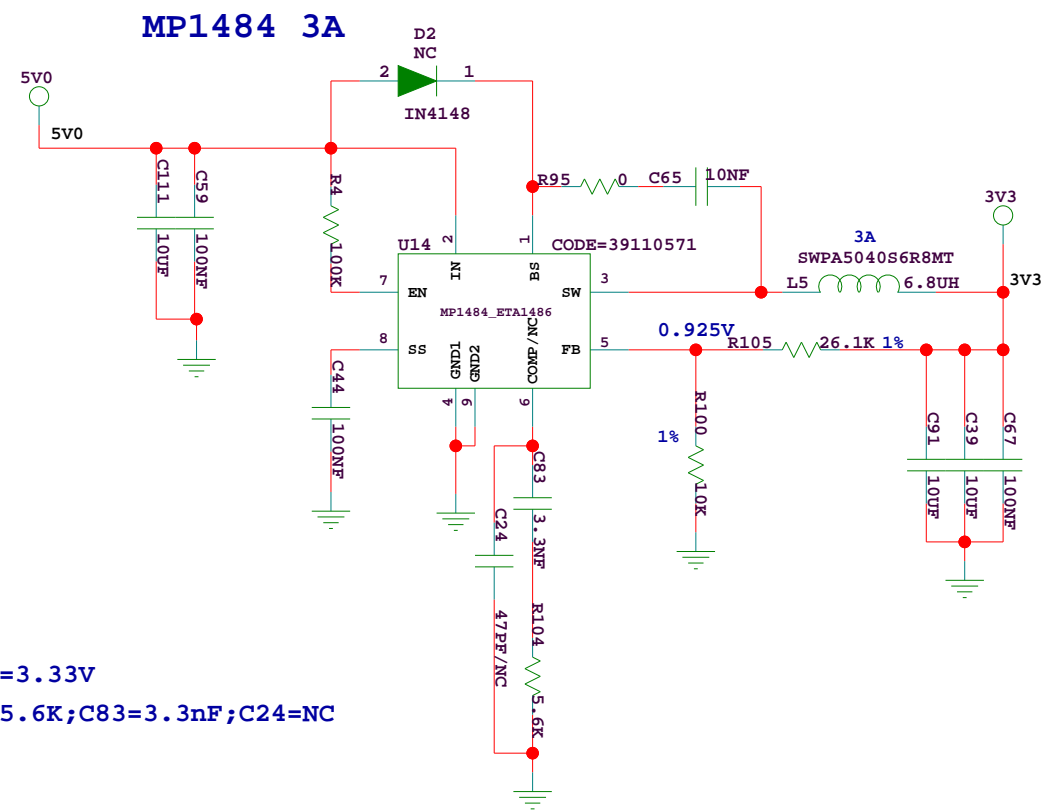
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REVIEWED	CHENYUZHU 00149603				
		VER	PART_NUMBER	SHEET 3 OF 19	
		A	03030001	HUAWEI TECH CO.,LTD.	

5V PLUG-IN



3.3V POWER



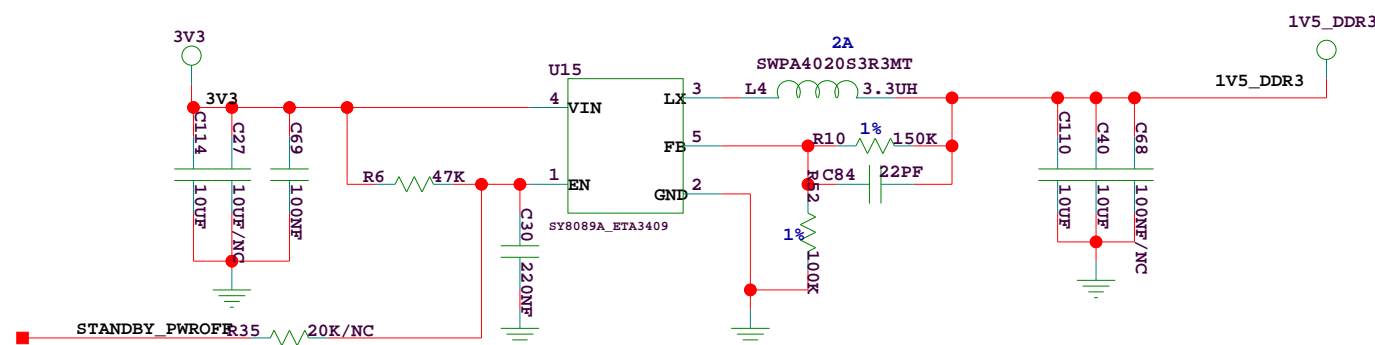
ETA1486 4A
 $V_{OUT} = 0.923 \times (1 + 26.1K/10K) = 3.33V$
 C44=100nF;C65=10nF;R104=5.6K;C83=3.3nF;C24=NC
 R105=26.1K;R100=10K

MP1484 3A
 $V_{OUT} = 0.925 * (1 + 26.1K / 10K) = 3.34V$

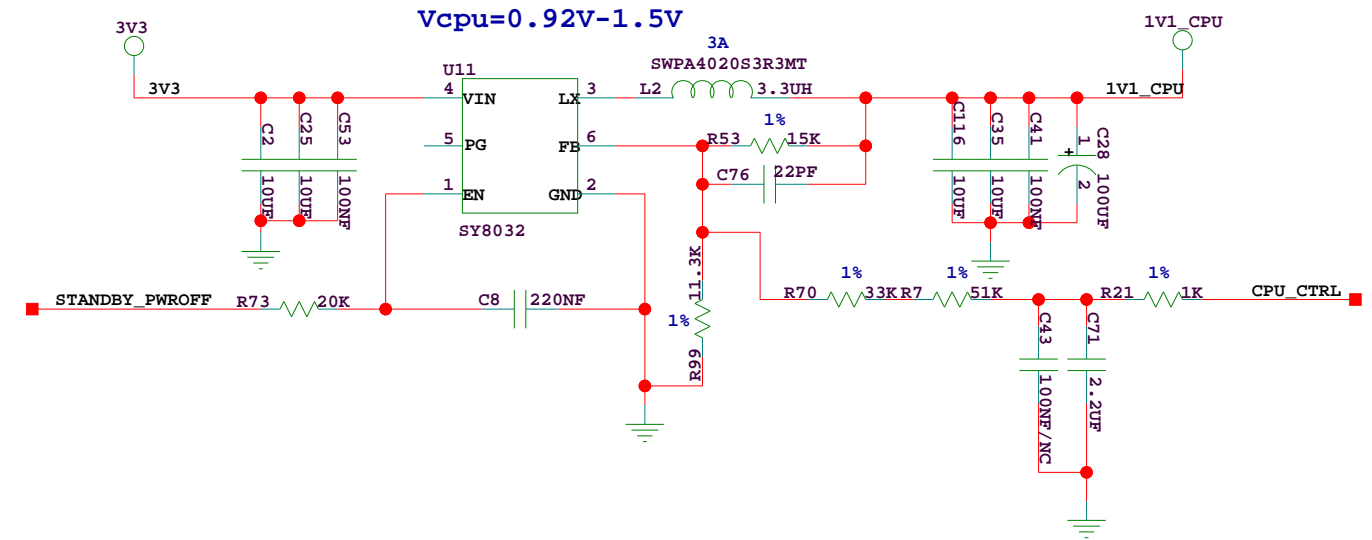
C44=100nF;C65=10nF;R104=5.6K;C83=3.3nF;C24=NC;R105=26.1K;R100=10K

DDR POWER

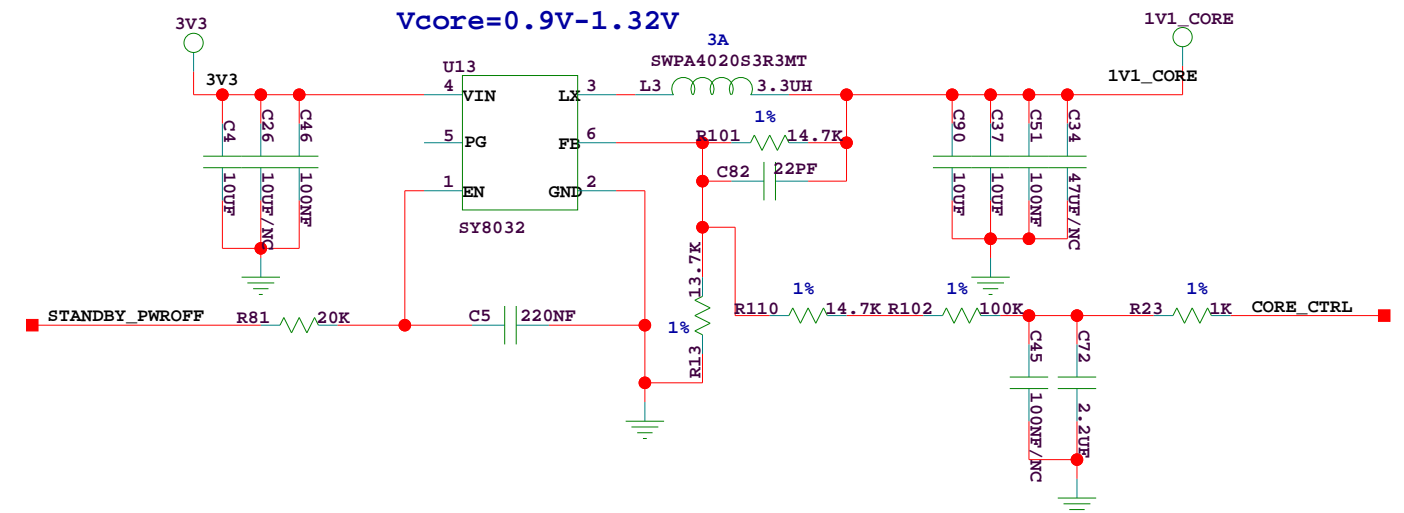
$$V_o = 0.6 \times (1 + R_{up}/R_{down}) = 1.5V$$



CPU POWER



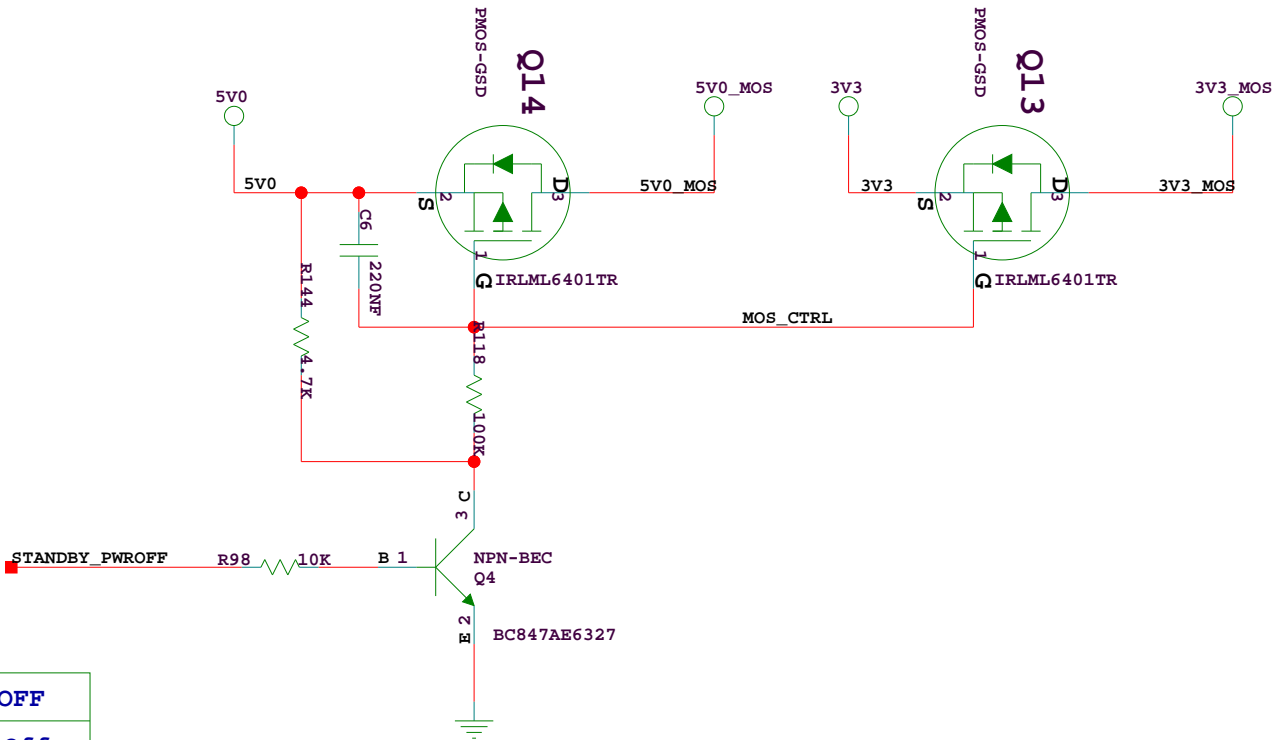
CORE POWER



The type and specification of the components refer to the BOM

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DESIGNED	TIANSHOU 00171014	HI3798MDMO1D_VERE		00001234	
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		VER	PART_NUMBER	SHEET 4 OF 19	
		A	03030001	HUAWEI TECH CO.,LTD.	

Power Ctrl

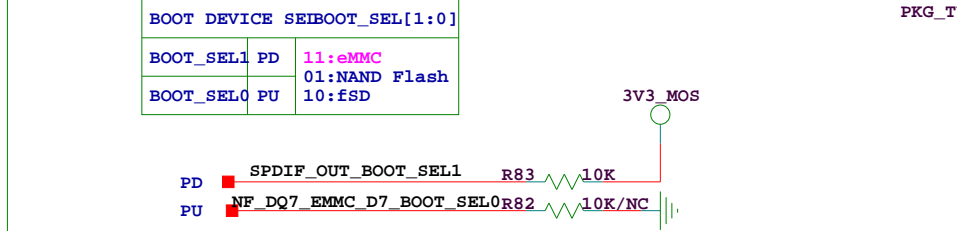
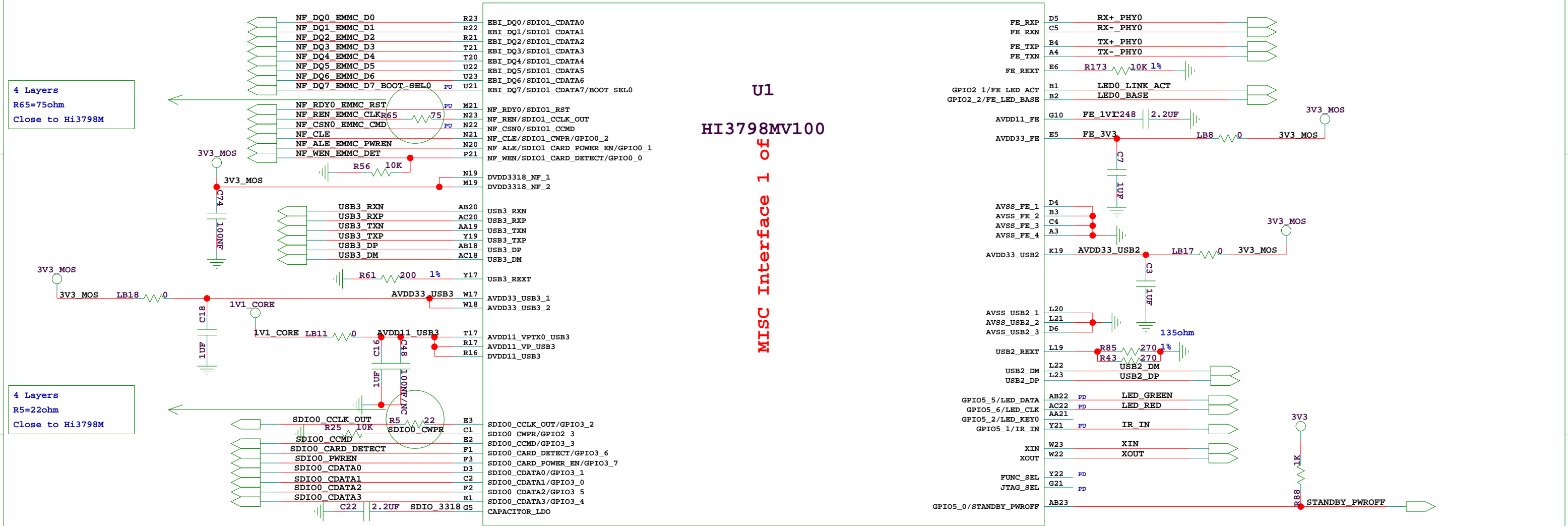


STANDBY_PWROFF	
0	Power Off
1	Power On

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REVIEWED	CHENYUZHU 00149603				
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Unit 1 of Hi3798MV100(NAND/USB3.0/IR/SDIO/XTAL/FE)



** FE PHY 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 RX and TX differential pairs, 10 mils max within a pair.	
C.component selection	
1.REXT resistor should be 10K ohm +/-1%.	
2.ESD components are suggested for ports protection, Put between Hi3716CV200 and transformer.	

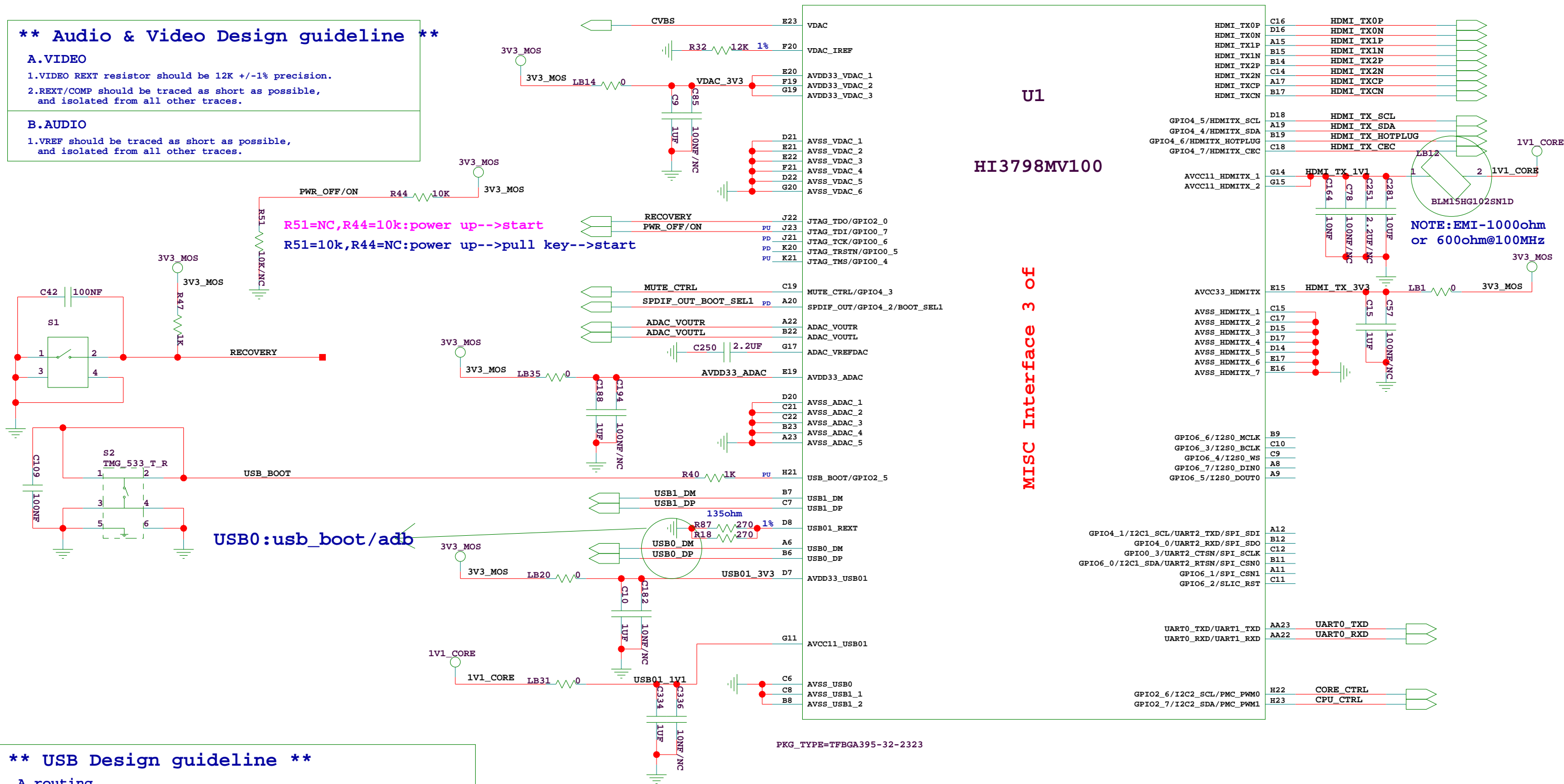
The type and specification of the components refer to the BOM					
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REVIEWED	CHENYUZHU 00149603				
		VER	PART_NUMBER	SHEET 6 OF 19	
		A	03030001	HUAWEI TECH CO.,LTD.	

Unit 2 of Hi3798MV100(JTAG/USB2.0/HDMI TX/DAC/I2S/SPI/UART)

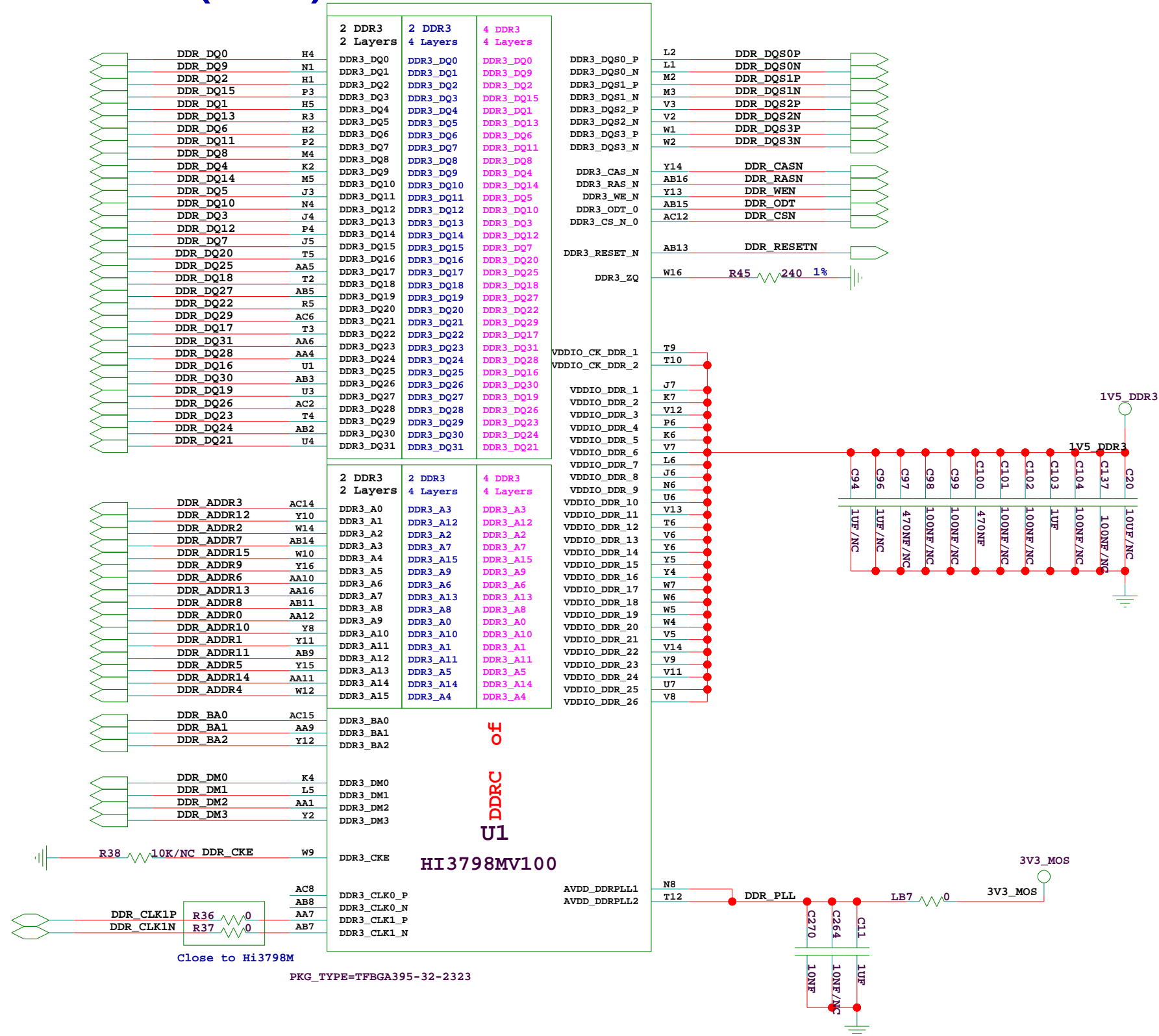
** Audio & Video Design guideline **

- 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.



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.

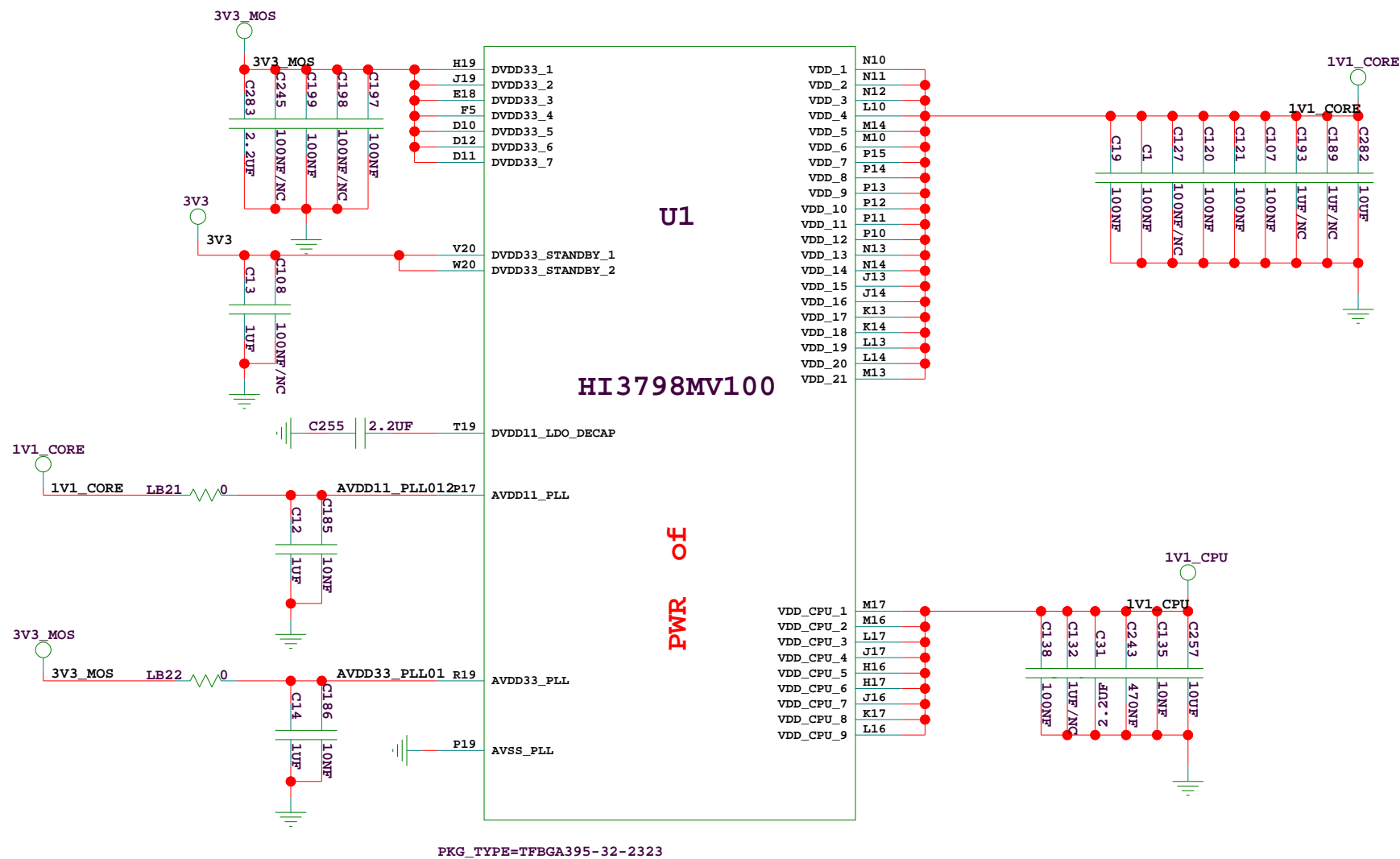
B.Layout suggestion

1. Please copy hisilicon demo board completely

The type and specification of the components refer to the BOM

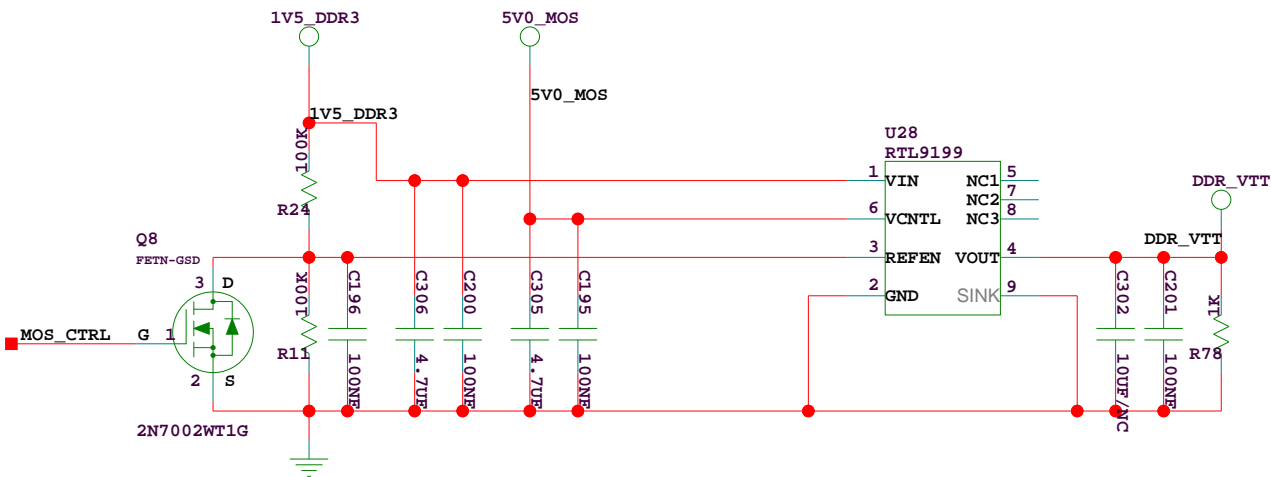
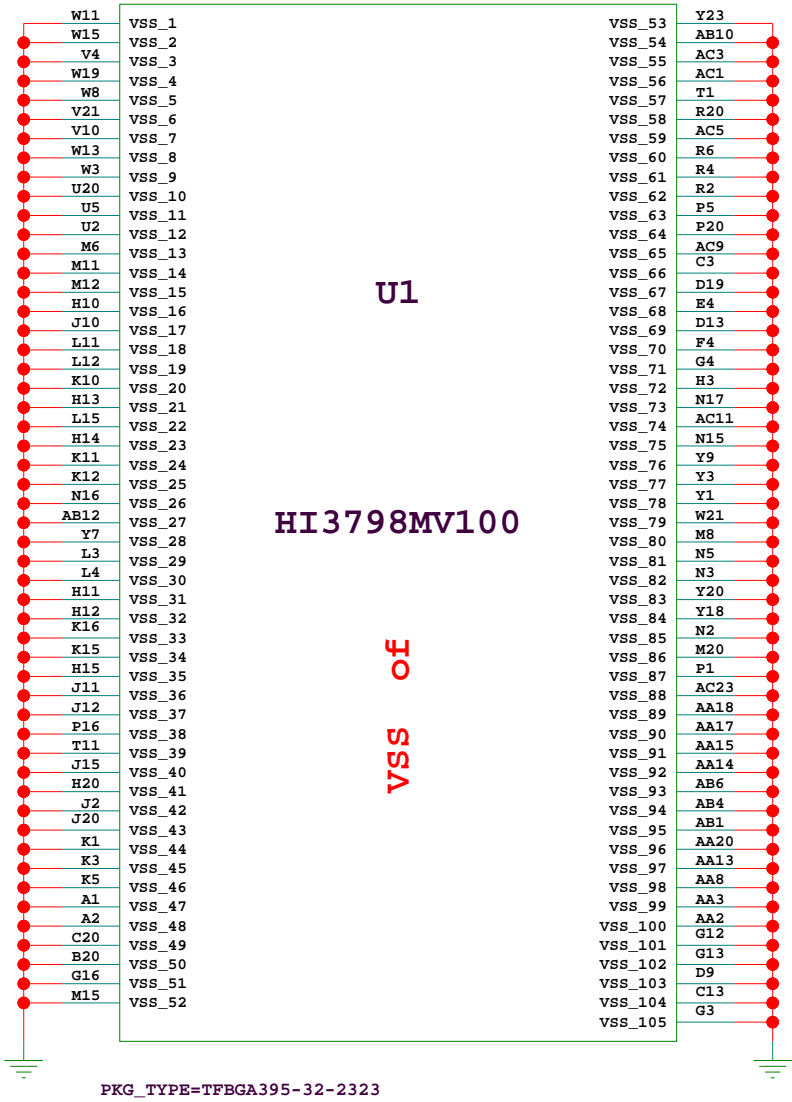
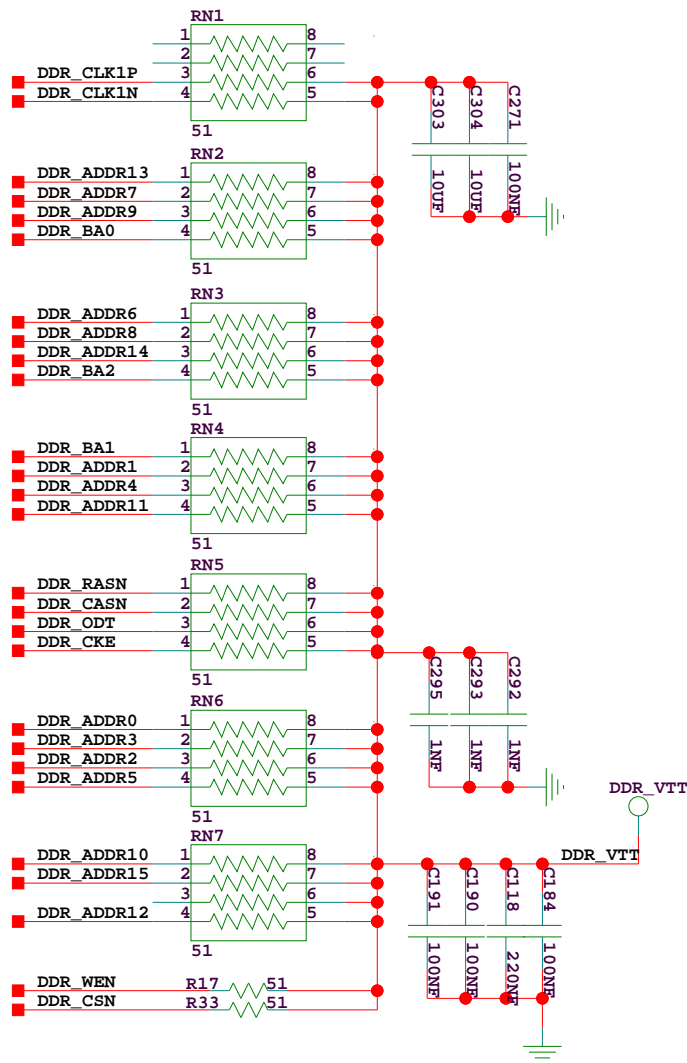
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		VER	PART_NUMBER	SHEET 8 OF 19	
		A	03030001	HUAWEI TECH CO.,LTD.	

Unit 4 of Hi3798MV100(POWER)



The type and specification of the components refer to the BOM					
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		A	03030001	HUAWEI TECH CO.,LTD.	

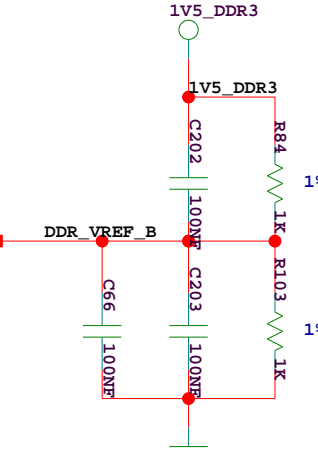
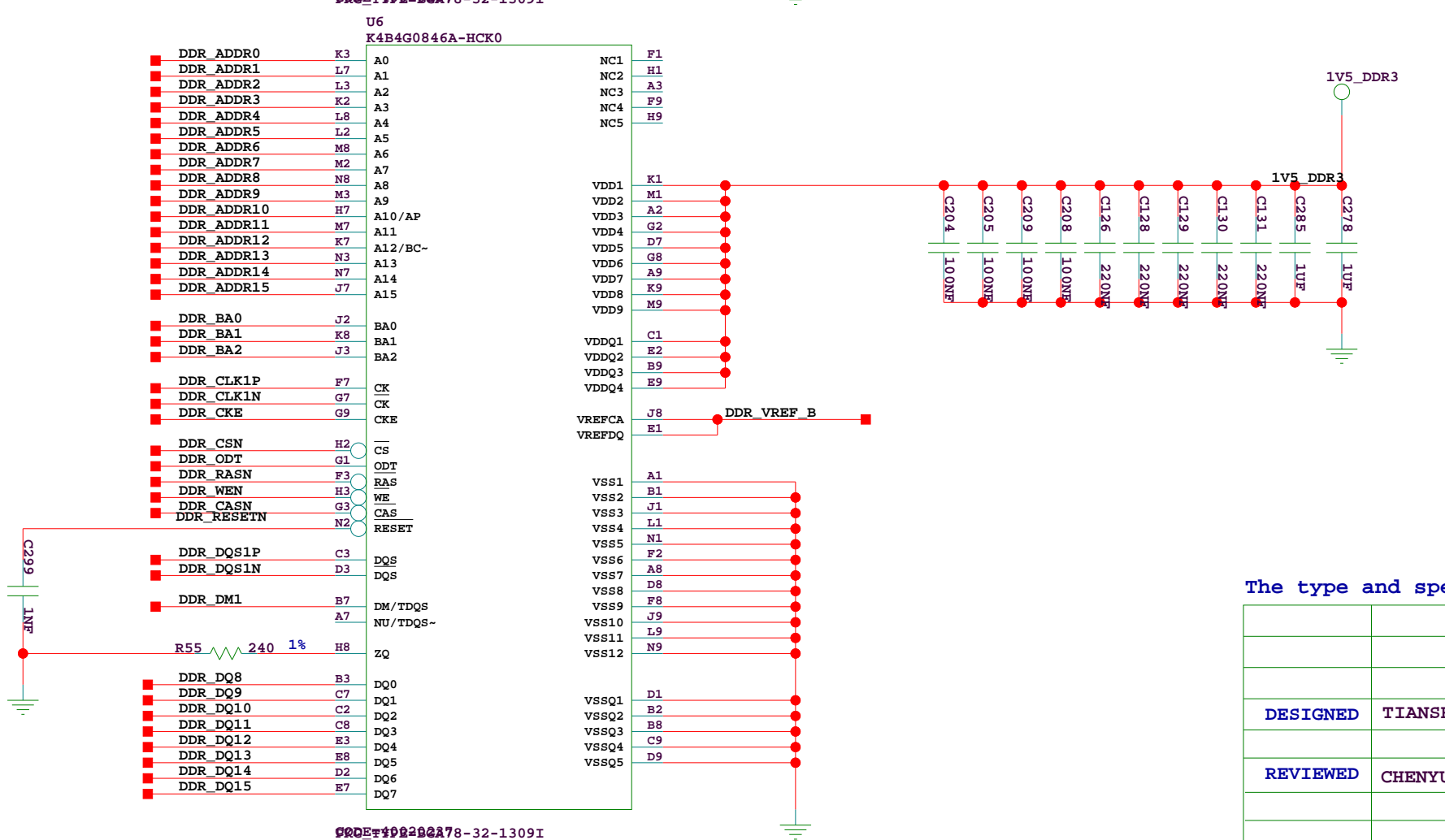
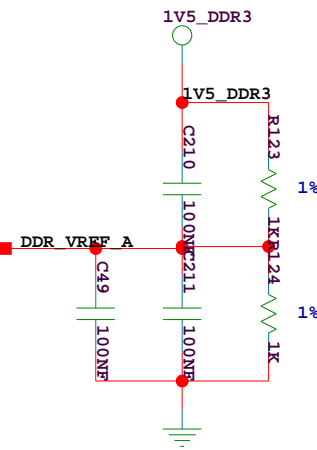
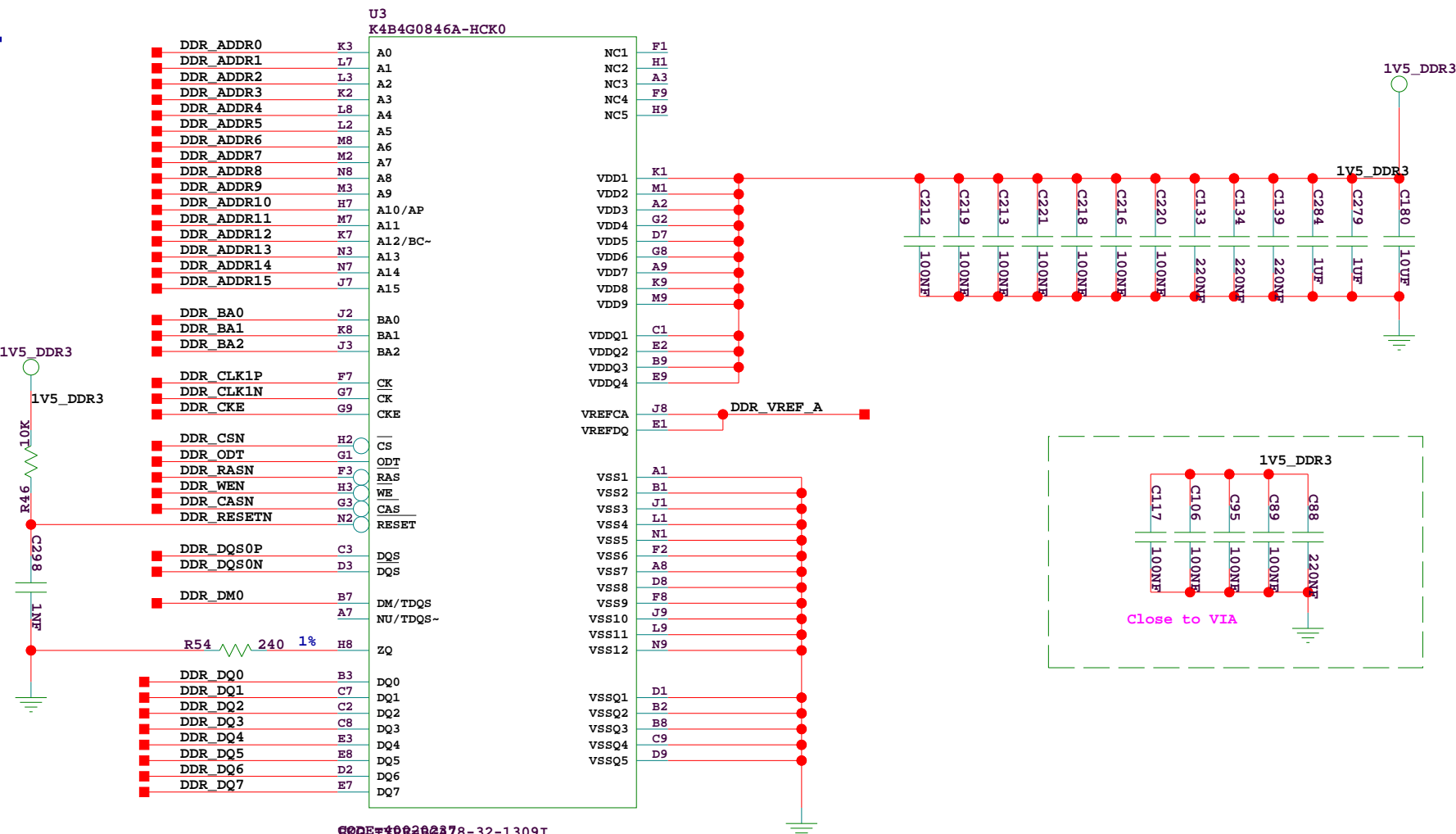
Unit 5 of Hi3798MV100(VSS)



The type and specification of the components refer to the BOM

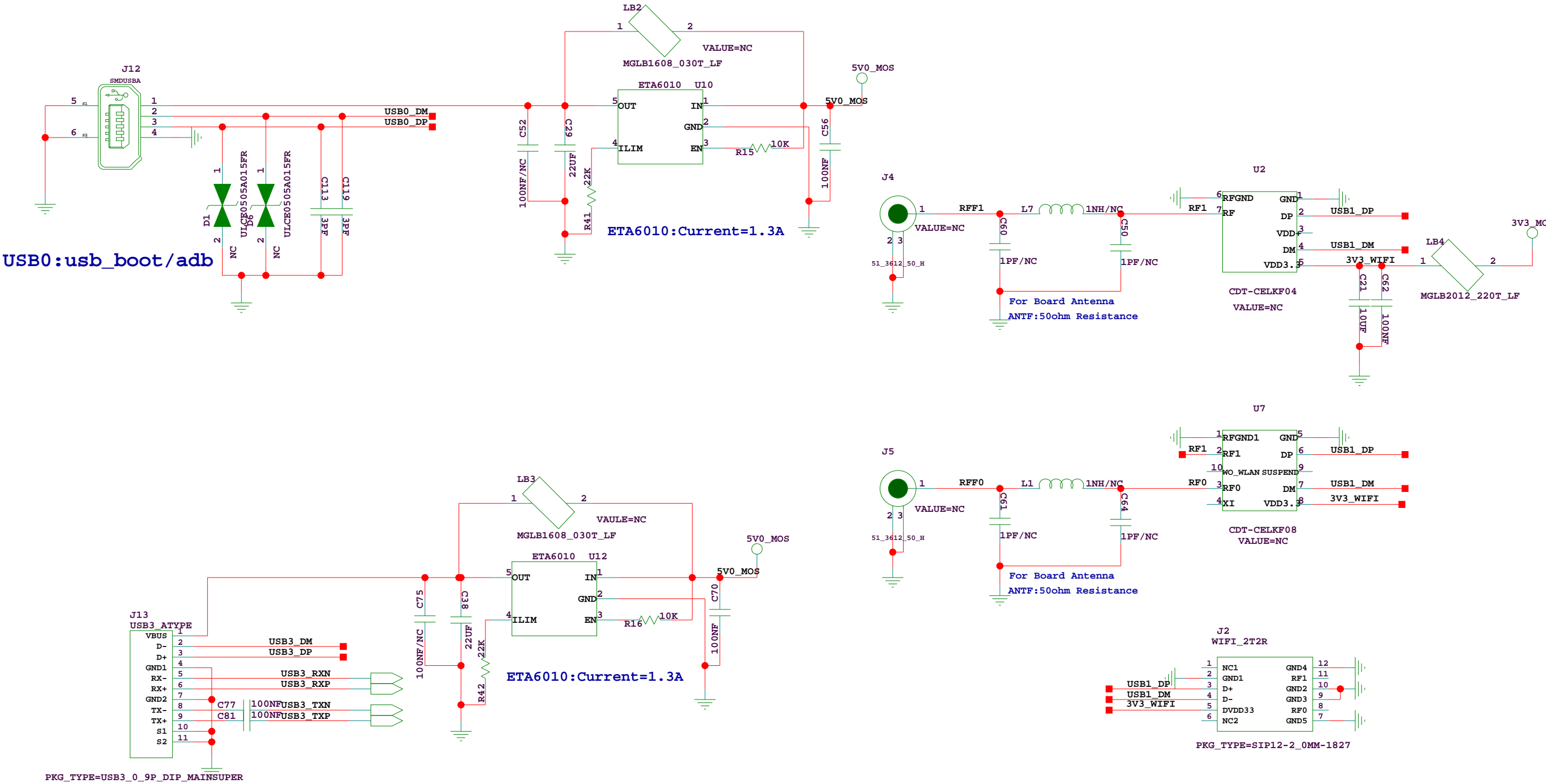
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REVIEWED	CHENYUZHU 00149603				
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DDRA



The type and specification of the components refer to the BOM					
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		A	03030001	HUAWEI TECH CO.,LTD	

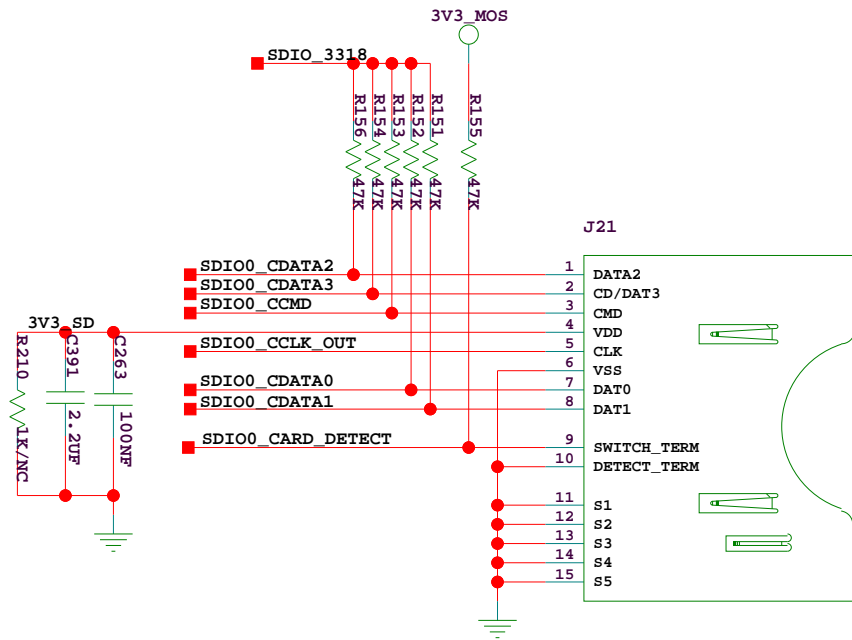
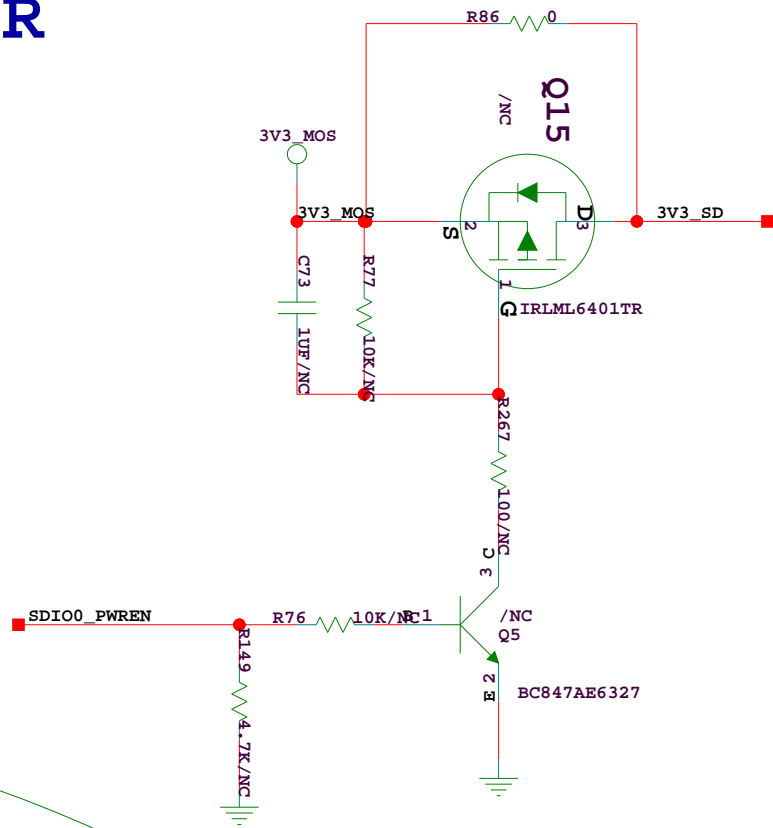
USB2.0/USB3.0/WIFI



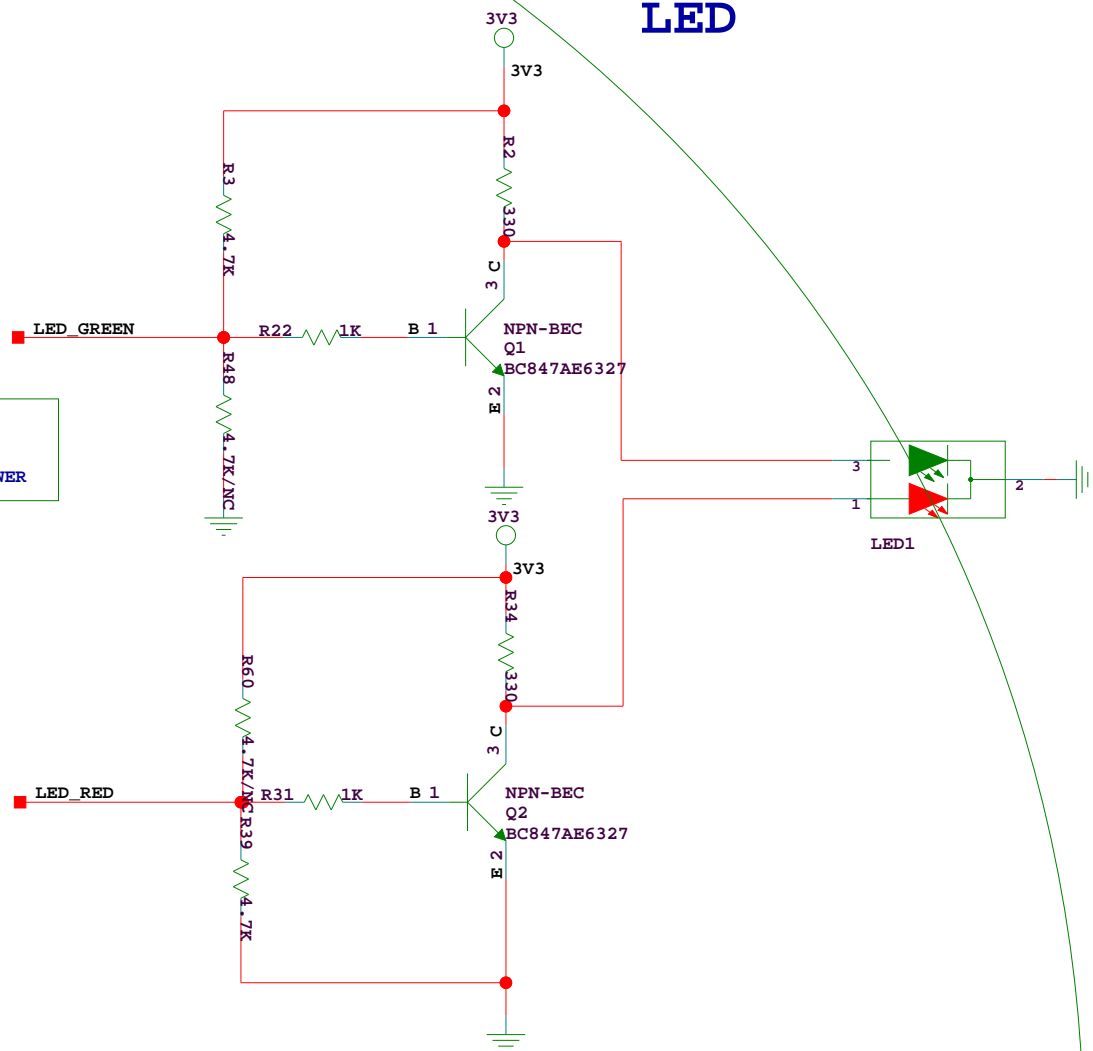
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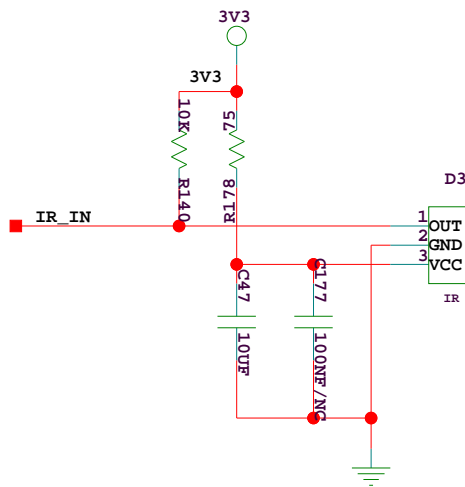
SD CARD/IR



LED



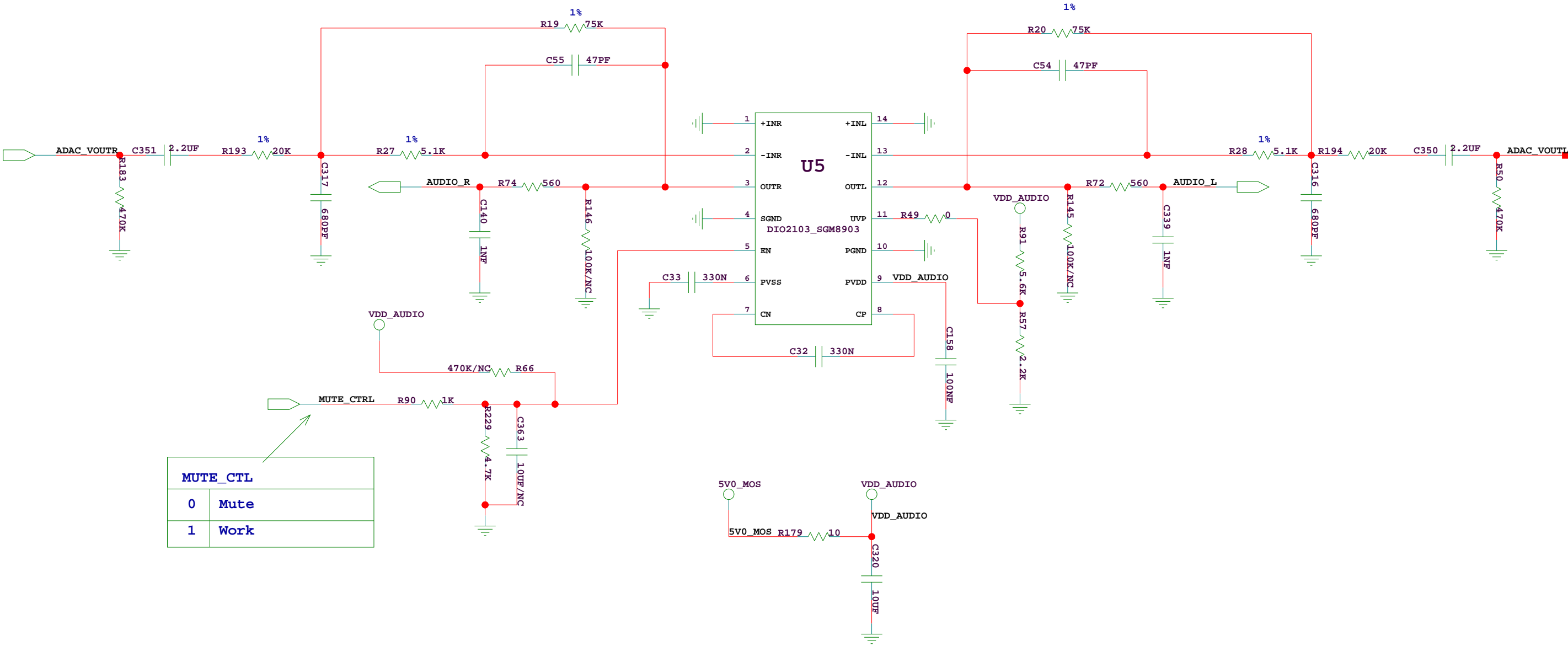
IR



The type and specification of the components refer to the BOM

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				ECA NO	DATE
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		VER	PART_NUMBER	SHEET 15 OF 19	
		A	03030001	HUAWEI TECH CO.,LTD.	

Audio Output

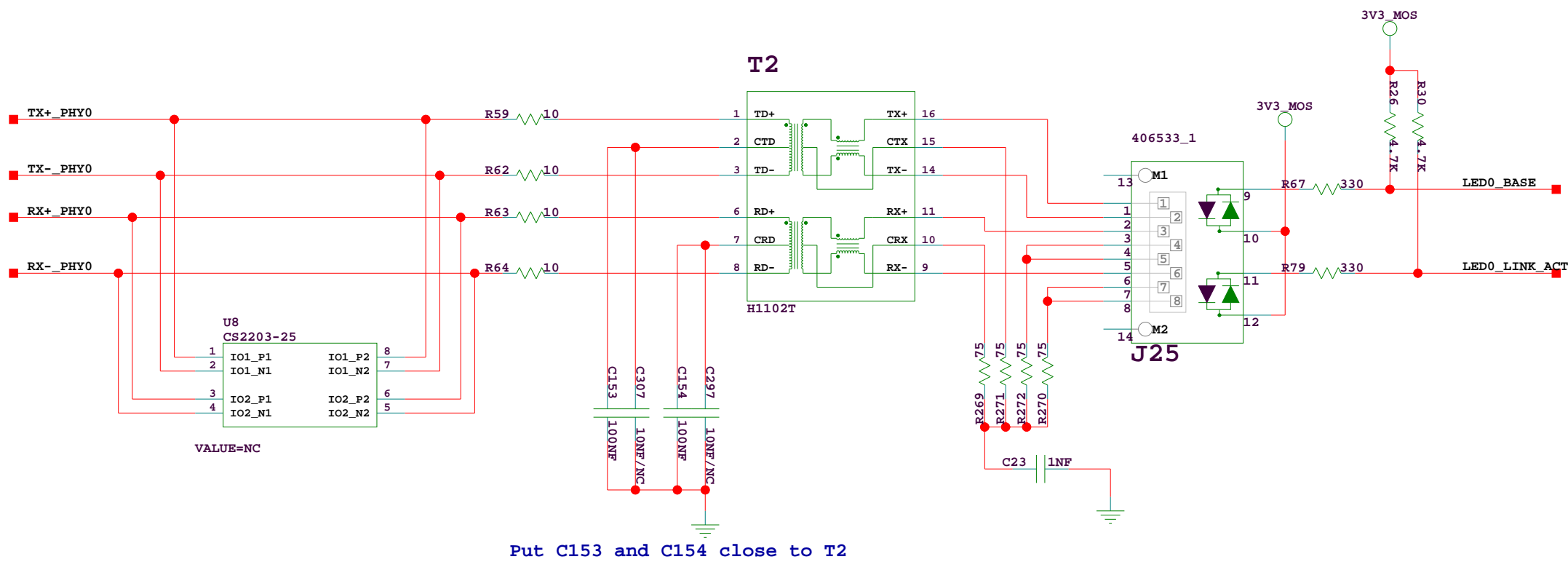


MUTE_CTL	
0	Mute
1	Work

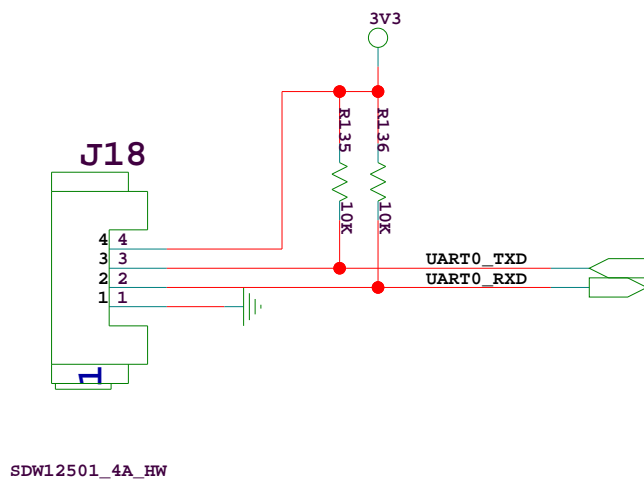
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		VER	PART_NUMBER	SHEET 16 OF 19	
		A	03030001	HUAWEI TECH CO.,LTD.	

FE PHY/UART



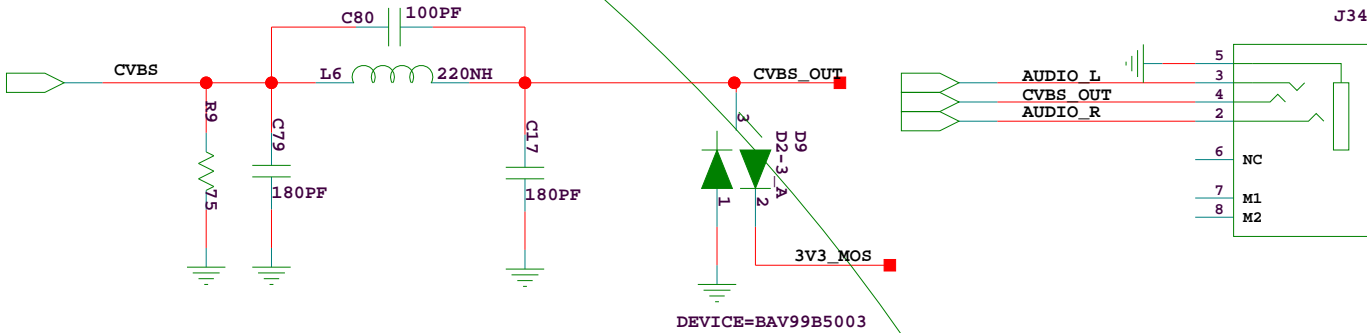
UART



The type and specification of the components refer to the BOM

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		A	03030001	HUAWEI TECH CO.,LTD.	

VDAC OUTPUT



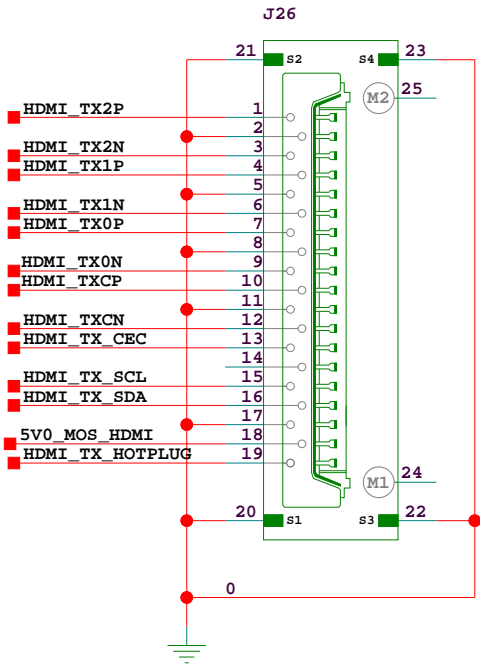
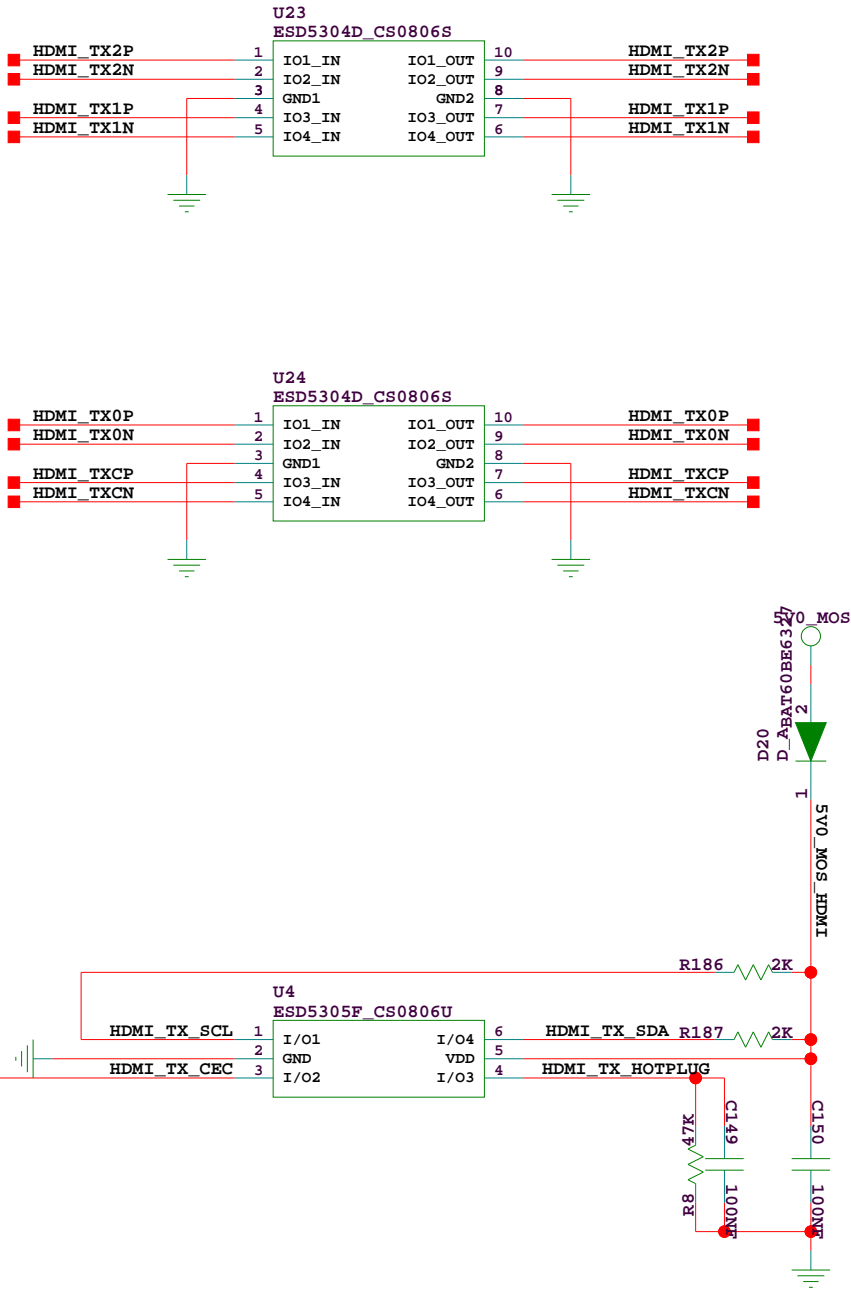
** Design guideline **

- 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

				NA	2013.1.4
				ECA NO	DATE
DESIGNED	TIANSHOU 00171014	HI3798MDM01D_VERE		00001234	
REVIEWED	CHENYUZHU 00149603				
		VER	PART_NUMBER	SHEET 18 OF 19	
		A	03030001	HUAWEI TECH CO.,LTD.	

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.REXT resistor should be 6.6K Ohm +/-1%.
- 2.ESD components are suggested for ports protection.
- 3.All equivalent capacitance of ESD components should be < 0.8pF.

The type and specification of the components refer to the BOM

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DESIGNED	TIANSHOU 00171014	HI3798MDM01D_VERE		00001234	
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		A	03030001	HUAWEI TECH CO.,LTD.	