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The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	WANGYONGHAO 206908	HI3516APERB_VB		00001234	
REVIEWED	LISI XXXXX				
		VER	PART_NUMBER	SHEET 1 OF 23	
		A	03030001	HUAWEI TECH CO.,LTD.	

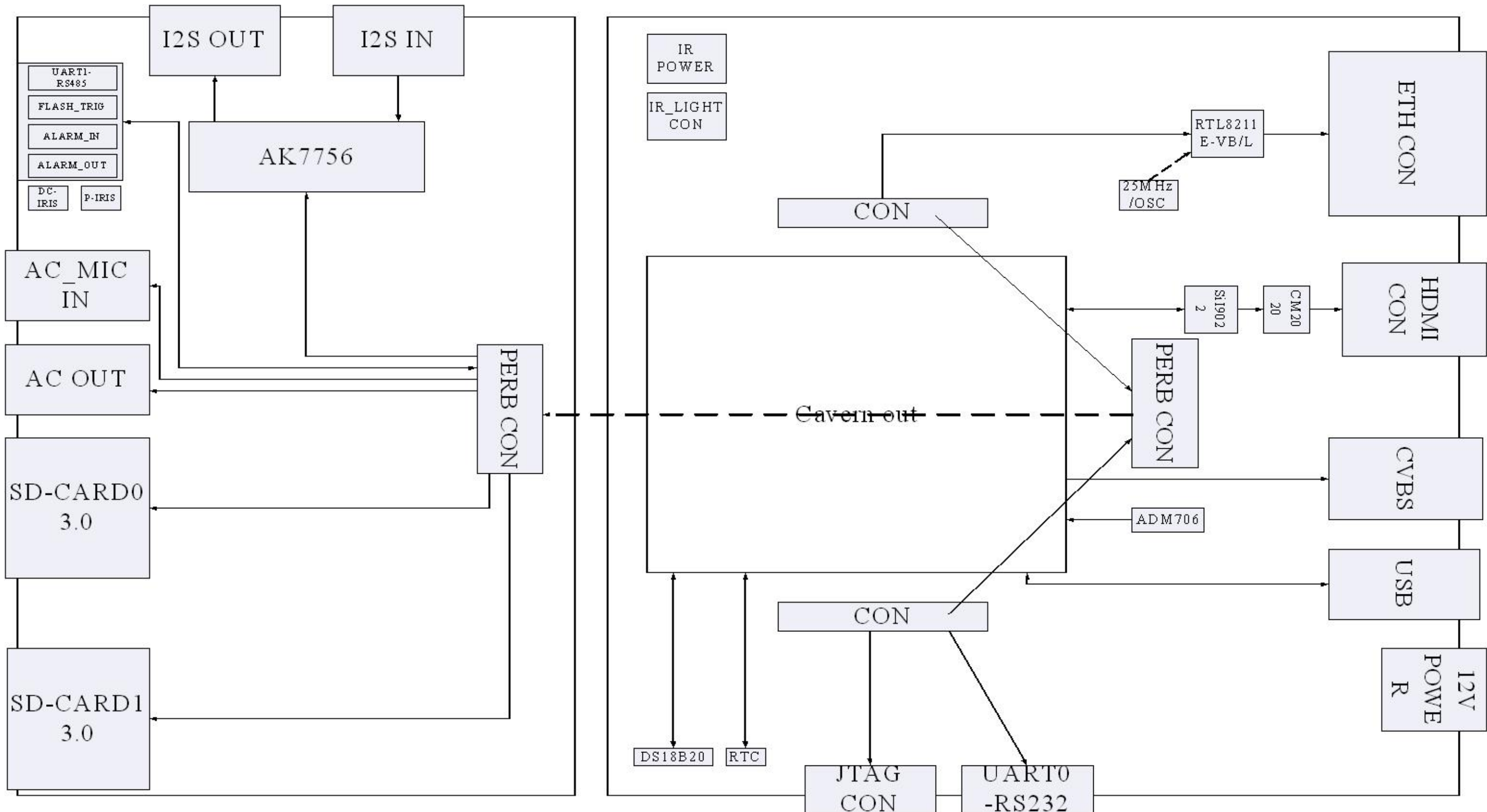
Changing List

Ver.	Who	Date	Description
Ver.A	WangYonghao	2014-07-24	Initial
Ver.B	WangYonghao	2014-09-05	1.Change the AI circuit. 2.Add 5V connect for reserve. 3.Add more power pin on connector.
		2014-11-20	4.Change LMC6482IM(U4) to LM358(ST). 5.Change the value of R205 from NC to 4.7KΩ
		2014-12-22	6.Change LM358(ST)(U4) to TLV2372IDR.
	Zhengyunfeng	2016-09-08	7.Change the Value of R128/R131/R130/R129/R125/R122/R123/R124/R121 from 4.7Kohm to 10Kohm.

The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	WANGYONGHAO 206908	HI3516APERB_VB		00001234	
REVIEWED	LISI XXXXX				
		VER	PART_NUMBER	SHEET 2 OF 23	
		A	03030001	HUAWEI TECH CO.,LTD.	

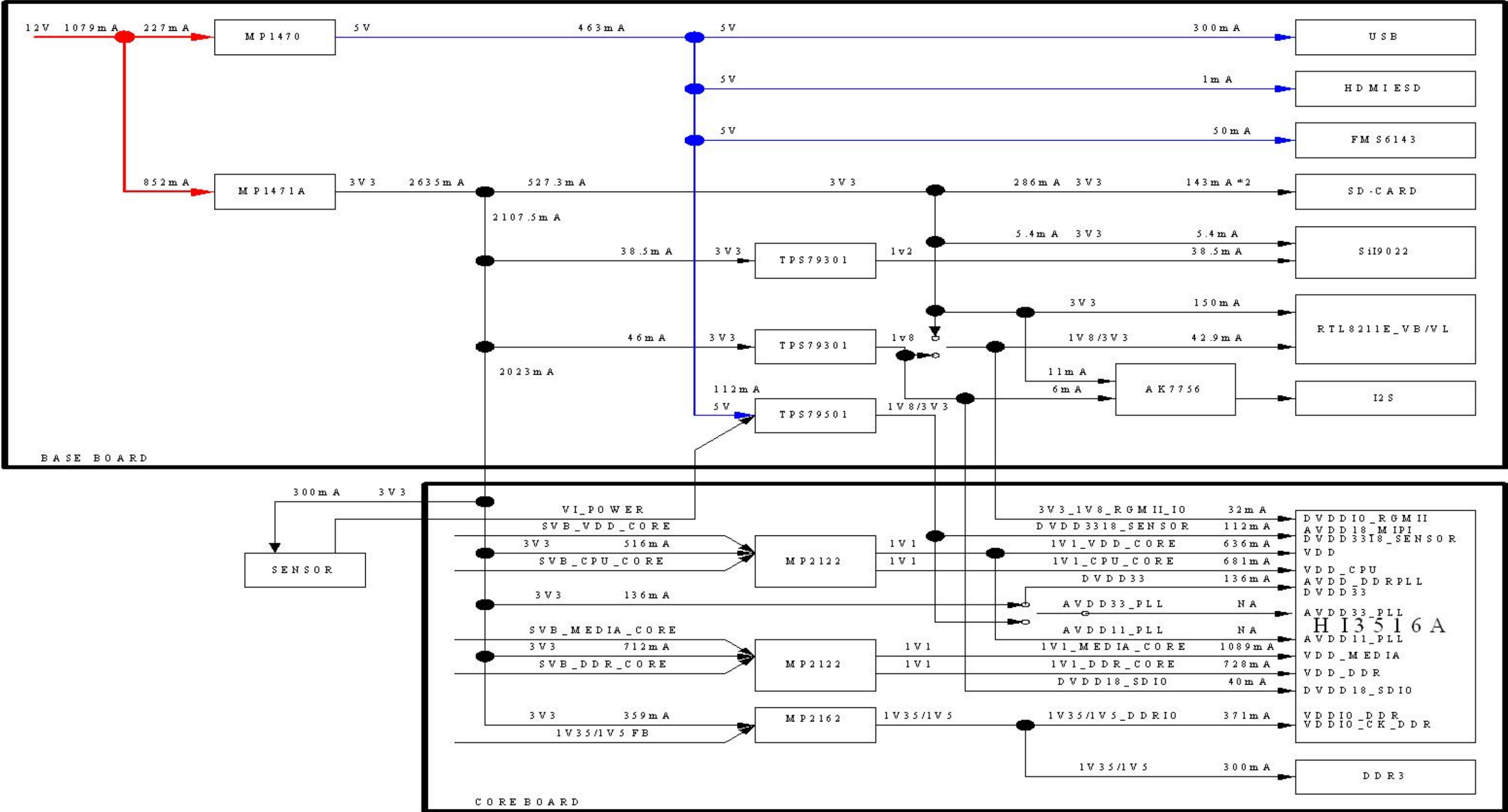
BLOCK DIAGRAM



The type and specification of the components refer to the BOM

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				ECA NO	DATE
DESIGNED	WANGYONGHAO 206908	HI3516APERB_VB		00001234	
REVIEWED	LISI XXXXX				
		VER	PART_NUMBER	SHEET 3	OF 23
		A	03030001	HUAWEI TECH CO.,LTD.	

POWER TREE



The currents are only for reference.

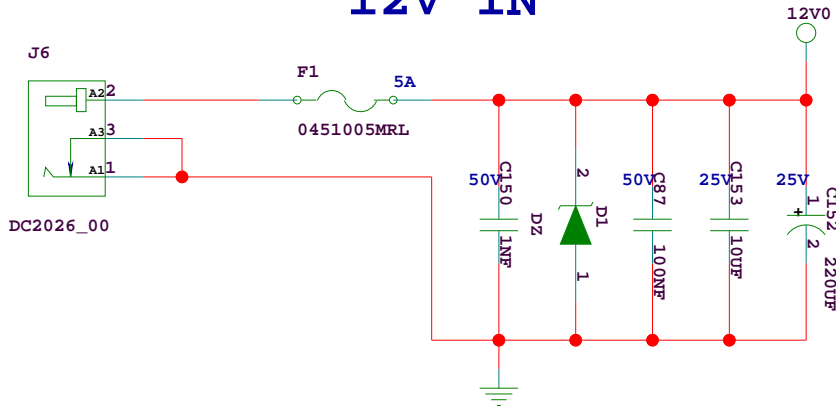
For details about the actual currents,see the related documents released by HiSilicon.

The type and specification of the components refer to the BOM

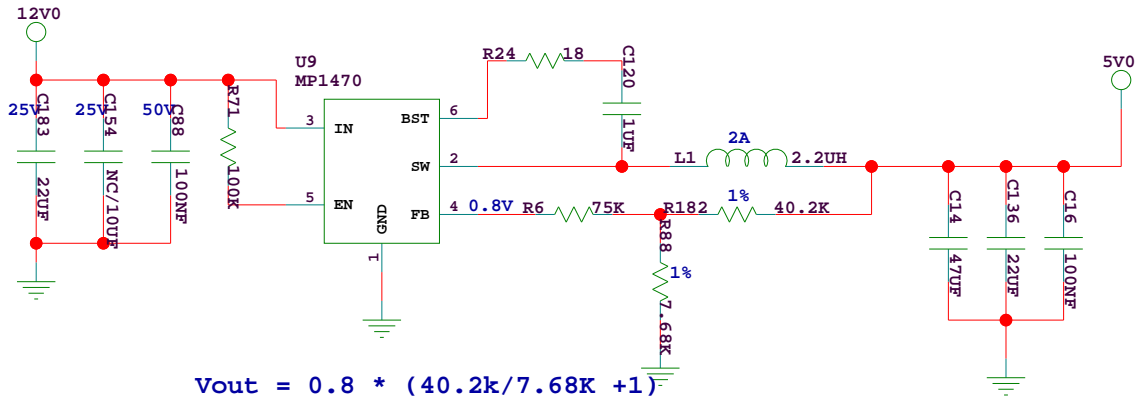
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REVIEWED	LISI XXXXX				
		VER	PART_NUMBER	SHEET 4 OF 23	
		A	03030001	HUAWEI TECH CO.,LTD.	

Power1

12V IN

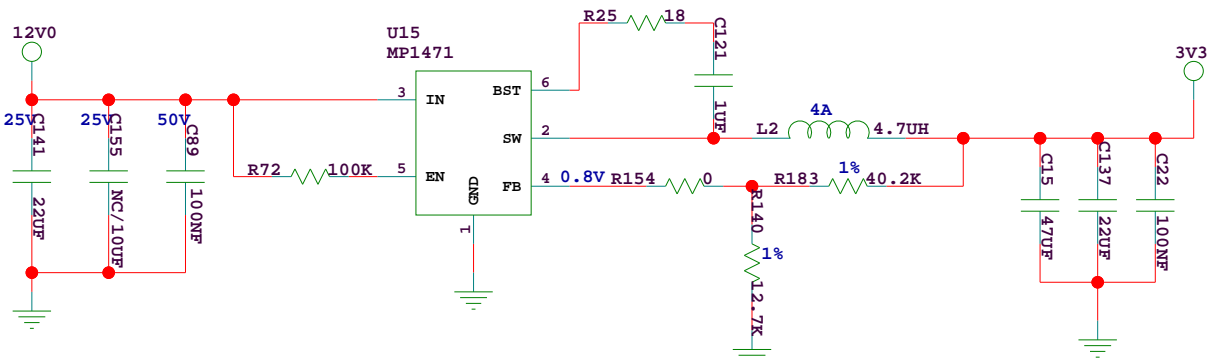


DC/DC 12V0->5V0 2Amax



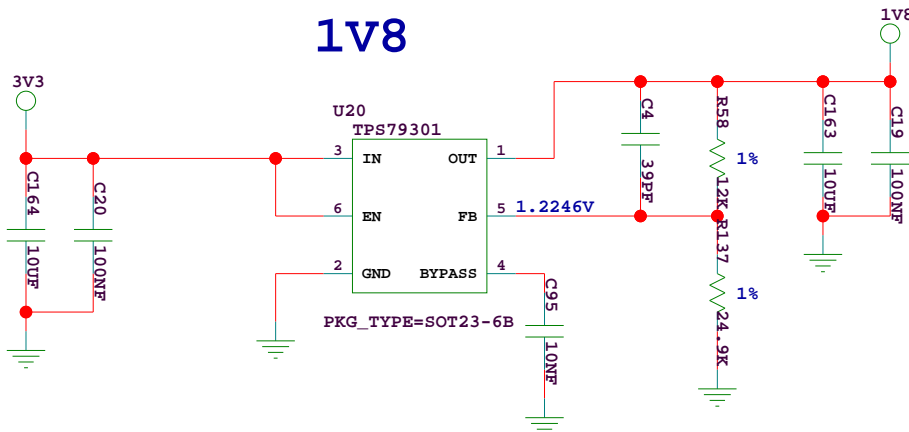
$$V_{out} = 0.8 * (40.2k / 7.68K + 1)$$

DC/DC 12V0->3V3 2.5Amax



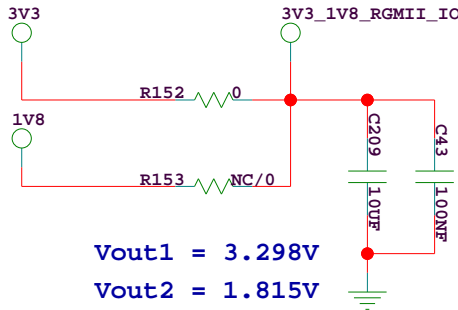
$$V_{out} = 0.8 * (40.2K / 12.7K + 1) = 3.332V$$

1V8



$$V_{out} = 1.2246 * (12k / 24.9K + 1) = 1.815V$$

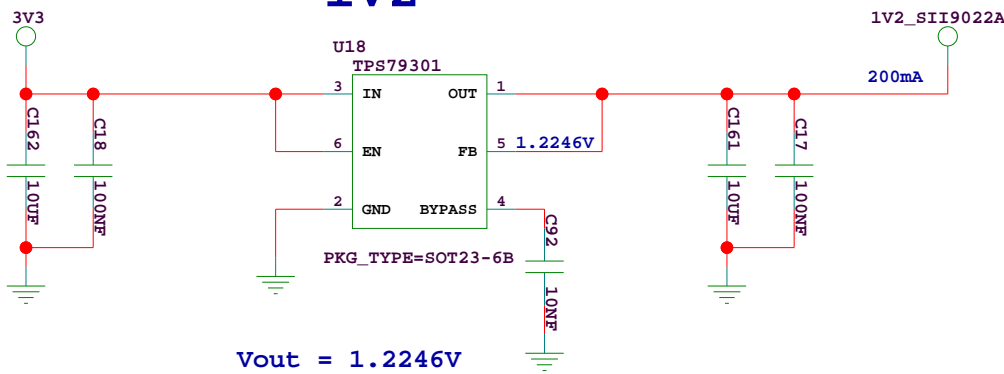
3V3_1V8_RGMII_IO



$$V_{out1} = 3.298V$$

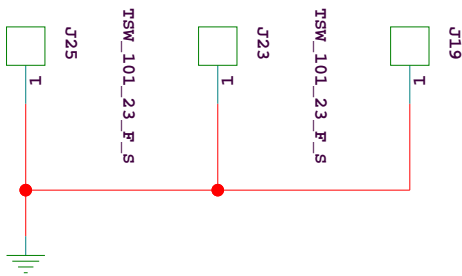
$$V_{out2} = 1.815V$$

1V2



$$V_{out} = 1.2246V$$

GND test pin

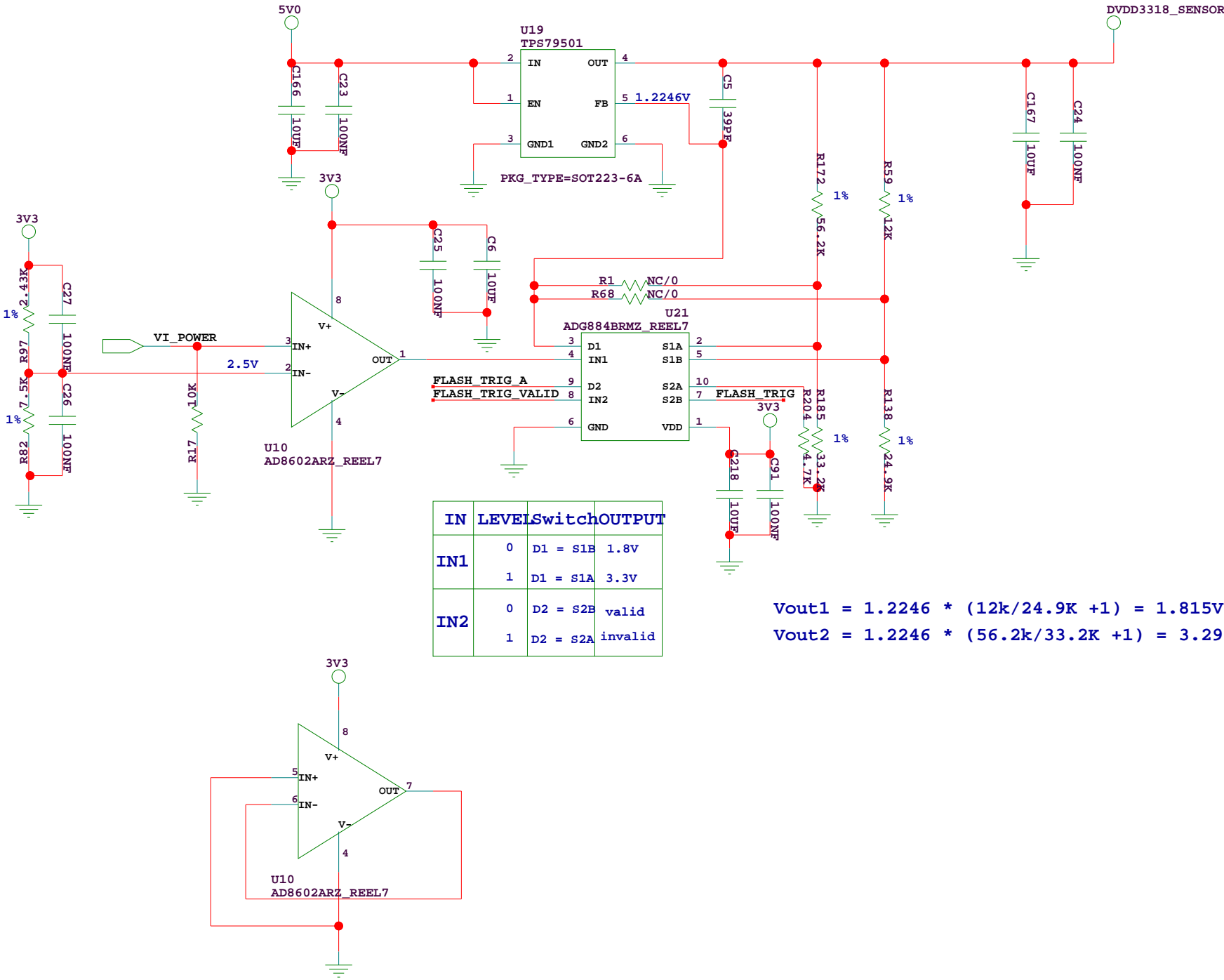


The type and specification of the components refer to the BOM

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DESIGNED	WANGYONGHAO 206908	HI3516APERB_VB		00001234	
REVIEWED	LISI XXXXX				
		VER	PART_NUMBER	SHEET 5 OF 23	
		A	03030001	HUAWEI TECH CO.,LTD.	

Power2

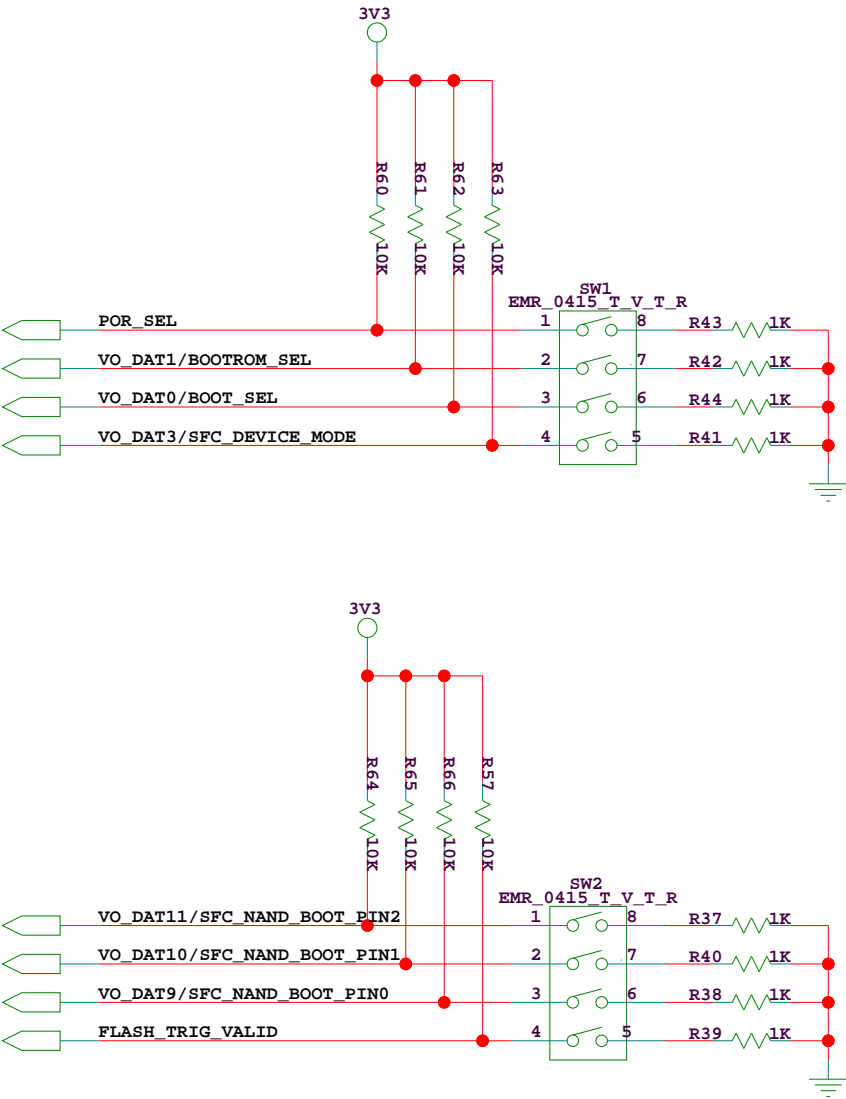
DVDD3318_SENSOR



The type and specification of the components refer to the BOM

				NA	
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DESIGNED	WANGYONGHAO 206908	HI3516APERB_VB		00001234	
REVIEWED	LISI XXXXX				
		VER	PART_NUMBER	SHEET 6 OF 23	
		A	03030001	HUAWEI TECH CO.,LTD.	

Configuration



POR_SEL(internal pull down)

- 0: Enable POR
- 1: Disable POR

BOOTROM_SEL(internal pull down)

- 0: Enable BOOTFLASH
- 1: Enable BOOTROM

BOOT_SEL(internal pull down)

- 0: SPI FLASH
- 1: NAND FLASH

SFC_DEVICE_MODE(internal pull down)

- 0: Spi Nor flash
- 1: Spi Nand flash

SFC_NAND_BOOT_PIN2(internal pull down)

- 0: page size is 2kB
- 1: page size is 4kB

SFC_NAND_BOOT_PIN[1:0](default value is 01)

- 00: Reserve
- 01: 8bit ecc
- 10: Reserve
- 11: 24bit ecc

FLASH_TRIG_VALID

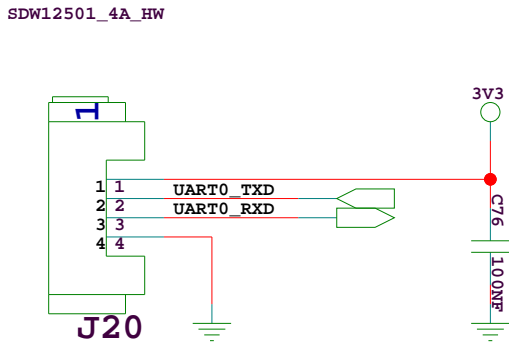
- 0: valid
- 1: invalid

The type and specification of the components refer to the BOM

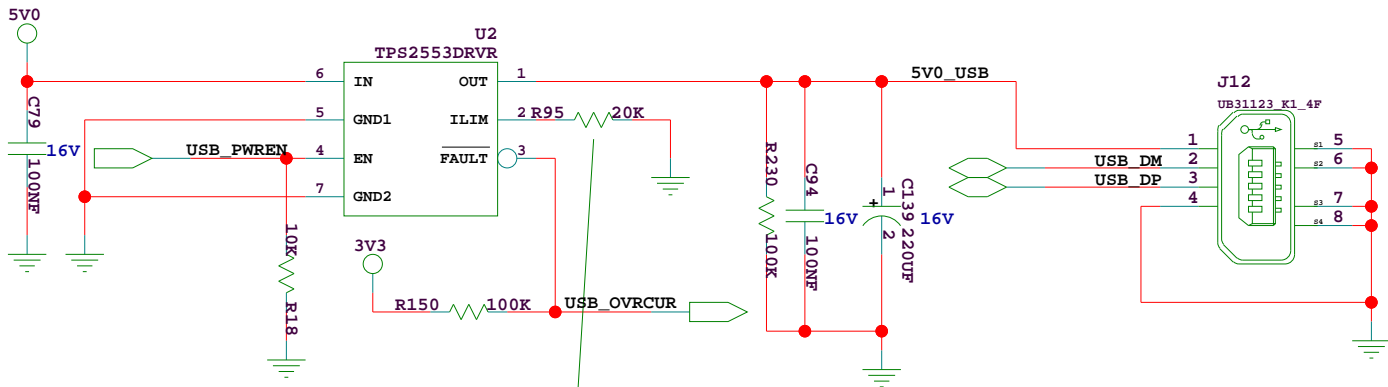
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				ECA NO	DATE
DESIGNED	WANGYONGHAO 206908	HI3516APERB_VB		00001234	
REVIEWED	LISI XXXXX				
		VER	PART_NUMBER	SHEET 7 OF 23	
		A	03030001	HUAWEI TECH CO.,LTD.	

UART&JTAG&USB

RS232

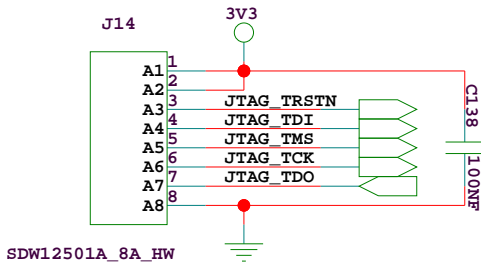


USB



ILIM is refer to RILIM ,here ILIM(nom) = 1295mA when RILIM = 20Kohm.

JTAG



The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	WANGYONGHAO 206908	HI3516APERB_VB		00001234	
REVIEWED	LISI XXXXX				
		VER	PART_NUMBER	SHEET 8 OF 23	
		A	03030001	HUAWEI TECH CO.,LTD.	

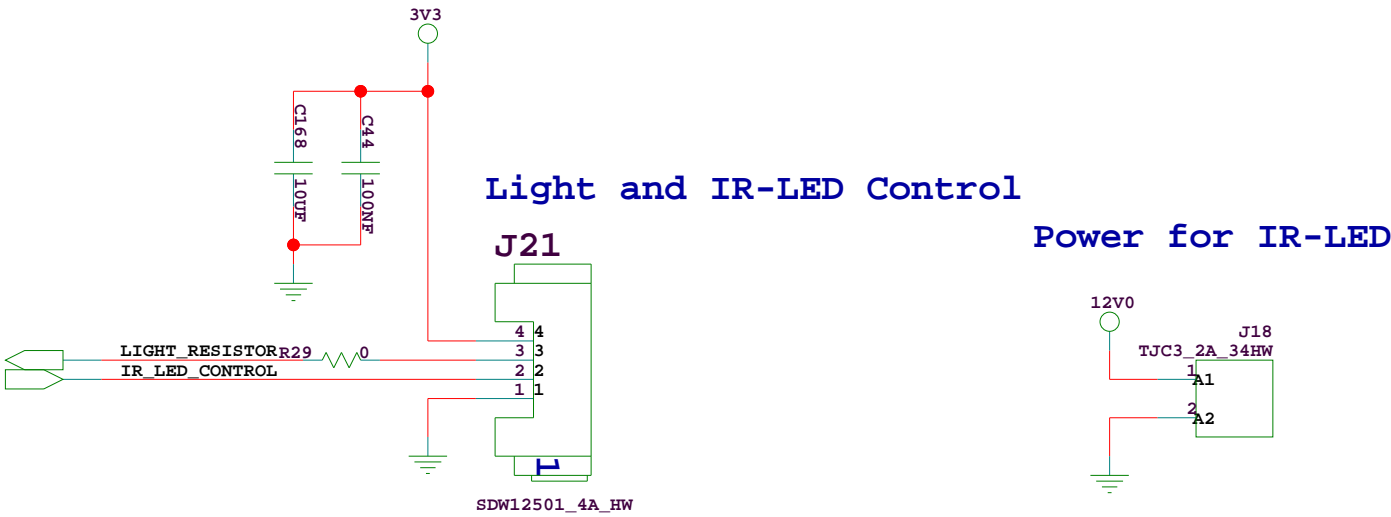
A



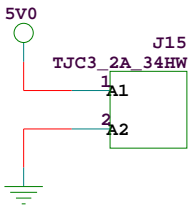
The type and specification of the components refer to the BOM

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DESIGNED	WANGYONGHAO 206908	HI3516APERB_VB		00001234	
REVIEWED	LISI XXXXX				
		VER	PART_NUMBER	SHEET	9 OF 23
		A	03030001	HUAWEI TECH CO.,LTD.	

IR BRD CONNECTOR/HTI BRD POWER



Power for HTIB

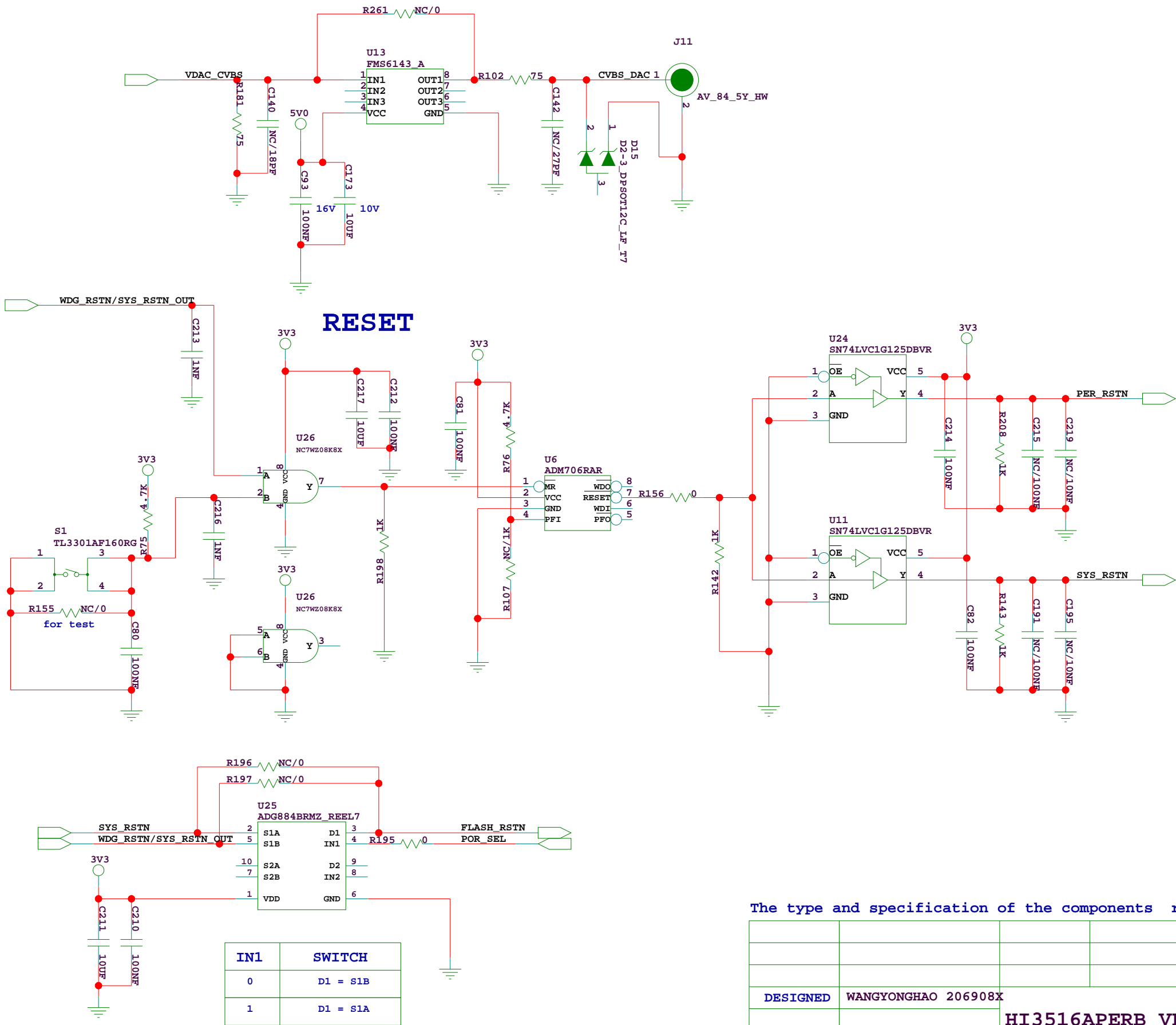


The type and specification of the components refer to the BOM

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REVIEWED	LISI XXXXX				
		VER	PART_NUMBER	SHEET 10 OF 23	
		A	03030001	HUAWEI TECH CO.,LTD.	

CVBS&RESET

Video DAC



The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	WANGYONGHAO 206908X			HI3516APERB_VB	
REVIEWED	LISI XXXXX			00001234	
		VER	PART_NUMBER	SHEET 11 OF 23	
		A	03030001	HUAWEI TECH CO.,LTD.	

A



C

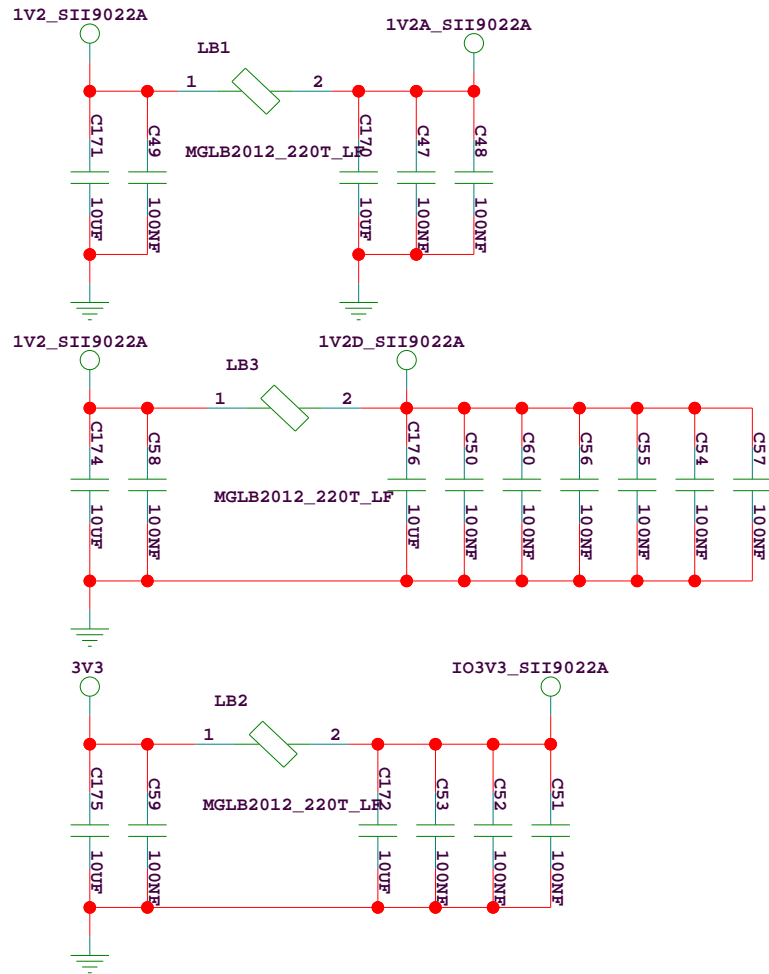
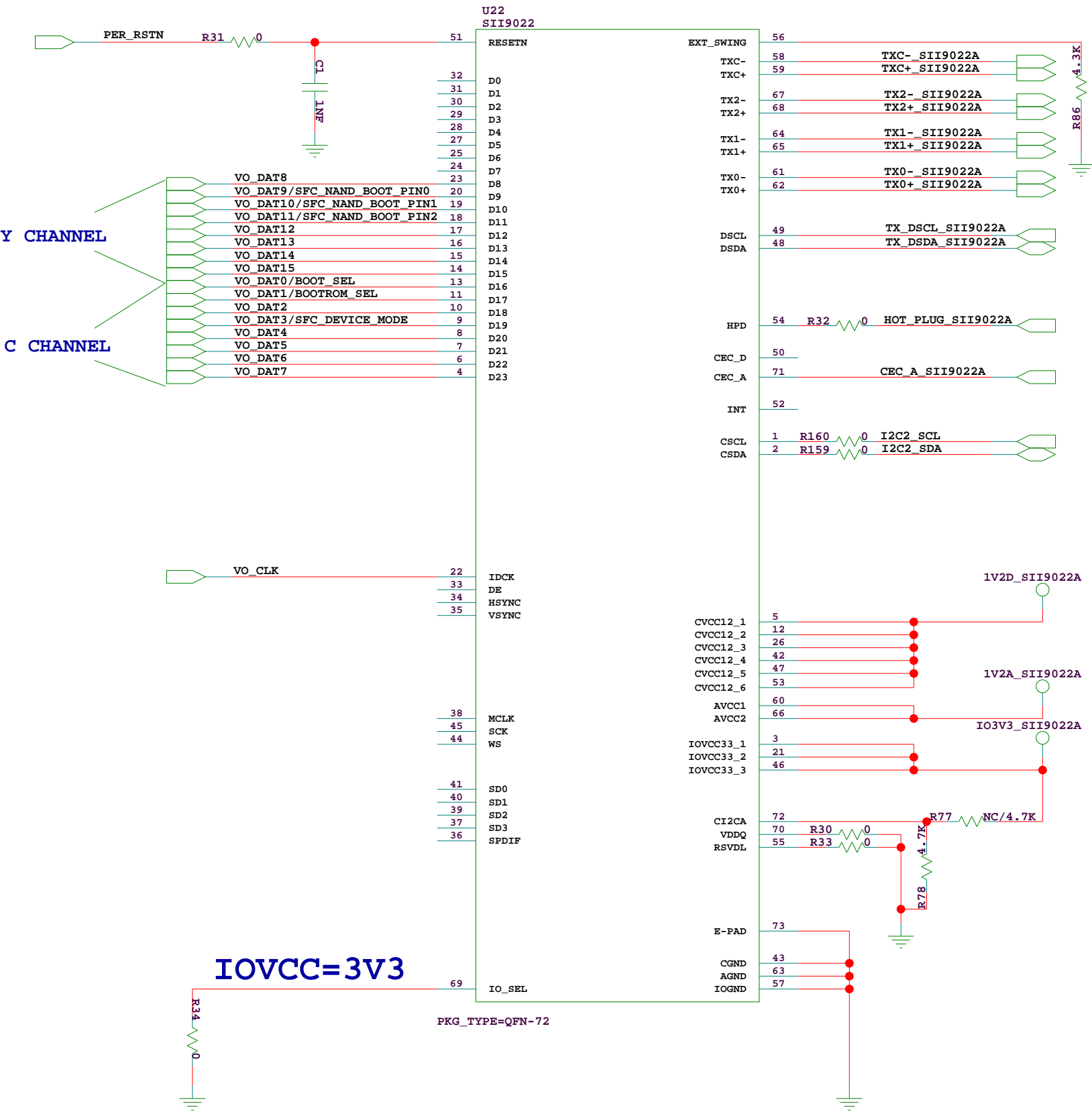


D

D

D

Video Output SiI9022A

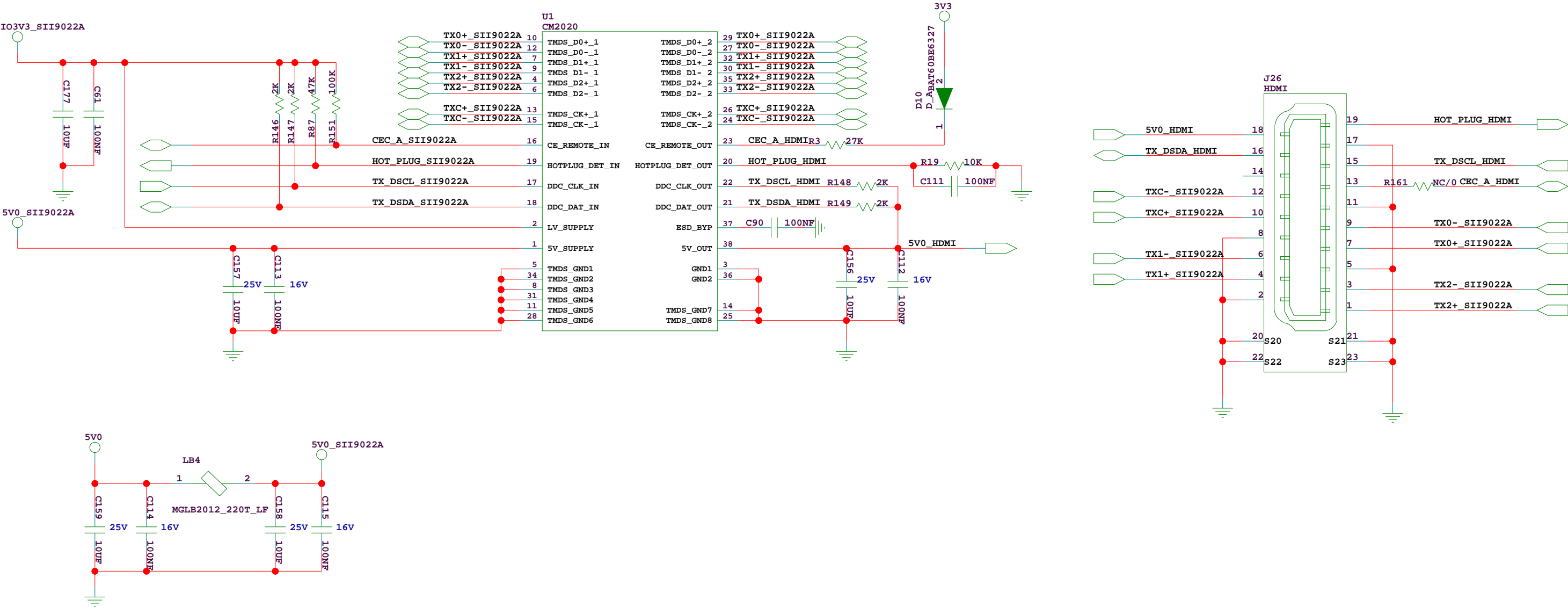


Internal Function	CI2CA = Low
Transmitter Programming Interface(TPI) device address	0x72
CEC Programming Interface(CPI) device address	0xC0
SII9022 compatible internal registers: first device address	0x72
SII9022 compatible internal registers: second device address	0x7A

The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	WANGYONGHAO 206908	HI3516APERB_VB		00001234	
REVIEWED	LISI XXXXX				
		VER	PART_NUMBER	SHEET 13 OF 23	
		A	03030001	HUAWEI TECH CO.,LTD.	

HDMI ESD



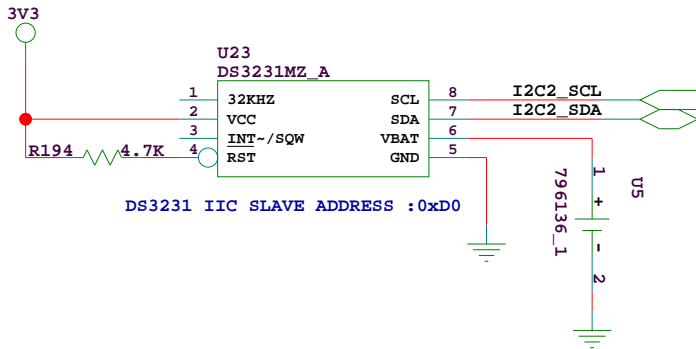
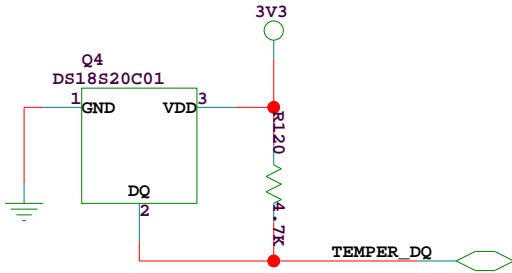
The type and specification of the components refer to the BOM

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DESIGNED	WANGYONGHAO 206908	HI3516APERB_VB		00001234	
REVIEWED	LISI XXXXX				
		VER	PART_NUMBER	SHEET 14 OF 23	
		A	03030001	HUAWEI TECH CO.,LTD.	

RTC&TEMPER_DQ

Temperature sampling

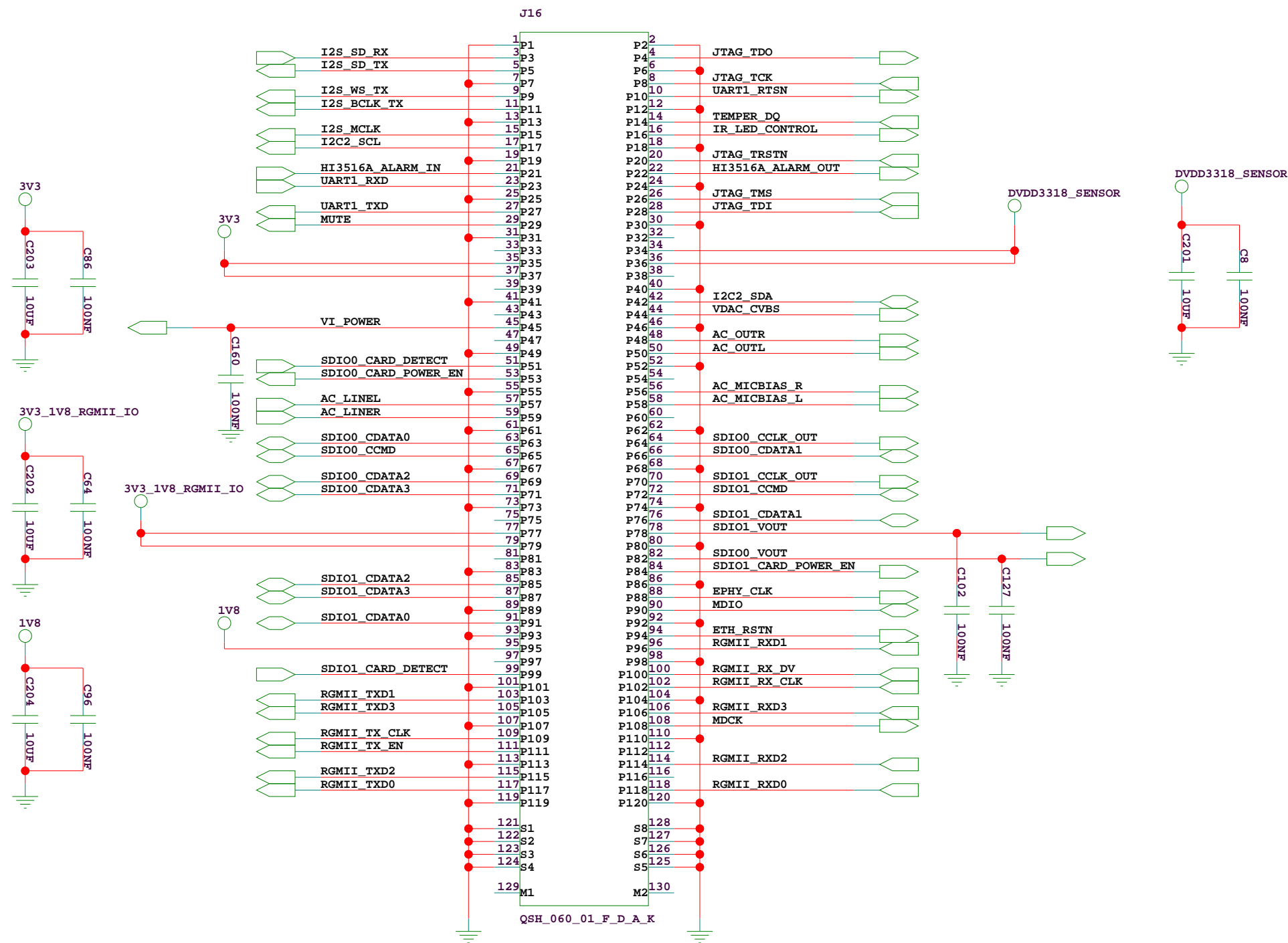
This device should be placed near to the OSC of the RTC.



The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	WANGYONGHAO 206908	HI3516APERB_VB		00001234	
REVIEWED	LISI XXXXX				
		VER	PART_NUMBER	SHEET 15 OF 23	
		A	03030001	HUAWEI TECH CO.,LTD.	

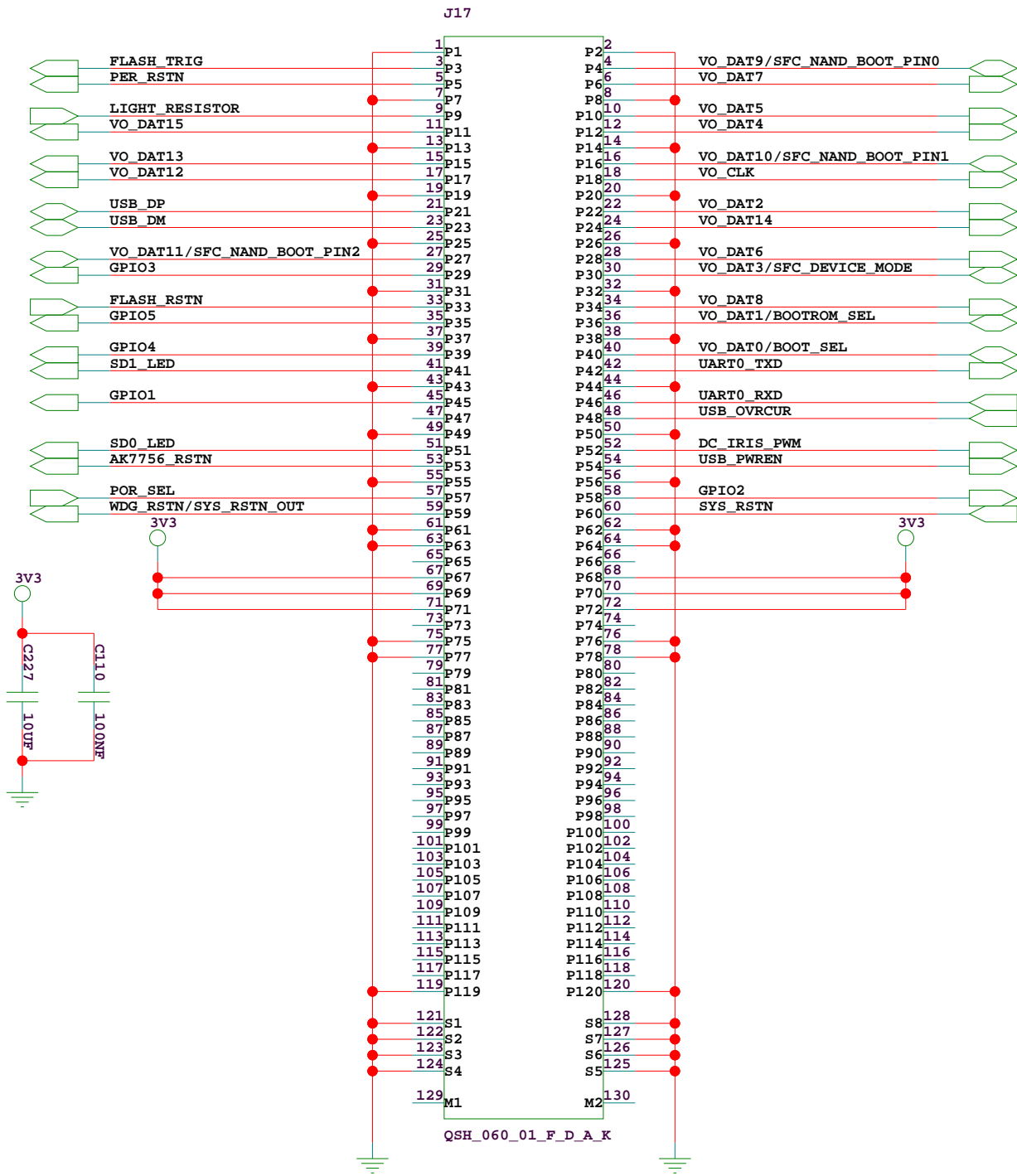
CONNECTOR TO DMEB J2



The type and specification of the components refer to the BOM

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DESIGNED	WANGYONGHAO 206908	HI3516APERB_VB		00001234	
REVIEWED	LISI XXXXX				
		VER	PART_NUMBER	SHEET 16 OF 23	
		A	03030001	HUAWEI TECH CO.,LTD.	

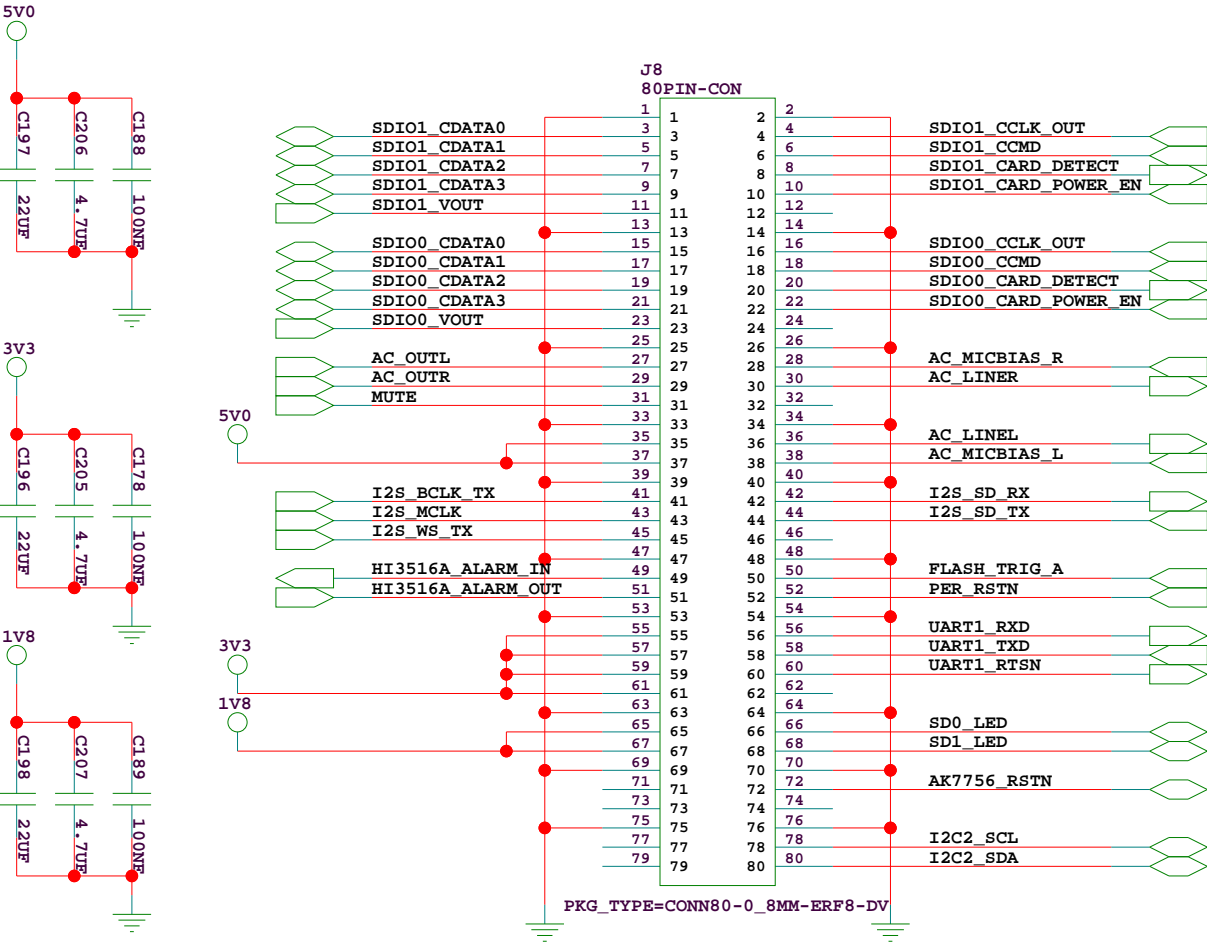
CONNECTOR TO DMEB J3



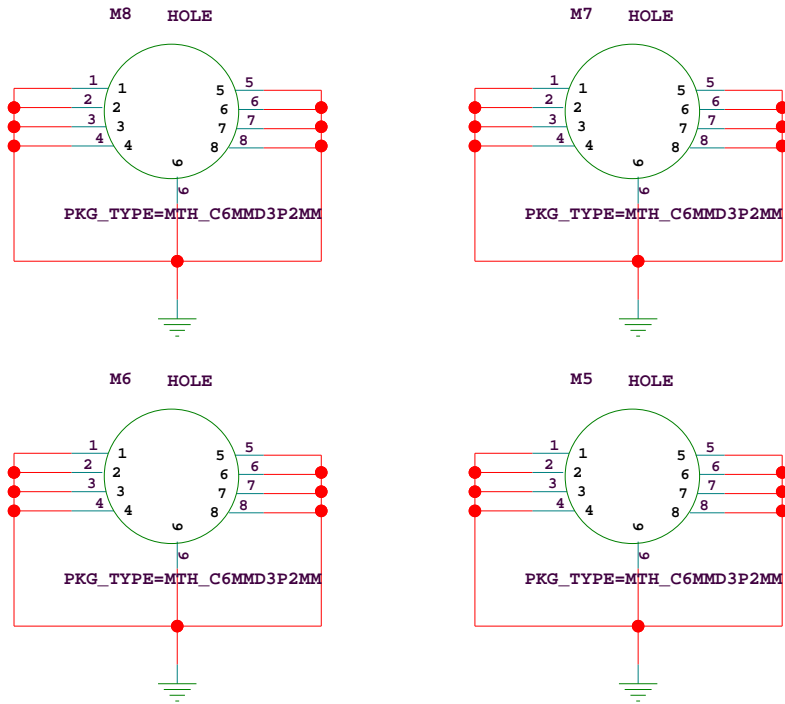
The type and specification of the components refer to the BOM

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DESIGNED	WANGYONGHAO 206908	HI3516APERB_VB		00001234	
REVIEWED	LISI XXXXX				
		VER	PART_NUMBER	SHEET 17 OF 23	
		A	03030001	HUAWEI TECH CO.,LTD.	

CONNECTOR TO J9



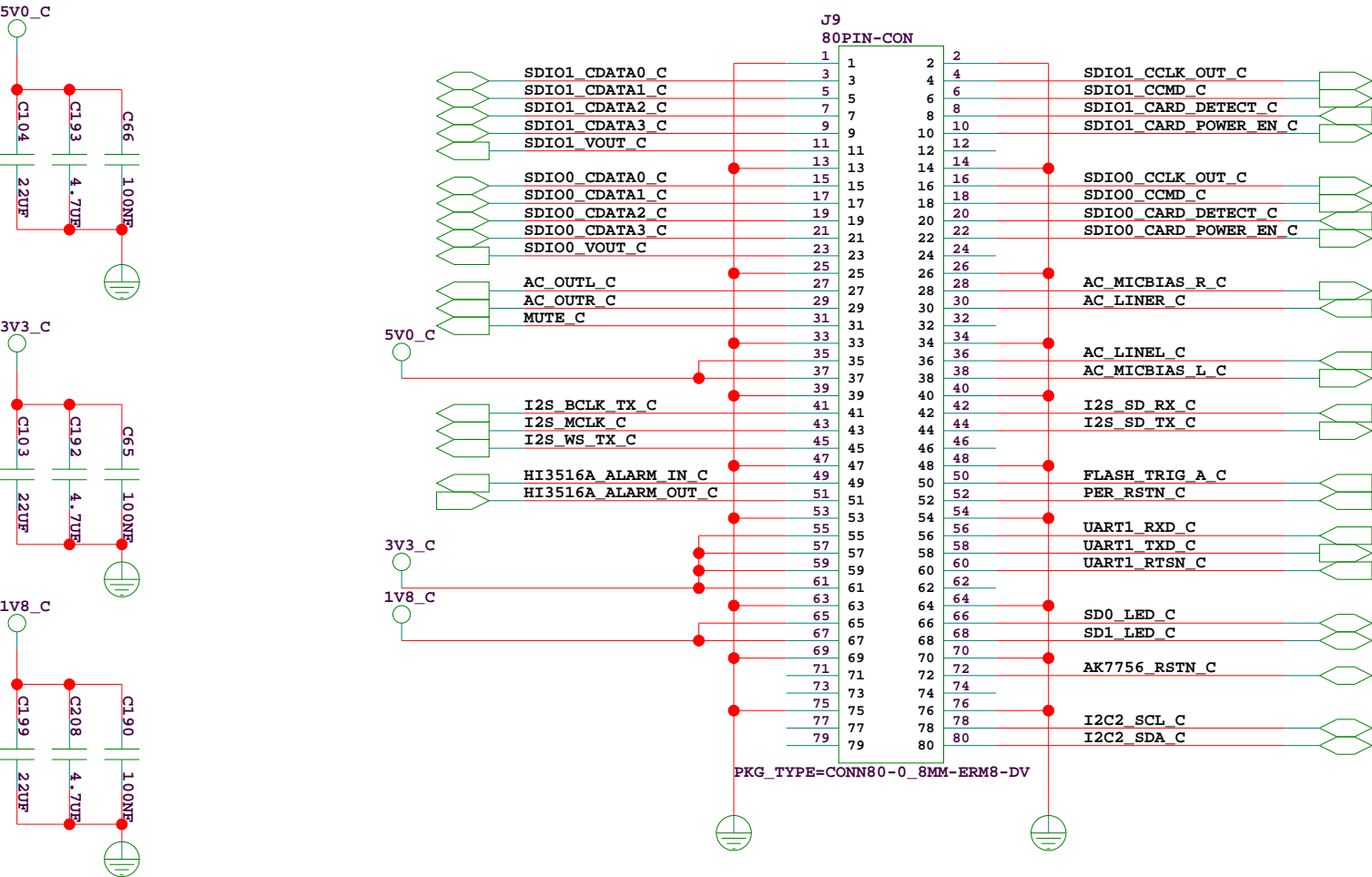
INSALLNATION HOLES



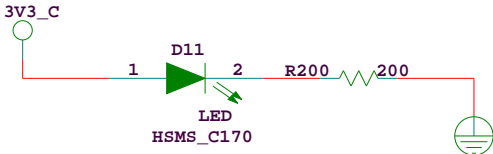
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		VER	PART_NUMBER	SHEET 18 OF 23	
		C	03030001	HUAWEI TECH CO.,LTD.	

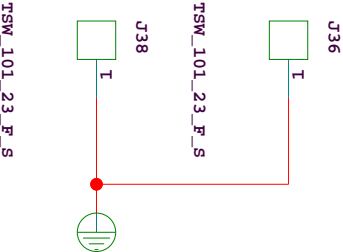
CONNECTOR TO J8&POWER LED



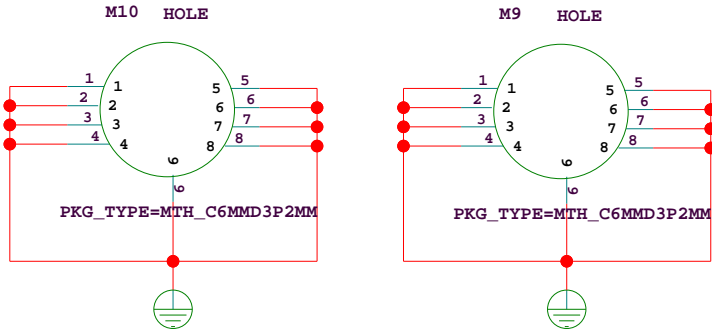
POWER LED



PGND test pin



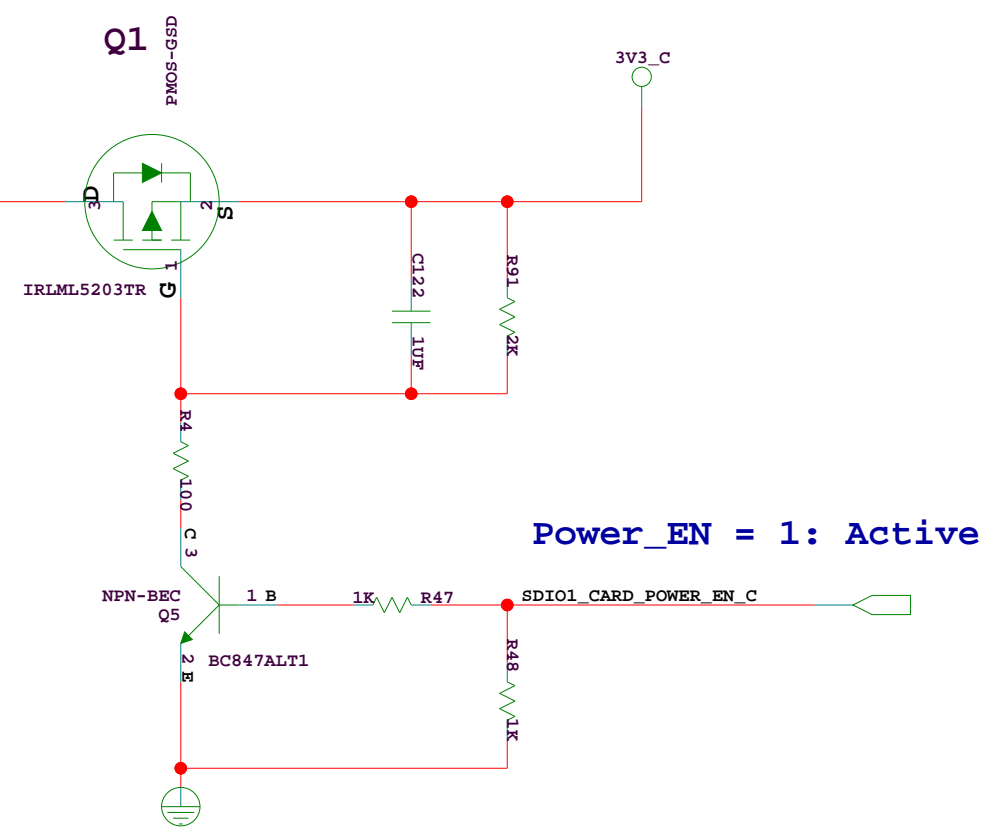
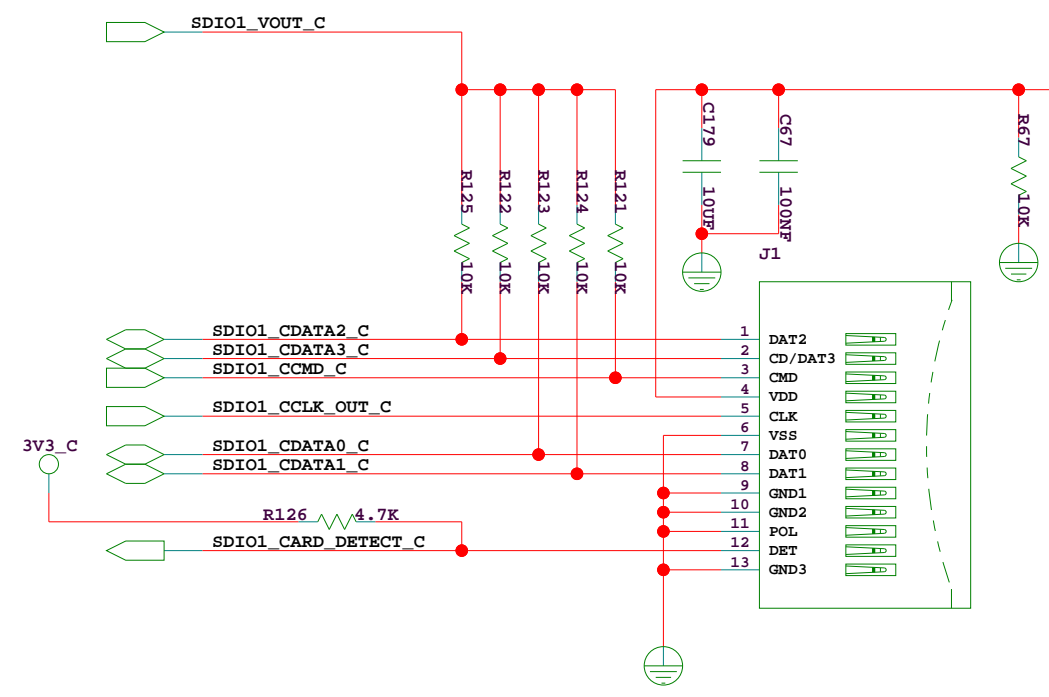
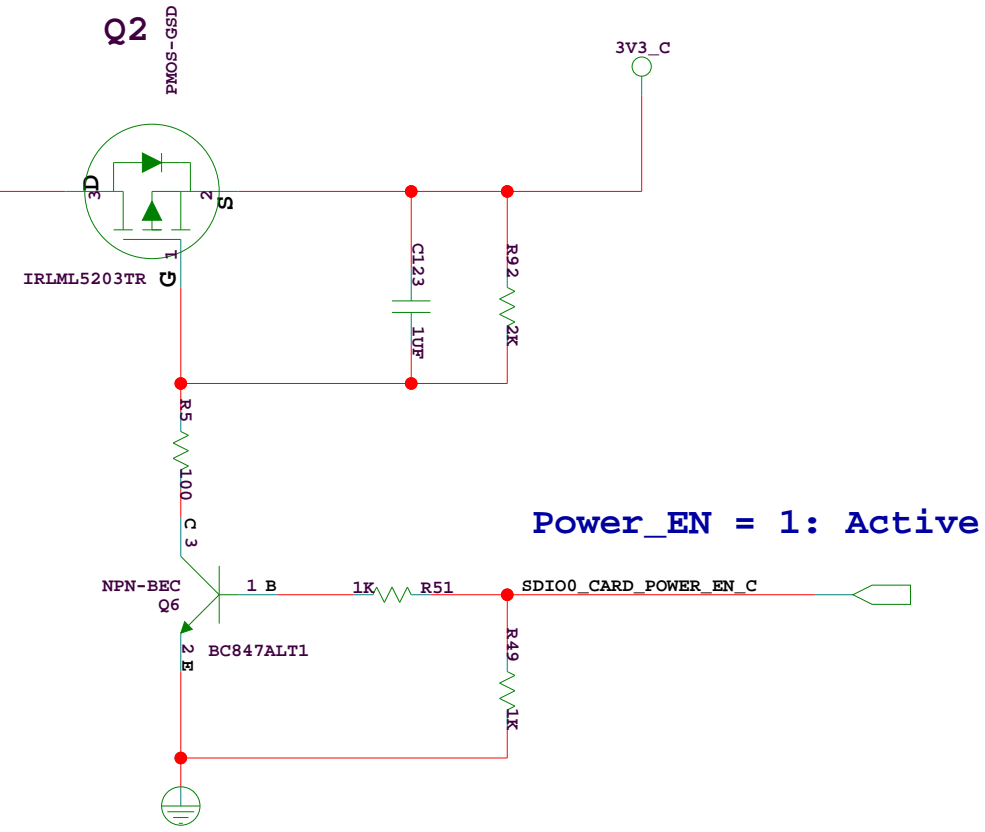
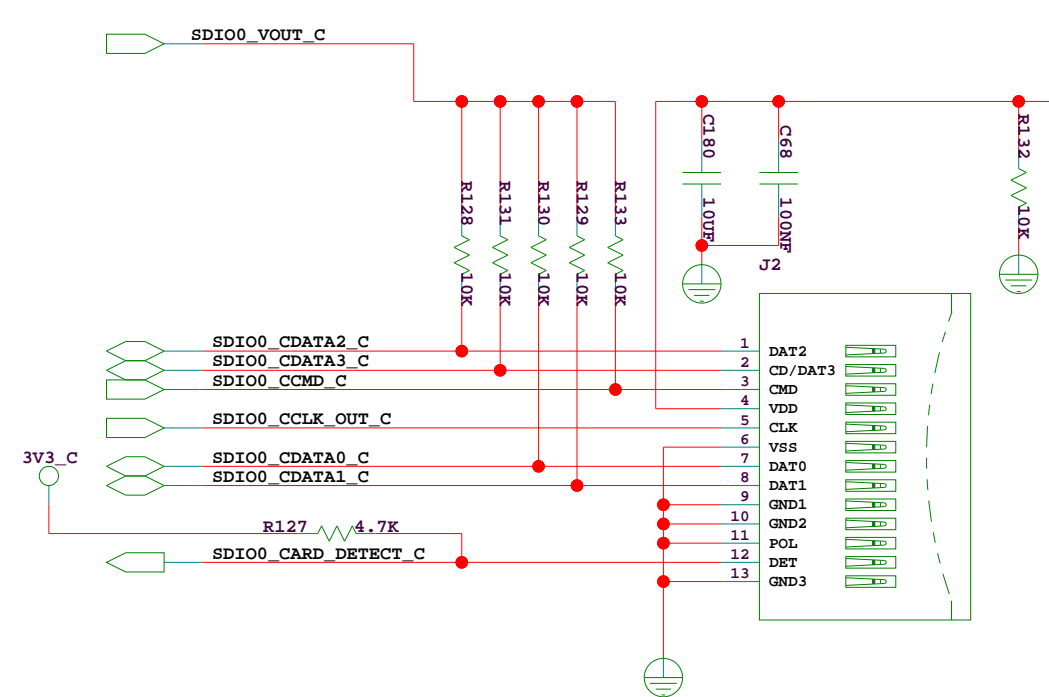
INSALLNATION HOLES



The type and specification of the components refer to the BOM

				NA	
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DESIGNED	WANGYONGHAO 206908	HI3516APERB_VB		00001234	
REVIEWED	LISI XXXXX				
		VER	PART_NUMBER	SHEET 19 OF 23	
		C	03030001	HUAWEI TECH CO.,LTD.	

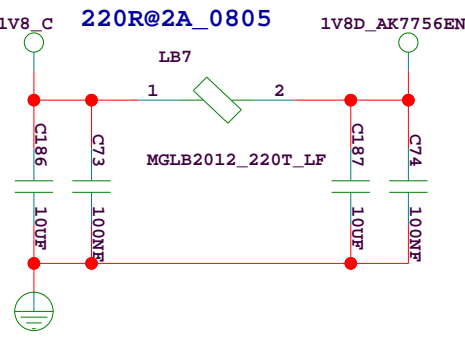
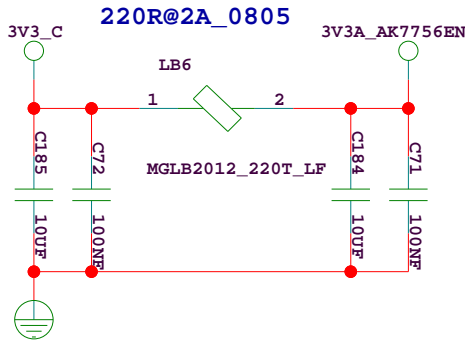
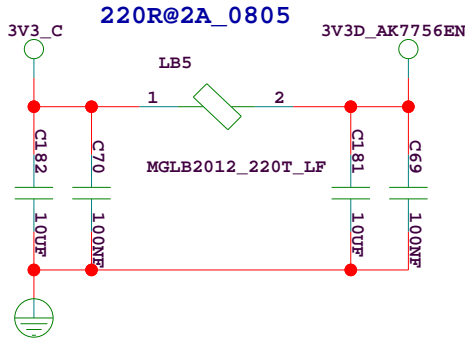
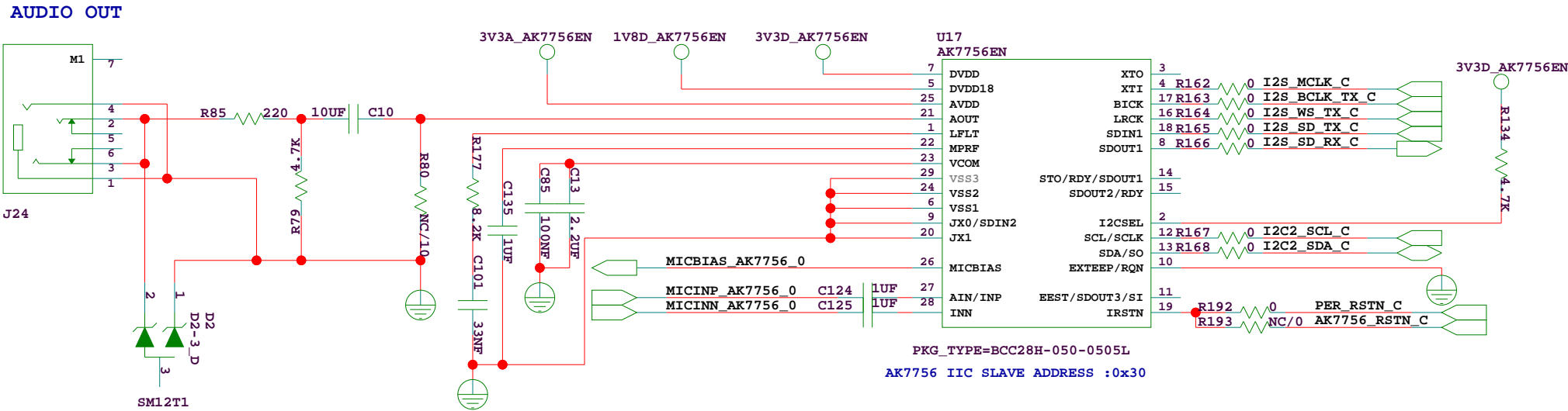
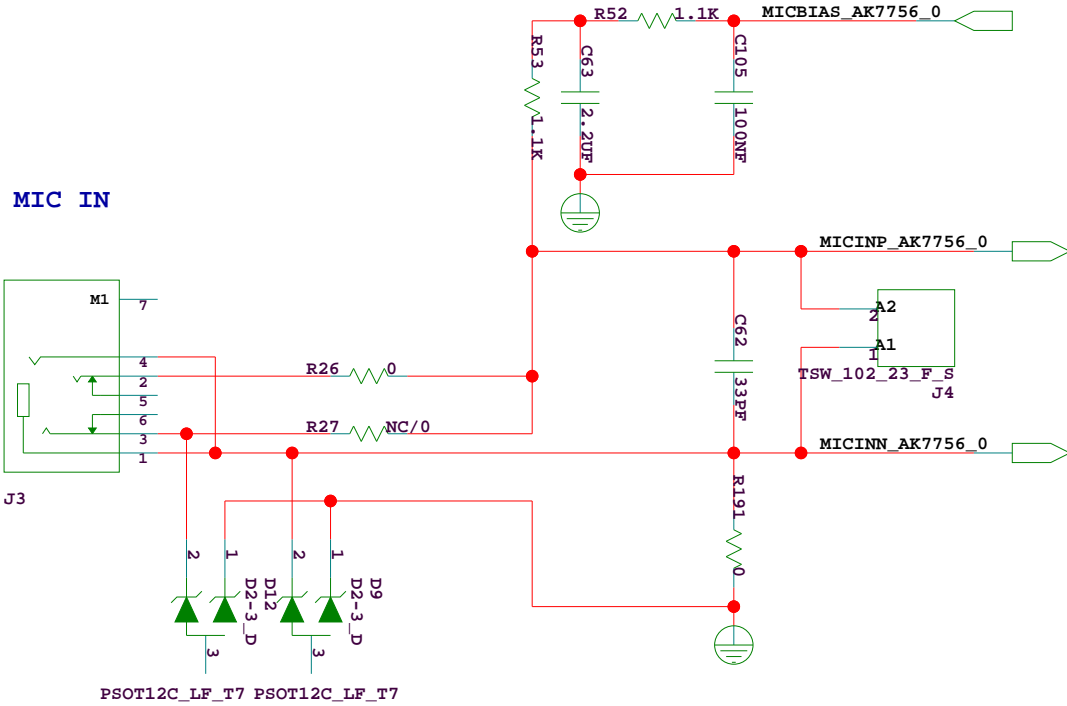
Micro-SD Card



The type and specification of the components refer to the BOM

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DESIGNED	WANGYONGHAO 206908	HI3516APERB_VB		00001234	
REVIEWED	LISI XXXXX				
		VER	PART_NUMBER	SHEET 20 OF 23	
		A	03030001	HUAWEI TECH CO.,LTD.	

I2S



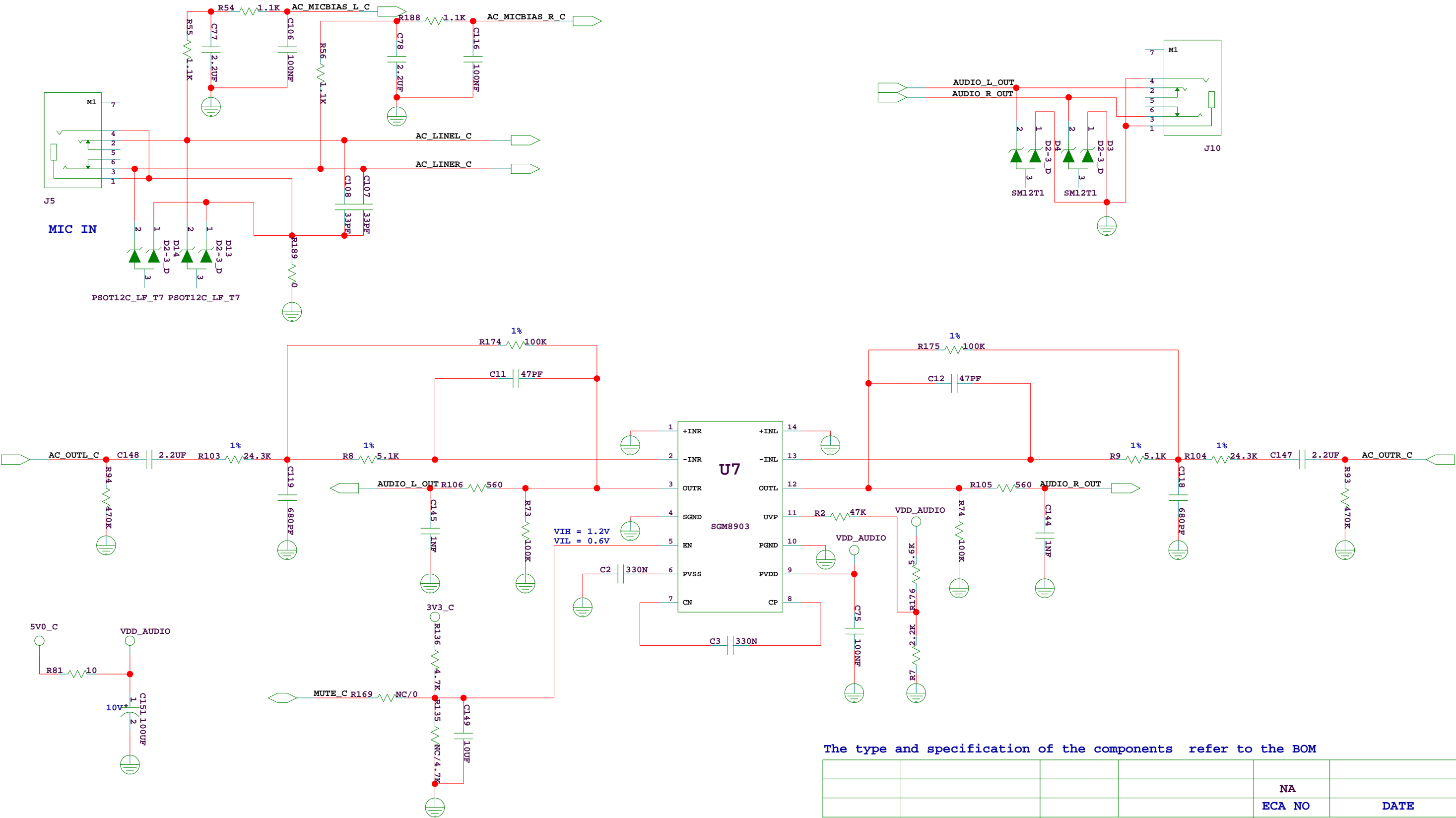
The type and specification of the components refer to the BOM

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REVIEWED	LISI XXXXX				
		VER	PART_NUMBER	SHEET 21 OF 23	
		B	03030001	HUAWEI TECH CO.,LTD.	

AUDIO_AC

AUDIO_IN

AUDIO_OUT



The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	WANGYONGHAO 206908	HI3516APERB_VB		00001234	
REVIEWED	VER.A				
		VER	PART_NUMBER	SHEET 22 OF 23	
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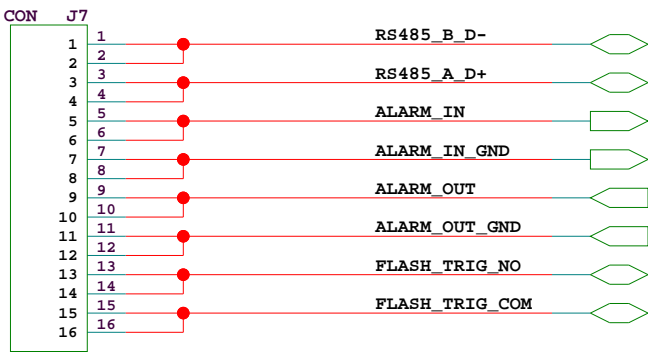
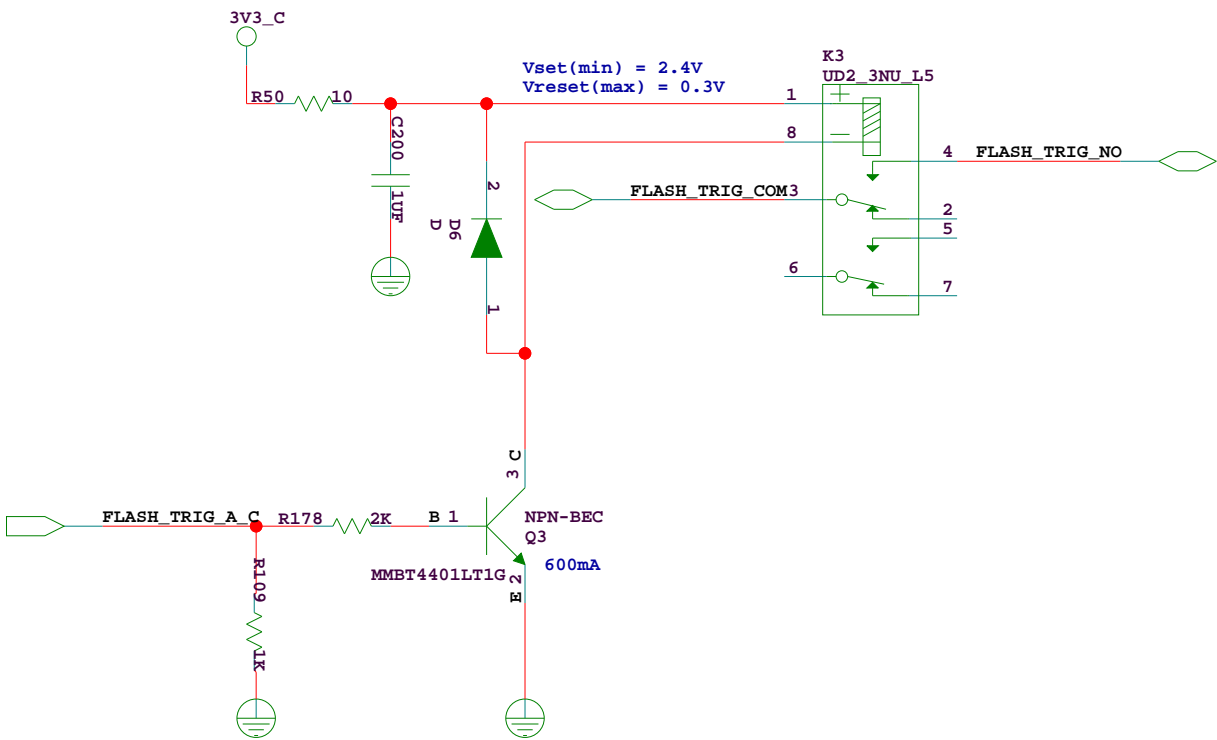
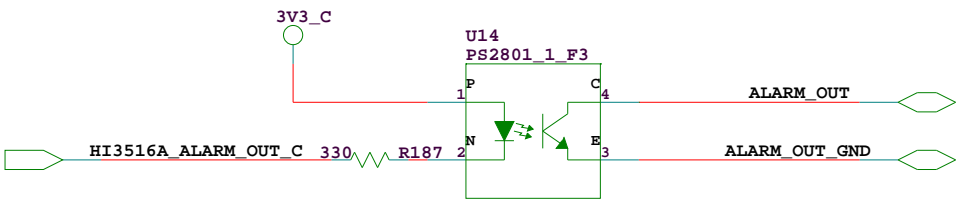
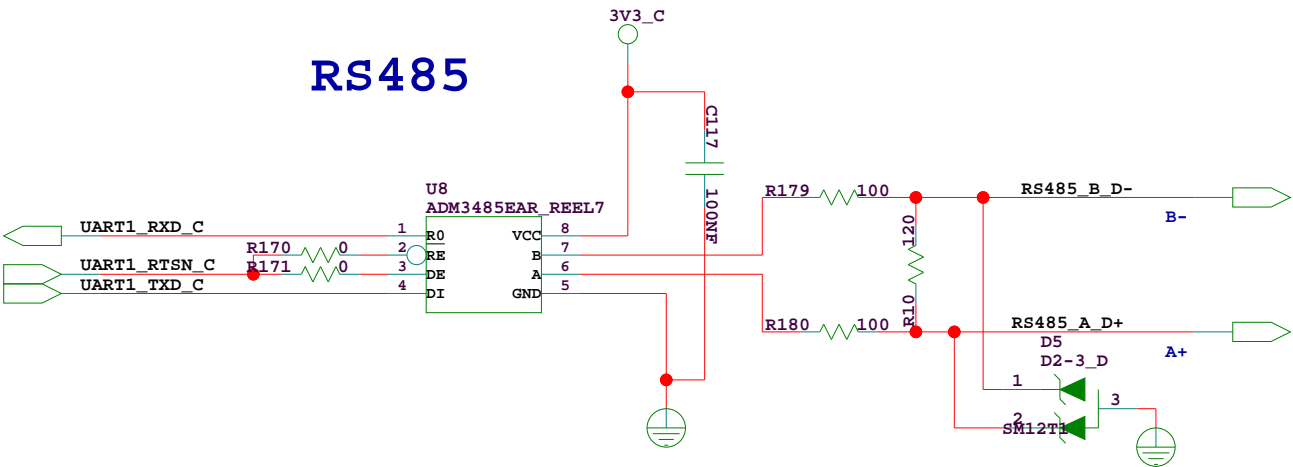
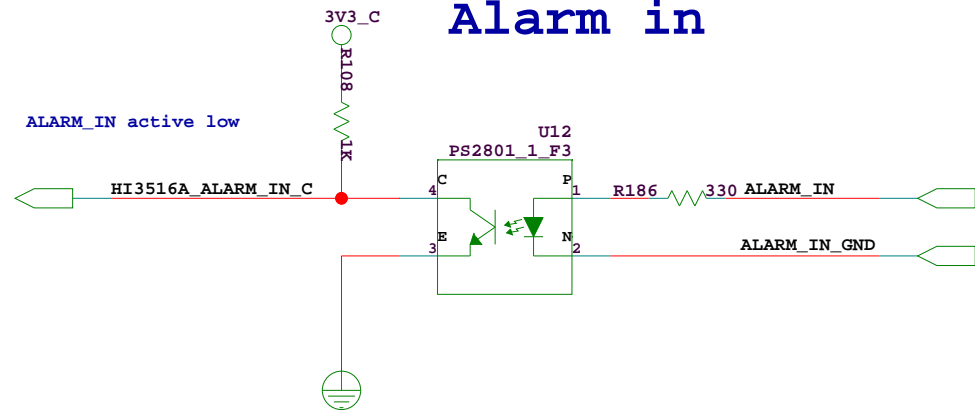
ALARM&RS485&FLASH TRIG

RS485

Alarm in

FLASH_TRIG

Alarm out



The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	WANGYONGHAO 206908	HI3516APERB_VB		00001234	
REVIEWED	LISI XXXXX				
		VER	PART_NUMBER	SHEET 23 OF 23	
		A	03030001	HUAWAI TECH CO.,LTD.	