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Hi3796MDMO1A

VER_A

Hi3796MV100 DEMO Board

4 layers PCB with 2x DDR3 16bit

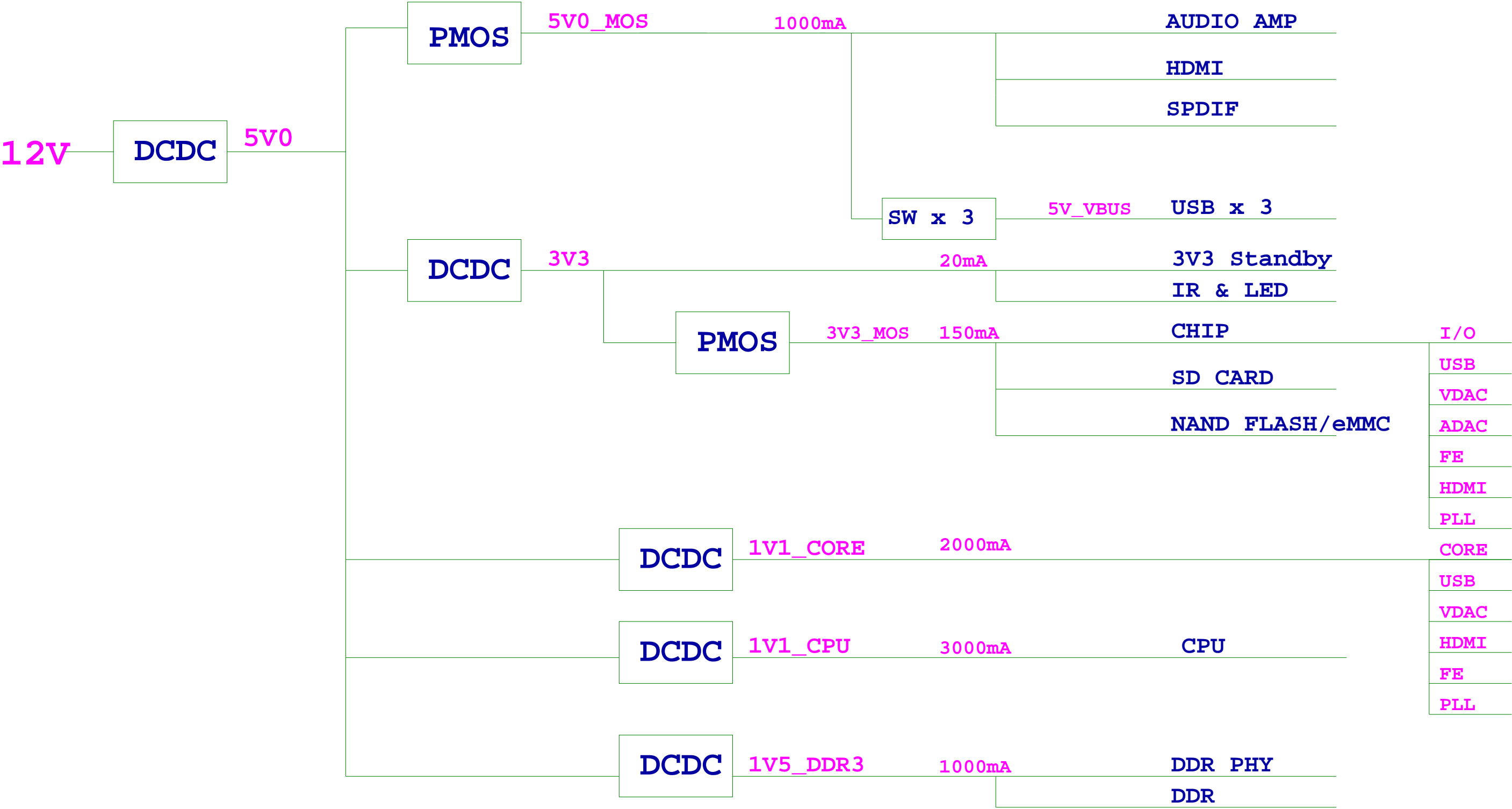
Hi3796MDMO1A VER.A_V1.1.0.0

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The type and specification of the components refer to the BOM

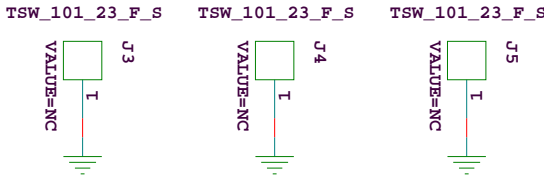
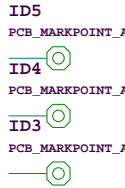
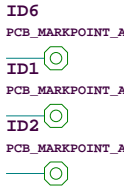
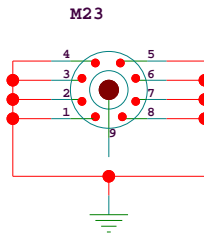
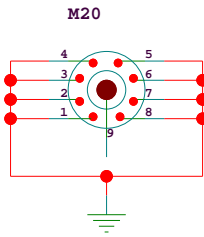
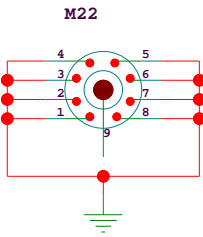
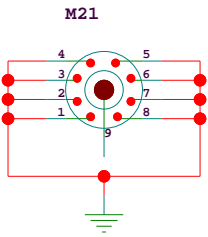
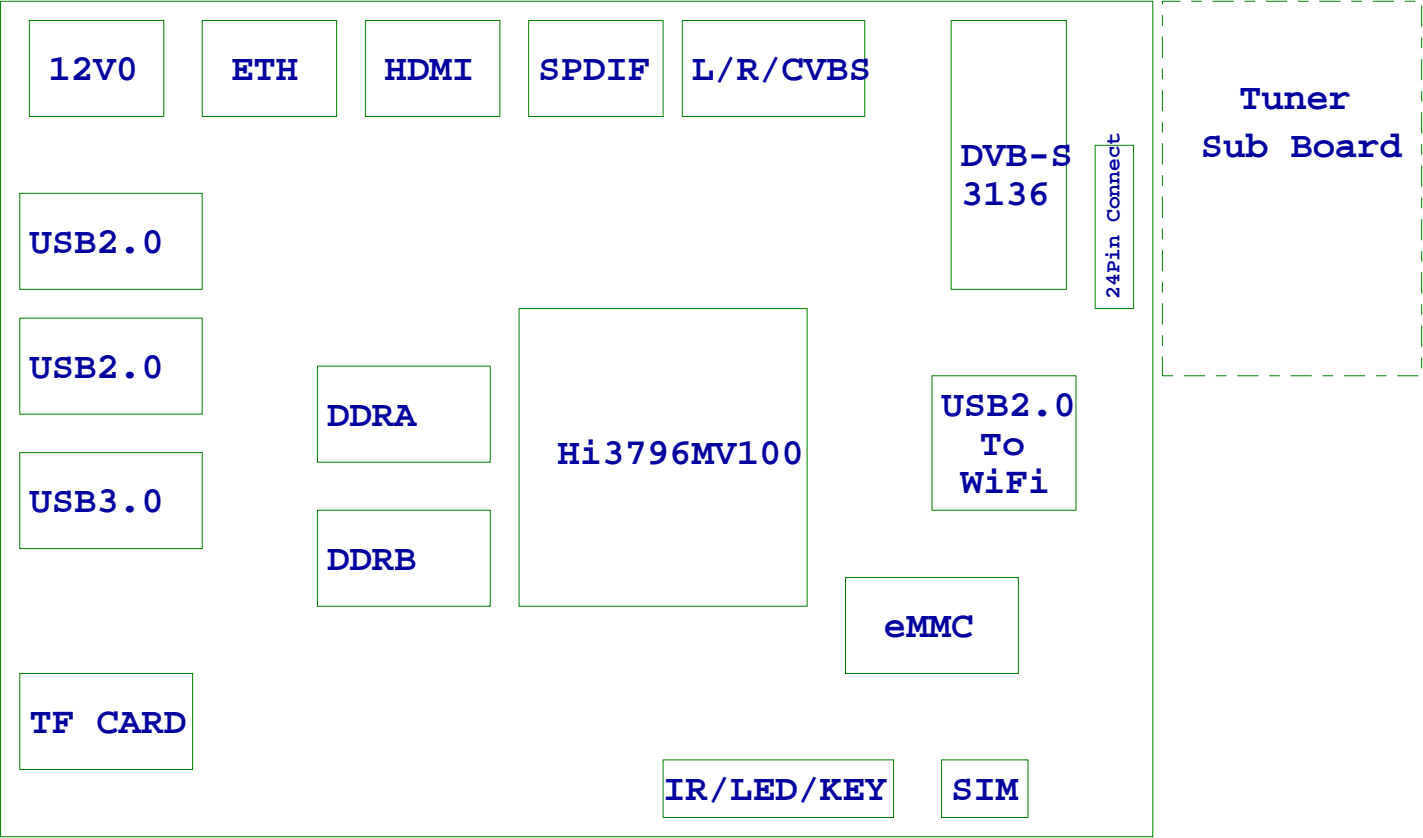
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| | | | | ECA NO | DATE |
| DESIGNED | WURANGLIANG 170563 | HI3796MDMO1A_VERA | | 00001234 | |
| REVIEWED | CHENYUZHU 149603 | | | | |
| | | VER | PART_NUMBER | SHEET 1 OF 22 | |
| | | A | 03030001 | HUAWEI TECH CO.,LTD. | |
| | | | | | |

Power Tree



| | | | | | |
|---|--------------------|-------------------|-------------|----------------------|------------|
| 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 2 OF 25 | |
| | | A | 03030001 | HUAWEI TECH CO.,LTD. | |
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Block Diagram



The type and specification of the components refer to the BOM

| | | | | | |
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| | | | | NA | 2013-08-04 |
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| DESIGNED | WURANGLIANG 170563 | HI3796MDM01A_VERA | | 00001234 | |
| REVIEWED | CHENYUZHU 149603 | | | | |
| | | VER | PART_NUMBER | SHEET 3 OF 22 | |
| | | A | 03030001 | HUAWEI TECH CO.,LTD. | |

6



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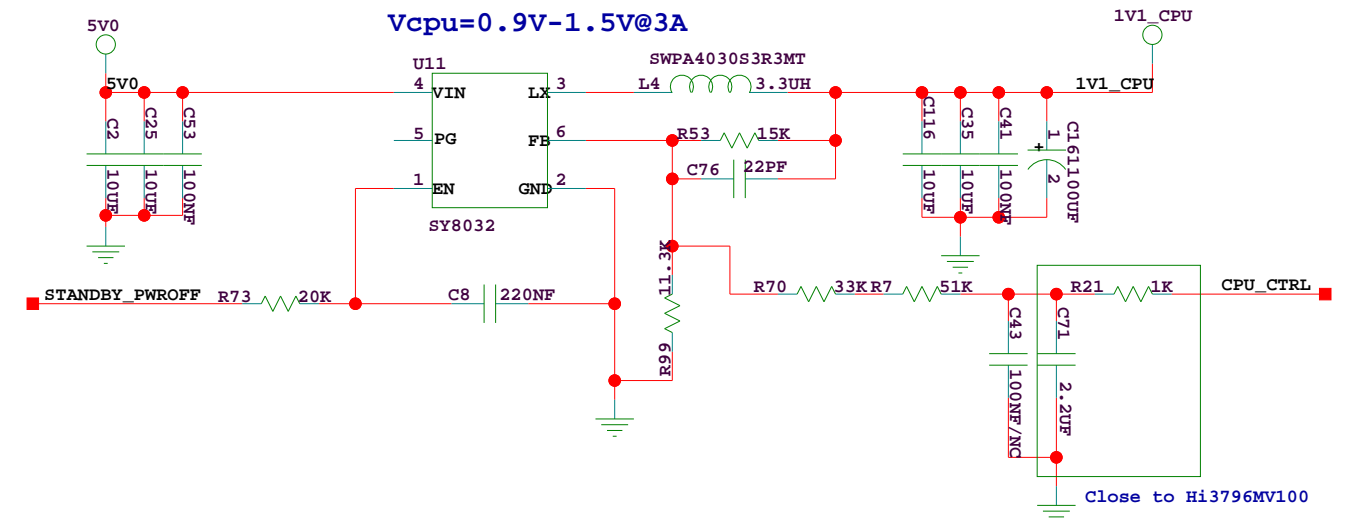
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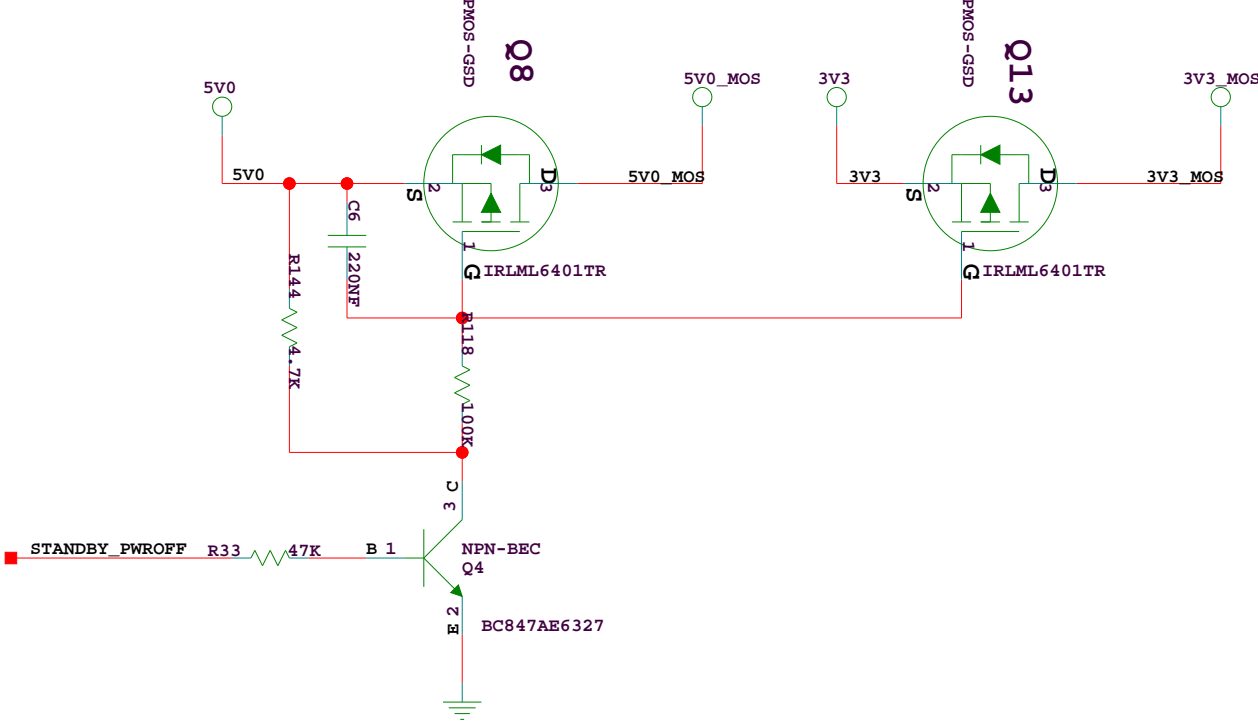
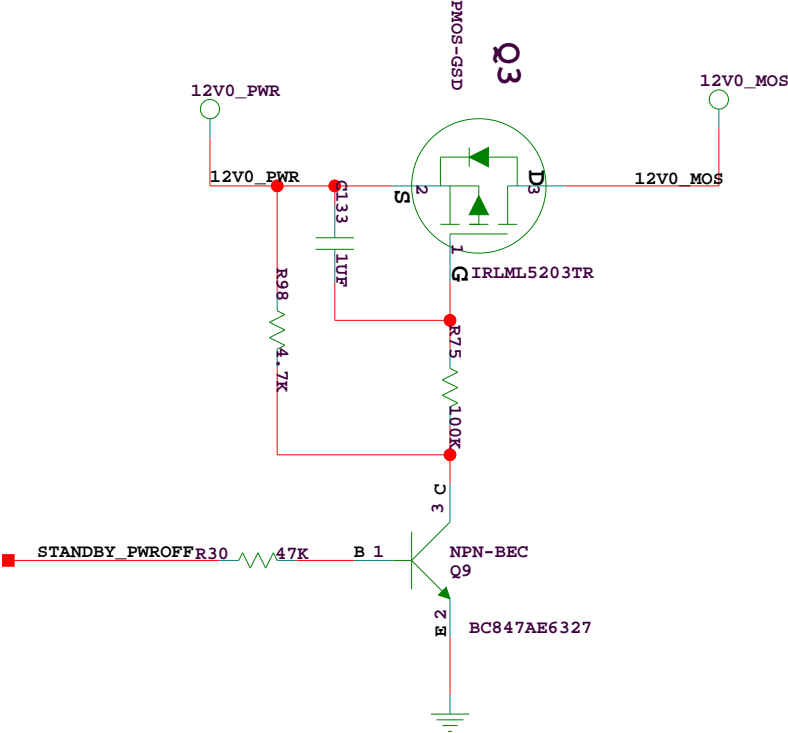


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| REVIEWED | CHENYUZHU 149603 | | | | |
| | | VER | PART_NUMBER | SHEET 4 OF 22 | |
| | | A | 03030001 | HUAWEI TECH CO.,LTD | |
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Power Ctrl

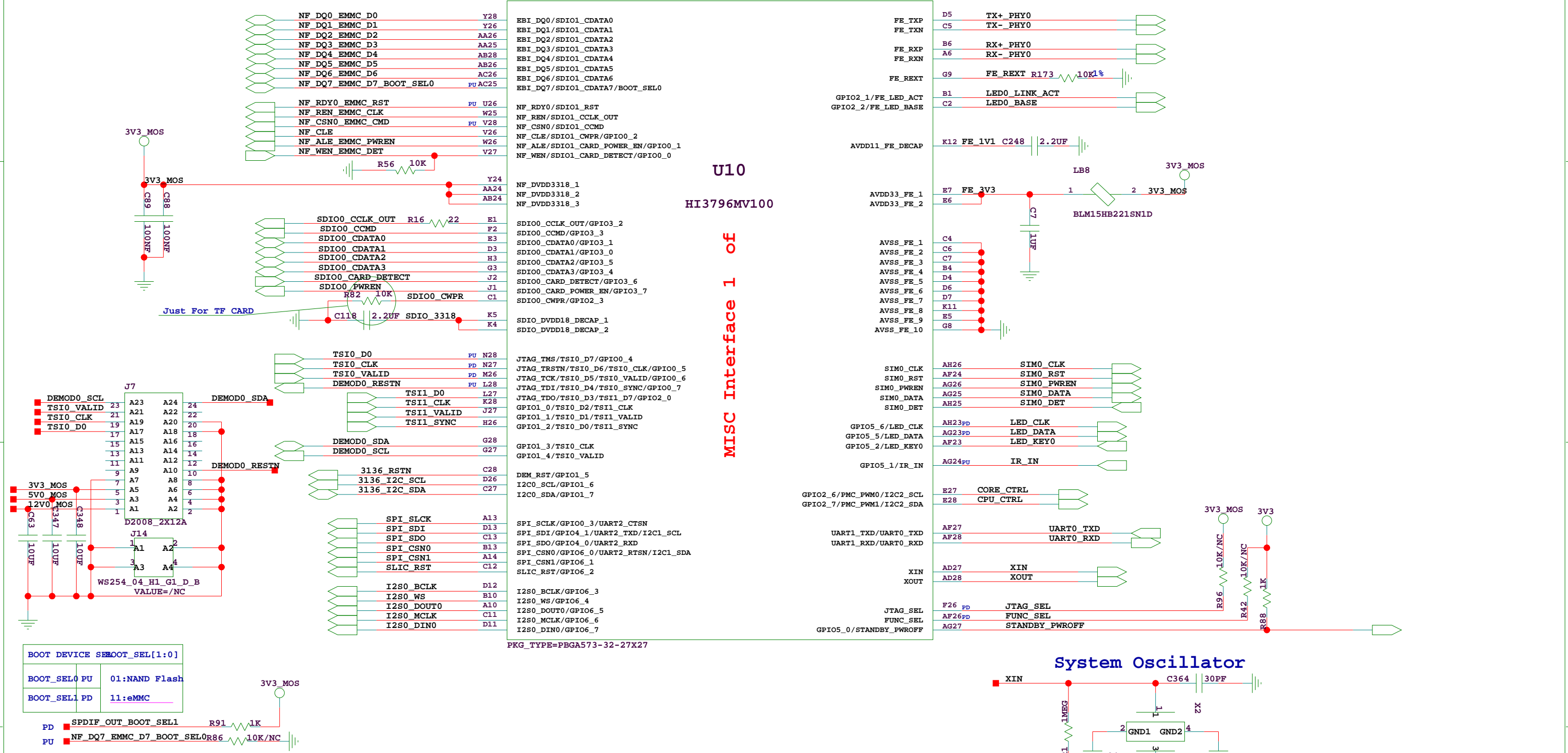


| STANDBY_PWROFF | |
|----------------|-----------|
| 0 | Power Off |
| 1 | Power On |

The type and specification of the components refer to the BOM

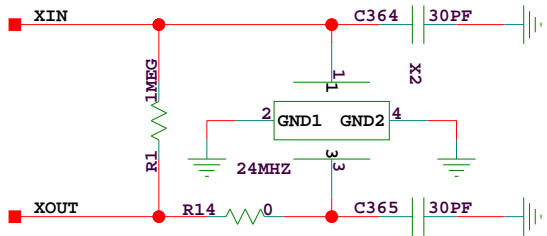
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| REVIEWED | CHENYUZHU 149603 | | | | |
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Unit 1 of Hi3796MV100(NAND/SDIO/SPI+I2S/FE/SIM/FP/Sys)



U10
HI3796MV100
MISC Interface 1 of

System Oscillator



The type and specification of the components refer to the BOM

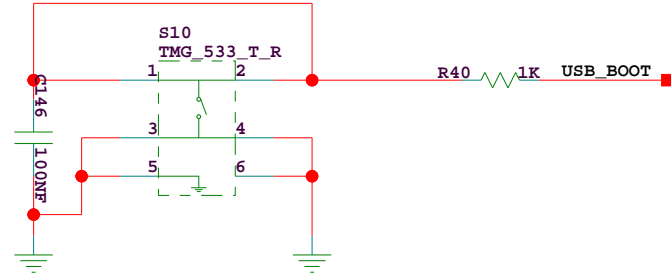
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| REVIEWED | CHENYUZHU 149603 | | | | |
| | | VER | PART_NUMBER | SHEET 6 OF 22 | |
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Unit 2 of Hi3796MV100(JTAG/USB2.0/HDMI TX/DAC/I2S/SPI/UART)

** 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.

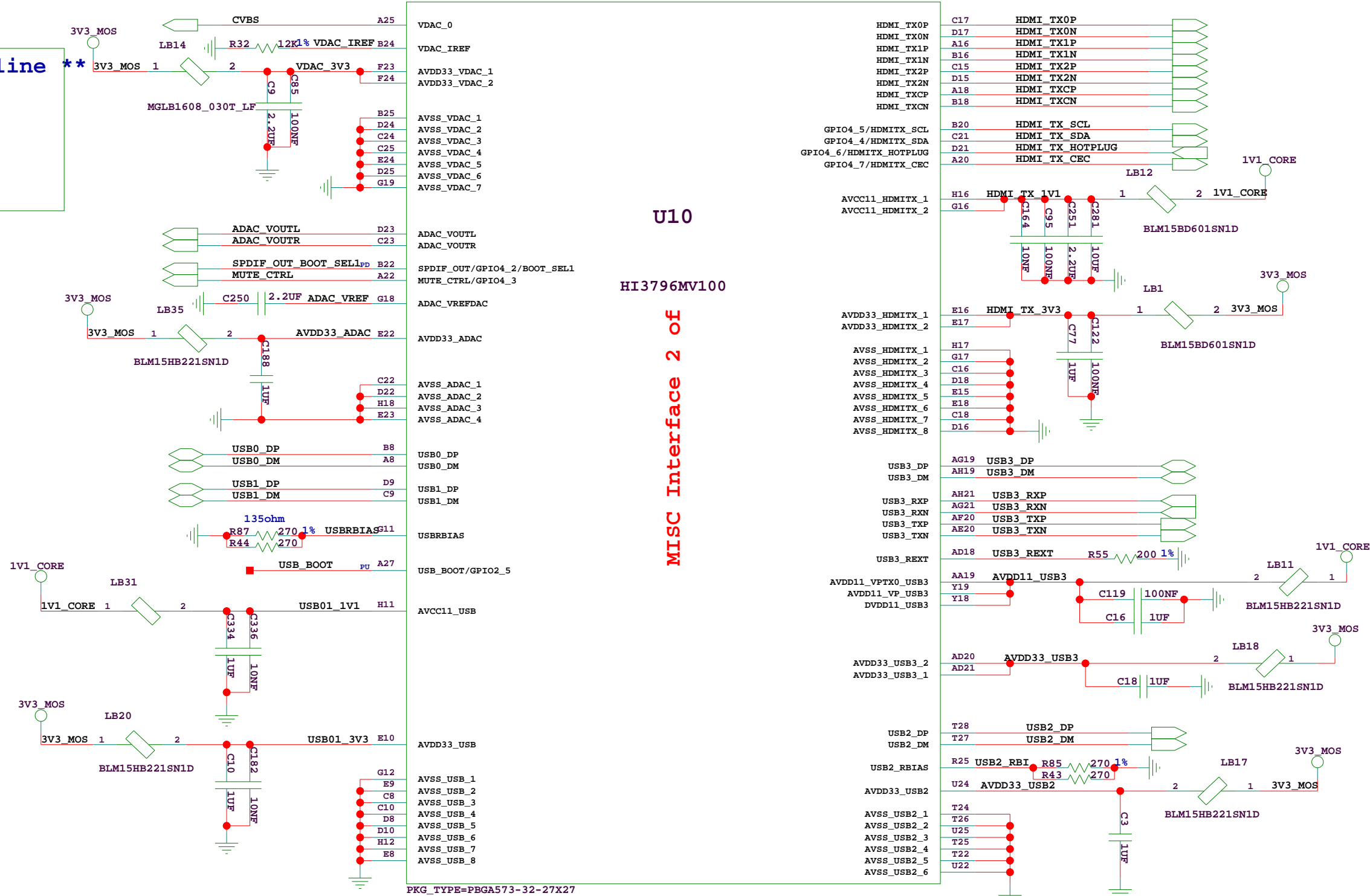


** USB Design guideline **

- 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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| | | A | 03030001 | HUAWEI TECH CO.,LTD. | |

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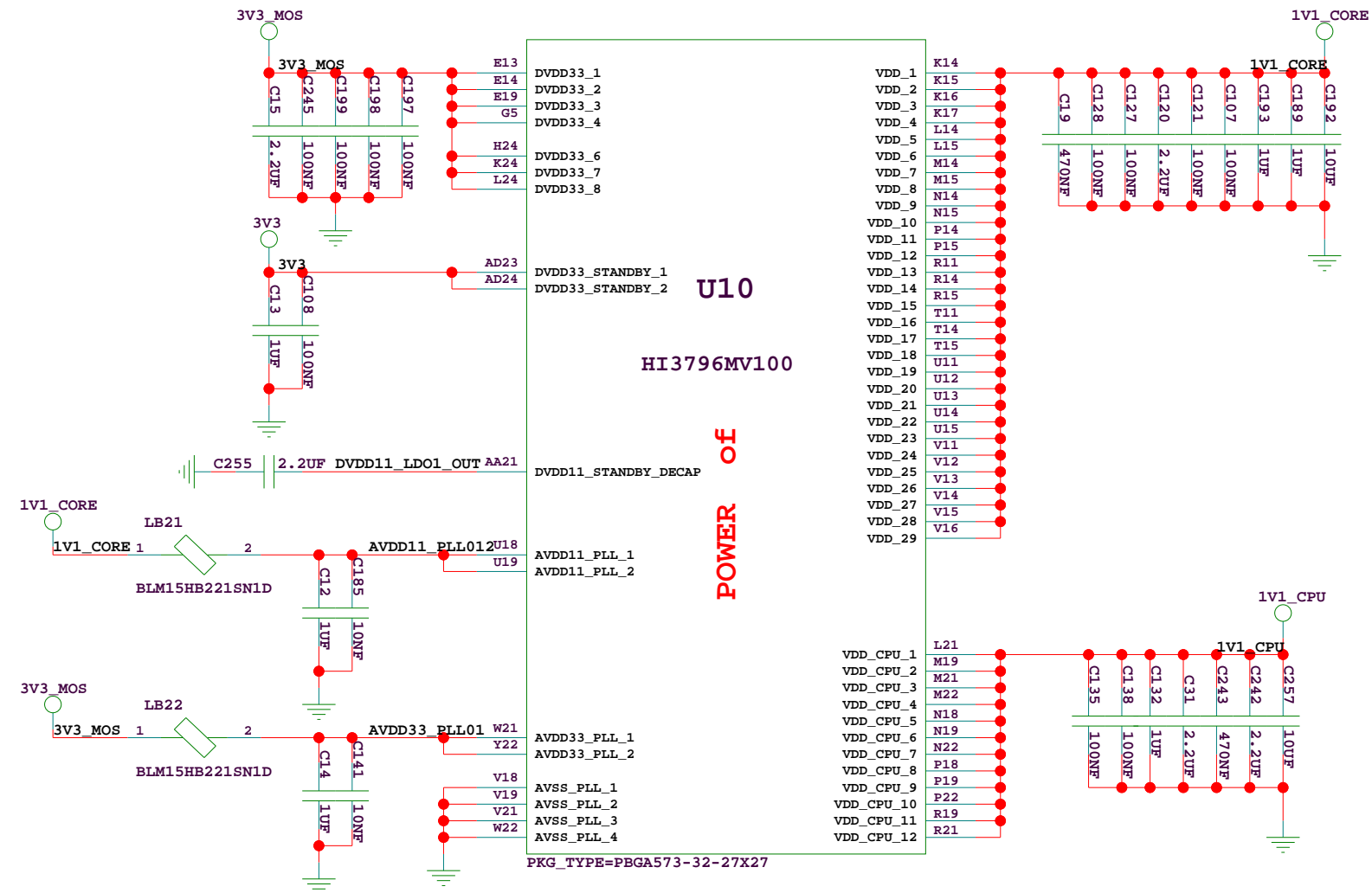
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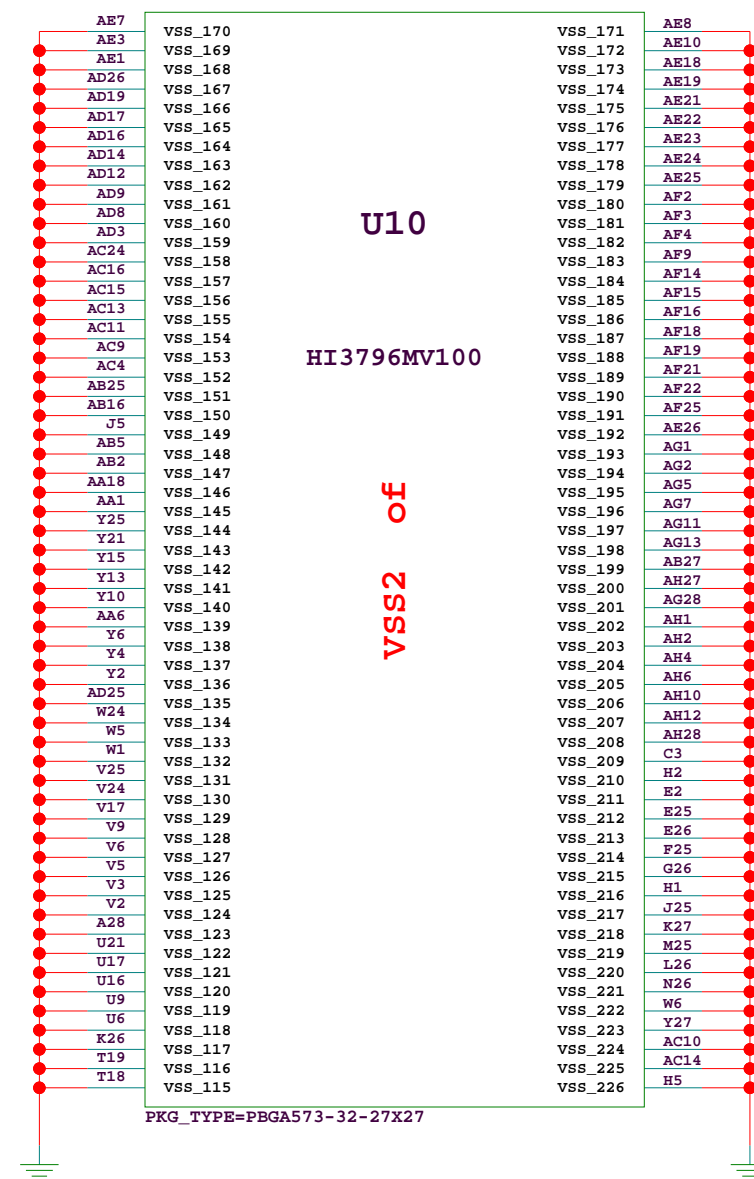
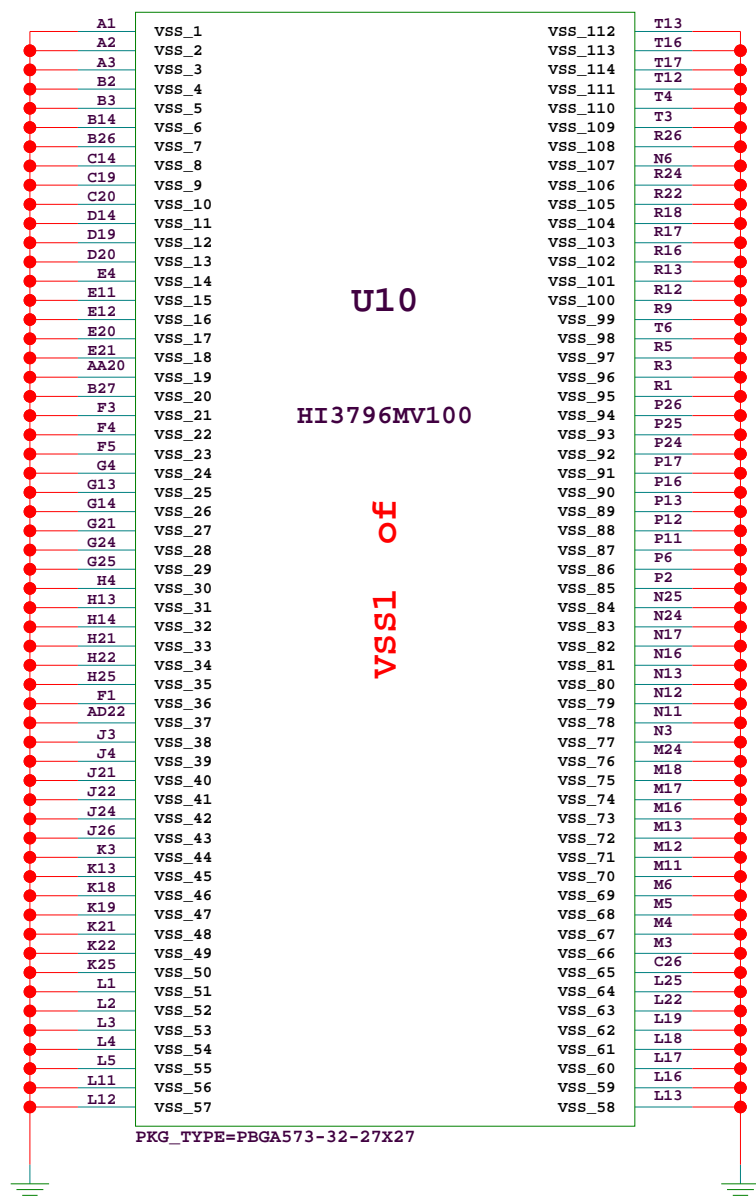
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Unit 4 of Hi3796MV100(Power)



The type and specification of the components refer to the BOM

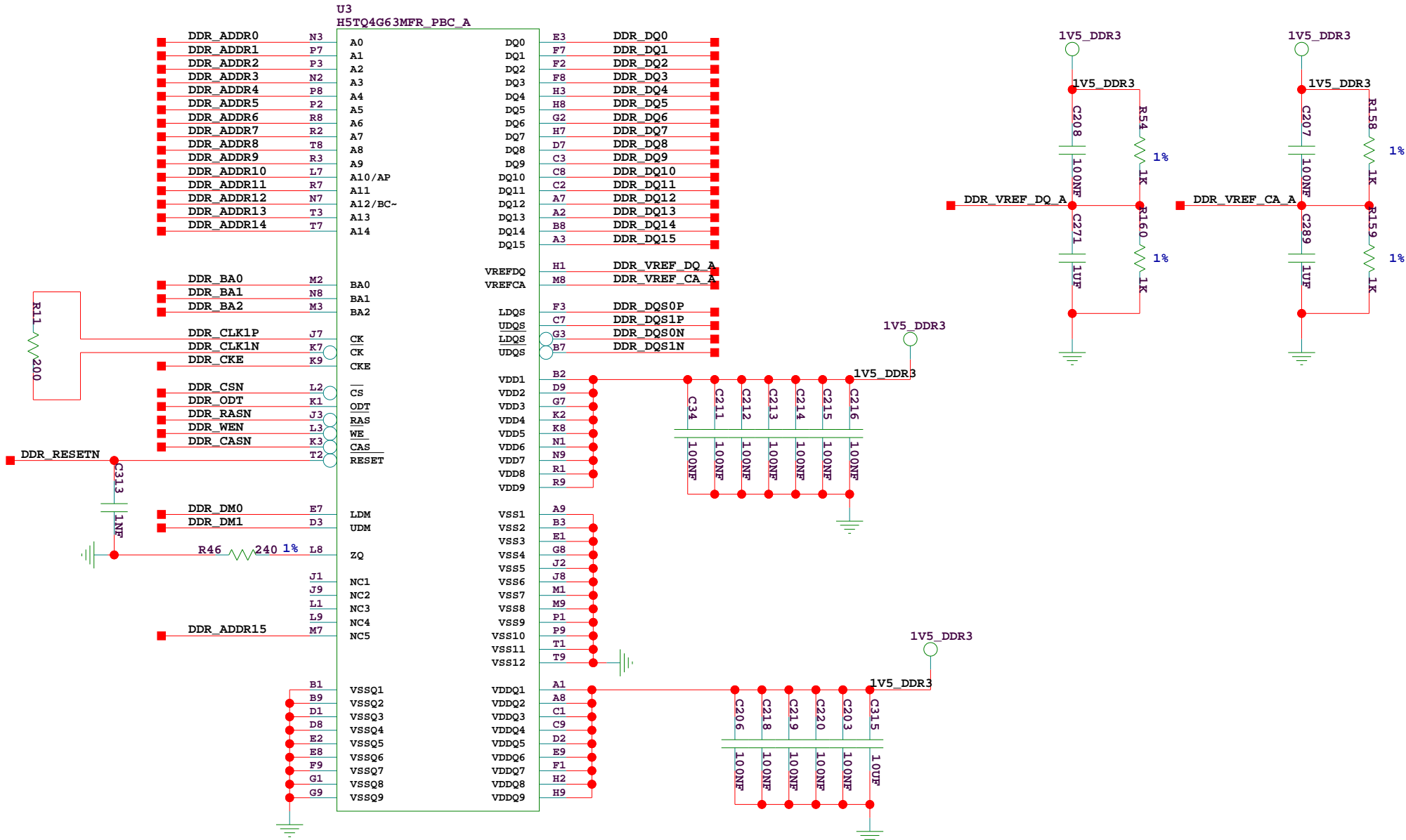
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| REVIEWED | CHENYUZHU 149603 | | | | |
| | | VER | PART_NUMBER | SHEET 9 OF 22 | |
| | | A | 03030001 | HUAWEI TECH CO.,LTD. | |
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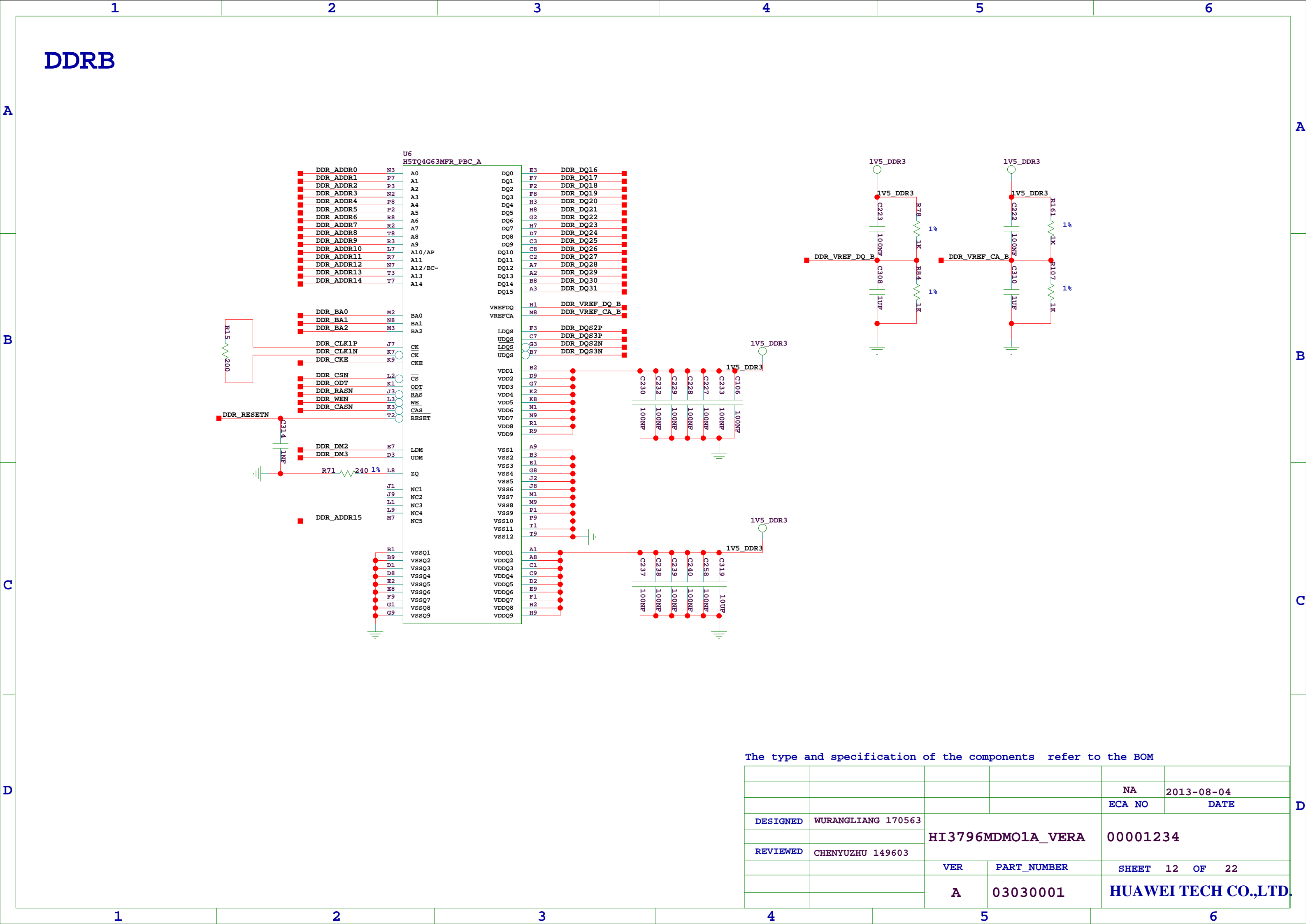
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| REVIEWED | CHENYUZHU 149603 | | | | |
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| | | A | 03030001 | HUAWEI TECH CO.,LTD. | |
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DDRA

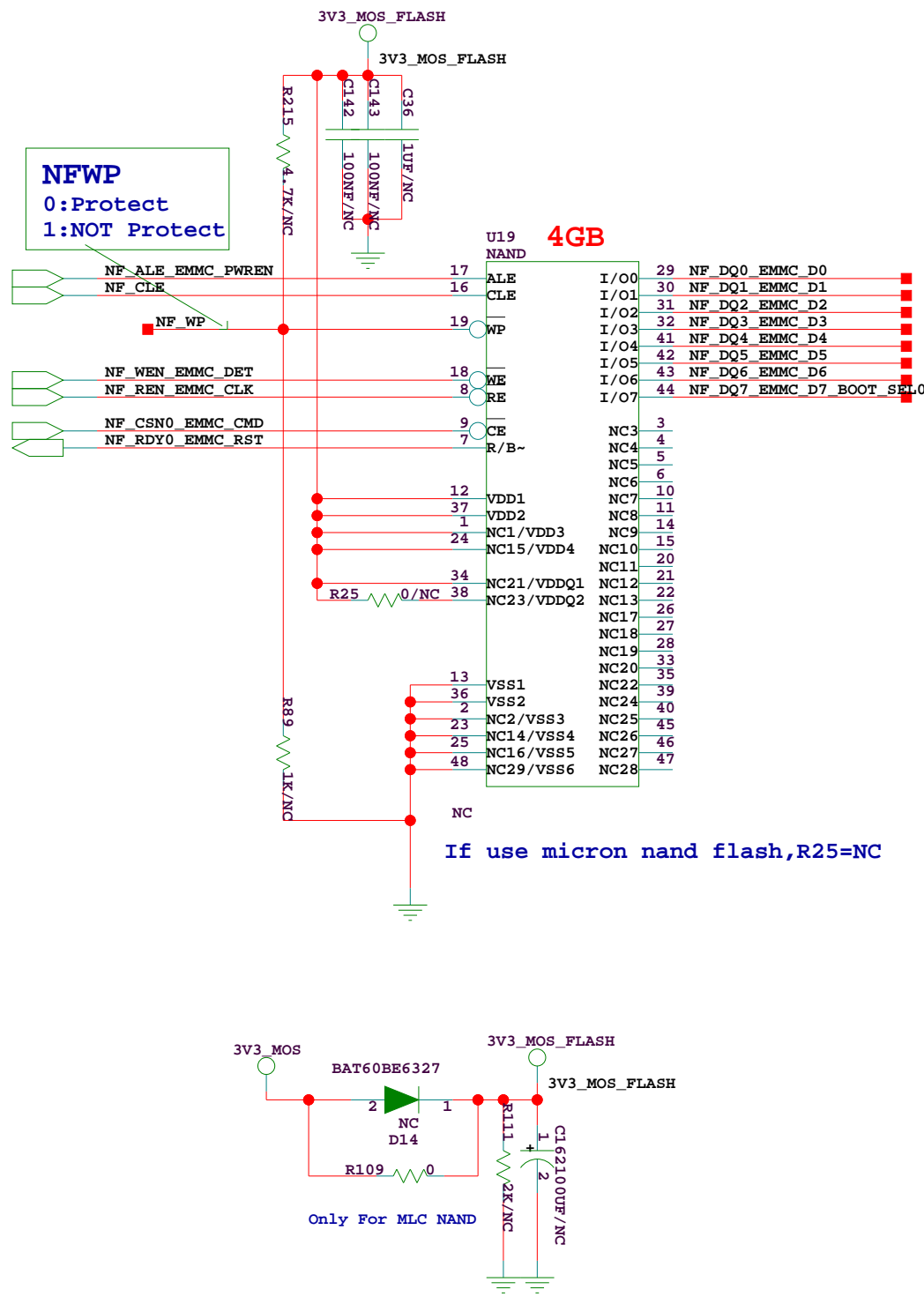


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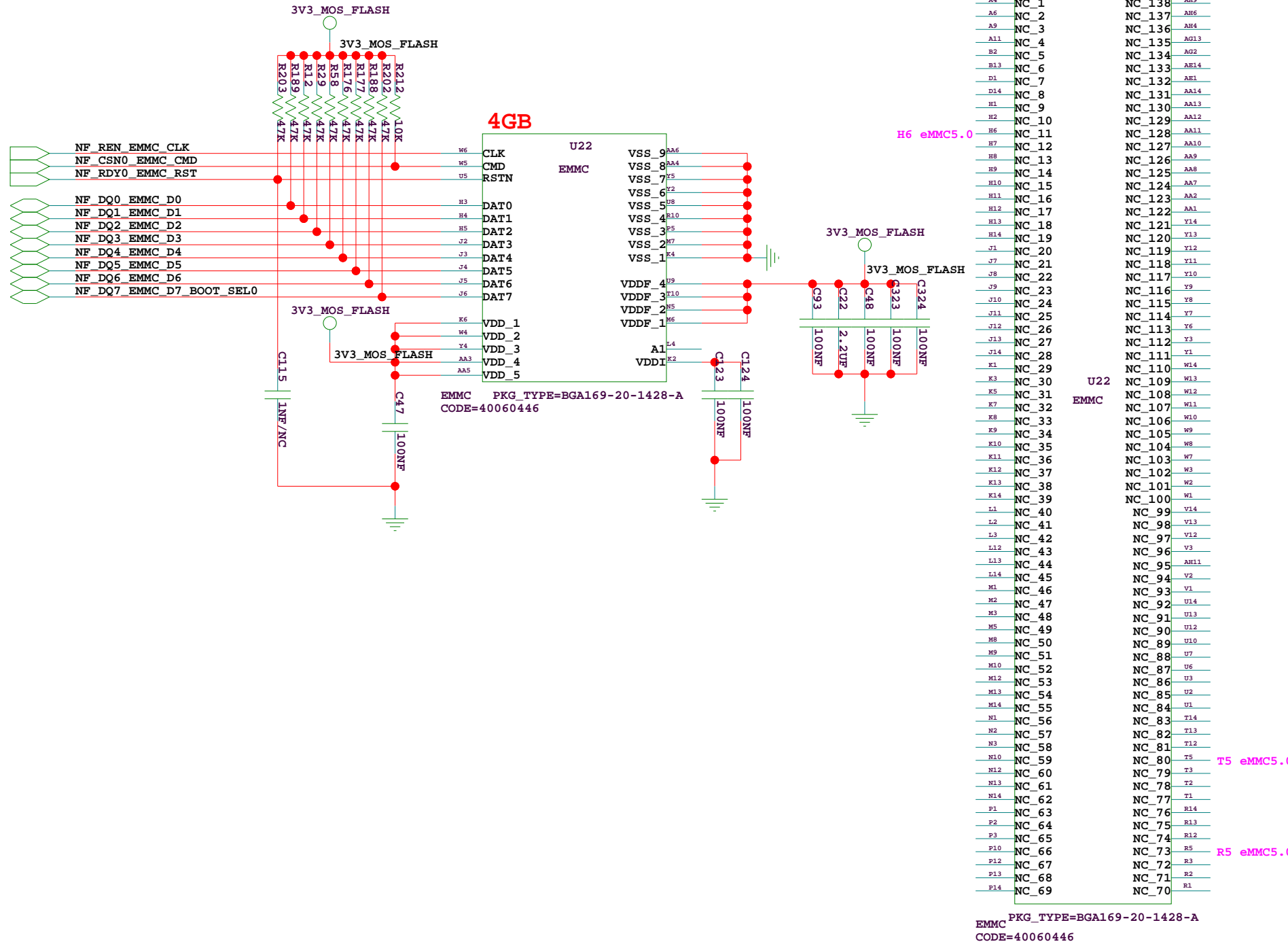
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NAND FLASH/EMMC

NAND FLASH



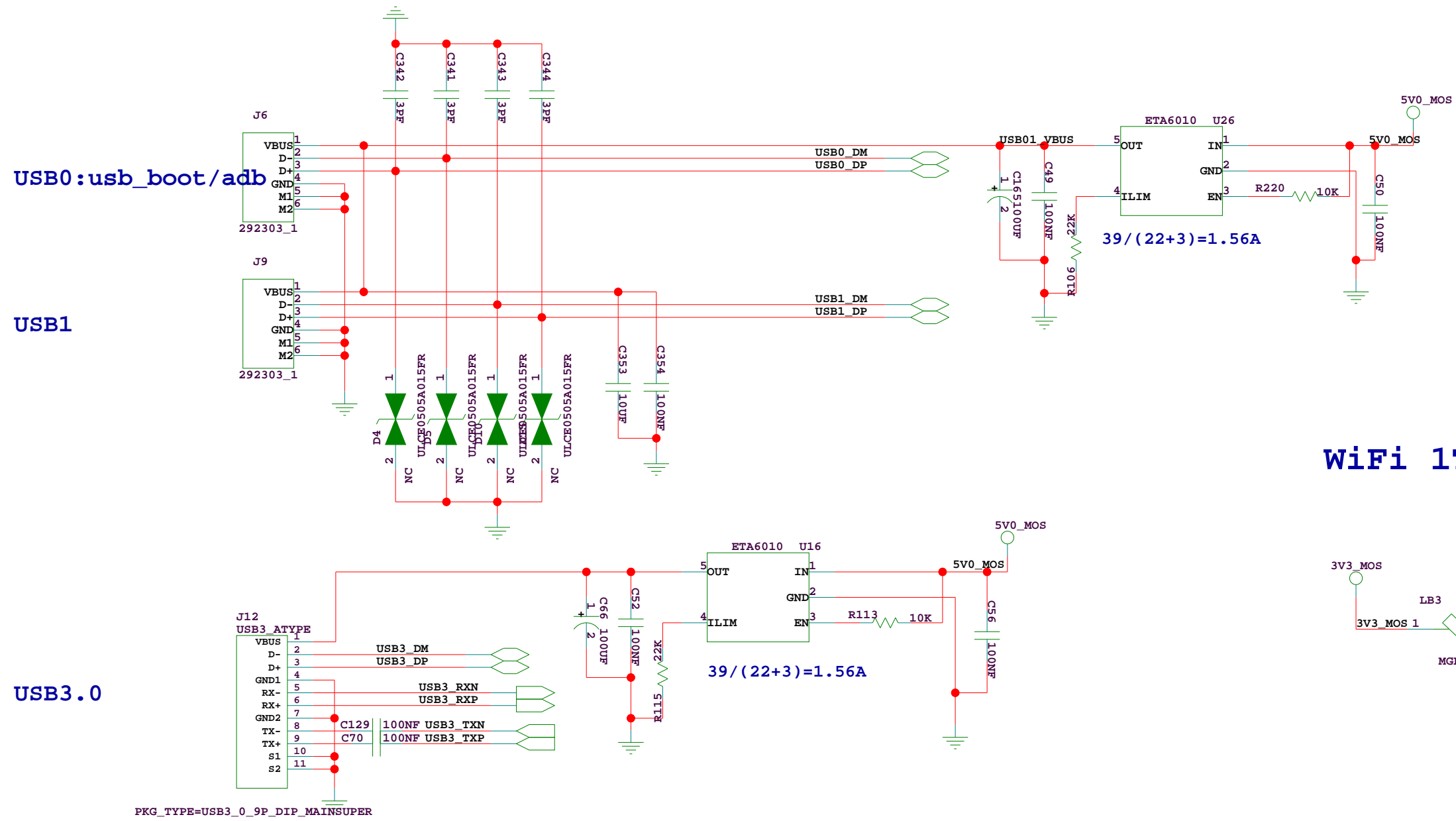
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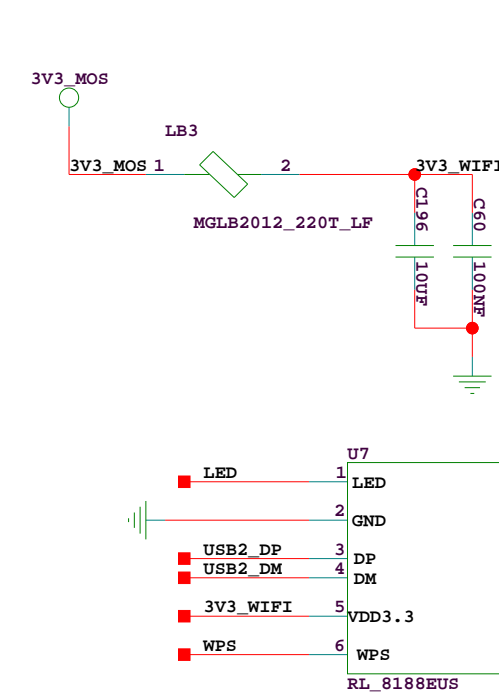
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| REVIEWED | CHENYUZHU 149603 | | | | |
| | | VER | PART_NUMBER | SHEET 13 OF 22 | |
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USB

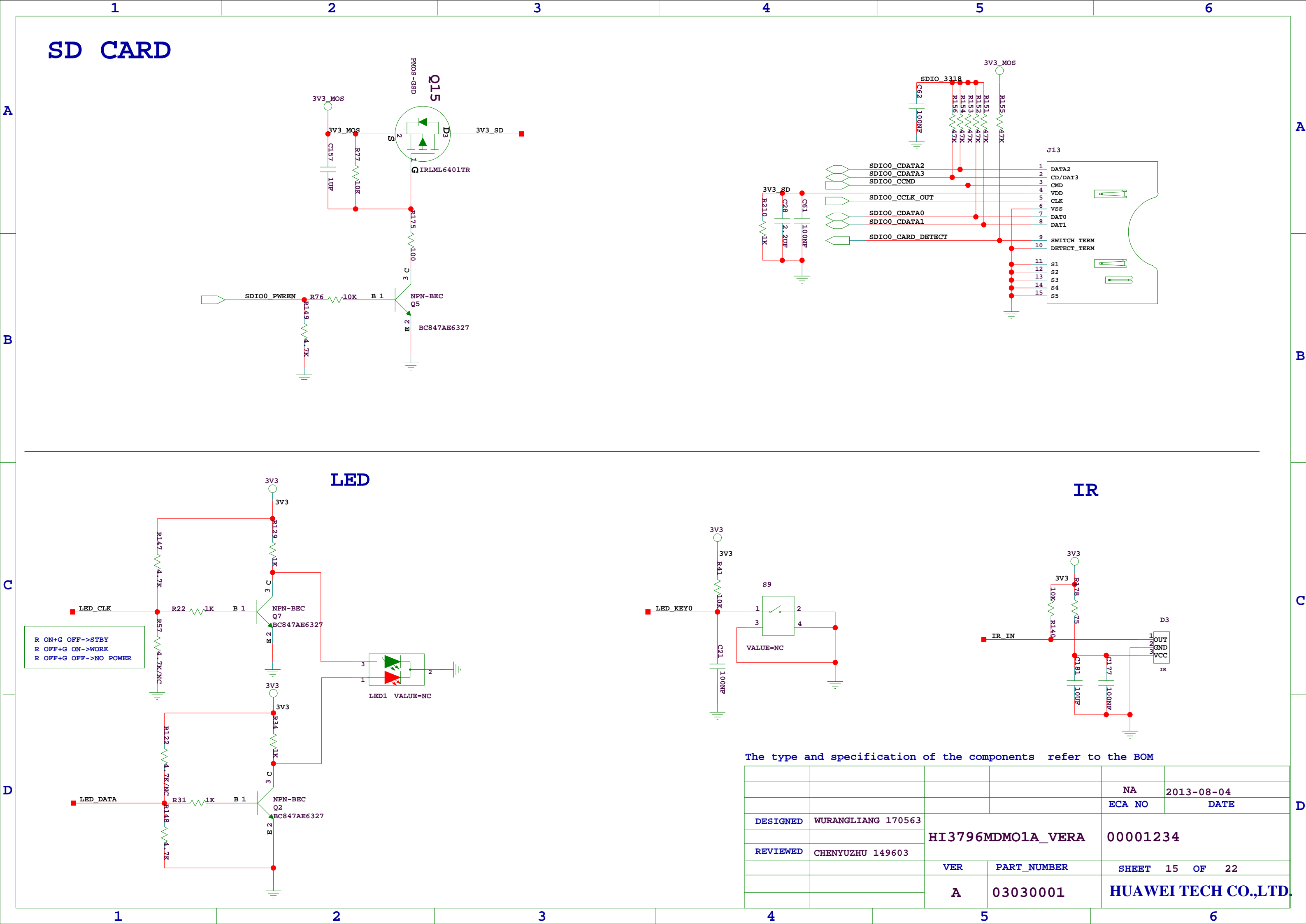
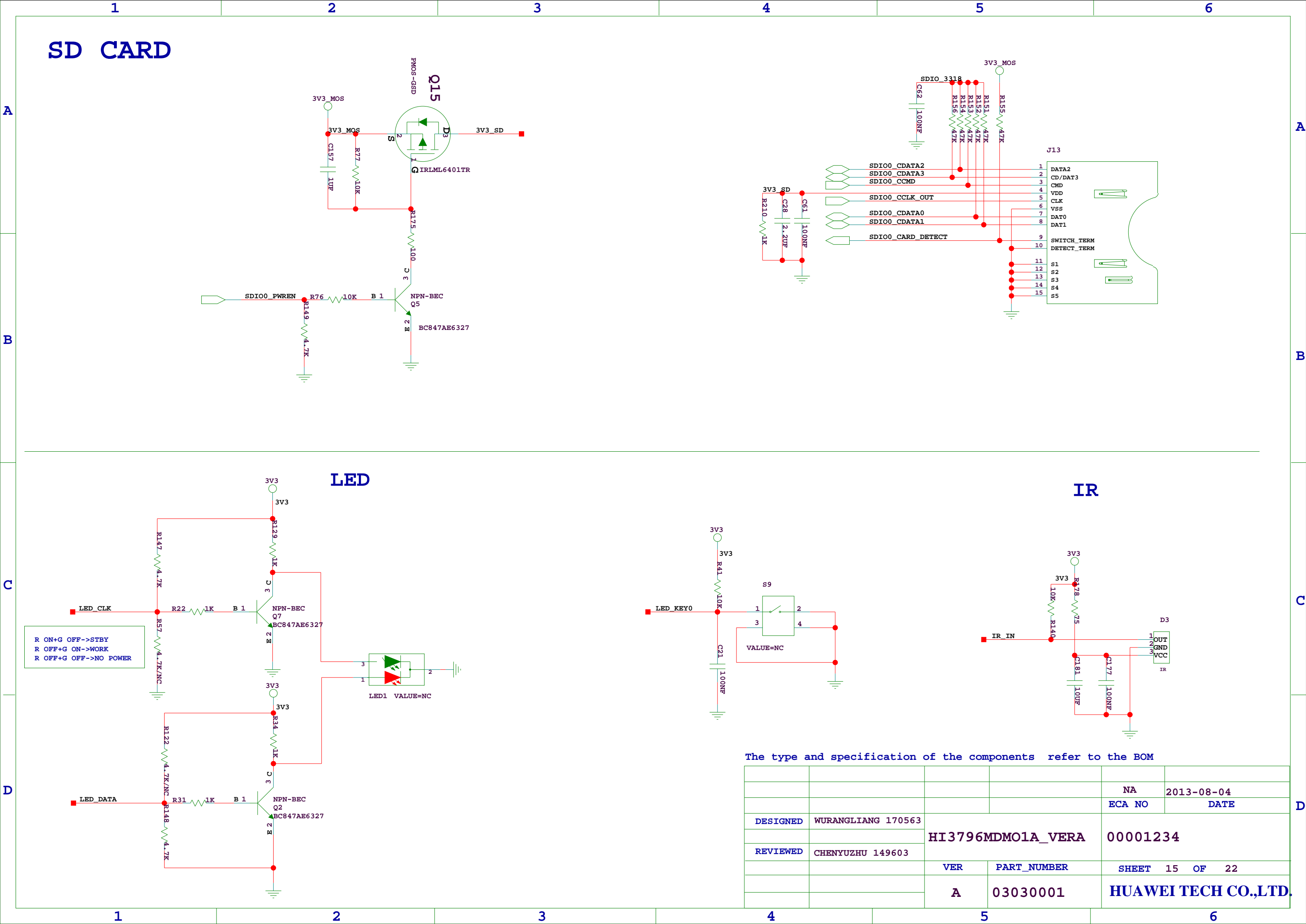


WiFi 1T1R 2.4G



The type and specification of the components refer to the BOM

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| REVIEWED | CHENYUZHU 149603 | | | | |
| | | VER | PART_NUMBER | SHEET 14 OF 22 | |
| | | A | 03030001 | HUAWEI TECH CO.,LTD. | |

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SD CARD

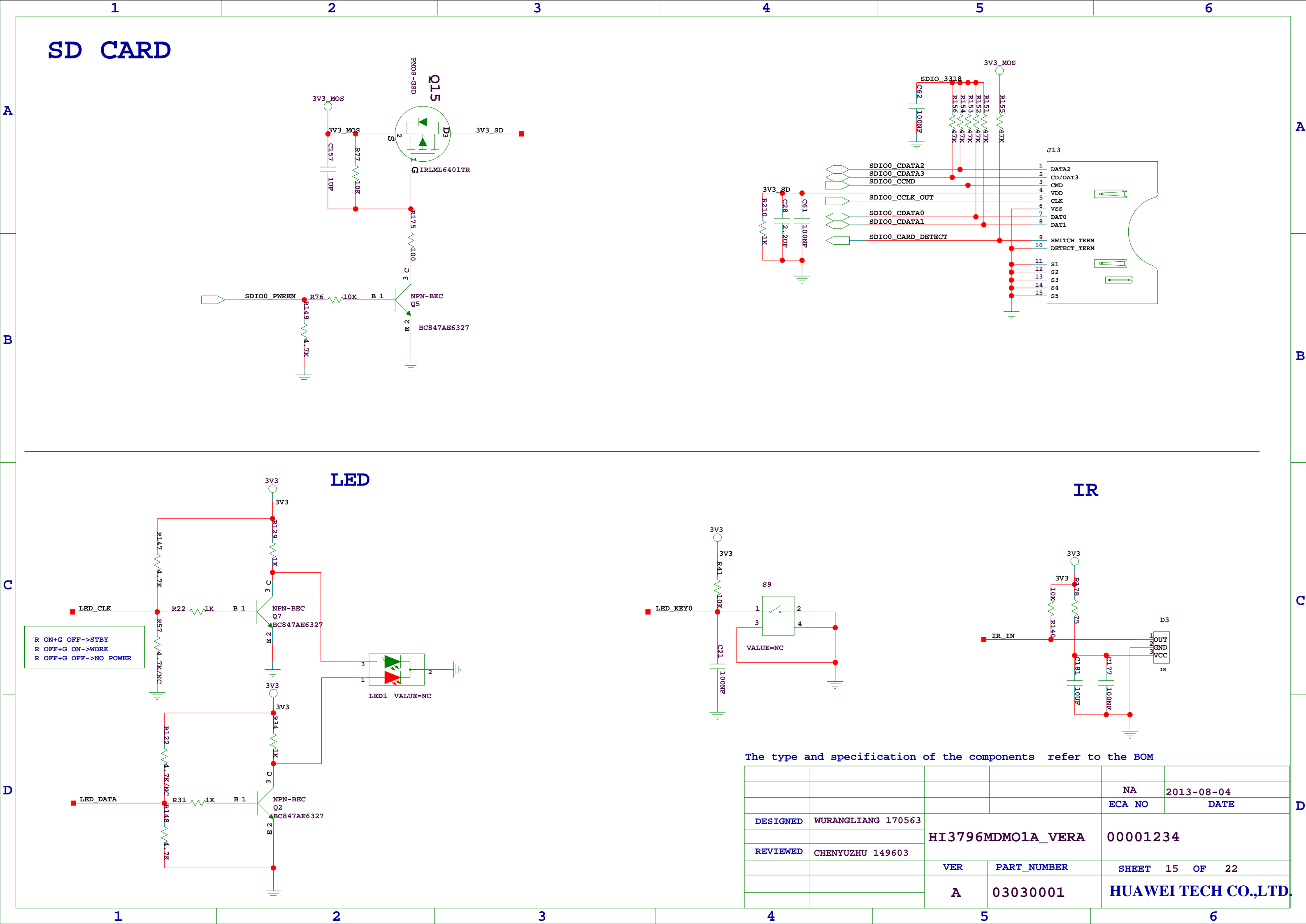
LED

| |
|-----------------------|
| R ON+G OFF->STBY |
| R OFF+G ON->WORK |
| R OFF+G OFF->NO POWER |

IR

The type and specification of the components refer to the BOM

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| | | | | NA | 2013-08-04 |
| | | | | ECA NO | DATE |
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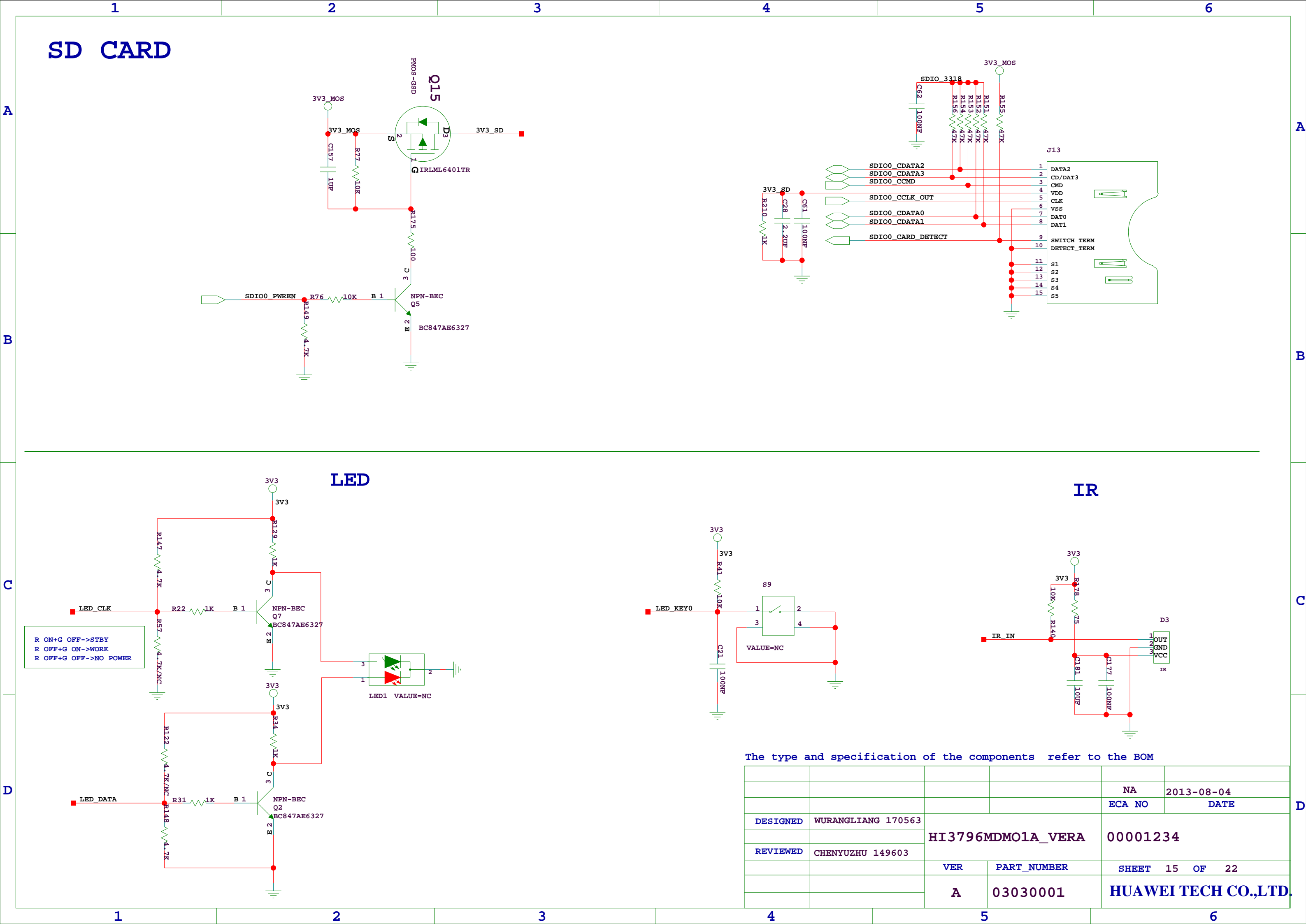
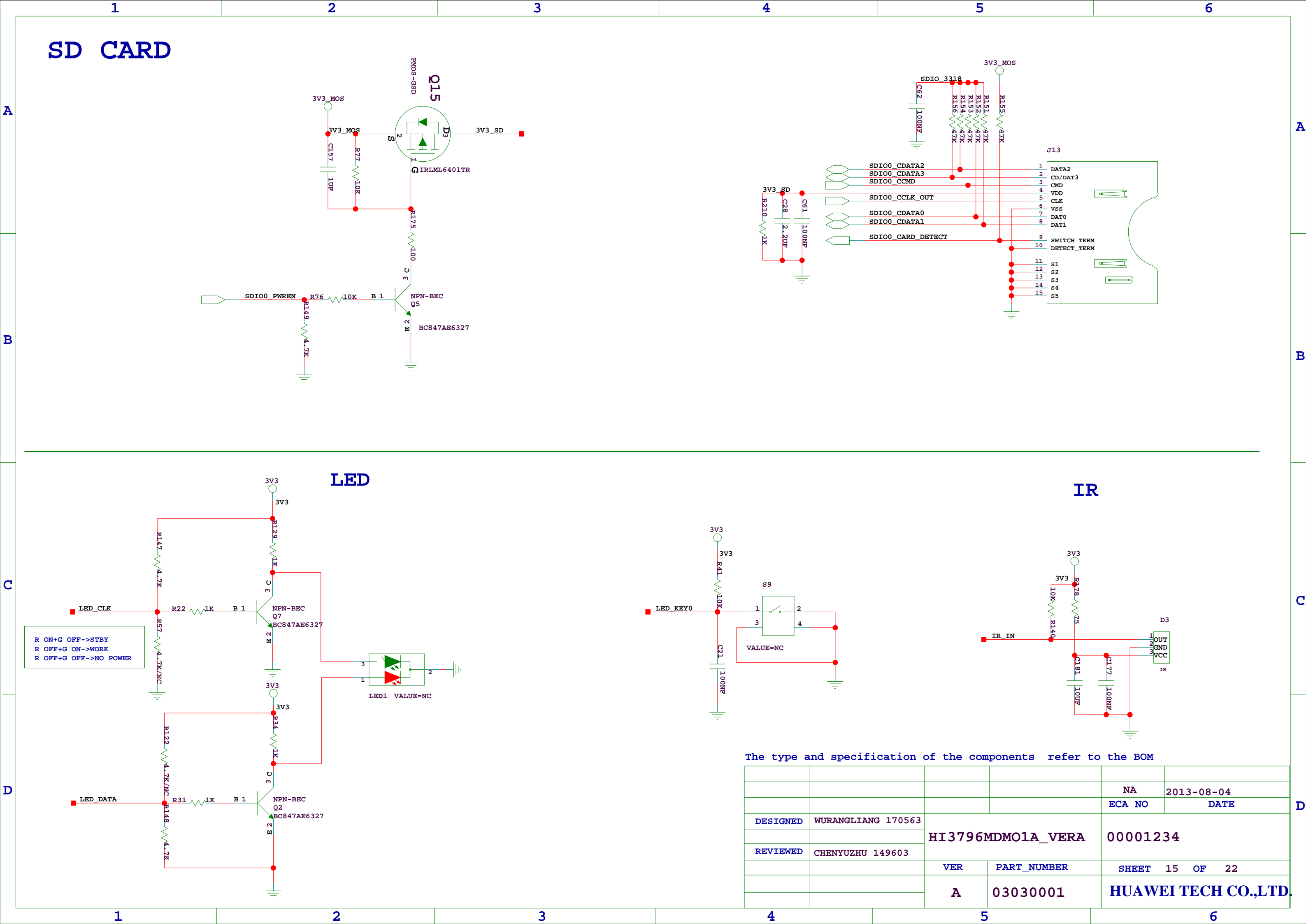
SD CARD

LED

IR

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 15 OF 22 | |
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SD CARD

LED

IR

The type and specification of the components refer to the BOM

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| | | | | NA | 2013-08-04 |
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SD CARD

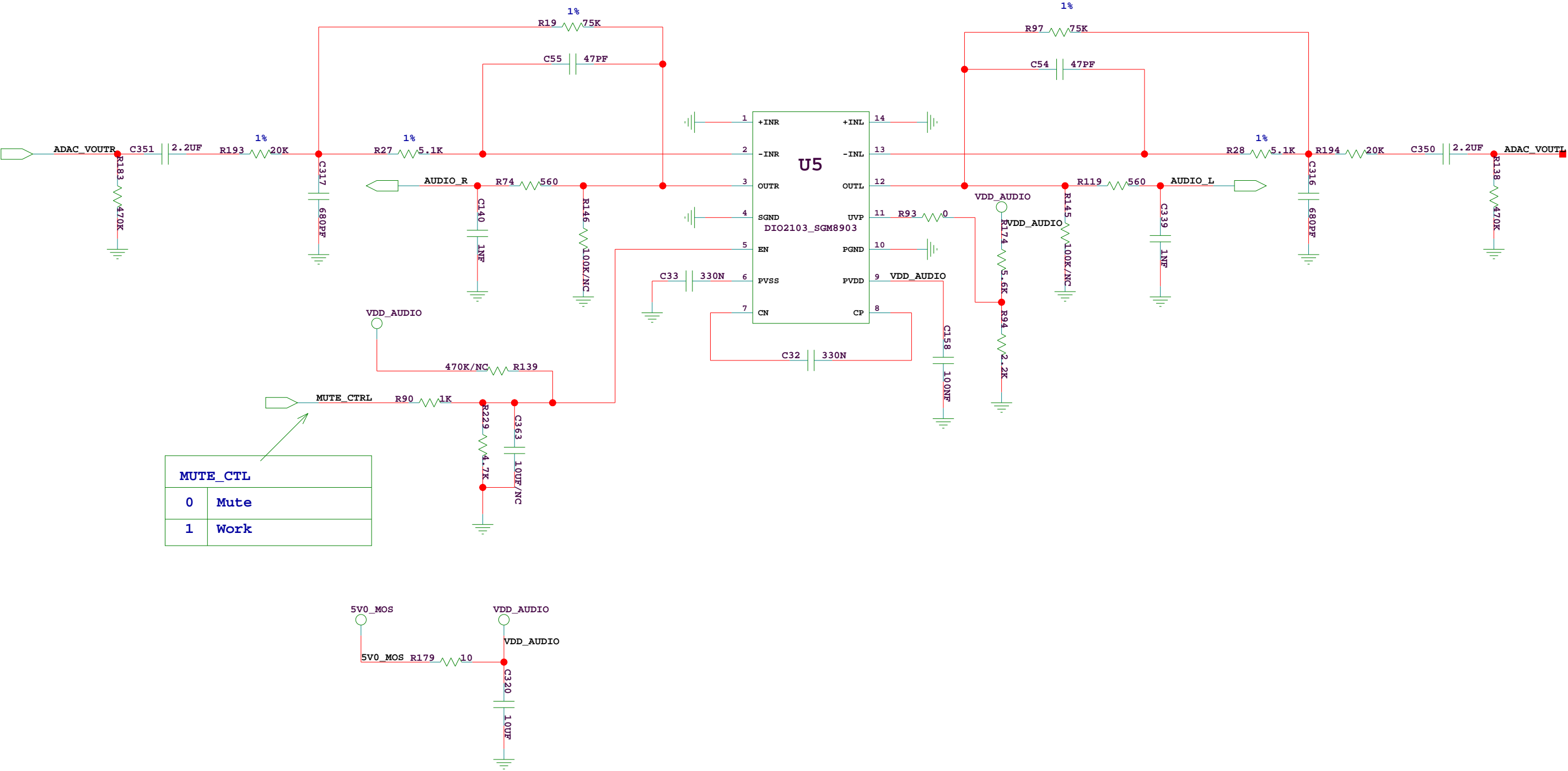
LED

IR

The type and specification of the components refer to the BOM

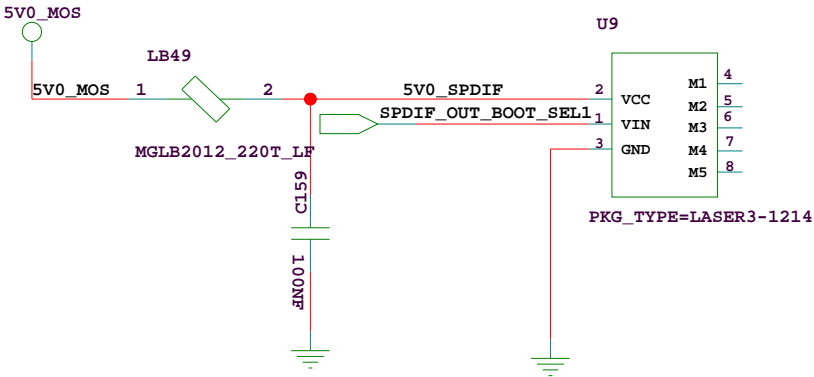
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| | | VER | PART_NUMBER | SHEET 15 OF 22 | |
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Audio Output



| MUTE_CTL | |
|----------|------|
| 0 | Mute |
| 1 | Work |

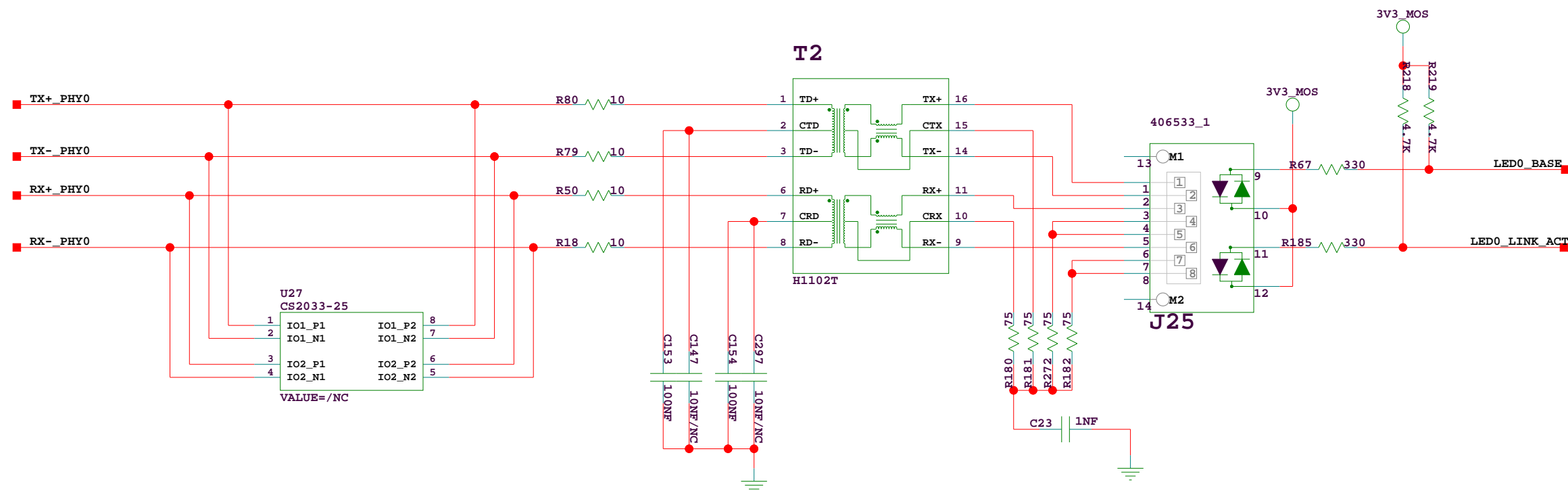
SPDIF



The type and specification of the components refer to the BOM

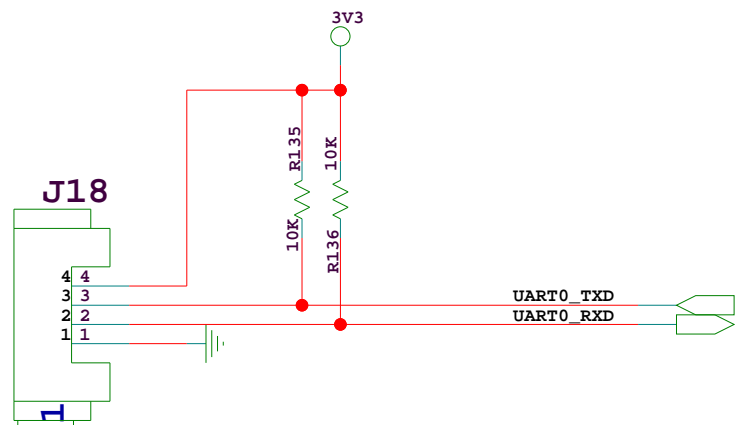
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| REVIEWED | CHENYUZHU 149603 | | | | |
| | | VER | PART_NUMBER | SHEET 16 OF 24 | |
| | | A | 03030001 | HUAWEI TECH CO.,LTD. | |

FE PHY



Put C153 and C154 close to T2

UART

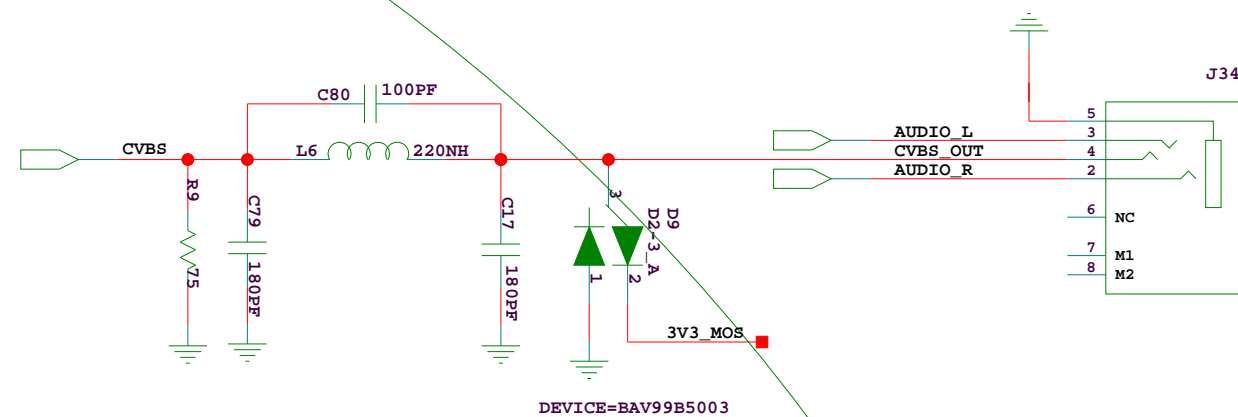


SDW12501_4A_HW

The type and specification of the components refer to the BOM

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| | | A | 03030001 | HUAWEI TECH CO.,LTD. | |

VDAC OUTPUT



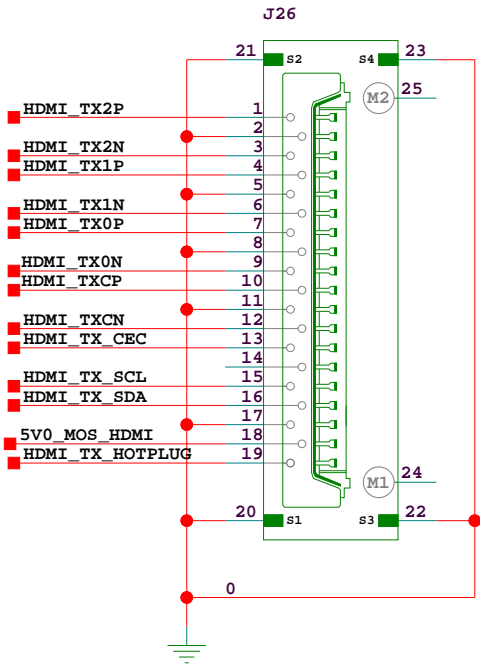
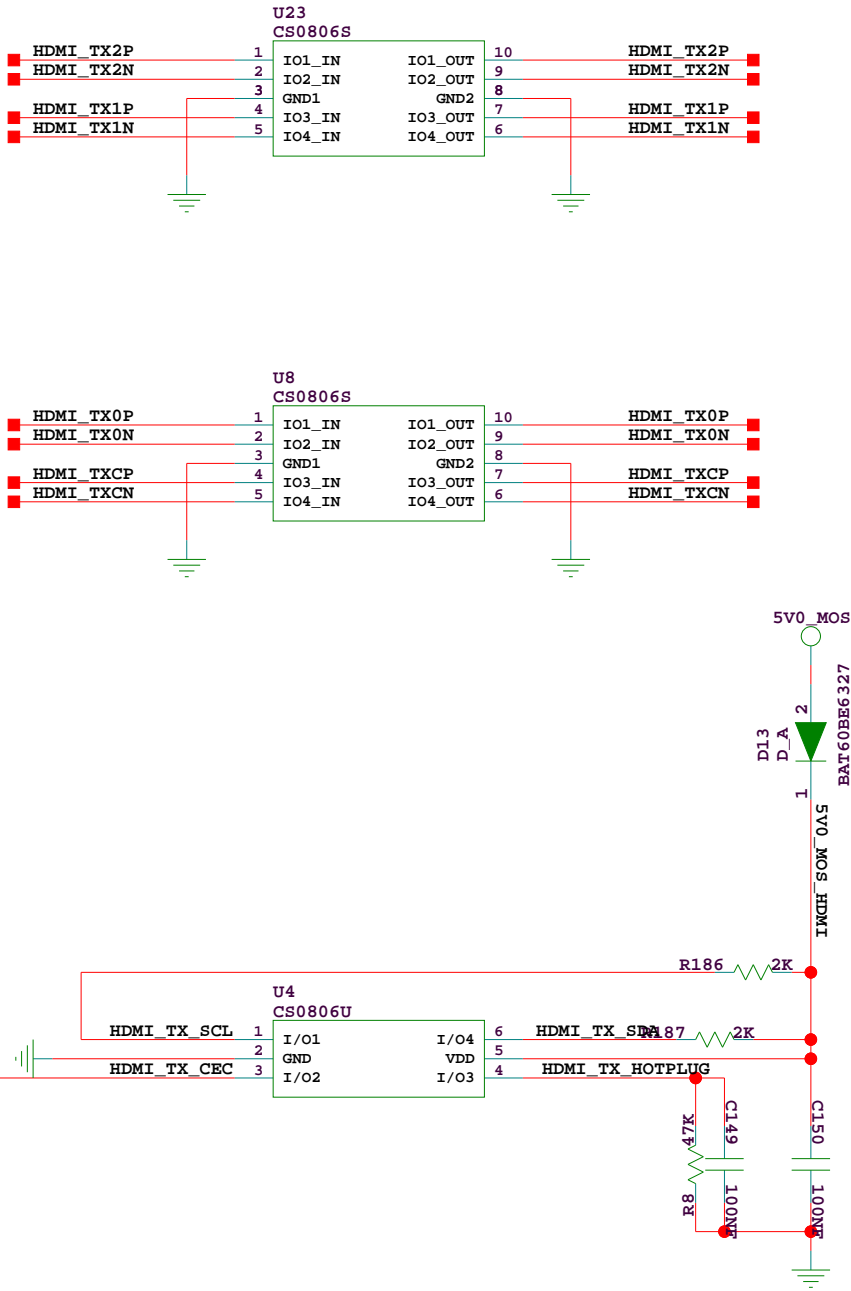
** Design guideline **

- 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

| | | | | | |
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| | | VER | PART_NUMBER | SHEET 18 OF 24 | |
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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.

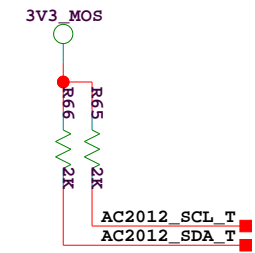
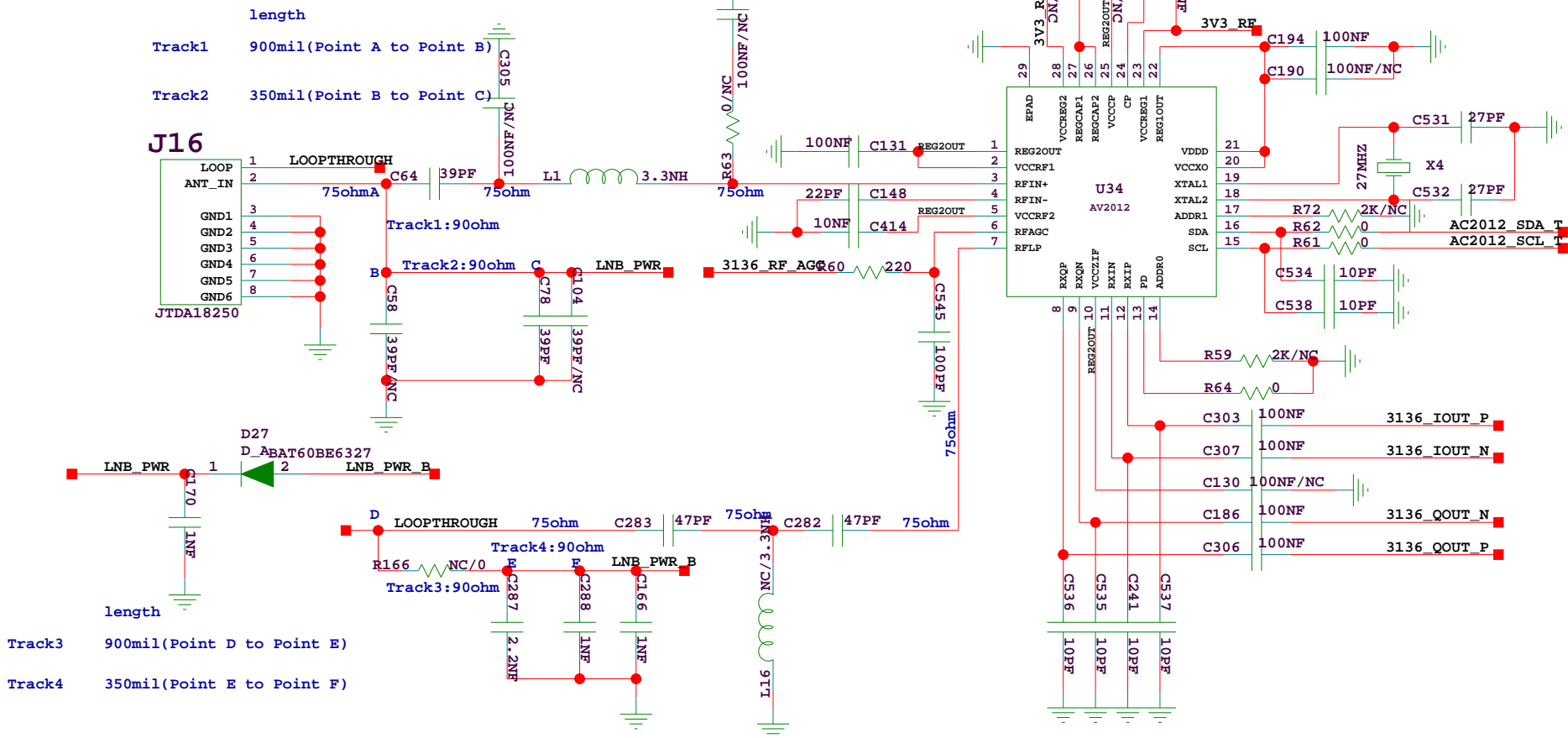
C.component selection

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

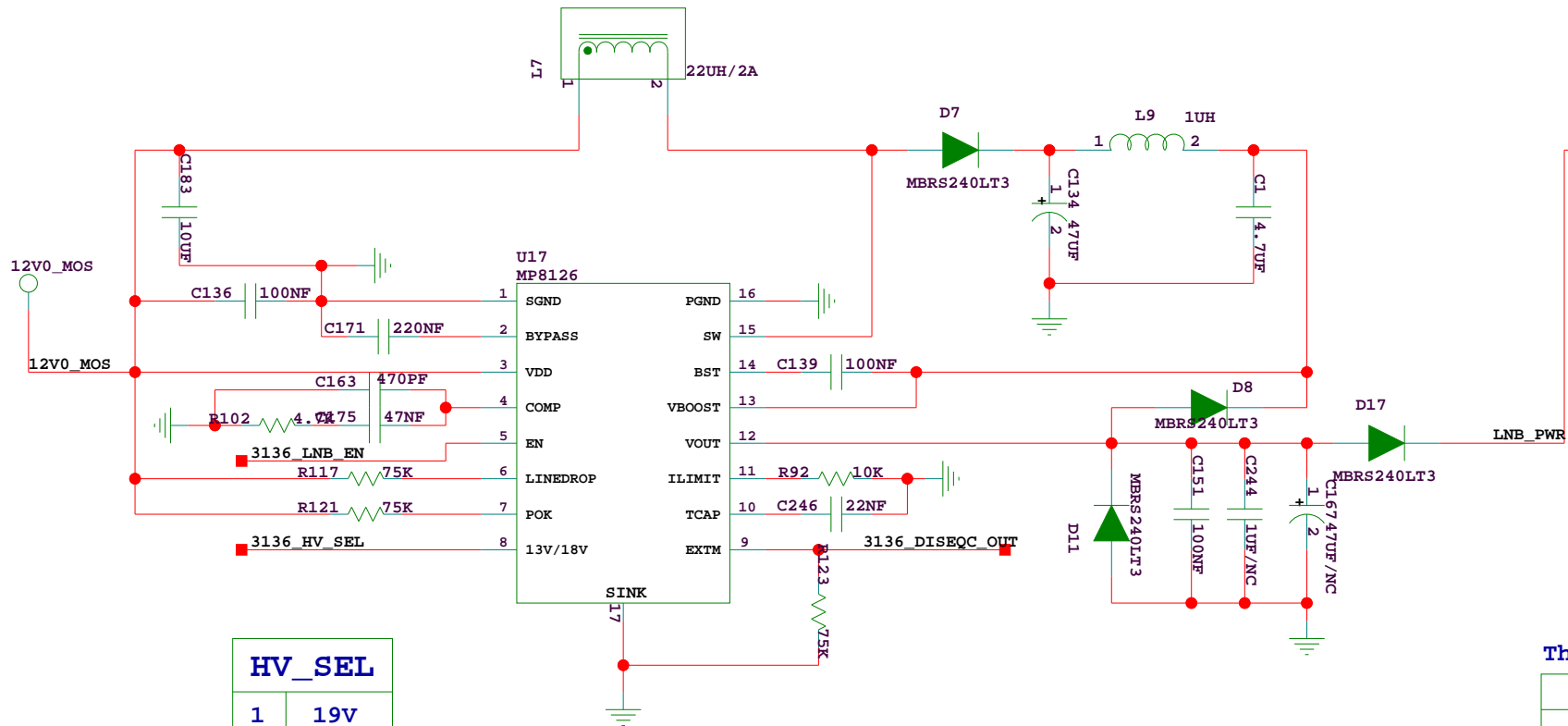
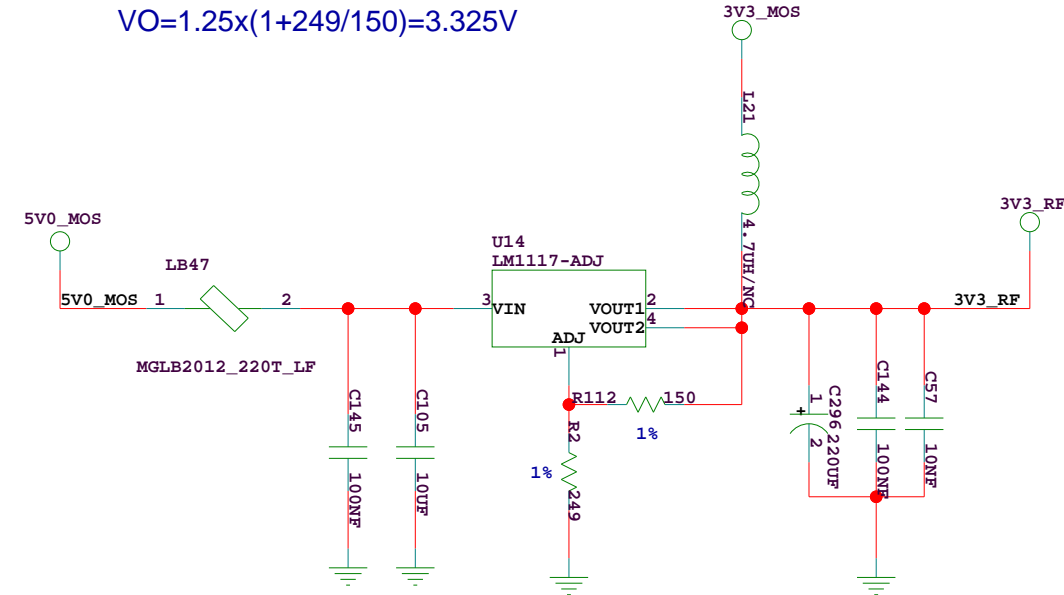
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| REVIEWED | CHENYUZHU 149603 | | | | |
| | | VER | PART_NUMBER | SHEET 19 OF 24 | |
| | | A | 03030001 | HUAWEI TECH CO.,LTD. | |

DVB-S2 Tuner&LNB Power



$$VO=1.25 \times (1 + 249/150) = 3.325V$$

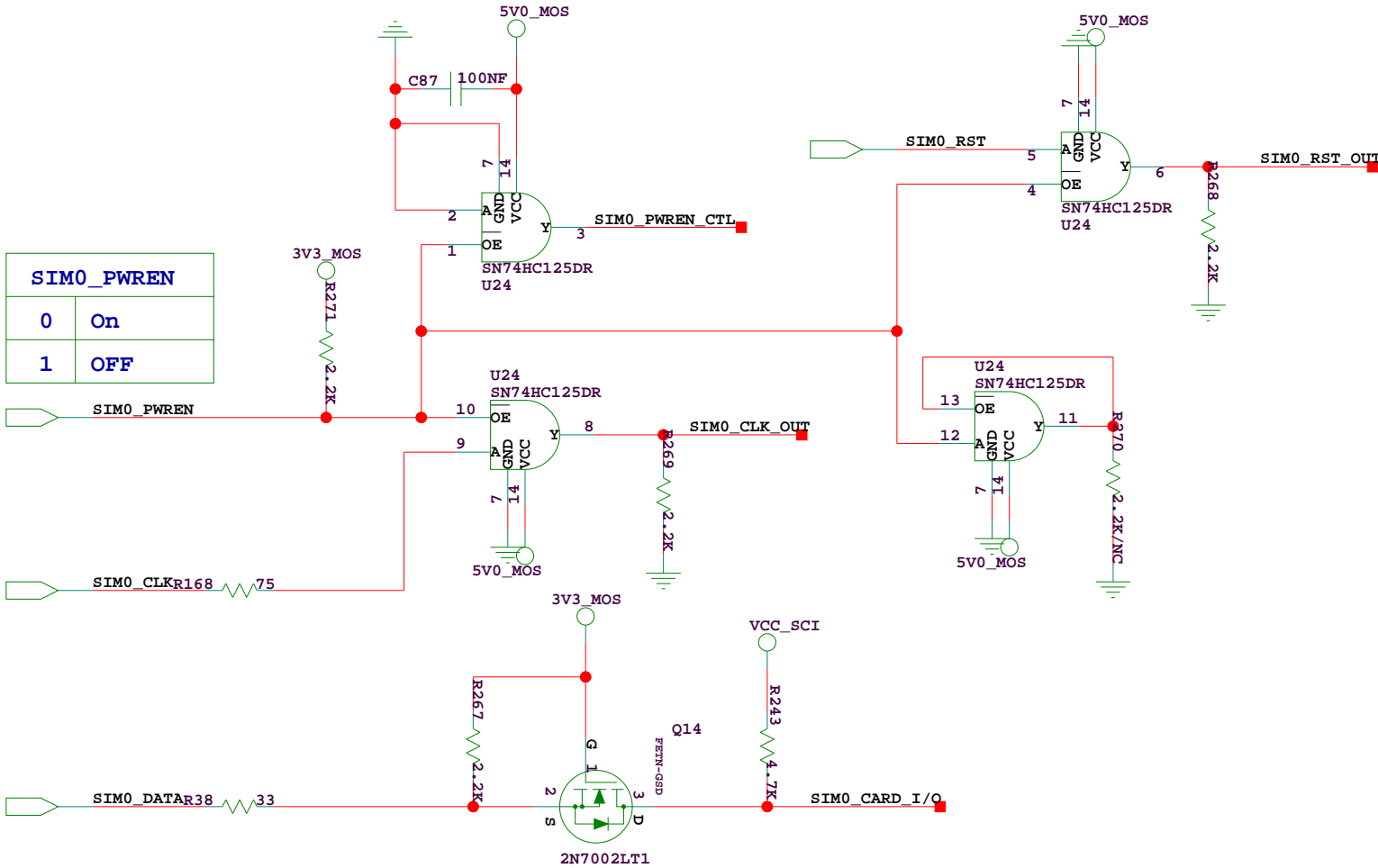


| HV_SEL | |
|--------|-----|
| 1 | 19V |
| 0 | 14V |

The type and specification of the components refer to the BOM

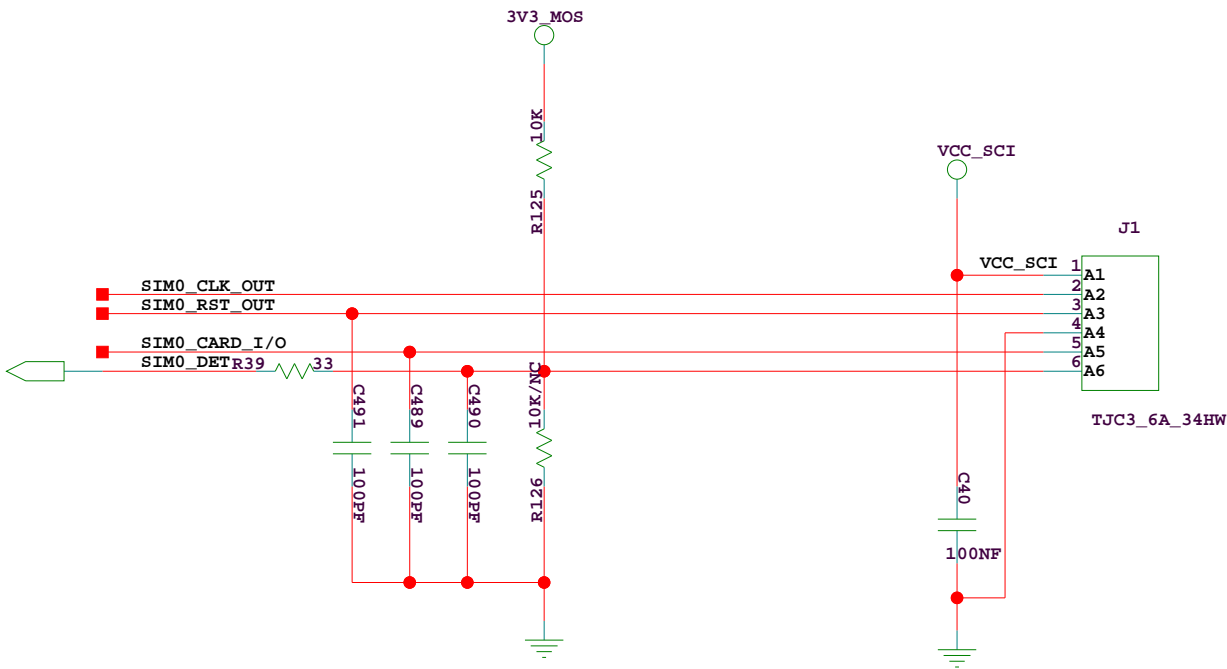
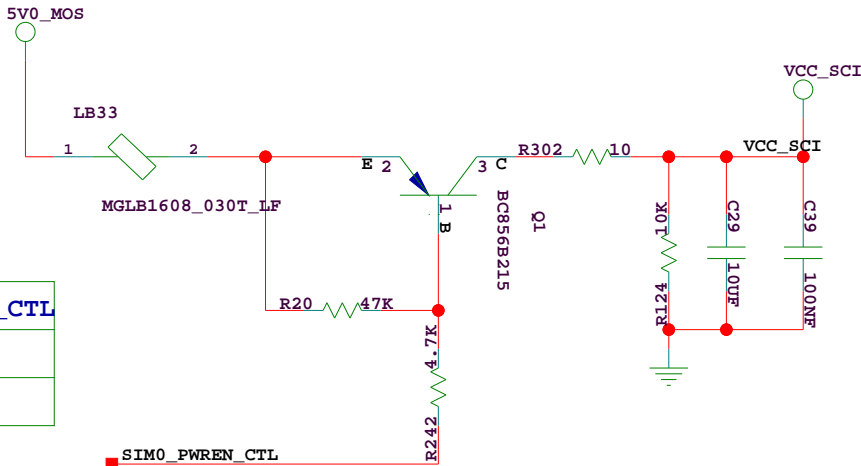
| | | | | | |
|----------|---------------------|-------------------|-------------|----------------------|------------|
| | | | | NA | 2012.05.23 |
| | | | | ECA NO | DATE |
| DESIGNED | YANGXINGHONG 185416 | HI3796MDM01A_VERA | | 00001234 | |
| REVIEWED | XIEGUOMING 43517 | | | | |
| | | VER | PART_NUMBER | SHEET 21 OF 22 | |
| | | B | 03030001 | HUAWEI TECH CO.,LTD. | |

SCI0 CONNECTOR



| SIMO_PWREN | |
|------------|-----|
| 0 | On |
| 1 | OFF |

| SIMO_PWREN_CTL | |
|----------------|-----|
| 0 | On |
| 1 | OFF |



SCI Card Interface

The type and specification of the components refer to the BOM

| | | | | | |
|----------|--------------------|-------------------|-------------|----------------------|------------|
| | | | | NA | 2013-08-04 |
| | | | | ECA NO | DATE |
| DESIGNED | WURANGLIANG 170563 | HI3796MDM01A_VERA | | 00001234 | |
| REVIEWED | CHENYUZHU 149603 | | | | |
| | | VER | PART_NUMBER | SHEET 22 OF 22 | |
| | | A | 03030001 | HUAWEI TECH CO.,LTD. | |