# EVB Schematic For PX30

**Version: RK_EVB_PX30_DDR3P216SD4_V10**

**PMIC: RK809-1 (5BUCK + 9LDO + Codec)**
**RAM: DDR3**
**ROM: eMMC/Nand + TF card**
**Interface: MIPICSI/MIPIDSI/UART/I2S/RMII**



| | | | |
|---|---|---|---|
| Rockchip 瑞芯微电子 Fuzhou Rockchip Electronics | | | |
| Project: | PX30 | | |
| File: | 00.Cover Page | | |
| Date: | Thursday, January 11, 2018 | Rev: | V0.1 |
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# Note

**NOTE 1:**
**Component parameter description**

1. DNP stands for component not mounted temporarily
2. If Value or option is DNP, which means the area is reserved without being mounted
3. If Flash is compatible, please notice when eMMC is used, the option is that @eMMC is mounted, @Nand is not mounted when Nand is used, the option is that @Nand is mounted, @eMMC is not mounted

**NOTE 2:**
**Please use our recommended components to avoid too many changes.For more informations about the second source,please refer to our AVL.**

Note
Option
Description
Remind

**Bill of Materials**

**Header:**

Item\tPart\tDescription\tPCB Footprint\tReference\tQuantity\tOption

**Combined property string:**

{Item}\t{Value}\t{Description}\t{PCB Footprint}\t{Reference}\t{Quantity}\t{Option}

| | | | |
|---|---|---|---|
| Rockchip 瑞芯微电子 | Fuzhou Rockchip Electronics | | |
| Project: | PX30 | | |
| File: | 01.Index | | |
| Date: | Thursday, January 11, 2018 | Rev: | V0.1 |
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| Version | Date | Author | Change List | Approved |
|---|---|---|---|---|
| V0.1 | 20171227 | XHF | First edition for PX30 | |
| | | | | |
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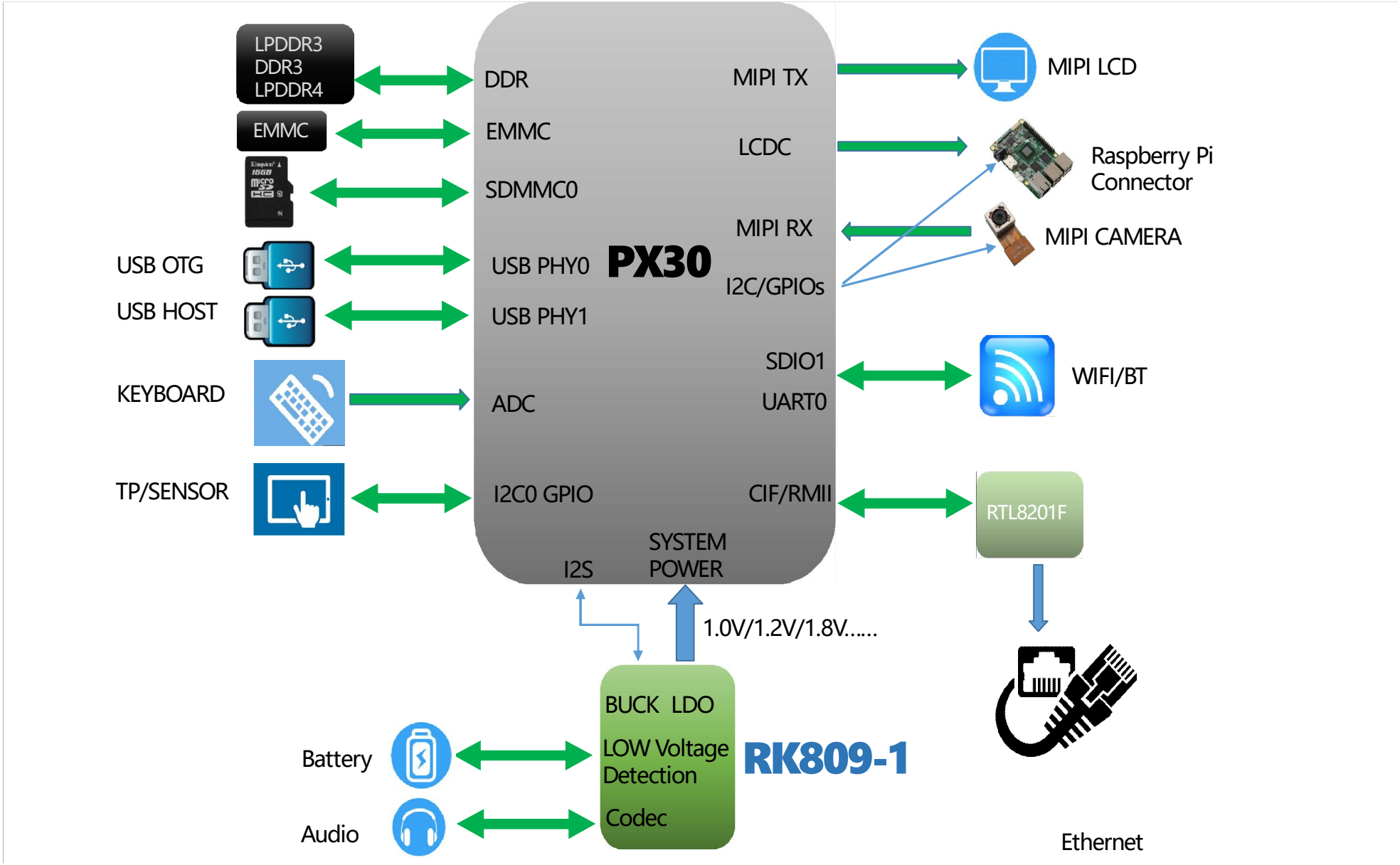
| Project: | PX30 | | |
| File: | 02.Revision History | | |
| Date: | Thursday, January 11, 2018 | Rev: | V0.1 |
| Designed by: | XIAOHF | Sheet: | 3 of 35 |

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| Project: | PX30 | | |
| File: | 03.Block Diagram | | |
| Date: | Thursday, January 11, 2018 | Rev: | V0.1 |
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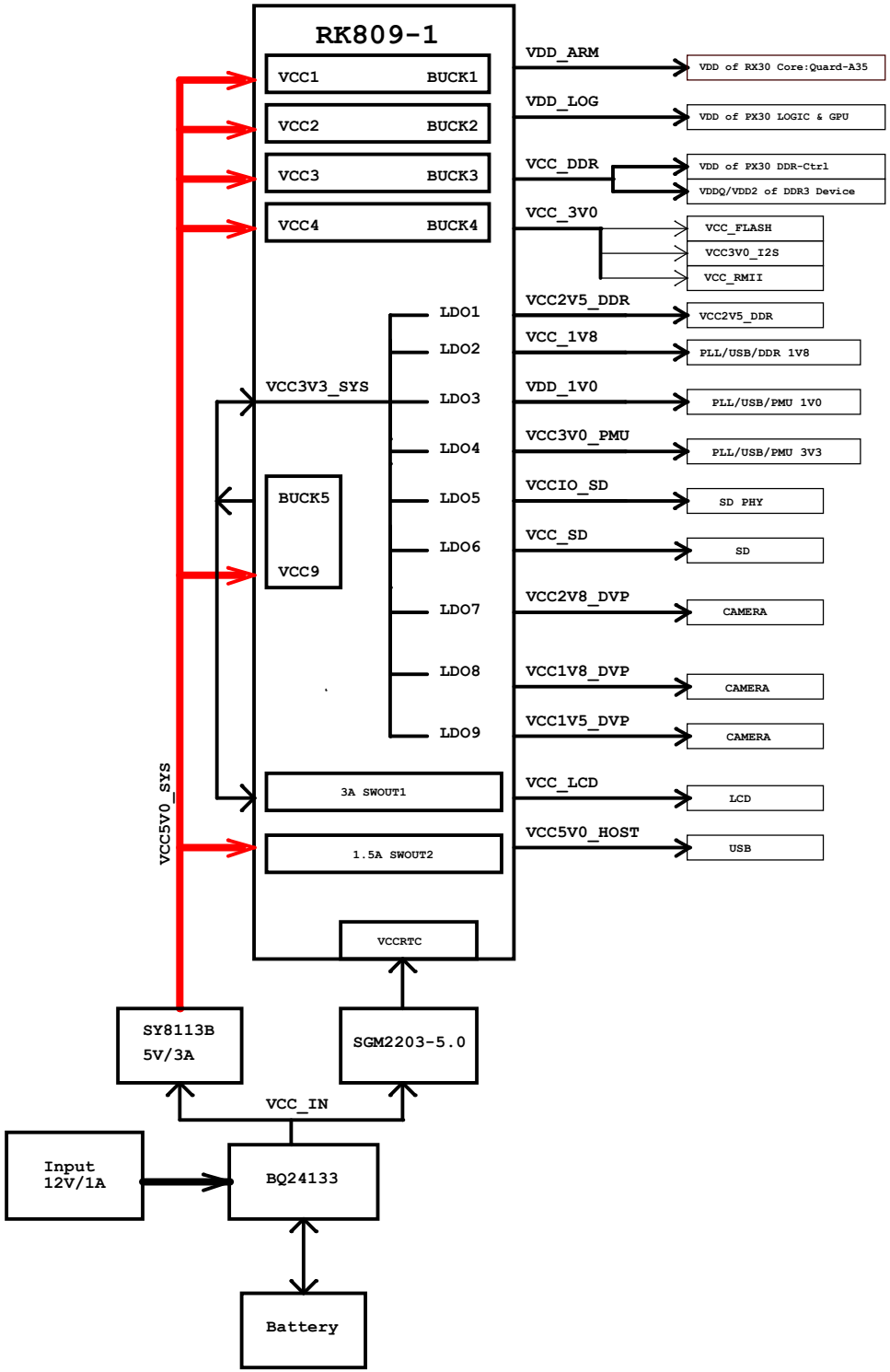
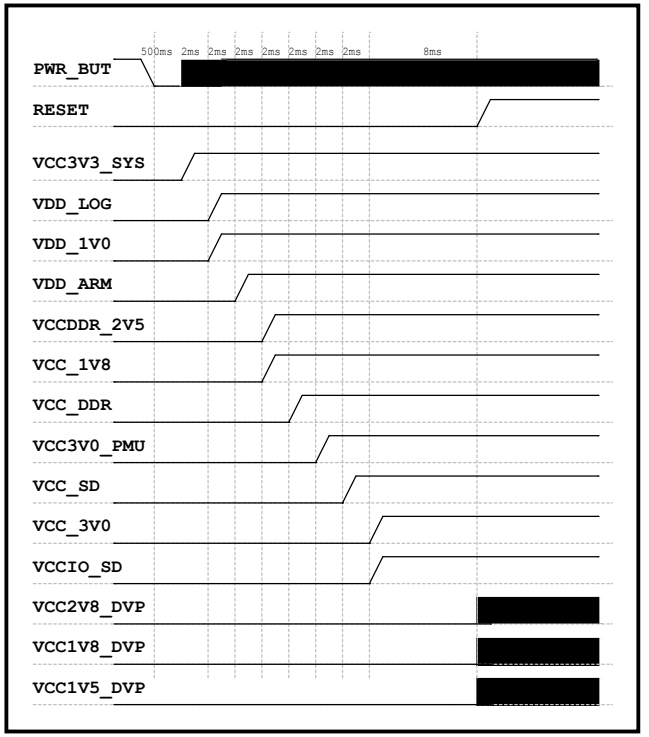
# POWER DIAGRAM




RK809-1 Power-on Sequence

| PowerName | PMIC Channel | Time Slot (step 2mS) | Default voltage | Supply Limit | Default ON/OFF | Sleep ON/OFF | Peak Current |
|---|---|---|---|---|---|---|---|
| VDD_ARM | BUCK1 | Slot:3 | 1.0V | 2.5A | ON | OFF | 1.5A |
| VDD_LOG | BUCK2 | Slot:2 | 1.0V | 2.5A | ON | | 1.4A |
| VCC_DDR | BUCK3 | Slot:5 | FB=0.6V | 1.5A | ON | ON | 1.5A |
| VCC_3V0 | BUCK4 | Slot:8 | 3.0V | 1.5A | ON | ON | 1.5A |
| VCC3V3_SYS | BUCK5 | Slot:1 | 3.3V | 1.5A | ON | ON | |
| VCCDDR_2V5 | LDO1 | Slot:4 | 2.5V | 500mA | ON | ON | |
| VCC_1V8 | LDO2 | Slot:4 | 1.8V | 500mA | ON | ON | |
| VDD_1V0 | LDO3 | Slot:2 | 1.0V | 500mA | ON | ON | |
| VCC3V0_PMU | LDO4 | Slot:6 | 3.0V | 100mA | ON | ON | 12mA |
| VCCIO_SD | LDO5 | Slot:8 | 3.0V | 500mA | ON | | |
| VCC_SD | LDO6 | Slot:7 | 3.0V | 500mA | ON | | 400mA |
| VCC2V8_DVP | LDO7 | | 2.8V | 500mA | OFF | OFF | |
| VCC1V8_DVP | LDO8 | | 1.8V | 500mA | OFF | OFF | |
| VCC1V5_DVP | LDO9 | | 1.5V | 500mA | OFF | OFF | |
| RESET | RESETB | Slot:11 | OD | | | | |




| | | | |
|---|---|---|---|
| Rockchip 瑞芯微电子 | Fuzhou Rockchip Electronics | | |
| Project: | PX30 | | |
| File: | 05.Power diagram and Sequence | | |
| Date: | Thursday, January 11, 2018 | Rev: | V0.1 |
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# I2C MAP

| Port | Pin name | Domain | Bus name | Pull-up voltage | Slave Device | Slave Addr (MS 7Bits) | Note | Slave Bus Capability |
|---|---|---|---|---|---|---|---|---|
| I2C0 | I2C0_SDA/GPIO0_B1_u<br>I2C0_SCL/GPIO0_B0_u | PMUIO2 | I2C0_SDA<br>I2C0_SDA | VCC3V0_PMU | | | Sensor | |
| | | | | | | | Touch IC | |
| | | | | | | | Raspberry Pi | |
| I2C1 | I2C1_SDA/GPIO0_C3_u<br>I2C1_SCL/PMU_DEBUG5/GPIO0_C2_u | PMUIO2 | I2C_SDA_PMIC<br>I2C_SCL_PMIC | VCC3V0_PMU | Rockchip RK809-1 | | PMIC | |
| I2C2 | I2C2_SDA/GPIO2_C0_u<br>I2C2_SCL/GPIO2_B7_u | VCCIO3 | I2C2_SDA_CAM<br>I2C2_SCL_CAM | VCC_RMII | | | MIPI Camera | |
| | | | | | | | Raspberry Pi | |

| | | | |
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| Project: | PX30 | | |
| File: | 04.I2C MAP | | |
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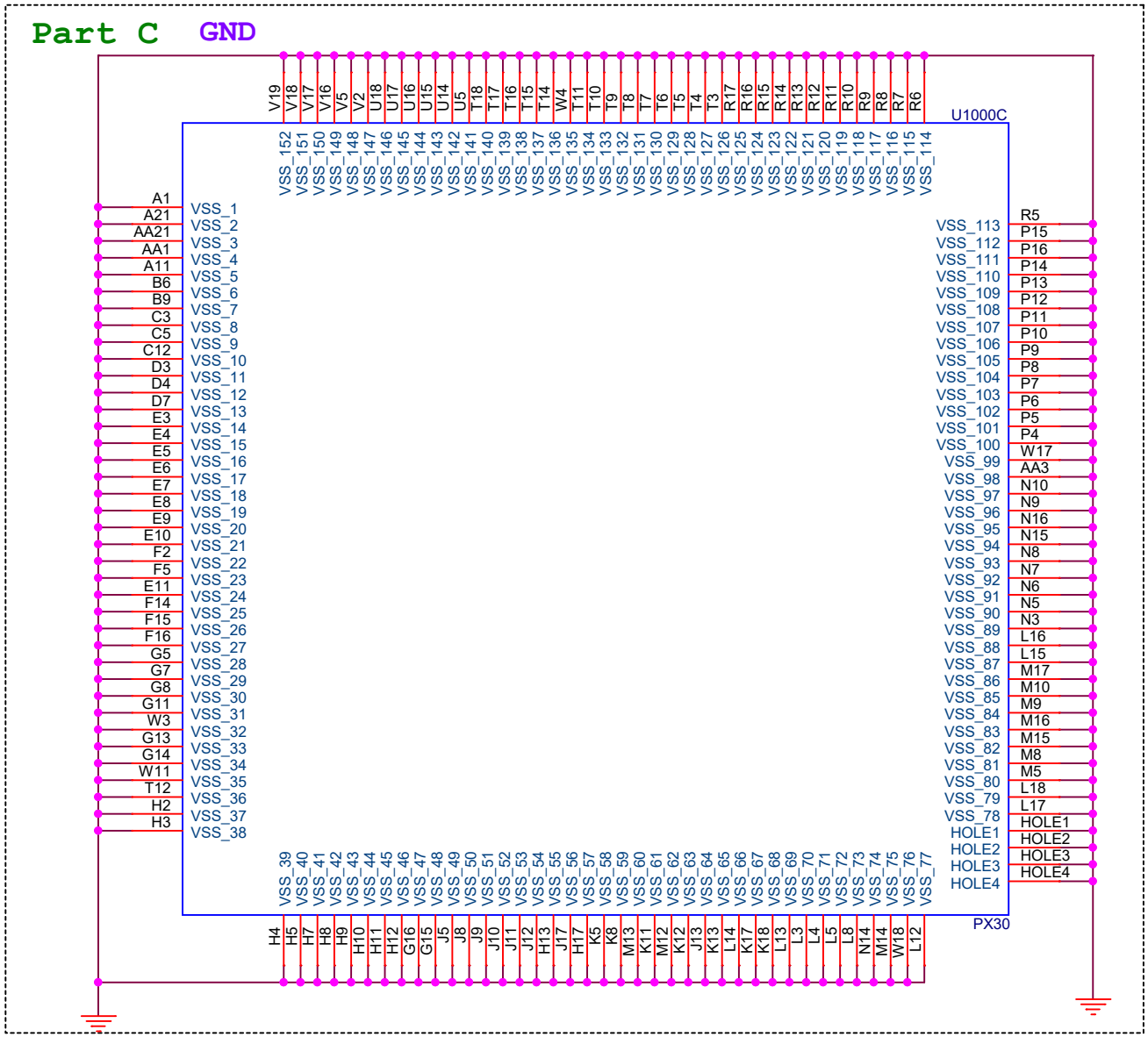


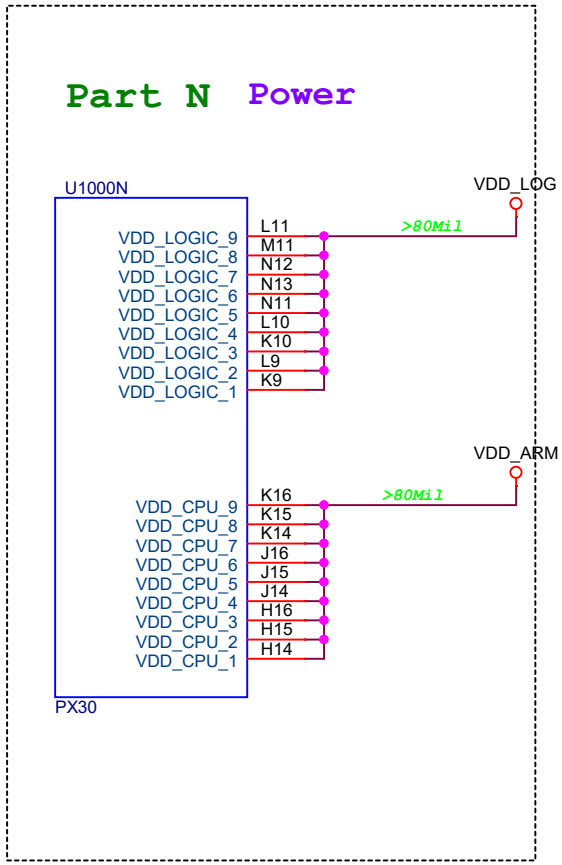


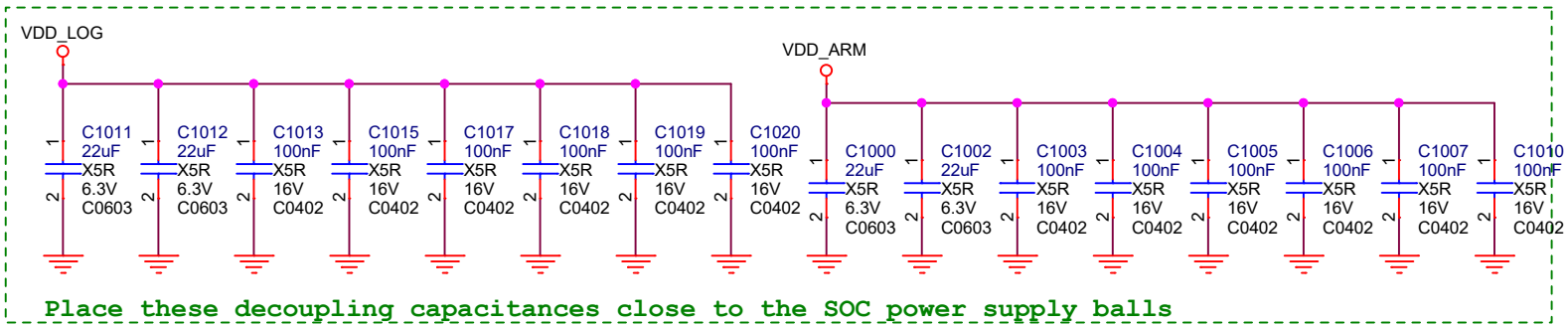


| | | | |
|---|---|---|---|
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| Project: | PX30 | | |
| File: | 10.PX30 Power | | |
| Date: | Thursday, January 11, 2018 | Rev: | V0.1 |
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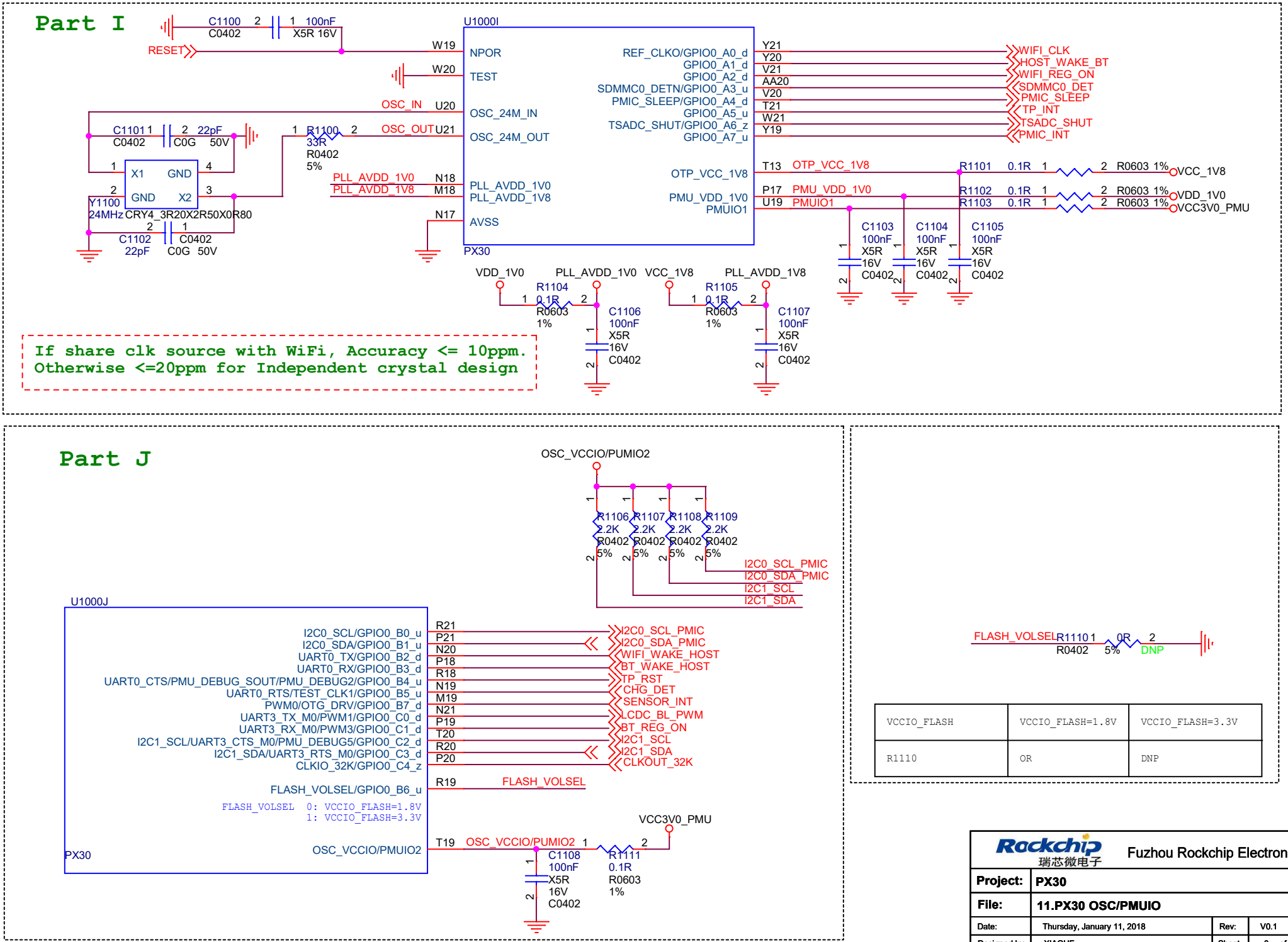
Part I
C1100 C0402
100nF X5R 16V
RESET
U1000I
W19 NPOR
W20 TEST
OSC_IN U20
OSC_24M_IN
C1101 C0402 22pF C0G 50V
R1100 33R R0402 5%
OSC_OUT U21
OSC_24M_OUT
X1 GND X2 GND
Y1100 24MHz CRY4_3R20X2R50X0R80
C1102 22pF C0G 50V
C0402
PLL_AVDD_1V0 N18
PLL_AVDD_1V8 M18
PLL_AVDD_1V0
PLL_AVDD_1V8
N17 AVSS
PX30
REF_CLKO/GPIO0_A0_d Y21
GPIO0_A1_d Y20
GPIO0_A2_d V21
SDMMC0_DETN/GPIO0_A3_u AA20
PMIC_SLEEP/GPIO0_A4_d V20
GPIO0_A5_u T21
TSADC_SHUT/GPIO0_A6_z W21
GPIO0_A7_u Y19
WIFI_CLK
HOST_WAKE_BT
WIFI_REG_ON
SDMMC0_DET
PMIC_SLEEP
TP_INT
TSADC_SHUT
PMIC_INT
OTP_VCC_1V8 T13
PMU_VDD_1V0 P17
PMUIO1 U19
R1101 0.1R R0603 1% VCC_1V8
R1102 0.1R R0603 1% VDD_1V0
R1103 0.1R R0603 1% VCC3V0_PMU
C1103 C1104 C1105 100nF X5R 16V C0402
VDD_1V0 PLL_AVDD_1V0 VCC_1V8 PLL_AVDD_1V8
R1104 0.1R R0603 1%
R1105 0.1R R0603 1%
C1106 C1107 100nF X5R 16V C0402
If share clk source with WiFi, Accuracy <= 10ppm.
Otherwise <=20ppm for Independent crystal design
Part J
OSC_VCCIO/PUMIO2
R1106 R1107 R1108 R1109 2.2K R0402 5%
I2C0_SCL_PMIC
I2C0_SDA_PMIC
I2C1_SCL
I2C1_SDA
U1000J
I2C0_SCL/GPIO0_B0_u R21
I2C0_SDA/GPIO0_B1_u P21
UART0_TX/GPIO0_B2_d N20
UART0_RX/GPIO0_B3_d P18
UART0_CTS/PMU_DEBUG_SOUT/PMU_DEBUG2/GPIO0_B4_u R18
UART0_RTS/TEST_CLK1/GPIO0_B5_u N19
PWM0/OTG_DRV/GPIO0_B7_d M19
UART3_TX_M0/PWM1/GPIO0_C0_d N21
UART3_RX_M0/PWM3/GPIO0_C1_d P19
I2C1_SCL/UART3_CTS_M0/PMU_DEBUG5/GPIO0_C2_d T20
I2C1_SDA/UART3_RTS_M0/GPIO0_C3_d R20
CLKIO_32K/GPIO0_C4_z P20
WIFI_WAKE_HOST
BT_WAKE_HOST
TP_RST
CHG_DET
SENSOR_INT
LCDC_BL_PWM
BT_REG_ON
I2C1_SCL
I2C1_SDA
CLKOUT_32K
FLASH_VOLSEL/GPIO0_B6_u R19
FLASH_VOLSEL 0: VCCIO_FLASH=1.8V 1: VCCIO_FLASH=3.3V
OSC_VCCIO/PUMIO2 T19
PX30
VCC3V0_PMU
C1108 100nF X5R 16V C0402
R1111 0.1R R0603 1%
FLASH_VOLSEL R1110 R0402 5% 0R DNP
VCCIO_FLASH VCCIO_FLASH=1.8V VCCIO_FLASH=3.3V
R1110 OR DNP
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Project: PX30
File: 11.PX30 OSC/PMUIO
Date: Thursday, January 11, 2018
Rev: V0.1
Designed by: XIAOHF
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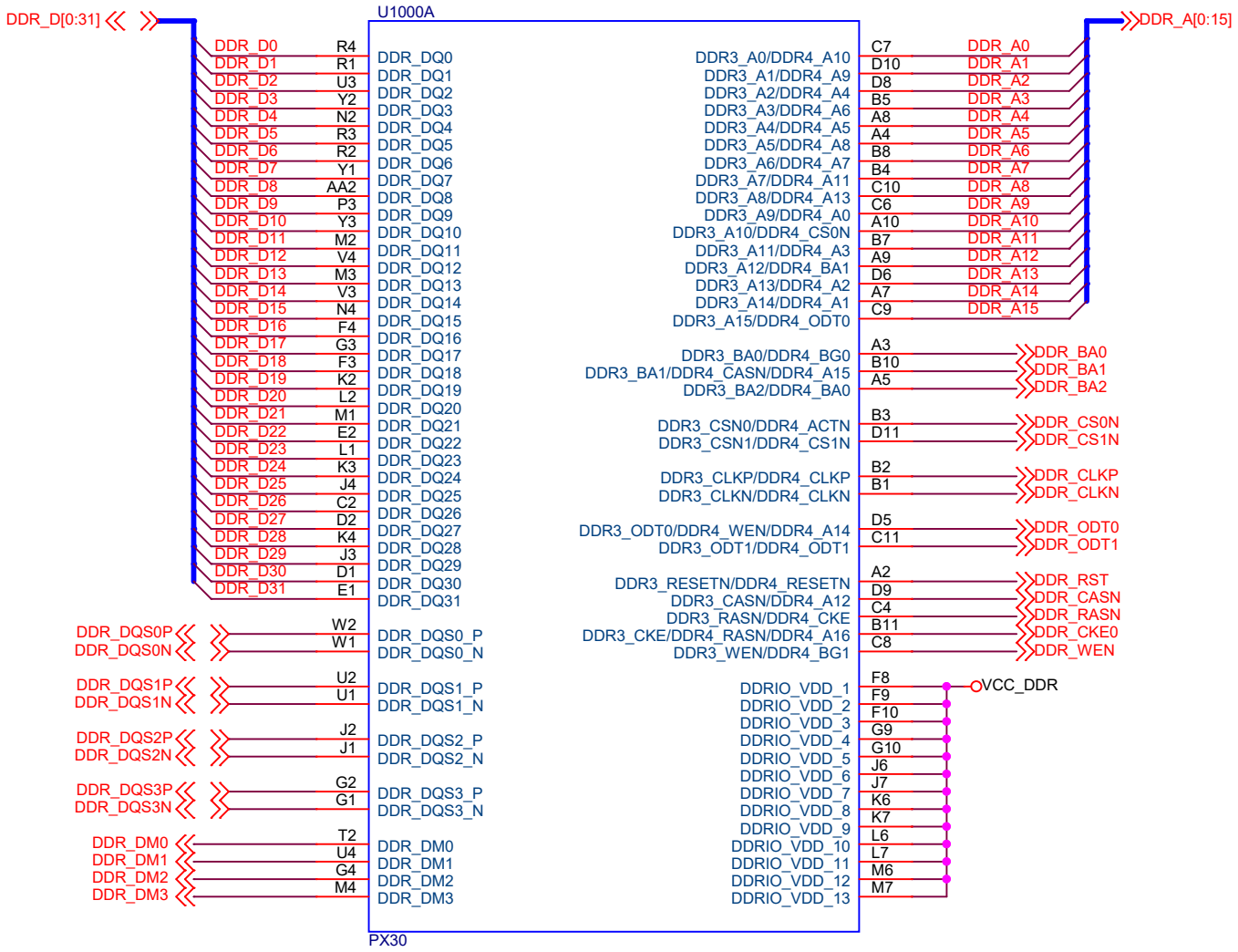
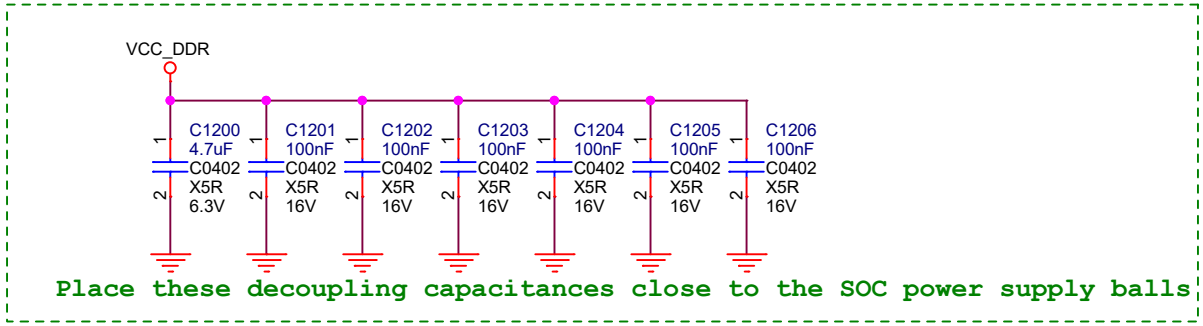
# Part A DDR Controler




## DDR3/DDR4 PIN MUX

| | |
|---|---|
| DDR3_A0 | DDR4_A10 |
| DDR3_A1 | DDR4_A9 |
| DDR3_A2 | DDR4_A4 |
| DDR3_A3 | DDR4_A6 |
| DDR3_A4 | DDR4_A5 |
| DDR3_A5 | DDR4_A8 |
| DDR3_A6 | DDR4_A7 |
| DDR3_A7 | DDR4_A11 |
| DDR3_A8 | DDR4_A13 |
| DDR3_A9 | DDR4_A0 |
| DDR3_A10 | DDR4_CS0n |
| DDR3_A11 | DDR4_A3 |
| DDR3_A12 | DDR4_BA1 |
| DDR3_A13 | DDR4_A2 |
| DDR3_A14 | DDR4_A1 |
| DDR3_A15 | DDR4_ODT0 |
| DDR3_BA0 | DDR4_BG0 |
| DDR3_BA1 | DDR4_CASn/DDR4_A15 |
| DDR3_BA2 | DDR4_BA0 |
| DDR3_CS0N | DDR4_ACTn |
| DDR3_CS1N | DDR4_CS1N |
| DDR3_ODT0 | DDR4_WEn/DDR4_A14 |
| DDR3_ODT1 | DDR4_ODT1 |
| DDR3_CLKP | DDR4_CLKP |
| DDR3_CLKn | DDR4_CLKn |
| DDR3_CKE | DDR4_RASn/DDR4_A16 |
| DDR3_RASn | DDR4_CKE |
| DDR3_CASN | DDR4_A12 |
| DDR3_WEn | DDR4_BG1 |
| DDR3_RST | DDR4_RST |

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| Rockchip 瑞芯微电子 | Fuzhou Rockchip Electronics | | |
| Project: | PX30 | | |
| File: | 12.PX30 DDR Controller | | |
| Date: | Thursday, January 11, 2018 | Rev: | V0.1 |
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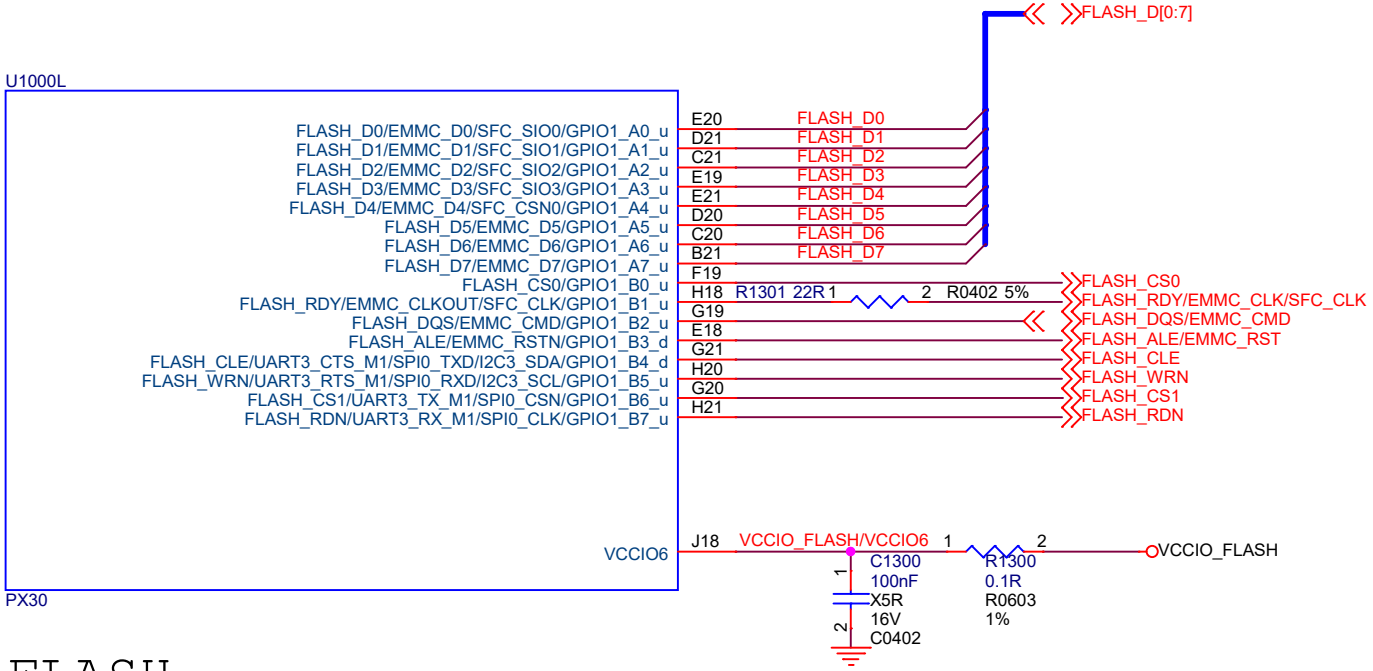
## Part L




# FLASH

| | | | |
|---|---|---|---|
| Rockchip 瑞芯微电子 | Fuzhou Rockchip Electronics | | |
| Project: | PX30 | | |
| File: | 13.PX30 Flash Controller | | |
| Date: | Thursday, January 11, 2018 | Rev: | V0.1 |
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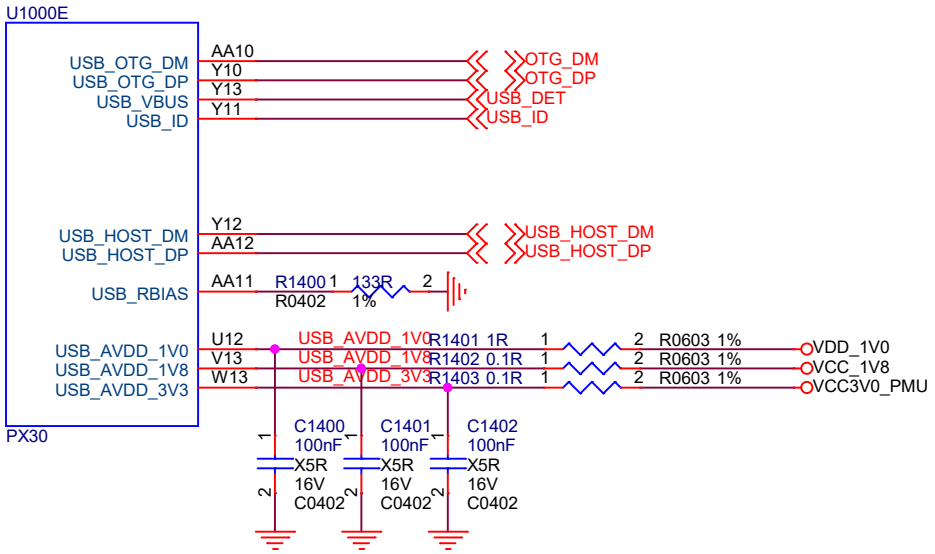
# Part E




| | | | |
|---|---|---|---|
| Rockchip 瑞芯微电子 | Fuzhou Rockchip Electronics | | |
| Project: | PX30 | | |
| File: | 14.PX30 USB Controller | | |
| Date: | Thursday, January 11, 2018 | Rev: | V0.1 |
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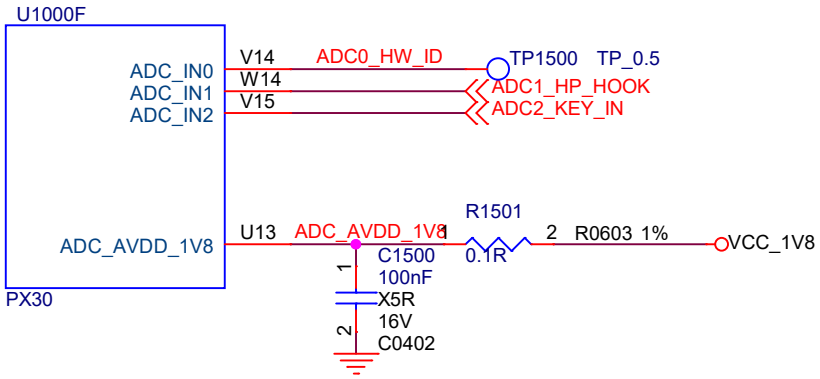
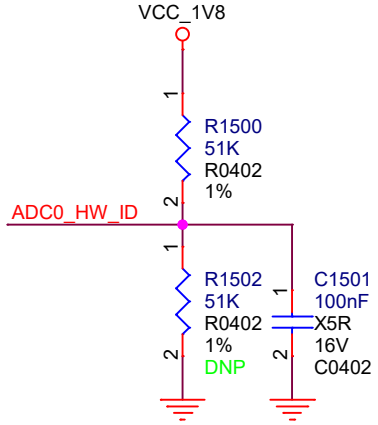
# Part F




## HW ID

| ADC0_HW_ID | | Up Resistance | Down Resistance | |
|---|---|---|---|---|
| Reserve | | DNP | 51K | |
| | | 110K | 51K | |
| | | 100K | 51K | |
| | | 100K | 33K | |
| | | 36K | 18K | |
| | | 51K | 36K | |
| | | 51K | 51K | |
| | | 36K | 51K | |
| | | 18K | 36K | |
| | | 33K | 100K | |
| | | 20K | 100K | |
| | | 10K | 110K | |
| | | 10K | DNP | |

| | | | |
|---|---|---|---|
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| **Project:** | **PX30** | | |
| **File:** | **15.PX30 ADC** | | |
| Date: | Thursday, January 11, 2018 | Rev: | V0.1 |
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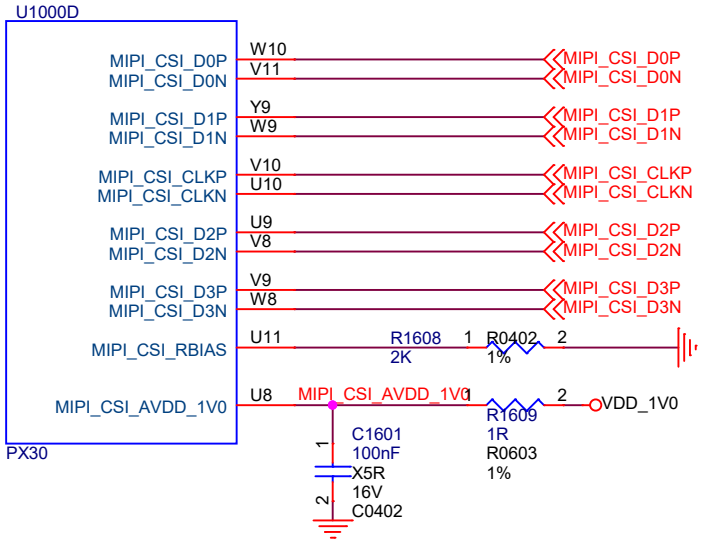
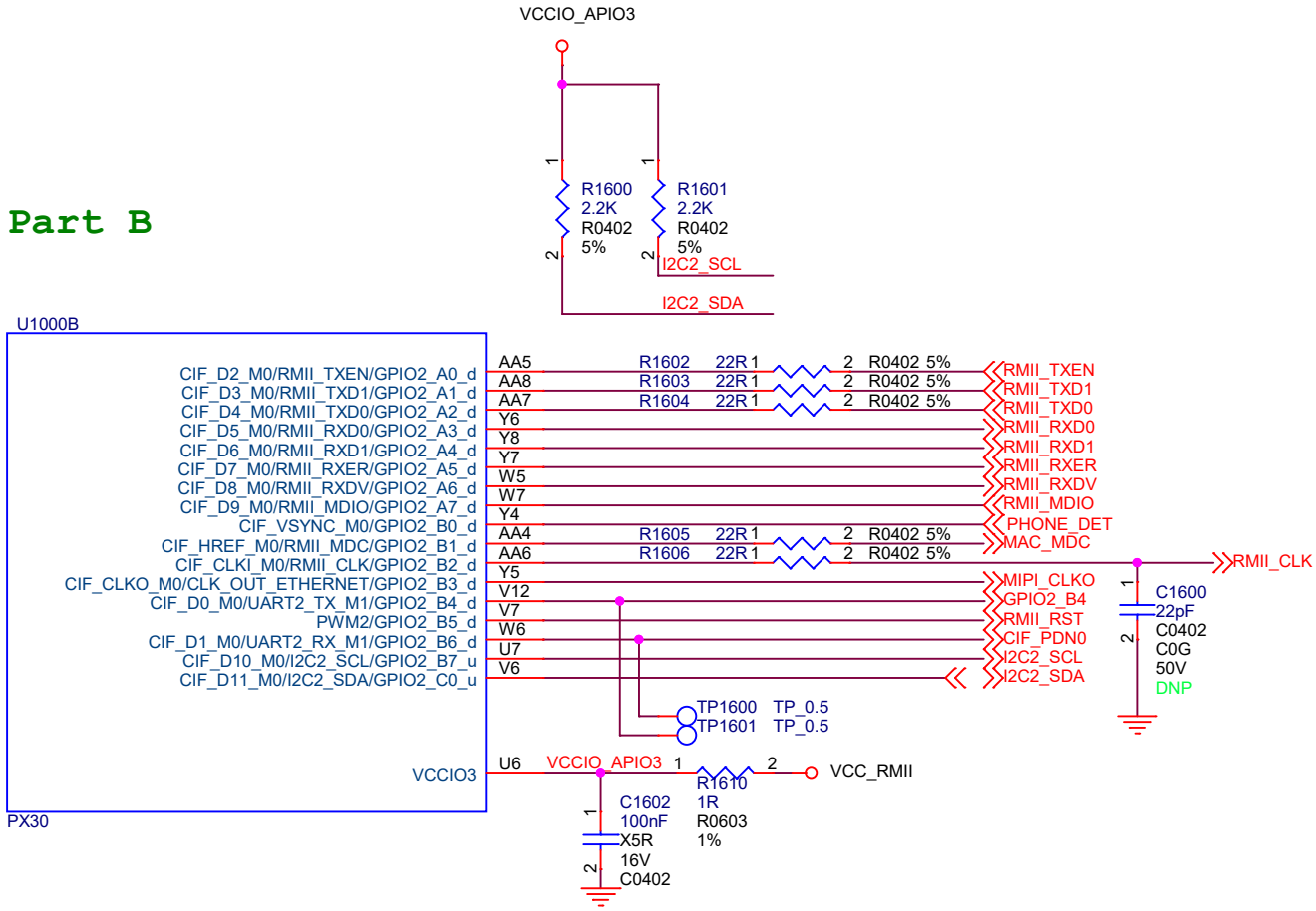
## Part D




MIPI CSI

## Part B




CIF/RMII

| | | | |
|---|---|---|---|
| Rockchip 瑞芯微电子 | Fuzhou Rockchip Electronics | | |
| Project: | PX30 | | |
| File: | 16.PX30 DVP Interface | | |
| Date: | Thursday, January 11, 2018 | Rev: | V0.1 |
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# Part M


| | | | |
|---|---|---|---|
| Rockchip 瑞芯微电子 | Fuzhou Rockchip Electronics | | |
| Project: | PX30 | | |
| File: | 17.PX30 MIPI DSI/LCDC/CIF | | |
| Date: | Thursday, January 11, 2018 | Rev: | V0.1 |
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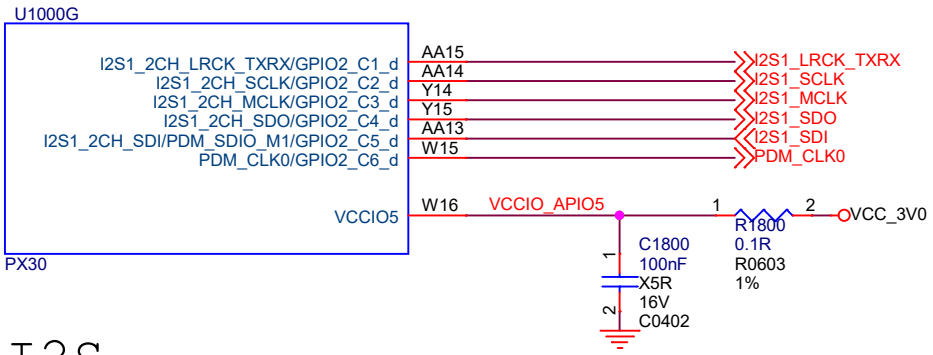
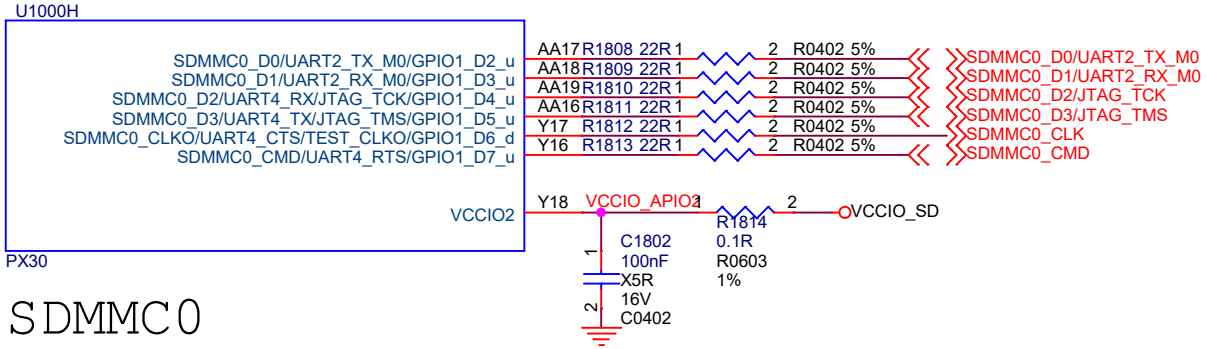
## Part G



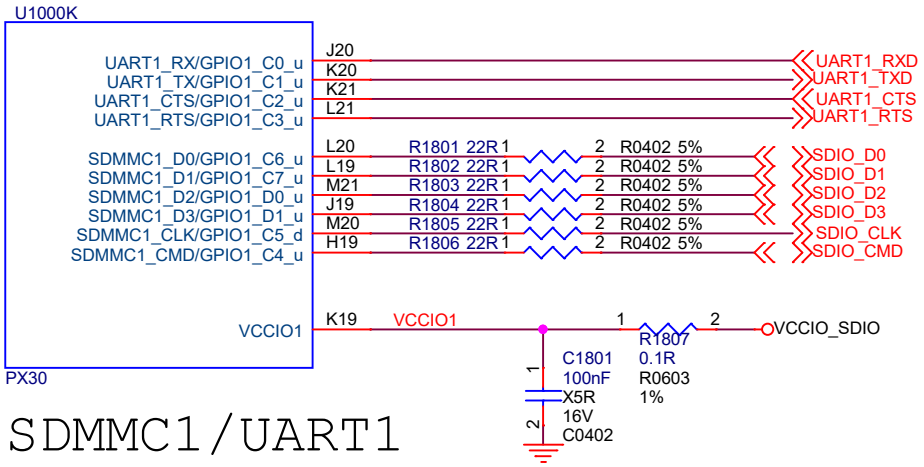

I2S

## Part H




SDMMC0

## Part K




SDMMC1/UART1

| | | | |
|---|---|---|---|
| Rockchip 瑞芯微电子 Fuzhou Rockchip Electronics | | | |
| Project: | PX30 | | |
| File: | 18.PX30 GPIO | | |
| Date: | Thursday, January 11, 2018 | Rev: | V0.1 |
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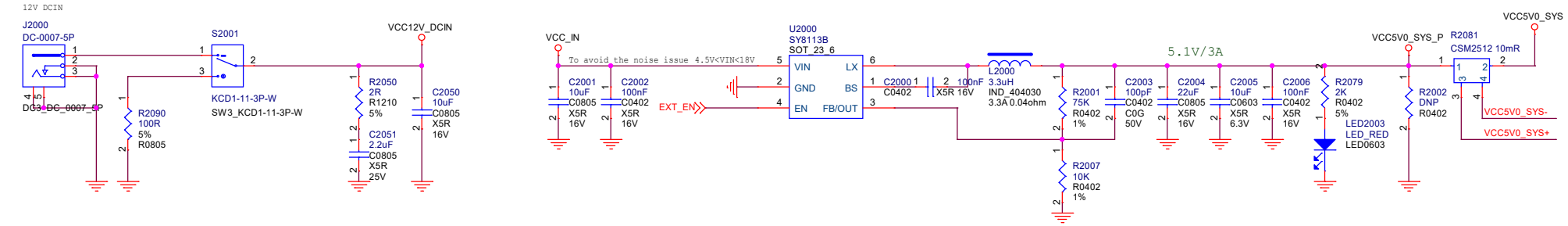
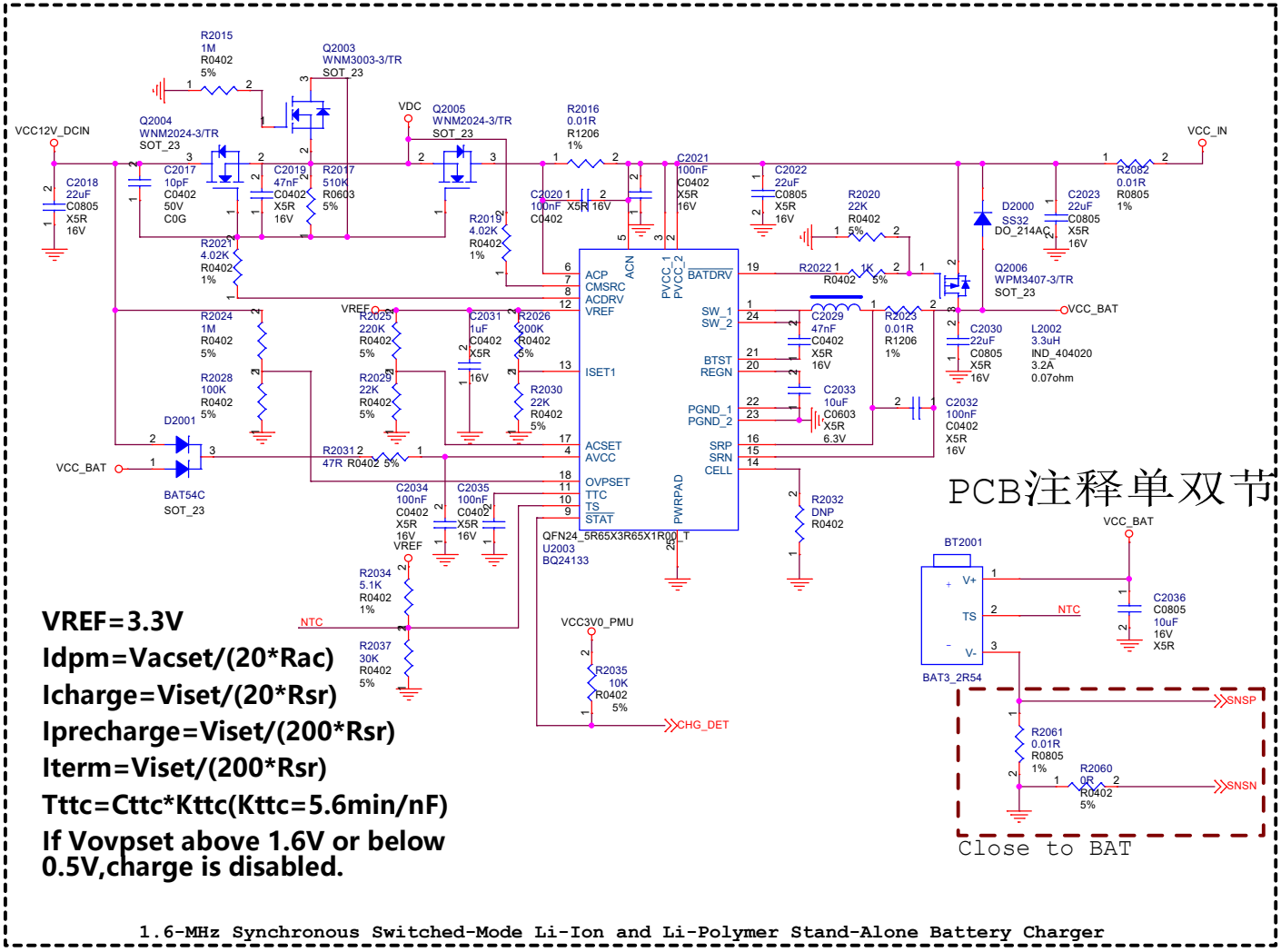
# DC IN&SYSTEM Power




**VREF=3.3V**

**Idpm=Vacset/(20*Rac)**

**Icharge=Viset/(20*Rsr)**

**Iprecharge=Viset/(200*Rsr)**

**Iterm=Viset/(200*Rsr)**

**Ttc=Cttc*Kttc(Kttc=5.6min/nF)**

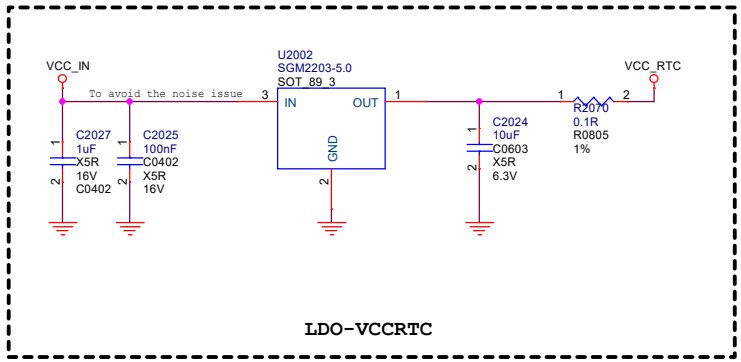
**If Vovpset above 1.6V or below 0.5V,charge is disabled.**

PCB注释单双节




Close to BAT

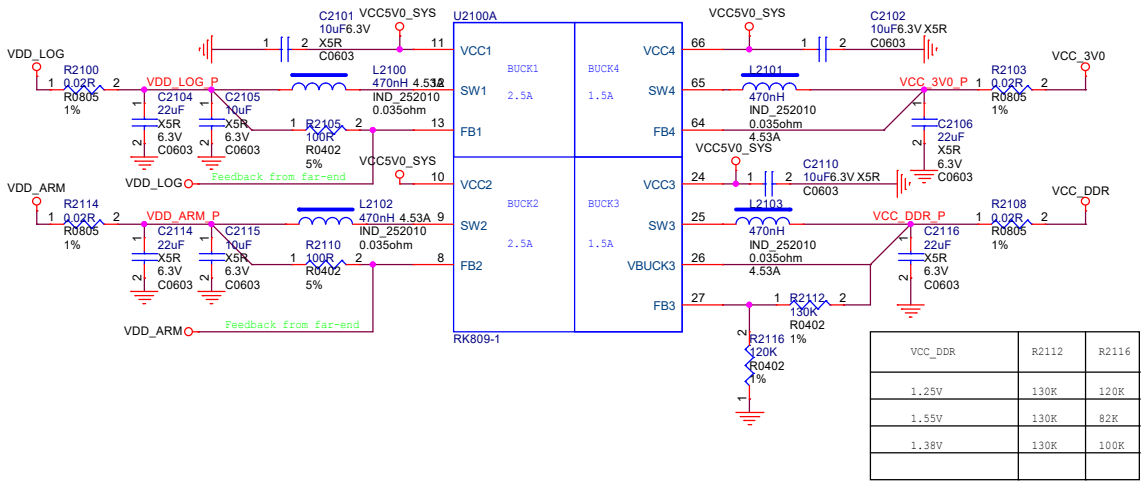
1.6-MHz Synchronous Switched-Mode Li-Ion and Li-Polymer Stand-Alone Battery Charger




LDO-VCCRTC

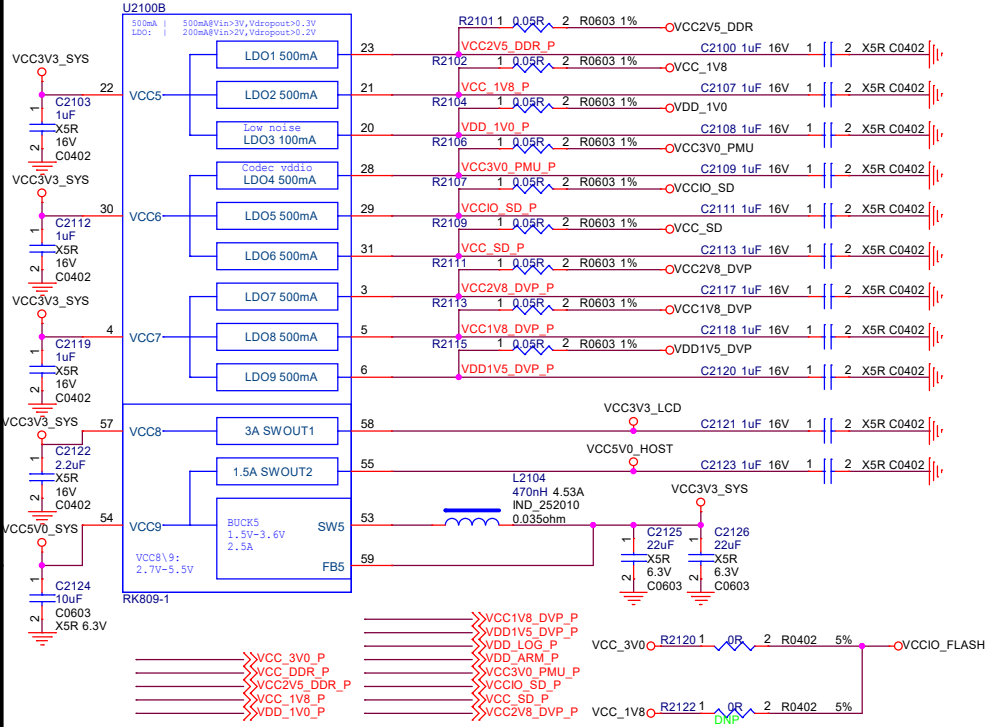
| | | | |
|---|---|---|---|
| Rockchip 瑞芯微电子 | Fuzhou Rockchip Electronics | | |
| Project: | PX30 | | |
| File: | 20.Power-DC IN | | |
| Date: | Thursday, January 11, 2018 | Rev: | V1.1 |
| Designed by: | XIAOHF | Sheet: | 16 of 35 |

# PMIC RK809-1 DCDC

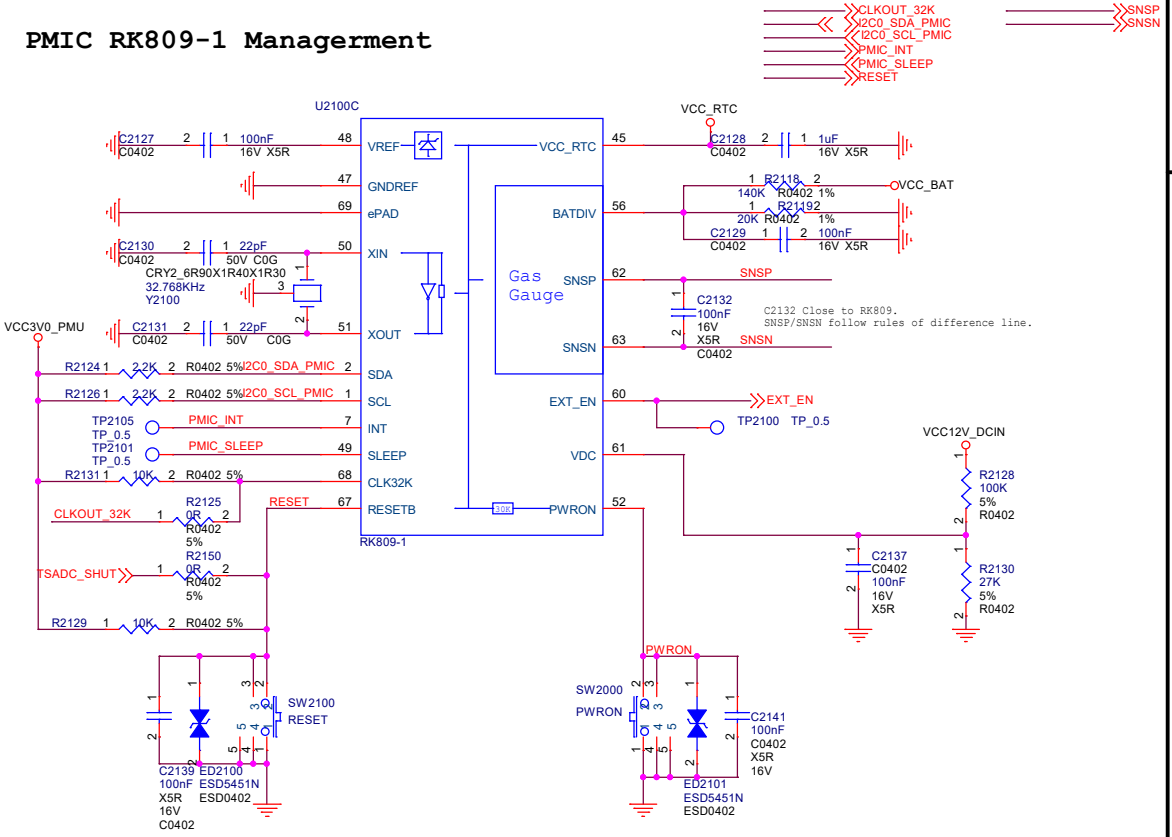



| VCC_DDR | R2112 | R2116 |
|---|---|---|
| 1.25V | 130K | 120K |
| 1.55V | 130K | 82K |
| 1.38V | 130K | 100K |
| | | |

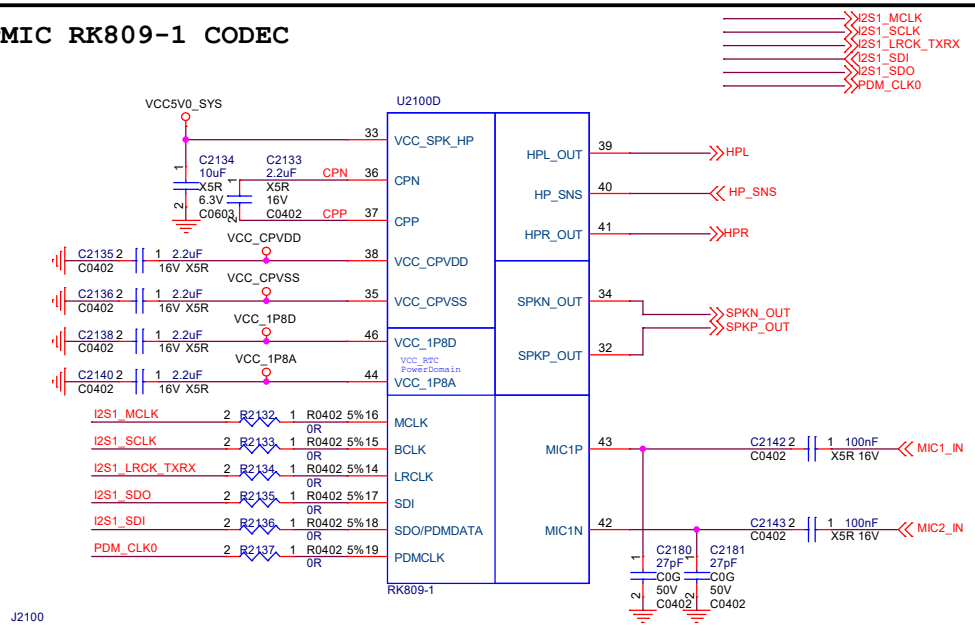
# PMIC RK809-1 LDO

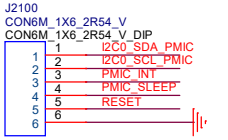



# PMIC RK809-1 Managerment



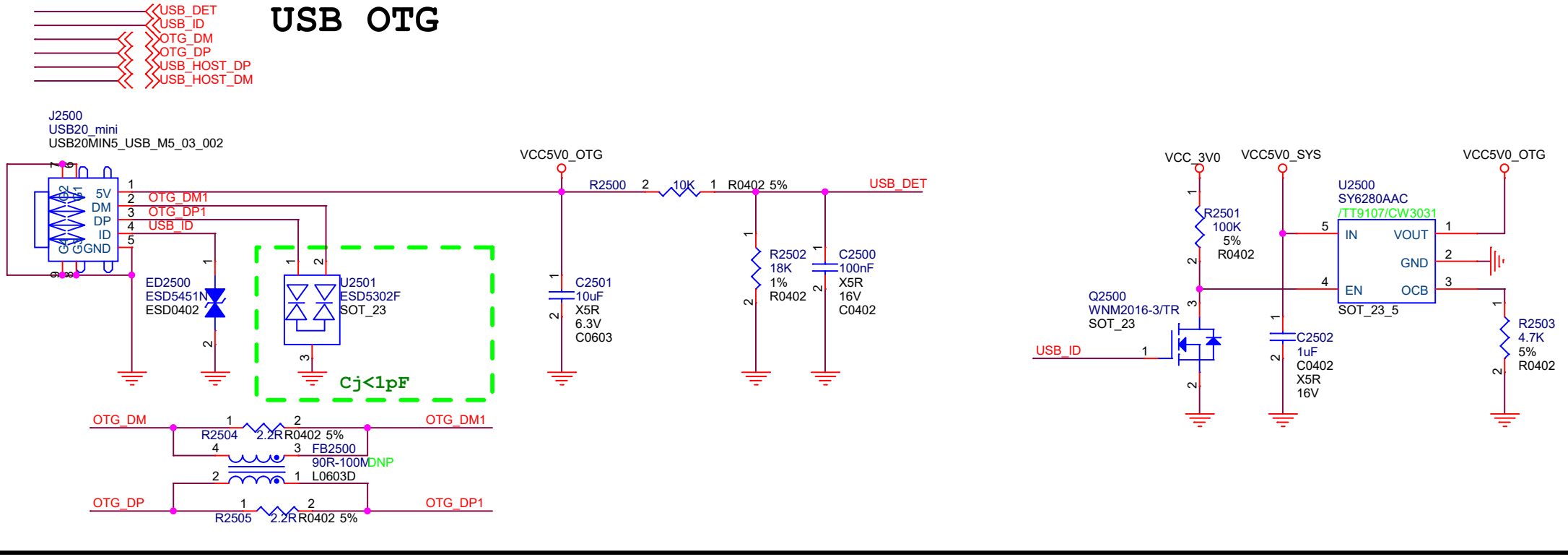

# PMIC RK809-1 CODEC



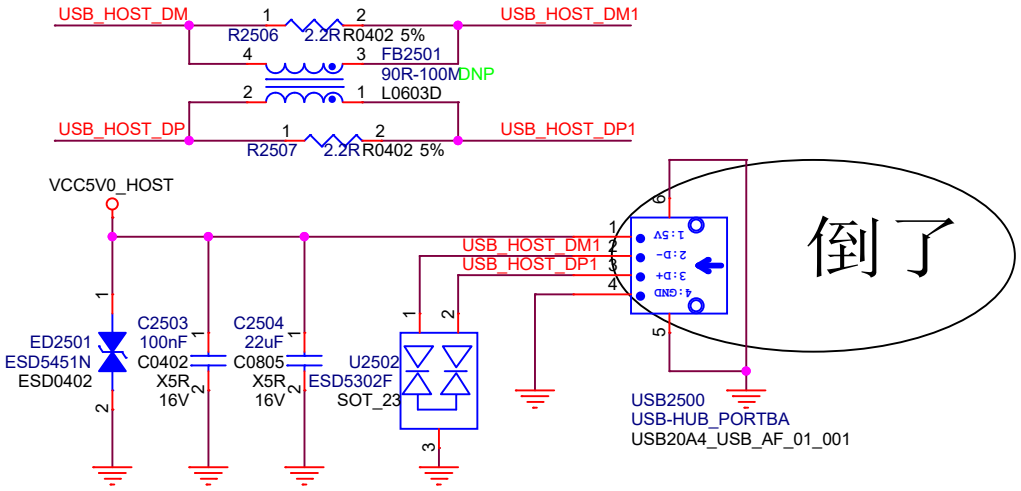




| | |
|---|---|
| Rockchip 瑞芯微电子 | Fuzhou Rockchip Electronics |
| Project: | PX30 |
| File: | 21:Power-PMIC RK809-1 |
| Date: | Thursday, January 11, 2018 |
| Rev: | V0.1 |
| Designed by: | XIAOHF |
| Sheet: | 17 of 35 |

# USB OTG

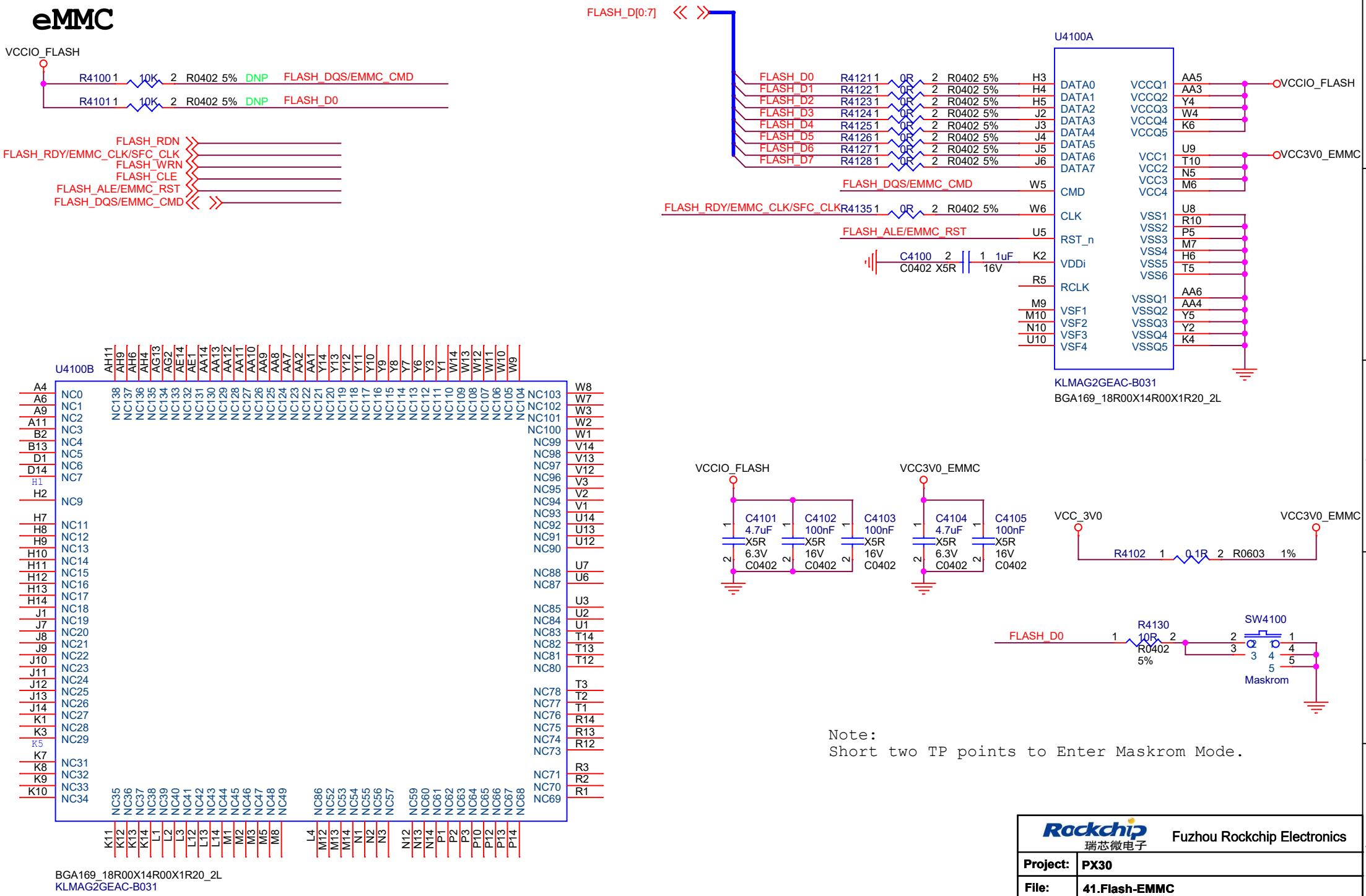



# USB HOST




| | | | |
|---|---|---|---|
| Rockchip 瑞芯微电子 | Fuzhou Rockchip Electronics | | |
| Project: | PX30 | | |
| File: | 25.USB OTG/HOST | | |
| Date: | Thursday, January 11, 2018 | Rev: | V0.1 |
| Designed by: | XIAOHF | Sheet: | 18 of 35 |

# eMMC

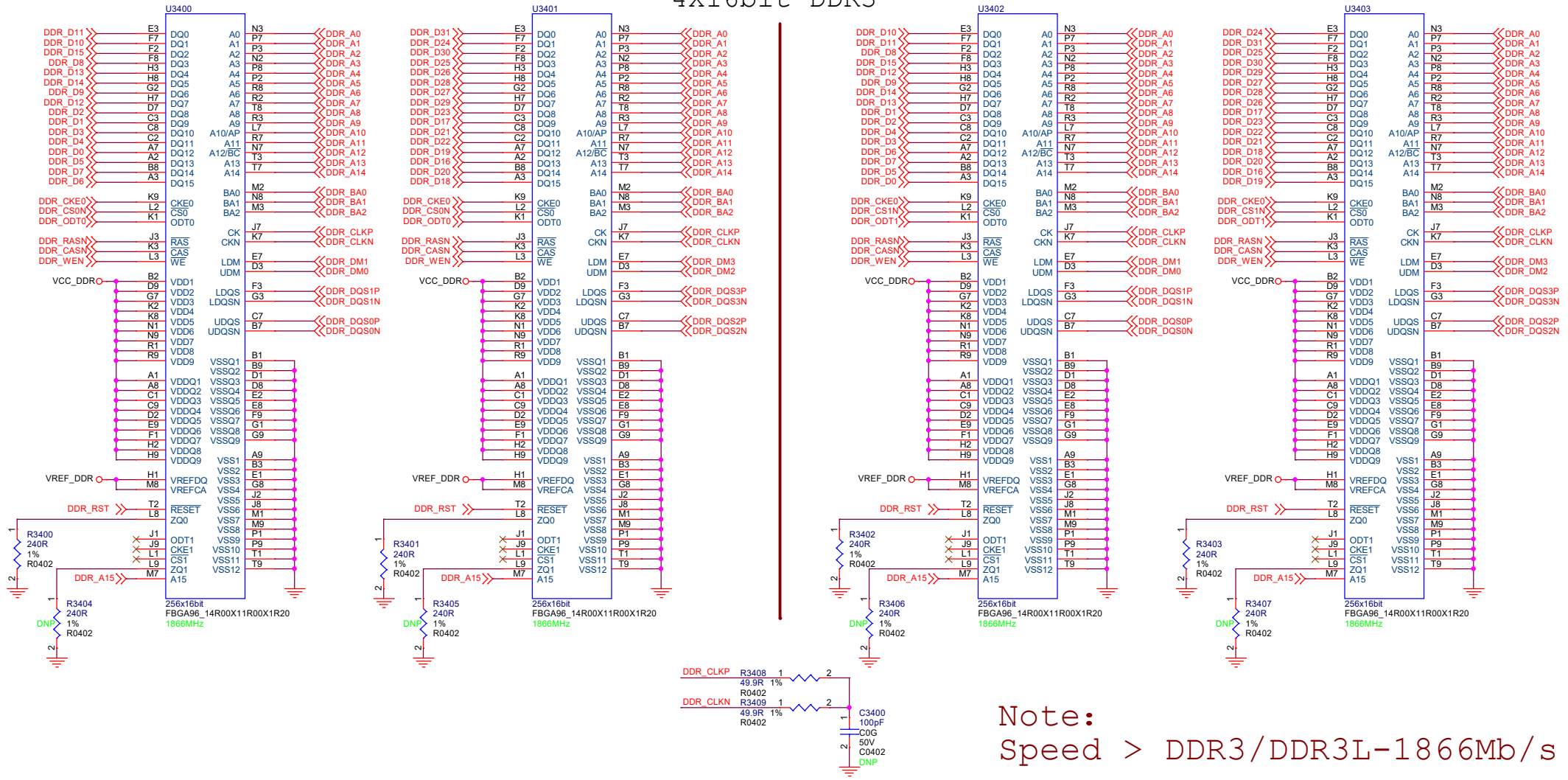



Note:
Short two TP points to Enter Maskrom Mode.

**Remind: Refer to the latest AVL for parts selection.**

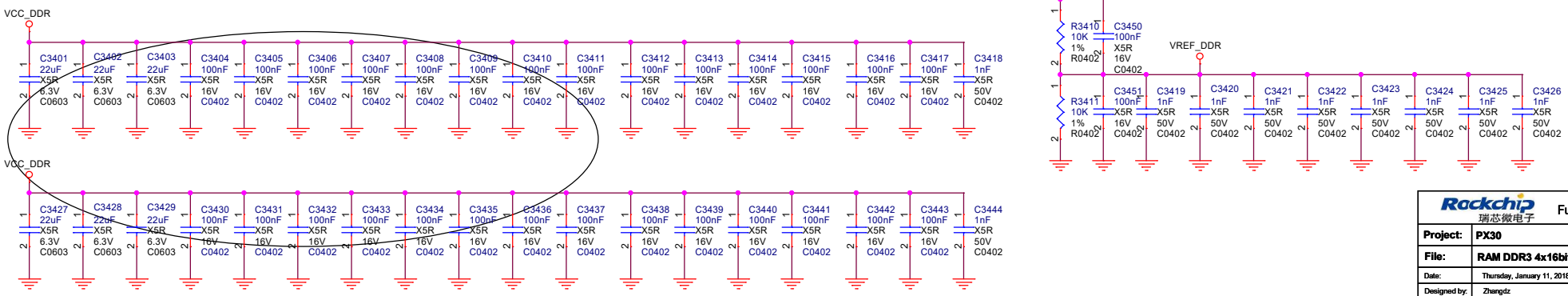
| | | | |
|---|---|---|---|
| Rockchip 瑞芯微电子 | Fuzhou Rockchip Electronics | | |
| Project: | PX30 | | |
| File: | 41.Flash-EMMC | | |
| Date: | Thursday, January 11, 2018 | Rev: | V0.1 |
| Designed by: | XIAOHF | Sheet: | 19 of 35 |

# 4X16bit DDR3




Note:
Speed > DDR3/DDR3L-1866Mb/s

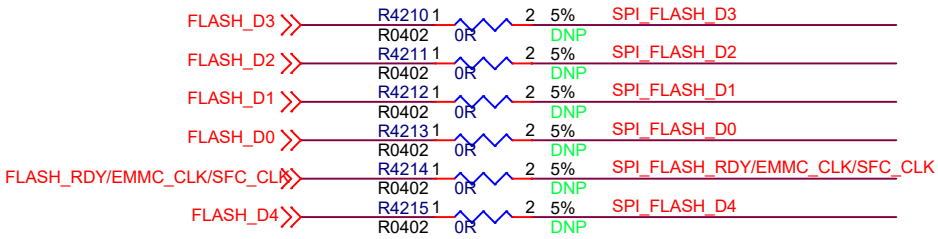
## DDR3 FILTER

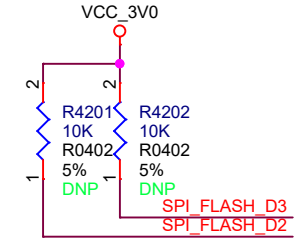


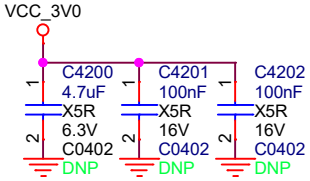

| | | | |
|---|---|---|---|
| Rockchip 瑞芯微电子 | Fuzhou Rockchip Electronics | | |
| Project: | PX30 | | |
| File: | RAM DDR3 4x16bit | | |
| Date: | Thursday, January 11, 2018 | Rev: | V1.0 |
| Designed by: | Zhangdz | Sheet: | 19 of 35 |

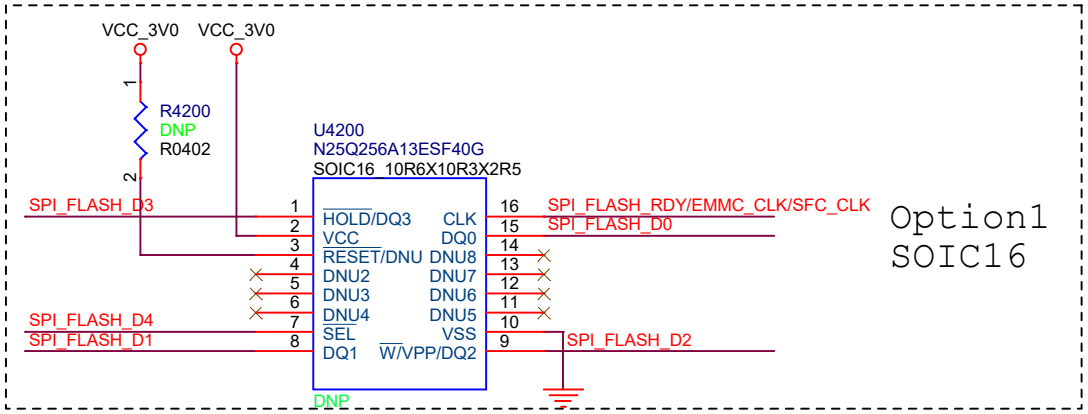
# SPI Flash

Reserved for minimal system.



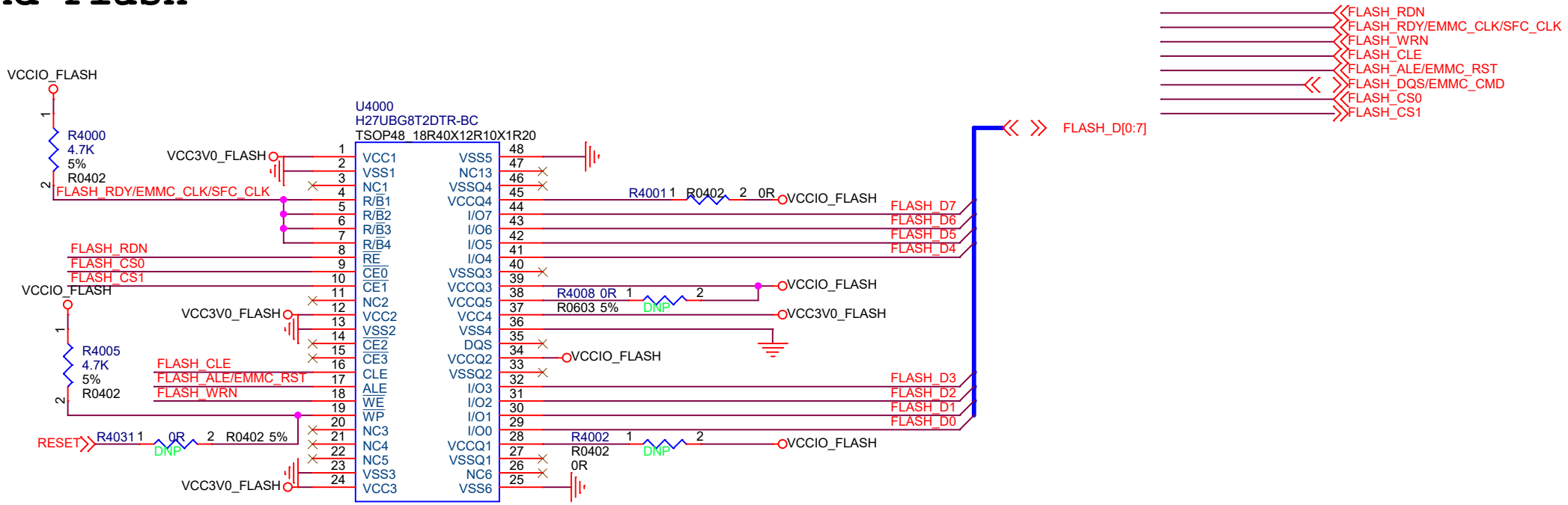


Note:
Short two TP points to Enter Maskrom Mode.

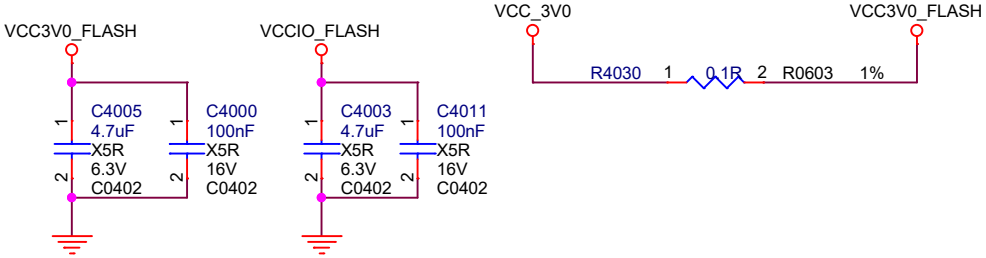
**Remind: Refer to the latest AVL for parts selection.**

| | | | |
|---|---|---|---|
| Rockchip 瑞芯微电子 | Fuzhou Rockchip Electronics | | |
| Project: | PX30 | | |
| File: | 42.Flash-SPI Flash | | |
| Date: | Thursday, January 11, 2018 | Rev: | V0.1 |
| Designed by: | XIAOHF | Sheet: | 20 of 35 |

# Nand Flash



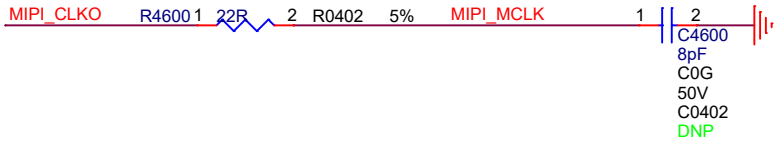

Note: if use toshiba and sandisk DDR mode,
VCCQ1 and VCCQ4 must be connected to VCC_IO。



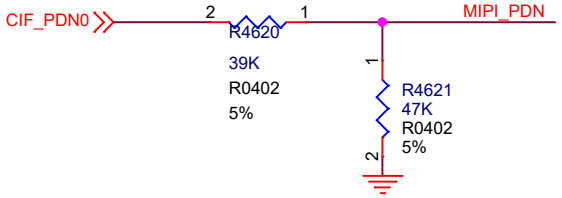

**Remind: Refer to the latest AVL for parts selection.**

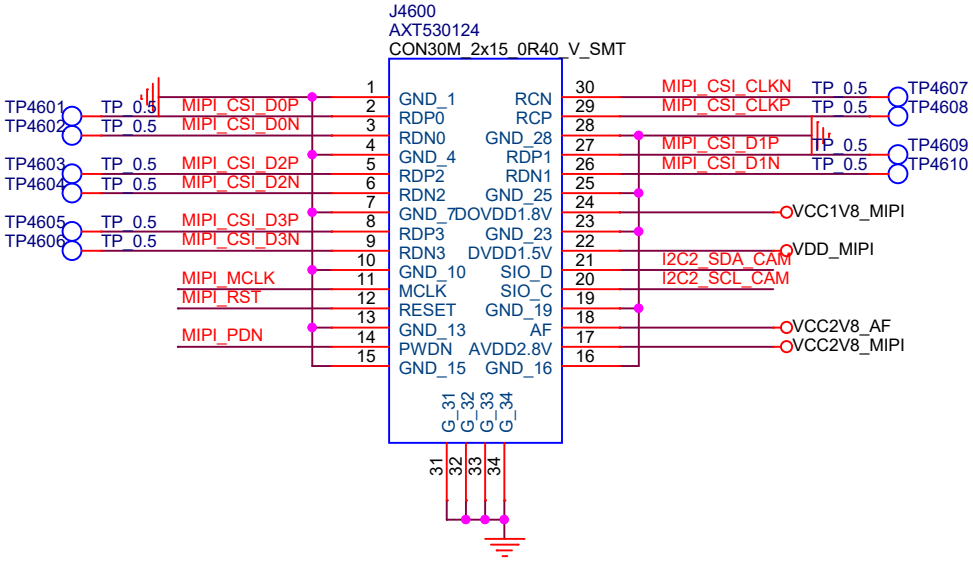
| | | | |
|---|---|---|---|
| Rockchip 瑞芯微电子 | Fuzhou Rockchip Electronics | | |
| Project: | PX30 | | |
| File: | 40.Flash-Nand Flash | | |
| Date: | Thursday, January 11, 2018 | Rev: | V0.1 |
| Designed by: | XIAOHF | Sheet: | 20 of 35 |

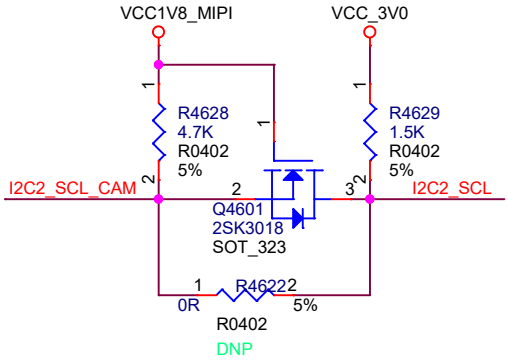
# MIPI Camera

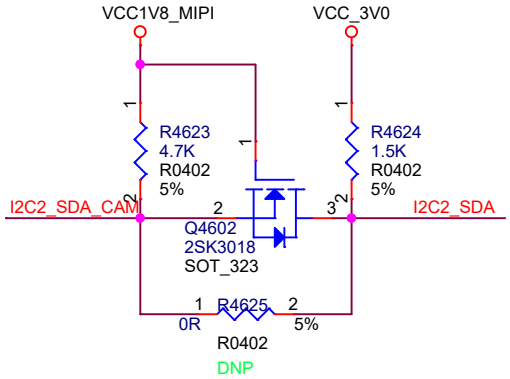



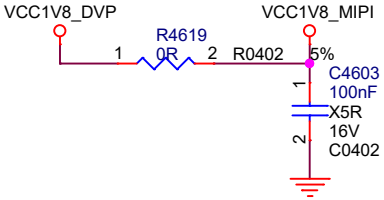


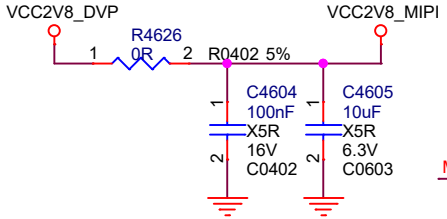


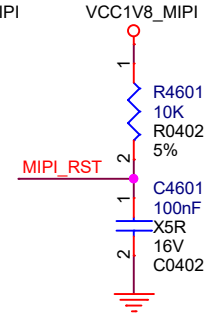



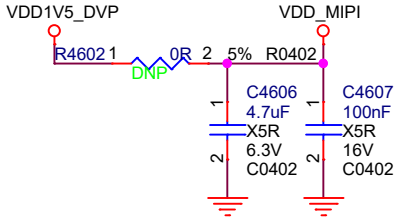



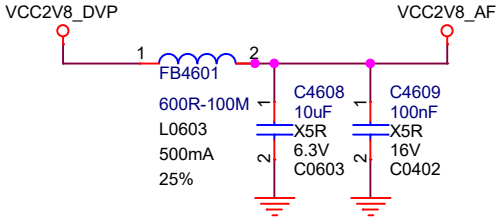



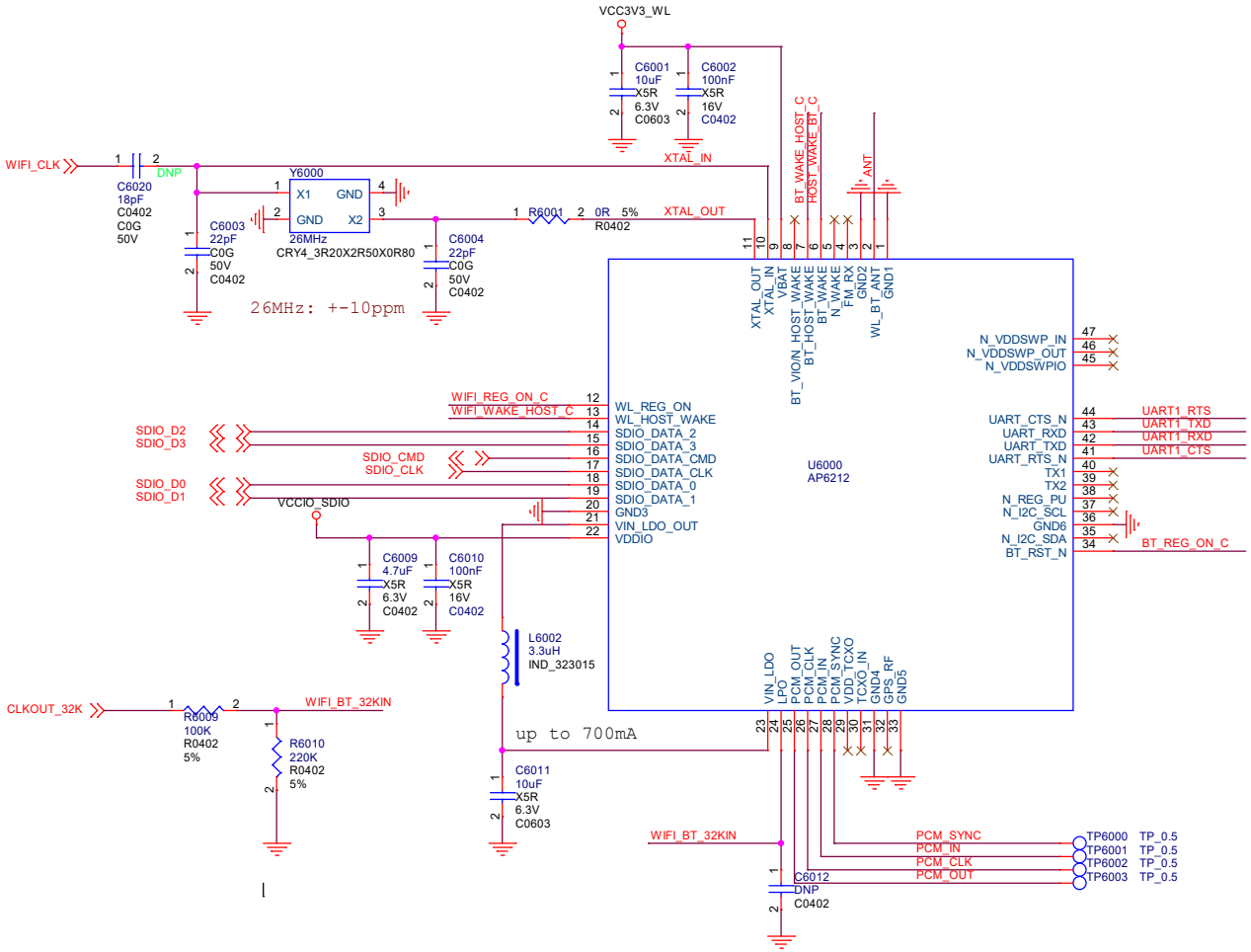



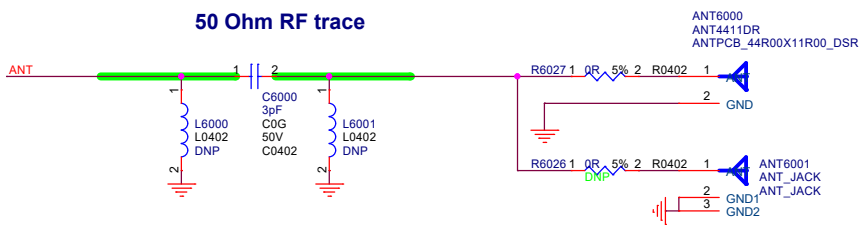




| | | | |
|---|---|---|---|
| Rockchip 瑞芯微电子 Fuzhou Rockchip Electronics | | | |
| Project: | PX30 | | |
| File: | 46.Camera-MIPI CSI | | |
| Date: | Thursday, January 11, 2018 | Rev: | V0.1 |
| Designed by: | XIAOHF | Sheet: | 21 of 35 |

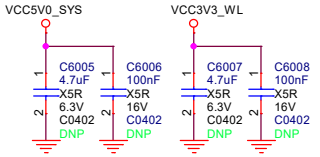
# WIFI/BT MODULE



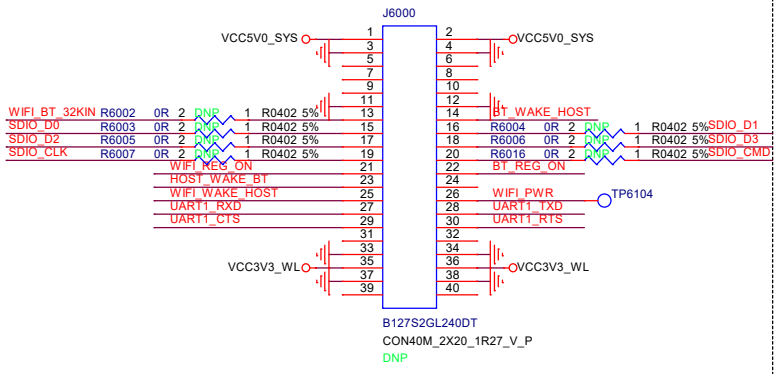




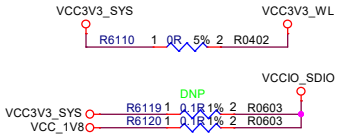

## DNP



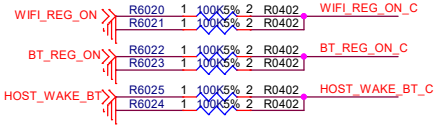

### WIFI CONNECTOR

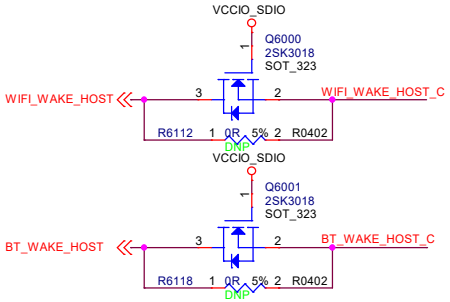



## Module Power

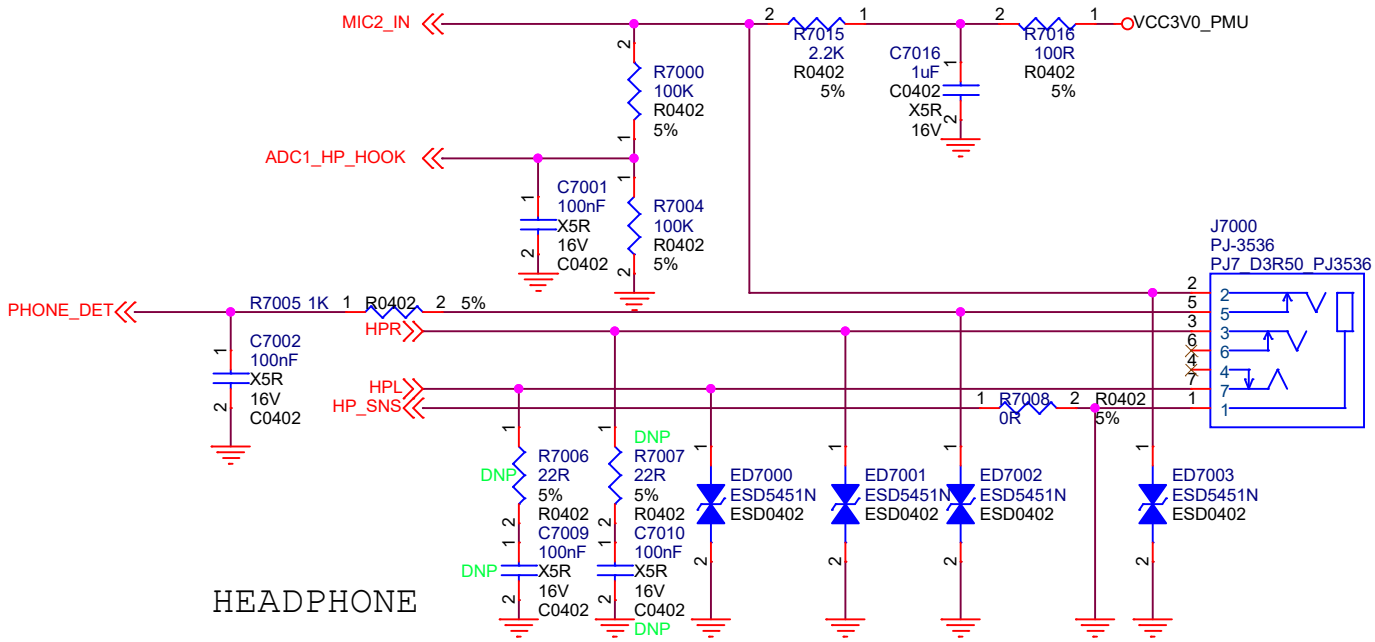


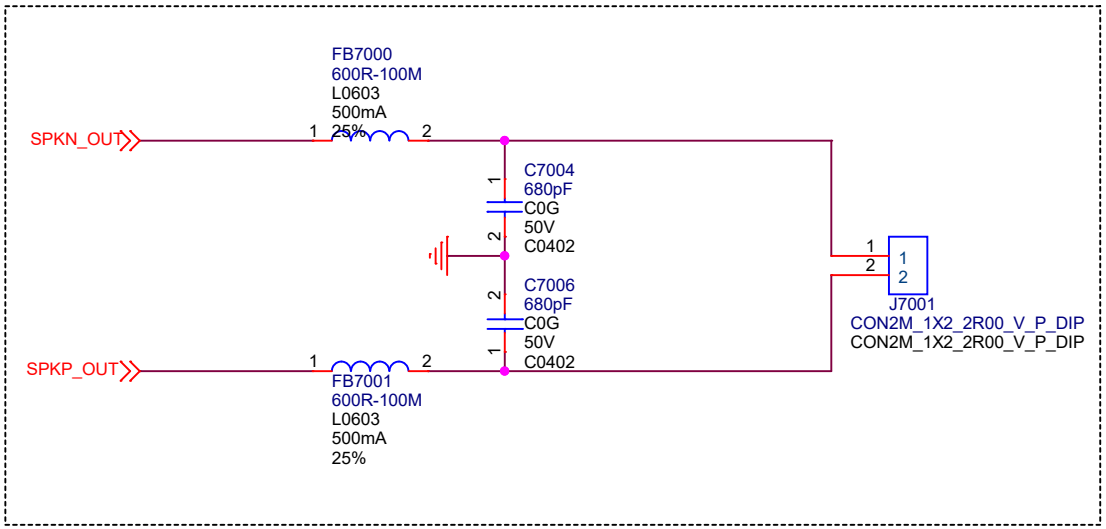

## Level Shift

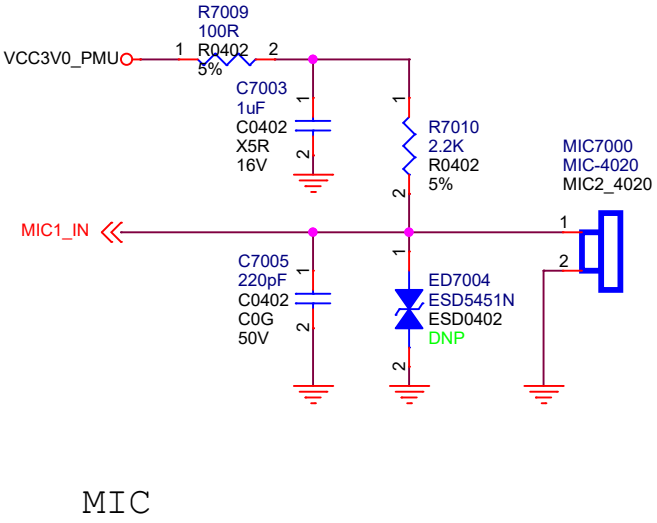



| | | | |
|---|---|---|---|
| Rockchip 瑞芯微电子 | Fuzhou Rockchip Electronics | | |
| Project: | PX30 | | |
| File: | 60.SDIO WIFI/BT AP6212 | | |
| Date: | Thursday, January 11, 2018 | Rev: | V0.1 |
| Designed by: | XIAOHF | Sheet: | 22 of 35 |

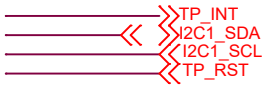


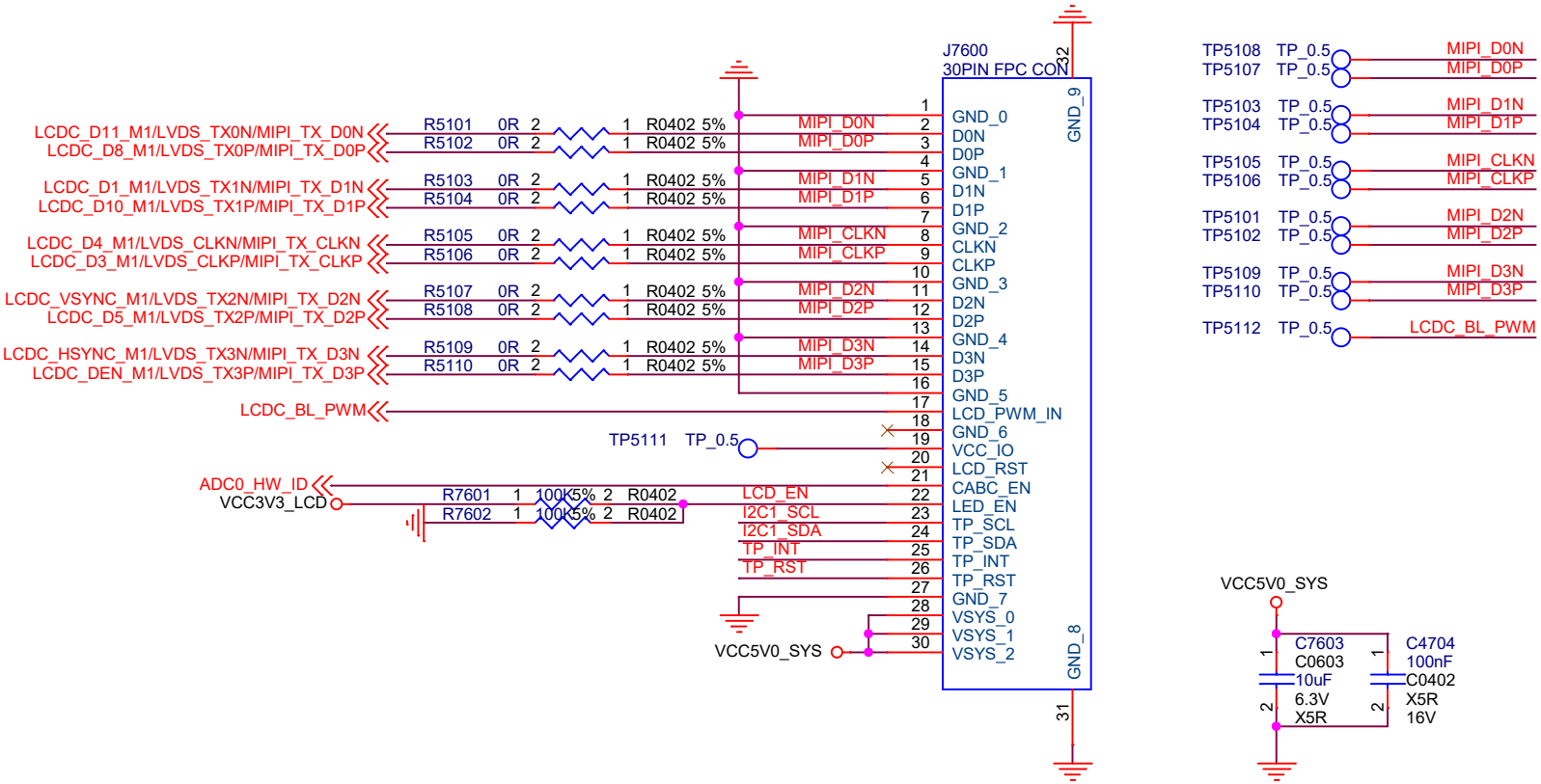




| | | | |
|---|---|---|---|
| Rockchip 瑞芯微电子 | Fuzhou Rockchip Electronics | | |
| Project: | PX30 | | |
| File: | 70.AUDIO | | |
| Date: | Thursday, January 11, 2018 | Rev: | V0.1 |
| Designed by: | XIAOHF | Sheet: | 24 of 35 |

# LCM MIPI Connector







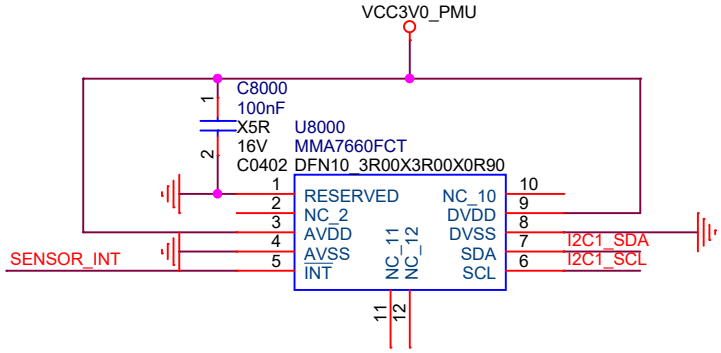



| | | | |
|---|---|---|---|
| Rockchip 瑞芯微电子 | Fuzhou Rockchip Electronics | | |
| Project: | PX30 | | |
| File: | 76.MIPI Panel | | |
| Date: | Thursday, January 11, 2018 | Rev: | V0.1 |
| Designed by: | XIAOHF | Sheet: | 25 of 35 |

I2C1_SDA
I2C1_SCL

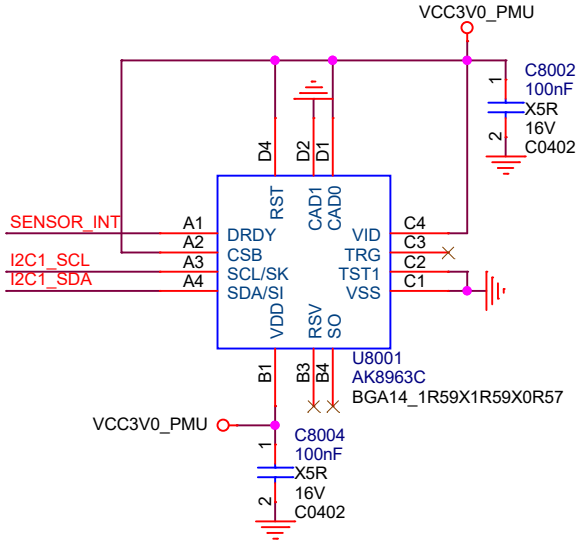
SENSOR_INT

# G-sensor



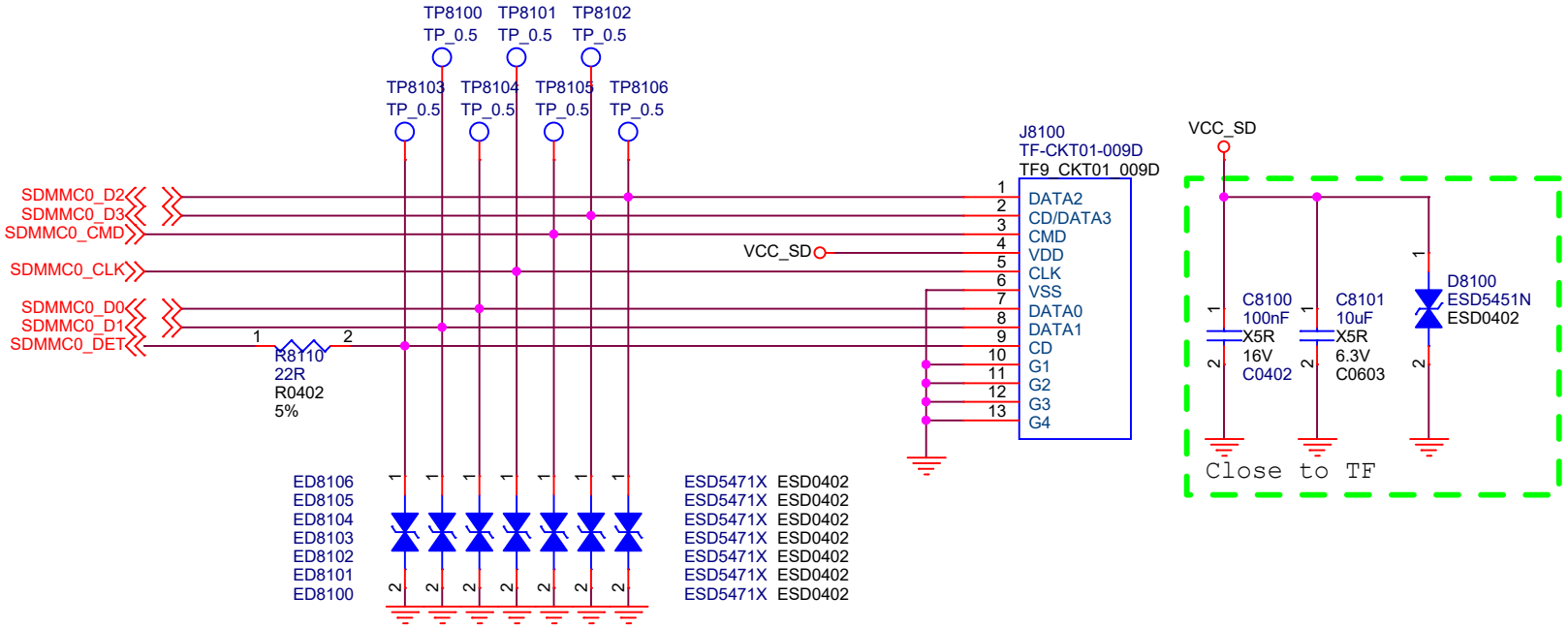

# Compass

Note:
The first pin of AK8963C must be place on the lower left corner of PCB.

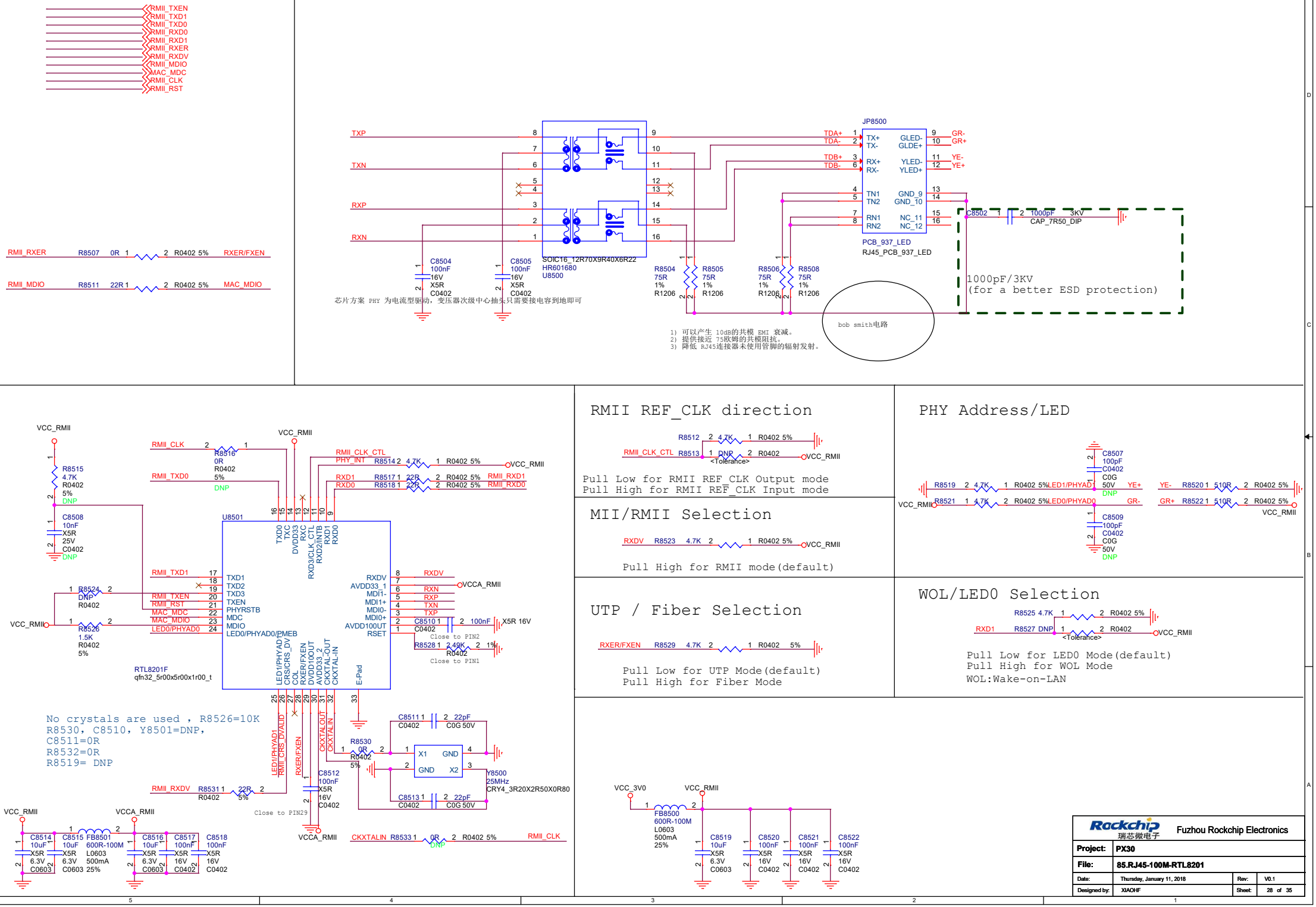



| | | | |
|---|---|---|---|
| Rockchip 瑞芯微电子 | Fuzhou Rockchip Electronics | | |
| Project: | PX30 | | |
| File: | 80.Sensor | | |
| Date: | Thursday, January 11, 2018 | Rev: | V0.1 |
| Designed by: | XIAOHF | Sheet: | 26 of 35 |

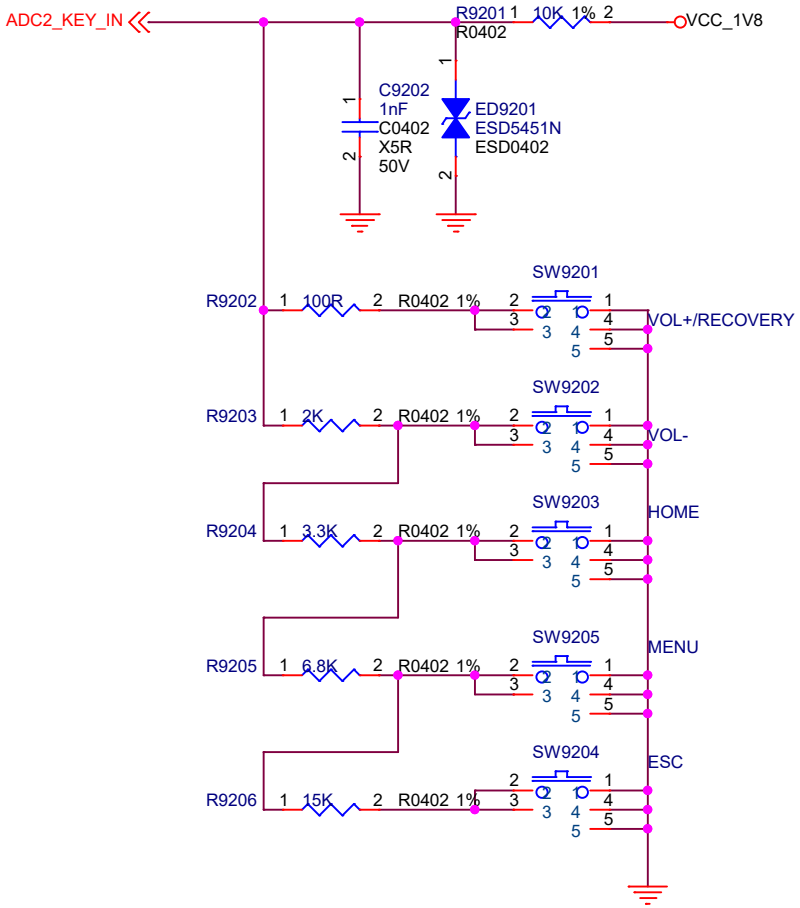
# TF Card




| | | | |
|---|---|---|---|
| Rockchip 瑞芯微电子 | Fuzhou Rockchip Electronics | | |
| Project: | PX30 | | |
| File: | 81.TF Card | | |
| Date: | Thursday, January 11, 2018 | Rev: | V0.1 |
| Designed by: | XIAOHF | Sheet: | 27 of 35 |


RMII_TXEN
RMII_TXD1
RMII_TXD0
RMII_RXD0
RMII_RXD1
RMII_RXER
RMII_RXDV
RMII_MDIO
MAC_MDC
RMII_CLK
RMII_RST
RMII_RXER R8507 0R RXER/FXEN
RMII_MDIO R8511 22R MAC_MDIO
TXP
TXN
RXP
RXN
C8504 100nF 16V X5R C0402
C8505 100nF 16V X5R C0402
SOIC16_12R70X9R40X6R22
HR601680
U8500
芯片方案 PHY 为电流型驱动，变压器次级中心抽头只需要接电容到地即可
R8504 75R 1% R1206
R8505 75R 1% R1206
R8506 75R 1% R1206
R8508 75R 1% R1206
JP8500
TDA+ TDA- TDB+ TDB-
TX+ TX- RX+ RX-
GLED- GLDE+ YLED- YLED+
GR- GR+ YE- YE+
TN1 TN2 RN1 RN2
GND_9 GND_10 NC_11 NC_12
PCB_937_LED
RJ45_PCB_937_LED
C8502 1000pF 3KV CAP_7R50_DIP
1000pF/3KV
(for a better ESD protection)
bob smith电路
1) 可以产生 10dB的共模 EMI 衰减。
2) 提供接近 75欧姆的共模阻抗。
3) 降低 RJ45连接器未使用管脚的辐射发射。
VCC_RMII
VCCA_RMII
R8515 4.7K R0402 5% DNP
R8516 0R R0402 5% DNP
C8508 10nF X5R 25V C0402 DNP
RMII_CLK
RMII_TXD0
RMII_CLK_CTL
PHY_INT
R8514 4.7K R0402 5%
RXD1 R8517 22R R0402 5% RMII_RXD1
RXD0 R8518 22R R0402 5% RMII_RXD0
U8501
TXD0 TXC DVDD33 RXC RXD3/CLK_CTL RXD2/INTB RXD1 RXD0
RMII_TXD1
RMII_TXEN
RMII_RST
MAC_MDC
LED0/PHYAD0
R8524 DNP R0402
R8526 1.5K R0402 5%
TXD1 TXD2 TXD3 TXEN PHYRSTB MDC MDIO LED0/PHYAD0/PMEB
RXDV AVDD33_1 MDI1- MDI1+ MDI0- MDI0+ AVDD100UT RSET
C8510 100nF X5R 16V
R8528 2.49K 1% R0402
Close to PIN2
Close to PIN1
RTL8201F
qfn32_5r00x5r00x1r00_t
LED1/PHYAD1 CRS/CRS_DV COL RXER/FXEN DVDD10OUT AVDD33_2 CKXTAL-OUT CKXTAL-IN E-Pad
No crystals are used , R8526=10K
R8530, C8510, Y8501=DNP,
C8511=0R
R8532=0R
R8519= DNP
C8511 22pF C0G 50V
R8530 0R R0402 5%
X1 GND GND X2
Y8500 25MHz CRY4_3R20X2R50X0R80
C8513 22pF C0G 50V
C8512 100nF X5R 16V C0402
RMII_RXDV R8531 22R R0402 5%
Close to PIN29
CKXTALIN R8533 0R DNP R0402 5% RMII_CLK
C8514 10uF X5R 6.3V C0603
C8515 10uF X5R 6.3V C0603
FB8501 600R-100M L0603 500mA 25%
C8516 10uF X5R 6.3V C0603
C8517 100nF X5R 16V C0402
C8518 100nF X5R 16V C0402
RMII REF_CLK direction
R8512 4.7K R0402 5%
RMII_CLK_CTL R8513 DNR <Tolerance> R0402 VCC_RMII
Pull Low for RMII REF_CLK Output mode
Pull High for RMII REF_CLK Input mode
MII/RMII Selection
RXDV R8523 4.7K R0402 5% VCC_RMII
Pull High for RMII mode(default)
UTP / Fiber Selection
RXER/FXEN R8529 4.7K R0402 5%
Pull Low for UTP Mode(default)
Pull High for Fiber Mode
PHY Address/LED
R8519 4.7K R0402 5% LED1/PHYAD1 YE+
R8521 4.7K R0402 5% LED0/PHYAD0 GR-
C8507 100pF C0402 C0G 50V DNP
C8509 100pF C0402 C0G 50V DNP
YE- R8520 510R R0402 5%
GR+ R8522 510R R0402 5%
WOL/LED0 Selection
R8525 4.7K R0402 5%
RXD1 R8527 DNP <Tolerance> R0402 VCC_RMII
Pull Low for LED0 Mode(default)
Pull High for WOL Mode
WOL:Wake-on-LAN
VCC_3V0
FB8500 600R-100M L0603 500mA 25%
C8519 10uF X5R 6.3V C0603
C8520 100nF X5R 16V C0402
C8521 100nF X5R 16V C0402
C8522 100nF X5R 16V C0402
Rockchip 瑞芯微电子
Fuzhou Rockchip Electronics
Project: PX30
File: 85.RJ45-100M-RTL8201
Date: Thursday, January 11, 2018
Rev: V0.1
Designed by: XIAOHF
Sheet: 28 of 35

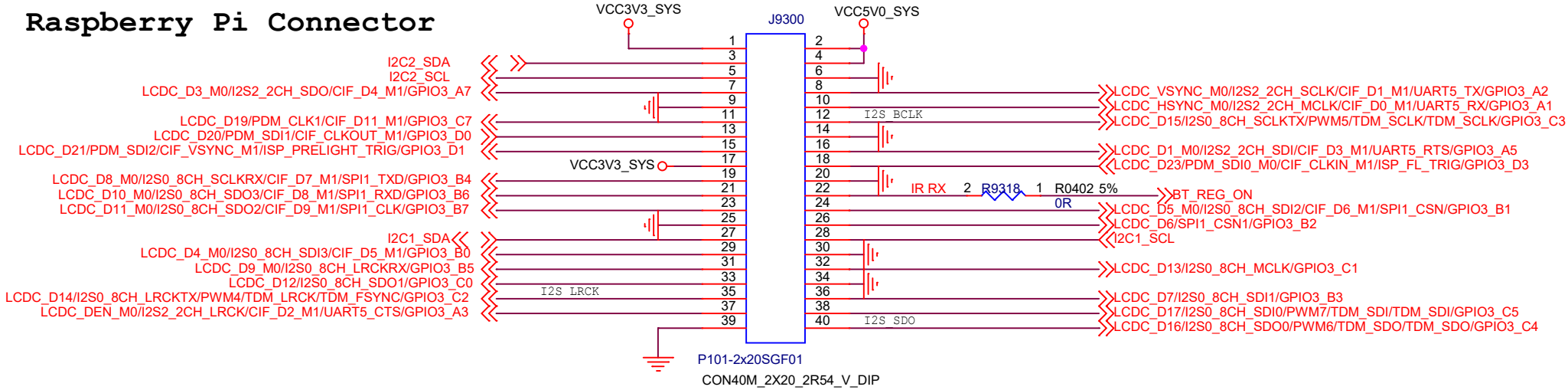
# KEY BAORD



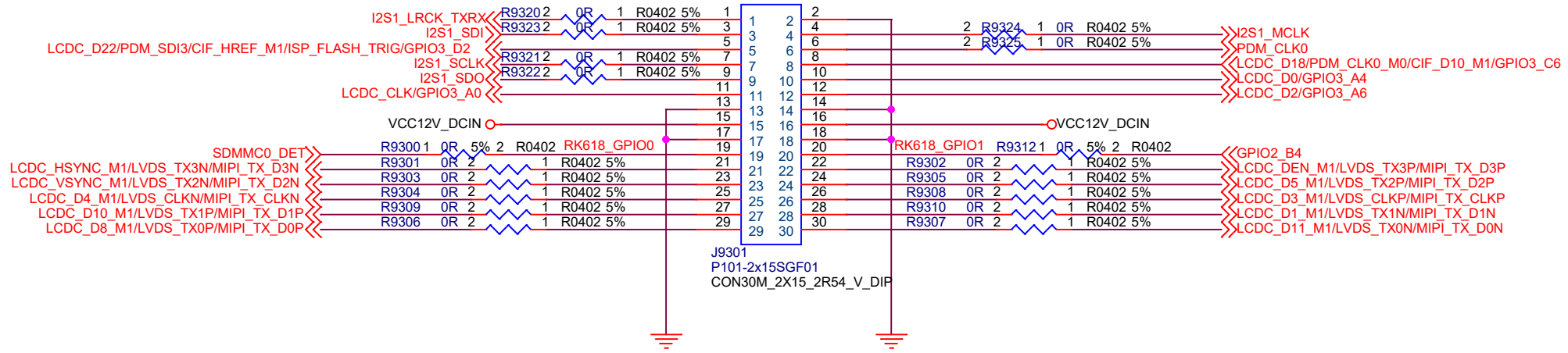

| Key Name | SARADC |
|---|---|
| VOL+/RECOVERY | 10 |
| VOL- | 170 |
| HOME | 254 |
| MENU | 414 |
| ESC | 614 |

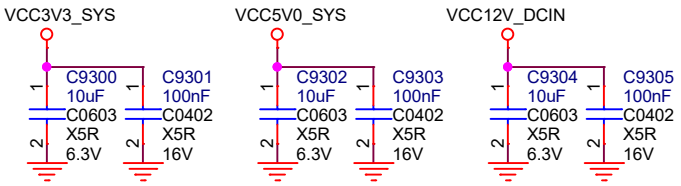
| | | | |
|---|---|---|---|
| Rockchip 瑞芯微电子 Fuzhou Rockchip Electronics | | | |
| Project: | PX30 | | |
| File: | 92.KEY Board | | |
| Date: | Thursday, January 11, 2018 | Rev: | V0.1 |
| Designed by: | XIAOHF | Sheet: | 30 of 35 |

# Raspberry Pi Connector



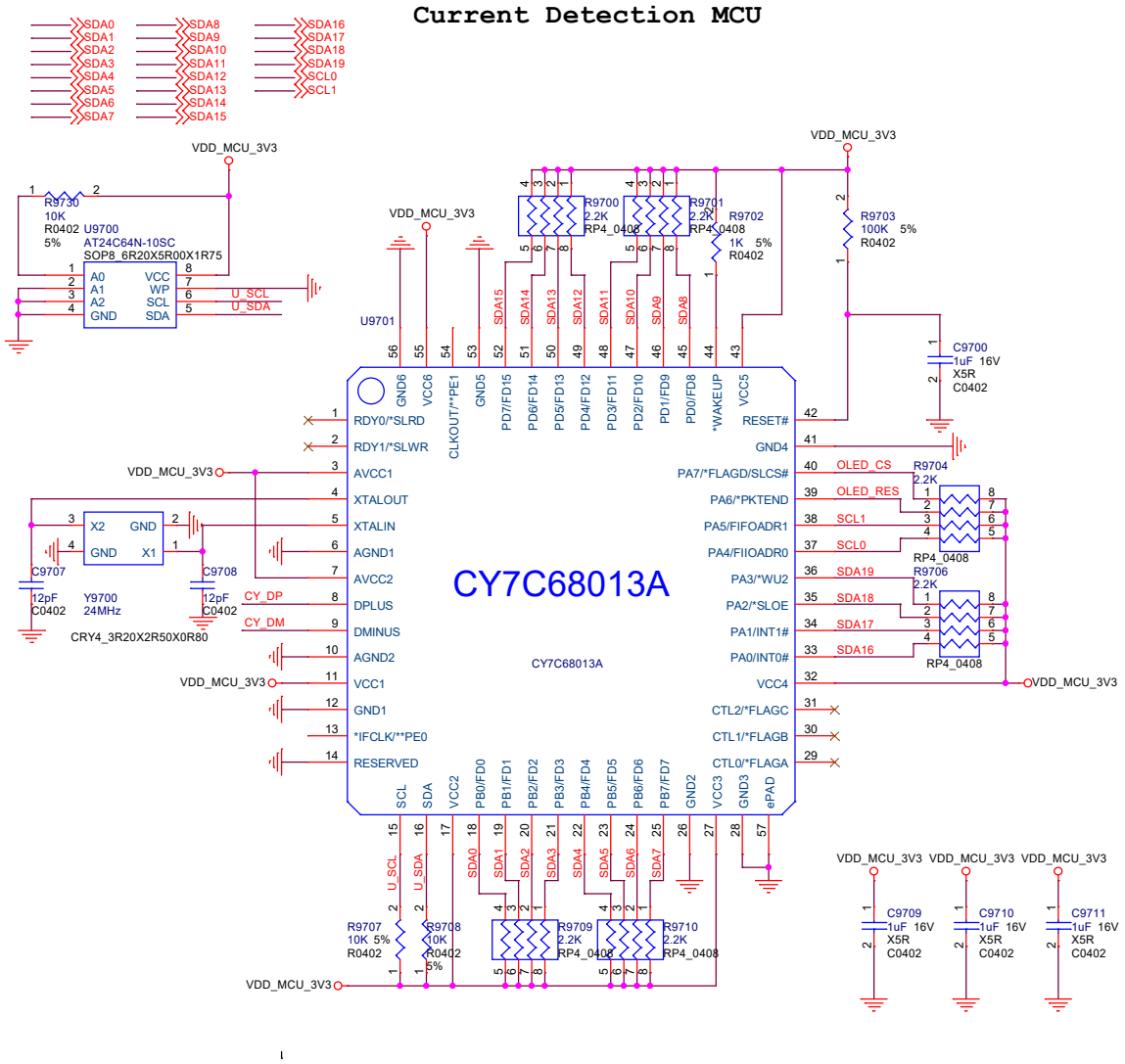

# RK616 Connector



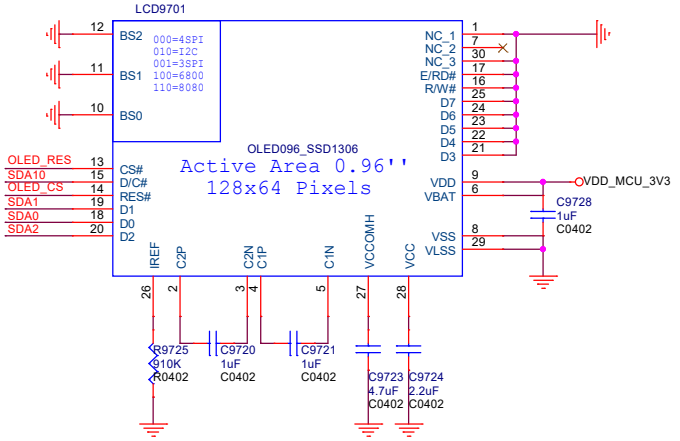




| | | | |
|---|---|---|---|
| Rockchip 瑞芯微电子 Fuzhou Rockchip Electronics | | | |
| Project: | PX30 | | |
| File: | 93.40PIN/30PIN Connect | | |
| Date: | Thursday, January 11, 2018 | Rev: | V0.1 |
| Designed by: | XIAOHF | Sheet: | 31 of 35 |

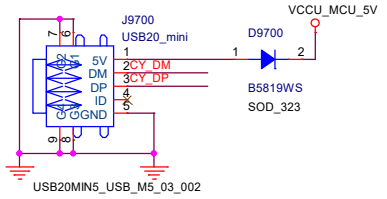
## Current Detection MCU



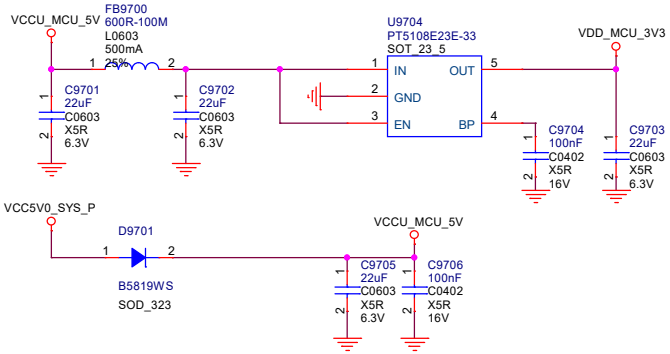

## OLED




## USB Port

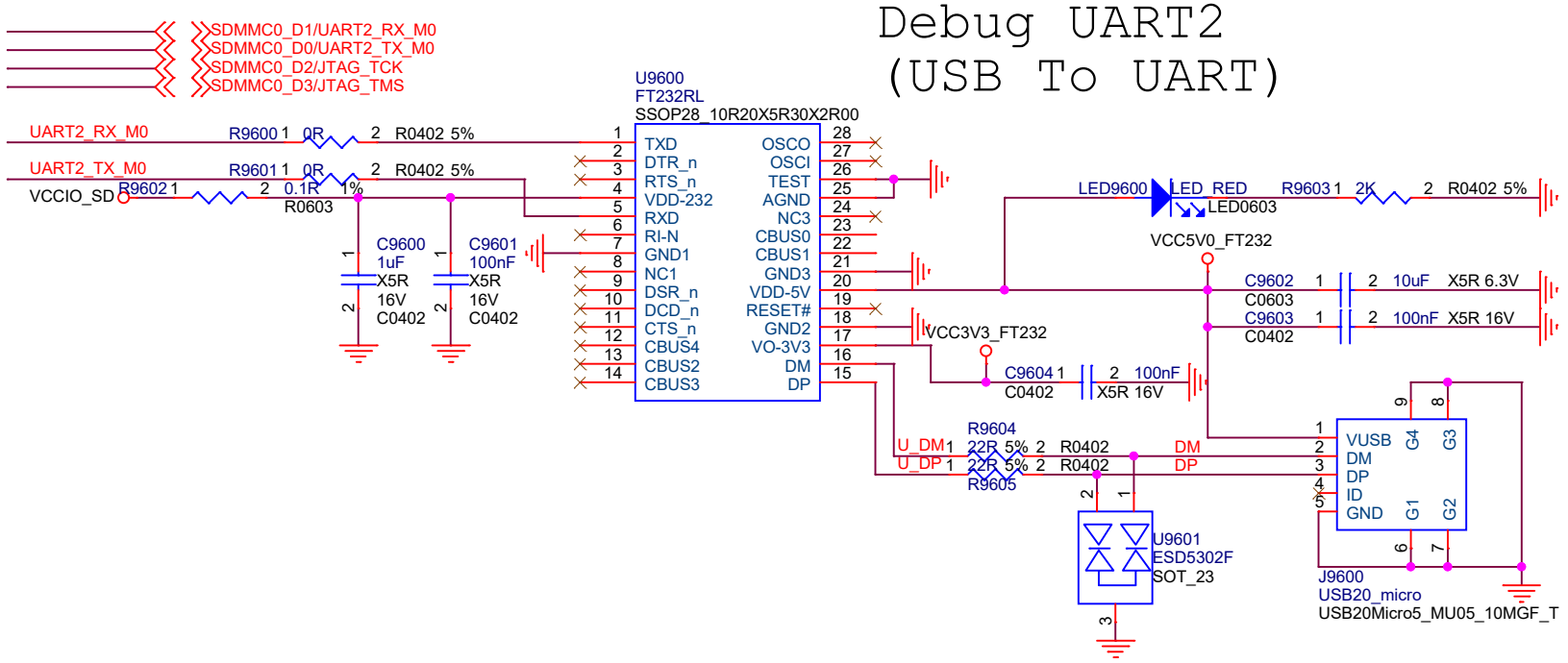


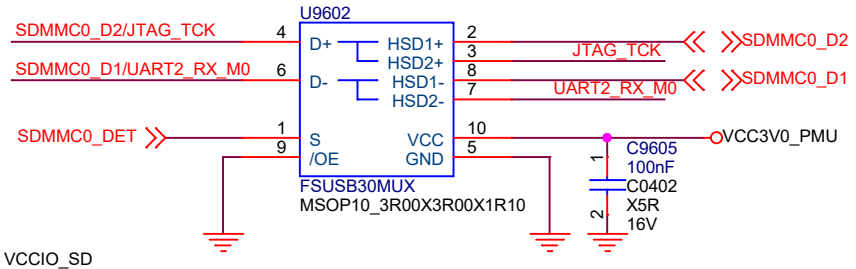

## Power

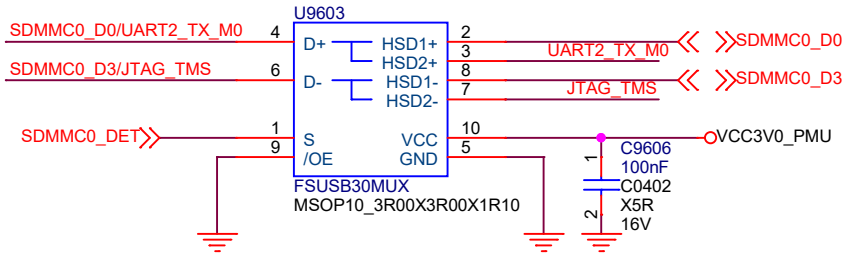


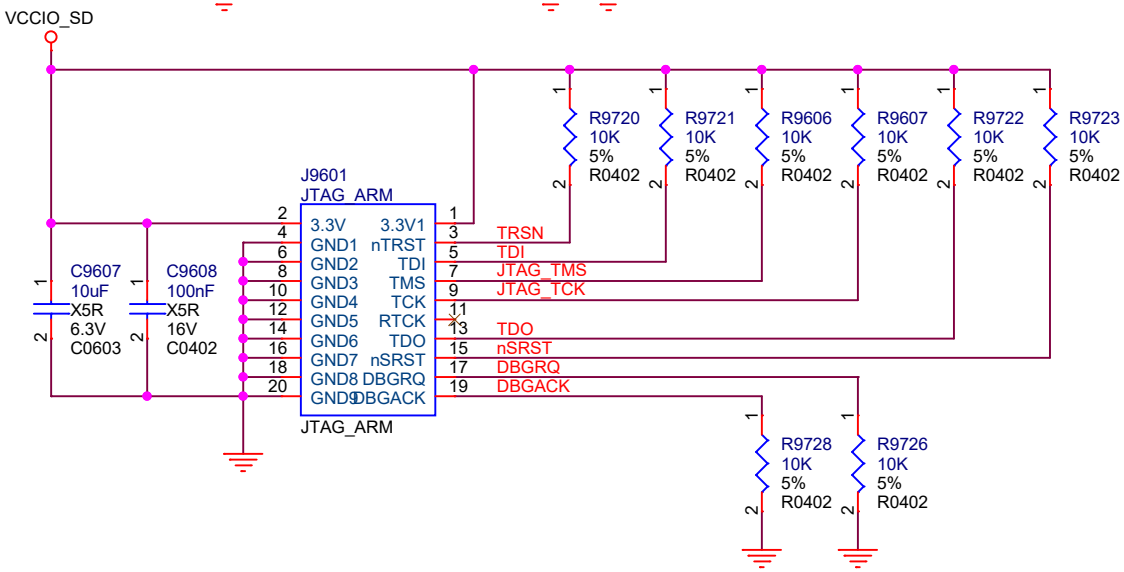

| | | | |
|---|---|---|---|
| Rockchip 瑞芯微电子 | Fuzhou Rockchip Electronics CO.,LTD | | |
| Project: | PX30 | | |
| File: | 97.PowerTest_MCU | | |
| Date: | Thursday, January 11, 2018 | Rev: | V0.1 |
| Designed by: | XIAOHF | Sheet: | 32 of 35 |

# Debug UART2 (USB To UART)



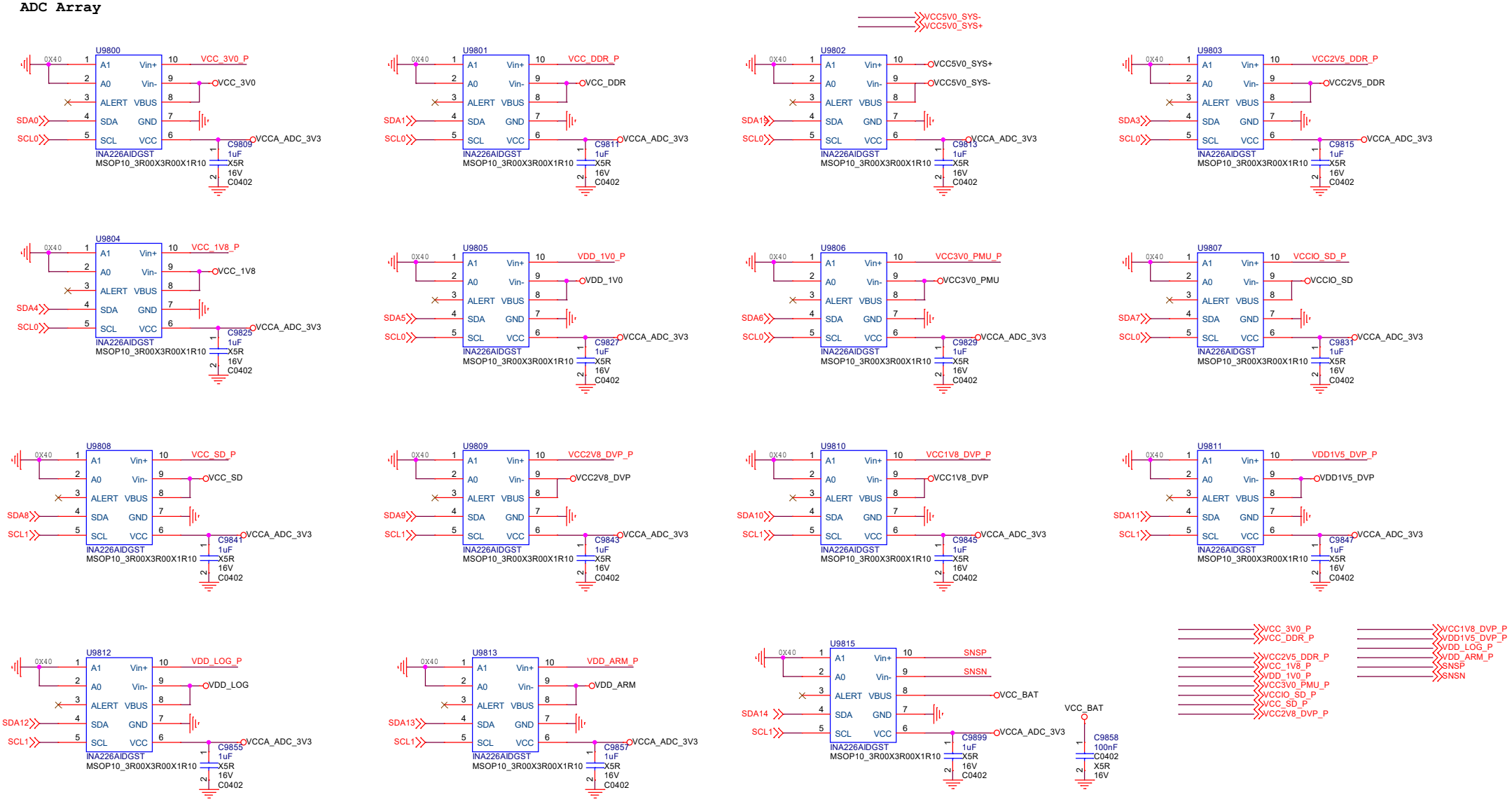




## Truth Table

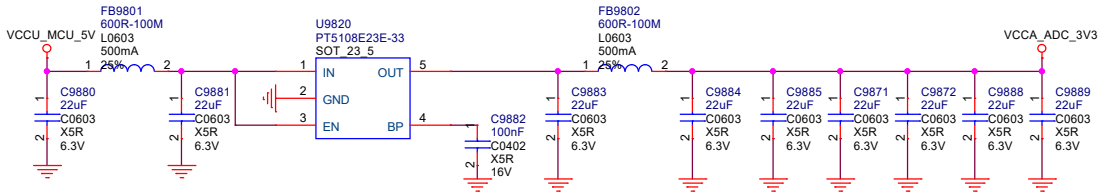
| S | $\overline{OE}$ | Function |
|---|---|---|
| X | H | Disconnect |
| L | L | D+, D– = $HSD1_n$ |
| H | L | D+, D– = $HSD2_n$ |

| | | | |
|---|---|---|---|
| Rockchip 瑞芯微电子 | Fuzhou Rockchip Electronics | | |
| Project: | PX30 | | |
| File: | 96.UART Debug | | |
| Date: | Thursday, January 11, 2018 | Rev: | V0.1 |
| Designed by: | XIAOHF | Sheet: | 32 of 35 |

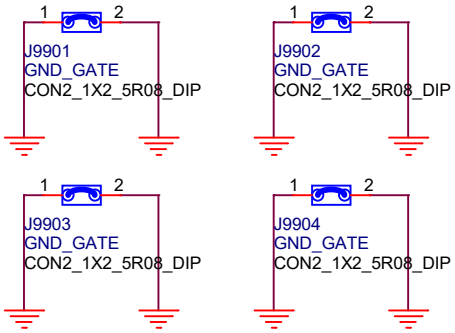
## ADC Array

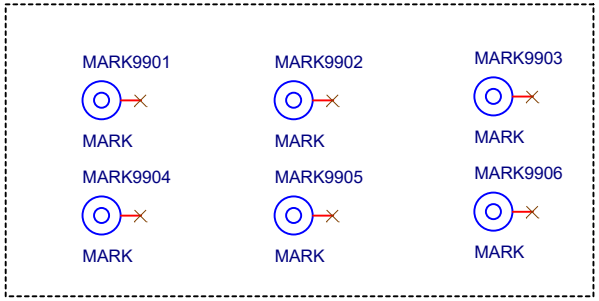


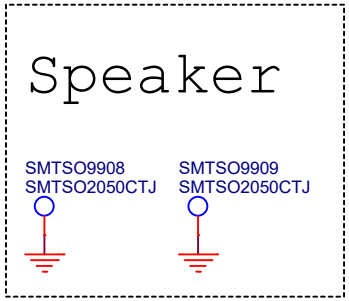

## ADC Power

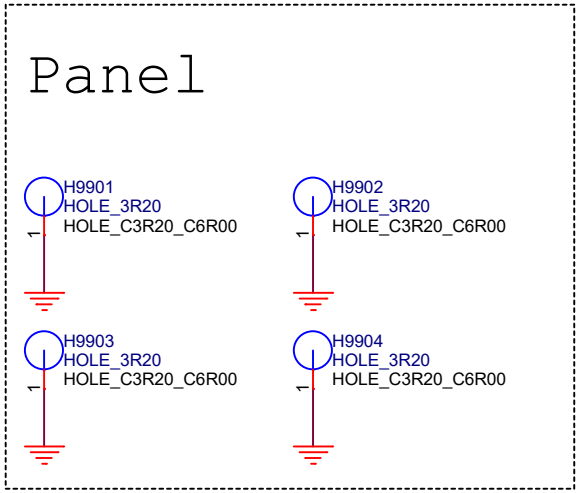


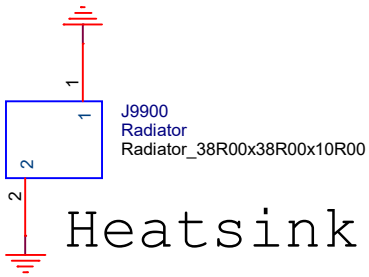

| | | | |
|---|---|---|---|
| Rockchip 瑞芯微电子 | Fuzhou Rockchip Electronics CO.,LTD | | |
| Project: | PX30 | | |
| File: | 98.PowerTest_ADC | | |
| Date: | Thursday, January 11, 2018 | Rev: | V0.1 |
| Designed by: | XIAOHF | Sheet: | 34 of 35 |

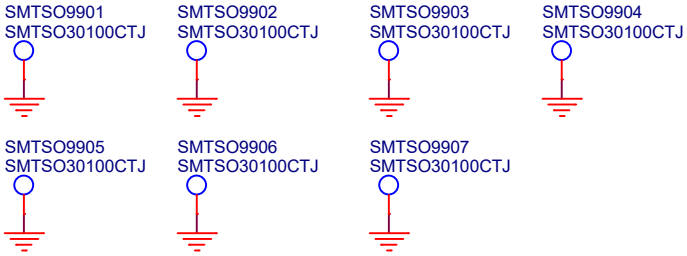



| | | | |
|---|---|---|---|
| Rockchip 瑞芯微电子 | Fuzhou Rockchip Electronics | | |
| **Project:** | **PX30** | | |
| **File:** | **99.MARK/CLIP/Radiator** | | |
| Date: | Thursday, January 11, 2018 | Rev: | V0.1 |
| Designed by: | XIAOHF | Sheet: | 35 of 35 |