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RK3368_REF_V0.1

I2C address(7Bit)

1: I2C0 POWER

RK818-1	0x1c
SYR827	0x40
XZ3216	0x60

2: I2C1 CODEC

ES8316	0x20
ALC5631	0x1a

3: I2C2 Touch Panel

CT363	0x1b
FT5506	
GSL3680	0x40

4: I2C3 Camera

OV2659	0x30
OV8858	

5: I2C4 Sensor

CM3218	0x10,0x0c
LSM330TR	G:0x6a,A:0x1e
MMA8452Q	0x1d
MPU6500	0x34
LIS3DH	0x19
LSM303D	0x1d

Note:

器件参数说明

1: DNP代表暂时不贴。

2: 如果Value和option是DNP, 说明是预留先不贴。

3: Flash兼容选择时, 要注意

如果选择eMMC时, option是@eMMC都要贴上; @Nand不贴。

如果选择Nand时, option是@Nand都要贴上; @eMMC不贴。

4: WIFI+BT模组选择时, 要注意

如果选择RTL8723BS模组, 那么option是DNP/@AP6212的器件不贴,

如果选择AP6212模组时, 那么option是DNP/@AP6212的器件要贴上。

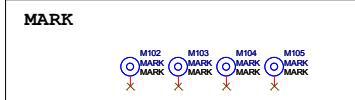
Bill of Materials

Header:

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

Combined property string:

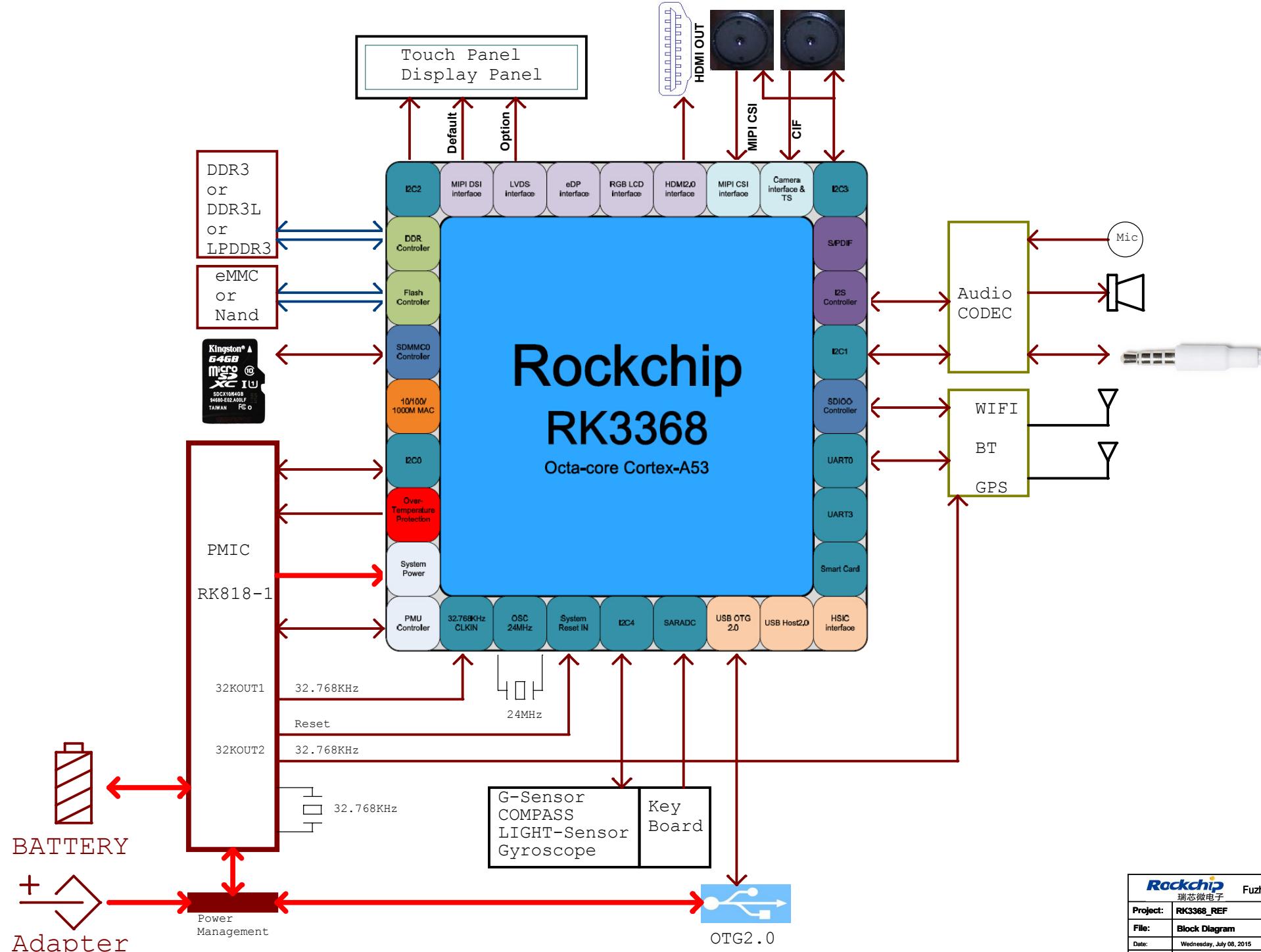
{Item}\t{Value}\t{Description}\t{PCB Footprint}\t{Reference}\t{Quantity}\t{Option}



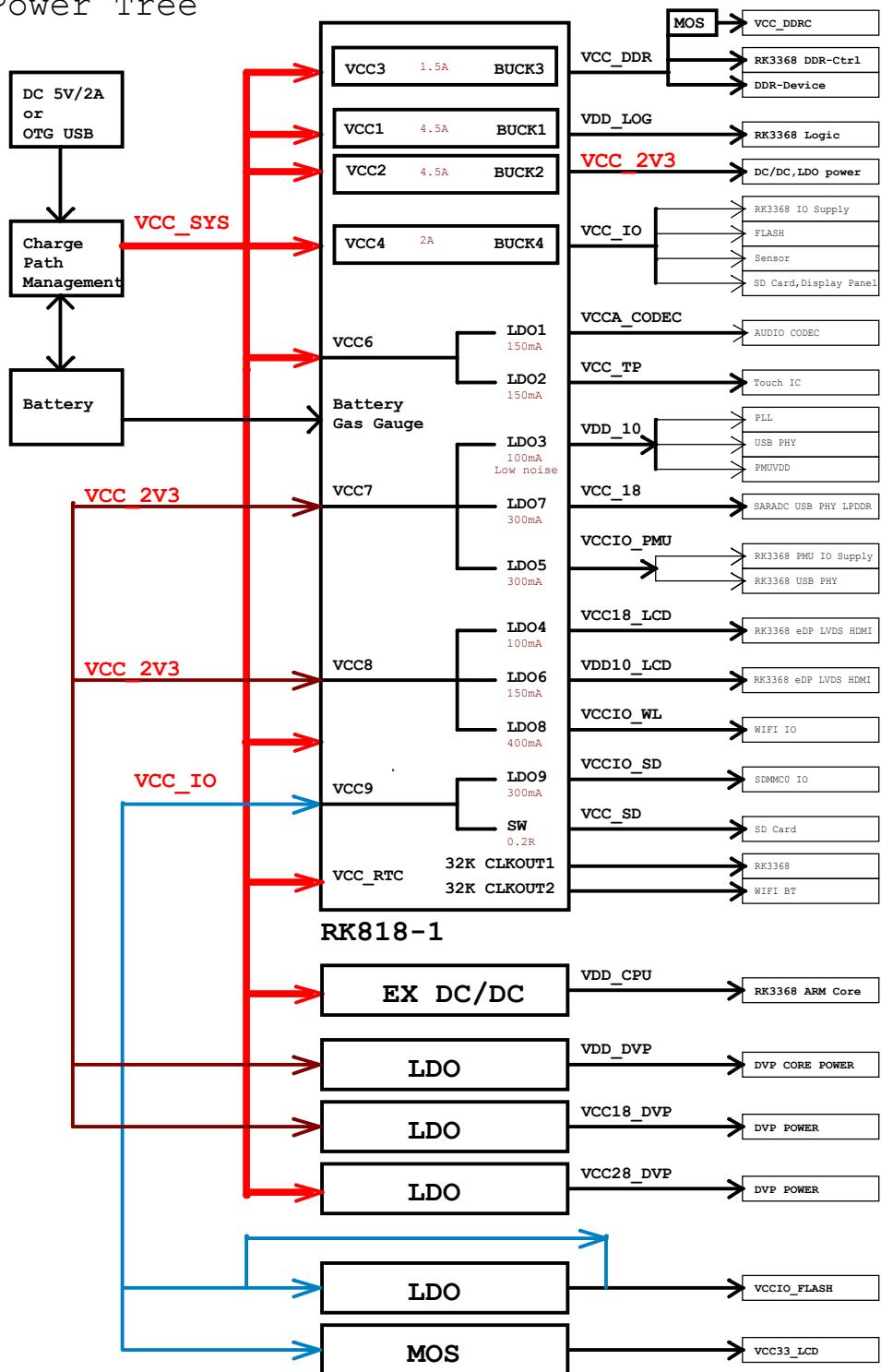
Version	Date	Author	Change Note	Approved
V0.1	20150312	Zhangdz	First edictor	



Block Diagram for MID

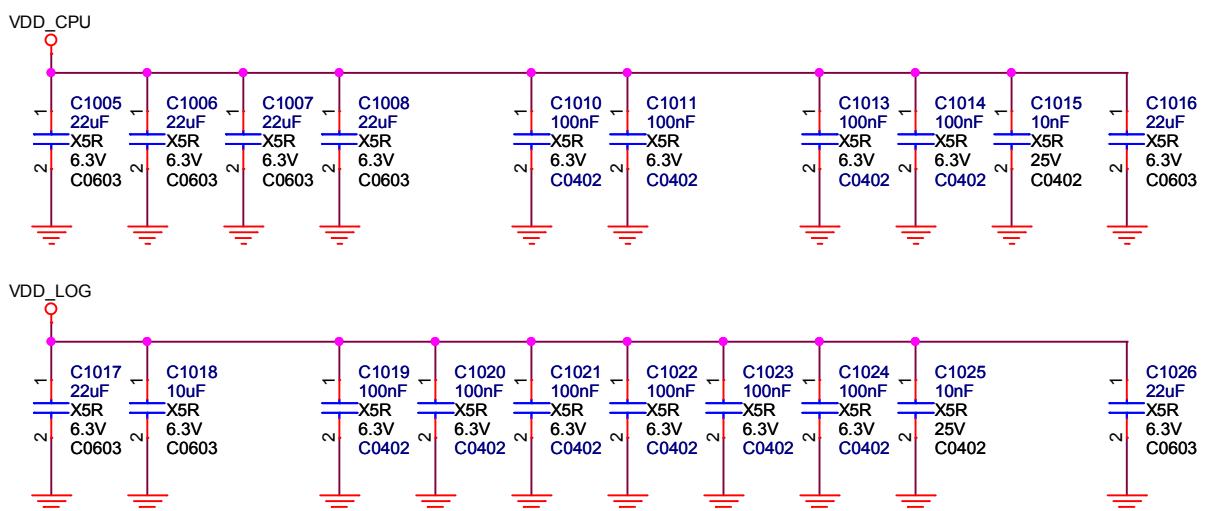
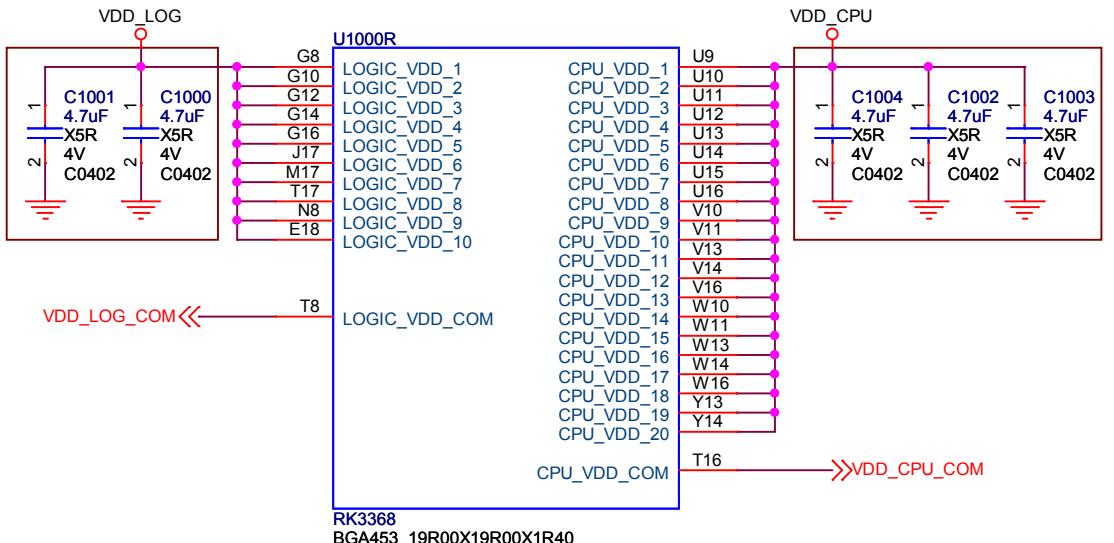


Power Tree

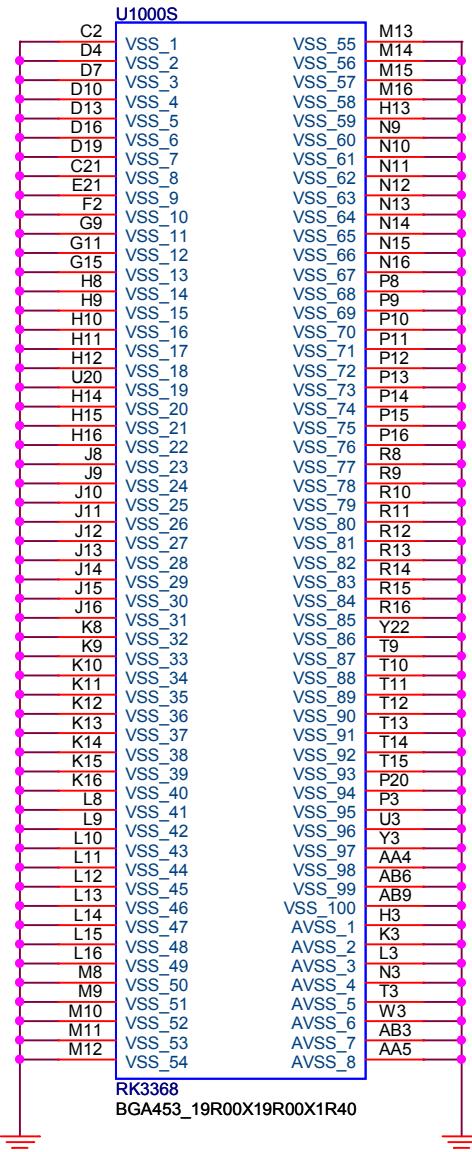


Power up Timing

PowerName	PMIC Channel	timer(2mS)	Default voltage	Normal voltage
VCC_2V3	DCDC2	Slot:1	2.3V	2.3V
VDD_10	VLDO3	Slot:2	1.0V	1.0V
VDD_LOG	DCDC1	Slot:3	1.1V	DVFS
VCC_DDR	DCDC3	Slot:3	1.25V <small>LPDDR 1.25V</small>	1.25V
VDD_CPU	EX DCDC	Slot:3A	1.0V	DVFS
VCC_18	VLDO7	Slot:4	1.8V	1.8V
VCCIO_PMU	VLDO5	Slot:5	1.8V	1.8V
VCC_IO	DCDC4	Slot:6	3.3V	3.3V
VCCIO_FLASH	EX LDO(1.8V) or VCC_IO	Slot:6A	1.8V or 3.3V	1.8V or 3.3V
VCCIO_SD	VLDO9	Slot:7	3.3V	1.8V or 3.3V
VCC_SD	VSWOUT1	Slot:7	3.3V	3.3V
Reset	(16*2mS) + 50ms			
VDD10_LCD	VLDO6	OFF	0V	1.0V
VCC18_LCD	VLDO4	OFF	0V	1.8V
VCC33_LCD	EX MOS	OFF	0V	3.3V
VCCA_CODEC	VLDO1	OFF	0V	3.0V
VCC_TP	VLDO2	OFF	0V	3.3V
VCCIO_WL	VLDO8	OFF	0V	1.8V
VDD_DVP	EX LDO	OFF	0V	1.2V or 1.5V
VCC18_DVP	EX LDO	OFF	0V	1.8V
VCC28_DVP	EX LDO	OFF	0V	2.8V

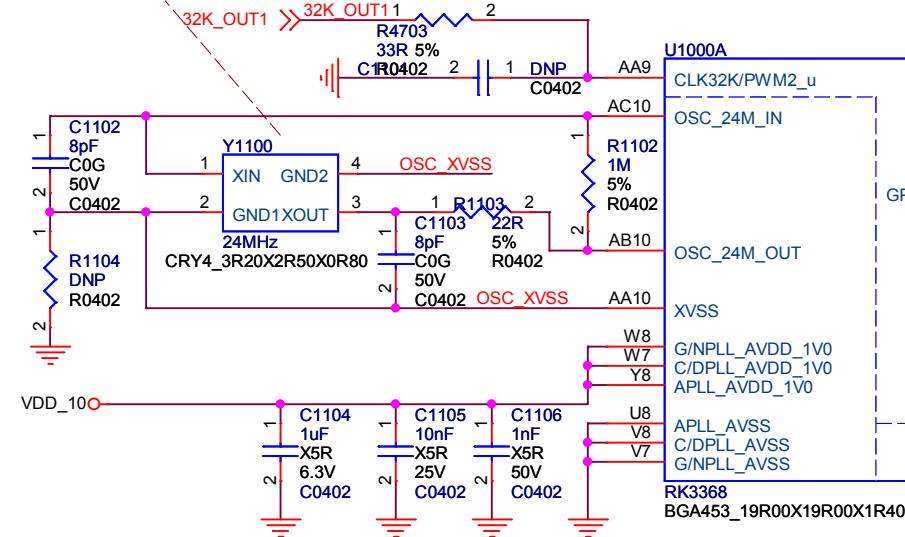


Note: All the capacitor should be place close to the power pin of RK3368.



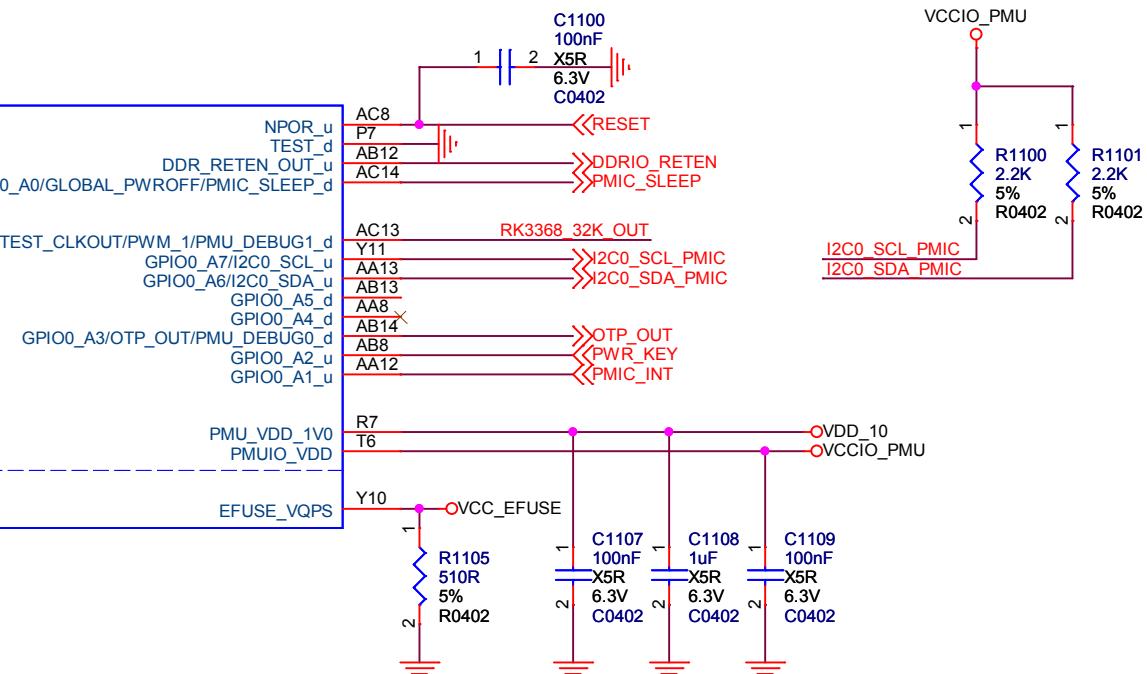
Note:

Adjusted the load capacitance
according to the crystal specification.



Note: All the capacitor should be place close to
the power pin of RK3368.

32K_OUT1 1
R4704 33R 5%
R0402 DNP
RK3368 32K_OUT

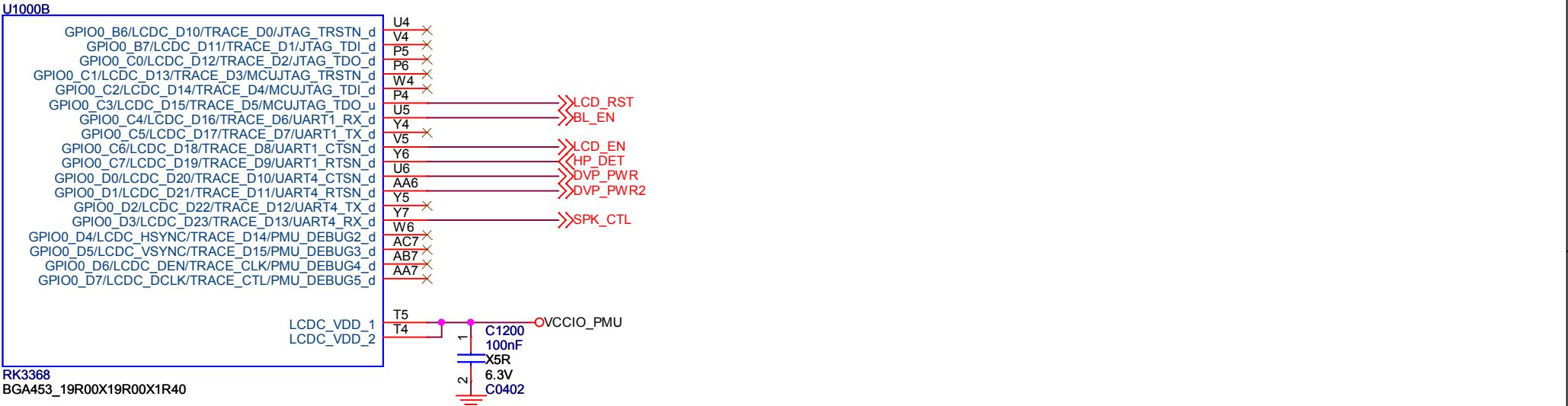


Note: All the capacitor should be place close to
the power pin of RK3368.



Note: eFUSE
Programming condition: VCC_EFUSE=1.5V+/-10%
Read condition: VCC_EFUSE=0V

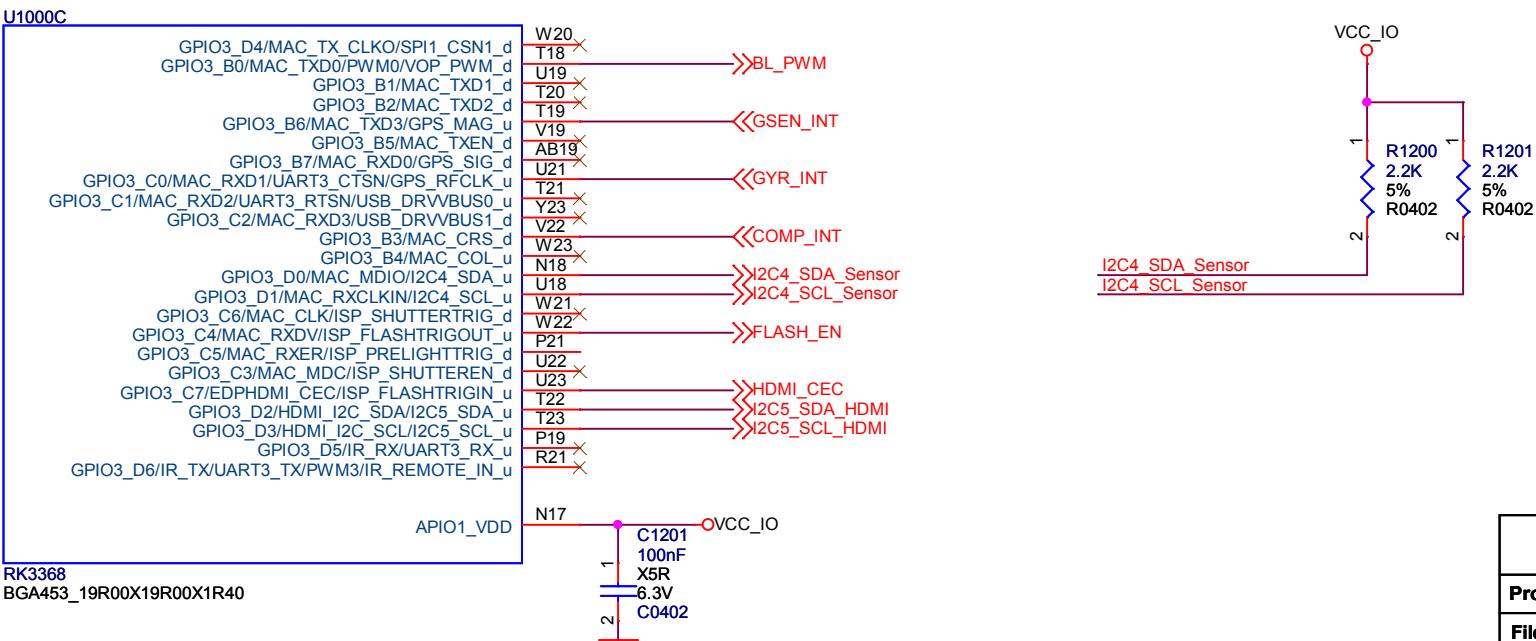
Rockchip 瑞芯微电子		Fuzhou Rockchip Electronics
Project:	RK3368_REF	
File:	RK3368 OSC/PMUIO Controller	
Date:	Wednesday, July 08, 2015	Rev: V0.1
Designed by:	Zhangdz	Sheet: 6 of 38



Note: All the capacitor should be place close to the power pin of RK3368.

PMUIO

VCC_IO



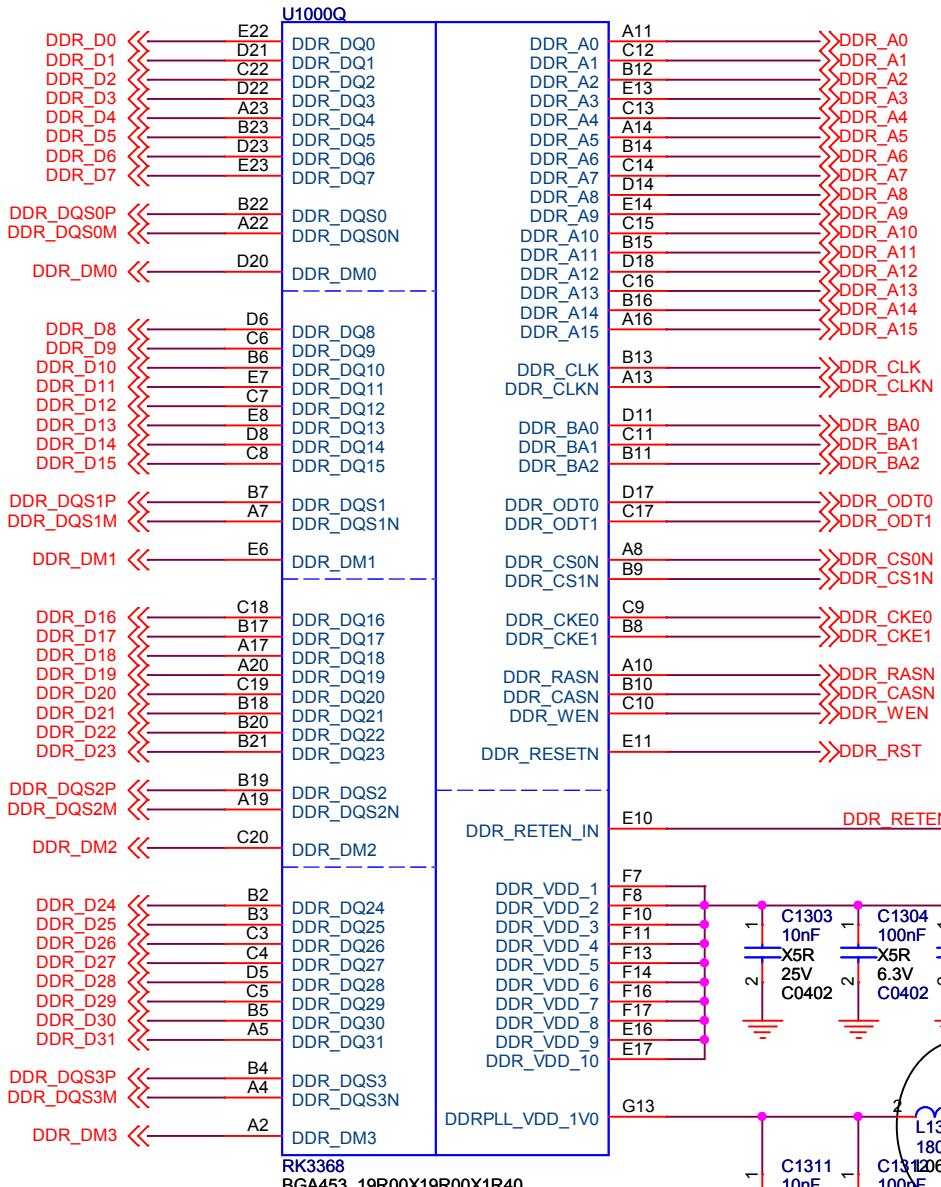
Note: All the capacitor should be place close to the power pin of RK3368.

Rockchip Fuzhou Rockchip Electronics

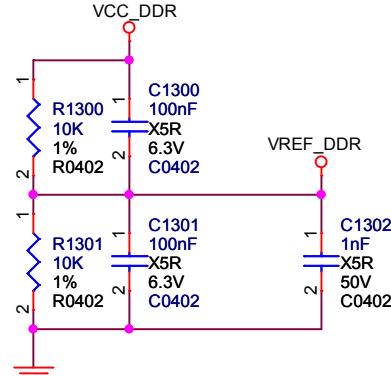
Project: RK3368_REF

File: RK3368 GPIO Interface

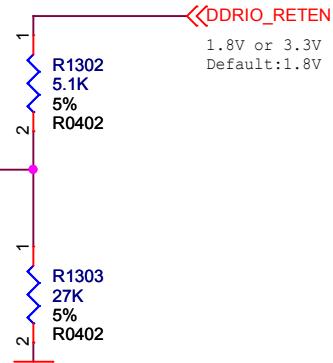
Date:	Wednesday, July 08, 2015	Rev:	V0.1
Designed by:	Zhangdz	Sheet:	7 of 38



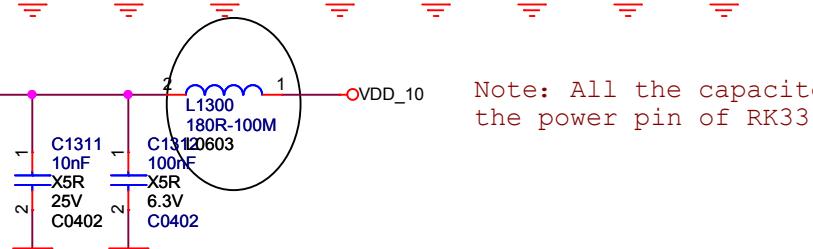
Note: All the capacitor should be place close to the power pin of RK3368.



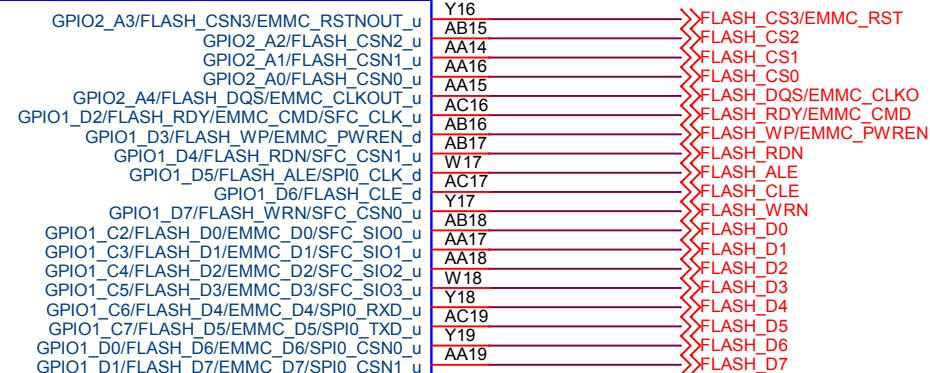
VCC_IO=1.8V	R1302	R1303	VCC_IO=3.3V	R1302	R1303
DDR3	5.1K	27K	DDR3	12K	10K
DDR3L	5.1K	16K	DDR3L	10K	6.8K
LPDDR2/3	5.1K	12K	LPDDR2/3	8.2K	5.1K



Note: All the capacitor should be place close to the power pin of RK3368.



U1000H

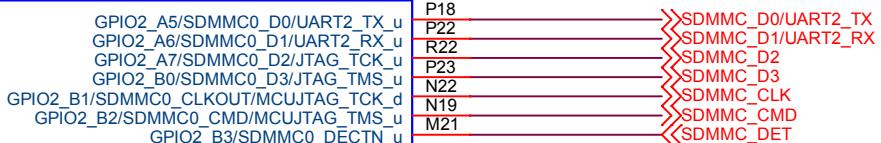
RK3368
BGA453_19R00X19R00X1R40

FLASH_VDD

V17
C1401
100nF
X5R
6.3V
CO402

Note: All the capacitor should be place close to the power pin of RK3368.

U1000M

RK3368
BGA453_19R00X19R00X1R40

SDMMC_VDD

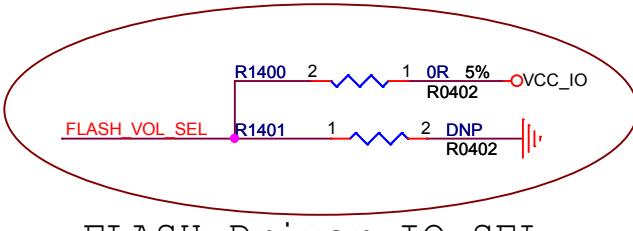
N21
C1402
100nF
X5R
6.3V
CO402

Note: All the capacitor should be place close to the power pin of RK3368.

U1000D

RK3368
BGA453_19R00X19R00X1R40

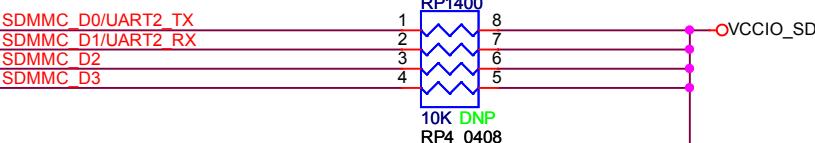
Note: All the capacitor should be place close to the power pin of RK3368.



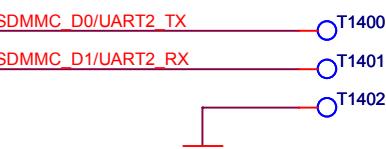
FLASH_VOL_SEL		FLASH_IO Voltage
1.8V or 3.3V	R1400=0R R1401=DNP	1.8V Driver IO
0V	R1400=DNP R1401=0R	3.3V Driver IO

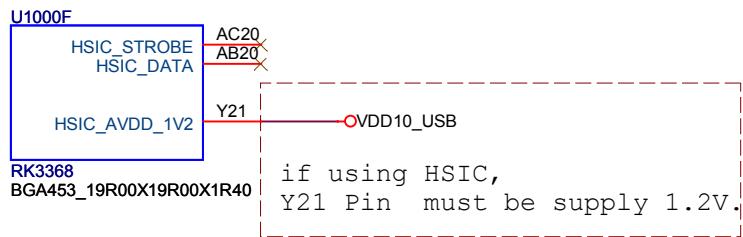
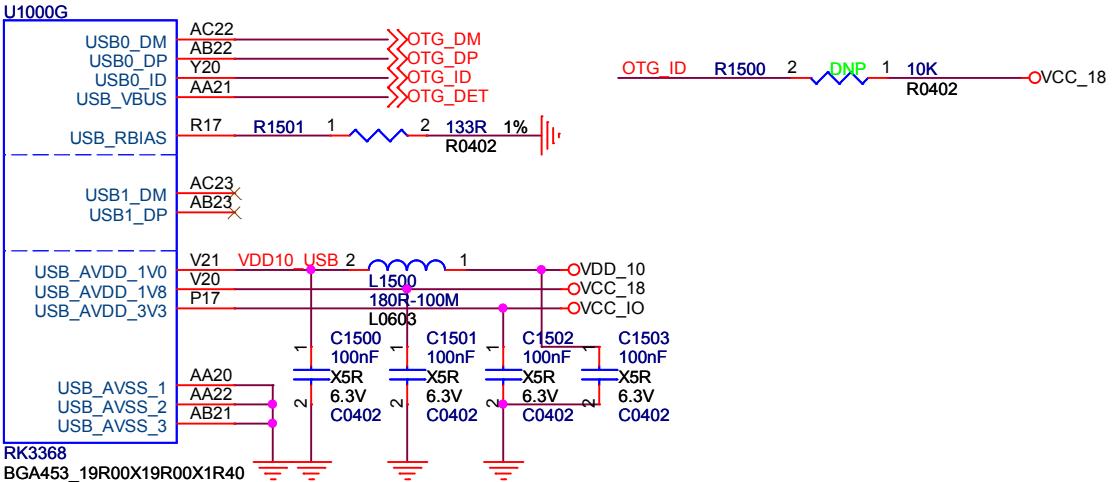
VCC_TP
R1404
10K
5%
R0402

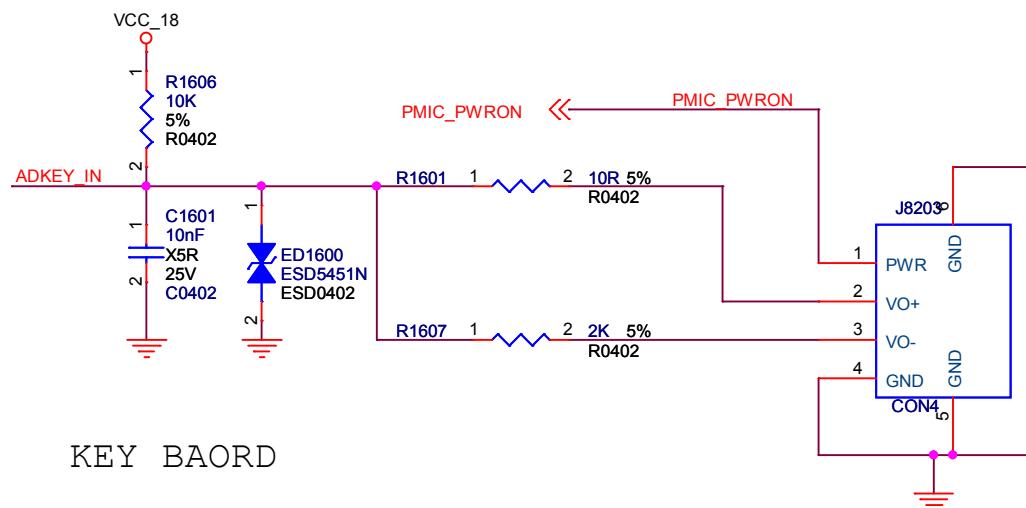
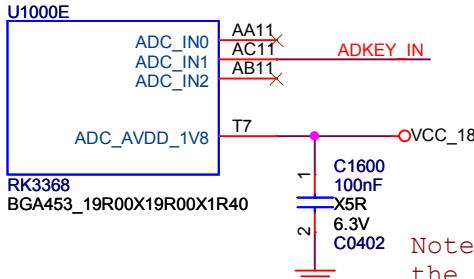
TOUCH_INT

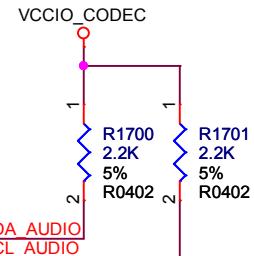
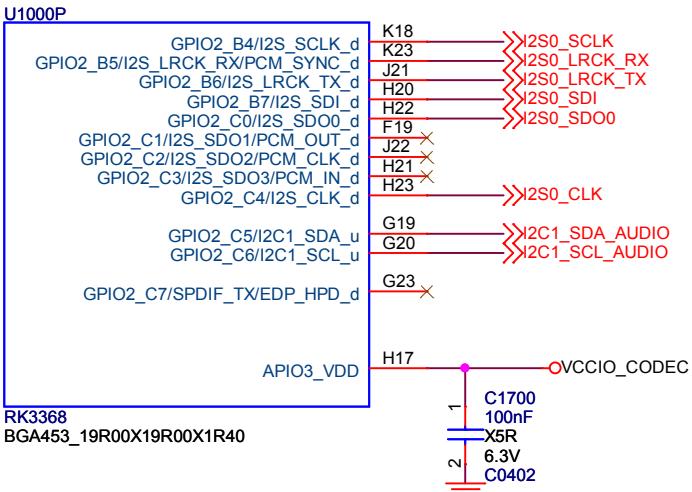


Debug UART2

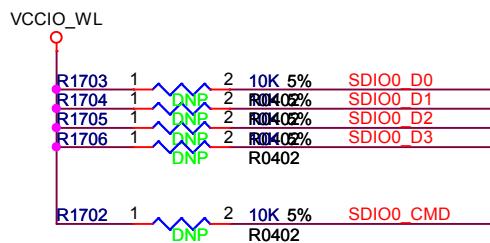
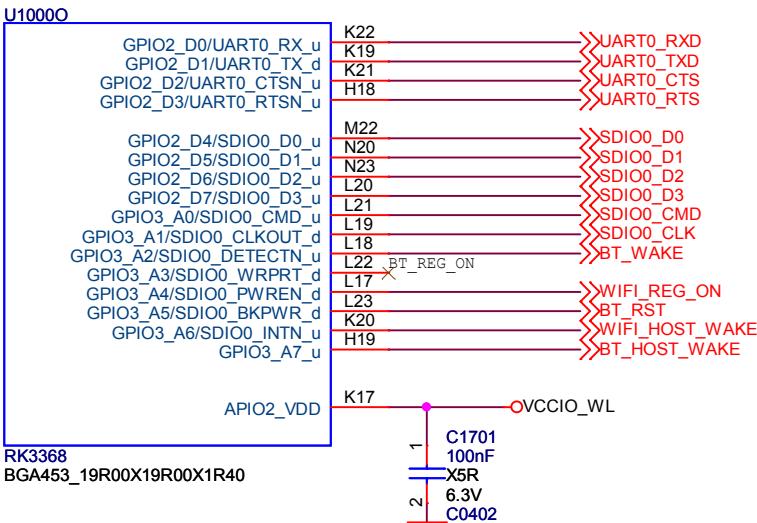








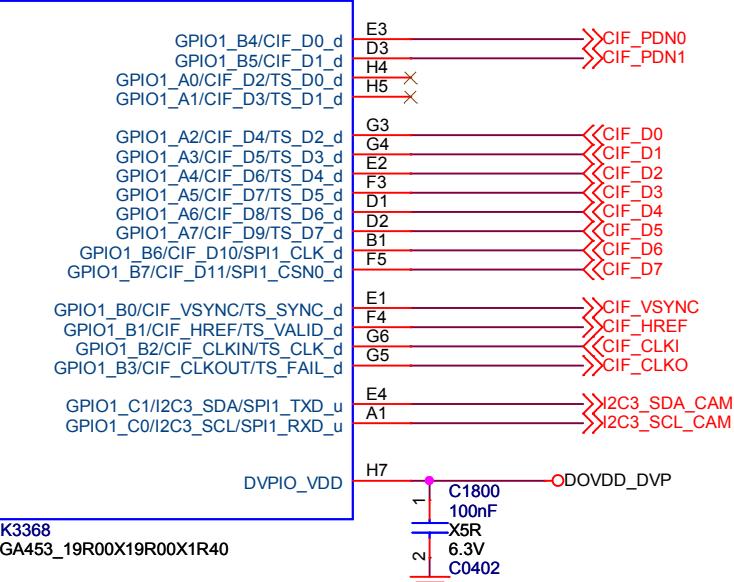
Note: All the capacitor should be place close to the power pin of RK3368.



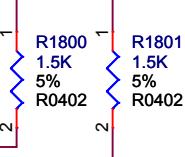
Note: All the capacitor should be place close to the power pin of RK3368.

Rockchip Fuzhou Rockchip Electronics			
Project:	RK3368_REF		
File:	RK3368 SDIO0/UART0/I2C1		
Date:	Wednesday, July 08, 2015	Rev:	V0.1
Designed by:	Zhangdz	Sheet:	12 of 38

U1000N



DOVDD_DVP

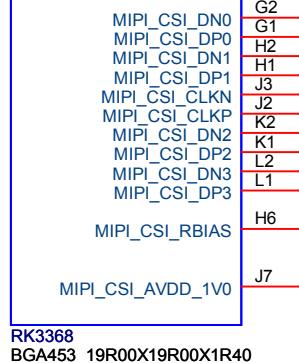
I2C3_SDA_CAM
I2C3_SCL_CAM

CIF

Note: All the capacitor should be place close to the power pin of RK3368.

MIPI_CSI

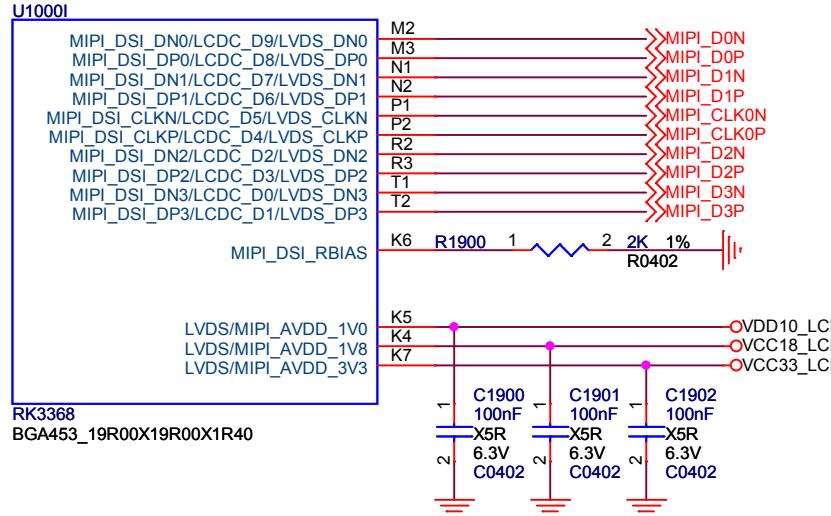
U1000L



Note: All the capacitor should be place close to the power pin of RK3368.

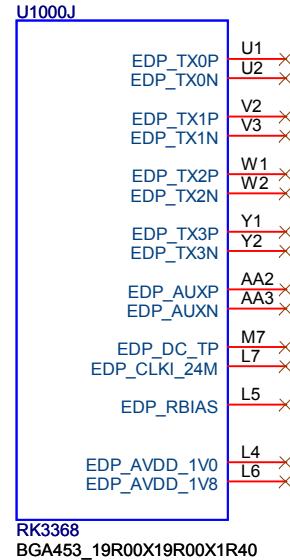
Rockchip Fuzhou Rockchip Electronics	
Project:	RK3368_REF
File:	RK3368 DVP/MIPICSI Interface
Date:	Wednesday, July 08, 2015
Designed by:	Zhangdz
Rev:	V0.1
Sheet:	13 of 38

LVDS/MIPI_DSI

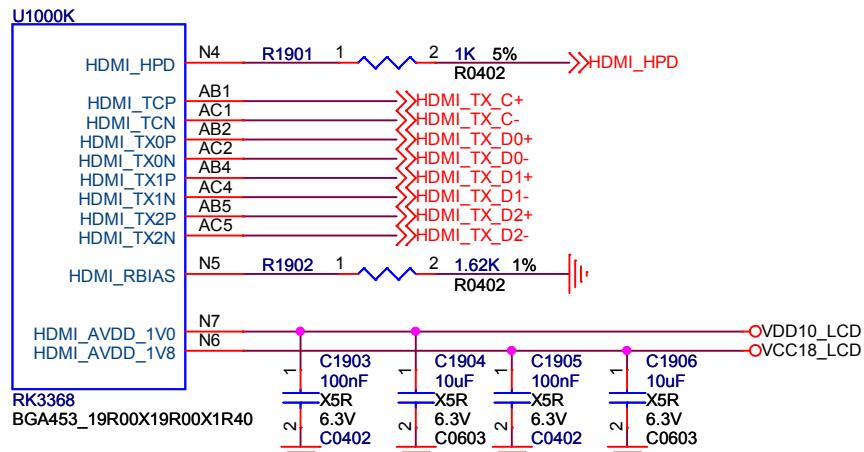


Note: All the capacitor should be place close to the power pin of RK3368.

EDP

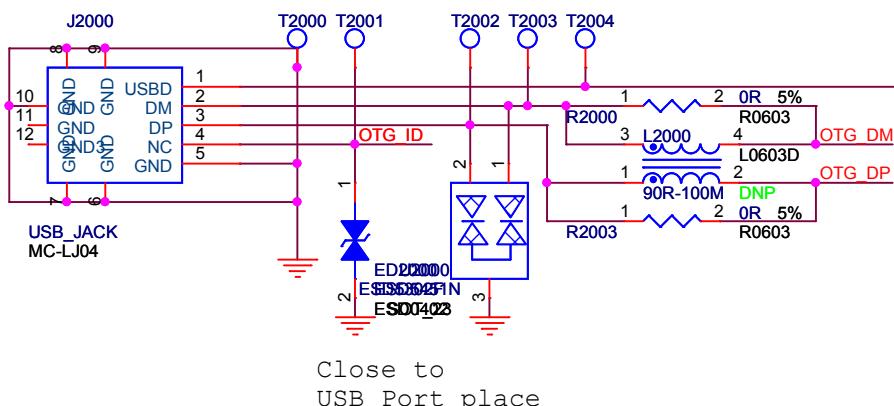


HDMI OUT

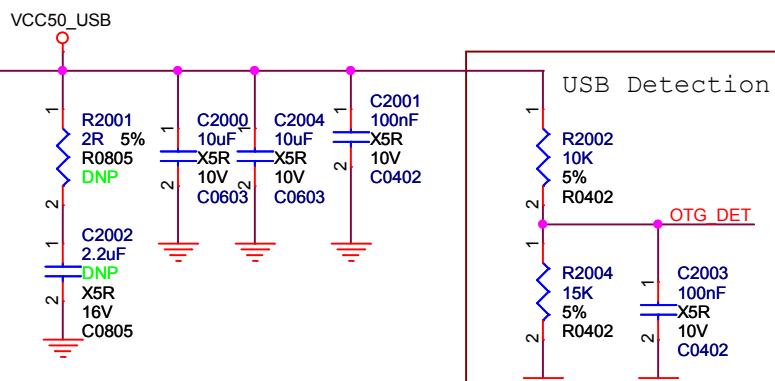


Note: All the capacitor should be place close to the power pin of RK3368.

Rockchip Fuzhou Rockchip Electronics			
Project:	RK3368_REF		
File:	RK3368 Display Interface		
Date:	Wednesday, July 08, 2015	Rev:	V0.1
Designed by:	Zhangdz	Sheet:	14 of 38



Close to
USB Port place

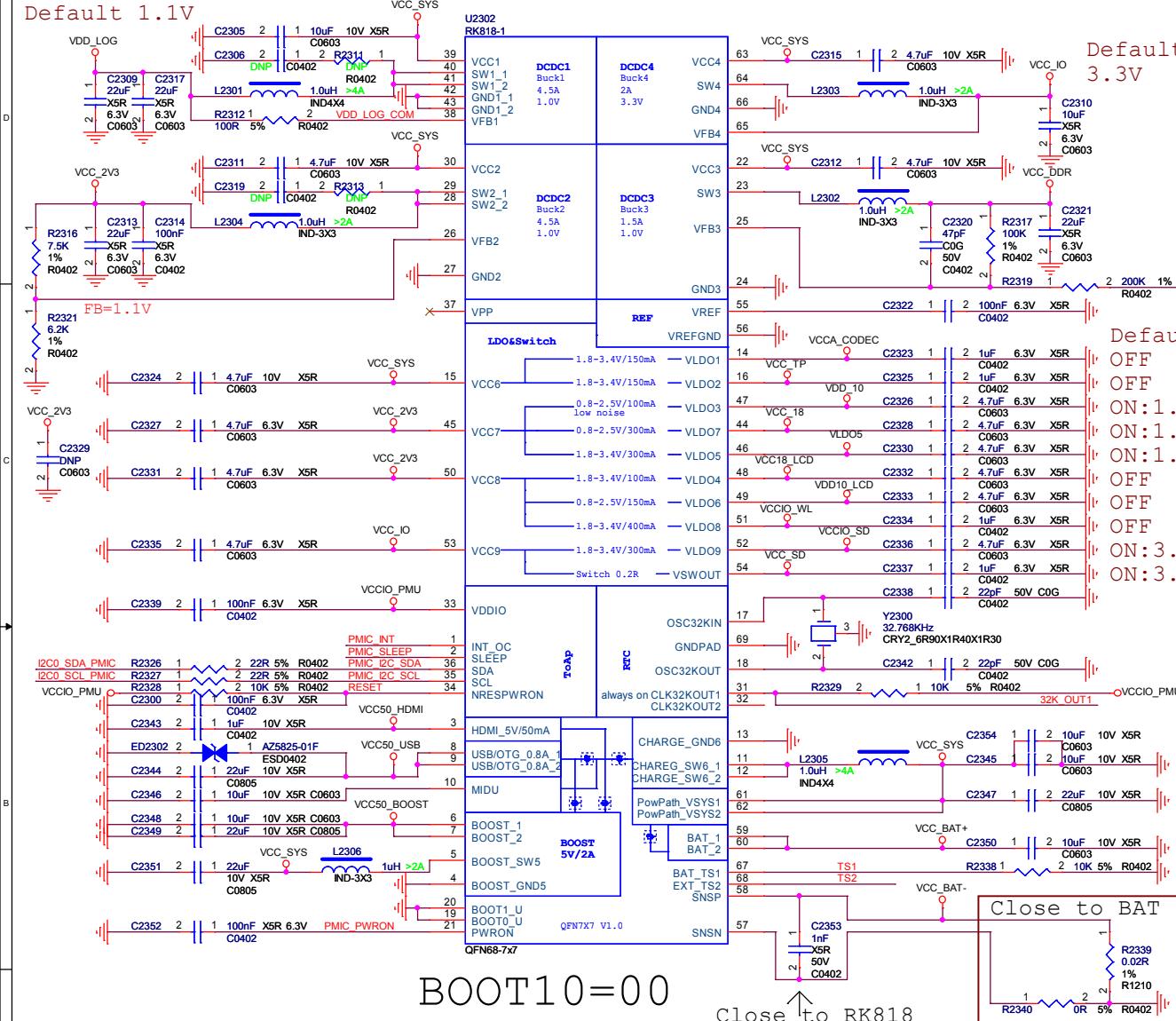


USB Interrupt--->RK818 (PMIC INT)

OTG_DM
OTG_DP
OTG_ID
OTG_DET

PMIC RK818-1

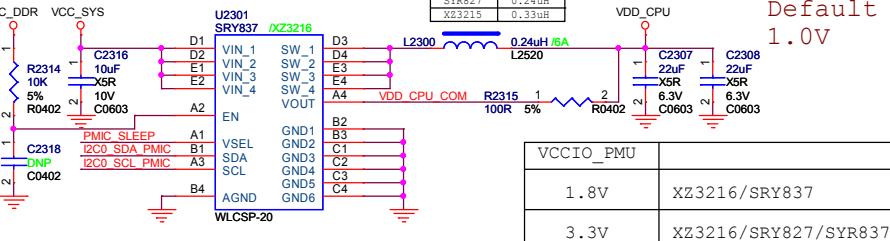
Default 1.1V



BOOT10=00

Close to RK818

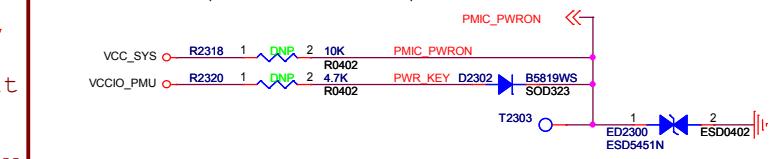
VDD CPU



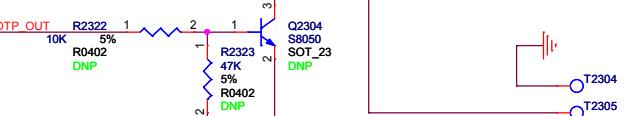
Defau
1.0V



Power KEY (Power on/off)



Over-temperature Protection



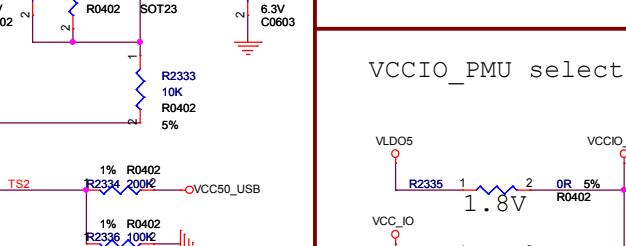
VCC33 LTC



Power for WiFi+BT



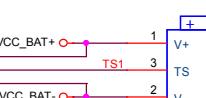
VCCTO PMU select



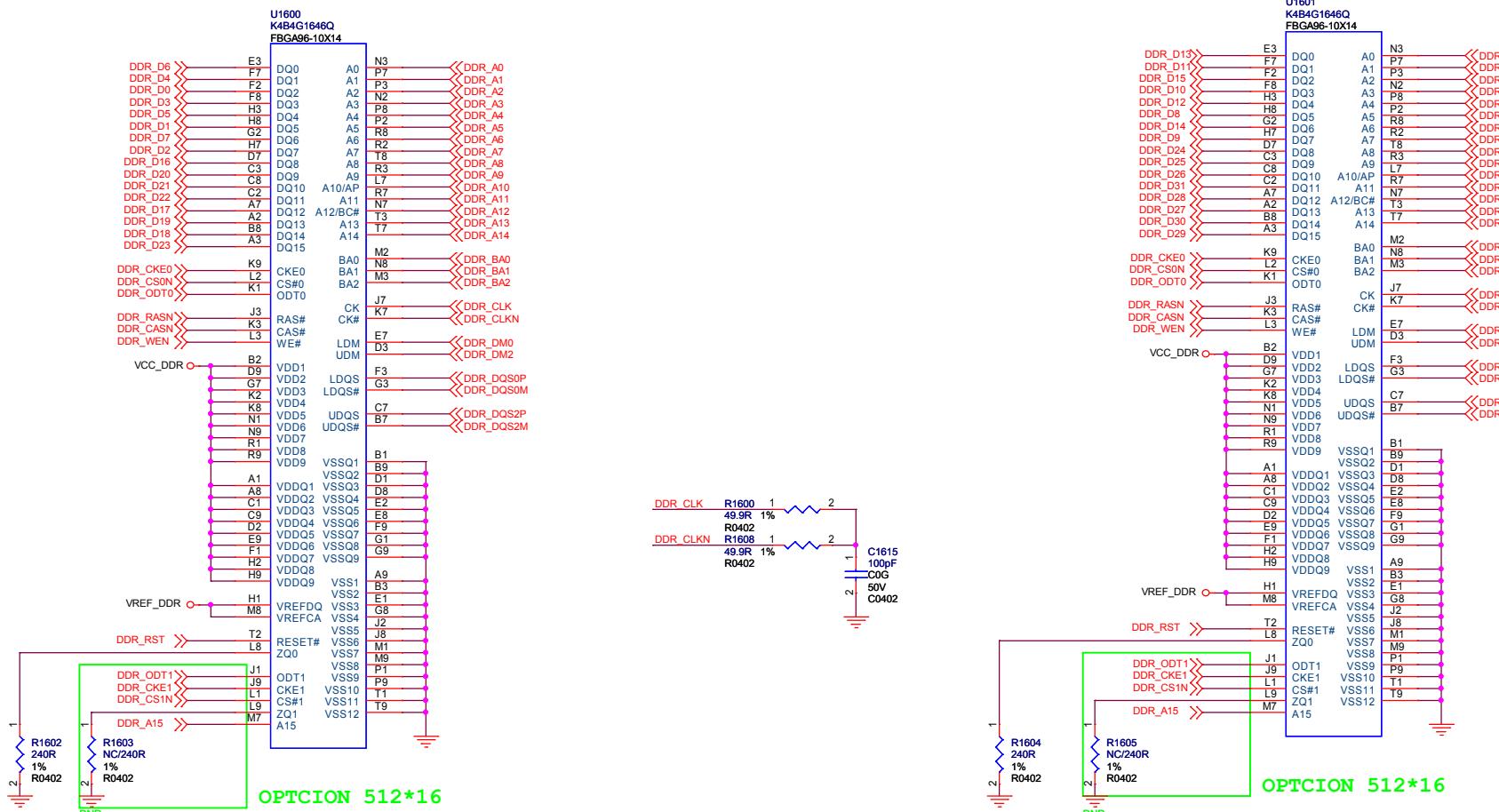
B2335 1 2 08 5%



Batter

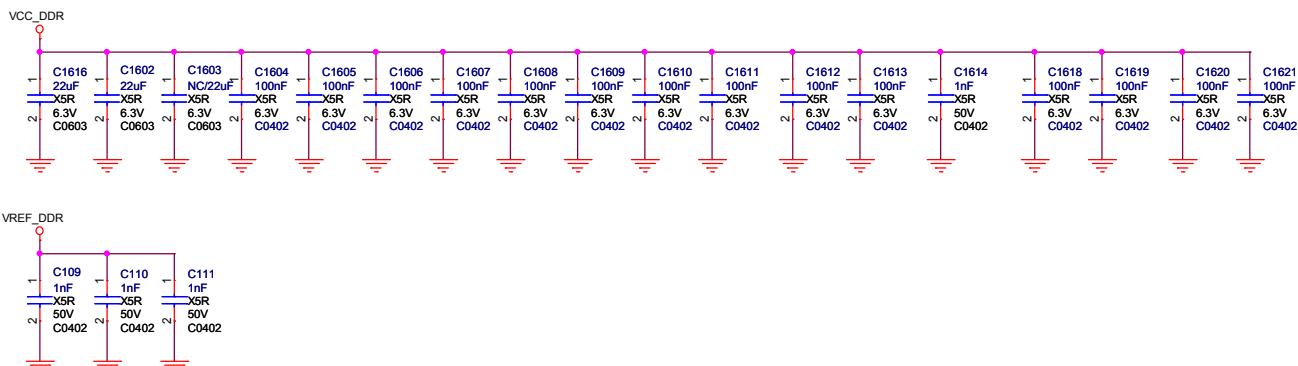


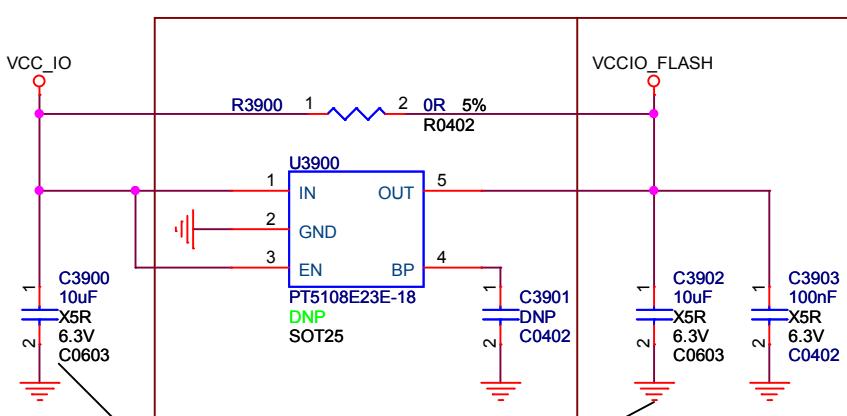
 瑞芯微电子	Fuzhou Rockchip Electronics
Project:	RK3368_REF
File:	PMIC-RKB18-1
Date:	Wednesday, July 08, 2015
Designed by:	Zhangdz
Rev.:	V0.1
Sheet:	16 / 31



DDR3

DDR3 FILTER





Note:
Close to eMMC or Nand Flash

	Flash IO voltage		
eMMC (Default)	1.8V	U3900:PT5108E23E-18 R3900:DNP	Default
	3.3V	U3900:DNP R3900:OR	
Nand Flash	1.8V	U3900:PT5108E23E-18 R3900:DNP	
	3.3V	U3900:DNP R3900:OR	

Note:
默认建议使用1.8V IO eMMC
如果使用Nand FLASH, 默认是3.3V IO
如果使用的Nand FLASH支持1.8V IO, 要注意修改成1.8V IO.

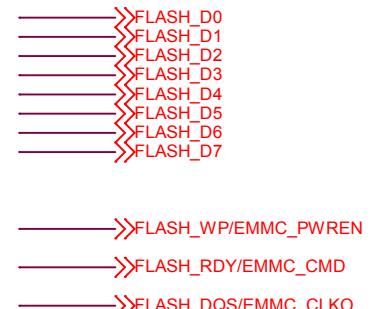
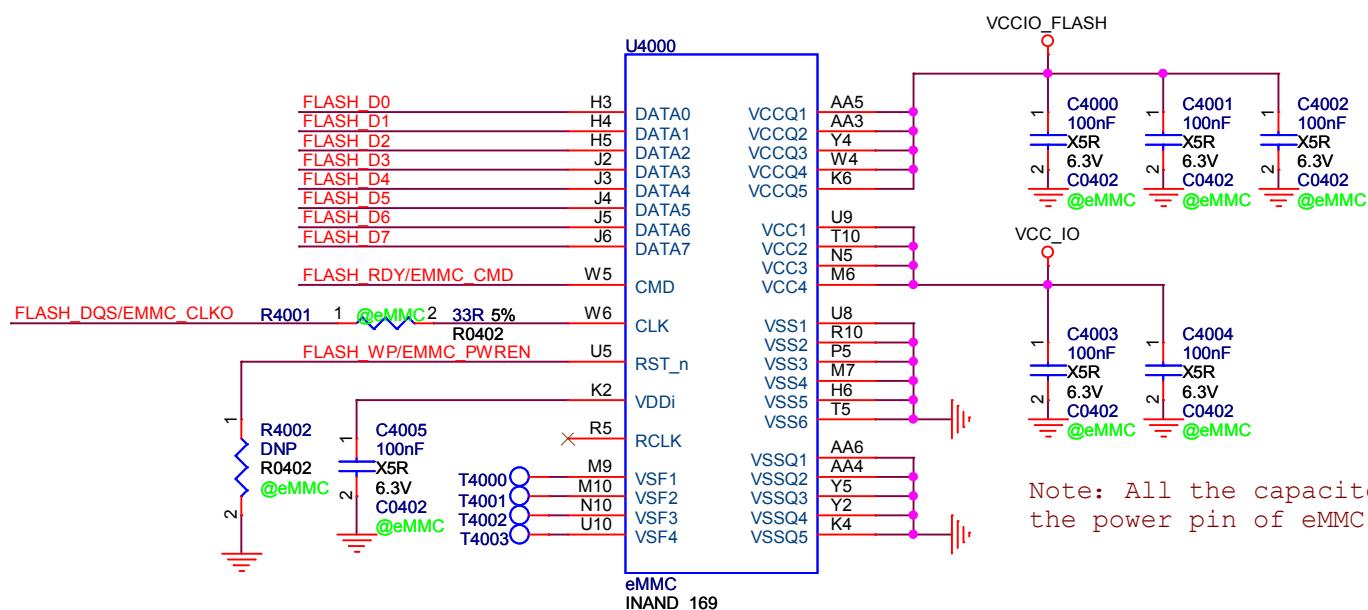
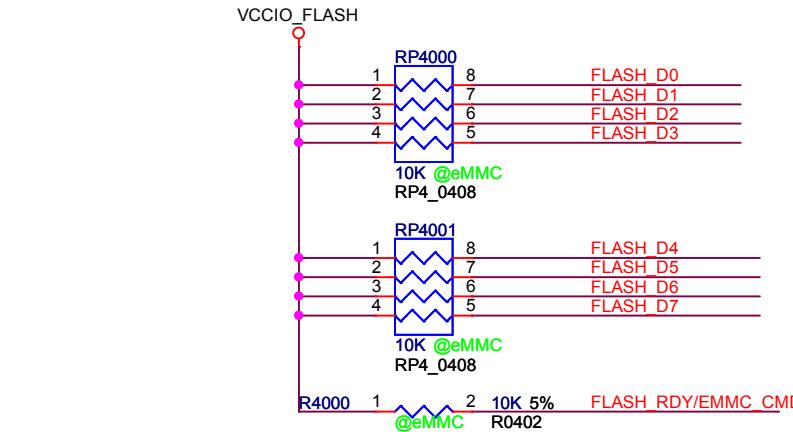
FLASH_VOL_SEL管脚状态 (IO驱动设置) 也要配合修改。
在14.RK3368 FLASH/SDMMC Controller页里。



Note:
Reserve PAD for Nand Flash Update.

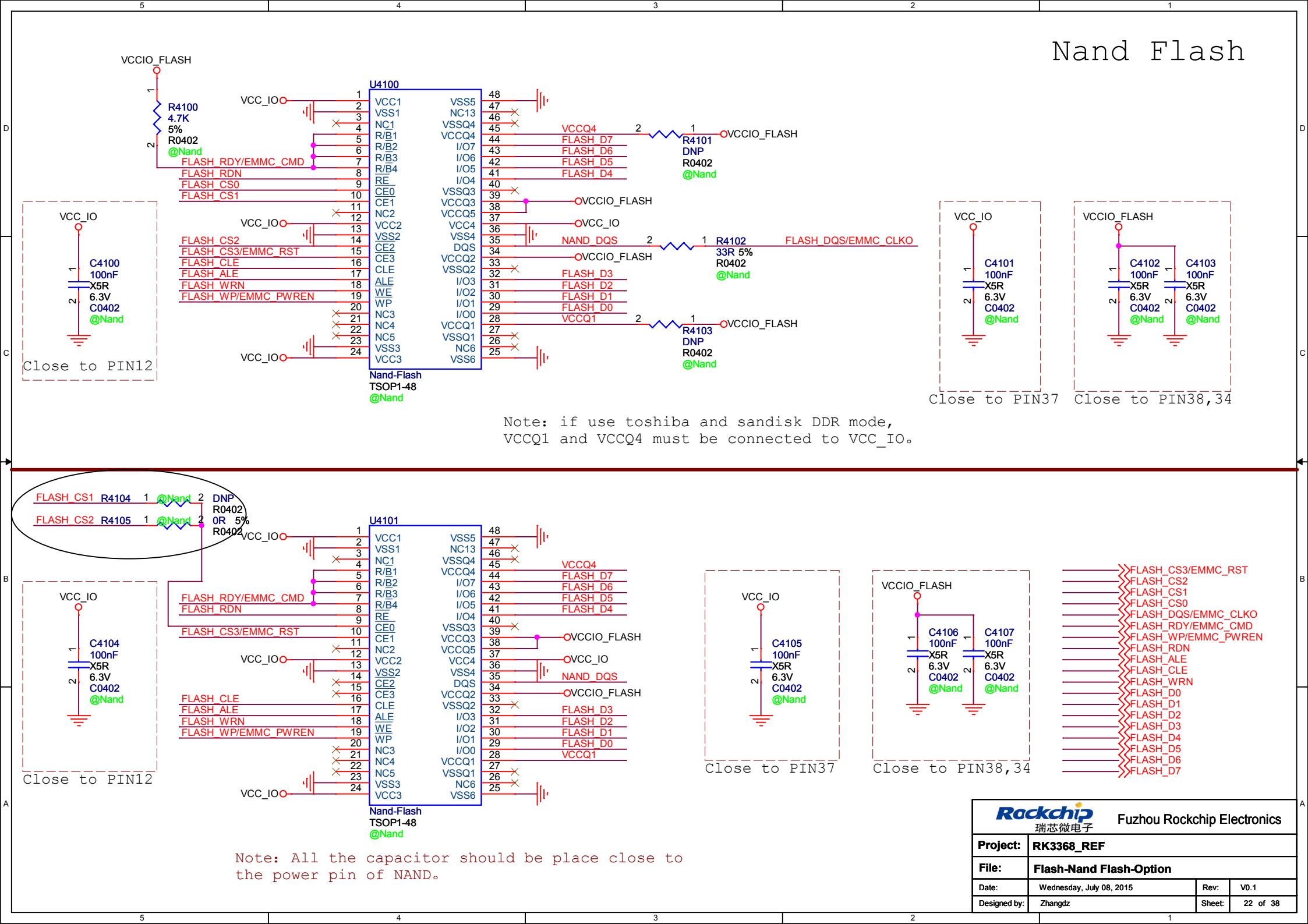


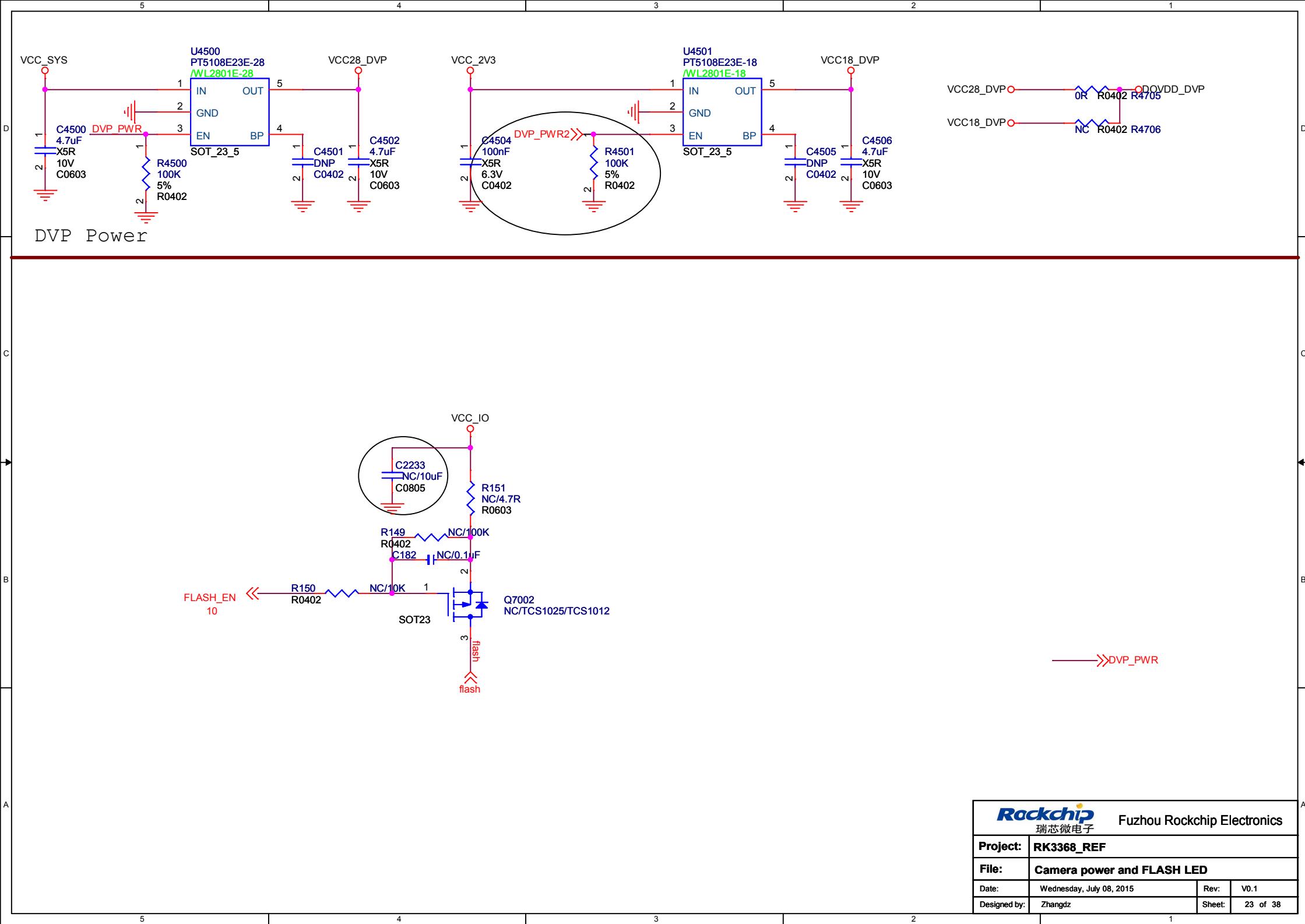
Note:
Reserve PAD for eMMC or tSD Update.

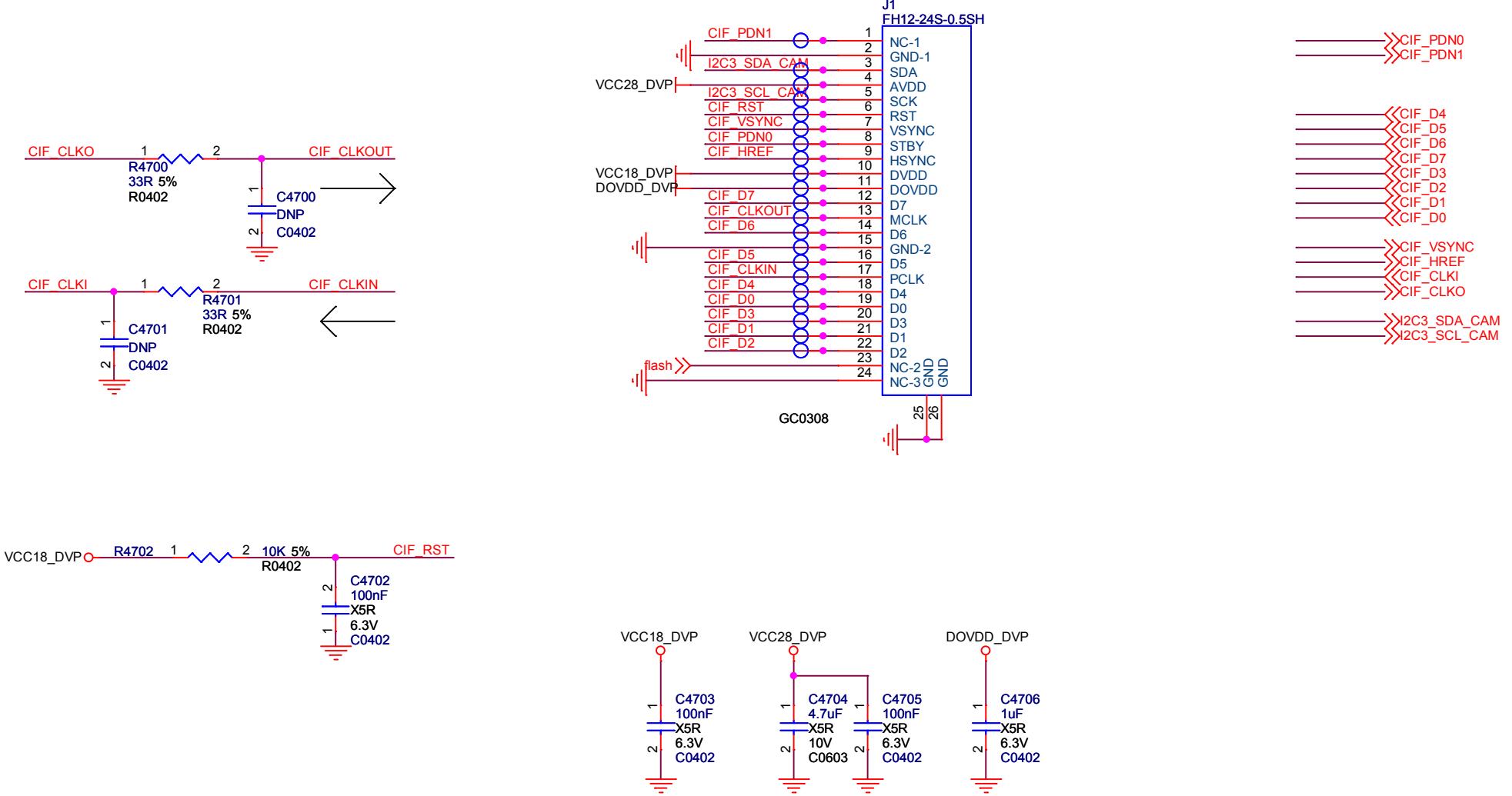


Note: All the capacitor should be place close to the power pin of eMMC.

Nand Flash

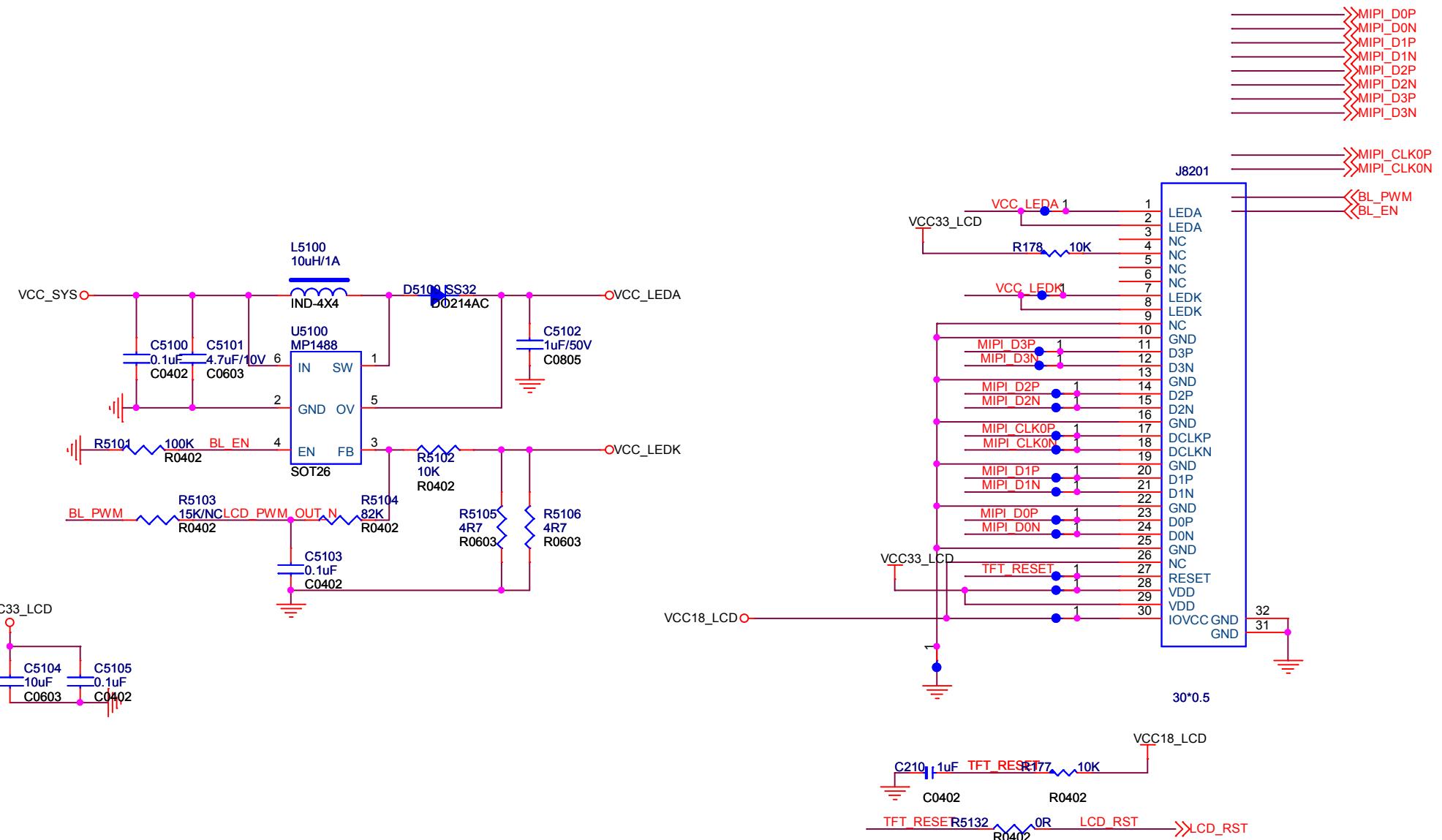






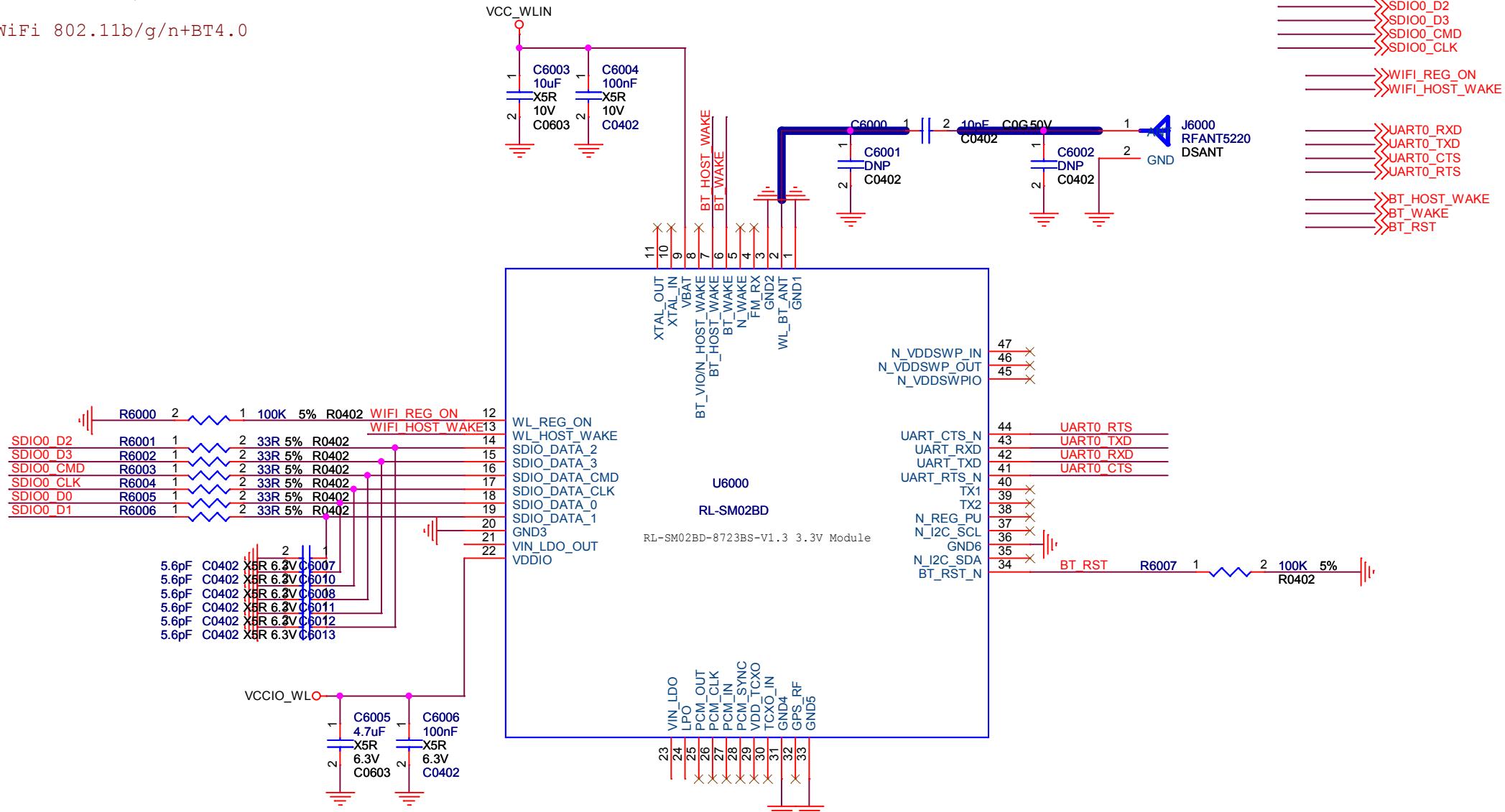
Note: All the capacitor should be place close to the power pin of Camera Port.

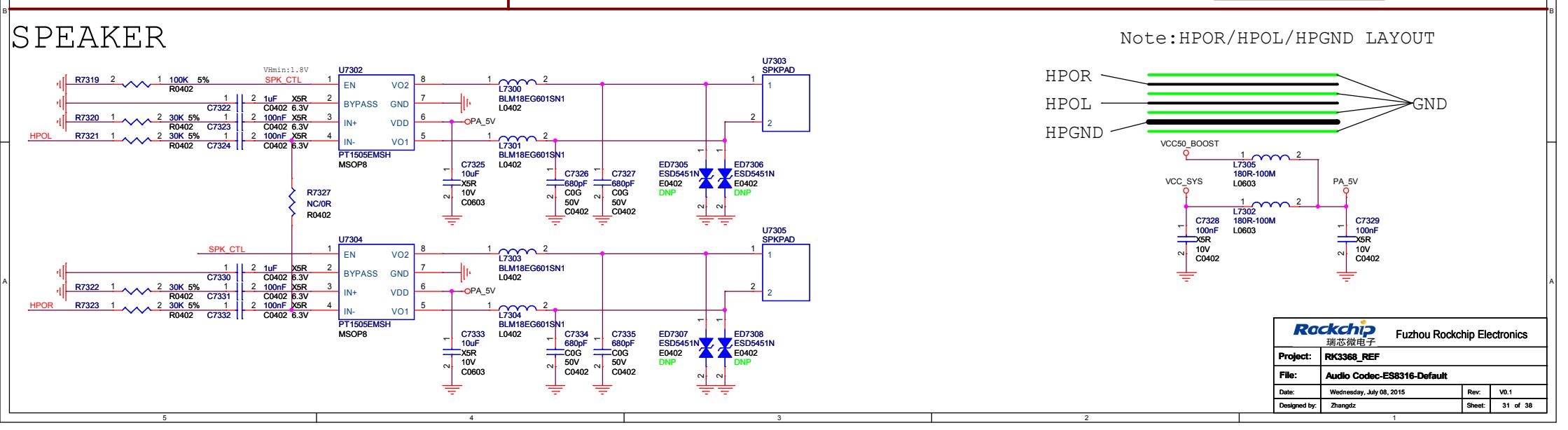
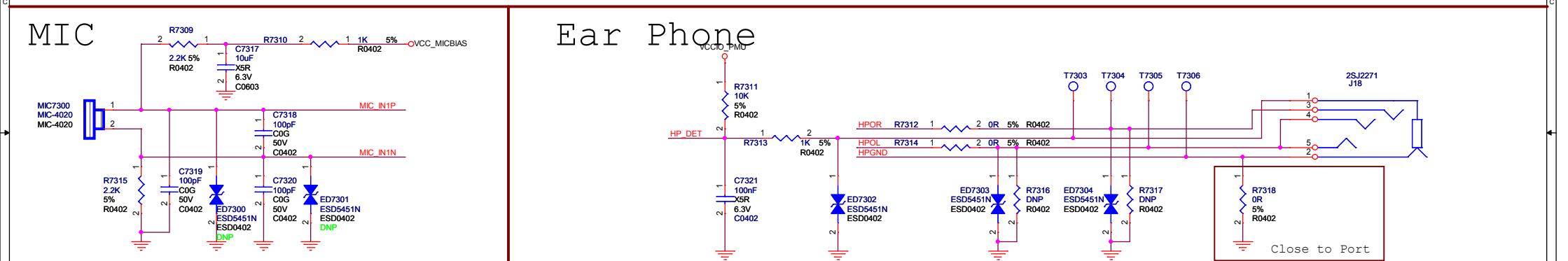
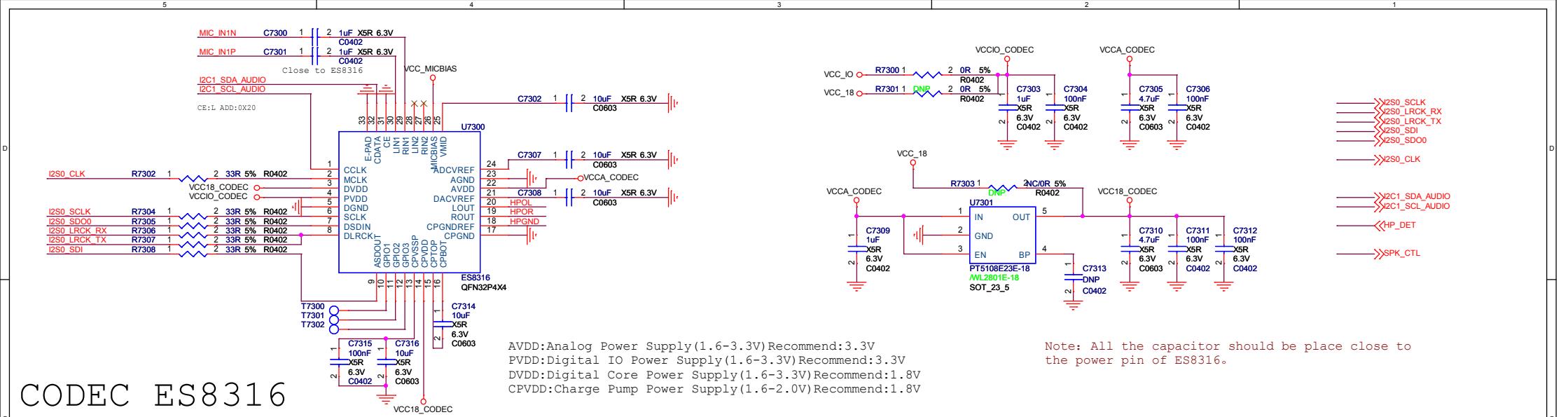
Rockchip 瑞芯微电子	Fuzhou Rockchip Electronics
Project:	RK3368_REF
File:	Camera-CIF
Date:	Wednesday, July 08, 2015
Designed by:	Zhangdz
Rev:	V0.1
Sheet:	25 of 38



WIFI/BT MODULE

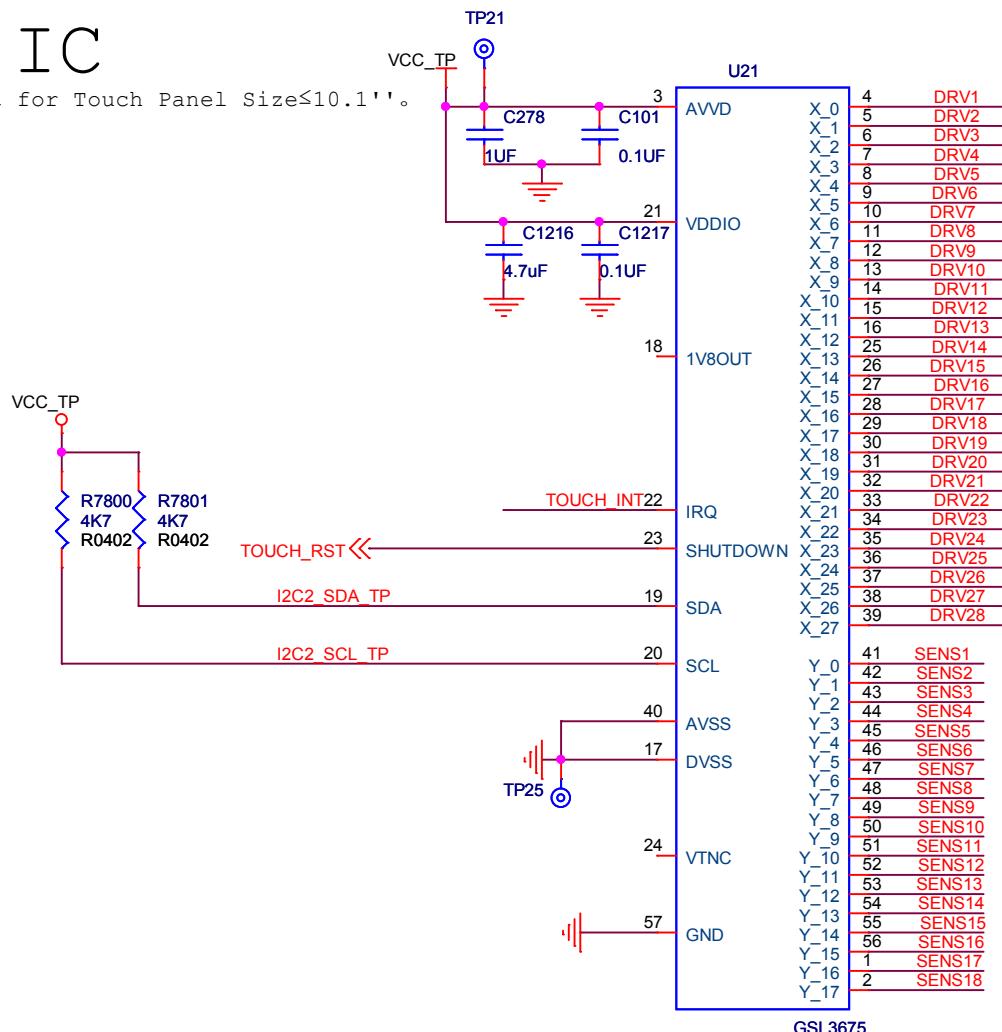
WiFi 802.11b/g/n+BT4.0



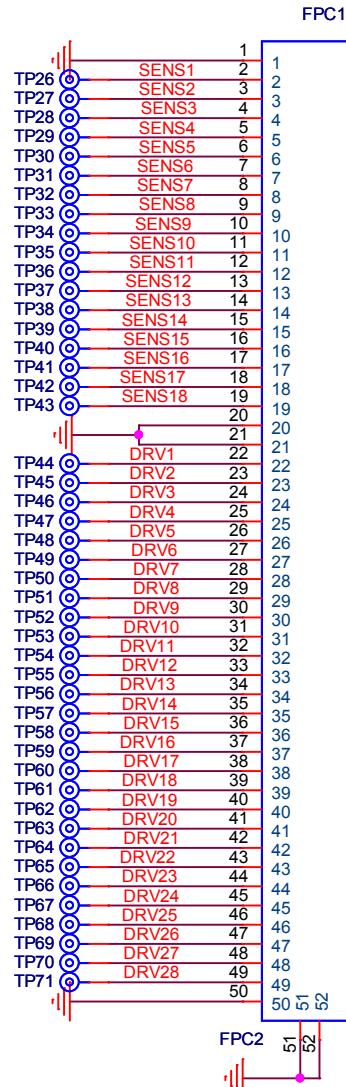


Touch IC

note: GSL3680B suit for Touch Panel Size \leq 10.1''.



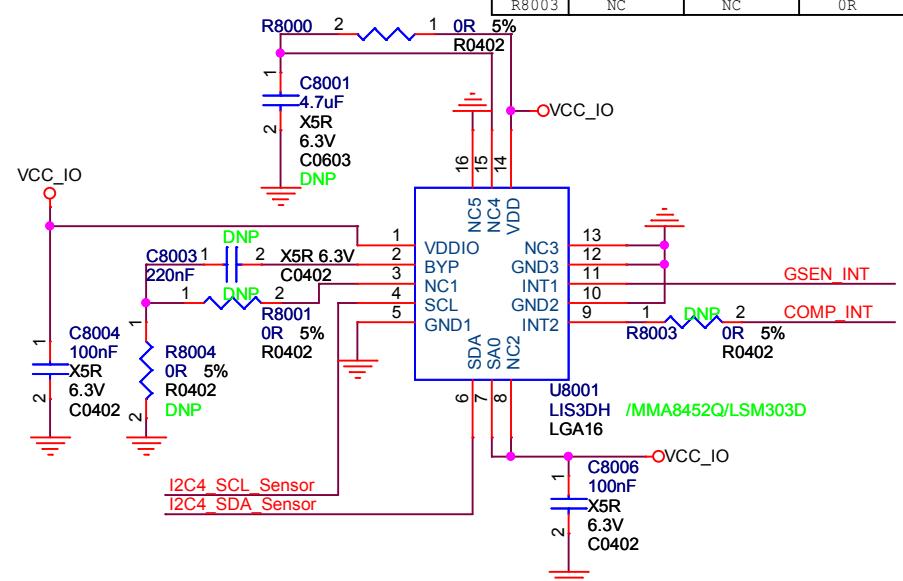
T7842 → TOUCH_RST
 T7844 → TOUCH_INT
 T7846 → I2C2_SCL_TP
 T7847 → I2C2_SDA_TP



Rockchip Fuzhou Rockchip Electronics			
Project:	RK3368_REF		
File:	TP-COB-GSL3680-Option		
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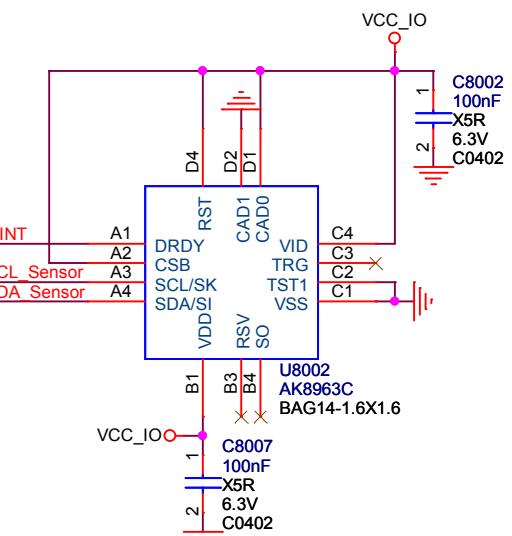
G-sensor

LSM303D with 3D Gsensor and E-compass

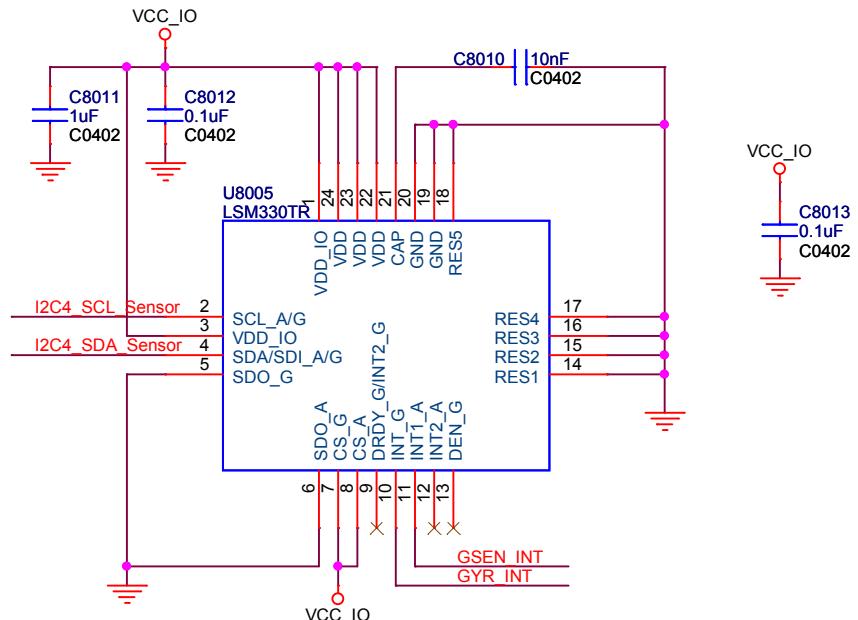


Compass

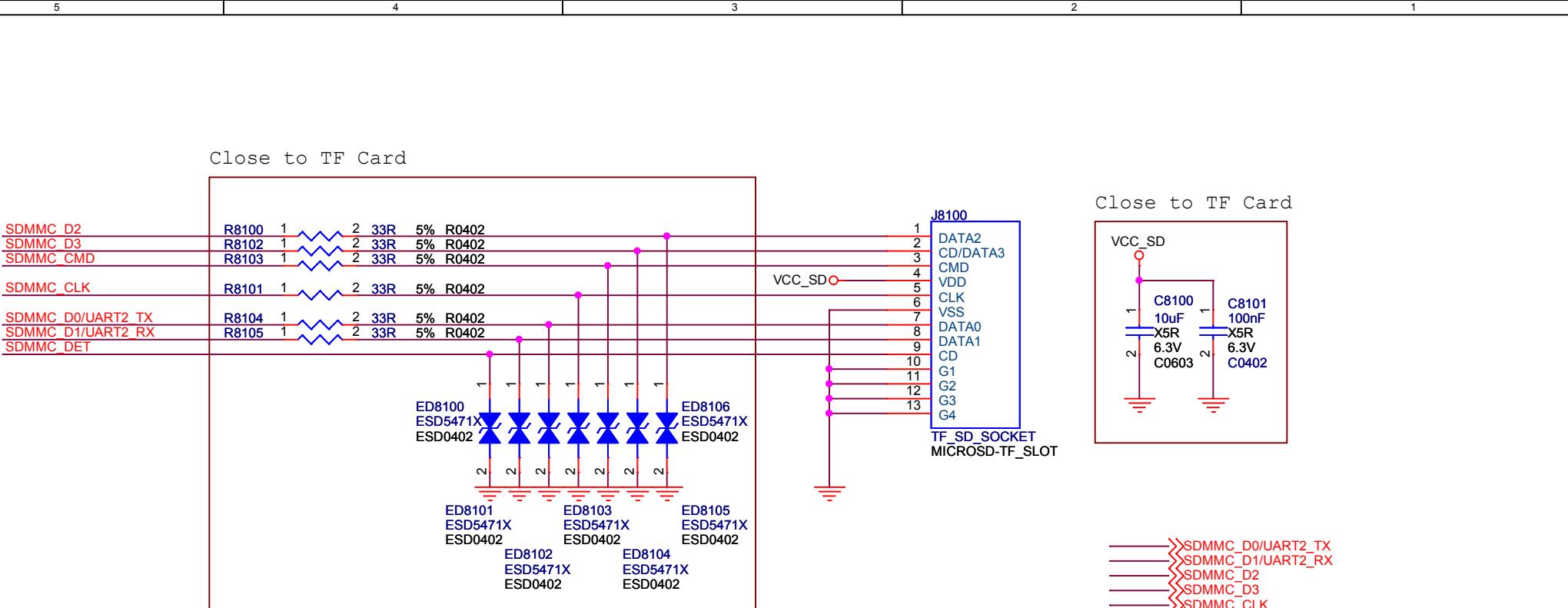
Note:
The first pin of AK8963C must be place on the lower left corner of PCB.

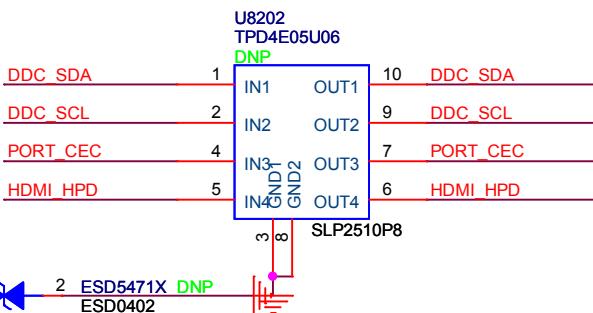
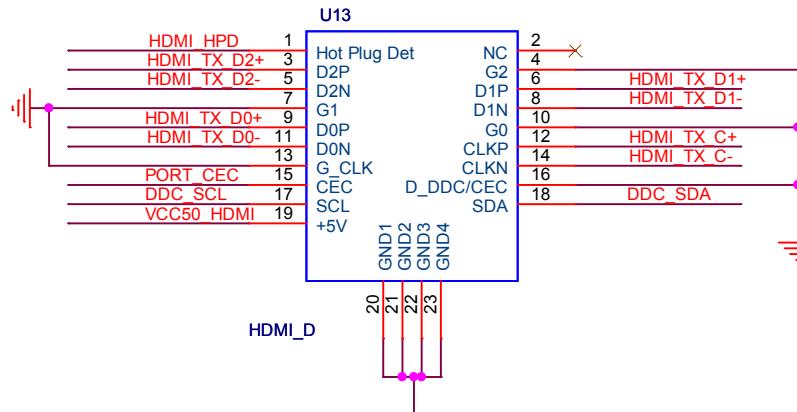
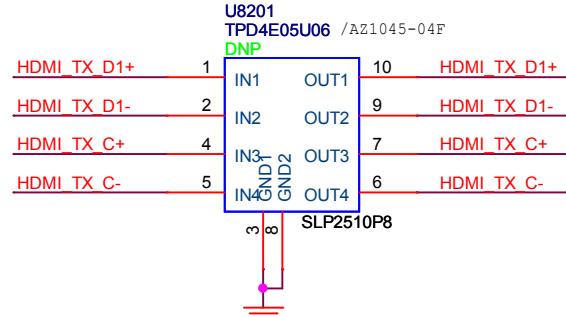
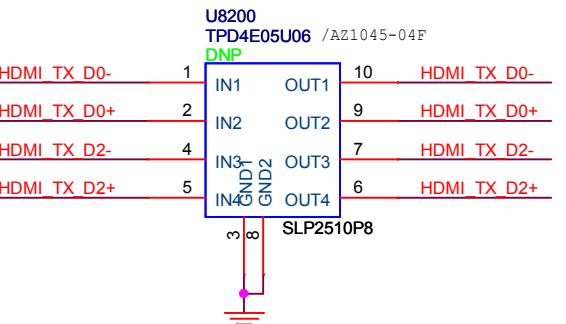
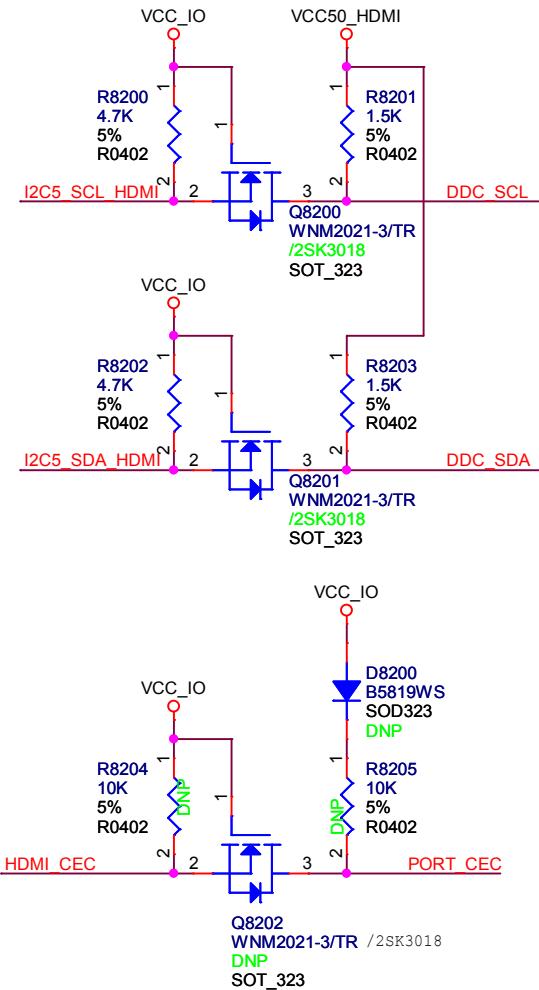


Gyroscope+G-sensor



Note: All the capacitor should be place close to the power pin of Sensor.





→ HDMI_TX_C+
→ HDMI_TX_C-
→ HDMI_TX_D0+
→ HDMI_TX_D0-
→ HDMI_TX_D1+
→ HDMI_TX_D1-
→ HDMI_TX_D2+
→ HDMI_TX_D2-

→ HDMI_HPD
→ HDMI_CEC

→ I2C5_SDA_HDMI
→ I2C5_SCL_HDMI

Rockchip 瑞芯微电子		Fuzhou Rockchip Electronics	
Project:	RK3368_REF	File:	HDMI OUT Port
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Designed by:	Zhangdz	Sheet:	38 of 38