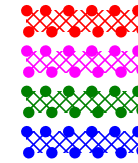


CONTENT INDEXING

- 01. INDEX
- 02.Change List
- 03.Block Diagram
- 05.Power Tree-RK816-3
- 10.PX3-SE Power
- 11.PX3-SE MISC&USB
- 12.PX3-SE DDR Controler
- 13.PX3-SE Flash/SD Controler
- 17.PX3-SE Display
- 18.PX3-SE GPIO
- 19.PX3_SE_CIF
- 20.Power-RK816-3
- 21.POWER_IN
- 30.RAM-DDR3 2x16bit
- 40.Memory-Nand Flash(OPTION)
- 41.Memory-eMMC Flash
- 42.Memory-SPI_FLASH(OPTION)
- 45.CVBS_IN TP2825(OPTION)
- 46.CVBS_IN ADV7181D
- 50.LCD LVDS
- 51.LCD MIPI(OPTION)
- 60.WIFI/BT MODULE
- 61.GPS MODULE
- 70.PX3 CODEC/CVBS OUT/HDMI
- 71.EXTERNAL CODEC
- 72.VOICE PROCESSOR
- 73.AUDIO PA
- 80.SENSOR
- 81.TF card
- 82.HDMI
- 83.I2C TO UART
- 85.USB HUB
- 88.KEYPAD
- 99.MARK

PCB POWER WIRE WIDTH INDICATE



No indicate


above 80 miles

above 50 miles

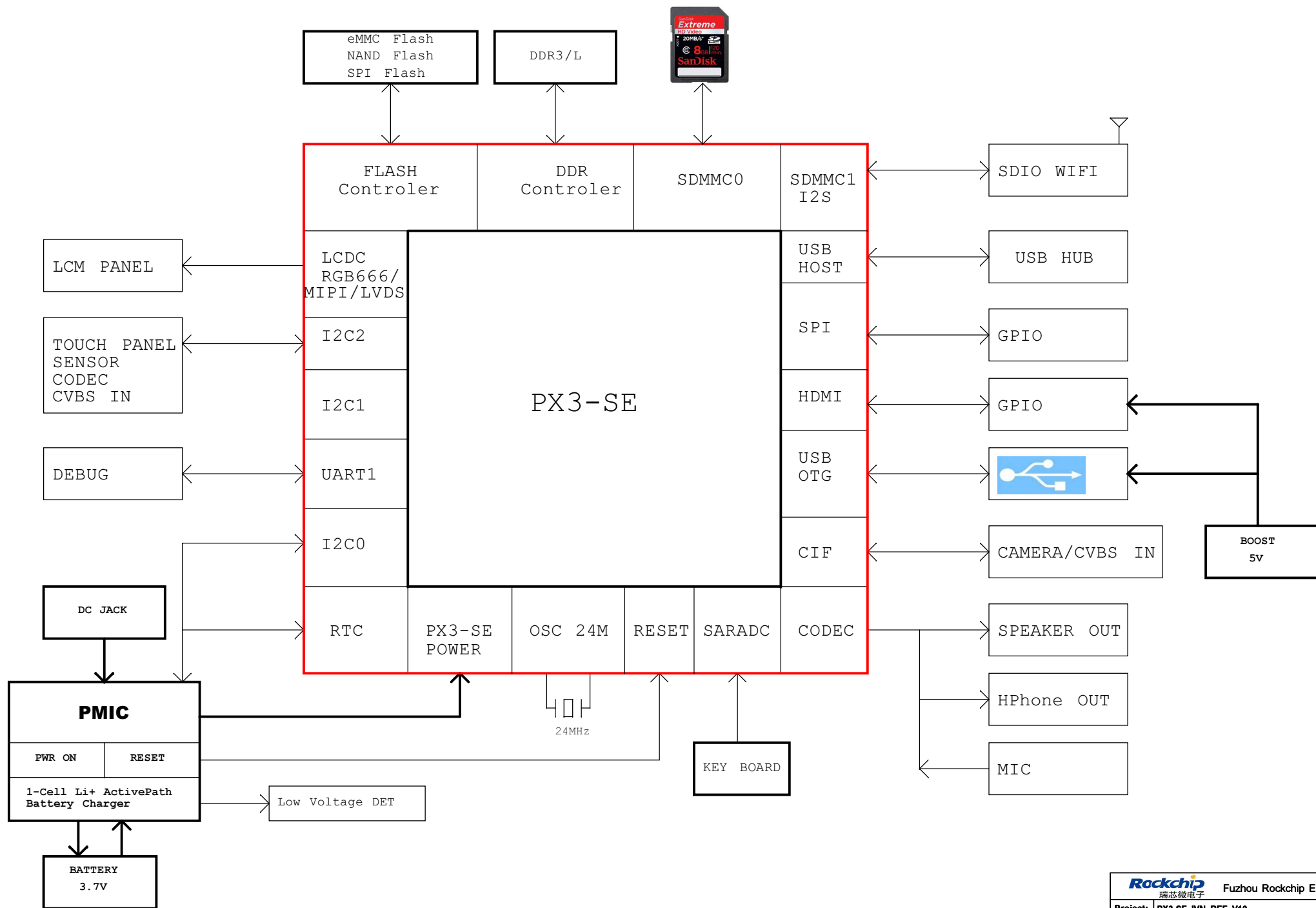
above 30 miles

above 16 miles

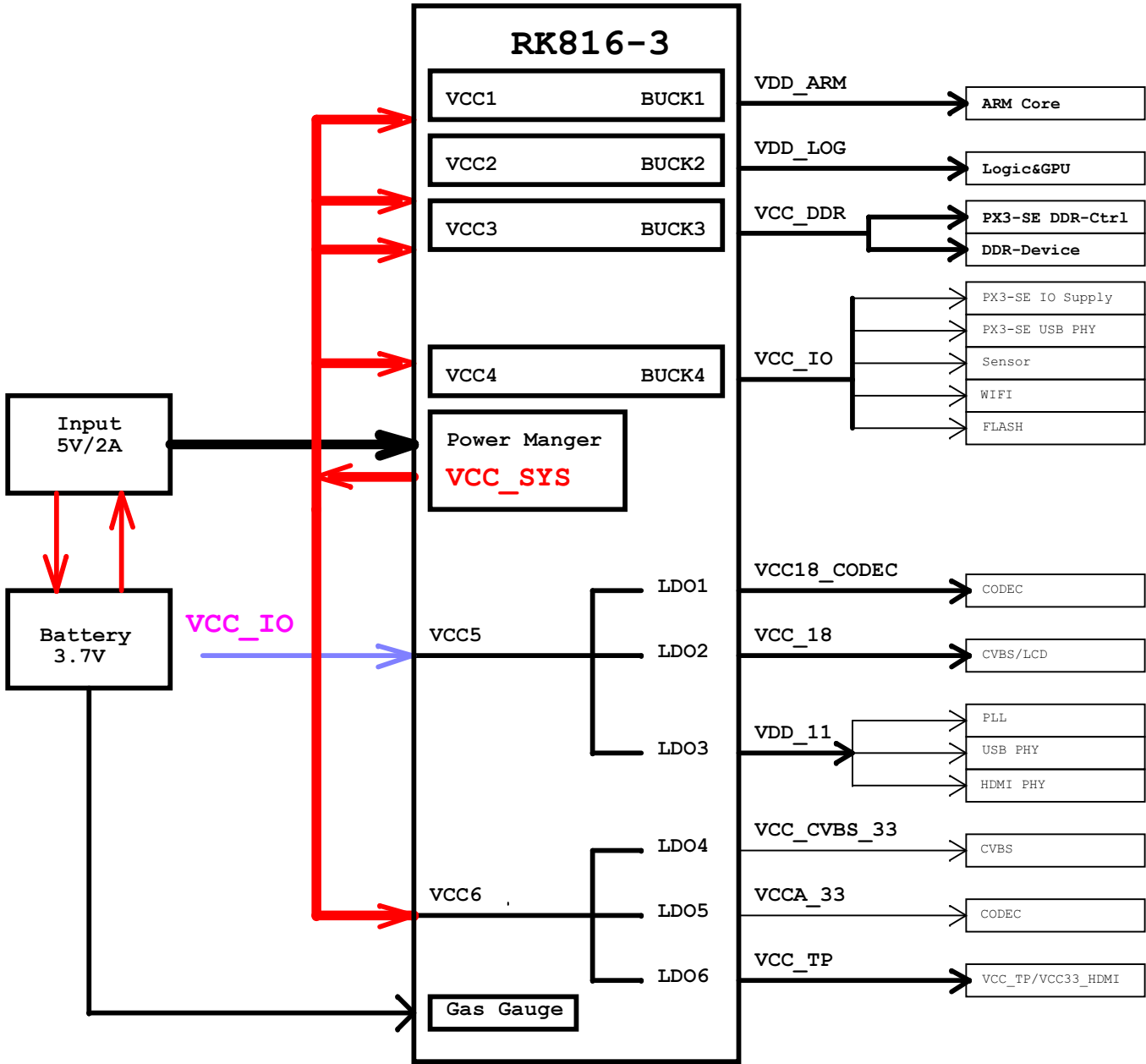
Under needs

 瑞芯微电子		Fuzhou Rockchip Electronics	
Project:	PX3-SE_IVN_REF_V10		
File:	INDEX		
Date:	Thursday, March 02, 2017	Rev:	V1.0
Designed by:	ZHM	Sheet:	1 of 99


Version	Date	Author	Change Note	Note
V1.0	20170226	ZHM	First Edit	



POWER DIAGRAM



PMU Channel	TIMER (2mS)	Hefault ON/OFF	default voltage	PX3-SE
DCDC1	solt:2	ON	1.1V	VDD_ARM
DCDC2	solt:1	ON	1.1V	VDD_LOG
DCDC4	solt:1	ON	3.3V	VCC_Io/VCCIo_WL/VCC_SD FLASH/VCC_LcD
DCDC3	solt:3	ON	DDR3 1.5V DDR3L 1.35V LPDDR 1.245V	VCC_DDR
VLDO1	X	OFF		VCC18_CODEEC
VLDO2	solt:1	ON	1.8V	VCC_18
VLDO3	solt:1	ON	1.1V	VDD_11
VLDO4	X	OFF	3.3V	VCC_CVBS_33
VLDO5	solt:4	ON	3.3V	VCCA_33
VLDO6	solt:4	ON	3.3V	VCC_TP
RESET	58mS	ON	OD	RESET

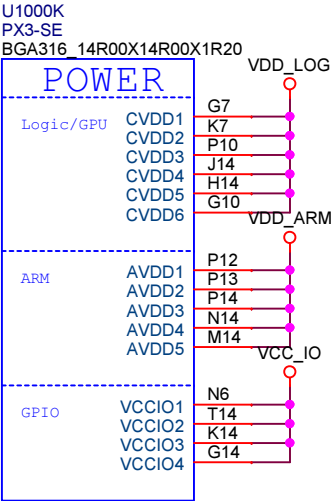


瑞芯微电子

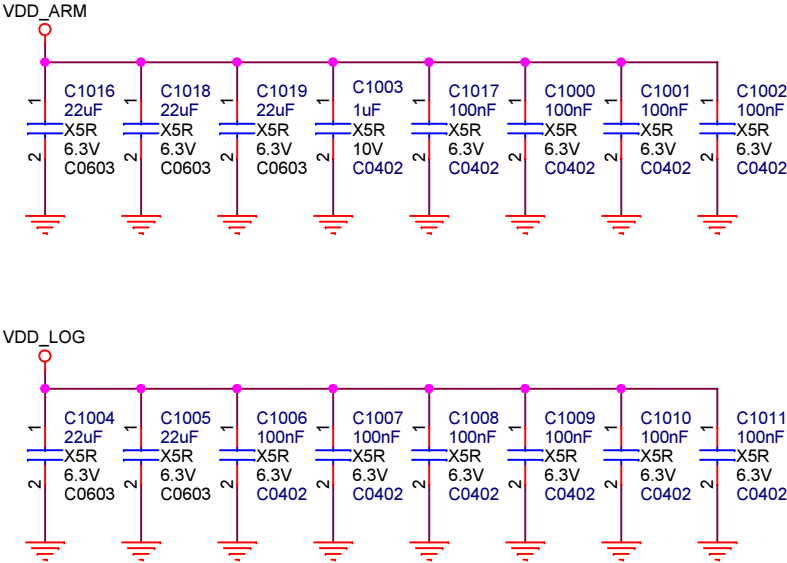
Fuzhou Rockchip Electronics

Project:	PX3-SE_IVN_REF_V10		
File:	Power Tree-RK816-3		
Date:	Thursday, March 02, 2017	Rev:	V1.0
Designed by:	ZHM	Sheet:	5 of 99

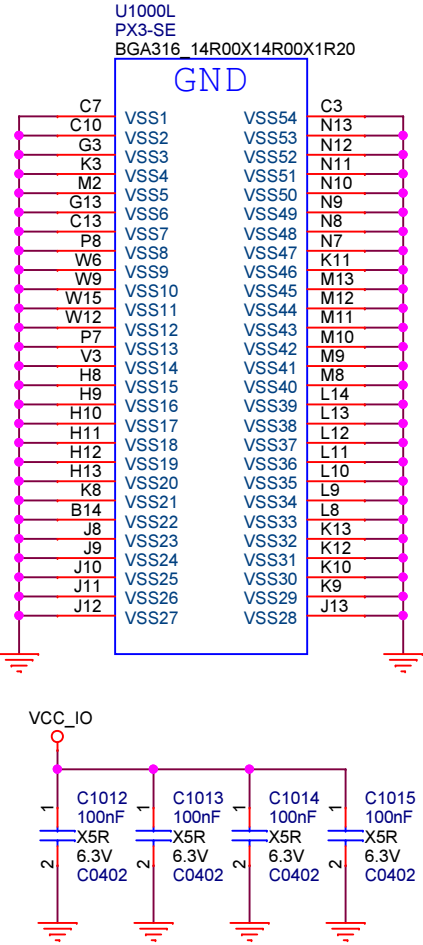
PX3-SE-K



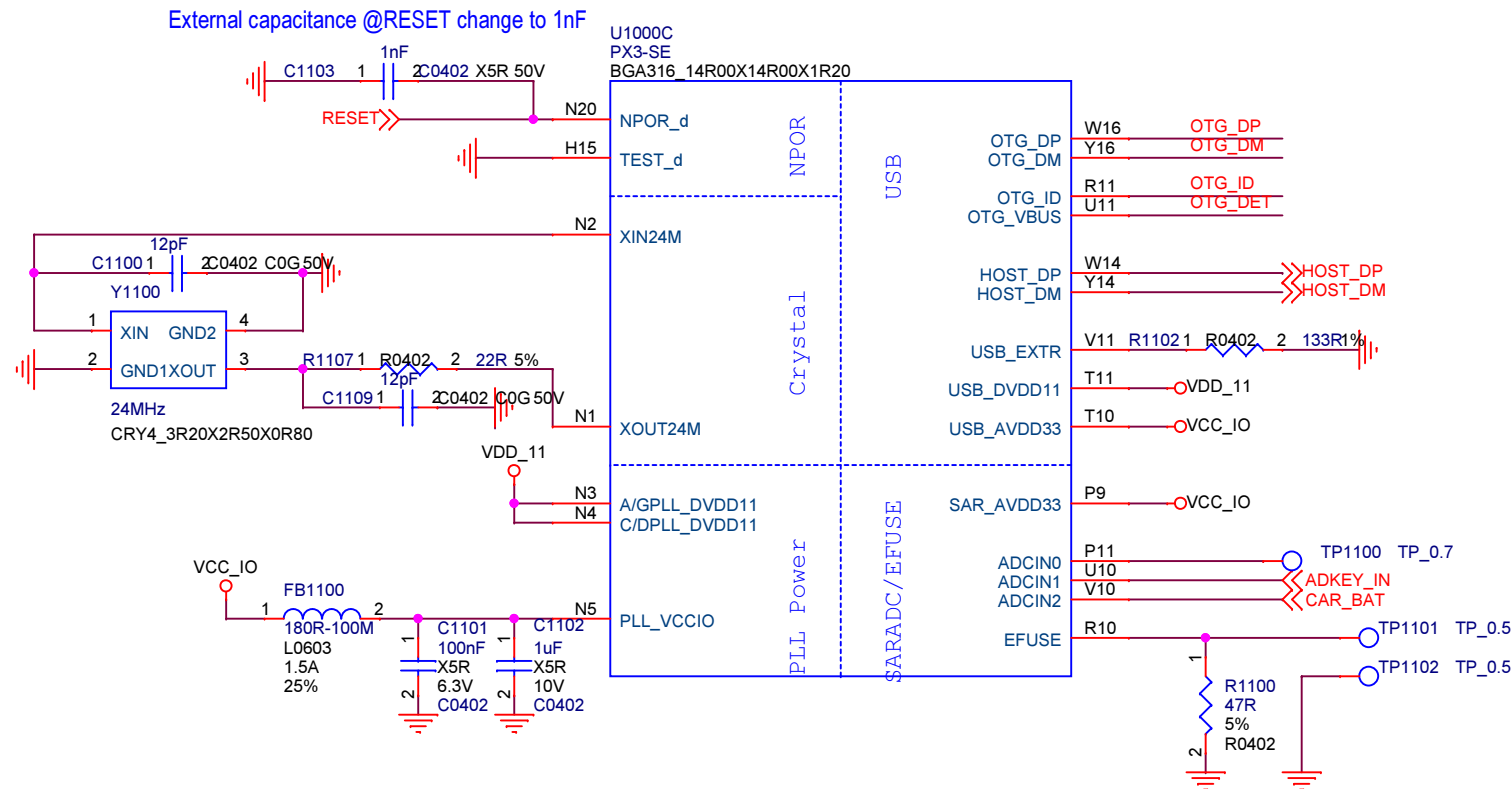
Note:
Place these filter capacitors under CPU.



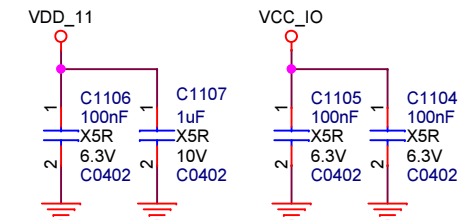
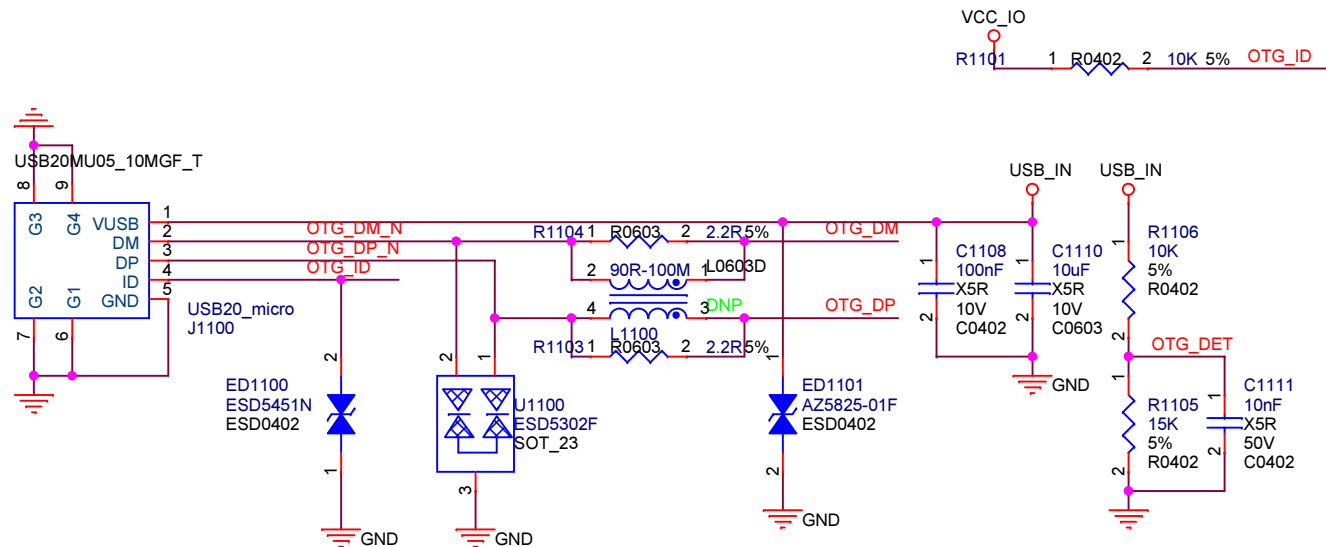
PX3-SE-L



Rockchip 瑞芯微电子 Fuzhou Rockchip Electronics			
Project:	PX3-SE_IVN_REF_V10		
File:	PX3-SE POWER		
Date:	Thursday, March 02, 2017	Rev:	V1.0
Designed by:	ZHM	Sheet:	10 of 99



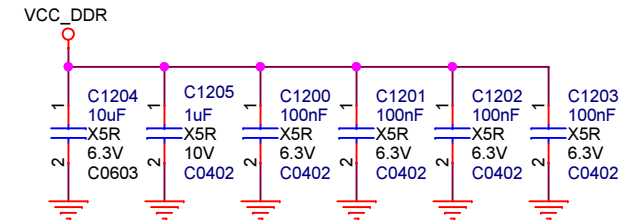
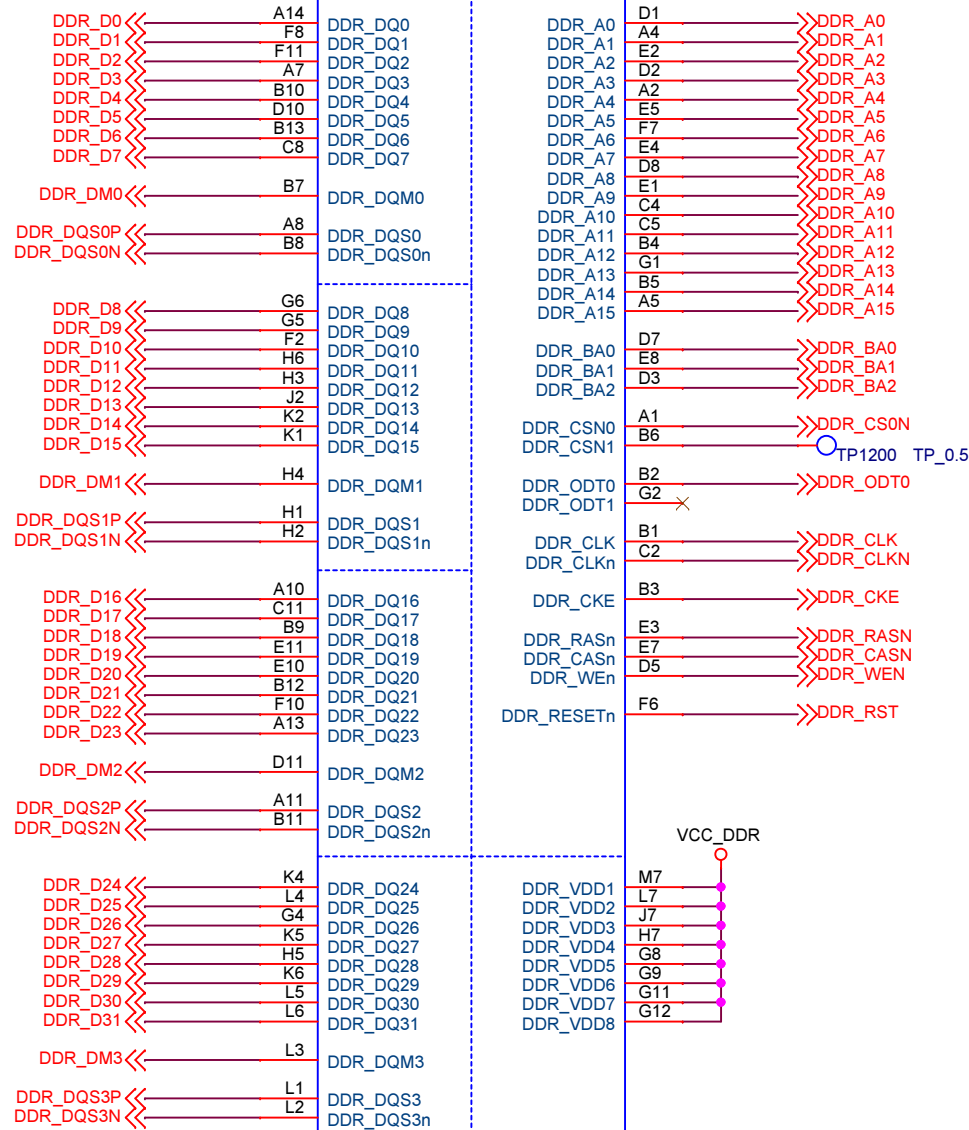
Note: All the capacitor should be place close to the power pin of PX3-SE.



PX3-SE-J

U1000J
PX3-SE
BGA316 14R00X14R00X1R20

Memory

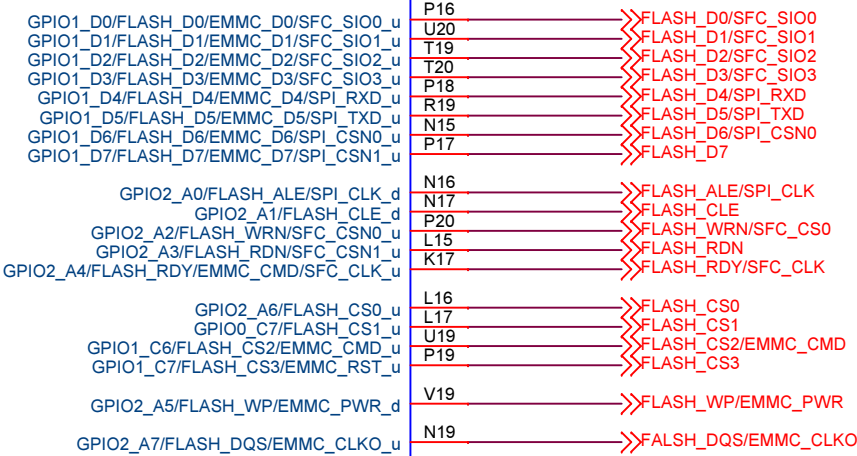


Rockchip 瑞芯微电子 Fuzhou Rockchip Electronics			
Project:	PX3-SE_IVN_REF_V10		
File:	PX3-SE DDR Controler		
Date:	Thursday, March 02, 2017	Rev:	V1.0
Designed by:	ZHM	Sheet:	12 of 99

PX3-SE-E

U1000E
PX3-SE
BGA316 14R00X14R00X1R20

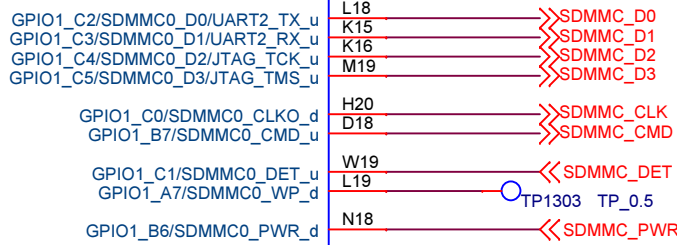
Nand Flash/eMMC/SFC/SPI




PX3-SE-D

U1000D
PX3-SE
BGA316 14R00X14R00X1R20

SDMMC0



此测试点在Layout的时候尽量避免分支走线
或者尽可能短的分支走线

 瑞芯微电子		Fuzhou Rockchip Electronics	
Project:	PX3-SE_IVN_REF_V10		
File:	PX3-SE Flash/SD Controller		
Date:	Thursday, March 02, 2017	Rev:	V1.0
Designed by:	ZHM	Sheet:	13 of 99

U1000A
PX3-SE
BGA316 14R00X14R00X1R20

PX3-SE-A

LCDC/LVDS/MIPI/GMAC/EMAC

GPIO2_B0/LCDC_CLK/EBC_SDCLK/GMAC_RXDV_d
GPIO2_B1/LCDC_HSYNC/EBC_SDLE/GMAC_TXCLK_d
GPIO2_B2/LCDC_VSYNC/EBC_SDOE/GMAC_CRS_d
GPIO2_B3/LCDC_DEN/EBC_GDCLK/GMAC_RXCLK_d

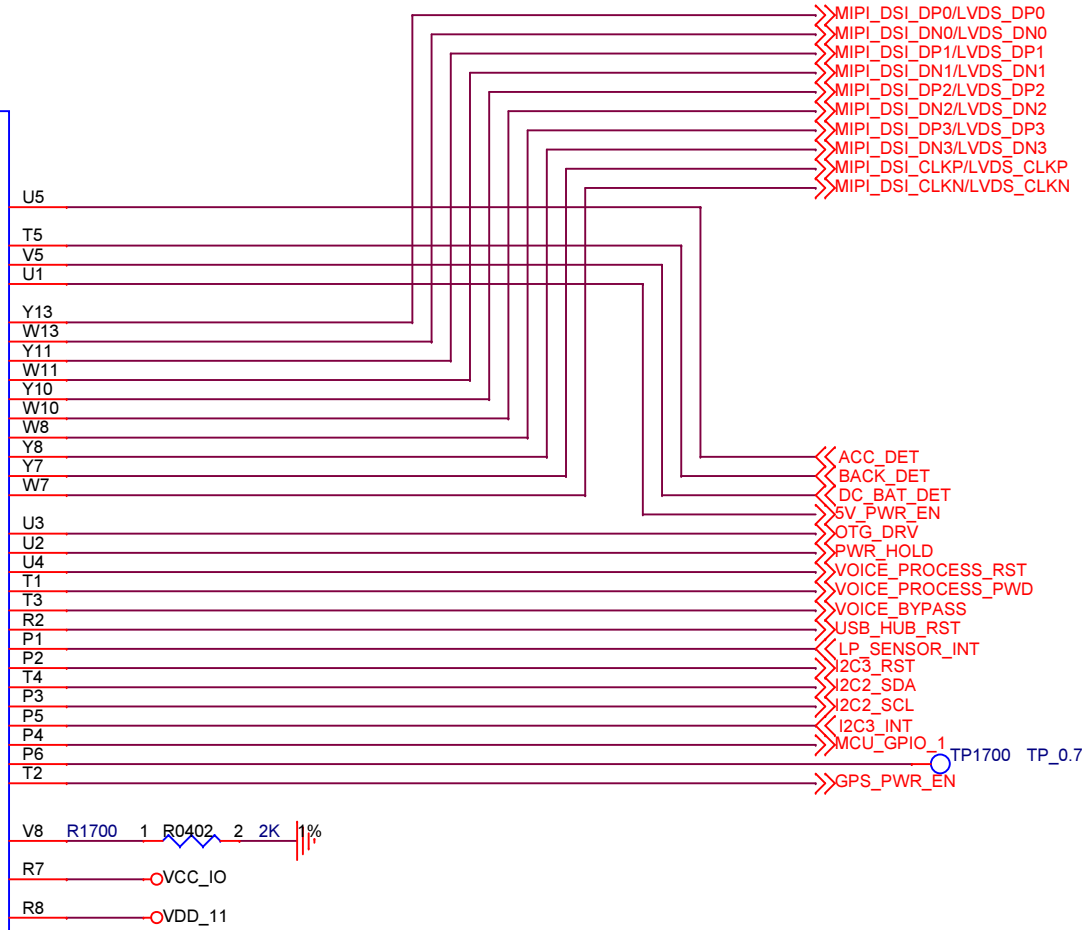
LCDC_D0/LVDS_TX0P/EBC_SDDO0/MIPI_D0P
LCDC_D1/LVDS_TX0N/EBC_SDDO1/MIPI_D0N
LCDC_D2/LVDS_TX1P/EBC_SDDO2/MIPI_D1P
LCDC_D3/LVDS_TX1N/EBC_SDDO3/MIPI_D1N
LCDC_D4/LVDS_TX2P/EBC_SDDO4/MIPI_D2P
LCDC_D5/LVDS_TX2N/EBC_SDDO5/MIPI_D2N
LCDC_D6/LVDS_TX3P/EBC_SDDO6/MIPI_D3P
LCDC_D7/LVDS_TX3N/EBC_SDDO7/MIPI_D3N
LCDC_D8/LVDS_CLKP/EBC_SDCE0/MIPI_CLKP
LCDC_D9/LVDS_CLKN/EBC_SDCE1/MIPI_CLKN

GPIO2_B4/LCDC_D10/EBC_SDCE2/GMAC_MDIQ_d
GPIO2_B5/LCDC_D11/EBC_SDCE3/GMAC_TXEN_d
GPIO2_B6/LCDC_D12/EBC_SDCE4/GMAC_CLK_d
GPIO2_B7/LCDC_D13/EBC_SDCE5/GMAC_RXER_d
GPIO2_C0/LCDC_D14/EBC_VCOM/GMAC_RXD1_d
GPIO2_C1/LCDC_D15/EBC_GDOE/GMAC_RXD0_d
GPIO2_C2/LCDC_D16/EBC_GDSP/GMAC_TXD1_d
GPIO2_C3/LCDC_D17/EBC_GDPWR0/GMAC_TXD0_d
GPIO2_C4/LCDC_D18/EBC_GDRL/I2C2_SDA/GMAC_RXD3_d
GPIO2_C5/LCDC_D19/EBC_SDSHR/I2C2_SCL/GMAC_RXD2_d
GPIO2_C6/LCDC_D20/EBC_BORDER0/GPS_SIGN/GMAC_TXD2_d
GPIO2_C7/LCDC_D21/EBC_BORDER1/GPS_MAG/GMAC_TXD3_d
GPIO2_D0/LCDC_D22/EBC_GDPWR1/GPS_CLK/GMAC_COL_d
GPIO2_D1/LCDC_D23/EBC_GDPWR2/GMAC_MDC_d

LVDS/MIPI_EXTR

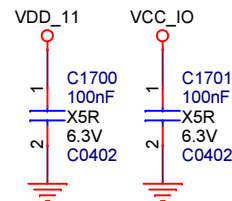
LVDS/MIPI_VCC

LVDS/MIPI_VDD11



Correspondence between LCDC DATA and RGB

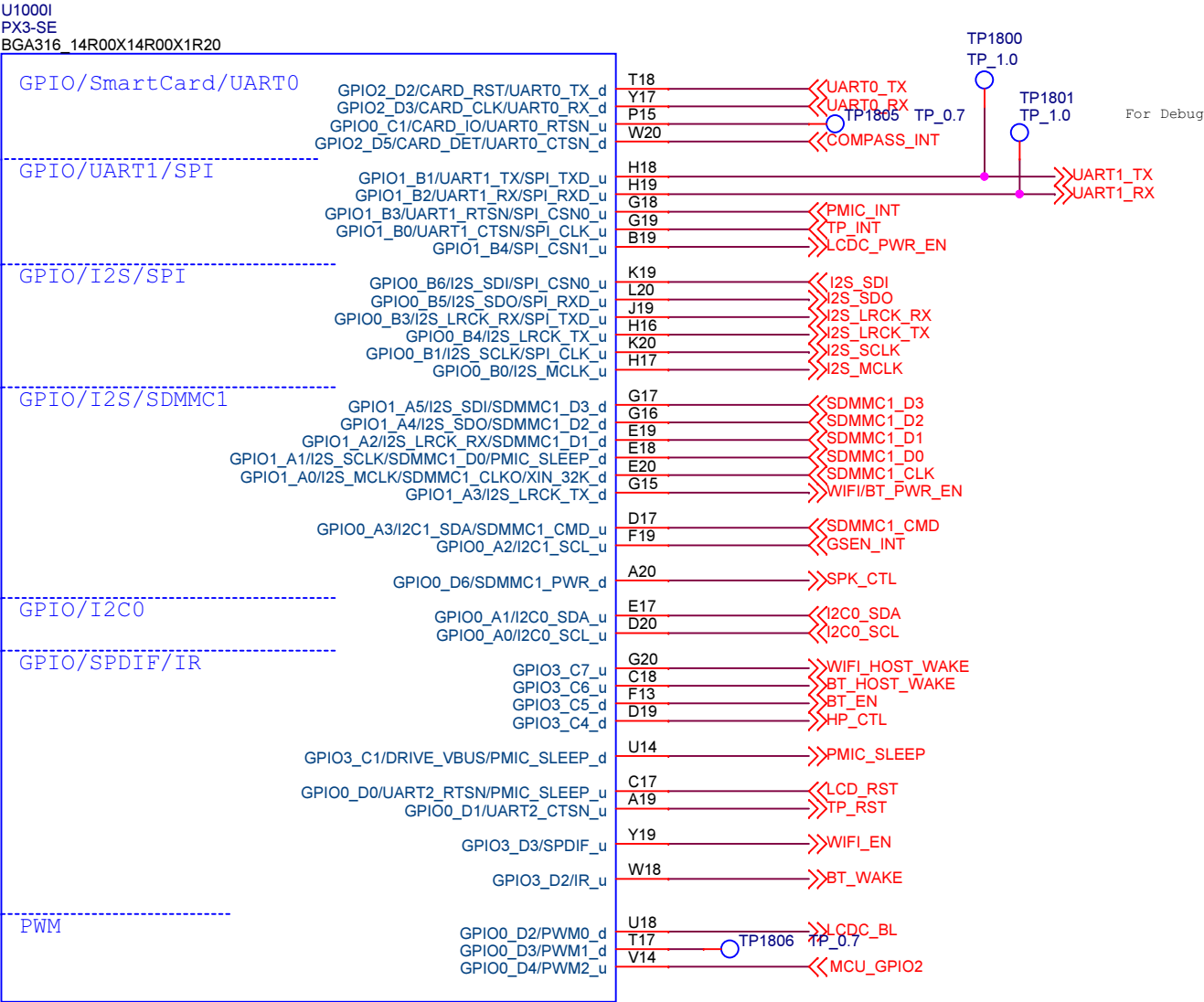
LCDC_D0	B2	LCDC_D9	G5
LCDC_D1	B3	LCDC_D10	G6
LCDC_D2	B4	LCDC_D11	G7
LCDC_D3	B5	LCDC_D12	R2
LCDC_D4	B6	LCDC_D13	R3
LCDC_D5	B7	LCDC_D14	R4
LCDC_D6	G2	LCDC_D15	R5
LCDC_D7	G3	LCDC_D16	R6
LCDC_D8	G4	LCDC_D17	R7




Fuzhou Rockchip Electronics

Project:	PX3-SE_IVN_REF_V10		
File:	PX3-SE Display		
Date:	Thursday, March 02, 2017	Rev:	V1.0
Designed by:	ZHM	Sheet:	17 of 99

PX3-SE-I



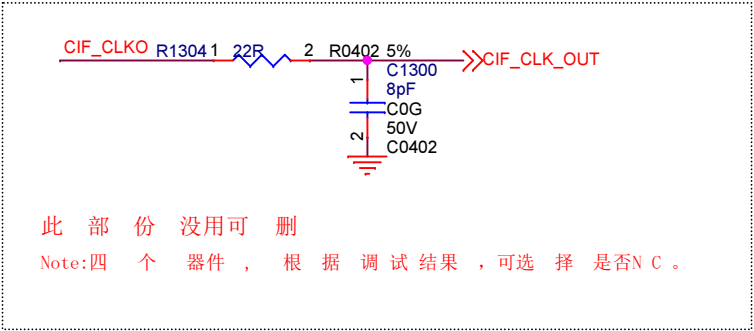
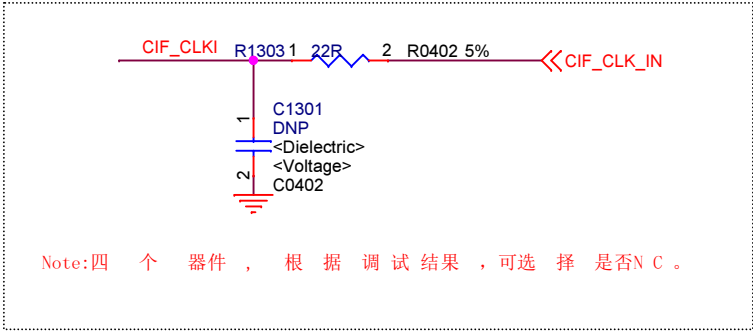
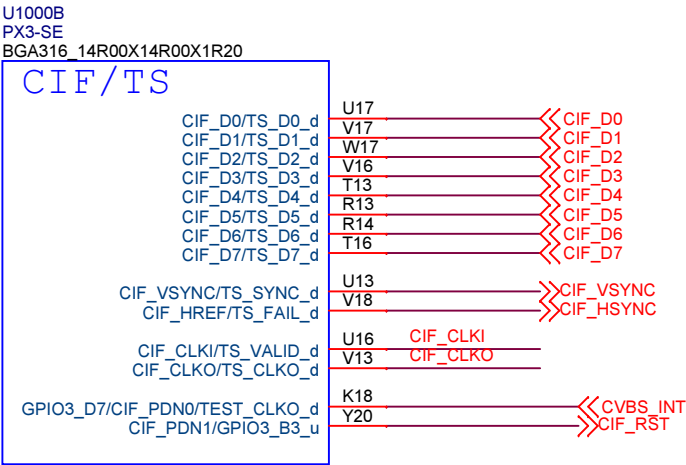


瑞芯微电子

Fuzhou Rockchip Electronics

Project:	PX3-SE_IVN_REF_V10		
File:	PX3-SE GPIO		
Date:	Thursday, March 02, 2017	Rev:	V1.0
Designed by:	ZHM	Sheet:	18 of 99

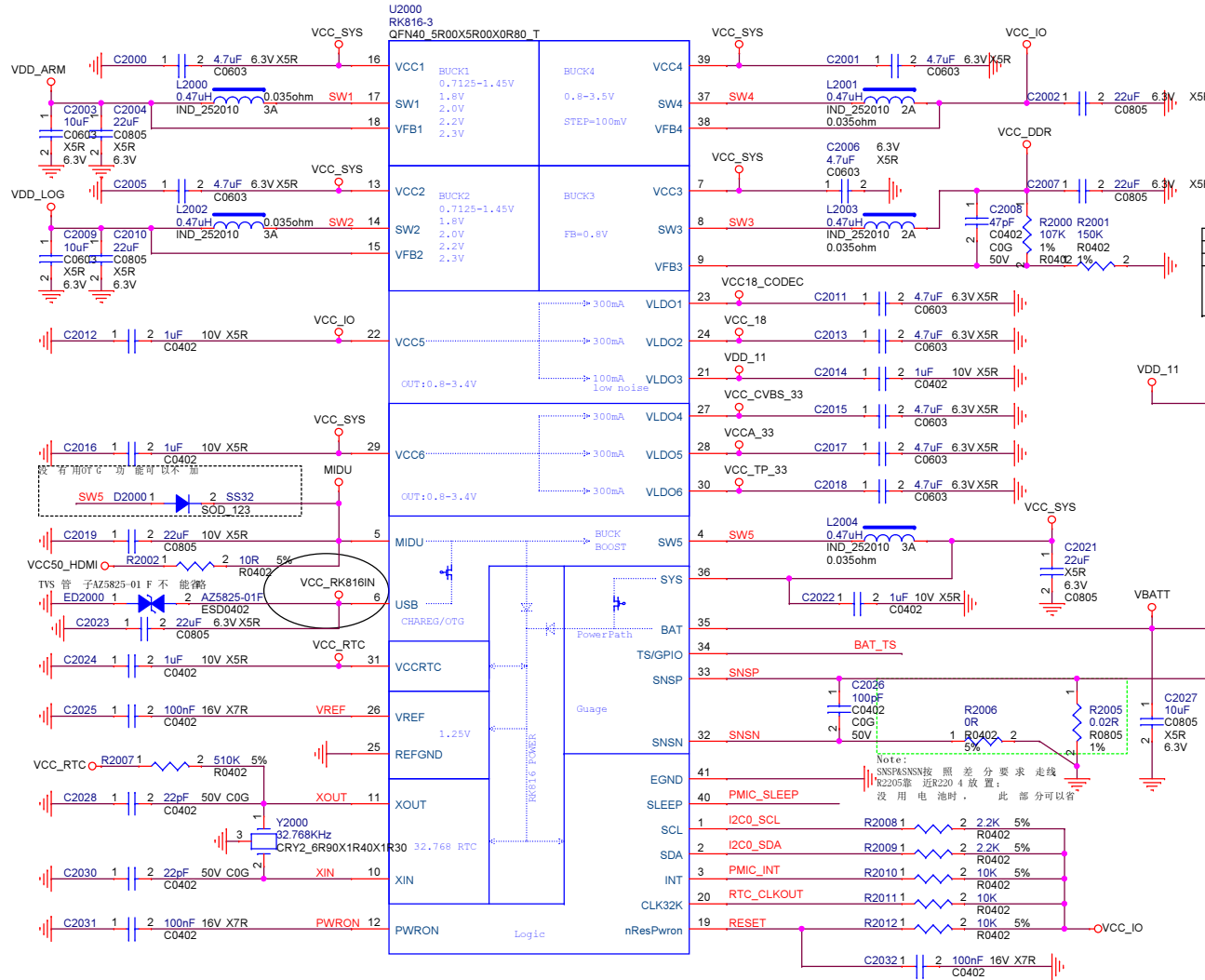
PX3-SE-B



PCB POWER WIRE WIDTH INDICATE



above 80 miles
above 50 miles
above 30 miles
above 12 miles
Under needs

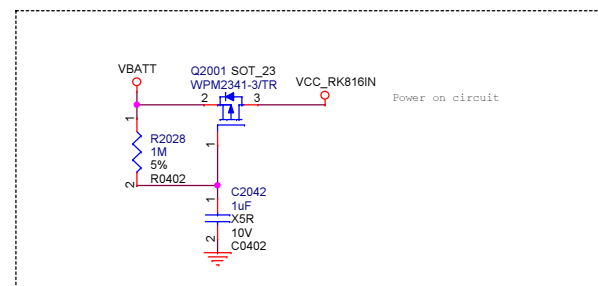
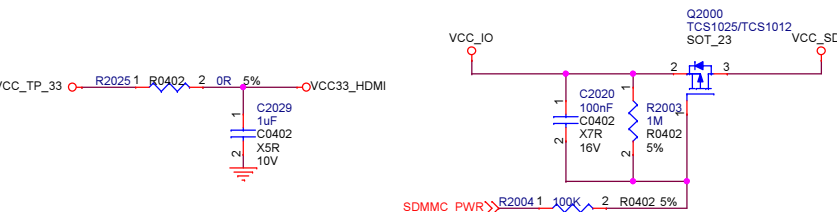


Default DDR3L

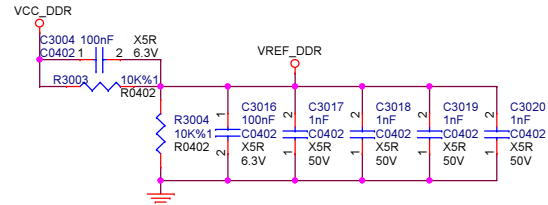
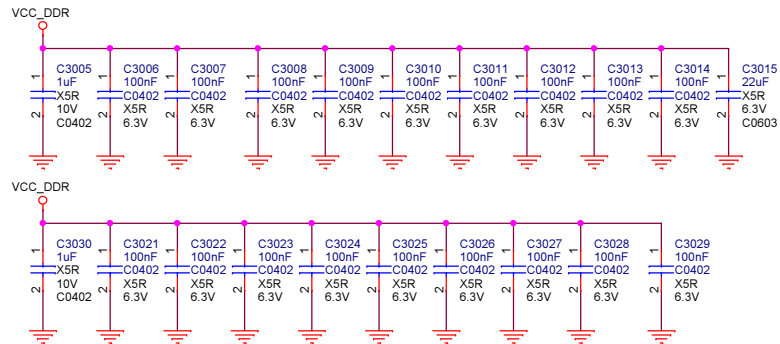
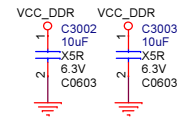
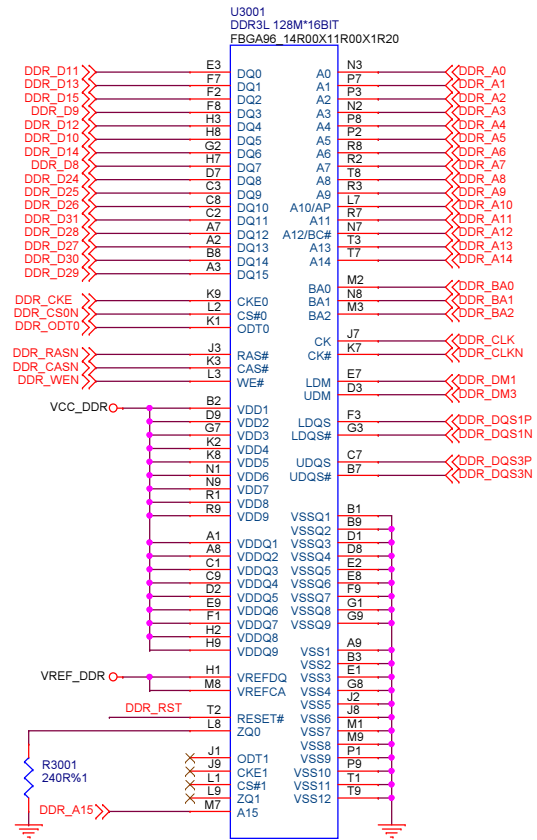
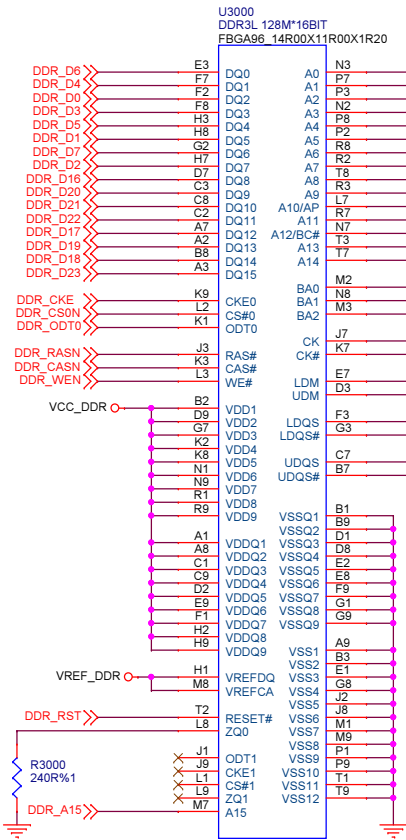
R2201	R2200	VCC_DDR	RAM
150K	137K	1.53V	DDR3
150K	107K	1.37V	DDR3L

PMU Channel	TIMER (2ms)	Default ON/OFF	default voltage	RK3126
DDCD1	solitt	ON	1.1V	VDD_ARM
DDCD2	solitt	ON	1.1V	VDD_ECG
DDCD4	solitt	ON	3.2V	VCC_IO/VCC10_WL/VCC_SE FLASH/VCC_LCP
DDCD3	solitt	ON	0.8V	VDD3 1.5V DDR3L 1.35V LDDR 1.245V VCC_DDR
VLD01	X	OFF	1.8V	VDD18_GSM
VLD02	solitt	ON	1.8V	VCC18
VLD03	solitt	ON	1.1V	VDD11/VDD11_HDMI
VLD04	X	OFF	3.3V	VCC_CVBS
VLD05	solitt	ON	3.3V	VCC33
VLD06	solitt	ON	3.3V	VCC_TP_33/VCC33_HDMI
RESET	98ms	ON	OD	RESET

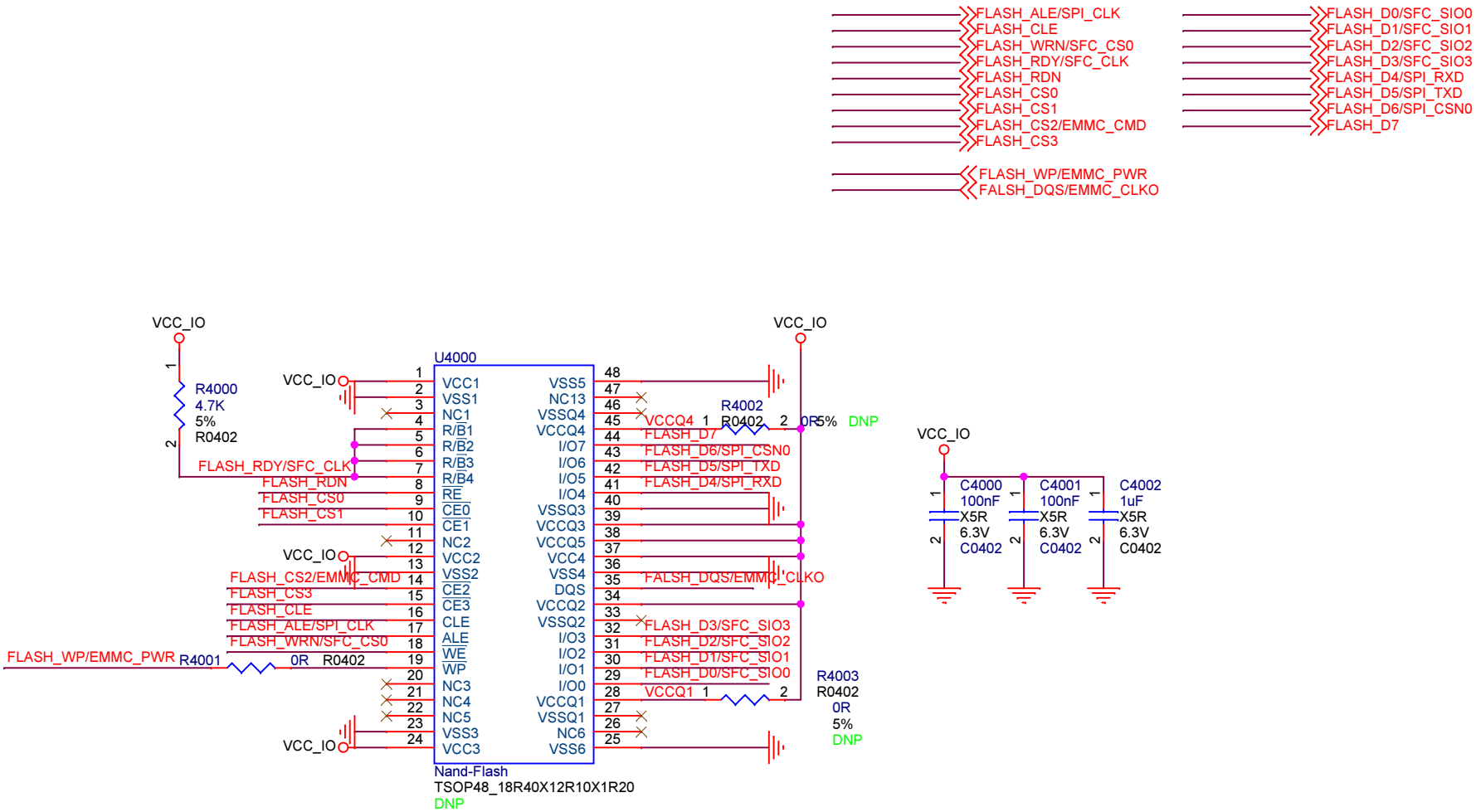
I2C0_SDA
I2C0_SCL
RESET
PMIC_SLEEP
PMIC_INT
RTC_CLKOUT
PWRON



DDR3/L

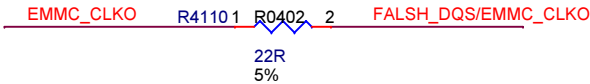
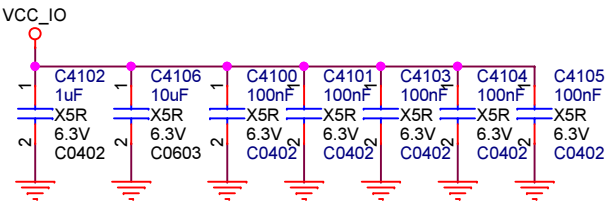
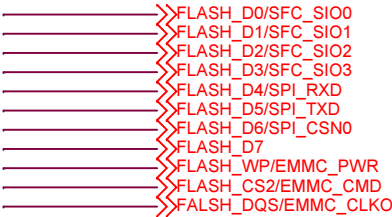
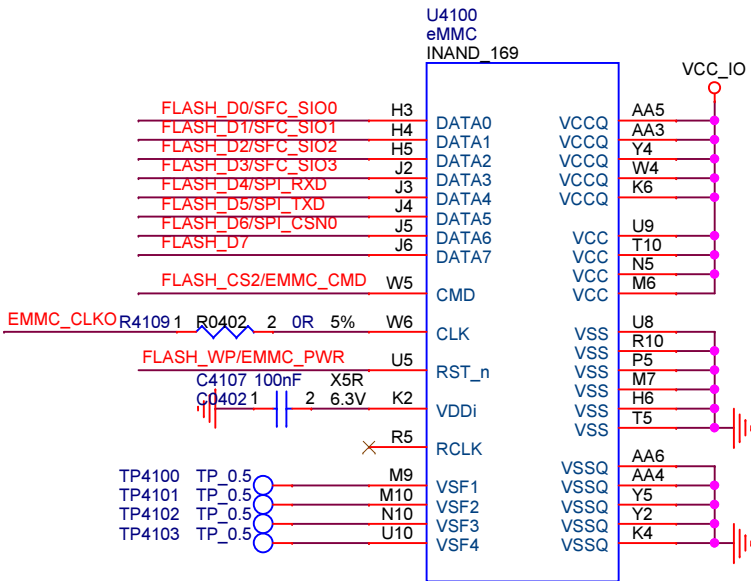
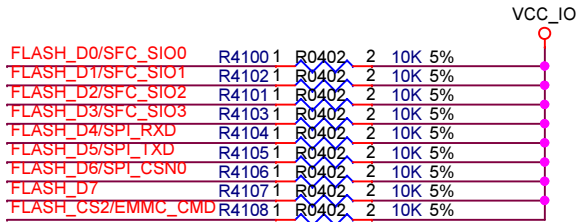


NAND FLASH



Note:if use toshiba and sandisk DDR mode PIN28 and PIN45 must be connect to VCC_IO

eMMC FLASH

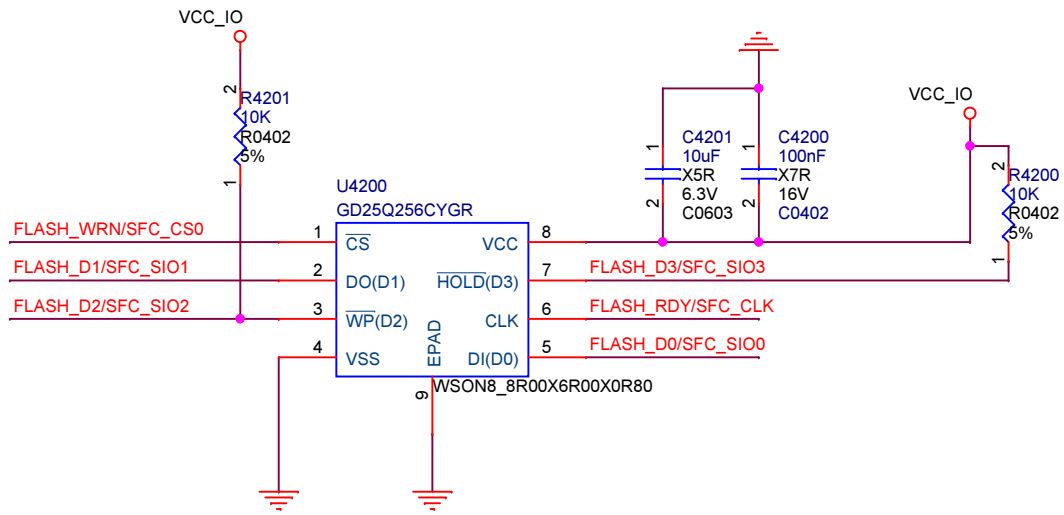
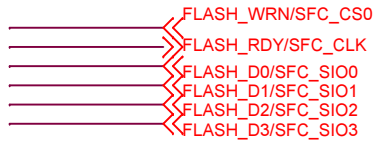



D

C

B

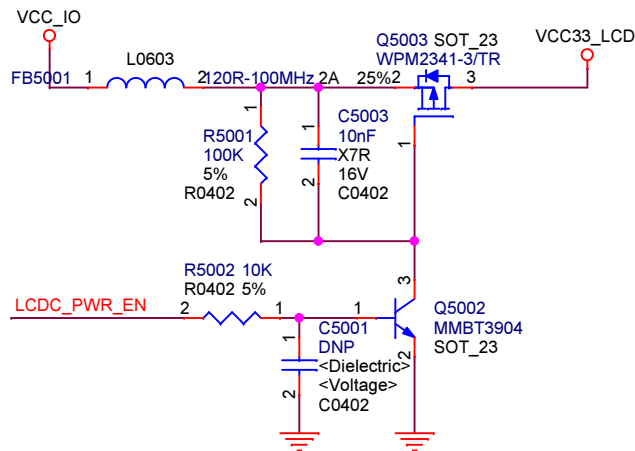
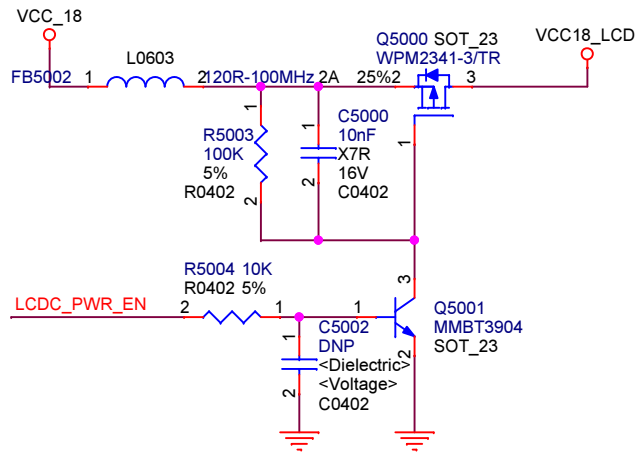
A



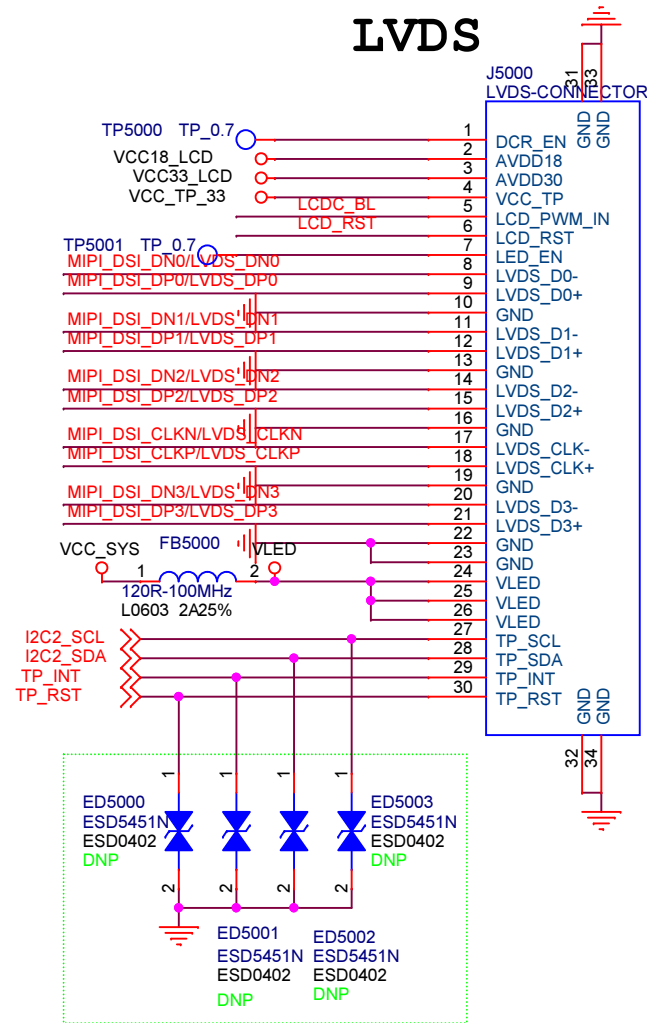
 瑞芯微电子		Fuzhou Rockchip Electronics	
Project:	PX3-SE_IVN_REF_V10		
File:	Memory-SPI_FLASH		
Date:	Thursday, March 02, 2017	Rev:	V1.0
Designed by:	ZHM	Sheet:	42 of 99

<< MIPI_DSI_DP0/LVDS_DP0
 << MIPI_DSI_DN0/LVDS_DN0
 << MIPI_DSI_DP1/LVDS_DP1
 << MIPI_DSI_DN1/LVDS_DN1
 << MIPI_DSI_DP2/LVDS_DP2
 << MIPI_DSI_DN2/LVDS_DN2
 << MIPI_DSI_DP3/LVDS_DP3
 << MIPI_DSI_DN3/LVDS_DN3
 << MIPI_DSI_CLKP/LVDS_CLKP
 << MIPI_DSI_CLKN/LVDS_CLKN

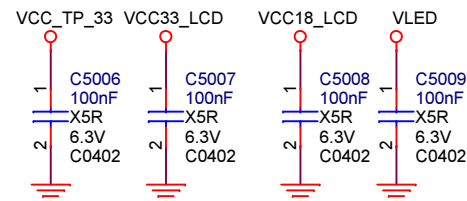
<< LCDC_PWR_EN
 << LCDC_BL
 << LCD_RST



LVDS



Close to LVDS socket



Rockchip
 瑞芯微电子

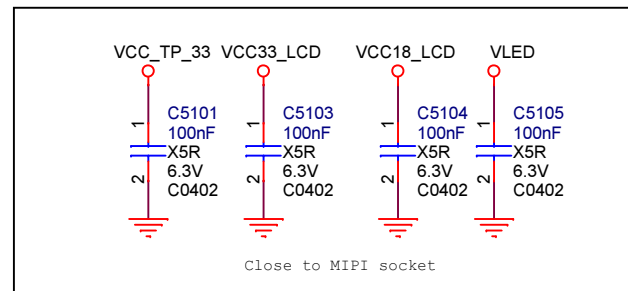
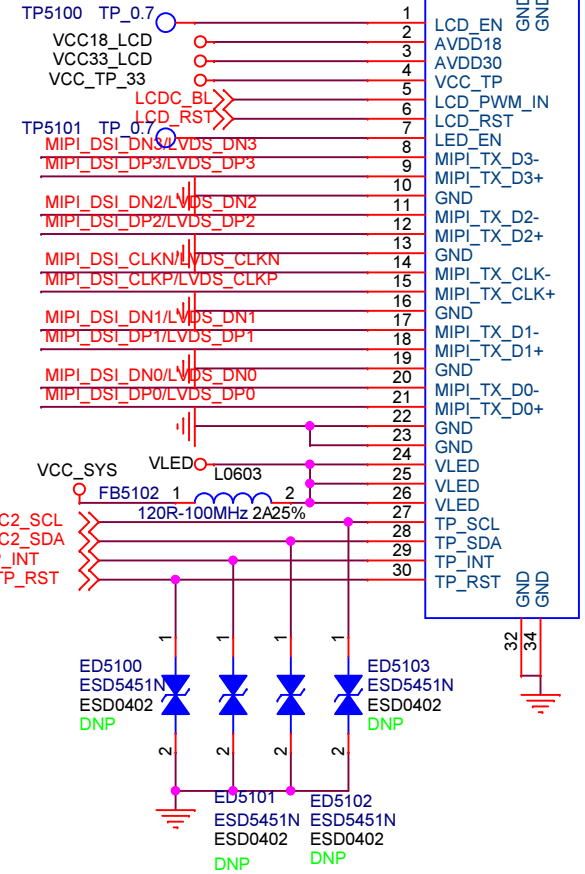
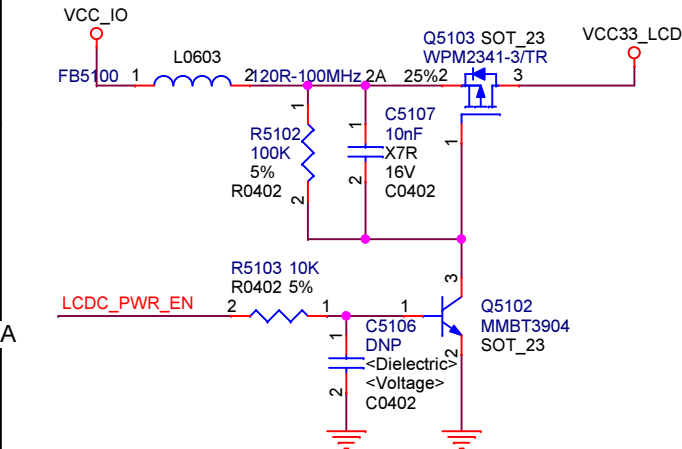
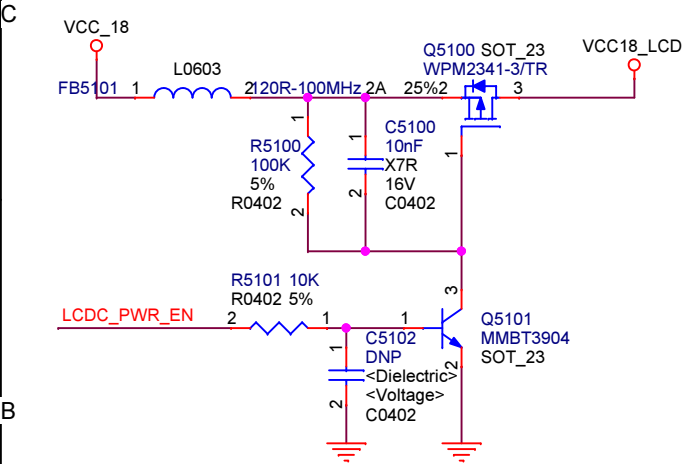
Fuzhou Rockchip Electronics

Project:	PX3-SE_IVN_REF_V10		
File:	LCD_MIPI		
Date:	Thursday, March 02, 2017	Rev:	V1.0
Designed by:	ZHM	Sheet:	50 of 99

MIPI-DSI

MIPI_DSI_DP0/LVDS_DP0
MIPI_DSI_DN0/LVDS_DN0
MIPI_DSI_DP1/LVDS_DP1
MIPI_DSI_DN1/LVDS_DN1
MIPI_DSI_DP2/LVDS_DP2
MIPI_DSI_DN2/LVDS_DN2
MIPI_DSI_DP3/LVDS_DP3
MIPI_DSI_DN3/LVDS_DN3
MIPI_DSI_CLKP/LVDS_CLKP
MIPI_DSI_CLKN/LVDS_CLKN

LCDC_PWR_EN
LCDC_BL
LCD_RST



Rockchip
瑞芯微电子

Fuzhou Rockchip Electronics

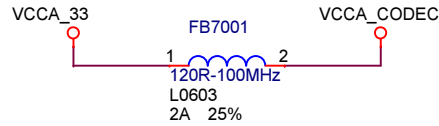
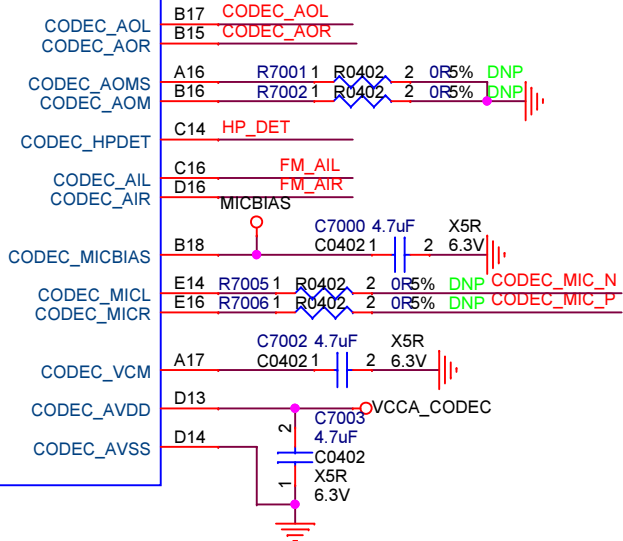
Project: PX3-SE_IVN_REF_V10			
File: LCD_MIPI			
Date:	Thursday, March 02, 2017	Rev:	V1.0
Designed by:	ZHM	Sheet:	51 of 99



PX3-SE-F

U1000F
PX3-SE
BGA316 14R00X14R00X1R20

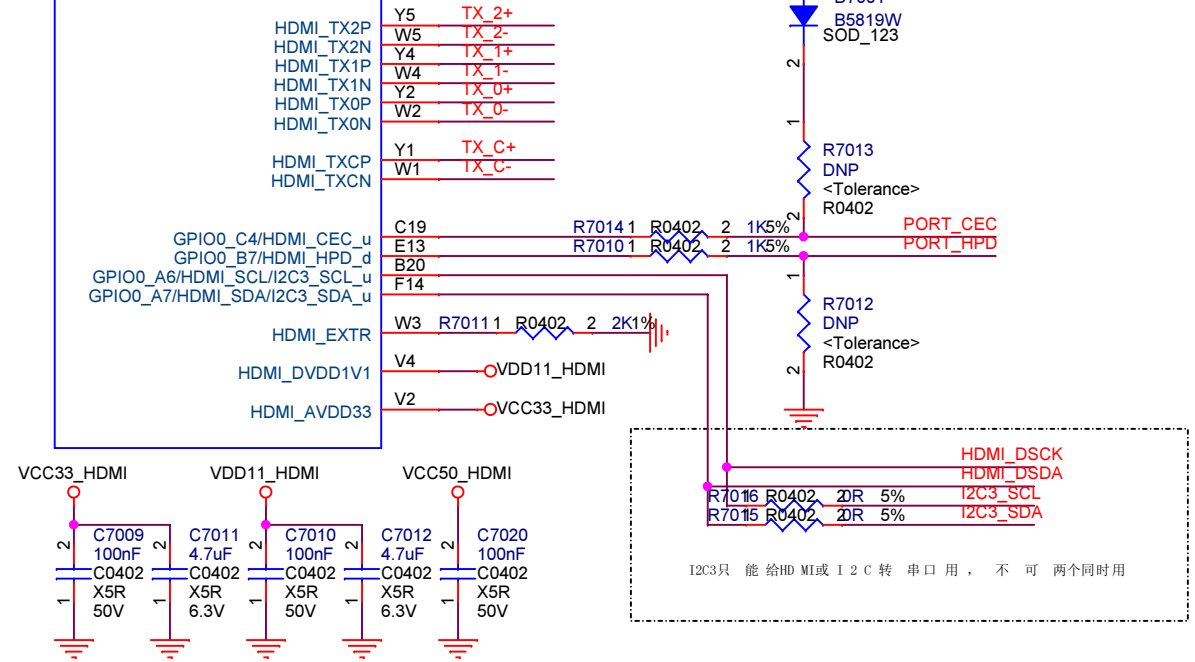
Codec



HDMI

U1000H
PX3-SE
BGA316 14R00X14R00X1R20

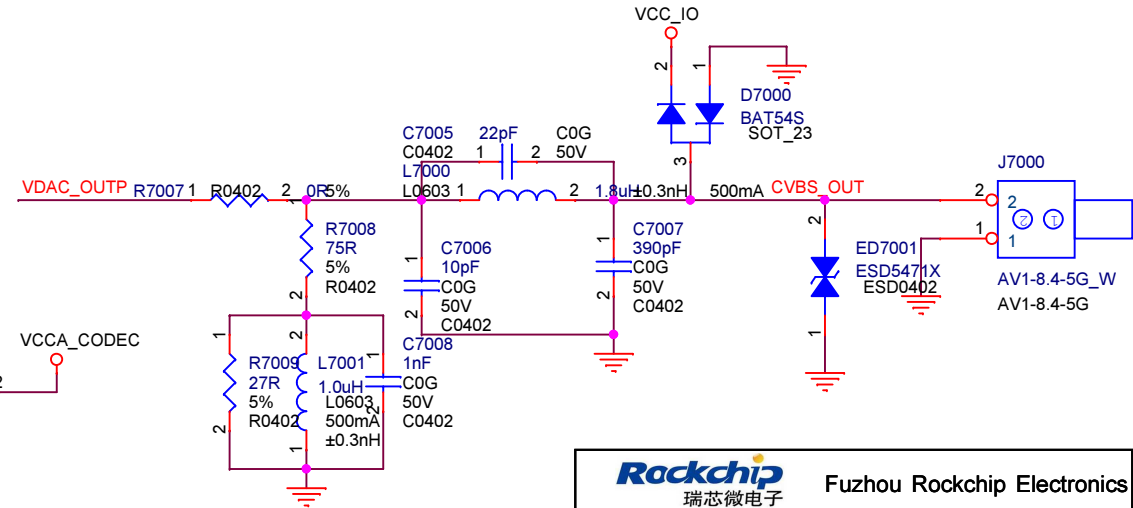
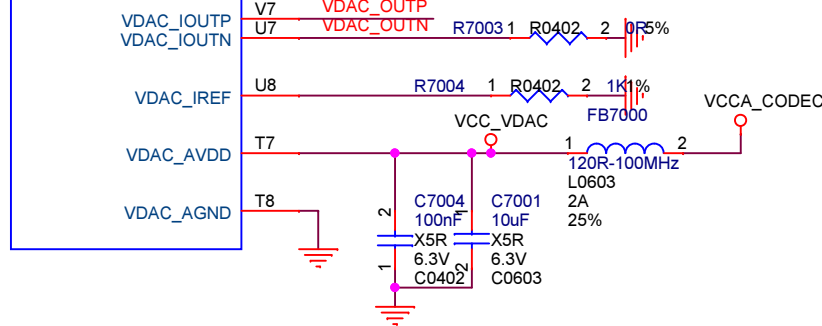
HDMI TX



PX3-SE-G

U1000G
PX3-SE
BGA316 14R00X14R00X1R20

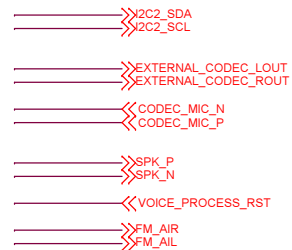
VDAC

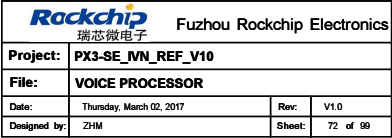


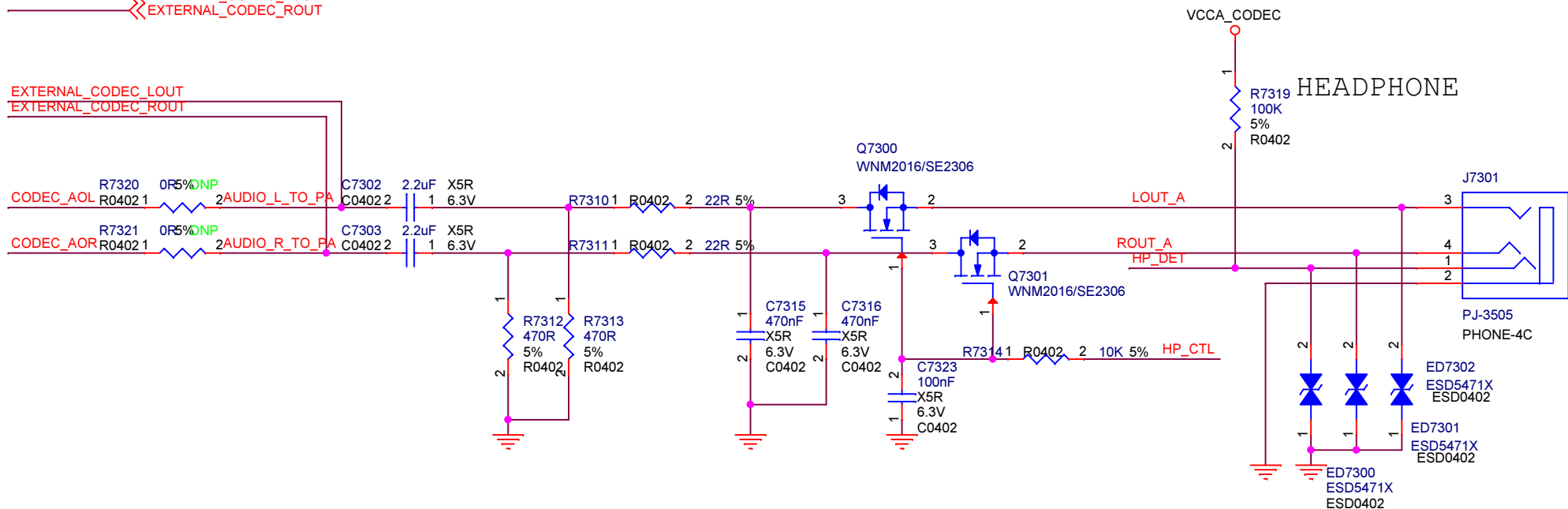
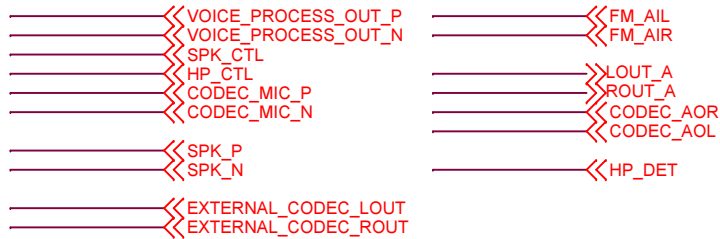
Rockchip
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Project:	PX3-SE_IVN_REF_V10		
File:	PX3 CODEC/CVBS OUT/HDMI		
Date:	Thursday, March 02, 2017	Rev:	V1.0
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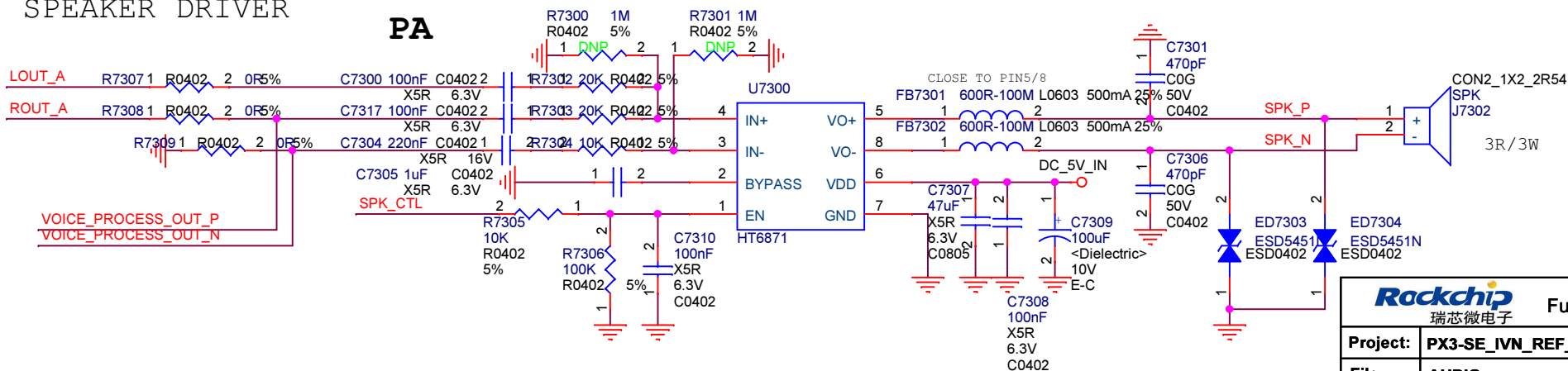






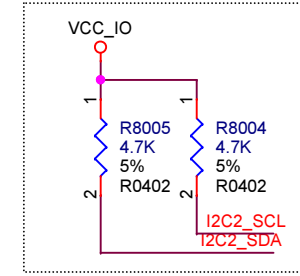
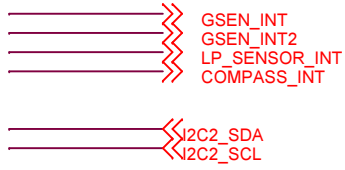
SPEAKER DRIVER

PA

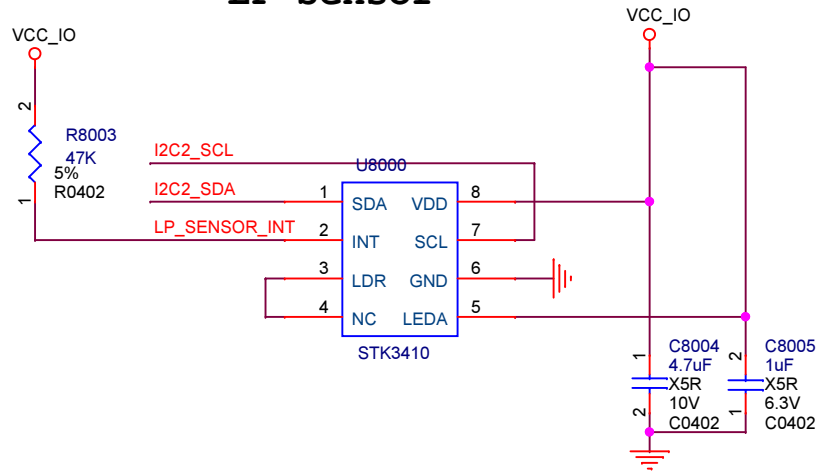


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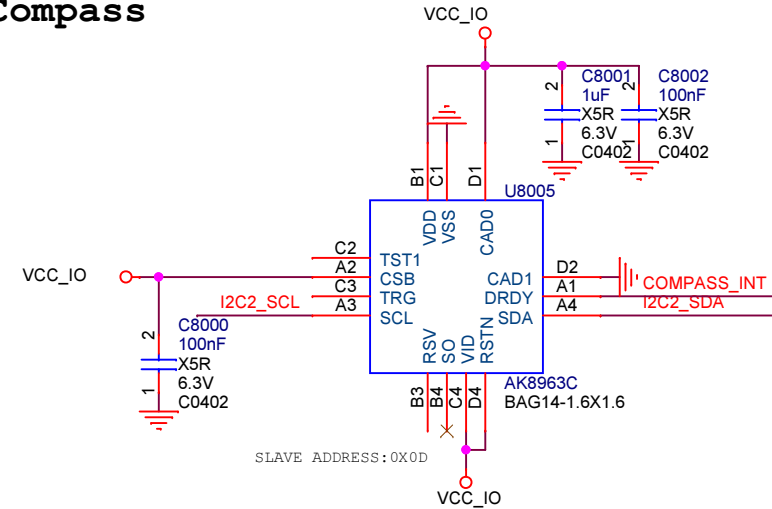
Project:	PX3-SE_IVN_REF_V10		
File:	AUDIO		
Date:	Thursday, March 02, 2017	Rev:	V1.0
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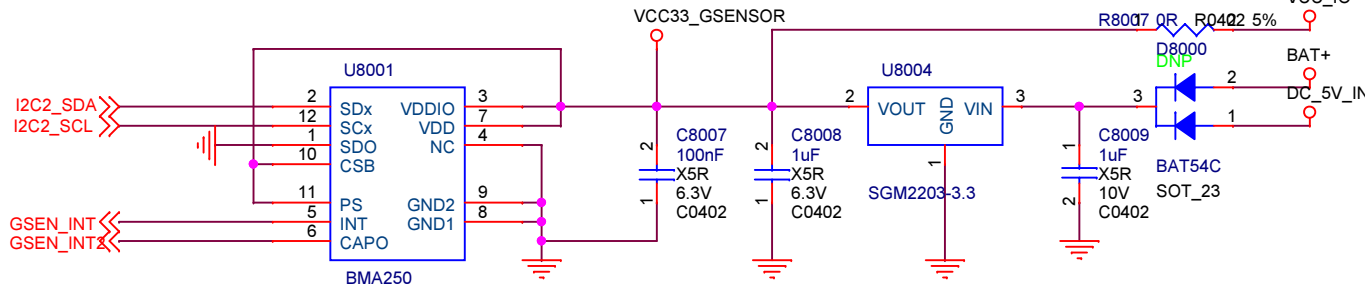
LP Sensor



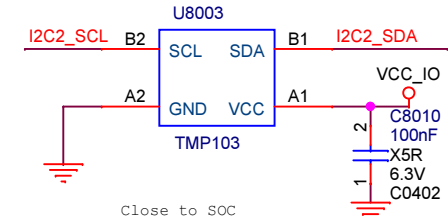
Compass



G-Sensor



Temperature Sensor

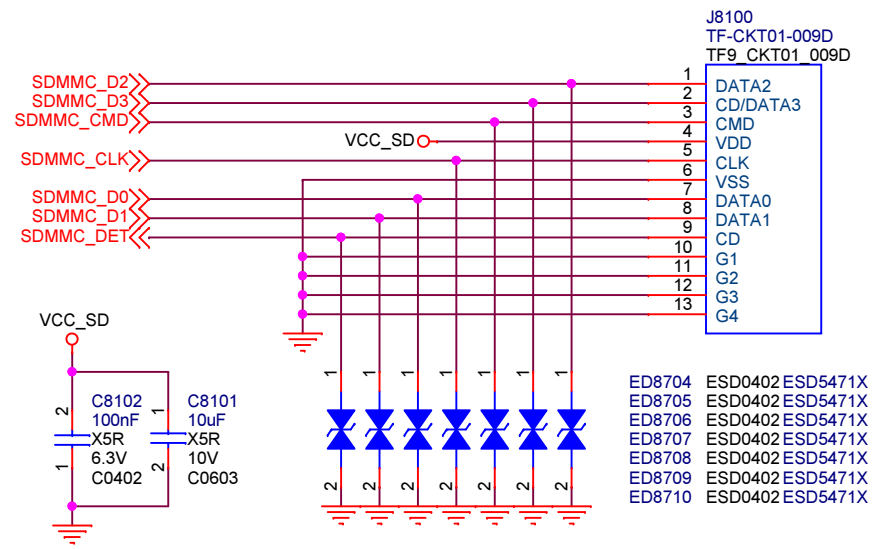


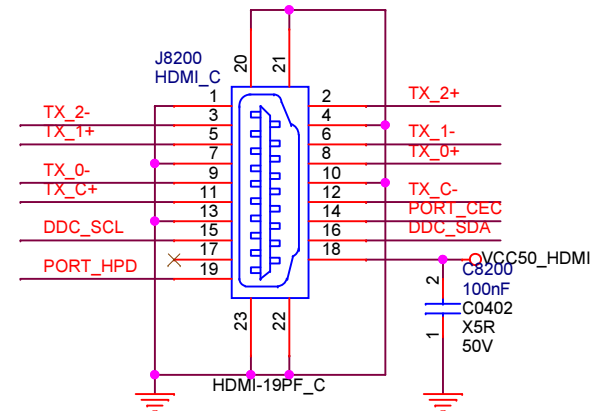
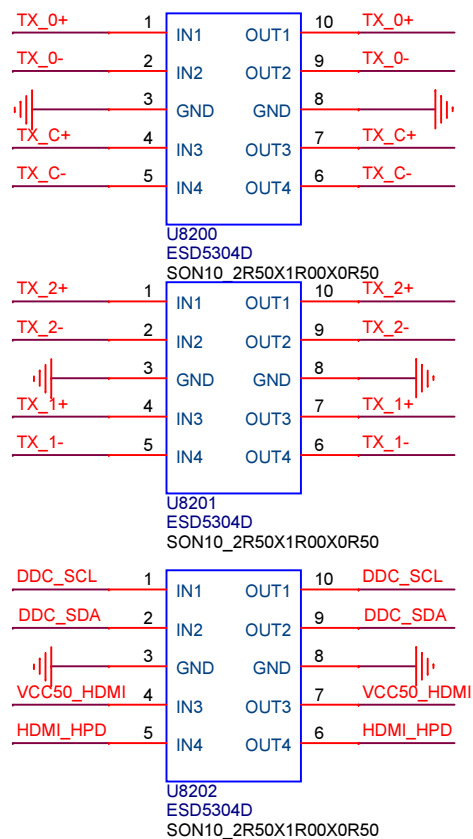
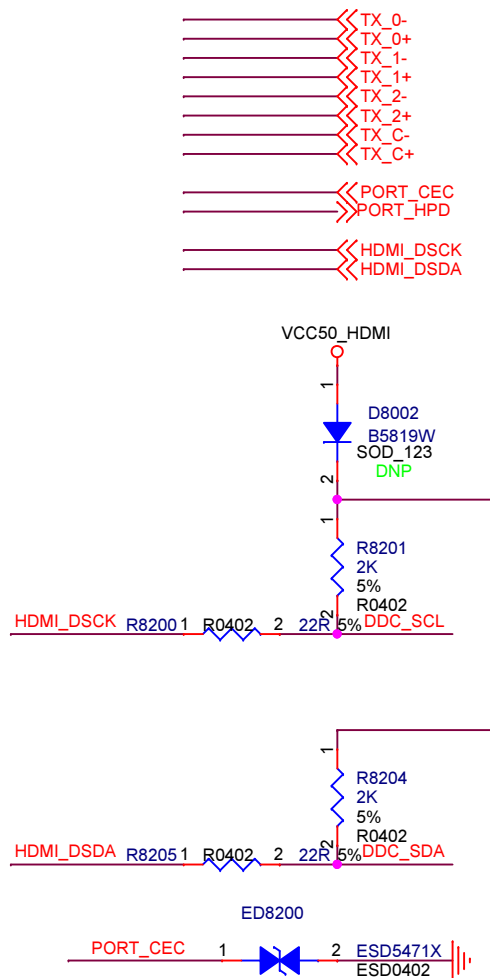
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Project:	PX3-SE_IVN_REF_V10		
File:	SENSOR		
Date:	Thursday, March 02, 2017	Rev:	V1.0
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TF CARD



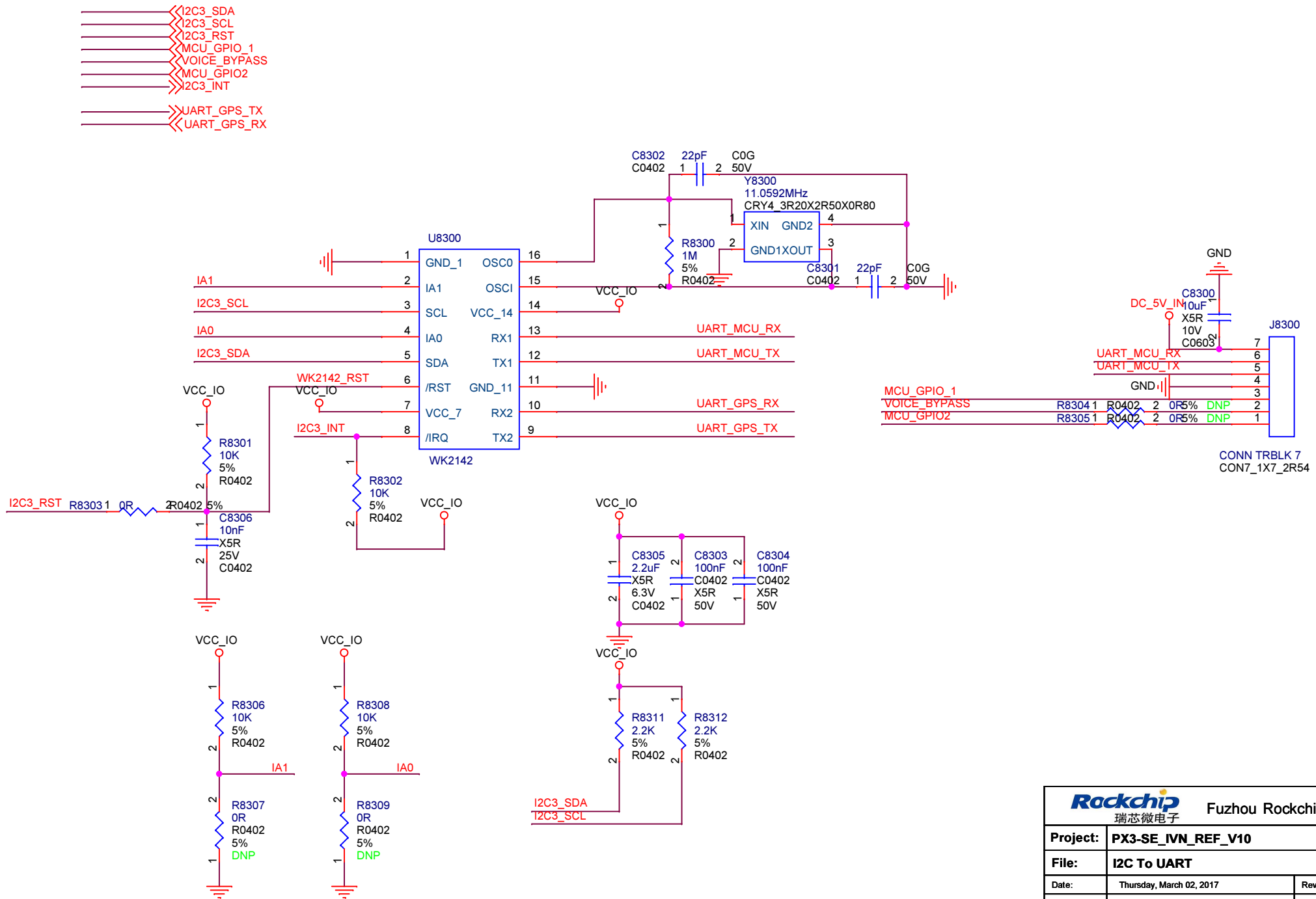



D

C

B

A



 瑞芯微电子		Fuzhou Rockchip Electronics	
Project:	PX3-SE_IVN_REF_V10		
File:	I2C To UART		
Date:	Thursday, March 02, 2017	Rev:	V1.0
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