

Reference Schematic For PX30

PX30_REF_V1.2

PMIC: RK809-1 (5BUCK + 9LDO + Codec)
RAM: DDR3 /LPDDR3/DDR4
ROM: eMMC/Nand + TF card
Interface: MIPI CSI/MIPI DSI/UART/I2S/RMII

Rockchip Confidential

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Project:	PX30 REF				
File:	00.Cover Page//OK				
Date:	Tuesday, August 02, 2022		Rev:	V1.0	
Designed by:	Linta	Reviewed by:	cjx	Sheet	1 of 24

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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

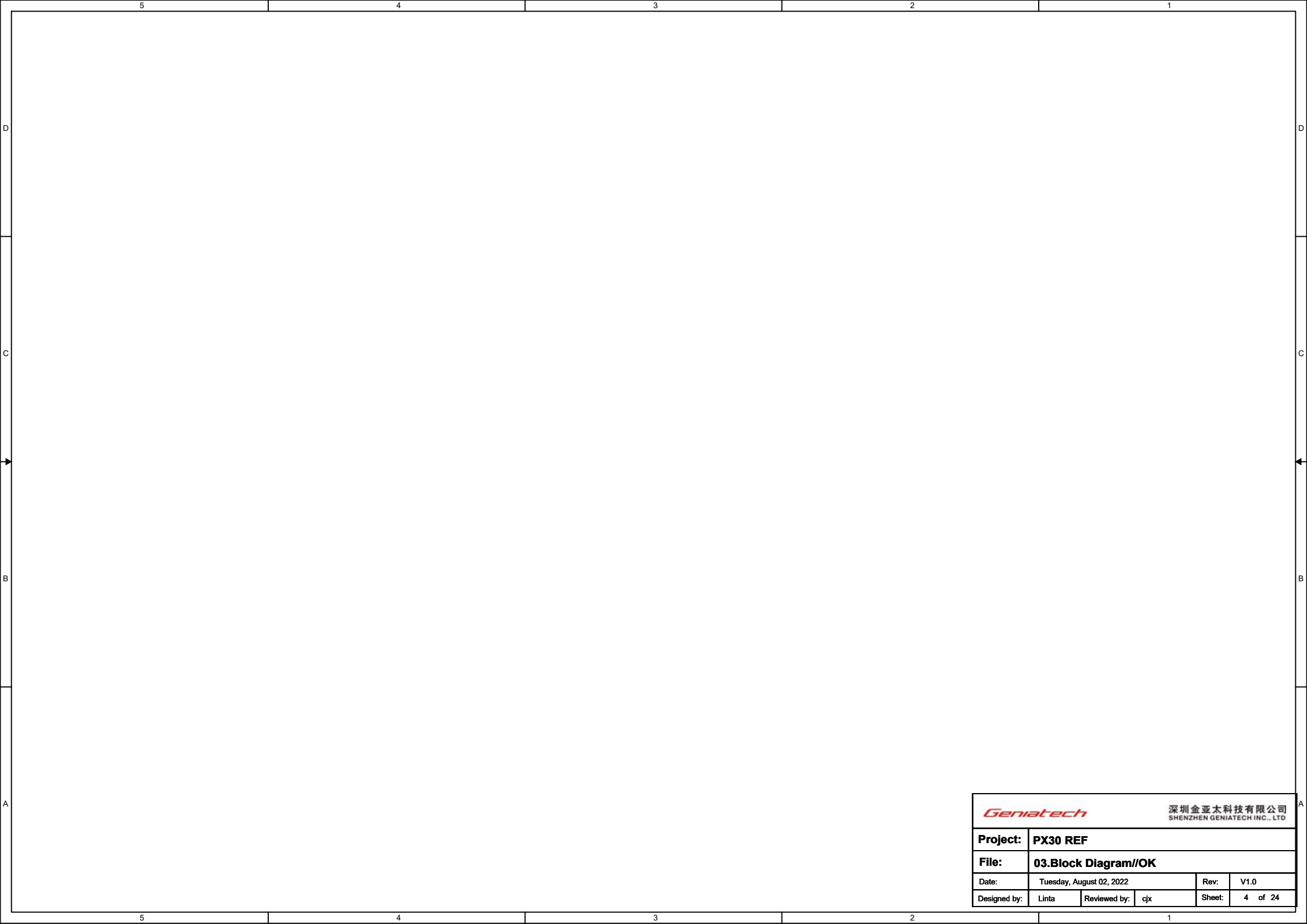
Header:

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}

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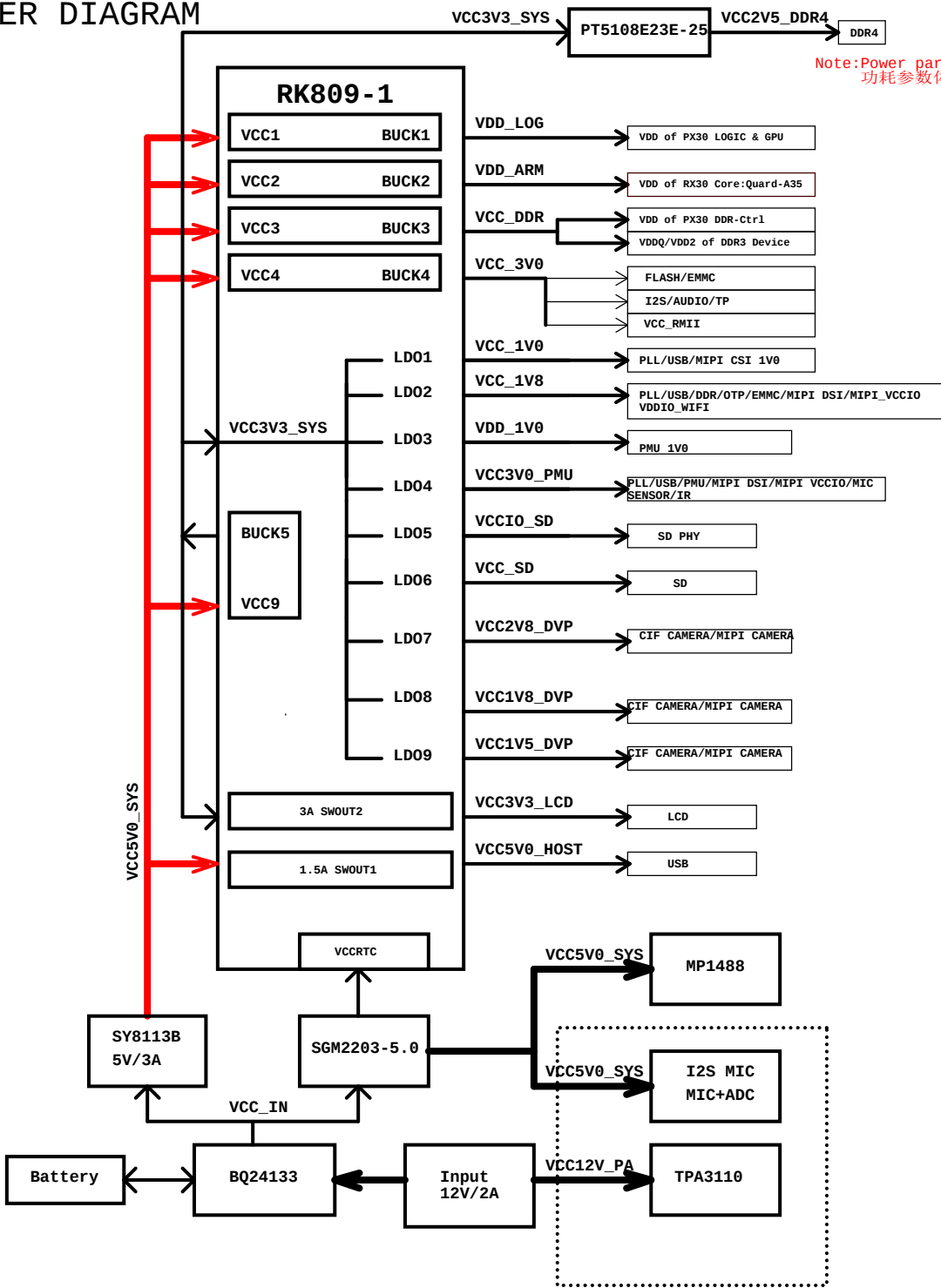
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Project:	PX30 REF				
File:	03.Block Diagram//OK				
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I2C MAP

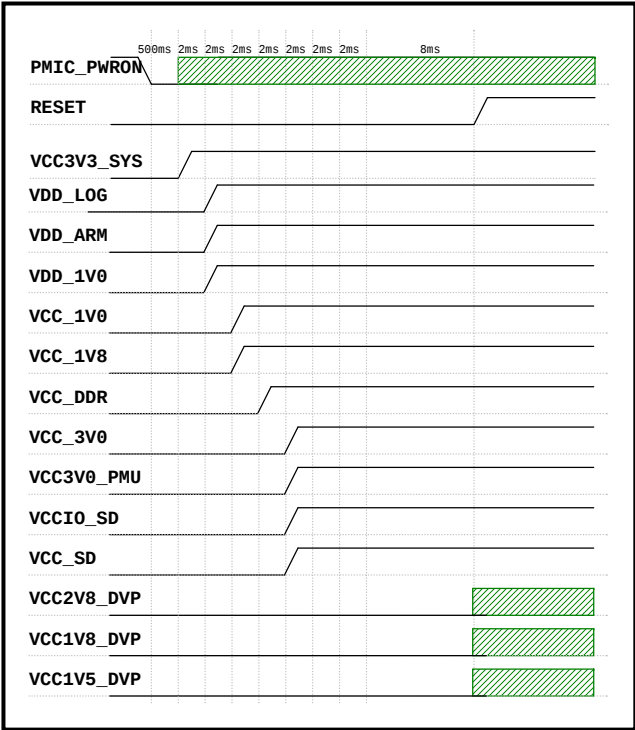
Port	Pin name	Domain	Bus name	Pull-up voltage	Slave Device	Slave Addr (MS 7Bits)	Note	Slave Bus Capability
I2C0	I2C0_SCL/GPI00_B0_u I2C0_SDA/GPI00_B1_u	PMUI02	I2C0_SCL_PMIC I2C0_SDA_PMIC	VCC3V0_PMU	Rockchip RK809	0x20	PMIC	
					Rockchip RK618	0x50	Video	
I2C1	I2C1_SCL/PMU_DEBUG5/GPI00_C2_u I2C1_SDA/GPI00_C3_u	PMUI02	I2C1_SCL I2C1_SDA	VCC3V0_PMU	MMA7660FCT	0x4C	3-Axis Orientation/Motion Detection Sensor	100kHz, 400kHz
					AK8963C	0x0E	3-axis Electronic Compass	100kHz, 400kHz
					GSL1680	0x40	Touch IC	100kHz, 400kHz
					GSL3676	0x40	Touch IC	100kHz, 400kHz
I2C2	I2C2_SCL/GPI02_B7_u I2C2_SDA/GPI02_C0_u	VCCIO3	I2C2_SCL_CAM I2C2_SDA_CAM	VCCIO_DVP	OV5695	0X36	MIPI Camera	
					IMX323	0X1a	CIF Camera	

POWER DIAGRAM

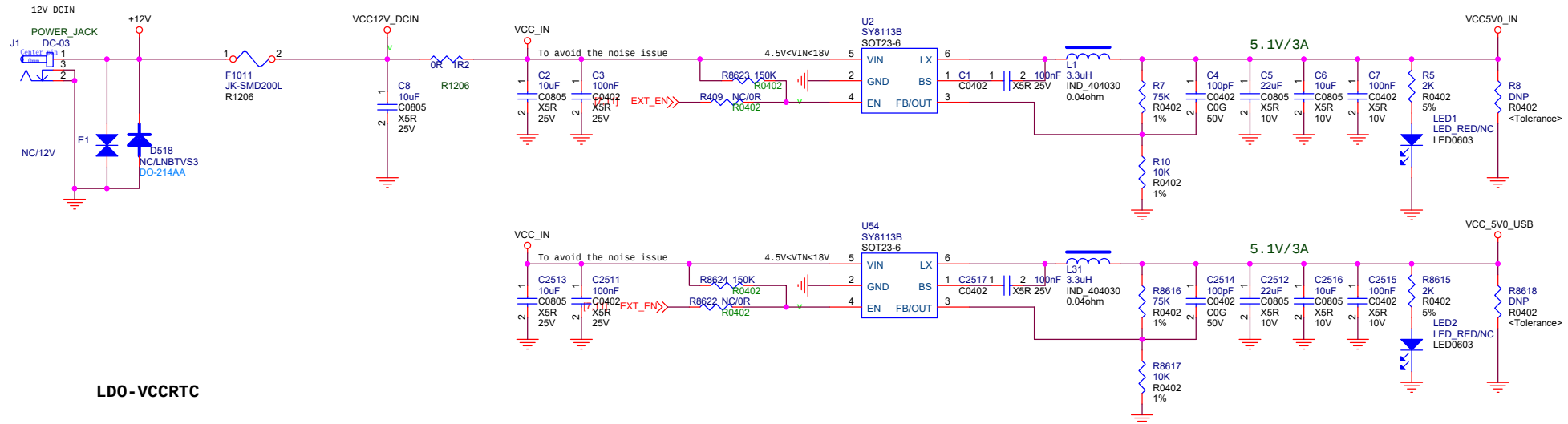
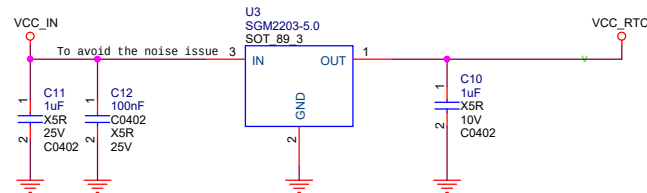


Note: Power parameter shows the Peak value of system consumption.
功耗参数体现的是系统峰值功率

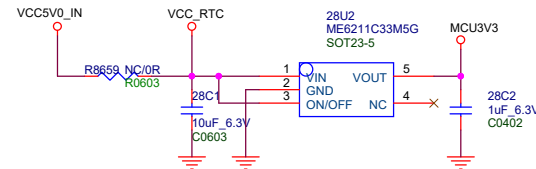
RK809-1 Power-on Sequence							
PowerName	PMIC Channel	Time Slot (step 2mS)	Default voltage	Supply Limit	Default ON/OFF	Sleep ON/OFF	Peak Current
VDD_ARM	BUCK1	Slot:2	1.0V	2.5A	ON	OFF	1160mA
VDD_LOG	BUCK2	Slot:2	1.0V	2.5A	ON	OFF	1020mA
VCC_DDR	BUCK3	Slot:4	1.0V	1.5A	ON	OFF	790mA
VCC_3V0	BUCK4	Slot:5	3.0V	1.5A	ON	OFF	360mA
VCC3V3_SYS	BUCK5	Slot:1	3.3V	1.5A	ON	OFF	360mA
VCC1V0	LD01	Slot:3	2.5V	500mA	ON	OFF	235mA
VCC1V8	LD02	Slot:3	1.8V	500mA	ON	OFF	13.6mA
VDD1V0	LD03	Slot:2	1.0V	500mA	ON	OFF	9mA
VCC3V0_PMU	LD04	Slot:5	3.0V	100mA	ON	OFF	9mA
VCCIO_SD	LD05	Slot:5	3.0V	500mA	ON	OFF	9mA
VCC_SD	LD06	Slot:5	3.0V	500mA	ON	OFF	9mA
VCC2V8_DVP	LD07	Slot:5	2.8V	500mA	OFF	OFF	9mA
VCC1V8_DVP	LD08	Slot:5	1.8V	500mA	OFF	OFF	9mA
VCC1V5_DVP	LD09	Slot:5	1.5V	500mA	OFF	OFF	9mA
RESET	RESETB	Slot:11	0V	500mA	OFF	OFF	9mA



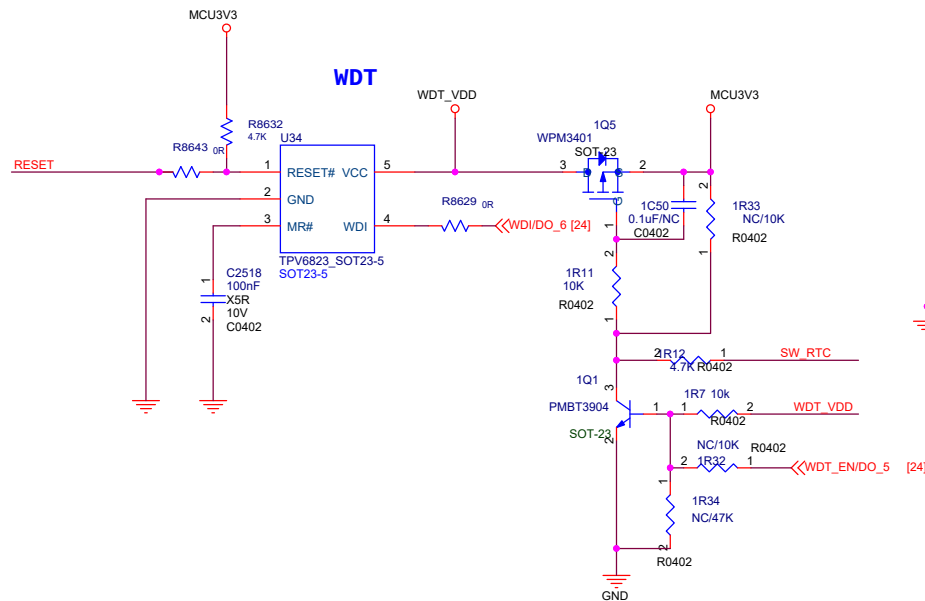
DC IN&SYSTEM Power

**LDO-VCCRTC**

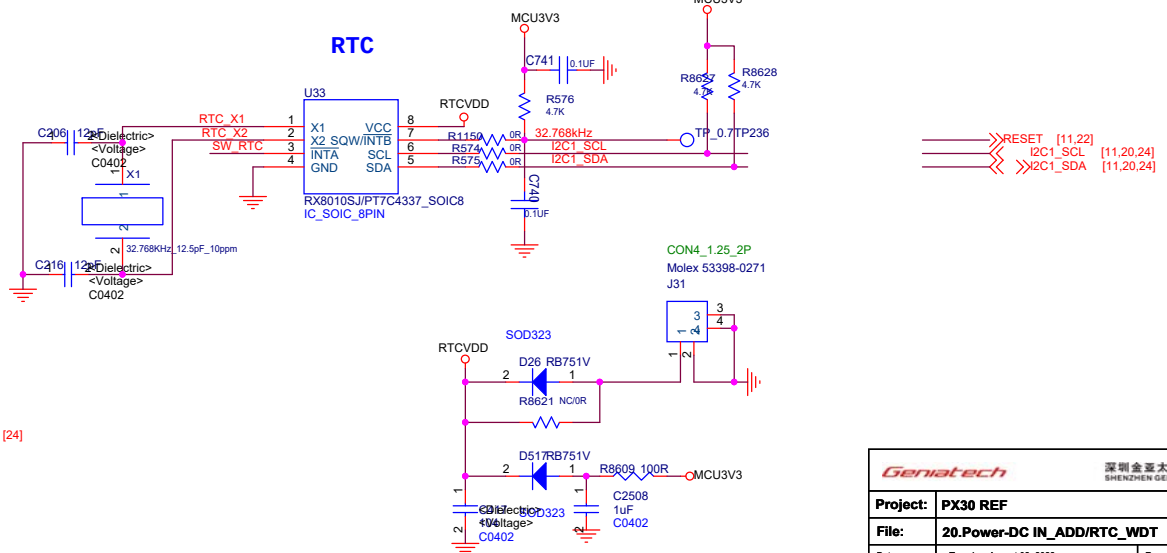
VCC_RTC_WDT

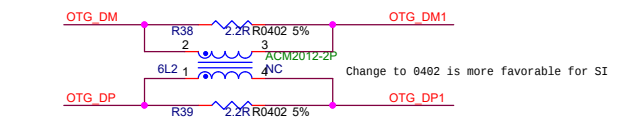


WDT

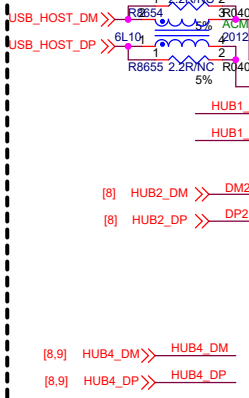


RTC

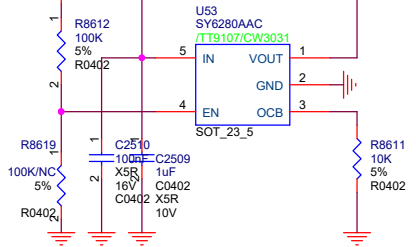
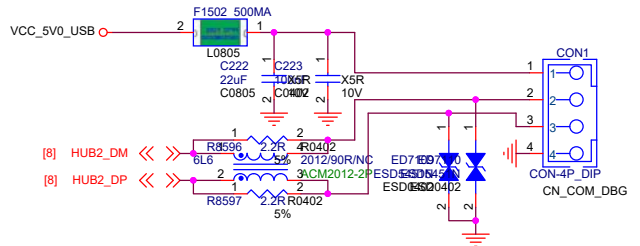




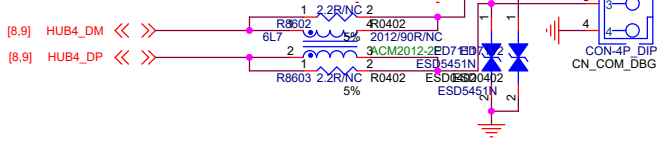
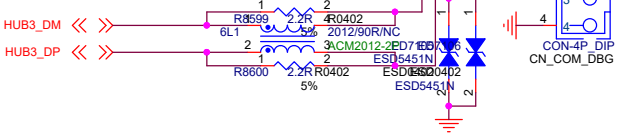
USB-T0-HUB



USB HOST

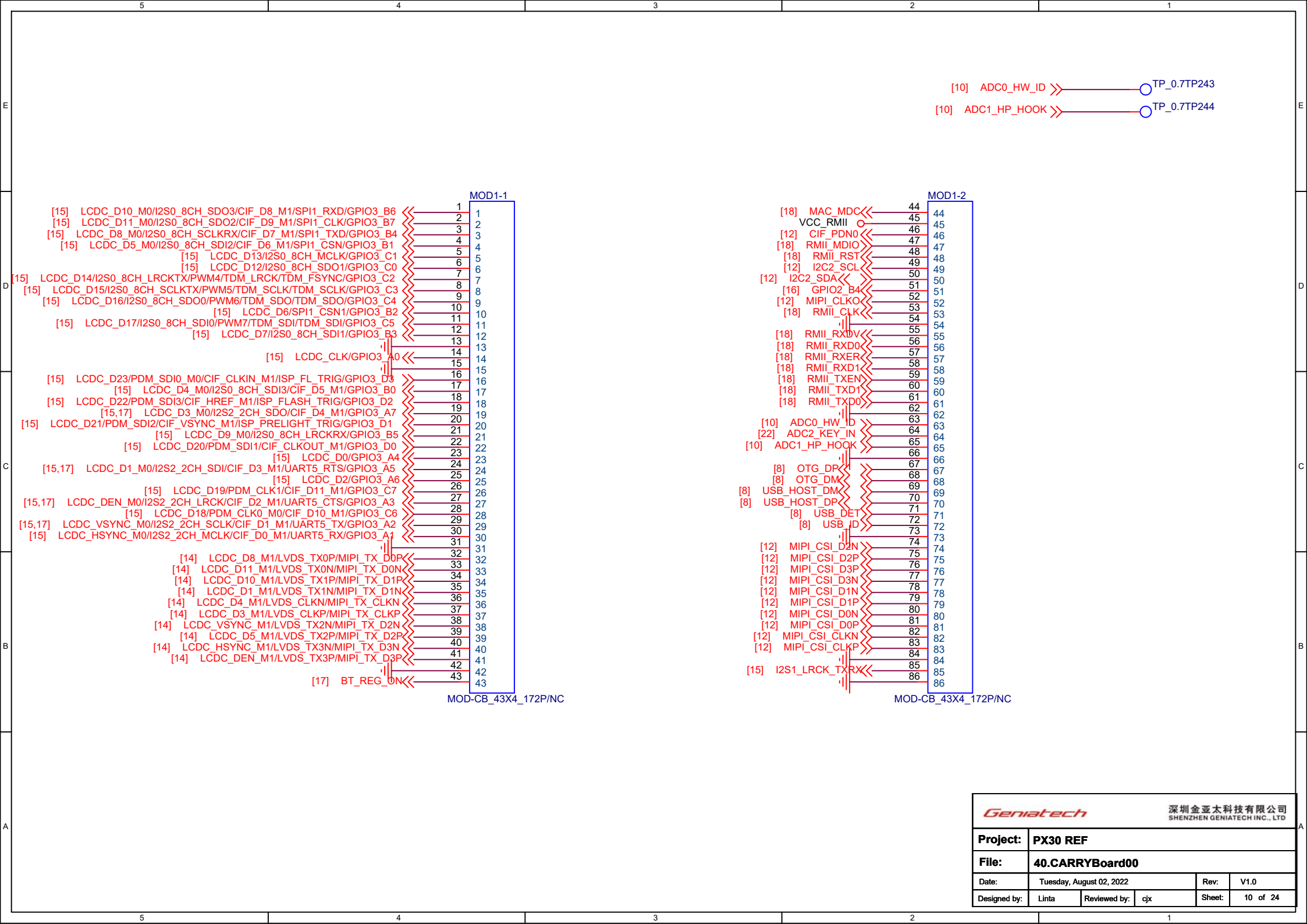


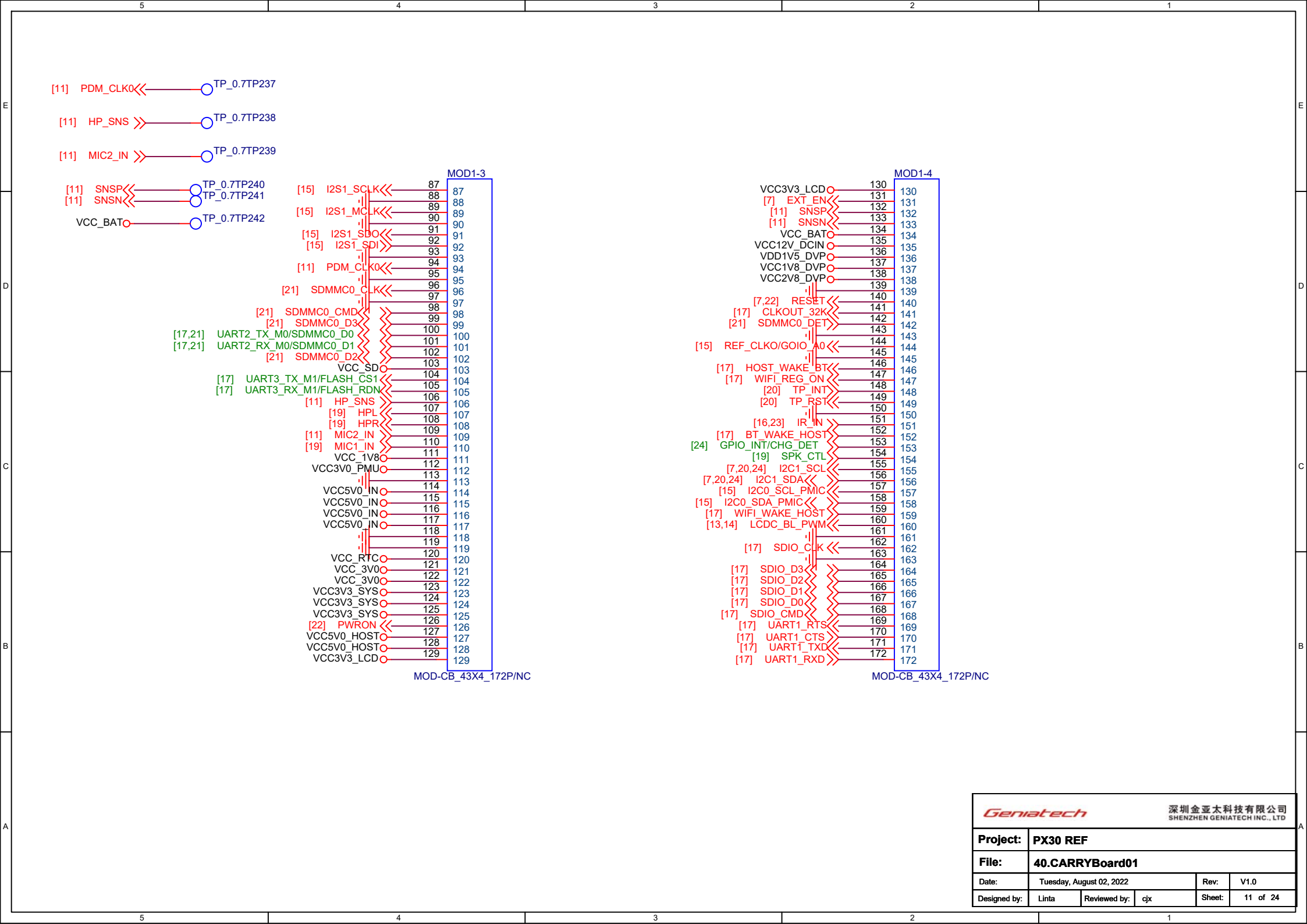
usb tuner modern



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File:	25.USB OTG/HOST&HUB
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Designed by:	Lintai
Reviewed by:	cjx
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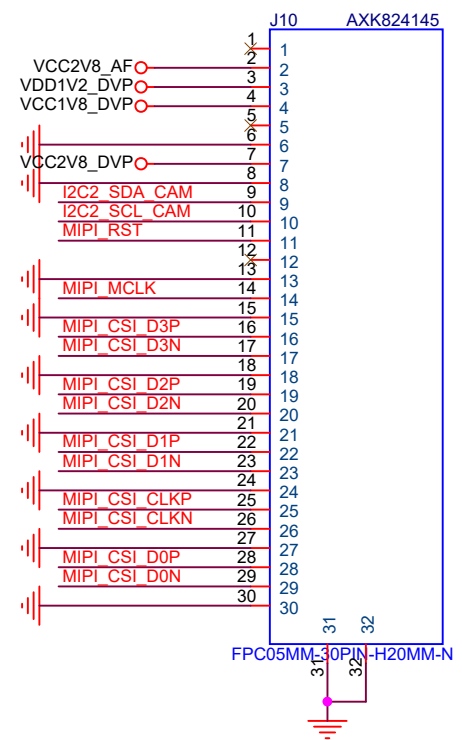
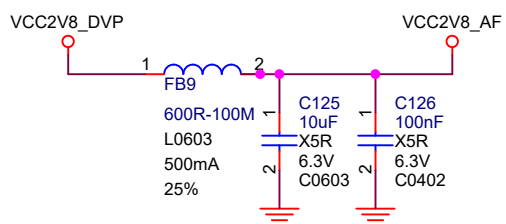
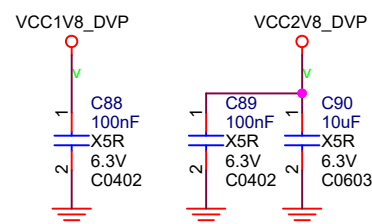
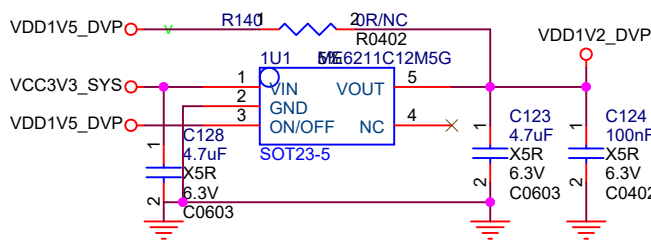
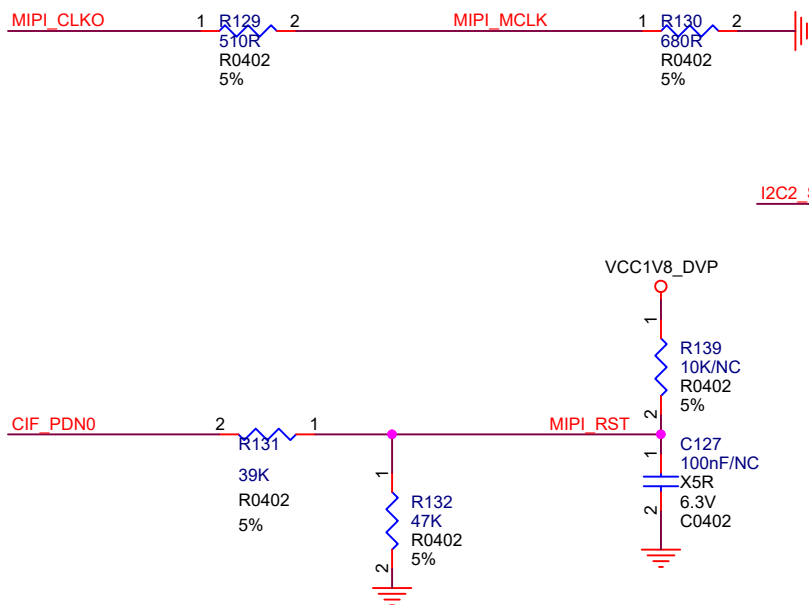
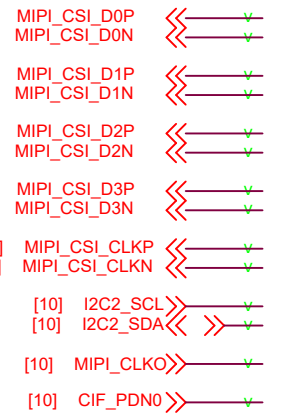




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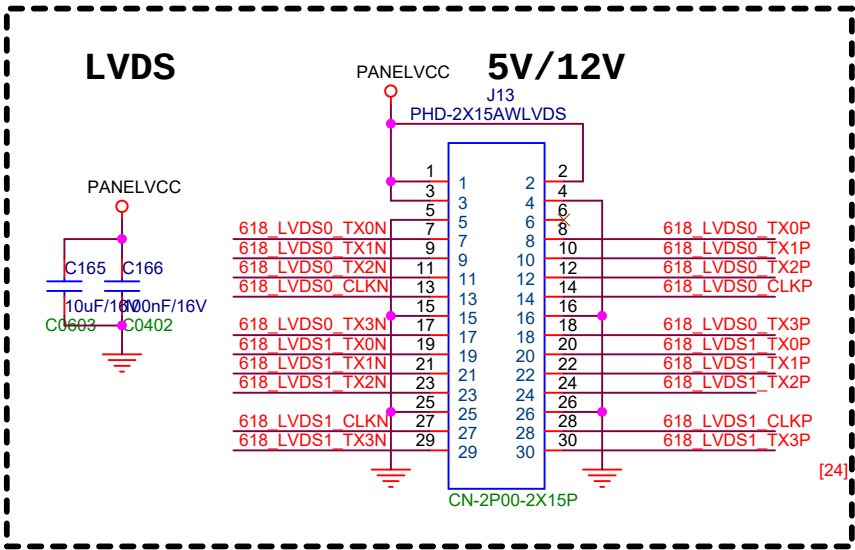
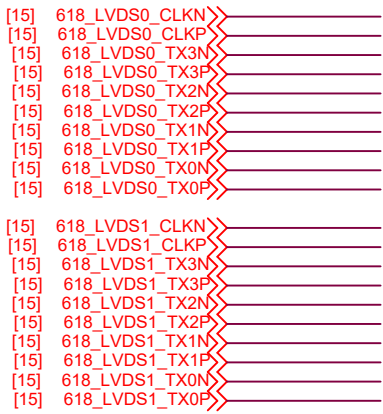
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MIPI Camera

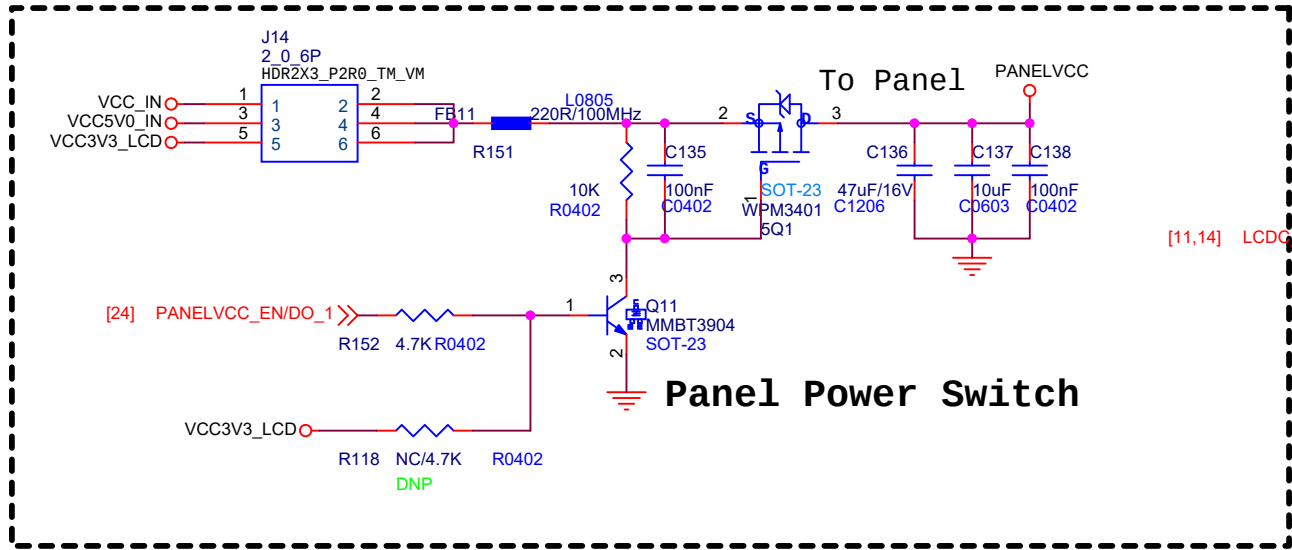
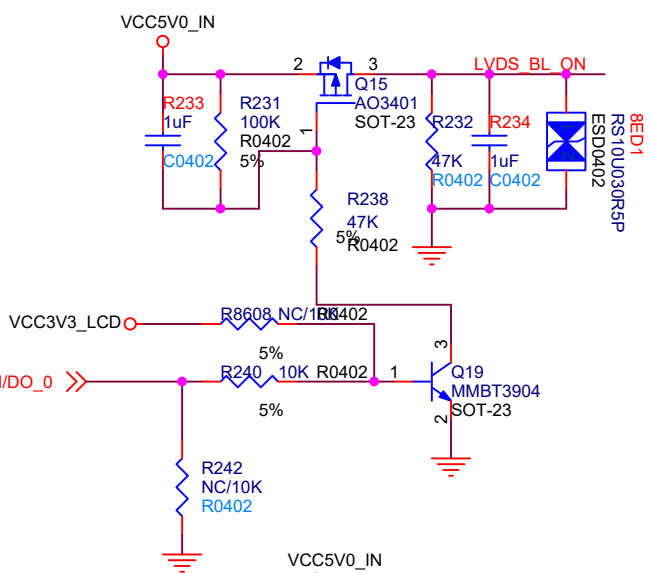


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Project:	PX30 REF		
File:	46.Camera-MIPI CSI		
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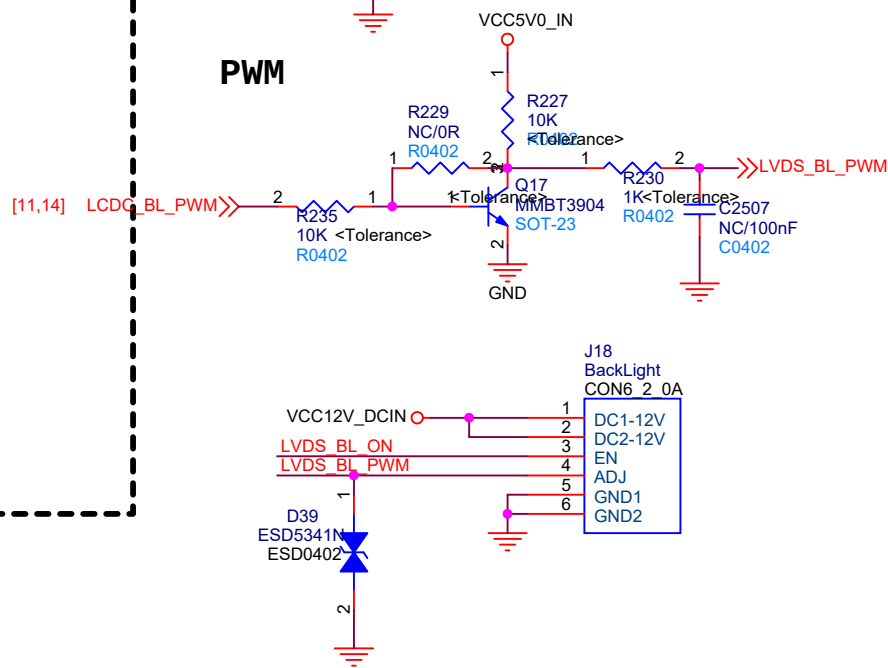
LVDS Panel



21.5' Backlight



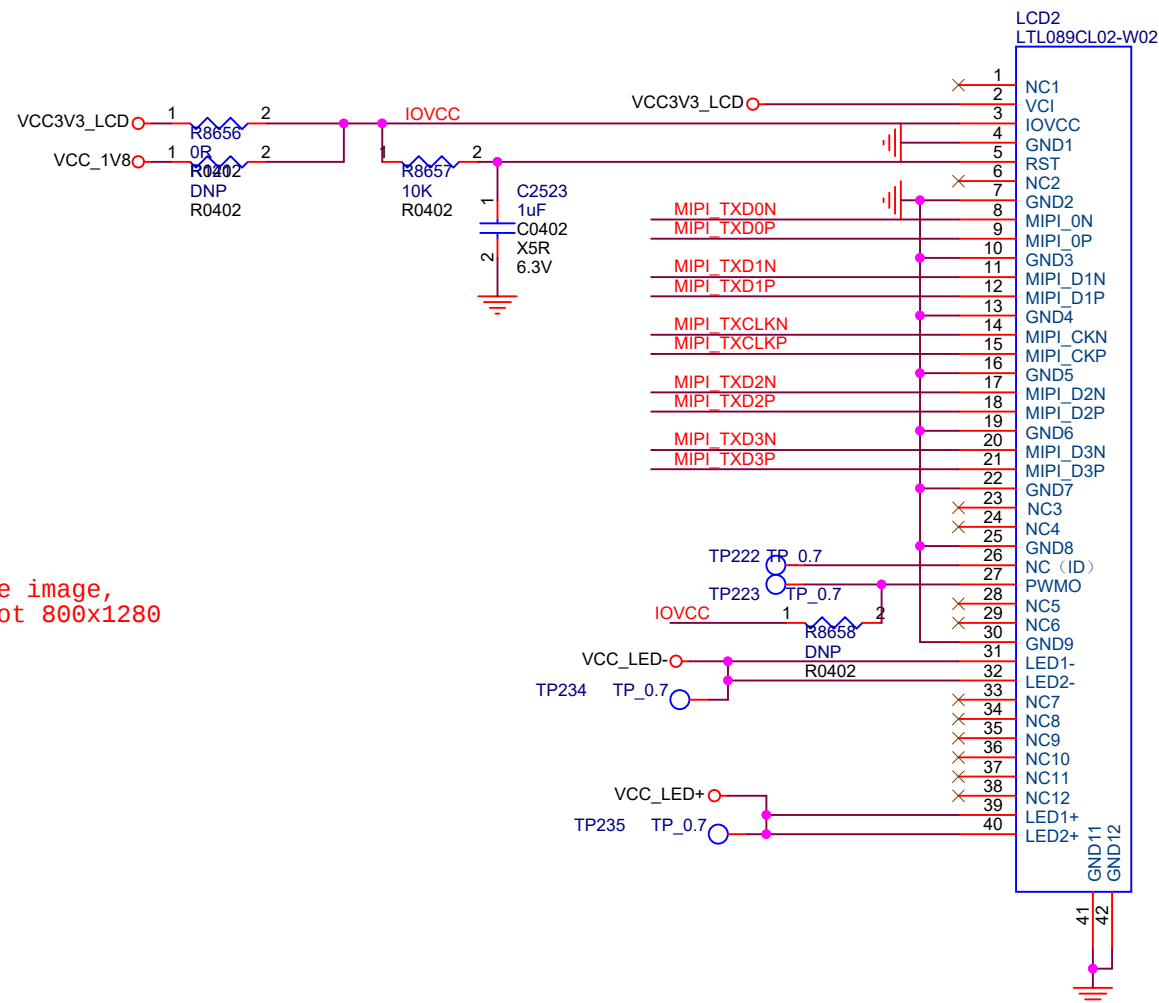
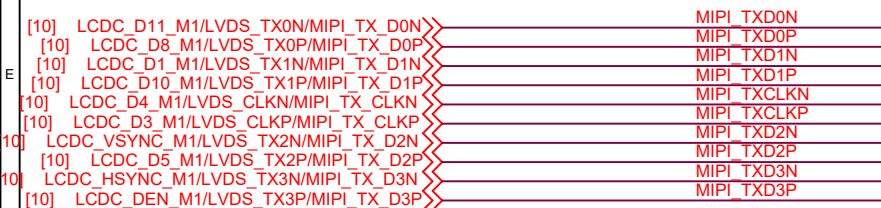
PWM



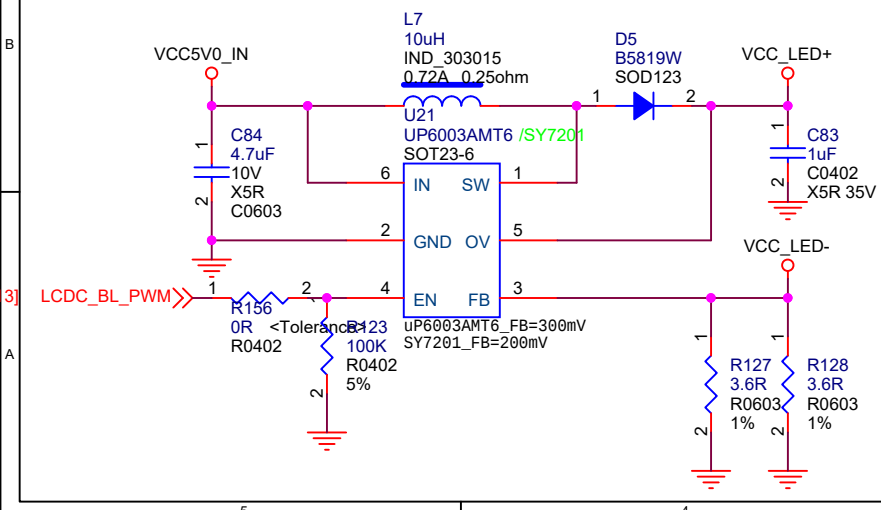
VCC12V_DCIN
VCC5V0_USB
VCC3V3_SYS

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Project:	PX30 REF		
File:	51.LCM-DLVDSPanel(option)		
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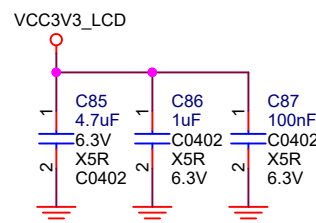
MIPI Panel



Note:
1. Use the MIPI output of RK618, please disconnect the RK3326.
2. If need to support of MIPI panel and HDMI with dual output same image, must use the physical cross screen panel, for example 1280x800, not 800x1280
1. 如果使用RK618的MIPI输出, 则可以不用连接到RK3326的MIPI输出接口。
2. 如果需要支持MIPI屏与HDMI的双屏同显, 则必须使用物理横屏, 例如屏幕像素为1280x800而不是800x1280的

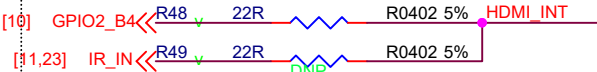


Note:
U5200 EN pin must support PWM brightness dimming control, Otherwise, it needs to be increased PWM circuit at FB pin.
R5203&R5204 should be placed close to the power pins of Panel Interface.
U5000的EN管脚需要能支持PWM动态背光调节功能, 否则就需要在DCDC的FB管脚增加PWM电路来进行调节。
R5203&R5204必须靠近屏连接座的电源管脚放置而不是靠近DCDC放置。

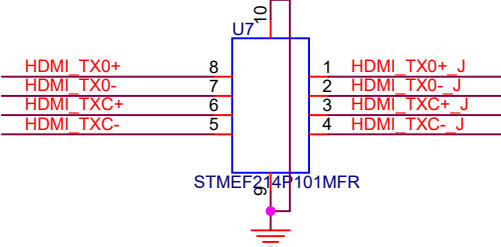
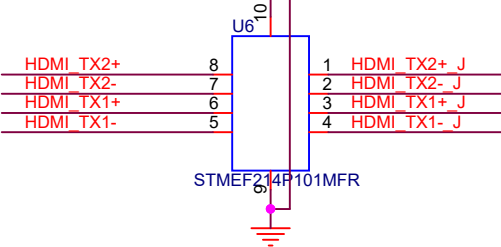
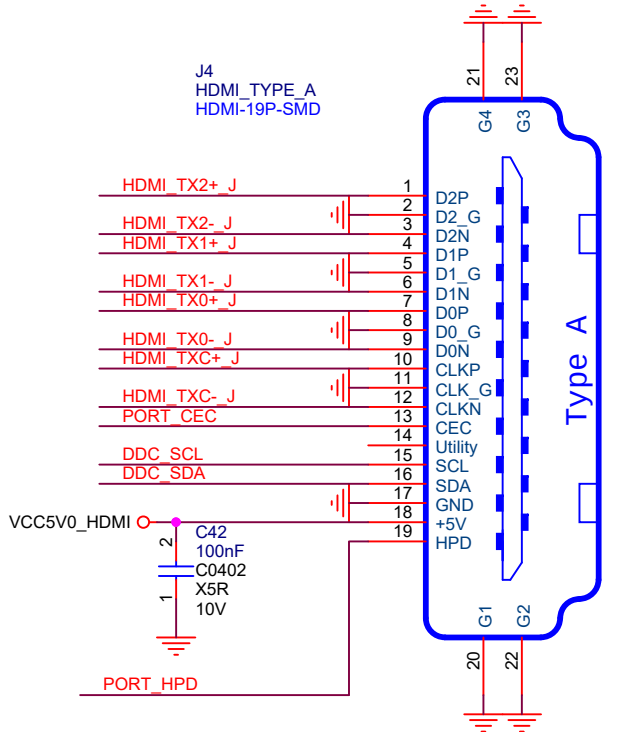
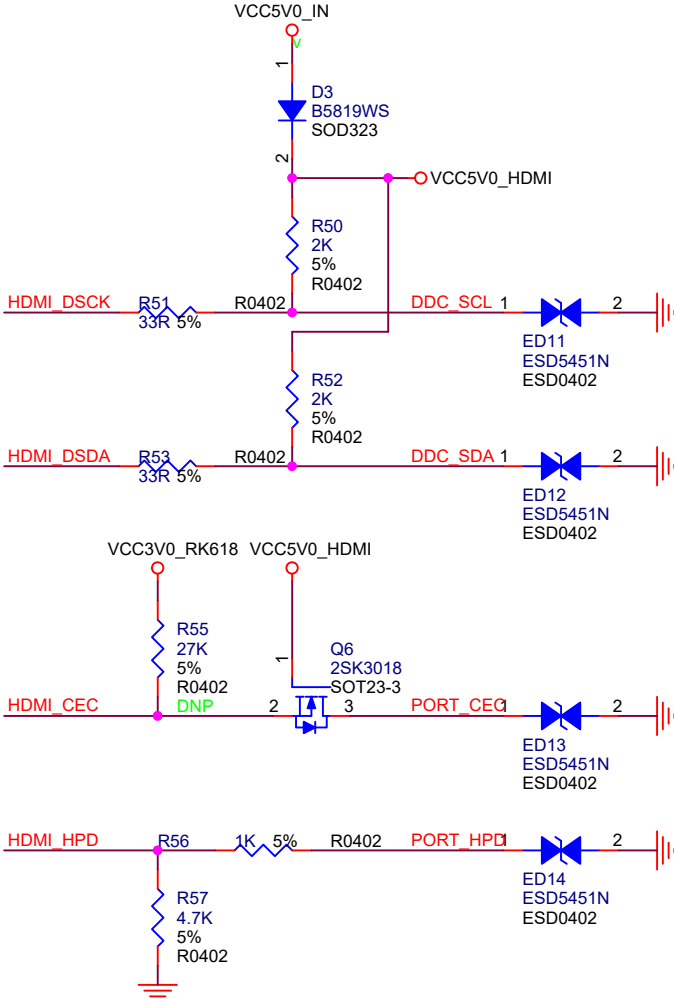
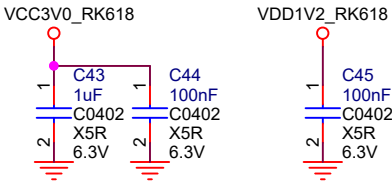
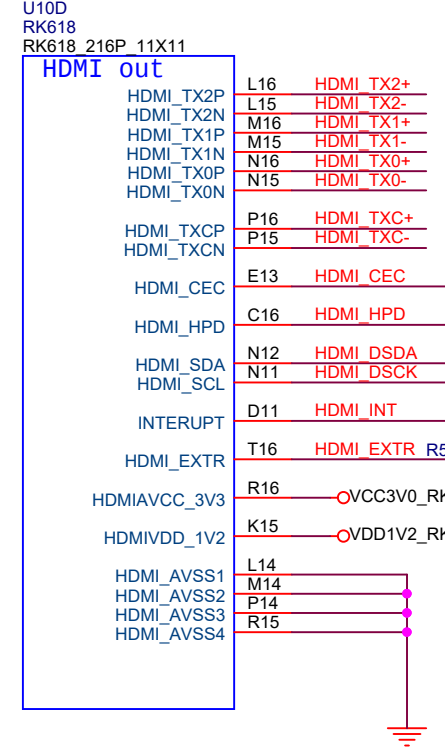


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HDMI Output

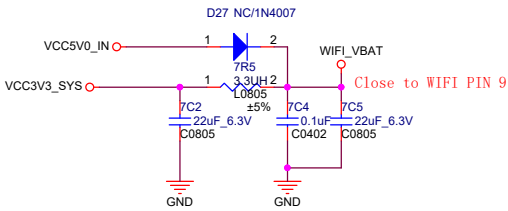
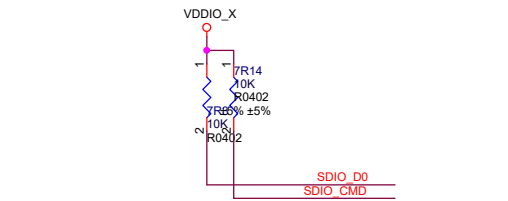
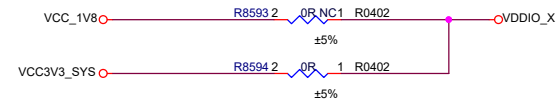


When using a CIF camera,GPIO2_B4 is used for the power control of CIF camera.
CIF/RK618/IR, three functions can't be used at the same time

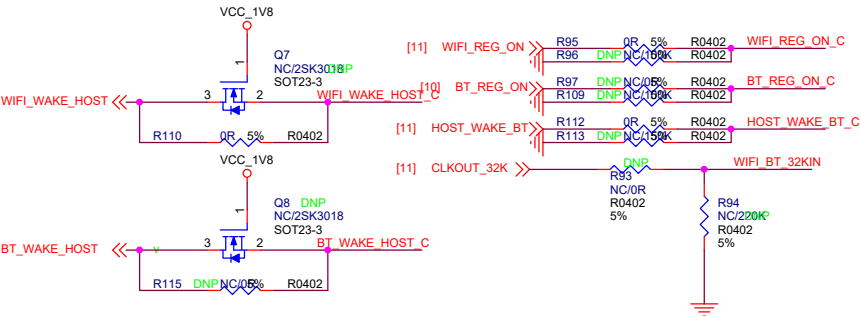


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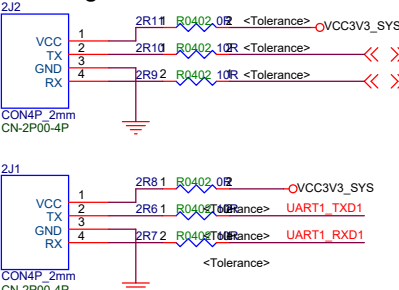
WIFI/BT MODULE



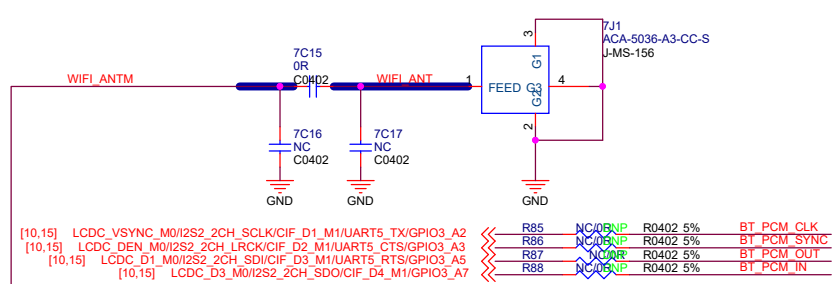
Level Shift

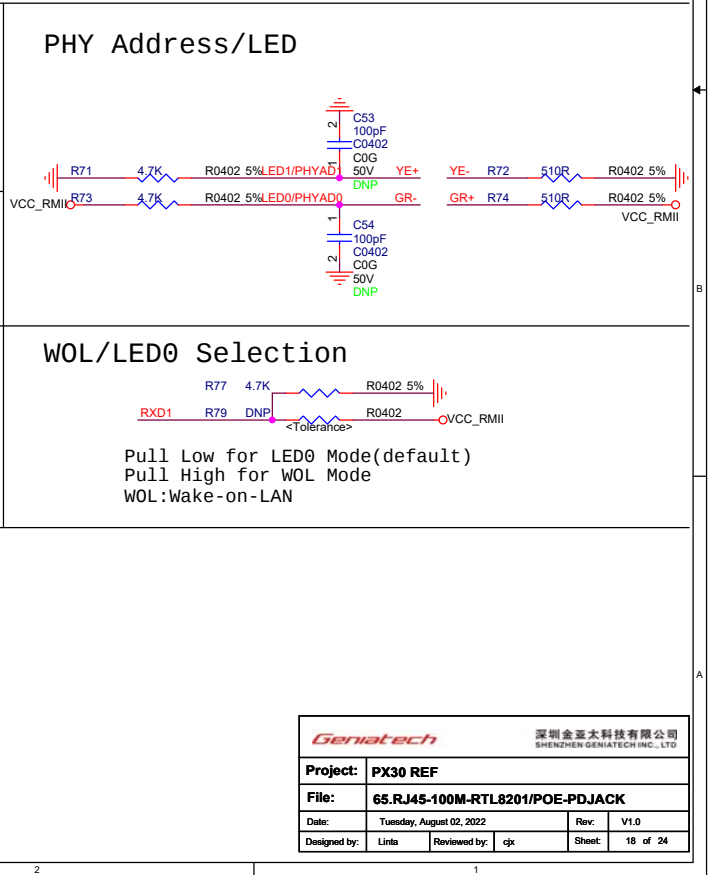
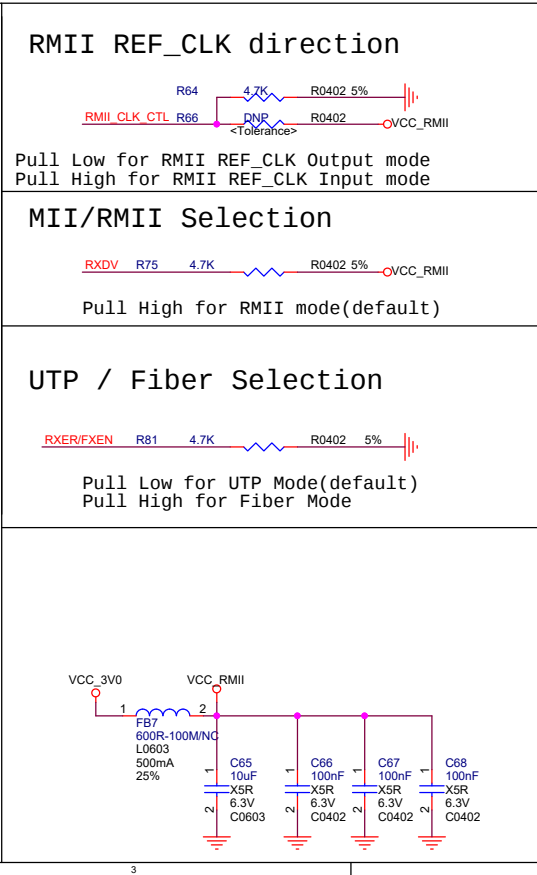
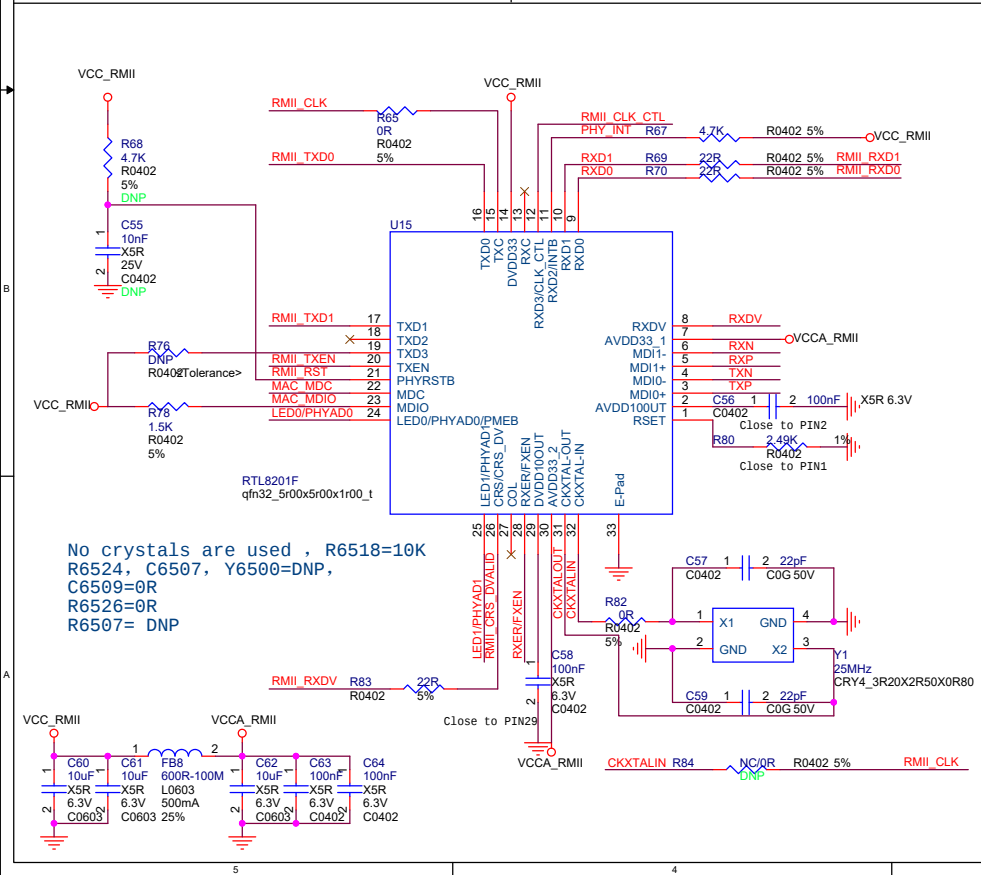
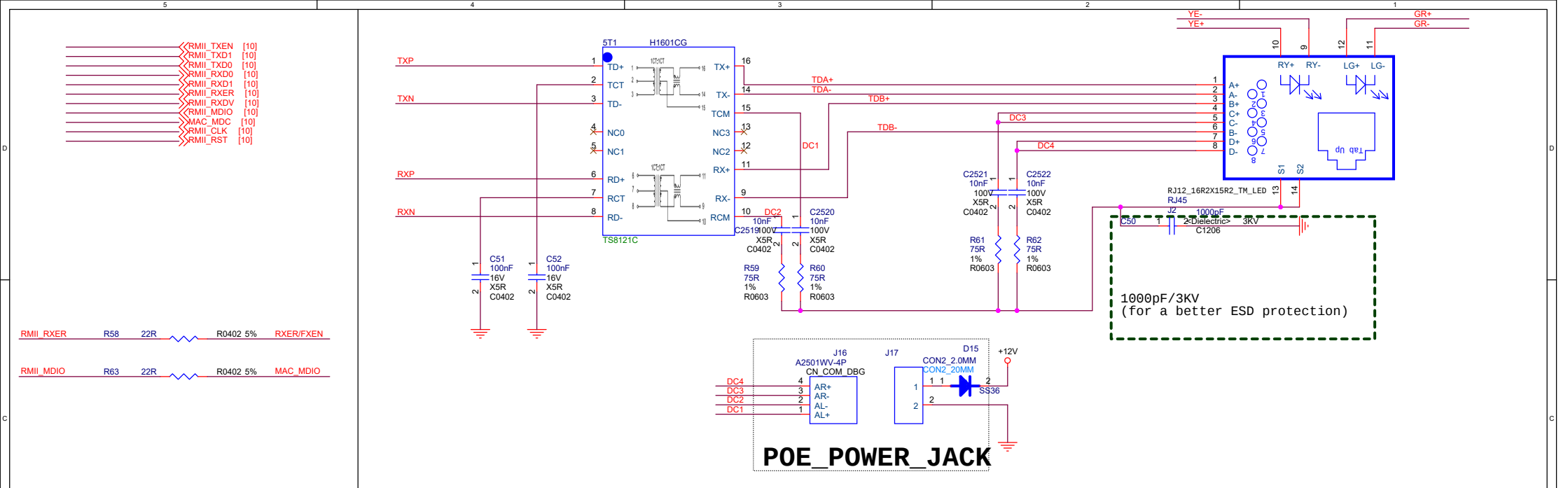


Debug



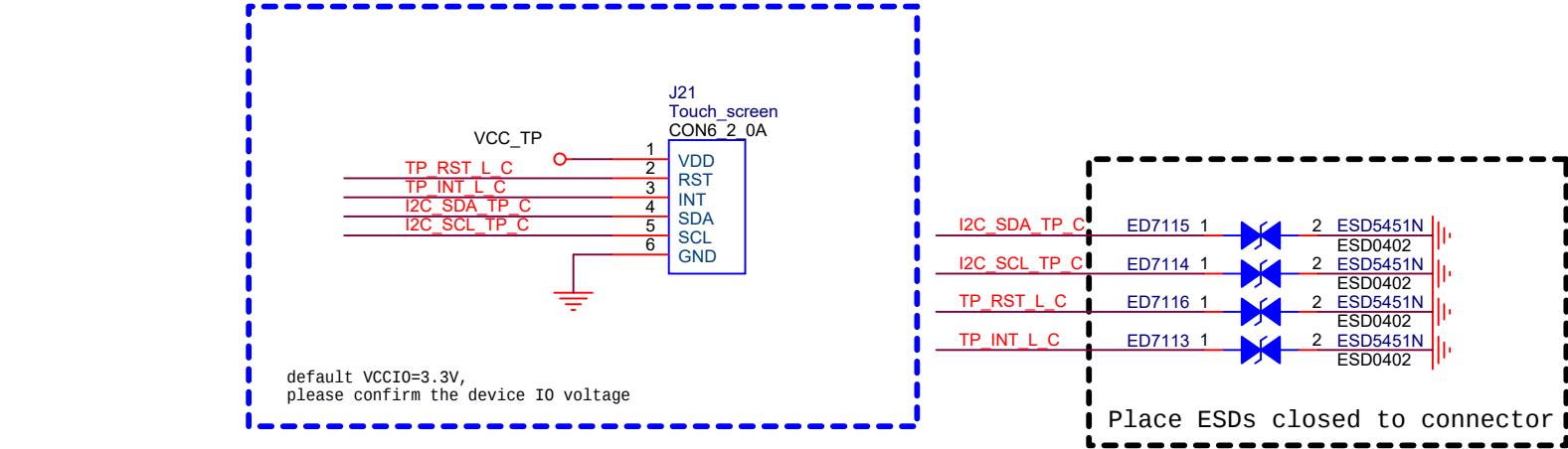
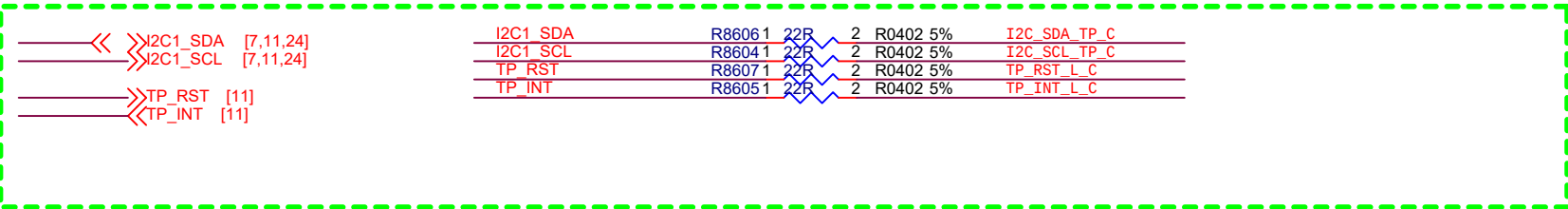
WiFi ANT



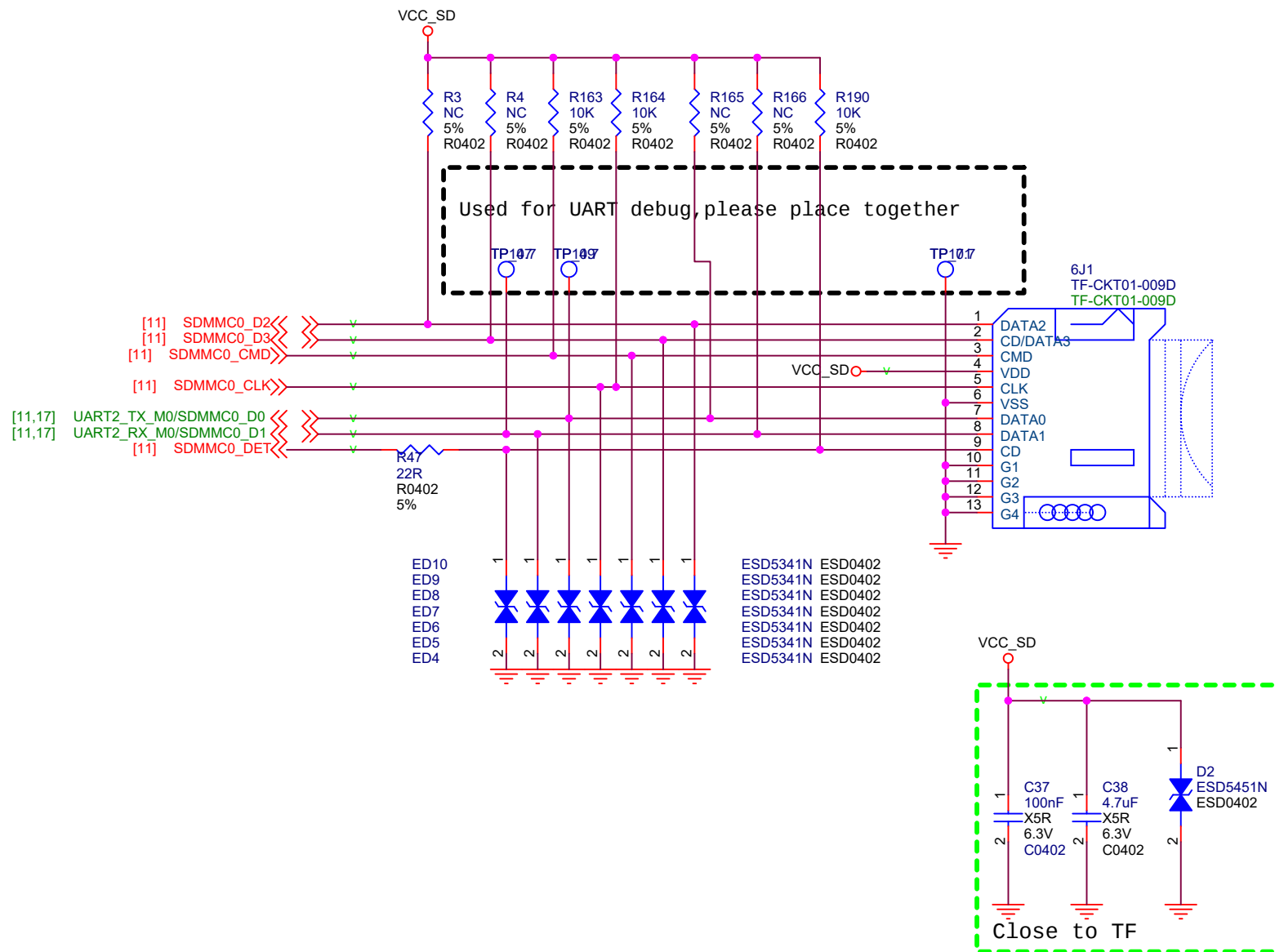


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Project:	PX30 REF		
File:	65.RJ45-100M-RTL8201/POE-PD JACK		
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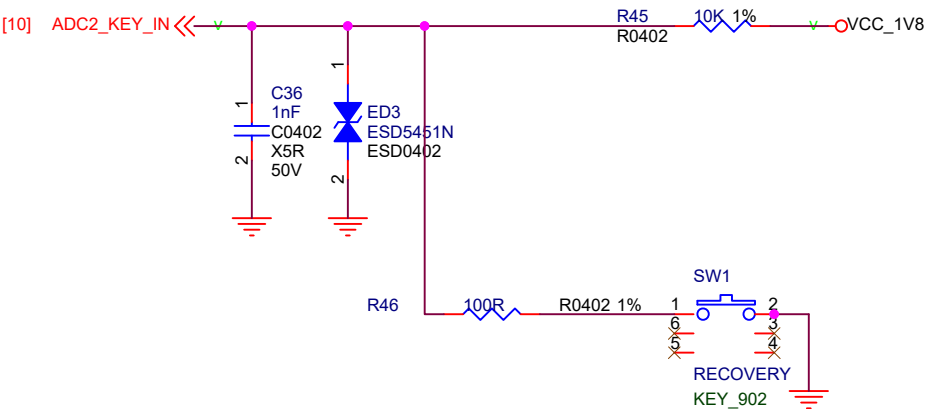
TP COF Connector



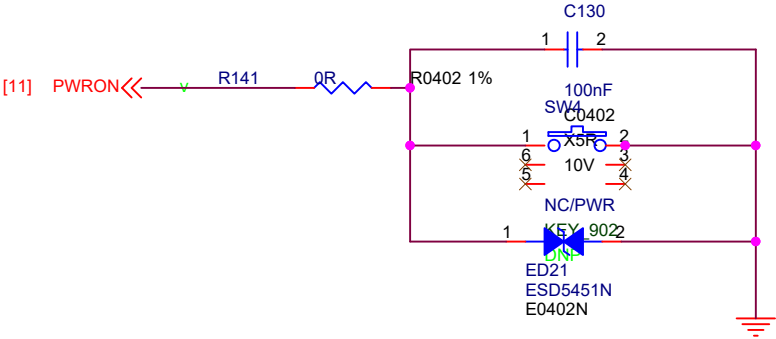
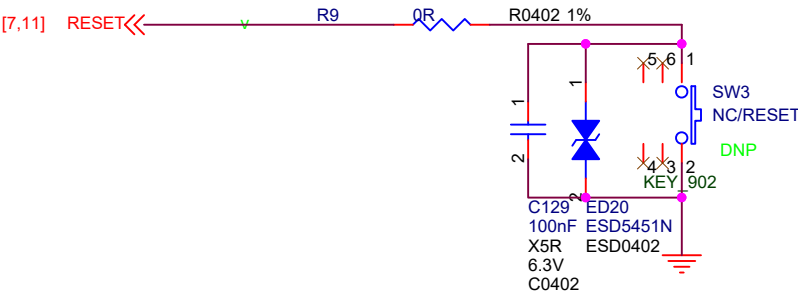
TF Card



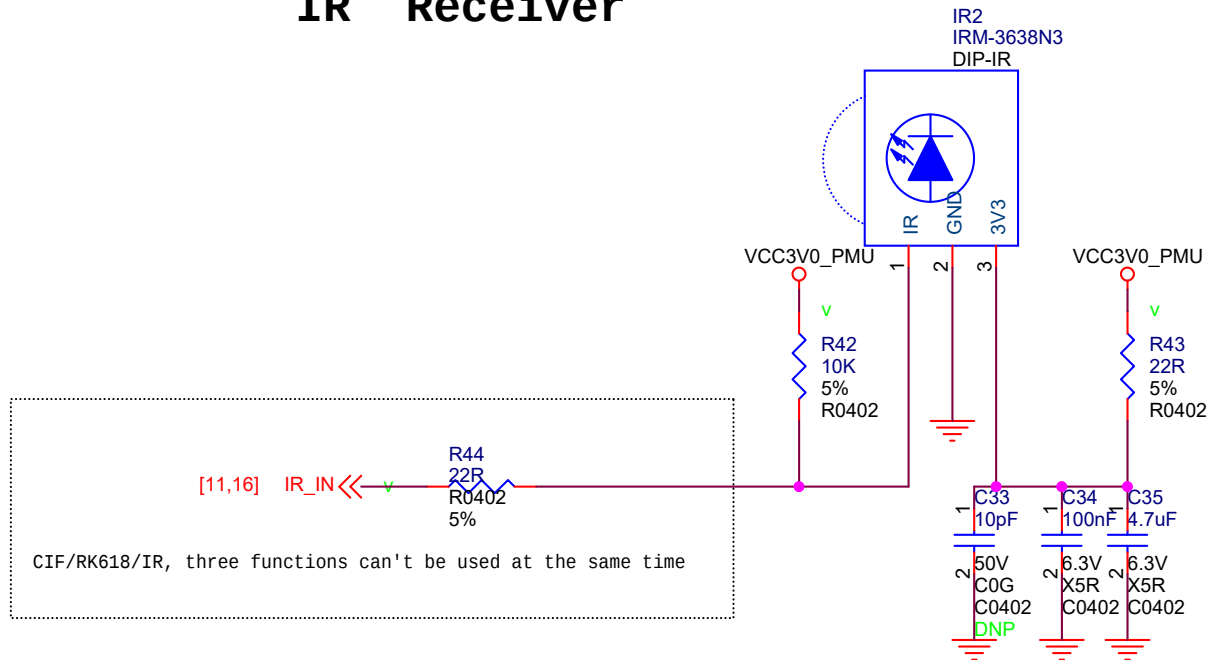
KEY BAORD



Key Name	SARADC
VOL+/RECOVERY	10
VOL-	170
HOME	354
MENU	560
ESC	747

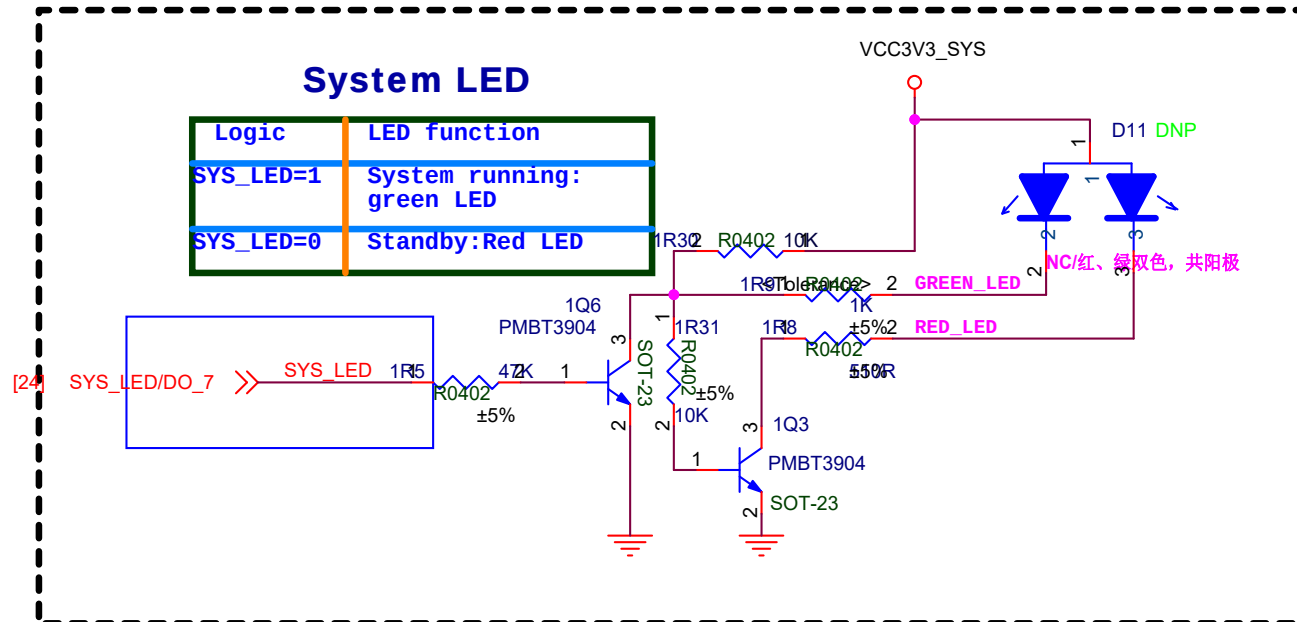


IR Receiver

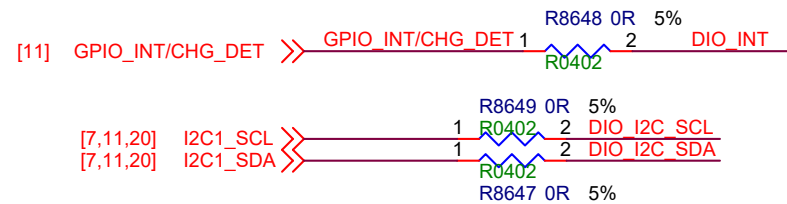
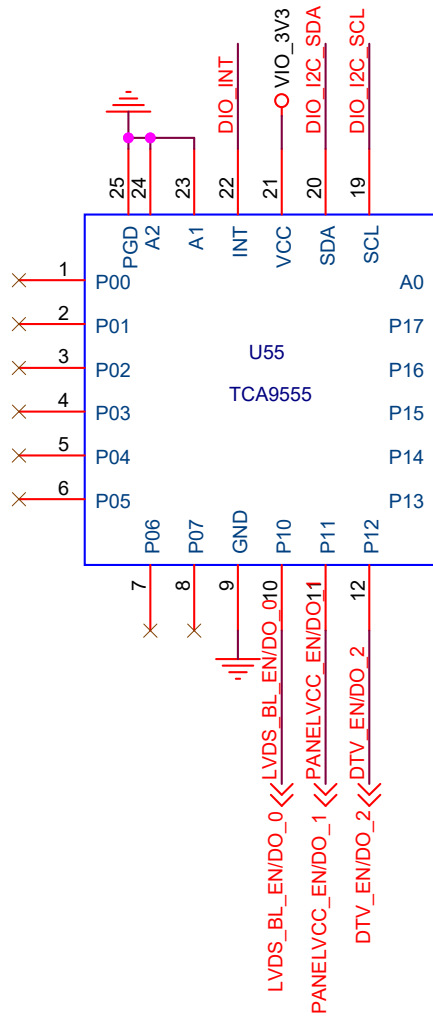
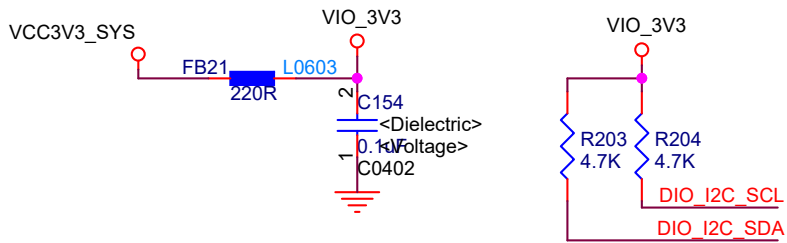


System LED

Logic	LED function
SYS_LED=1	System running: green LED
SYS_LED=0	Standby: Red LED



		深圳金亚太科技有限公司 SHENZHEN GENIATECH INC., LTD	
Project:	PX30 REF		
File:	93.IR&LED		
Date:	Tuesday, August 02, 2022		Rev: V1.0
Designed by:	Linta	Reviewed by: cjx	Sheet: 23 of 24



[13]

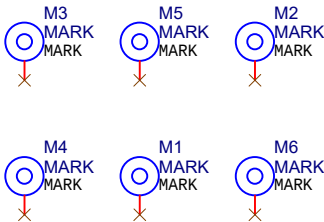
[9]

[13]

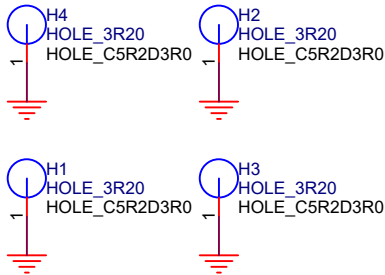
		深圳金亚太科技有限公司 SHENZHEN GENIATECH INC., LTD	
Project:	PX30 REF		
File:	94.GPIO		
Date:	Tuesday, August 02, 2022		Rev: V1.0
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Page of Accessories

PCB Mark Point



Mechanical Hole



Heatsink

Rockchip Confidential

Rockchip Rockchip Electronics Co., Ltd

Project: PX30 REF

File: 99.Mark/Hole/Heatsink

Date: Tuesday, August 02, 2022 **Rev:** V1.0

Designed by: Daniel.J **Reviewed by:** Default **Sheet:** 40 of 63