
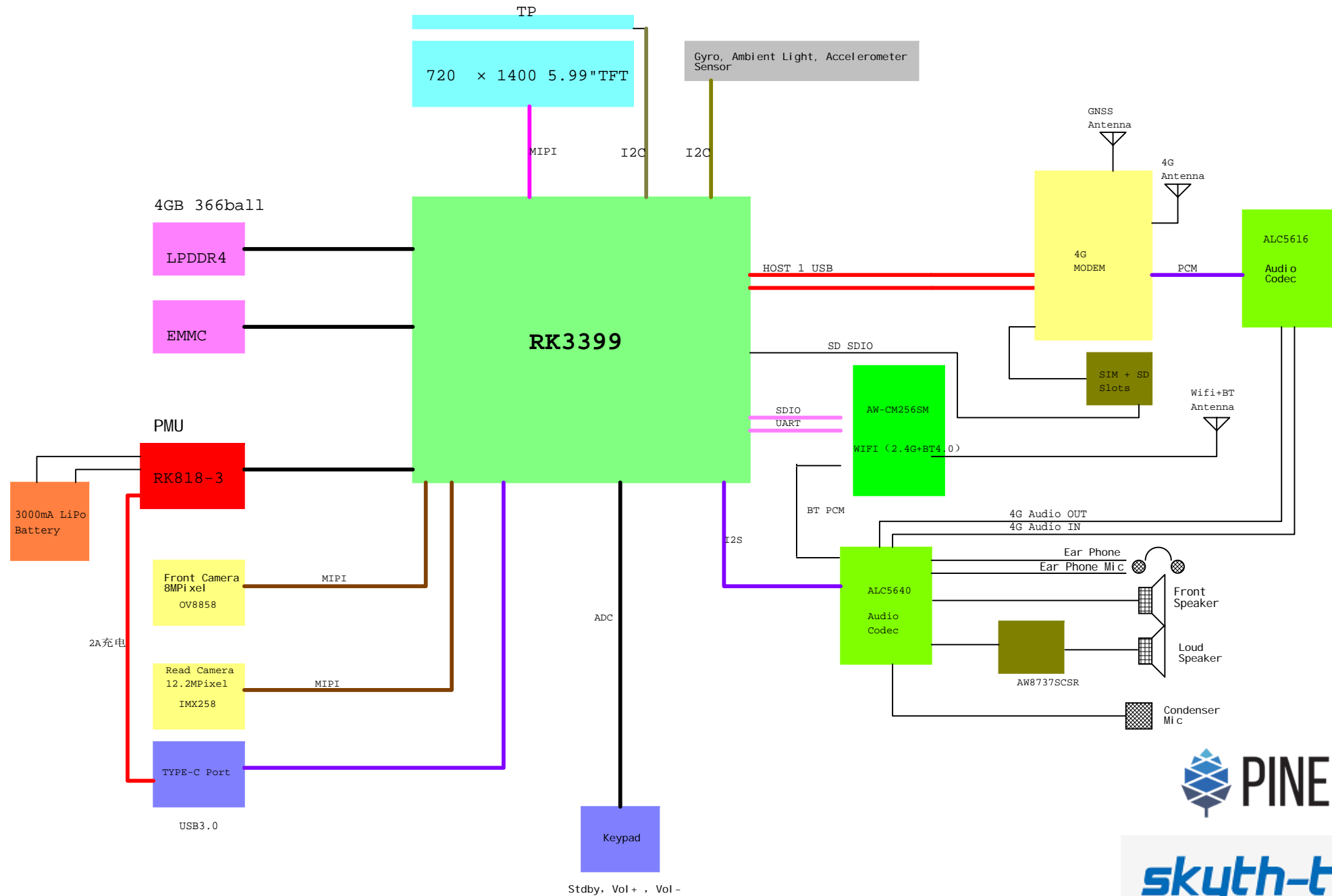


Version	Date	Author	Change Note	Approved
V0.2	20210315		Pilot Production	
V1.0	20211127		Explorer Edition	

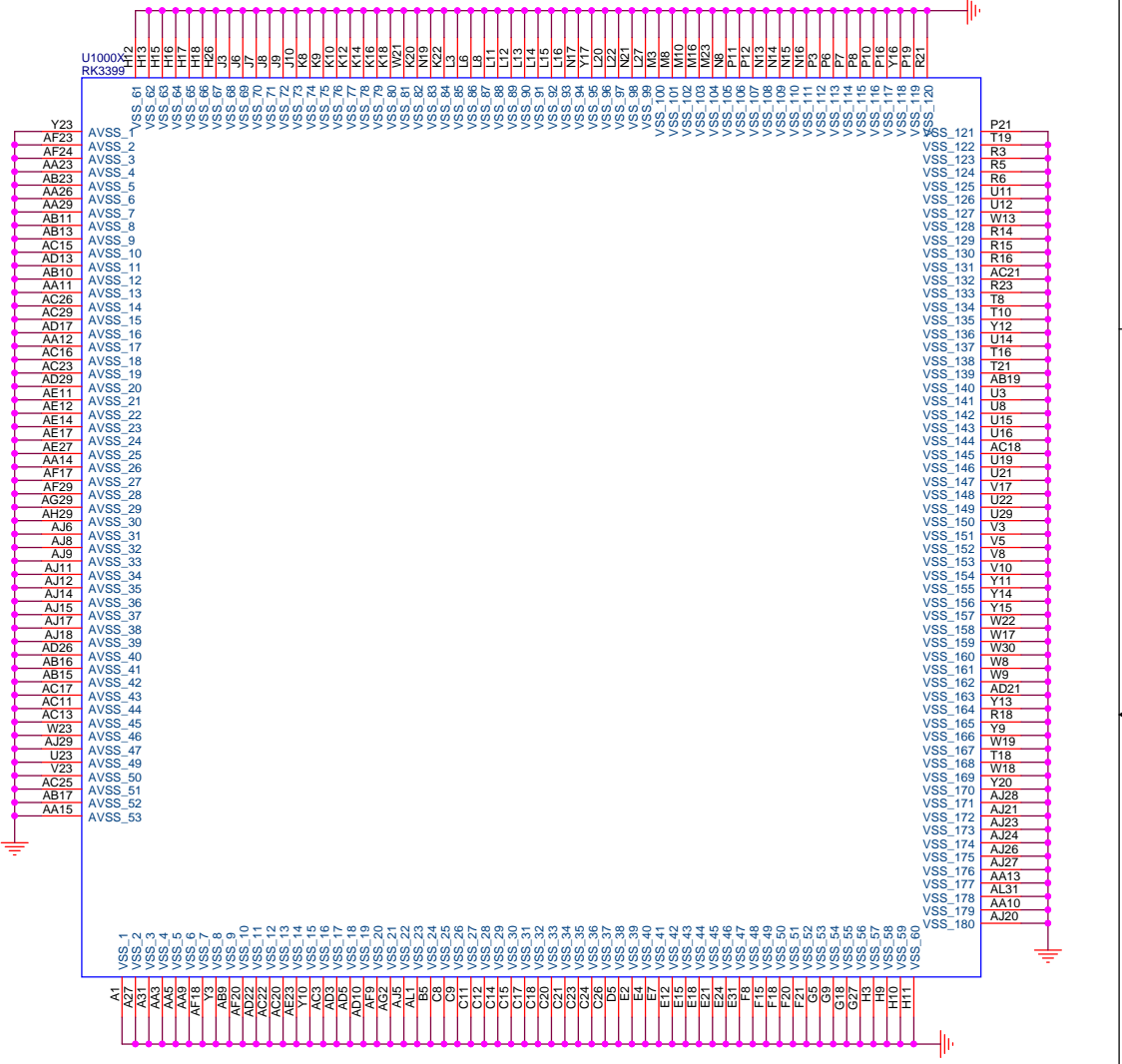
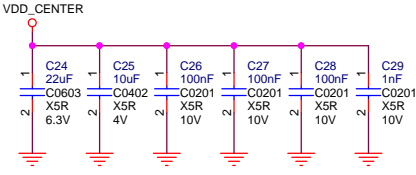
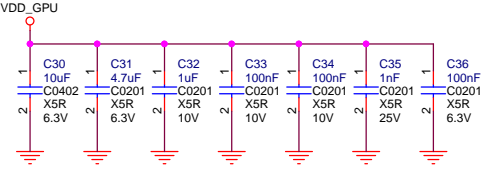
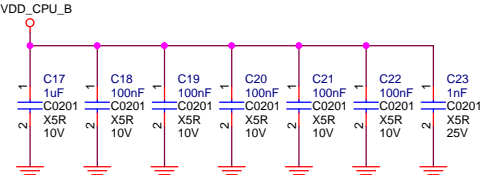
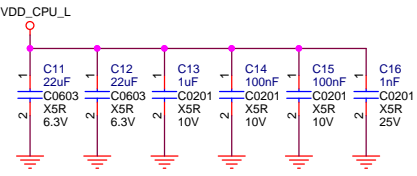
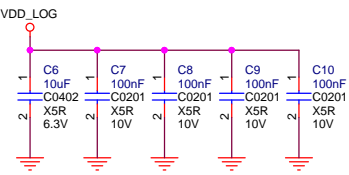
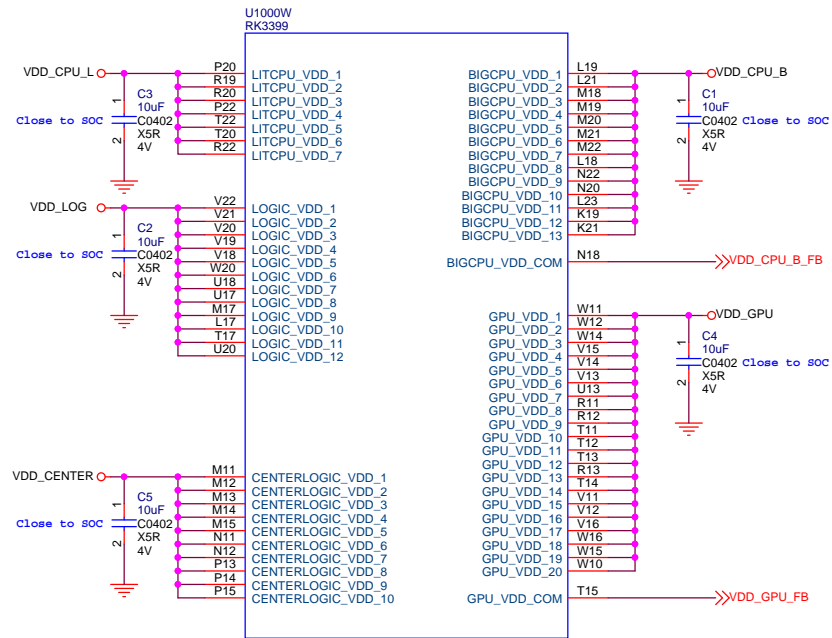
 PINE64		PINE64	
Project:	PinephonePro Schematic 211127		
File:	Change List		
Date:	Saturday, November 27, 2021	Rev:	02
Designed by:	HXS	Sheet:	1 of 24



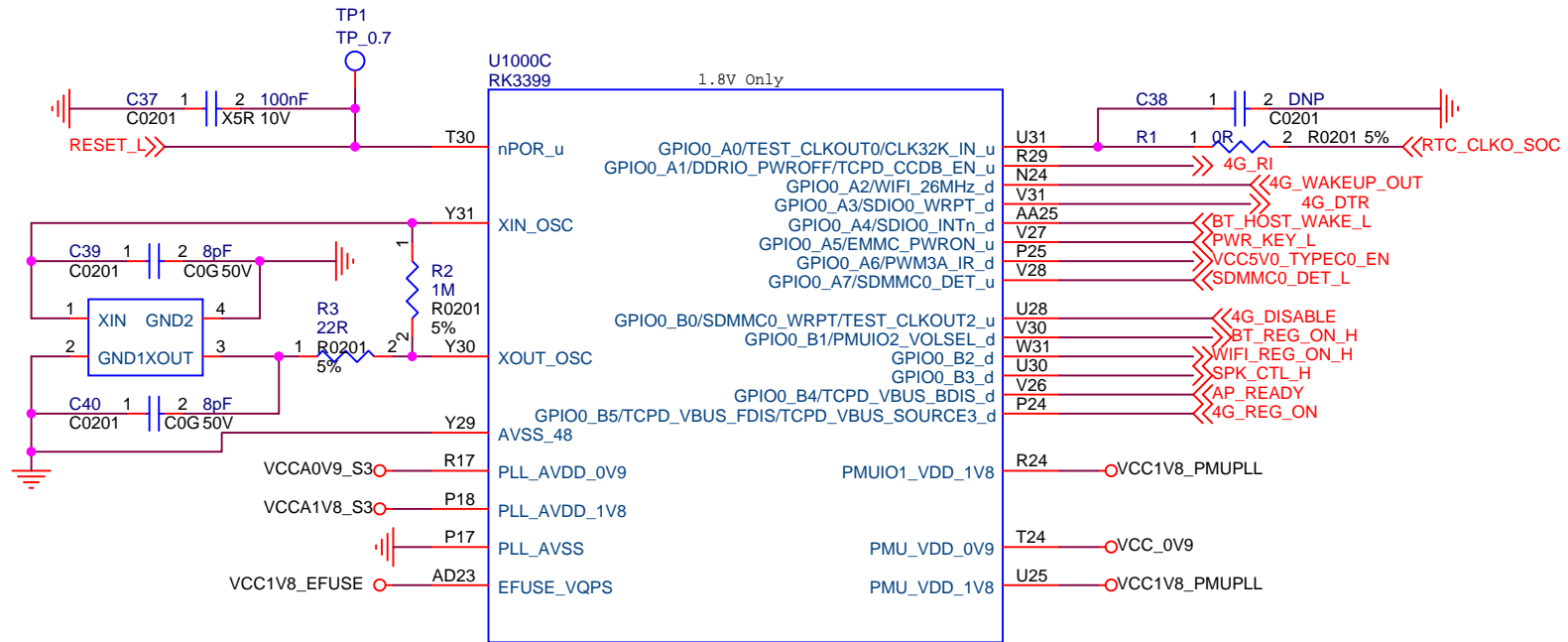
PINE64

skyth-tek

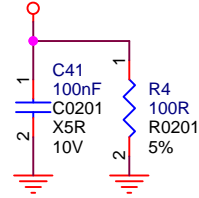
Stdby, Vol + , Vol -



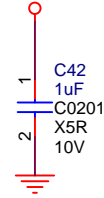
Y1
24MHz
CR2520



VCC1V8_EFUSE



VCCA1V8_S3



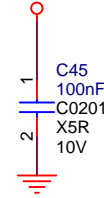
VCCA0V9_S3



VCC_0V9

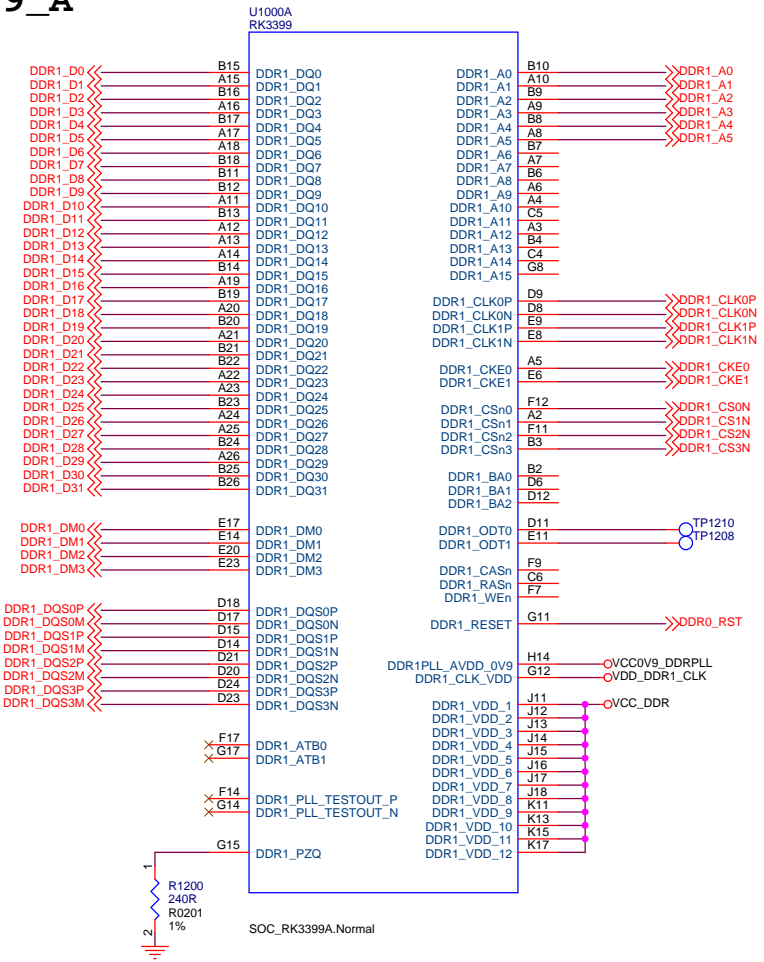


VCC1V8_PMUPLL



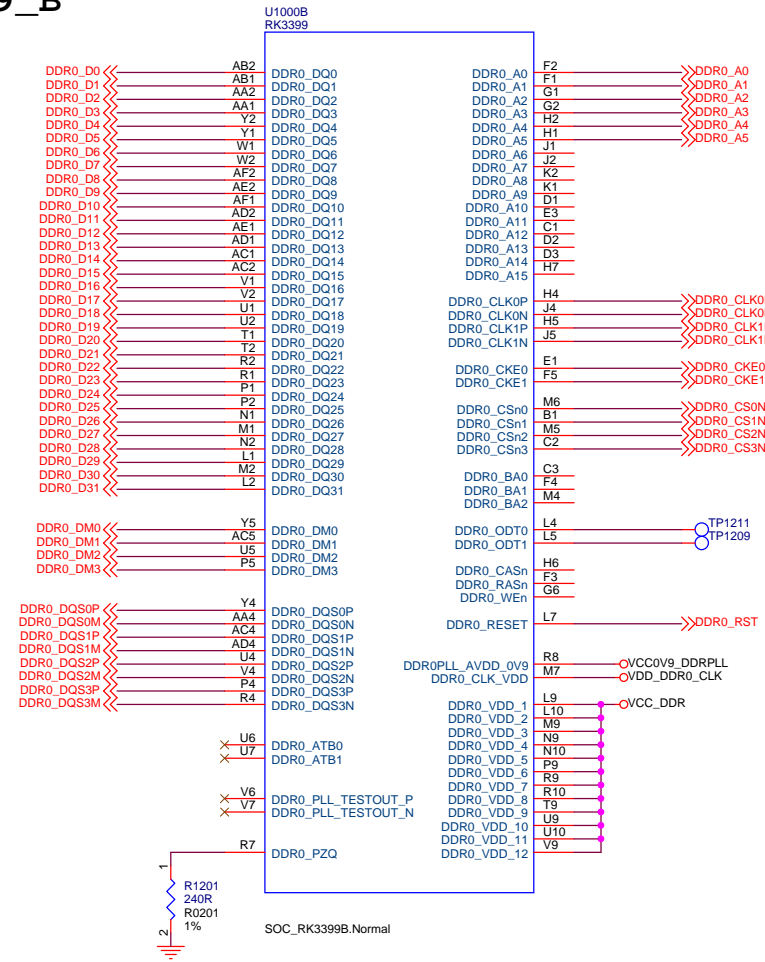
		PINE64	
Project:	PinephonePro Schematic 20211127		
File:	RK3399 PMU Controller		
Date:	Saturday, November 27, 2021	Rev:	1.0
Designed by:	HXS	Sheet:	4 of 24

RK3399_A



SOC_RK3399A.Normal

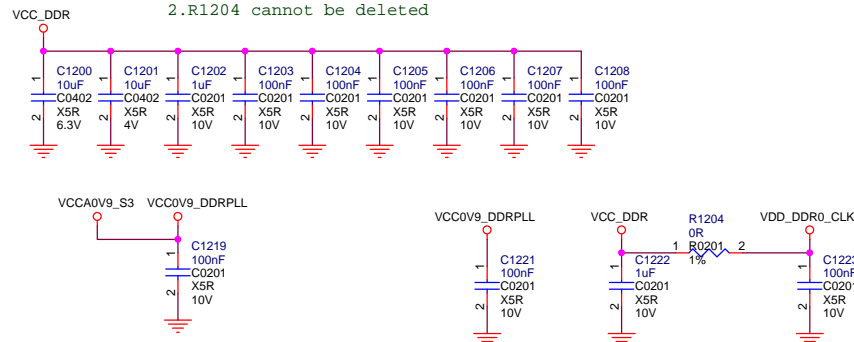
RK3399_B



SOC_RK3399B.Normal

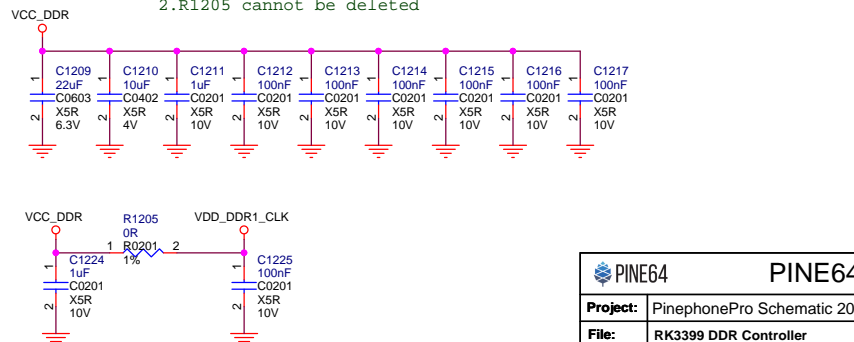
DDR FILTER

Note:
 1.All the Power filter capacitor should be place close to the power pin of RK3399
 2.R1204 cannot be deleted



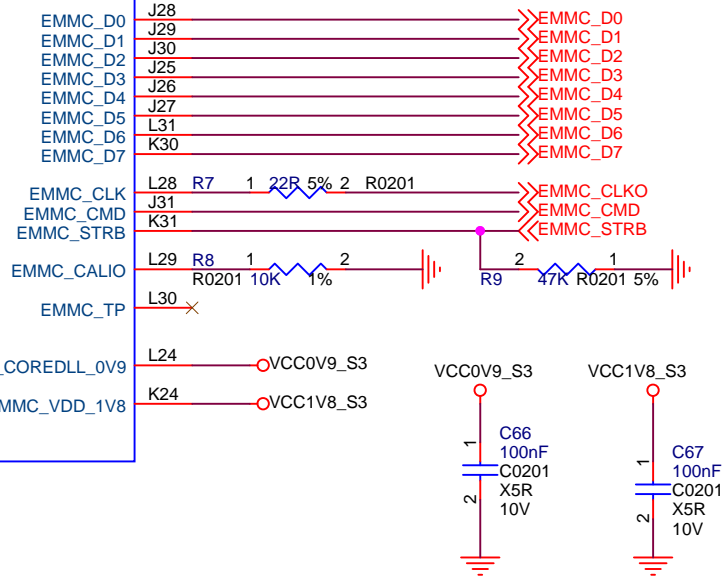
DDR FILTER

Note:
 1.All the Power filter capacitor should be place close to the power pin of RK3399
 2.R1205 cannot be deleted

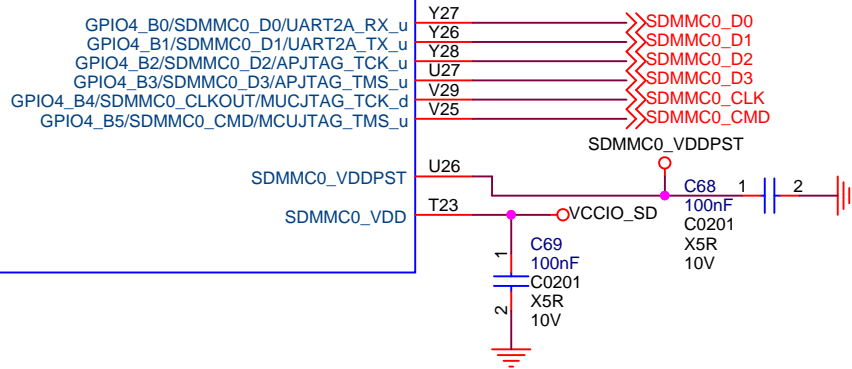



PINE64		PINE64	
Project:	PinephonePro Schematic 20211127		
File:	RK3399 DDR Controller		
Date:	Saturday, November 27, 2021	Rev:	1.0
Designed by:	Linus	Sheet:	5 of 24

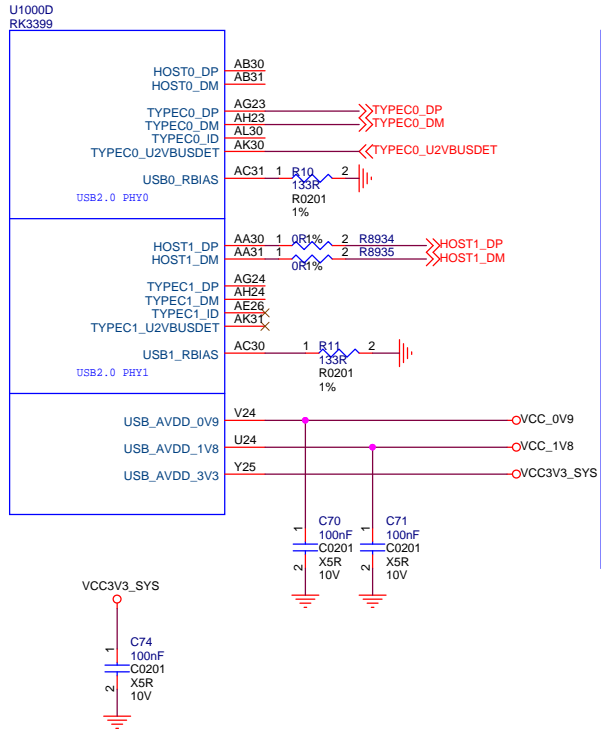
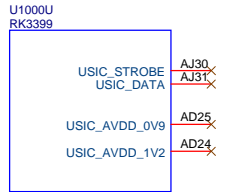
U1000H
RK3399



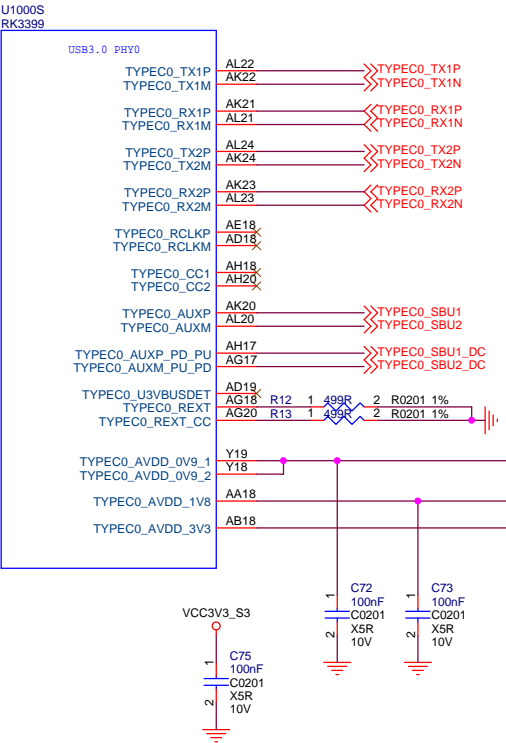
U1000F
RK3399



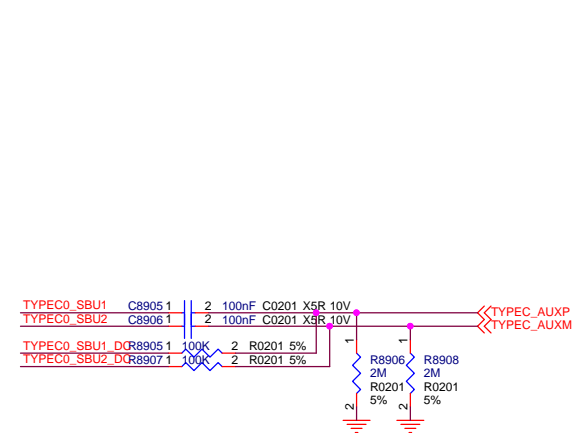
 PINE64		PINE64	
Project:	PinephonePro Schematic 20211127		
File:	RK3399 Flash&SDMMC Controller		
Date:	Saturday, November 27, 2021	Rev:	1.0
Designed by:	HXS	Sheet:	6 of 24



USB2.0 design rule:
 1.Max intra-pair skew < 4 ps;
 2.Max trace length < 6 inchs;
 3.Max allowed via < 6;
 4.Trace impedance 90ohm+/-10%;

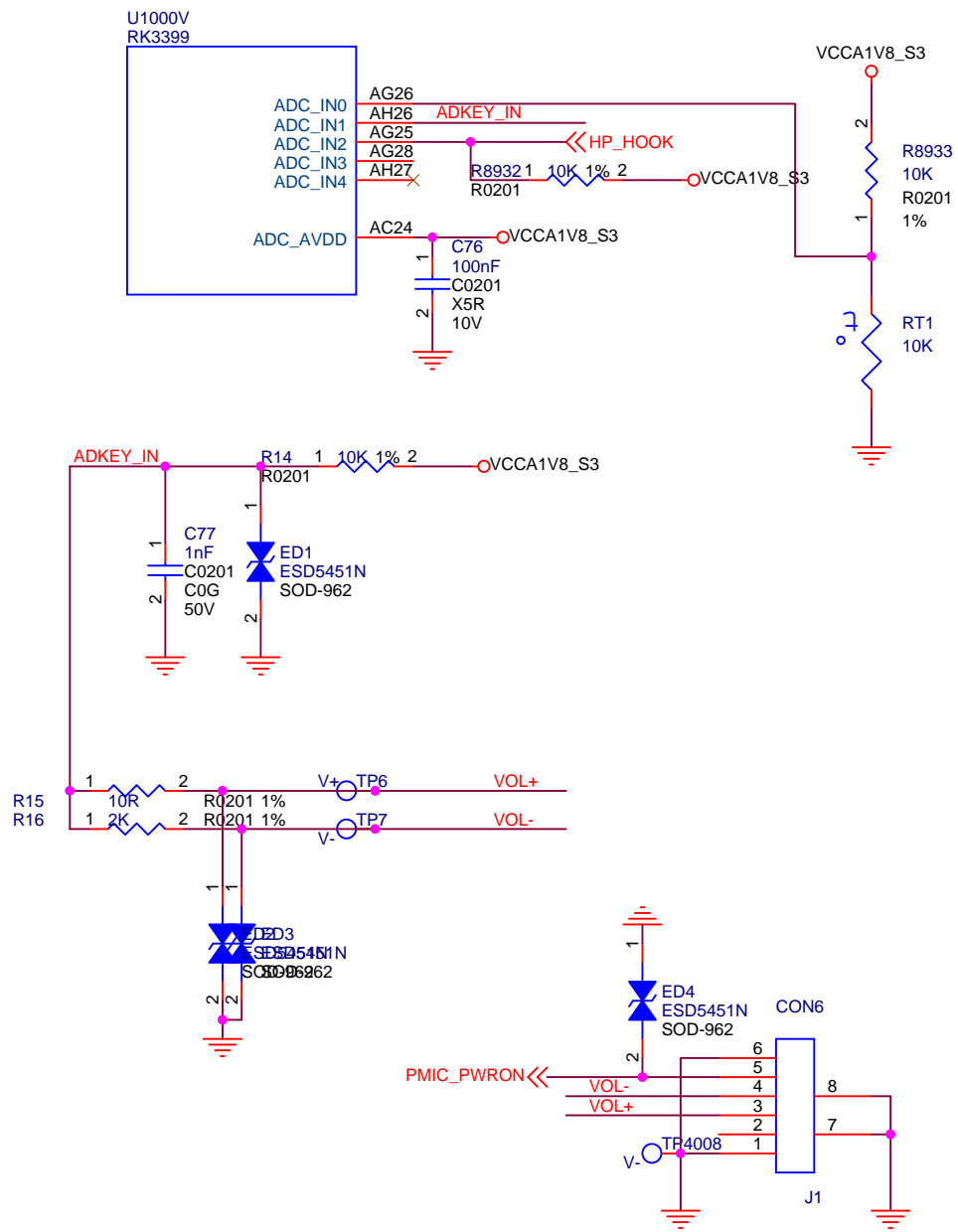


USB3.0 design rule:
 1.Max intra-pair skew < 4 ps;
 2.Max length skew between TX and RX < 1.6 ns;
 3.Max trace length < 6 inchs;
 4.Max allowed via < 4;
 5.Trace impedance 90ohm+/-10%;



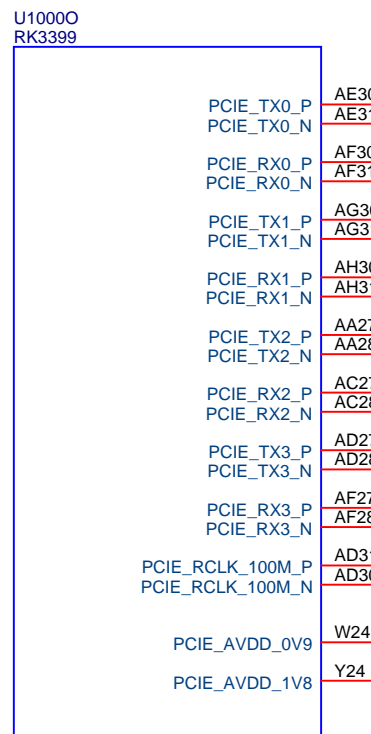
DP design rule:
 1.Max intra-pair skew < 4 ps;
 2.Max trace length < 6 inchs;
 3.Max allowed via < 4;
 4.Trace impedance 90ohm+/-10%;

Project:	PinephonePro Schematic 20211127
File:	RK3399 USB/USIC Controler
Date:	Saturday, November 27, 2021
Designed by:	HXS
Rev:	1.0
Sheet:	7 of 24



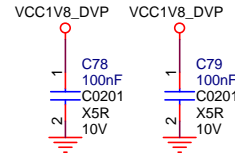
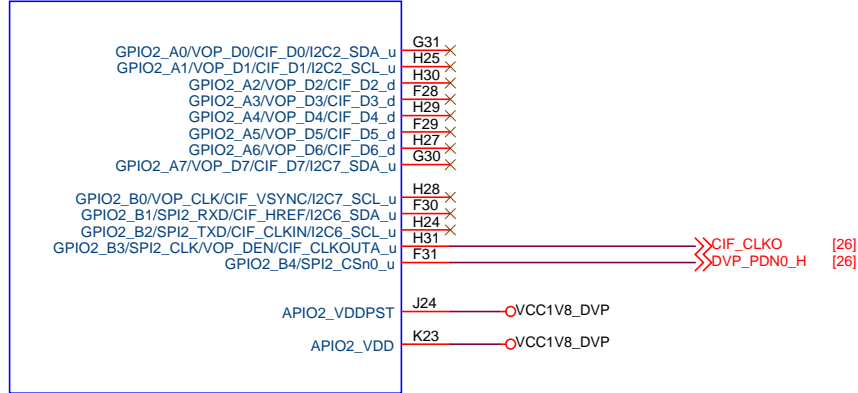
KEY BAORD

V+ / V- / Stdby

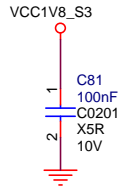
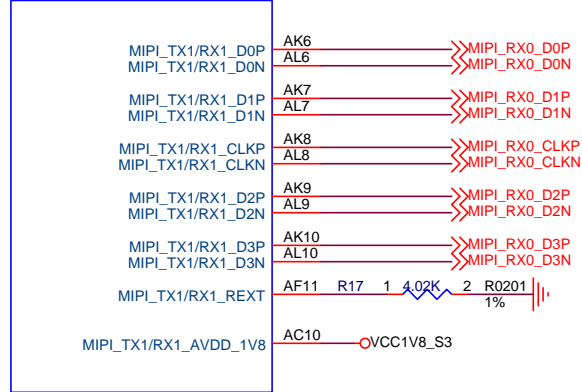


PINE64	
Project:	PinephonePro Schematic 20211127
File:	RK3399 SARADC/keyBoard
Date:	Saturday, November 27, 2021
Designed by:	HXS
Rev:	1.0
Sheet:	8 of 24

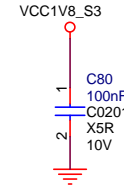
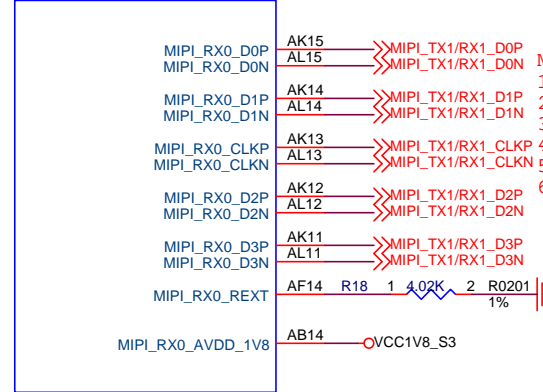
U1000L
RK3399



U1000P
RK3399



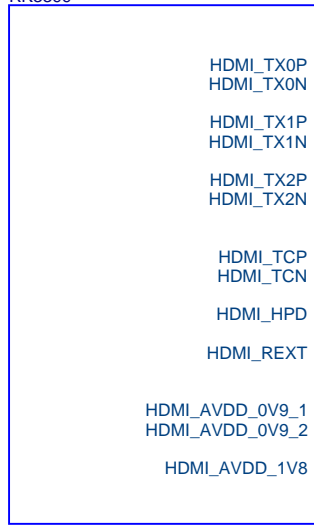
U1000R
RK3399



- MIPI design rules:
1. Max intra-pair skew < 4ps;
 2. Max length skew between clk and data < 7ps;
 3. Max trace length < 7.2inches;
 4. Max allowed via < 4;
 5. Trace impedance 100ohm+/-10%;
 6. The distance between other signals follows the 3W rule;

		PINE64	
Project: PinephonePro Schematic 20211127			
File: RK3399 DVP Interface			
Date: Saturday, November 27, 2021		Rev: 1.0	
Designed by: HXS		Sheet: 9 of 24	

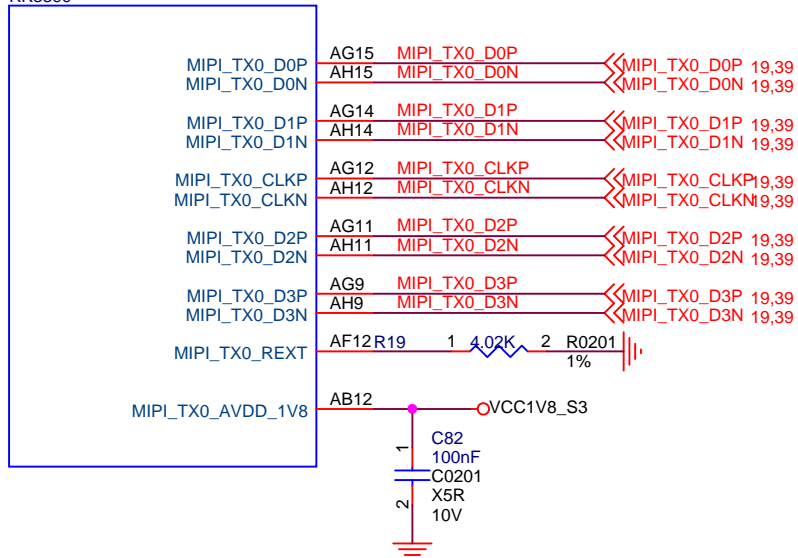
U1000N
RK3399



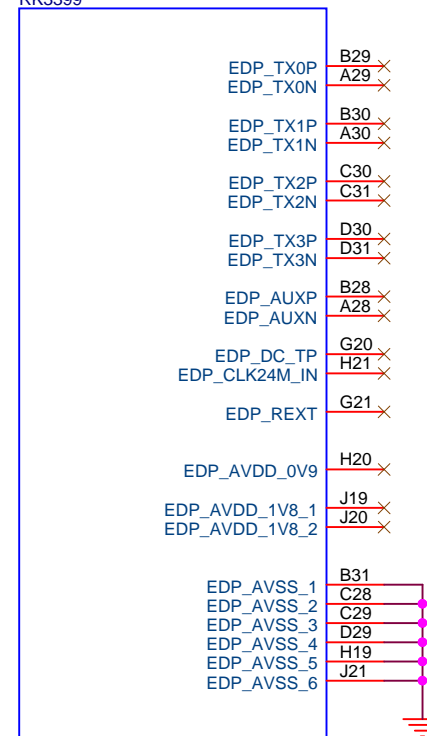
HDMI design rule:

- 1.Max intra-pair skew < 4 ps;
- 2.Max length skew between clk and data < 80 ps;
- 3.Max trace length < 9.8 inches;
- 4.Max allowed via < 4;
- 5.Trace impedance 100ohm+/-10%;

U1000Q
RK3399



U1000M
RK3399



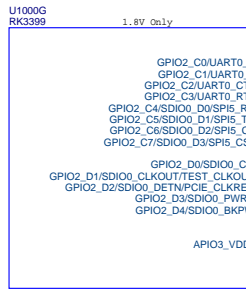
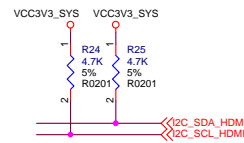
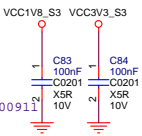
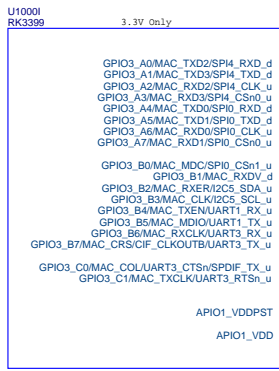
eDP design rule:

- 1.Max intra-pair skew < 4 ps;
- 2.Max trace length < 6 inches;
- 3.Max allowed via < 4;
- 4.Trace impedance 90ohm+/-10%;

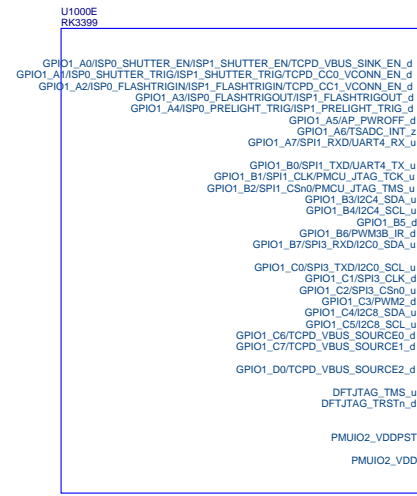
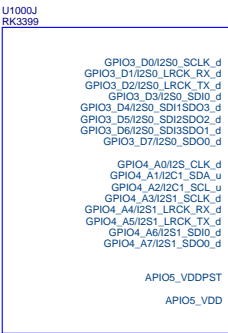
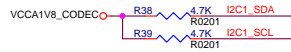
MIPI design rule:

- 1.Max intra-pair skew < 4 ps;
- 2.Max length skew between clk and data < 7ps;
- 3.Max trace length < 7.2 inches;
- 4.Max allowed via < 4;
- 5.Trace impedance 100ohm+/-10%;

		PINE64	
Project:	PinephonePro Schematic 20211127		
File:	RK3399 Display Interface		
Date:	Saturday, November 27, 2021	Rev:	1.0
Designed by:	HXS	Sheet:	10 of 24

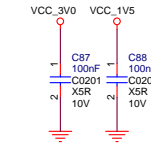
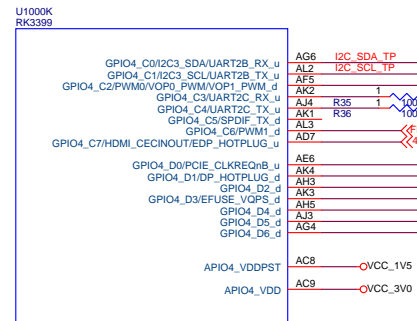
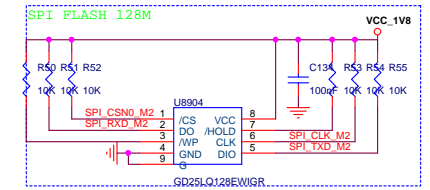
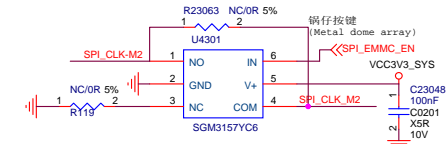


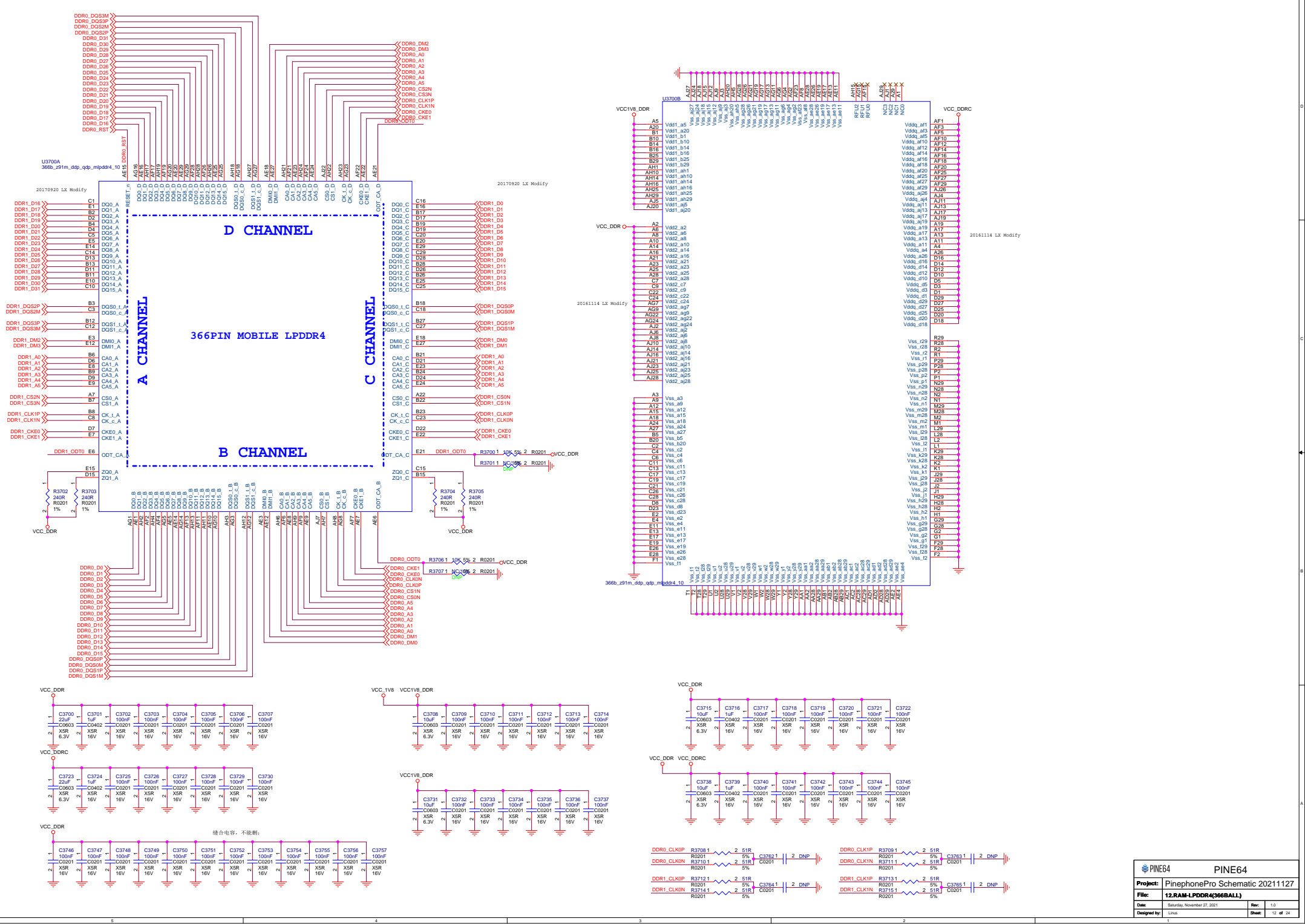
1.8V Only	VDDPST=VDDIO=1.8V
3.3V Only	VDDPST=1.8V, VDDIO=3.3V
other	3.0V mode: VDDPST=1.5V, VDDIO=3.0V 1.8V mode: VDDPST=1.8V, VDDIO=1.8V



disable SPI Flash

IN	NO	NC
0	OFF	ON
1	ON	OFF





D CHANNEL

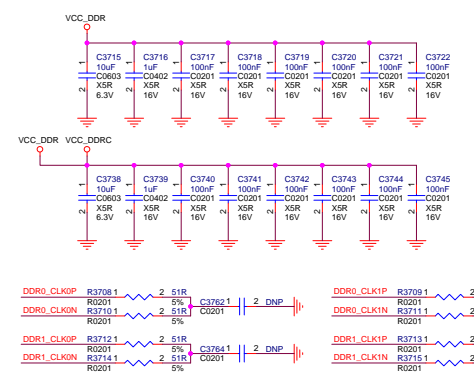
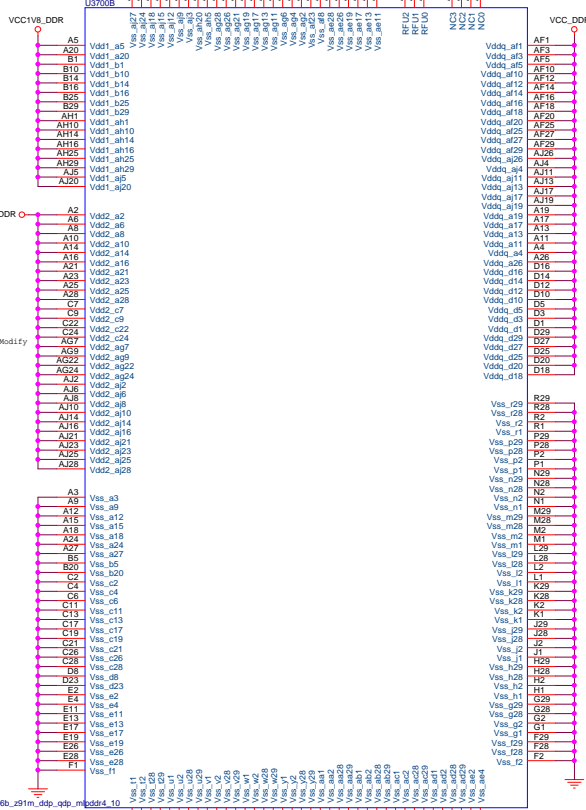
A CHANNEL

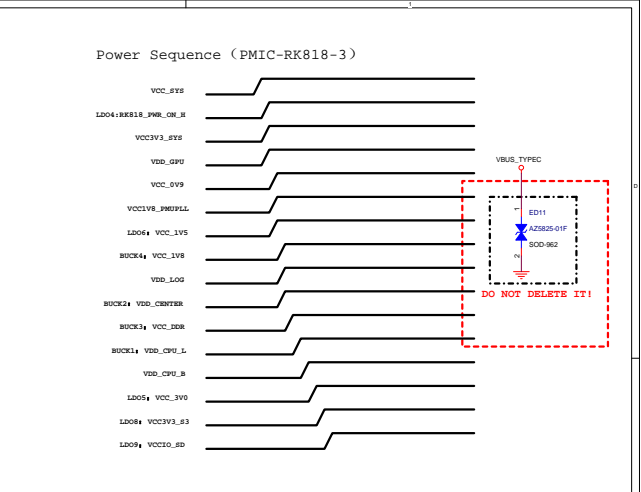
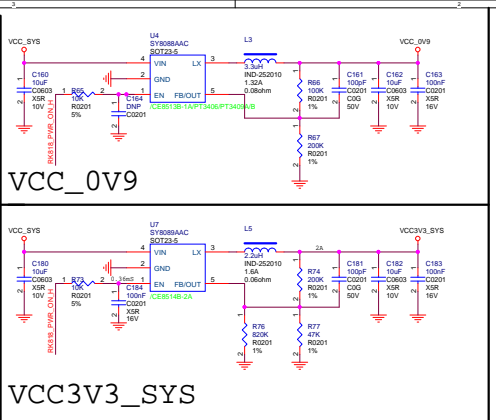
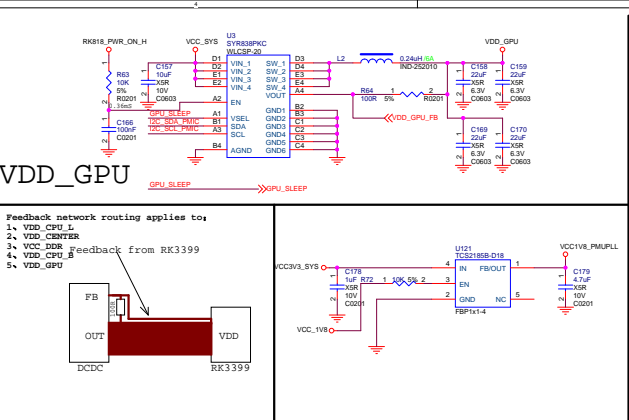
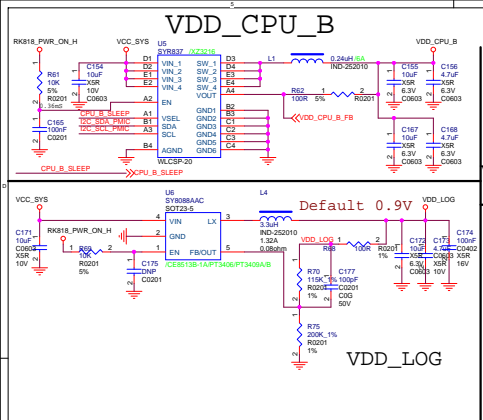
366PIN MOBILE LPDDR4

C CHANNEL

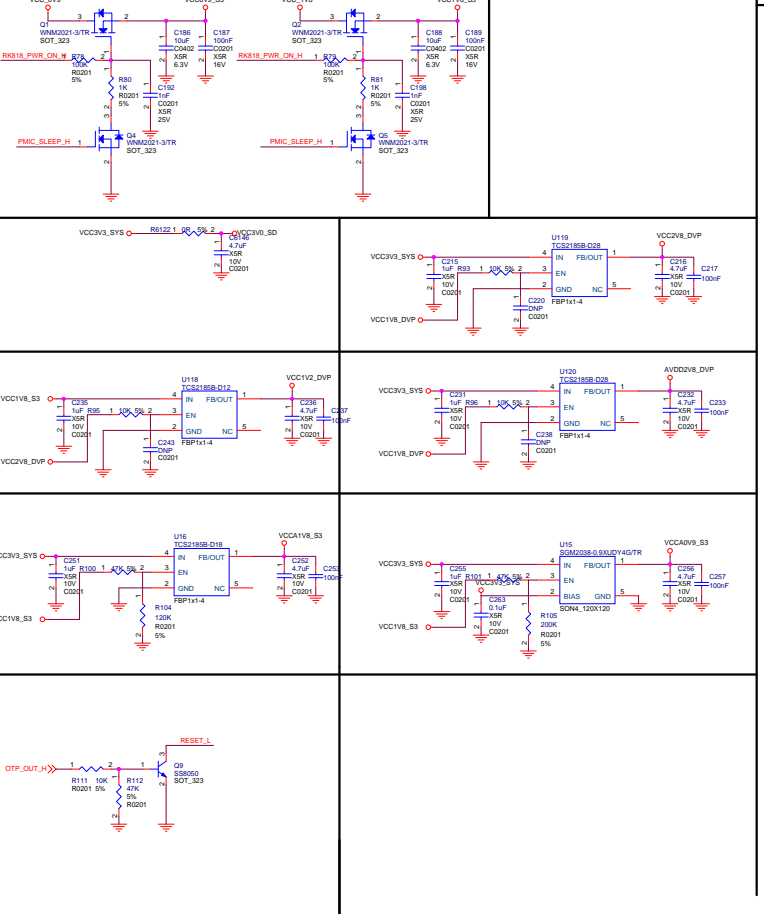
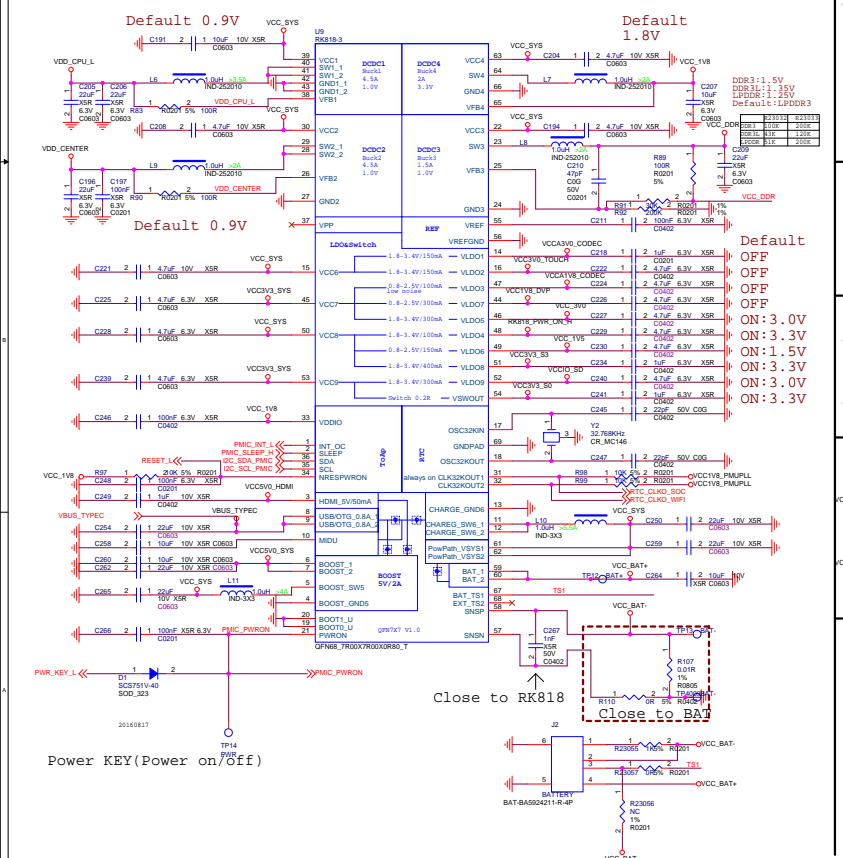
B CHANNEL

缝合电容, 不能删!





PMIC RK818-3



NOTE:

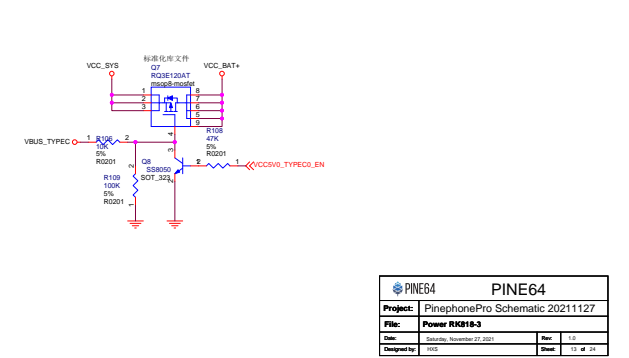
If adapter 5V direct connect to PMIC power pins.
DO NOT DELETE THE TVS PROTECTION!!!

Note that PMIC power pins supply voltage < 6.5V

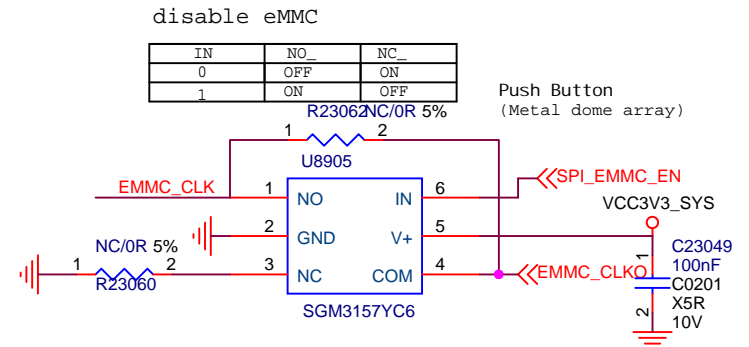
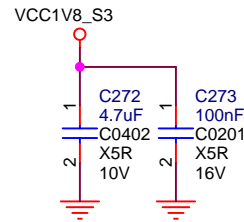
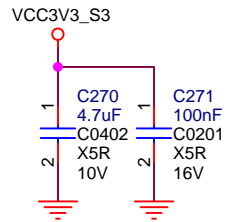
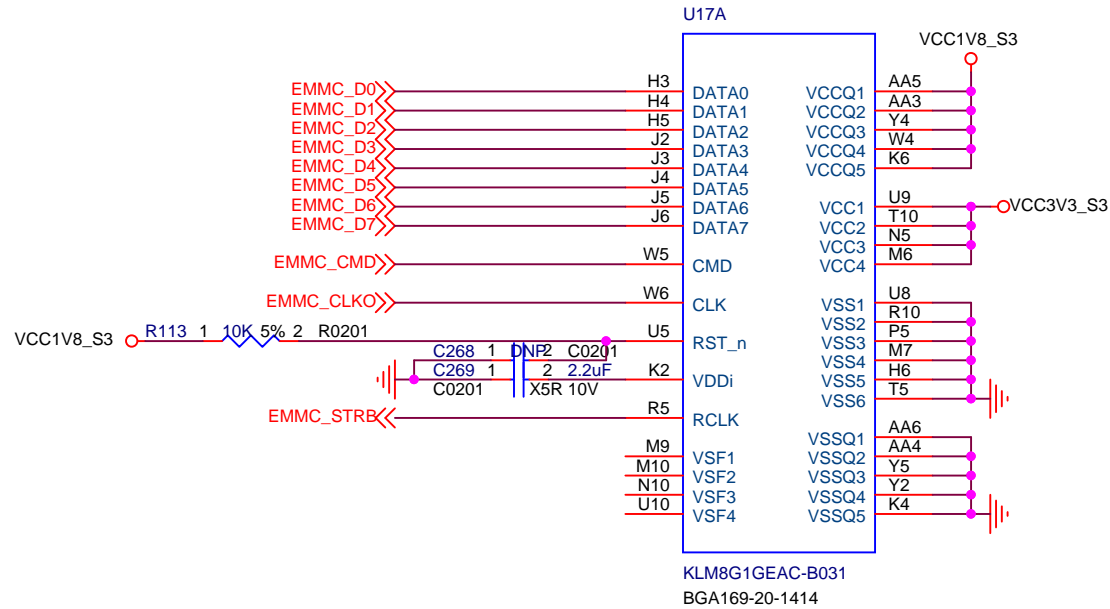
Recommended TVS Partnumber: AZ5825-01F

Operating Supply Voltage: 5.5V
PeakPulse Current: >10A(tp=8/20us)
Surge Clamping Voltage: 6V
ESD Clamping Voltage: 6.5V

IF TVS UNMOUNTED, ESD OR SURGE SHOULD DAMAGE THE PMIC!!!



eMMC FLASH



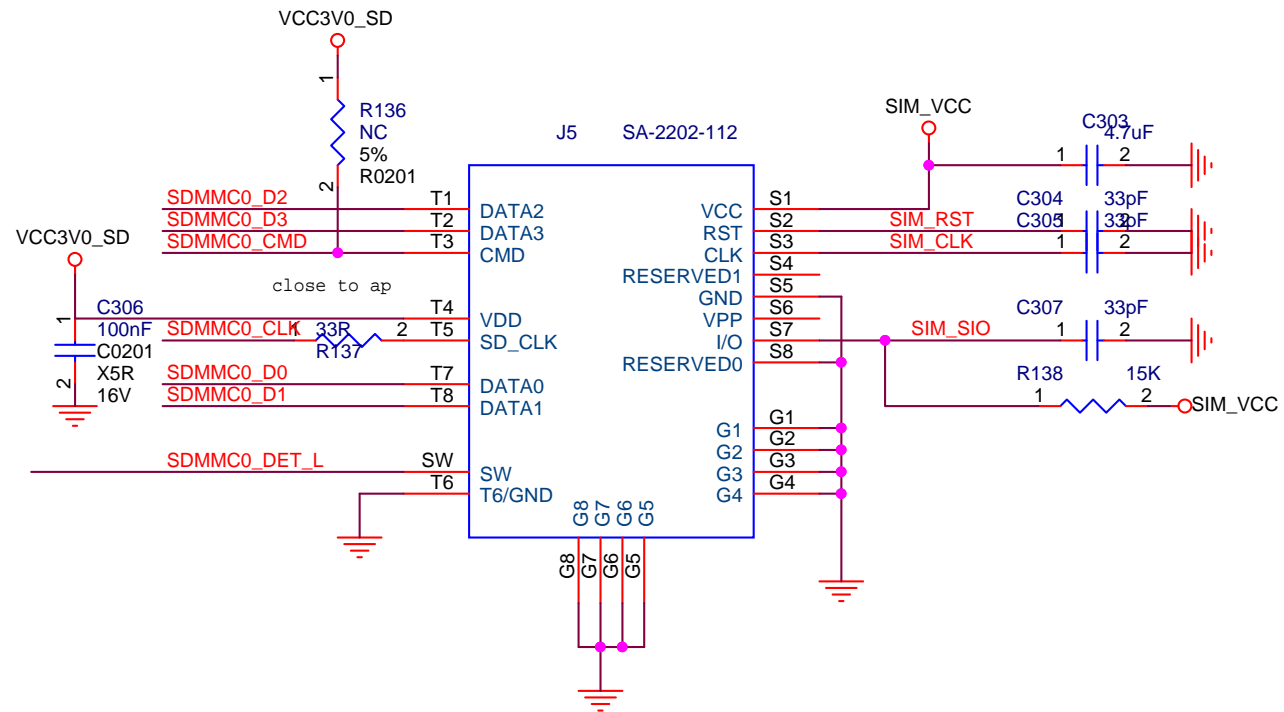
PINE64		PINE64	
Project:	PinephonePro Schematic 20211127		
File:	Memory-eMMC		
Date:	Saturday, November 27, 2021	Rev:	1.0
Designed by:	HXS	Sheet:	14 of 24

SDMMC0_D0
SDMMC0_D1
SDMMC0_D2
SDMMC0_D3

SDMMC0_CLK
SDMMC0_CMD
SDMMC0_DET_L

SIM_RST
SIM_CLK
SIM_SIO

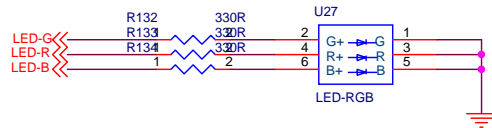
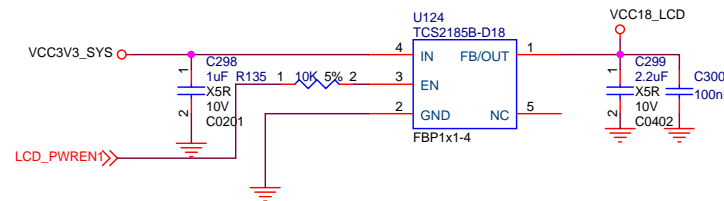
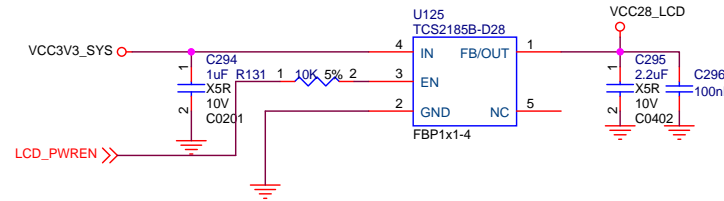
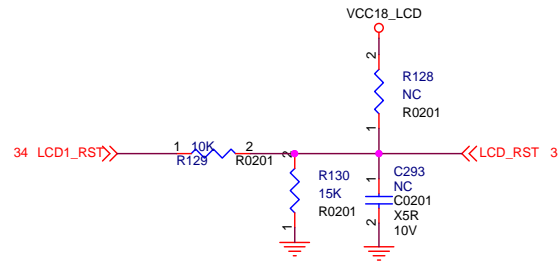
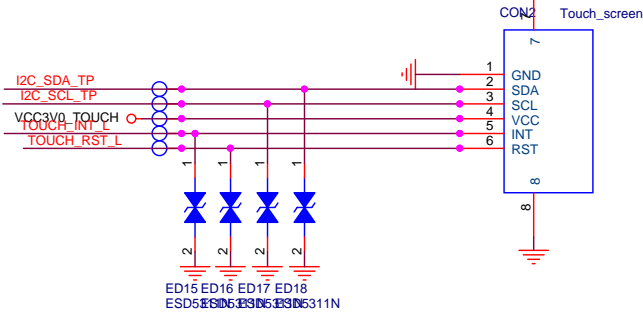
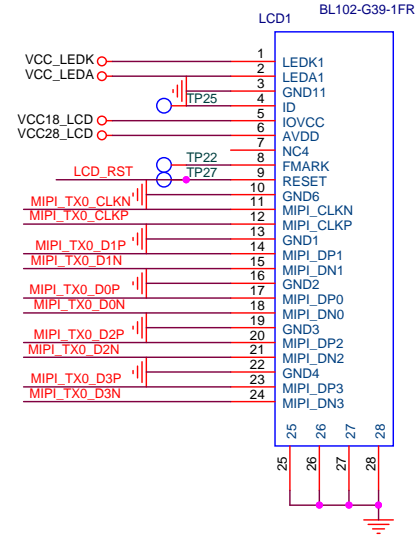
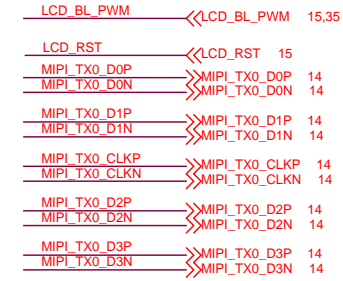
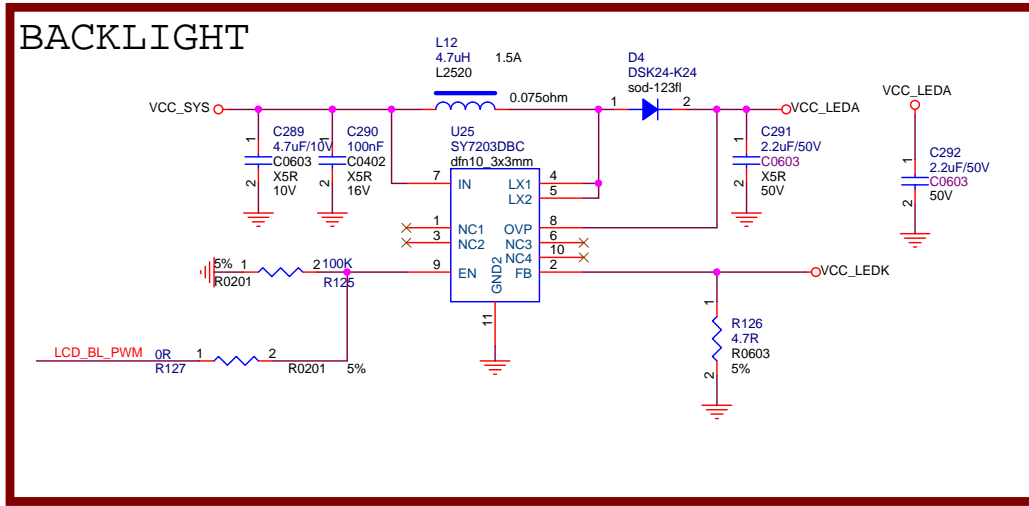
SIM_VCC



		PINE64	
Project:	PinephonePro Schematic 20211127		
File:	TF Card		
Date:	Saturday, November 27, 2021	Rev:	1.0
Designed by:	HXS	Sheet:	15 of 24

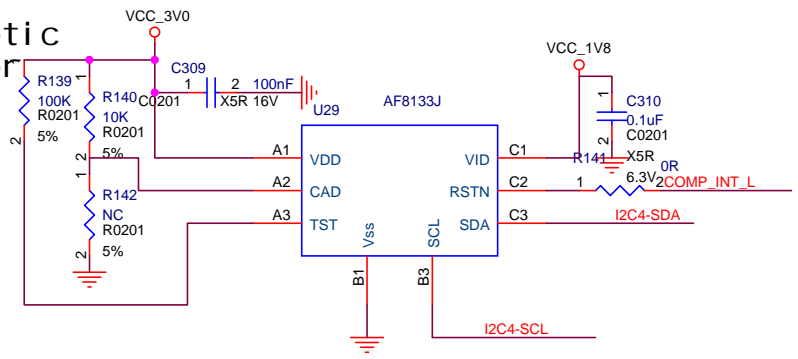
MIPI Panel

BACKLIGHT

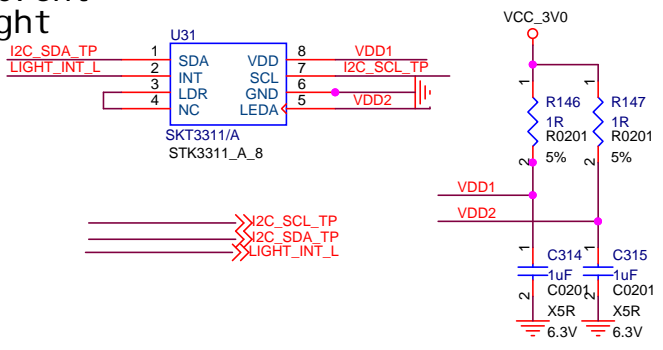


PINE64		PINE64	
Title			
LCD panel/Touch Panel			
Size	File	Rev	
Custom	PinephonePro Schematic 20211127	1.0	
Date:	Saturday, November 27, 2021	Sheet	16 of 24

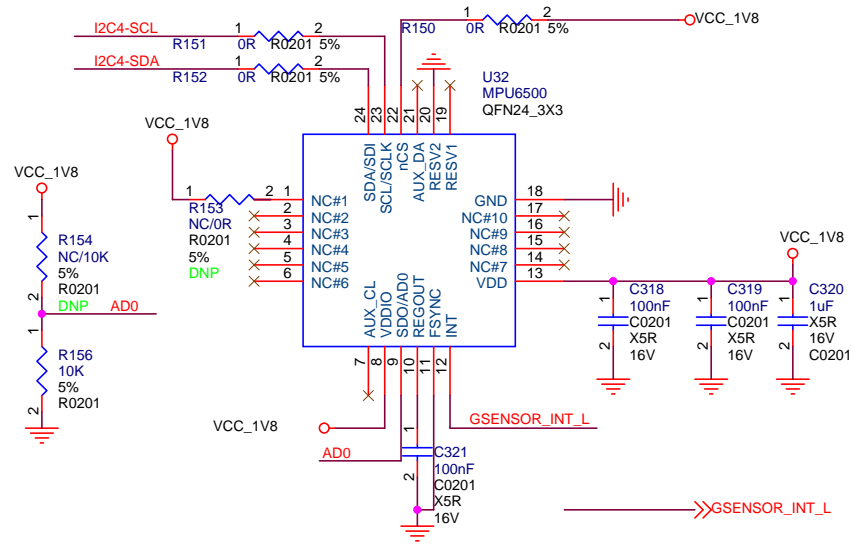
Geo Magnetic Sensor



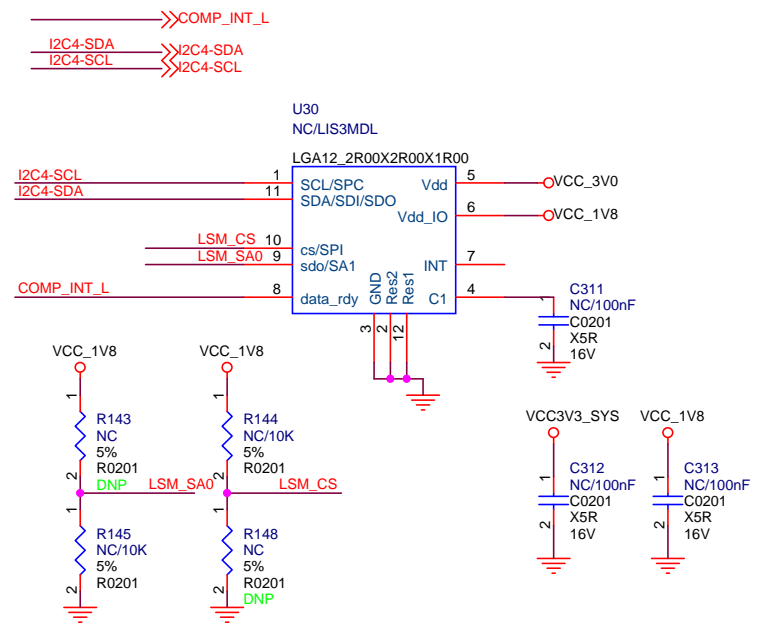
Ambient Light



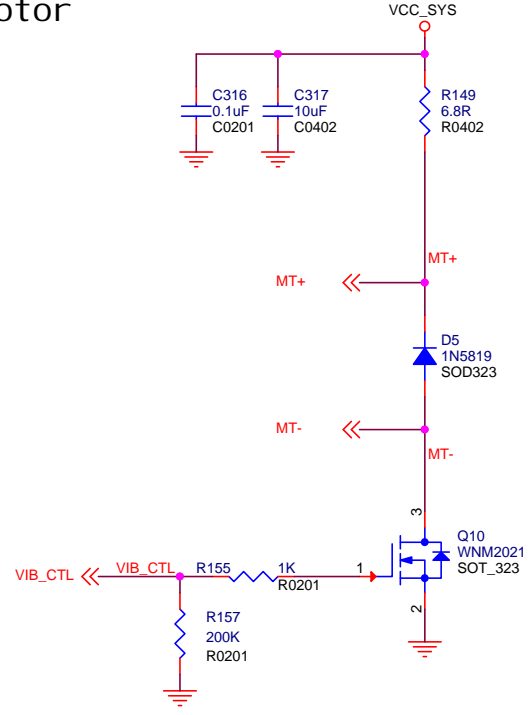
Gyro



3-axis Magnetometer

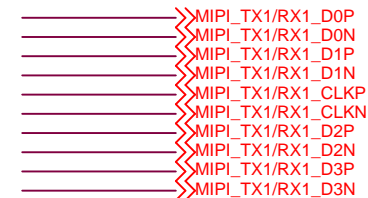
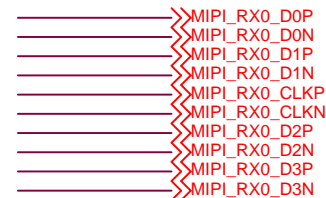
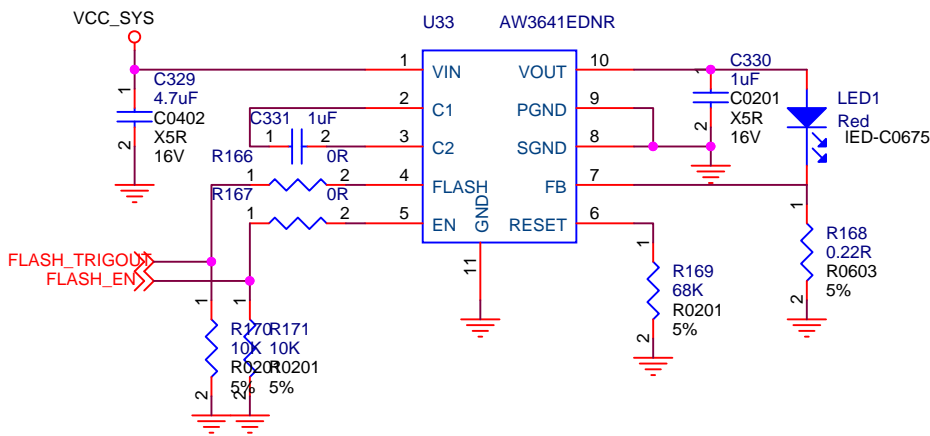
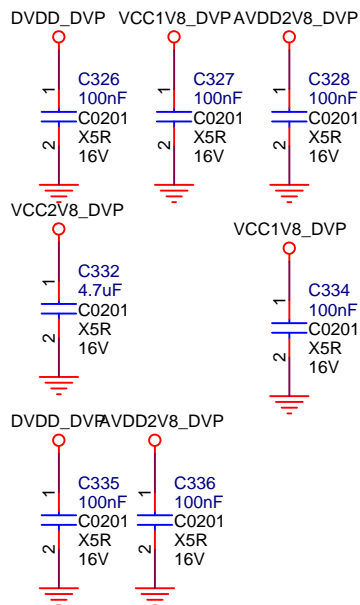
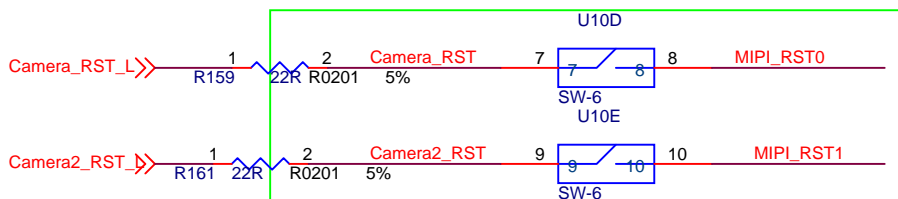
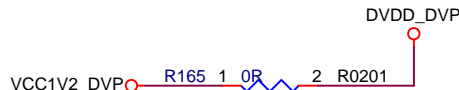
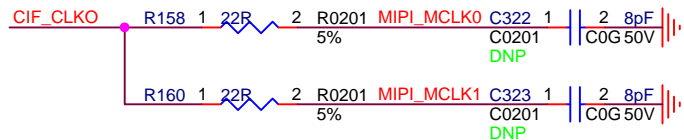


Motor



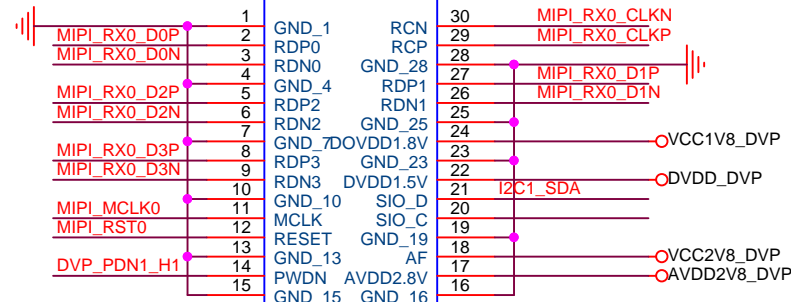
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Project: PinephonePro Schematic 20211127	
File: Sensor	
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MIPI Camera



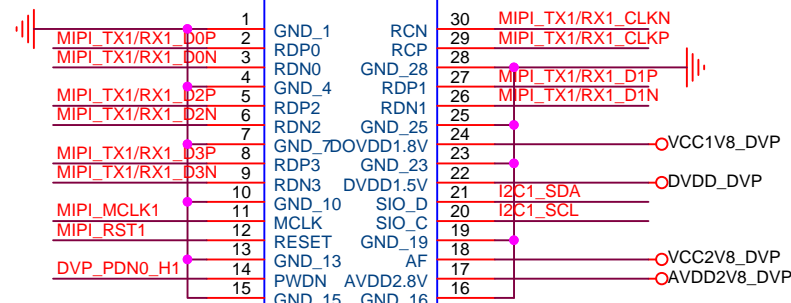
Rear Camera
IMX258

J6
AXT530124
OK-14F030-04



Front Camera
ov8858

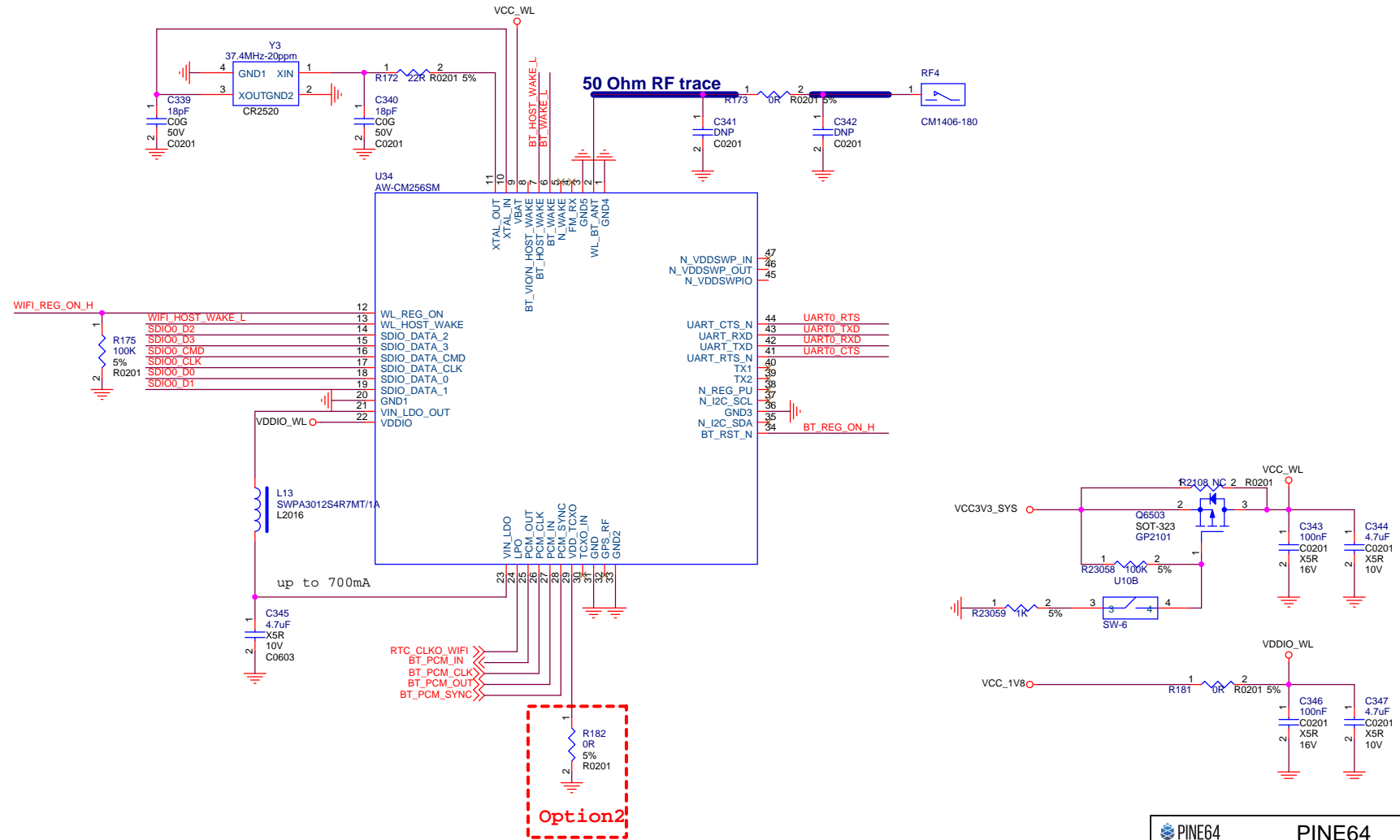
J7
AXT530124
OK-14F030-04



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Project:	PinephonePro Schematic 20211127		
File:	Camera-MIPI CSI		
Date:	Saturday, November 27, 2021	Rev:	1.0
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WIFI/BT MODULE

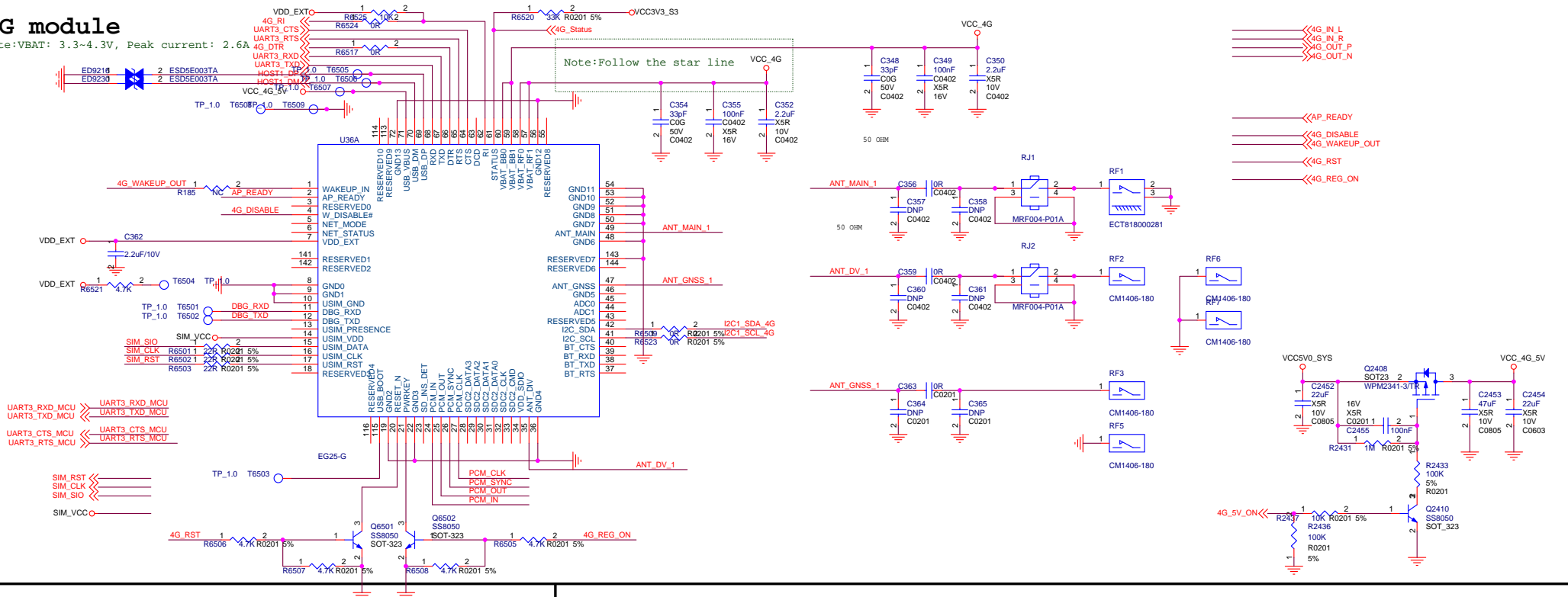
- SDIO0_D0
- SDIO0_D1
- SDIO0_D2
- SDIO0_D3
- SDIO0_CMD
- SDIO0_CLK
- UART0_RTS
- UART0_TXD
- UART0_RXD
- UART0_CTS
- BT_HOST_WAKE_L
- BT_WAKE_L
- BT_REG_ON_H
- WIFI_REG_ON_H
- WIFI_HOST_WAKE_L
- RTC_CLKO_WIFI



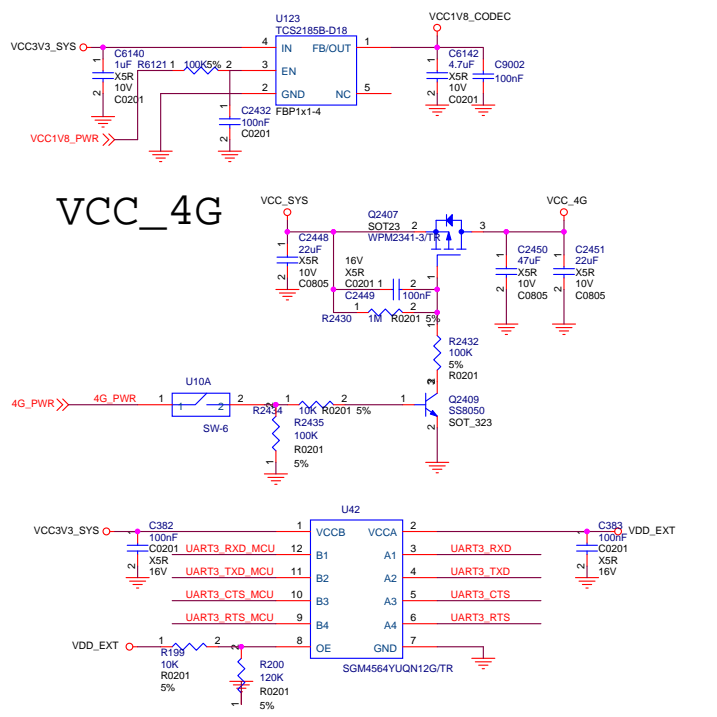
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Project: PinephonePro Schematic 20211127			
File: WIFI/BT-AW-CM256SMP6335			
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4G module

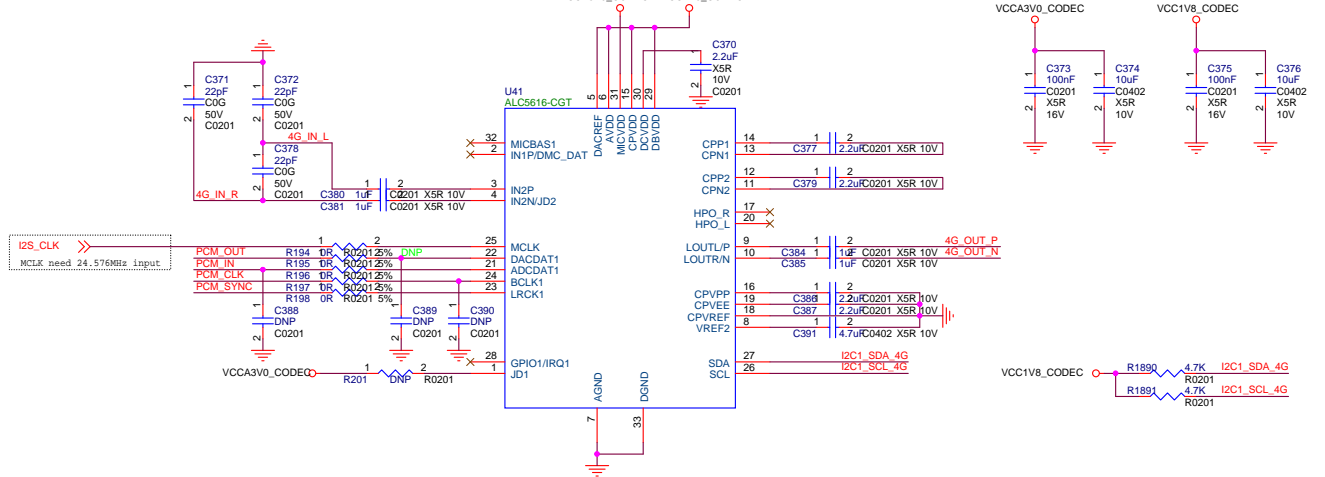
Note:VBAT: 3.3~4.3V, Peak current: 2.6A



POWER



CODEC



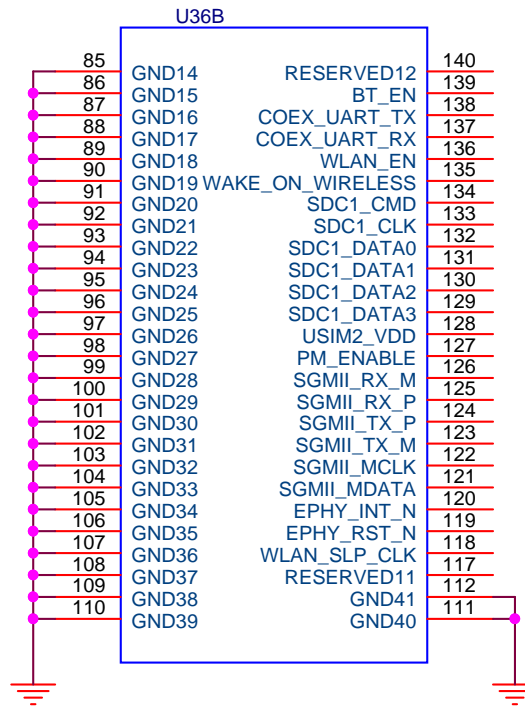
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File: 20.4G Module

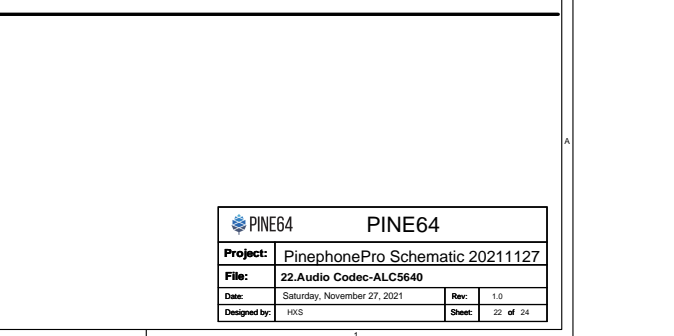
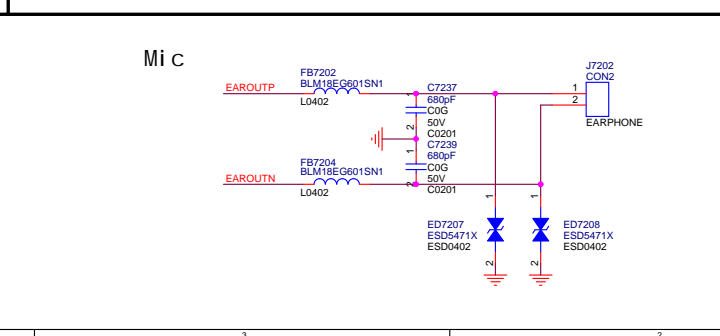
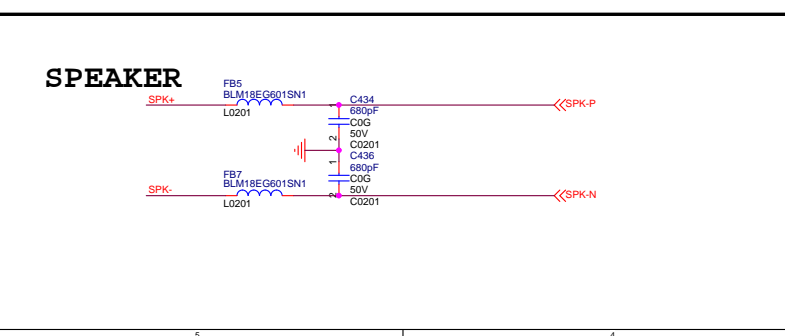
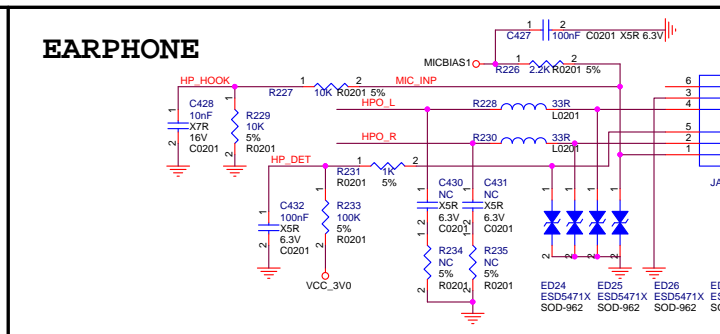
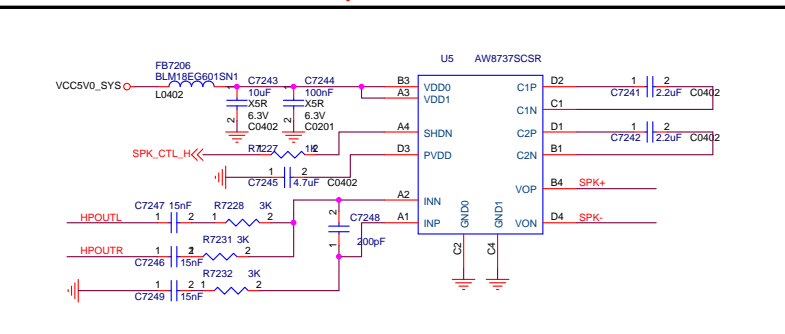
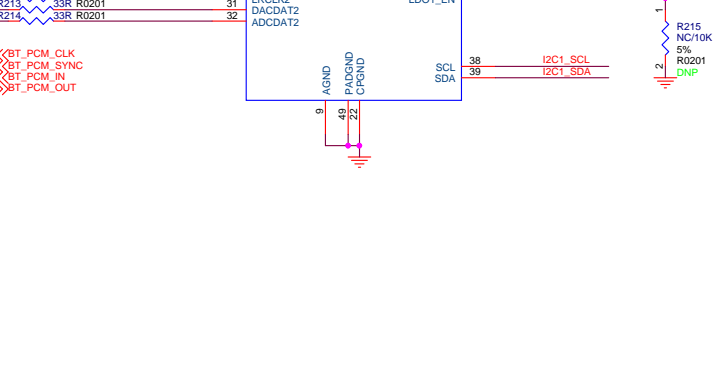
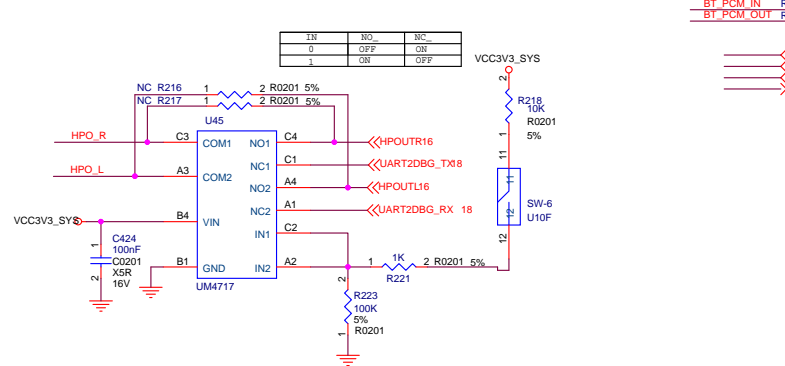
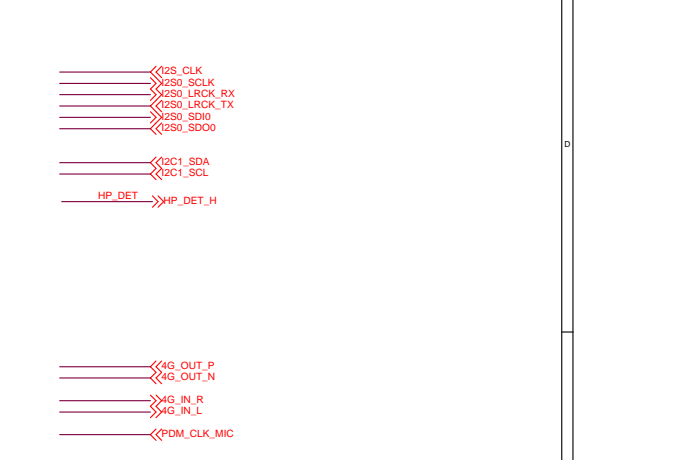
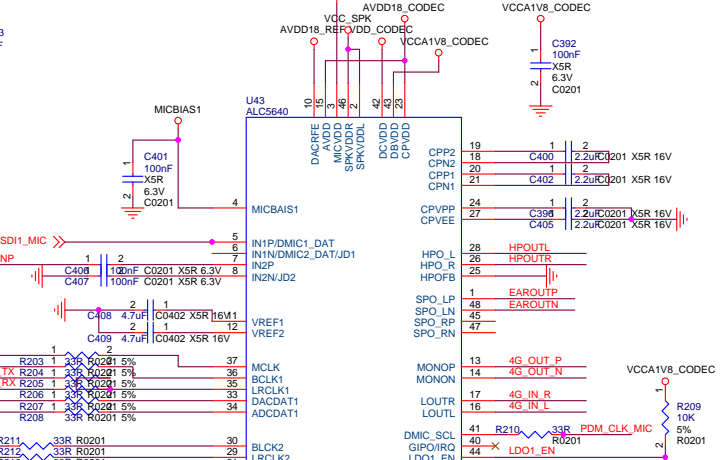
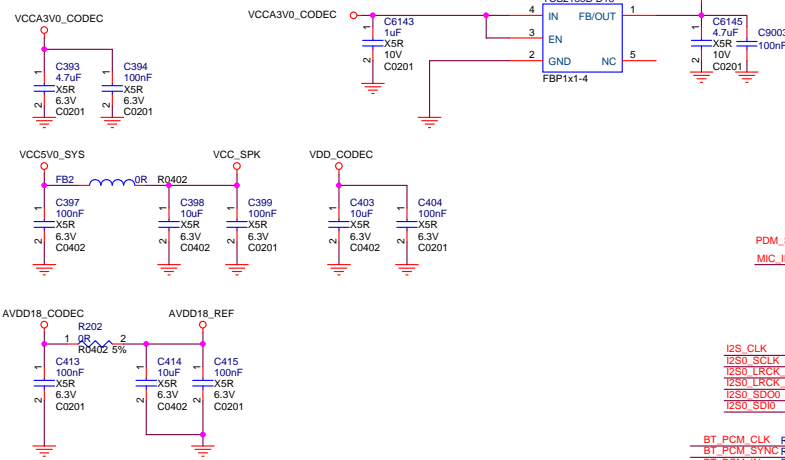
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Title			
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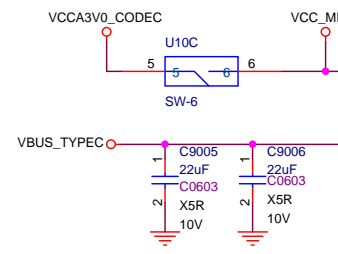
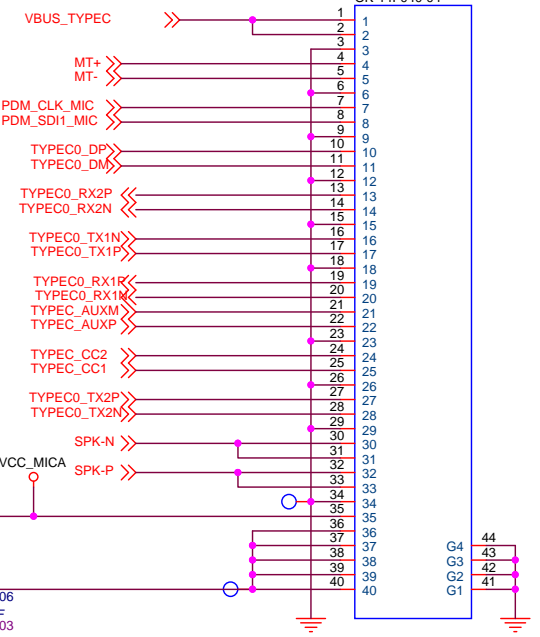
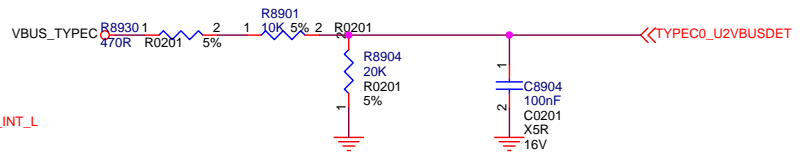
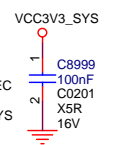
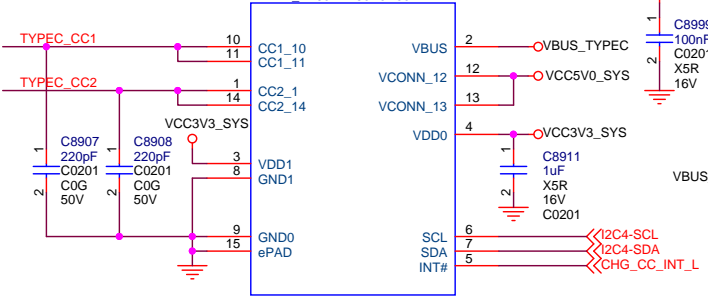
CODEC



PINE64		PINE64	
Project:	PinephonePro Schematic 20211127		
File:	22.Audio Codec-ALC5640		
Date:	Saturday, November 27, 2021	Rev:	1.0
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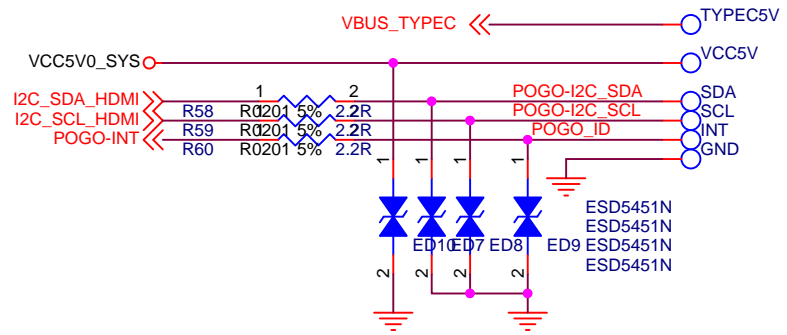
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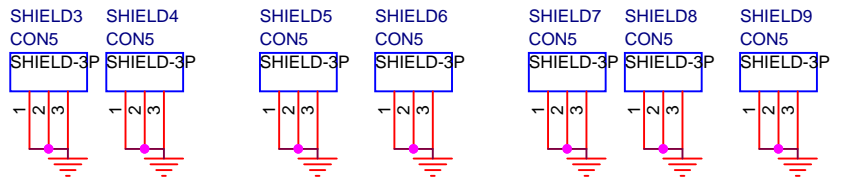
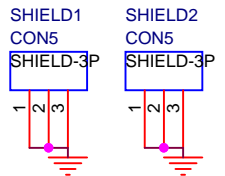
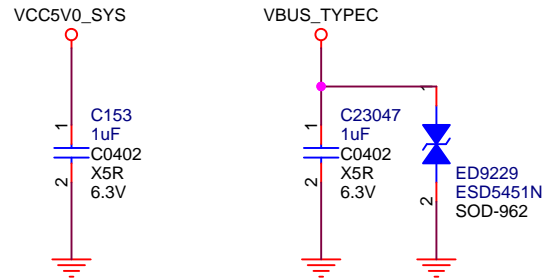


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Title PinephonePro Schematic 20211127			
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Pogo Pins



SHIELD&HOLE



		PINE64	
Project:	PinephonePro Schematic 20211127		
File:	24.USB-POGO/SHILED		
Date:	Saturday, November 27, 2021	Rev:	V1.0
Designed by:	Linus	Sheet:	24 of 24