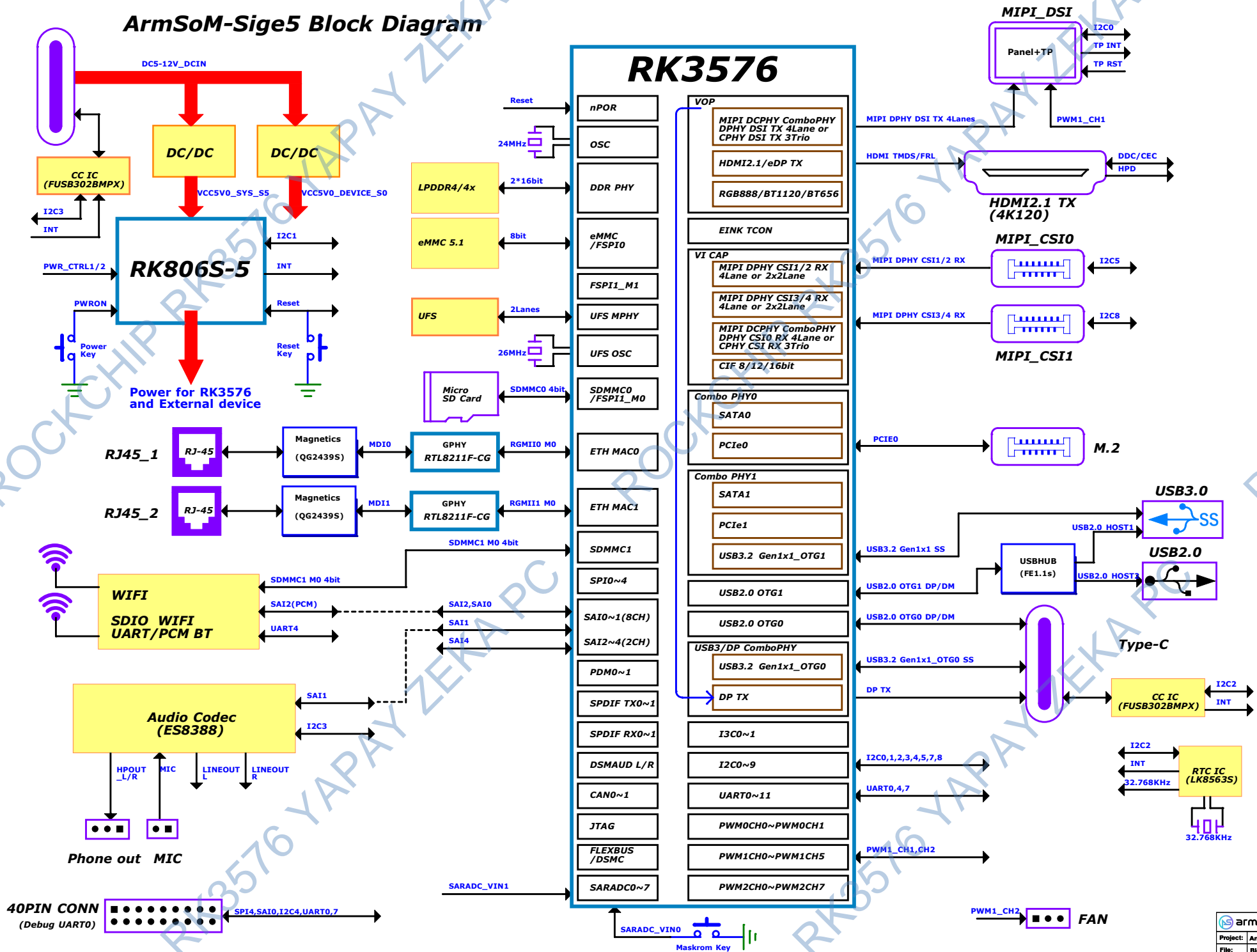


ArmSoM-Sige5 Block Diagram



RK3576_S (Power)

U1000S

CPU_BIG

CPU_BIG_DVDD_0: 2G5, 2G6, 2H6, 2H7, 2J6, 2J7, 2K6, 2K7

CPU_LIT

CPU_LIT_DVDD_0: 2H4, 2J3, 2J4, 2K3, 2K4

LOGIC

LOGIC_DVDD_0: 2F7, 2F8, 2F9, 2G8, 2G9, 2H8, 2H9

LOGIC_MEM_DVDD_0: 2F7, 2J9

GPU

GPU_DVDD_0: 2C4, 2C5, 2D4, 2D5, 2E4

NPU

NPU_DVDD_0: 2C7, 2C8, 2C9, 2D7, 2D8

VDD_CPU_BIG_S0

C1000, C1001, C1002, C1003, C1004, C1005, C1006, C1007, C1008

VDD_CPU_LIT_S0

C1009, C1010, C1011, C1012, C1013, C1014

VDD_LOGIC_S0

C1015, C1016, C1017, C1018, C1020, C1021, C1022

VDD_LOGIC_MEM_S0

C1024, C1023, C1025

VDD_GPU_S0

C1026, C1027, C1028, C1029, C1030, C1031

VDD_NPU_S0

C1032, C1033, C1034, C1035, C1036, C1037, C1038

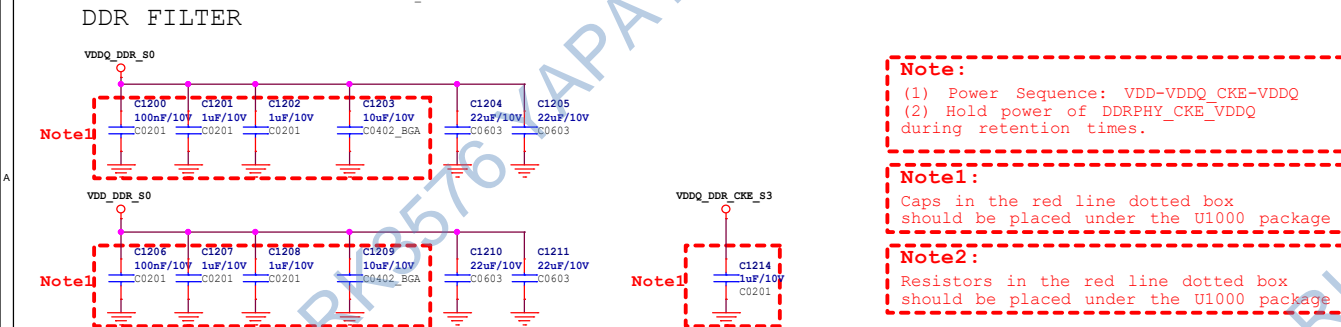
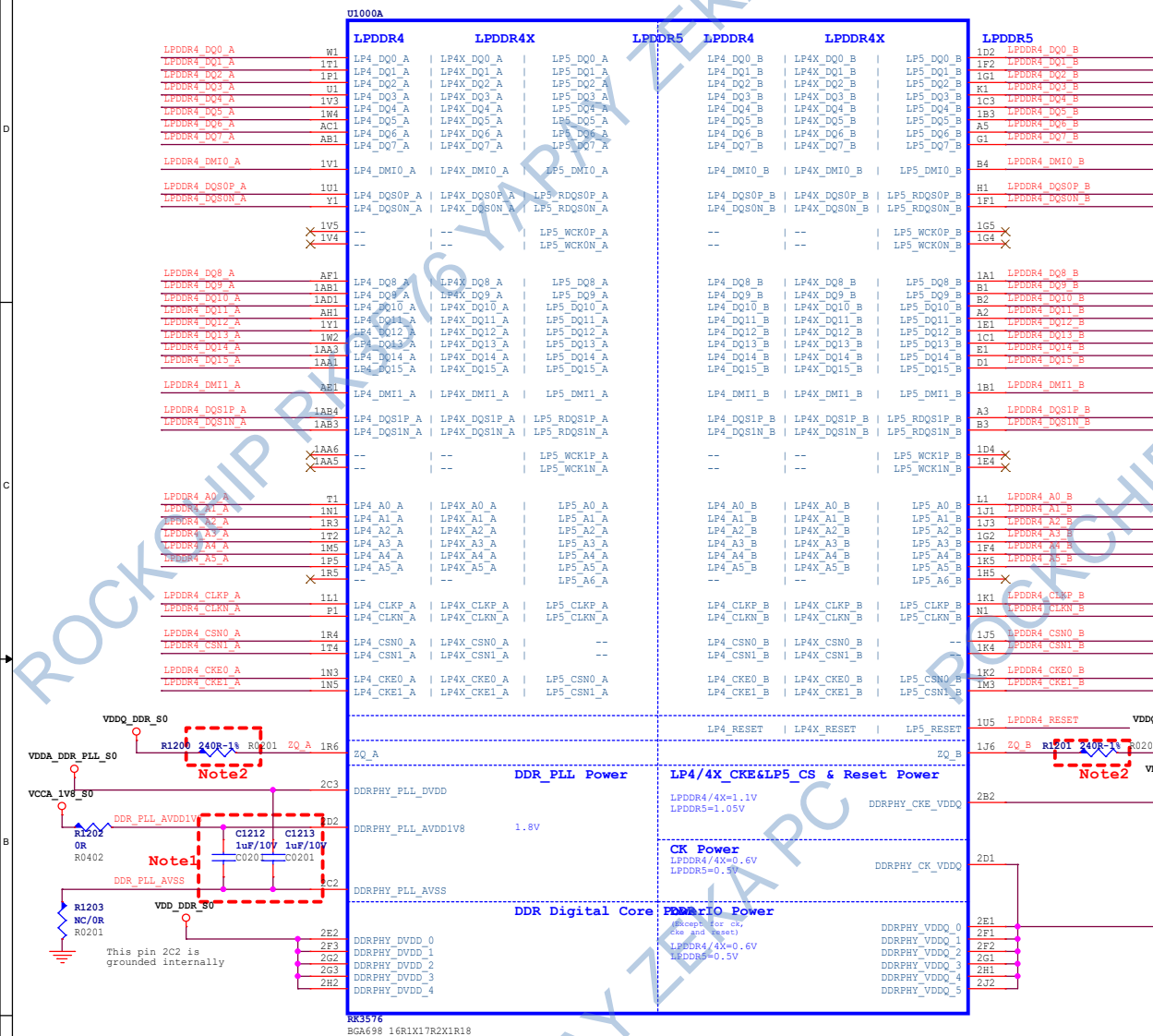
Note:

Caps of between dashed red lines and U1000 should be placed under the U1000 package. Other caps should be placed close to the U1000 package.

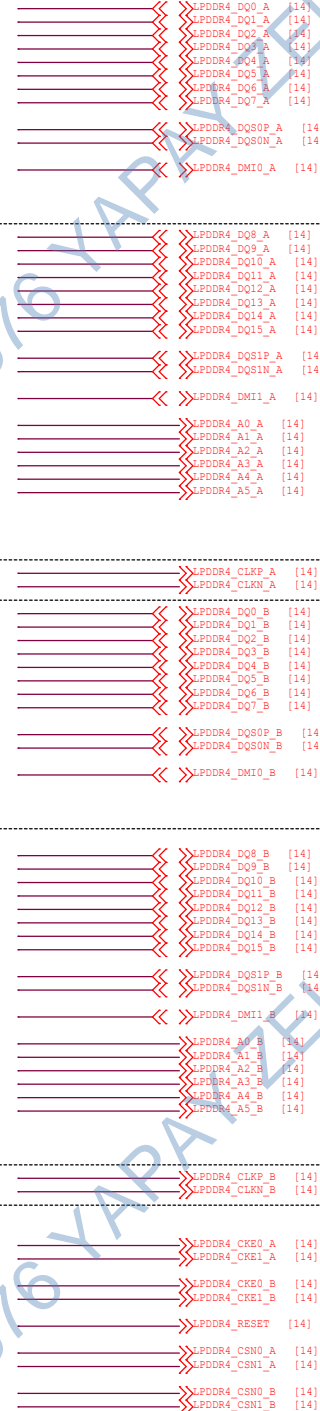
[illegible]

Caps of between dashed red lines and U1000 should be placed under the U1000 package. Other caps should be placed close to the U1000 package

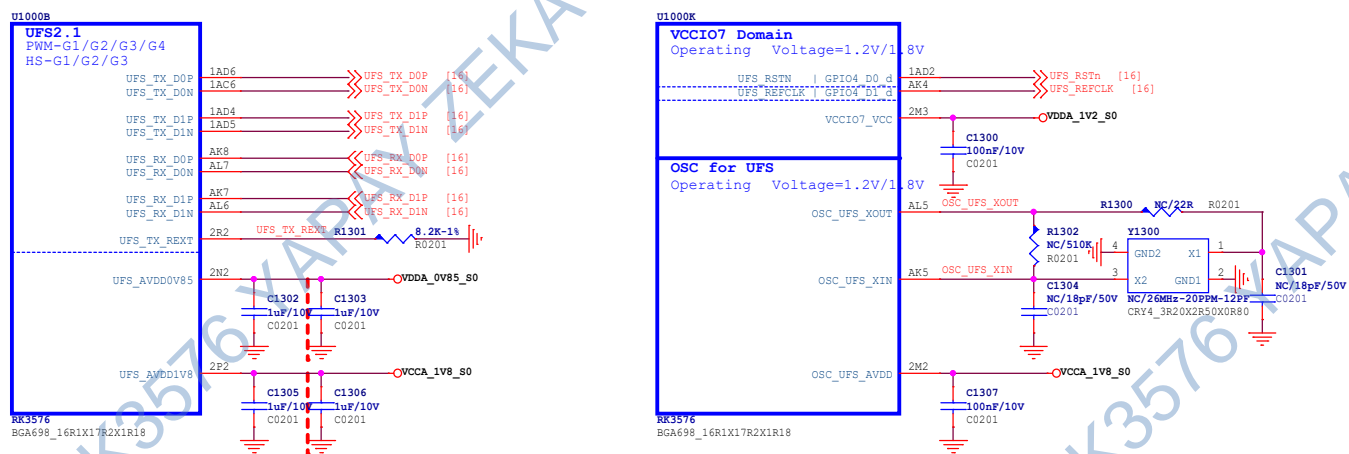
RK3576 A (DDRPHY)



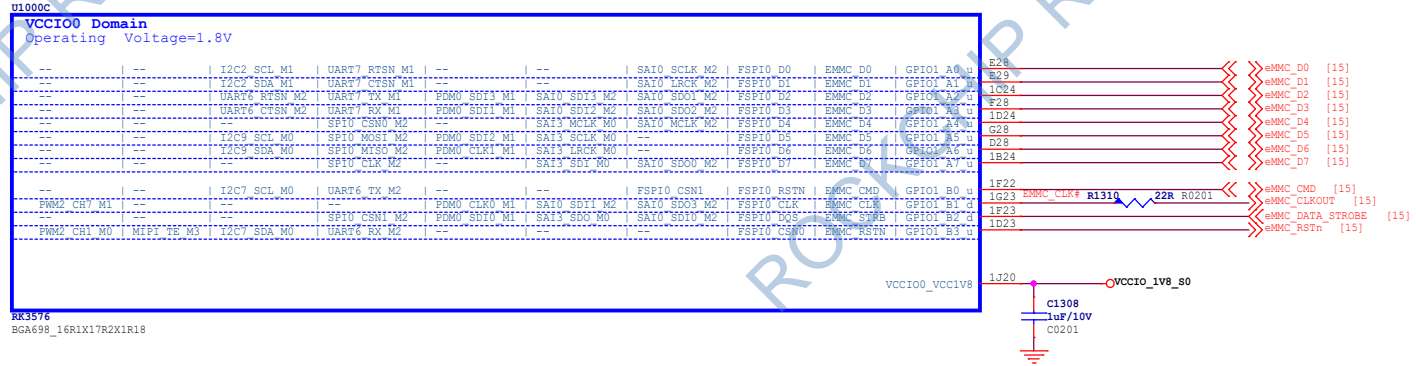
LPDDR4 Signal



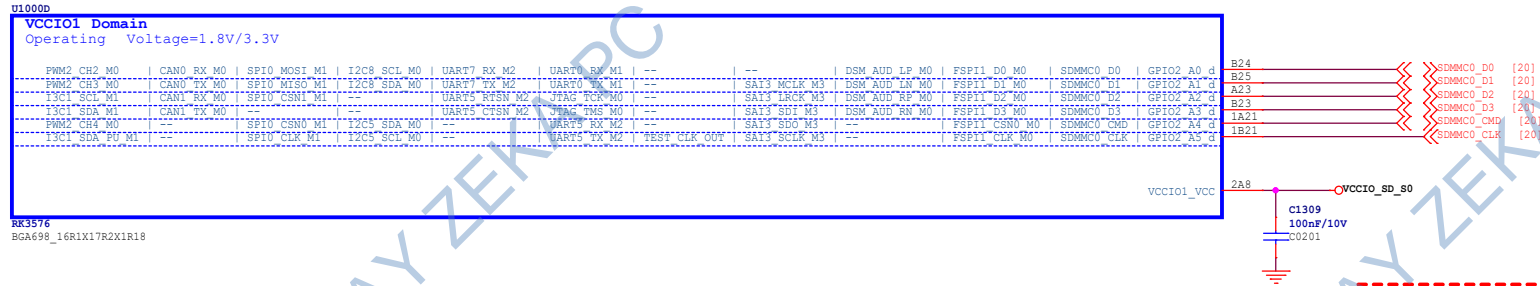
RK3576 B
(UFS2.1)



RK3576 C
(VCCIO0)

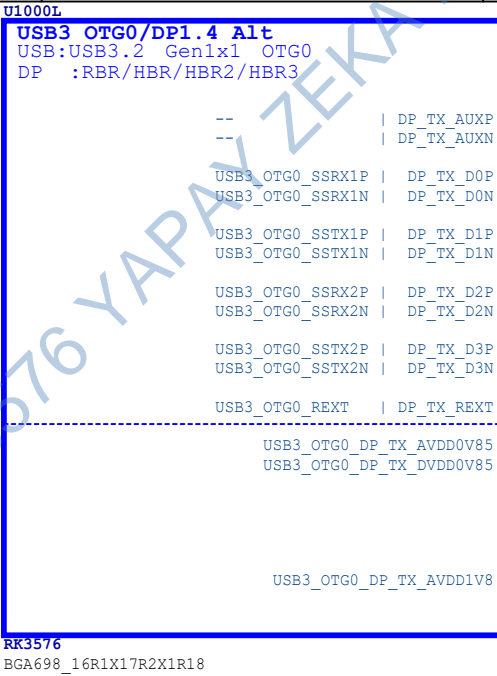


RK3576 D
(VCCIO1)

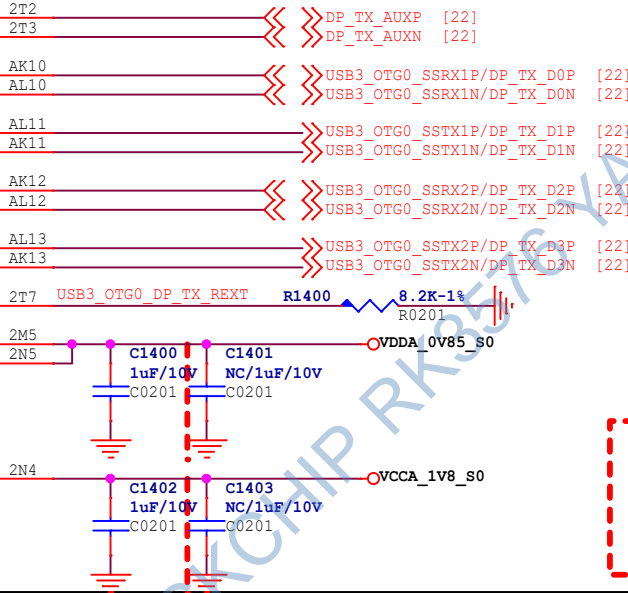


Note:
Caps of between dashed red lines and U1000 should be placed under the U1000 package.
Other caps should be placed close to the U1000 package

RK3576 L (USB3/DP)



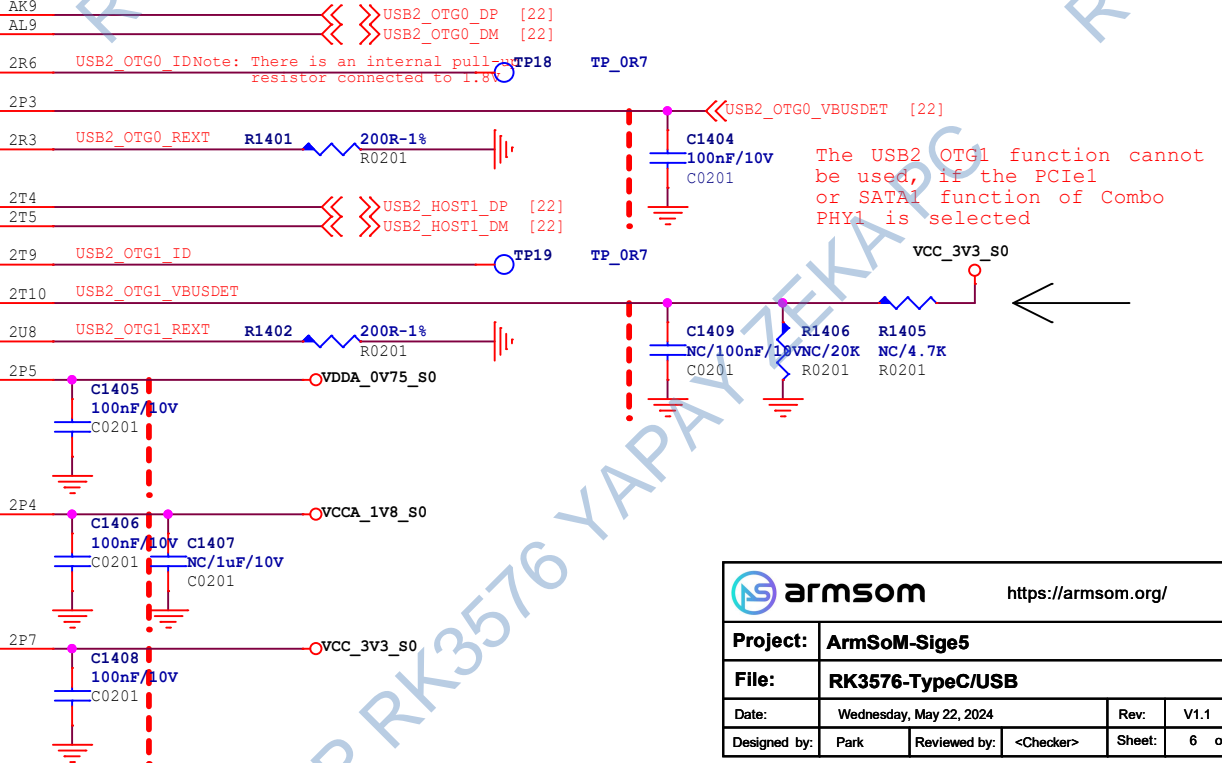
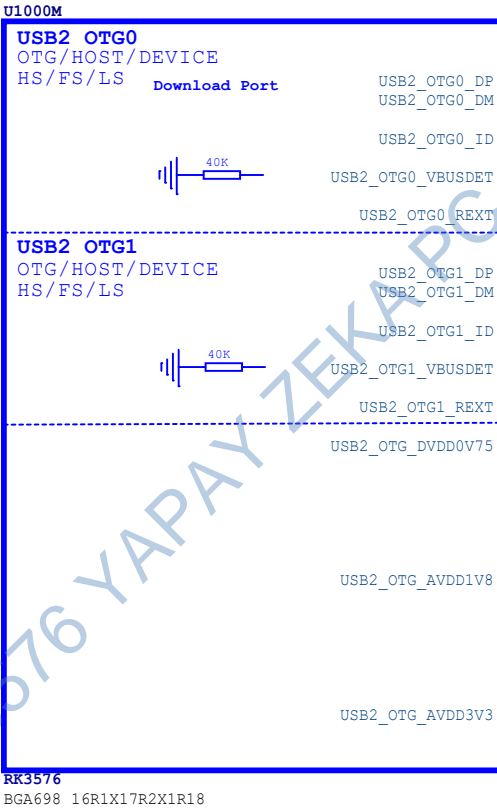
Support:
Type-C With Displayport Alternate Mode




Note:

Caps of between dashed red lines and U1000 should be placed under the U1000 package.
Other caps should be placed close to the U1000 package

RK3576 M (USB2)



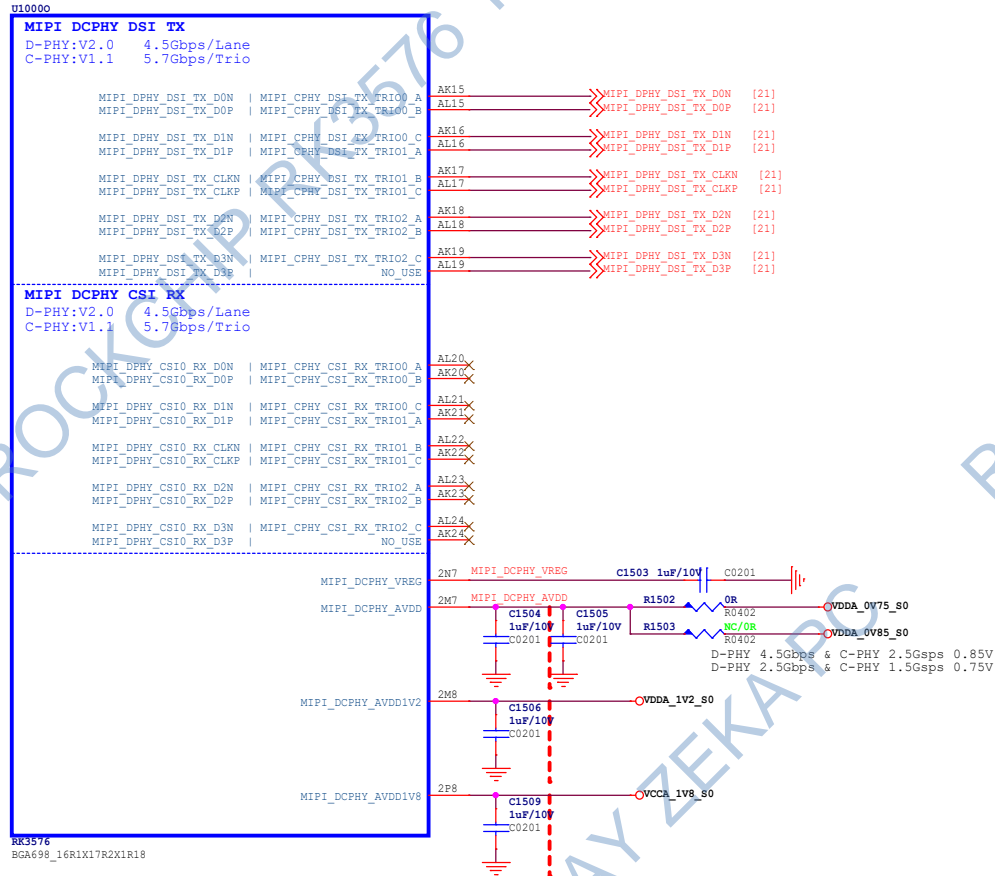


armsom

<https://armsom.org/>

Project:	ArmSoM-Sig5				
File:	RK3576-TypeC/USB				
Date:	Wednesday, May 22, 2024			Rev:	V1.1
Designed by:	Park	Reviewed by:	<Checker>	Sheet:	6 of 25

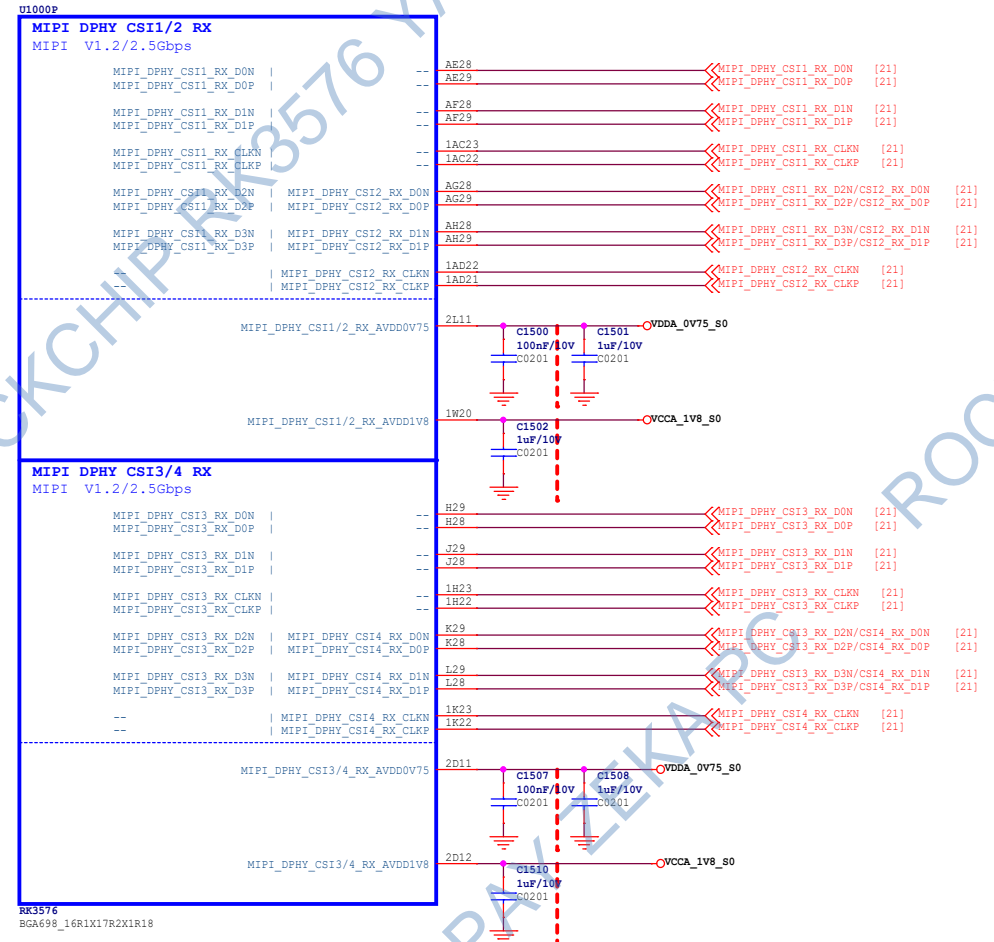
RK3576_O (MIPI DCPHY)



Note:

Caps of between dashed red lines and U1000 should be placed under the U1000 package.
Other caps should be placed close to the U1000 package

RK3576_P (MIPI DPHY CSI RX)

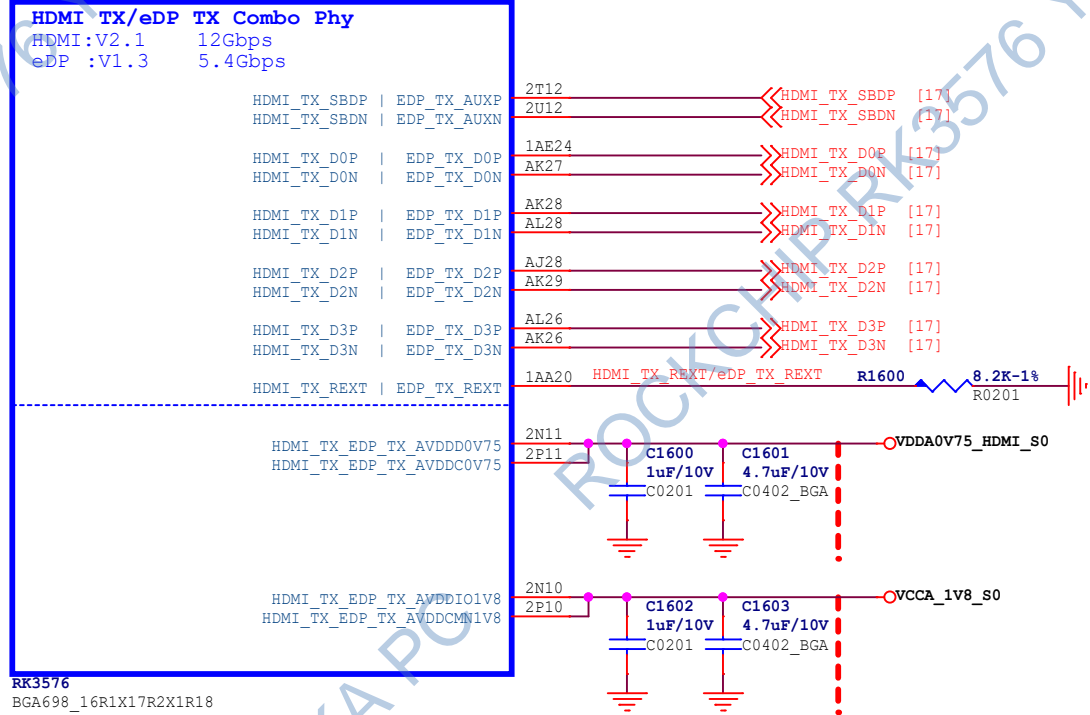


Note:


Caps of between dashed red lines and U1000 should be placed under the U1000 package.
Other caps should be placed close to the U1000 package

RK3576_Q (HDMI/eDP)

Note:
HDMI 2.1 supports up to 4Kx2K@120Hz
U10000



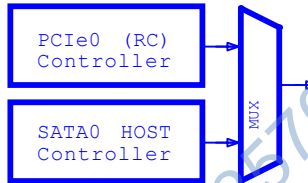
Note:
Caps of between dashed red lines and U1000 should be placed under the U1000 package.
Other caps should be placed close to the U1000 package

		armsom		https://armsom.org/	
Project:		ArmSoM-Sig5			
File:		RK3576-MIPI DSI/CSI			
Date:		Wednesday, May 22, 2024		Rev:	V1.1
Designed by:		Park	Reviewed by:	<Checker>	Sheet: 8 of 25

RK3576_N (PCIe/SATA/USB3)

U1000N

PCIe0/SATA0 Combo PHY0

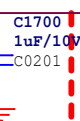


PCIe0: Gen1/Gen2
SATA0: Gen1/Gen2/Gen3

PCIe0_REFCLKP		--	1N22	>>>	PCIe0_REFCLKP	[20]
PCIe0_REFCLKN		--	1N23	>>>	PCIe0_REFCLKN	[20]
PCIe0_TXP		SATA0_TXP	P29	>>>	PCIe0_TXP	[20]
PCIe0_TXN		SATA0_TXN	P28	>>>	PCIe0_TXN	[20]
PCIe0_RXP		SATA0_RXP	R28	>>>	PCIe0_RXP	[20]
PCIe0_RXN		SATA0_RXN	R29	>>>	PCIe0_RXN	[20]

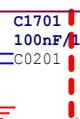
PCIe0_SATA0_AVDD0V85

VDDA_0V85_S0

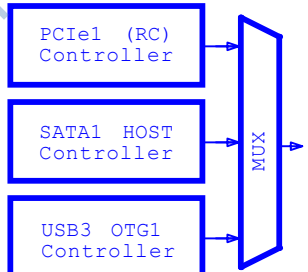


PCIe0_SATA0_AVDD1V8

VCCA_1V8_S0



PCIe1/SATA1/USB3_OTG1 Combo PHY1

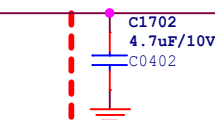


PCIe1: Gen1/Gen2
SATA1: Gen1/Gen2/Gen3
USB : USB3.2 Gen1x1 OTG1

PCIe1_REFCLKP		--	1L23	>>>		
PCIe1_REFCLKN		--	1M23	>>>		
PCIe1_TXP		SATA1_TXP USB3_OTG1_SSTXP	N28	>>>	USB3_HOST1_SSTXP	[22]
PCIe1_TXN		SATA1_TXN USB3_OTG1_SSTXN	N29	>>>	USB3_HOST1_SSTXN	[22]
PCIe1_RXP		SATA1_RXP USB3_OTG1_SSRXP	M28	>>>	USB3_HOST1_SSRXP	[22]
PCIe1_RXN		SATA1_RXN USB3_OTG1_SSRXN	M29	>>>	USB3_HOST1_SSRXN	[22]

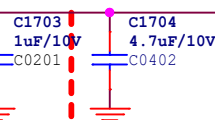
PCIe1_SATA1_USB3_OTG1_AVDD0V85

VDDA_0V85_S0



PCIe1_SATA1_USB3_OTG1_AVDD1V8


VCCA_1V8_S0



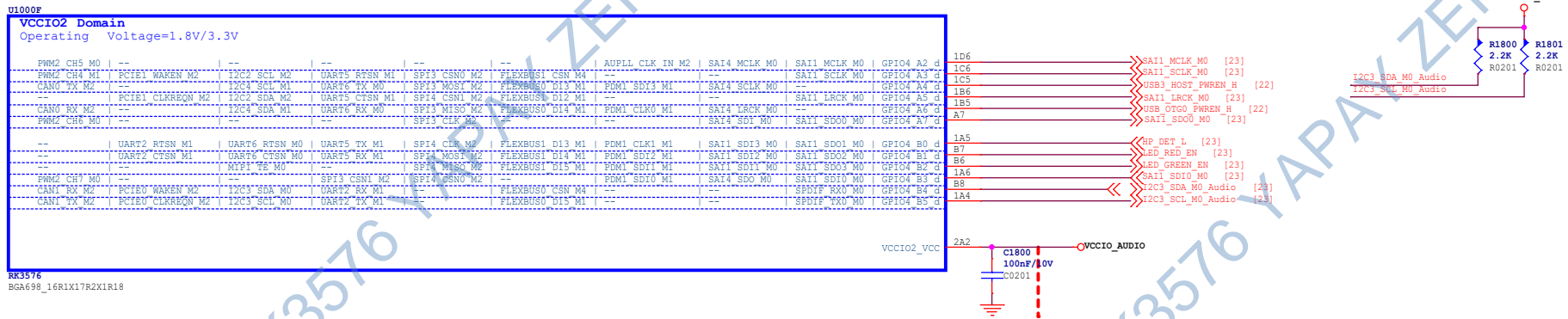
RK3576
BGA698_16R1X17R2X1R18

Note:

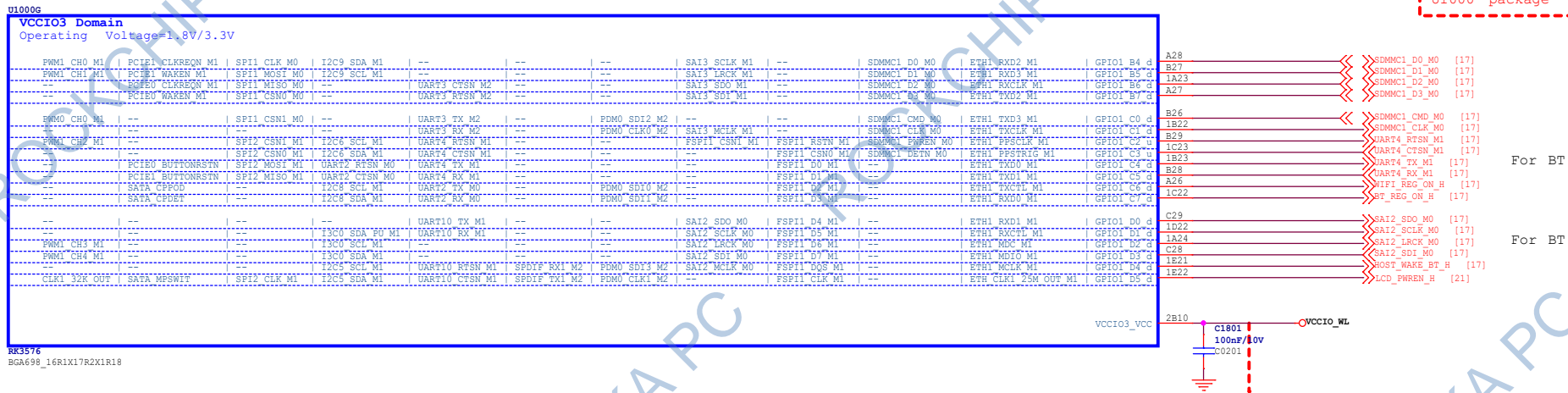
Caps of between dashed red lines and U1000 should be placed under the U1000 package.
Other caps should be placed close to the U1000 package

 armsom		https://armsom.org/	
Project:	ArmSoM-Sige5		
File:	RK3576-PCIe/SATA/USB3		
Date:	Tuesday, May 21, 2024		Rev: V1.1
Designed by:	Park	Reviewed by: <Checker>	Sheet: 9 of 25

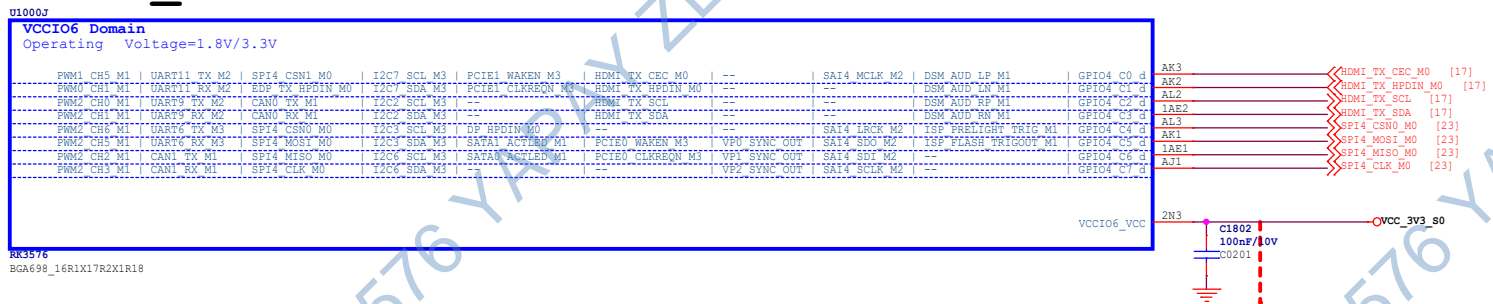
RK3576_F (VCCIO2)



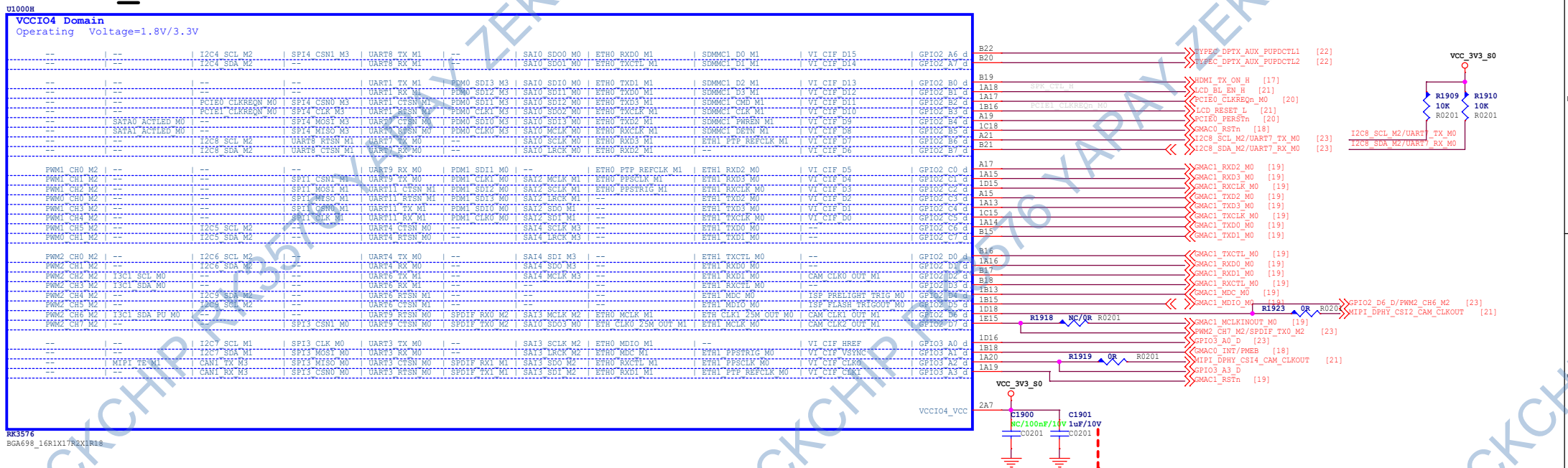
RK3576 G (VCCIO3)



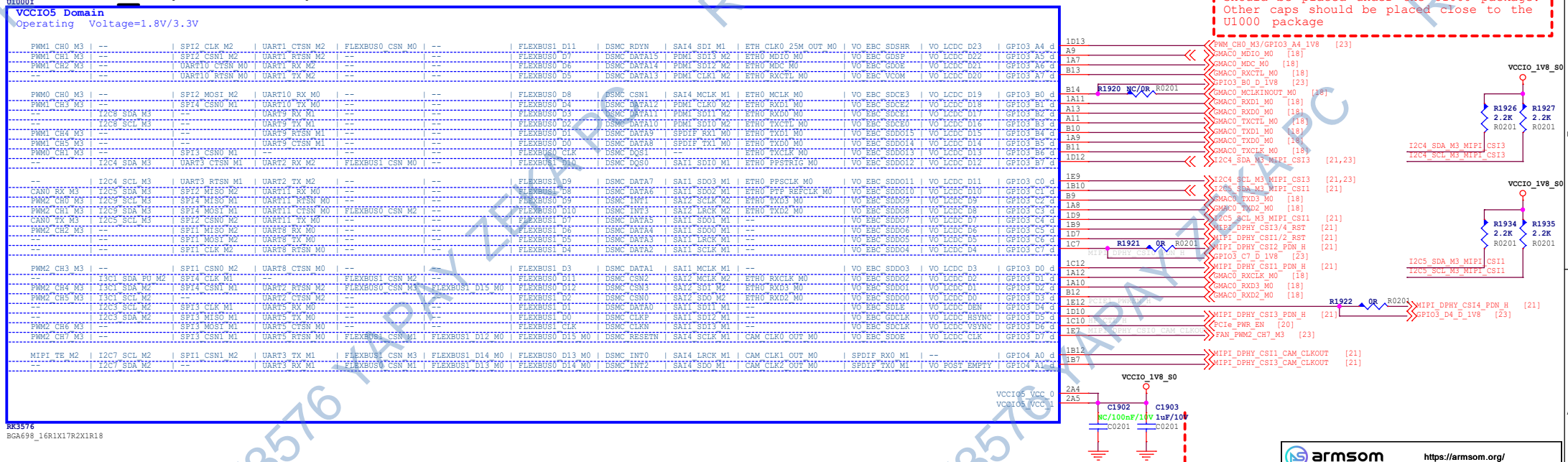
BK3576 J (VCC106)



RK3576_H (VCCIO4)



RK3576 I (VCCIO5)



Note:
Caps of between dashed red lines and U1000 should be placed under the U1000 package.
Other caps should be placed close to the U1000 package

```

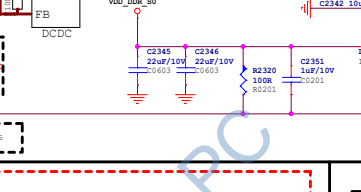
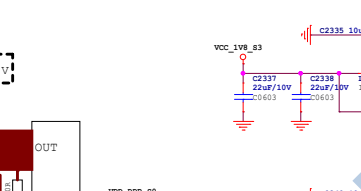
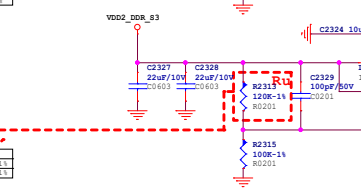
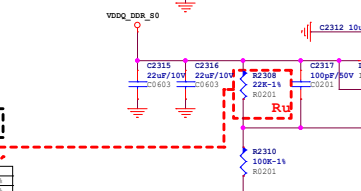
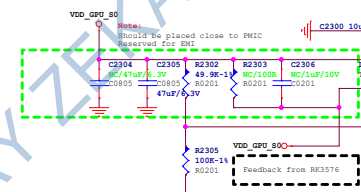
[3] 12C1_SDA_M0_RK004 >>>
[3] 12C1_SCL_M0_RK004 >>>

[3] PMIC_PMR_CTRL1 >>>
[3] PMIC_PMR_CTRL2 >>>

[3] PMIC_INT_1 <<<
[3,23] RESET_1 >>>

[13] PMIC_EXT_EN_OUT <<<
[23] PWRON_1 >>>

```



This device must be mounted. Replacing TVS mode is not recommended, if must, please choose the same specifications

Operating Supply Voltage : 5.5V(5.25-6V)

PeakPulse Current: >10A(tp=8/20uS)

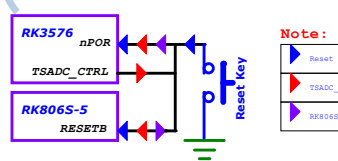
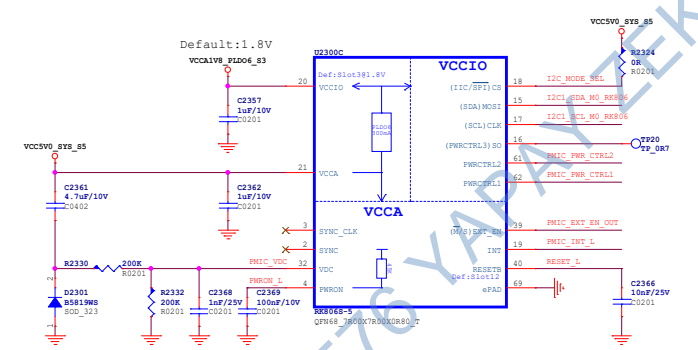
Surge Clamping Voltage: <6.5V

DO NOT DELETE IT!



DO NOT DELETE IT!

The schematic diagram illustrates the power supply section of the ADXL345. It features three voltage regulators: VCC2V0, VCC5V0, and VCC1V0. Each regulator is a 100mV regulator with a 100nF output capacitor. The VCC2V0 regulator is connected to the VCC2V0 pin of the ADXL345. The VCC5V0 regulator is connected to the VCC5V0 pin. The VCC1V0 regulator is connected to the VCC1V0 pin. The ADXL345 is shown as a black box with pins 1 through 14. The VCC2V0 pin is connected to the VCC2V0 regulator. The VCC5V0 pin is connected to the VCC5V0 regulator. The VCC1V0 pin is connected to the VCC1V0 regulator. The ADXL345 is also connected to ground at pins 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, and 14.

The RK806 LDO power distribution of the reference schematics is only suitable for the interface used in the reference schematics. If the interface functions are to be added to the reference schematics, the RK806 LDO distribution needs to be re-evaluated, otherwise the added functions may exceed the maximum current provided by the LDO



Note:

- | | |
|---|-------------------------|
|  | Reset Key Control Path |
|  | TSADC_SHUT Control Path |
|  | RK806S-5 Control Path |

Note:
I2C Mode:CS(pin18) connected to VCCA(pin21);
SPI Mode(Def):CS(pin18) floating or connected to GND

```
Default:1.8V
Default:1.8V
Default:1.2V
Default:3.0V
Default:3.3V
```

Default:0.75V

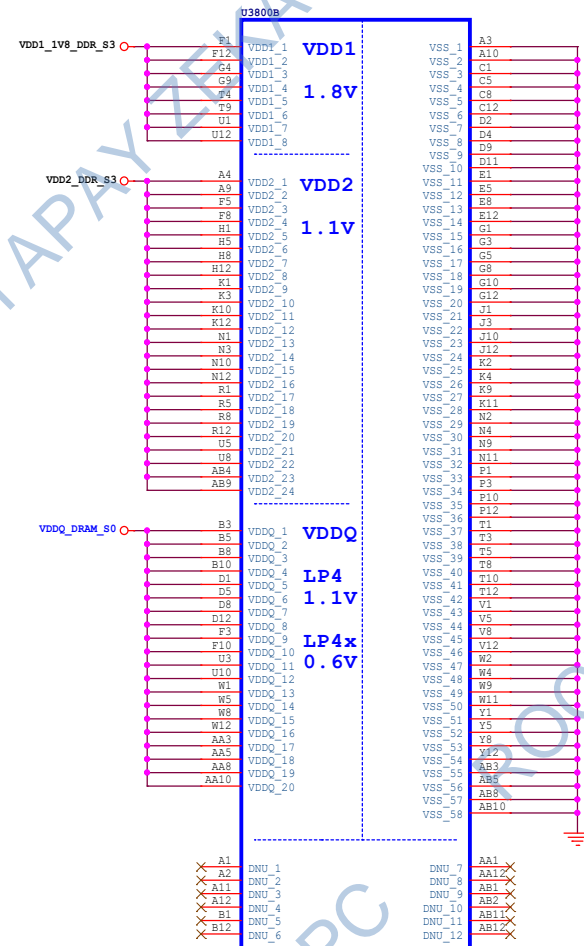
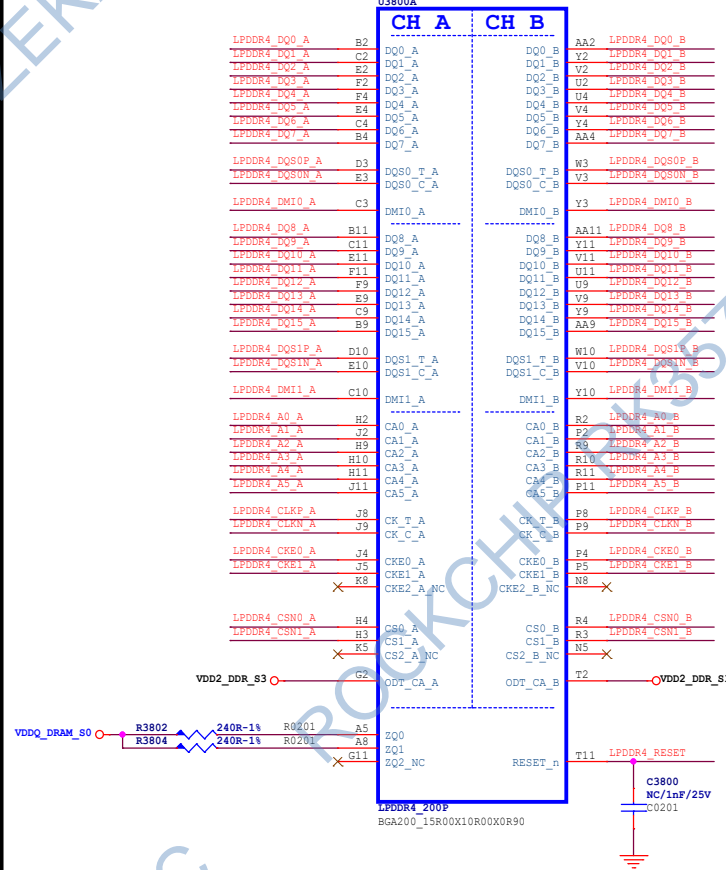
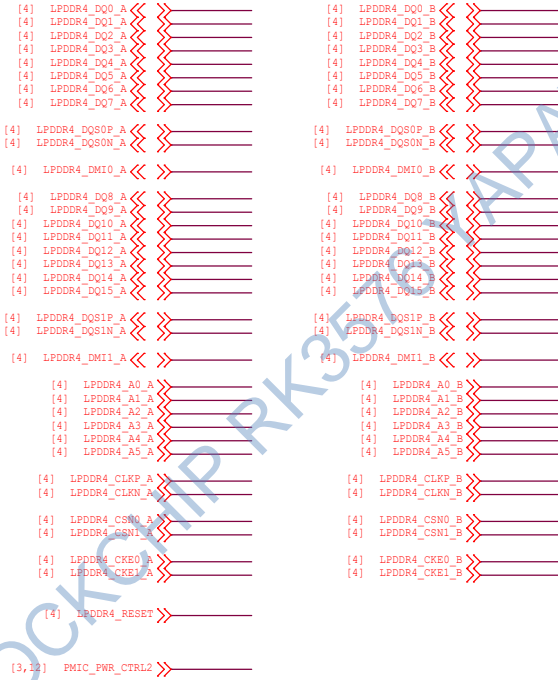
Default:0.85V;Low frequency:0.85V-->0.75V

```

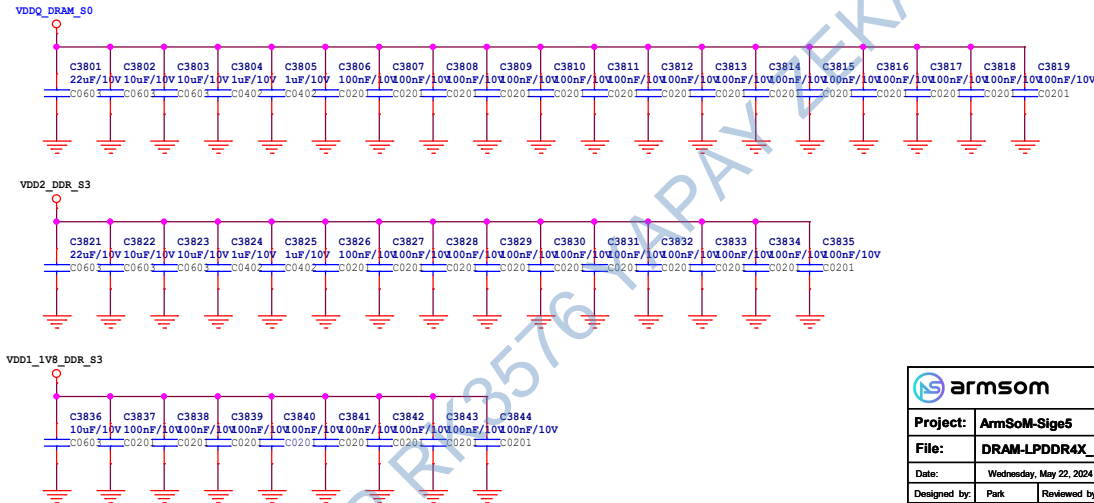
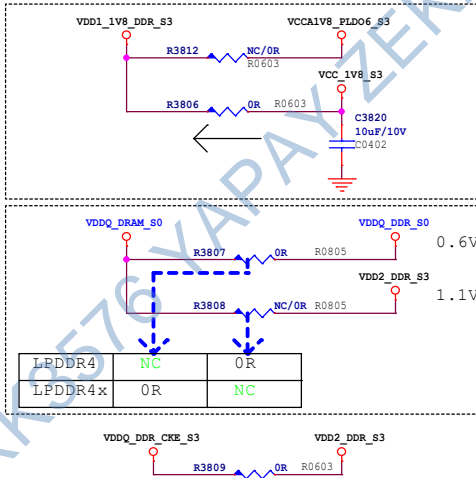
Default:0.75V
Default:0.85V
Default:0.75V


```


LPDDR4/4X



Note:
Sequence: VDD1-VDD2-VDDQ
VDD1: 1.70-1.95
VDD2: 1.06-1.17
VDDQ: 1.06-1.17



 armsom		https://armsom.org/	
Project:	ArmSoM-Sig5		
File:	DRAM-LPDDR4X_1X32bit_200P		
Date:	Wednesday, May 22, 2024	Rev:	V1.1
Designed by:	Park	Reviewed by:	<Checker>
		Sheet:	14 of 25

eMMC FLASH

[5] eMMC_D0<<>>
[5] eMMC_D1<<>>
[5] eMMC_D2<<>>
[5] eMMC_D3<<>>
[5] eMMC_D4<<>>
[5] eMMC_D5<<>>
[5] eMMC_D6<<>>
[5] eMMC_D7<<>>

[5] eMMC_CMD<<>>

[5] eMMC_CLKOUT<<>>

[5] eMMC_DATA_STROBE<<>>

[5] eMMC_RSTn<<>>

VCCIO_1V8_S0

R4000 10K R4001 NC/10K
R0201 R0201

eMMC_D0 A3
eMMC_D1 A4
eMMC_D2 A5
eMMC_D3 B2
eMMC_D4 B3
eMMC_D5 B4
eMMC_D6 B5
eMMC_D7 B6
eMMC_CMD M5

U4000A

DATA0 VCCQ1
DATA1 VCCQ2
DATA2 VCCQ3
DATA3 VCCQ4
DATA4 VCCQ5
DATA5
DATA6
DATA7

CMD

CLK

Data Strobe

RST_n

VDDi

VSS1 A6
VSS2 C4
VSS3 E7
VSS4 G5
VSS5 H10
VSS6

VSSQ1 N2
VSSQ2 N5
VSSQ3 P4
VSSQ4 P6
VSSQ5

VSF4 K10
VSF3 F10
VSF2 E10
VSF1 E9

EMMC B153 2L
BGA153_13RX11R5X0R9_2L

VCCIO_1V8_S0

C6 C4000 C4001 C4002
M4 100nF/10V 100nF/10V 4.7uF/10V
N4 C0201 C0201 C0402
P3
P5

VCC_3V3_S0

E6 C4004 C4005 C4006
F5 100nF/10V 100nF/10V 4.7uF/10V
J10 C0201 C0201 C0402
K9

Note:
This cap should be placed
close to the Pin M6 <400mi>

C4003 NC/10K
C0201

eMMC_DATA_STROBE R4004 OR R0201

VCCIO_1V8_S0

R4005 NC/47K
R0201

eMMC_RSTn


Note:
The capacity value depends on the
requirement of eMMC Specification

VDDi C2
C4007 2.2uF/10V
C0402

U4000B

A2 NC2 NC196 P14
A8 NC8 NC195 P13
A9 NC9 NC194 P12
A10 NC10 NC193 P11
A11 NC11 NC191 P8
A12 NC12 NC190 P2
A13 NC13 NC184 P1
A14 NC14 NC183 N14
B1 NC15 NC182 N13
B7 NC21 NC181 N12
B8 NC22 NC180 N11
B9 NC23 NC179 N10
B10 NC24 NC178 N9
B11 NC25 NC177 N8
B12 NC26 NC176 N7
B13 NC27 NC175 N6
B14 NC28 NC174 N3
C1 NC29 NC171 N1
C3 NC31 NC169 M14
C7 NC35 NC168 M13
C8 NC36 NC167 M12
C9 NC37 NC166 M11
C10 NC38 NC165 M10
C11 NC39 NC164 M9
C12 NC40 NC163 M8
C13 NC41 NC162 M7
C14 NC42 NC161 M3
D1 NC43 NC157 M2
D2 NC44 NC156 M1
D3 NC45 NC155 L14
D4 NC46 NC154 L13
D12 NC54 NC153 L12
D13 NC55 NC152 L3
D14 NC56 NC143 L2
E1 NC57 NC142 L1
E2 NC58 NC141 K14
E3 NC59 NC140 K13
E12 NC68 NC139 K12
E13 NC69 NC138 K3
E14 NC70 NC129 K2
F1 NC71 NC128 K1
F2 NC72 NC127 J14
F3 NC73 NC126 J13
F12 NC82 NC125 J12
F13 NC83 NC124 J3
F14 NC84 NC115 J2
G1 NC85 NC114 J1
G2 NC86 NC113 H14
G12 NC96 NC112 H13
G13 NC97 NC111 H12
G14 NC98 NC110 H3
NC99 NC101 H2
NC100 NC100 H1
A7 RFU1 RFU9 P10
E5 RFU2 RFU8 P7
E8 RFU3 RFU7 K7
G3 RFU4 RFU6 K6
G10 RFU5

EMMC B153 2L
BGA153_13RX11R5X0R9_2L



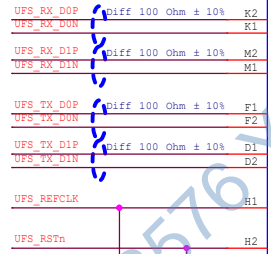
armsom

<https://armsom.org/>

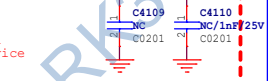
Project:	ArmSoM-Sige5		
File:	Flash-eMMC		
Date:	Wednesday, May 22, 2024		Rev: V1.1
Designed by:	Park	Reviewed by: <Checker>	Sheet: 15 of 25

UFS Flash

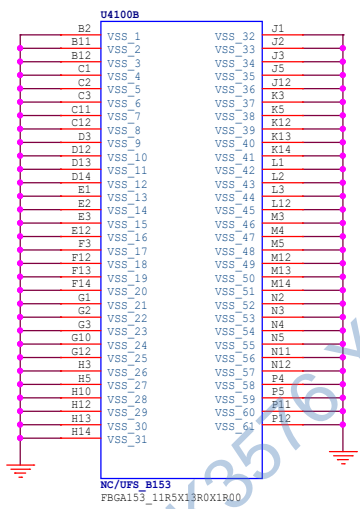
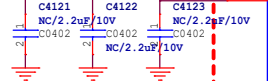
- (1) UFS_TX_D0P
- (1) UFS_TX_D0N
- (1) UFS_TX_D1P
- (1) UFS_TX_D1N
- (1) UFS_RX_D0P
- (1) UFS_RX_D0N
- (1) UFS_RX_D1P
- (1) UFS_RX_D1N
- (3) UFS_RSTn
- (5) UFS_REFCLK



Note:
These caps should be placed close to the pin of UFS device



Note:
The capacitance value of these capacitors depends on the selected UFS device



NC/UFS_B153
FBGA153_11R5X13R0X1R00

Note:
For particles above UFS4.0, Pin B13, P3, and P6 need to refer to the particle datasheet for design

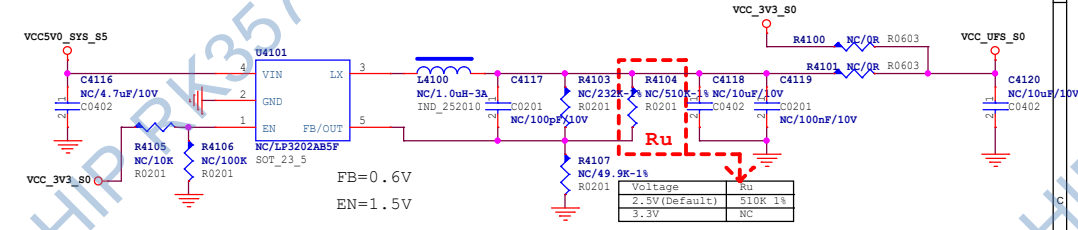
UFS POWER

	VCCQ	VCCQ2	VCC
UFS2.0	1.2V	1.8V	3.3V
UFS2.1	No Connect	1.8V	3.3V
UFS2.2	No Connect	1.8V	3.3V
UFS3.0	1.2V	No Connect	2.5V/3.3V
UFS3.1	1.2V	No Connect	2.5V/3.3V
UFS4.0	1.2V	No Connect	2.5V

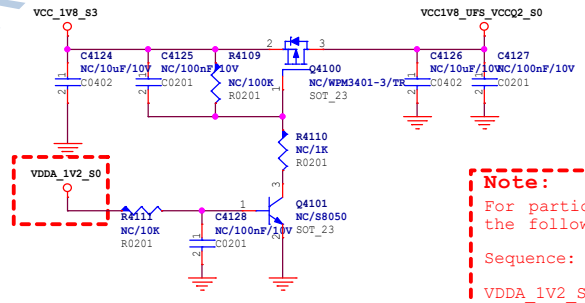
Default UFS device: UFS2.2

Sequence: VCCQ2->VCCQ, VCC is independent

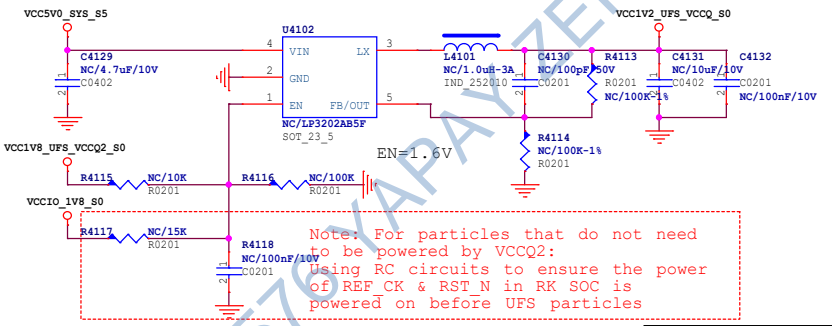
Note: Do not support UFS4.0 Device!
The power ball that is not used at the particle must be kept floating.



Voltage	Ru
2.5V(Default)	510K 1%
3.3V	NC



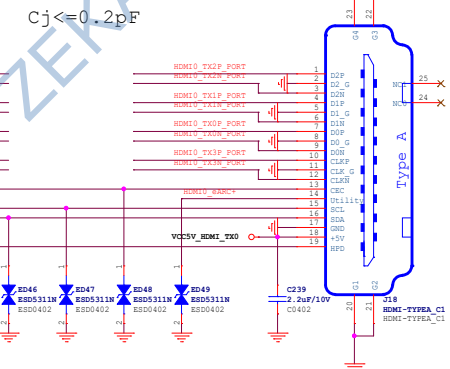
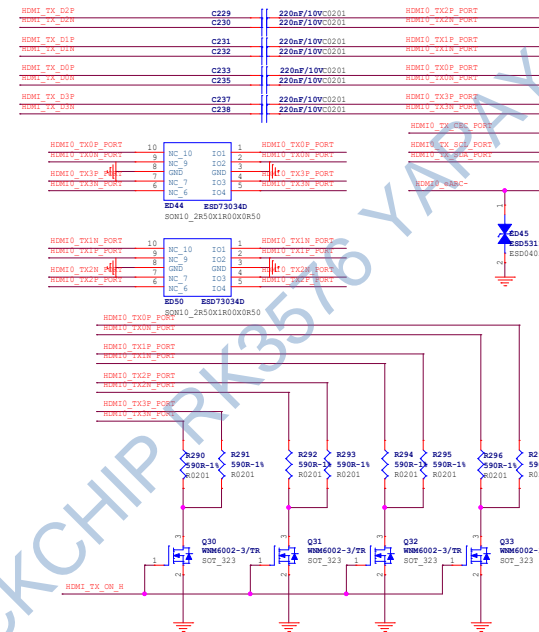
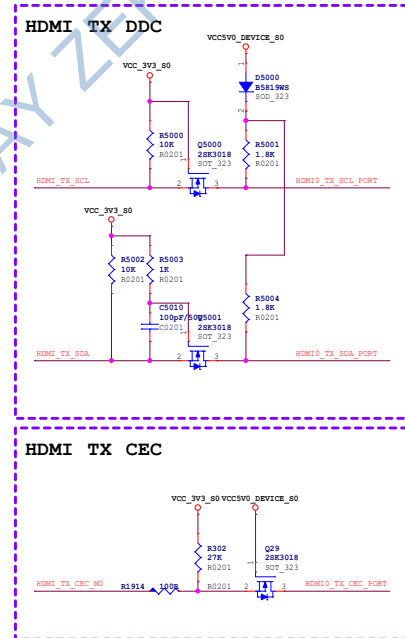
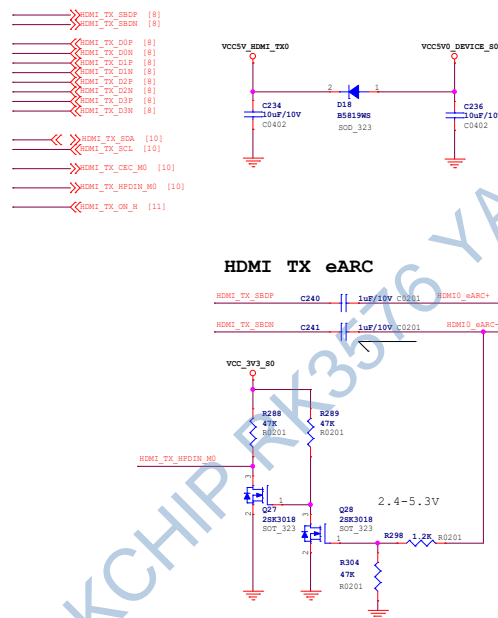
Note:
For particles that require VCCQ and VCCQ2, the following timing needs to be met:
Sequence: VDDA_1V2_S0->VCCQ2->VCCQ
VDDA_1V2_S0 is the power of REF CK & RST_N in RK SOC, which needs to be powered on before UFS particles



Note: For particles that do not need to be powered by VCCQ2:
Using RC circuits to ensure the power of REF CK & RST_N in RK SOC is powered on before UFS particles

armsom		https://armsom.org/	
Project:	ArmSoM-Sig5		
File:	Flash-UFS		
Date:	Wednesday, May 22, 2024	Rev:	V1.1
Designed by:	Park	Reviewed by:	<Checker>
Sheet:	16	of	25

HDMI TX0

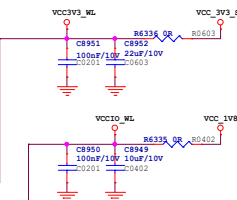
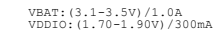
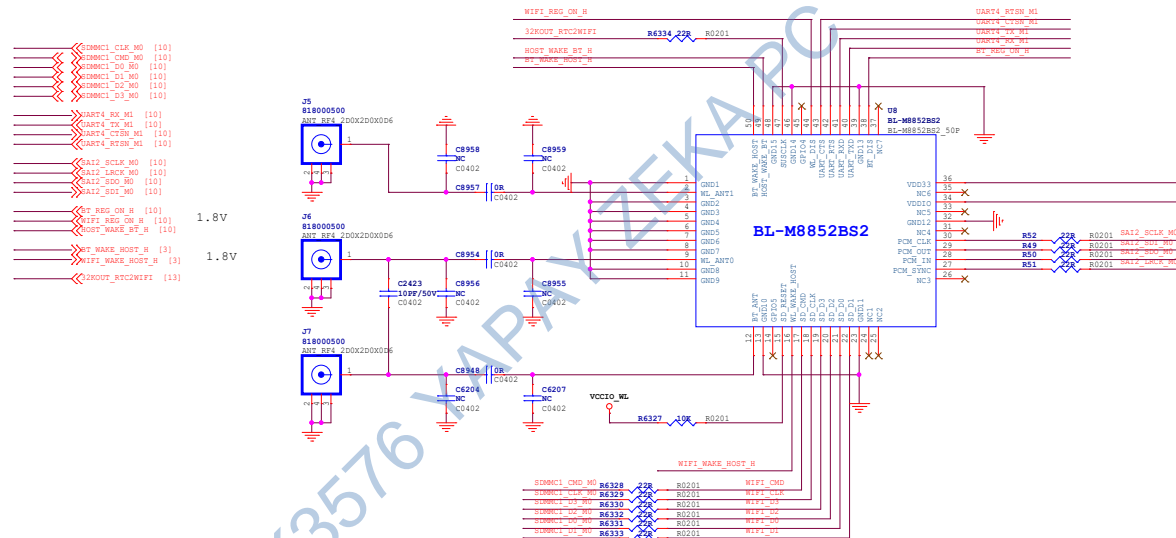


Note:
The HDMI2.1 trace length is less than 100mm.
The HDMI2.1 differential trace impedance is 100 OHM.

Note: The controller only support AC coupled link. In order to backward compatibility or to meet HDMI2.0 (1.4b) DC common mode spec and Voff, need do R based level-shift.

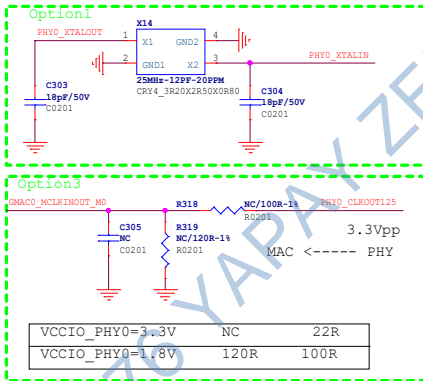
Switch on in HDMI2.0(TMDS) mode
Switch off in HDMI2.1(FRL) mode.

SDIO WIFI6/BT Module-2T2R

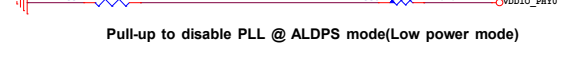
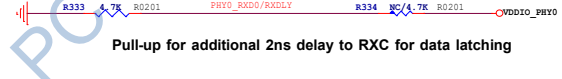
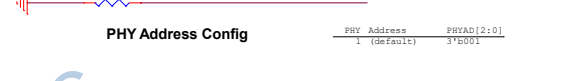
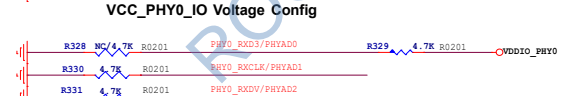
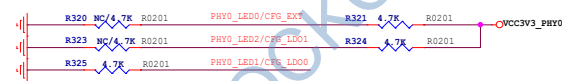
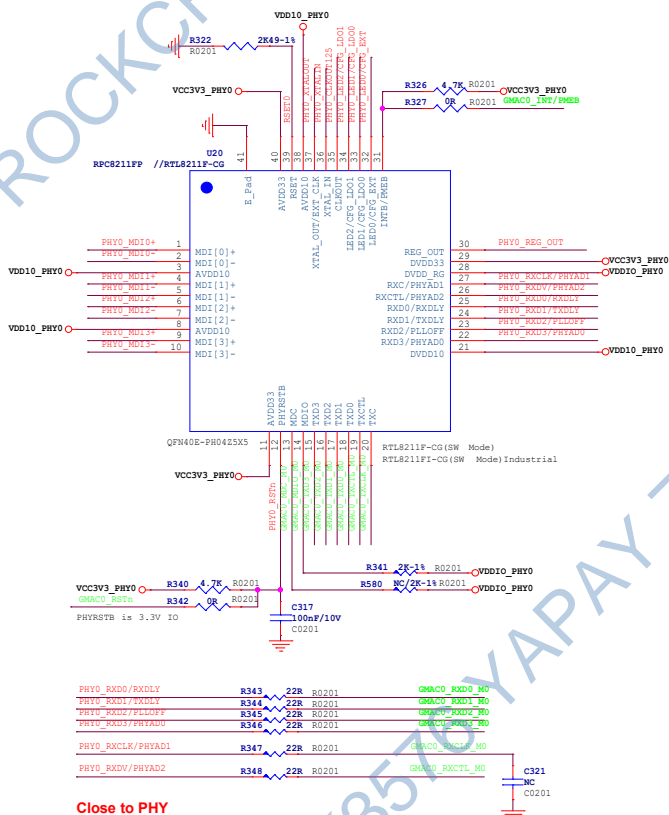
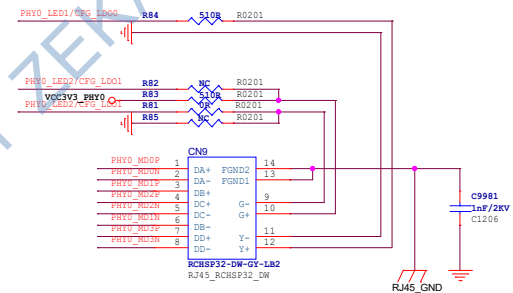
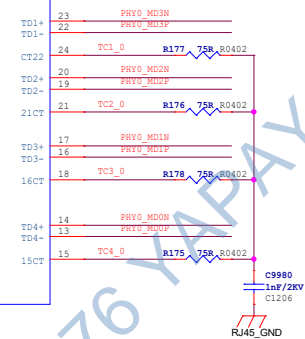
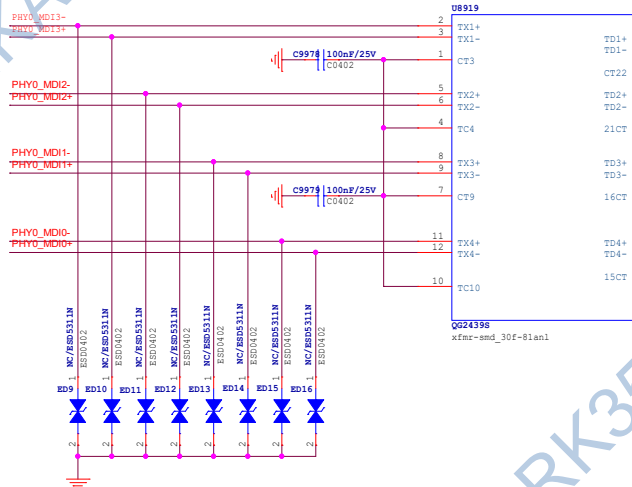


GPHY To JR45

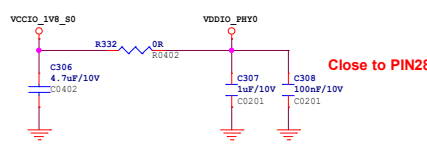
GMACO_TXD0_M0 [11]
 GMACO_TXD1_M0 [11]
 GMACO_TXD2_M0 [11]
 GMACO_TXD3_M0 [11]
 GMACO_TXCTL_M0 [11]
 GMACO_TXCLK_M0 [11]
 GMACO_RXD0_M0 [11]
 GMACO_RXD1_M0 [11]
 GMACO_RXD2_M0 [11]
 GMACO_RXD3_M0 [11]
 GMACO_RXCTL_M0 [11]
 GMACO_RXCLK_M0 [11]
 GMACO_MCLKINOUT_M0 [11]
 GMACO_MDC_M0 [11]
 GMACO_MDIO_M0 [11]
 GMACO_RSTn [11]
 GMACO_INT/PWRn [11]



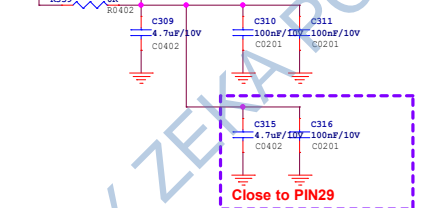
RK SOC clock
 mode recommended
 RK3576 model1



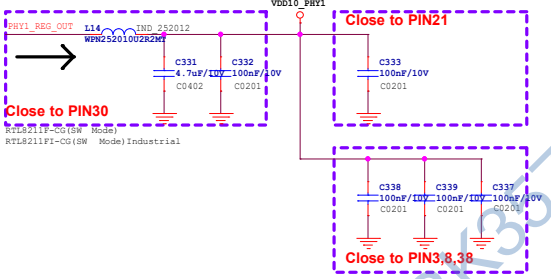
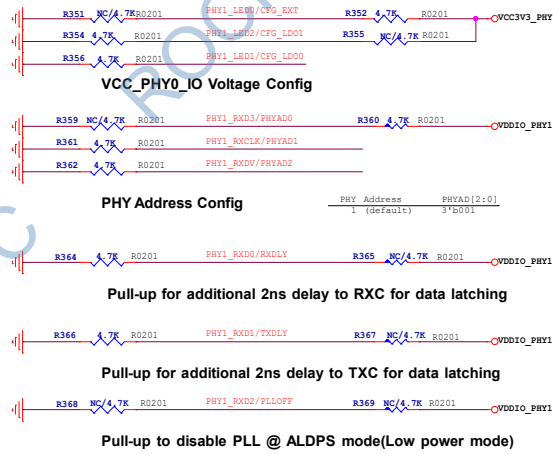
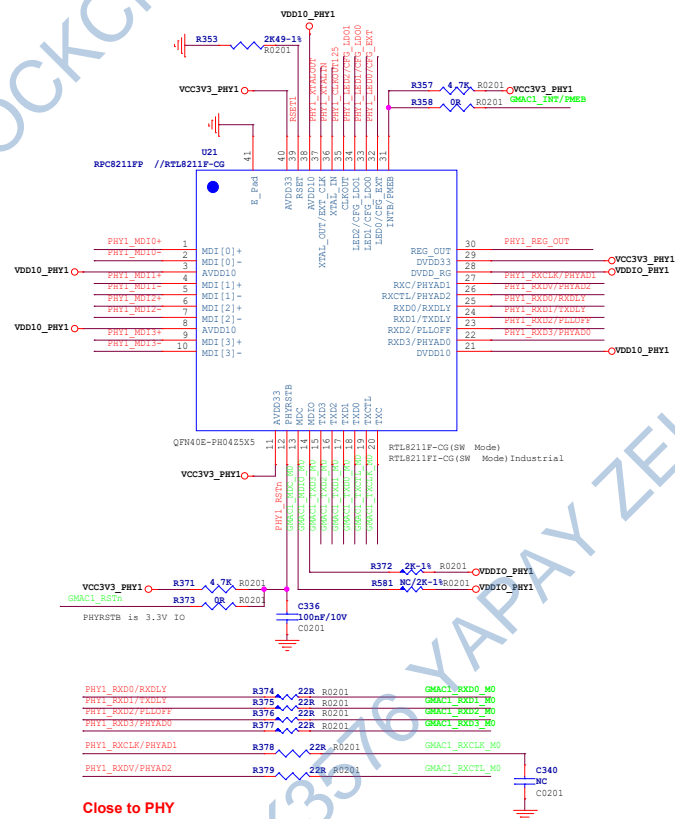
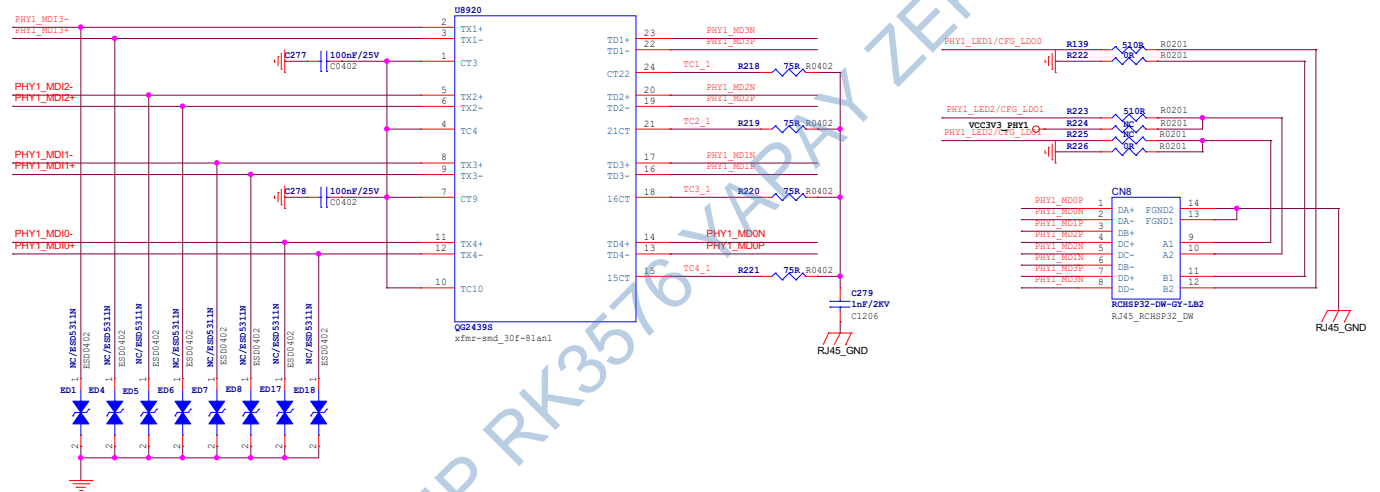
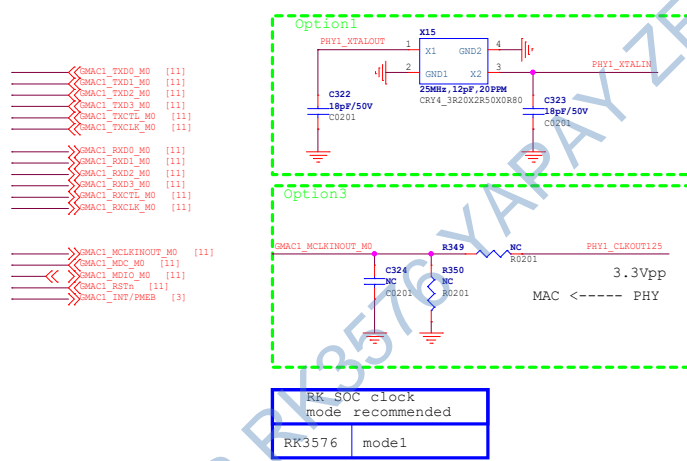
VDDIO_PHY0: Default 1.8V



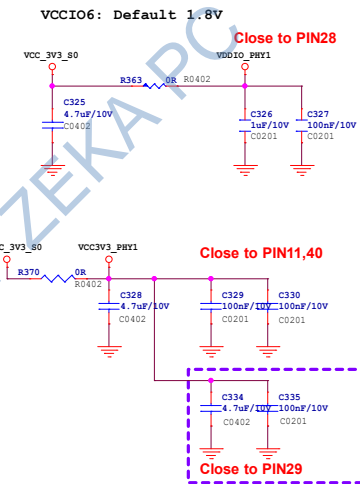
VCC3V3_PHY0



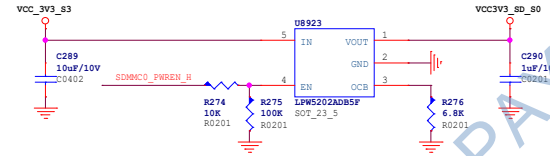
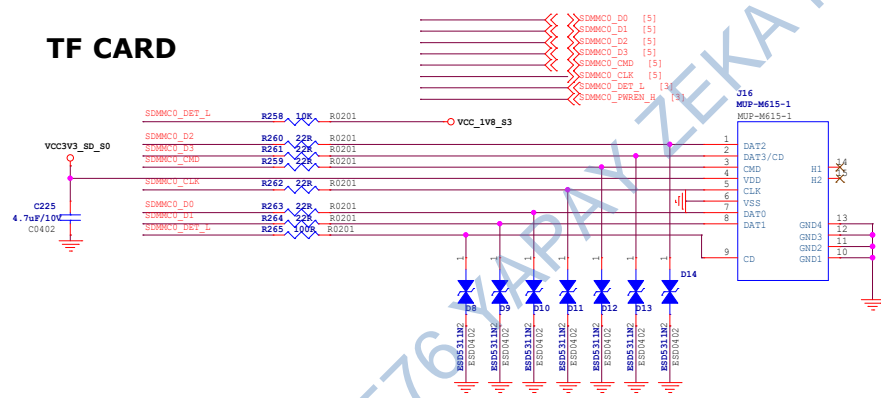
Giga PHY1_WAN



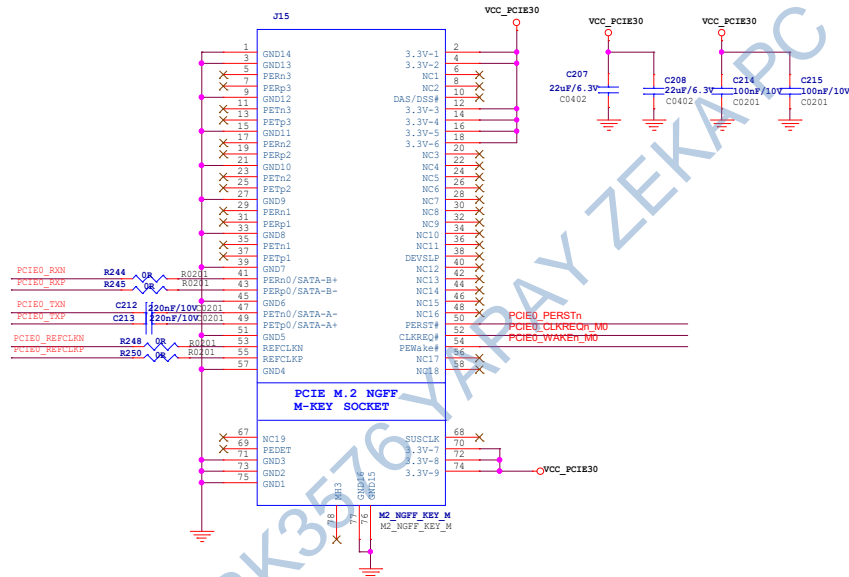
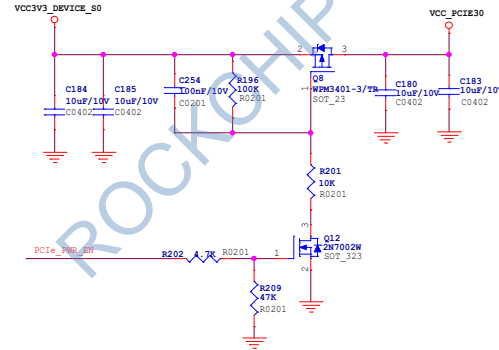
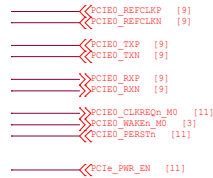
RMII Power Source	CFG EXT	CFG LDO(1:0)	
External 3.3V(default)	1'b1	2'b00	CFG_EXT: 1: External Power Source for IO pad.
External 1.8V	1'b1	2'b10	0: Integrated LDO for IO pad
Internal 1.8V	1'b0	2'b10	CFG LDO(1:0) 10: 1.8V 00: 3.3V



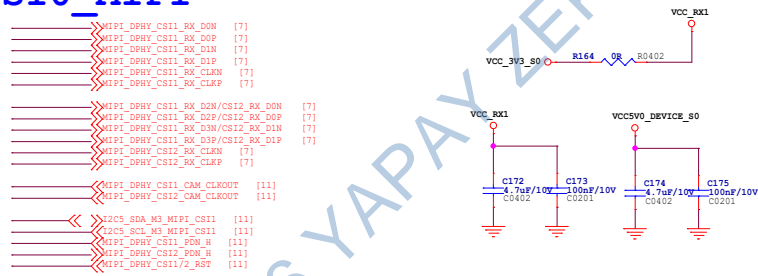
TF CARD



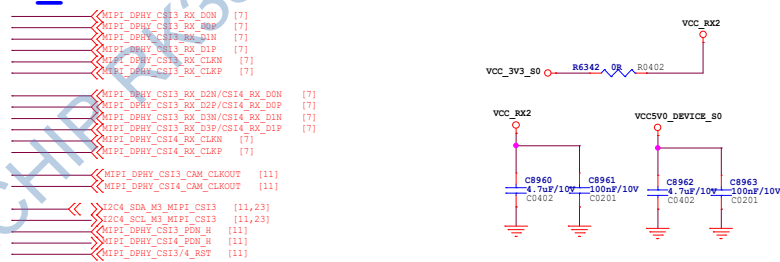
M.2_PCIE



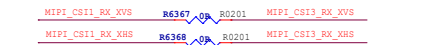
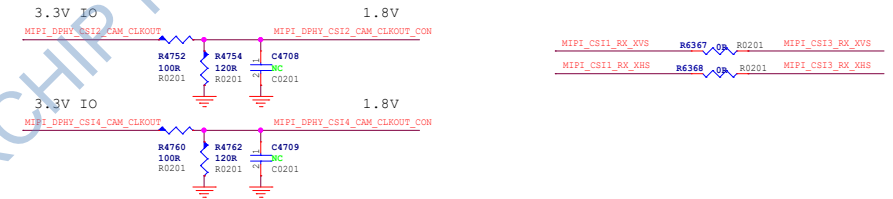
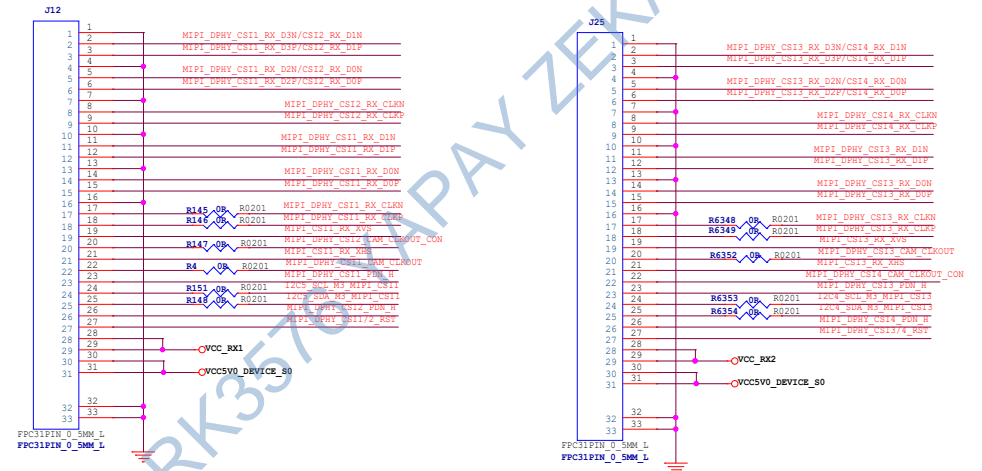
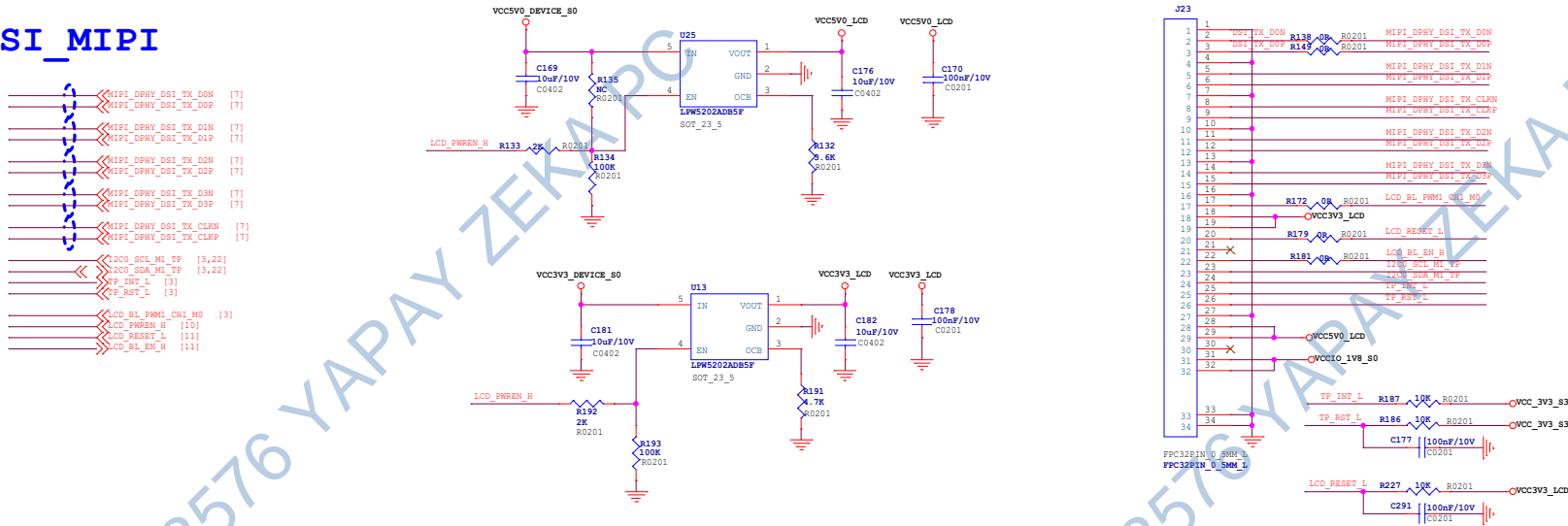
CSI0 MIPI

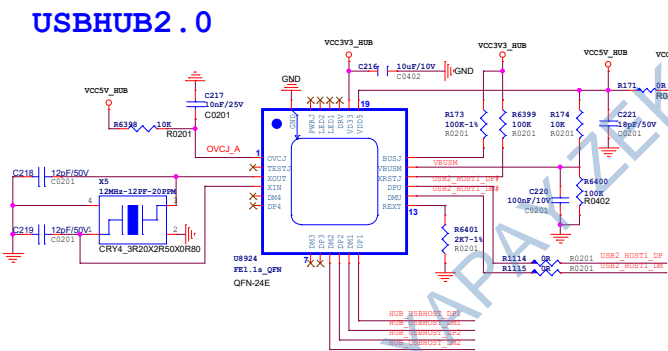


CS1_MIP1

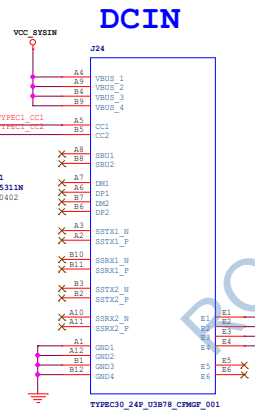
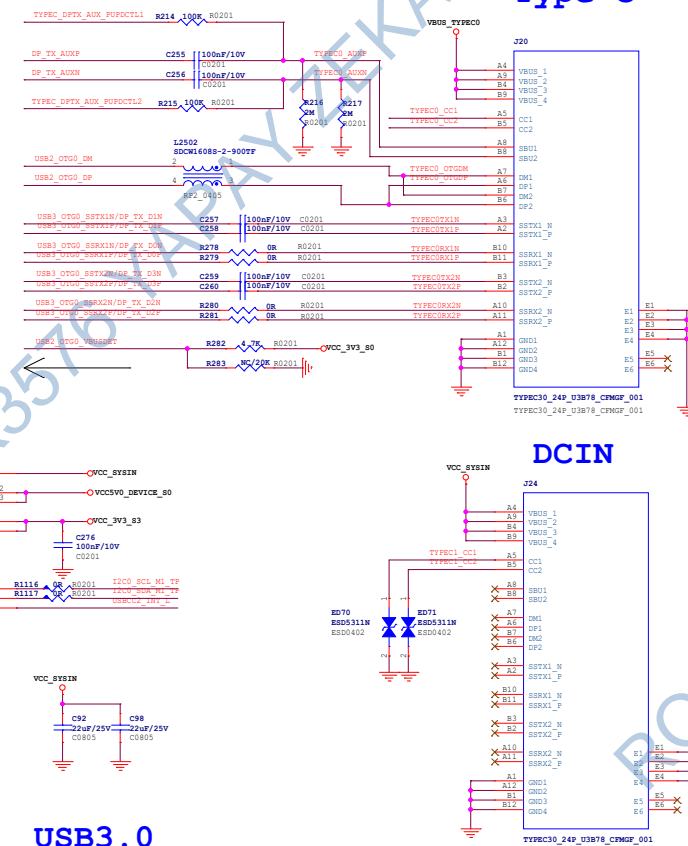
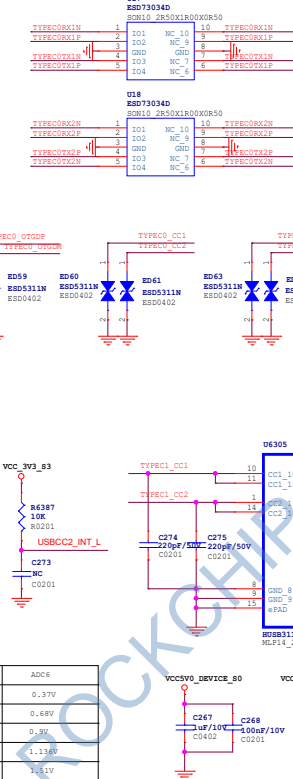


DSI MIPI



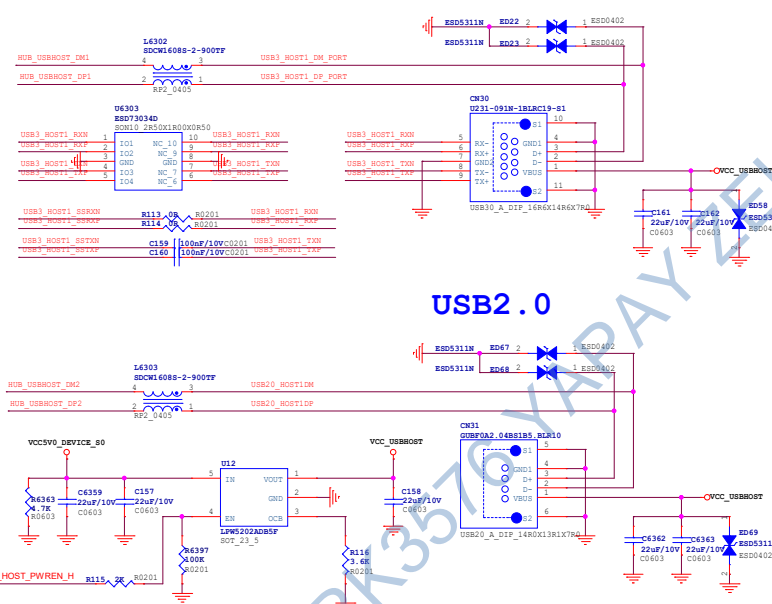


12bit_ADC	ADC6
35E	0.37V
610	0.68V
81S	0.9V
A1A	1.136V
079	1.51V

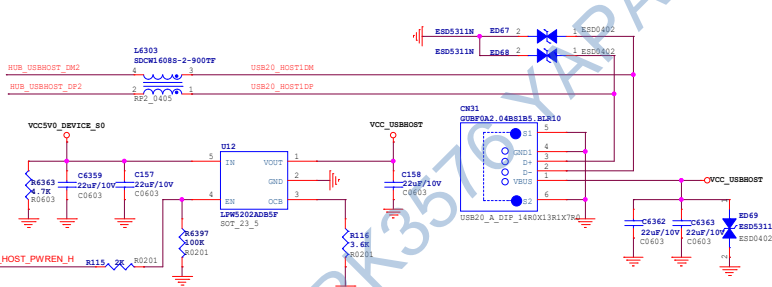


USBHUB2.0

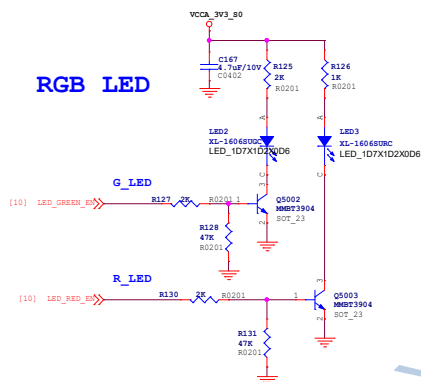
USB3.0



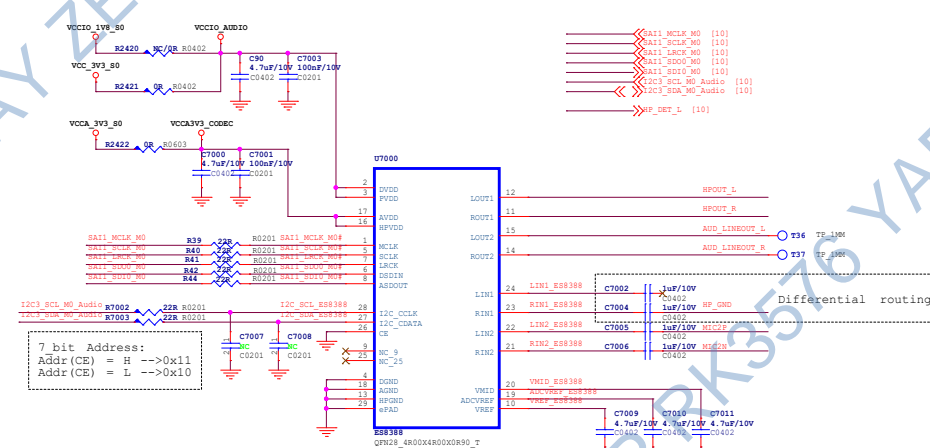
USB2.0



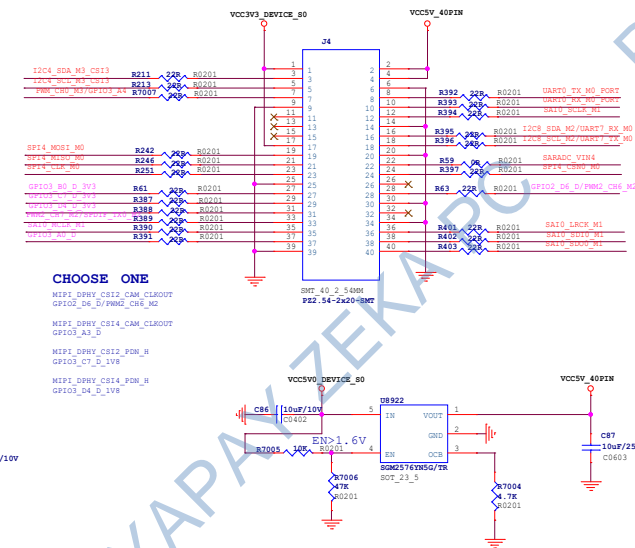
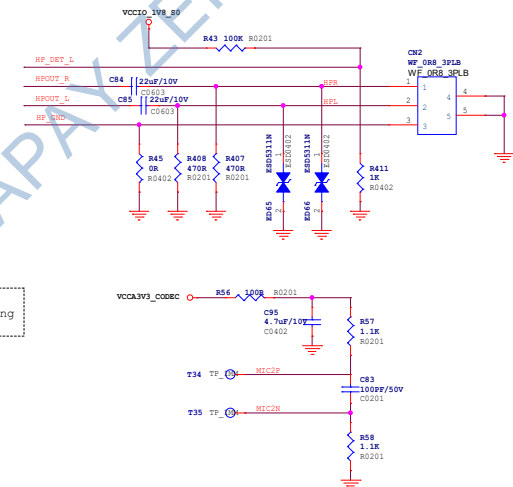
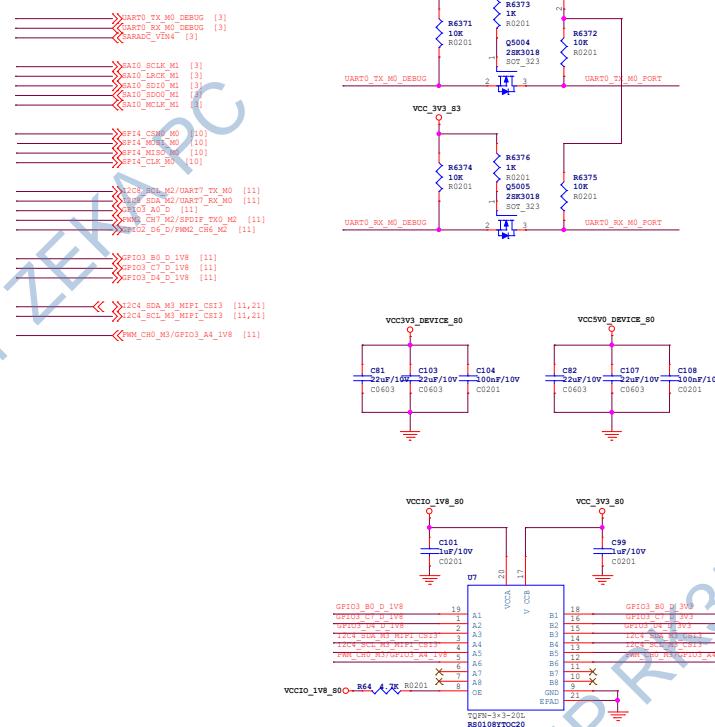
RGB LED

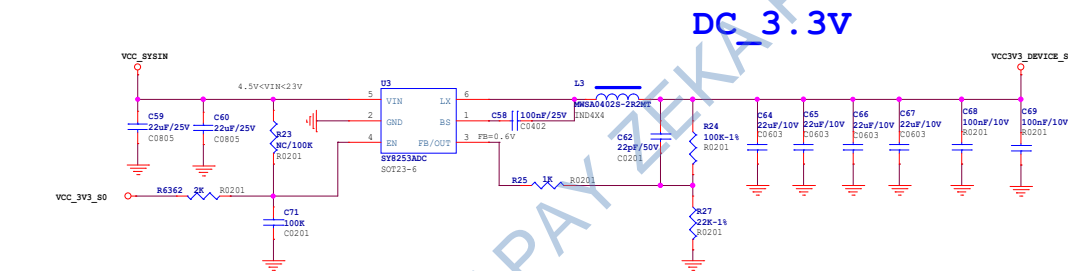
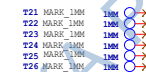
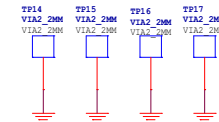
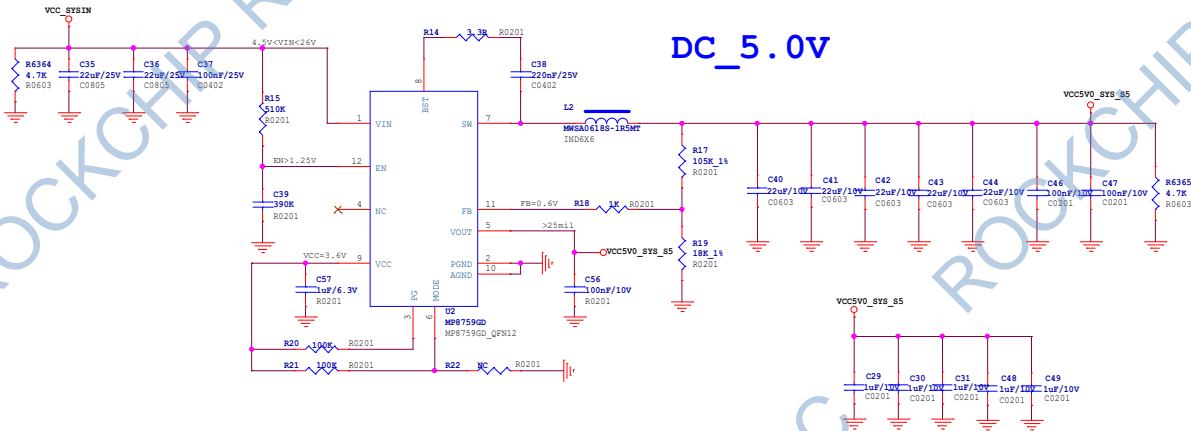
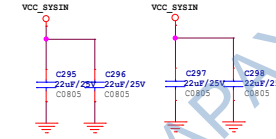
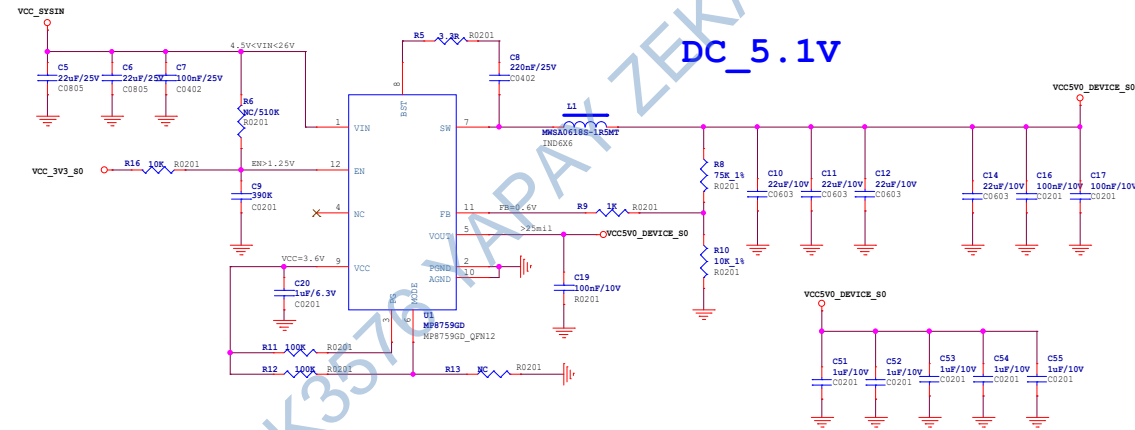



AUDIO CODEC



40PIN_GPIO





 armsom		https://armsom.org/	
Project:	ArmSoM-Sig5		
File:	Power		
Date:	Wednesday, May 22, 2024		Rev: V1.1
Designed by:	Park	Reviewed by: <Checker>	Sheet: 24 of 25

Revision History

Version	Date	By	Change Dscription	Approved
V1.0	2024-03-27	SL Chen	First release;	
V1.1	2024-05-15	SL Chen	1.U1/U2 Pin5 connect to output; TF_DET_L connect to VCC_1V8_S3; J23 Pin2&Pin3 change position; 2.J25 MIPI_DPHY_CSI3_CAM_CLKOUT&MIPI_DPHY_CSI4_CAM_CLKOUT_CON change position;	