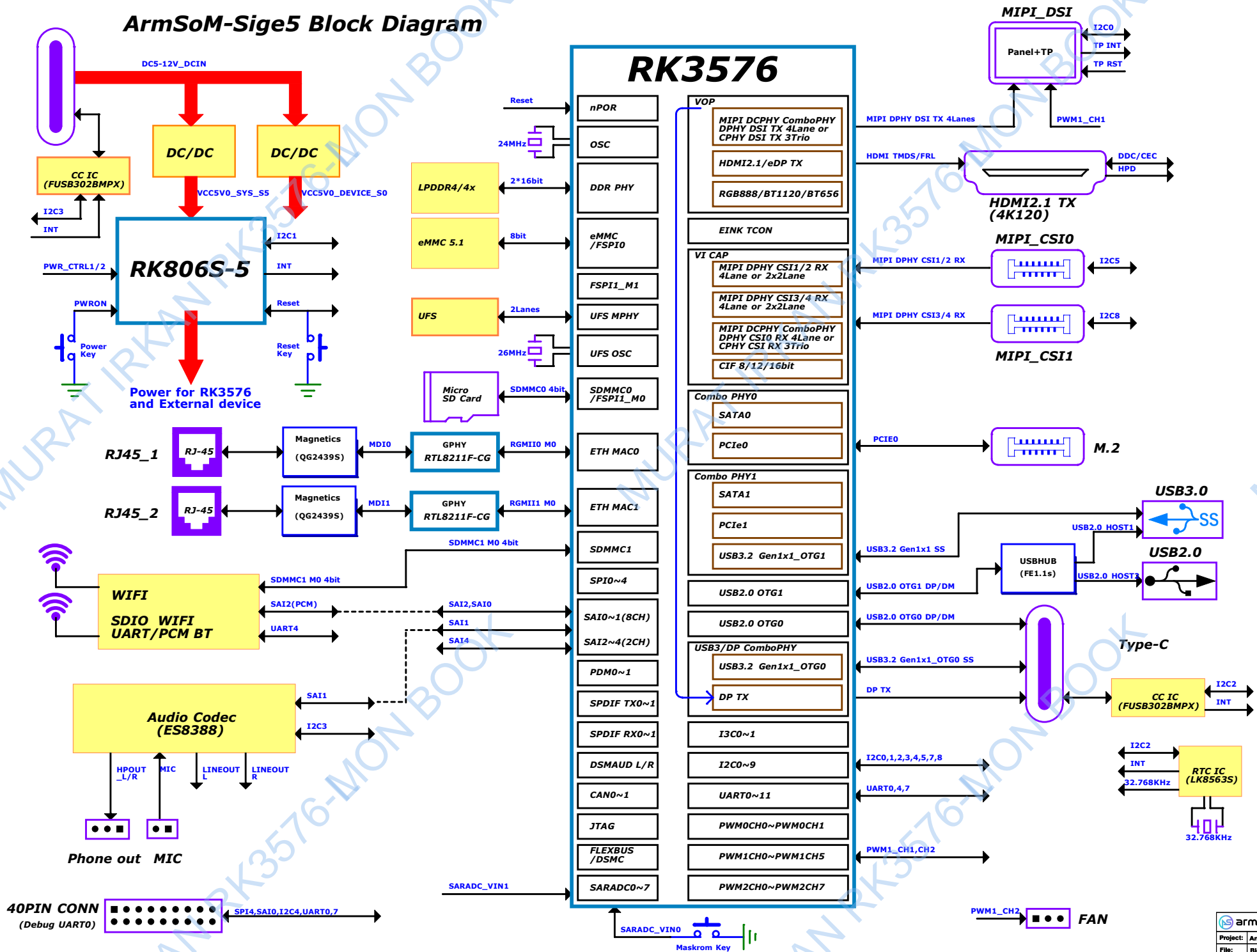
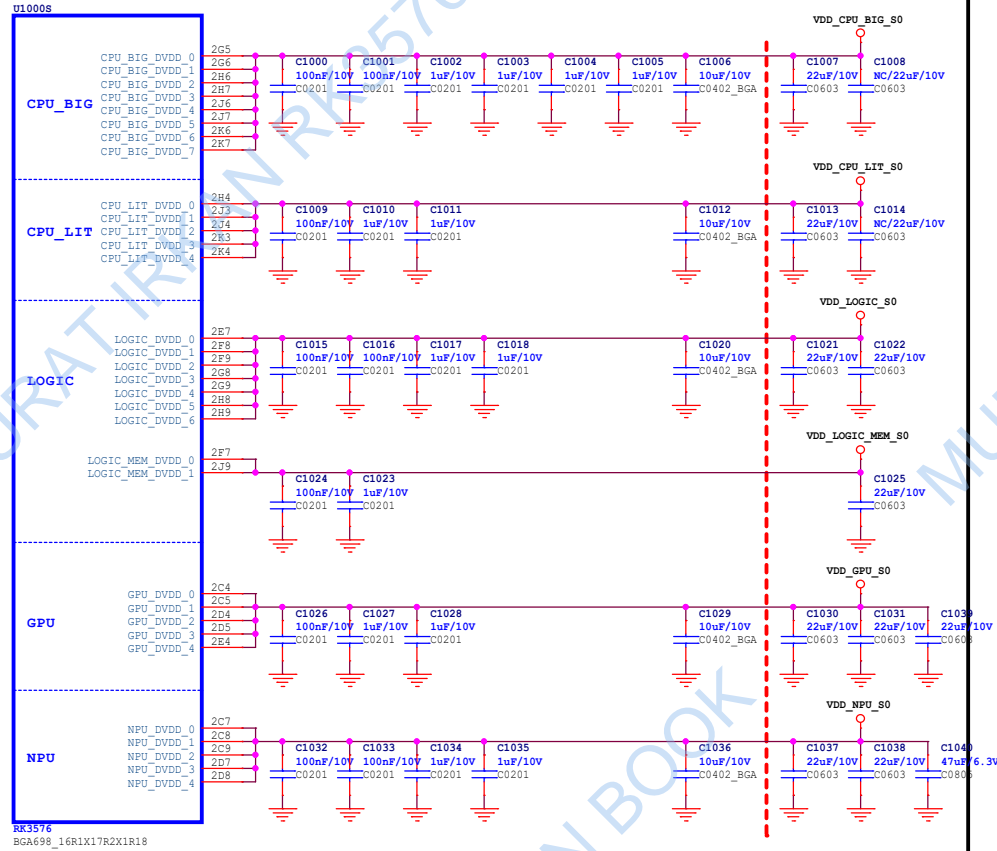


ArmSoM-Sige5 Block Diagram



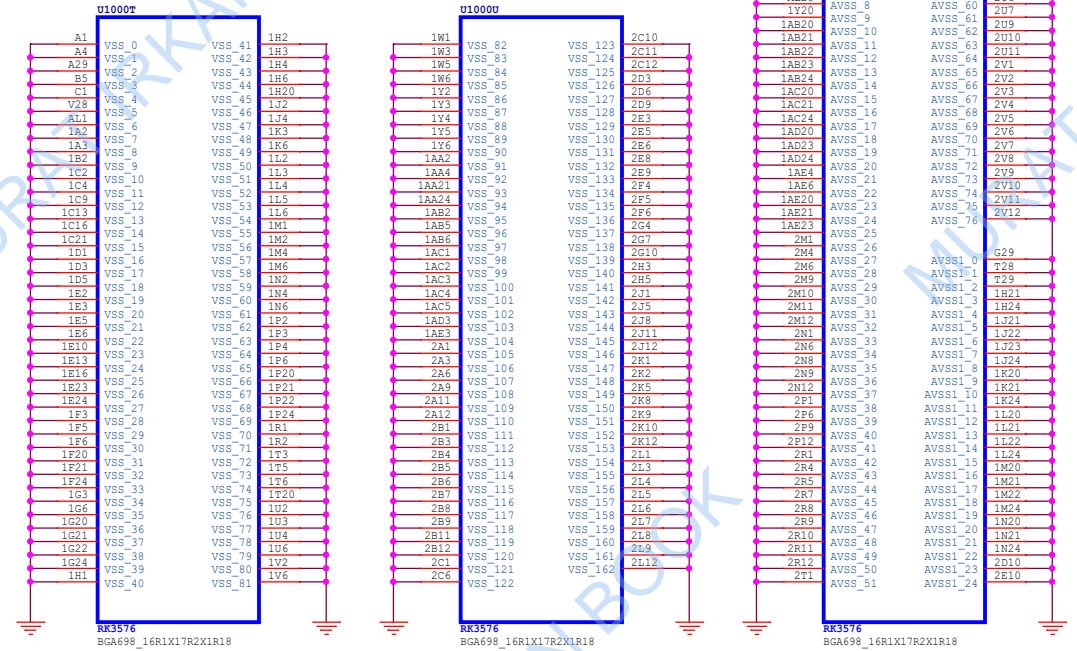
RK3576_S (Power)


RK3576_T/U/V (GND)



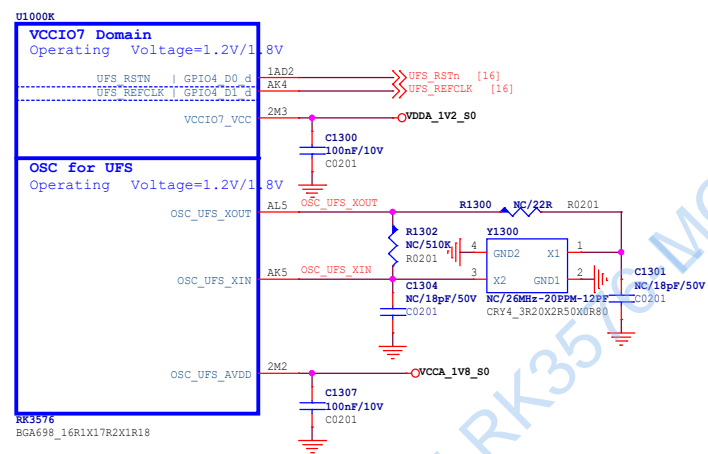
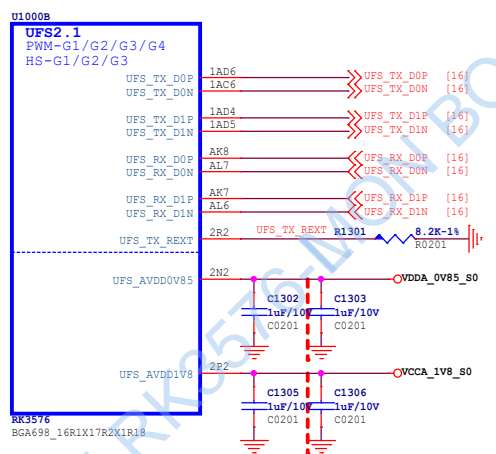
Note:

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

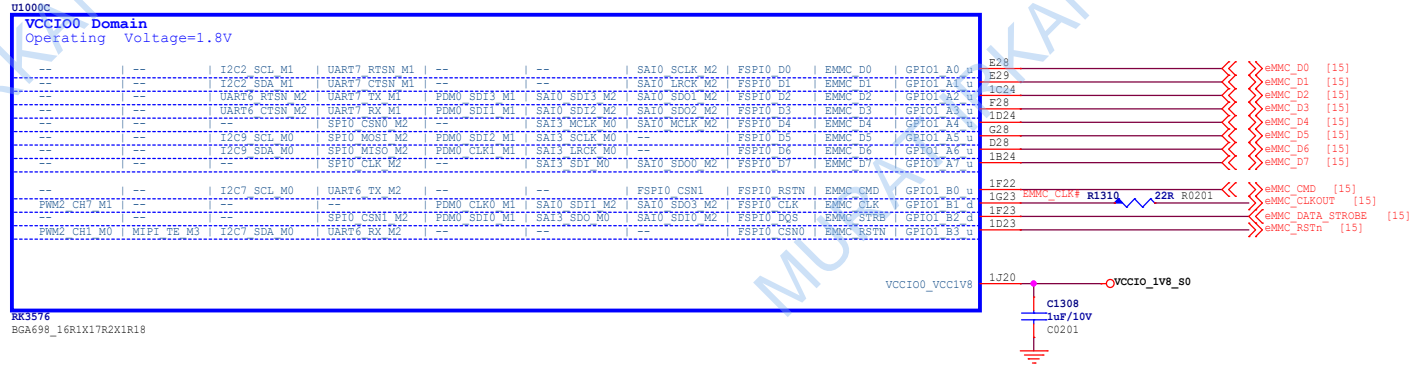


		https://armsom.org/	
Project:	ArmSoM-Sig5		
File:	RK3576-Power/GND		
Date:	Tuesday, May 21, 2024		Rev: V1.1
Designed by:	Park	Reviewed by:	<Checker>
		Sheet:	2 of 25

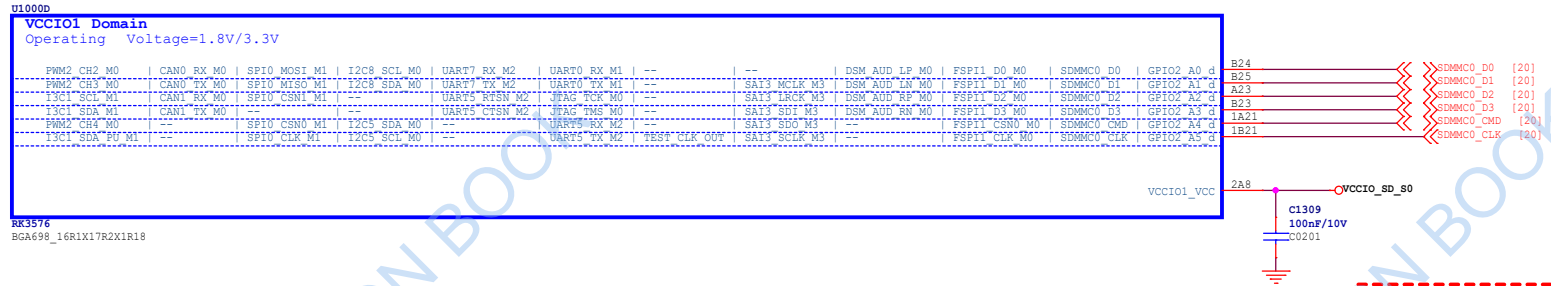
RK3576 B
(UFS2.1)



RK3576 C
(VCCIO0)

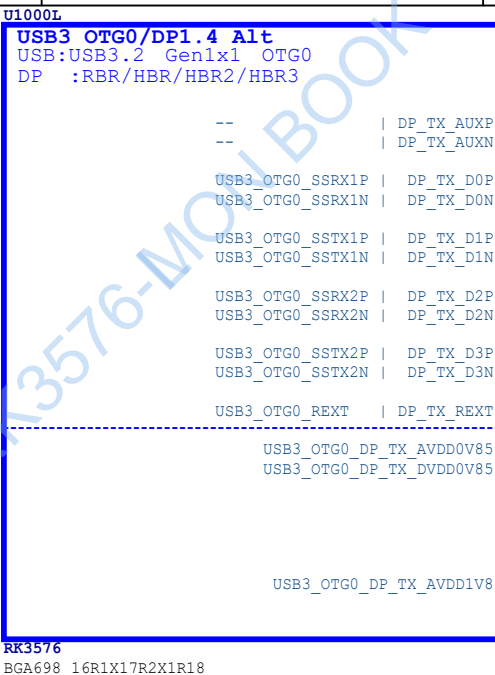


RK3576 D
(VCCIO1)

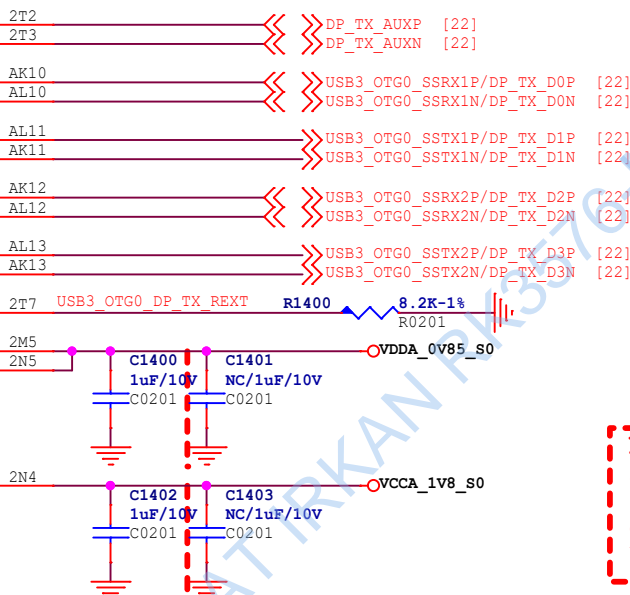


Note:
Caps of between dashed red lines and U1000 should be placed under the U1000 package.
Other caps should be placed close to the U1000 package

RK3576 L (USB3/DP)



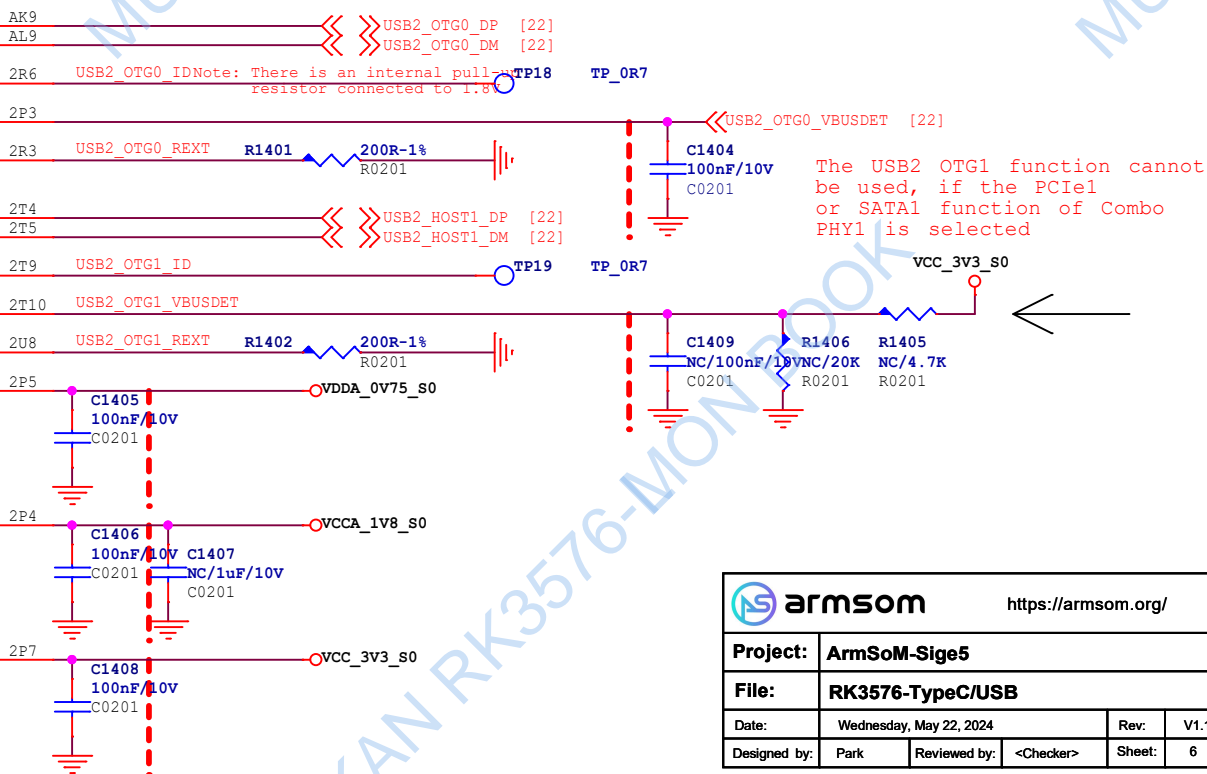
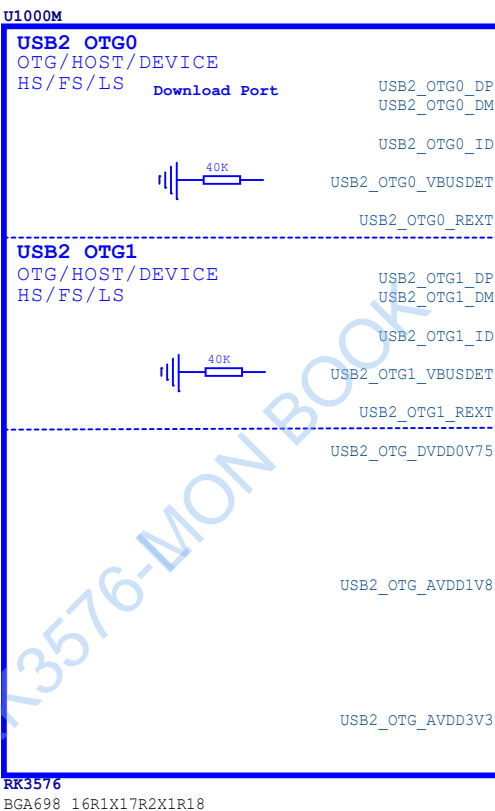
Support:
Type-C With Displayport Alternate Mode



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)



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Project: ArmSoM-Sige5

File: RK3576-TypeC/USB

Date: Wednesday, May 22, 2024

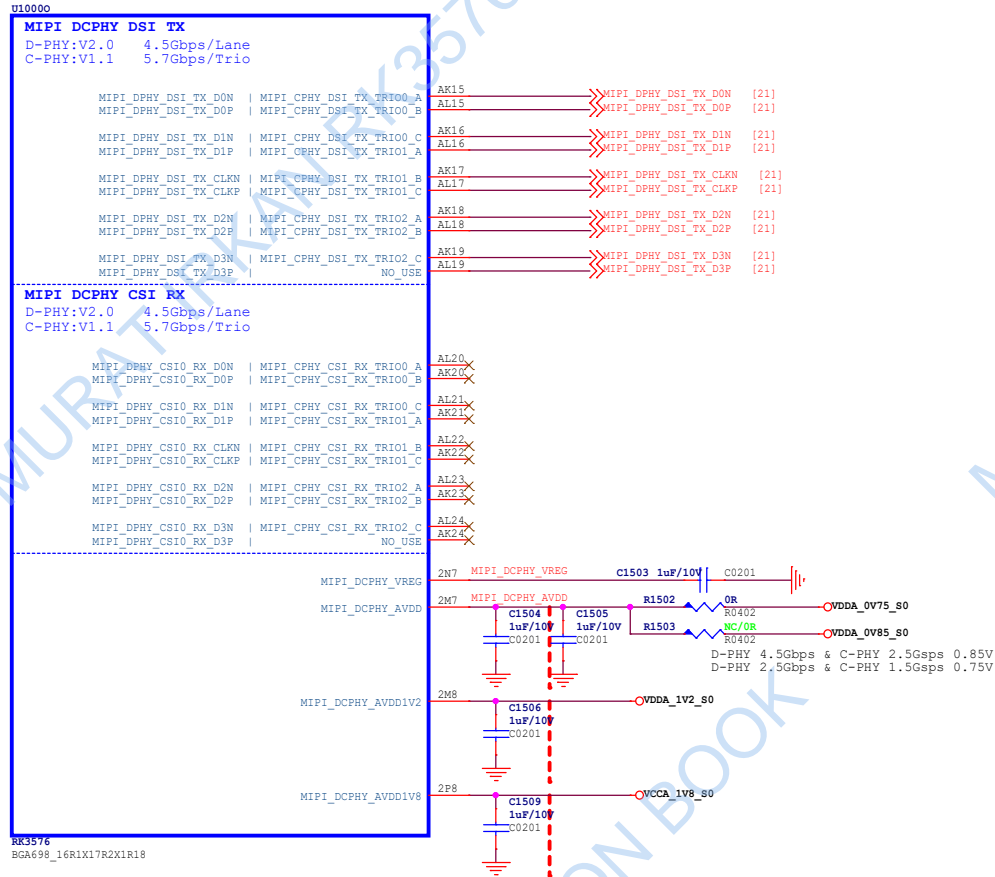
Rev: V1.1

Designed by: Park

Reviewed by: <Checker>

Sheet: 6 of 25

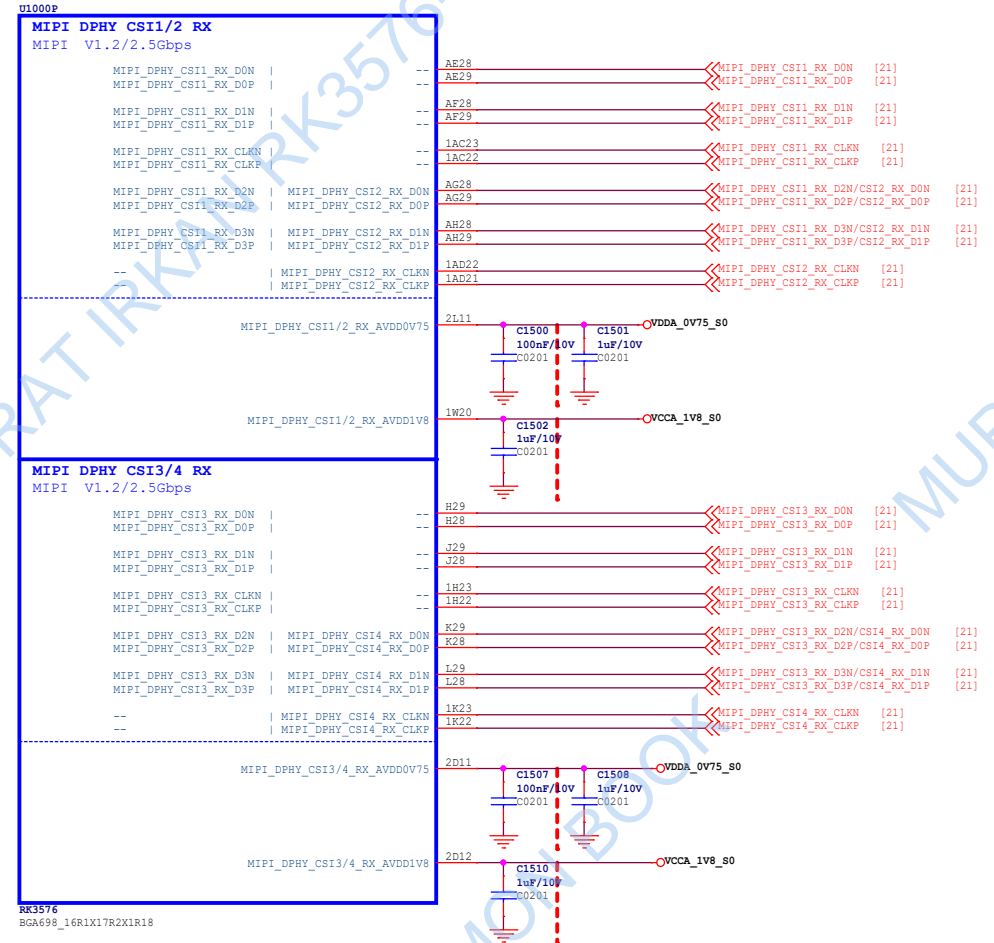
RK3576_O (MIPI DCPHY)



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)



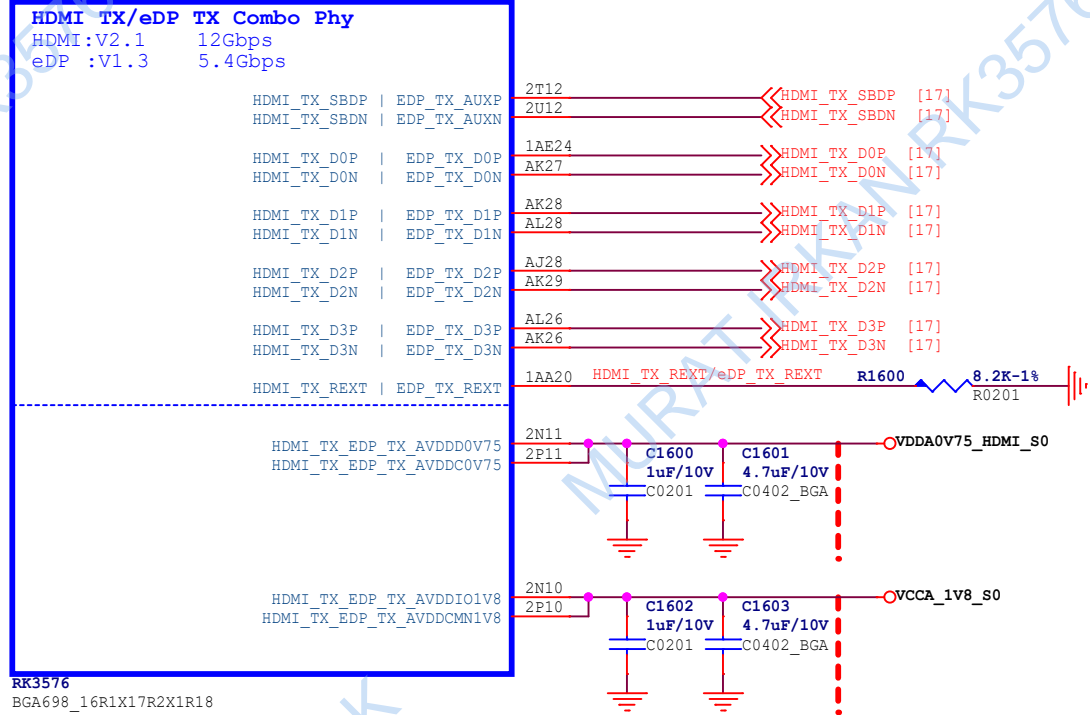
Note:

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


		https://armsom.org/	
Project: ArmSoM-Sigs5			
File: RK3576-MIPI DSU/CSI			
Date: Tuesday, May 21, 2024		Rev: V1.1	
Designed by: Park	Reviewed by: <Checker>	Sheet: 7	of 25

RK3576_Q (HDMI/eDP)

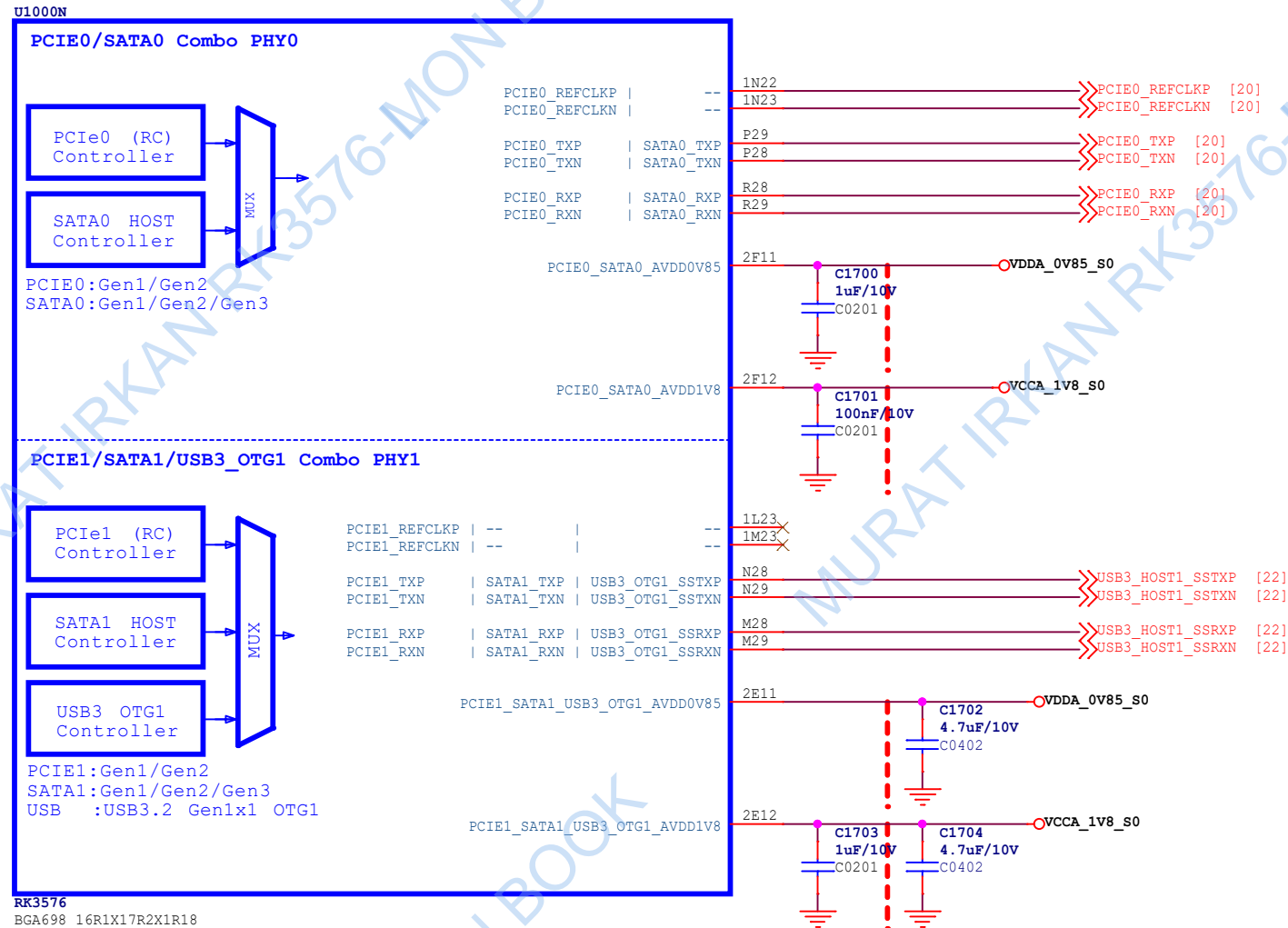
Note:
HDMI 2.1 supports up to 4Kx2K@120Hz
U10000



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)



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

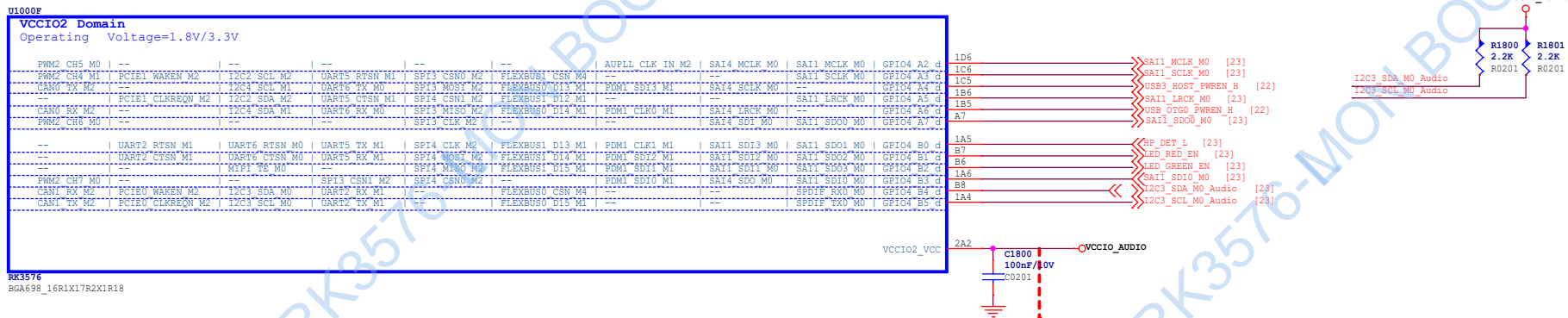


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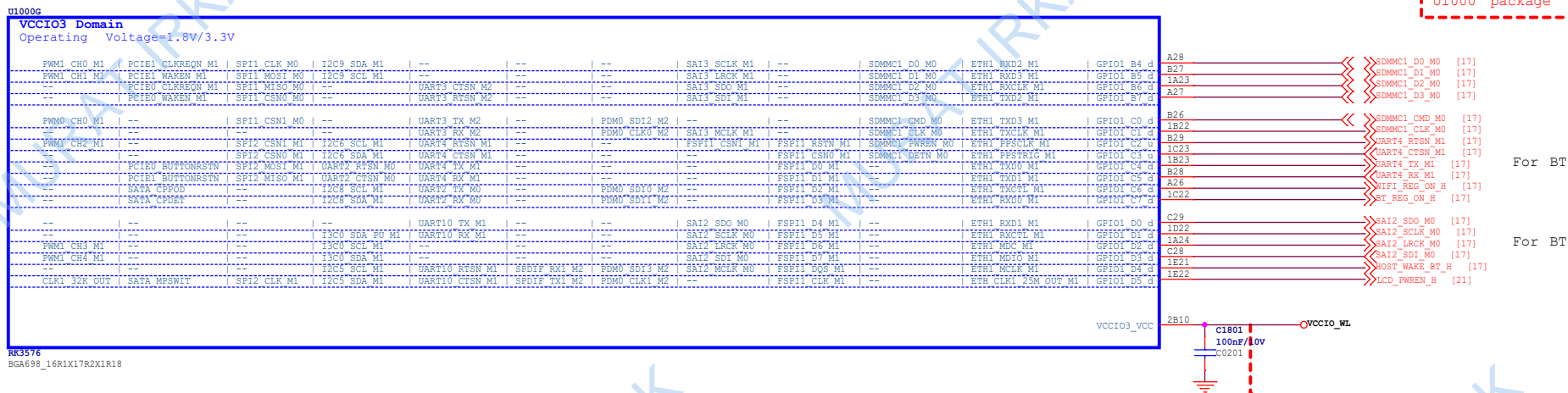
<https://armsom.org/>

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

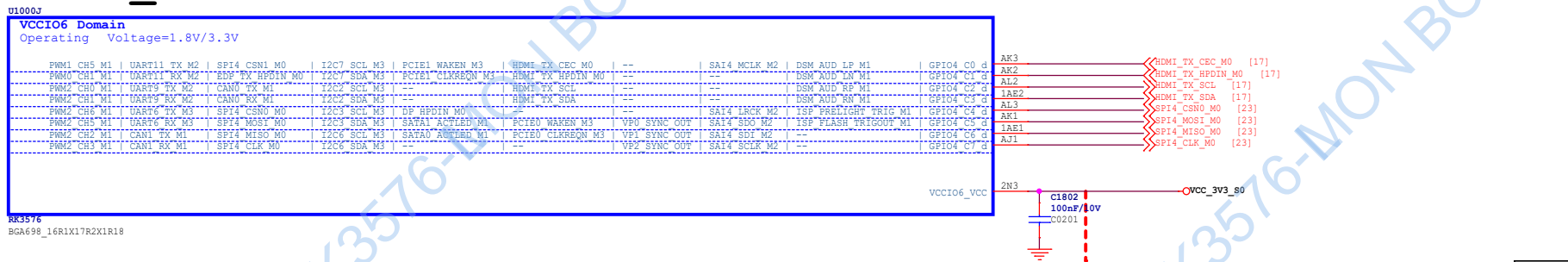
RK3576_F (VCCIO2)



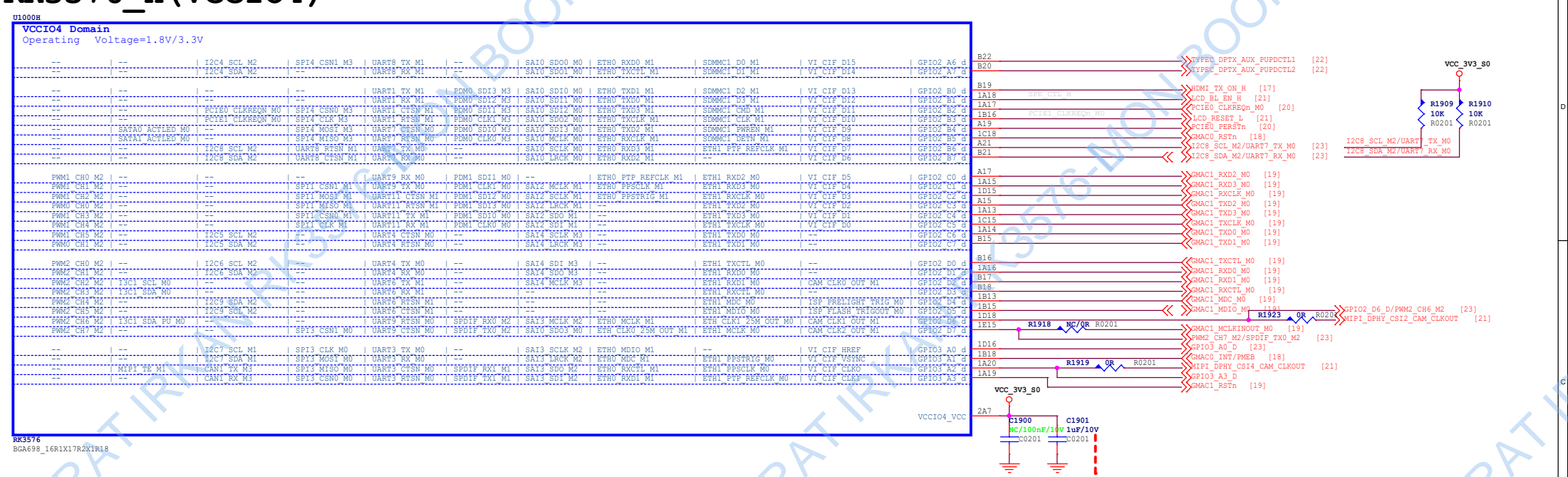
RK3576 G (VCCIO3)



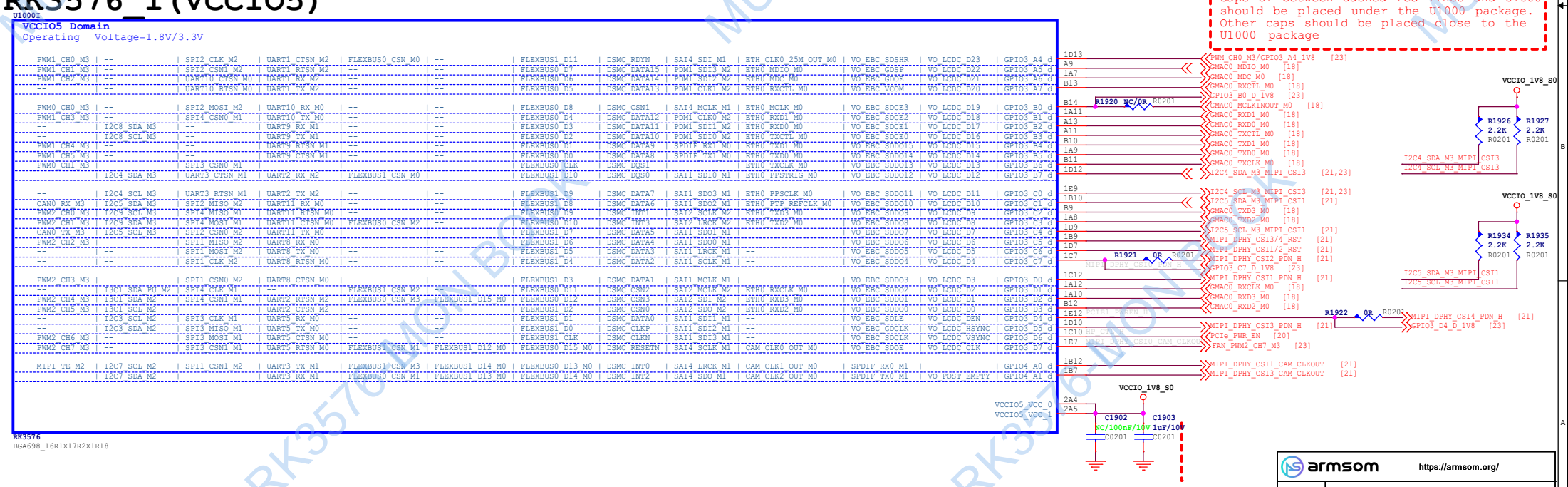
BK3576 J (VCC106)



RK3576_H (VCCIO4)



RK3576 I (VCCI05)



```

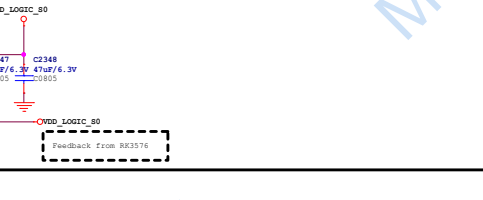
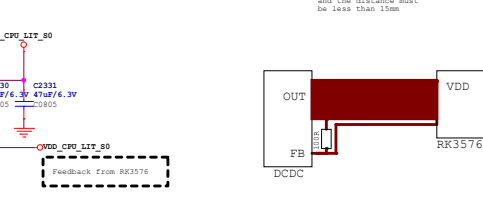
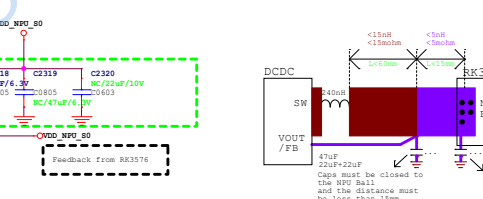
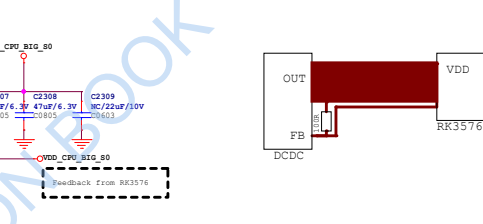
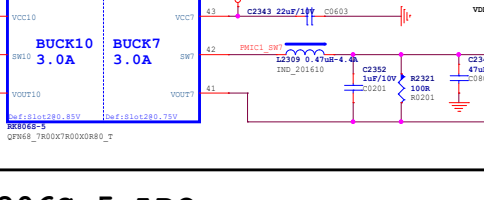
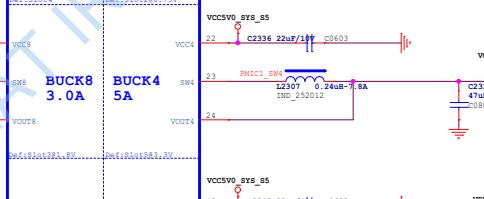
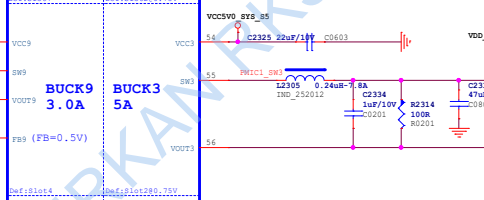
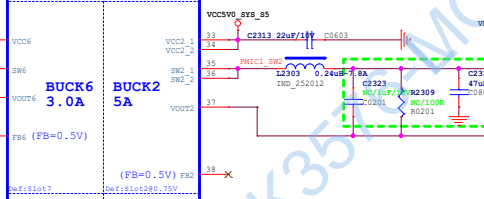
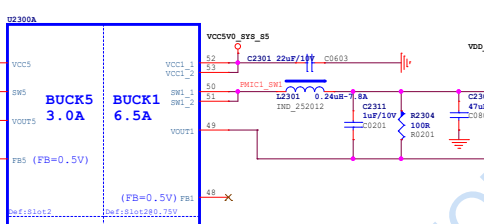
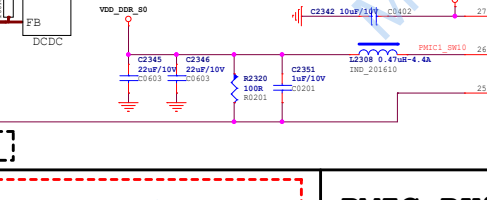
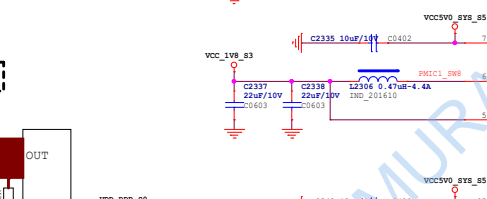
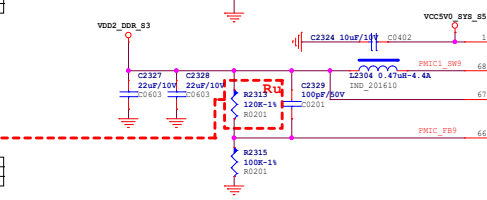
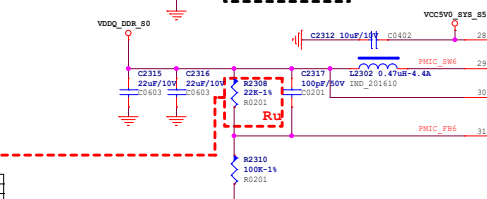
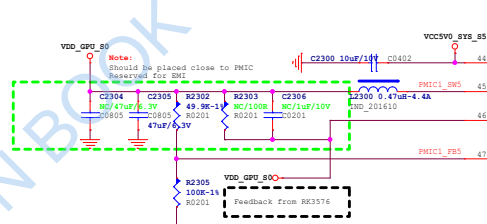
[3] 12C1_SDA_M0_RK004 >>>
[3] 12C1_SCL_M0_RK004 >>>

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

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

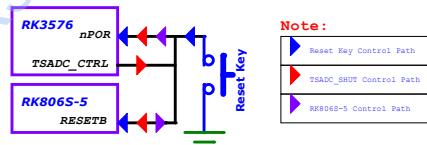
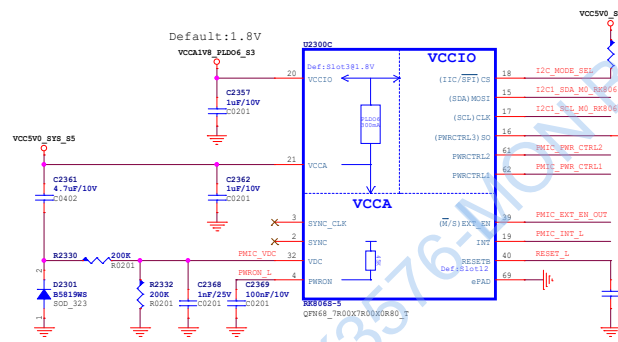
[13] PMIC_EXT_EN_OUT <<<
[23] PWRON_1 >>>

```






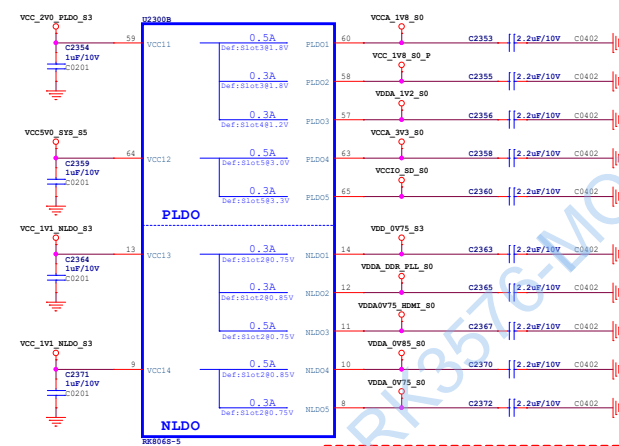
Note:
I2C Mode:CS(pin18) connected to VCCA(pin21);
SPI Mode(Def):CS(pin18) floating or connected to GND

VCC5V0_SYS_55



Note:

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



The RK806 LDO power distribution of the reference schematics is only suitable for the interface used in the reference schematics. If other interface functions are to be added to the reference schematics, the RK806 LDO distribution needs to be re evaluated, otherwise the added

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
```


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
R0201

R4001
NC/10K
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
DATA1
DATA2
DATA3
DATA4
DATA5
DATA6
DATA7

CMD

CLK

Data Strobe

RST_n

VDDi

VSS1
VSS2
VSS3
VSS4
VSS5
VSS6

VSSQ1
VSSQ2
VSSQ3
VSSQ4
VSSQ5

VSF4
VSF3
VSF2
VSF1

VDDi

VDDi

EMMC B153 2L

BGA153_13RX11R5X0R9_2L

VCCIO_1V8_S0

C6
M4
N4
P3
P5

C4000
100nF/10V
C0201

C4001
100nF/10V
C0201

C4002
4.7uF/10V
C0402

VCC_3V3_S0

E6
F5
J10
K9

C4004
100nF/10V
C0201

C4005
100nF/10V
C0201

C4006
4.7uF/10V
C0402

J5
A6
C4
E7
G5
H10

VSS1
VSS2
VSS3
VSS4
VSS5
VSS6

K8
N2
N5
P4
P6

VSSQ1
VSSQ2
VSSQ3
VSSQ4
VSSQ5

K10
F10
E10
E9

VSF4
VSF3
VSF2
VSF1

U4000B

A2 NC2
A8 NC8
A9 NC9
A10 NC10
A11 NC11
A12 NC12
A13 NC13
A14 NC14
B1 NC15
B7 NC21
B8 NC22
B9 NC23
B10 NC24
B11 NC25
B12 NC26
B13 NC27
B14 NC28
C1 NC29
C3 NC31
C7 NC35
C8 NC36
C9 NC37
C10 NC38
C11 NC39
C12 NC40
C13 NC41
C14 NC42
D1 NC43
D2 NC44
D3 NC45
D4 NC46
D12 NC54
D13 NC55
D14 NC56
E1 NC57
E2 NC58
E3 NC59
E12 NC68
E13 NC69
E14 NC70
F1 NC71
F2 NC72
F3 NC73
F12 NC82
F13 NC83
F14 NC84
G2 NC85
G12 NC86
G13 NC96
G14 NC97
NC98

A7 RFU1
E5 RFU2
E8 RFU3
G3 RFU4
G10 RFU5

NC196
P13
NC195
P12
NC194
P11
NC193
P9
NC191
P8
NC190
P2
NC184
P1
NC183
N14
NC182
N13
NC181
N12
NC180
N11
NC179
N10
NC178
N9
NC177
N8
NC176
N7
NC175
N6
NC174
N3
NC171
N1
NC169
M14
NC168
M13
NC167
M12
NC166
M11
NC165
M10
NC164
M9
NC163
M8
NC162
M7
NC161
M3
NC157
M2
NC156
M1
NC155
L14
NC154
L13
NC153
L12
NC152
L1
NC143
L2
NC142
L1
NC141
K14
NC140
K13
NC139
K12
NC138
K3
NC129
K2
NC128
K1
NC127
J14
NC126
J13
NC125
J12
NC124
J3
NC115
J2
NC114
J1
NC113
H14
NC112
H13
NC111
H12
NC110
H3
NC101
H2
NC100
H1
NC99

P10
RFU9
RFU8
K7
RFU7
K6
RFU6

EMMC B153 2L

BGA153_13RX11R5X0R9_2L



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<https://armsom.org/>

Project: ArmSoM-Sige5

File: Flash-eMMC

Date: Wednesday, May 22, 2024

Rev: V1.1

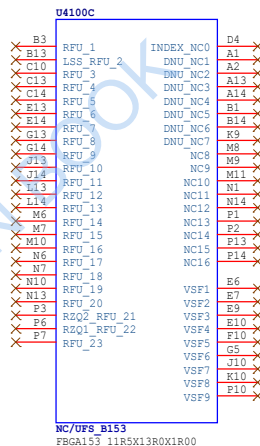
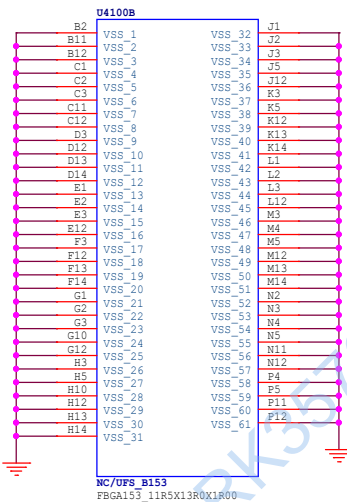
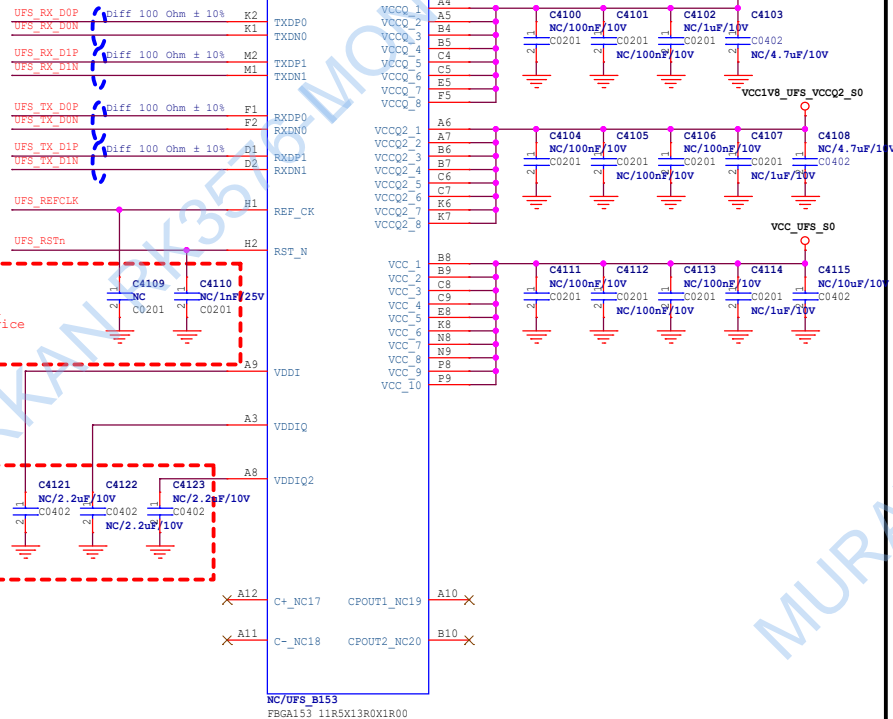
Designed by: Park

Reviewed by: <Checker>

Sheet: 15 of 25

UFS Flash

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



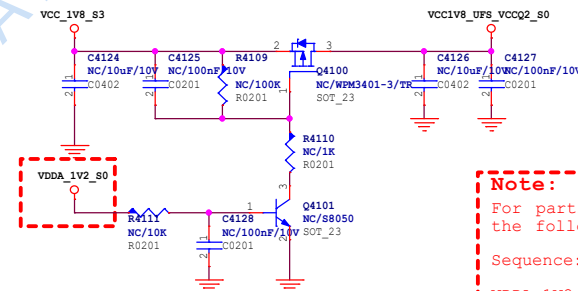
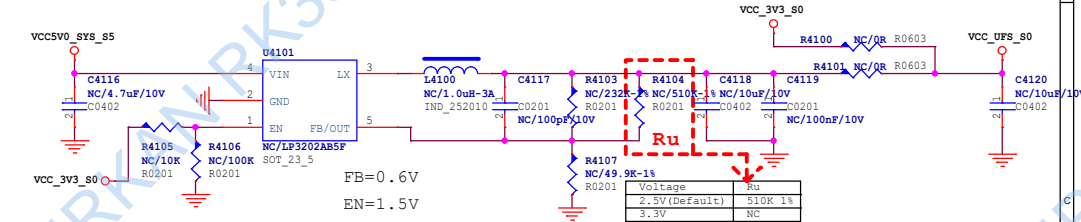
Note: For particles above UFS4.0, Pin B13, P3, and P6 need to refer to the particle datasheet for design

UFS POWER

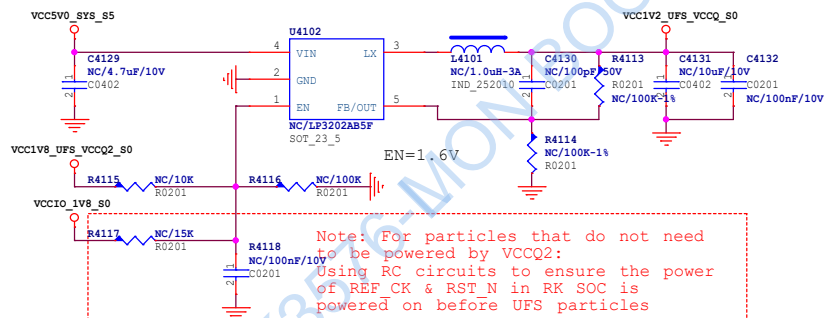
	VCCQ	VCCQ2	VCC	Default UFS device: UFS2.2
UFS2.0	1.2V	1.8V	3.3V	
UFS2.1	No Connect	1.8V	3.3V	
UFS2.2	No Connect	1.8V	3.3V	
UFS3.0	1.2V	No Connect	2.5V/3.3V	
UFS3.1	1.2V	No Connect	2.5V/3.3V	
UFS4.0	1.2V	No Connect	2.5V	

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.

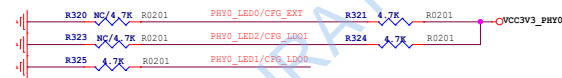
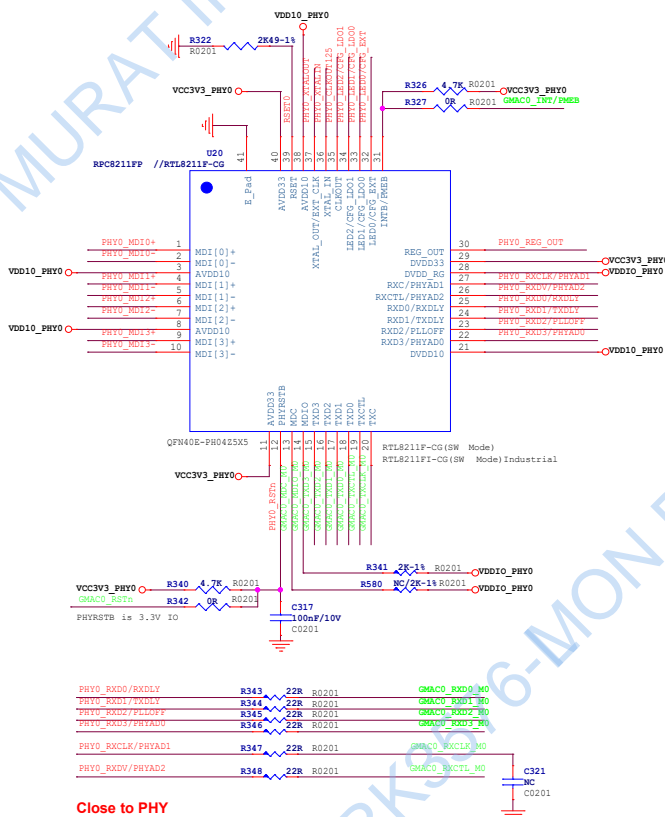
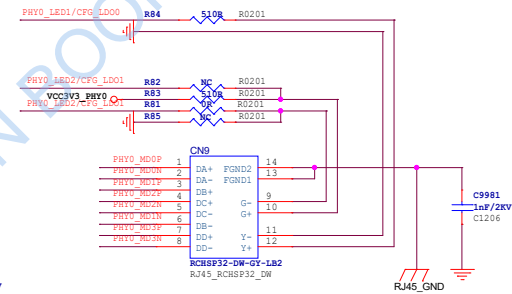
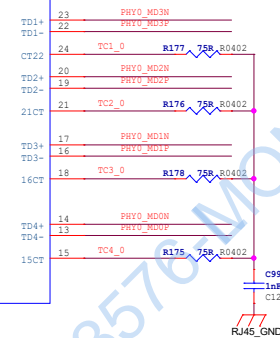
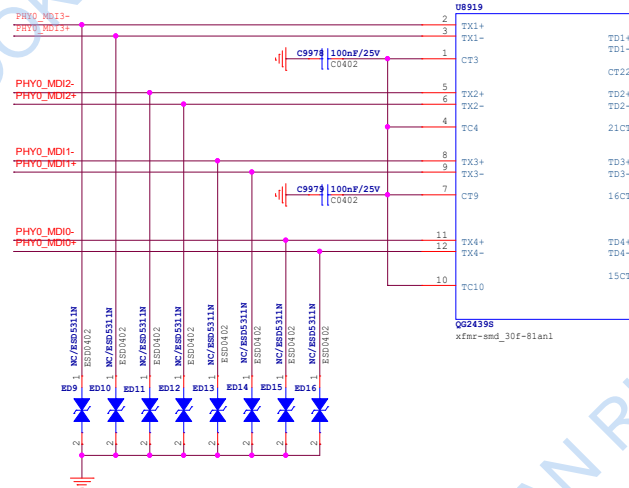
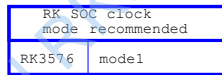


Note: For particles that require VCCQ and VCCQ2, the following timing needs to be met:
Sequence: VDDA_1V2_S0->VCCQ2->VCCQ
VDDA_1V2_S0 is the power of REF_CLK & RST_N in RK SOC, which needs to be powered on before UFS particles



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

_____	GMAC0_TXD0_M0	[11]
_____	GMAC0_TXD1_M0	[11]
_____	GMAC0_TXD2_M0	[11]
_____	GMAC0_TXD3_M0	[11]
_____	GMAC0_TXCTL_M0	[11]
_____	GMAC0_TXCLK_M0	[11]
_____	GMAC0_RXD0_M0	[11]
_____	GMAC0_RXD1_M0	[11]
_____	GMAC0_RXD2_M0	[11]
_____	GMAC0_RXD3_M0	[11]
_____	GMAC0_RXCTL_M0	[11]
_____	GMAC0_RXCLK_M0	[11]



The schematic diagram illustrates the PHY interface. It shows three PHY lanes: PHY0, PHY1, and PHY2. Each lane is connected to a resistor (R328, R330, and R331 respectively) with a value of 4.7k. These resistors are connected to R0201. The PHY0 lane is also connected to R329, which is connected to VDDIO_PHY0.

Pull-up for additional 2ns delay to RYC for data latching

Pull-up for additional 2ns delay to TXC for data latching

Pull-up to disable PLL @ ALDPS mode(Low power mode)

[illegible]

C314
100nF/10V
C0201

Close to PIN3,8,38

Close to PIN28

VCC_3V3_B0

VCC3V3_BMT0

R339

OR

R0402

C309
4.7μF/10V
C402

C310
100nF/10V
C0201

C311
100nF/10V
C0201


C315
4.7μF/10V
C402

C316
100nF/10V
C0201

Close to PIN11,40

Close to PIN29

129

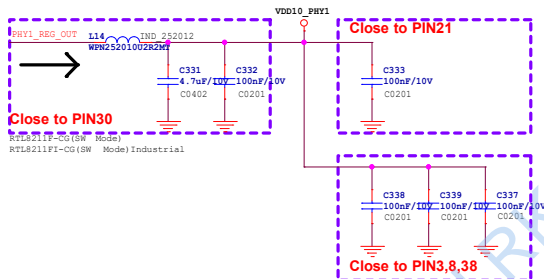
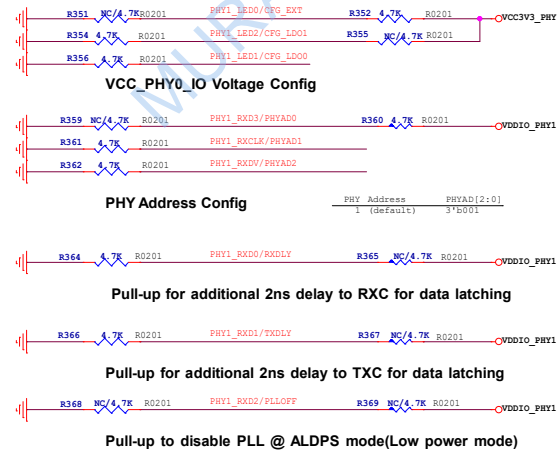
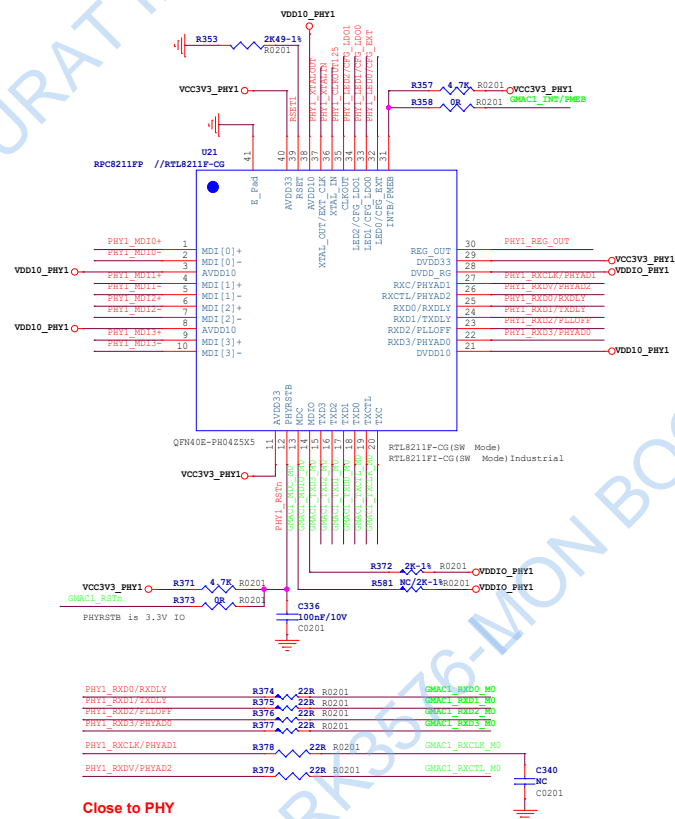
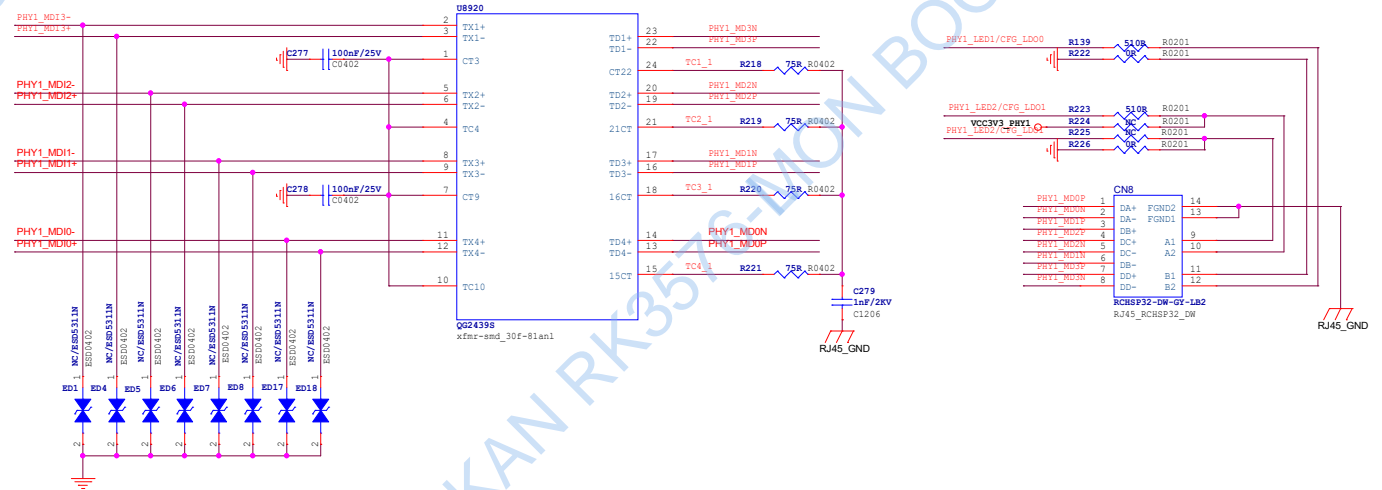
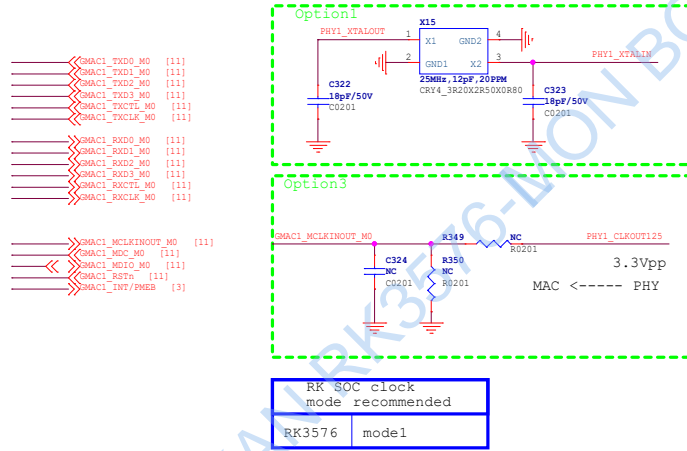


armsom

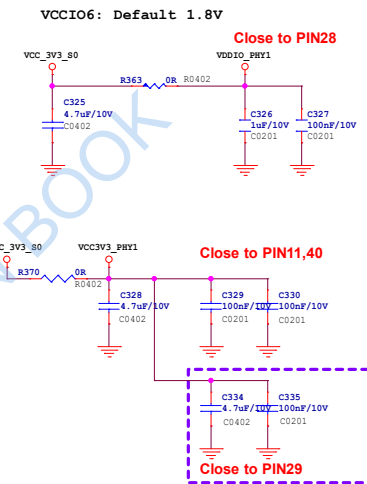
<https://armsom.org/>

Project:	ArmSoM-Sig5		
File:	Ethernet-GPHY		
Date:	Wednesday, May 22, 2024		Rev: V1.1
Designed by:	Park	Reviewed by:	<Checker>
Sheet:	18 of 25		

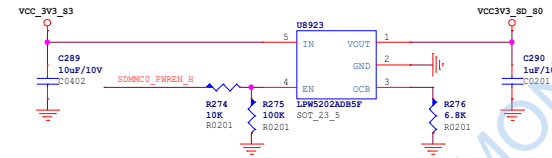
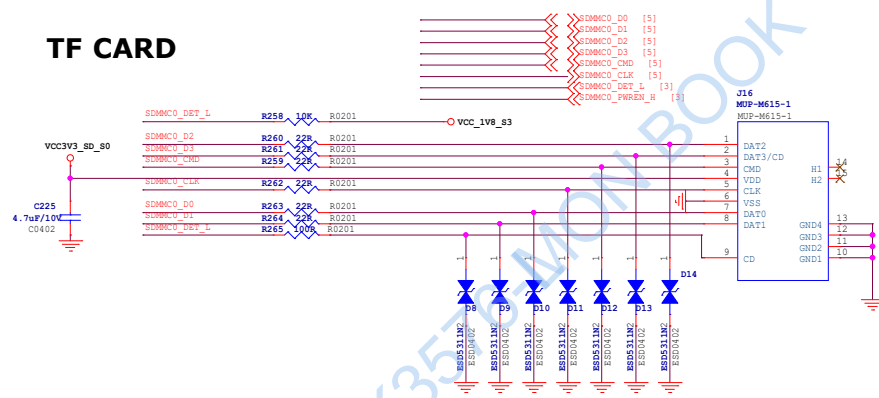
Giga PHY1_WAN



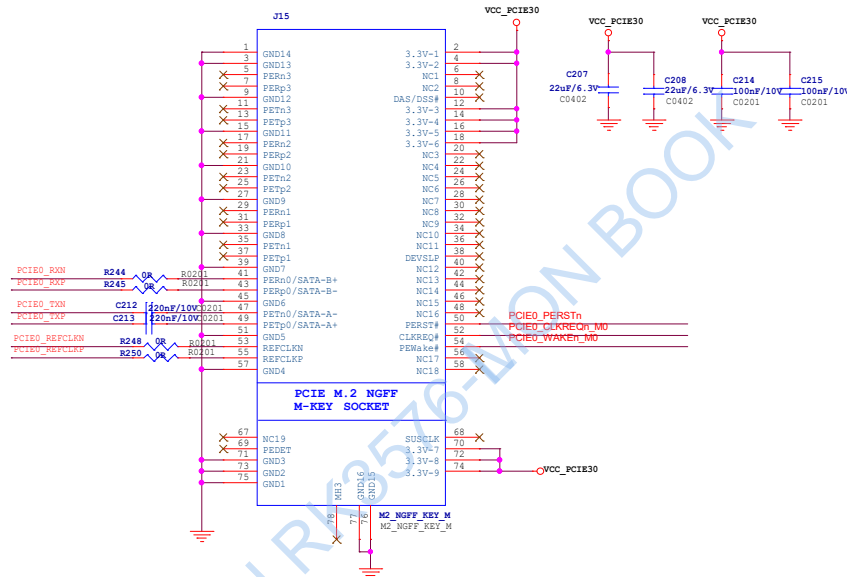
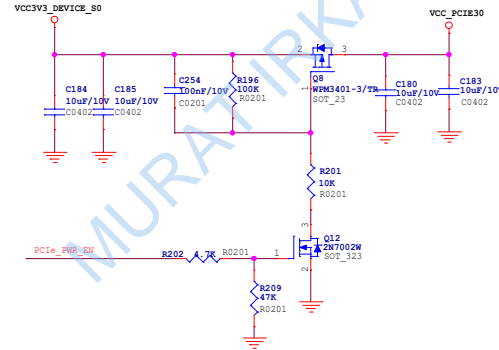
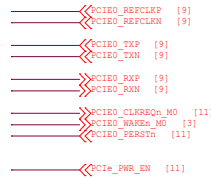
RGMI1 Power Source	CFG EXT	CFG LDO[1:0]	
External 3.3V(default)	1'b1	2'b00	CFG EXT: 1:External Power Source for 10 pad. 0:Integrated LDO for 10 pad
External 1.8V	1'b1	2'b10	CFG LDO[1:0]: 10:1.8V 00:3.3V
Internal 1.8V	1'b0	2'b10	

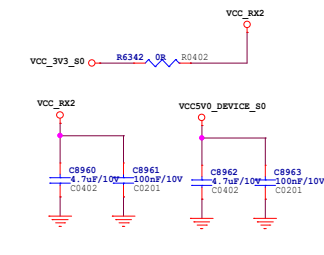


TF CARD

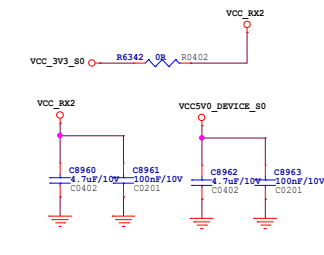


M.2_PCIE



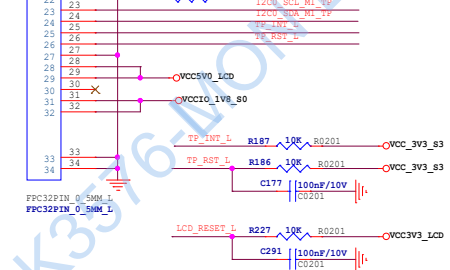
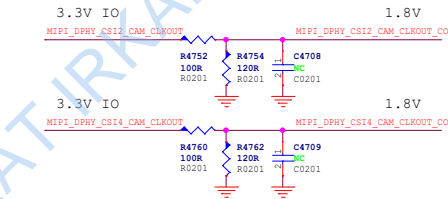
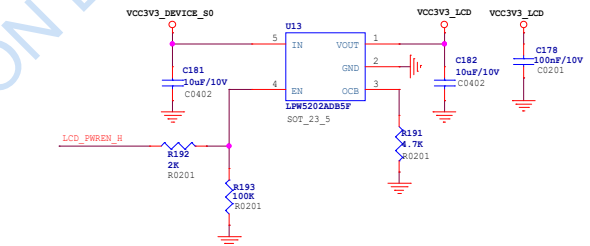
[illegible]

```
[7] MIPI_DPHY_CS13_RX_CON [7]
[7] MIPI_DPHY_CS13_RX_CLK [7]
[7] MIPI_DPHY_CS13_RX_CLKM [7]
[7] MIPI_DPHY_CS13_RX_CCLK [7]
[7] MIPI_DPHY_CS13_RX_CLKEN [7]
[7] MIPI_DPHY_CS13_RX_CLKEP [7]
[7] MIPI_DPHY_CS14_RX_CON [7]
[7] MIPI_DPHY_CS14_RX_CLK [7]
[7] MIPI_DPHY_CS14_RX_CLKM [7]
[7] MIPI_DPHY_CS14_RX_CCLK [7]
[7] MIPI_DPHY_CS14_RX_CLKEN [7]
[7] MIPI_DPHY_CS14_RX_CLKEP [7]
[11] MIPI_DPHY_CS18_CAM_CLKOUT [11]
[11] MIPI_DPHY_CS18_CAM_CLKOUT [11]
[11,23] ZTC24_S0D_M3_MIPI_CS13 [11,23]
[11,23] ZTC24_S0C_M3_MIPI_CS13 [11,23]
[11] MIPI_DPHY_CS13_PDN_A [11]
[11] MIPI_DPHY_CS14_PDN_H [11]
[11] MIPI_DPHY_CS13/4_RST [11]
```



Timing diagram for the MIPI DPHY DSI TX signal. The diagram shows a series of signal transitions over time. A blue dashed oval highlights a specific sequence of signals. The signals are:

- MIPI_DPHY_DSI_TX_D0N [7]
- MIPI_DPHY_DSI_TX_D0P [7]
- MIPI_DPHY_DSI_TX_D1N [7]
- MIPI_DPHY_DSI_TX_D1P [7]
- MIPI_DPHY_DSI_TX_D2N [7]
- MIPI_DPHY_DSI_TX_D2P [7]
- MIPI_DPHY_DSI_TX_D3N [7]
- MIPI_DPHY_DSI_TX_D3P [7]
- MIPI_DPHY_DSI_TX_CLKN [7]
- MIPI_DPHY_DSI_TX_CLKP [7]
- C2C0_SCL_M1_TP [3,22]
- C2C0_SDA_M1_TP [3,22]
- TP_SW_L [3]
- TP_RST_L [3]
- LCD_BL_PWM1_CH1_M0 [3]
- LCD_PAREN_H [10]
- LCD_RESET_L [11]
- LCD_EN_A [11]

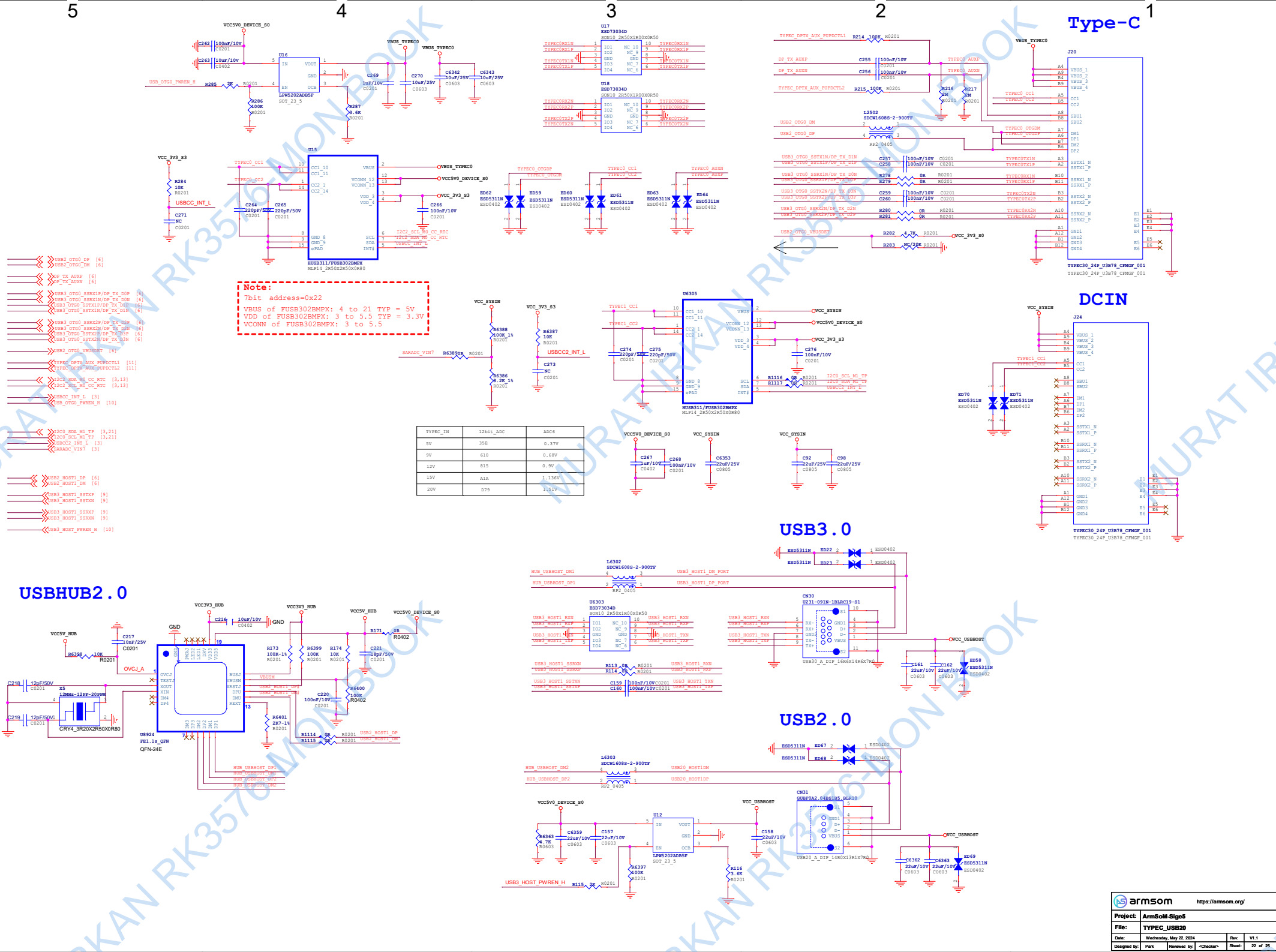


D

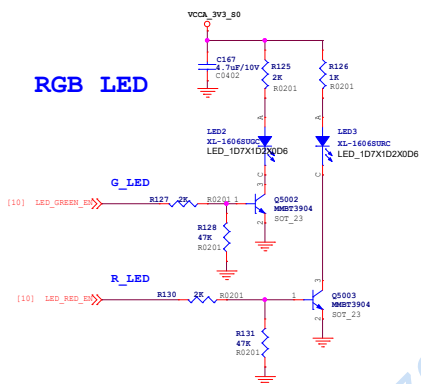
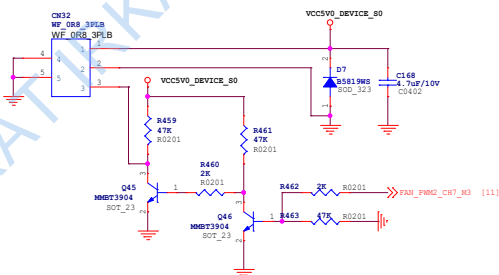
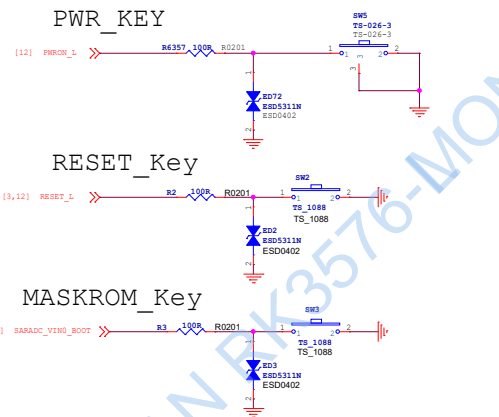
C

B

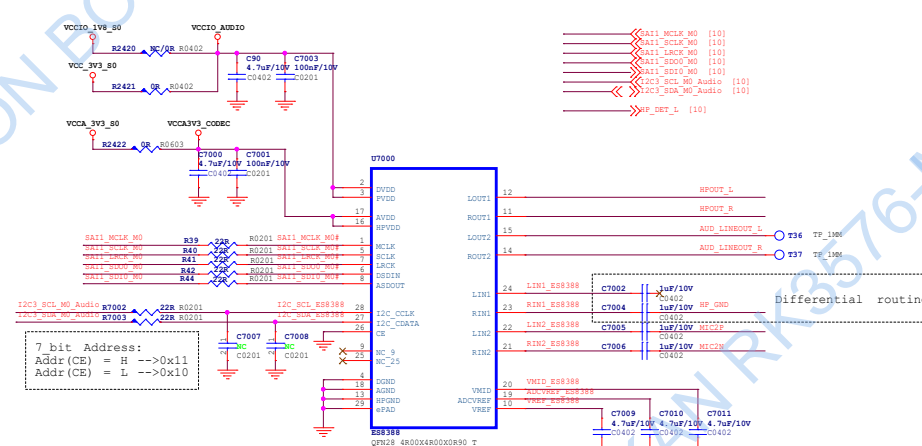
A



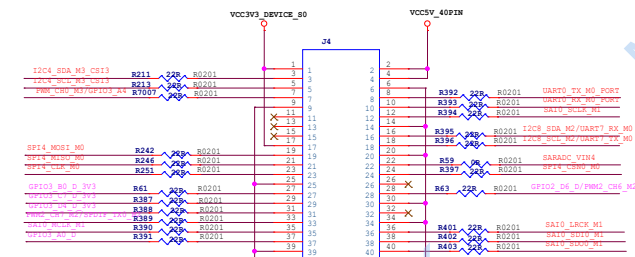
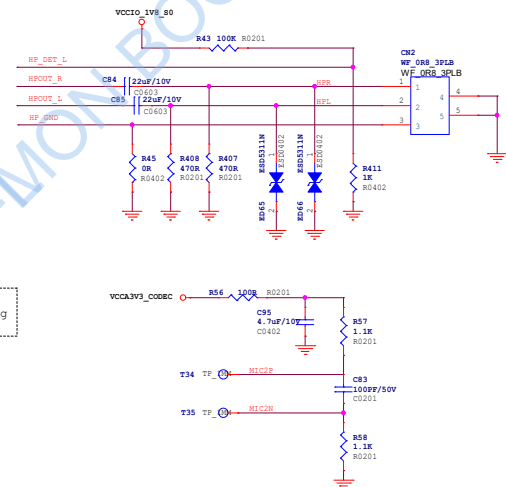
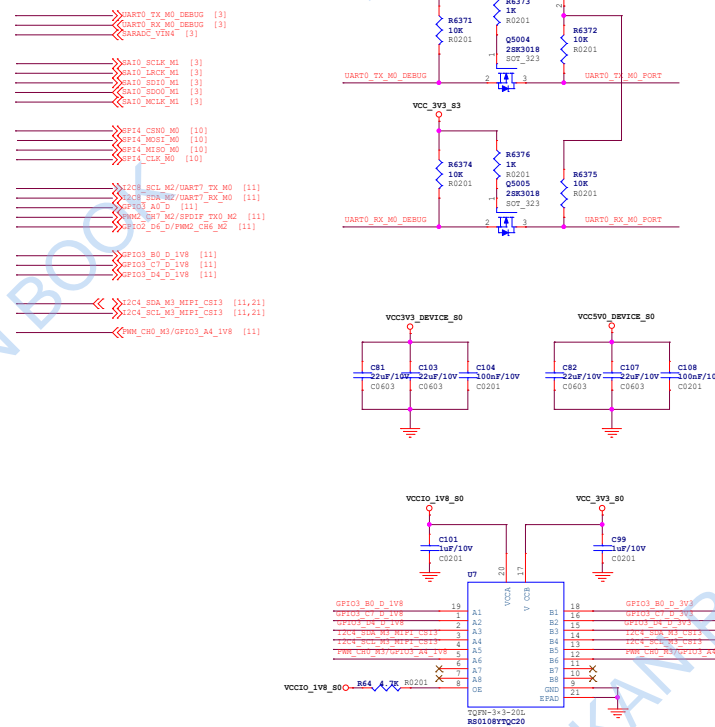
RGB LED



AUDIO CODEC



40PIN_GPIO



CHOOSE ONE

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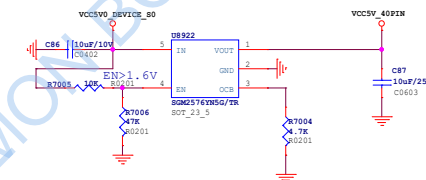
MIPI_DPHY_CSI2_CAM_CLKOUT
GPIO2_D6_D/PWM2_CH6_M2

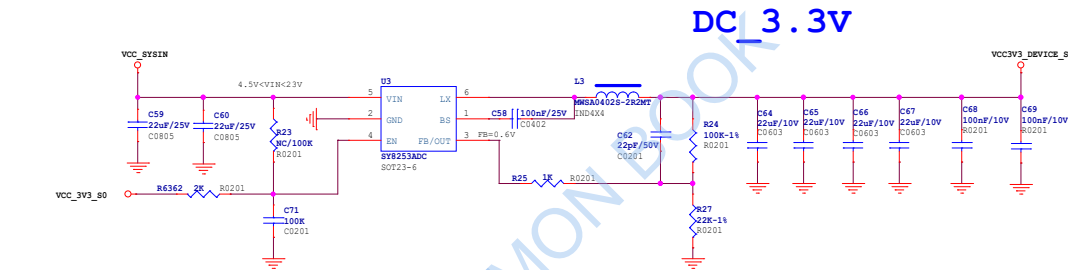
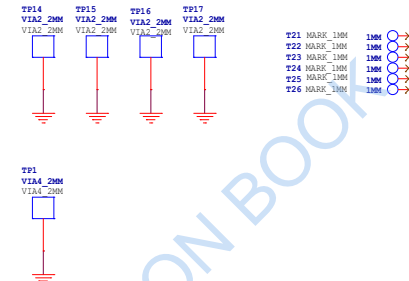
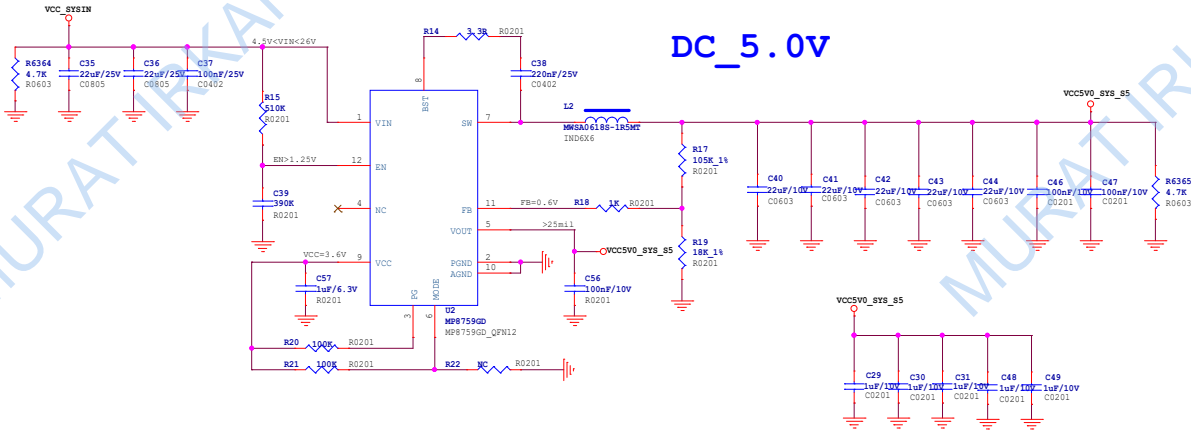
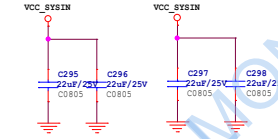
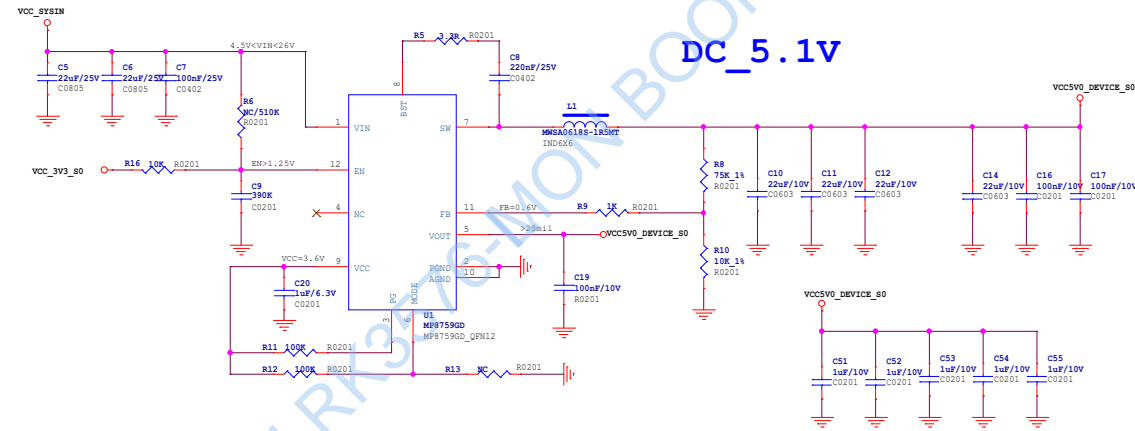
MIPI_DPHY_CSI4_CAM_CLKOUT
GPIO3_A3_D

MIPI_DPHY_CSI2_PDN_H
GPIO3_C7_D_1V8

MIPI_DPHY_CSI4_PDN_H
GPIO3_D4_D_1V8

```





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;	