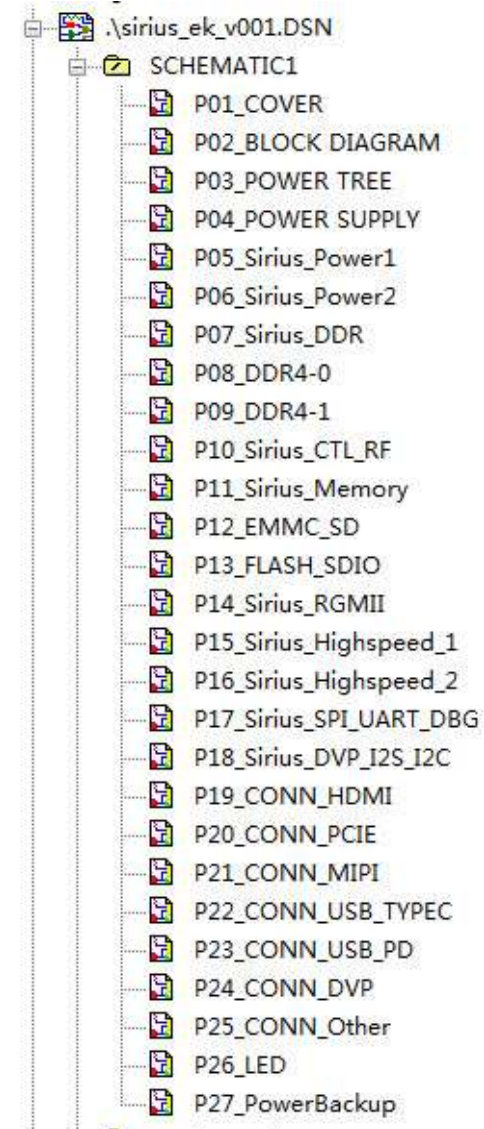


D

C

B

A




D

C

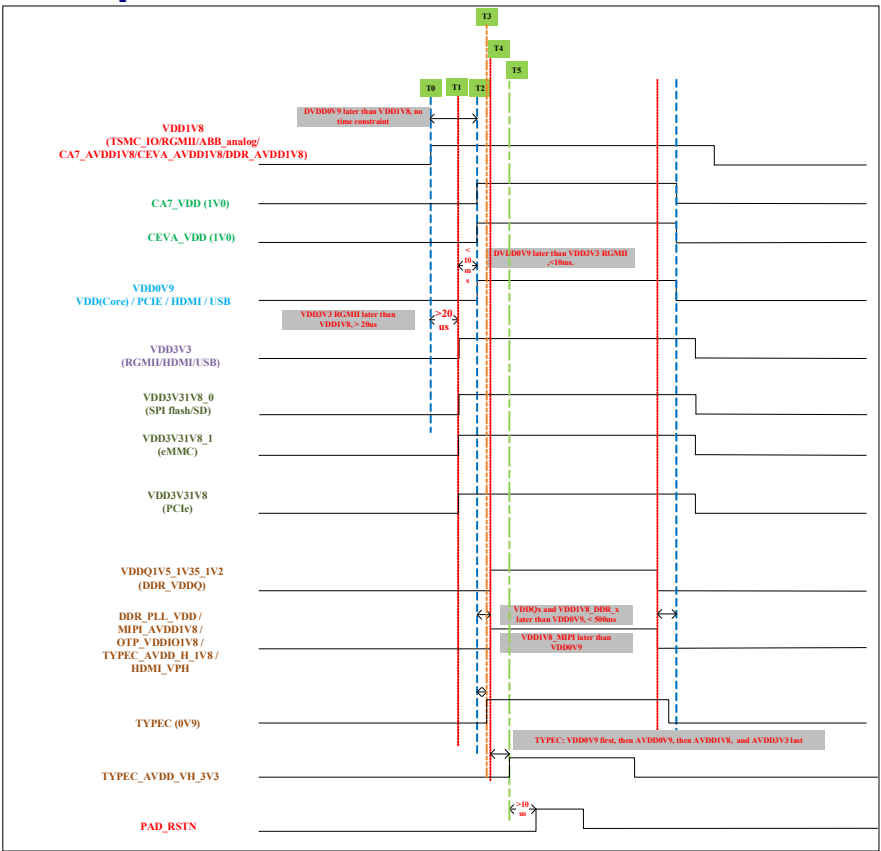
B

A

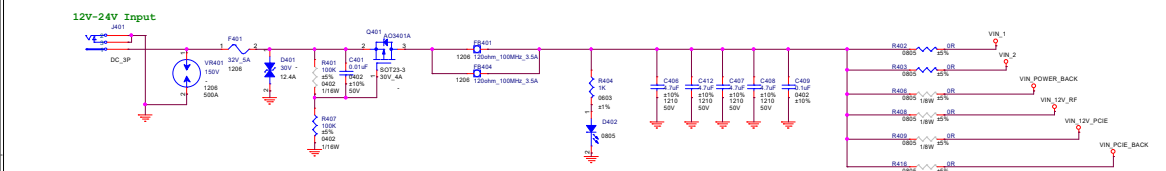
<div><div> ARTOSYN CONFIDENTIAL</div></div>			
Designed by Wuping Wang	Project Name Sirius EK V001		Rev 1.0.0
Date 2017.11.22	Size A4	Page Title P02_BLOCK DIAGRAM	
Dept: R&D, ARTOSYN		Sheet [ 2 ] of [ 27 ]	

Power Sequence

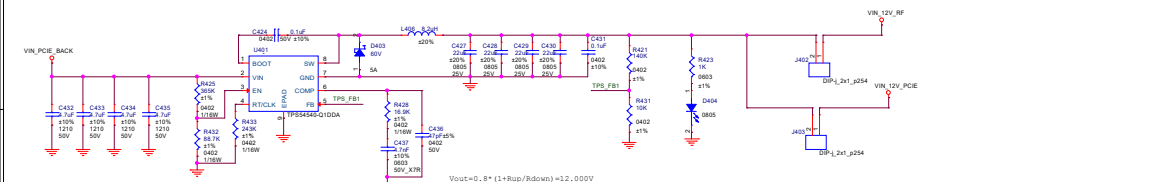
Power Tree



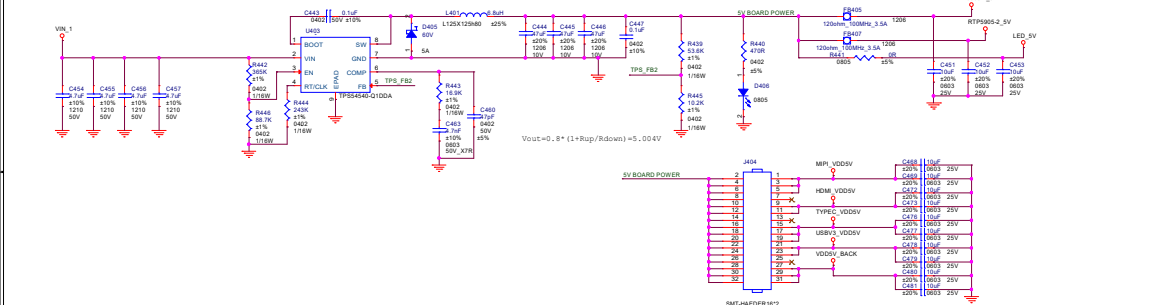
## POWER INPUT



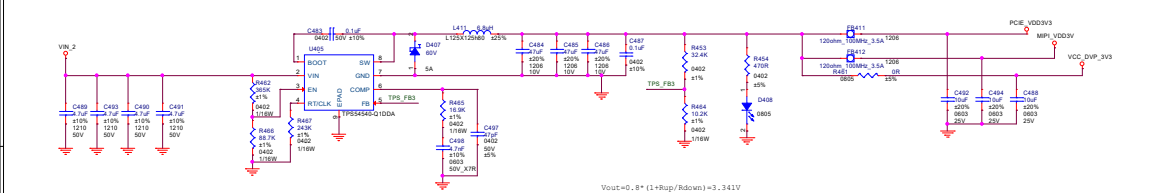
```
=====
12V PCIE&RF CON POWER
```



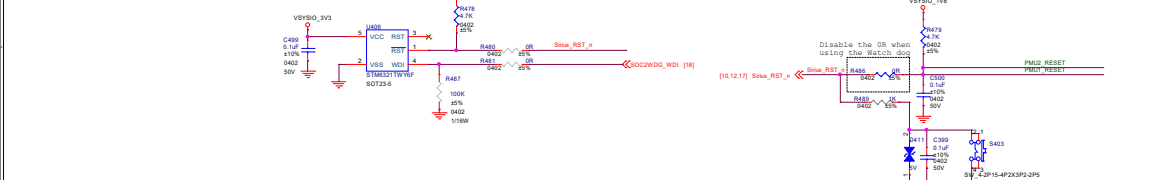
## 5V BOARD POWER



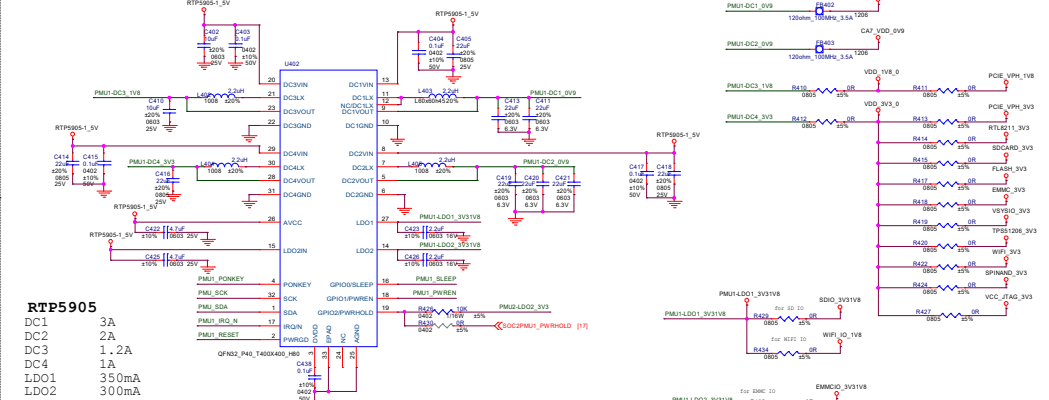
## 3.3V CON POWER



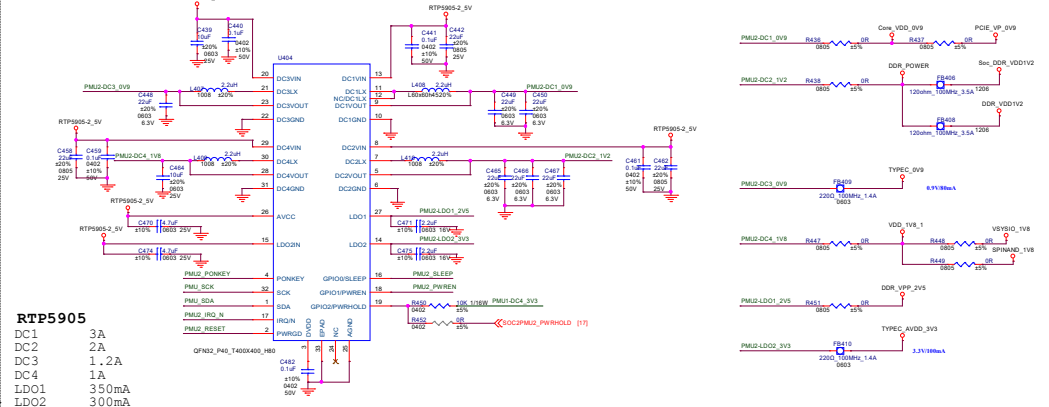
## SYSTEM RESET



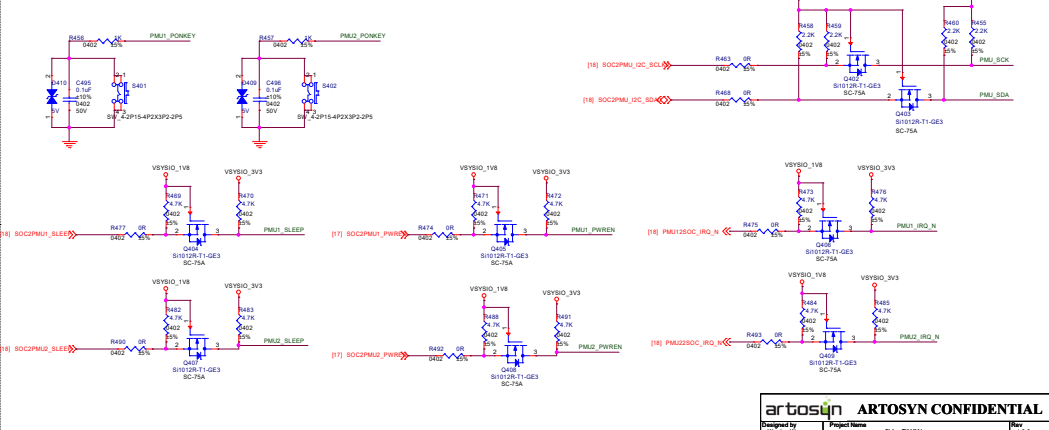
## PMU1



## PMU2



BUTTON & LEVEL SHIFT

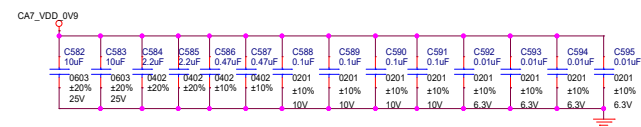
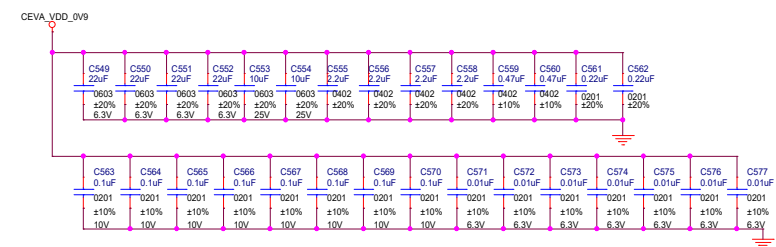
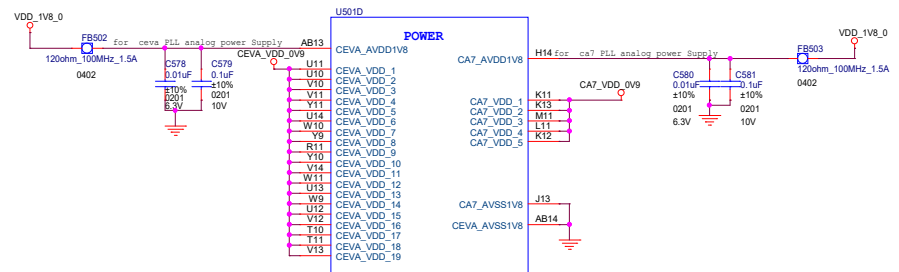
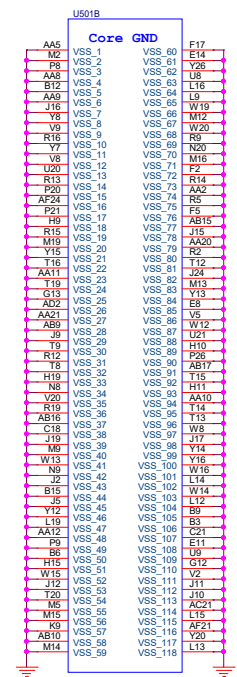
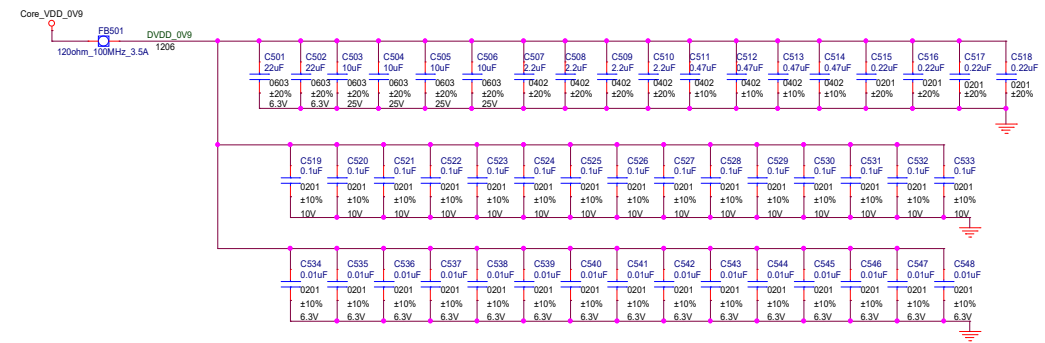
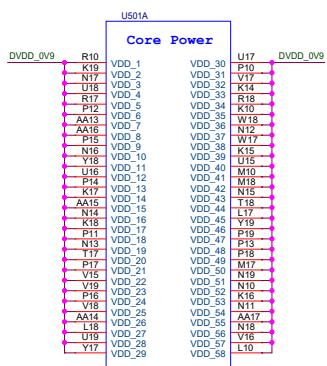


D

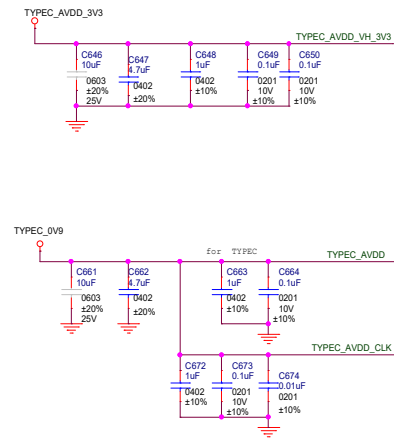
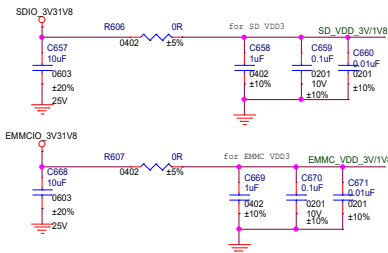
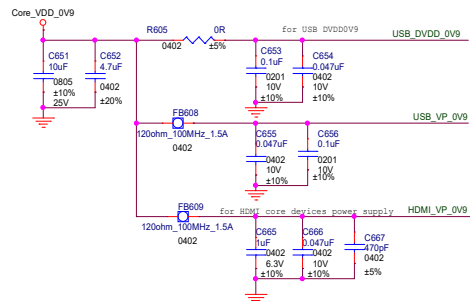
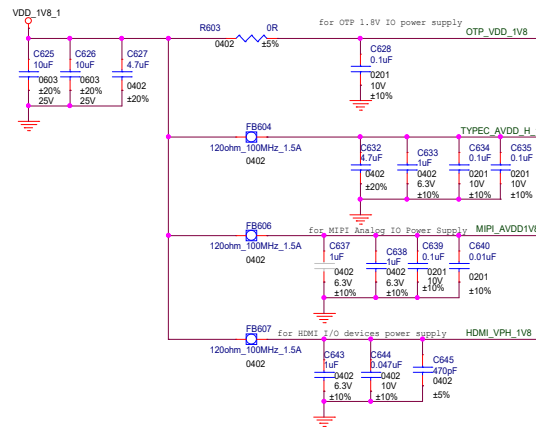
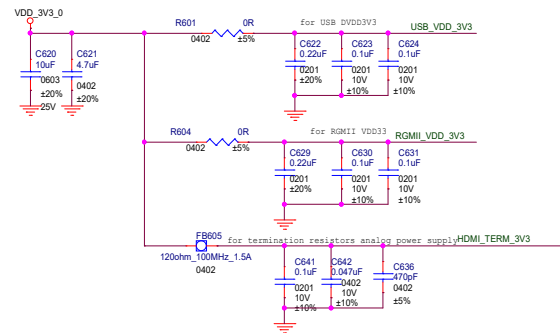
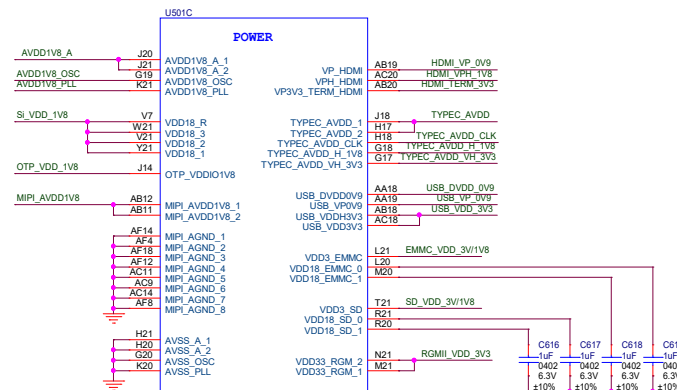
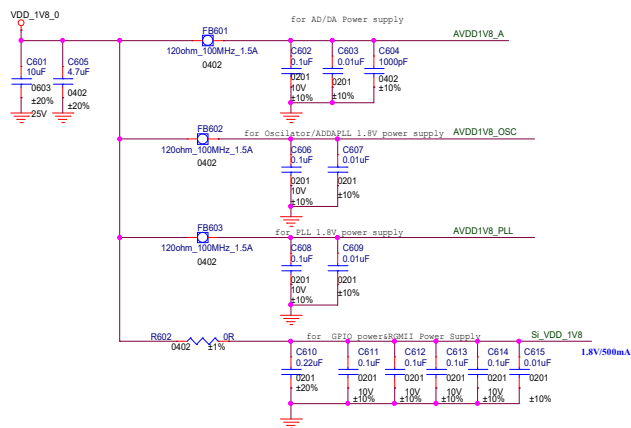
C

B

A

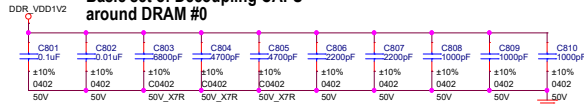


数字地与模拟地是否要分开？

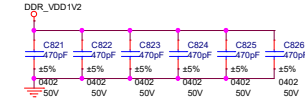
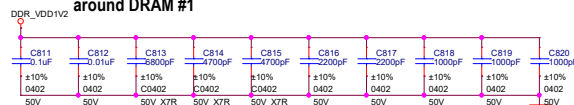




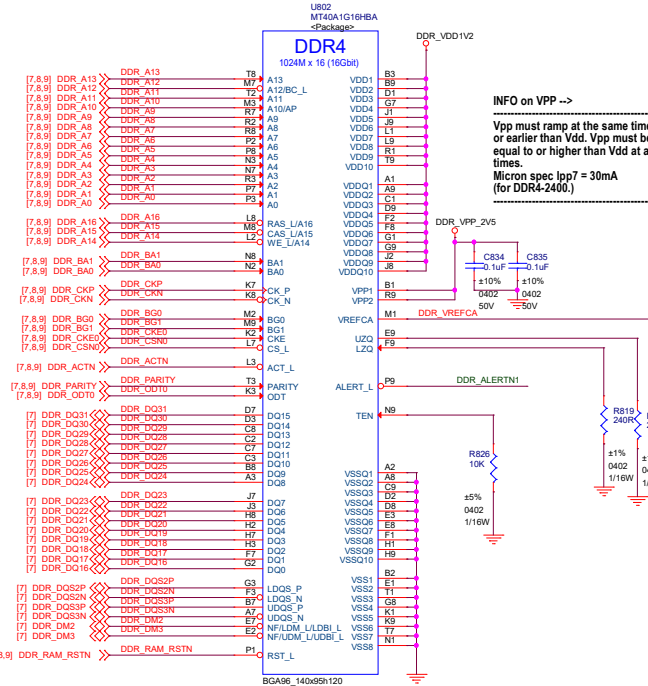
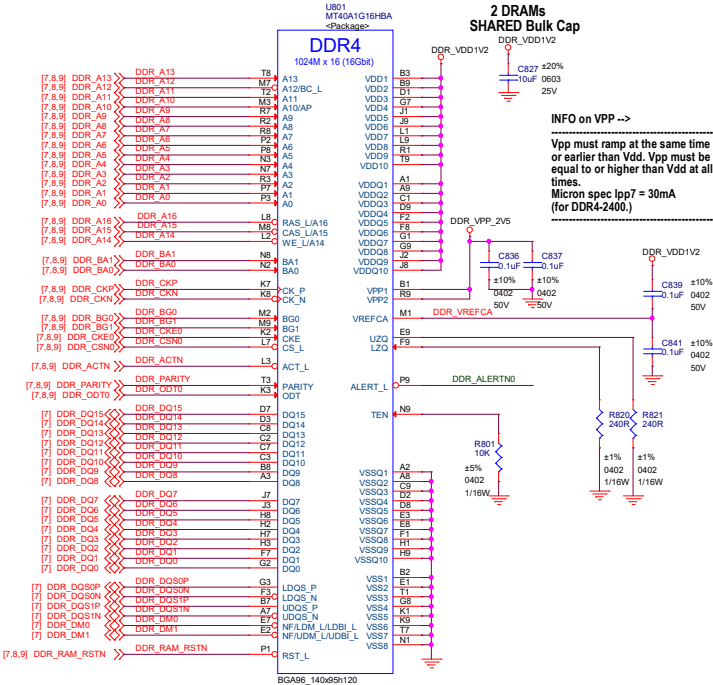
## Basic set of Decoupling CAPS around DRAM #0



## Basic set of Decoupling CAPS around DRAM #1



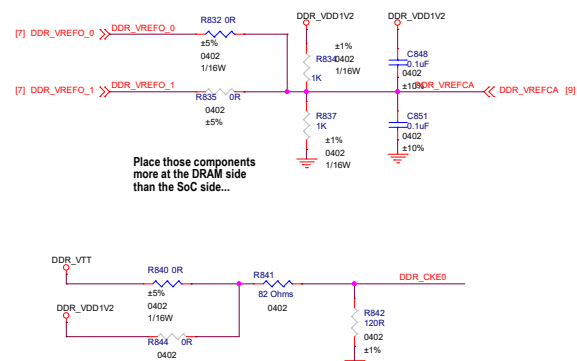
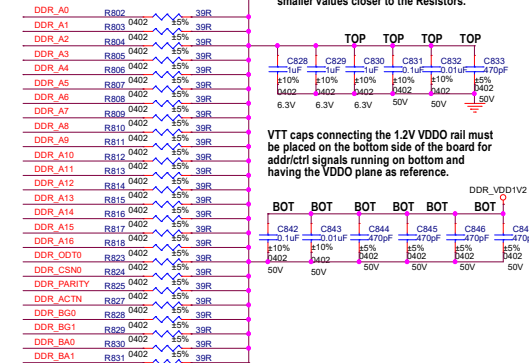
## 2 DRAMs SHARED Bulk Cap



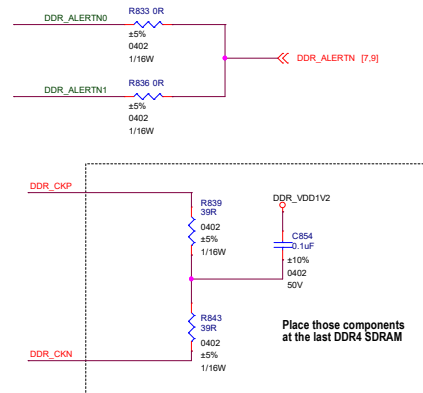
INFO on VPP -->

Vpp must ramp at the same time or earlier than Vdd. Vpp must be equal to or higher than Vdd at all times.  
Micron spec Ipp7 = 30mA (for DDR4-2400.)

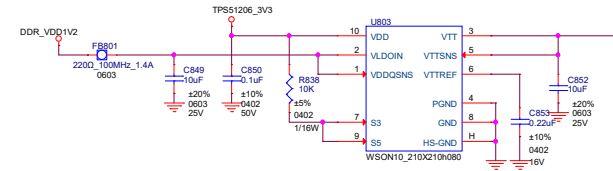
Should use this VTT caps configuration. Spread the caps around the Resistors smaller values closer to the Resistors.



Place those components more at the DRAM side than the SoC side...



Place those components at the last DRAM SDRAM





Basic set of Decoupling CAPS  
around DRAM #3



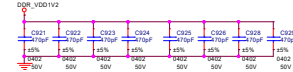
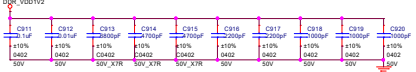
2 DRAMS  
SHARED Bulk Cap



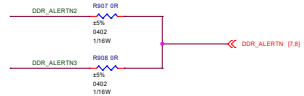
INFO on VPP ->  
Vpp must ramp at the same time  
or earlier than Vdd. Vpp must be  
equal to or higher than Vdd at all  
times.  
Micron spec tpp7 = 30mA  
(for DDR4-2400)

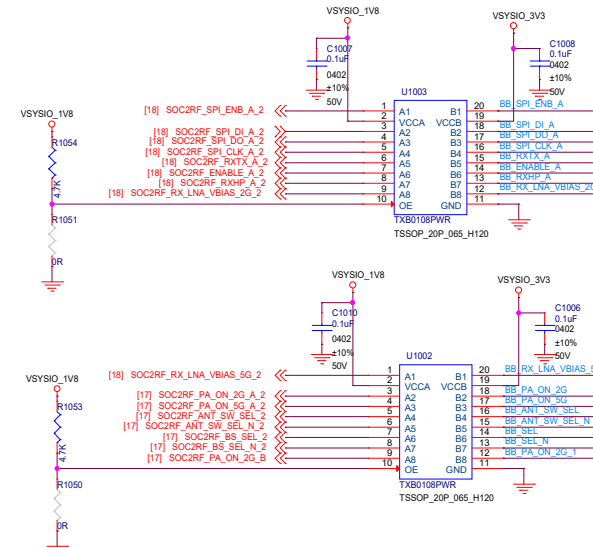
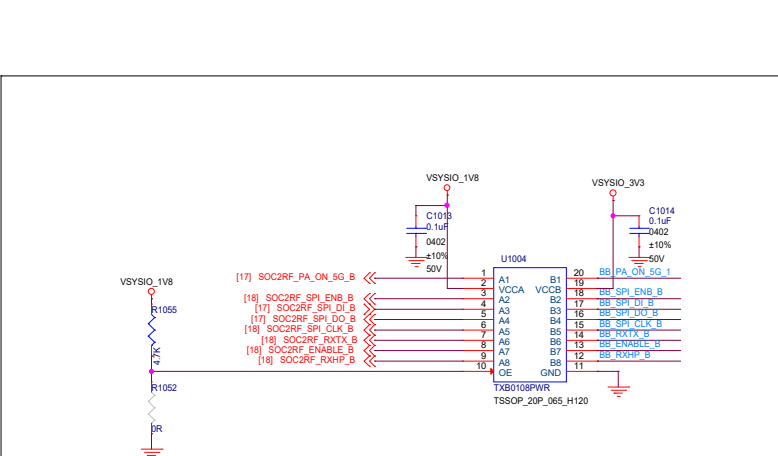
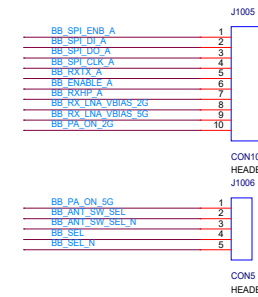
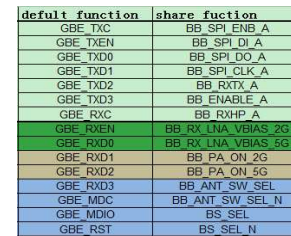
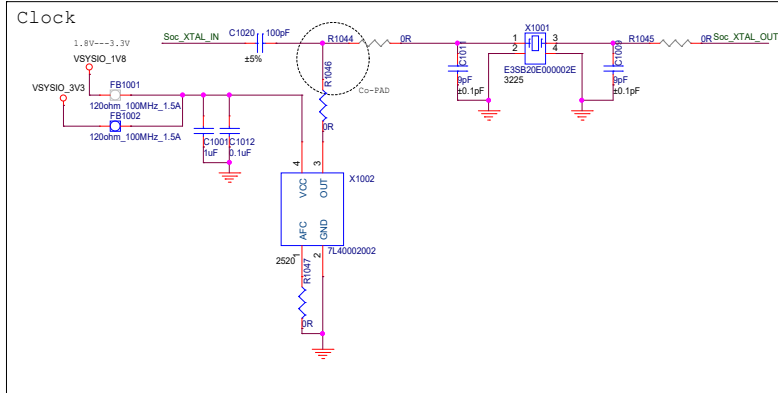
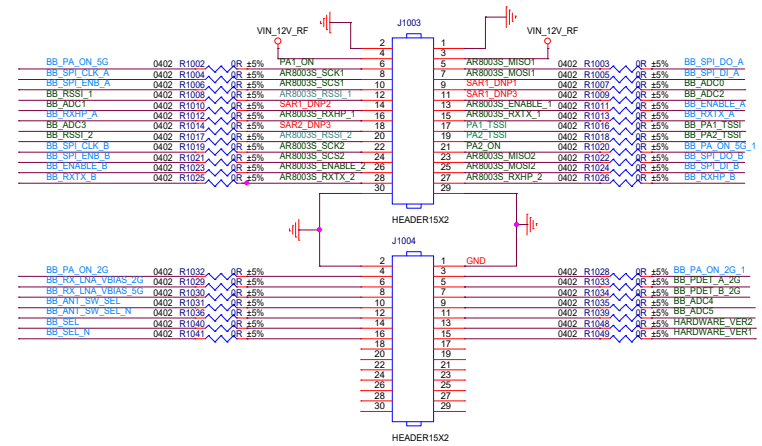
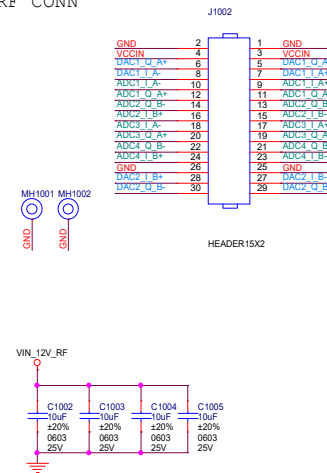
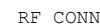
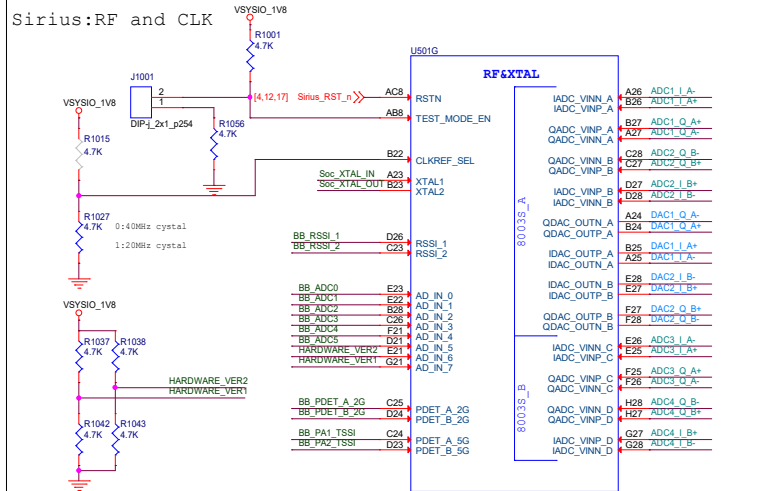
Please test pads on these strips  
as close as possible to the  
Bom/2520 balls they connected to.

Basic set of Decoupling CAPS  
around DRAM #4



INFO on VPP ->  
Vpp must ramp at the same time  
or earlier than Vdd. Vpp must be  
equal to or higher than Vdd at all  
times.  
Micron spec tpp7 = 30mA  
(for DDR4-2400)





## SOC EMMC & SD

U501H

### EMMC

EMMC_D0//GP(C3)_0	H25	R1101	0R	SOC2EMMC_D0 [12]
EMMC_D1//GP(C3)_1	H26	R1105	0R	SOC2EMMC_D1 [12]
EMMC_D2//GP(C3)_2	J26	R1108	0R	SOC2EMMC_D2 [12]
EMMC_D3//GP(C3)_3	J26	R1110	0R	SOC2EMMC_D3 [12]
EMMC_D4//GP(C3)_4	K27	R1111	0R	SOC2EMMC_D4 [12]
EMMC_D5//GP(C3)_5	K28	R1112	0R	SOC2EMMC_D5 [12]
EMMC_D6//GP(C3)_6	L28	R1114	0R	SOC2EMMC_D6 [12]
EMMC_D7//GP(C3)_7	L27	R1115	0R	SOC2EMMC_D7 [12]

EMMC\_CCLK\_OUT//GP(B0)\_2 J28 R1120 22R >>SOC2EMMC\_CLK [12]

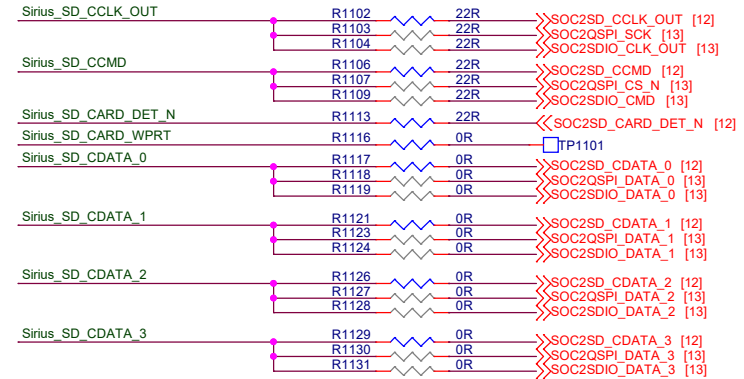
EMMC\_CCMD//GP(B0)\_3 J27 R1122 0R >>SOC2EMMC\_CMD [12]

EMMC\_PWR//GP(B0)\_4 K22 R1125 0R >>SOC2EMMC\_PWR [12]

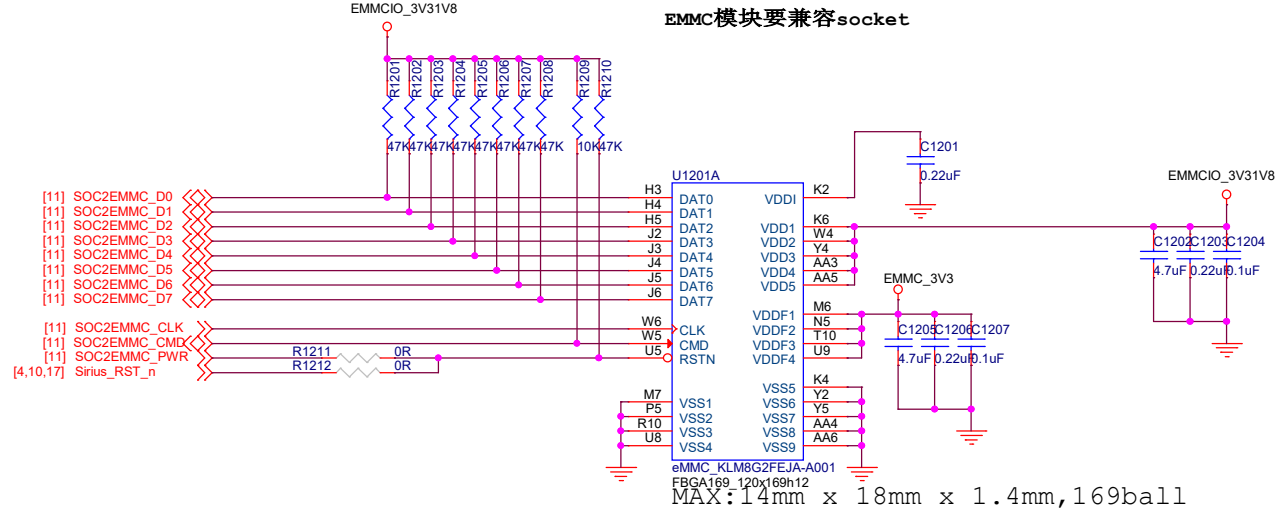
U501I

### SD CARD

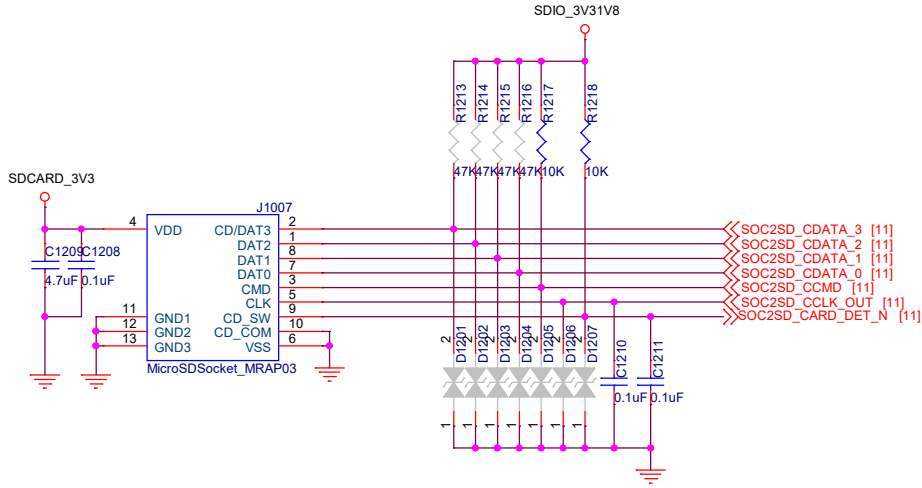
SD_CCLK_OUT/QSPI_SCK//GP(D2)_0	U28	Sirius_SD_CCLK_OUT
SD_CCMD/QSPI_CS_N//GP(D2)_1	U27	Sirius_SD_CCMD
SD_CARD_DETECT_N//GP(D2)_2	V28	Sirius_SD_CARD_DET_N
SD_CARD_WPRT//GP(D2)_3	V27	Sirius_SD_CARD_WPRT
SD_CDATA_0/QSPI_DATA_0//GP(D2)_4	W28	Sirius_SD_CDATA_0
SD_CDATA_1/QSPI_DATA_1//GP(D2)_5	W27	Sirius_SD_CDATA_1
SD_CDATA_2/QSPI_DATA_2//GP(D2)_6	Y28	Sirius_SD_CDATA_2
SD_CDATA_3/QSPI_DATA_3//GP(D2)_7	Y27	Sirius_SD_CDATA_3



eMMC



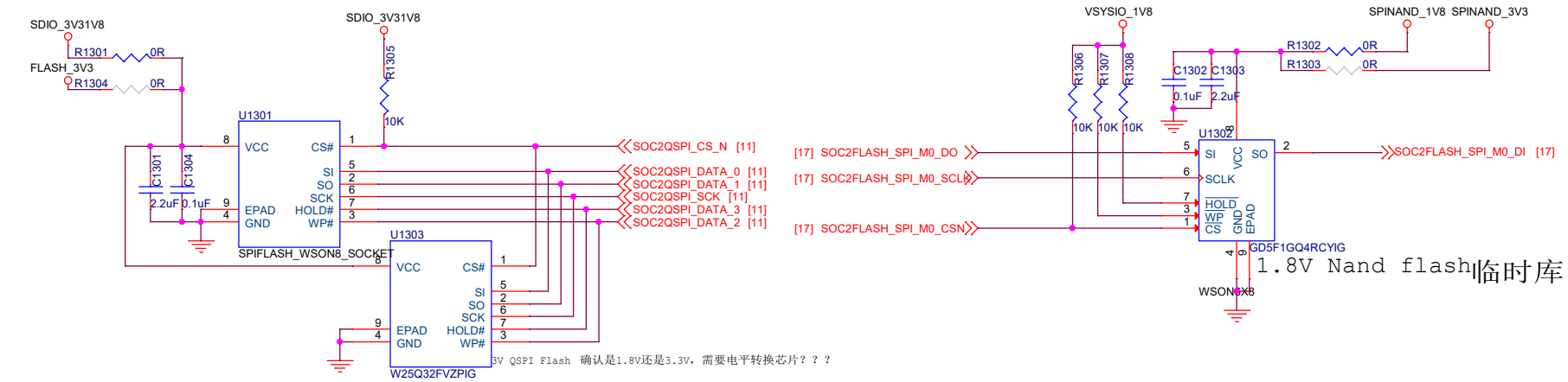
SD



U1201B			
H6	RFU1	NC53	N12
H7	RFU2	NC54	N13
K5	RFU3	NC55	N14
M5	RFU4	NC56	P1
M8	RFU5	NC57	P2
M9	RFU6	NC58	P12
M10	RFU7	NC59	P13
N10	RFU8	NC60	P14
P3	RFU9	NC61	R1
P10	RFU10	NC62	R2
R5	RFU11	NC63	R3
T5	RFU12	NC64	R12
U6	RFU13	NC65	R13
U7	RFU14	NC66	R14
U10	RFU15	NC67	T1
AA7	RFU16	NC68	T2
AA10	RFU17	NC69	T3
A4	NC1	NC70	T12
A6	NC2	NC71	T13
A9	NC3	NC72	T14
A11	NC4	NC73	U1
B2	NC5	NC74	U2
B13	NC6	NC75	U3
D1	NC7	NC76	U12
D14	NC8	NC77	U13
H1	NC9	NC78	U14
H2	NC10	NC79	V1
H8	NC11	NC80	V2
H9	NC12	NC81	V3
H10	NC13	NC82	V12
H11	NC14	NC83	V13
H12	NC15	NC84	V14
H13	NC16	NC85	W1
H14	NC17	NC86	W2
J1	NC18	NC87	W3
J7	NC19	NC88	W7
J8	NC20	NC89	W8
J9	NC21	NC90	W9
J10	NC22	NC91	W10
J11	NC23	NC92	W11
J12	NC24	NC93	W12
J13	NC25	NC94	W13
J14	NC26	NC95	W14
K1	NC27	NC96	Y1
K3	NC28	NC97	Y3
K7	NC29	NC98	Y6
K8	NC30	NC99	Y7
K9	NC31	NC100	Y8
K10	NC32	NC101	Y9
K11	NC33	NC102	Y10
K12	NC34	NC103	Y11
K13	NC35	NC104	Y12
K14	NC36	NC105	Y13
L1	NC37	NC106	Y14
L2	NC38	NC107	AA1
L3	NC39	NC108	AA2
L4	NC40	NC109	AA3
L12	NC41	NC110	AA4
L13	NC42	NC111	AA5
L14	NC43	NC112	AA6
M1	NC44	NC113	AA7
M2	NC45	NC114	AA8
M3	NC46	NC115	AA9
M12	NC47	NC116	AA10
M13	NC48	NC117	AG1
M14	NC49	NC118	AG2
N1	NC50	NC119	AG3
N2	NC51	NC120	AH1
N3	NC52	NC121	AH2
		NC122	AH3

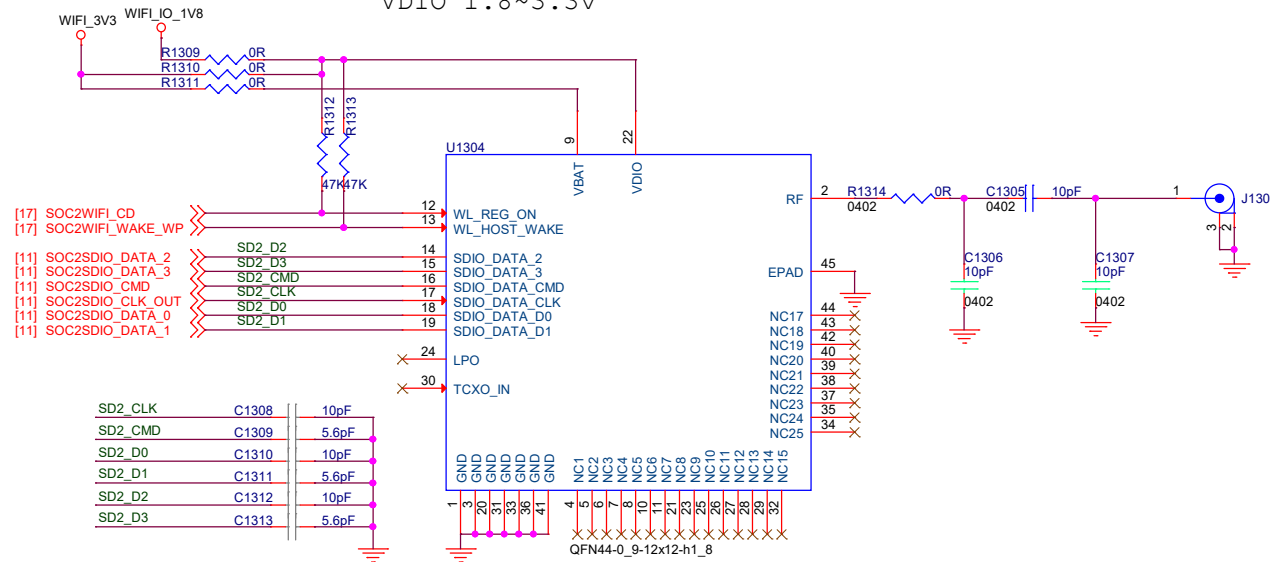
eMMC\_KLM8G2FEJA-A001  
<Package>  
FBGA169\_120x169h12

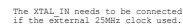
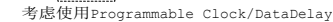
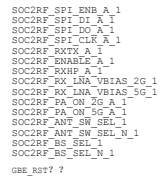
# QSPI & SPI Nand flash



# SDIO WIFI Module

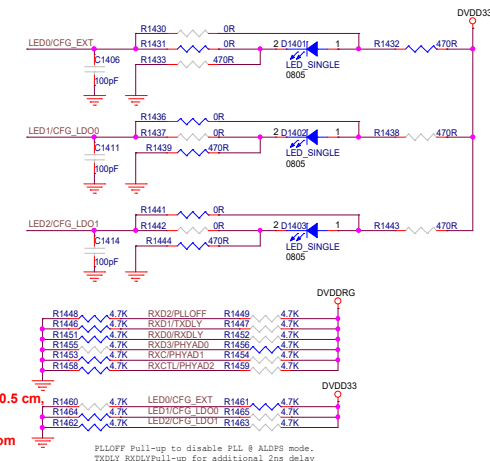
VDIO 1.8~3.3v





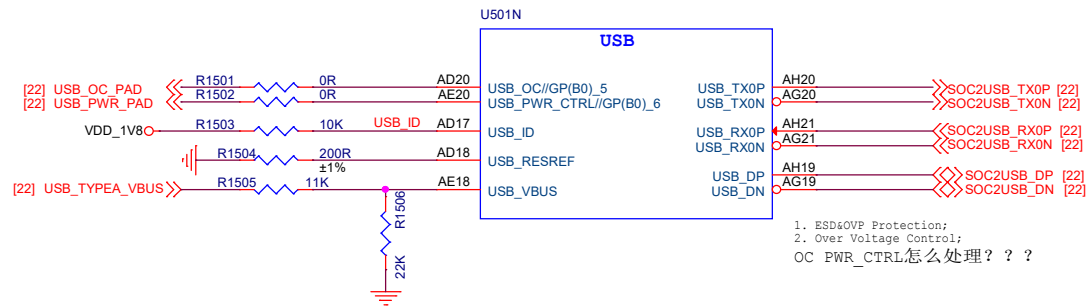
**Note 3: CAPs(C1417/C1448) must be closed to pin28 for EMI consideration.**

**Note 6: Any inductance or bead except L1 is not allowed on the path from REGOUT to DVDD10/AVDD10.**

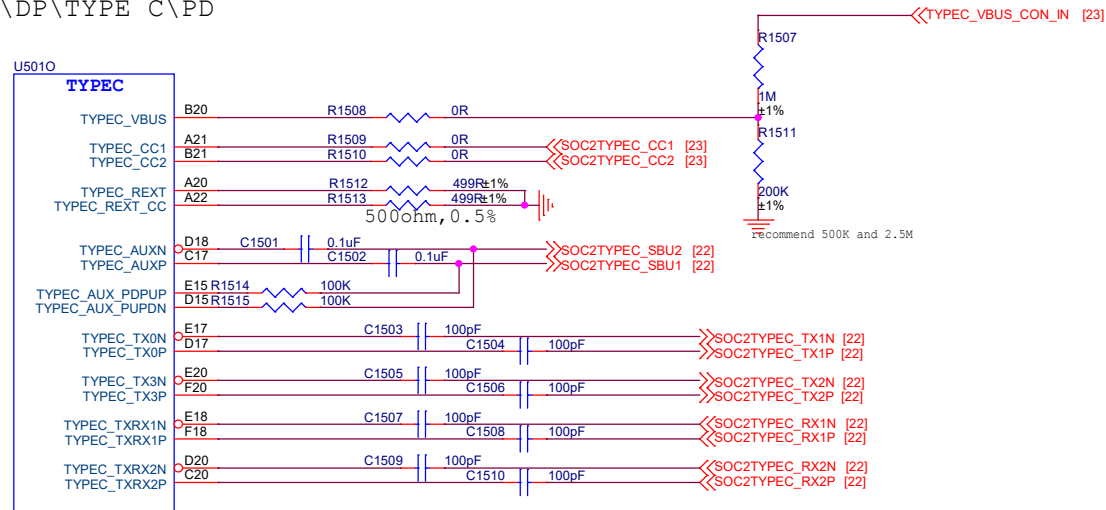


PLLOFF Pull-up to disable PLL @ ALDPS mode.  
TXDLY RXDLY Pull-up for additional 2ns delay

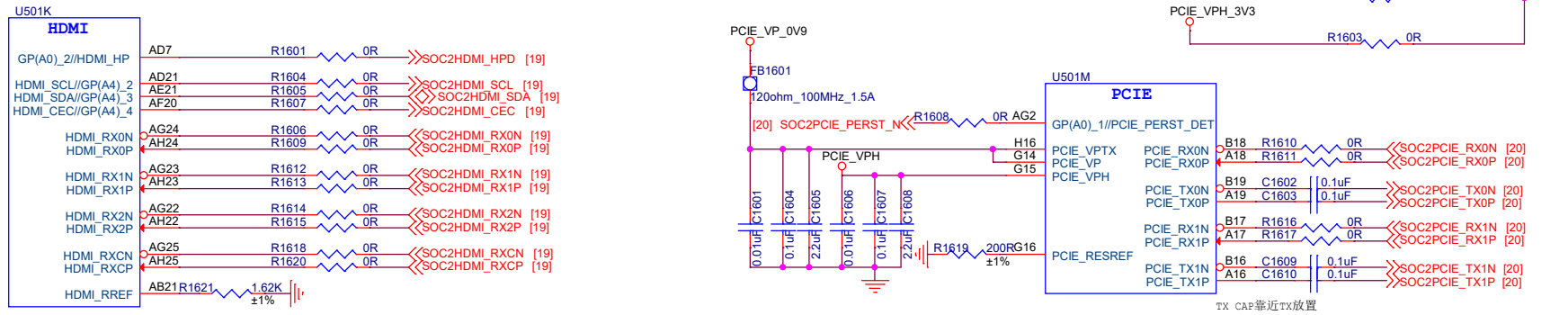
## SOC:USB3.0 AND USB2.0



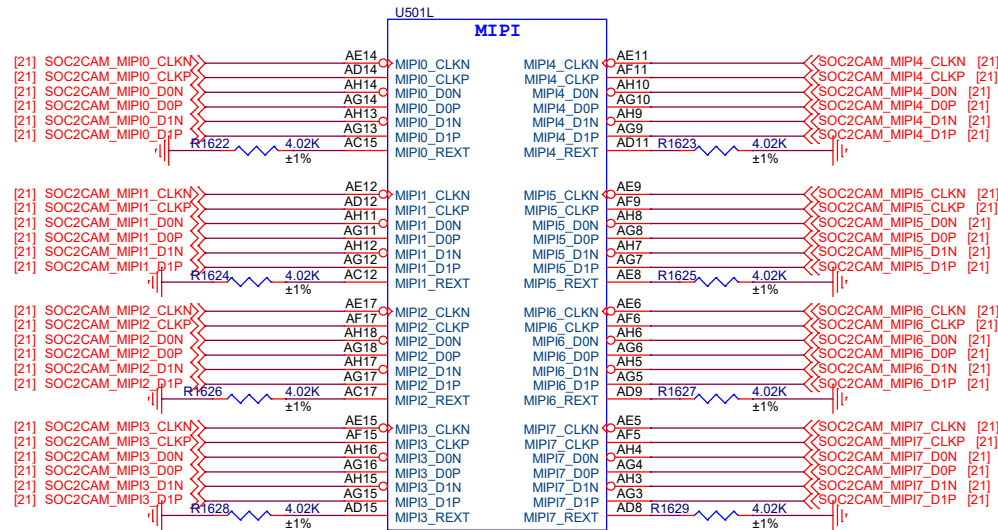
## SOC:USB3.0\DP\TYPE C\PD



## SOC:HDMI RX AND PCIE

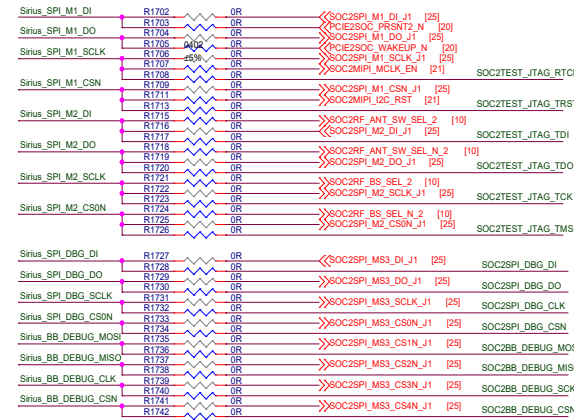
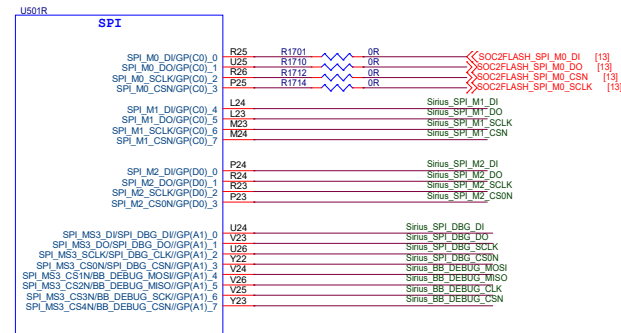


## SOC:MIPI CSI RX\*8 AND TX\*2

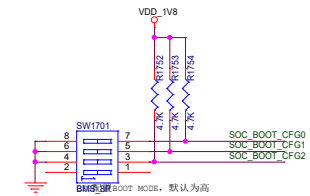
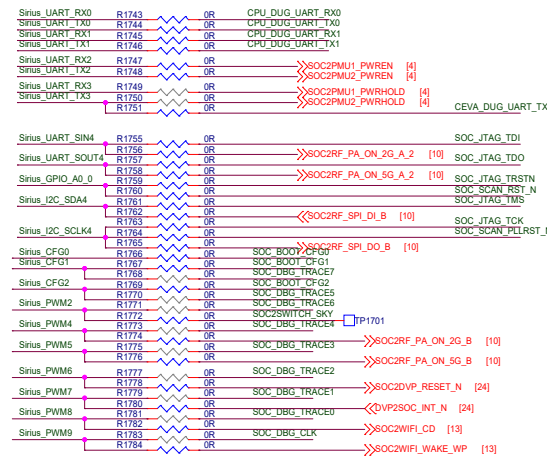
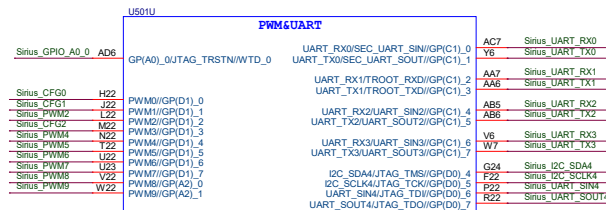




SOC SPI

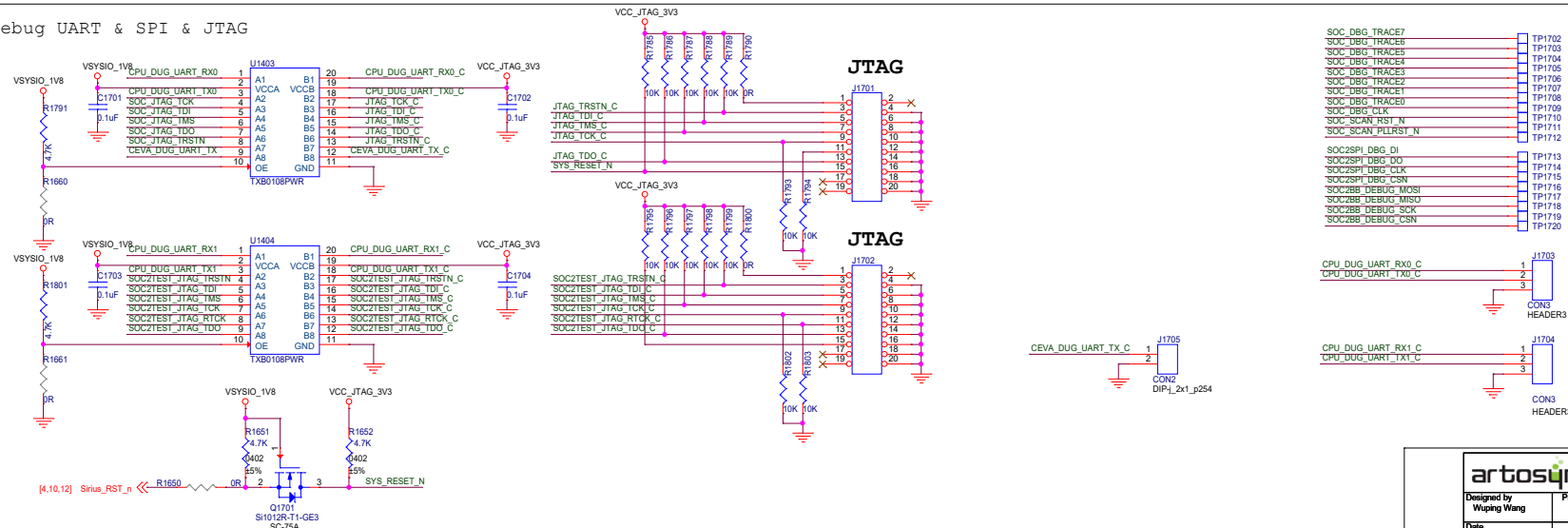


## UART&amp;CFG



1.8v digital IO

Debug UART & SPI & JTAG

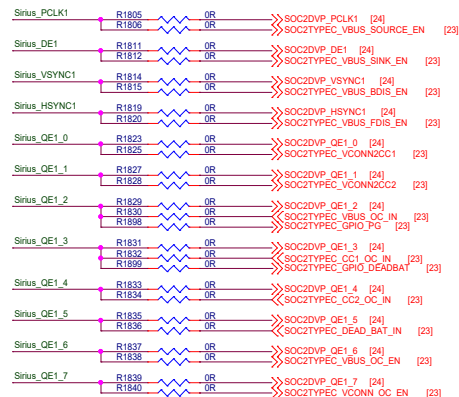


# Sirius DVP

U501P

## DVP

PCLK0/GP(A2).0	AD26	Sirius_PCLK0
DE0/GP(A2).1	AD25	Sirius_DE0
VSYNC0/GP(B0).0	AF26	Sirius_VSYNC0
HSYNC0/GP(B0).1	AE26	Sirius_HSYNC0
QEO_0/GP(B3).0	AG26	Sirius_QEO_0
QEO_1/GP(B3).1	AF25	Sirius_QEO_1
QEO_2/GP(B3).2	AD23	Sirius_QEO_2
QEO_3/GP(B3).3	AE24	Sirius_QEO_3
QEO_4/GP(B3).4	AC22	Sirius_QEO_4
QEO_5/GP(B3).5	AE23	Sirius_QEO_5
QEO_6/GP(B3).6	AF23	Sirius_QEO_6
QEO_7/GP(B3).7	AD22	Sirius_QEO_7
PCLK1/GP(A2).2	AC28	Sirius_PCLK1
DE1/GP(A2).3	AD28	Sirius_DE1
VSYNC1/GP(A2).4	AC27	Sirius_VSYNC1
HSYNC1/GP(A2).5	AE28	Sirius_HSYNC1
QE1_0/GP(A3).0	AF28	Sirius_QE1_0
QE1_1/GP(A3).1	AD27	Sirius_QE1_1
QE1_2/GP(A3).2	AG26	Sirius_QE1_2
QE1_3/GP(A3).3	AE27	Sirius_QE1_3
QE1_4/GP(A3).4	AH26	Sirius_QE1_4
QE1_5/GP(A3).5	AF27	Sirius_QE1_5
QE1_6/GP(A3).6	AG27	Sirius_QE1_6
QE1_7/GP(A3).7	AH27	Sirius_QE1_7



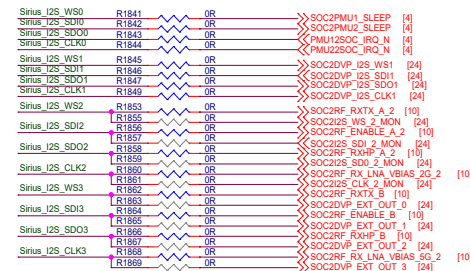
DVP 0和MON OUT复用接口  
DVP 1和MON OUT复用接口  
DVP 0和TYPE C 兼容设计

# Sirius I2S&GPIO

U501Q

## I2S

I2S_WS_0/GP(B2).0	AA27	Sirius_I2S_WS0
I2S_SDI_0/GP(B2).1	AA26	Sirius_I2S_SDI0
I2S_SDO_0/GP(B2).2	AB28	Sirius_I2S_SDO0
I2S_CLK_0/GP(B2).3	AA28	Sirius_I2S_CLK0
I2S_WS_1/GP(B2).4	AA25	Sirius_I2S_WS1
I2S_SDI_1/GP(B2).5	Y25	Sirius_I2S_SDI1
I2S_SDO_1/GP(B2).6	AB27	Sirius_I2S_SDO1
I2S_CLK_1/GP(B2).7	AC26	Sirius_I2S_CLK1
I2S_WS_2/GP(C2).0	Y24	Sirius_I2S_WS2
I2S_SDI_2/GP(C2).1	AA23	Sirius_I2S_SDI2
I2S_SDO_2/GP(C2).2	AA24	Sirius_I2S_SDO2
I2S_CLK_2/GP(C2).3	AA22	Sirius_I2S_CLK2
I2S_WS_3/GP(C2).4	AB23	Sirius_I2S_WS3
I2S_SDI_3/GP(C2).5	AB24	Sirius_I2S_SDI3
I2S_SDO_3/GP(C2).6	AC24	Sirius_I2S_SDO3
I2S_CLK_3/GP(C2).7	AC25	Sirius_I2S_CLK3



U501T

## GPIO

GP(A0)_3/UART_SIN5	AH2	R1848	OR	SOC2WDG_WDI_A_1	[4]
GP(A0)_4/UART_SOUT5	AF2	R1850	OR	SOC2RFR_SPI_DO_A_2	[10]
GP(A0)_5/WTD_1	AF1	R1851	OR	SOC2RFR_SPI_ENB_A_2	[10]
GP(A0)_6/UART_SIN1	AG1	R1852	OR	SOC2RFR_SPI_DI_A_2	[10]
GP(A0)_7/UART_SOUT1	AF3	R1854	OR	SOC2RFR_SPI_CLK_A_2	[10]

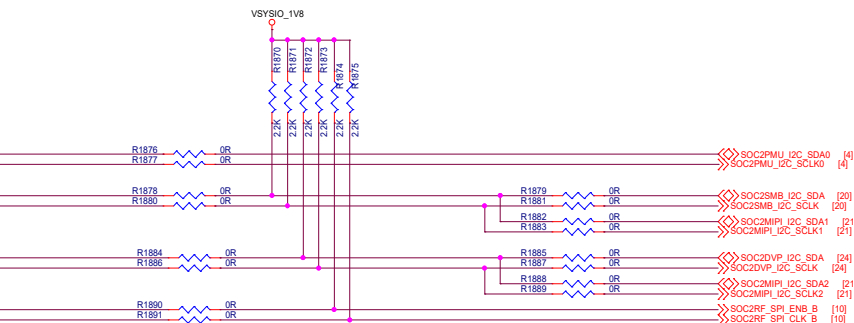
1.8v digital IO

# Sirius I2C

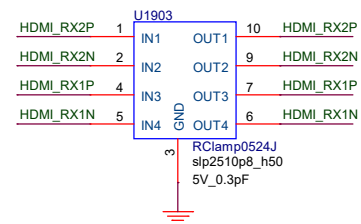
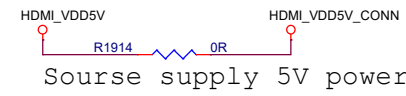
U501S

## I2C

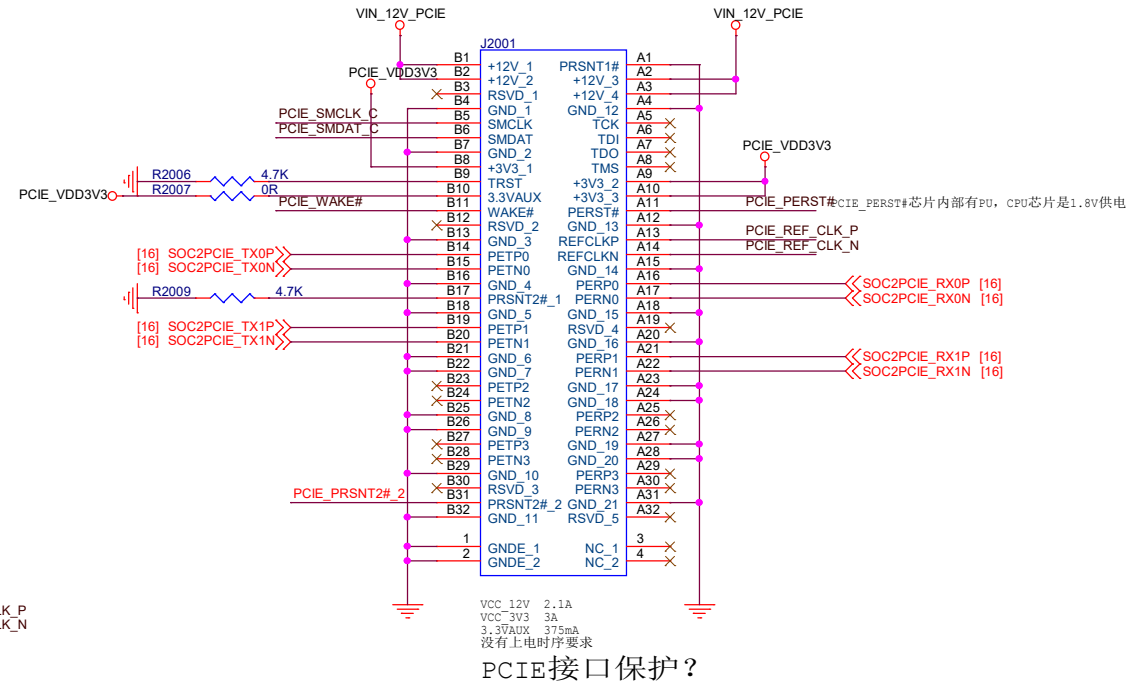
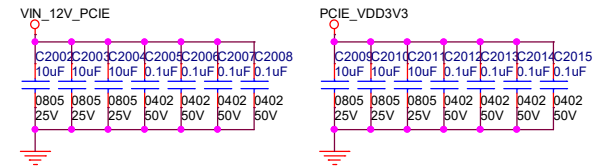
I2C_SDA0/GP(B1).0	AE3	Sirius_I2C_SDA0
I2C_SCL0/GP(B1).1	AD3	Sirius_I2C_SCL0
I2C_SDA1/GP(B1).2	AD4	Sirius_I2C_SDA1
I2C_SCL1/GP(B1).3	AC4	Sirius_I2C_SCL1
I2C_SDA2/GP(B1).4	AC5	Sirius_I2C_SDA2
I2C_SCL2/GP(B1).5	AC3	Sirius_I2C_SCL2
I2C_SDA3/GP(B1).6	F24	Sirius_I2C_SDA3
I2C_SCL3/GP(B1).7	H24	Sirius_I2C_SCL3



1.8v digital IO

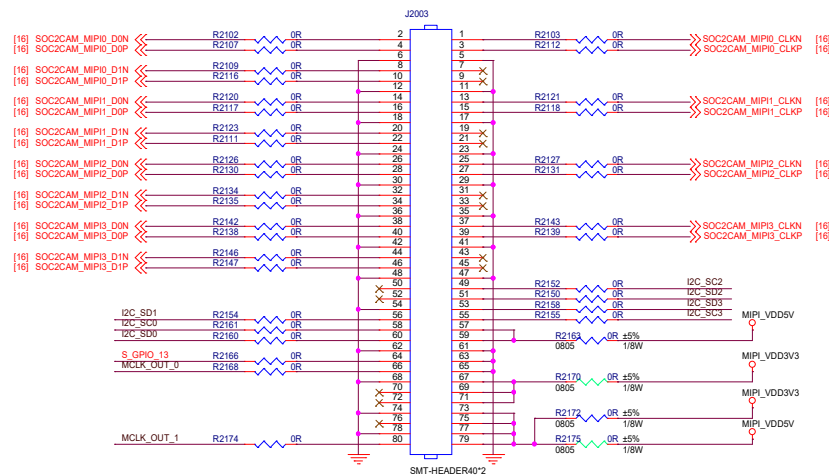


**PIN顺序！ 需要确认！**

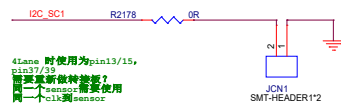


## PCIE接口保护？

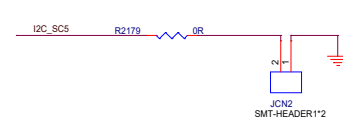
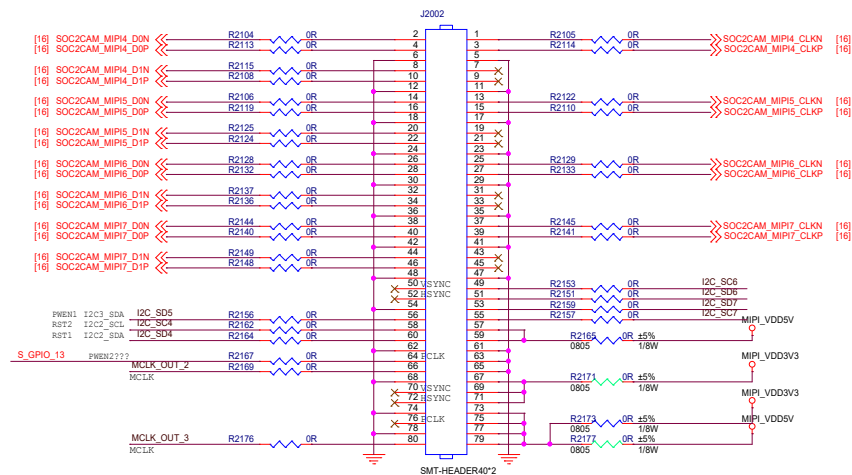
## Sensor Connector



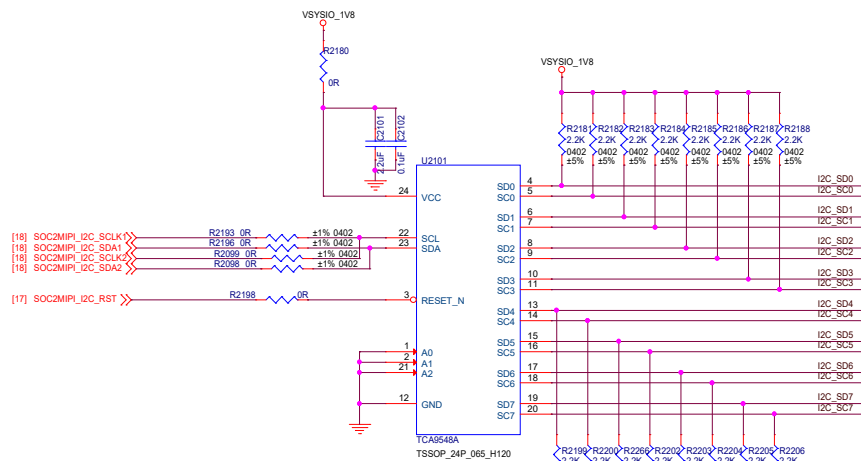
## 接口定义



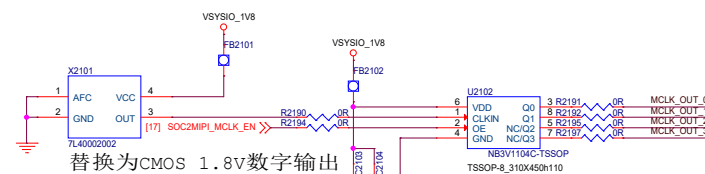
4Lane 时使用为pin13/15,  
pin37/39  
需要最新板转接板,  
同 sensor 需要使用  
同 clk 到 sensor



## Sensor I2C Switch



## Sensor MCLK router



替换为CMOS 1.8V数字输出

## Sensor I2C Switch

## Sensor MCLK router

## D



# B



D



D



B

- B



D

C

B

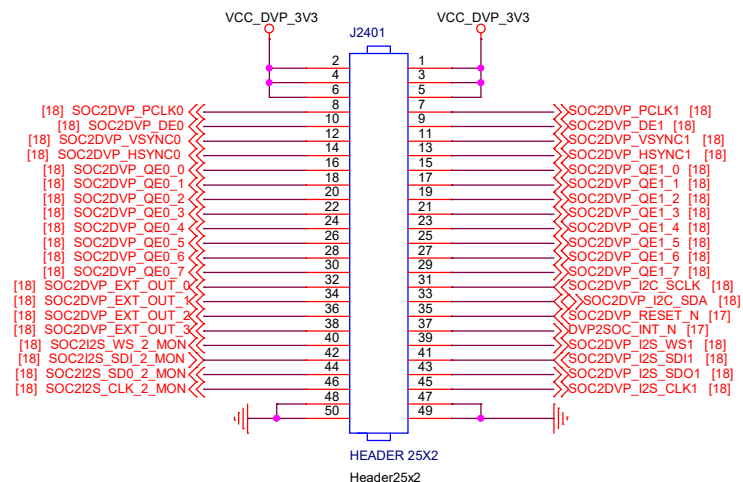
A

D

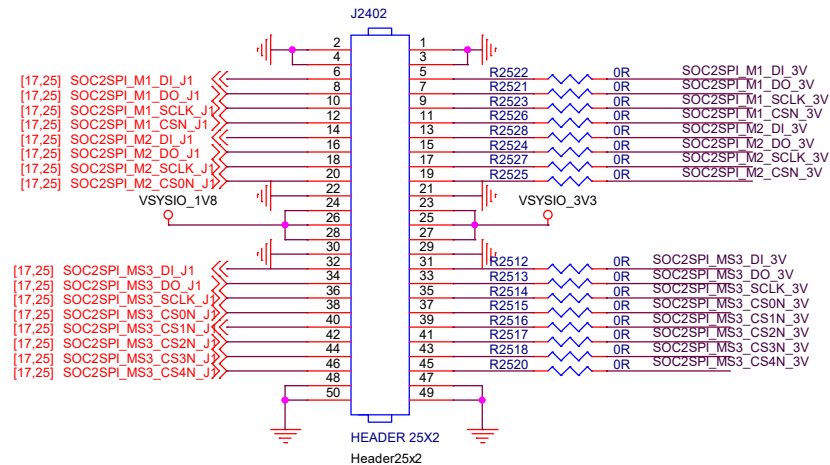
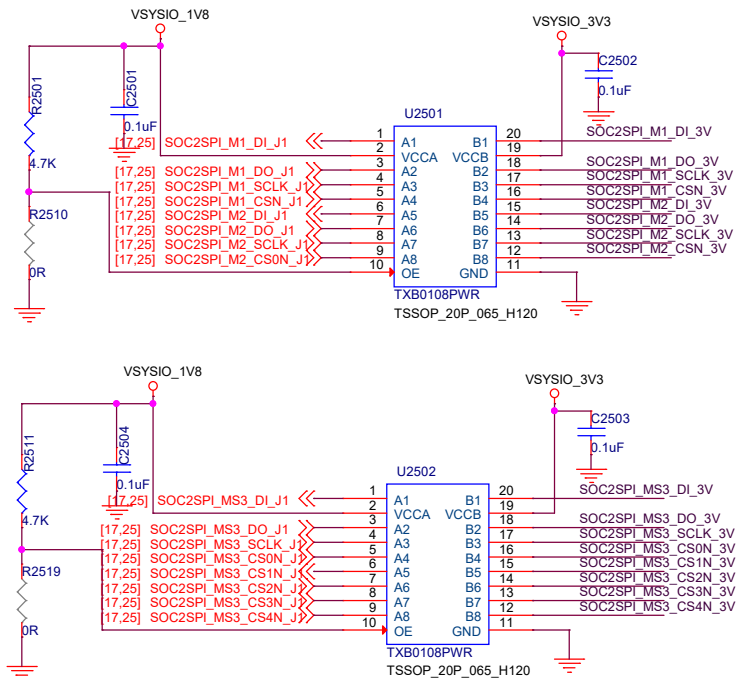
C

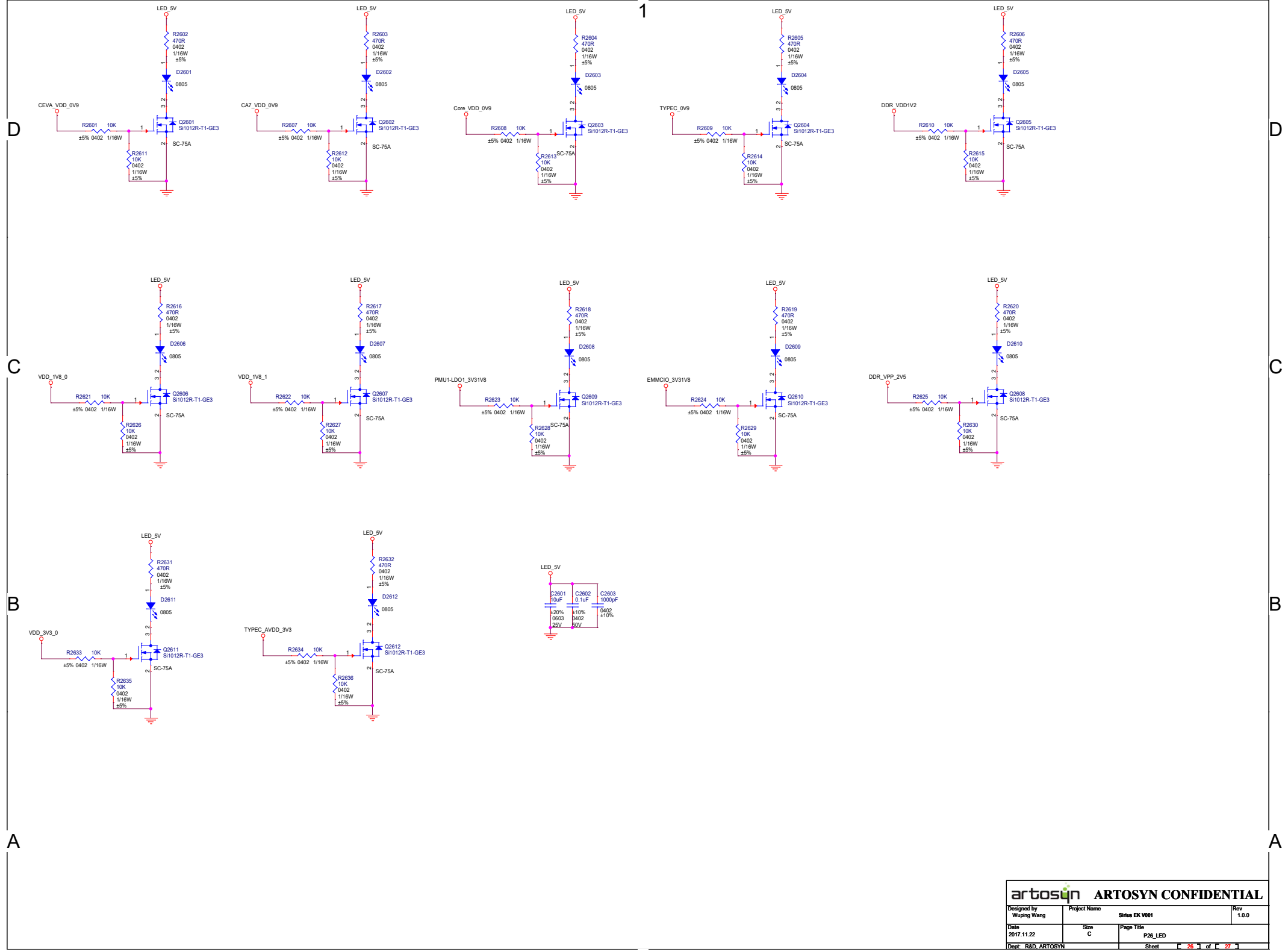
B

A

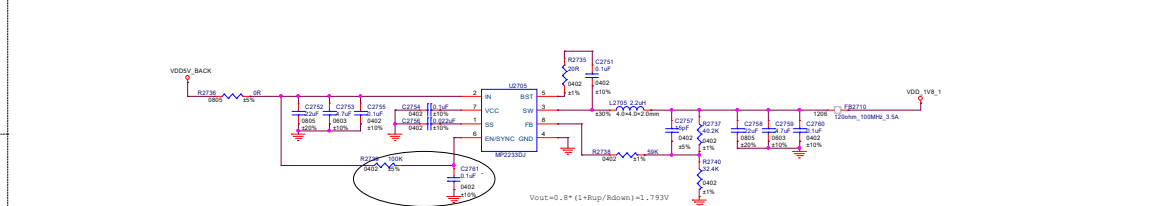
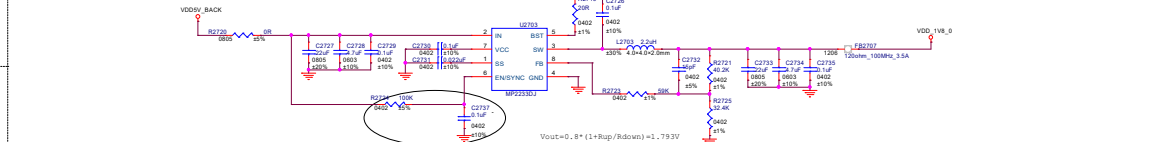




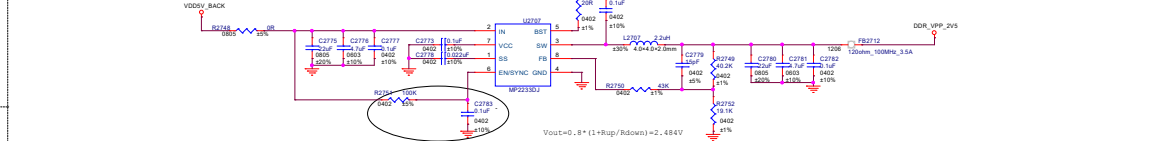




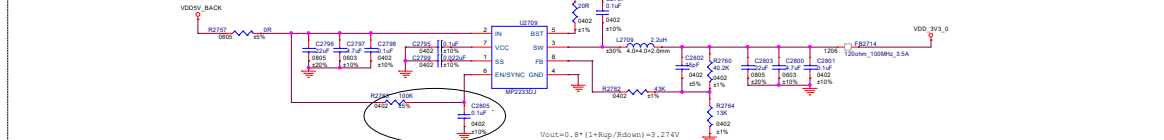
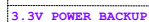
## D



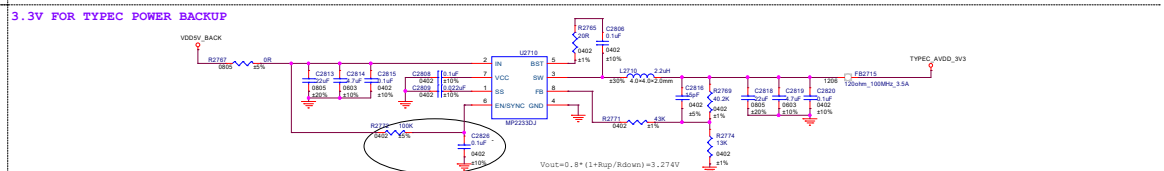
# B



A



## 3 3V FOR TYPEC POWER BACKUP



### 3.3V FOR SDIO/EMMCIO POWER BACKUP

