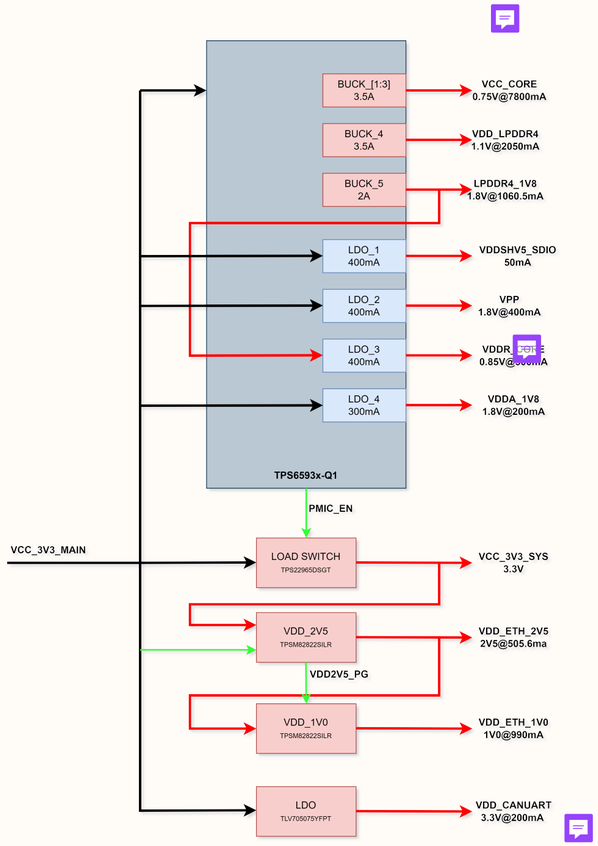
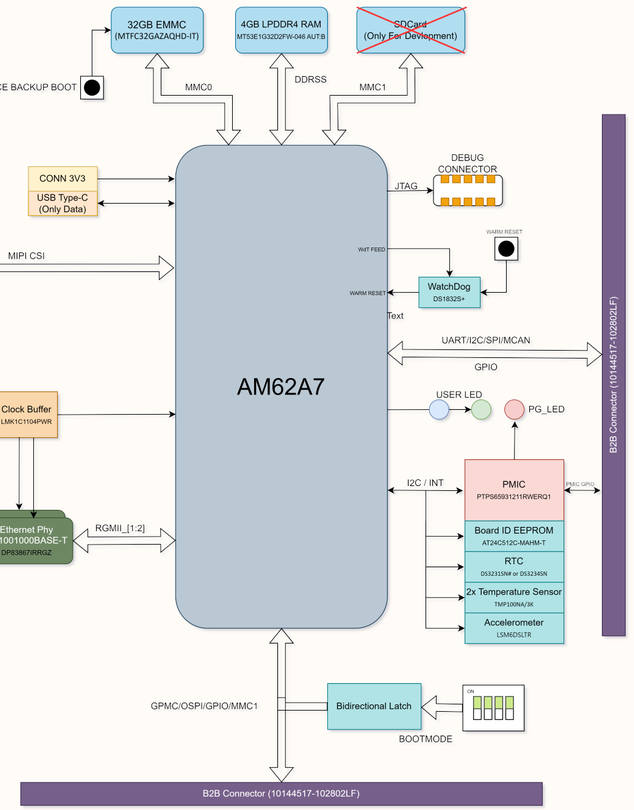
CONTENTS

AM62A7x - System On Module

POWER SUPPLY DIAGRAM



SOM BLOCK DIAGRAM



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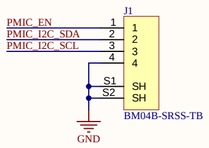
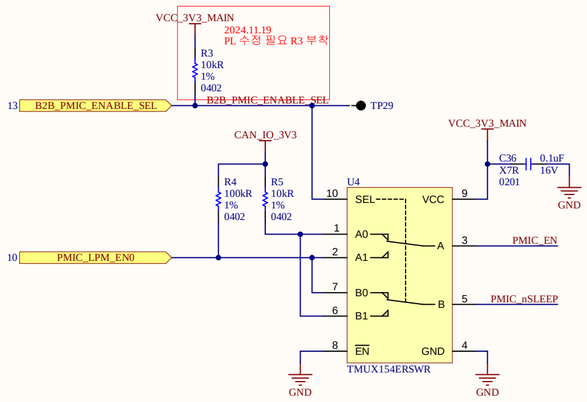
TPS6593 - PMIC

PMIC CONFIG

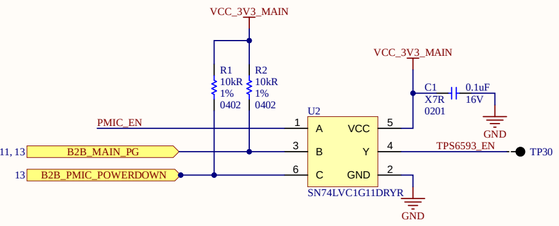


PMIC LPM LOGIC

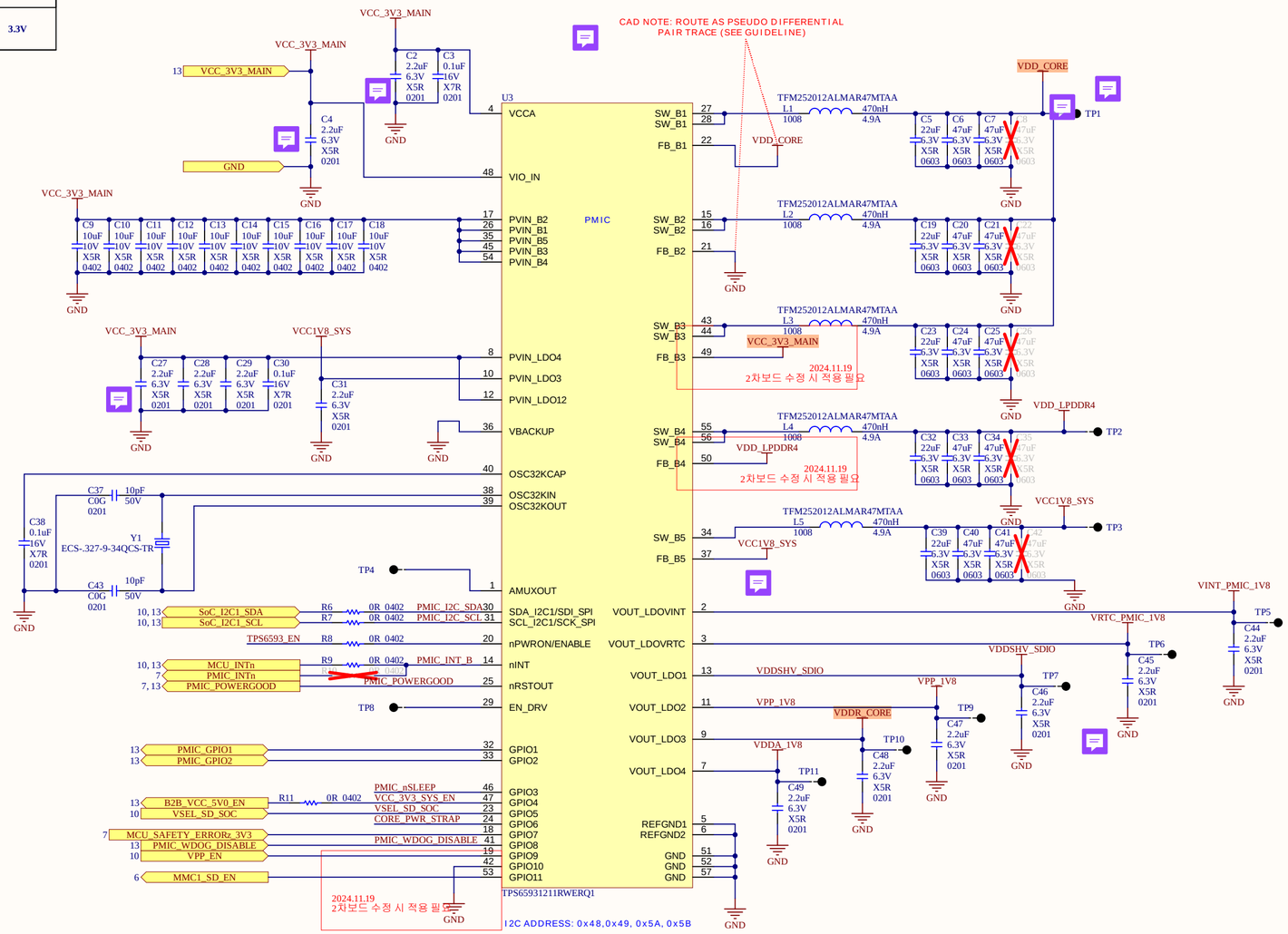


SEL = 0 A,B to A0,B0
SEL = 1 A,B to A1,B1

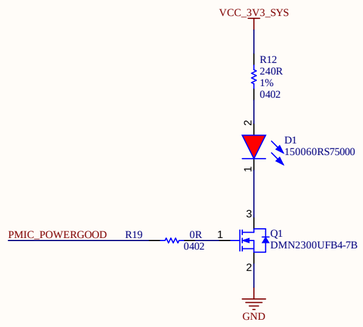
PMIC ENABLE



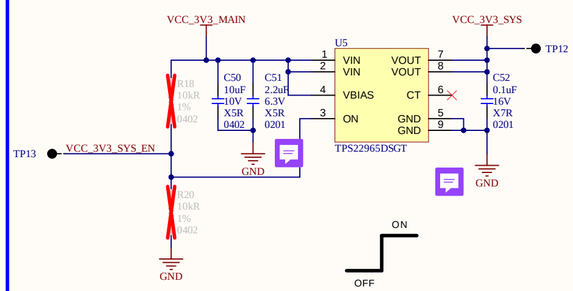
TP1	0.85V	TP7	3.3V
TP2	1.1V	TP9	0V
TP3	1.8V	TP10	0.85V
TP5	1.8V	TP11	1.8V
TP6	1.8V	TP12	3.3V



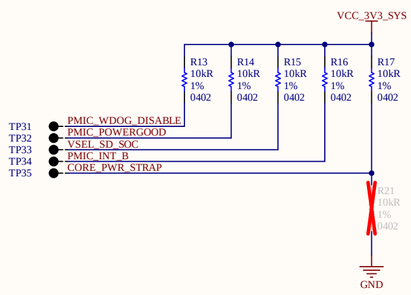
POWER INIDCATION LED



VCC_3V3_SYS POWER SWITCH



PU/PD RESISTORS



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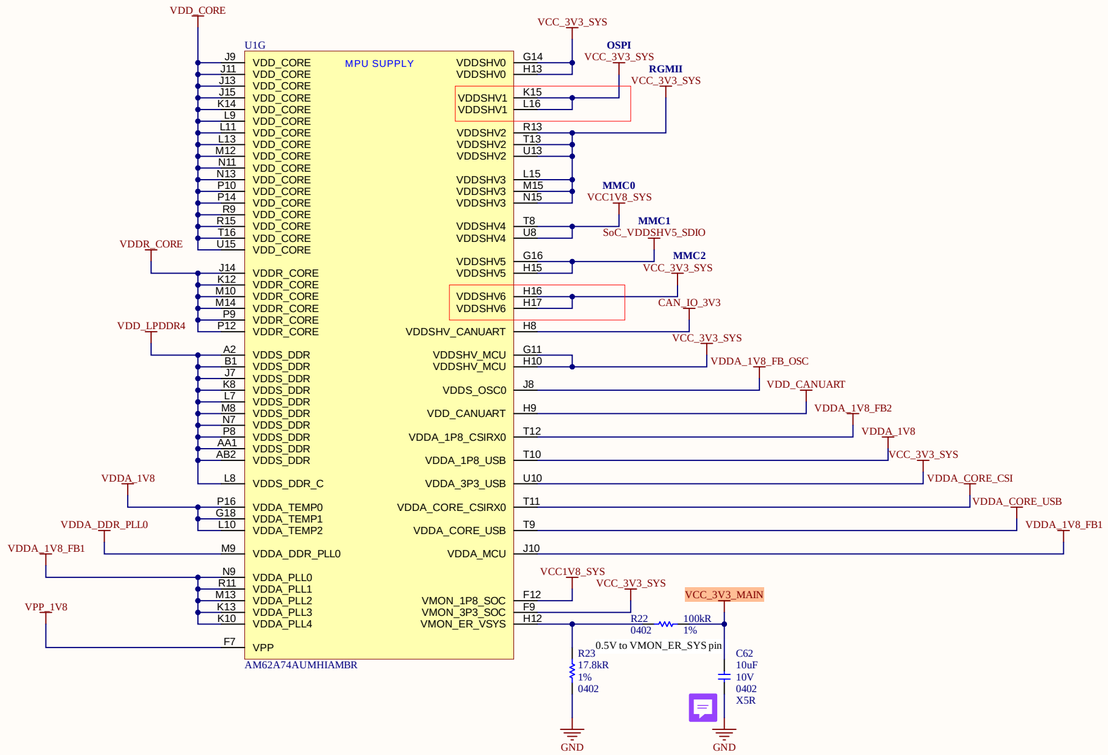
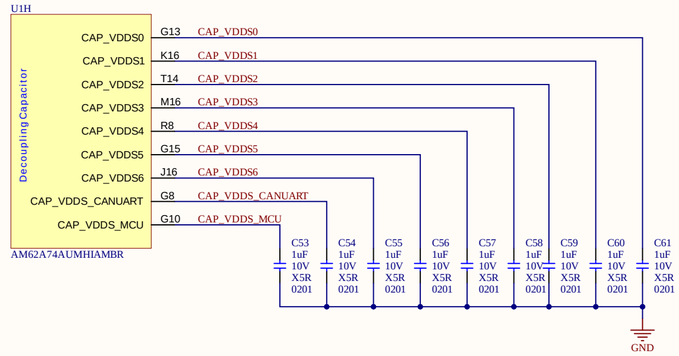
SoC Power

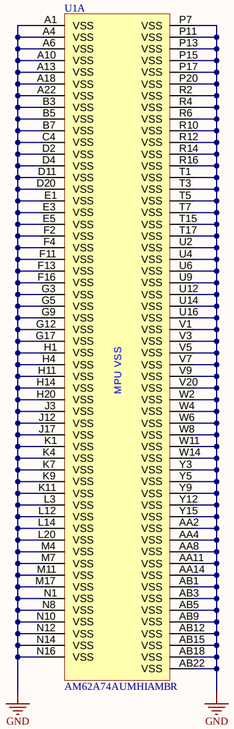
SOC POWER SUPPLY



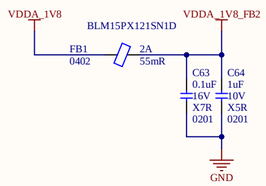
SOC DECOUPLING

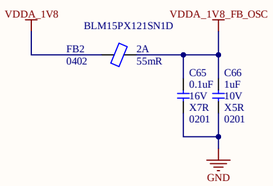


SOC GND

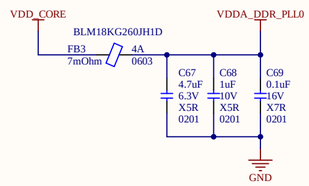


1.8V Analog SUPPLY

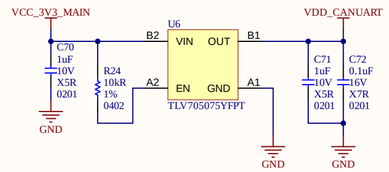


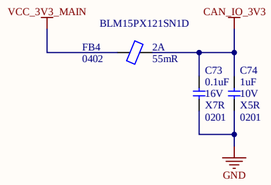


VDDA_DDR_PLL0

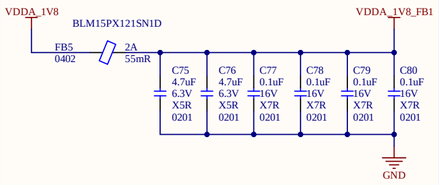


VDD_CANUART

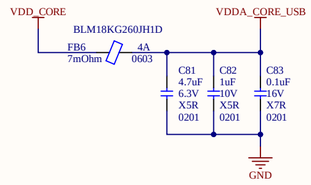




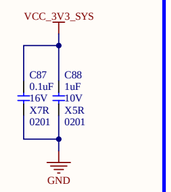
PLL / MCU SUPPLY



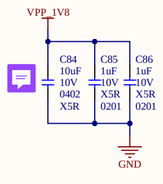
VDDA_CORE_USB



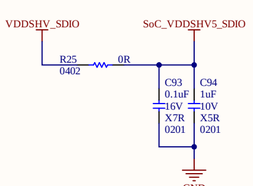
VDDA_3P3_USB



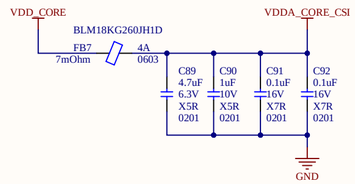
VPP_1V8



3.3V / 1.8V MMC1 SUPPLY



VDDA_CORE_CSI



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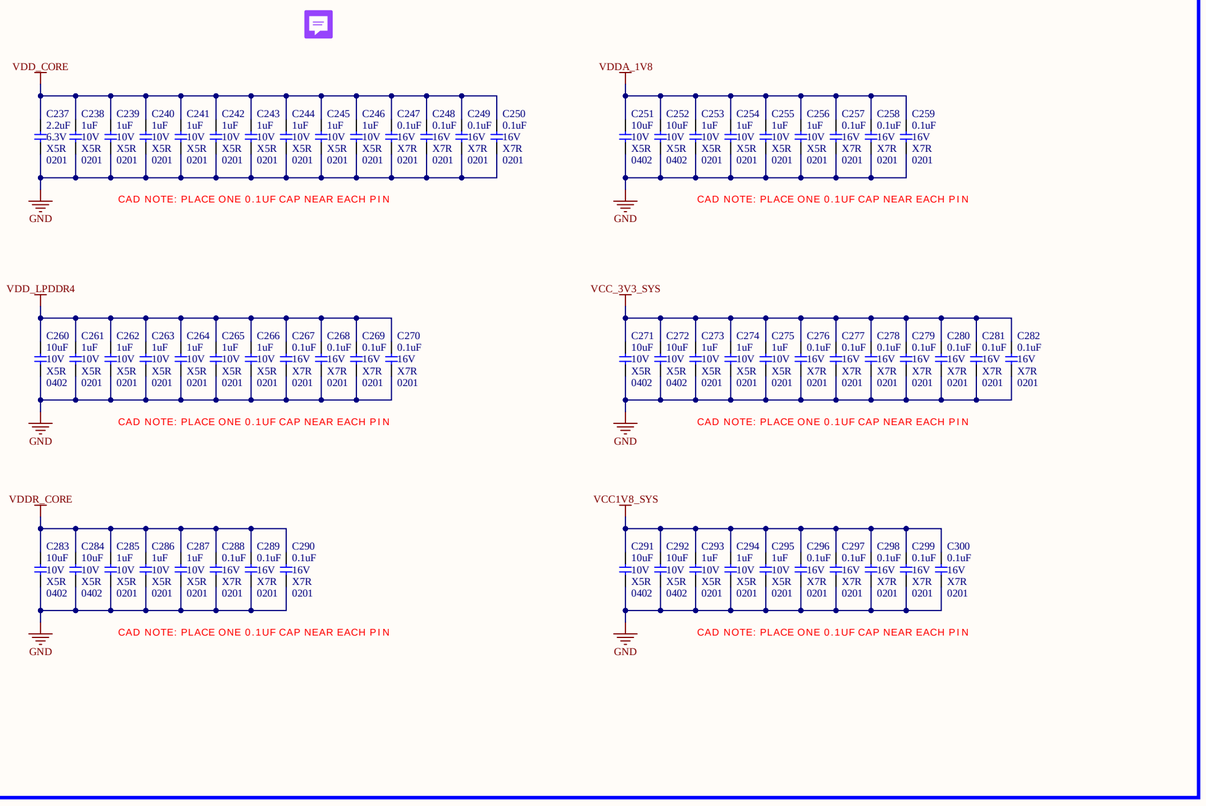
SoC Power Decaps



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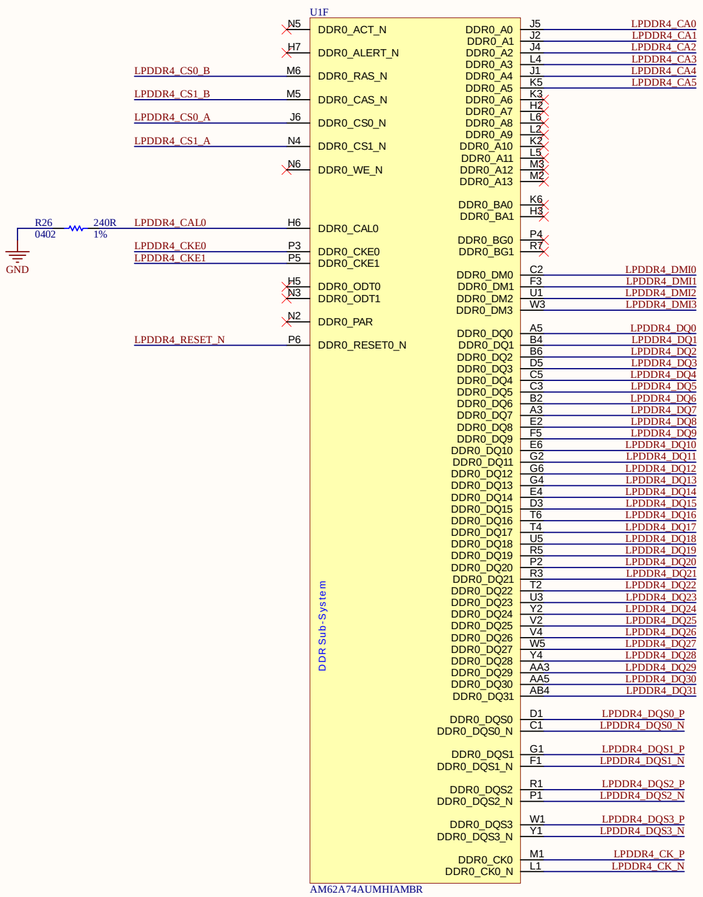
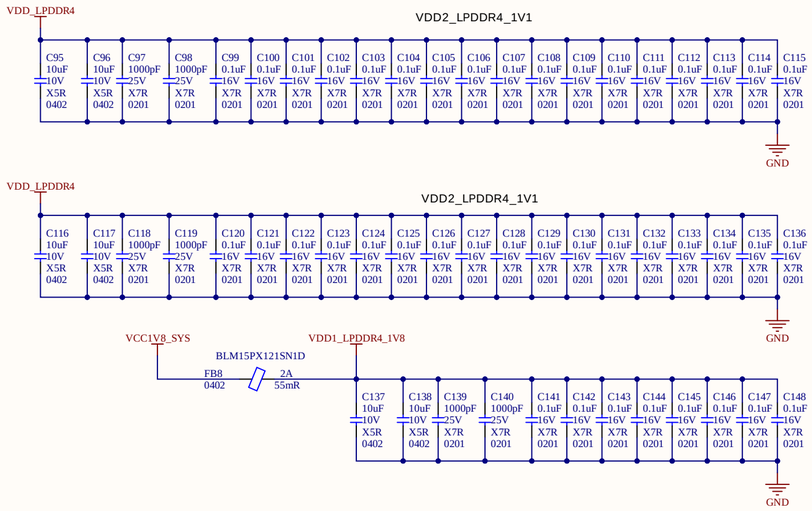
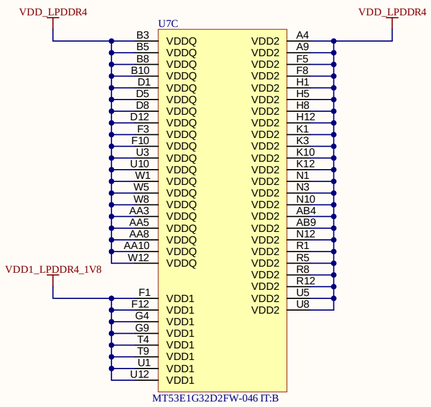
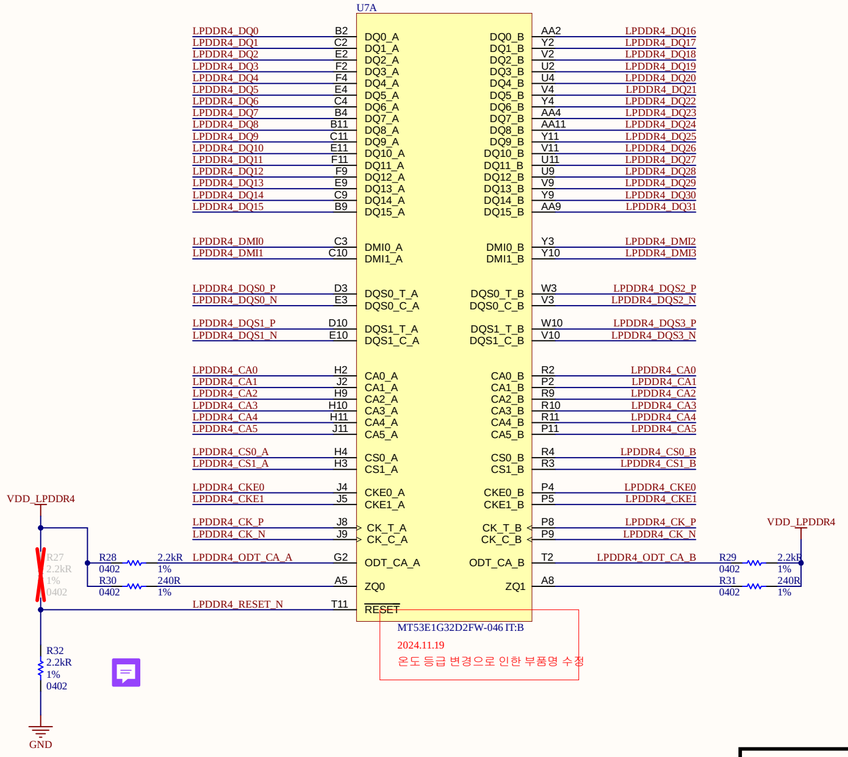
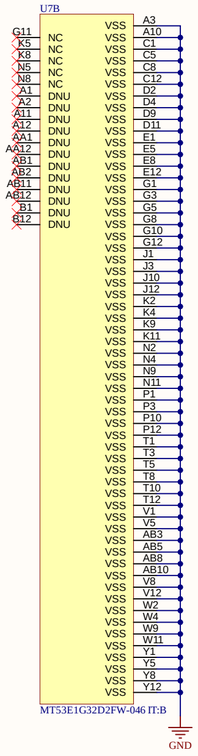
LPDDR4 (4GB)











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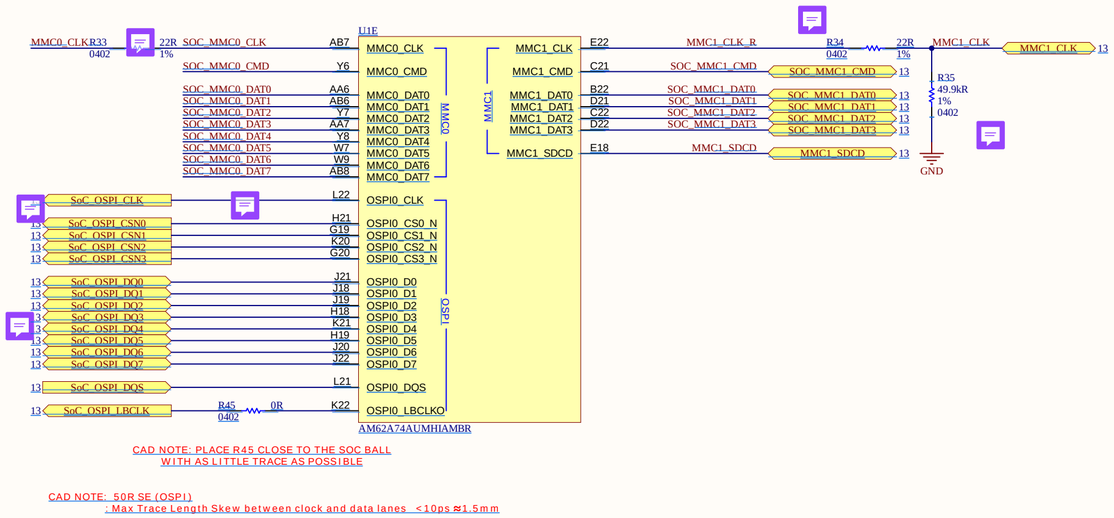
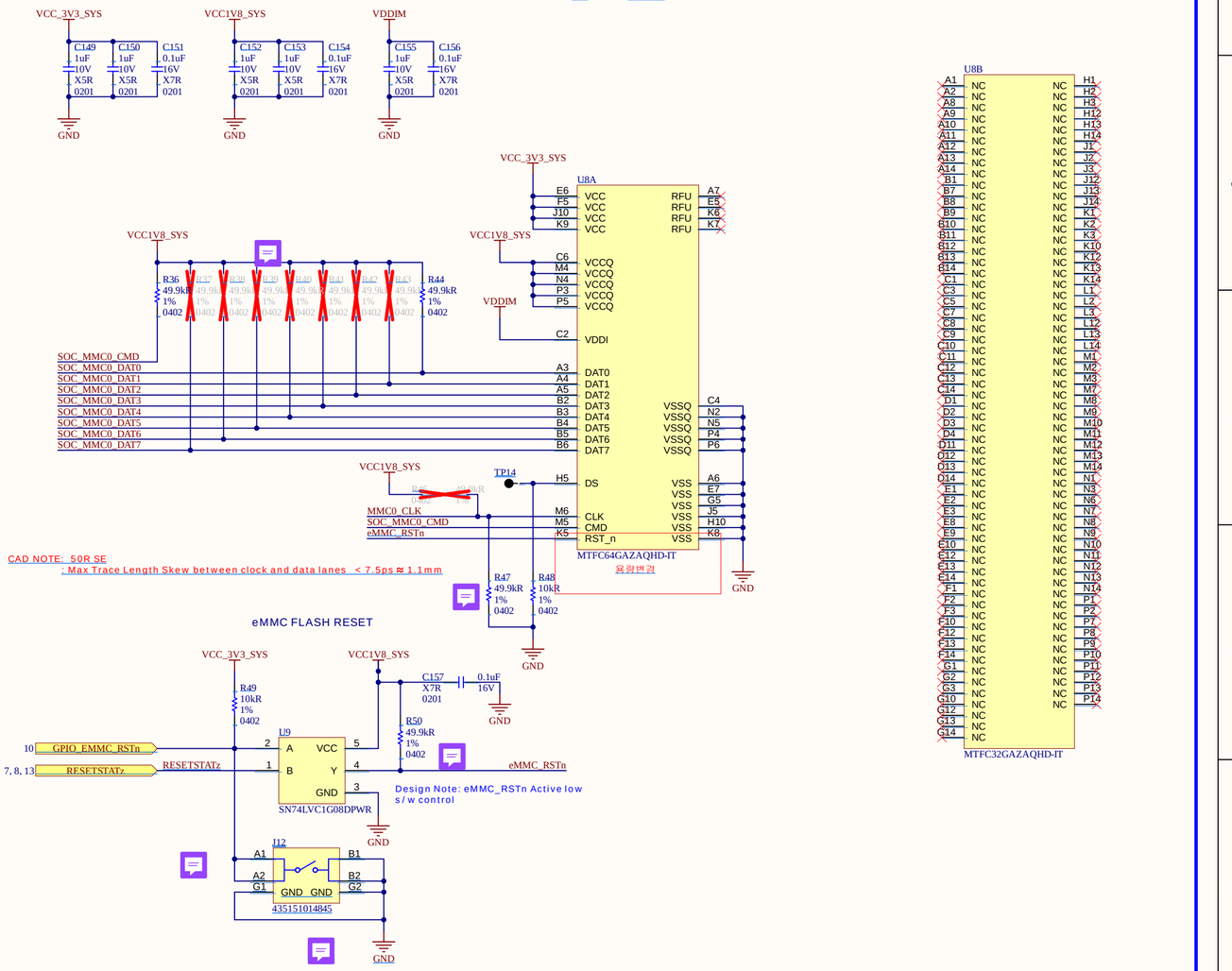
MMC, OSPI and USB Interface

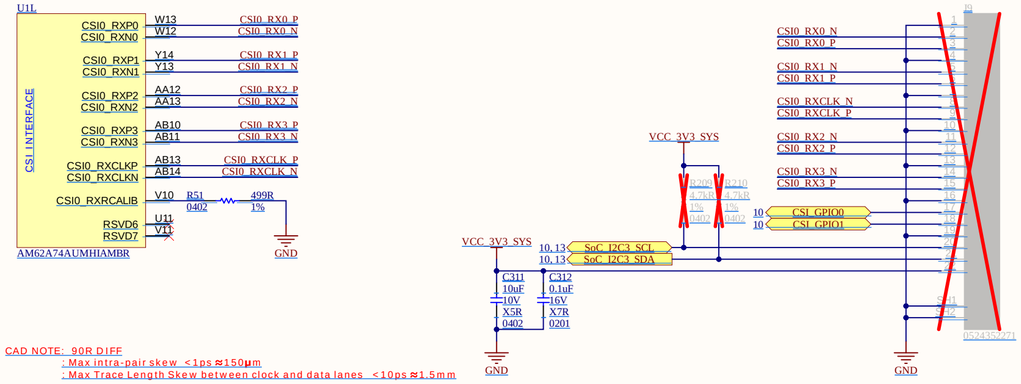
SoC - MMC, OSPI Interface



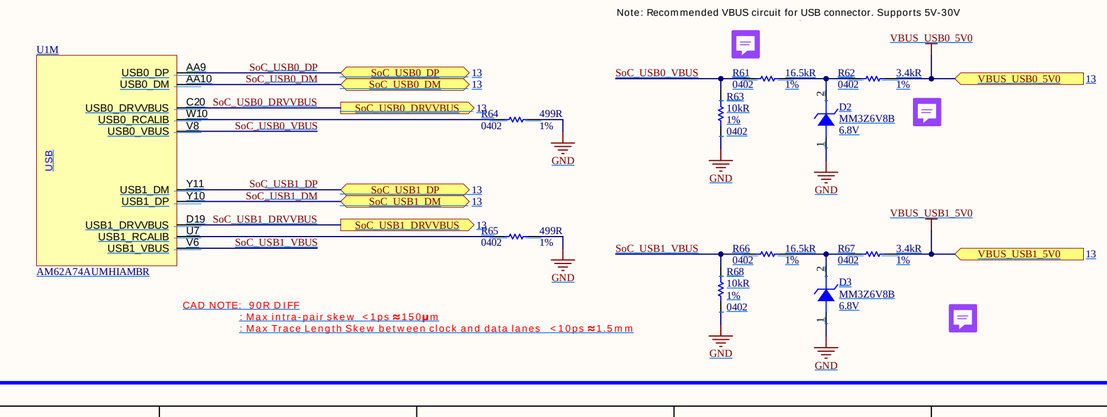
eMMC (32GB)



SoC - CSI Interface



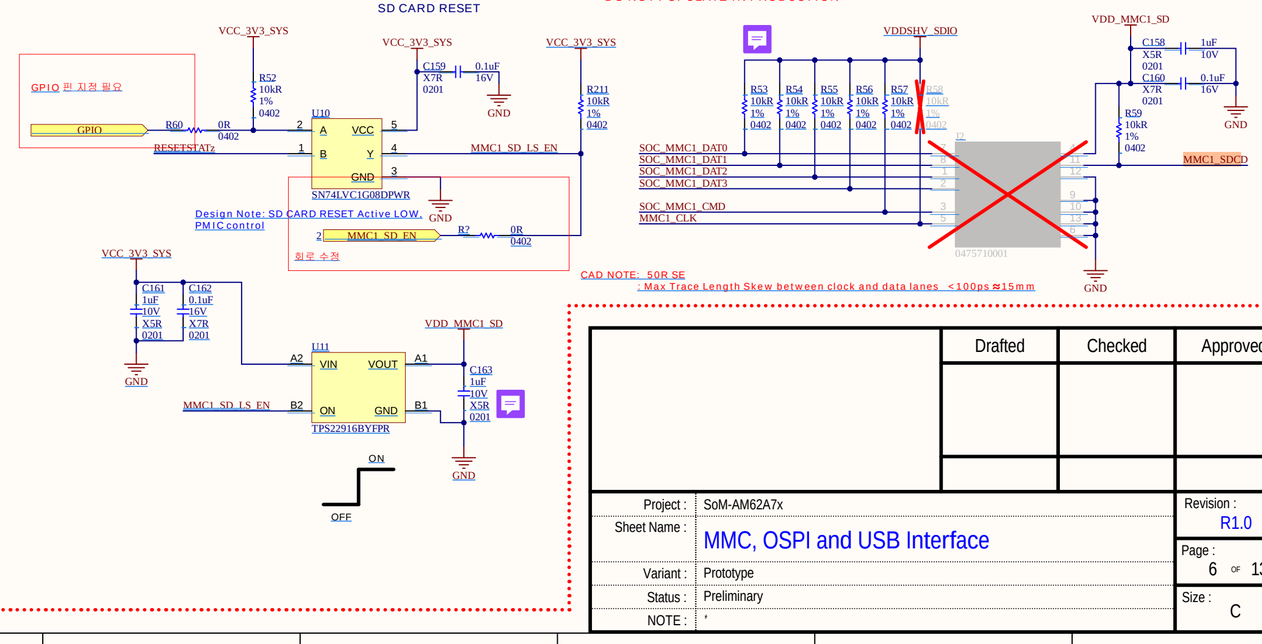
SoC - USB Interface



SD Card Interface

INTERNAL USE ONLY

DO NOT POPULATE IN PRODUCTION



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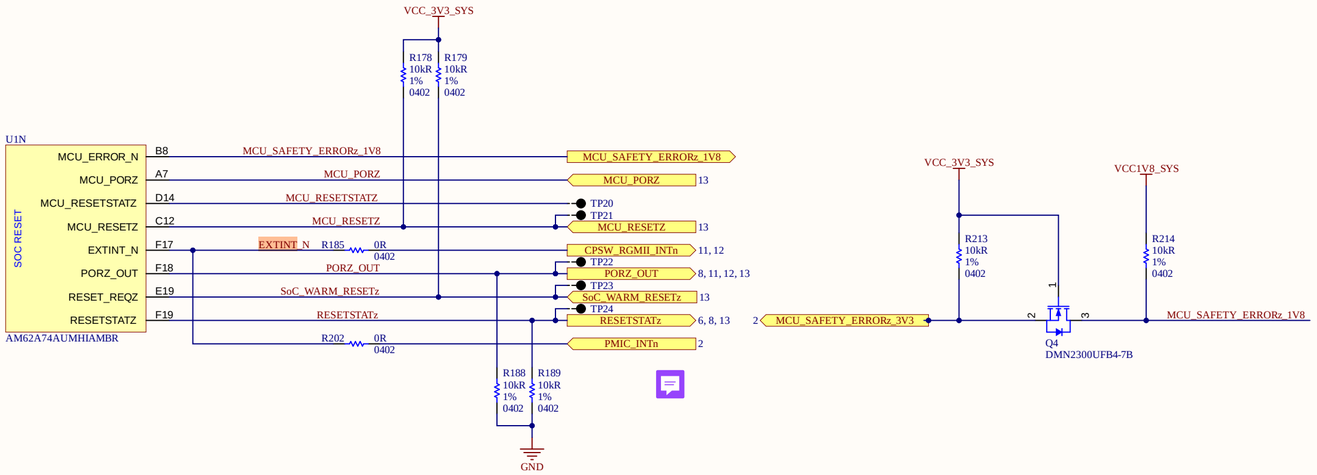
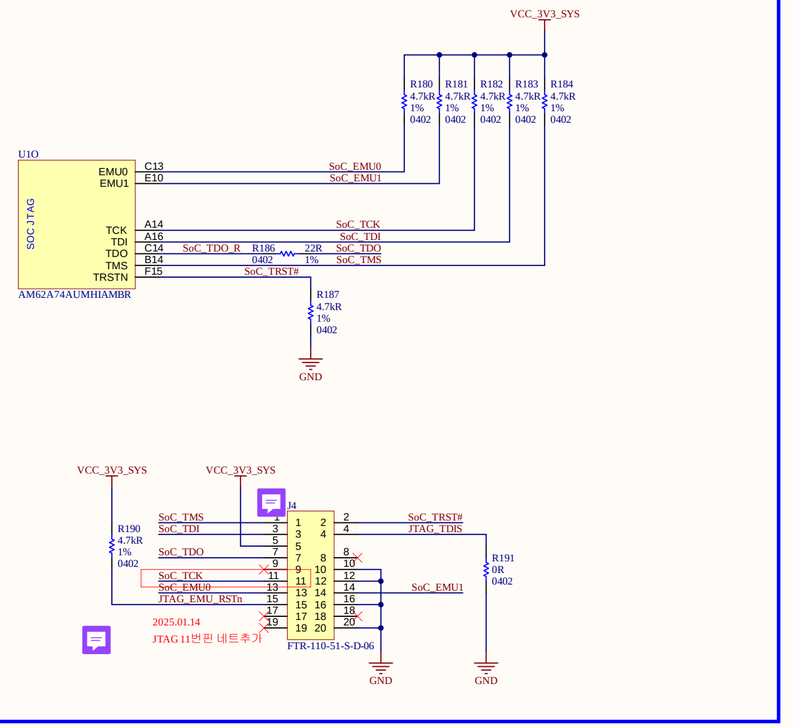
DEBUG, RESET

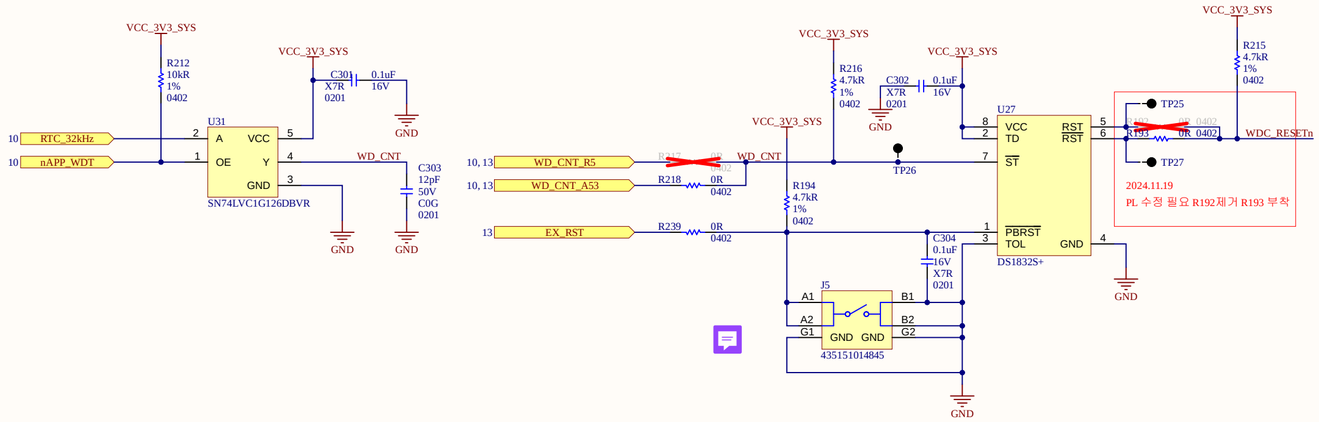
SoC RESET

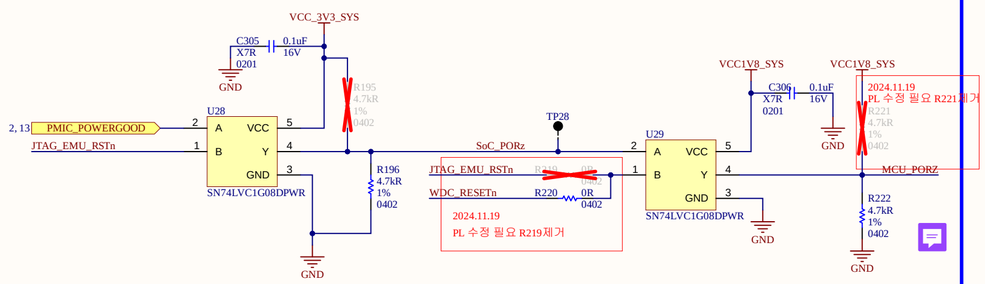


SoC JTAG



WATCHDOG TIMER





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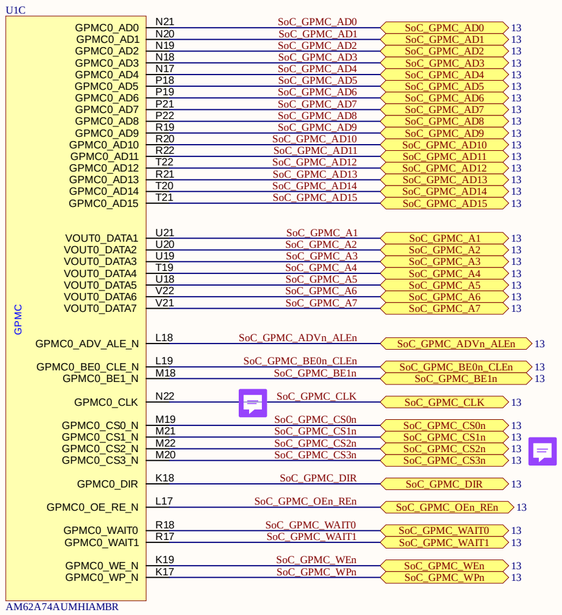
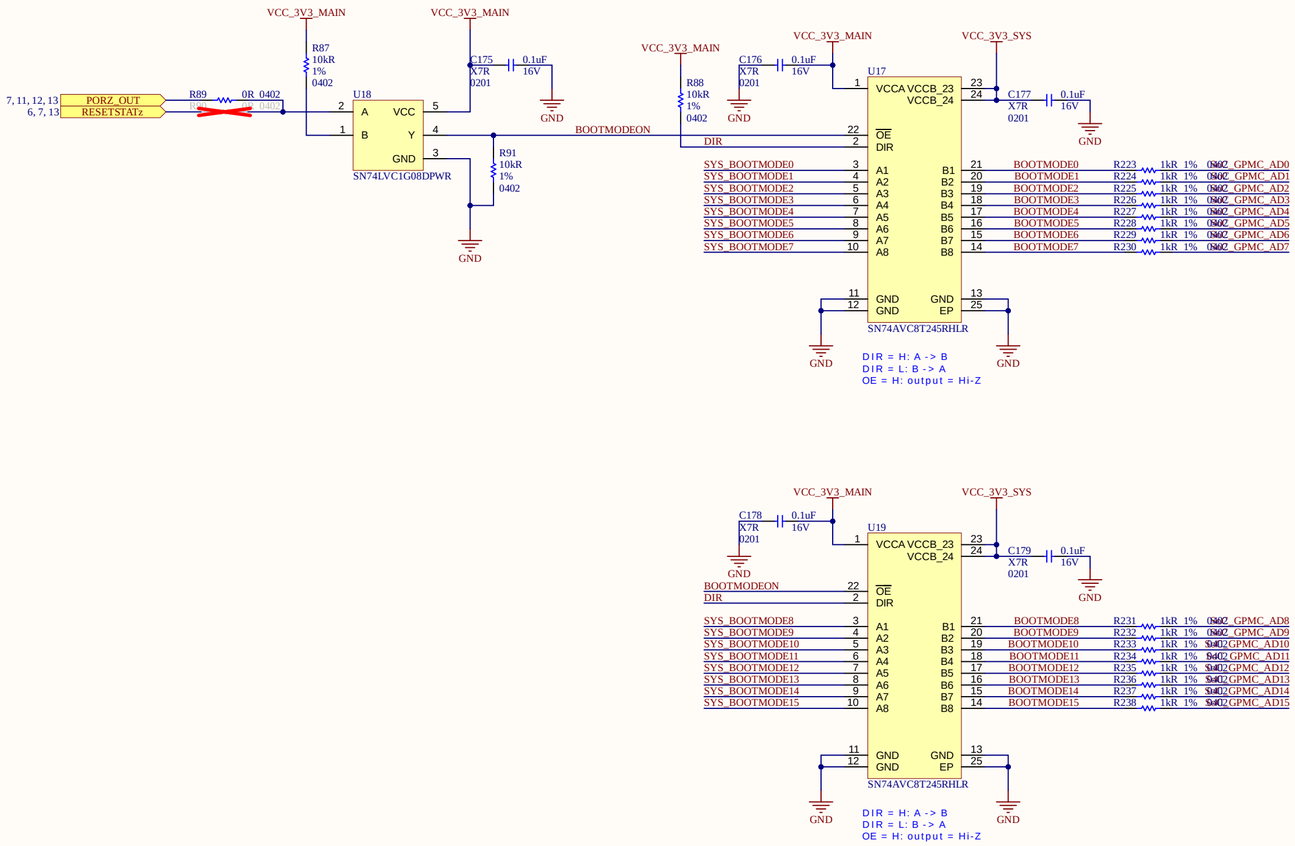
GPMC Interface

GPMC



CAD NOTE: 50R SE
: Max Trace Length Skew between clock and data lanes < 7.5ps ≈ 1.1mm

BOOTMODE CONFIG



BOOTCONFIG TABLE

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Reserved	Reserved	Backup Boot Mode Config	Backup Boot Mode			Primary Boot Mode Config			Primary Boot Mode				PLL Config		

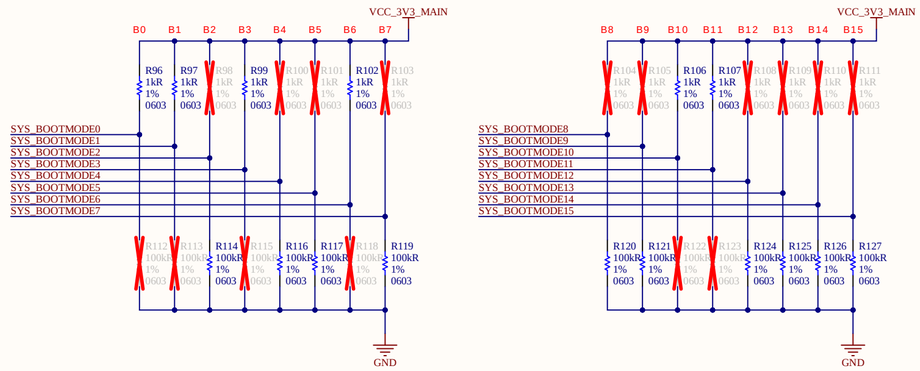
PLL Config Pins			Ref Clock (MHz)
B2	B1	B0	
0	0	0	19.2
0	0	1	20
0	1	0	24
0	1	1	25
1	0	0	26
1	0	1	27[1]
1	1	0	Reserved
1	1	1	Reserved

Primary Boot Mode Config							Primary Boot Mode
B9	B8	B7	B6	B5	B4	B3	
Reserved	Mode	Csel	0	0	1	1	SPI
0	0	Link Info	0	1	0	0	Ethernet RGMII
Clkout	Clk src	0	0	1	0	1	Ethernet RMII
Bus reset	Reserved	Addr	0	1	1	0	I2C
Reserved	Reserved	Reserved	0	1	1	1	UART
Port	Reserved	Fs/raw	1	0	0	0	MMCSD Boot (SD Card Boot or eMMC Boot using UDA)
Reserved	Reserved	Reserved	1	0	0	1	eMMC Boot
Core Volt	Mode	Lane Swap	1	0	1	0	USB
Reserved	Reserved	Reserved	1	0	1	1	GPMC NAND
Reserved	Reserved	Reserved	1	1	0	0	GPMC NOR
Reserved	Reserved	Reserved	1	1	0	1	Reserved
SFPD	Read Cmd	Mode	1	1	1	0	xSPI
Reserved	ARM/Thumb	No/Dev	1	1	1	1	No-boot/Dev boot

Backup Boot Config	Backup Boot Mode Selection			Backup Boot Mode Selected
B13	B12	B11	B10	
Reserved	0	0	0	None
Mode	0	0	1	USB
Reserved	0	1	0	Reserved
Reserved	0	1	1	UART
IF	1	0	0	Ethernet
Port	1	0	1	MMCSD Boot (SD Card Boot or eMMC Boot)
Reserved	1	1	0	SPI
Reserved	1	1	1	I2C

PRIMARY BOOT MODE	B6	B5	B4	B3
UART	0	1	1	1
MMCSD	1	0	0	0
EMMC(DEFAULT)	1	0	0	1
USB	1	0	1	0

BACKUP BOOT MODE	B13	B12	B11	B10
UART(DEFAULT)	X	0	1	1
MMCSD	1	1	0	1
USB	X	0	0	1



CAD NOTE: PLACE RESISTORS WITH SINGLE PAD OVERLAP/SHARING

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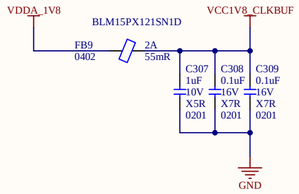
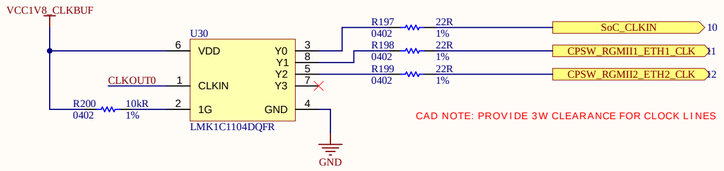
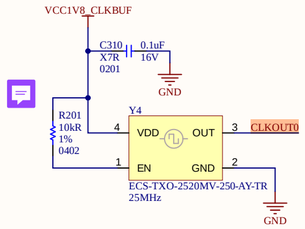
CLOCK BUFFER







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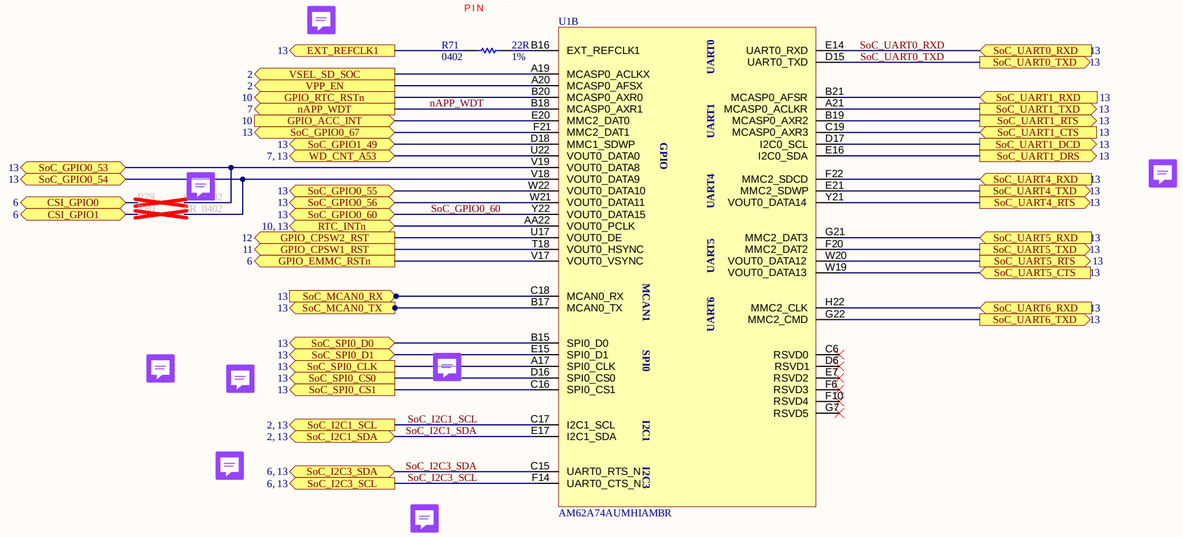
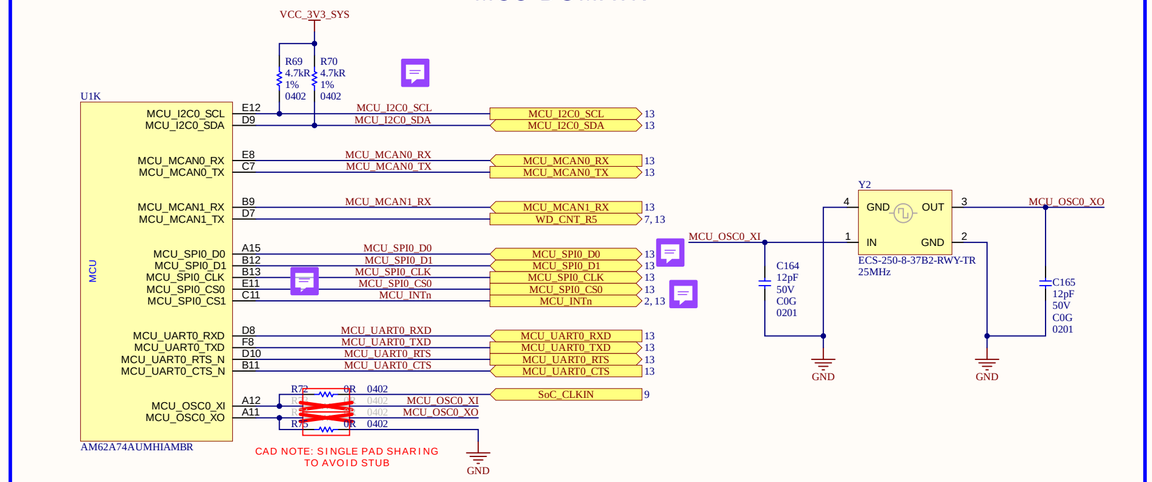
PERIPHERAL

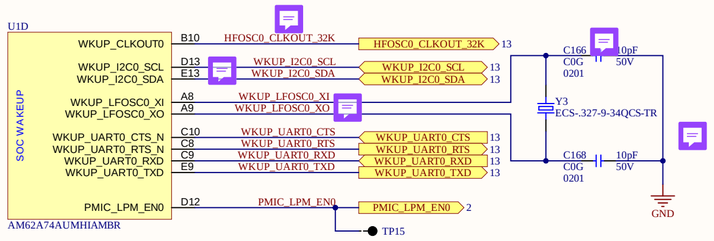
SOC DOMAIN



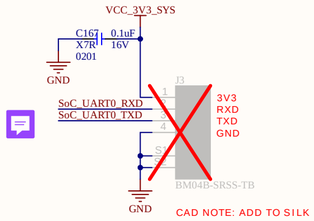
MCU DOMAIN



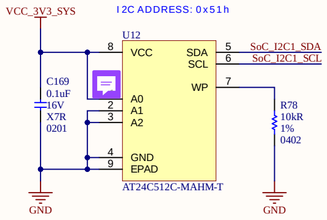
SOC WAKEUP DOMAIN



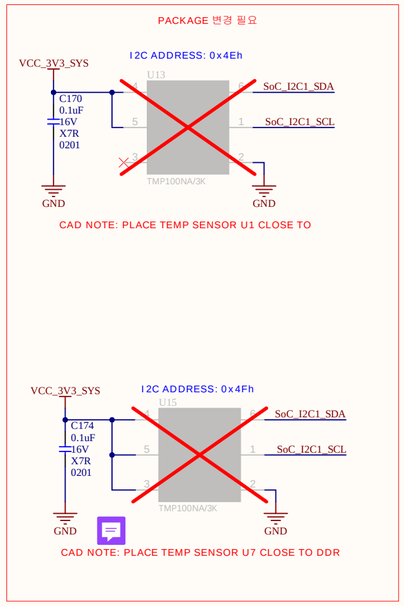
SOC UART LOG



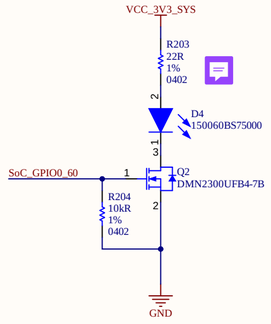
BOARD ID EEPROM (I2C1)



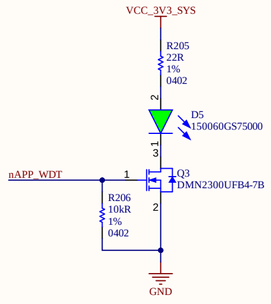
TEMPERATURE SENSORS (I2C1)



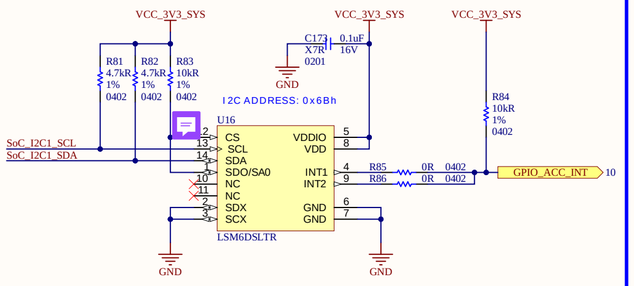
USER LED



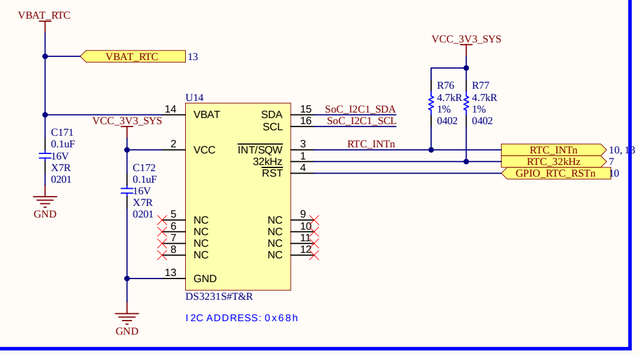
RUN LED



IMU SENSOR (I2C1)



RTC (I2C1)



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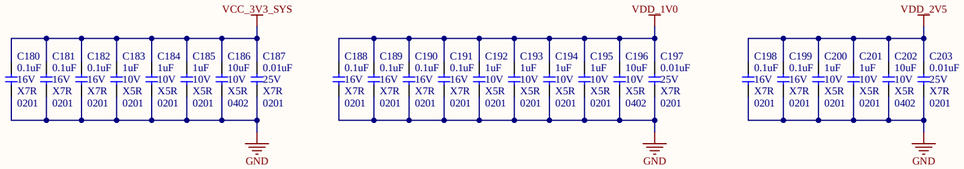
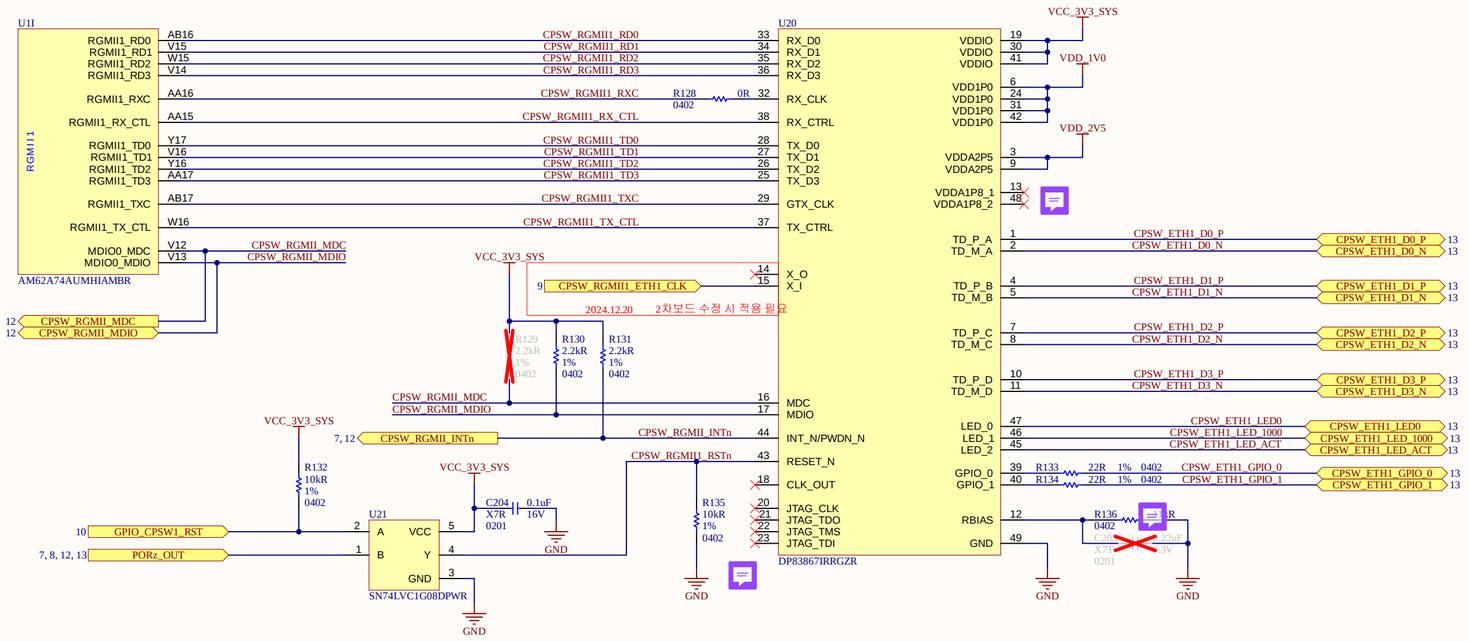
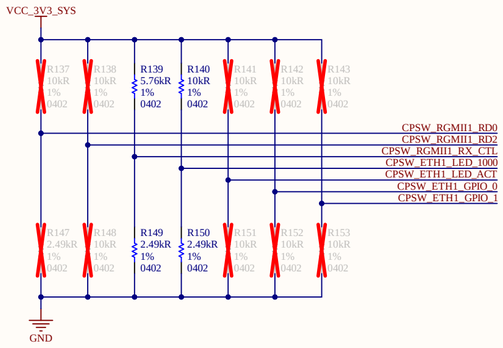
Status :	Preliminary		
NOTE :	'		

CPSW RGMII 1 - PHY

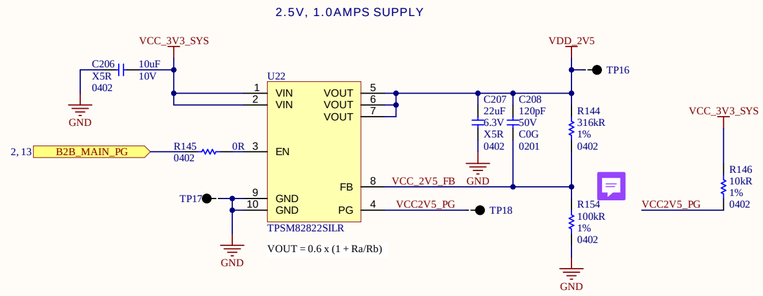






PHY ADDRESS = 00001
Auto-negotiation Enabled
10/100/1000 advertised, Auto-MDI-X
Tx Clock Skew = 0ns
Rx Clock Skew = 2ns

ETHERNET PHY POWER



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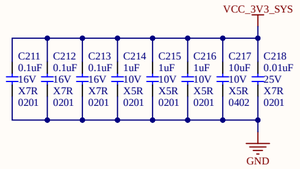
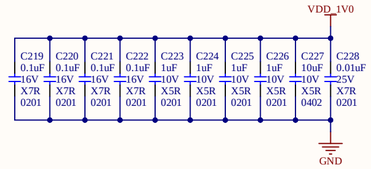
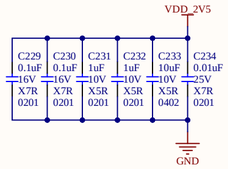
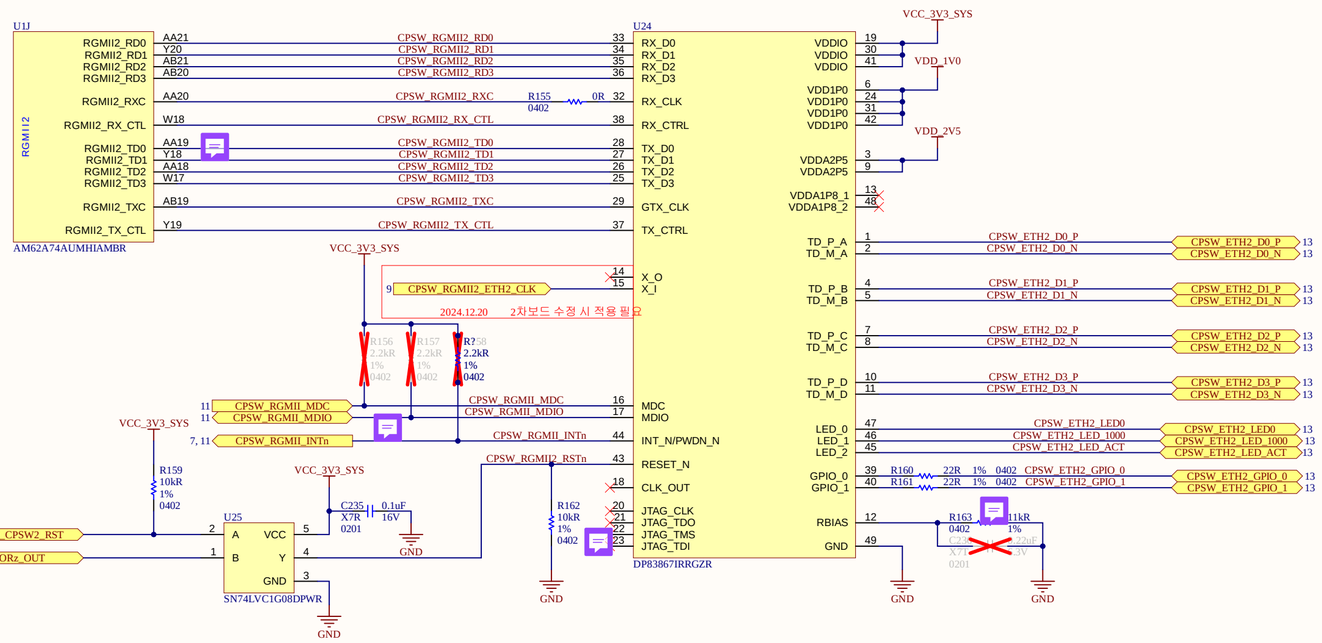
Status :	Preliminary		
NOTE :	'		

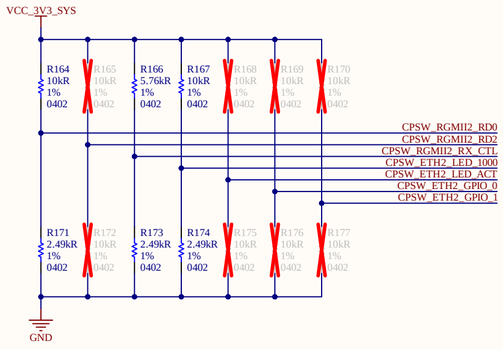
CPSW RGMII 2 - PHY











PHY ADDRESS = 00001
Auto-negotiation Enabled
10/100/1000 advertised, Auto-MDI-X
Tx Clock Skew = 0ns
Rx Clock Skew = 2ns

Design Guideline: https://www.ti.com/lit/an/snla387/snla387.pdf

	Drafted	Checked	Approved

Project :	SoM-AM62A7x	Revision : R1.0
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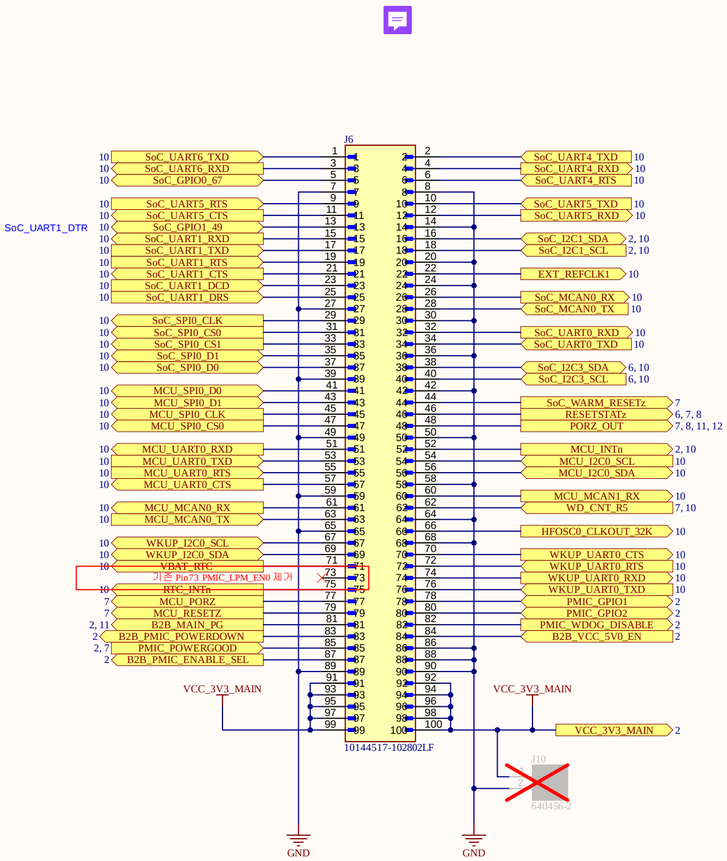
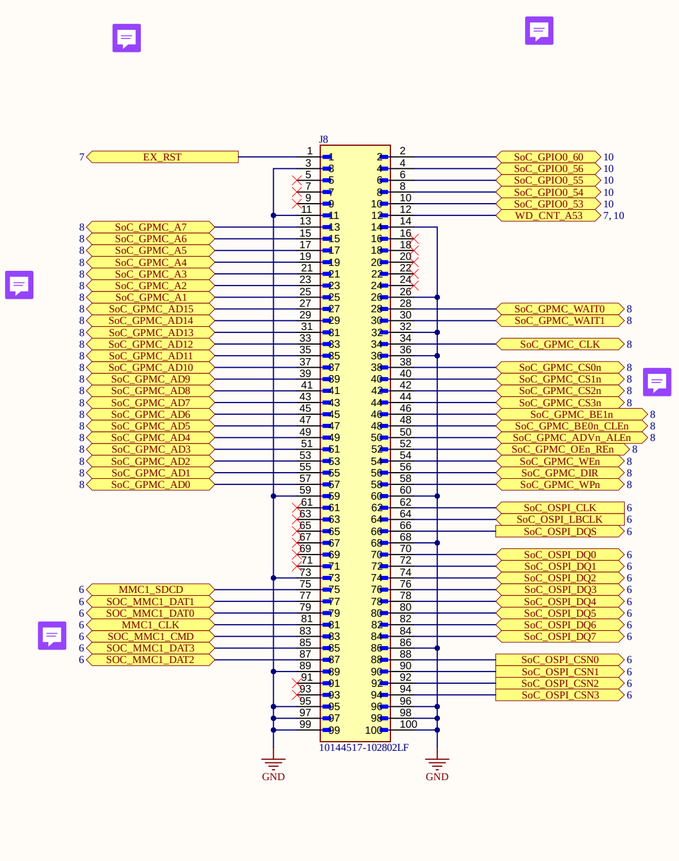
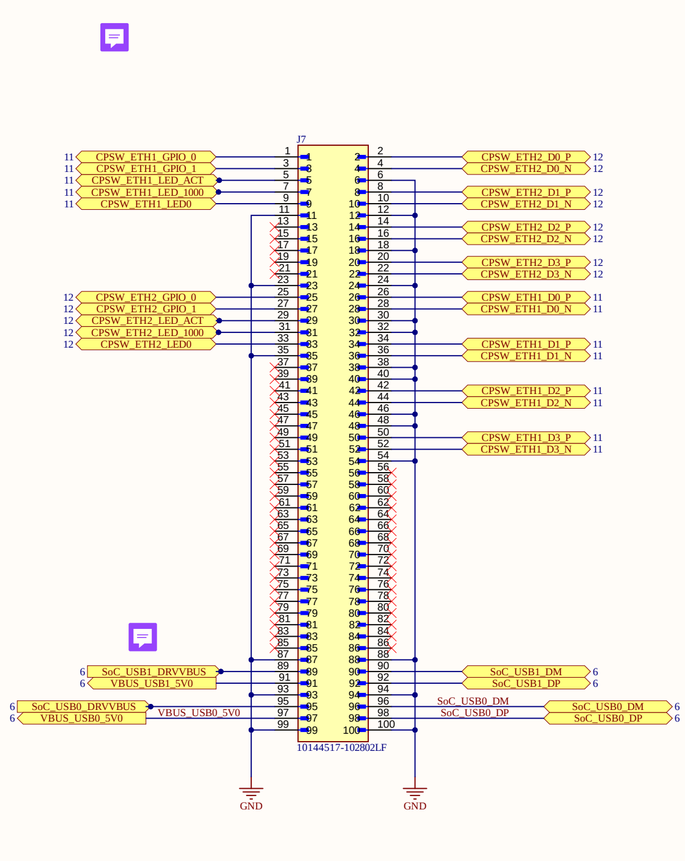
B2B Connector

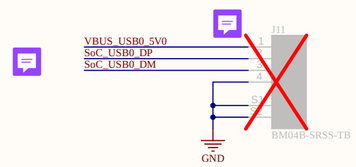






USB Interface

INTERNAL USE ONLY
DO NOT POPULATE IN PRODUCTION



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