

# **BA01(Q570/H570/B560)** *Version : 3.1*

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## **CPU :**

**Intel RocketLake-S**

## **System Chipset :**

**Intel RocketLake Chipset**

## **On Board Chipset :**

**IMVP8 -- NCP81220 4+2 Phase**  
**Gigabit LAN -- INTEL-I219LM Co-LAY RTL8111K**  
**HDA Codec -- Realtek ALC623**  
**Super I/O --NCT6686D-L**  
**SPI Flash 256Mb +128Mb**

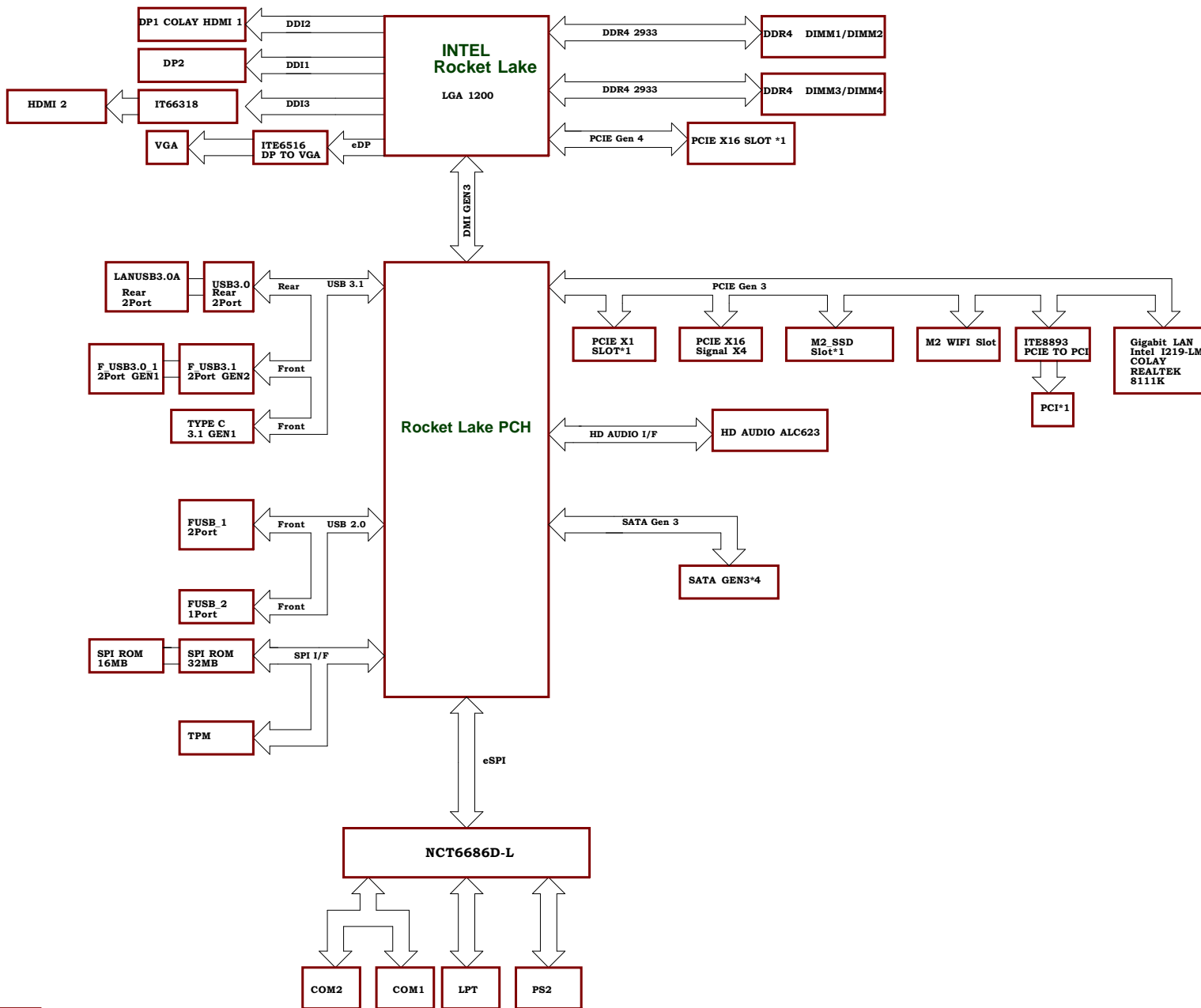
## **Main Memory :**

**2 Channel DDR 4 \* 4 (Max 128GB)**

## **Expansion Slot :**

**PCI Express x16 Slot \* 1**  
**PCI Express x4 Slot \* 1**  
**PCI Express x1 Slot \* 1**  
**PCI SLOT \* 1**





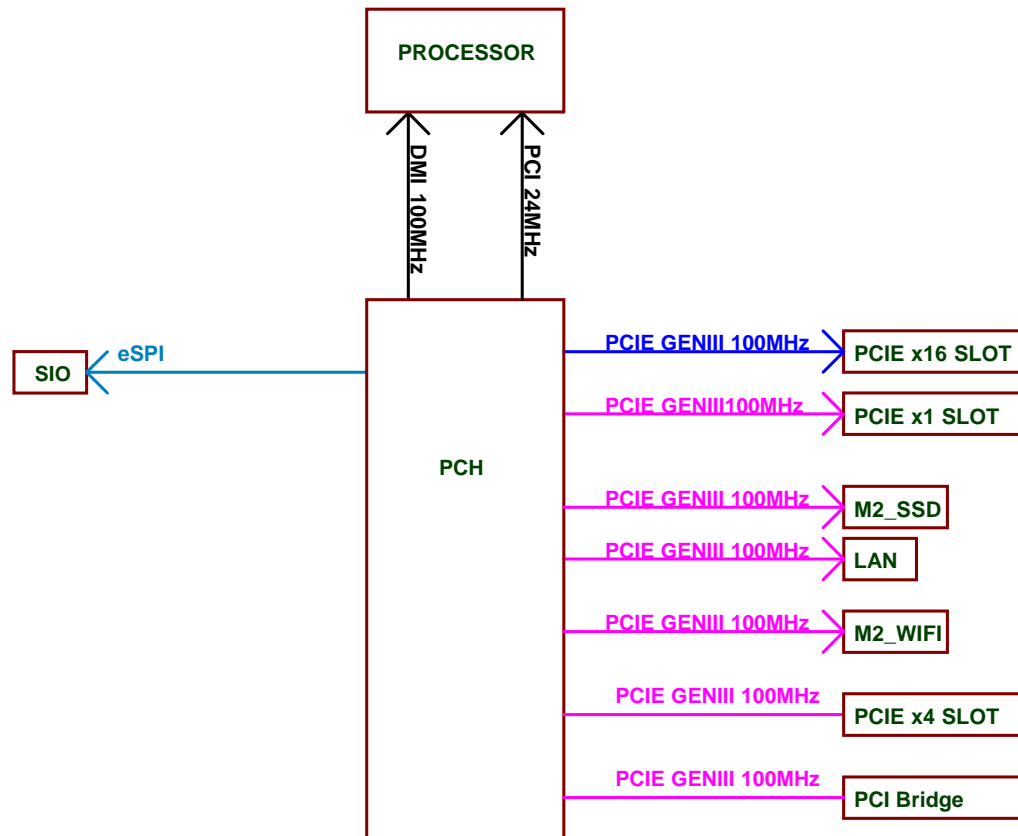
Slot Sequence:

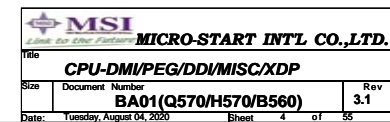
PCIE X16

PCIE X1

PCIE X16(signal x4)

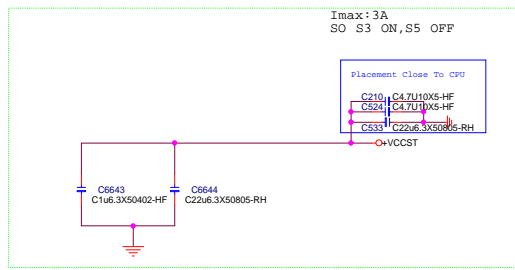
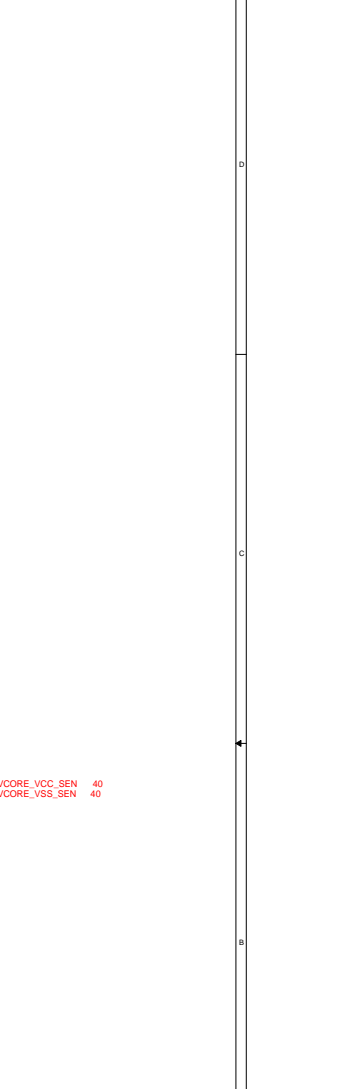
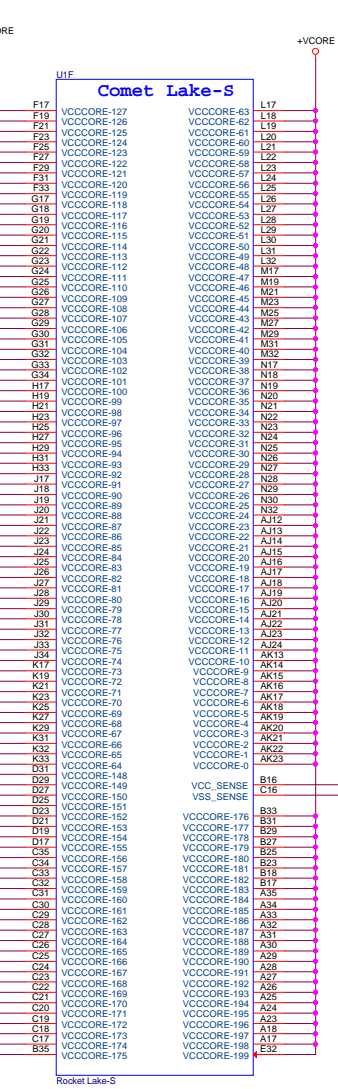
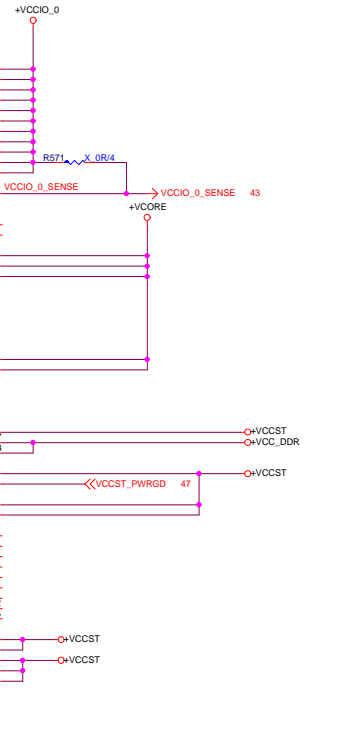
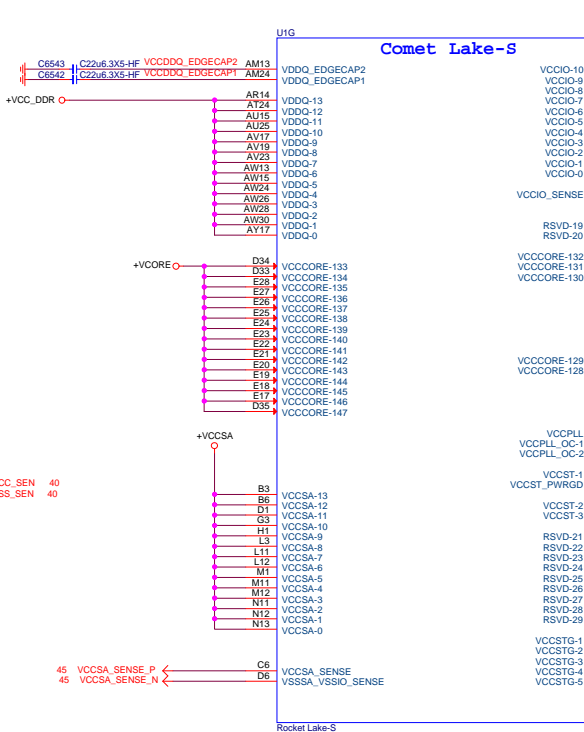
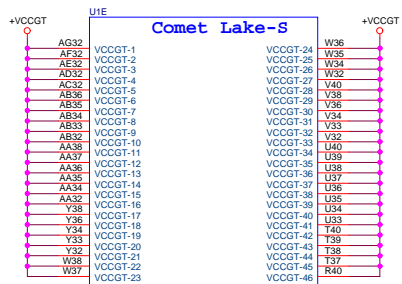
PCI SLOT

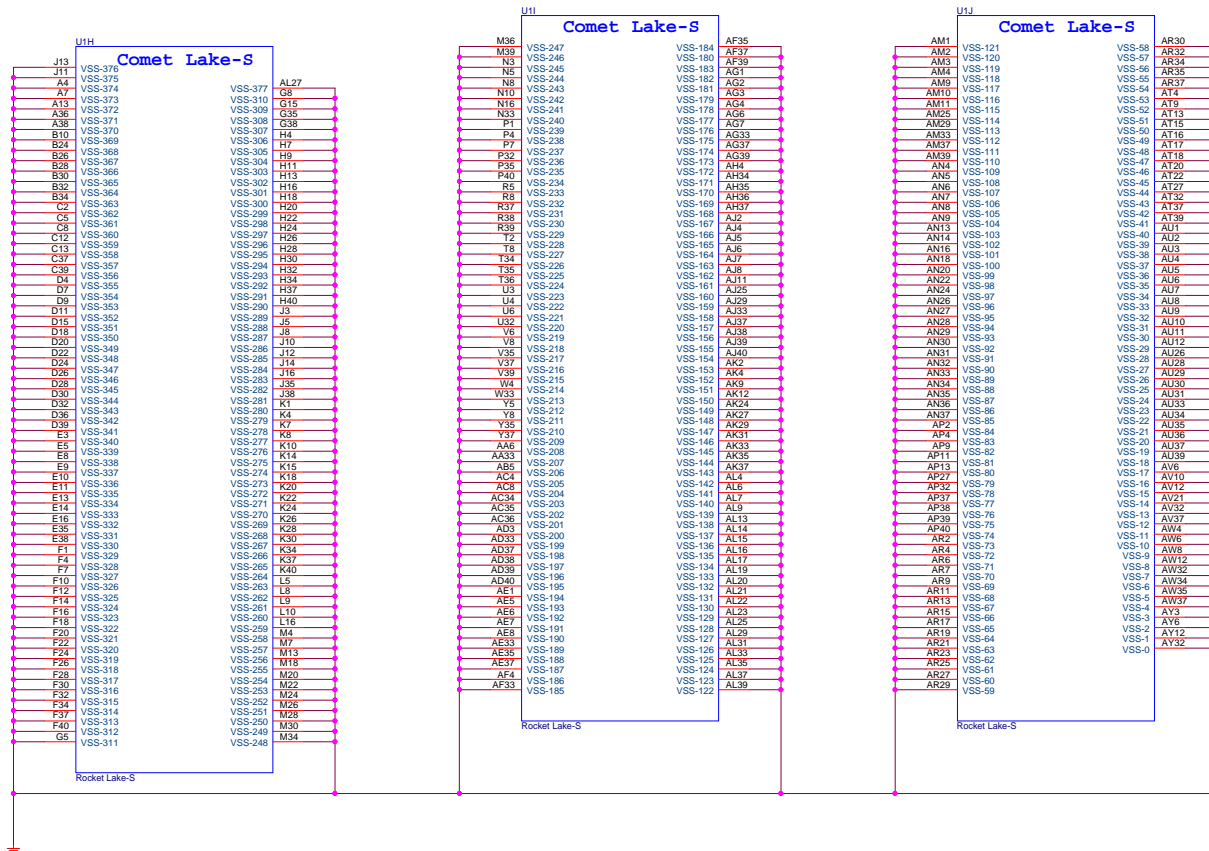




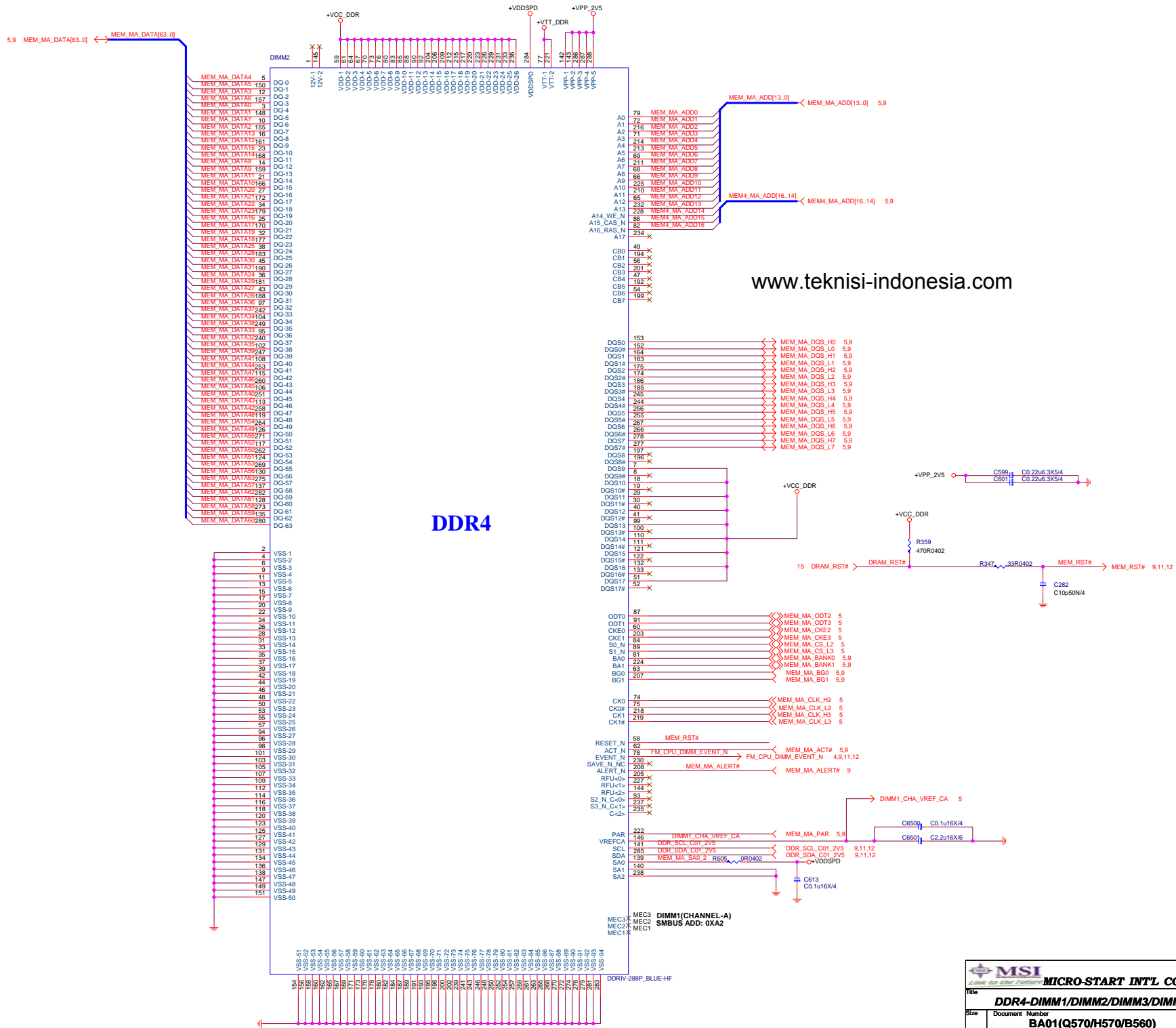






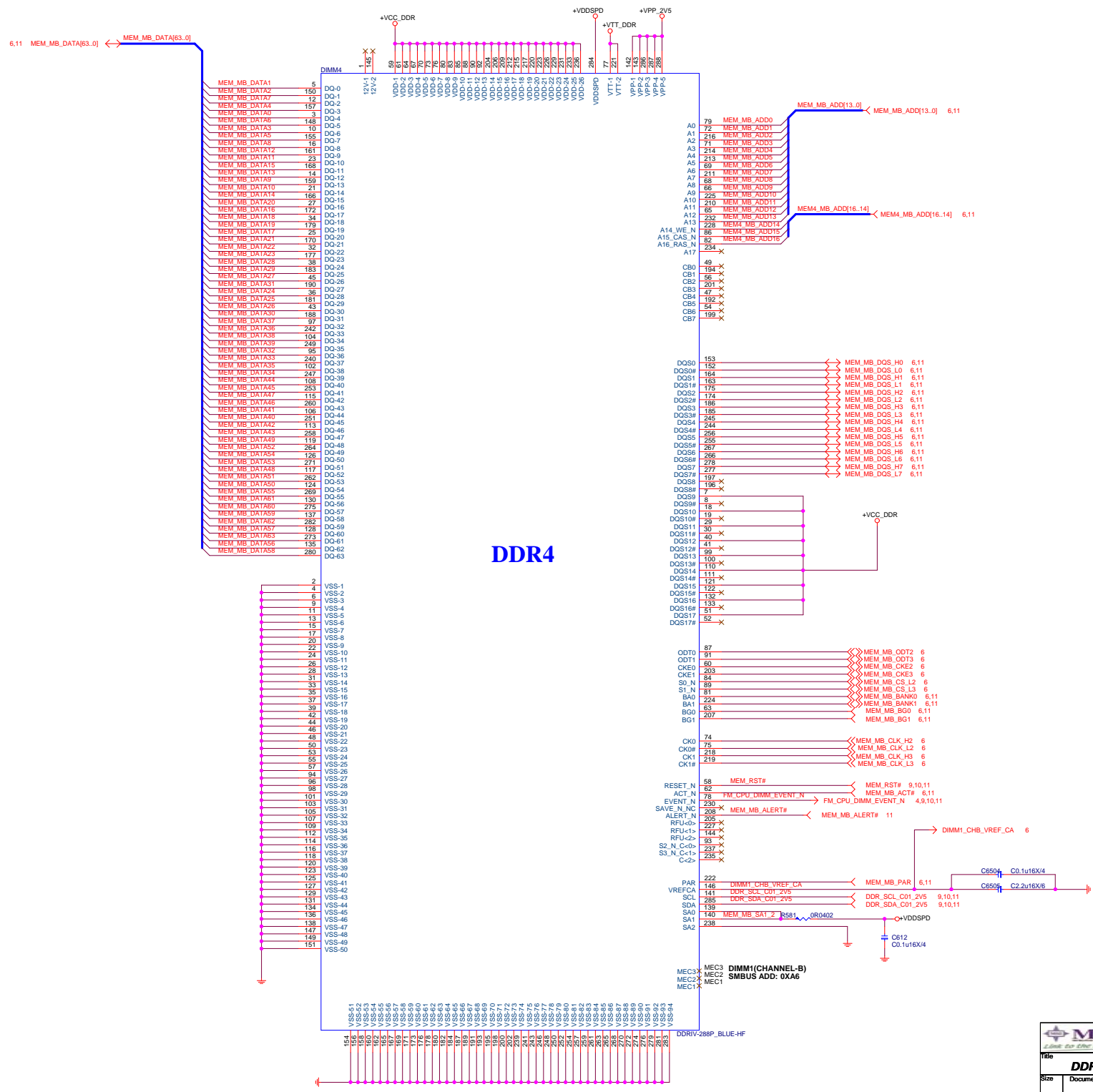






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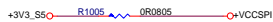
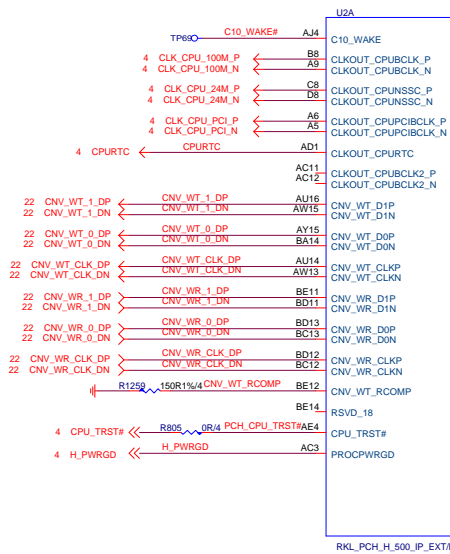




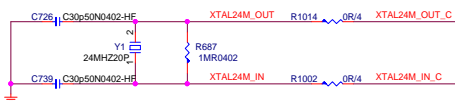




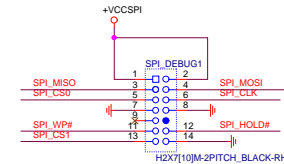
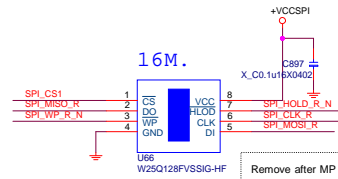
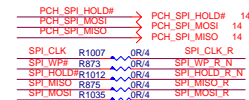
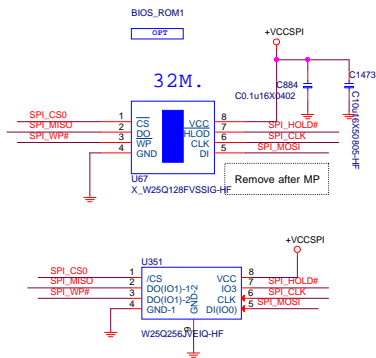




#### 24MHz Clock



#### SPI FLASH ROM (close to SB)

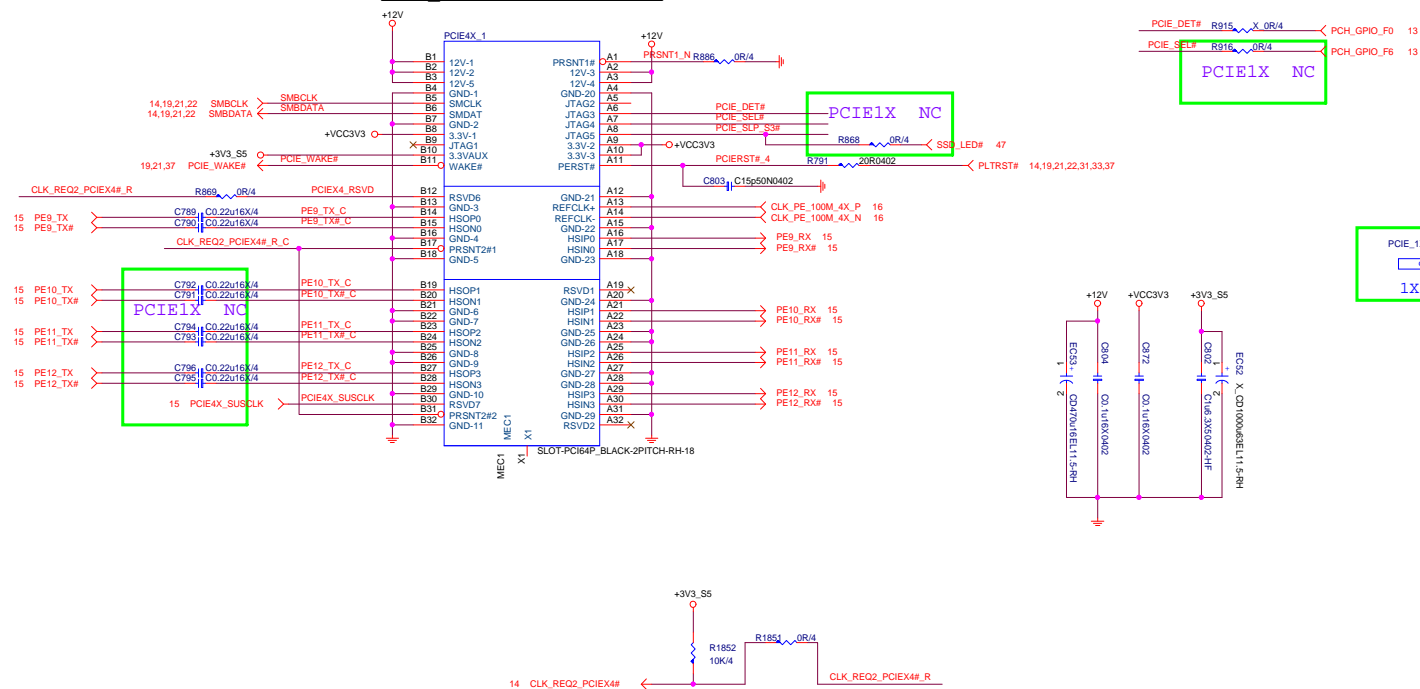








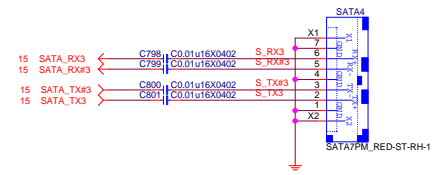
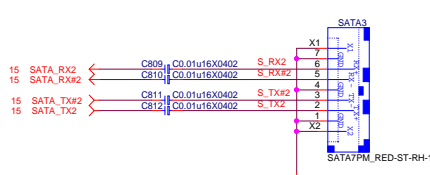
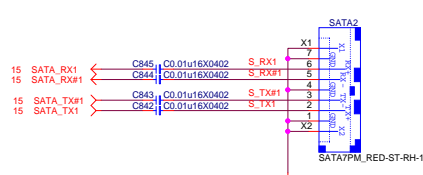
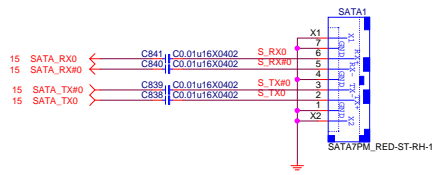
# PCI EXPRESS X4 SLOT



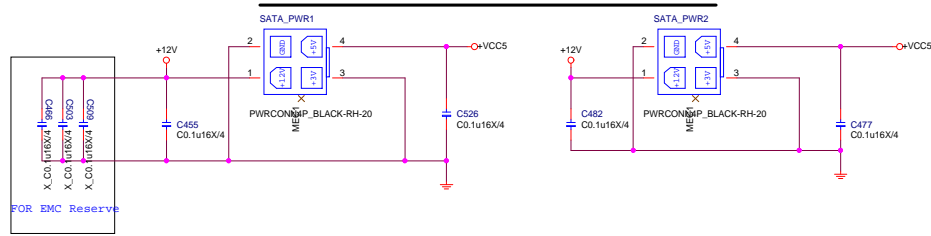
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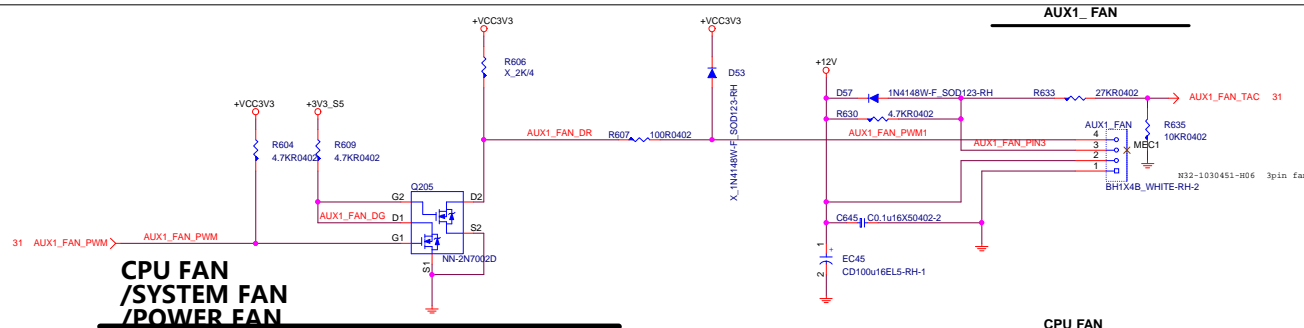


### SATA Power Output Connector



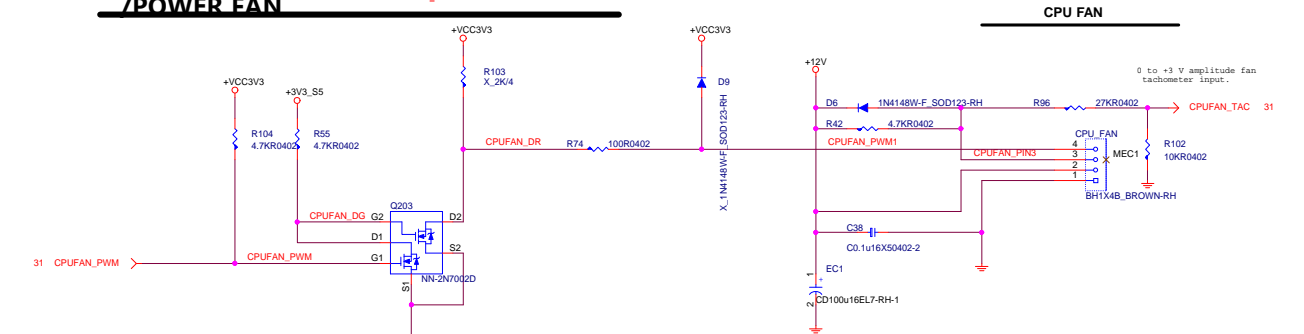
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### AUX1\_FAN

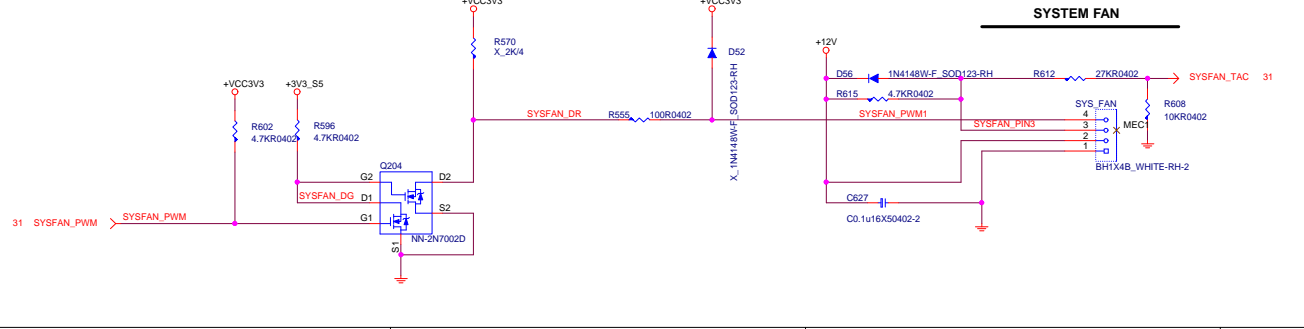


### CPU FAN /SYSTEM FAN /POWER FAN

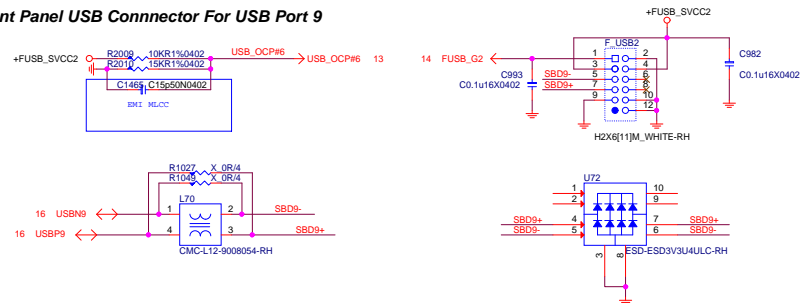
### CPU FAN



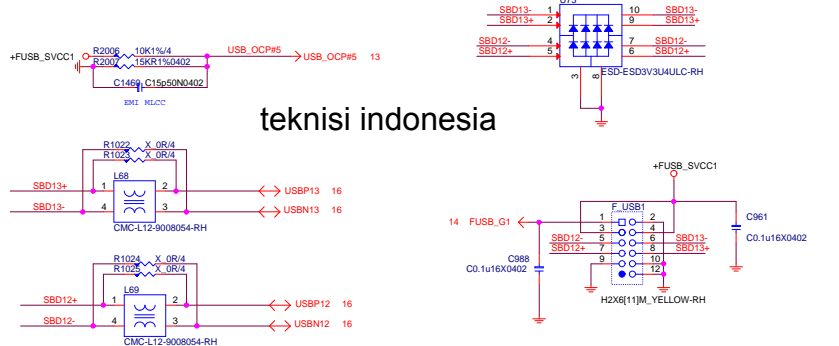
### SYSTEM FAN



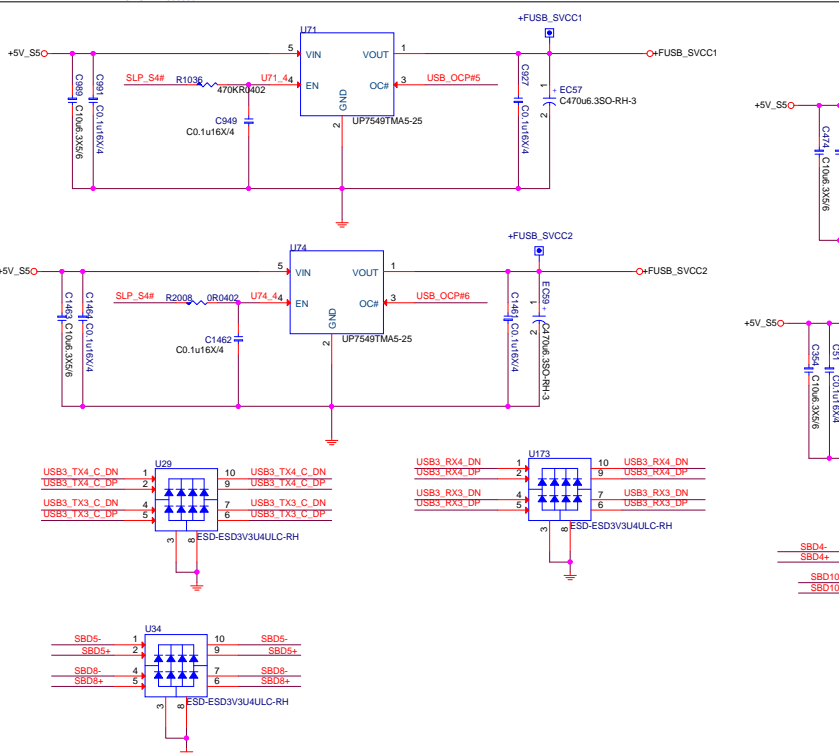
## Front Panel USB Connector For USB Port 9



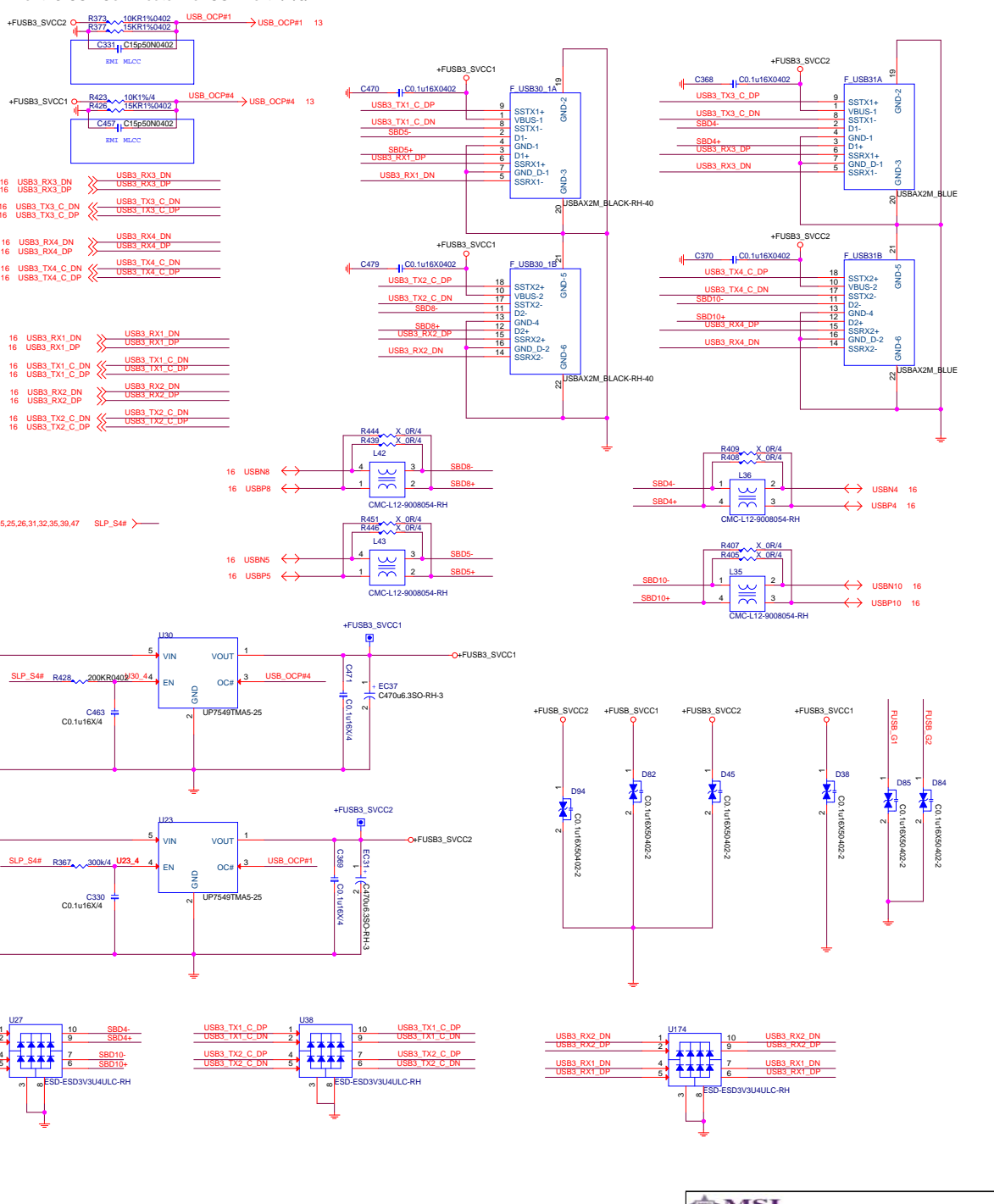
## Front Panel USB Connector For USB Port 12 / 13



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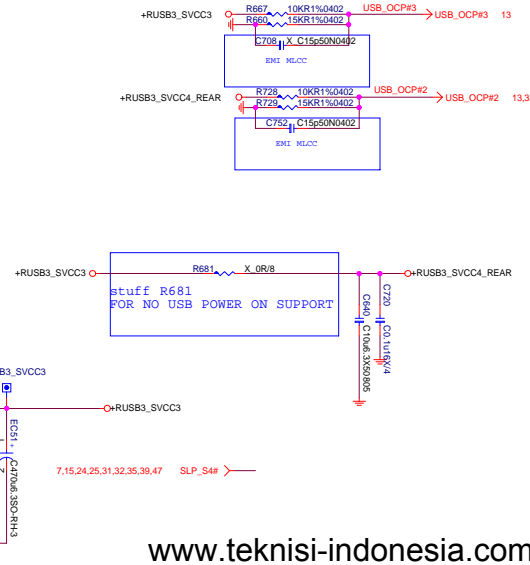
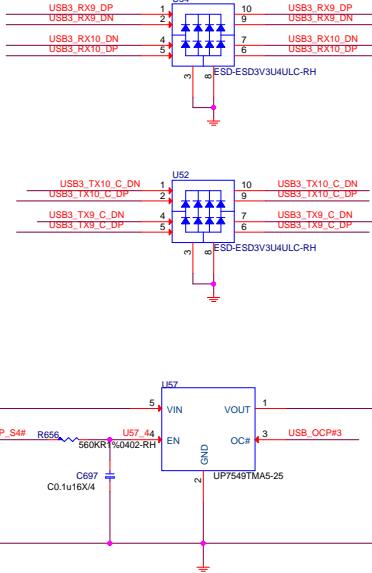
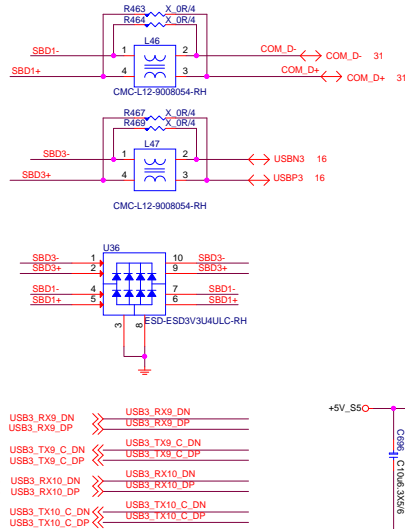
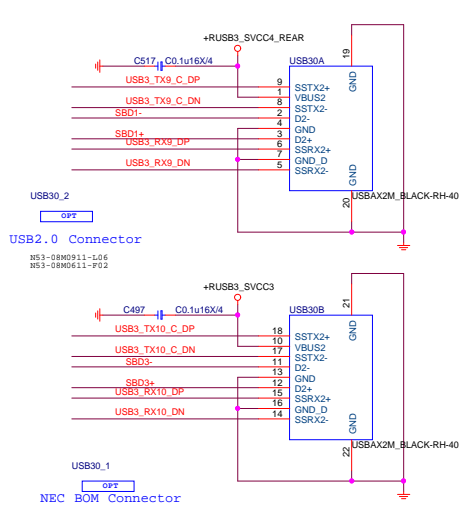


## Front IO USB Connector For USB Port 1/2/3/4



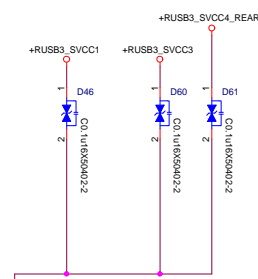
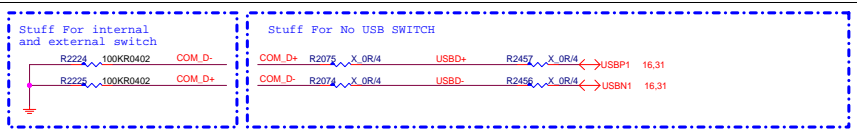
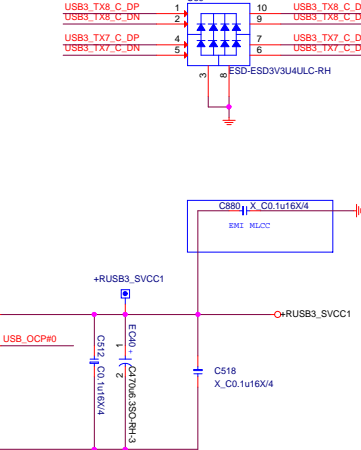
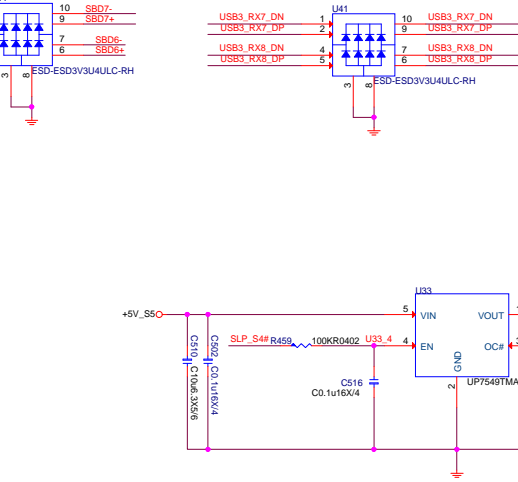
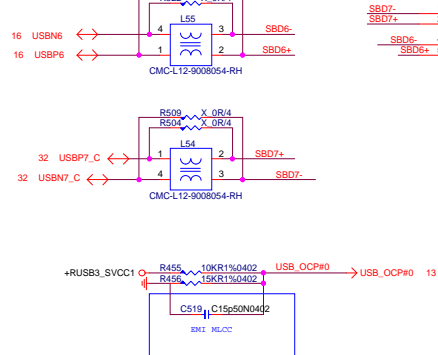
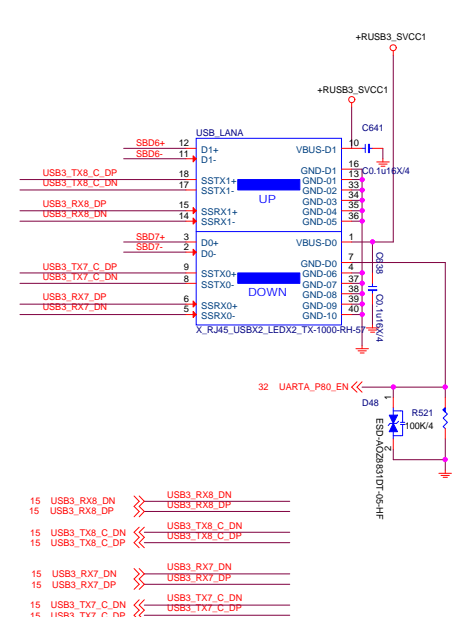


# Rear IO USB Connector For USB Port 7/8



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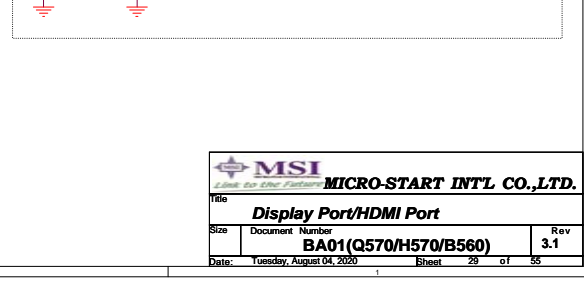
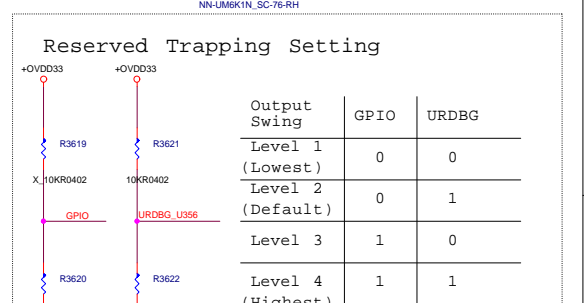
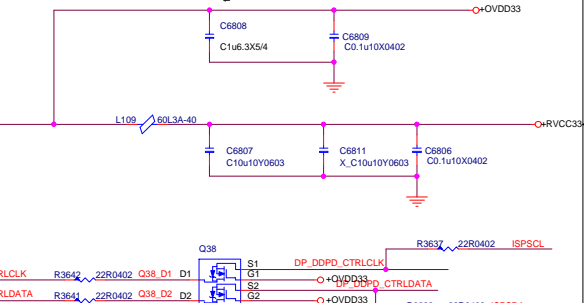
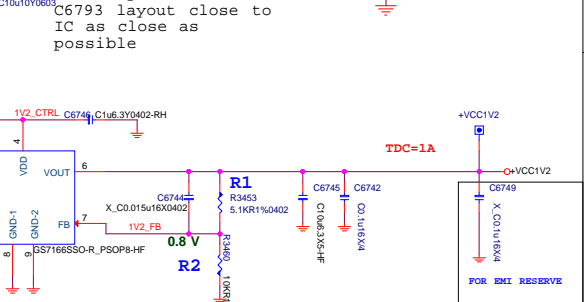
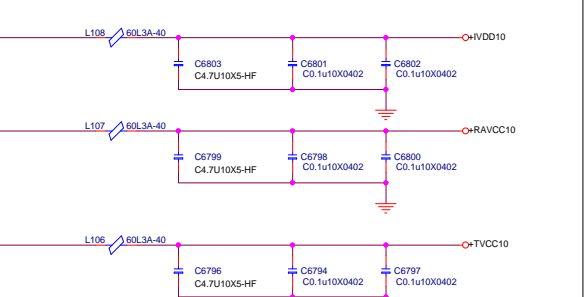
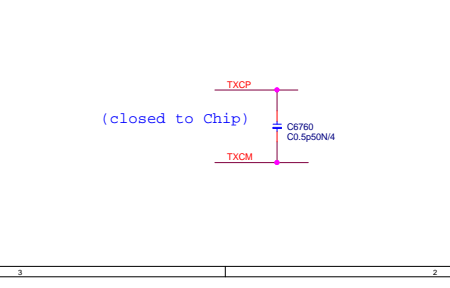
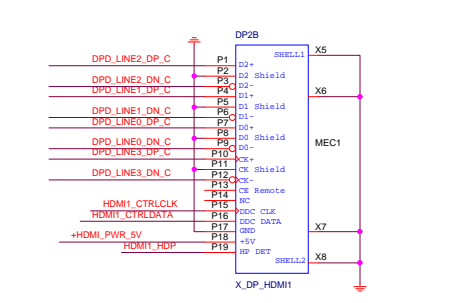
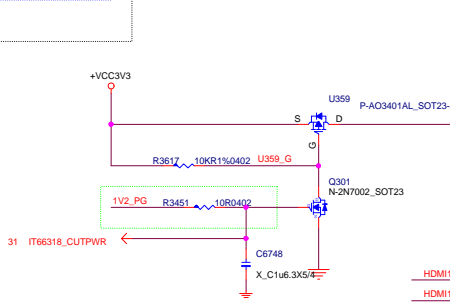
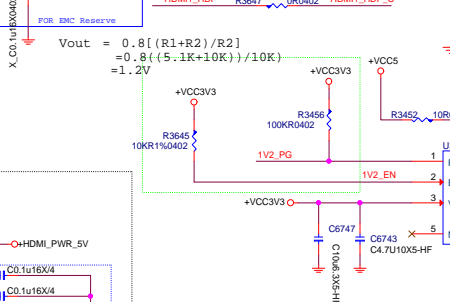
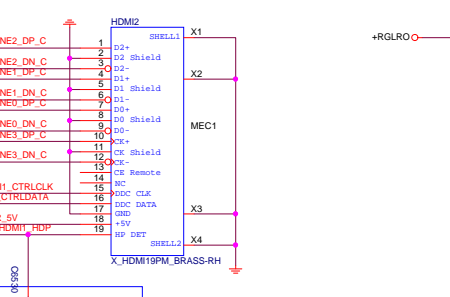
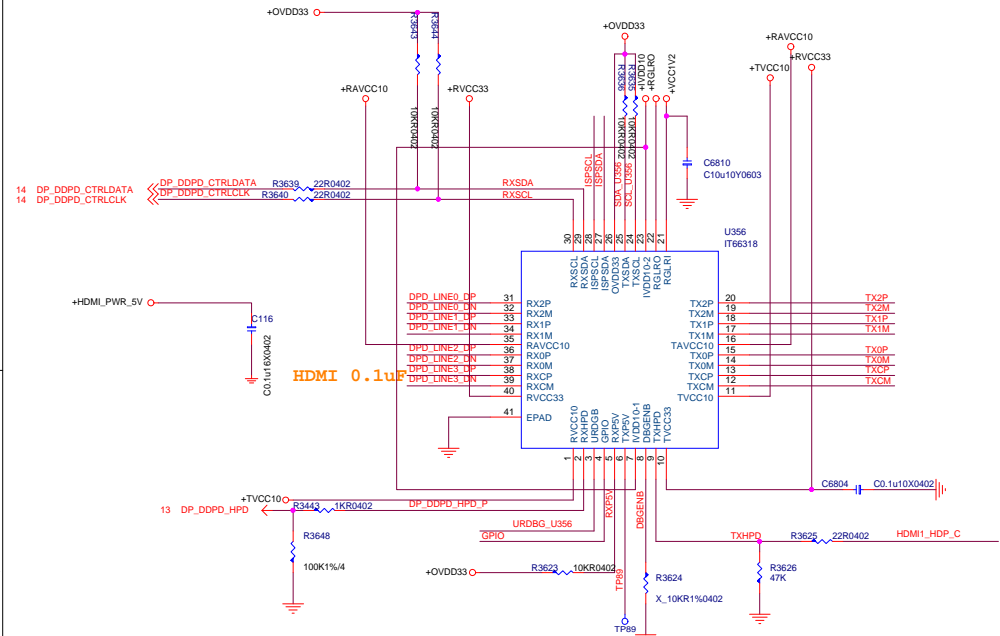
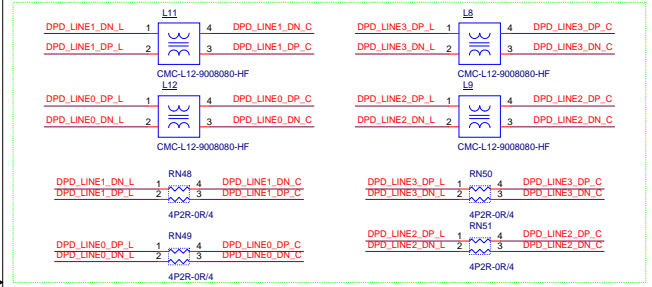
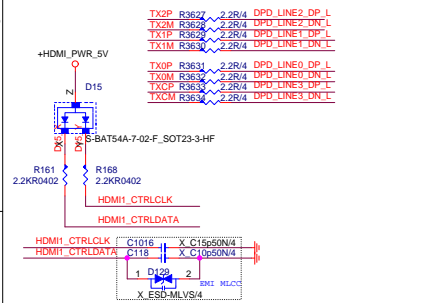
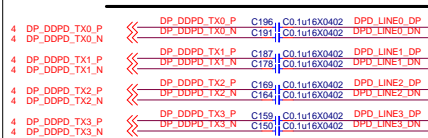
# Rear USB Connector For USB Port 9 / 10





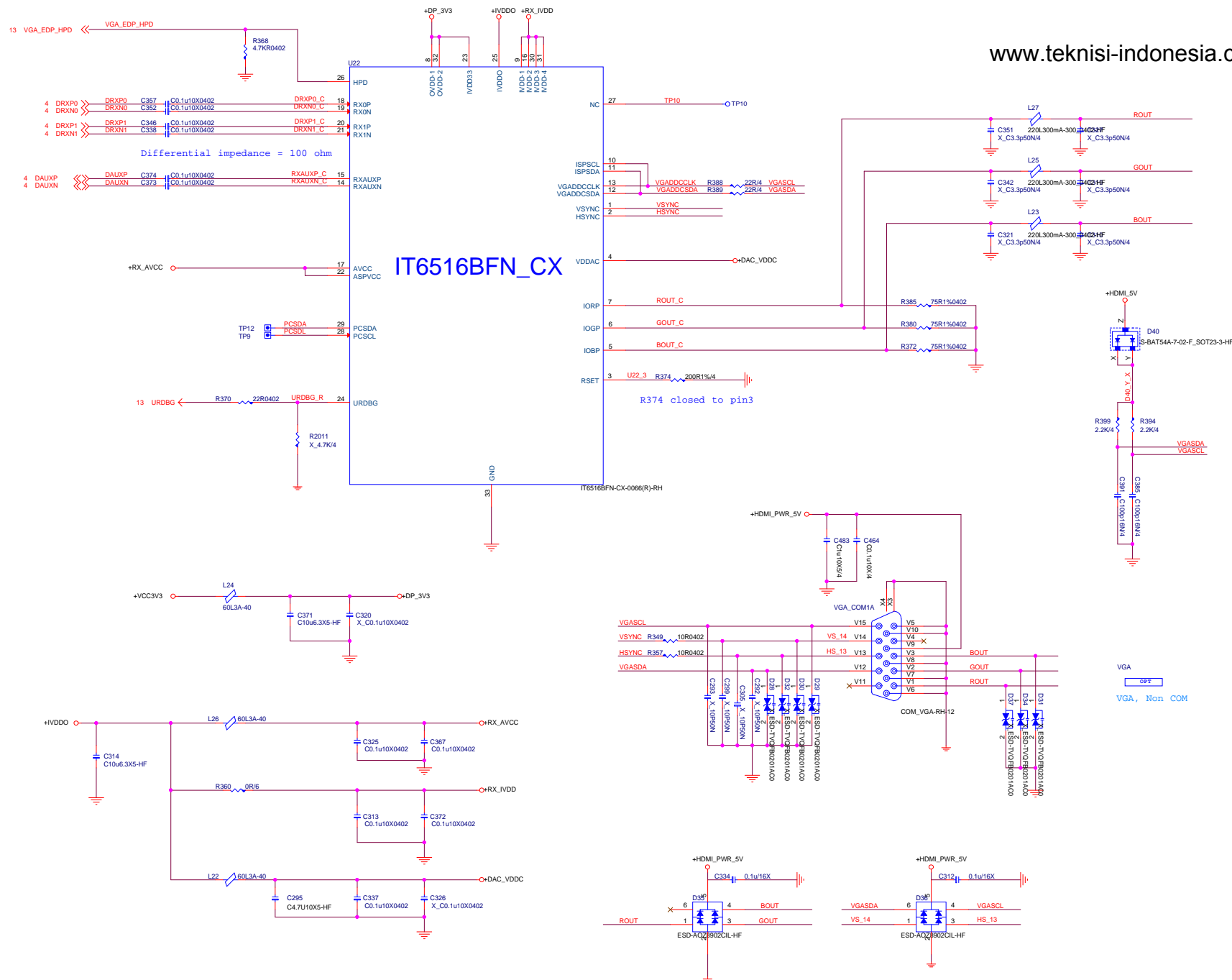


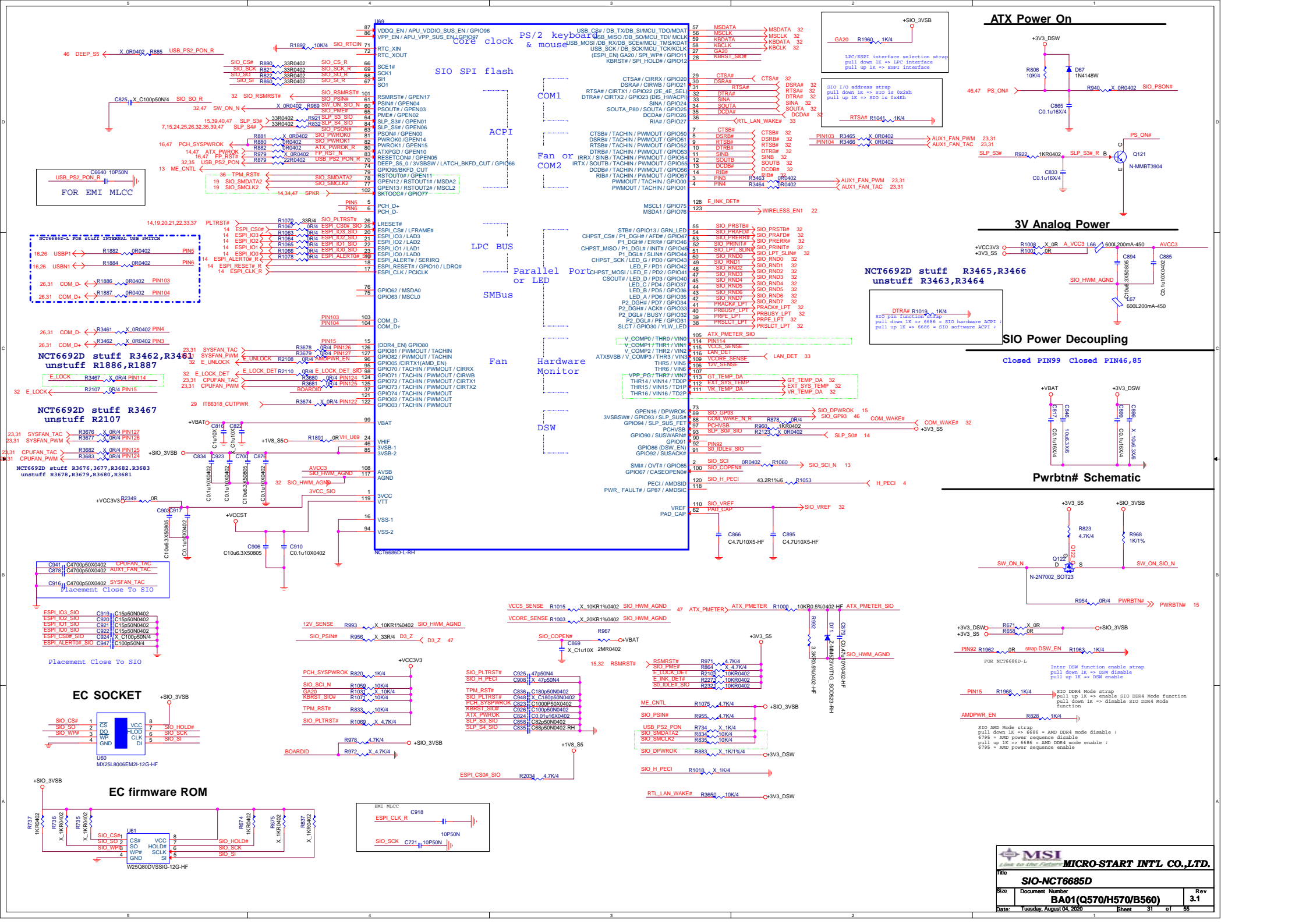
# HDMI2\_CONN



## Reserved Trapping Setting

Output Swing	GPIO	URDBG
Level 1 (Lowest)	0	0
Level 2 (Default)	0	1
Level 3	1	0
Level 4 (Highest)	1	1

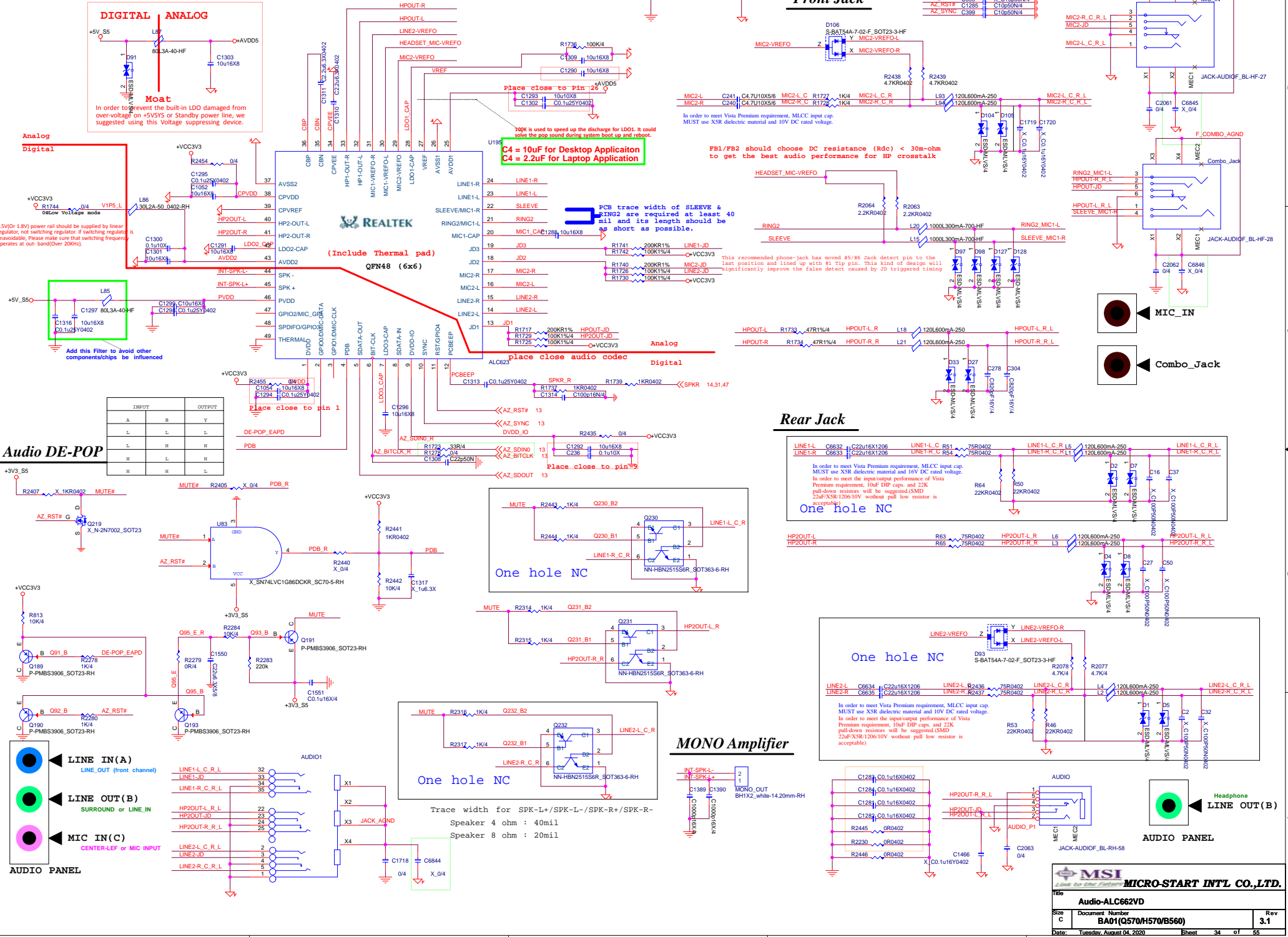


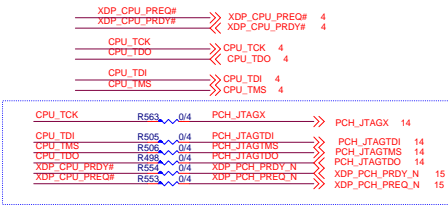




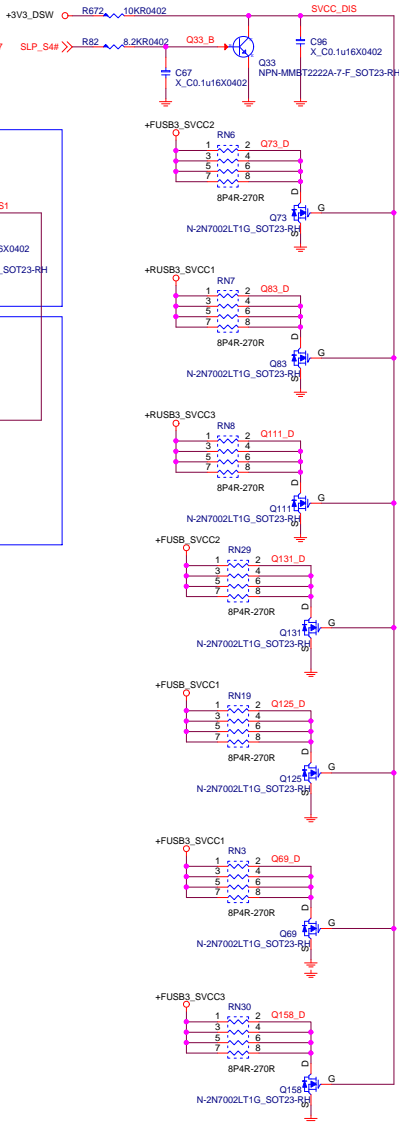
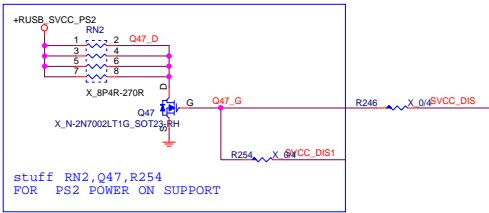
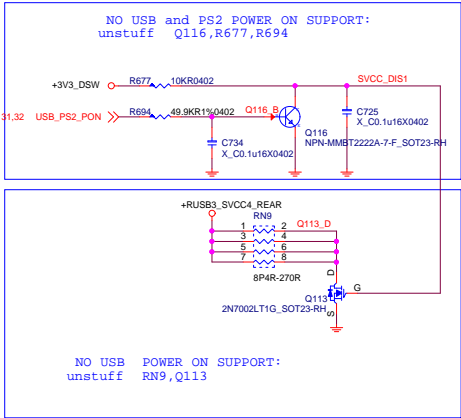


# Azalia Codec - ALC623

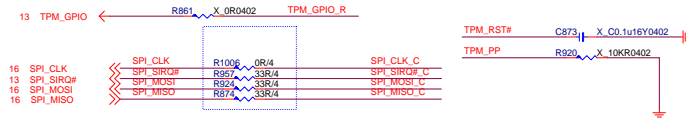
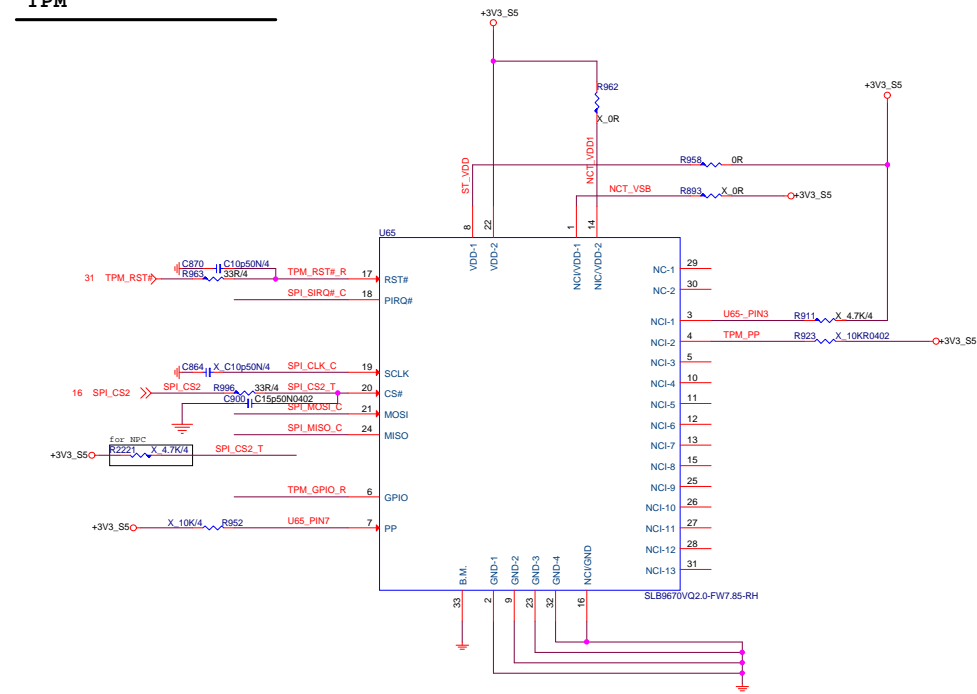




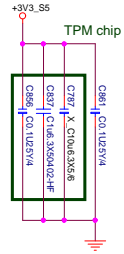
USB power discharge circuit



# TPM



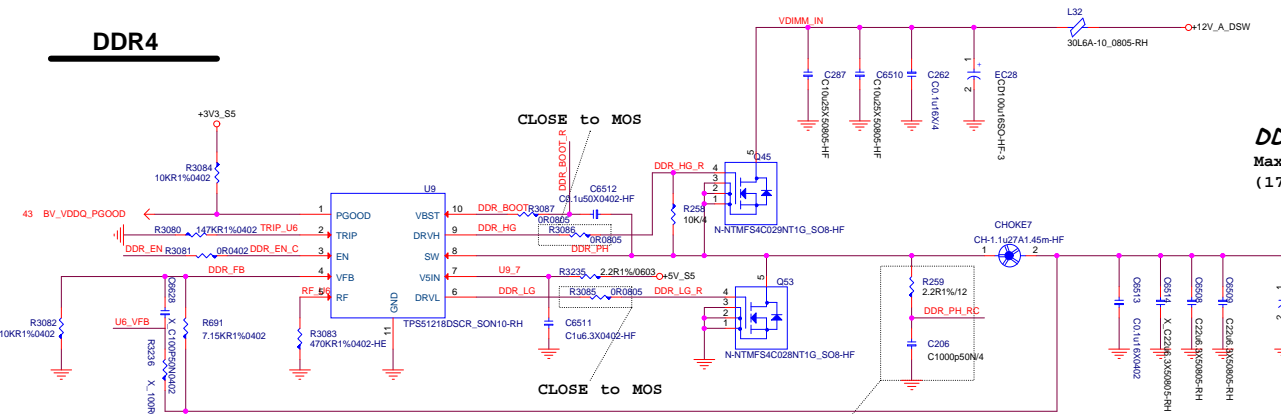
	R893	R911	R923	R920	R952	R958	R962	R861
ST---ST33HTPH2E32AHB4 (SPI)	X	X	X	X	X	X	X	X
NPC---NPCT750 SPI )	V	X	X	X	X	V	V	X
Infineon SLB 9670VQ2.0 (SPI)	X	X	X	X	X	V	X	X
NationZ Z32H330TC FW 7.51 (SPI)	V	X	X	X	X	V	V	X







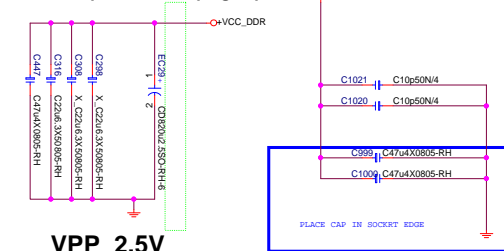
## DDR4



**DDR**  
Max Current  
(17.113A)

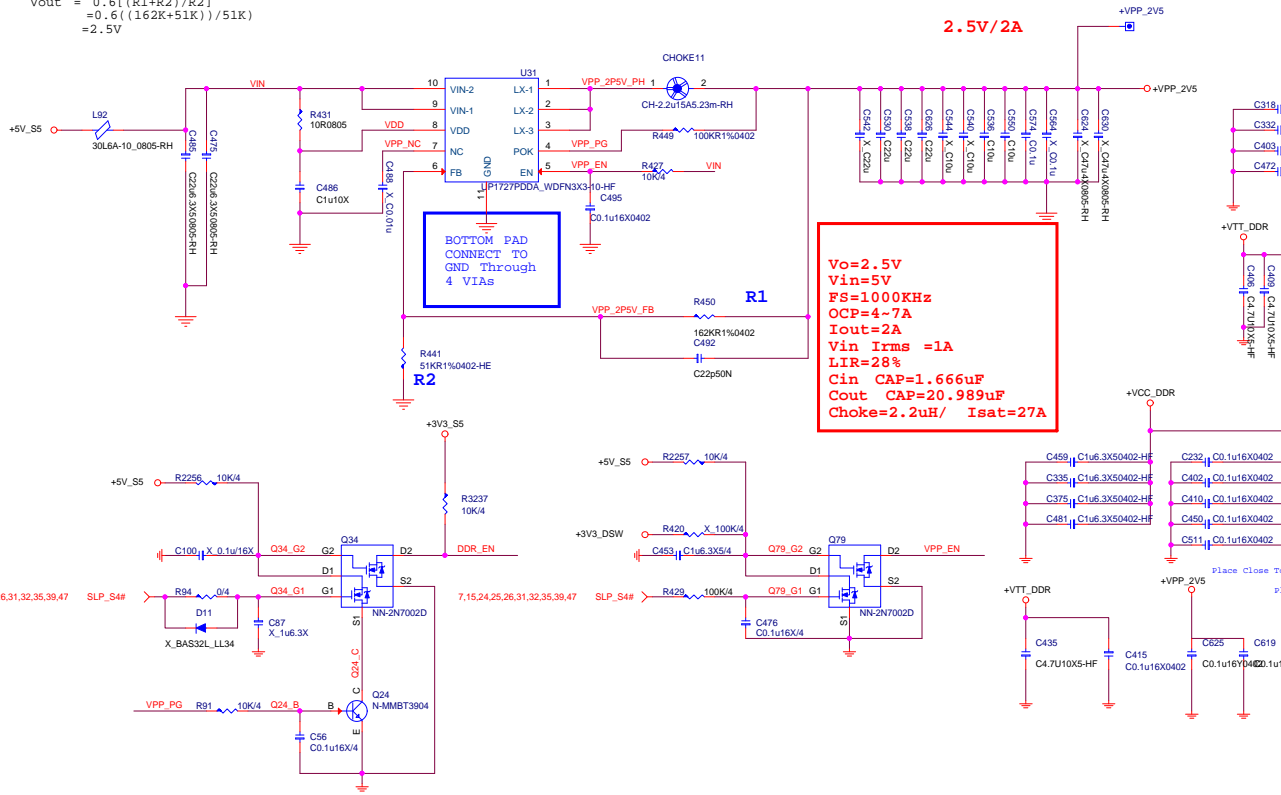
Vo=1.2V  
Vin=12V  
FS=300KHz  
OCP=25.67~34.23A  
Iout=17.113A  
V<sub>in</sub> I<sub>rms</sub> =5.13A  
LIR=19%  
C<sub>in</sub> CAP=17.113uF  
C<sub>out</sub> CAP=1467.51uF  
Choke=1.1uH/ Isat=27A

DDR4 I/O power decoupling caps.



## VPP\_2.5V

$$V_{out} = 0.6 \left[ \frac{R1+R2}{R2} \right] = 0.6 \left[ \frac{(162K+51K)}{51K} \right] = 2.5V$$

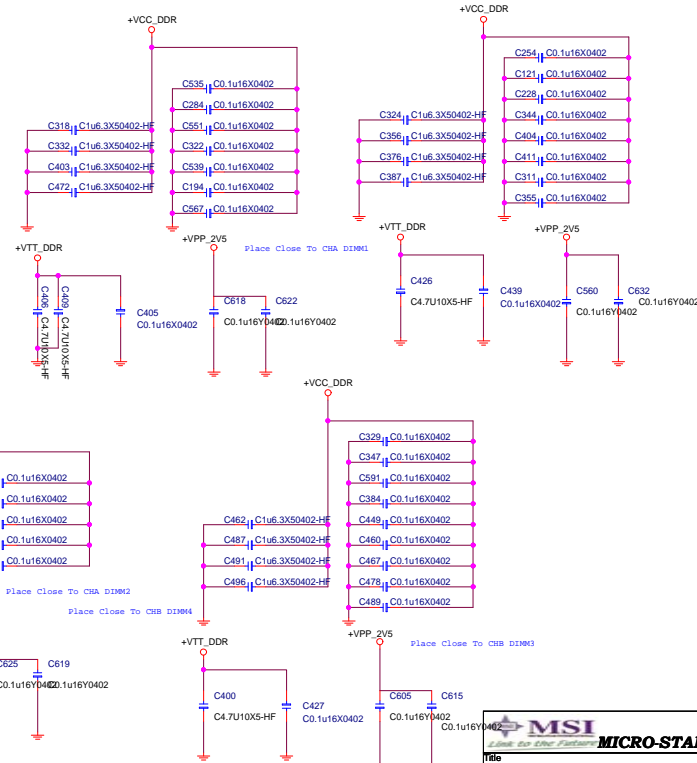
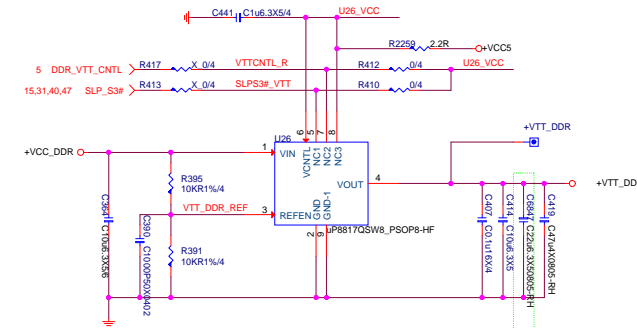


2.5V/2A

Vo=2.5V  
Vin=5V  
FS=1000KHz  
OCP=4~7A  
Iout=2A  
V<sub>in</sub> I<sub>rms</sub> =1A  
LIR=28%  
C<sub>in</sub> CAP=1.666uF  
C<sub>out</sub> CAP=20.989uF  
Choke=2.2uH/ Isat=27A

## DDR4 Termination Power

0.6V - 1.1A - 0.825W







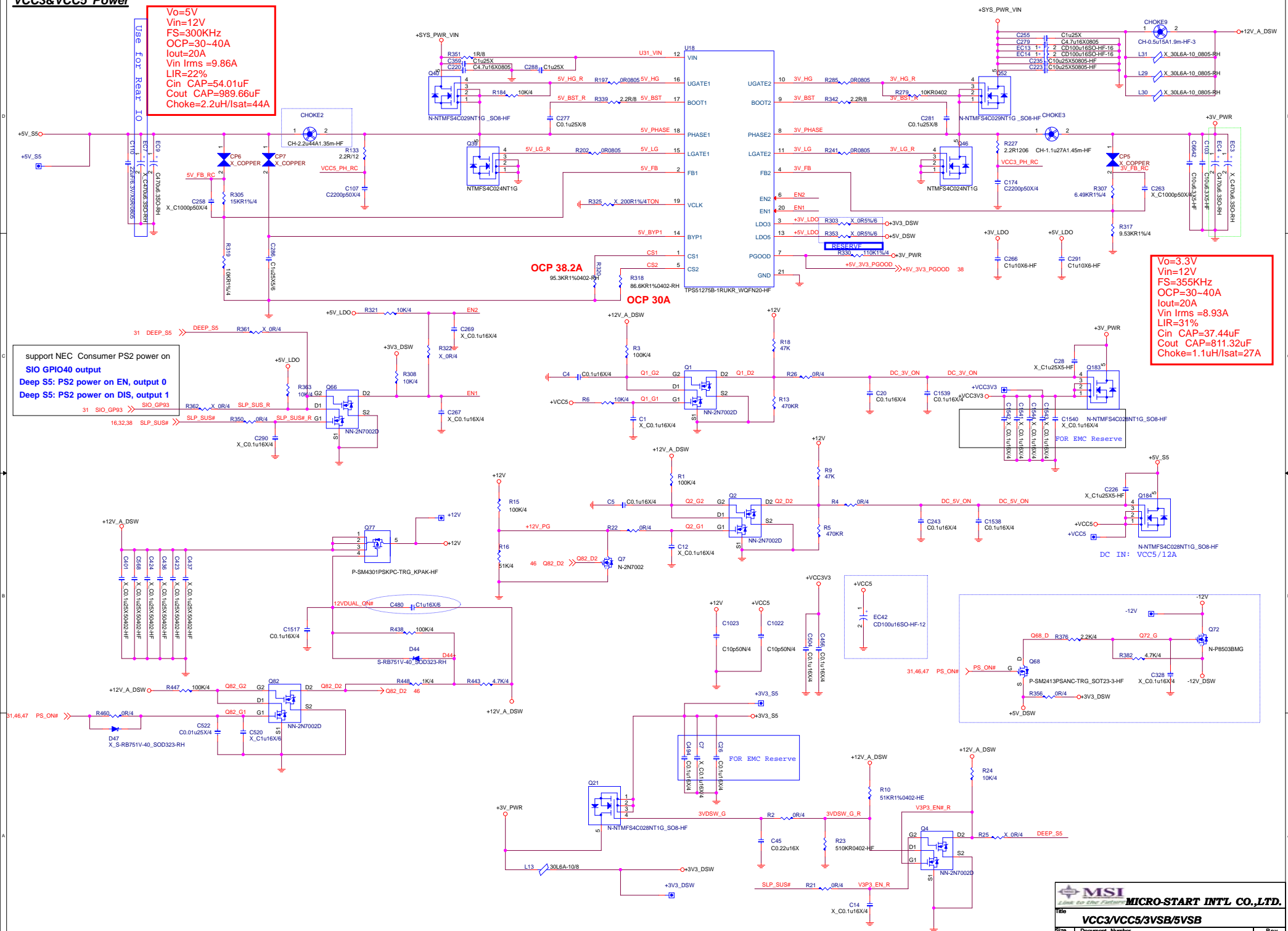




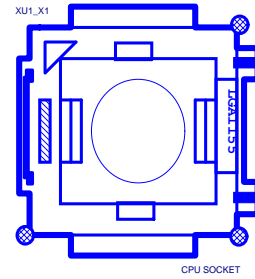
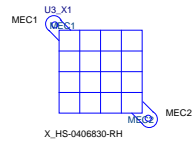
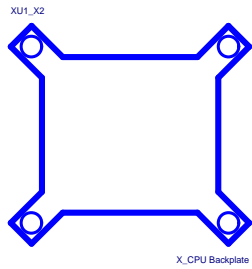
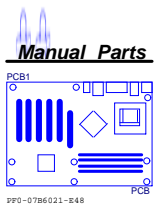




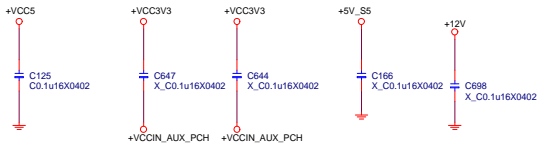
$V_o=5V$   
 $V_{in}=12V$   
 $FS=300KHz$   
 $OCP=30-40A$   
 $I_{out}=20A$   
 $V_{in\ rms}=9.86A$   
 $LIR=22\%$   
 $C_{in\ CAP}=54.01\mu F$   
 $C_{out\ CAP}=989.66\mu F$   
 $Choke=2.2\mu H/I_{sat}=44A$







For EMI For Moat CAP



without surge +USB2.0 X2 connector: N58-23F0131-F02

with surge single LED +USB2.0 X2 connector: N58-21F0041-F02

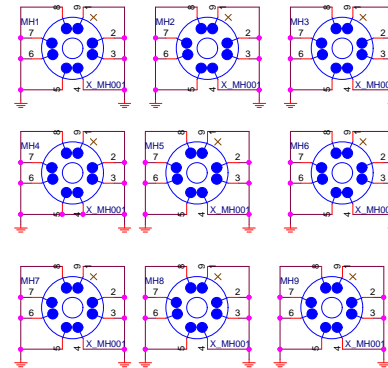
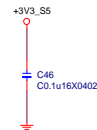


### Optics Orientation Holes

Optical Fiducial Marks-120



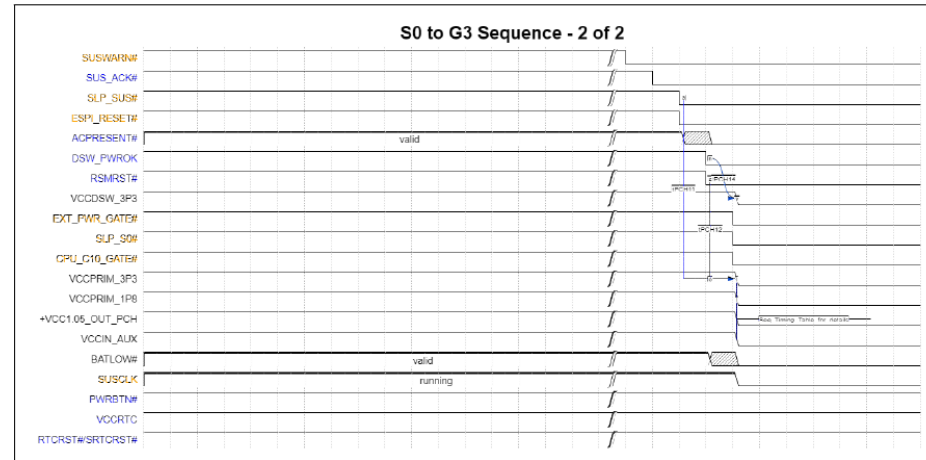
### PCH Chipset







## Timing Diagram for S0/M0 to G3 [ Deep Sx Platform]



## Rail-to-Rail Sequencing Requirement for Deep Sx Configured System

