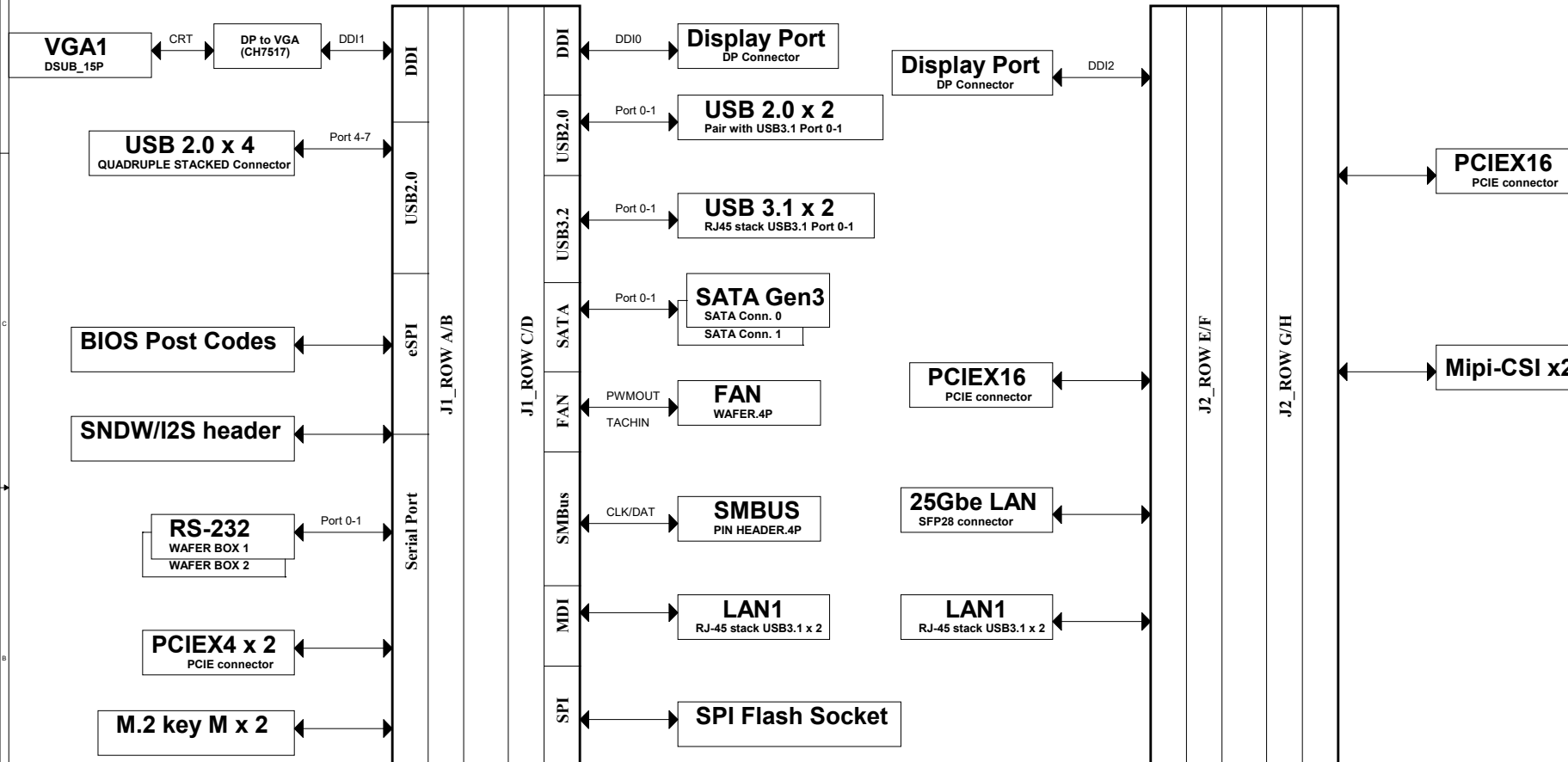


## ECB-980A COM Express HPC Carrier Board

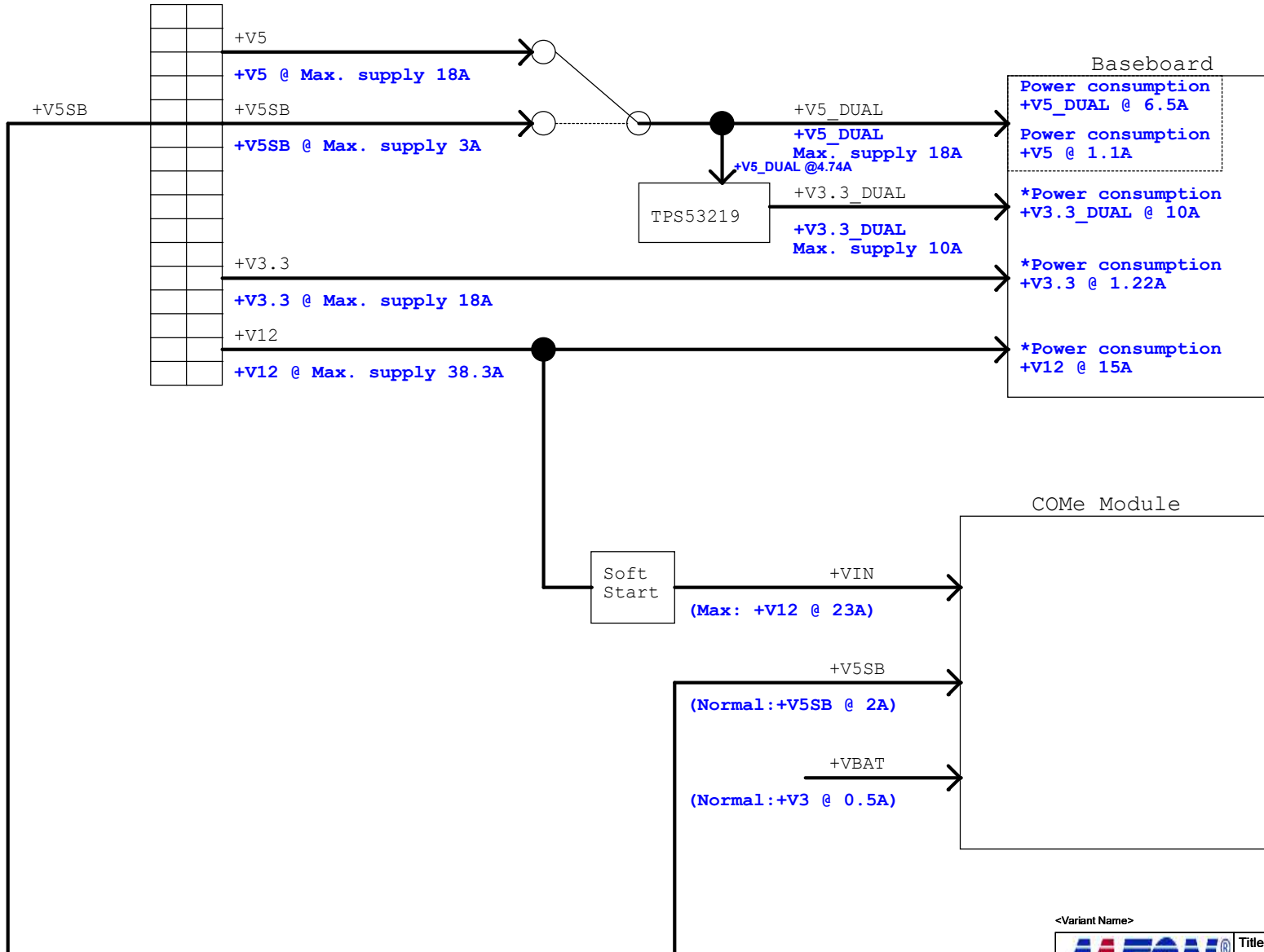


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2	Power Map
3	DP(DDI1) to VGA(CH7517)
4	VGA
5	USB2.0
6	DP 1.4_Redriver & DP
7	DP 1.4_Redriver & DP
8	LAN with USB3.1
9	LAN with USB3.1
10	SATA/RTC/FAN
11	Serial port(RS-232)
12	USB3.1 GEN2 Redriver
13	USB3.1 GEN2 Redriver
14	SPI. Clock buffer
15	BUTTON/PLRST/LED/SMBUS
16	COM-HPC_Row AB/CD
17	COM-HPC_Row EF/GH
18	+3V3_DUAL & +5V_DUAL
19	F85280 + eSPI 80H
20	ATX Power + Discharge
21	PCIEX16 M.2. eDP connector
22	25Gbe connector
23	CSI. SNDW/I2S header
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31	
32	

<Variant Name>

\*Calculate the ATX PWR distribution based on 500W

ATX 24P



<Variant Name>

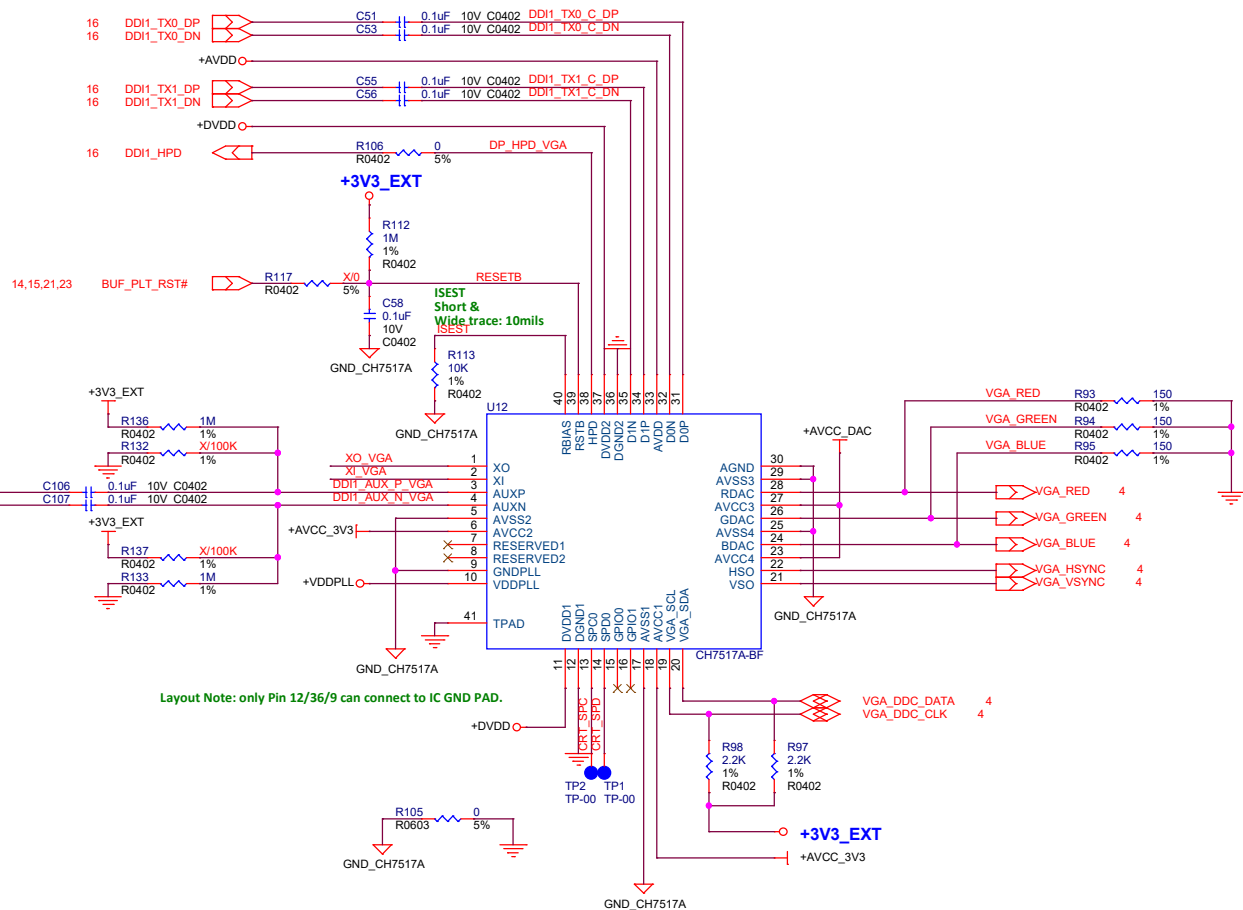
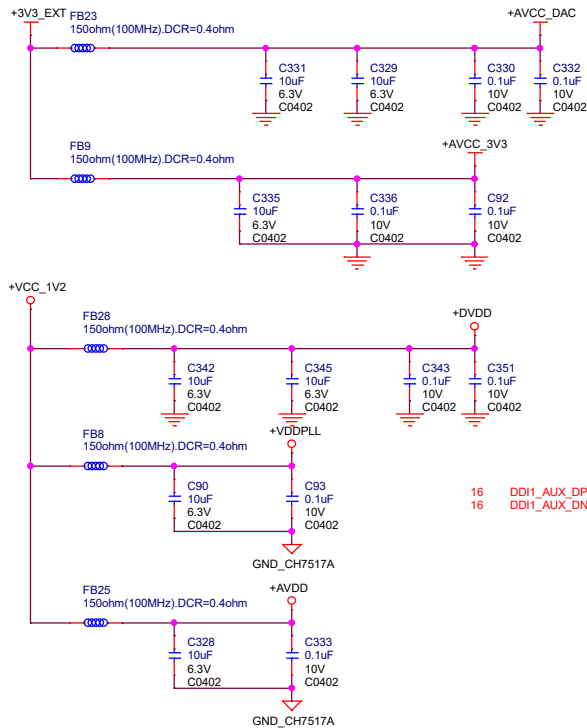


Title Power Map		
Size B	Document Number ECB-980A	Rev: A0.1_0_0
Date: Thursday, April 28, 2022		Sheet: 2 of 24

# DP to VGA (CH7517)

- Note:**
1. +1.05V power spply tolerance range -5%~+25%
  2. +3.3V power spply tolerance range +/-10%

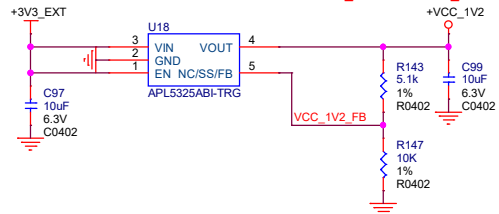
## +V3.3\_AVCC + +V3.3\_AVCC\_DAC : 130mA



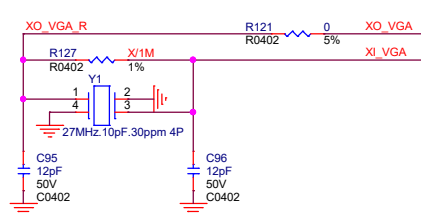
## LDO

### +3V3\_EXT @ 60mA

### +V1.2\_DVDD + +V1.2\_VDDPLL + +V1.2\_AVDD : 135mA



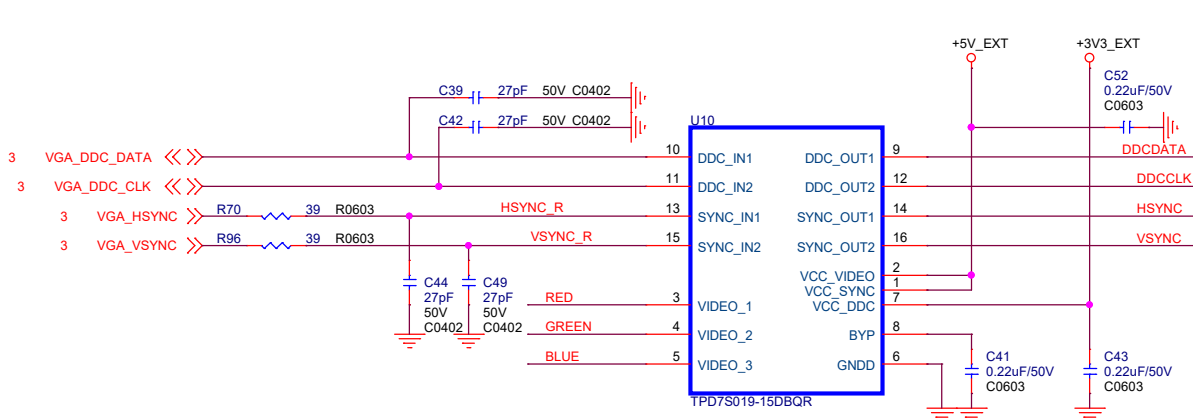
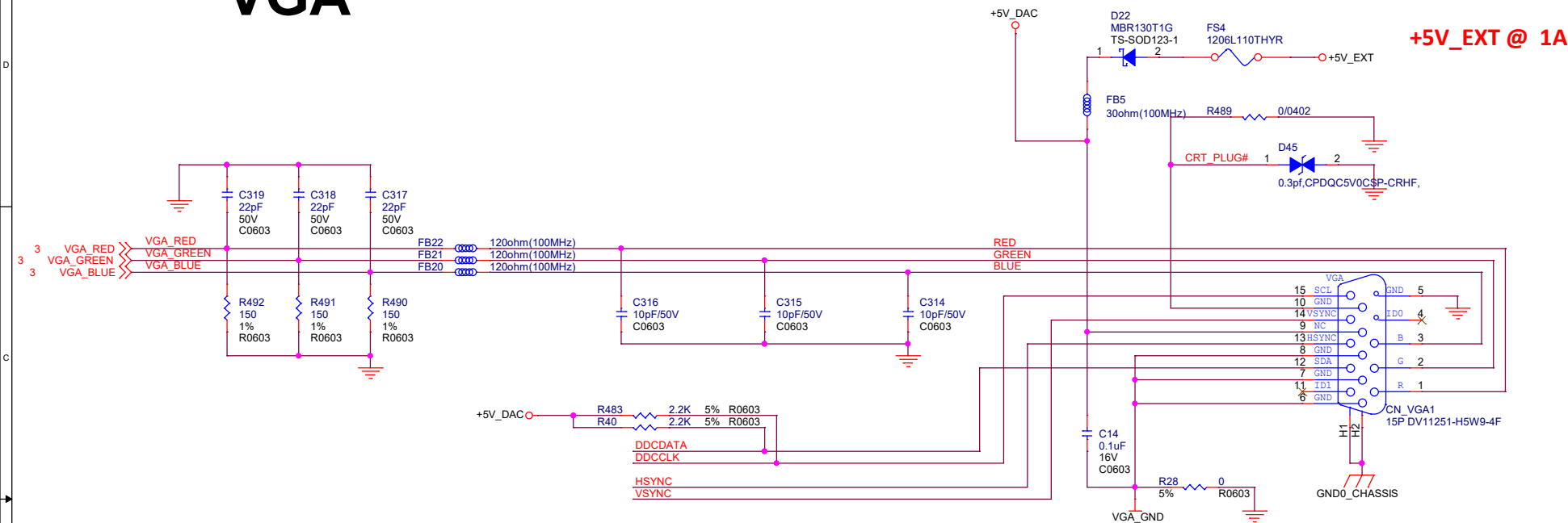
## X'tal




<Variant Name>

<b>MEON</b> an /ELUS ASSOC. CO.		Title <b>DP(DD1) to VGA(CH7517)</b>	
Size Custom	Document Number <b>ECB-980A</b>	Rev: <b>A0.1_0_0</b>	
Date: Thursday, April 28, 2022		Sheet: 3 of 24	

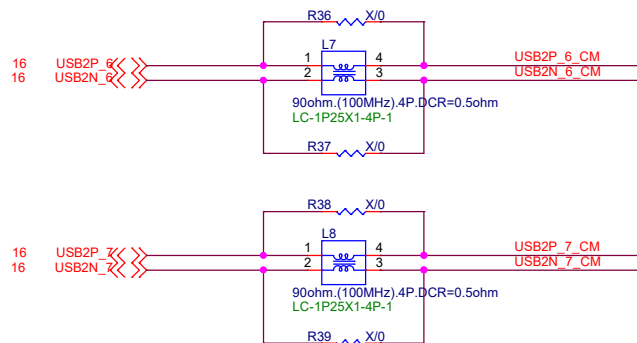
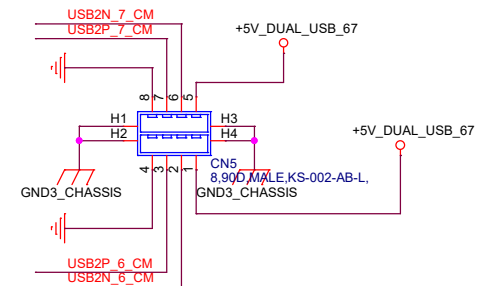
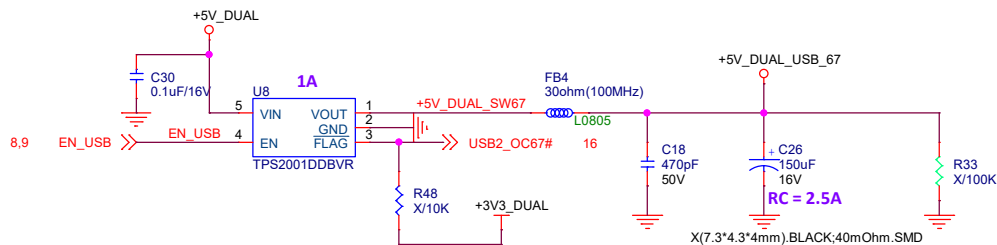
# VGA



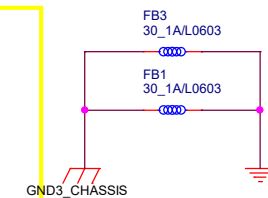
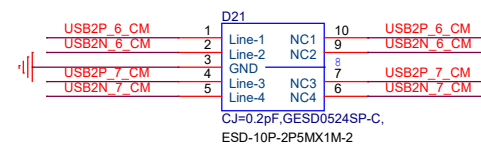
<Variant Name>

 an ASUS assoc. co.	Title <b>VGA</b>		
	Size Custom	Document Number <b>ECB-980A</b>	Rev: <b>A0.1_0_0</b>
	Date: <i>Thursday, April 28, 2022</i>		Sheet: <b>4</b> of <b>24</b>

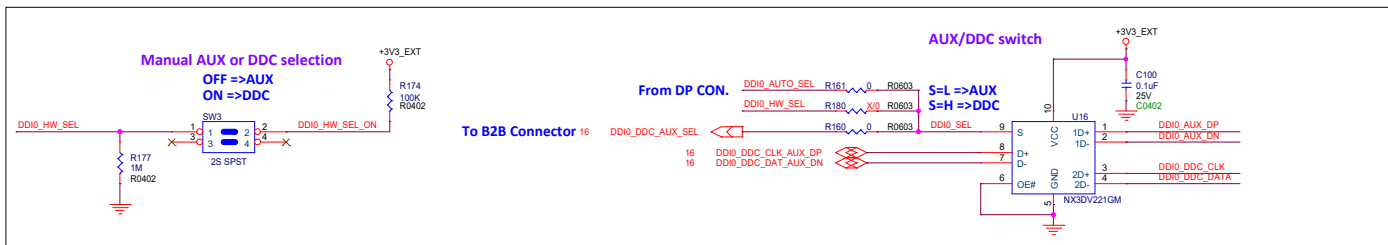
## +5V\_DUAL @ 2A



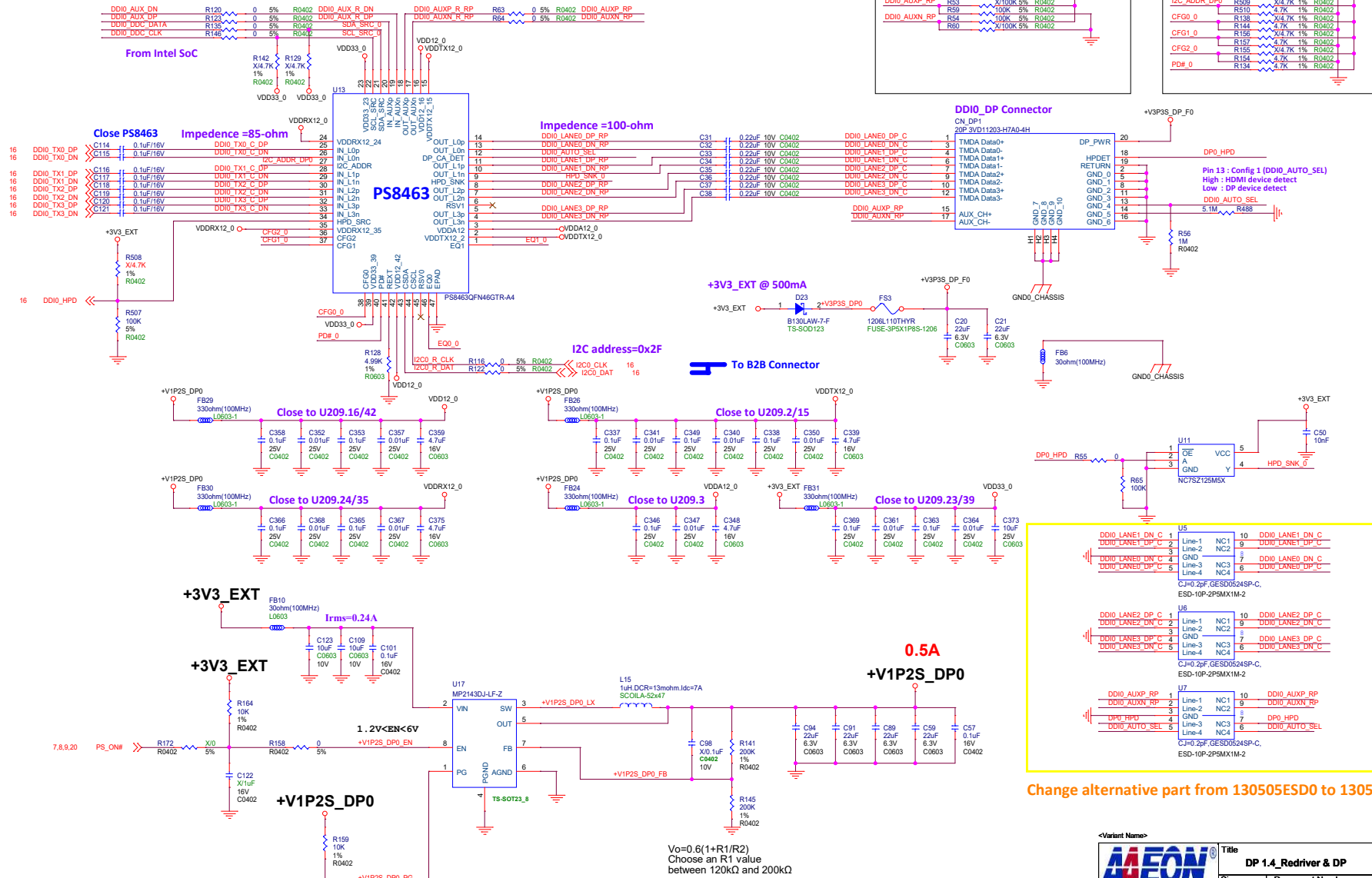
**Change alternative part from 130505ESD0 to 1305Q00022**



## Display Port 1.4

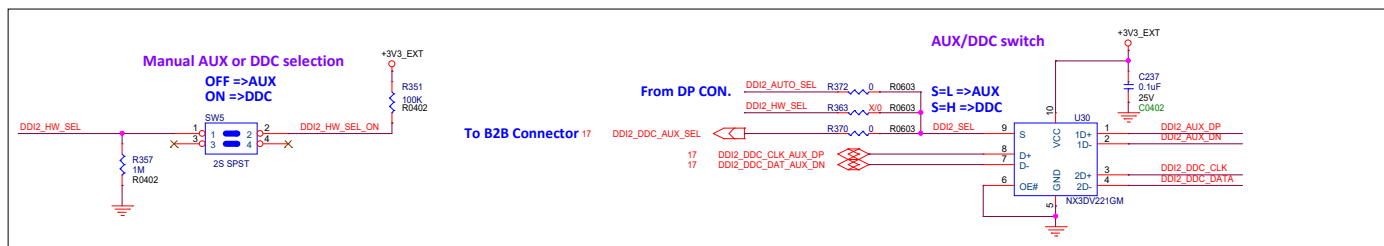


\*PS8463QFN46GTR-A4:  
+3V3\_EXT @ 0.019A  
+V1P2S DP0 @ 0.47A

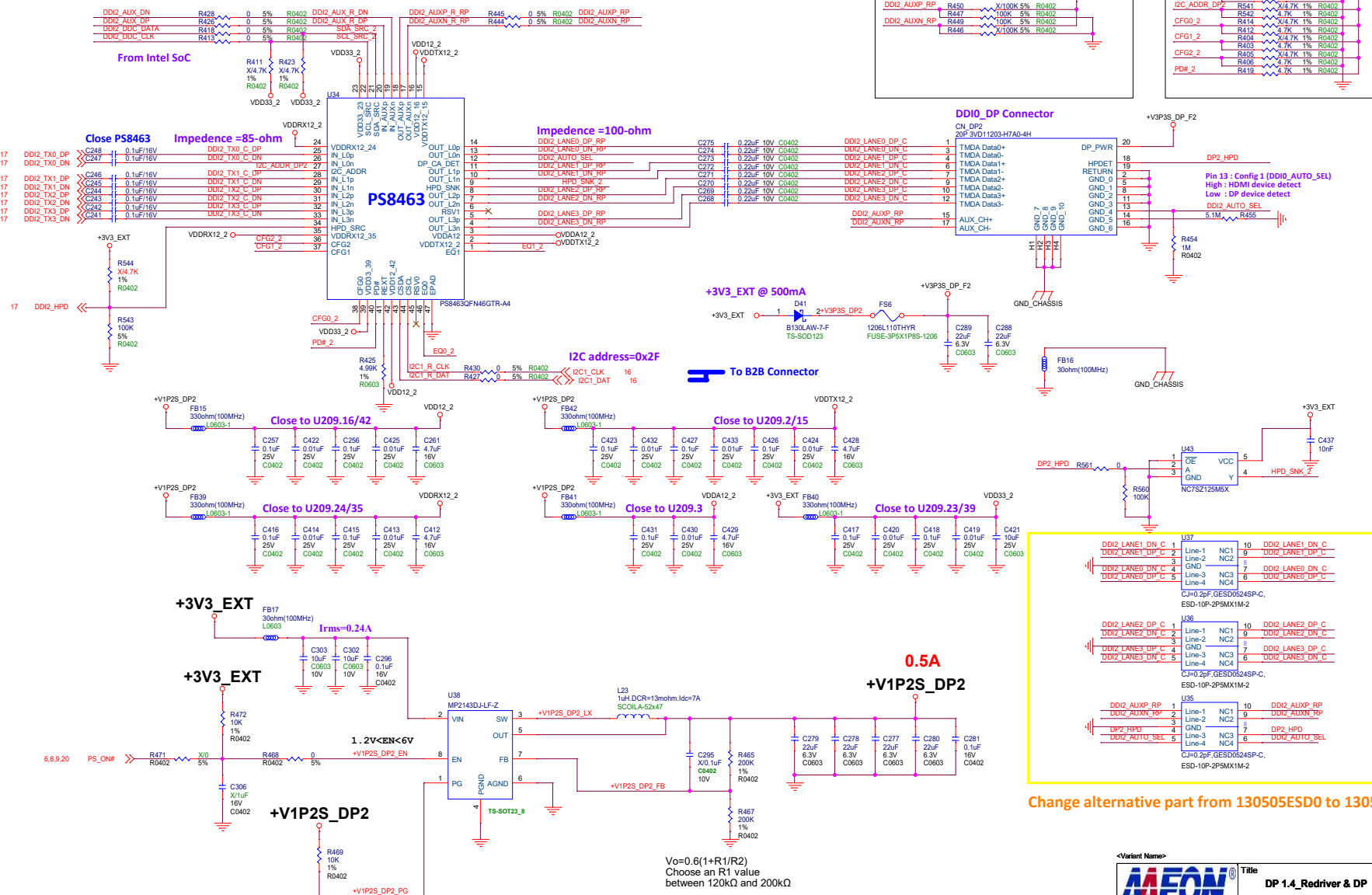


Change alternative part from 130505ESD0 to 1305Q00022

## Display Port 1.4



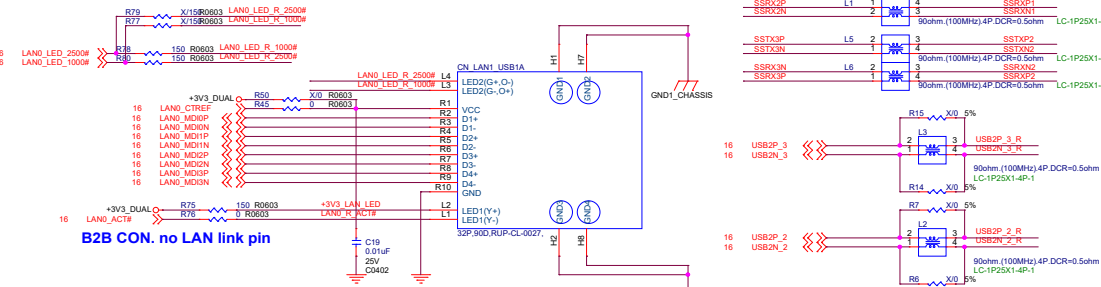
\*PS8463QFN46GTR-A4:  
+3V3\_EXT @ 0.019A  
+V1P2S\_DP2 @ 0.47A



**Change alternative part from 130505ESD0 to 1305Q00022**

**Total: +5V\_DUAL @ 3A**

**Total: +5V\_DUAL @ 3A**



**B2B CON. no LAN link pin**

[illegible]

USB3\_0\_TXN\_CM 1 10 USB3\_0\_TXN\_CM

USB3\_0\_TXP\_CM 2 9 USB3\_0\_TXP\_CM

USB3\_0\_RXN\_CM 3 8 USB3\_0\_RXN\_CM

USB3\_0\_RXP\_CM 4 7 USB3\_0\_RXP\_CM

GND 5

D25

Line-1 NC1

Line-2 NC2

GND NC3

Line-3 NC4

CJ=0.2pF, GESD0524SP-C,  
ESD-10P-2P5MX1M-2

[illegible]

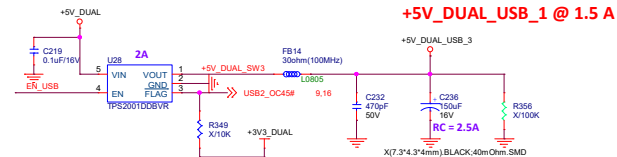
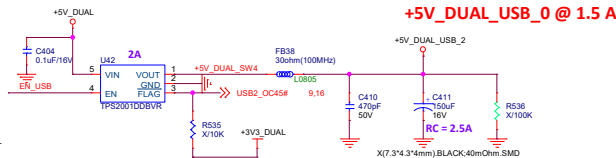
Pin connection diagram for the CN LAN1\_USB1B module. The module has two main headers: H02 on the left and H03 on the right. H02 pins are: GND-1, GND-2, U1-3, U1-4, VBUS-5, VBUS-6, USB-7, USB-8, USB-9, USB-10, USB-11, USB-12, USB-13, USB-14, USB-15, USB-16, USB-17, USB-18, USB-19, USB-20, USB-21, USB-22, USB-23, USB-24, USB-25, USB-26, USB-27, USB-28, USB-29, USB-30, USB-31, USB-32, USB-33, USB-34, USB-35, USB-36, USB-37, USB-38, USB-39, USB-40, USB-41, USB-42, USB-43, USB-44, USB-45, USB-46, USB-47, USB-48, USB-49, USB-50, USB-51, USB-52, USB-53, USB-54, USB-55, USB-56, USB-57, USB-58, USB-59, USB-60, USB-61, USB-62, USB-63, USB-64, USB-65, USB-66, USB-67, USB-68, USB-69, USB-70, USB-71, USB-72, USB-73, USB-74, USB-75, USB-76, USB-77, USB-78, USB-79, USB-80, USB-81, USB-82, USB-83, USB-84, USB-85, USB-86, USB-87, USB-88, USB-89, USB-90, USB-91, USB-92, USB-93, USB-94, USB-95, USB-96, USB-97, USB-98, USB-99, USB-100. H03 pins are: GND-1, GND-2, U1-3, U1-4, VBUS-5, VBUS-6, USB-7, USB-8, USB-9, USB-10, USB-11, USB-12, USB-13, USB-14, USB-15, USB-16, USB-17, USB-18, USB-19, USB-20, USB-21, USB-22, USB-23, USB-24, USB-25, USB-26, USB-27, USB-28, USB-29, USB-30, USB-31, USB-32, USB-33, USB-34, USB-35, USB-36, USB-37, USB-38, USB-39, USB-40, USB-41, USB-42, USB-43, USB-44, USB-45, USB-46, USB-47, USB-48, USB-49, USB-50, USB-51, USB-52, USB-53, USB-54, USB-55, USB-56, USB-57, USB-58, USB-59, USB-60, USB-61, USB-62, USB-63, USB-64, USB-65, USB-66, USB-67, USB-68, USB-69, USB-70, USB-71, USB-72, USB-73, USB-74, USB-75, USB-76, USB-77, USB-78, USB-79, USB-80, USB-81, USB-82, USB-83, USB-84, USB-85, USB-86, USB-87, USB-88, USB-89, USB-90, USB-91, USB-92, USB-93, USB-94, USB-95, USB-96, USB-97, USB-98, USB-99, USB-100. The diagram shows connections for +5V\_DUAL\_USB\_0 and +5V\_DUAL\_USB\_1. The module is labeled CN LAN1\_USB1B and is connected to a 3P-300-RUP-C0-027 connector.



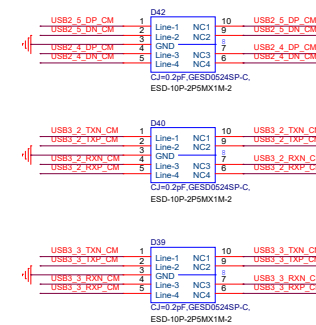
Title		
LAN1 with USB3.1		
Size	Document Number	Rev:
Custom	ECB-960A	A0.1_0_0
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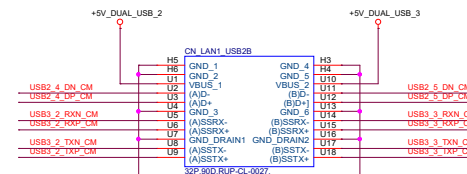
**Total: +5V\_DUAL @ 3A**



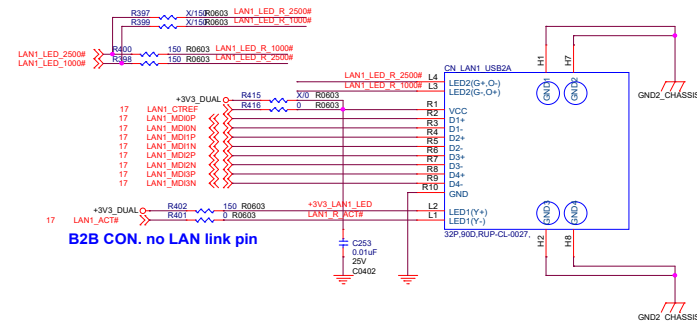
Change alternative part from 130505ESD0 to 1305Q00022



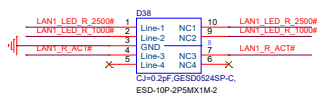
Two USB3.2 GEN2



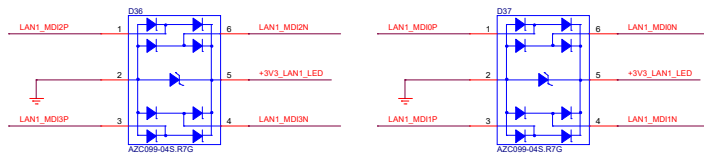
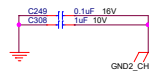
## LAN 2.5G CON.



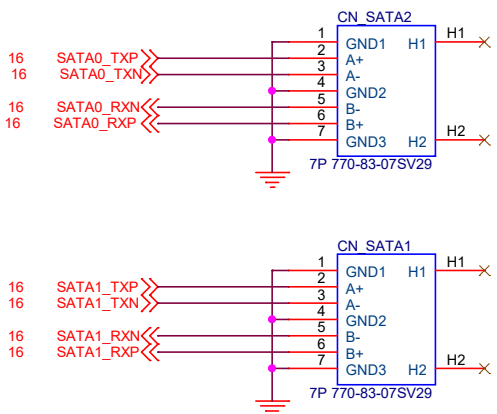
B2B CON. no LAN link pin



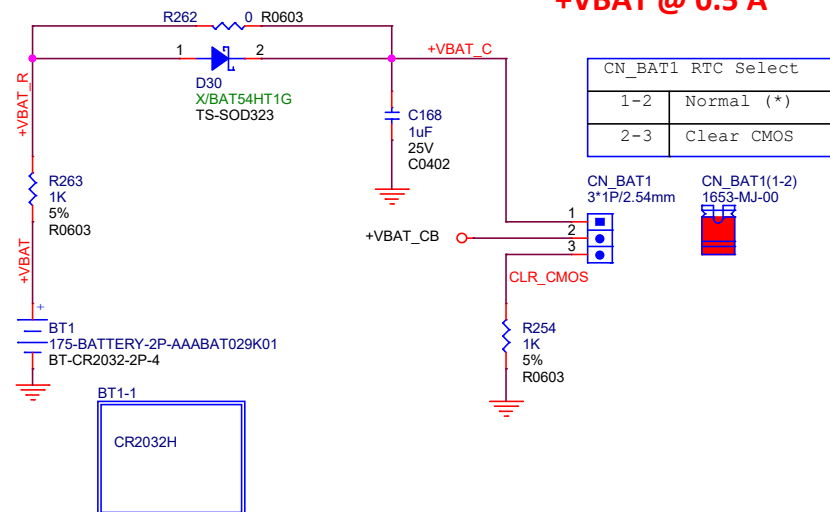
**Change alternative part from 130505ESD0 to 1305Q00022**



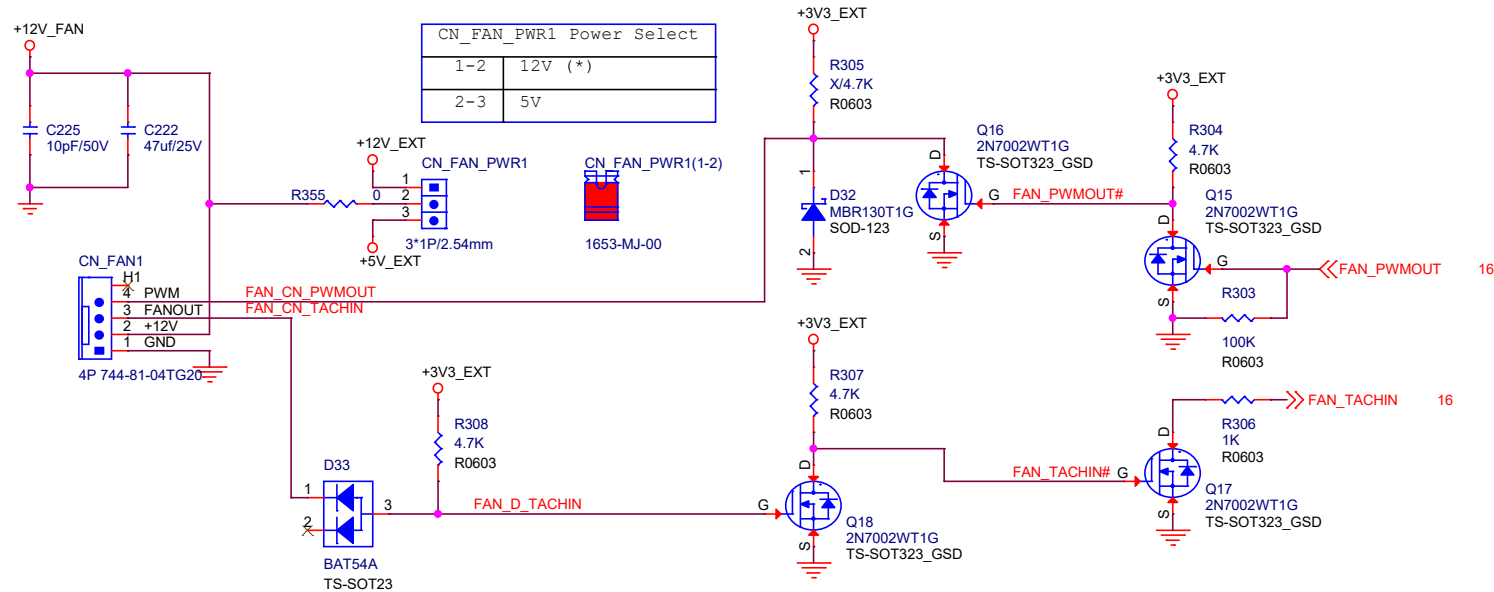
**SATA CON.**



RTCBAT



## PWM FAN Control

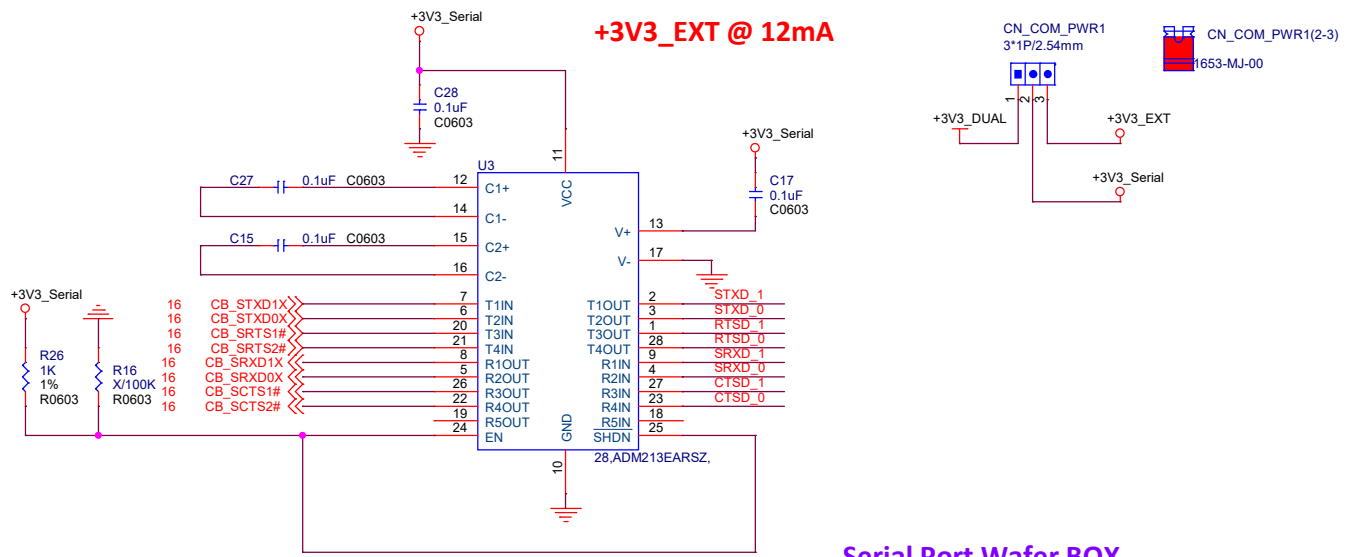


<Variant Name>

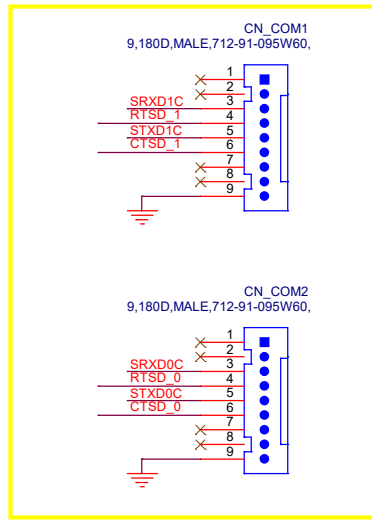
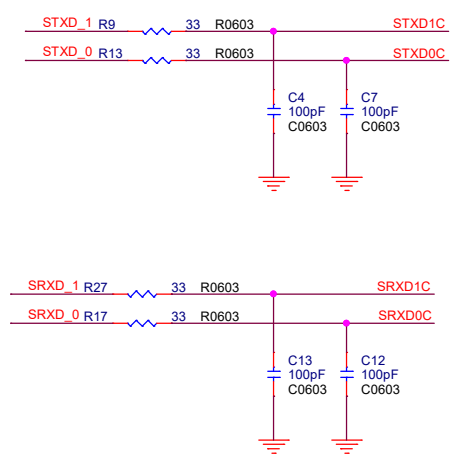


Title <b>SATA/RTC/FAN</b>		
Size Custom	Document Number <b>ECB-980A</b>	Rev: <b>A0.1_0_0</b>
Date: <i>Thursday, April 28, 2022</i>		Sheet: <b>10</b> of <b>24</b>

# Serial Port



Serial Port Wafer BOX  
Change alternative part from 1655909034 to 1655X00025.



For Loop back use

CN3 3\*1P/2.54mm

CN11 COM Port Mode

1-2	Loopback Mode (*)
2-3	X

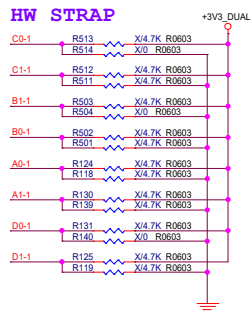
For Loop back use

CN4 3\*1P/2.54mm

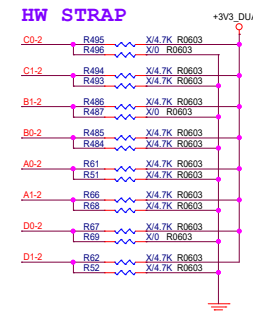
CN13 COM Port Mode

1-2	Loopback Mode (*)
2-3	X

## +3V3\_DUAL @ 0.225 A

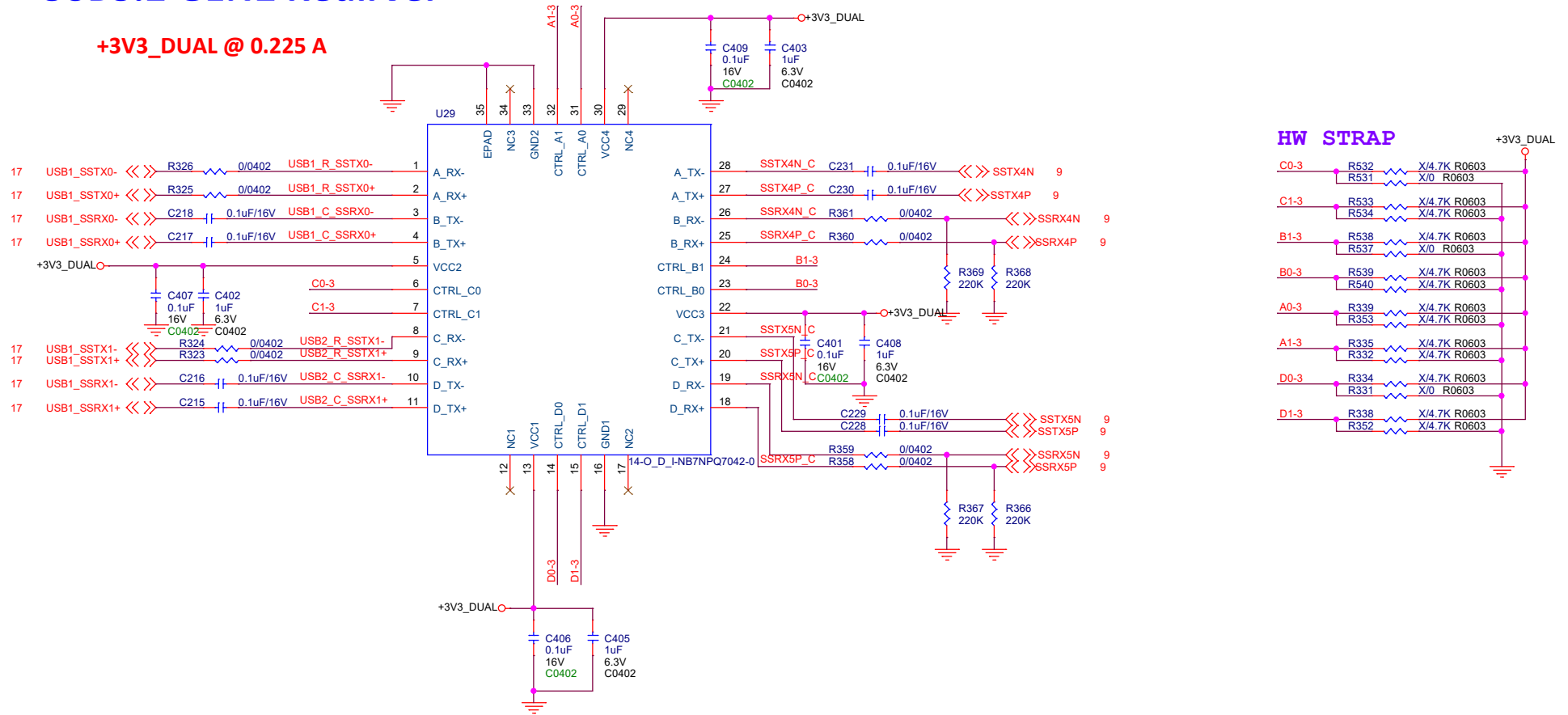


## +3V3\_DUAL @ 0.225 A



# USB3.2 GEN2 Redirver

+3V3\_DUAL @ 0.225 A



<Variant Name>

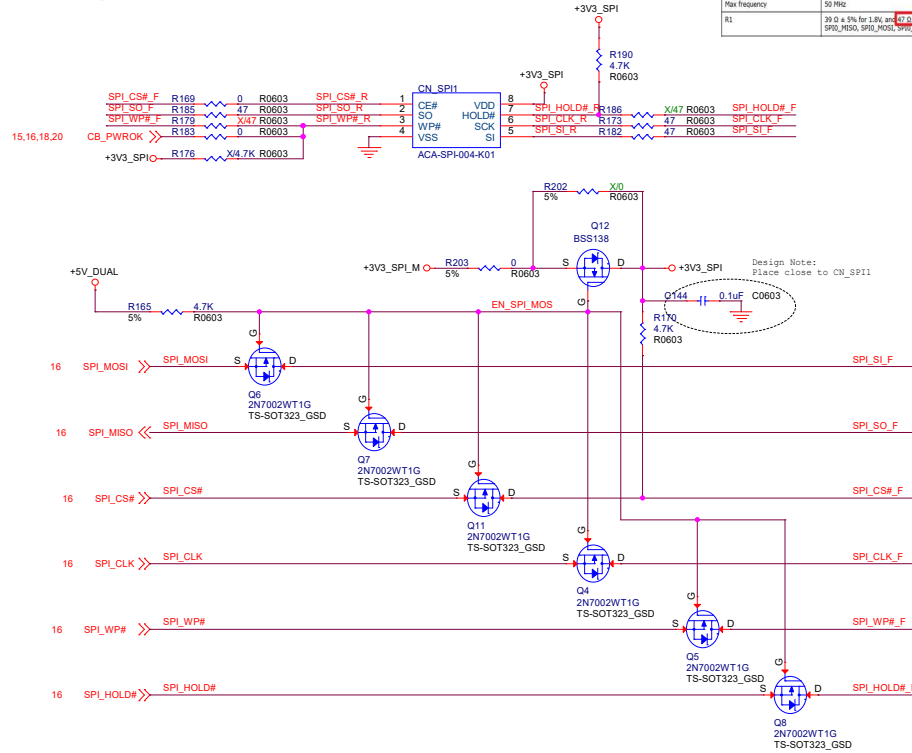


Title <b>USB3.1 GEN2 Redriver</b>		
Size B	Document Number <b>ECB-980A</b>	Rev: <b>A0.1_0_0</b>
Date: Thursday, April 28, 2022		Sheet: 13 of 24

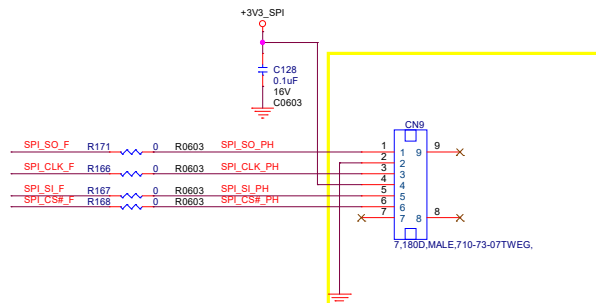
# SPI

Table 543. 3-Load Branch Topology (Device Down) MAF Notes

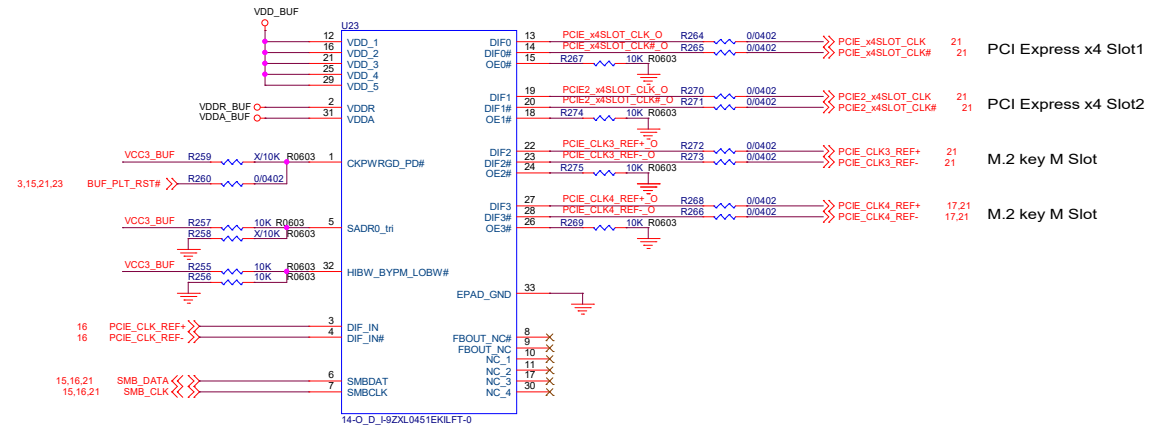
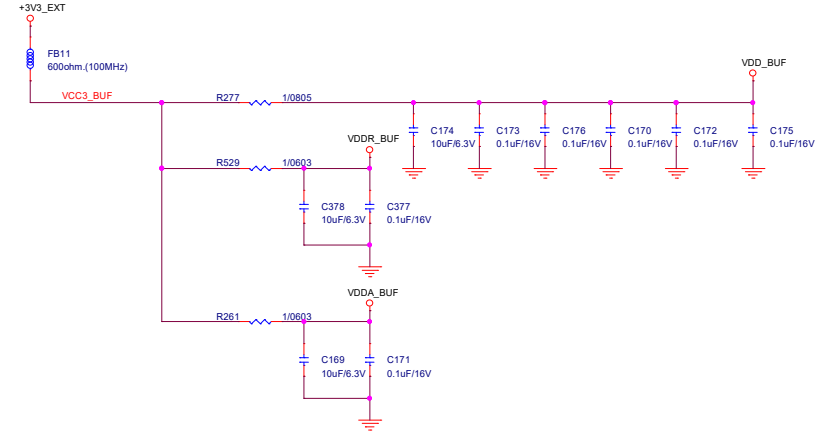
Note	Detail
Number of vias allowed	5
Reference plane	Continuous ground only
Max frequency	50 MHz
R1	39 Ω ± 5% for 1.8V and 47 Ω ± 5% for 3.3V to be placed on SPI0_CLK, SPI0_MISO, SPI0_MOSI, SPI0_SS and SPI0_CS



## SPI pin header



Change alternative part from 1655807030 to 1655X00032.

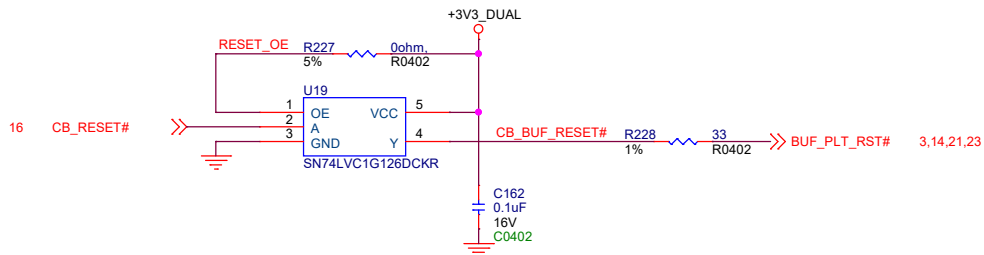


<Variant Name>

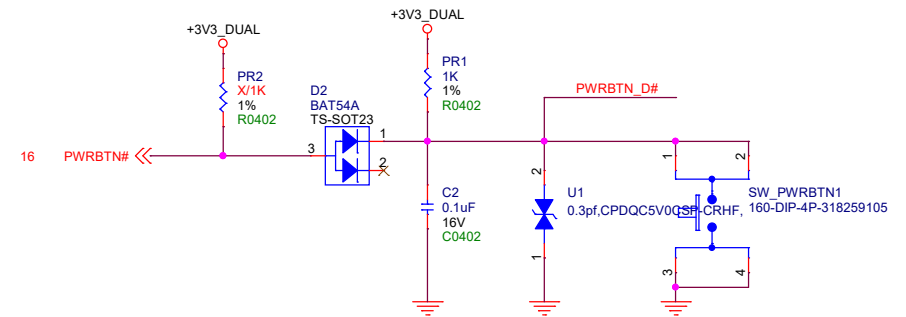
Title		SPL Clock buffer	
Size	Document Number	Rev:	A0.1_0_0
Custom	ECB-980A	Date: Thursday, April 28, 2022	Sheet: 14 of 24



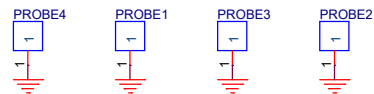
## PLT\_RST#



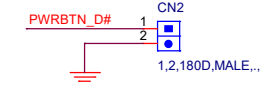
## POWER BUTTON



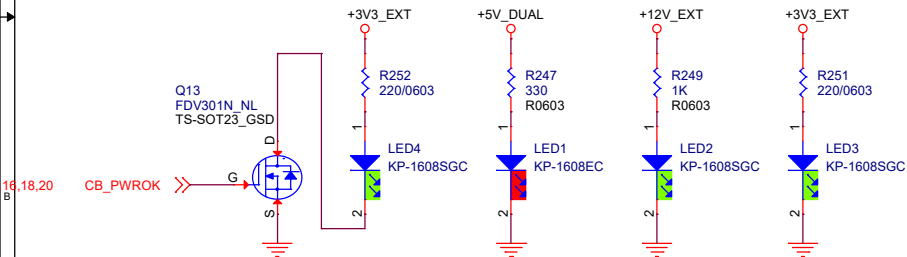
## GND Probes



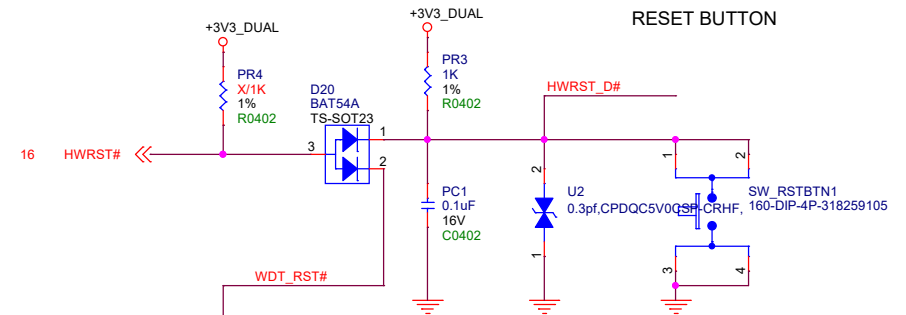
## PWR BTN PIN HEADER



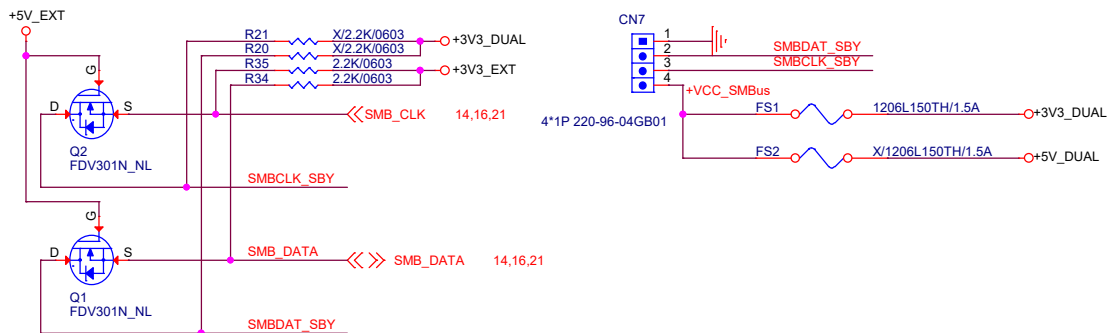
## POWER LED



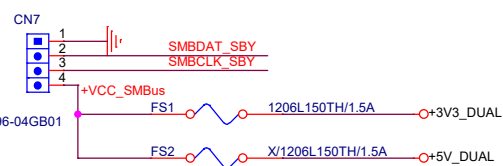
## RESET BUTTON



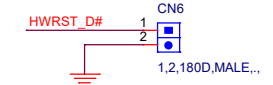
## SMBUS



## SMBUS Pin Header



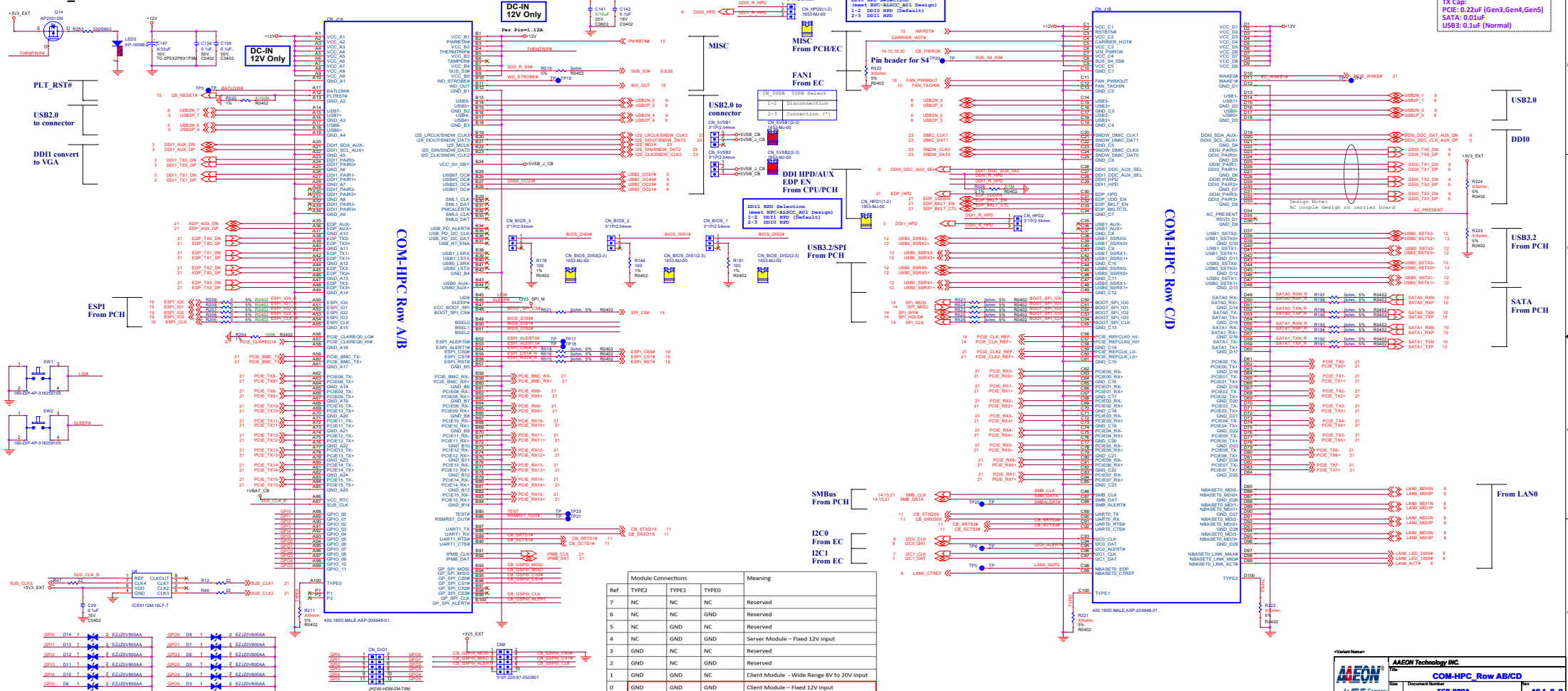
## RESET PIN HEADER



<Variant Name>



Title <b>BUTTON/PLRST/LED/SMBUS</b>		
Size B	Document Number <b>ECB-980A</b>	Rev: <b>A0.1_0_0</b>
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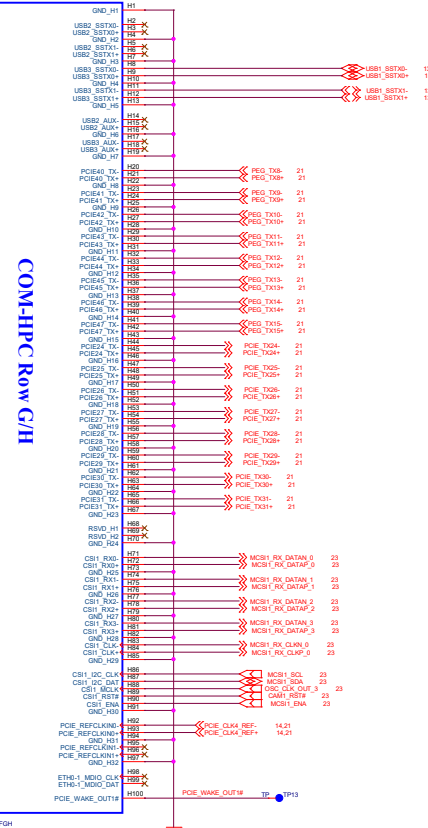
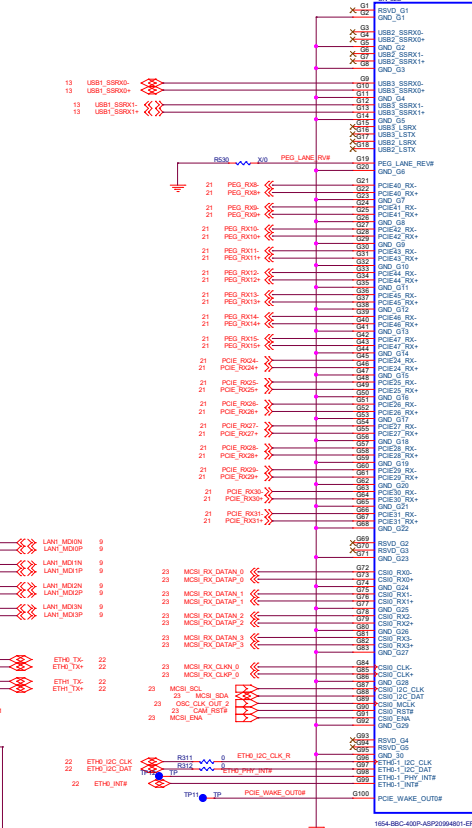
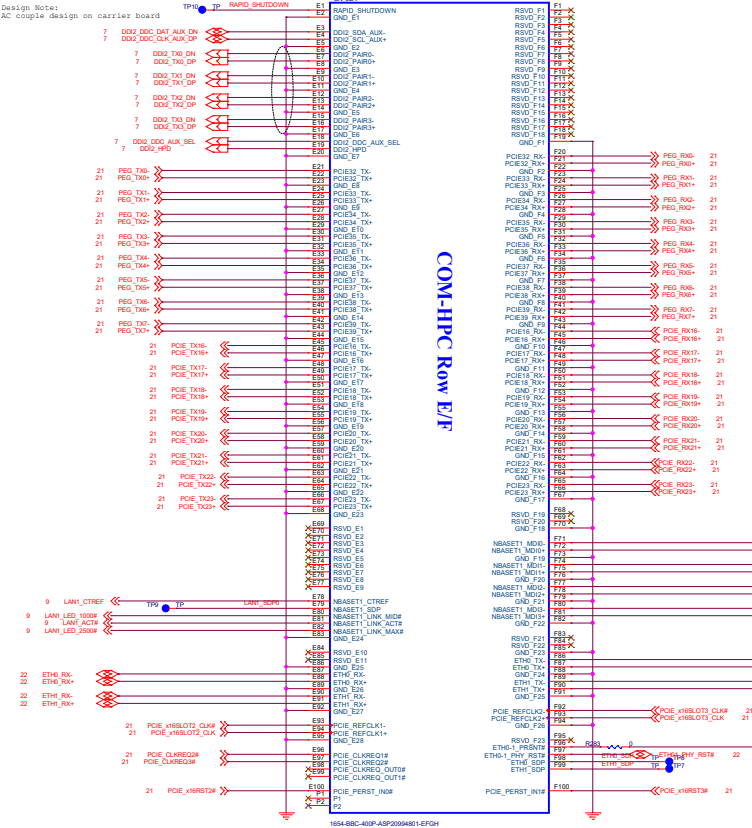


Module Connections				Meaning
Ref	TYPE2	TYPE1	TYPE0	
7	NC	NC	NC	Reserved
6	NC	NC	GND	Reserved
5	NC	GND	NC	Reserved
4	NC	GND	GND	Server Module – Fixed 12V input
3	GND	NC	NC	Reserved
2	GND	NC	GND	Reserved
1	GND	GND	NC	Client Module - Wide Range 8V to 20V input
0	GND	GND	GND	Client Module – Fixed 12V input

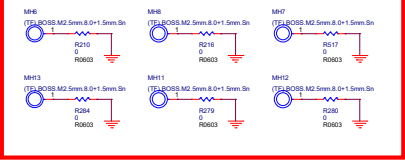


COM-HPC\_Row EF/GH

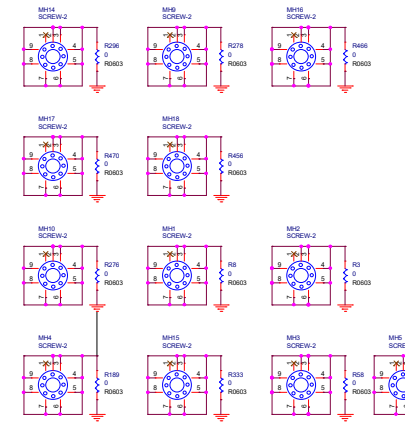
Design Note:  
AC couple design on carrier board



Skew Stud



Skew Hole



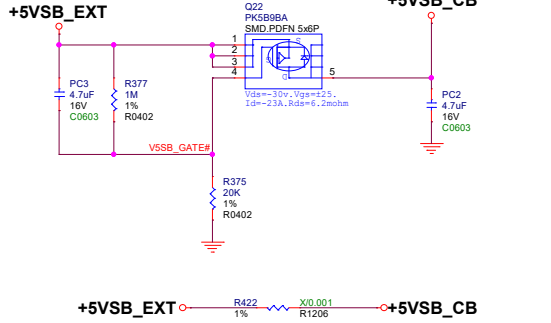
PCB P/N



AAEON Technology INC.	
Doc No.	COM-HPC_Row EF/GH
Doc Name	ECB-980A
Rev	A0.1_0_0
Date	Thursday, April 28, 2022
Drawn	17
Checked	24

## +5SB Soft stat

**+5VSB @ 2A**

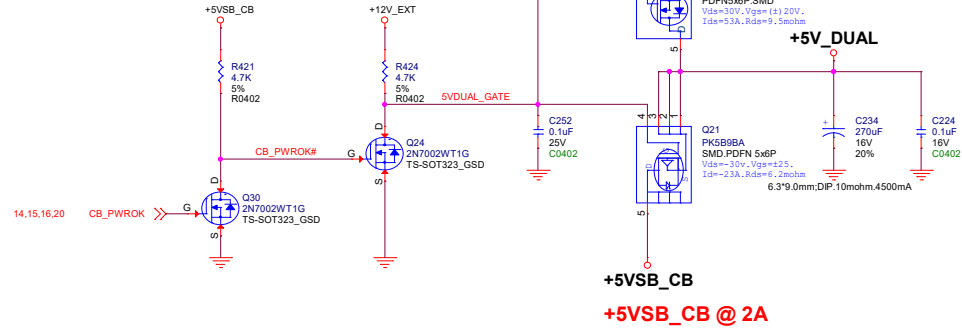


## +5V\_DUAL

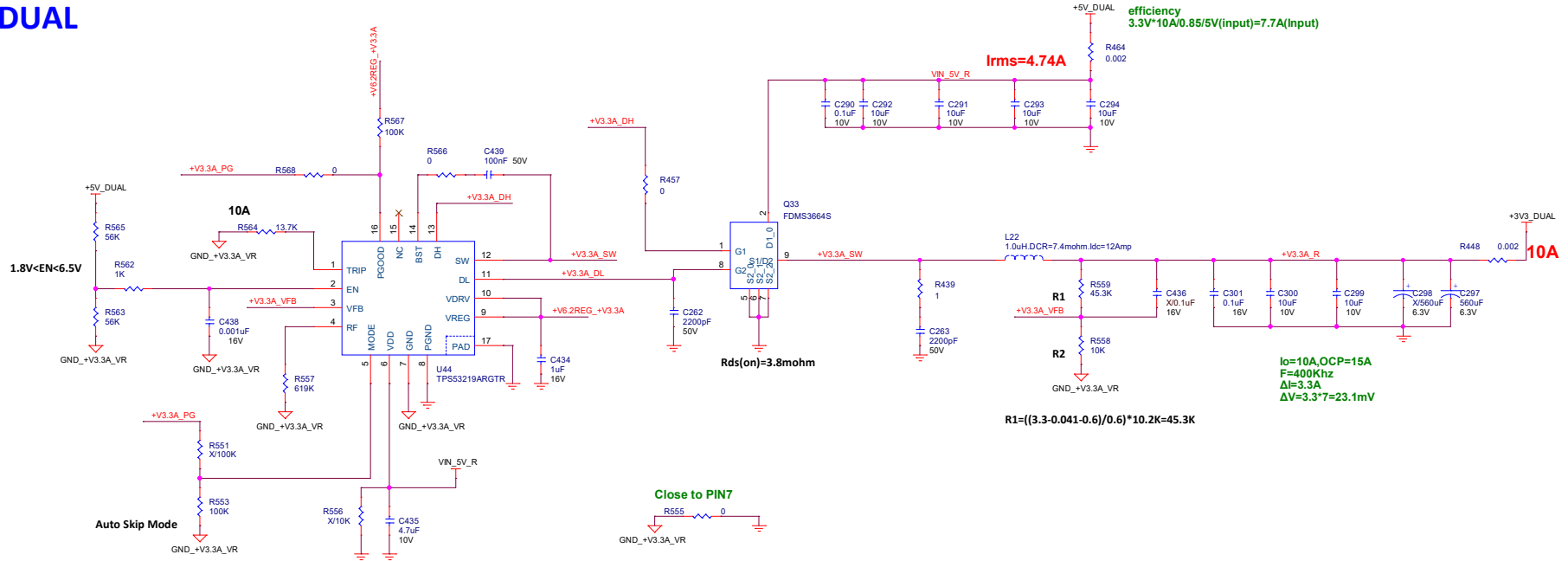
**+5V\_EXT @ Max. 18A / Min. 1.1A**

**+5V\_EXT**

**+5V\_DUAL @ Max. 18A / Min. 1.1A**



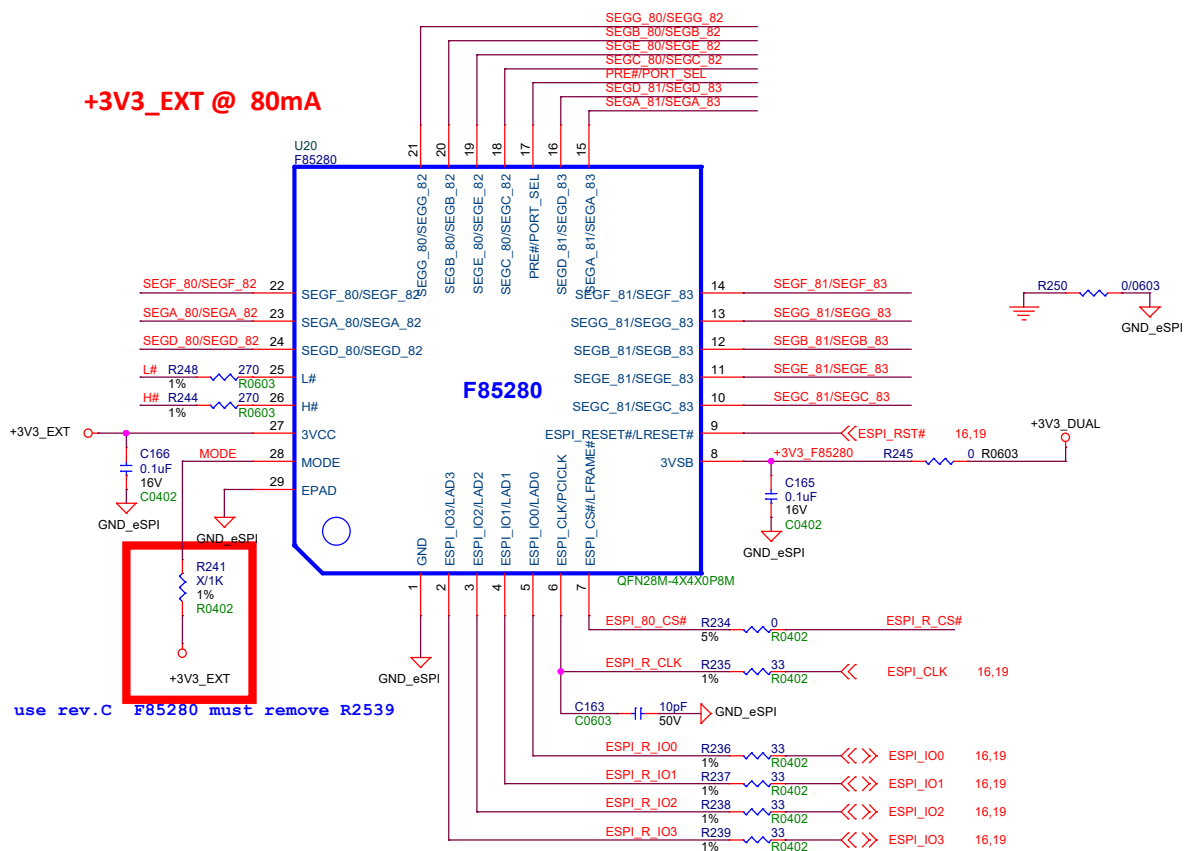
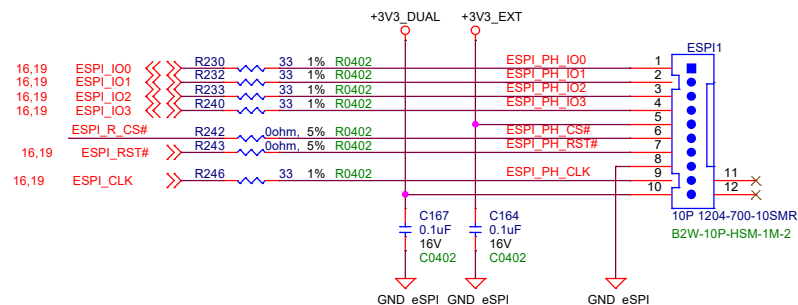
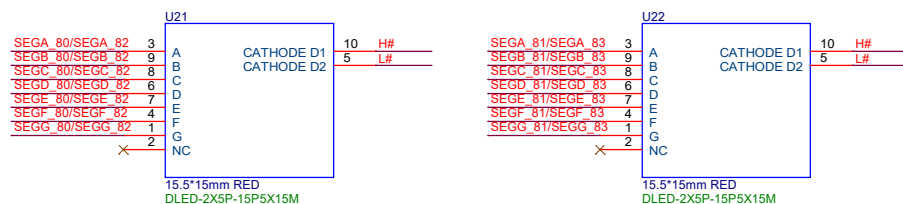
## +3V3\_DUAL



<Variant Name>

<b>AMEON</b> an ASUS ASSOC. CO.		Title <b>+3V3_DUAL &amp; +5V_DUAL</b>	
Size Custom	Document Number ECB-980A	Rev: A0.1_0_0	
Date: Thursday, April 28, 2022		Sheet: 18 of 24	

## BIOS POST code with eSPI



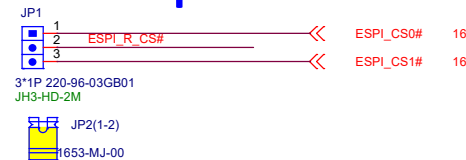
## eSPI Connector

## Port Selection



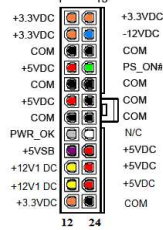
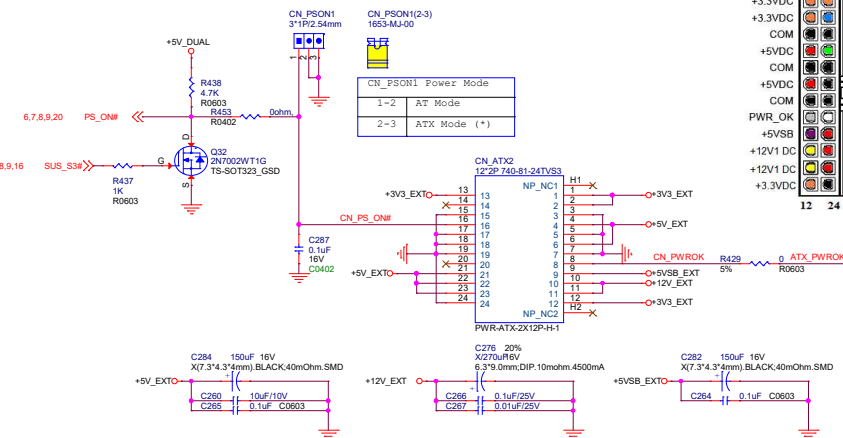
JP1 Port 80 Select	
1-2	82/83 Port
2-3	80/81 Port (*)

## eSPI Chip Selection

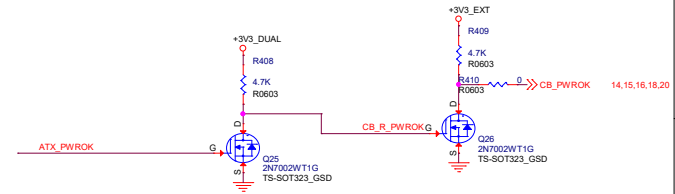
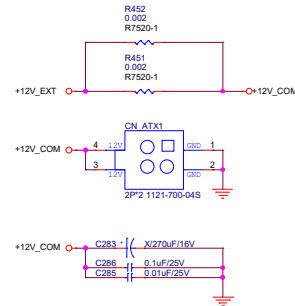


JP2	Function
1-2	ESPI_CS0#
2-3 (Default)	ESPI_CS1#

## ATX12V POWER

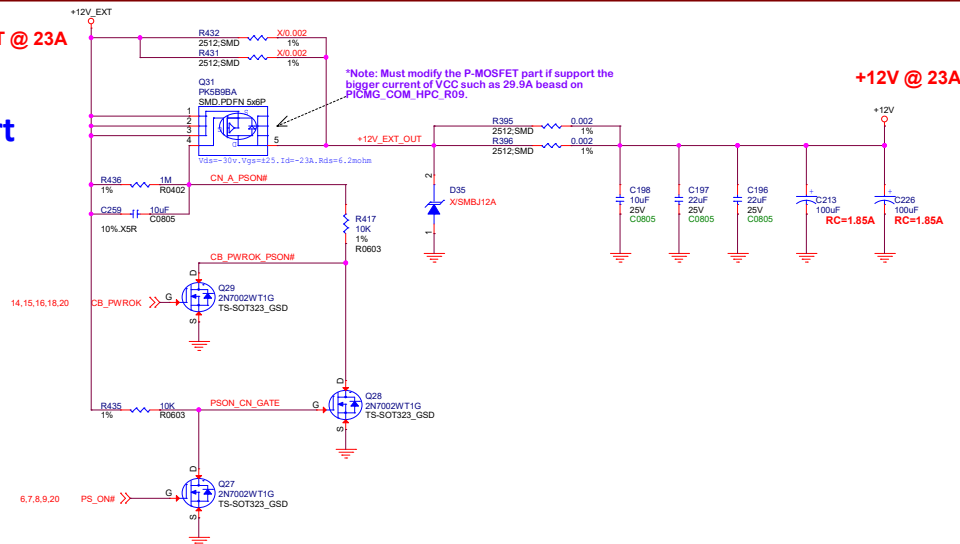


**+12V\_COM @ 16A**

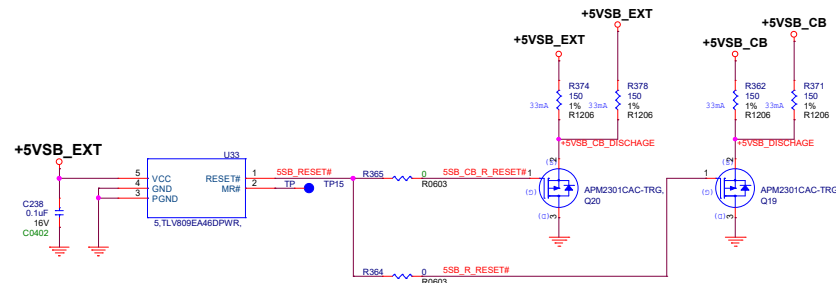
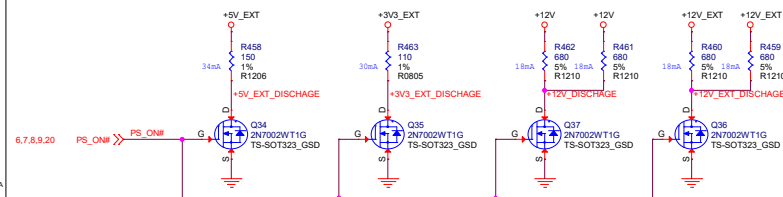


## +12V\_EXT Soft start

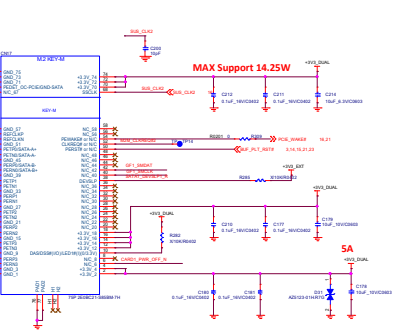
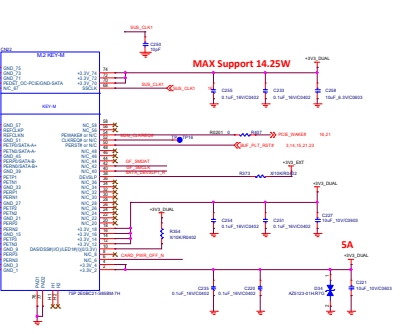
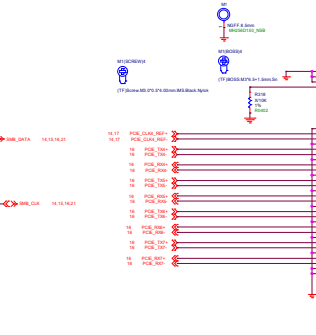
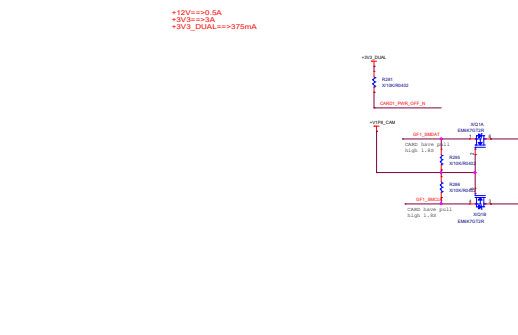
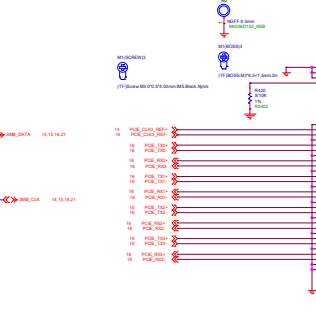
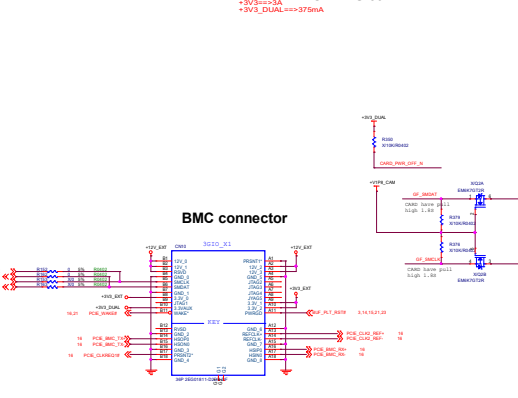
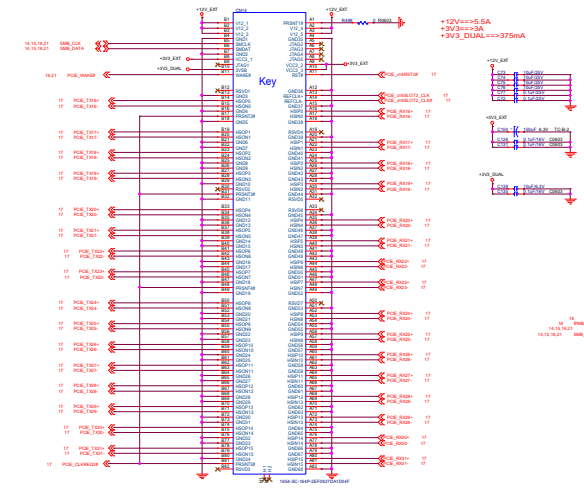
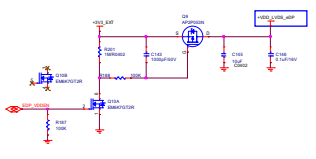
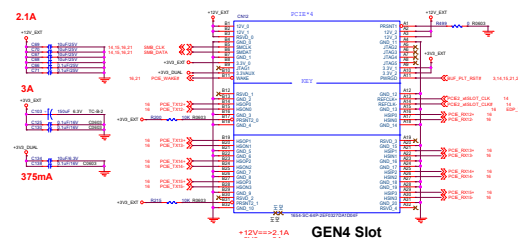
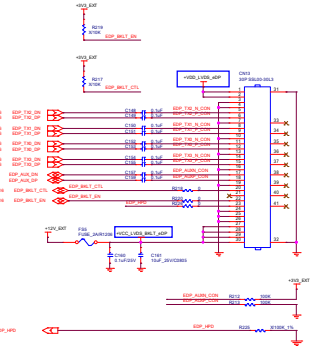
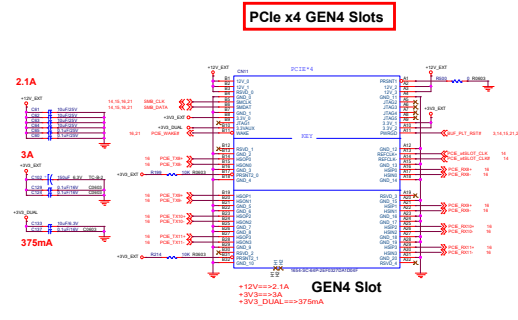
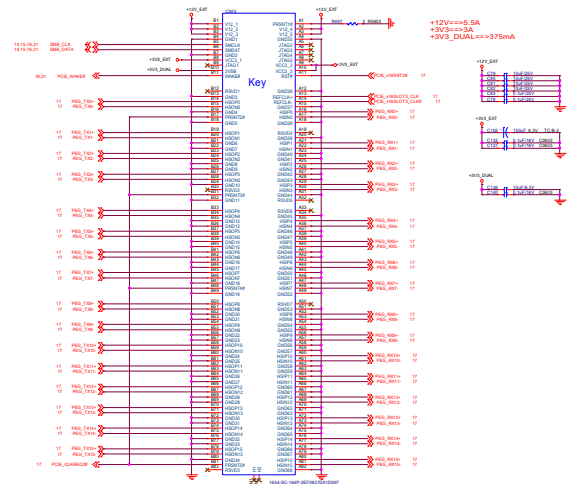
**+12V\_EXT @ 23A**



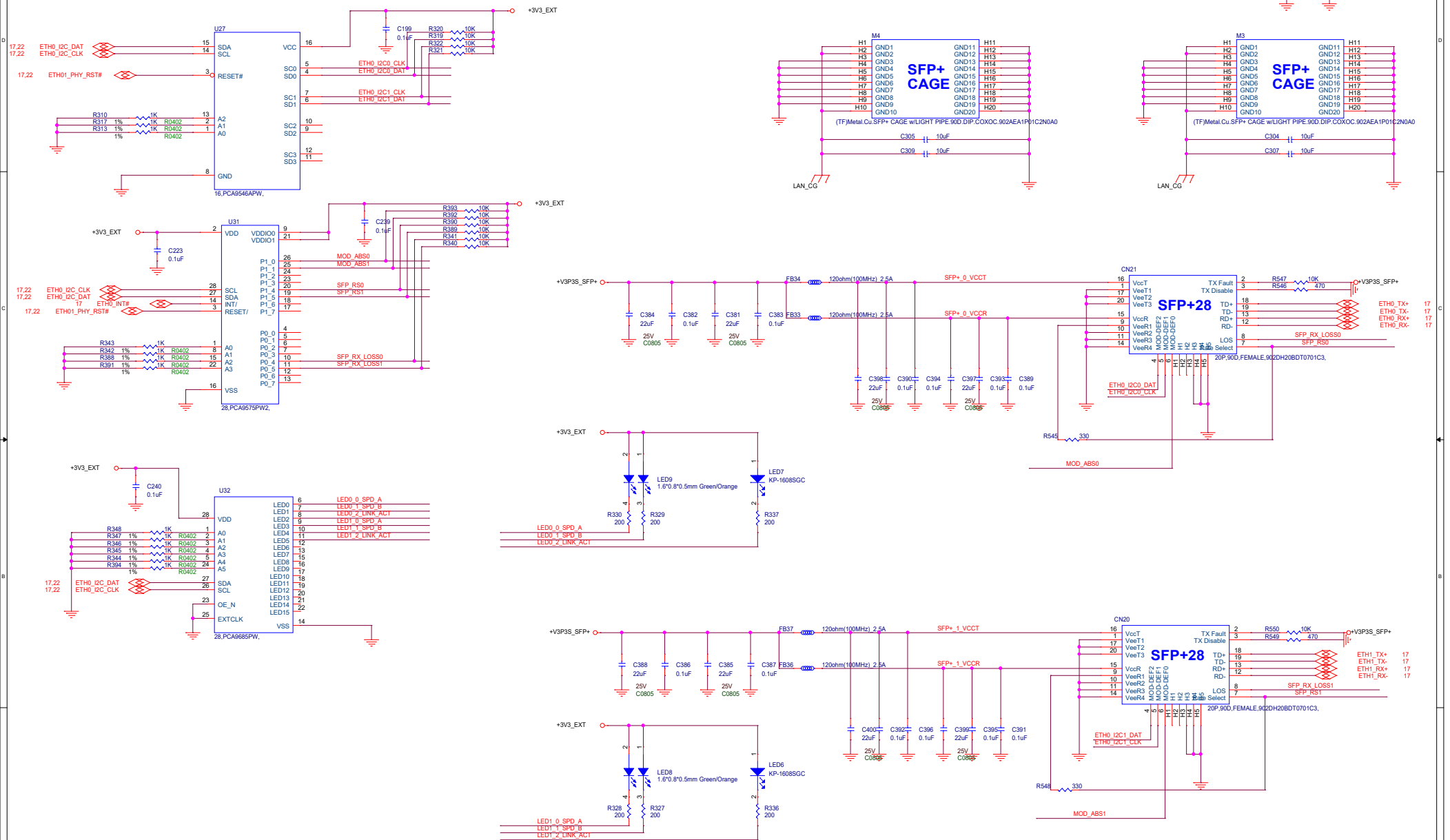
## PWR Discharge



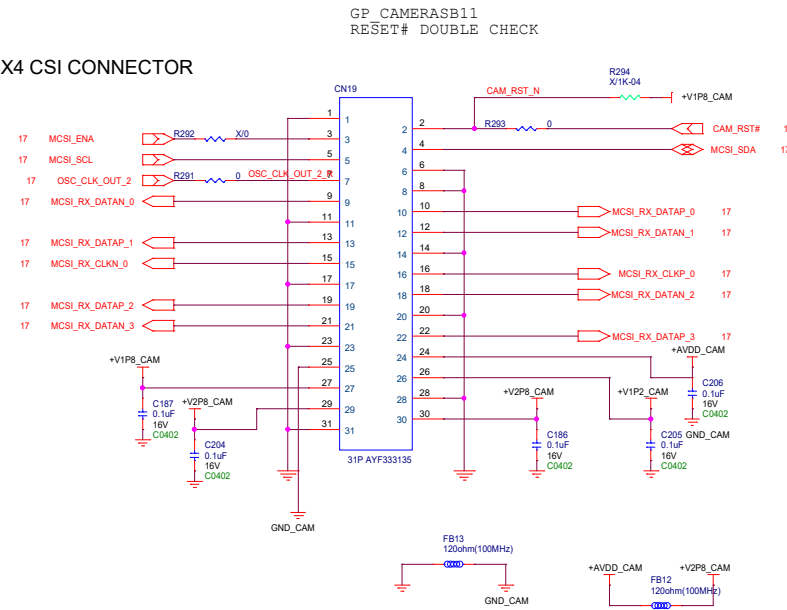
<Variant Name>



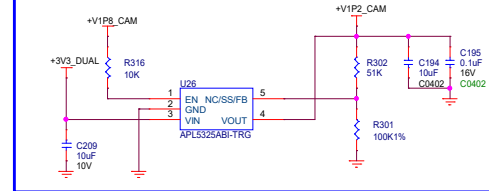
### INTEL.C827-AM1FCBGA.169P(Option)?



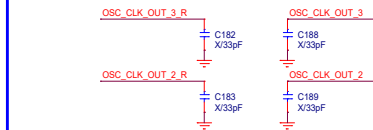
## MIPI X4 CSI CONNECTOR



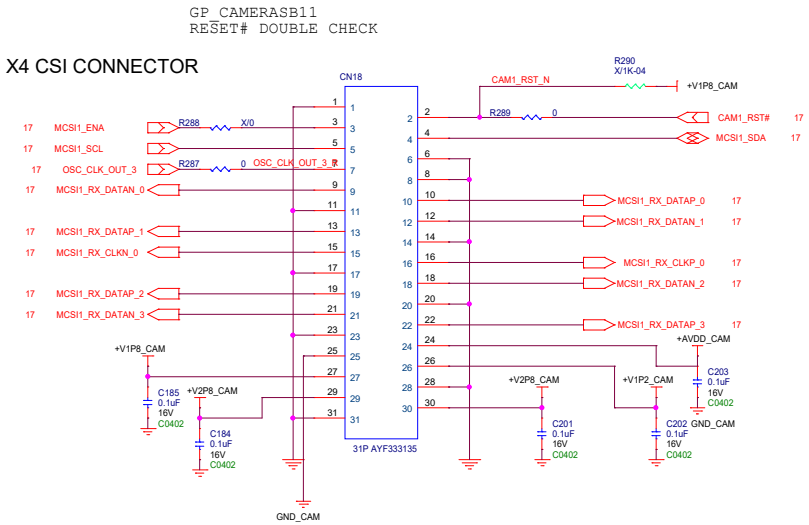
### +V1P2\_CAM



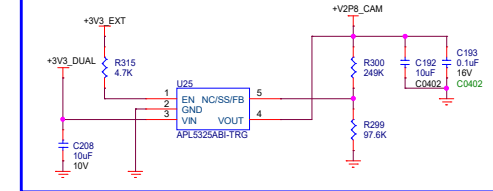
### Reserved for OSC Clock Filter (Close to Connector)



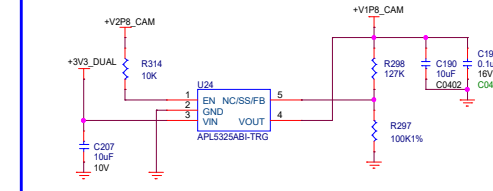
## MIPI X4 CSI CONNECTOR



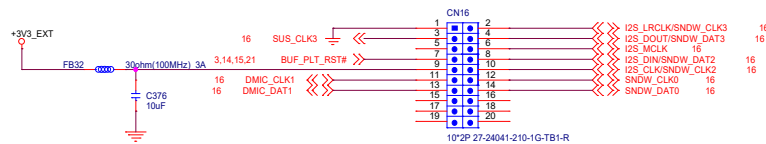
### +V2P8\_CAM



### +V1P8\_CAM



## SNDW/I2S header



<Variant Name>

AAEON Technology INC.			
Title			
CSI. SNDW/I2S header			
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ECB-980A A0.1\_0\_0 PCB: 1907980A00 Date: 2022/03/25

01. Project code:  
02. Model name: ECB-980A  
03. Model revision: A0.1\_0\_0  
04. 96-Level: 9697  
05. PCB 料號: 1907980A00  
06. PCB 厚度: 1.6 mm  
07. PCB 層數: 8 Layer  
08. 連板數量: 2 pcs

### Revision History

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[illegible]