

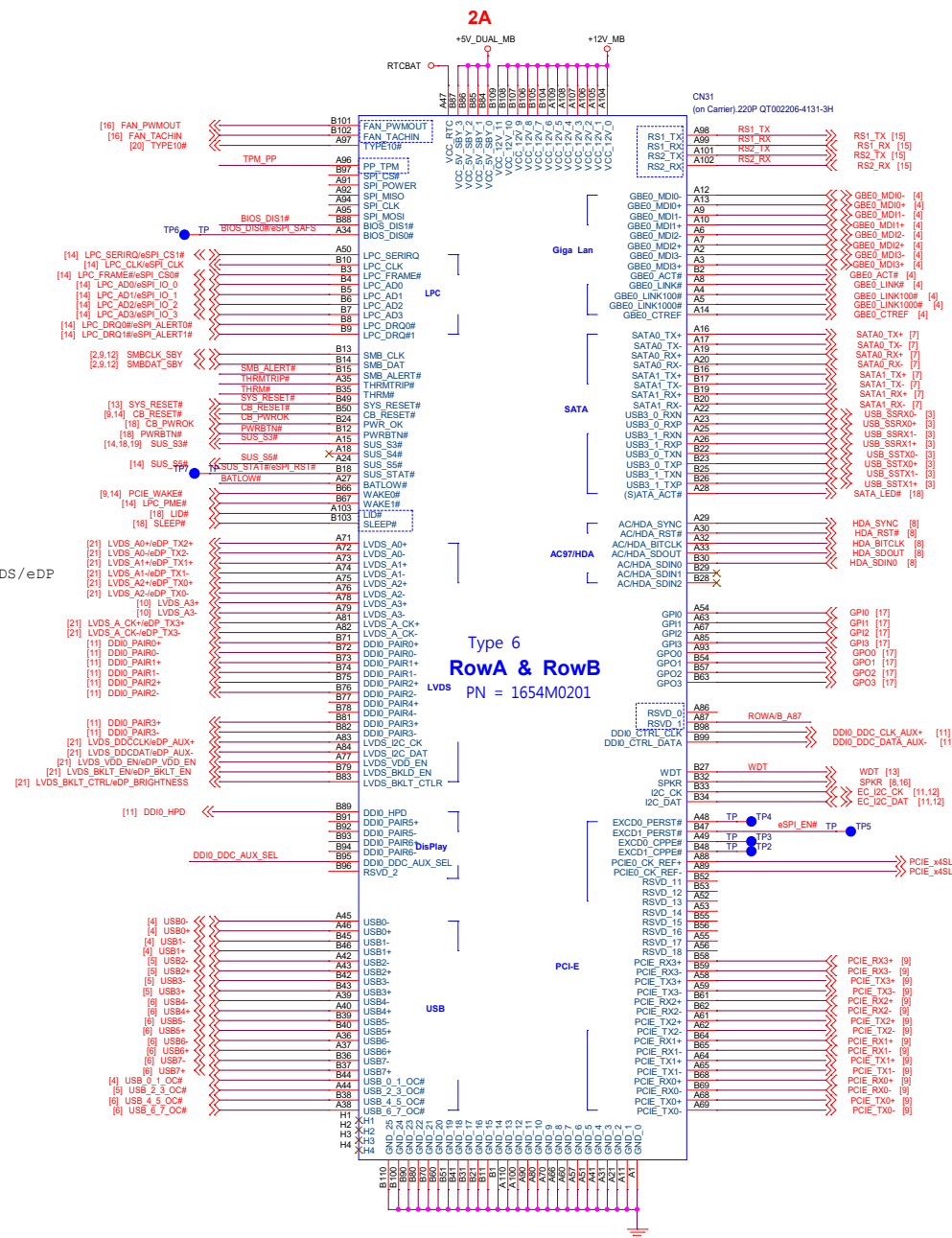
Page	Index
1	Cover Page
2	ROW A/B
3	USB3.1 GEN2 Redriver
4	LAN with USB3.1
5	USB2.0
6	USB2.0_1
7	SATA
8	Audio
9	PCIe x4 Slots
10	LVDS
11	DP 1.4_Redriver & DP
12	CANBUS / SMBUS / I2C
13	RESET + PWROK
14	SIO Card SLOT
15	Serial port
16	SPI + Buzzer + FAN + RTC
17	DIO/ Micro SD
18	ATX Power + Front Panel
19	+5V_DUAL / +3V3_DUAL
20	+12V / +5V / +3V3
21	eDP+eDP/LVDS Switch

For design reference only

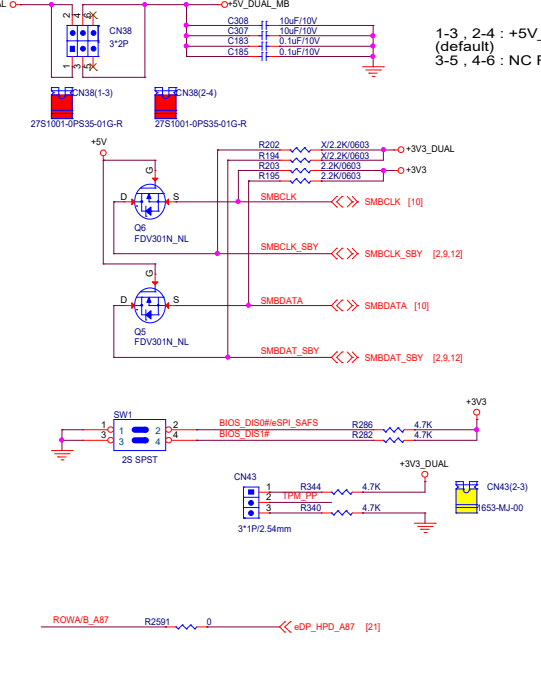
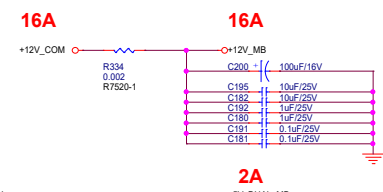
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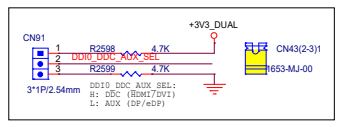
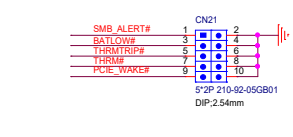
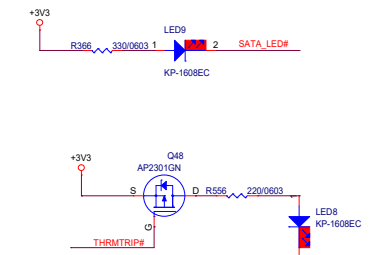
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Size B	Document Number ECB-920A	Rev: A1.1_0_0
Date: Thursday, March 16, 2023		Sheet: 1 of 21



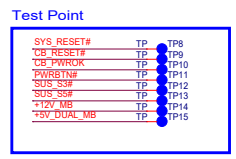
Power Rail	Module Pin	Nominal Input	Input Range	Derated Input	Max Input Ripple	Max Module Input Power (w. derated input)	Assumed Conversion Efficiency	Max Load Power
	(Amps)	(Volts)	(Volts)	(Volts)	(mV)	(Watts)		(Watts)
VCC_12V	12	12	11.4 - 12.6	11.4	+/- 100	137	85%	116
VCC_5V_SBY	2	5	4.75 - 5.25	4.75	+/- 50	9		
VCC_RTC	0.5	3	2.0 - 3.3		+/- 20			

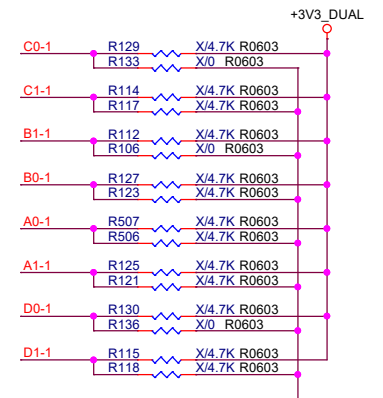
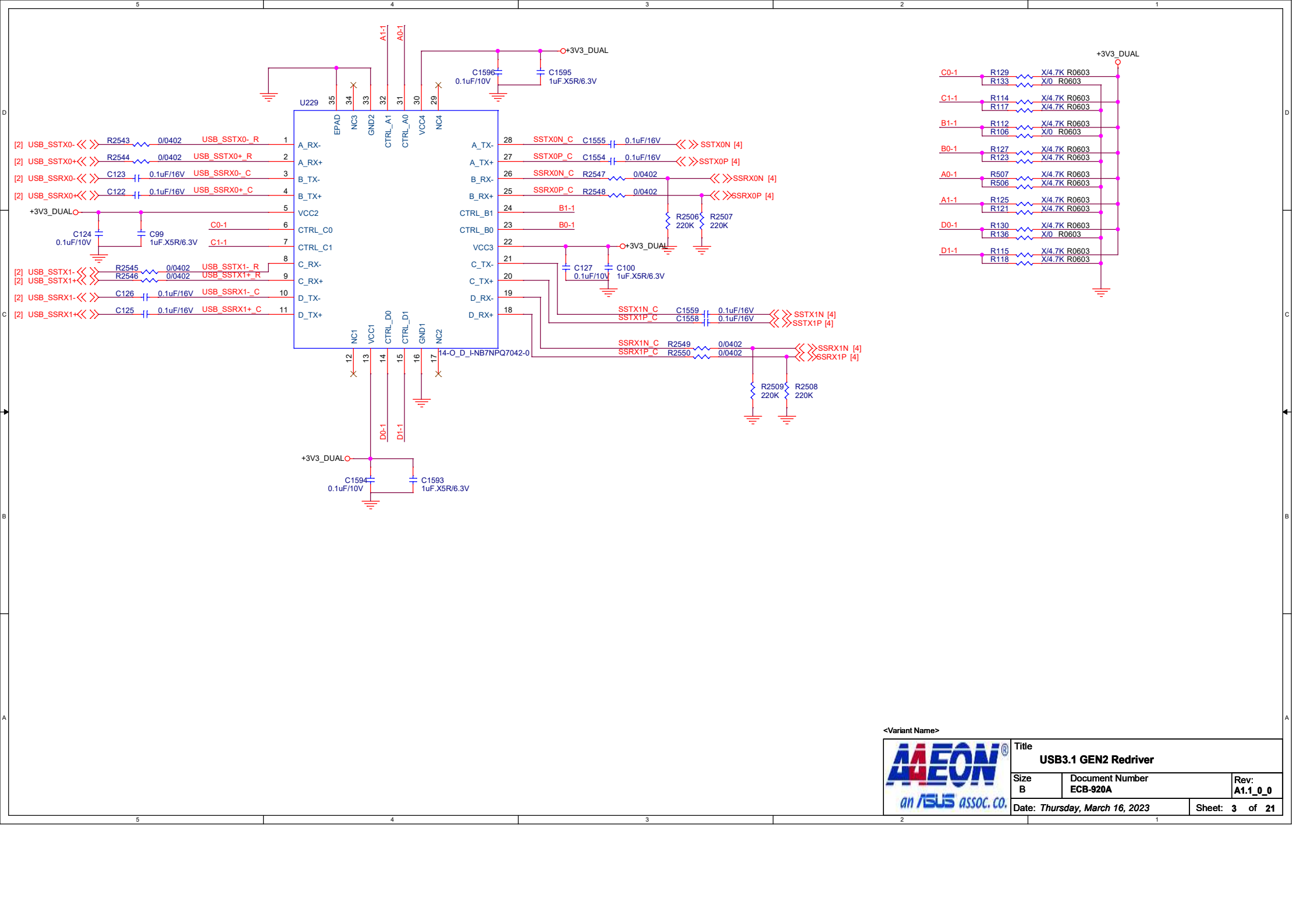


1-3, 2-4 : +5V\_DUAL For ATX Power (default)  
3-5, 4-6 : NC For AT Power




COM Express® Signal	SD card interface signals
GPIO0	SD_DATA0
GPIO1	SD_DATA1
GPIO2	SD_DATA2
GPIO3	SD_DATA3
GPO0	SD_CLK
GPO1	SD_CMD
GPO2	SD_WP
GPO3	SD_CD#

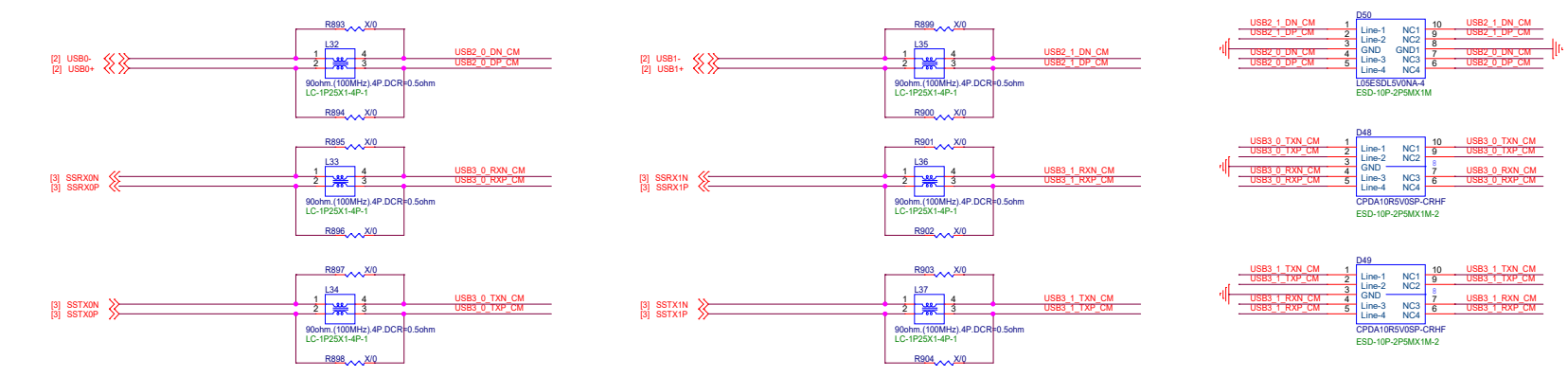
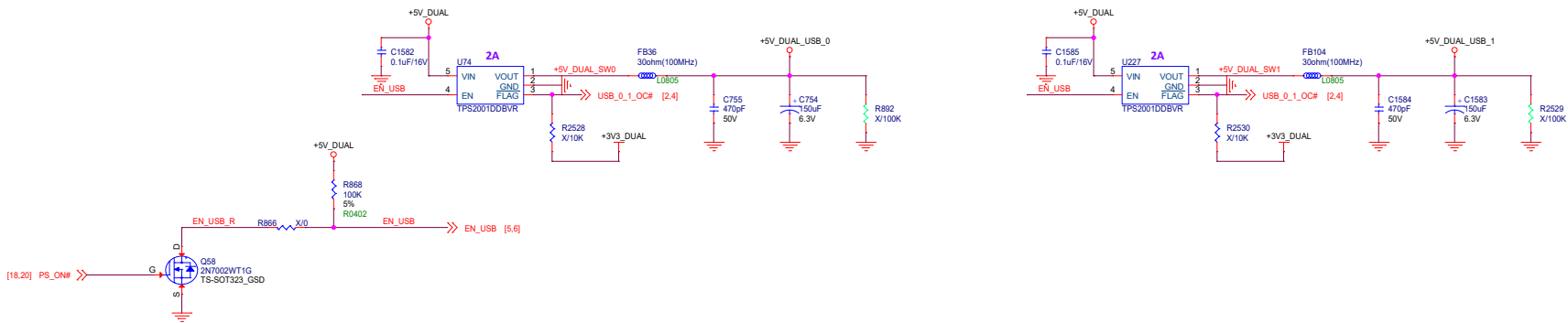




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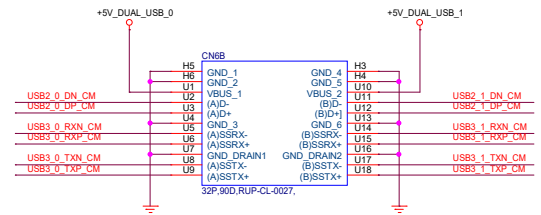
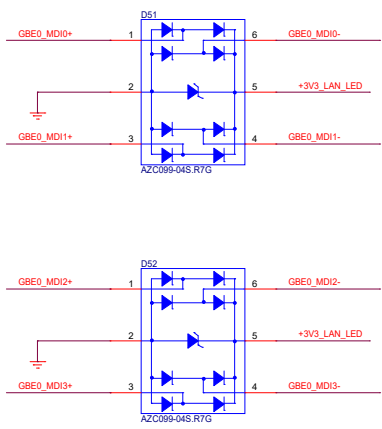
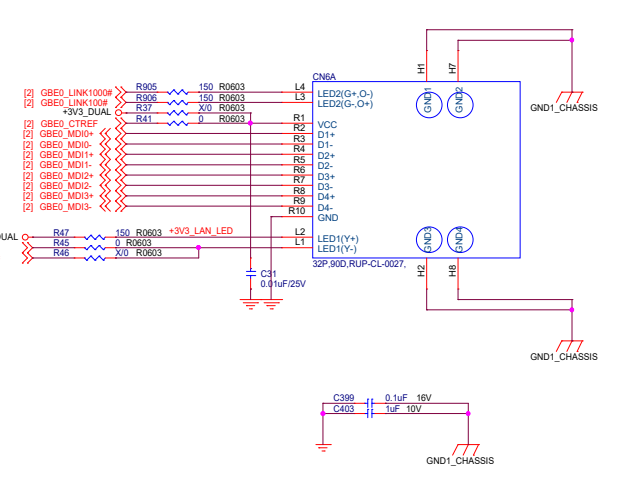
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Size	Document Number	Rev:	
B	ECB-920A	A1.1_0_0	
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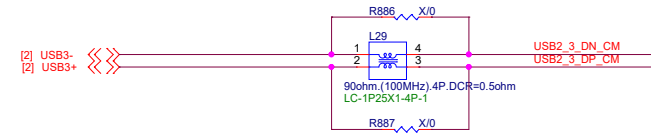
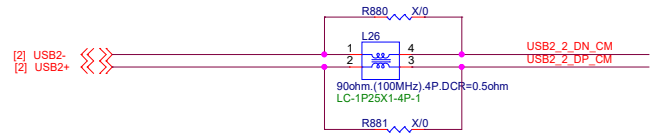
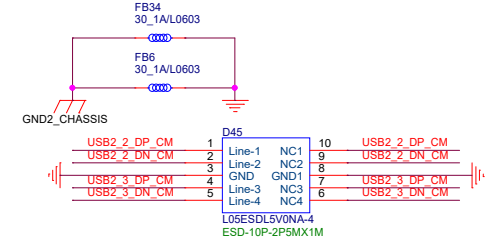
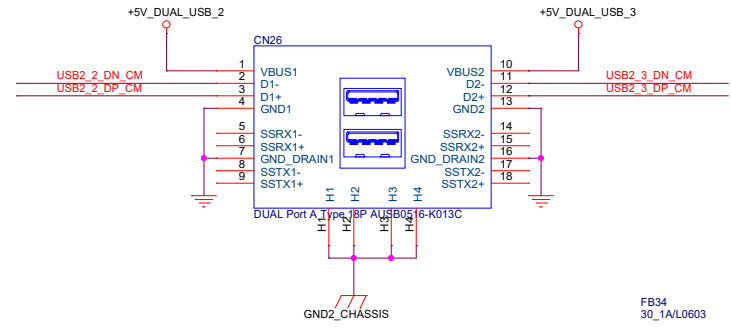
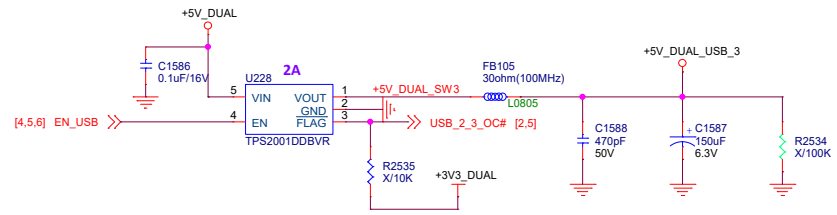
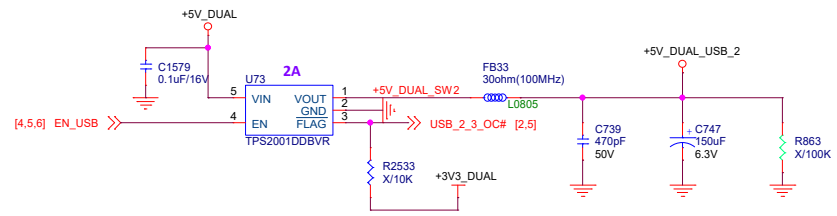
# LAN & USB 3.1



## Upgrade to 2.5G LAN

## Upgrade to USB3.2 GEN2



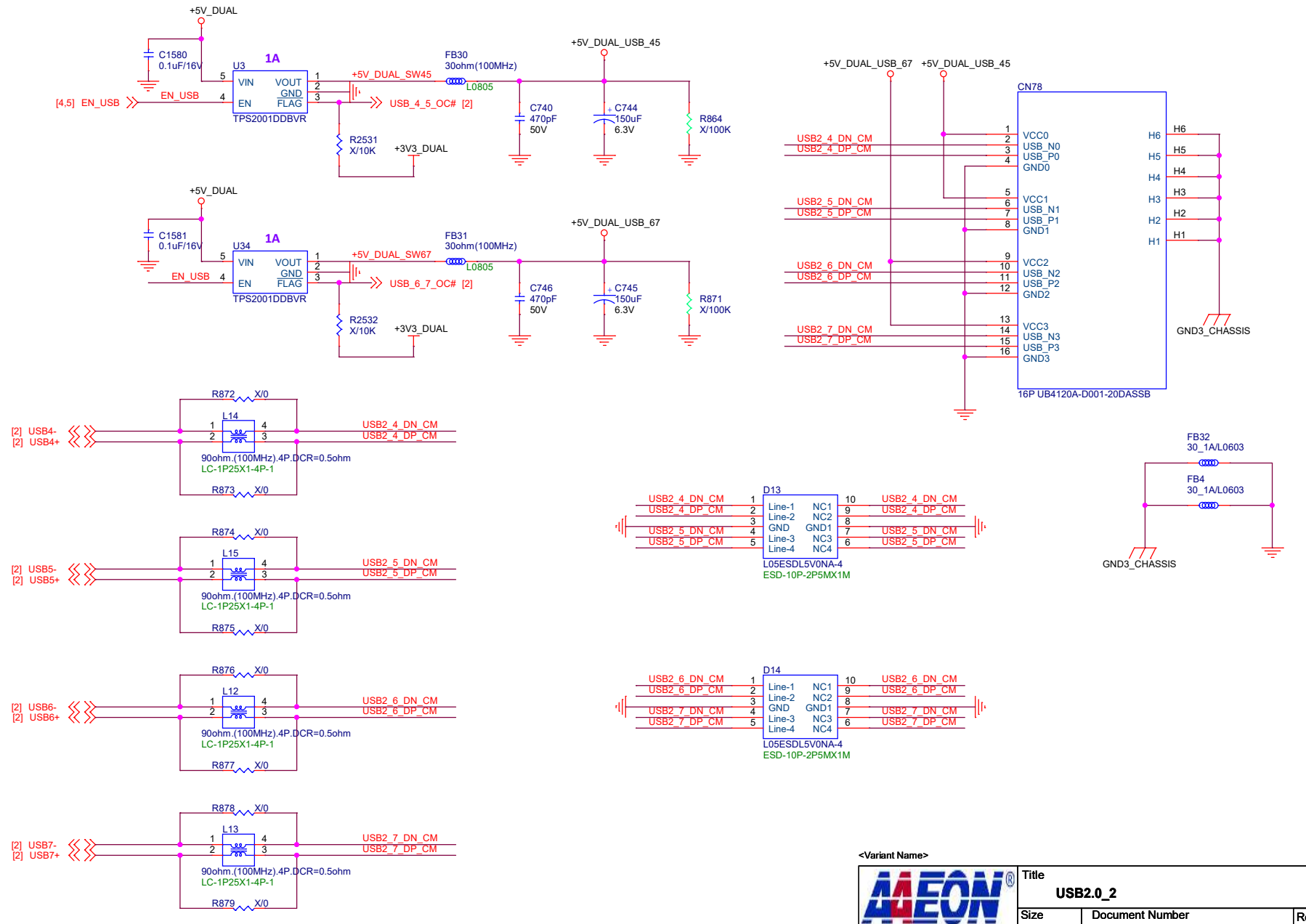


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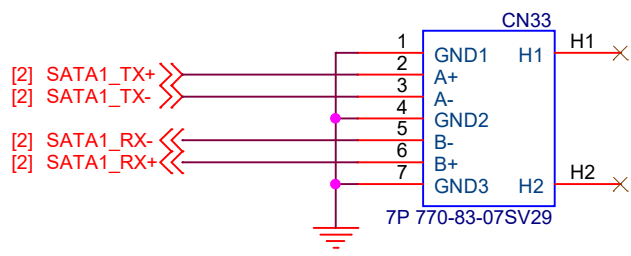
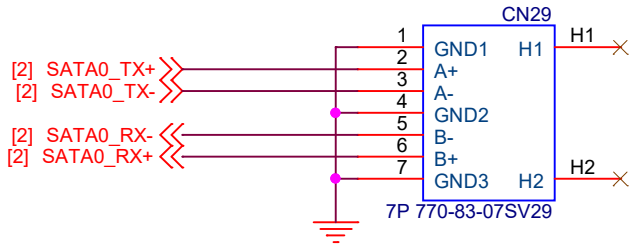
Title <b>USB2.0</b>		Rev: <b>A1.1_0_0</b>
Size Custom	Document Number <b>ECB-920A</b>	Date: <b>Thursday, March 16, 2023</b>
Sheet: <b>5</b> of <b>21</b>		

# USB 2.0



<Variant Name>

		Title	
		USB2.0_2	
Size	Document Number	Rev:	
B	ECB-920A	A1.1_0_0	
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<Variant Name>



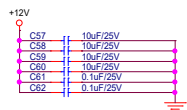
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Size A	Document Number <b>ECB-920A</b>	Rev: <b>A1.1_0_0</b>
Date: <i>Thursday, March 16, 2023</i>		Sheet: <b>7</b> of <b>21</b>



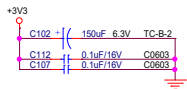


# PCIe x4 GEN4 Slots

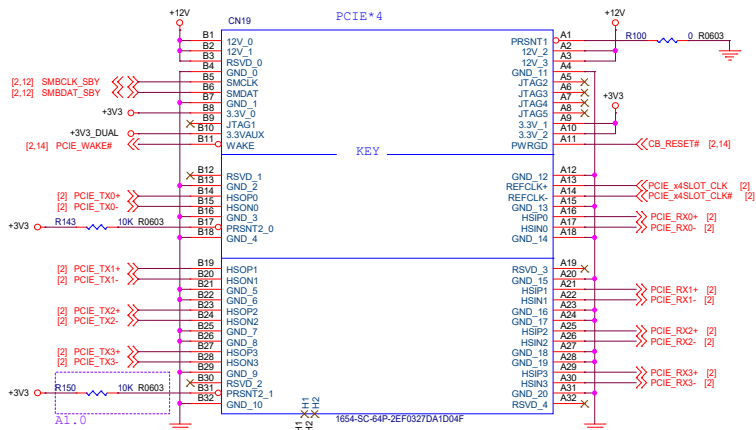
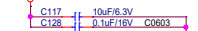
## 2.1A



## 3A



## 375mA




**GEN4 Slot**  
 +12V==>2.1A  
 +3V3==>3A  
 +3V3\_DUAL==>375mA

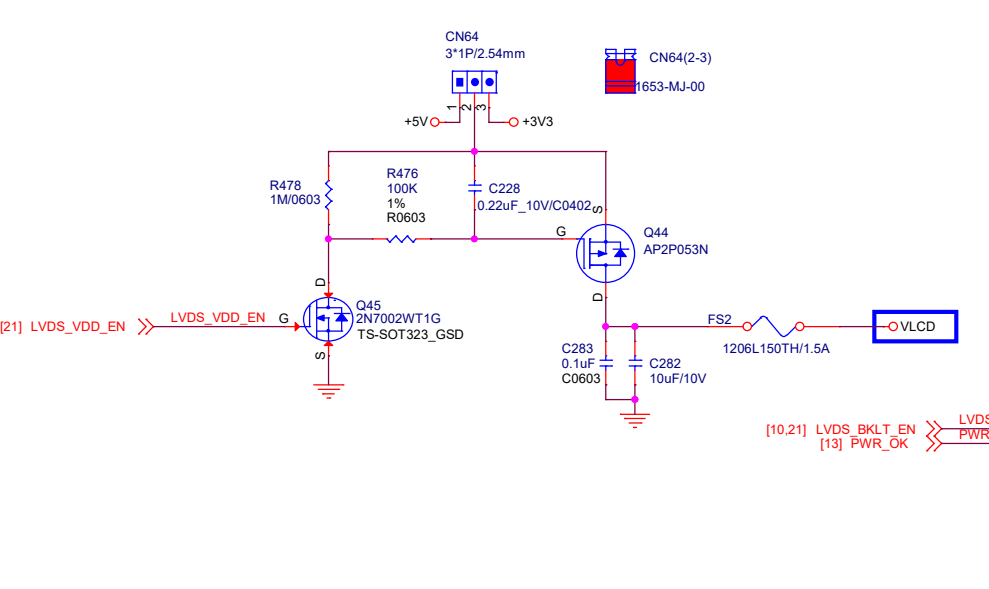
	X1		x4/x8	x16	
Standard height	10 W <sup>1</sup> (max)	25 W <sup>1</sup> (max)	25 W (max)	25 W <sup>2</sup> (max)	75 W <sup>2,4</sup> (max)
Low profile card <sup>3</sup>	10 W (max)		25 W (max)	25 W (max)	

Power Rail	10 W Slot	25 W Slot	75 W Slot
<b>+3.3V</b>			
Voltage tolerance	± 9% (max)	± 9% (max)	± 9% (max)
Supply Current	3.0 A (max)	3.0 A (max)	3.0 A (max)
Capacitive Load	1000 $\mu$ F (max)	1000 $\mu$ F (max)	1000 $\mu$ F (max)
<b>+12V</b>			
Voltage tolerance	± 8%	± 8%	± 8%
Supply Current	0.5 A	2.1 A (max)	5.5 A (max)
Capacitive Load	300 $\mu$ F (max)	1000 $\mu$ F (max)	2000 $\mu$ F (max)
<b>+3.3Vaux</b>			
Voltage tolerance	± 9% (max)	± 9% (max)	± 9% (max)
Supply Current			
Wakeup Enabled	375 mA (max)	375 mA (max)	375 mA (max)
Non-wakeup Enabled	20 mA (max)	20 mA (max)	20 mA (max)
Capacitive Load	150 $\mu$ F (max)	150 $\mu$ F (max)	150 $\mu$ F (max)

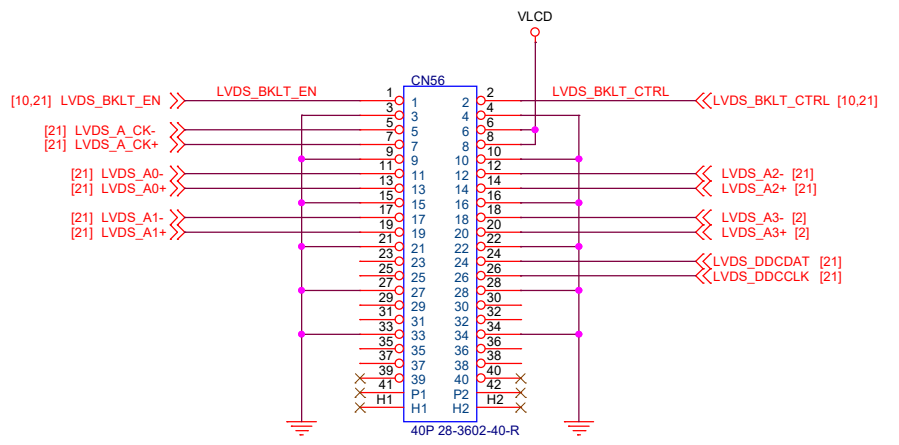
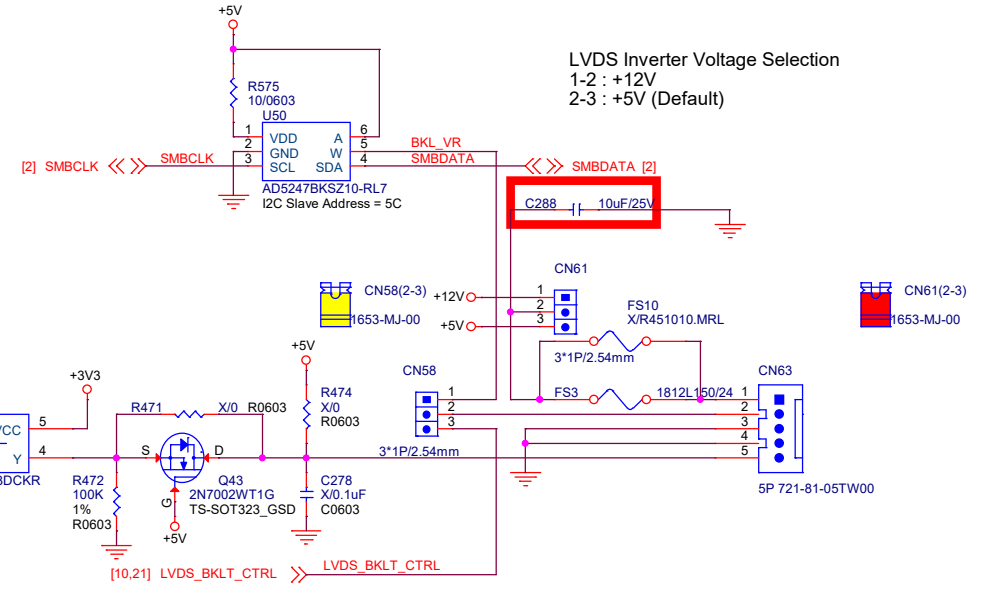
<Variant Name>

		Title <b>PCIe x4 Slots</b>	
		Size C	Document Number <b>ECB-920A</b>
Date: Thursday, March 16, 2023		Sheet: 9 of 21	


LVDS Operating Voltage Selection  
 1-2 : +5V  
 2-3 : +3.3V (Default)



LVDS Inverter Voltage Selection  
 1-2 : +12V  
 2-3 : +5V (Default)

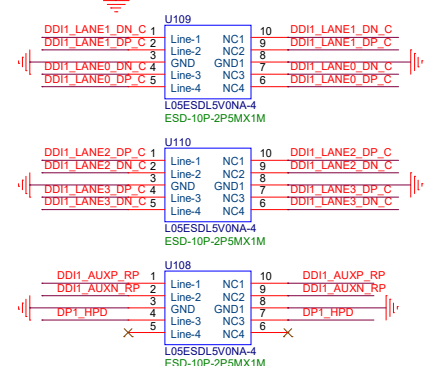
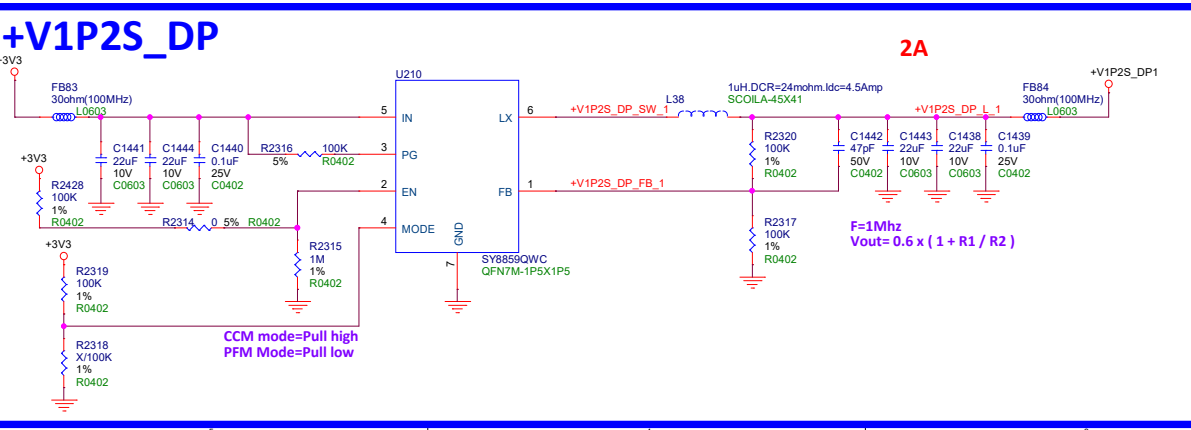
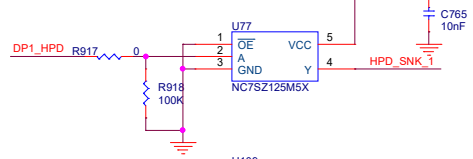
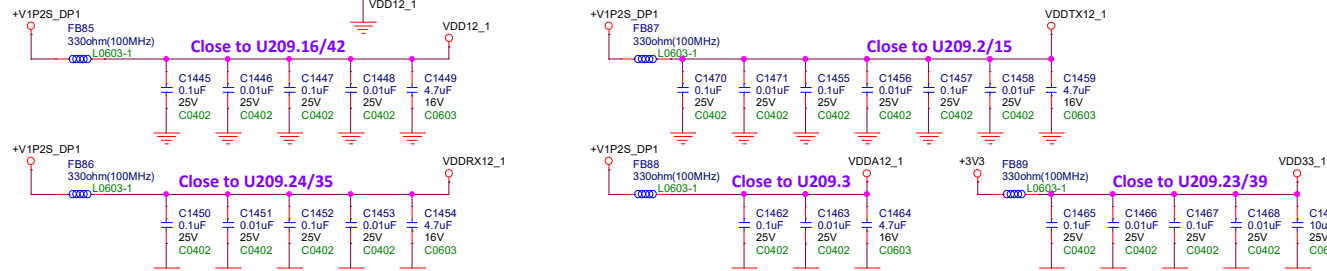
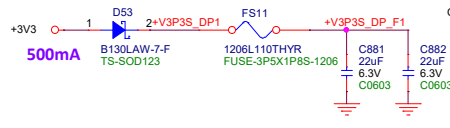
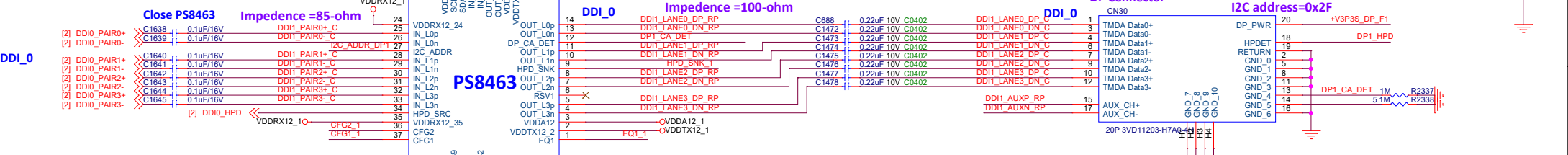
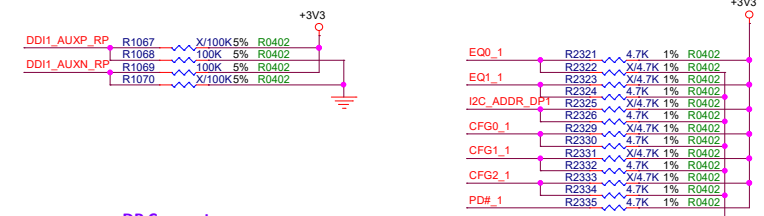
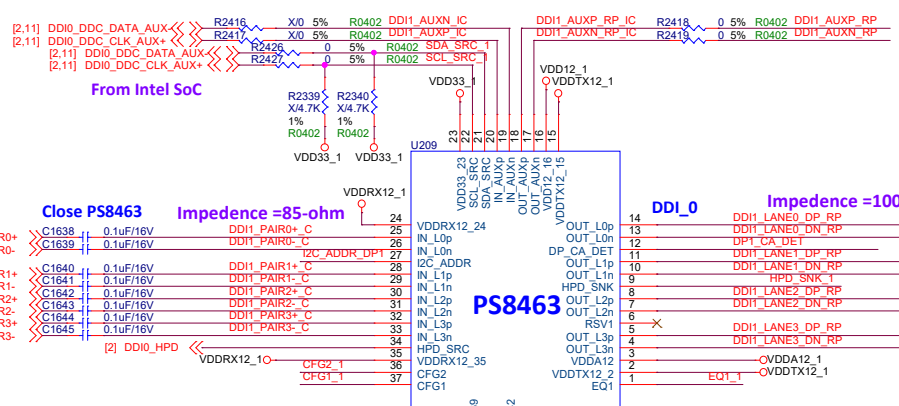


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Size	Document Number	Rev:	
B	ECB-920A	A1.1_0_0	
Date:	Thursday, March 16, 2023	Sheet: 10 of 21	

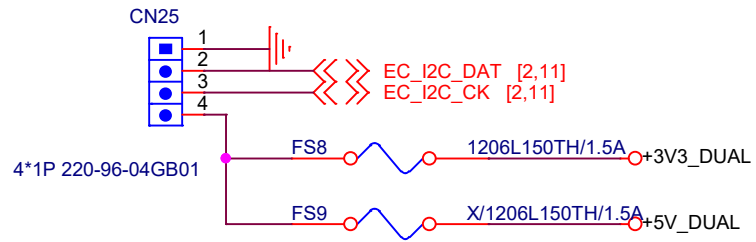
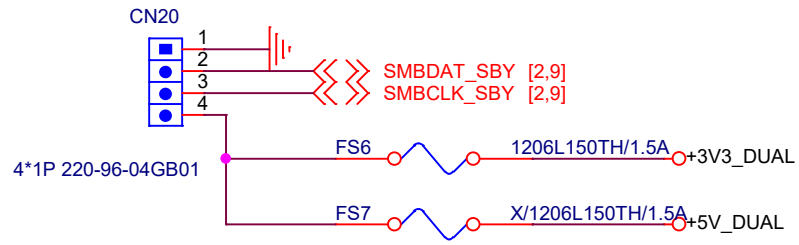
# Display Port 1.4

DDI\_0



Title		DP 1.4_Redriver & DP	
Size	Document Number	Rev:	
Custom	ECB-920A	A1.1_0_0	
Date:	Thursday, March 16, 2023	Sheet:	11 of 21

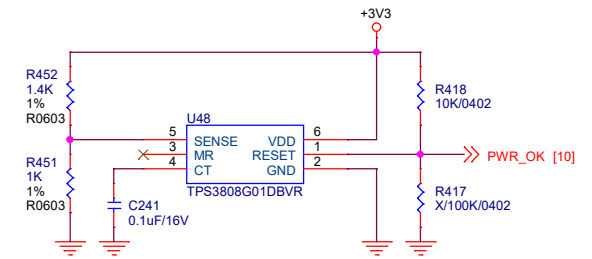
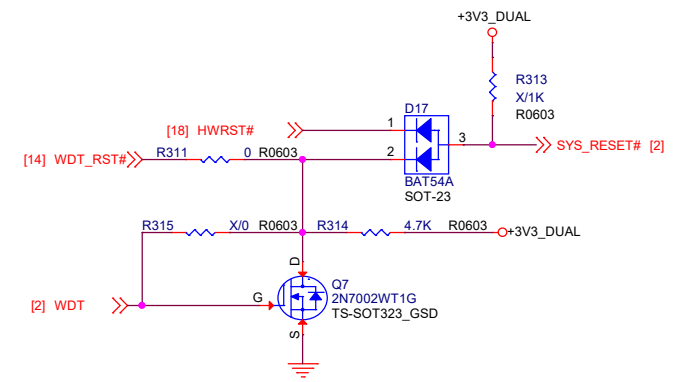




<Variant Name>




Title		
Size A	Document Number <b>ECB-920A</b>	Rev: <b>A1.1_0_0</b>
Date: <i>Thursday, March 16, 2023</i>		Sheet: <b>12 of 21</b>

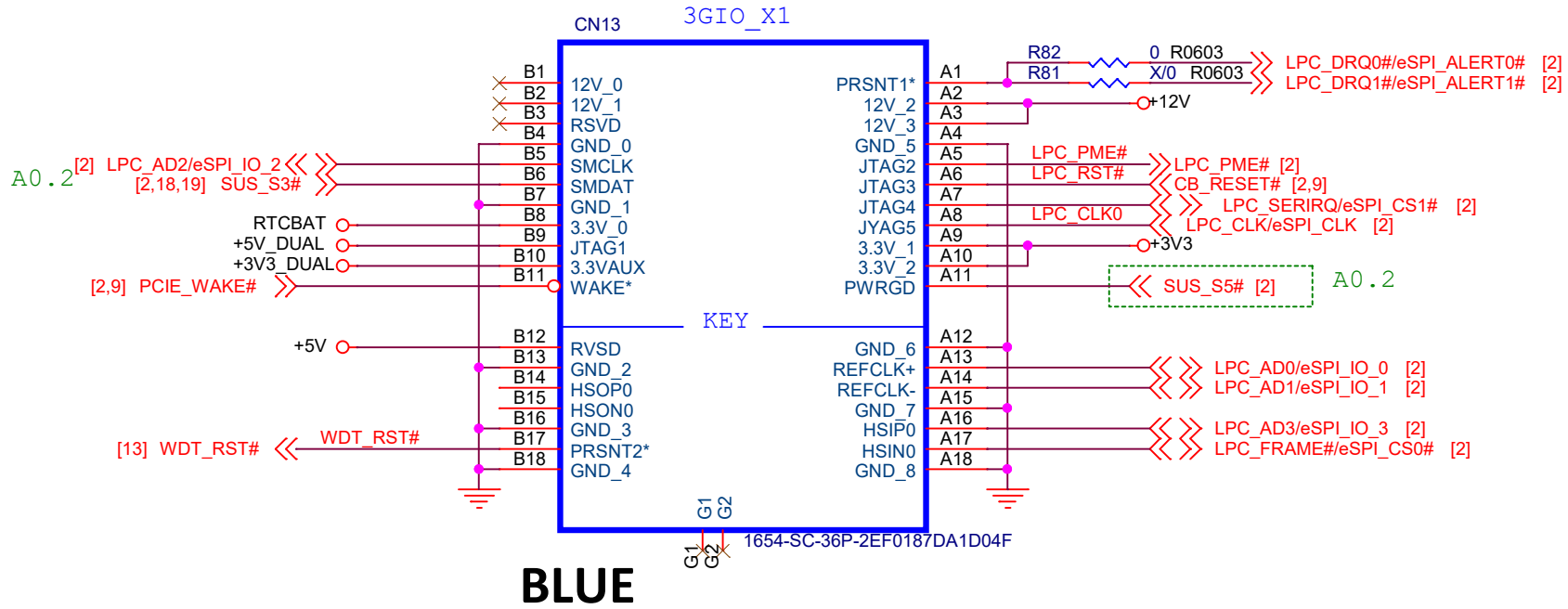


$$C_T \text{ (nF)} = [t_D \text{ (s)} - 0.5 \times 10^{-3} \text{ (s)}] \times 175$$

<Variant Name>

		Title	
		RESET + PWROK	
Size	Document Number	Rev:	
B	ECB-920A	A1.1_0_0	
Date:	Thursday, March 16, 2023	Sheet:	13 of 21

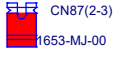
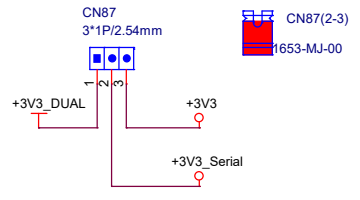
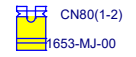
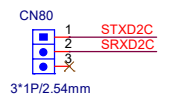
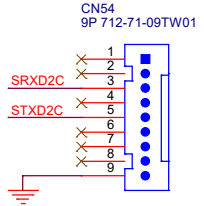
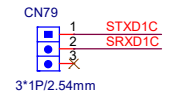
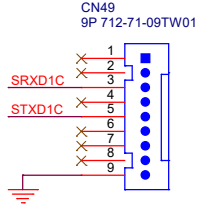
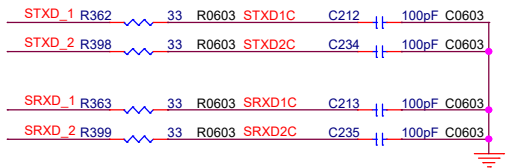
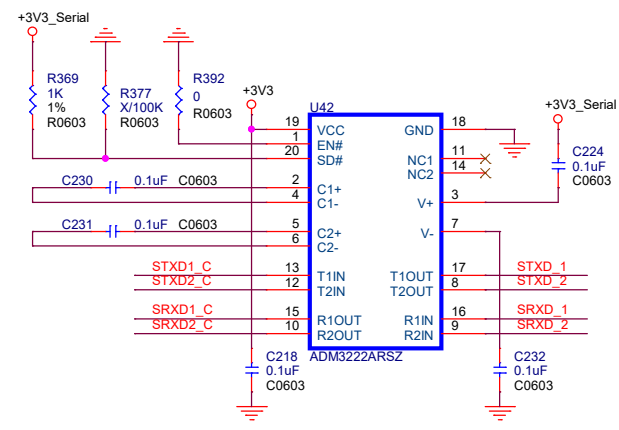
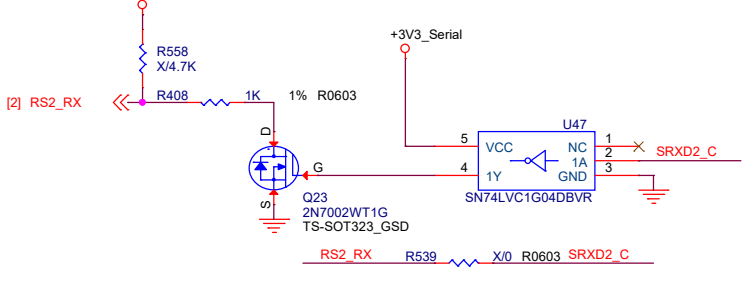
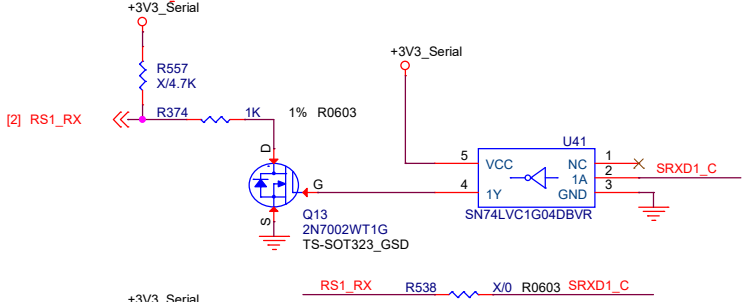
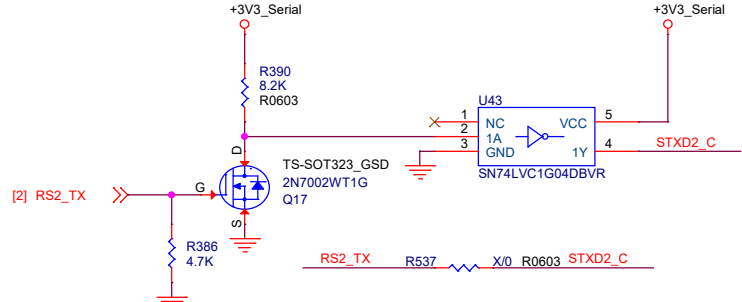
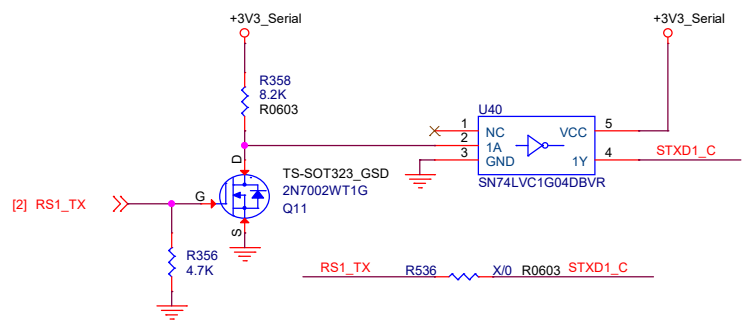
# SIO Slot




<Variant Name>



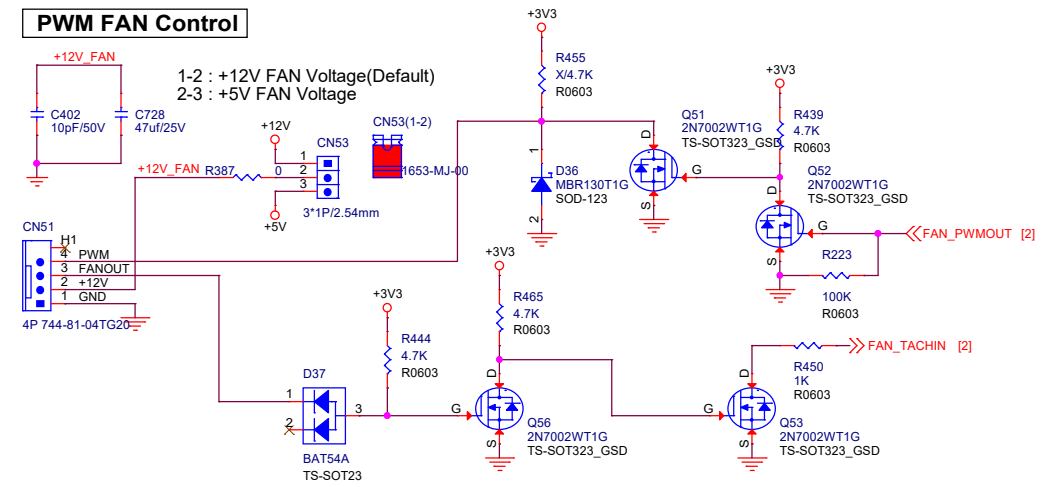
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Size A	Document Number <b>ECB-920A</b>	Rev: <b>A1.1_0_0</b>
Date: <i>Thursday, March 16, 2023</i>		Sheet: <b>14 of 21</b>



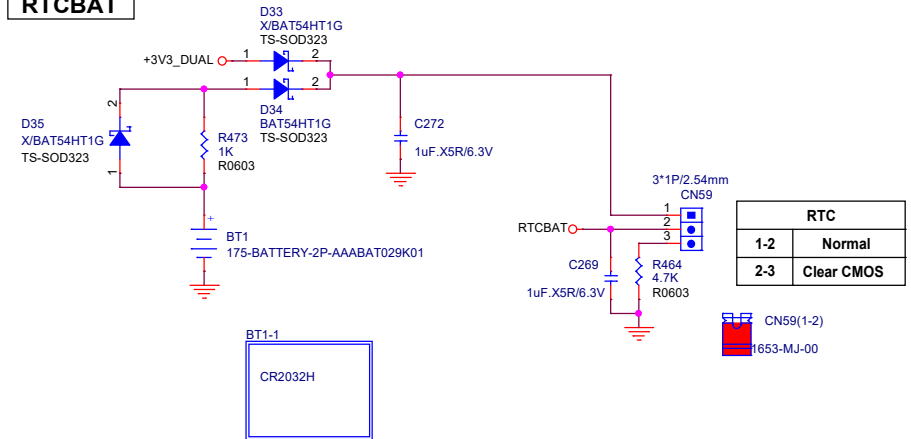
<Variant Name>

		Title	
		Serial port	
Size	Document Number	Rev:	
B	ECB-920A	A1.1_0_0	
Date:	Thursday, March 16, 2023	Sheet: 15 of 21	

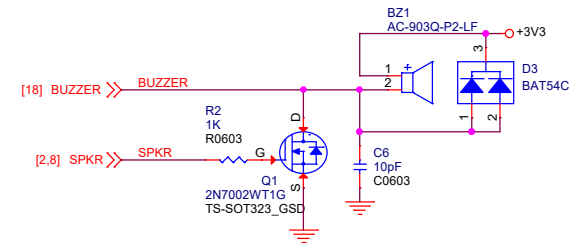
**PWM FAN Control**



**RTCBAT**



**Buzzer**

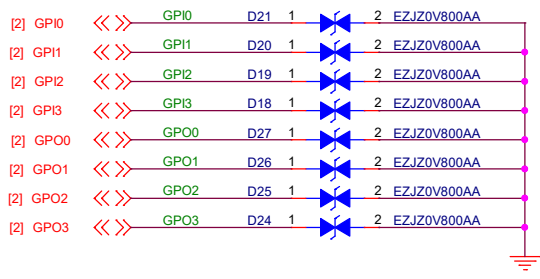
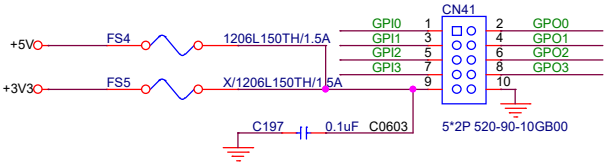


<Variant Name>


	Title	
	<b>SPI + Buzzer + FAN + RTC</b>	
Size	Document Number	Rev:
Custom	<b>ECB-920A</b>	<b>A1.1_0_0</b>
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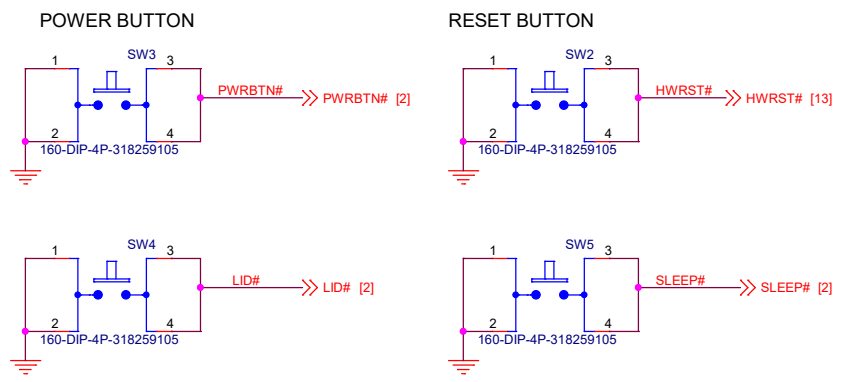
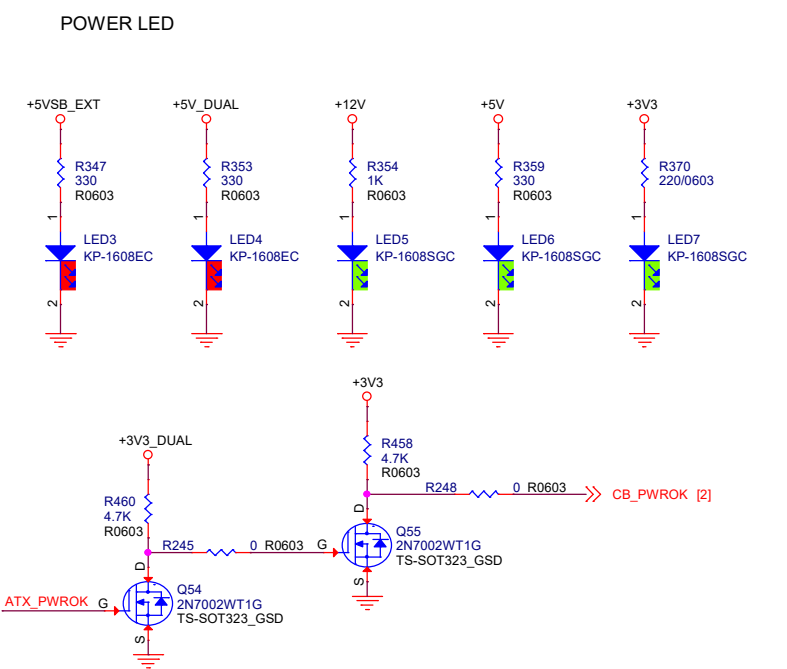
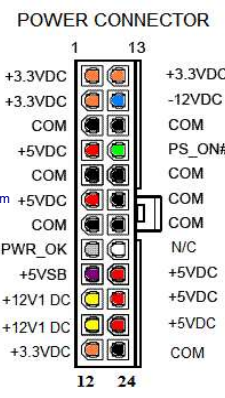
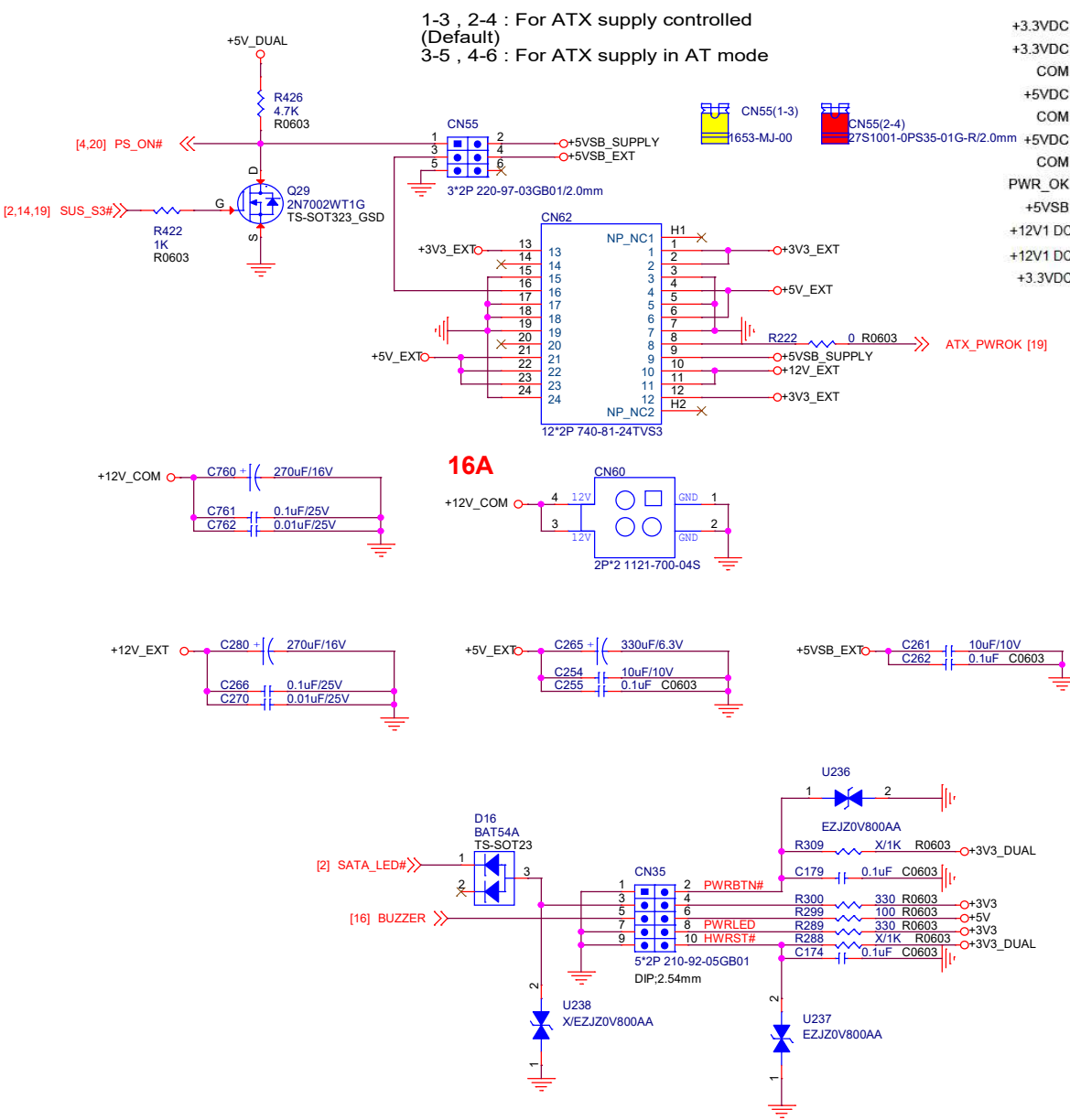


# Digital I/O



<Variant Name>

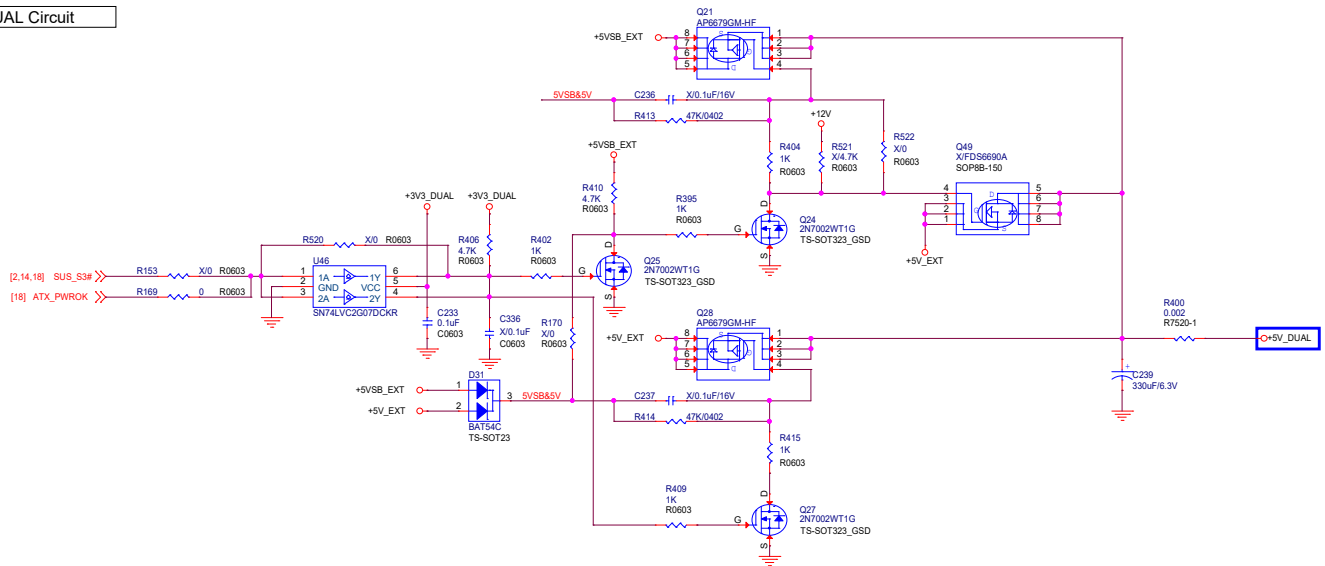
 an ASUS ASSOC. CO.	Title		
	Size B	Document Number ECB-920A	Rev: A1.1_0_0
Date: Thursday, March 16, 2023		Sheet: 17 of 21	



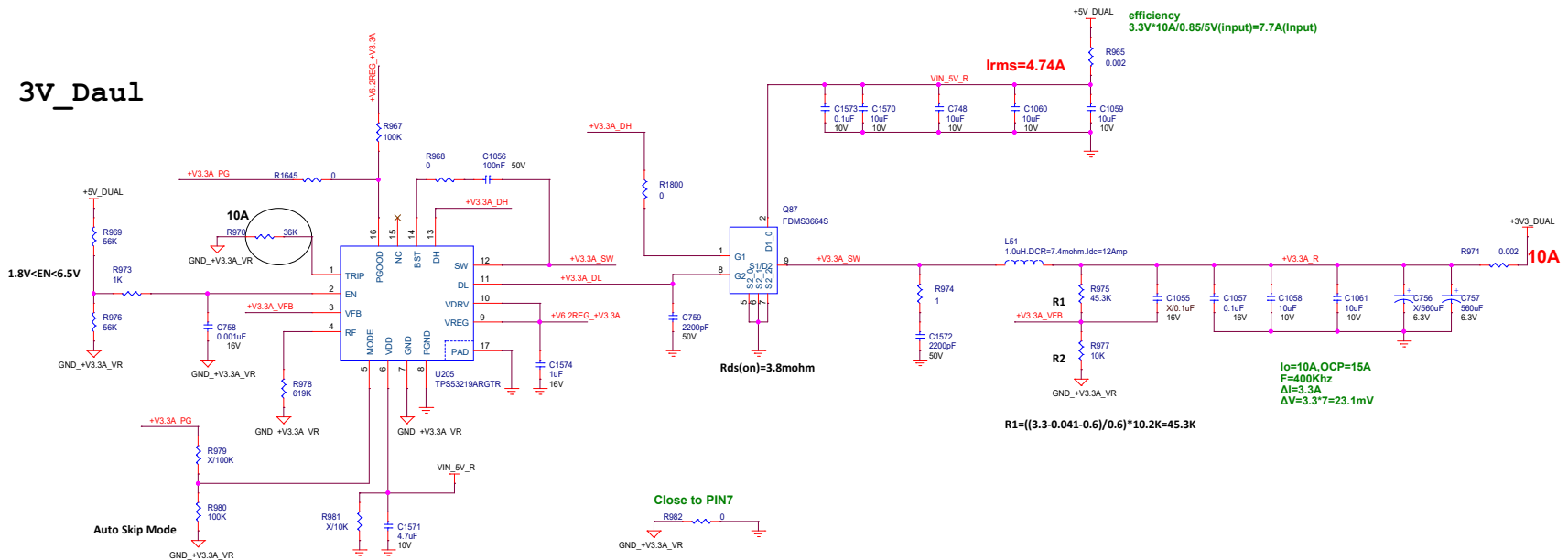
<Variant Name>

<b>MEON</b> an TEUS ASSOC. CO.			Title <b>ATX Power + Front Panel</b>	
Size <b>B</b>	Document Number <b>ECB-920A</b>	Rev: <b>A1.1_0_0</b>		
Date: <b>Thursday, March 16, 2023</b>			Sheet: <b>18 of 21</b>	

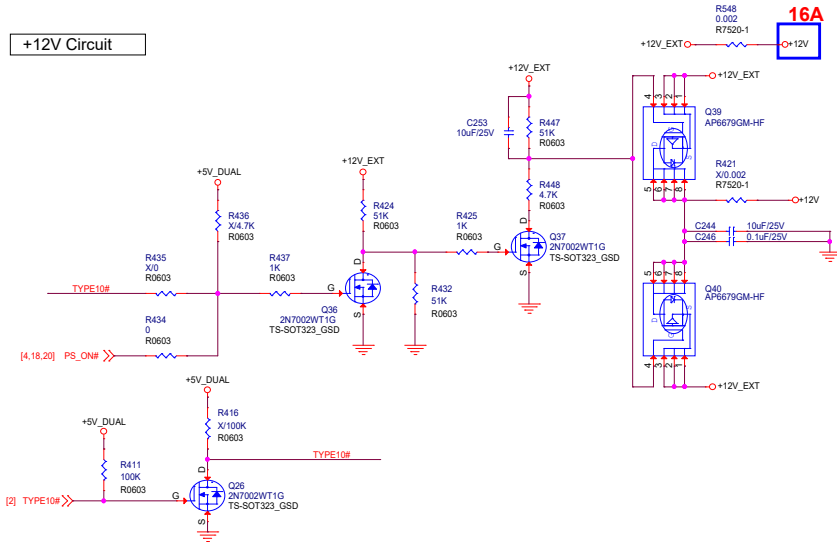
**+5V\_DUAL Circuit**



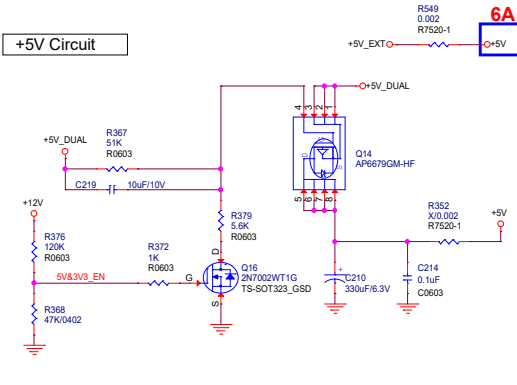
**3V\_Dual**



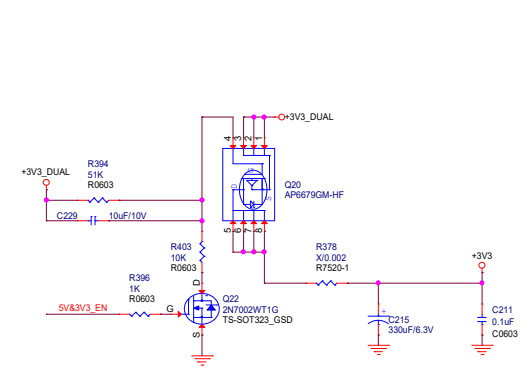
**+12V Circuit**



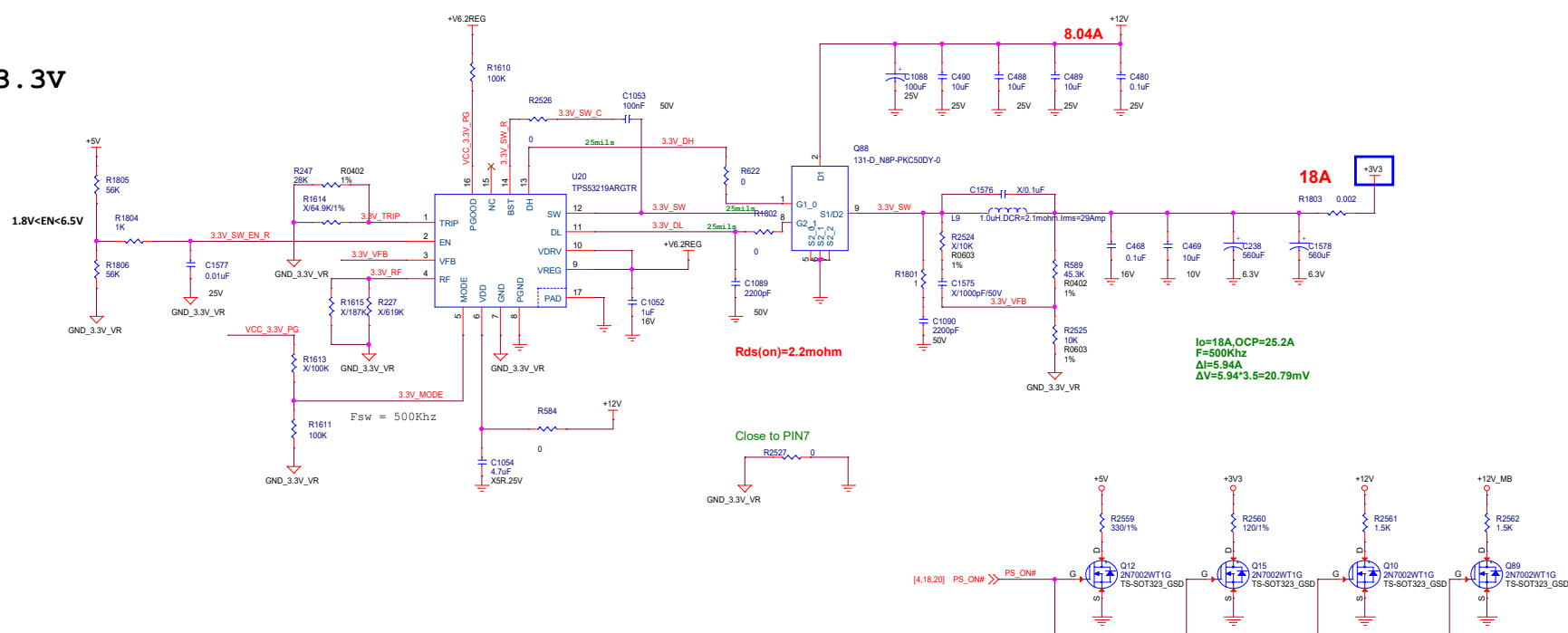
**+5V Circuit**

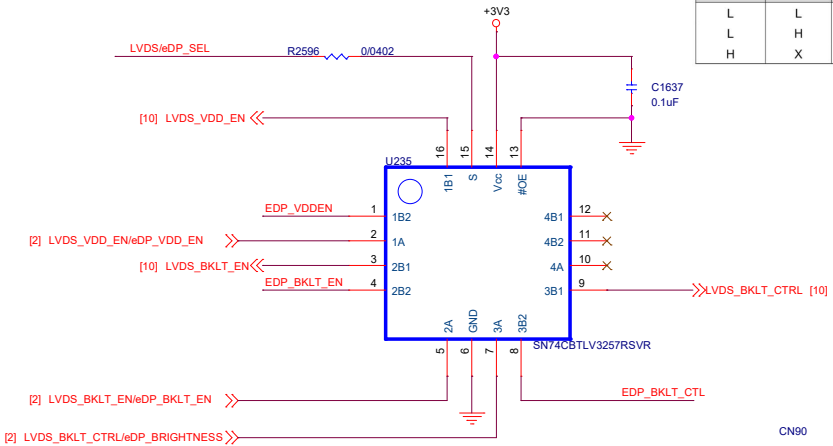
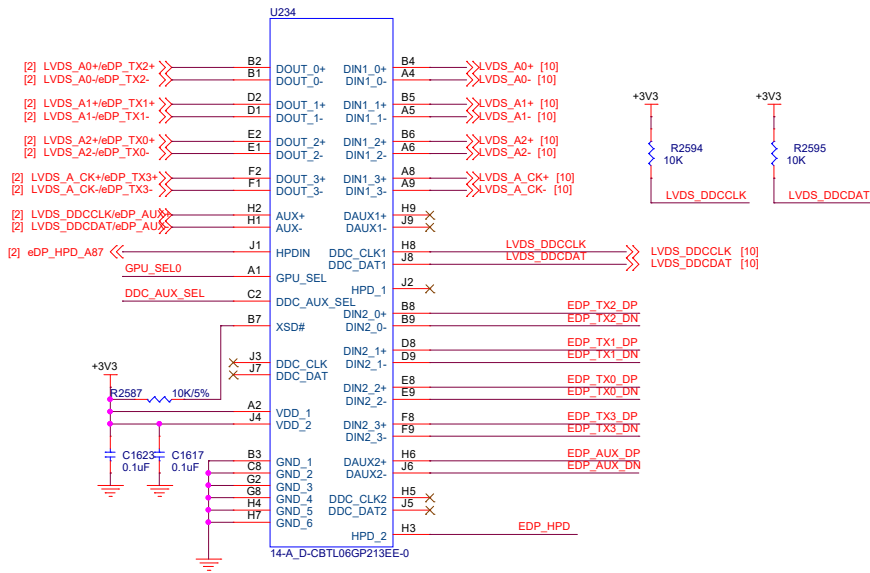


**6A**

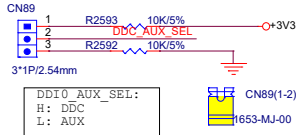
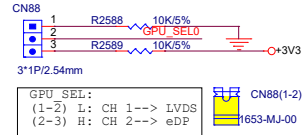
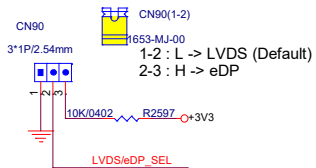


**3.3V**



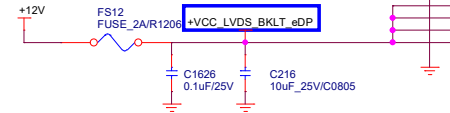
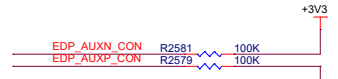
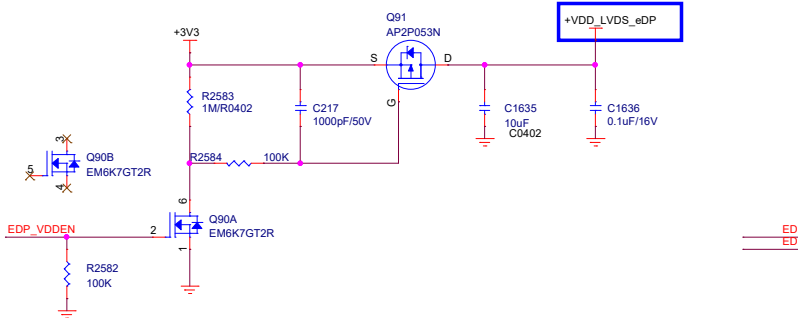
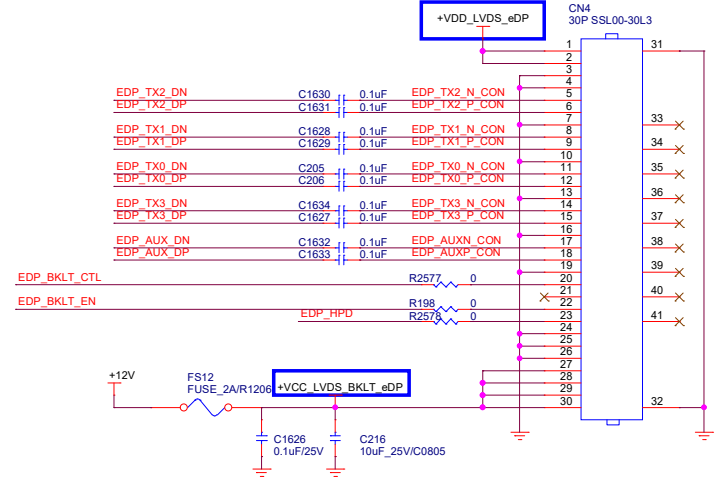
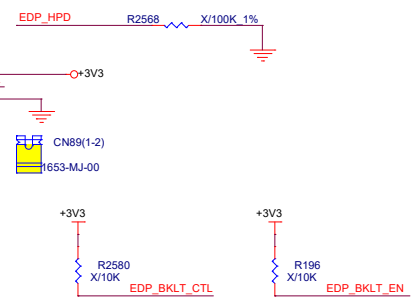


INPUTS		FUNCTION
OE	S	
L	L	A port = B1 port
L	H	A port = B2 port
H	X	Disconnect



GPU\_SEL:  
 (1-2) L: CH 1--> LVDS  
 (2-3) H: CH 2--> eDP

DDI0\_AUX\_SEL:  
 H: DDC  
 L: AUX



<Variant Name>

Title: **eDP+eDP/LVDS Switch**

Size: Custom	Document Number: ECB-920A	Rev: A1.1_0_0
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