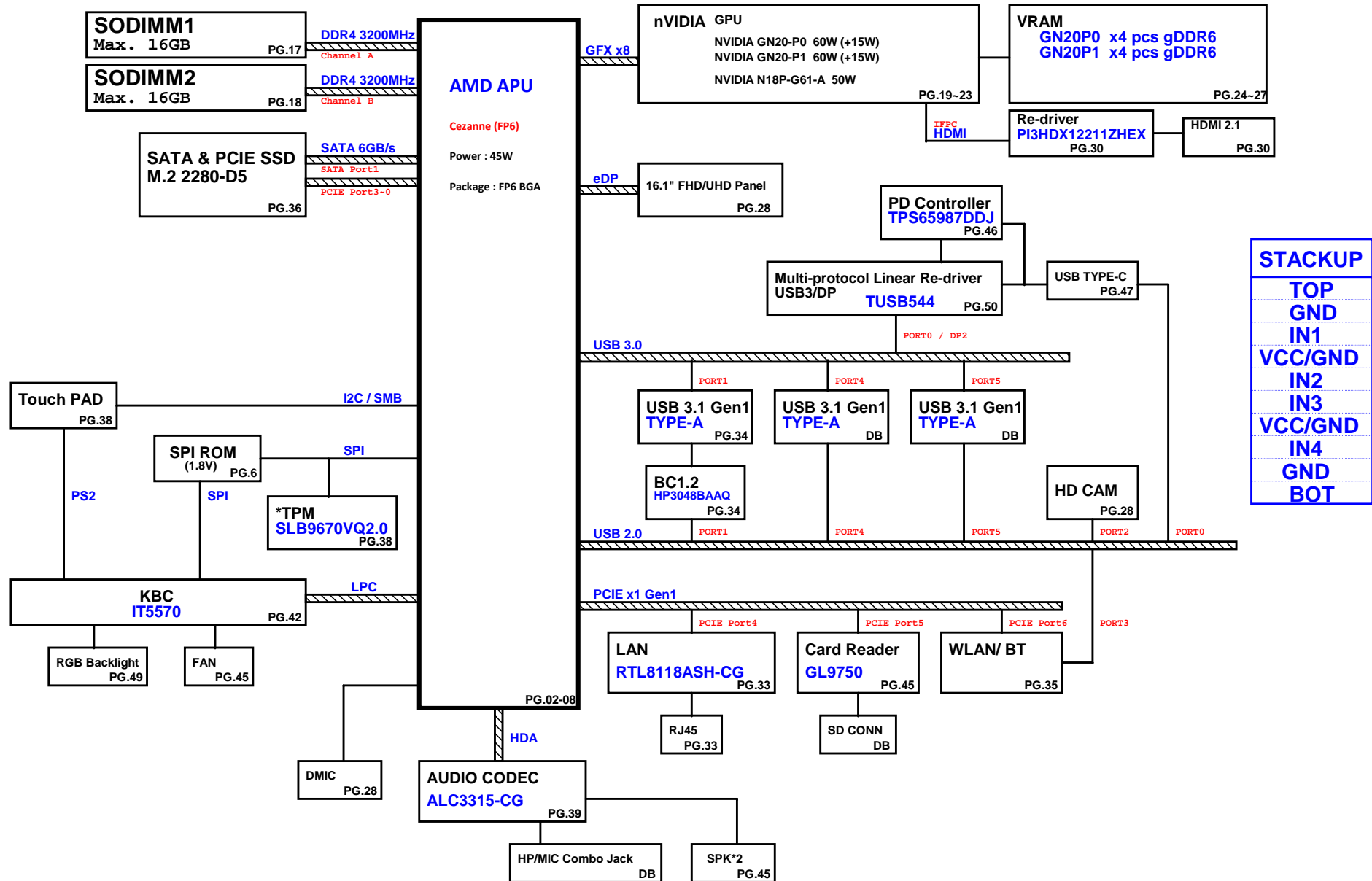


# G3MQ AMD Cezanne+ NV GN20P/N18P-G61



PCIe Port	Function
GFX 0~8	GPU
PCIe 3~0	SSD1(PCIe/SATA)
PCIe 4	LAN
PCIe 5	WLAN
PCIe 6	CARD Reader
PCIe 7	NC
PCIe 8~11	SSD2(PCIe/SATA)

PCIe-SSD 4 lane  
(Port3 --> Port0)

LAN

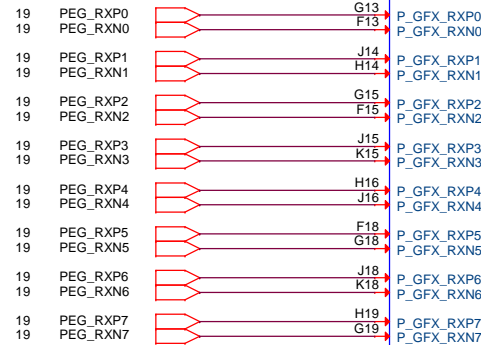
CARD

WLAN

PCIe-SSD 4 lane  
(Port8 --> Port11)

U1B

PCIe

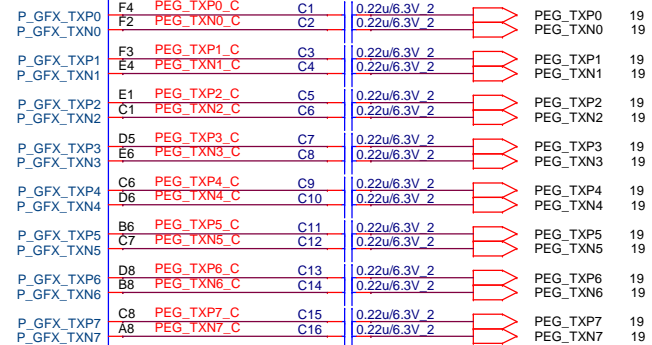


SSD SATA/PCIe exchange port

SSD SATA/PCIe exchange port

\*CPU\_AMD\_FP6

FP6 REV 0.92  
PART 2 OF 13



SSD SATA/PCIe exchange port

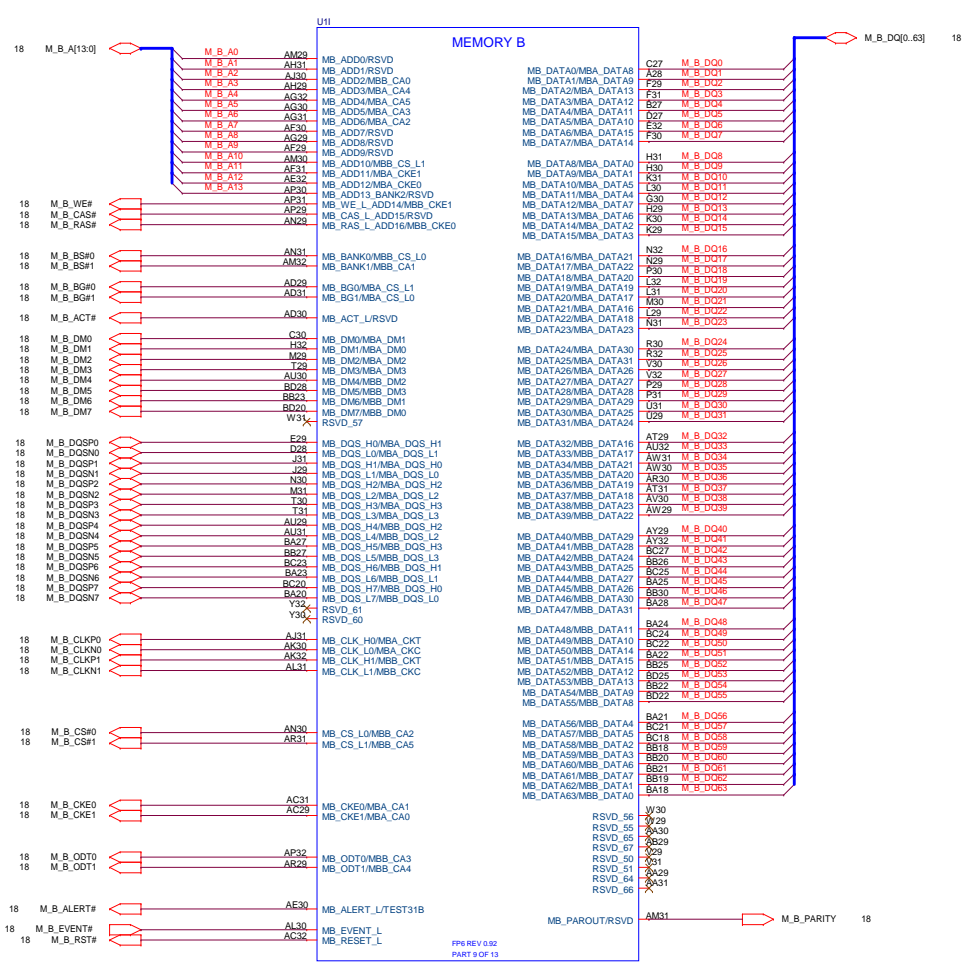
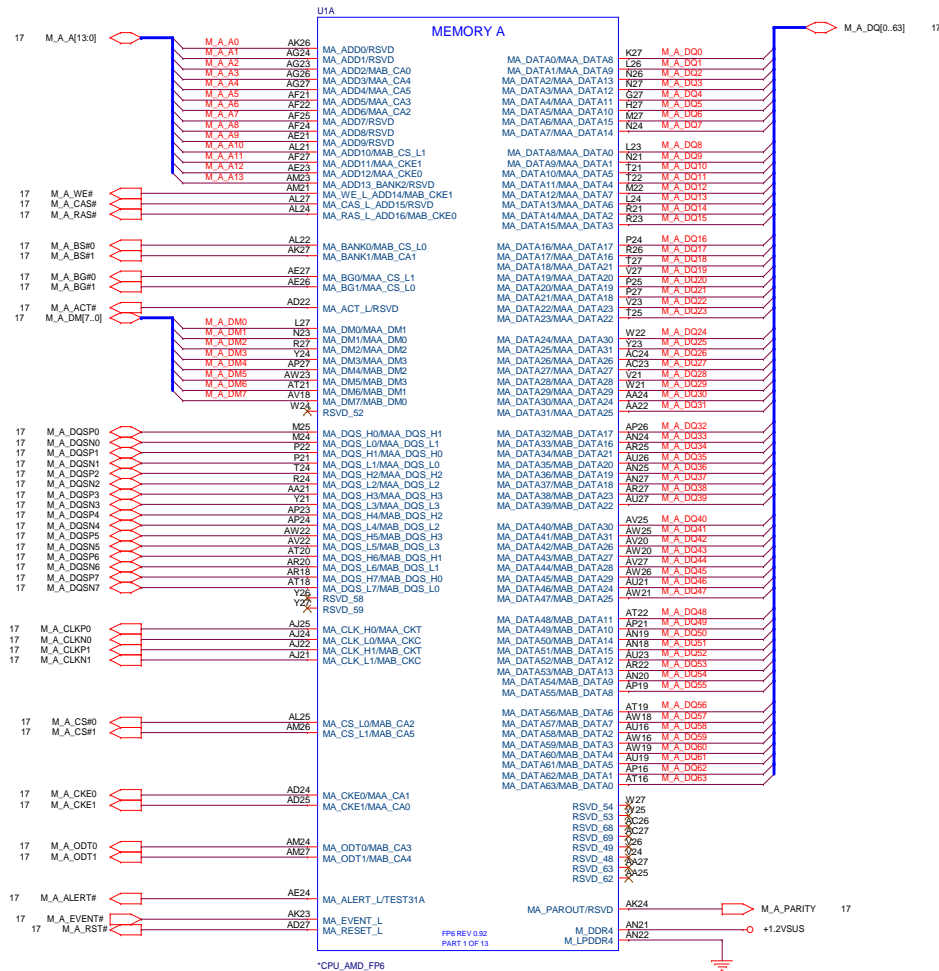
SSD SATA/PCIe exchange port

AMD APU	TOPBSQ PN	Quanta PN	Stage
R9-4900U 2.0G	NA	AJ00100UT00	DB



**PROJECT : G3MQ**  
Quanta Computer Inc.

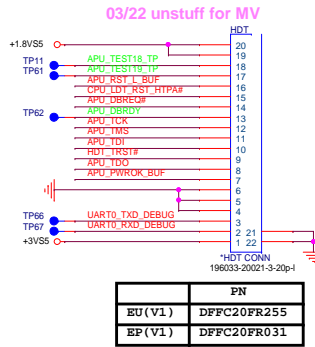
Size	Document Number	Rev
Custom	Cezanne 17(PCIE)	3A
Date: Wednesday, April 28, 2021	Sheet	2 of 106





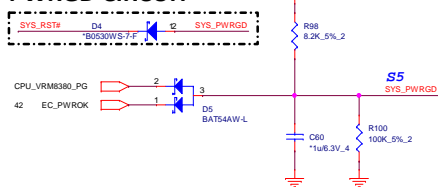
SVC	SVD	VOLTAGE
0	0	1.1
0	1	1.0
1	0	0.9
1	1	0.8

Place near APU within 500mil  
CRB: SVC & SVD 22 ohm follow check list 0 ohm.

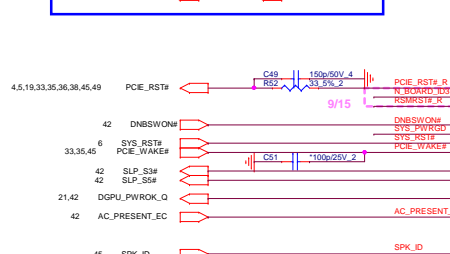




## PWRGD CIRCUIT



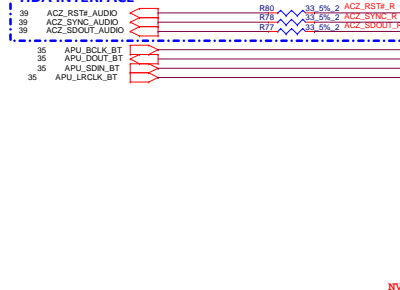
## COMBINE INTEL/AMD NET NAME



```

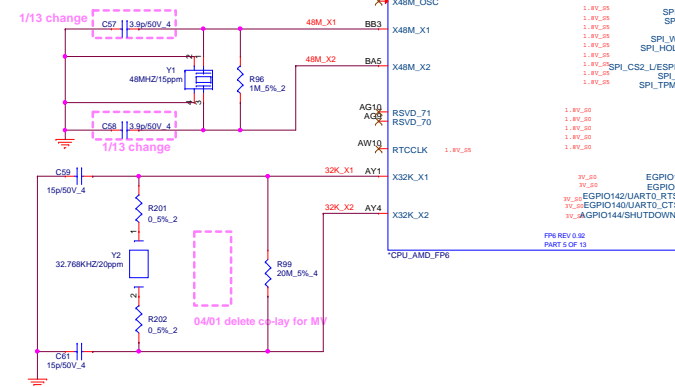
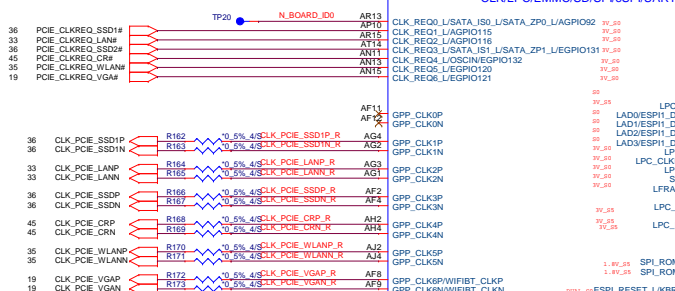
38      BII_CLK_A000
39      ACZ_SDIO0
HDA INTERFACE

```

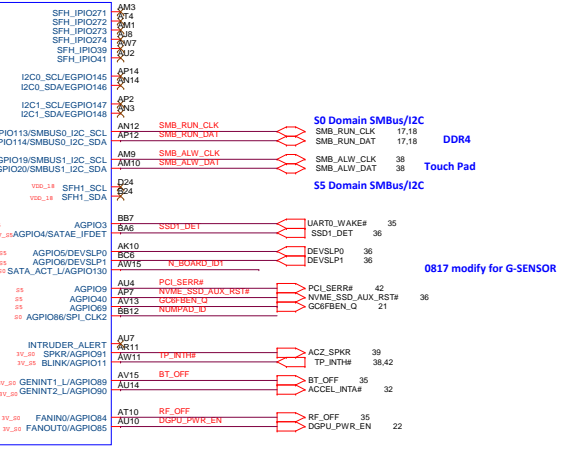


NVME\_SSD\_AUX\_RST# & LPC\_PD#  
If unused, enable internal pull up or pull down by software.

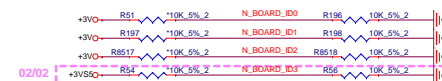
## PC/EMMC/SD/SPI/eSPI/IART



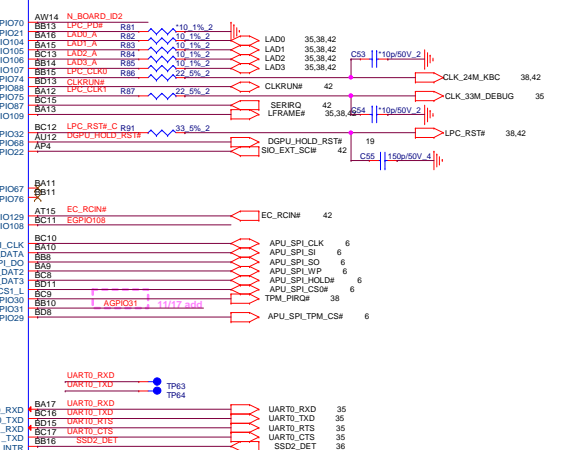
## ACPI/AUDIO/I2C/GPIO/MISC

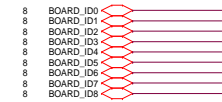
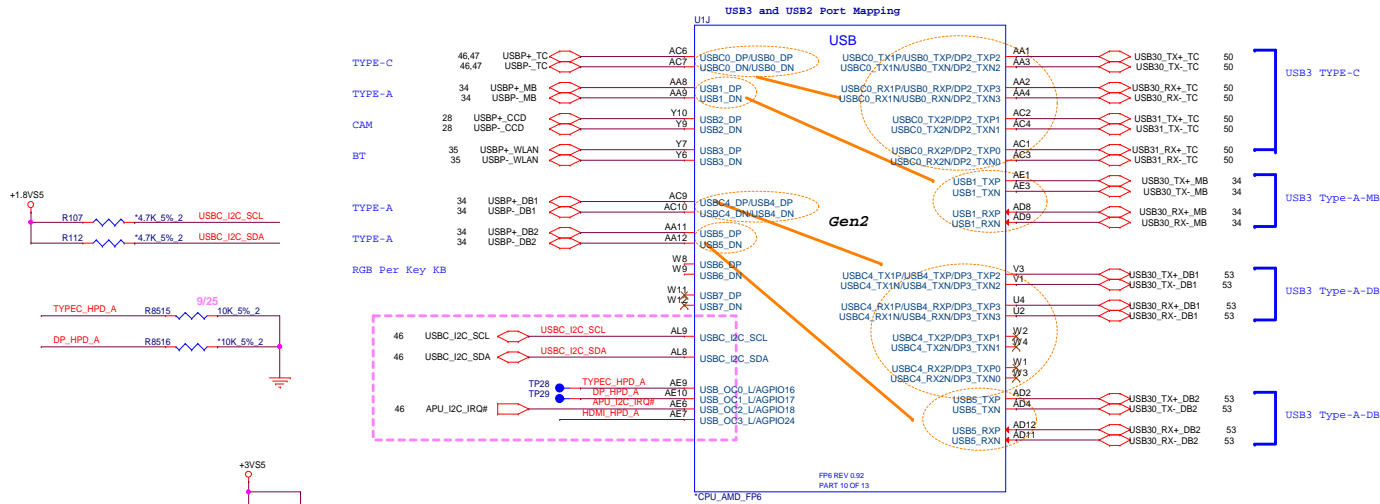


## BOARD ID SETTING



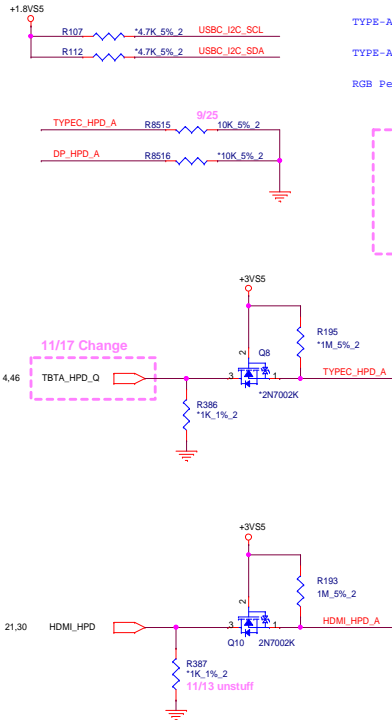
Model	N_BOARD_ID [3:2:1:0]			
	ID3	ID3 ; ID2 ; ID1 ; ID0		
Definition	1 : <del>Voodoo</del>	1100 : GN20E3-gDDR6	0000 : GN20P0-gDDR6	
		1101 : Reserve	0001 : GN20P1-gDDR6	
	0 : <del>Omen</del>	1110 : Reserve	0010 : N18P-G61-A	
		1111 : Reserve	0011 : GN20-P0-D	



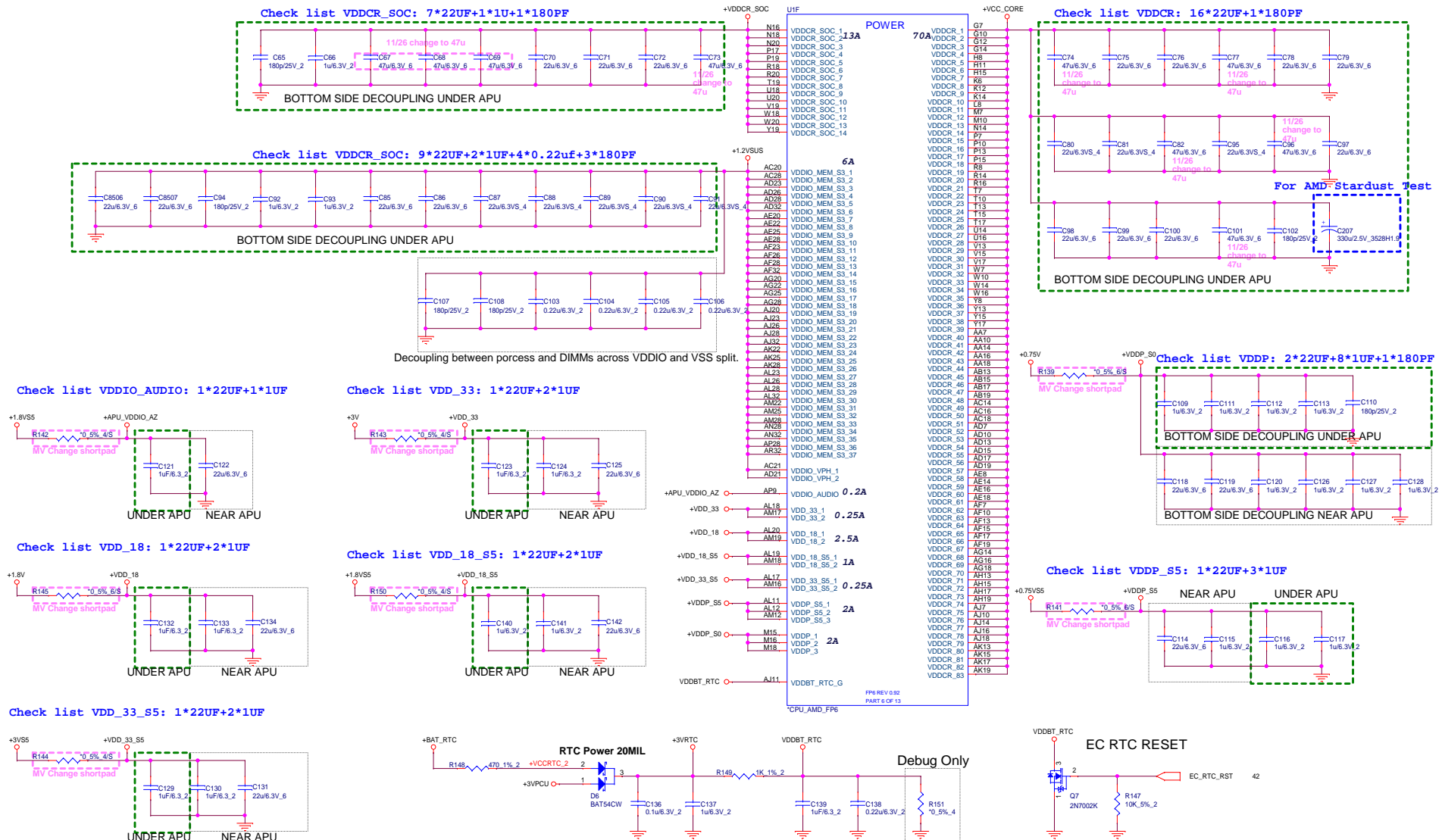


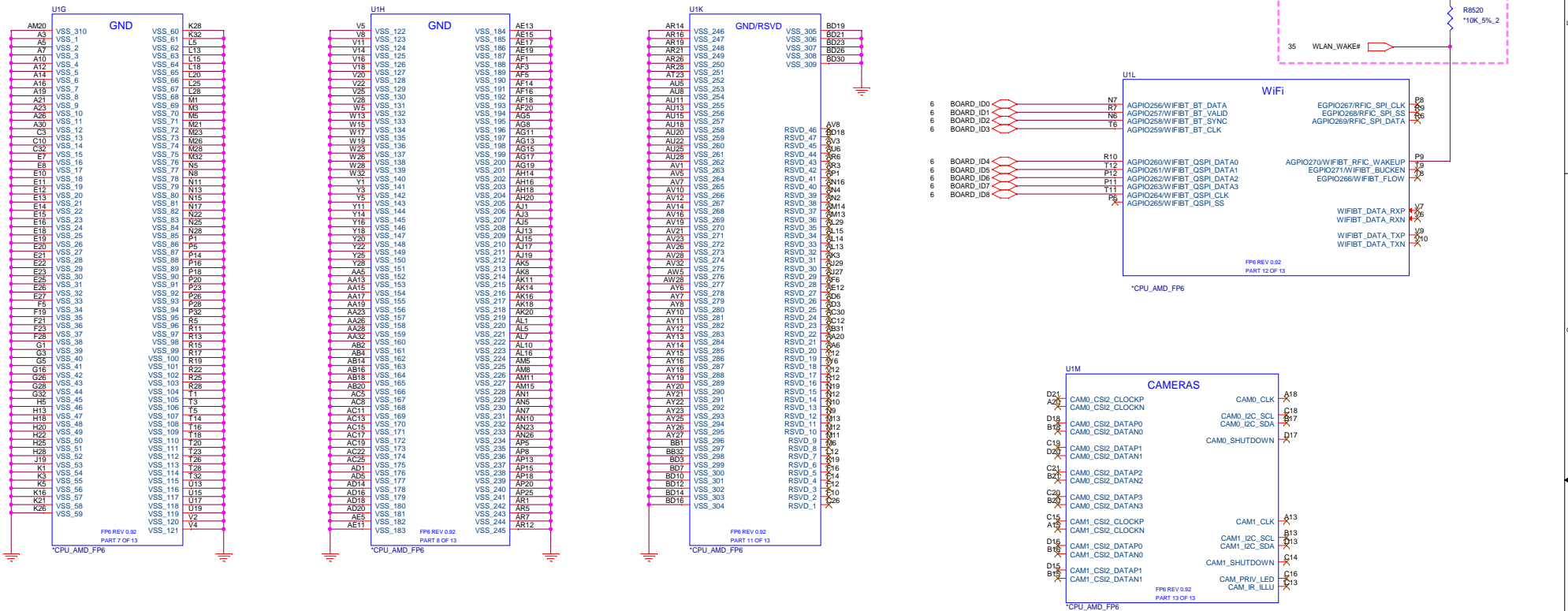
USB3 Port	Function
USB0	TYPE-C
USB1	TYPE-A-MB
USB4	TYPE-A-DB
USB5	TYPE-A-DB

USB2 Port	Function
USB0	TYPE-C
USB1	TYPE-A
USB2	CAM
USB3	BT
USB4	TYPE-A
USB5	TYPE-A
USB6	RGB Per Key KB
USB7	IR CAM














NA

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NA

	<b>PROJECT : G3MQ</b> Quanta Computer Inc.		
	Size A	Document Number PCH(NA)	Rev 3A
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NA

	<b>PROJECT : G3MQ</b> Quanta Computer Inc.		
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NA

	<b>PROJECT : G3MQ</b> Quanta Computer Inc.		
	Size A	Document Number PCH(NA)	Rev 3A
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NA


	<b>PROJECT : G3MQ</b> Quanta Computer Inc.		
	Size A	Document Number PCH(NA)	Rev 3A
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NA


	<b>PROJECT : G3MQ</b> Quanta Computer Inc.		
	Size A	Document Number PCH(NA)	Rev 3A
	Date: Wednesday, April 28, 2021   Sheet 14 of 106		



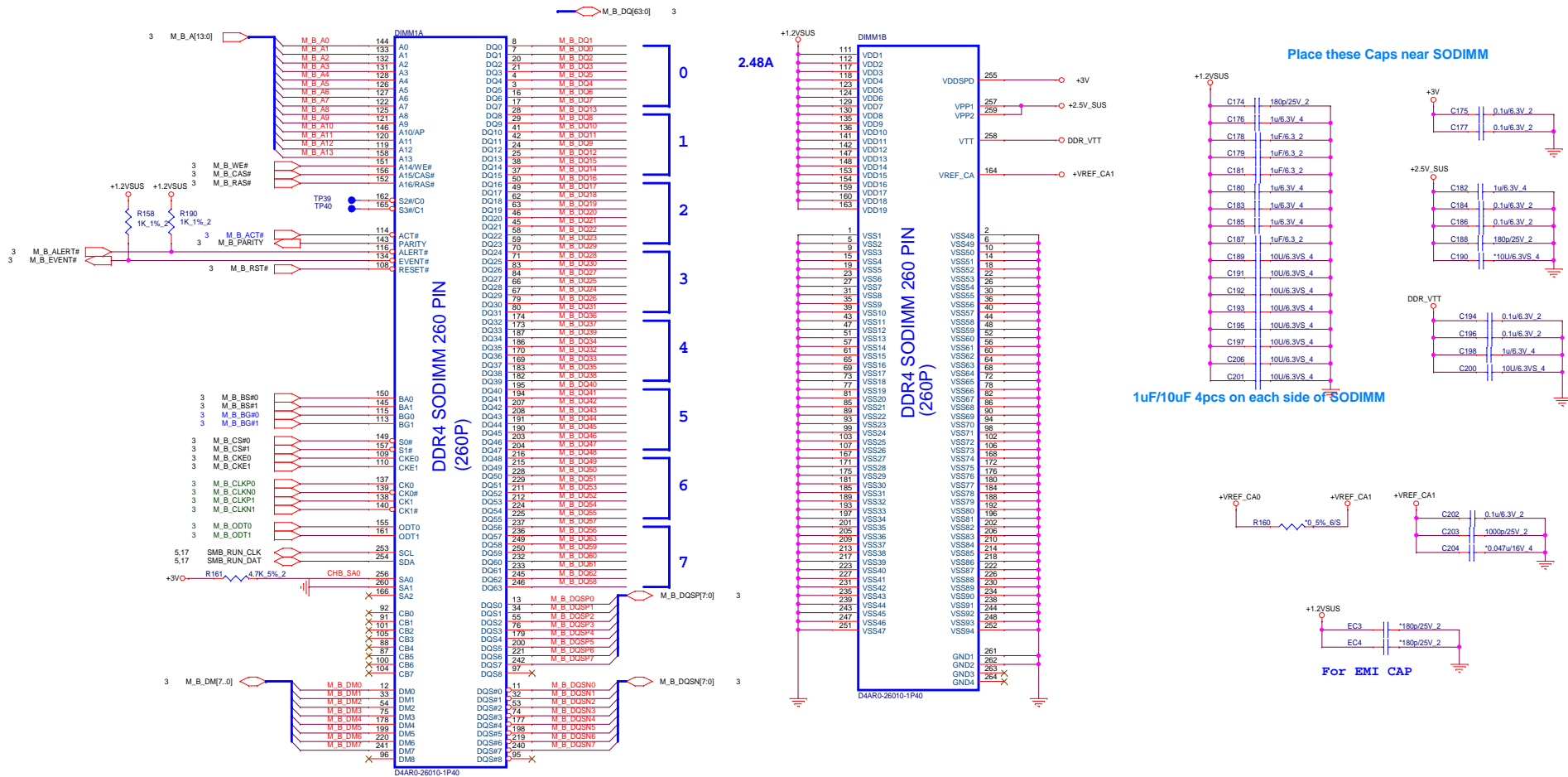
NA

	<b>PROJECT : G3MQ</b> Quanta Computer Inc.		
	Size A	Document Number PCH(NA)	Rev 3A
	Date: Wednesday, April 28, 2021   Sheet 15 of 106		

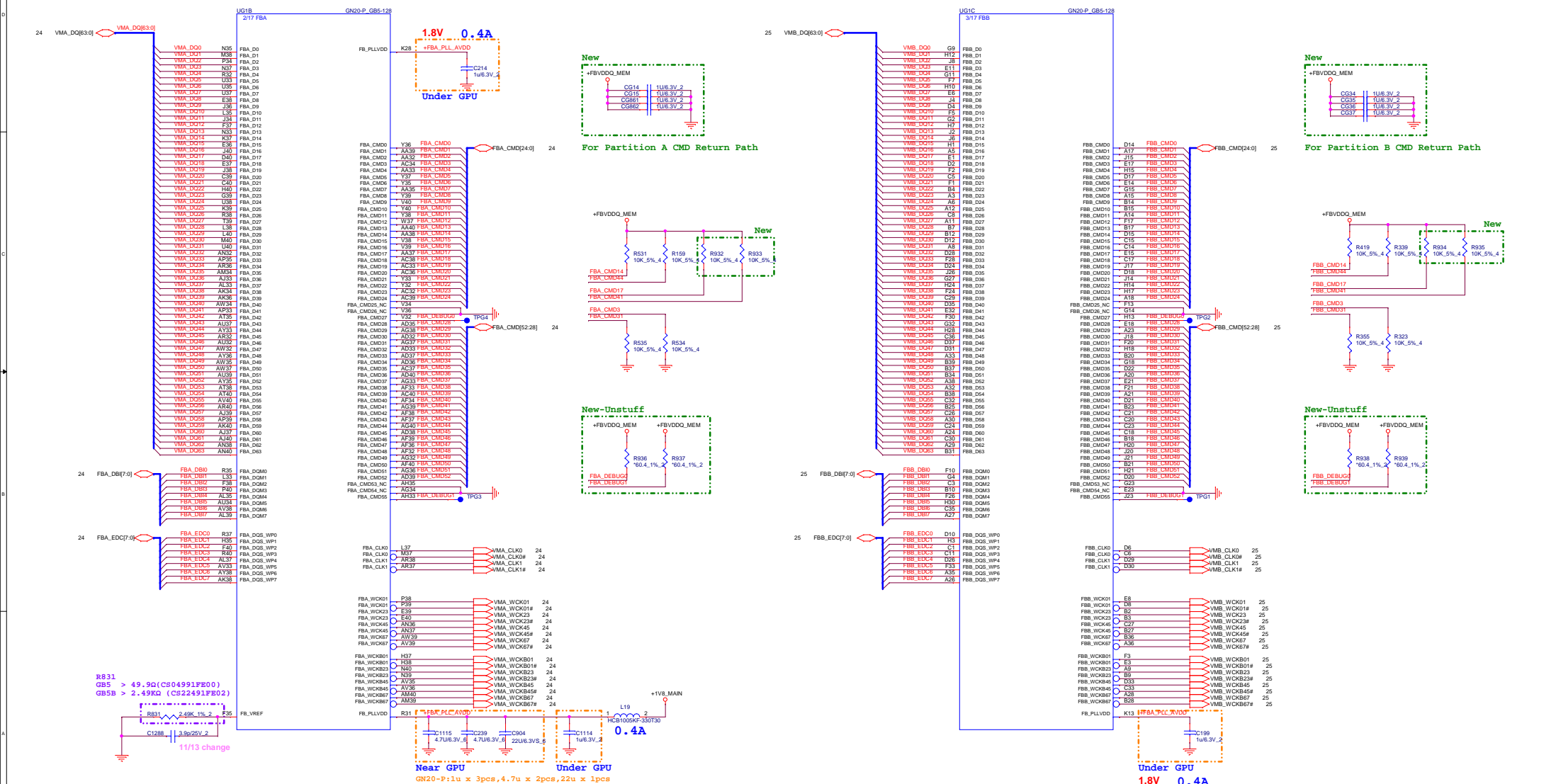
NA

	<b>PROJECT : G3MQ</b> Quanta Computer Inc.		
	Size A	Document Number PCH(NA)	Rev 3A
	Date: Wednesday, April 28, 2021   Sheet 16 of 106		

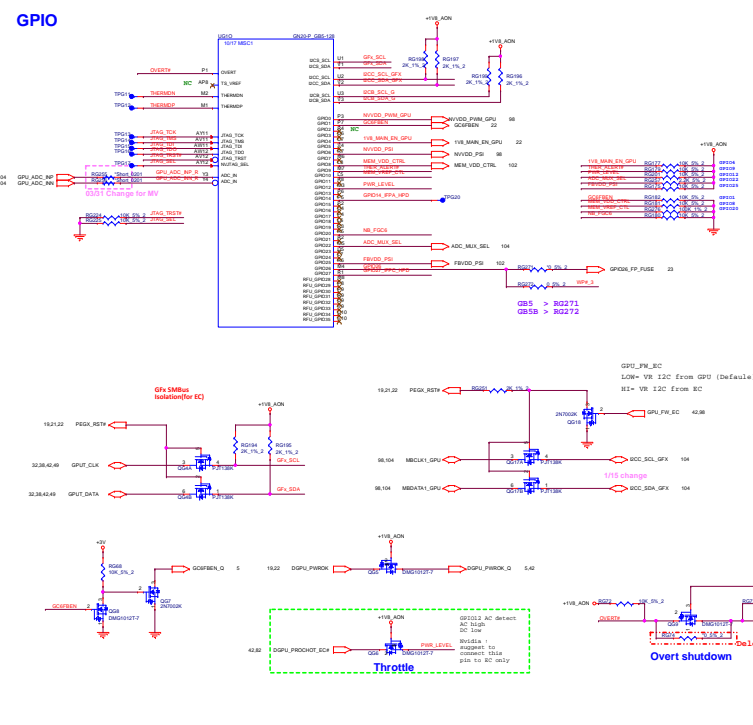
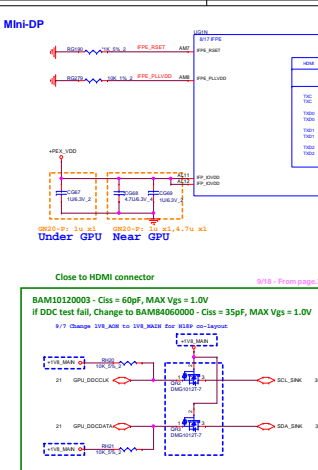






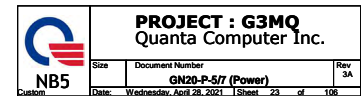


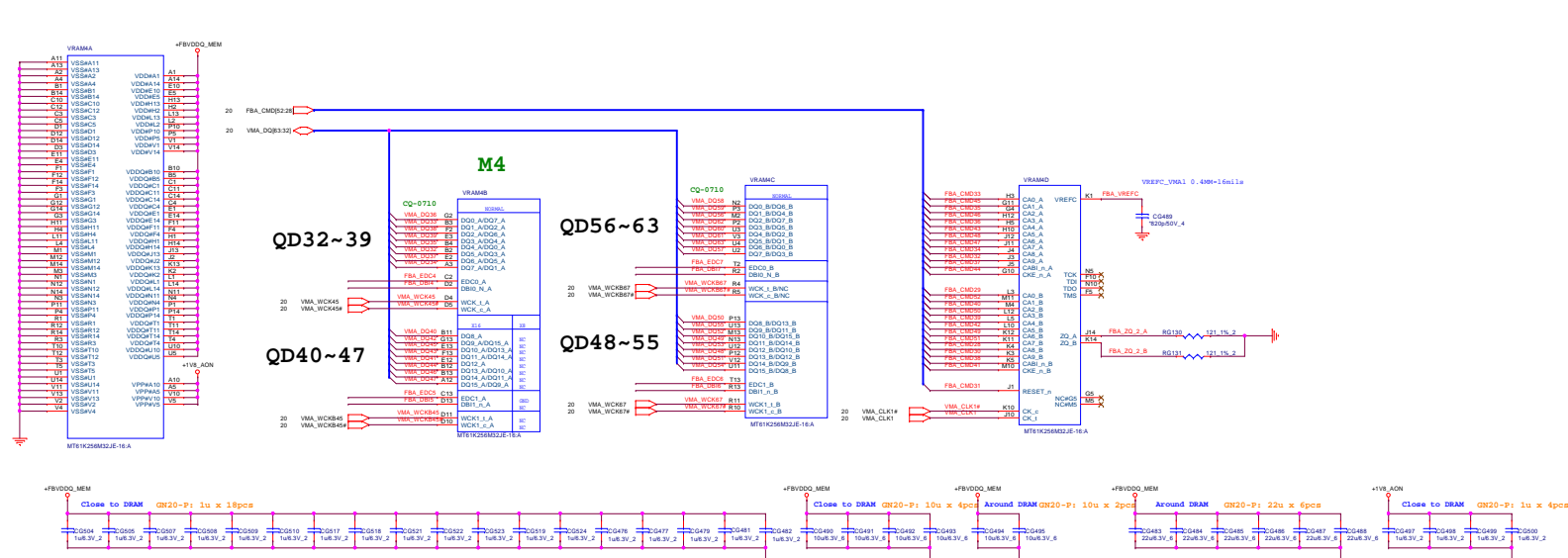
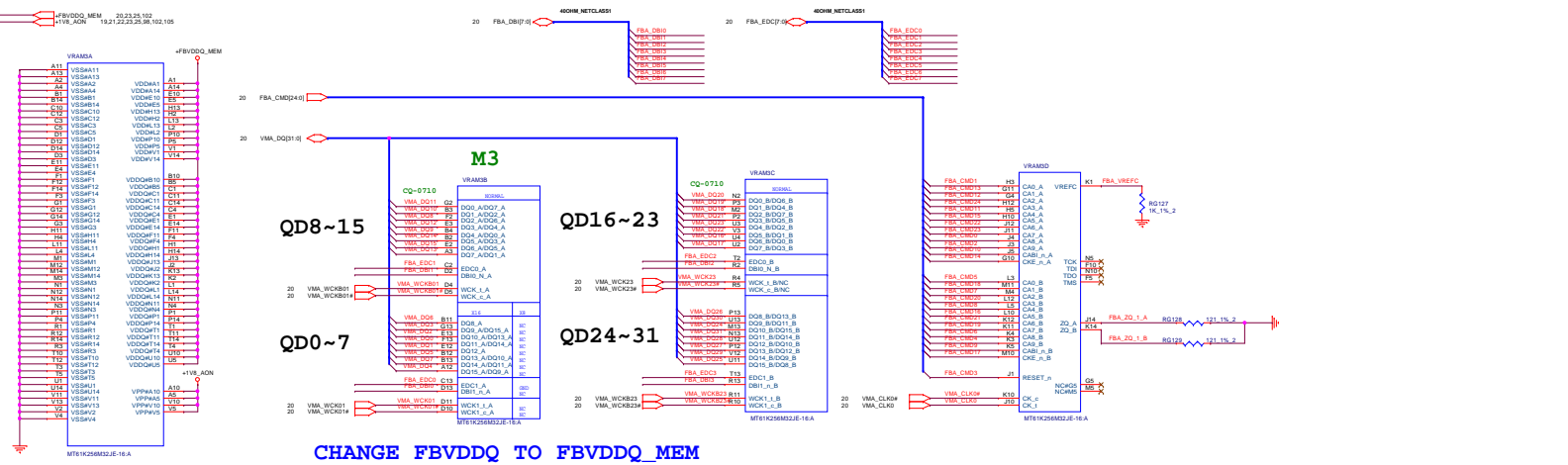




<https://realschematic.com>



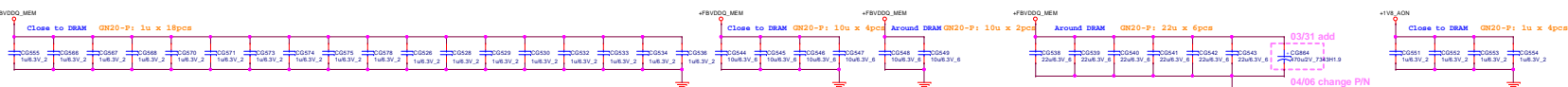
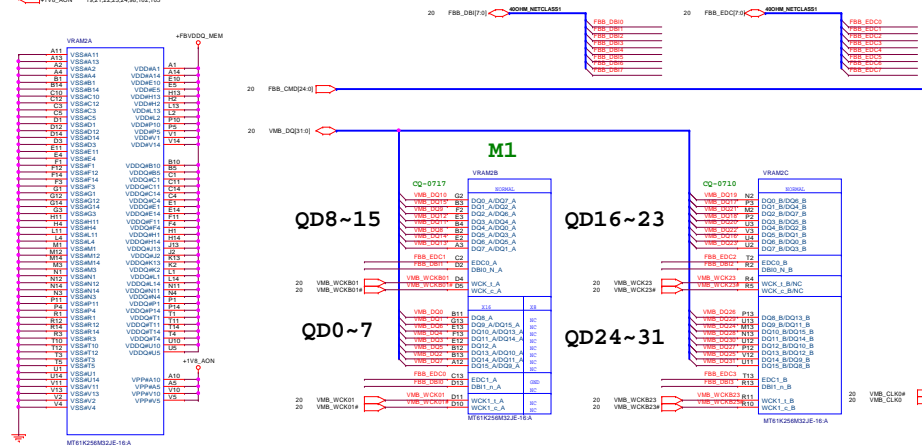




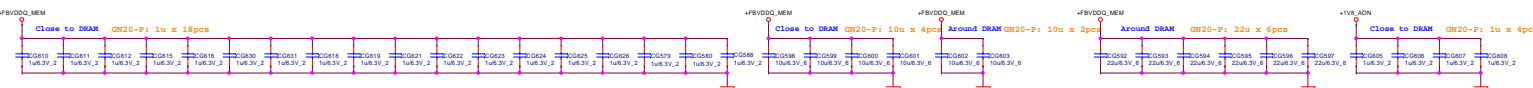
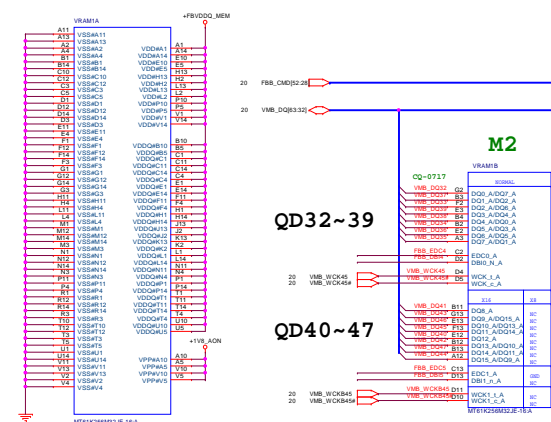
GDDR6 CMD Mapping		x16 Mode	
Lower 0..31		Upper 32..63	
DRAM1		DRAM2	
CBA-Byte 0,1		CBA-Byte 4,5	
CA0_A	CMD0	CA0_B	CMD4
CA1_A	CMD9	CA1_B	CMD12
CA2_A	CMD1	CA2_B	CMD10
CA3_A	CMD32	CA3_B	CMD6
CA4_A	CMD7	CA4_B	CMD13
CA5_A	CMD11	CA5_B	CMD23
CA6_A	CMD15	CA6_B	CMD27
CA7_A	CMD14	CA7_B	CMD30
CA8_A	CMD3	CA8_B	CMD2
CA9_A	CMD1	CA9_B	CMD11
CABT_A	CMD6	CABT_B	CMD22
CKE_A	CMD10	CKE_B	CMD26
CHB-Byte 3,3		CHB-Byte 6,7	
CA0_B	CMD4	CA0_B	CMD16
CA1_B	CMD12	CA1_B	CMD25
CA2_B	CMD6	CA2_B	CMD24
CA3_B	CMD13	CA3_B	CMD33
CA4_B	CMD7	CA4_B	CMD23
CA5_B	CMD11	CA5_B	CMD27
CA6_B	CMD15	CA6_B	CMD30
CA7_B	CMD14	CA7_B	CMD2
CA8_B	CMD3	CA8_B	CMD11
CA9_B	CMD1	CA9_B	CMD22
CABT_B	CMD6	CABT_B	CMD26
CKE_B	CMD10	CKE_B	CMD26
RESET*		CMD2	

## MEMORY: FBB Partition 31..0

FBVDD0\_MEM 20.23,24,102  
+1V8\_AON 18,21,22,23,24,56,102,105




## MEMORY: FBB Partition 63..32



GDDR6 CMD Mapping		x16 Mode	
Lower 0..31		Upper 32..63	
DRAM1		DRAM2	
CHB-Byte 0..1		CHB-Byte 4..5	
CA0_A	CMD0	CA0_B	CMD16
CA1_A	CMD9	CA1_B	CMD17
CA2_A	CMD8	CA2_B	CMD18
CA3_A	CMD32	CA3_B	CMD19
CA4_A	CMD7	CA4_B	CMD20
CA5_A	CMD11	CA5_B	CMD21
CA6_A	CMD15	CA6_B	CMD22
CA7_A	CMD14	CA7_B	CMD23
CA8_A	CMD3	CA8_B	CMD24
CA9_A	CMD1	CA9_B	CMD25
CAB1_A	CMD6	CAB1_B	CMD26
CAB2_A	CMD10	CAB2_B	CMD27
CHB-Byte 2..3		CHB-Byte 6..7	
CA0_B	CMD4	CA0_B	CMD16
CA1_B	CMD12	CA1_B	CMD17
CA2_B	CMD6	CA2_B	CMD18
CA3_B	CMD13	CA3_B	CMD19
CA4_B	CMD7	CA4_B	CMD20
CA5_B	CMD11	CA5_B	CMD21
CA6_B	CMD15	CA6_B	CMD22
CA7_B	CMD14	CA7_B	CMD23
CA8_B	CMD3	CA8_B	CMD24
CA9_B	CMD1	CA9_B	CMD25
CAB1_B	CMD6	CAB1_B	CMD26
CAB2_B	CMD10	CAB2_B	CMD27
RESET*		CMD2	

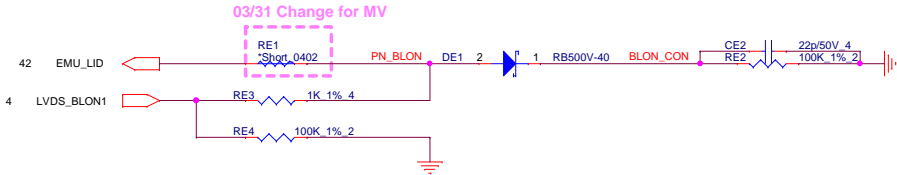
NA

 <b>NB5</b>	<b>PROJECT : G3MQ</b> Quanta Computer Inc.		
	Size A	Document Number <b>Reserve</b>	Rev 3A
	Date: Wednesday, April 28, 2021		Sheet 26 of 106

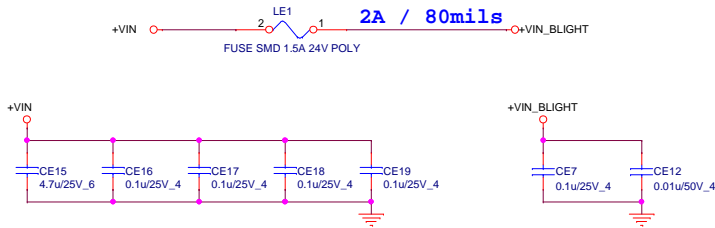




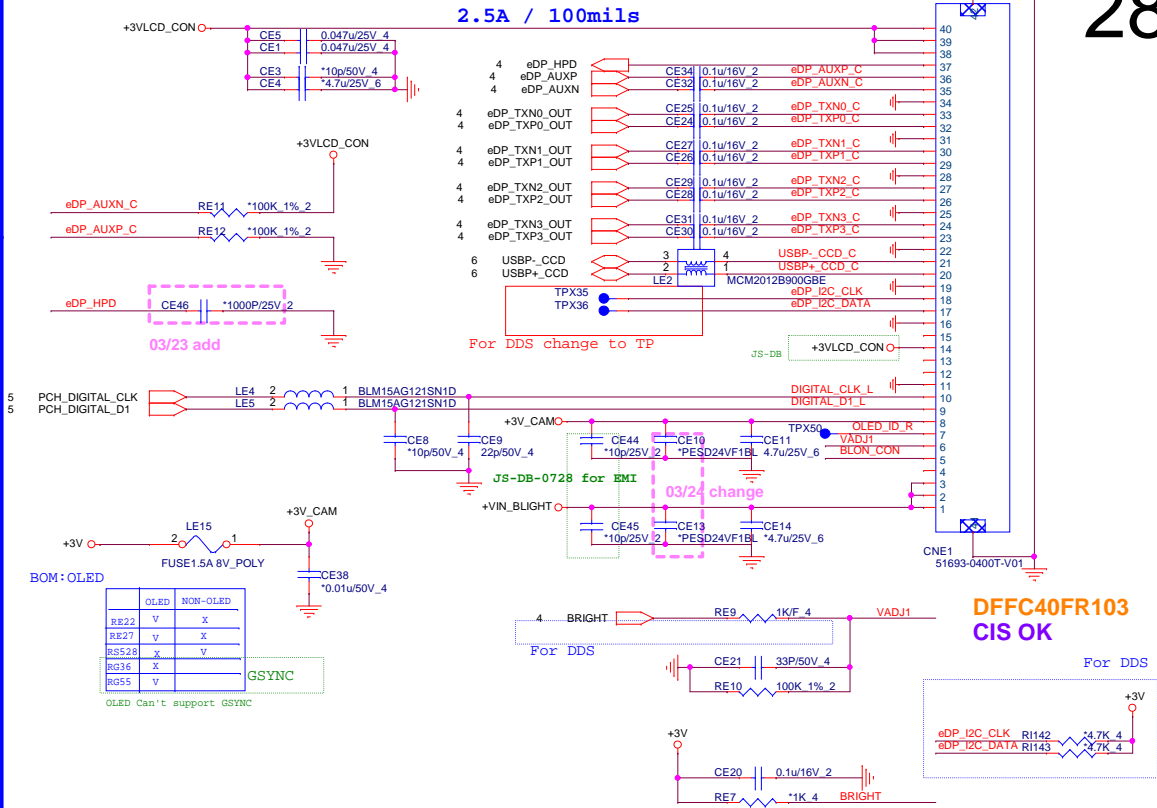
# LID Switch



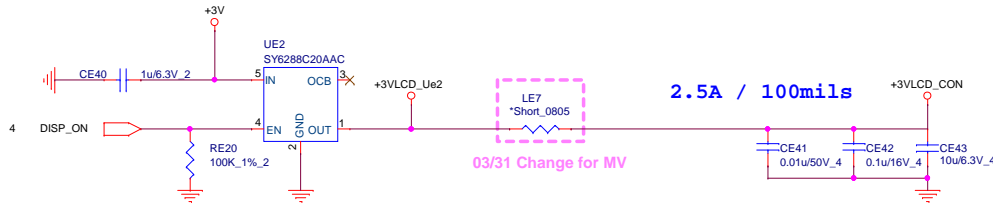
# LCD Blight



# eDP Conn.



# 3V LCD Power SW

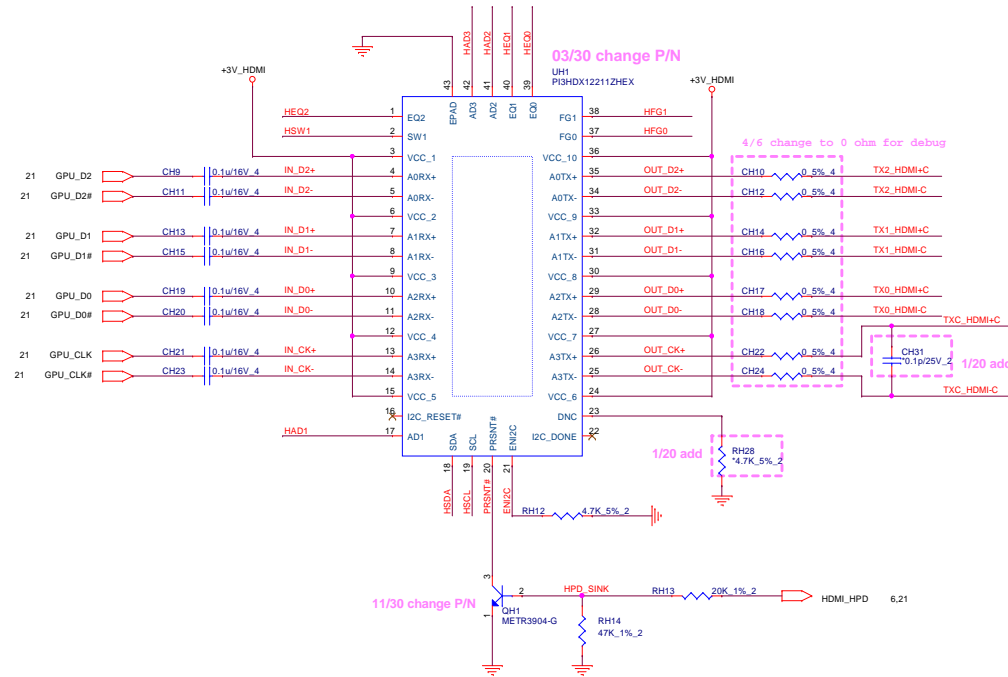
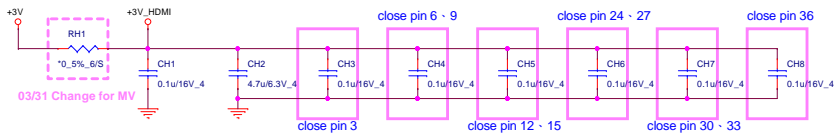




**PROJECT : G3MQ**  
**Quanta Computer Inc.**

Size Custom	Document Number <b>eDP Mux</b>	Rev 3A
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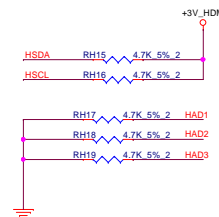
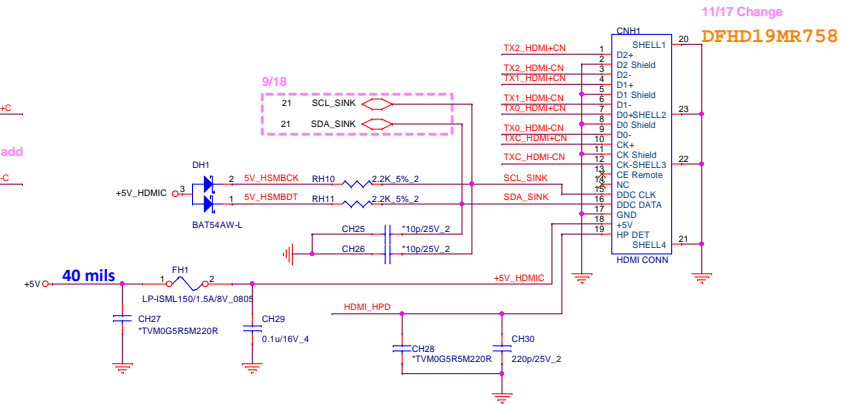
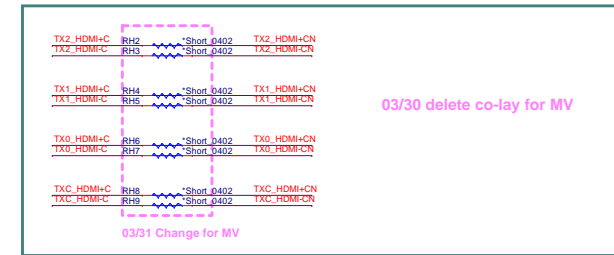
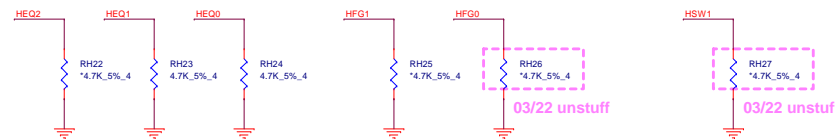
+3V +5V 4.5,7,17,18,21,28,32,33,35,36,38,39,42,45,49,50,82,88,96,98,99,100,102 39,45,49,96



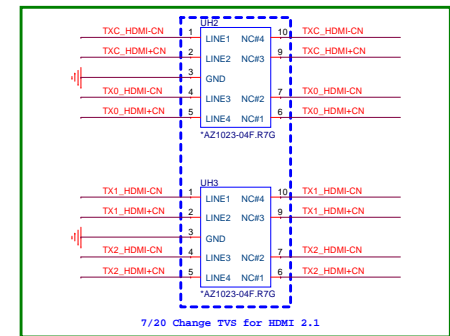
Value	HEQ2	HEQ1	HEQ0
6.8dB	4.7K	4.7K	4.7K
7.8dB	4.7K	4.7K	NC
9.2dB	4.7K	NC	4.7K
10.7dB	4.7K	NC	NC
12.2dB (Default)	NC	4.7K	4.7K
13.4dB	NC	4.7K	NC
14.8dB	NC	NC	4.7K
16.4dB	NC	NC	NC

Value	HFG1	HFG0
-3.5dB	4.7K	4.7K
-2.0dB	4.7K	NC
-0.5dB (Default)	NC	4.7K
1.5dB	NC	NC

Value	HSW1
1000mV (Default)	4.7K
1200mV	NC



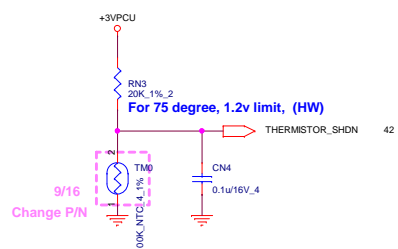
## ESD



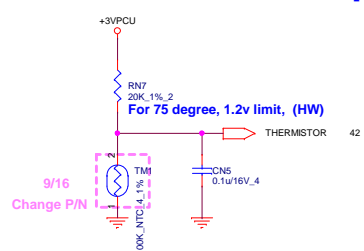


## Thermal Protect

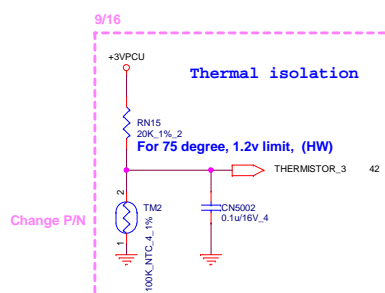
Under CPU pipe for travel bag test



GPU area to monitor GPU temp.

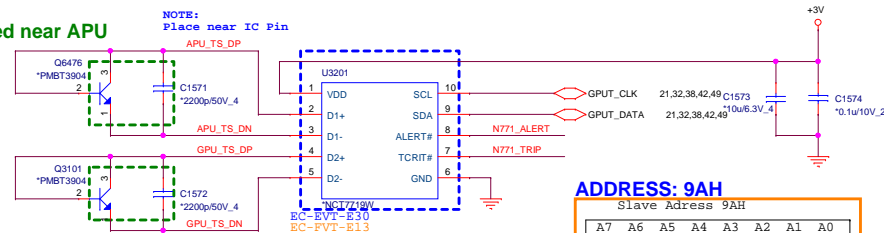


Thermal isolation

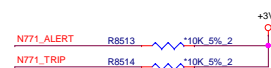


## Thermal Sensor APU and GPU 03/29 unstuff for MV

Placed near APU



Placed near GPU

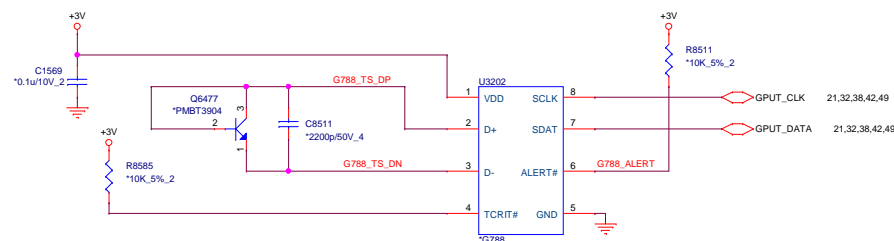


ADDRESS: 9AH

Slave Address 9AH							
A7	A6	A5	A4	A3	A2	A1	A0
1	0	0	1	1	0	1	0

GMT	G753T11U		90h	AL000753000
Nuvoton	NCT7719W	SMBus Address	9Ah	AL007719000
GMT	G751-2P8F	SMBus Address	92h	AL000751016

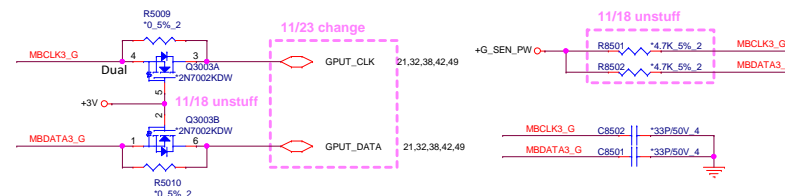
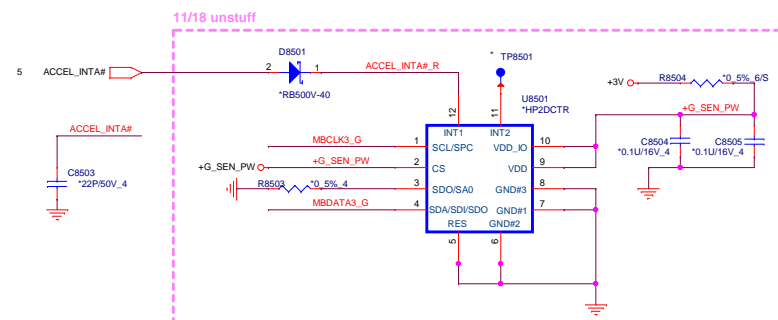
## 10/23 Thermal isolation 03/29 unstuff for MV



ADDRESS: 98H

Slave Address 98H							
A7	A6	A5	A4	A3	A2	A1	A0
1	0	0	1	1	0	0	0

## Accelerometer Sensor





9. Power Sequence

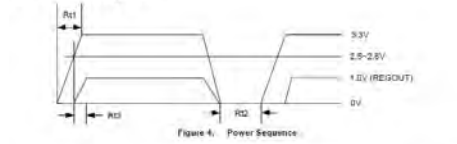
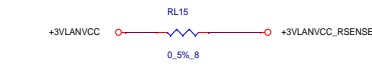
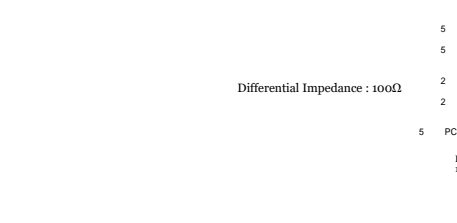
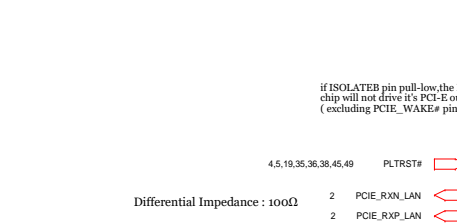
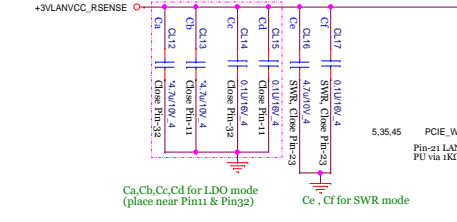
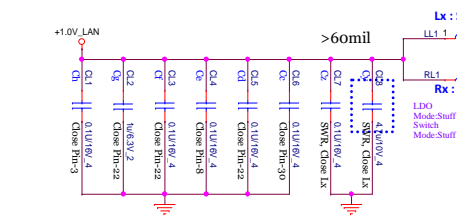


Table 16. Power Sequence Parameter

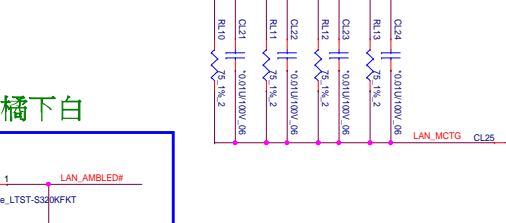
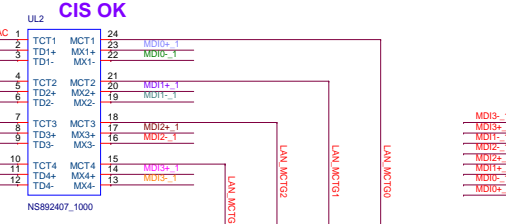
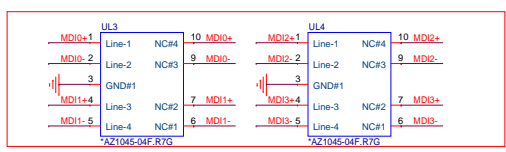
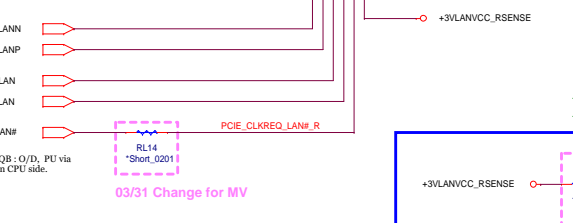
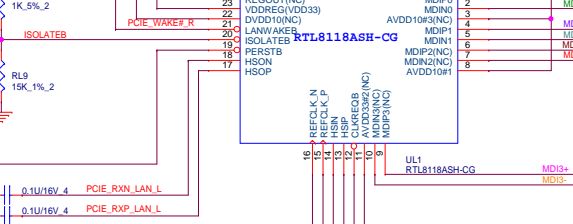
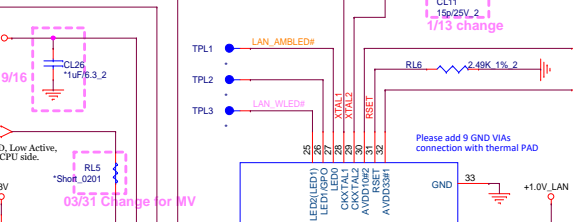
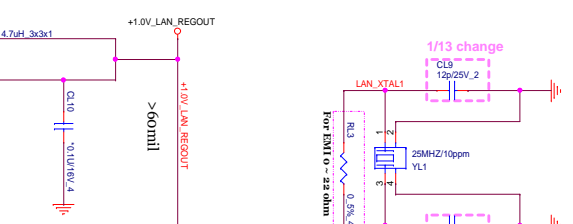
Symbol	Description	Min	Typical	Max	Units
R1	3.3V Rise Time	0.1	-	100	ns
R2	3.3V Off Time	-	-	-	ns
R3	1.1V (REGOUT) Settle Time	-	-	15	ns

Note: See the following section for power sequence requirements.

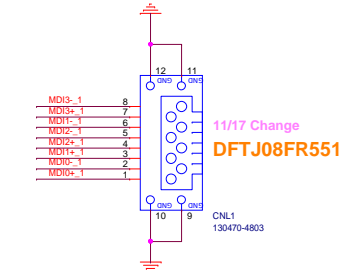
Place Cc,Cd,Ce,Cf close to each VDD10 pin-- 3,8,22,30  
Place Cg & Ch close to each VDD10 pin22



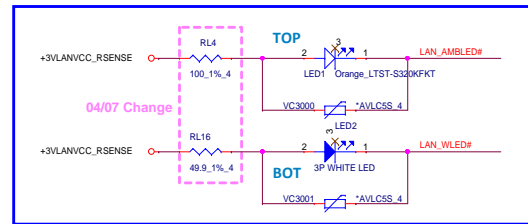
Power trace Layout W > 60mil  
Trace<30 mil  
Width > 60 mil



LAN CONN RJ45

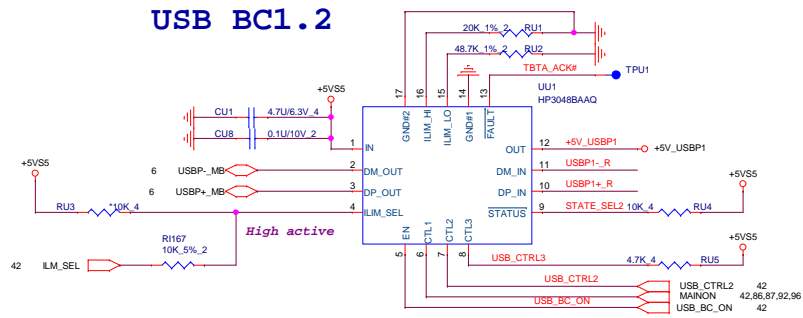


LAN LED 上橘下白

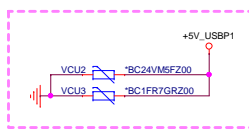


### USB 2.0/3.0 Combo MB

## USB BC1.2

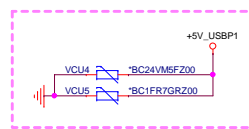


03/31 add (near Pin12)



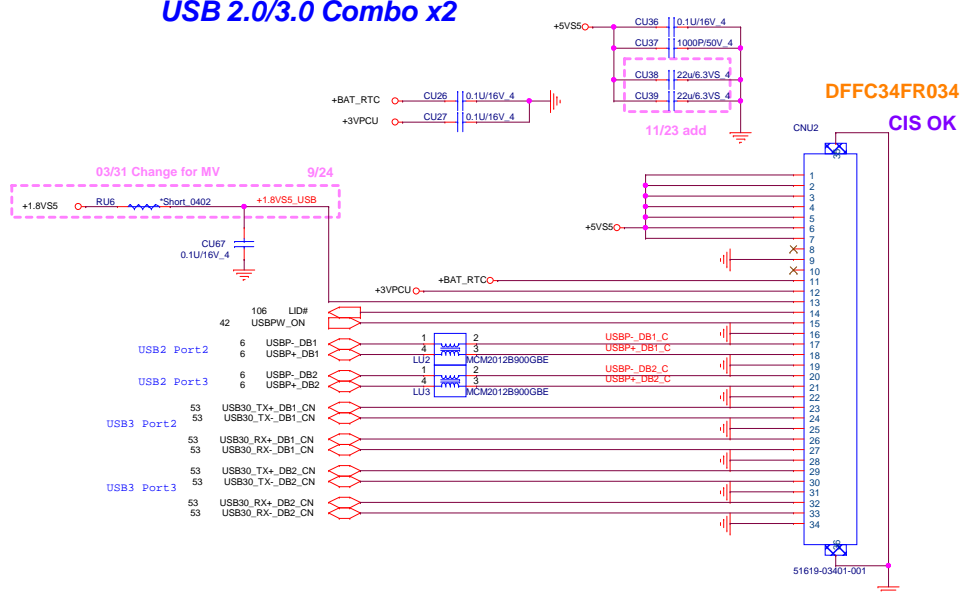
04/06 change P/N

04/06 add (near Pin12)



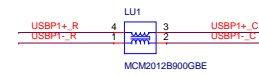
## USB3 small board

**USB 2.0/3.0 Combo x2**

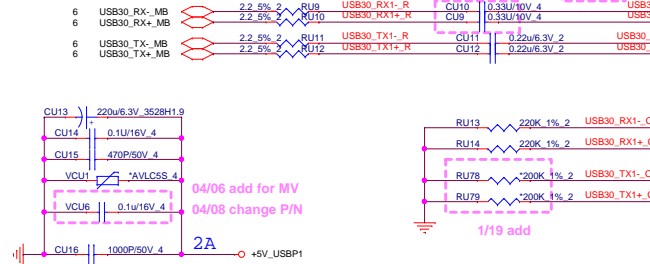


AMD - 9/15

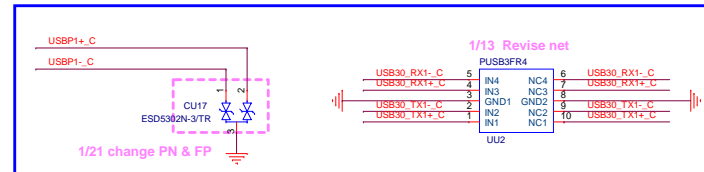
03/30 delete co-lay for MV



AMD - 9/15



Place Back to Back La

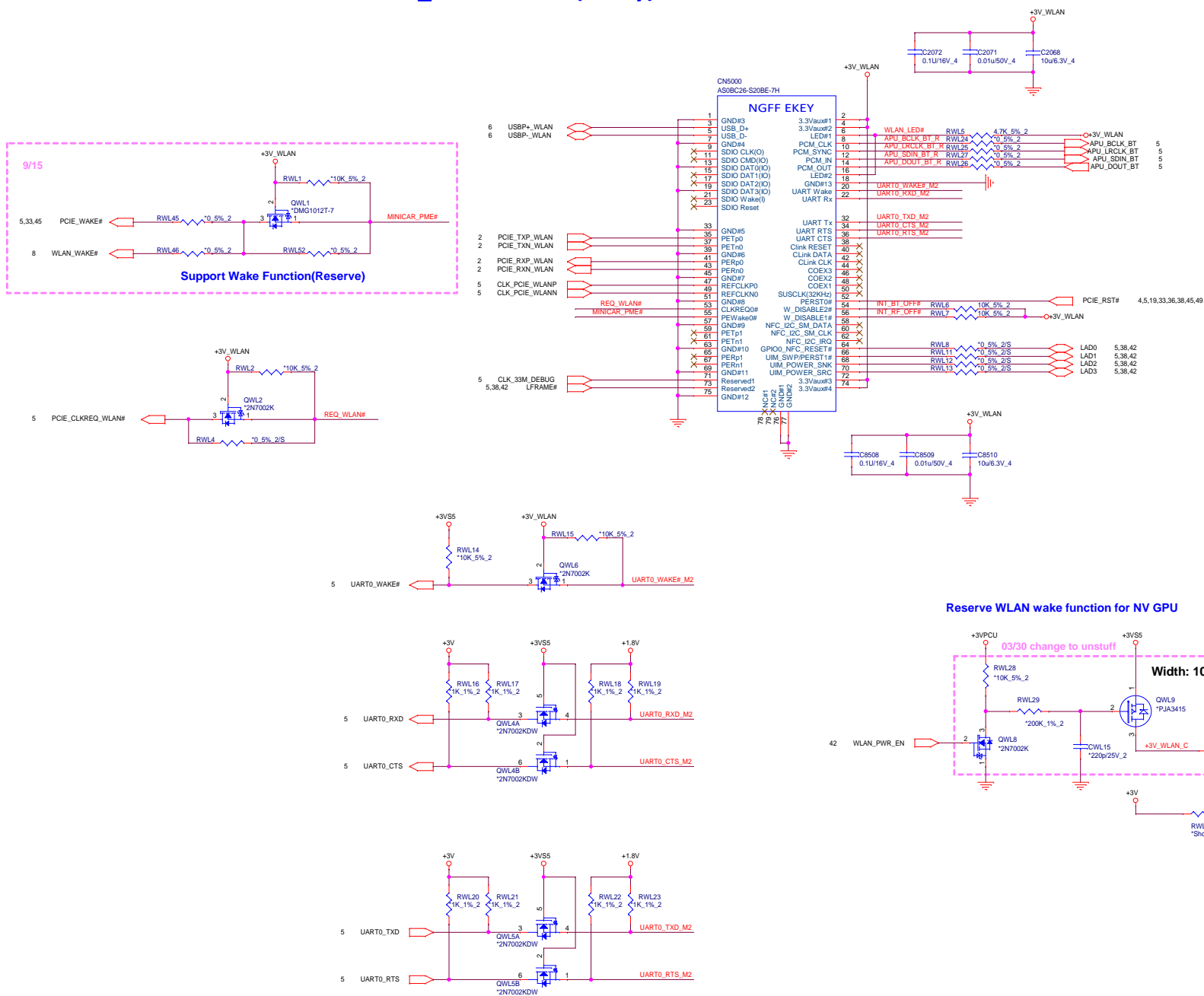


CIS OK

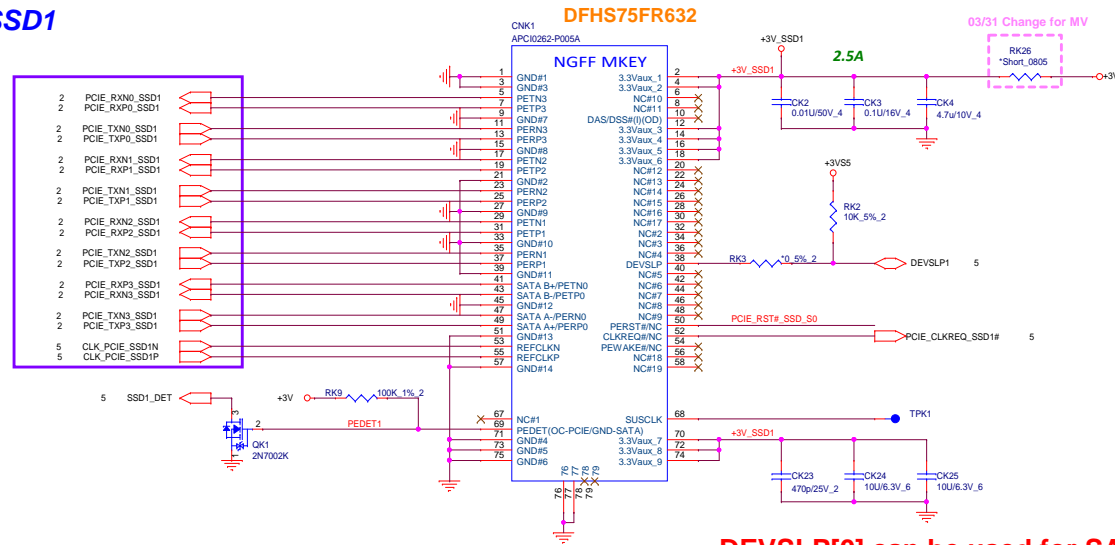
- 9/15

03/30 delete co-lay for MV

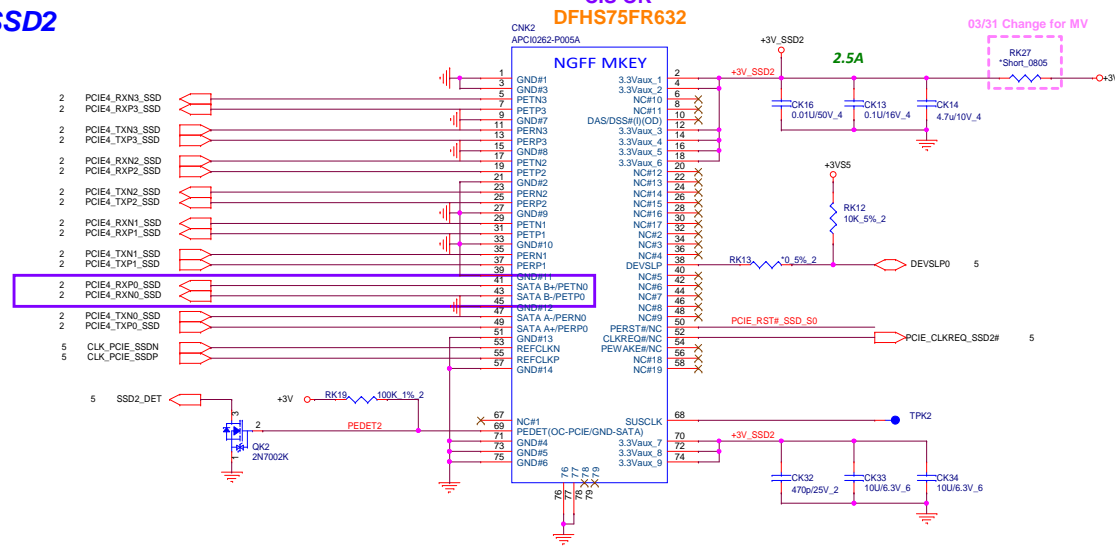
## WLAN\_NGFF CONN (E-Key)



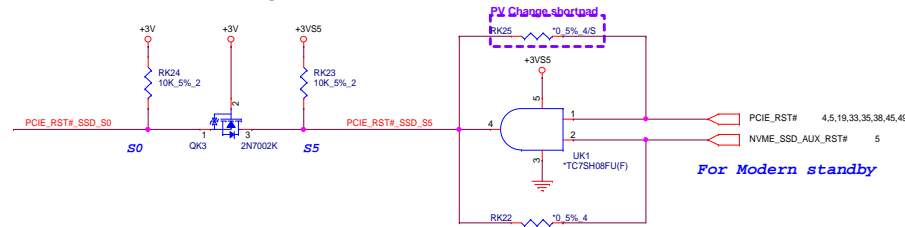
## SSD1



## SSD2



For leakage

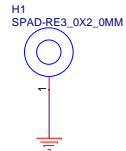


## EMI Gasket

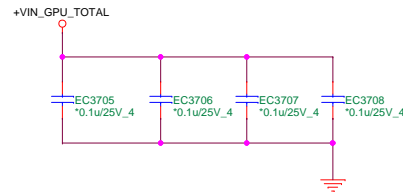
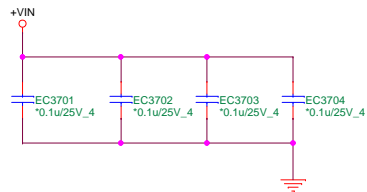
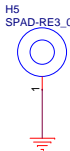
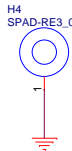
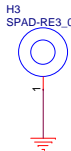
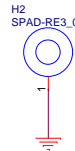
## Nut ( HH4 / 9 / 10 / 23 / 24 stuff )

9/22

P/N : GB0MB001010

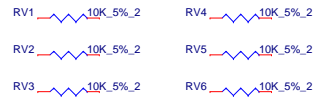


P/N : GBBLV004010

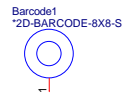
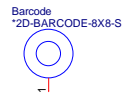


9/18

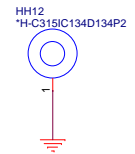
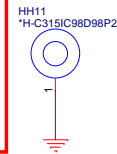
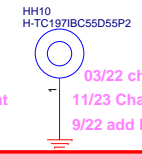
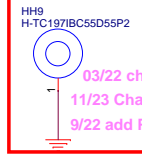
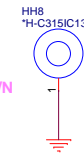
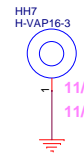
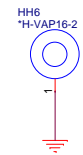
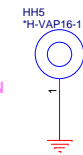
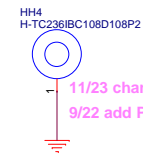
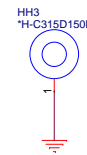
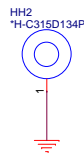
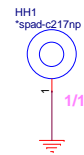
TOP for Vendor ID



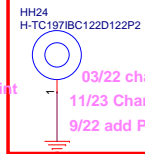
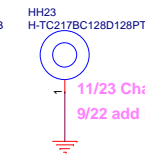
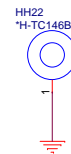
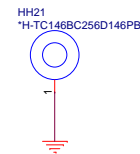
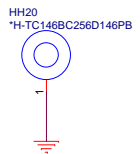
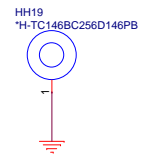
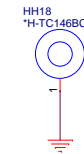
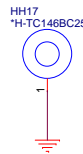
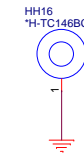
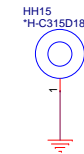
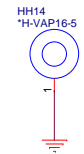
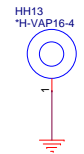
9/18



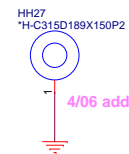
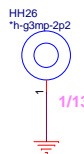
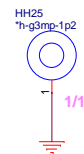
9/17



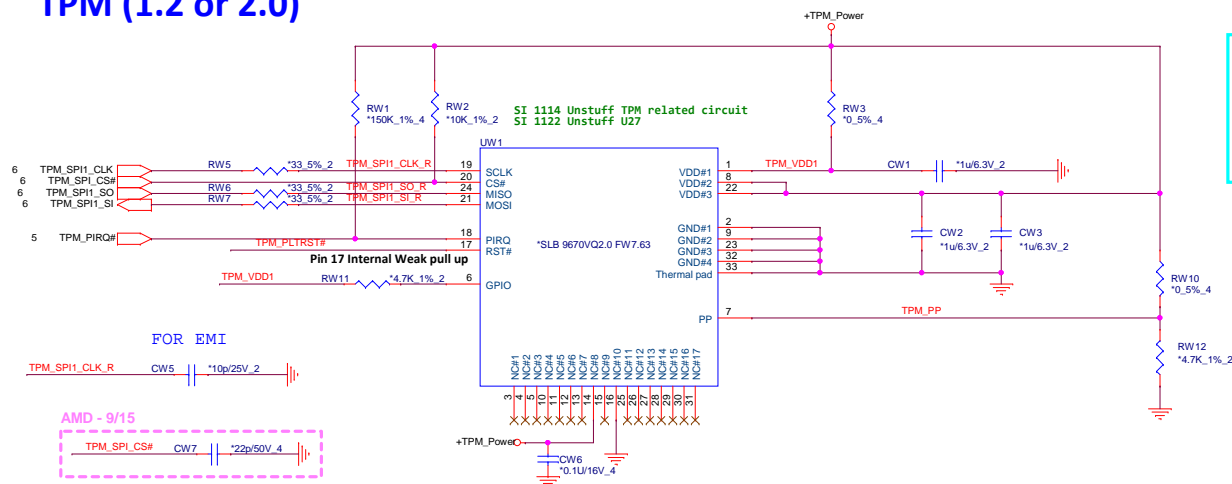
04/06 Change footprint



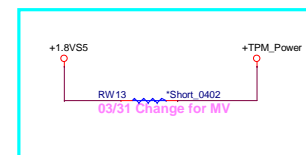
04/06 Change footprint



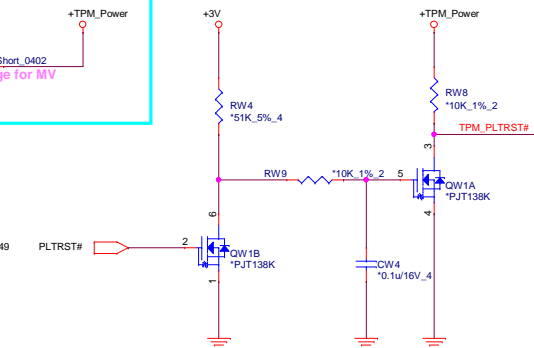
## TPM (1.2 or 2.0)



AMD +1.8VS5

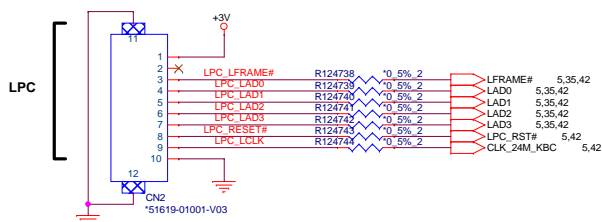


4,5,19,33,35,36,45,49

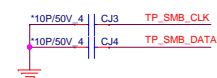
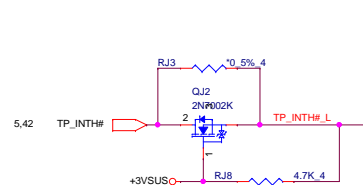


## For debug

03/29 unstuff for MV

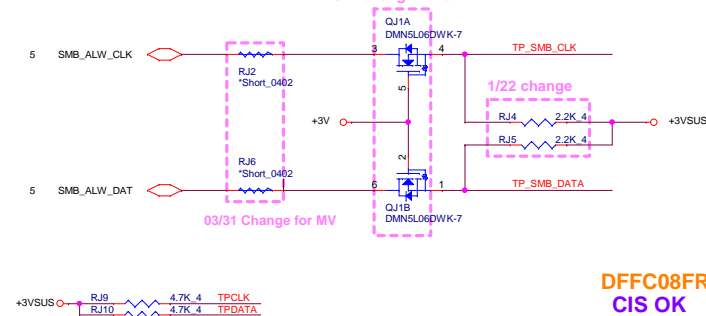
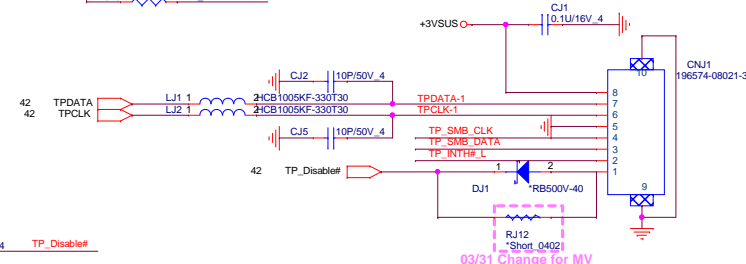


## Touch Pad



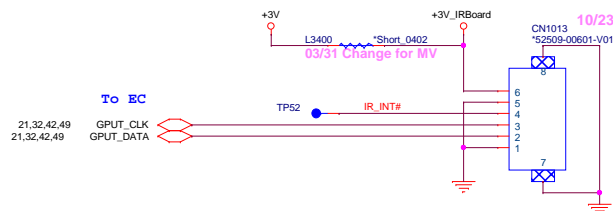
+3VSUS - RJ11 - 4.7K - 4 - TP\_Disable#

1/22 change PN &amp; FP

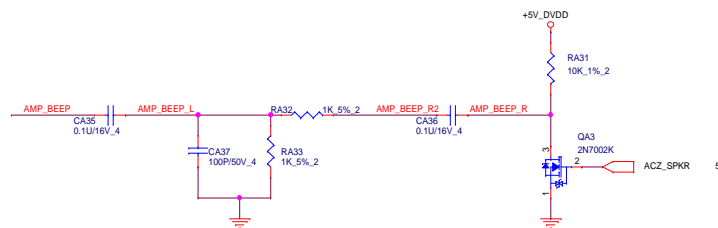
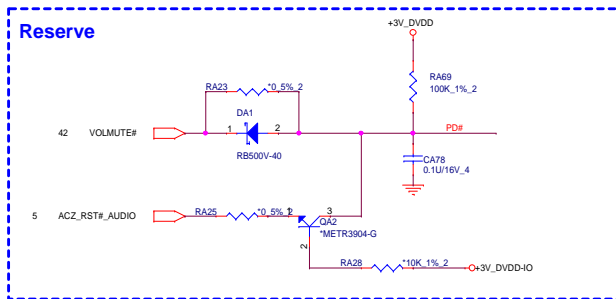
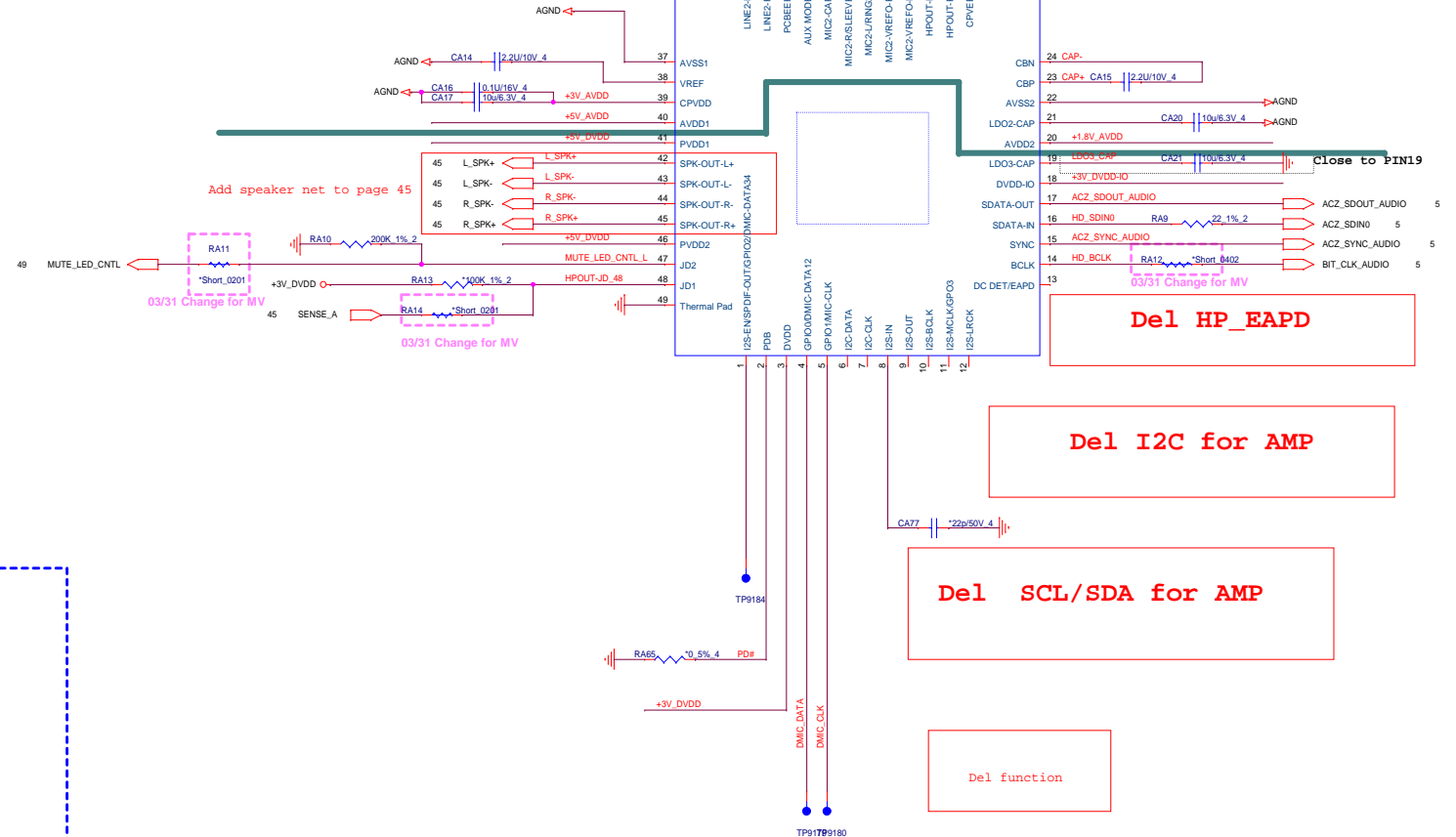
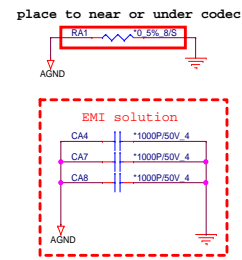
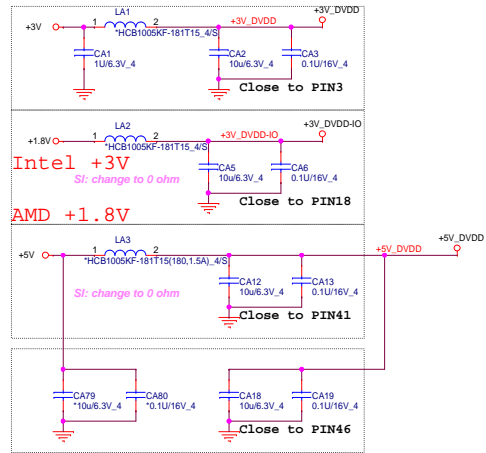
DFFC08FR174  
CIS OK

## IR connector

10/22 03/29 unstuff for MV

<https://realschematic.com>

## schematic reference G3EE




CHECK WITH G3ZA

*Head Phone out*

40

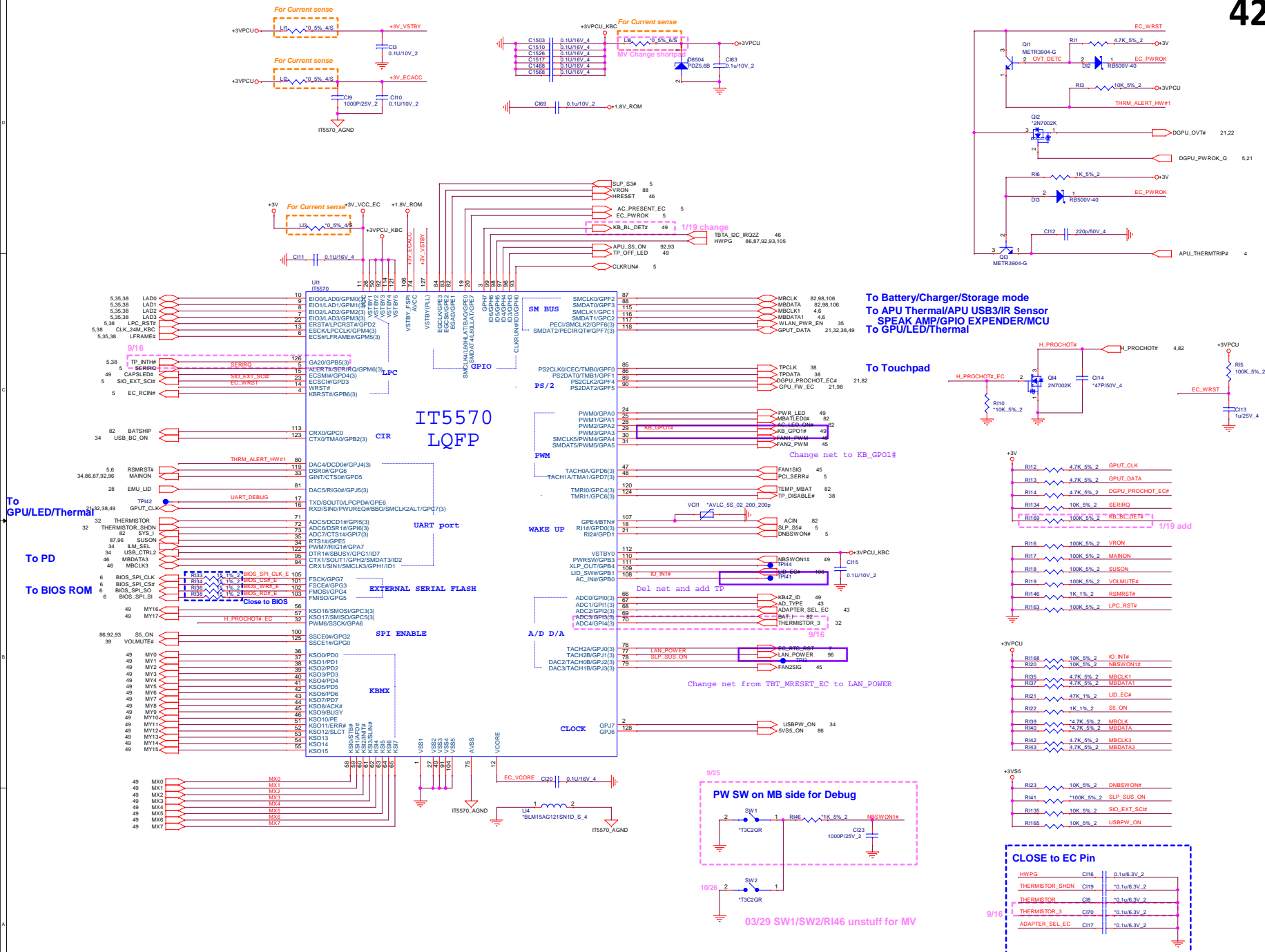
*Head Phone jack*

Move Audio jack to DB board

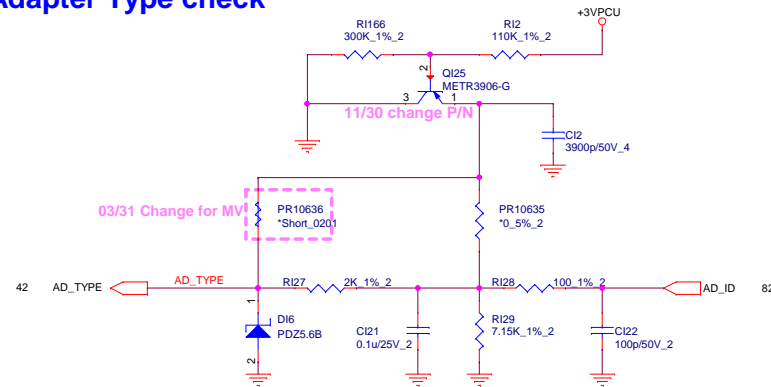
 NB5	<b>PROJECT : G3MQ</b> Quanta Computer Inc.		
	Size Custom	Document Number <b>HP AMP/HP Jack/MIC Jack</b>	Rev 3A
	Date: Wednesday, April 28, 2021	Sheet 40of	106



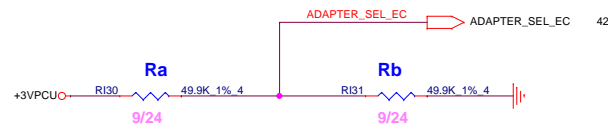
Del AMP



### Adapter Type check



## Adapter select for EC



9/24 update

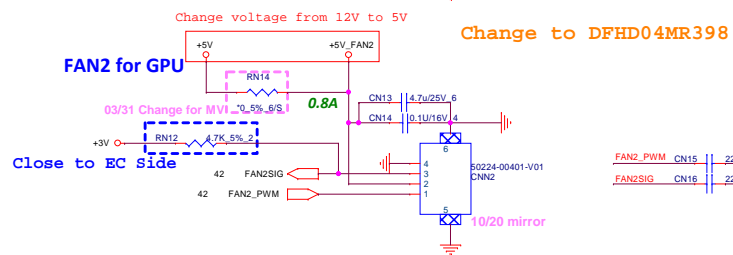
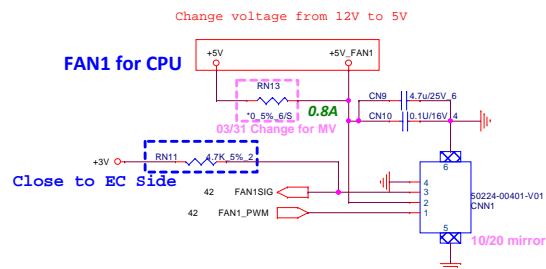
Adaptor rating	Ra	Rb	ADAPTER_SEL_EC	GPU type (TGP+PPAB) max
230W	10K (CS31002FB26)	90.9K (CS39092FB11)	2.972V	Reserve (GN20-E5 80W Max-Q support up to 115W TGP)
200W	20K (CS32002FB29)	80.6K (CS38062FB14)	2.643V	GN20-E3 80W Standard (Actually 80W+15W)
Reserve	30.1K (CS33012FB18)	69.8K (CS36982FB11)	2.305V	Reserve
200W	49.9K (CS34992FB10)	49.9K (CS34992FB10)	1.65V	GN20-P0/P1 60W support (Actually 60W+15W)
150W	60.4K (CS36042FB10)	40.2K (CS34022FB15)	1.318V	N18P-G61-A 50W

[illegible]

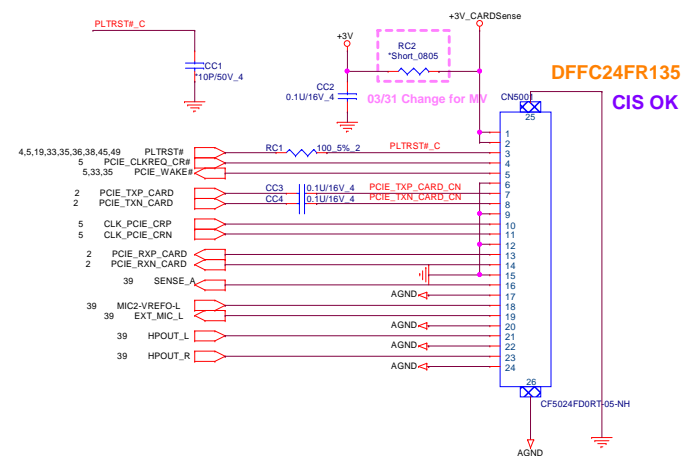
Del thunderbolt function

## **FAN connector**

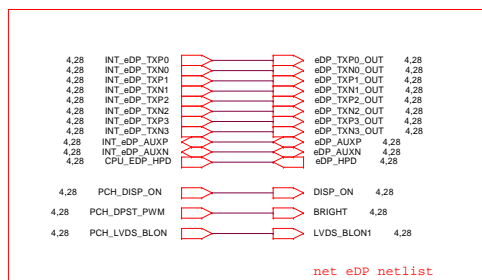
Project	CPU Fan	GPU Fan
VAE	DFHD04MR445	DFHD04MR445
VAP	DFHD04MR398	DFHD04MR398



### SD Card to Small Board



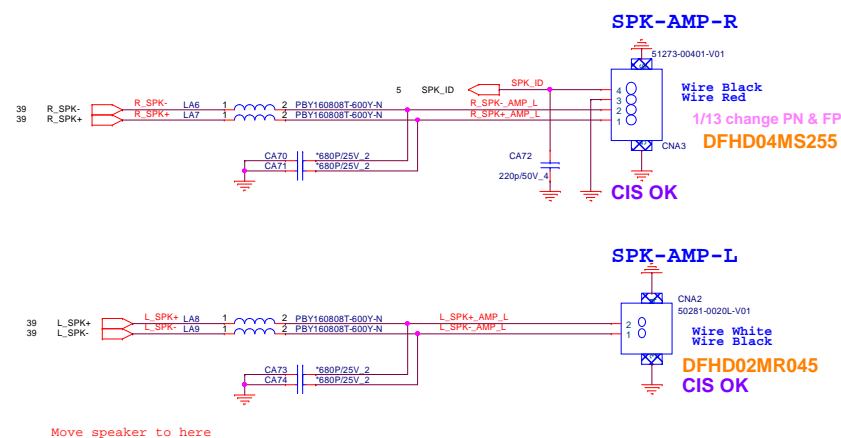
## Del IR connector



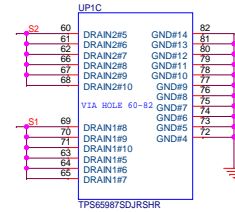
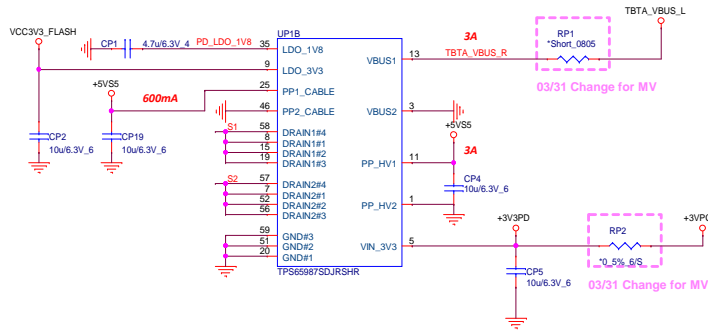
COMBINE INTEL/AMD NET NAME



**Speaker**

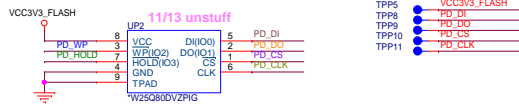
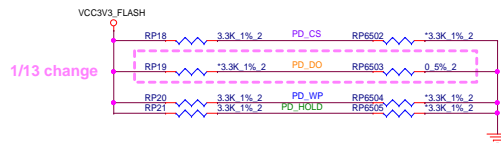


Move speaker to here

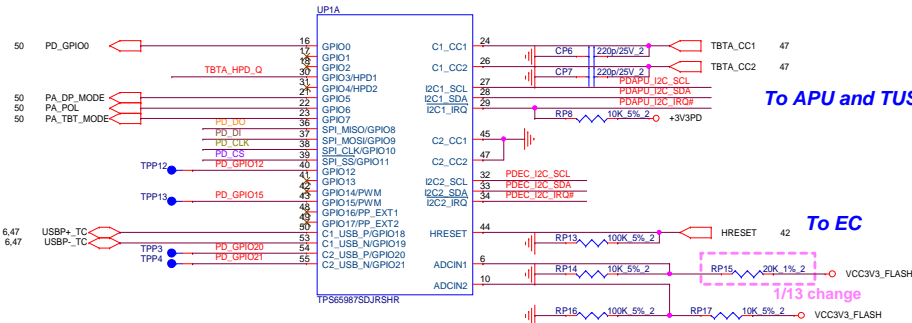


Qunata PN	Part Description
AL180901000	IC OTHER(56P) SN1809018RSHR(VQFN)

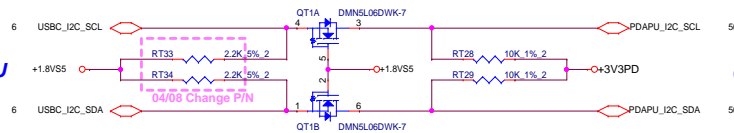
### PD SPI ROM



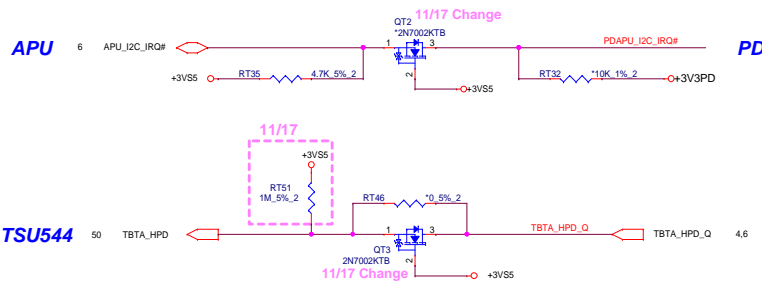
DB Stuff / SI unstuff  
Support flash less



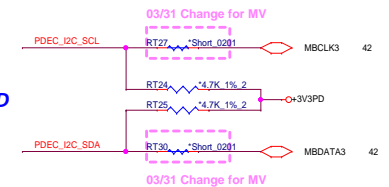
### APU



### PD (To TUSB544 re-driver)

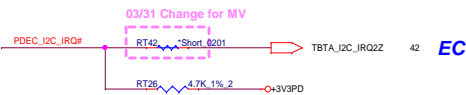


### PD



### EC

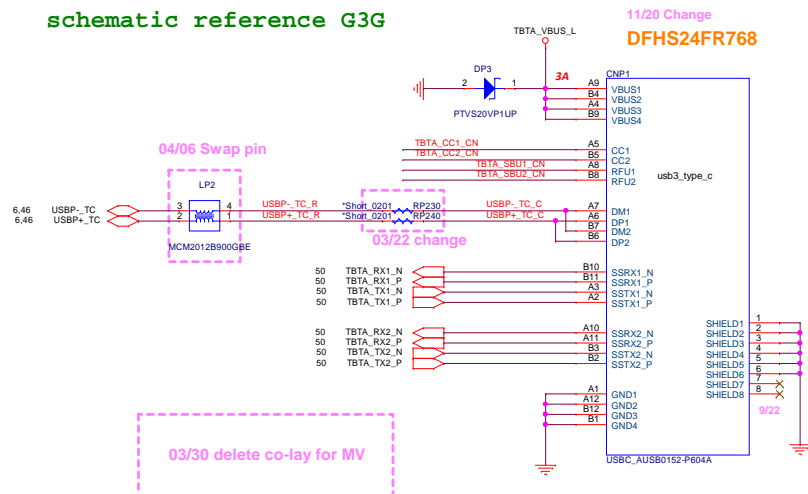
### PD



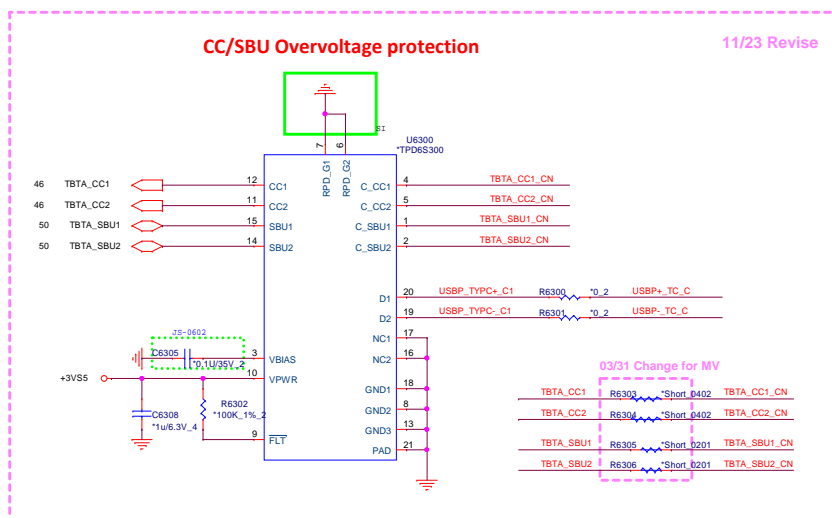
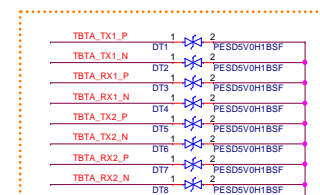
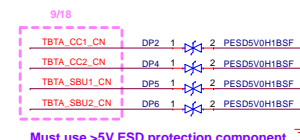
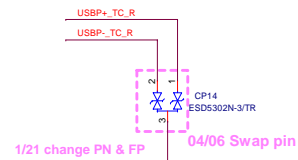
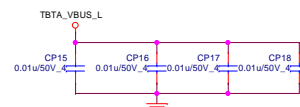
### EC

## TYPE-C

schematic reference G3G




## ESD part



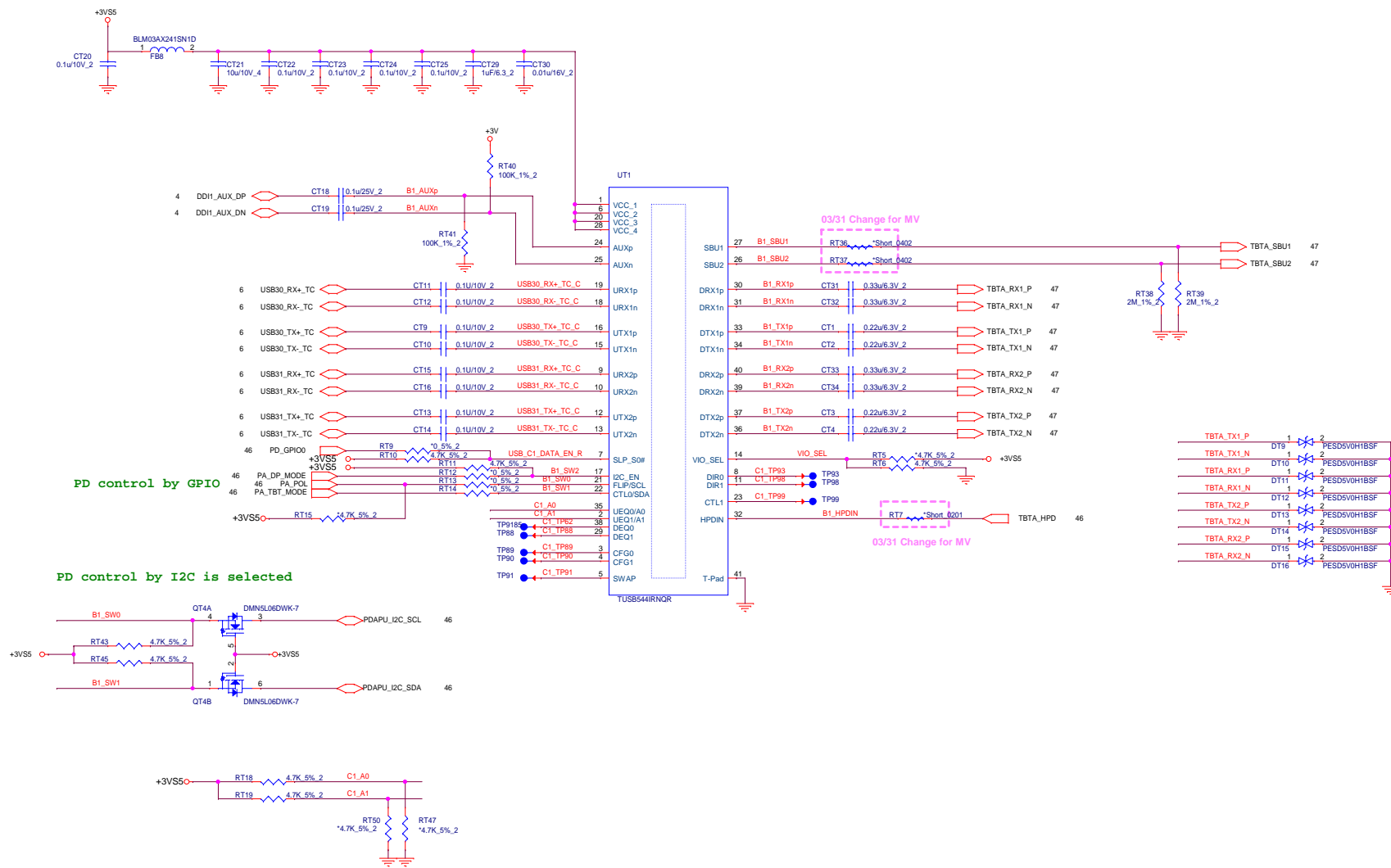
PROJECT : G3MQ  
Quanta Computer Inc.

Size Custom  
Document Number TYPE-C/TBT DP1.4 redriver  
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	Size Custom	Document Number <b>GPIO EXPENDER/Keyboard</b>	Rev 3A
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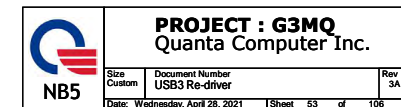
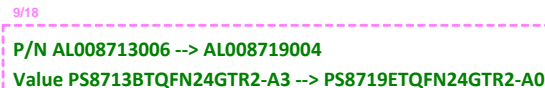
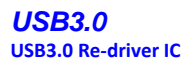
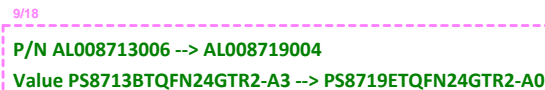
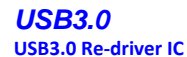





	Custom Alt Mode	900 mV <sub>pp</sub> ; CTL1 = H; CTL0 = H			
P <sub>CC-Active-DP</sub>	Average active power 4 Lane DP Only	Four active DP lanes operating at 8.1 Gbps; EQ control pins = NC, K28.5 pattern at 5 Gbps, V <sub>ID</sub> = 1000 mV <sub>pp</sub> ; VOD Linearity = 900 mV <sub>pp</sub> ; CTL1 = H; CTL0 = L;	564		mW
P <sub>CC-NC-USB</sub>	Average power with no connection	No GEN1 device is connected to TXP/TXN; CTL1 = L; CTL0 = H;	2.5		mW
P <sub>CC-U2U3</sub>	Average power in U2/U3	Link in U2 or U3 USB Mode Only; CTL1 = L; CTL0 = H;	2.0		mW









NA

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 NB5	<b>PROJECT : G3MQ</b> Quanta Computer Inc.		
	Size A	Document Number <b>Reserve</b>	Rev 3A
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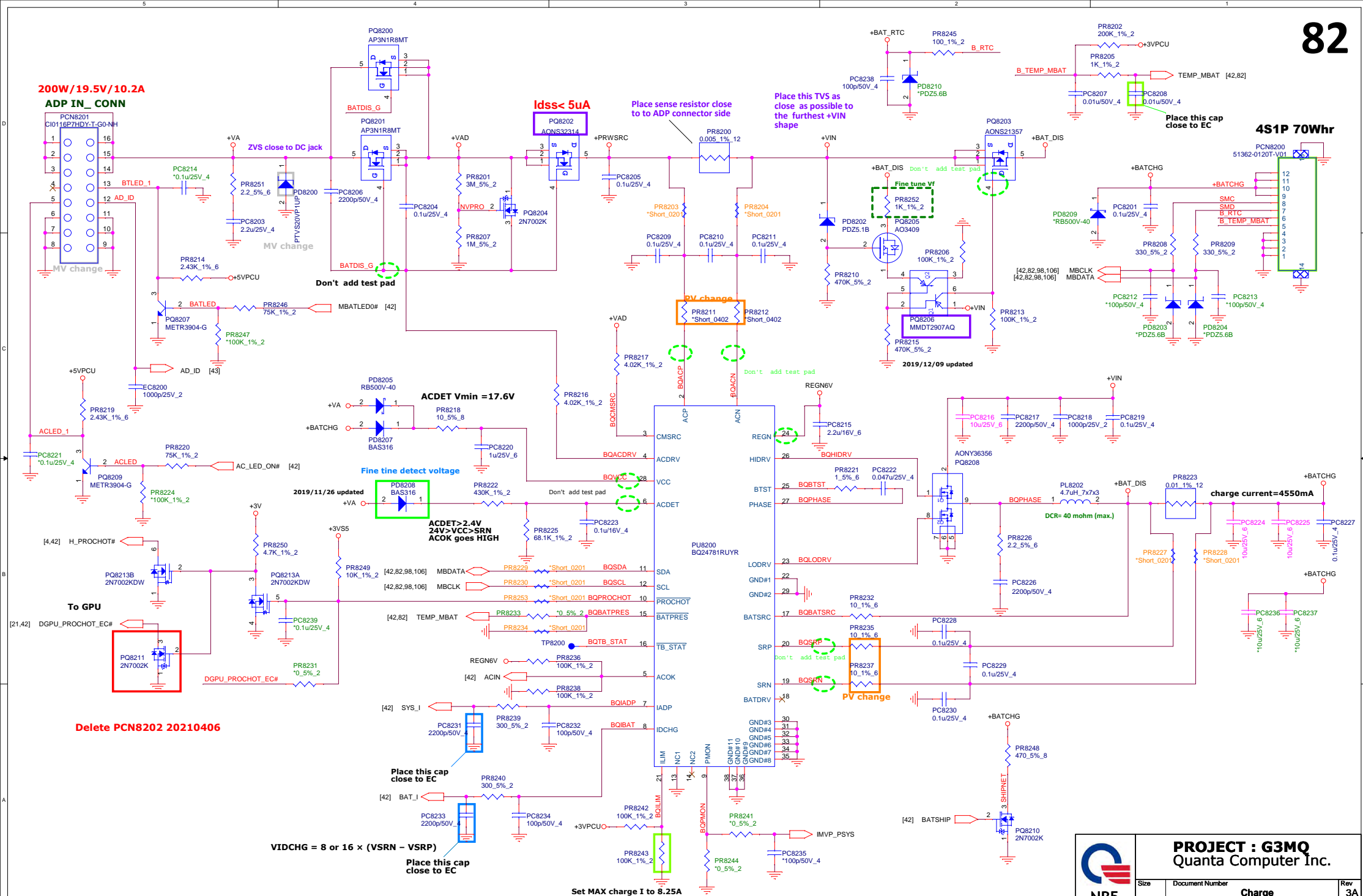



NB5


<b>PROJECT : G3MQ</b> Quanta Computer Inc.		
Size Custom	Document Number 80 – TYPE-C/Barrel switch	Rev 3A
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 NB5	<b>PROJECT : G3MQ</b> Quanta Computer Inc.		
	Size Custom	Document Number <b>81 -- PWROK</b>	Rev 3A
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	<b>PROJECT : G3MQ</b> Quanta Computer Inc.		
	Size Custom	Document Number <b>83 -- Charger (ISL9538HRTZ-T)</b>	Rev 3A
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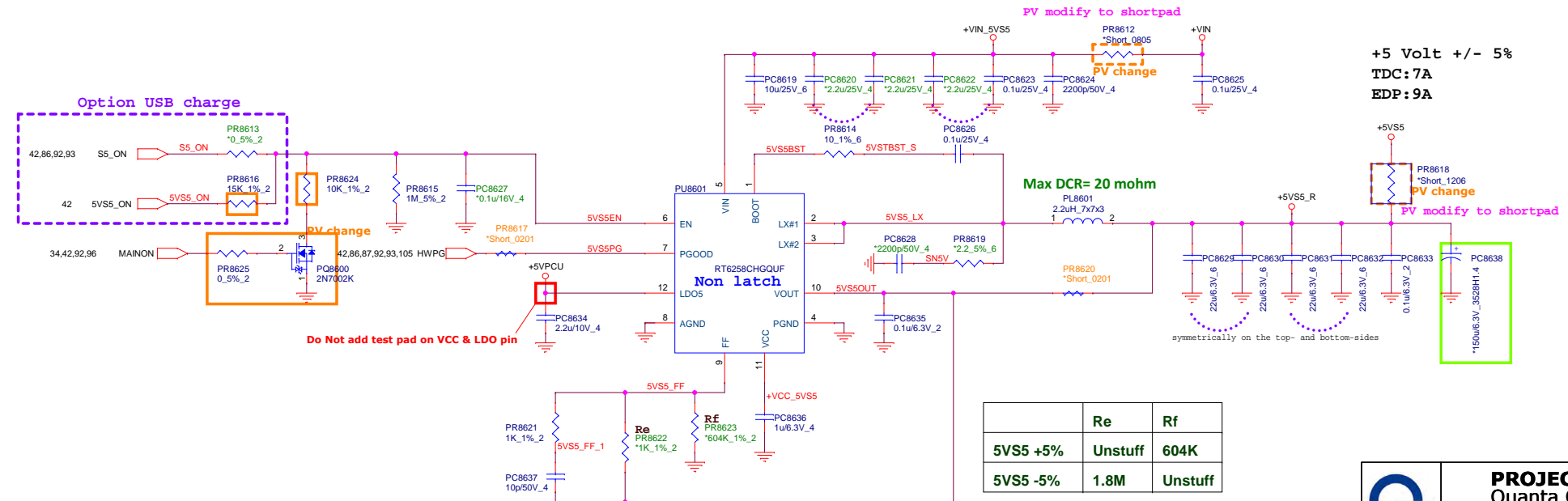
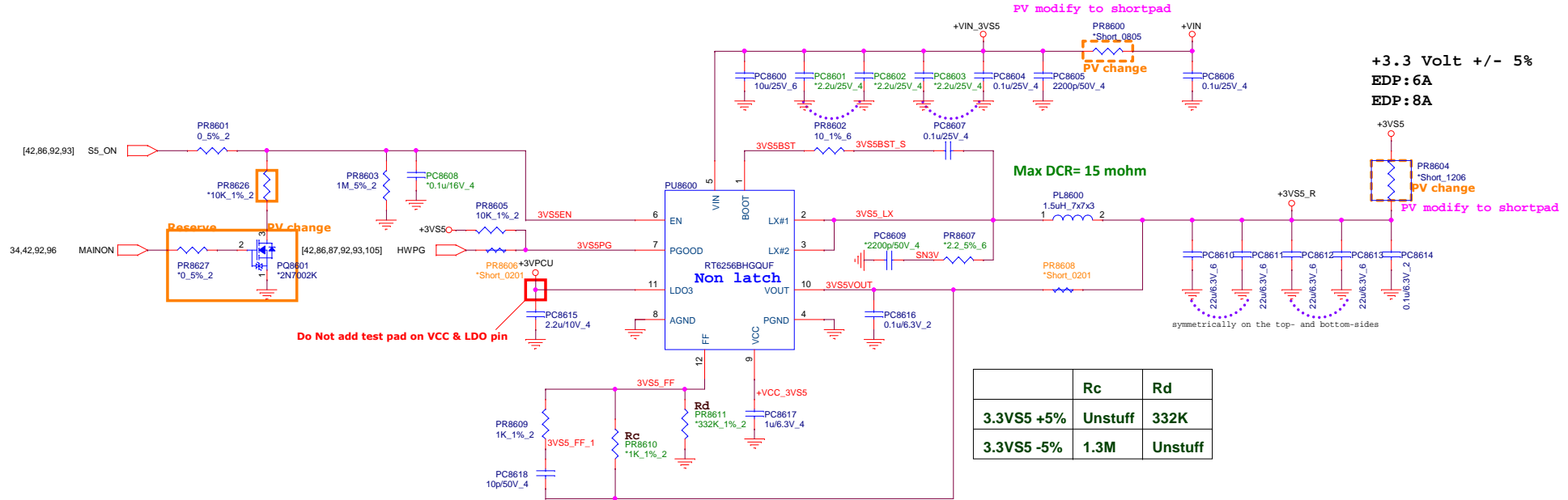


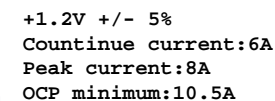
**PROJECT : G3MQ**  
Quanta Computer Inc.

Size	Document Number	Rev
	<b>Charge II</b>	<b>3A</b>
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 <b>NB5</b>	<b>PROJECT : G3MQ</b> Quanta Computer Inc.		
	Size Custom	Document Number 85 – Charger II	Rev 3A
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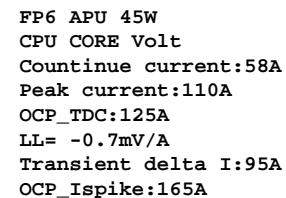
+3VS5 [4,5,6,7,23,35,36,42,46,47,50,53,82,87,92,93,96,104,105]  
 +3VPCU [7,32,34,35,42,43,46,49,82,106]  
 +5VS5 [34,46,87,98,99,96,102,105]  
 +5VPCU [39,82,96,105]  
 +VIN [28,37,49,82,87,88,89,96,97,99]







[illegible][illegible]

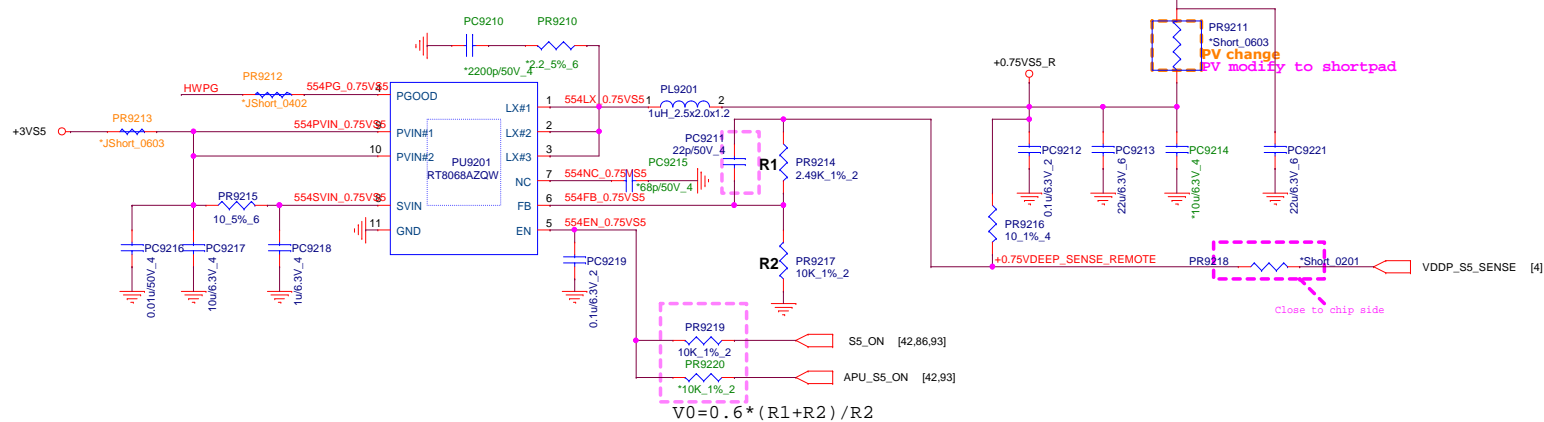
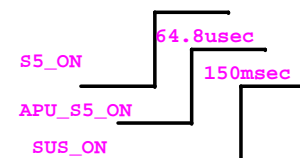
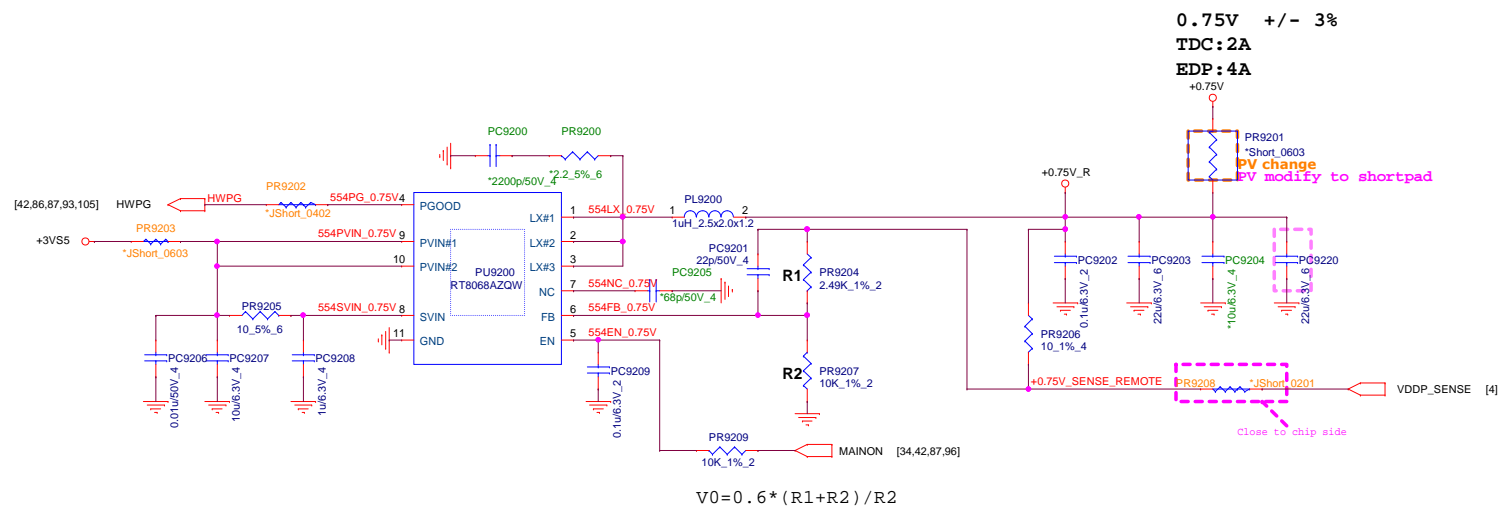


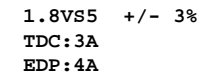



NB5


 <b>NB5</b> Custom	<b>PROJECT : G3MQ</b> Quanta Computer Inc.		
	Size	Document Number	Rev
		<b>Charge II</b>	<b>3A</b>
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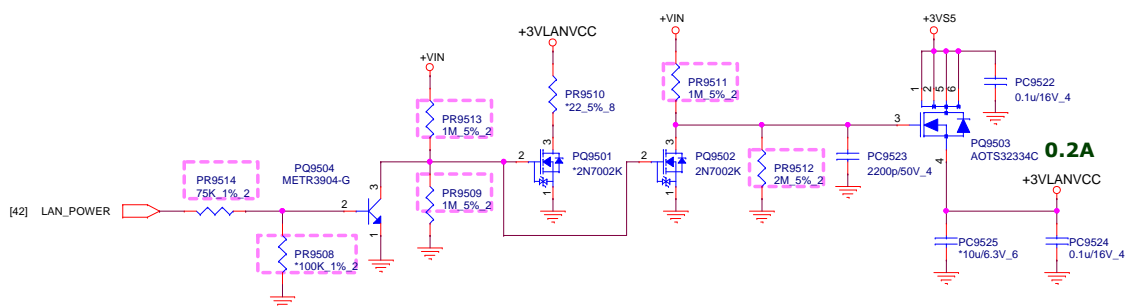
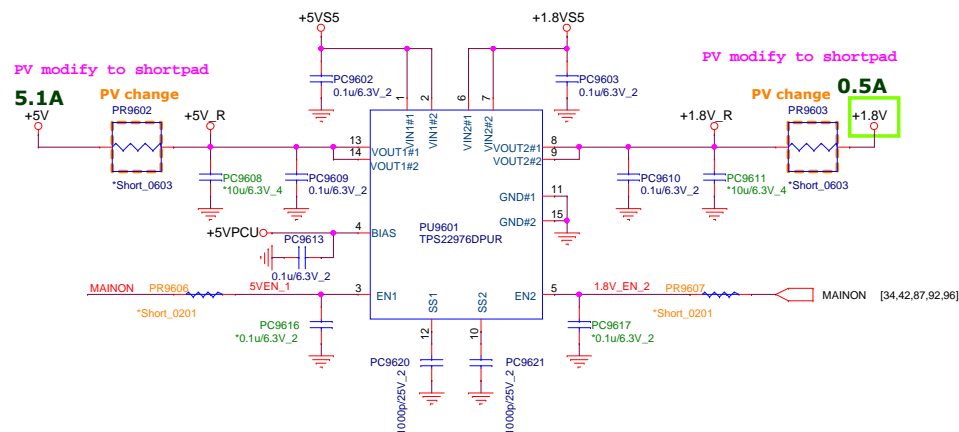
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	Size	Document Number	Rev
		<b>CPU POWER</b>	<b>3A</b>
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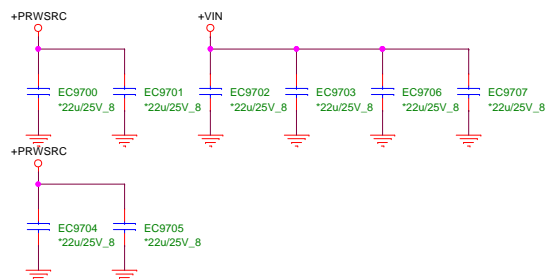
 <b>NB5</b> Custom	<b>PROJECT : G3MQ</b> Quanta Computer Inc.		
	Size	Document Number	Rev
		<b>Charge II</b>	<b>3A</b>
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 NB5	<b>PROJECT : G3MQ</b> Quanta Computer Inc.		
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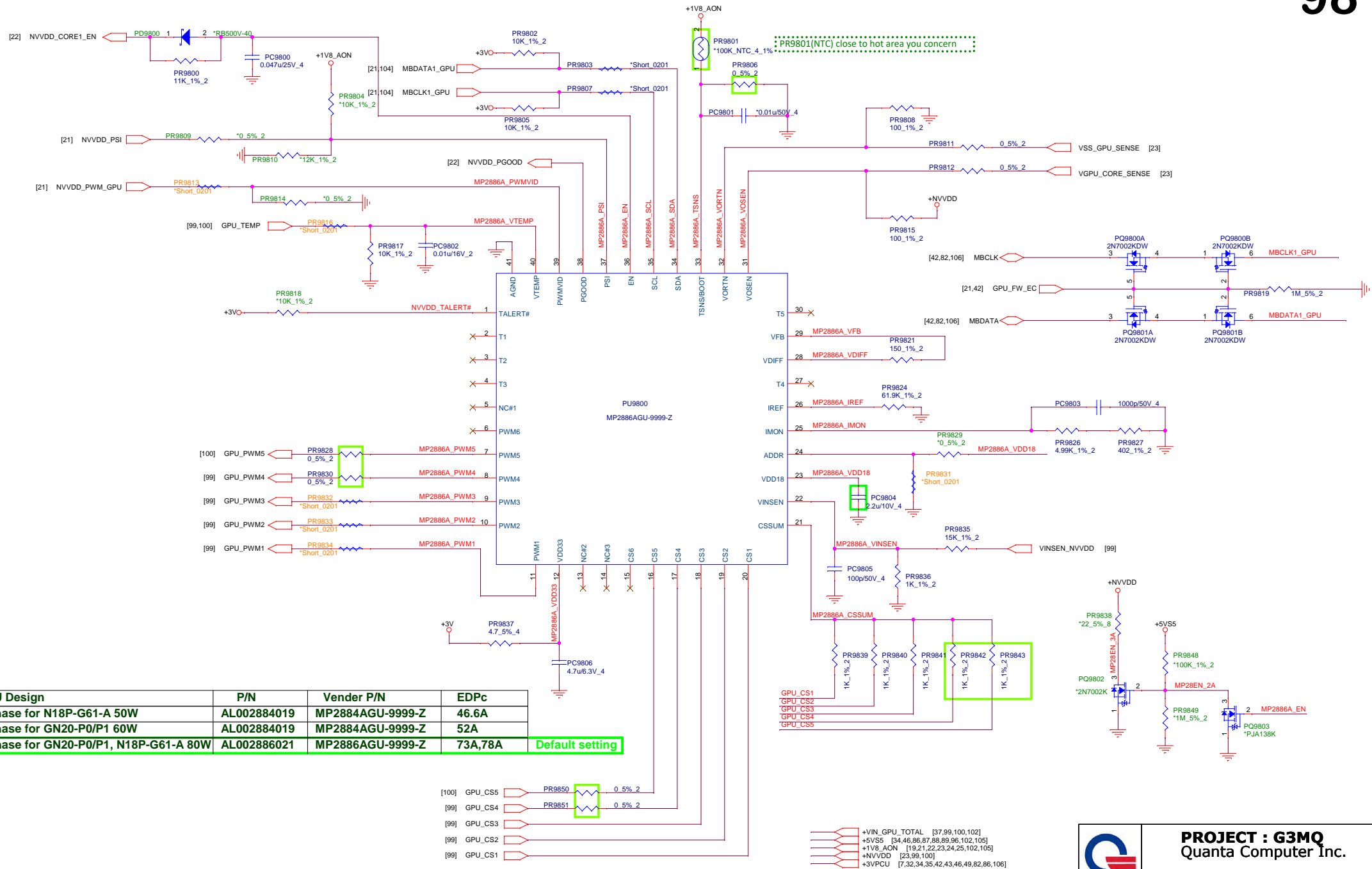




# Reserve for ISEN



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	Quanta Computer Inc.	
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+VIN\_GPU\_TOTAL [37,100,102]  
+5VSS [34,46,86,87,88,89,96,98,102,105]  
+NVVDD [23,98,100]

Put the same side with Dr.MOS and near pin1

+VIN\_GPU\_TOTAL

+VIN\_GPU\_TOTAL

99

MOS Temperature

[98] GPU\_PWM1  
[98,99,100] GPU\_TEMP

[98] GPU\_CS1

[98] VINSEN\_NVVDD

PU9900  
MP86941GQVT-Z  
VIN#1  
VIN#2  
AGND  
BST  
SW#1  
SW#2  
SW#3  
PGND#3  
PGND#2  
PGND#1  
CS

PC9908  
2.2u/10V  
PC9909  
1u/25V\_4  
PC9900  
10u/25V\_6  
PC9901  
10u/25V\_6  
PC9902  
1u/25V\_4  
PC9903  
2200p/50V\_4  
PC9904  
15u/25V\_3528H1.9  
PC9905  
15u/25V\_7343H1.9  
PC9906  
15u/25V\_7343H1.9  
PC9907  
15u/25V\_7343H1.9

PL9900  
0.15uH\_7x7x3  
Idc=26A Isat=52A  
DCR=1.9 mOhm +-7%

PC9904  
2.2\_5\_6  
PC9910  
330u/2V\_7343H1.9  
PC9911  
330u/2V\_7343H1.9

Put the same side with Dr.MOS and near pin1

GN20-P0/P1 (TGP 60W Φ4/80W Φ5)  
EDP-C: 52A/78A  
EDP-P: 211A  
OCP Minimum: ?A  
Co: 330uF/ESR9 x5PCS

N18P-G61-A (TGP 50W Φ3)  
EDP-C: 46.6A  
EDP-P: 99.2A  
OCP Minimum: ?A  
Co: 330uF/ESR9 x2PCS

LI= 0mV/A  
VBOOT=0.8V  
eff>87%@41A

[98] GPU\_PWM2  
[98,99,100] GPU\_TEMP

[98] GPU\_CS2

PU9901  
MP86941GQVT-Z  
VIN#1  
VIN#2  
AGND  
BST  
SW#1  
SW#2  
SW#3  
PGND#3  
PGND#2  
PGND#1  
CS

PC9914  
2.2u/10V  
PC9915  
10u/25V\_6  
PC9916  
10u/25V\_6  
PC9917  
1u/25V\_4  
PC9918  
2200p/50V\_4  
PC9919  
1u/25V\_4  
PC9920  
330u/2V\_7343H1.9  
PC9921  
2200p/25V\_2  
PC9922  
10u/25V\_6  
PC9923  
10u/25V\_6  
PC9924  
1u/25V\_4  
PC9925  
2200p/50V\_4  
PC9926  
15u/25V\_3528H1.9  
PC9927  
2.2u/10V  
PC9928  
1u/25V\_4  
PC9929  
330u/2V\_7343H1.9

PL9901  
0.15uH\_7x7x3  
Idc=26A Isat=52A  
DCR=1.9 mOhm +-7%

PC9905  
2.2\_5\_6  
PC9921  
2200p/25V\_2  
PC9922  
10u/25V\_6  
PC9923  
10u/25V\_6  
PC9924  
1u/25V\_4  
PC9925  
2200p/50V\_4  
PC9926  
15u/25V\_3528H1.9  
PC9927  
2.2u/10V  
PC9928  
1u/25V\_4  
PC9929  
330u/2V\_7343H1.9

Put the same side with Dr.MOS and near pin1

[98] GPU\_PWM3  
[98,99,100] GPU\_TEMP

[98] GPU\_CS3

PU9902  
MP86941GQVT-Z  
VIN#1  
VIN#2  
AGND  
BST  
SW#1  
SW#2  
SW#3  
PGND#3  
PGND#2  
PGND#1  
CS

PC9927  
2.2u/10V  
PC9928  
1u/25V\_4  
PC9929  
330u/2V\_7343H1.9  
PC9930  
2200p/25V\_2  
PC9931  
10u/25V\_6  
PC9932  
10u/25V\_6  
PC9933  
1u/25V\_4  
PC9934  
2200p/50V\_4  
PC9935  
15u/25V\_3528H1.9  
PC9936  
2.2u/10V  
PC9937  
1u/25V\_4  
PC9938  
330u/2V\_7343H1.9  
PC9939  
2200p/25V\_2

PL9902  
0.15uH\_7x7x3  
Idc=26A Isat=52A  
DCR=1.9 mOhm +-7%

PC9906  
2.2\_5\_6  
PC9930  
2200p/25V\_2  
PC9931  
10u/25V\_6  
PC9932  
10u/25V\_6  
PC9933  
1u/25V\_4  
PC9934  
2200p/50V\_4  
PC9935  
15u/25V\_3528H1.9  
PC9936  
2.2u/10V  
PC9937  
1u/25V\_4  
PC9938  
330u/2V\_7343H1.9  
PC9939  
2200p/25V\_2

Put the same side with Dr.MOS and near pin1

[98] GPU\_PWM4  
[98,99,100] GPU\_TEMP

[98] GPU\_CS4

PU9903  
MP86941GQVT-Z  
VIN#1  
VIN#2  
AGND  
BST  
SW#1  
SW#2  
SW#3  
PGND#3  
PGND#2  
PGND#1  
CS

PC9936  
2.2u/10V  
PC9937  
1u/25V\_4  
PC9938  
330u/2V\_7343H1.9  
PC9939  
2200p/25V\_2  
PC9940  
10u/25V\_6  
PC9941  
10u/25V\_6  
PC9942  
1u/25V\_4  
PC9943  
2200p/50V\_4  
PC9944  
15u/25V\_3528H1.9  
PC9945  
15u/25V\_7343H1.9  
PC9946  
15u/25V\_7343H1.9  
PC9947  
15u/25V\_7343H1.9  
PC9948  
15u/25V\_7343H1.9  
PC9949  
15u/25V\_7343H1.9  
PC9950  
15u/25V\_7343H1.9  
PC9951  
15u/25V\_7343H1.9  
PC9952  
15u/25V\_7343H1.9  
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PC9995  
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PC9996  
15u/25V\_7343H1.9  
PC9997  
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PC9998  
15u/25V\_7343H1.9  
PC9999  
15u/25V\_7343H1.9

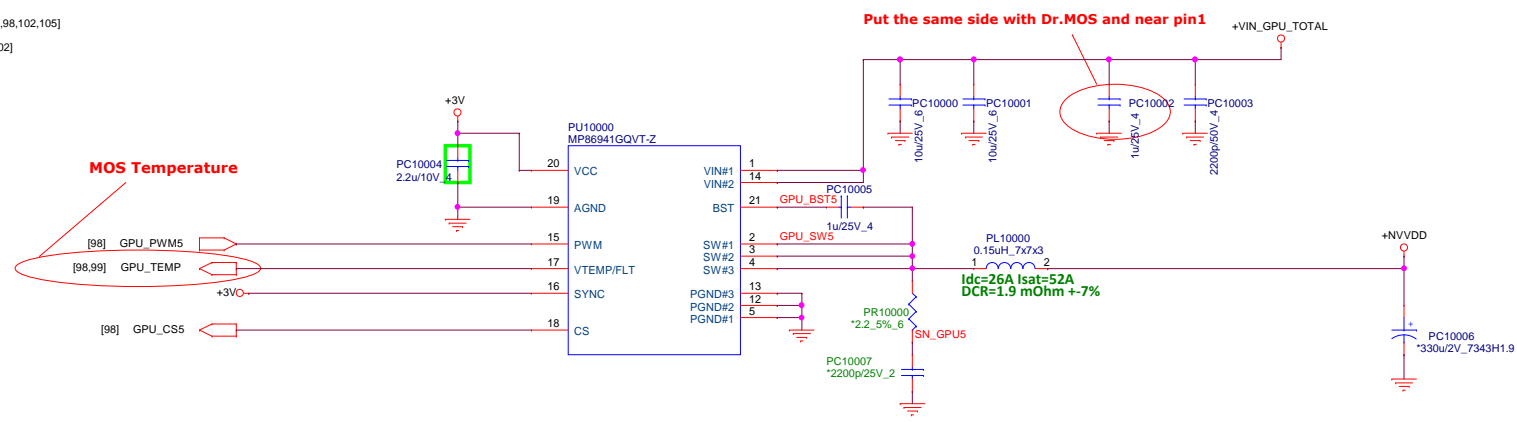
PL9903  
0.15uH\_7x7x3  
Idc=26A Isat=52A  
DCR=1.9 mOhm +-7%


PC9907  
2.2\_5\_6  
PC9930  
2200p/25V\_2  
PC9931  
10u/25V\_6  
PC9932  
10u/25V\_6  
PC9933  
1u/25V\_4  
PC9934  
2200p/50V\_4  
PC9935  
15u/25V\_3528H1.9  
PC9936  
2.2u/10V  
PC9937  
1u/25V\_4  
PC9938  
330u/2V\_7343H1.9  
PC9939  
2200p/25V\_2



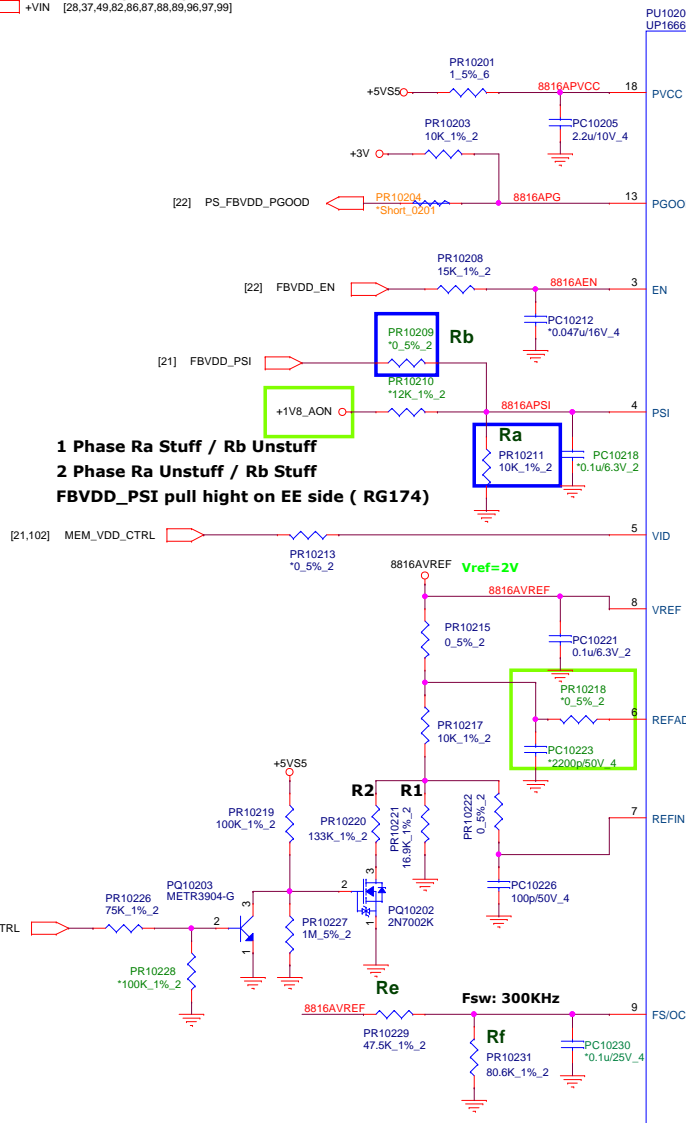
PROJECT : G3MQ  
Quanta Computer Inc.

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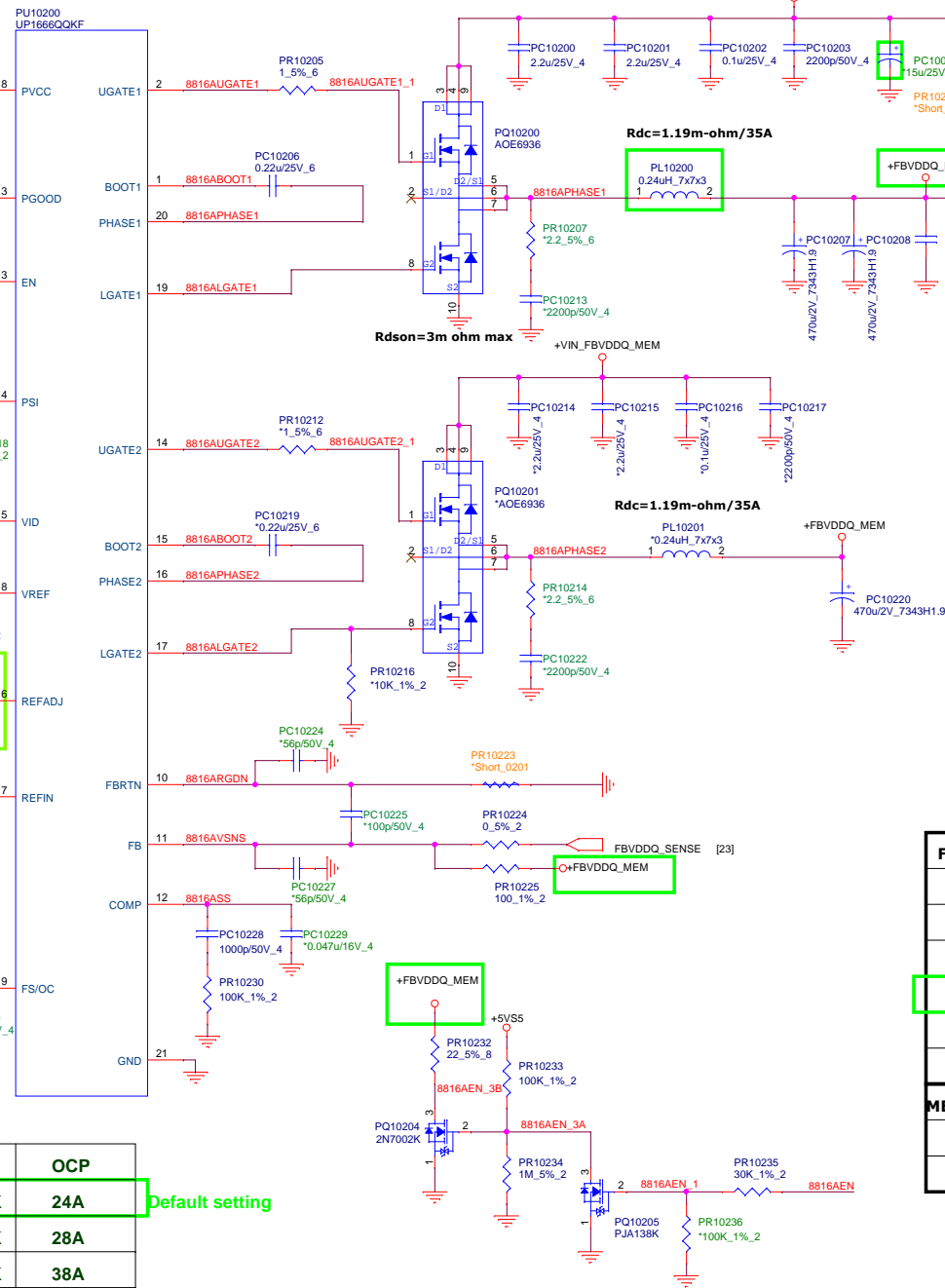


 NB5	<b>PROJECT : G3MQ</b> Quanta Computer Inc.		
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+VS5 [34.46,86,87,88,89,96,98,105]  
 +NVVDD [23,98,99,100]  
 +VIN\_GPU\_TOTAL [37,99,100]  
 +1V8\_AON [19,21,22,23,24,25,98,105]  
 +FBVDDQ\_MEM [20,23,24,25]  
 +VIN [28,37,49,82,86,87,88,89,96,97,99]



**1 Phase Ra Stuff / Rb Unstuff**  
**2 Phase Ra Unstuff / Rb Stuff**  
**FBVDDQ\_PSI pull high on EE side (RG174)**



### 1 Phase VGA type

GN20-P0/P1 60W up to 80W  
 N18P-G61-A 50W  
 EDP-C : 13A,17.4A  
 EDP-P : 15A,18.5A  
 OCP : 24A  
 Rds(on) = 3m ohm max  
 Co : 330uF/ESR9 x1PCS

GN20-E3 80W Max-Q up to 110W TGP  
 GN20-E3 115W up to 140W TGP  
 EDP-C : 20A  
 EDP-P : 23A  
 OCP : 28A  
 Rds(on) = 1.8m ohm max  
 Co : 330uF/ESR9 x1PCS

Unified use MOS 3m ohm

### 2 Phase VGA type

GN20-E4/E5/E7 80W Max-Q up to 110W TGP  
 GN20-E4/E5/E7 115W up to 140W TGP  
 EDP-C : 26A,36A  
 EDP-P : 30A,41A  
 OCP : 38A,52A  
 Rds(on) = 3m ohm max  
 Co : 330uF/ESR9 x1PCS  
 (26A - MOS 3m ohm, 36A - MOS 1.8m ohm)


FBVDDQ_MEM	R1	R2	GPU Type
1.55V-1.35V	34.8K	53.6K	
1.5V_1.35V	30.9K	69.8K	
1.25V_1.35V	21K	82.5K	
1.2V_1.25V	16.9K	133K	GN20x_GDDR6
Fix 1.35V	21K	Open	
Fix 1.2V	15K	Open	
MEM_VDD_CTRL	FBVDDQ_MEM		
1	1.25V		
0	1.2V		

	Ra	Rb	Re	Rf	OCP
GN20-P0/P1 60W,N18P-G61-A 50W	Stuff	NA	47.77K	80.65K	24A
GN20-E3 MaxQ 80W/110W	Stuff	NA	46.18K	85.62K	28A
GN20-E4/E5 MaxQ 80W/110W	NA	Stuff	46.66K	84.03K	38A
GN20-E7 MaxQ 80W/110W	NA	Stuff	45.93K	86.51K	52A

Default setting

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	GEN1	GEN2
R4, R5	75K ohm	0 ohm
R6, R7	649 ohm	NC
C6, C7	1 nF	NC

	GEN1	GEN2
R25	0 ohm	0 ohm (On) NC (UPI)
R26	NC	NC (On) 0 ohm (UPI)

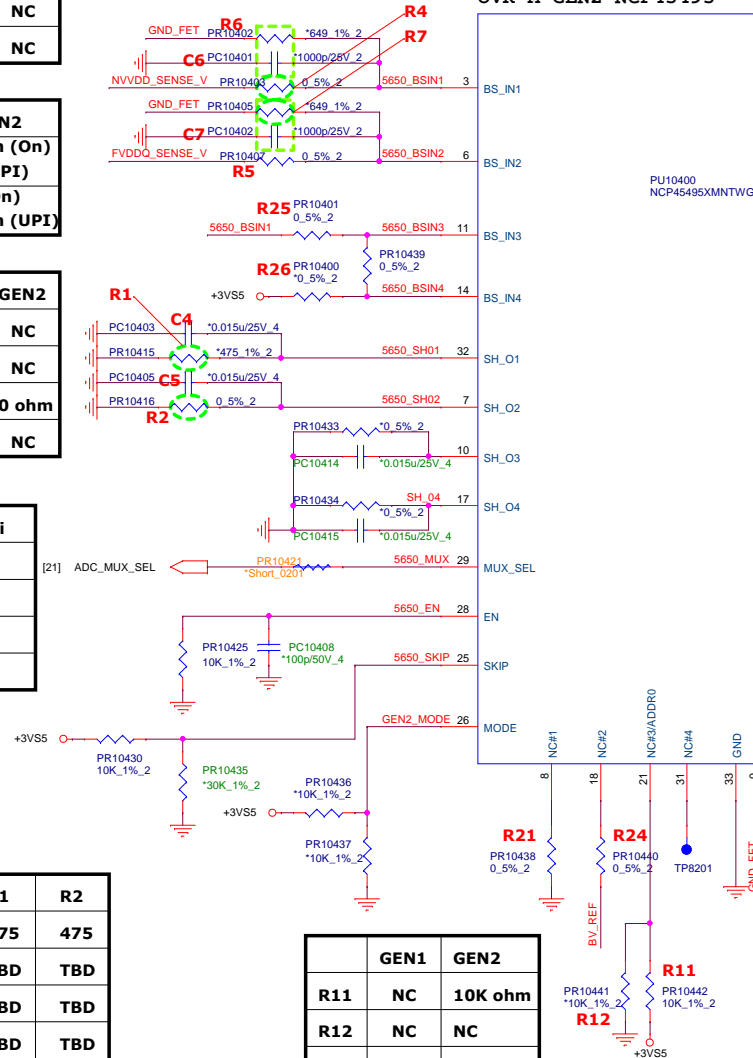
	GEN1	GEN2
R1	475 ohm	NC
C4	15 nF	NC
R2	475 ohm	0 ohm
C5	15 nF	NC

GEN1	UPI	OnSemi
R1, R2	357	475
R20	324K	243K
R4, R5	75K	75K
R6, R7	487	649

UPI OVR Setting	R1	R2
QN20-P1		
QN20-P1 Max-Q	475	475
GN20-P0	TBD	TBD
GN20-E7	TBD	TBD
GN20-E3/E4/E5	TBD	TBD
GN20-E3/E4/E5/E7 Max-Q	TBD	TBD

	GEN1	GEN2
R11	NC	10K ohm
R12	NC	NC
R21	NC	0 ohm
R24	NC	0 ohm

OVR-M GEN1 NCP45492 - N18P-G61-A  
OVR-M GEN2 NCP45495 - GN20-Px/Ex



	GEN1	GEN2
R8	100 ohm	0 ohm
R9, R10	49.9 ohm	0 ohm
C1, C2	NC	680 pF

CH1 NVVDD+ FVDDQ VOLTAGE

CH1 NVVDD+ FVDDQ CURRENT

CH2 FVDDQ VOLTAGE

CH2 FVDDQ CURRENT

	GEN1	GEN2
CH3 TBD		
CH3 TBD		
CH4 TBD		
CH4 TBD		

	GEN1	GEN2
R3	365K	NC
R14	681K	10K
R15	NC	0 ohm
R16	NC	0 ohm
R17	0 ohm	NC
R18	0 ohm	NC
R19	NC	0 ohm
R20	324K(UPI) 243K(ON)	31.6K

	GEN1	GEN2
R27	NC	NC
C3	1 nF	NC
R13	NC	0 ohm

ADDR1	ADDR0	I2C
0	0	0x68
0	1	0x6A
1	0	0x6C
1	1	0x6E

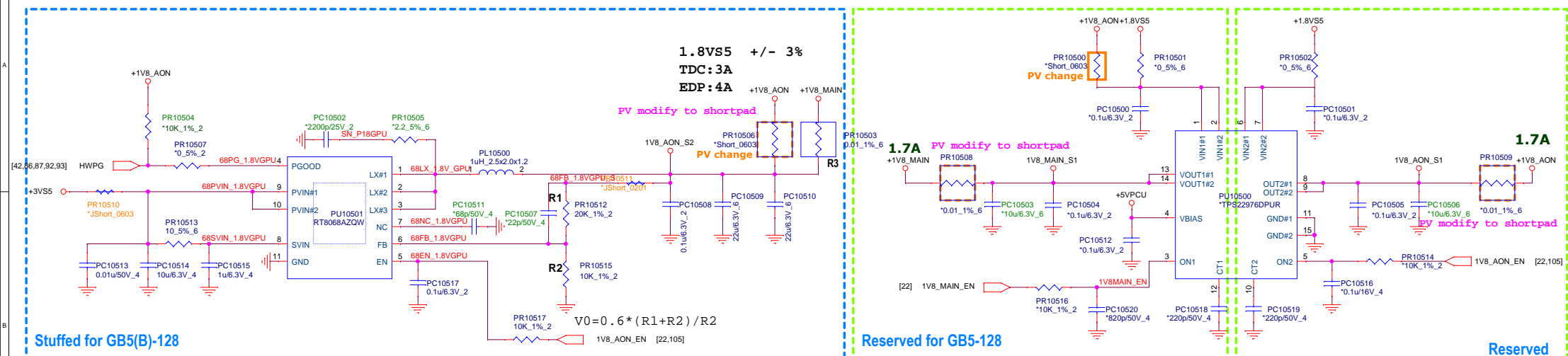
GEN1	GEN2
NCP45492	NCP45495
AL045492000	AL045495000



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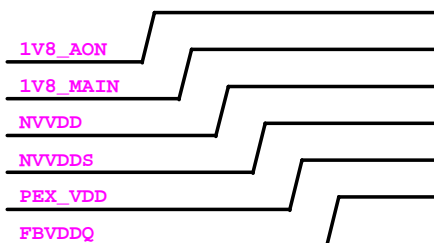
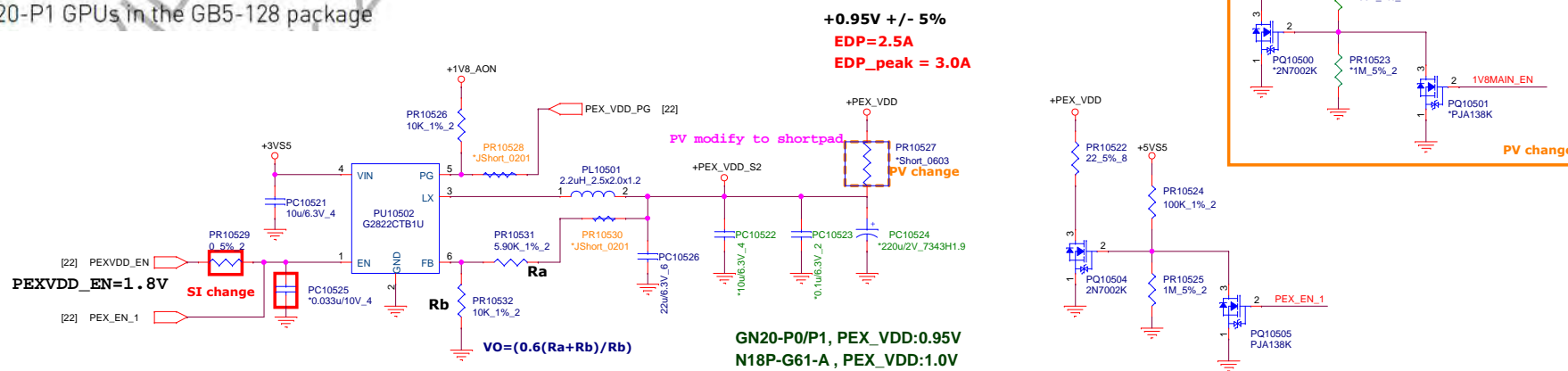
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	stuff	Non - stuff
GN20-P0/P1, QN20-P3	GB5(B)-128, R3	GB5-128
N18P-G61-A, QN20-P1	GB5(B)-128, GB5-128	R3

- ▶ GN20-P0/P1 and QN20-P3 GPUs in the GB5B-128 package
- ▶ N18P-G61-A and QN20-P1 GPUs in the GB5-128 package




 +3VS5 [4,5,6,7,23,35,36,42,46,47,50,53,82,86,87,92,93,96,104]  
 +1V8\_MAIN [19,20,21,22,23]  
 +1V8\_AON [19,21,22,23,24,25,98,102]  
 +PEX\_VDD [19,21]  
 +3V [4,5,7,17,18,21,28,30,32,33,35,36,38,39,42,45,49,50,82,88,96,98,99,100,102]

