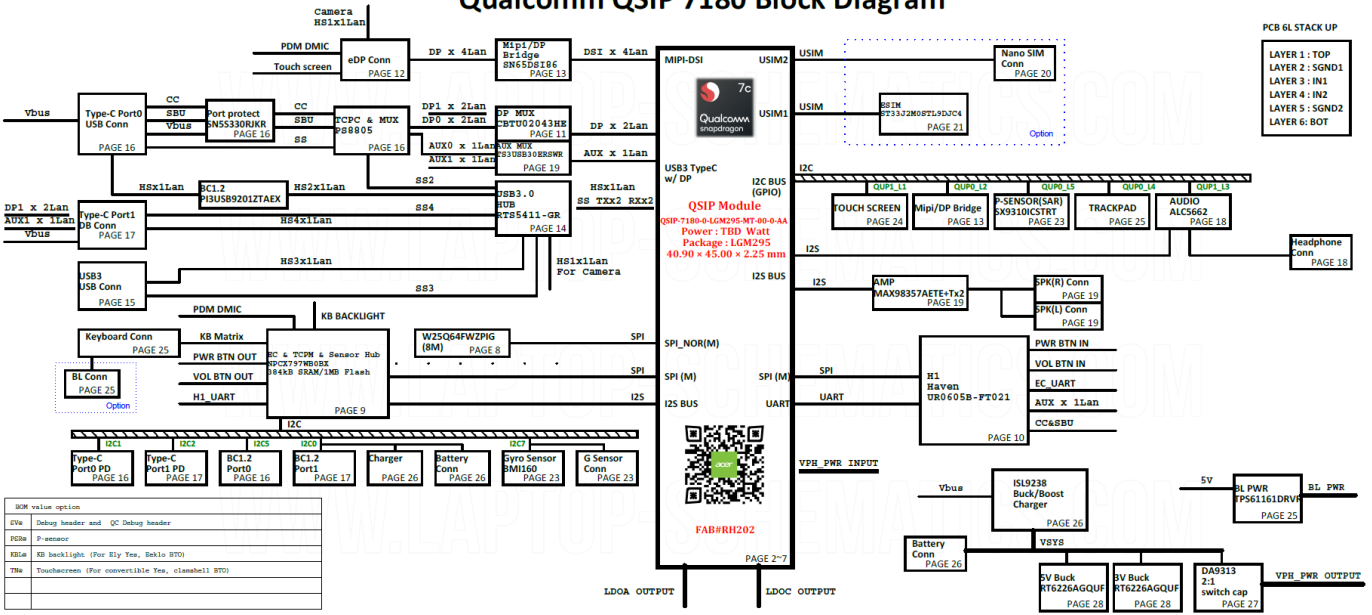
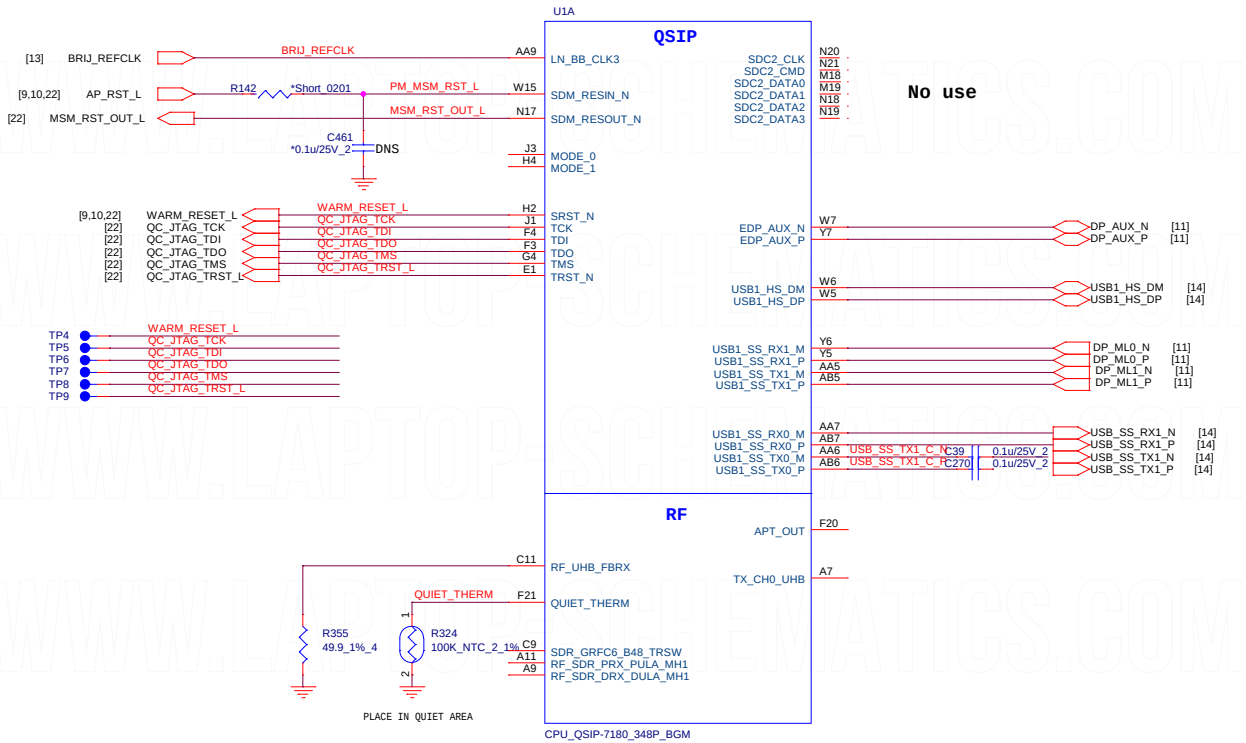
Qualcomm QSIP 7180 Block Diagram

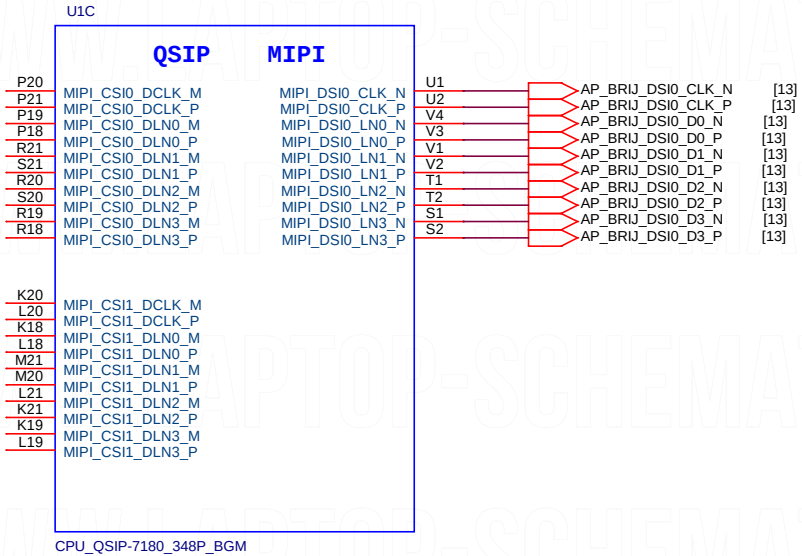


BOM value option	
SV#	Debug header and QC Debug header
PSR#	P-sensor
KBL#	KB backlight (For Ely Yes, Sekio STO)
TN#	Touchscreen (For convertible Yes, clamshell STO)

Quanta Computer Inc.
PROJECT : KARBEN_7C
Size: Document Number: BLOCK DIAGRAM
Rev: 1A
Date: Wednesday, November 25, 2020 Sheet 1 of 50

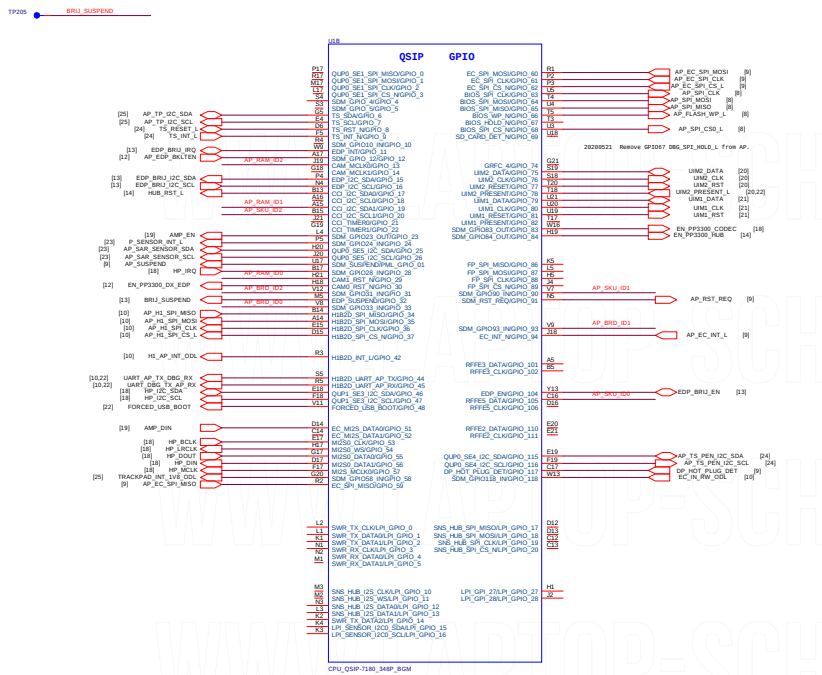


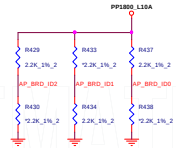
Quanta Computer Inc.		
PROJECT : KARBEN_7C		
Size	Document Number: QSIP CTRL,USB3.JTAG,RF	Rev: 1A
Date: Wednesday, November 25, 2020	Sheet 2 of 32	



DISPLAY

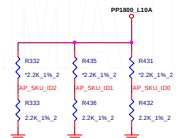
Quanta Computer Inc.		
PROJECT : KARBEN_7C		
Size	Document Number: QSIP MIPI	Rev: 1A
Date: Wednesday, November 25, 2020	Sheet 3 of 32	





AP_BRD_ID 41ZC8SS0000

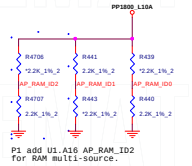
Stage	P0	P0b	P0C	P1	EVT	EVT2	DVT	PVT
Value	000	001	010	000	001	010	011	101



AP_SKU_ID 41ZC8SS0000

SKU	WIFI & LTE KB BL	WIFI W/O KB BL	WIFI KB BL
Value	000 (Default)	001	010

* sku0 = LTE + kb backlight
* sku1 = WiFi + no kb backlight
* sku2 = WiFi + kb backlight

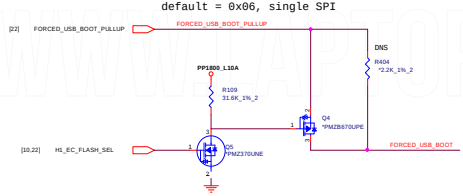


P1 add U1.A16 AP_RAM_ID2
for RAM multi-source.

31-Level QPN	Description
31ZC8MB0030	ZC8MB(CPU QSIP-7180P 2.1G8C,M4G,S64G)NBL
31ZC8MB0070	ZC8MB(CPUQSIP-7180P2.1G8C,M4G,S64G)NBLUR
31ZC8MB0040	ZC8MB(CPU QSIP-7180P 2.1G8C,M8G,S64G)
31ZC8MB0080	ZC8MB(CPU QSIP-7180P 2.1G8C,M8G,S64G) UR
31ZC8MB0050	ZC8MB(CPU QSIP-7180 2.4G8C,M8G,S128G,LTE)
31ZC8MB0090	ZC8MB(CPUQSIP-71802.4G8C,M8G,S128GLTE)UR
31ZC8MB0060	ZC8MB(CPU QSIP-7180P 2.1G8C,M4G,S64G)
31ZC8MB00A0	ZC8MB(CPU QSIP-7180P 2.1G8C,M4G,S64G) UR

Boot config select
Default = single SPI

default = 0x06, single SPI



RAM_ID 41ZC8SS0000

4G LPDDR4X

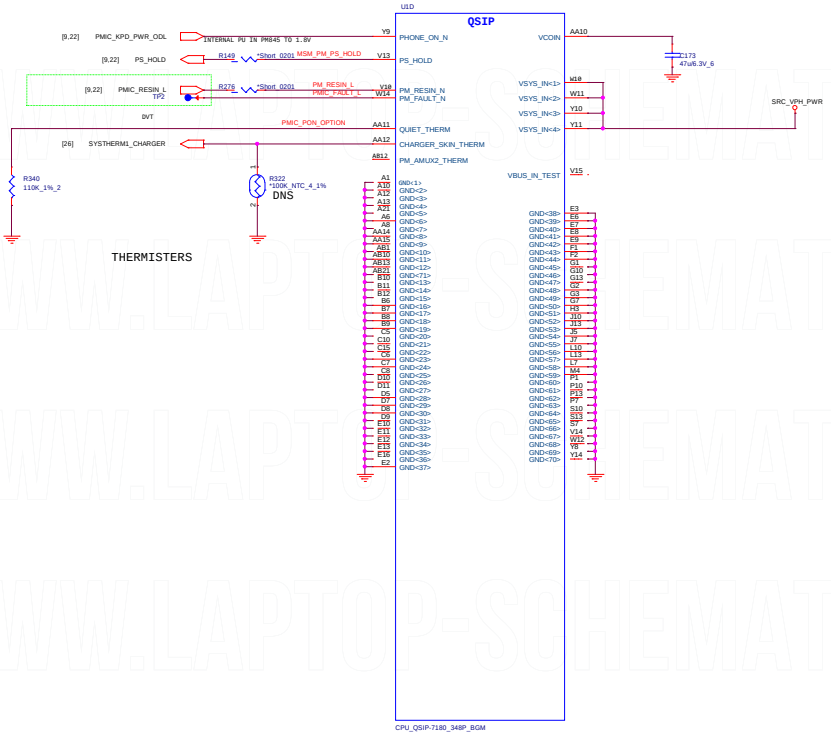
RAM ID	Supplier	Mfr. PN	QSIP QPN	31-Level QPN
000	Micron	EMPC 128 G		
001	Micron	MT53D1024M32D4DT-046 WT:D		
010	Micron	MT53E1G32D2NP-046 WT:A	AJ07180UA14	31ZC8MB0030/31ZC8MB0070 31ZC8MB0060/31ZC8MB00A0

8G LPDDR4X

011	Micron	MT53E2G32D4NQ-046 WT:A	AJ07180UA13	31ZC8MB0050/31ZC8MB0090
			AJ07180UA15	31ZC8MB0040/31ZC8MB0080

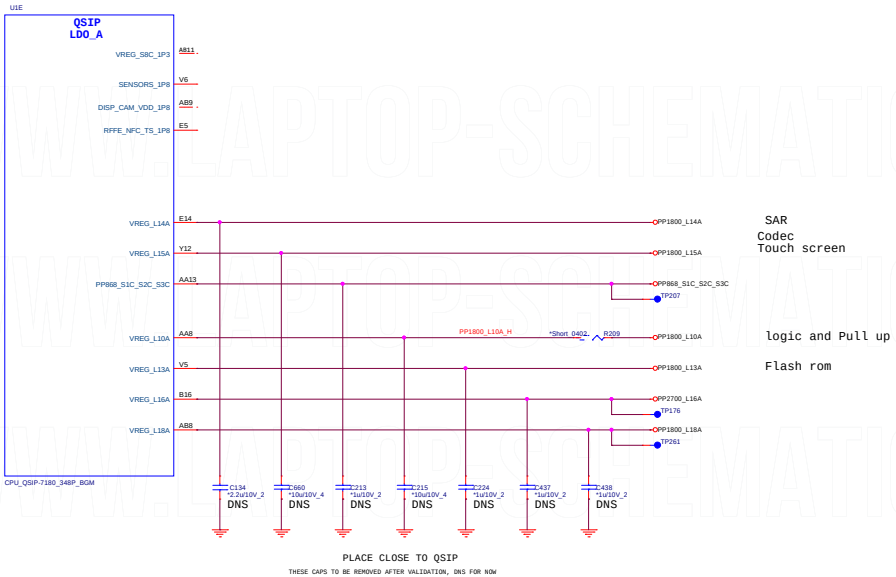
Quanta Computer Inc.
PROJECT : KARBEN_7C

Size	Document Number	Rev
	QSIP GPIO	1A
Date:	Wednesday, November 25, 2020	Sheet 4 of 32



Quanta Computer Inc.
PROJECT :KARBEN_7C

Size	Document Number	Rev
	QSIP PMIC CTRL	1A
Date: Wednesday, November 25, 2020	Sheet 5 of 32	

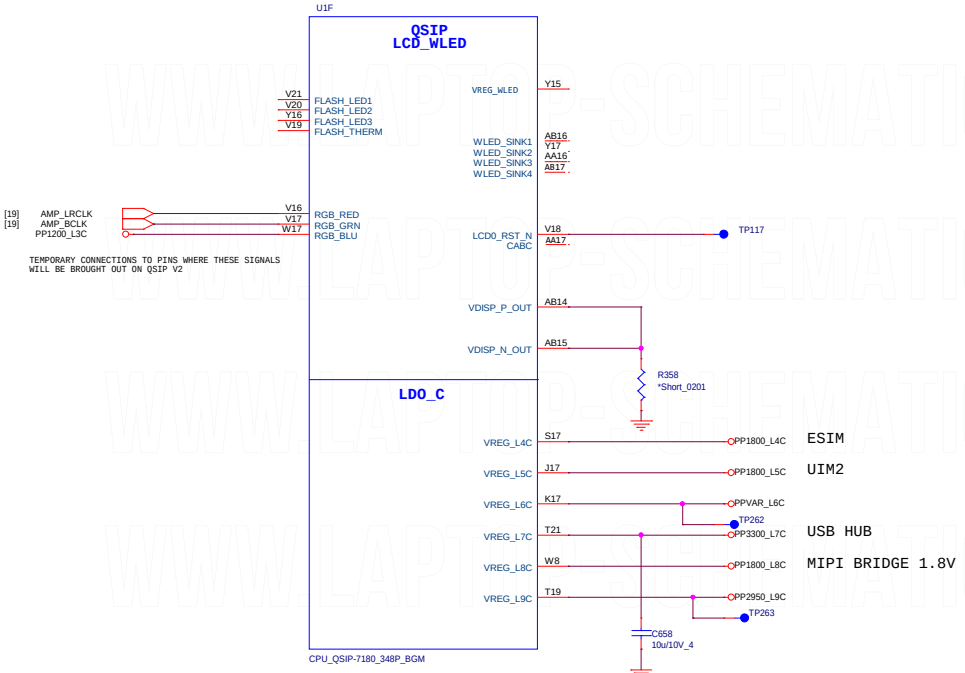


SAR
Codec
Touch screen

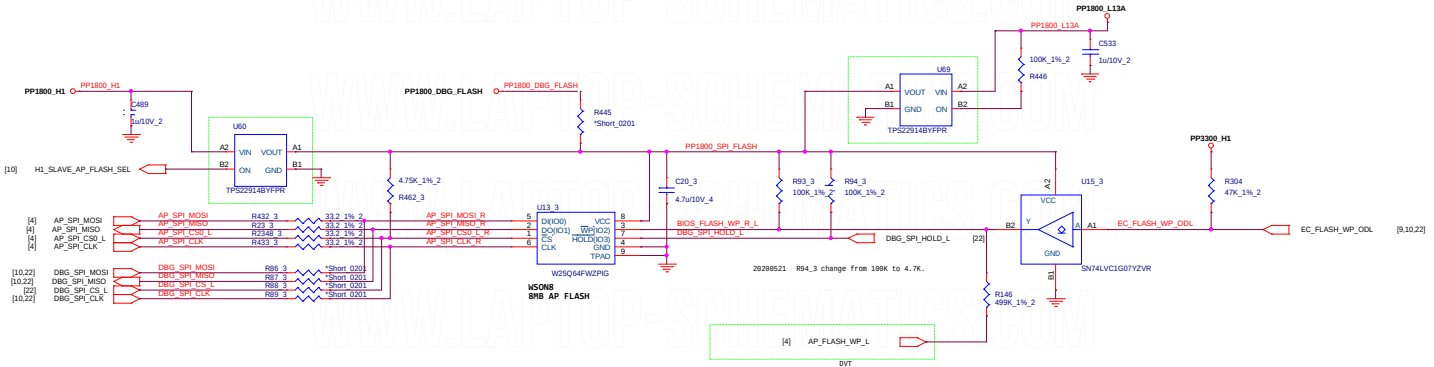
logic and Pull up

Flash rom

Quanta Computer Inc.		
PROJECT : KARBEN_7C		
Size	Document Number	Rev
	QSIP LDO A	1A
Date: Wednesday, November 25, 2020	Sheet 6 of 32	

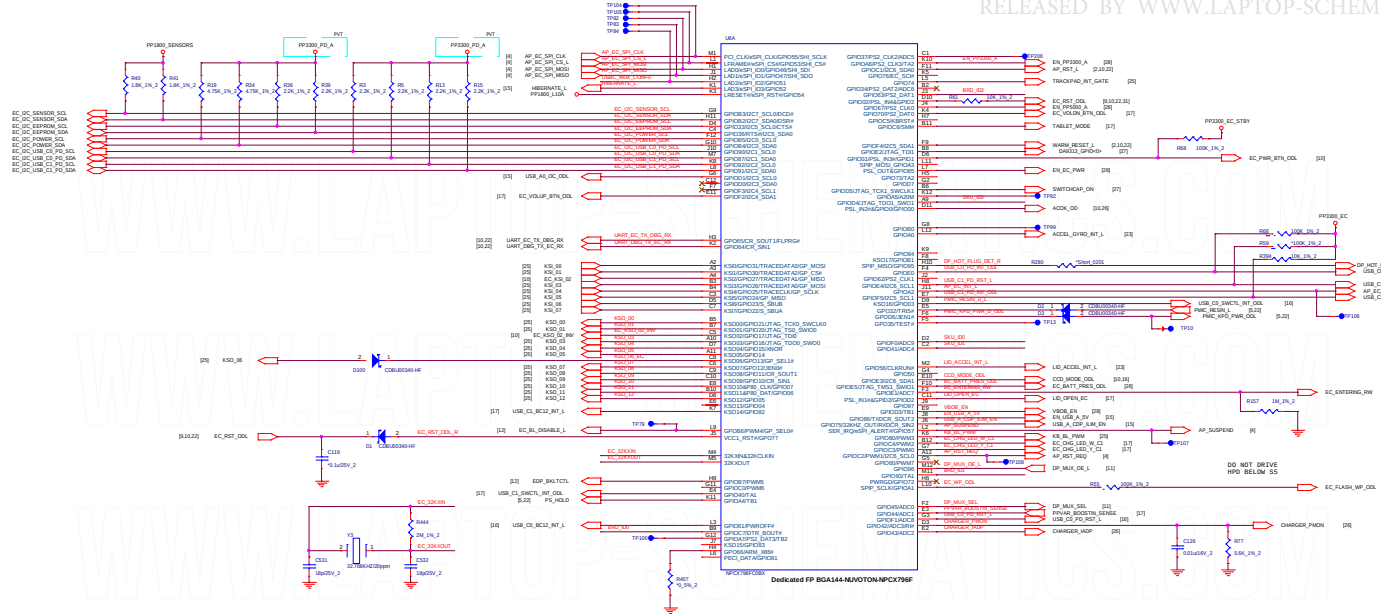


Quanta Computer Inc.		
PROJECT : KARBEN_7C		
Size	Document Number	Rev
	QSIP LDO C,LCD,LED	1A
Date: Wednesday, November 25, 2020	Sheet 7 of 32	

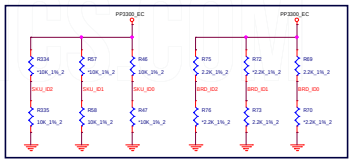


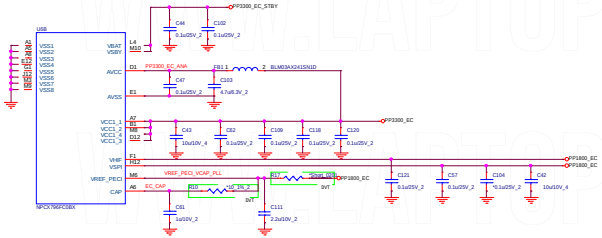
Quanta Computer Inc.		
PROJECT : KARBEN_7C		
Size	Document Number	Rev
	SPI FLASH	1A
Date: Wednesday, November 25, 2020	Sheet 8 of 32	

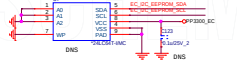
EC



31ZC8MB0000







EEPROM FOR BOARD ID, SKU ID, AND RAM ID
WHEN NOT USING STRAPPING PINS

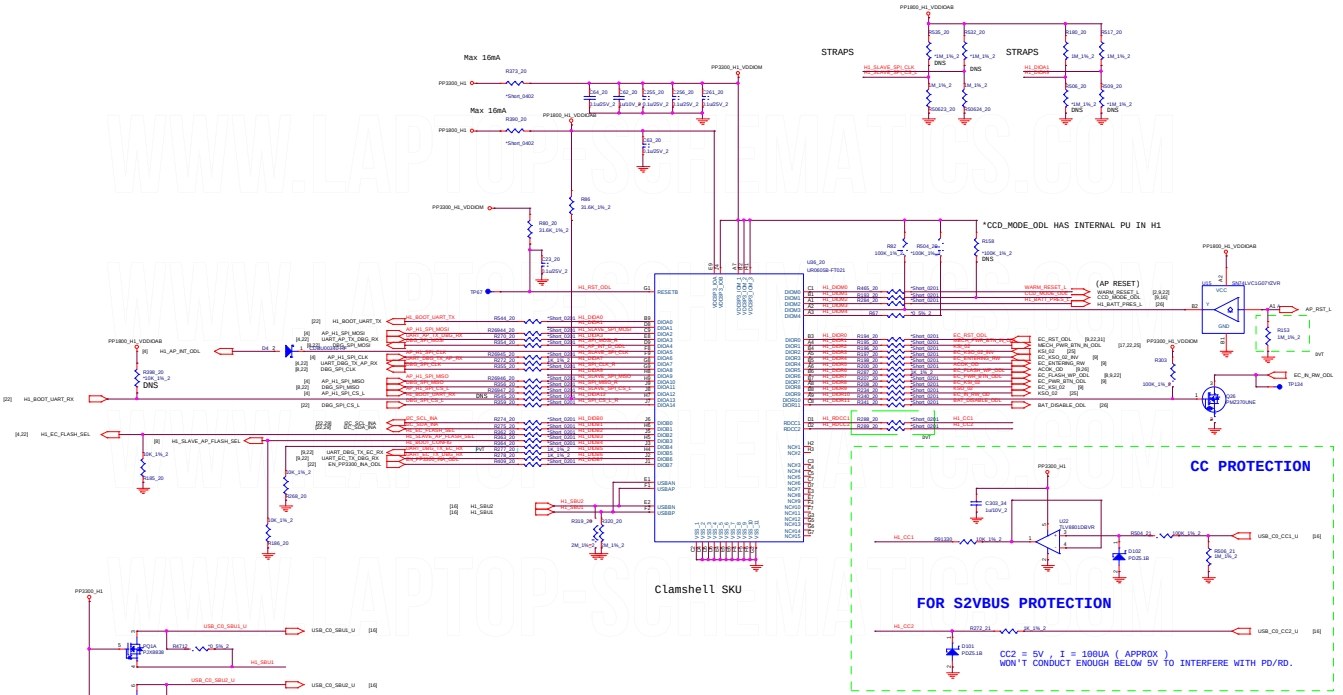
IF STRAPPING PINS ARE USED, DNS THE EEPROM
ODM TO SELECT EEPROM'

R PU	R PD	VOLTAGE	LEVEL
51.1KOHM	2KOHM	0.0124V	1
51.1KOHM	4.7KOHM	0.278V	2
51.1KOHM	8.2KOHM	0.456V	3
51.1KOHM	12.4KOHM	0.644V	4
51.1KOHM	18KOHM	0.860	5
51.1KOHM	22KOHM	0.993	6
51.1KOHM	27.4KOHM	1.152V	7
51.1KOHM	34KOHM	1.318V	8
51.1KOHM	40.2KOHM	1.453V	9
10KOHM	10KOHM	1.650V	10
10KOHM	12.4KOHM	1.827V	11
10KOHM	18KOHM	2.121V	12
10KOHM	22KOHM	2.269V	13
10KOHM	27.4KOHM	2.418V	14
10KOHM	34KOHM	2.550V	15
10KOHM	47KOHM	2.721V	16

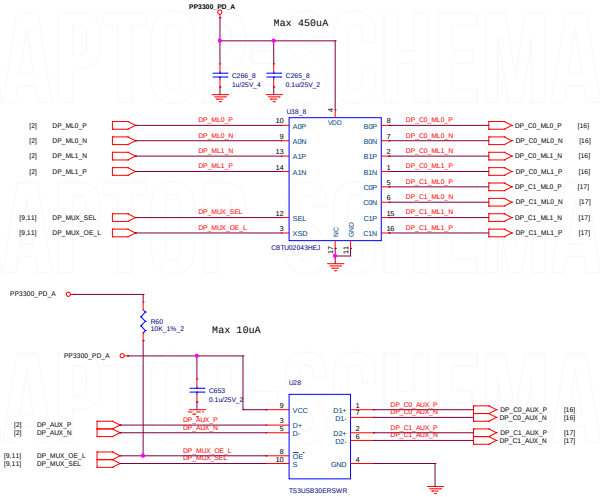
CONNECT AVSS TO GND AT 1 POINT
PLACE DECOUPLING AS CLOSE AS POSSIBLE TO U6

For MOV: SET C111 TO 1-4.7UF
CONNECT VCC_PLL AND VSS_PLL
CONNECT EC_CAP

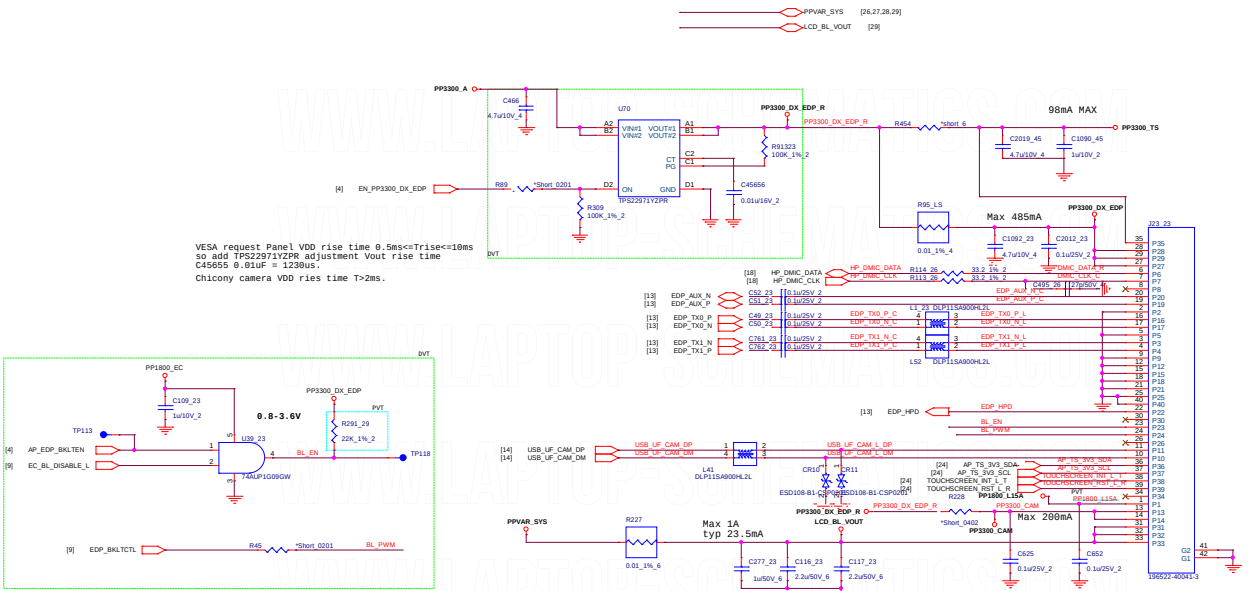
Quanta Computer Inc.
PROJECT : KARBEN_7C
Size: C | Document Number: EC-NPCX7 | Rev: 1A
Date: Wednesday, November 25, 2020 | Sheet 9 of 22



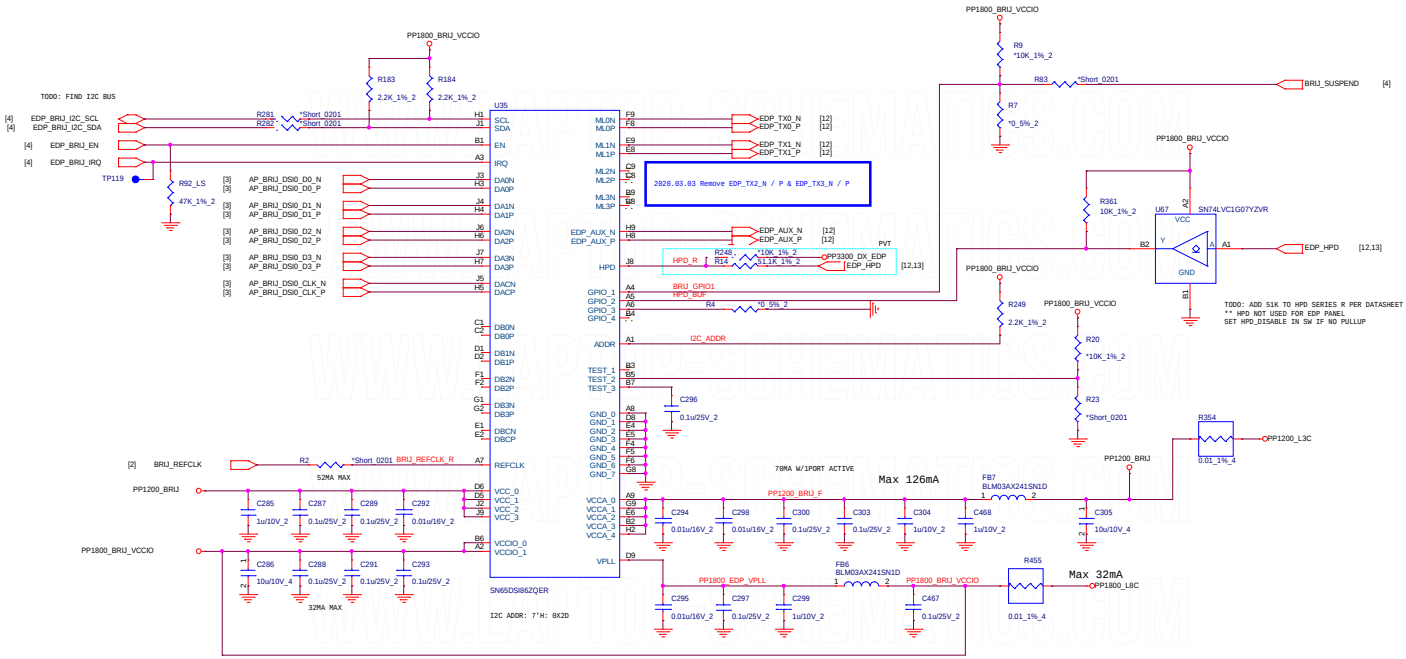
Quanta Computer Inc.		
PROJECT : KARBEN_7C		
Size	Document Number	Rev
	H1 SECURE MICROCONTROLLER	1A
Date: Wednesday, November 25, 2020	Sheet 10 of 50	



Quanta Computer Inc.	
PROJECT : KARBEN_7C	
Size	Document Number: DP MUX
Rev: 1A	
Date: Wednesday, November 25, 2020	Sheet 11 of 32

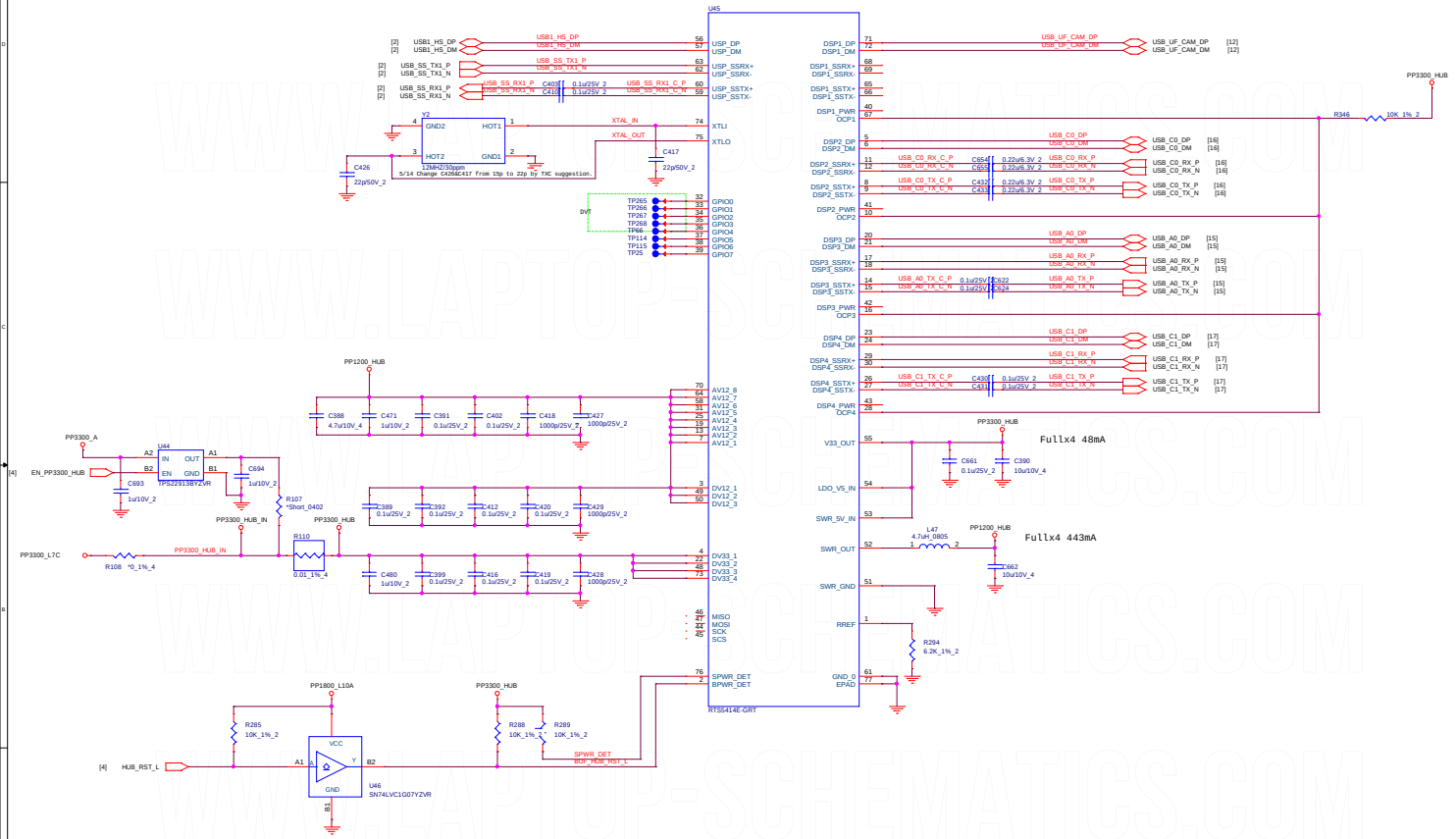


Quanta Computer Inc.			
PROJECT : KARBEN_7C			
Size	Document Number		Rev 1A
	eDP DISPLAY		
Date: Wednesday, November 25, 2020		Sheet 12 of 32	

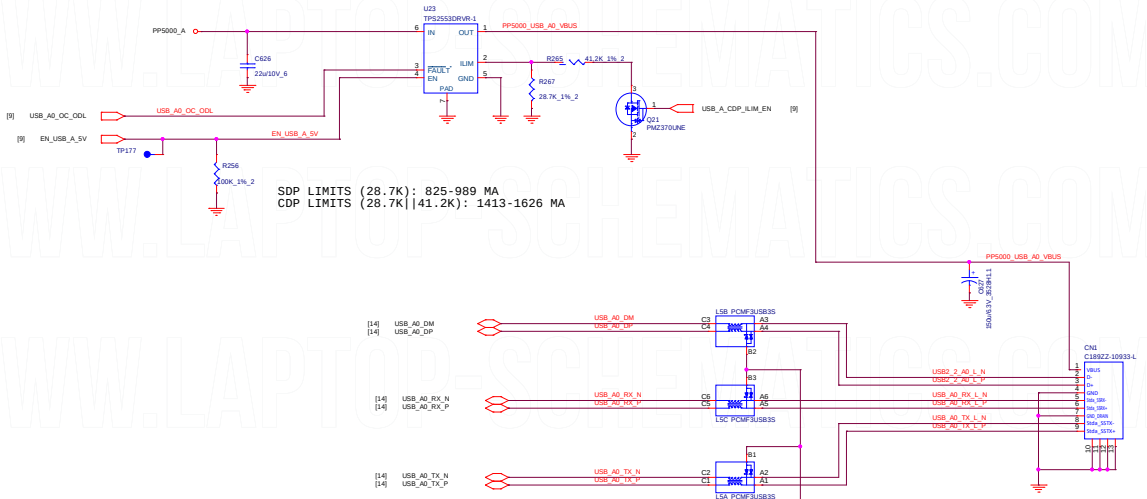


Quanta Computer Inc.			
PROJECT : KARBEN_7C			
Size	Document Number		Rev 1A
	MIPI eDP BRIDGE		
Date: Wednesday, November 25, 2020	Sheet 13 of 32		

USB HUB

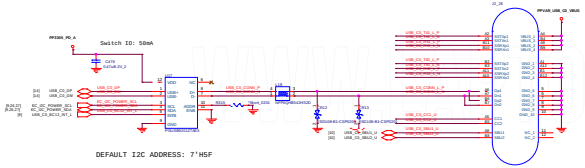


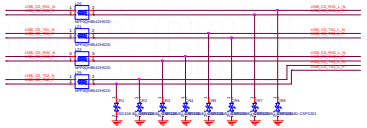
Quanta Computer Inc.			
PROJECT : KARBEN_7C			
Size	Document Number		Rev
	USB3.0 HUB		1A
Date: Wednesday, November 25, 2020	Sheet 14 of 32		

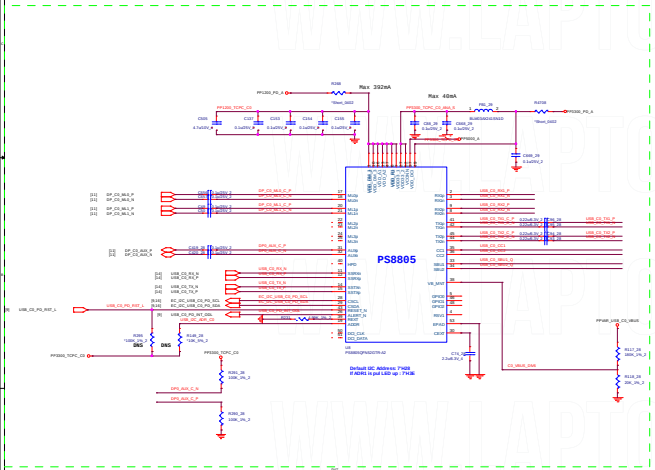


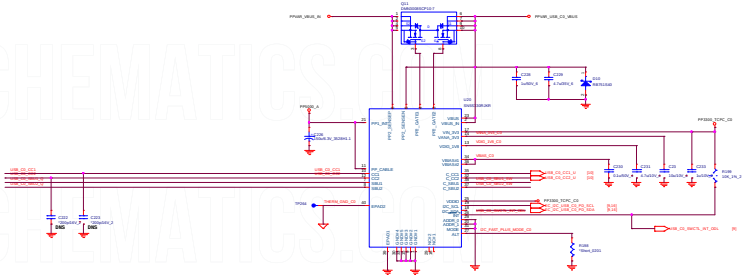
Quanta Computer Inc.		
PROJECT : KARBEN_7C		
Size	Document Number	Rev 1A
	USB TYPE-A	
Date: Wednesday, November 25, 2020	Sheet 15 of 32	

Analogix Semiconductor, Inc.
ANX3429-AA-R
QFN48

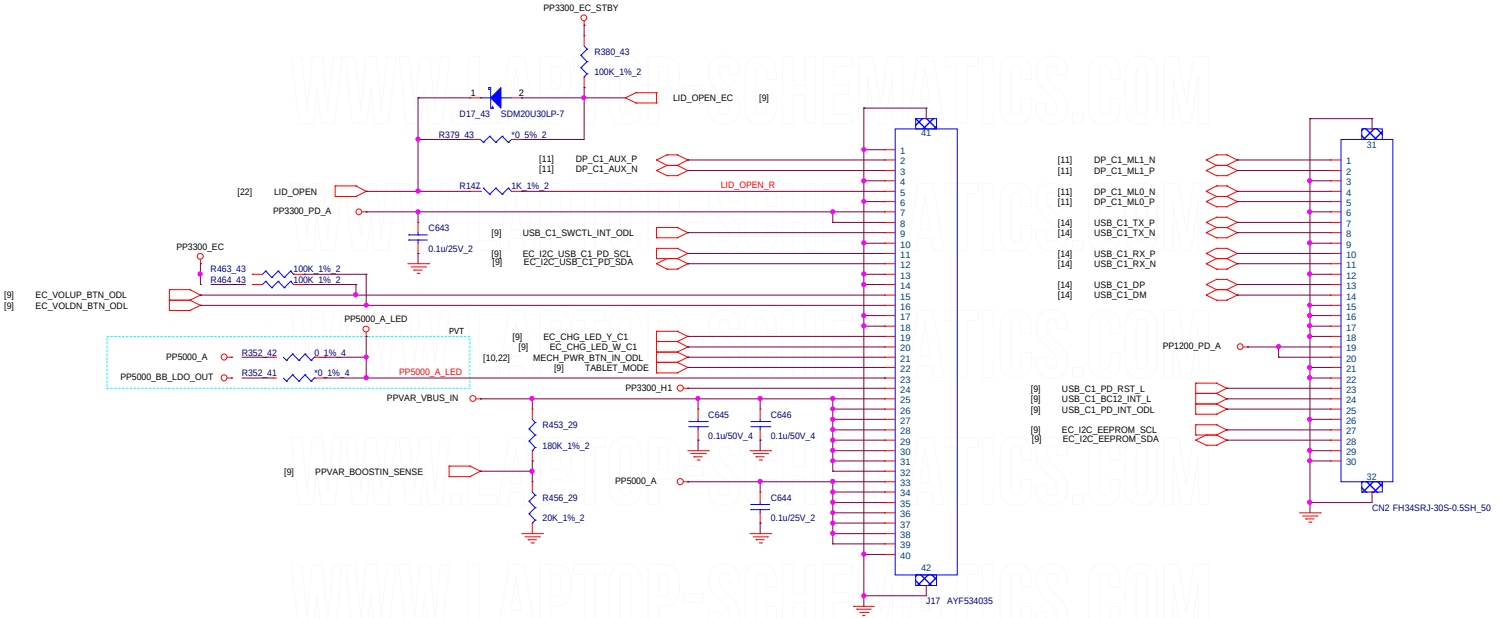






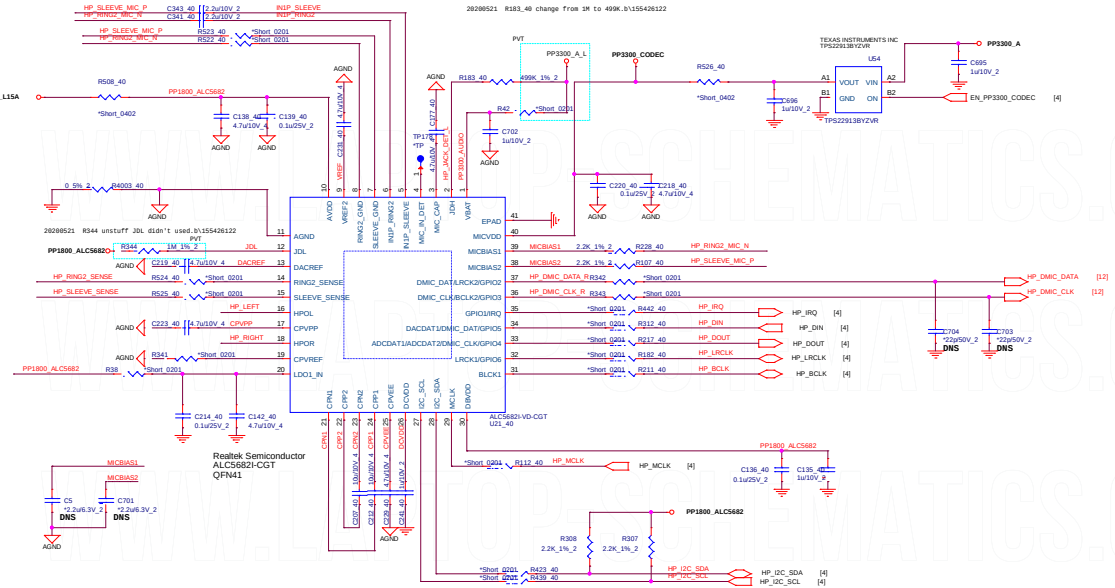


Quanta Computer Inc.
PROJECT : KARBEN_7C
USB TYPE-C PORT 0
Rev: 1A
Date: Wednesday, November 29, 2023 Sheet 18 of 37



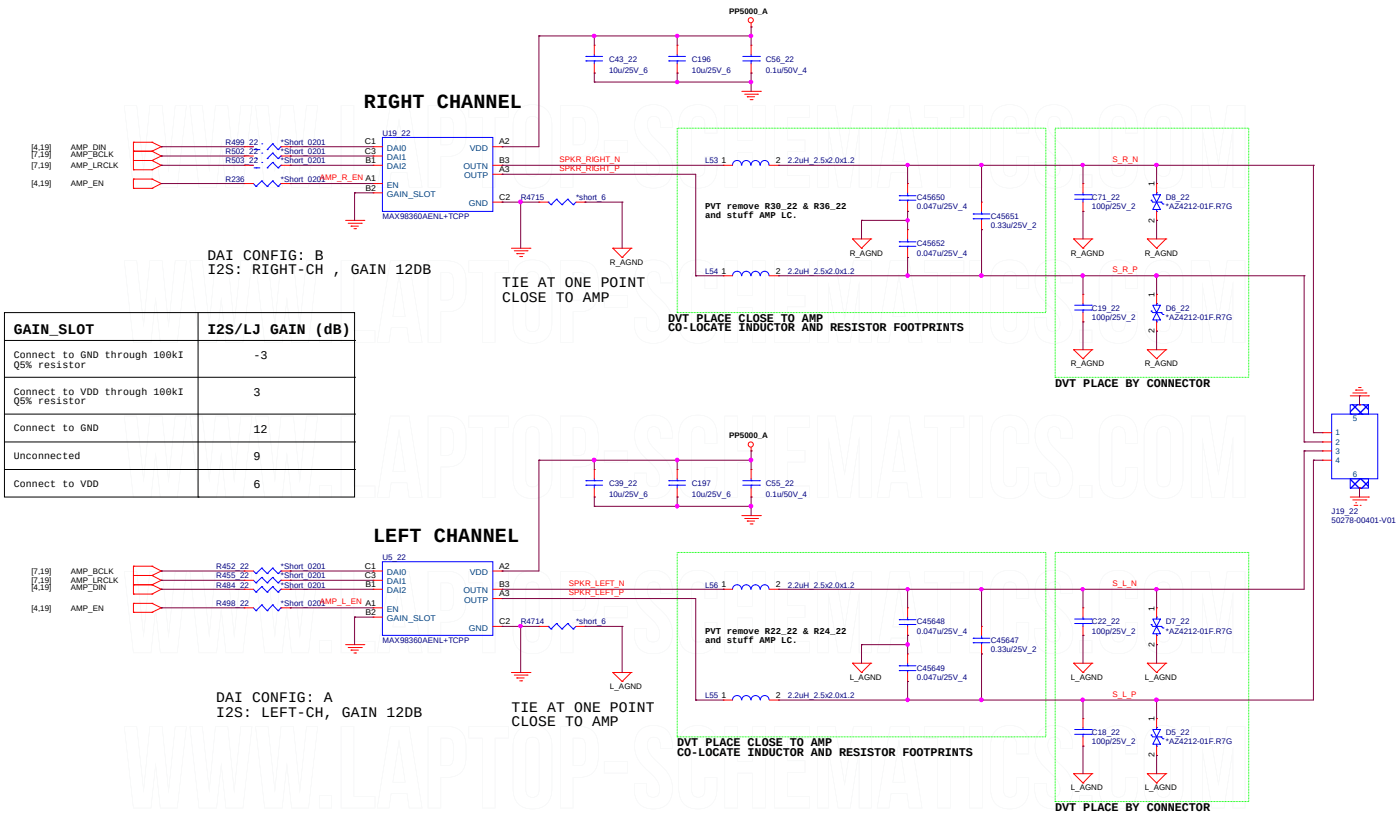
Quanta Computer Inc.		
PROJECT : KARBEN_7C		
Size	Document Number	Rev 1A
	USB TYPE-C PORT 1	
Date: Wednesday, November 25, 2020	Sheet 17 of 32	

*C135 and C136 have to be closed U21.3(DBVDD).
PAY ATT TO AGND ROUTINGS



Quanta Computer Inc.
PROJECT :KARBEN_7C

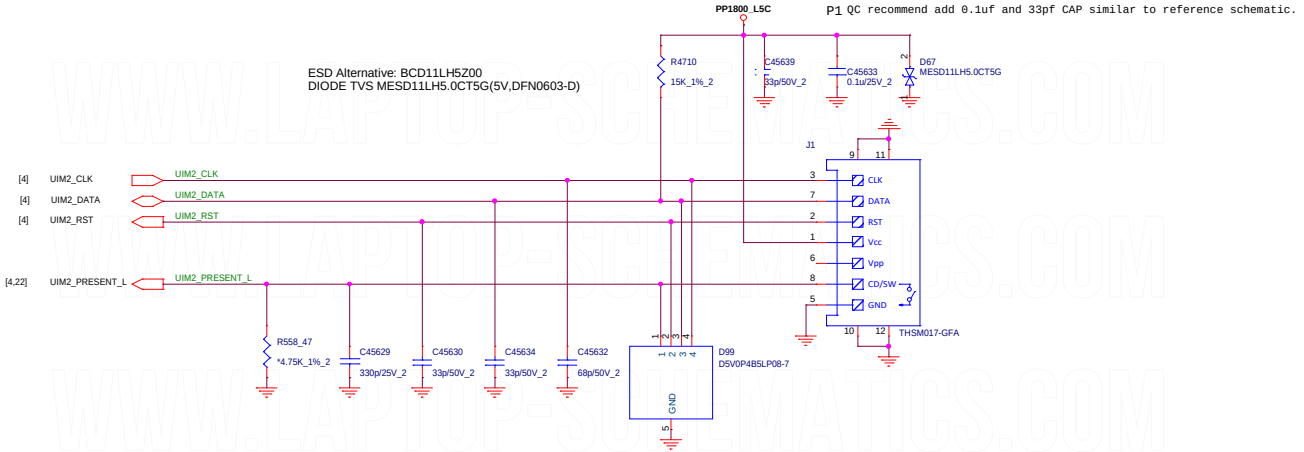
Size	Document Number	Rev
	AUDIO + HP JACK	1A
Date: Wednesday, November 25, 2020	Sheet 18 of 32	



GAIN_SLOT	I2S/LJ GAIN (dB)
Connect to GND through 100kI Q5% resistor	-3
Connect to VDD through 100kI Q5% resistor	3
Connect to GND	12
Unconnected	9
Connect to VDD	6

Quanta Computer Inc.	
PROJECT : KARBEN_7C	
Size	Document Number: SPEAKER AMPS — Rev: 1A
Date: Wednesday, November 25, 2020	Sheet 19 of 32

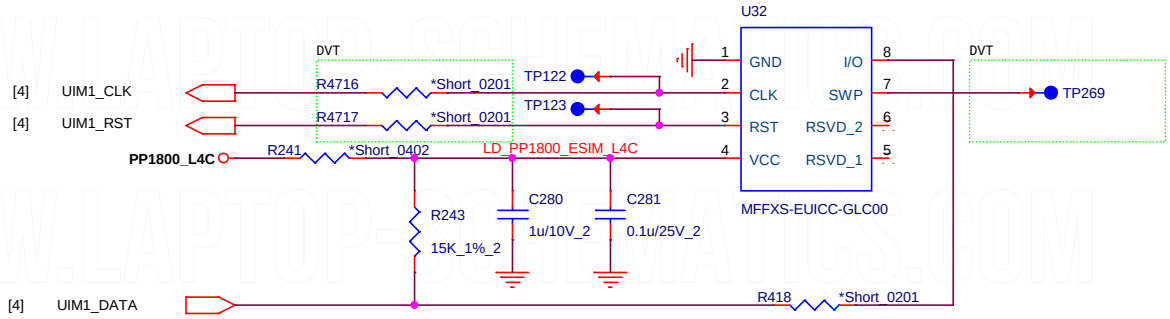
Nano-SIM



Quanta Computer Inc.		
PROJECT : KARBEN_7C		
Size	Document Number: Nano SIM	Rev: 1A
Date: Wednesday, November 25, 2020	Sheet 20 of 32	

eSIM

WIFI SKU : UNSTUFF
WIFI+LTE SKU : STUFF



Quanta Computer Inc.		
PROJECT : KARBEN_7C		
Size	Document Number: ESIM	Rev: 1A
Date: Wednesday, November 25, 2020	Sheet 21 of 32	

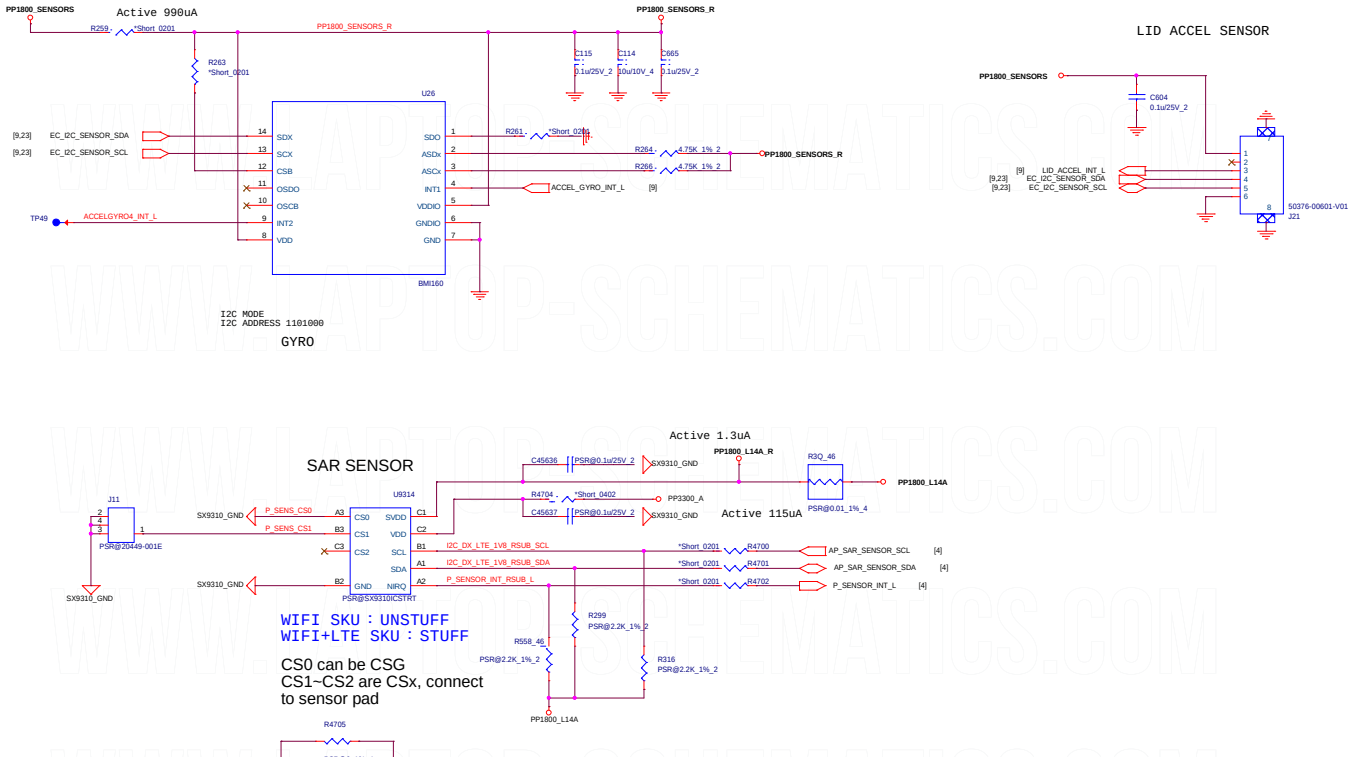
Need to change 24A
P18 is AP UART REF Voltage.

P34 IS EC UART REF VOLTAGE

QC DEBUG HEADER

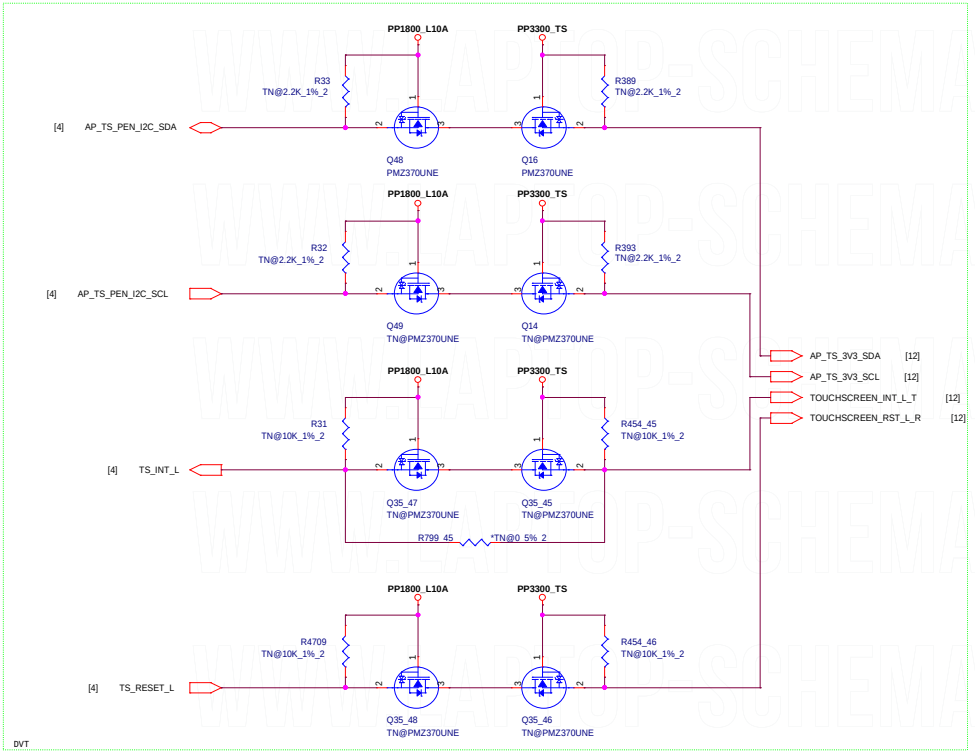
** REMOVE HEADER, RESISTORS AND BURY/REMOVE TRACE FOR MP

Quanta Computer Inc.			
PROJECT : KARBEN_7C			
Size	Document Number		Rev
	SERVO, QC DEBUG HEADERS		1A
Date: Wednesday, November 25, 2020	Sheet 22 of 32		



Quanta Computer Inc.		
PROJECT : KARBEN_7C		
Size	Document Number: SENSORS	Rev: 1A
Date: Wednesday, November 25, 2020	Sheet 23 of 32	

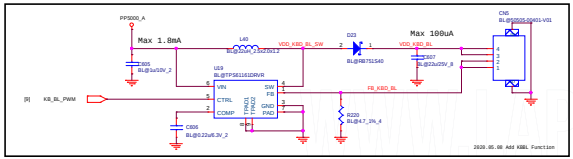
TOUCH I/F

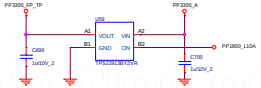


TO DISPLAY CONN

Quanta Computer Inc.		
PROJECT : KARBEN_7C		
Size	Document Number	Rev
	TOUCH / PEN	1A
Date: Wednesday, November 25, 2020	Sheet 24 of 32	

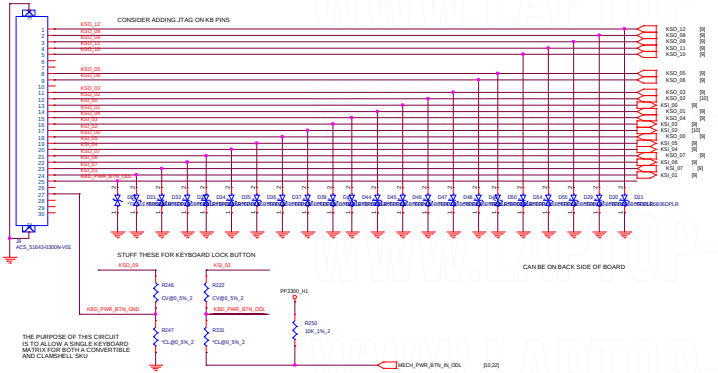
KEYBOARD BACKLIGHT





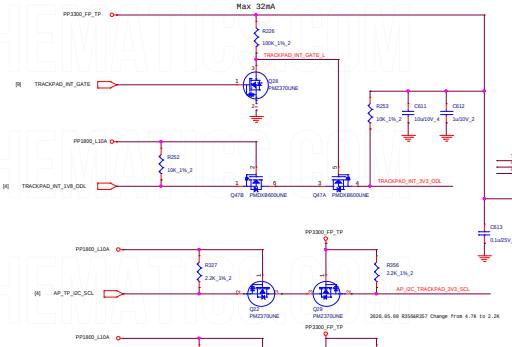
KEYBOARD

BSW REF DESIGN ERRATA MENTIONED A LEAKAGE PROBLEM INTO THE EC VIA THE KSO PINS.
THE FIX WAS TO ADD 100K PULLUPS TO 3P3A_EC ON THE KSO SIGNALS.
0C2A COMPATIBLE



STUFF THESE FOR KEYBOARD POWER BUTTON

Convertible	R246,R222,SW3 STUFF ; R247,R331 NC
Clamshell	R247,R222 STUFF ; R246,R248,SW3 NC



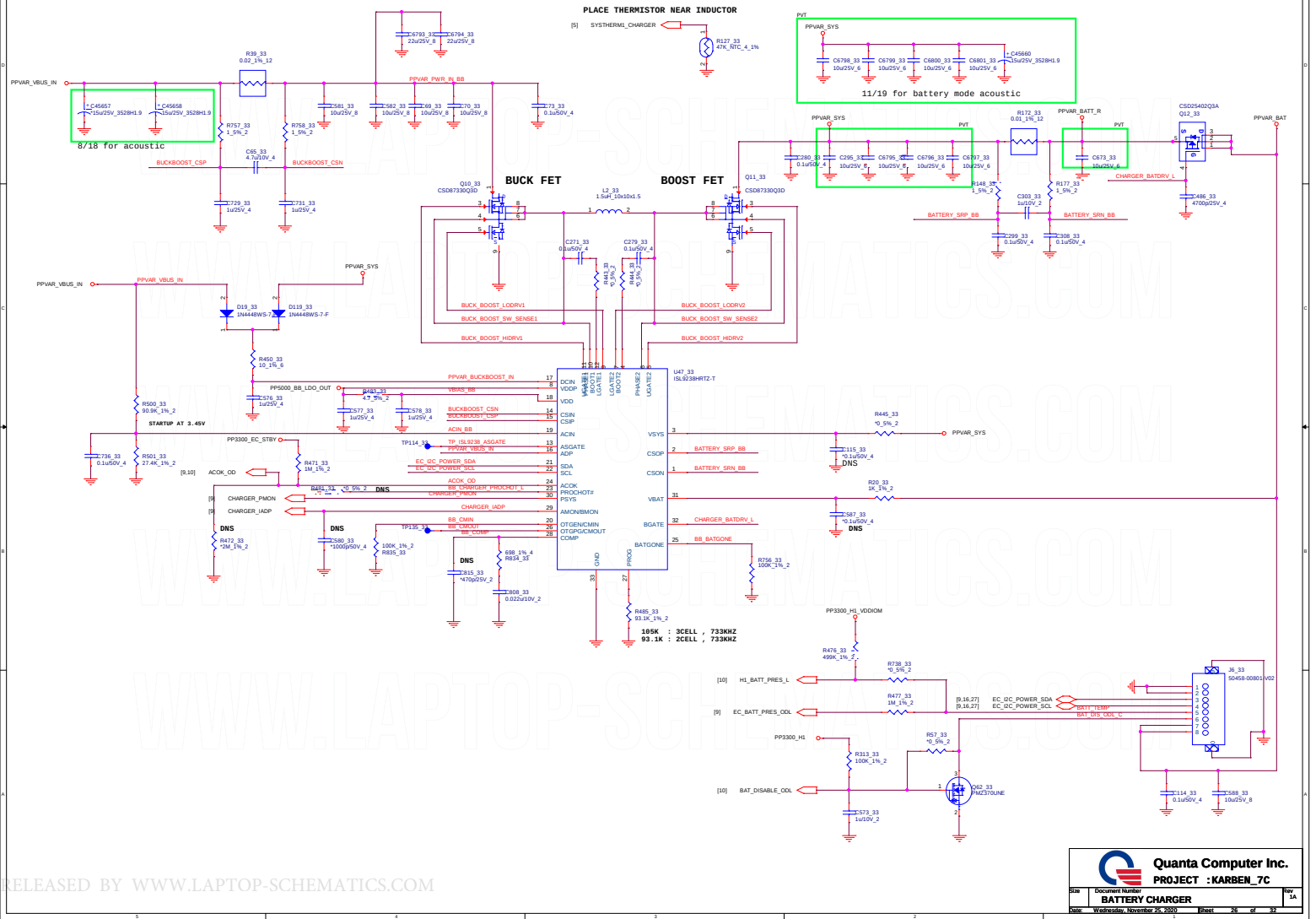
TRACKPAD CONNECTOR

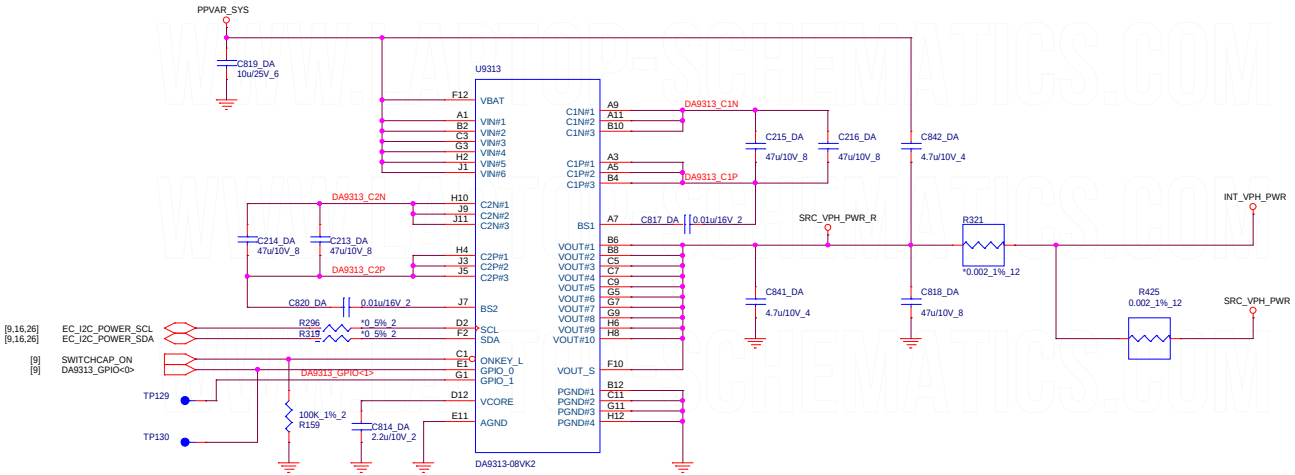
SUBJECT TO CHANGE PER QUANTA REQUEST
TRACKPAD 3.3V TO 1.8V LEAKAGE SHOULD BE TINY

5/26 Remove223.8 LIB for acer suggestion.

Quanta Computer Inc.			
PROJECT : TP,KB,KB BACK LIGHT			
Size	Document Number		Rev 1A
Date: Wednesday, November 25, 2020	Sheet 25 of 32		

INTERSIL BUCK - BOOST CHARGER





I2C ADDRESS: 7'H68

Quanta Computer Inc.			
PROJECT : KARBEN_7C			
Size	Document Number		Rev
	2:1 SWITCHCAP		1A
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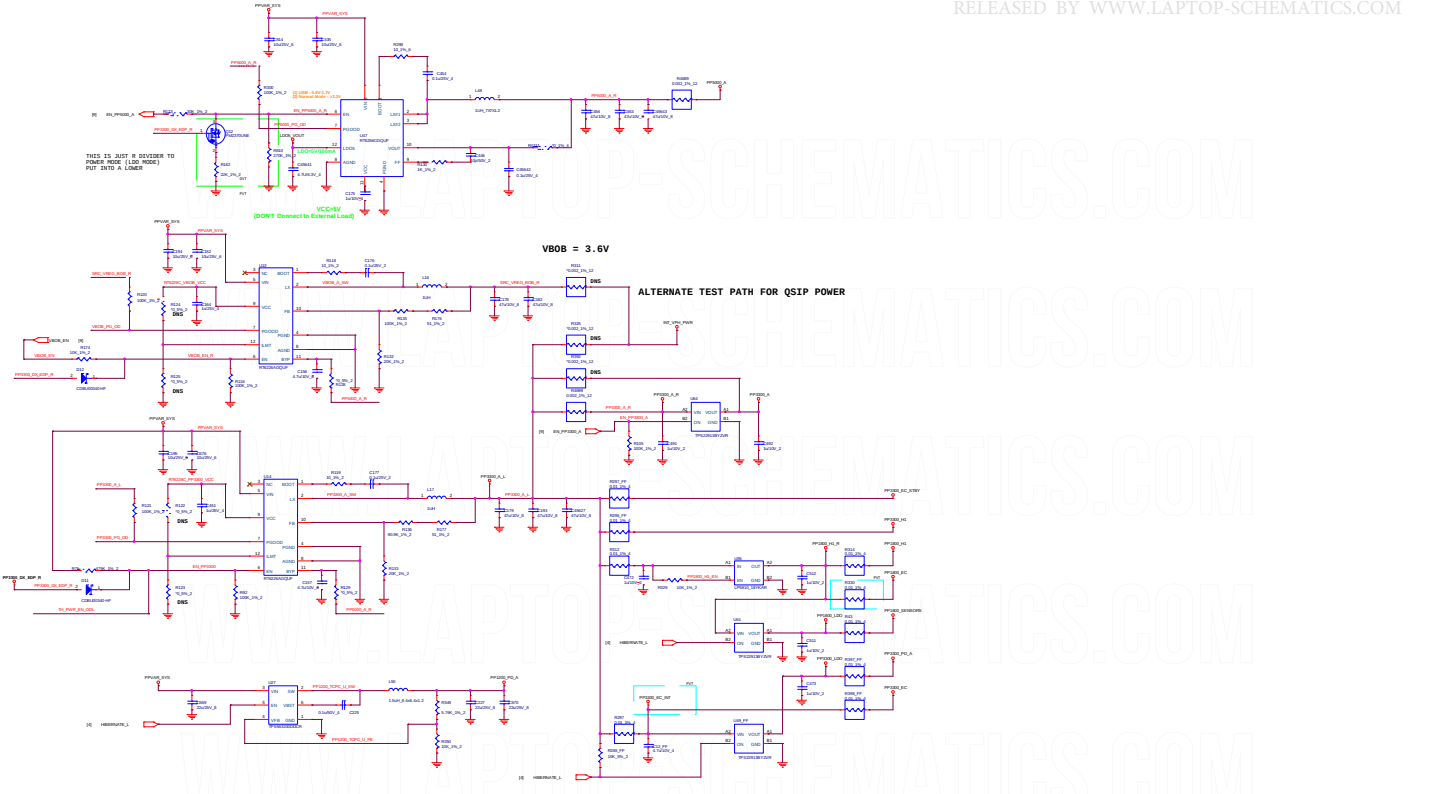

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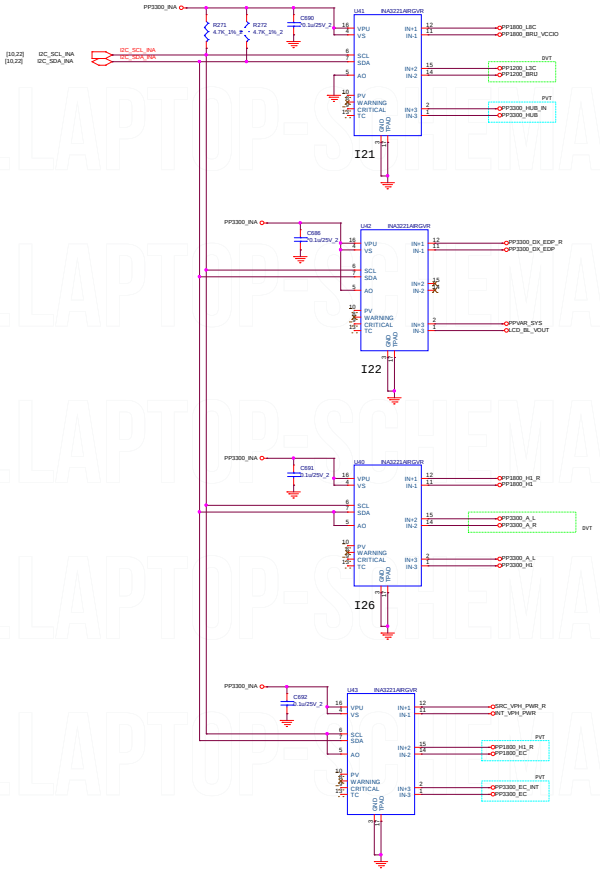

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	POWER MEASURE	1A

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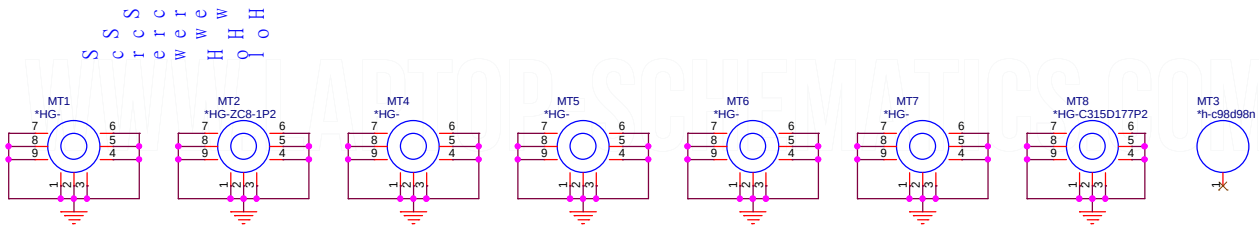

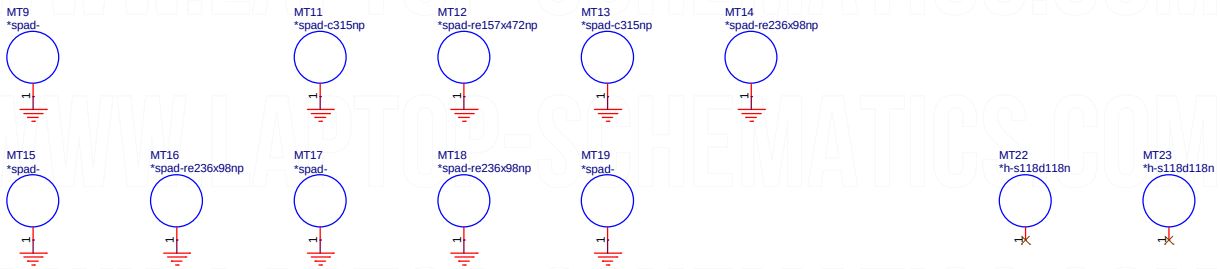

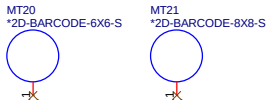

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	HOLE,SHIELD,CLIP	1A

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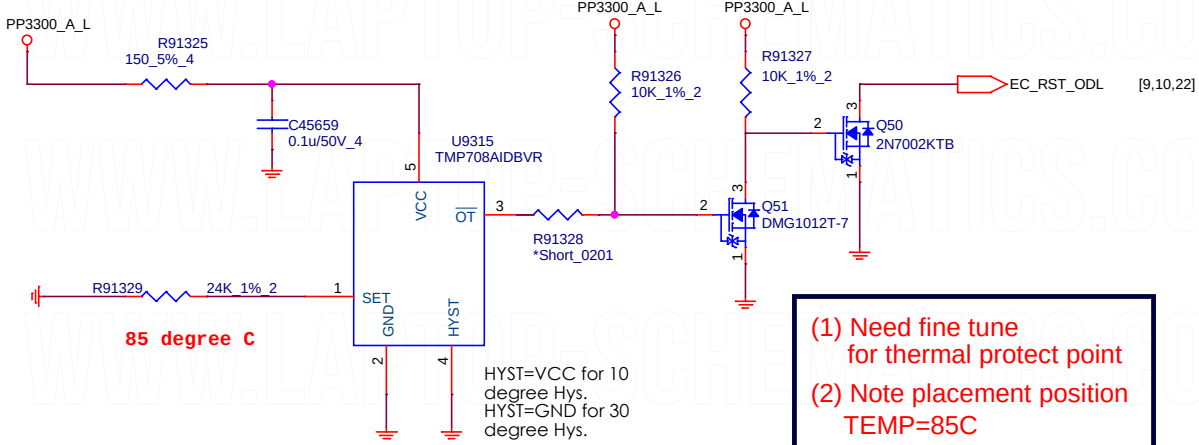
Thermal protection



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Model	Version	CHANGE LIST
Karben_7C	1A	2020.02.25 1. Page_28 Update L48 & L16 & L17 QPN : CV-1063MZ04 , H=1.5 to H=1±0.2 --- 2020.03.03 2. Page_12 Remove EDP_TX2_N / P & EDP_TX3_N / P --- 2020.03.06 3. Page_12 Remove EDP L1_23 4 channel to L1_23 & L52 2 channel.
	2A	2020.05.21 4. Page_08 Replace R94_3 with 4.7K/0201 resistor. 5. Page_04 Move R438 to R437 for EVT board ID = 001. 6. Page_13 Move R93_LS to R354 and change TPS22913 to TPS22914. 7. Page_24 Remove R799632_45 and stuff R389 and R393 with 2.2K/0201 and add non-stuff Q35_46 and R454_46. 8. Page_25 Change R356 and R357 from 4.7K to 2.2K/0201. 9. Page_04 Move EN_PP3300_DX_EDP from GPIO 106 to GPIO 30 and GPIO 106 is NC. 10. Page_21 eSIM change to MFFXS-EUICC-GLC00. 11. Page_04 Remove GPIO67 DBG_SPI_HOLD_L from AP. 12. Page_18 R344 unstuff JDL didn't used.b\155426122 13. Page_18 R183_40 change from 1M to 499K.b\155426122 --- 2020.05.22 14. Page_20/15 change USB_A_CDP_ILIM_EN_L to USB_A_CDP_ILIM_EN GPIO output behavior change..b\156965411 15. Page_12 Swap J23_23 pin17 pin16. --- 2020.05.26 16. Page_25 Remove J23.8 LID_OPEN_EC due to it's already disabled from module FW. 17. Page_12 Increase J17 two pins for PP5000_A. 18. Page_17 CN2.26 DEL USB_DET PIN --- 2020.05.28 19. Page 13 Remove U65, C705,C91_LS, and R93_LS. 20. Page 12 reserve C45640 for PP3300_DX_EDP raise time adjustment. --- 2020.0601 --- 22. page 13 R9 change 10K for QCT recommend. 23. page 20 C45639 change to 30pf for QCT recommend. 24. Page 31 Add 15k pull up PP1800_L5C for QCT recommend. 25. Page 23 U9314 PU resistor power rail from PP3300 to PP1800_L14A. --- 2020.0602 --- 24. Page 20 Add 15k pull up PP1800_L5C on UIM2_DATA for QCT recommend. 25. Page 23 U9314 PU resistor power rail from PP3300 to PP1800_L14A. 26. page 24 stuff R454_46\Q35_46\R31\R4709 for QCT recommend. 27. page 28 update U47 from RT6256A to RT6256C. 28. page 20 remove R558_47 for sim card hot plug issue.

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CHANGE LIST
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