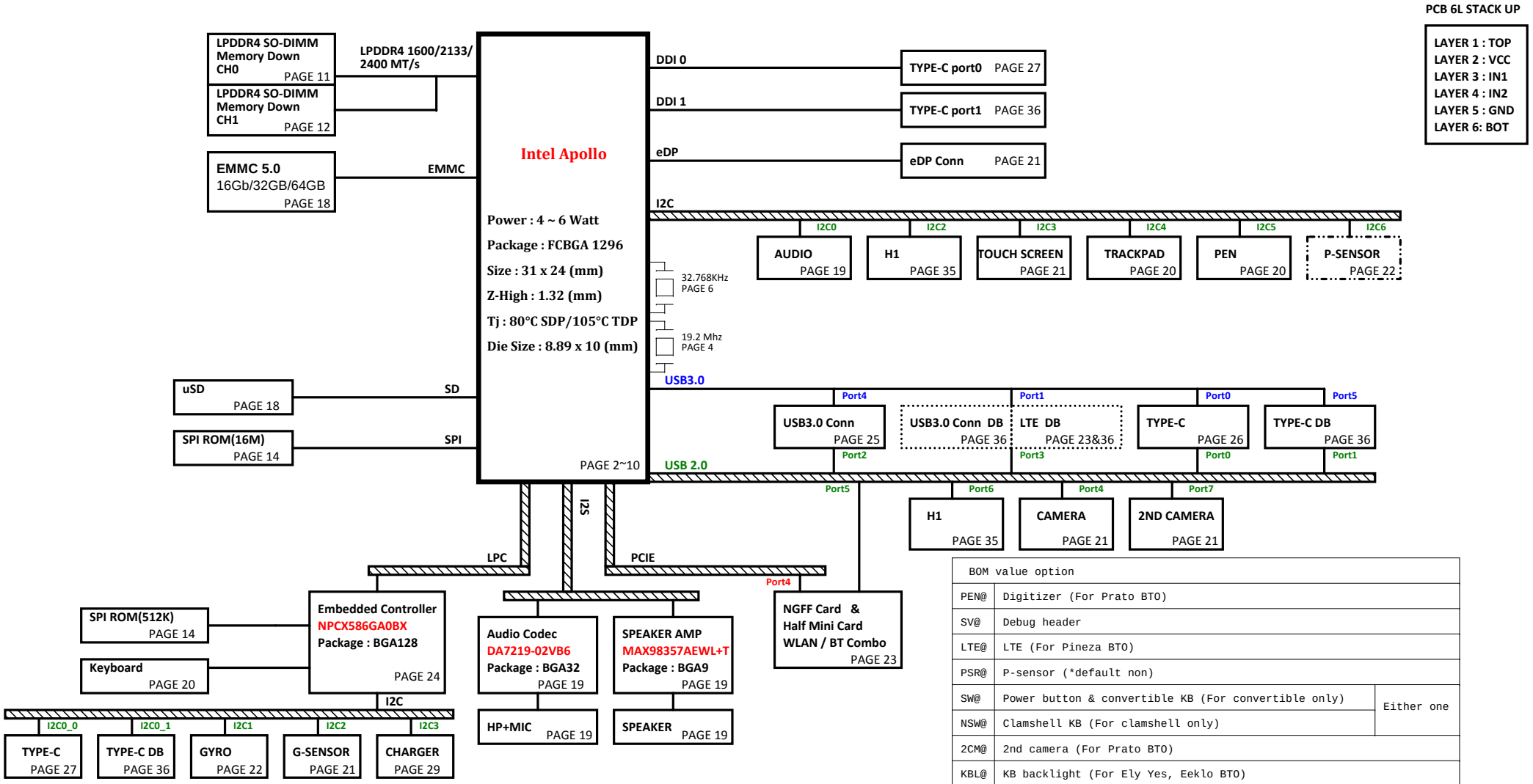
Intel Apollo Platform Block Diagram



BOM value option		
PEN@	Digitizer (For Prato BTO)	
SV@	Debug header	
LTE@	LTE (For Pineza BTO)	
PSR@	P-sensor (*default non)	
SW@	Power button & convertible KB (For convertible only)	Either one
NSW@	Clamshell KB (For clamshell only)	
2CM@	2nd camera (For Prato BTO)	
KBL@	KB backlight (For Ely Yes, Eeklo BTO)	
GS@	G-sensor (For convertible only)	
TN@	Touchscreen (For convertible Yes, clamshell BTO)	
GY@	Gyro (For convertible only)	
ZAL@	For Astronaut only (acoustic noise)	

*11" and 15" USB3 TYPE-A connector and audio jack are different

Quanta Computer Inc.
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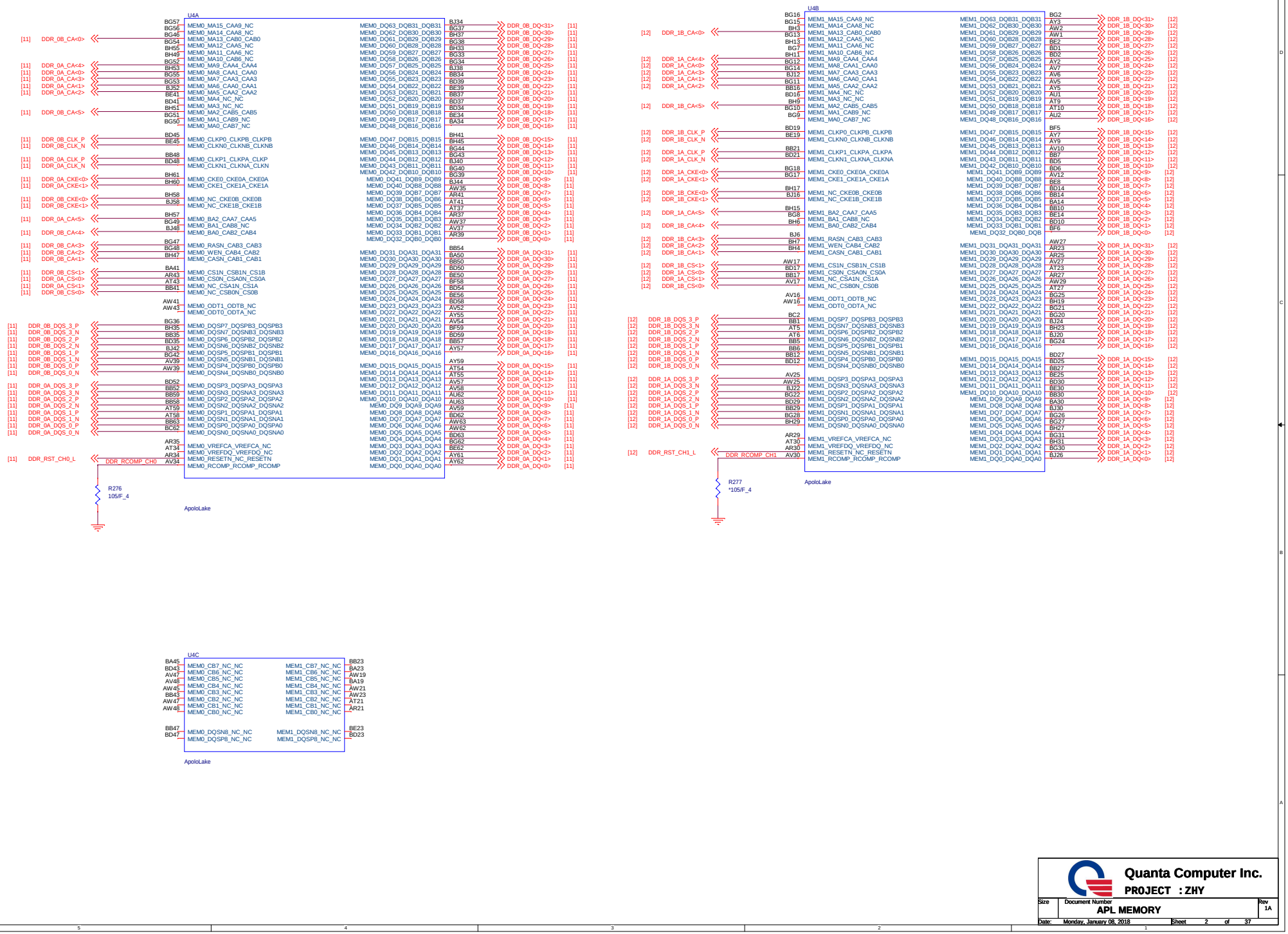
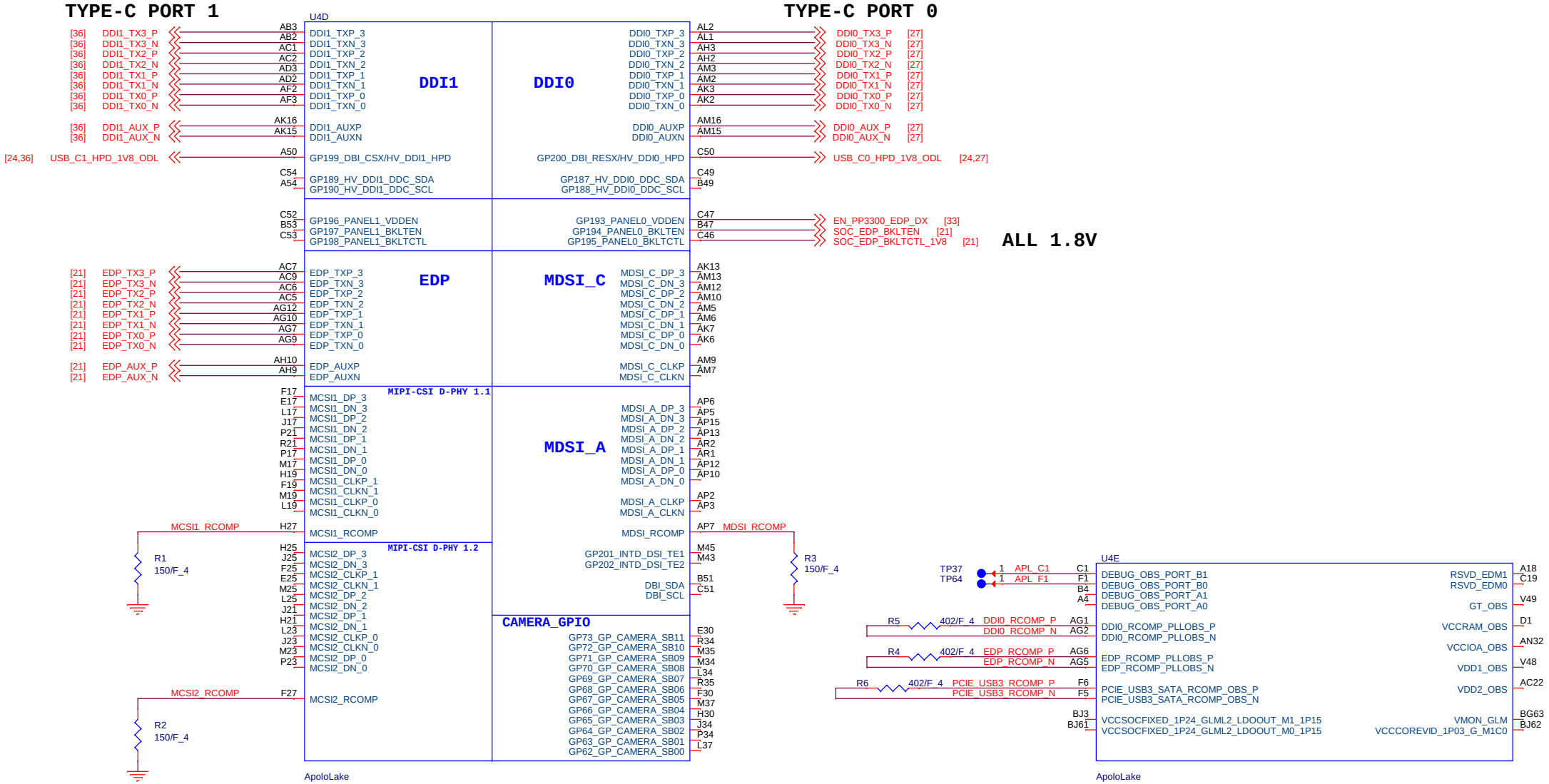
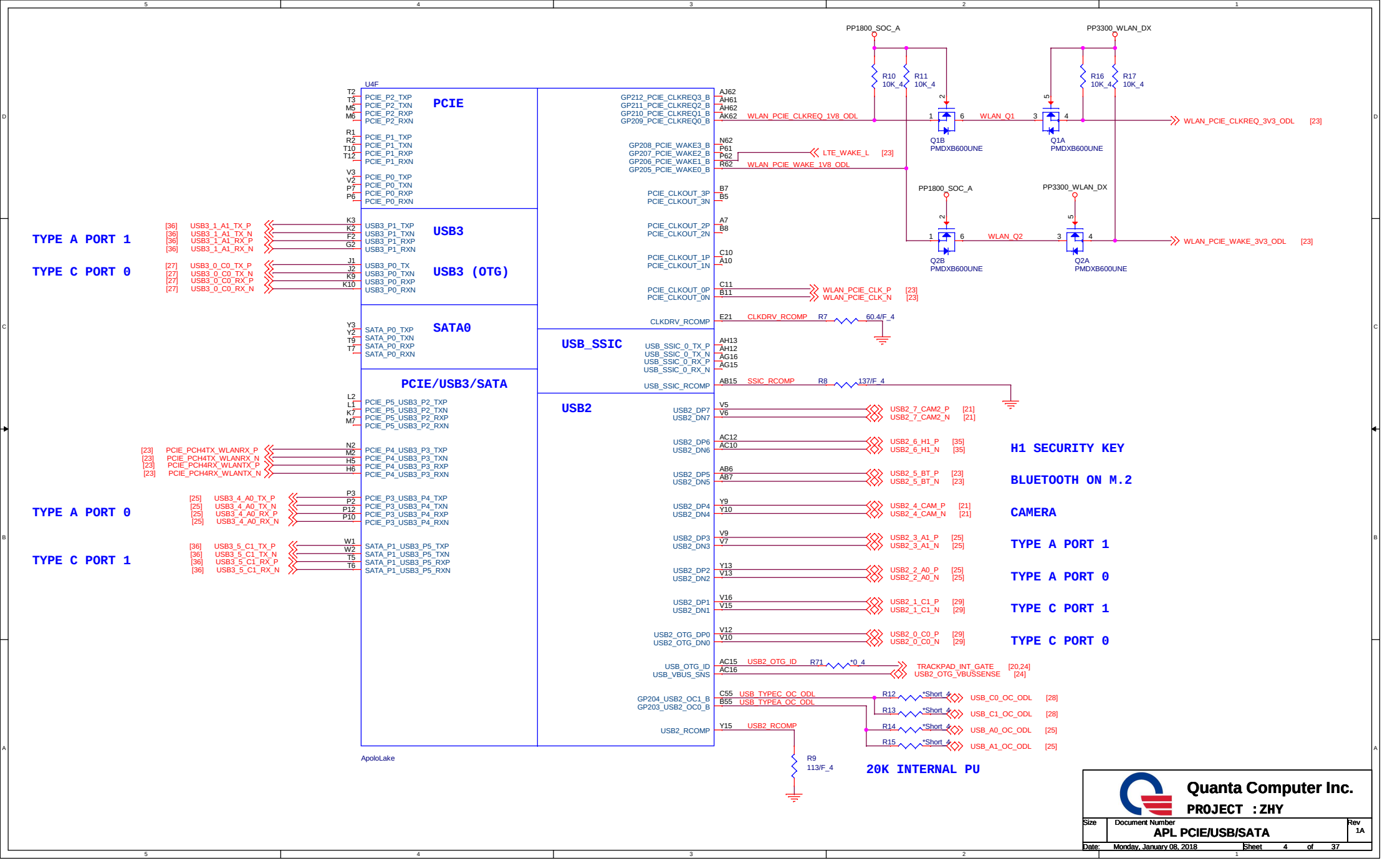


Quanta Computer Inc.			
PROJECT : ZHY			
Size	Document Number		Rev
	APL MEMORY		1A
Date: Monday, January 08, 2018	Sheet 2 of 37		



Quanta Computer Inc.	PROJECT : ZHY
Size	Document Number: APL eDP/RCOMP — Rev: 1A
Date: Monday, January 08, 2018	Sheet 3 of 37

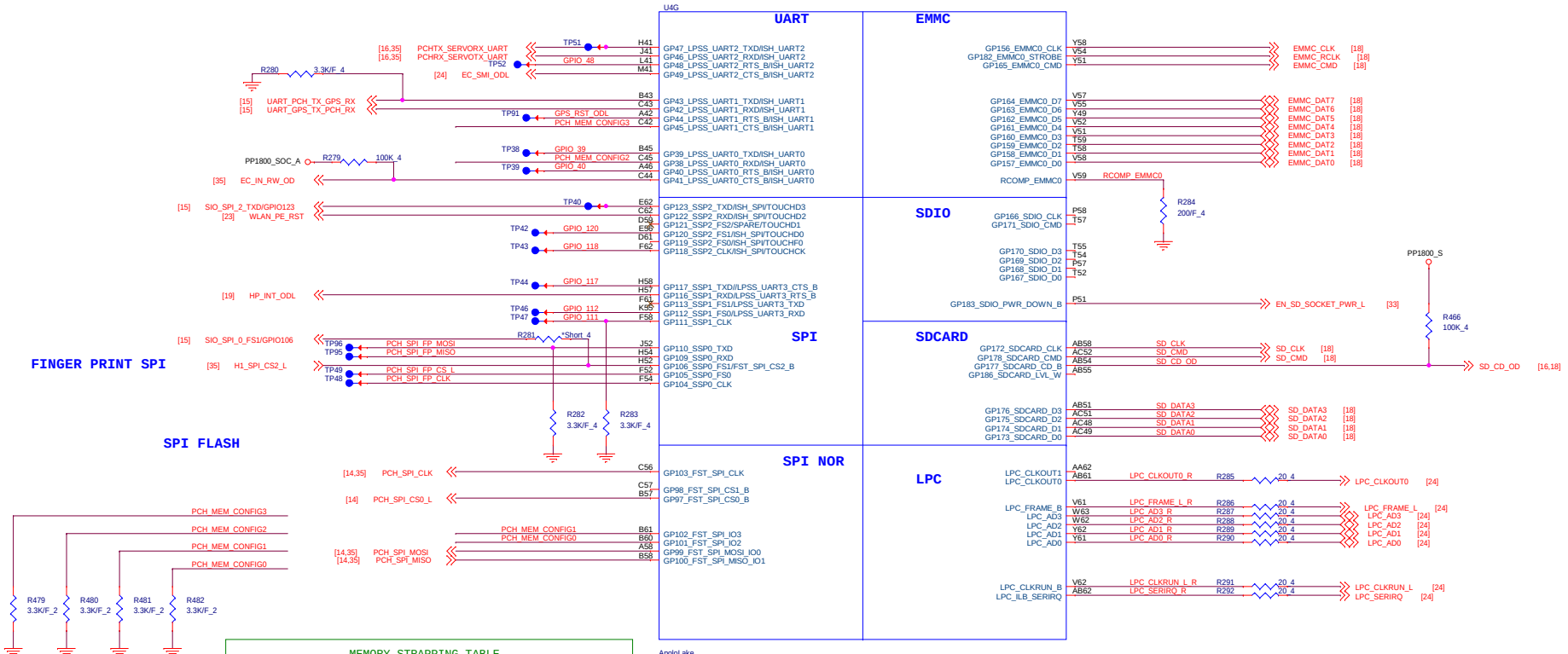


Quanta Computer Inc.

PROJECT : ZHY

Size	Document Number	Rev
	APL PCIE/USB/SATA	1A

Date: Monday, January 08, 2018 Sheet 4 of 37



MEMORY STRAPPING TABLE				
CONFIG PIN	3	2	1	0
SAMSUNG 8GB K4F6E304HB	0	0	0	0
SAMSUNG 4GB K4F8E304HB	0	0	0	1
MICRON 8GB MT53B512M32D2NP-062WT:C	0	0	1	0
MICRON 4GB MT53B256M32D1NP-062 WT:C	0	0	1	1
HYNIX 8GB H9HCNNNBPUMLHR	0	1	0	0
HYNIX 4GB H9HCNNN8KUMLHR	0	1	0	1

HARDWARE STRAPS (* = SYSTEM STRAP SELECTION)				
GPIO_39: INTERNAL 20K PD *DISABLE CSE ROM BYPASS: 0 ENABLE CSE ROM BYPASS: 1	GPIO_47: INTERNAL 20K PD *DON'T FORCE DNX FW LOAD: 0 FORCE DNX FW LOAD: 1	GPIO_106: INTERNAL 20K PU *MUST BE HIGH WHEN RSM_RST_N DEASSERTS	GPIO_117: INTERNAL 20K PD *MUST BE LOW WHEN RSM_RST_N DEASSERTS	GPIO_120: INTERNAL 20K PD *TOP SWAP OVERRIDE DISABLE: 0 TOP SWAP OVERRIDE ENABLE: 1
GPIO_40: INTERNAL 20K PD *MUST BE LOW WHEN RSM_RST_N DEASSERTS	GPIO_48: INTERNAL 20K PD *MUST BE LOW WHEN RSM_RST_N DEASSERTS	GPIO_111: INTERNAL 20K PU DO NOT BOOT FROM SPI: 1 *BOOT FROM SPI: 0	GPIO_123: INTERNAL 20K PU MUST BE HIGH WHEN RSM_RST_N DEASSERTS	GPIO_121: INTERNAL 20K PD *MUST BE LOW WHEN RSM_RST_N DEASSERTS
GPIO_43: INTERNAL 20K PU ENABLE BOOT FROM EMMC: 1 *DISABLE BOOT FROM EMMC: 0	GPIO_104: INTERNAL 20K PD *MUST BE LOW WHEN RSM_RST_N DEASSERTS	GPIO_118: INTERNAL 20K PD *NO FLASH DESCRIPTOR OVERRIDE: 0 OVERRIDE FLASH DESCRIPTOR: 1	GPIO_112: INTERNAL 20K PD *MUST BE LOW WHEN RSM_RST_N DEASSERTS	
GPIO_44: INTERNAL 20K PU *ENABLE BOOT FROM SPI: 1 DISABLE BOOT FROM SPI: 0	GPIO_105: INTERNAL 20K PD *MUST BE LOW WHEN RSM_RST_N DEASSERTS	GPIO_110: INTERNAL 20K PU LPC BUFFERS AT 1.8V: 1 *LPC BUFFERS AT 3.3V: 0	GPIO_113: INTERNAL 20K PD *MUST BE LOW WHEN RSM_RST_N DEASSERTS	

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	APL UART/SPI/EMMC/SD/LPC	1A

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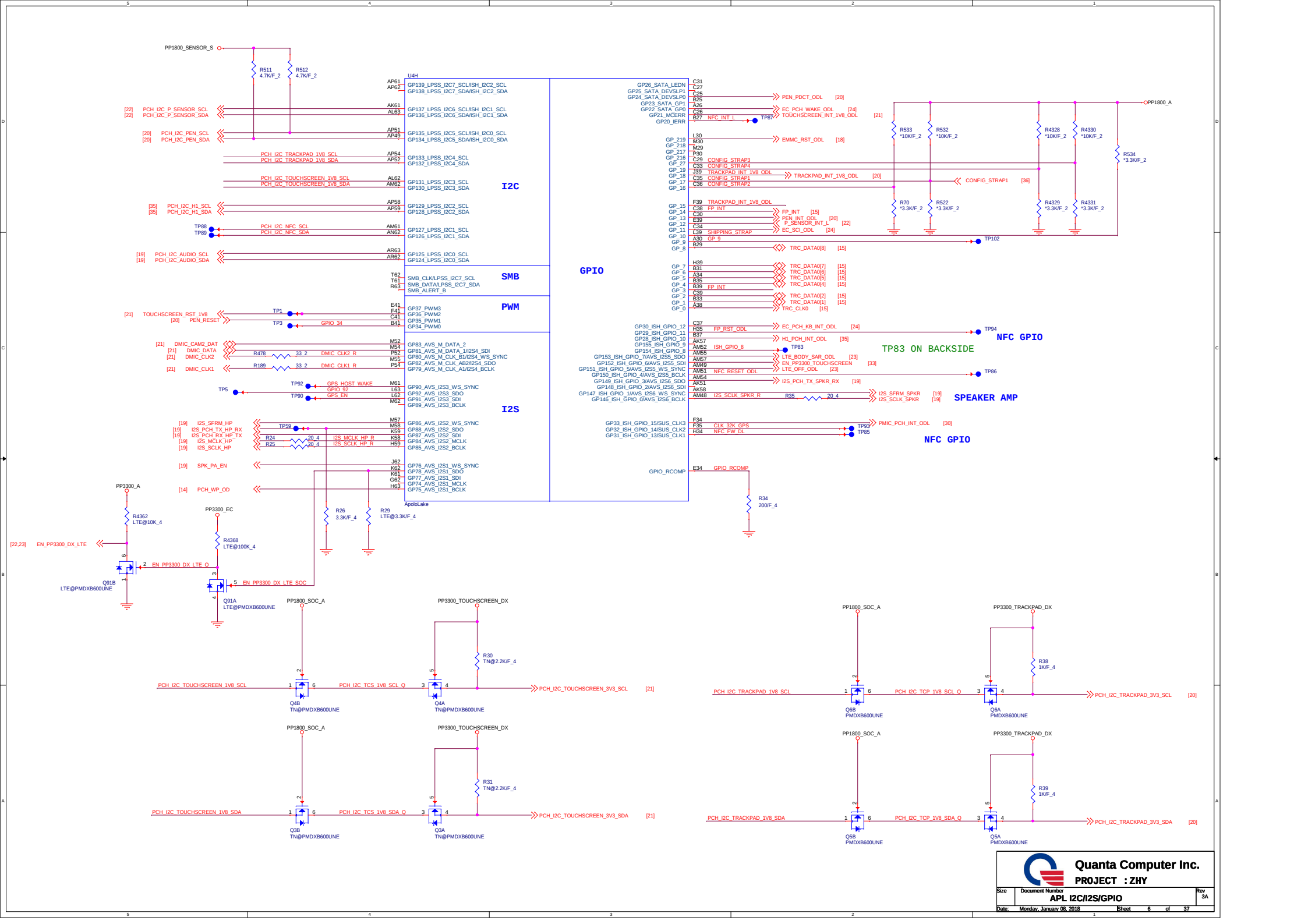
PP1800_SENSOR_S
R511 4.7K/F_2
R512 4.7K/F_2
U4H
I2C
SMB
PWM
I2S
GPIO
ApoloLake
PCH_I2C_P_SENSOR_SCL
PCH_I2C_P_SENSOR_SDA
PCH_I2C_PEN_SCL
PCH_I2C_PEN_SDA
PCH_I2C_TRACKPAD_1V8_SCL
PCH_I2C_TRACKPAD_1V8_SDA
PCH_I2C_TOUCHSCREEN_1V8_SCL
PCH_I2C_TOUCHSCREEN_1V8_SDA
PCH_I2C_NFC_SCL
PCH_I2C_NFC_SDA
PCH_I2C_AUDIO_SCL
PCH_I2C_AUDIO_SDA
PCH_I2C_H1_SCL
PCH_I2C_H1_SDA
TOUCHSCREEN_RST_1V8
PEN_RESET
GPIO_34
DMIC_CAM2_DAT
DMIC_DATA
DMIC_CLK2
DMIC_CLK1
DMIC_CLK2_R
DMIC_CLK1_R
GPS_HOST_WAKE
GPIO_92
GPS_EN
I2S_SFRM_HP
I2S_PCH_TX_HP_RX
I2S_PCH_RX_HP_TX
I2S_MCLK_HP
I2S_SCLK_HP
I2S_MCLK_HP_R
I2S_SCLK_HP_R
SPK_PA_EN
PCH_WP_OD
PEN_PDCT_ODL
EC_PCH_WAKE_ODL
TOUCHSCREEN_INT_1V8_ODL
NFC_INT_L
EMMC_RST_ODL
CONFIG_STRAP3
CONFIG_STRAP4
TRACKPAD_INT_1V8_ODL
CONFIG_STRAP1
CONFIG_STRAP2
FP_INT
P_SENSOR_INT_L
EC_SCI_ODL
SHIPPING_STRAP
GP_9
TRC_DATA0[8]
TRC_DATA0[7]
TRC_DATA0[6]
TRC_DATA0[5]
TRC_DATA0[4]
TRC_DATA0[2]
TRC_DATA0[1]
TRC_CLK0
EC_PCH_KB_INT_ODL
FP_RST_ODL
H1_PCH_INT_ODL
ISH_GPIO_8
LTE_BODY_SAR_ODL
EN_PP3300_TOUCHSCREEN
LTE_OFF_ODL
NFC_RESET_ODL
I2S_PCH_TX_SPKR_RX
I2S_SFRM_SPKR
I2S_SCLK_SPKR
CLK_32K_GPS
NFC_FW_DL
PMIC_PCH_INT_ODL
GPIO_RCOMP
TP83 ON BACKSIDE
NFC GPIO
SPEAKER AMP
PP1800_A
PP3300_A
PP3300_EC
EN_PP3300_DX_LTE
EN_PP3300_DX_LTE_Q
EN_PP3300_DX_LTE_SOC
Q91B LTE@PMDXB600UNE
Q91A LTE@PMDXB600UNE
PP1800_SOC_A
PP3300_TOUCHSCREEN_DX
PCH_I2C_TOUCHSCREEN_1V8_SCL
PCH_I2C_TCS_1V8_SCL_Q
PCH_I2C_TOUCHSCREEN_3V3_SCL
Q4B TN@PMDXB600UNE
Q4A TN@PMDXB600UNE
PCH_I2C_TOUCHSCREEN_1V8_SDA
PCH_I2C_TCS_1V8_SDA_Q
PCH_I2C_TOUCHSCREEN_3V3_SDA
Q3B TN@PMDXB600UNE
Q3A TN@PMDXB600UNE
PP3300_TRACKPAD_DX
PCH_I2C_TRACKPAD_1V8_SCL
PCH_I2C_TCP_1V8_SCL_Q
PCH_I2C_TRACKPAD_3V3_SCL
Q6B PMDXB600UNE
Q6A PMDXB600UNE
PCH_I2C_TRACKPAD_1V8_SDA
PCH_I2C_TCP_1V8_SDA_Q
PCH_I2C_TRACKPAD_3V3_SDA
Q5B PMDXB600UNE
Q5A PMDXB600UNE
Quanta Computer Inc.
PROJECT : ZHY
Size
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APL I2C/I2S/GPIO
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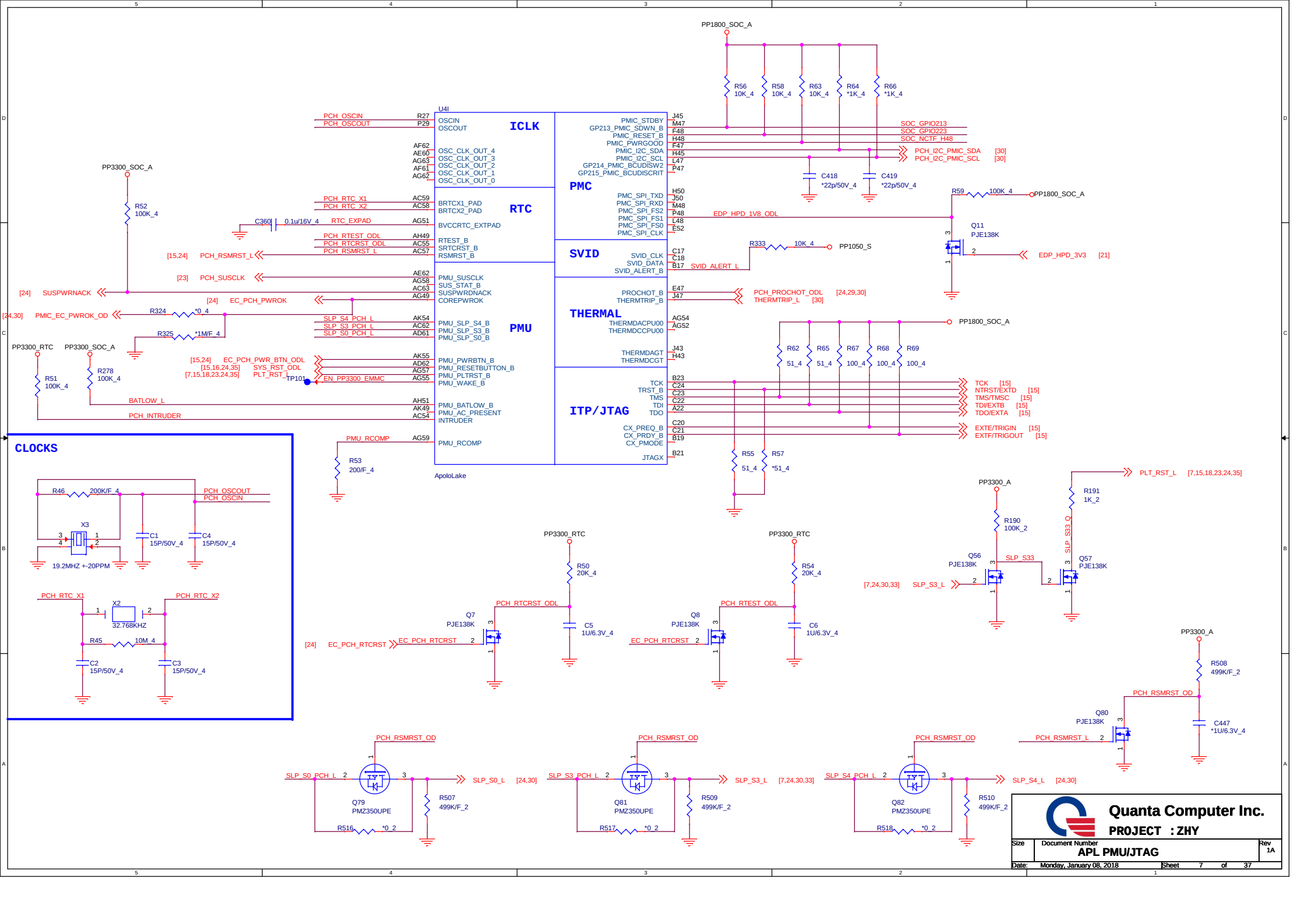
U4I
ICLK
RTC
PMU
SVID
THERMAL
PMC
ITP/JTAG
ApoloLake
PCH_OSCIN
PCH_OSCOUT
PCH_RTC_X1
PCH_RTC_X2
RTC_EXPAD
PCH_RTEST_ODL
PCH_RTCRST_ODL
PCH_RSMRST_L
PCH_SUSCLK
SUSPWRNACK
EC_PCH_PWROK
PMIC_EC_PWROK_OD
SLP_S4_PCH_L
SLP_S3_PCH_L
SLP_S0_PCH_L
EC_PCH_PWR_BTN_ODL
SYS_RST_ODL
PLT_RST_L
EN_PP3300_EMMC
BATLOW_L
PCH_INTRUDER
PMU_RCOMP
PMIC_STDBY
PMIC_RESET_B
PMIC_PWRGOOD
PMIC_I2C_SDA
PMIC_I2C_SCL
PMIC_SPI_TXD
PMIC_SPI_RXD
PMIC_SPI_FS2
PMIC_SPI_FS1
PMIC_SPI_FS0
PMIC_SPI_CLK
SVID_CLK
SVID_DATA
SVID_ALERT_B
PROCHOT_B
THERMTRIP_B
THERMDACPU00
THERMDCCPU00
THERMDAGT
THERMDCGT
TCK
TRST_B
TMS
TDI
TDO
CX_PREQ_B
CX_PRDY_B
CX_PMODE
JTAGX
SOC_GPIO213
SOC_GPIO223
SOC_NCTF_H48
PCH_I2C_PMIC_SDA
PCH_I2C_PMIC_SCL
EDP_HPD_1V8_ODL
EDP_HPD_3V3
SVID_ALERT_L
PCH_PROCHOT_ODL
PCH_THERMTRIP_L
CLOCKS
19.2MHZ +-20PPM
32.768KHZ
PP1800_SOC_A
PP3300_SOC_A
PP3300_RTC
PP1050_S
PP3300_A
Q7
Q8
Q11
Q56
Q57
Q79
Q80
Q81
Q82
PJE138K
PMZ350UPE
EC_PCH_RTCRST
SLP_S3_L
SLP_S33
PLT_RST_L
PCH_RSMRST_OD
PCH_RSMRST_L
SLP_S0_L
SLP_S3_L
SLP_S4_L
Quanta Computer Inc.
PROJECT : ZHY
Size
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APL PMU/JTAG
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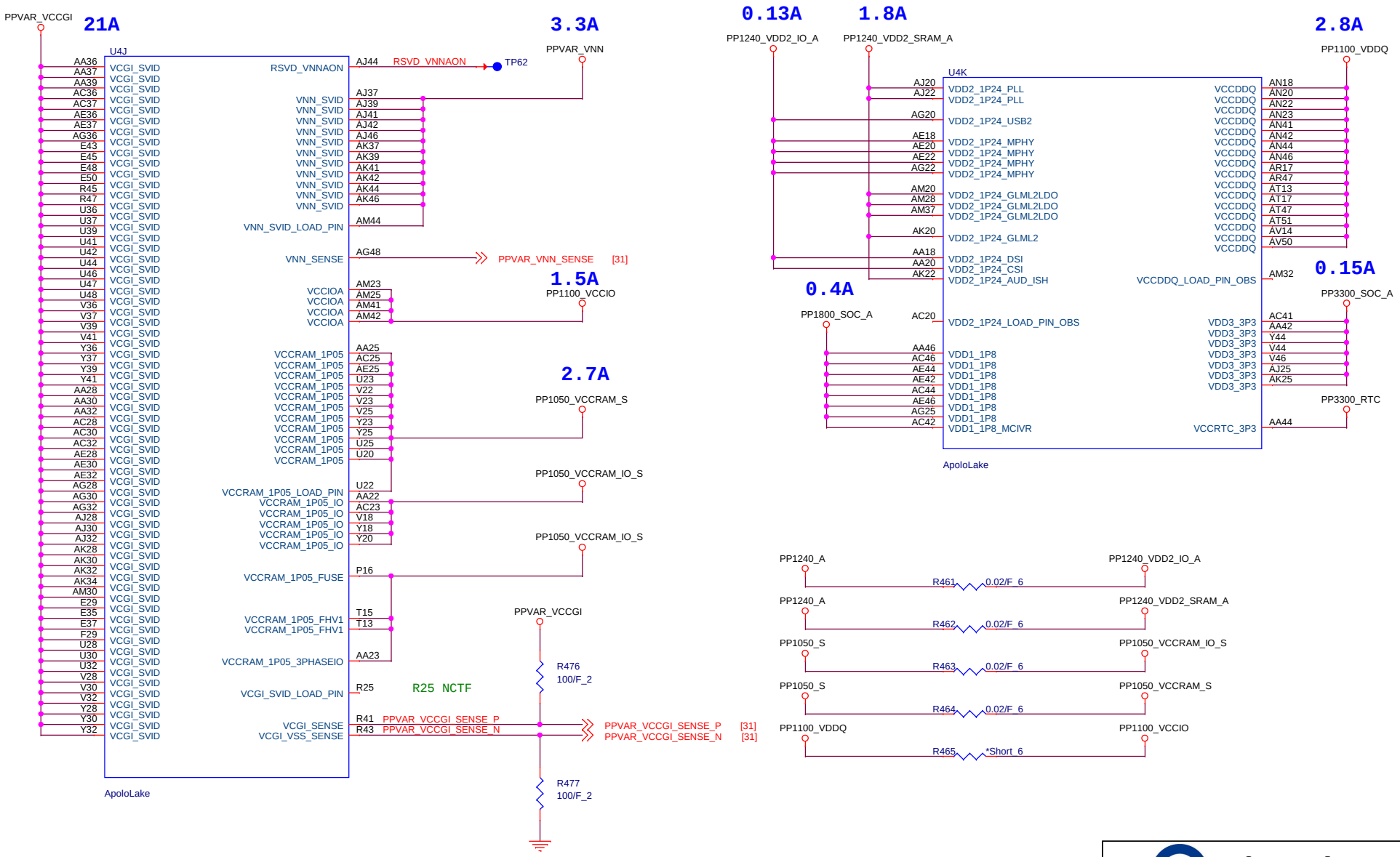

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Size	Document Number	Rev
	APL POWER	1A

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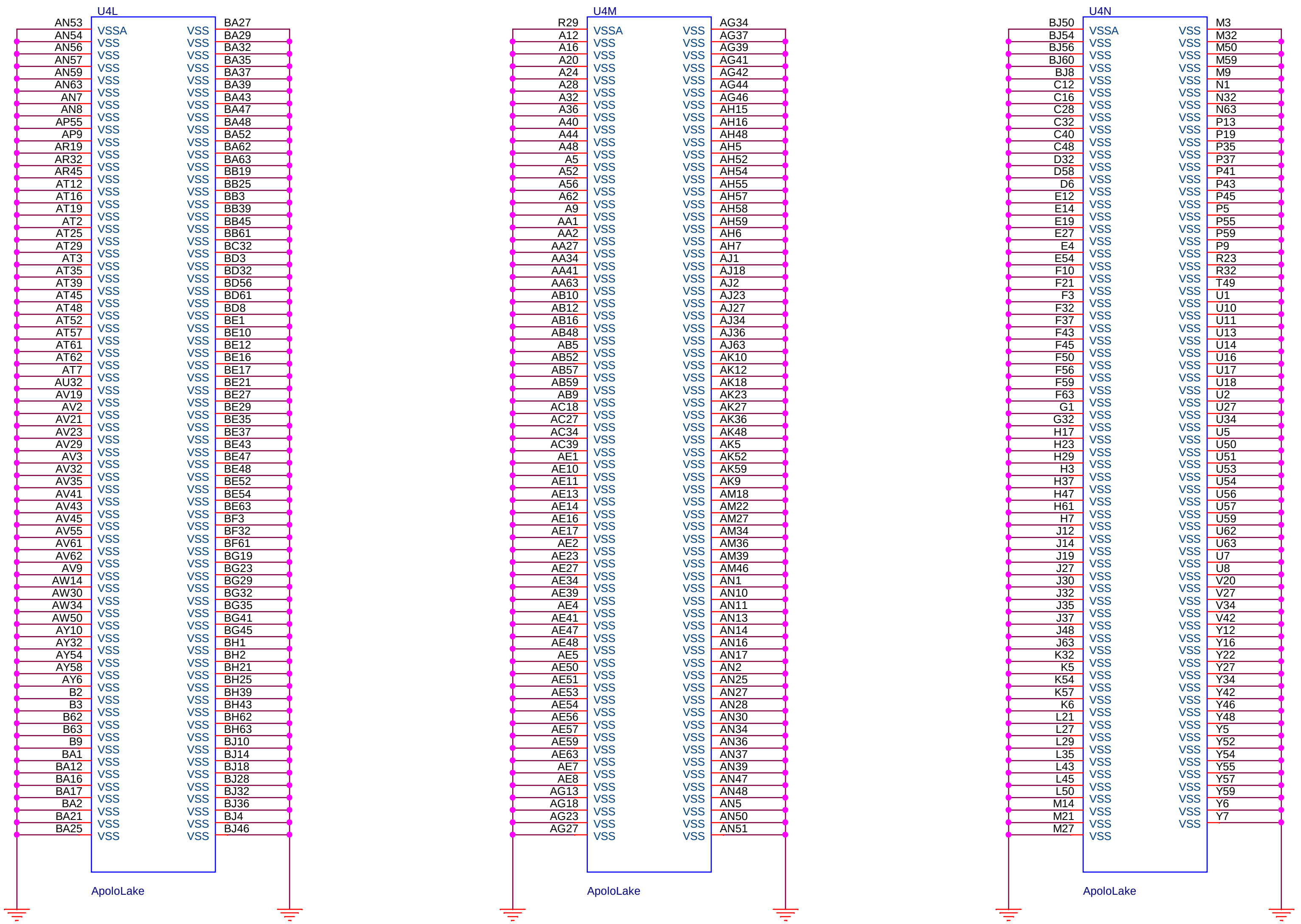

Quanta Computer Inc.

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Size	Document Number	Rev
	APL GROUND	1A

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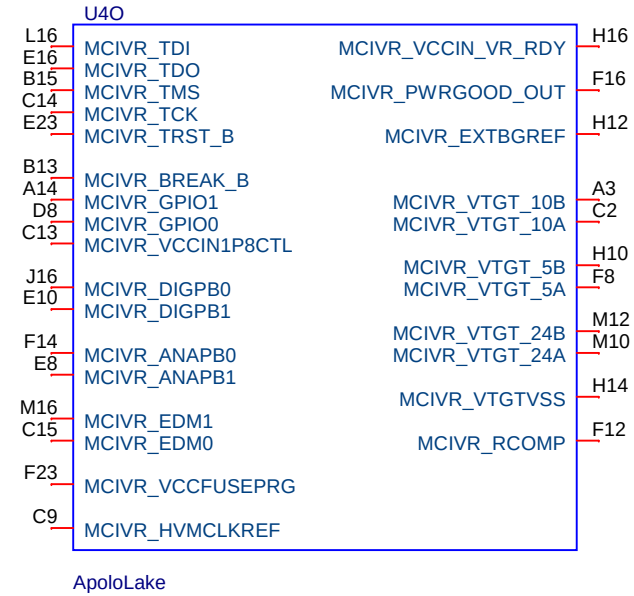

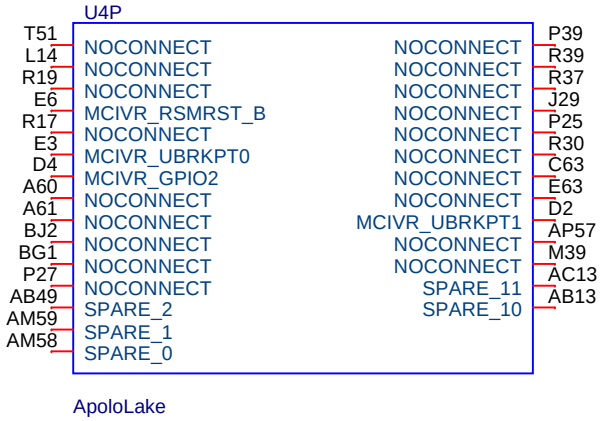

Quanta Computer Inc.

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Size	Document Number	Rev
	APL NO CONNECT	1A
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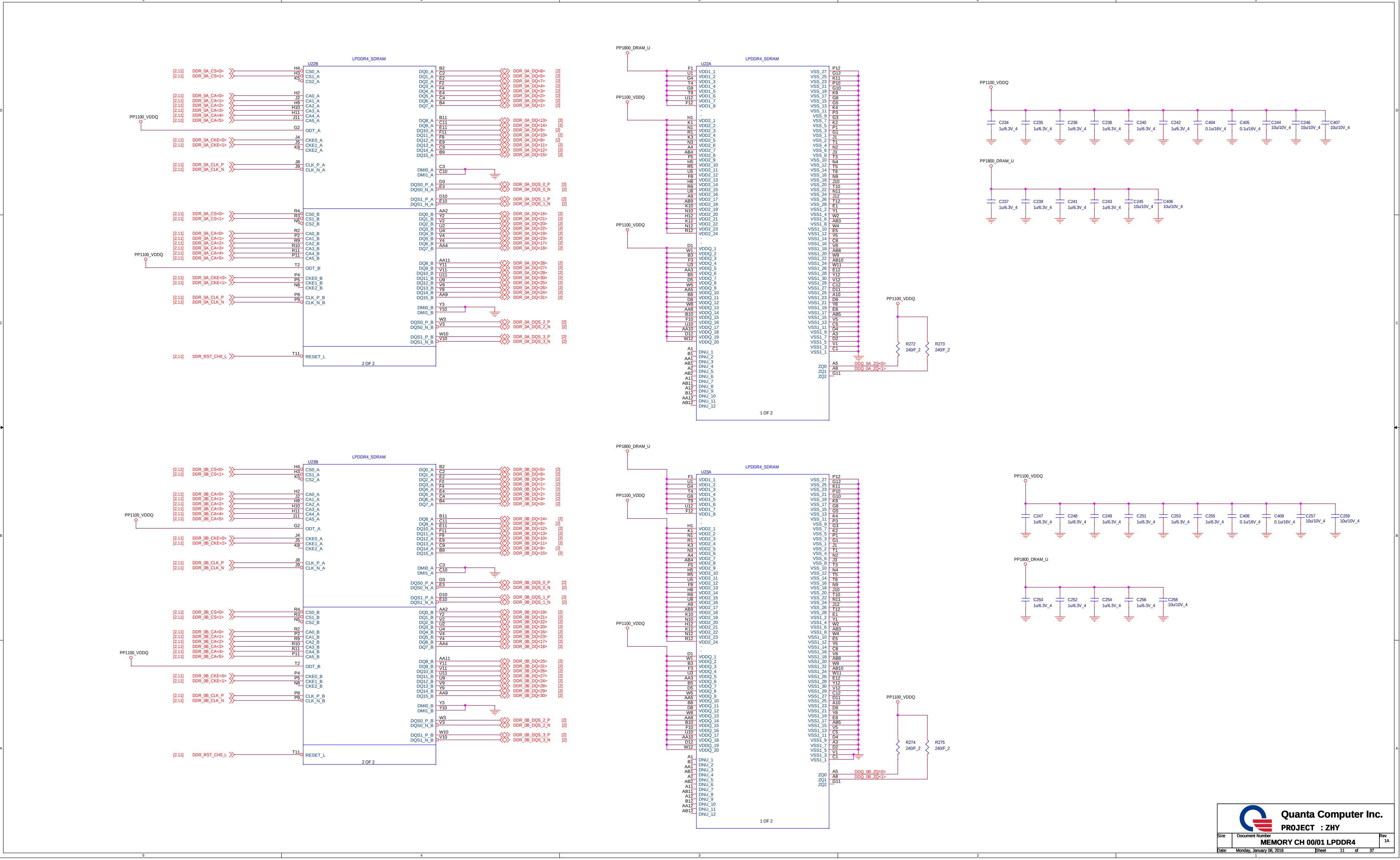

Quanta Computer Inc.

PROJECT : ZHY

Size	Document Number	Rev
	MEMORY CH 00/01 LPDDR4	1A

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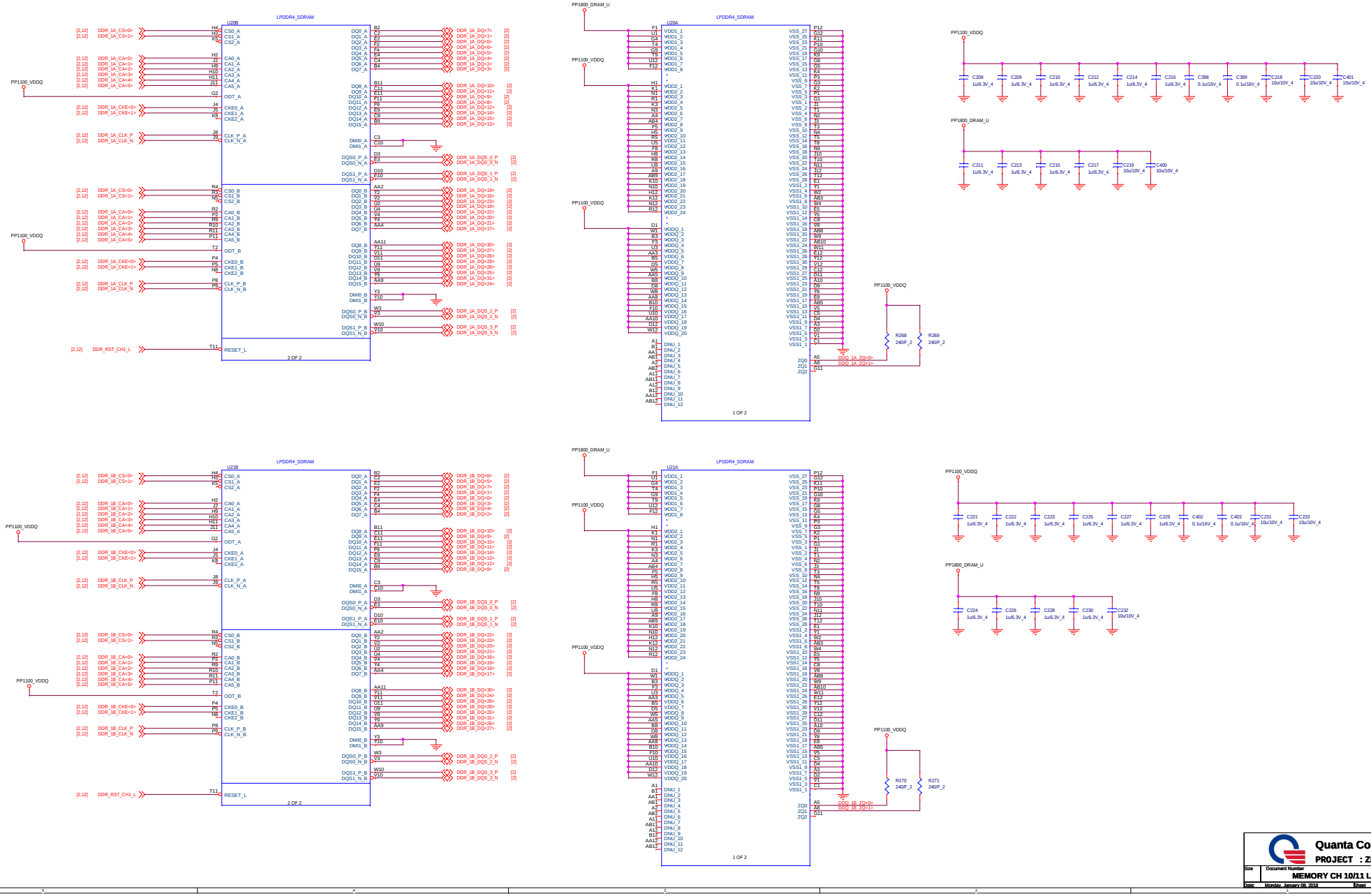

Quanta Computer Inc.

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Size	Document Number	Rev
	MEMORY CH 10/11 LPDDR4	1A
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PPVAR_VCCGI
C26 1u/6.3V_4
C35 1u/6.3V_4
C44 1u/6.3V_4
C49 1u/6.3V_4
C54 1u/6.3V_4
C58 1u/6.3V_4
C62 1u/6.3V_4
C65 1u/6.3V_4
C68 1u/6.3V_4
C70 1u/6.3V_4
C72 1u/6.3V_4
C74 1u/6.3V_4
BACKSIDE
PPVAR_VCCGI
C27 22u/6.3V_6
C36 22u/6.3V_6
C45 22u/6.3V_6
C50 22u/6.3V_6
C55 22u/6.3V_6
C59 22u/6.3V_6
C63 22u/6.3V_6
C66 22u/6.3V_6
TOPSIDE
EDGE CAP
PP1050_VCCRAM_IO_S
C79 1u/6.3V_4
C84 1u/6.3V_4
C80 1u/6.3V_4
C85 1u/6.3V_4
BACKSIDE
PP1050_VCCRAM_IO_S
C88 22u/6.3V_6
TOPSIDE
EDGE CAP
PLACE NEAR VCCRAM_1P05_IO PINS
PP1240_VDD2_IO_A
C93 1u/6.3V_4
C101 1u/6.3V_4
C94 1u/6.3V_4
BACKSIDE
PP1240_VDD2_IO_A
C104 22u/6.3V_6
TOPSIDE
EDGE CAP
PLACE NEAR AE20,AE18,AE22,AG22
VDD2_1P24_MPHY
PPVAR_VNN
C28 1u/6.3V_4
C37 1u/6.3V_4
C46 1u/6.3V_4
BACKSIDE
PPVAR_VNN
C29 22u/6.3V_6
C38 22u/6.3V_6
C47 22u/6.3V_6
C51 22u/6.3V_6
C274 *22u/6.3V_6
C275 *22u/6.3V_6
TOPSIDE
EDGE CAP
PP1240_VDD2_SRAM_A
C81 1u/6.3V_4
C86 1u/6.3V_4
C82 1u/6.3V_4
BACKSIDE
PP1240_VDD2_SRAM_A
C89 22u/6.3V_6
TOPSIDE
EDGE CAP
PLACE NEAR AM20,AK20,AM37
VDD2_1P24_GLM
PP1240_VDD2_IO_A
C95 1u/6.3V_4
BACKSIDE
PP1240_VDD2_IO_A
C96 1u/6.3V_4
C105 22u/6.3V_6
TOPSIDE
EDGE CAP
PLACE NEAR AA18,AA20
VDD2_1P24_DSI_CSI
PP1100_VCCIO
C52 22u/6.3V_6
C56 22u/6.3V_6
TOPSIDE
EDGE CAP
AM42,AM25,AM23,AM41
PP1100_VCCIO
C30 1u/6.3V_4
C39 1u/6.3V_4
BACKSIDE
PP1240_VDD2_SRAM_A
C83 1u/6.3V_4
BACKSIDE
PLACE NEAR AM28
VDD2_1P24_GLM
PP3300_RTC
C99 1U/6.3V_4
C198 0.1u/16V_4
TOPSIDE
AA44
VCCRTC_3P3V
PP1100_VDDQ
C31 1u/6.3V_4
C40 1u/6.3V_4
BACKSIDE
PP1100_VDDQ
C32 22u/6.3V_6
C41 22u/6.3V_6
C48 22u/6.3V_6
C53 22u/6.3V_6
C60 22u/6.3V_6
C64 22u/6.3V_6
C67 22u/6.3V_6
C69 22u/6.3V_6
TOPSIDE
EDGE CAP
PP1240_VDD2_SRAM_A
C76 1u/6.3V_4
C77 1u/6.3V_4
BACKSIDE
PP1240_VDD2_SRAM_A
C87 22u/6.3V_6
TOPSIDE
EDGE CAP
PLACE NEAR AJ20,AJ22,AK22
VDD2_1P24_AUD_ISH_PLL
PP1800_SOC_A
C97 1u/6.3V_4
C100 1u/6.3V_4
C98 1u/6.3V_4
BACKSIDE
PP1800_SOC_A
PP1800_SOC_A
C102 1u/6.3V_4
C106 22u/6.3V_6
TOPSIDE
EDGE CAP
PLACE NEAR VDD_1P8V_A
PP1050_VCCRAM_S
C33 1u/6.3V_4
C42 1u/6.3V_4
C34 1u/6.3V_4
C43 1u/6.3V_4
BACKSIDE
PP1050_VCCRAM_S
C57 22u/6.3V_6
C61 22u/6.3V_6
TOPSIDE
EDGE CAP
PLACE NEAR VCCRAM_1P05 PINS
PP1240_VDD2_IO_A
C78 1u/6.3V_4
BACKSIDE
PLACE NEAR AG20
VDD2_1P24_USB2
BACKSIDE
PP3300_SOC_A
C90 1u/6.3V_4
BACKSIDE
PP3300_SOC_A
C107 1u/6.3V_4
AK25,AJ25
TOPSIDE
PP3300_SOC_A
C91 1u/6.3V_4
C92 1u/6.3V_4
C103 22u/6.3V_6
EDGE CAP
AC41,AA42,Y44,V44,V46
PLACE NEAR VDD_3P3V_A
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PROJECT : ZHY
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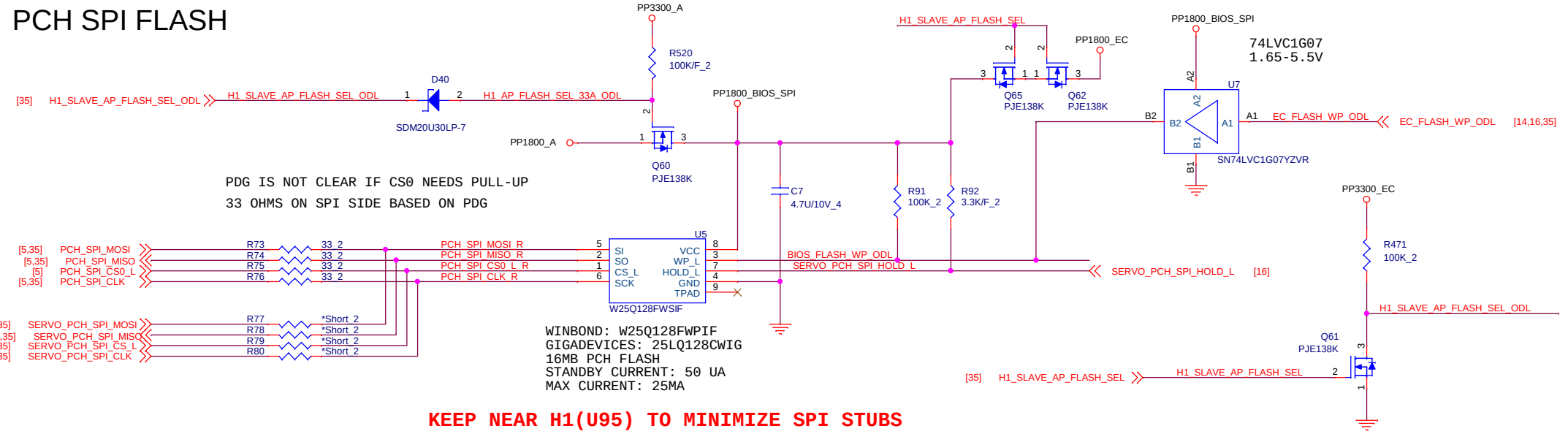
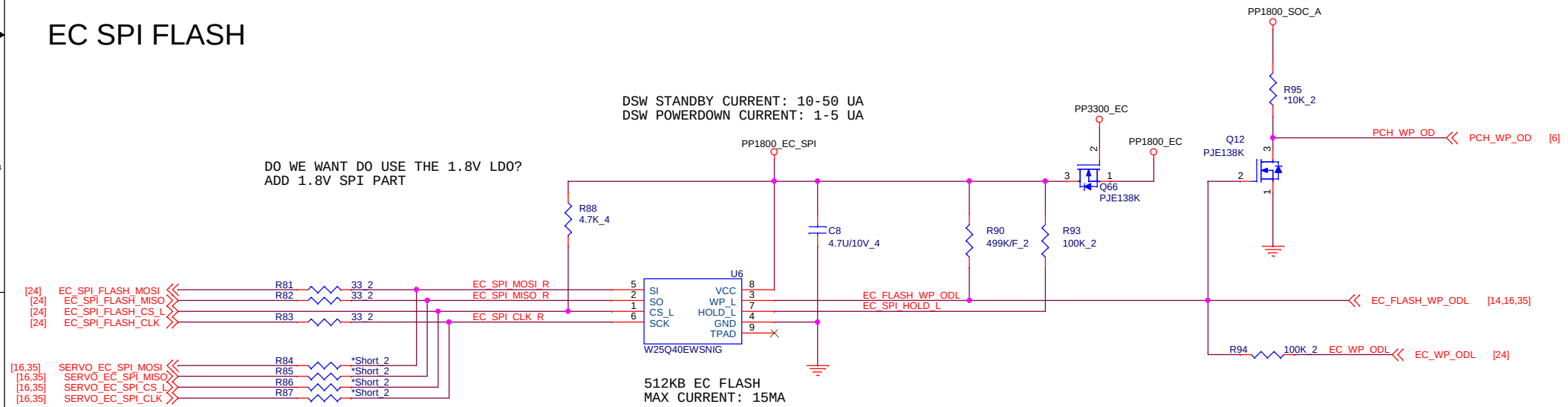
PCH SPI FLASH



KEEP NEAR H1(U95) TO MINIMIZE SPI STUBS

EC SPI FLASH



Quanta Computer Inc.		
PROJECT : ZHY		
Size	Document Number	Rev
	SPI ROM	1A
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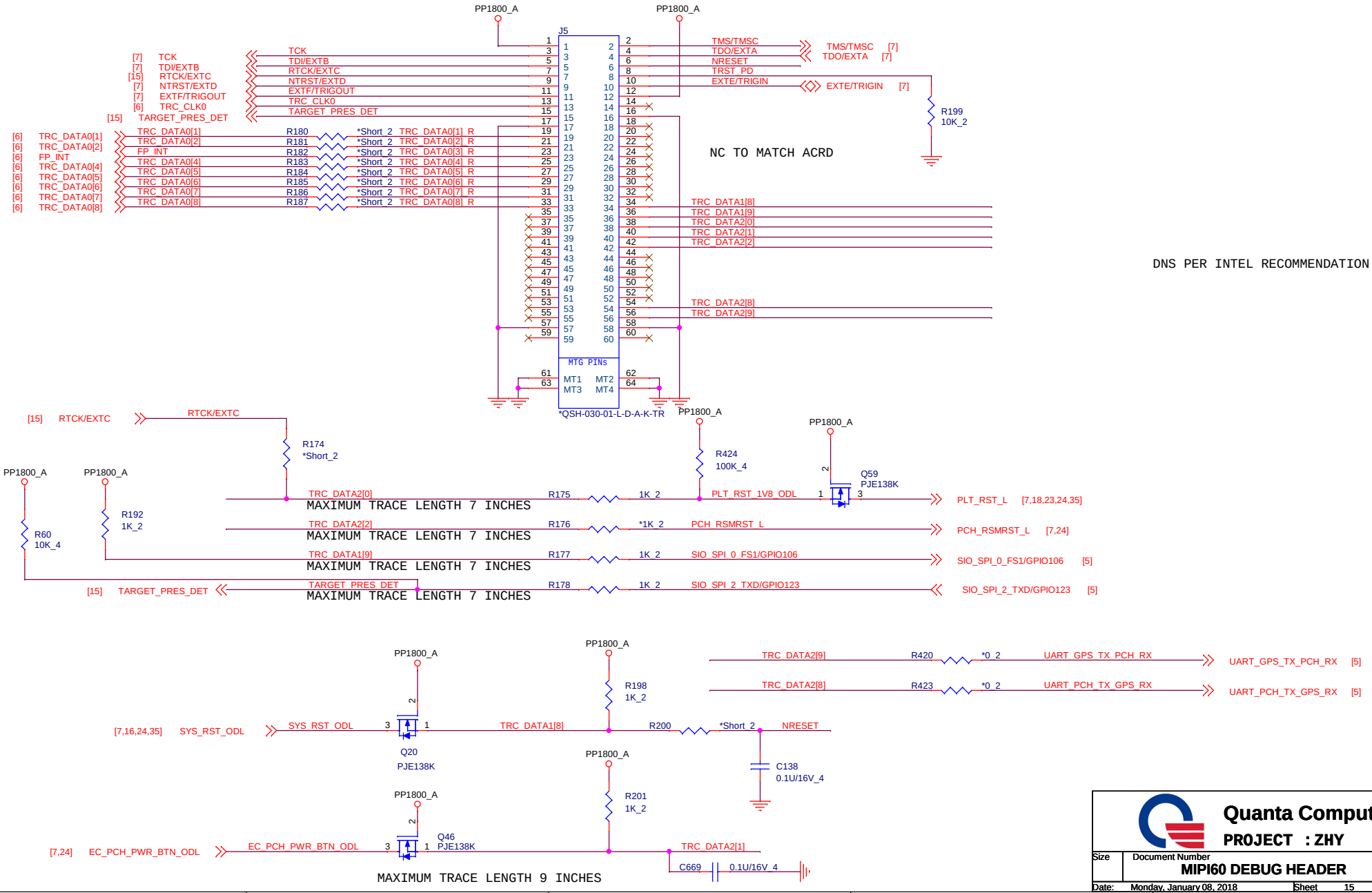

Quanta Computer Inc.

PROJECT : ZHY

Size	Document Number	Rev
	MIPI60 DEBUG HEADER	1A
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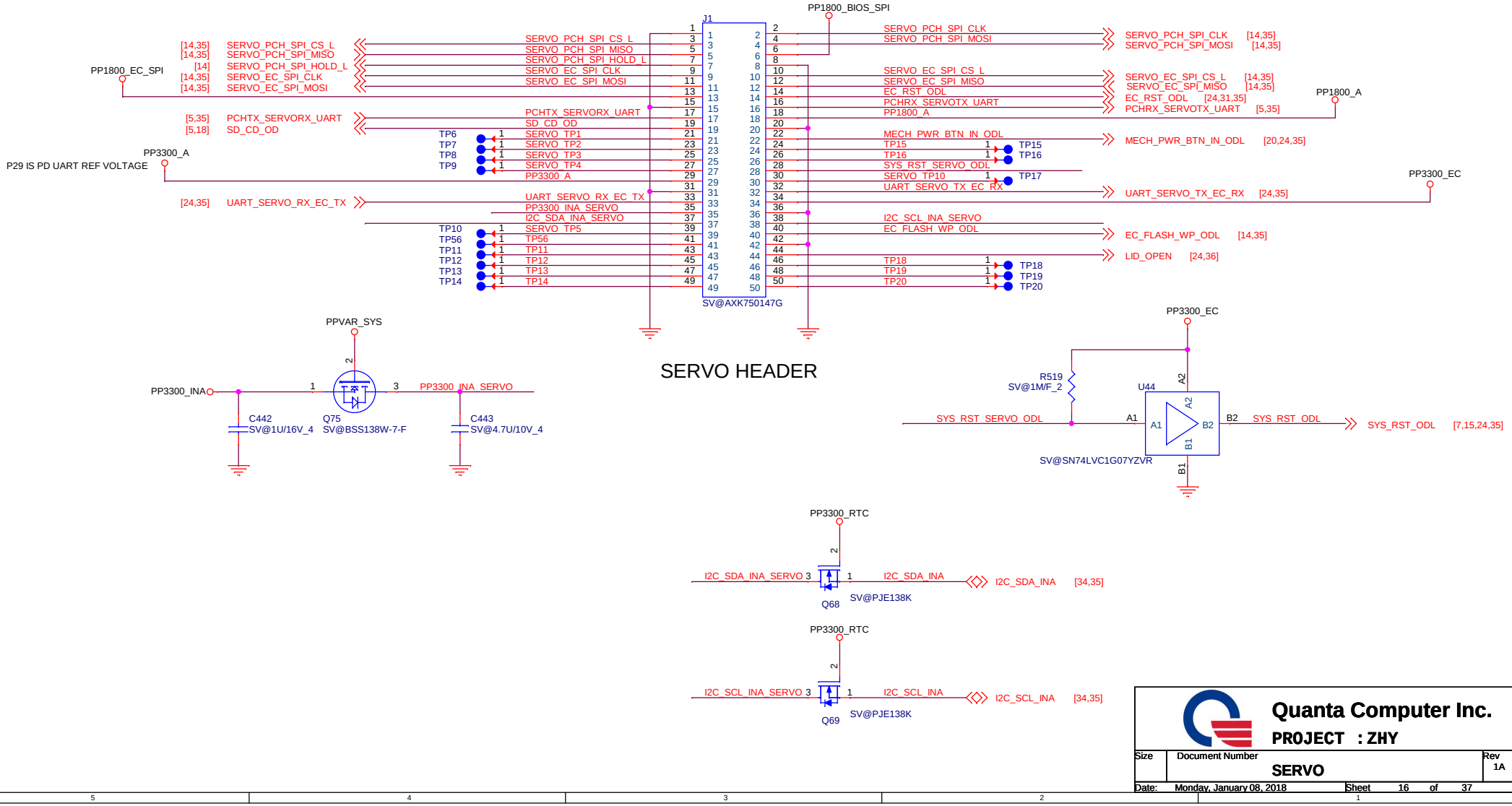

SERVO HEADER

Quanta Computer Inc.	
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Size	Document Number: SERVO — Rev: 1A
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	RESERVE	1A

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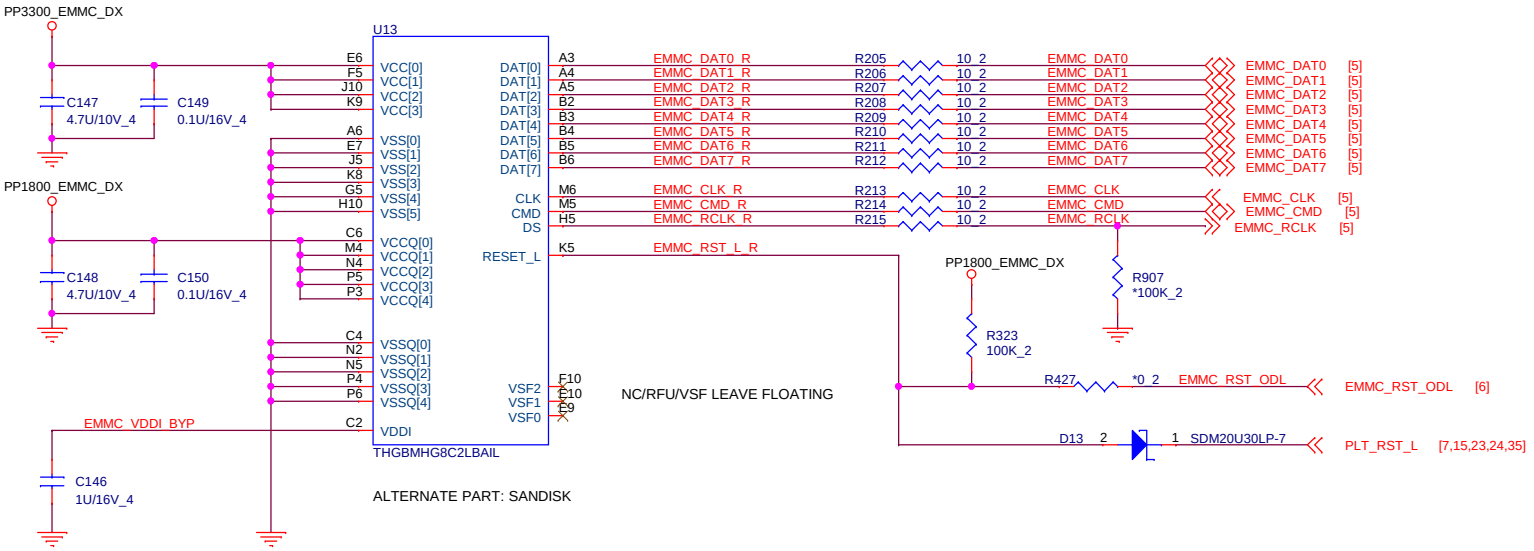
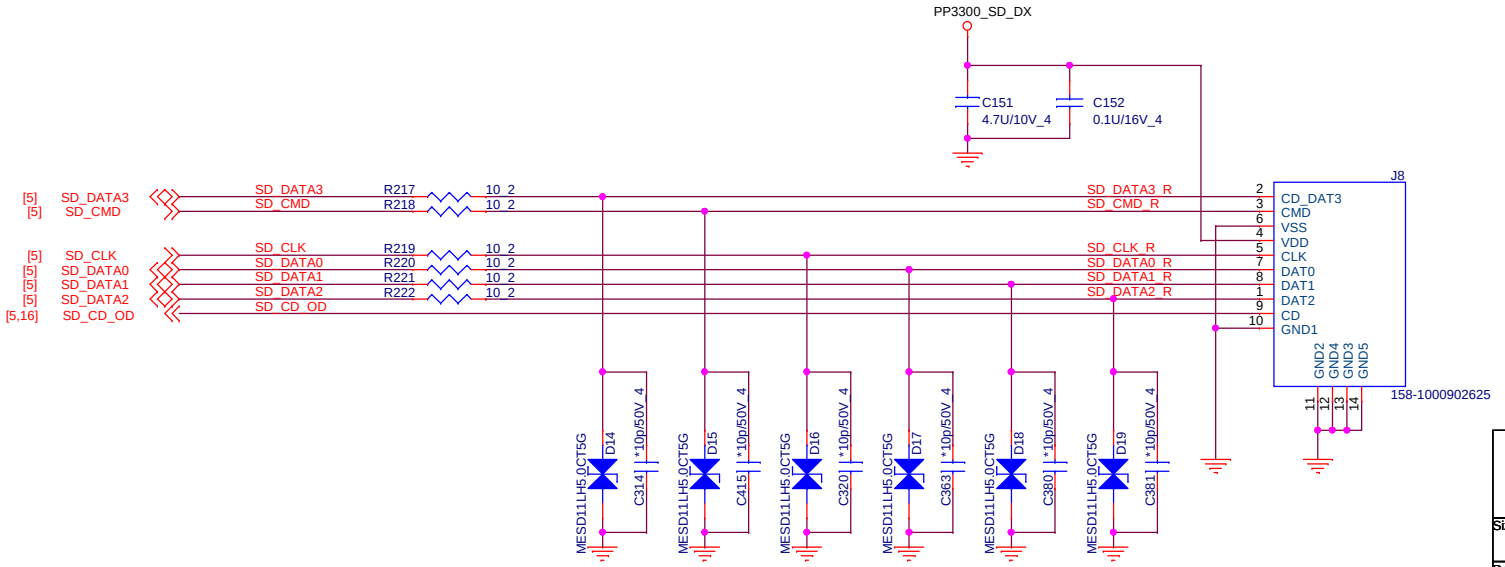
32 GB EMMC SD STORAGE

150 UA SLEEP CURRENT





Quanta Computer Inc.

PROJECT : ZHY

Size	Document Number	Rev
	eMMC/SD	1A
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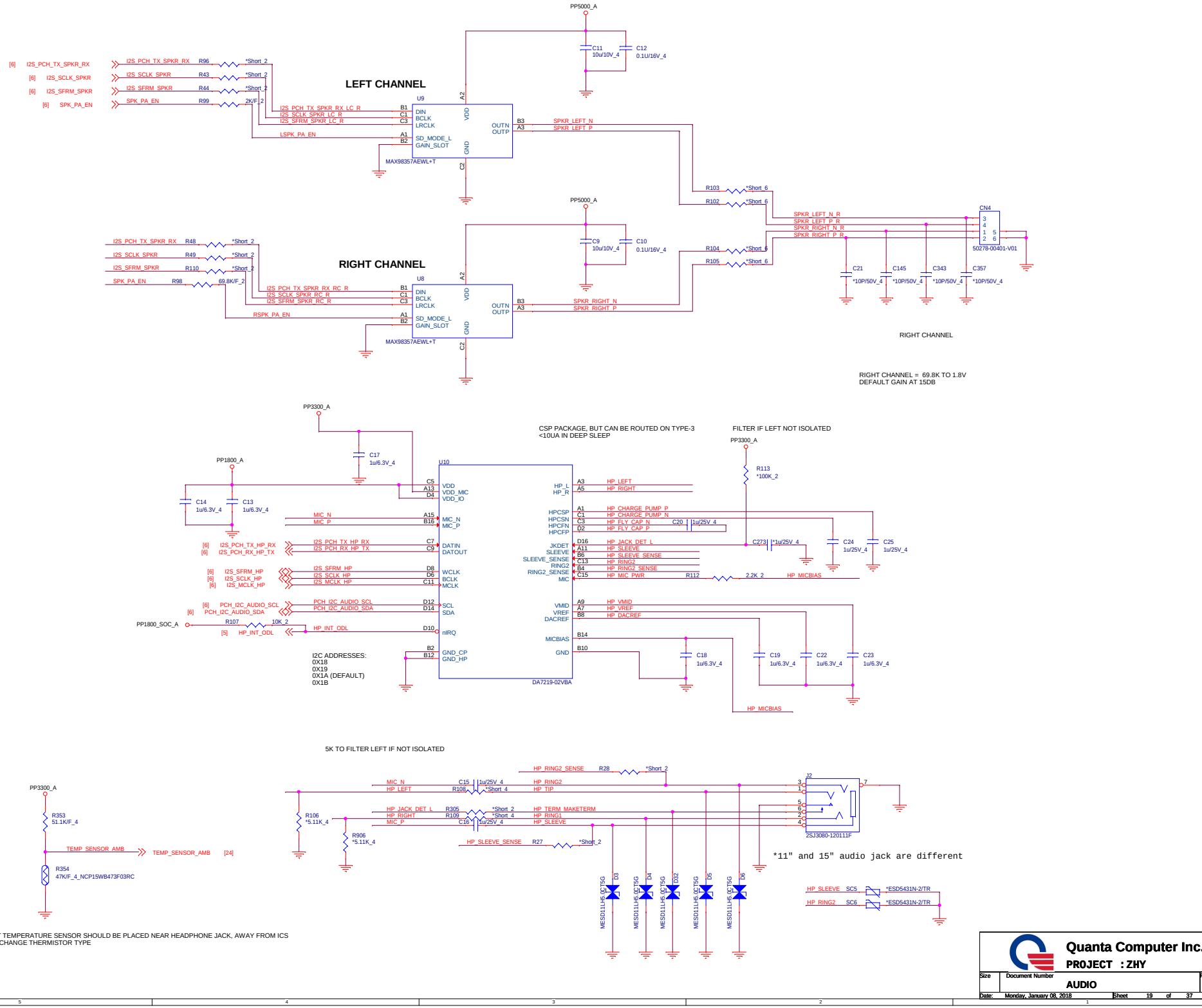
LEFT CHANNEL
RIGHT CHANNEL
PP5000_A
PP3300_A
PP1800_A
PP1800_SOC_A
U9
U8
U10
MAX98357AEWL+T
DA7219-02VBA
CN4
50278-00401-V01
2SJ3080-120111F
RIGHT CHANNEL
RIGHT CHANNEL = 69.8K TO 1.8V
DEFAULT GAIN AT 15DB
CSP PACKAGE, BUT CAN BE ROUTED ON TYPE-3
<10UA IN DEEP SLEEP
FILTER IF LEFT NOT ISOLATED
I2C ADDRESSES:
0X18
0X19
0X1A (DEFAULT)
0X1B
5K TO FILTER LEFT IF NOT ISOLATED
*11" and 15" audio jack are different
AMBIENT TEMPERATURE SENSOR SHOULD BE PLACED NEAR HEADPHONE JACK, AWAY FROM ICS
DO NOT CHANGE THERMISTOR TYPE
Quanta Computer Inc.
PROJECT : ZHY
AUDIO
Size
Document Number
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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

CONSIDER ADDING JTAG ON KB PINS

J9
51646-0300N-V01

THE PURPOSE OF THIS CIRCUIT
IS TO ALLOW A SINGLE KEYBOARD
MATRIX FOR BOTH A CONVERTIBLE
AND CLAMSHELL SKU

Convertible	R246,R248,SW3 STUFF ; R247,R249 NC
Clamshell	R247,R249 STUFF ; R246,R248,SW3 NC

D26 D27 D28 D29 *TPD4E101DPWR *TPD4E101DPWRD30

D20 D21 MESD11H5.0C75G

CAN BE ON BACK SIDE OF BOARD

STUFF THESE FOR KEYBOARD LOCK BUTTON

R246 SW@0_2
R248 SW@0_2
R247 NSW@0_2
R249 NSW@0_2
R250 10K_2

THE PURPOSE OF THIS CIRCUIT
IS TO ALLOW A SINGLE KEYBOARD
MATRIX FOR BOTH A CONVERTIBLE
AND CLAMSHELL SKU

STUFF THESE FOR KEYBOARD POWER BUTTON

STUFF FOR POWER BUTTON (DETACHABLE)

SW@nte316-ad1t-a160t-a
SW3

D41 *SW@ESD5451N-2/TR

MECH_PWR_BTN_IN_ODL [16,24,35]

KB BACKLIGHT

L3 KBL@22uH_2.5x2.0x1.2
l2_5x2-1_2h

480-00225-00
D1 KBL@RB751S40

C3672 KBL@1U/16V_4
C3671 KBL@22U/25V_8
C3673 KBL@0.22U/10V_4
R4360 KBL@4.7/F_4

U3 TPS61161
313-00590-00
TEXAS INSTRUMENTS INC
SON6
KBL@TPS61161DRVR

CN5
KBL@50505-00401-V01

TRACKPAD CONNECTOR

SUBJECT TO CHANGE PER QUANTA REQUEST

TRACKPAD 3.3V TO 1.8V LEAKAGE SHOULD BE TINY

R72 100K/F_2
Q28 PJE138K
R252 10K_2
R253 10K_2
Q47B PMDXB600UNE
Q47A PMDXB600UNE
C190 10u/6.3V_4
C192 1U/16V_4
C195 0.1U/16V_4
TP32
J23 50506-00601-V01

PEN CONNECTOR

PEN 7-BIT I2C ADDRESS = 0X09
~ 100 MA

R514 100K/F_2
R515 100K/F_2
R513 PEN@100K/F_2
Q83 PEN@PJE138K
J22 PEN@50208-00801-V02

Quanta Computer Inc.
PROJECT : ZHY

Size	Document Number	Rev
	BASE: KB, TP, PEN	2A
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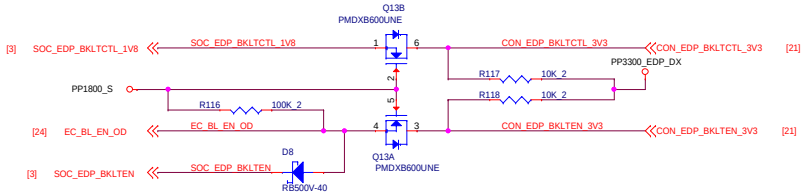
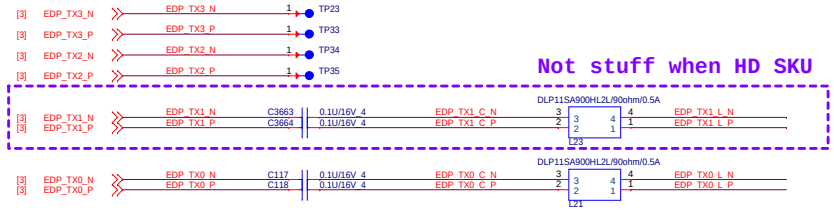
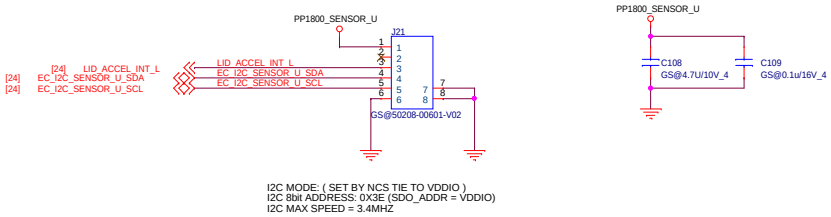


EDP2-EDP3 DOES NOT NEED TO ROUTE TO CONNECTOR

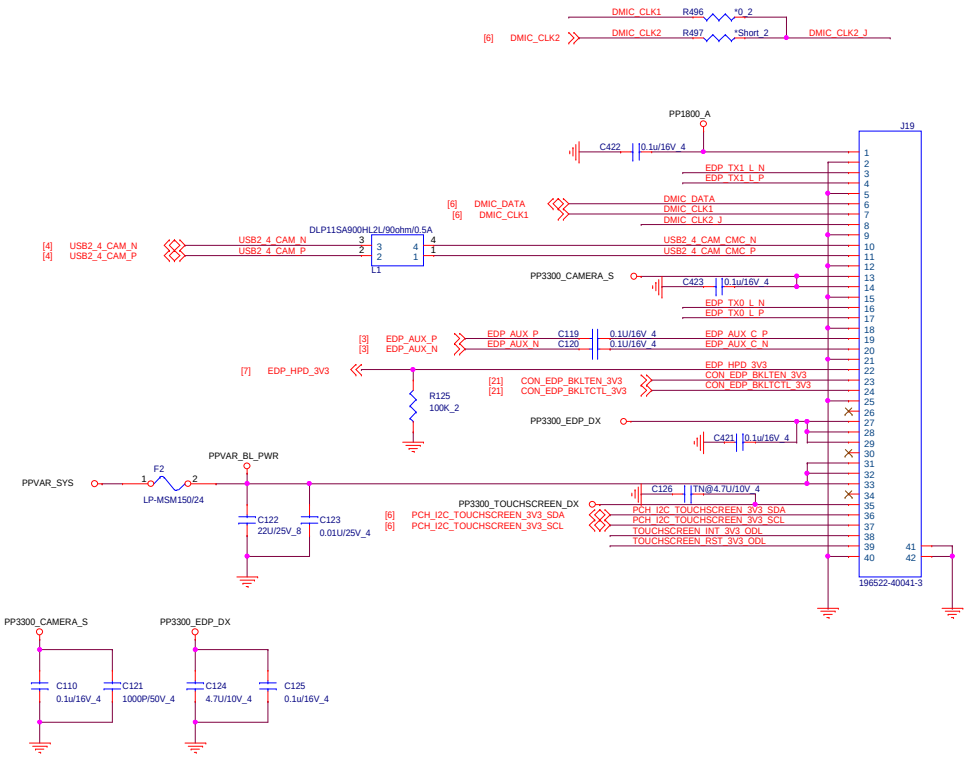


SENSOR BOARD (KX022)

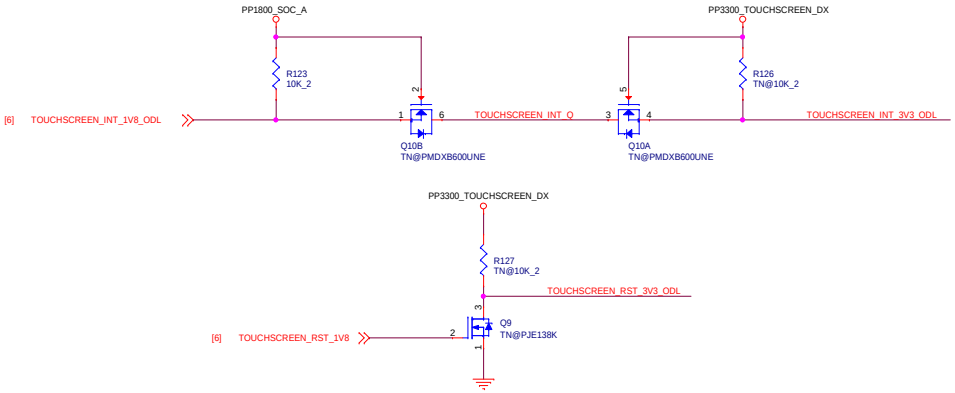


I2C MODE: (SET BY NCS TIE TO VDDIO)
I2C 8bit ADDRESS: 0X3E (SDO_ADDR = VDDIO)
I2C MAX SPEED = 3.4MHZ

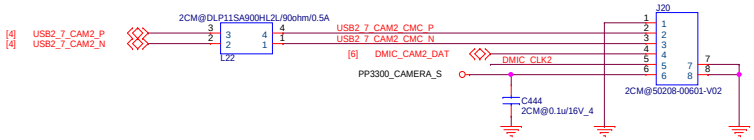
NOTE: SEE WHITE PAPER ON ACCEL PLACEMENT FOR CONVERTIBLES



TOUCH SCREEN



C-PANEL CAMERA



Quanta Computer Inc.
PROJECT : ZHY

Size	Document Number	Rev
	LID: eDP, CAM, TOUCH, SEN	3A
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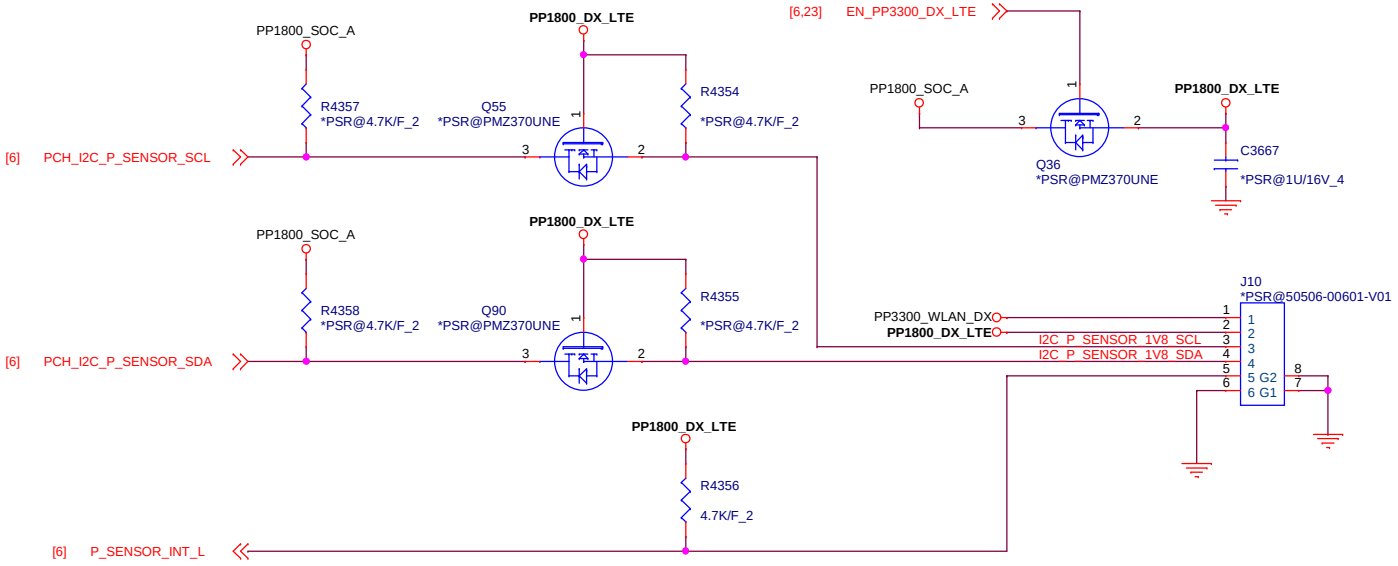
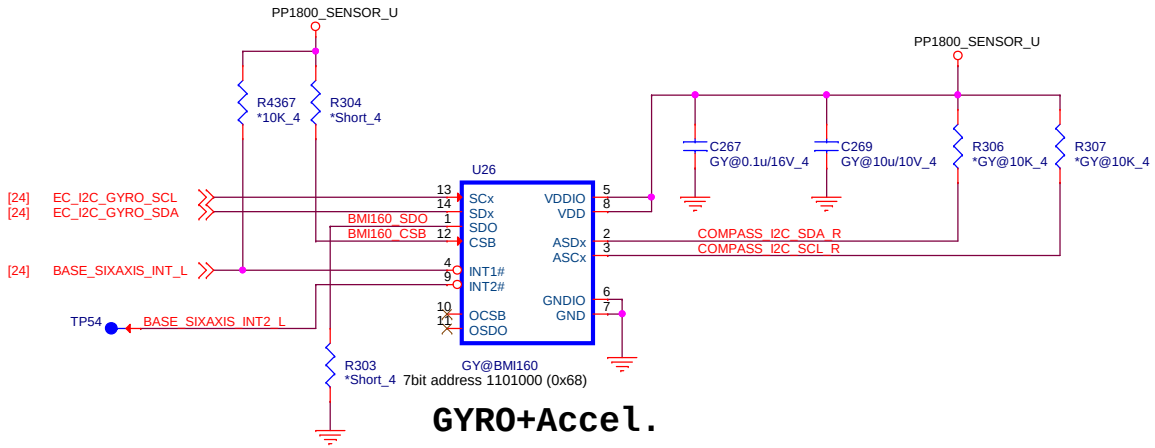
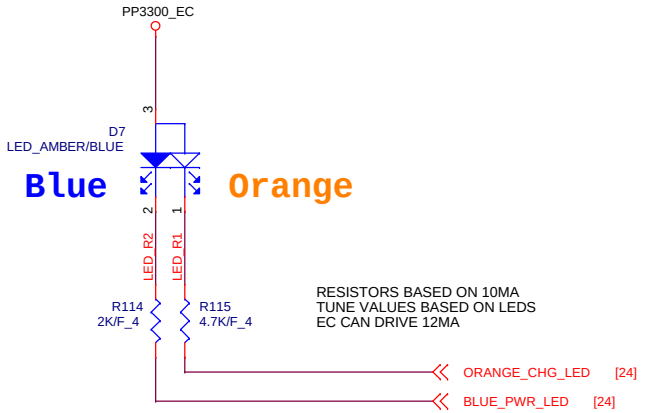
P-SENSOR





GYRO+Accel.

CHARGE/BATTERY LED



Quanta Computer Inc.		
PROJECT : ZHY		
Size	Document Number	Rev
	GYRO, LED, P-SENSOR	3A
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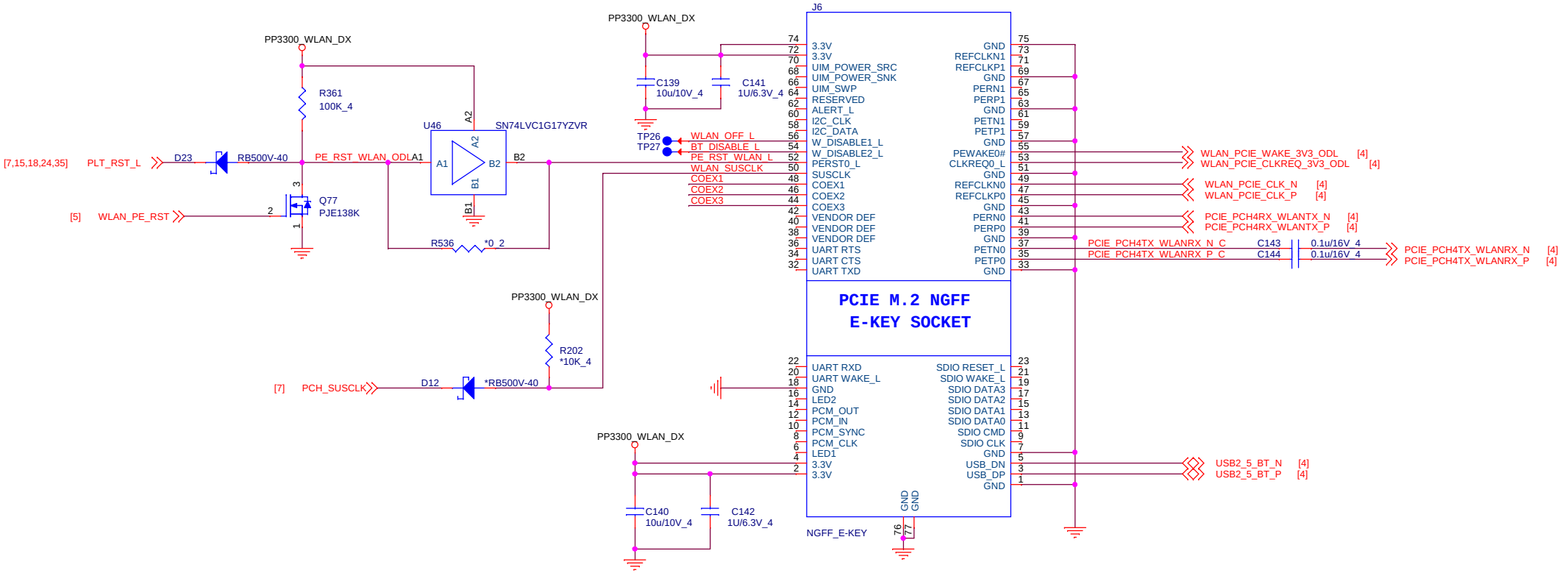
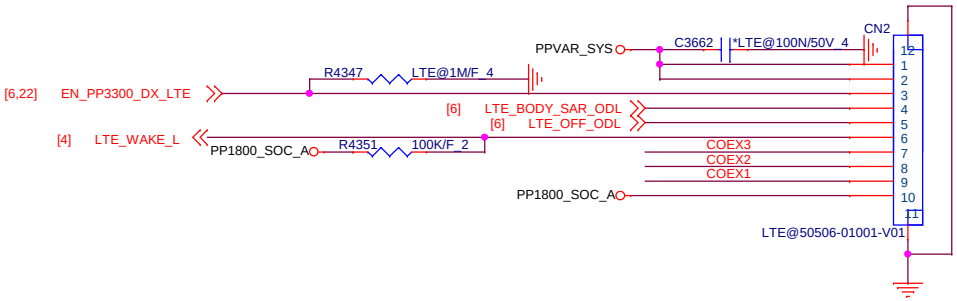
M.2 connector



To LTE/B connector



Quanta Computer Inc.
PROJECT : ZHY

Size	Document Number	Rev
	WIFI,LTE CONNTECOR	1A
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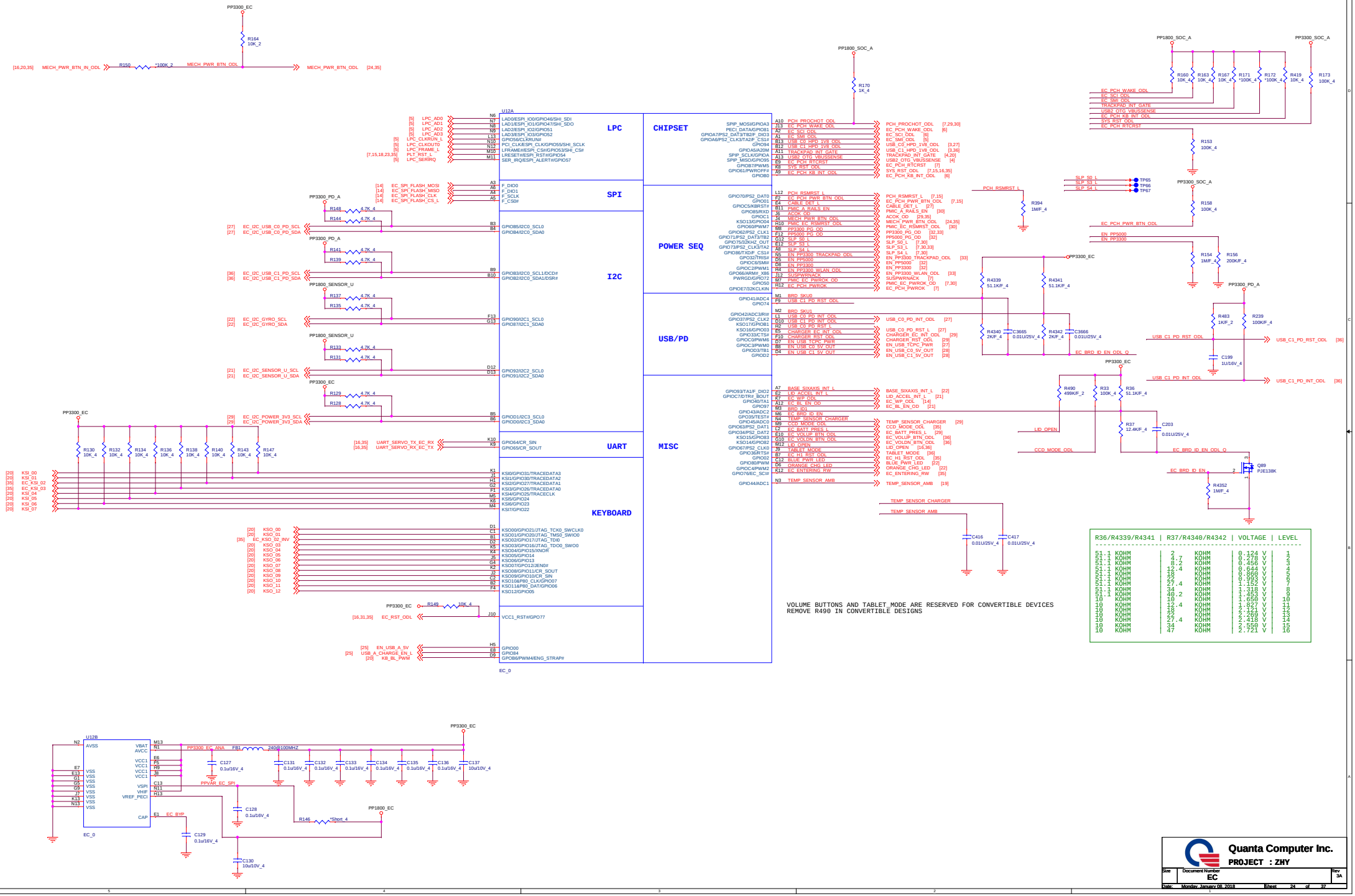
PP3300_EC
R164 10K_2
[16,20,35] MECH_PWR_BTN_IN_ODL
R150 *100K_2
MECH_PWR_BTN_ODL
MECH_PWR_BTN_ODL [24,35]
U12A
LPC
SPI
I2C
UART
KEYBOARD
CHIPSET
POWER SEQ
USB/PD
MISC
LPC_AD0
LPC_AD1
LPC_AD2
LPC_AD3
LPC_CLKRUN_L
LPC_CLKOUT0
LPC_FRAME_L
PLT_RST_L
LPC_SERIRQ
EC_SPI_FLASH_MOSI
EC_SPI_FLASH_MISO
EC_SPI_FLASH_CLK
EC_SPI_FLASH_CS_L
PP3300_PD_A
PP1800_SENSOR_U
EC_I2C_USB_C0_PD_SCL
EC_I2C_USB_C0_PD_SDA
EC_I2C_USB_C1_PD_SCL
EC_I2C_USB_C1_PD_SDA
EC_I2C_GYRO_SCL
EC_I2C_GYRO_SDA
EC_I2C_SENSOR_U_SCL
EC_I2C_SENSOR_U_SDA
EC_I2C_POWER_3V3_SCL
EC_I2C_POWER_3V3_SDA
UART_SERVO_TX_EC_RX
UART_SERVO_RX_EC_TX
KSI_00
KSI_01
EC_KSI_02
EC_KSI_03
KSI_04
KSI_05
KSI_06
KSI_07
KSO_00
KSO_01
EC_KSO_02_INV
KSO_03
KSO_04
KSO_05
KSO_06
KSO_07
KSO_08
KSO_09
KSO_10
KSO_11
KSO_12
PP3300_EC
R149 10K_4
EC_RST_ODL
VCC1_RST#/GPO77
EN_USB_A_5V
USB_A_CHARGE_EN_L
KB_BL_PWM
GPIO00
GPIO84
GPOB6/PWM4/ENG_STRAP#
EC_0
PP1800_SOC_A
R170 1K_4
SPIP_MOSI/GPIOA3
PECI_DATA/GPIO81
GPIOA7/PS2_DAT3/TB2/F_DIO3
GPIOA6/PS2_CLK3/TA2/F_CS1#
GPIO94
GPIOA5/A20M
SPIP_SCLK/GPIOA
SPIP_MISO/GPIO95
GPIOB7/PWM5
GPIO61/PWROFF#
GPIOB0
PCH_PROCHOT_ODL
EC_PCH_WAKE_ODL
EC_SCI_ODL
EC_SMI_ODL
USB_C0_HPD_1V8_ODL
USB_C1_HPD_1V8_ODL
TRACKPAD_INT_GATE
USB2_OTG_VBUSSENSE
EC_PCH_RTCRST
SYS_RST_ODL
EC_PCH_KB_INT_ODL
PCH_PROCHOT_ODL [7,29,30]
EC_PCH_WAKE_ODL [6]
EC_SCI_ODL [6]
EC_SMI_ODL [6]
USB_C0_HPD_1V8_ODL [3,27]
USB_C1_HPD_1V8_ODL [3,36]
TRACKPAD_INT_GATE [4,20]
USB2_OTG_VBUSSENSE [4]
EC_PCH_RTCRST [7]
SYS_RST_ODL [7,15,16,35]
EC_PCH_KB_INT_ODL [6]
PCH_RSMRST_L
EC_PCH_PWR_BTN_ODL
CABLE_DET_L
PMIC_A_RAILS_EN
ACOK_OD
MECH_PWR_BTN_ODL
PMIC_EC_RSMRST_ODL
PP3300_PG_OD
PP5000_PG_OD
SLP_S0_L
SLP_S3_L
SLP_S4_L
EN_PP3300_TRACKPAD_ODL
EN_PP5000
EN_PP3300
EN_PP3300_WLAN_ODL
SUSPWRNACK
PMIC_EC_PWROK_OD
EC_PCH_PWROK
PCH_RSMRST_L [7,15]
EC_PCH_PWR_BTN_ODL [7,15]
CABLE_DET_L [27]
PMIC_A_RAILS_EN [30]
ACOK_OD [29,35]
MECH_PWR_BTN_ODL [24,35]
PMIC_EC_RSMRST_ODL [30]
PP3300_PG_OD [32,33]
PP5000_PG_OD [32]
SLP_S0_L [7,30]
SLP_S3_L [7,30,33]
SLP_S4_L [7,30]
EN_PP3300_TRACKPAD_ODL [33]
EN_PP5000 [32]
EN_PP3300 [32]
EN_PP3300_WLAN_ODL [33]
SUSPWRNACK [7]
PMIC_EC_PWROK_OD [7,30]
EC_PCH_PWROK [7]
BRD_SKU0
USB_C0_PD_RST_L
USB_C1_PD_RST_L
CHARGER_EC_INT_ODL
EN_USB_TCPC_PWR
EN_USB_C0_5V_OUT
EN_USB_C1_5V_OUT
USB_C0_PD_INT_ODL [27]
USB_C1_PD_INT_ODL [27]
USB_C0_PD_RST_L [27]
CHARGER_EC_INT_ODL [29]
CHARGER_RST_ODL [29]
EN_USB_TCPC_PWR [27]
EN_USB_C0_5V_OUT [28]
EN_USB_C1_5V_OUT [28]
BASE_SIXAXIS_INT_L
LID_ACCEL_INT_L
EC_WP_ODL
EC_BL_EN_OD
BRD_ID1
EC_BRD_ID_EN
TEMP_SENSOR_CHARGER
CCD_MODE_ODL
EC_BATT_PRES_L
EC_VOLUP_BTN_ODL
EC_VOLDN_BTN_ODL
LID_OPEN
TABLET_MODE
EC_H1_RST_ODL
BLUE_PWR_LED
ORANGE_CHG_LED
EC_ENTERING_RW
TEMP_SENSOR_AMB
BASE_SIXAXIS_INT_L [22]
LID_ACCEL_INT_L [21]
EC_WP_ODL [14]
EC_BL_EN_OD [21]
TEMP_SENSOR_CHARGER [29]
CCD_MODE_ODL [35]
EC_BATT_PRES_L [29]
EC_VOLUP_BTN_ODL [36]
EC_VOLDN_BTN_ODL [36]
LID_OPEN [16,36]
TABLET_MODE [36]
EC_H1_RST_ODL [35]
BLUE_PWR_LED [23]
ORANGE_CHG_LED [22]
EC_ENTERING_RW [35]
TEMP_SENSOR_AMB [19]
PP1800_SOC_A
PP3300_SOC_A
EC_PCH_WAKE_ODL
EC_SCI_ODL
EC_SMI_ODL
TRACKPAD_INT_GATE
USB2_OTG_VBUSSENSE
EC_PCH_KB_INT_ODL
SYS_RST_ODL
EC_PCH_RTCRST
SLP_S0_L
SLP_S3_L
SLP_S4_L
TP65
TP66
TP67
PCH_RSMRST_L
EC_PCH_PWR_BTN_ODL
EN_PP5000
EN_PP3300
PP3300_SOC_A
PP3300_EC
PP3300_PD_A
USB_C1_PD_RST_ODL
USB_C1_PD_INT_ODL
EC_BRD_ID_EN_ODL_Q
EC_BRD_ID_EN
LID_OPEN
CCD_MODE_ODL
Q89 PJE138K
C199 1U/16V_4
C203 0.01U/25V_4
C416 0.01U/25V_4
C417 0.01U/25V_4
R4352 1MF_4
R394 1MF_4
R4339 51.1K/F_4
R4340 2K/F_4
R4341 51.1K/F_4
R4342 2K/F_4
C3665 0.01U/25V_4
C3666 0.01U/25V_4
R153 100K_4
R158 100K_4
R154 1MF_4
R156 200K/F_4
R483 1K/F_2
R239 100K/F_4
R490 499K/F_2
R33 100K_4
R36 51.1K/F_4
R37 12.4K/F_4
R160 10K_4
R163 10K_4
R167 10K_4
R171 *100K_4
R172 *100K_4
R419 10K_4
R173 100K_4
R130 10K_4
R132 10K_4
R134 10K_4
R136 10K_4
R138 10K_4
R140 10K_4
R143 10K_4
R147 10K_4
R148 4.7K_4
R144 4.7K_4
R141 4.7K_4
R139 4.7K_4
R137 4.7K_4
R135 4.7K_4
R133 4.7K_4
R131 4.7K_4
R129 4.7K_4
R128 4.7K_4
U12B
PP3300_EC_ANA
FB1 240@100MHZ
PPVAR_EC_SPI
EC_BYP
R146 *Short_4
C127 0.1u/16V_4
C128 0.1u/16V_4
C129 0.1u/16V_4
C130 10u/10V_4
C131 0.1u/16V_4
C132 0.1u/16V_4
C133 0.1u/16V_4
C134 0.1u/16V_4
C135 0.1u/16V_4
C136 0.1u/16V_4
C137 10u/10V_4
VOLUME BUTTONS AND TABLET_MODE ARE RESERVED FOR CONVERTIBLE DEVICES
REMOVE R490 IN CONVERTIBLE DESIGNS
R36/R4339/R4341 | R37/R4340/R4342 | VOLTAGE | LEVEL
51:1 KOHM | 2 KOHM | 0.124 V | 1
51:1 KOHM | 4.7 KOHM | 0.278 V | 2
51:1 KOHM | 8.2 KOHM | 0.456 V | 3
51:1 KOHM | 12.4 KOHM | 0.644 V | 4
51:1 KOHM | 18 KOHM | 0.860 V | 5
51:1 KOHM | 22 KOHM | 0.993 V | 6
51:1 KOHM | 27.4 KOHM | 1.152 V | 7
51:1 KOHM | 34 KOHM | 1.318 V | 8
51:1 KOHM | 40.2 KOHM | 1.453 V | 9
10 KOHM | 10 KOHM | 1.650 V | 10
10 KOHM | 12.4 KOHM | 1.827 V | 11
10 KOHM | 18 KOHM | 2.121 V | 12
10 KOHM | 22 KOHM | 2.269 V | 13
10 KOHM | 27.4 KOHM | 2.418 V | 14
10 KOHM | 34 KOHM | 2.550 V | 15
10 KOHM | 47 KOHM | 2.721 V | 16
Quanta Computer Inc.
PROJECT : ZHY
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EC
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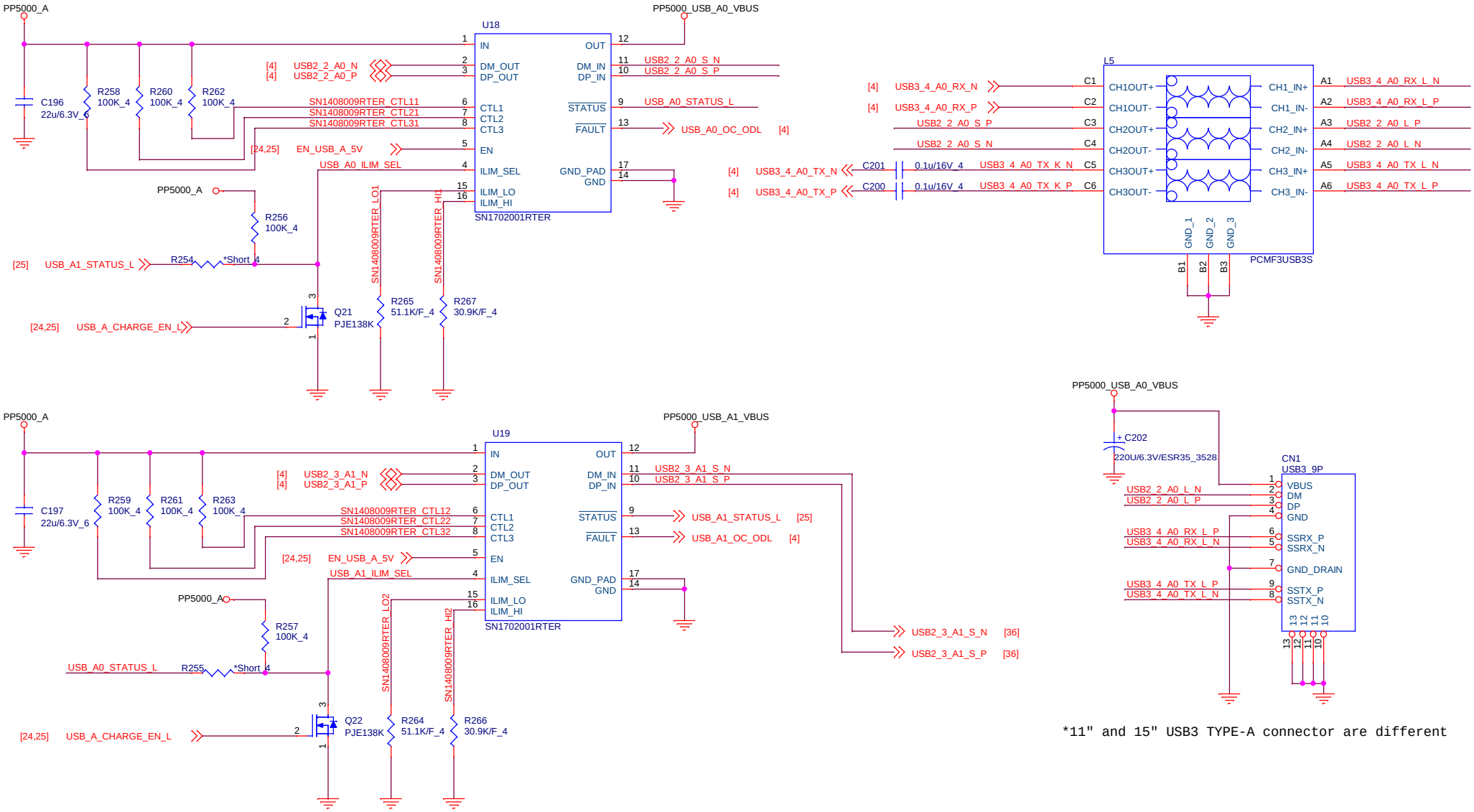

*11" and 15" USB3 TYPE-A connector are different

Quanta Computer Inc.

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Size	Document Number	Rev
	USB A CONNECTORS	3A
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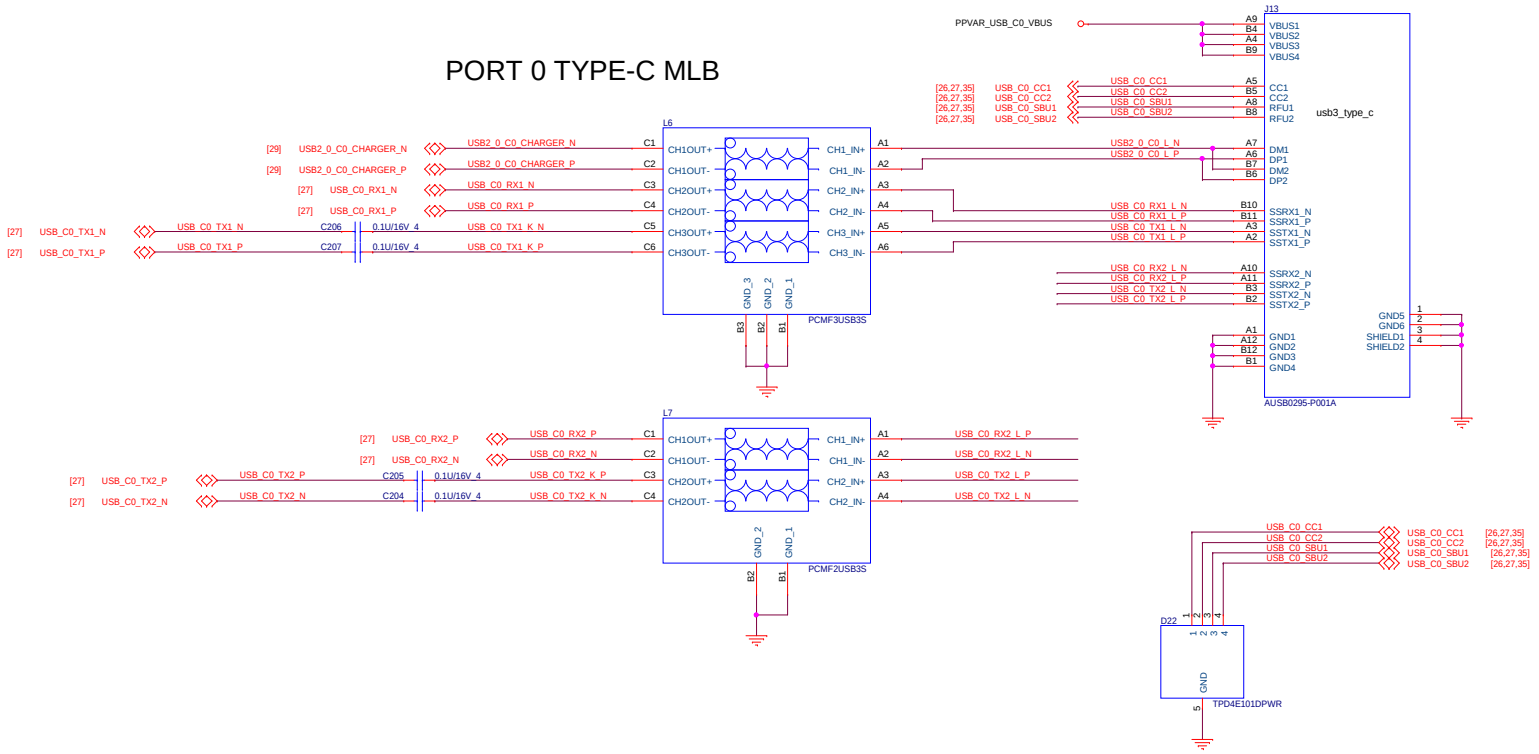
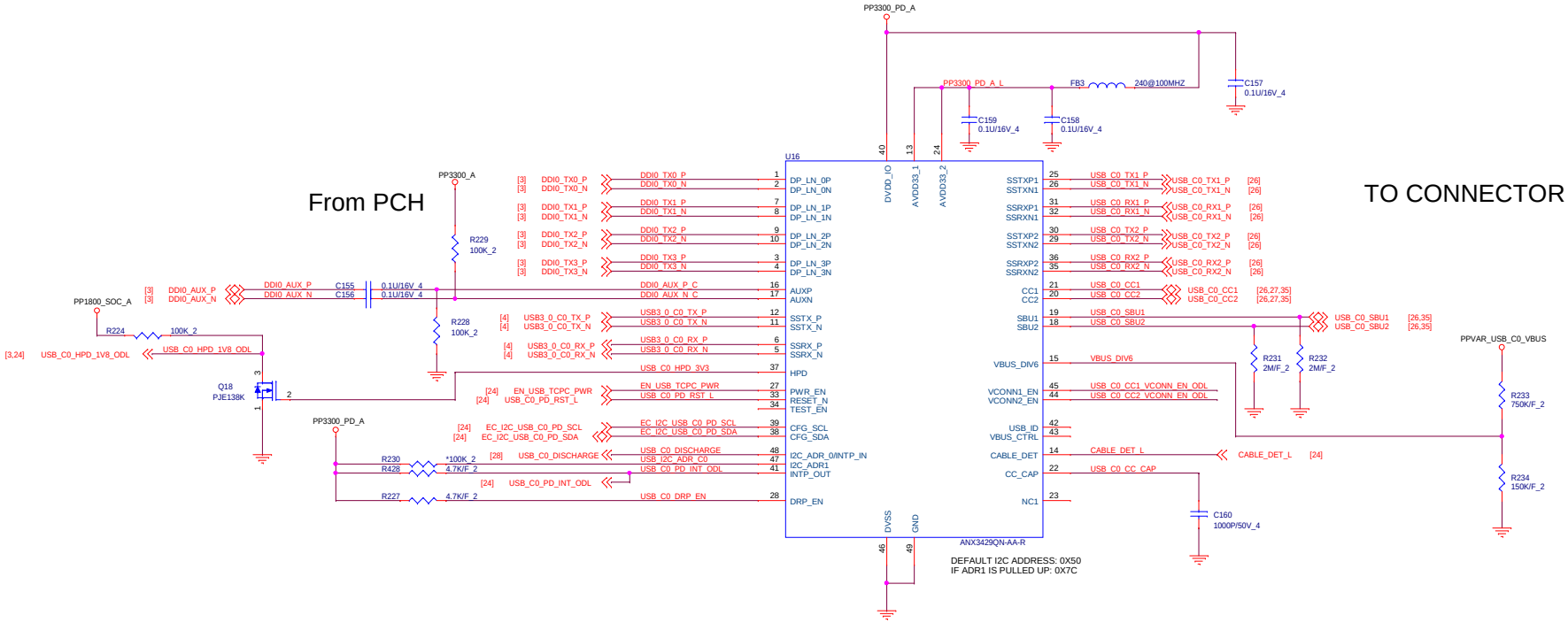
PORT 0 TYPE-C MLB





Quanta Computer Inc.		
PROJECT : ZHY		
Size	Document Number: USB C TCPC/MUX	Rev: 1A
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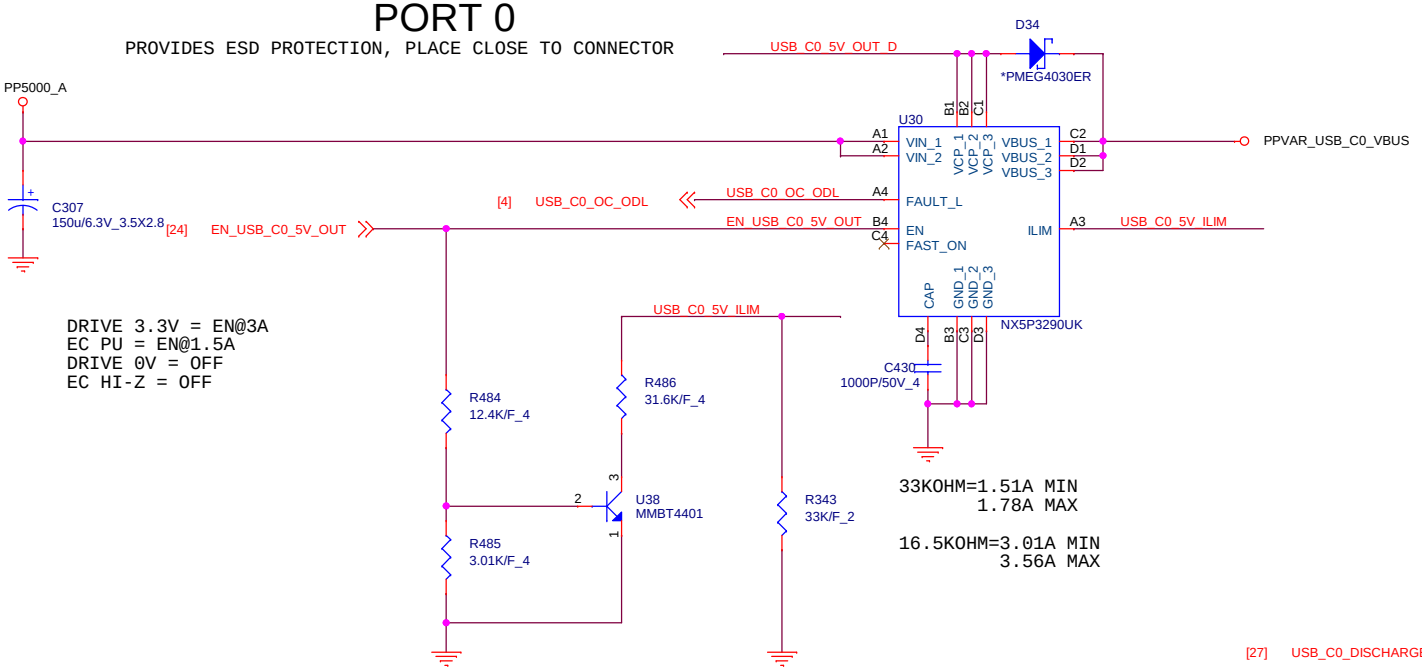
PORT 0

PROVIDES ESD PROTECTION, PLACE CLOSE TO CONNECTOR

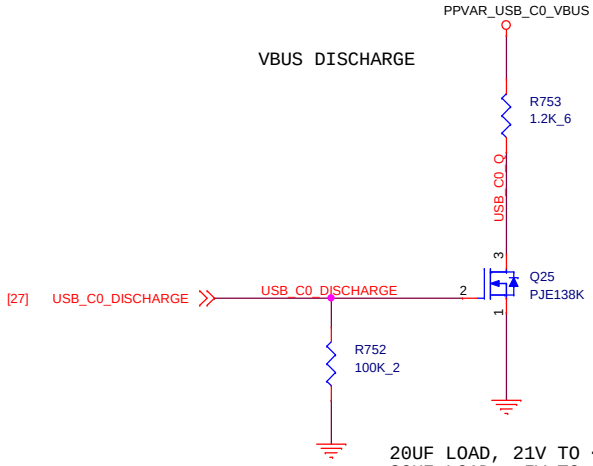


DRIVE 3.3V = EN@3A
EC PU = EN@1.5A
DRIVE 0V = OFF
EC HI-Z = OFF

33KOHM=1.51A MIN
1.78A MAX

16.5KOHM=3.01A MIN
3.56A MAX

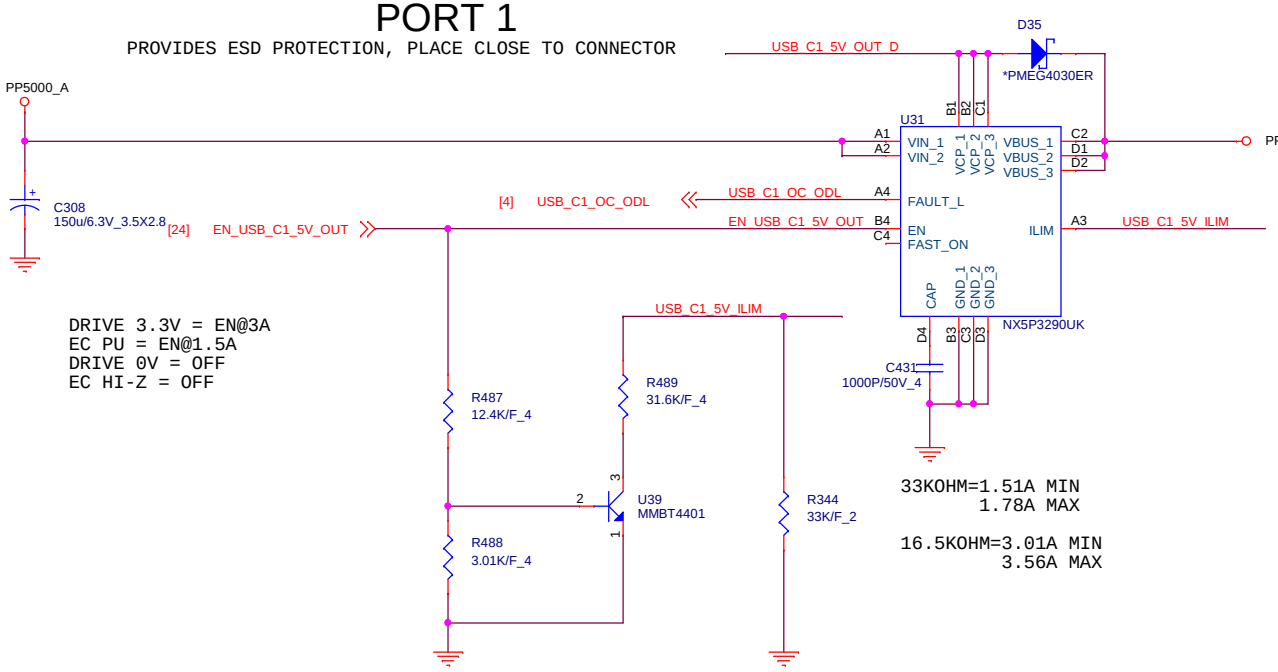
VBUS DISCHARGE



20UF LOAD, 21V TO <0.8V IN <80MS
20UF LOAD, 5V TO <0.8V IN <45MS
0402 CAN DISSIPATE 400MW FOR 80MS
0603 CAN DISSIPATE 400MW FOR 500MS
0805 CAN DISSIPATE 400MW FOR 2000MS

PORT 1

PROVIDES ESD PROTECTION, PLACE CLOSE TO CONNECTOR



DRIVE 3.3V = EN@3A
EC PU = EN@1.5A
DRIVE 0V = OFF
EC HI-Z = OFF

33KOHM=1.51A MIN
1.78A MAX

16.5KOHM=3.01A MIN
3.56A MAX

Quanta Computer Inc.
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POWER - BATTERY CHARGER

ROHM BUCK-BOOST CHARGER

1x dual-N FET (CSD86311W1723) to 2x single-N FET (AON7410)

change to 10U/25V_8 from 10U/50V_1206

1x CSD86311W1723 to 2x AON7752
Change to PCMB103T-2R2MS from MGV12022R2M-10

BUCK FET

BOOST FET

PCMB103T-2R2MS

For acoustic noise

Change to AON6414AL from CSD17552Q3A

1x dual-N FET (CSD86311W1723) to 2x single-N FET (AON7410)

0.6V for 512MA

11/15/16
Change Q84 to 2N7002K

QUANTA CHOOSE PINOUT/CONNECTOR

CV: 12.6V
3S1P Battery

PLACE NEAR CHARGER INDUCTOR/FETS
DO NOT CHANGE THERMISTOR TYPE (Intel suggestion)

Quanta Computer Inc.	PROJECT : ZHY
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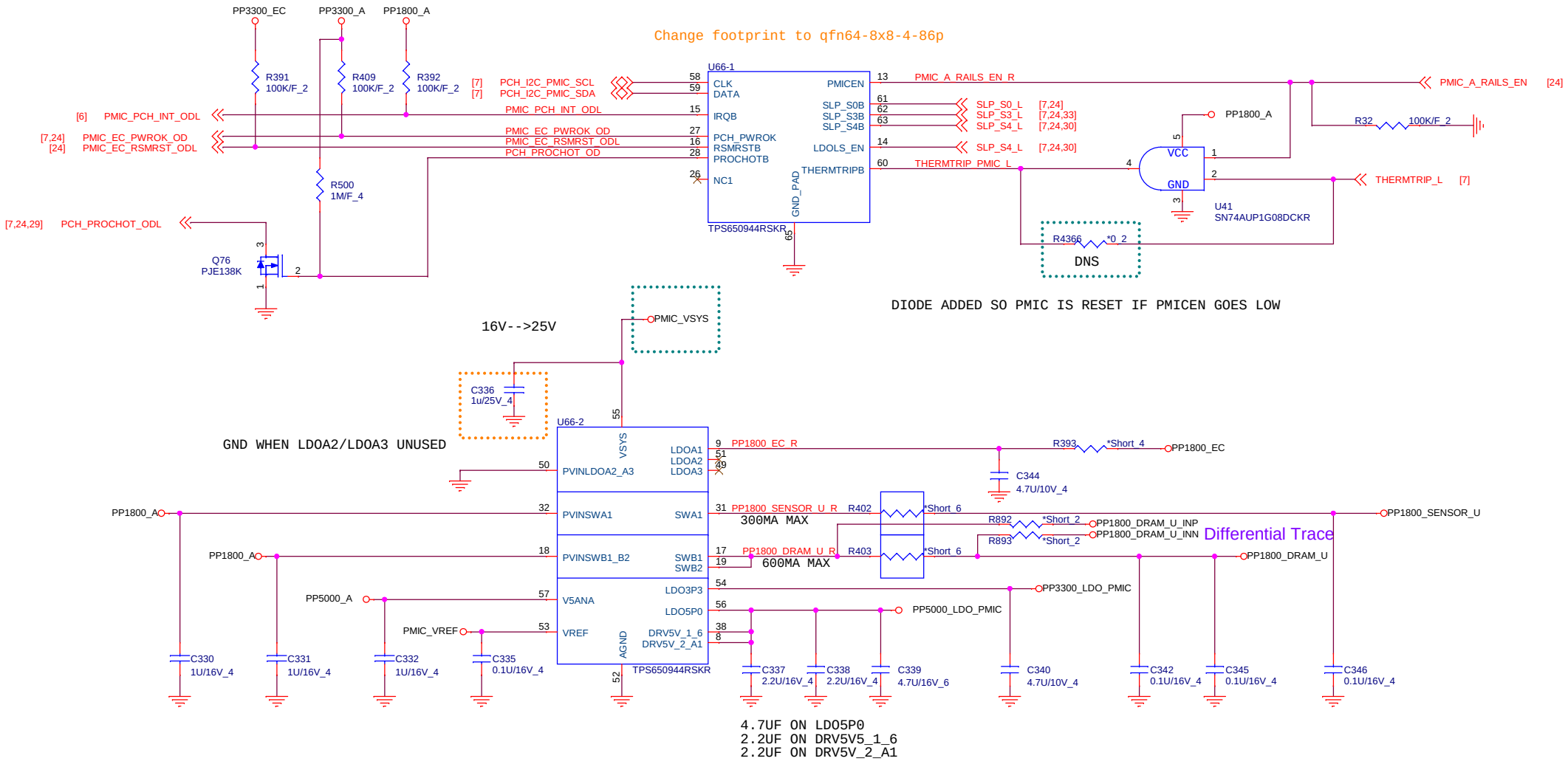
POWER - PMIC LOGIC



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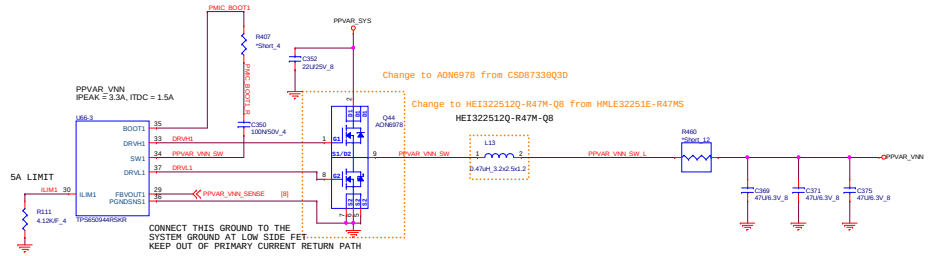
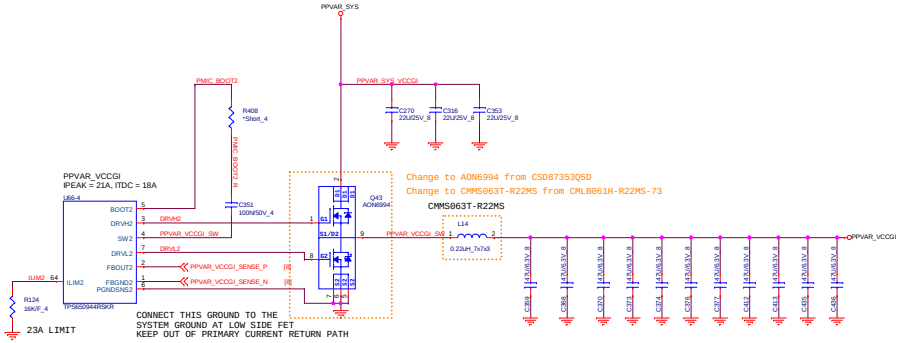
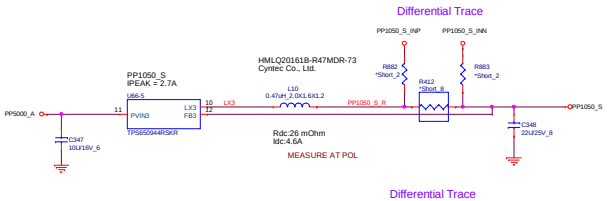
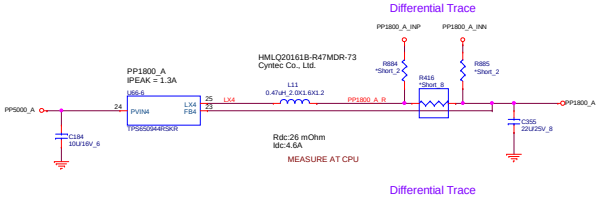
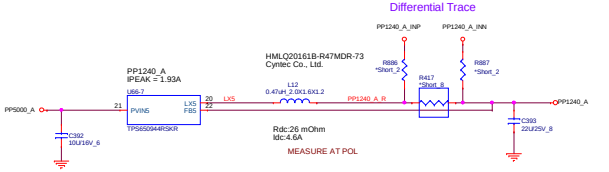
POWER - PMIC RAILS

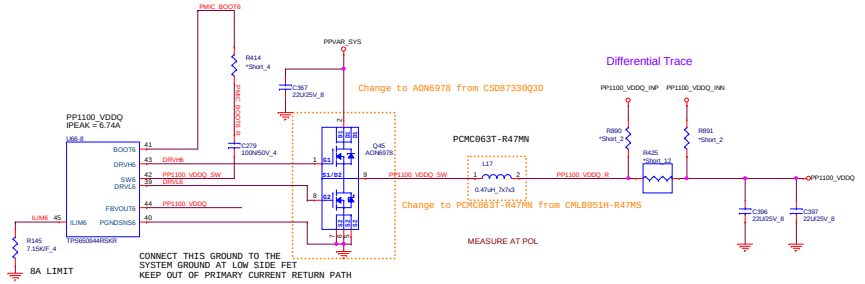








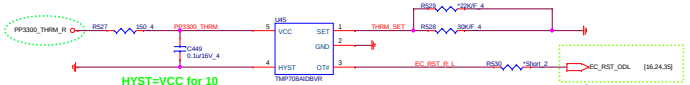




Thermal Protector

Need fine tune
for thermal protect point
Note placement position
TEMP=76.3C

Rset(Kohm)=0.0012T*T-0.9308T+96.147



HYST=VCC for 10
degree Hys.
HYST=GND for 30
degree Hys.

PMIC_VSYS

Quanta Computer Inc.
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	POWER - PMIC RAILLS	3A
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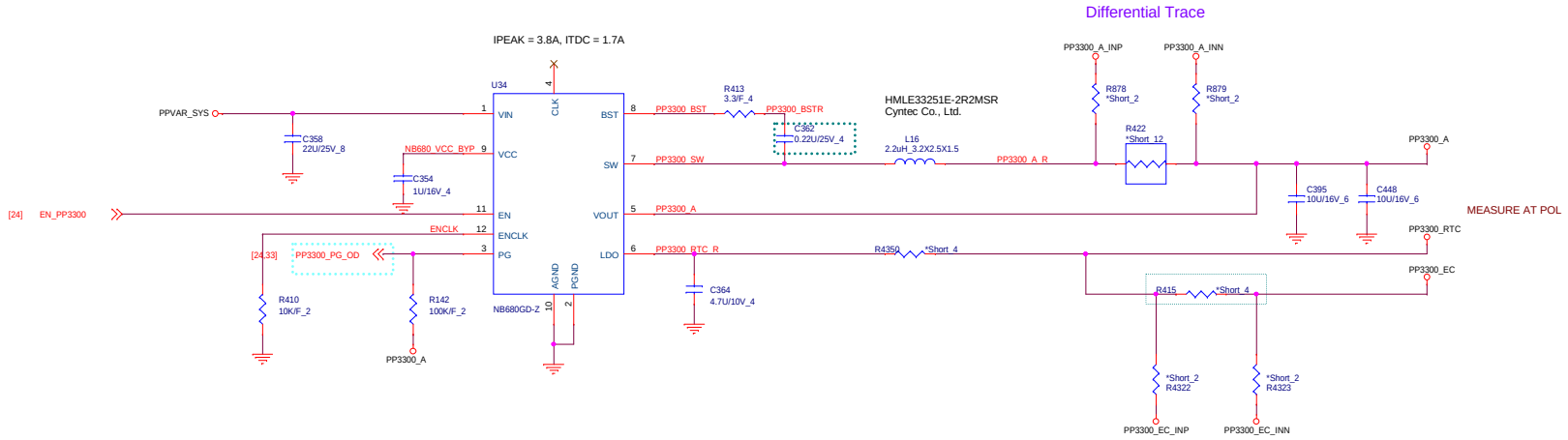
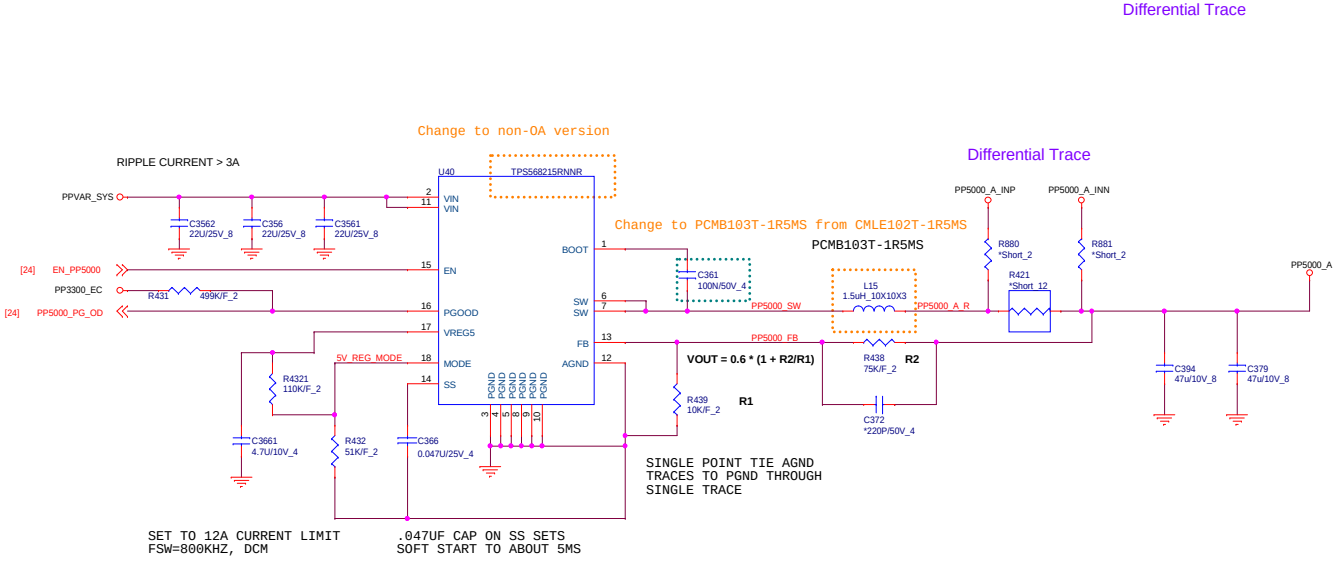
PP3300_A



PP5000_A



Quanta Computer Inc.		
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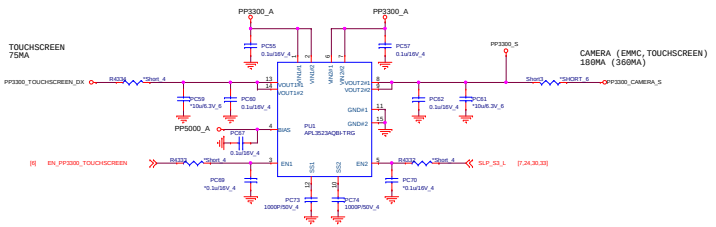
POWER - LOAD SWITCHES

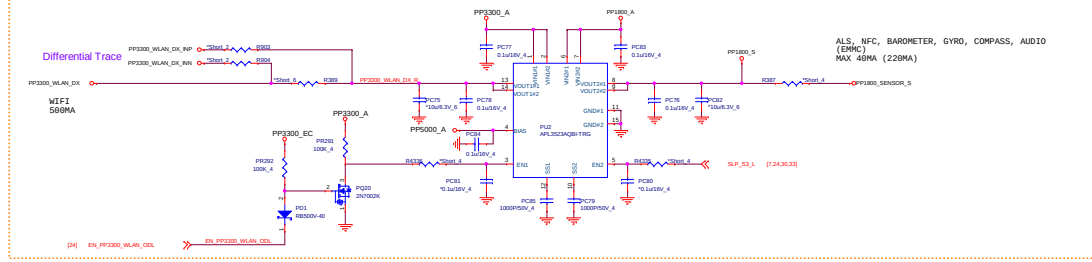
Change to switch IC

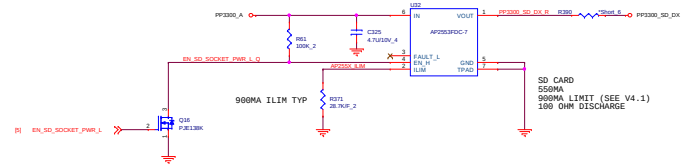
INPUT:PP3300_A

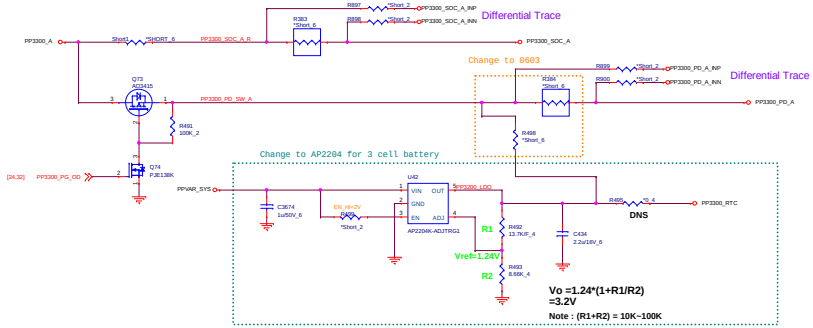


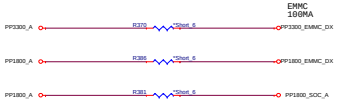
Change to switch IC

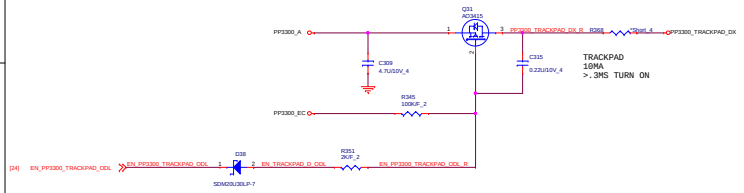
INPUT:PP3300_A INPUT:PP1800_A

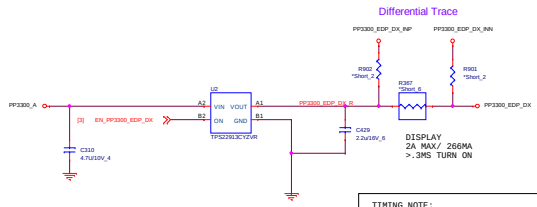












TIMING NOTE:
OTHER THAN LISTED,TURN-ON TIME IS ~50US

Quanta Computer Inc.
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POWER - BATTERY CHARGER
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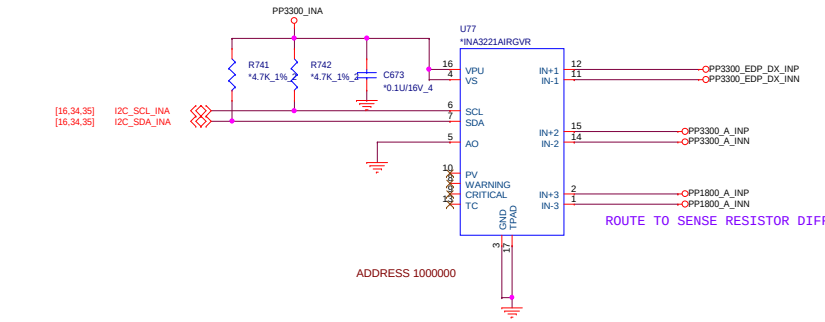
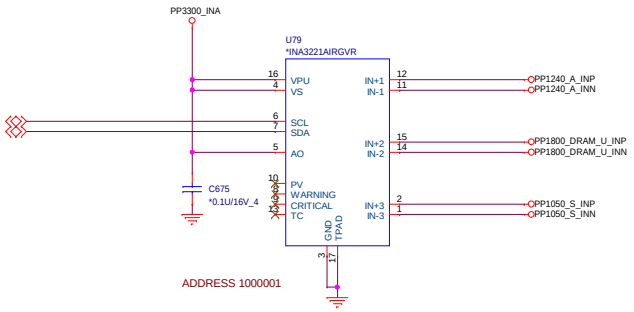
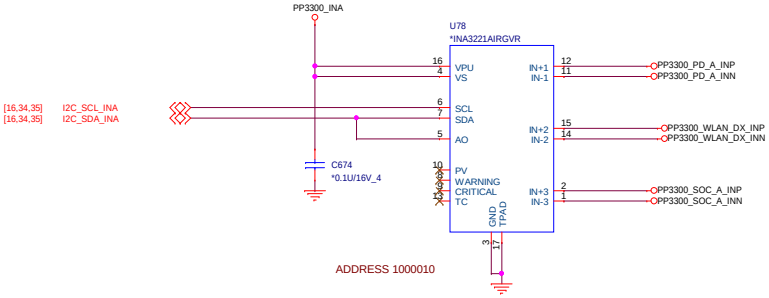
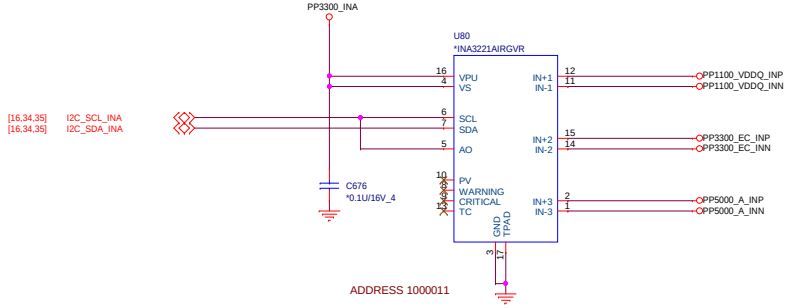
INAs

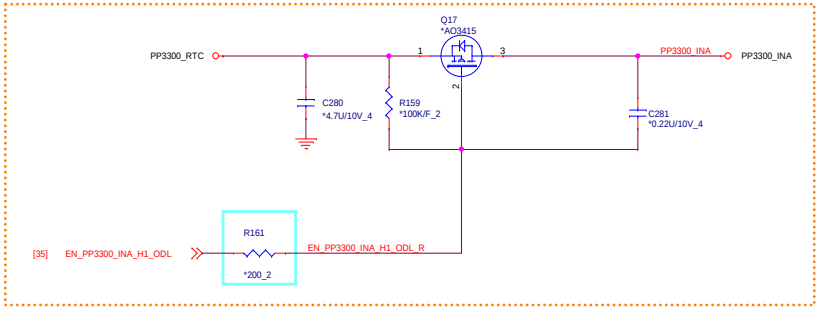




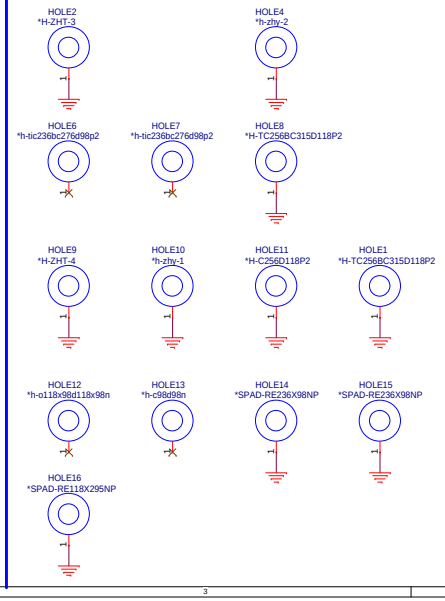




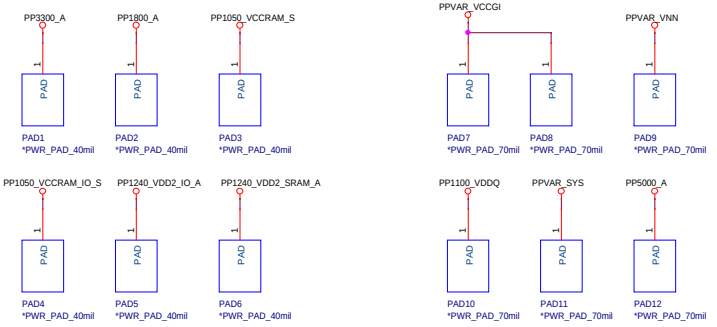
INAs power



HOLES



POWER TEST PAD



Quanta Computer Inc.
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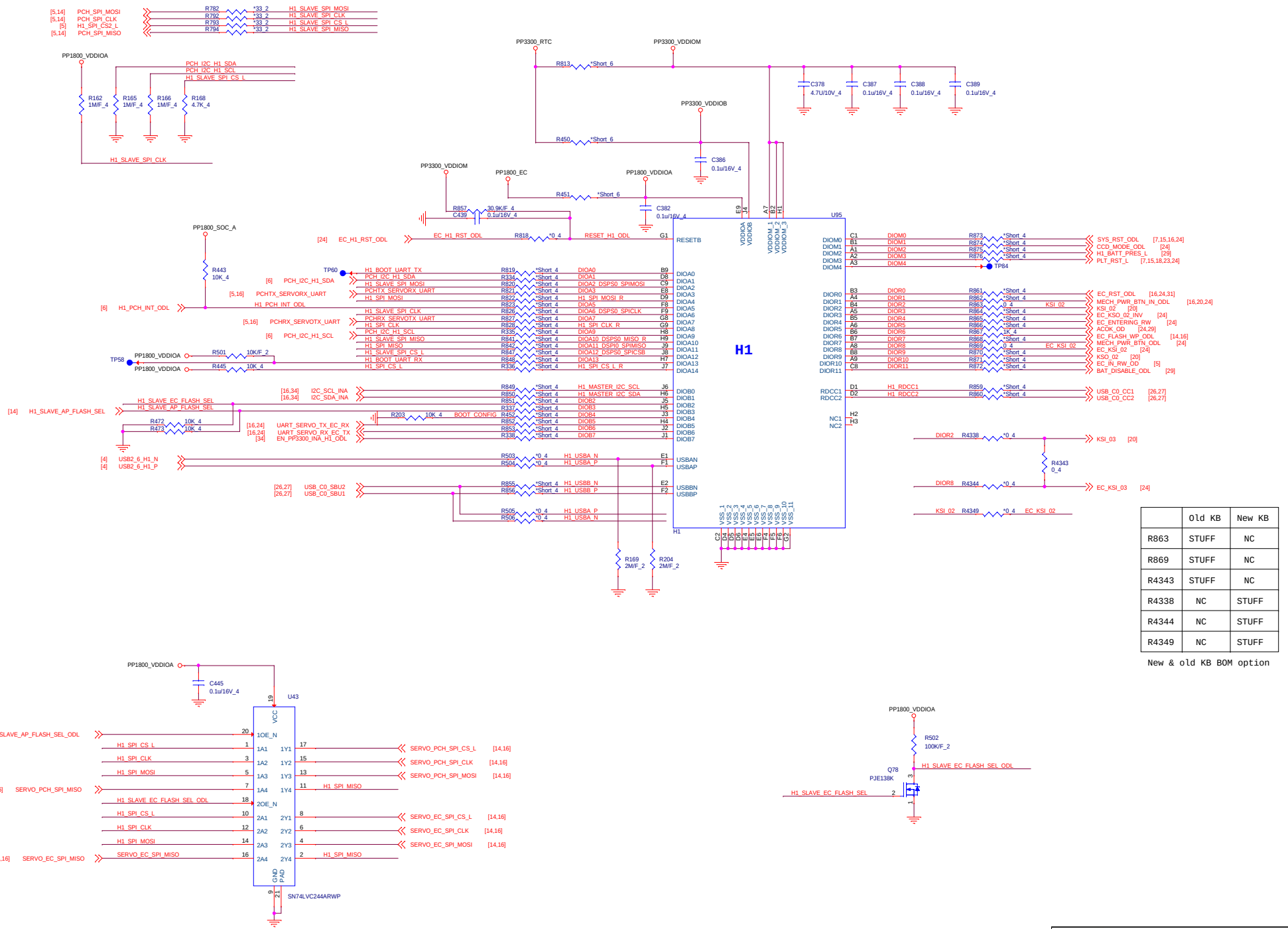

	Old KB	New KB
R863	STUFF	NC
R869	STUFF	NC
R4343	STUFF	NC
R4338	NC	STUFF
R4344	NC	STUFF
R4349	NC	STUFF

New & old KB BOM option

Quanta Computer Inc.
PROJECT : ZHY

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	H1 SECURE MICROCONTROLLER	3A

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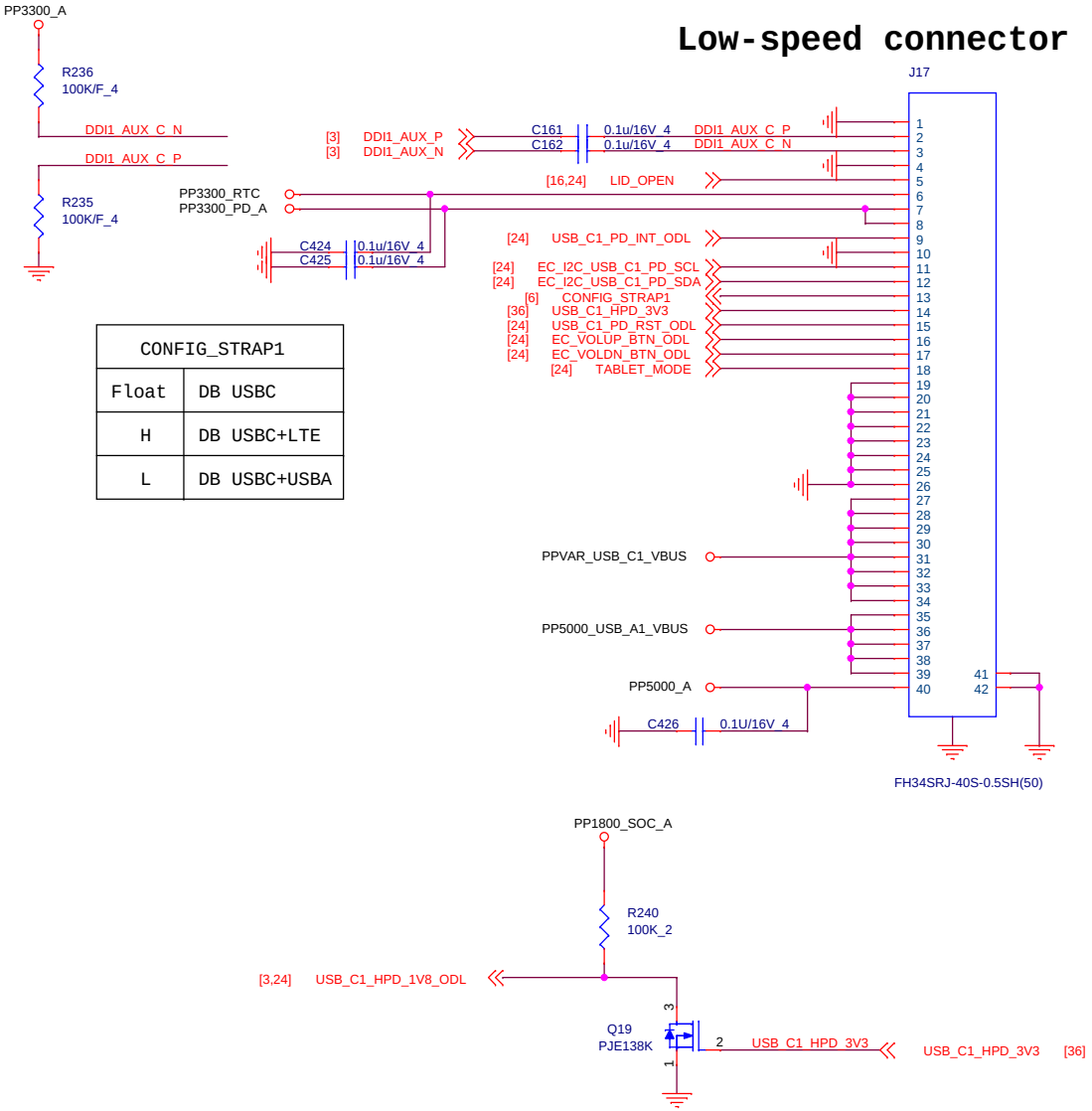
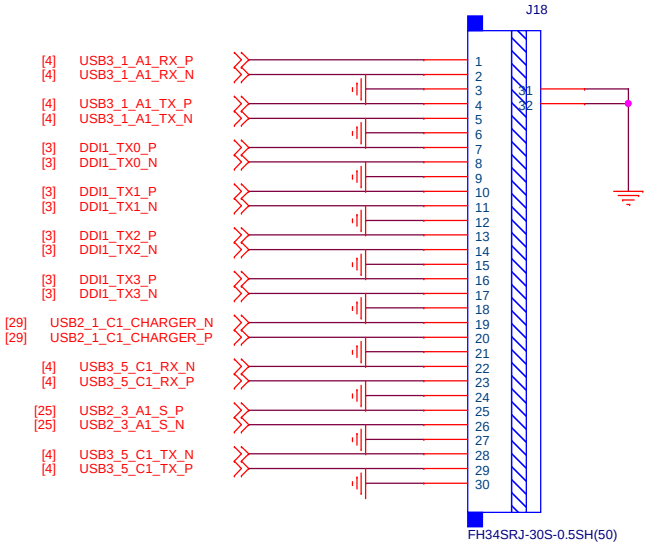
Low-speed connector



CONFIG_STRAP1	
Float	DB USBC
H	DB USBC+LTE
L	DB USBC+USBA

High-speed connector



Quanta Computer Inc.

PROJECT : ZHY

Size	Document Number	Rev
	MLB CONNECTORS	2A
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Model	Version	CHANGE LIST
ZHY	3A	2017/12/19 page 6 Change Q91 to PMDXB600UNE, add R4368 for LTE EN_PP3300_DX_LTE signal glitch issue page 21 Change R497 to short pad page 35 Change R875,R450,R813 to short pad page 29 Change value to 10u/25V_8 for C296,C297,C410 page 30 Change R393,R402,R403 to short pad page 31 Change R460,R412,R416,R417,R425,R530,R4365 to short pad page 32 Change R422,R4350,R415,R421 to short pad page 33 Change R4334,R4333,R4332,R4336,R4335,R383,R381,R367,R499 to short pad Change R498,R384 to short pad page 34 DNS all INAs and INAs power 2017/12/20 page 29 Add C3675,C3676 (56uF/20V/7343) on PPVAR_SYS for acoustic noise. page 31 Remove PU15,R4364,PR191,PR189,PR188,R4363,PC197,PC195. 2017/12/29 page 29 Stuff C3676 for all project,stuff C3675 for Astronaut project only 2018/1/3 page 24 Change R37 to 12.4Kohm for PVT

Quanta Computer Inc.
PROJECT : ZHY
Size | Document Number | Rev 3A
CHANGE LIST
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