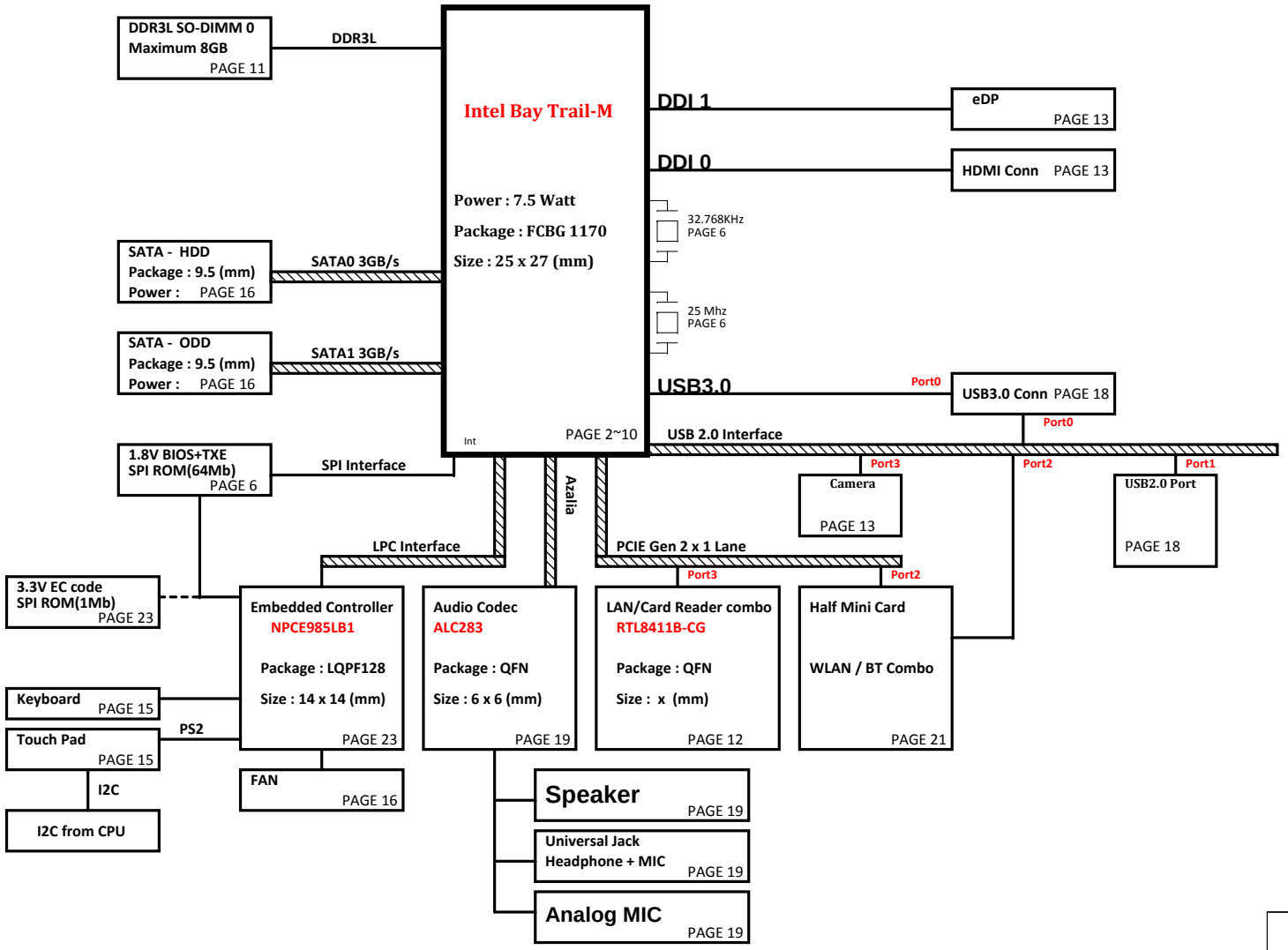
Z8A UMA(14")
Intel Bay Trail-M Platform Block Diagram

01

PCB 4L STACK UP

LAYER 1 : TOP
LAYER 2 : SVCC
LAYER 3 : SGND
LAYER 4 : BOT



Quanta Computer Inc.
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Size	Document Number	Rev
	Intel Block Diagram	1A

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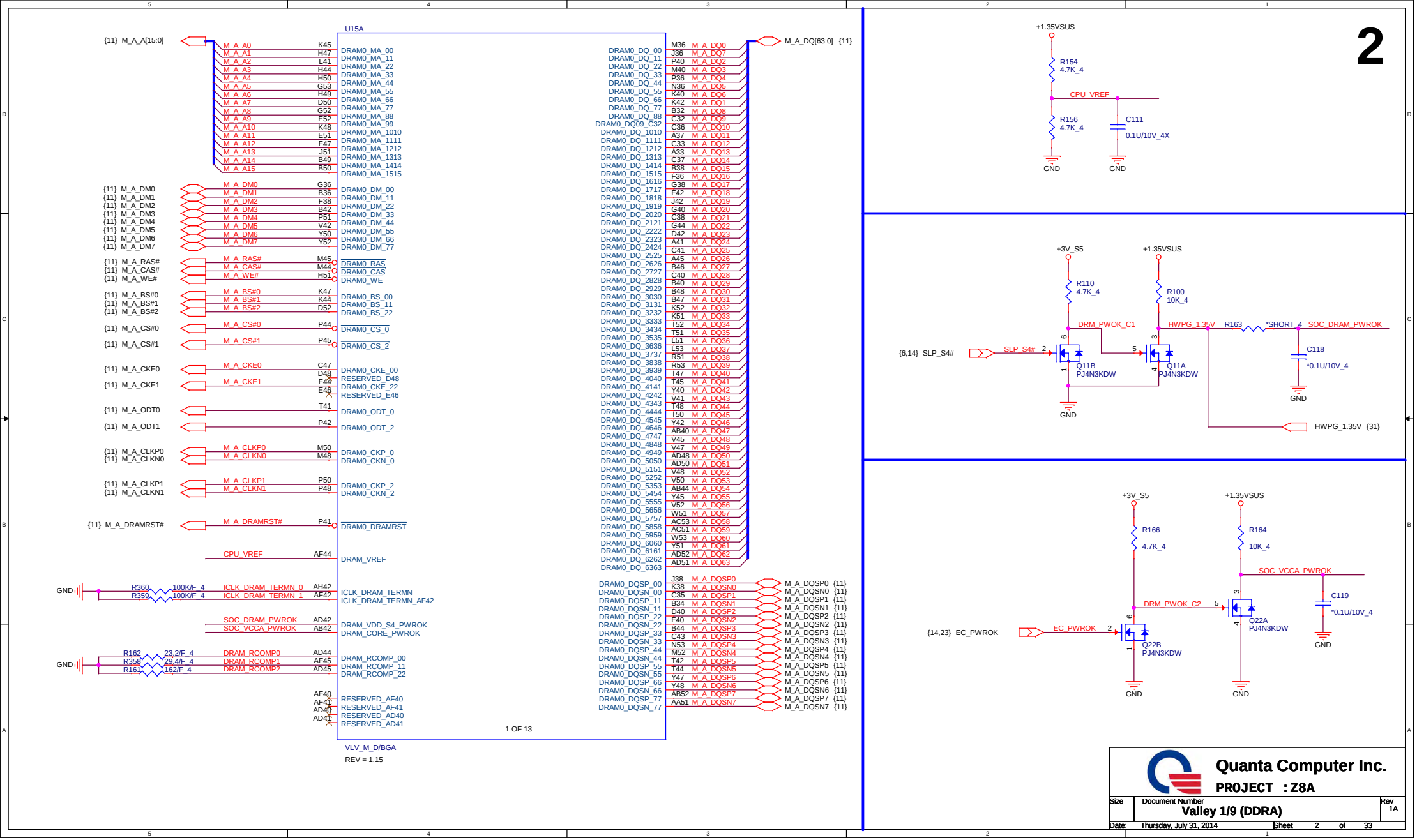
U15A
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M_A_A0 K45 DRAM0_MA_00
M_A_A1 H47 DRAM0_MA_11
M_A_A2 L41 DRAM0_MA_22
M_A_A3 H44 DRAM0_MA_33
M_A_A4 H50 DRAM0_MA_44
M_A_A5 G53 DRAM0_MA_55
M_A_A6 H49 DRAM0_MA_66
M_A_A7 D50 DRAM0_MA_77
M_A_A8 G52 DRAM0_MA_88
M_A_A9 E52 DRAM0_MA_99
M_A_A10 K48 DRAM0_MA_1010
M_A_A11 E51 DRAM0_MA_1111
M_A_A12 F47 DRAM0_MA_1212
M_A_A13 J51 DRAM0_MA_1313
M_A_A14 B49 DRAM0_MA_1414
M_A_A15 B50 DRAM0_MA_1515
{11} M_A_DM0 M_A_DM0 G36 DRAM0_DM_00
{11} M_A_DM1 M_A_DM1 B36 DRAM0_DM_11
{11} M_A_DM2 M_A_DM2 F38 DRAM0_DM_22
{11} M_A_DM3 M_A_DM3 B42 DRAM0_DM_33
{11} M_A_DM4 M_A_DM4 P51 DRAM0_DM_44
{11} M_A_DM5 M_A_DM5 V42 DRAM0_DM_55
{11} M_A_DM6 M_A_DM6 Y50 DRAM0_DM_66
{11} M_A_DM7 M_A_DM7 Y52 DRAM0_DM_77
{11} M_A_RAS# M_A_RAS# M45 DRAM0_RAS
{11} M_A_CAS# M_A_CAS# M44 DRAM0_CAS
{11} M_A_WE# M_A_WE# H51 DRAM0_WE
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{11} M_A_CKE1 M_A_CKE1 D48 RESERVED_D48
F44 DRAM0_CKE_22
E46 RESERVED_E46
{11} M_A_ODT0 T41 DRAM0_ODT_0
{11} M_A_ODT1 P42 DRAM0_ODT_2
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{11} M_A_CLKP1 M_A_CLKP1 P50 DRAM0_CKP_2
{11} M_A_CLKN1 M_A_CLKN1 P48 DRAM0_CKN_2
{11} M_A_DRAMRST# M_A_DRAMRST# P41 DRAM0_DRAMRST
CPU_VREF AF44 DRAM_VREF
GND R360 100K/F_4 ICLK_DRAM_TERMN_0 AH42 ICLK_DRAM_TERMN
R359 100K/F_4 ICLK_DRAM_TERMN_1 AF42 ICLK_DRAM_TERMN_AF42
SOC_DRAM_PWROK AD42 DRAM_VDD_S4_PWROK
SOC_VCCA_PWROK AB42 DRAM_CORE_PWROK
GND R162 23.2/F_4 DRAM_RCOMP0 AD44 DRAM_RCOMP_00
R358 29.4/F_4 DRAM_RCOMP1 AF45 DRAM_RCOMP_11
R161 162/F_4 DRAM_RCOMP2 AD45 DRAM_RCOMP_22
AF40 RESERVED_AF40
AF41 RESERVED_AF41
AD40 RESERVED_AD40
AD41 RESERVED_AD41
1 OF 13
VLV_M_D/BGA
REV = 1.15
DRAM0_DQ_00 M36 M_A_DQ0
DRAM0_DQ_11 J36 M_A_DQ7
DRAM0_DQ_22 P40 M_A_DQ2
DRAM0_DQ_33 M40 M_A_DQ3
DRAM0_DQ_44 P36 M_A_DQ4
DRAM0_DQ_55 N36 M_A_DQ5
DRAM0_DQ_66 K40 M_A_DQ6
DRAM0_DQ_77 K42 M_A_DQ1
DRAM0_DQ_88 B32 M_A_DQ8
DRAM0_DQ09_C32 C32 M_A_DQ9
DRAM0_DQ_1010 C36 M_A_DQ10
DRAM0_DQ_1111 A37 M_A_DQ11
DRAM0_DQ_1212 C33 M_A_DQ12
DRAM0_DQ_1313 A33 M_A_DQ13
DRAM0_DQ_1414 C37 M_A_DQ14
DRAM0_DQ_1515 B38 M_A_DQ15
DRAM0_DQ_1616 F36 M_A_DQ16
DRAM0_DQ_1717 G38 M_A_DQ17
DRAM0_DQ_1818 F42 M_A_DQ18
DRAM0_DQ_1919 J42 M_A_DQ19
DRAM0_DQ_2020 G40 M_A_DQ20
DRAM0_DQ_2121 C38 M_A_DQ21
DRAM0_DQ_2222 G44 M_A_DQ22
DRAM0_DQ_2323 D42 M_A_DQ23
DRAM0_DQ_2424 A41 M_A_DQ24
DRAM0_DQ_2525 C41 M_A_DQ25
DRAM0_DQ_2626 A45 M_A_DQ26
DRAM0_DQ_2727 B46 M_A_DQ27
DRAM0_DQ_2828 C40 M_A_DQ28
DRAM0_DQ_2929 B40 M_A_DQ29
DRAM0_DQ_3030 B48 M_A_DQ30
DRAM0_DQ_3131 B47 M_A_DQ31
DRAM0_DQ_3232 K52 M_A_DQ32
DRAM0_DQ_3333 K51 M_A_DQ33
DRAM0_DQ_3434 T52 M_A_DQ34
DRAM0_DQ_3535 T51 M_A_DQ35
DRAM0_DQ_3636 L51 M_A_DQ36
DRAM0_DQ_3737 L53 M_A_DQ37
DRAM0_DQ_3838 R51 M_A_DQ38
DRAM0_DQ_3939 R53 M_A_DQ39
DRAM0_DQ_4040 T47 M_A_DQ40
DRAM0_DQ_4141 T45 M_A_DQ41
DRAM0_DQ_4242 Y40 M_A_DQ42
DRAM0_DQ_4343 V41 M_A_DQ43
DRAM0_DQ_4444 T48 M_A_DQ44
DRAM0_DQ_4545 T50 M_A_DQ45
DRAM0_DQ_4646 Y42 M_A_DQ46
DRAM0_DQ_4747 AB40 M_A_DQ47
DRAM0_DQ_4848 V45 M_A_DQ48
DRAM0_DQ_4949 V47 M_A_DQ49
DRAM0_DQ_5050 AD48 M_A_DQ50
DRAM0_DQ_5151 AD50 M_A_DQ51
DRAM0_DQ_5252 V48 M_A_DQ52
DRAM0_DQ_5353 V50 M_A_DQ53
DRAM0_DQ_5454 AB44 M_A_DQ54
DRAM0_DQ_5555 Y45 M_A_DQ55
DRAM0_DQ_5656 V52 M_A_DQ56
DRAM0_DQ_5757 W51 M_A_DQ57
DRAM0_DQ_5858 AC53 M_A_DQ58
DRAM0_DQ_5959 AC51 M_A_DQ59
DRAM0_DQ_6060 W53 M_A_DQ60
DRAM0_DQ_6161 Y51 M_A_DQ61
DRAM0_DQ_6262 AD52 M_A_DQ62
DRAM0_DQ_6363 AD51 M_A_DQ63
M_A_DQ[63:0] {11}
DRAM0_DQSP_00 J38 M_A_DQSP0 M_A_DQSP0 {11}
DRAM0_DQSN_00 K38 M_A_DQSN0 M_A_DQSN0 {11}
DRAM0_DQSP_11 C35 M_A_DQSP1 M_A_DQSP1 {11}
DRAM0_DQSN_11 B34 M_A_DQSN1 M_A_DQSN1 {11}
DRAM0_DQSP_22 D40 M_A_DQSP2 M_A_DQSP2 {11}
DRAM0_DQSN_22 F40 M_A_DQSN2 M_A_DQSN2 {11}
DRAM0_DQSP_33 B44 M_A_DQSP3 M_A_DQSP3 {11}
DRAM0_DQSN_33 C43 M_A_DQSN3 M_A_DQSN3 {11}
DRAM0_DQSP_44 N53 M_A_DQSP4 M_A_DQSP4 {11}
DRAM0_DQSN_44 M52 M_A_DQSN4 M_A_DQSN4 {11}
DRAM0_DQSP_55 T42 M_A_DQSP5 M_A_DQSP5 {11}
DRAM0_DQSN_55 T44 M_A_DQSN5 M_A_DQSN5 {11}
DRAM0_DQSP_66 Y47 M_A_DQSP6 M_A_DQSP6 {11}
DRAM0_DQSN_66 Y48 M_A_DQSN6 M_A_DQSN6 {11}
DRAM0_DQSP_77 AB52 M_A_DQSP7 M_A_DQSP7 {11}
DRAM0_DQSN_77 AA51 M_A_DQSN7 M_A_DQSN7 {11}
+1.35VSUS
R154 4.7K_4
CPU_VREF
R156 4.7K_4
C111 0.1U/10V_4X
GND
+3V_S5
+1.35VSUS
R110 4.7K_4
R100 10K_4
DRM_PWOK_C1
HWPG_1.35V
R163 *SHORT_4
SOC_DRAM_PWROK
{6,14} SLP_S4#
SLP_S4#
Q11B PJ4N3KDW
Q11A PJ4N3KDW
C118 *0.1U/10V_4
HWPG_1.35V {31}
R166 4.7K_4
R164 10K_4
SOC_VCCA_PWROK
DRM_PWOK_C2
C119 *0.1U/10V_4
{14,23} EC_PWROK
EC_PWROK
Q22B PJ4N3KDW
Q22A PJ4N3KDW
Quanta Computer Inc.
PROJECT : Z8A
Size
Document Number
Valley 1/9 (DDRA)
Rev 1A
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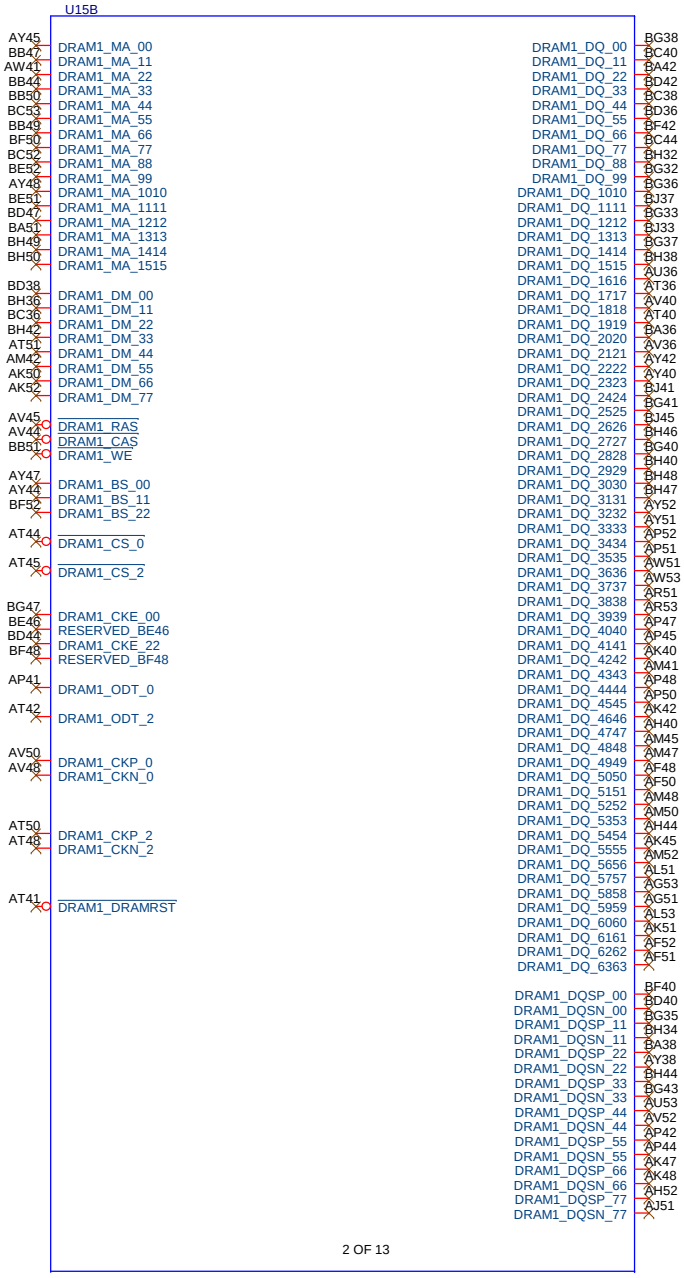
2



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Size	Document Number	Rev
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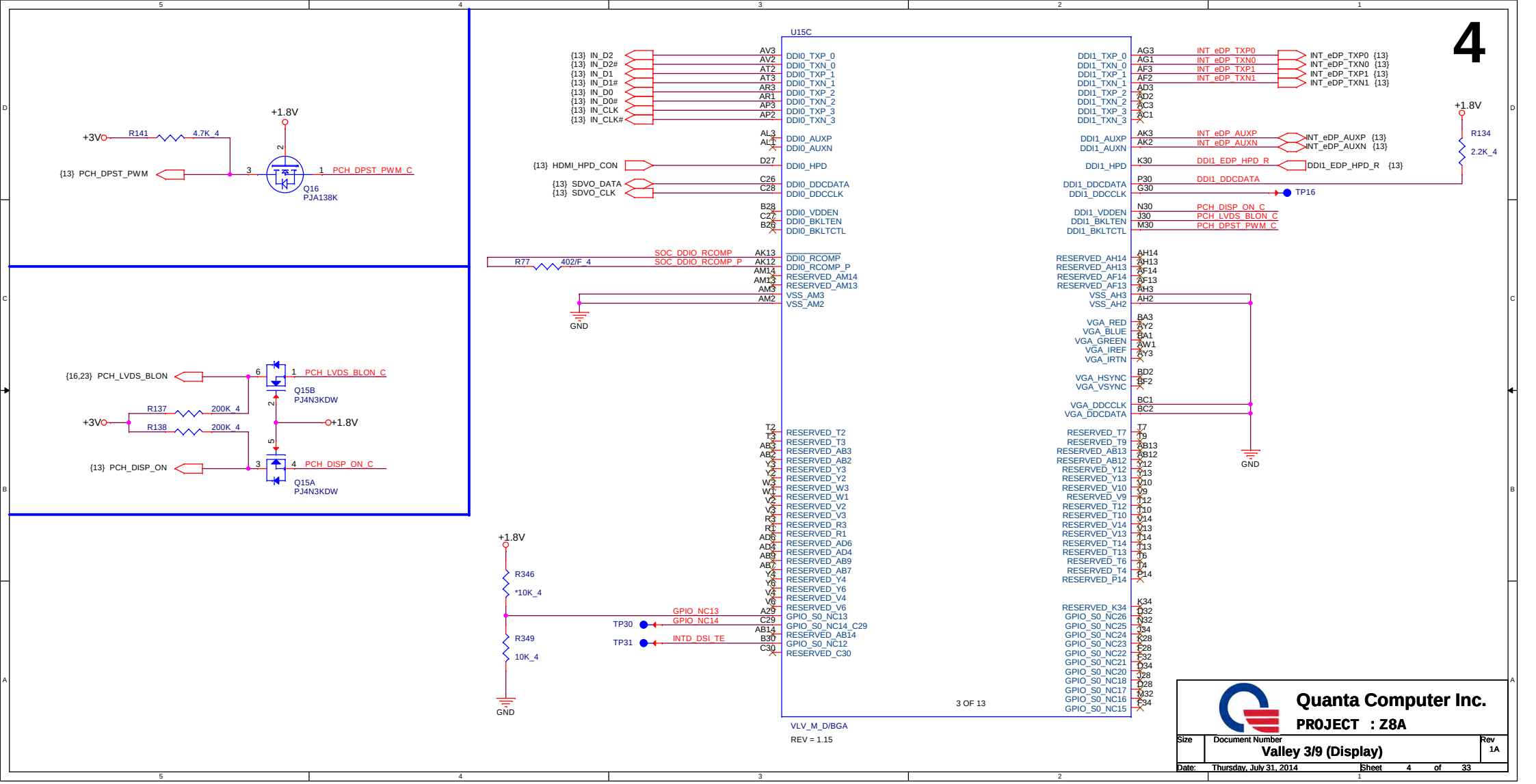
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U15C
{13} IN_D2
{13} IN_D2#
{13} IN_D1
{13} IN_D1#
{13} IN_D0
{13} IN_D0#
{13} IN_CLK
{13} IN_CLK#
AV3 DDI0_TXP_0
AV2 DDI0_TXN_0
AT2 DDI0_TXP_1
AT3 DDI0_TXN_1
AR3 DDI0_TXP_2
AR1 DDI0_TXN_2
AP3 DDI0_TXP_3
AP2 DDI0_TXN_3
AL3 DDI0_AUXP
AL1 DDI0_AUXN
{13} HDMI_HPD_CON
D27 DDI0_HPD
{13} SDVO_DATA
{13} SDVO_CLK
C26 DDI0_DDCDATA
C28 DDI0_DDCCLK
B28 DDI0_VDDEN
C27 DDI0_BKLTEN
B26 DDI0_BKLTCTL
R77 402/F_4
SOC_DDIO_RCOMP
SOC_DDIO_RCOMP_P
AK13 DDI0_RCOMP
AK12 DDI0_RCOMP_P
AM14 RESERVED_AM14
AM13 RESERVED_AM13
AM3 VSS_AM3
AM2 VSS_AM2
GND
DDI1_TXP_0 AG3
DDI1_TXN_0 AG1
DDI1_TXP_1 AF3
DDI1_TXN_1 AF2
DDI1_TXP_2 AD3
DDI1_TXN_2 AD2
DDI1_TXP_3 AC3
DDI1_TXN_3 AC1
INT_eDP_TXP0
INT_eDP_TXN0
INT_eDP_TXP1
INT_eDP_TXN1
INT_eDP_TXP0 {13}
INT_eDP_TXN0 {13}
INT_eDP_TXP1 {13}
INT_eDP_TXN1 {13}
DDI1_AUXP AK3
DDI1_AUXN AK2
INT_eDP_AUXP
INT_eDP_AUXN
INT_eDP_AUXP {13}
INT_eDP_AUXN {13}
DDI1_HPD K30
DDI1_EDP_HPD_R
DDI1_EDP_HPD_R {13}
DDI1_DDCDATA P30
DDI1_DDCCLK G30
DDI1_DDCDATA
TP16
DDI1_VDDEN N30
DDI1_BKLTEN J30
DDI1_BKLTCTL M30
PCH_DISP_ON_C
PCH_LVDS_BLON_C
PCH_DPST_PWM_C
+1.8V
R134
2.2K_4
RESERVED_AH14 AH14
RESERVED_AH13 AH13
RESERVED_AF14 AF14
RESERVED_AF13 AF13
VSS_AH3 AH3
VSS_AH2 AH2
VGA_RED BA3
VGA_BLUE AY2
VGA_GREEN BA1
VGA_IREF AW1
VGA_IRTN AY3
VGA_HSYNC BD2
VGA_VSYNC BF2
VGA_DDCCLK BC1
VGA_DDCDATA BC2
GND
T2 RESERVED_T2
T3 RESERVED_T3
AB3 RESERVED_AB3
AB2 RESERVED_AB2
Y3 RESERVED_Y3
Y2 RESERVED_Y2
W3 RESERVED_W3
W1 RESERVED_W1
V2 RESERVED_V2
V3 RESERVED_V3
R3 RESERVED_R3
R1 RESERVED_R1
AD6 RESERVED_AD6
AD4 RESERVED_AD4
AB9 RESERVED_AB9
AB7 RESERVED_AB7
Y4 RESERVED_Y4
Y6 RESERVED_Y6
V4 RESERVED_V4
V6 RESERVED_V6
A29 GPIO_S0_NC13
C29 GPIO_S0_NC14_C29
AB14 RESERVED_AB14
B30 GPIO_S0_NC12
C30 RESERVED_C30
RESERVED_T7 T7
RESERVED_T9 T9
RESERVED_AB13 AB13
RESERVED_AB12 AB12
RESERVED_Y12 Y12
RESERVED_Y13 Y13
RESERVED_V10 V10
RESERVED_V9 V9
RESERVED_T12 T12
RESERVED_T10 T10
RESERVED_V14 V14
RESERVED_V13 V13
RESERVED_T14 T14
RESERVED_T13 T13
RESERVED_T6 T6
RESERVED_T4 T4
RESERVED_P14 P14
RESERVED_K34 K34
GPIO_S0_NC26 C32
GPIO_S0_NC25 N32
GPIO_S0_NC24 J34
GPIO_S0_NC23 K28
GPIO_S0_NC22 C28
GPIO_S0_NC21 C32
GPIO_S0_NC20 D34
GPIO_S0_NC18 J28
GPIO_S0_NC17 D28
GPIO_S0_NC16 M32
GPIO_S0_NC15 C34
3 OF 13
VLV_M_D/BGA
REV = 1.15
+1.8V
R346
*10K_4
R349
10K_4
GPIO_NC13
GPIO_NC14
INTD_DSI_TE
TP30
TP31
GND
+3VO
R141
4.7K_4
{13} PCH_DPST_PWM
PCH_DPST_PWM_C
Q16
PJA138K
{16,23} PCH_LVDS_BLON
PCH_LVDS_BLON_C
Q15B
PJ4N3KDW
R137
200K_4
R138
200K_4
{13} PCH_DISP_ON
PCH_DISP_ON_C
Q15A
PJ4N3KDW
Quanta Computer Inc.
PROJECT : Z8A
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Valley 3/9 (Display)
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1A
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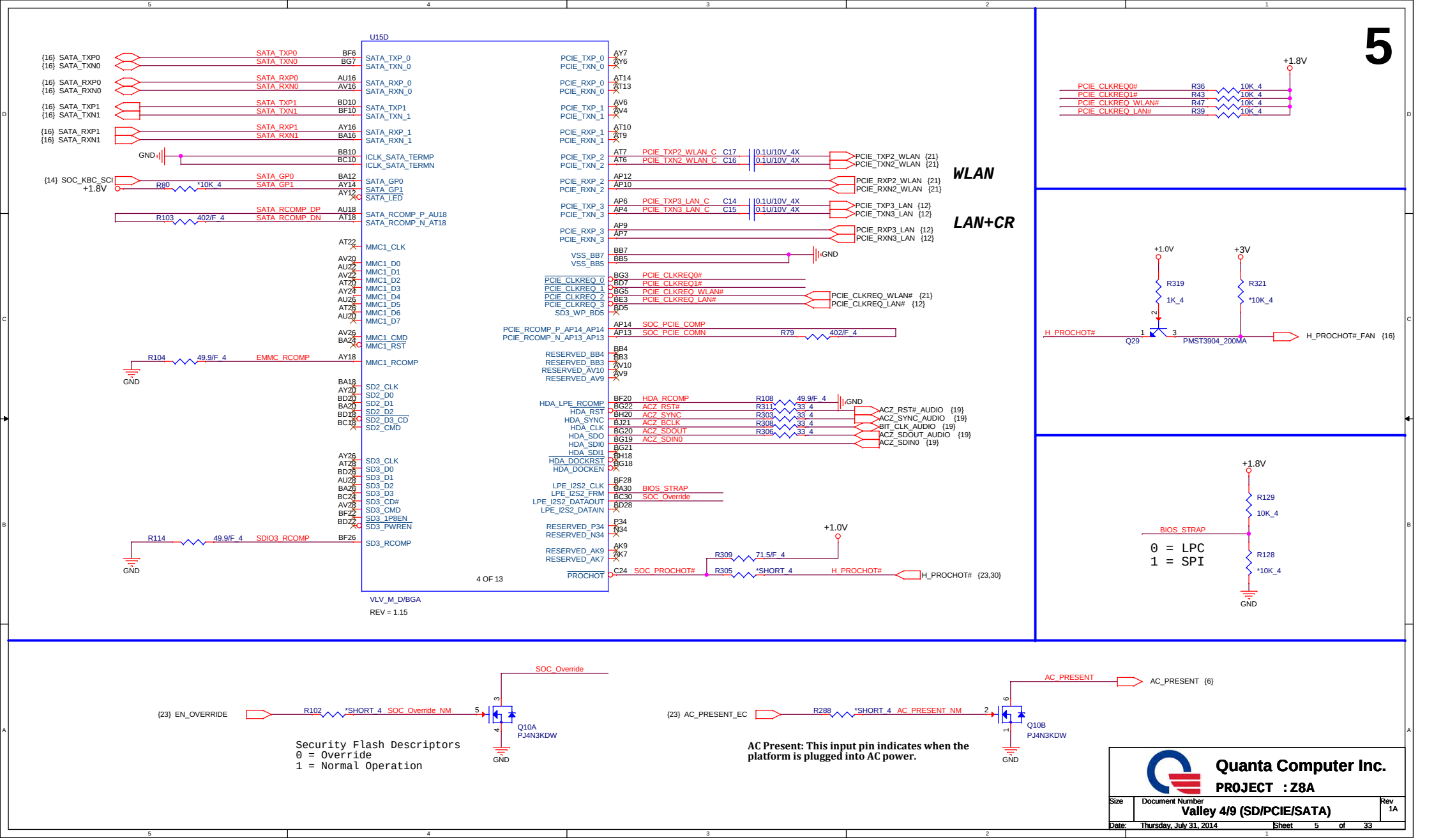

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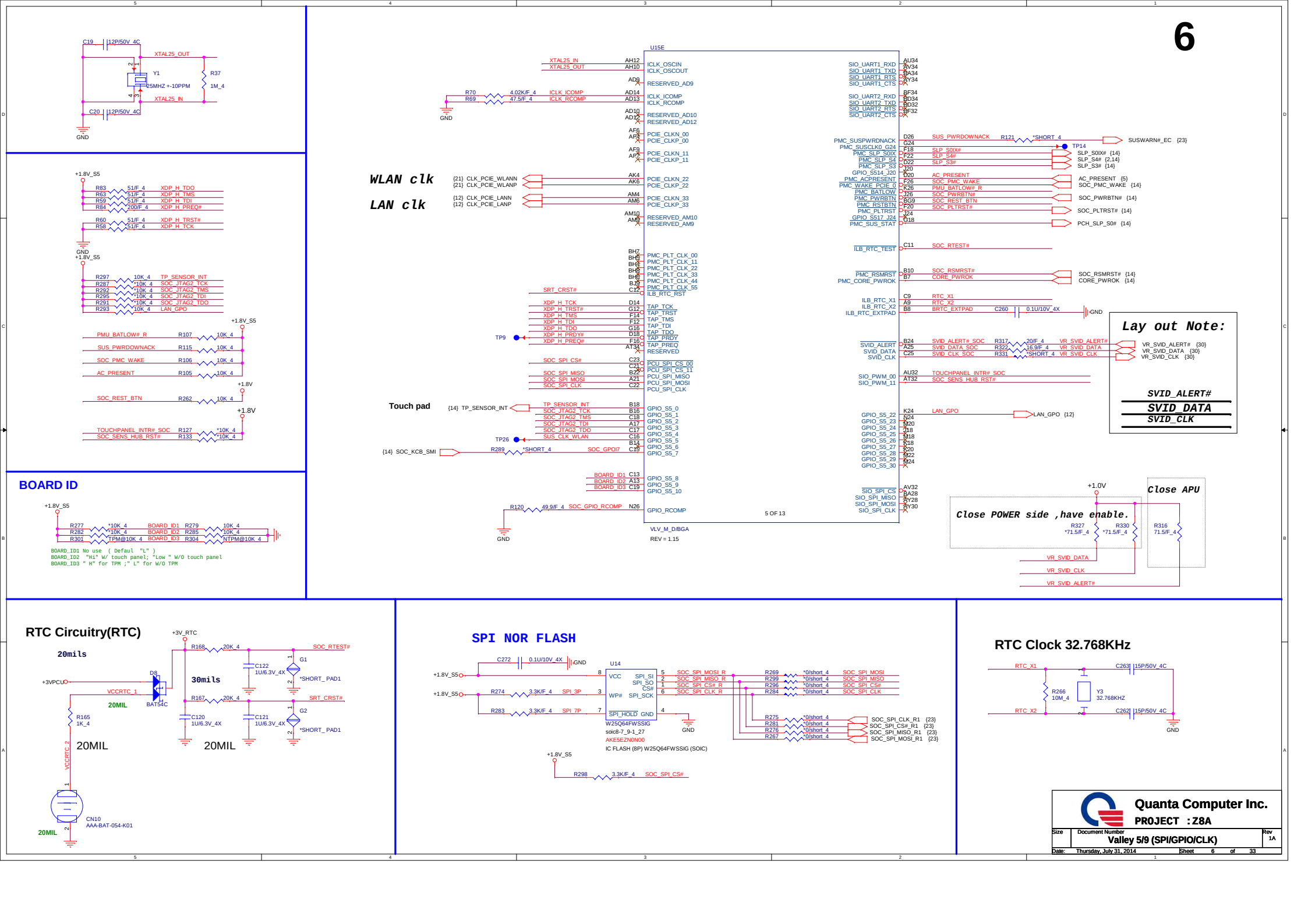
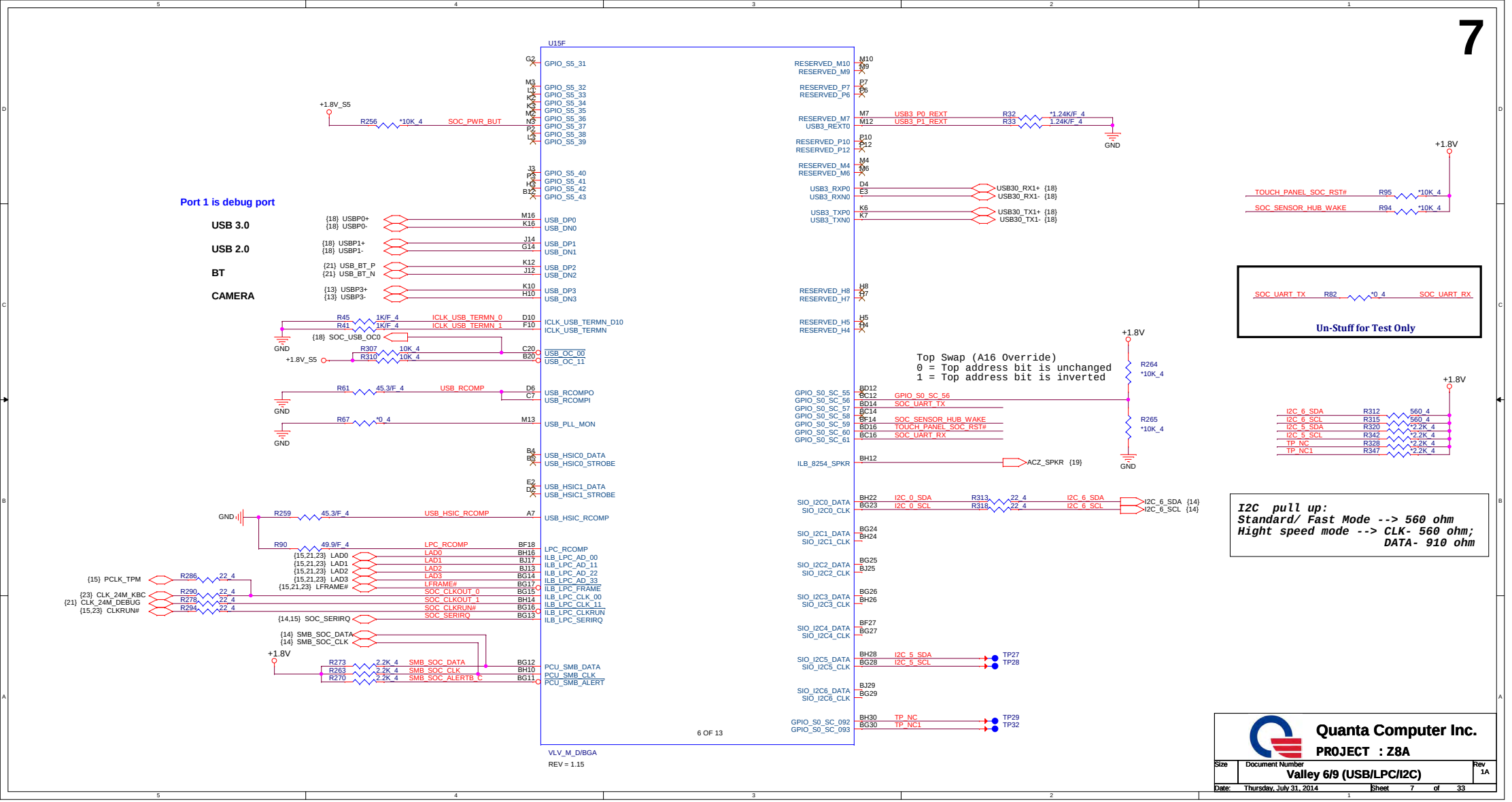

6
C19 12P/50V_4C
XTAL25_OUT
Y1
25MHZ +-10PPM
R37
1M_4
XTAL25_IN
C20 12P/50V_4C
GND
+1.8V_S5
R83 51/F_4 XDP_H_TDO
R63 51/F_4 XDP_H_TMS
R59 51/F_4 XDP_H_TDI
R84 200/F_4 XDP_H_PREQ#
R60 51/F_4 XDP_H_TRST#
R58 51/F_4 XDP_H_TCK
R297 10K_4 TP_SENSOR_INT
R287 *10K_4 SOC_JTAG2_TCK
R292 *10K_4 SOC_JTAG2_TMS
R295 *10K_4 SOC_JTAG2_TDI
R291 *10K_4 SOC_JTAG2_TDO
R293 10K_4 LAN_GPO
PMU_BATLOW# R R107 10K_4
SUS_PWRDOWNACK R115 10K_4
SOC_PMC_WAKE R106 10K_4
AC_PRESENT R105 10K_4
SOC_REST_BTN R262 10K_4
TOUCHPANEL_INTR# SOC R127 *10K_4
SOC_SENS_HUB_RST# R133 *10K_4
BOARD ID
R277 *10K_4 BOARD_ID1
R282 *10K_4 BOARD_ID2
R301 TPM@10K_4 BOARD_ID3
R279 10K_4
R285 10K_4
R304 NTPM@10K_4
BOARD_ID1 No use (Defaul "L")
BOARD_ID2 "Hi" W/ touch panel; "Low " W/O touch panel
BOARD_ID3 " H" for TPM ;" L" for W/O TPM
U15E
XTAL25_IN AH12
XTAL25_OUT AH10
ICLK_OSCIN
ICLK_OSCOUT
AD9 RESERVED_AD9
R70 4.02K/F_4 ICLK_ICOMP AD14
R69 47.5/F_4 ICLK_RCOMP AD13
ICLK_ICOMP
ICLK_RCOMP
AD10 RESERVED_AD10
AD12 RESERVED_AD12
AF6 PCIE_CLKN_00
AF8 PCIE_CLKP_00
AF9 PCIE_CLKN_11
AF7 PCIE_CLKP_11
WLAN clk
{21} CLK_PCIE_WLANN AK4 PCIE_CLKN_22
{21} CLK_PCIE_WLANP AK6 PCIE_CLKP_22
LAN clk
{12} CLK_PCIE_LANN AM4 PCIE_CLKN_33
{12} CLK_PCIE_LANP AM6 PCIE_CLKP_33
AM10 RESERVED_AM10
AM9 RESERVED_AM9
BH7 PMC_PLT_CLK_00
BH5 PMC_PLT_CLK_11
BH4 PMC_PLT_CLK_22
BH3 PMC_PLT_CLK_33
BH2 PMC_PLT_CLK_44
BJ9 PMC_PLT_CLK_55
SRT_CRST# C12 ILB_RTC_RST
XDP_H_TCK D14 TAP_TCK
XDP_H_TRST# G12 TAP_TRST
XDP_H_TMS F14 TAP_TMS
XDP_H_TDI F12 TAP_TDI
XDP_H_TDO G16 TAP_TDO
TP9 XDP_H_PRDY# D18 TAP_PRDY
XDP_H_PREQ# F16 TAP_PREQ
AT34 RESERVED
SOC_SPI_CS# C23 PCU_SPI_CS_00
C21 PCU_SPI_CS_11
SOC_SPI_MISO B22 PCU_SPI_MISO
SOC_SPI_MOSI A21 PCU_SPI_MOSI
SOC_SPI_CLK C22 PCU_SPI_CLK
Touch pad
{14} TP_SENSOR_INT B18 GPIO_S5_0
SOC_JTAG2_TCK B16 GPIO_S5_1
SOC_JTAG2_TMS C18 GPIO_S5_2
SOC_JTAG2_TDI A17 GPIO_S5_3
SOC_JTAG2_TDO C17 GPIO_S5_4
SUS_CLK_WLAN C16 GPIO_S5_5
TP26 B14 GPIO_S5_6
{14} SOC_KCB_SMI R289 *SHORT_4 SOC_GPO/7 C15 GPIO_S5_7
BOARD_ID1 C13 GPIO_S5_8
BOARD_ID2 A13 GPIO_S5_9
BOARD_ID3 C19 GPIO_S5_10
R120 49.9/F_4 SOC_GPIO_RCOMP N26 GPIO_RCOMP
5 OF 13
VLV_M_D/BGA
REV = 1.15
SIO_UART1_RXD AU34
SIO_UART1_TXD AV34
SIO_UART1_RTS BA34
SIO_UART1_CTS AY34
SIO_UART2_RXD BF34
SIO_UART2_TXD BD34
SIO_UART2_RTS BD32
SIO_UART2_CTS BF32
PMC_SUSPWRDNACK D26 SUS_PWRDOWNACK R121 *SHORT_4 SUSWARN#_EC {23}
PMC_SUSCLK0_G24 G24 TP14
PMC_SLP_S0IX F18 SLP_S0IX# {14}
PMC_SLP_S4 F22 SLP_S4# {2,14}
PMC_SLP_S3 D22 SLP_S3# {14}
GPIO_S514_J20 J20
PMC_ACPRESENT D20 AC_PRESENT {5}
PMC_WAKE_PCIE_0 F26 SOC_PMC_WAKE {14}
PMC_BATLOW K26 PMU_BATLOW# R
PMC_PWRBTN J26 SOC_PWRBTN# {14}
PMC_RSTBTN BG9 SOC_REST_BTN
PMC_PLTRST F20 SOC_PLTRST# {14}
GPIO_S517_J24 J24
PMC_SUS_STAT G18 PCH_SLP_S0# {14}
ILB_RTC_TEST C11 SOC_RTEST#
PMC_RSMRST B10 SOC_RSMRST# {14}
PMC_CORE_PWROK B7 CORE_PWROK {14}
ILB_RTC_X1 C9 RTC_X1
ILB_RTC_X2 A9 RTC_X2
ILB_RTC_EXTPAD B8 BRTC_EXTPAD C260 0.1U/10V_4X GND
SVID_ALERT B24 SVID_ALERT# SOC R317 20/F_4 VR_SVID_ALERT#
SVID_DATA A25 SVID_DATA_SOC R322 16.9/F_4 VR_SVID_DATA
SVID_CLK C25 SVID_CLK_SOC R331 *SHORT_4 VR_SVID_CLK
Lay out Note:
SVID_ALERT#
SVID_DATA
SVID_CLK
VR_SVID_ALERT# {30}
VR_SVID_DATA {30}
VR_SVID_CLK {30}
SIO_PWM_00 AU32 TOUCHPANEL_INTR# SOC
SIO_PWM_11 AT32 SOC_SENS_HUB_RST#
K24 LAN_GPO
LAN_GPO {12}
GPIO_S5_22 N24
GPIO_S5_23 N20
GPIO_S5_24 U18
GPIO_S5_25 M18
GPIO_S5_26 K18
GPIO_S5_27 K20
GPIO_S5_28 M22
GPIO_S5_29 M24
GPIO_S5_30
SIO_SPI_CS AV32
SIO_SPI_MISO BA28
SIO_SPI_MOSI AY28
SIO_SPI_CLK BY30
+1.0V
Close APU
Close POWER side ,have enable.
R327 *71.5/F_4
R330 *71.5/F_4
R316 71.5/F_4
VR_SVID_DATA
VR_SVID_CLK
VR_SVID_ALERT#
RTC Circuitry(RTC)
+3V_RTC
20mils
+3VPCU
D8
BAT54C
VCCRTC_1
20MIL
R165 1K_4
VCCRTC_2
CN10
AAA-BAT-054-K01
R168 20K_4
R167 20K_4
30mils
C122 1U/6.3V_4X
C120 1U/6.3V_4X
C121 1U/6.3V_4X
G1
G2
*SHORT_ PAD1
SOC_RTEST#
SRT_CRST#
SPI NOR FLASH
U14
C272 0.1U/10V_4X GND
+1.8V_S5
R274 3.3K/F_4 SPI_3P
R283 3.3K/F_4 SPI_7P
VCC SPI_SI
SPI_SO
CS#
WP# SPI_SCK
SPI_HOLD GND
W25Q64FWSSIG
soic8-7_9-1_27
AKE5EZN0N00
IC FLASH (8P) W25Q64FWSSIG (SOIC)
SOC_SPI_MOSI_R
SOC_SPI_MISO_R
SOC_SPI_CS#_R
SOC_SPI_CLK_R
R269 *0/short_4 SOC_SPI_MOSI
R299 *0/short_4 SOC_SPI_MISO
R296 *0/short_4 SOC_SPI_CS#
R284 *0/short_4 SOC_SPI_CLK
R275 *0/short_4
R281 *0/short_4
R276 *0/short_4
R267 *0/short_4
SOC_SPI_CLK_R1 {23}
SOC_SPI_CS#_R1 {23}
SOC_SPI_MISO_R1 {23}
SOC_SPI_MOSI_R1 {23}
R298 3.3K/F_4 SOC_SPI_CS#
RTC Clock 32.768KHz
RTC_X1
RTC_X2
R266 10M_4
Y3 32.768KHZ
C263 15P/50V_4C
C262 15P/50V_4C
Quanta Computer Inc.
PROJECT : Z8A
Size
Document Number
Valley 5/9 (SPI/GPIO/CLK)
Rev 1A
Date: Thursday, July 31, 2014
Sheet 6 of 33



Quanta Computer Inc.			
PROJECT : Z8A			
Size	Document Number		Rev
	Valley 6/9 (USB/LPC/I2C)		1A
Date: Thursday, July 31, 2014		Sheet 7 of 33	

{22,30} +VCC_CORE
{22,30} +VCC_GFX
{2,11,31,32} +1.35VSUS

U15G

{30} VCC_SENSE
{30} VCC_AXG_SENSE
{30} VSS_SENSE
{30} VSS_AXG_SENSE

VCC_SENSE
VCC_AXG_SENSE
VSS_SENSE

P28 CORE_VCC_SENSE_P28
BB8 UNCORE_VNN_SENSE
N28 CORE_VSS_SENSE_N28

+1.35VSUS_VSM
+1.35VSUS

AD38 DRAM_VDD_S4_AD38
AF38 DRAM_VDD_S4_AF38
AA8 DRAM_VDD_S4
AK38 DRAM_VDD_S4_AK38
AM38 DRAM_VDD_S4_AM38
AV41 DRAM_VDD_S4_AV41
AV42 DRAM_VDD_S4_AV42
BB46 DRAM_VDD_S4_BB46

+VCC_GFX +VCC_CORE

R111 100/F_4
R123 100/F_4
R122 100/F_4
GND

+VCC_CORE

C84 10U/6.3V_4X
C298 4.7U/6.3V_6X
C80 10U/6.3V_4X
C86 10U/6.3V_4X
C299 2.2U/6.3V_6X
C301 22U/6.3V_6X
C297 22U/6.3V_6X
C300 22U/6.3V_6X
GND

AA27 CORE_VCC_S0IX_AA27
AA29 CORE_VCC_S0IX_AA29
AA30 CORE_VCC_S0IX_AA30
AC27 CORE_VCC_S0IX_AC27
AC29 CORE_VCC_S0IX_AC29
AC30 CORE_VCC_S0IX_AC30
AD27 CORE_VCC_S0IX_AD27
AD29 CORE_VCC_S0IX_AD29
AD30 CORE_VCC_S0IX_AD30
AF27 CORE_VCC_S0IX_AF27
AF29 CORE_VCC_S0IX_AF29
AG27 CORE_VCC_S0IX_AG27
AG29 CORE_VCC_S0IX_AG29
AG30 CORE_VCC_S0IX_AG30
P26 CORE_VCC_S0IX_P26
P27 CORE_VCC_S0IX_P27
U27 CORE_VCC_S0IX_U27
U29 CORE_VCC_S0IX_U29
V27 CORE_VCC_S0IX_V27
V29 CORE_VCC_S0IX_V29
V30 CORE_VCC_S0IX_V30
Y27 CORE_VCC_S0IX_Y27
Y29 CORE_VCC_S0IX_Y29
Y30 CORE_VCC_S0IX_Y30

AF30 TP_CORE_V1P05_S4

7 OF 13

VLV_M_D/BGA
REV = 1.15

DRAM_VDD_S4_BD49 BD49
DRAM_VDD_S4_BD52 BD52
DRAM_VDD_S4_BD53 BD53
DRAM_VDD_S4_BF44 BF44
DRAM_VDD_S4_BG51 BG51
DRAM_VDD_S4_BJ48 BJ48
DRAM_VDD_S4_C51 C51
DRAM_VDD_S4_D44 D44
DRAM_VDD_S4_F49 F49
DRAM_VDD_S4_F52 F52
DRAM_VDD_S4_F53 F53
DRAM_VDD_S4_H46 H46
DRAM_VDD_S4_M41 M41
DRAM_VDD_S4_M42 M42
DRAM_VDD_S4_V38 V38
DRAM_VDD_S4_Y38 Y38

+1.35VSUS

C106 2.2U/6.3V_4X
C113 2.2U/6.3V_4X
C100 2.2U/6.3V_4X
C50 2.2U/6.3V_4X
C101 1U/6.3V_4X
C103 0.1U/10V_4X
GND

UNCORE_VNN_S3_AA24 AA24
UNCORE_VNN_S3_AC22 AC22
UNCORE_VNN_S3_AC24 AC24
UNCORE_VNN_S3_AD22 AD22
UNCORE_VNN_S3_AD24 AD24
UNCORE_VNN_S3_AF22 AF22
UNCORE_VNN_S3_AF24 AF24
UNCORE_VNN_S3_AG22 AG22
UNCORE_VNN_S3_AG24 AG24
UNCORE_VNN_S3_AJ22 AJ22
UNCORE_VNN_S3_AJ24 AJ24
UNCORE_VNN_S3_AK22 AK22
UNCORE_VNN_S3_AK24 AK24
UNCORE_VNN_S3_AK25 AK25
UNCORE_VNN_S3_AK27 AK27
UNCORE_VNN_S3_AK29 AK29
UNCORE_VNN_S3_AK30 AK30
UNCORE_VNN_S3_AK32 AK32
UNCORE_VNN_S3_AM22 AM22

+VCC_GFX

C289 10U/6.3V_6X
C288 10U/6.3V_6X
C286 10U/6.3V_6X
C79 1U/6.3V_4X
C71 10U/6.3V_4X
C75 1U/6.3V_4X
C85 0.1U/10V_4X
C65 10U/6.3V_4X
C81 10U/6.3V_4X
GND

TP2_CORE_VCC_S0IX

AA22 SOC_CORE_PIN_AA22
TP13

+1.35VSUS_VSM

C114 0.1U/10V_4X
C117 0.1U/10V_4X
GND

IO Thrm Protect

+3VPCU

R81 *10K/J_4

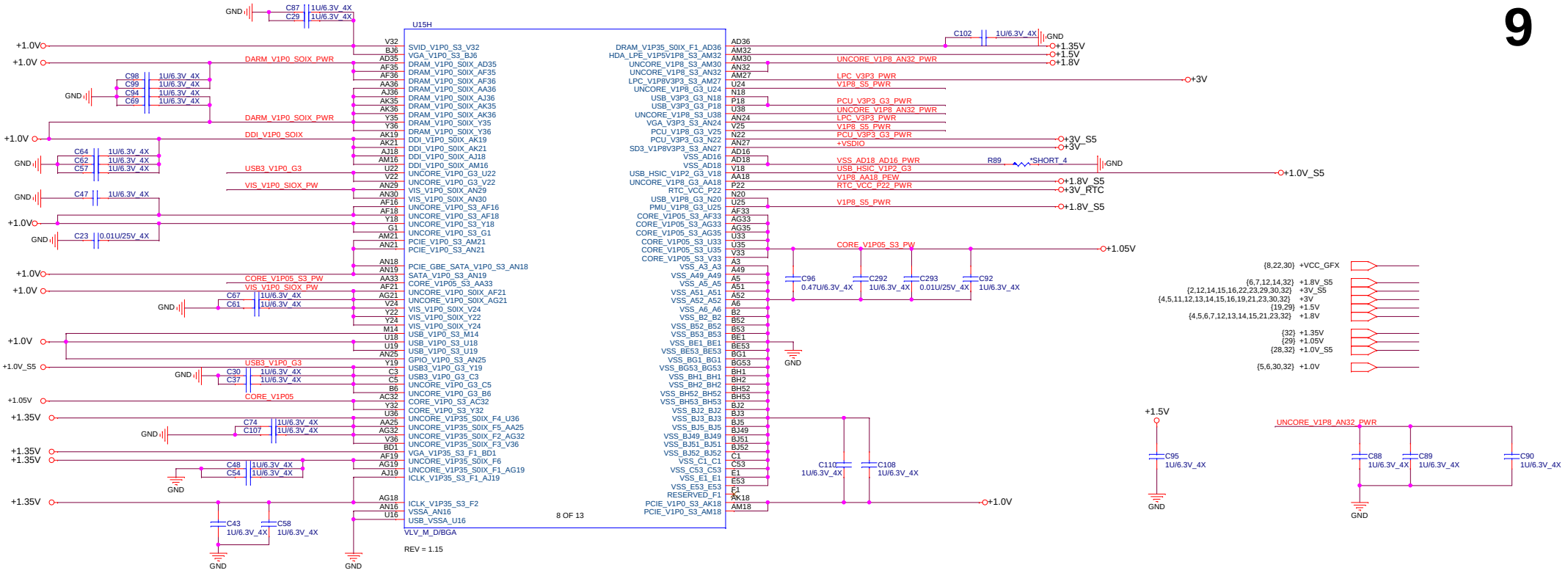
default 25 degree for detect temperature

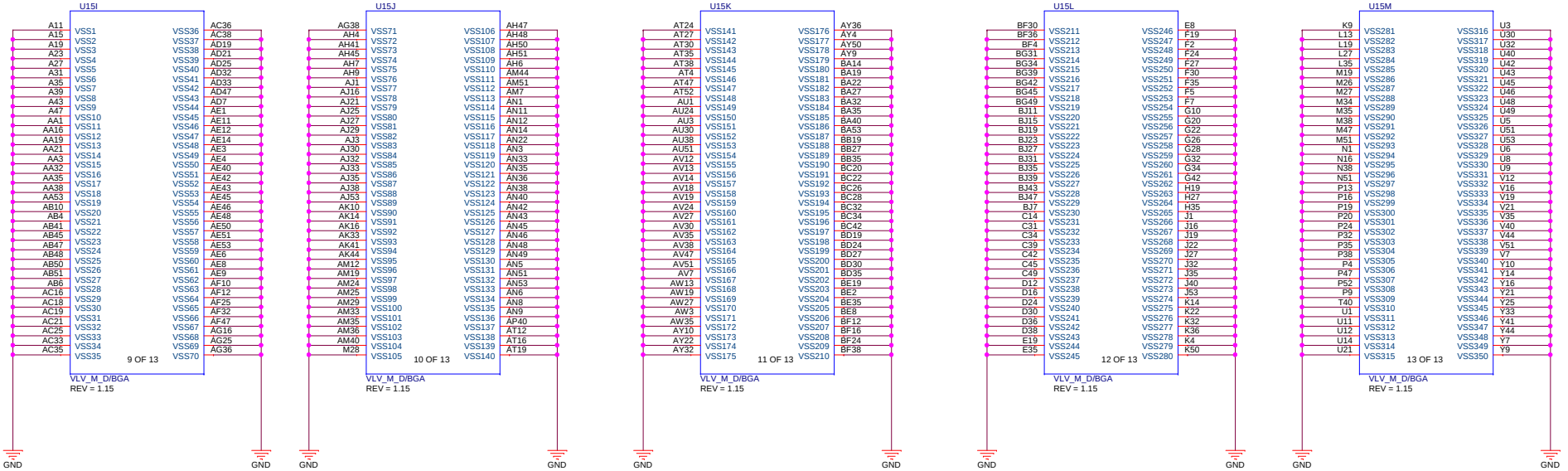
THRM_MOINTOR {23}

R98 *0_4
C45 *0.1u/10V_4
THER_CPU
R87 *10K_6_NTC

Quanta Computer Inc.
PROJECT : Z8A

Size	Document Number	Rev
	Valley 7/9 (Power 1)	1A
Date: Thursday, July 31, 2014	Sheet 8 of 33	


U15H
8 OF 13
VLV_M_D/BGA
REV = 1.15
+1.0V
+1.35V
+1.5V
+1.8V
+3V
+3V_S5
+1.8V_S5
+1.0V_S5
+3V_RTC
+1.05V
+1.5V
+VSDIO
GND
DARM_V1P0_SOIX_PWR
DDI_V1P0_SOIX
USB3_V1P0_G3
VIS_V1P0_SIOX_PW
CORE_V1P05_S3_PW
CORE_V1P05
UNCORE_V1P8_AN32_PWR
LPC_V3P3_PWR
V1P8_S5_PWR
PCU_V3P3_G3_PWR
VSS_AD18_AD16_PWR
USB_HSIC_V1P2_G3
V1P8_AA18_PEW
RTC_VCC_P22_PWR
R89 *SHORT_4
{8,22,30} +VCC_GFX
{6,7,12,14,32} +1.8V_S5
{2,12,14,15,16,22,23,29,30,32} +3V_S5
{4,5,11,12,13,14,15,16,19,21,23,30,32} +3V
{19,29} +1.5V
{4,5,6,7,12,13,14,15,21,23,32} +1.8V
{32} +1.35V
{29} +1.05V
{28,32} +1.0V_S5
{5,6,30,32} +1.0V

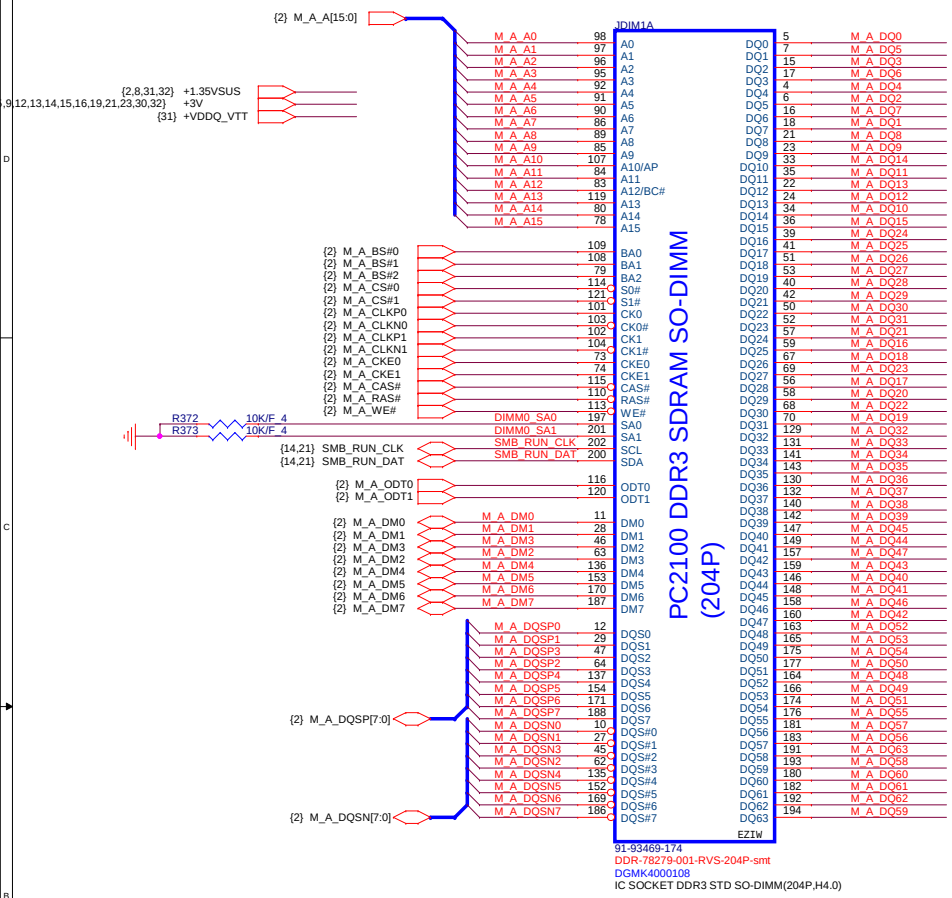


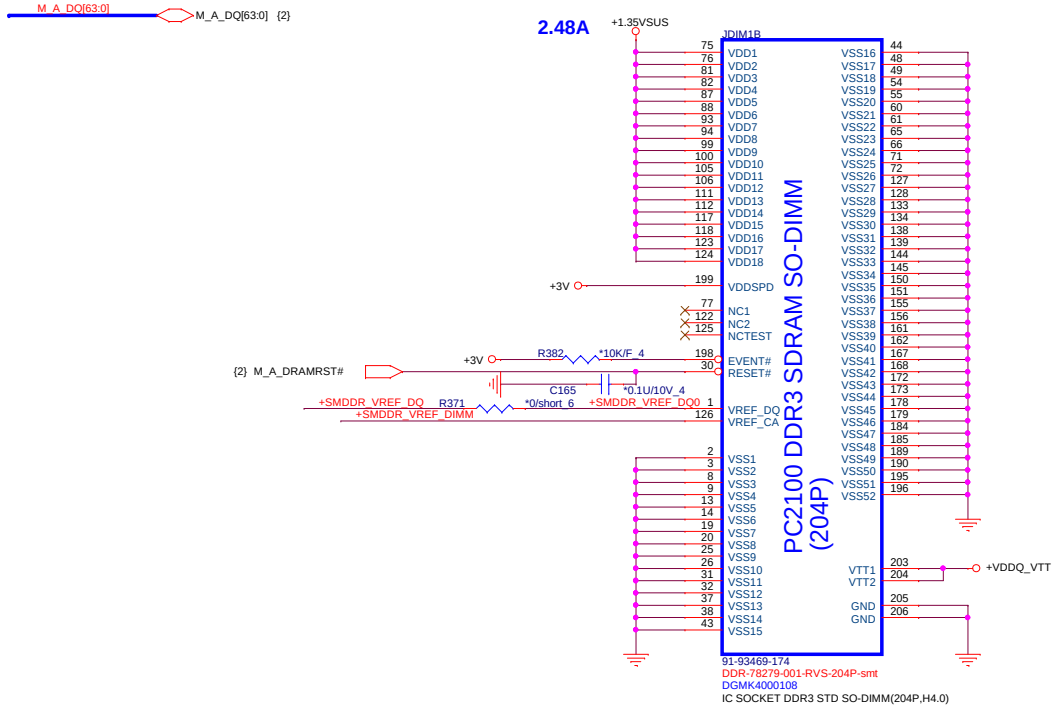
Quanta Computer Inc.

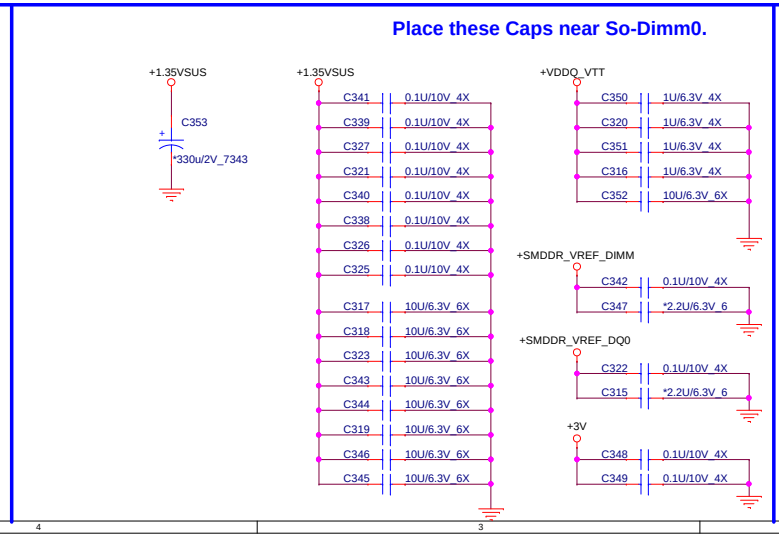
PROJECT : Z8A

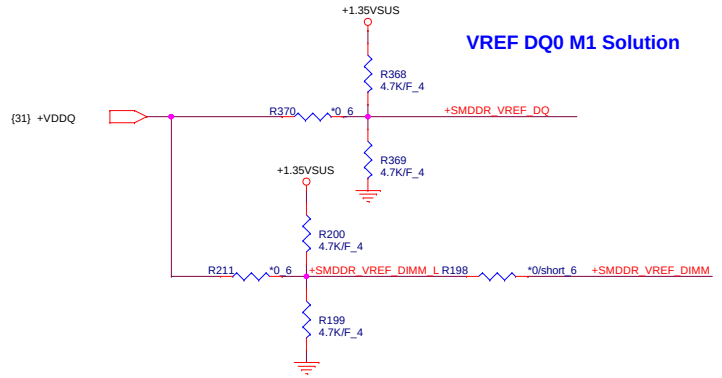
Size	Document Number	Rev
	Valley 9/9 (GND)	1A

Date: Thursday, July 31, 2014 Sheet 10 of 33



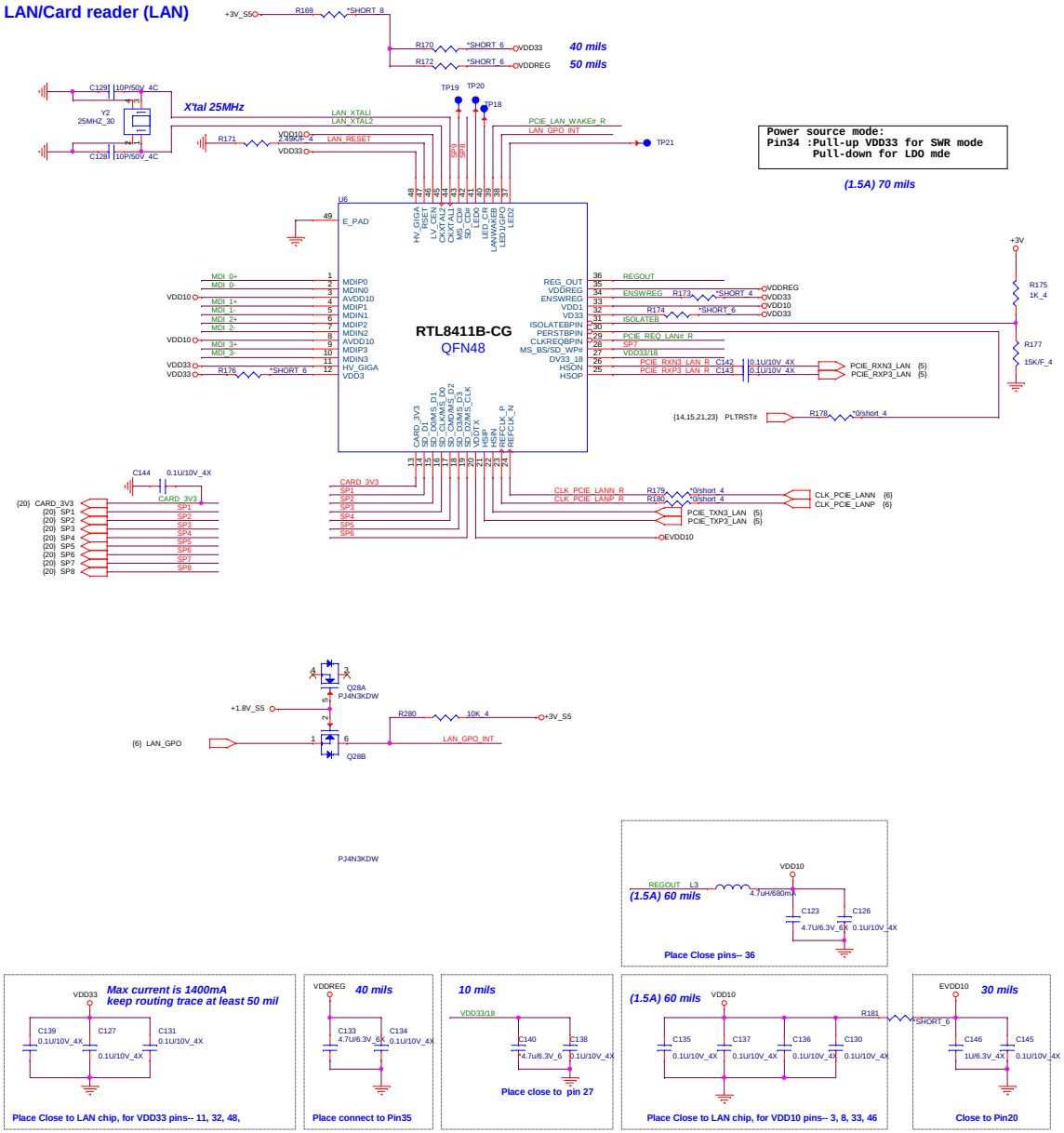




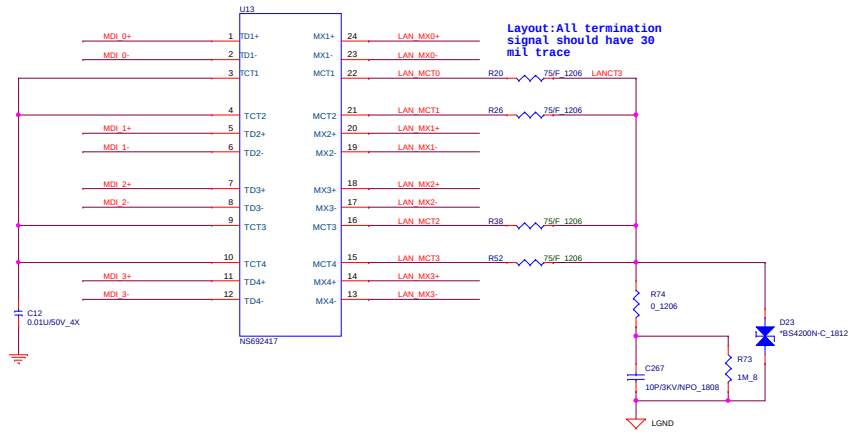


Quanta Computer Inc.		
PROJECT : Z8A		
Size	Document Number: DDR3 DIMM0-STD(4.0H)	Rev: 1A
Date: Thursday, July 31, 2014	Sheet 11 of 33	

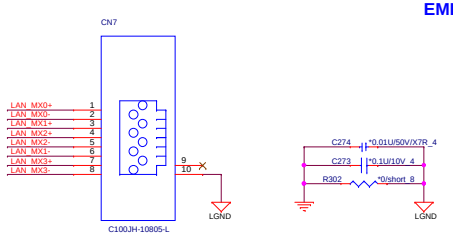
LAN/Card reader (LAN)



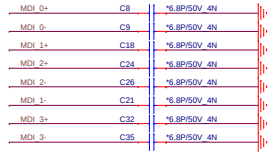
Transformer (LAN)

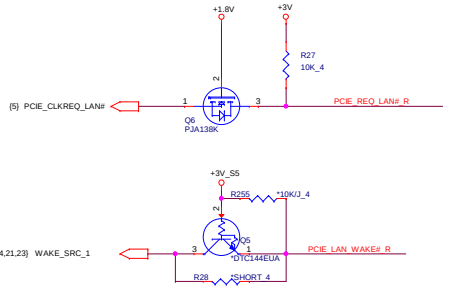


RJ45 Connector



EMI





Quanta Computer Inc.
PROJECT : Z8A

Size	Document Number	Rev
	LAN (RTL8111GS)	1A

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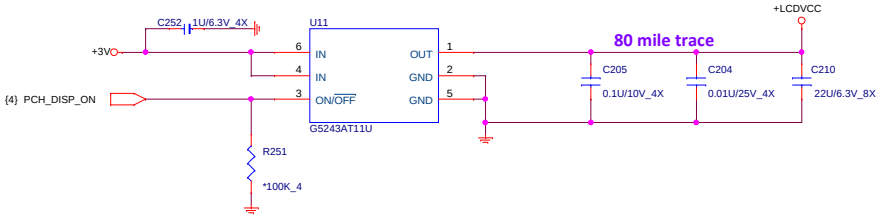
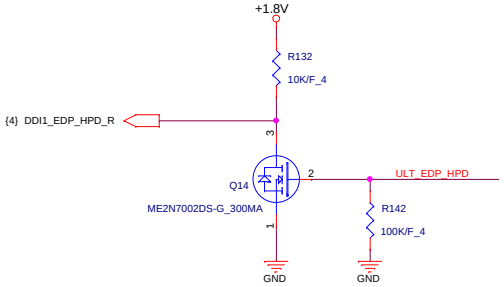
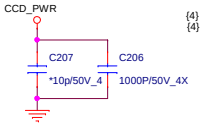
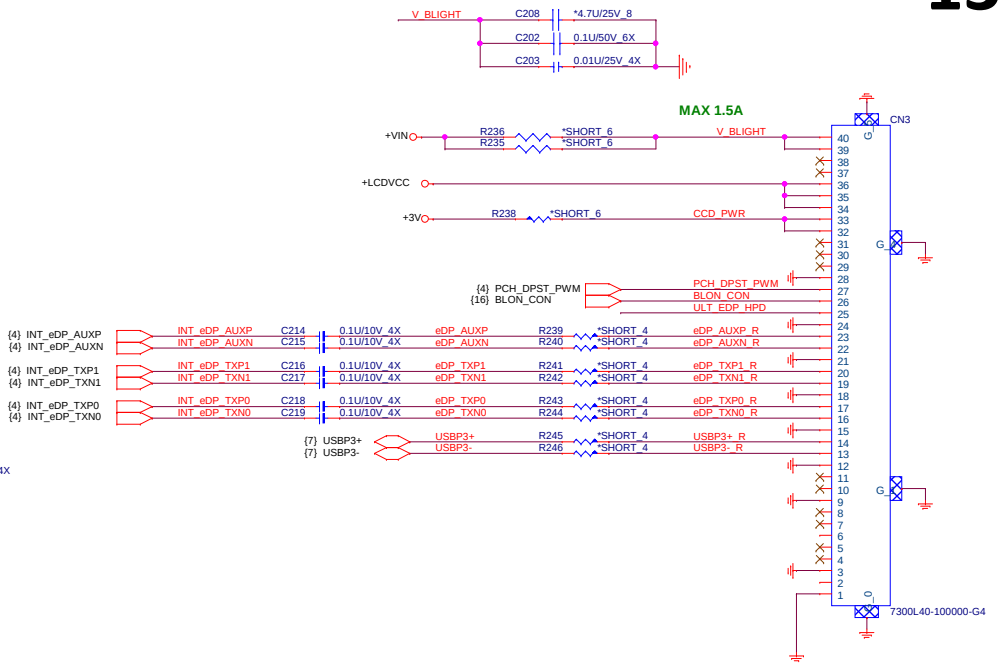
LCD POWER SWITCH



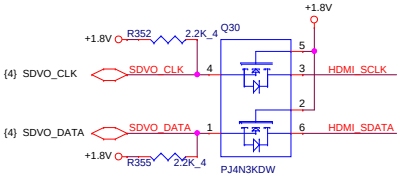




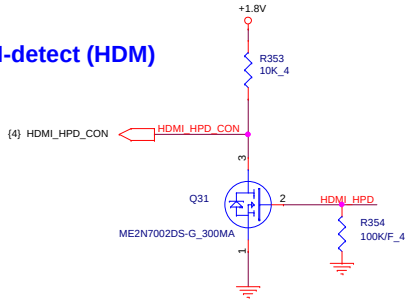


HDMI Conn.

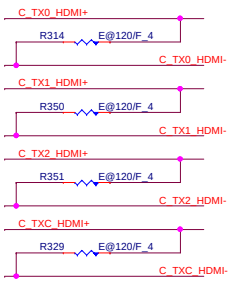
HDMI SMBus Isolation

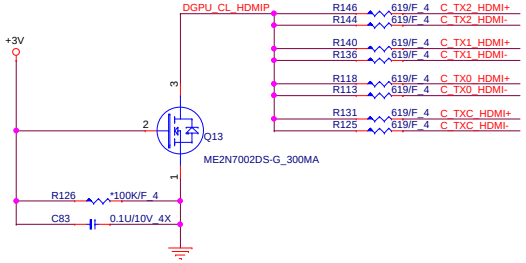


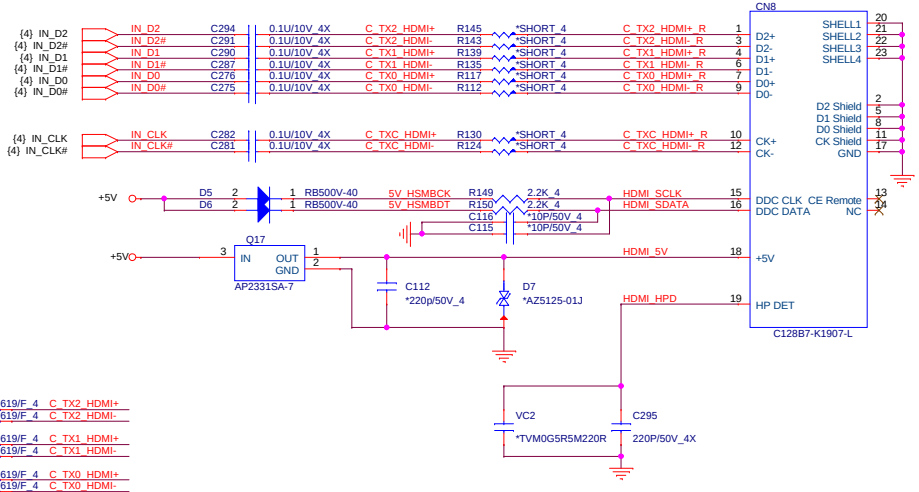
HDMI-detect (HDM)



EMI (EMC)







Quanta Computer Inc.
PROJECT : Z8A

Size	Document Number	Rev
	LCD/HDMI/Camera	1A
Date: Thursday, July 31, 2014	Sheet 13 of 33	

{6,7,9,12,32} +1.8V_S5
{2,9,12,15,16,22,23,29,30,32} +3V_S5
{4,5,9,11,12,13,15,16,19,21,23,30,32} +1.8V
{4,5,9,11,12,13,15,16,19,21,23,30,32} +3V

{2,23} EC_PWROK
{23} DPWROK_EC
R99 *SHORT_4
R86 *0_4
CORE_PWROK {6}
R96 100K/F_4
GND

{23} RSMRST#
R268 *0/short_4
SOC_RSMRST# {6}
R272 100K/F_4
GND

+1.8V
R92 10K_4
{7,15} SOC_SERIRQ
SOC_SERIRQ R91 *SHORT_4 SERIRQ
SERIRQ {23}

Reserve for +1.8V new EC

+1.8V_S5
{6} PCH_SLP_S0#
PCH_SLP_S0# 1 2 3 PCH_SLP_S0_N
Q4 *PJA138K
R14 *10K_4
+3V_S5
PCH_SLP_S0_N {23}

{6} SLP_S3#
Q12A PJ4N3KDW
SUSB# {23}
R119 *10K_4
+1.8V_S5
R116 *10K_4
+1.8VPCU
{2,6} SLP_S4#
Q12B PJ4N3KDW
SUSC# {23}

+1.8V_S5
R159 10K_4
U5
{6} SOC_PWRBTN#
+1.8V_S5
{6} SOC_PMC_WAKE
Y1 A1 VCC GND Y2 A2
74LVC2G07GW
GND
DNBSWON# {23}
WAKE_SRC_1 {12,21,23}
R153 *10K_4
+3V_S5

{6} SLP_S0IX#
R85 10K_4
+3V_S5
SLP_SUS#_EC {23}
Q8A PJ4N3KDW
+1.8V_S5
{6} SOC_PLTRST#
Q8B PJ4N3KDW
PLTRST# {12,15,21,23}
R76 10K_4
+3V

+1.8V_S5
R148 *10K_4
U4
{6} SOC_KCB_SMI
{5} SOC_KBC_SCI
+3V_S5
+1.8V
R147 10K_4
Y1 A1 VCC GND Y2 A2
74LVC2G07GW
GND
SIO_EXT_SMI# {23}
SIO_EXT_SCI# {23}

+TPVDD_1
+1.8V
R193 200K/F_4
R196 2.2K_4
R194 2.2K_4
GND
C164 0.1U/25V_4X
U9
C161 0.1U/25V_4X
GND
{7} I2C_6_SDA
{7} I2C_6_SCL
GND EN VREF1 VREF2 SDA1 SDA2 SCL1 SCL2
PCA9306
I2C_6_SDA_R {15}
I2C_6_SCL_R {15}

PJ4N3KDW
Q21A
{7} SMB_SOC_CLK
R160 4.7K_4
SMB_RUN_CLK {11,21}
+1.8V
+3V
R157 4.7K_4
{7} SMB_SOC_DATA
SMB_RUN_DAT {11,21}
Q21B PJ4N3KDW

For Touch pad : POWER-A

{6} TP_SENSOR_INT
TP_SENSOR_INT
Q24 ME2N7002DS-G_300MA
GND
+TPVDD_1
R189 10K_4
R191 10K_4
TP_SENSOR_INT_R
TP_SENSOR_INT_R {15,23}
Q25 ME2N7002DS-G_300MA
GND

Quanta Computer Inc.
PROJECT : Z8A

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	Level Shfiter	1A

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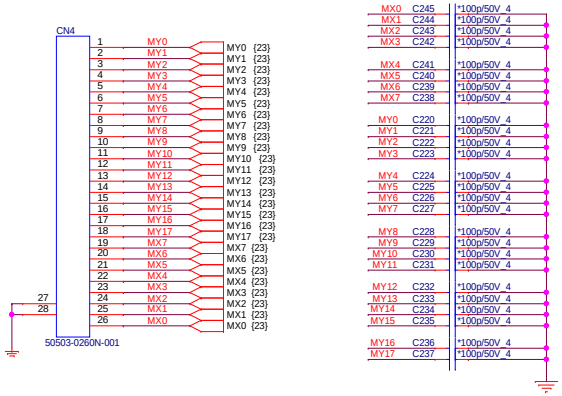
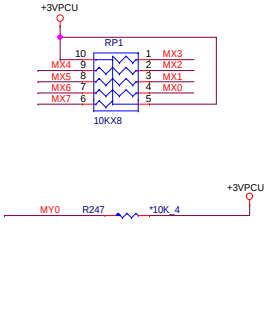
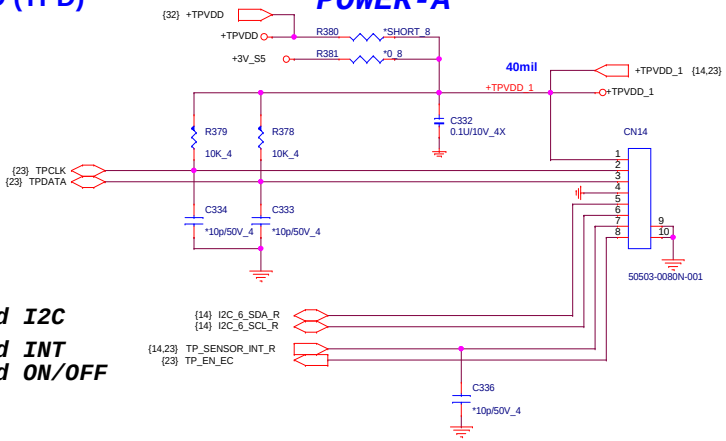
KEYBOARD (KBC)



INTERNAL KEYBOARD STRIP SET (KBC)



TOUCH PAD (TPD)



Touch pad I2C

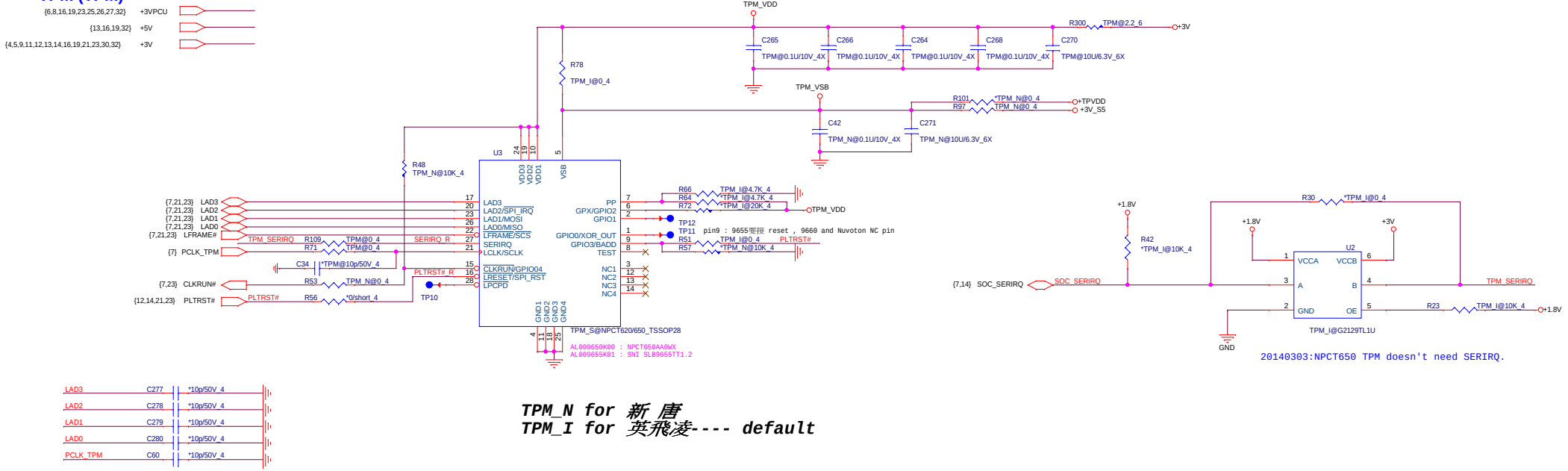
Touch pad INT

Touch pad ON/OFF

POWER-A

15

TPM (TPM)



20140303:NPCT650 TPM doesn't need SERIRQ.

TPM_N for 新唐

TPM_I for 英飛凌--- default

Quanta Computer Inc.

PROJECT : Z8A

Size	Document Number	Rev
	KB/BT/TP	1A

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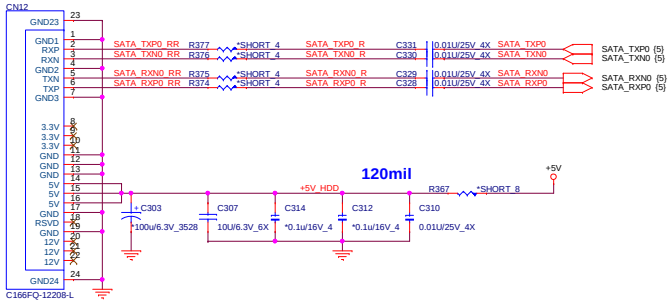
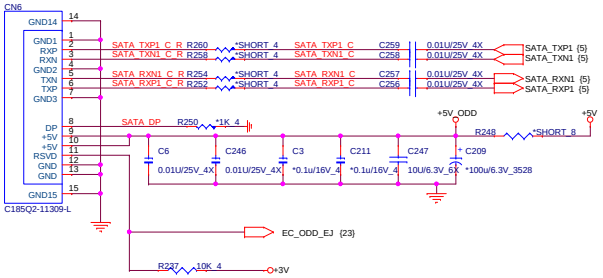
2.5" SATA HDD (HDD)

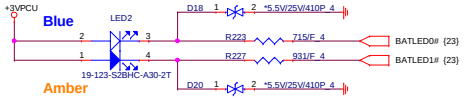


SATA ODD Connector

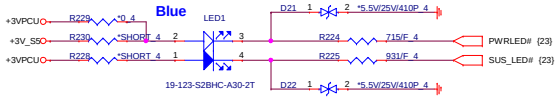


LED/SW (UIF)

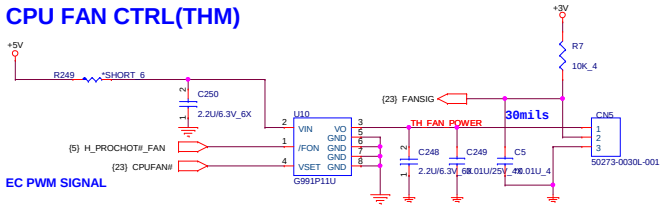
Battery indicator



PWR indicator



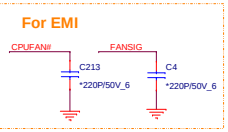
CPU FAN CTRL(THM)



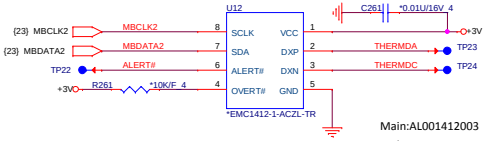
EC PWM SIGNAL

FANPWR = 1.6*VSET

For EMI



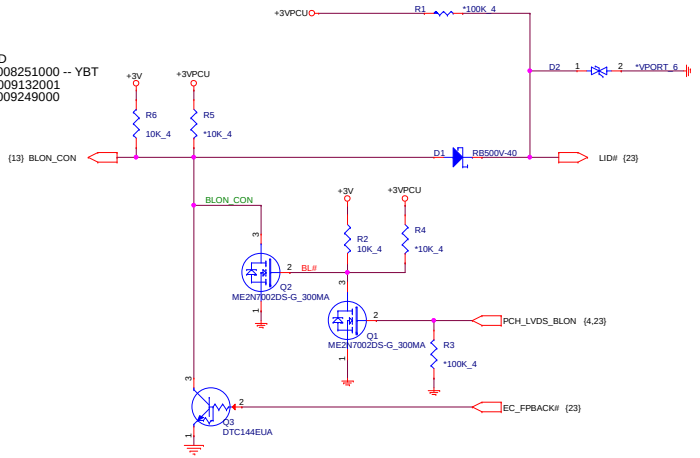
CPU Thermal sensor(THS) / MB Local TEMP



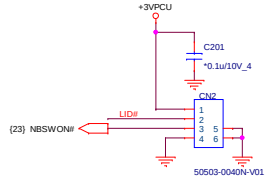
Main:AL001412003 EMC1412-1-ACZL-TR(98h)
2nd:AL000431014 TMP431ADGKR(98h)

HALL IC (HSR)

1st source ：EOD
2nd source ：AL008251000 -- YBT
3rd source ：AL009132001
4th source ：AL009249000



PWR button DB CON



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Quanta Computer Inc.

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Size	Document Number	Rev
	USB HUB -1	1A

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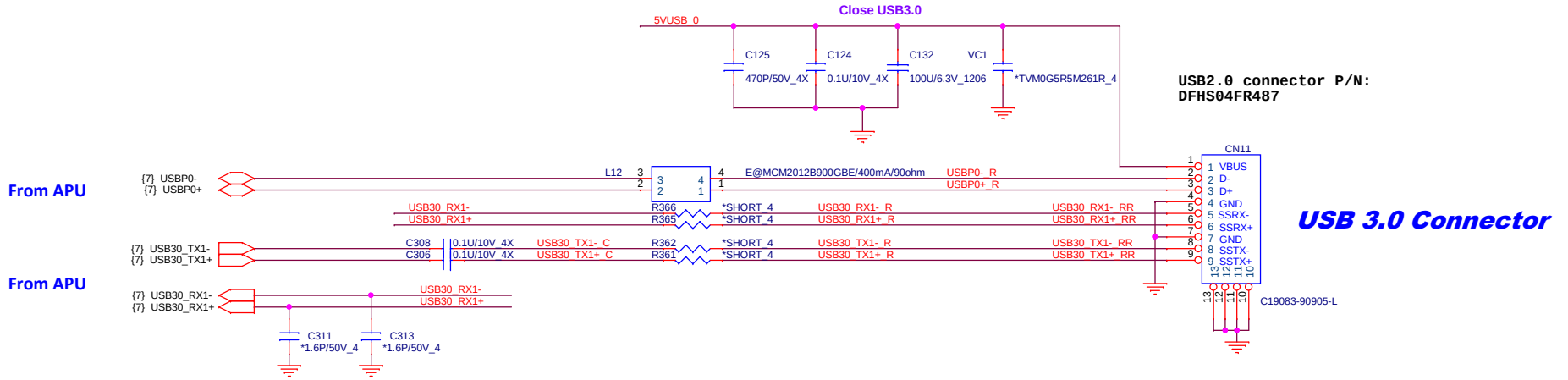

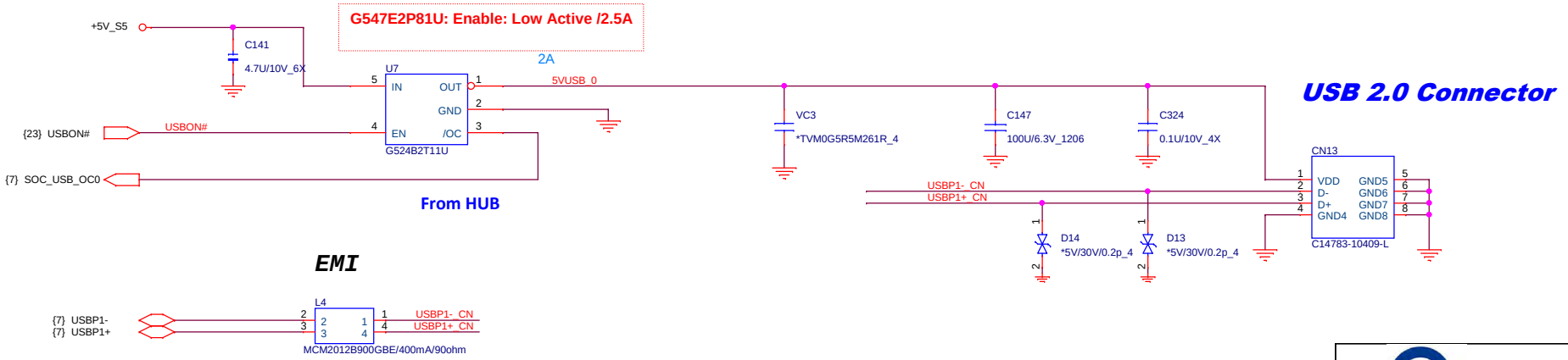

Quanta Computer Inc.

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	USB / eMMC CONN	1A
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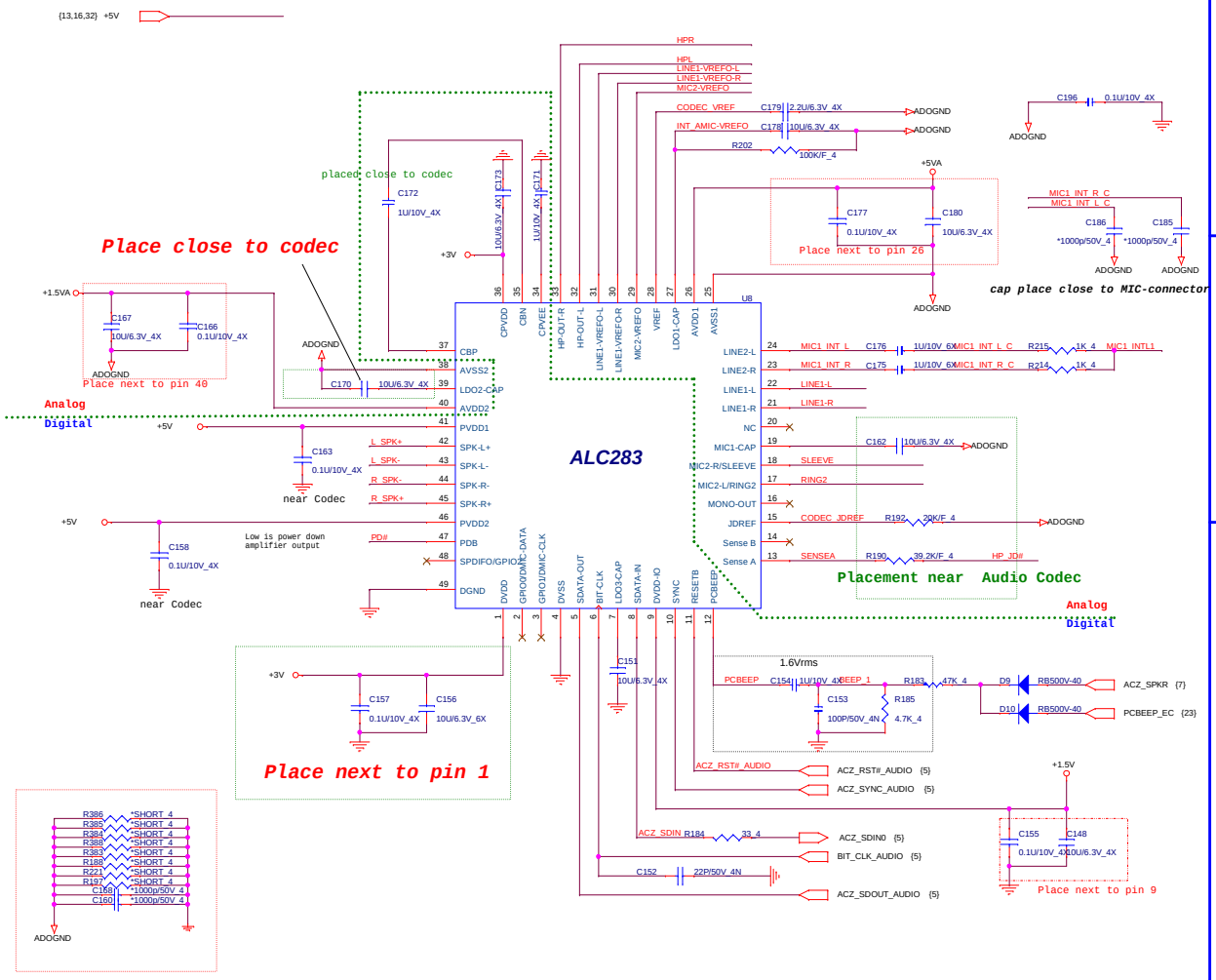
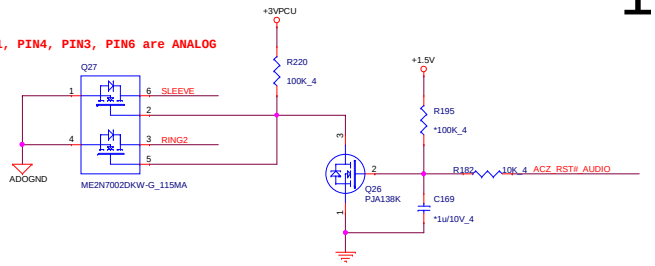
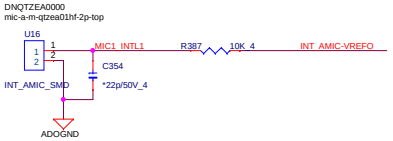
Codec(ADO)



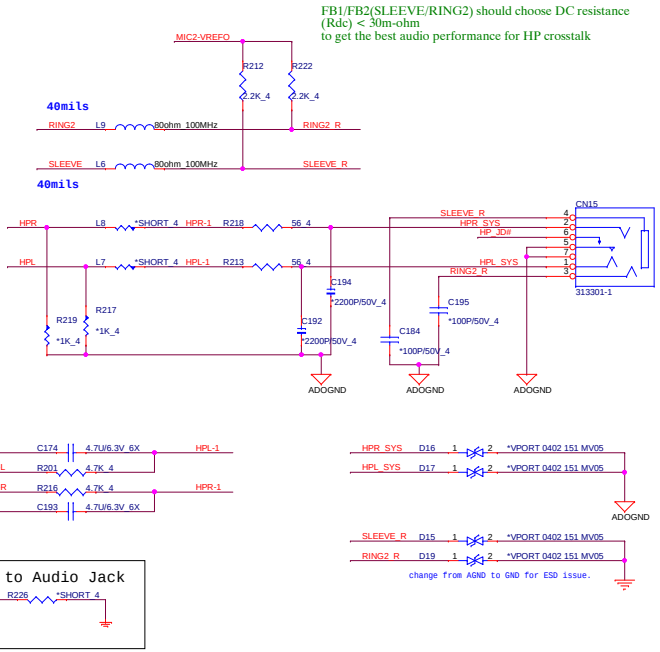
Grounding circuit(ADO)



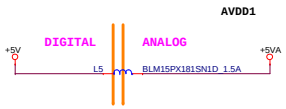
INT MIC array



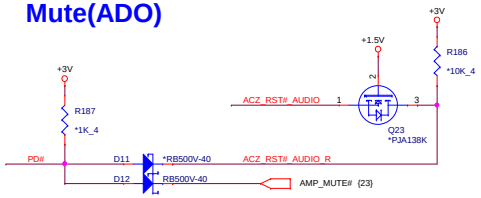
HEADPHONE/MIC/LINE combo



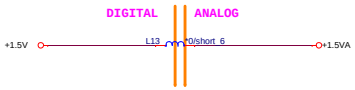
Codec PWR 5V(ADO)



Mute(ADO)



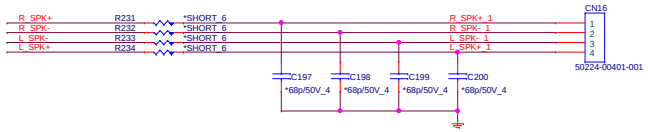
Codec PWR 1.5V(ADO)



Internal Speaker

40mil for each signal

footprint 88266-040xx-xxx-4p-l



Quanta Computer Inc.
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Size	Document Number	Rev
	ALC283/HP/SPK	1A
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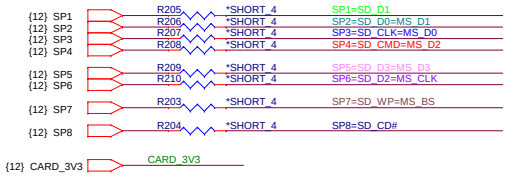
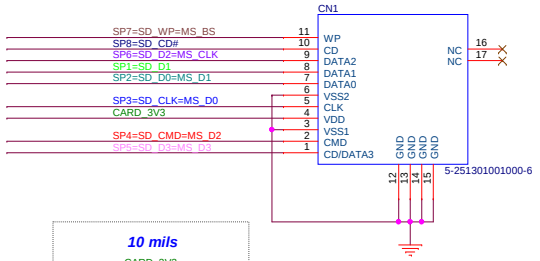
CARD READER CONNECTOR (MMC)

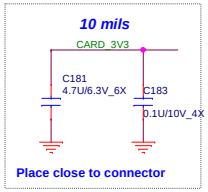
Share Pin

SP1	SD_D1	
SP2	SD_D0	MS_D1
SP3	SD_CLK	MS_D0
SP4	SD_CMD	MS_D2
SP5	SD_D3	MS_D3
SP6	SD_D2	MS_CLK
SP7	SD_WP	MS_BS
SP8	SD_CD#	
SP9		MS_INS#

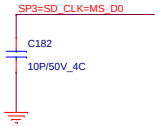


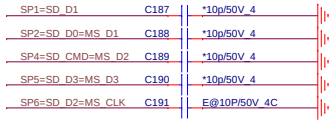
SD/MMC CARD READER (MMC)





EMI





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PROJECT : Z8A			
Size	Document Number		Rev
	Cardreader GL834L		1A
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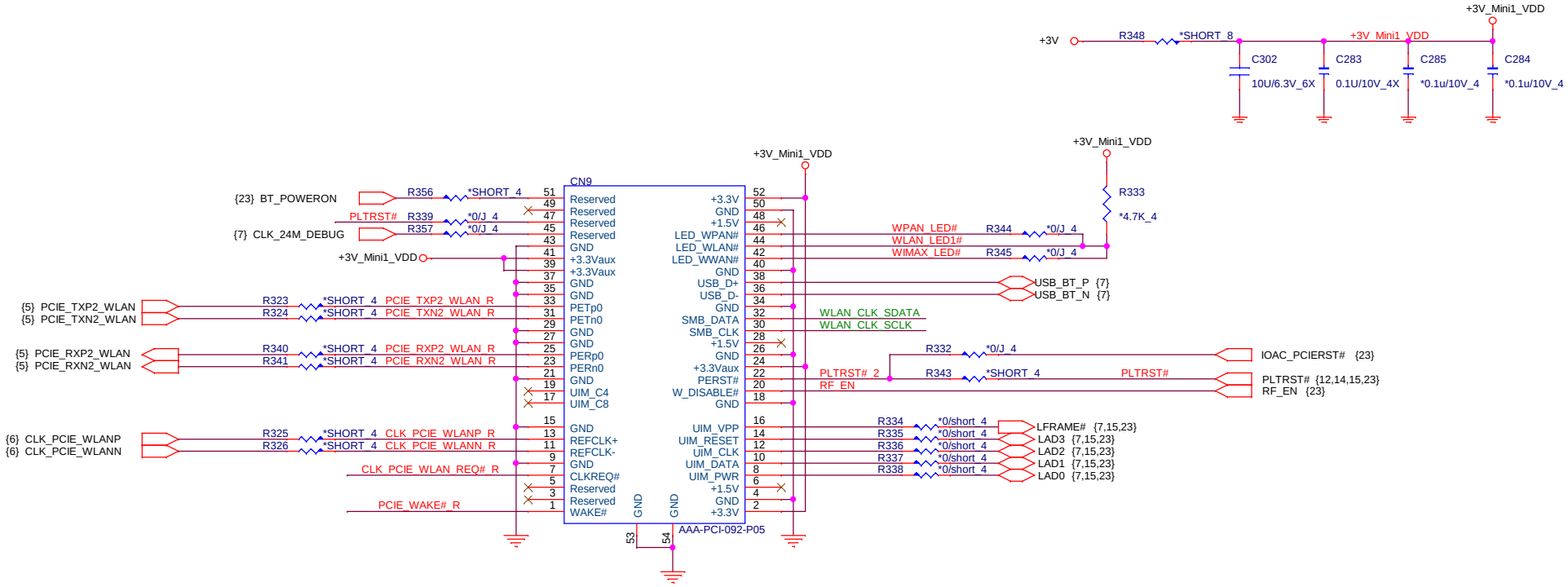
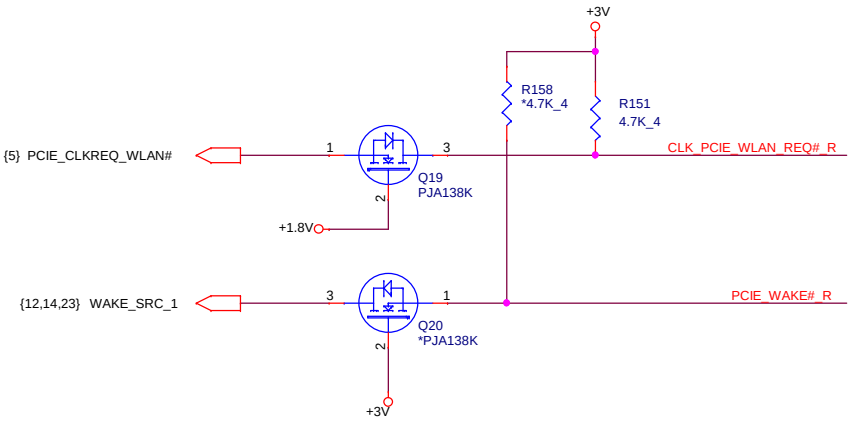
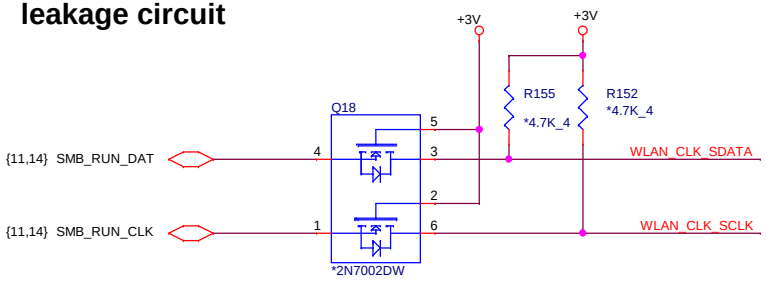
WLAN





leakage circuit



{4,5,6,7,9,12,13,14,15,23,32} +1.8V

{4,5,9,11,12,13,14,15,16,19,23,30,32} +3V

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Size	Document Number	Rev
	WiFi & BT	1A

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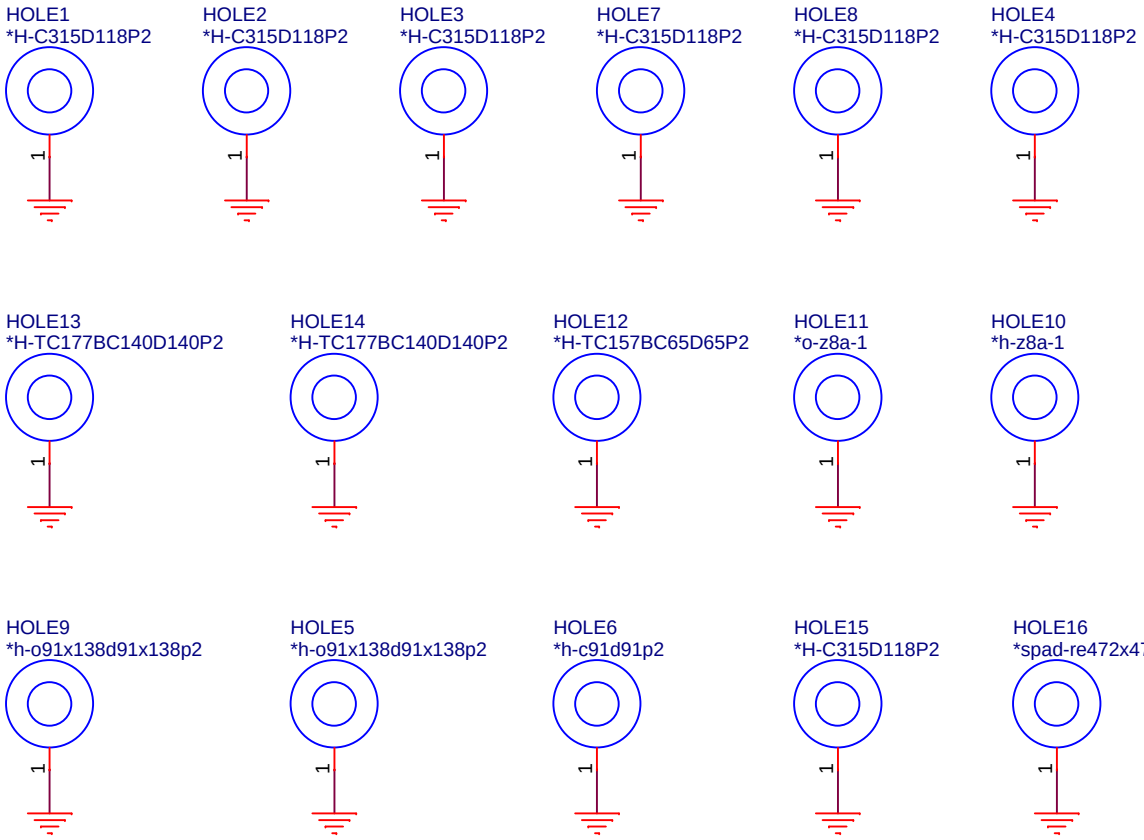

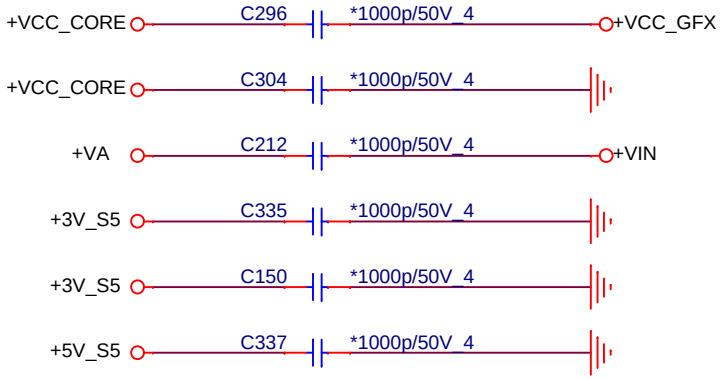

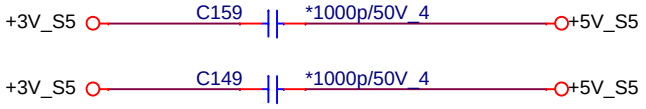

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Size	Document Number	Rev
	Thermal / Hole	1A
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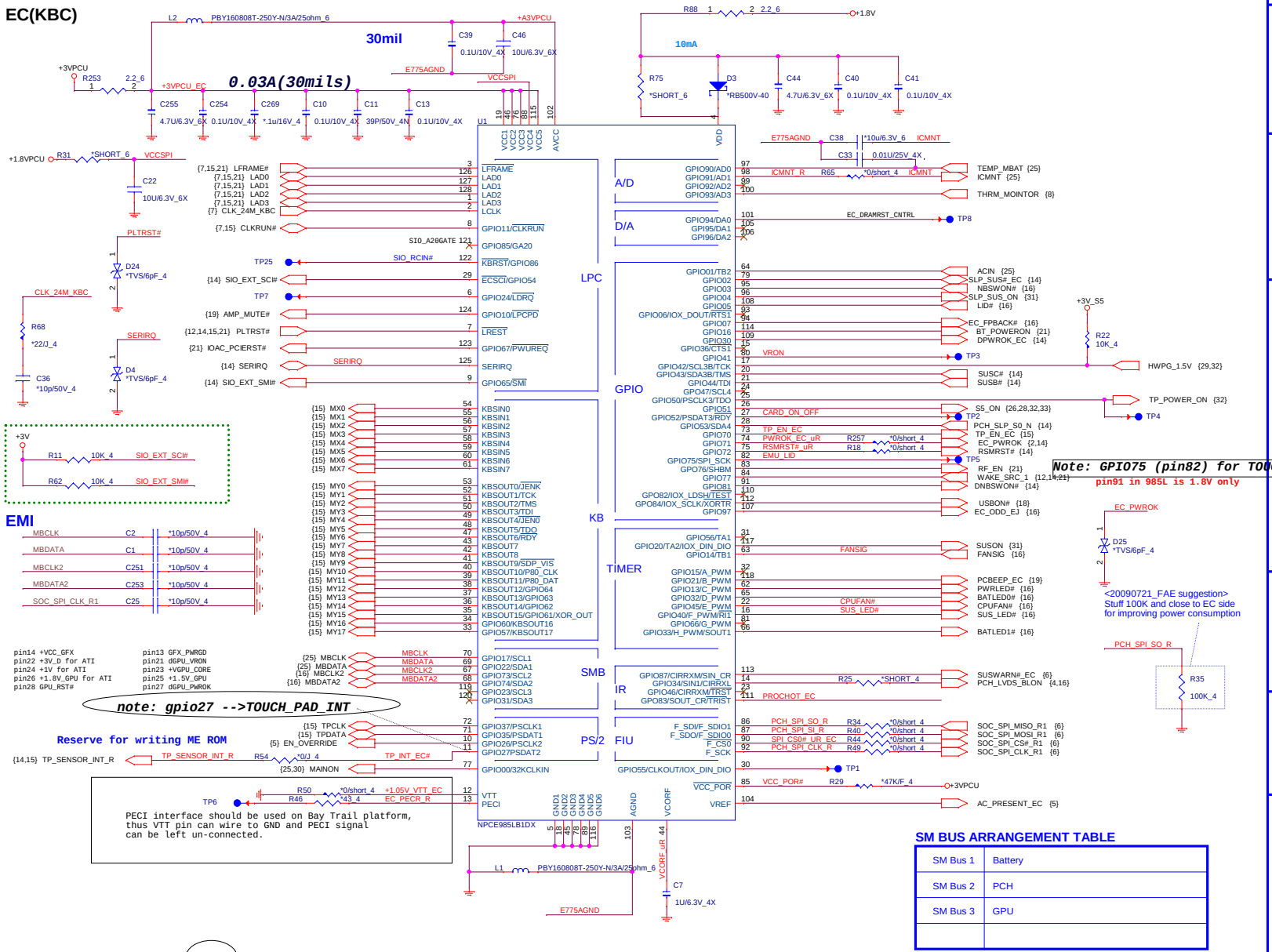
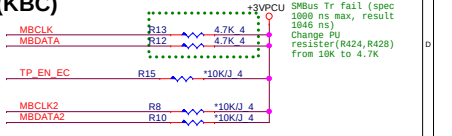
EC(KBC)

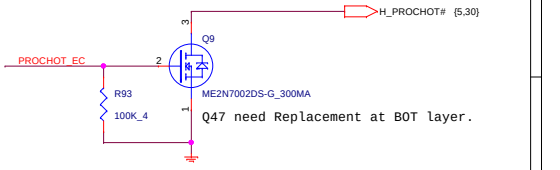


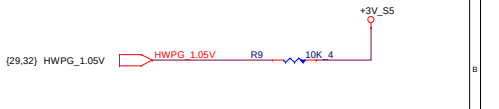
SM BUS ARRANGEMENT TABLE

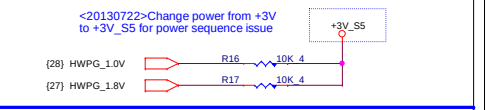
SM Bus 1	Battery
SM Bus 2	PCH
SM Bus 3	GPU

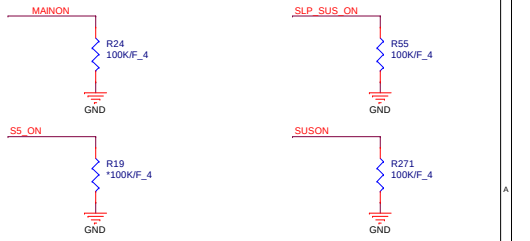
SM BUS PU(KBC)











Quanta Computer Inc.
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Size	Document Number	Rev
	NPCE885/FLASH	1A

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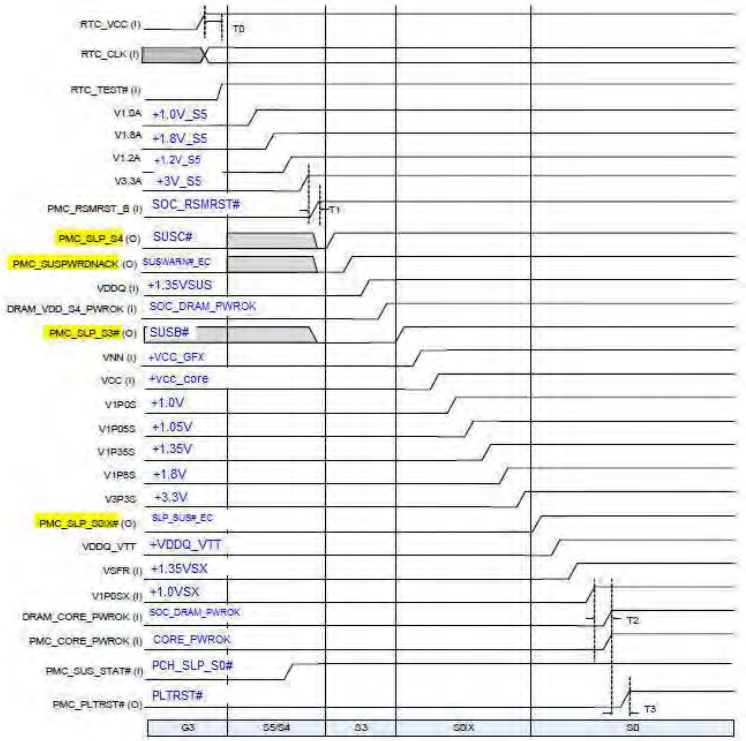
Bay Trail-M S4/S5 to S0 (Power Up) Sequence



Quanta Computer Inc.		
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Size	Document Number: Power sequence	Rev: 1A
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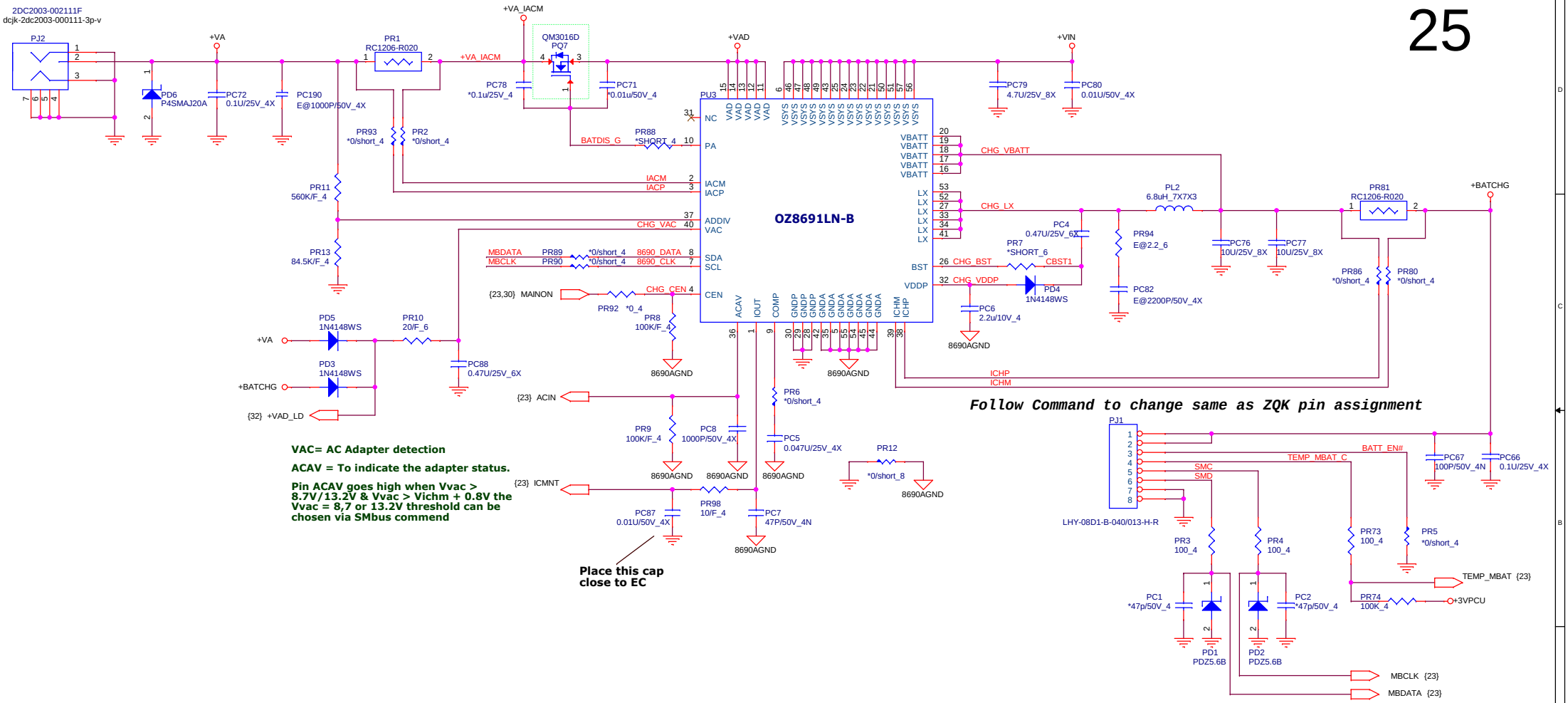
2DC2003-002111F
dcjk-2dc2003-000111-3p-v



VAC= AC Adapter detection

ACAV = To indicate the adapter status.

Pin ACAV goes high when Vvac > 8.7V/13.2V & Vvac > Vichm + 0.8V the Vvac = 8,7 or 13.2V threshold can be chosen via SMbus commend

Place this cap close to EC

Quanta Computer Inc.

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Size	Document Number	Rev
	Charger (OZ8690ALN)	1A
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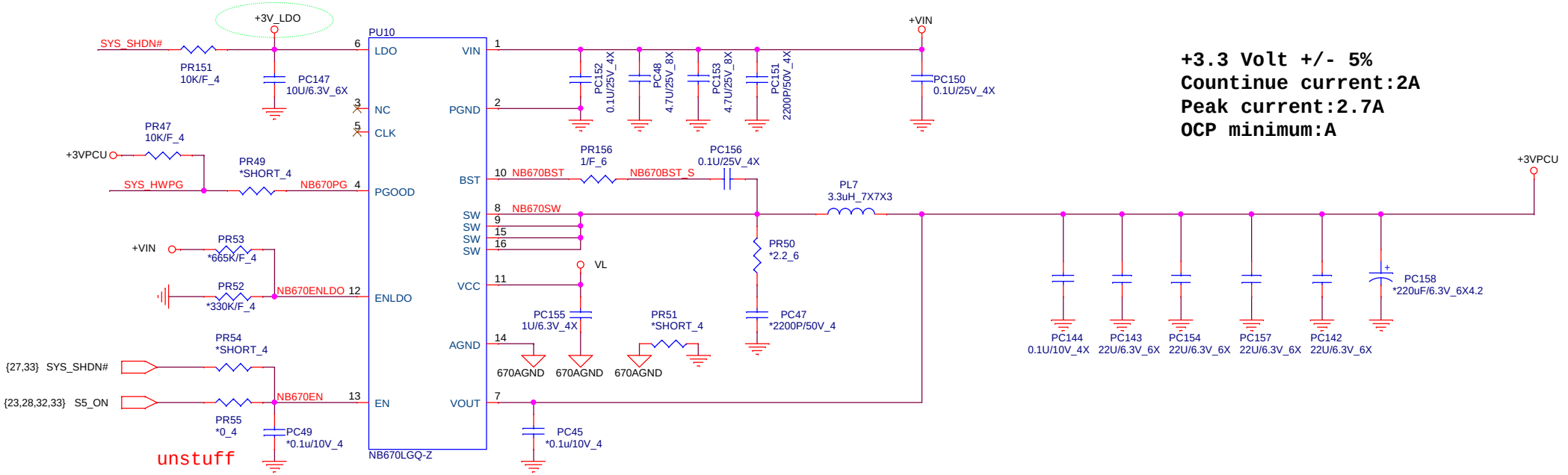
DC/DC +3VPCU/+5V_S5

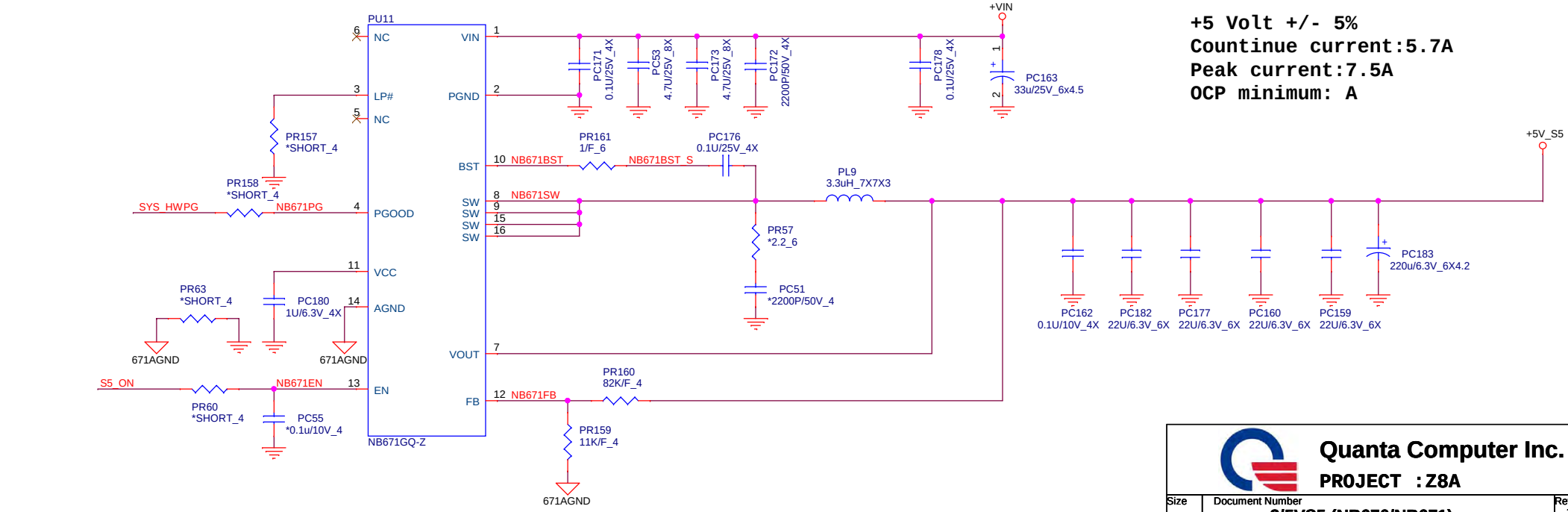
+3VPCU {6,8,15,16,19,23,25,27,32}

+5V_S5 {18,22,28,29,30,31,32}

LDO(MAX)=100mA



+3.3 Volt +/- 5%
Countinue current:2A
Peak current:2.7A
OCP minimum:A



+5 Volt +/- 5%
Countinue current:5.7A
Peak current:7.5A
OCP minimum: A

Quanta Computer Inc.

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	3/5VS5 (NB670/NB671)	1A
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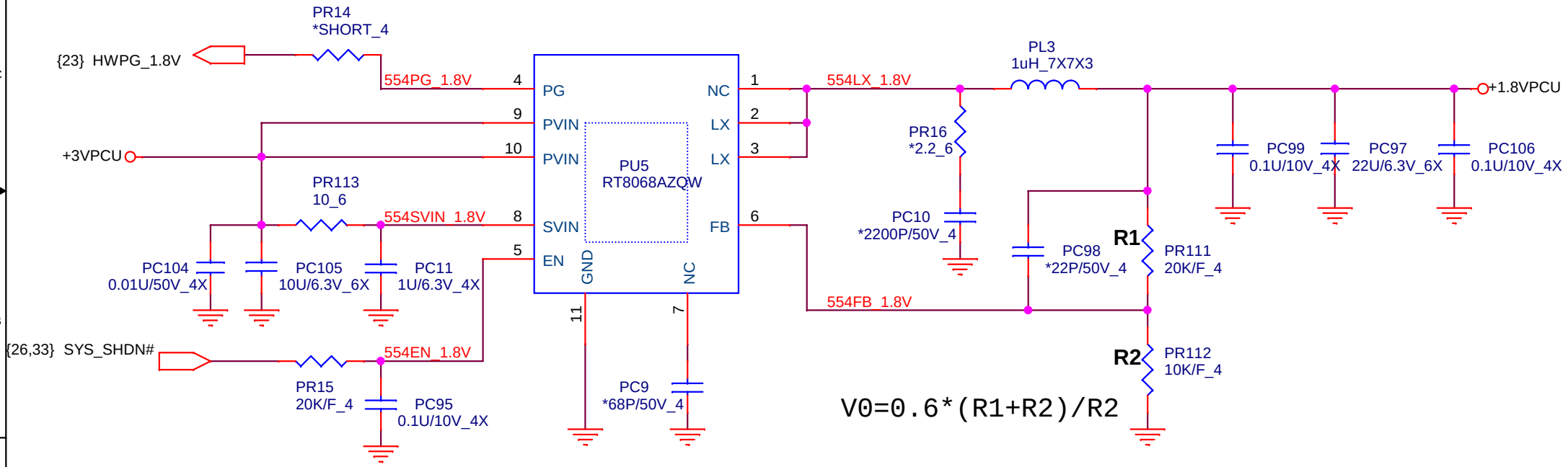
{14,23,32} +1.8VPCU

{6,8,15,16,19,23,25,26,32} +3VPCU

27

+1.8V Volt +/- 5%
Countinue current:0.08A
Peak current:0.11A
OCP minimum:A



Quanta Computer Inc.

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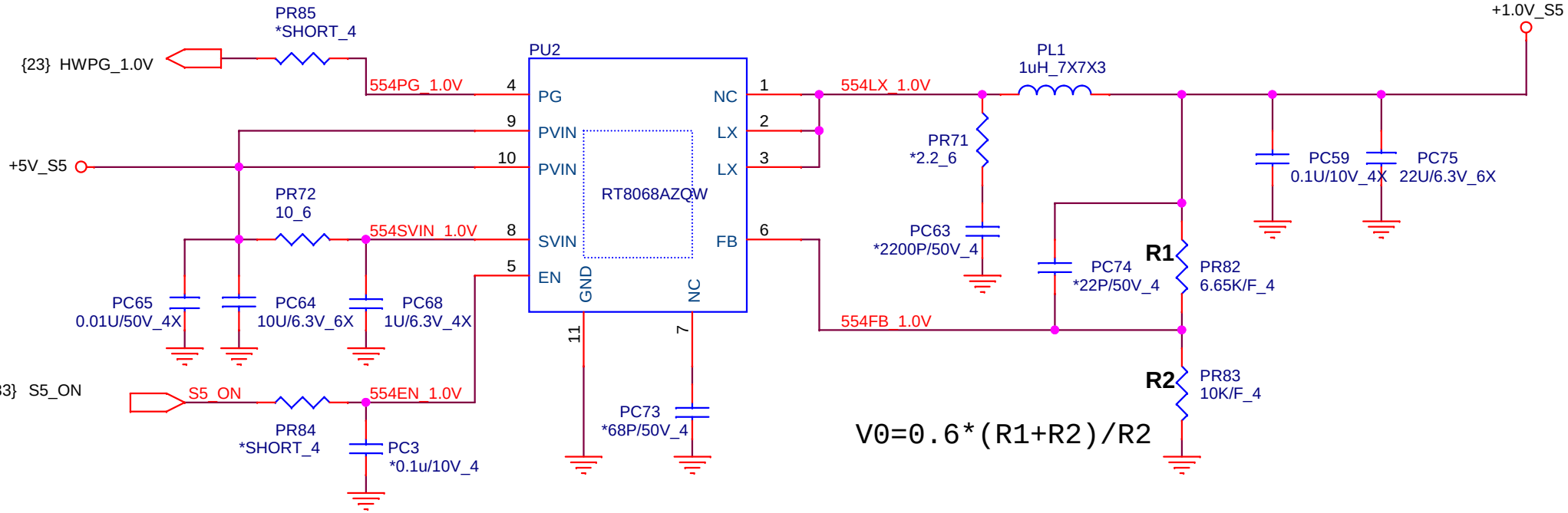
Size	Document Number	Rev
	+1.8VPCU	1A
Date: Thursday, July 31, 2014	Sheet 27 of 33	

{9,32} +1.0V_S5

{18,22,26,29,30,31,32} +5V_S5

{2,9,12,14,15,16,22,23,29,30,32} +3V_S5

+1.0V Volt +/- 5%
Countinue current:2.4A
Peak current:3.2A
OCP minimum:A



V0=0.6*(R1+R2)/R2

Quanta Computer Inc.

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	+1.0V	1A
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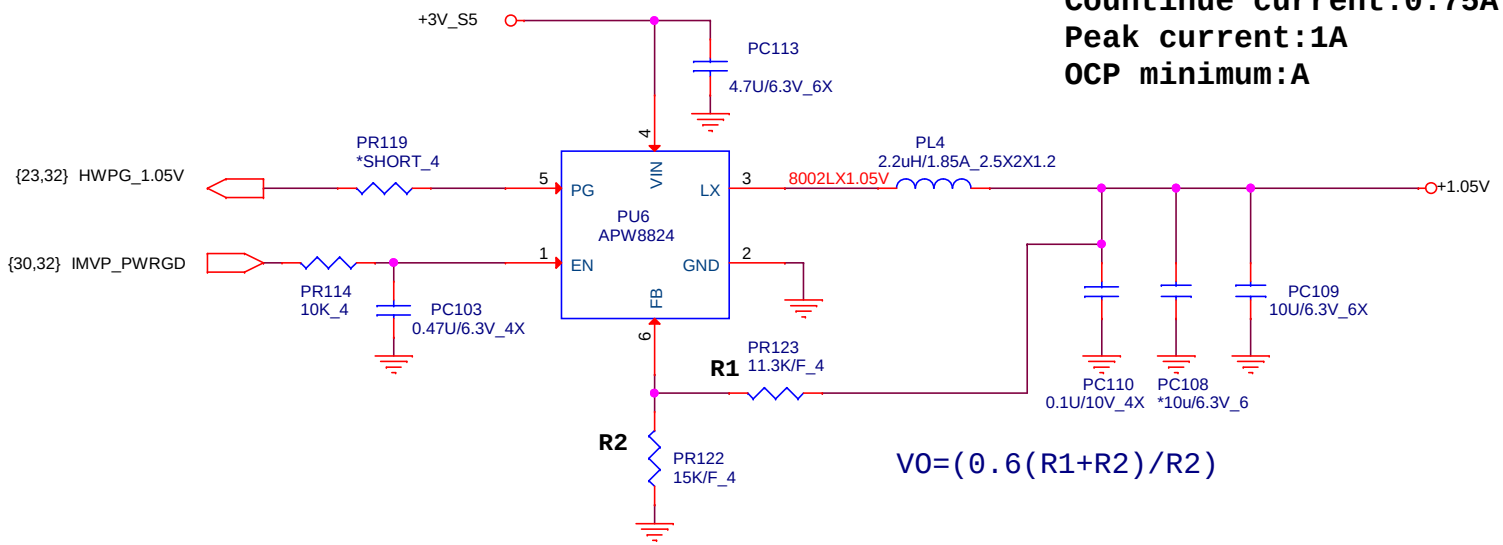
29

{2,9,12,14,15,16,22,23,30,32} +3V_S5

{9} +1.05V

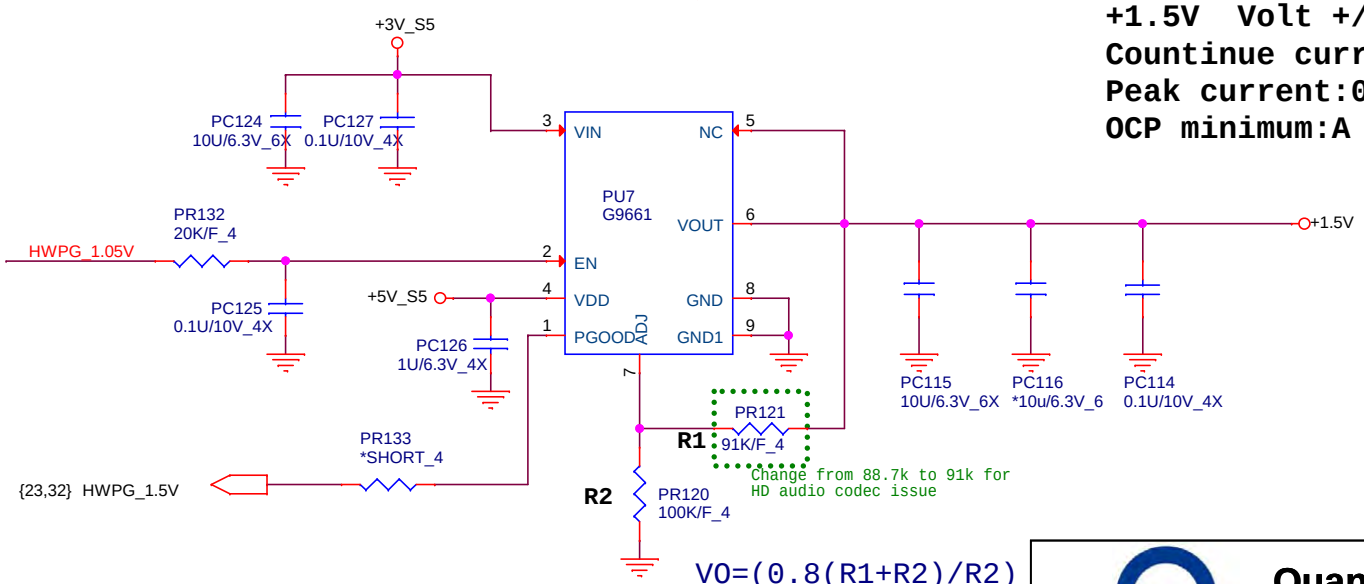
{9,19} +1.5V

+1.05V Volt +/- 5%
Countinue current:0.75A
Peak current:1A
OCP minimum:A



VO=(0.6(R1+R2)/R2)

+1.5V Volt +/- 5%
Countinue current:0.023A
Peak current:0.03A
OCP minimum:A



VO=(0.8(R1+R2)/R2)
R2<120Kohm

Quanta Computer Inc.
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Size	Document Number	Rev
	+1.05V	1A
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20130617 Change +1.05V to +1.0V

Close to VR

VR_SVID_ALERT# close to CPU

VR_SVID_DATA and VR_SVID_CLK close to VR

{5,6,9,32} +1.0V
{8,22} +VCC_GFX
{13,22,25,26,31,32,33} +VIN
{18,22,26,28,29,31,32} +5V_S5

Close to the CPU side.

Close to the CPU side.

AXG

+VCC_GFX
TDC : A
PEAK : 14A
OCP : A
Width : mil

GFX_CORE Load Line :
-5.9mV/A for 2.xW SDP

Close to the VR side.

Close with AXG inductor

Core

+VCC_CORE
TDC : A
PEAK : 12A
OCP : A
Width : mil

VCORE Load Line :
-5.9mV/A for 2.xW SDP

Close to the VR side.

Close with phase1 inductor

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Size	Document Number	Rev
	+VCC_CORE/+VGFX (ISL95833)	1A
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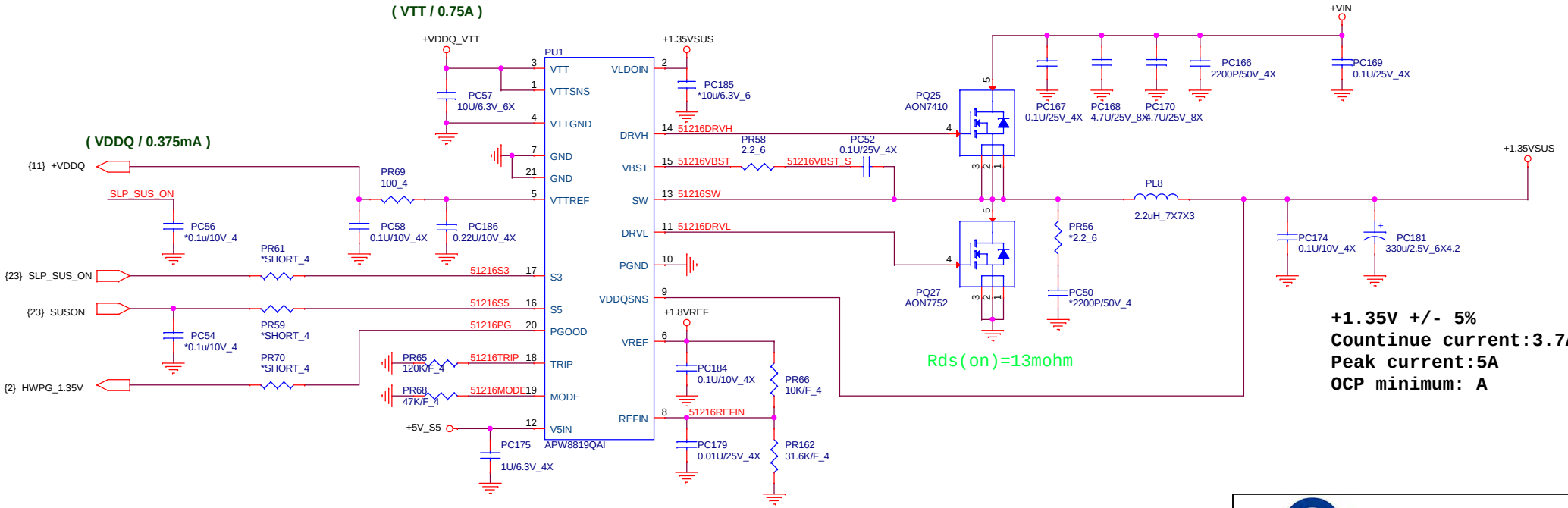
{2,8,11,32} +1.35VSUS
{11} +VDDQ_VTT
{18,22,26,28,29,30,32} +5V_S5



Quanta Computer Inc.		
PROJECT :Z8A		
Size	Document Number: DDR3 (APW8819)	Rev: 1A
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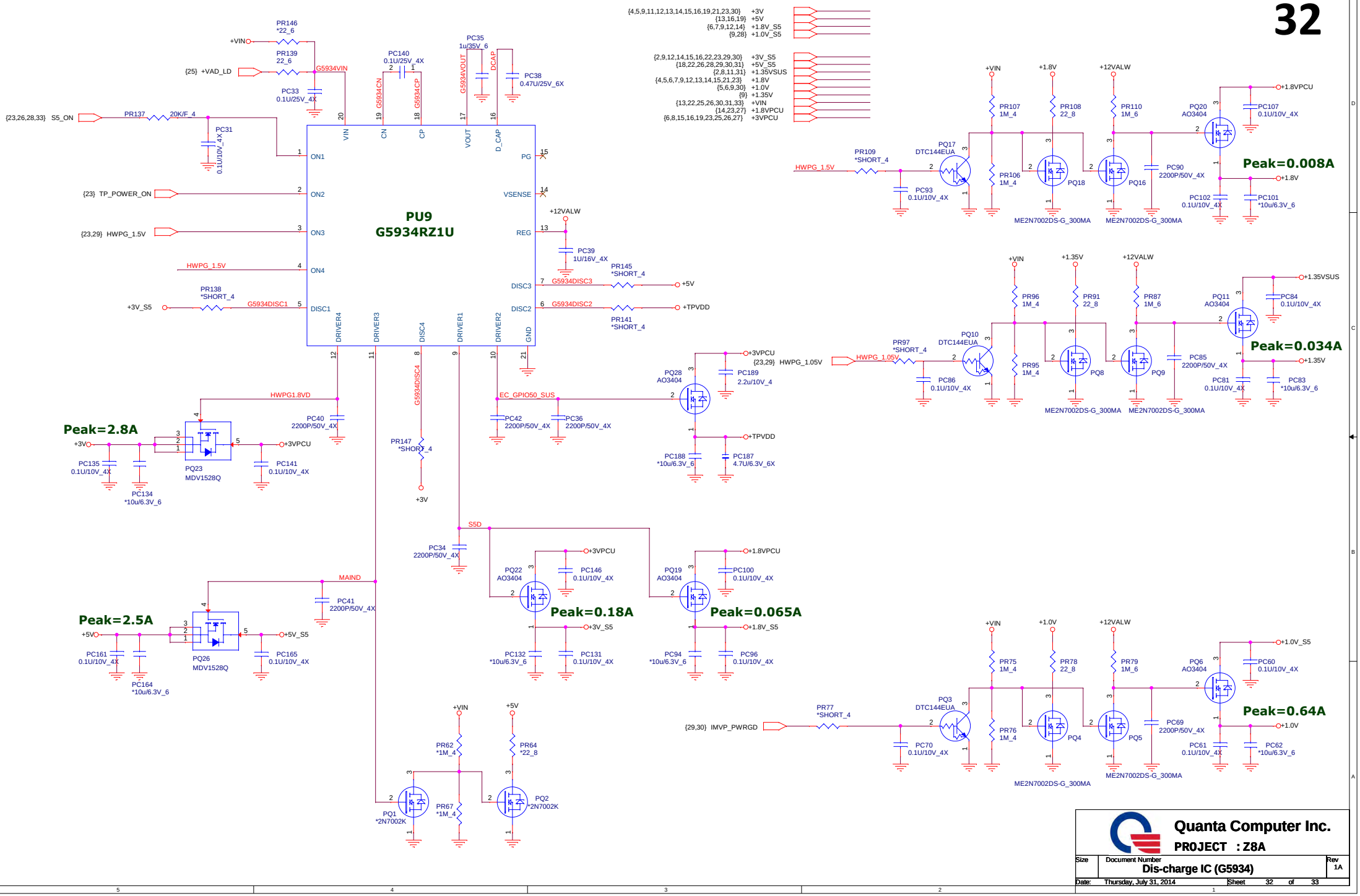

Quanta Computer Inc.
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	Dis-charge IC (G5934)	1A
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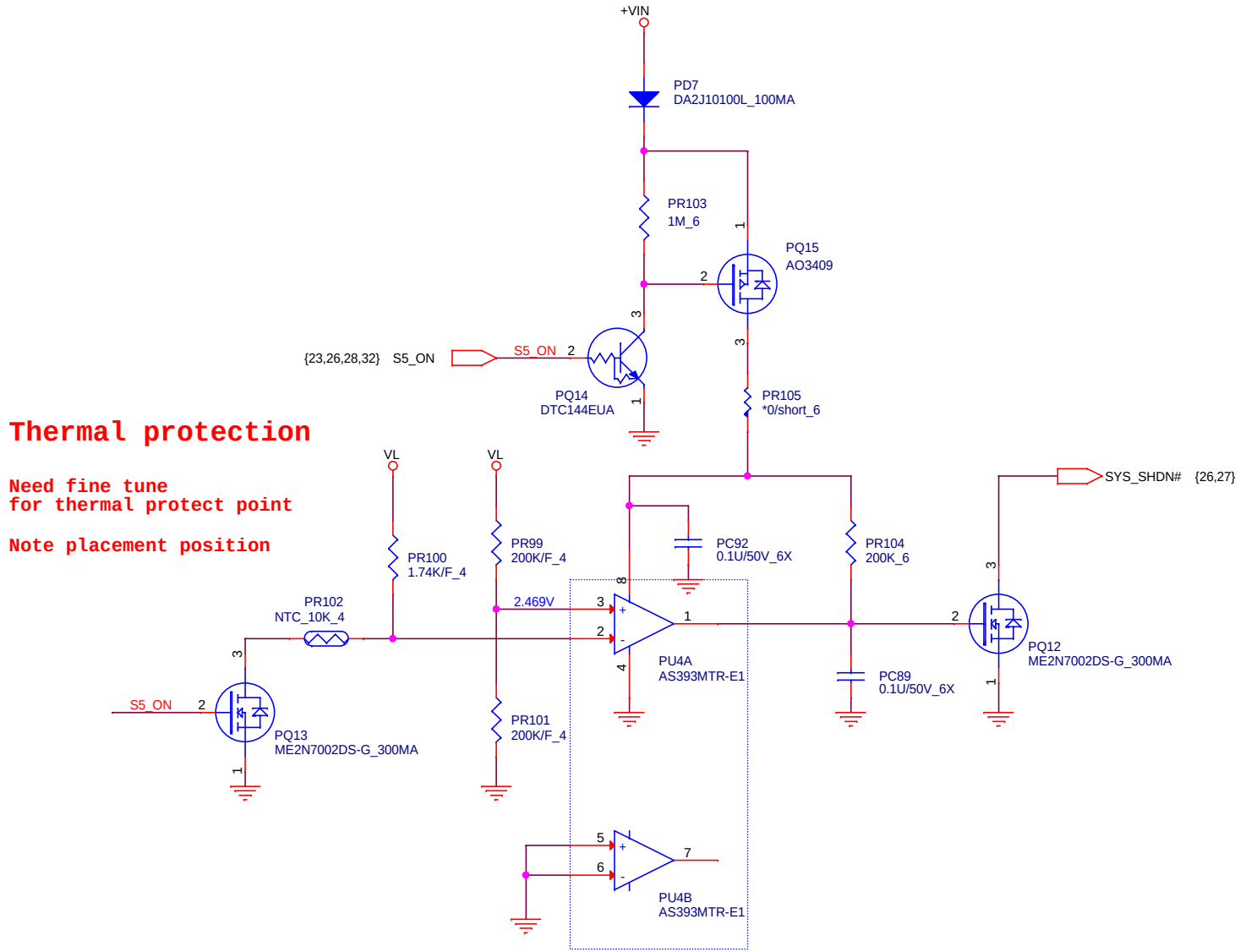

Thermal protection

Need fine tune
for thermal protect point

Note placement position

For EC control thermal protection (output 3.3V)

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Model	REV	CHANGE LIST
Z8A MB	A1A	1.First Release
	C3A	1.Change C19/C20 value from 10P to 12P for crystal Vendor EA suggestion 2.Swap USB3+/USB3- signals to correct pin define for CCD yellow mark issue 3.Change L4 to 90 ohm common mode chock for EMI 4.Change Hole10 and Hole16 footprint for ME DXF update 5.Reverse D24 and D25 ESD components for ESD 6.Add PC190 1000p cap for EMI suggestion 7.Mount PR94 and PC82 for EMI suggestion
	E3A	1.Change R223,R224,R225,R227 value for LED brightness 2.Change Hole5 and Hole6 and Hole9 and Hole10 footprint for ME DXF update

Quanta Computer Inc. PROJECT : Z8A Size / Document Number / Rev: Change list / 1A Date: Thursday, July 31, 2014 Sheet 34 of 34	DOC NO.	PROJECT MODEL :	Z8A	APPROVED BY:		DATE:
		PART NUMBER:		DRAWING BY:		REVISON: