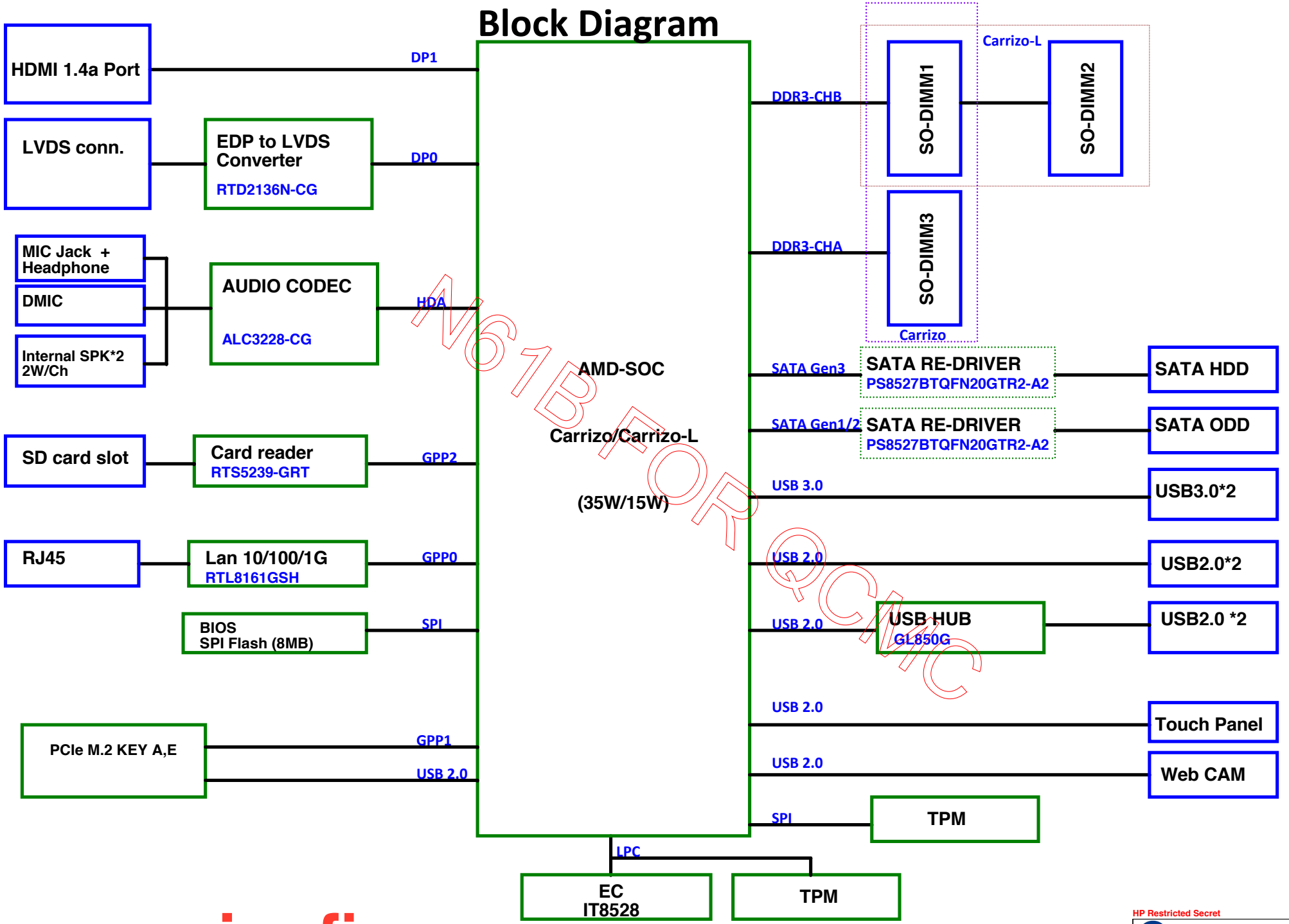
Block Diagram



N61B FOR QCMC

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PROJECT Compressor
Quanta Computer Inc.

Size	Document Number	Rev
Custom	System Block Diagram 799918-000	A1A

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SI to PV Change List

EC-PV-E01 SWAP USB touch and camera for touch no function issue
EC-PV-E02 Add APU_VDDNB_RUN_FB_L
EC-PV-E03 Change D15 to AZ4212 to meet 12V
EC-PV-E04 Delete USB signal 0ohm of reserve
EC-PV-E05 Change U39 to G517G1P81U(MSOP8) for max current to 3A.
EC-PV-E06 Depop C255 and change footprint to 0402 for sequence fine tune and unified 1uF size.
EC-PV-E07 Change L11 footprint for SMT request.
EC-PV-E08 Reserve change backlight sequence for panel flash when panel power off
EC-PV-E09 Change 0ohm to short pad location R39,R58,R59,R45,R348,R91,R92,R364
,R69,R70,R71,R72,R73,R74,R120,R169,R173,R432,R541,R542,R382,R383,R389,R392,R406,R415,
L16,R164,R166,R414,R421,R426,R210,R226,R228,R229,R230,R232,R233,AR3,AR35,R471,R208,
R457,R216,R275,R296,R297,R298,FR1,FR2,FR3,FR4,FR5,FR6,FR7,FR8,R250,R84,R85,R89,R305
,R313,R314,R315,R316,R318,R96,R106,R260,R261,R199,R184,R186,R543,R458,R320,AR4,AR7,
F1,L27,AR30,AR6,R254,F6,F5,F3
EC-PV-E10 Change AD3,AD4,AD6,AD7 footprint for SMT request
EC-PV-E11 Add GND pad H17 for EMI request.
EC-PV-E12 Add short pad G2 on EC pin31 for reset panel ID.
EC-PV-E13 Pop AR19,AR27,AR28,AR36 to 0.47uF for ESD solution.
EC-PV-E14 Change D14,D17,D18,D20,D21,D34 footprint for SMT request.
EC-PV-E15 Change LED2,LED3 footprint for SMT request.
EC-PV-E16 Change Board ID to PVT1
EC-PV-E17 Change D7,D8,D9 from BC512501Z00 to BC052301Z00, Pop D36,D37 P/N BC052301Z00 for ESD request.
EC-PV-E18 Change R258 form 0603 to 0402 Unifile with DC-IN LED
EC-PV-E19 Add EC_PCA_ID for PCA_ID identify
EC-PV-E20 Depop TPM relate material PV stage depop reserve material
EC-PV-E21 Change R178 from 680ohm to 619ohm for USB eye diagram

EC-PV-P01 Change 0ohm to short pad location PR157,PR150,PR274,PR103,PR226,PR228,PR243 ,PR96,PR97,PR98,PR211,PR212,PR182,PR52,PR53,PR4,PR9,PR11,PR10,PR30,PR26,PR81,PR82,PR54,PR56,PR70,PR62,PR63,PR37 ,PR38,PR138,PR17,PR35,PR20,PR113,PR252,PR125,PR116,PR199
EC-PV-P02 Change PC239 footprint to 0603 change footprint for buyer suggest
EC-PV-P03 Add 0402 cap reserve 0402 cap
EC-PV-P04 Change MOS PQ38 for high side Mos temperature Rds-on from 26m ohm to 11.7m ohm in 4.5V
EC-PV-P05 Remove reserve material PD2,PC115,PR172,PR171,PR176,PR174,PC116,PR170 remove AC_Lost cirucit
EC-PV-P06 Change CZ-L PR259 and PR261 value be same with CZ for 90W adapter ID and CPU throttling point.

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POWER PLANE	VOLTAGE	CONTROL SIGNAL	Power States ACTIVE IN
VIN	+19V		Always
VCCRTC	+1.5V		Always
3V	+3.3V	S0_ON1_D	S0
3V_S3	+3.3V	SUSD	S0~S3
3V_S5	+3.3V	S5_ON_D	S0~S5
3V_AUX	+3.3V	AC/DC Insert enable	Always
5V	+5V	S0_ON1_D	S0
5V_S3	+5V	SUSD	S0~S3
5V_S5	+5V	S5_ON_D	S0~S5
5V_AUX	+5V	AC/DC Insert enable	Always
3V_WLAN	+3.3V	SLP_MINI	S0~S5
3V_LAN	+3.3V	LAN_PWR_ON	S0~S5
1.5V_S3	+1.5V	S3_ON	S0~S3
1.5V	+1.5V	S0_ON1_D	S0
1.8V_S5	+1.8V	S5_ON	S0~S5
1.8V	+1.8V	S0_ON1_D	S0
VDDP_S5	+1.05V	S5_ON	S0~S5
VDDP	+1.05V	S0_ON1_D	S0
VDDCR_FCH_S5	+0.775V	S5_ON	S0~S5
CPU_CORE	~	VRON	S0
NB_CORE	~	VRON	S0
12V	+12V	S0_ON1	S0
SMDDR_VTERM	+1.5V	S3_ON	S3

NOT FOR PCMC

Schematic "Value" Definition

AMD Platform Compressor-U and Compressor-LU		DB/SI/PV Stage				MP		
By Value format	Description	Auto BOM Control	15W Carrizo-L	25W Carrizo-L	Carrizo	15W Carrizo-L	25W Carrizo-L	Carrizo
XX	Install	V	V	V	V	V	V	V
*XX	Non-Install	V						
CZ@XX	Install AMD Carrizo only	V			V			V
CZ-L@XX	Install AMD Carrizo-L only	V	V	V		V	V	
15W_CZ-L@XX	Install AMD 15W Carrizo-L only	V	V			V		
25W_CZ-L_35W_CZ@XX	Install AMD 25W Carrizo-L and Carrizo	V		V	V		V	V
PROTO@XX	Install in pre-production only	V	V	V	V			
MP@XX	Install in MP only	V				V	V	V

***Board ID by manual control

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7,8,20,38,39 VDDP
5,6,7,8,29,33,38,39 1.8V

GPP:CZ: support GEN3 (1.05V)
CZ-L:support GEN2 (0.95V)
-->current GEN2 only.

LAN
WLAN
CARD READER

U6B
PCIE

LAN	18	PCIE_GLAN_RX_P	U10	P_GPP_RXP[0]	P_GPP_TXP[0]	R1	PCIE_TXP0_C	C34	0.1U/10V/X5R_4	PCIE_GLAN_TX_P	18
	18	PCIE_GLAN_RX_N	U9	P_GPP_RXN[0]	P_GPP_TXN[0]	R2	PCIE_TXN0_C	C36	0.1U/10V/X5R_4	PCIE_GLAN_TX_N	18
WLAN	23	PCIE_WLAN_RX_P	T6	P_GPP_RXP[1]	P_GPP_TXP[1]	R4	PCIE_TXP1_C	C29	0.1U/10V/X5R_4	PCIE_WLAN_TX_P	23
	23	PCIE_WLAN_RX_N	T5	P_GPP_RXN[1]	P_GPP_TXN[1]	R3	PCIE_TXN1_C	C30	0.1U/10V/X5R_4	PCIE_WLAN_TX_N	23
CARD READER	19	PCIE_CR_RX_P	T9	P_GPP_RXP[2]	P_GPP_TXP[2]	N1	PCIE_TXP2_C	C28	0.1U/10V/X5R_4	PCIE_CR_TX_P	19
	19	PCIE_CR_RX_N	T8	P_GPP_RXN[2]	P_GPP_TXN[2]	N2	PCIE_TXN2_C	C27	0.1U/10V/X5R_4	PCIE_CR_TX_N	19
			P7	P_GPP_RXP[3]	P_GPP_TXP[3]	N4					
			P6	P_GPP_RXN[3]	P_GPP_TXN[3]	N3					

Cdep : 220 nF for CZ(if need support GEN3) and 100nF for Gen2

VDDP R312 CZ-L@1.69K/F_4 P_ZVDDP U7 P_ZVDDP

Carrizo : 196 ohm
Carrizo-L: 1.69 K
R312 CS21692FB01
CZ@196/F_4

P_ZVSS/P_RX_ZVDDP U6 P_RX_ZVDDP R309 CZ-L@1K/F_4 VDDP

R306
CZ@196/F_4

Carrizo : 196 ohm pull down
Carrizo-L : 1K Pull up

P_GFX(4:7)_RXP(N) : Only Carrizo	P10	P_GFX_RXP[0]	P_GFX_TXP[0]	M2	P_GFX(4:7)_TXP(N) : Only Carrizo
	P9	P_GFX_RXN[0]	P_GFX_TXN[0]	M1	
	N6	P_GFX_RXP[1]	P_GFX_TXP[1]	L1	
	N5	P_GFX_RXN[1]	P_GFX_TXN[1]	L2	
	N9	P_GFX_RXP[2]	P_GFX_TXP[2]	L4	
	N8	P_GFX_RXN[2]	P_GFX_TXN[2]	L3	
	L7	P_GFX_RXP[3]	P_GFX_TXP[3]	J1	
	L6	P_GFX_RXN[3]	P_GFX_TXN[3]	J2	
	L10	P_GFX_RXP[4]	P_GFX_TXP[4]	J4	
	L9	P_GFX_RXN[4]	P_GFX_TXN[4]	J3	
	K6	P_GFX_RXP[5]	P_GFX_TXP[5]	H2	
	K5	P_GFX_RXN[5]	P_GFX_TXN[5]	H1	
	K9	P_GFX_RXP[6]	P_GFX_TXP[6]	G1	
	K8	P_GFX_RXN[6]	P_GFX_TXN[6]	G2	
	J7	P_GFX_RXP[7]	P_GFX_TXP[7]	G4	
	J6	P_GFX_RXN[7]	P_GFX_TXN[7]	G3	

FP4 REV 1.0
FP4

HDT+ Debug Connector

1.8V R270 1K_4
5 APU_TRST# R271 PROTO@33_4 HDT_TRST#
R272 PROTO@10K_4 HDT_DBRDY3
R273 PROTO@10K_4 HDT_DBRDY2
R274 PROTO@10K_4 HDT_DBRDY1
C162 0.01U/25V_4

J1 PROTO@HDT HEADER

1	CPU_VDDIO1	CPU_TCK	2	APU_TCK	APU_TCK	5
3	GND1	CPU_TMS	4	APU_TMS	APU_TMS	5
5	GND2	CPU_TDI	6	APU_TDI	APU_TDI	5
7	GND3	CPU_TDO	8		APU_TDO	5
9	CPU_TRST_L	CPU_PWROK_BUF	10	APU_PWROK_BUF		
11	CPU_DBRDY3	CPU_RST_L_BUF	12	APU_RST_L_BUF		
13	CPU_DBRDY2	CPU_DBRDY0	14			
15	CPU_DBRDY1	CPU_DBREQ_L	16	DBREQ# R289 PROTO@0_4	APU_DBRDY	5
17	GND4	CPU_PLLTEST0	18		APU_DBREQ#	5
19	CPU_VDDIO2	CPU_PLLTEST1	20		APU_TEST19_PLLTEST0	5
					APU_TEST18_PLLTEST1	5

1.8V R288 PROTO@1K_4 R287 PROTO@1K_4
5 APU_RST# U29 A1 Y1 APU_RST_L_BUF
GND VCC 1.8V
5 APU_PWRGD A2 Y2 APU_PWROK_BUF
PROTO@SN74LVC2G07DCKR

APU_TDI R286 1K_4
APU_TCK R284 1K_4
APU_TMS R285 1K_4
APU_DBREQ# R290 1K_4
1.8V
C177 0.1U/10V/X5R_4

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8,10,11,12,13,35,38,39,40 1.5V_S3
10 MA_VREFDQ
13 MB_VREFDQ

04

U6A

MEMORY A

10 M_A_A[15:0]

M_A_A0 AE28 MA_ADD[0]
M_A_A1 Y27 MA_ADD[1]
M_A_A2 Y29 MA_ADD[2]
M_A_A3 Y26 MA_ADD[3]
M_A_A4 W28 MA_ADD[4]
M_A_A5 W29 MA_ADD[5]
M_A_A6 W26 MA_ADD[6]
M_A_A7 U29 MA_ADD[7]
M_A_A8 W25 MA_ADD[8]
M_A_A9 U26 MA_ADD[9]
M_A_A10 AG29 MA_ADD[10]
M_A_A11 U27 MA_ADD[11]
M_A_A12 T28 MA_ADD[12]
M_A_A13 AK26 MA_ADD[13]
M_A_A14 T26 MA_ADD[14]/MA_BG[1]
M_A_A15 T25 MA_ADD[15]/MA_ACT_L

10 M_A_BS#[2..0]

M_A_BS#0 AG26 MA_BANK[0]
M_A_BS#1 AG27 MA_BANK[1]
M_A_BS#2 T29 MA_BANK[2]/MA_BG[0]

10 M_A_DM[7..0]

M_A_DM[7:0]

M_A_DM0 E19 MA_DM[0]
M_A_DM1 D21 MA_DM[1]
M_A_DM2 K21 MA_DM[2]
M_A_DM3 F29 MA_DM[3]
M_A_DM4 AP28 MA_DM[4]
M_A_DM5 AV26 MA_DM[5]
M_A_DM6 AR22 MA_DM[6]
M_A_DM7 BC22 MA_DM[7]
K29 MA_DM[8]

10 M_A_DQSP0 H19 MA_DQS_H[0]
10 M_A_DQSN0 G19 MA_DQS_L[0]
10 M_A_DQSP1 B22 MA_DQS_H[1]
10 M_A_DQSN1 A22 MA_DQS_L[1]
10 M_A_DQSP2 F23 MA_DQS_H[2]
10 M_A_DQSN2 E23 MA_DQS_L[2]
10 M_A_DQSP3 G27 MA_DQS_H[3]
10 M_A_DQSN3 F27 MA_DQS_L[3]
10 M_A_DQSP4 AP25 MA_DQS_H[4]
10 M_A_DQSN4 AP26 MA_DQS_L[4]
10 M_A_DQSP5 AW27 MA_DQS_H[5]
10 M_A_DQSN5 AV27 MA_DQS_L[5]
10 M_A_DQSP6 AV22 MA_DQS_H[6]
10 M_A_DQSN6 AU22 MA_DQS_L[6]
10 M_A_DQSP7 BA21 MA_DQS_H[7]
10 M_A_DQSN7 AY21 MA_DQS_L[7]
L27 MA_DQS_H[8]
L26 MA_DQS_L[8]

10 M_A_CLKP0 AE25 MA_CLK_H[0]
10 M_A_CLKN0 AE26 MA_CLK_L[0]
10 M_A_CLKP1 AD26 MA_CLK_H[1]
10 M_A_CLKN1 AD27 MA_CLK_L[1]
AB28 MA_CLK_H[2]
AB29 MA_CLK_L[2]
AB25 MA_CLK_H[3]
AB26 MA_CLK_L[3]

10 M_A_RST# N29 MA_RESET_L
10 M_A_EVENT# AE29 MA_EVENT_L

10 M_A_CKE0 P27 MA_CKE0
10 M_A_CKE1 P29 MA_CKE1

10 M_A_ODT0 AK27 MA0_ODT[0]
10 M_A_ODT1 AL26 MA0_ODT[1]
AH25 MA1_ODT[0]
AL25 MA1_ODT[1]

10 M_A_CS#0 AH26 MA0_CS_L[0]
10 M_A_CS#1 AL29 MA0_CS_L[1]
AH29 MA1_CS_L[0]
AL28 MA1_CS_L[1]

10 M_A_RAS# AG24 MA_RAS_L/MA_RAS_L_ADD[16]
10 M_A_CAS# AK29 MA_CAS_L/MA_CAS_L_ADD[15]
10 M_A_WE# AH28 MA_WE_L/MA_WE_L_ADD[14]

MA_VREFDQ B19 MA_VREFDQ
MEMVREF_APU T32 M_VREF

MA_ZVDDIO_MEM_S AD29 M_ZAVDDIO

M_A_DQ[63:0] 10

M_A_DQ0 H17 MA_DATA[0]
M_A_DQ1 J17 MA_DATA[1]
M_A_DQ2 F20 MA_DATA[2]
M_A_DQ3 H20 MA_DATA[3]
M_A_DQ4 E17 MA_DATA[4]
M_A_DQ5 F17 MA_DATA[5]
M_A_DQ6 K18 MA_DATA[6]
M_A_DQ7 E20 MA_DATA[7]

M_A_DQ8 A21 MA_DATA[8]
M_A_DQ9 C21 MA_DATA[9]
M_A_DQ10 C23 MA_DATA[10]
M_A_DQ11 D23 MA_DATA[11]
M_A_DQ12 B20 MA_DATA[12]
M_A_DQ13 B21 MA_DATA[13]
M_A_DQ14 B23 MA_DATA[14]
M_A_DQ15 A23 MA_DATA[15]

M_A_DQ16 G22 MA_DATA[16]
M_A_DQ17 H22 MA_DATA[17]
M_A_DQ18 E25 MA_DATA[18]
M_A_DQ19 G25 MA_DATA[19]
M_A_DQ20 J20 MA_DATA[20]
M_A_DQ21 E22 MA_DATA[21]
M_A_DQ22 H23 MA_DATA[22]
M_A_DQ23 J23 MA_DATA[23]

M_A_DQ24 F26 MA_DATA[24]
M_A_DQ25 E27 MA_DATA[25]
M_A_DQ26 J26 MA_DATA[26]
M_A_DQ27 J27 MA_DATA[27]
M_A_DQ28 H25 MA_DATA[28]
M_A_DQ29 E26 MA_DATA[29]
M_A_DQ30 G28 MA_DATA[30]
M_A_DQ31 G29 MA_DATA[31]

M_A_DQ32 AN26 MA_DATA[32]
M_A_DQ33 AP29 MA_DATA[33]
M_A_DQ34 AR26 MA_DATA[34]
M_A_DQ35 AP24 MA_DATA[35]
M_A_DQ36 AN29 MA_DATA[36]
M_A_DQ37 AN27 MA_DATA[37]
M_A_DQ38 AR29 MA_DATA[38]
M_A_DQ39 AR27 MA_DATA[39]

M_A_DQ40 AU26 MA_DATA[40]
M_A_DQ41 AV29 MA_DATA[41]
M_A_DQ42 AU25 MA_DATA[42]
M_A_DQ43 AW25 MA_DATA[43]
M_A_DQ44 AU29 MA_DATA[44]
M_A_DQ45 AU28 MA_DATA[45]
M_A_DQ46 AW26 MA_DATA[46]
M_A_DQ47 AT25 MA_DATA[47]

M_A_DQ48 AV23 MA_DATA[48]
M_A_DQ49 AW23 MA_DATA[49]
M_A_DQ50 AV20 MA_DATA[50]
M_A_DQ51 AW20 MA_DATA[51]
M_A_DQ52 AR23 MA_DATA[52]
M_A_DQ53 AT23 MA_DATA[53]
M_A_DQ54 AR20 MA_DATA[54]
M_A_DQ55 AT20 MA_DATA[55]

M_A_DQ56 BB23 MA_DATA[56]
M_A_DQ57 BB22 MA_DATA[57]
M_A_DQ58 BB20 MA_DATA[58]
M_A_DQ59 AY19 MA_DATA[59]
M_A_DQ60 BA23 MA_DATA[60]
M_A_DQ61 BC23 MA_DATA[61]
M_A_DQ62 BC21 MA_DATA[62]
M_A_DQ63 BB21 MA_DATA[63]

MA_CHECK[0] K26
MA_CHECK[1] K28
MA_CHECK[2] N26
MA_CHECK[3] N28
MA_CHECK[4] Q29
MA_CHECK[5] K25
MA_CHECK[6] Q29
MA_CHECK[7] N25

FP4 REV 1.0
FP4

R328 CZ@39.2/F_4 1.5V_S3

Carrizo : Only

1.5V_S3
R303 1K/F_4
MEMVREF_APU
R301 1K/F_4
C212 0.1U/10V/X5R_4
C211 1000P/50V_4
C213 *0.47U/6.3V/X5R_4
Place within 1000mil of the APU

MA_VREFDQ
C23 *1U/6.3V/X5R_4
C20 *100P/50V_4
EC-SI-E52

U6I

MEMORY B

11,12,13 M_B_A[15:0]

M_B_A0 AG31 MB_ADD[0]
M_B_A1 AC30 MB_ADD[1]
M_B_A2 AC31 MB_ADD[2]
M_B_A3 AB32 MB_ADD[3]
M_B_A4 AA32 MB_ADD[4]
M_B_A5 AA33 MB_ADD[5]
M_B_A6 AA31 MB_ADD[6]
M_B_A7 Y33 MB_ADD[7]
M_B_A8 AA30 MB_ADD[8]
M_B_A9 W32 MB_ADD[9]
M_B_A10 AG32 MB_ADD[10]
M_B_A11 Y32 MB_ADD[11]
M_B_A12 W33 MB_ADD[12]
M_B_A13 AL31 MB_ADD[13]
M_B_A14 W30 MB_ADD[14]/MB_BG[1]
M_B_A15 V32 MB_ADD[15]/MB_ACT_L

11,12,13 M_B_BS#[2..0]

M_B_BS#0 AH32 MB_BANK[0]
M_B_BS#1 AG33 MB_BANK[1]
M_B_BS#2 W31 MB_BANK[2]/MB_BG[0]

11,12,13 M_B_DM[7..0]

M_B_DM0 D25 MB_DM[0]
M_B_DM1 D29 MB_DM[1]
M_B_DM2 E33 MB_DM[2]
M_B_DM3 J33 MB_DM[3]
M_B_DM4 AF30 MB_DM[4]
M_B_DM5 AW30 MB_DM[5]
M_B_DM6 BC30 MB_DM[6]
M_B_DM7 BC26 MB_DM[7]
N33 MB_DM[8]

11,12,13 M_B_DQSP0 B26 MB_DQS_H[0]
11,12,13 M_B_DQSN0 A26 MB_DQS_L[0]
11,12,13 M_B_DQSP1 B30 MB_DQS_H[1]
11,12,13 M_B_DQSN1 A30 MB_DQS_L[1]
11,12,13 M_B_DQSP2 F32 MB_DQS_H[2]
11,12,13 M_B_DQSN2 E32 MB_DQS_L[2]
11,12,13 M_B_DQSP3 K32 MB_DQS_H[3]
11,12,13 M_B_DQSN3 J32 MB_DQS_L[3]
11,12,13 M_B_DQSP4 AR32 MB_DQS_H[4]
11,12,13 M_B_DQSN4 AR33 MB_DQS_L[4]
11,12,13 M_B_DQSP5 AW32 MB_DQS_H[5]
11,12,13 M_B_DQSN5 AW33 MB_DQS_L[5]
11,12,13 M_B_DQSP6 BA29 MB_DQS_H[6]
11,12,13 M_B_DQSN6 AY29 MB_DQS_L[6]
11,12,13 M_B_DQSP7 BA25 MB_DQS_H[7]
11,12,13 M_B_DQSN7 AY25 MB_DQS_L[7]
P32 MB_DQS_H[8]
N32 MB_DQS_L[8]

11,12 M_B_CLKP0 AE33 MB_CLK_H[0]
11,12 M_B_CLKN0 AE32 MB_CLK_L[0]
11,12 M_B_CLKP1 AE30 MB_CLK_H[1]
11,12 M_B_CLKN1 AE31 MB_CLK_L[1]
13 M_B_CLKP2 AD32 MB_CLK_H[2]
13 M_B_CLKN2 AD33 MB_CLK_L[2]
13 M_B_CLKP3 AC33 MB_CLK_H[3]
13 M_B_CLKN3 AC32 MB_CLK_L[3]

11,12,13 M_B_RST# T33 MB_RESET_L
11,12,13 M_B_EVENT# AG30 MB_EVENT_L

11,12,13 M_B_CKE0 U32 MB_CKE0
11,12,13 M_B_CKE1 U33 MB_CKE1

11,12 M_B_ODT0 AL30 MB0_ODT[0]
11,12 M_B_ODT1 AM32 MB0_ODT[1]
13 M_B_ODT0 AJ32 MB1_ODT[0]
13 M_B_ODT1 AM33 MB1_ODT[1]

11,12 M_B_CS#0 AJ33 MB0_CS_L[0]
11,12 M_B_CS#1 AL32 MB0_CS_L[1]
13 M_B_CS#0 AJ30 MB1_CS_L[0]
13 M_B_CS#1 AL33 MB1_CS_L[1]

11,12,13 M_B_RAS# AH33 MB_RAS_L/MB_RAS_L_ADD[16]
11,12,13 M_B_CAS# AK32 MB_CAS_L/MB_CAS_L_ADD[15]
11,12,13 M_B_WE# AJ31 MB_WE_L/MB_WE_L_ADD[14]

MB_VREFDQ A19 MB_VREFDQ

MB_ZVDDIO_MEM_S AF32 M_ZBVDDIO

M_B_DQ[63:0] 11,12,13

M_B_DQ0 A25 MB_DATA[0]
M_B_DQ1 C25 MB_DATA[1]
M_B_DQ2 C27 MB_DATA[2]
M_B_DQ3 D27 MB_DATA[3]
M_B_DQ4 B24 MB_DATA[4]
M_B_DQ5 B25 MB_DATA[5]
M_B_DQ6 B27 MB_DATA[6]
M_B_DQ7 A27 MB_DATA[7]

M_B_DQ8 A29 MB_DATA[8]
M_B_DQ9 C29 MB_DATA[9]
M_B_DQ10 B32 MB_DATA[10]
M_B_DQ11 D32 MB_DATA[11]
M_B_DQ12 B28 MB_DATA[12]
M_B_DQ13 B29 MB_DATA[13]
M_B_DQ14 A31 MB_DATA[14]
M_B_DQ15 C31 MB_DATA[15]

M_B_DQ16 E30 MB_DATA[16]
M_B_DQ17 E31 MB_DATA[17]
M_B_DQ18 G33 MB_DATA[18]
M_B_DQ19 G32 MB_DATA[19]
M_B_DQ20 C33 MB_DATA[20]
M_B_DQ21 D33 MB_DATA[21]
M_B_DQ22 G30 MB_DATA[22]
M_B_DQ23 G31 MB_DATA[23]

M_B_DQ24 J30 MB_DATA[24]
M_B_DQ25 J31 MB_DATA[25]
M_B_DQ26 L33 MB_DATA[26]
M_B_DQ27 L32 MB_DATA[27]
M_B_DQ28 H32 MB_DATA[28]
M_B_DQ29 H33 MB_DATA[29]
M_B_DQ30 L30 MB_DATA[30]
M_B_DQ31 L31 MB_DATA[31]

M_B_DQ32 AN31 MB_DATA[32]
M_B_DQ33 AP32 MB_DATA[33]
M_B_DQ34 AT32 MB_DATA[34]
M_B_DQ35 AU32 MB_DATA[35]
M_B_DQ36 AN33 MB_DATA[36]
M_B_DQ37 AN32 MB_DATA[37]
M_B_DQ38 AR31 MB_DATA[38]
M_B_DQ39 AT33 MB_DATA[39]

M_B_DQ40 AU30 MB_DATA[40]
M_B_DQ41 AV32 MB_DATA[41]
M_B_DQ42 BA33 MB_DATA[42]
M_B_DQ43 AY32 MB_DATA[43]
M_B_DQ44 AU33 MB_DATA[44]
M_B_DQ45 AU31 MB_DATA[45]
M_B_DQ46 AW31 MB_DATA[46]
M_B_DQ47 AY33 MB_DATA[47]

M_B_DQ48 BC31 MB_DATA[48]
M_B_DQ49 BB30 MB_DATA[49]
M_B_DQ50 BB28 MB_DATA[50]
M_B_DQ51 AY27 MB_DATA[51]
M_B_DQ52 BB32 MB_DATA[52]
M_B_DQ53 BA31 MB_DATA[53]
M_B_DQ54 BC29 MB_DATA[54]
M_B_DQ55 BB29 MB_DATA[55]

M_B_DQ56 BB27 MB_DATA[56]
M_B_DQ57 BB26 MB_DATA[57]
M_B_DQ58 BB24 MB_DATA[58]
M_B_DQ59 AY23 MB_DATA[59]
M_B_DQ60 BA27 MB_DATA[60]
M_B_DQ61 BC27 MB_DATA[61]
M_B_DQ62 BC25 MB_DATA[62]
M_B_DQ63 BB25 MB_DATA[63]

MB_CHECK[0] N30
MB_CHECK[1] N31
MB_CHECK[2] P33
MB_CHECK[3] P32
MB_CHECK[4] M32
MB_CHECK[5] M33
MB_CHECK[6] P30
MB_CHECK[7] P31

FP4 REV 1.0
FP4

AF32 M_ZBVDDIO R331 39.2/F_4 1.5V_S3

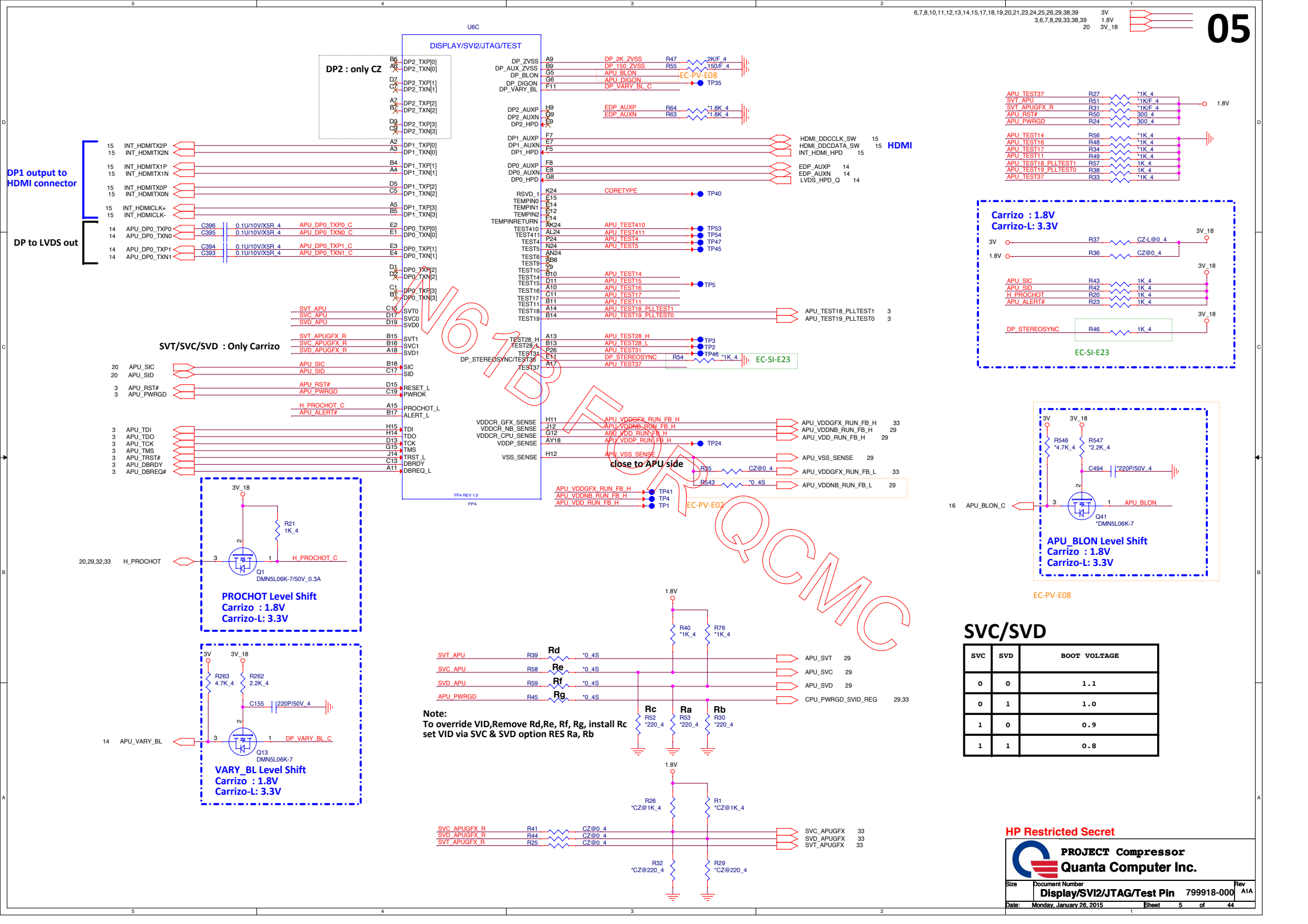
MB_VREFDQ
C22 *1U/6.3V/X5R_4
C19 *100P/50V_4
EC-SI-E52

Intel Confidential

HP Restricted Secret

PROJECT Compressor
Quanta Computer Inc.

Size	Document Number	Rev
	DDR3 Memory 799918-000	A1A
Date: Monday, January 26, 2015	Sheet 4 of 44	



SVC/SVD

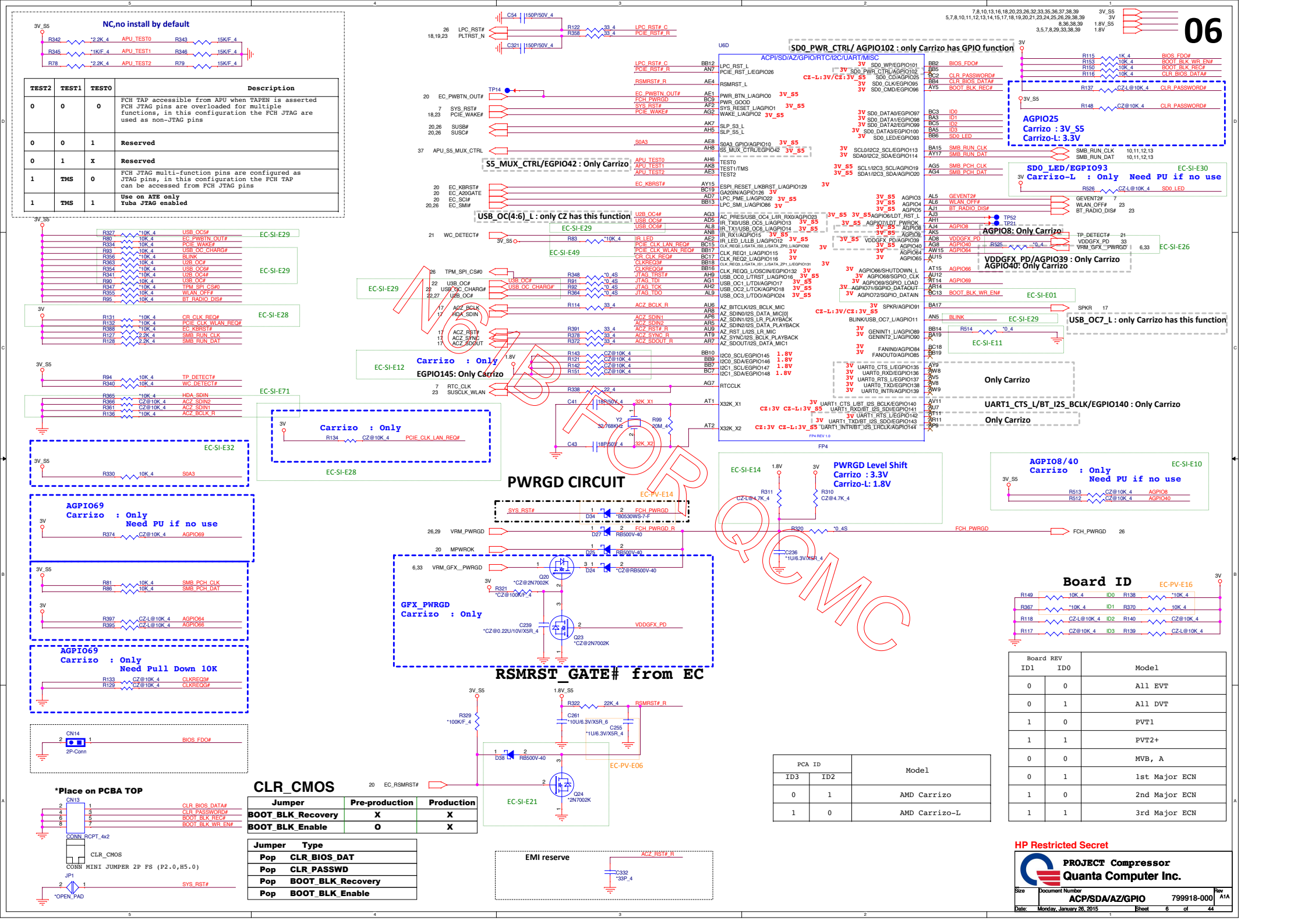
SVC	SVD	BOOT VOLTAGE
0	0	1.1
0	1	1.0
1	0	0.9
1	1	0.8

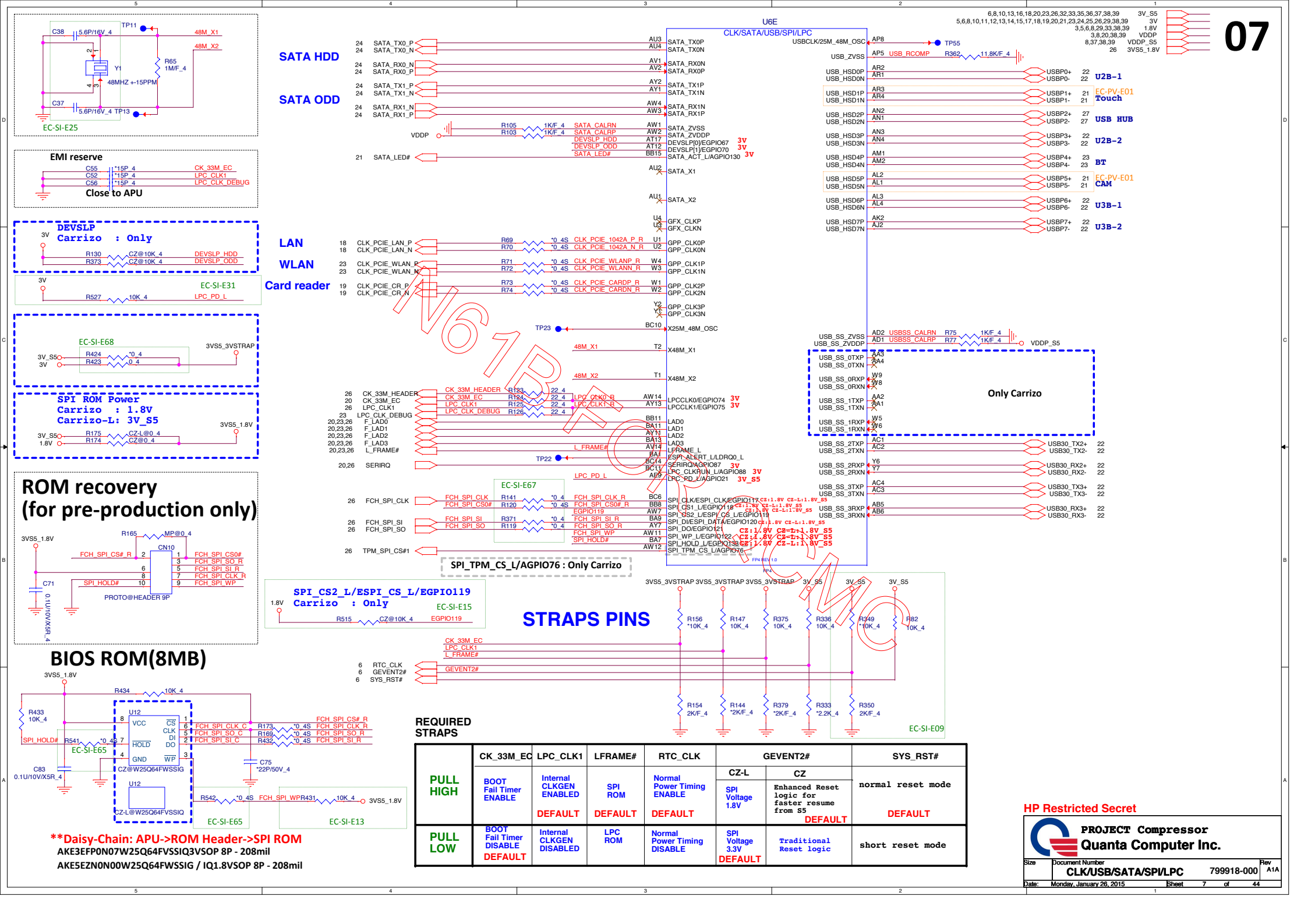
HP Restricted Secret

PROJECT Compressor
Quanta Computer Inc.

Size	Document Number	Rev
	Display/SVI2/JTAG/Test Pin 799918-000	A1A

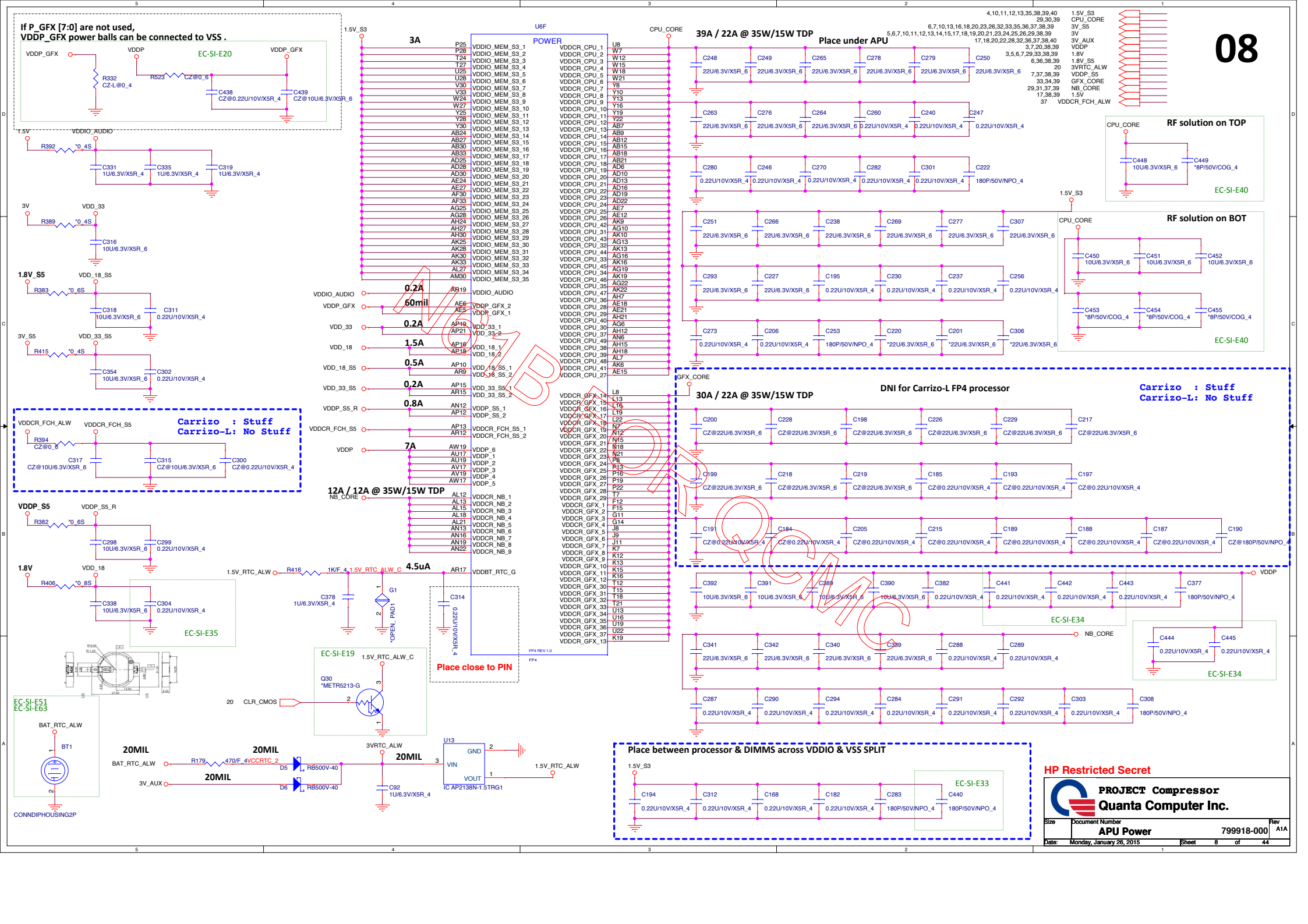
Date: Monday, January 26, 2015 Sheet 5 of 44


06
NC,no install by default
3V_S5
R342 *2.2K_4 APU_TEST0 R343 15K/F_4
R345 *1K/F_4 APU_TEST1 R346 15K/F_4
R78 *2.2K_4 APU_TEST2 R79 15K/F_4
TEST2 TEST1 TEST0 Description
0 0 0 FCH TAP accessible from APU when TAPEN is asserted FCH JTAG pins are overloaded for multiple functions, in this configuration the FCH JTAG are used as non-JTAG pins
0 0 1 Reserved
0 1 X Reserved
1 TMS 0 FCH JTAG multi-function pins are configured as JTAG pins, in this configuration the FCH TAP can be accessed from FCH JTAG pins
1 TMS 1 Use on ATE only Yuba JTAG enabled
SD0_PWR_CTRL/ AGPIO102 : only Carrizo has GPIO function
ACPI/SD/AZ/GPIO/RTC/I2C/UART/MISC
AGPIO25 Carrizo : 3V_S5 Carrizo-L: 3.3V
SD0_LED/EGPIO93 EC-SI-E30
Carrizo-L : Only Need PU if no use
S5_MUX_CTRL/EGPIO42 : Only Carrizo
USB_OC(4:6)_L : only CZ has this function
AGPIO8: Only Carrizo
VDDGFX_PD/AGPIO39 : Only Carrizo
AGPIO40: Only Carrizo
USB_OC7_L : only Carrizo has this function
UART1_CTS_L/BT_I2S_BCLK/EGPIO140 : Only Carrizo
Only Carrizo
AGPIO69 Carrizo : Only Need PU if no use
AGPIO69 Carrizo : Only Need Pull Down 10K
AGPIO8/40 Carrizo : Only Need PU if no use
EC-SI-E10
PWRGD CIRCUIT
PWRGD Level Shift Carrizo : 3.3V Carrizo-L: 1.8V
GFX_PWRGD Carrizo : Only
RSMRST_GATE# from EC
Board ID
EC-PV-E16
Board REV ID1 ID0 Model
0 0 All EVT
0 1 All DVT
1 0 PVT1
1 1 PVT2+
0 0 MVB, A
0 1 1st Major ECN
1 0 2nd Major ECN
1 1 3rd Major ECN
*Place on PCBA TOP
CLR_CMOS
Jumper Pre-production Production
BOOT_BLK_Recovery X X
BOOT_BLK_Enable O X
Jumper Type
Pop CLR_BIOS_DAT
Pop CLR_PASSWD
Pop BOOT_BLK_Recovery
Pop BOOT_BLK_Enable
PCA ID ID3 ID2 Model
0 1 AMD Carrizo
1 0 AMD Carrizo-L
EMI reserve
HP Restricted Secret
PROJECT Compressor
Quanta Computer Inc.
Size Document Number ACP/SDA/AZ/GPIO 799918-000 Rev A1A
Date: Monday, January 26, 2015 Sheet 6 of 44
ACP QCMC



REQUIRED STRAPS

	CK_33M_EC	LPC_CLK1	LFRAME#	RTC_CLK	GEVENT2#		SYS_RST#
					CZ-L	CZ	
PULL HIGH	BOOT Fail Timer ENABLE	Internal CLKGEN ENABLED DEFAULT	SPI ROM DEFAULT	Normal Power Timing ENABLE DEFAULT	SPI Voltage 1.8V	Enhanced Reset logic for faster resume from S5 DEFAULT	normal reset mode DEFAULT
PULL LOW	BOOT Fail Timer DISABLE DEFAULT	Internal CLKGEN DISABLED	LPC ROM	Normal Power Timing DISABLE	SPI Voltage 3.3V DEFAULT	Traditional Reset logic	short reset mode


If P_GFX [7:0] are not used,
VDDP_GFX power balls can be connected to VSS .
EC-SI-E20
U6F
POWER
3A
0.2A
60mil
0.2A
1.5A
0.5A
0.2A
0.8A
7A
12A / 12A @ 35W/15W TDP
4.5uA
Place close to PIN
39A / 22A @ 35W/15W TDP
Place under APU
RF solution on TOP
RF solution on BOT
EC-SI-E40
30A / 22A @ 35W/15W TDP
DNI for Carrizo-L FP4 processor
Carrizo : Stuff
Carrizo-L: No Stuff
EC-SI-E34
EC-SI-E35
EC-SI-E19
EC-SI-E51
EC-SI-E63
Place between processor & DIMMS across VDDIO & VSS SPLIT
EC-SI-E33
20MIL
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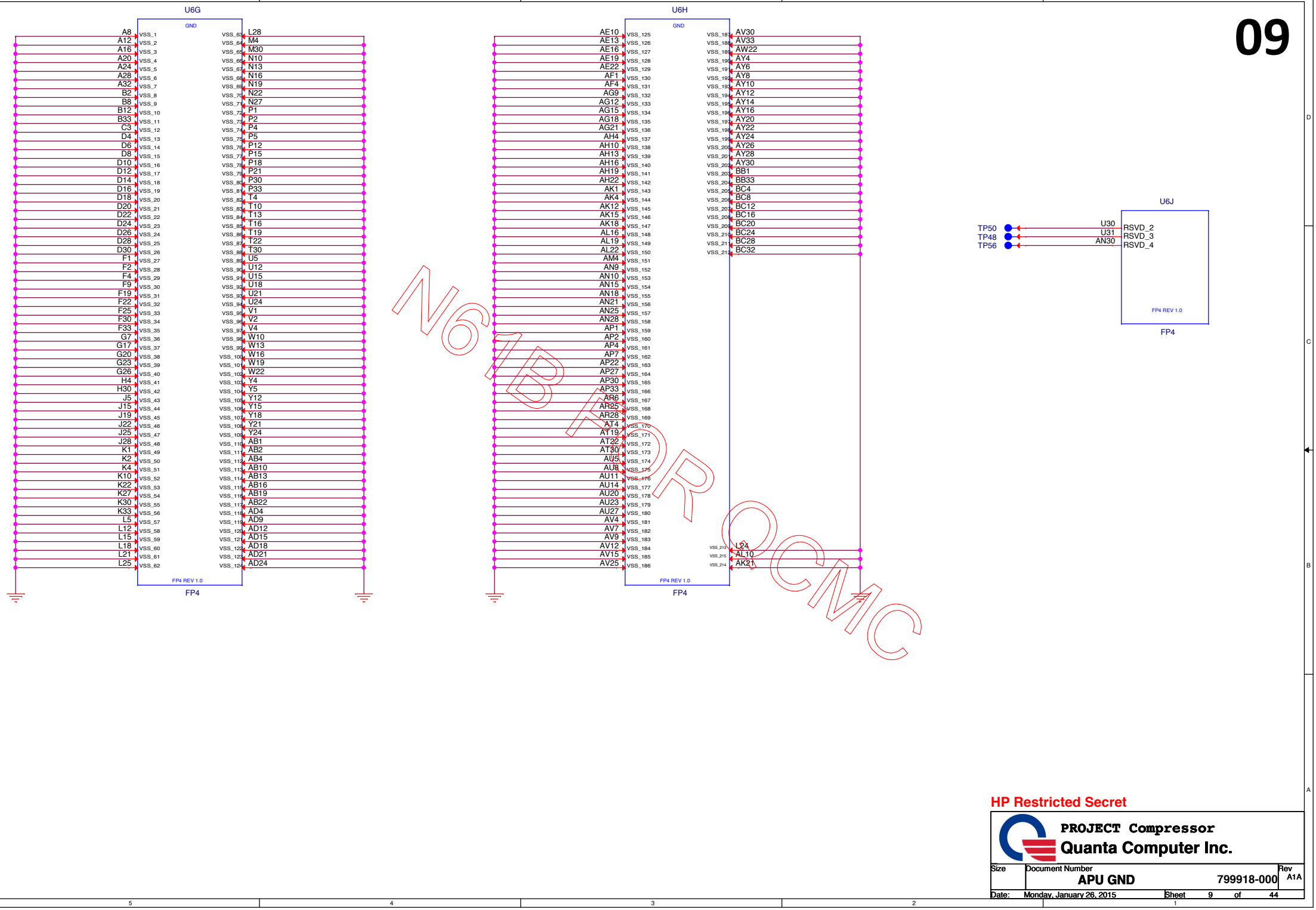
PROJECT Compressor
Quanta Computer Inc.
APU Power
799918-000
Monday, January 26, 2015
08


U6G
GND
A8 VSS_1
A12 VSS_2
A16 VSS_3
A20 VSS_4
A24 VSS_5
A28 VSS_6
A32 VSS_7
B2 VSS_8
B8 VSS_9
B12 VSS_10
B33 VSS_11
C3 VSS_12
D4 VSS_13
D6 VSS_14
D8 VSS_15
D10 VSS_16
D12 VSS_17
D14 VSS_18
D16 VSS_19
D18 VSS_20
D20 VSS_21
D22 VSS_22
D24 VSS_23
D26 VSS_24
D28 VSS_25
D30 VSS_26
F1 VSS_27
F2 VSS_28
F4 VSS_29
F9 VSS_30
F19 VSS_31
F22 VSS_32
F25 VSS_33
F30 VSS_34
F33 VSS_35
G7 VSS_36
G17 VSS_37
G20 VSS_38
G23 VSS_39
G26 VSS_40
H4 VSS_41
H30 VSS_42
J5 VSS_43
J15 VSS_44
J19 VSS_45
J22 VSS_46
J25 VSS_47
J28 VSS_48
K1 VSS_49
K2 VSS_50
K4 VSS_51
K10 VSS_52
K22 VSS_53
K27 VSS_54
K30 VSS_55
K33 VSS_56
L5 VSS_57
L12 VSS_58
L15 VSS_59
L18 VSS_60
L21 VSS_61
L25 VSS_62
L28 VSS_63
M4 VSS_64
M30 VSS_65
N10 VSS_66
N13 VSS_67
N16 VSS_68
N19 VSS_69
N22 VSS_70
N27 VSS_71
P1 VSS_72
P2 VSS_73
P4 VSS_74
P5 VSS_75
P12 VSS_76
P15 VSS_77
P18 VSS_78
P21 VSS_79
P30 VSS_80
P33 VSS_81
T4 VSS_82
T10 VSS_83
T13 VSS_84
T16 VSS_85
T19 VSS_86
T22 VSS_87
T30 VSS_88
U5 VSS_89
U12 VSS_90
U15 VSS_91
U18 VSS_92
U21 VSS_93
U24 VSS_94
V1 VSS_95
V2 VSS_96
V4 VSS_97
W10 VSS_98
W13 VSS_99
W16 VSS_100
W19 VSS_101
W22 VSS_102
Y4 VSS_103
Y5 VSS_104
Y12 VSS_105
Y15 VSS_106
Y18 VSS_107
Y21 VSS_108
Y24 VSS_109
AB1 VSS_110
AB2 VSS_111
AB4 VSS_112
AB10 VSS_113
AB13 VSS_114
AB16 VSS_115
AB19 VSS_116
AB22 VSS_117
AD4 VSS_118
AD9 VSS_119
AD12 VSS_120
AD15 VSS_121
AD18 VSS_122
AD21 VSS_123
AD24 VSS_124
FP4 REV 1.0
FP4
U6H
GND
AE10 VSS_125
AE13 VSS_126
AE16 VSS_127
AE19 VSS_128
AE22 VSS_129
AF1 VSS_130
AF4 VSS_131
AG9 VSS_132
AG12 VSS_133
AG15 VSS_134
AG18 VSS_135
AG21 VSS_136
AH4 VSS_137
AH10 VSS_138
AH13 VSS_139
AH16 VSS_140
AH19 VSS_141
AH22 VSS_142
AK1 VSS_143
AK4 VSS_144
AK12 VSS_145
AK15 VSS_146
AK18 VSS_147
AL16 VSS_148
AL19 VSS_149
AL22 VSS_150
AM4 VSS_151
AN9 VSS_152
AN10 VSS_153
AN15 VSS_154
AN18 VSS_155
AN21 VSS_156
AN25 VSS_157
AN28 VSS_158
AP1 VSS_159
AP2 VSS_160
AP4 VSS_161
AP7 VSS_162
AP22 VSS_163
AP27 VSS_164
AP30 VSS_165
AP33 VSS_166
AR6 VSS_167
AR25 VSS_168
AR28 VSS_169
AT4 VSS_170
AT19 VSS_171
AT22 VSS_172
AT30 VSS_173
AU5 VSS_174
AU8 VSS_175
AU11 VSS_176
AU14 VSS_177
AU20 VSS_178
AU23 VSS_179
AU27 VSS_180
AV4 VSS_181
AV7 VSS_182
AV9 VSS_183
AV12 VSS_184
AV15 VSS_185
AV25 VSS_186
AV30 VSS_187
AV33 VSS_188
AW22 VSS_189
AY4 VSS_190
AY6 VSS_191
AY8 VSS_192
AY10 VSS_193
AY12 VSS_194
AY14 VSS_195
AY16 VSS_196
AY20 VSS_197
AY22 VSS_198
AY24 VSS_199
AY26 VSS_200
AY28 VSS_201
AY30 VSS_202
BB1 VSS_203
BB33 VSS_204
BC4 VSS_205
BC8 VSS_206
BC12 VSS_207
BC16 VSS_208
BC20 VSS_209
BC24 VSS_210
BC28 VSS_211
BC32 VSS_212
L24 VSS_213
AL10 VSS_215
AK21 VSS_214
FP4 REV 1.0
FP4
U6J
TP50
TP48
TP56
U30 RSVD_2
U31 RSVD_3
AN30 RSVD_4
FP4 REV 1.0
FP4
09
NOT FOR PCMC
HP Restricted Secret
PROJECT Compressor
Quanta Computer Inc.
Size
Document Number
APU GND
799918-000
Rev
A1A
Date: Monday, January 26, 2015
Sheet 9 of 44

DDR_RVS(DDR)

Carrizo : Only

11,12,13,35,39 SMDDR_VTERM
5,6,7,8,11,12,13,14,15,17,18,19,20,21,23,24,25,26,29,38,39 3V
4 MA_VREFDQ
4,8,11,12,13,35,38,39,40 1.5V_S3
6,7,8,13,16,18,20,23,26,32,33,35,36,37,38,39 3V_S5
13,35 SMDDR_VREF

4 M_A_A[15:0]

M_A_A0 98
M_A_A1 97
M_A_A2 96
M_A_A3 95
M_A_A4 92
M_A_A5 91
M_A_A6 90
M_A_A7 86
M_A_A8 89
M_A_A9 85
M_A_A10 107
M_A_A11 84
M_A_A12 83
M_A_A13 119
M_A_A14 80
M_A_A15 78

4 M_A_BS#0 109
4 M_A_BS#1 108
4 M_A_BS#2 79
4 M_A_CS#0 114
4 M_A_CS#1 121
4 M_A_CLKP0 101
4 M_A_CLKN0 103
4 M_A_CLKP1 102
4 M_A_CLKN1 104
4 M_A_CKE0 73
4 M_A_CKE1 74
4 M_A_CAS# 115
4 M_A_RAS# 110
4 M_A_WE# 113

R400 CZ@10K_4 DIMM0_SA0 197
R399 CZ@10K_4 DIMM0_SA1 201

6,11,12,13 SMB_RUN_CLK 202
6,11,12,13 SMB_RUN_DAT 200

4 M_A_ODT0 116
4 M_A_ODT1 120

4 M_A_DM[7:0]
M_A_DM0 11
M_A_DM1 28
M_A_DM2 46
M_A_DM3 63
M_A_DM4 136
M_A_DM5 153
M_A_DM6 170
M_A_DM7 187

4 M_A_DQSP[7:0]
M_A_DQSP0 12
M_A_DQSP1 29
M_A_DQSP2 47
M_A_DQSP3 64
M_A_DQSP4 137
M_A_DQSP5 154
M_A_DQSP6 171
M_A_DQSP7 188

4 M_A_DQSN[7:0]
M_A_DQSN0 10
M_A_DQSN1 27
M_A_DQSN2 45
M_A_DQSN3 62
M_A_DQSN4 135
M_A_DQSN5 152
M_A_DQSN6 169
M_A_DQSN7 186

JDIM1A

PC2100 DDR3 SDRAM SO-DIMM (204P)

A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 A10/AP A11 A12/BC# A13 A14 A15
BA0 BA1 BA2
S0# S1#
CK0 CK0# CK1 CK1#
CKE0 CKE1
CAS# RAS# WE#
SA0 SA1
SCL SDA
ODT0 ODT1
DM0 DM1 DM2 DM3 DM4 DM5 DM6 DM7
DQS0 DQS1 DQS2 DQS3 DQS4 DQS5 DQS6 DQS7 DQS#0 DQS#1 DQS#2 DQS#3 DQS#4 DQS#5 DQS#6 DQS#7
DQ0 DQ1 DQ2 DQ3 DQ4 DQ5 DQ6 DQ7 DQ8 DQ9 DQ10 DQ11 DQ12 DQ13 DQ14 DQ15 DQ16 DQ17 DQ18 DQ19 DQ20 DQ21 DQ22 DQ23 DQ24 DQ25 DQ26 DQ27 DQ28 DQ29 DQ30 DQ31 DQ32 DQ33 DQ34 DQ35 DQ36 DQ37 DQ38 DQ39 DQ40 DQ41 DQ42 DQ43 DQ44 DQ45 DQ46 DQ47 DQ48 DQ49 DQ50 DQ51 DQ52 DQ53 DQ54 DQ55 DQ56 DQ57 DQ58 DQ59 DQ60 DQ61 DQ62 DQ63

CZ@DDR3-DIMM1_H=5_RVS

M_A_DQ[0..63] 4

M_A_DQ0 5
M_A_DQ1 7
M_A_DQ2 15
M_A_DQ3 17
M_A_DQ4 4
M_A_DQ5 6
M_A_DQ6 16
M_A_DQ7 18
M_A_DQ8 21
M_A_DQ9 23
M_A_DQ10 33
M_A_DQ11 35
M_A_DQ12 22
M_A_DQ13 24
M_A_DQ14 34
M_A_DQ15 36
M_A_DQ16 39
M_A_DQ17 41
M_A_DQ18 51
M_A_DQ19 53
M_A_DQ20 40
M_A_DQ21 42
M_A_DQ22 50
M_A_DQ23 52
M_A_DQ24 57
M_A_DQ25 59
M_A_DQ26 67
M_A_DQ27 69
M_A_DQ28 56
M_A_DQ29 58
M_A_DQ30 68
M_A_DQ31 70
M_A_DQ32 129
M_A_DQ33 131
M_A_DQ34 141
M_A_DQ35 143
M_A_DQ36 130
M_A_DQ37 132
M_A_DQ38 142
M_A_DQ39 140
M_A_DQ40 147
M_A_DQ41 149
M_A_DQ42 157
M_A_DQ43 159
M_A_DQ44 146
M_A_DQ45 148
M_A_DQ46 158
M_A_DQ47 160
M_A_DQ48 163
M_A_DQ49 165
M_A_DQ50 175
M_A_DQ51 177
M_A_DQ52 164
M_A_DQ53 166
M_A_DQ54 174
M_A_DQ55 176
M_A_DQ56 181
M_A_DQ57 183
M_A_DQ58 191
M_A_DQ59 193
M_A_DQ60 180
M_A_DQ61 182
M_A_DQ62 192
M_A_DQ63 194

1.5V_S3

2.48A

JDIM1B

PC2100 DDR3 SDRAM SO-DIMM (204P)

VDD1 VDD2 VDD3 VDD4 VDD5 VDD6 VDD7 VDD8 VDD9 VDD10 VDD11 VDD12 VDD13 VDD14 VDD15 VDD16 VDD17 VDD18 VDDSPD
NC1 NC2 NCTEST
EVENT# RESET#
VREF_DQ VREF_CA
VSS1 VSS2 VSS3 VSS4 VSS5 VSS6 VSS7 VSS8 VSS9 VSS10 VSS11 VSS12 VSS13 VSS14 VSS15
VSS16 VSS17 VSS18 VSS19 VSS20 VSS21 VSS22 VSS23 VSS24 VSS25 VSS26 VSS27 VSS28 VSS29 VSS30 VSS31 VSS32 VSS33 VSS34 VSS35 VSS36 VSS37 VSS38 VSS39 VSS40 VSS41 VSS42 VSS43 VSS44 VSS45 VSS46 VSS47 VSS48 VSS49 VSS50 VSS51 VSS52
VTT1 VTT2
GND GND

1.5V_S3 75 76 81 82 87 88 93 94 99 100 105 106 111 112 117 118 123 124
3V 199
77 122 125
1.5V_S3 R401 CZ@1K/F_4
4 M_A_EVENT# 198
4 M_A_RST# 30
0.75V_VREF_DQ_A0 1
0.75V_VREF_CA_A0 126
2 3 8 9 13 14 19 20 25 26 31 32 37 38 43
44 48 49 54 55 60 61 65 66 71 72 127 128 133 134 138 139 144 145 150 151 155 156 161 162 167 168 172 173 178 179 184 185 189 190 195 196
VTT1 203
VTT2 204
SMDDR_VTERM
GND 205
GND 206

CZ@DDR3-DIMM1_H=5_RVS

1.5V_S3

C202 CZ@10U/10V/X5R_6
C285 CZ@10U/10V/X5R_6
C224 CZ@10U/10V/X5R_6
C274 CZ@10U/10V/X5R_6
C244 CZ@10U/10V/X5R_6
C204 CZ@0.1U/10V/X5R_4
C252 CZ@0.1U/10V/X5R_4
C223 CZ@0.1U/10V/X5R_4
C272 CZ@0.1U/10V/X5R_4

SMDDR_VTERM

Place these Caps near So-Dimm.

C357 CZ@1U/6.3V/X5R_4
C356 CZ@1U/6.3V/X5R_4
C359 CZ@1U/6.3V/X5R_4
C358 CZ@1U/6.3V/X5R_4
C355 CZ@4.7U/6.3V/X5R_6
C364 CZ@4.7U/6.3V/X5R_6

3V

C345 CZ@1U/6.3V/X5R_4
C344 CZ@1U/6.3V/X5R_4
C343 CZ@0.1U/10V/X5R_4

0.75V_VREF_DQ_A0

C159 CZ@0.1U/10V/X5R_4
C158 CZ@1000P/50V_4

0.75V_VREF_CA_A0

C310 CZ@0.1U/10V/X5R_4
C305 CZ@1000P/50V_4
C447 CZ@0.1U/10V/X5R_4

EC-SI-E36

VDDQ Driving Circuit

MA_VREFDQ
1.5V_S3
3V_S5
0.75V_VREF_DQ_A0

R15 *CZ@0_4
R8 *CZ@0_4
*CZ@0.1U/10V/X5R_4
C6
R7 *CZ@0_4
R3 CZ@1K/F_4
DQ_OP- 4
2
V+
V-
3
1 OP_OUT
R14 *CZ@0_6
U2 *CZ@MCP6001RT-E/OT
R5 *CZ@0_6
5
R2 CZ@1K/F_4
C8 CZ@470P/50V_4
APU_VREFDQ_R
R13 CZ@0_6
R11 *CZ@10K_4
C10 *CZ@0.1U/10V/X5R_4

Place these Caps near So-Dimm.

SMDDR_VREF
1.5V_S3
0.75V_VREF_CA_A0
R352 CZ@1K/F_4
R357 *CZ@0_6
R351 CZ@1K/F_4
C297 CZ@0.47U/6.3V/X5R_4

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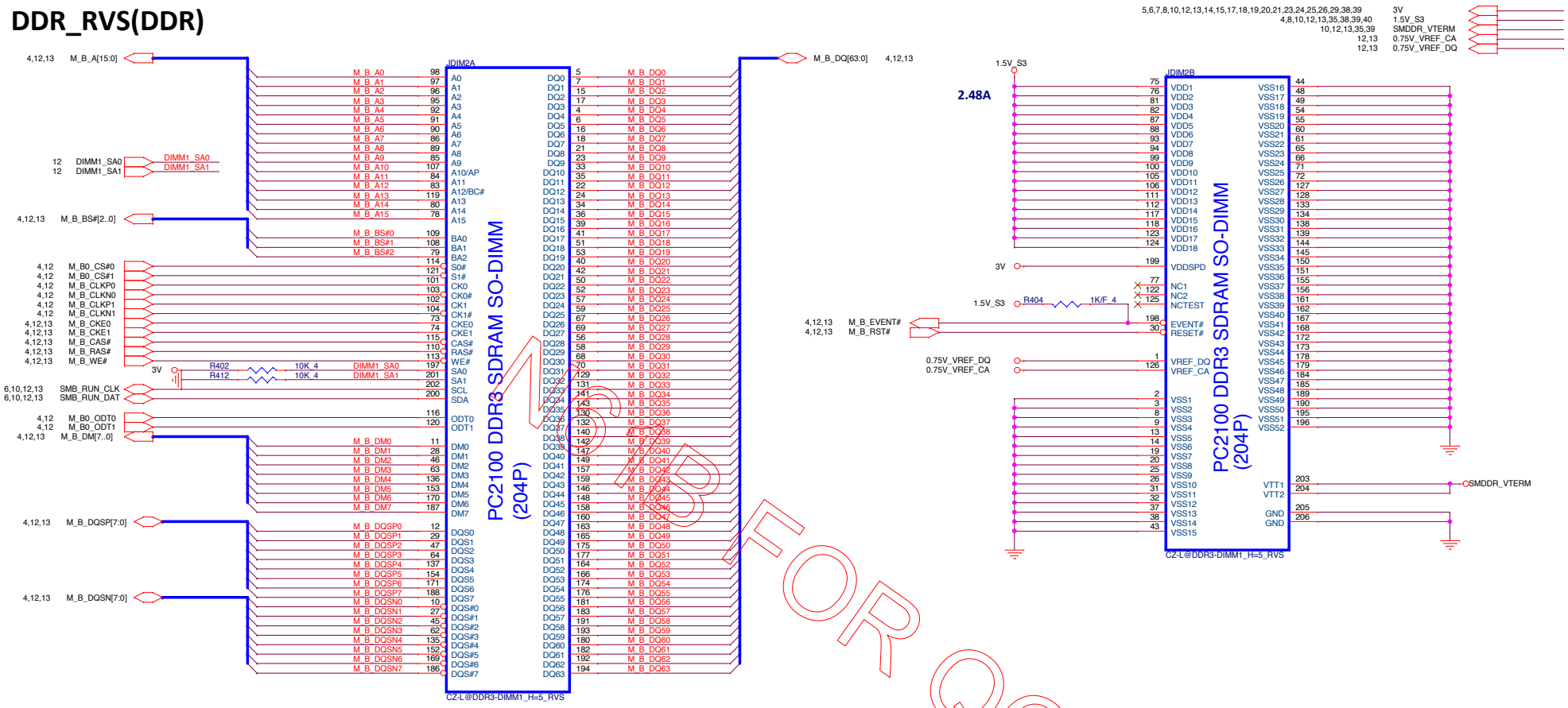
PROJECT Compressor
Quanta Computer Inc.

Size	Document Number	Rev
	DDR3 DIMM-1 (H=5.2) 799918-000	A1A
Date: Monday, January 26, 2015	Sheet 10 of 44	

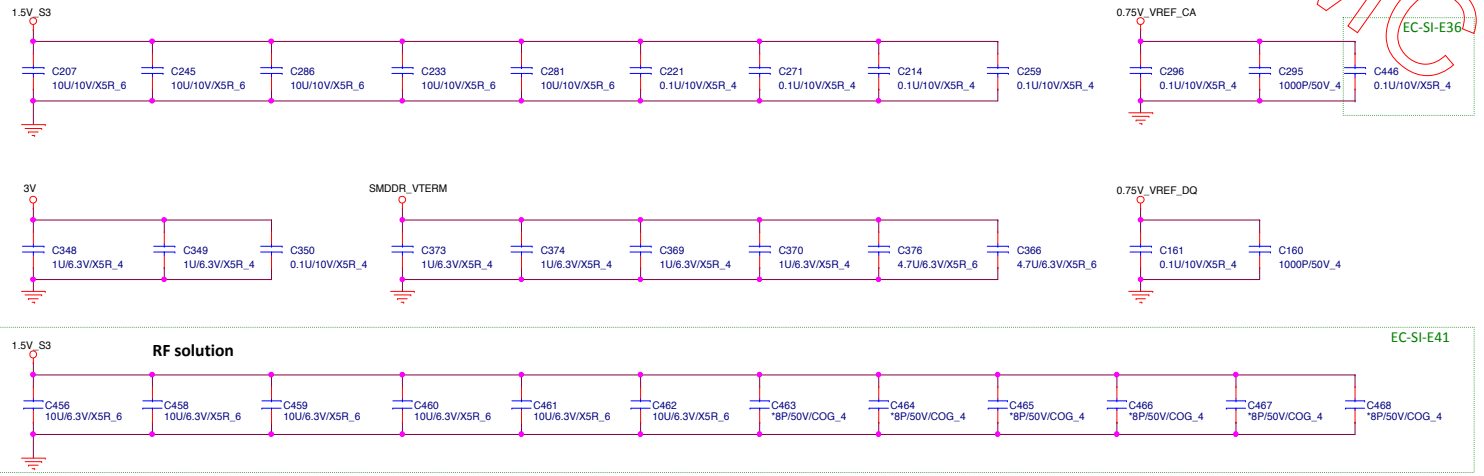
For QCI

DDR_RVS(DDR)



COMPAL CONFIDENTIAL FOR QCMC

Place these Caps near So-Dimm.



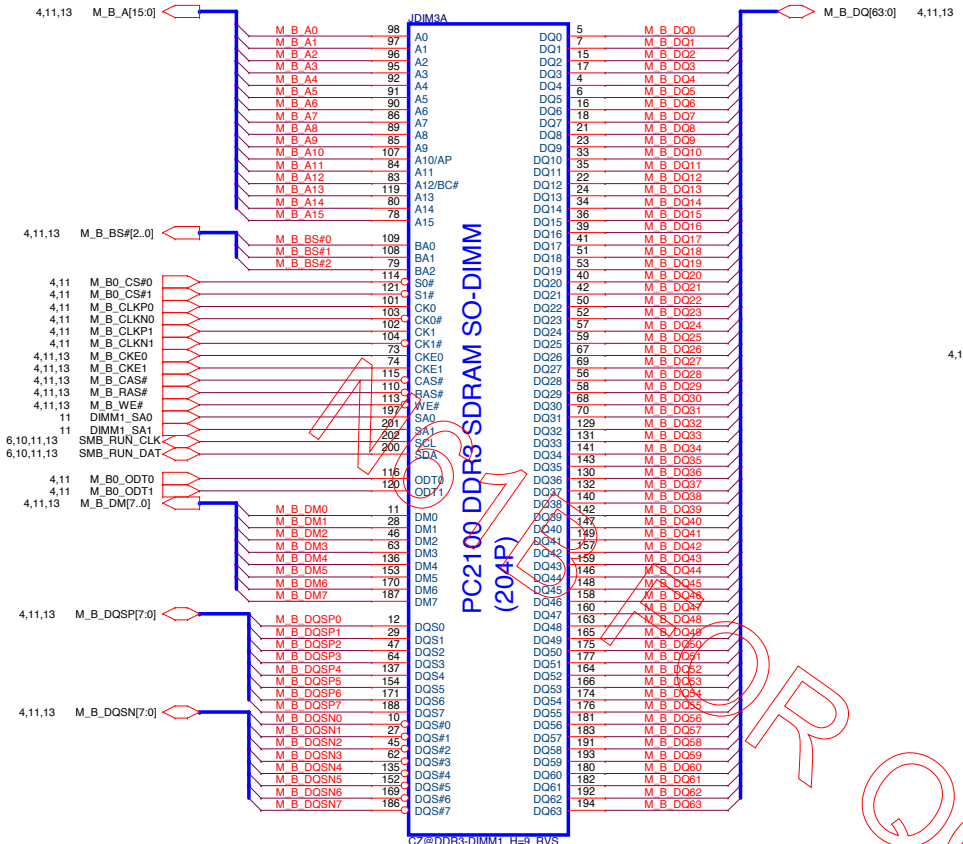
HP Restricted Secret

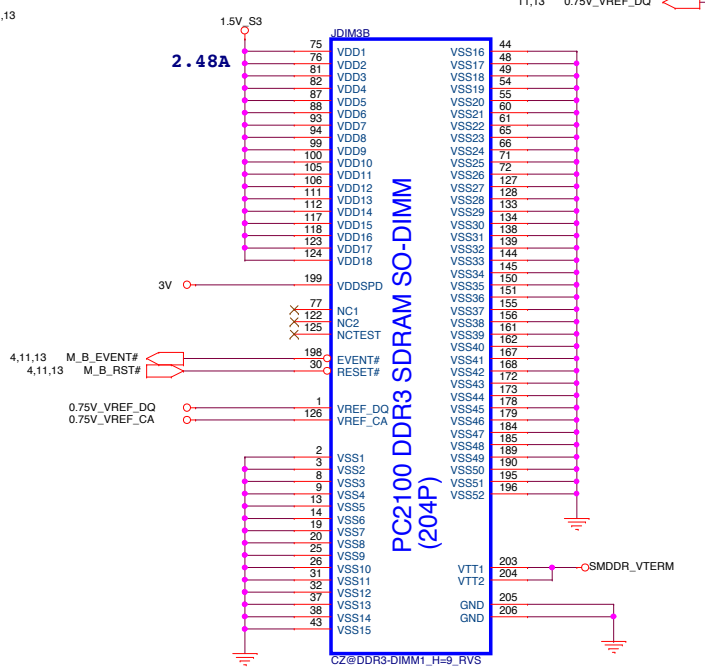
PROJECT Compressor
Quanta Computer Inc.

Size	Document Number	Rev
	DDR3 DIMM-2 (H=5.2) 799918-000	A1A
Date: Monday, January 26, 2015	Sheet 11 of 44	

DDR_RVS(DDR)

Carrizo : Only





5,6,7,8,10,11,13,14,15,17,18,19,20,21,23,24,25,26,29,38,39 3V
4,8,10,11,13,35,38,39,40 1.5V_S3
10,11,13,35,39 SMDDR_VTERM
11,13 0.75V_VREF_CA
11,13 0.75V_VREF_DQ

12

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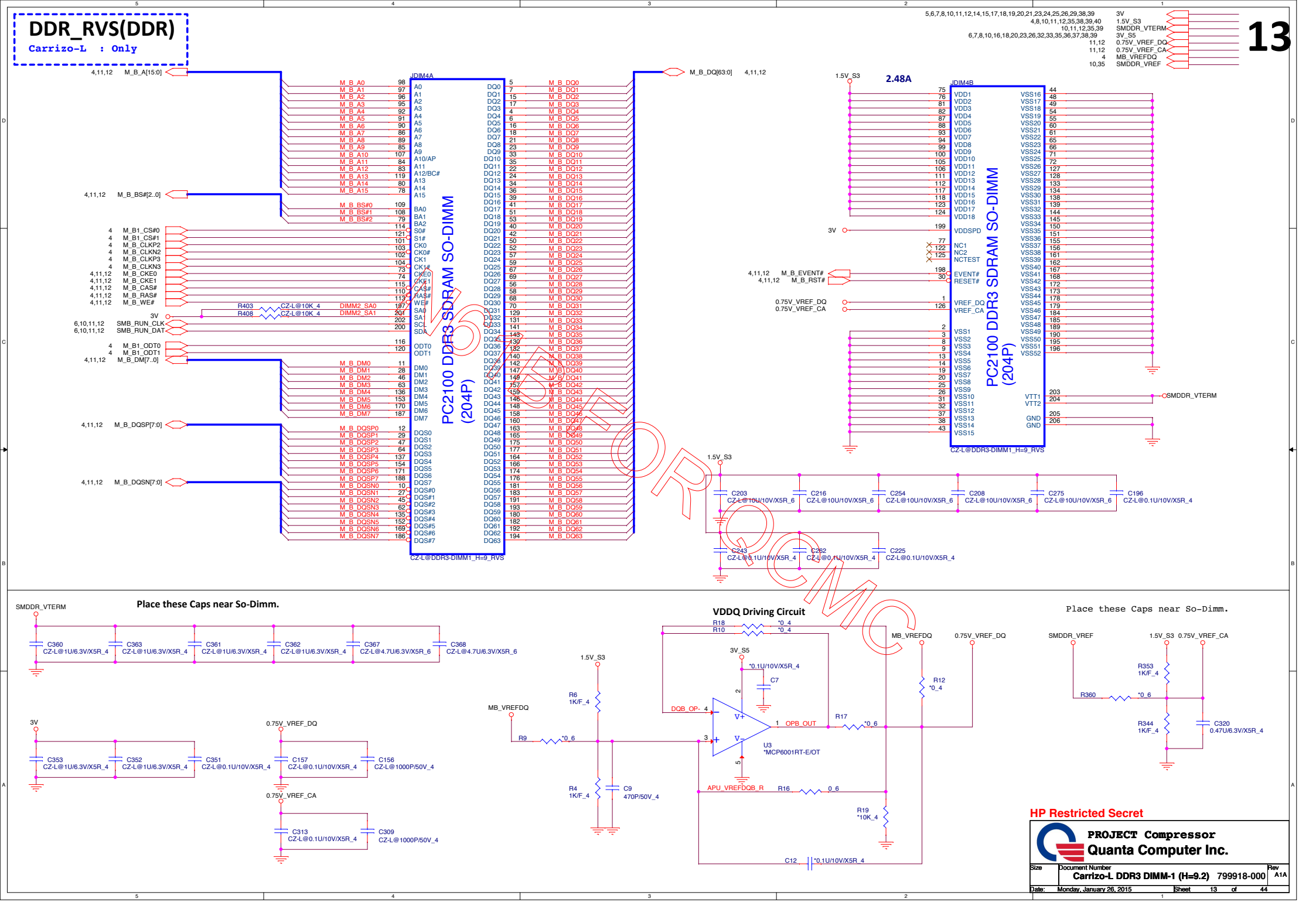
PROJECT Compressor

Quanta Computer Inc.

Size	Document Number	Rev
	Carrizo DDR3 DIMM-2 (H=9.2) 799918-000	A1A
Date: Monday, January 26, 2015	Sheet 12 of 44	

DDR_RVS(DDR)

Carrizo-L : Only



Wistron Confidential Document

Place these Caps near So-Dimm.

VDDQ Driving Circuit

Place these Caps near So-Dimm.

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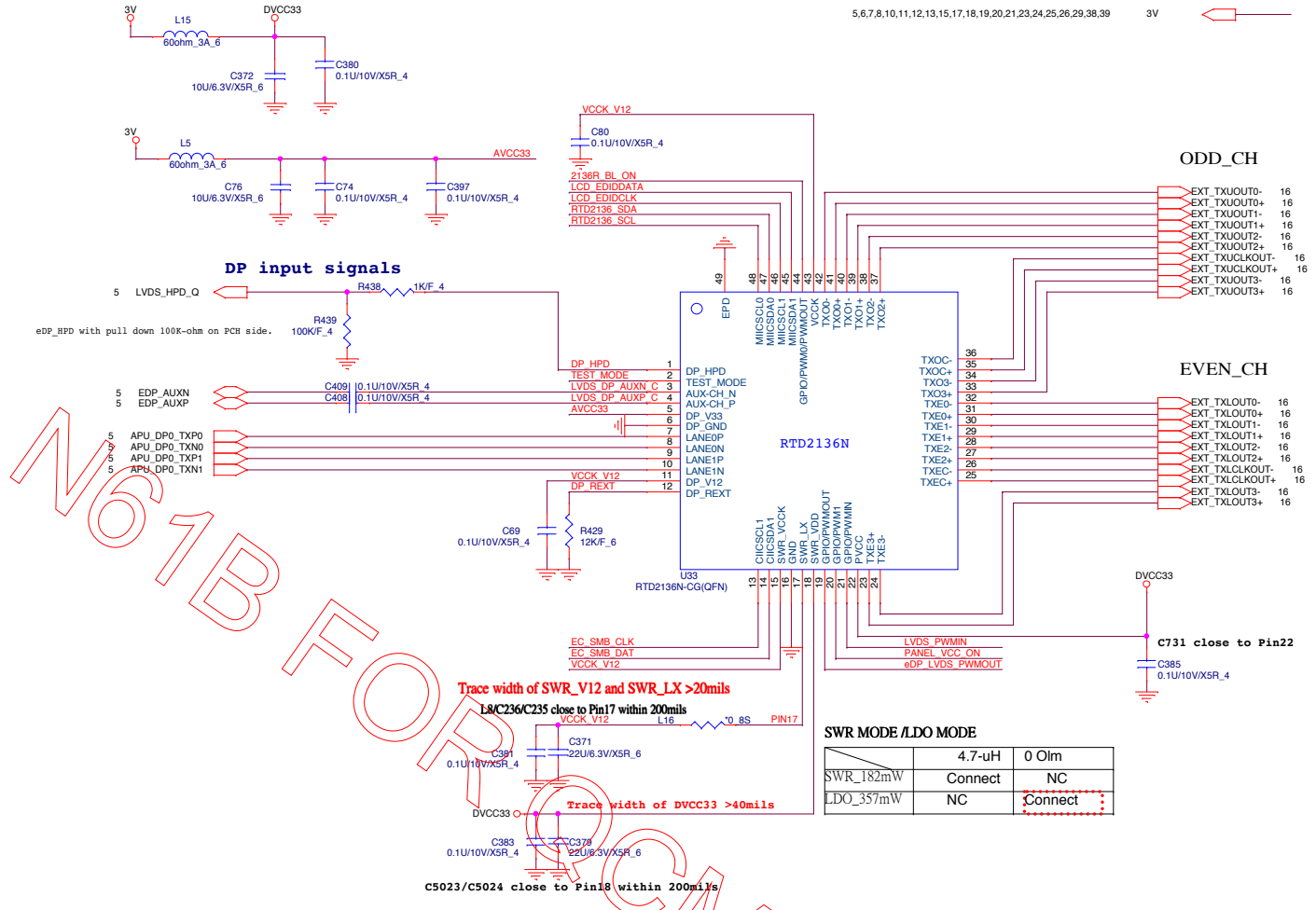
PROJECT Compressor

Quanta Computer Inc.

Size	Document Number	Rev
	Carrizo-L DDR3 DIMM-1 (H=9.2) 799918-000	A1A
Date: Monday, January 26, 2015	Sheet 13 of 44	

eDP to LVDS (RTD2136N-CG)

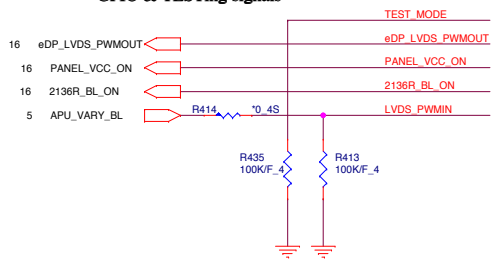


SWR MODE /LDO MODE

	4.7-uH	0 Olm
SWR_182mW	Connect	NC
LDO_357mW	NC	Connect

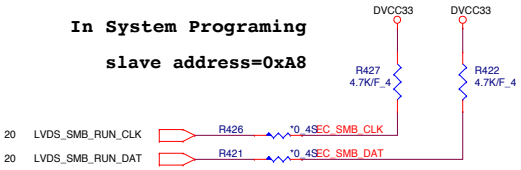
N61B FOR QCMO

GPIO & TESTing signals



In System Programing

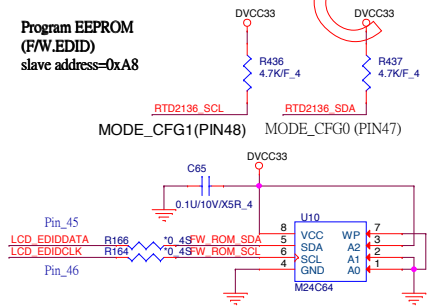
slave address=0xA8



RTD2136N: Mode Selestion		MODE_CFG0 (PIN47)	
		0	1
MODE_CFG1(PIN48)	0	X	EP MODE
	1	ROM ONLY MODE	EEPROM MODE

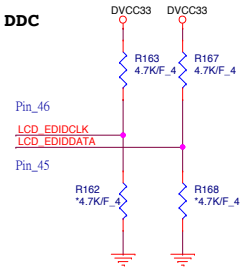
Program EEPROM (F/W.EDID)

slave address=0xA8



The Program EEPROM must be 2 byte addressing device

DDC



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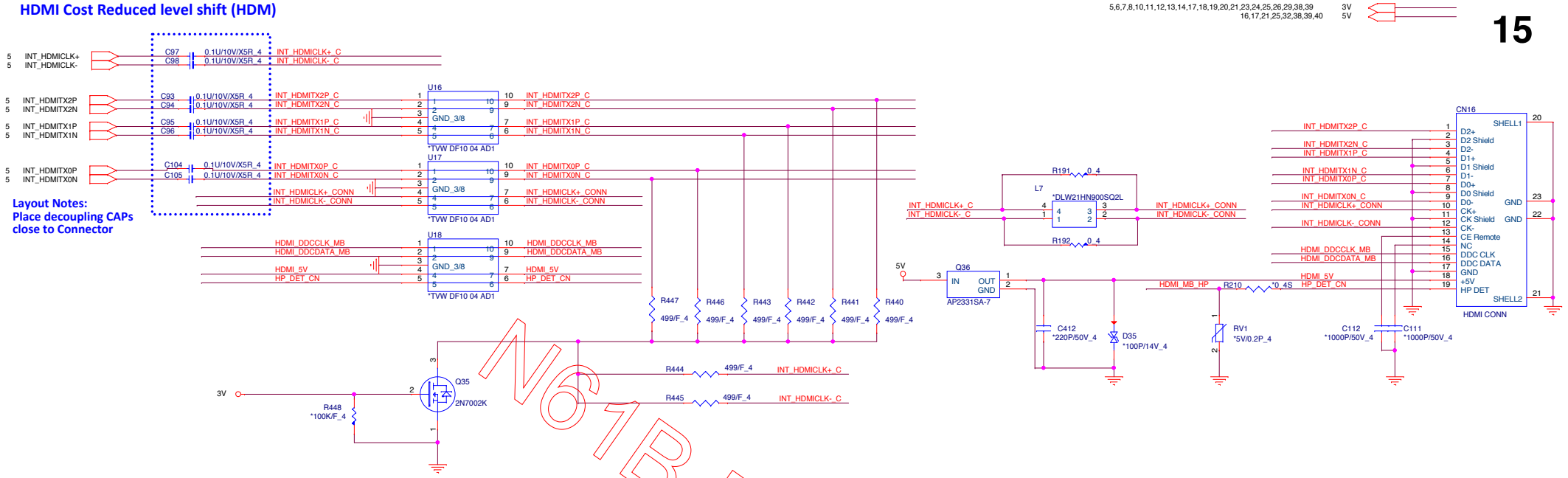
PROJECT Compressor
Quanta Computer Inc.

Size	Document Number	Rev
	Converter RTD2136R 799918-000	A1A

Date: Monday, January 26, 2015 Sheet 14 of 44

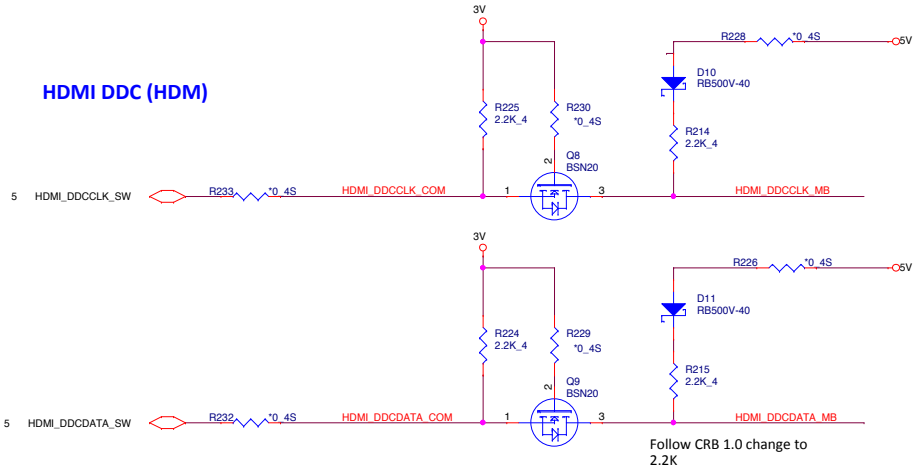
HDMI Cost Reduced level shift (HDM)



Layout Notes:
Place decoupling CAPs close to Connector

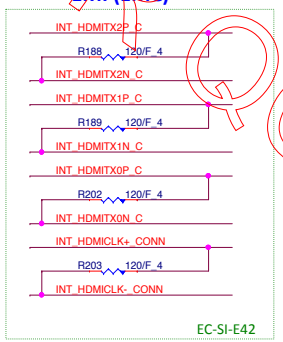
N61B FOR QCMC

HDMI DDC (HDM)

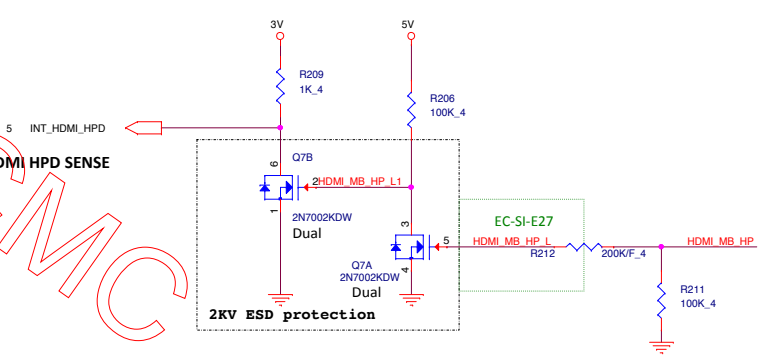


Follow CRB 1.0 change to 2.2K

EMI (EMC)



HDMI-detect (HDM)



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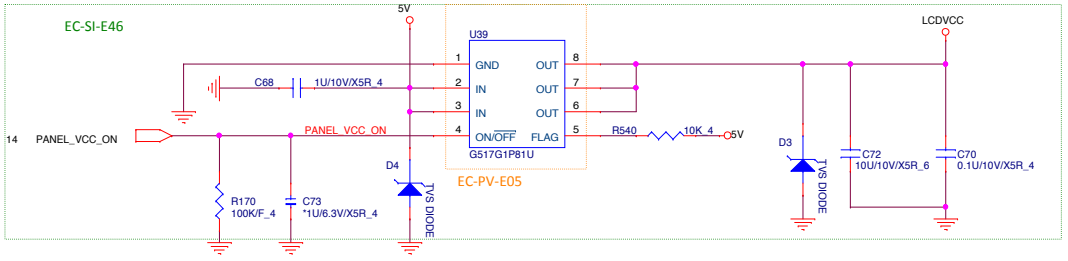
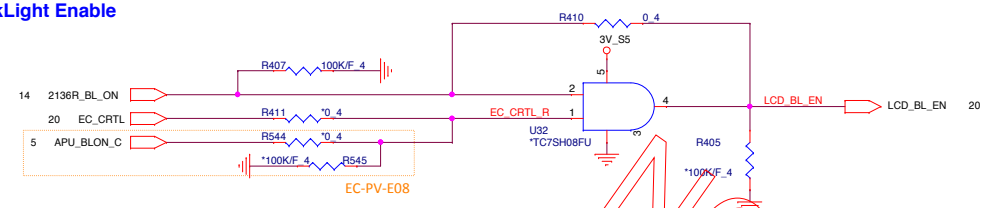
PROJECT Compressor
Quanta Computer Inc.

Size	Document Number	Rev
	HDMI 799918-000	A1A
Date: Monday, January 26, 2015	Sheet 15 of 44	

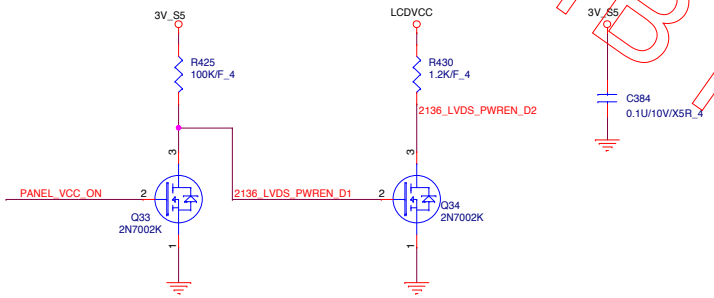
PANEL VCC CONTROL



BackLight Enable



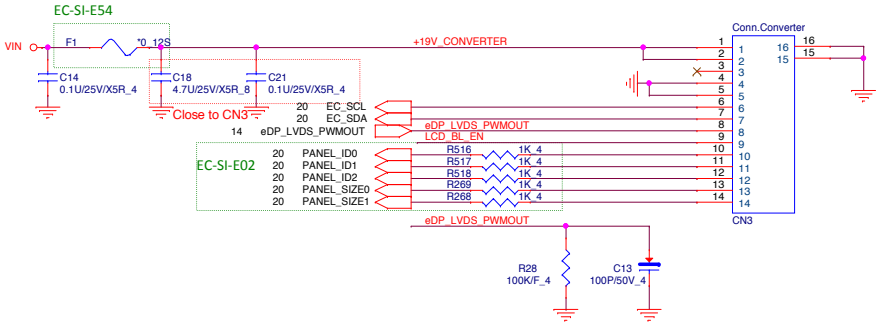
LCDVCC Discharge Circuit



PANEL VCC CONTROL

28,30,31,32,34,35,36,37,39,40
6,7,8,10,13,18,20,23,26,32,33,35,36,37,38,39
15,17,21,25,32,38,39,40
VIN
3V_S5
5V

CONVERTER CONN

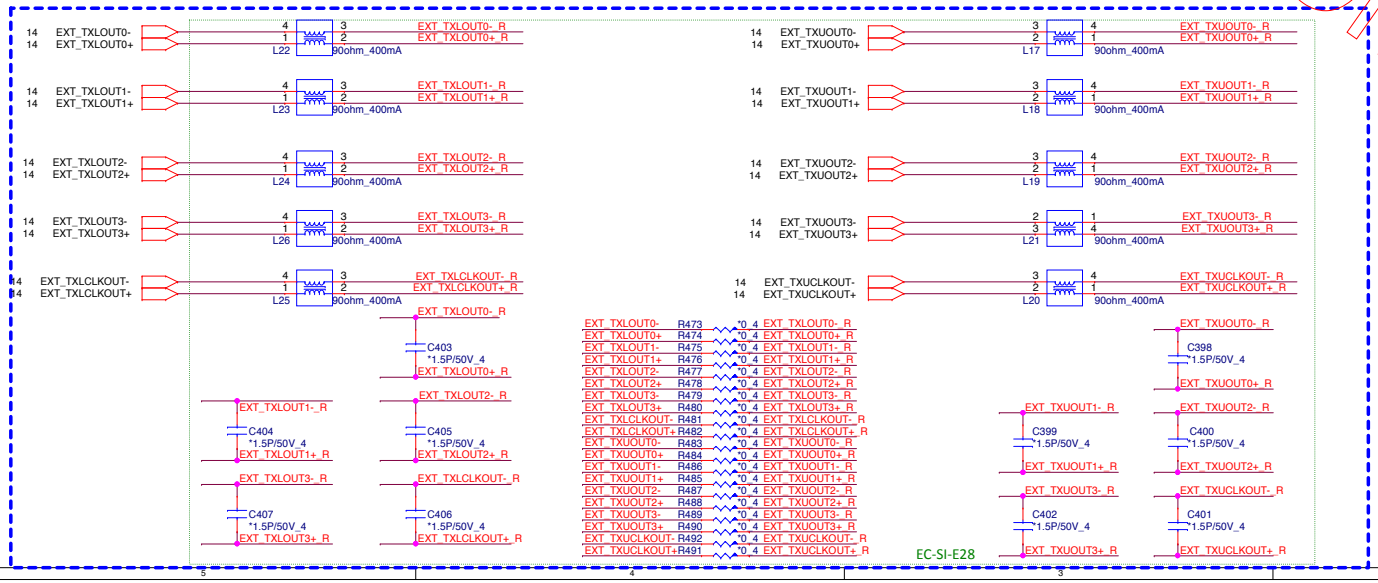


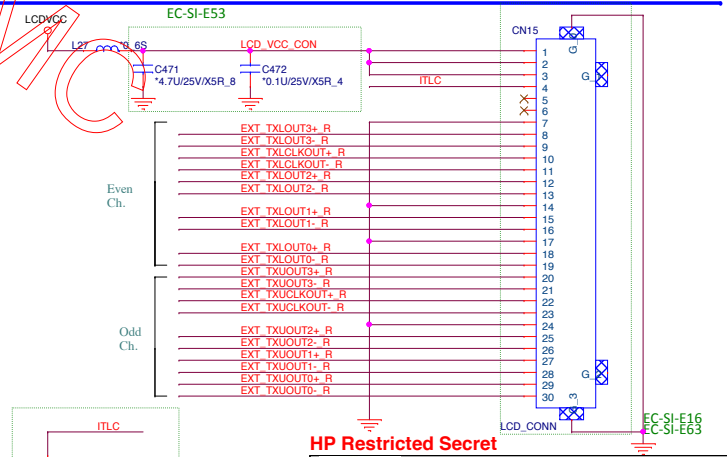
Brightness(PWM CONTROL)

PANEL_Size[1:0]	Size
01	27"
10	23"
11	21.5

PANEL_ID[2:0]	Panel model
000	Reserve
001	SDC LTM215HL01_H02
010	SDC LTM230HL08 LTM215HL01_H01 LTM270HL02-H02
011	Reserve
100	LGD LM230WF3 LM215WF3 LM270WF5-SLN2
101	Reserve
110	Reserve
111	No Connect/Cable

N61B FOR QCMC





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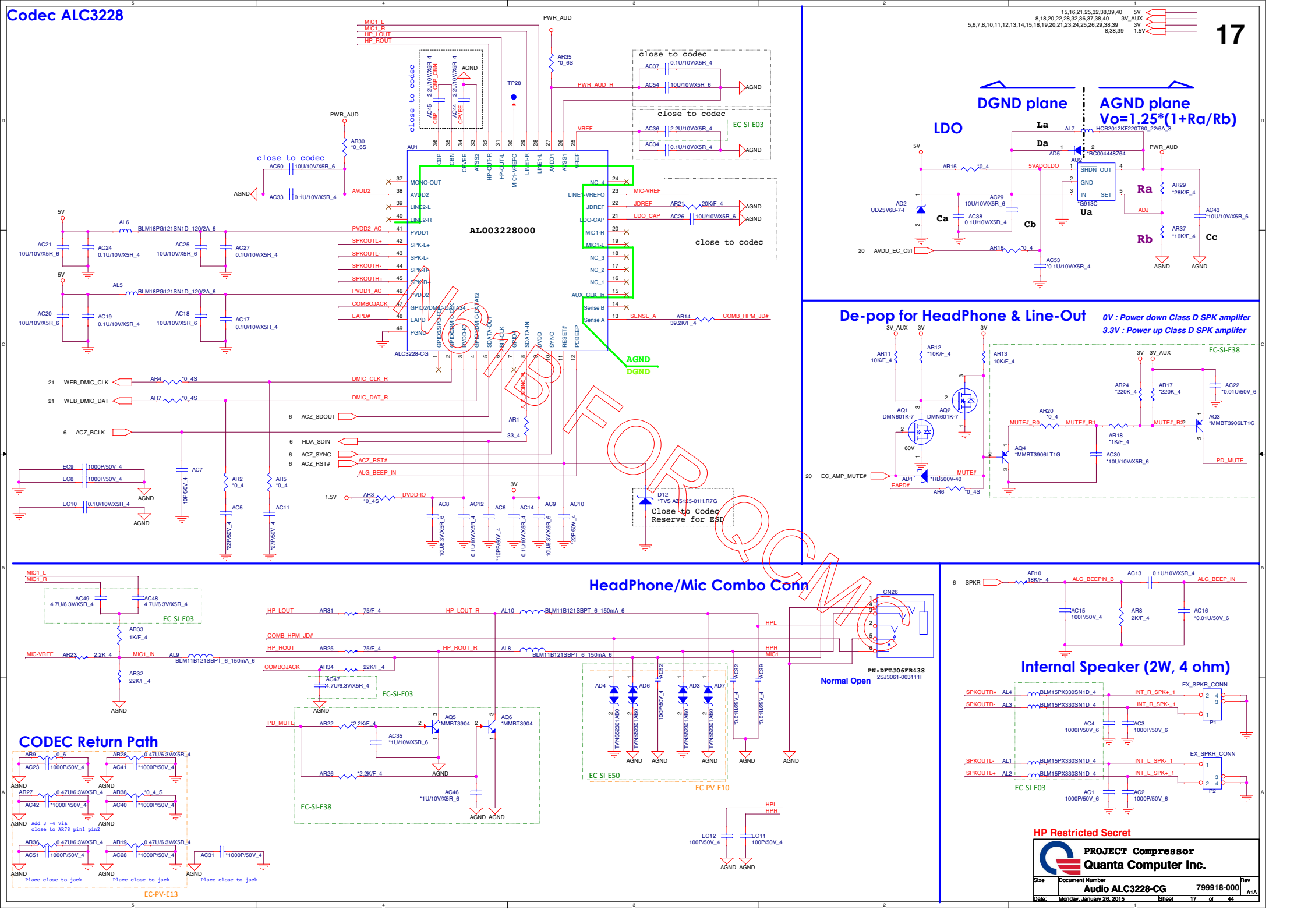
PROJECT Compressor
Quanta Computer Inc.

Size	Document Number	Rev
	Panel (Control).LCD-Conn. 799918-000	A1A
Date: Monday, January 26, 2015	Sheet 16 of 44	


Codec ALC3228
AL003228000
ALC3228-CG
close to codec
EC-SI-E03
EC-SI-E38
EC-SI-E50
EC-PV-E10
EC-PV-E13
DGND plane
AGND plane
Vo=1.25*(1+Ra/Rb)
LDO
De-pop for HeadPhone & Line-Out
0V : Power down Class D SPK amplifer
3.3V : Power up Class D SPK amplifer
HeadPhone/Mic Combo Conn
Normal Open
PN:DFTJ06FR438
Internal Speaker (2W, 4 ohm)
CODEC Return Path
Close to Codec
Reserve for ESD
17
HP Restricted Secret
PROJECT Compressor
Quanta Computer Inc.
Audio ALC3228-CG
799918-000
Monday, January 26, 2015

3V_LAN

8,17,20,22,28,32,36,37,38,40
5,6,7,8,10,11,12,13,14,15,17,19,20,21,23,24,25,26,29,38,39

3V_AUX
3V

R470 value should be
2.49K (1%)
for all application.

R470 2.49K/F_4 RSET
3V_LAN

VDD10
25MCLKX2
25MCLKX1
LAN_LED0#
LED1/EEDO
LED2/EESK
T3
T2
T1

PCIE_WAKE# LAN R238 1K/F_4
CLKREQB R464 10K/F_4

U38
GND 33
AVDD33 32
RSET 31
AVDD10_2 30
CKXTAL2 29
CKXTAL1 28
LED0 27
LED1/GPO 26
LED2(LED1) 25

MDI0+ 1 MDIP0
MDI0- 2 MDIN0
VDD10 3 AVDD10(NC)
MDI1+ 4 MDIP1
MDI1- 5 MDIN1
MDI2+ 6 MDIP2(NC)
MDI2- 7 MDIN2(NC)
VDD10 8 AVDD10_1

REGOUT(NC) 24 REGOUT
VDDREG(VDD33) 23 VDD33_REG
DVDD10(NC) 22 VDD10
LANWAKEB 21 PCIE_WAKE# LAN
ISOLATEB 20 ISOLATEB
PERSTB 19 LAN_RST#
HSON 18 HSON
HSOP 17 HSOP

3V
R467 1K/F_4
R468 *15K/F_4
C427 0.1U/10V/X5R_4
C426 0.1U/10V/X5R_4
PCIE_GLAN_RX_N 3
PCIE_GLAN_RX_P 3

MDIP3(NC) 9
MDIN3(NC) 10
AVDD33(NC) 11
CKXTAL3 12
HSIP 13
HSIN 14
REFCLK_P 15
REFCLK_N 16

MDI3+
MDI3-
3V_LAN
CLKREQB

CLK_PCIE_LAN_N 7
CLK_PCIE_LAN_P 7
PCIE_GLAN_TX_N 3
PCIE_GLAN_TX_P 3

RTL8161GSH

3V_LAN

3V_AUX 3V_S5
EC-SI-E17
R520 *0_6
3V_LAN

Q12
IN_1 5
IN_2 4
ON/OFF 3
OUT 1
GND 2
G5243AT11U

R257 *10K/F_4
20 LAN_PWR_ON
C141 *0.1U/10V/X5R_4
C145 0.1U/10V/X5R_4

40 mil

EVDD10/AVDD33_REG trace width >40mils

3V_LAN
R254 *0_6S
VDD33_REG

C435 *4.7U/6.3V/X5R_6
C433 0.1U/10V/X5R_4
Close to Pin32

C424 *4.7U/6.3V/X5R_6
C425 0.1U/10V/X5R_4
Close to Pin11

EC-SI-E18
C140 0.1U/10V/X5R_4
C432 4.7U/6.3V/X5R_6
Close to Pin23

EC-PV-E07

EVDD10/N780946/REGOUT trace width >60mils

VDD10
L11 4.7uH_8
REGOUT

C434 0.1U/10V/X5R_4
C429 0.1U/10V/X5R_4
C132 0.1U/10V/X5R_4
C138 0.1U/10V/X5R_4
Close to PIN3, 8, 22, 30

C430 0.1U/10V/X5R_4
C431 1U/6.3V/X5R_4
EC-SI-E52
C430,C431
Close to PIN22

EC-SI-E18
C139 4.7U/6.3V/X5R_6
C144 *0.1U/10V/X5R_4

X'tal 25MHz

C437 10P/50V_4
R471 *0_4S 25MCLKX1
Y4
XTAL 25MHz 30ppm
BG625000085
C436 10P/50V_4
25MCLKX2

LAN_RST#

3V_LAN
C135 0.1U/10V/X5R_4
LAN_RST# 4
U24
TC7SH08FU
PLTRST_N 6,19,23

PCIE_WAKE# LAN

3V_LAN
Q10
METR5213-G
PCIE_WAKE# LAN
R253 *0_4
PCIE_WAKE# 6,23

NOT FOR QC

LAN Conn

U21
MDI0+ R247 1/F_6 MDI0+_R
MDI0- R243 1/F_6 MDI0-_R
MDI1+ R237 1/F_6 MDI1+_R
MDI1- R235 1/F_6 MDI1-_R
MDI2+ R223 1/F_6 MDI2+_R
MDI2- R219 1/F_6 MDI2-_R
MDI3+ R218 1/F_6 MDI3+_R
MDI3- R217 1/F_6 MDI3-_R

TCT0 TD0+ TD0- TCT1 TD1+ TD1- TCT2 TD2+ TD2- TCT3 TD3+ TD3-
MCT0 TX0+ TX0- MCT1 TX1+ TX1- MCT2 TX2+ TX2- MCT3 TX3+ TX3-

TXCT0 10MIL R466 75/F_8 NS892407_MCT
RJ45-TX0+ IN0 10MIL
RJ45-TX0-
TXCT1 10MIL R465 75/F_8
RJ45-TX1+ IN1 10MIL
RJ45-TX1-
TXCT2 10MIL R463 75/F_8
RJ45-TX2+ IN2 10MIL
RJ45-TX2-
TXCT3 10MIL R462 75/F_8
RJ45-TX3+ IN3 10MIL
RJ45-TX3- 10MIL
NS892407

15MIL
C417 10P/3KV_1808
15MIL
EC-SI-E03
LANGND

C428 0.1U/50V/X7R_6
L32 *BLM8SG370TN1D(70_4A)_6
R469 *0_6

TVL ST23
CH2 CH3 CH4 CH1 Vn Vp
MDI3- MDI3+ MDI2- MDI2+ 3V_LAN
U19
TVL ST23
MDI1- MDI1+ MDI0- MDI0+ 3V_LAN
U23
EC-SI-E50

TXCT1 TXCT0 TXCT3 TXCT2
Q38 Q37
Surge
LANGND

R208 *0_8S
R457 *0_8S
L8 HCB1608KF-221T20(220_2A)_6
C130 0.1U/50V/X7R_6
C107 *0.1U/25V/X5R_4
C110 *0.1U/25V/X5R_4
LANGND

3V_LAN R207 332/F_4
C109 470P/50V_4
C108 470P/50V_4
D9 TVNS52301AB0
D8 TVNS52301AB0
EC-PV-E17
LANGND

LED2/EESK 1000M_LED_R
RJ45-TX3-
RJ45-TX3+
RJ45-TX1-
RJ45-TX2-
RJ45-TX2+
RJ45-TX1+
RJ45-TX0-
RJ45-TX0+

CN21
Y- Y+
NC/3- NC/3+ NC/2- NC/2+
RX-/1- RX+/1+ TX-/0- TX+/0+
G- G+
GND1
RJ45-CONN
13
LANGND

LED1/EEDO R200 332/F_4 LED1_R
LAN_LED0#
D7 TVNS52301AB0
EC-PV-E17
C101 470P/50V_4
C102 470P/50V_4
LANGND

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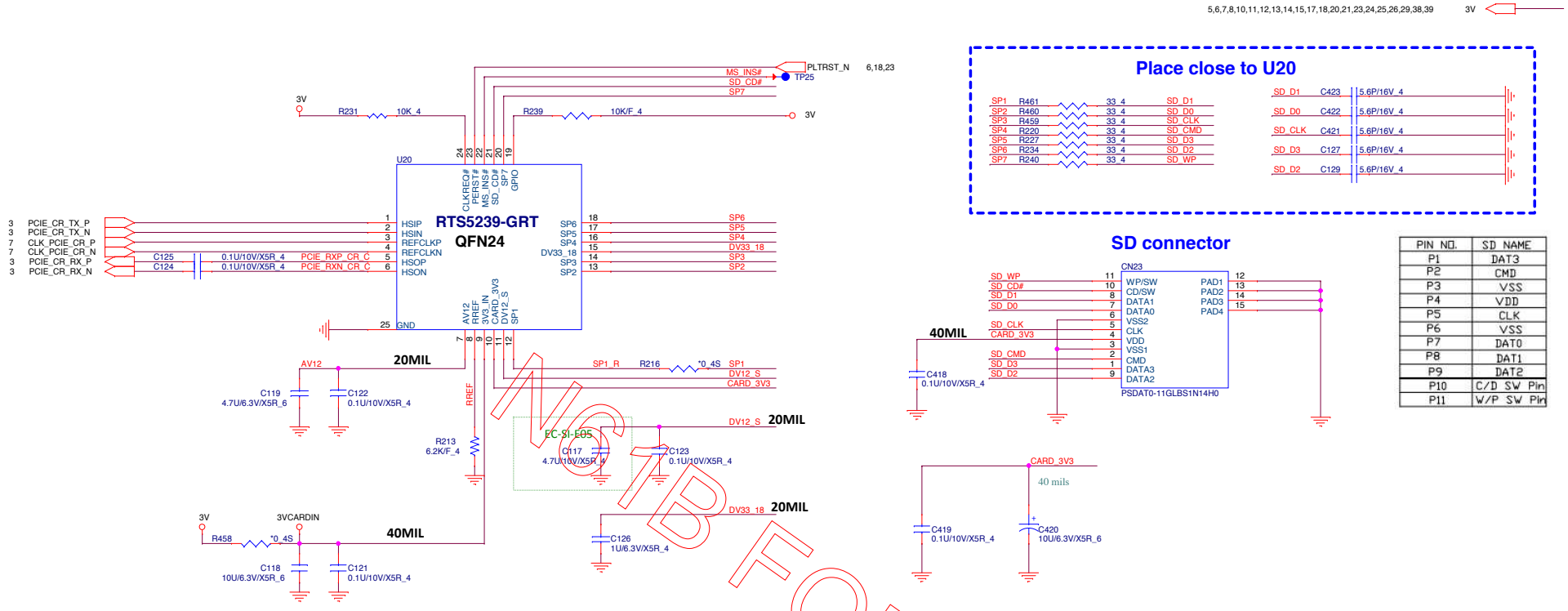
PROJECT Compressor
Quanta Computer Inc.

Size	Document Number	Rev
	RTL8151/RJ45 799918-000	A1A
Date: Monday, January 26, 2015	Sheet 18 of 44	



PIN NO.	SD NAME
P1	DAT3
P2	CMD
P3	VSS
P4	VDD
P5	CLK
P6	VSS
P7	DAT0
P8	DAT1
P9	DAT2
P10	C/D SW Pin
P11	W/P SW Pin

NOT TO BE FOR QCMC

HP Restricted Secret

PROJECT Compressor
Quanta Computer Inc.

Size	Document Number	Rev
	Card Reader (RTS5239) 799918-000	A1A
Date: Monday, January 26, 2015	Sheet 19 of 44	

EC

(For PLL Power)

3V_AUX

LPC

GPIO

SM BUS

PS/2

CIR

PWM

UART port

WAKE UP

EXTERNAL SERIAL FLASH

SPI Device

KBMX

A/D D/A

CLOCK

IT8528E

U28 IT8528

CN22 *EC_88502-2401-24P-L

EC Debug

SIC,SID:CZ: level shift 1.8V CZ-L:3.3V

To converter

To translator

Power Good circuit

Close to EC

For EC F/W ROM

U5 GD25Q80BSIGR 4Mb SPI Flash

EC_BOARD_ID	Model
1	AMD Carrizo
0	AMD Carrizo-L

Carrizo-L A8 APU	
TDP_ID	APU TDP
1	15W APU
0	25W APU

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PROJECT Compressor
Quanta Computer Inc.

Size	Document Number	Rev
	EC ITE 8528/ FlashROM 799918-000	A1A
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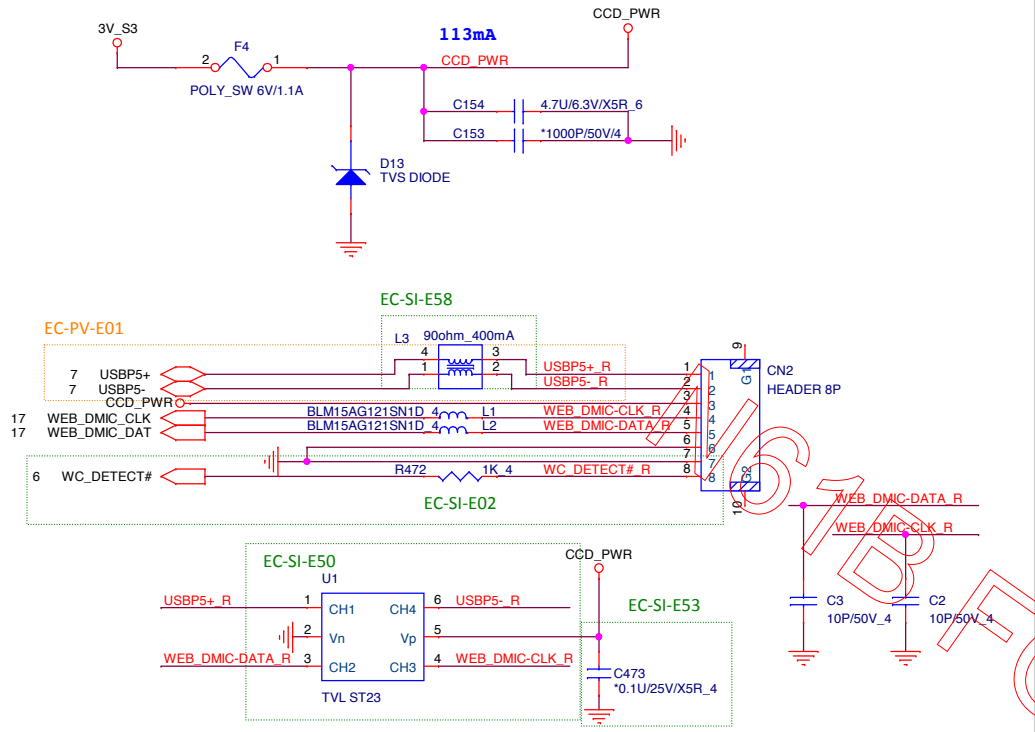
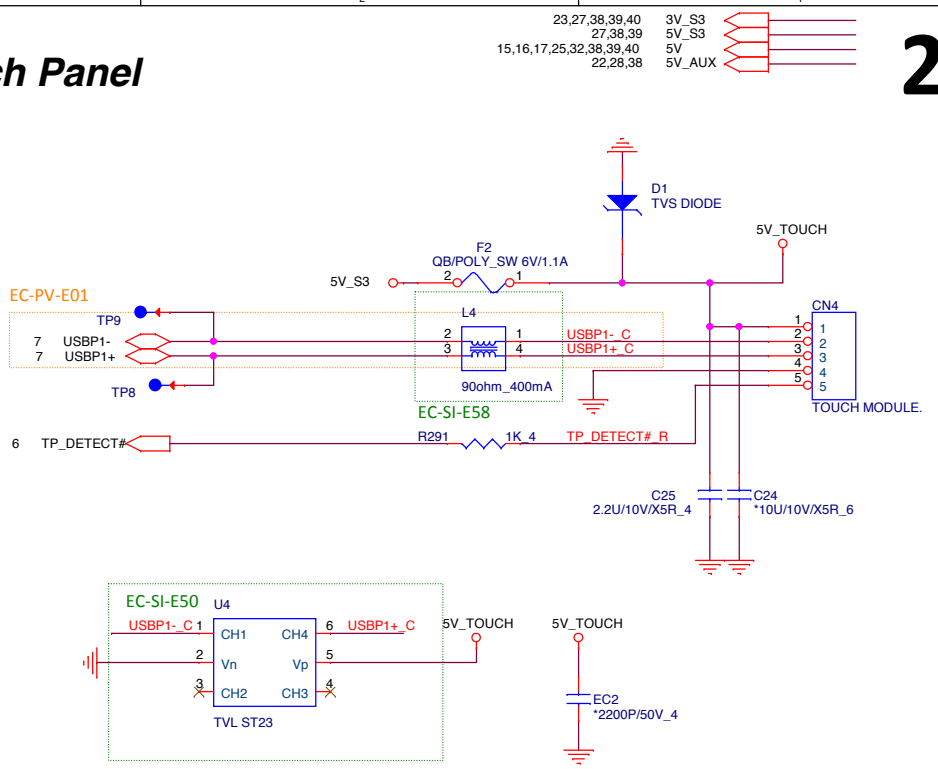
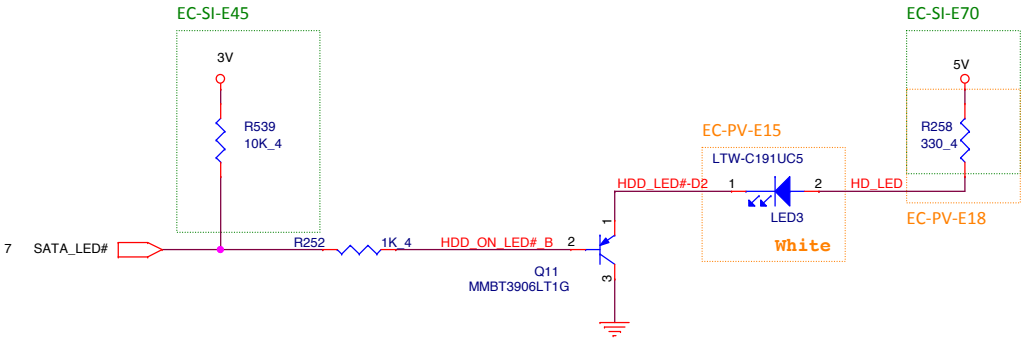
WEBCAM



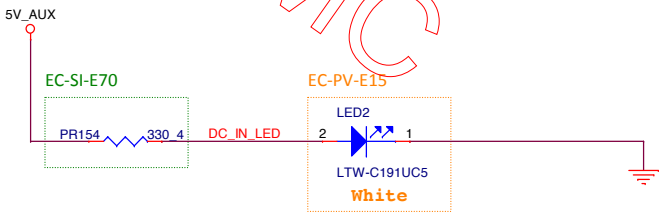
Touch Panel



SATA LED



DC-IN LED



16TB FOR QCMC

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PROJECT Compressor		
Quanta Computer Inc.		
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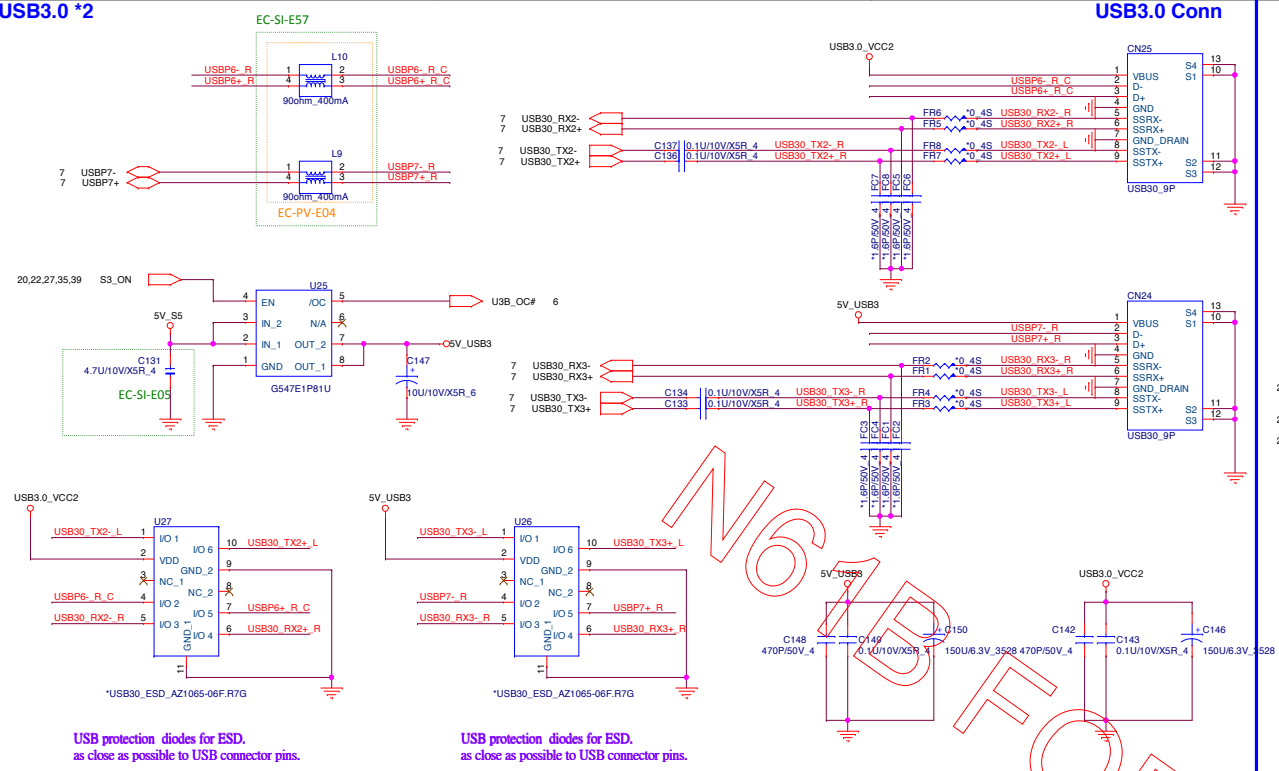
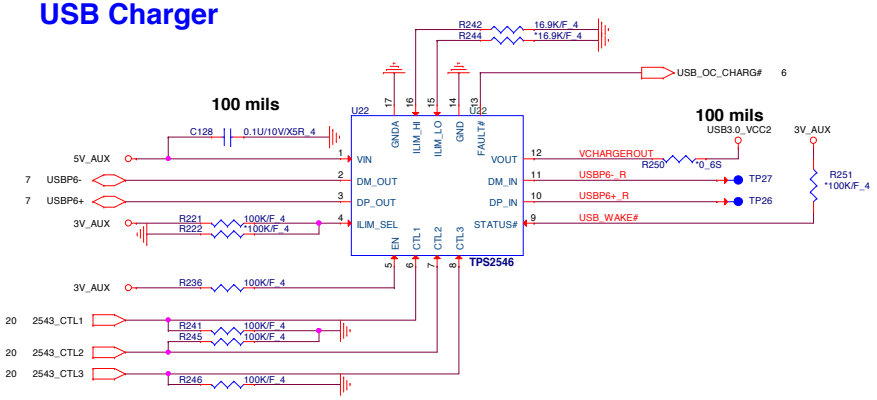
USB3.0 *2



USB Charger

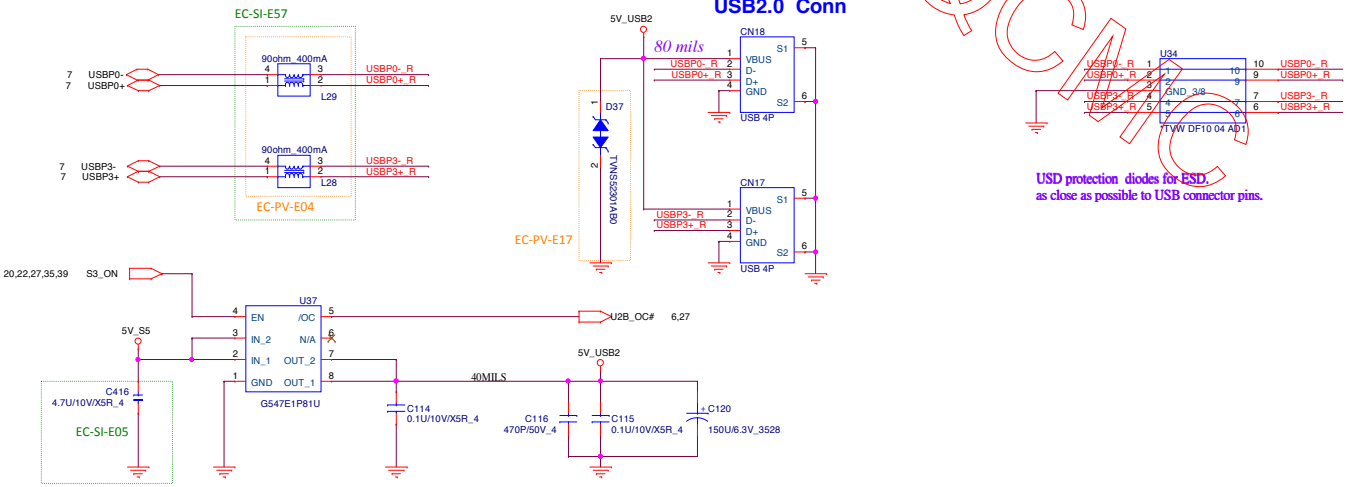


SDP : Standard Downstream Port
CDP : Charging downstream port
DCP : Dedicated Charging Port
Enable/Disable : setting by BIOS

POWER STATE	TPS2546 CHARGING MODE	CTRL1	CTRL2	CTRL3	ILIM
S0	CDP LOAD DETECTION WITH ILIM_LO +60MA THRESHOLDS OR IF A BC1.2 PRIMARY DETECTION OCCURS	1	1	1	1
S3	AUTO MODE, LOAD DETECTION WITH POWER WAKE THRESHOLDS	0	1	1	1
S4/S5	AUTO MODE, KEYBOARD/ MOUSE WAKE-UP, LOAD DETECTION WITH ILIM_LO +60MA THRESHOLDS	0	0	1	1

No USB for QC

USB2.0 X 2



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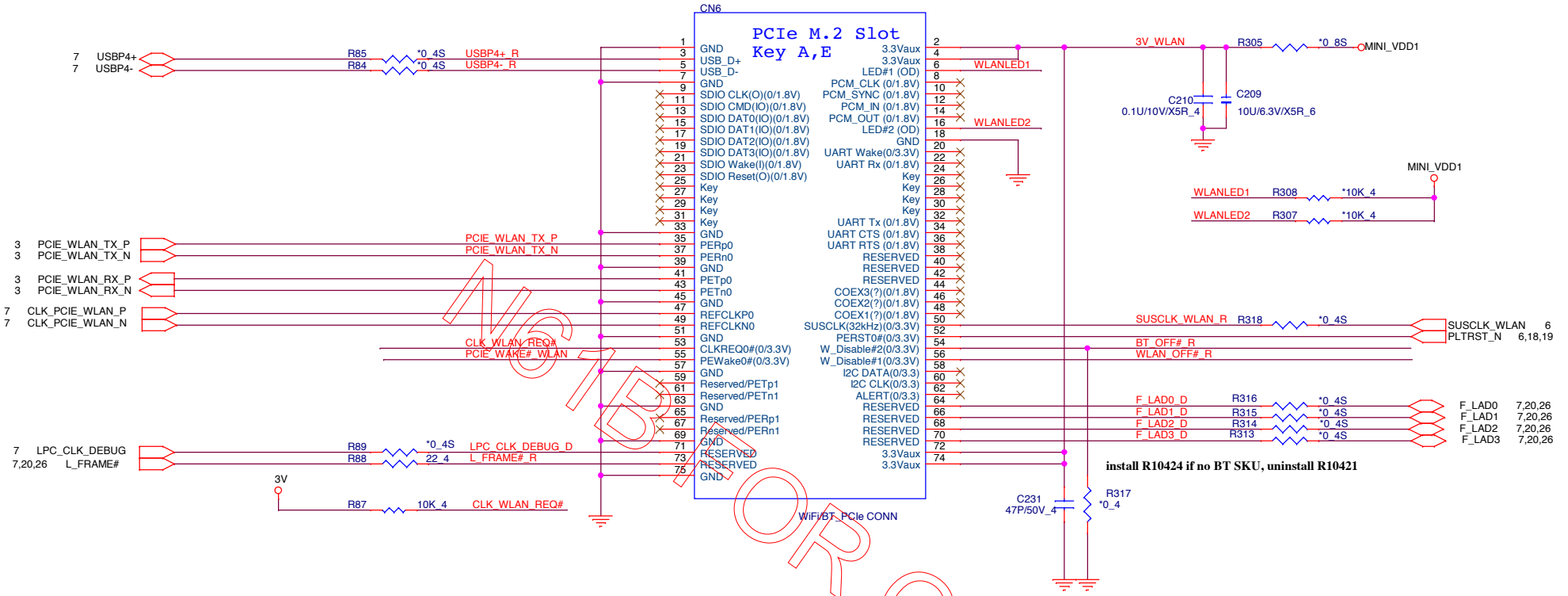
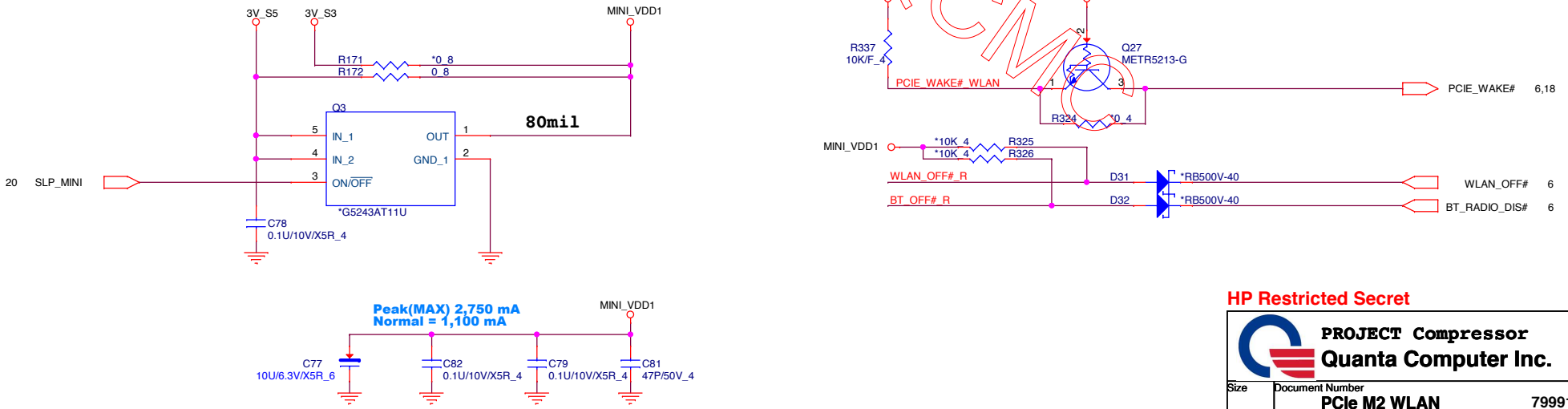
PCIe M.2 Slot Key A,E

H=9.0

6,7,8,10,13,16,18,20,26,32,33,35,36,37,38,39 3V_S5
5,6,7,8,10,11,12,13,14,15,17,18,19,20,21,24,25,26,29,38,39 3V
21,27,38,39,40 3V_S3



PCIe M2_power(S5)



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5,6,7,8,10,11,12,13,14,15,17,18,19,20,21,23,25,26,29,38,39 3V

HDD REDRIVER

C44,C45,C46,C47 CLOSE TO RE-DRIVER IC

7 SATA_TX0_P — C44 R100 *0.01U/25V_4 0_4 — SATA_TX0_P_RE — SATA_TX0_P_CON 25
7 SATA_TX0_N — C45 R101 *0.01U/25V_4 0_4 — SATA_TX0_N_RE — SATA_TX0_N_CON 25
7 SATA_RX0_N — C47 R104 *0.01U/25V_4 0_4 — SATA_RX0_N_RE — SATA_RX0_N_CON 25
7 SATA_RX0_P — C46 R102 *0.01U/25V_4 0_4 — SATA_RX0_P_RE — SATA_RX0_P_CON 25

3 PAD DESIGN

3V — R96 *0_4S — 3V_HDD_REDRIVER

3V
R495 *4.7K_4 — HDD_A_EQ1
R497 *4.7K_4 — HDD_A_EQ2
R498 *4.7K_4 — HDD_B_EQ2
R499 *4.7K_4 — HDD_B_EQ1
R494 *4.7K_4
R496 *4.7K_4
R501 *4.7K_4
R500 *4.7K_4

EC-SI-E06

3V_HDD_REDRIVER
C50 4.7U/6.3V/X5R_4 — EC-SI-E05
C42 0.1U/10V/X5R_4
C40 *4.7U/6.3V/X5R_4 — EC-SI-E05
C49 0.1U/10V/X5R_4

U7 PS8527BTQFN20GTR2-A2

6 VCC			
16 VCC		REXT 10	R493 4.99/FK_4
HDD_A_EQ1 18 A_EQ1		B_EQ2 17	HDD_B_EQ2
HDD_A_EQ2 19 A_EQ2		B_EQ1 20	HDD_B_EQ1
SATA_TX0_P_RE 1 IN0P		OUT0P 15	SATA_TXP0+_R 25
SATA_TX0_N_RE 2 IN0M		OUT0M 14	SATA_TXN0-_R 25
SATA_RX0_N_RE 4 OUT1N		IN1N 12	SATA_RXN0-_R 25
SATA_RX0_P_RE 5 OUT1P		IN1P 11	SATA_RXP0+_R 25
3V R107 10K_4 7 EN		GND 3	
3V R111 4.7K_4 9 A_DE		GND 13	
R108 4.7K_4 8 B_DE		EP_AGND 22	
		EP 23	
		EP 24	
21		25	

R109 4.7K_4 — R110 4.7K_4

ODD REDRIVER

C53,C57,C58,C59 CLOSE TO RE-DRIVER IC

7 SATA_TX1_P — C53 R135 *0.01U/25V_4 0_4 — SATA_TX1_P_RE — SATA_TX1_P_CON 25
7 SATA_TX1_N — C57 R145 *0.01U/25V_4 0_4 — SATA_TX1_N_RE — SATA_TX1_N_CON 25
7 SATA_RX1_N — C59 R155 *0.01U/25V_4 0_4 — SATA_RX1_N_RE — SATA_RX1_N_CON 25
7 SATA_RX1_P — C58 R152 *0.01U/25V_4 0_4 — SATA_RX1_P_RE — SATA_RX1_P_CON 25

3 PAD DESIGN

3V — R106 *0_4S — 3V_ODD_REDRIVER

3V
R502 *4.7K_4 — ODD_A_EQ1
R503 *4.7K_4 — ODD_A_EQ2
R506 *4.7K_4 — ODD_B_EQ2
R507 *4.7K_4 — ODD_B_EQ1
R505 *4.7K_4
R504 *4.7K_4
R508 *4.7K_4
R509 *4.7K_4

EC-SI-E66

EC-SI-E06

3V_ODD_REDRIVER
C48 4.7U/6.3V/X5R_4 — EC-SI-E05
C51 0.1U/10V/X5R_4
C62 *4.7U/6.3V/X5R_4 — EC-SI-E05
C60 0.1U/10V/X5R_4

U8 *PS8527BTQFN20GTR2-A2

6 VCC			
16 VCC		REXT 10	4.99K/F_4 R112
ODD_A_EQ1 18 A_EQ1		B_EQ2 17	ODD_B_EQ2
ODD_A_EQ2 19 A_EQ2		B_EQ1 20	ODD_B_EQ1
SATA_TX1_P_RE 1 IN0P		OUT0P 15	SATA_TXP1+_R 25
SATA_TX1_N_RE 2 IN0M		OUT0M 14	SATA_TXN1-_R 25
SATA_RX1_N_RE 4 OUT1N		IN1N 12	SATA_RXN1-_R 25
SATA_RX1_P_RE 5 OUT1P		IN1P 11	SATA_RXP1+_R 25
3V R157 10K_4 7 EN		GND 3	
3V R161 4.7K_4 9 A_DE		GND 13	
R158 4.7K_4 8 B_DE		EP_AGND 22	
		EP 23	
		EP 24	
21		25	

R159 4.7K_4 — R160 4.7K_4

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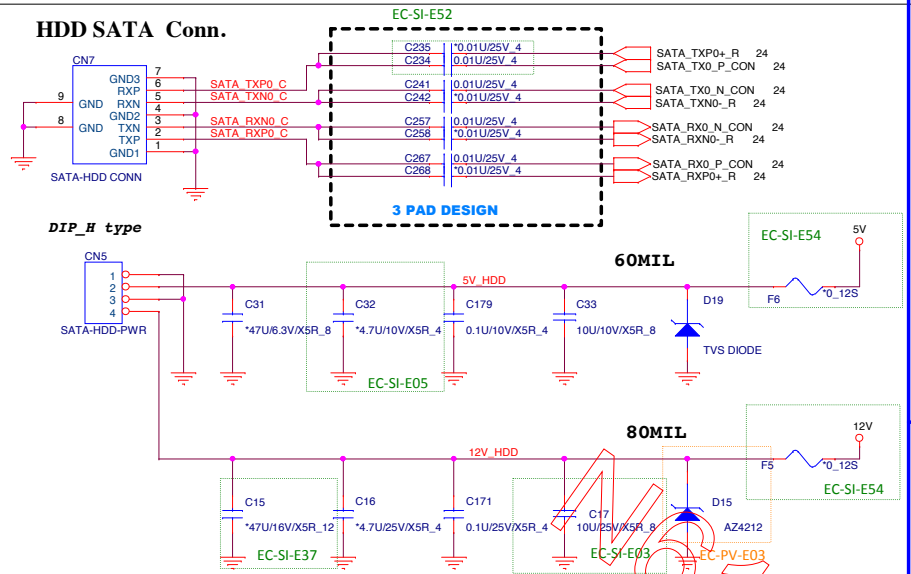
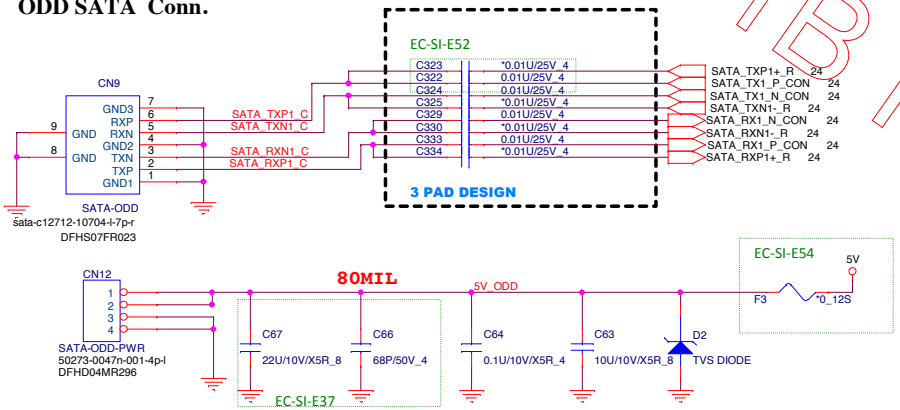
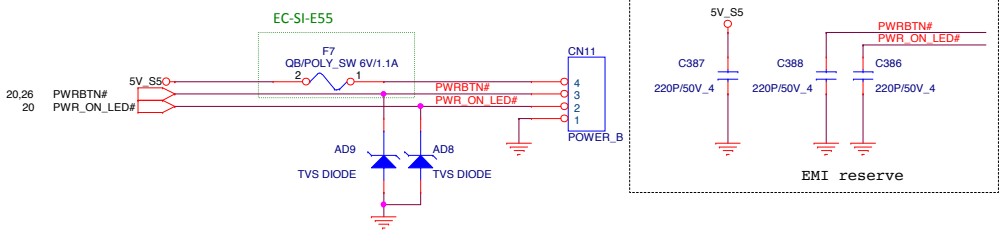
HDD SATA Conn.



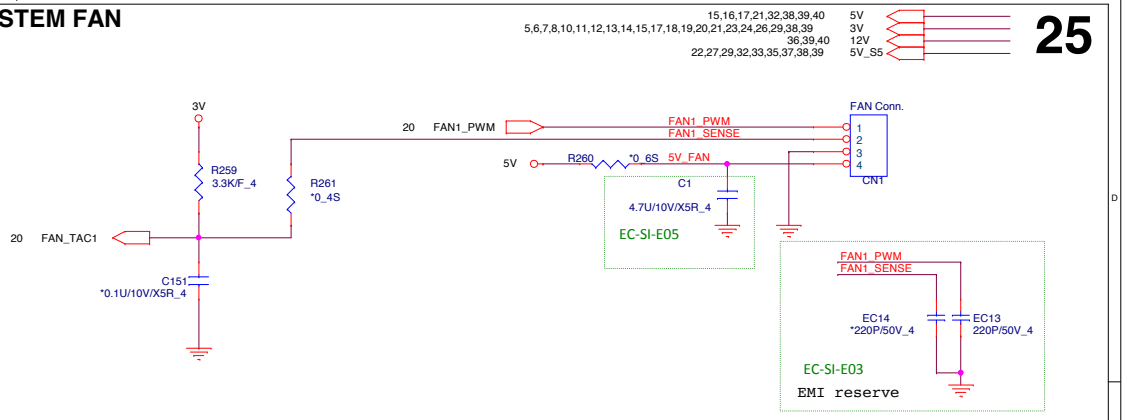
ODD SATA Conn.



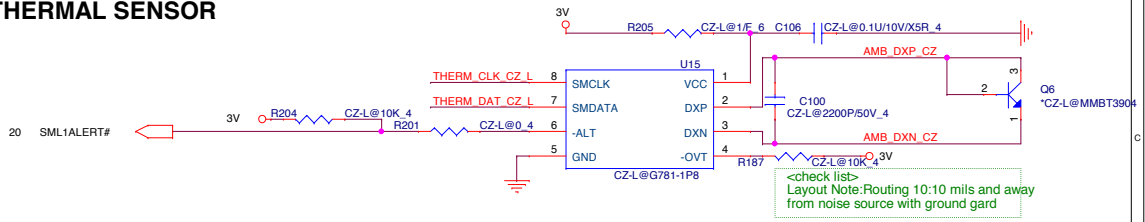
Power Button CONN



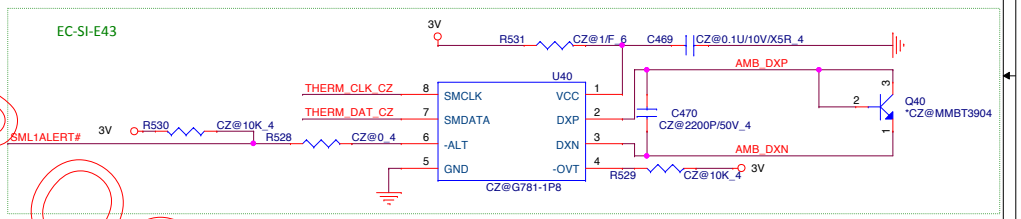
SYSTEM FAN

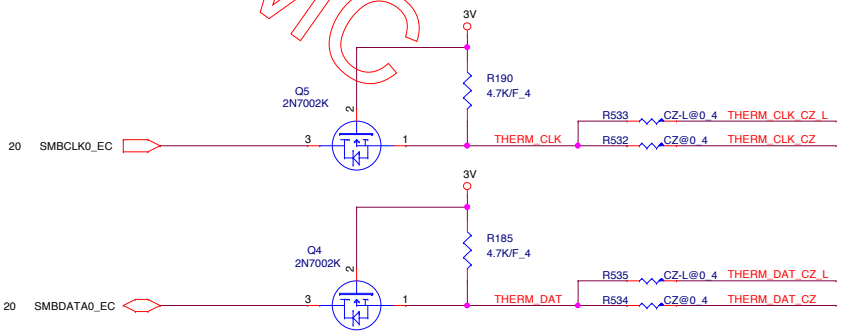


THERMAL SENSOR



Ambient





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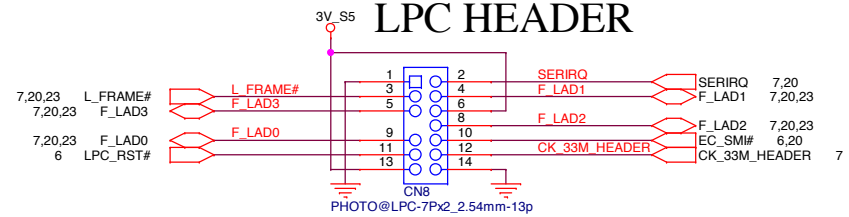
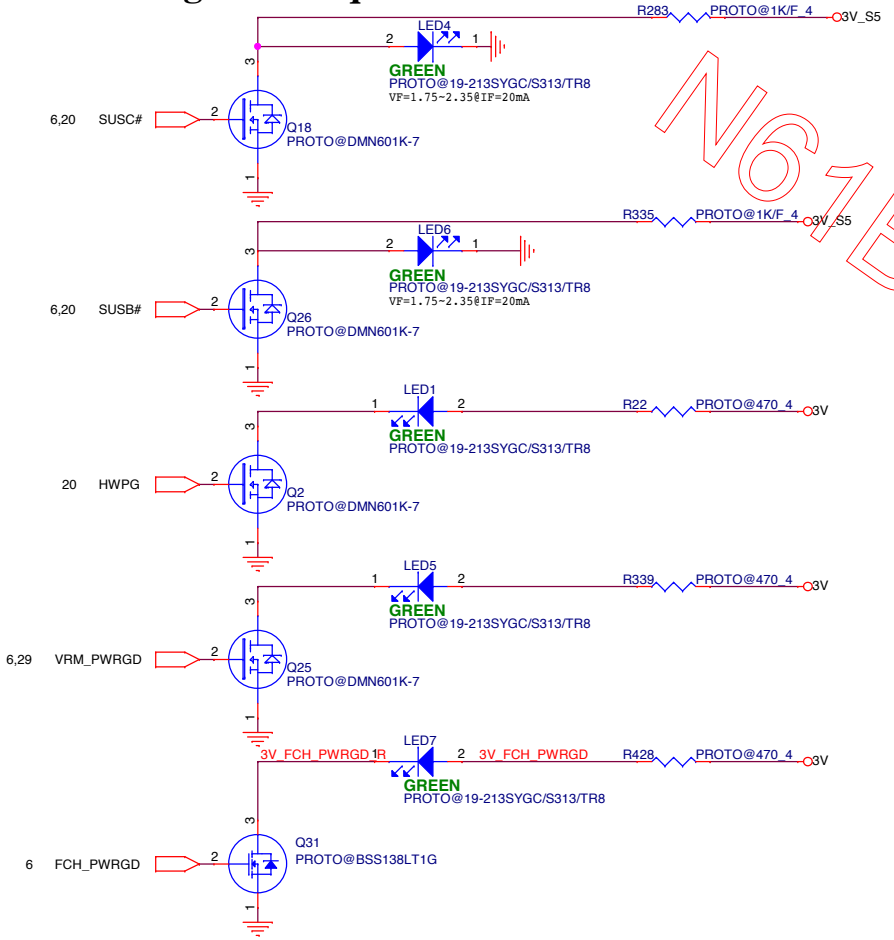
MOTHER BOARD FOR QCMC

LEDs/LPC HEADER



PCA debug LED requirement:



SW1 For Debug.MP will remove it.

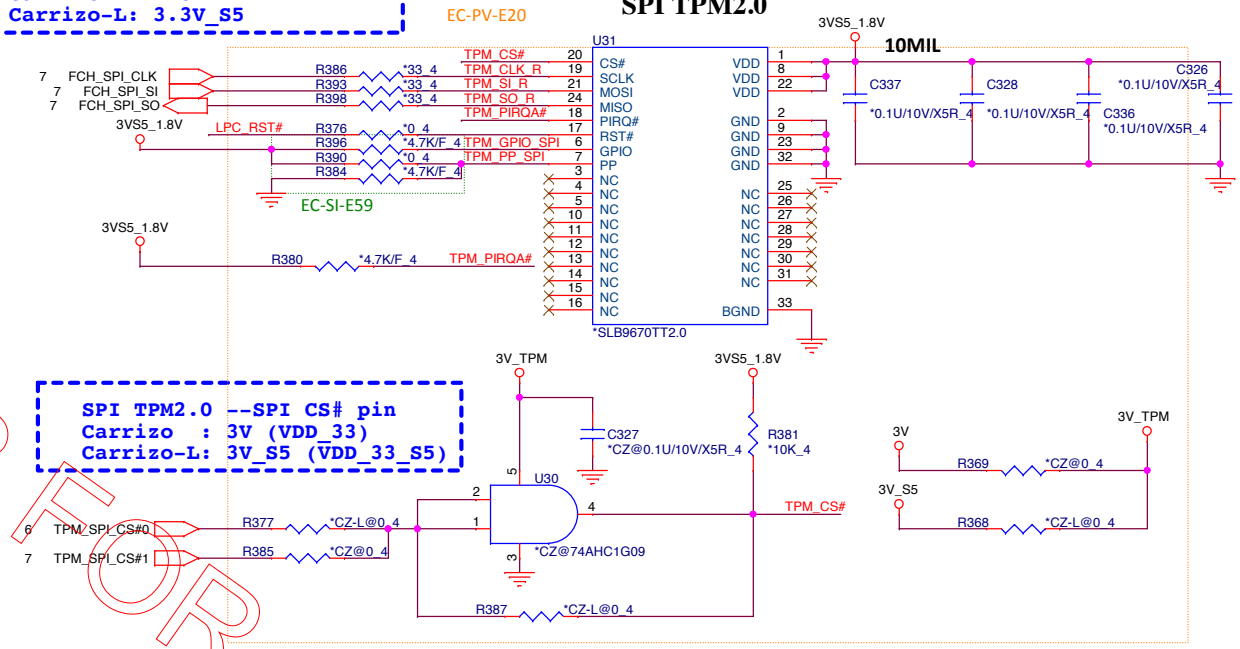
TPM2.0

6,7,8,10,13,16,18,20,23,32,33,35,36,37,38,39 3V_S5
5,6,7,8,10,11,12,13,14,15,17,18,19,20,21,23,24,25,29,38,39 3V
7 3VS5_1.8V

26

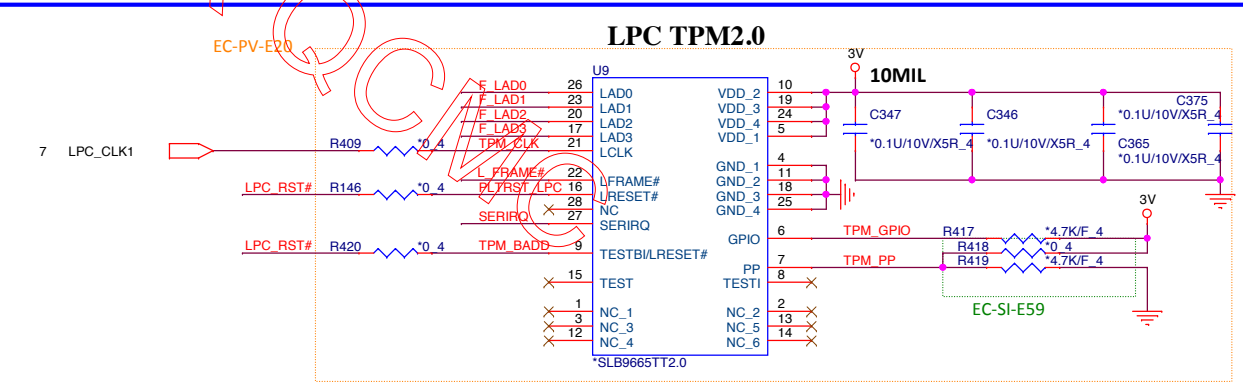
SPI TPM2.0 --VCC
Carrizo : 1.8V
Carrizo-L: 3.3V_S5

SPI TPM2.0



SPI TPM2.0 --SPI CS# pin
Carrizo : 3V (VDD_33)
Carrizo-L: 3V_S5 (VDD_33_S5)

LPC TPM2.0



N61B FOR QCT

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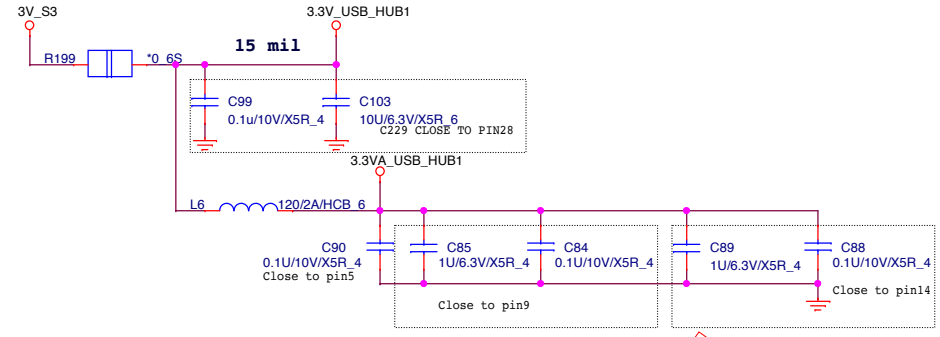
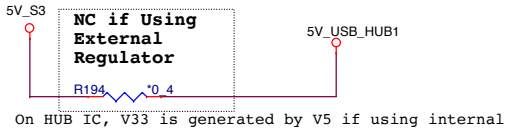
USB HUB

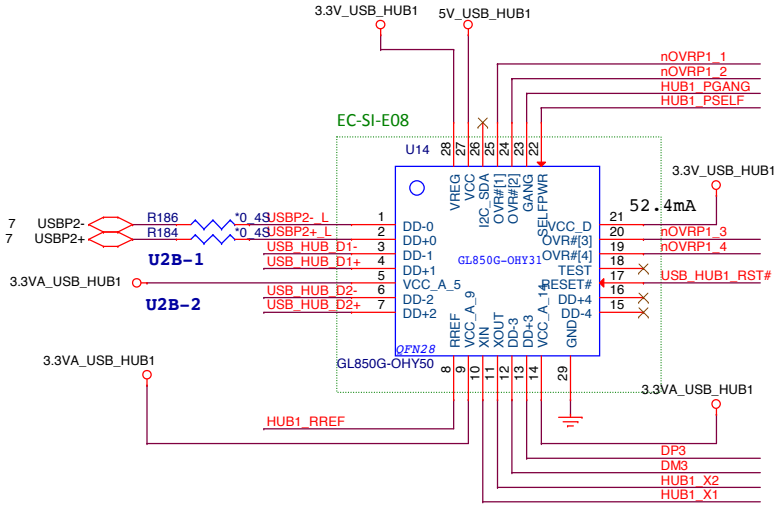
21,23,38,39,40 3V_S3
21,38,39 5V_S3
22,25,29,32,33,35,37,38,39 5V_S5

typ. 81mA for 2 port full speed.

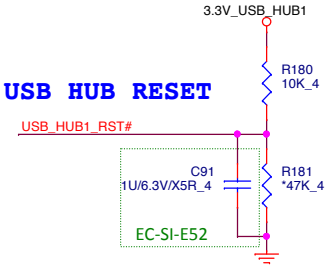




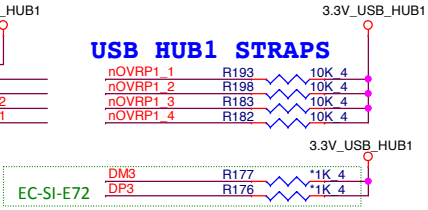
On HUB IC, V33 is generated by V5 if using internal LDO.



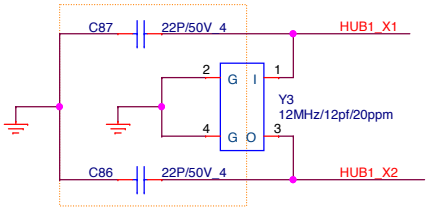
USB HUB RESET

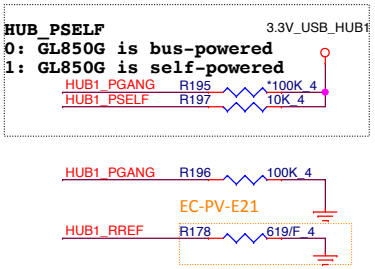


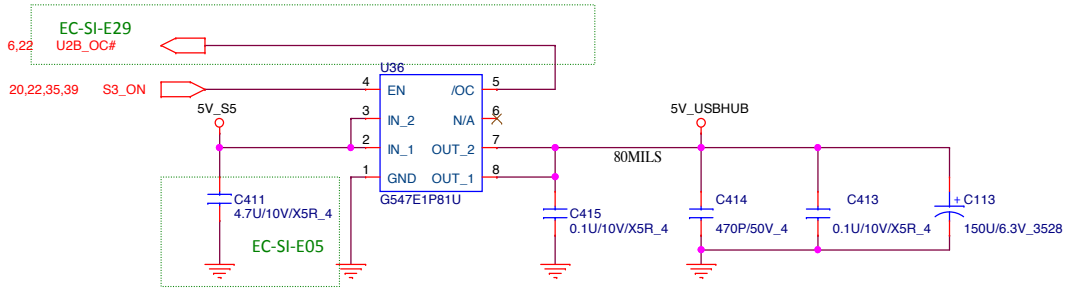
USB HUB1 STRAPS

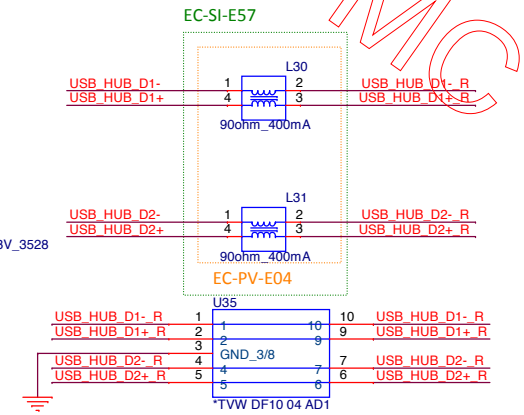


USB HUB1 XTAL

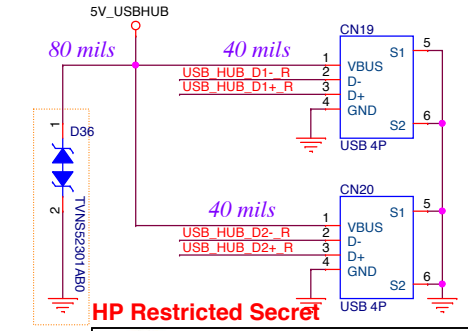








USB protection diodes for ESD.
as close as possible to USB connector pins.



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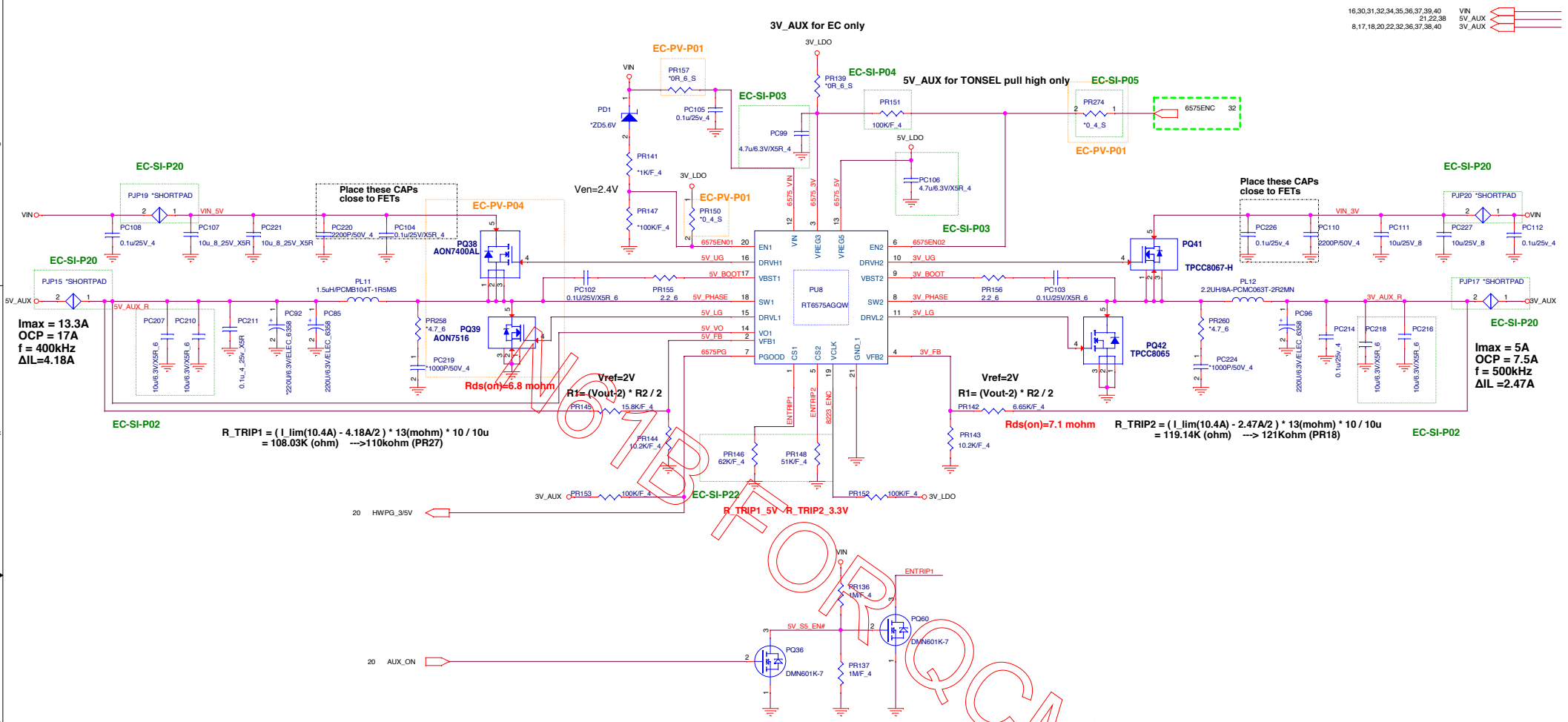

NOT FOR QCMC

L/S Mosfet parameter

MOSFET	Package	ID (Ta=25C)	Rds_on_max
TPCC8067-H	DFN3x3	9A	26m
TPCC8062-H	DFN3x3	27A	7.1m

Power On sequencing

EN0	ENC	REF	VREG3	VREG5	SMPS1	SMPS2
LOW	LOW	OFF	OFF	OFF	OFF	OFF
> 2.4V	LOW	ON	ON	ON	OFF	OFF
> 2.4V	> 2.4V	ON	ON	ON	ON	ON

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8,30,39 CPU_CORE
8,31,37,39 NB_CORE
22,25,27,32,33,35,37,38,39 5V_S5
6,7,8,10,13,16,18,20,23,26,32,33,35,36,37,38,39 3V_S5
3,5,6,7,8,33,38,39 1.8V

N61B REV QCMC

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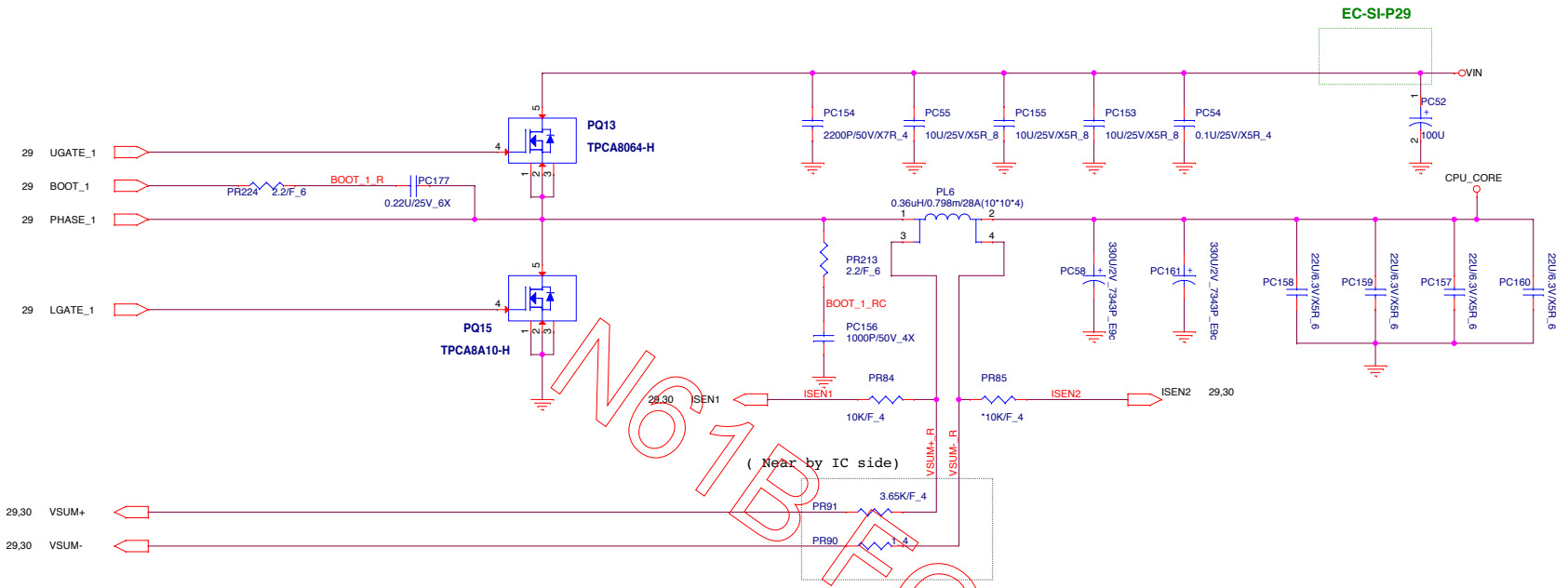
8,29,39 CPU_CORE
16,28,31,32,34,35,36,37,39,40 VIN

EC-SI-P29

CPU_CORE
CARRIZO
TDC = 39A
EDC = 55A
OCP= 71A

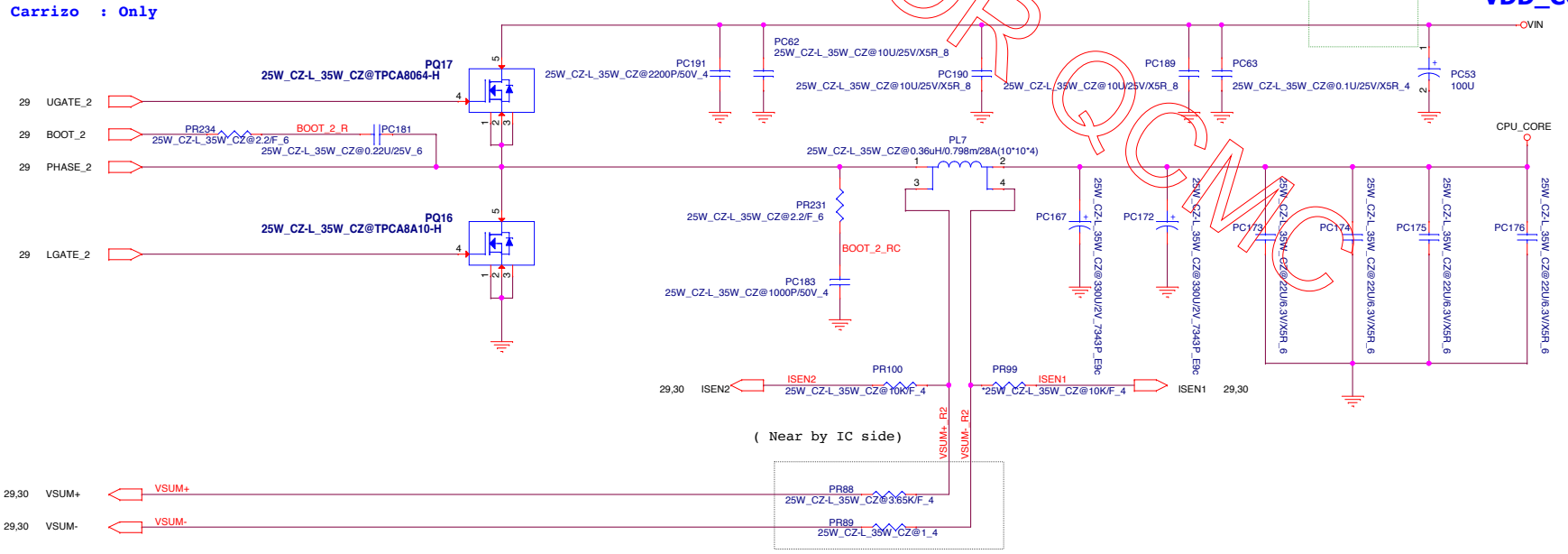
CPU_CORE
CARRIZO-L
TDC = 22A
EDC = 35A
OCP= 45A



Carrizo : Only

EC-SI-P29

VDD_CORE



Not for QCNC

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PROJECT Compressor
Quanta Computer Inc.

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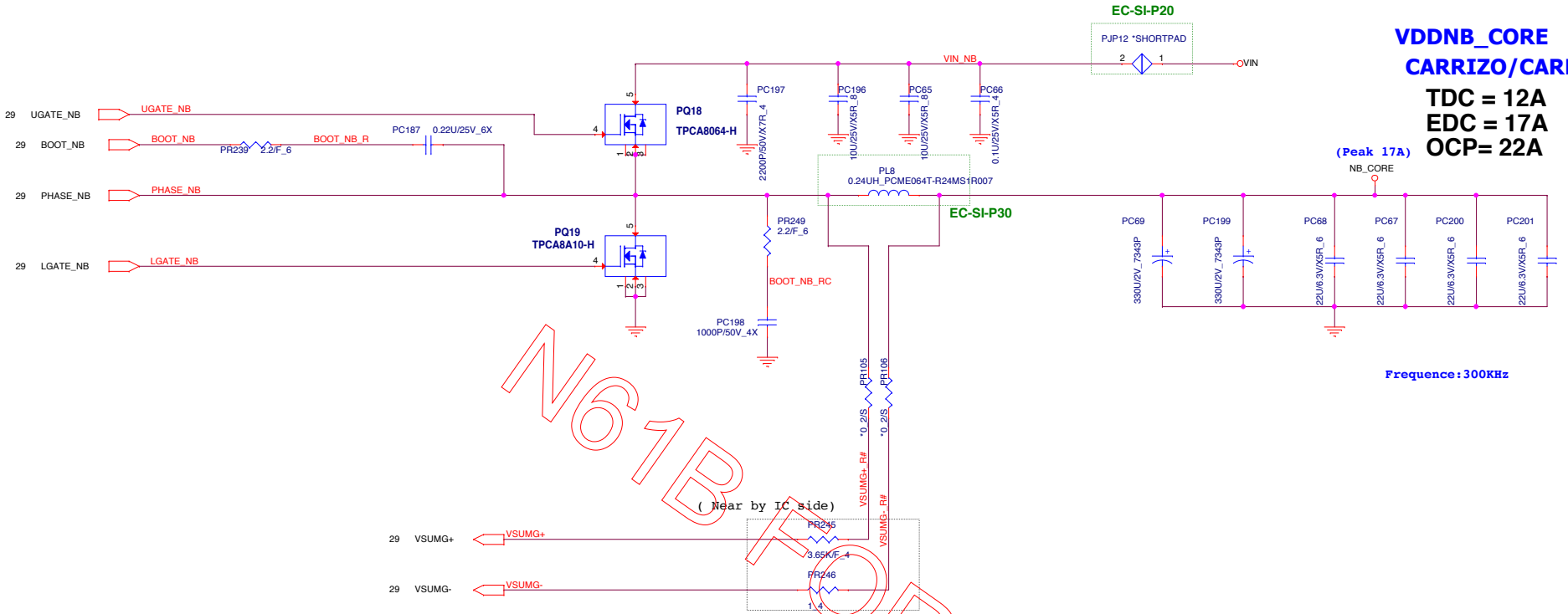
VDDNB_CORE
CARRIZO/CARRIZO-L

TDC = 12A
EDC = 17A
OCP= 22A

(Peak 17A)



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PROJECT Compressor Quanta Computer Inc.		
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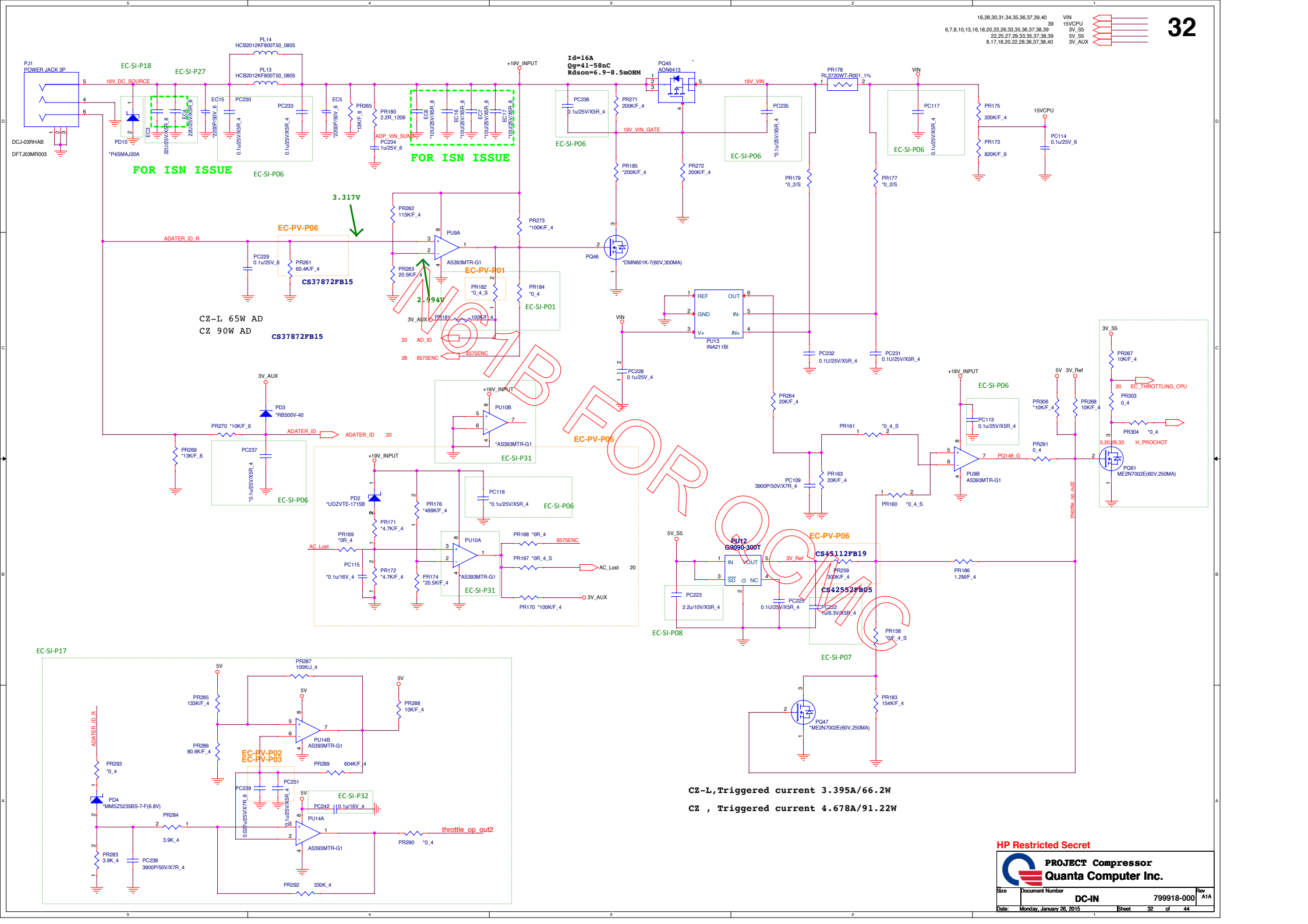

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PROJECT Compressor			
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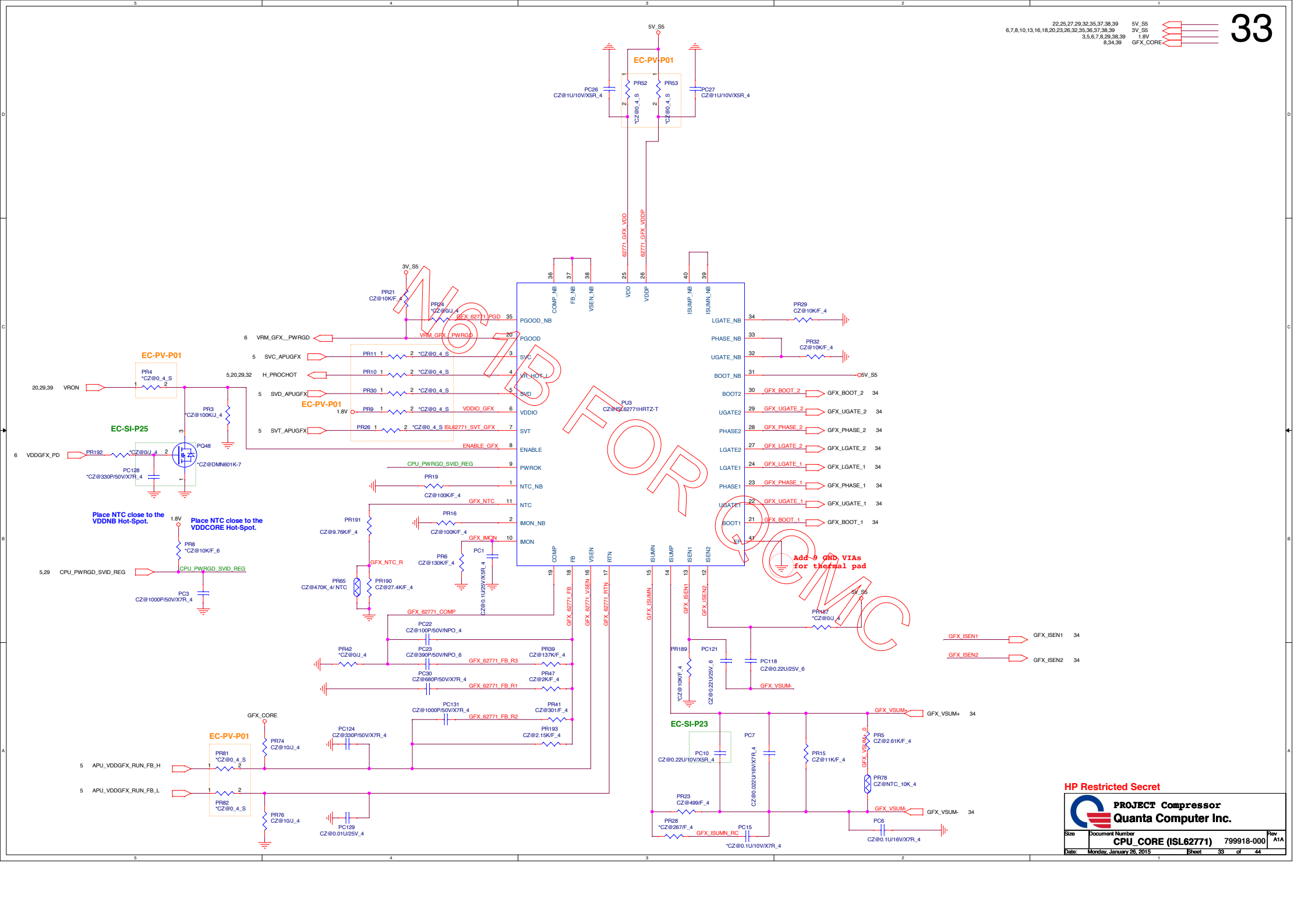

22,25,27,29,32,35,37,38,39 5V_S5
6,7,8,10,13,16,18,20,23,26,32,35,36,37,38,39 3V_S5
3,5,6,7,8,29,38,39 1.8V
8,34,39 GFX_CORE

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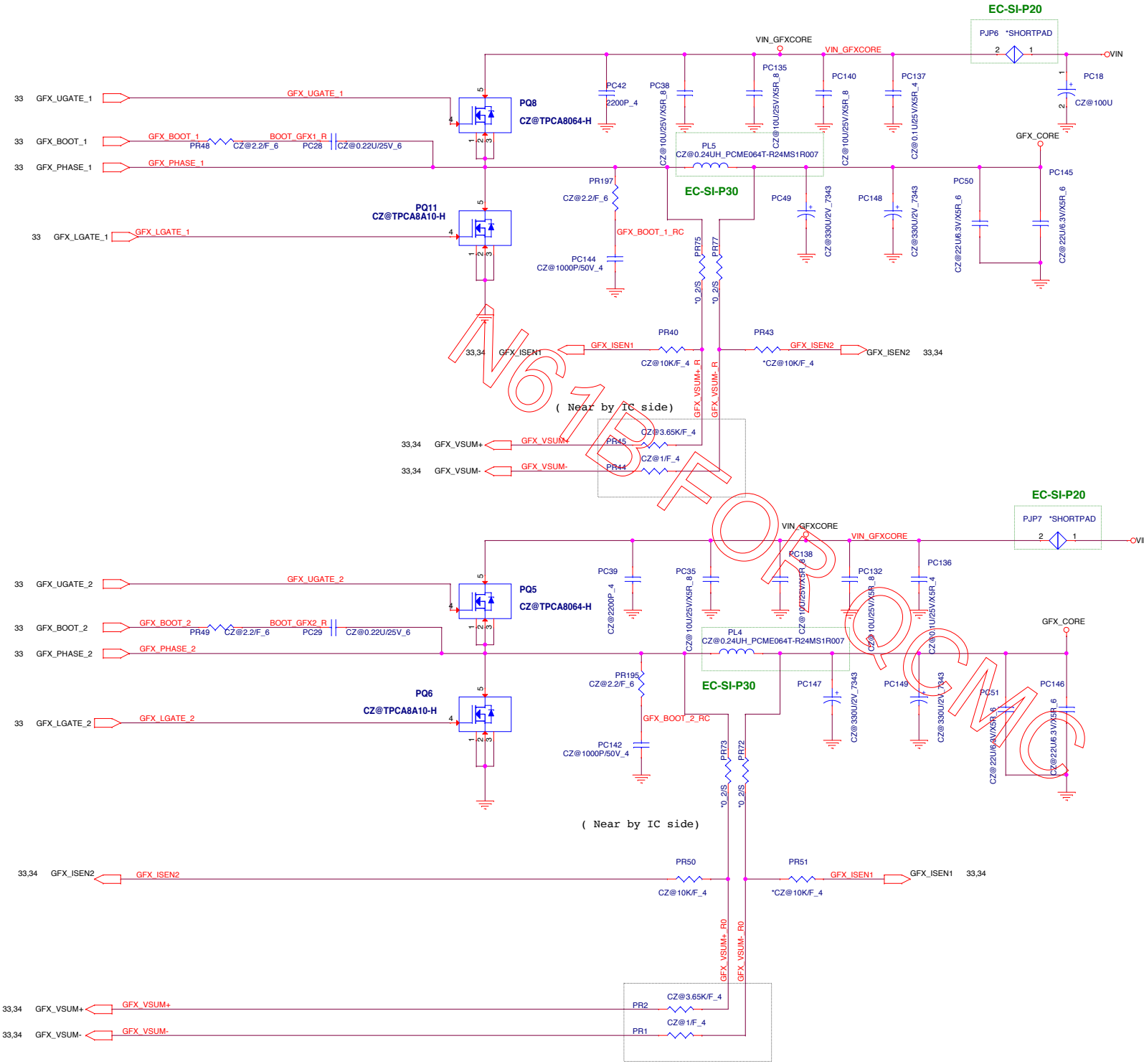
16,28,30,31,32,35,36,37,39,40 VIN
8,33,39 GFX_CORE

GFX_CORE CARRIZO

TDC = 30A
EDC = 45A
OCP= 58A

GFX_CORE CARRIZO-L
Disable



W61 EOL NOTE

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PROJECT Compressor
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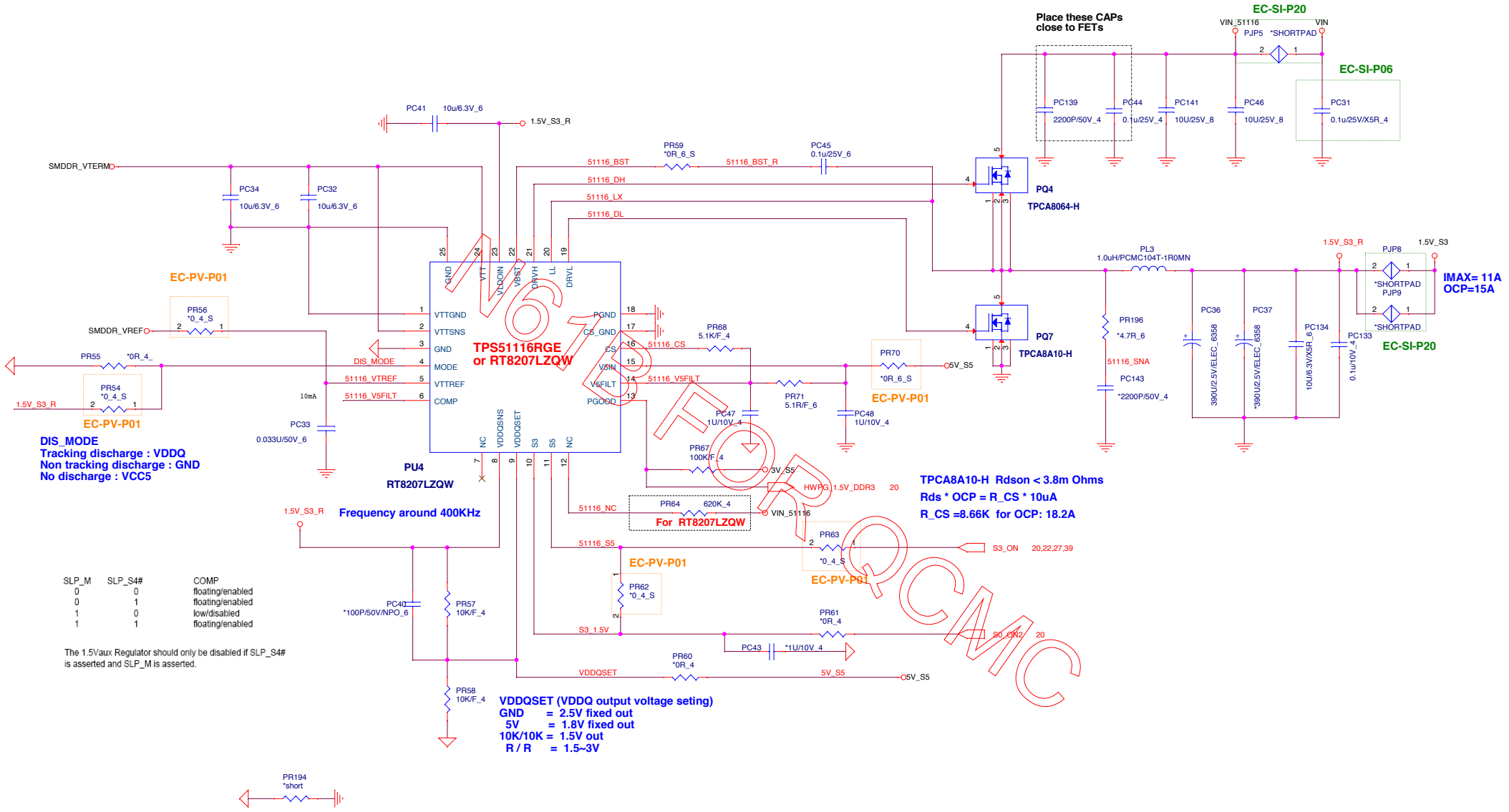
DDR POWER --1.5VSUS&VTT

10,11,12,13,39 SMDDR_VTERM
10,13 SMDDR_VREF
22,25,27,29,32,33,37,38,39 5V_S5
4,8,10,11,12,13,38,39,40 1.5V_S3
16,28,30,31,32,34,36,37,39,40 VIN
6,7,8,10,13,16,18,20,23,26,32,33,36,37,38,39 3V_S5



SLP_M	SLP_S4#	COMP
0	0	floating/enabled
0	1	floating/enabled
1	0	low/disabled
1	1	floating/enabled

The 1.5Vaux Regulator should only be disabled if SLP_S4# is asserted and SLP_M is asserted.

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	DDR3 (RT8207LZQW) 799918-000	A1A
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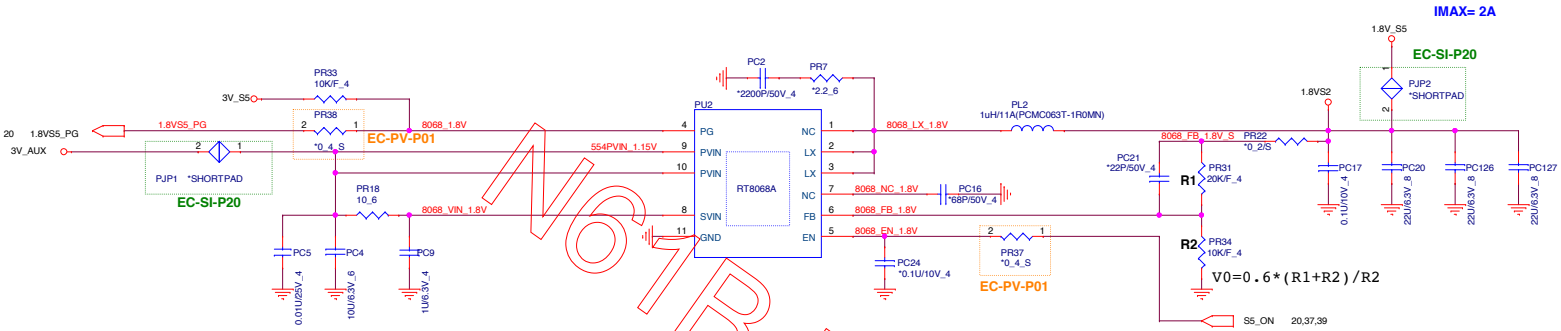
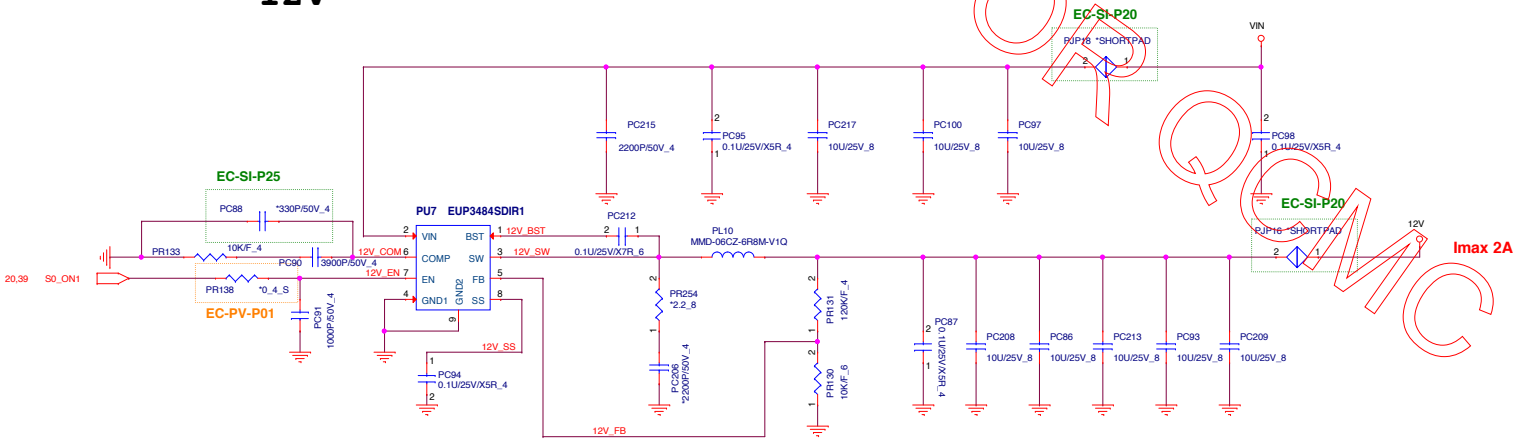


NOT FOR PQC

12v



Vout=0.923*((R1+R2)/R2)

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PROJECT Compressor Quanta Computer Inc.		
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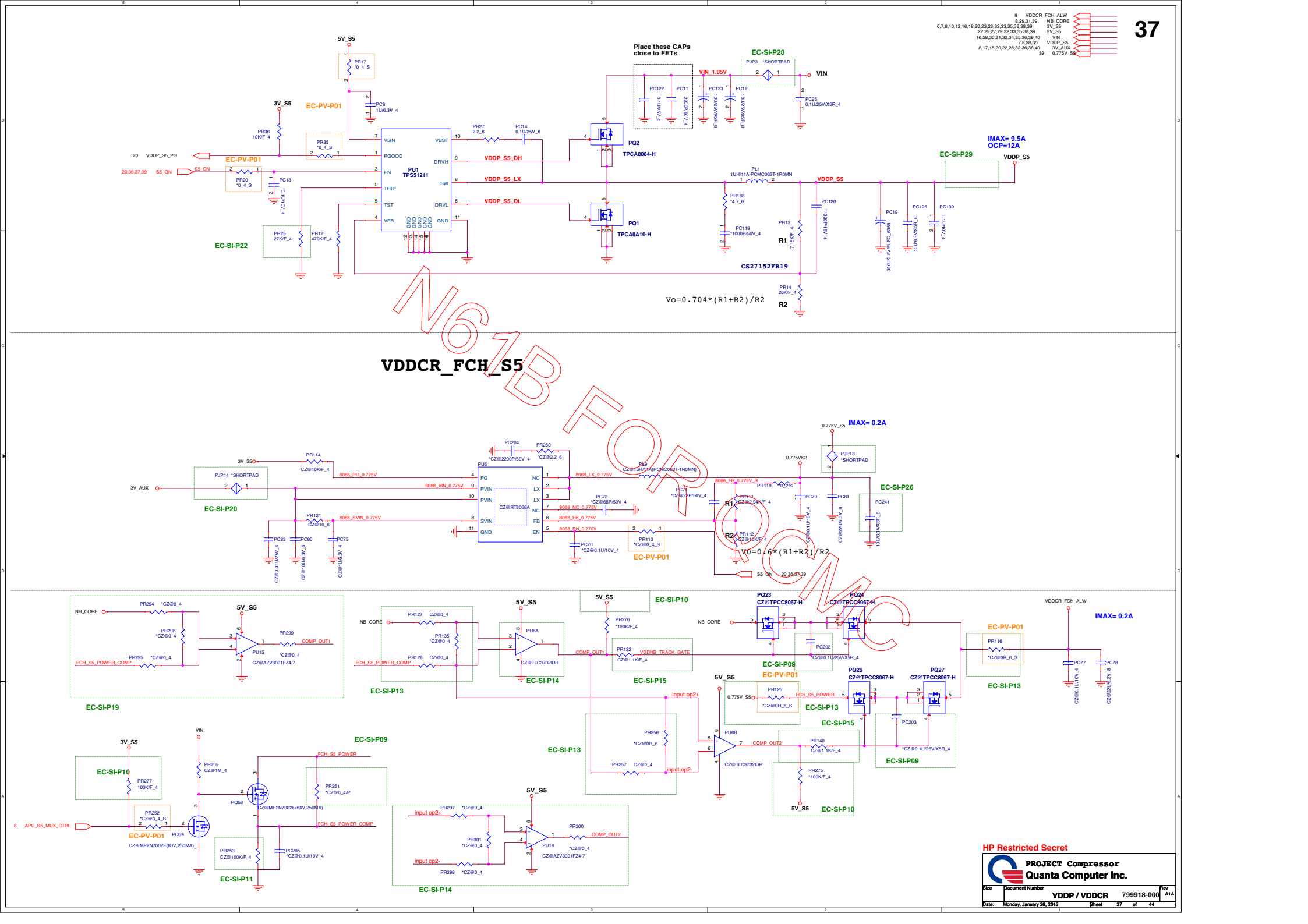
VDDCR_FCH_S5
Vo=0.704*(R1+R2)/R2
Vo=0.6*(R1+R2)/R2
PU1 TPS51211
PQ2 TPCA8064-H
PQ1 TPCA8A10-H
CS27152FB19
PU5 CZ@RT8068A
PU15 CZ@AZV3001FZ4-7
PU6A CZ@TLC3702IDR
PU6B CZ@TLC3702IDR
PU16 CZ@AZV3001FZ4-7
PQ58 CZ@ME2N7002E(60V,250MA)
PQ59 CZ@ME2N7002E(60V,250MA)
PQ23 CZ@TPCC8067-H
PQ24 CZ@TPCC8067-H
PQ26 CZ@TPCC8067-H
PQ27 CZ@TPCC8067-H
PL1 1UH/11A-PCMC063T-1R0MN
PL3 CZ@1UH/11A(PCMC063T-1R0MN)
Place these CAPs close to FETs
VIN_1.05V
IMAX= 9.5A
OCP=12A
IMAX= 0.2A
EC-PV-P01
EC-SI-P10
EC-SI-P11
EC-SI-P13
EC-SI-P14
EC-SI-P15
EC-SI-P19
EC-SI-P20
EC-SI-P22
EC-SI-P26
EC-SI-P29
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PROJECT Compressor
Quanta Computer Inc.
VDDP / VDDCR
799918-000
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Load Switch

21,22,28 5V_AUX
21,27,39 5V_S3
8,17,18,20,22,28,32,36,37,40 3V_AUX
21,23,27,39,40 3V_S3
15,16,17,21,25,32,39,40 5V
5,6,7,8,10,11,12,13,14,15,17,18,19,20,21,23,24,25,26,29,39 3V
6,8,36,39 1.8V_S5
3,5,6,7,8,29,33,39 1.8V
4,8,10,11,12,13,35,39,40 1.5V_S3
8,17,39 1.5V
7,8,37,39 VDDP_S5
3,7,8,20,39 VDDP
22,25,27,29,32,33,35,37,39 5V_S5
6,7,8,10,13,16,18,20,23,26,32,33,35,36,37,39 3V_S5

S3 ON Load SW

PQ29
AO6402A(30V,7A)
IMAX 0.5A
5V_AUX
5V_S3
38,39 SUSD
PR118
10R/F_4
5VS3_G
PC74
1000P/50V_4

S0 ON_1 Load SW

PQ25
TPCC8067-H
IMAX 9A
5V
5V_AUX
38,39 S0_ON1_D
S0_ON1_D
PR115
30R/F_4
5V_G
PC72
1N/25V_4

S0 ON_1 Load SW

PQ57
AO6402A(30V,7A)
IMAX 0.2A
1.5V_S3
1.5V
38,39 S0_ON1_D
PR248
DIS@10R/F_4
1.5V_G
PC195
DIS@1000P/50V_4

EC-SI-P24

PQ22
TPCA8059-H
IMAX 8.5A
VDDP_S5
VDDP
38,39 S0_ON1_D
PR120
DIS@10R/F_4
VDDP_G
PC76
DIS@1000P/50V_4

PQ37
AO6402A(30V,7A)
IMAX 2.5A
3V_AUX
3V_S3
38,39 SUSD
PR149
10R/F_4
3VS3_G
PC101
1000P/50V_4

PQ35
AO6402A(30V,7A)
IMAX 0.7A
3V_AUX
3V
S0_ON1_D
PR134
30R/F_4
3V_G
PC89
1N/25V_4

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+1.8v

IMAX 1.5A
1.8V_S5
60mil
PC152
0.1U/10V/X5R_4
EC-PV-P01
PR199
*0_4_S
38,39 S0_ON1_D
PQ50
TPCC8067
PC150
2200P/50V/X7R_4
60mil
1.8V
PC151
0.1U/10V/X5R_4

S5 ON Load SW

IMAX 3.8A
PQ30
TPCC8067-H
5V_AUX
5V_S5
39 S5_ON_D
S5_ON_D
PR122
30R/F_4
5V_S5_G
PC82
1n/25V_4

IMAX 0.5A
PQ33
AO6402A(30V,7A)
3V_AUX
3V_S5
S5_ON_D
PR126
30R/F_4
3V_S5_G
PC84
1n/25V_4

Mosfet parameter

Mosfet	Package	ID(Ta=25C)	Rds_on_max	Vgs_max
AO6402A	TSOP-6	5.0A/6.7A	42m	+/- 20V
TPCC8067-H	3x3	9A	26m	+/- 20V
TPCA8A10-H	SO-8	20A	7.9m	+/- 20V

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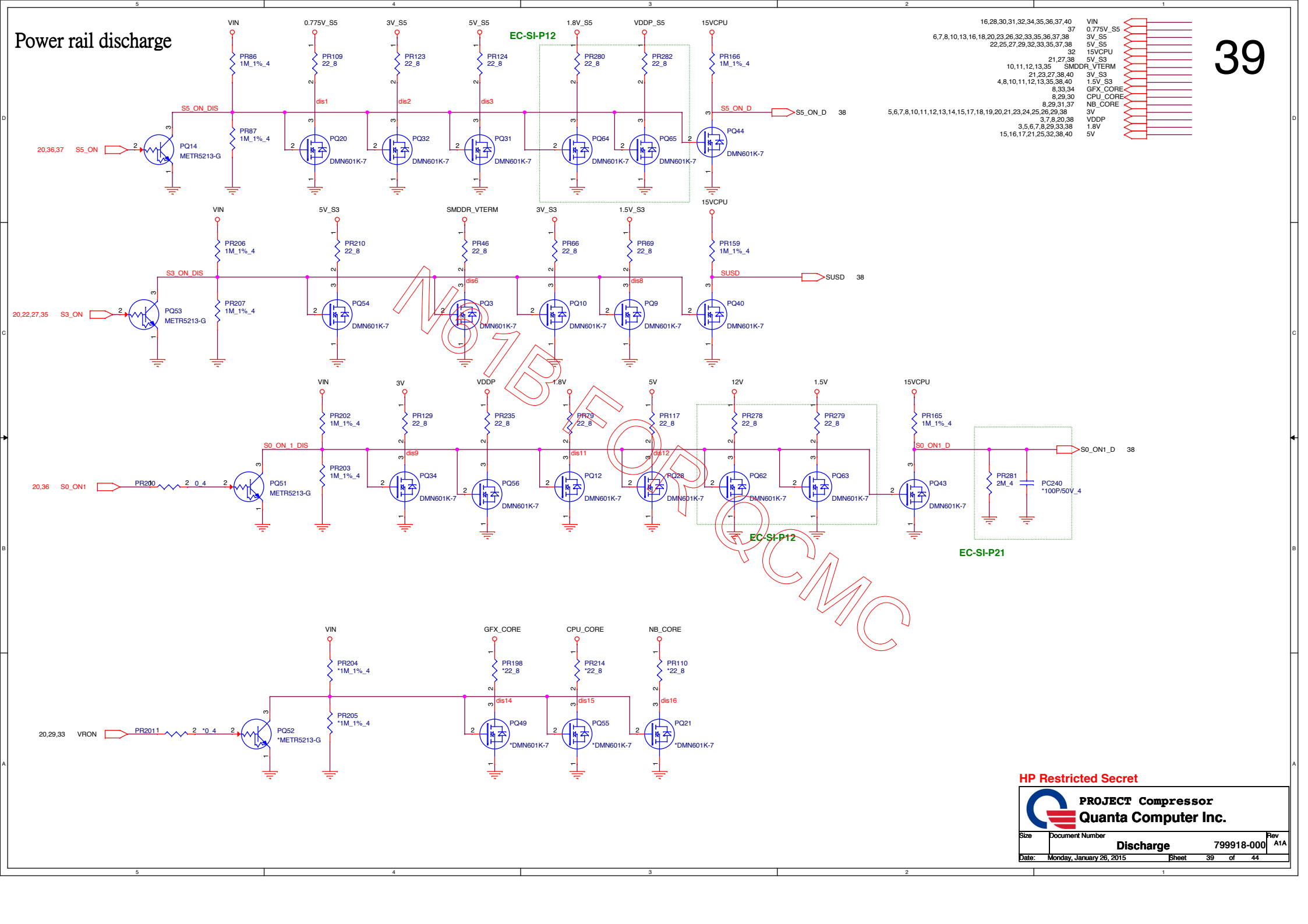
CONFIDENTIAL

Power rail discharge



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PROJECT Compressor Quanta Computer Inc.		
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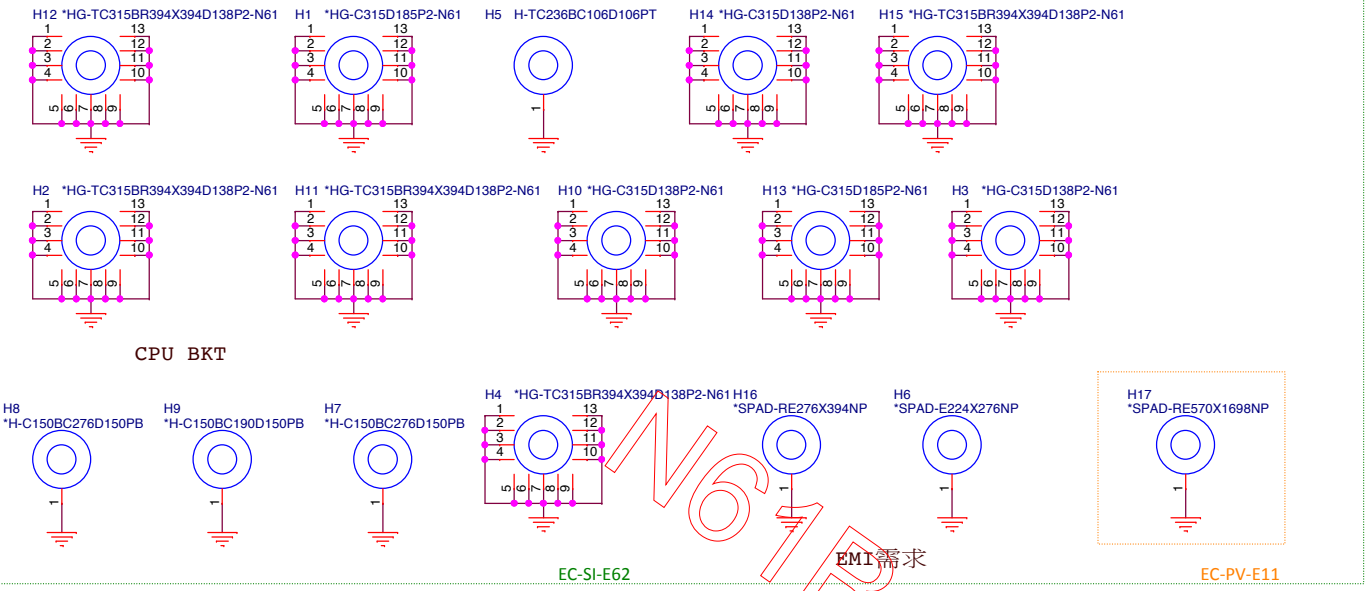

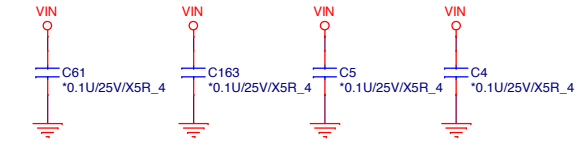

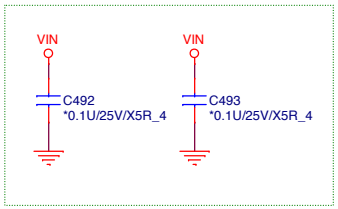

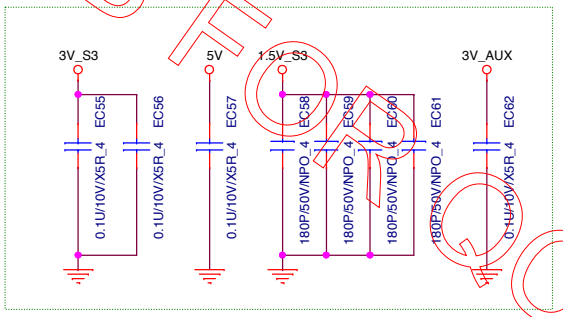

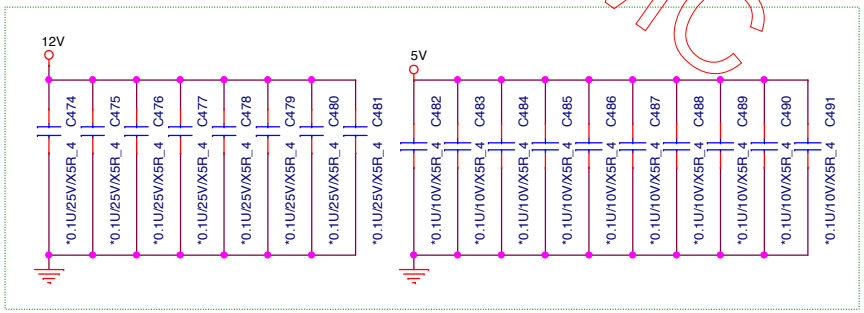

W61BTQCMC

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	HOLE 799918-000	A1A
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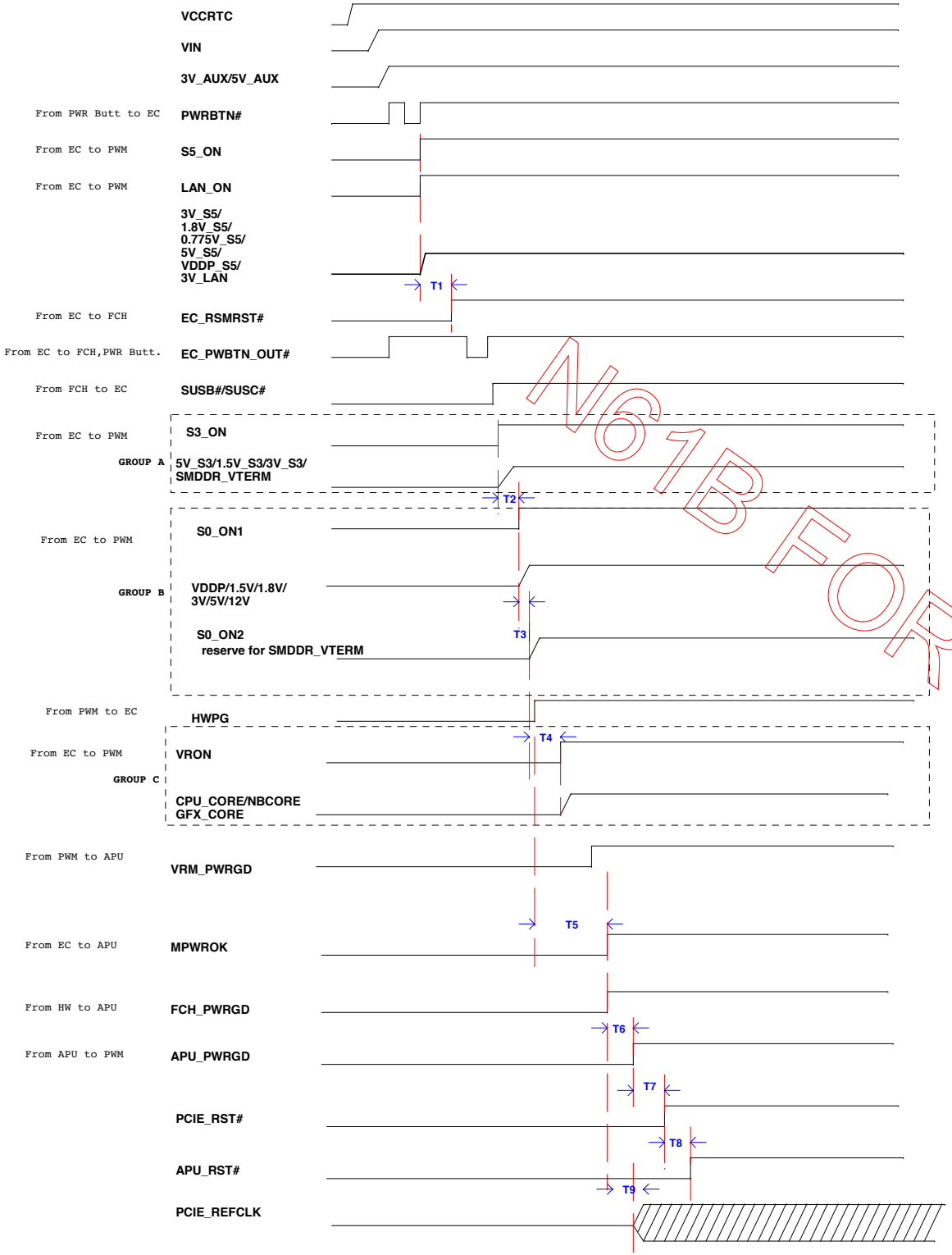

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System Power Sequence

EC Control:
T1: S5_ON TO EC_RSMRST# = 20ms
T2: S3_ON TO S0_ON1=10ms
T3: S0_ON1 TO S0_ON2 = 1ms
T4: S0_N2 TO VRON = 10ms
T5: HWPG TO MPWROK =99ms

Timing spec:
T1 Spec:10ms min
Power Up Spec:
Group A > Group B > Group C
T6: FCH_PWRGD TO APU_PWRGD = 108.6~118.6 ms
T7: APU_PWRGD TO PCIE_RST# = 114.2~124.2 ms
T8: PCIE_RST# TO APU_RST# = 111.9~121.9 ms
T9: FCH_PWRGD TO PCIE_REFCLK = 37.6~47.6 ms

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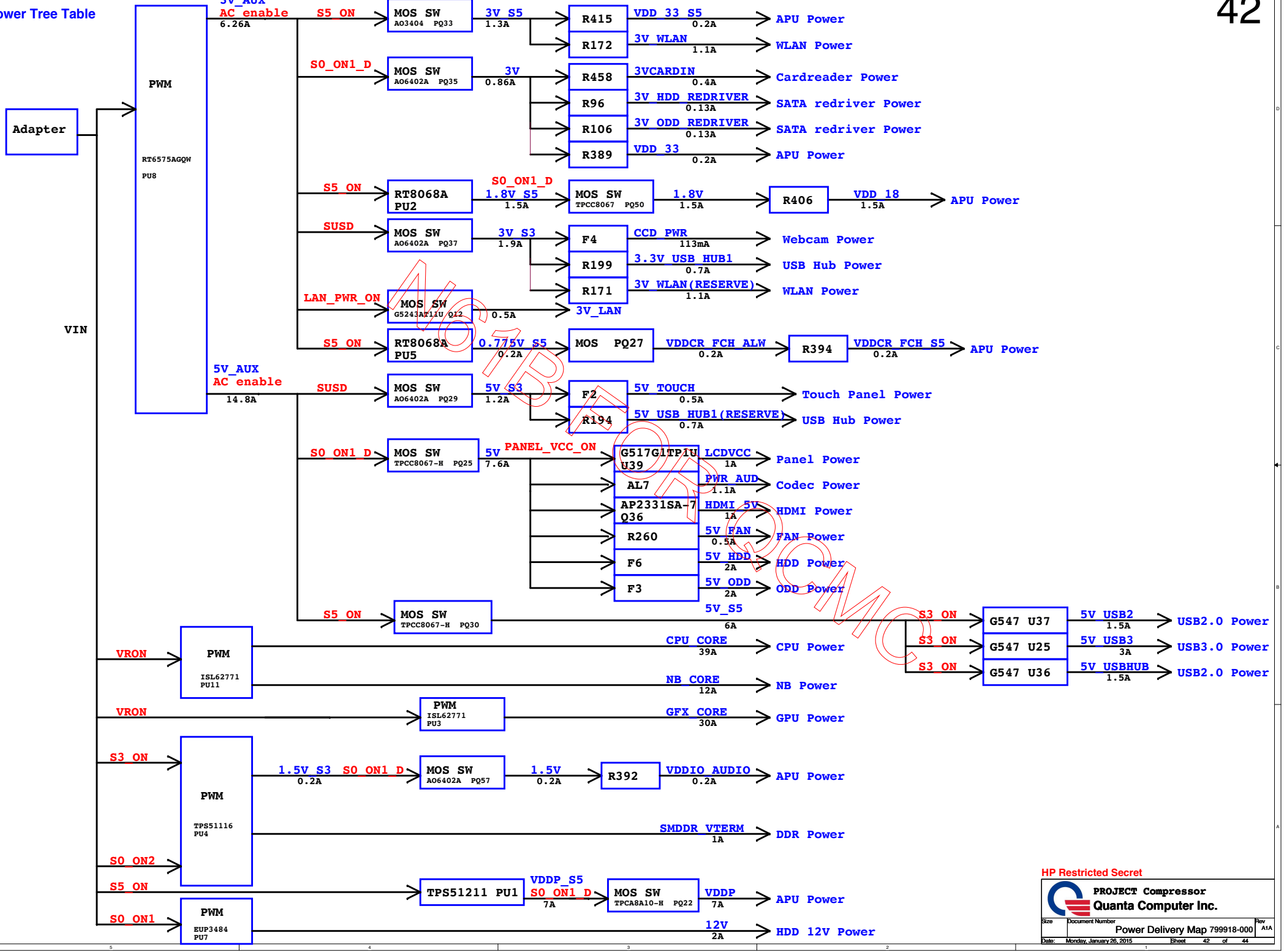
PROJECT Compressor
Quanta Computer Inc.
Power Sequence
799918-000

Power Tree Table



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	Power Delivery Map 799918-000	A1A
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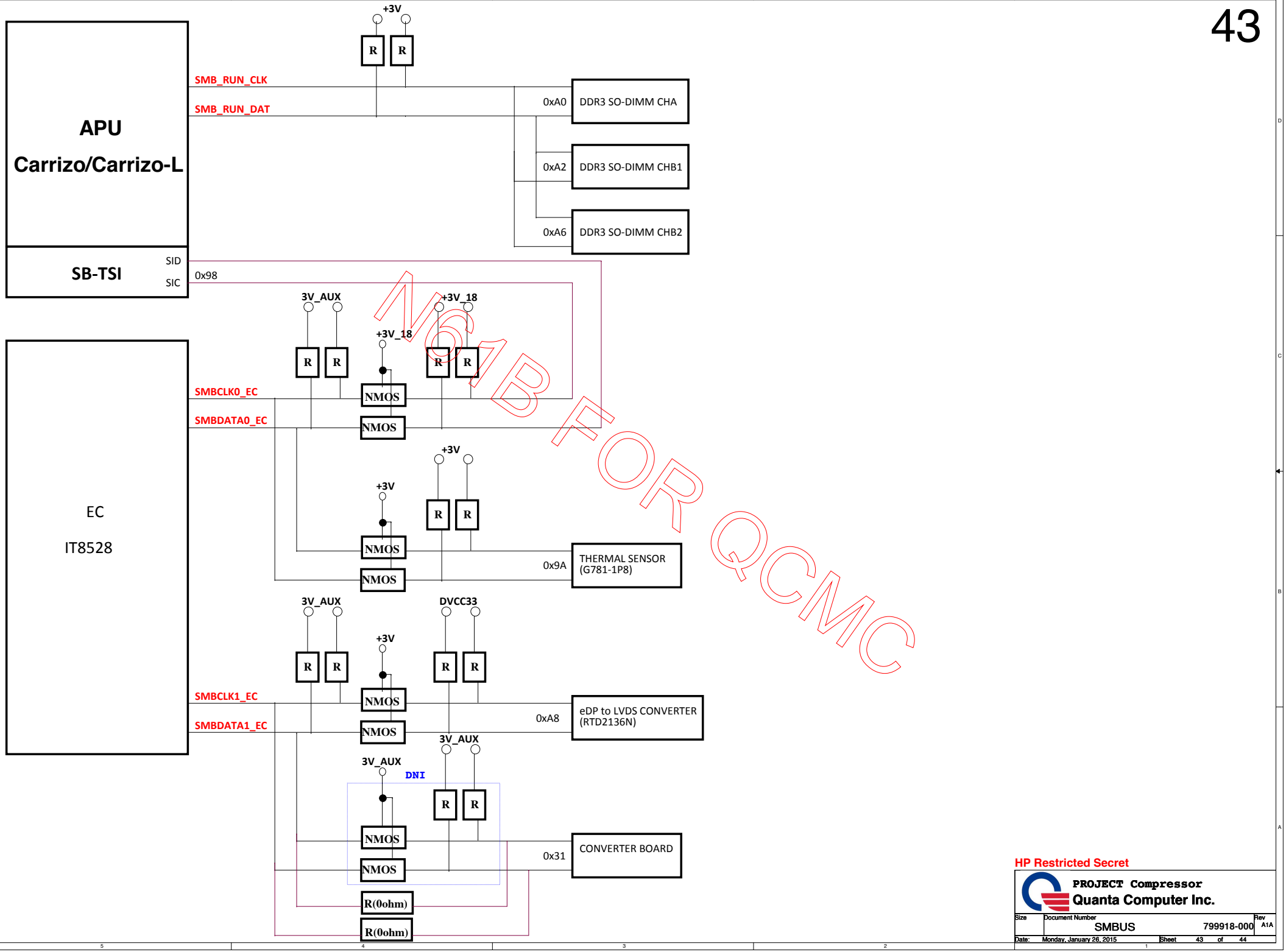

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DB to SI Change List

EC-SI-E01 Change BOOT_BLK_WR_EN# from AGPIO102 to AGPIO72 -- Page 6
EC-SI-E02 Add 1K to WC_DETECT# and PANEL_ID0,ID1,ID2
EC-SI-E03 C17 change to 0805 size,C417 change to 1808 size,EC13/EC14 change to 0402 size
EC-SI-E04 Add co-lay resistor R473~R492 to LVDS interface
EC-SI-E05 C1,C32,C117,C131,C411,C416 change to 0402 size
EC-SI-E06 Change SATA re-driver solution
EC-SI-E07 Add one gpio for EC to distinguish CZ and CZ-L
EC-SI-E08 Change HUB IC P/N to AL00850G004
EC-SI-E09 Change GEVENT2# from Pull high 10K to PD 2K
EC-SI-E10 AGPIO8/40 need pull up to 3V_S5 if no use on CZ
EC-SI-E11 GENINT1_L/AGPIO89(HVBEN_L):Connect to VSS to enable, or if not used, leave unconnected to disable AMD Hardware Validated Boot.
EC-SI-E12 R143/R121/R142/R151change to 10K to meet SCL
EC-SI-E13 Pop R431 for SPI WP#
EC-SI-E14 Change PWR_GOOD pull up power domail to 3V & 1.8V (S0 state) for SCL ver. 1.04
EC-SI-E15 SPI_CS2_L/ESPI_CS_L/EGPIO119 need pull up to 1.8V if no use on CZ
EC-SI-E16 Exchange CN15 pin define between pin 1 and pin 30 for cable routing change
EC-SI-E17 Reserve 0ohm to 3V_S5 instead LAN power switch if needed
EC-SI-E18 un-pop C144, pop C432,C139 to follow CRB
EC-SI-E19 un-pop Q30 that only workaround for SharkBay platform's RTC logic latch issue.
EC-SI-E20 Change VDDP_GFX power rail from VSS to VDDP that depop R332, add R523,C438 and C439 fixed PCI-E Device no function and system reboot failure issues.
EC-SI-E21 Add D38 unpop Q24 reserve RSMRST#_R level
EC-SI-E22 Pop D30 for HW power good control.
EC-SI-E23 Unpop R54 and pop R46 for HDMI no output.
EC-SI-E24 Add 0ohm R524 to GND for Interlace mode selection
EC-SI-E25 Change C37 and C38 from 6.8uF to 5.6uF as vendor recommend.
EC-SI-E26 Reseve 0ohm R525 for VRM_GFX__PWRGD inform system.
EC-SI-E27 Change Q7.5 net from HDMI_MB_HP_L1 to HDMI_MB_HP_L due to same netname.
EC-SI-E28 CLKREQ0 only Carrizo need pull up if no use and CLKREQ1,2 change to depop if no use.
EC-SI-E29 USB_OC5/6/7 only for Carrizo only , so cna't use for Carrizo/Carrizo-L co-lay design, R327,R341,R354,R356 depop. U3B_0C change to OC1,Charger_OC change to OC2 and HUB_OC combine to U2B_OC
EC-SI-E30 SD0_LED/EGPIO93 need PU for Carrizo-L only if no use.
EC-SI-E31 LPC_PD_L/AGPIO21 need PU if no use.
EC-SI-E32 R330 need PU for Carrizo and Carrizo-L
EC-SI-E33 C440 add for across the VDDIO_MEM_S3 and VSS plane split.
EC-SI-E34 VDDP add five 0.22u for SCL ver. 1.05 update.
EC-SI-E35 C304 change to 0.22u for SCL ver. 1.05 update.
EC-SI-E36 Add 0.1u C446,C447 for 0.75V_VREF_CA and 0.75V_VREF_CA_A0 power quality.
EC-SI-E37 Change C15 to 1210 size and pop C66 68pF,C67 22uF for RF solution.
EC-SI-E38 Non-Install AR22,AR26,AQ5,AQ6,AQ4,AQ3,AR17,AR18,AR20 and AC30 for audio noise issue from resume S3.
EC-SI-E40 Add 10uF*4 and reserve 8pF*4 on CPU_CORE to GND for RF solution.
EC-SI-E41 Add 10uF*6 and reserve 8pF*6 on DDR_DIMM 1.5V_S3 to GND for RF solution.
EC-SI-E42 Pop 120ohm on R188,R189,R202,R203 for EMI solution
EC-SI-E43 Add R530,R528,U40,R531,R529,C469,C470,Q40,R532~R535 for thermal move ambient sensor of CZ-L
EC-SI-E44 Add R537 and R538 for APU TDP ID pin.
EC-SI-E45 Add R539 pull high for SATA LED leakage.
EC-SI-E46 Change U39 from sot-23-5 to tsot-23-6 for larger current limit.
EC-SI-E47 Add two 0.1u from 3V_S3 to GND.Add one 0.1u from 5V to GND.Add four 180p from 1.5V_S3_S3 to GND.Add one 0.1u from 3V_AUX to GND for EMI soluton
EC-SI-E48 Change LVDS signal 0ohm to common mode choke for EMI solution
EC-SI-E49 depop R83 to meet SCL V1.05
EC-SI-E50 pop AD3/AD4/AD6/AD7/U1/U4/U19/U23 for ESD solution
EC-SI-E51 Change BT1 footprint and part number for SMT requirement and HP service requirement
EC-SI-E52 Change C22/C23/C234/C322/C431/C91 cap voltage value for Quanta PUR request commond part
EC-SI-E53 Reserve C471/C472/C473 for power quality
EC-SI-E54 Change fuse F1/F3/F5/F6 to 0ohm for safety recommend.
EC-SI-E55 Add F7 for ESD protect
EC-SI-E56 Change JDIM1~JDIM4 footprint for SMT requirement
EC-SI-E57 Pop L9/L10/L28~L31 depop R449~R456/R248/R249/R255/R256 for EMI solution
EC-SI-E58 Change CX12B900000 footprint for this part dedicated footprint
EC-SI-E59 pop R384/R419 depop R390/R418 to meet SPI TPM spec
EC-SI-E61 Add eight 0.1u from 12V to GND.Add ten 0.1u from 5V to GND for RF soluton
EC-SI-E62 Changed the mounting hole design and follow HP recommends.
EC-SI-E63 Change CN15, BT1 material for ME require
EC-SI-E64 Add C492,C493 for across the VIN and VSS plane split.
EC-SI-E65 Reserve damping resistor R541,R542 for FCH_SPI_WP and SPI_HOLD#.
EC-SI-E66 Depop ODD Redrivr U8 due to SATA signal can pass before BIOS fine tune.
EC-SI-E67 Depop R119,R141,R371 for SPI TPM not support.
EC-SI-E68 Change Change CZ-L 3VS5_3VSTRAP from 3V_S5 to 3V to meet SCL V1.05
EC-SI-E69 Change CN24 CN25 change to DFHS09FR611 for main source change , footprint no change
EC-SI-E70 Change R258,PR154 to 330ohm for LED brightness fine tune.
EC-SI-E71 Pop R366,R361 for AMD CRB change due to codec issue that the Audio Codec will not be recognized by the OS.
EC-SI-E72 Depop R176,R177 for USB yellow mark due to new version hub IC remove port disable function.

EC-SI-P01 Change PR184 from short pad to 0402 for HW protection canceling and stuff PR181 and PR182 _0 ohm for Informing EC to support adapter SMART ID function.
EC-SI-P02 PC218 / PC216/PC207 / PC210 change p/n and footprint from CC0805 to CC0603 p/n: CH6101M9905
EC-SI-P03 PC106/ PC99 change p/n and footprint from CC0805 to CC0603 p/n: CH5471M9B00
EC-SI-P04 PR151 change p/n : CS41002FB28
EC-SI-P05 Add 0ohm PR274 For debug
EC-SI-P06 PC31 / PC233 / PC230 / PC237 / PC235 / PC236 / PC117/ PC113/ PC116 change p/n and footprint from CC0603 to CC0402 p/n: CH4104K9B03
EC-SI-P07 PC222 change p/n and footprint from CC0603 to CC0402 p/n: CH5101K9B01
EC-SI-P08 PC223 change p/n and footprint from CC0603 to CC0402 p/n:CH5222K9B06
EC-SI-P09 Depop PC202 / PC203/ PR251 No need on the component
EC-SI-P10 Add PR275/PR276 / PR277 Add pull high resistance for switch gate
EC-SI-P11 Pop PR253 Add pull low resistance for FCH_S5_POWER_COMP
EC-SI-P12 Add PR278/PQ62/PR279/PQ63/PR280/PQ64 Add 12V/1.5V/1.8V_S5 discharge
EC-SI-P13: change PR127 / PR128 / PR256 / PR257 /PR125/PR116 footprint
EC-SI-P14: change PU6 p/n , change to push pull op.
EC-SI-P15: change PR132 / PR140 p/n to 1.1K , follow MRB
EC-SI-P16: Remove PR266, Remove reserve resistance.
EC-SI-P17: Add adapter throttling
EC-SI-P18: add PD10 for inrush voltage
EC-SI-P19: add OP second source
EC-SI-P20: change PJP1~PJP20 footprint from open to short.
EC-SI-P21: add PR281 / PC240 reduce Vgs in VDDP/ 1.5V load SW.
EC-SI-P22: Modify PR146 to 62K , PR148 to 51K , PR25 to 17K for 5V/3V/VDDP_S5 OCP.
EC-SI-P23: Modify PR102 to 1.58K / PC10 modify to 0.22uF for CPU /GFX load line .
EC-SI-P24 change PQ22 p/n to BAM80590000 for leakage
EC-SI-P25 Remove PQ48 / PC128 /PC88 this for battery power saving .
EC-SI-P26 Add PC241 for 0.775V_S5 ripple.
EC-SI-P27 Disable EC6/EC7/EC16/EC17 change EC3/EC4 P/N to CH6224M9A00
EC-SI-P28 Add PR303/PR304 for faster throttling function
EC-SI-P29 Remove PJP10 / PJP11 / PJP4 for placement
EC-SI-P30 Change PL8 / PL4 / PL5 part number Buyer suggest material
EC-SI-P31 No stuff PU10 for remove AC lost protection circuit.
EC-SI-P32 Add PC 242 by pass capacitor for amp. power.

No 1B FOR QCMC

HP Restricted Secret