Diamond-3 Intel Calpella Platform with Discrete GFX

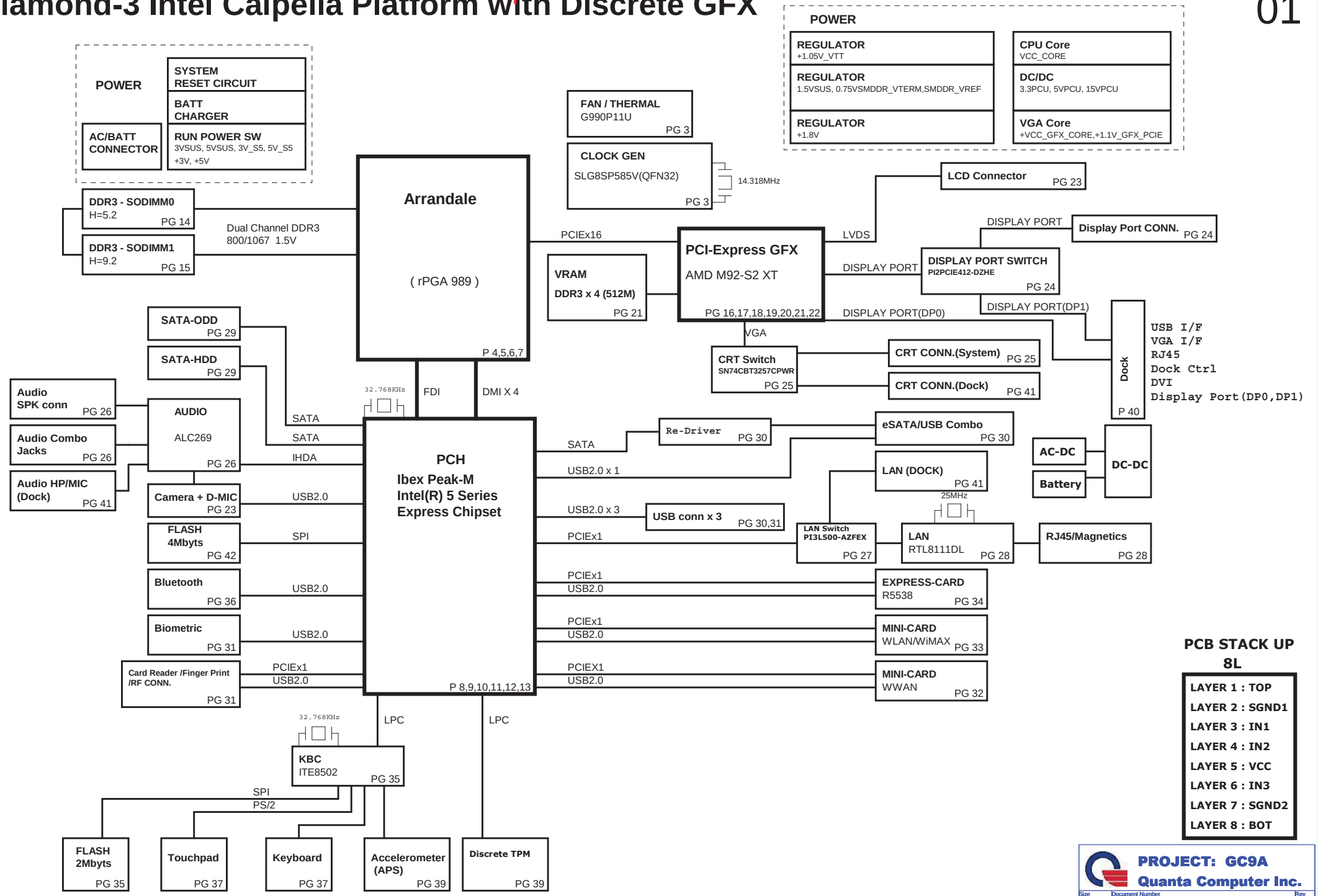

Table of Contents

Power States

POWER PLANE	VOLTAGE	PAGE	DESCRIPTION	CONTROL SIGNAL	ACTIVE IN
VIN	10V~+20V	16,36,37,38,39,40,41,42	MAIN POWER		S0~S5
+3VRTC	+3.0V~+3.3V	9,12,34	RTC		S0~S5
3VPCU	+3.3V	9,16,20,23,28,32,34,36,37,40,42	ITE8502 POWER	3V5V_EN	S0~S5
5VPCU	+5V	36,37,38,39,40,42	DC/DC POWER IC SOURCE	3V5V_EN	S0~S5
+15V	+15V	16,31,36,38,39,40	LARGE POWER	3V5V_EN	S0~S5
LANVCC	+3.3V	20,36	LAN POWER	LAN_ON	
5V_S5	+5V	12,22,23,36	PCH SUS POWER	S5_ON	S0~S3
3V_S5	+3.3V	8,9,10,11,12,36	Sys Management,PCH Resume Well, Intel HD Audio,USB,WLAN,WiMAX POWER	S5_ON	S0~S3
5VSUS	+5V	16,32,36,41,42	SLP_S4# CTRLD POWER	SUSON	S0~S3
3VSUS	+3.3V	8,23,27,34,36,42	SLP_S4# CTRLD POWER	SUSON	S0~S3
1.5VSUS	+1.5V	4,6,12,14,15,36,38,39	DDR3 SODIMM POWER	SUSON	S0~S3
0.75VSMDDR_VTERM	+0.75V	14,15,36,38	DDR3 SODIMM REFERENCE POWER	MAINON	S0
+5V	+5V	8,12,16,17,18,19,21,28,30,34,36,37	SLP_S3# CTRLD POWER	MAINON	S0
+3V	+3.3V	3,4,8,9,10,11,12,14,15,16,17,18,19,20,21,22 23,24,25,26,27,29,30,31,32,33,34,36,37,38, 39,40,41,42,43	SLP_S3# CTRLD POWER	MAINON	S0
+1.8V	+1.8V	6,12,26,36,42	LVDS,NVM POWER	MAINON	S0
+1.5V	+1.5V	12,24,25,27,38,39	Mini PCIe,Express Card POWER	MAIND	S0
+1.05V_VTT	+1.05V	3,4,6,8,10,11,12,36,39,41,43	AuBurndale VTT POWER/PCH CORE POWER	MAINON	S0
+VCC_GFX_CORE		6,36,42	VGA CORE POWER	GFXVR_EN	S0
VCC_CORE		6,36,41	CPU CORE POWER	VRON	S0
LCDVCC	+3.3V	16	LCD Power	ENVDD	S0
+5V_ODD	+5V	21	ODD Power	MAINON#	S0
+5V_HDD	+5V	21	HDD Power	MAINON#	S0
BAT-V	+10V~+17V	37	MAIN BATTERY	CHG_PBATT	S0~S5

PROJECT: GC9A
Quanta Computer Inc.

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Custom	Index & Power Status	1A

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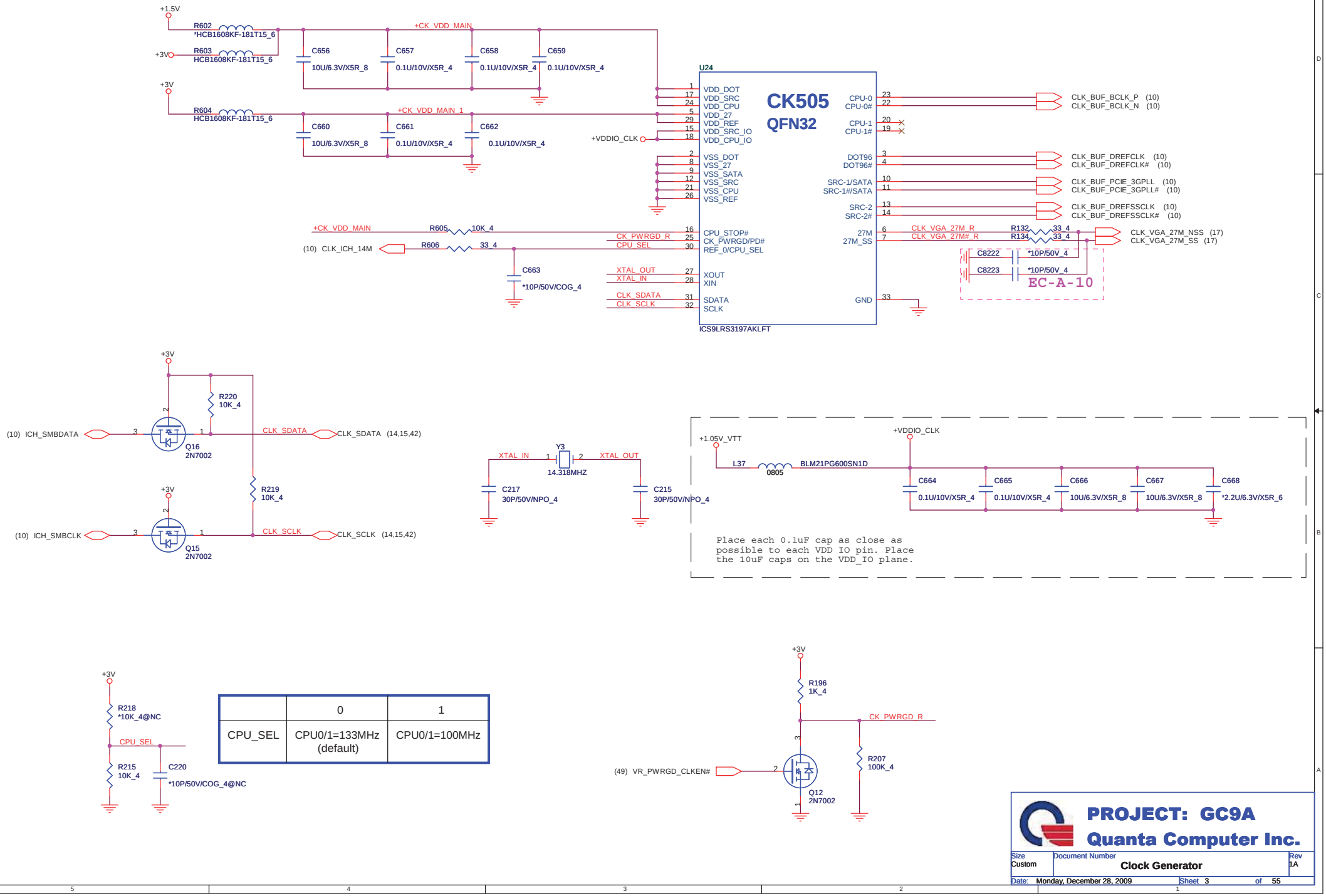
(4,8,9,10,11,12,14,15,17,23,24,25,26,28,29,30,31,32,33,34,35,36,38,39,40,41,42,44,46,47,48,49,51) +3V
(4,6,8,9,10,11,12,44,47,49) +1.05V_VTT



	0	1
CPU_SEL	CPU0/1=133MHz (default)	CPU0/1=100MHz

PROJECT: GC9A
Quanta Computer Inc.

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Custom	Clock Generator	1A
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ARRANDALE PROCESSOR (DMI,PEG,FDI)

ARRANDALE PROCESSOR (CLK,MISC,JTAG)

(3,6,9,10,11,12,14,15,17,23,24,25,26,28,29,30,31,32,33,34,35,36,38,39,40,41,42,44,46,47,48,49,51) +3V
(3,6,8,9,10,11,12,44,47,49) +1.05V_VTT
(14,15,44,46,50) 1.5VSUS

U34A

DMI_TXN0 A24 DMI_RX#[0]
DMI_TXN1 C23 DMI_RX#[1]
DMI_TXN2 B22 DMI_RX#[2]
DMI_TXN3 A21 DMI_RX#[3]
DMI_TXP0 B24 DMI_RX[0]
DMI_TXP1 D23 DMI_RX[1]
DMI_TXP2 B23 DMI_RX[2]
DMI_TXP3 A22 DMI_RX[3]
DMI_RXN0 D24 DMI_TX#[0]
DMI_RXN1 G24 DMI_TX#[1]
DMI_RXN2 F23 DMI_TX#[2]
DMI_RXN3 H23 DMI_TX#[3]
DMI_RXP0 D25 DMI_TX[0]
DMI_RXP1 F24 DMI_TX[1]
DMI_RXP2 E23 DMI_TX[2]
DMI_RXP3 G23 DMI_TX[3]

DMI

FDI_TX#[0] E22
FDI_TX#[1] D21
FDI_TX#[2] D19
FDI_TX#[3] D18
FDI_TX#[4] G21
FDI_TX#[5] E19
FDI_TX#[6] F21
FDI_TX#[7] G18
FDI_TX[0] D22
FDI_TX[1] C21
FDI_TX[2] D20
FDI_TX[3] C18
FDI_TX[4] G22
FDI_TX[5] E20
FDI_TX[6] F20
FDI_TX[7] G19
FDI_FSYNC[0] F17
FDI_FSYNC[1] E17
FDI_INT C17
FDI_LSYNC[0] F18
FDI_LSYNC[1] D17

Intel(R) FDI

R9 1K/F_4 FDI_SYNC
R7 1K/F_4 FDI_SYNC

PCI EXPRESS GRAPHICS - 1

PEG_ICOMPI B26
PEG_ICOMPO A26
PEG_RCOMPO B27
PEG_RBIAS A25
R336 49.9/F_4
R338 750/F_4

PEG_RX#[0] K35 PEG_RXN15
PEG_RX#[1] J34 PEG_RXN14
PEG_RX#[2] J33 PEG_RXN13
PEG_RX#[3] G35 PEG_RXN12
PEG_RX#[4] G32 PEG_RXN11
PEG_RX#[5] F34 PEG_RXN10
PEG_RX#[6] F31 PEG_RXN9
PEG_RX#[7] D35 PEG_RXN8
PEG_RX#[8] E33 PEG_RXN7
PEG_RX#[9] C33 PEG_RXN6
PEG_RX#[10] D32 PEG_RXN5
PEG_RX#[11] B32 PEG_RXN4
PEG_RX#[12] C31 PEG_RXN3
PEG_RX#[13] B28 PEG_RXN2
PEG_RX#[14] B30 PEG_RXN1
PEG_RX#[15] A31 PEG_RXN0
PEG_RXN[0..15] (16)

PEG_RX[0] J35 PEG_RXP15
PEG_RX[1] H34 PEG_RXP14
PEG_RX[2] H33 PEG_RXP13
PEG_RX[3] F35 PEG_RXP12
PEG_RX[4] G33 PEG_RXP11
PEG_RX[5] E34 PEG_RXP10
PEG_RX[6] F32 PEG_RXP9
PEG_RX[7] D34 PEG_RXP8
PEG_RX[8] F33 PEG_RXP7
PEG_RX[9] B33 PEG_RXP6
PEG_RX[10] D31 PEG_RXP5
PEG_RX[11] A32 PEG_RXP4
PEG_RX[12] C30 PEG_RXP3
PEG_RX[13] A28 PEG_RXP2
PEG_RX[14] B29 PEG_RXP1
PEG_RX[15] A30 PEG_RXP0
PEG_RXP[0..15] (16)

PEG_TX#[0] L33 PEG_C_TXN15
PEG_TX#[1] M35 PEG_C_TXN14
PEG_TX#[2] M33 PEG_C_TXN13
PEG_TX#[3] M30 PEG_C_TXN12
PEG_TX#[4] L31 PEG_C_TXN11
PEG_TX#[5] K32 PEG_C_TXN10
PEG_TX#[6] M29 PEG_C_TXN9
PEG_TX#[7] J31 PEG_C_TXN8
PEG_TX#[8] K29 PEG_C_TXN7
PEG_TX#[9] H30 PEG_C_TXN6
PEG_TX#[10] H29 PEG_C_TXN5
PEG_TX#[11] F29 PEG_C_TXN4
PEG_TX#[12] E28 PEG_C_TXN3
PEG_TX#[13] D29 PEG_C_TXN2
PEG_TX#[14] D27 PEG_C_TXN1
PEG_TX#[15] C26 PEG_C_TXN0
PEG_TXN[0..15] (16)

PEG_TX[0] L34 PEG_C_TXP15
PEG_TX[1] M34 PEG_C_TXP14
PEG_TX[2] M32 PEG_C_TXP13
PEG_TX[3] L30 PEG_C_TXP12
PEG_TX[4] M31 PEG_C_TXP11
PEG_TX[5] K31 PEG_C_TXP10
PEG_TX[6] M28 PEG_C_TXP9
PEG_TX[7] H31 PEG_C_TXP8
PEG_TX[8] K28 PEG_C_TXP7
PEG_TX[9] G30 PEG_C_TXP6
PEG_TX[10] G29 PEG_C_TXP5
PEG_TX[11] F28 PEG_C_TXP4
PEG_TX[12] E27 PEG_C_TXP3
PEG_TX[13] D28 PEG_C_TXP2
PEG_TX[14] C27 PEG_C_TXP1
PEG_TX[15] C25 PEG_C_TXP0
PEG_TXP[0..15] (16)

IC_AUB_CFD_rPGA_R0P9

U34B

H_COMP3 AT23 COMP3
H_COMP2 AT24 COMP2
H_COMP1 G16 COMP1
H_COMP0 AT26 COMP0

MISC

TP21 TP_SKTOCC# AH24 SKTOCC#

H_CATERR# AK14 CATERR#
(11) H_PECI H_PECI_ISO AT15 PECI
(49) H_PROCHOT# H_PROCHOT# AN26 PROCHOT#
(11) PM_THRMTRIP# AK15 THERMTRIP#

THERMAL

TP22 H_CPURST# AP26 RESET_OBS#
(8) PM_SYNC AL15 PM_SYNC
SYS_AGENT_PWROK AN14 VCCPWRGOOD_1
AN27 VCCPWRGOOD_0
TP24 (8) PM_DRAM_PWRGD PM_DRAM_PWRGD AK13 SM_DRAMPWROK
H_VTTPWRGD AM15 VTTPWRGOOD
TP123 H_PWRGD_XDP AM26 TAPPWRGOOD
(10,28,31,32,33,34,39,42) PLTRST# R214 1.5K/F_4 AL14 RSTIN#
R213 750/F_4

PWR MANAGEMENT

IC_AUB_CFD_rPGA_R0P9

BCLK A16 CLK_CPU_BCLK (11)
BCLK# B16 CLK_CPU_BCLK# (11)
BCLK_ITP AR30 TP75
BCLK_ITP# AT30 TP76
PEG_CLK E16 CLK_PCIE_3GPLL (10)
PEG_CLK# D16 CLK_PCIE_3GPLL# (10)
DPLL_REF_SSCLK A18
DPLL_REF_SSCLK# A17

CLOCKS

SM_DRAMRST# F6 CPUDRAMRST#
SM_RCOMP[0] AL1 SM_RCOMP_0
SM_RCOMP[1] AM1 SM_RCOMP_1
SM_RCOMP[2] AN1 SM_RCOMP_2
+1.05V_VTT
PM_EXT_TS#[0] AN15 R200 10K_4
PM_EXT_TS#[1] AP15 R197 10K_4
R201 0_4 PM_EXTTS#0 (14)
R198 0_4 PM_EXTTS#1 (15)

DDR3 MISC

PRDY# AT28 XDP_PRDY# TP61
PREQ# AP27 XDP_PREQ# TP62
TCK AN28 XDP_TCLK TP19
TMS AP28 XDP_TMS TP20
TRST# AT27 XDP_TRST# TP59
TDI AT29 XDP_TDI_R TP56
TDO AR27 XDP_TDO_R TP60
TDI_M AR29 XDP_TDI_M TP57
TDO_M AP29 XDP_TDO_M TP58
DBR# AN25 XDP_DBRESET# (8)
BPM#[0] A122 XDP_OBS0 TP77
BPM#[1] AK22 XDP_OBS1 TP78
BPM#[2] AK24 XDP_OBS2 TP79
BPM#[3] AJ24 XDP_OBS3 TP80
BPM#[4] AJ25 XDP_OBS4 TP81
BPM#[5] AH22 XDP_OBS5 TP118
BPM#[6] AK23 XDP_OBS6 TP119
BPM#[7] AH23 XDP_OBS7 TP120

JTAG & BPM

(35,42,46,47,48,49,50,51) HWPG
U23 74AHCT1G08GW
R212 2K/F_4 H_VTTPWRGD
R211 1K_4

Layout Note:
Place this test point on top side

For S3 Power Saving

3V_S5
R611 8.2K_4
C669 0.1U/10V/X7R_4
+1.5VCPU
R612 *1.1K/F_4
+1.5VCPU_PG 2
U51 TC7SH08FU(F)
DRAMPWRGD_CPU R613 1.5K/F_4 PM_DRAM_PWRGD
R617 750/F_4

For S3 Power Saving

3V_S5
R610 10K_4
R608 10K_4
+1.5VCPU_PG +1.5VCPU_PG (46)
Q30 MMBT3904
R614 10K_4
+1.5VCPU
Q32 PDTC143TT
C671 1U/6.3V/X5R_4

For S3 Power Saving

1.5VSUS
R607 1K_4
R609 *0_4
Q31 ME2N7002E
(14,15) DDR3_DRAMRST# CPUDRAMRST#
(35) DRAMRST_CTRL_EC
(10) DRAMRST_CTRL_PCH
R615 *0_4
R618 0_4
R616 100K_4
C670 0.047U/10V_4

+1.05V_VTT
XDP_TMS R186 51_4
XDP_TDI_R R335 51_4
XDP_PREQ# R191 *51_4@NC
XDP_TCLK R184 51_4

JTAG MAPPING

XDP_TDI_R R337 0_4 XDP_TDI
XDP_TDO_M R341 *0_4@NC XDP_TDO
R340 0_4
XDP_TRST# R342 51_4
XDP_TDI_M R339 *0_4@NC
XDP_TDO_R R343 0_4

Scan Chain (Default)	STUFF -> R337, R340, R343 NO STUFF -> R341, R339
CPU Only	STUFF -> R337, R341 NO STUFF -> R340, R339, R343
GMCH Only	STUFF -> R339, R343 NO STUFF -> R337, R341, R340

Processor Pullups

+1.05V_VTT
R199 49.9/F_4
R192 68_4
R193 *68_4@NC
H_CATERR#
H_PROCHOT#
H_CPURST#

(8,49) DELAY_VR_PWRGOOD R205 *0_4@NC SYS_AGENT_PWROK
(11) H_PWRGOOD R206 0_4

Platform REFDES	ERB	CRB
R205	STUFF	NO_STUFF
R206	NO_STUFF	STUFF

Processor Compensation Signals

H_COMP0
H_COMP1
H_COMP2
H_COMP3
R344 49.9/F_4
R195 49.9/F_4
R345 20/F_4
R346 20/F_4

DDR3 Compensation Signals

SM_RCOMP_2
SM_RCOMP_1
SM_RCOMP_0
R355 130/F_4
R354 24.9/F_4
R353 100/F_4
Layout Note: Place these resistors near Processor

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Quanta Computer Inc.

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Custom	AUBURNDA 1/4	1A

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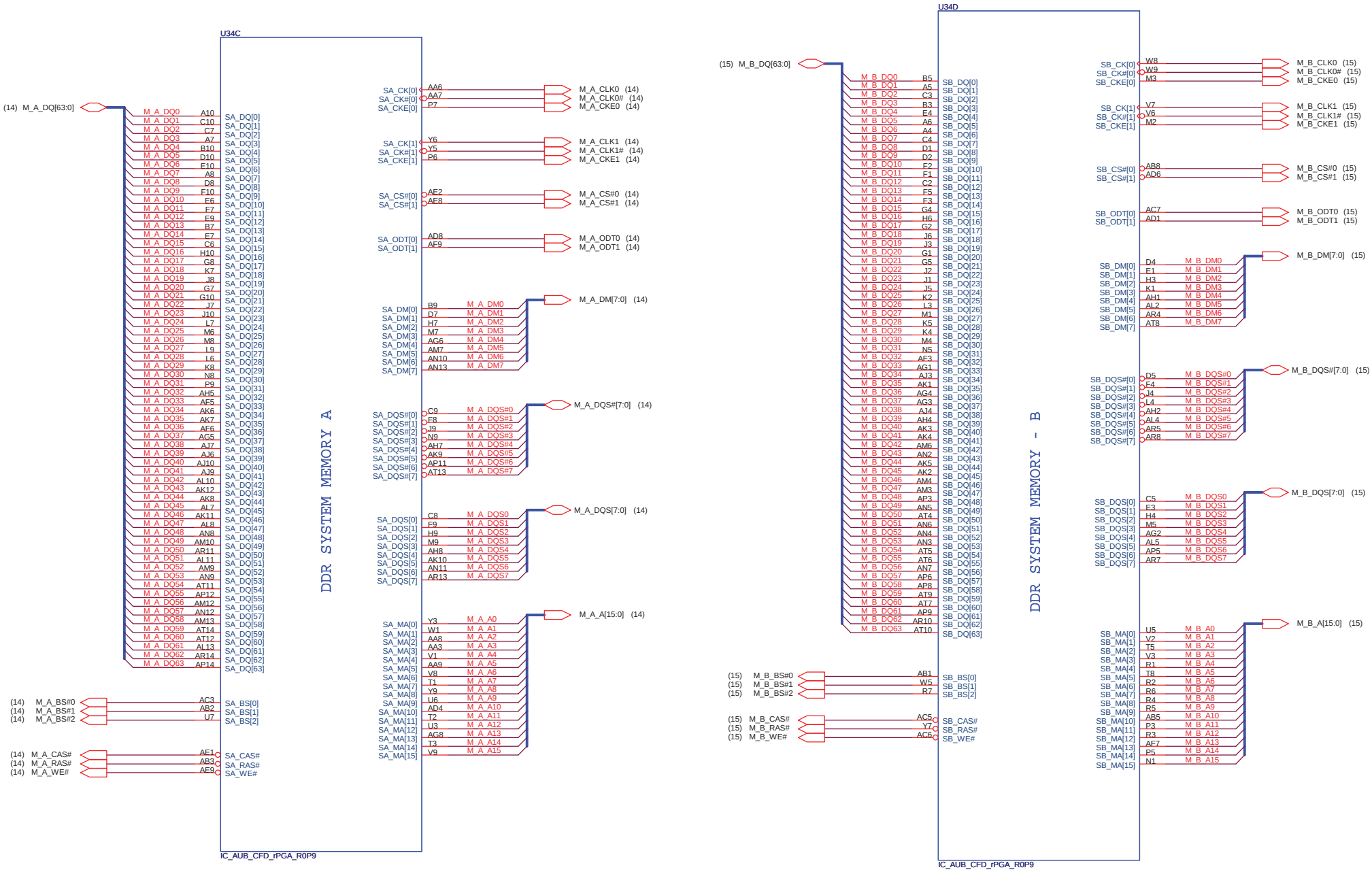
ARRANDALE PROCESSOR (DDR3)



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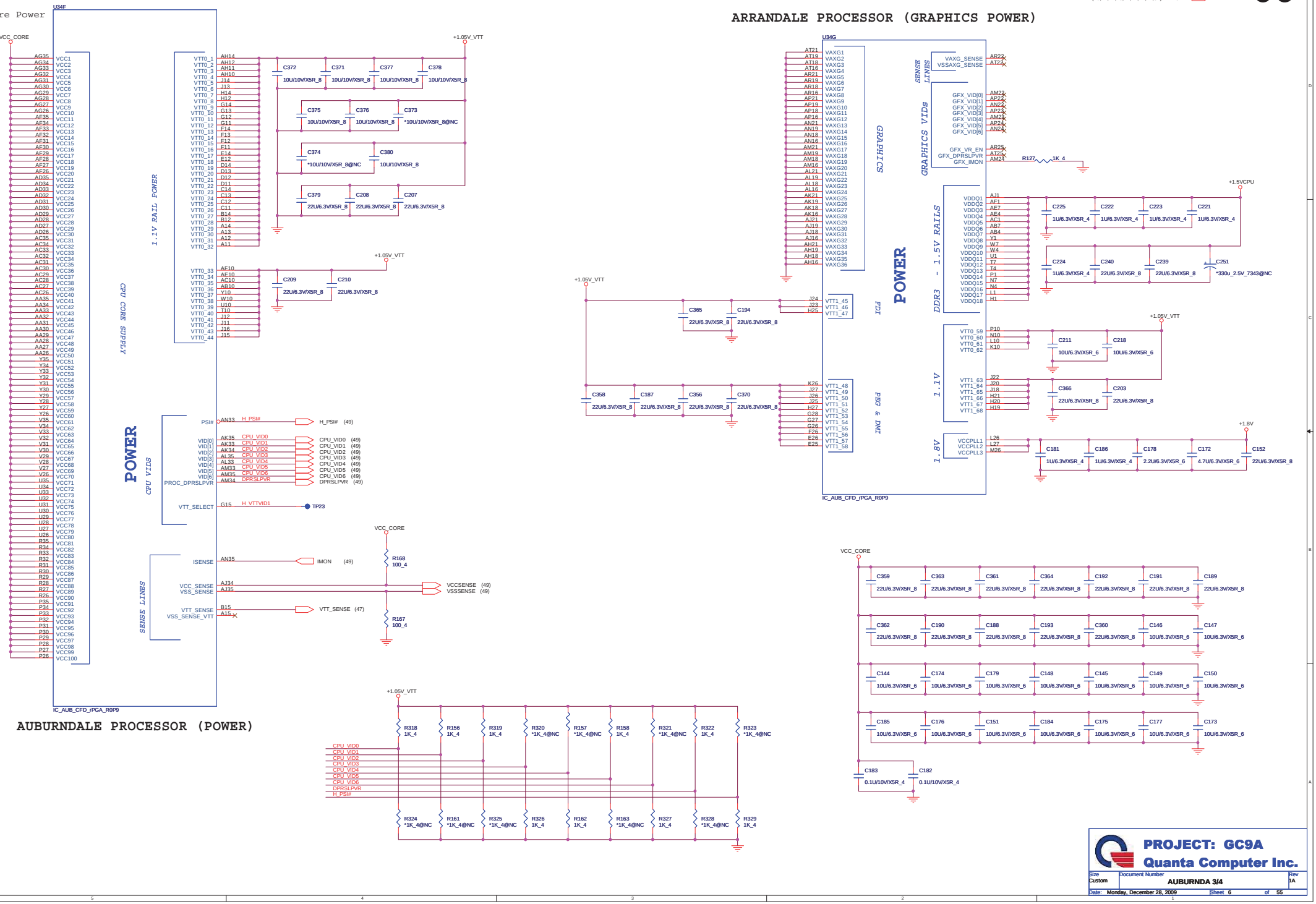
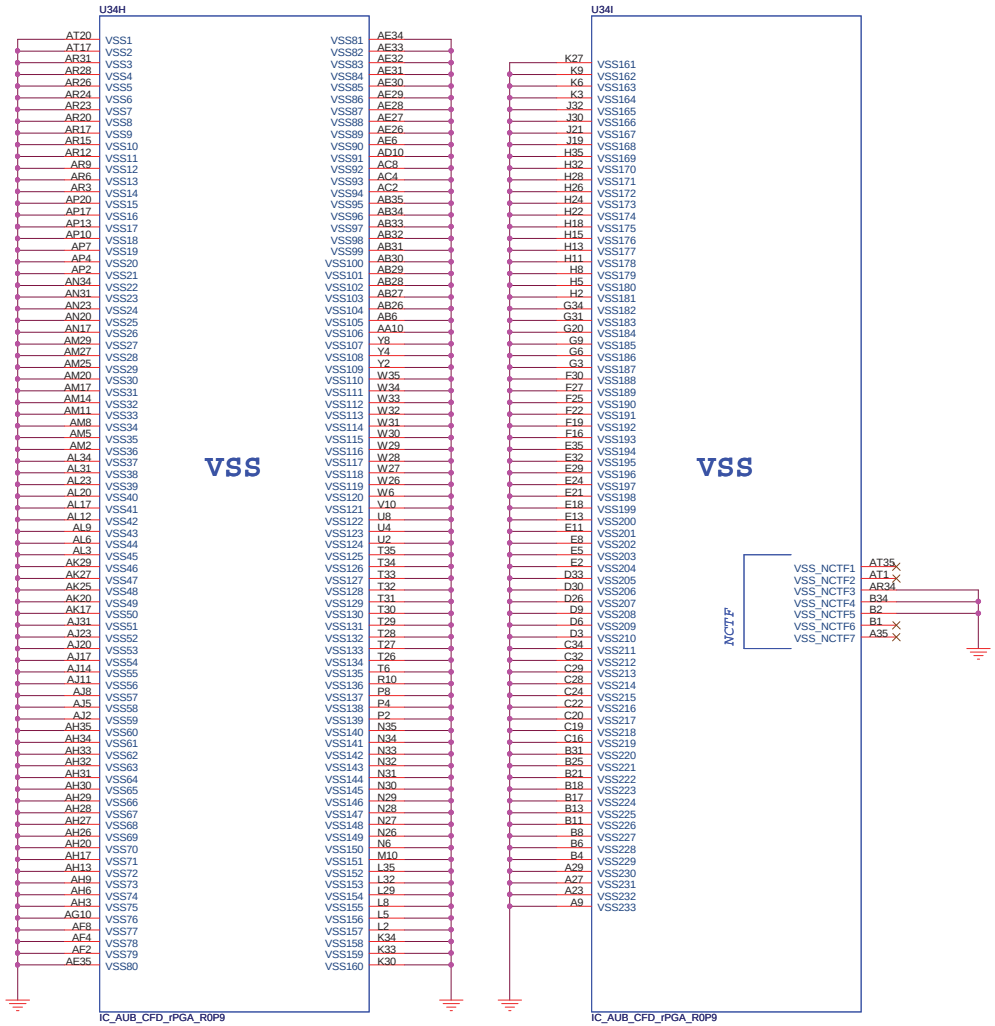
CPU Core Power

AUBURNDALE PROCESSOR (POWER)

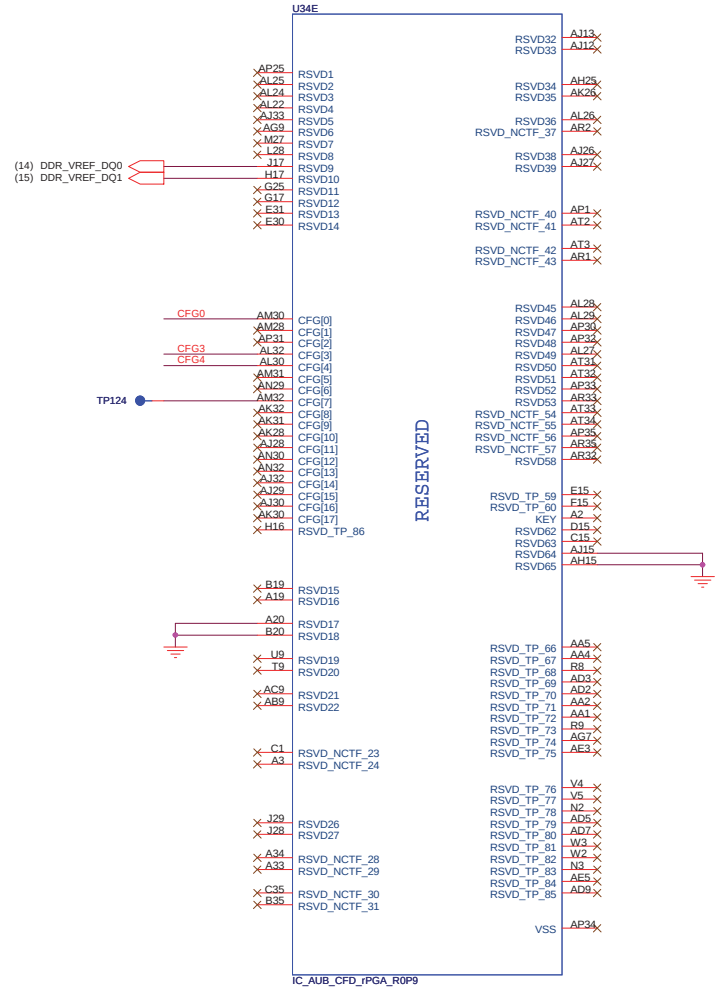
ARRANDALE PROCESSOR (GRAPHICS POWER)



ARRANDALE PROCESSOR (GND)



ARRANDALE PROCESSOR(RESERVED, CFG)



	1	0
CFG4 (Display Port Presence)	Disabled; No Physical Display Port attached to Embedded Diplay Port	Enabled; An external Display port device is connected to the Embedded Display port
CFG0 (PCI-Epress Configuration Select)	Single PEG	Bifurcation enabled
CFG3 (PCI-Epress Static Lane Reversal)	Normal Operation	Lane Numbers Reversed

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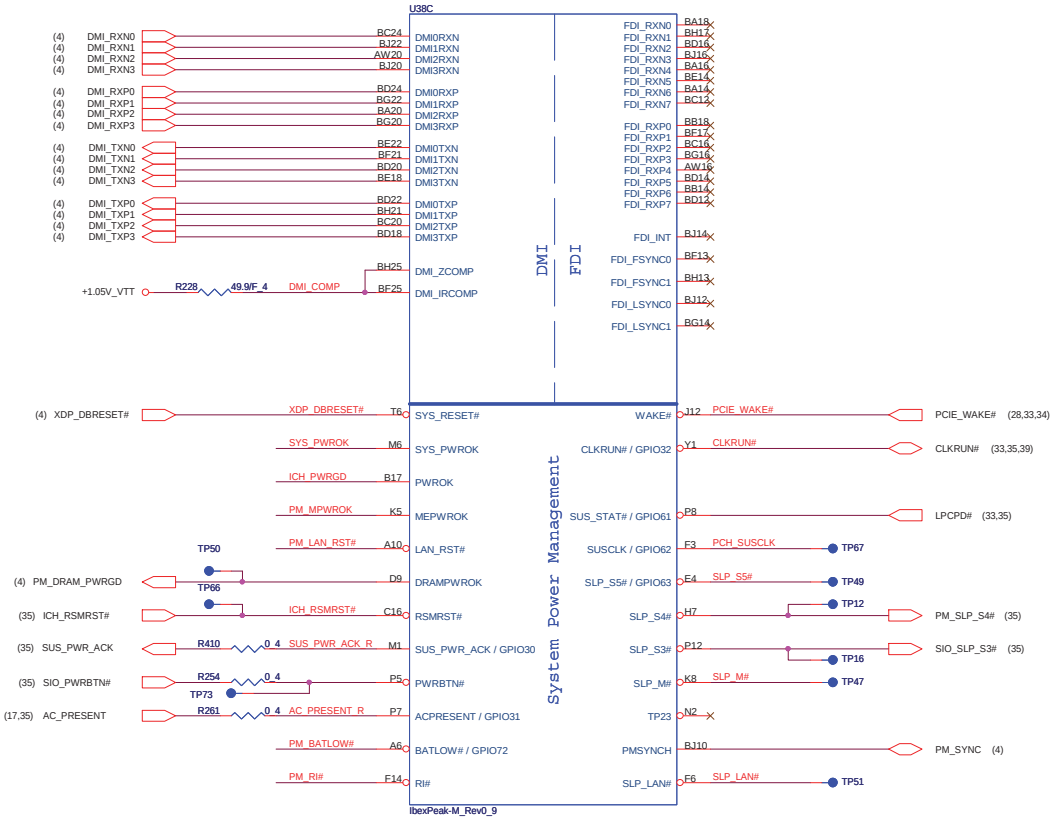
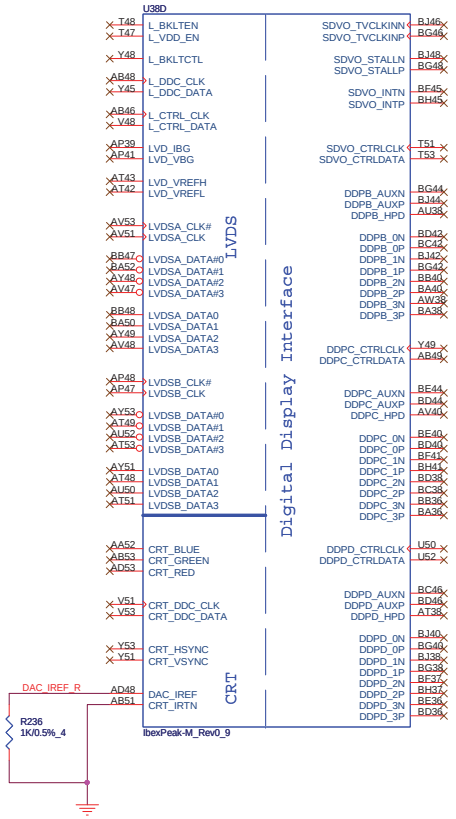
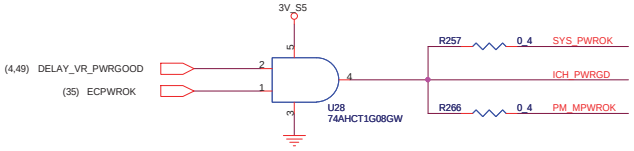
(3,4,6,9,10,11,12,44,47,49) +1.05V_VTT
(4,9,10,11,12,30,33,42,44) 3V_S5
(3,4,9,10,11,12,14,15,17,23,24,25,26,28,29,30,31,32,33,34,35,36,38,39,40,41,42,44,46,47,48,49,51) +3V
(12,18,21,24,25,26,29,35,37,38,44) +5V

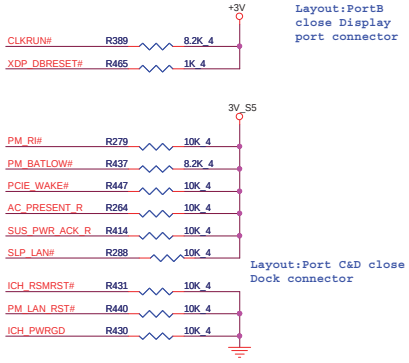
IBEX PEAK-M (DMI,FDI,GPIO)



IBEX PEAK-M (LVDS,DDI)







PROJECT: GC9A
Quanta Computer Inc.

Size	Document Number	Rev
Custom	IBEX PEAK-M 1/6	1A
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(12,35) +3VRTC
(23,28,31,35,40,41,44,45,48,50) 3VPCU
(3,4,8,10,11,12,14,15,17,23,24,25,26,28,29,30,31,32,33,34,35,36,38,39,40,41,42,44,46,47,48,49,51) +3V
(4,8,10,11,12,30,33,42,44) 3V_S5
(3,4,6,8,10,11,12,44,47,49) +1.05V_VTT

RTC Circuitry

CMOS Settings	J2
Clear CMOS	1-2
Save CMOS	1-X (Default)

TPM Settings	J3
Clear ME RTC registers	1-2
Save ME RTC registers	1-X (Default)

+3VRTC
3VPCU
D14 RB501V-40
C429 1U/6.3V/X5R_4
D15 RB501V-40
+3VRTC_2
R169 1K/F_4
+3VRTC_1
BT1
RTC BATTERY
R432 1M/F_4
R445 20K/F_4
R446 20K/F_4
C441 1U/6.3V/X5R_4
J3 *SHORT_ PAD1
C440 1U/6.3V/X5R_4
J2 *SHORT_PAD1
C452 15P/50V/NPO_4
Y4 32.768KHZ
R459 10M_4
C451 15P/50V/NPO_4
Cap values depend on Xtal

IBEX PEAK-M (HDA,JTAG,SATA)

U38A

RTC_X1 B13 RTCX1
RTC_X2 D13 RTCX2
RTC_RST# C14 RTCRST#
SRTC_RST# D17 SRTCRST#
SM_INTRUDER# A16 INTRUDER#
+3VRTC R433 330K_4 PCH_INVRMEN A14 INTVRMEN

INTVRMEN - Integrated SUS 1.1V VRM Enable
High - Enable Internal VRs

RTC

LPC
FWH0 / LAD0 D33 LPC_LAD0 (33,35,39)
FWH1 / LAD1 B33 LPC_LAD1 (33,35,39)
FWH2 / LAD2 C32 LPC_LAD2 (33,35,39)
FWH3 / LAD3 A32 LPC_LAD3 (33,35,39)
FWH4 / LFRAME# C34 LPC_LFRAME# (33,35,39)
LDRQ0# A34 LPC_DRQ#0 LPC_DRQ#0 (33)
LDRQ1# / GPIO23 F34 LCD_BK_OFF LCD_BK_OFF (23)
R275 *10K_4@NC +3V
SERIRQ AB9
R293 10K_4 +3V
IRQ_SERIRQ (33,35,39)

(26) ICH_AZ_CODEC_BITCLK R426 33_4 ACZ_BIT_CLK
C427 *10P/50V/COG_4@NC
(26) ICH_AZ_CODEC_SYNC R428 33_4 ACZ_SYNC
(26) ICH_AZ_CODEC_RST# R425 33_4 ACZ_RST#
(26) ICH_AZ_CODEC_SDOUT R427 33_4 ACZ_SDOUT

Place all series terms close to PCH except for SDIN input lines,which should be close to source.Placement of R651, R652, R650 & R653 should equal distance to the T split trace point. Basically, keep the same distance from T for all series termination resistors.

ACZ_BIT_CLK A30 HDA_BCLK
ACZ_SYNC D29 HDA_SYNC
(26) SPKR SPKR P1 SPKR
ACZ_RST# C30 HDA_RST#
(26) ICH_AZ_CODEC_SDIN0 G30 HDA_SDIN0
TP43 F30 HDA_SDIN1
TP46 E32 HDA_SDIN2
TP48 F32 HDA_SDIN3
ACZ_SDOUT B29 HDA_SDO
R272 *1K_4@NC
+3V R291 *1K_4@NC HDA_DOCK_EN# H32 HDA_DOCK_EN# / GPIO33
3V_S5 R259 *10K_4@NC HDA_DOCK_RST# J30 HDA_DOCK_RST# / GPIO13

HDA_DOCK_EN# has a weak internal pull-up.
High : the security measures defined in the Flash Descriptor will be in effect (default).
Low : the Flash Descriptor Security will be overridden.

IHDA

SATA
SATA0RXN AK7 SATA_RX0- (29)
SATA0RXP AK6 SATA_RX0+ (29)
SATA0TXN AK11 SATA_TXN0_C C270 0.01U/16V/X7R_4 SATA_TX0- (29)
SATA0TXP AK9 SATA_TXP0_C C267 0.01U/16V/X7R_4 SATA_TX0+ (29)
SATA HDD
SATA1RXN AH6 SATA_RX1- (29)
SATA1RXP AH5 SATA_RX1+ (29)
SATA1TXN AH9 SATA_TXN1_C C271 0.01U/16V/X7R_4 SATA_TX1- (29)
SATA1TXP AH8 SATA_TXP1_C C276 0.01U/16V/X7R_4 SATA_TX1+ (29)
SATA ODD
SATA2RXN AF11
SATA2RXP AF9
SATA2TXN AF7
SATA2TXP AF6
SATA3RXN AH3
SATA3RXP AH1
SATA3TXN AF3
SATA3TXP AF1

Distance between the PCH and cap on the "P" signal should be identical distace between the PCH and cap on the "N" signal for the same pair.

SATA4RXN AD9 SATA_RX4- (30)
SATA4RXP AD8 SATA_RX4+ (30)
SATA4TXN AD6 SATA_TXN4_C C296 0.01U/16V/X7R_4 SATA_TX4- (30)
SATA4TXP AD5 SATA_TXP4_C C292 0.01U/16V/X7R_4 SATA_TX4+ (30)
E-SATA
SATA5RXN AD3
SATA5RXP AD1
SATA5TXN AB3
SATA5TXP AB1
SATAICOMPO AF16
SATAICOMPI AF15 SATA_COMP R237 37.4/F_4 +1.05V_VTT
SATALED# T3 R404 10K_4 +3V SATA_LED# (40)
SATA0GP / GPIO21 Y9 SATA0GP R449 10K_4 +3V TP82
SATA1GP / GPIO19 V1 SATA1GP R450 10K_4 +3V TP83

TP65 PCH_JTAG_TCK M3 JTAG_TCK
TP68 K3 JTAG_TMS
TP54 K1 JTAG_TDI
TP52 J2 JTAG_TDO
TP53 PCH_JTAG_RST# J4 JTAG_RST#

JTAG

(42) SPI_CLK_R BA2 SPI_CLK
(42) SPI_CS0#_R AV3 SPI_CS0#
TP63 SPI_CS1# AY3 SPI_CS1#
(42) SPI_SI_R AY1 SPI_MOSI
(42) SPI_SO AV1 SPI_MISO

SPI

IbexPeak-M_Rev0_9

EC-A-05

No Reboot Strap

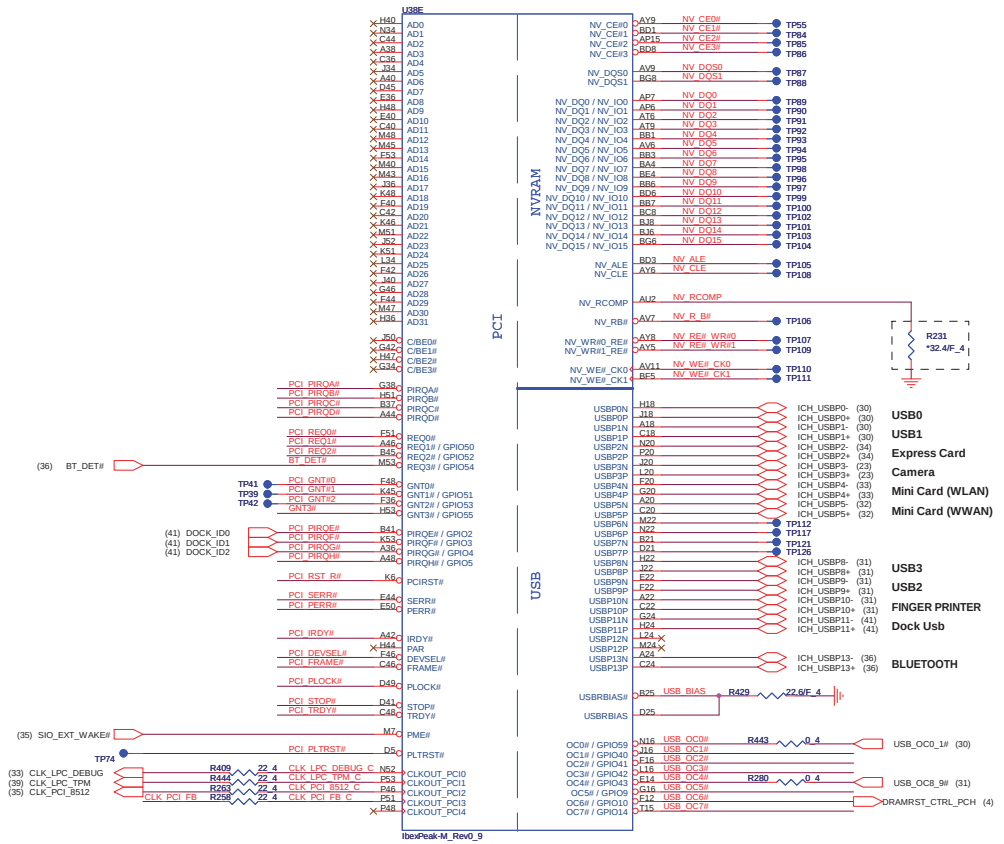
Place near connector
+3V
R408 *1K_4@NC SPKR
R268 10K_4 IRQ_SERIRQ

9VSUS
PR82 PCH_JTAG_RST# 10K_4
R347 PCH_JTAG_TCK 51_4

PROJECT: GC9A
Quanta Computer Inc.

Size	Document Number	Rev
Custom	IBEX PEAK-M 2/6	1A
Date: Monday, January 04, 2010	Sheet 9 of 55	

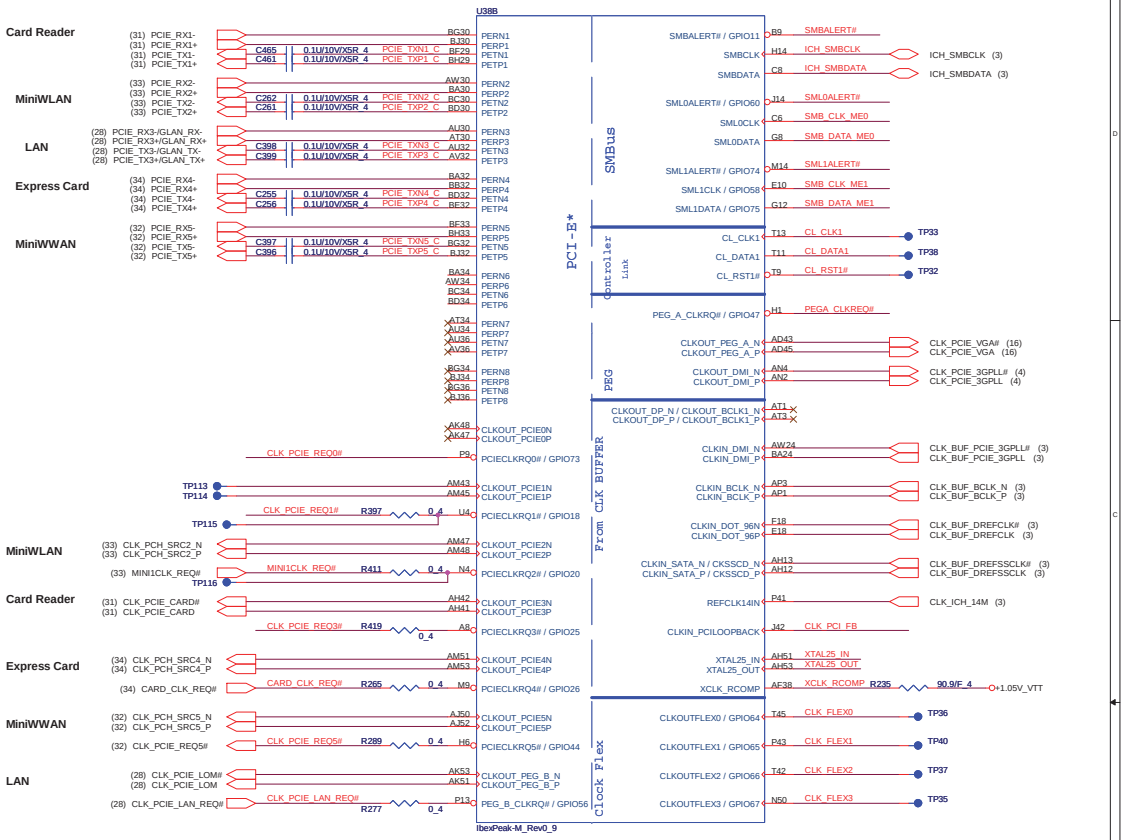
IBEX PEAK-M (PCI,USB,NVRAM)

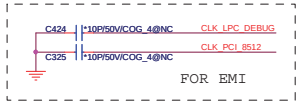


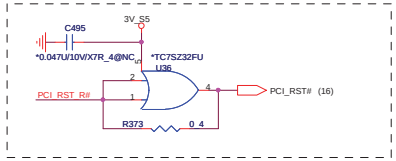
IBEX PEAK-M (PCI-E,SMBUS,CLK)

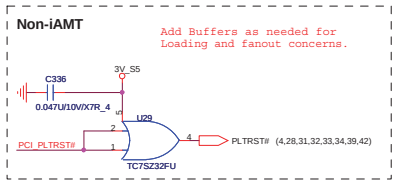
(3,4,8,9,11,12,14,15,17,23,24,25,26,28,29,30,31,32,33,34,35,36,38,39,40,41,42,44,46,47,48,49,51) +3V
(4,8,9,11,12,30,33,42,44) 3V_S5
(3,4,6,8,9,11,12,44,47,49) +1.05V_VTT
(6,12,17,18,21,22,24,44,51) +1.8V

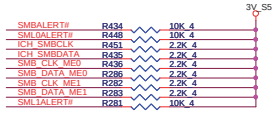
10

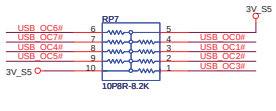


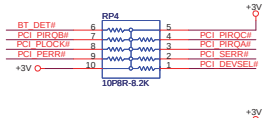


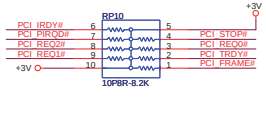


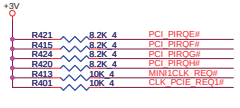


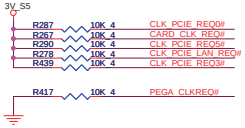


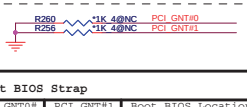




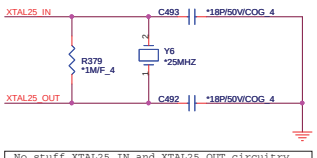




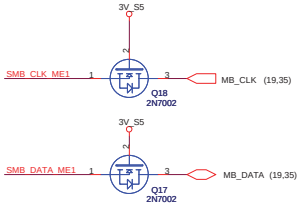




Boot BIOS Strap		
PCI_GNT0#	PCI_GNT#1	Boot BIOS Location
0	0	LPC
0	1	PCI
1	0	Reserved (NAND)
1	1	SPI



No stuff XTAL25_IN and XTAL25_OUT circuitry until integrated CG becomes PCH POR.



DMI Termination Voltage	
NV_CLE	Set to Vcc when LOW Set to Vcc/2 when HIGH

Danbury Technology Enabled	
NV_ALE	High = Enable Low = Disable

A16 swap override Strap/Top-Block Swap Override jumper	
GNT3#	Low = A16 swap override/Top-Block Swap Override enabled High = Default

PROJECT: GC9A
Quanta Computer Inc.

Size	Document Number	Rev
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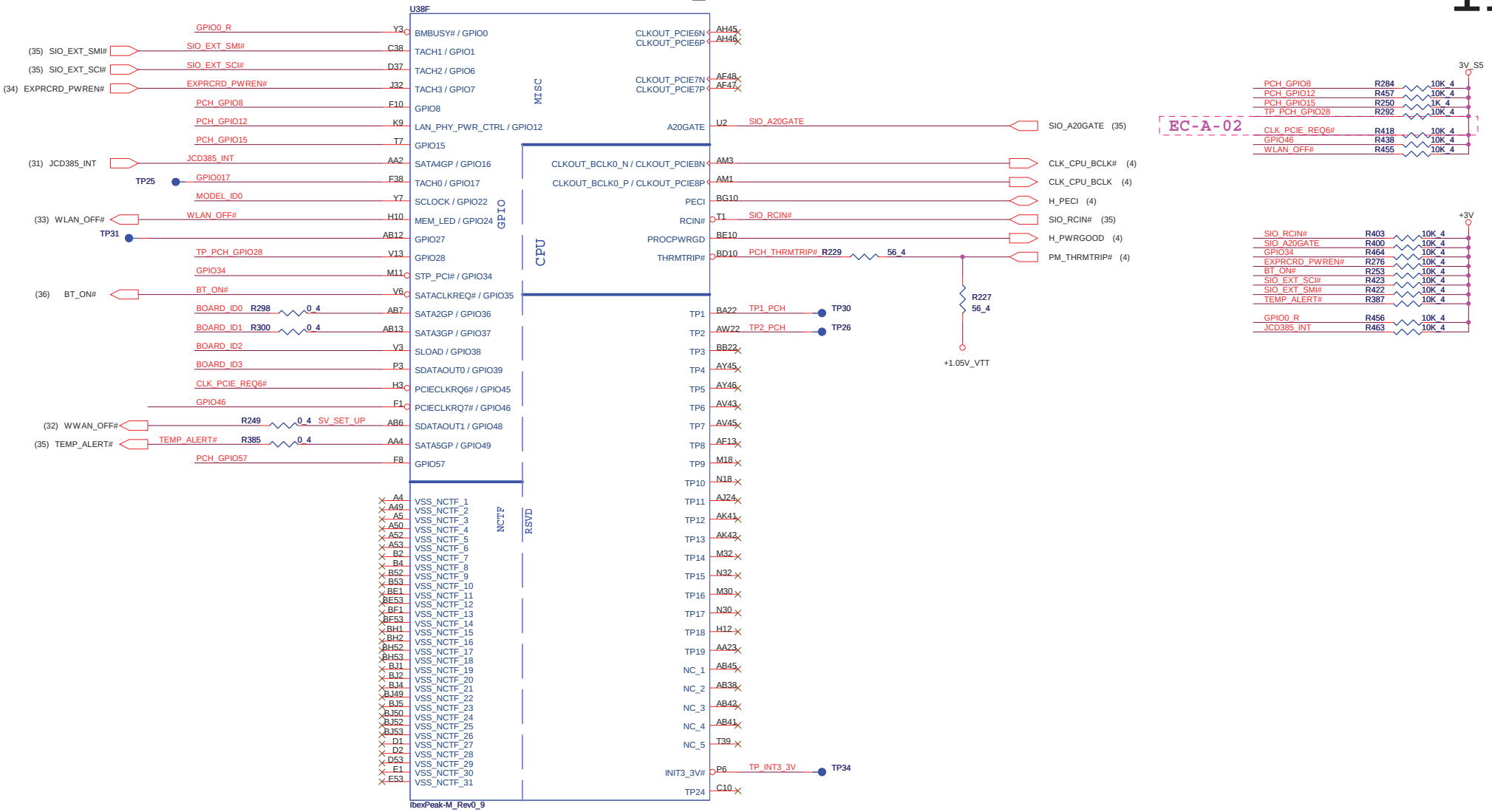
IBEX PEAK-M (GPIO,VSS_NCTF,RSVD)

(3,4,6,8,9,10,12,14,15,17,23,24,25,26,28,29,30,31,32,33,34,35,36,38,39,40,41,42,44,46,47,48,49,51) +3V
(4,8,9,10,12,30,33,42,44) 3V_S5
(3,4,6,8,9,10,12,44,47,49) +1.05V_VTT



EC-A-02

3V_S5

PCH_GPIO8	R284	10K_4
PCH_GPIO12	R457	10K_4
PCH_GPIO15	R250	1K_4
TP_PCH_GPIO28	R292	10K_4
CLK_PCIE_REQ6#	R418	10K_4
GPIO46	R438	10K_4
WLAN_OFF#	R455	10K_4

+3V

SIO_RCIN#	R403	10K_4
SIO_A20GATE	R400	10K_4
GPIO34	R464	10K_4
EXPRCRD_PWREN#	R276	10K_4
BT_ON#	R253	10K_4
SIO_EXT_SCI#	R423	10K_4
SIO_EXT_SMI#	R422	10K_4
TEMP_ALERT#	R387	10K_4
GPIO0_R	R456	10K_4
JCD385_INT	R463	10K_4

Board ID For Function	ID3 GPIO39	ID2 GPIO38	ID1 GPIO37	ID0 GPIO36
SDV	0	0	0	0
SIV	0	0	0	1
SIT	0	0	1	0
SVT	0	0	1	1
SOVP	0	1	0	0

+3V
R296 10K_4 BOARD_ID0 R297 *10K_4@NC
R301 *10K_4@NC BOARD_ID1 R299 10K_4
R394 *10K_4@NC BOARD_ID2 R393 10K_4
R407 *10K_4@NC BOARD_ID3 R406 10K_4

Model ID	MODEL_ID0
14"	0
15"	1

+3V
R243 *10K_4@NC
MODEL_ID0
R239 10K_4

TPM physical presence	
PCH_GPIO57	Low: Default

3V_S5
R466 *10K/F_4@NC
PCH_GPIO57
R458 100K/F_4

+3V
SV_SET_UP R246 10K_4

SV_SET_UP	1-X High = Strong (Default)

PROJECT: GC9A
Quanta Computer Inc.

Size	Document Number	Rev
Custom	IBEX PEAK-M 4/6	1A

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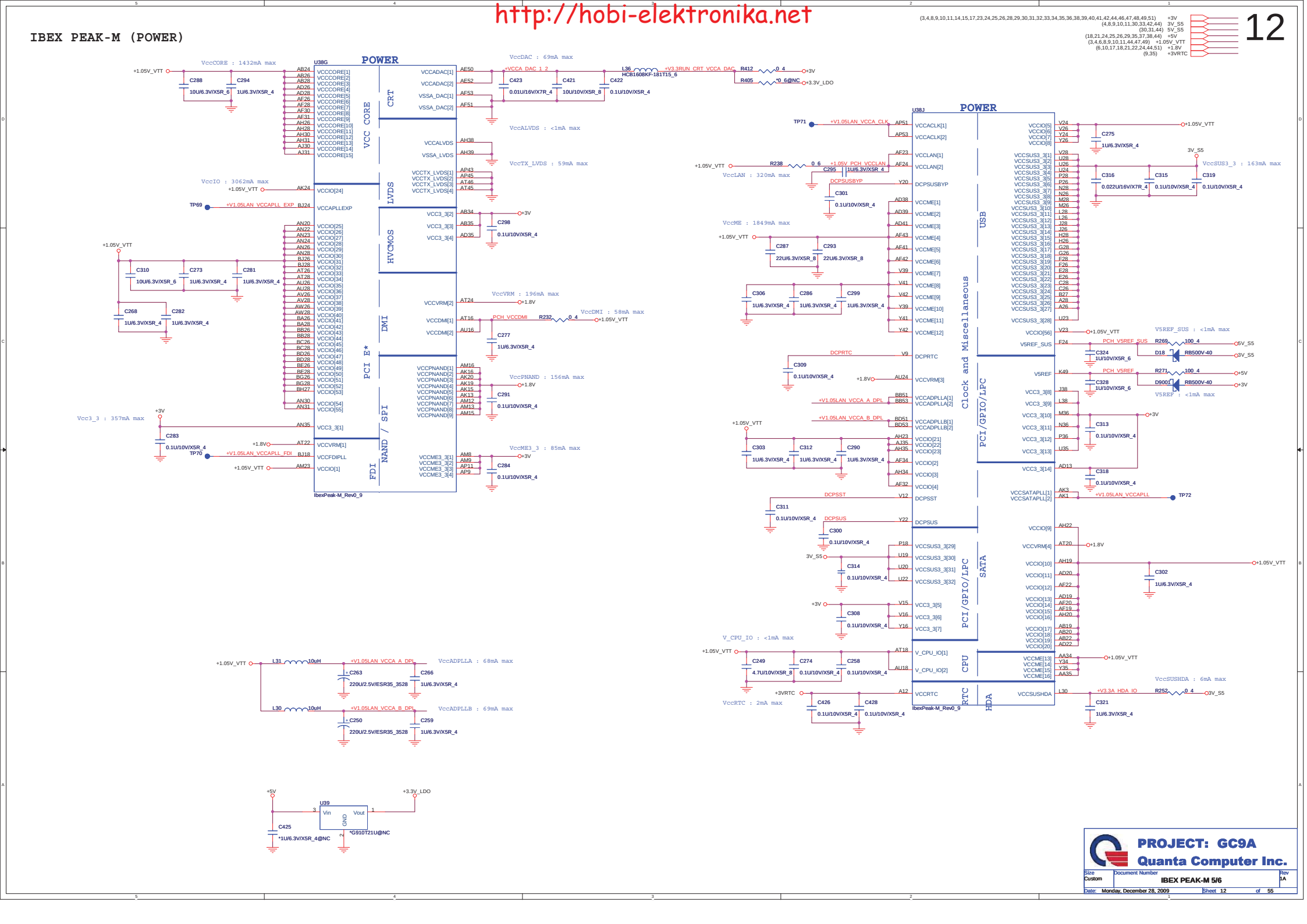
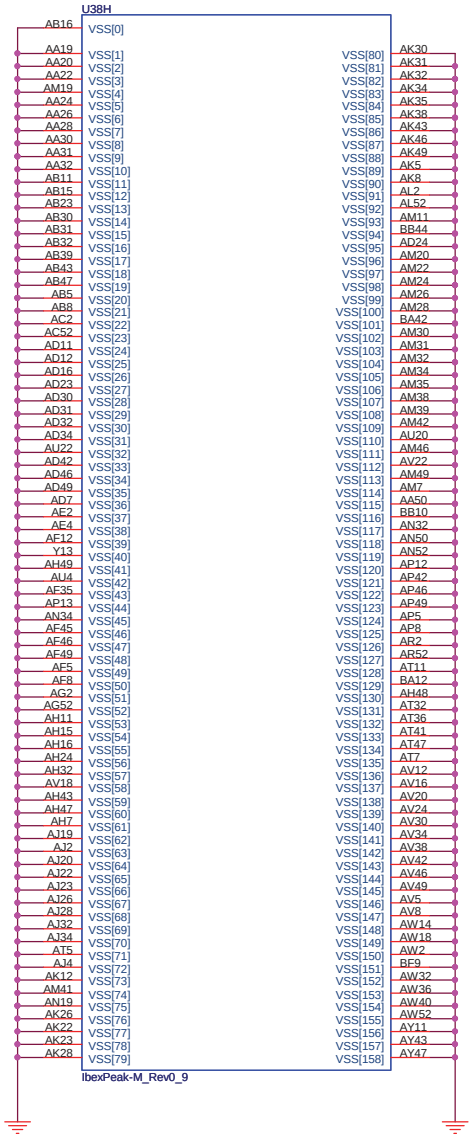
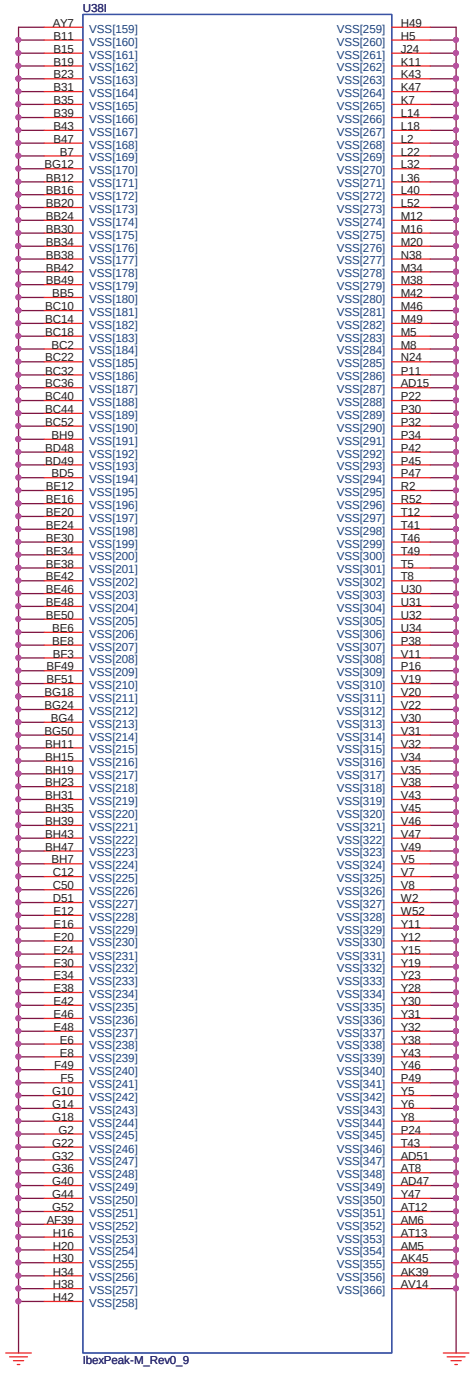
IBEX PEAK-M (POWER)



IBEX PEAK-M (GND)





PROJECT: GC9A
Quanta Computer Inc.

Size	Document Number	Rev
Custom	IBEX PEAK-M 6/6	1A

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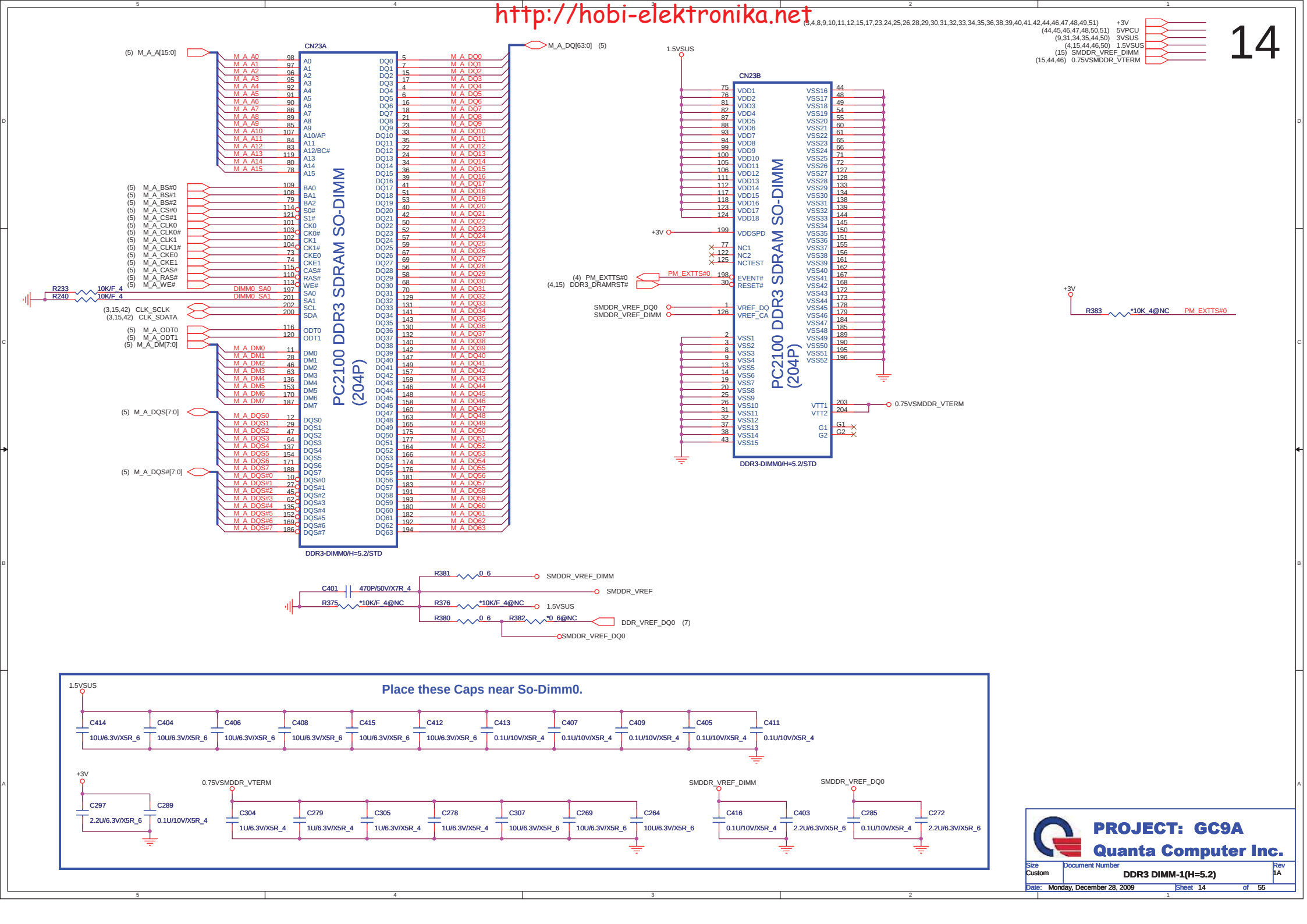

Place these Caps near So-Dimm0.

PROJECT: GC9A
Quanta Computer Inc.

Size	Document Number	Rev
Custom	DDR3 DIMM-1(H=5.2)	1A
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(3,4,8,9,10,11,12,14,17,23,24,25,26,28,29,30,31,32,33,34,35,36,38,39,40,41,42,44,46,47,48,49,51) +3V
(9,31,34,35,44,50) 3VSUS
(4,14,44,46,50) 1.5VSUS
(14) SMDDR_VREF_DIMM
(14,44,46) 0.75VSMDDR_VTERM

CN24A

(5) M_B_A[15:0]
M_B_A0 98
M_B_A1 97
M_B_A2 96
M_B_A3 95
M_B_A4 92
M_B_A5 91
M_B_A6 90
M_B_A7 86
M_B_A8 89
M_B_A9 85
M_B_A10 107
M_B_A11 84
M_B_A12 83
M_B_A13 119
M_B_A14 80
M_B_A15 78

(5) M_B_BS#0 109
(5) M_B_BS#1 108
(5) M_B_BS#2 79
(5) M_B_CS#0 114
(5) M_B_CS#1 121
(5) M_B_CLK0 101
(5) M_B_CLK0# 103
(5) M_B_CLK1 102
(5) M_B_CLK1# 104
(5) M_B_CKE0 73
(5) M_B_CKE1 74
(5) M_B_CAS# 115
(5) M_B_RAS# 110
(5) M_B_WE# 113

R441 10K/F_4 DIMM1_SA0 197
R442 10K/F_4 DIMM1_SA1 201
+3V

(3,14,42) CLK_SCLK 202
(3,14,42) CLK_SDATA 200

(5) M_B_ODT0 116
(5) M_B_ODT1 120
(5) M_B_DM[7:0]
M_B_DM0 11
M_B_DM1 28
M_B_DM2 46
M_B_DM3 63
M_B_DM4 136
M_B_DM5 153
M_B_DM6 170
M_B_DM7 187

(5) M_B_DQS[7:0]
M_B_DQS0 12
M_B_DQS1 29
M_B_DQS2 47
M_B_DQS3 64
M_B_DQS4 137
M_B_DQS5 154
M_B_DQS6 171
M_B_DQS7 188

(5) M_B_DQS#[7:0]
M_B_DQS#0 10
M_B_DQS#1 27
M_B_DQS#2 45
M_B_DQS#3 62
M_B_DQS#4 135
M_B_DQS#5 152
M_B_DQS#6 169
M_B_DQS#7 186

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 5 M_B_DQ0
DQ1 7 M_B_DQ1
DQ2 15 M_B_DQ2
DQ3 17 M_B_DQ3
DQ4 4 M_B_DQ4
DQ5 6 M_B_DQ5
DQ6 16 M_B_DQ6
DQ7 18 M_B_DQ7
DQ8 21 M_B_DQ8
DQ9 23 M_B_DQ9
DQ10 33 M_B_DQ10
DQ11 35 M_B_DQ11
DQ12 22 M_B_DQ12
DQ13 24 M_B_DQ13
DQ14 34 M_B_DQ14
DQ15 36 M_B_DQ15
DQ16 39 M_B_DQ16
DQ17 41 M_B_DQ17
DQ18 51 M_B_DQ18
DQ19 53 M_B_DQ19
DQ20 40 M_B_DQ20
DQ21 42 M_B_DQ21
DQ22 50 M_B_DQ22
DQ23 52 M_B_DQ23
DQ24 57 M_B_DQ24
DQ25 59 M_B_DQ25
DQ26 67 M_B_DQ26
DQ27 69 M_B_DQ27
DQ28 56 M_B_DQ28
DQ29 58 M_B_DQ29
DQ30 68 M_B_DQ30
DQ31 70 M_B_DQ31
DQ32 129 M_B_DQ32
DQ33 131 M_B_DQ33
DQ34 141 M_B_DQ34
DQ35 143 M_B_DQ35
DQ36 130 M_B_DQ36
DQ37 132 M_B_DQ37
DQ38 140 M_B_DQ38
DQ39 142 M_B_DQ39
DQ40 147 M_B_DQ40
DQ41 149 M_B_DQ41
DQ42 157 M_B_DQ42
DQ43 159 M_B_DQ43
DQ44 146 M_B_DQ44
DQ45 148 M_B_DQ45
DQ46 158 M_B_DQ46
DQ47 160 M_B_DQ47
DQ48 163 M_B_DQ48
DQ49 165 M_B_DQ49
DQ50 175 M_B_DQ50
DQ51 177 M_B_DQ51
DQ52 164 M_B_DQ52
DQ53 166 M_B_DQ53
DQ54 174 M_B_DQ54
DQ55 176 M_B_DQ55
DQ56 181 M_B_DQ56
DQ57 183 M_B_DQ57
DQ58 191 M_B_DQ58
DQ59 193 M_B_DQ59
DQ60 180 M_B_DQ60
DQ61 182 M_B_DQ61
DQ62 192 M_B_DQ62
DQ63 194 M_B_DQ63

M_B_DQ[63:0] (5)

DDR3-DIMM1/H=9.2/STD

1.5VSUS

CN24B

VDD1 75
VDD2 76
VDD3 81
VDD4 82
VDD5 87
VDD6 88
VDD7 93
VDD8 94
VDD9 99
VDD10 100
VDD11 105
VDD12 106
VDD13 111
VDD14 112
VDD15 117
VDD16 118
VDD17 123
VDD18 124

+3V VDDSPD 199

NC1 77
NC2 122
NCTEST 125

(4) PM_EXTTS#1 PM_EXTTS#1 EVENT# 198
(4,14) DDR3_DRAMRST# RESET# 30

SMDDR_VREF_DQ1 VREF_DQ 1
SMDDR_VREF_DIMM VREF_CA 126

VSS1 2
VSS2 3
VSS3 8
VSS4 9
VSS5 13
VSS6 14
VSS7 19
VSS8 20
VSS9 25
VSS10 26
VSS11 31
VSS12 32
VSS13 37
VSS14 38
VSS15 43

VSS16 44
VSS17 48
VSS18 49
VSS19 54
VSS20 55
VSS21 60
VSS22 61
VSS23 65
VSS24 66
VSS25 71
VSS26 72
VSS27 127
VSS28 128
VSS29 133
VSS30 134
VSS31 138
VSS32 139
VSS33 144
VSS34 145
VSS35 150
VSS36 151
VSS37 155
VSS38 156
VSS39 161
VSS40 162
VSS41 167
VSS42 168
VSS43 172
VSS44 173
VSS45 178
VSS46 179
VSS47 184
VSS48 185
VSS49 189
VSS50 190
VSS51 195
VSS52 196

VTT1 203
VTT2 204
0.75VSMDDR_VTERM

G1
G2

PC2100 DDR3 SDRAM SO-DIMM (204P)

DDR3-DIMM1/H=9.2/STD

+3V
R270 *10K_4@NC PM_EXTTS#1

SMDDR_VREF_DIMM R452 0_6 R453 *0_6@NC DDR_VREF_DQ1 (7)
SMDDR_VREF_DQ1

Place these Caps near So-Dimm1.

1.5VSUS
C437 10U/6.3V/X5R_6
C439 10U/6.3V/X5R_6
C431 10U/6.3V/X5R_6
C430 10U/6.3V/X5R_6
C410 10U/6.3V/X5R_6
C438 10U/6.3V/X5R_6
C433 0.1U/10V/X5R_4
C432 0.1U/10V/X5R_4
C434 0.1U/10V/X5R_4
C435 0.1U/10V/X5R_4
C436 0.1U/10V/X5R_4

+3V
C334 2.2U/6.3V/X5R_6
C442 0.1U/10V/X5R_4

0.75VSMDDR_VTERM
C326 1U/6.3V/X5R_4
C335 1U/6.3V/X5R_4
C327 1U/6.3V/X5R_4
C330 1U/6.3V/X5R_4
C323 10U/6.3V/X5R_6
C331 10U/6.3V/X5R_6
C329 10U/6.3V/X5R_6

SMDDR_VREF_DIMM
C444 0.1U/10V/X5R_4
C445 2.2U/6.3V/X5R_6

SMDDR_VREF_DQ1
C332 0.1U/10V/X5R_4
C333 2.2U/6.3V/X5R_6

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Quanta Computer Inc.

Size	Document Number	Rev
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(4) PEG_TXP[0..15]
(4) PEG_TXN[0..15]

U9003A
PART 1 OF 10

PCI-EXPRESS INTERFACE

PEG_TXP0	AF30	PCIE_RX0P	PCIE_TX0P	AH30	PEG_C_RXP0
PEG_TXN0	AE31	PCIE_RX0N	PCIE_TX0N	AG31	PEG_C_RXN0
PEG_TXP1	AE29	PCIE_RX1P	PCIE_TX1P	AG29	PEG_C_RXP1
PEG_TXN1	AD28	PCIE_RX1N	PCIE_TX1N	AF28	PEG_C_RXN1
PEG_TXP2	AD30	PCIE_RX2P	PCIE_TX2P	AF27	PEG_C_RXP2
PEG_TXN2	AC31	PCIE_RX2N	PCIE_TX2N	AF26	PEG_C_RXN2
PEG_TXP3	AC29	PCIE_RX3P	PCIE_TX3P	AD27	PEG_C_RXP3
PEG_TXN3	AB28	PCIE_RX3N	PCIE_TX3N	AD26	PEG_C_RXN3
PEG_TXP4	AB30	PCIE_RX4P	PCIE_TX4P	AC25	PEG_C_RXP4
PEG_TXN4	AA31	PCIE_RX4N	PCIE_TX4N	AB25	PEG_C_RXN4
PEG_TXP5	AA29	PCIE_RX5P	PCIE_TX5P	Y23	PEG_C_RXP5
PEG_TXN5	Y28	PCIE_RX5N	PCIE_TX5N	Y24	PEG_C_RXN5
PEG_TXP6	Y30	PCIE_RX6P	PCIE_TX6P	AB27	PEG_C_RXP6
PEG_TXN6	W31	PCIE_RX6N	PCIE_TX6N	AB26	PEG_C_RXN6
PEG_TXP7	W29	PCIE_RX7P	PCIE_TX7P	Y27	PEG_C_RXP7
PEG_TXN7	V28	PCIE_RX7N	PCIE_TX7N	Y26	PEG_C_RXN7
PEG_TXP8	V30	PCIE_RX8P	PCIE_TX8P	W24	PEG_C_RXP8
PEG_TXN8	U31	PCIE_RX8N	PCIE_TX8N	W23	PEG_C_RXN8
PEG_TXP9	U29	PCIE_RX9P	PCIE_TX9P	V27	PEG_C_RXP9
PEG_TXN9	T28	PCIE_RX9N	PCIE_TX9N	U26	PEG_C_RXN9
PEG_TXP10	T30	PCIE_RX10P	PCIE_TX10P	U24	PEG_C_RXP10
PEG_TXN10	R31	PCIE_RX10N	PCIE_TX10N	U23	PEG_C_RXN10
PEG_TXP11	R29	PCIE_RX11P	PCIE_TX11P	T26	PEG_C_RXP11
PEG_TXN11	P28	PCIE_RX11N	PCIE_TX11N	T27	PEG_C_RXN11
PEG_TXP12	P30	PCIE_RX12P	PCIE_TX12P	T24	PEG_C_RXP12
PEG_TXN12	N31	PCIE_RX12N	PCIE_TX12N	T23	PEG_C_RXN12
PEG_TXP13	N29	PCIE_RX13P	PCIE_TX13P	P27	PEG_C_RXP13
PEG_TXN13	M28	PCIE_RX13N	PCIE_TX13N	P26	PEG_C_RXN13
PEG_TXP14	M30	PCIE_RX14P	PCIE_TX14P	P24	PEG_C_RXP14
PEG_TXN14	L31	PCIE_RX14N	PCIE_TX14N	P23	PEG_C_RXN14
PEG_TXP15	L29	PCIE_RX15P	PCIE_TX15P	M27	PEG_C_RXP15
PEG_TXN15	K30	PCIE_RX15N	PCIE_TX15N	N26	PEG_C_RXN15

(10) CLK_PCIE_VGA
(10) CLK_PCIE_VGA#
AK30 PCIE_REFCLKP
AK32 PCIE_REFCLKN

(10) PCI_RST#
AL27 PERSTB

PCIE_CALRN AA22 PCIE_CALRN 2K/F_4 R9020
PCIE_CALRP Y22 PCIE_CALRP 1.27K/F_4 R9018

(1.1V)
+1.1V_GFX_PCIE

M92-S2/M92-XT

100 MHz (+/-300 ppm) input frequency,
0-0.7 V single-ended swing.
clock must be provided less than 400ns
after CLKREQ# is asserted

(18,21,22,44,50) +1.1V_GFX_PCIE

PEG_RXP[0..15] (4)
PEG_RXN[0..15] (4)

PEG_C_RXP0	0.1U/10V/X5R_4	C9014	PEG_RXP0
PEG_C_RXP1	0.1U/10V/X5R_4	C9024	PEG_RXP1
PEG_C_RXP2	0.1U/10V/X5R_4	C9031	PEG_RXP2
PEG_C_RXP3	0.1U/10V/X5R_4	C9044	PEG_RXP3
PEG_C_RXP4	0.1U/10V/X5R_4	C9049	PEG_RXP4
PEG_C_RXP5	0.1U/10V/X5R_4	C9060	PEG_RXP5
PEG_C_RXP6	0.1U/10V/X5R_4	C9055	PEG_RXP6
PEG_C_RXP7	0.1U/10V/X5R_4	C9073	PEG_RXP7
PEG_C_RXP8	0.1U/10V/X5R_4	C9072	PEG_RXP8
PEG_C_RXP9	0.1U/10V/X5R_4	C9089	PEG_RXP9
PEG_C_RXP10	0.1U/10V/X5R_4	C9086	PEG_RXP10
PEG_C_RXP11	0.1U/10V/X5R_4	C9108	PEG_RXP11
PEG_C_RXP12	0.1U/10V/X5R_4	C9098	PEG_RXP12
PEG_C_RXP13	0.1U/10V/X5R_4	C9112	PEG_RXP13
PEG_C_RXP14	0.1U/10V/X5R_4	C9124	PEG_RXP14
PEG_C_RXP15	0.1U/10V/X5R_4	C9122	PEG_RXP15

PEG_C_RXN0	0.1U/10V/X5R_4	C9015	PEG_RXN0
PEG_C_RXN1	0.1U/10V/X5R_4	C9027	PEG_RXN1
PEG_C_RXN2	0.1U/10V/X5R_4	C9037	PEG_RXN2
PEG_C_RXN3	0.1U/10V/X5R_4	C9038	PEG_RXN3
PEG_C_RXN4	0.1U/10V/X5R_4	C9053	PEG_RXN4
PEG_C_RXN5	0.1U/10V/X5R_4	C9068	PEG_RXN5
PEG_C_RXN6	0.1U/10V/X5R_4	C9059	PEG_RXN6
PEG_C_RXN7	0.1U/10V/X5R_4	C9080	PEG_RXN7
PEG_C_RXN8	0.1U/10V/X5R_4	C9063	PEG_RXN8
PEG_C_RXN9	0.1U/10V/X5R_4	C9092	PEG_RXN9
PEG_C_RXN10	0.1U/10V/X5R_4	C9081	PEG_RXN10
PEG_C_RXN11	0.1U/10V/X5R_4	C9100	PEG_RXN11
PEG_C_RXN12	0.1U/10V/X5R_4	C9093	PEG_RXN12
PEG_C_RXN13	0.1U/10V/X5R_4	C9109	PEG_RXN13
PEG_C_RXN14	0.1U/10V/X5R_4	C9127	PEG_RXN14
PEG_C_RXN15	0.1U/10V/X5R_4	C9114	PEG_RXN15

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Quanta Computer Inc.

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MEMORY APERTURE SIZE SELECT			
MEMORY SIZE	CFG2 GPIO13	CFG1 GPIO12	CFG0 GPIO11
128MB	0	0	0
256MB	0	0	1
64MB	0	1	0
512MB	1	0	0

Memory Straps	RAM_TYPE _CFG3	RAM_TYPE _CFG2	RAM_TYPE _CFG1	RAM_TYPE _CFG0
800MHz 512MB(64M*16) Samsung K4W1G1646E-HC12	0	0	0	1
800MHz 512MB(64M*16) Hynix H5TQ1G63BFR-12C	0	0	1	0

GPIO Straps table	DESCRIPTION OF DEFAULT SETTINGS	G NOTE Setting
GPIO0	GPIO(0) - TX_PWRS_ENB (Transmitter Power Savings Enable) 0: 50% Tx output swing for mobile mode 1: full Tx output swing (Default setting for Desktop)	0
GPIO1	GPIO(1) - TX_DEEMPH_EN (Transmitter De-emphasis Enable) 0: Tx de-emphasis disabled for mobile mode 1: Tx de-emphasis enabled (Default setting for Desktop)	0
GPIO2	GPIO(2) - BIF_GEN2_EN (5.0 GT/s Enable) 0 : Default. (Driver Controlled Gen2) 1 : Strap Controlled Gen2	0
GPIO3	ATI reserved configuration straps.	0
GPIO4	ATI reserved configuration straps.	0
GPIO5	GPIO_5_AC_BATT 0 : Battery saving mode = 0.0 V 1 : AC (Performance mode) = 3.3 V	1
GPIO6	ATI Internal use only	0
GPIO8	ATI reserved configuration straps.	0
GPIO9	VGA Disable 0 - VGA Controller capacity enabled 1 - The device will not recognized as the system's VGA controller	0
GPIO22	Enable external BIOS ROM device 0 - Disable external BIOS ROM device 1 - Enable external BIOS ROM device	0
HSYNC VSYNC	AUD[1:0] 00 - No audio function 01 - Audio for DisplayPort and HDMI if adapter is detectd 10 - Audio for DisplayPort only 11 - Audio for both DisplayPort and HDMI	1 1

	SS DISABLE	SS ENABLE
R3079	DE-POP	POP
R3080	POP	DE-POP

Layout Note:
Place 150 ohm termination resistors close to ATI CHIP.

A2VSSQ connect to GND by a via directly

A2VSSQ connect to GND by a via directly

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(16,21,22,44,50) +1.1V_GFX_PCIE
(3,19,20,32,33,34,46) +1.5V
(6,10,12,17,21,22,24,44,51) +1.8V
(17,19,21) +3.3V_DELAY
(21,44,50) +VCC_GFX_CORE
(12,21,24,25,26,29,35,37,38,44) +5V

layout note: close to VDDR1#[1:17]

+1.5V
C9128 1U/6.3V/X5R_4
C9131 1U/6.3V/X5R_4
C9129 1U/6.3V/X5R_4
C9121 1U/6.3V/X5R_4
C9126 0.1U/10V/X5R_4
C9120 0.1U/10V/X5R_4
C9118 0.1U/10V/X5R_4
C9117 0.1U/10V/X5R_4
C9102 0.1U/10V/X5R_4
C9125 1U/6.3V/X5R_4
C9143 1U/6.3V/X5R_4
C9134 1U/6.3V/X5R_4
C9133 1U/6.3V/X5R_4
C9130 1U/6.3V/X5R_4
C9119 1U/6.3V/X5R_4

+1.5V
C9191 10U/6.3V/X5R_6
C9209 10U/6.3V/X5R_6
C9185 10U/6.3V/X5R_6
C9211 10U/6.3V/X5R_6
C9140 10U/6.3V/X5R_6

VDDR1+VDDRHA
0.93 A (RMS) / 1.2 A (peak)

U9003D
PART 4 OF 10
POWER

H13 VDDR1#1
H16 VDDR1#2
H19 VDDR1#3
J10 VDDR1#4
J23 VDDR1#5
J24 VDDR1#6
J9 VDDR1#7
K10 VDDR1#8
K23 VDDR1#9
K24 VDDR1#10
K9 VDDR1#11
L11 VDDR1#12
L12 VDDR1#13
L13 VDDR1#14
L20 VDDR1#15
L21 VDDR1#16
L22 VDDR1#17

110mA
+1.8V
L9004 BLM15BD121SN1D
+VDD_CT
C9006 10U/6.3V/X5R_6
C9067 0.1U/10V/X5R_4
C9066 1U/6.3V/X5R_4
C9065 1U/6.3V/X5R_4
C9013 0.1U/10V/X5R_4
AA20 VDD_CT#1
AA21 VDD_CT#2
AB20 VDD_CT#3
AB21 VDD_CT#4

+3.3V_DELAY
50mA
C9062 1U/6.3V/X5R_4
C9056 1U/6.3V/X5R_4
C9058 0.1U/10V/X5R_4
C9064 0.1U/10V/X5R_4
AA17 VDDR3#1
AA18 VDDR3#2
AB17 VDDR3#3
AB18 VDDR3#4

170mA
+1.8V
C9057 1U/6.3V/X5R_4
C9051 0.1U/10V/X5R_4
C9061 1U/6.3V/X5R_4
C9069 0.1U/10V/X5R_4
AA11 VDDR4#1
AA12 VDDR4#2
Y11 VDDR4#3
Y12 VDDR4#4
U11 VDDR5#1
U12 VDDR5#2
V11 VDDR5#3
V12 VDDR5#4

+1.5V
L9011 BLM15BD121SN1D
+VDDRH1
C9135 1U/6.3V/X5R_4
C9113 1U/6.3V/X5R_4
L17 VDDRHA
L16 VSSRHA

180mA
+BBP
Q9006 SI2301BDS-T1-E3
+1.8V
C9071 1U/6.3V/X5R_4
Q9007 2N7002K-T1-E3
(0.9~1.2V)
+VCC_GFX_CORE
R9025 100K_4
+5V
(17) BB_ENA
Q9003 2N7002
R9019 10K_4

(0.9~1.2V)
+VCC_GFX_CORE
C9090 10U/6.3V/X5R_6
C9078 10U/6.3V/X5R_6
C9091 10U/6.3V/X5R_6

PCIE_VDDR#1 AB23
PCIE_VDDR#2 AC23
PCIE_VDDR#3 AD24
PCIE_VDDR#4 AE24
PCIE_VDDR#5 AE25
PCIE_VDDR#6 AE26
PCIE_VDDR#7 AF25
PCIE_VDDR#8 AG26

C9082 1U/6.3V/X5R_4
C9034 0.1U/10V/X5R_4
C9054 1U/6.3V/X5R_4
C9045 0.01U/25V/X7R_4
C9178 10U/6.3V/X5R_6

PCIE_VDDC#1 L23
PCIE_VDDC#2 L24
PCIE_VDDC#3 L25
PCIE_VDDC#4 L26
PCIE_VDDC#5 M22
PCIE_VDDC#6 N22
PCIE_VDDC#7 N23
PCIE_VDDC#8 N24
PCIE_VDDC#9 R22
PCIE_VDDC#10 T22
PCIE_VDDC#11 U22
PCIE_VDDC#12 V22

10.9 A (RMS) / 11.5 A (peak)
6.6 A (RMS) / 7.3 A (peak)
5.8 A (RMS) / 6.4 A (peak)
(0.9~1.2V)
+VCC_GFX_CORE

VDDC#1 AA15
VDDC#2 M11
VDDC#3 M12
VDDC#4 N15
VDDC#5 N17
VDDC#6 R13
VDDC#7 R16
VDDC#8 R18
VDDC#9 R21
VDDC#10 T12
VDDC#11 T15
VDDC#12 T17
VDDC#13 T20
VDDC#14 U13
VDDC#15 U16
VDDC#16 U18
VDDC#17 U21
VDDC#18 V15
VDDC#19 V17
VDDC#20 V20
VDDC#21 V21
VDDC#22 Y13
VDDC#23 Y16
VDDC#24 Y18
VDDC#25 Y21

+BBP
C9085 0.1U/10V/X5R_4
C9077 1U/6.3V/X5R_4

2A
+VDDCI
(0.9~1.2V)

VDDCI#1 M13
VDDCI#2 M15
VDDCI#3 M16
VDDCI#4 M17
VDDCI#5 M18
VDDCI#6 M20
VDDCI#7 M21
VDDCI#8 N20

M92-S2/M92-XT

(0.9~1.2V)
+VCC_GFX_CORE
layout note: close to VDDC#[1:25]
C9083 1U/6.3V/X5R_4
C9087 1U/6.3V/X5R_4
C9094 1U/6.3V/X5R_4
C9106 1U/6.3V/X5R_4
C9075 1U/6.3V/X5R_4
C9070 1U/6.3V/X5R_4
C9076 1U/6.3V/X5R_4
C9101 1U/6.3V/X5R_4
C9079 1U/6.3V/X5R_4
C9096 1U/6.3V/X5R_4
C9107 1U/6.3V/X5R_4
C9095 1U/6.3V/X5R_4
C9084 1U/6.3V/X5R_4

(PCIE_VDDC 1.1V @ 1A)
(1.1V)
+1.1V_GFX_PCIE
362mA
C9136 10U/6.3V/X5R_6
C9139 1U/6.3V/X5R_4
C9111 0.1U/10V/X5R_4
C9041 10U/6.3V/X5R_6
C9099 1U/6.3V/X5R_4
C9116 0.1U/10V/X5R_4

(1.1V)
+1.1V_GFX_PCIE
1.4A
C9115 1U/6.3V/X5R_4
C9032 1U/6.3V/X5R_4
C9137 1U/6.3V/X5R_4
C9097 1U/6.3V/X5R_4
C9138 1U/6.3V/X5R_4
C9132 1U/6.3V/X5R_4
C9088 1U/6.3V/X5R_4
C9040 10U/6.3V/X5R_6

U9003E
PART 5 OF 10
GND

PCIE_VSS#1 AA27
PCIE_VSS#2 AB24
PCIE_VSS#3 AB32
PCIE_VSS#4 AC24
PCIE_VSS#5 AC26
PCIE_VSS#6 AC27
PCIE_VSS#7 AD25
PCIE_VSS#8 AD32
PCIE_VSS#9 AE27
PCIE_VSS#10 AF32
PCIE_VSS#11 AG27
PCIE_VSS#12 AH32
PCIE_VSS#13 K28
PCIE_VSS#14 K32
PCIE_VSS#15 L27
PCIE_VSS#16 M32
PCIE_VSS#17 N25
PCIE_VSS#18 N27
PCIE_VSS#19 P25
PCIE_VSS#20 P32
PCIE_VSS#21 R27
PCIE_VSS#22 T25
PCIE_VSS#23 T32
PCIE_VSS#24 U25
PCIE_VSS#25 U27
PCIE_VSS#26 V32
PCIE_VSS#27 W25
PCIE_VSS#28 W26
PCIE_VSS#29 W27
PCIE_VSS#30 Y25
PCIE_VSS#31 Y32

GND#1 A3
GND#2 A30
GND#3 AA13
GND#4 AA16
GND#5 AB10
GND#6 AB15
GND#7 AB6
GND#8 AC9
GND#9 AD6
GND#10 AD8
GND#11 AE7
GND#12 AG12
GND#13 AH10
GND#14 AH28
GND#15 B10
GND#16 B12
GND#17 B14
GND#18 B16
GND#19 B18
GND#20 B20
GND#21 B22
GND#22 B24
GND#23 B26
GND#24 B6
GND#25 B8
GND#26 C1
GND#27 C32
GND#28 E28
GND#29 F10
GND#30 F12
GND#31 F14
GND#32 F16

GND#33 F18
GND#34 F2
GND#35 F20
GND#36 F22
GND#37 F24
GND#38 F26
GND#39 F6
GND#40 F8
GND#41 G10
GND#42 G27
GND#43 G31
GND#44 G8
GND#45 H14
GND#46 H17
GND#47 H2
GND#48 H20
GND#49 H6
GND#50 J27
GND#51 J31
GND#52 K11
GND#53 K2
GND#54 K22
GND#55 K6
GND#56 M6
GND#57 N11
GND#58 N12
GND#59 N13
GND#60 N16
GND#61 N18
GND#62 N21
GND#63 P6
GND#64 P9
GND#65 R12
GND#66 R15
GND#67 R17
GND#68 R20
GND#69 T13
GND#70 T16
GND#71 T18
GND#72 T21
GND#73 T6
GND#74 U15
GND#75 U17
GND#76 U20
GND#77 U3
GND#78 U9
GND#79 V13
GND#80 V16
GND#81 V18
GND#82 V6
GND#83 Y10
GND#84 Y15
GND#85 Y17
GND#86 Y20
GND#87 Y6
GND#88 T11
GND#89 R11

VSS_MECH#1 A32
VSS_MECH#2 AM1
VSS_MECH#3 AM32

M92-S2/M92-XT

(0.9~1.2V)
(0.9~1.2V)
+VCC_GFX_CORE
L9010 BLM18EG221SN1D
+VDDCI
C9105 0.1U/10V/X5R_4
C9104 0.1U/10V/X5R_4
C9110 1U/6.3V/X5R_4
C9103 1U/6.3V/X5R_4
C9123 10U/6.3V/X5R_6

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Quanta Computer Inc.

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MEMORY INTERFACE

(3,18,20,32,33,34,46) +1.5V
(17,18,21) +3.3V_DELAY

U9003C
PART 3 OF 10
MEMORY INTERFACE
M92-S2/M92-XT

(20) M_QSA#[7..0] — M_QSA#[7..0]
(20) M_QSA[7..0] — M_QSA[7..0]
(20) M_DQMA#[7..0] — M_DQMA#[7..0]
(20) M_MDA[63..0] — M_MDA[63..0]
(20) M_MAA[12..0] — M_MAA[12..0]
(20) BA[2..0] — BA[2..0]

M_MDA		DQA		MAA		M_MAA
M_MDA0	K27	DQA_0		MAA_0	K17	M_MAA0
M_MDA1	J29	DQA_1		MAA_1	J20	M_MAA1
M_MDA2	H30	DQA_2		MAA_2	H23	M_MAA2
M_MDA3	H32	DQA_3		MAA_3	G23	M_MAA3
M_MDA4	G29	DQA_4		MAA_4	G24	M_MAA4
M_MDA5	F28	DQA_5		MAA_5	H24	M_MAA5
M_MDA6	F32	DQA_6		MAA_6	J19	M_MAA6
M_MDA7	F30	DQA_7		MAA_7	K19	M_MAA7
M_MDA8	C30	DQA_8		MAA_8	J14	M_MAA8
M_MDA9	F27	DQA_9		MAA_9	K14	M_MAA9
M_MDA10	A28	DQA_10		MAA_10	J11	M_MAA10
M_MDA11	C28	DQA_11		MAA_11	J13	M_MAA11
M_MDA12	E27	DQA_12		MAA_BA0	J16	BA0
M_MDA13	G26	DQA_13		MAA_BA1	L15	BA1
M_MDA14	D26	DQA_14		MAA_12	H11	M_MAA12
M_MDA15	F25	DQA_15		MAA_BA2	G11	BA2
M_MDA16	A25	DQA_16				
M_MDA17	C25	DQA_17				
M_MDA18	E25	DQA_18				
M_MDA19	D24	DQA_19				
M_MDA20	E23	DQA_20				
M_MDA21	F23	DQA_21				
M_MDA22	D22	DQA_22				
M_MDA23	F21	DQA_23				
M_MDA24	E21	DQA_24				
M_MDA25	D20	DQA_25				
M_MDA26	F19	DQA_26				
M_MDA27	A19	DQA_27				
M_MDA28	D18	DQA_28				
M_MDA29	F17	DQA_29				
M_MDA30	A17	DQA_30				
M_MDA31	C17	DQA_31				
M_MDA32	E17	DQA_32				
M_MDA33	D16	DQA_33				
M_MDA34	F15	DQA_34				
M_MDA35	A15	DQA_35				
M_MDA36	D14	DQA_36				
M_MDA37	F13	DQA_37				
M_MDA38	A13	DQA_38				
M_MDA39	C13	DQA_39				
M_MDA40	E11	DQA_40				
M_MDA41	A11	DQA_41				
M_MDA42	C11	DQA_42				
M_MDA43	F11	DQA_43				
M_MDA44	A9	DQA_44				
M_MDA45	C9	DQA_45				
M_MDA46	F9	DQA_46				
M_MDA47	D8	DQA_47				
M_MDA48	E7	DQA_48				
M_MDA49	A7	DQA_49				
M_MDA50	C7	DQA_50				
M_MDA51	F7	DQA_51				
M_MDA52	A5	DQA_52				
M_MDA53	E5	DQA_53				
M_MDA54	C3	DQA_54				
M_MDA55	E1	DQA_55				
M_MDA56	G7	DQA_56				
M_MDA57	G6	DQA_57				
M_MDA58	G1	DQA_58				
M_MDA59	G3	DQA_59				
M_MDA60	J6	DQA_60				
M_MDA61	J1	DQA_61				
M_MDA62	J3	DQA_62				
M_MDA63	J5	DQA_63				

DQM		M_DQMA#
DQMA_0	E32	M_DQMA#0
DQMA_1	E30	M_DQMA#1
DQMA_2	A21	M_DQMA#2
DQMA_3	C21	M_DQMA#3
DQMA_4	E13	M_DQMA#4
DQMA_5	D12	M_DQMA#5
DQMA_6	E3	M_DQMA#6
DQMA_7	F4	M_DQMA#7

WRITE STROBE READ STROBE

QSA		M_QSA
QSA_0	H28	M_QSA0
QSA_1	C27	M_QSA1
QSA_2	A23	M_QSA2
QSA_3	E19	M_QSA3
QSA_4	E15	M_QSA4
QSA_5	D10	M_QSA5
QSA_6	D6	M_QSA6
QSA_7	G5	M_QSA7
QSA_0B	H27	M_QSA#0
QSA_1B	A27	M_QSA#1
QSA_2B	C23	M_QSA#2
QSA_3B	C19	M_QSA#3
QSA_4B	C15	M_QSA#4
QSA_5B	E9	M_QSA#5
QSA_6B	C5	M_QSA#6
QSA_7B	H4	M_QSA#7

ODTA0	L18	ODTA0 (20)
ODTA1	K16	ODTA1 (20)
CLKA0	H26	CLKA0 (20)
CLKA1	G9	CLKA1 (20)
CLKA0B	H25	CLKA0# (20)
CLKA1B	H9	CLKA1# (20)
RASA0B	G22	RASA0# (20)
RASA1B	G17	RASA1# (20)
CASA0B	G19	CASA0# (20)
CASA1B	G16	CASA1# (20)
CSA0B_0	H22	CSA0_0# (20)
CSA0B_1	J22	
CSA1B_0	G13	CSA1_0# (20)
CSA1B_1	K13	
CKEA0	K20	CKEA0 (20)
CKEA1	J17	CKEA1 (20)
WEA0B	G25	WEA0# (20)
WEA1B	H10	WEA1# (20)
DRAM_RST	L10	DRAM_RST# (20)

MVREFDA	K26	MVREFD_A
MVREFSA	J26	
CLKTESTA	K8	CLKTESTA
CLKTESTB	L7	CLKTESTB
MEM_CALRP1	J8	MEMTEST
NC_MAA_13	G20	
NC_MAA_14	G14	
NC_MEM_CALRN1	K7	
NC_MEM_CALRP0	K25	
NC_MEM_CALRN0	J25	

DIVIDER RESISTORS	DDR3	GDDR3
MVREF TO 1.8V	100R	40.2R
MVREF TO GND	100R	100R

+1.5V
R9076 100_4
R9077 100_4
C9184 0.1U/10V/X5R_4
MVREFD_A
+1.5V
R9034 100_4
MVREFS_A
R9033 100_4
C9142 0.1U/10V/X5R_4
C9141 0.01U/25V/X7R_4
+1.5V
R9027 4.7K_4
R9026 4.7K_4
R9029 243/F_4
R9031 *4.7K_4@NC
R9030 *4.7K_4@NC
R9032 *4.7K_4@NC
Reserved for furture ASIC

+1.5V
R9079 4.7K_4
C9183 1U/6.3V/X5R_4
R9078 *4.7K_4
DRAM_RST# (20)

THERMAL MONITOR

+3.3V_DELAY
(10,35) MB_CLK
Q9004 2N7002
R9046 4.7K_4
R9047 4.7K_4
Q9000 2N7002
(10,35) MB_DATA
(17) THERMAL_INT#
THERMAL_INT#
U9002
ADM1032ARMZ-1
SCLK VDD
SDATA D+
ALERT# D-
GND THERM#
C9021 2200P/50V/X7R_4
C9001 0.1U/10V/X5R_4
VGA_THERMDP (21)
VGA_THERMDN (21)
MB_THERM#
MB_THERM# R9059 *10K_4@NC
THERMAL_INT# R9000 10K_4
+3.3V_DELAY
Q9005 2N7002
SYS_SHDN# (38,44,48,49)

PROJECT: GC9A
Quanta Computer Inc.

Size	Document Number	Rev
Custom	VGA-M92-XT (MEMORY/THERM) 4/7	1A

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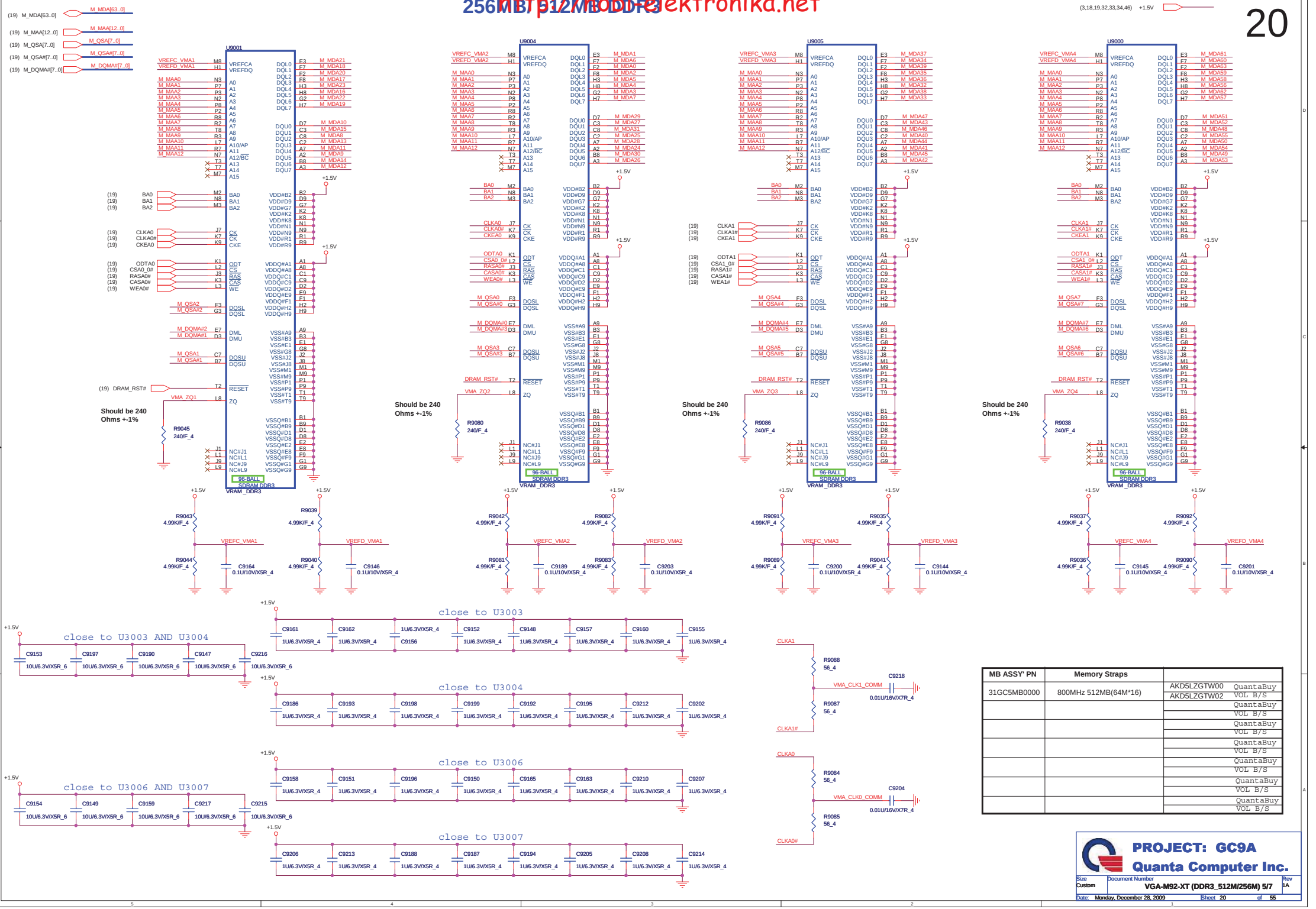

MB ASSY' PN	Memory Straps	
31GC5MB0000	800MHz 512MB(64M*16)	AKD5LZGTW00 QuantaBuy
		AKD5LZGTW02 VOL B/S
		QuantaBuy
		VOL B/S
		QuantaBuy
		VOL B/S
		QuantaBuy
		VOL B/S
		QuantaBuy
		VOL B/S
		QuantaBuy
		VOL B/S
		QuantaBuy
		VOL B/S

PROJECT: GC9A
Quanta Computer Inc.

Size	Document Number	Rev
Custom	VGA-M92-XT (DDR3_512M/256M) 5/7	1A

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(6,10,12,17,18,22,24,44,51) +1.8V
(17,18,19) +3.3V_DELAY
(18,44,50) +VCC_GFX_CORE

U9003J
Part 10 of 10
XTAL / PLL

T9010 — H7 NC_SPV18
J7 SPVSS
+SPV10 H8 SPV10
AM28 XTALIN
AK28 XTALOUT
L8 NC_MPV18

DPLL_PVDD AF14 +DPLL_PVDD
DPLL_PVSS AE14
DPLL_VDDC AD14 +DPLL_VDDC
PCIE_PVDD AM30 +PCIE_PVDD

(0.9~1.2V) +VCC_GFX_CORE — L9016 BLM15BD121SN1D
C9182 1U/6.3V/X5R_4
C9180 1U/6.3V/X5R_4
C9179 0.1U/10V/X5R_4
C9181 0.01U/25V/X7R_4

+1.8V — L9008 BLM15BD121SN1D — 120mA
C9030 0.01U/25V/X7R_4
C9026 0.1U/10V/X5R_4
C9035 10U/6.3V/X5R_6
C9039 10U/6.3V/X5R_6

(1.1V) +1.1V_GFX_PCIE — L9012 BLM15BD121SN1D — 150mA
C9176 0.01U/25V/X7R_4
C9167 0.1U/10V/X5R_4
C9166 1U/6.3V/X5R_4
C9169 10U/6.3V/X5R_6

+1.8V — L9006 BLM15BD121SN1D — 40mA
C9018 1U/6.3V/X5R_4
C9017 0.01U/25V/X7R_4
C9019 0.1U/10V/X5R_4
C9023 10U/6.3V/X5R_6

(17) XTALIN
(17) XTALOUT

M92-S2/M92-XT

U9003H
Part 8 of 10
I2C / DDC / AUX

CRT
(25) M92_CRT_DDCCLK — AC1 DDC6CLK
(25) M92_CRT_DDCDAT — AC3 DDC6DATA
R1 SCL
R3 SDA

TMDP / DAC1
AUX1P AD2 DPA_AUX1_P
AUX1N AD4 DPA_AUX1_N
DDC1CLK AE6 DPA_DDCCLK
DDC1DATA AE5 DPA_DDCDAT
AUX2P AD13 DPB_AUX1_P C687 0.1U/10V/X5R_4
AUX2N AD11 DPB_AUX1_N C686 0.1U/10V/X5R_4
DDC2CLK AC11 DPB_DDCCLK1
DDC2DATA AC13 DPB_DDCDAT1

LVTMDP / DAC2
DDCCLK_AUX5P AE16 M92_LVDS_DDCCLK
DDCDATA_AUX5N AD16 M92_LVDS_DDCDAT
NC_DDCCLK_AUX7P AD20
NC_DDCDATA_AUX7N AC20

M92-S2/M92-XT

Dock DP1 & System DP

T9006

U2002
SN74CBT3257CPWR
+5V
C1412 0.1U/10V_4
DPA_DDCCLK
DPA_DDCDAT
DPC_HPD
DPC_AUX_SINK_P_C — C689 0.1U/10V/X5R_4
DPC_AUX_SINK_N_C — C688 0.1U/10V/X5R_4
DPA_AUX_SINK_P (24)
DPC_AUX_SINK_P (41)
DPA_AUX_SINK_N (24)
DPC_AUX_SINK_N (41)
DPA_DDCCLK1 (24)
DPC_DDCCLK2 (41)
DPA_DDCDAT1 (24)
DPC_DDCDAT2 (41)

Dock DP0
DPB_AUX_SINK_P (41)
DPB_AUX_SINK_N (41)
DPB_DDCCLK1 (41)
DPB_DDCDAT1 (41)

LVDS
+3.3V_DELAY
M92_LVDS_DDCCLK R9064 2.2K_4
M92_LVDS_DDCDAT R9065 2.2K_4
M92_LVDS_DDCCLK (23)
M92_LVDS_DDCDAT (23)

20mA
+1.8V — L9001 BLM15BD121SN1D
C9003 1U/6.3V/X5R_4
C9009 0.1U/10V/X5R_4
+TSVDD AD17
AC17

U9003I
Part 9 of 10
TSS FDO
TSVDD
TSVSS
TS_FDO R5
DPLUS T4 VGA_THERMDP (19)
DMINUS T2 VGA_THERMDN (19)

M92-S2/M92-XT

+3.3V_DELAY
0.1U/10V/X5R_4 C121
Layout: close Dock connector
(17) DPC_HPD_1
DPC_HPD (24,41)
DPA_HPD (24)
U17 TC7SH86FU
R370 150K/F_4

dGPU	detect	no detect
DP(DPA)	DP1	SYS
DP(DPB)	DP0	DP0

PROJECT: GC9A
Quanta Computer Inc.

Size	Document Number	Rev
Custom	VGA-M92-XT (XTAL/PLL/I2C) 6/7	1A

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TMDP(HDMI) INTERFACE

U9003F

PART 6 OF 10

DPA

+DPA_PVDD AG8 DPA_PVDD

AG7 DPA_PVSS

+DPA_VDD18 AE11 AE11 NC_DPA_VDD18#2 NC_DPA_VDD18#1

for DP interface use

+DPA_VDD10 AF6 AF7 DPA_VDD10#1 DPA_VDD10#2

TX2P_DPA0P AK3
TX2M_DPA0N AK1
TX1P_DPA1P AH3
TX1M_DPA1N AH1
TX0P_DPA2P AG3
TX0M_DPA2N AG5
TXCAP_DPA3P AF2
TXCAM_DPA3N AF4

DPA_VSSR#5 AH5
DPA_VSSR#3 AG1
DPA_VSSR#4 AG6
DPA_VSSR#2 AE3
DPA_VSSR#1 AE1

DPB

+DPA_PVDD AG10 DPB_PVDD

AG11 DPB_PVSS

for DP interface use

+DPA_VDD18 AF13 AF13 NC_DPB_VDD18#1 NC_DPB_VDD18#2

+DPA_VDD10 AF8 AF9 DPB_VDD10#1 DPB_VDD10#2

TX5P_DPB0P AK8
TX5M_DPB0N AL7
TX4P_DPB1P AJ7
TX4M_DPB1N AH6
TX3P_DPB2P AK6
TX3M_DPB2N AM5
TXCBP_DPB3P AK5
TXCBM_DPB3N AM3

DPB_VSSR#5 AM8
DPB_VSSR#2 AG9
DPB_VSSR#1 AF10
DPB_VSSR#4 AM6
DPB_VSSR#3 AH8

CALIBRATION

DPAB_CALR AE10 DPAB_CALR R9063 150/F_4

M92-S2/M92-XT

System DP & Dock DP1

DPA_LANE0_P AK3 DPA_LANE0_P (24)
DPA_LANE0_N AK1 DPA_LANE0_N (24)
DPA_LANE1_P AH3 DPA_LANE1_P (24)
DPA_LANE1_N AH1 DPA_LANE1_N (24)
DPA_LANE2_P AG3 DPA_LANE2_P (24)
DPA_LANE2_N AG5 DPA_LANE2_N (24)
DPA_LANE3_P AF2 DPA_LANE3_P (24)
DPA_LANE3_N AF4 DPA_LANE3_N (24)

Display port A

Dock DP0

DPB_LANE0_P AK8 DPB_LANE0_P (41)
DPB_LANE0_N AL7 DPB_LANE0_N (41)
DPB_LANE1_P AJ7 DPB_LANE1_P (41)
DPB_LANE1_N AH6 DPB_LANE1_N (41)
DPB_LANE2_P AK6 DPB_LANE2_P (41)
DPB_LANE2_N AM5 DPB_LANE2_N (41)
DPB_LANE3_P AK5 DPB_LANE3_P (41)
DPB_LANE3_N AM3 DPB_LANE3_N (41)

Display port B

LVDS INTERFACE

U9003G

Part 7 of 10

DPF

+DPF_PVDD AG19 NC_DPF_PVDD

AF20 NC_DPF_PVSS

+DPF_VDD18 AG17 AF16 DPF_VDD18#2 DPF_VDD18#1

+DPF_VDD10 AG22 AF22 DPF_VDD10#2 DPF_VDD10#1

RSVD#6 AK24
RSVD#4 AJ23
T2X5P_DPF0P AL23
T2X5M_DPF0N AK22
T2X4P_DPF1P AH22
T2X4M_DPF1N AJ21
T2X3P_DPF2P AL21
T2X3M_DPF2N AK20
T2XCFP_DPF3P AH20
T2XCFM_DPF3N AJ19

M92_LVDS_B2+ (23)
M92_LVDS_B2- (23)
M92_LVDS_B1+ (23)
M92_LVDS_B1- (23)
M92_LVDS_B0+ (23)
M92_LVDS_B0- (23)
M92_LVDS_BCLK+ (23)
M92_LVDS_BCLK- (23)

DPF_VSSR#4 AM22
DPF_VSSR#5 AM24
DPF_VSSR#2 AG23
DPF_VSSR#1 AF23
DPF_VSSR#3 AM20

DPE

+DPF_PVDD AG18 DPE_PVDD

AF19 DPE_PVSS

+DPF_VDD18 AG16 AG15 DPE_VDD18#2 DPE_VDD18#1

+DPF_VDD10 AG21 AG20 DPE_VDD10#2 DPE_VDD10#1

RSVD#7 AL19
RSVD#5 AK18
T2X2P_DPE0P AH18
T2X2M_DPE0N AJ17
T2X1P_DPE1P AL17
T2X1M_DPE1N AK16
T2X0P_DPE2P AH16
T2X0M_DPE2N AJ15
T2XCEP_DPE3P AL15
T2XCEM_DPE3N AK14

M92_LVDS_A2+ (23)
M92_LVDS_A2- (23)
M92_LVDS_A1+ (23)
M92_LVDS_A1- (23)
M92_LVDS_A0+ (23)
M92_LVDS_A0- (23)
M92_LVDS_ACLK+ (23)
M92_LVDS_ACLK- (23)

DPE_VSSR#3 AM14
DPE_VSSR#2 AH14
DPE_VSSR#1 AG14
DPE_VSSR#4 AM16
DPE_VSSR#5 AM18

CALIBRATION

DPEF_CALR AF17 DPEF_CALR R9060 150/F_4

M92-S2/M92-XT

for HDMI interface use

+1.8V → L9007 BLM15BD121SN1D → +DPA_PVDD
C9022 4.7U/6.3V/X5R_6 | C9028 1U/6.3V/X5R_4 | C9033 0.1U/10V/X5R_4

(1.1V)
+1.1V_GFX_PCIE → L9009 BLM18PG300SN1D → +DPA_VDD10
C9043 4.7U/6.3V/X5R_6 | C9047 1U/6.3V/X5R_4 | C9046 0.1U/10V/X5R_4

+1.8V → L9013 BLM15BD121SN1D@NC → +DPA_VDD18
C9172 4.7U/6.3V/X5R_6@NC | C9048 1U/6.3V/X5R_4@NC | C9052 0.1U/10V/X5R_4@NC

for DP interface use

for LVDS interface use

+1.8V → L9003 BLM15BD121SN1D → +DPF_PVDD
C9005 4.7U/6.3V/X5R_6 | C9011 1U/6.3V/X5R_4 | C9042 0.1U/10V/X5R_4

+1.8V → L9015 BLM15BD121SN1D → +DPF_VDD18
C9168 4.7U/6.3V/X5R_6 | C9170 1U/6.3V/X5R_4 | C9171 0.1U/10V/X5R_4

(1.1V)
+1.1V_GFX_PCIE → L9014 BLM18PG300SN1D → +DPF_VDD10
C9173 4.7U/6.3V/X5R_6 | C9029 1U/6.3V/X5R_4 | C9036 0.1U/10V/X5R_4

PROJECT: GC9A
Quanta Computer Inc.

Size	Document Number	Rev
Custom	VGA-M92-XT (TMDP I/F) 7/7	1A

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(3,4,8,9,10,11,12,14,15,17,24,25,26,28,29,30,31,32,33,34,35,36,38,39,40,41,42,44,46,47,48,49,51) +3V
(39,44,46,48) +15V
(44,49) 5VSUS
(9,28,31,35,40,41,44,45,48,50) 3VPCU
(44,45,46,47,48,49,50,51) VIN
(12,18,21,24,25,26,29,35,37,38,44) +5V

LCDVCC

+3V → F3 3A_FUSE_6 → +3V_lcd_fuse
+15V → R155 330K_4 → LCDVCC_ON
Q7 AO3404 (+3V_lcd_fuse → LCDVCC)
R153 22_8
C138 10U/6.3V/X5R_8
C140 0.022U/25V/X7R_6
5VSUS → R150 100K_4
Q10 2N7002, Q11 2N7002 (LCDON#)
(17) M92_ENVDD → R145 100K_4
Q6 PDTC144EU

LCD_CON

M92_LVDS_BCLK- (22)	M92_LVDS_BCLK+ (22)
M92_LVDS_B2- (22)	M92_LVDS_B2+ (22)
M92_LVDS_B1- (22)	M92_LVDS_B1+ (22)
M92_LVDS_B0- (22)	M92_LVDS_B0+ (22)
M92_LVDS_ACLK- (22)	M92_LVDS_ACLK+ (22)
M92_LVDS_A2- (22)	M92_LVDS_A2+ (22)
M92_LVDS_A1- (22)	M92_LVDS_A1+ (22)
M92_LVDS_A0- (22)	M92_LVDS_A0+ (22)
M92_LVDS_DDCCLK	M92_LVDS_DDCCLK (21)
M92_LVDS_DDCDAT	M92_LVDS_DDCDAT (21)
THINK LIGHT → TP122	
+3V	
LCDVCC	
GFX_PWR_SRC	
5VSUS	
TP125	
+CAM_VCC	
R120 0_4 / R121 BK1005HM241	DMIC_DAT (26) / DMIC_CLK (26)
USBP3_D-	
USBP3_D+	
DISPON	
VADJ_PWM	

CN3

Adress : A9H --Contrast
AAH --Backlight

back light

3VPCU → R103 10K_4
+3V → R122 *4.7K_4@NC
(35,40) LID551# → D8 RB500V-40 → D7 RB500V-40 → DISPON
C99 0.1U/10V/X5R_4
R113 100K_4, C102 *47P/50V/NPO_4@NC
(17) PANEL_BKEN → R111 2.2K_4
R112 100K_4
C111 *1U/10V/X5R_6@NC
Q3 DDTC144EUA-7-F → LCD_BK_OFF (9)

DMIC_DAT / DMIC_CLK

*Clamp-Diode_4@NC C104
*Clamp-Diode_4@NC C103
FOR ESD

R126 0_4 / L24

(10) ICH_USBP3-
(10) ICH_USBP3+
*DLW21HN900SQ2L@NC
USBP3_D-
USBP3_D+
R125 0_4
U16 *PJSR05@NC
+CAM_VCC
FOR ESD

CAMERA VCC Control

+3V → F4 1A_FUSE_6 → +CAM_VCC
C124 4.7U/6.3V/X5R_6

(17) M92_BIA_PWM → R102 0_4 → VADJ_PWM
C100 *47P/50V/NPO_4@NC

GFX_PWR_SRC
C141 0.1U/25V/X5R_6
C142 0.1U/25V/X5R_6
C139 *10U/25V/X6S_1206@NC
R160 0_8 → VIN

PROJECT: GC9A
Quanta Computer Inc.

Size	Document Number	Rev
Custom	LCD + CAMERA CONN	1A

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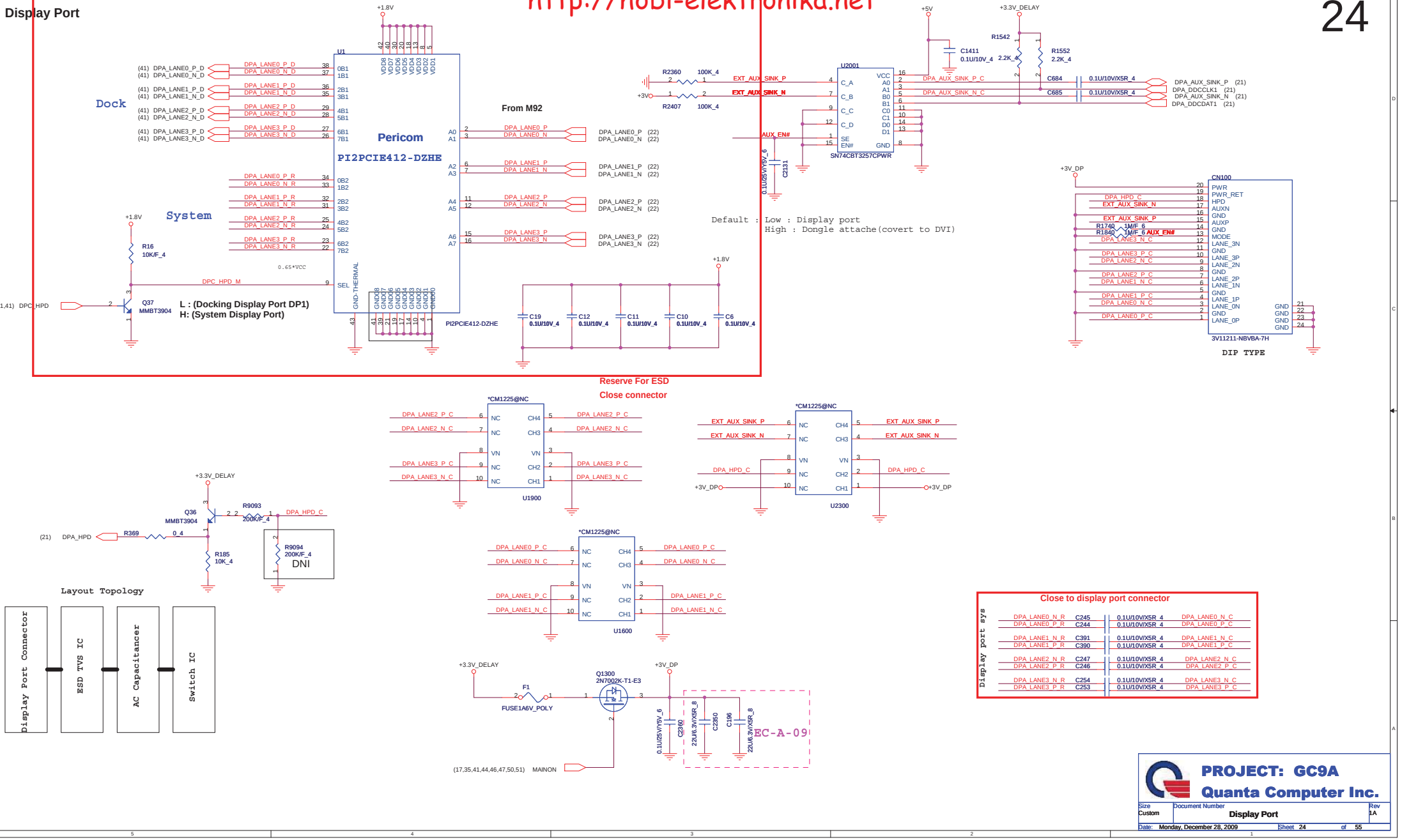
Display Port



PROJECT:	GC9A
Quanta Computer Inc.	
Size: Custom	Document Number: Display Port
Rev: 1A	
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(12,18,21,24,26,29,35,37,38,44) +5V
(3,4,8,9,10,11,12,14,15,17,23,24,26,28,29,30,31,32,33,34,35,36,38,39,40,41,42,44,46,47,48,49,51) +3V

CRT_VCC
D1 RB500V-40
Layout Note: 40mil
C9 0.1U/10V/X5R_4
+5V
F2 FUSE1A6V_POLY
CRT_VCC_R

Layout Note: Setting R,G,B trace impedance to 50 ohm.

CRT_R_CON — L5 BK1608LL680 — CRT_R1
CRT_G_CON — L4 BK1608LL680 — CRT_G1
CRT_B_CON — L3 BK1608LL680 — CRT_B1

R14 150/F_4
R13 150/F_4
R12 150/F_4
C17 5.6P/50V/COG_4
C16 5.6P/50V/COG_4
C15 5.6P/50V/COG_4
C1 5.6P/50V/COG_4
C2 5.6P/50V/COG_4
C3 5.6P/50V/COG_4
TP1
CN17
CRT_CONN

+5V
(17) M92_CRT_VSYNC — U31 AHCT1G125DCH — VGAVSYNC_R — R28 10_4 — CRTVSYNC1 (41)
C26 0.1U/10V/X5R_4
(17) M92_CRT_HSYNC — U32 AHCT1G125DCH — VGAHSYNC_R — R15 10_4 — CRTHSYNC1 (41)

Place near U5001,U5002 < 200 mil

CRTVSYNC1 — L1 BLM18AG121SN1D — CRTVSYNC
CRTHSYNC1 — L2 BLM18AG121SN1D — CRTHSYNC
C8 10P/50V/C0G_4
C7 10P/50V/C0G_4

Place near CRT connector < 200 mil

+3.3V_DELAY
R8 10K_4
R5 10K_4
CRT_VCC
R4 2.2K_4
R6 2.2K_4

(21) M92_CRT_DDCCLK — Q21 2N7002K-T1-E3 — DDCCLK2 — R1 0_6 — DDCCLK3 — DDCCLK3 (41)
+3V
(21) M92_CRT_DDCDAT — Q22 2N7002K-T1-E3 — DDCDAT2 — R2 0_6 — DDCDAT3 — DDCDAT3 (41)

C5 *10P/50V/COG_4@NC
C4 *10P/50V/COG_4@NC

+5V
C494 0.1U/10V_4

U40 SN74CBT3257CPWR
(17) M92_CRT_RED — C_A — CRT_R_CON — DOCK_RED (41)
(17) M92_CRT_GRN — C_B — CRT_G_CON — DOCK_GEN (41)
(17) M92_CRT_BLU — C_C — CRT_B_CON — DOCK_BLU (41)
R396 10K_4 — C_D
(41) DOCK_ATTACHED_3V# — SE / EN#
VCC, A0, A1, B0, B1, C0, C1, D0, D1, GND

SEL	FUNCTION(COM)
LOW	IN_x0
HIGH	IN_x1

ESD PROTECTION

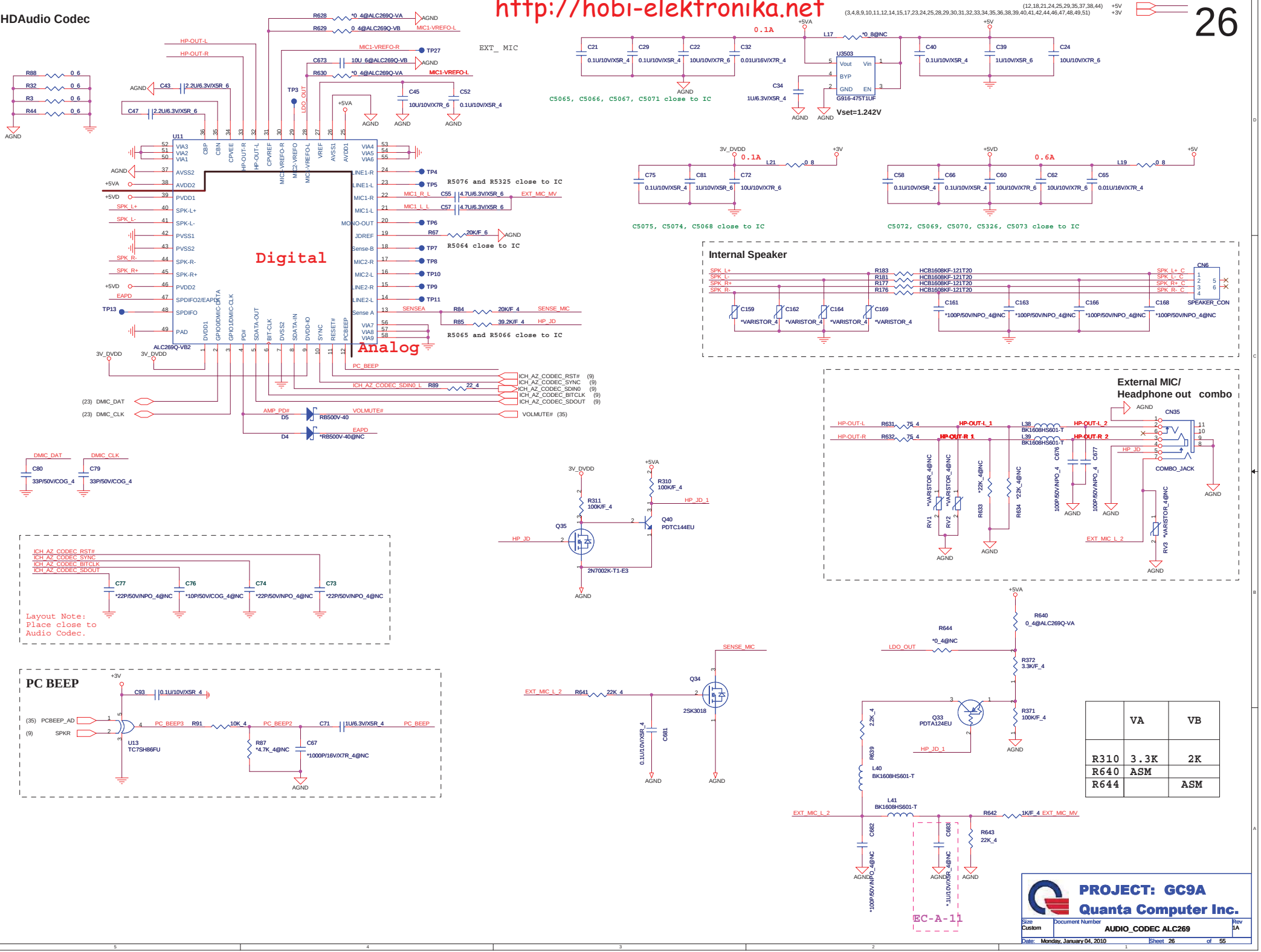
D25 PJSD05LCTS — CRT_R1
D24 PJSD05LCTS — CRT_G1
D23 PJSD05LCTS — CRT_B1
D21 PJSD05LCTS — CRTVSYNC
D22 PJSD05LCTS — CRTHSYNC
D20 PJSD05LCTS — DDCCLK3
D26 PJSD05LCTS — DDCDAT3
D28 PJSD05LCTS — CRT_VCC_R

PROJECT: GC9A
Quanta Computer Inc.

Size	Document Number	Rev
Custom	CRT CONN	1A

Date: Monday, December 28, 2009 Sheet 25 of 55

HDAudio Codec

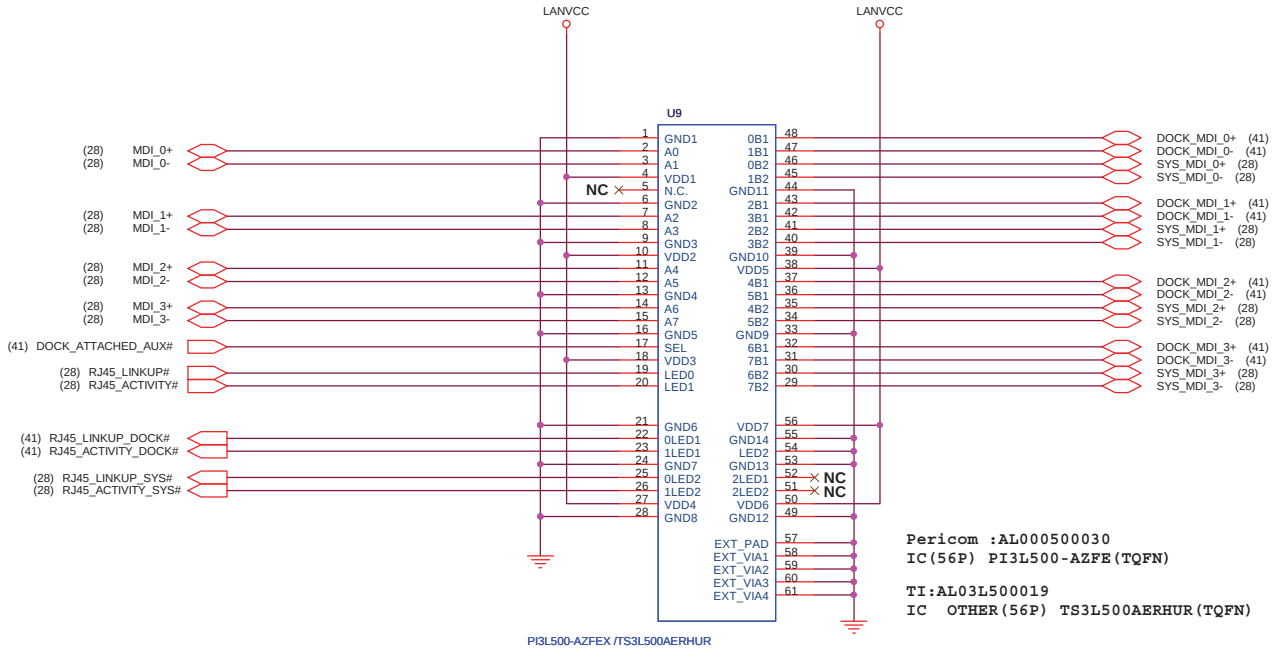


	VA	VB
R310	3.3K	2K
R640	ASM	
R644		ASM

PROJECT: GC9A
Quanta Computer Inc.

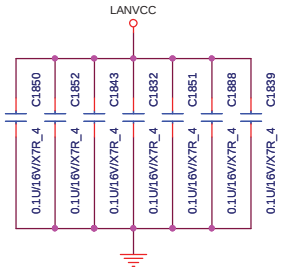
Size	Document Number	Rev
Custom	AUDIO_CODEC ALC269	1A

Date: Monday, January 04, 2010 Sheet 26 of 55



Pericom :AL000500030
IC(56P) PI3L500-AZFE(TQFN)

TI:AL03L500019
IC OTHER(56P) TS3L500AERHUR(TQFN)



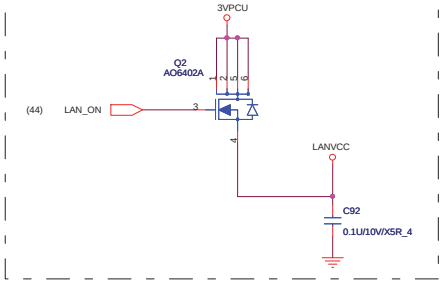
PROJECT: GC9A
Quanta Computer Inc.

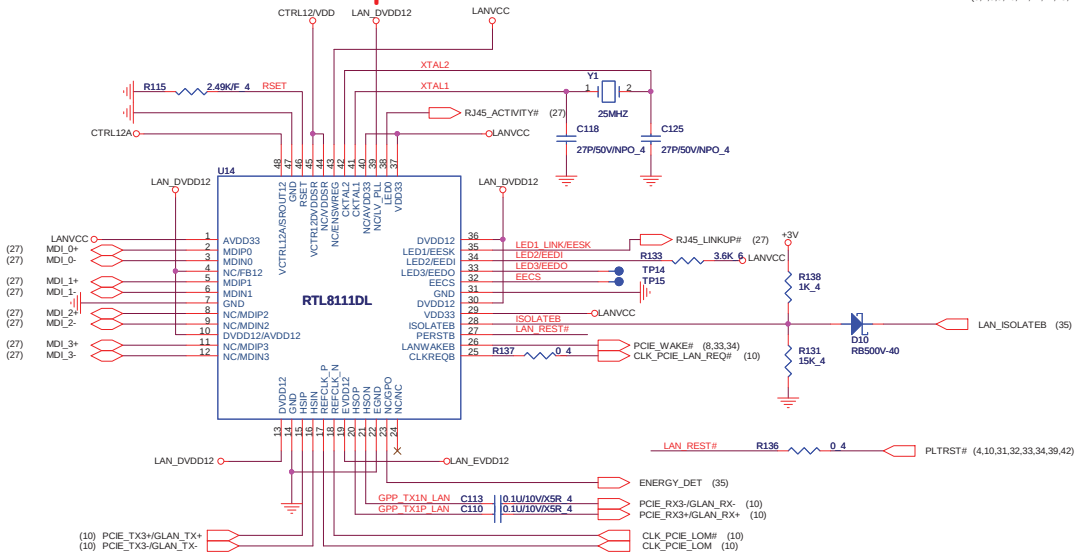
Size	Document Number	Rev
Custom	LAN SW	1A

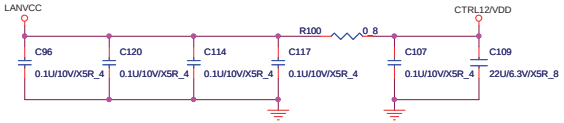
Date: Monday, December 28, 2009 Sheet 27 of 55

(27,41,44) LANVCC
(3,4,8,9,10,11,12,14,15,17,23,24,25,26,29,30,31,32,33,34,35,36,38,39,40,41,42,44,46,47,48,49,51) +3V
(9,23,31,35,40,41,44,45,48,50) 3VPCU

LANVCC

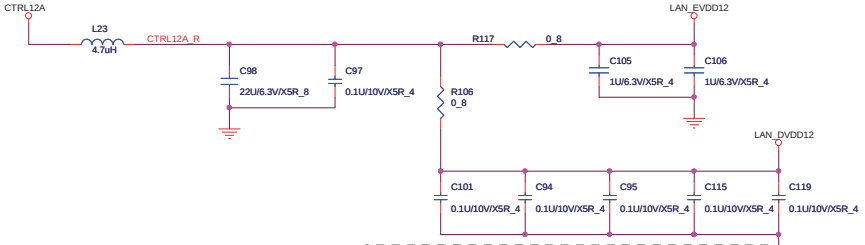






* C5110 to C5113 are for U5006 VDD33 pins-- 1, 29, 37 and 40.

Place C5113 ,C5094 closed to U5006 pins44,45.



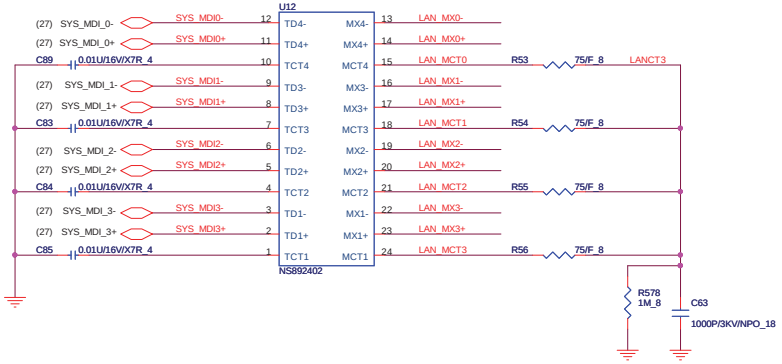
* C5116 and C5273 are for U5006 EVDD12 pin 19.

* C5119 to C5123 are for U5006 VDD12 pins-- 10, 13, 30, 36, 39.

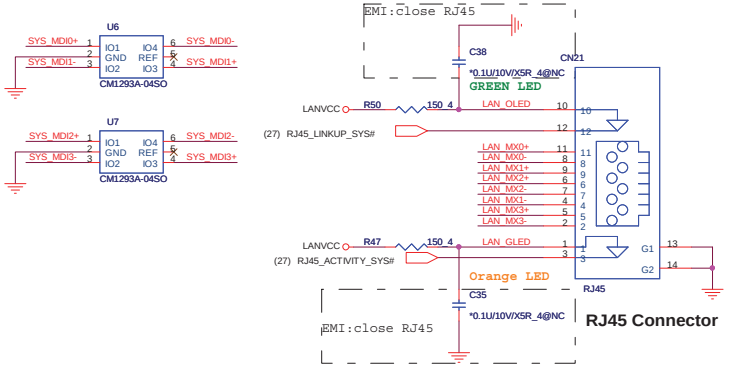
Note 1: The Trace length between L1 and 8111DL's Pin 1 must be within 0.5 cm. C5 and C8 to L1 must be within 0.5cm. Refer to Layout guide for more detail.

Layout:All termination signal should have 20 mil trace

Tramsformer



RJ45 Connector



RJ45 Connector

PROJECT: GC9A
Quanta Computer Inc.

Size	Document Number	Rev
Custom	RTL8111DL	1A

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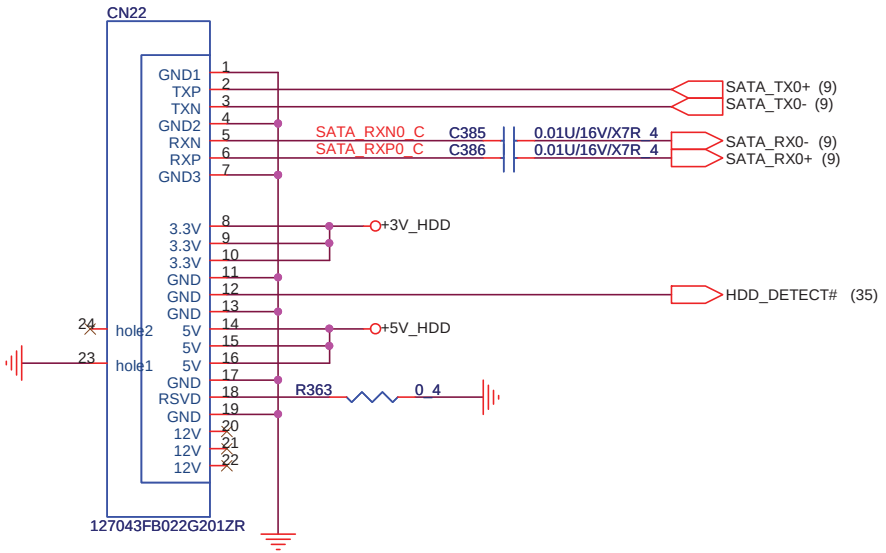
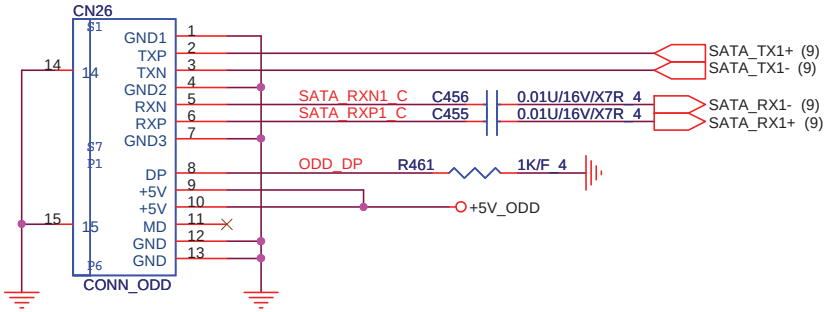
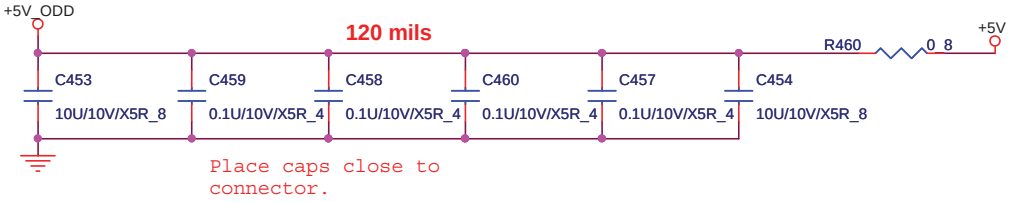
(12,18,21,24,25,26,35,37,38,44) +5V
(3,4,8,9,10,11,12,14,15,17,23,24,25,26,28,30,31,32,33,34,35,36,38,39,40,41,42,44,46,47,48,49,51) +3V

SATA Connector.



ODD Connector



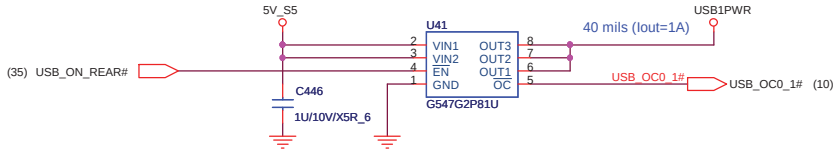


PROJECT: GC9A
Quanta Computer Inc.

Size	Document Number	Rev
Custom	SATA (HDD&CD_ROM)	1A

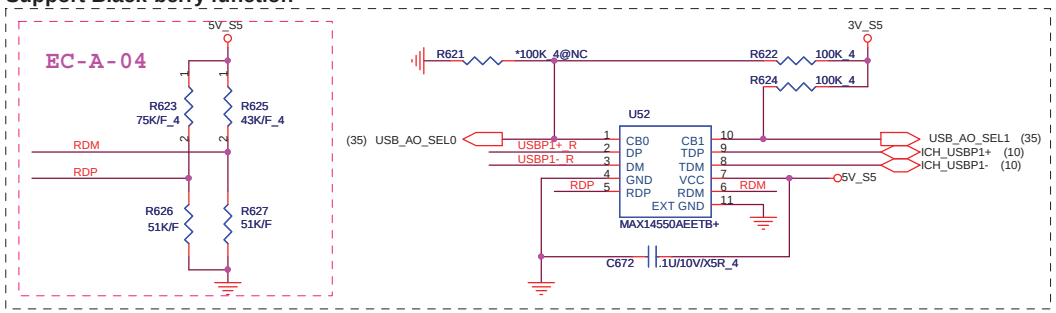
Date: Tuesday, January 05, 2010 Sheet 29 of 55

USBX1

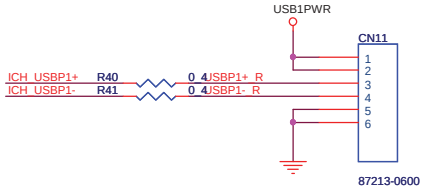


(12,31,44) 5V_S5
(3,4,8,9,10,11,12,14,15,17,23,24,25,26,28,29,31,32,33,34,35,36,38,39,40,41,42,44,46,47,48,49,51) +3V

Support Black-berry function



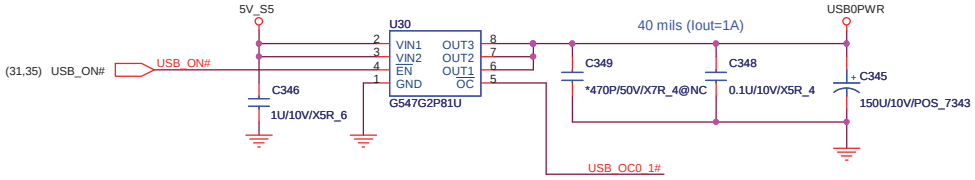
USB X1---> Wire to board conn

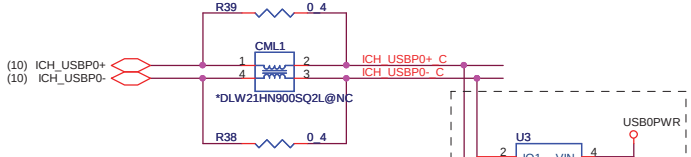


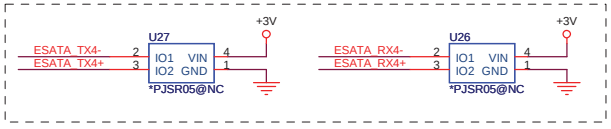
USB 1

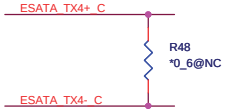
	w/ AOU3	w/o AOU3
R40	NO ASM	ASM
R41	NO ASM	ASM
U52	ASM	NO ASM
R622	ASM	NO ASM
R624	ASM	NO ASM
R626	ASM	NO ASM
C676	ASM	NO ASM

USB + E-SATA

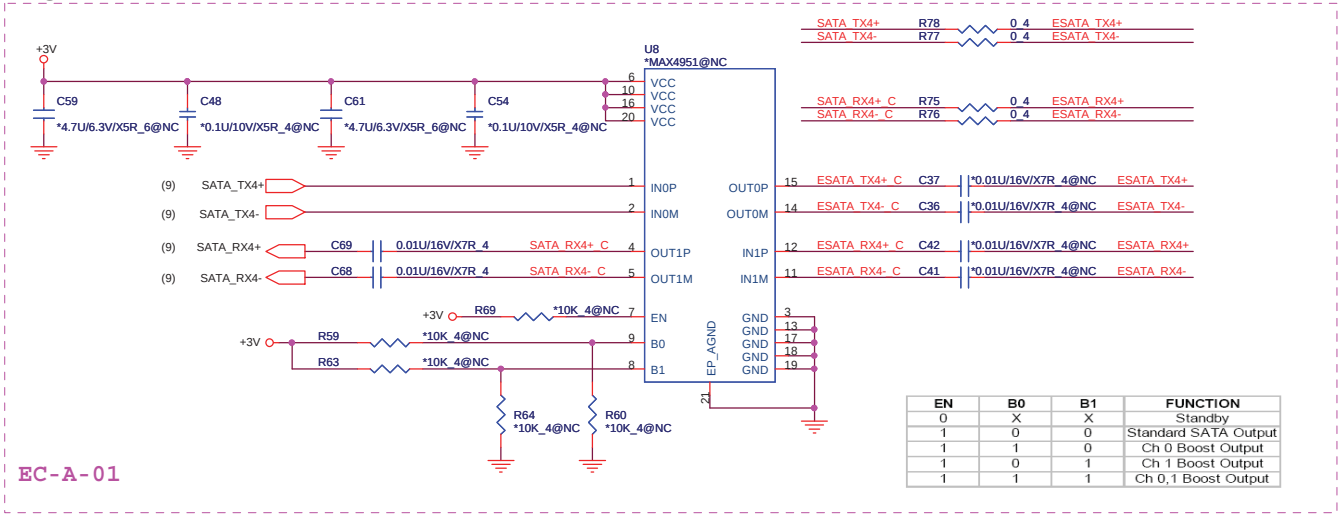








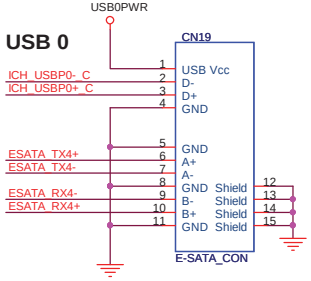
E-SATA RE-DRIVER



EN	B0	B1	FUNCTION
0	X	X	Standby
1	0	0	Standard SATA Output
1	1	0	Ch 0 Boost Output
1	0	1	Ch 1 Boost Output
1	1	1	Ch 0,1 Boost Output

EC-A-01

USB 0



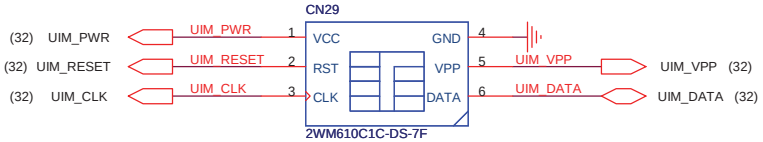
PROJECT: GC9A
Quanta Computer Inc.

Size	Document Number	Rev
Custom	USB X1/USB+ESATA	1A

Date: Monday, December 28, 2009 Sheet 30 of 55

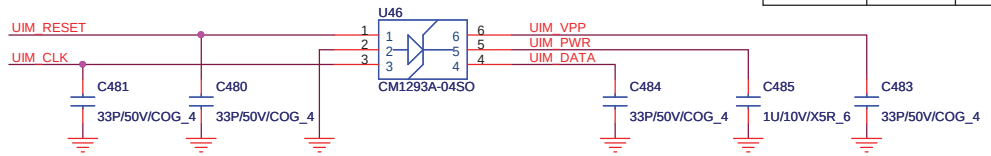
(3,4,8,9,10,11,12,14,15,17,23,24,25,26,28,29,30,32,33,34,35,36,38,39,40,41,42,44,46,47,48,49,51) +3V
(9,23,28,35,40,41,44,45,48,50) 3VPCU
(9,34,35,44,50) 3VSUS
(12,30,44) 5V_S5

SIM Card CONN

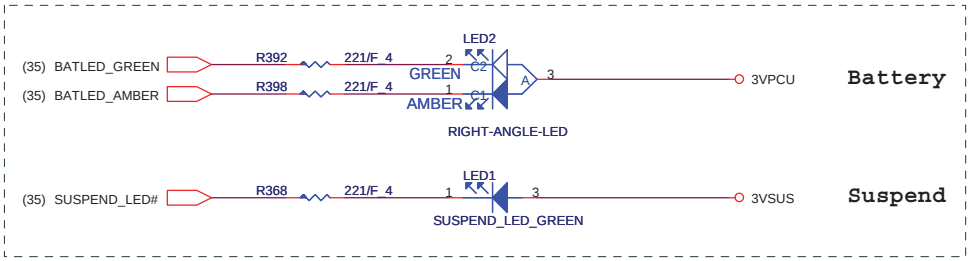


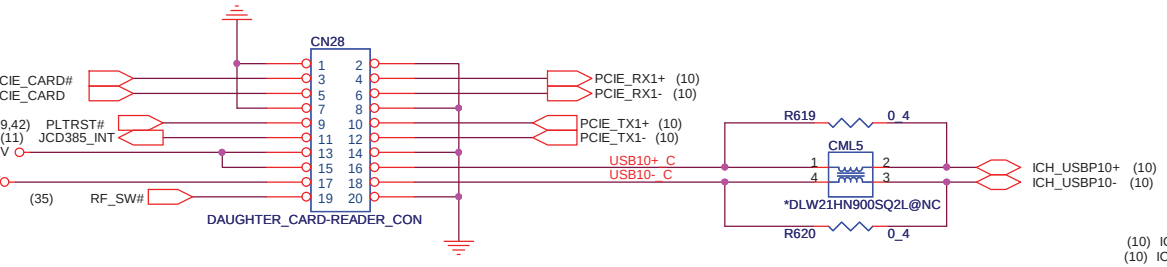
	w/ WWAN	w/o WWAN
CN29	ASM	NO ASM
U46	ASM	NO ASM
C480-C481	ASM	NO ASM
C483-C485	ASM	NO ASM

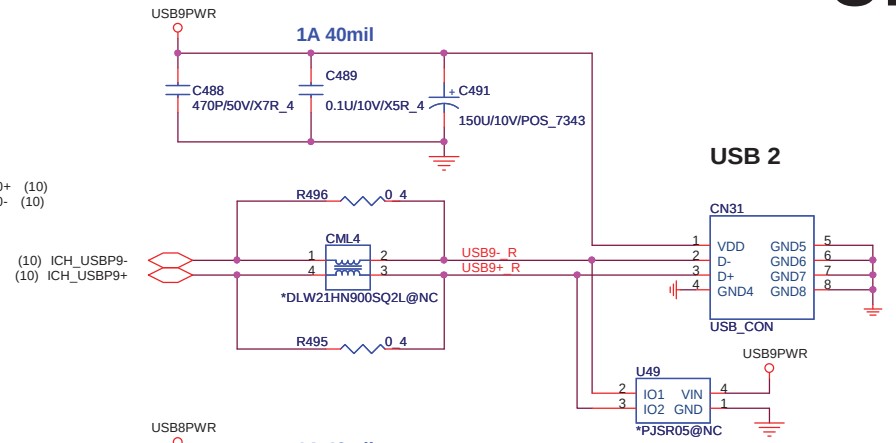
Layout Note:
UIM_RESET,UIM_CLK,UIM_DATA routting as short as possible

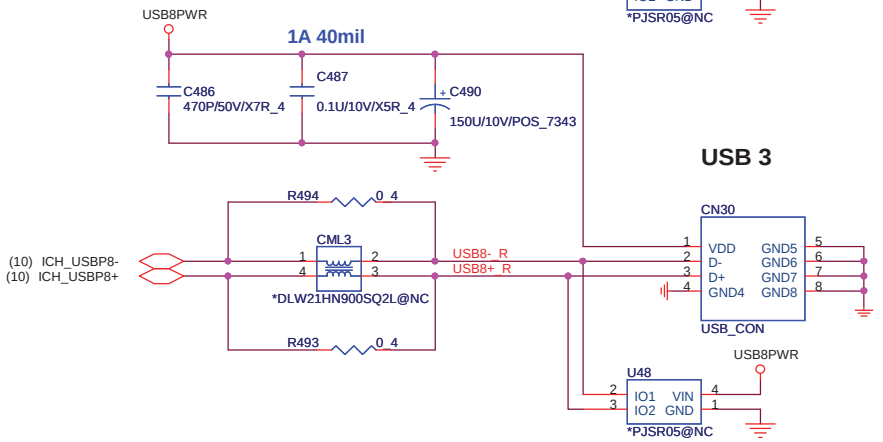


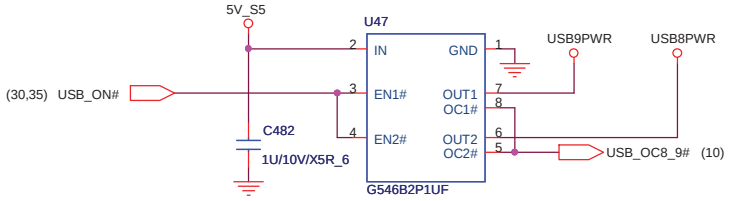
FRONT LEDs











PROJECT: GC9A
Quanta Computer Inc.

Size	Document Number	Rev
Custom	USB X2/SIM_CARD/LEDs/RF	1A

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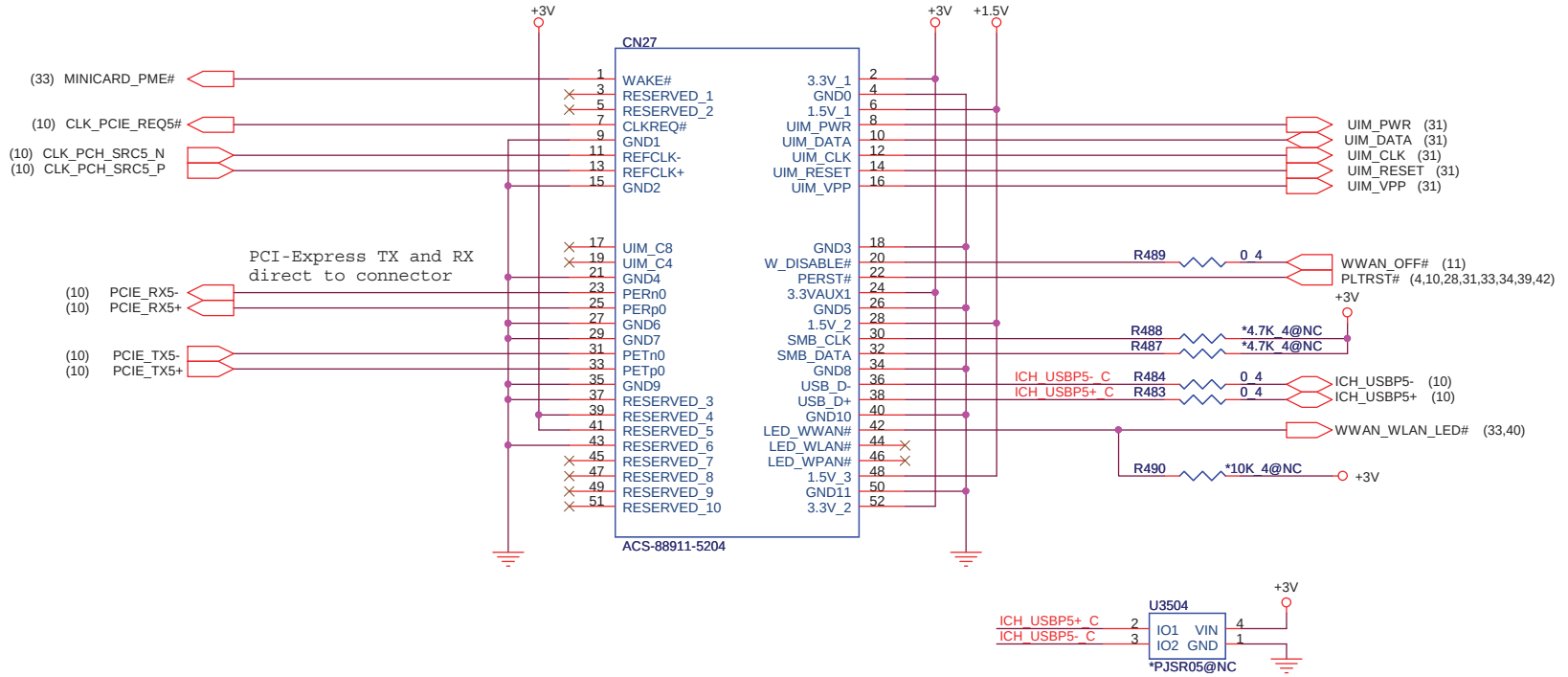
MiniCard WWAN connector



	w/ WWAN	w/o WWAN
CN27	ASM	NO ASM
R489	ASM	NO ASM
R484	ASM	NO ASM
R483	ASM	NO ASM
C1000~ C1004	ASM	NO ASM

PROJECT: GC9A
Quanta Computer Inc.

Size	Document Number	Rev
Custom	MINI-Card (UWB, WWAN)	1A
Date: Monday, December 28, 2009	Sheet 32 of 55	

MiniCard WLAN/WiMAX connector

(3,4,8,9,10,11,12,14,15,17,23,24,25,26,28,29,30,31,32,34,35,36,38,39,40,41,42,44,46,47,48,49,51) +3V
(3,18,19,20,32,34,46) +1.5V
(9,23,28,31,35,40,41,44,45,48,50) 3VPCU
(23,44,45,46,47,48,49,50,51) VIN

PCI-Express TX and RX direct to connector

CN12

(32) MINICARD_PME#	MINICARD_PME#	1	WAKE#
(36) BBC0EX1		3	RESERVED_1
(36) BBC0EX2		5	RESERVED_2
(10) MINI1CLK_REQ#		7	CLKREQ#
		9	GND1
(10) CLK_PCH_SRC2_N		11	REFCLK-
(10) CLK_PCH_SRC2_P		13	REFCLK+
		15	GND2
	PLTRST# R303 0_4 R302 0_4 CLK_DEBUG	17	UIM_C8
(10) CLK_LPC_DEBUG		19	UIM_C4
		21	GND4
(10) PCIE_RX2-		23	PERn0
(10) PCIE_RX2+		25	PERp0
		27	GND6
		29	GND7
(10) PCIE_TX2-		31	PETn0
(10) PCIE_TX2+		33	PETp0
		35	GND9
		37	RESERVED_3
		39	RESERVED_4
		41	RESERVED_5
		43	RESERVED_6
(8,35) LPCPD#	R305 *0_4@NC LPC_PD#_R	45	RESERVED_7
(9) LPC_DRQ#0	R308 *0_4@NC LPC_LDRQ0#_R	47	RESERVED_8
(9,35,39) IRQ_SERIRQ	R307 *0_4@NC IRQ_SERIRQ_R	49	RESERVED_9
(8,35,39) CLKRUN#	R306 *0_4@NC CLKRUN#_R	51	RESERVED_10

3.3V_1	2		
GND0	4		
1.5V_1	6		
UIM_PWR	8		
UIM_DATA	10		
UIM_CLK	12		
UIM_RESET	14		
UIM_VPP	16		
GND3	18		
W_DISABLE#	20	WLAN_OFF_R#	
PERST#	22	PLTRST#	PLTRST# (4,10,28,31,32,34,39,42)
3.3VAUX1	24		+3.3V_WLAN
GND5	26		
1.5V_2	28		
SMB_CLK	30	R479 *4.7K_4@NC	
SMB_DATA	32	R481 *4.7K_4@NC	
GND8	34		
USB_D-	36	ICH_USBP4-_C R486 0_4	ICH_USBP4- (10)
USB_D+	38	ICH_USBP4+_C R485 0_4	ICH_USBP4+ (10)
GND10	40		
LED_WWAN#	42		
LED_WLAN#	44		WWAN_WLAN_LED# (32,40)
LED_WPAN#	46		
1.5V_3	48	R482 *10K_4@NC	+3V
GND11	50		
3.3V_2	52		

	LPC_LFRAME#	(9,35,39)
	LPC_LAD3	(9,35,39)
	LPC_LAD2	(9,35,39)
	LPC_LAD1	(9,35,39)
	LPC_LAD0	(9,35,39)

ACS-88911-5204

3V_S5 R304 *10K_4@NC

(8,28,34) PCIE_WAKE# — Q19 *PDTC144EU@NC — MINICARD_PME#

WLAN_OFF_R# — D27 RB500V-40 — WLAN_OFF# (11)

R480 *0_4@NC

ICH_USBP4-_C, ICH_USBP4+_C — U45 *PJSR05@NC (IO1 VIN, IO2 GND) — +3.3V_WLAN

+3.3V_WLAN — R478 0_8 — +3V

+1.5V: C1006 1U/6.3V/X5R_4; C463 0.1U/10V/X5R_4; C469 10U/6.3V/X5R_8

+3.3V_WLAN: C467 0.1U/10V/X5R_4; C1007 1U/6.3V/X5R_4; C464 0.1U/10V/X5R_4; C1008 1U/6.3V/X5R_4; C1005 10U/6.3V/X5R_8; C462 *330U/6.3V/ESR23M_7343@NC

Place caps close to connector.

PROJECT: GC9A

Quanta Computer Inc.

Size	Document Number	Rev
Custom	MINI-Card (WLAN)	1A

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Express Card

(3,4,8,9,10,11,12,14,15,17,23,24,25,26,28,29,30,31,32,33,35,36,38,39,40,41,42,44,46,47,48,49,51) +3V
(3,18,19,20,32,33,46) +1.5V
(9,31,35,44,50) 3VSUS

(10) ICH_USBP2+
(10) ICH_USBP2-
R179 0_4
L26
*DLW21HN900SQ2L@NC
R178 0_4
USBP2_D+
USBP2_D-
+3.3V_CARD
U19
IO1 VIN
IO2 GND
*PJSR05@NC
FOR ESD

+1.5V_CARD Max. 650mA, Average 500mA.
+3V_CARD Max. 1300mA, Average 1000mA.

20090928
avoid current leakage

+1.5V +3V 3VSUS +3.3V_CARDAUX +3.3V_CARD +1.5V_CARD
U20
AUXIN AUXOUT
3.3VIN_0 3.3VOUT_0
3.3VIN_1 3.3VOUT_1
1.5VIN_0 1.5VOUT_0
1.5VIN_1 1.5VOUT_1
ExpressSwitch
SHDN# PERST#
STBY# CPPE#
SYSRST# CPUSB#
OC#
NC
GND0 RCLKEN
G577BSR91U/RT9716AGQW

3VSUS
R172 10K_4 2231_SHDN#
R173 10K_4 2231_STBY#
(4,10,28,31,32,33,39,42) PLTRST#
Q39
2N7002
+3V
CARD_RESET#
EXPRCRD_PWREN#
CPUSB#
R182 *100K_4@NC
R180 *100K_4@NC
TP18
TP17
3VSUS

CN4
GND_1
USB-
USB+
CPUSB#
RSV_0
RSV_1
SMBCLK
SMBDATA
+1.5V_0
+1.5V_1
WAKE#
+3.3VAUX
PERST#
+3.3V_1
+3.3V_2
CLKREQ#
CPPE#
REFCLK-
REFCLK+
GND_2
PERn0
PERp0
GND_3
PETn0
PETp0
GND_4 NC1 NC2 NC3 NC4 NC5
48303-0033
JAE PX10FS16PH-26P
USBP2_D-
USBP2_D+
CPUSB#
+3.3V_CARDAUX
R170 10K_4
R171 10K_4
+1.5V_CARD
(8,28,33) PCIE_WAKE#
+3.3V_CARDAUX
CARD_RESET#
+3.3V_CARD
(10) CARD_CLK_REQ#
(11) EXPRCRD_PWREN#
(10) CLK_PCH_SRC4_N
(10) CLK_PCH_SRC4_P
EXPRCRD_PWREN#
(10) PCIE_RX4-
(10) PCIE_RX4+
(10) PCIE_TX4-
(10) PCIE_TX4+
C674 0.047U/25V/X7R_4

+1.5V C170 0.1U/10V/X5R_4 Please the cap near pin 12 & 14(1.5VIN).
+3V C157 0.1U/10V/X5R_4 Please the cap near pin 2 & 4 (3.3VIN).
3VSUS C165 0.1U/10V/X5R_4 Please the cap near pin 17 (AUXIN).
+3.3V_CARDAUX C167 0.1U/10V/X5R_4 Please the cap near pin 15 (AUXOUT).
+3.3V_CARD C160 0.1U/10V/X5R_4 Please the cap near pin 3 & 5 (3.3VOUT).
+1.5V_CARD C171 0.1U/10V/X5R_4 Please the cap near pin 11 & 13(1.5VOUT).

+1.5V_CARD C158 0.1U/10V/X5R_4 C155 0.1U/10V/X5R_4 Please the cap near connector.
+3.3V_CARD C153 0.1U/10V/X5R_4 C156 0.1U/10V/X5R_4 C154 10U/6.3V/X5R_6 Please the cap near connector.

PROJECT: GC9A
Quanta Computer Inc.

Size	Document Number	Rev
Custom	Express Card	1A

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(3,4,8,9,10,11,12,14,15,17,23,24,25,26,28,29,30,31,32,33,34,36,38,39,40,41,42,44,46,47,48,49,51) +3V
(9,23,28,31,40,41,44,45,48,50) 3VPCU
(9,12) +3VRTC
(12,18,21,24,25,26,29,37,38,44) +5V

IT8502E

RTC_VCC +3VRTC R148 0_4 C127 0.1U/10V/X5R_4

IT8512_AVCC L20 10_6 3VPCU
C82 1000P/16V/X7R_4 C90 1U/6.3V/X5R_4 L25 BLM18AG121SN1D 3VPCU
L22 BLM18AG121SN1D C128 0.1U/10V/X5R_4
(For PLL Power)

Layout Note:
Place all capacitors close to IT8512.

3VPCU C91 C108 C116 C129 C112 C126 0.1U/10V/X5R_4

(10) CLK_PCI_8512 CLK_PCI_8512 C131 *15P/50V/NPO_4@NC
EMI suggestion:
Add a 15p bypass CAP on CLK_PCI_8512

Layout Note:
net "3VPCU" and "RTC_VCC" minimum trace width 12mils.
+3V 3VPCU RTC_VCC C134 0.1U/10V/X5R_4

IT8512_VSTBY

TRACK_POINT_RESET RF_SW# TRACK_POINT_RESET (37) RF_SW# (31) LAN_ISOLATEB (28)
PAD_RESET# PAD_RESET# (37)
ICH_RSMRST# (8) USB_ON_REAR# (30) ECPWROK (8)
GSENSOR_TST# (39) MIC_MUTE_LED# (40) VRON (44,49) SPEAKER_MUTE_LED# (40) MAINON (17,24,41,44,46,47,50,51) SUSON (44,46) S5_ON (44)

3VPCU R109 10K_4 R107 *10K_4@NC
DIS =>R109
UMA=>R107

R99 0_4 CLKRUN# (8,33,39)

3VPCU
MB_CLK R123 4.7K_4
MB_DATA R124 4.7K_4
MBCLK R118 4.7K_4
MBDATA R119 4.7K_4
PAD_RESET# R114 10K_4
BATLED_AMBER_LED# R116 *10K_4@NC
BATLED_GREEN_LED# R110 *10K_4@NC
BLC# R92 *10K_4@NC
TRACK_POINT_RESET R96 *10K_4@NC
HDD_DETECT# R194 100K_4
DOCK_ATTACHED_3VPCU# R1100 10K_4
+3V HWPG R130 10K_4

RF ON/OFF SWITCH

3VSUS R95 100K_4 RF_SW# C88 0.1U/10V/X5R_4

EC-A-07

POWER SWITCH/ CARE BUTTON

3VPCU R135 10K_4 NBSWON# C122 0.1U/10V/X5R_4
3VPCU R262 10K_4 CARE_BUTTON# C382 0.1U/10V/X5R_4

16Mbit (2M Byte), SPI

Winbond	AKE38ZP0N00
SST	AKE28FP0K07
MX	AKE37FP0Z13

3VPCU R175 10K_4 R187 10K_4
8512_SCE# 8512_SCK R188 47_4 8512_SCK1
8512_SI R189 47_4 8512_SI1
8512_SO R174 15_4 8512_SO1
U21 CE# SCK SI SO WP# VDD HOLD# VSS
C180 0.1U/10V/X5R_4
MX25L1605A

LPC

(9,33,39) LPC_LAD0
(9,33,39) LPC_LAD1
(9,33,39) LPC_LAD2
(9,33,39) LPC_LAD3
(23,40) LID551#
CLK_PCI_8512
(9,33,39) LPC_LFRAME#
OV_EVENT
(8,33) LPCPD#
(11) SIO_A20GATE
(9,33,39) IRQ_SERIRQ
(11) SIO_EXT_SMI#
(11) SIO_EXT_SCI#
(11) SIO_RCIN#
(40) CAPSLED
D9 D13 D11 D12 RB500V-40
WRST_8512#

CIR

(45) D/C#
(44) LAN_POWER

GPIO

SM BUS

SMCLK0/GPB3 MBCLK (45)
SMDAT0/GPB4 MBDATA (45)
SMCLK1/GPC1 MB_CLK (10,19)
SMDAT1/GPC2 MB_DATA (10,19)
SMCLK2/GPF6 AC_PRESENT (8,17)
SMDAT2/GPF7 VOLMUTE# (26)

RP1 *10K_8P4R@NC
R97 10K_4 R98 10K_4 +5V

PS/2

PS2CLK0/GPF0 MSCLK
PS2DAT0/GPF1 MSDATA
PS2CLK1/GPF2 KPCLK
PS2DAT1/GPF3 KPDATA
PS2CLK2/GPF4 TPCLK (37)
PS2DAT2/GPF5 TPDATA (37)

TP44 Layout Note: Place this test point on top side
3VPCU R147 470K_4 WRST_8512# C130 0.1U/10V/X5R_4

Note 1 : Since all GPIO belong to VSTBY power domain, and there are some special considerations below:
(1) If it is output to external VCC derived power domain circuit, this signal should be isolated by a diode such as KBRST# and GA20.
(2) If it is input from external VCC derived power domain circuit, this external circuit must consider not to float the GPIO input.

Note 2 :
(1) Each input pin should be driven or pulled.
(2) Each output-drain output pin should be pulled.

PWM

PWM0/GPA0 PWR_LED# (40)
PWM1/GPA1
PWM2/GPA2 VFAN (38)
PWM3/GPA3 SUSPEND_LED# (31)
PWM4/GPA4 GSENSOR_ON# (39)
PWM5/GPA5 PCBEEP_AD (26)
PWM6/GPA6 ENERGY_DET (28)
PWM7/GPA7 PAD_DETECT# (37)

TACH0/GPD6 FANSIG (38)
TACH1/GPD7 DRAMRST_CTRL_EC (4)
TMR0/WUI2/GPC4 TEMP_ALERT# (11)
TMR1/WUI3/GPC6 HWPG (4,42,46,47,48,49,50,51)
C691 *1U/10V/X5R_4

WAKE UP

PWRSW/GPE4 NBSWON# (40,41)
RI1#/WUI0/GPD0 SIO_SLP_S3# (8)
RI2#/WUI1/GPD1 ACIN (45)
WUI5/GPE5 CARE_BUTTON# (40)
RING#/PWRFAIL#/LPCRST#/GPB7 DOCK_ATTACHED_3VPCU# (41)

UART

TXD/GPB1 BATLED_AMBER_LED# (31)
RXD/GPB0 BATLED_GREEN_LED# (31)

A/D D/A

ADC0/GPI0 TEMP_MBAT (45)
ADC1/GPI1 MBATV (45)
ADC2/GPI2 AD_ID (45)
ADC3/GPI3 GSENSOR_Z_R
ADC4/GPI4 GSENSOR_X_R
ADC5/GPI5 GSENSOR_Y_R
ADC6/GPI6 ACDC_ID (41,45)
ADC7/GPI7 PM_SLP_S4# (8)

DAC0/GPJ0 HDD_DETECT# (29)
DAC1/GPJ1 SIO_EXT_WAKE# (10)
DAC2/GPJ2 BLC# (45)
DAC3/GPJ3 USB_AO_SEL1 (30)
DAC4/GPJ4 DNBSWON_R
DAC5/GPJ5 USB_AO_SEL0 (30)
D6 RB500V-40 SIO_PWRBTN# (8)

CLOCK

CK32KE IT8512_CK32KE
CK32K IT8512_CK32K
Y2 32.768KHZ
C136 15P/50V/NPO_4 C135 15P/50V/NPO_4

FLASH

(8) SUS_PWR_ACK
(30,31) USB_ON#
8512_SCK 8512_SI 8512_SO 8512_SCE#
FLRST#/WUI7/GPG0/TM
FLCLK/SCK
FLAD3/GPG6
FLAD2/SO
FLAD1/SI
FLAD0/SCE#
FLFRAME#/GPG2

KBMX

EC-A-03
R101 100K_4

R609	FLASH TYPE SELECT
High	LPC/FWH FLASH ROM
Low	SPI FLASH ROM (Default)

(37,40) MY[0..15]
KSO0/PD0 KSO1/PD1 KSO2/PD2 KSO3/PD3 KSO4/PD4 KSO5/PD5 KSO6/PD6 KSO7/PD7 KSO8/ACK# KSO9/BUSY KSO10/PE KSO11/ERR# KSO12/SLCT KSO13 KSO14 KSO15
KSO/STB# KSI/AFD# KSI/INIT# KSI/SLIN# KSI4 KSI5 KSI6 KSI7

(37,40) MX[0..7]
MX0 MX1 MX2 MX3 MX4 MX5 MX6 MX7

VSS AVSS

C133 *1U/6.3V/X5R_4@NC C132 0.1U/10V/X5R_4

Width = 6mils Spacing = 10 mils

GSENSOR_X_R R94 56K_4 GSENSOR_X (39)
GSENSOR_Y_R R90 56K_4 GSENSOR_Y (39)
GSENSOR_Z_R R93 *56K_4@NC GSENSOR_Z (39)
C87 0.1U/10V/X5R_4 C78 0.1U/10V/X5R_4 C86 *0.1U/10V/X5R_4@NC

U15 IT8502E

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Quanta Computer Inc.	
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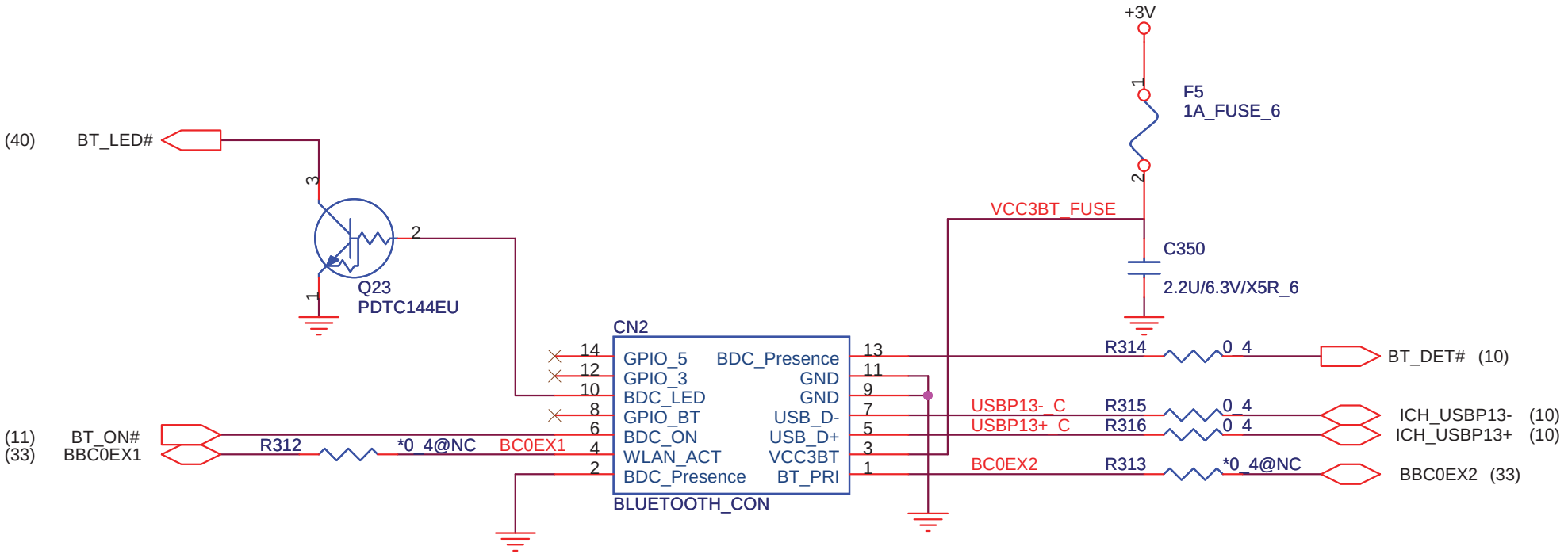
BLUETOOTH

(3,4,8,9,10,11,12,14,15,17,23,24,25,26,28,29,30,31,32,33,34,35,38,39,40,41,42,44,46,47,48,49,51) +3V



PROJECT: GC9A

Quanta Computer Inc.

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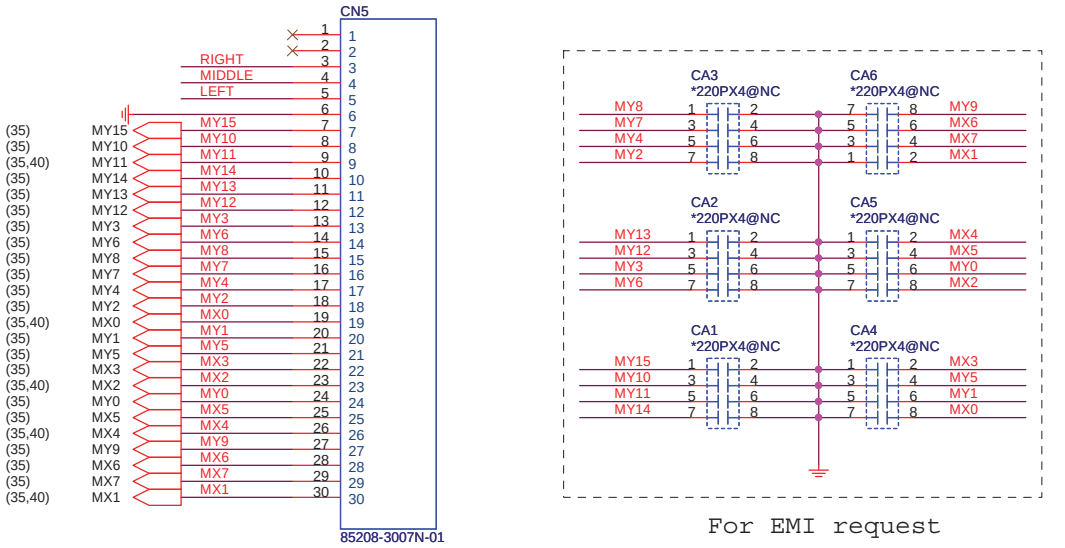
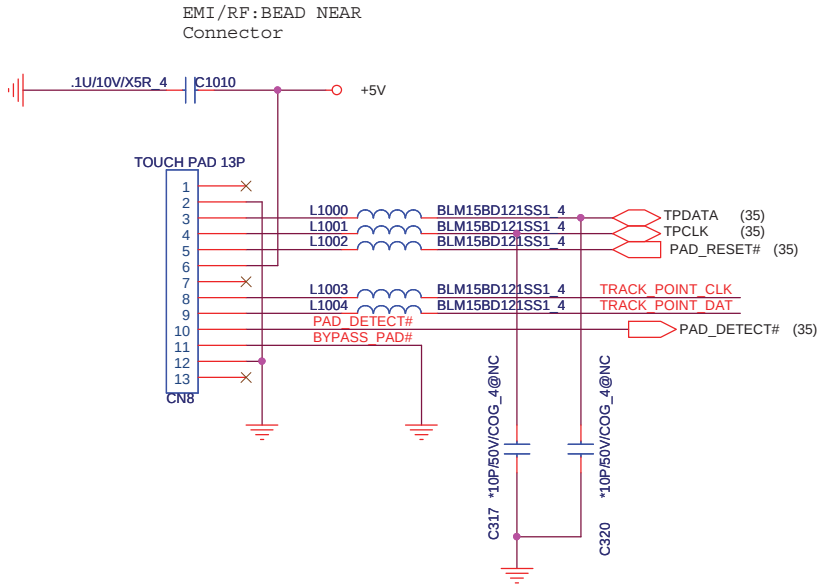
KEYBOARD

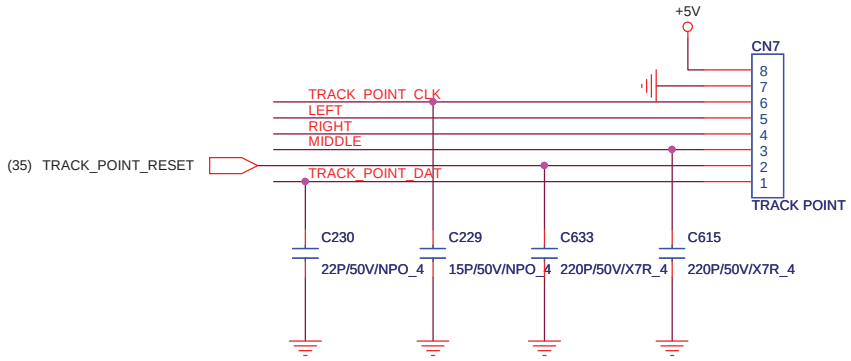
KEYBOARD connector



Touch pad



TRACK POINT



PROJECT: GC9A

Quanta Computer Inc.

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Custom	K/B, T/P	1A

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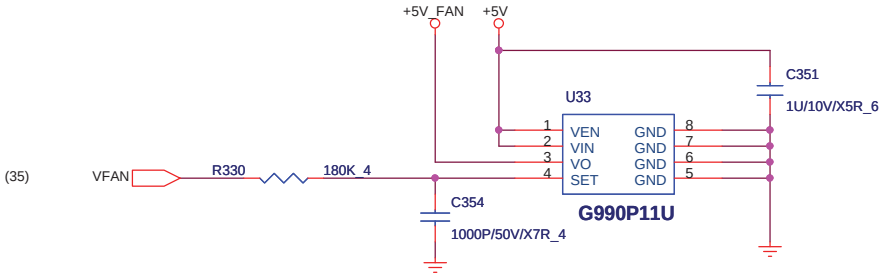
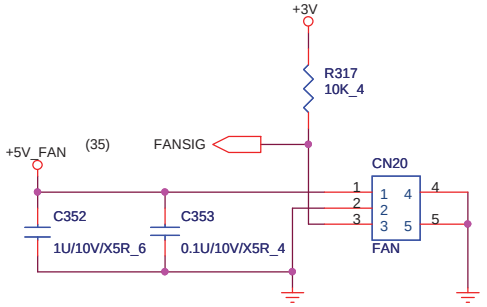
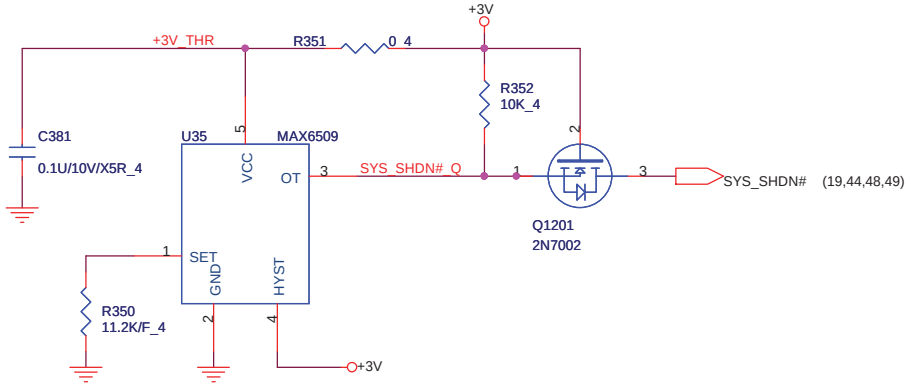
FAN CONTROL

(3,4,8,9,10,11,12,14,15,17,23,24,25,26,28,29,30,31,32,33,34,35,36,39,40,41,42,44,46,47,48,49,51) +3V
(12,18,21,24,25,26,29,35,37,44) +5V







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Quanta Computer Inc.

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Custom	FAN & THERMAL	1A

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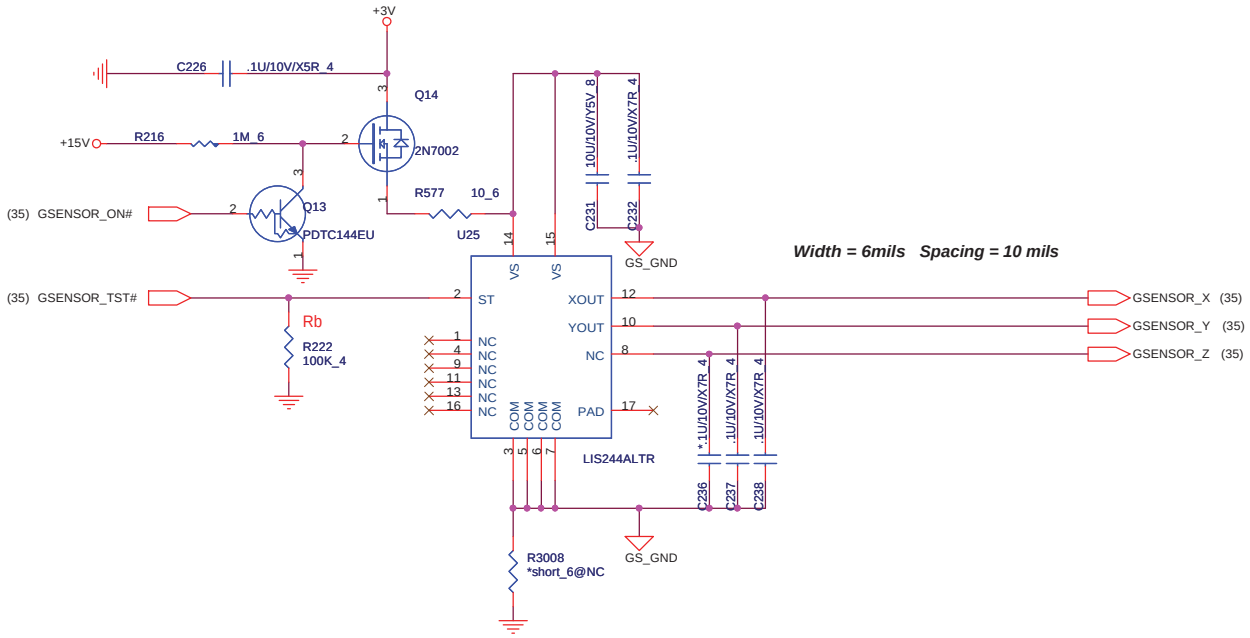
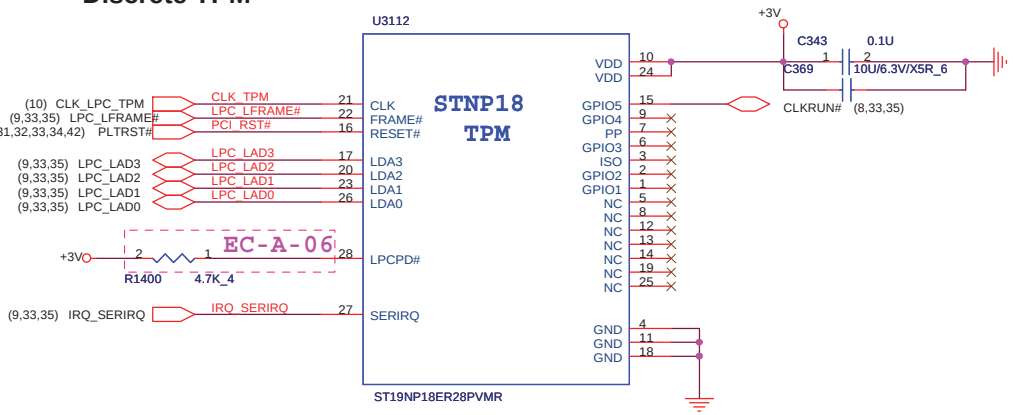
G-SENSOR (2-Axial)



Discrete TPM



supplier P/N:ST19NP18ER28PVMR
Quanta P/N:AL19NP18K13
F/P:tssop28-6_4-65-1_2h

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Quanta Computer Inc.

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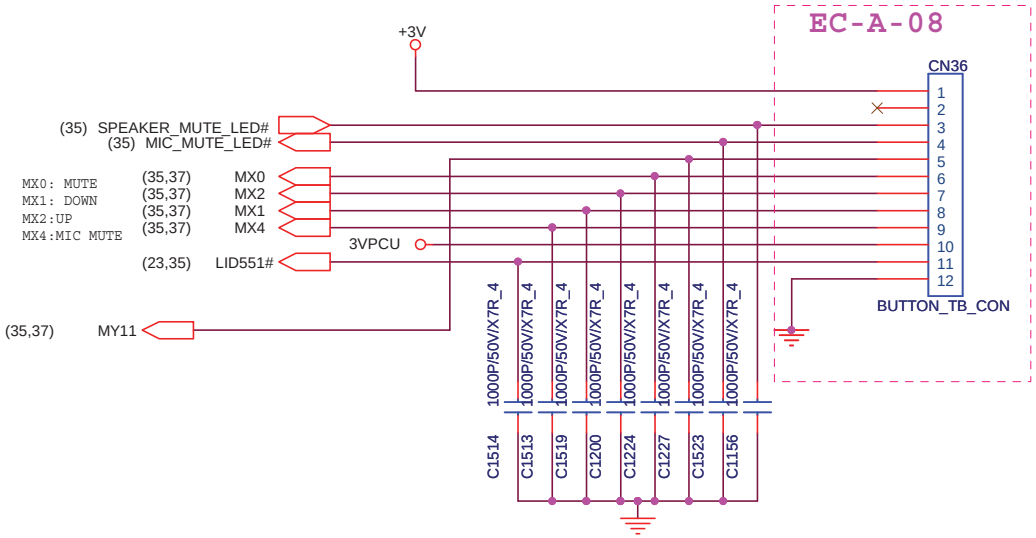
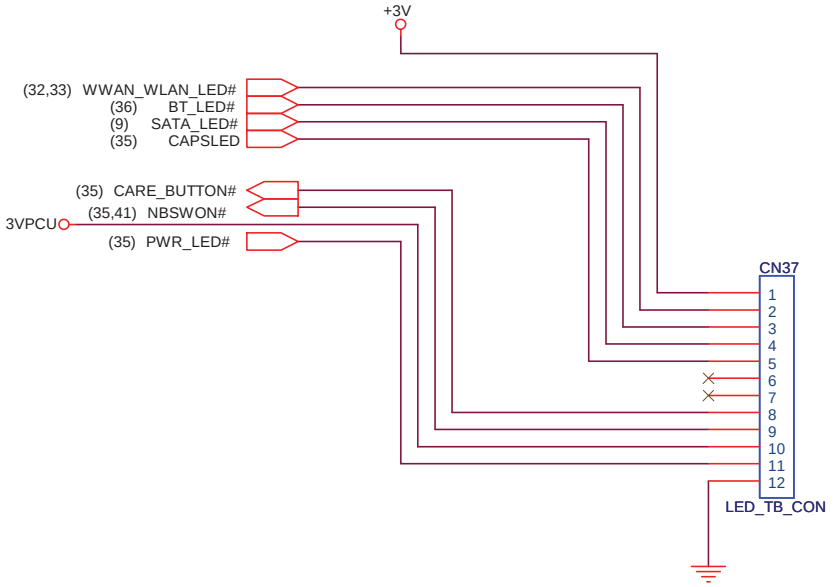
FFC TO KBD LEFT SIDE CONNECTOR



FFC TO LED RIGHT SIDE CONNECTOR



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Quanta Computer Inc.

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Custom	Daughter Boards	1A
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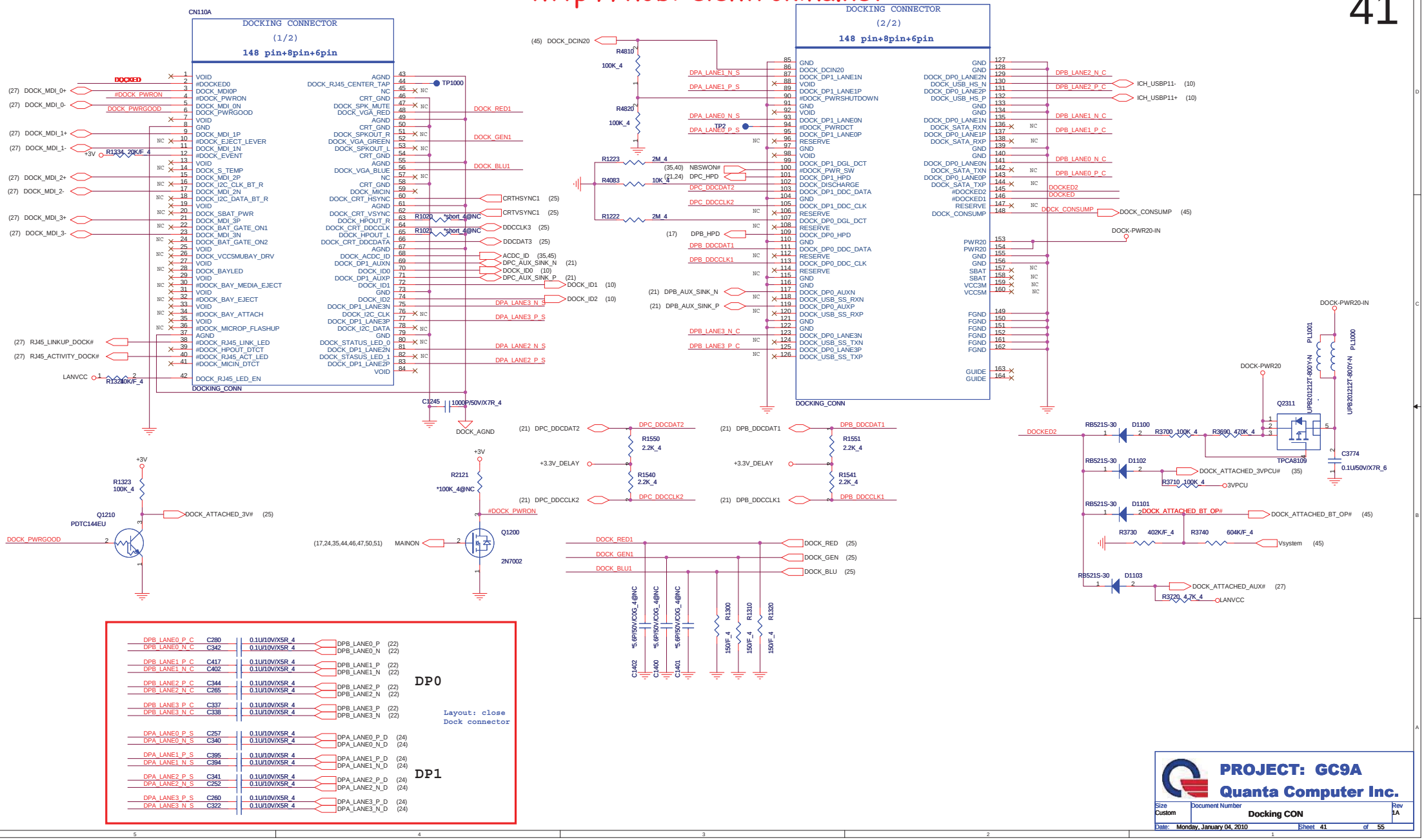

(3,4,8,9,10,11,12,14,15,17,23,24,25,26,28,29,30,31,32,33,34,35,36,38,39,40,41,44,46,47,48,49,51) +3V

iTPM ENABLE/DISABLE

3V_S5 — R366 *1K_4 — SPI_SI

iTPM Function	R366
Enable	1K
Disable	NC

For PCH
32Mbit (4M Byte), SPI

(9) SPI_CS0#_R — SPI_CS0#_R — R377 15_4 — SPI_CS0#
(9) SPI_CLK_R — SPI_CLK_R — R365 15_4 — SPI_CLK
(9) SPI_SI_R — SPI_SI_R — R362 15_4 — SPI_SI
(9) SPI_SO — SPI_SO — R378 15_4 — SPI_SO_R

3V_S5 — R361 3.3K_4

U37
CE# 1 — VDD 8
SCK 6
SI 5
SO 2 — HOLD# 7
WP# 3 — VSS 4
W25Q32BVSSIG

3V_S5 — R367 10K_4

C387 22P/50V/NPO_4

C400 0.1U/10V/X5R_4

RFID

+3V — R204 4.7K_4

D16 RB500V-40
(4,35,46,47,48,49,50,51) HWPG — 1 — 2 — PROT
(4,10,28,31,32,33,34,39) PLTRST# — 1 — 2
D17 RB500V-40

+3V — C213 0.1U/10V/X5R_4

U22
R202 100K_4 — 1 L1
R203 100K_4 — 2 L2
PROT — 3 PROT
(3,14,15) CLK_SCLK — 6 SCL
(3,14,15) CLK_SDATA — 5 SDA
VCC 8
WP 7
GND 4
PCA24S08D
tssop8-4_9-65

R190 1K_4

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Quanta Computer Inc.

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MiniCard WLAN

HOLE13 H-TC197BC142D102P2
HOLE14 H-TC197BC142D102P2
Top side

MiniCard WWAN

HOLE35 H-TC236BC102D64P2
HOLE36 H-TC236BC102D64P2
Bot side

Hole for PCH support

HOLE34 H-TC197BC118D118P2
HOLE33 H-TC197BC118D118P2

Drink Hole

HOLE8 *H-C298D298N

Bluetooth nut

HOLE3 H-TC197D118PT
Top side

Hole for CPU support

HOLE29 *H-C142D142N@NC
HOLE31 *H-C142D142N@NC
HOLE30 *H-C142D142N@NC
HOLE32 *H-C142D142N@NC

VGA nut

HOLE27 H-TC197BC158D122P2
HOLE28 H-TC197BC158D122P2
HOLE26 H-TC197BC158D122P2

Break Hole

HOLE11 *o-gc4@NC

Boundary Hole

HOLE7 *H-TC276BC216D91P2
HOLE4 *H-C276D91P2@NC
HOLE5 *H-C86D86N@NC
HOLE15 *H-TC236BC216D87P2
HOLE10 *H-TC209BC315D209P2
HOLE1 *H-C276D91P2@NC
HOLE9 *H-C276I107D91P2
HOLE17 *H-C276D91P2@NC
HOLE2 *H-C276D91P2@NC

Card Reader Nut

HOLE18 H-TC197BC158D122P2
HOLE37 H-TC197BC158D122P2
Top side

Boundary Hole

HOLE6 *H-TSHAPEBC276D91P2-1@NC
HOLE16 *H-C276D91P2@NC
HOLE25 *H-C276D91P2@NC
HOLE23 *H-C91D91N
HOLE21 *H-C157D91P2
HOLE24 *H-C276D91P2@NC

Boundary Hole (ODD)

HOLE12 *H-C276D91P2@NC

PAD

GP2 *SPAD-SPE1NP
GP3 *SPAD-RE197X217NP
GP1 *RE236X494NP
GP4 *RE270X220NP

HOLE19 O-GC2A-1
HOLE20 O-GC2A-2
HOLE22 *H-TC197BC93D93P2

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Quanta Computer Inc.

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Custom	HOLE & SCREW	1A
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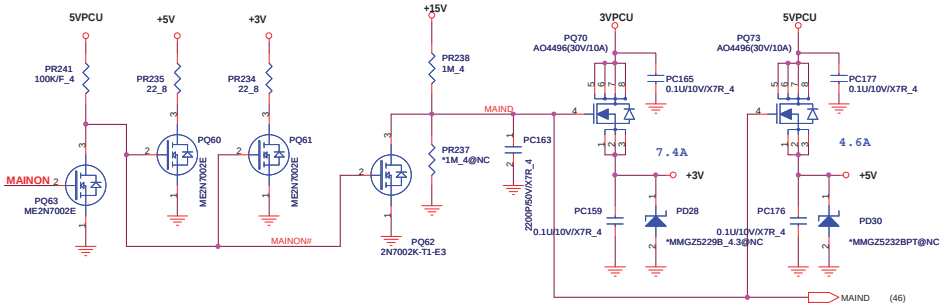
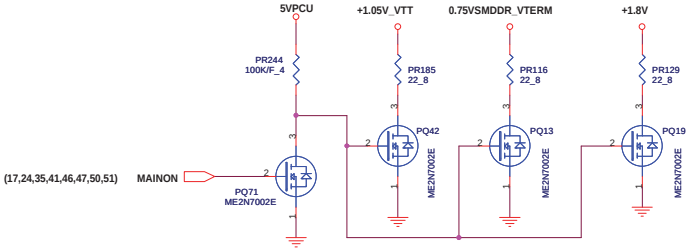
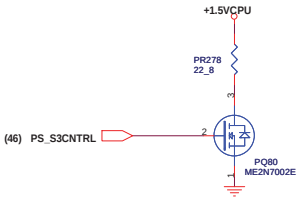
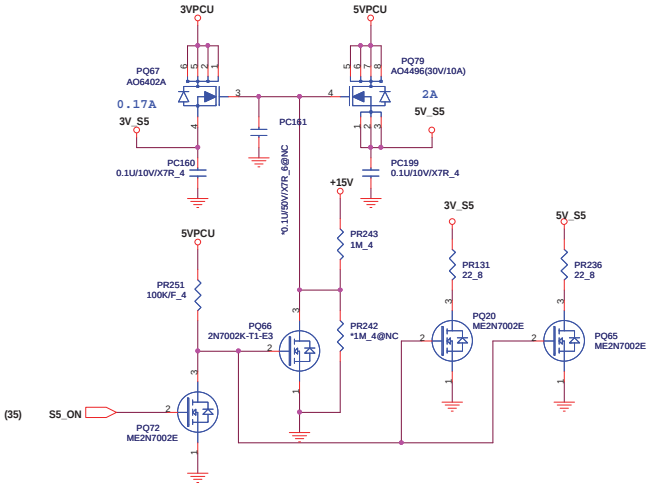
+3.3V, +5V

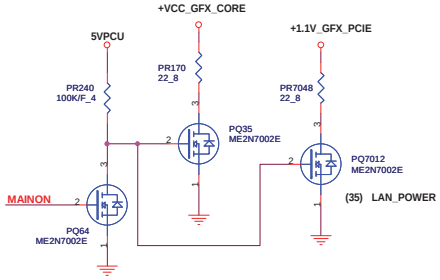




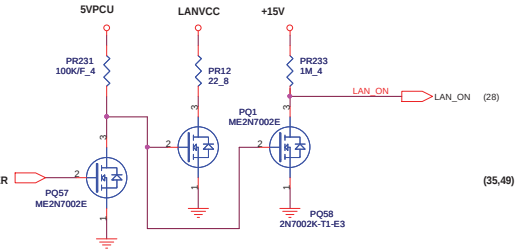


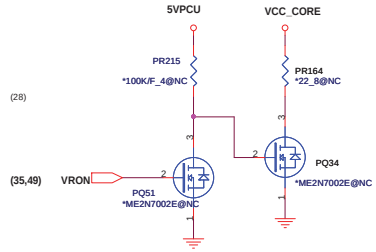
3V_S5, 5V_S5

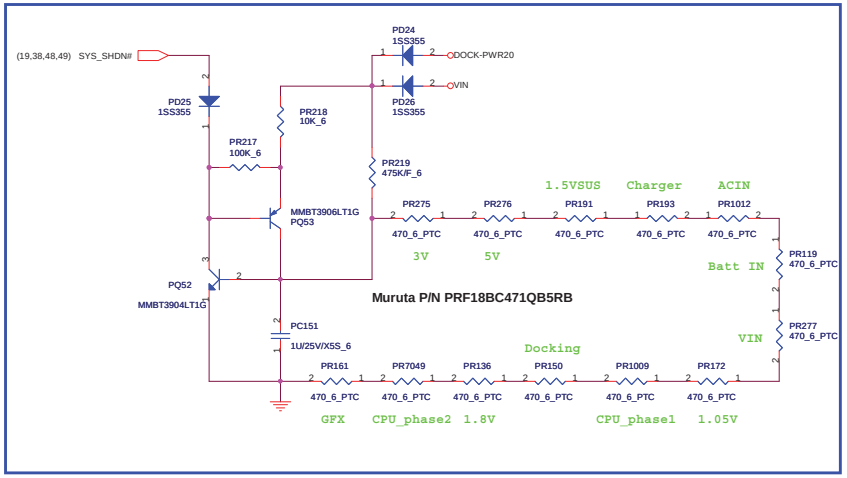




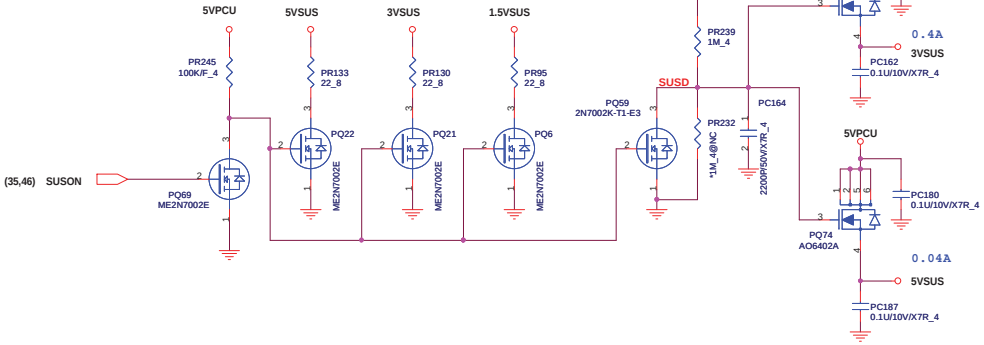
LANVCC

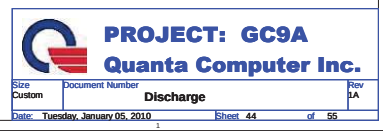


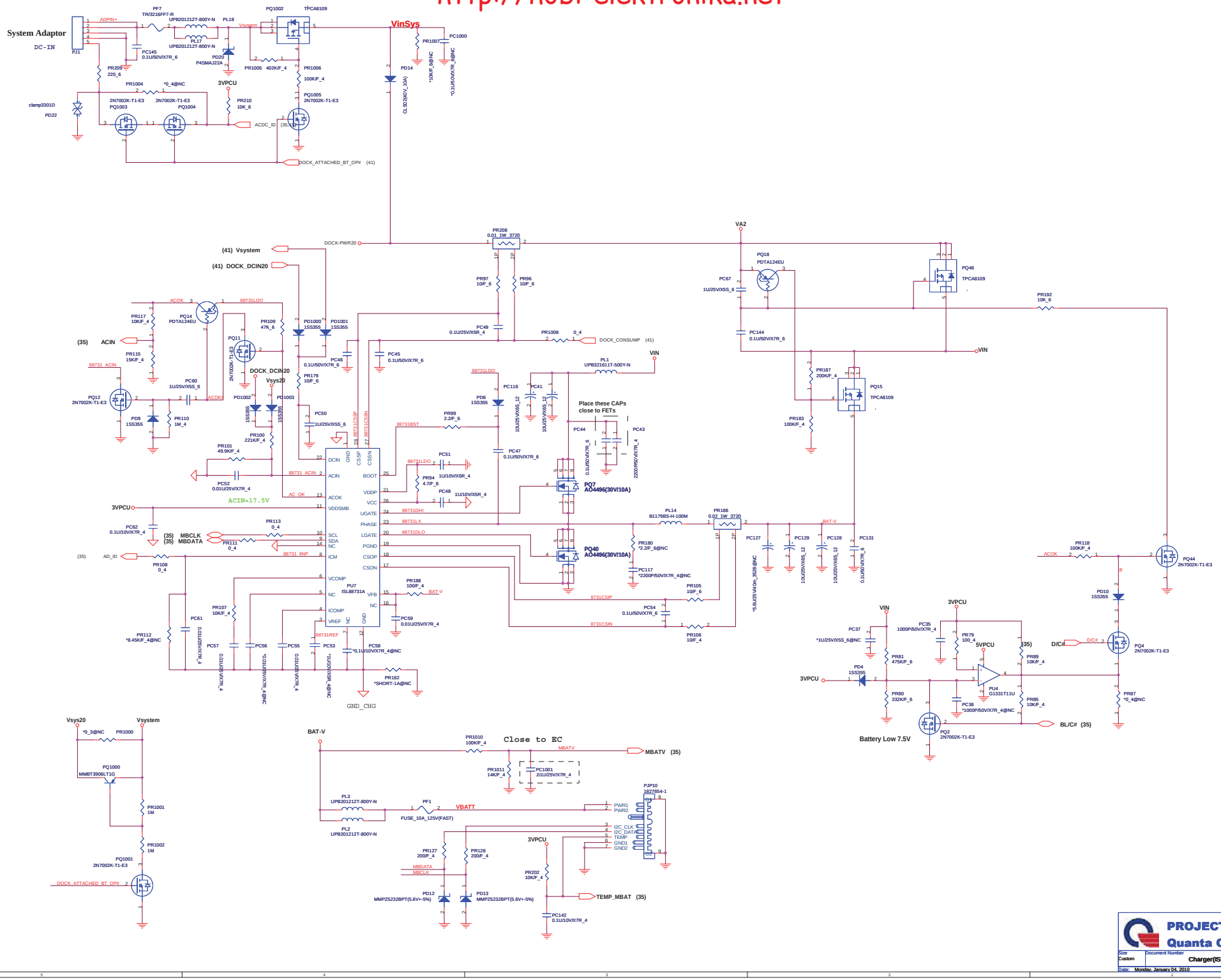


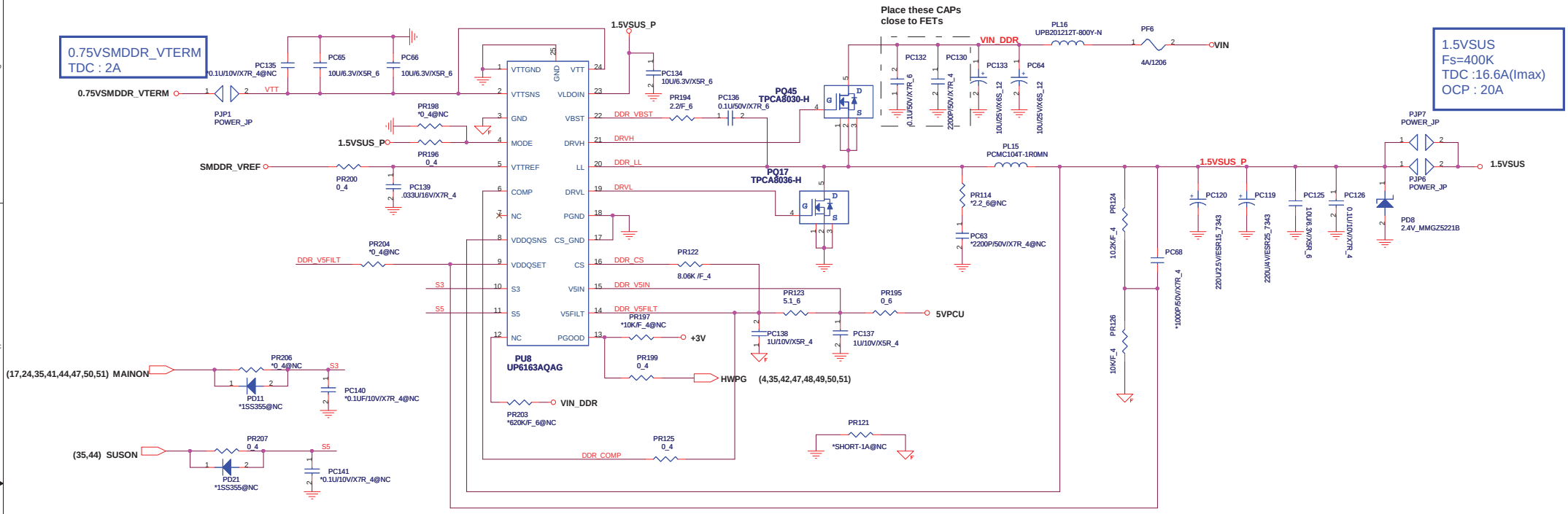


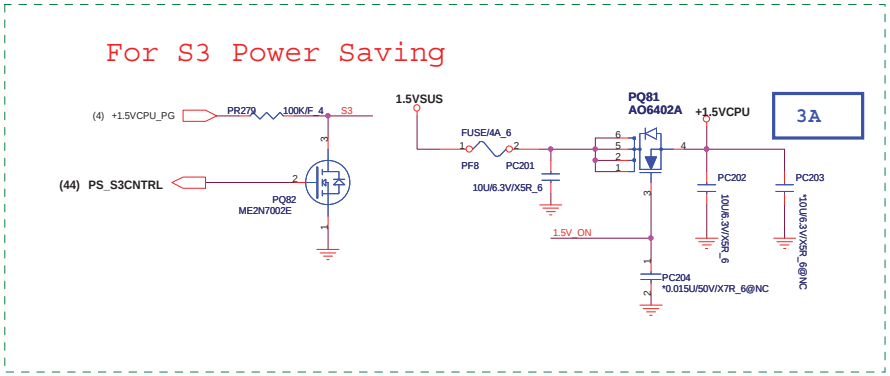
3VSUS, 5VSUS

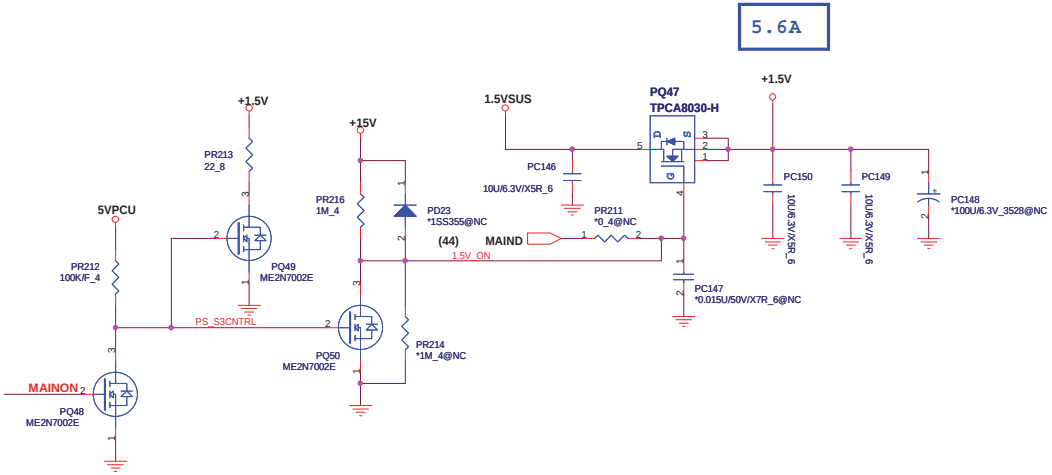








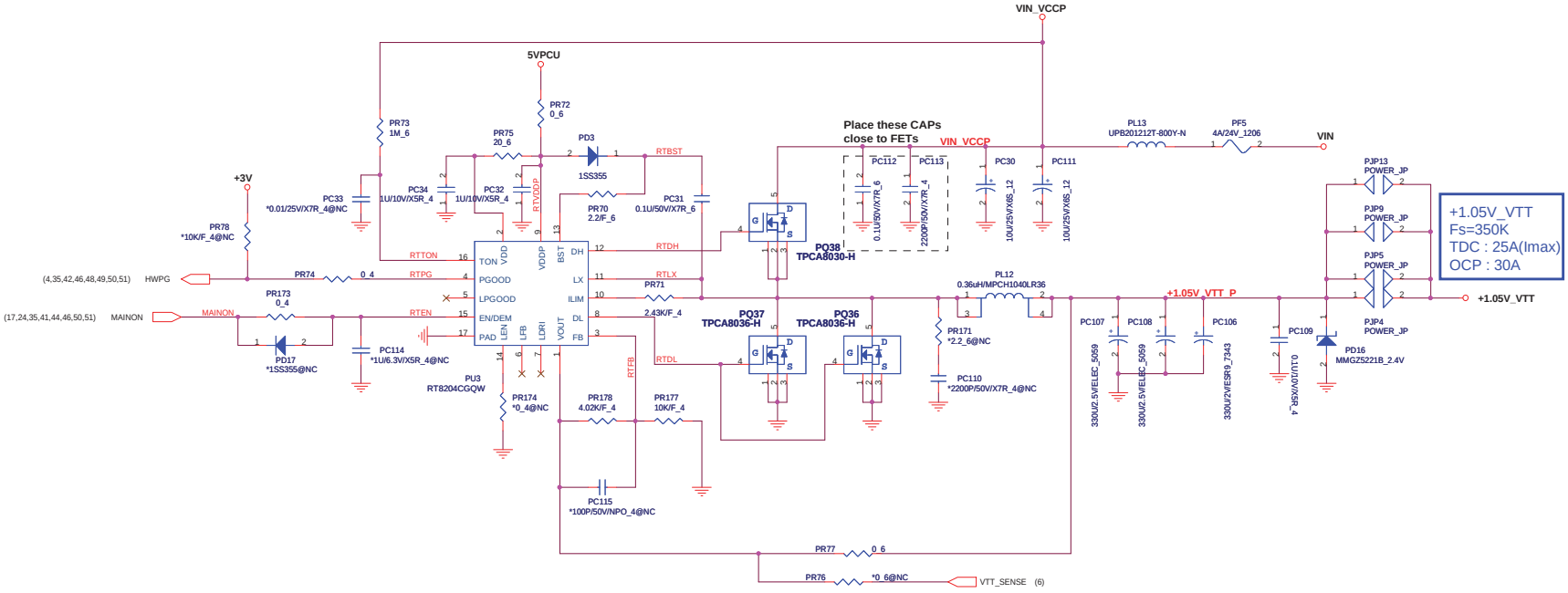




PROJECT: GC9A
Quanta Computer Inc.

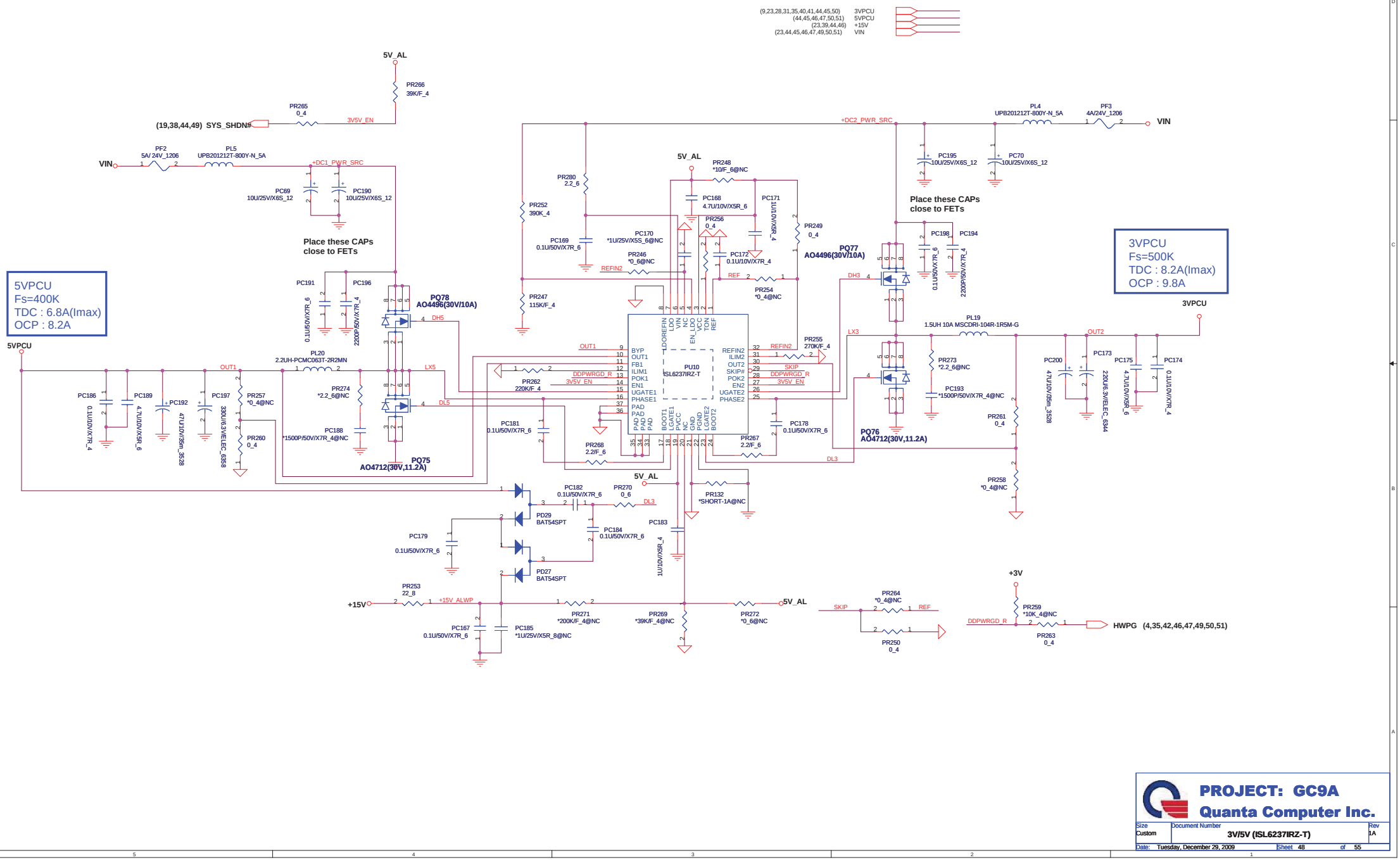
Size	Document Number	Rev
Custom	DDR3/0.75VSMDDR (UP6163AQAG)	1A

Date: Monday, January 04, 2010 Sheet 46 of 55



PROJECT: GC9A
Quanta Computer Inc.

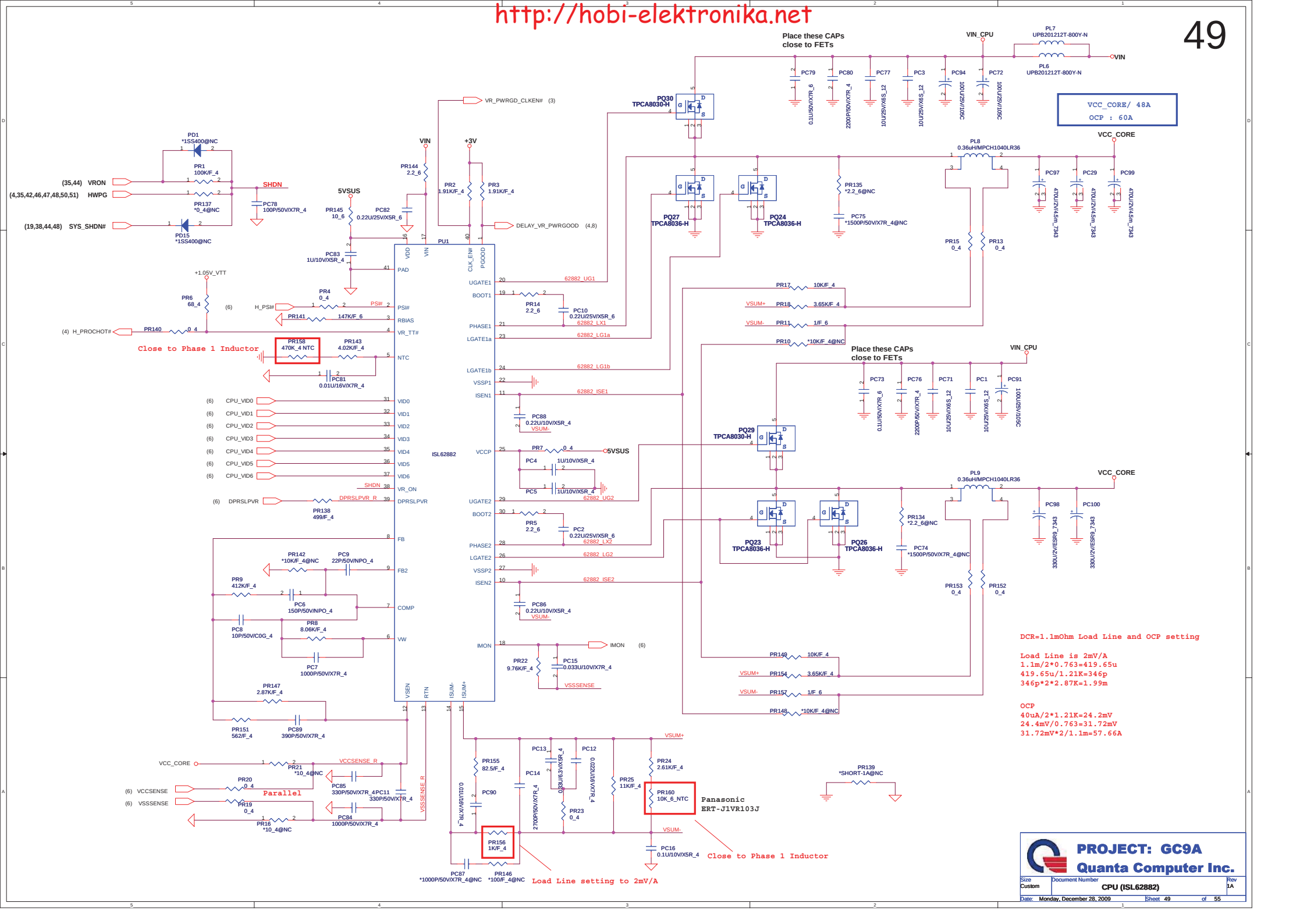
Size	Document Number	Rev
C	1.05V_VTT/1.05_PCH (RT8204)	1A
Date: Monday, December 28, 2009	Sheet 47 of 55	



PROJECT: GC9A
Quanta Computer Inc.

Size	Document Number	Rev
Custom	3V/5V (ISL6237IRZ-T)	1A

Date: Tuesday, December 29, 2009 Sheet 48 of 55

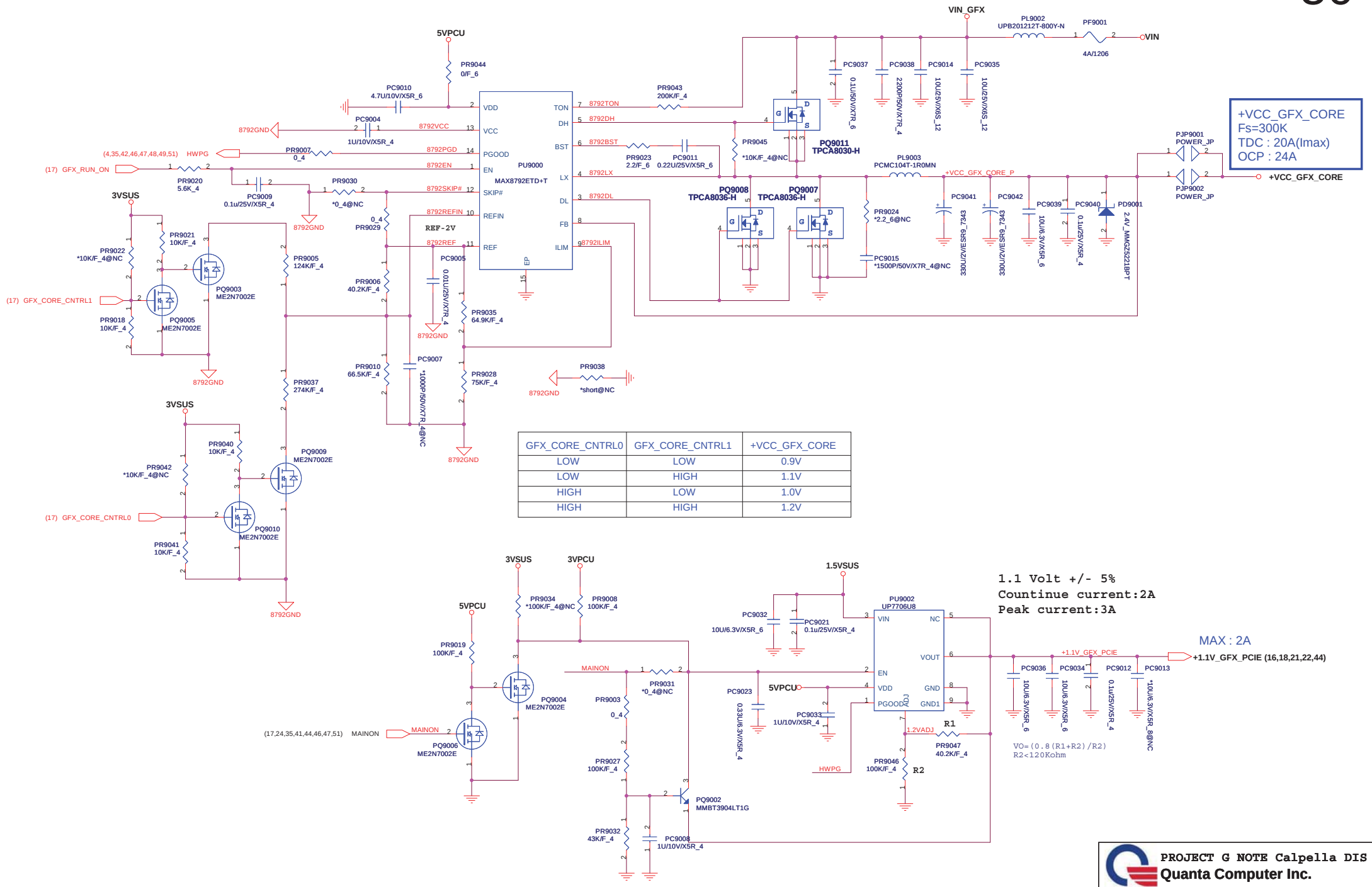


PROJECT: GC9A
Quanta Computer Inc.

Size	Document Number	Rev
Custom	CPU (ISL62882)	1A

Date: Monday, December 28, 2009 Sheet 49 of 55

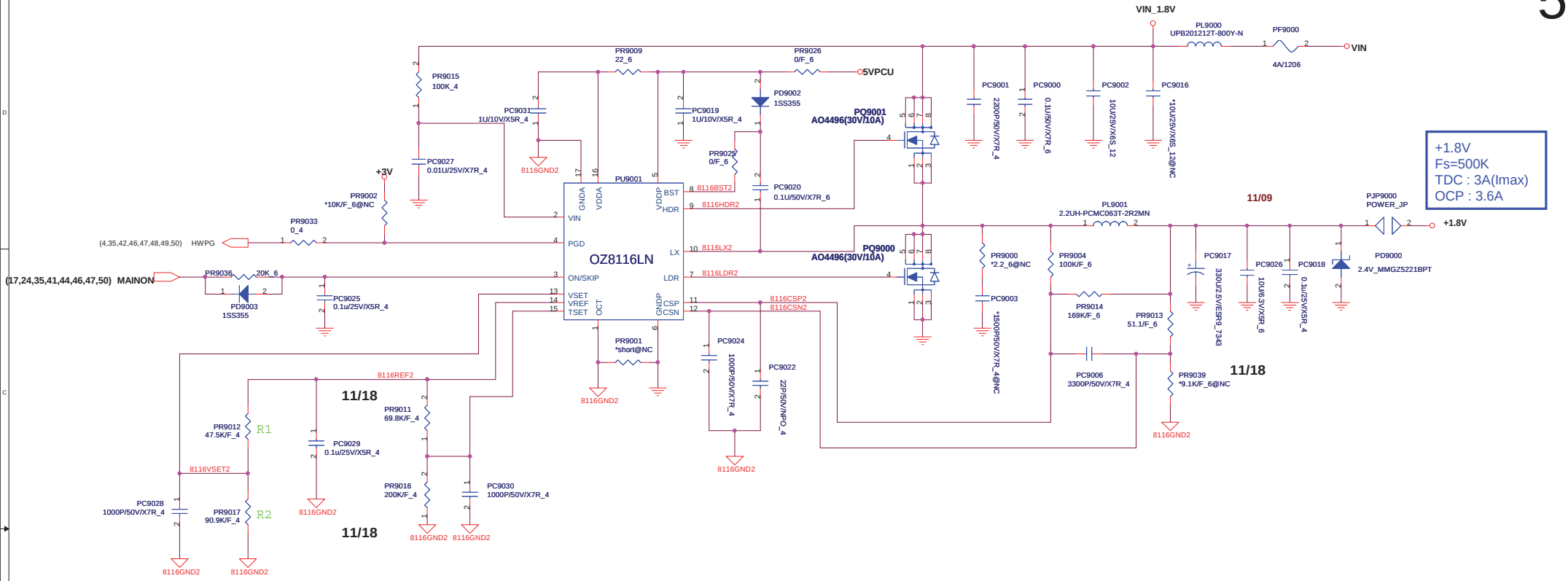
For Discrete M92 VGA Only



GFX_CORE_CNTRL0	GFX_CORE_CNTRL1	+VCC_GFX_CORE
LOW	LOW	0.9V
LOW	HIGH	1.1V
HIGH	LOW	1.0V
HIGH	HIGH	1.2V

PROJECT G NOTE Calpella DIS
Quanta Computer Inc.

Size	Document Number	Rev
Custom	DIS_GFX_VCC (MAX8792)	1B
Date: Tuesday, December 29, 2009	Sheet 50 of 55	



PROJECT G NOTE Calpella DIS			
Quanta Computer Inc.			
Size: Custom	Document Number: DIS_1.8V_RUN (OZ8116LN)		Rev: 1A
Date: Tuesday, December 29, 2009	Sheet 51 of 55		

Revision History

Revision	Date	Phase	Change List	Release Schematic Date	Release Gerber File Date
1A		DV	Initial release		

Schematic Value Explanation Description :

RESISTOR

Value	F	4	6	8	12	1210	*	Description
*1K/F_4	1%	0402 (1005)					DE POP	1K ohm 1% SMD 0402 package and DE POP
1K_6	5%		0603 (1608)				POP	1K ohm 5% SMD 0603 package and POP
1K_8	5%			0805 (2125)			POP	1K ohm 5% SMD 0805 package and POP
1K_12	5%				1206 (3216)		POP	1K ohm 5% SMD 1206 package and POP
1K_1210	5%					1210 (3225)	POP	1K ohm 5% SMD 1210 package and POP

CAPACITOR

Value	Voltage	Material	6				*	Description
*0.1U/10V/X5R_4	10V	X5R	0402 (1005)				DE POP	0.1UF 10V X5R SMD 0402 package DE POP
1U/25V/X7R_6	25V	X7R	0603 (1608)				POP	0.1UF 25V X7R SMD 0603 package POP

G NOTE SKU TABLE

Location					

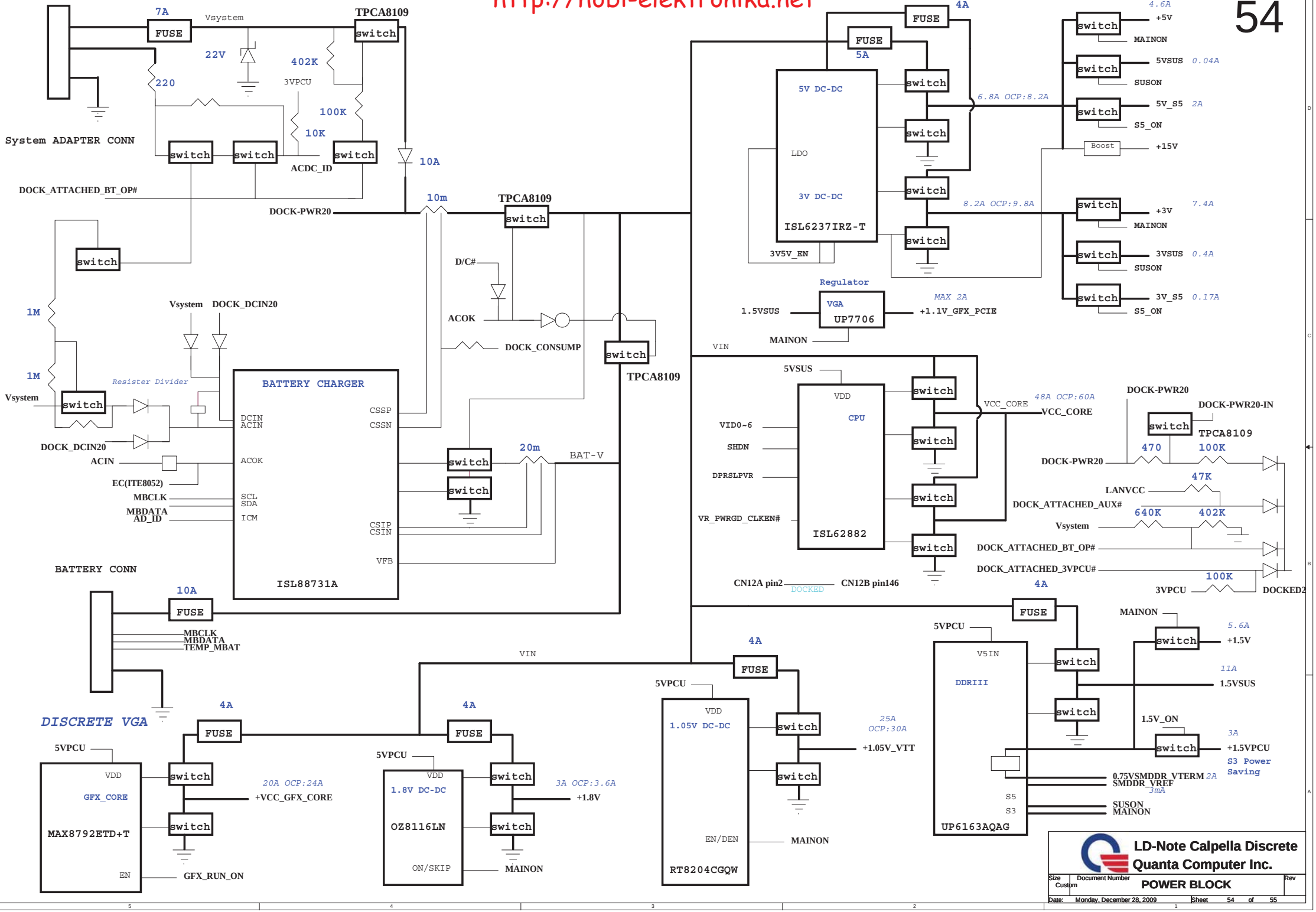
G NOTE SKU TABLE

Location					Page

PROJECT: GC9A
Quanta Computer Inc.

Size	Document Number	Rev
Custom	BOM Matrix Table	1A

Date: Monday, December 28, 2009 Sheet 53 of 55



LD-Note Calpella Discrete
Quanta Computer Inc.

Size	Document Number	Rev
Custom	POWER BLOCK	
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2009

A stage

EC NO.	PG.	DATE	PART REFERENCE	DESCRIPTION
EC-A-01	30	12/22	R36,R37,R42,R43	Delete R36,R37,R41,R42 (redundant optional resistor) and change connection of E-sata.
EC-A-02	11	12/22	R285	No POP R285 or delete.We have R466 for TPM physical presence
EC-A-03	35	12/22	R101	EC use SPI type
EC-A-04	30	12/22	R623,R625,R626, R627	AUO3 use ext power
EC-A-05	9	12/22	R449,R450	GPIO19,21 should have pull up 10K to +3V due to no internal PU/PD
EC-A-06	39	12/22		Cut LPCPD# signal from TPM#28. due to PCH bug(SUSSTAT# signal chatteringwhen assert)
EC-A-07	35	12/23	R262,C382	Add Pull high for CARE_BUTTON#
EC-A-08	40	12/23	R79,R80,R81, R82,R83,R86, R104,R105,R108	Delete these resistor to save space for layout.
EC-A-09	24	12/28	C2350,C196	Change CAP value per customer request.
EC-A-10	03	12/28	C8222,C8223	Add decoupling cap per RF engineer requested.
EC-A-11	26	12/29	C683	De-pop C683 to prevent efect high frequency of THD+N.

G-Note Montevina
Quanta Computer Inc.

Size	Document Number	Rev
B	EC list	2A

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ERROR: syntaxerror
OFFENDING COMMAND: --nostringval--

STACK:

/Title
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(D:20100106114247+08’00’)
/ModDate
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/Keywords
(PDFCreator Version 0.9.5)
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-mark-