LD-Note Intel Calpella Platform with Discrete GFX

01

POWER

- AC/BATT CONNECTOR PG 44
- BATT CHARGER PG 44
- RUN POWER SW 3VSUS, 5VSUS, 3V_S5, 5V_S5 +3V, +5V PG 43
- Discharge PG 43

Arrandale

(rPGA 989)

PG 4,5,6,7

- DDR3 - SODIMM0 PG 14
- DDR3 - SODIMM1 PG 15

Dual Channel DDR3 800/1067 1.5V

- FAN / THERMAL: FAN G993P1U, THERMAL MAX6694 PG 37
- CLOCK GEN: SLG8SP585V(QFN32) PG 3 — 14.318MHz

POWER

- REGULATOR +1.05V_VTT,+1.05V_PCH PG 46
- REGULATOR (DDR3) 1.5VSUS, SMDDR_VREF,1.5V PG 45
- REGULATOR +1.8V PG 50
- CPU Core PG 48
- DC/DC 3VPCU, 5VPCU, +15V PG 47
- VGA Core Discrete PG 49

PCIEx16

- DDR3 x 4 (256M/512M) PG 20
- **PCI-Express GFX**: AMD M92-S2 XT — PG 16,17,18,19,20,21,22
  - LVDS → Panel Connector PG 23
  - HDMI → HDMI CONN. PG 24
  - VGA → CRT CONN. PG 25

DMI X 4

32.768KHz

PCH

Ibex Peak-M
Intel(R) 5 Series Express Chipset

PG 8,9,10,11,12,13

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- USB2.0 x 3 → USB conn x 3 PG 29,30
- PCIEx1 → LAN RTL8111DL PG 27 → RJ45/Magnetics PG 27 (25MHz)
- PCIEx1 / USB2.0 → EXPRESS-CARD R5538 PG 34
- PCIEx1 / USB2.0 → MINI-CARD WLAN/WiMAX PG 32
- PCIEX1 / USB2.0 → MINI-CARD (F1) WWAN PG 31
- USB2.0 → Bluetooth PG 36
- SATA → SATA-ODD PG 28
- SATA → SATA-HDD PG 28
- IHDA → AUDIO ALC269 PG 26
  - Audio SPK conn PG 26
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- USB2.0 → Camera + D-MIC PG 23
- USB2.0 → Biometric PG 30
- SPI → FLASH 2Mbyts PG 40
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- PCIEx1 → 7-in-1 Card Reader RTS5159 PG 33

32.768KHz

SPI / PS/2

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- Touchpad PG 35
- Keyboard PG 35
- Accelerometer (APS) PG 38
- Card Reader CONN. PG33

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Quanta Computer Inc.

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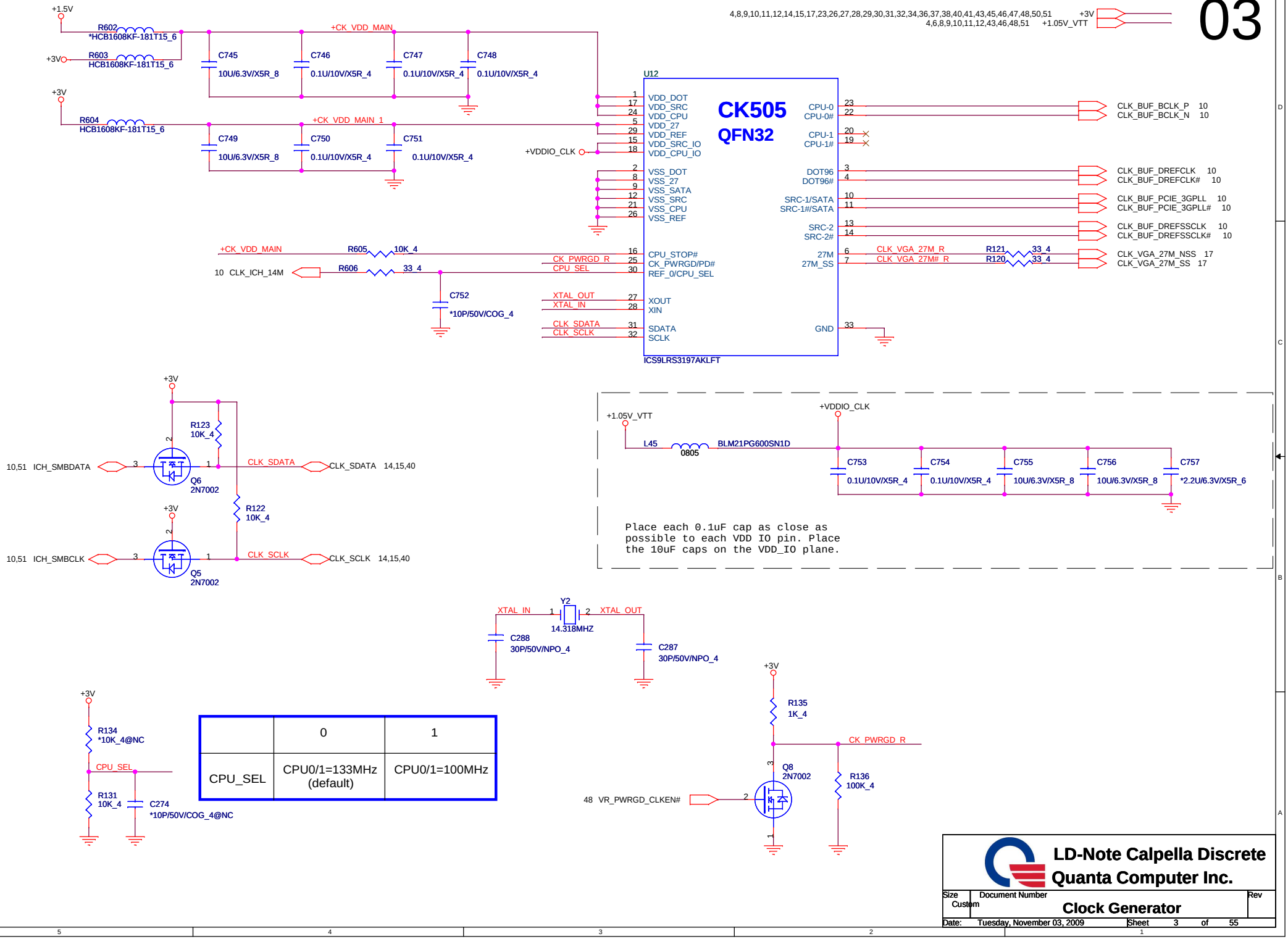
Power States

POWER PLANE	VOLTAGE	PAGE	DESCRIPTION	CONTROL SIGNAL	ACTIVE IN
VIN	10V~+20V	23,32,43,44,45,46,47,48,49,50	MAIN POWER		S0~S5
+3VRTC	+3.0V~+3.3V	9,12,41	RTC		S0~S5
3VPCU	+3.3V	9,23,27,30,32,35,39,41,43,44,47	ITE8052 POWER	3V5V_EN	S0~S5
5VPCU	+5V	14,43,44,45,46,47,49,50	DC/DC POWER IC SOURCE	3V5V_EN	S0~S5
+15V	+15V	23,38,43,45,46,47	LARGE POWER	3V5V_EN	S0~S5
LANVCC	+3.3V	27,43	LAN POWER	LAN_ON	
5V_S5	+5V	12,29,30,43	PCH SUS POWER	S5_ON	S0~S3
3V_S5	+3.3V	8,9,10,11,12,43,52	Sys Management,PCH Resume Well,Intel HD Audio,USB,WLAN WiMAX POWER	S5_ON	S0~S3
5VSUS	+5V	23,39,43,48	SLP_S4# CTRLD POWER	SUSON	S0~S3
3VSUS	+3.3V	14,15,30,34,41,43,49	SLP_S4# CTRLD POWER	SUSON	S0~S3
1.5VSUS	+1.5V	4,6,14,15,43,45,46,49,50	SODIMM POWER	SUSON	S0~S3
0.75VSMDDR_VTERM	+0.75V	14,15,43,45	DDR3 SODIMM REFERENCE POWER	MAIN_ON	S0
+5V	+5V	12,18,23,24,25,26,28,35,37,41,43,44	SLP_S3# CTRLD POWER	MAIN_ON	S0
+3V	+3.3V	3,4,8,9,10,11,12,14,15,17,23,25,26,27,28,29,30,31,32,33,34,36,37,38,39,40,41,43,44,45,46,47,48,50,52	SLP_S3# CTRLD POWER	MAIN_ON	S0
+1.8V	+1.8V	6,12,17,18,21,22,33,43,50	LVDS,NVM POWER	MAIN_ON	S0
+1.5V	+1.5V	12,18,19,20,31,32,34,45,46	Mini PCIe,Express Card POWER	MAIN_ON	S0
+1.05V_VTT	+1.05V	4,6,11,12,43,46,48,52	AuBurndale VTT POWER	MAIN_ON	S0
+1.05V_PCH	+1.05V	3,10,12,43,46,52	PCH CORE POWER	1.05V_RUN_ON	S0
+VCC_GFX_CORE	+0.9V~+1.2V	18,21,43,49	VGA CORE POWER	GFXVR_EN	S0
VCC_CORE		6,43,48	CPU CORE POWER	VRON	S0
LCDVCC	+3.3V	23	LCD Power	ENVDD	S0
+5V_ODD	+5V	28	ODD Power	MAIN_ON	S0
+5V_HDD	+5V	28	HDD Power	MAIN_ON	S0
BAT-V	+10V~+17V	44	MAIN BATTERY	CHG_PBATT	S0~S5



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

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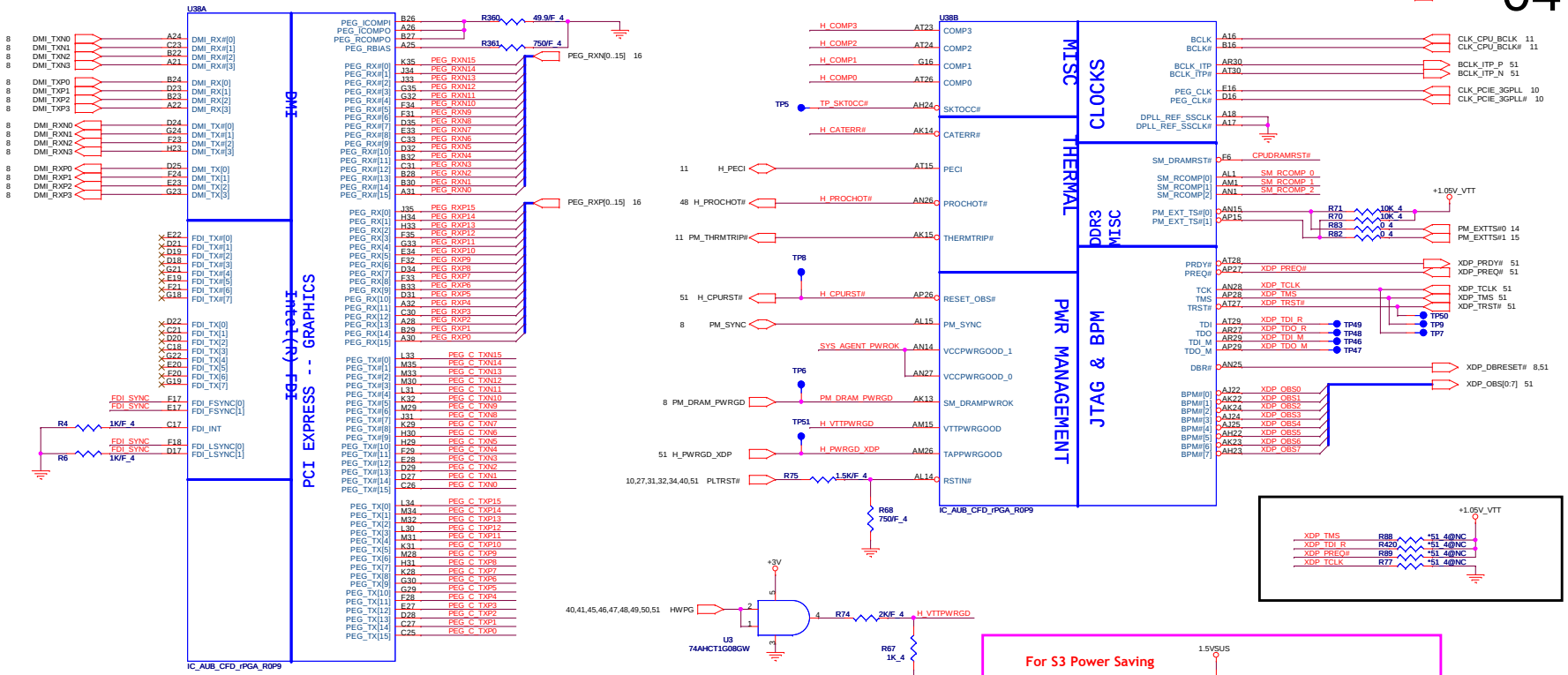
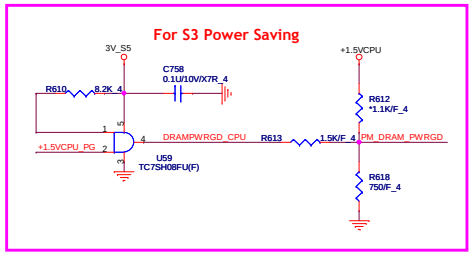
AUBURNDALE PROCESSOR (DMI,PEG,FDI)

04

3,8,9,10,11,12,14,15,17,23,26,27,28,29,30,31,32,34,36,37,38,40,41,43,45,46,47,48,50,51 +3V
3,6,8,9,10,11,12,43,46,48,51 +1.05V_VTT
14,15,43,45,49 1.5VSUS



For S3 Power Saving



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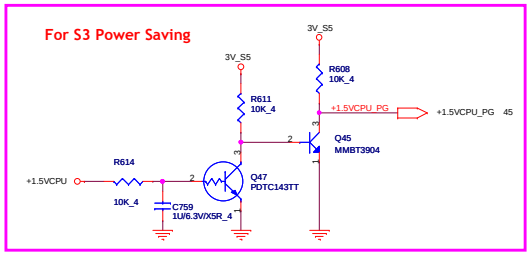
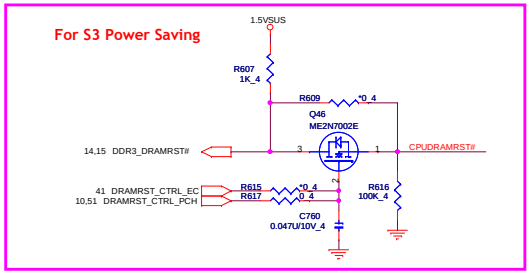


For S3 Power Saving



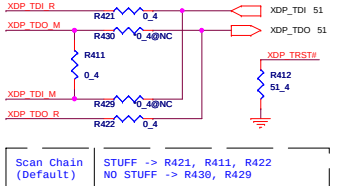
PEG_C_TXN15	C604	0.1U/10V/X5R_4	PEG_TXN15
PEG_C_TXN14	C596	0.1U/10V/X5R_4	PEG_TXN14
PEG_C_TXN13	C593	0.1U/10V/X5R_4	PEG_TXN13
PEG_C_TXN12	C587	0.1U/10V/X5R_4	PEG_TXN12
PEG_C_TXN11	C579	0.1U/10V/X5R_4	PEG_TXN11
PEG_C_TXN10	C577	0.1U/10V/X5R_4	PEG_TXN10
PEG_C_TXN9	C572	0.1U/10V/X5R_4	PEG_TXN9
PEG_C_TXN8	C564	0.1U/10V/X5R_4	PEG_TXN8
PEG_C_TXN7	C560	0.1U/10V/X5R_4	PEG_TXN7
PEG_C_TXN6	C556	0.1U/10V/X5R_4	PEG_TXN6
PEG_C_TXN5	C552	0.1U/10V/X5R_4	PEG_TXN5
PEG_C_TXN4	C543	0.1U/10V/X5R_4	PEG_TXN4
PEG_C_TXN3	C540	0.1U/10V/X5R_4	PEG_TXN3
PEG_C_TXN2	C536	0.1U/10V/X5R_4	PEG_TXN2
PEG_C_TXN1	C525	0.1U/10V/X5R_4	PEG_TXN1
PEG_C_TXN0	C521	0.1U/10V/X5R_4	PEG_TXN0

PEG_TXN[0..15] 16

PEG_C_TXP15	C598	0.1U/10V/X5R_4	PEG_TXP15
PEG_C_TXP14	C594	0.1U/10V/X5R_4	PEG_TXP14
PEG_C_TXP13	C588	0.1U/10V/X5R_4	PEG_TXP13
PEG_C_TXP12	C580	0.1U/10V/X5R_4	PEG_TXP12
PEG_C_TXP11	C578	0.1U/10V/X5R_4	PEG_TXP11
PEG_C_TXP10	C573	0.1U/10V/X5R_4	PEG_TXP10
PEG_C_TXP9	C568	0.1U/10V/X5R_4	PEG_TXP9
PEG_C_TXP8	C561	0.1U/10V/X5R_4	PEG_TXP8
PEG_C_TXP7	C557	0.1U/10V/X5R_4	PEG_TXP7
PEG_C_TXP6	C553	0.1U/10V/X5R_4	PEG_TXP6
PEG_C_TXP5	C546	0.1U/10V/X5R_4	PEG_TXP5
PEG_C_TXP4	C541	0.1U/10V/X5R_4	PEG_TXP4
PEG_C_TXP3	C537	0.1U/10V/X5R_4	PEG_TXP3
PEG_C_TXP2	C529	0.1U/10V/X5R_4	PEG_TXP2
PEG_C_TXP1	C523	0.1U/10V/X5R_4	PEG_TXP1
PEG_C_TXP0	C520	0.1U/10V/X5R_4	PEG_TXP0

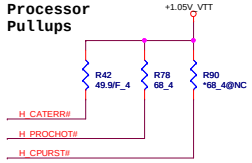
PEG_TXP[0..15] 16

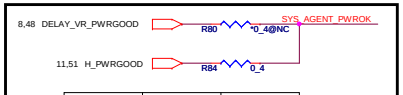
JTAG MAPPING



Scan Chain (Default)	STUFF -> R421, R411, R422 NO STUFF -> R430, R429
CPU Only	STUFF -> R421, R430 NO STUFF -> R411, R429, R422
GMCH Only	STUFF -> R429, R422 NO STUFF -> R421, R430, R411

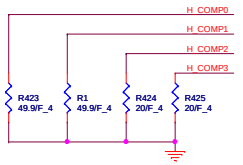
Processor Pullups



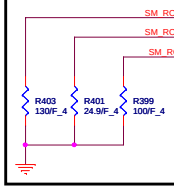


Platform REFDES	ERB	CRB
R80	STUFF	NO_STUFF
R84	NO_STUFF	STUFF

Processor Compensation Signals



DDR3 Compensation Signals



Layout Note: Place these resistors near Processor

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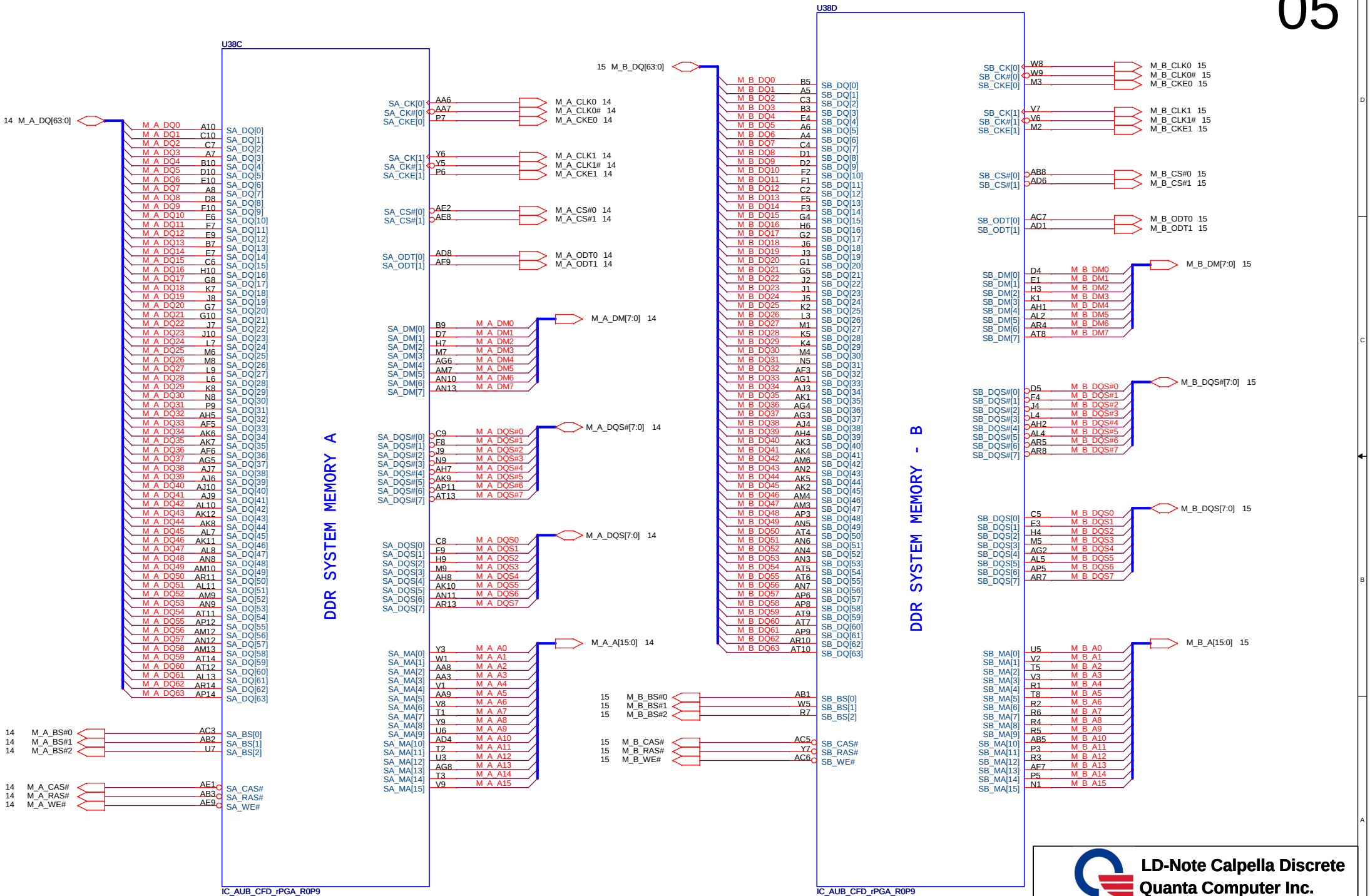
AUBURNDALE PROCESSOR (DDR3)

05



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AUBURNDALE PROCESSOR (GRAPHICS POWER)

06

43,48 VCC_CORE
3,4,8,9,10,11,12,43,46,48,51 +1.05V_VTT
4,14,15,43,45,49 1.5VSUS
10,12,17,18,21,22,43,50 +1.8V

U38F

VCC_CORE

AG35 AG34 AG33 AG32 AG31 AG30 AG29 AG28 AG27 AG26 AF35 AF34 AF33 AF32 AF31 AF30 AF29 AF28 AF27 AF26 AD35 AD34 AD33 AD32 AD31 AD30 AD29 AD28 AD27 AD26 AC35 AC34 AC33 AC32 AC31 AC30 AC29 AC28 AC27 AC26 AA35 AA34 AA33 AA32 AA31 AA30 AA29 AA28 AA27 AA26 Y35 Y34 Y33 Y32 Y31 Y30 Y29 Y28 Y27 Y26 V35 V34 V33 V32 V31 V30 V29 V28 V27 V26 U35 U34 U33 U32 U31 U30 U29 U28 U27 U26 R35 R34 R33 R32 R31 R30 R29 R28 R27 R26 P35 P34 P33 P32 P31 P30 P29 P28 P27 P26

VCC1 VCC2 VCC3 VCC4 VCC5 VCC6 VCC7 VCC8 VCC9 VCC10 VCC11 VCC12 VCC13 VCC14 VCC15 VCC16 VCC17 VCC18 VCC19 VCC20 VCC21 VCC22 VCC23 VCC24 VCC25 VCC26 VCC27 VCC28 VCC29 VCC30 VCC31 VCC32 VCC33 VCC34 VCC35 VCC36 VCC37 VCC38 VCC39 VCC40 VCC41 VCC42 VCC43 VCC44 VCC45 VCC46 VCC47 VCC48 VCC49 VCC50 VCC51 VCC52 VCC53 VCC54 VCC55 VCC56 VCC57 VCC58 VCC59 VCC60 VCC61 VCC62 VCC63 VCC64 VCC65 VCC66 VCC67 VCC68 VCC69 VCC70 VCC71 VCC72 VCC73 VCC74 VCC75 VCC76 VCC77 VCC78 VCC79 VCC80 VCC81 VCC82 VCC83 VCC84 VCC85 VCC86 VCC87 VCC88 VCC89 VCC90 VCC91 VCC92 VCC93 VCC94 VCC95 VCC96 VCC97 VCC98 VCC99 VCC100

1.1V RAIL POWER

VTT0_1 VTT0_2 VTT0_3 VTT0_4 VTT0_5 VTT0_6 VTT0_7 VTT0_8 VTT0_9 VTT0_10 VTT0_11 VTT0_12 VTT0_13 VTT0_14 VTT0_15 VTT0_16 VTT0_17 VTT0_18 VTT0_19 VTT0_20 VTT0_21 VTT0_22 VTT0_23 VTT0_24 VTT0_25 VTT0_26 VTT0_27 VTT0_28 VTT0_29 VTT0_30 VTT0_31 VTT0_32

AH14 AH12 AH11 AH10 J14 J13 H14 H12 G14 G13 G12 G11 F14 F13 F12 F11 E14 E12 D14 D13 D12 D11 C14 C13 C12 C11 B14 B12 A14 A13 A12 A11

+1.05V_VTT

C505 10U/10V/X5R_8 C533 10U/10V/X5R_8 C569 10U/10V/X5R_8 C575 10U/10V/X5R_8

C551 10U/10V/X5R_8 C558 10U/10V/X5R_8 C535 *10U/10V/X5R_8@NC

C542 *10U/10V/X5R_8@NC C506 10U/10V/X5R_8

C585 22U/6.3V/X5R_8 C109 22U/6.3V/X5R_8 C88 22U/6.3V/X5R_8

VTT0_33 VTT0_34 VTT0_35 VTT0_36 VTT0_37 VTT0_38 VTT0_39 VTT0_40 VTT0_41 VTT0_42 VTT0_43 VTT0_44

AF10 AE10 AC10 AB10 Y10 W10 U10 T10 J12 J11 J16 J15

+1.05V_VTT

C130 22U/6.3V/X5R_8 C144 22U/6.3V/X5R_8

CPU CORE SUPPLY

POWER

CPU VIDS

PSI# AN33 H_PSI# → H_PSI# 48

VID[0] AK35 CPU_VID0
VID[1] AK33 CPU_VID1
VID[2] AK34 CPU_VID2
VID[3] AL35 CPU_VID3
VID[4] AL33 CPU_VID4
VID[5] AM33 CPU_VID5
VID[6] AM35 CPU_VID6
PROC_DPRSLPVR AM34 DPRSLPVR

CPU_VID0 48
CPU_VID1 48
CPU_VID2 48
CPU_VID3 48
CPU_VID4 48
CPU_VID5 48
CPU_VID6 48
DPRSLPVR 48

VTT_SELECT G15 H_VTTVID1 → TP1

SENSE LINES

ISENSE AN35 → IMON 48

VCC_SENSE AJ34
VSS_SENSE AJ35
→ VCCSENSE 48
VSSSENSE 48

VTT_SENSE B15
VSS_SENSE_VTT A15
→ VTT_SENSE 46

VCC_CORE

R46 100_4

R49 100_4

IC_AUB_CFD_rPGA_R0P9

U38G

AT21 AT19 AT18 AT16 AR21 AR19 AR18 AR16 AP21 AP19 AP18 AP16 AN21 AN19 AN18 AN16 AM21 AM19 AM18 AM16 AL21 AL19 AL18 AL16 AK21 AK19 AK18 AK16 AJ21 AJ19 AJ18 AJ16 AH21 AH19 AH18 AH16

VAXG1 VAXG2 VAXG3 VAXG4 VAXG5 VAXG6 VAXG7 VAXG8 VAXG9 VAXG10 VAXG11 VAXG12 VAXG13 VAXG14 VAXG15 VAXG16 VAXG17 VAXG18 VAXG19 VAXG20 VAXG21 VAXG22 VAXG23 VAXG24 VAXG25 VAXG26 VAXG27 VAXG28 VAXG29 VAXG30 VAXG31 VAXG32 VAXG33 VAXG34 VAXG35 VAXG36

GRAPHICS POWER

SENSE LINES

VAXG_SENSE AR22
VSSAXG_SENSE AT22

GRAPHICS VIDS

GFX_VID[0] AM22
GFX_VID[1] AP22
GFX_VID[2] AN22
GFX_VID[3] AP23
GFX_VID[4] AM23
GFX_VID[5] AP24
GFX_VID[6] AN24

GFX_VR_EN AR25
GFX_DPRSLPVR AT25
GFX_IMON AM24

R79 1K_4

DDR3 - 1.5V RAILS

+1.5VCPU

VDDQ1 AJ1
VDDQ2 AF1
VDDQ3 AE7
VDDQ4 AE4
VDDQ5 AC1
VDDQ6 AB7
VDDQ7 AB4
VDDQ8 Y1
VDDQ9 W7
VDDQ10 W4
VDDQ11 U1
VDDQ12 T7
VDDQ13 T4
VDDQ14 P1
VDDQ15 N7
VDDQ16 N4
VDDQ17 L1
VDDQ18 H1

C54 1U/6.3V/X5R_4 C119 1U/6.3V/X5R_4 C173 1U/6.3V/X5R_4 C87 1U/6.3V/X5R_4

C141 1U/6.3V/X5R_4 C55 22U/6.3V/X5R_8 C104 22U/6.3V/X5R_8 C5 *330u_2.5V_7343@NC

FDI

C531 22U/6.3V/X5R_8 C52 22U/6.3V/X5R_8

J24 J23 H25
VTT1_45 VTT1_46 VTT1_47

C530 22U/6.3V/X5R_8 C51 22U/6.3V/X5R_8 C503 22U/6.3V/X5R_8 C504 22U/6.3V/X5R_8

K26 J27 J26 J25 H27 G28 G27 G26 F26 E26 E25
VTT1_48 VTT1_49 VTT1_50 VTT1_51 VTT1_52 VTT1_53 VTT1_54 VTT1_55 VTT1_56 VTT1_57 VTT1_58

PEG & DMI

1.1V

+1.05V_VTT

VTT0_59 VTT0_60 VTT0_61 VTT0_62
P10 N10 L10 K10

C73 10U/6.3V/X5R_6 C56 10U/6.3V/X5R_6

VTT1_63 VTT1_64 VTT1_65 VTT1_66 VTT1_67 VTT1_68
J22 J20 J18 H21 H20 H19

C532 22U/6.3V/X5R_8 C166 22U/6.3V/X5R_8

1.8V

+1.8V

VCCPLL1 VCCPLL2 VCCPLL3
L26 L27 M26

C57 1U/6.3V/X5R_4 C49 1U/6.3V/X5R_4 C46 2.2U/6.3V/X5R_6 C47 4.7U/6.3V/X5R_6 C6 22U/6.3V/X5R_8

IC_AUB_CFD_rPGA_R0P9

+1.05V_VTT

R441 1K_4 R54 1K_4 R446 1K_4 R442 *1K_4@NC R69 *1K_4@NC R85 1K_4 R443 *1K_4@NC R444 1K_4 R445 *1K_4@NC

CPU_VID0
CPU_VID1
CPU_VID2
CPU_VID3
CPU_VID4
CPU_VID5
CPU_VID6
DPRSLPVR
H_PSI#

R414 *1K_4@NC R50 *1K_4@NC R419 *1K_4@NC R415 1K_4 R58 1K_4 R81 *1K_4@NC R416 1K_4 R417 *1K_4@NC R418 1K_4

VCC_CORE

C549 C583 C566 C584 C164 C128 C86 — 22U/6.3V/X5R_8

C567 C129 C85 C163 C550 C565 C582 — 22U/6.3V/X5R_8

C548 C178 C136 C91 C131 C132 C162 — 10U/6.3V/X5R_6

C90 C72 C161 C124 C149 C160 C103 — 10U/6.3V/X5R_6

C89 0.1U/10V/X5R_4 C187 0.1U/10V/X5R_4

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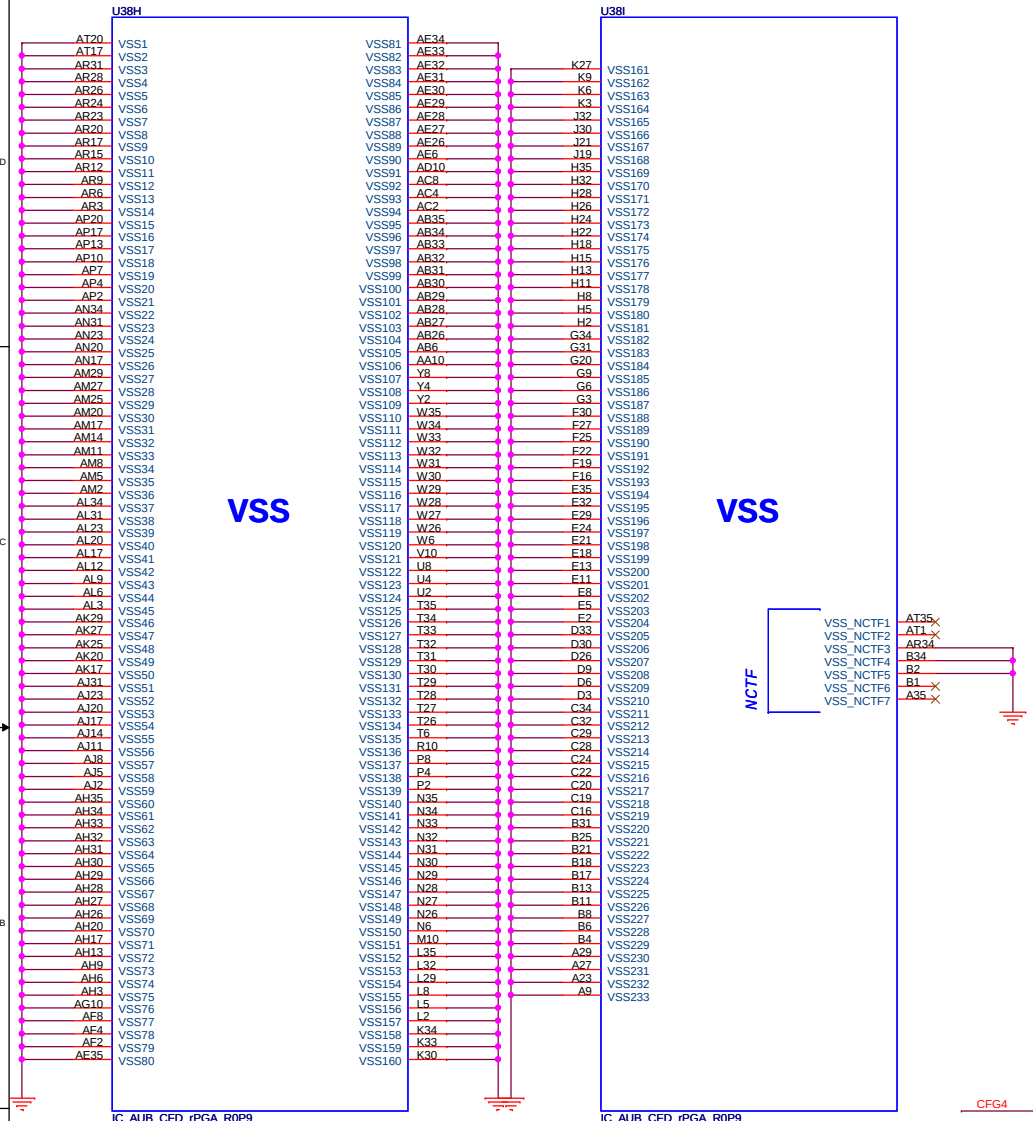
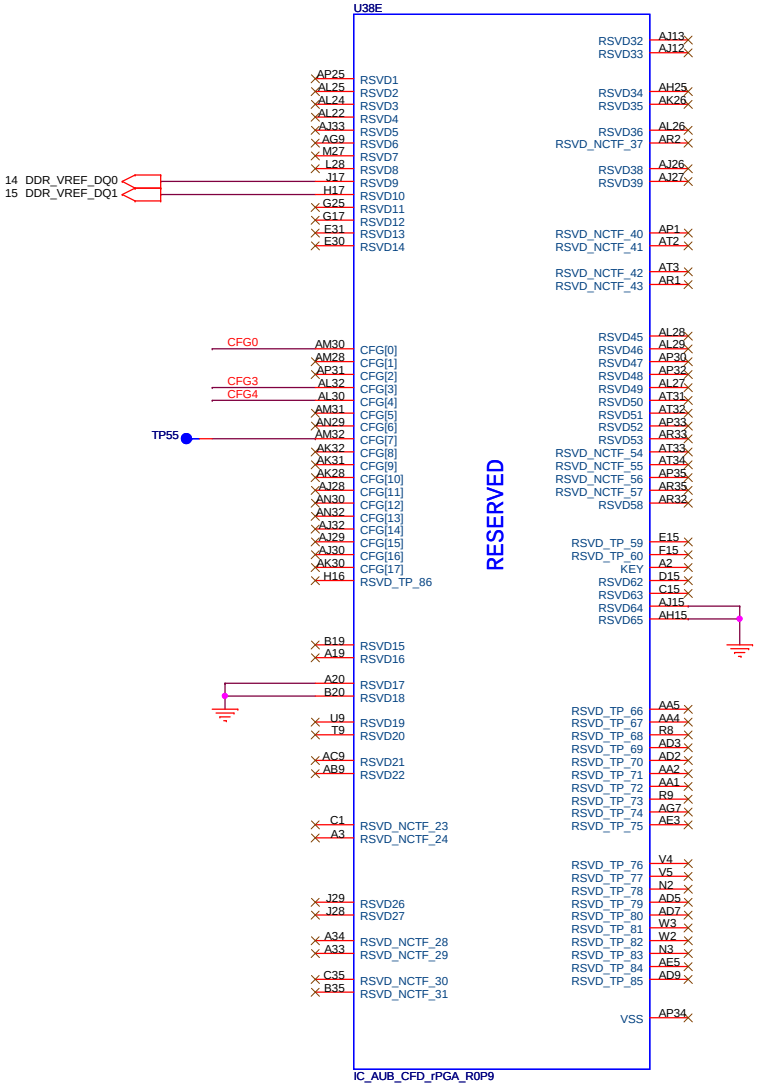
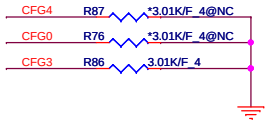
AUBURNDALE PROCESSOR (GND)



AUBURNDALE 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

LD-Note Calpella Discrete
Quanta Computer Inc.

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Custom	AUBURNDA 4/4	
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3,4,6,9,10,11,12,43,46,48,51 +1.05V_VTT
4,9,10,11,12,29,32,40,43,51 3V_S5
3,4,9,10,11,12,14,15,17,23,26,27,28,29,30,31,32,34,36,37,38,40,41,43,45,46,47,48,50,51 +3V

IBEX PEAK-M (DMI,FDI,GPIO)

U50C

DMI_RXN0 BC24 DMI0RXN
DMI_RXN1 BJ22 DMI1RXN
DMI_RXN2 AW20 DMI2RXN
DMI_RXN3 BJ20 DMI3RXN
DMI_RXP0 BD24 DMI0RXP
DMI_RXP1 BG22 DMI1RXP
DMI_RXP2 BA20 DMI2RXP
DMI_RXP3 BG20 DMI3RXP
DMI_TXN0 BE22 DMI0TXN
DMI_TXN1 BF21 DMI1TXN
DMI_TXN2 BD20 DMI2TXN
DMI_TXN3 BE18 DMI3TXN
DMI_TXP0 BD22 DMI0TXP
DMI_TXP1 BH21 DMI1TXP
DMI_TXP2 BC20 DMI2TXP
DMI_TXP3 BD18 DMI3TXP

+1.05V_VTT R494 49.9/F_4 DMI_COMP BH25 DMI_ZCOMP BF25 DMI_IRCOMP

DMI

FDI_RXN0 BA18
FDI_RXN1 BH17
FDI_RXN2 BD16
FDI_RXN3 BJ16
FDI_RXN4 BA16
FDI_RXN5 BE14
FDI_RXN6 BA14
FDI_RXN7 BC12
FDI_RXP0 BB18
FDI_RXP1 BF17
FDI_RXP2 BC16
FDI_RXP3 BG16
FDI_RXP4 AW16
FDI_RXP5 BD14
FDI_RXP6 BB14
FDI_RXP7 BD12
FDI_INT BJ14
FDI_FSYNC0 BF13
FDI_FSYNC1 BH13
FDI_LSYNC0 BJ12
FDI_LSYNC1 BG14

FDI

4,51 XDP_DBRESET# XDP_DBRESET# T6 SYS_RESET#
SYS_PWROK M6 SYS_PWROK
ICH_PWRGD B17 PWROK
PM_MPWROK K5 MEPWROK
PCH_LAN_RST# A10 LAN_RST#
4 PM_DRAM_PWRGD D9 DRAMPWROK
41 ICH_RSMRST# ICH_RSMRST# C16 RSMRST#
41 SUS_PWR_ACK R539 0_4 SUS_PWR_ACK_R M1 SUS_PWR_ACK / GPIO30
41 SIO_PWRBTN# R317 0_4 P5 PWRBTN#
51 PM_PWRBTN#_R
17,41 AC_PRESENT R319 0_4 AC_PRESENT_R P7 ACPRESENT / GPIO31
PM_BATLOW# A6 BATLOW# / GPIO72
PM_RI# F14 RI#

TP34 TP30

System Power Management

WAKE# J12 PCIE_WAKE# PCIE_WAKE# 27,32,34
CLKRUN# / GPIO32 Y1 CLKRUN# CLKRUN# 32,41
SUS_STAT# / GPIO61 P8 LPC_PD# 32
SUSCLK / GPIO62 F3 ICH_SUSCLK TP52
SLP_S5# / GPIO63 E4 SLP_S5# TP38
SLP_S4# H7 TP10 PM_SLP_S4# 41
SLP_S3# P12 TP20 SIO_SLP_S3# 41
SLP_M# K8 SLP_M# TP35
TP23 N2
PMSYNCH BJ10 PM_SYNC 4
SLP_LAN# F6 SLP_LAN# TP39

IbexPeak-M_Rev0_9

3V_S5
4,48 DELAY_VR_PWRGOOD
41 ECPWROK
U31
74AHCT1G08GW
R318 0_4 SYS_PWROK
ICH_PWRGD
R322 0_4 PM_MPWROK

+3V
CLKRUN# R533 8.2K_4
XDP_DBRESET# R567 1K_4

3V_S5
PM_RI# R275 10K_4
PM_BATLOW# R526 8.2K_4
PCIE_WAKE# R508 10K_4
AC_PRESENT_R R342 10K_4
SUS_PWR_ACK_R R540 10K_4
SLP_LAN# R324 10K_4
ICH_RSMRST# R500 10K_4
PCH_LAN_RST# R507 10K_4
ICH_PWRGD R499 10K_4

EC-C-05

IBEX PEAK-M (LVDS,DDI)

U50D

T48 L_BKLTEN
T47 L_VDD_EN
Y48 L_BKLTCTL
AB48 L_DDC_CLK
Y45 L_DDC_DATA
AB46 L_CTRL_CLK
V48 L_CTRL_DATA
AP39 LVD_IBG
AP41 LVD_VBG
AT43 LVD_VREFH
AT42 LVD_VREFL

LVDS

AV53 LVDSA_CLK#
AV51 LVDSA_CLK
BB47 LVDSA_DATA#0
BA52 LVDSA_DATA#1
AY48 LVDSA_DATA#2
AV47 LVDSA_DATA#3
BB48 LVDSA_DATA0
BA50 LVDSA_DATA1
AY49 LVDSA_DATA2
AV48 LVDSA_DATA3
AP48 LVDSB_CLK#
AP47 LVDSB_CLK
AY53 LVDSB_DATA#0
AT49 LVDSB_DATA#1
AU52 LVDSB_DATA#2
AT53 LVDSB_DATA#3
AY51 LVDSB_DATA0
AT48 LVDSB_DATA1
AU50 LVDSB_DATA2
AT51 LVDSB_DATA3

AA52 CRT_BLUE
AB53 CRT_GREEN
AD53 CRT_RED
V51 CRT_DDC_CLK
V53 CRT_DDC_DATA
Y53 CRT_HSYNC
Y51 CRT_VSYNC
AD48 DAC_IREF
AB51 CRT_IRTN

CRT

R192 1K/0.5%_4

Digital Display Interface

SDVO_TVCLKINN BJ46
SDVO_TVCLKINP BG46
SDVO_STALLN BJ48
SDVO_STALLP BG48
SDVO_INTN BF45
SDVO_INTP BH45
SDVO_CTRLCLK T51
SDVO_CTRLDATA T53

SDVO

DDPB_AUXN BG44
DDPB_AUXP BJ44
DDPB_HPD AU38
DDPB_0N BD42
DDPB_0P BC42
DDPB_1N BJ42
DDPB_1P BG42
DDPB_2N BB40
DDPB_2P BA40
DDPB_3N AW38
DDPB_3P BA38

Display port B

DDPC_CTRLCLK Y49
DDPC_CTRLDATA AB49
DDPC_AUXN BE44
DDPC_AUXP BD44
DDPC_HPD AV40
DDPC_0N BE40
DDPC_0P BD40
DDPC_1N BF41
DDPC_1P BH41
DDPC_2N BD38
DDPC_2P BC38
DDPC_3N BB36
DDPC_3P BA36

Display port C

DDPD_CTRLCLK U50
DDPD_CTRLDATA U52
DDPD_AUXN BC46
DDPD_AUXP BD46
DDPD_HPD AT38
DDPD_0N BJ40
DDPD_0P BG40
DDPD_1N BJ38
DDPD_1P BG38
DDPD_2N BF37
DDPD_2P BH37
DDPD_3N BE36
DDPD_3P BD36

Display port D

IbexPeak-M_Rev0_9

LD-Note Calpella Discrete
Quanta Computer Inc.

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12,41 +3VRTC
23,27,35,39,41,43,44,47,49 3VPCU
3,4,8,10,11,12,14,15,17,23,26,27,28,29,30,31,32,34,36,37,38,40,41,43,45,46,47,48,50,51 +3V
4,8,10,11,12,29,32,40,43,51 3V_S5
3,4,6,8,10,11,12,43,46,48,51 +1.05V_VTT

RTC Circuitry

CMOS Settings	J5
Clear CMOS	1-2
Save CMOS	1-X (Default)

TPM Settings	J4
Clear ME RTC registers	1-2
Save ME RTC registers	1-X (Default)

Cap values depend on Xtal

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

Place all series terms close to PCH except for SDIN input lines,which should be close to source.Placement of R773, R775, R776 & R777 should equal distance to the T split trace point. Basically, keep the same distance from T for all series termination resistors.

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.

No Reboot Strap

Place near connector

IBEX PEAK-M (HDA,JTAG,SATA)

U50A

RTC: RTCX1 B13, RTCX2 D13, RTCRST# C14, SRTCRST# D17, INTRUDER# A16, INTVRMEN A14
LPC: FWH0 / LAD0 D33, FWH1 / LAD1 B33, FWH2 / LAD2 C32, FWH3 / LAD3 A32, FWH4 / LFRAME# C34, LDRQ0# A34, LDRQ1# / GPIO23 F34, SERIRQ AB9
IHDA: HDA_BCLK A30, HDA_SYNC D29, SPKR P1, HDA_RST# C30, HDA_SDIN0 G30, HDA_SDIN1 F30, HDA_SDIN2 E32, HDA_SDIN3 F32, HDA_SDO B29
SATA: SATA0RXN AK7, SATA0RXP AK6, SATA0TXN AK11, SATA0TXP AK9, SATA1RXN AH6, SATA1RXP AH5, SATA1TXN AH9, SATA1TXP AH8, SATA2RXN AF11, SATA2RXP AF9, SATA2TXN AF7, SATA2TXP AF6, SATA3RXN AH3, SATA3RXP AH1, SATA3TXN AF3, SATA3TXP AF1, SATA4RXN AD9, SATA4RXP AD8, SATA4TXN AD6, SATA4TXP AD5, SATA5RXN AD3, SATA5RXP AD1, SATA5TXN AB3, SATA5TXP AB1, SATAICOMPO AF16, SATAICOMPI AF15, SATALED# T3, SATA0GP / GPIO21 Y9, SATA1GP / GPIO19 V1
JTAG: JTAG_TCK M3, JTAG_TMS K3, JTAG_TDI K1, JTAG_TDO J2, JTAG_RST# J4
SPI: SPI_CLK BA2, SPI_CS0# AV3, SPI_CS1# AY3, SPI_MOSI AY1, SPI_MISO AV1

IbexPeak-M_Rev0_9

SATA HDD
SATA ODD
E-SATA

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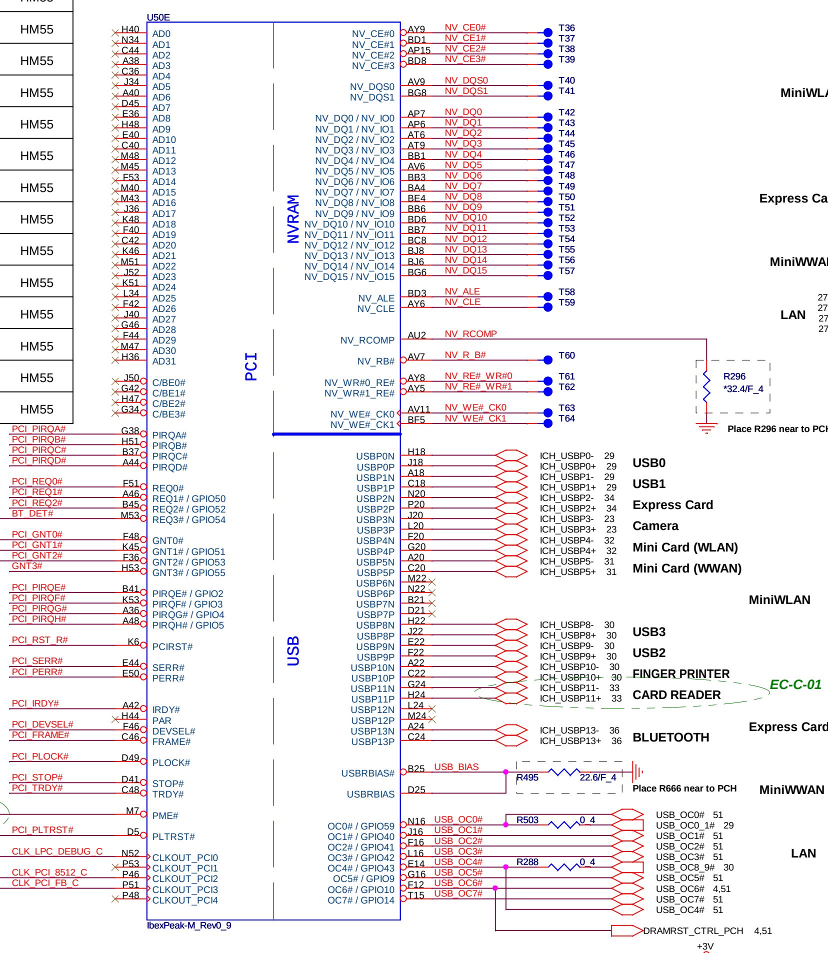
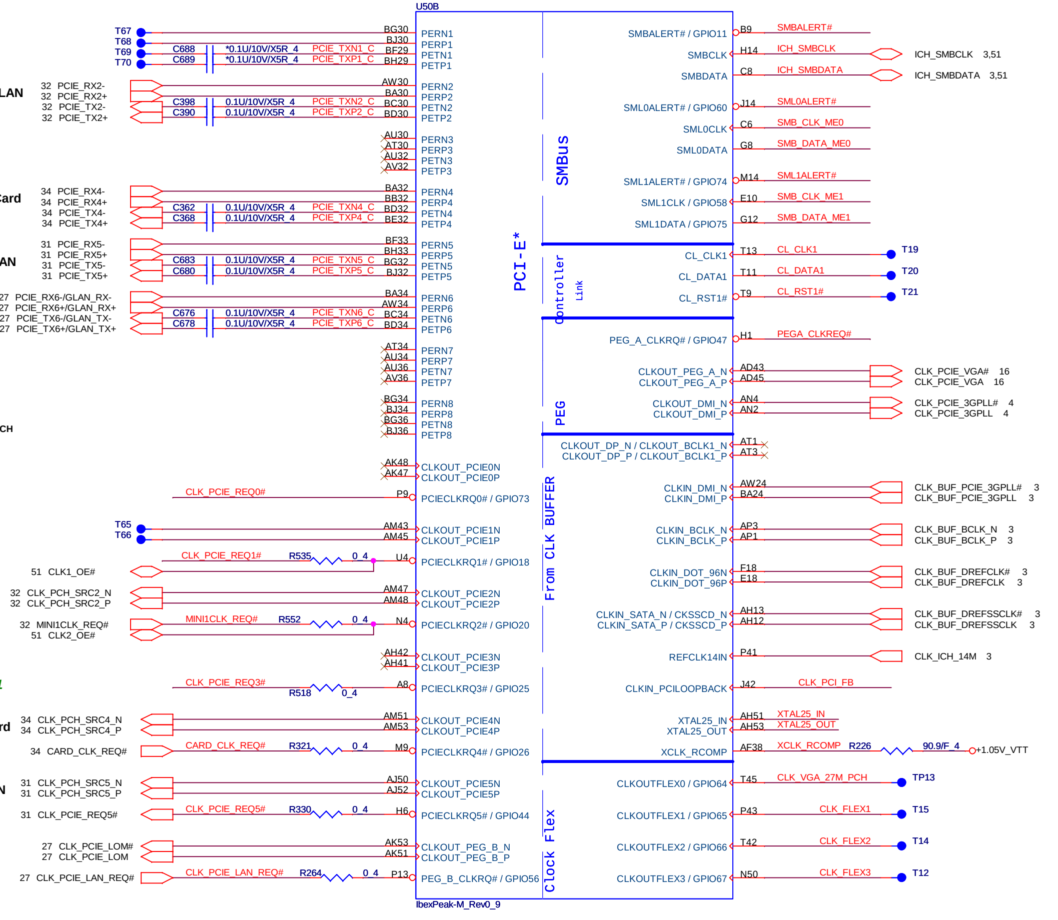
3,4,8,9,11,12,14,15,17,23,26,27,28,29,30,31,32,34,36,37,38,40,41,43,45,46,47,48,50,51 +3V
4,8,9,11,12,29,32,40,43,51 3V_S5
3,4,6,8,9,11,12,43,46,48,51 +1.05V_VTT
6,12,17,18,21,22,43,50 +1.8V

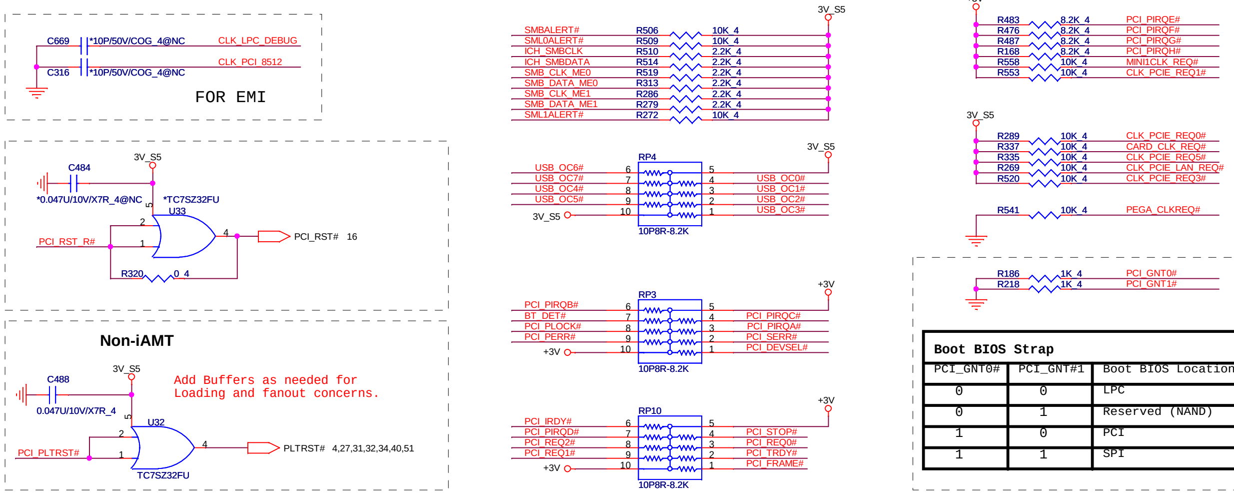
USB Port	Device	PM55 (Support)	HM55 (Support)	DV-Stage
Port 0	USB Port	V	V	HM55
Port 1	USB Port	V	V	HM55
Port 2	New Card	V	V	HM55
Port 3	Camera	V	V	HM55
Port 4	WLAN	V	V	HM55
Port 5	WWAN	V	V	HM55
Port 6	Card Reader	V	X	HM55
Port 7	NC	V	X	HM55
Port 8	USB Port	V	V	HM55
Port 9	USB Port	V	V	HM55
Port 10	Finger print	V	V	HM55
Port 11	NC	V	V	HM55
Port 12	NC	V	V	HM55
Port 13	Bluetooth	V	V	HM55

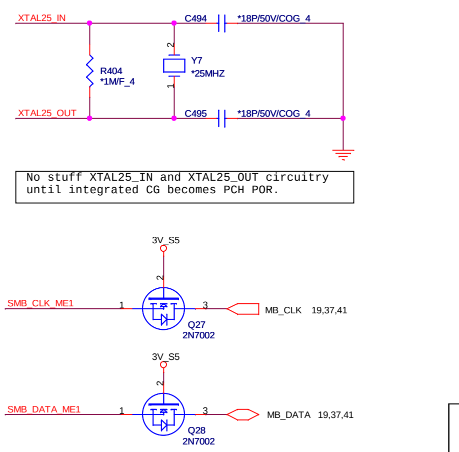
IBEX PEAK-M (PCI,USB,NVRAM)



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







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

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

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Quanta Computer Inc.

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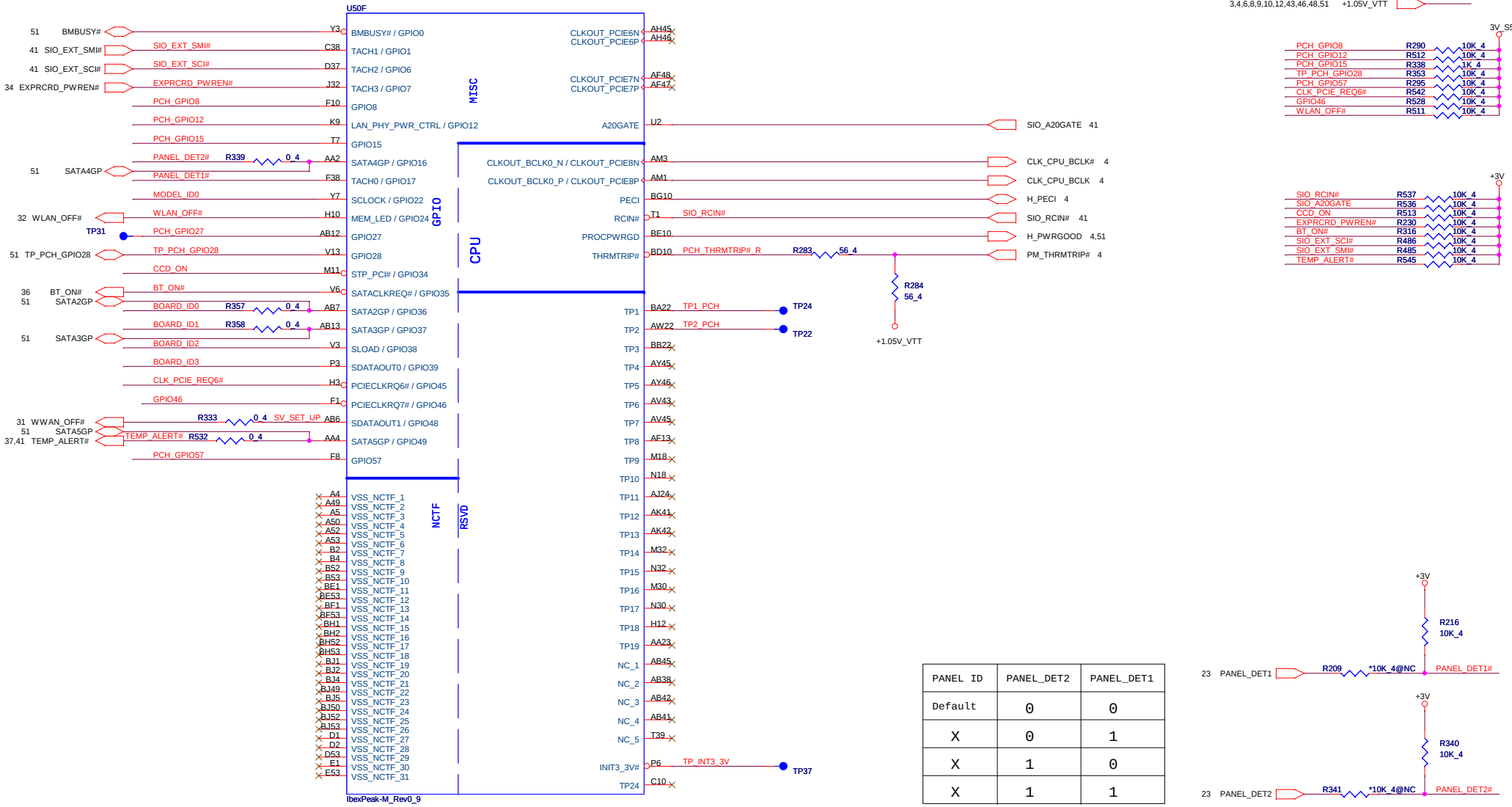
IBEX PEAK-M (GPIO,VSS_NCTF,RSVD)

3,4,8,9,10,12,14,15,17,23,26,27,28,29,30,31,32,34,36,37,38,40,41,43,45,46,47,48,50,51 +3V
4,8,9,10,12,29,32,40,43,51 3V_S5
3,4,6,8,9,10,12,43,46,48,51 +1.05V_VTT



Board ID

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

Model ID

Model ID	MODEL_ID0	MODEL_ID1
13"	0	0
14"	0	1
15"	1	0
Default	1	1

PANEL ID	PANEL_DET2	PANEL_DET1
Default	0	0
X	0	1
X	1	0
X	1	1

SV_SET_UP	1-X High = Strong (Default)

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Quanta Computer Inc.

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3,4,8,9,10,11,14,15,17,23,26,27,28,29,30,31,32,34,36,37,38,40,41,43,45,46,47,48,50,51 +3V
4,8,9,10,11,29,32,40,43,51 3V_S5
29,43 5V_S5
18,24,25,26,28,35,37,39,41,43 +5V
3,4,6,8,9,10,11,43,46,48,51 +1.05V_VTT
6,10,17,18,21,22,43,50 +1.8V
9,41 +3VRTC

VccCORE : 1432mA max
VccIO : 3062mA max
Vcc3_3 : 357mA max
VccDAC : 69mA max
VccLAN : 320mA max
VccME : 1849mA max
VccVRM : 196mA max
VccDMI : 58mA max
VccPNAND : 156mA max
VccME3_3 : 85mA max
V_CPU_IO : <1mA max
VccRTC : 2mA max
VccADPLLA : 68mA max
VccADPLLB : 69mA max
VccSUS3_3 : 163mA max
V5REF_SUS : <1mA max
V5REF : <1mA max
VccSUSHDA : 6mA max

U50G
POWER
VCC CORE
CRT
LVDS
HVCMOS
DMI
PCI E*
SPI
NAND
FDI
VCCORE[1] AB24
VCCORE[2] AB26
VCCORE[3] AB28
VCCORE[4] AD26
VCCORE[5] AD28
VCCORE[6] AF26
VCCORE[7] AF28
VCCORE[8] AF30
VCCORE[9] AF31
VCCORE[10] AH26
VCCORE[11] AH28
VCCORE[12] AH30
VCCORE[13] AH31
VCCORE[14] AJ30
VCCORE[15] AJ31
VCCIO[24] AK24
VCCAPLLEXP BJ24
VCCIO[25] AN20
VCCIO[26] AN22
VCCIO[27] AN23
VCCIO[28] AN24
VCCIO[29] AN26
VCCIO[30] AN28
VCCIO[31] BJ26
VCCIO[32] BJ28
VCCIO[33] AT26
VCCIO[34] AT28
VCCIO[35] AU26
VCCIO[36] AU28
VCCIO[37] AV26
VCCIO[38] AV28
VCCIO[39] AW26
VCCIO[40] AW28
VCCIO[41] BA26
VCCIO[42] BA28
VCCIO[43] BB26
VCCIO[44] BB28
VCCIO[45] BC26
VCCIO[46] BC28
VCCIO[47] BD26
VCCIO[48] BD28
VCCIO[49] BE26
VCCIO[50] BE28
VCCIO[51] BG26
VCCIO[52] BG28
VCCIO[53] BH27
VCCIO[54] AN30
VCCIO[55] AN31
VCC3_3[1] AN35
VCCVRM[1] AT22
VCCFDIPLL BJ18
VCCIO[1] AM23
VCCADAC[1] AE50
VCCADAC[2] AE52
VSSA_DAC[1] AF53
VSSA_DAC[2] AF51
VCCALVDS AH38
VSSA_LVDS AH39
VCCTX_LVDS[1] AP43
VCCTX_LVDS[2] AP45
VCCTX_LVDS[3] AT46
VCCTX_LVDS[4] AT45
VCC3_3[2] AB34
VCC3_3[3] AB35
VCC3_3[4] AD35
VCCVRM[2] AT24
VCCDMI[1] AT16
VCCDMI[2] AU16
VCCPNAND[1] AM16
VCCPNAND[2] AK16
VCCPNAND[3] AK20
VCCPNAND[4] AK19
VCCPNAND[5] AK15
VCCPNAND[6] AK13
VCCPNAND[7] AM12
VCCPNAND[8] AM13
VCCPNAND[9] AM15
VCCME3_3[1] AM8
VCCME3_3[2] AM9
VCCME3_3[3] AP11
VCCME3_3[4] AP9
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U50J
POWER
USB
Clock and Miscellaneous
PCI/GPIO/LPC
SATA
CPU
RTC
HDA
VCCACLK[1] AP51
VCCACLK[2] AP53
VCCLAN[1] AF23
VCCLAN[2] AF24
DCPSUSBYP Y20
VCCME[1] AD38
VCCME[2] AD39
VCCME[3] AD41
VCCME[4] AF43
VCCME[5] AF41
VCCME[6] AF42
VCCME[7] V39
VCCME[8] V41
VCCME[9] V42
VCCME[10] Y39
VCCME[11] Y41
VCCME[12] Y42
DCPRTC V9
VCCVRM[3] AU24
VCCADPLLA[1] BB51
VCCADPLLA[2] BB53
VCCADPLLB[1] BD51
VCCADPLLB[2] BD53
VCCIO[21] AH23
VCCIO[22] AJ35
VCCIO[23] AH35
VCCIO[2] AF34
VCCIO[3] AH34
VCCIO[4] AF32
DCPSST V12
DCPSUS Y22
VCCSUS3_3[29] P18
VCCSUS3_3[30] U19
VCCSUS3_3[31] U20
VCCSUS3_3[32] U22
VCC3_3[5] V15
VCC3_3[6] V16
VCC3_3[7] Y16
V_CPU_IO[1] AT18
V_CPU_IO[2] AU18
VCCRTC A12
IbexPeak-M_Rev0_9
VCCIO[5] V24
VCCIO[6] V26
VCCIO[7] Y24
VCCIO[8] Y26
VCCSUS3_3[1] V28
VCCSUS3_3[2] U28
VCCSUS3_3[3] U26
VCCSUS3_3[4] U24
VCCSUS3_3[5] P28
VCCSUS3_3[6] P26
VCCSUS3_3[7] N28
VCCSUS3_3[8] N26
VCCSUS3_3[9] M28
VCCSUS3_3[10] M26
VCCSUS3_3[11] L28
VCCSUS3_3[12] L26
VCCSUS3_3[13] J28
VCCSUS3_3[14] J26
VCCSUS3_3[15] H28
VCCSUS3_3[16] H26
VCCSUS3_3[17] G28
VCCSUS3_3[18] G26
VCCSUS3_3[19] F28
VCCSUS3_3[20] F26
VCCSUS3_3[21] E28
VCCSUS3_3[22] E26
VCCSUS3_3[23] C28
VCCSUS3_3[24] C26
VCCSUS3_3[25] B27
VCCSUS3_3[26] A28
VCCSUS3_3[27] A26
VCCSUS3_3[28] U23
VCCIO[56] V23
V5REF_SUS F24
V5REF K49
VCC3_3[8] J38
VCC3_3[9] L38
VCC3_3[10] M36
VCC3_3[11] N36
VCC3_3[12] P36
VCC3_3[13] U35
VCC3_3[14] AD13
VCCSATAPLL[1] AK3
VCCSATAPLL[2] AK1
VCCIO[9] AH22
VCCVRM[4] AT20
VCCIO[10] AH19
VCCIO[11] AD20
VCCIO[12] AF22
VCCIO[13] AD19
VCCIO[14] AF20
VCCIO[15] AF19
VCCIO[16] AH20
VCCIO[17] AB19
VCCIO[18] AB20
VCCIO[19] AB22
VCCIO[20] AD22
VCCME[13] AA34
VCCME[14] Y34
VCCME[15] Y35
VCCME[16] AA35
VCCSUSHDA L30

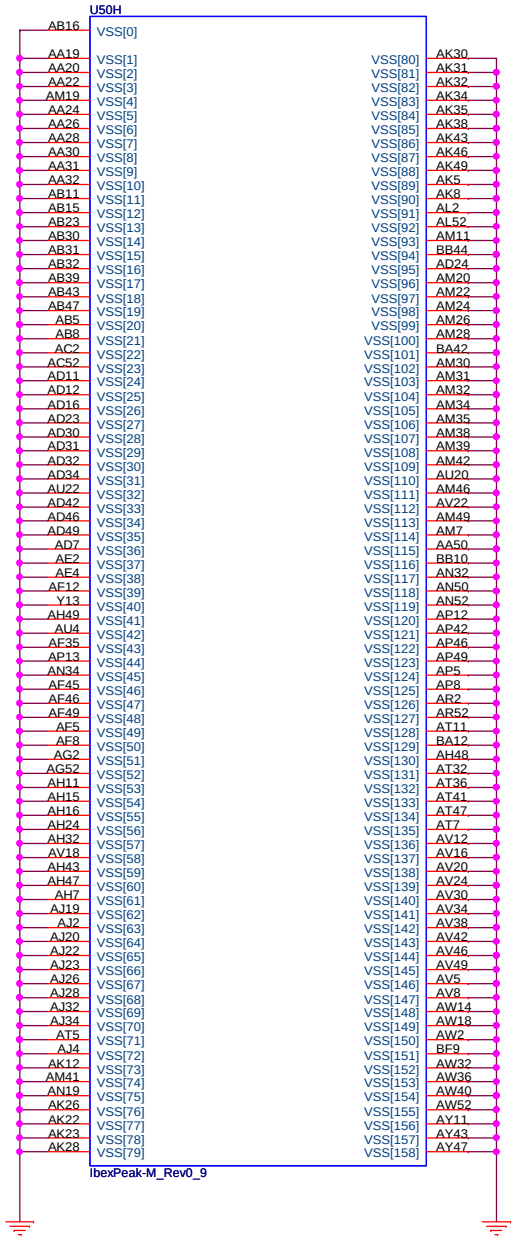
TP74 +V1.05LAN_VCCA_CLK
TP72 +V1.05LAN_VCCAPLL_EXP
TP73 +V1.05LAN_VCCAPLL_FDI
TP75 +V1.05LAN_VCCAPLL
+V1.05LAN_INT_VCCSUS
DCPSUSBYP
+VCCRTCEXT
+VCCSST
PCH_VCCDMI
PCH_V5REF_SUS
PCH_V5REF
+3V3A_1.5A_HDA_IO

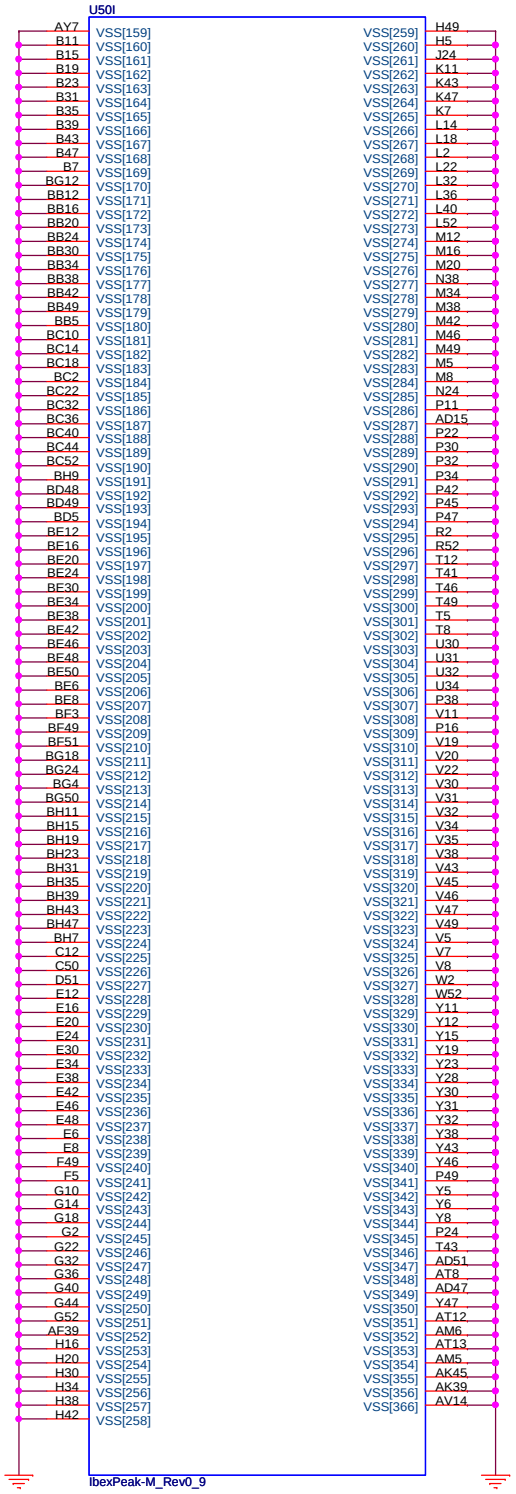
L25 180ohm@100MHz
R247 0_6 +1.05V_PCH_VCCLAN C393 1U/6.3V/X5R_4
R268 0_4
R191 0_6
R245 100_4 D11 RB500V-40
R175 100_4 D9 RB500V-40
R243 0_4

LD-Note Calpella Discrete
Quanta Computer Inc.

Size	Document Number	Rev
Custom	IBEX PEAK-M 5/6	
Date: Saturday, November 07, 2009	Sheet 12 of 55	

IBEX PEAK-M (GND)





LD-Note Calpella Discrete
Quanta Computer Inc.

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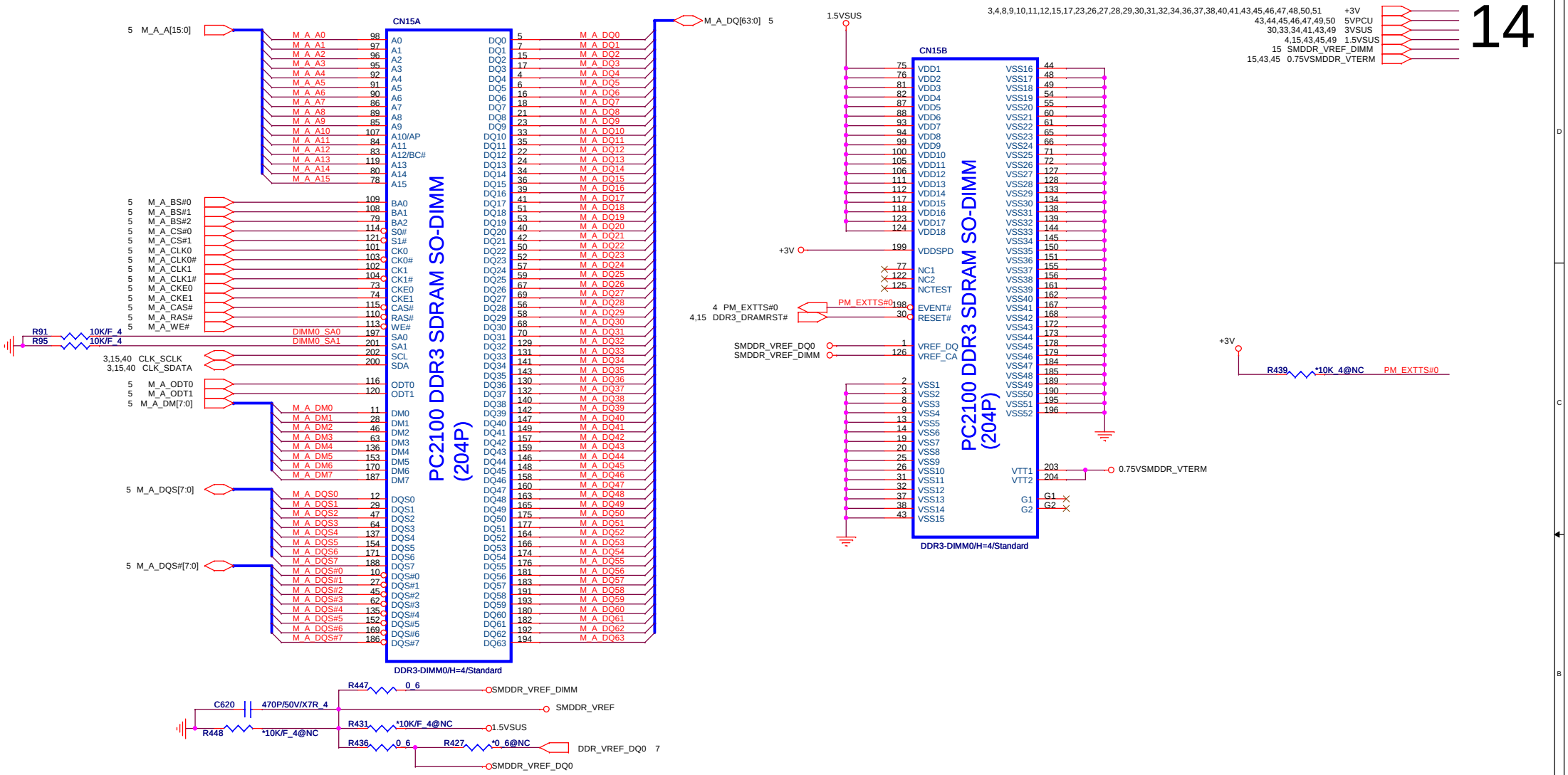
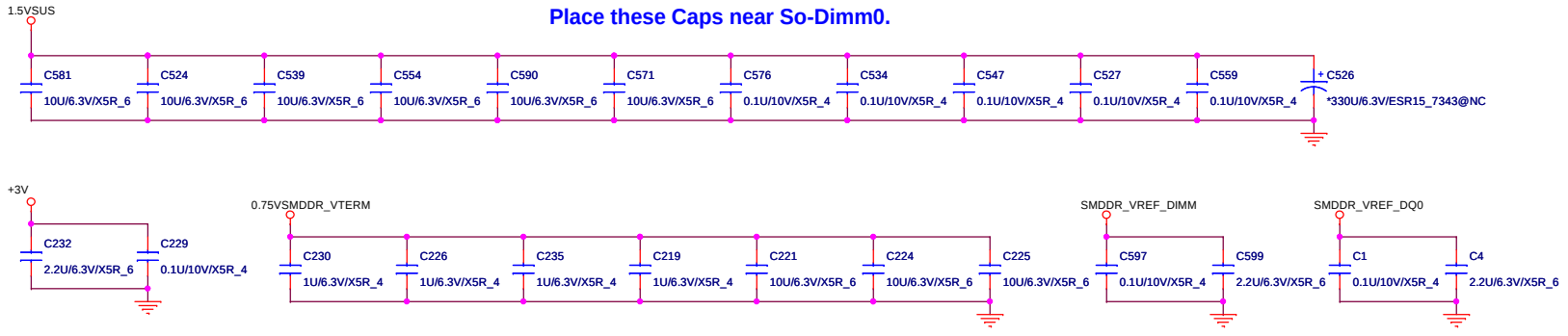
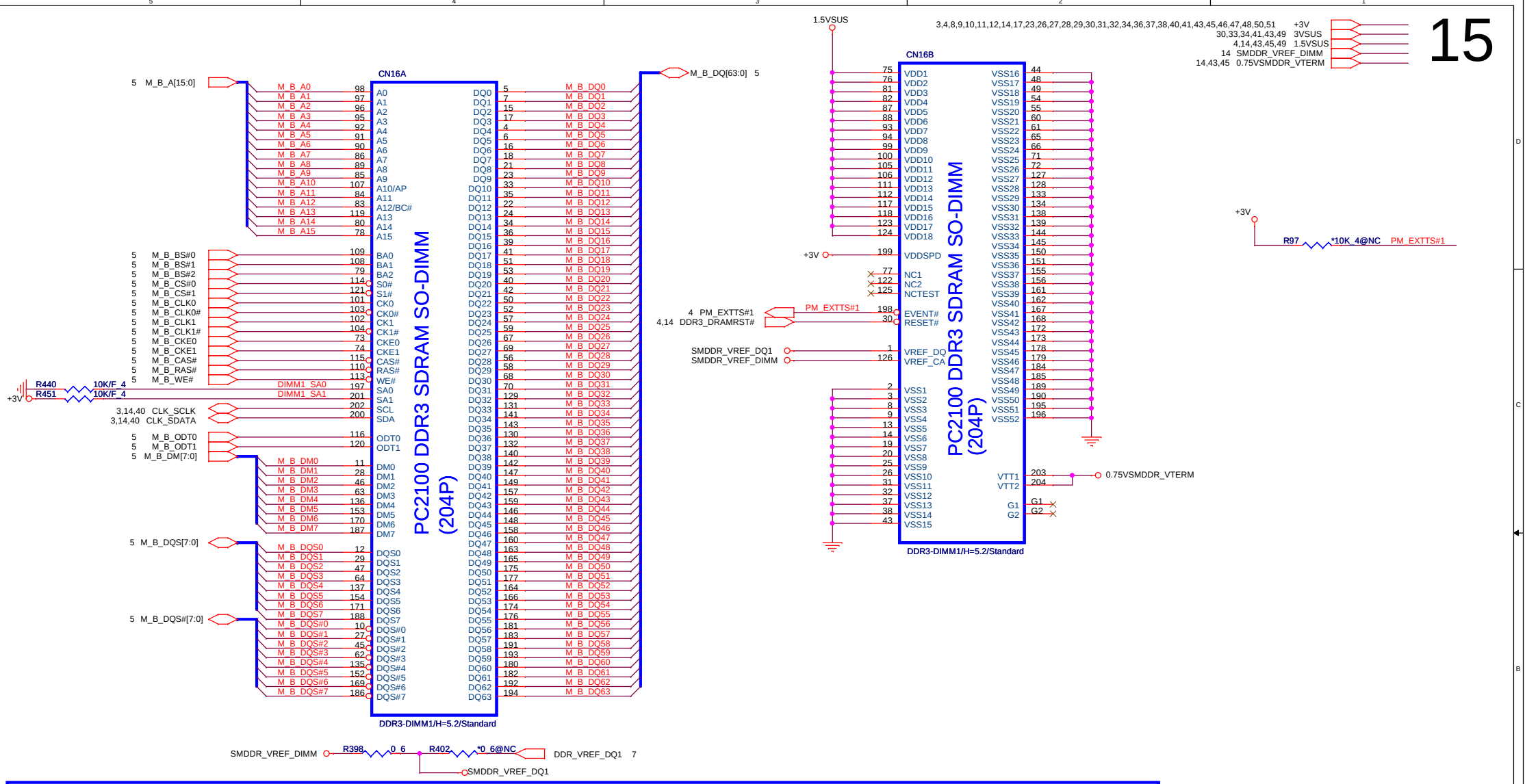


Place these Caps near So-Dimm0.

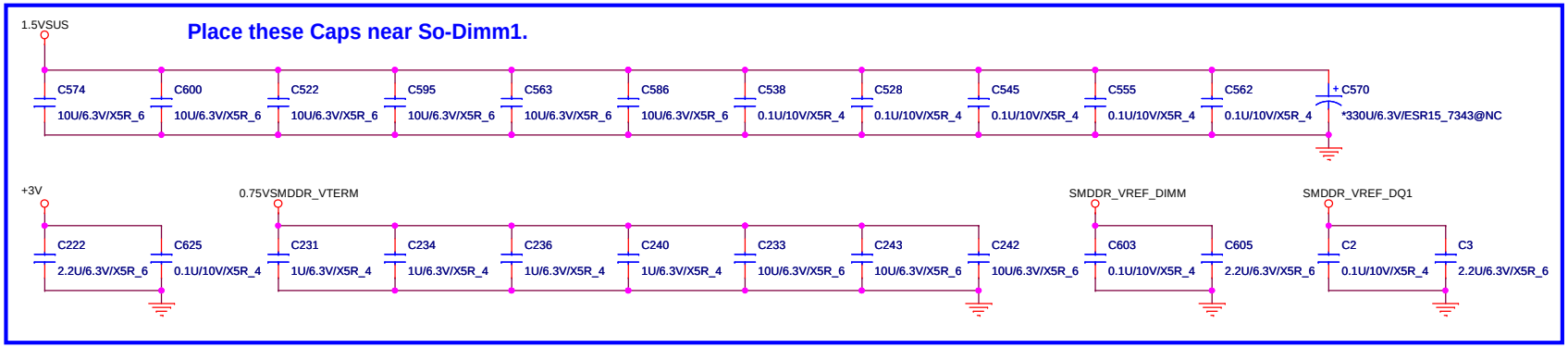


LD-Note Calpella Discrete
Quanta Computer Inc.

Size	Document Number	Rev
Custom	DDR3 DIMM-1(H=5.2)	
Date: Tuesday, November 03, 2009	Sheet 14 of 55	



Place these Caps near So-Dimm1.



LD-Note Calpella Discrete
Quanta Computer Inc.

Size	Document Number	Rev
Custom	DDR3 DIMM-1(H=9.2)	
Date: Tuesday, November 03, 2009	Sheet 15 of 55	

4 PEG_TXP[0..15]
4 PEG_TXN[0..15]

18,21,22,43,49 +1.1V_GFX_PCIE

U40A

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 R31
PCIE_CALRP Y22 PCIE_CALRP 1.27K/F_4 R28

(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

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

PEG_C_RXP0	0.1U/10V/X5R_4	C21	PEG_RXP0	
PEG_C_RXP1	0.1U/10V/X5R_4	C31	PEG_RXP1	
PEG_C_RXP2	0.1U/10V/X5R_4	C38	PEG_RXP2	
PEG_C_RXP3	0.1U/10V/X5R_4	C61	PEG_RXP3	
PEG_C_RXP4	0.1U/10V/X5R_4	C66	PEG_RXP4	
PEG_C_RXP5	0.1U/10V/X5R_4	C82	PEG_RXP5	
PEG_C_RXP6	0.1U/10V/X5R_4	C74	PEG_RXP6	
PEG_C_RXP7	0.1U/10V/X5R_4	C102	PEG_RXP7	
PEG_C_RXP8	0.1U/10V/X5R_4	C101	PEG_RXP8	
PEG_C_RXP9	0.1U/10V/X5R_4	C127	PEG_RXP9	
PEG_C_RXP10	0.1U/10V/X5R_4	C122	PEG_RXP10	
PEG_C_RXP11	0.1U/10V/X5R_4	C155	PEG_RXP11	
PEG_C_RXP12	0.1U/10V/X5R_4	C143	PEG_RXP12	
PEG_C_RXP13	0.1U/10V/X5R_4	C167	PEG_RXP13	
PEG_C_RXP14	0.1U/10V/X5R_4	C181	PEG_RXP14	
PEG_C_RXP15	0.1U/10V/X5R_4	C179	PEG_RXP15	

PEG_C_RXN0	0.1U/10V/X5R_4	C22	PEG_RXN0	
PEG_C_RXN1	0.1U/10V/X5R_4	C34	PEG_RXN1	
PEG_C_RXN2	0.1U/10V/X5R_4	C45	PEG_RXN2	
PEG_C_RXN3	0.1U/10V/X5R_4	C48	PEG_RXN3	
PEG_C_RXN4	0.1U/10V/X5R_4	C71	PEG_RXN4	
PEG_C_RXN5	0.1U/10V/X5R_4	C97	PEG_RXN5	
PEG_C_RXN6	0.1U/10V/X5R_4	C79	PEG_RXN6	
PEG_C_RXN7	0.1U/10V/X5R_4	C114	PEG_RXN7	
PEG_C_RXN8	0.1U/10V/X5R_4	C92	PEG_RXN8	
PEG_C_RXN9	0.1U/10V/X5R_4	C135	PEG_RXN9	
PEG_C_RXN10	0.1U/10V/X5R_4	C115	PEG_RXN10	
PEG_C_RXN11	0.1U/10V/X5R_4	C146	PEG_RXN11	
PEG_C_RXN12	0.1U/10V/X5R_4	C137	PEG_RXN12	
PEG_C_RXN13	0.1U/10V/X5R_4	C156	PEG_RXN13	
PEG_C_RXN14	0.1U/10V/X5R_4	C186	PEG_RXN14	
PEG_C_RXN15	0.1U/10V/X5R_4	C169	PEG_RXN15	

LD-Note Calpella Discrete
Quanta Computer Inc.

Size	Document Number	Rev
Custom	VGA-M92-XT (PCIe) 1/7	
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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

LD-Note Calpella Discrete
Quanta Computer Inc.

VGA-M92-XT (IO) 2/7

Sunday, November 08, 2009

16,21,22,43,49 +1.1V_GFX_PCIE
3,19,20,31,32,34,45 +1.5V
6,10,12,17,21,22,43,50 +1.8V
17,19,21,24,25 +3.3V_DELAY
21,43,49 +VCC_GFX_CORE
12,24,25,26,28,35,37,39,41,43 +5V

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

+1.5V
C188 1U/6.3V/X5R_4
C191 1U/6.3V/X5R_4
C189 1U/6.3V/X5R_4
C177 1U/6.3V/X5R_4
C185 0.1U/10V/X5R_4
C176 0.1U/10V/X5R_4
C174 0.1U/10V/X5R_4
C172 0.1U/10V/X5R_4
C148 0.1U/10V/X5R_4
C182 1U/6.3V/X5R_4
C206 1U/6.3V/X5R_4
C194 1U/6.3V/X5R_4
C193 1U/6.3V/X5R_4
C190 1U/6.3V/X5R_4
C175 1U/6.3V/X5R_4

+1.5V
C623 10U/6.3V/X5R_6
C648 10U/6.3V/X5R_6
C614 10U/6.3V/X5R_6
C653 10U/6.3V/X5R_6
C202 10U/6.3V/X5R_6

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

U40D
PART 4 OF 10
POWER

+1.5V
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
L5 BLM15BD121SN1D
+VDD_CT
C13 10U/6.3V/X5R_6
C96 0.1U/10V/X5R_4
C95 1U/6.3V/X5R_4
C94 1U/6.3V/X5R_4
C20 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
C84 1U/6.3V/X5R_4
C76 1U/6.3V/X5R_4
C78 0.1U/10V/X5R_4
C93 0.1U/10V/X5R_4
AA17 VDDR3#1
AA18 VDDR3#2
AB17 VDDR3#3
AB18 VDDR3#4

170mA
+1.8V
C77 1U/6.3V/X5R_4
C69 0.1U/10V/X5R_4
C83 1U/6.3V/X5R_4
C98 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
L17 BLM15BD121SN1D
+VDDRH1
C195 1U/6.3V/X5R_4
C168 1U/6.3V/X5R_4
L17 VDDRHA
L16 VSSRHA

180mA
+BBP
Q33 SI2301BDS-T1-E3
Q34 2N7002K-T1-E3
(0.9~1.2V)
+VCC_GFX_CORE
+1.8V
C100 1U/6.3V/X5R_4
R36 100K_4
+5V
17 BB_ENA
Q4 2N7002
R30 10K_4

(0.9~1.2V)
+VCC_GFX_CORE
C133 10U/6.3V/X5R_6
C111 10U/6.3V/X5R_6
C134 10U/6.3V/X5R_6

(PCIE_VDDC 1.1V @ 1A)
(1.1V)
+1.1V_GFX_PCIE
C196 10U/6.3V/X5R_6
C201 1U/6.3V/X5R_4
C165 0.1U/10V/X5R_4
C58 10U/6.3V/X5R_6
C145 1U/6.3V/X5R_4
C171 0.1U/10V/X5R_4

362mA
+1.8V
C116 1U/6.3V/X5R_4
C41 0.1U/10V/X5R_4
C75 1U/6.3V/X5R_4
C62 0.01U/25V/X7R_4
C544 10U/6.3V/X5R_6

(1.1V)
+1.1V_GFX_PCIE
1.4A
C170 1U/6.3V/X5R_4
C39 1U/6.3V/X5R_4
C199 1U/6.3V/X5R_4
C142 1U/6.3V/X5R_4
C200 1U/6.3V/X5R_4
C192 1U/6.3V/X5R_4
C126 1U/6.3V/X5R_4
C53 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

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
C120 0.1U/10V/X5R_4
C110 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

U40E
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

layout note: close to VDDC#[1:25]

(0.9~1.2V)
+VCC_GFX_CORE
C117 1U/6.3V/X5R_4
C125 1U/6.3V/X5R_4
C138 1U/6.3V/X5R_4
C153 1U/6.3V/X5R_4
C107 1U/6.3V/X5R_4
C99 1U/6.3V/X5R_4
C108 1U/6.3V/X5R_4
C147 1U/6.3V/X5R_4
C113 1U/6.3V/X5R_4
C140 1U/6.3V/X5R_4
C154 1U/6.3V/X5R_4
C139 1U/6.3V/X5R_4
C118 1U/6.3V/X5R_4

(0.9~1.2V)
(0.9~1.2V)
+VCC_GFX_CORE
+VDDCI
L15 BLM18EG221SN1D
C152 0.1U/10V/X5R_4
C151 0.1U/10V/X5R_4
C157 1U/6.3V/X5R_4
C150 1U/6.3V/X5R_4
C180 10U/6.3V/X5R_6

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Quanta Computer Inc.

Size	Document Number	Rev
Custom	VGA-M92-XT (POWER/GND) 3/7	
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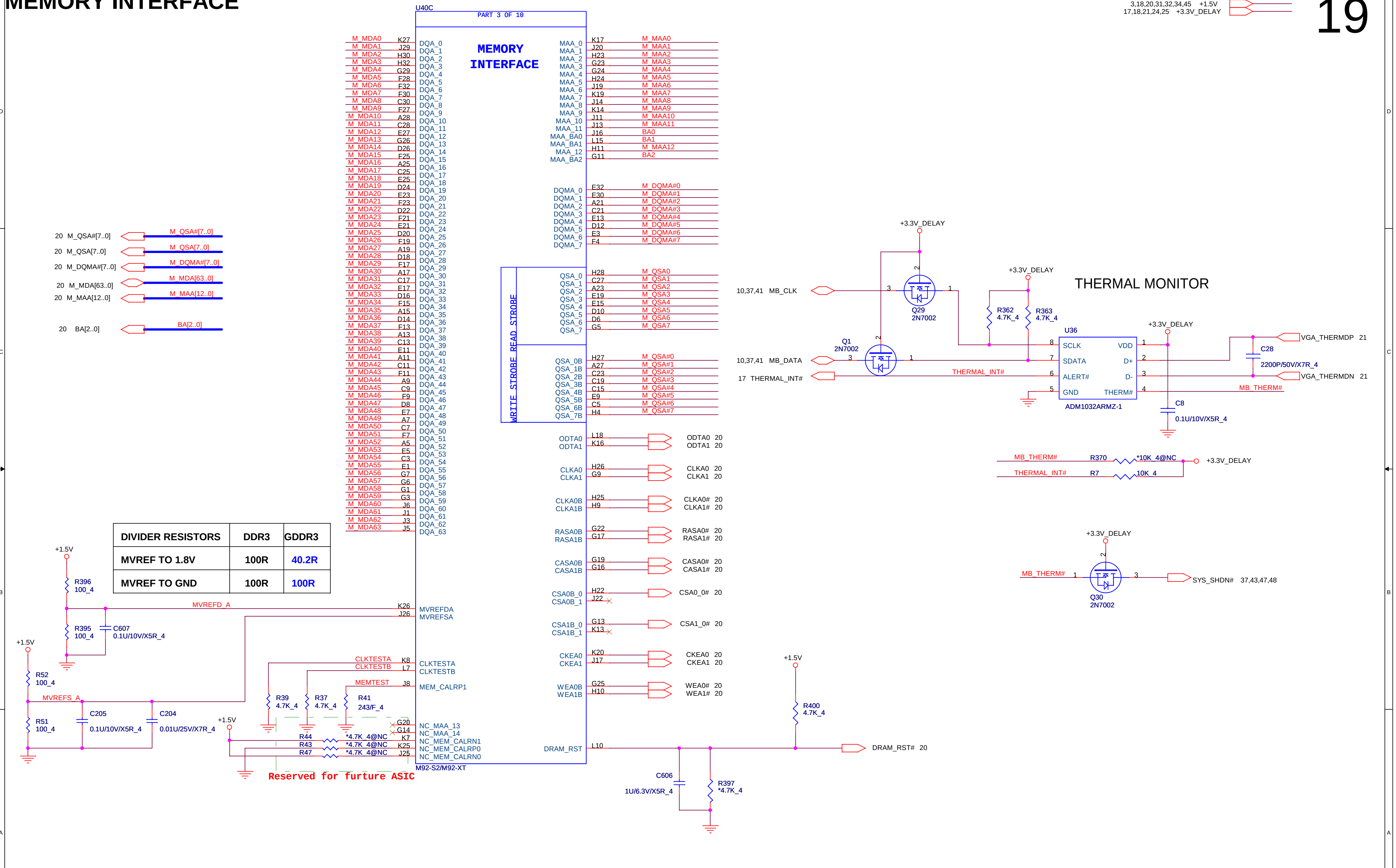
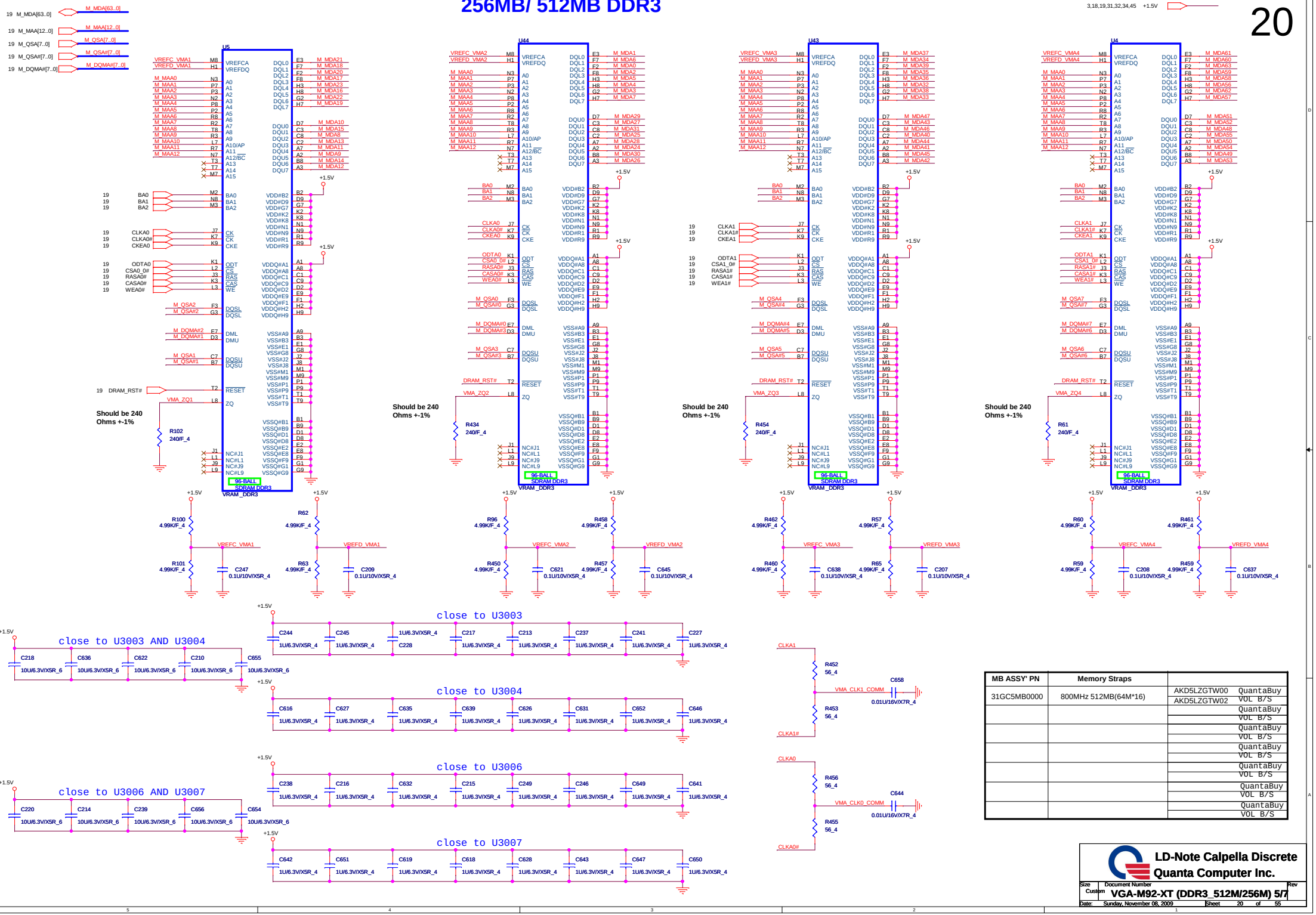
MEMORY INTERFACE



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

256MB/ 512MB DDR3



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

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Custom	VGA-M92-XT (DDR3_512M/256M) 5/7	
Date: Sunday, November 08, 2009	Sheet 20 of 55	

6,10,12,17,18,22,43,50 +1.8V
17,18,19,24,25 +3.3V_DELAY
18,43,49 +VCC_GFX_CORE

U40J
Part 10 of 10
XTAL / PLL

T11 — H7 NC_SPV18
J7 SPVSS
+SPV10 H8 SPV10
17 XTALIN AM28 XTALIN
17 XTALOUT AK28 XTALOUT

DPLL_PVDD AF14 +DPLL_PVDD
DPLL_PVSS AE14
DPLL_VDDC AD14 +DPLL_VDDC
PCIE_PVDD AM30 +PCIE_PVDD
NC_MPVP18 L8 T7

M92-S2/M92-XT

(0.9~1.2V) +VCC_GFX_CORE — L44 BLM15BD121SN1D — C601 1U/6.3V/X5R_4 — C591 1U/6.3V/X5R_4 — C592 0.1U/10V/X5R_4 — C602 0.01U/25V/X7R_4

+1.8V — 120mA — L9 BLM15BD121SN1D — C37 0.01U/25V/X7R_4 — C33 0.1U/10V/X5R_4 — C42 10U/6.3V/X5R_6 — C50 10U/6.3V/X5R_6

(1.1V) +1.1V_GFX_PCIE — 150mA — L40 BLM15BD121SN1D — C515 0.01U/25V/X7R_4 — C508 0.1U/10V/X5R_4 — C507 1U/6.3V/X5R_4 — C509 10U/6.3V/X5R_6

+1.8V — 40mA — L7 BLM15BD121SN1D — C25 1U/6.3V/X5R_4 — C24 0.01U/25V/X7R_4 — C26 0.1U/10V/X5R_4 — C30 10U/6.3V/X5R_6

U40H
Part 8 of 10
I2C / DDC / AUX

CRT
25 M92_CRT_DDCCLK — AC1 DDC6CLK
25 M92_CRT_DDCDAT — AC3 DDC6DATA

TMDP / DAC1
AUX1P AD2
AUX1N AD4
DDC1CLK AE6 — M92_LVDS_DDCCLK 23
DDC1DATA AE5 — M92_LVDS_DDCDAT 23
AUX2P AD13
AUX2N AD11
DDC2CLK AC11 — M92_DDC2_CLK 24
DDC2DATA AC13 — M92_DDC2_DAT 24

LVDS
HDMI

+3.3V_DELAY
M92_LVDS_DDCCLK — R380 2.2K_4
M92_LVDS_DDCDAT — R381 2.2K_4

LVTMDP / DAC2
DDCCLK_AUX5P AE16
DDCDATA_AUX5N AD16
NC_DDCCLK_AUX7P AD20
NC_DDCDATA_AUX7N AC20

R1 SCL
R3 SDA

M92-S2/M92-XT

20mA — +1.8V — L2 BLM15BD121SN1D — +TSVDD — C10 1U/6.3V/X5R_4 — C16 0.1U/10V/X5R_4

U40I
Part 9 of 10
TSS FDO

TSVDD AD17
TSVSS AC17
TS_FDO R5
DPLUS T4 — VGA_THERMDP 19
DMINUS T2 — VGA_THERMDN 19

M92-S2/M92-XT

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Quanta Computer Inc.

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Custom	VGA-M92-XT (XTAL/PLL/I2C) 6/7	
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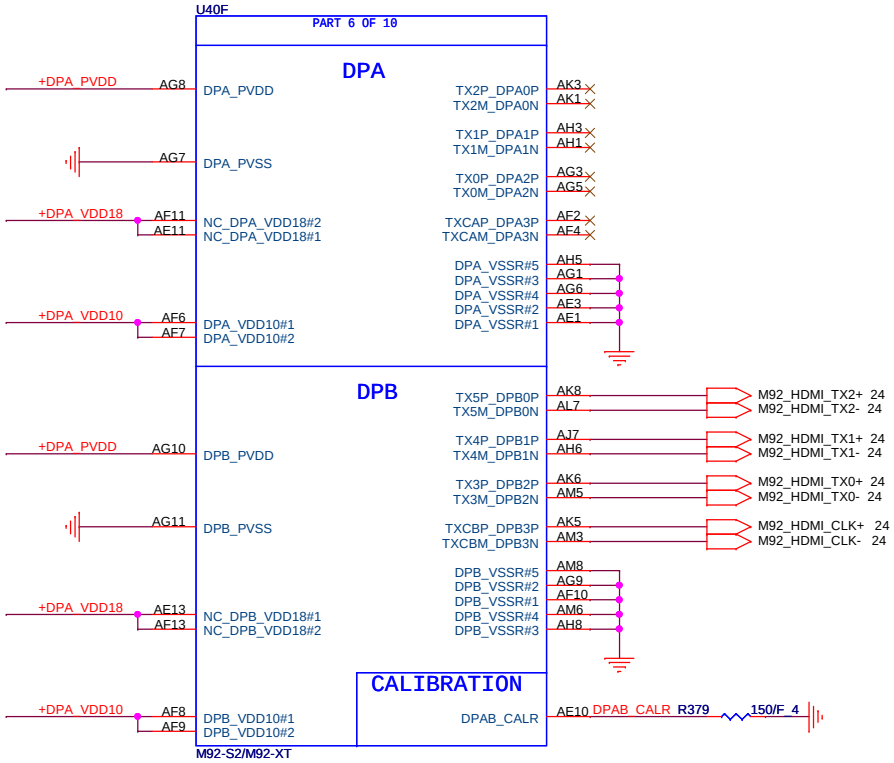
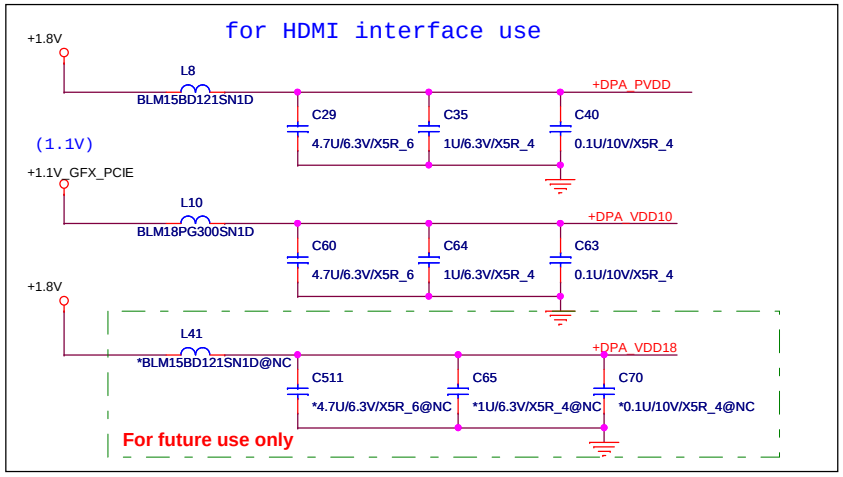
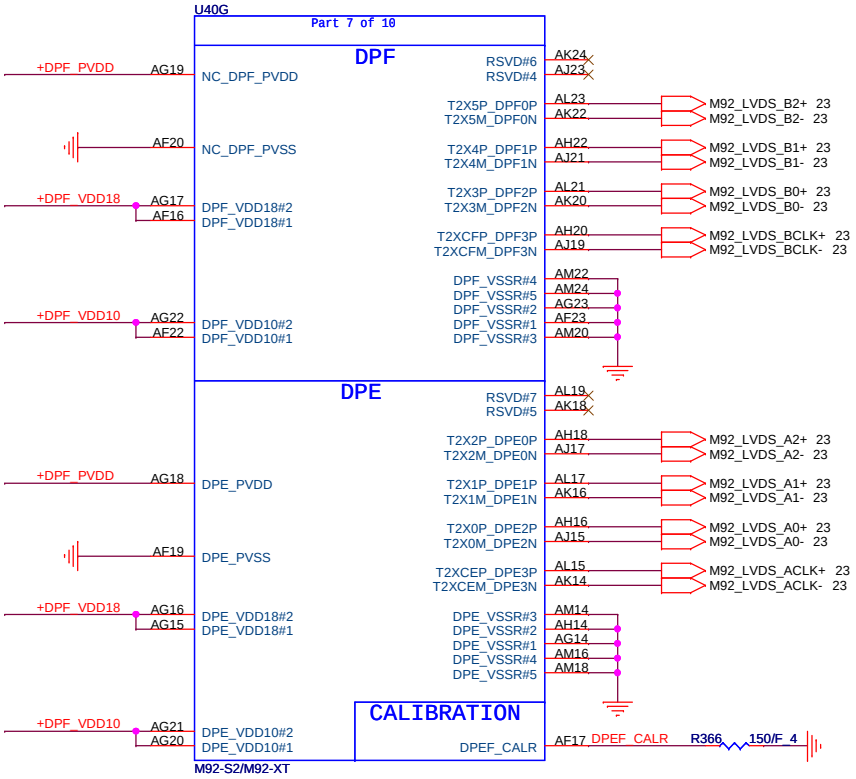
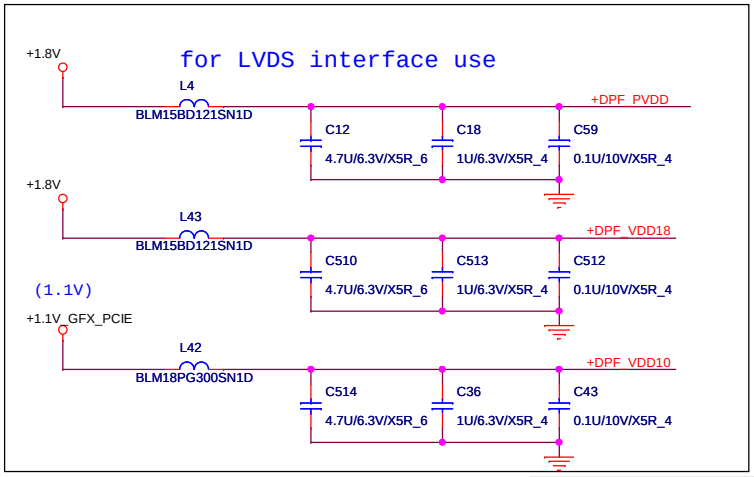
TMDP(HDMI) INTERFACE





LVDS INTERFACE





LD-Note Calpella Discrete
Quanta Computer Inc.

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Custom	VGA-M92-XT (TMDP I/F) 7/7	

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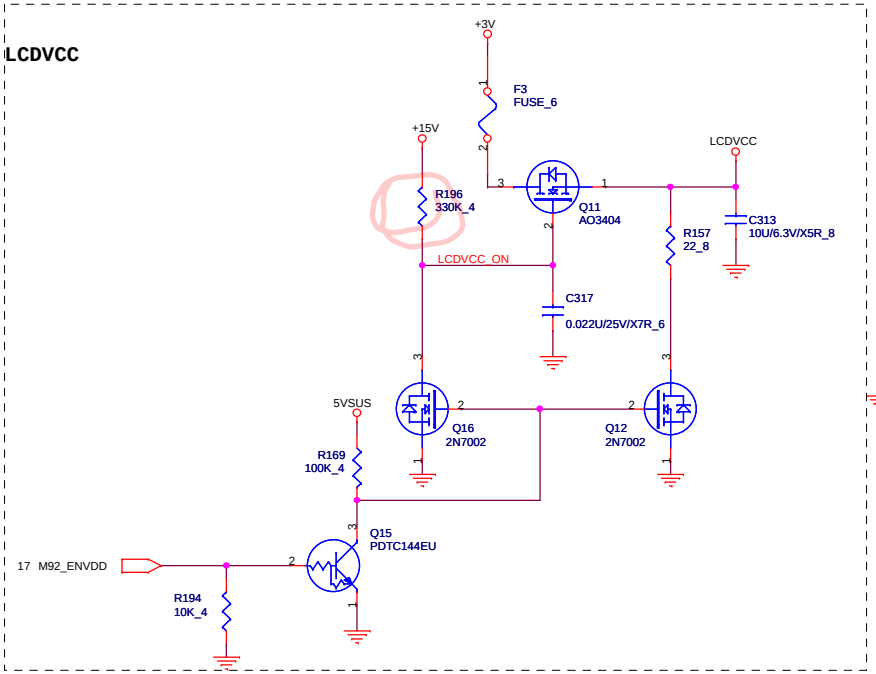
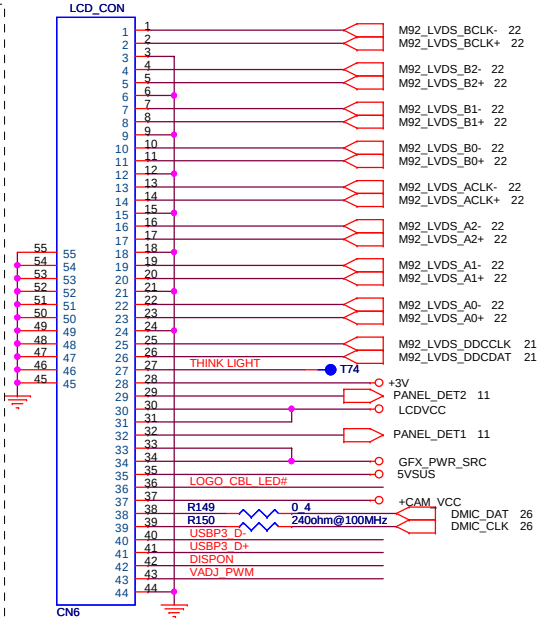
LCDVCC



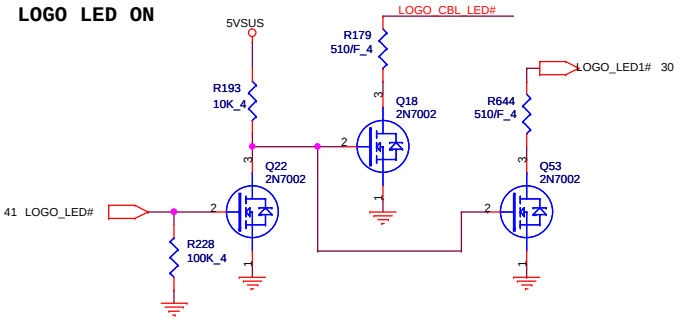
LCD_CON



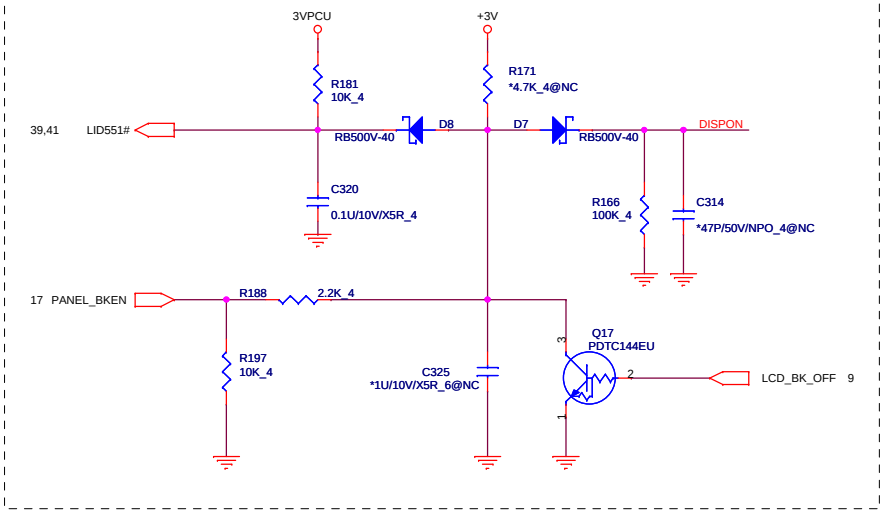
Adress : A9H --Contrast
AAH --Backlight

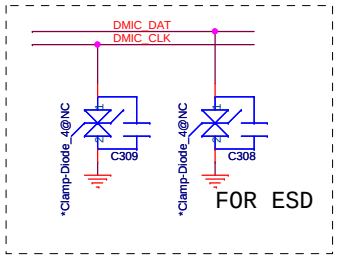
3,4,8,9,10,11,12,14,15,17,26,27,28,29,30,31,32,34,36,37,38,40,41,43,45,46,47,48,50,51 +3V
38,43,45,47 +15V
29,30,43,48 5VSUS
9,27,35,39,41,43,44,47,49 3VPCU
43,44,45,46,47,48,49,50 VIN
12,18,24,25,26,28,35,37,39,41,43 +5V

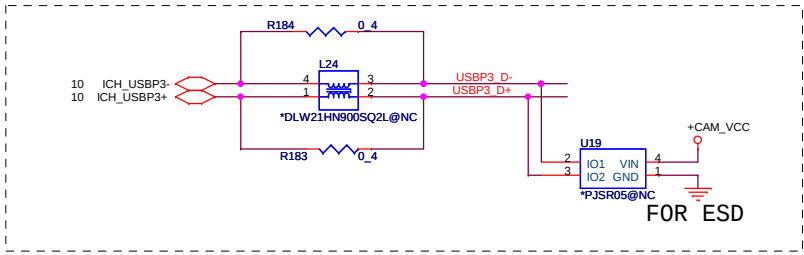
LOGO LED ON



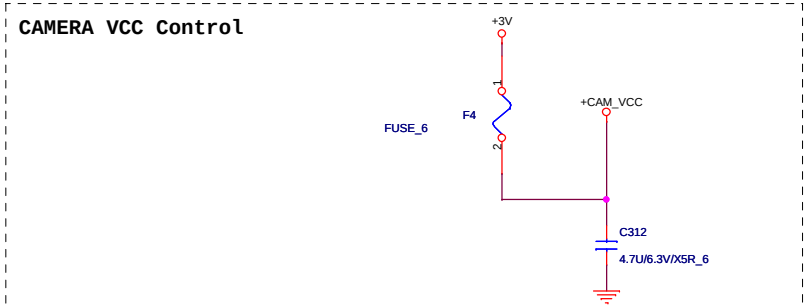
back light

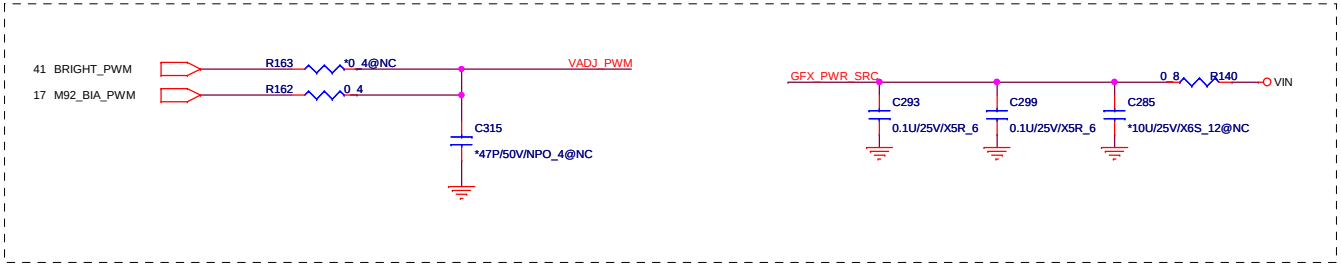






CAMERA VCC Control





LD-Note Calpella Discrete
Quanta Computer Inc.

Size	Document Number	Rev
Custom	LCD + CAMERA CONN	
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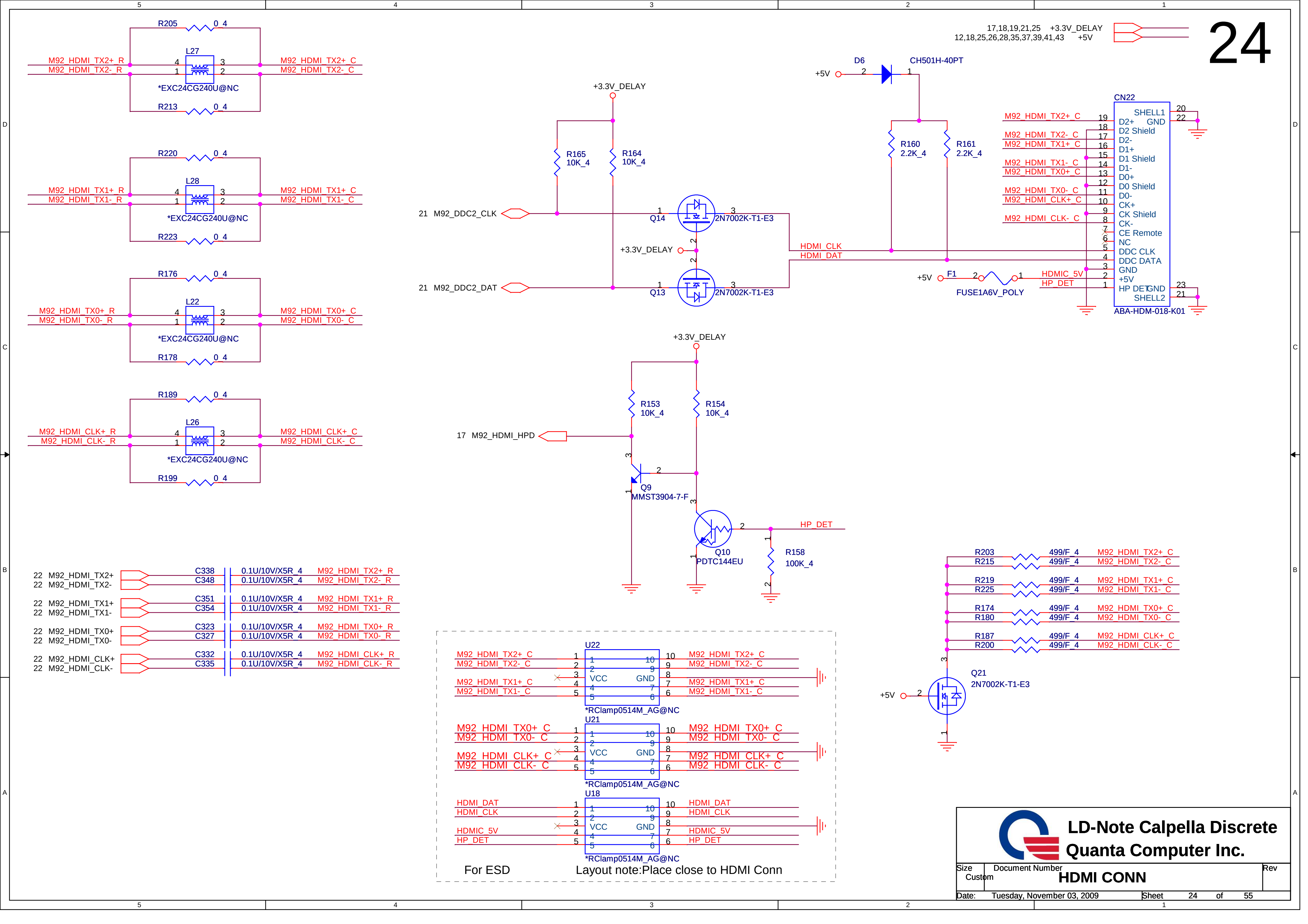
24
17,18,19,21,25 +3.3V_DELAY
12,18,25,26,28,35,37,39,41,43 +5V
R205 0_4
L27
M92_HDMI_TX2+_R
M92_HDMI_TX2-_R
M92_HDMI_TX2+_C
M92_HDMI_TX2-_C
*EXC24CG240U@NC
R213 0_4
R220 0_4
L28
M92_HDMI_TX1+_R
M92_HDMI_TX1-_R
M92_HDMI_TX1+_C
M92_HDMI_TX1-_C
*EXC24CG240U@NC
R223 0_4
R176 0_4
L22
M92_HDMI_TX0+_R
M92_HDMI_TX0-_R
M92_HDMI_TX0+_C
M92_HDMI_TX0-_C
*EXC24CG240U@NC
R178 0_4
R189 0_4
L26
M92_HDMI_CLK+_R
M92_HDMI_CLK-_R
M92_HDMI_CLK+_C
M92_HDMI_CLK-_C
*EXC24CG240U@NC
R199 0_4
+3.3V_DELAY
R165 10K_4
R164 10K_4
21 M92_DDC2_CLK
21 M92_DDC2_DAT
Q14 2N7002K-T1-E3
Q13 2N7002K-T1-E3
HDMI_CLK
HDMI_DAT
D6 CH501H-40PT
+5V
R160 2.2K_4
R161 2.2K_4
F1 FUSE1A6V_POLY
HDMIC_5V
HP_DET
CN22
SHELL1
D2+ GND
D2 Shield
D2-
D1+
D1 Shield
D1-
D0+
D0 Shield
D0-
CK+
CK Shield
CK-
CE Remote
NC
DDC CLK
DDC DATA
GND
+5V
HP DET GND
SHELL2
ABA-HDM-018-K01
R153 10K_4
R154 10K_4
17 M92_HDMI_HPD
Q9 MMST3904-7-F
Q10 PDTC144EU
R158 100K_4
22 M92_HDMI_TX2+
22 M92_HDMI_TX2-
22 M92_HDMI_TX1+
22 M92_HDMI_TX1-
22 M92_HDMI_TX0+
22 M92_HDMI_TX0-
22 M92_HDMI_CLK+
22 M92_HDMI_CLK-
C338 C348 C351 C354 C323 C327 C332 C335
0.1U/10V/X5R_4
U22 *RClamp0514M_AG@NC
U21 *RClamp0514M_AG@NC
U18 *RClamp0514M_AG@NC
VCC GND
For ESD
Layout note:Place close to HDMI Conn
R203 R215 R219 R225 R174 R180 R187 R200 499/F_4
Q21 2N7002K-T1-E3
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Quanta Computer Inc.
Size Custom
Document Number HDMI CONN
Rev
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17,18,19,21,24 +3.3V_DELAY
12,18,24,26,28,35,37,39,41,43 +5V
3,4,8,9,10,11,12,14,15,17,23,26,27,28,29,30,31,32,34,36,37,38,40,41,43,45,46,47,48,50,51 +3V

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

17 M92_CRT_RED
17 M92_CRT_GRN
17 M92_CRT_BLU

L16 BK1608LL680
L14 BK1608LL680
L13 BK1608LL680

R48 150/F_4
R45 150/F_4
R38 150/F_4

C198 5.6P/50V/COG_4
C184 5.6P/50V/COG_4
C159 5.6P/50V/COG_4
C158 5.6P/50V/COG_4
C183 5.6P/50V/COG_4
C197 5.6P/50V/COG_4

CRT_VCC
D2 RB500V-40
C121 0.1U/10V/X5R_4
+5V
F2 FUSE1A6V_POLY
CRT_VCC_R
C123 *VARISTOR_4
EC-C-07
CRT_R1
CRT_G1
CRT_B1
TP3
CRT_CONN
CN17

+5V
17 M92_CRT_VSYNC
17 M92_CRT_HSYNC
U37 AHCT1G125DCH
U39 AHCT1G125DCH
C80 0.1U/10V/X5R_4
VGAVSYNC_R
VGAHSYNC_R
R20 10_4
R29 10_4
Place near U5001,U5002 < 200 mil
CRTVSYNC1
CRTHSYNC1
C105 *10P/50V/COG_4
C68 *10P/50V/COG_4
L11 HB-1T1608-121JT
L12 HB-1T1608-121JT
C112 10P/50V/COG_4
C81 10P/50V/COG_4
CRTVSYNC
CRTHSYNC
Place near CN5000 connector < 200 mil

ESD PROTECTION
D25 TVSS5VESPT CRT_R1
D24 TVSS5VESPT CRT_G1
D23 TVSS5VESPT CRT_B1
D21 TVSS5VESPT CRTVSYNC
D22 TVSS5VESPT CRTHSYNC
D20 TVSS5VESPT DDCCLK3
D26 TVSS5VESPT DDCDAT3

AMD suggestion,change to 10K
+3.3V_DELAY
CRT_VCC
R56 10K_4
R12 10K_4
R53 2.2K_4
R14 2.2K_4
21 M92_CRT_DDCCLK
21 M92_CRT_DDCDAT
Q31 2N7002K-T1-E3
Q36 2N7002K-T1-E3
DDCCLK2
DDCDAT2
R11 0_6
R55 0_6
DDCCLK3
DDCDAT3
C203 *10P/50V/COG_4@NC
C44 *10P/50V/COG_4@NC

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Quanta Computer Inc.

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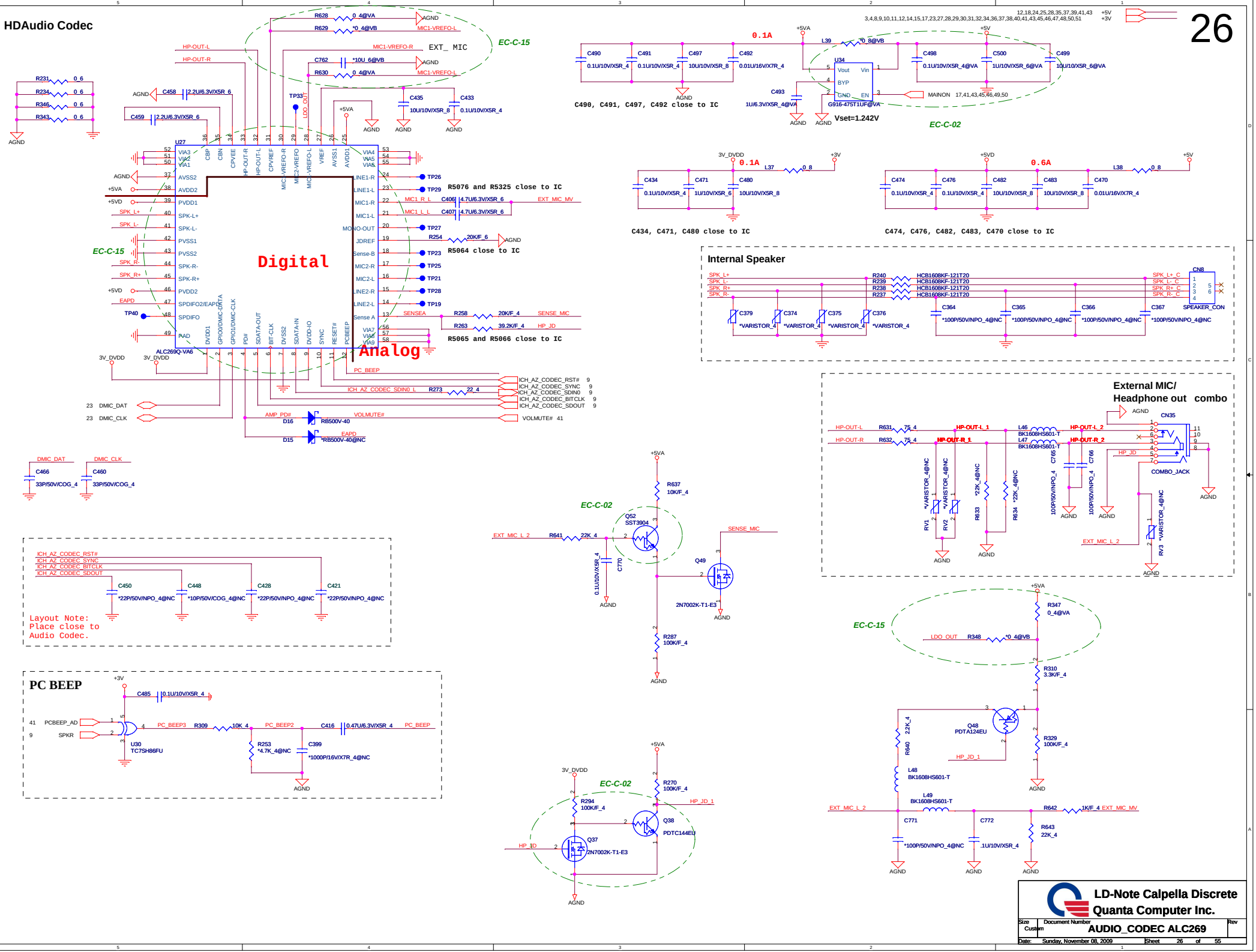
HDAudio Codec



LD-Note Calpella Discrete
Quanta Computer Inc.

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Custom	AUDIO_CODEC ALC269	
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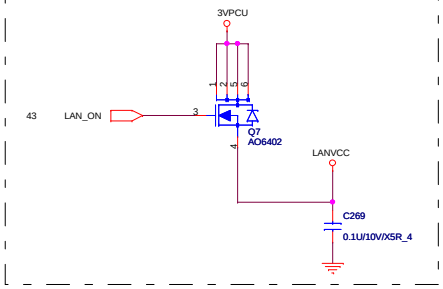
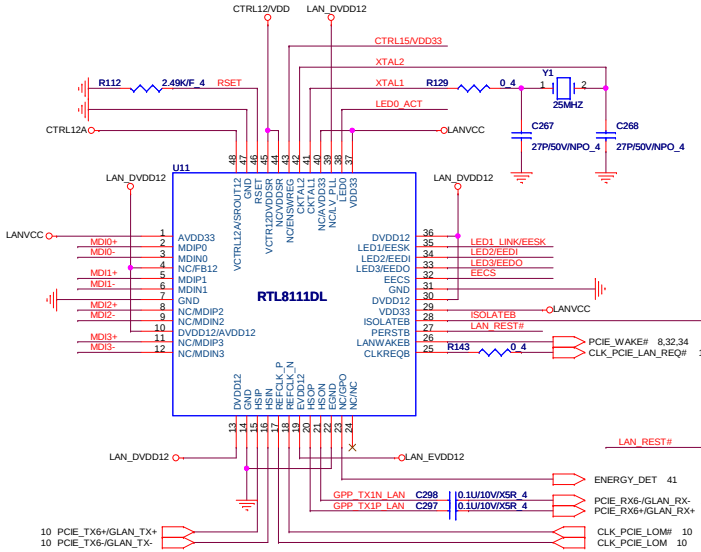
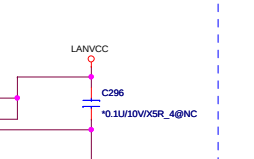
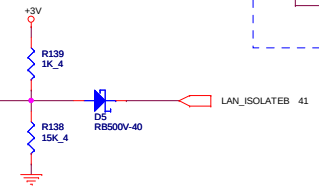
43 LANVCC
3,4,8,9,10,11,12,14,15,17,23,26,28,29,30,31,32,34,36,37,38,40,41,43,45,46,47,48,50,51 +3V
9,23,35,39,41,43,44,47,49 3VPCU

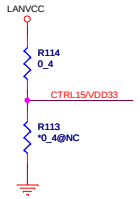
LANVCC





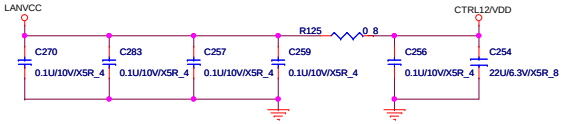






3.3V : Enable switching regulator
0V : Disable switching regulator

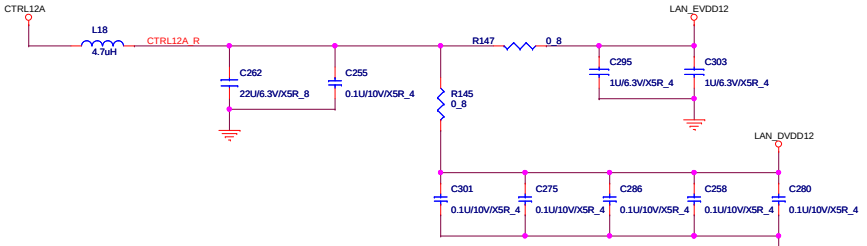
LAN_REST# R141 0_4 PLTRST# 4,10,31,32,34,40,51



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

Place C5113 ,C5094 closed to U5006 pins44,45.

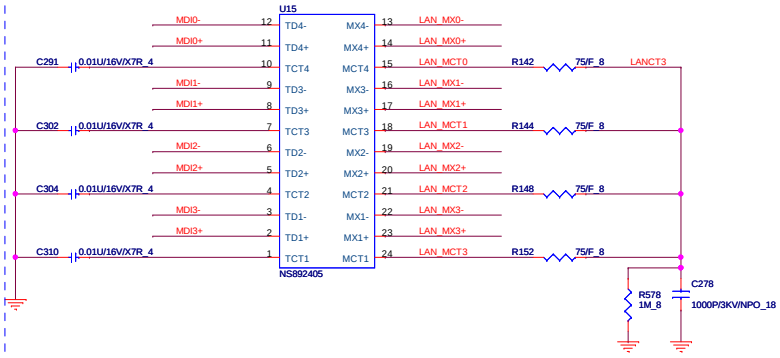
* C5116 and C5273 are for U5006 EVDD12 pin 19.



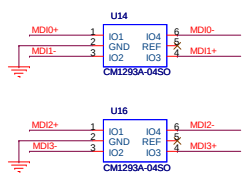
* C5119 to C5123 are for U5006 VDD12 pins-- 10, 13, 30, 36, 39.

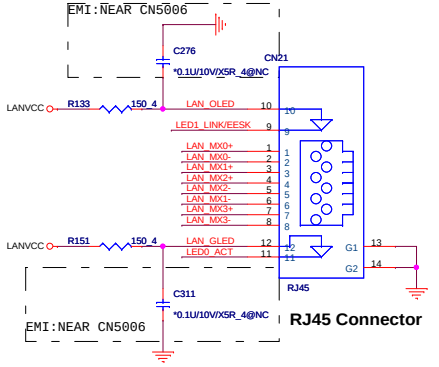
Note 1: The Trace length between L1 and 8111DL's Pin 1 must be within 0.5 cm. C5 and C8 to L1 must be within 0.5cm. Refer to Layout guide for more detail.

Tramsformer



RJ45 Connector





RJ45 Connector

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Quanta Computer Inc.

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Custom	RTL8111DL	
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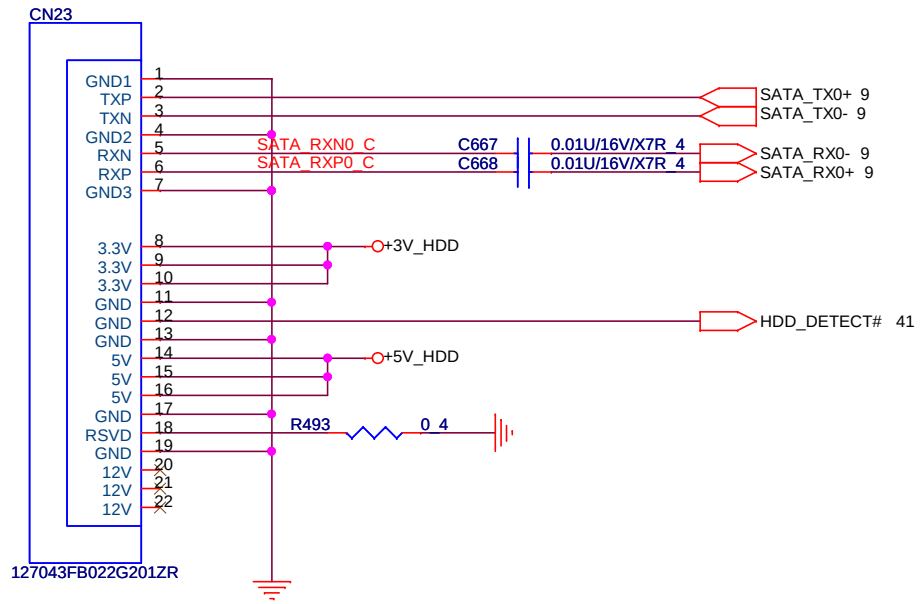
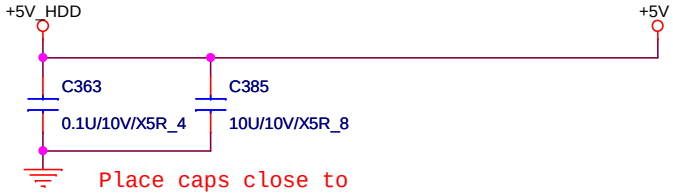
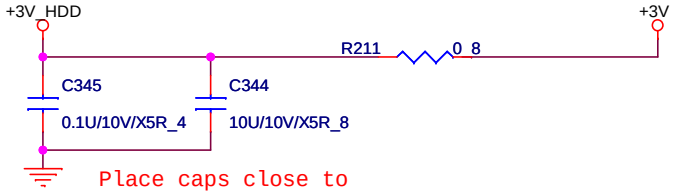
SATA Connector.

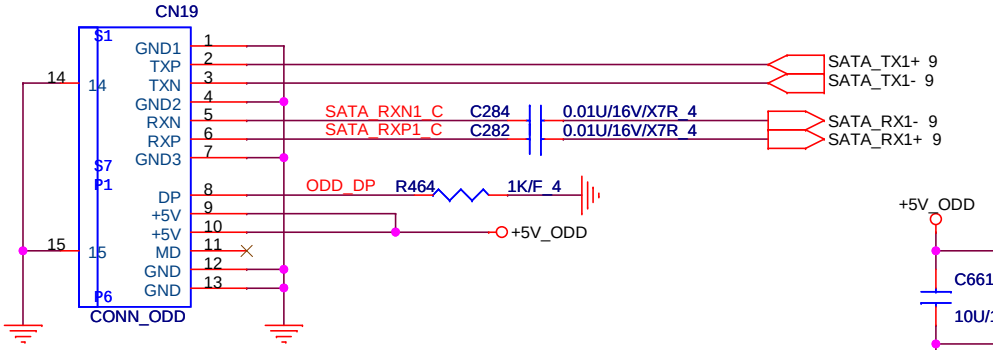
12,18,24,25,26,35,37,39,41,43 +5V
3,4,8,9,10,11,12,14,15,17,23,26,27,29,30,31,32,34,36,37,38,40,41,43,45,46,47,48,50,51 +3V

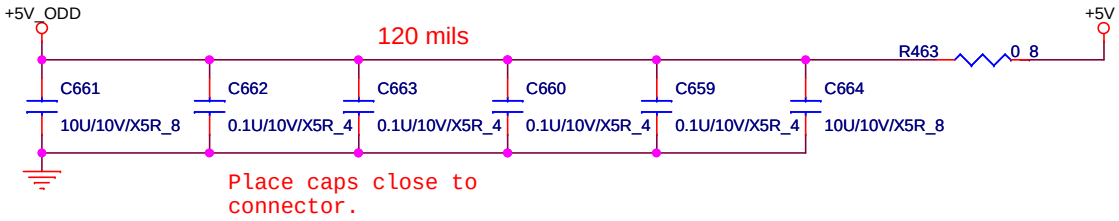






ODD Connector





LD-Note Calpella Discrete
Quanta Computer Inc.

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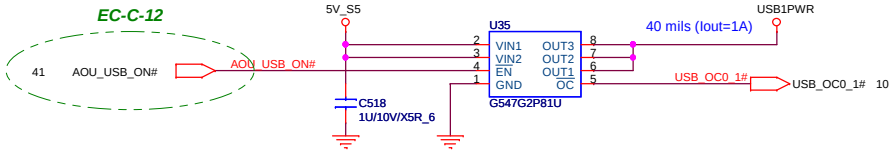
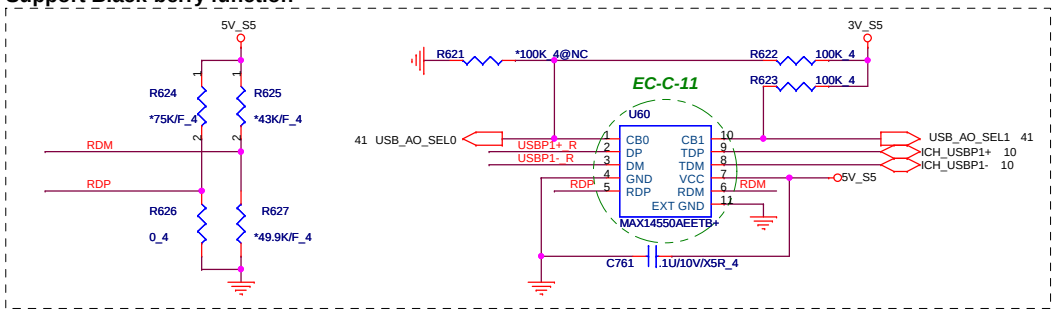
USBX1

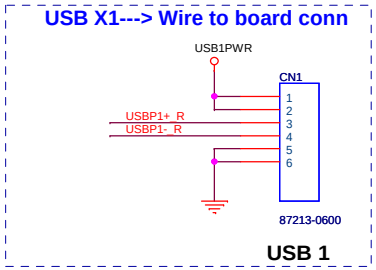


12,43 5V_S5
3,4,8,9,10,11,12,14,15,17,23,26,27,28,30,31,32,34,36,37,38,40,41,43,45,46,47,48,50,51 +3V
23,30,43,48 5VSUS

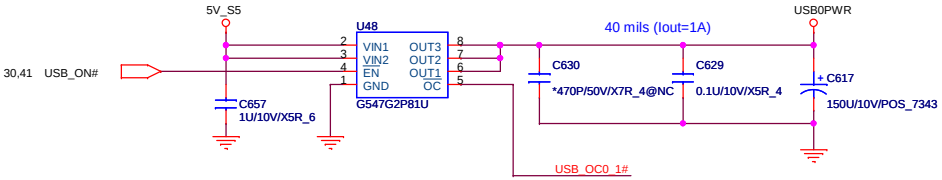
Support Black-berry function

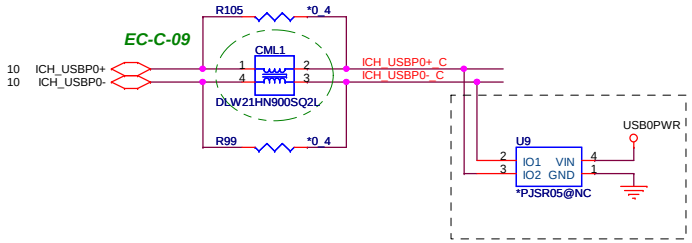


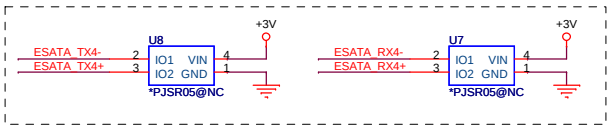
USB X1---> Wire to board conn

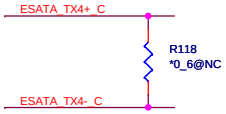


USB + E-SATA

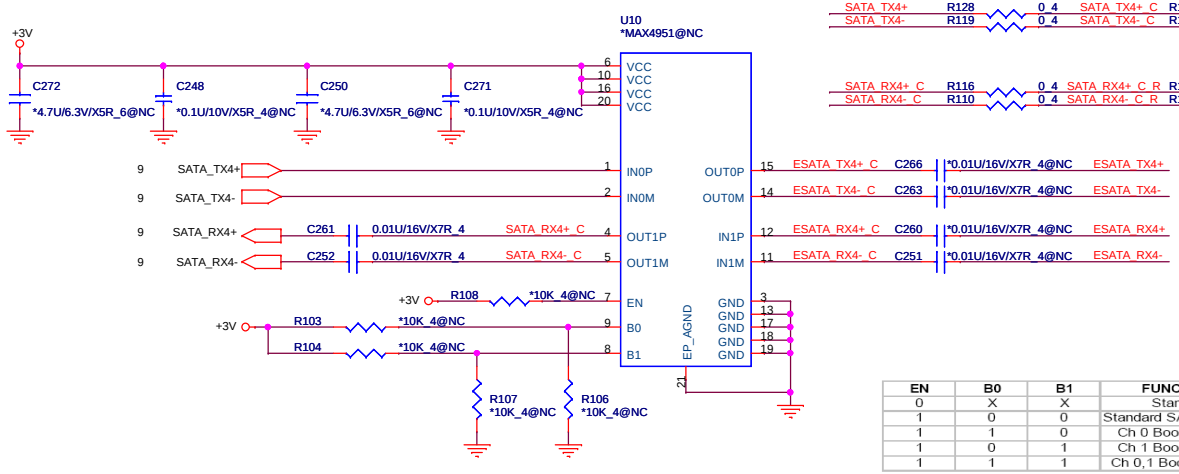


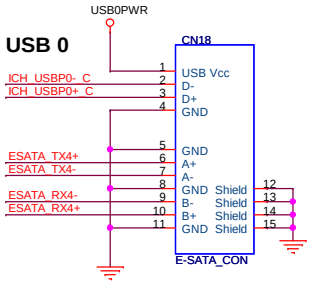






E-SATA RE-DRIVER





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

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Quanta Computer Inc.

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Custom	USB X1/USB+ESATA	
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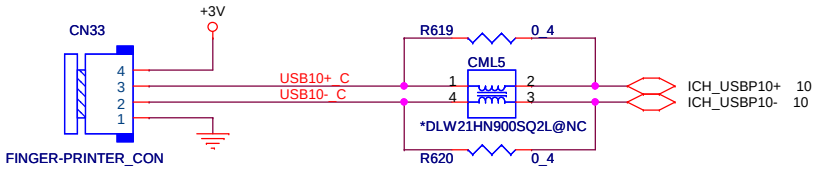
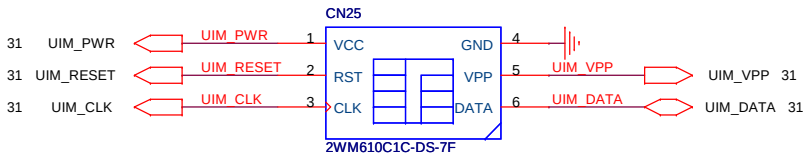
3,4,8,9,10,11,12,14,15,17,23,26,27,28,29,31,32,34,36,37,38,40,41,43,45,46,47,48,50,51 +3V
9,23,27,35,39,41,43,44,47,49 3VPCU
33,34,41,43,49 3VSUS
23,29,43,48 5VSUS

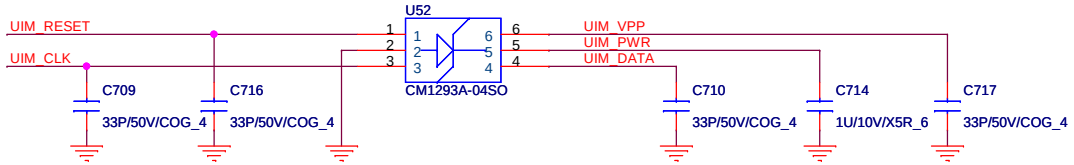
Finger Print



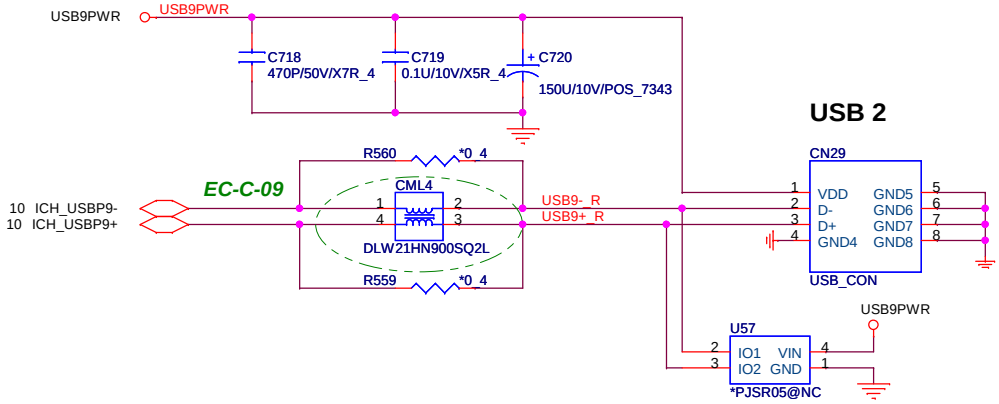
SIM Card CONN

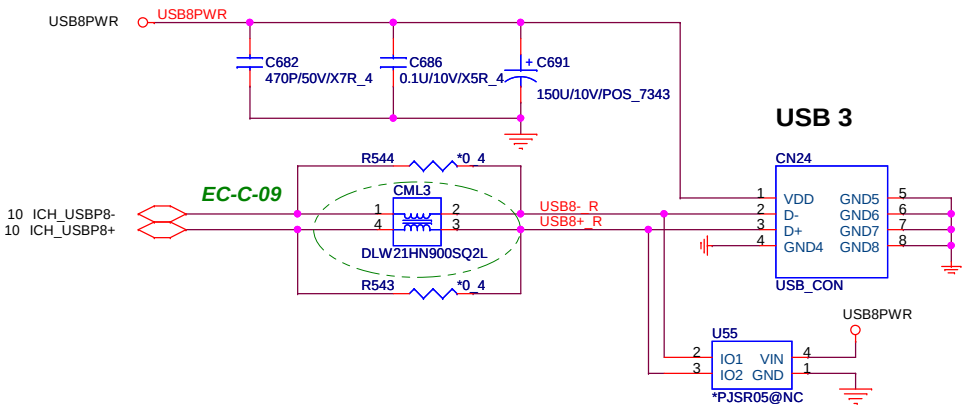


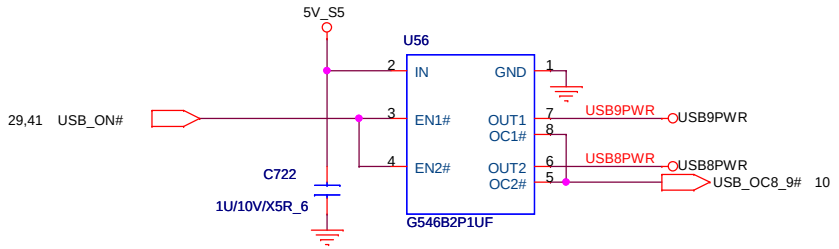
Layout Note:
UIM_RESET,UIM_CLK,UIM_DATA routting as short as possible



LOGO LED







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Quanta Computer Inc.

Size	Document Number	Rev
Custom	USB X2/SIM_CARD/LEDs/RF	
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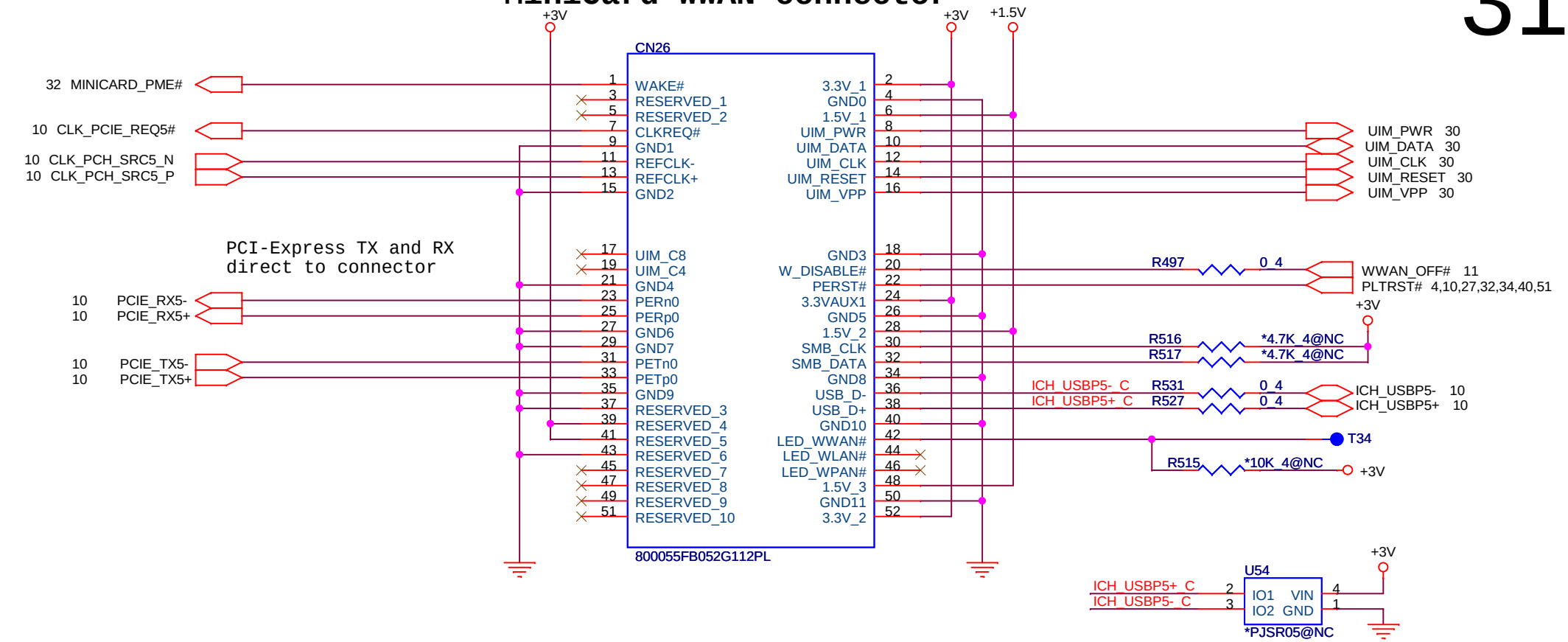
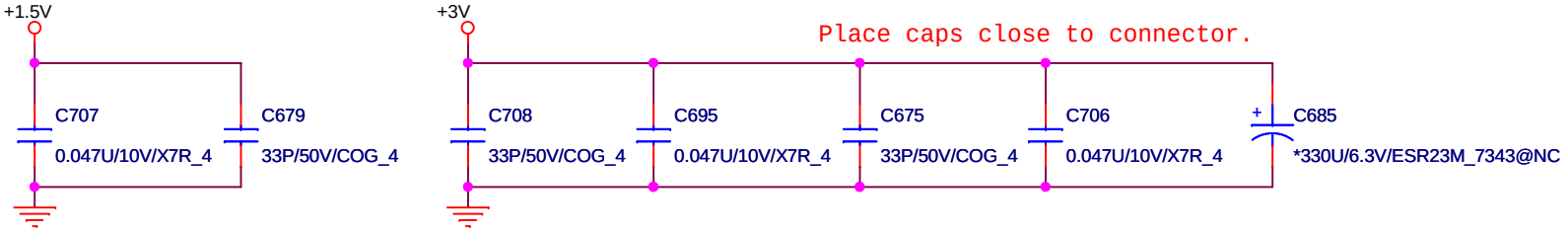
MiniCard WWAN connector

3,4,8,9,10,11,12,14,15,17,23,26,27,28,29,30,32,34,36,37,38,40,41,43,45,46,47,48,50,51 +3V
3,18,19,20,32,34,45 +1.5V



Place caps close to connector.



LD-Note Calpella Discrete
Quanta Computer Inc.

Size	Document Number	Rev
Custom	MINI-Card (WWAN)	
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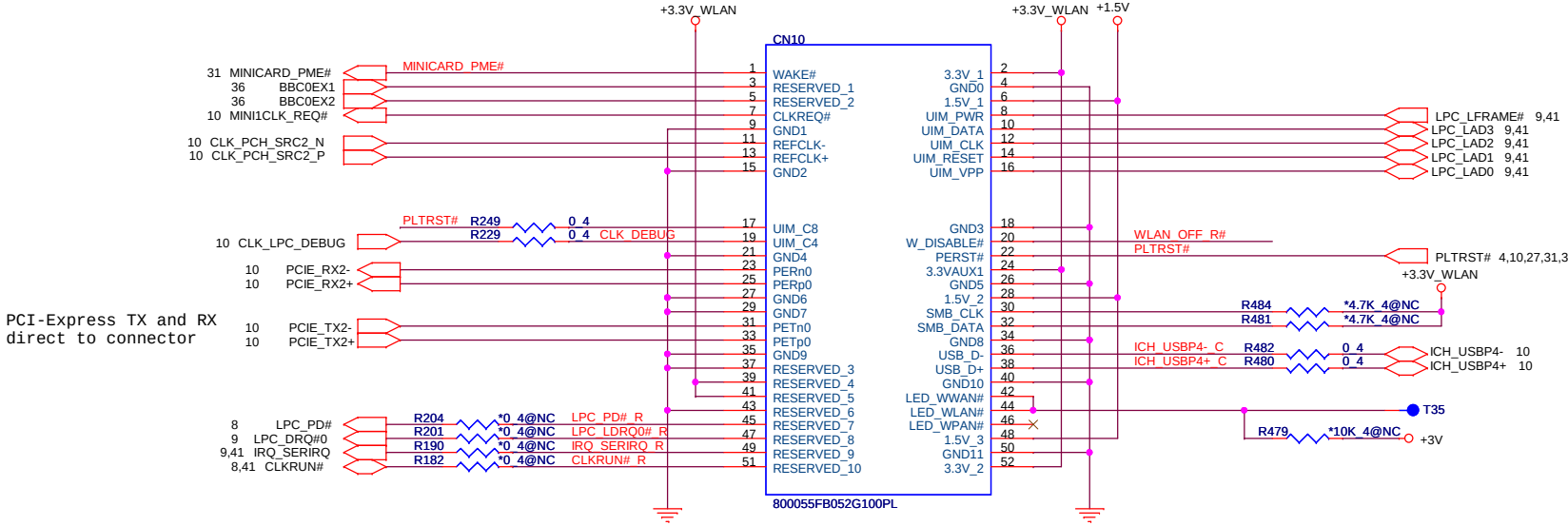
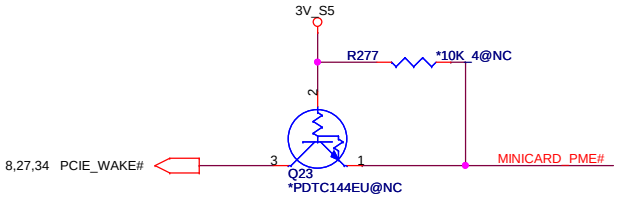
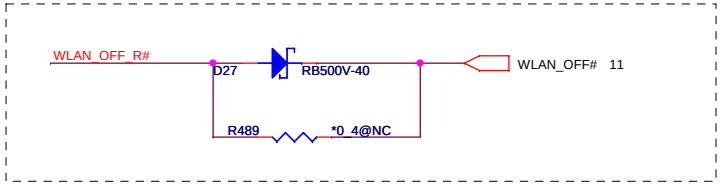
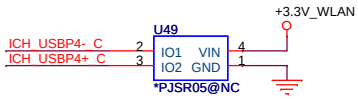
3,4,8,9,10,11,12,14,15,17,23,26,27,28,29,30,31,34,36,37,38,40,41,43,45,46,47,48,50,51 +3V
3,18,19,20,31,34,45 +1.5V
9,23,27,35,39,41,43,44,47,49 3VPCU
23,43,44,45,46,47,48,49,50 VIN

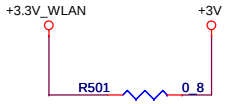
MiniCard WLAN/WiMAX connector

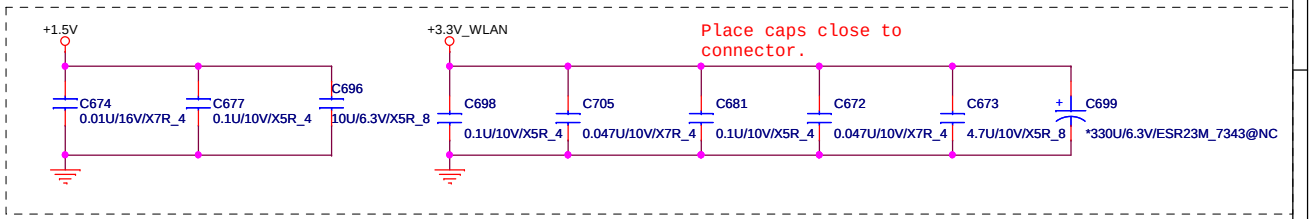












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Quanta Computer Inc.

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Custom	MINI-Card (WIAN)	
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CARD READER

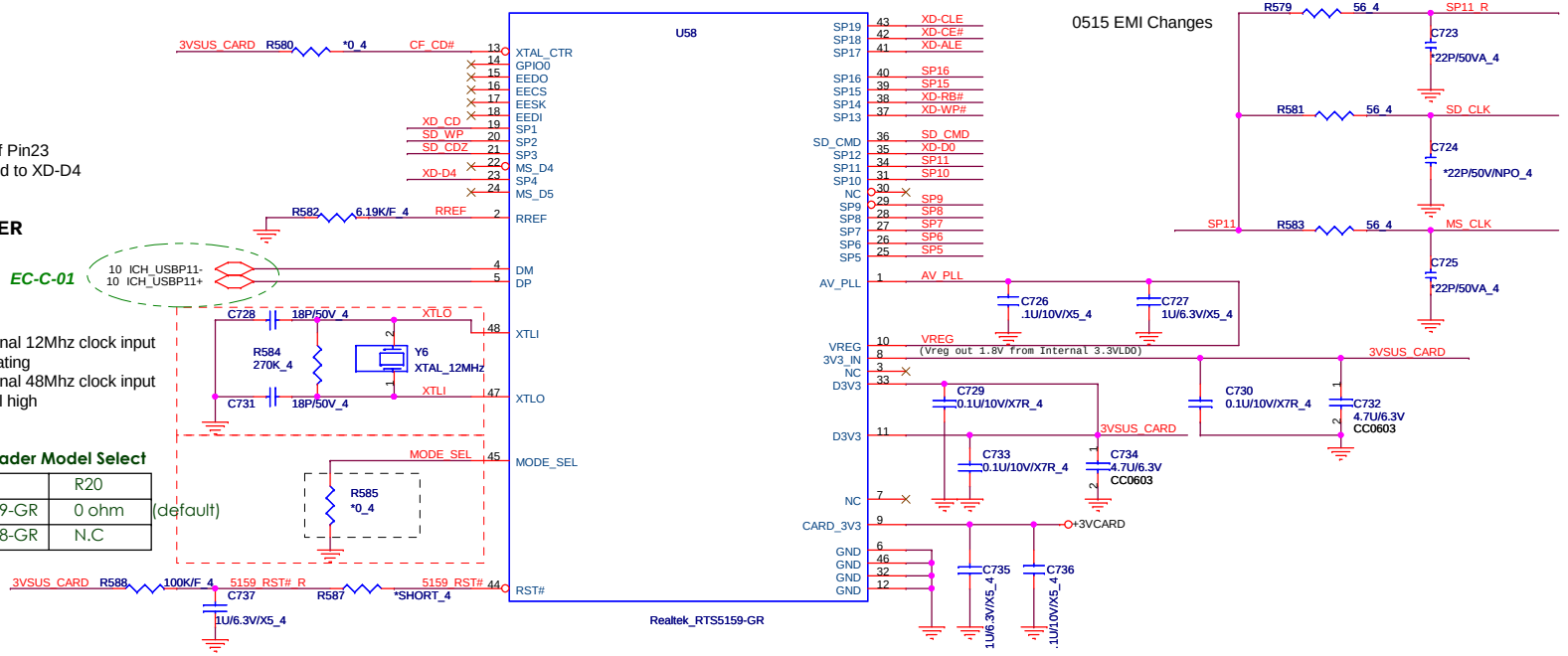
Left NC if Pin23
connected to XD-D4

EC-C-01

For external 12Mhz clock input
pin13 floating
For external 48Mhz clock input
pin13 pull high

Card Reader Model Select

Pin 45	R20
RTS5159-GR	0 ohm (default)
RTS5158-GR	N.C

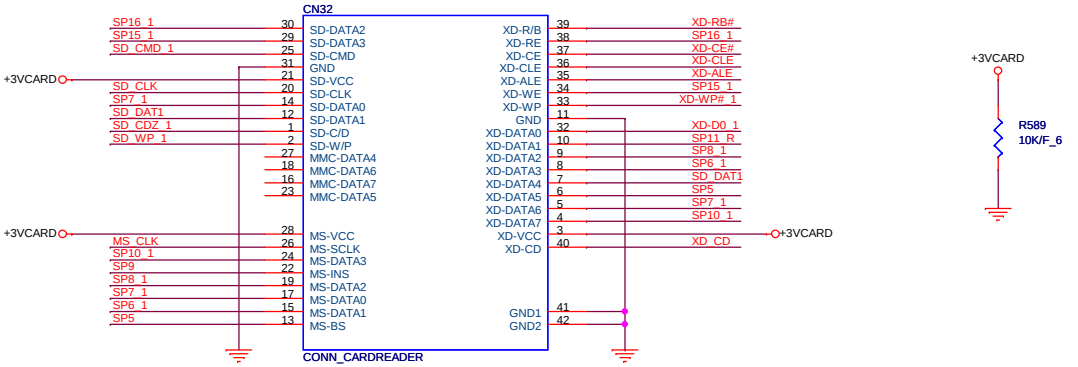


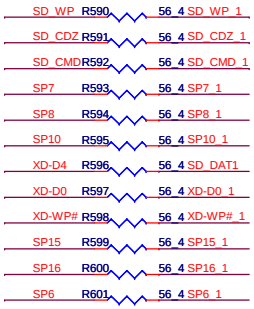
0515 EMI Changes

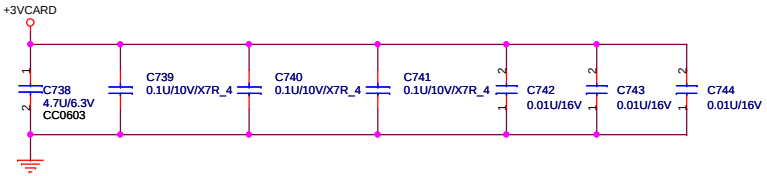
Note:

	SD/MMC	MS	XD
SP0			
SP1			XD_CD#
SP2	SD_WP		
SP3	SD_CD#		
SP4			XD_D4
SP5		MS_BS	XD_D5
SP6		MS_D1	XD_D3
SP7	SD_DAT0	MS_D0	XD_D6
SP8	SD_DAT7	MS_D2	XD_D2
SP9		MS_INS#	
SP10	SD_DAT6	MS_D3	XD_D7
SP11	SD_CLK	MS_SCLK	XD_D1
SP12	SD_DAT5		XD_D0
SP13	SD_DAT4		XD_WP#
SP14			XD_R/B#
SP15	SD_DAT3		XD_WE#
SP16	SD_DAT2		XD_RE#
SP17			XD_ALE
SP18			XD_CE#
SP19			XD_CLE

7 in 1 Socket(MS, MS PRO,SD, MMC, xD)







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Size	Document Number	Rev
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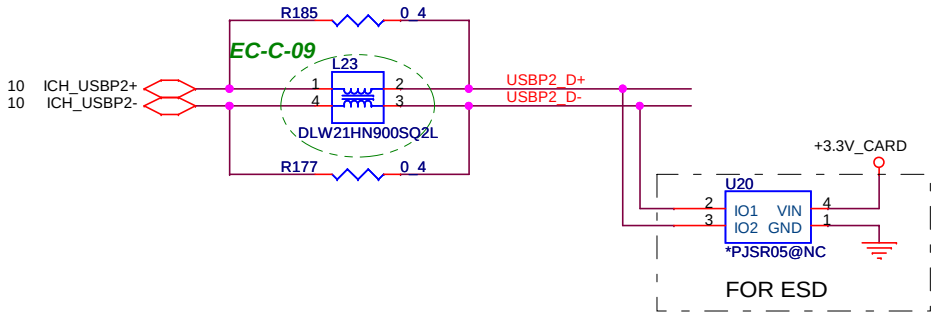
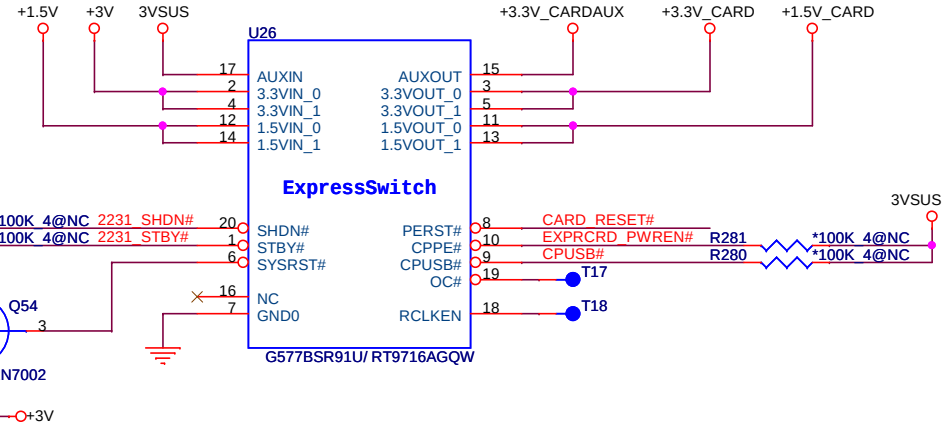
Express Card

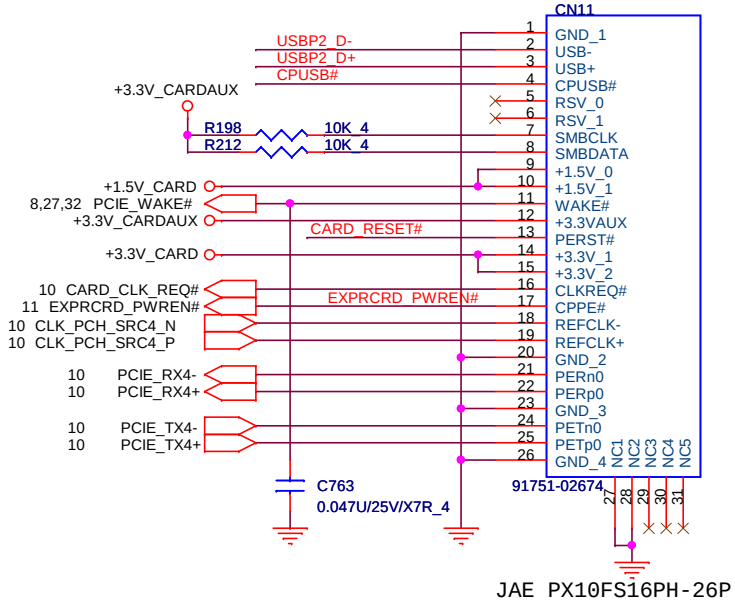
3,4,8,9,10,11,12,14,15,17,23,26,27,28,29,30,31,32,36,37,38,40,41,43,45,46,47,48,50,51 +3V
3,18,19,20,31,32,45 +1.5V
30,33,41,43,49 3VSUS

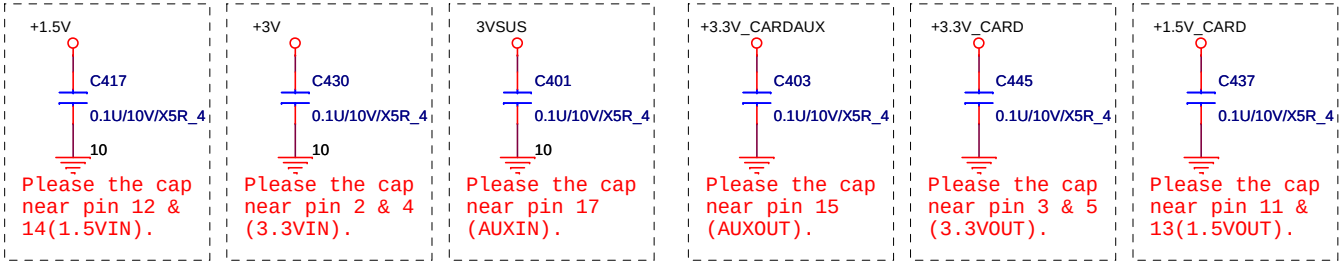
34

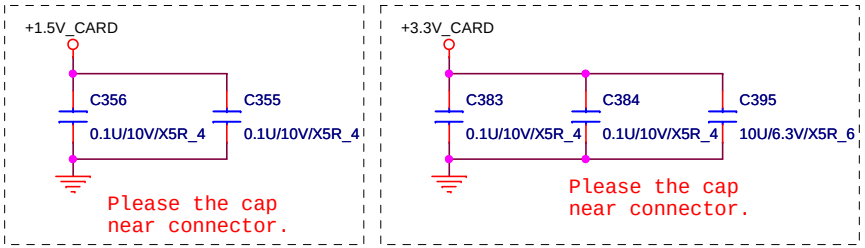
+1.5V_CARD Max. 650mA, Average 500mA.
+3.3V_CARD Max. 1300mA, Average 1000mA.











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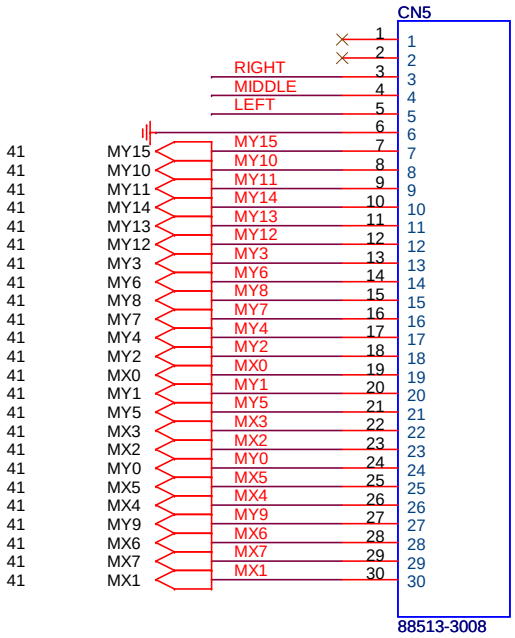
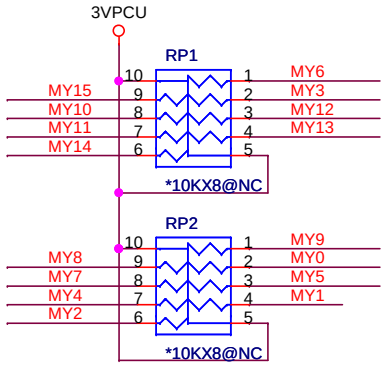
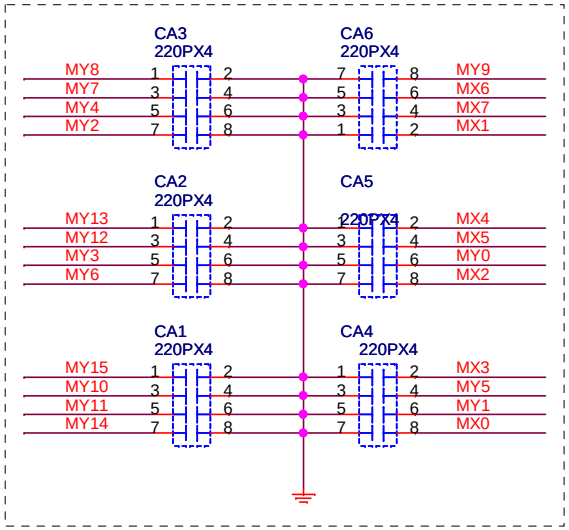
KEYBOARD

KEYBOARD connector

12,18,24,25,26,28,37,39,41,43 +5V
9,23,27,39,41,43,44,47,49 3VPCU

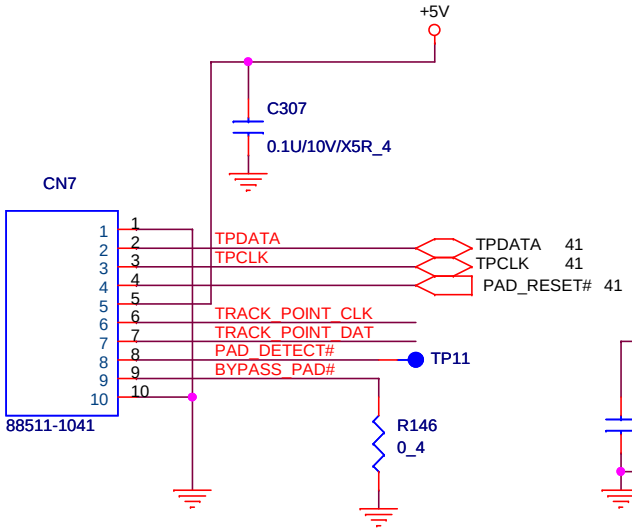


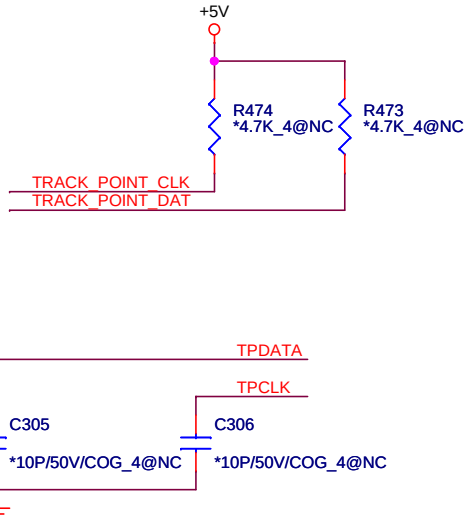




For EMI request

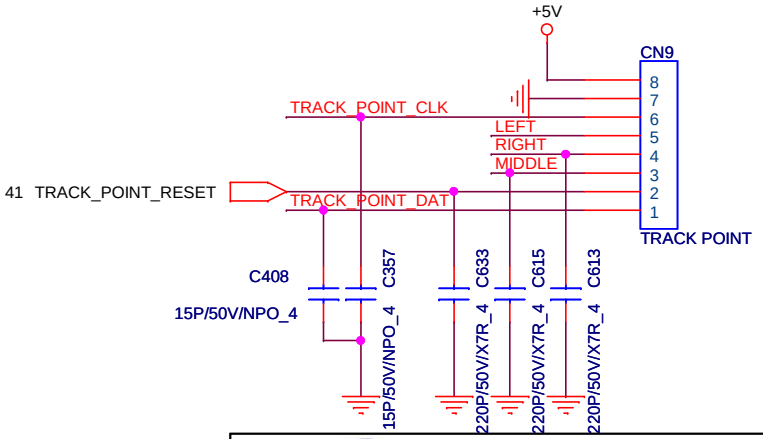
Touch pad





Place C5303 ,C5302 closed to CN5020

TRACK POINT



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Quanta Computer Inc.

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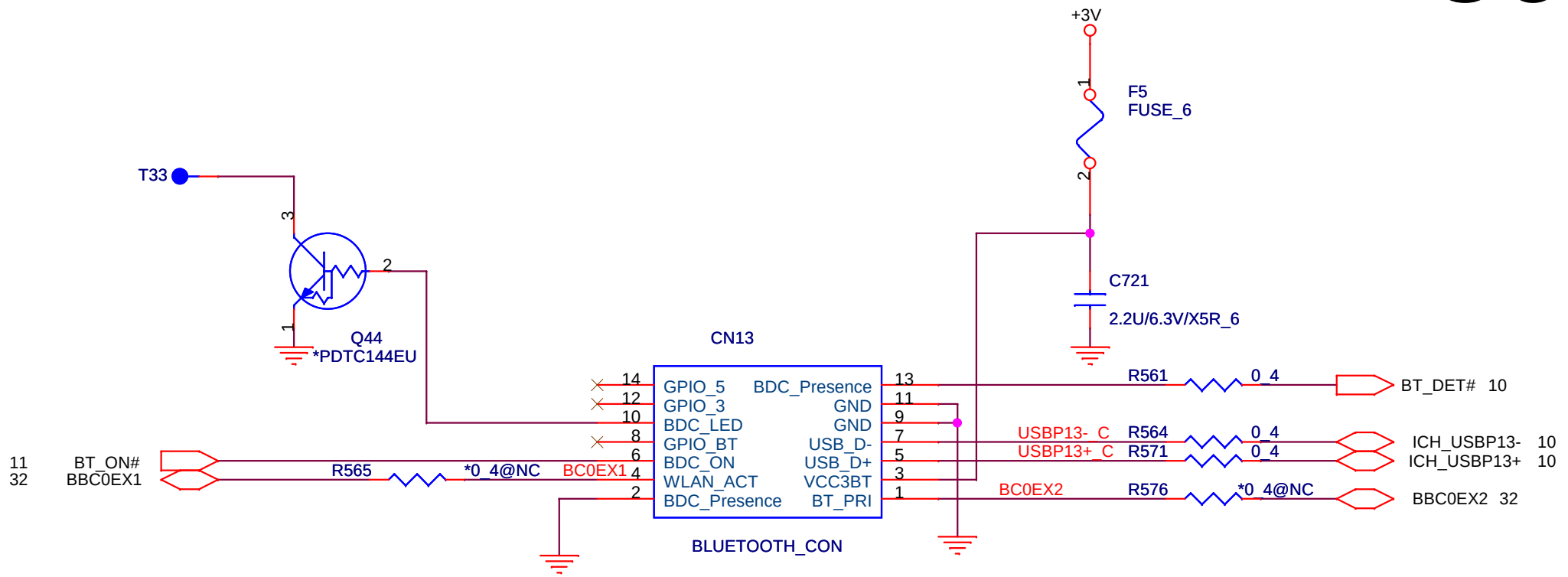
BLUETOOTH

3,4,8,9,10,11,12,14,15,17,23,26,27,28,29,30,31,32,34,37,38,40,41,43,45,46,47,48,50,51 +3V

36



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Quanta Computer Inc.

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Custom	B/T	
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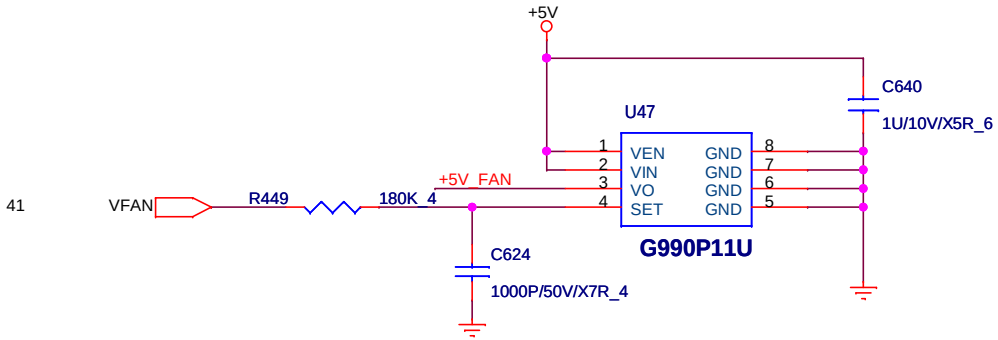
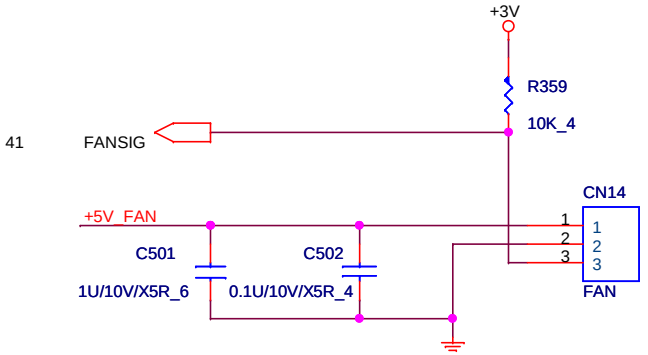
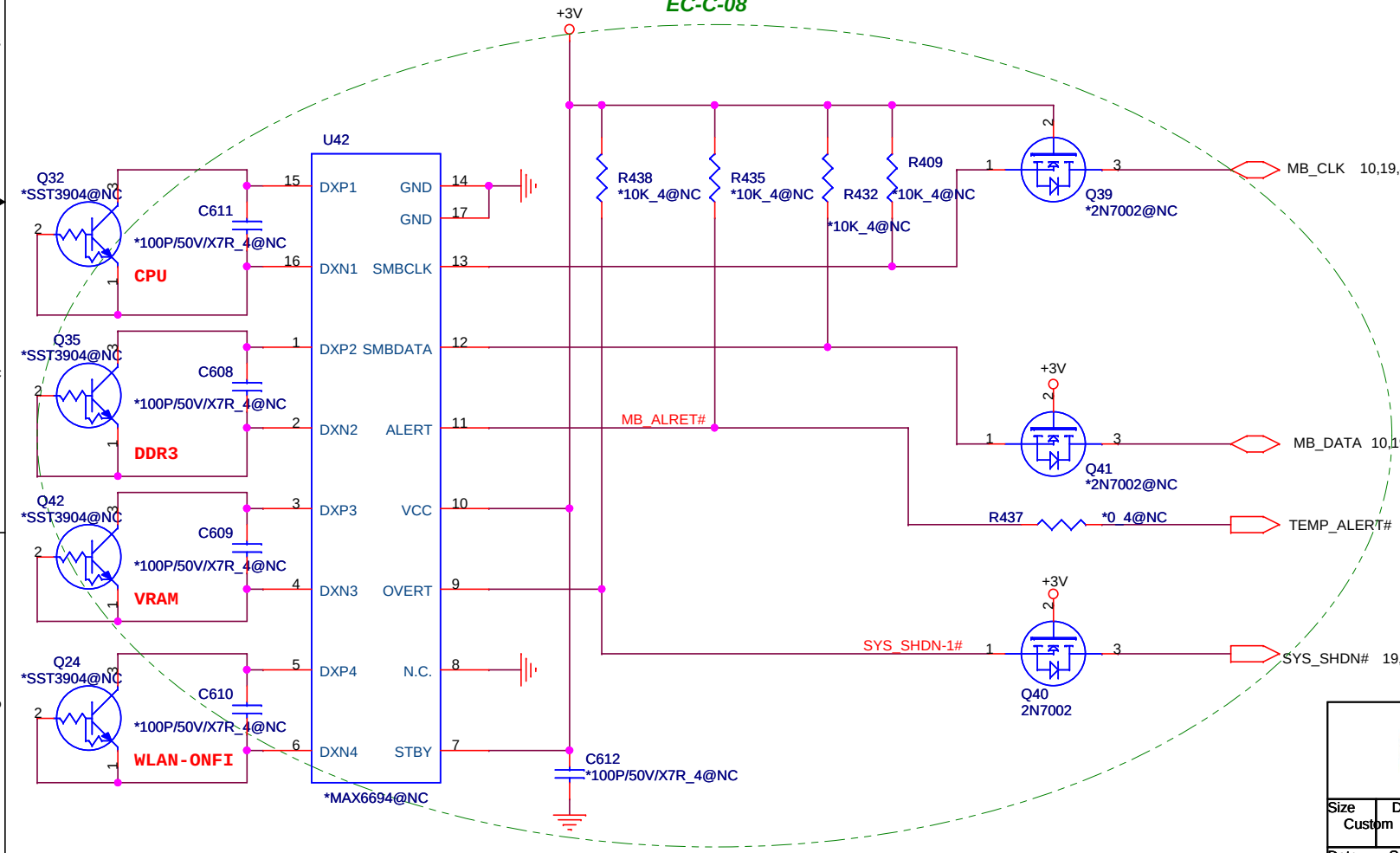
FAN CONTROL

3,4,8,9,10,11,12,14,15,17,23,26,27,28,29,30,31,32,34,36,38,40,41,43,45,46,47,48,50,51 +3V
12,18,24,25,26,28,35,39,41,43 +5V

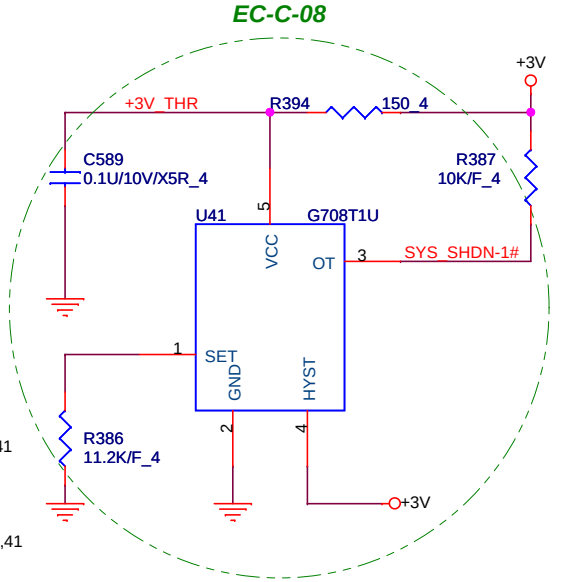




EC-C-08



EC-C-08



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Quanta Computer Inc.

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Custom	FAN & THERMAL	
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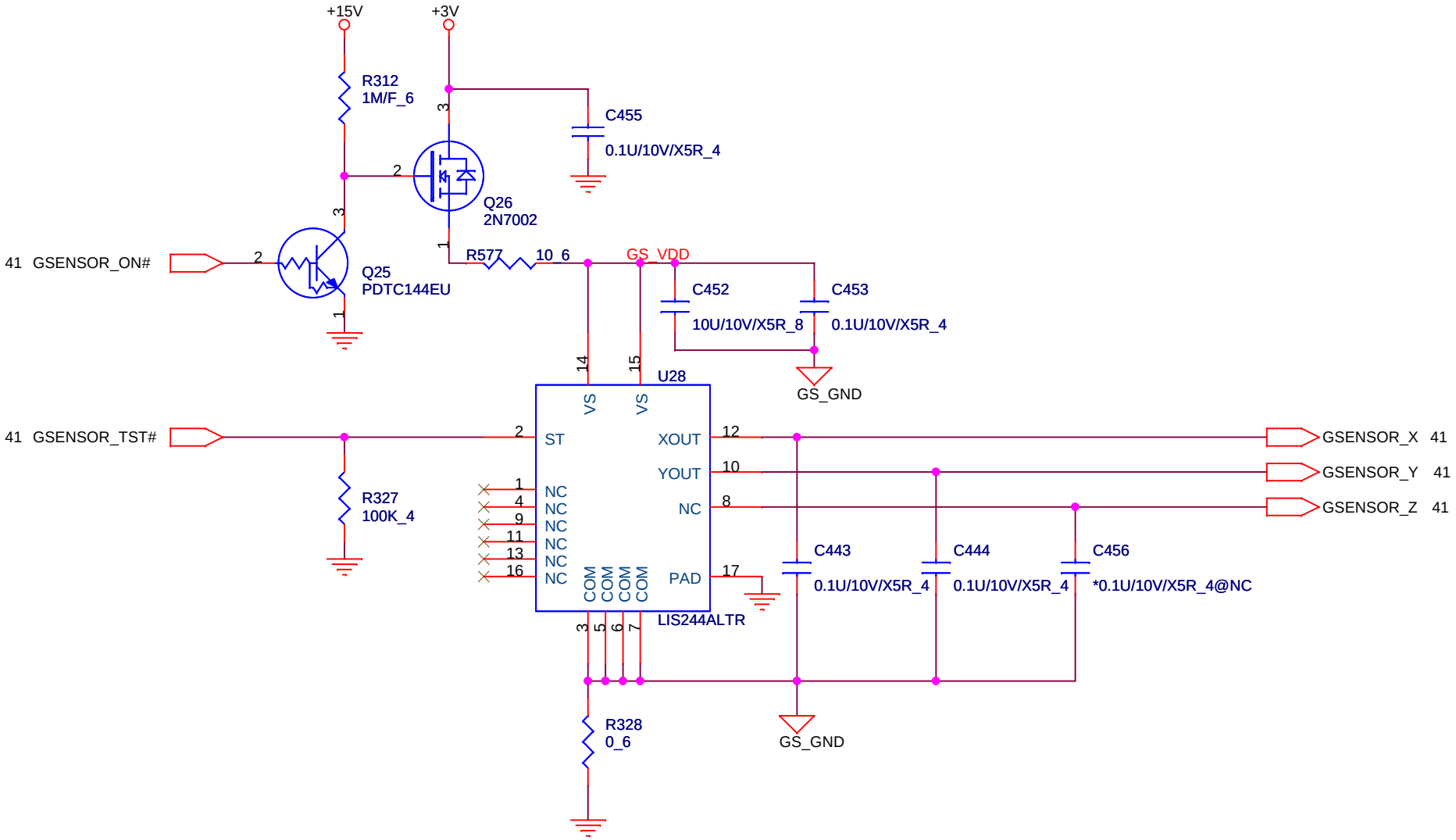
G-SENSOR (2-Axial)

3,4,8,9,10,11,12,14,15,17,23,26,27,28,29,30,31,32,34,36,37,40,41,43,45,46,47,48,50,51 +3V
23,43,45,47 +15V

38



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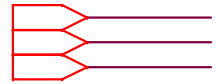
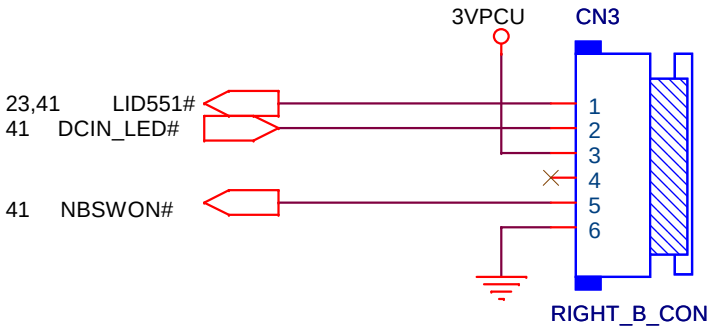
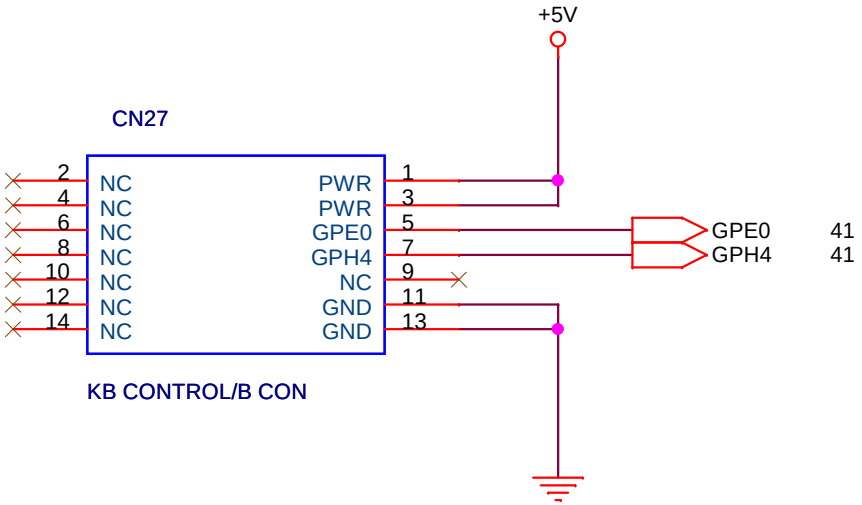
3,4,8,9,10,11,12,14,15,17,23,26,27,28,29,30,31,32,34,36,37,38,40,41,43,45,46,47,48,50,51 +3V
9,23,27,35,41,43,44,47,49 3VPCU
12,18,24,25,26,28,35,37,41,43 +5V



39

FFC TO B LED RIGHT SIDE CONNECTOR(For 14",15")





LD-Note Calpella Discrete
Quanta Computer Inc.

Size	Document Number	Rev
Custom	B TO B CON	
Date: Tuesday, November 03, 2009	Sheet 39 of 55	

iTPM ENABLE/DISABLE

3V_S5

EC-C-04

R292 *1K_4 SPI_SI

iTPM Function	R292
Enable	1K
Disable	NC

3,4,8,9,10,11,12,14,15,17,23,26,27,28,29,30,31,32,34,36,37,38,41,43,45,46,47,48,50,51
4,8,9,10,11,12,29,32,43,51 +3V 3V_S5

For PCH

32Mbit (4M Byte), SPI

EC-C-04 3V_S5 R554 3.3K_4 EC-C-17

EC-C-04 3V_S5 R332 10K_4

9 SPI_CS0#_R
9 SPI_CLK_R
9 SPI_SI_R
9 SPI_SO

SPI_CS0#_R R556 15_4 SPI_CS0#
SPI_CLK_R R334 15_4 SPI_CLK
SPI_SI_R R331 15_4 SPI_SI
SPI_SO R555 15_4 SPI_SO_R

U53
1 CE# VDD 8
6 SCK
5 SI
2 SO HOLD# 7
3 WP# VSS 4
W25Q32BVSSIG

C475 22P/50V/NPO_4

C467 0.1U/10V/X5R_4

RFID

+3V R92 4.7K_4

D3 CH500H-40

4,41,45,46,47,48,49,50,51 HWPG
4,10,27,31,32,34,51 PLTRST#
PROT

D4 CH500H-40

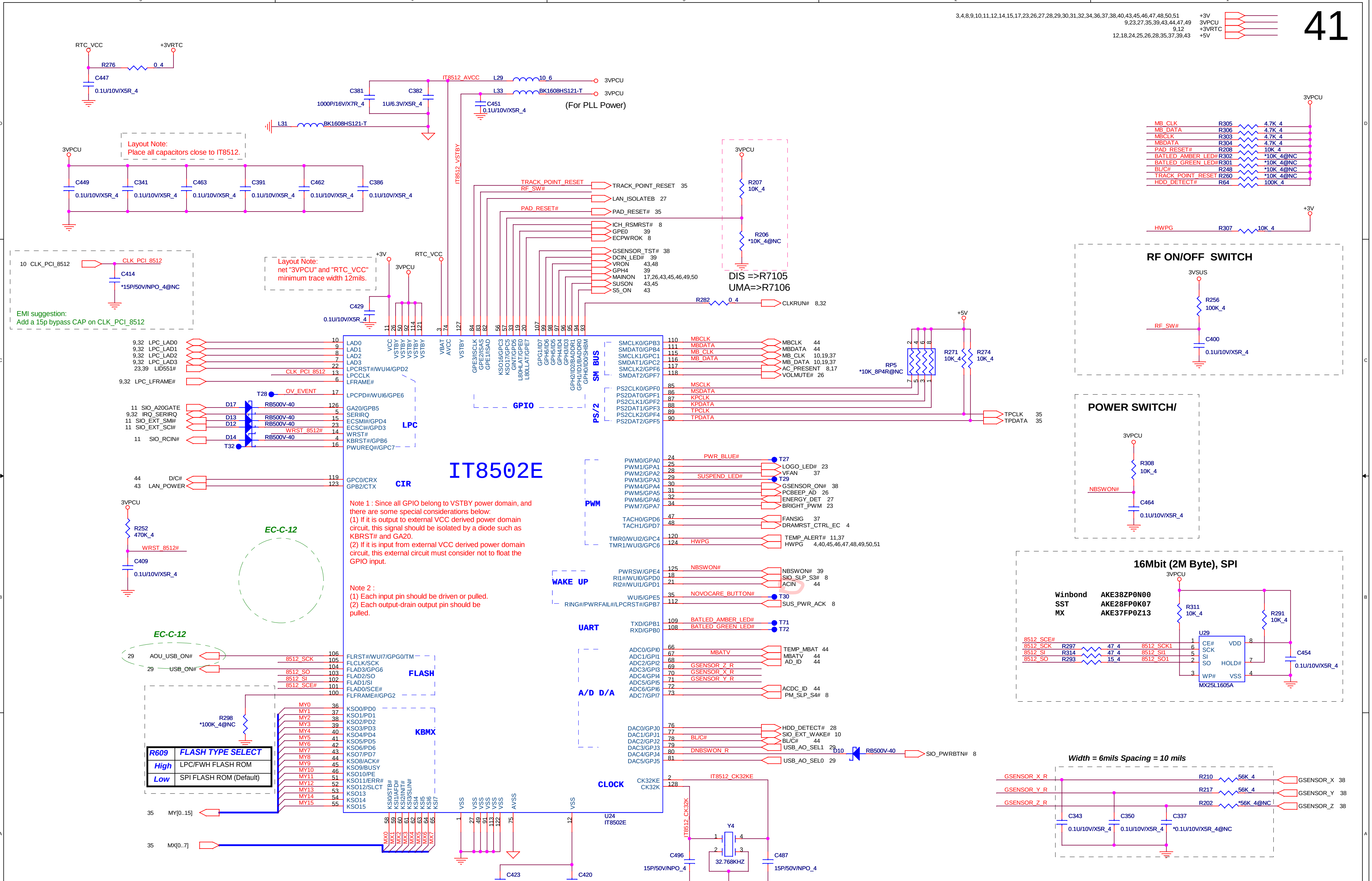
+3V

U6
R93 100K_4 1 L1 VCC 8 C223 0.1U/10V/X5R_4
R94 100K_4 2 L2
PROT 3 PROT WP 7
6 SCL
5 SDA GND 4 R98 1K_4
PCA24S08DP TSSOP

3,14,15 CLK_SCLK
3,14,15 CLK_SDATA

LD-Note Calpella Discrete
Quanta Computer Inc.

Size	Document Number	Rev
Custom	iTPM & RFID EEPROM	
Date: Thursday, November 05, 2009	Sheet 40 of 55	


IT8502E
U24
IT8502E
LPC
CIR
GPIO
SM BUS
PS/2
PWM
WAKE UP
UART
FLASH
KBMX
A/D D/A
CLOCK
(For PLL Power)
Layout Note:
Place all capacitors close to IT8512.
Layout Note:
net "3VPCU" and "RTC_VCC"
minimum trace width 12mils.
EMI suggestion:
Add a 15p bypass CAP on CLK_PCI_8512
DIS =>R7105
UMA=>R7106
RF ON/OFF SWITCH
POWER SWITCH/
16Mbit (2M Byte), SPI
Winbond AKE38ZP0N00
SST AKE28FP0K07
MX AKE37FP0Z13
MX25L1605A
Width = 6mils Spacing = 10 mils
R609 FLASH TYPE SELECT
High LPC/FWH FLASH ROM
Low SPI FLASH ROM (Default)
EC-C-12
EC-C-12
32.768KHZ
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.

LD-Note Calpella Discrete
Quanta Computer Inc.

Size	Document Number	Rev
Custom	KBC IT8502E	
Date: Saturday, November 07, 2009	Sheet 41 of 55	

MiniCard WLAN

HOLE15 HOLE

HOLE18 HOLE

MiniCard WWAN

HOLE34 HOLE

HOLE35 HOLE

Hole for PCH support

HOLE33 HOLE

HOLE36 HOLE

Drink Hole

HOLE8 *HOLE

Bluetooth nut

HOLE20 HOLE

Hole for CPU support

HOLE27 *HOLE

HOLE28 *HOLE

HOLE29 *HOLE

HOLE30 *HOLE

VGA nut

HOLE26 HOLE

HOLE32 HOLE

HOLE31 HOLE

Break Hole

HOLE14 *HOLE

Boundary Hole (ODD)

HOLE7 *HOLE

Boundary Hole

HOLE1 *HOLE

HOLE2 *HOLE

HOLE3 *HOLE

HOLE4 *HOLE

HOLE5 *HOLE

HOLE6 *HOLE

HOLE9 *HOLE

HOLE11 *HOLE

HOLE21 *HOLE

ESD for ESATA

GP3 *re236x494np@NC

Boundary Hole

EC-C-13

HOLE22 *HOLE

HOLE23 *HOLE

HOLE25 *HOLE

HOLE24 *HOLE

HOLE12 *HOLE

HOLE10 *HOLE

KB Control/B NUT

HOLE13 HOLE

PAD

GP9 *SPAD-RE270X320NP@NC

GP14 *SPAD-RE270X320NP@NC

PAD

GP4 *re190x217np@NC

GP2 *re270x220np@NC

GP1 *re270x220np@NC

GP5 *SPAD-SPE1NP@NC

GP6 *SPAD-RE85X155NP@NC

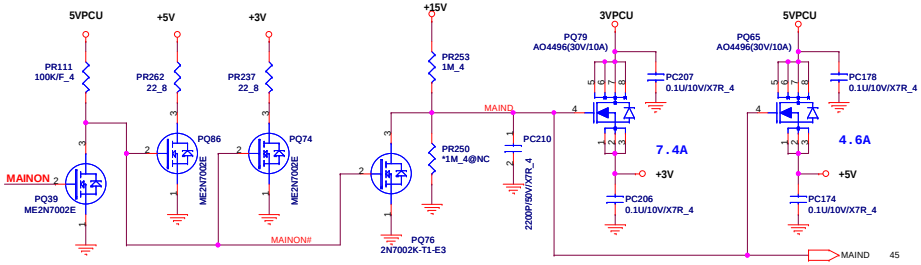
GP7 *SPAD-RE315X325NP@NC

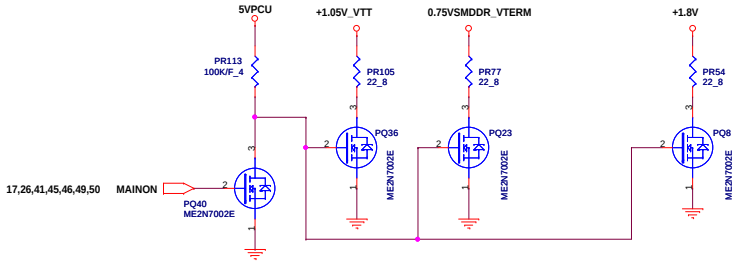
GP8 *SPAD-RE420X165NP@NC

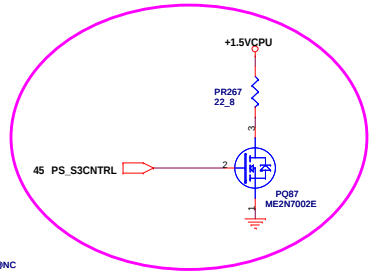
LD-Note Calpella Discrete
Quanta Computer Inc.

Size	Document Number	Rev
Custom	HOLE & SKREW	
Date: Saturday, November 07, 2009	Sheet 42 of 55	

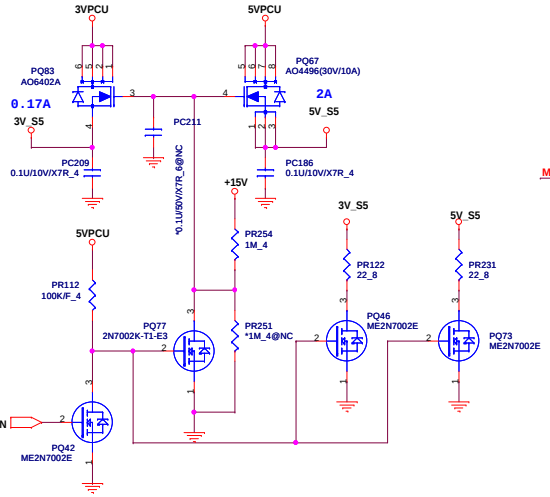
+3V, +5V

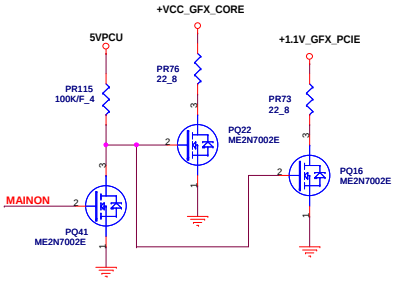




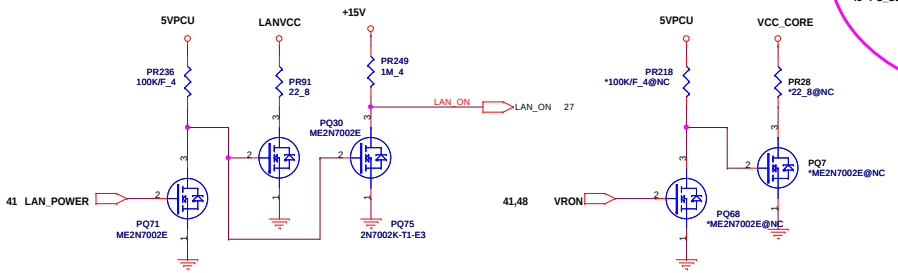


3V_S5, 5V_S5

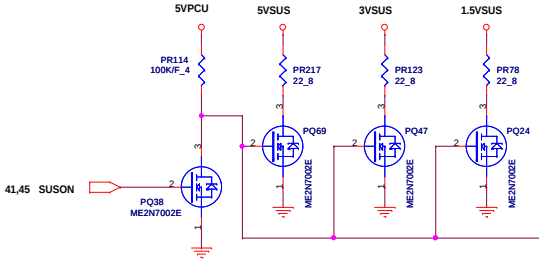


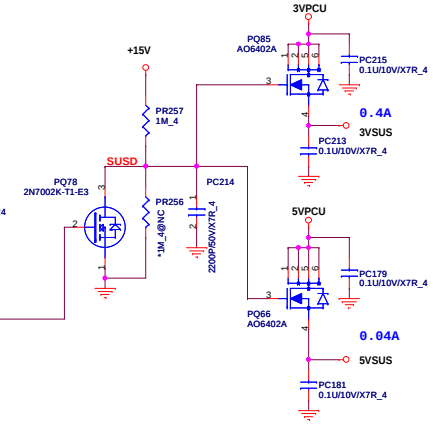


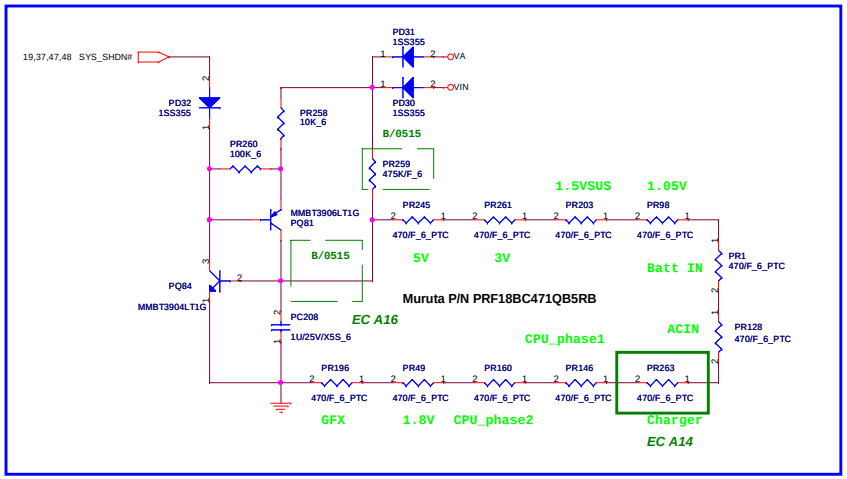
LANVCC



3VSUS, 5VSUS





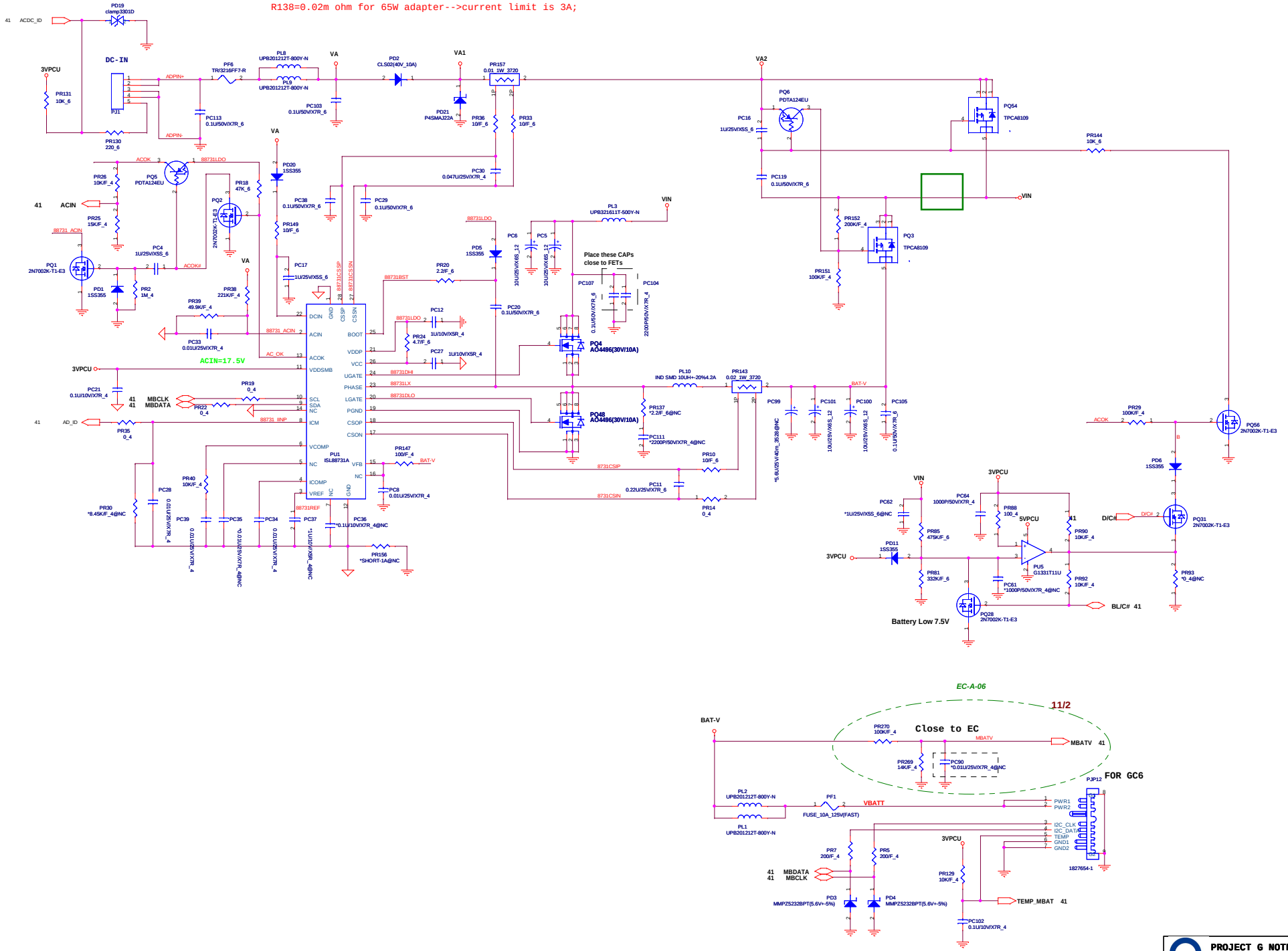


PROJECT G NOTE Calpella DIS
Quanta Computer Inc.

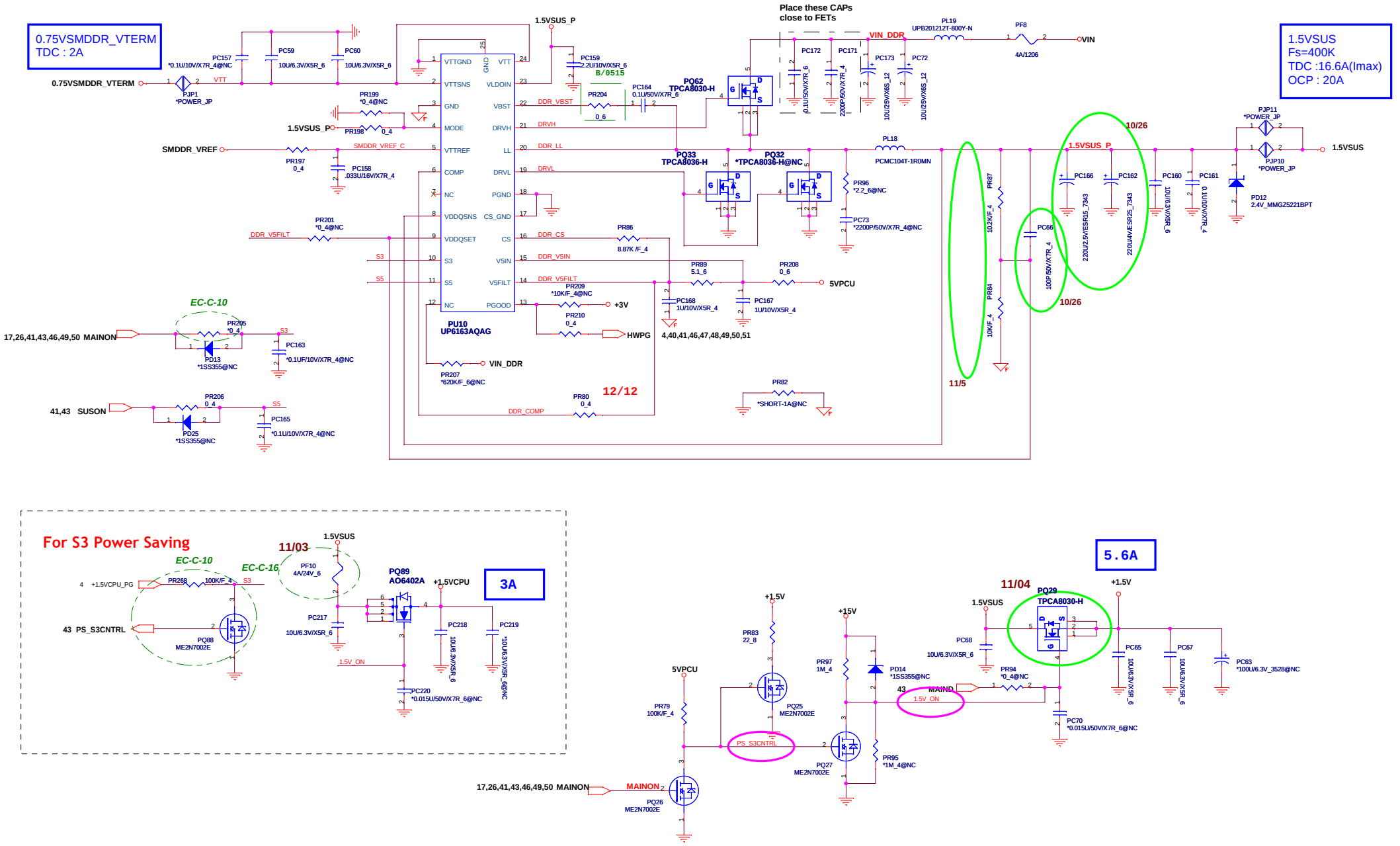
Size	Document Number	Rev
Custom	Discharge	1B

Date: Thursday, November 05, 2009 Sheet 43 of 55

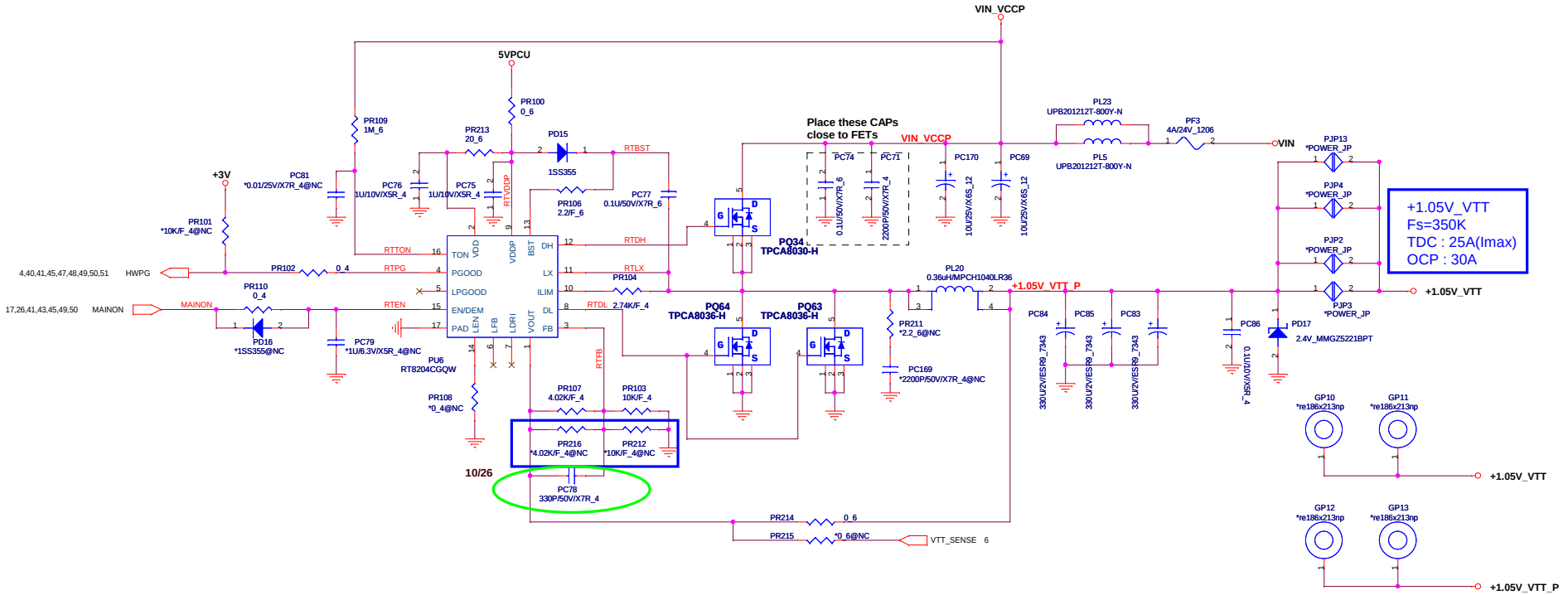
R138=0.02m ohm for 65W adapter-->current limit is 3A;



PROJECT G NOTE Calpella DIS			
Quanta Computer Inc.			
Size: Custom	Document Number: Charger(ISL88731A)		Rev: 1B
Date: Saturday, November 07, 2009		Sheet 44 of 55	



PROJECT G NOTE Calpella DIS	
Quanta Computer Inc.	
Size: Custom	Document Number: DDR3/0.75VSMDDR (UP6163AQAG)
Rev: 1A	
Date: Saturday, November 07, 2009	Sheet 45 of 55

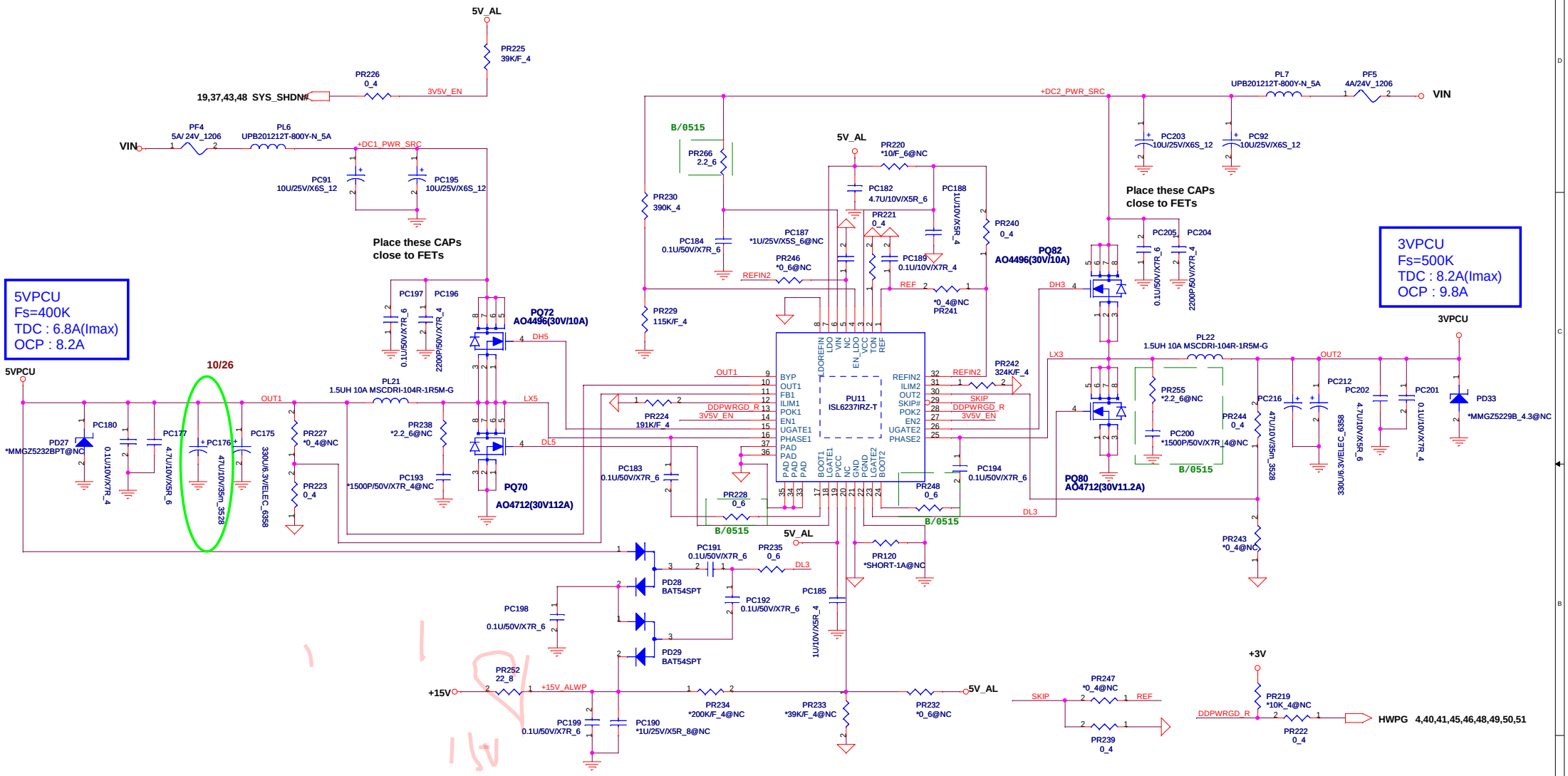


PROJECT G NOTE Calpella DIS
Quanta Computer Inc.

Size	Document Number	Rev
Custom	1.05V_VTT/1.05_PCH(RT8204)	1B

Date: Saturday, November 07, 2009 Sheet 46 of 55

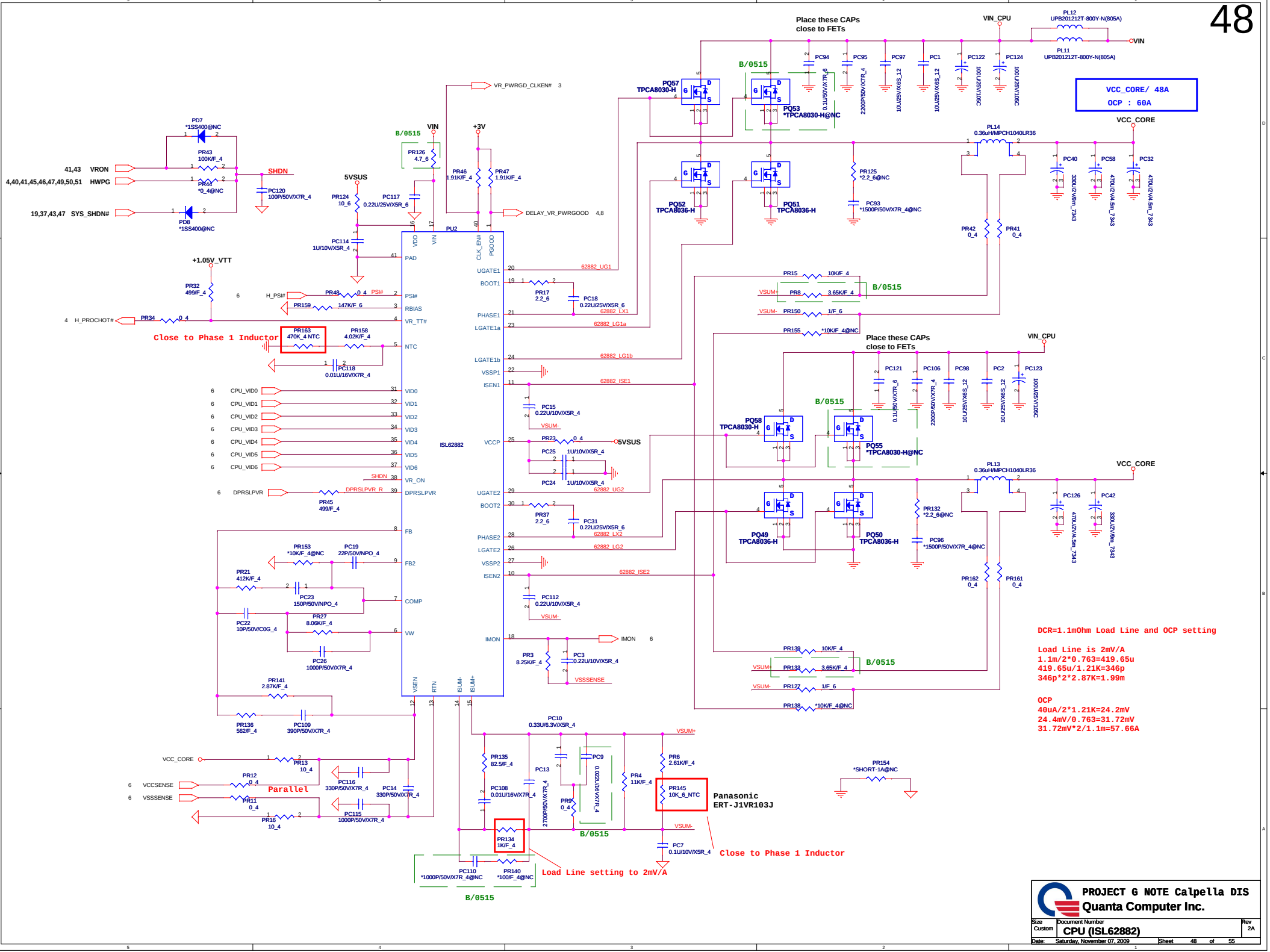
9,23,27,35,39,41,43,44,49 3VPCU
43,44,45,46,49,50 5VPCU
23,38,43,45 +15V
23,43,44,45,46,48,49,50 VIN



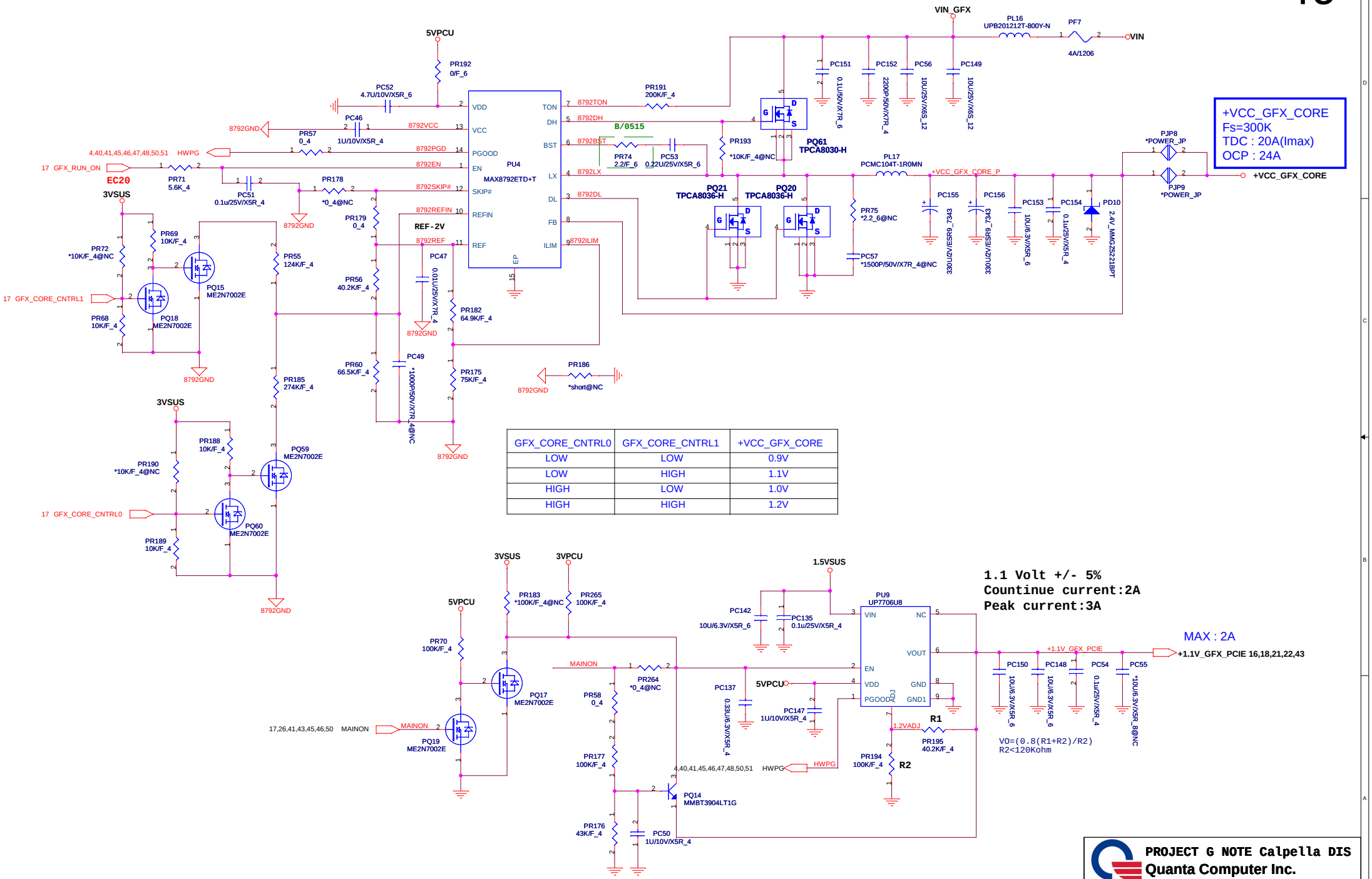
PROJECT G NOTE Calpella DIS
Quanta Computer Inc.

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

Date: Saturday, November 07, 2009 Sheet 47 of 55


Place these CAPs close to FETs
VIN_CPU
VIN
VCC_CORE/ 48A
OCP : 60A
VCC_CORE
Place these CAPs close to FETs
VIN_CPU
VCC_CORE
ISL62882
Close to Phase 1 Inductor
Parallel
Panasonic ERT-J1VR103J
Close to Phase 1 Inductor
Load Line setting to 2mV/A
DCR=1.1mOhm Load Line and OCP setting
Load Line is 2mV/A
1.1m/2*0.763=419.65u
419.65u/1.21K=346p
346p*2*2.87K=1.99m
OCP
40uA/2*1.21K=24.2mV
24.4mV/0.763=31.72mV
31.72mV*2/1.1m=57.66A
PROJECT G NOTE Calpella DIS
Quanta Computer Inc.
CPU (ISL62882)
Saturday, November 07, 2009
Sheet 48 of 55

For Descrete M92 VGA Only

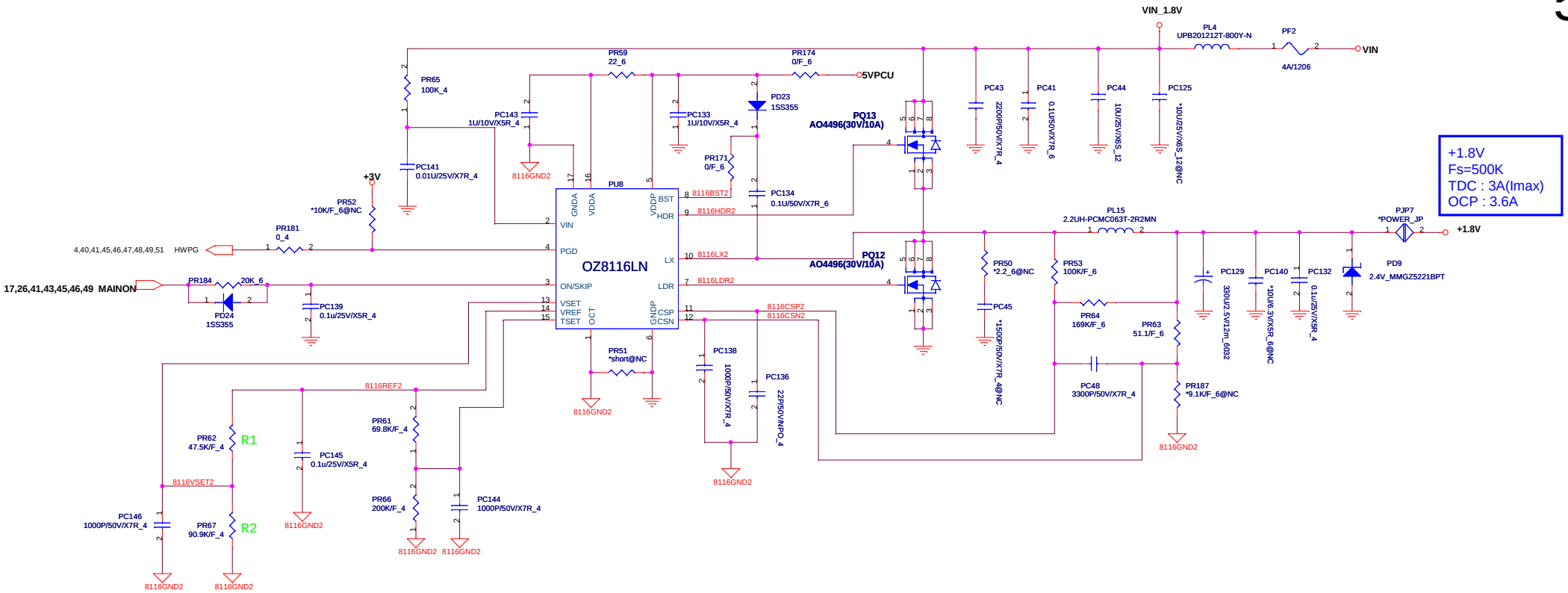


GFX_CORE_CNTRL0	GFX_CORE_CNTRL1	+VCC_GFX_CORE
LOW	LOW	0.9V
LOW	HIGH	1.1V
HIGH	LOW	1.0V
HIGH	HIGH	1.2V

PROJECT G NOTE Calpella DIS
Quanta Computer Inc.

Size	Document Number	Rev
Custom	DIS_GFX_VCC (MAX8792)	1B

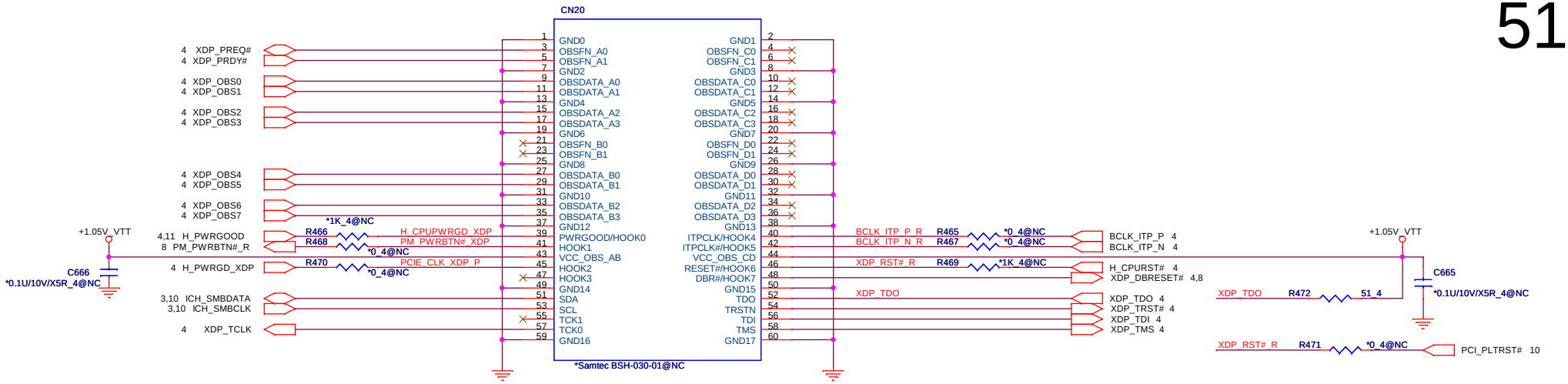
Date: Saturday, November 07, 2009 Sheet 49 of 55

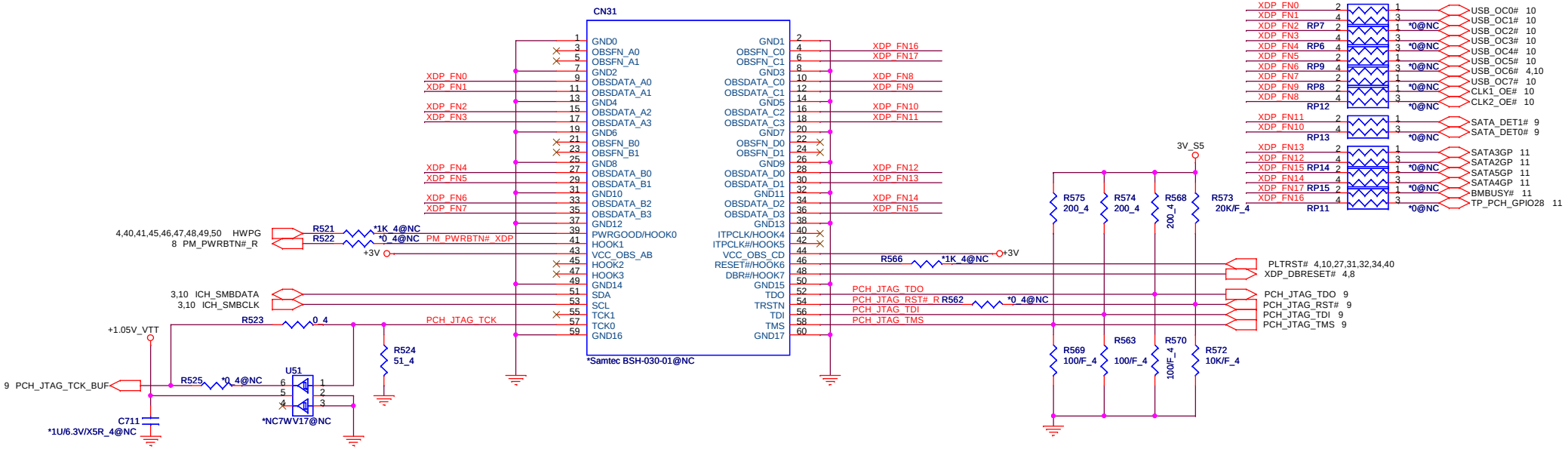


PROJECT G NOTE Calpella DIS
Quanta Computer Inc.

Size	Document Number	Rev
Custom	DIS_1.8V_RUN (OZ8116LN)	1A

Date: Saturday, November 07, 2009 Sheet 50 of 55





PROJECT G NOTE Calpella DIS
Quanta Computer Inc.

Size	Document Number	Rev
Custom	XDP	1A
Date: Tuesday, November 03, 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

EC #	Page	Description	Part Affected
EC-C-01	10,33	Change card reader from port6 to port11	U58,U50
EC-C-02	26	Change Q52 from MOS to BJT to fix MIC function issue Change Q37 to MOS,Q38 to BJT to fix audio function issue Add LDO circuit to fix audio noise; un-stuff 0 ohm RES	Q52 Q37,Q38 U34,C498,C499,C500,L39
EC-C-04	40	Change PCH SPI BIOS power supplier from +3V to 3V_S5	U53
EC-C-05	8	Change PCIE_WAKE# pull high RES to 10K ohm	R508
EC-C-06	44	Add net MBATV from charger to EC	PR269,PR270
EC-C-07	25	ESD suggest to move C123	C123
EC-C-08	37	Un-stuff thermal IC MAX6694 relative circuits, suff G708 relative circuits	Un-stuff U42,Q32,Q35,Q42,Q24,C611,C608,C609,C610,C612,Q39,Q41,Q40,R432,R409 Stuff U41,C589,R394,R386,R387
EC-C-09	29 30 34	Stuff common choke to fix EMI issue	CML1 CML3,CML4 L23
EC-C-10	45	Solve S3 run in issue	Stuff PR268,PQ88 Un-stuff PR205
EC-C-11	29	Change black-berry charger IC to MAX14550AEETB+	U60
EC-C-12	29 41	Add enable pin AOU_USB_ON# to control black-berry charger function from EC Remove CELL-SET pin and two select RES	U35 U24,299,R300
EC-C-13	42	ME modify NON-PTH hole	HOLE12
EC-C-14	10	Reserve one 0 ohm RES to moniter leakage current in the future	R336
EC-C-15	26	Reserve codec Rev. VA @ VB option schematic	R628,R629,C762,R630,R347,R348
EC-C-16	45	Add one fuse to prevent from PQ89 burn out	PF10
EC-C-17	40	Change PCH BIOS to 4M Byte	U53