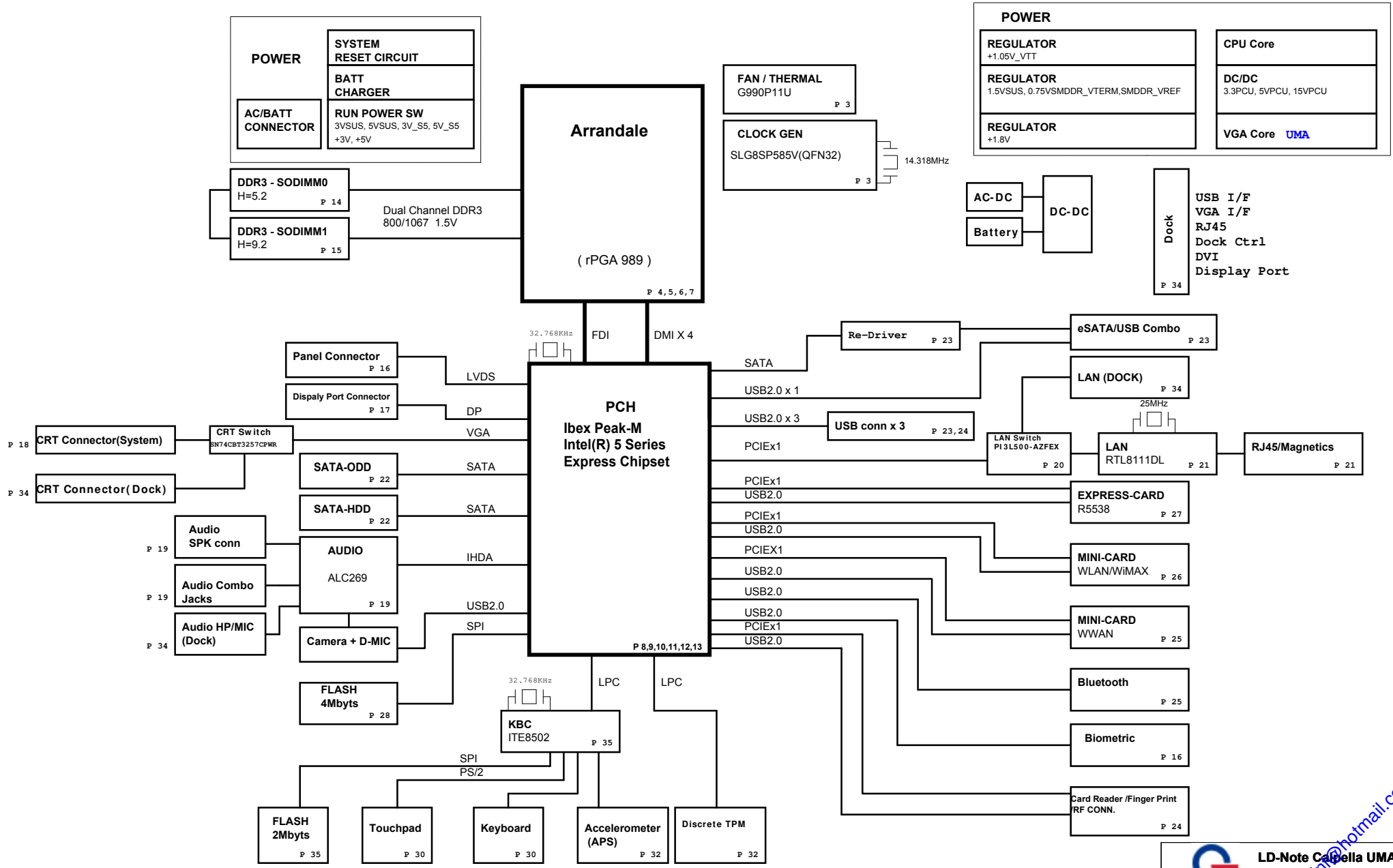
Diamond-3 Intel Calpella Platform with UMA GFX



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Custom	<Doc>	<RevCode

Block Diagram

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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

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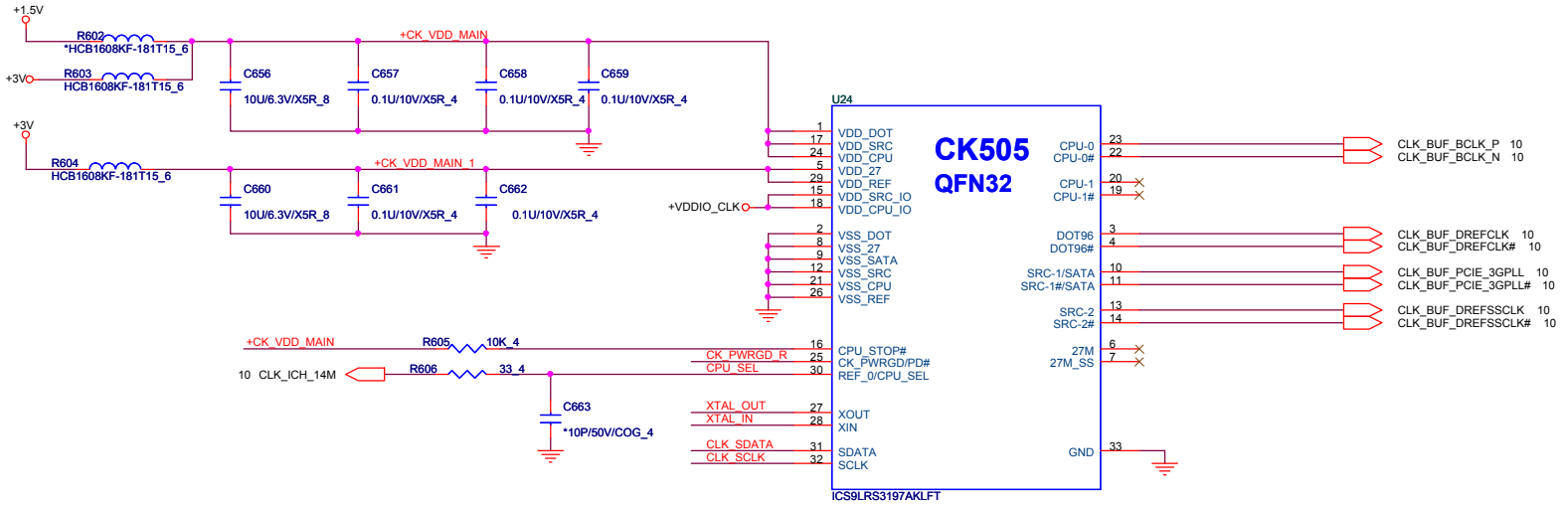
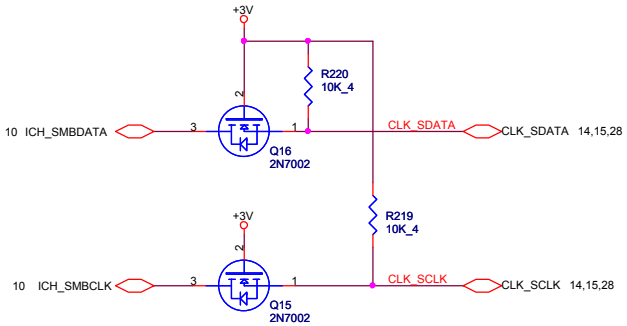
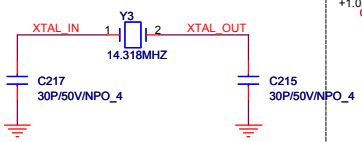
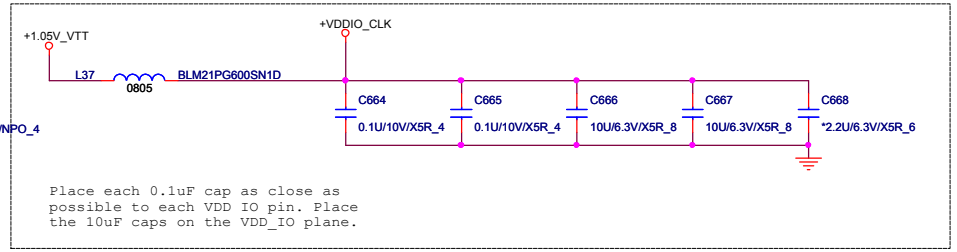
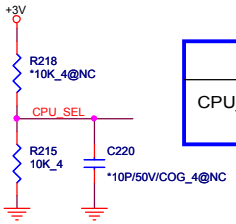
4,8,9,10,11,12,14,15,16,17,18,19,21,22,23,24,25,26,27,28,29,31,32,33,34,35,37,39,40,41,42 +3V
4,6,8,9,10,11,12,37,40,42,43 +1.05V_VTT



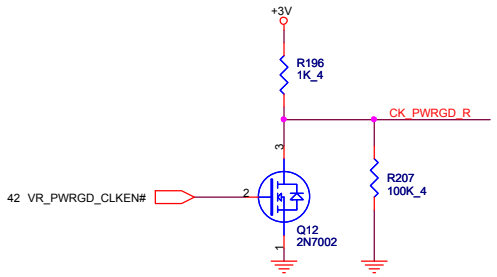








	0	1
CPU_SEL	CPU0/1=133MHz (default)	CPU0/1=100MHz



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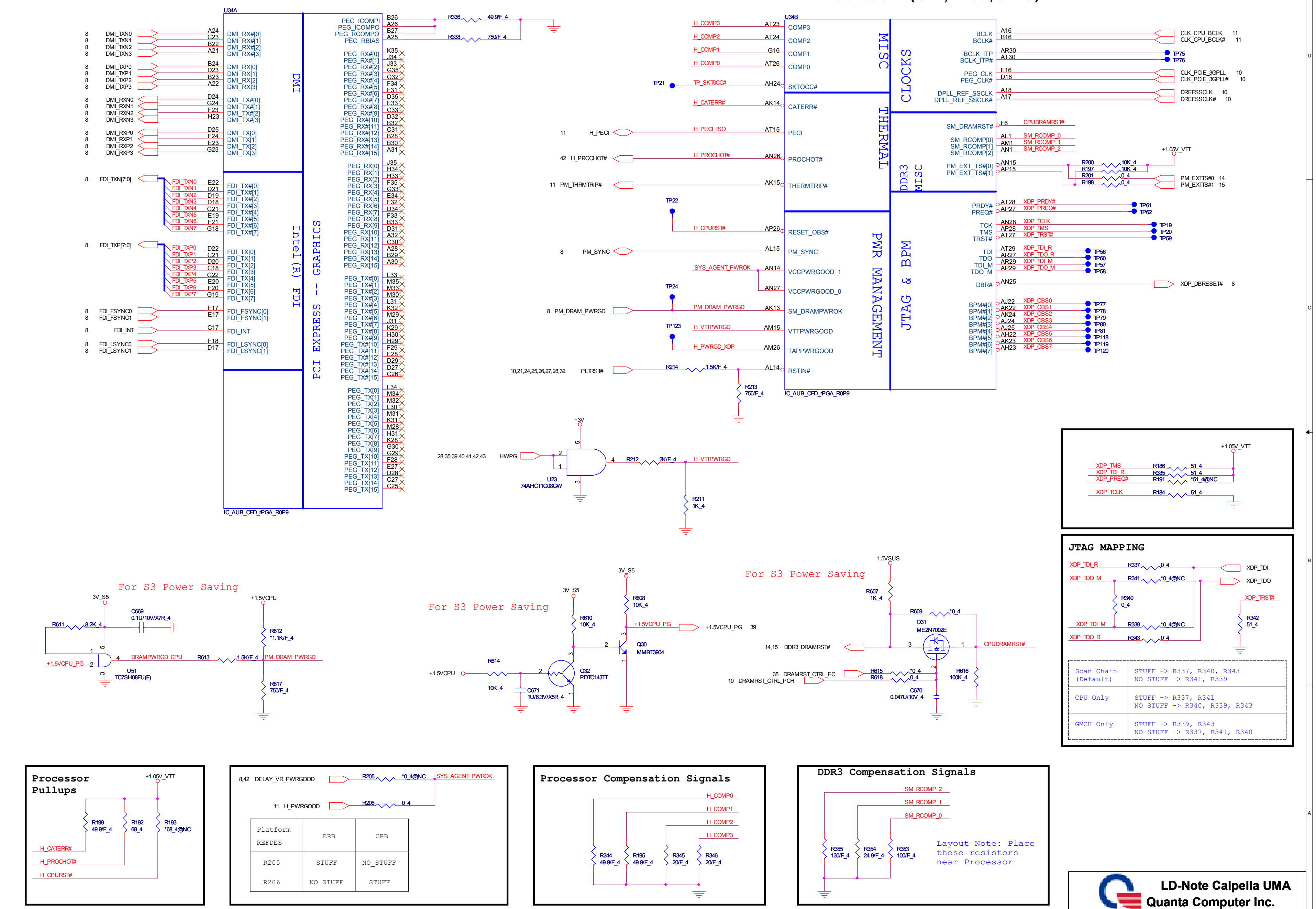
ARRANDALE PROCESSOR (DMI,PEG,FDI)

ARRANDALE PROCESSOR (CLK,MISC,JTAG)



JTAG MAPPING

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

Platform REFDES	ERB	CRB
R205	STUFF	NO_STUFF
R206	NO_STUFF	STUFF

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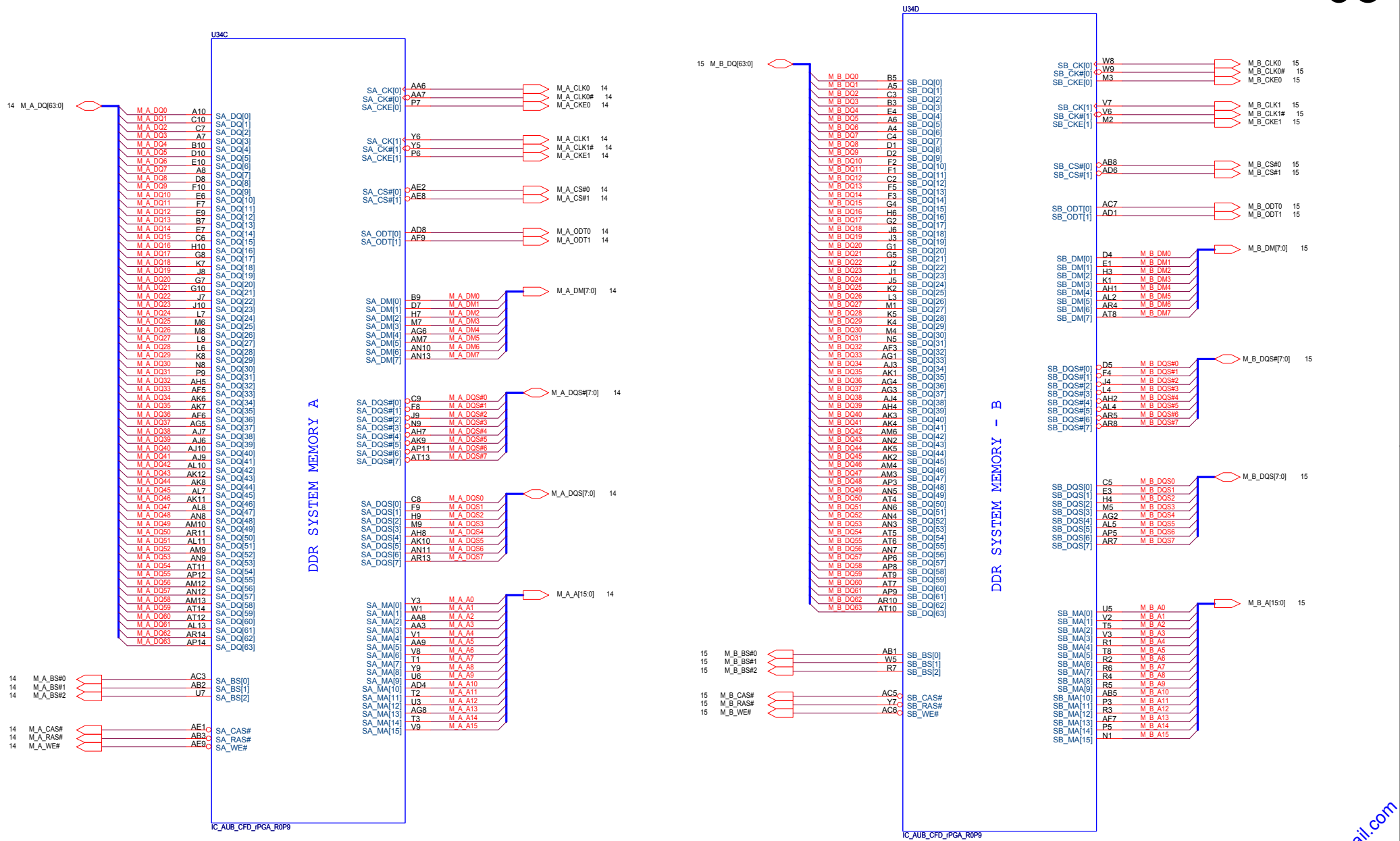
ARRANDALE PROCESSOR (DDR3)



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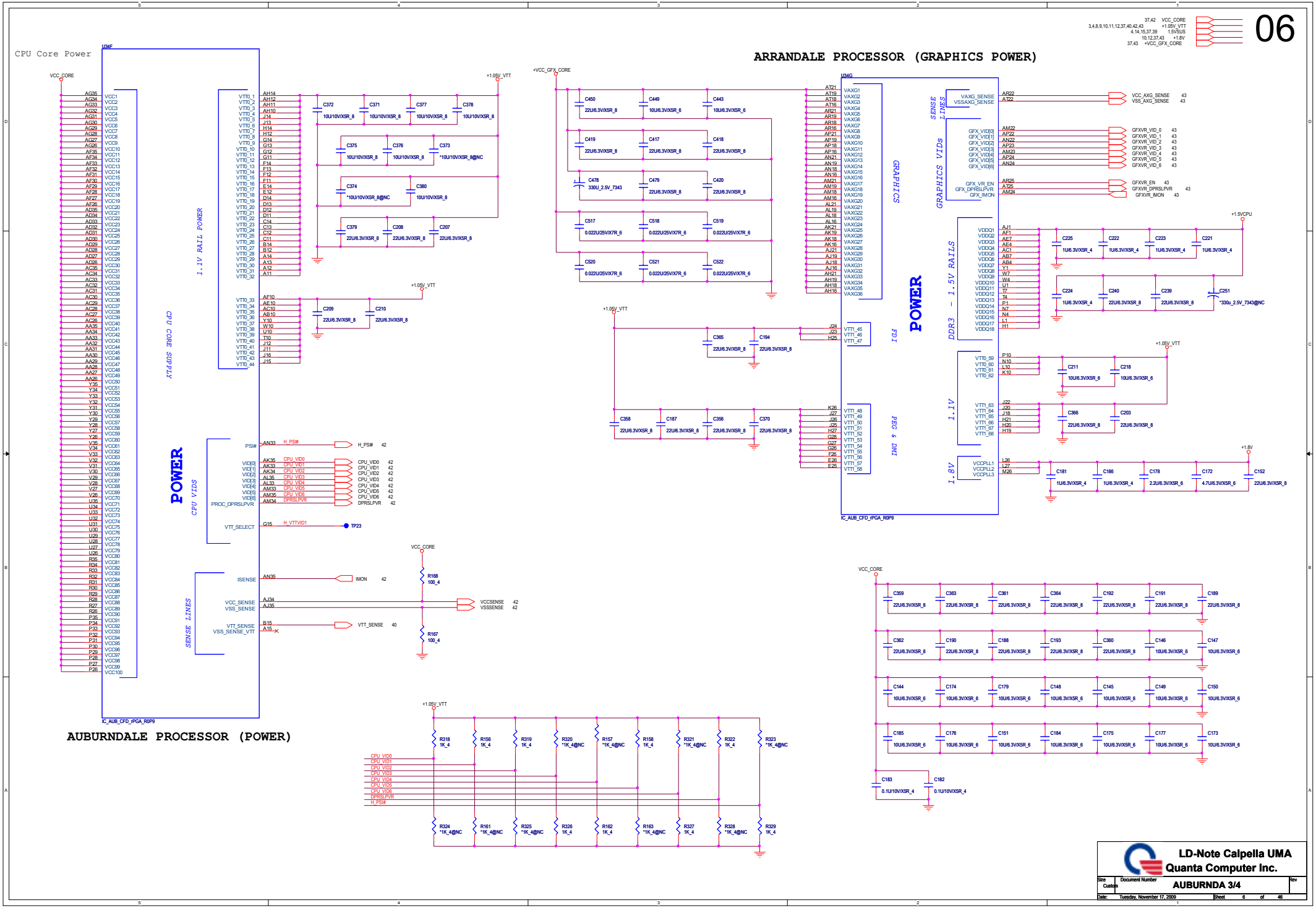
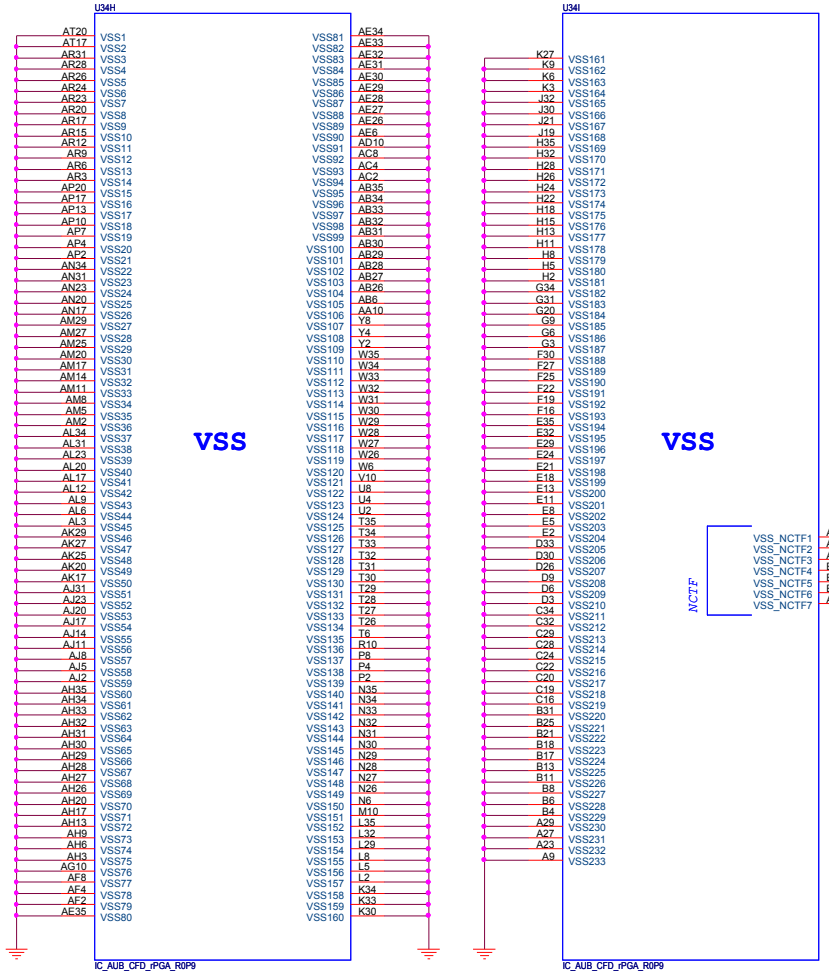
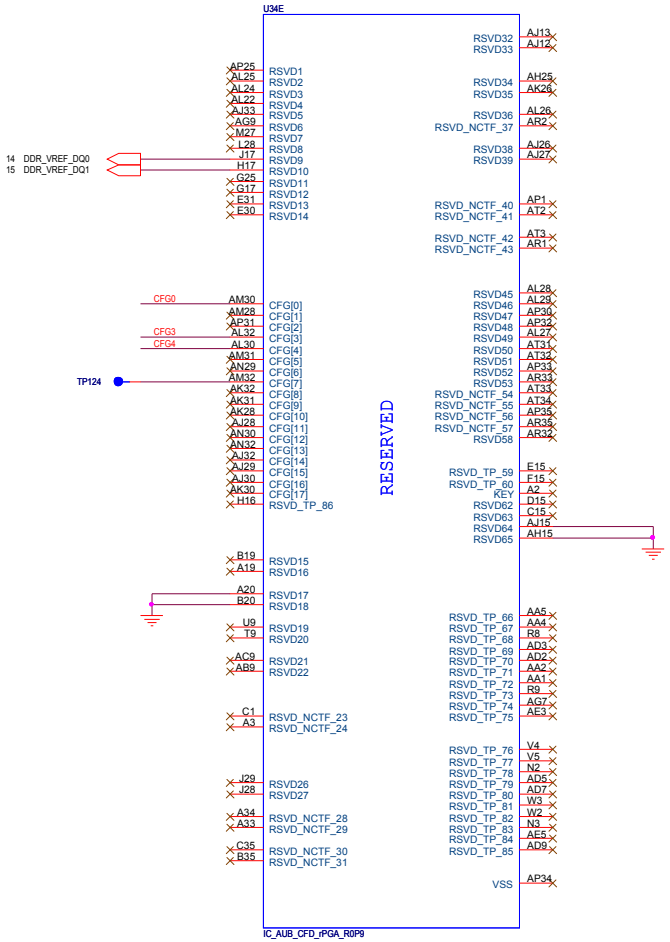

CPU Core Power
ARRANDALE PROCESSOR (GRAPHICS POWER)
AUBURNDALE PROCESSOR (POWER)
06
POWER
1.1V RAIL POWER
CPU CORE SUPPLY
CPU VIDS
SENSE LINES
GRAPHICS VIDs
SENSE LINES
DDR3 – 1.5V RAILS
1.1V
1.8V
PEG & DMI
PDI
GRAPHICS
IC_AUB_CFD_rPGA_R0P9
VCC_CORE
+1.05V_VTT
+VCC_GFX_CORE
+1.5VCPU
+1.8V

ARRANDALE PROCESSOR (GND)



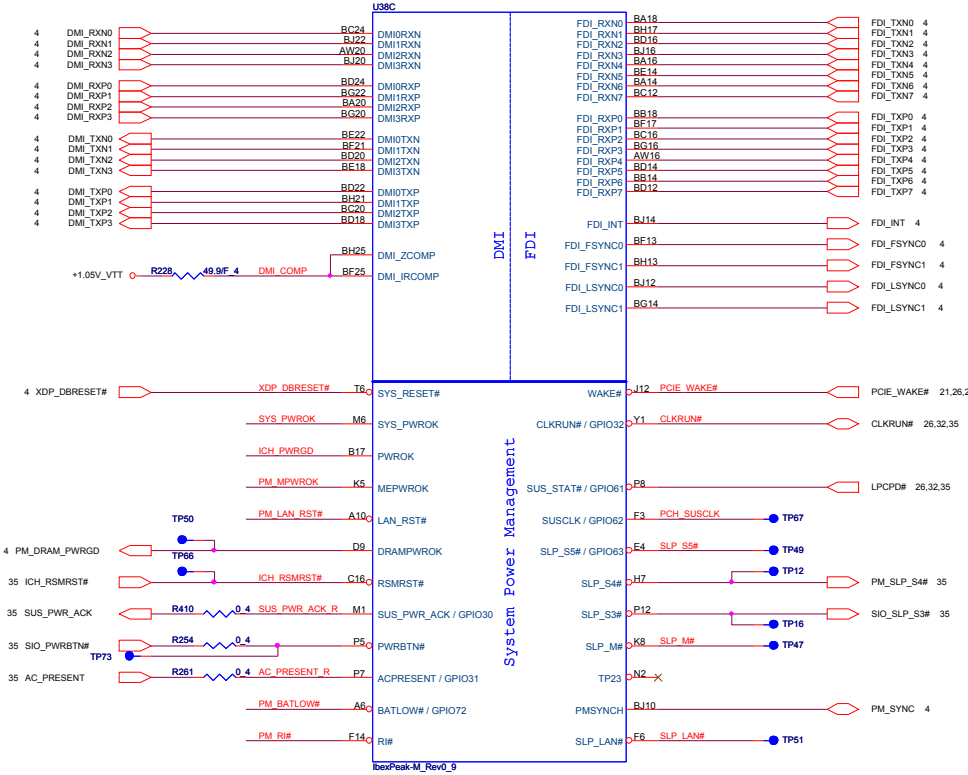
ARRANDALE PROCESSOR(RESERVED, CFG)

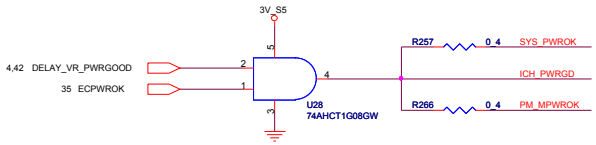


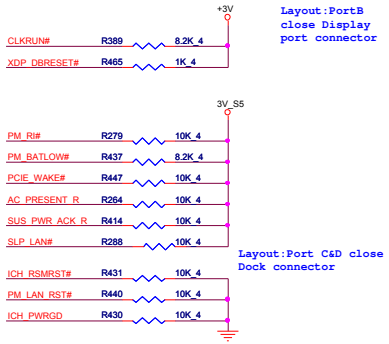
	1	0
CFG4 (Display Port Presence)	Disabled; No Physical Display Port attached to Embedded Diplay Port	Enabled; An external Display port device is connected to the Embedded Display port
CFG0 (PCI-Epress Configuration Select)	Single PEG	Bifurcation enabled
CFG3 (PCI-Epress Static Lane Reversal)	Normal Operation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

3,4,6,9,10,11,12,37,40,42,43 +1.05V_VTT
4,9,10,11,12,23,26,28,37 3V_S5
3,4,9,10,11,12,14,15,16,17,18,19,21,22,23,24,25,26,27,28,29,31,32,33,34,35,37,39,40,41,42 +3V
12,17,18,19,22,30,31,35,37 +5V

IBEX PEAK-M (DMI,FDI,GPIO)



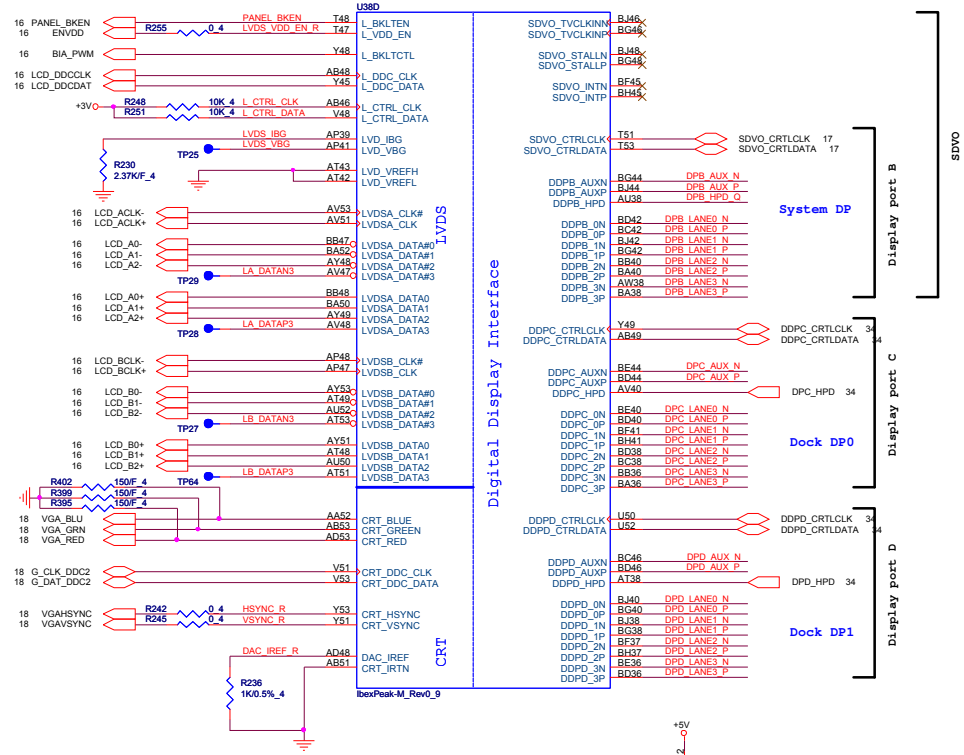


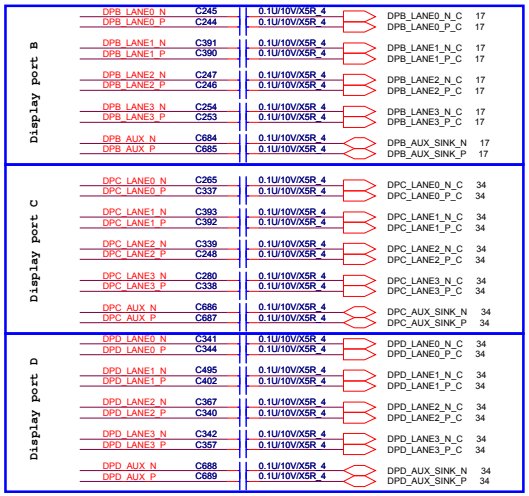


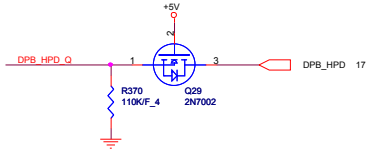
Layout:PortB close Display port connector

Layout:Port C&D close Dock connector

IBEX PEAK-M (LVDS,DDI)







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12,35 +3VRTC
16,21,24,33,34,35,37,38,41,43 3VPCU
3,4,8,10,11,12,14,15,16,17,18,19,21,22,23,24,25,26,27,28,29,31,32,33,34,35,37,39,40,41,42 +3V
4,8,10,11,12,23,26,28,37 3V_S5
3,4,6,8,10,11,12,37,40,42,43 +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)

RTC BATTERY

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

Cap values depend on Xtal

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.

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)

U38A

IbexPeak-M_Rev0_9

SATA HDD
SATA ODD
E-SATA

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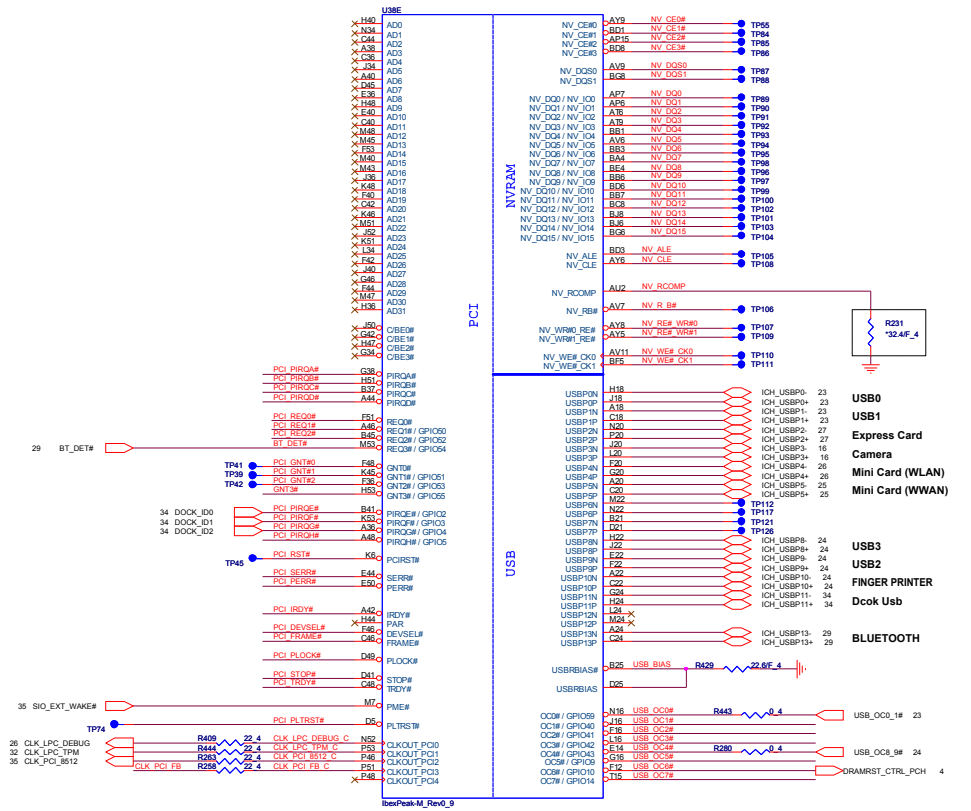
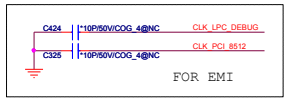
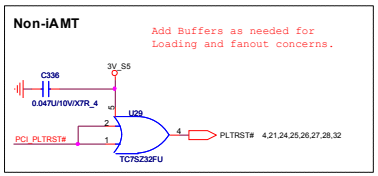
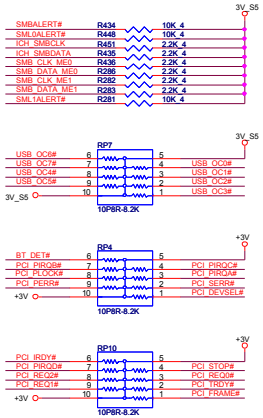
IBEX PEAK-M (PCI,USB,NVRAM)

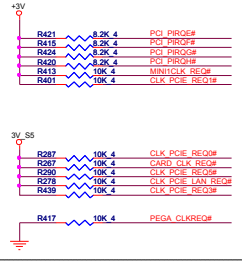
IBEX PEAK-M (PCI-E,SMBUS,CLK)

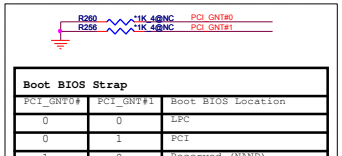


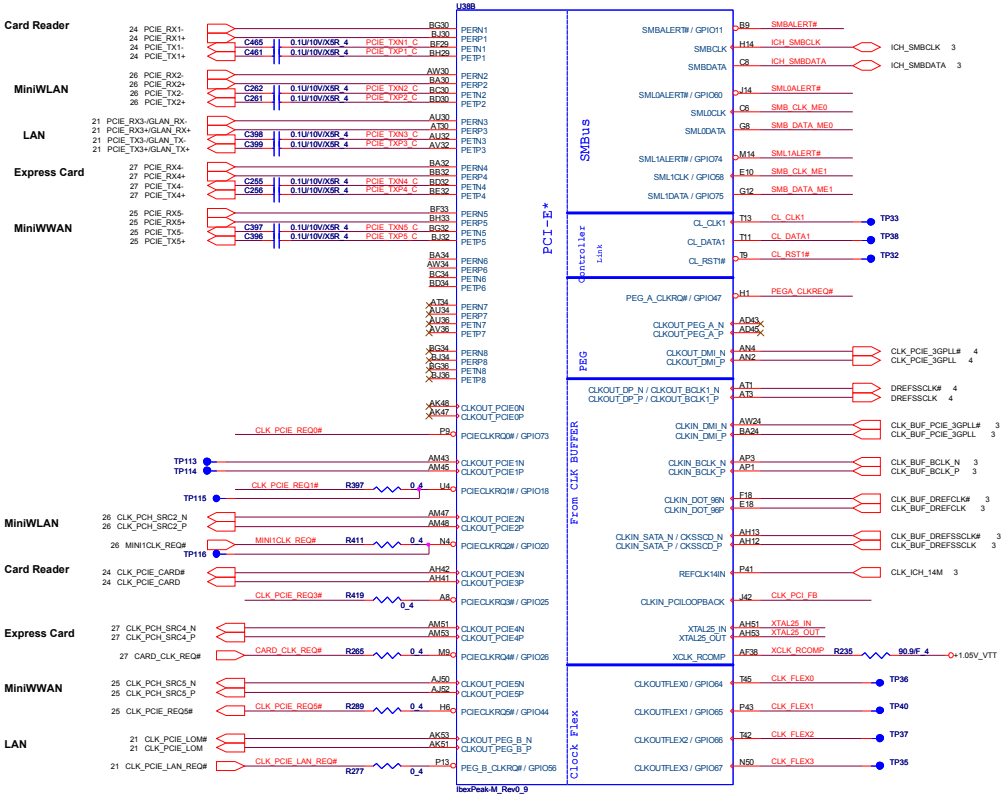


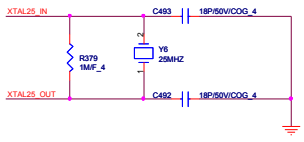


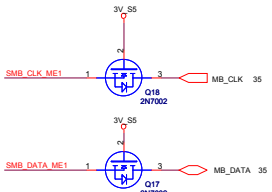


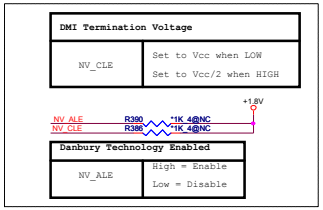


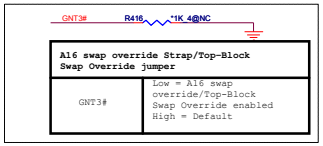












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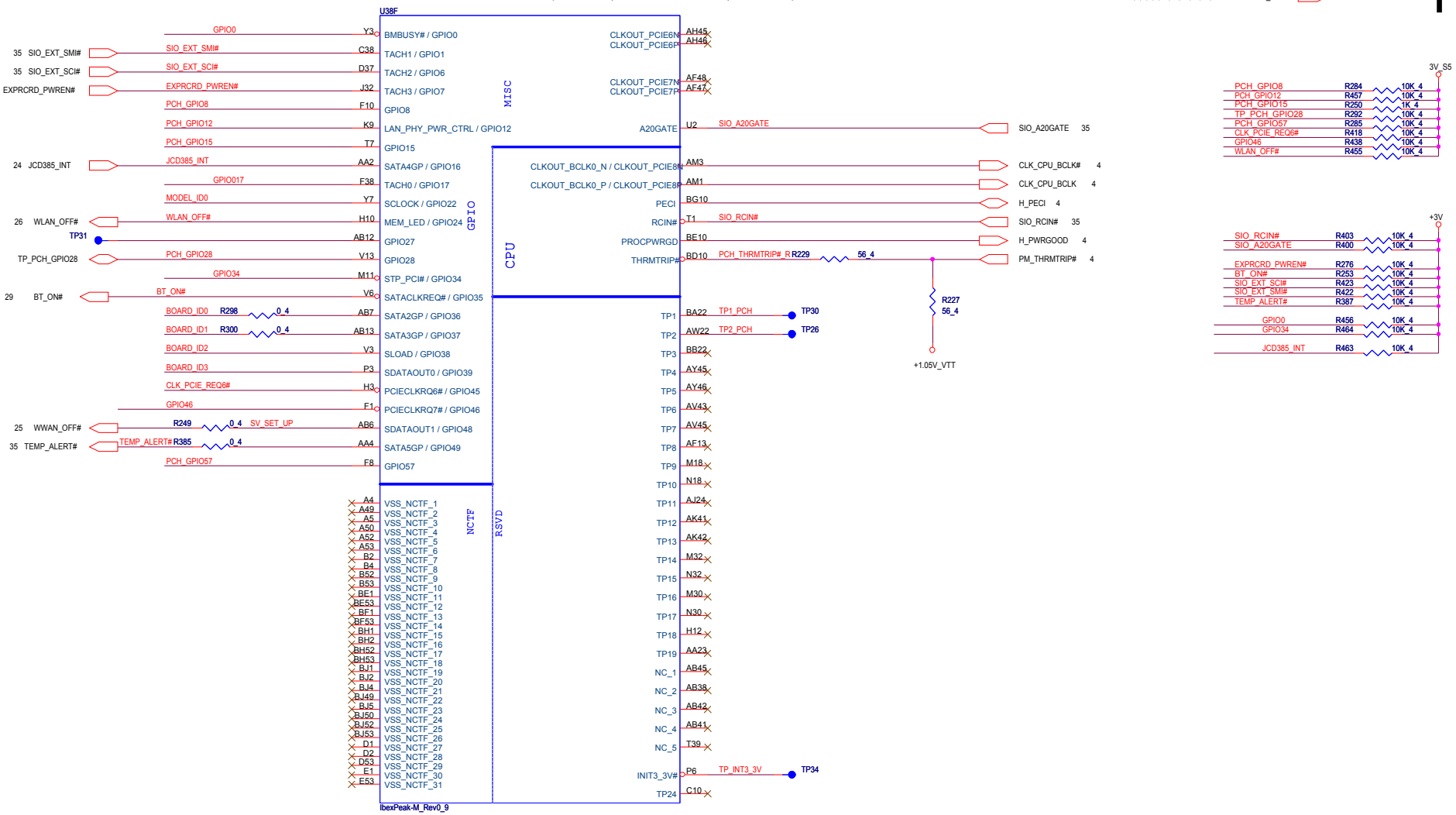
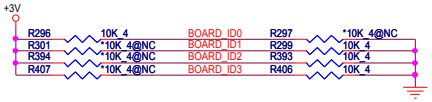
IBEX PEAK-M (GPIO,VSS_NCTF,RSVD)

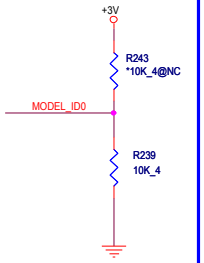
3,4,8,9,10,12,14,15,16,17,18,19,21,22,23,24,25,26,27,28,29,31,32,33,34,35,37,39,40,41,42 +3V
4,8,9,10,12,23,26,28,37 3V_S5
3,4,6,8,9,10,12,37,40,42,43 +1.05V_VTT



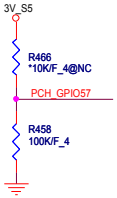
Board ID For Function	ID3 GPIO39	ID2 GPIO38	ID1 GPIO37	ID0 GPIO36
SDV	0	0	0	0
SIV	0	0	0	1
SIT	0	0	1	0
SVT	0	0	1	1
SOVP	0	1	0	0



Model ID	MODEL_ID0
14"	0
15"	1



TPM physical presence	
PCH_GPIO57	Low: Default



SV_SET_UP	1-X High = Strong (Default)

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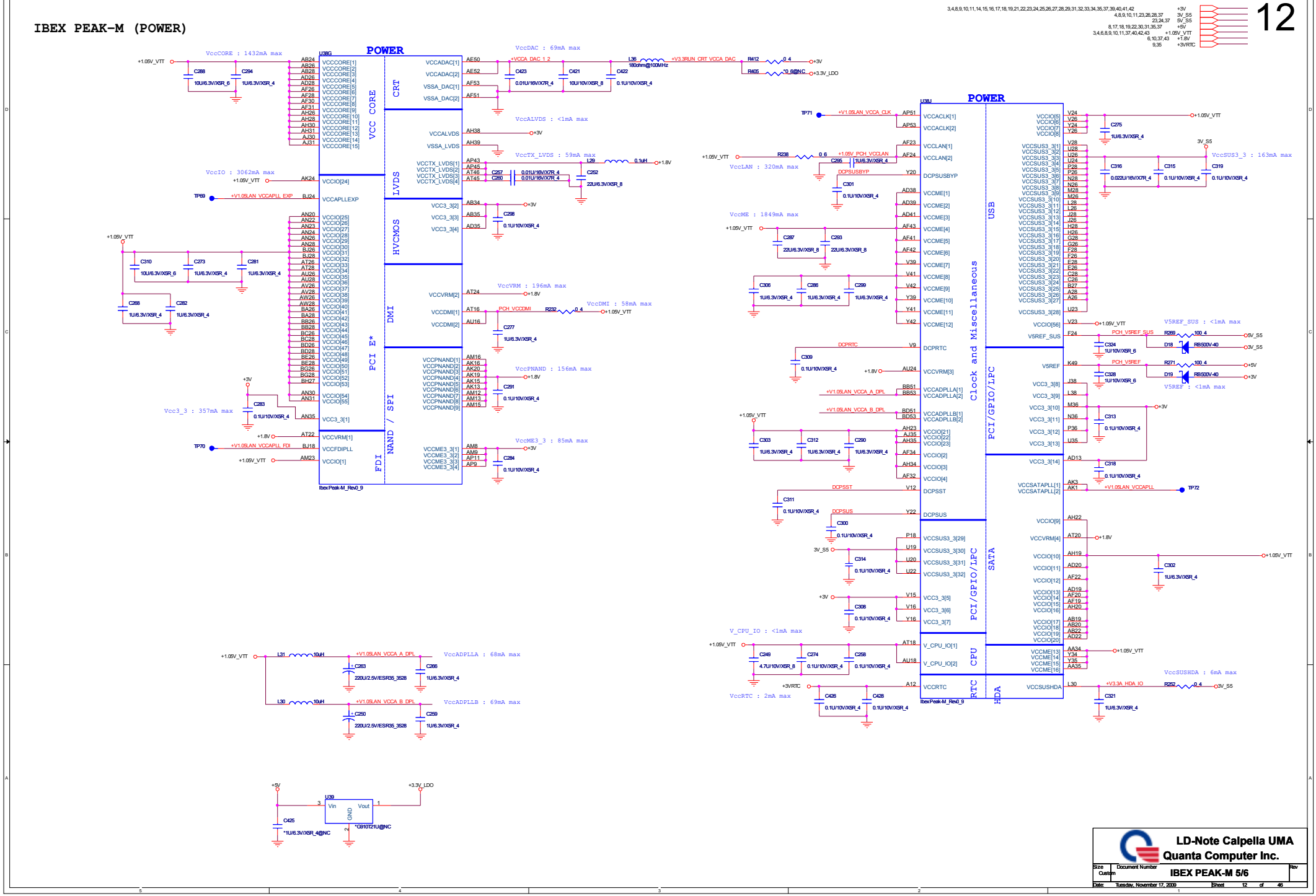
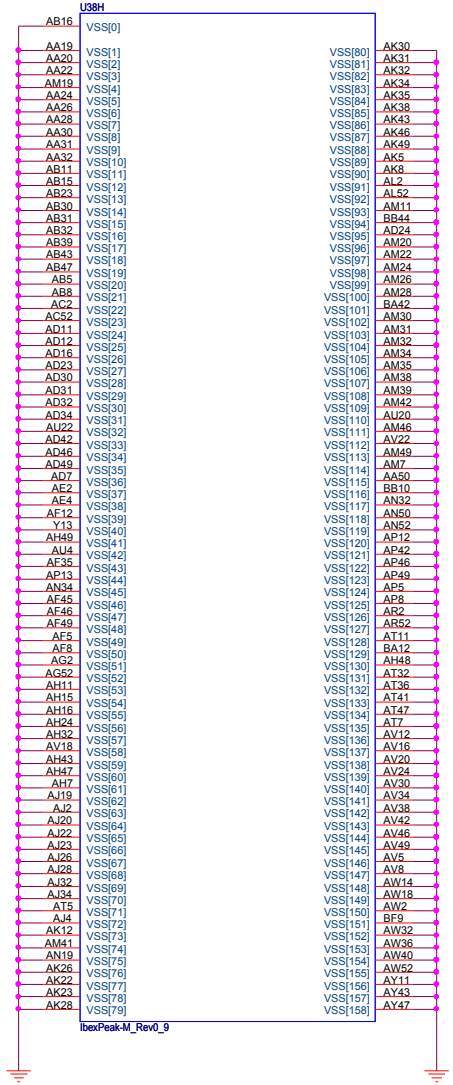
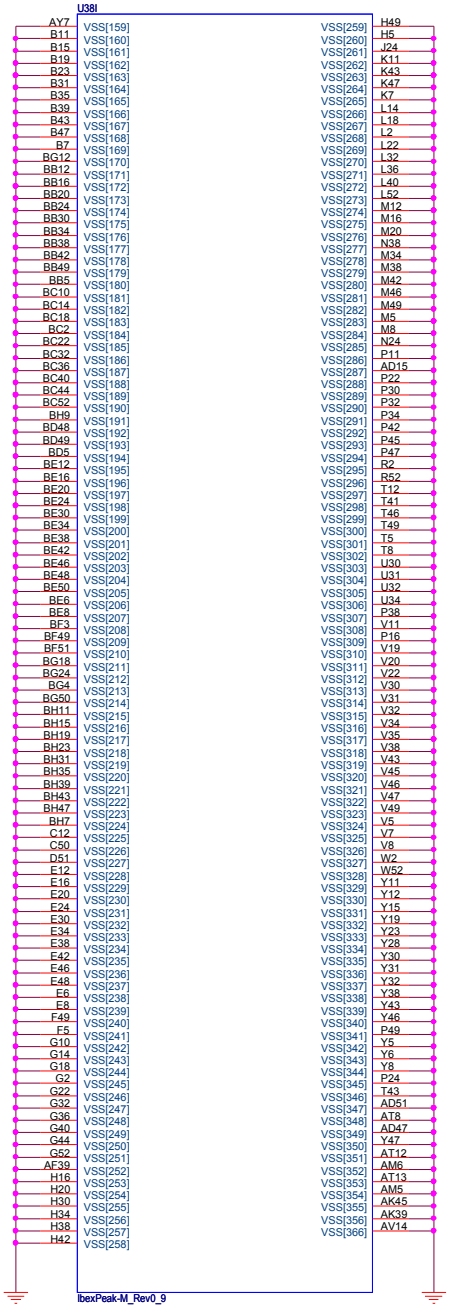
IBEX PEAK-M (POWER)



IBEX PEAK-M (GND)





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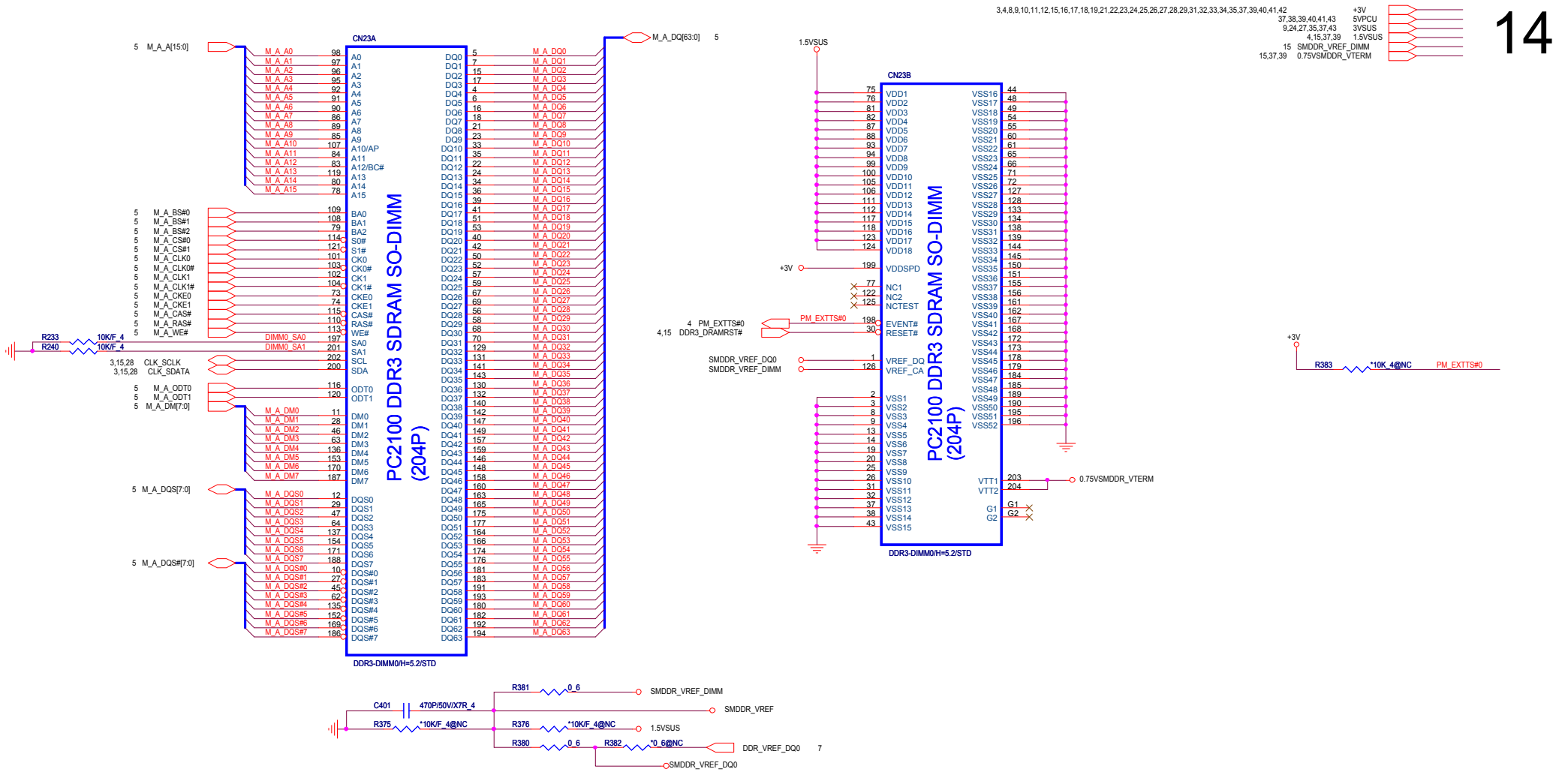
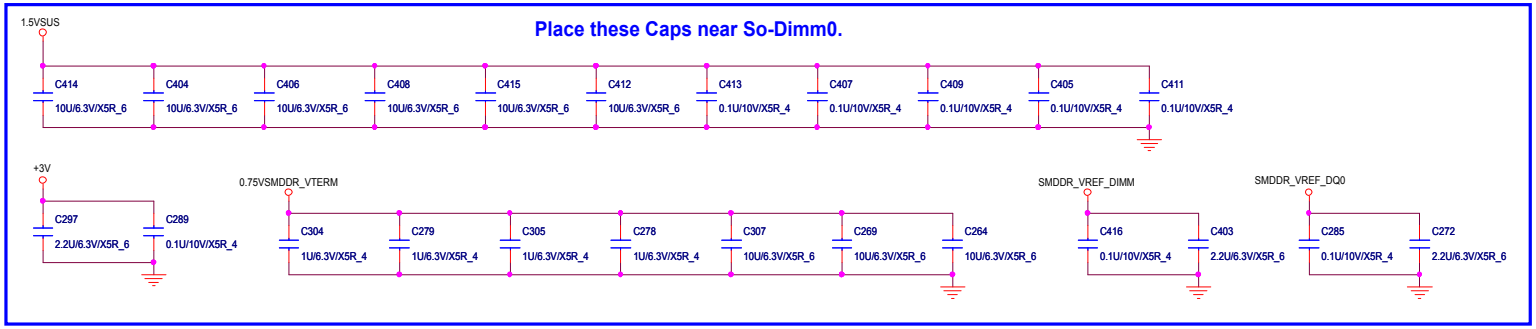


Place these Caps near So-Dimm0.



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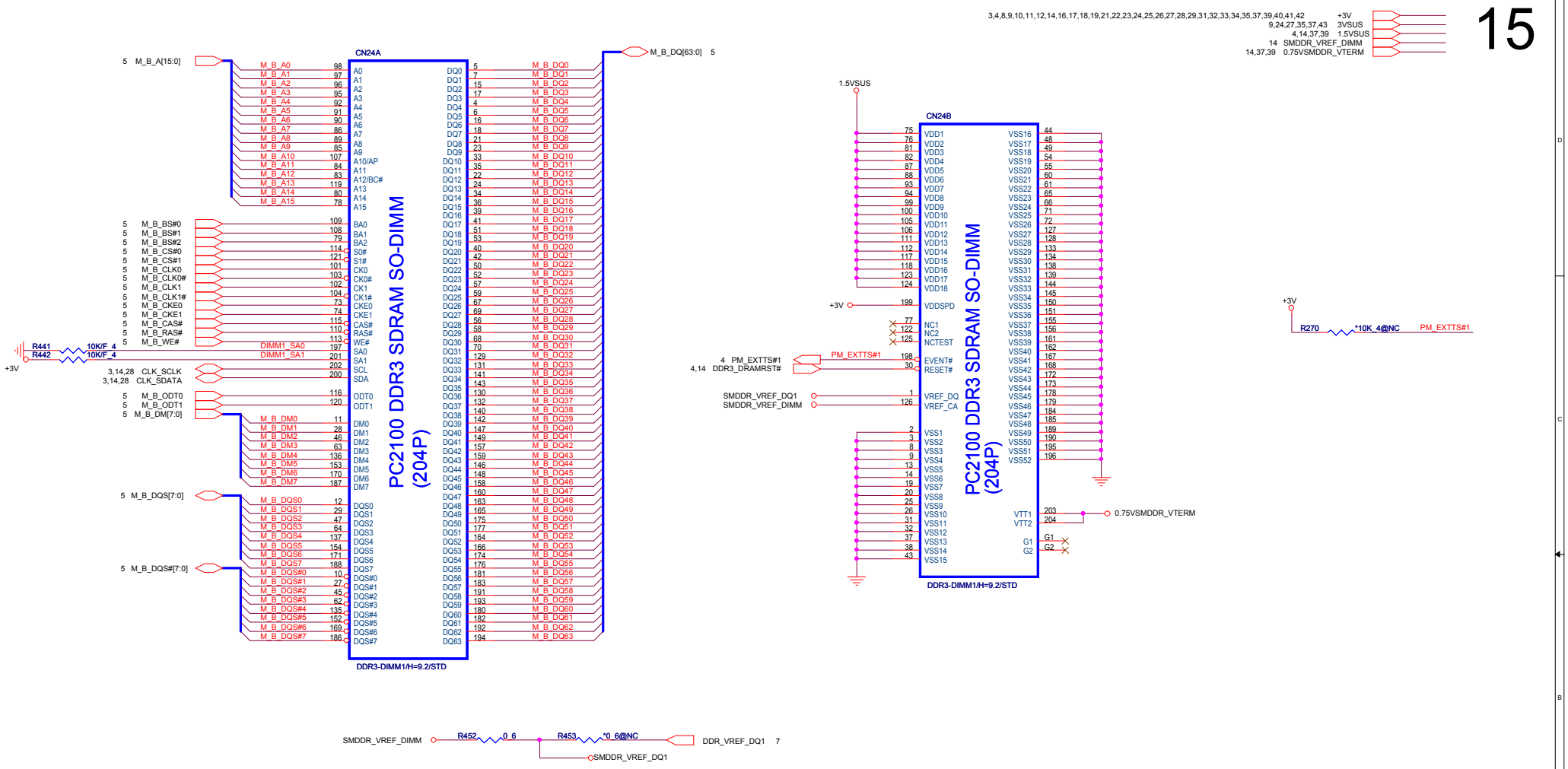

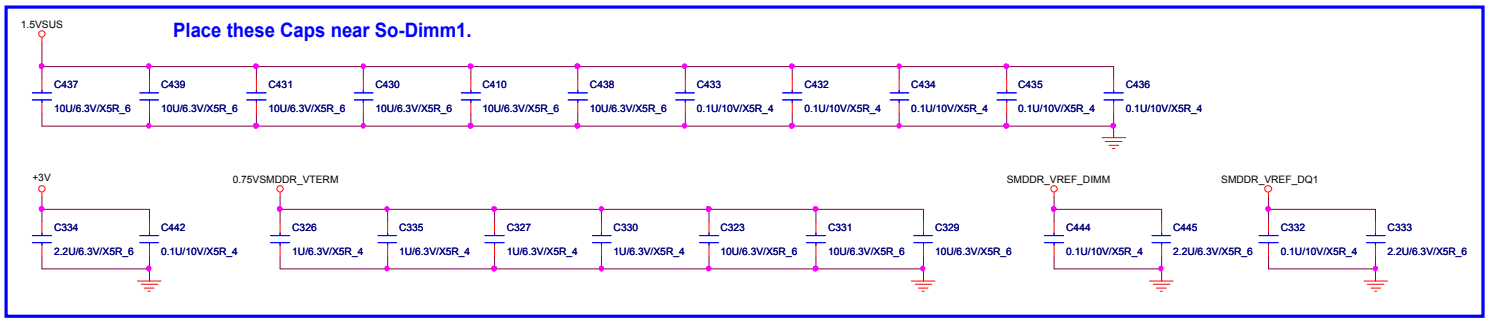

LD-Note Calpella UMA
Quanta Computer Inc.

Size	Document Number	Rev
Custom	DDR3 DIMM-1(H=9.2)	
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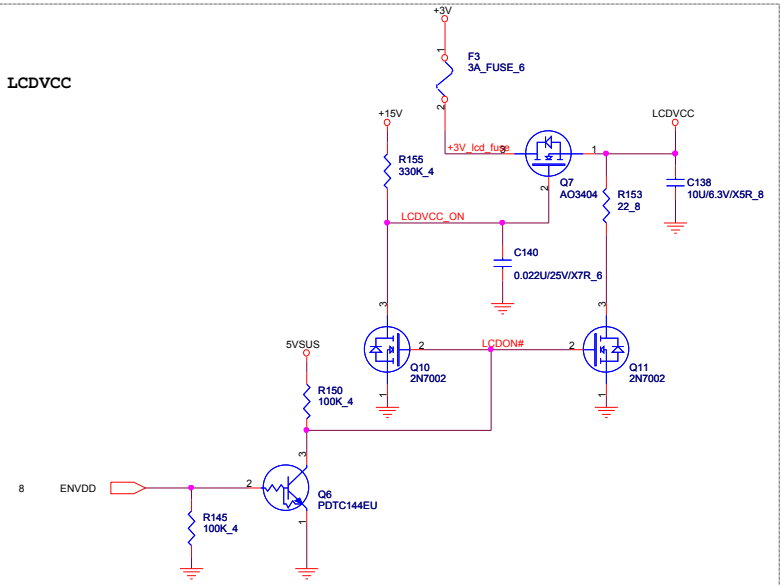
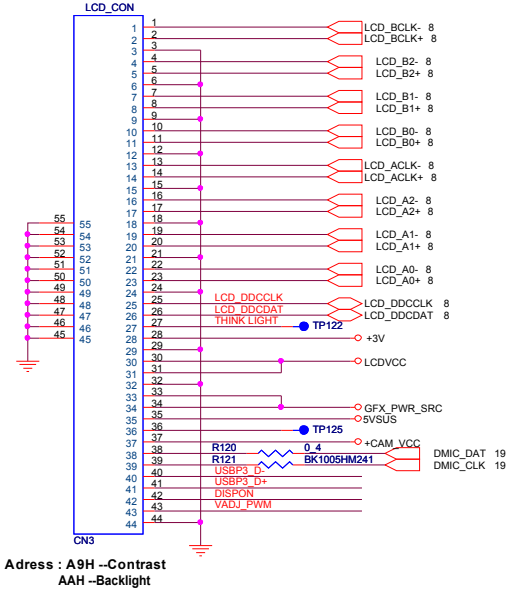
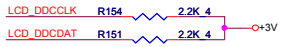
LCDVCC



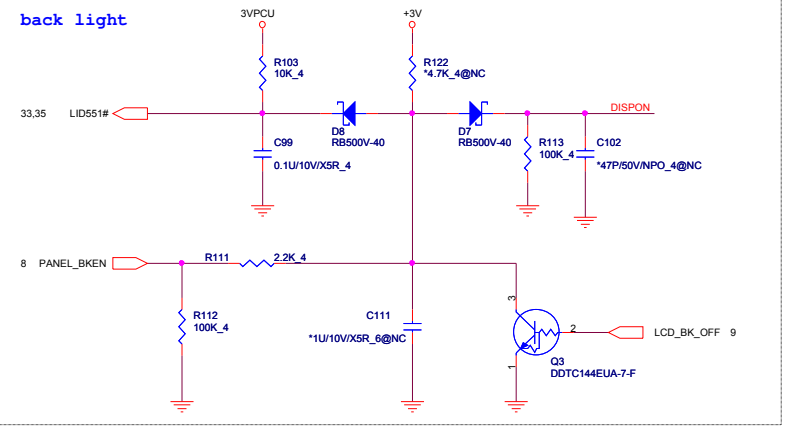


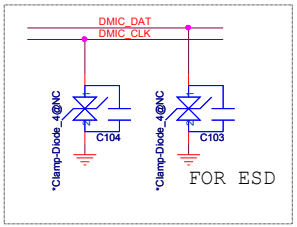
Adress : A9H --Contrast
AAH --Backlight

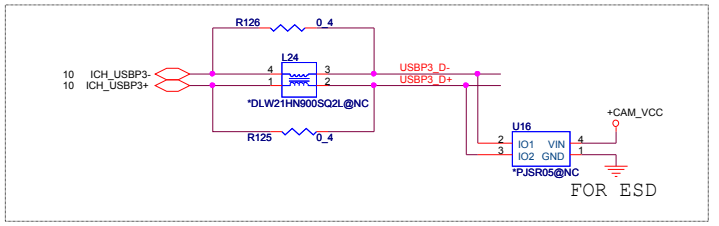
3,4,8,9,10,11,12,14,15,17,18,19,21,22,23,24,25,26,27,28,29,31,32,33,34,35,37,39,40,41,42 +3V
32,37,39,41 +15V
37,42,43 5VSUS
9,21,24,33,34,35,37,38,41,43 3VPCU
37,38,39,40,41,42,43 VIN
8,12,17,18,19,22,30,31,35,37 +5V



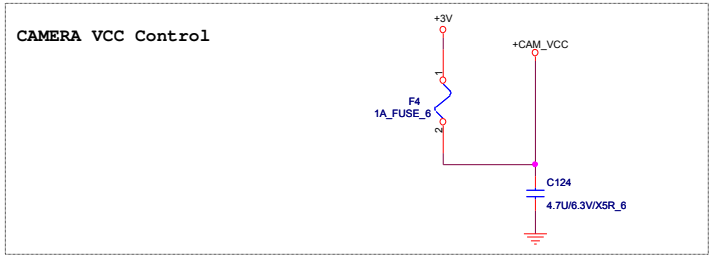
back light

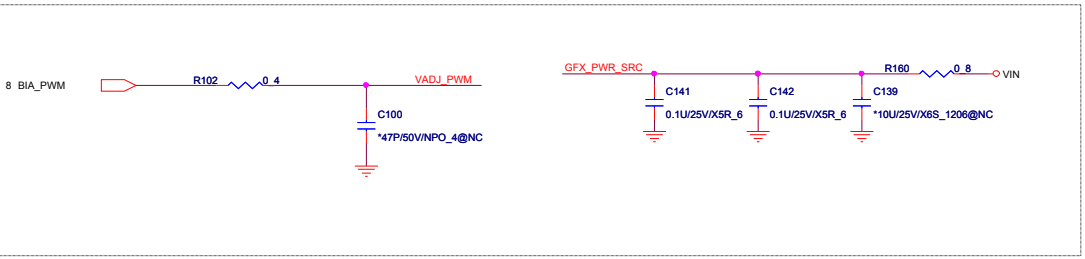






CAMERA VCC Control





LD-Note Calpella UMA
Quanta Computer Inc.

Size	Document Number	Rev
Custom	LCD + CAMERA CONN	
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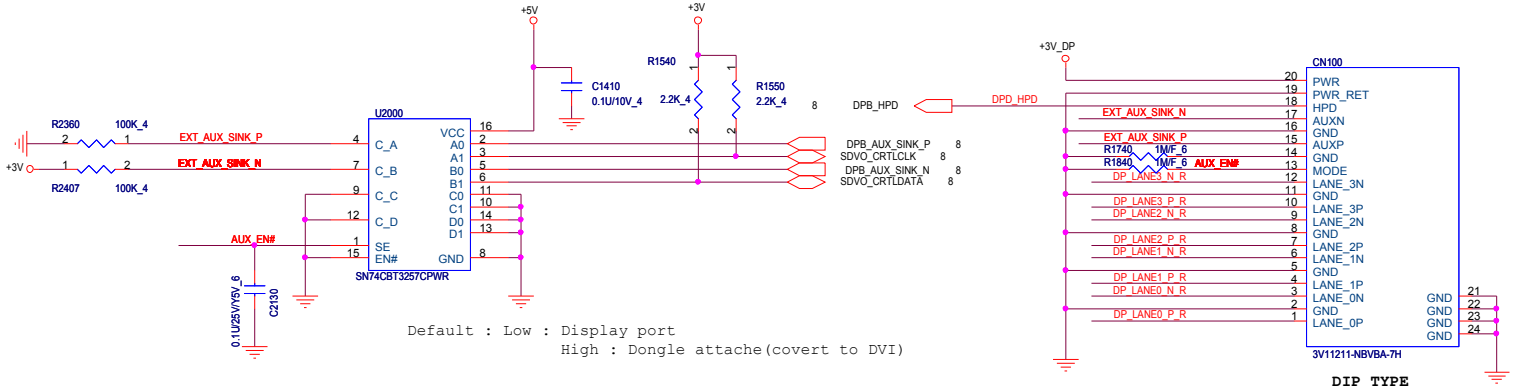
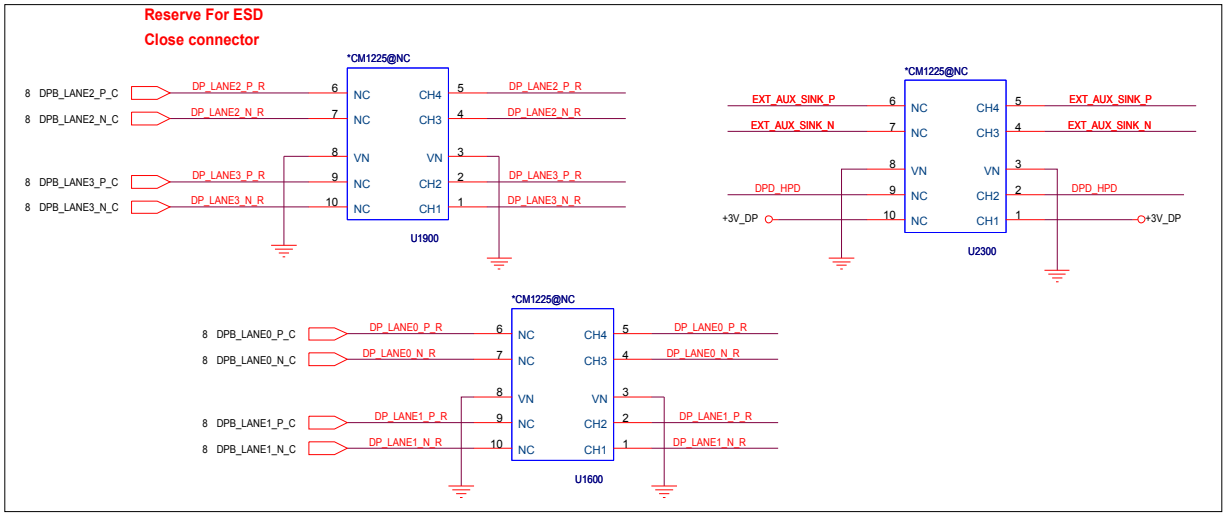
Display Port



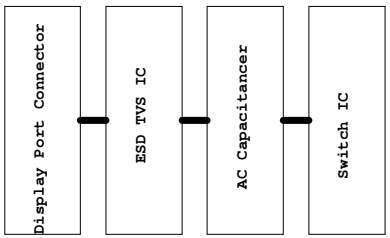
Default : Low : Display port
High : Dongle attache(covert to DVI)

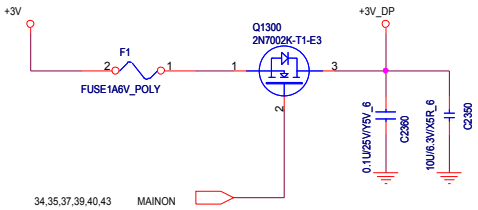
DIP TYPE

Reserve For ESD
Close connector



Layout Topology





G-Note Montevina
Quanta Computer Inc.

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Custom	Display Port	<RevCode>
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8,12,17,19,22,30,31,35,37 +5V
3,4,8,9,10,11,12,14,15,16,17,19,21,22,23,24,25,26,27,28,29,31,32,33,34,35,37,39,40,41,42 +3V

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

CRT_VCC
D1 RB500V-40
Layout Note:
40mil
C9 0.1U/10V/X5R_4
+5V
F2 FUSE40A6V
CRT_VCC_R

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
8 VGAVSYNC — U31 AHCT1G125DCH — VGAVSYNC_R — R28 10_4 — CRTVSYNC1 — CRTVSYNC1 34
C26 0.1U/10V/X5R_4
8 VGAHSYNC — U32 AHCT1G125DCH — VGAHSYNC_R — R15 10_4 — CRTHSYNC1 — CRTHSYNC1 34

Place near
U5001,U5002 < 200 mil

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

Place near CRT connector
< 200 mil

+3V
CRT_VCC
R8 2.2K_4
R5 2.2K_4
R4 2.2K_4
R6 2.2K_4

8 G_CLK_DDC2 — Q21 2N7002K-T1-E3 — DDCCLK2 — R1 0_6 — DDCCLK3 — DDCCLK3 34
8 G_DAT_DDC2 — Q22 2N7002K-T1-E3 — DDCDAT2 — R2 0_6 — DDCDAT3 — DDCDAT3 34

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

+5V
C494 0.1U/10V_4

U40 SN74CBT3257CPWR
8 VGA_RED — C_A — CRT_R_CON — DOCK_RED 34
8 VGA_GRN — C_B — CRT_G_CON — DOCK_GEN 34
8 VGA_BLU — C_C — CRT_B_CON — DOCK_BLU 34
R396 10K_4
34 DOCK_ATTACHED_3V# — SE EN#
VCC GND

SEL	FUNCTION(COM)
LOW	IN_x0
HIGH	IN_x1

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
D28 TVSS5VESPT — CRT_VCC_R

LD-Note Calpella UMA
Quanta Computer Inc.

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Custom	CRT CONN	
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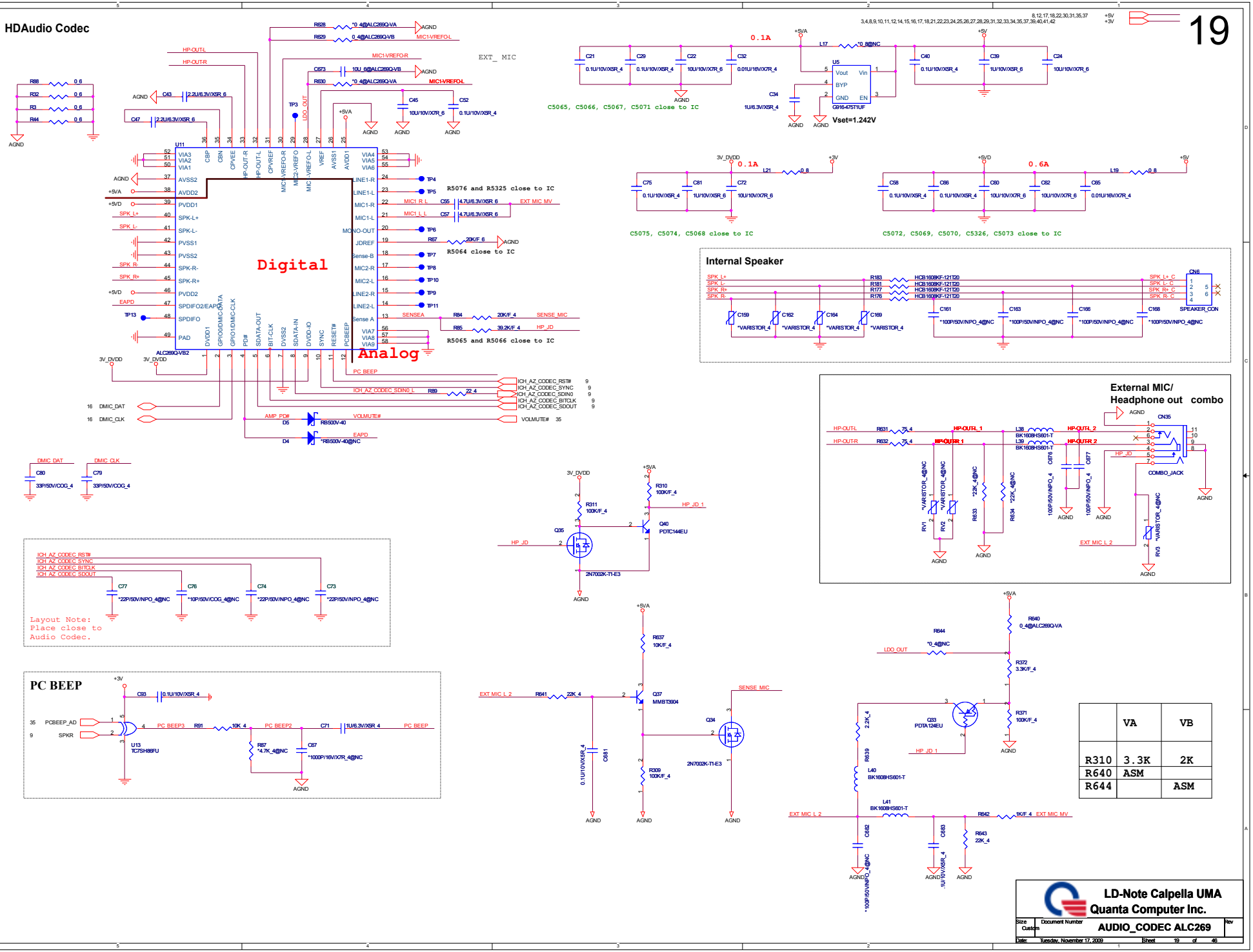
HDAudio Codec



	VA	VB
R310	3.3K	2K
R640	ASM	
R644		ASM

LD-Note Calpella UMA
Quanta Computer Inc.

Size	Document Number	Rev
Custom	AUDIO_CODEC ALC269	
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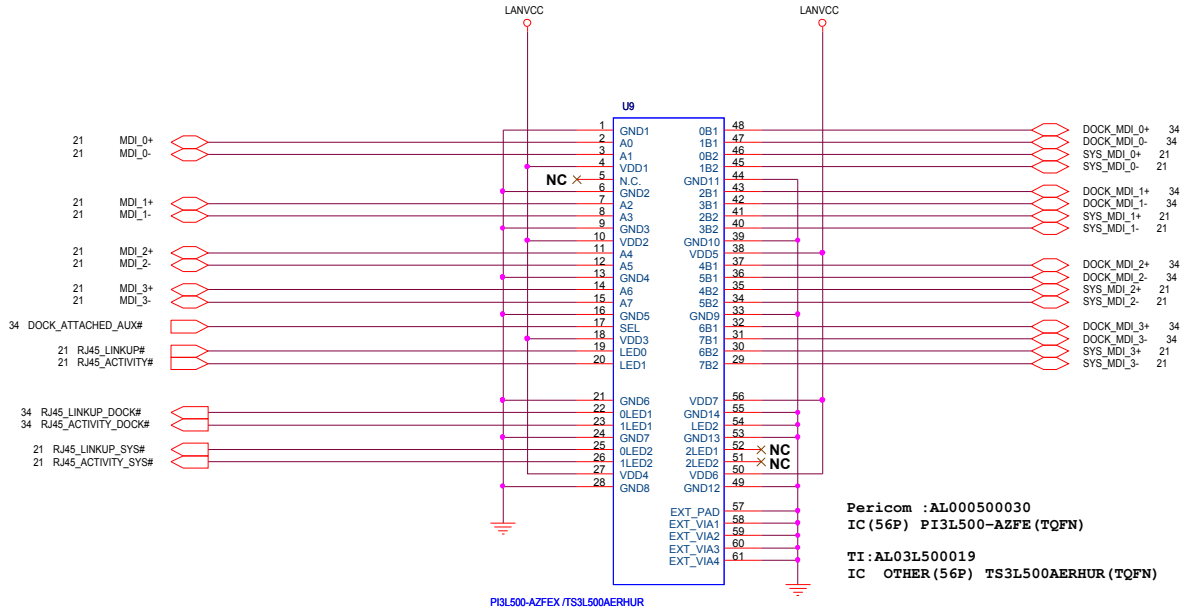
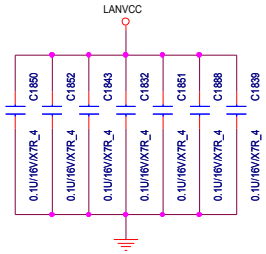


Pericom :AL000500030
IC(56P) PI3L500-AZFE(TQFN)

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



PROJECT :G NOTE
Quanta Computer Inc.

Size	Document Number	Rev
Custom	LAN SW	<RevCode>
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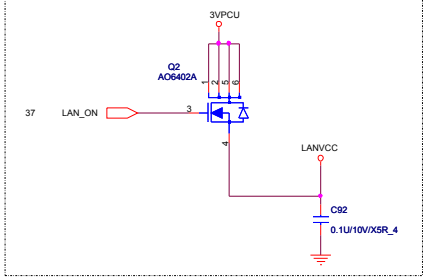
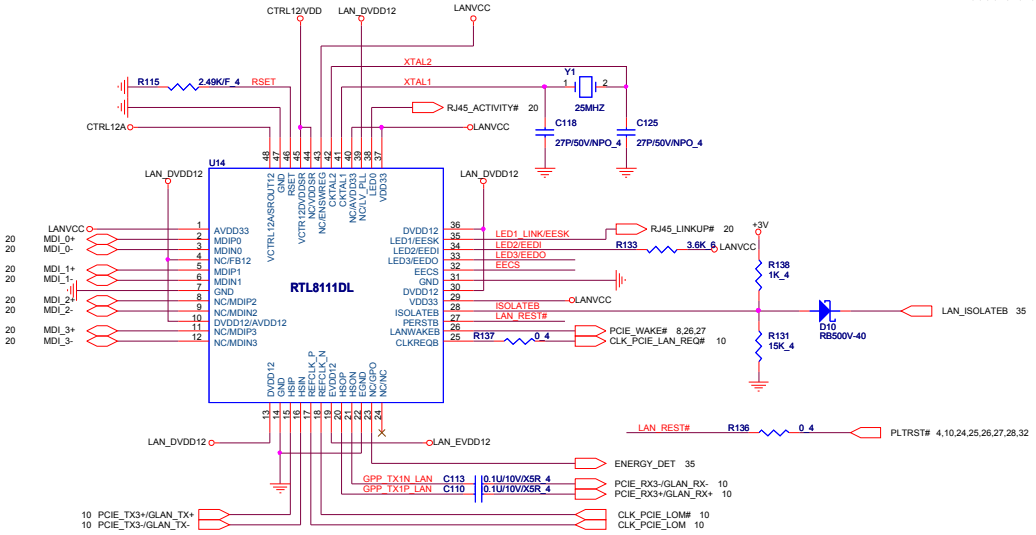
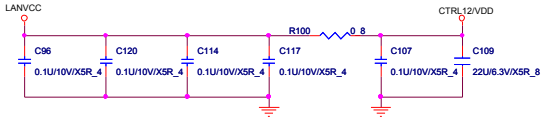
20,34,37 LANVCC
3,4,8,9,10,11,12,14,15,16,17,18,19,22,23,24,25,26,27,28,29,31,32,33,34,35,37,39,40,41,42 +3V
9,16,24,33,34,35,37,38,41,43 3VPCU

LANVCC



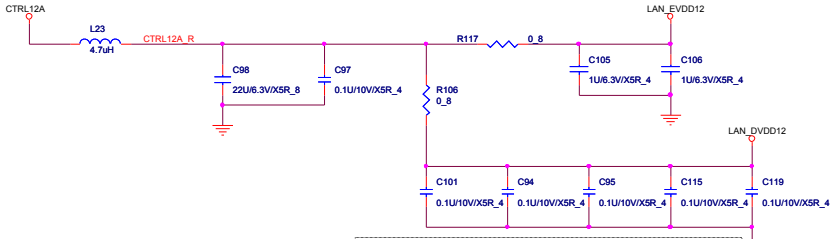


* C5116 and C5273 are for U5006 EVDD12 pin 19.



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

Place C5113 ,C5094 closed to U5006 pins44,45.

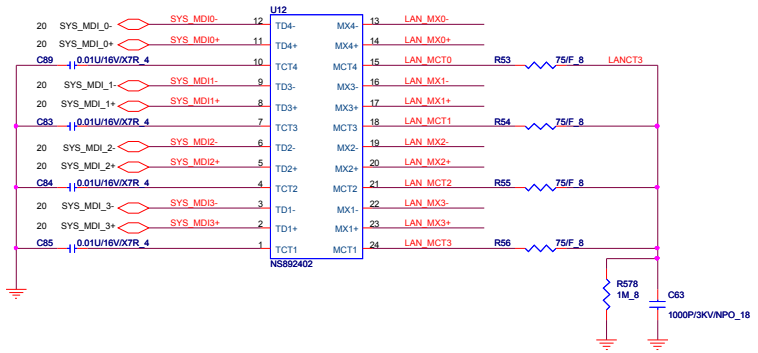


* C5119 to C5123 are for U5006 VDD12 pins-- 10, 13, 30, 36, 39.

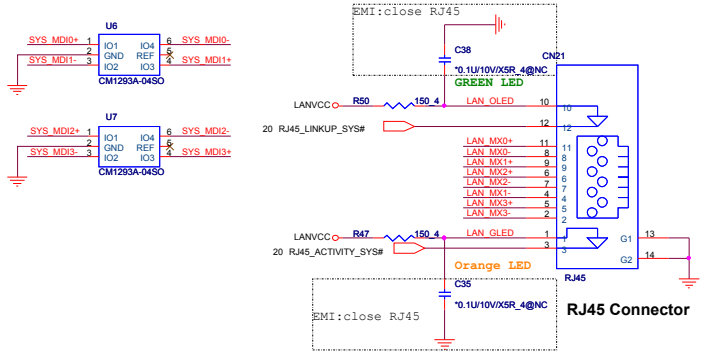
Note 1: The Trace length between L1 and 8111DL's Pin 1 must be within 0.5 cm. C5 and C8 to L1 must be within 0.5cm. Refer to Layout guide for more detail.

Layout:All termination signal should have 20 mil trace

Tramsformer



RJ45 Connector



RJ45 Connector

LD-Note Calpella UMA
Quanta Computer Inc.

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Custom	RTL8111DL	
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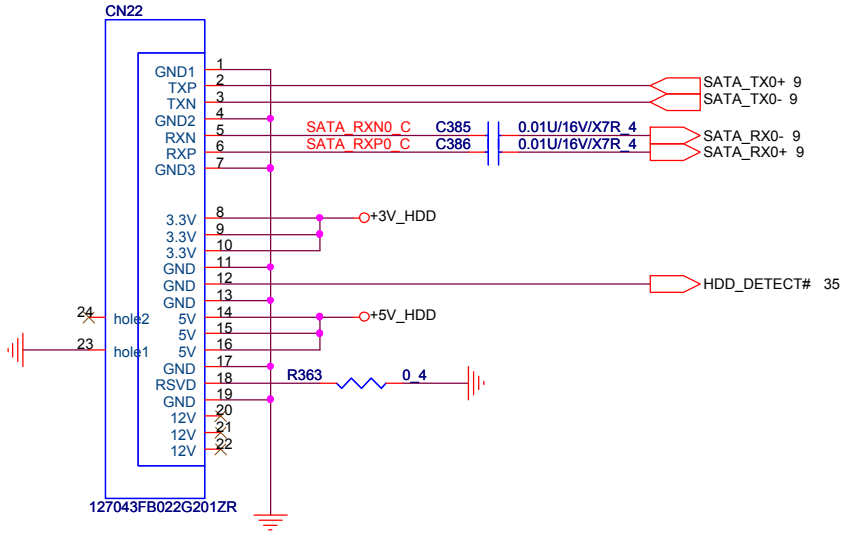
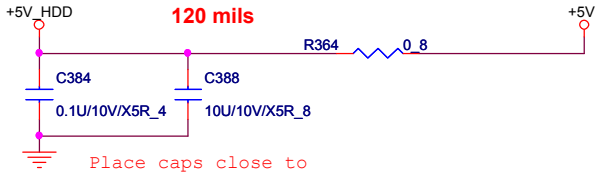
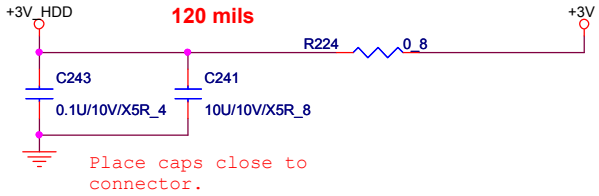
SATA Connector.

8,12,17,18,19,30,31,35,37 +5V
3,4,8,9,10,11,12,14,15,16,17,18,19,21,23,24,25,26,27,28,29,31,32,33,34,35,37,39,40,41,42 +3V

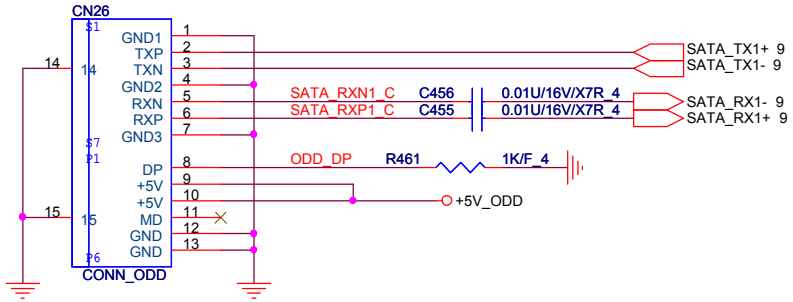
22

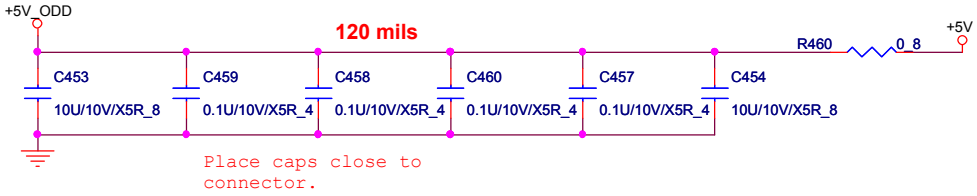






ODD Connector





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Quanta Computer Inc.

Size	Document Number	Rev
Custom	SATA (HDD&CD_ROM)	
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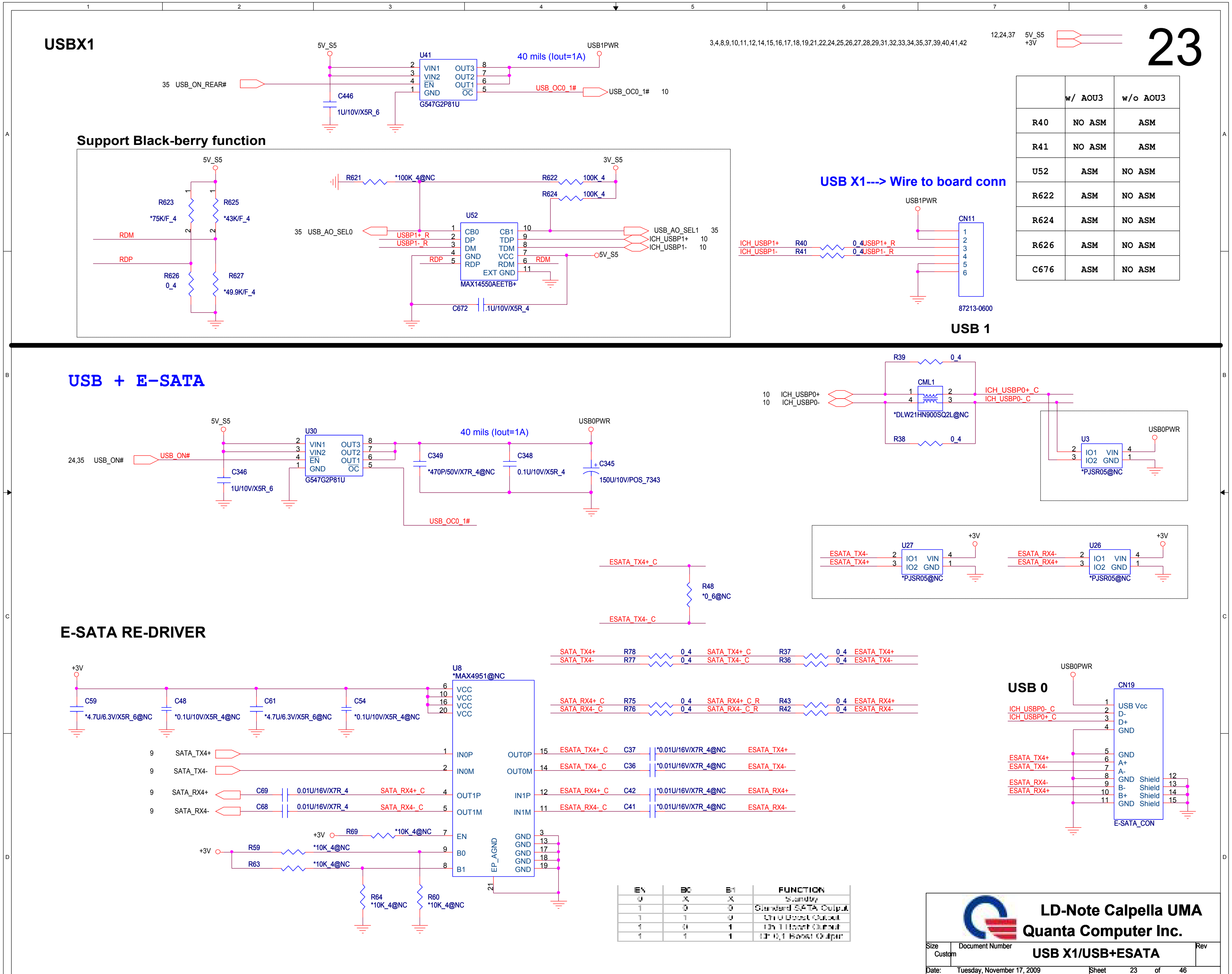

	w/ AOU3	w/o AOU3
R40	NO ASM	ASM
R41	NO ASM	ASM
U52	ASM	NO ASM
R622	ASM	NO ASM
R624	ASM	NO ASM
R626	ASM	NO ASM
C676	ASM	NO ASM

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.

Size: Custom | Document Number: USB X1/USB+ESATA | Rev

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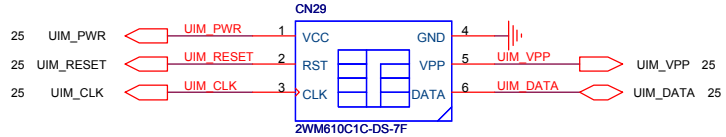
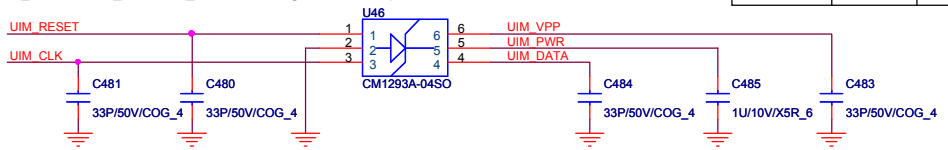
12,23,37 5V_S5
3,4,8,9,10,11,12,14,15,16,17,18,19,21,22,23,25,26,27,28,29,31,32,33,34,35,37,39,40,41,42 +3V
9,16,21,33,34,35,37,38,41,43 3VPCU
9,27,35,37,43 3VSUS

SIM Card CONN

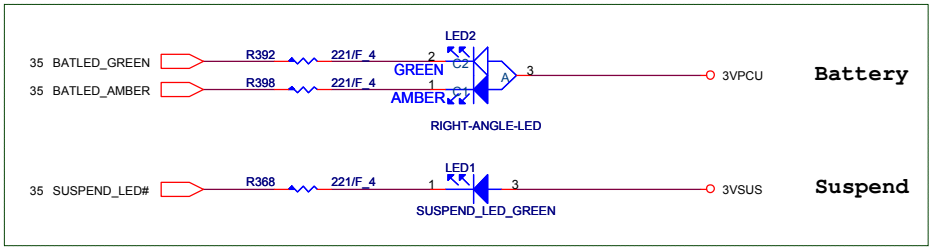


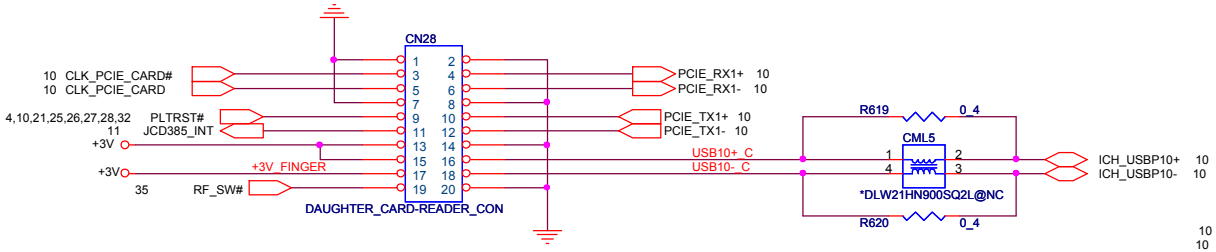
	w/ WWAN	w/o WWAN
CN29	ASM	NO ASM
U46	ASM	NO ASM
C480-C481	ASM	NO ASM
C483-C485	ASM	NO ASM

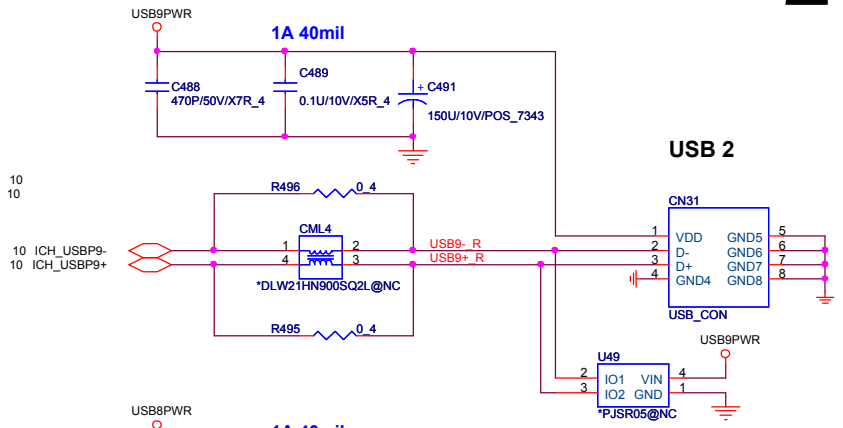
Layout Note:
UIM_RESET,UIM_CLK,UIM_DATA routting as short as possible

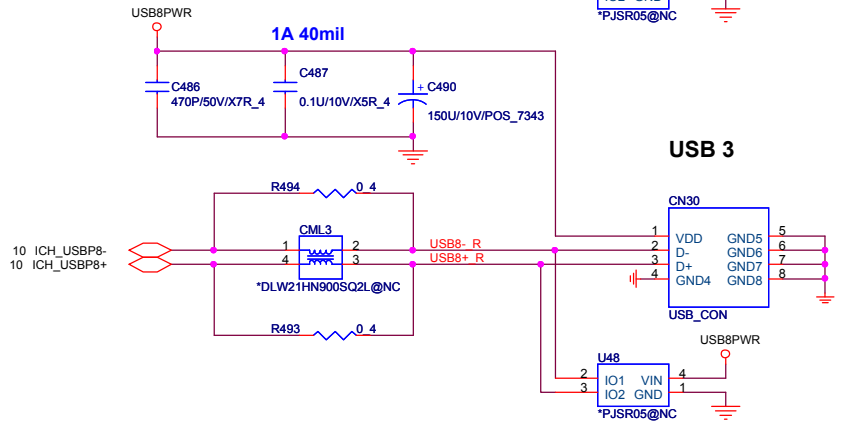


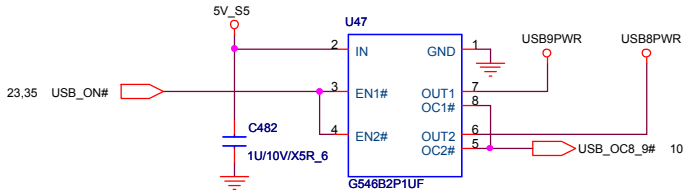
FRONT LEDs











LD-Note Calpella UMA
Quanta Computer Inc.

Size	Document Number	Rev
Custom	USB X2/SIM_CARD/LEDs/RF	
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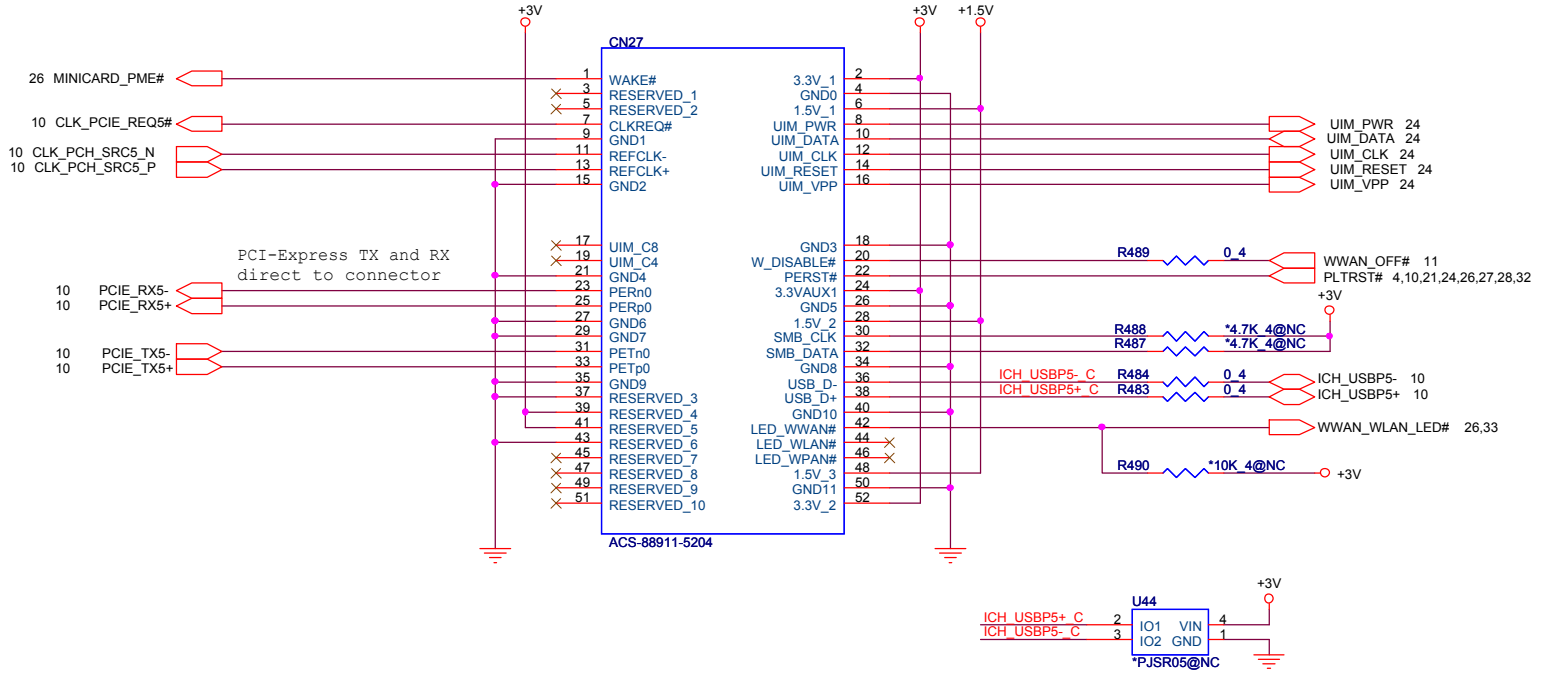
3,4,8,9,10,11,12,14,15,16,17,18,19,21,22,23,24,26,27,28,29,31,32,33,34,35,37,39,40,41,42 +3V
3,26,27,39 +1.5V

25

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

LD-Note Calpella UMA
Quanta Computer Inc.

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Custom	MINI-Card (UWB, WWAN)	
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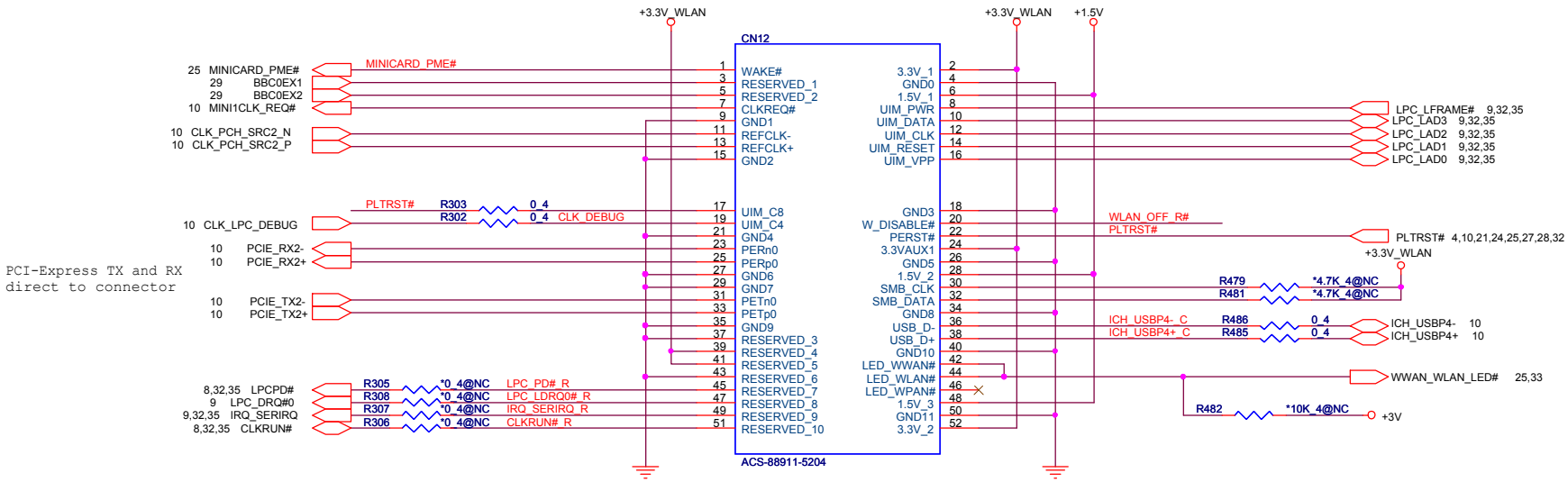
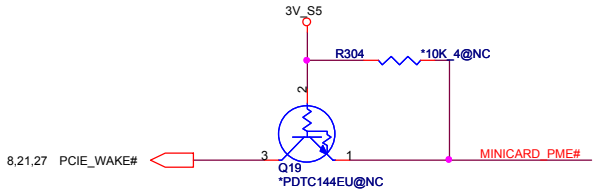
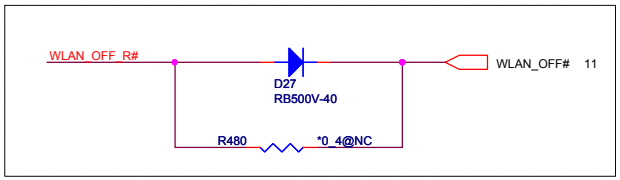
MiniCard WLAN/WiMAX connector

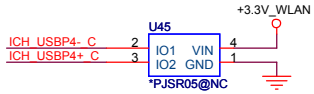
26

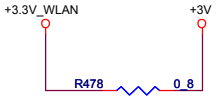
3,4,8,9,10,11,12,14,15,16,17,18,19,21,22,23,24,25,27,28,29,31,32,33,34,35,37,39,40,41,42 +3V
3,25,27,39 +1.5V
9,16,21,24,33,34,35,37,38,41,43 3VPCU
16,37,38,39,40,41,42,43 VIN

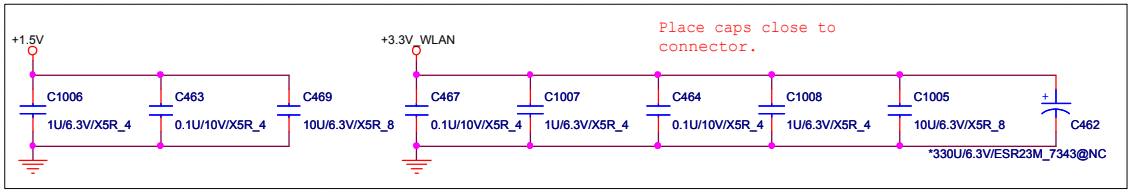












LD-Note Calpella UMA
Quanta Computer Inc.

Size	Document Number	Rev
Custom	MINI-Card (WLAN)	
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Express Card

3,4,8,9,10,11,12,14,15,16,17,18,19,21,22,23,24,25,26,28,29,31,32,33,34,35,37,39,40,41,42 +3V
3,25,26,39 +1.5V
9,24,35,37,43 3VSUS

27

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

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

+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#
Q39
2N7002
+3V
4,10,21,24,25,26,28,32 PLTRST#
CARD_RESET#
EXPRCRD_PWREN#
CPUSB#
R182 *100K_4@NC
R180 *100K_4@NC
TP18
TP17
3VSUS

20090928
avoid current leakage

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
8,21,26 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.

LD-Note Calpella UMA
Quanta Computer Inc.

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Custom	Express Card	
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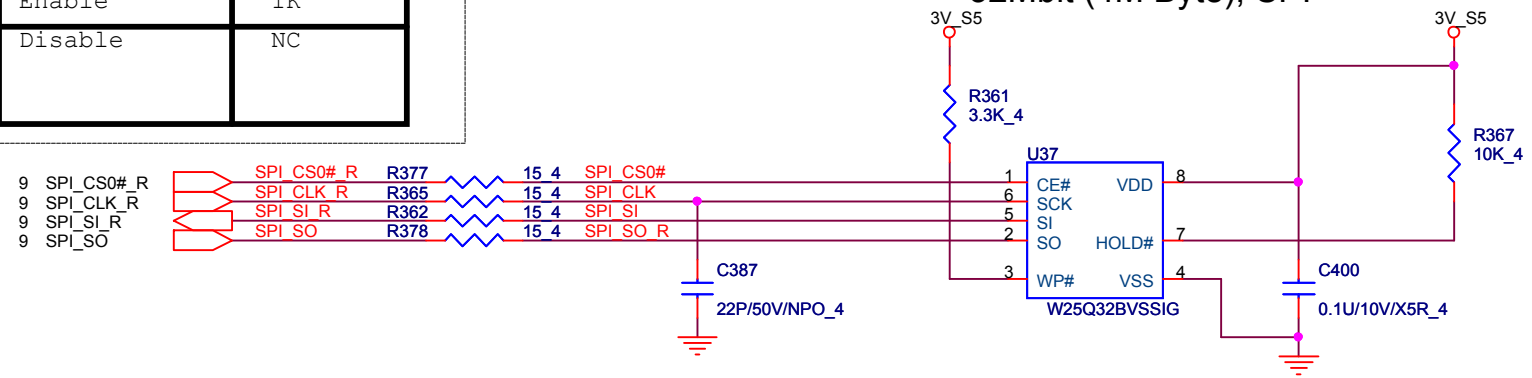
iTPM ENABLE/DISABLE

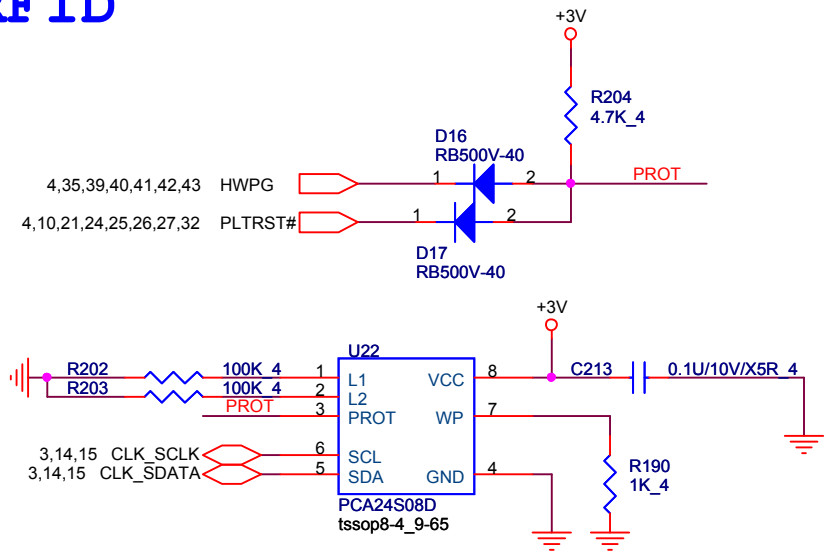
iTPM Function	R366
Enable	1K
Disable	NC

3,4,8,9,10,11,12,14,15,16,17,18,19,21,22,23,24,25,26,27,29,31,32,33,34,35,37,39,40,41,42 +3V

For PCH
32Mbit (4M Byte), SPI



RFID



LD-Note Calpella UMA
Quanta Computer Inc.

Size	Document Number	Rev
Custom	iTPM & RFID EEPROM	
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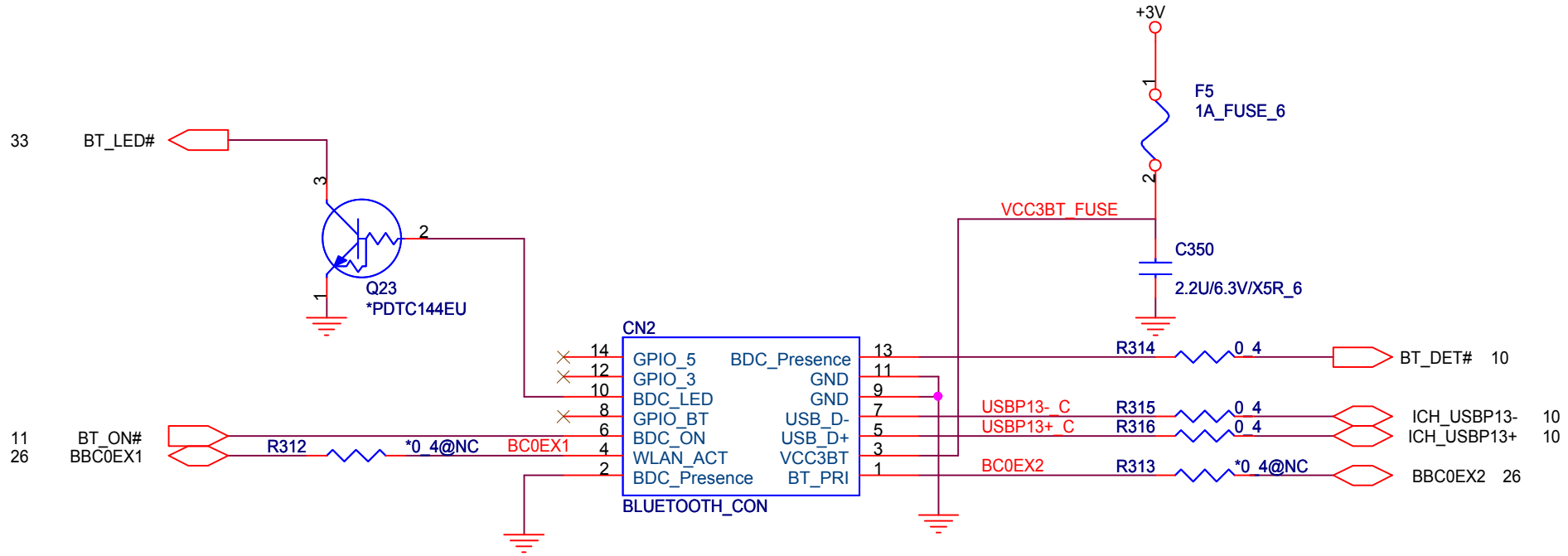
BLUETOOTH

3,4,8,9,10,11,12,14,15,16,17,18,19,21,22,23,24,25,26,27,28,31,32,33,34,35,37,39,40,41,42 +3V

29

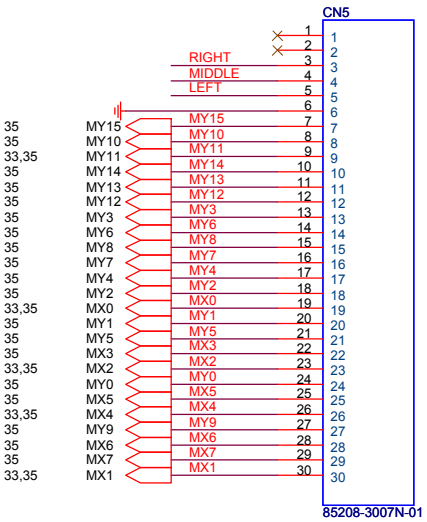


LD-Note Calpella UMA
Quanta Computer Inc.

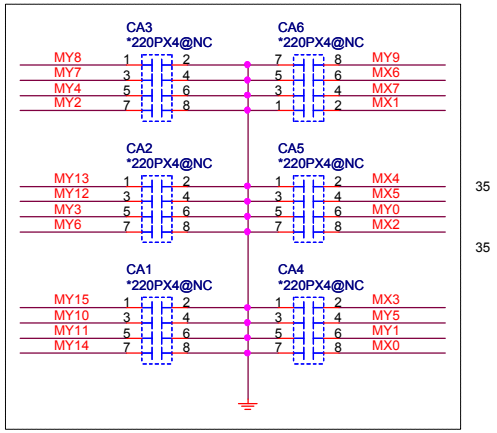
Size	Document Number	Rev
Custom	B/T	
Date: Tuesday, November 17, 2009	Sheet 29 of 46	

KEYBOARD

KEYBOARD connector

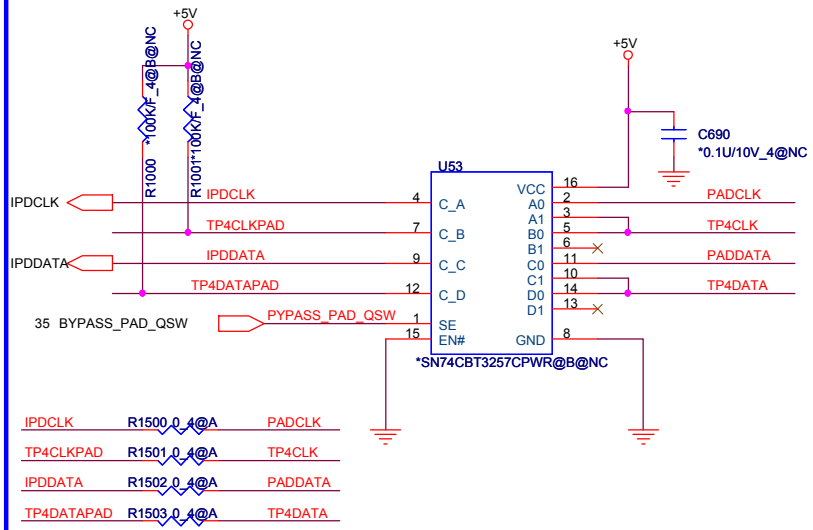


8,12,17,18,19,22,31,35,37 +5V
9,16,21,24,33,34,35,37,38,41,43 3VPCU



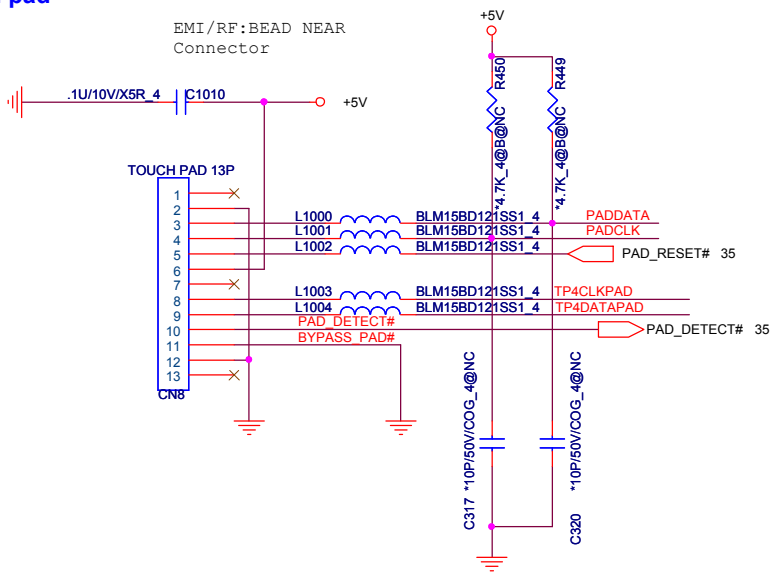
For EMI request

Touch pad/Track point Switch

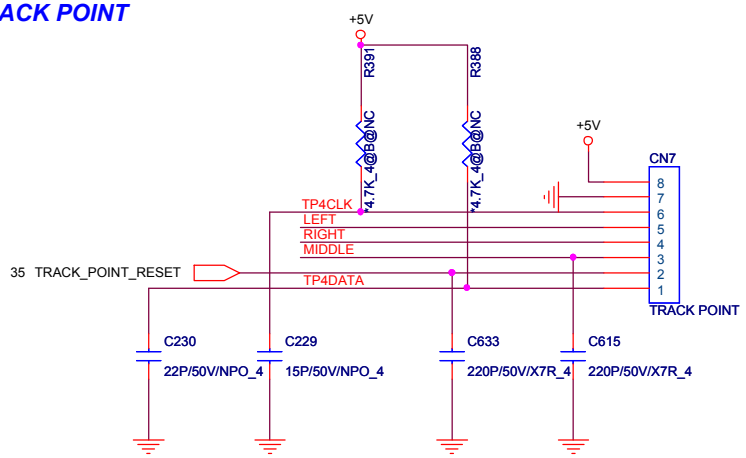


30

Touch pad



TRACK POINT



LD-Note Calpella UMA
Quanta Computer Inc.

Size	Document Number	Rev
Custom	K/B, T/P	
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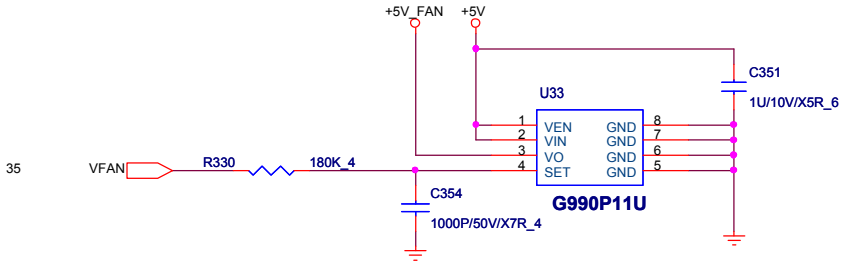
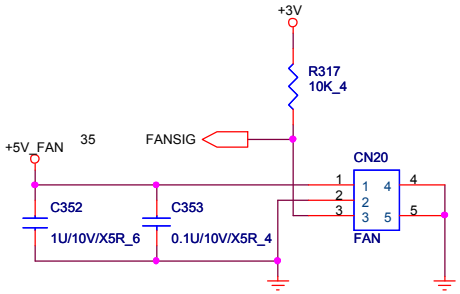
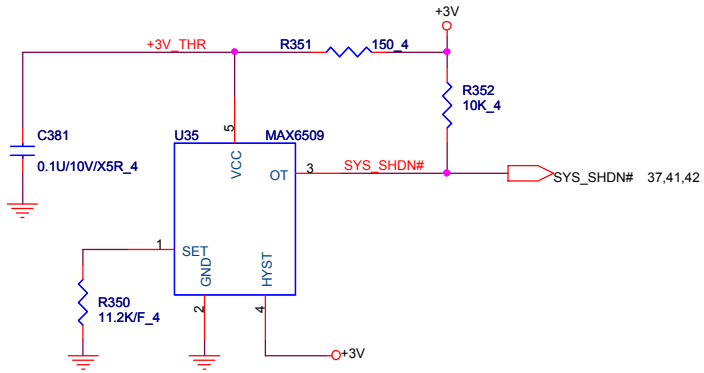
FAN CONTROL

3,4,8,9,10,11,12,14,15,16,17,18,19,21,22,23,24,25,26,27,28,29,32,33,34,35,37,39,40,41,42 +3V
8,12,17,18,19,22,30,35,37 +5V

31







LD-Note Calpella UMA Quanta Computer Inc.			
Size Custom	Document Number FAN & THERMAL		Rev
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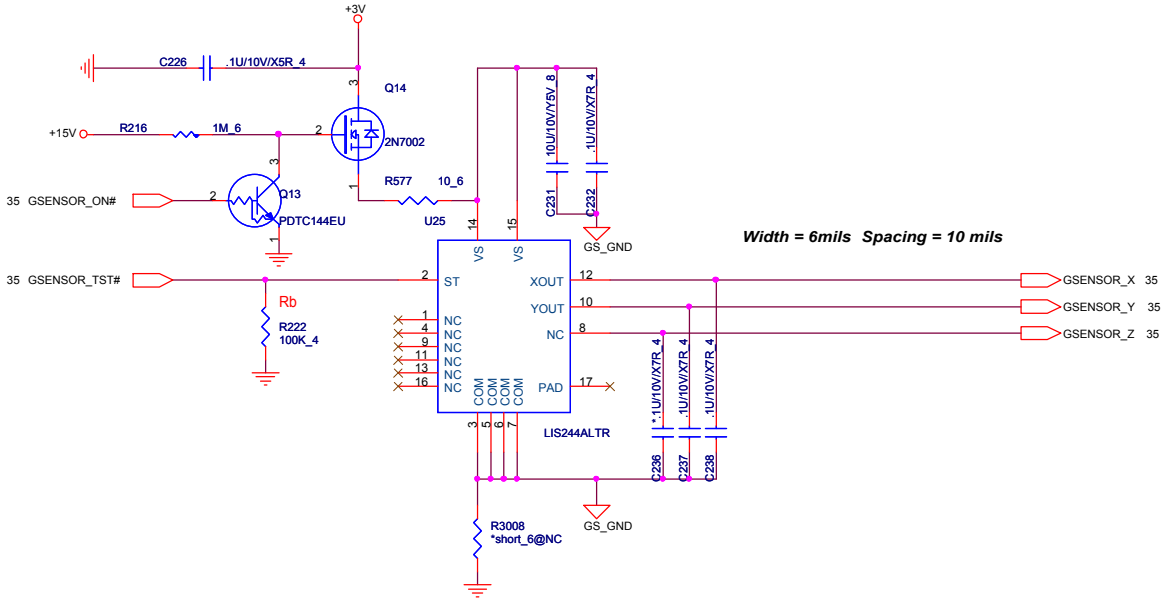
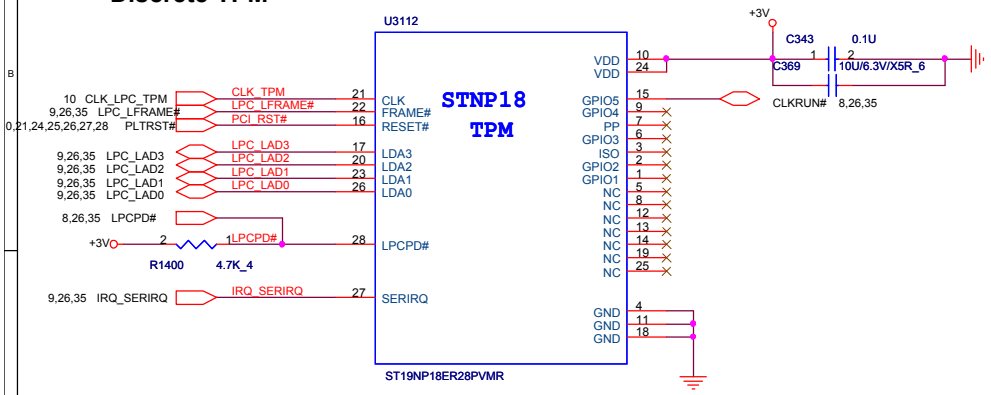
G-SENSOR (2-Axial)

32



Discrete TPM



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

G-Note Montevina Quanta Computer Inc.		
Size: Custom	Document Number: G-SENSOR/Discrete TPM	Rev: <RevCode>
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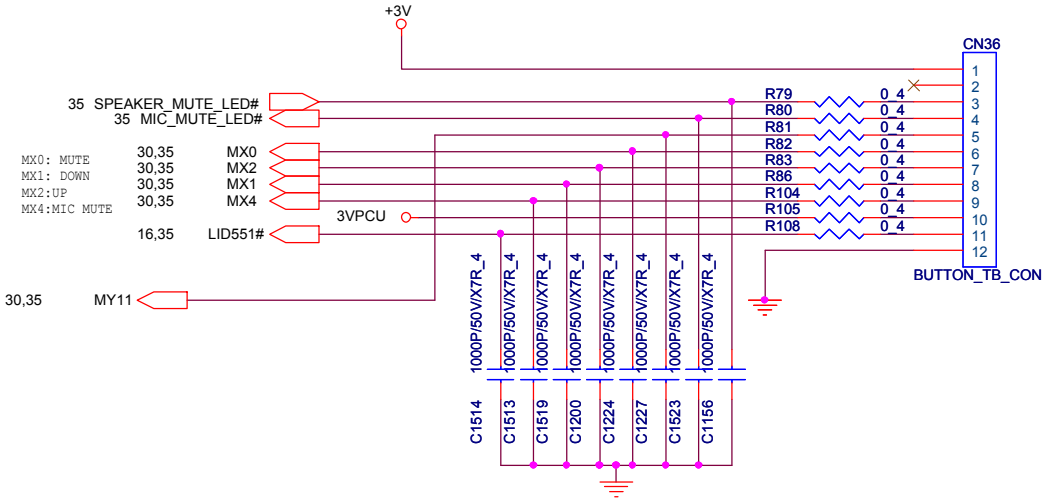
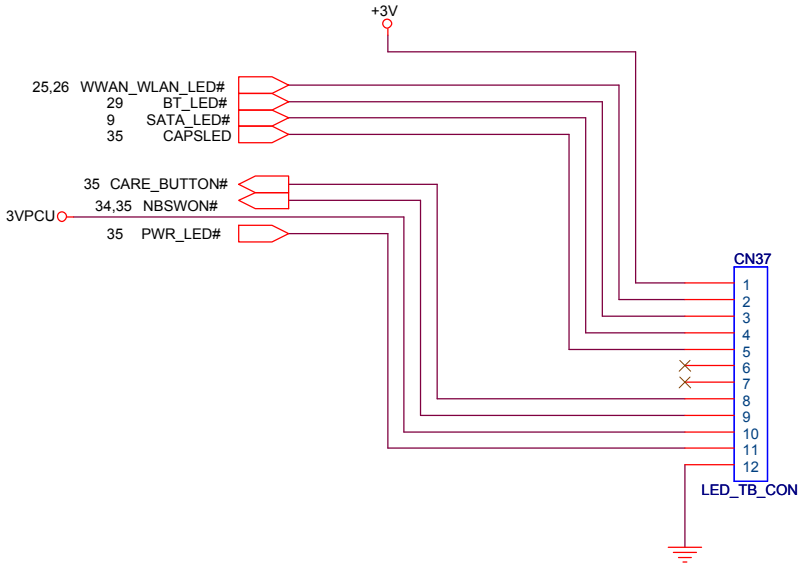
Daughter Boards for LEDs & Ports

FFC TO KBD LEFT SIDE CONNECTOR



FFC TO LED RIGHT SIDE CONNECTOR



G-Note Montevina Quanta Computer Inc.		
Size: Custom	Document Number: Daughter Boards	Rev: <RevCo
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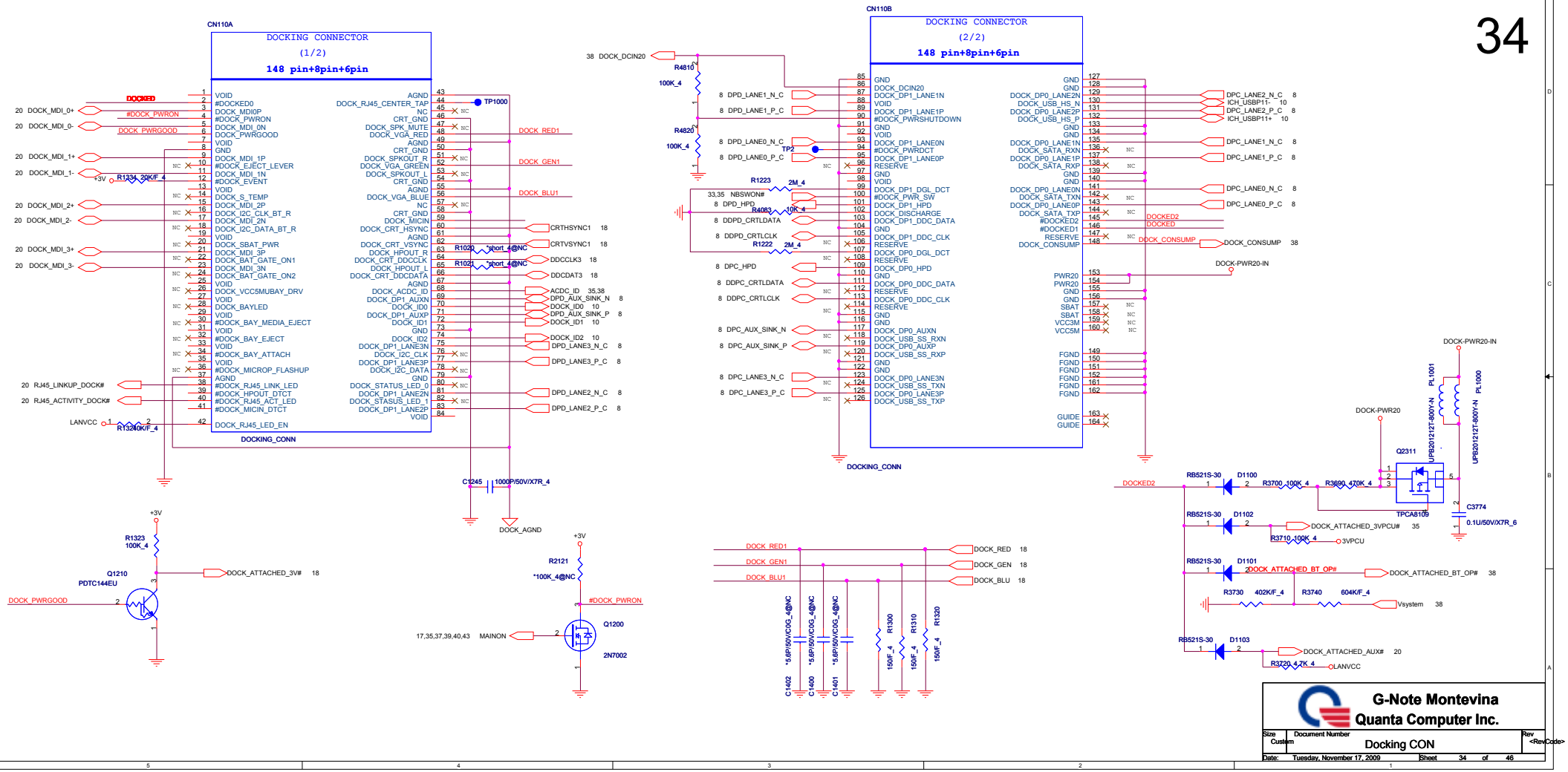
CN110A
DOCKING CONNECTOR
(1/2)
148 pin+8pin+6pin
DOCKING_CONN
CN110B
DOCKING CONNECTOR
(2/2)
148 pin+8pin+6pin
DOCKING_CONN
DOCKED
#DOCK_PWRON
DOCK_PWRGOOD
+3V
R1334 20K/F_4
R13240K/F_4
LANVCC
TP1000
DOCK_RED1
DOCK_GEN1
DOCK_BLU1
CRTHSYNC1
CRTVSYNC1
DDCCLK3
DDCDAT3
R1020 *short_4@NC
R1021 *short_4@NC
C1245 1000P/50V/X7R_4
DOCK_AGND
R4810 100K_4
R4820 100K_4
TP2
R1223 2M_4
R4083 10K_4
R1222 2M_4
DOCKED2
DOCK_CONSUMP
DOCK-PWR20-IN
DOCK-PWR20
Q2311
TPCA8109
UPB2012127-600Y-N
PL1001
PL1000
C3774 0.1U/50V/X7R_6
RB521S-30
D1100
R3700 100K_4
R3690 470K_4
D1102
R3710 100K_4
3VPCU
D1101
R3730 402K/F_4
R3740 604K/F_4
Vsystem
D1103
R3720 4.7K_4
DOCK_ATTACHED_3VPCU#
DOCK_ATTACHED_BT_OP#
DOCK_ATTACHED_AUX#
R1323 100K_4
Q1210
PDTC144EU
DOCK_ATTACHED_3V#
R2121 *100K_4@NC
Q1200
2N7002
MAINON
C1402 *5.6P/50V/C0G_4@NC
C1400 *5.6P/50V/C0G_4@NC
C1401 *5.6P/50V/C0G_4@NC
R1300 150/F_4
R1310 150/F_4
R1320 150/F_4
G-Note Montevina
Quanta Computer Inc.
Docking CON
Tuesday, November 17, 2009
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IT8502E

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

(For PLL Power)

DIS =>R109
UMA=>R107

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.

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

RF ON/OFF SWITCH

POWER SWITCH

we will change to 512K Byte Next(SIT).
16Mbit (2M Byte), SPI

Winbond	AKE38ZP0N00
SST	AKE28FP0K07
MX	AKE37FP0Z13

Width = 6mils Spacing = 10 mils

LD-Note Calpella UMA
Quanta Computer Inc.

Size	Document Number	Rev
Custom	KBC IT8502E	

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MiniCard WLAN

HOLE13 H-TC197BC142D102P2
HOLE14 H-TC197BC142D102P2

MiniCard WWAN

HOLE35 H-TC236BC102D64P2
HOLE36 H-TC236BC102D64P2

Hole for PCH support

HOLE34 H-BC197D118PB
HOLE33 H-BC197D118PB

Drink Hole

HOLE8 *O-GC8-2

Bluetooth nut

HOLE3 H-TC197D118PT

Hole for CPU support

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

VGA nut

HOLE27 *H-C276D87P2
HOLE28 O-GC8-1
HOLE26 H-TC236BC216D87P2

Boundary Hole

HOLE7 *H-C276D87P2
HOLE4 *H-C276D91P2
HOLE5 *H-C86D86N@NC
HOLE15 *H-TC236BC216D87P2
HOLE10 H-C209D209N
HOLE1 *H-C276D91P2@NC
HOLE9 *H-BC276D91P2
HOLE17 *H-C276D91P2@NC
HOLE2 *H-C276D91P2@NC

Break Hole

HOLE11 *o-gc4@NC

Boundary Hole

HOLE6 *H-TSHAPEBC276D91P2-1@NC
HOLE16 *H-C276D91P2@NC
HOLE25 *H-C276D91P2@NC
HOLE23 *H-C79D79N
HOLE21 *H-BC276D87PB
HOLE24 *H-C157D91P2@NC

K/B Control/B Nut

HOLE18 *H-TC189D122PT

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-TC181D93PT
HOLE37 *H-TC189BC158D122P2

LD-Note Calpella UMA
Quanta Computer Inc.

Size	Document Number	Rev
Custom	HOLD & SKEW	
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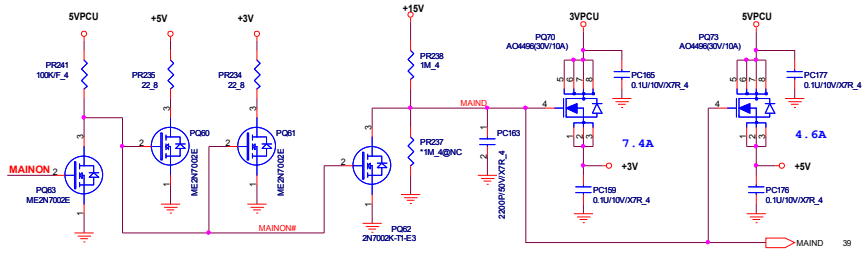
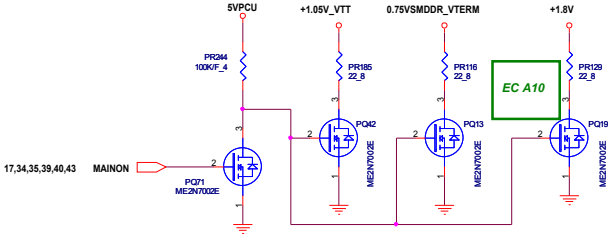
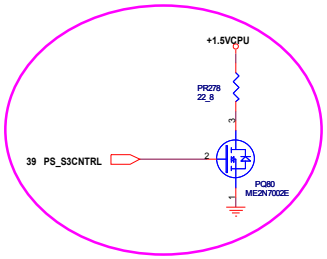
DISCHARGE

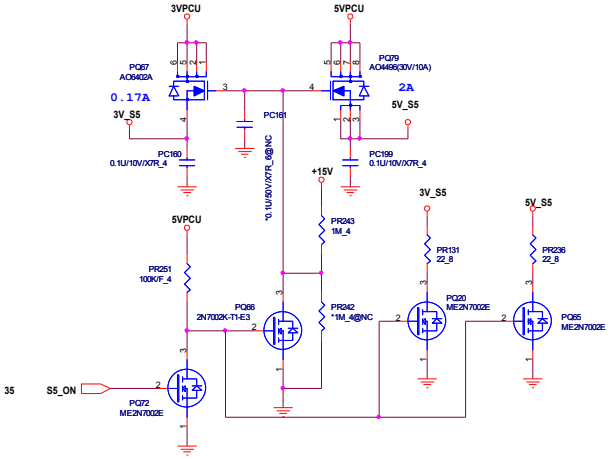
+3.3V, +5V

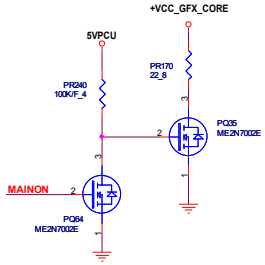




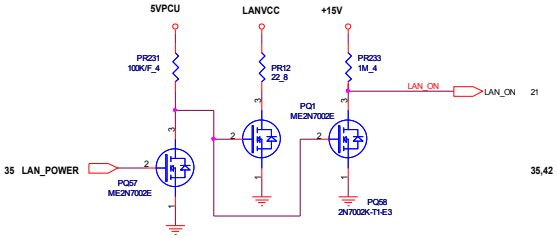


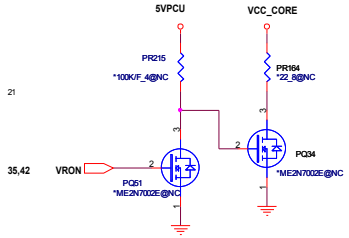
3V_S5, 5V_S5

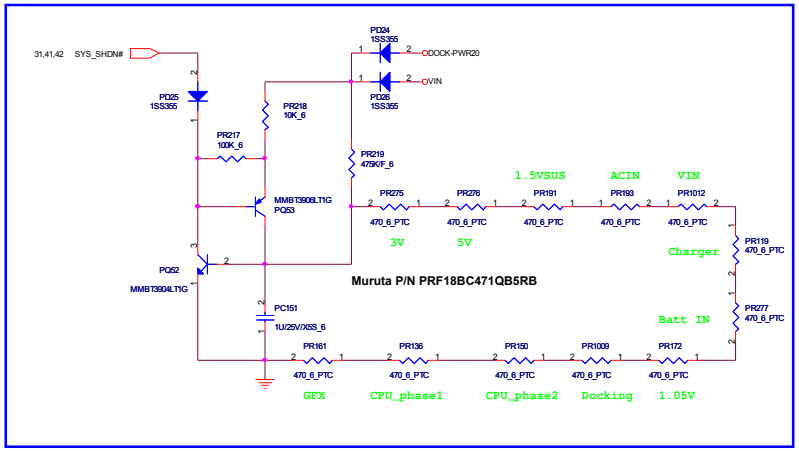




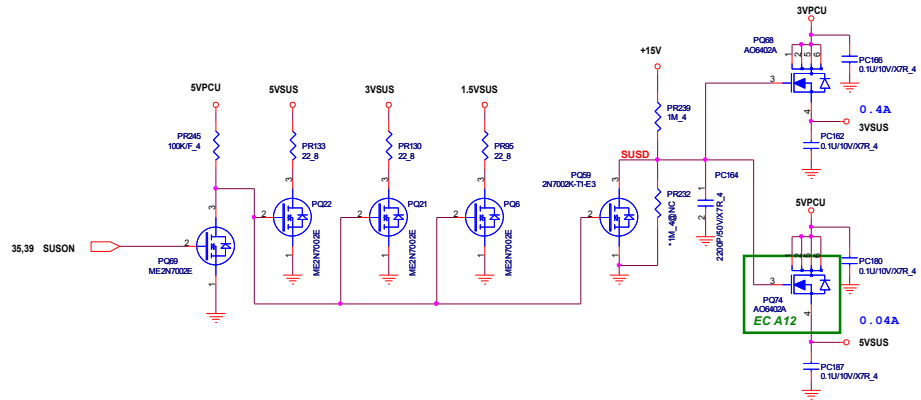
LANVCC







3VSUS, 5VSUS



G-NOTE Calpella (UMA)
Quanta Computer Inc.

Size	Document Number	Rev
Custom	Discharge	1B
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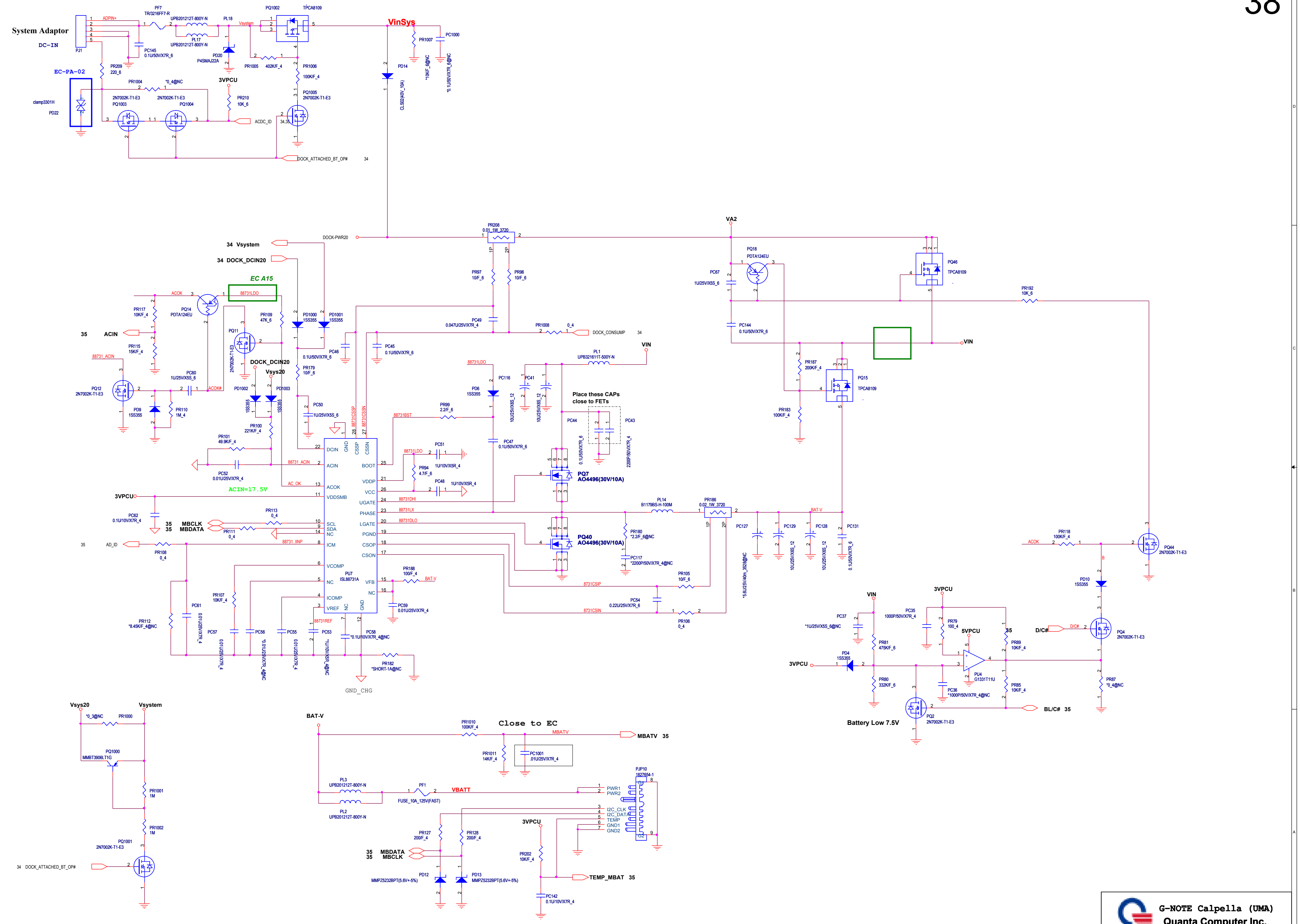

G-NOTE Calpella (UMA)

Quanta Computer Inc.

Size	Document Number	Rev
Custom	Charger(ISL88731A)	1B

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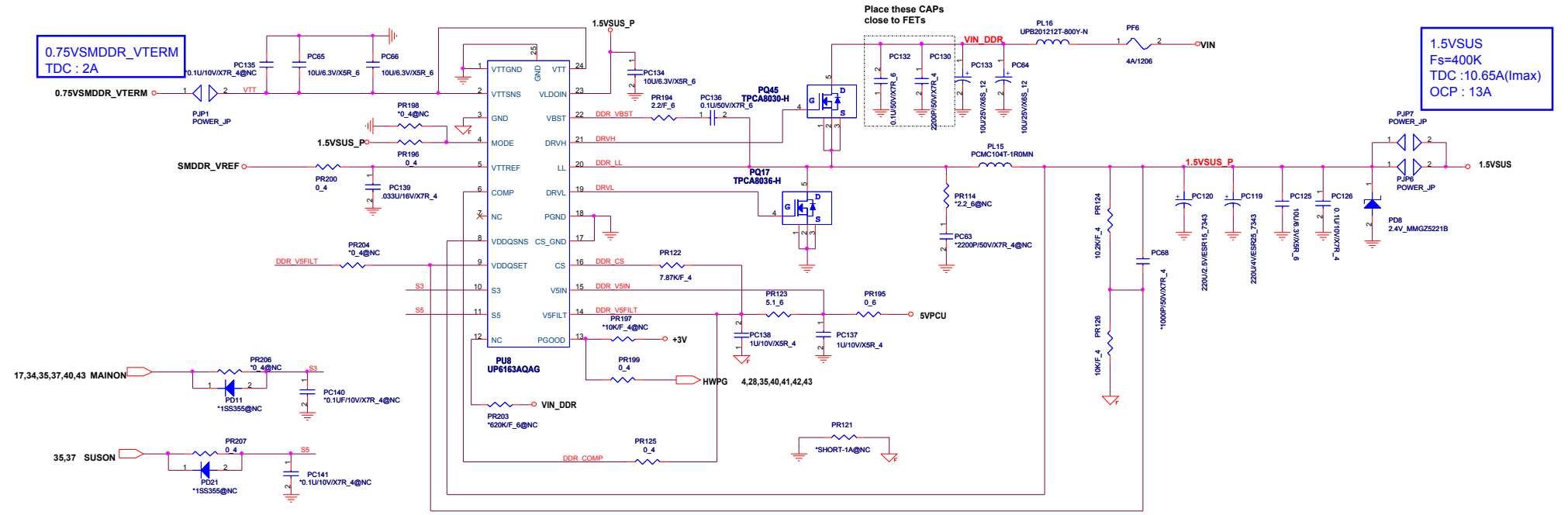
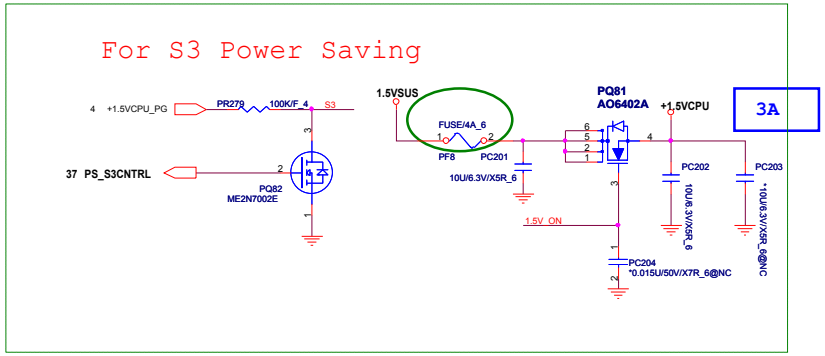
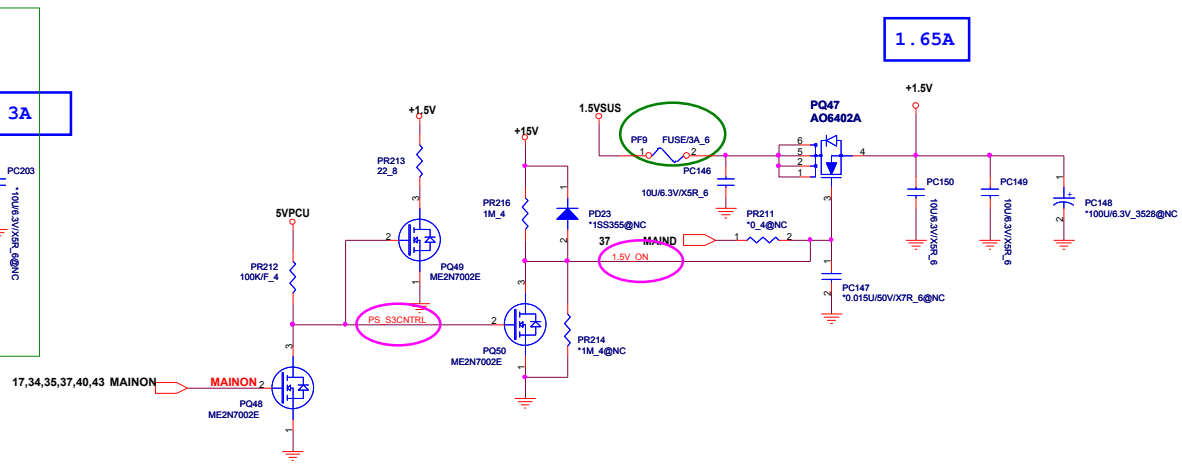
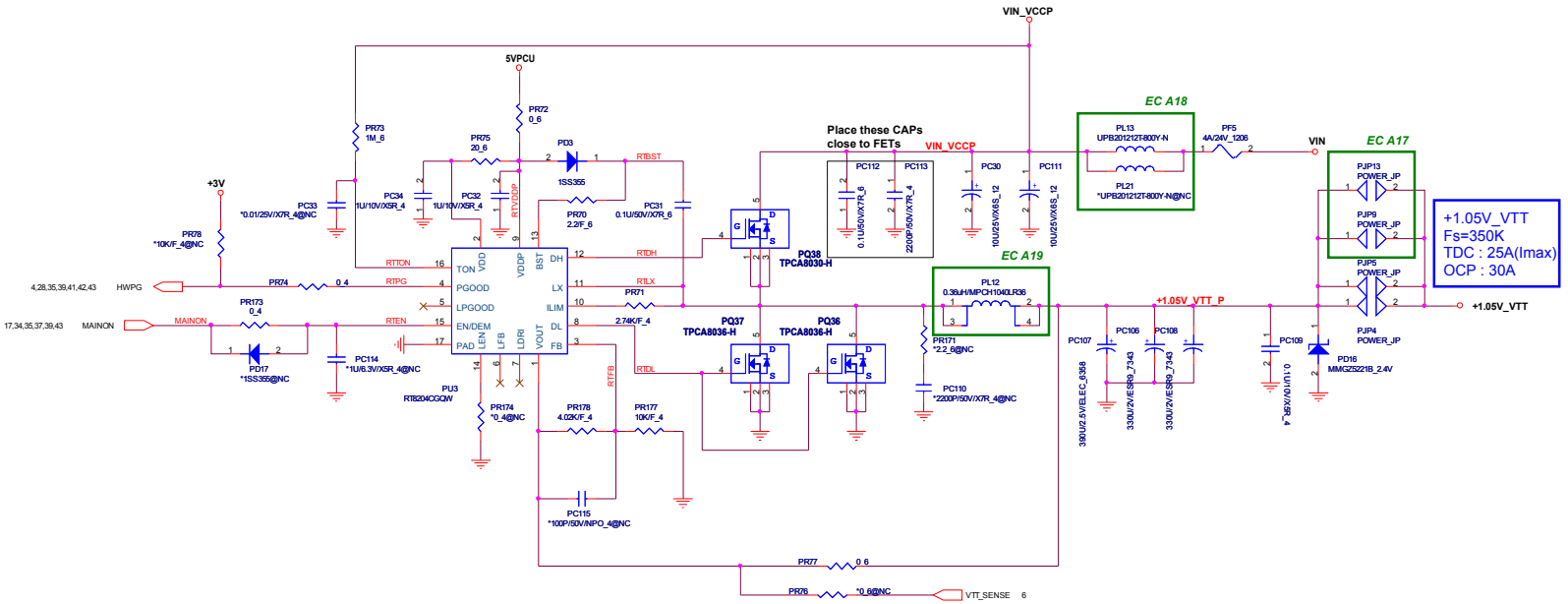




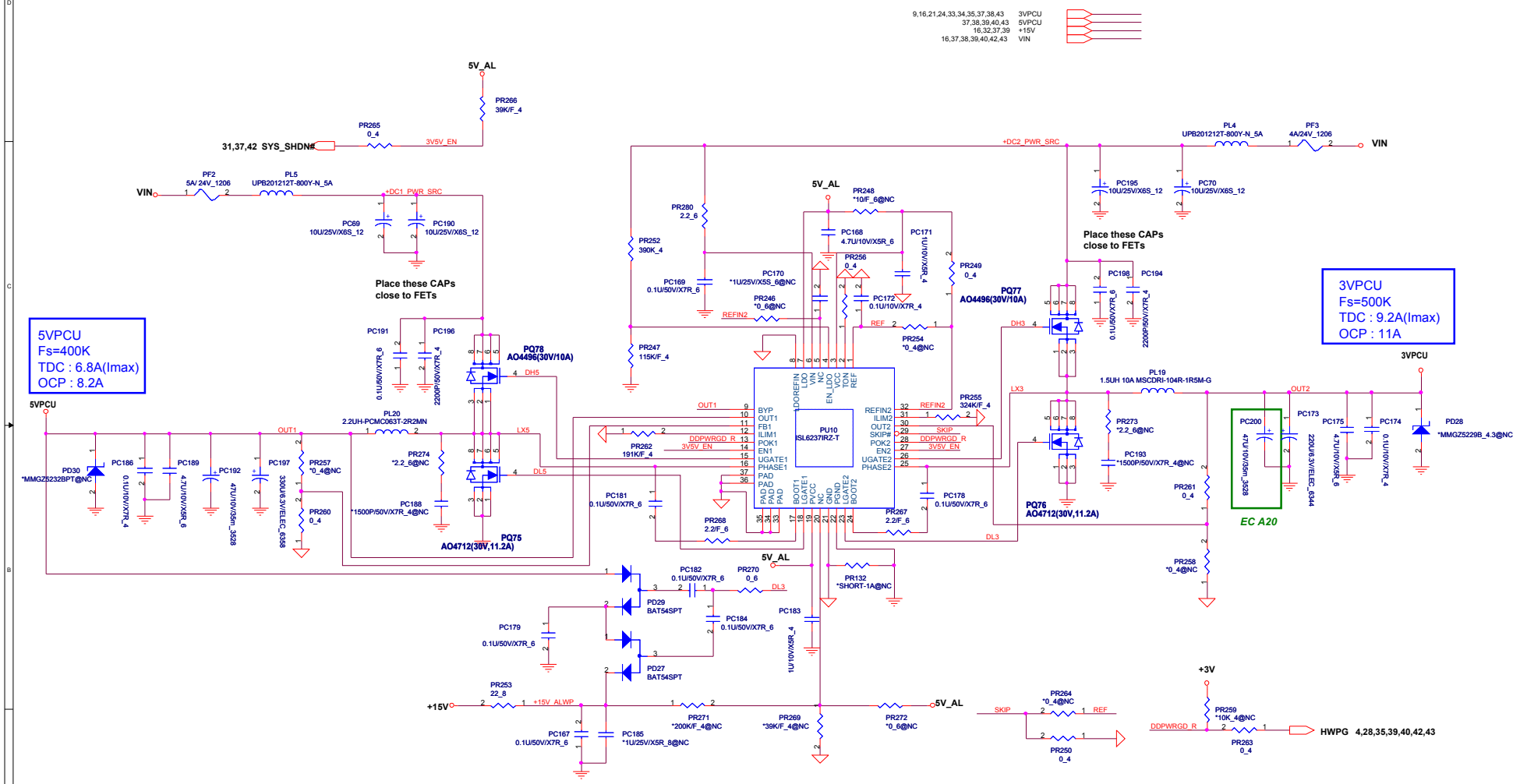


G-NOTE Calpella (UMA)
Quanta Computer Inc.

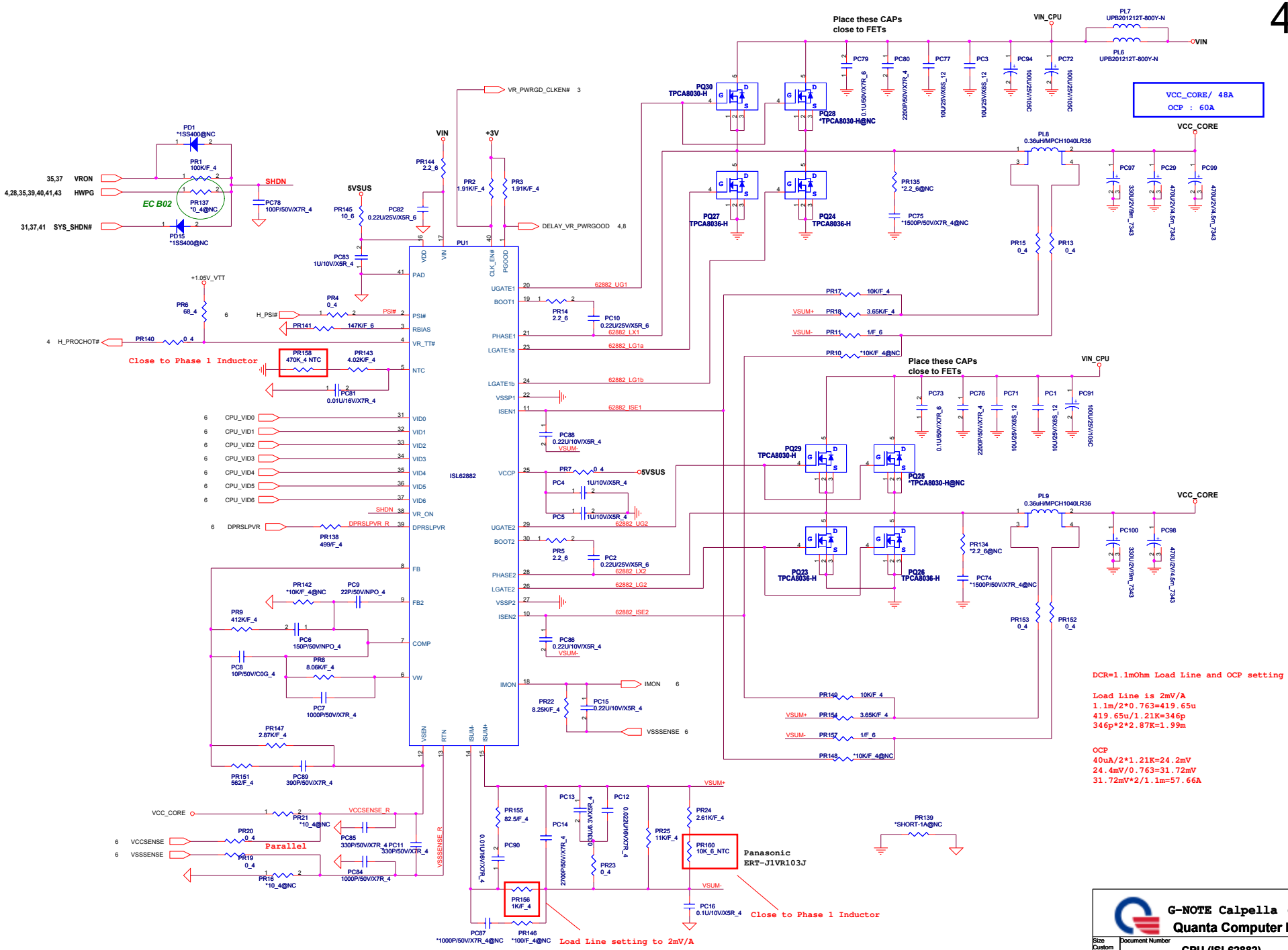
Size	Document Number	Rev
Custom	DDR3/0.75VSMDDR (UP6163AQAG)	1B
Date: Tuesday, November 17, 2009	Sheet 39 of 46	



Quanta Computer Inc.	G-NOTE Calpella (UMA)
Size: C	Document Number: 1.05V_VTT/1.05_PCH (RT8204)
Rev: 1B	
Date: Tuesday, November 17, 2009	Sheet 40 of 48



G-NOTE Calpella (UMA)			
Quanta Computer Inc.			
Size: Custom	Document Number: 3V/5V (ISL6237IRZ-T)		Rev: 1B
Date: Tuesday, November 17, 2009	Sheet 41 of 46		


Place these CAPs close to FETs
VIN_CPU
PL7 UPB201212T-800Y-N
PL6 UPB201212T-800Y-N
VIN
VCC_CORE/ 48A
OCP : 60A
VCC_CORE
PQ30 TPCA8030-H
PQ28 *TPCA8030-H@NC
PQ27 TPCA8036-H
PQ24 TPCA8036-H
PL8 0.36uH/MPCH1040LR36
PR135 *2.2_6@NC
PC75 *1500P/50V/X7R_4@NC
PR15 0_4
PR13 0_4
PD1 *1SS400@NC
PD15 *1SS400@NC
PR1 100K/F_4
PR137 *0_4@NC
EC B02
35,37 VRON
4,28,35,39,40,41,43 HWPG
31,37,41 SYS_SHDN#
SHDN
PC78 100P/50V/X7R_4
5VSUS
PR145 10_6
PC82 0.22U/25V/X5R_6
PC83 1U/10V/X5R_4
PR144 2.2_6
VIN
+3V
PR2 1.91K/F_4
PR3 1.91K/F_4
VR_PWRGD_CLKEN# 3
DELAY_VR_PWRGOOD 4,8
PU1
ISL62882
VDD
VIN
CLK_EN#
PGOOD
PAD
+1.05V_VTT
PR6 68_4
PR4 0_4
H_PSI#
PSI#
PR141 147K/F_6
RBIAS
H_PROCHOT# 4
PR140 0_4
VR_TT#
Close to Phase 1 Inductor
PR158 470K_4 NTC
PR143 4.02K/F_4
NTC
PC81 0.01U/16V/X7R_4
CPU_VID0 6
CPU_VID1 6
CPU_VID2 6
CPU_VID3 6
CPU_VID4 6
CPU_VID5 6
CPU_VID6 6
VID0
VID1
VID2
VID3
VID4
VID5
VID6
SHDN
VR_ON
DPRSLPVR 6
DPRSLPVR_R
DPRSLPVR
PR138 499/F_4
FB
PR142 *10K/F_4@NC
PC9 22P/50V/NPO_4
FB2
PR9 412K/F_4
PC6 150P/50V/NPO_4
COMP
PC8 10P/50V/C0G_4
PR8 8.06K/F_4
VW
PC7 1000P/50V/X7R_4
PR147 2.87K/F_4
PR151 562/F_4
PC89 390P/50V/X7R_4
VSEN
RTN
ISUM-
ISUM+
VCC_CORE
PR21 *10_4@NC
VCCSENSE_R
VCCSENSE 6
PR20 0_4
Parallel
VSSSENSE 6
PR19 0_4
PR16 *10_4@NC
PC85 330P/50V/X7R_4
PC11 330P/50V/X7R_4
PC84 1000P/50V/X7R_4
VSSSENSE_R
UGATE1
BOOT1
PR14 2.2_6
PC10 0.22U/25V/X5R_6
62882_UG1
62882_LX1
PHASE1
LGATE1a
62882_LG1a
LGATE1b
62882_LG1b
VSSP1
ISEN1
62882_ISE1
PC88 0.22U/10V/X5R_4
VSUM-
VCCP
PR7 0_4
5VSUS
PC4 1U/10V/X5R_4
PC5 1U/10V/X5R_4
UGATE2
62882_UG2
BOOT2
PR5 2.2_6
PC2 0.22U/25V/X5R_6
62882_LX2
PHASE2
LGATE2
62882_LG2
VSSP2
ISEN2
62882_ISE2
PC86 0.22U/10V/X5R_4
VSUM-
IMON
IMON 6
PR22 8.25K/F_4
PC15 0.22U/10V/X5R_4
VSSSENSE 6
PR17 10K/F_4
VSUM+
PR18 3.65K/F_4
VSUM-
PR11 1/F_6
PR10 *10K/F_4@NC
Place these CAPs close to FETs
VIN_CPU
PQ29 TPCA8030-H
PQ25 *TPCA8030-H@NC
PQ23 TPCA8036-H
PQ26 TPCA8036-H
PL9 0.36uH/MPCH1040LR36
PR134 *2.2_6@NC
PC74 *1500P/50V/X7R_4@NC
PR153 0_4
PR152 0_4
VCC_CORE
PR149 10K/F_4
VSUM+
PR154 3.65K/F_4
VSUM-
PR157 1/F_6
PR148 *10K/F_4@NC
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
PR155 82.5/F_4
PC90 0.01U/16V/X7R_4
PC13 0.33U/6.3V/X5R_4
PC14 2700P/50V/X7R_4
PC12 0.022U/16V/X7R_4
PR23 0_4
PR24 2.61K/F_4
PR25 11K/F_4
PR160 10K_6_NTC
Panasonic ERT-J1VR103J
PR139 *SHORT-1A@NC
PC16 0.1U/10V/X5R_4
Close to Phase 1 Inductor
PR156 1K/F_4
PC87 *1000P/50V/X7R_4@NC
PR146 *100/F_4@NC
Load Line setting to 2mV/A
G-NOTE Calpella (UMA)
Quanta Computer Inc.
Size Custom
Document Number
CPU (ISL62882)
Rev 1B
Date: Tuesday, November 17, 2009
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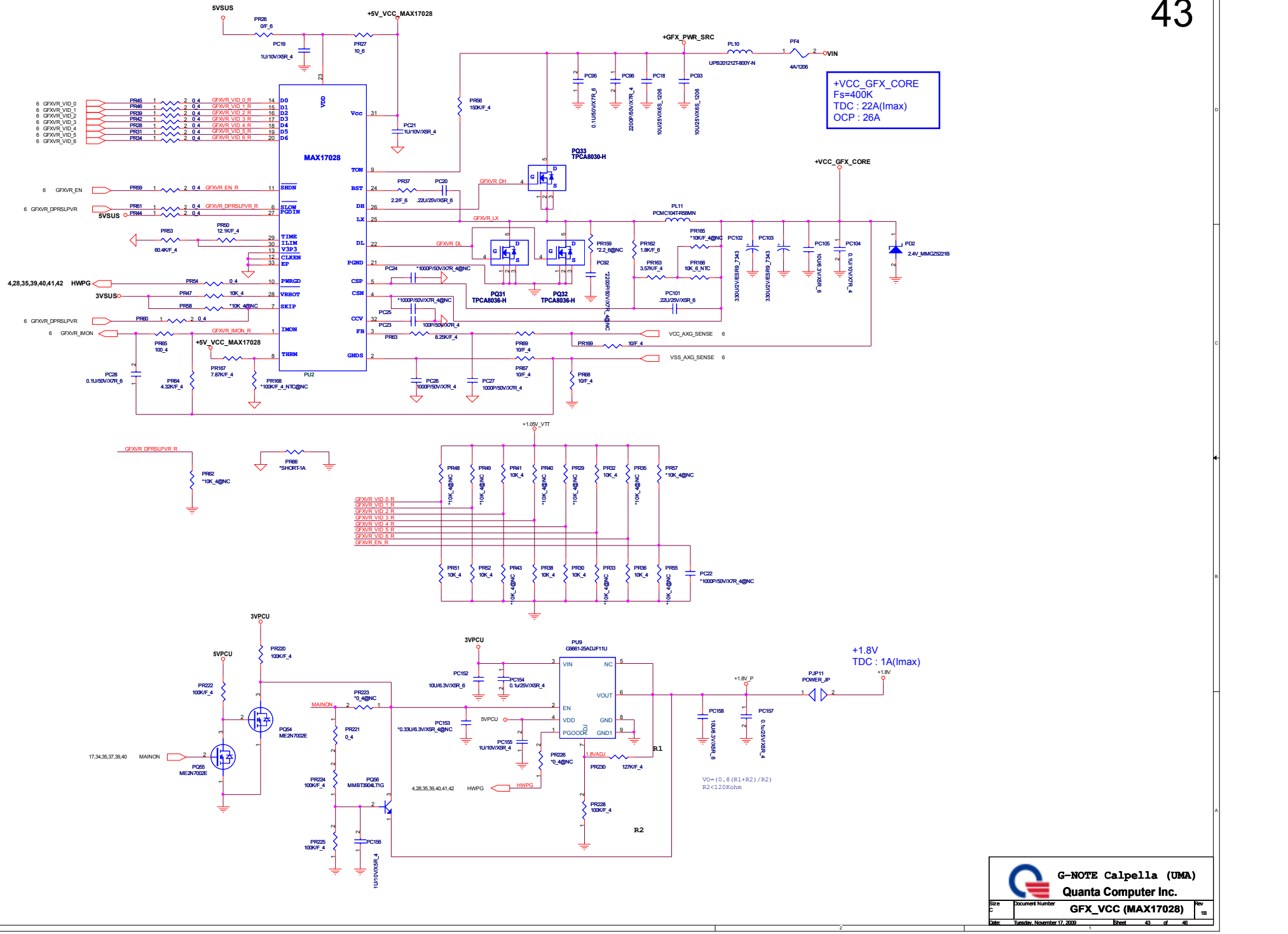

+VCC_GFX_CORE
Fs=400K
TDC : 22A(Imax)
OCP : 26A
MAX17028
+1.8V
TDC : 1A(Imax)
VO=(0.8(R1+R2)/R2)
R2<120Kohm
G-NOTE Calpella (UMA)
Quanta Computer Inc.
GFX_VCC (MAX17028)

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

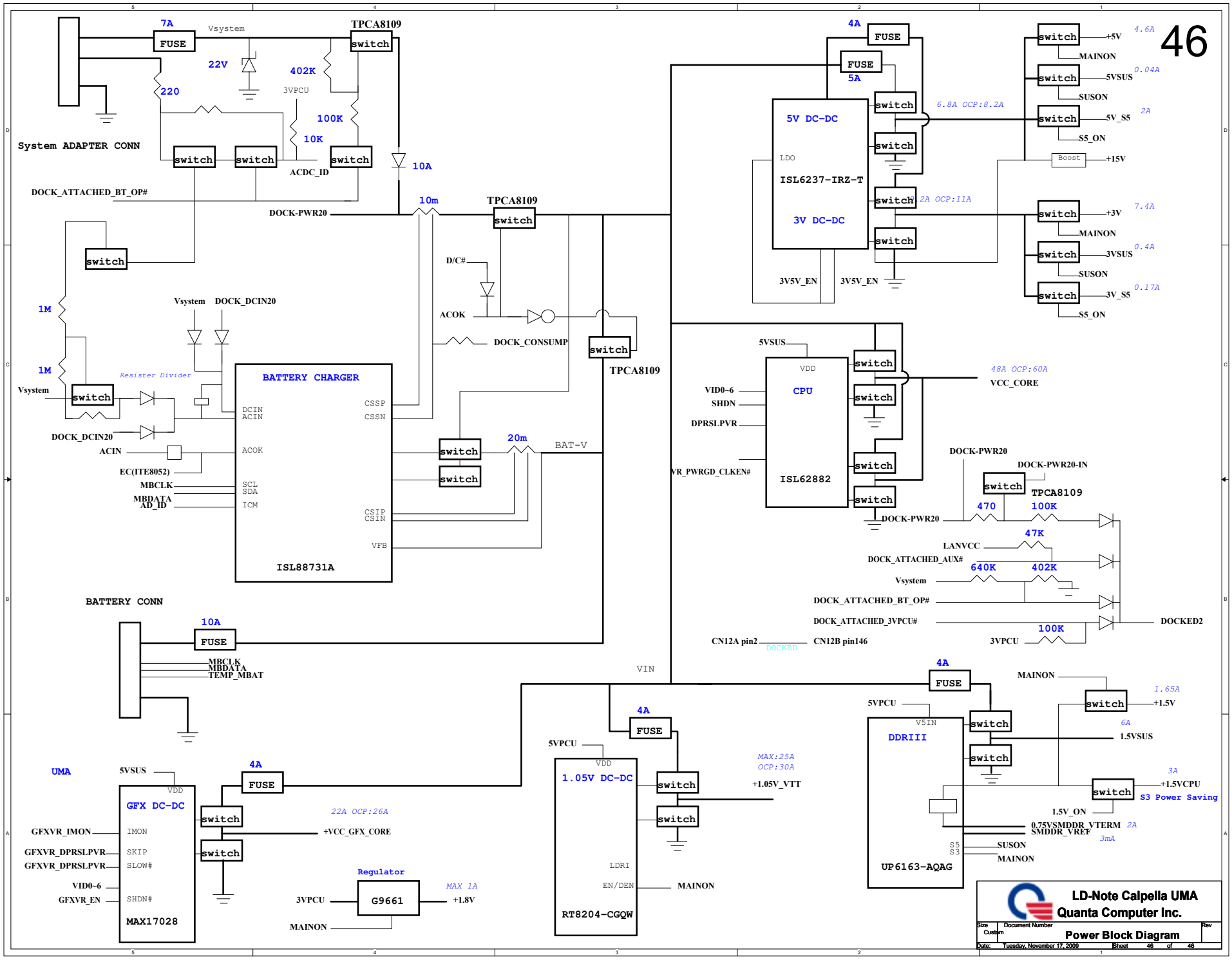
Value	Voltage	Material	6				*	Description
*0.1U/10V/X5R_4	10V	X5R	0402 (1005)				DE POP	0.1UF 10V X5R SMD 0402 package DE POP
1U/25V/X7R_6	25V	X7R	0603 (1608)				POP	0.1UF 25V X7R SMD 0603 package POP

G NOTE SKU TABLE

Location					

G NOTE SKU TABLE

Location					Page


46
System ADAPTER CONN
7A
FUSE
Vsystem
22V
220
402K
3VPCU
100K
10K
ACDC_ID
TPCA8109
switch
10A
DOCK_ATTACHED_BT_OP#
DOCK-PWR20
10m
D/C#
ACOK
DOCK_CONSUMP
1M
Vsystem
DOCK_DCIN20
Resister Divider
BATTERY CHARGER
DCIN
ACIN
ACOK
EC(ITE8052)
MBCLK
MBDATA
AD_ID
SCL
SDA
ICM
CSSP
CSSN
CSIP
CSIN
VFB
ISL88731A
20m
BAT-V
BATTERY CONN
MBCLK
MBDATA
TEMP_MBAT
4A
FUSE
5A
5V DC-DC
LDO
ISL6237-IRZ-T
3V DC-DC
6.8A OCP:8.2A
2A OCP:11A
3V5V_EN
+5V
MAINON
5VSUS
SUSON
5V_S5
S5_ON
Boost
+15V
+3V
3VSUS
3V_S5
4.6A
0.04A
2A
7.4A
0.4A
0.17A
5VSUS
VDD
CPU
VID0~6
SHDN
DPRSLPVR
VR_PWRGD_CLKEN#
ISL62882
48A OCP:60A
VCC_CORE
DOCK-PWR20-IN
470
100K
47K
640K
402K
LANVCC
DOCK_ATTACHED_AUX#
Vsystem
DOCK_ATTACHED_BT_OP#
DOCK_ATTACHED_3VPCU#
DOCKED2
CN12A pin2
CN12B pin146
DOCKED
3VPCU
VIN
UMA
GFX DC-DC
GFXVR_IMON
GFXVR_DPRSLPVR
GFXVR_DPRSLPVR
VID0~6
GFXVR_EN
IMON
SKIP
SLOW#
SHDN#
MAX17028
22A OCP:26A
+VCC_GFX_CORE
Regulator
G9661
MAX 1A
+1.8V
MAINON
5VPCU
1.05V DC-DC
LDRI
EN/DEN
RT8204-CGQW
MAX:25A
OCP:30A
+1.05V_VTT
DDRIII
V5IN
UP6163-AQAG
1.65A
+1.5V
6A
1.5VSUS
3A
+1.5VCPU
S3 Power Saving
1.5V_ON
0.75VSMDDR_VTERM
SMDDR_VREF
3mA
S5
S3
SUSON
LD-Note Calpella UMA
Quanta Computer Inc.
Size
Custom
Document Number
Power Block Diagram
Rev
Date:
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