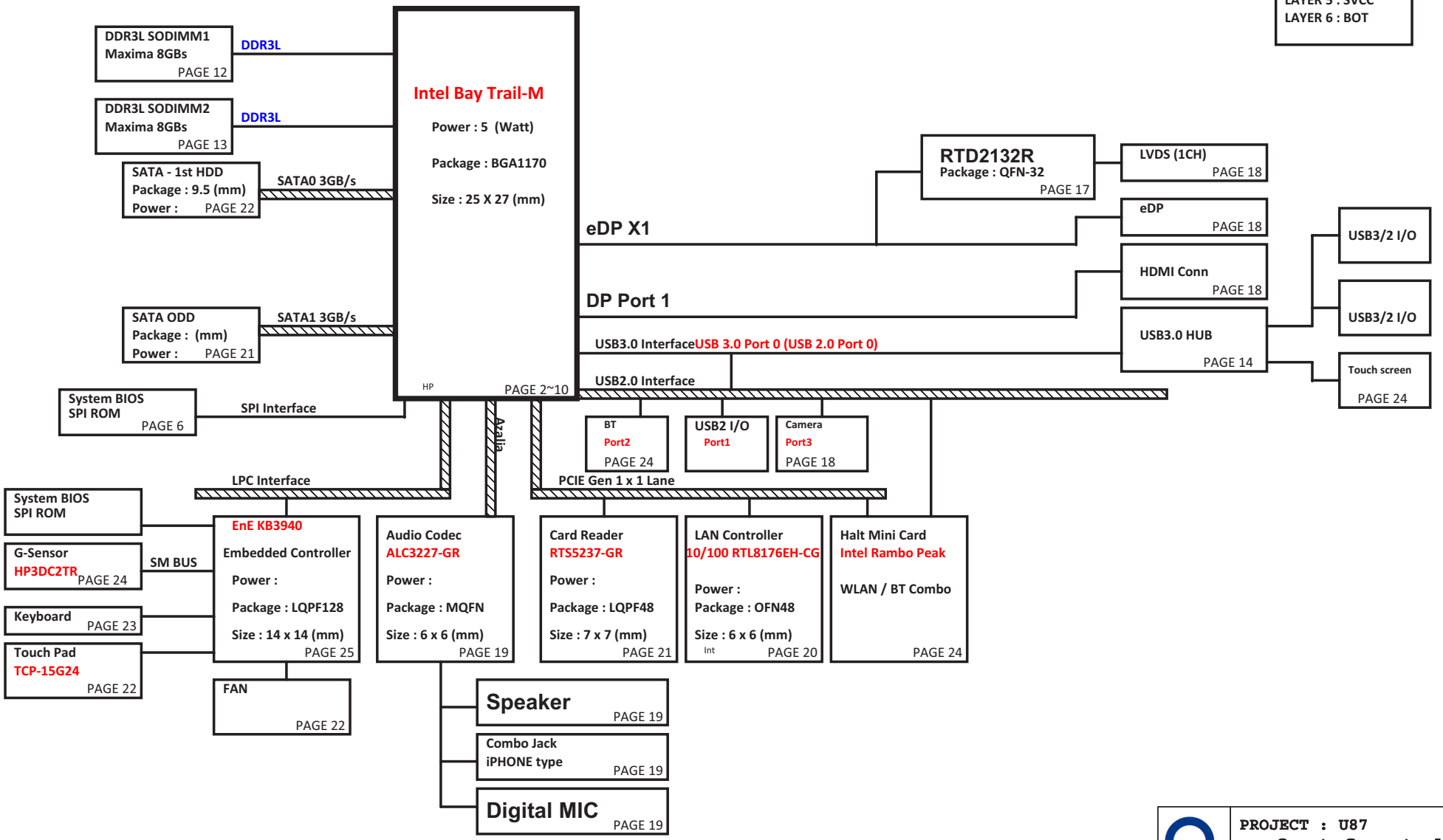
U87/U88 UMA (14"/15.6") Ultra/Slim
Intel Bay trail-M Platform Block Diagram

PCB 6L STACK UP

LAYER 1 : TOP
LAYER 2 : SGND
LAYER 3 : IN1(High)
LAYER 4 : IN2(Low)
LAYER 5 : SVCC
LAYER 6 : BOT

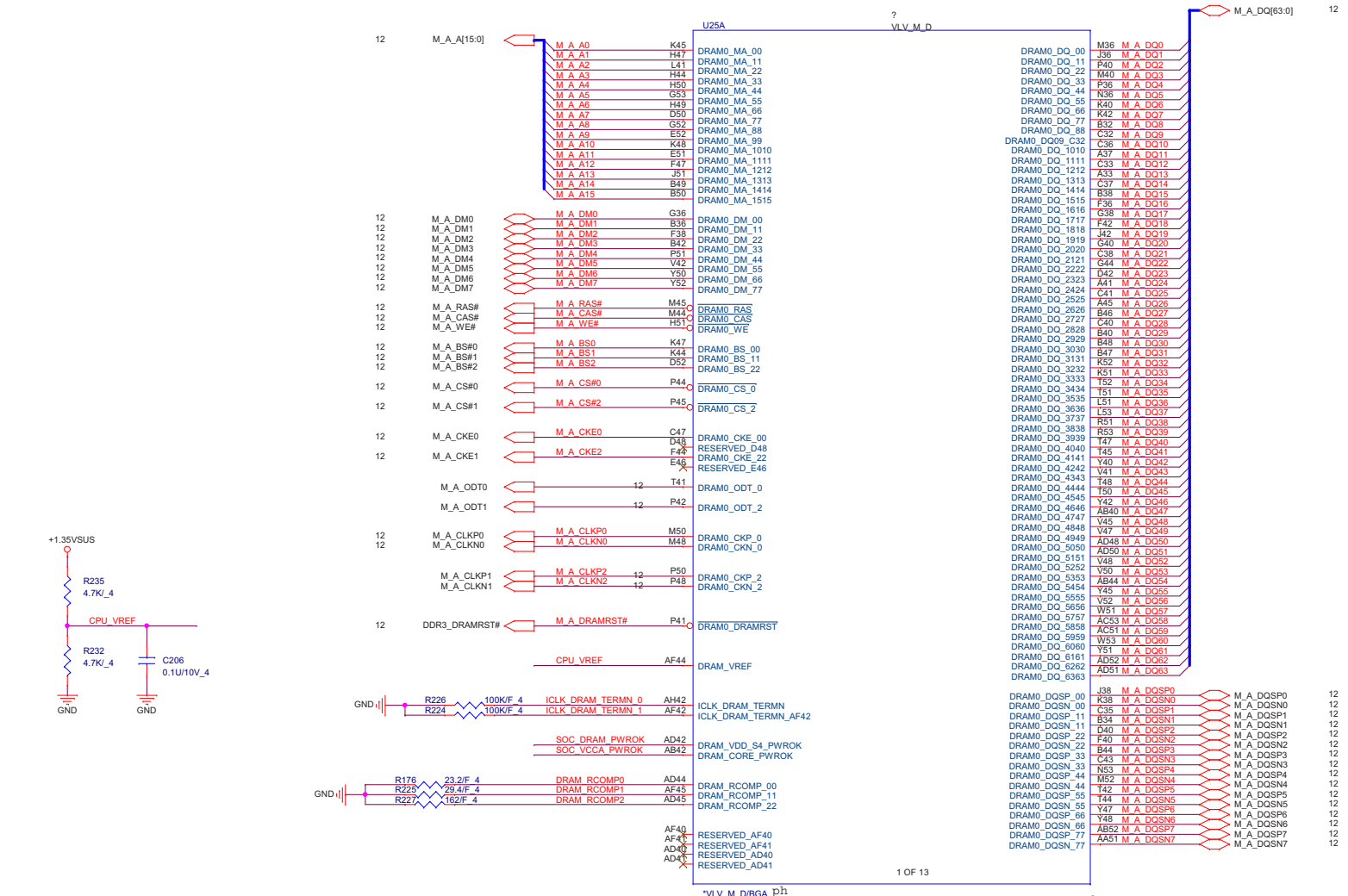


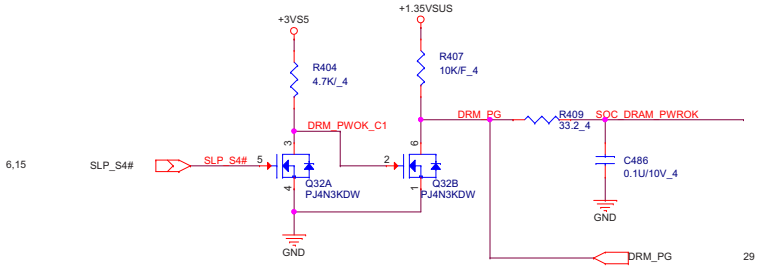
NB5

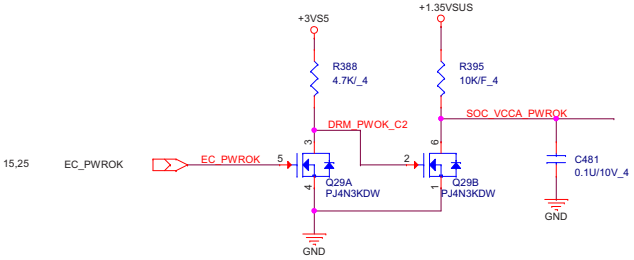
PROJECT : U87
Quanta Computer Inc.

Size	Document Number	Rev
Custom	Block Diagram	1A

Date: Monday, November 18, 2013 Sheet 1 of 37







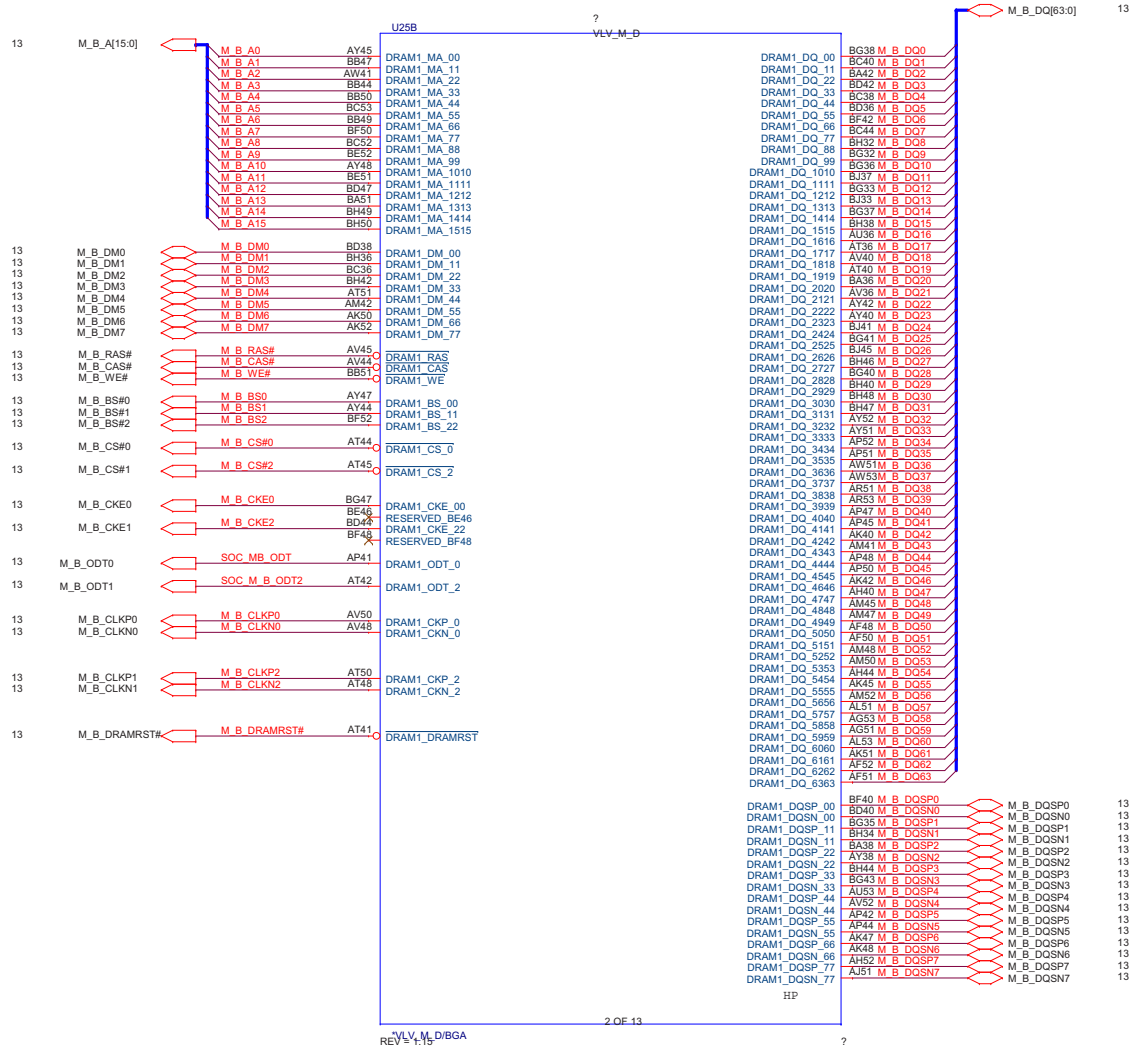
PROJECT : U87

Quanta Computer Inc.

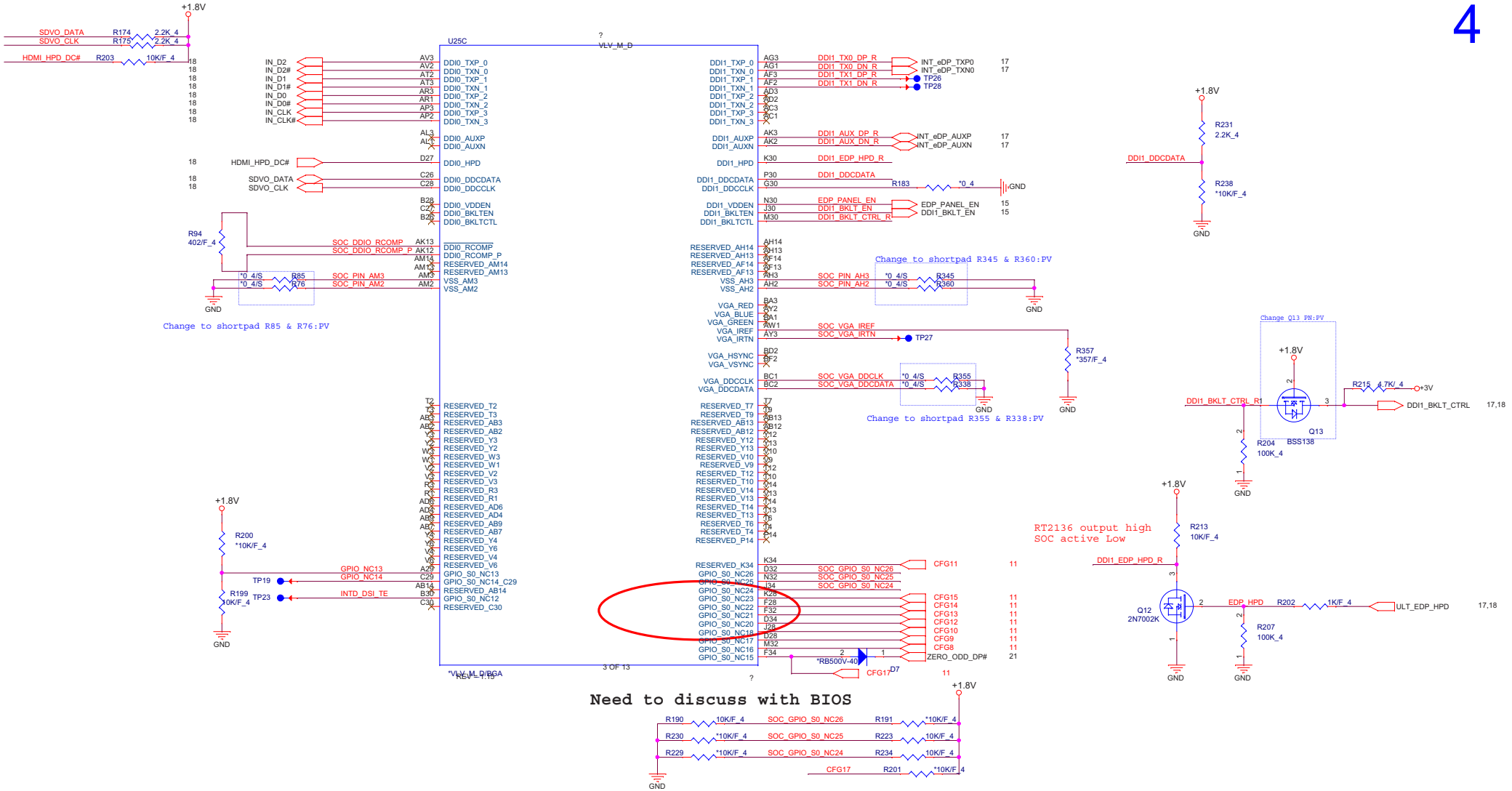
NB5

Size	Document Number	Rev
Custom	Valley 1/9 (DDRA)	1A

Date: Monday, November 18, 2013 | Sheet 2 of 37



PROJECT : U87	
Quanta Computer Inc.	
NB5	Size: Custom; Document Number: Valley 2/9 (DDRB); Rev: 1A
Date: Monday, November 18, 2013	Sheet 3 of 37



GPIO26	0	0	
GPIO25	0	0	0=HDD+ODD, 1= eMMC only
GPIO24	0	1	0=14", 1=15"

NB5

PROJECT : U87

Quanta Computer Inc.

Size	Document Number	Rev
Custom	Valley 3/9 (Display)	1A

Date: Tuesday, April 15, 2014 Sheet 4 of 37

HDD

ODD

Card reader

WIFI

LAN

Change R343 & R358 to shortpad:MV

Change to shortpad:PV

Change Q25 PN:PV

Change to shortpad R344 & R354:PV

Change R139 to shortpad:MV

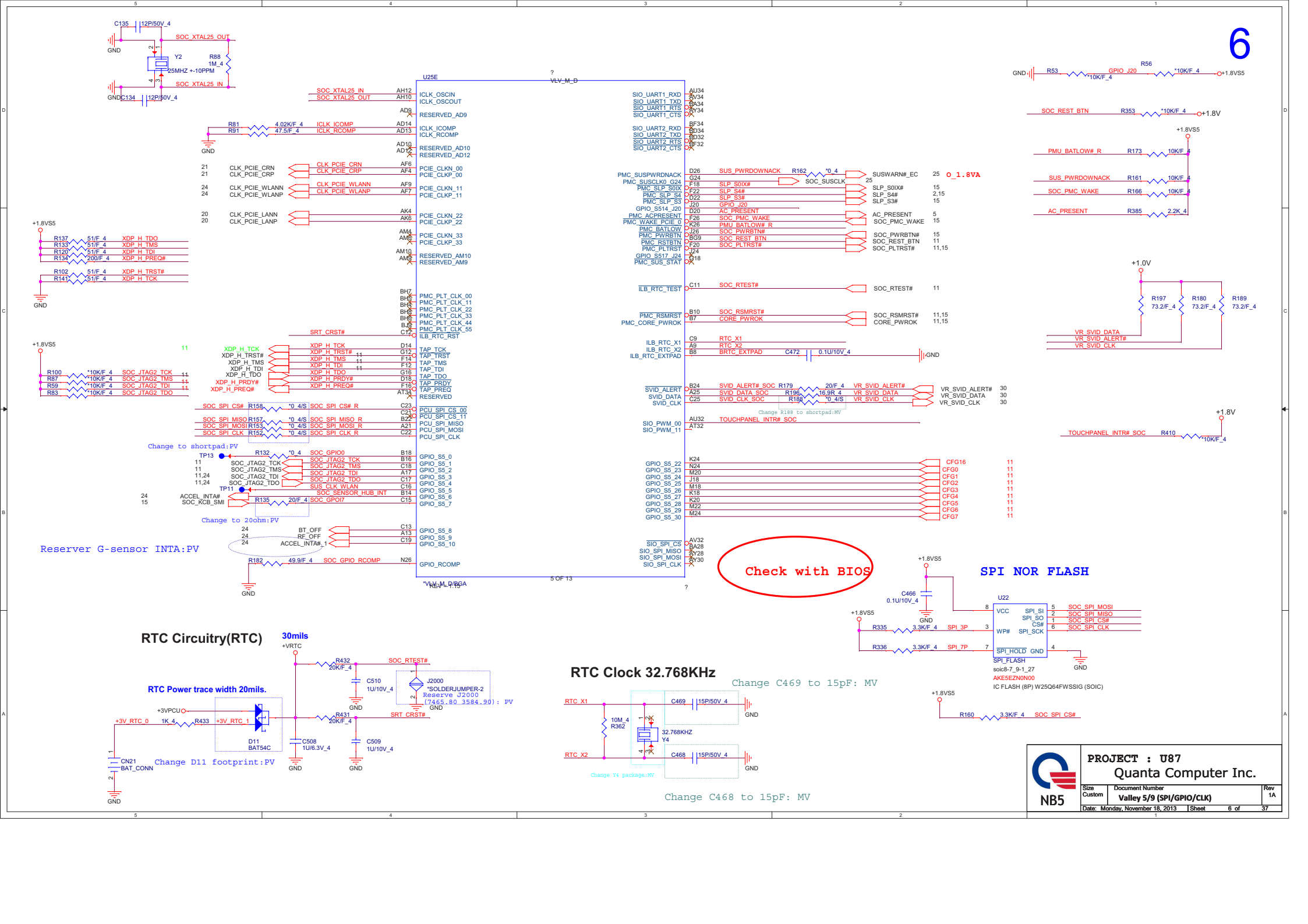
Change R168 to shortpad:MV

Change to shortpad:PV

Change to shortpad:PV

AC Present: This input pin indicates when the platform is plugged into AC power.

PROJECT : U87	
Quanta Computer Inc.	
NB5	Size: Custom; Document Number: Valley 4/9 (SD/PCIE/SATA); Rev: 1A
Date: Monday, November 18, 2013	Sheet 5 of 37


U25E
VLV_M_D
5 OF 13
*VLV_M_D/BGA
REV 1.15
Reserver G-sensor INTA:PV
Change to shortpad:PV
Change to 20ohm:PV
Change R188 to shortpad:MV
Check with BIOS
SPI NOR FLASH
U22
SPI_FLASH
soic8-7_9-1_27
AKE5EZN0N00
IC FLASH (8P) W25Q64FWSSIG (SOIC)
RTC Circuitry(RTC)
30mils
RTC Power trace width 20mils.
Change D11 footprint:PV
RTC Clock 32.768KHz
Change C469 to 15pF: MV
Change C468 to 15pF: MV
Change Y4 package:MV
PROJECT : U87
Quanta Computer Inc.
NB5
Valley 5/9 (SPI/GPIO/CLK)
Monday, November 18, 2013

+1.8VS5

R337 *10K/F_4 SOC_VOL_UP
R346 *10K/F_4 SOC_VOL_DOWN
R340 *10K/F_4 SOC_HOME_BUT
R341 *10K/F_4 SOC_ROTATE
R342 *10K/F_4 SOC_PWR_BUT

Add HUB power detect circuit: PV

14 HUB_PWR_DET

Change USB port define: PV

USB 3.0/2.0 HUB
USB2.0 CONN
BT
Camera

U25F

SOC_VOL_UP
SOC_VOL_DOWN
SOC_HOME_BUT
SOC_ROTATE
SOC_PWR_BUT

GPIO_S5_31
GPIO_S5_32
GPIO_S5_33
GPIO_S5_34
GPIO_S5_35
GPIO_S5_36
GPIO_S5_37
GPIO_S5_38
GPIO_S5_39
GPIO_S5_40
GPIO_S5_41
GPIO_S5_42
GPIO_S5_43

USB30_D+ 14 USB_DP0
USB30_D- 14 USB_DN0
19 USB_H2_P USB_DP1
19 USB_H2_N USB_DN1
24 USBP_BT+ USB_DP2
24 USBP_BT- USB_DN2
18 USBP_CAM+ USB_DP3
18 USBP_CAM- USB_DN3

1K_4 R92 ICLK_USB_TERMN_0 D10 ICLK_USB_TERMN_D10
1K_4 R93 ICLK_USB_TERMN_1 F10 ICLK_USB_TERMN
GND
R144 10K/F_4 SOC_USB_OC0 C20 USB_OC_00
+1.8VS5 R145 10K/F_4 SOC_USB_OC1 B20 USB_OC_11

R89 45.3/F_4 USB_RCOMP D6 USB_RCOMPO
C7 USB_RCOMPI
GND
M13 USB_PLL_MON

B4 USB_HSIC0_DATA
B5 USB_HSIC0_STROBE

GND
E2 USB_HSIC1_DATA
D2 USB_HSIC1_STROBE

R356 45.3/F_4 USB_HSIC_RCOMP A7 USB_HSIC_RCOMP
R138 49.9/F_4
LPC_RCOMP BF18 LPC_RCOMP

22,24,25 LAD0 BH16 ILB_LPC_AD_00
22,24,25 LAD1 BJ17 ILB_LPC_AD_11
22,24,25 LAD2 BJ13 ILB_LPC_AD_22
22,24,25 LAD3 BG14 ILB_LPC_AD_33
22,24,25 LFRAME# BG17 ILB_LPC_FRAME
25 L_CLKOUT_0 R350 22_6 SOC_CLKOUT_0 BG15 ILB_LPC_CLK_00
22,24 L_CLKOUT_1 R430 22_6 SOC_CLKOUT_1 BH14 ILB_LPC_CLK_11
22,25 L_CLKRUN# R351 22_6 SOC_CLKRUN# BG16 ILB_LPC_CLKRUN
15 SOC_SERIRQ SOC_SERIRQ BG13 ILB_LPC_SERIRQ

+1.8V
R104 2.2K_4 SMB_SOC_DATA BG12 PCU_SMB_DATA
R106 2.2K_4 SMB_SOC_CLK BH10 PCU_SMB_CLK
R339 10K/F_4 SMB_SOC_ALERTB BG11 PCU_SMB_ALERT

15 SMB_SOC_DATA SMB_SOC_DATA
15 SMB_SOC_CLK SMB_SOC_CLK

6 OF 13
*VLV_M_D/BGA
REV = 1.15

VLV_M_D

RESERVED_M10 M10
RESERVED_M9 M9
RESERVED_P7 P7
RESERVED_P6 P6
RESERVED_M7 M7
USB3_REXT0 M12 USB3_P0_REXT R97 1.24K/F_4
RESERVED_P10 P10
RESERVED_P12 P12
GND
RESERVED_M4 M4
RESERVED_M6 M6
USB3_RXP0 D4 USB30_RX+ USB30_RX+ 14
USB3_RXN0 E3 USB30_RX- USB30_RX- 14
USB3_TXP0 K6 USB30_TX+ USB30_TX+ 14
USB3_TXN0 K7 USB30_TX- USB30_TX- 14
RESERVED_H8 H8
RESERVED_H7 G7
RESERVED_H5 H5
RESERVED_H4 G4

GPIO_S0_SC_55 BD12 BT_COMBO_EN#_R
GPIO_S0_SC_56 BC12 TOP_SWAP
GPIO_S0_SC_57 BD14 SOC_UART_TX
GPIO_S0_SC_58 BC14
GPIO_S0_SC_59 BF14 SOC_SENSOR_HUB_WAKE
GPIO_S0_SC_60 BD16 TOUCH_PANEL_SOC_RST#
GPIO_S0_SC_61 BC16 SOC_UART_RX

ILB_8254_SPKR BH12 ACZ_SPKR 19

SIO_I2C0_DATA BH22 I2C_0_SDA
SIO_I2C0_CLK BG23 I2C_0_SCL
SIO_I2C1_DATA BG24 I2C_1_SDA
SIO_I2C1_CLK BH24 I2C_1_SCL
SIO_I2C2_DATA BG25 I2C_2_SDA_R
SIO_I2C2_CLK BJ25 I2C_2_SCL_R
SIO_I2C3_DATA BG26 I2C_3_SDA
SIO_I2C3_CLK BH26 I2C_3_SCL
SIO_I2C4_DATA BF27 I2C_4_SDA
SIO_I2C4_CLK BG27 I2C_4_SCL
SIO_I2C5_DATA BH28 I2C_5_SDA
SIO_I2C5_CLK BG28 I2C_5_SCL
SIO_I2C6_DATA BJ29 I2C_6_SDA
SIO_I2C6_CLK BG29 I2C_6_SCL
GPIO_S0_SC_092 BH30 I2C_NFC_SOC_SDA
GPIO_S0_SC_093 BG30 I2C_NFC_SOC_SCL

GPS, BT & WIFI CODEC

GND R45 10K/F_4 TOP_SWAP R46 *10K/F_4 +1.8V

USB 3.0/2.0 HUB

Q30 BSS138
Change Q30 PN:PV
GND 1 3 ACC_LED# 19
TOUCH_PANEL_SOC_RST#
Change R128 to 2.2K ohm: PV
+1.8V
TOUCH_PANEL_SOC_RST# R128 2.2K_4
SOC_SENSOR_HUB_WAKE R366 10K/F_4

SOC_UART_TX R131 *0_4 SOC_UART_RX

Un-Stuff for Test Only

+1.8V

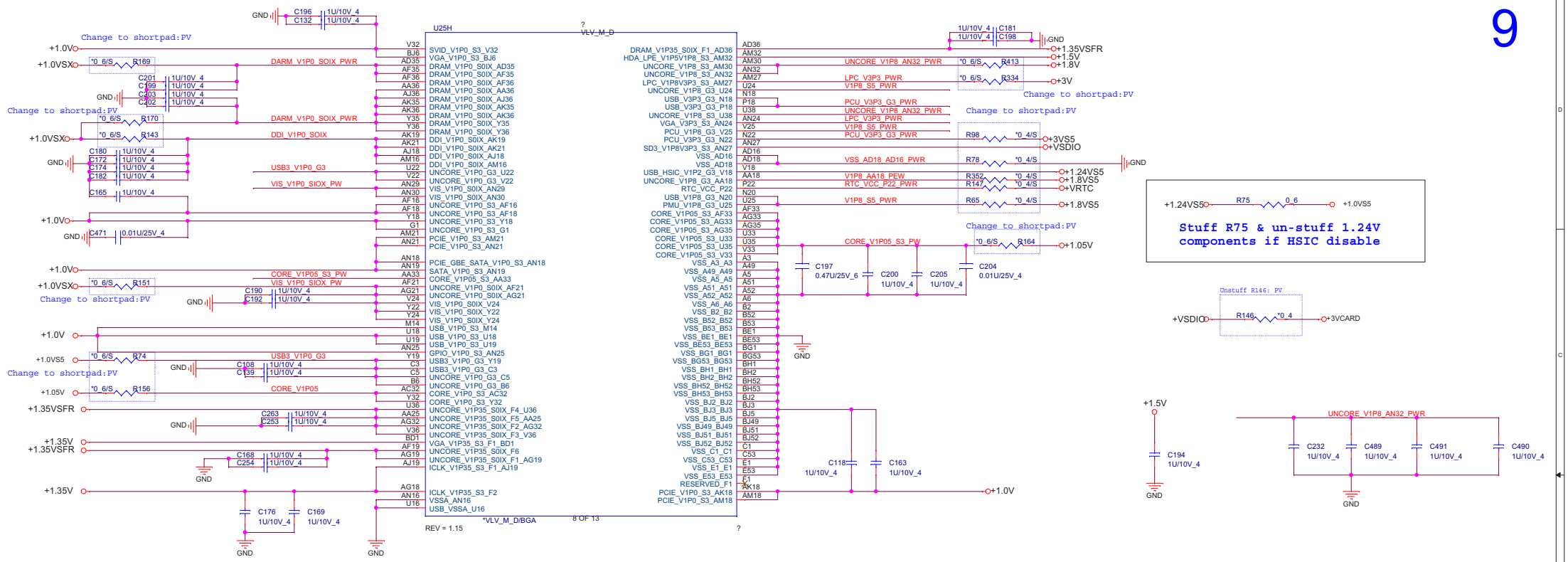
I2C_0_SDA R377 2.2K_4
I2C_0_SCL R378 2.2K_4
I2C_1_SDA R381 2.2K_4
I2C_1_SCL R382 2.2K_4
I2C_2_SDA_R R384 2.2K_4
I2C_2_SCL_R R386 2.2K_4
I2C_3_SDA R390 2.2K_4
I2C_3_SCL R391 2.2K_4
I2C_4_SDA R394 2.2K_4
I2C_4_SCL R393 2.2K_4
I2C_5_SDA R396 2.2K_4
I2C_5_SCL R397 2.2K_4
I2C_6_SDA R399 2.2K_4
I2C_6_SCL R400 2.2K_4
I2C_NFC_SOC_SDA R401 2.2K_4
I2C_NFC_SOC_SCL R403 2.2K_4
BT_COMBO_EN#_R R2021 *2.2K_4
Reserve R2021:PV

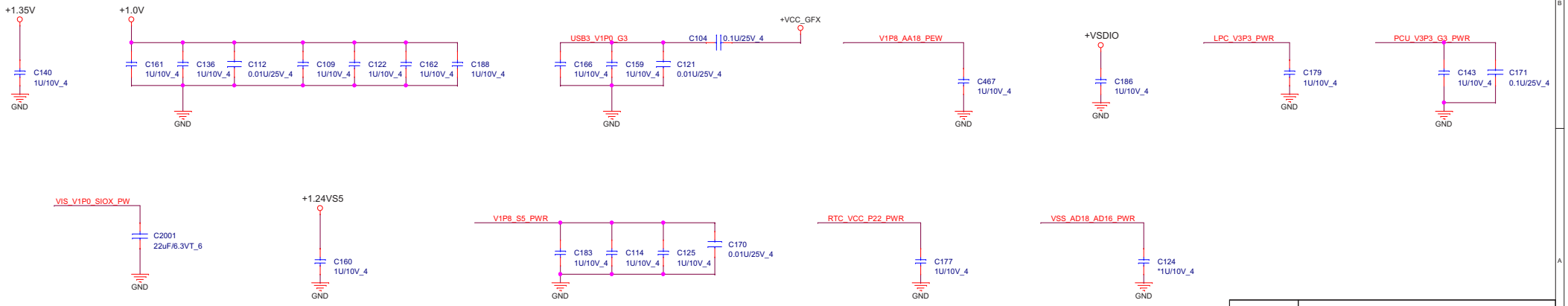
Q26 *BSS138
BT_COMBO_EN# R 1 3 BT_COMBO_EN# 24
+1.8V

NB5

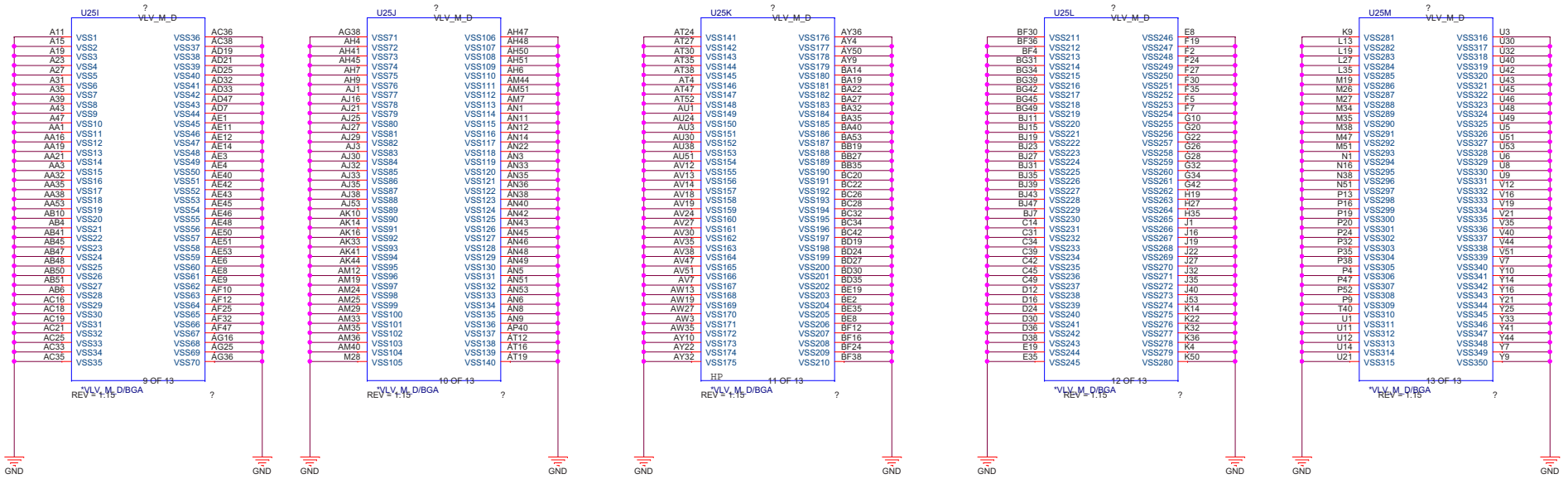
PROJECT : U87
Quanta Computer Inc.
Size Custom | Document Number Valley 6/9 (USB/LPC/I2C) | Rev 1A
Date: Monday, November 18, 2013 | Sheet 7 of 37

NB5	PROJECT : U87 Quanta Computer Inc.	
Size: Custom	Document Number: Valley 7/9 (Power 1)	Rev: 1A
Date: Monday, November 18, 2013	Sheet: 8 of 37	





PROJECT :	U87
Quanta Computer Inc.	
NB5	
Size: Custom	Document Number: Valley 8/9 (Power 2)
Rev: 1A	
Date: Monday, November 18, 2013	Sheet: 9 of 37



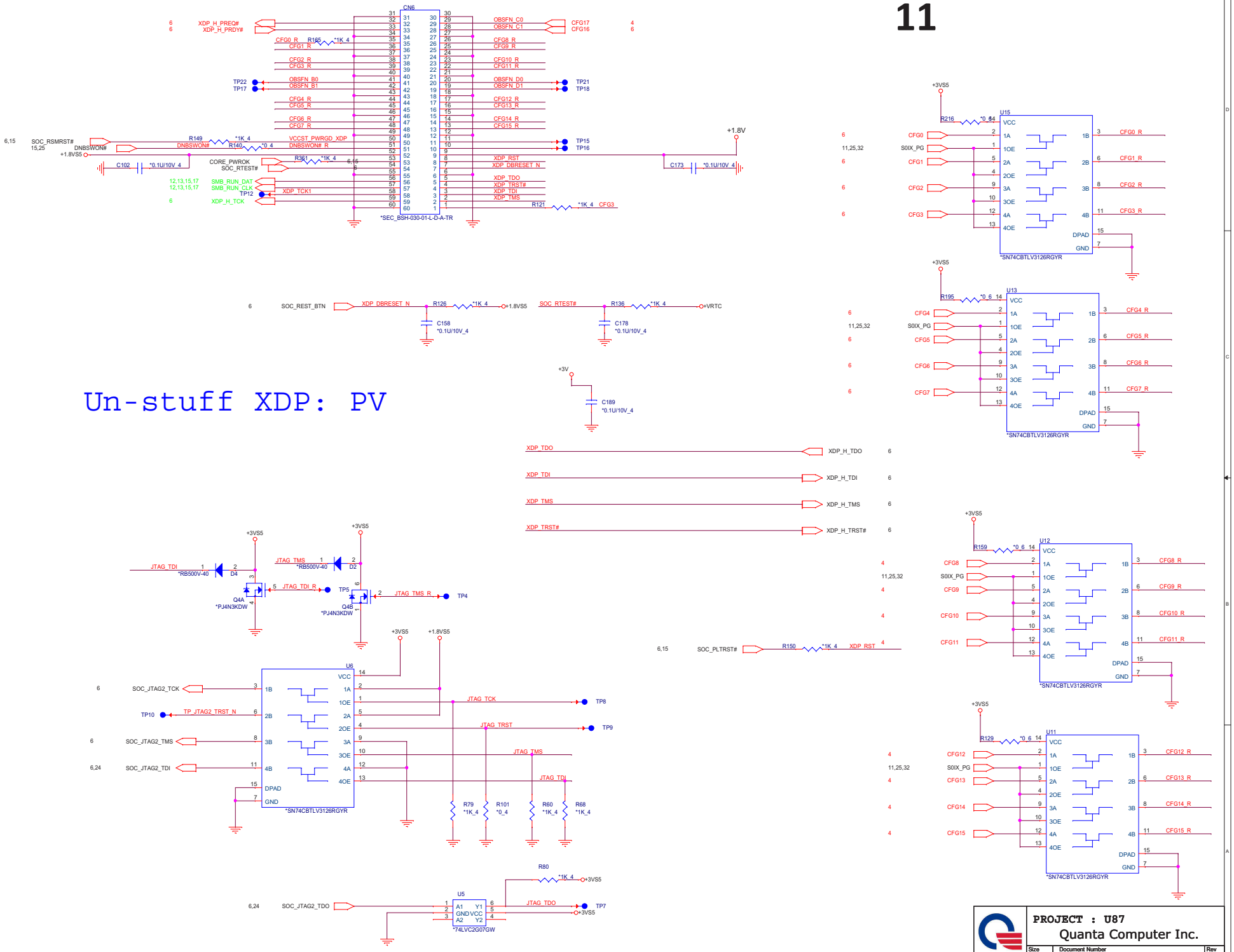
NB5

PROJECT : U87

Quanta Computer Inc.

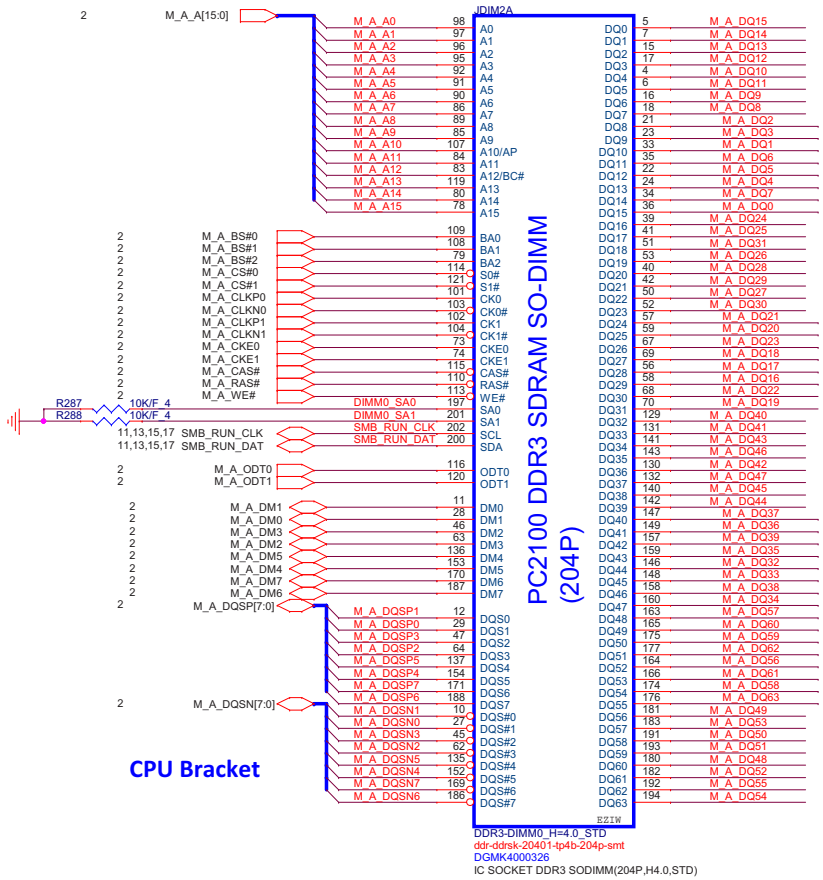
Size	Document Number	Rev
Custom	Valley 9/9 (GND)	1A

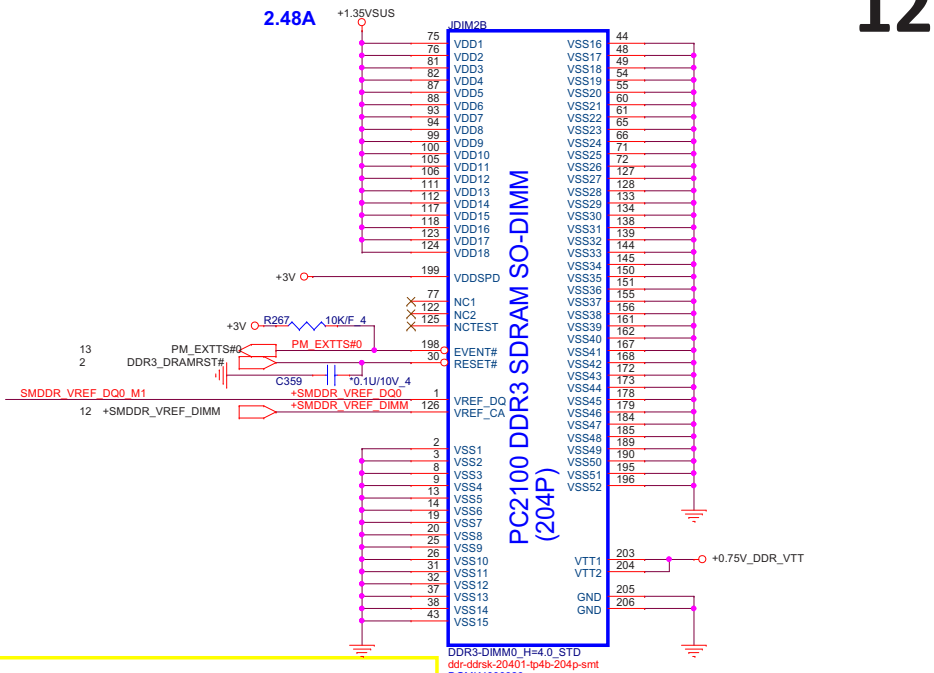
Date: Monday, November 18, 2013 | Sheet 10 of 37

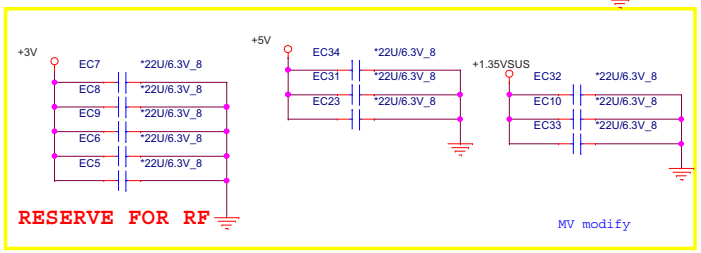


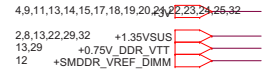
Un-stuff XDP: PV

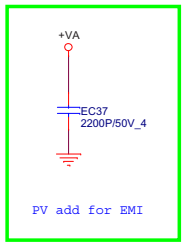
NB5	PROJECT : U87 Quanta Computer Inc.		
	Size: C	Document Number: HSW XDP & APS	Rev: 1A
	Date: Monday, November 18, 2013	Sheet 11 of 37	

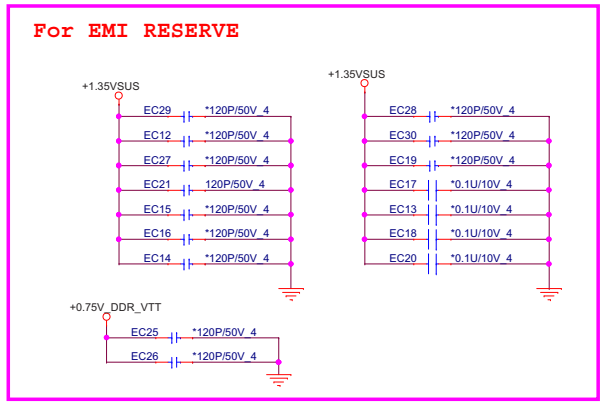


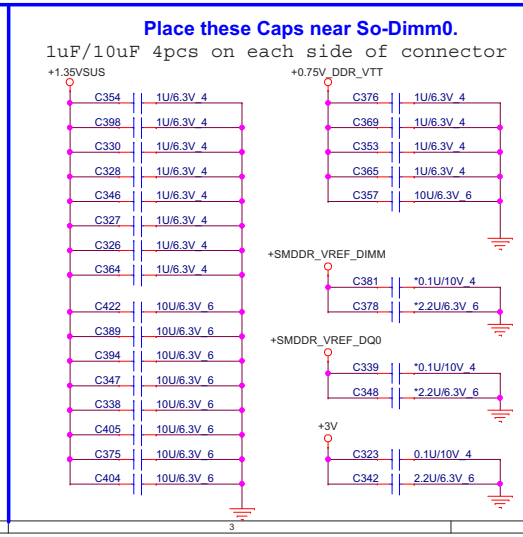


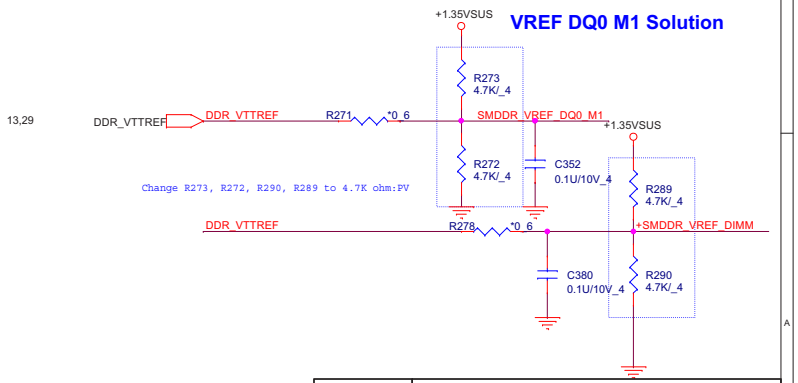




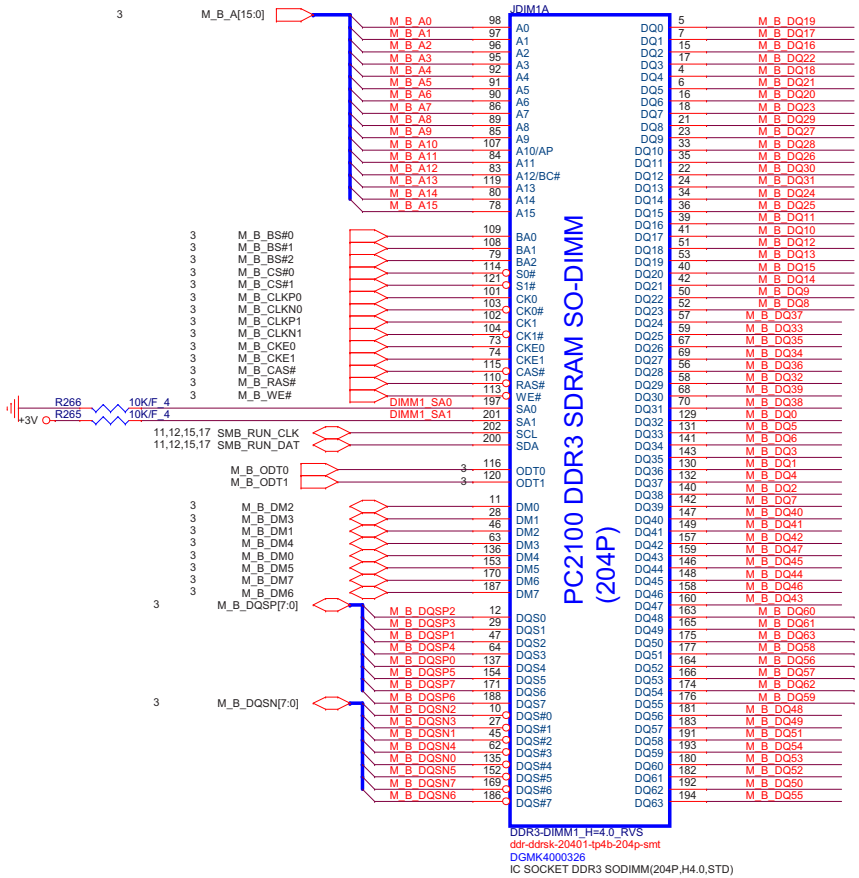


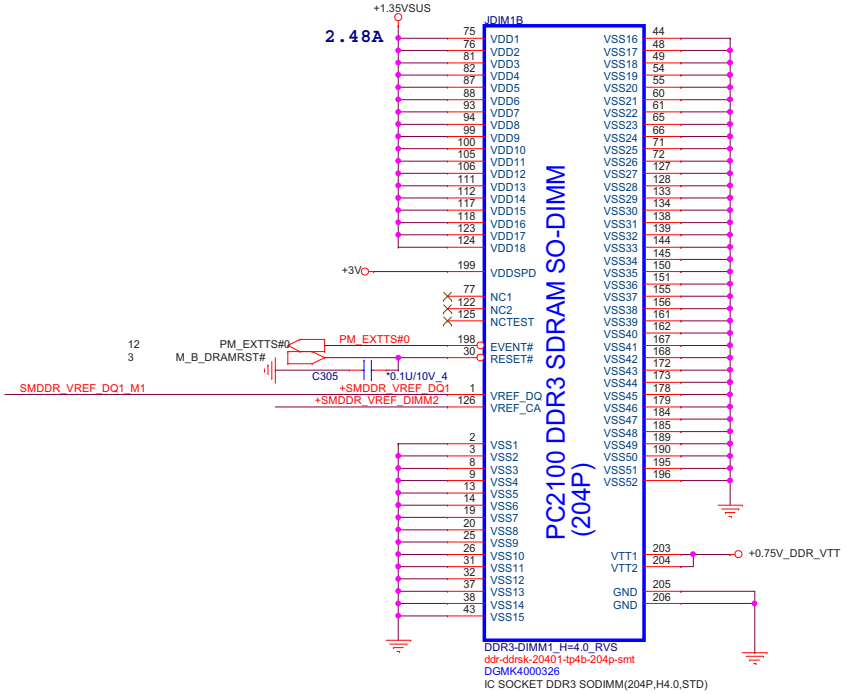




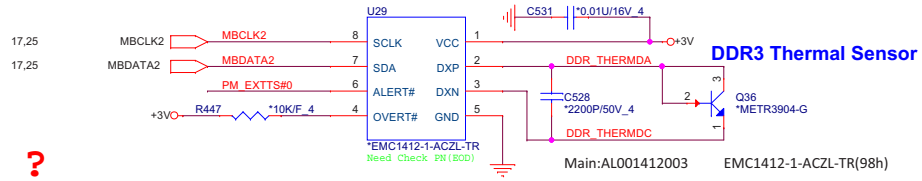


NB5	PROJECT : U87 Quanta Computer Inc.	
Size: Custom	Document Number: DDR3 DIMM0-STD(4.0H)	Rev: 1A
Date: Monday, November 18, 2013	Sheet 12 of 37	





Local Thermal Sensor

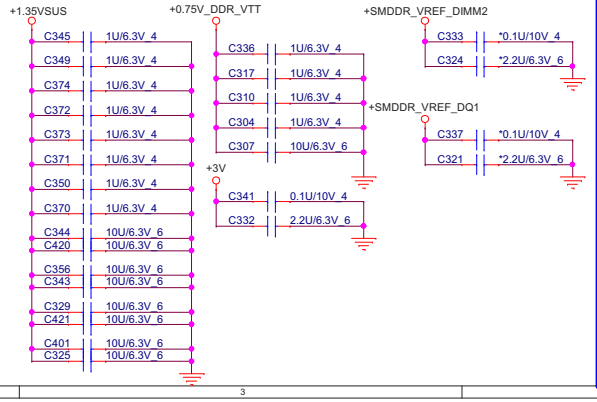


?

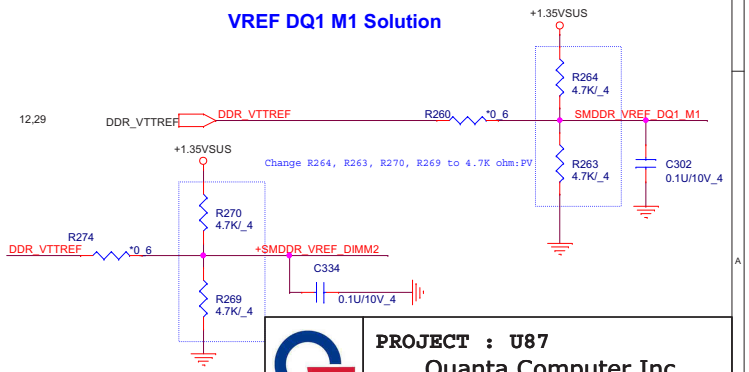
Main:AL001412003 EMC1412-1-ACZL-TR(98h)
2nd:AL000431014 TMP431ADGKR(98h)

Place these Caps near So-Dimm1.

1uF/10uF 4pcs on each side of connector



VREF DQ1 M1 Solution



2,8,12,22,29,32 +1.35VSUS
12,29 +0.75V_DDR_VTT
4,9,11,12,14,15,17,18,19,20,21,22,23,24,25,32 +3V

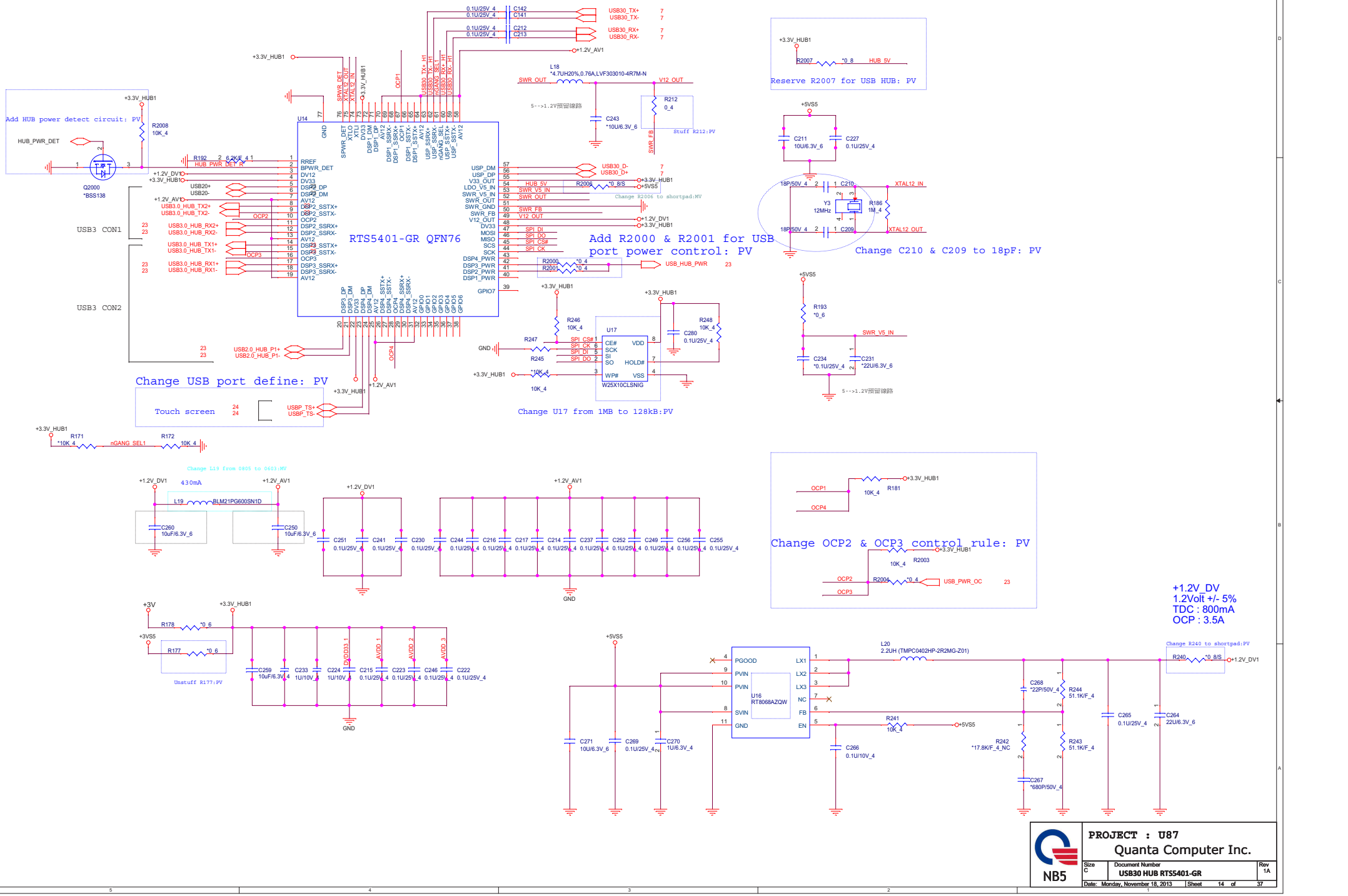
NB5

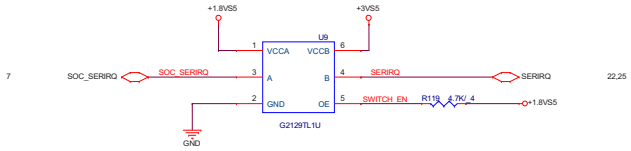
PROJECT : U87

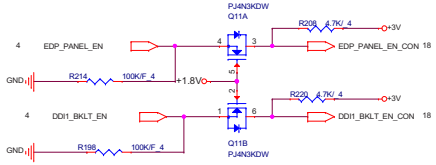
Quanta Computer Inc.

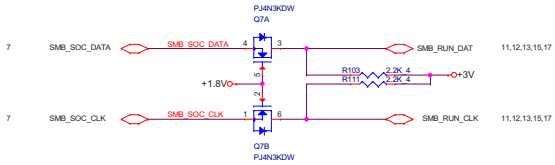
Size	Document Number	Rev
Custom	DDR3 DIMM1-STD(4.0H)	1A

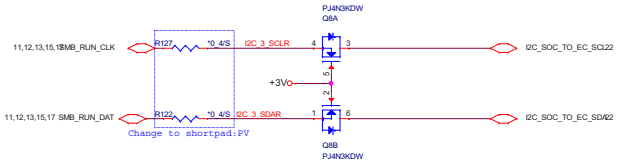
Date: Monday, November 18, 2013 Sheet 13 of 37

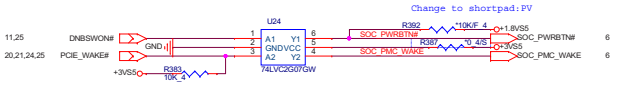

RTS5401-GR QFN76
Add HUB power detect circuit: PV
Reserve R2007 for USB HUB: PV
Add R2000 & R2001 for USB port power control: PV
Change C210 & C209 to 18pF: PV
Change USB port define: PV
Change U17 from 1MB to 128kB:PV
Change OCP2 & OCP3 control rule: PV
+1.2V_DV
1.2Volt +/- 5%
TDC : 800mA
OCP : 3.5A
PROJECT : U87
Quanta Computer Inc.
USB30 HUB RTS5401-GR
Monday, November 18, 2013
NB5

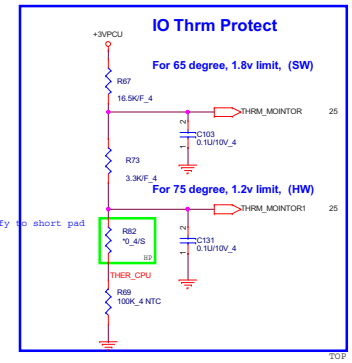


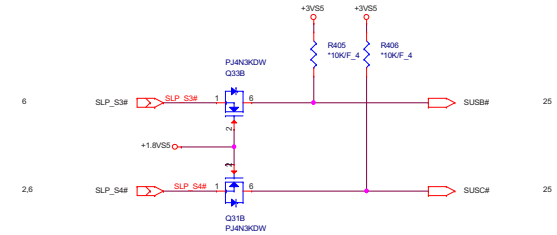


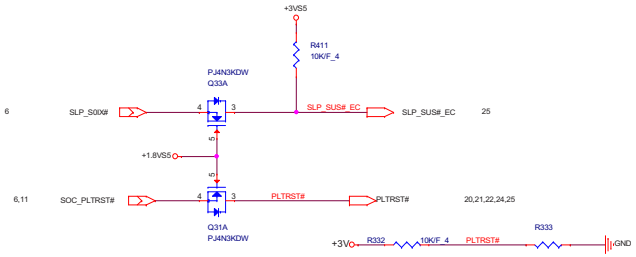


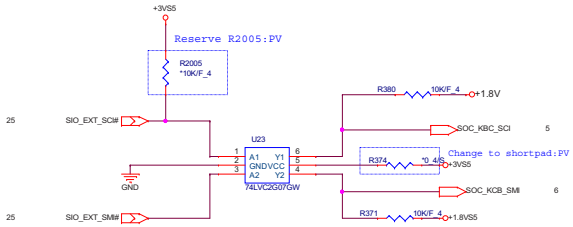


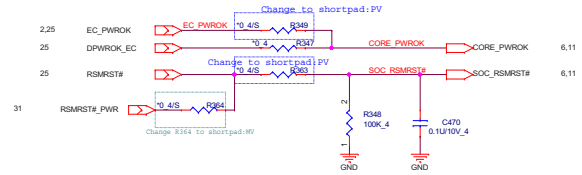












NB5	PROJECT : U87 Quanta Computer Inc.	
Size: Custom	Document Number: Level shift/Thermistor	Rev: 1A
Date: Monday, November 18, 2013	Sheet 15 of 37	

S5 to S0 Cold Boot Sequence without S0ix

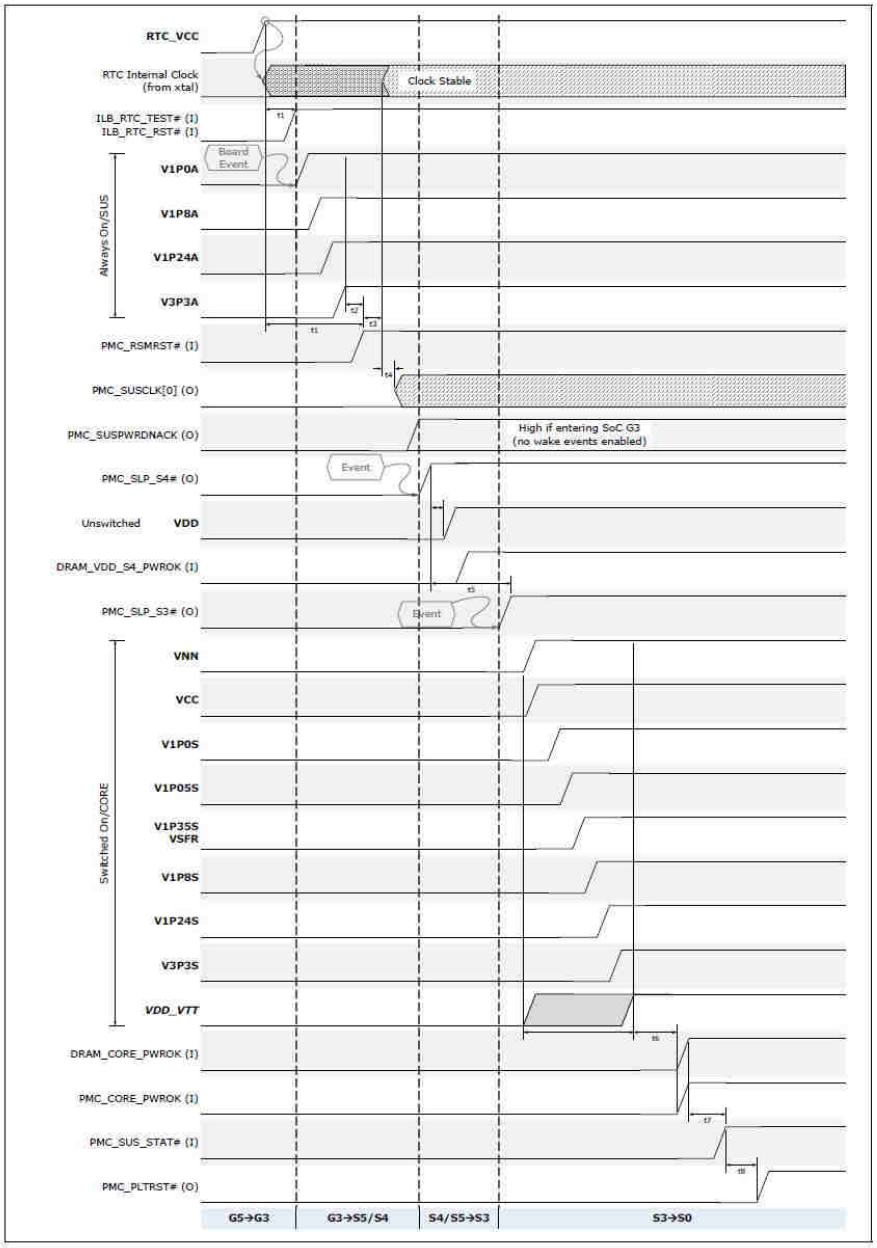
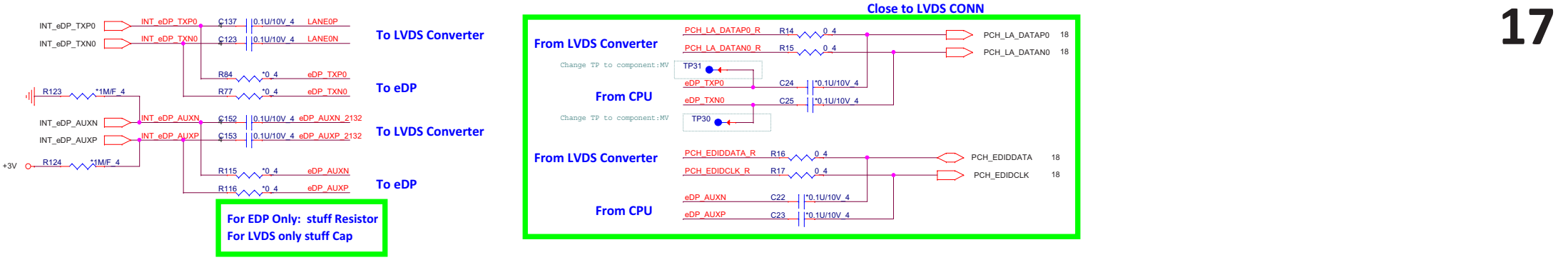


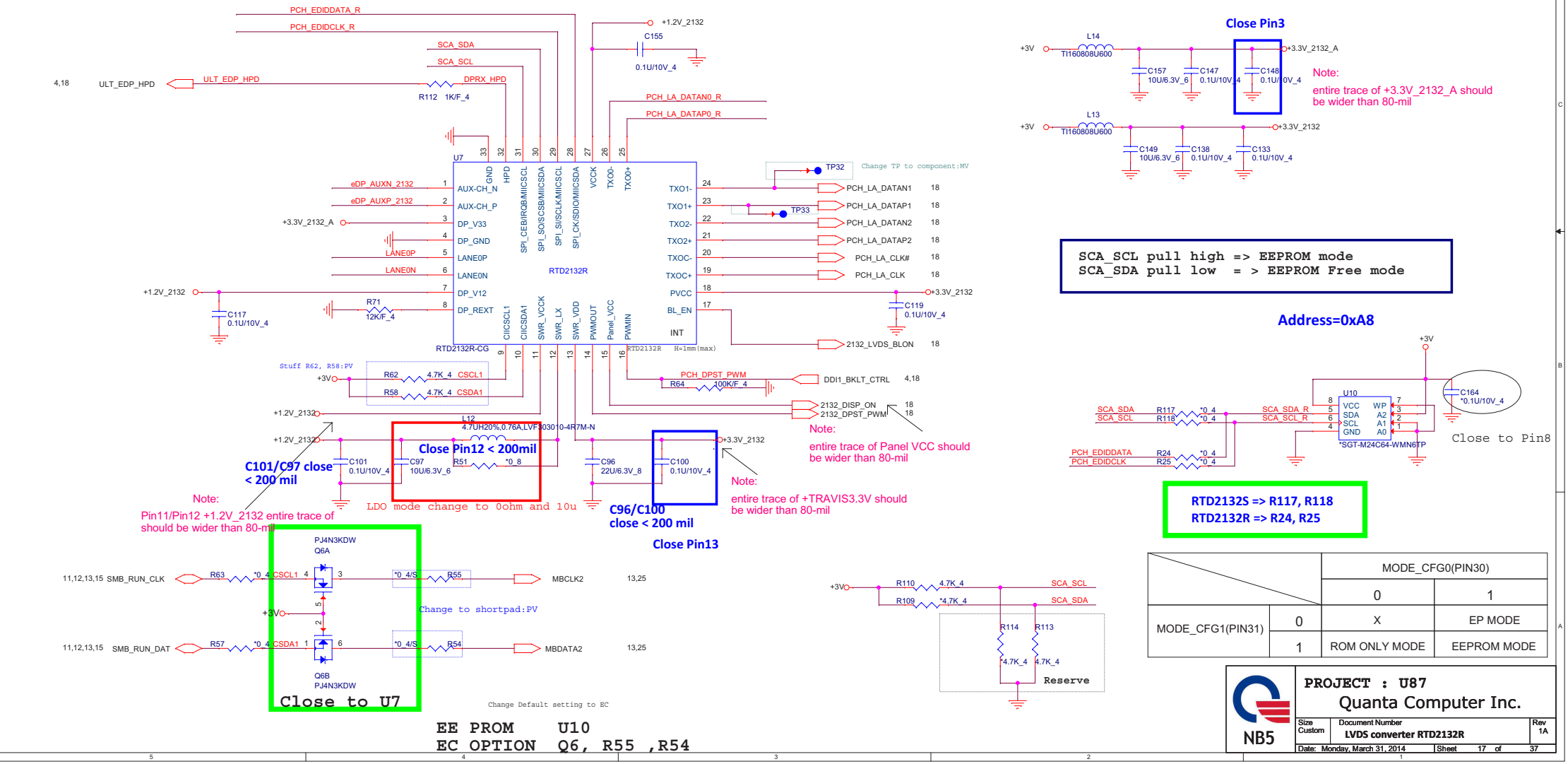
Table 4-12. Cold Boot Timing Spec

Parameter	Description	Min	Typ	Max	Units
T0	RTC_VCC stable to ILB_RTC_TEST# high	9			ms
T1	VR ramp up time from 10% to 90% voltage level			2	ms
T2	Rail to subsequent rail turn on delay	10		2000	us
T3	VSUS stable to PMC_RSMRST# high	10			ms
T4	S and SX rails stable to PMC_CORE_PWROK	100			ms

NOTES:

1. T1 and T2 are recommended time for all the VR rails unless specified otherwise. The VR ramp up time T2 and subsequent rail delay T3 are put in place to avoid inrush current which may be caused by multiple loads turning on simultaneously or fast charging of VR output decoupling.
2. Violation of rail-to-rail sequencing may cause the SoC part long term reliability issue.
3. Platform devices other than SoC sequencing are not explicitly shown as they are not limited by the SoC sequencing requirement.



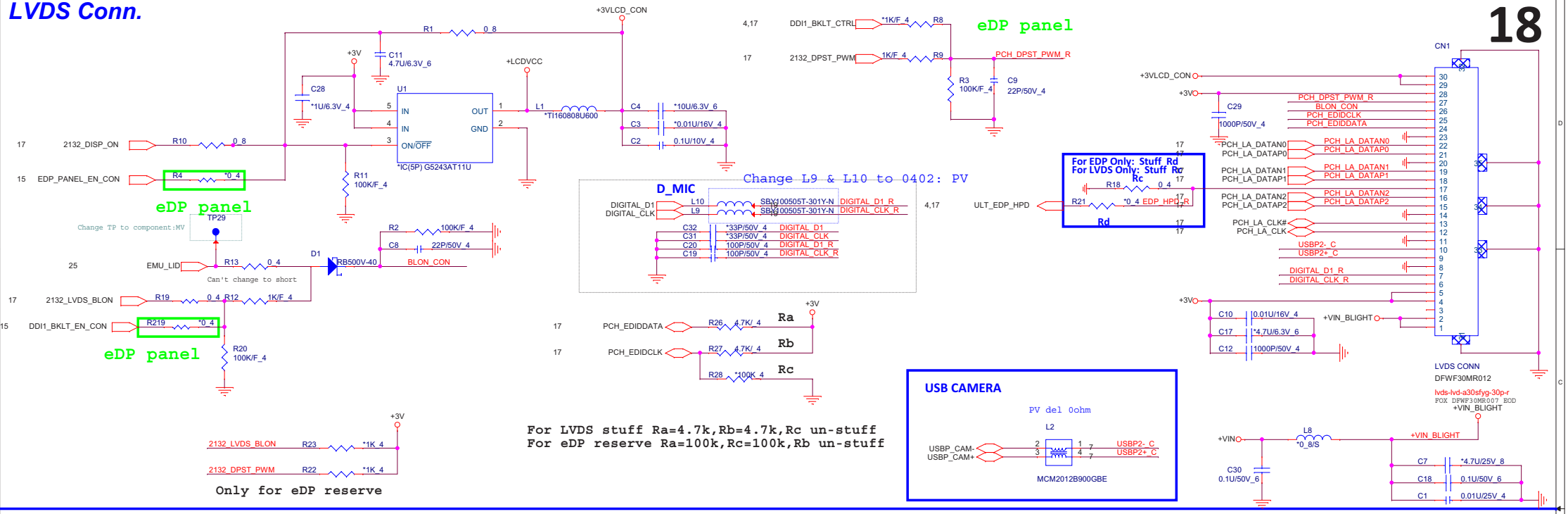


	MODE_CFG0(PIN30)	
	0	1
MODE_CFG1(PIN31) 0	X	EP MODE
MODE_CFG1(PIN31) 1	ROM ONLY MODE	EEPROM MODE

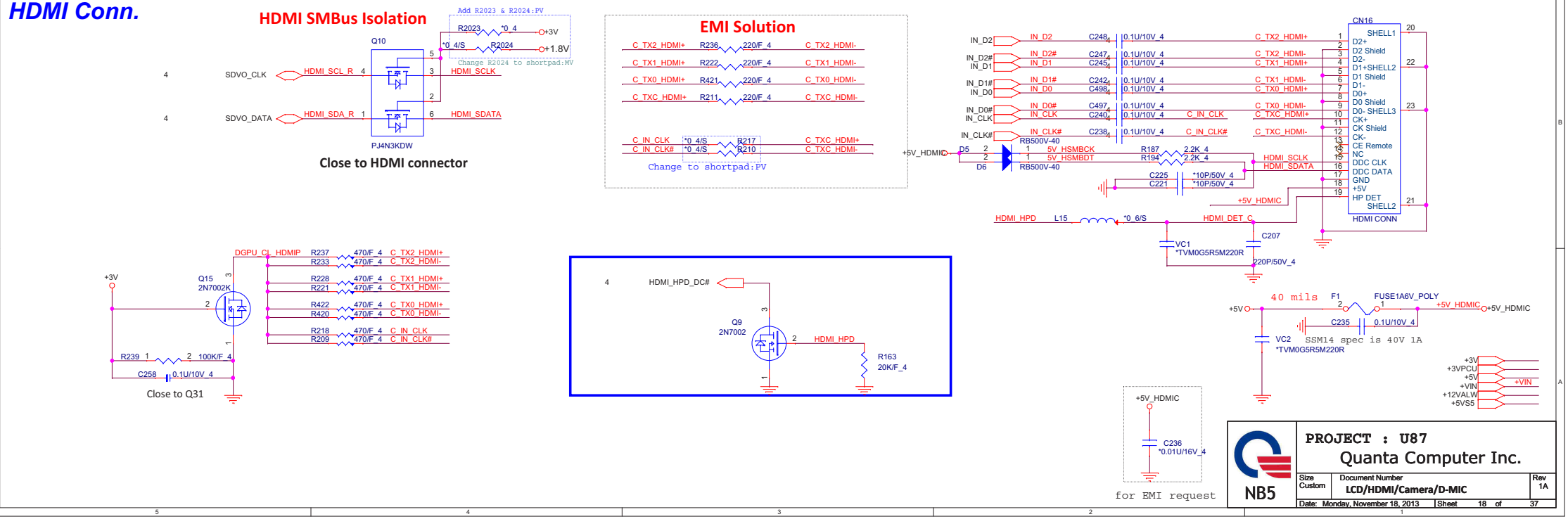
EE PROM U10
EC OPTION Q6, R55 ,R54

PROJECT : U87
Quanta Computer Inc.
NB5
Size: Custom | Document Number: LVDS converter RTD2132R | Rev: 1A
Date: Monday, March 31, 2014 | Sheet 17 of 37

LVDS Conn.



HDMI Conn.



PROJECT : U87	
Quanta Computer Inc.	
NB5	Size: Custom; Document Number: LCD/HDMI/Camera/D-MIC; Rev: 1A
Date: Monday, November 18, 2013	Sheet 18 of 37

Change L29 to 0402: PV

Close to PIN1

Change L25 to 0402: PV

>40mils trace

Change L26 to 0402: PV

Close to PIN26

Change L29 to 0402: PV

Close to PIN40

Change L29 to 0402: PV

Close to PIN28

TO Digital MIC

Close to PIN7

Change R436 to shortpad:MV

Close to Pin 34,35,36

TO Internal Speakers

Change L29 to 0402: PV

Close to Pin 41

Close to Pin 46

Close to codec

Close to Speaker

Speaker 4 ohm: 40mils

Check layout mount location

check value

Close to CODEC

place to near U28 or under U28

for intel HSW ULT

USB 2.0 AND AUDIO COMBO JACK

Place close to CN9

Stuff 1000pF on C351 for EMI: PV

PV del 0ohm

FOR EMI

Vset=1.242V

PROJECT : U87		
Quanta Computer Inc.		
Size: Custom	Document Number: Azalia ALC3227	Rev: 1A
Date: Monday, November 18, 2013	Sheet 19 of 37	

NB5

For EMI 0 ~ 22 ohm

R39 10/F_4

LAN_XTAL1 — XTAL1

Change Y1 PN to BG625000121: PV

Y1 25MHZ +-10PPM

XTAL2

C55 10P/50V_4

C52 10P/50V_4

Switch Mode:Stuff L11 For RTL 8176
LDO Mode:Stuff R40 For RTL8166

Trace<30 mil
Width > 60 mil

Power trace Layout 寬度> 60mil

>60mil

+1.05V_LAN_REGOUT — 4.7UH,+-20%,650MA_1210 L11 — >60mil

R40 *0_8

C67 4.7U/6.3V_6

Cz C64 0.1U/10V_4

Close to Choke L23
SWR mode need stuff C622 & Cz

Place Cc,Cd,Ce,Cf
close to each VDD10 pin-- 3, 8, 22, 30

Cc C49 0.1U/10V_4

Cd C48 0.1U/10V_4

Ce C71 0.1U/10V_4

Cf C40 0.1U/10V_4

+1.05V_LAN

Cg C78 1U/6.3V_4

C80 0.1U/10V_4

Place Cg & C80 close to each VDD10 pin22

*RTL8166EH Cg & C80 close pin30

U2

MDI1+_1 — TD+ — TX+ — MDI1+

MDI1-_1 — TD- — CMT — TRA_V_DAC

R29 75/F_4 LAN_MCTG1 — CT — TX- — MDI1-

MDI0+_1 — RD+ — RX- — MDI0-

MDI0-_1 — RD- — CT — TRA_V_DAC

R30 75/F_4 LAN_MCTG0 — CT — RX+ — MDI0+

NS681684

C427 10P/3KV_1808

C34 0.01U/25V_4

BOT: TST1284R LF DB0EL5LAN00

Stuff Ca and Cb only, close to each VDD33 pin-- 11, 32

+3V_LAN

+3VLANVCC

C53 0.1U/10V_4 Ca

C41 0.1U/10V_4 Cb

C68 4.7U/6.3V_6

C47 4.7U/6.3V_6

Place Cc and Cd close to each VDD33 pin-- 23

C76 4.7U/6.3V_6 Cc

C65 0.1U/10V_4 Cd

Remove For Not Using SWR mode

4,9,11,12,13,14,15,17,18,19,21,22,23,24,25,32 — 32 — +3VLANVCC

+1.05V_LAN

R32 2.49K/F_4 LANRSET

+3V_LAN

TP1 LAN_AMBLED#

TP2

TP3 LAN_WLED#

U4

RSET VDD10 XTAL2 XTAL1 LED0

AVDD33 RSET AVDD10 CKXTAL2 CKXTAL1 LED0 LED1/GPO LED2(LED1)

33 GND

Please add 9 GND VIAs connection with thermal PAD

MDI0+ 1 — MDIP0 — REGOUT(NC) 24 — +1.05V_LAN_REGOUT

MDI0- 2 — MDIN0 — VDDREG(VDD33) 23 — +3V_LAN

+1.05V_LAN — VDD10 3 — AVDD10(NC) — DVDD10(NC) 22 — VDD10 — +1.05V_LAN

MDI1+ 4 — MDIP1 — LANWAKEB 21 — PCIE_WAKE# — PCIE_WAKE# 15,21,24,25

MDI1- 5 — MDIN1 — ISOLATEB 20 — ISOLATEB

6 — MDIP2(NC) — PERSTB 19 — P

7 — MDIN2(NC) — HSON 18 — PCIE_RXN3_LAN_L C70 0.1U/10V_4 — PCIE_RXN3_LAN 5

+1.05V_LAN — VDD10 8 — AVDD10 — HSOP 17 — PCIE_RXP3_LAN_L C69 0.1U/10V_4 — PCIE_RXP3_LAN 5

RTL8176EH

RTL8176EH-CG

MDIP3(NC) MDIN3(NC) AVDD33(NC) CLKREQB HSIP HSIN REFCLK_P REFCLK_N

9 10 11 12 13 14 15 16

+3V_LAN

5 PCIE_CLKREQ_LAN# — PCIE_CLKREQ_LAN# R36 *0_4/S — LAN_CLKRQ

CLK_PCIE_LANN — CLK_PCIE_LANN 6

CLK_PCIE_LANP — CLK_PCIE_LANP 6

PCIE_TXN3_LAN — PCIE_TXN3_LAN 5

PCIE_TXP3_LAN — PCIE_TXP3_LAN 5

+3V

R41 1K_4

ISOLATEB

R42 15K/F_4

if ISOLATEB pin pull-low,the LAN chip will not drive it's PCI-E outputs (excluding PCIE_WAKE# pin)

LAN conn

RJ45

(White)

CN14

LAN_WLED 9 — LED_AMB_P A1

LAN_WLED# 10 — LED_AMB_N A2

8 — RX1-

7 — RX1+

MDI1-_1 6 — RX0-

5 — TX1-

4 — TX1+

MDI1+_1 3 — RX0+

MDI0-_1 2 — TX0-

MDI0+_1 1 — TX0+

GND1 14

GND 13

LAN_AMBLED 11 — LED_GRE_P B1

LAN_AMBLED# 12 — LED_GRE_N B2

(Amber)

RJ45_CONN

R7 *0_6/S

R31 *0_6/S

C430 68P/50V_4

+3VLANVCC — R299 330_4 — C428 1000P/50V_4 — LAN_AMBLED

+3VLANVCC — R300 330_4 — LAN_WLED — C433 1000P/50V_4

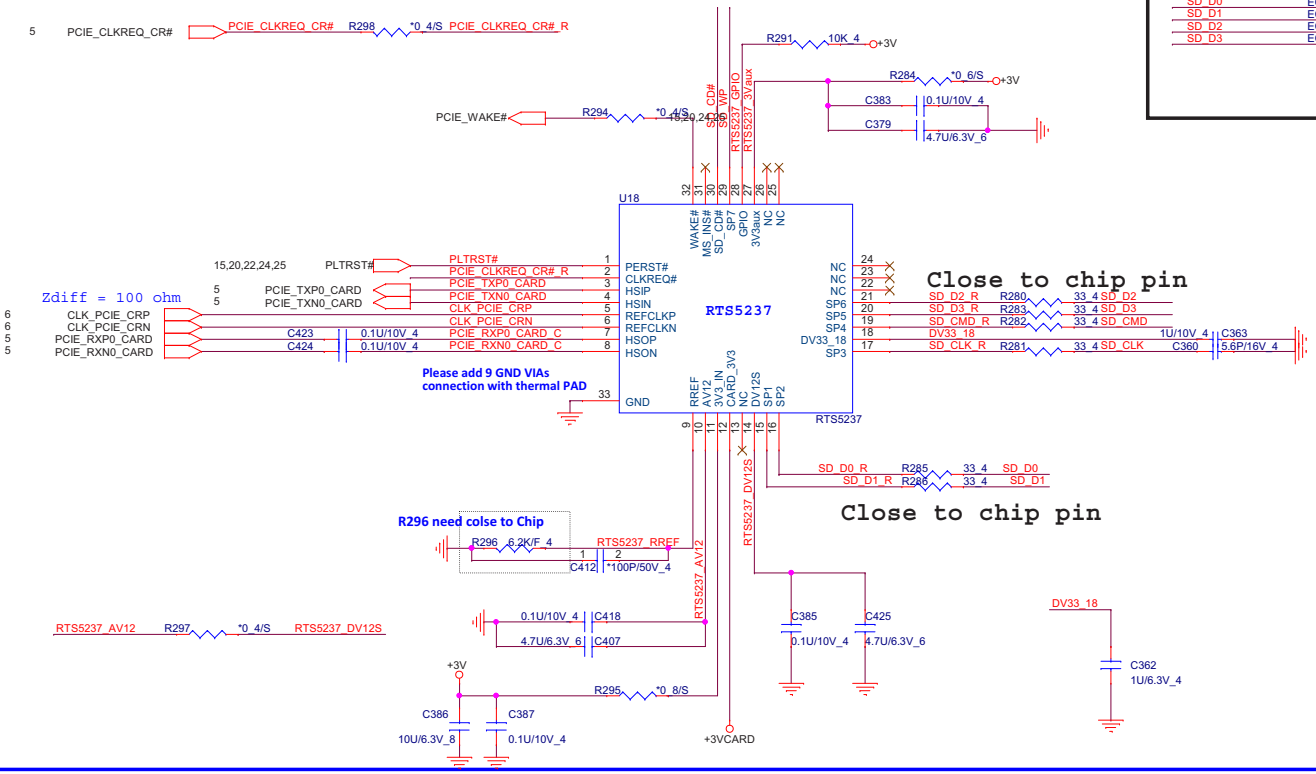
NB5

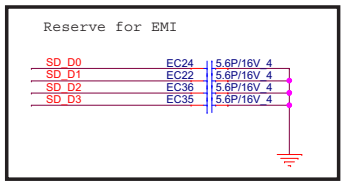
PROJECT : U87

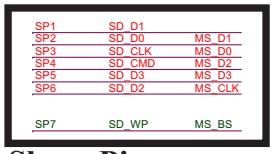
Quanta Computer Inc.

Size	Document Number	Rev
Custom	LAN RTL8176EH/RJ45	1A

Date: Monday, November 18, 2013 Sheet 20 of 37

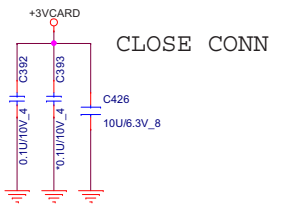




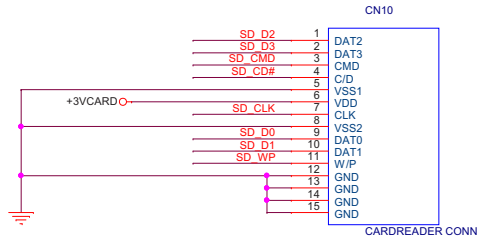


Share Pin

SD / MMC



CARD READER

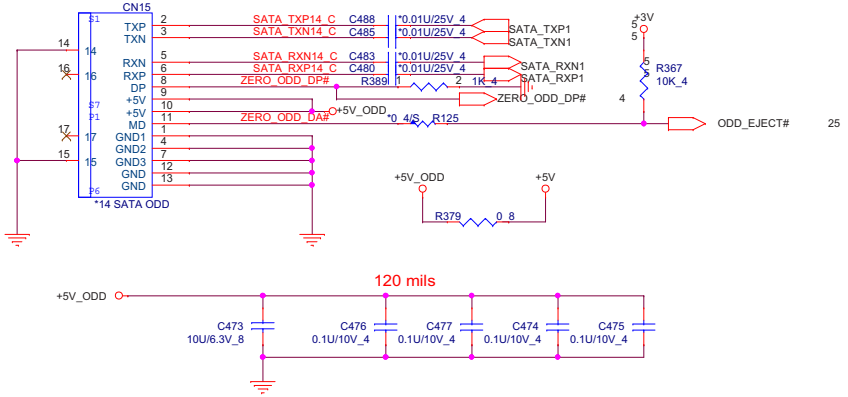


R3X Type

SATA ODD CONNECTOR

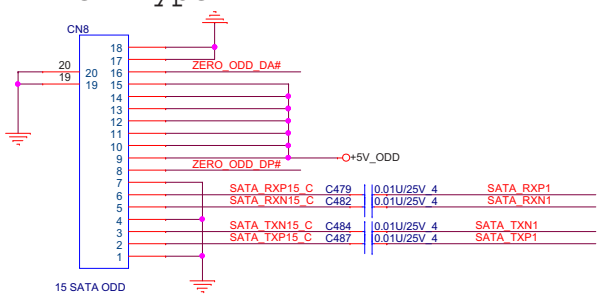
14" SATA ODD

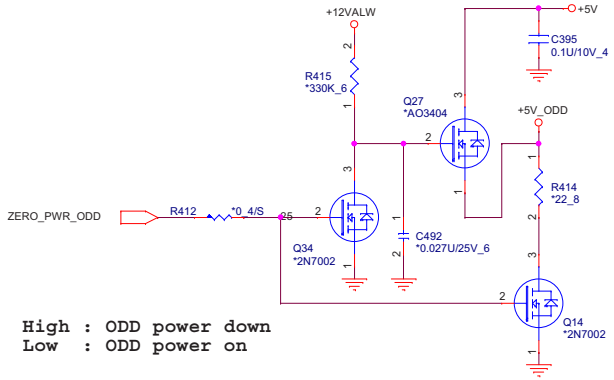
Bypass CAP close conn



15" SATA ODD

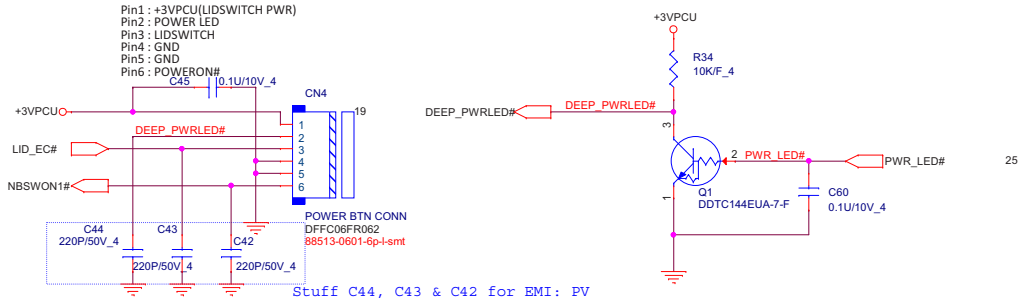
New Type



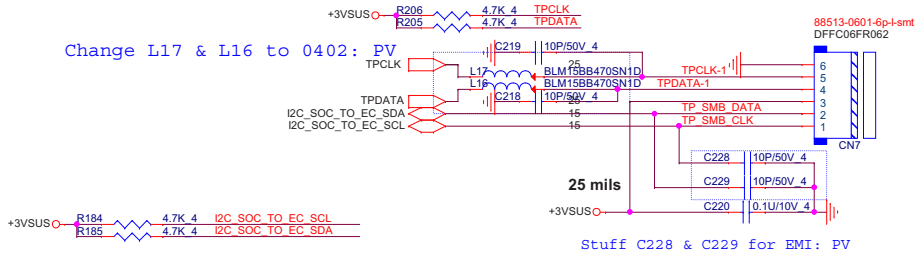


NB5	PROJECT : U87 Quanta Computer Inc.		
	Size: Custom	Document Number: CR RTS5237 & CR SOCKET	Rev: 1A
	Date: Tuesday, April 15, 2014	Sheet 21 of 37	

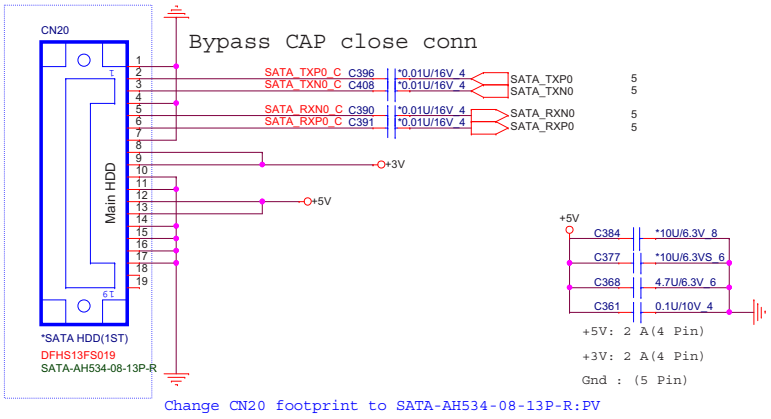
Power Botton Connector



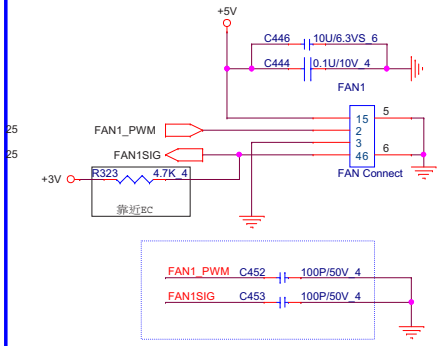
Touch Pad Connector



SATA HDD Connector(Cable type)

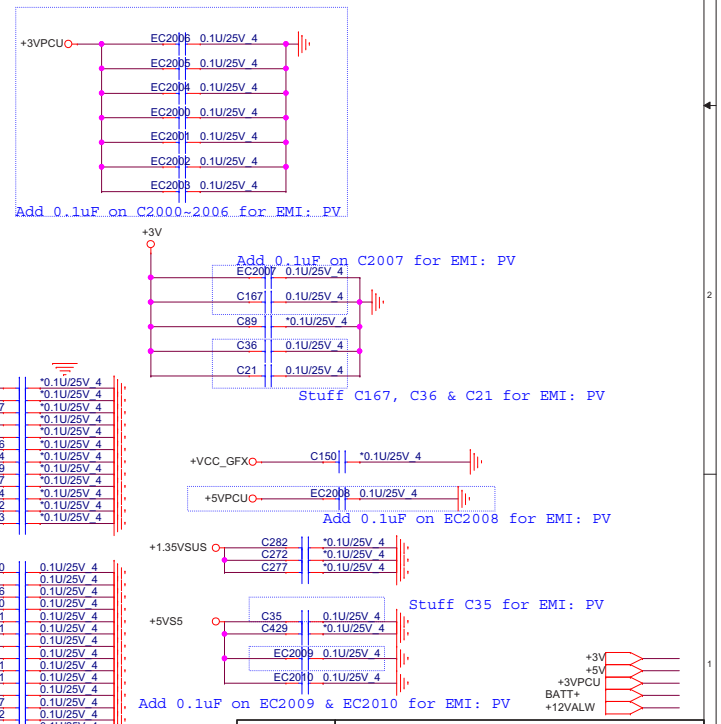


FAN

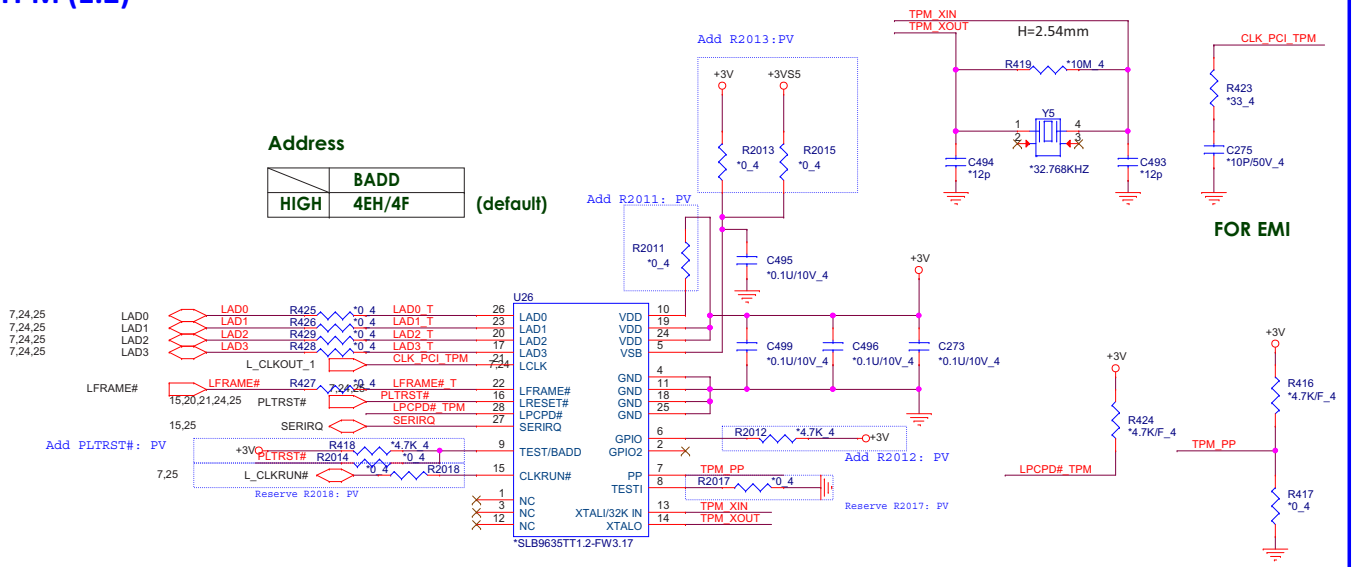


Mini PCI-E Card 2- Full size mSATA

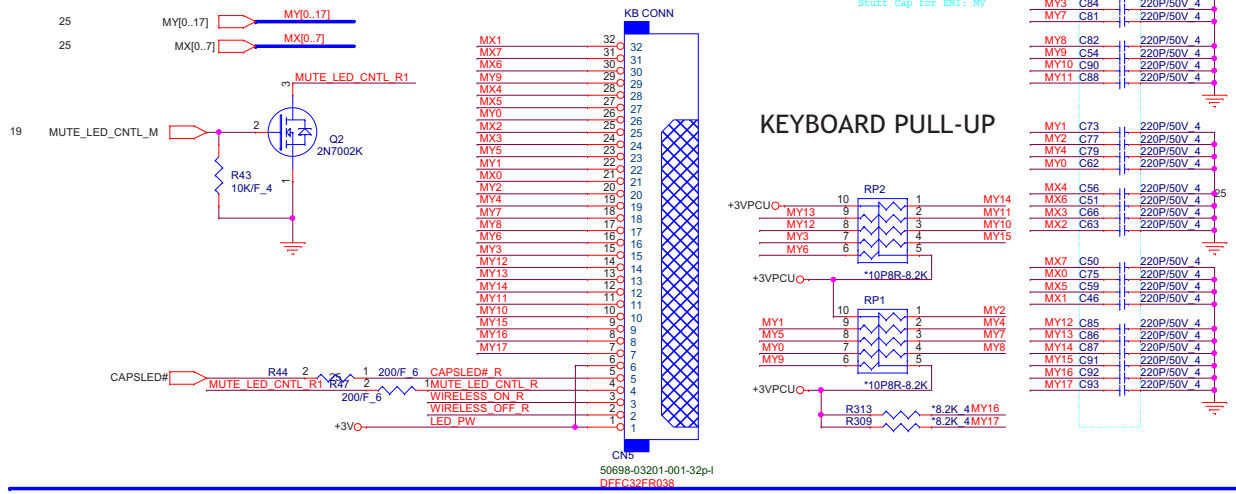
Removed mSATA 6/19



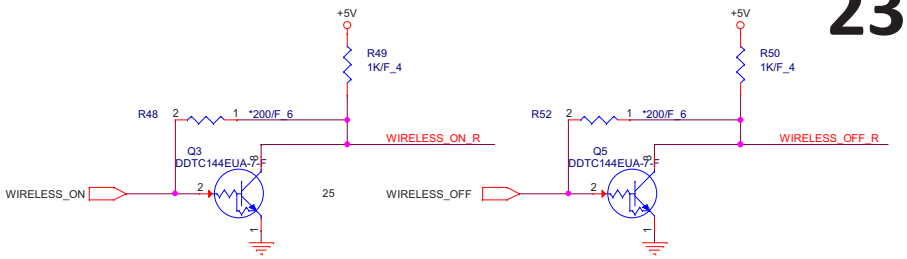
TPM (1.2)



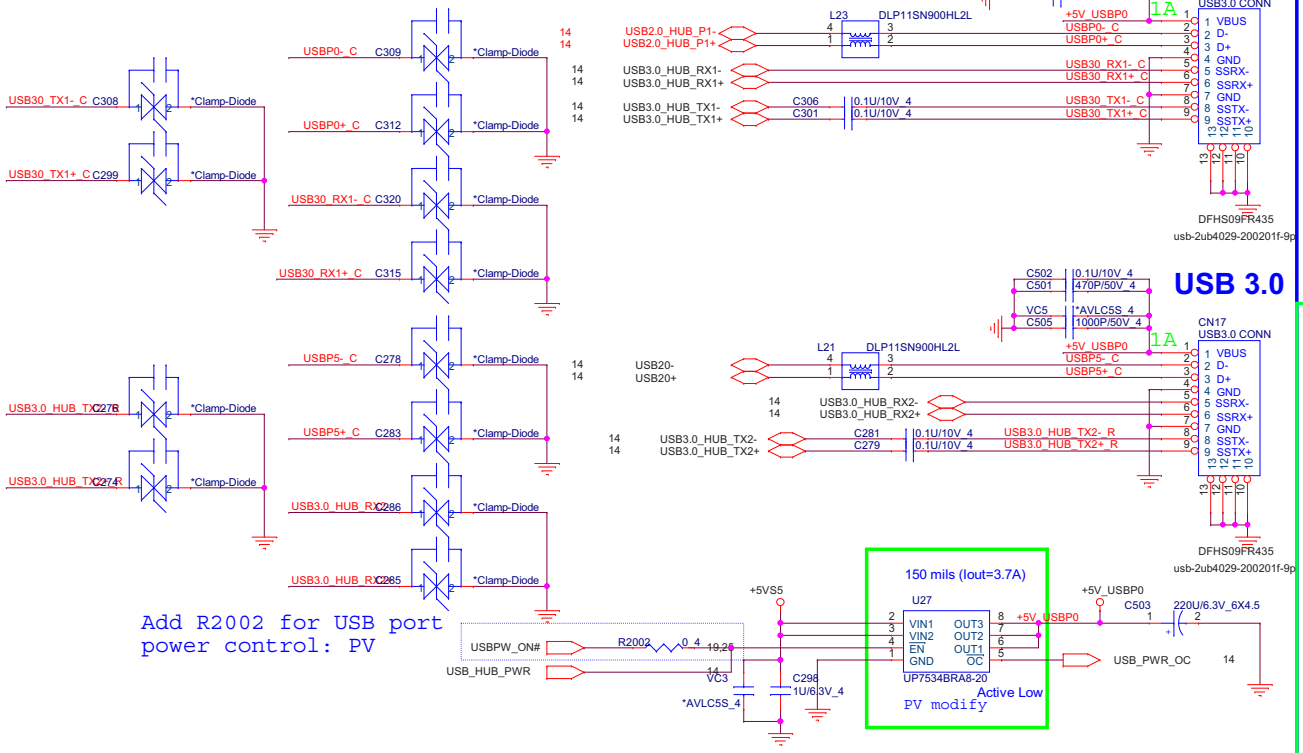
KEYBOARD Con.



KEYBOARD PULL-UP

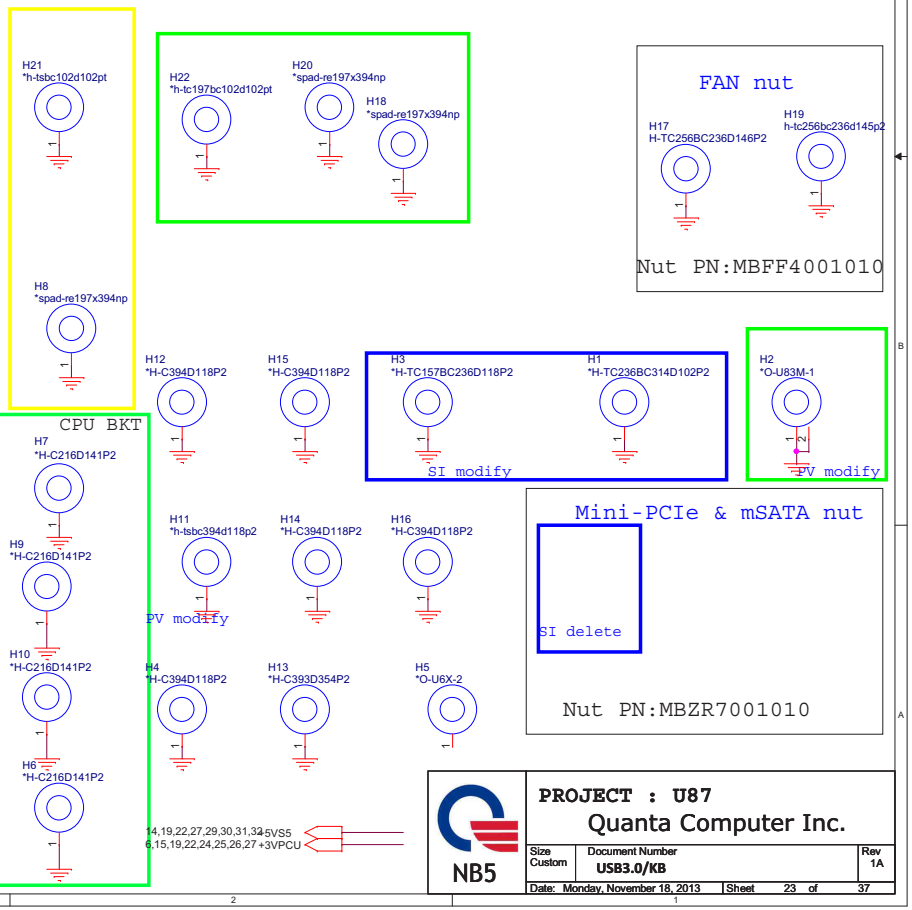


USB 2.0/3.0 Combo



Add R2002 for USB port power control: PV

Hole



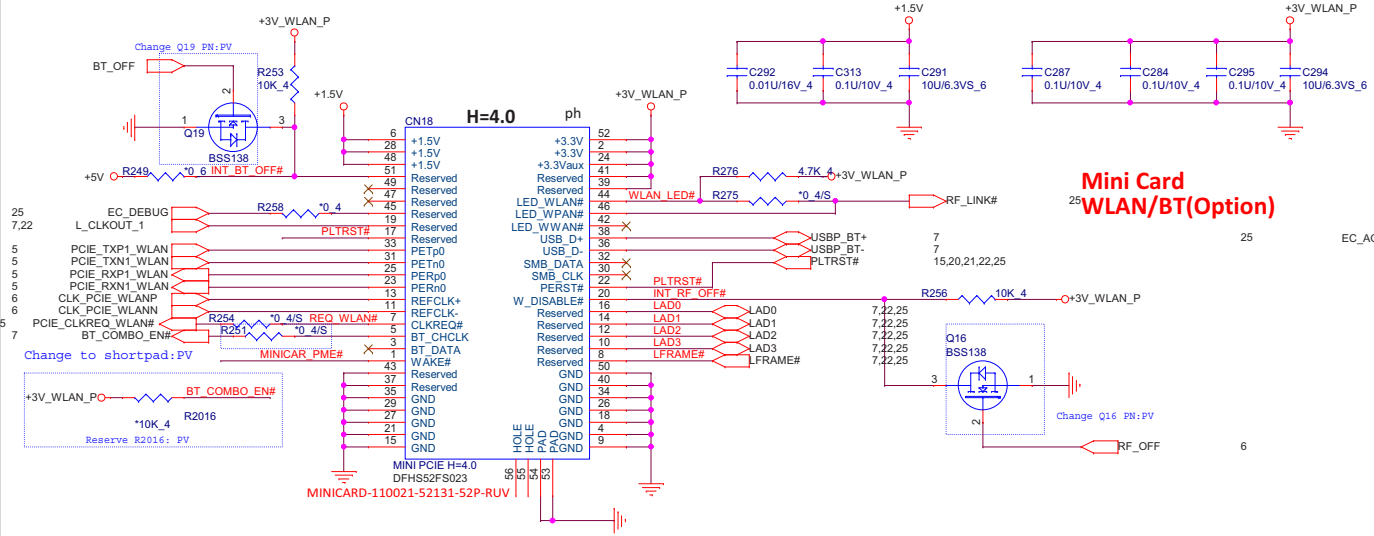
NB5

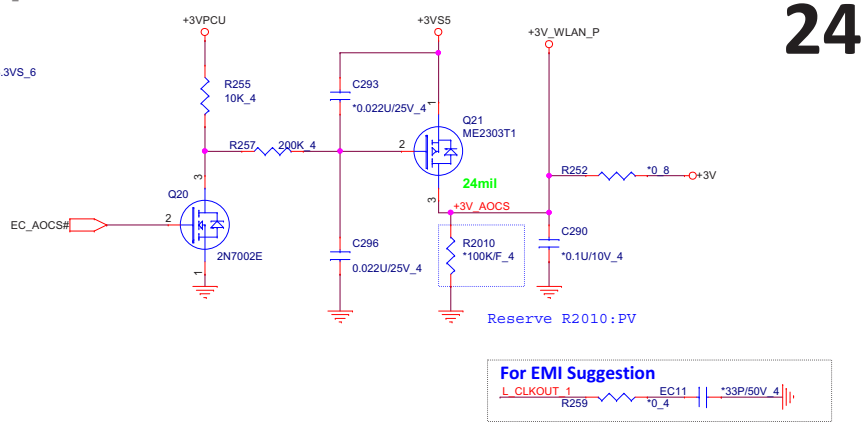
PROJECT : U87

Quanta Computer Inc.

Size	Document Number	Rev
Custom	USB3.0/KB	1A

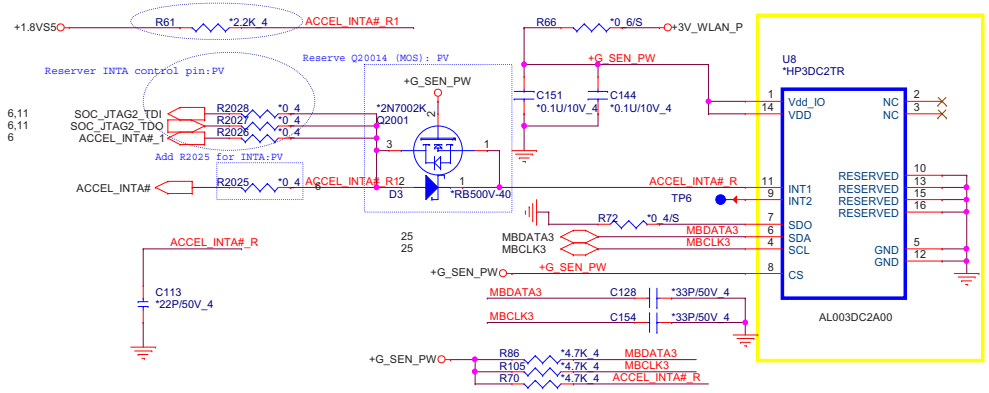
Date: Monday, November 18, 2013 | Sheet 23 of 37



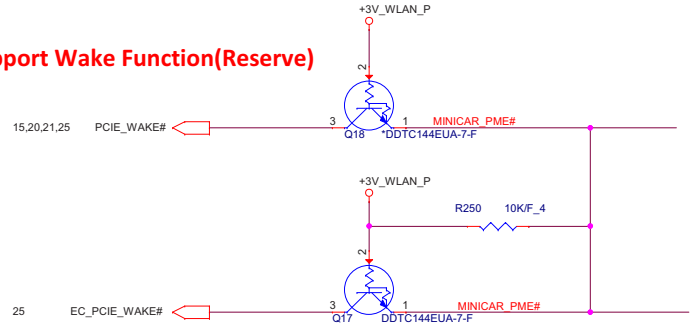


Accelerometer Sensor

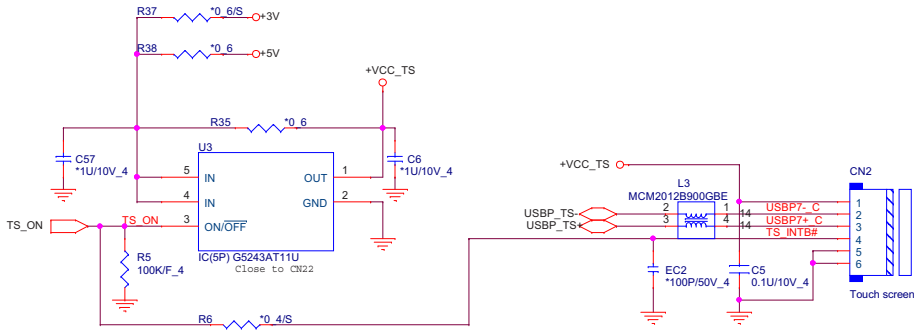
Stuff 2.2K on R61: PV



Support Wake Function(Reserve)



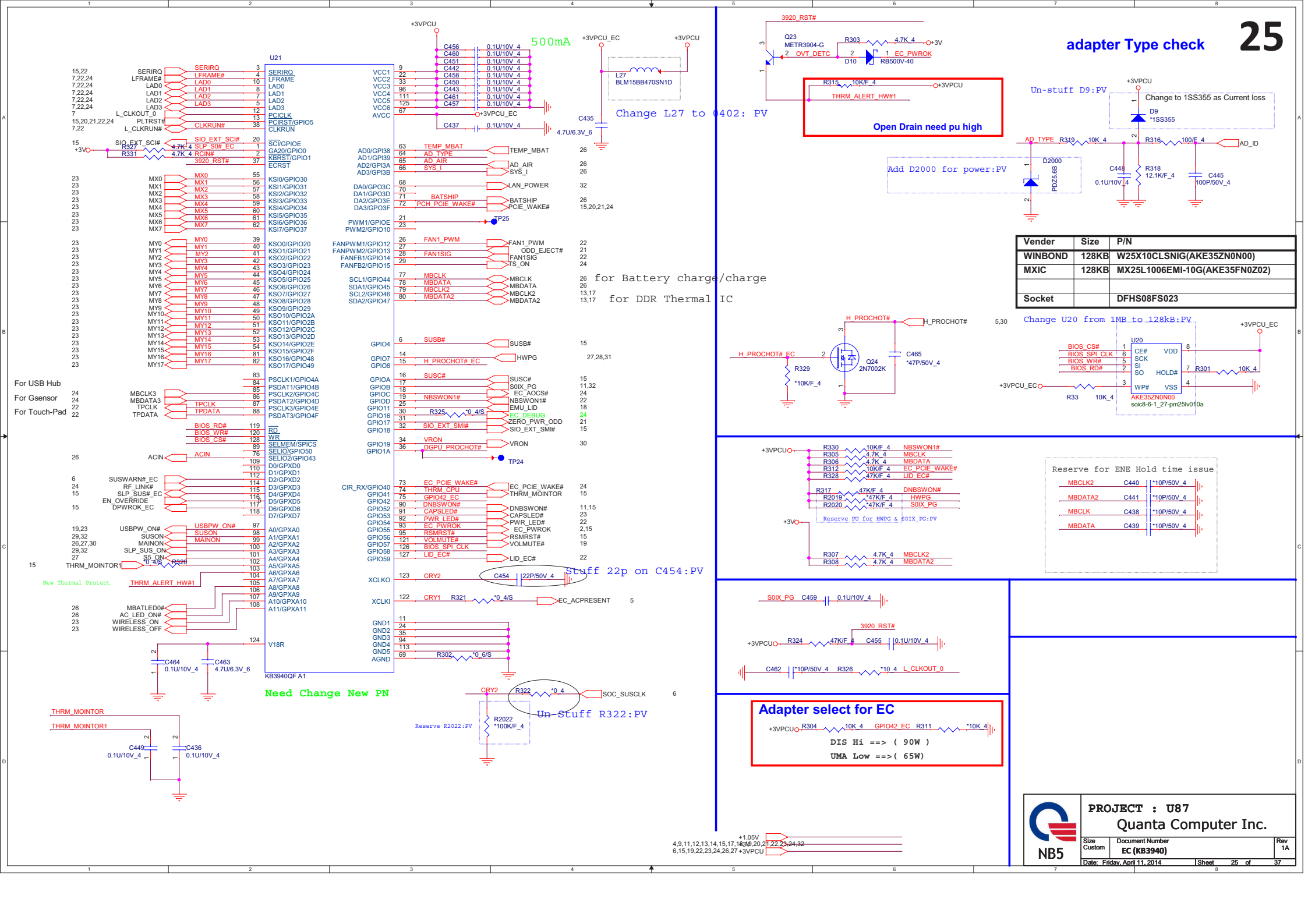
Touch screen



Green CLK Circuitry

+3V	4,9,11,12,13,14,15,17,18,19,20,21,22,23,25,32
+5V	12,18,19,21,22,23,32
+3VPCU	6,15,19,22,23,25,26,27

NB5	PROJECT : U87 Quanta Computer Inc.		
	Size: Custom	Document Number: WLAN/G-Sensor/G-CLK/TS	Rev: 1A
	Date: Wednesday, March 26, 2014	Sheet 24 of 37	



Vender	Size	P/N
WINBOND	128KB	W25X10CLSNIG(AKE35ZN0N00)
MXIC	128KB	MX25L1006EMI-10G(AKE35FN0Z02)
Socket		DFHS08FS023

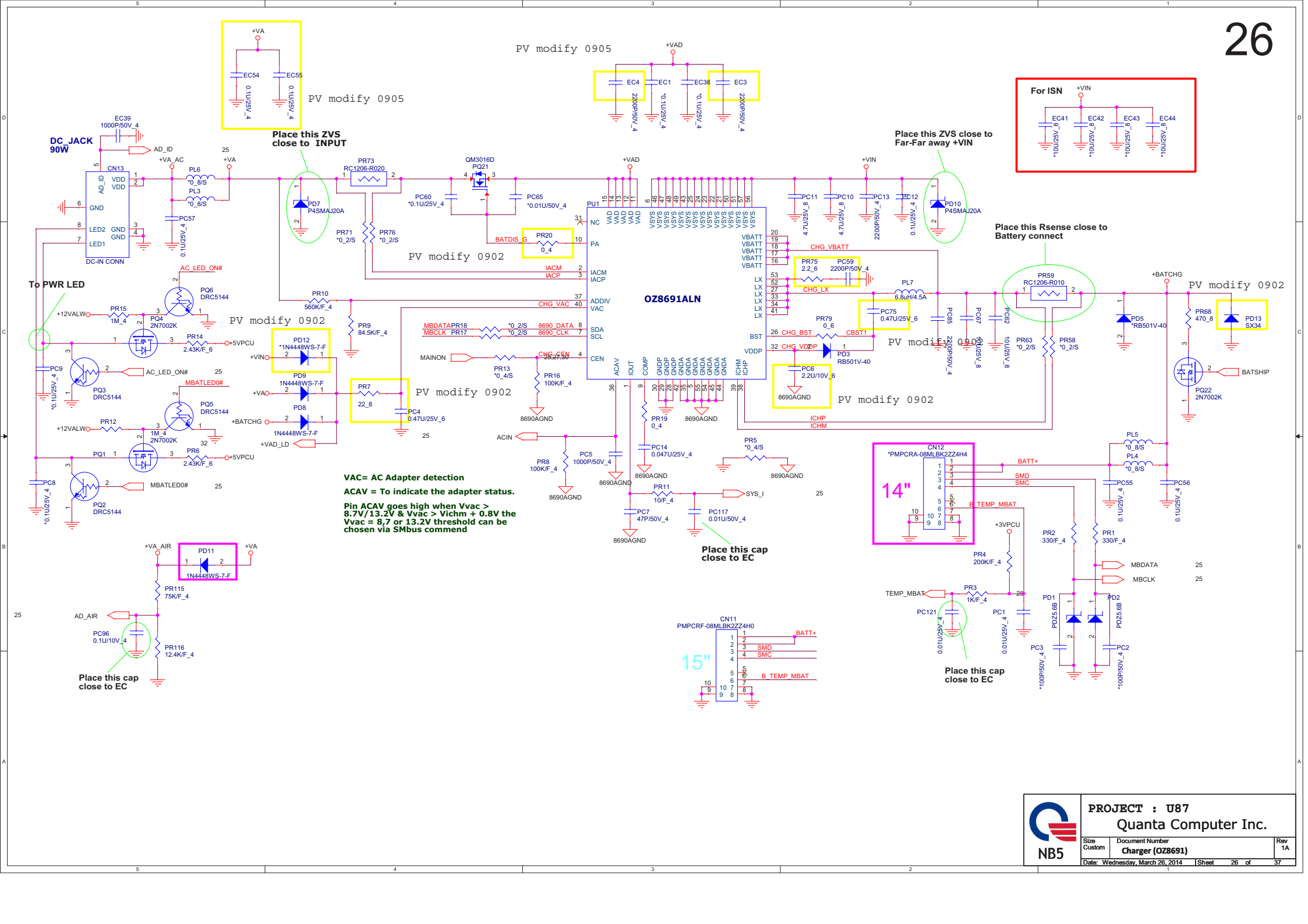
PROJECT : U87

Quanta Computer Inc.

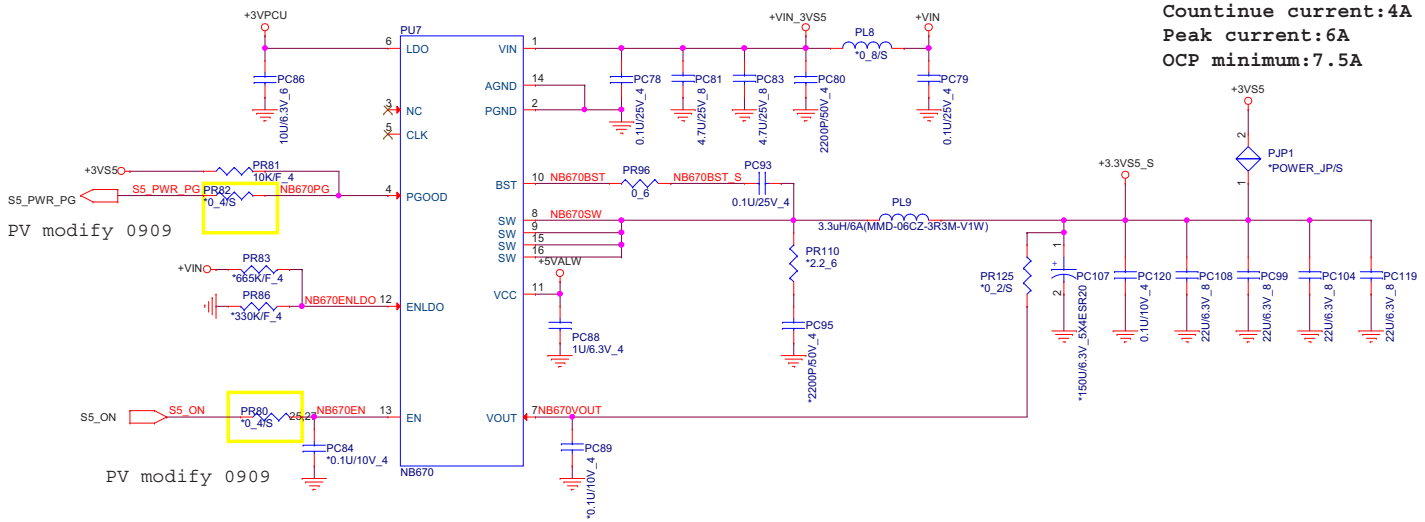
NB5

Size	Document Number	Rev
Custom	EC (KB3940)	1A

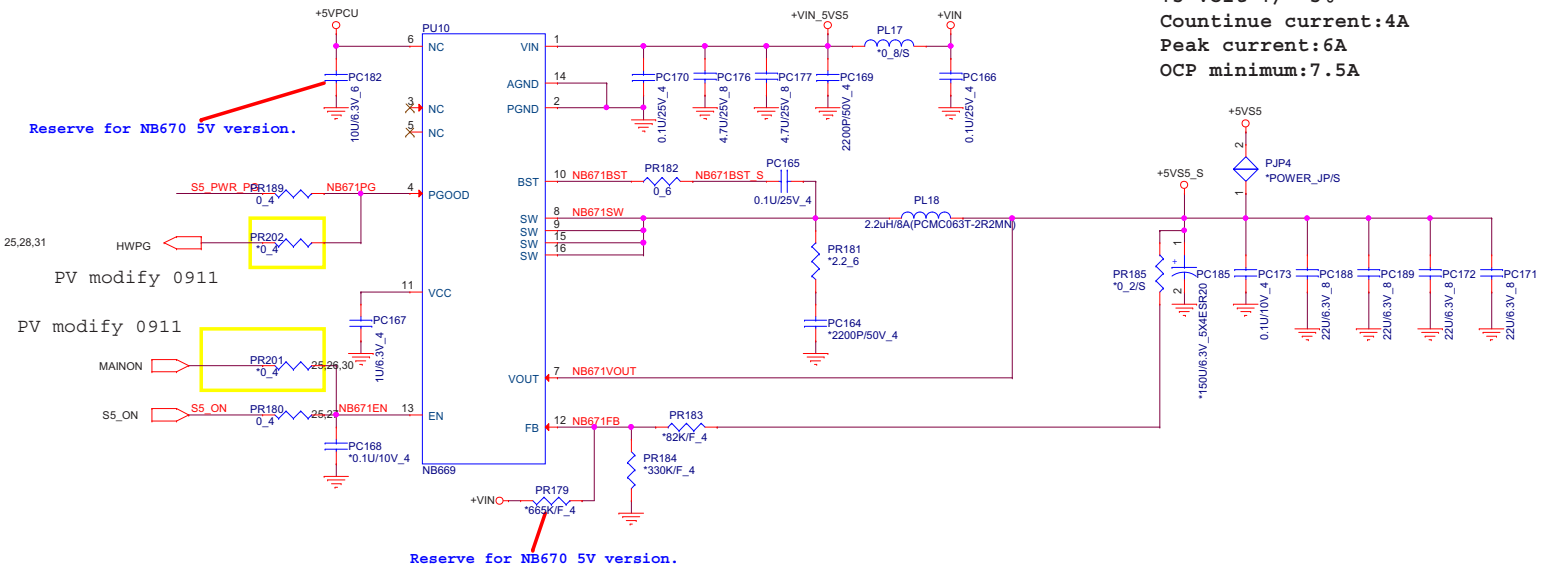
Date: Friday, April 11, 2014 Sheet 25 of 37


PV modify 0905
PV modify 0905
PV modify 0902
PV modify 0902
PV modify 0902
PV modify 0902
PV modify 0902
DC_JACK 90W
DC-IN CONN
Place this ZVS close to INPUT
Place this ZVS close to Far-Far away +VIN
For ISN
Place this Rsense close to Battery connect
To PWR LED
OZ8691ALN
VAC= AC Adapter detection
ACAV = To indicate the adapter status.
Pin ACAV goes high when Vvac > 8.7V/13.2V & Vvac > Vichm + 0.8V the Vvac = 8,7 or 13.2V threshold can be chosen via SMbus commend
Place this cap close to EC
Place this cap close to EC
Place this cap close to EC
14"
15"
CN12 *PMPCRA-08MLBK2ZZ4H4
CN11 PMPCRF-08MLBK2ZZ4H0
PROJECT : U87
Quanta Computer Inc.
NB5
Charger (OZ8691)
Date: Wednesday, March 26, 2014
Sheet 26 of 37

+3.3 Volt +/- 5%
Countinue current:4A
Peak current:6A
OCP minimum:7.5A



+5 Volt +/- 5%
Countinue current:4A
Peak current:6A
OCP minimum:7.5A



+3VS5 2,9,11,14,15,22,24,28,30,31,32
+5VS5 14,19,22,23,29,30,31,32

NB5	PROJECT : U87 Quanta Computer Inc.	
Size: Custom	Document Number: 3/5VPCU(NB670/NB669)	Rev: 1A
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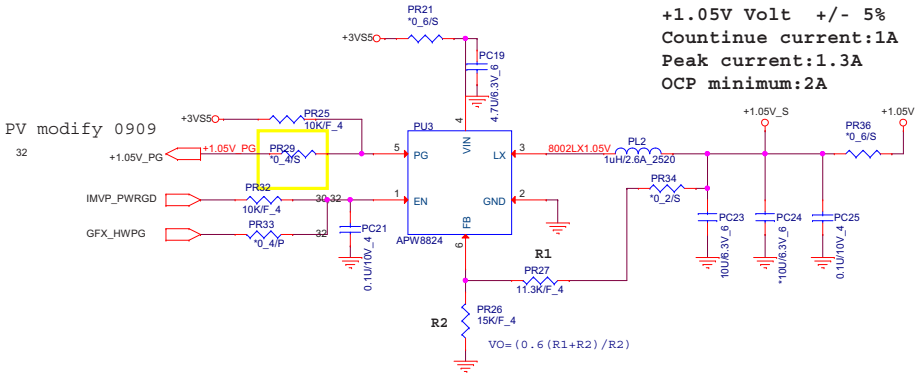

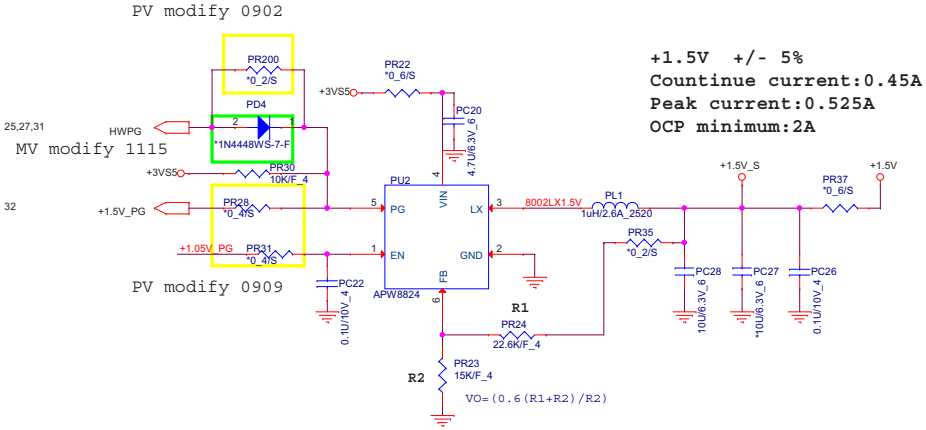

NB5	PROJECT : U87 Quanta Computer Inc.	
Size: Custom	Document Number: +1.05V/+1.5V (SY8002)	Rev: 1A
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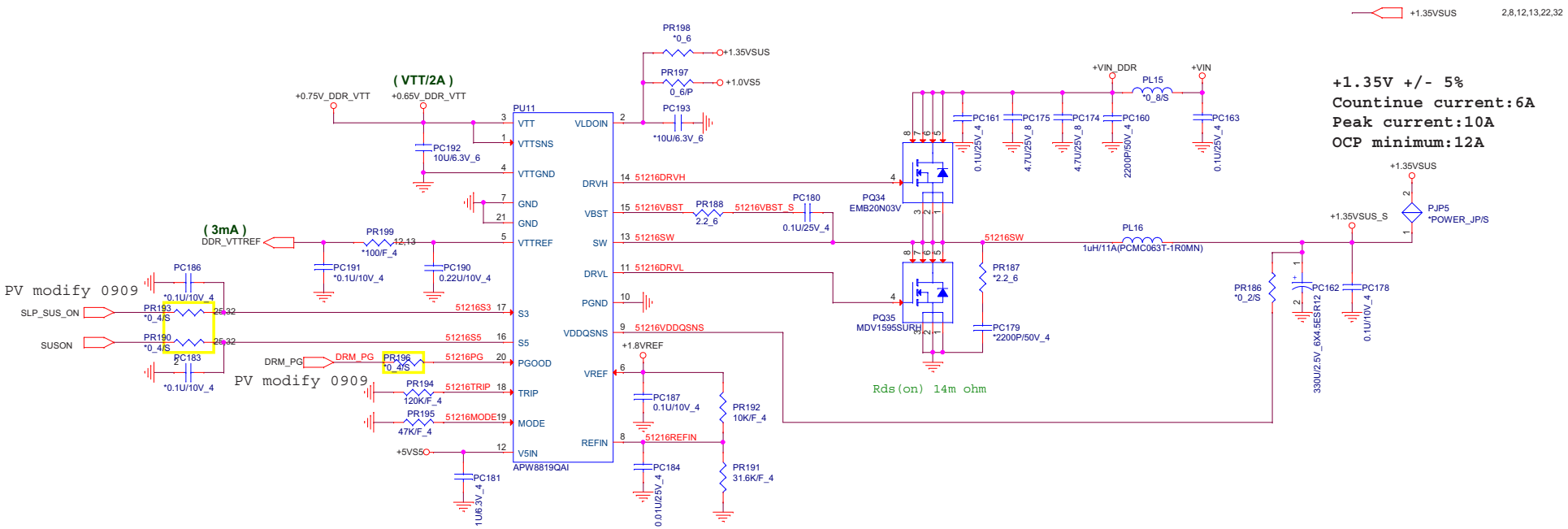

NB5	PROJECT : U87 Quanta Computer Inc.	
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+GFXORE Volt +/- 5%
Countinue current:6A
Peak current:14A
OCP minimum:16.5A

+CPUVORE Volt +/- 5%
Countinue current:6A
Peak current:12A
OCP minimum:14A

PV modify 0905
PV modify 0905
PV modify 0911
PV modify 0905
PV modify 0905
PV modify 0905
PV modify 0909
PV modify 0909

PU8 RT8172AGQW

Place those components close to Inductor

PUT COLSE TO V_GT HOT SPOT

PUT COLSE TO V_CORE HOT SPOT

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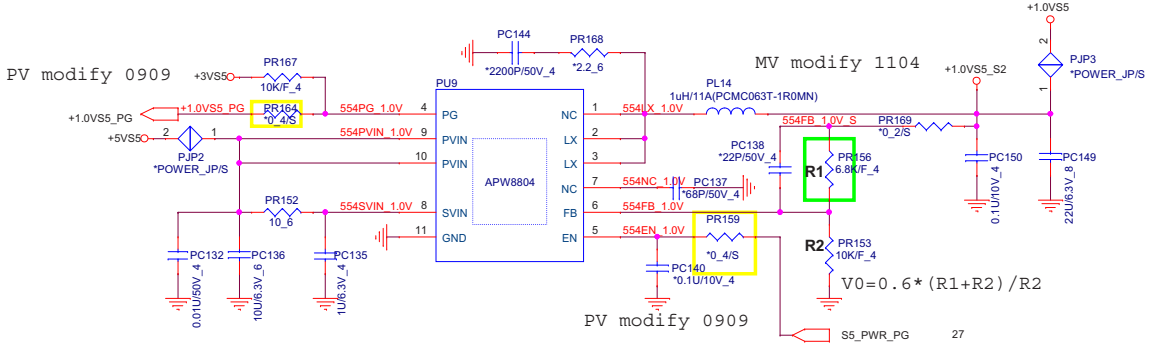
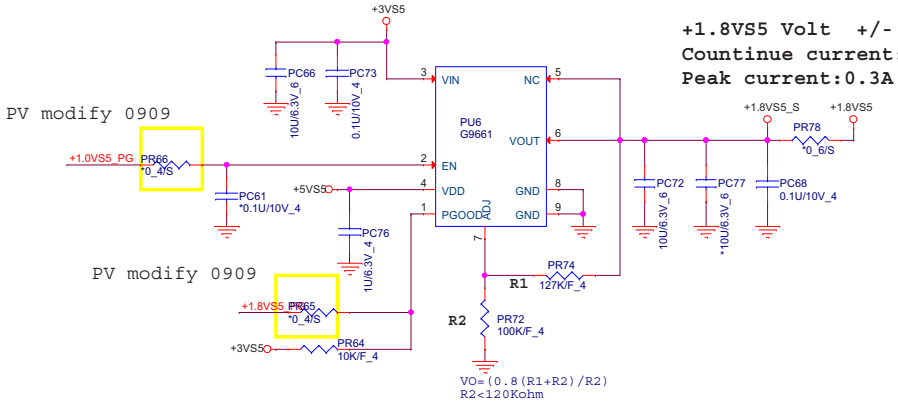
NB5

+1.0VS5 Volt +/- 5%
Countinue current:2A
Peak current:3A
OCP minimum:4.5A

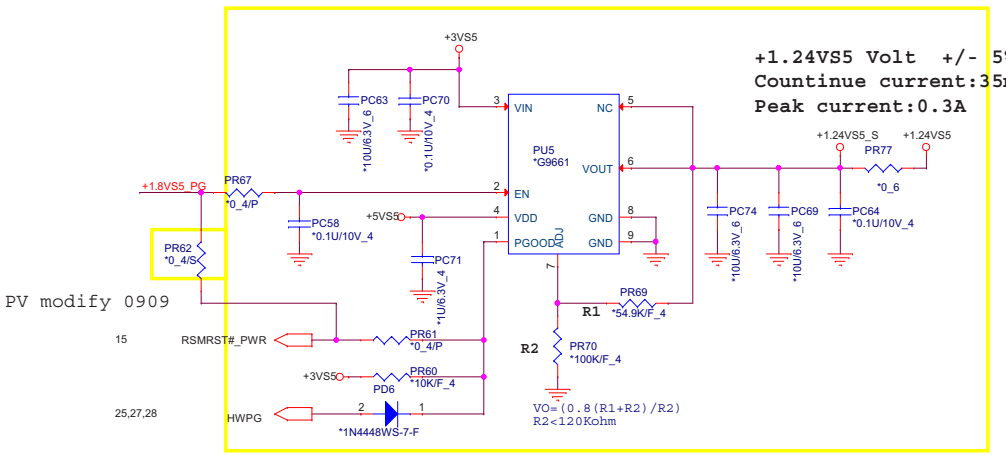


+1.8VS5 Volt +/- 5%
Countinue current:0.105mA
Peak current:0.3A



PV modify 0902

+1.24VS5 Volt +/- 5%
Countinue current:35mA
Peak current:0.3A



NB5	PROJECT : U87 Quanta Computer Inc.	
Size Custom	Document Number 1.0VS5/1.8VS5/1.24VS5	Rev 1A
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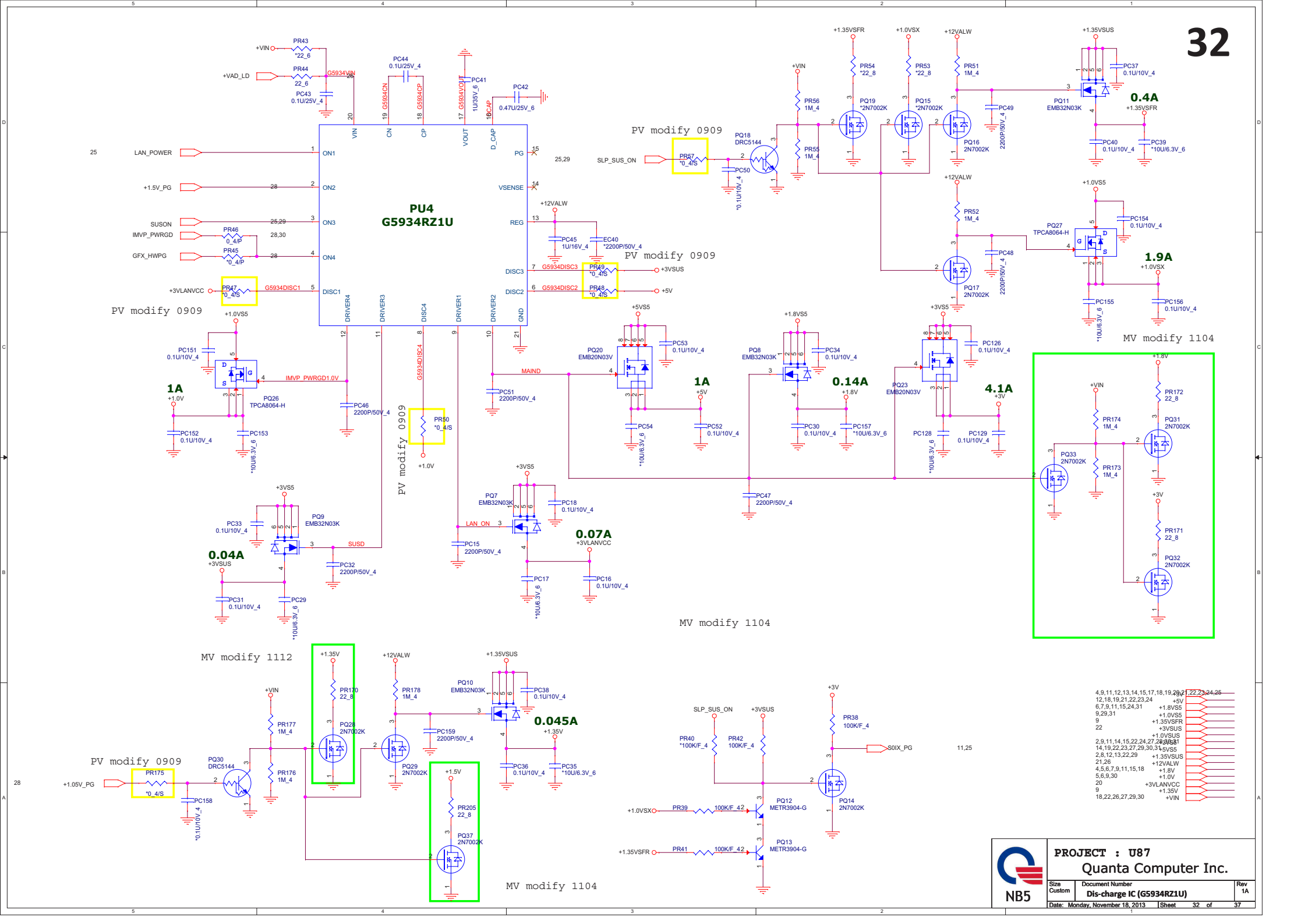

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	Quanta Computer Inc.
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USB3.0	Port Assignment	Power control pin
PORT0	USB HUB	

USB2.0	Port Assignment	Power control pin
PORT0	USB HUB	N/A
PORT1	Right side USB Daughter BD	USBPW_ON#(from EC)
PORT2	BT	N/A
PORT3	Camera	N/A

USB HUB	Port Assignment	Power control pin
USB30 PORT1	USB2.0/USB3.0 COMBO 1ST	USBPW_ON#(from EC)
USB30 PORT2	USB2.0/USB3.0 COMBO 2nd	USBPW_ON#(from EC)
USB30 PORT3	N/A	
USB30 PORT4	N/A	
USB20 PORT1	USB2.0/USB3.0 COMBO 1ST	USBPW_ON#(from EC)
USB20 PORT2	USB2.0/USB3.0 COMBO 2nd	USBPW_ON#(from EC)
USB20 PORT3	TS	TS_ON
USB20 PORT4		

SATA Master	Port Assignment	Power control pin
SATA0	HDD	N/A
SATA1	ODD	ZERO_PWR_ODD

PCIE	Port Assignment	Control pin
PCIE 0	Card reader	
PCIE 1	WLAN	
PCIE 2	LAN	
PCIE 3	NC	

NB5

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Quanta Computer Inc.

Size	Document Number	Rev
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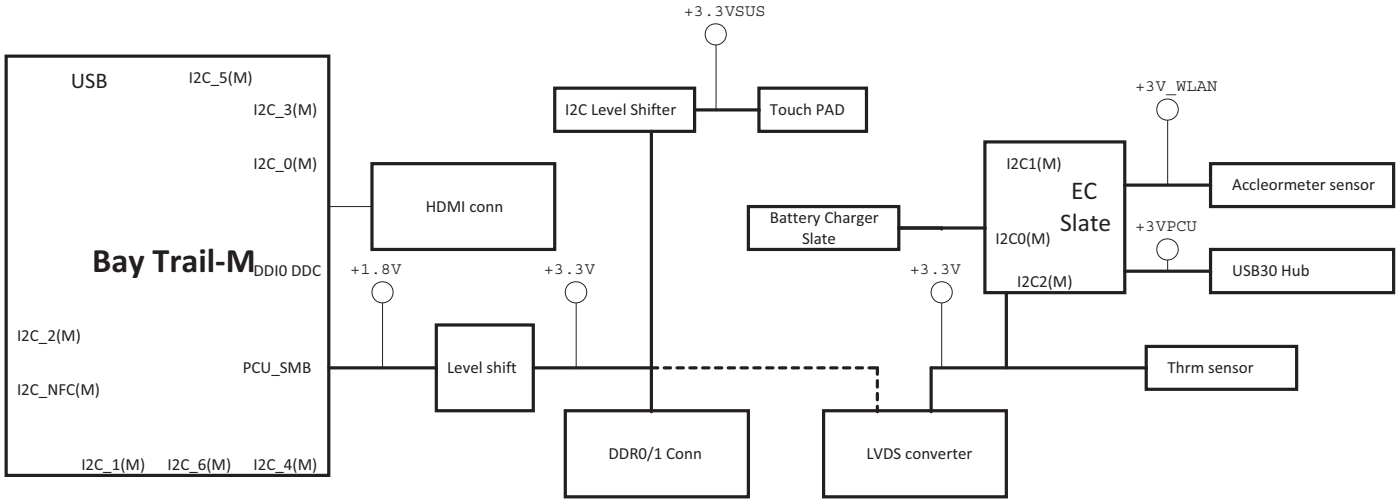

NB5	PROJECT : U87 Quanta Computer Inc.	
Size: Custom	Document Number: SMBUS & I2C	Rev: 1A
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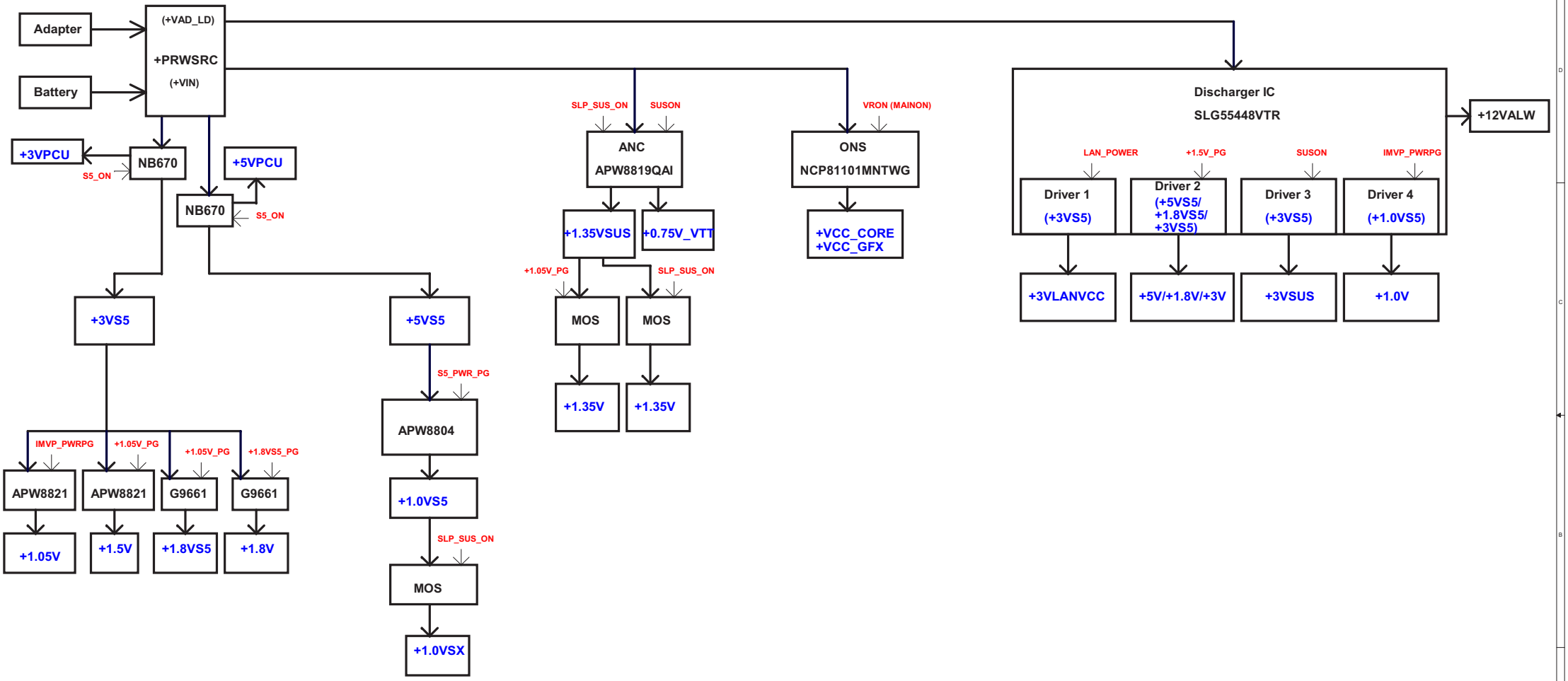

NB5

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Quanta Computer Inc.

Size	Document Number	Rev
Custom	Power Block Diagram	1A

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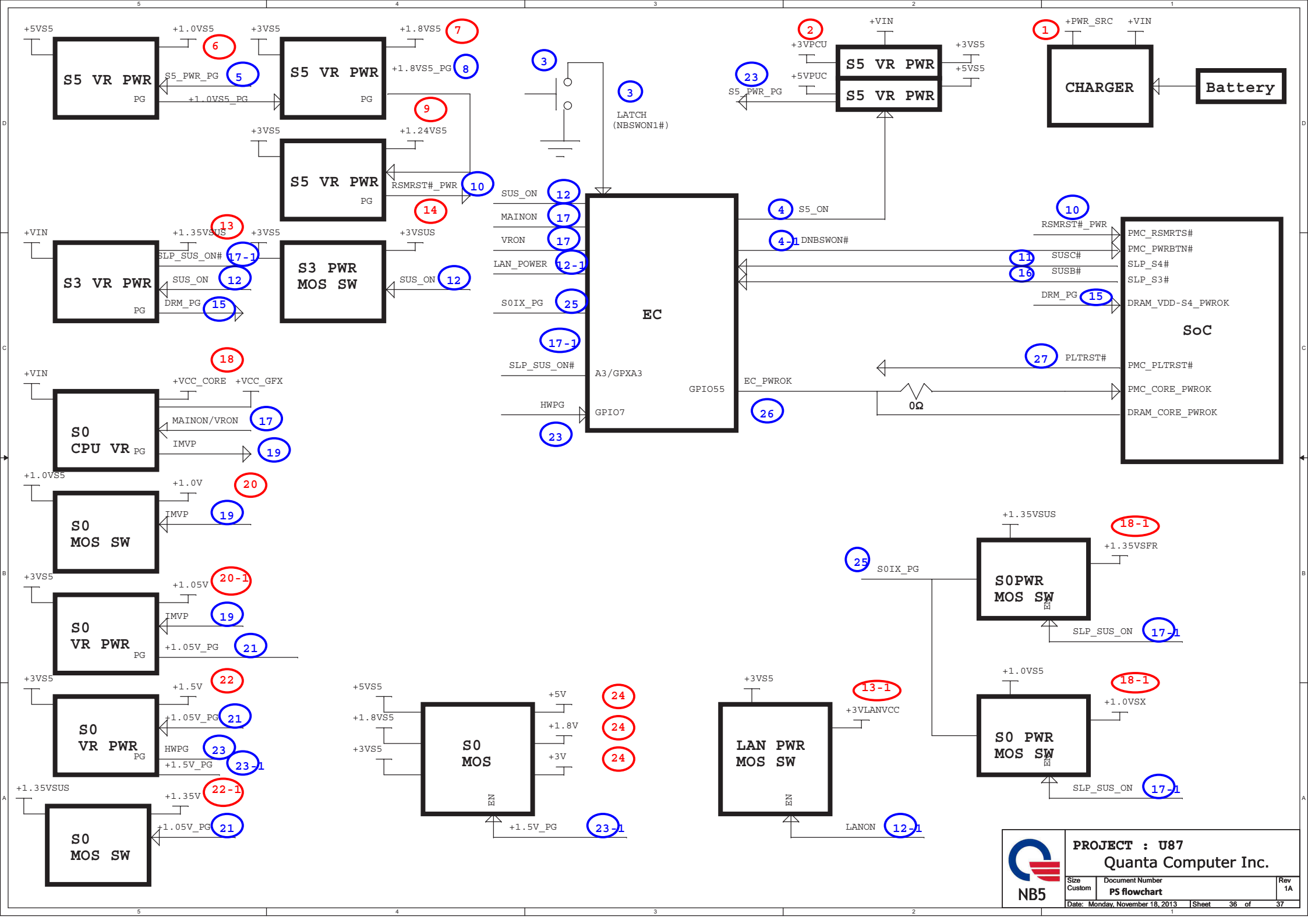

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Size: Custom	Document Number: PS flowchart
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NB5

NB5

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Custom	Note	1A

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