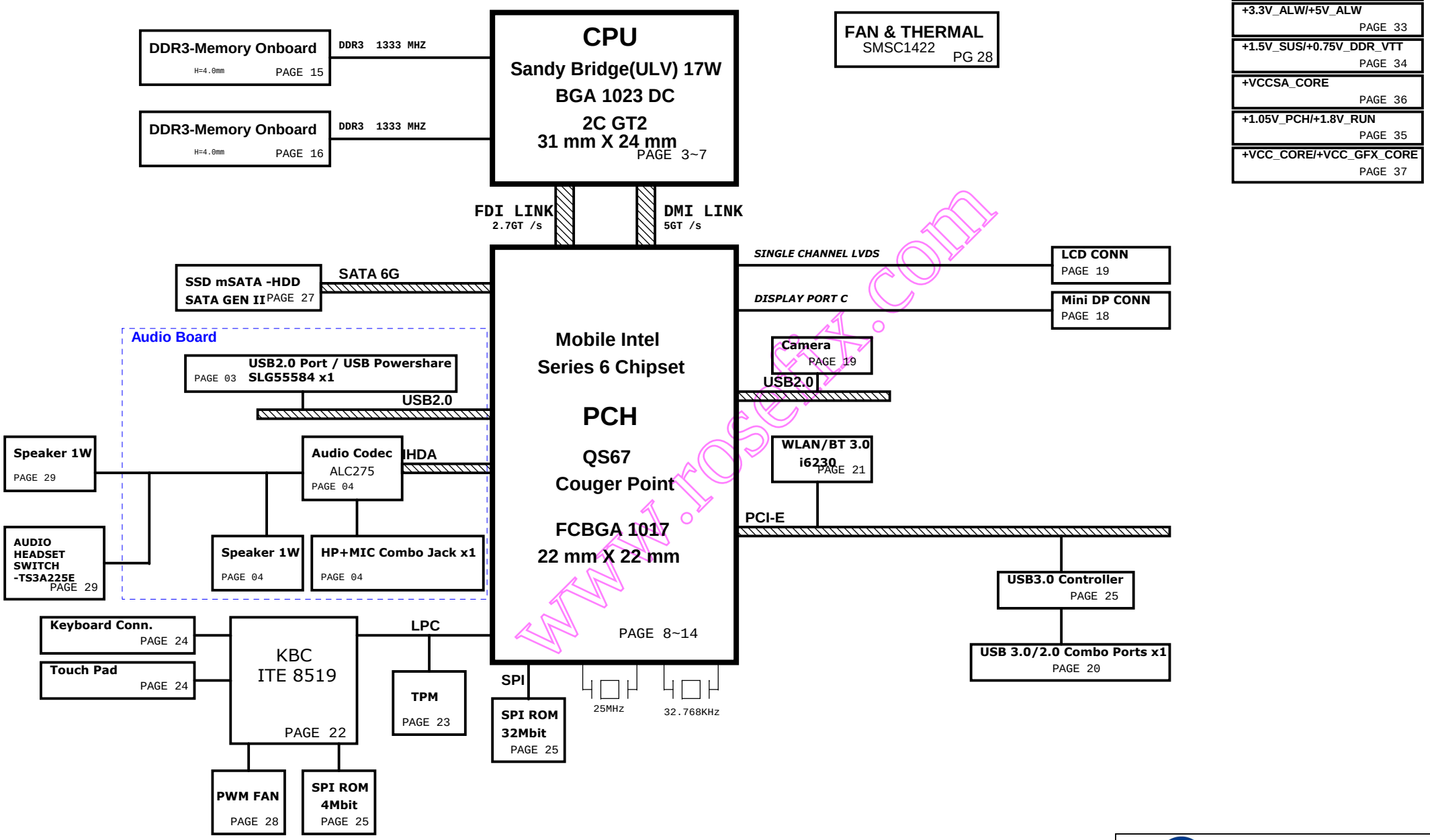
Spyder 13.3" UMA BLOCK DIAGRAM



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PROJECT : D13

Size	Document Number	Rev
	BLOCK DIAGRAM	1A

Date: Thursday, October 13, 2011 Sheet 1 of 41

power / State	SLP_S3#	SLP_S4#	SLP_S5#	ALW_ON	+3.3V_ALW	+5V_ALW	SUS_ON	+3.3V_SUS	+5V_SUS	RUN_ON	+3.3V_RUN	+5V_RUN	AOAC flag	USB2.0 Power share USB_BAK_EN#
S0	H	H	H	H	H	H	H	H	H	H	H	H	L	L
S3	L	H	H	H	H	H	H	H	H	L	L	L	L	L
S4/S5 AC	L	L	L	H	H	H	L	L	L	L	L	L	L	L
S4/S5 DC Only	L	L	L	L	L	L	L	L	L	L	L	L	L	L
AC/DC No Exist	L	L	L	L	L	L	L	L	L	L	L	L	L	L
AOAC(S4)	L	L	L	H	H	H	H	H	H	L	L	L	H	H

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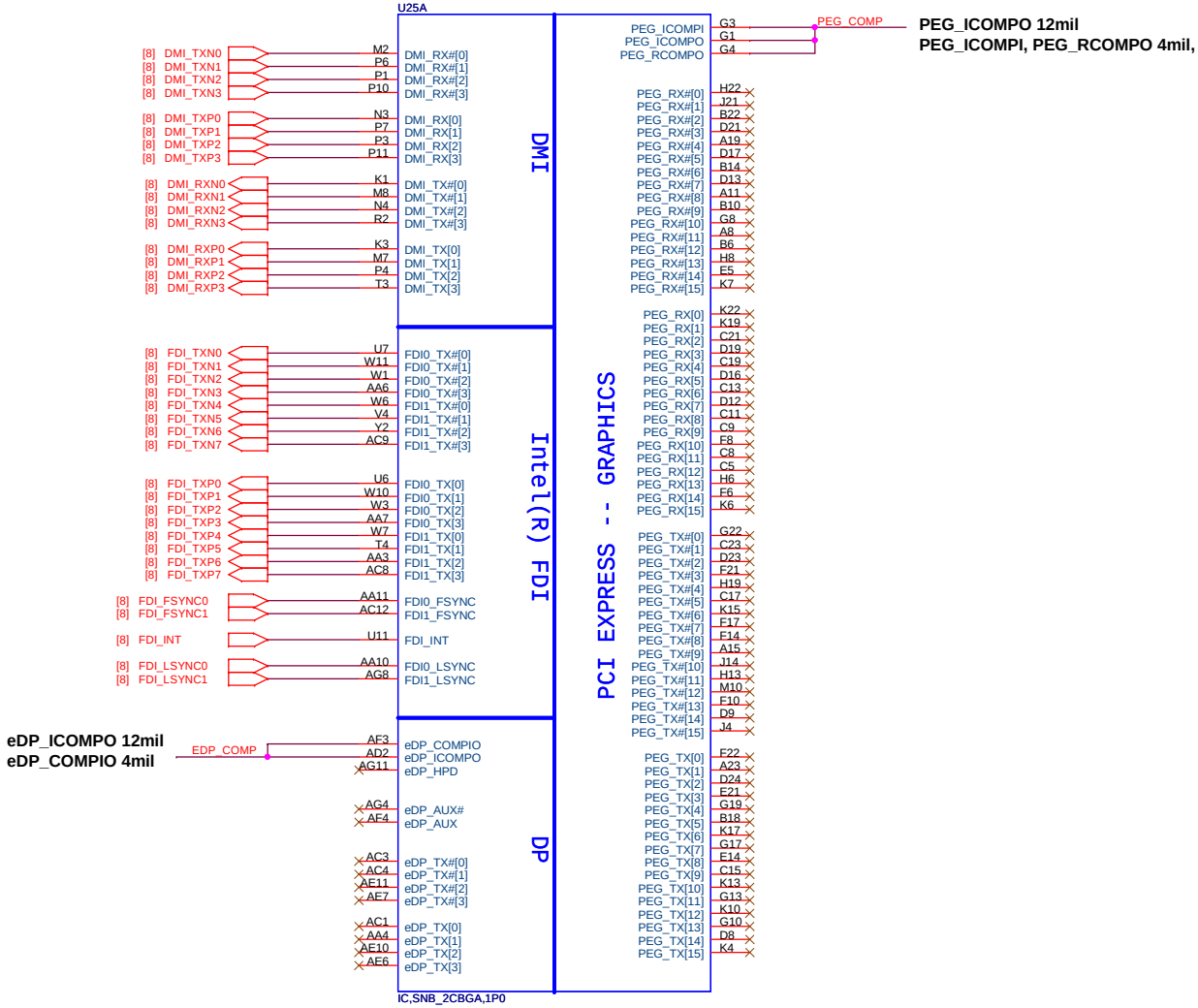
PROJECT : D13

Size	Document Number	Rev
	Power Rails	1A

Date: Thursday, October 13, 2011 Sheet 2 of 41

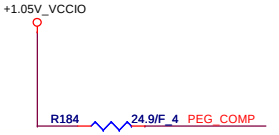
Sandy Bridge Processor (DMI,PEG,FDI)

CPU is i7 in schematic



DP & PEG Compensation

eDP_COMPIO and ICOMPO signals should be shorted near balls and routed with typical impedance <25 mohms



PEG_ICOMPI and RCOMPO signals should be routed within 500 mils typical impedance = 43 mohms

PEG_ICOMPO signals should be routed within 500 mils typical impedance = 14.5 mohms

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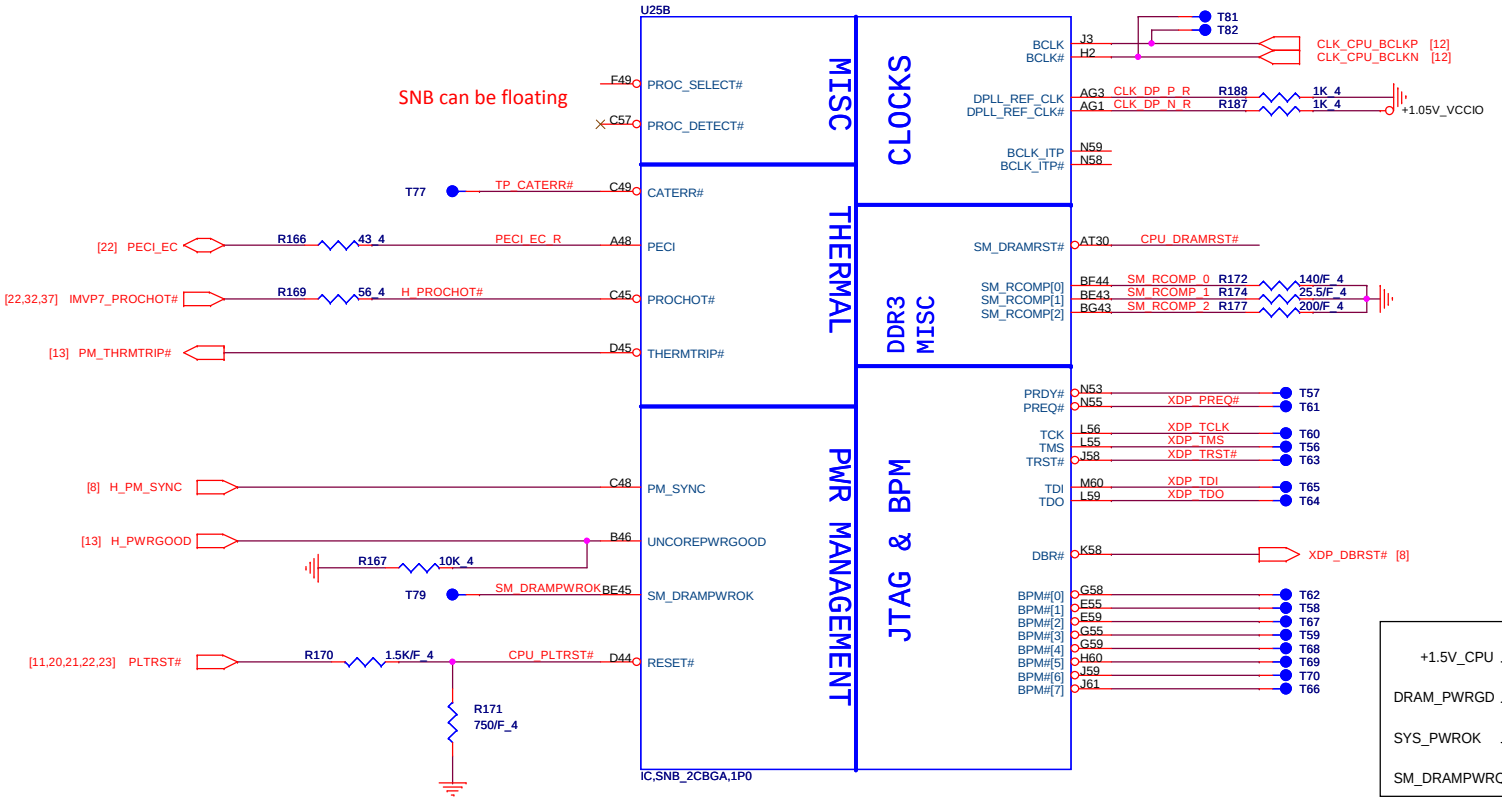
PROJECT : D13

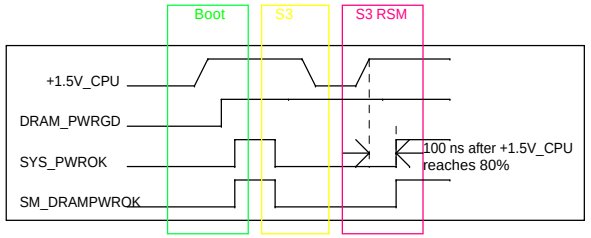
Size	Document Number	Rev
	Sandy Bridge 1/5	1A

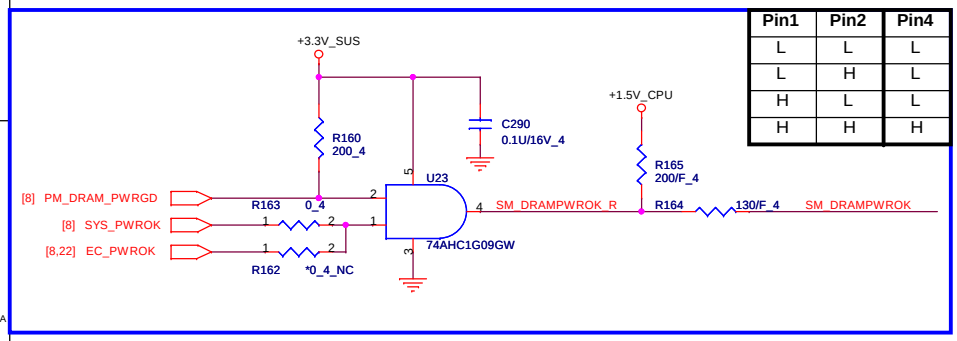
Date: Thursday, October 13, 2011 Sheet 3 of 41

Sandy Bridge Processor (CLK,MISC,JTAG)

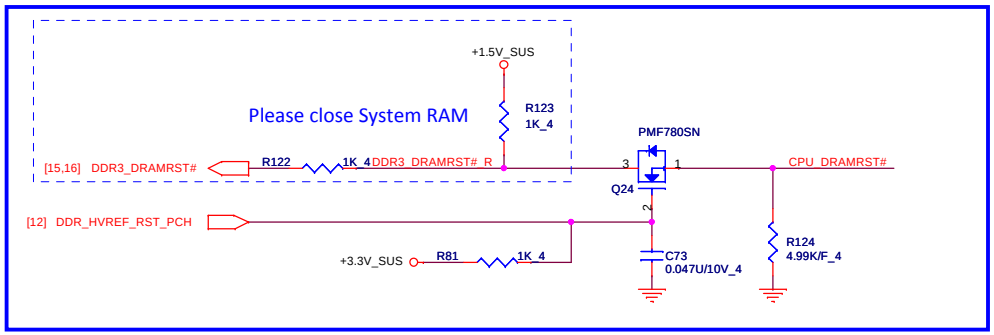
CPU is i7 in schematic







Pin1	Pin2	Pin4
L	L	L
L	H	L
H	L	L
H	H	H



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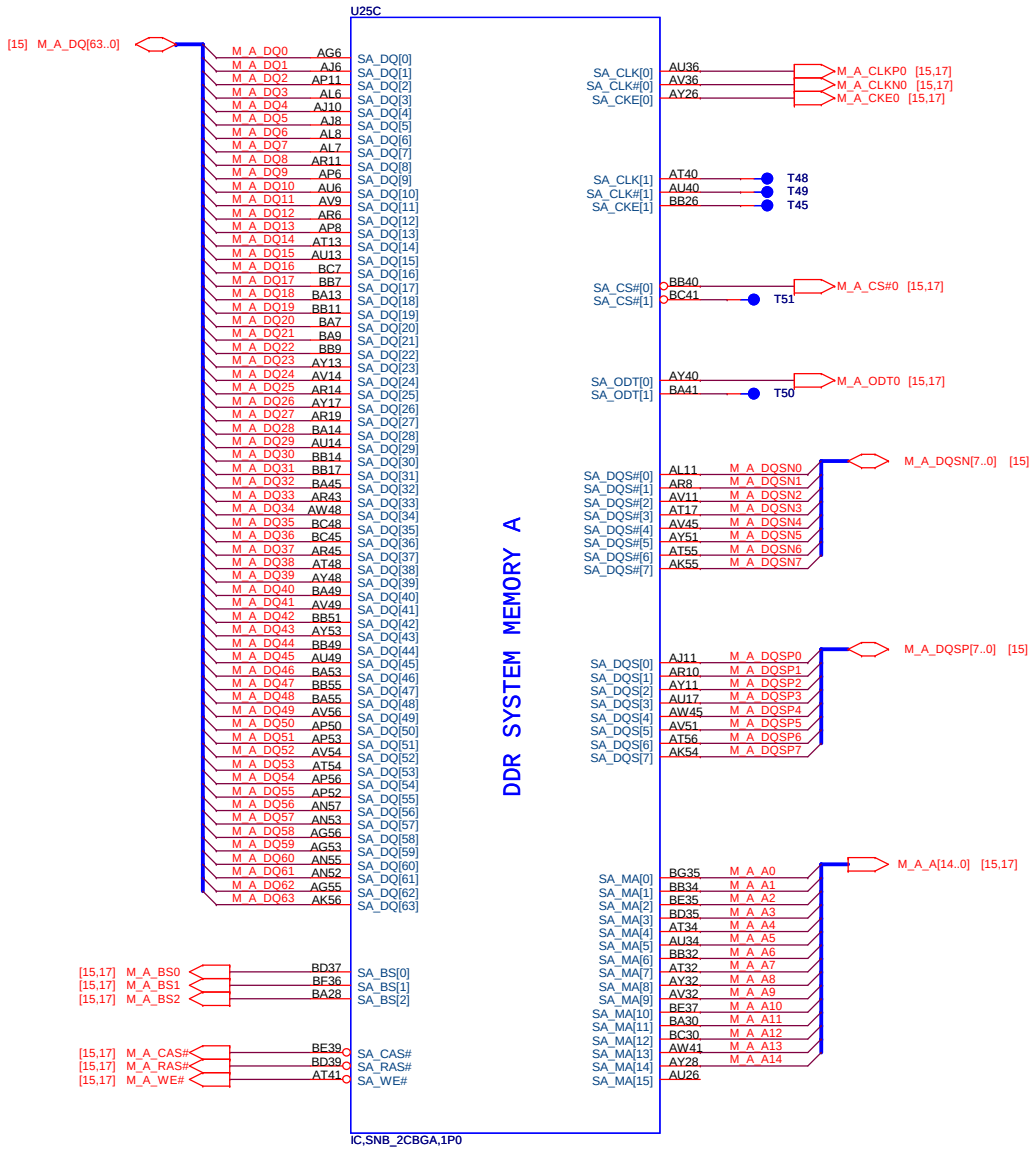
PROJECT : D13

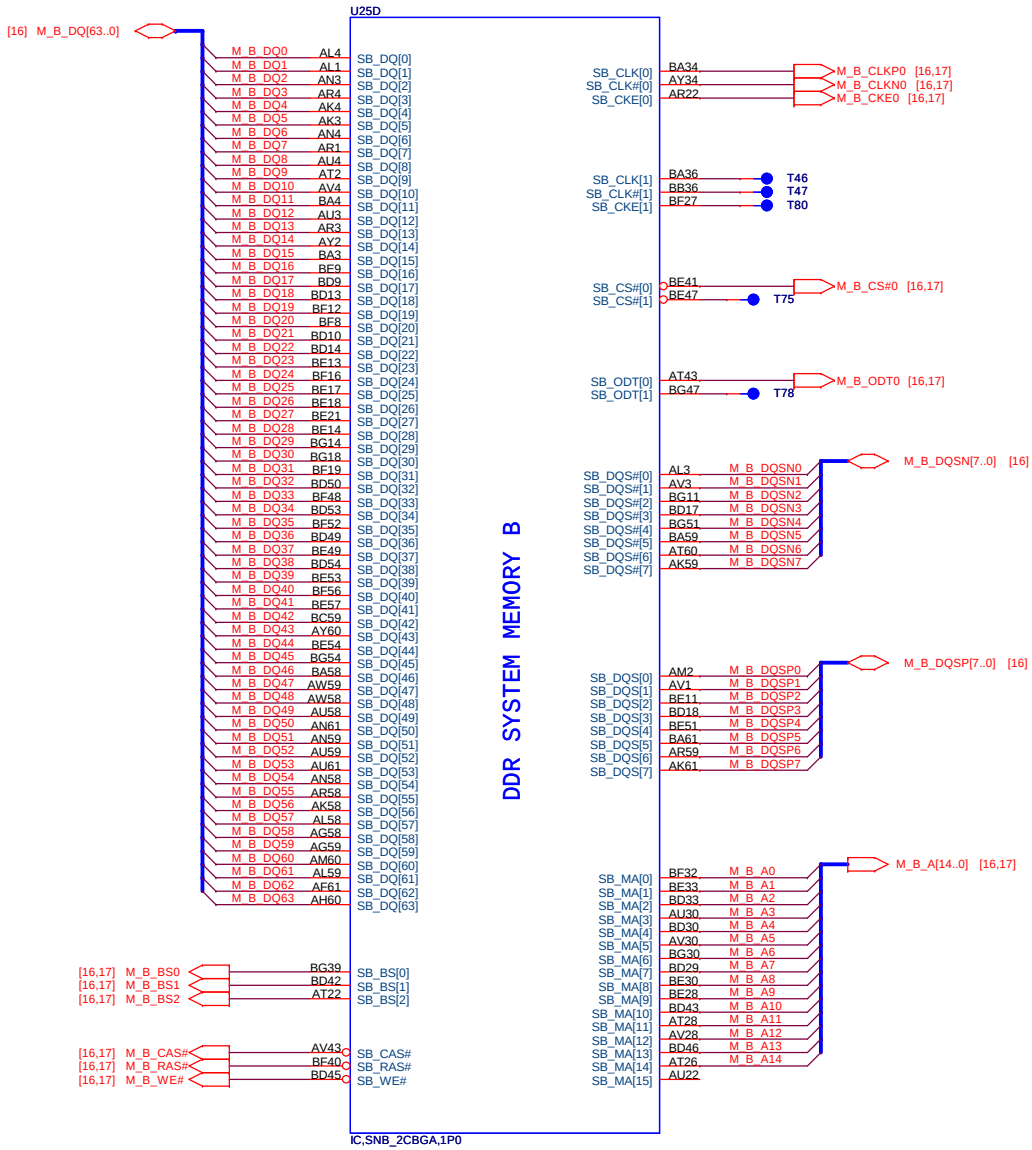
Size	Document Number	Rev
	Sandy Bridge 2/5	1A
Date: Thursday, October 13, 2011	Sheet 4 of 41	

Sandy Bridge Processor (DDR3)

CPU is i7 in schematic



CPU is i7 in schematic



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PROJECT : D13

Size	Document Number	Rev
	Sandy Bridge 3/5	1A
Date: Thursday, October 13, 2011	Sheet 5 of 41	

Sandy Bridge Processor (POWER)

CPU is i7 in schematic

U25F

SNB:33A

+VCC_CORE

8.5A

+1.05V_VCCIO

CORE SUPPLY

PEG AND DDR

POWER

QUIET RAILS

SVID

SENSE LINES

Follow check list of Intel

SNB:6A

+VCCSA_CORE

IC,SNB_2CBGA,1P0

Sandy Bridge Processor (GRAPHIC POWER)

CPU is i7 in schematic

U25G

18A

+VCC_GFX_CORE

GRAPHICS

POWER

DDR3 - 1.5V RAILS

SENSE LINES

1.8V RAIL

QUIET RAILS

SA RAIL

3A

+1.8V_RUN

10mil

SM_VREF

+VDDR_REF_CPU

SNB:5A

+1.5V_CPU

5A

+1.5V_SUS

Q26
AON7410

check with power Andy

[8] PS_S3CNTRL_S

C241
*4700P/25V/X7R_4_NC

Follow check list of Intel

08/11
For CPU cost down plan
C151, C150

Sandy Bridge only:
VCCSA_VID[0] should be pull down
VCCSA_VID[1] should connect to SA VR

IC,SNB_2CBGA,1P0

SVID DATA

Place resistor R55 close to CPU

SVID ALERT

Place resistor R175 close to CPU

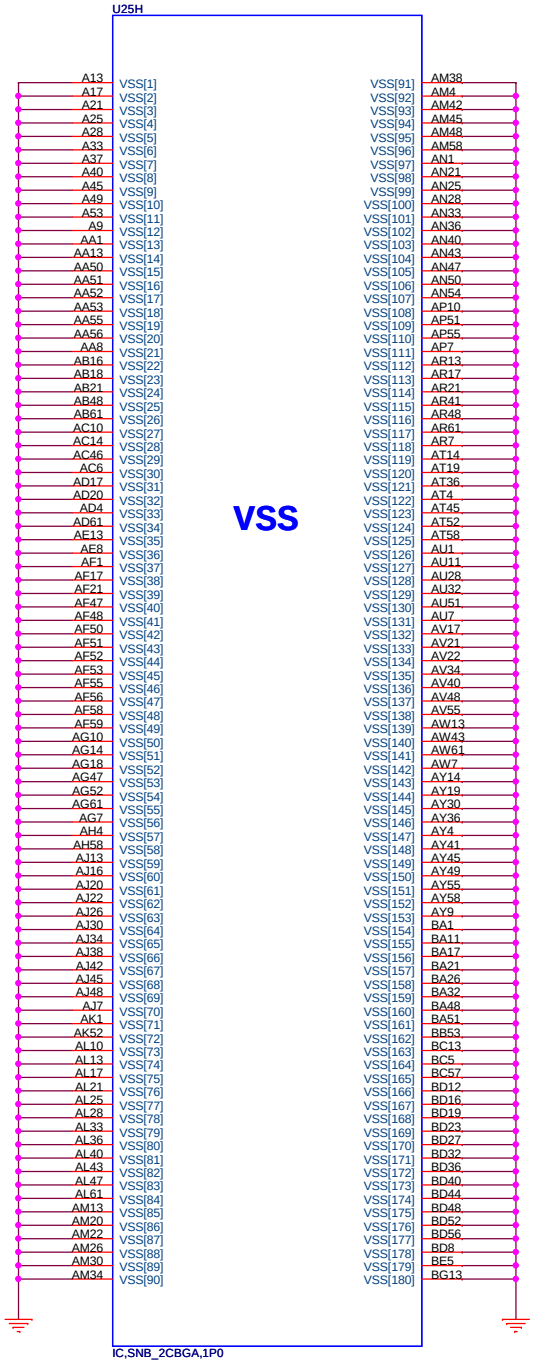
Follow check list of Intel

Quanta Computer Inc.
PROJECT : D13

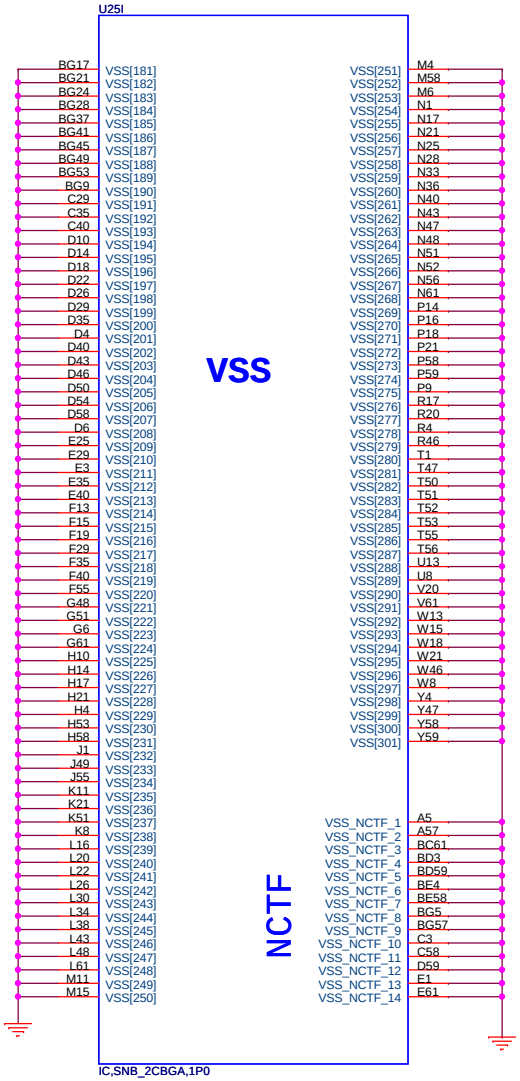
Size	Document Number	Rev
	Sandy Bridge 4/5	1A
Date: Thursday, October 13, 2011	Sheet 6 of 41	

Sandy Bridge Processor (GND)

CPU is i7 in schematic

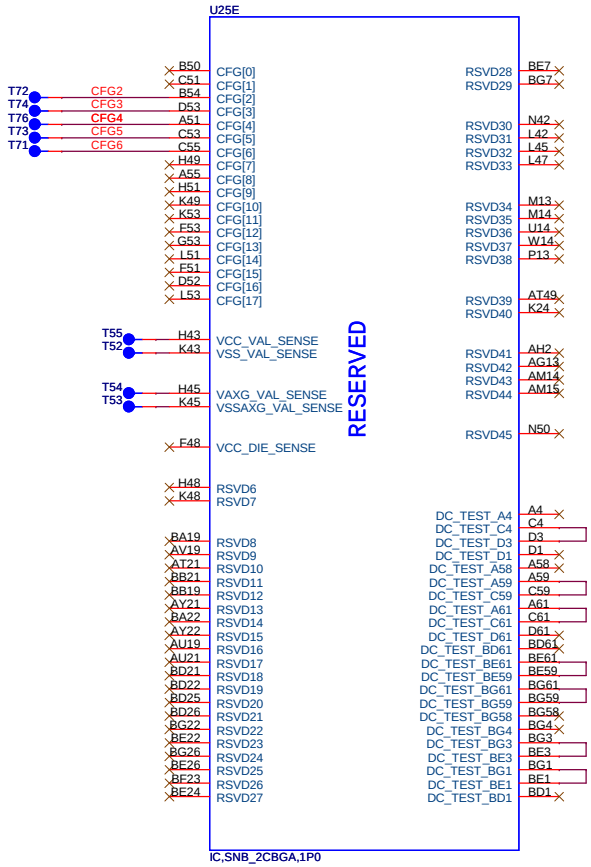


CPU is i7 in schematic



Sandy Bridge Processor (RESERVED, CFG)

CPU is i7 in schematic



PGB straping pin unused for UMA only

CFG[6:5] (PCIE Port Bifurcation Straps)

11: (Default) x16 - Device 1 functions 1 and 2 disabled
10: x8, x8 - Device 1 function 1 enabled ; function 2 disabled
01: Reserved - (Device 1 function 1 disabled ; function 2 enabled)
00: x8,x4,x4 - Device 1 functions 1 and 2 enabled

Processor Strapping

	1	0
CFG2 (PCI-E Static x16 Lane Reversal)	Normal Operation	Lane Reversed
CFG3 (PCI-E Static x4 Lane Reversal)	Normal Operation	Lane Reversed
CFG4 (DP Presence Strap)	Disable; No physical DP attached to eDP	Enable; An ext DP device is connected to eDP

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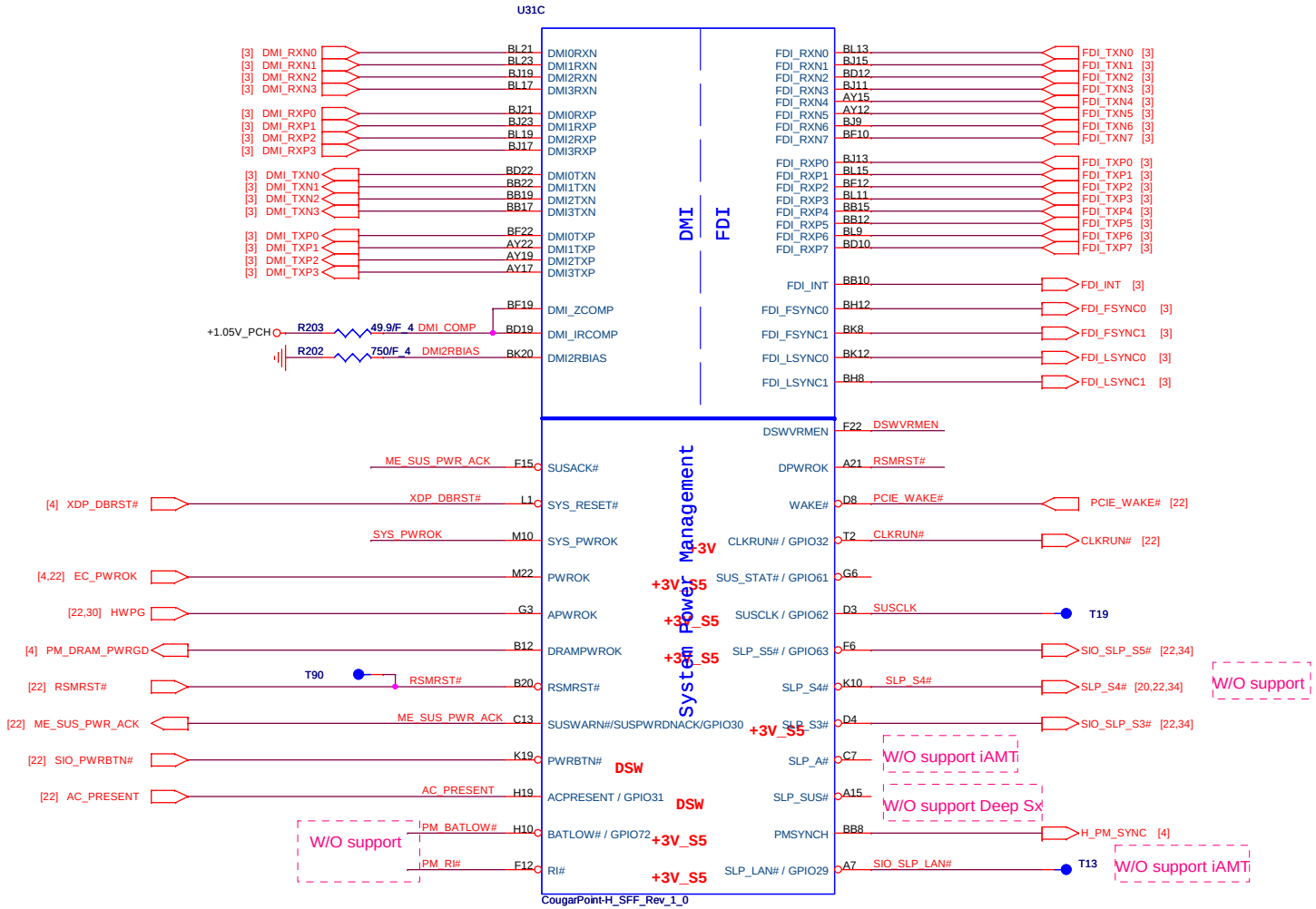
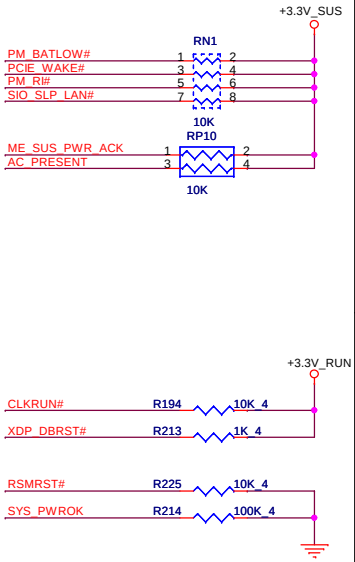
PROJECT : D13

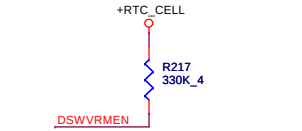
Size	Document Number	Rev
	Sandy Bridge 5/5	1A
Date: Thursday, October 13, 2011	Sheet 7 of 41	

Cougar Point (DMI,FDI,PM)



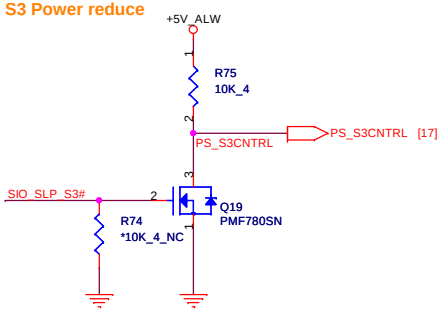
PCH Pull-high/low(CLG)





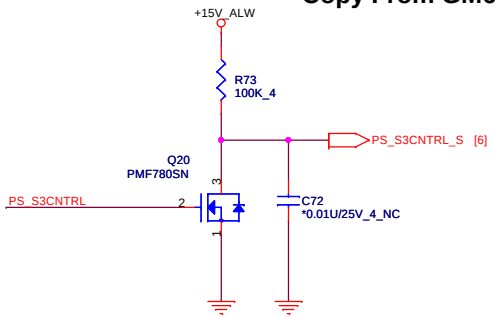
On Die DSW VR Enable
High = Enable (Default)
Low = Disable

S3 Power reduce

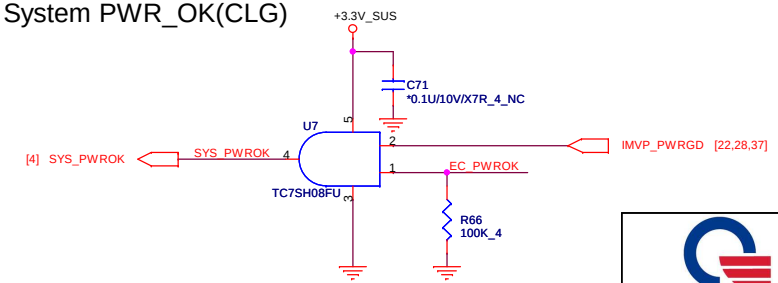


S3 Power reduce

Copy From GM6



System PWR_OK(CLG)



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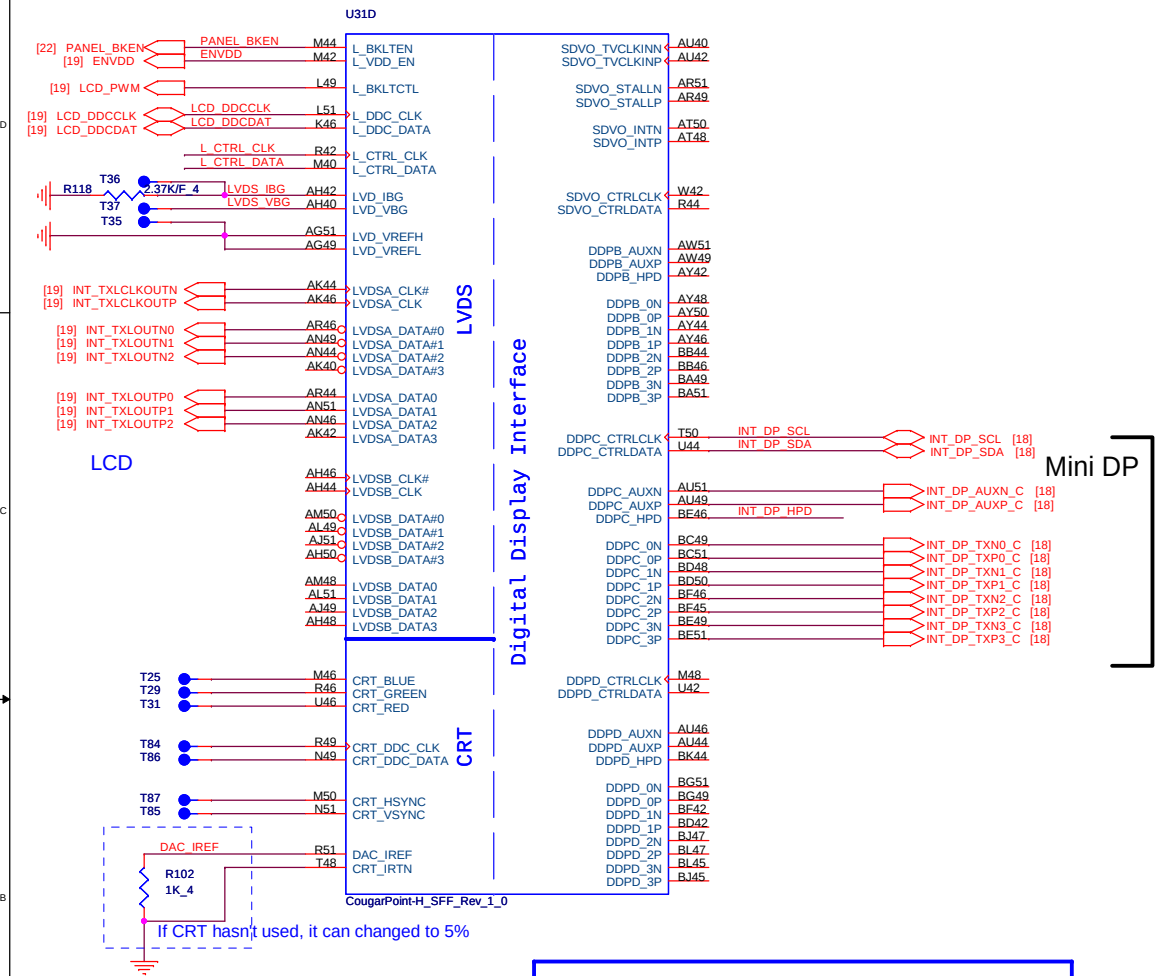
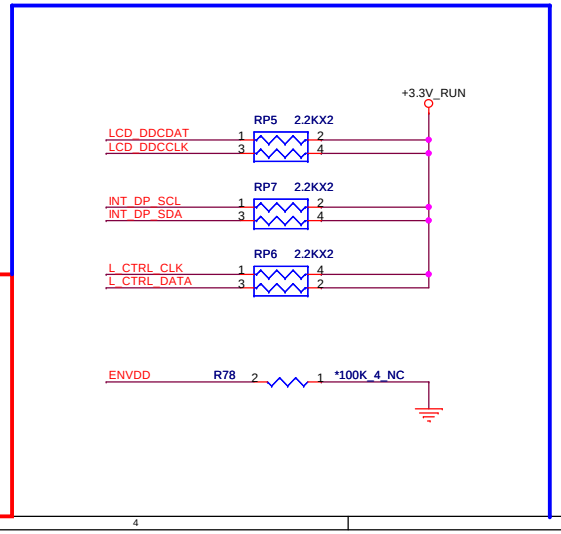
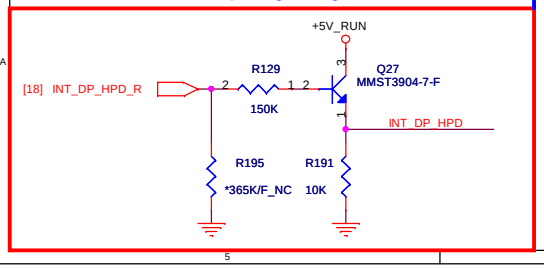
PROJECT : D13

Size	Document Number	Rev
	Cougar Point 1/7	1A
Date: Thursday, October 13, 2011	Sheet 8 of 41	

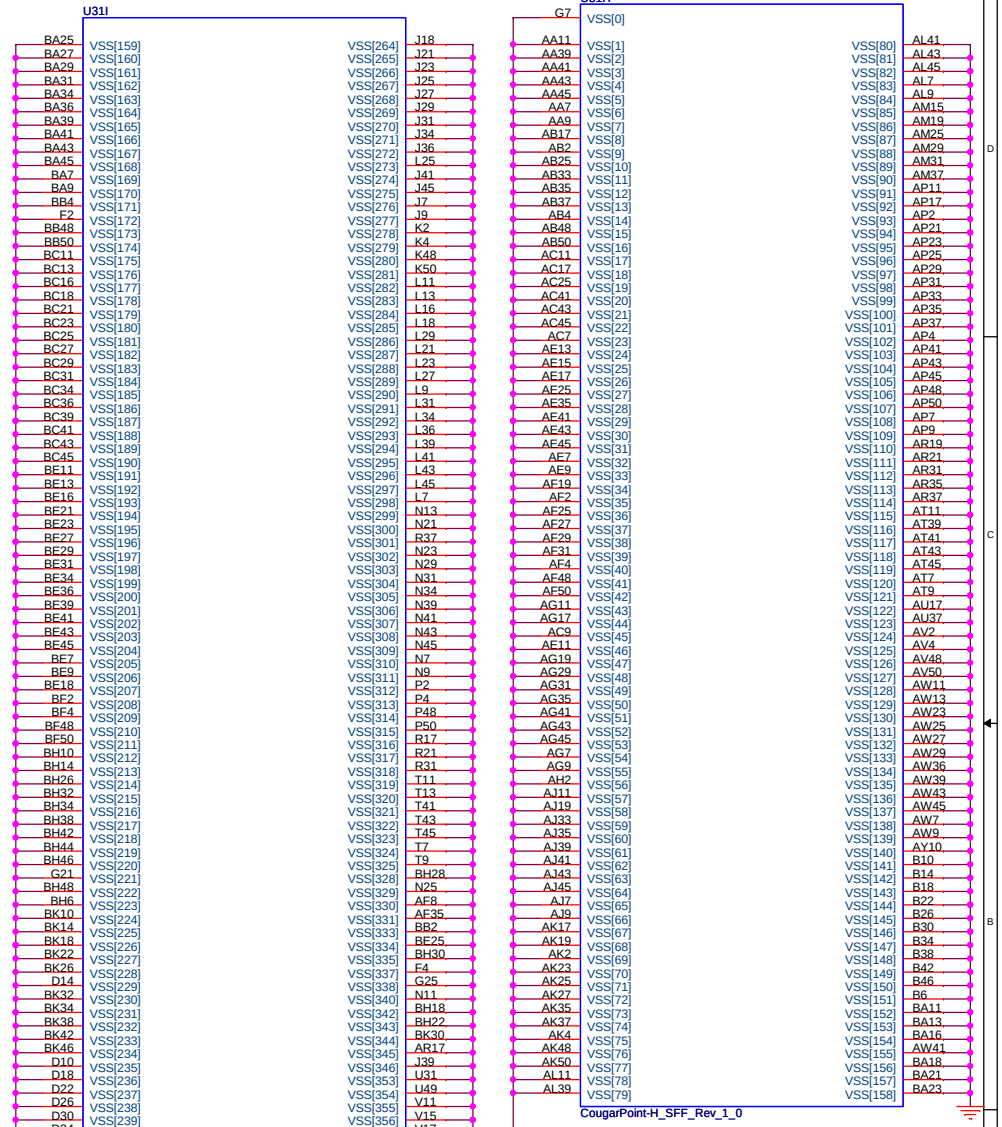
Cougar Point (LVDS,DDI)







Cougar Point (GND)



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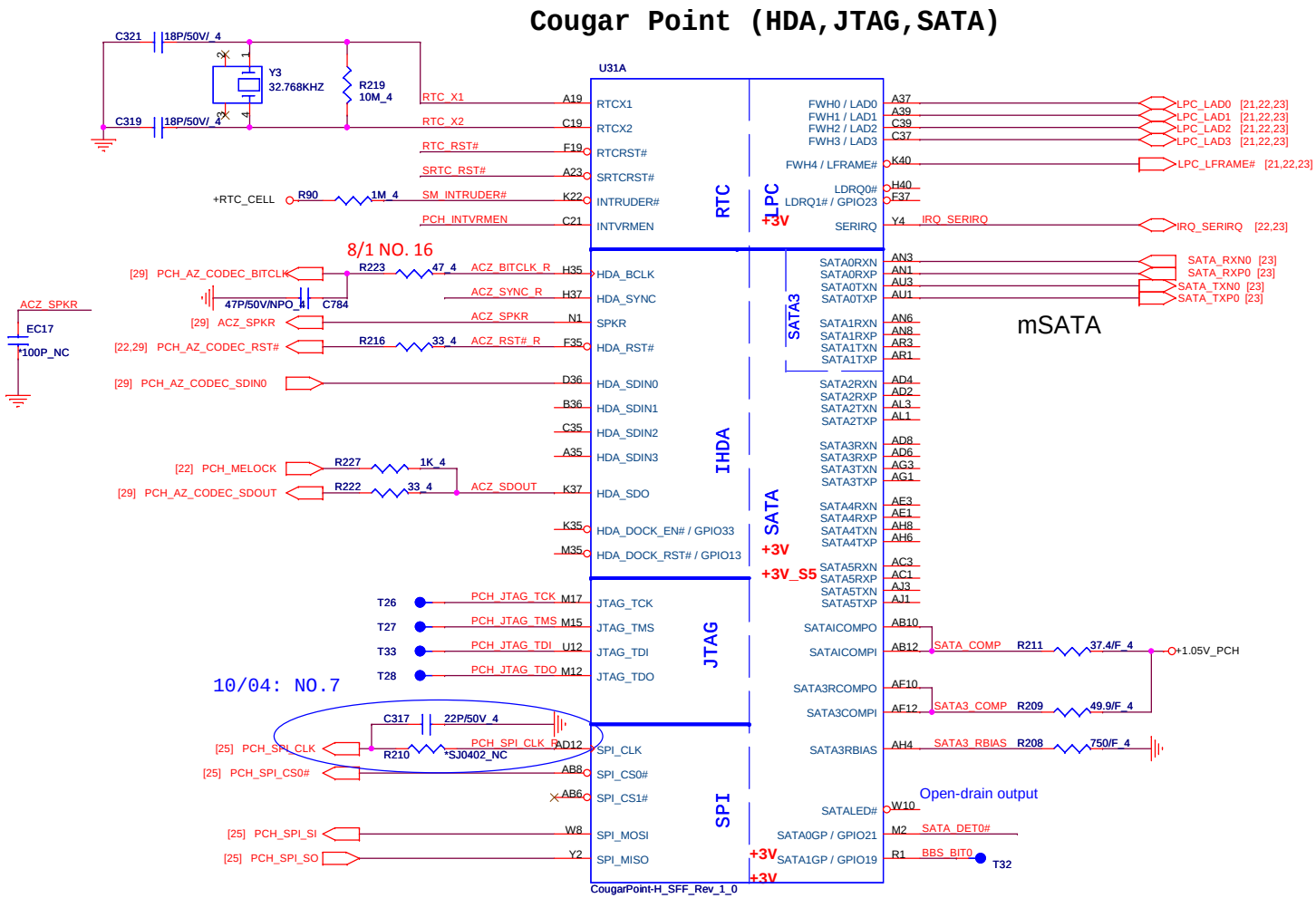
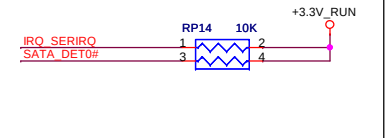
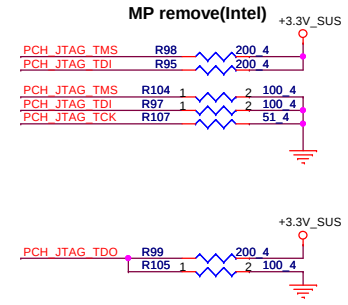
PROJECT : D13			
Size	Document Number: Cougar Point 2/7		Rev: 1A
Date: Thursday, October 13, 2011	Sheet 9 of 41		

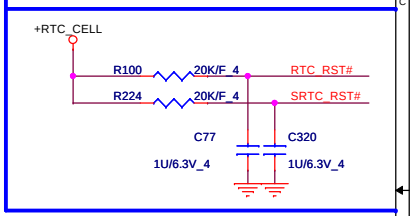
Cougar Point (HDA,JTAG,SATA)





PCH JTAG Debug (CLG)





PCH Strap Table

Pin Name	Strap description	Sampled	Configuration	note
SPKR	No reboot mode setting	PWROK	0 = Default (weak pull-down 20K) 1 = Setting to No-Reboot mode	
HDA_SDO	Flash Descriptor Security	PWROK	0 = Default (weak pull-down 20K) 1 = Override	
Del 0510			**Remove SPI_MOSI from PCH strapping, HR_C/L_v0.91**	
INTVRMEN	Integrated 1.05V VRM enable	ALWAYS	**Should be always pull-up**	+RTC_CELL — R96 330K_4 — PCH_INTVRMEN
HDA_SYNC	On-Die PLL VR Volatge Select	RSMRST	0 = Support by 1.8V (weak PD) 1 = Support by 1.5V	[29] PCH_AZ_CODEC_SYNC — R85 33_4 — 1K_4 R89 — +3.3V_SUS — ACZ_SYNC_R

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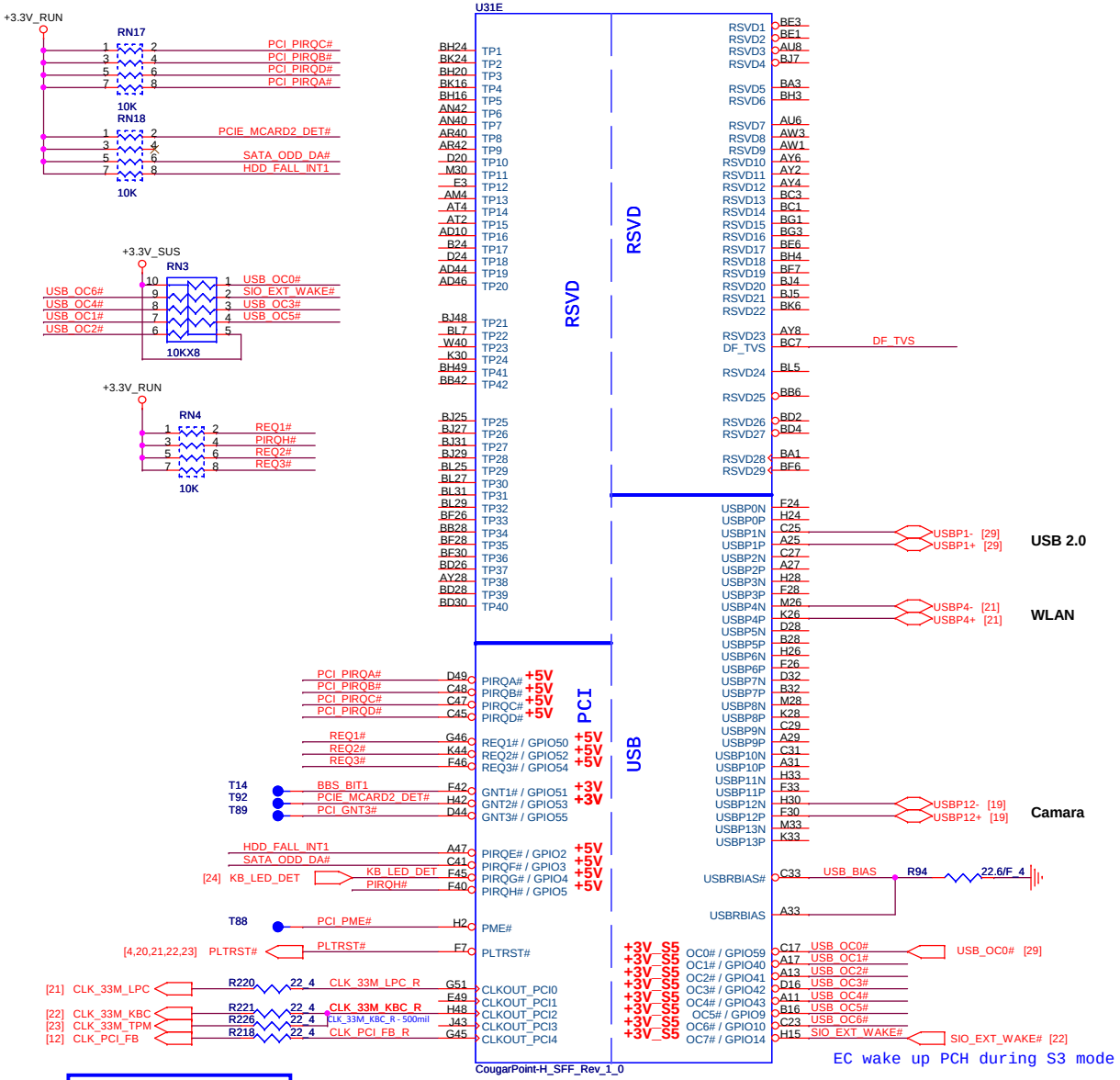
PROJECT : D13

Size	Document Number	Rev
	Cougar Point 3/7	1A

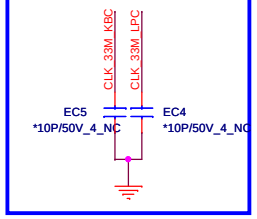
Date: Thursday, October 13, 2011 Sheet 10 of 41

Cougar Point-M (PCI,USB,NVRAM)

PCI/USBOC# Pull-up(CLG)



Add EMC solution



Pin Name	Strap description	Sampled	Configuration
GNT2# / GPIO53	ESI strap (Server only)	PWROK	Should not be pull-down (weak pull-up 10K)
GNT3# / GPIO55	Top-Block Swap Override	PWROK	0 = "top-block swap" mode 1 = Default (weak pull-up 10K)
GNT1# / GPIO51	Boot BIOS Selection 1 [bit-1]	PWROK	Bit 0 / Bit 1 / Boot Location 1 / 1 / SPI * 0 / 0 / LPC
GPIO19	Boot BIOS Selection 0 [bit-0]	PWROK	
			Default weak pull-up on GNT0/1# (Internal PU)
DF_TVS	DMI and FDI Tx/Rx Termination Voltage	PWROK	weak pull-down 20kohm

R196 2 2.2K_4 +1.8V_RUN
DF_TVS

CheckList_1.5 p72; HR_v1.5 p476

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PROJECT : D13

Size	Document Number	Rev
	Cougar Point 4/7	1A
Date: Thursday, October 13, 2011	Sheet 11 of 41	

Cougar Point-M (PCI-E,SMBUS,CLK)

U31B

For BIOS:
drop the PCH_SMB_ALERT from touchpad due to SMBUS will control it by host notify mechanism

PCI-E*

WLAN
[21] PCIE_RXN2 — BJ33 PERN1
[21] PCIE_RXP2 — BL33 PERP1
[21] PCIE_TXN2 — C313 0.1U/16V_4 PCIE_TXN2_C — BB30 PETN1
[21] PCIE_TXP2 — C314 0.1U/16V_4 PCIE_TXP2_C — AY30 PETP1
BJ35 PERN2
BL35 PERP2
BB33 PETN2
AY33 PETP2

USB3.0
[20] PCIE_RXN4 — BH36 PERN3
[20] PCIE_RXP4 — BK36 PERP3
[20] PCIE_TXN4 — C312 0.1U/16V_4 PCIE_TXN4_C — BF33 PETN3
[20] PCIE_TXP4 — C311 0.1U/16V_4 PCIE_TXP4_C — BD33 PETP3
BJ37 PERN4
BL37 PERP4
BD35 PETN4
BF35 PETP4

BJ39 PERN5
BL39 PERP5
AY35 PETN5
BB35 PETP5
BH40 PERN6
BK40 PERP6
BD37 PETN6
BF37 PETP6
BJ41 PERN7
BL41 PERP7
AY37 PETN7
BB37 PETP7
BJ43 PERN8
BL43 PERP8
AY40 PETN8
BB40 PETP8

SMBUS

+3V_S5 SMBALERT# / GPIO11 — H12 — PCH_SMB_ALERT# — T15
SMBCLK — F17 — SMBCLK
SMBDATA — F10 — SMBDATA
+3V_S5 SML0ALERT# / GPIO60 — H22 — DDR_HVREF_RST_PCH [4]
SML0CLK — K12 — SML0CLK
SML0DATA — A9 — SML0DATA
+3V_S5 SML1ALERT# / PCHHOT# / GPIO74 — C9 — PCH_GPIO74
+3V_S5 SML1CLK / GPIO58 — D12 — SMB_CLK_ME1
+3V_S5 SML1DATA / GPIO75 — C11 — SMB_DATA_ME1

Controller Link

CL_CLK1 — L3
CL_DATA1 — J1
CL_RST1# — M8

CLOCKS

+3V_S5 PEG_A_CLKRQ# / GPIO47 — R8 — PEG_CLKREQ_GPU#

AD48 CLKOUT_PCIE0N
AD50 CLKOUT_PCIE0P
PCIE_CLK_REQ0# — M4 — PCIECLKRQ0# / GPIO73 — +3V_S5

WLAN
[21] CLK_PCIE_WLANN — AE49 CLKOUT_PCIE1N
[21] CLK_PCIE_WLANP — AE51 CLKOUT_PCIE1P
PCIE_CLK_REQ1# — [21] PCIE_CLK_REQ1# — U8 — PCIECLKRQ1# / GPIO18 — +3V

AD40 CLKOUT_PCIE2N
AD42 CLKOUT_PCIE2P
PCIE_CLK_REQ2# — T4 — PCIECLKRQ2# / GPIO20 — +3V

AA49 CLKOUT_PCIE3N
AA51 CLKOUT_PCIE3P
PCIE_CLK_REQ3# — B8 — PCIECLKRQ3# / GPIO25 — +3V_S5

USB3.0
[20] CLK_PCIE_USB30N — Y48 CLKOUT_PCIE4N
[20] CLK_PCIE_USB30P — Y50 CLKOUT_PCIE4P
[20] PCIE_CLK_REQ4# — PCIE_CLK_REQ4# — M19 — PCIECLKRQ4# / GPIO26 — +3V_S5

AB40 CLKOUT_PCIE5N
AB42 CLKOUT_PCIE5P
PCIE_CLK_REQ5# — K8 — PCIECLKRQ5# / GPIO44 — +3V_S5

AF40 CLKOUT_PEG_B_N
AF42 CLKOUT_PEG_B_P
PEG_B_CLKRQ# — C4 — PEG_B_CLKRQ# / GPIO56 — +3V_S5

AB44 CLKOUT_PCIE6N
AB46 CLKOUT_PCIE6P
PCIE_CLK_REQ6# — J3 — PCIECLKRQ6# / GPIO45 — +3V_S5

W44 CLKOUT_PCIE7N
W46 CLKOUT_PCIE7P
PCIE_CLK_REQ7# — H4 — PCIECLKRQ7# / GPIO46 — +3V_S5

AR12 CLKOUT_ITPXDP_N
AR10 CLKOUT_ITPXDP_P

AF44 CLKOUT_PEG_A_N
AF46 CLKOUT_PEG_A_P

BB24 CLKOUT_DMI_N — CLK_CPU_BCLKN [4]
AY24 CLKOUT_DMI_P — CLK_CPU_BCLKP [4]

AN10 CLKOUT_DP_N
AN12 CLKOUT_DP_P

BD17 CLKIN_DMI_N — CLK_DMIN — R199 10K_4
BF17 CLKIN_DMI_P

BB26 CLKIN_GND1_N — CLK_GND1 — R198 10K_4
AY26 CLKIN_GND1_P

M24 CLKIN_DOT_96N — CLK_BUF_DREFCLK — R93 10K_4
K24 CLKIN_DOT_96P

AK8 CLKIN_SATA_N — CLK_BUF_DREFSSCLK — R207 10K_4
AK6 CLKIN_SATA_P

J49 REFCLK14IN — CLK_PCH_14M — R106 10K_4

E51 CLKIN_PCILOOPBACK — CLK_PCI_FB — CLK_PCI_FB [11]

W49 XTAL25_IN — XTAL25_IN
W51 XTAL25_OUT — XTAL25_OUT
R113 1M_4
Y2 25MHz
C102 12P/50V_4
C84 12P/50V_4

AC49 XCLK_RCOMP — XCLK_RCOMP — R117 90.9/F_4 — +1.05V_PCH

FLEXCLOCKS

+3V CLKOUTFLEX0 / GPIO64 — H50 — CLK_FLEX0 — T22
+3V CLKOUTFLEX1 / GPIO65 — D48 — CLK_FLEX1 — T20
+3V CLKOUTFLEX2 / GPIO66 — G49 — CLK_FLEX2 — T21
+3V CLKOUTFLEX3 / GPIO67 — J51 — CLK_FLEX3 — T24

CougarPoint-H_SFF_Rev_1_0

SMBus/Pull-up(CLG)

+3.3V_RUN
RP4 2.2KX2
Q21A DMN66D0LDW-7
SMBCLK — TP_SCLK [24]
Q21B DMN66D0LDW-7
SMBDATA — TP_SDATA [24]

+3.3V_SUS
Q22A DMN66D0LDW-7
SMB_CLK_ME1 — SMBCLK1 [22]
Q22B DMN66D0LDW-7
SMB_DATA_ME1 — SMBDAT1 [22]

CLK_REQ/Strap Pin(CLG)

+3.3V_SUS
RN2 10K
PCIE_CLK_REQ0#
PCIE_CLK_REQ3#
PCIE_CLK_REQ4#
PCIE_CLK_REQ5#
PEG_B_CLKRQ# R77 10K_4
PCIE_CLK_REQ6#
PCIE_CLK_REQ7#
RP11 10K

+3.3V_RUN
PCIE_CLK_REQ1#
PCIE_CLK_REQ2#
RP15 10K
+3.3V_SUS
PEG_CLKREQ_GPU# R92 10K_4

+3.3V_SUS
RP13 10K
PCH_GPIO74
PCH_SMB_ALERT#
RP8 2.2KX2
SMBCLK
SMBDATA
RP12 2.2KX2
SML0CLK
SML0DATA
RP9 2.2KX2
SMB_DATA_ME1
SMB_CLK_ME1

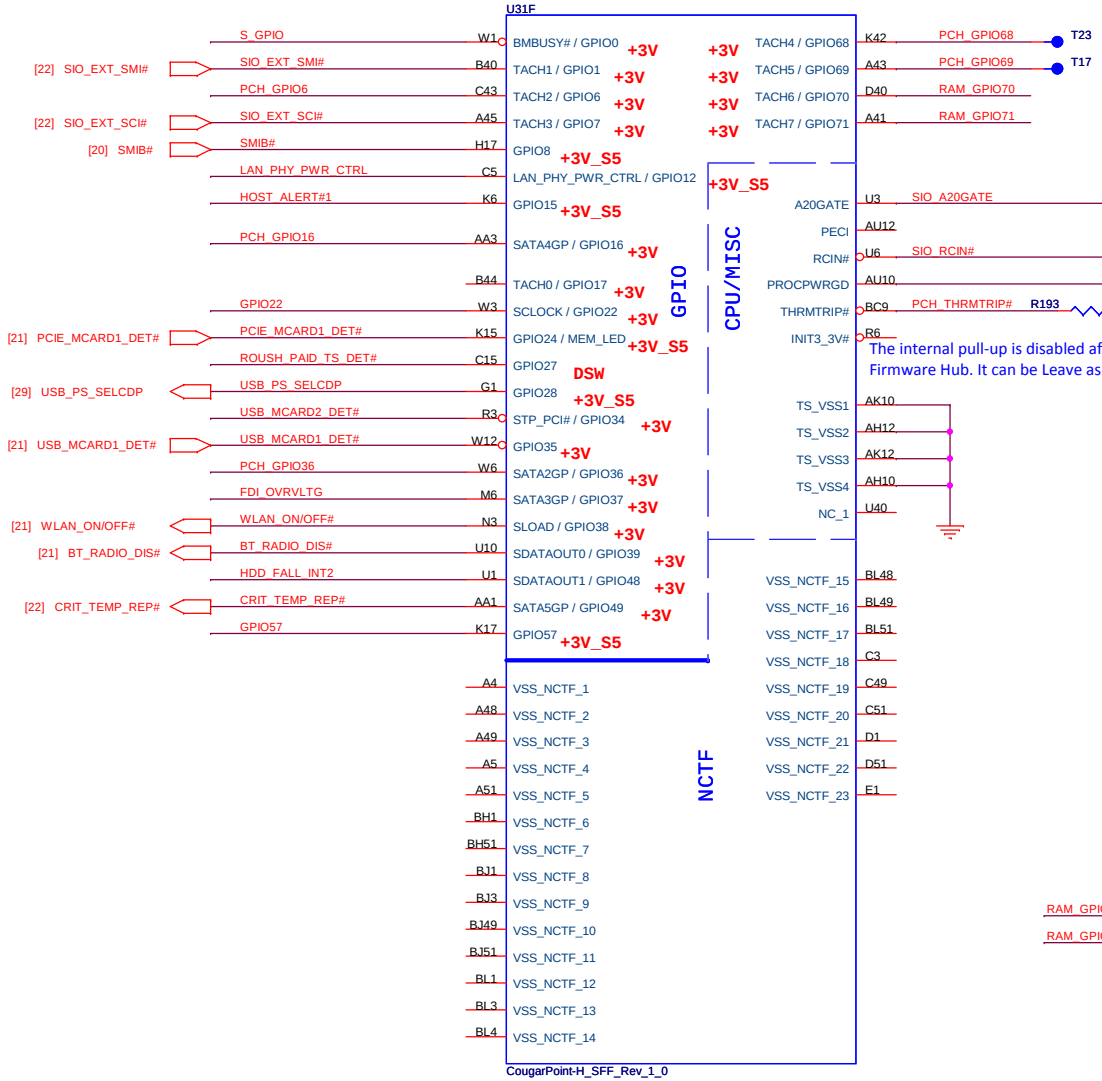
Quanta Computer Inc.
PROJECT : D13

Size	Document Number	Rev
	Cougar Point 5/7	1A

Date: Thursday, October 13, 2011 Sheet 12 of 41

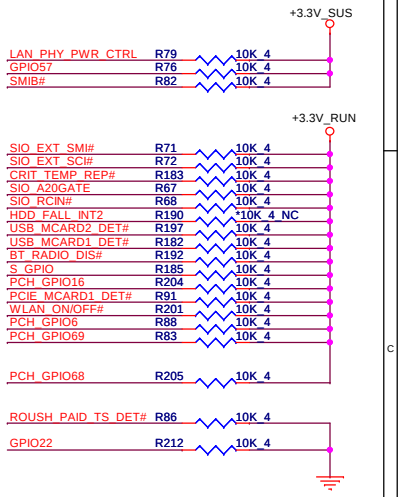
Cougar Point (GPIO,VSS_NCTF,RSVD)

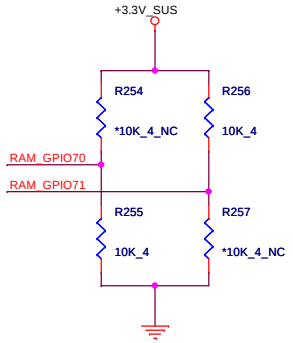
Pin Name	Strap description	Sampled	Configuration
GPIO28	On-die PLL Voltage Regulator	RSMRST#	0 = Disable 1 = Enable (Default)
Internal PU		USB_PS_SELCDP R215 *10K_4_NC	



The internal pull-up is disabled after PLTRST# deasserts. This signal is intended for Firmware Hub. It can be Leave as "No Connect". (desktop SKUs only)

GPIO Pull-up/Pull-down(CLG)





RAM Vender select

RAM_GPIO70	R254(1)	R255(0)
Samsung		V
Hynix	V	

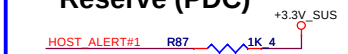
RAM size select

RAM_GPIO71	R256(1)	R257(0)
2G		V
4G	V	

FDI TERMINATION VOLTAGE OVERRIDE	LOW - Tx, Rx terminated to same voltage

DMI TERMINATION VOLTAGE OVERRIDE	Low = Tx, Rx terminated to same voltage (DC Coupling Mode) (DEFAULT)

Reserve (PDC)



Intel ME Crypto Transport Layer Security (TLS) cipher suite
Low = Disable (Default)
High = Enable

MFG-TEST

del 0527

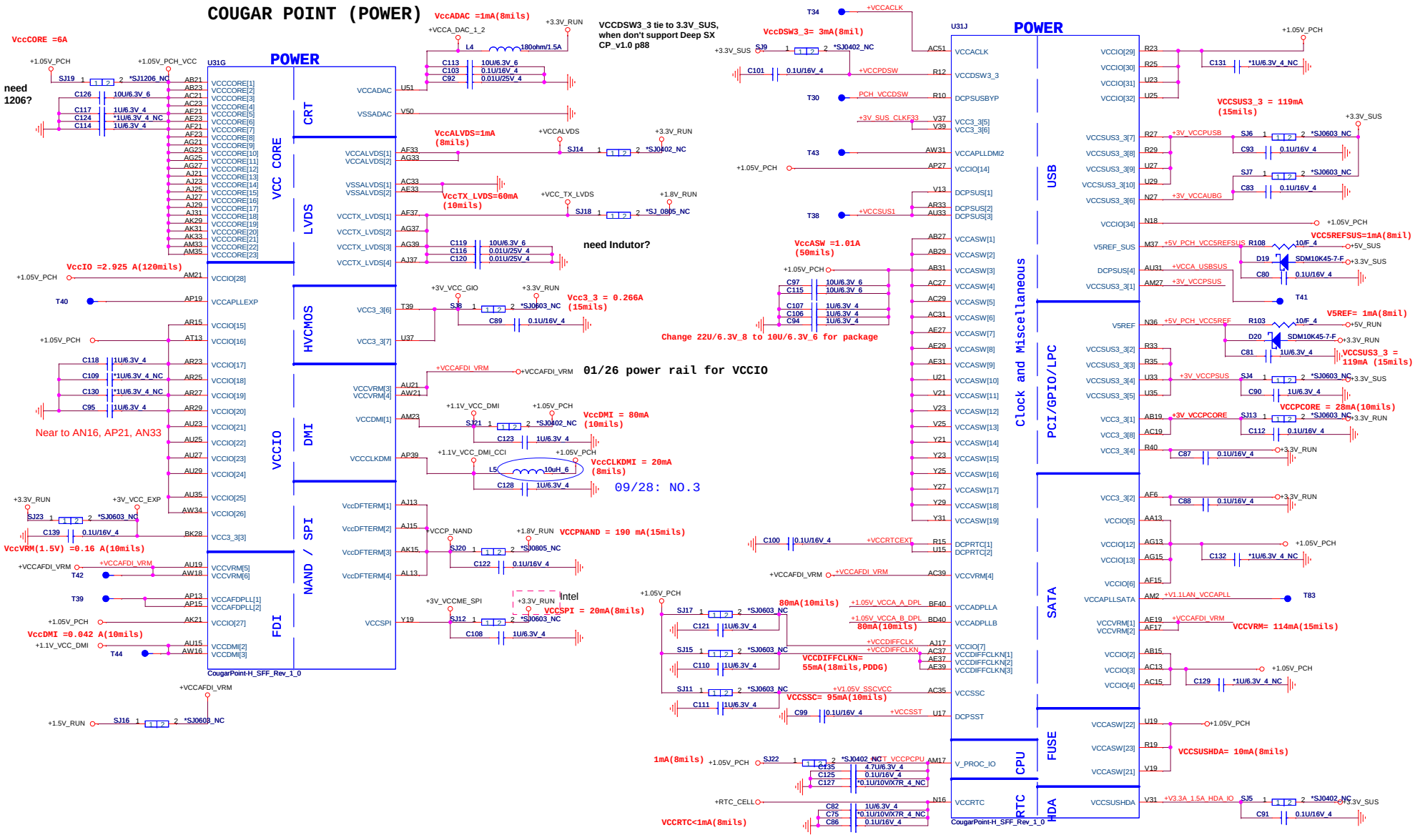
Quanta Computer Inc.

PROJECT : D13

Size	Document Number	Rev
	Cougar Point 6/7	1A
Date: Thursday, October 13, 2011	Sheet 13 of 41	

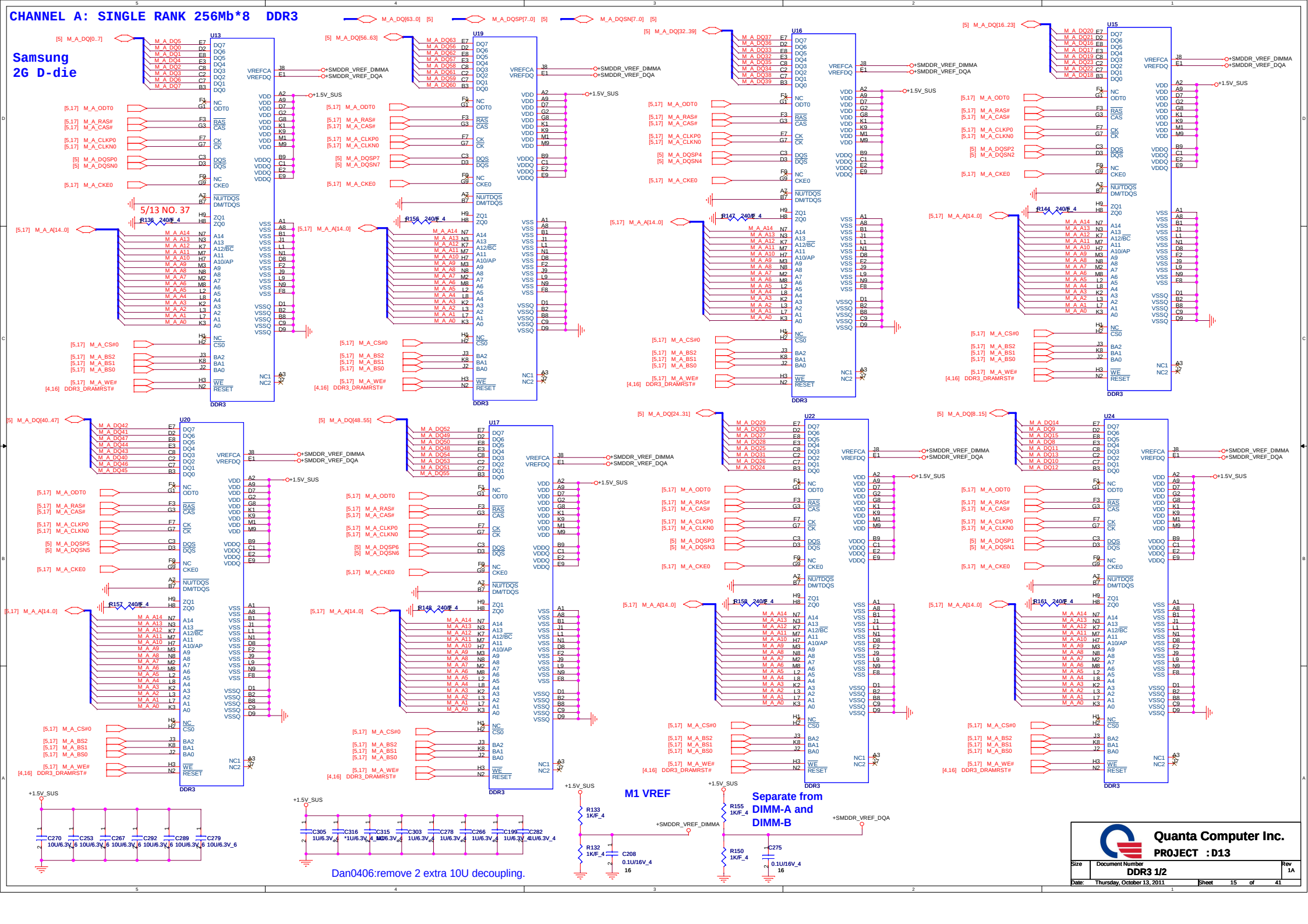
Cougar Point (POWER)

COUGAR POINT (POWER)



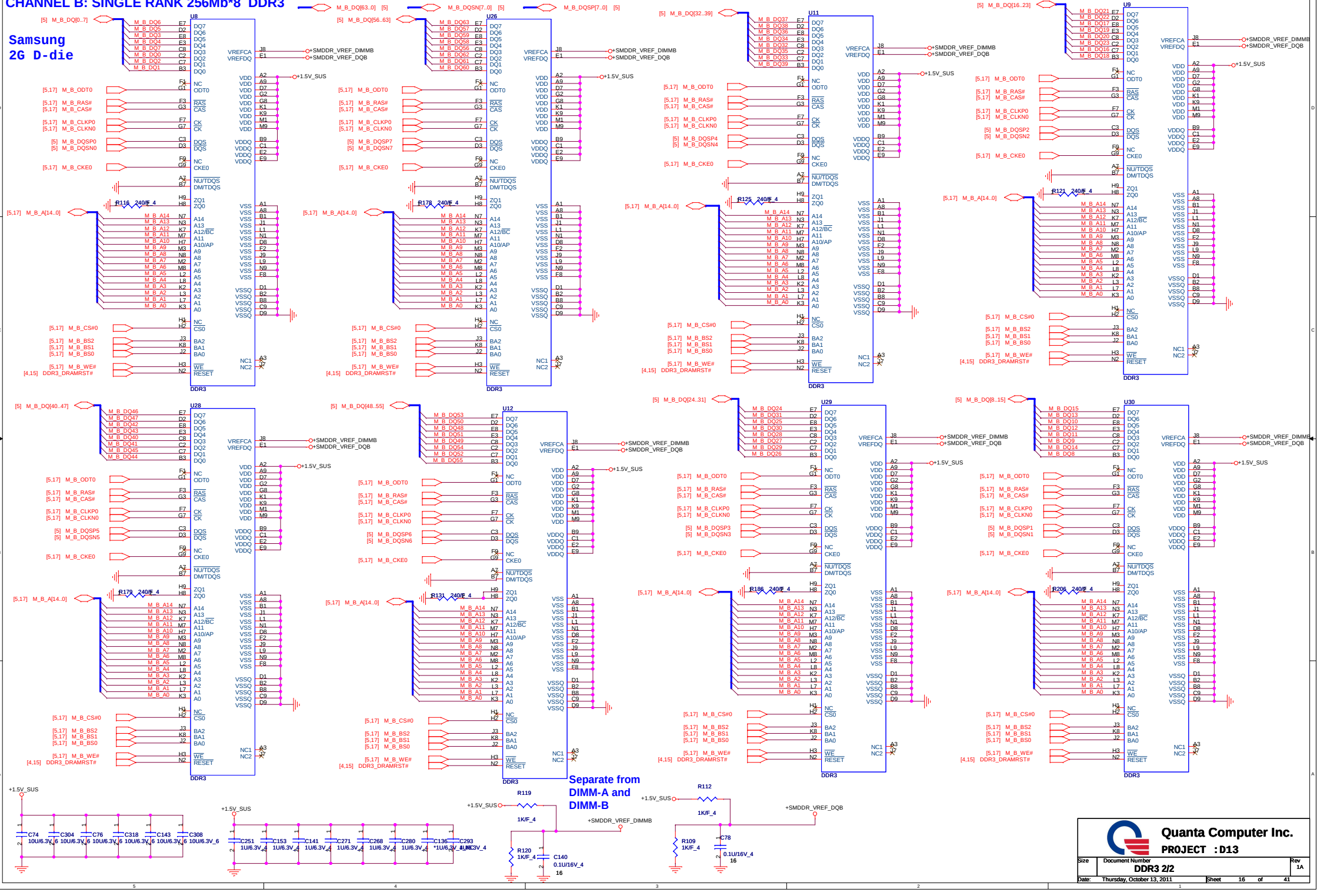
Quanta Computer Inc.	
PROJECT : D13	
Size	Document Number: Cougar Point 7/7 — Rev: 1A
Date: Thursday, October 13, 2011	Sheet 14 of 41

CHANNEL A: SINGLE RANK 256Mb*8 DDR3

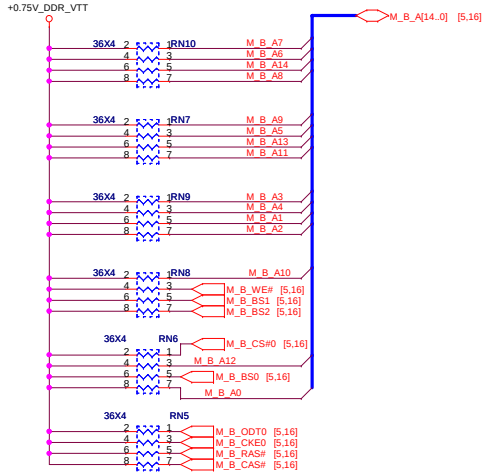


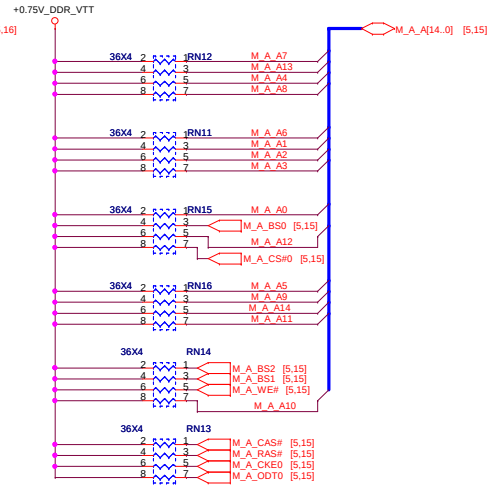
CHANNEL B: SINGLE RANK 256Mb*8 DDR3

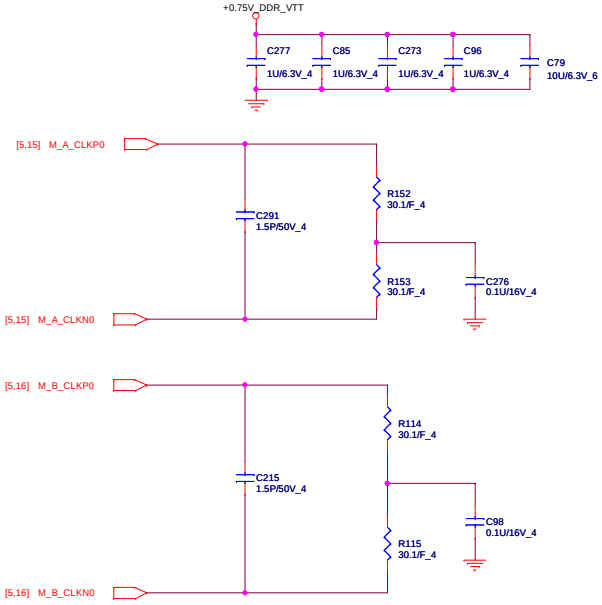
Samsung
2G D-die

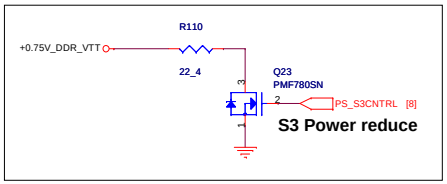


Quanta Computer Inc.		
PROJECT : D13		
Size	Document Number: DDR3 2/2	Rev: 1A
Date: Thursday, October 13, 2011	Sheet 16 of 41	



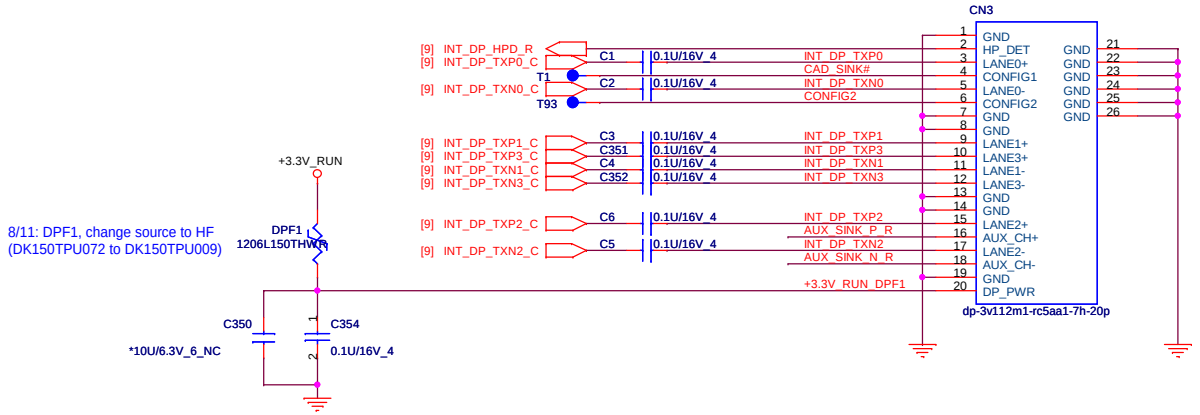




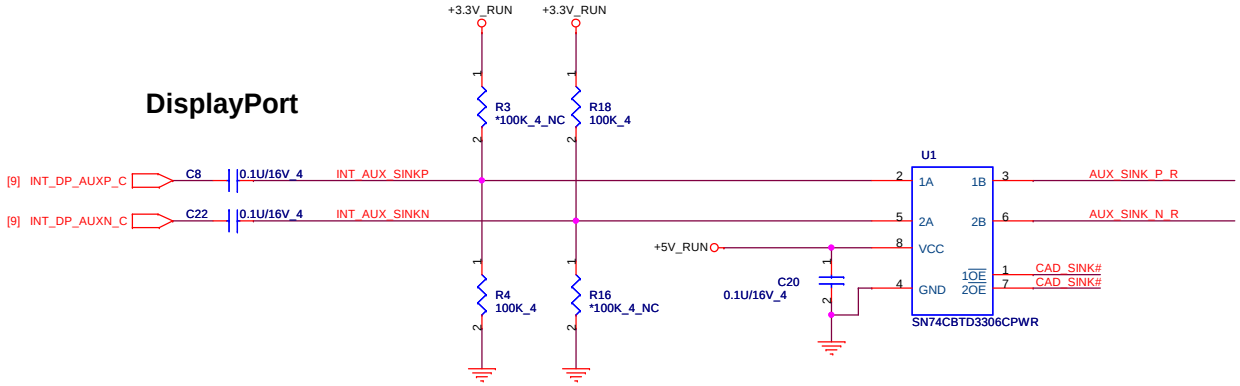


Quanta Computer Inc. PROJECT : D13		
Size	Document Number: DDR3 TERMINATION	Rev: 1A
Date: Thursday, October 13, 2011	Sheet 17 of 41	

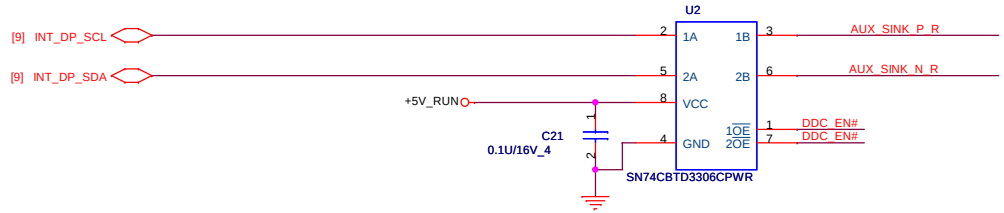
MINI DISPLAY PORT CONNECTOR

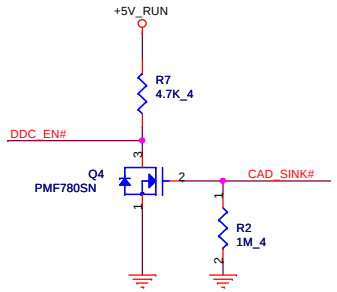


DisplayPort



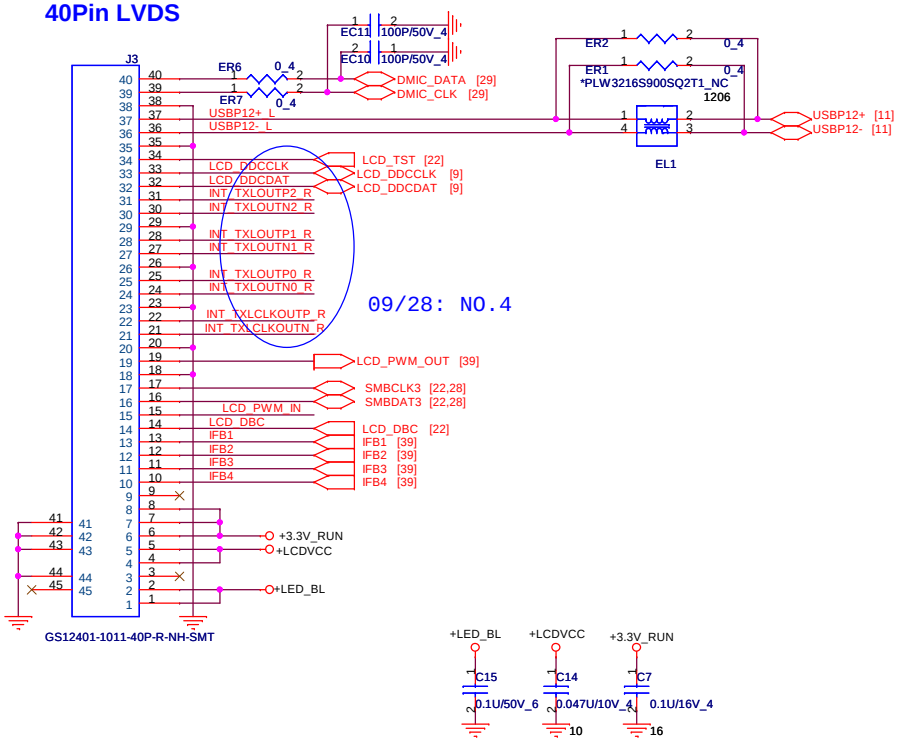
HDMI

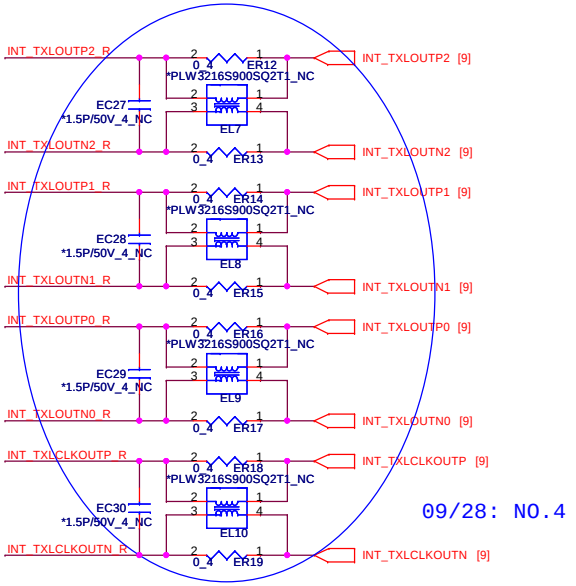


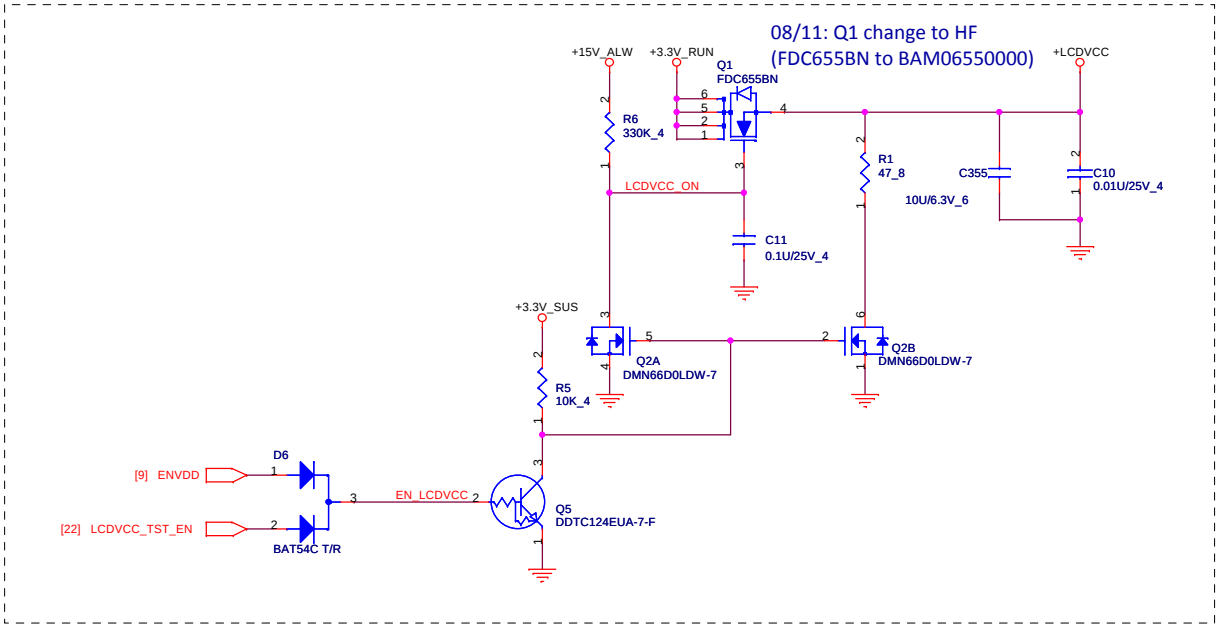


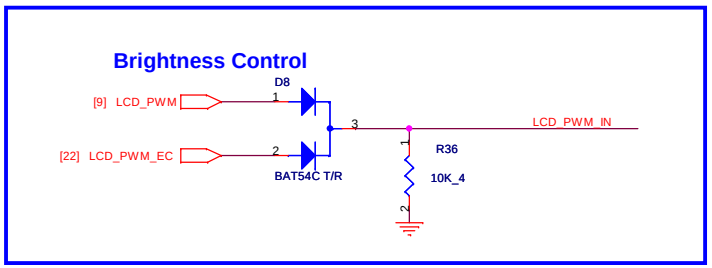
Quanta Computer Inc.		
PROJECT : D13		
Size	Document Number: MINI DP CONN	Rev: 1A
Date: Thursday, October 13, 2011	Sheet 18 of 41	

40Pin LVDS









Quanta Computer Inc.

PROJECT : D13

Size	Document Number	Rev
	LVDS CONN	1A

Date: Thursday, October 13, 2011 Sheet 19 of 41

AVCC33X		
Min	Typ	Max
3.15V	3.30V	3.45V
Current = 36mA		

PVCCA33X		
Min	Typ	Max
3.15V	3.30V	3.45V
Current = 72mA		

AVCC10X		
Min	Typ	Max
1.00V	1.05V	1.10V
Current = 164mA		

AVCC10		
Min	Typ	Max
1.00V	1.05V	1.10V
Current = 9mA		

DVCC33X		
Min	Typ	Max
2.97V	3.30V	3.63V
Current = 0mA		

DVCC33		
Min	Typ	Max
2.97V	3.30V	3.63V
Current = 5mA		

DVCC10X		
Min	Typ	Max
1.00V	1.05V	1.10V
Current = 25mA		

DVCC10		
Min	Typ	Max
1.00V	1.05V	1.10V
Current = 90mA		

09/28: NO.5

TX base on FL1009

RX base on FL1009

FL1009

CANNOT floating even if it hasn't been used

10/04 NO.7

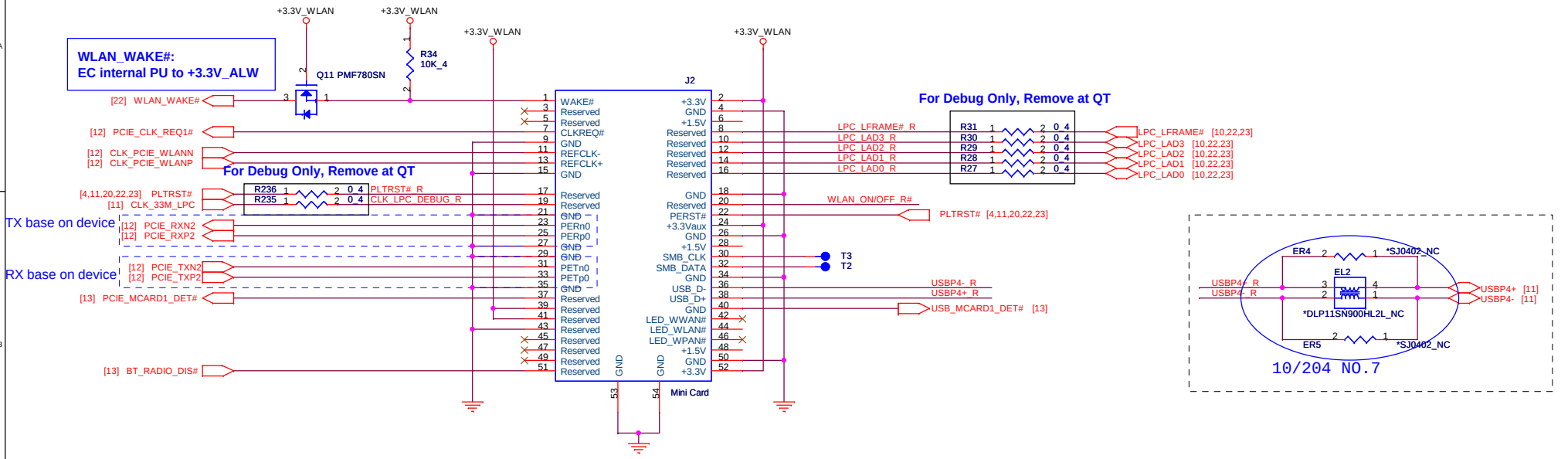
Vout=0.8*(R222+R223)/R223

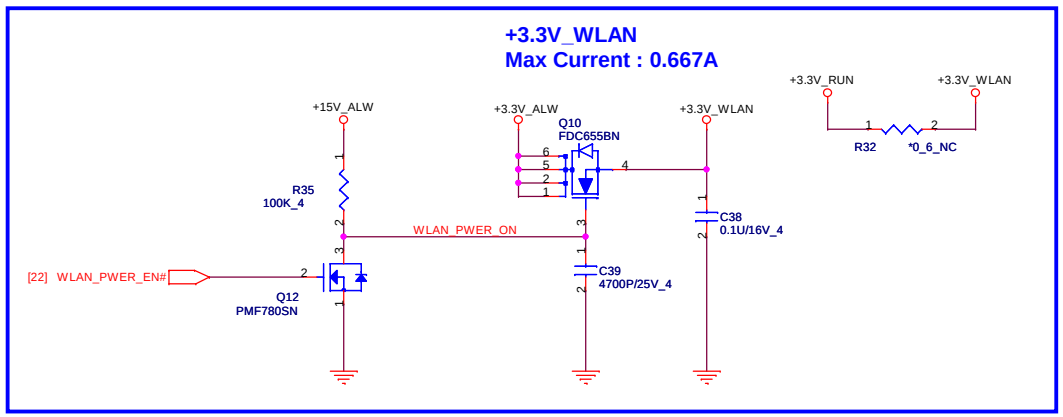
Need closed to CN4

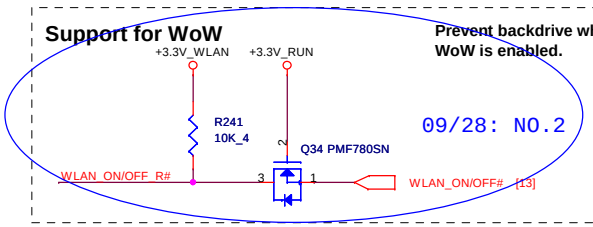
10/204 NO.7

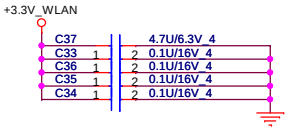
Quanta Computer Inc.		
PROJECT : D13		
Size	Document Number: TI USB 3.0	Rev: 1A
Date: Thursday, October 13, 2011	Sheet 20 of 41	

MiniCard WLAN connector

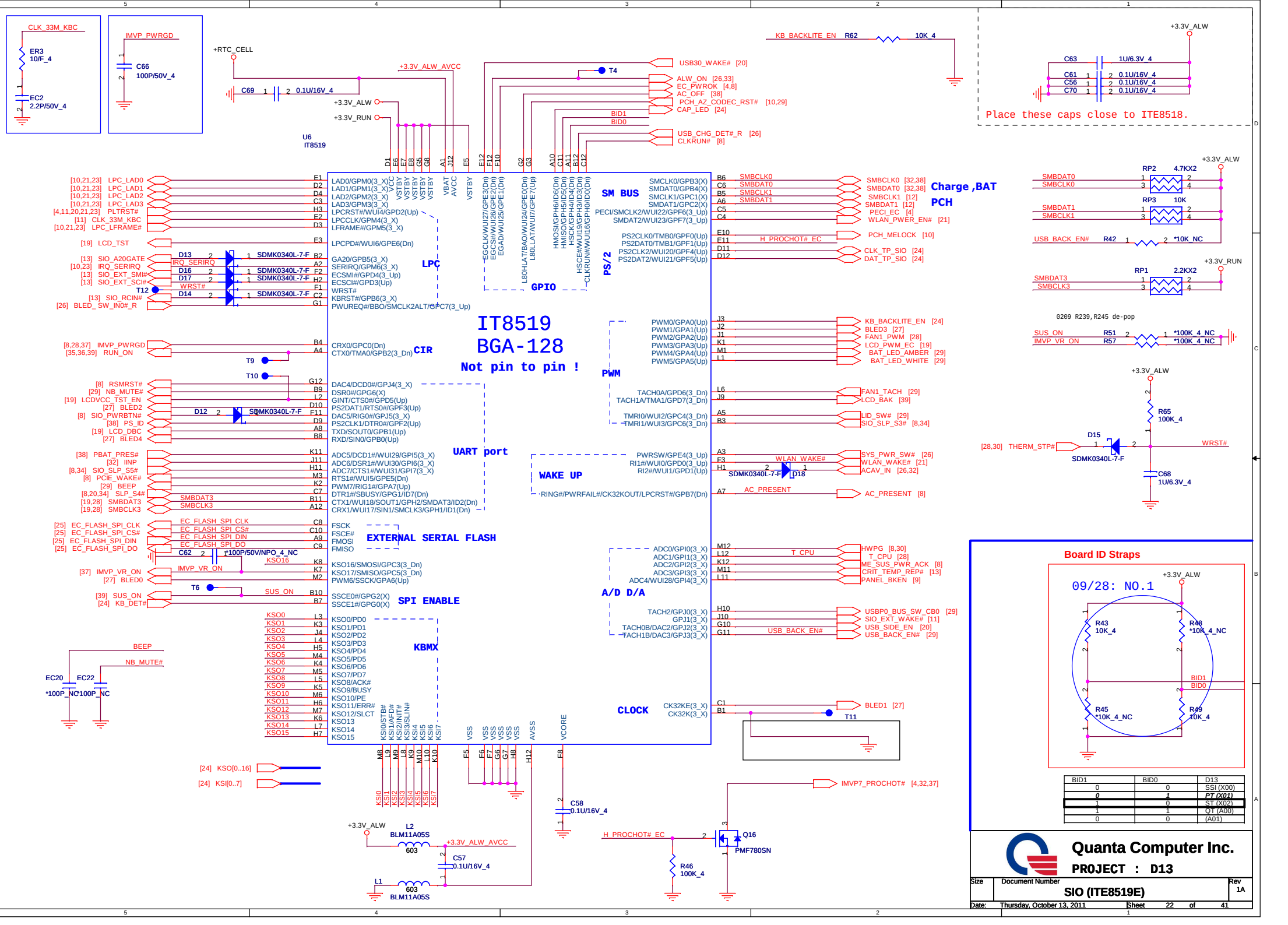






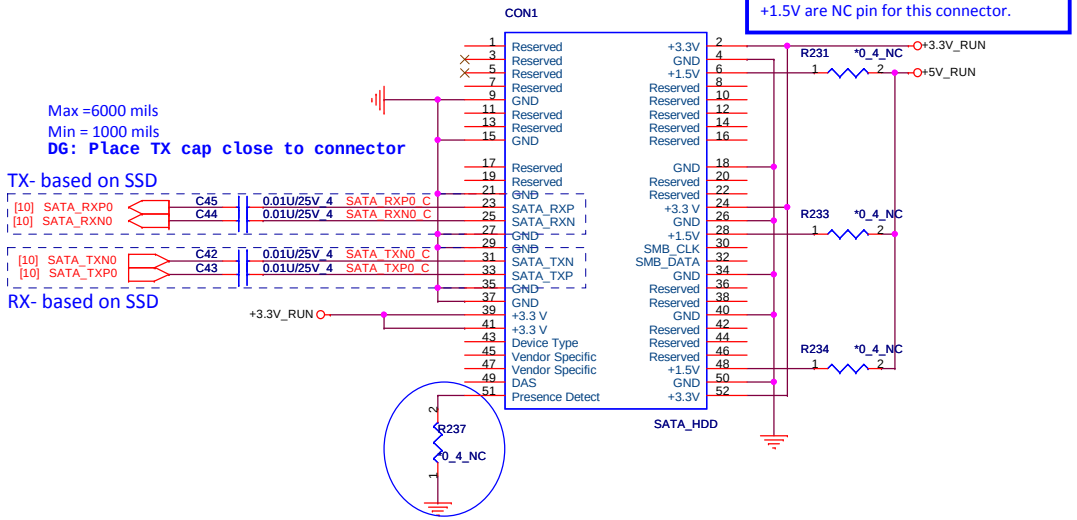


Quanta Computer Inc.		
PROJECT : D13		
Size	Document Number: MINI-PCI (WLAN/WPAN)	Rev: 1A
Date: Thursday, October 13, 2011	Sheet 21 of 41	

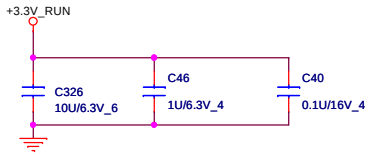

CLK_33M_KBC
ER3 10/F_4
EC2 2.2P/50V_4
IMVP_PWRGD
C66 100P/50V_4
+RTC_CELL
C69 0.1U/16V_4
+3.3V_ALW_AVCC
+3.3V_ALW
+3.3V_RUN
U6
IT8519
KB_BACKLITE_EN R62 10K_4
T4
USB30_WAKE# [20]
ALW_ON [26,33]
EC_PWROK [4,8]
AC_OFF [38]
PCH_AZ_CODEC_RST# [10,29]
CAP_LED [24]
BID1
BID0
USB_CHG_DET#_R [26]
CLKRUN# [8]
+3.3V_ALW
C63 1U/6.3V_4
C61 0.1U/16V_4
C56 0.1U/16V_4
C70 0.1U/16V_4
Place these caps close to ITE8518.
[10,21,23] LPC_LAD0
[10,21,23] LPC_LAD1
[10,21,23] LPC_LAD2
[10,21,23] LPC_LAD3
[4,11,20,21,23] PLTRST#
[11] CLK_33M_KBC
[10,21,23] LPC_LFRAME#
[19] LCD_TST
[13] SIO_A20GATE
[10,23] IRQ_SERIRQ
[13] SIO_EXT_SMI#
[13] SIO_EXT_SCI#
T12
[13] SIO_RCIN#
[26] BLED_SW_IN0#_R
D13 D16 D17 D14
SDMK0340L-7-F
WRST#
LPC
GPIO
SM BUS
PS/2
Charge ,BAT
PCH
SMBCLK0 [32,38]
SMBDAT0 [32,38]
SMBCLK1 [12]
SMBDAT1 [12]
PECI_EC [4]
WLAN_PWER_EN# [21]
H_PROCHOT# EC
PCH_MELOCK [10]
CLK_TP_SIO [24]
DAT_TP_SIO [24]
+3.3V_ALW
RP2 4.7KX2
SMBDAT0
SMBCLK0
RP3 10K
SMBDAT1
SMBCLK1
USB_BACK_EN# R42 *10K_NC
+3.3V_RUN
RP1 2.2KX2
SMBDAT3
SMBCLK3
IT8519
BGA-128
Not pin to pin !
[8,28,37] IMVP_PWRGD
[35,36,39] RUN_ON
T9
T10
CIR
CRX0/GPC0(Dn)
CTX0/TMA0/GPB2(3_Dn)
PWM
PWM0/GPA0(Up)
PWM1/GPA1(Up)
PWM2/GPA2(Up)
PWM3/GPA3(Up)
PWM4/GPA4(Up)
PWM5/GPA5(Up)
KB_BACKLITE_EN [24]
BLED3 [27]
FAN1_PWM [28]
LCD_PWM_EC [19]
BAT_LED_AMBER [29]
BAT_LED_WHITE [29]
0209 R239,R245 de-pop
SUS_ON R51 *100K_4_NC
IMVP_VR_ON R57 *100K_4_NC
+3.3V_ALW
R65 100K_4
D15
[28,30] THERM_STP#
WRST#
SDMK0340L-7-F
C68 1U/6.3V_4
[8] RSMRST#
[29] NB_MUTE#
[19] LCDVCC_TST_EN
[27] BLED2
[8] SIO_PWRBTN#
[38] PS_ID
[19] LCD_DBC
[27] BLED4
D12
UART port
DAC4/DCD0#/GPJ4(3_X)
DSR0#/GPG6(X)
GINT/CTS0#/GPD5(Up)
PS2DAT1/RTS0#/GPF3(Up)
DAC5/RIG0#/GPJ5(3_X)
PS2CLK1/DTR0#/GPF2(Up)
TXD/SOUT0/GPB1(Up)
RXD/SIN0/GPB0(Up)
TACH0A/GPD6(3_Dn)
TACH1A/TMA1/GPD7(3_Dn)
FAN1_TACH [29]
LCD_BAK [39]
TMRI0/WUI2/GPC4(3_Dn)
TMRI1/WUI3/GPC6(3_Dn)
LID_SW# [29]
SIO_SLP_S3# [8,34]
[38] PBAT_PRES#
[32] IINP
[8,34] SIO_SLP_S5#
[8] PCIE_WAKE#
[29] BEEP
[8,20,34] SLP_S4#
[19,28] SMBDAT3
[19,28] SMBCLK3
ADC5/DCD1#/WUI29/GPI5(3_X)
ADC6/DSR1#/WUI30/GPI6(3_X)
ADC7/CTS1#/WUI31/GPI7(3_X)
RTS1#/WUI5/GPE5(Dn)
PWM7/RIG1#/GPA7(Up)
DTR1#/SBUSY/GPG1/ID7(Dn)
CTX1/WUI18/SOUT1/GPH2/SMDAT3/ID2(Dn)
CRX1/WUI17/SIN1/SMCLK3/GPH1/ID1(Dn)
WAKE UP
PWRSW/GPE4(3_Up)
RI1#/WUI0/GPD0(3_Up)
RI2#/WUI1/GPD1(Up)
RING#/PWRFAIL#/CK32KOUT/LPCRST#/GPB7(Dn)
WLAN_WAKE#
SYS_PWR_SW# [26]
WLAN_WAKE# [21]
ACAV_IN [26,32]
SDMK0340L-7-F D18
AC_PRESENT
AC_PRESENT [8]
[25] EC_FLASH_SPI_CLK
[25] EC_FLASH_SPI_CS#
[25] EC_FLASH_SPI_DIN
[25] EC_FLASH_SPI_DO
EC_FLASH_SPI_CLK
EC_FLASH_SPI_CS#
EC_FLASH_SPI_DIN
EC_FLASH_SPI_DO
C62 *100P/50V/NPO_4_NC
FSCK
FSCE#
FMOSI
FMISO
EXTERNAL SERIAL FLASH
[37] IMVP_VR_ON
[27] BLED0
IMVP_VR_ON
KSO16
KSO16/SMOSI/GPC3(3_Dn)
KSO17/SMISO/GPC5(3_Dn)
PWM6/SSCK/GPA6(Up)
T6
[39] SUS_ON
[24] KB_DET#
SUS_ON
SSCE0#/GPG2(X)
SSCE1#/GPG0(X)
SPI ENABLE
A/D D/A
ADC0/GPI0(3_X)
ADC1/GPI1(3_X)
ADC2/GPI2(3_X)
ADC3/GPI3(3_X)
ADC4/WUI28/GPI4(3_X)
T_CPU
HWPG [8,30]
T_CPU [28]
ME_SUS_PWR_ACK [8]
CRIT_TEMP_REP# [13]
PANEL_BKEN [9]
TACH2/GPJ0(3_X)
GPJ1(3_X)
TACH0B/DAC2/GPJ2(3_X)
TACH1B/DAC3/GPJ3(3_X)
USB_BACK_EN#
USBP0_BUS_SW_CB0 [29]
SIO_EXT_WAKE# [11]
USB_SIDE_EN [20]
USB_BACK_EN# [29]
KSO0
KSO1
KSO2
KSO3
KSO4
KSO5
KSO6
KSO7
KSO8
KSO9
KSO10
KSO11
KSO12
KSO13
KSO14
KSO15
KSO0/PD0
KSO1/PD1
KSO2/PD2
KSO3/PD3
KSO4/PD4
KSO5/PD5
KSO6/PD6
KSO7/PD7
KSO8/ACK#
KSO9/BUSY
KSO10/PE
KSO11/ERR#
KSO12/SLCT
KSO13
KSO14
KSO15
KBMX
KSI0/STB#
KSI1/AFD#
KSI2/INIT#
KSI3/SLIN#
KSI4
KSI5
KSI6
KSI7
CLOCK
CK32KE(3_X)
CK32K(3_X)
BLED1 [27]
T11
BEEP
NB_MUTE#
EC20 *100P_NC
EC22 100P_NC
[24] KSO[0..16]
[24] KSI[0..7]
VSS
VCORE
AVSS
C58 0.1U/16V_4
IMVP7_PROCHOT# [4,32,37]
H_PROCHOT# EC
Q16 PMF780SN
R46 100K_4
+3.3V_ALW
L2 BLM11A05S 603
+3.3V_ALW_AVCC
C57 0.1U/16V_4
L1 603 BLM11A05S
Board ID Straps
09/28: NO.1
+3.3V_ALW
R43 10K_4
R48 *10K_4_NC
R45 *10K_4_NC
R49 10K_4
BID1
BID0
BID1 BID0 D13
0 0 SSI (X00)
0 1 PT (X01)
1 0 ST (X02)
1 1 QT (A00)
0 0 (A01)
Quanta Computer Inc.
PROJECT : D13
Size
Document Number
SIO (ITE8519E)
Rev 1A
Date: Thursday, October 13, 2011
Sheet 22 of 41

mSATA Connector

+5V_RUN is for testing mSATA by factory.
+1.5V are NC pin for this connector.

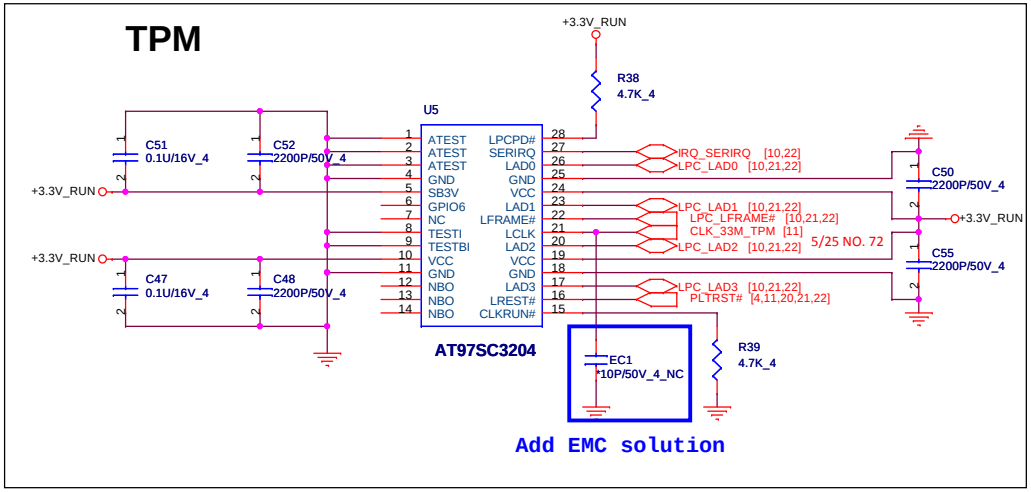


10/204 NO.7



Place caps close to connector.

TPM

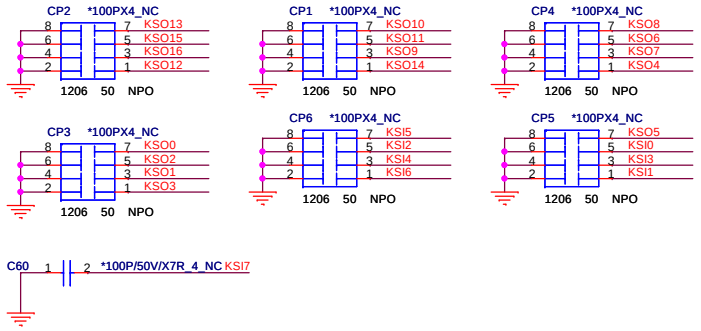


Add EMC solution

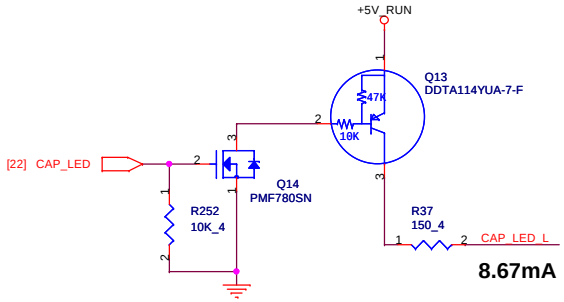
Quanta Computer Inc.		
PROJECT : D13		
Size	Document Number: SATA HDD/ODD	Rev: 1A
Date: Thursday, October 13, 2011	Sheet 23 of 41	

KEYBOARD CONNECTOR

03/30 Change CP1,CP2,CP3,CP4,CP5,CP6,C382 from Pop to Depop



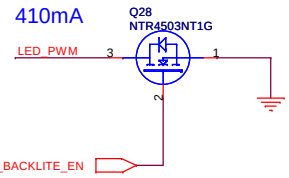
Vi(on_max)= -1.4V
Vi(off_min)=-0.3



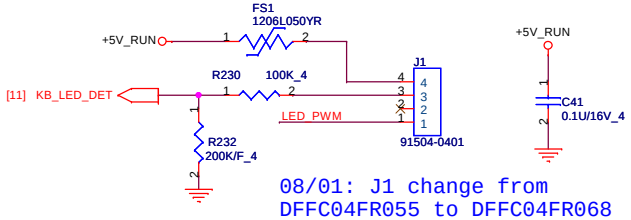
8.67mA

Key board illumination

410mA

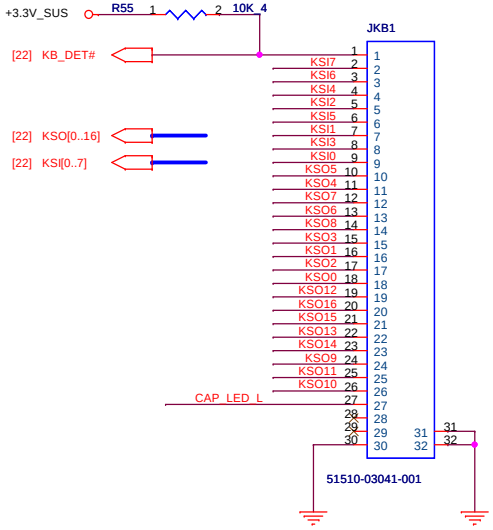


+KB_LED power trace width >10 mil



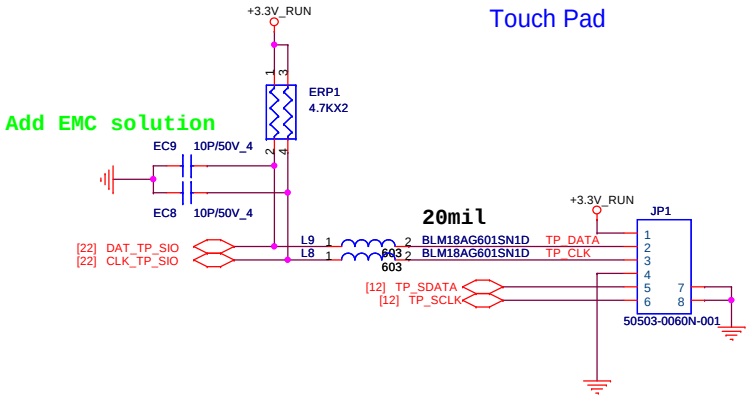
08/01: J1 change from
DFFC04FR055 to DFFC04FR068

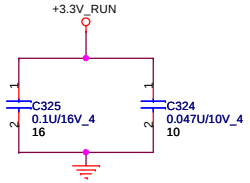
KEYBOARD CONNECTOR



Touch Pad

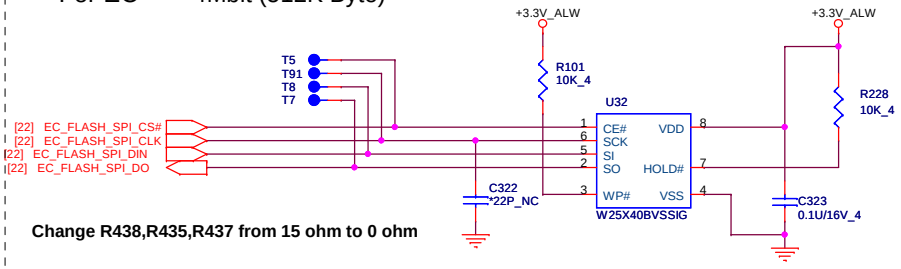
Add EMC solution





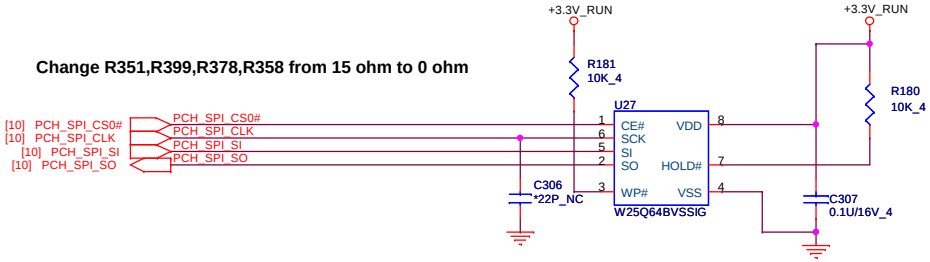
Quanta Computer Inc.		
PROJECT : D13		
Size	Document Number: TP / KB	Rev: 1A
Date: Thursday, October 13, 2011	Sheet 24 of 41	

For EC 4Mbit (512K Byte)



Change R438,R435,R437 from 15 ohm to 0 ohm

For PCH 64Mbit (8M Byte)

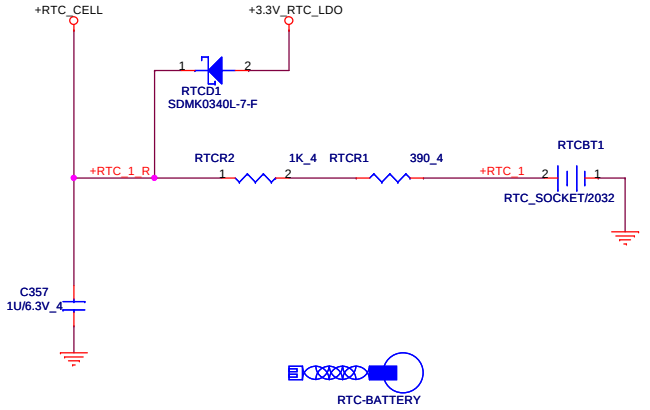


Change R351,R399,R378,R358 from 15 ohm to 0 ohm

Change SPI ROM for BIOS to AKE3EFP0N04 -0613

The max charge current is flow on charged at the end voltage of battery
2V. And the charge current is 1mA.
R >= (+RTC_CELL - 2)/1mA

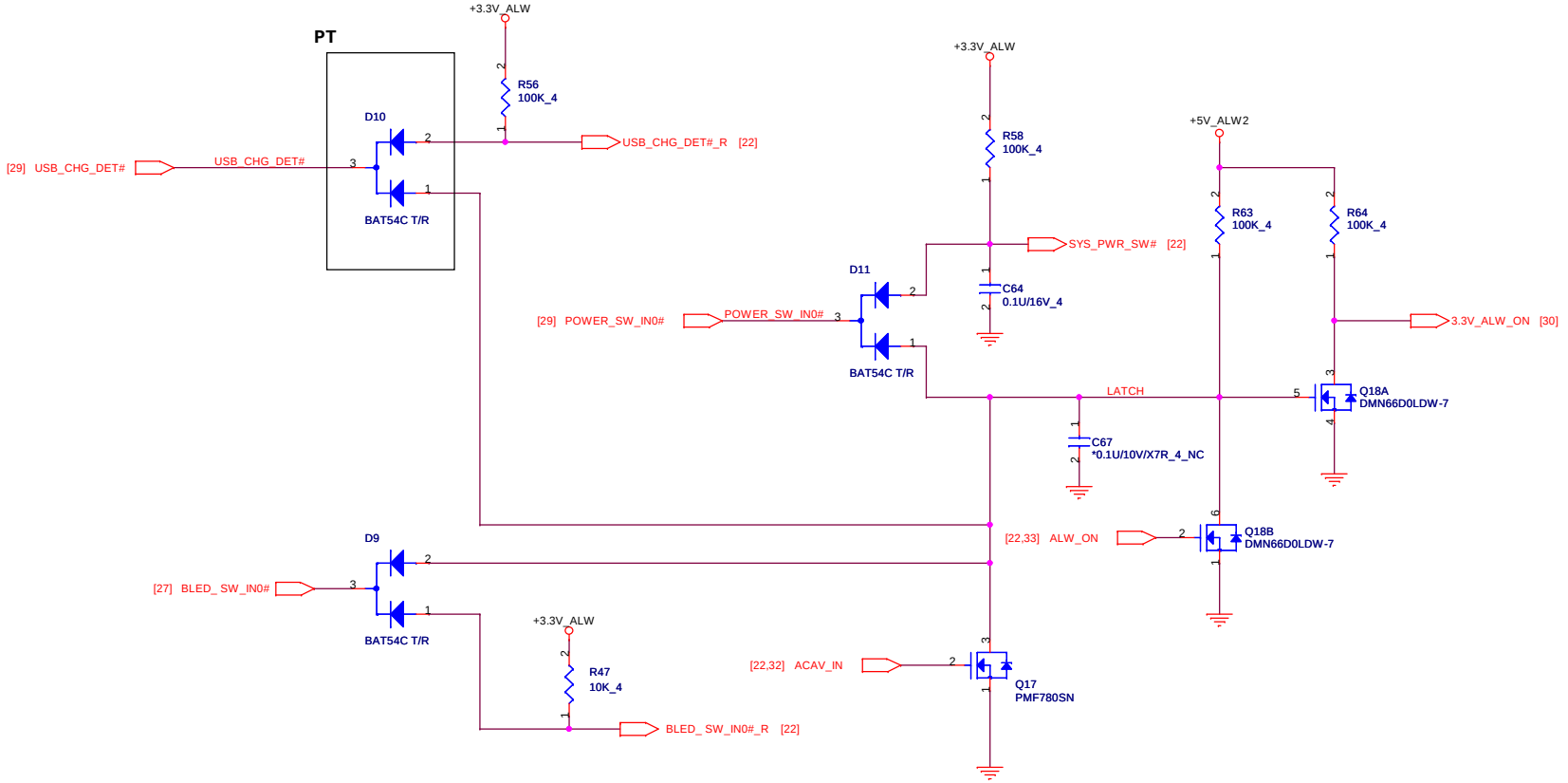
RTC BATTERY



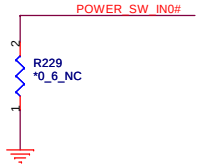
Quanta Computer Inc.
PROJECT : D13

Size	Document Number	Rev
	FLASH / RTC	1A
Date: Thursday, October 13, 2011	Sheet 25 of 41	

3VALW ON POWER LOGIC



For Debug PWR SW

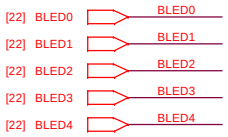


Quanta Computer Inc.		
PROJECT : D13		
Size	Document Number: PWR SW/LED	Rev: 1A
Date: Thursday, October 13, 2011	Sheet 26 of 41	

Truth table of Battery LED

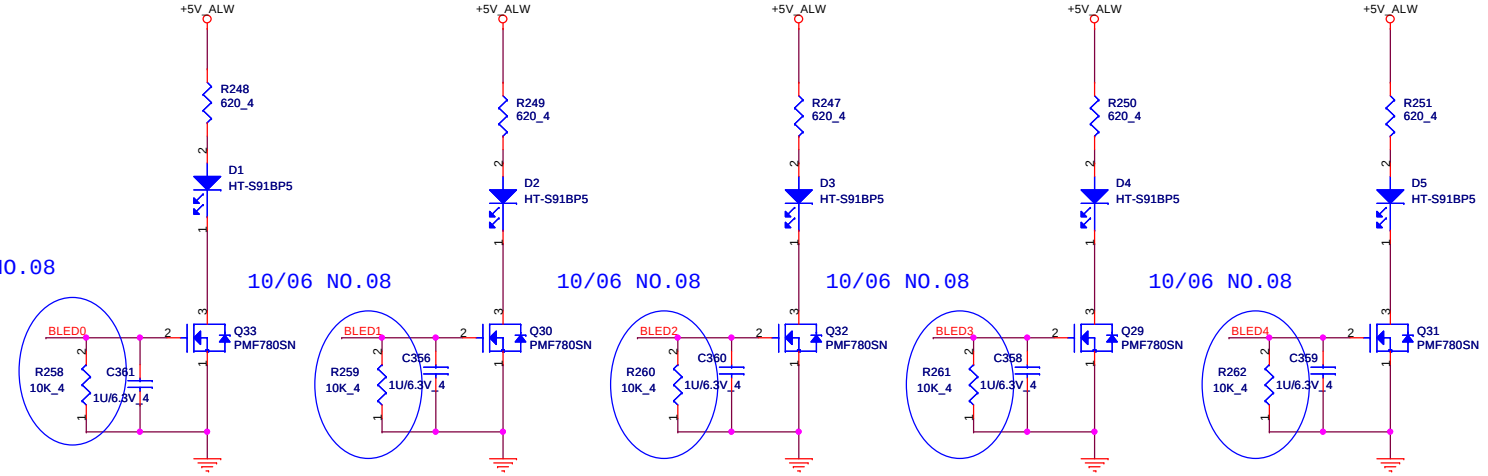
Battery Power State	BLED4	BLED3	BLED2	BLED1	BLED0	LED State
<20%	0	0	0	0	0	N/A
20%	0	0	0	0	1	D29
40%	0	0	0	1	1	D29 D30
60%	0	0	1	1	1	D29 D30 D31
80%	0	1	1	1	1	D29 D30 D31 D32
100%	1	1	1	1	1	D29 D30 D31 D32 D33

Battery Status LED



10/14, change current limit resistor from 365 ohm to 620

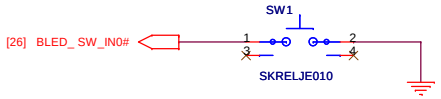
10/06 NO.08



10/06 NO.08 10/06 NO.08 10/06 NO.08 10/06 NO.08

Battery LED need to change direction

Battery LED button

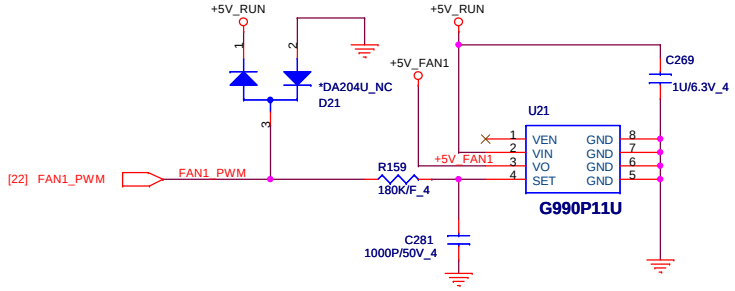


Quanta Computer Inc.

PROJECT : D13

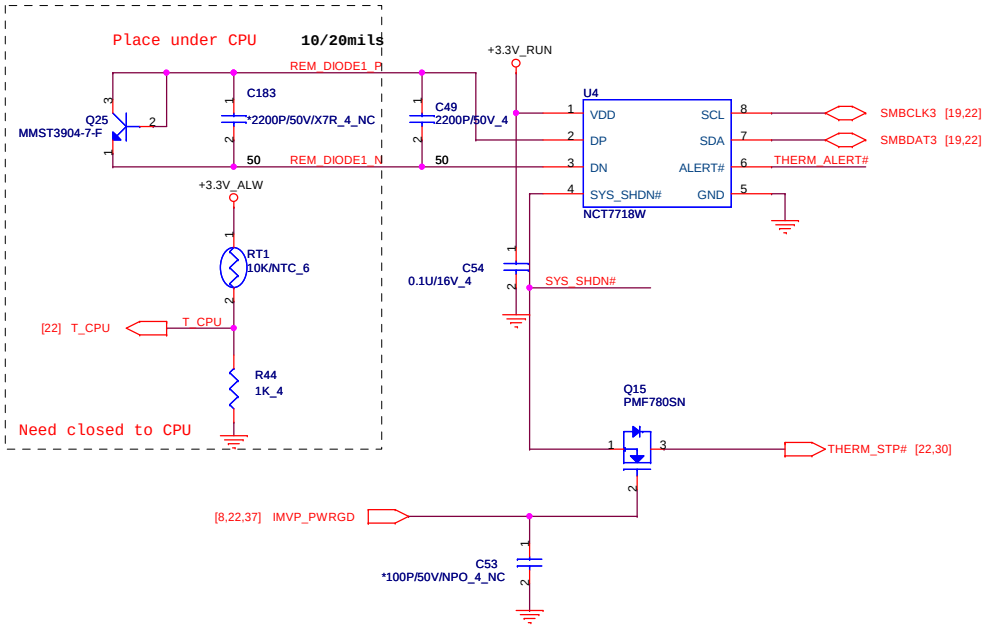
Size	Document Number	Rev
	LED SWITCH	1A

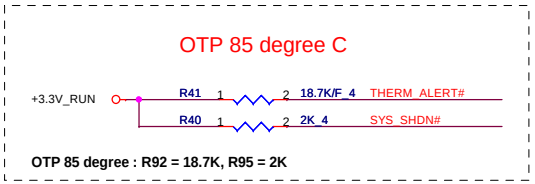
Date: Friday, October 14, 2011 Sheet 27 of 41



THERMAL IC

SYS_SHD# / ALERT#	2K	7.5K	10.5K	14K	18.7K
2K	77'C	87'C	97'C	107'C	117'C
7.5K	79'C	89'C	99'C	109'C	119'C
10.5K	81'C	91'C	101'C	111'C	121'C
14K	83'C	93'C	103'C	113'C	123'C
18.7K	85'C	95'C	105'C	115'C	125'C

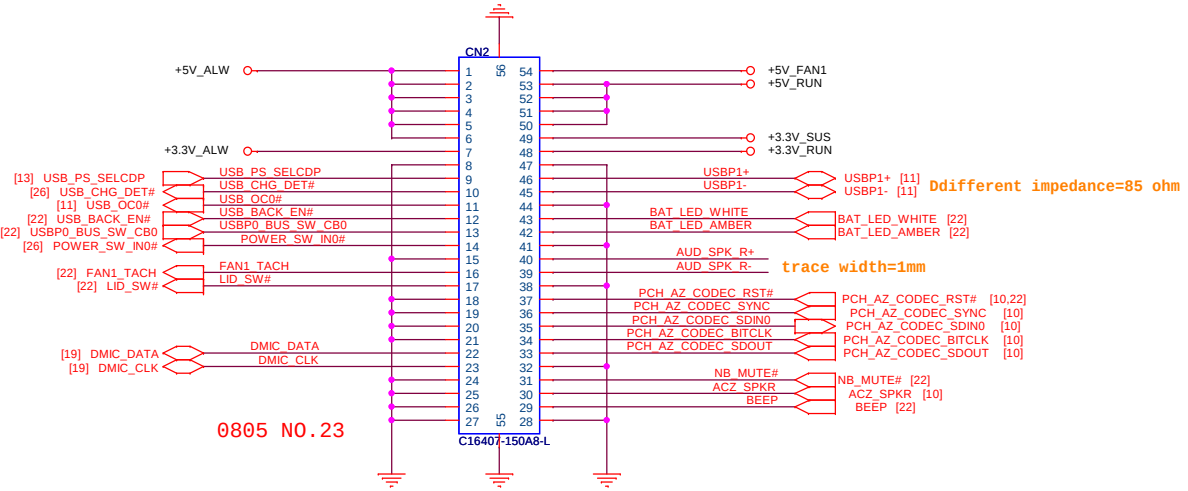


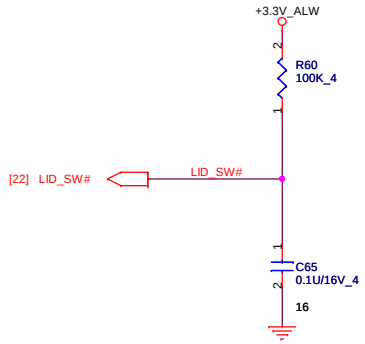


Quanta Computer Inc.
PROJECT : D13

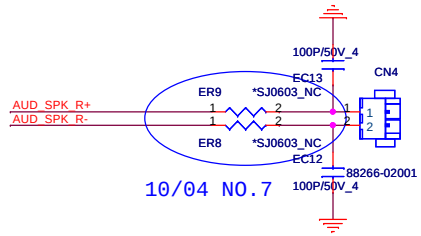
Size	Document Number	Rev
	FAN & THERMAL	1A

Date: Thursday, October 13, 2011 Sheet 28 of 41

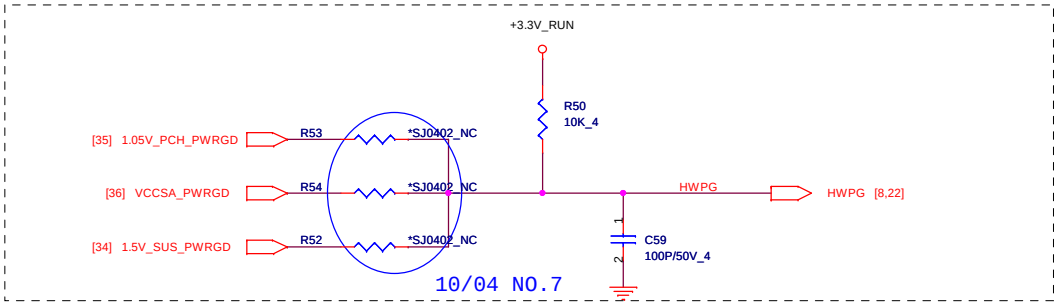


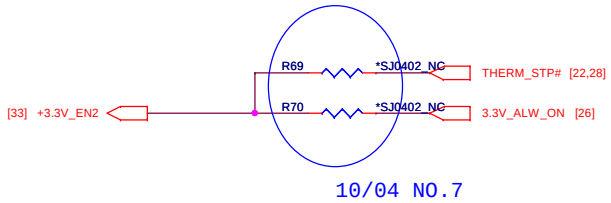


08/01: change CN4 PN from DFHD02MR401 change to DFHD02MR045



Quanta Computer Inc.		
PROJECT : D13		
Size	Document Number: BTB connector	Rev: 1A
Date: Thursday, October 13, 2011	Sheet 29 of 41	





Quanta Computer Inc.

PROJECT : D13

Size	Document Number	Rev
	System Reset Circuit	1A

Date: Thursday, October 13, 2011 Sheet 30 of 41

Need to add in BOM

H7
h-tc217bc197d102p2
1
h-tc217bc197d102p2

H8
h-tc217bc197d102p2
1
h-tc217bc197d102p2

H6
h-tc217bc197d102p2
1
h-tc217bc197d102p2

H10
H-C220D142P2
1
H-C220D142P2

H11
h-tc217bc197d102p2
1
h-tc217bc197d102p2

H12
h-tc217bc197d102p2
1
h-tc217bc197d102p2

BOT-Size
Need to modify PN

TOP-Size

H4
h-tc166i131bc177d91p2
1
*h-tc166i131bc177d91p2_NC

H3
H-TC197BC221D91P2
1
*H-TC197BC221D91P2_NC

H5
H-C217D91P2
1
*H-C217D91P2_NC

H1
H-C79D79N
1
*H-C79D79N_NC

09/30: NO.6

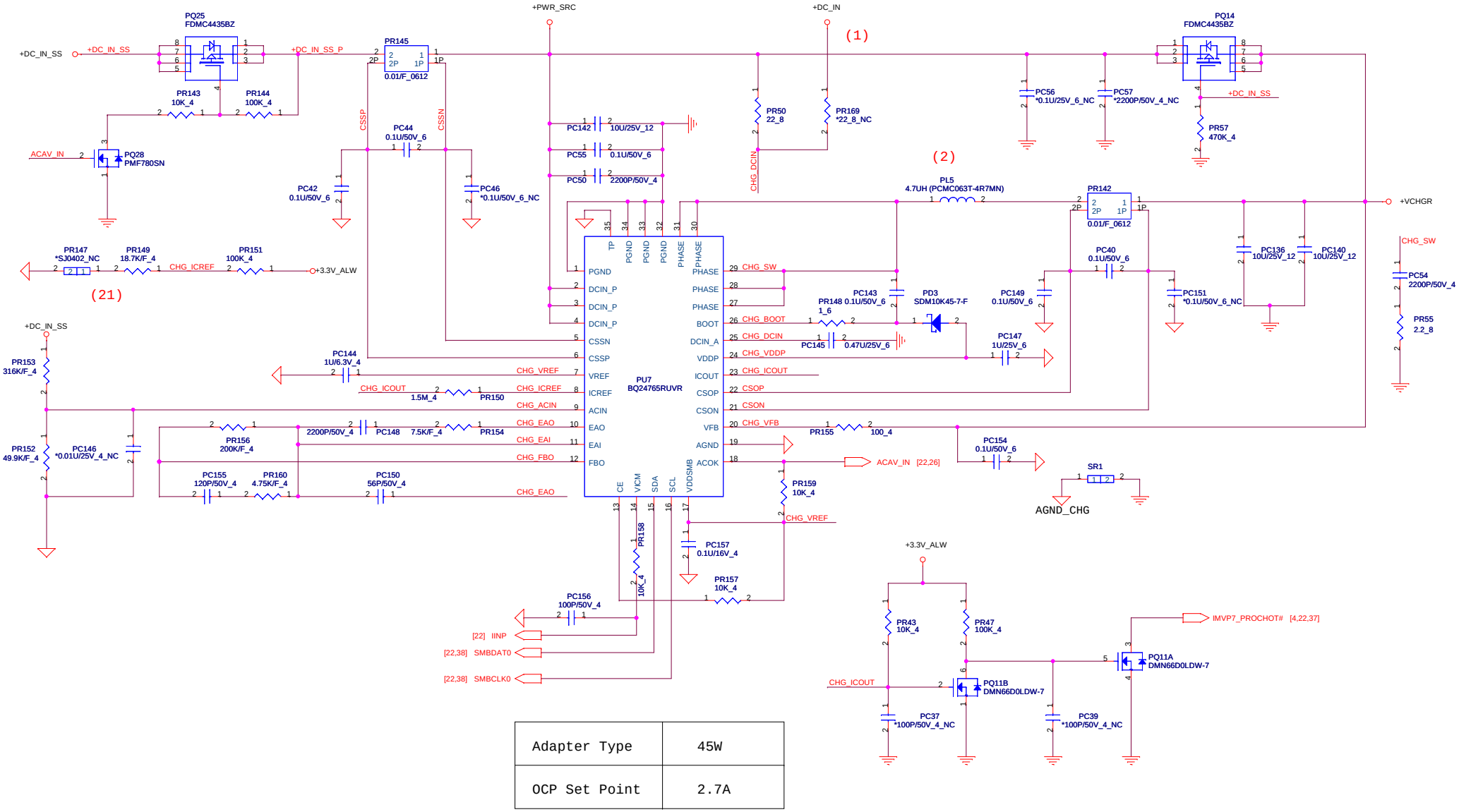
H9
H-TC197I131BC220D91P2
1
*H-TC197I131BC220D91P2_NC

H2
h-o79x87d79x87n
1
*h-o79x87d79x87n_NC

Quanta Computer Inc.
PROJECT : D13

Size	Document Number	Rev
	SCREW PAD	1A

Date: Thursday, October 13, 2011 Sheet 31 of 41



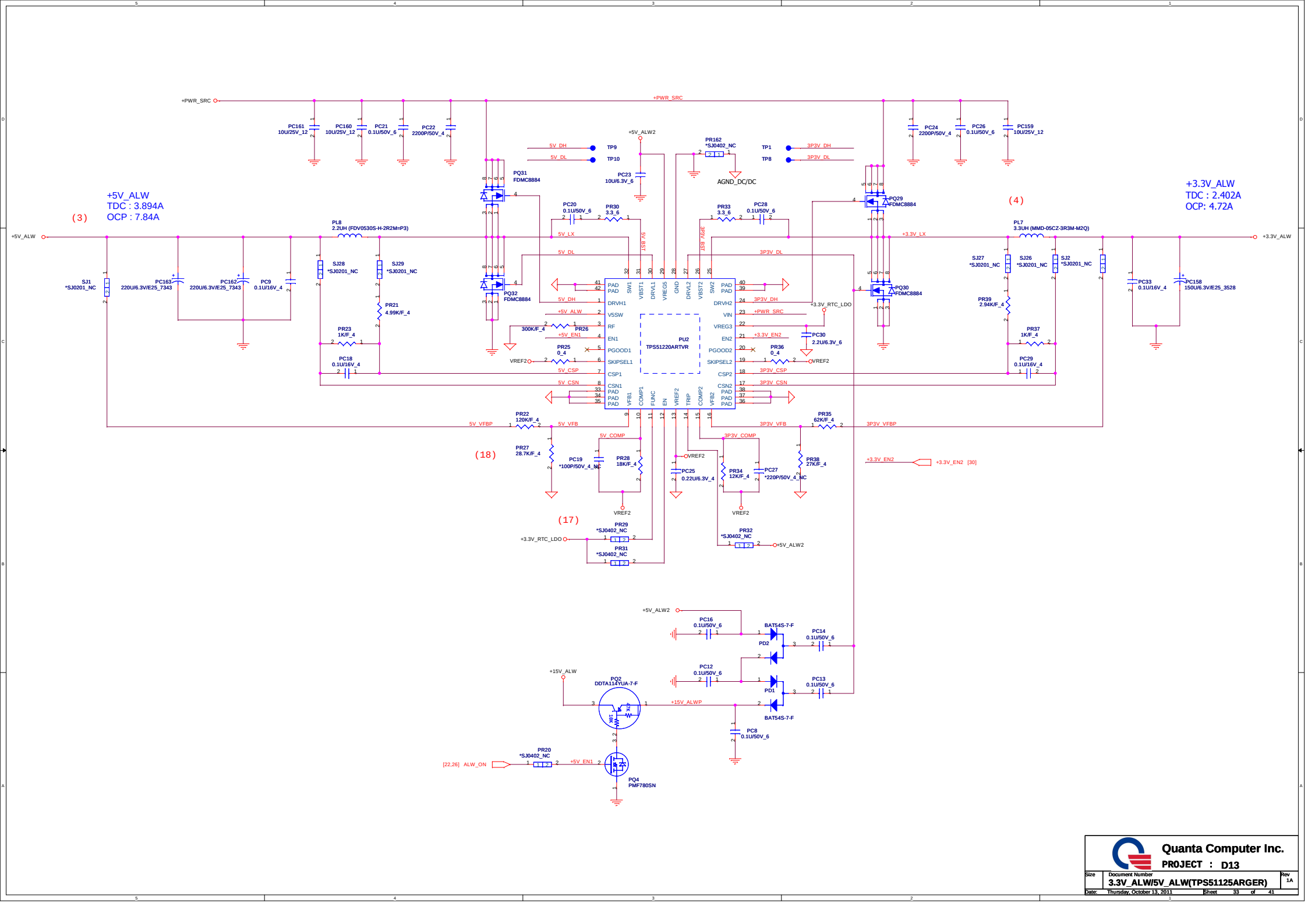
Adapter Type	45W
OCP Set Point	2.7A

Quanta Computer Inc.

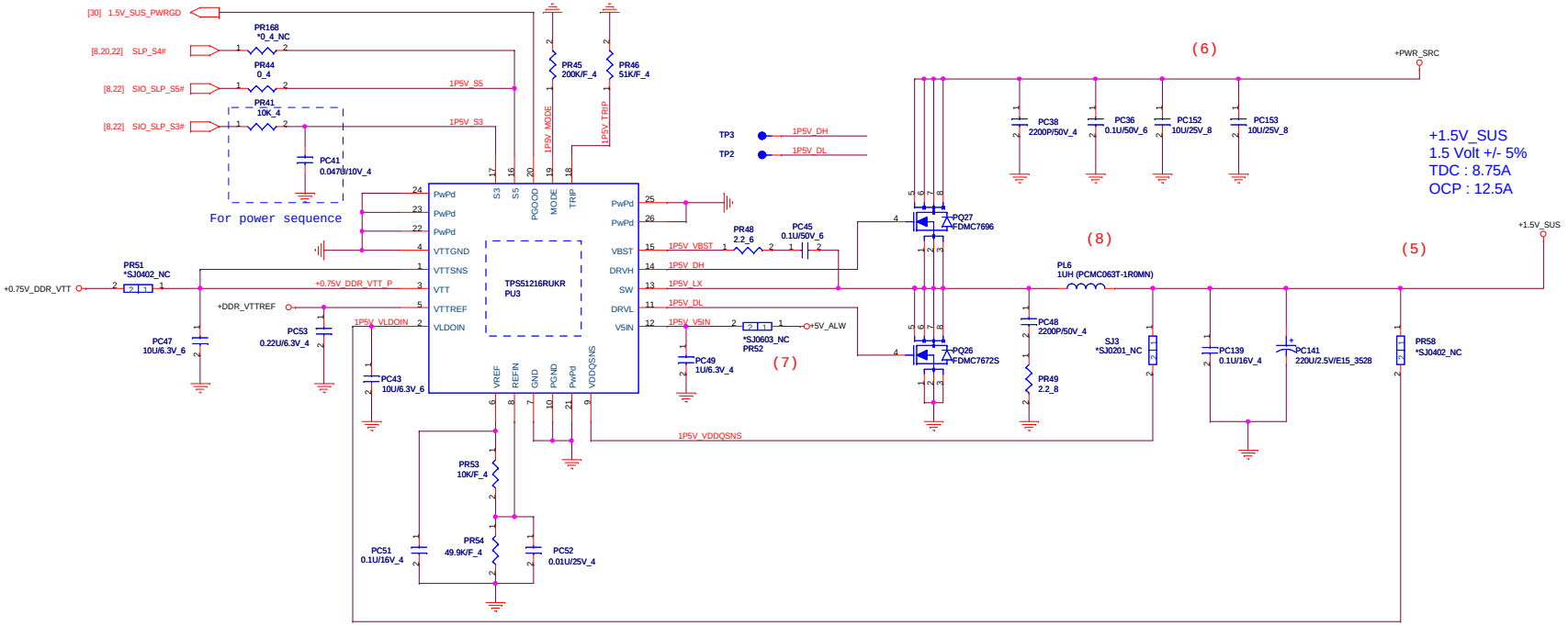
PROJECT : D13

Size	Document Number	Rev
	Charger (BQ24765RUVR)	1A

Date: Thursday, October 13, 2011 Sheet 32 of 41



Quanta Computer Inc.			
PROJECT : D13			
Size	Document Number		Rev
	3.3V_ALW/5V_ALW(TPS51125ARGER)		1A
Date: Thursday, October 13, 2011	Sheet 33 of 41		

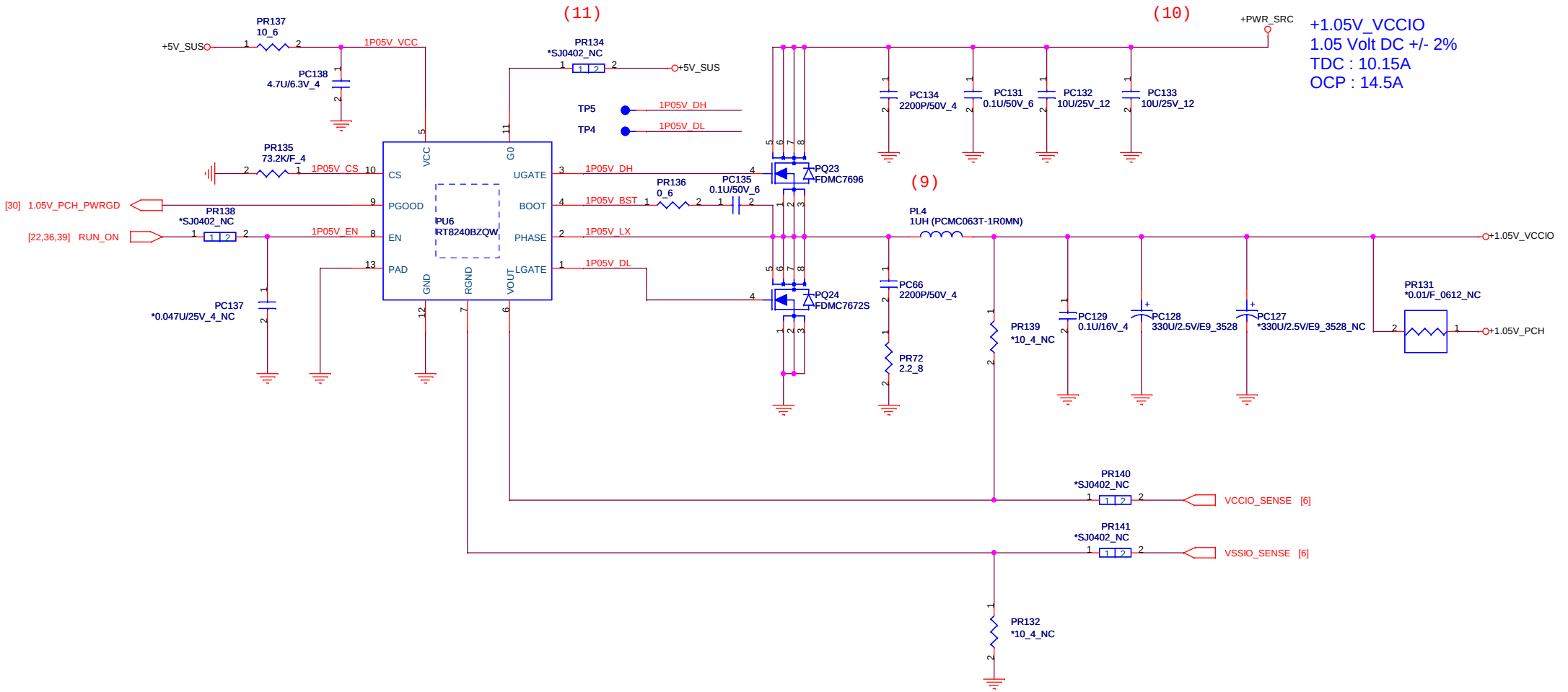


Quanta Computer Inc.

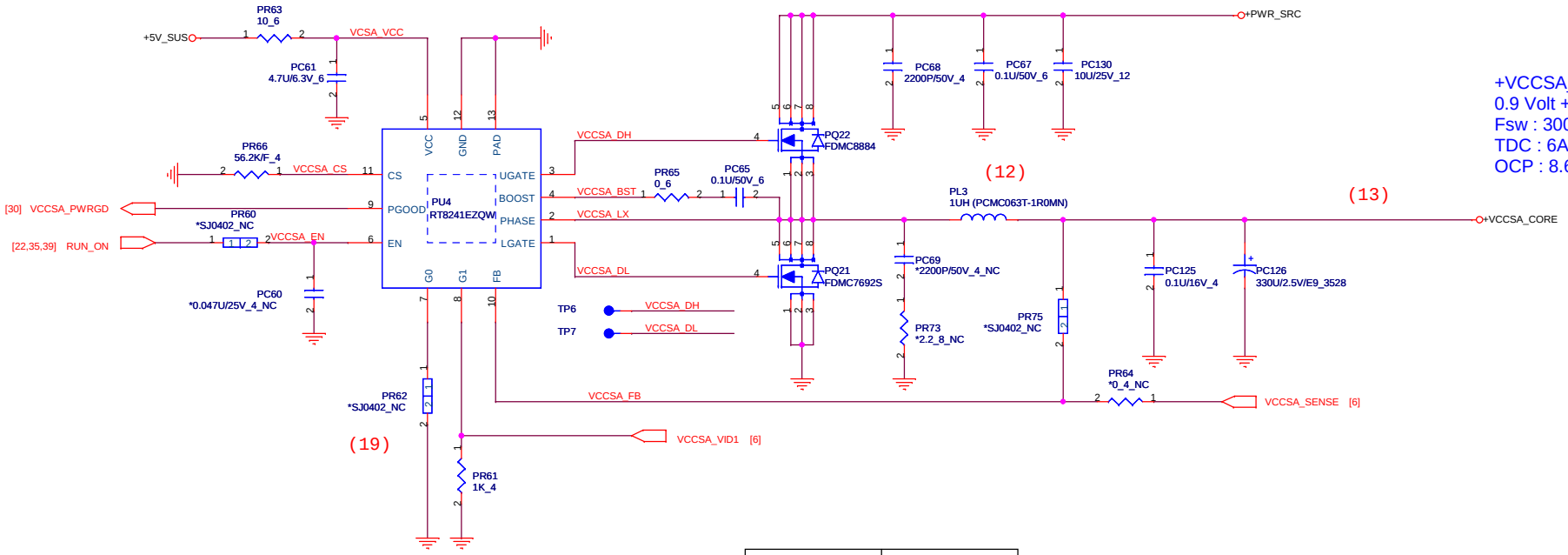
PROJECT : D13

Size	Document Number	Rev
	1.5_SUS/0.75_DDR_VTT	1A

Date: Thursday, October 13, 2011 Sheet 34 of 41

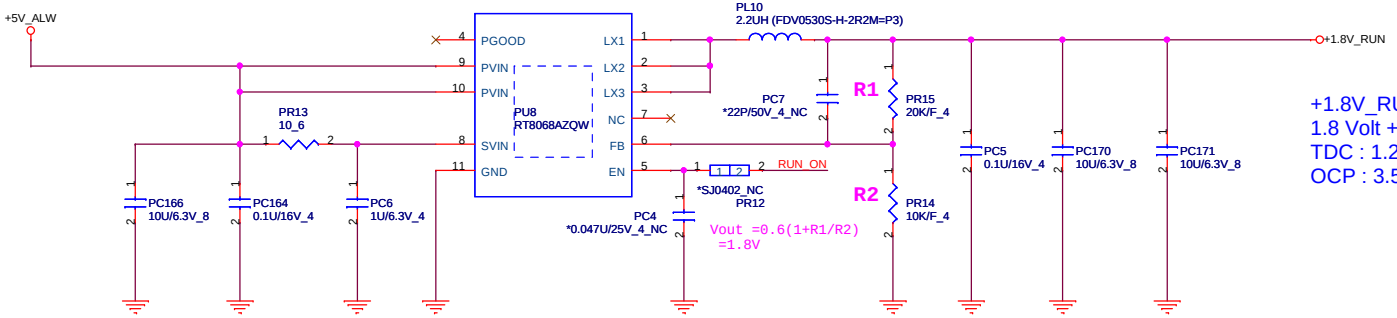


Quanta Computer Inc.		
PROJECT : D13		
Size	Document Number: 1.05V_VTT/1.05V_PCH	Rev: 1A
Date: Thursday, October 13, 2011	Sheet 35 of 41	



+VCCSA_CORE
0.9 Volt +/- 5%
Fsw : 300K
TDC : 6A
OCP : 8.6A

VCCSA_VID1	VCCSA_CORE
Low	0.9V
High	0.85V

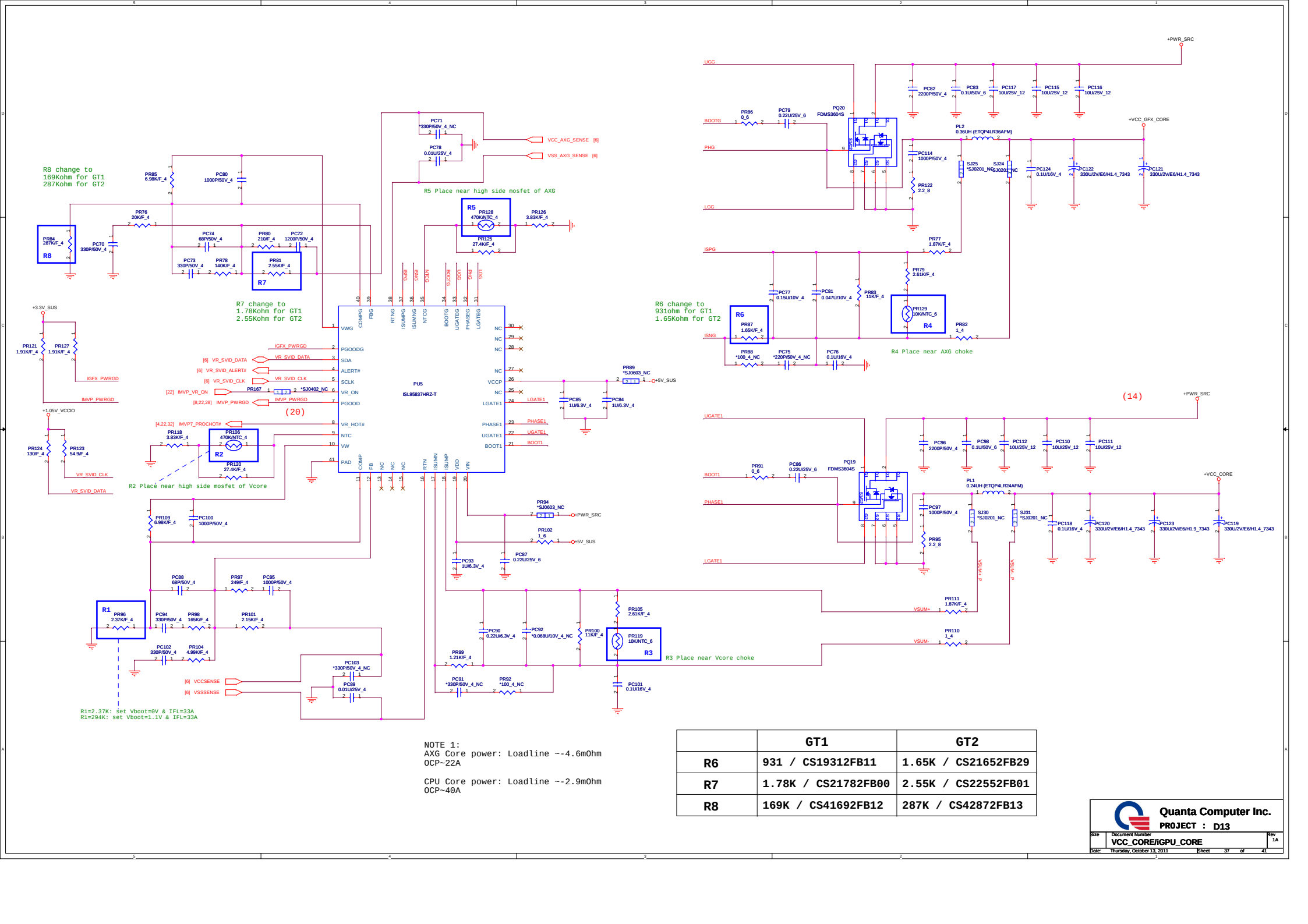


+1.8V_RUN
1.8 Volt +/- 5%
TDC : 1.23A
OCP : 3.5A

Quanta Computer Inc.
PROJECT : D13

Size	Document Number	Rev
	VCCSA_CORE/1.8V_RUN	1A

Date: Thursday, October 13, 2011 Sheet 36 of 41



NOTE 1:
AXG Core power: Loadline ~-4.6mOhm
OCP~22A

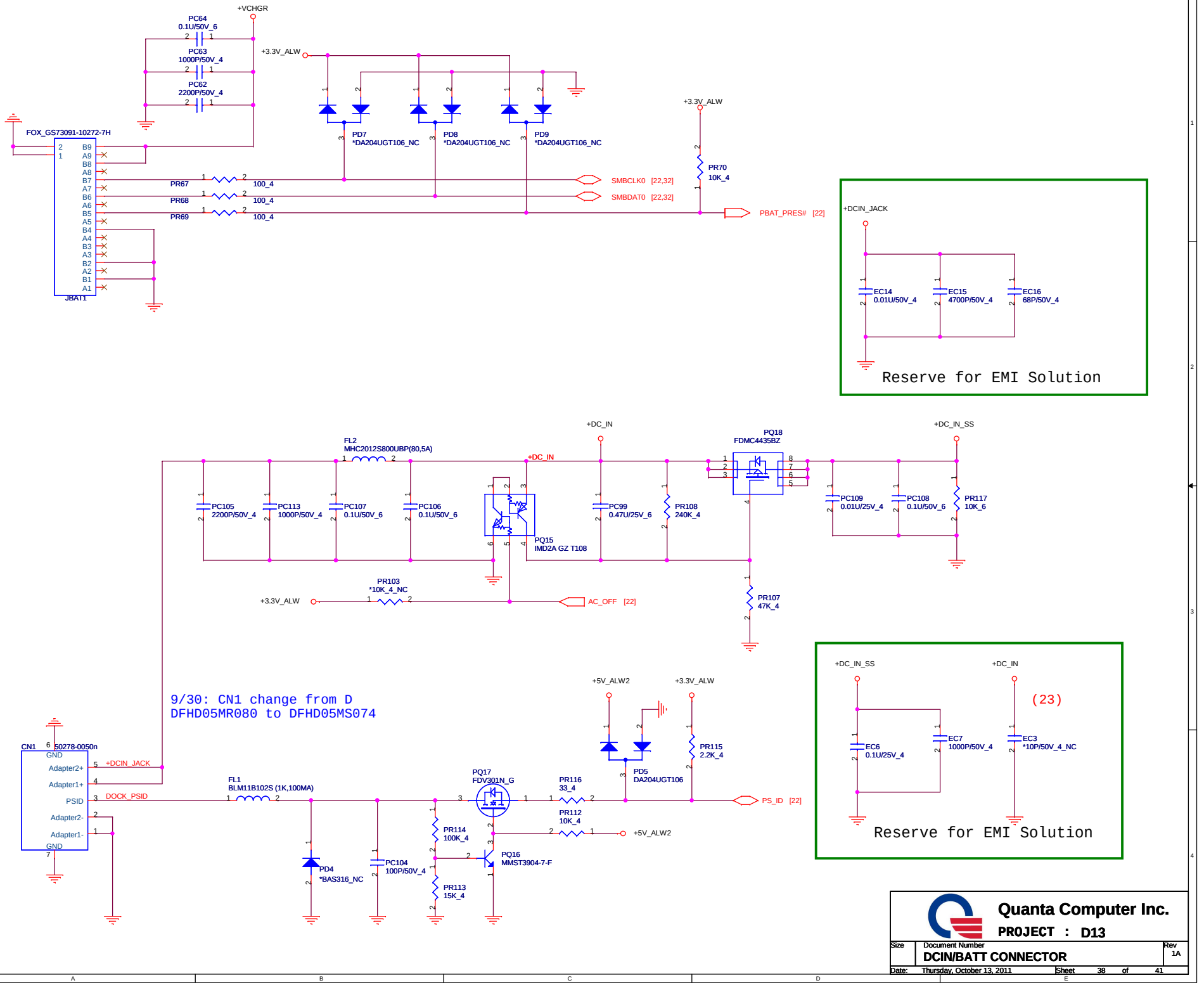
CPU Core power: Loadline ~-2.9mOhm
OCP~40A

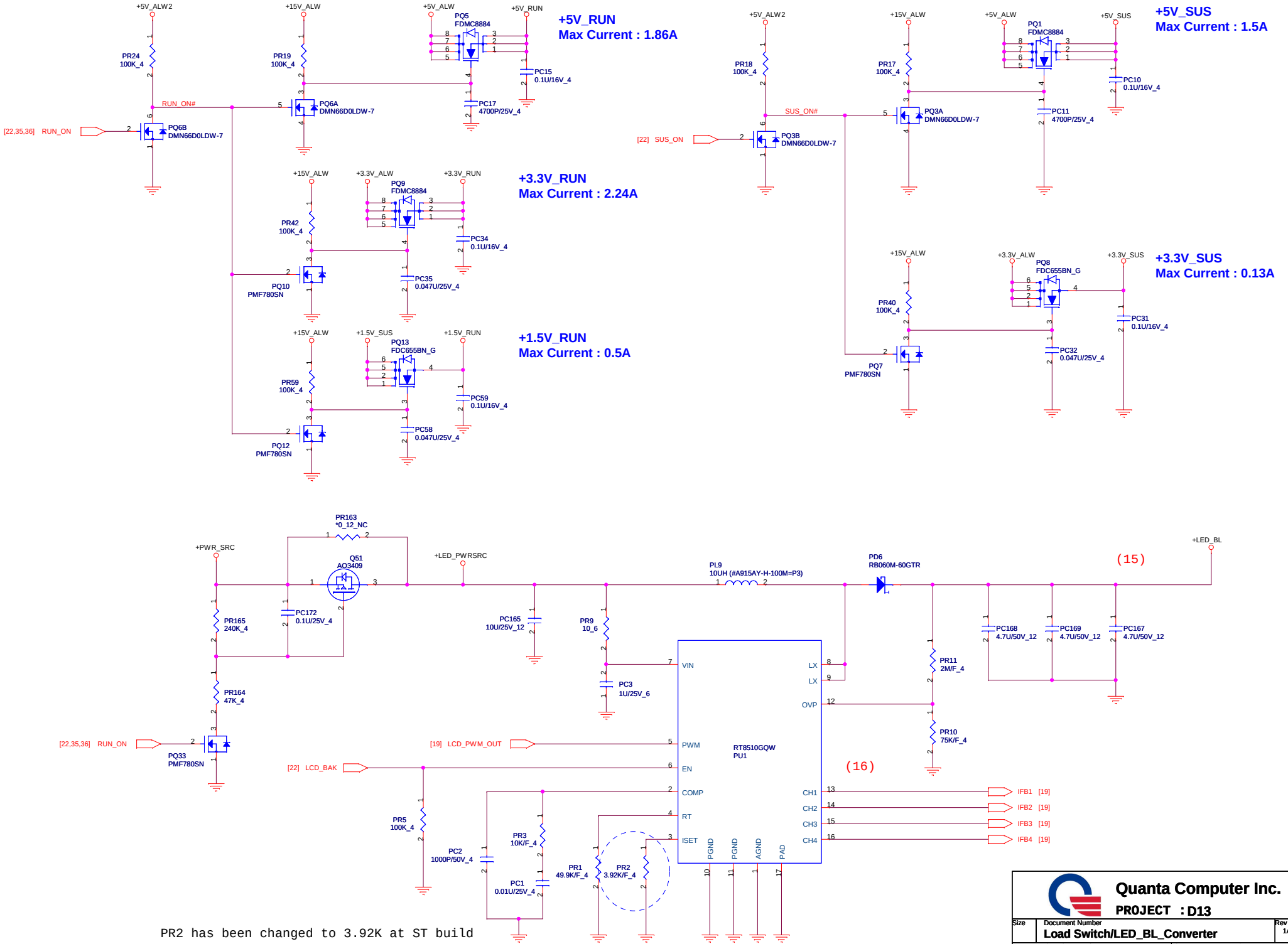
	GT1	GT2
R6	931 / CS19312FB11	1.65K / CS21652FB29
R7	1.78K / CS21782FB00	2.55K / CS22552FB01
R8	169K / CS41692FB12	287K / CS42872FB13

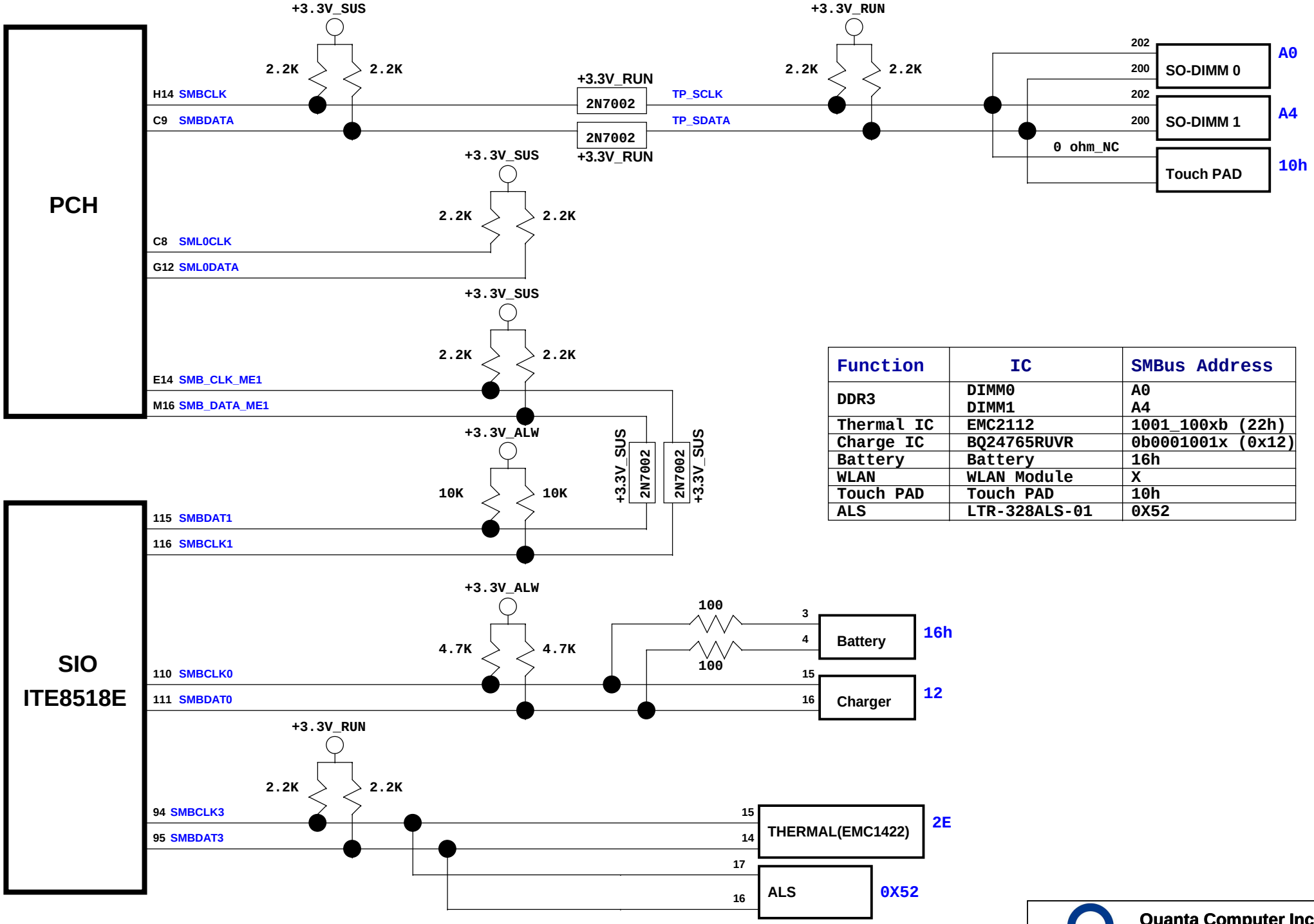
Quanta Computer Inc.
PROJECT : D13

Size	Document Number	Rev
	VCC_CORE/IGPU_CORE	1A

Date: Thursday, October 13, 2011 Sheet 37 of 41


+VCHGR
PC64
0.1U/50V_6
PC63
1000P/50V_4
PC62
2200P/50V_4
+3.3V_ALW
PD7
*DA204UGT106_NC
PD8
*DA204UGT106_NC
PD9
*DA204UGT106_NC
FOX_GS73091-10272-7H
JBAT1
PR67
PR68
PR69
100_4
SMBCLK0 [22,32]
SMBDAT0 [22,32]
PR70
10K_4
PBAT_PRES# [22]
+DCIN_JACK
EC14
0.01U/50V_4
EC15
4700P/50V_4
EC16
68P/50V_4
Reserve for EMI Solution
FL2
MHC2012S800UBP(80,5A)
+DC_IN
PC105
2200P/50V_4
PC113
1000P/50V_4
PC107
0.1U/50V_6
PC106
0.1U/50V_6
PQ15
IMD2A GZ T108
PC99
0.47U/25V_6
PR108
240K_4
PQ18
FDMC4435BZ
+DC_IN_SS
PC109
0.01U/25V_4
PC108
0.1U/50V_6
PR117
10K_6
PR103
*10K_4_NC
AC_OFF [22]
PR107
47K_4
9/30: CN1 change from D
DFHD05MR080 to DFHD05MS074
CN1
50278-0050n
GND
Adapter2+
Adapter1+
PSID
Adapter2-
Adapter1-
GND
+DCIN_JACK
DOCK_PSID
FL1
BLM11B102S (1K,100MA)
PD4
*BAS316_NC
PC104
100P/50V_4
PR114
100K_4
PR113
15K_4
PQ16
MMST3904-7-F
PQ17
FDV301N_G
PR116
33_4
PR112
10K_4
+5V_ALW2
+3.3V_ALW
PD5
DA204UGT106
PR115
2.2K_4
PS_ID [22]
+DC_IN_SS
+DC_IN
EC6
0.1U/25V_4
EC7
1000P/50V_4
(23)
EC3
*10P/50V_4_NC
Reserve for EMI Solution
Quanta Computer Inc.
PROJECT : D13
Size
Document Number
DCIN/BATT CONNECTOR
Rev
1A
Date: Thursday, October 13, 2011
Sheet 38 of 41


+5V_RUN
Max Current : 1.86A
+5V_SUS
Max Current : 1.5A
+3.3V_RUN
Max Current : 2.24A
+3.3V_SUS
Max Current : 0.13A
+1.5V_RUN
Max Current : 0.5A
+5V_ALW2
+15V_ALW
+5V_ALW
+5V_RUN
+5V_SUS
+3.3V_ALW
+3.3V_RUN
+3.3V_SUS
+1.5V_SUS
+1.5V_RUN
PR24 100K_4
PR19 100K_4
PR18 100K_4
PR17 100K_4
PR42 100K_4
PR40 100K_4
PR59 100K_4
PQ5 FDMC8884
PQ1 FDMC8884
PQ9 FDMC8884
PQ8 FDC655BN_G
PQ13 FDC655BN_G
PQ6A DMN66D0LDW-7
PQ6B DMN66D0LDW-7
PQ3A DMN66D0LDW-7
PQ3B DMN66D0LDW-7
PQ10 PMF780SN
PQ7 PMF780SN
PQ12 PMF780SN
PQ33 PMF780SN
PC15 0.1U/16V_4
PC17 4700P/25V_4
PC10 0.1U/16V_4
PC11 4700P/25V_4
PC34 0.1U/16V_4
PC35 0.047U/25V_4
PC31 0.1U/16V_4
PC32 0.047U/25V_4
PC59 0.1U/16V_4
PC58 0.047U/25V_4
RUN_ON#
SUS_ON#
[22,35,36] RUN_ON
[22] SUS_ON
PR163 *0_12_NC
+PWR_SRC
Q51 AO3409
+LED_PWRSRC
PL9 10UH (#A915AY-H-100M=P3)
PD6 RB060M-60GTR
+LED_BL
(15)
PR165 240K_4
PR164 47K_4
PC172 0.1U/25V_4
PC165 10U/25V_12
PR9 10_6
PC3 1U/25V_6
PC168 4.7U/50V_12
PC169 4.7U/50V_12
PC167 4.7U/50V_12
PR11 2M/F_4
PR10 75K/F_4
[19] LCD_PWM_OUT
[22] LCD_BAK
RT8510GQW PU1
VIN
PWM
EN
COMP
RT
ISET
LX
LX
OVP
CH1
CH2
CH3
CH4
PGND
PGND
AGND
PAD
(16)
IFB1 [19]
IFB2 [19]
IFB3 [19]
IFB4 [19]
PR5 100K_4
PR3 10K/F_4
PR1 49.9K/F_4
PR2 3.92K/F_4
PC2 1000P/50V_4
PC1 0.01U/25V_4
PR2 has been changed to 3.92K at ST build
Quanta Computer Inc.
PROJECT : D13
Size
Document Number
Load Switch/LED_BL_Converter
Rev 1A
Date: Thursday, October 13, 2011
Sheet 39 of 41



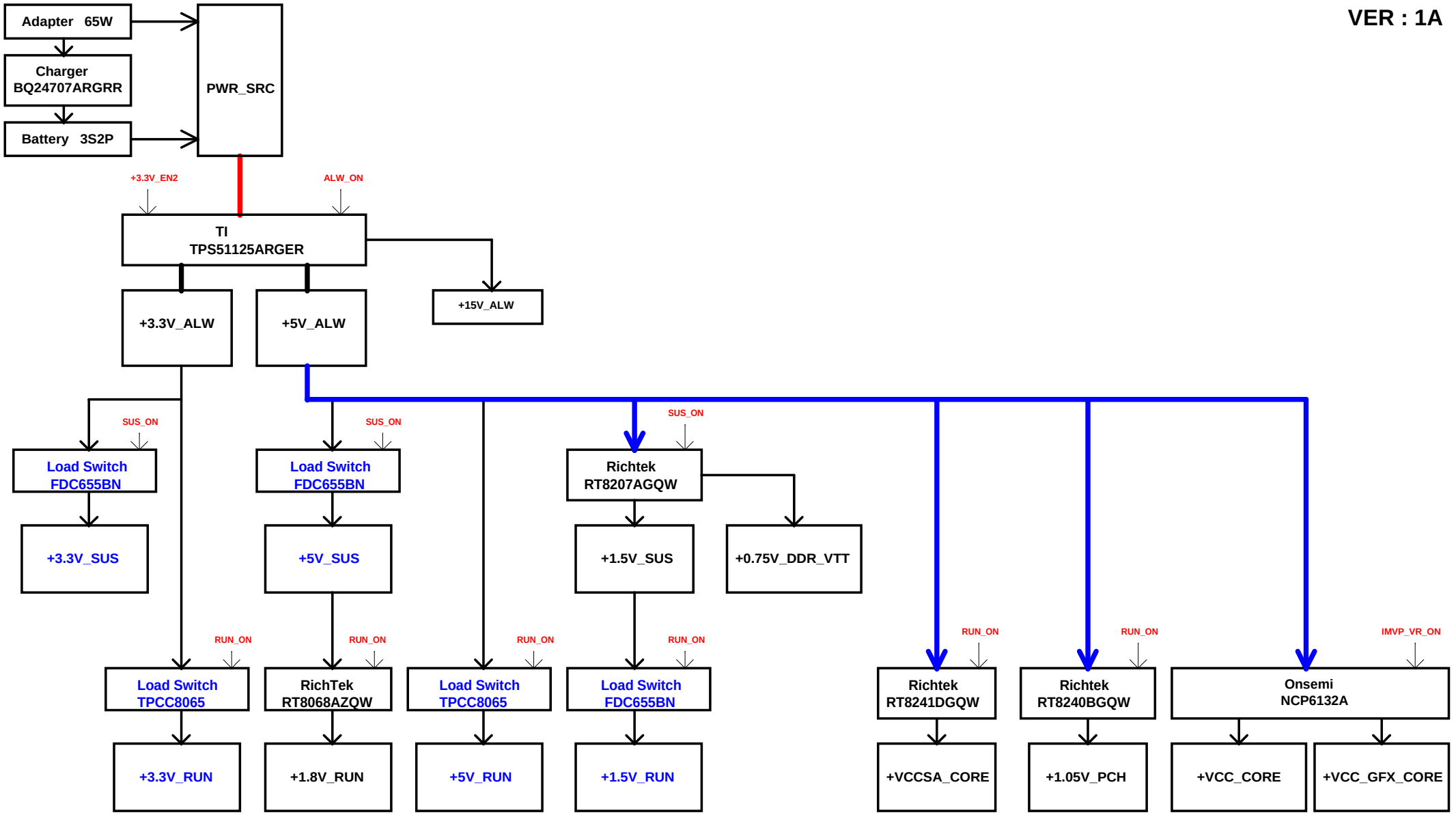
Function	IC	SMBus Address
DDR3	DIMM0 DIMM1	A0 A4
Thermal IC	EMC2112	1001_100xb (22h)
Charge IC	BQ24765RUVR	0b0001001x (0x12)
Battery	Battery	16h
WLAN	WLAN Module	X
Touch PAD	Touch PAD	10h
ALS	LTR-328ALS-01	0X52

Quanta Computer Inc.
PROJECT : D13

Size	Document Number	Rev
	SMBUS	1A

Date: Thursday, October 13, 2011 Sheet 40 of 41

VER : 1A



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PROJECT : D13

Size	Document Number	Rev
	Power Block Diagram	1A

Date: Thursday, October 13, 2011 Sheet 41 of 41