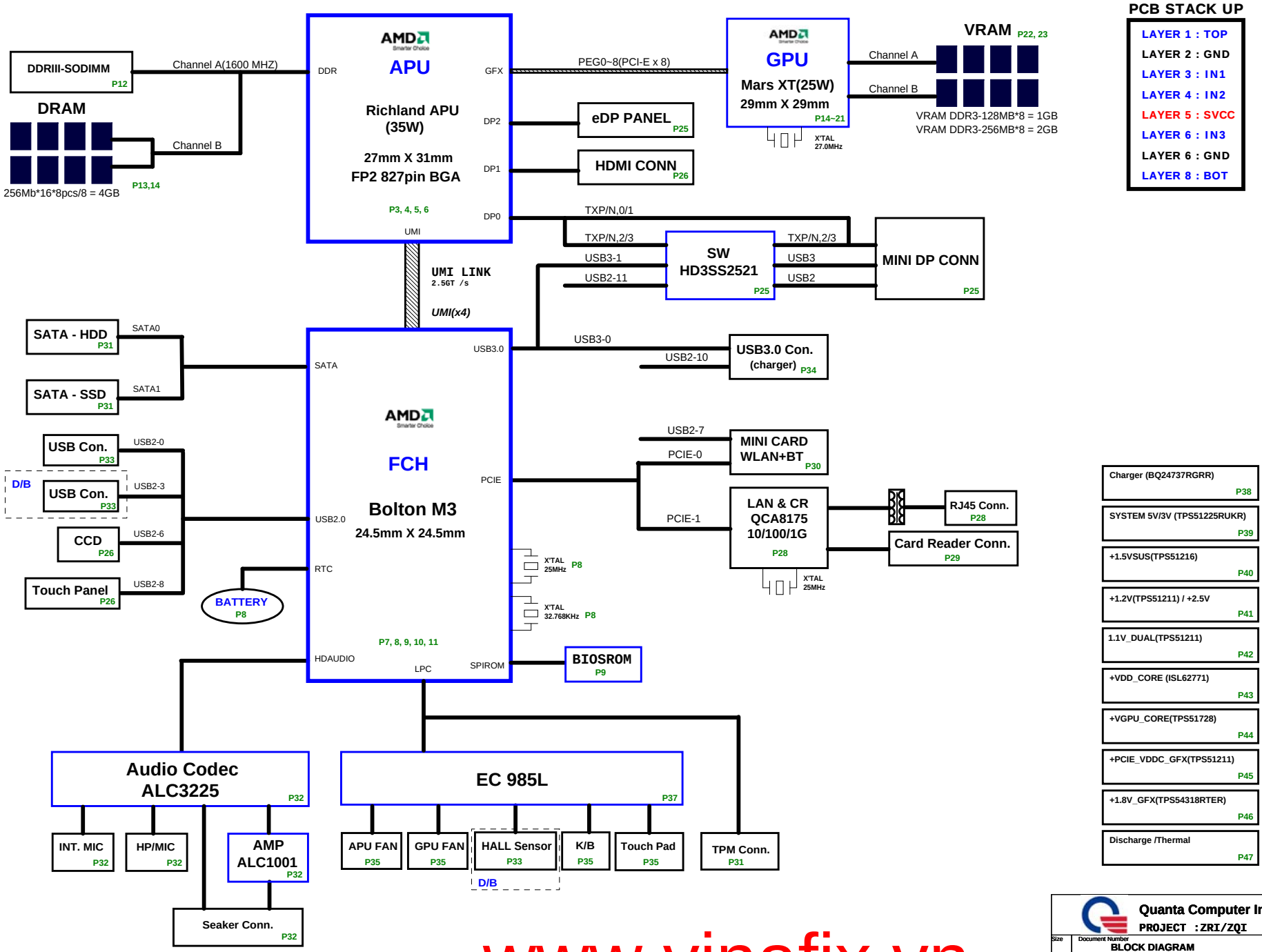
ZRI/ZQI Block Diagram



Quanta Computer Inc.
PROJECT : ZRI/ZQI
Size | Document Number: BLOCK DIAGRAM | Rev A1A
Date: Wednesday, April 24, 2013 | Sheet 1 of 50

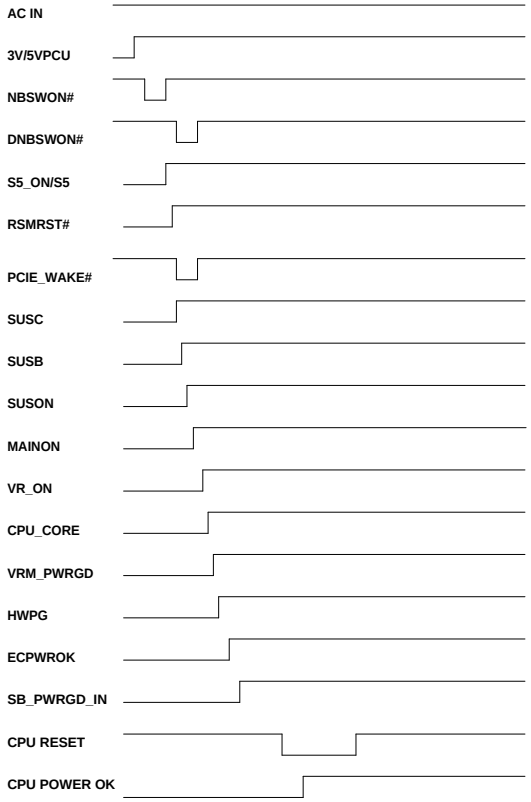
BOM Option

ITEM	DESCRIPTION	MARK
1	LVDS Panel Sku	LVDS@
2	eDP Panel Sku	eDP@
3	VGA Sku	EV@
4	VGA Thames Sku	EV_T@
5	VGA Mars Sku	EV_M@
6	VGA Sku for Thames and Mars stuff different value parts	EV_SP@
7	GPU 128bit Sku	EV_128@
8	GPU 128bit Sku of Special part value change	EV_128SP@
9	USB Charge Functions Sku	CH@
10	No USB Charge Functions Sku	NCH@
11	USB3.0 Re-Driver Sku	RD@
12	No USB3.0 Re-Driver Sku	NRD@
13	Always connect functions Sku	AC@
14	No Always connect functions Sku	NAC@
15	Special part value change or modify for different BOM sku	SP@
16	Key Board Back light Sku	KBL@
17	SSD Sku	SSD@
18	Touch panel Sku	TP@

Page 9 GPIO strap pin

ITEM	DESCRIPTION	MARK
1	Synaptics touch pad	SYNP@
2	ELAN touch pad	ELAN@
3	For UMA Sku	UMA@
4	ELPIDA on board DRAM	ELP@
5	HYNIX on board DRAM	HYN@

Power Sequence



Hudson M3

SMBUS

FCH SMBUS	Pin NO.	SMBUS Function Define
PCLK_SMB PDAT_SMB (+3V)	AD26 AD25	DDR / WLAN
SCLK1 SDATA1 (+3V_S5)	T7 R7	Touch Pad
SMB_EC_CLK (SCLK2) SMB_EC_DAT (SDATA2) (+3V_S5)	H19 G19	EC
SCLK3 SDATA3 (+3VPCU)	G22 G21	Not used
SCL4 SDATA4 (+3V_S5)	J19 K19	Not used

EC

SMBUS

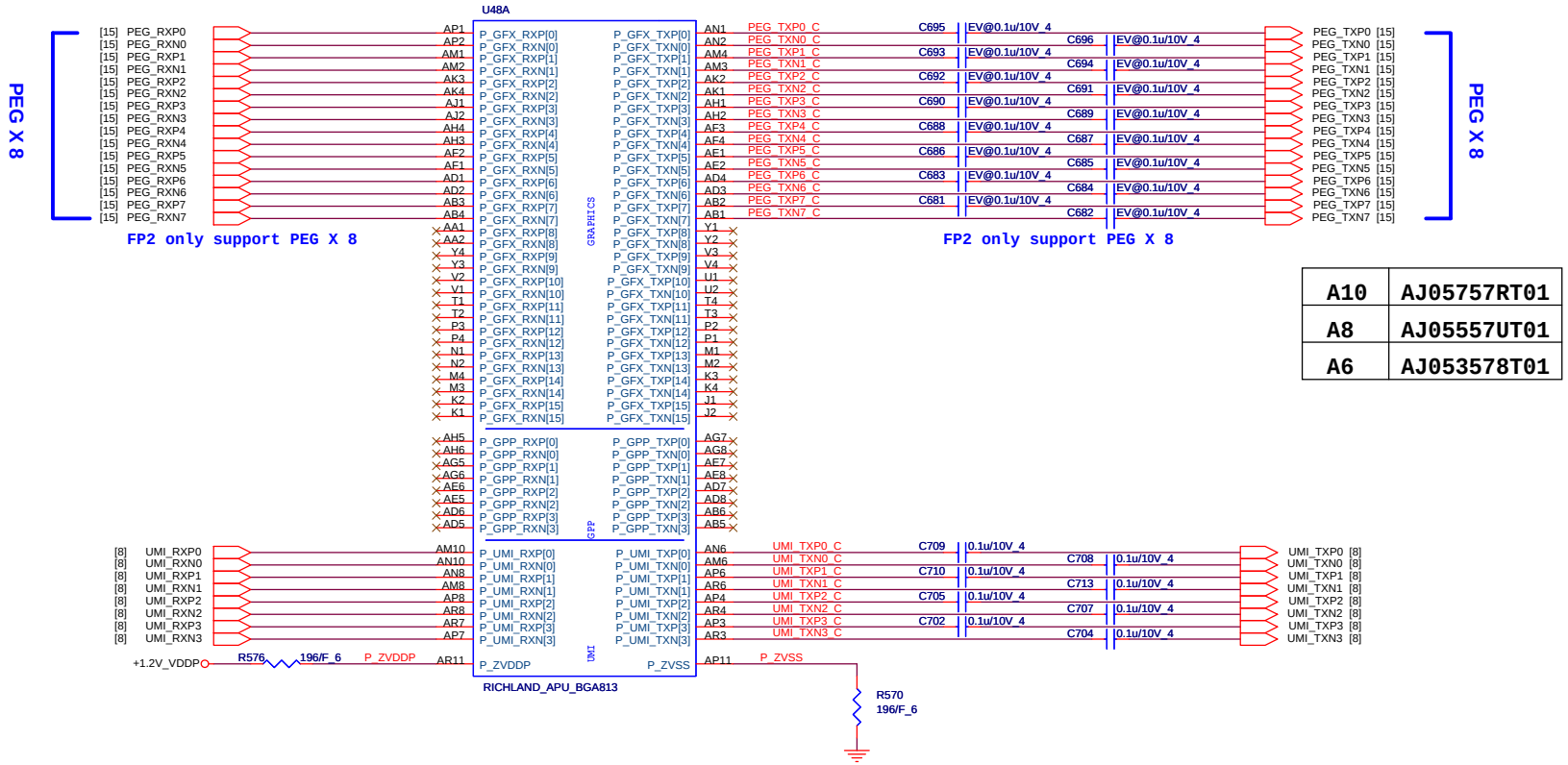
KBC SMBUS	Pin NO.	SMBUS Function Define
MBCLK MBDATA (+3VPCU)	70 69	Battery, FCH
APU_SIC_EC APU_SID_EC (+3V_S5)	67 68	APU
GPUT_CLK GPUT_DATA (+3V_GFX)	119 120	GPU
TPCLK TPDATA (+3V)	72 71	Touch Pad

EC	FCH	Device	I2C_Device(S)		
I2Ce_1(M)	I2Cf_2(M)	Charger	Battery		ALL/S5
I2Ce_2(M)		APU			ALL
I2Ce_3(M)					
	I2Cf_3(M)	APU			S5
	I2Cf_1(M)				S5
	I2Cf_0(M)	DDR	WLAN/3G	Image Sensor	S0

EC will Conflict with FCH.
Do not mount

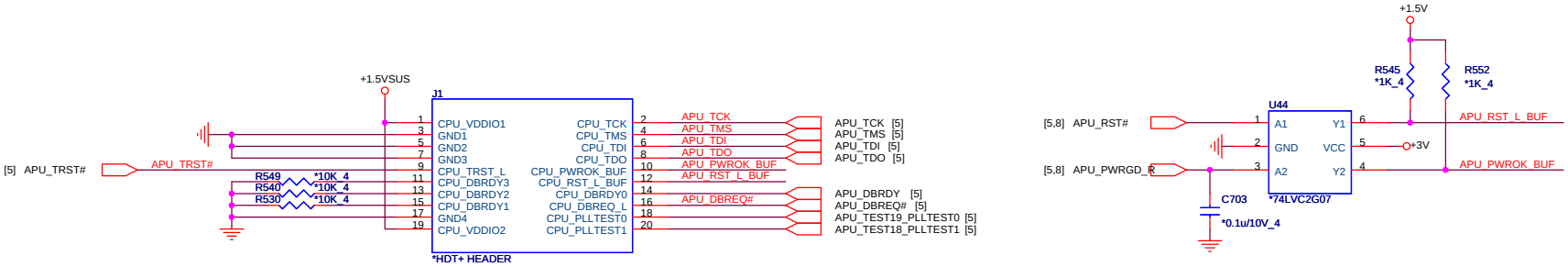
Quanta Computer Inc.
PROJECT : ZRI/ZQI

Size	Document Number	Rev
	SYSTEM INFORMATION	A1A
Date: Wednesday, April 24, 2013	Sheet 2 of 50	

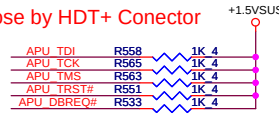


A10	AJ05757RT01
A8	AJ05557UT01
A6	AJ053578T01

HDT+ Connector for Debug only



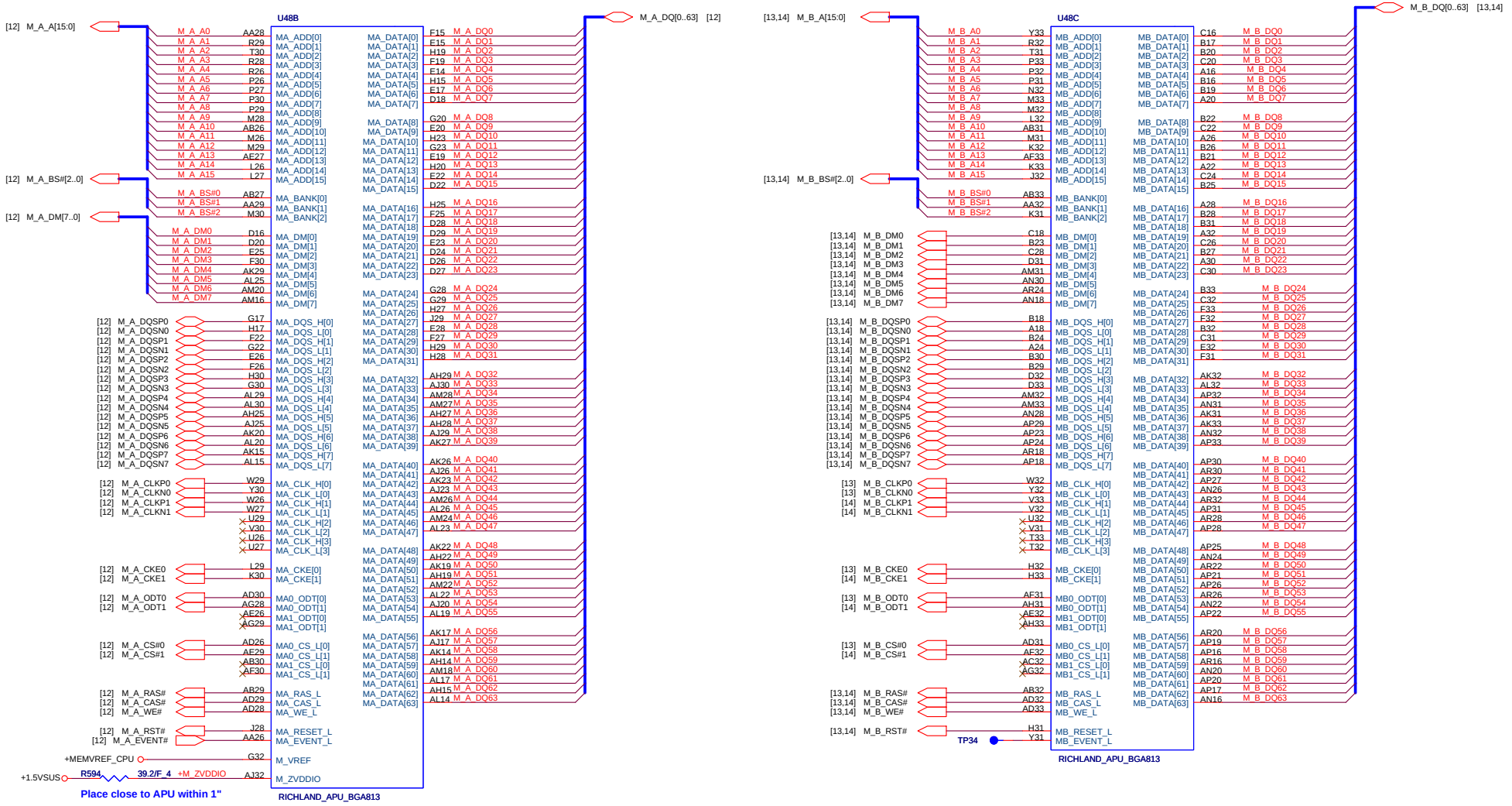
Close by HDT+ Conector

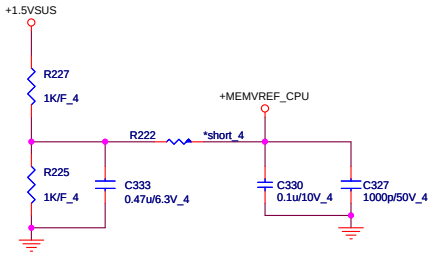


Quanta Computer Inc.
PROJECT : ZRI/ZQI

Size	Document Number	Rev
	APU 1/4(PCIE/UMI/GPP/HDT)	A1A
Date: Wednesday, April 24, 2013	Sheet 3 of 50	

Soldermask openings for all bottom side vias/TPs under FS1





A10	AJ05757RT01
A8	AJ05557UT01
A6	AJ053578T01

Quanta Computer Inc.
PROJECT : ZRI/ZQI

Size	Document Number	Rev
	APU 2/4(DDR3 MEM I/F)	A1A
Date: Wednesday, April 24, 2013	Sheet 4 of 50	

A10	AJ05757RT01
A8	AJ05557UT01
A6	AJ053578T01

DP0 MINI DP

DP1 HDMI

DP2 eDP

Note: CLK_APU_HCLKP/N is 100MHZ SSC

Note: CLK_DP_NSSCP/N is 100MHZ non-SSC

EC FCH

APU Core Power

DMAACTIVE_L controls entry and exit from the sleep and power states

7/8 For Comal.

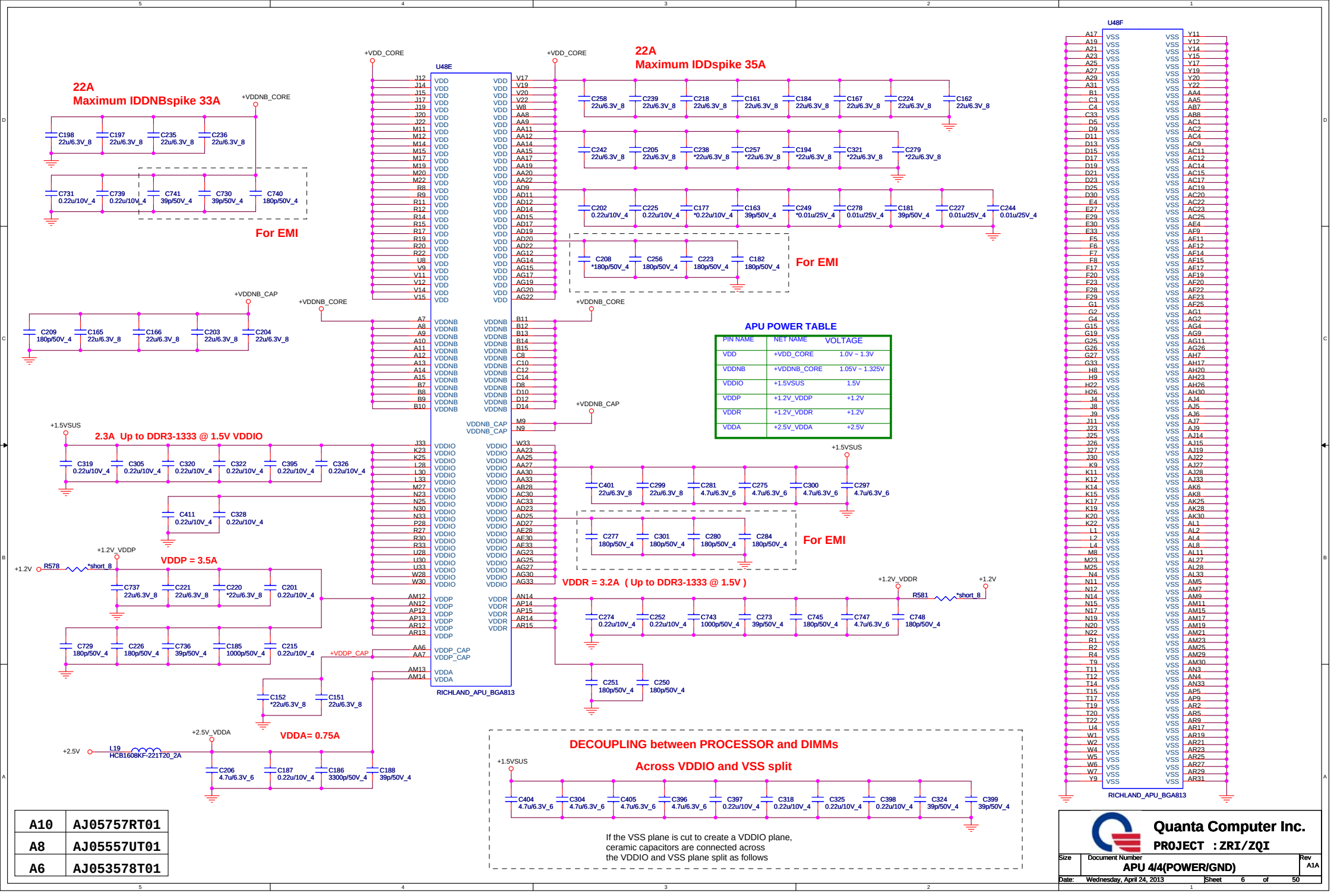
TEST35 PU FOR INTERNAL
TEST35 PD FOR CUSTOMER

	BOOT VOLTAGE	
SVC	SVD	VFIX_+VDD =VCC/GND	VFIX_+VDD =OPEN
0	0	1.1	1.1
0	1	1.0	1.2
1	0	0.9	1.0
1	1	0.8	0.8

for normal operation
open Ra , Rb,Rc

Quanta Computer Inc.
PROJECT : ZRI/ZQI

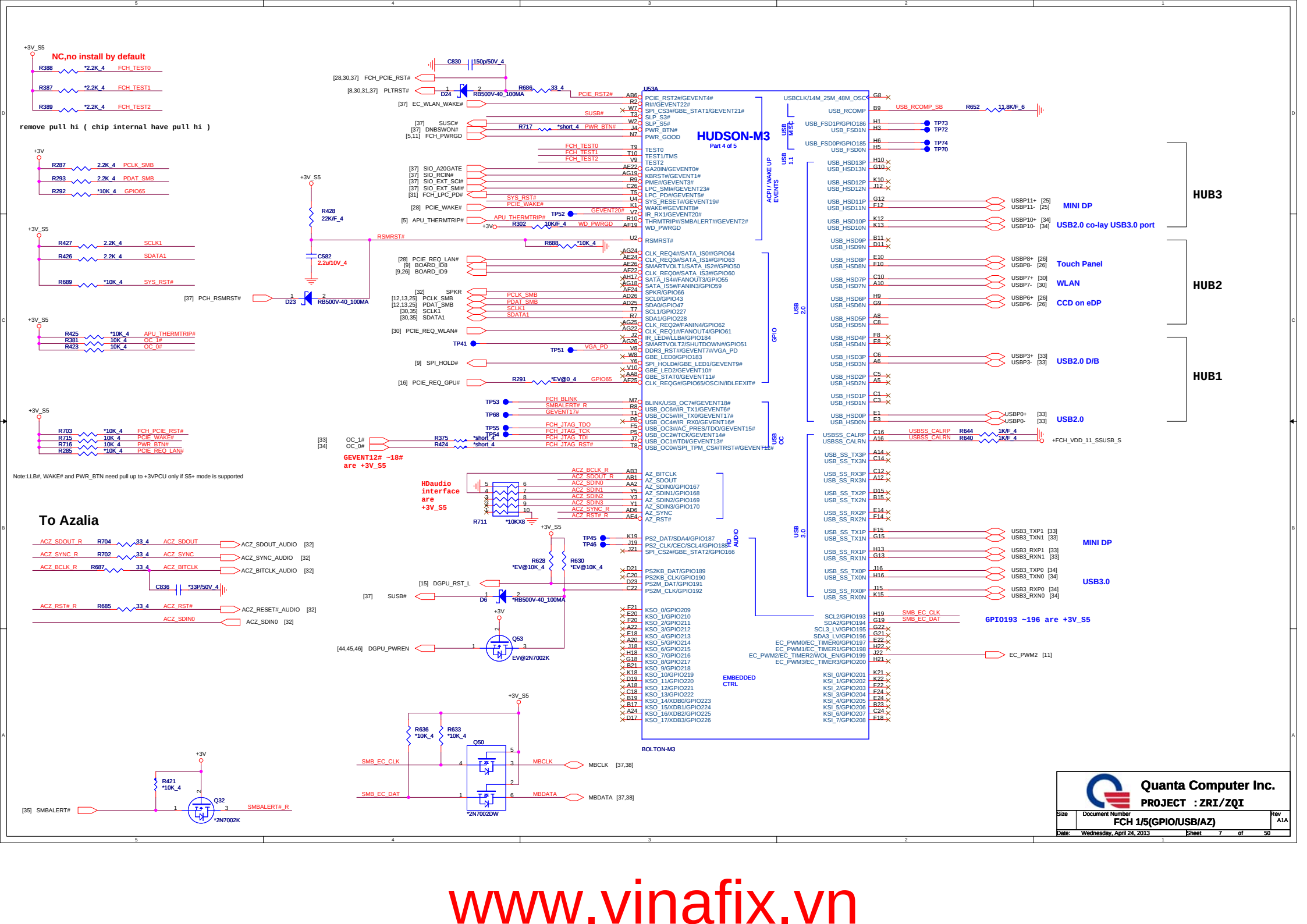
Size	Document Number	Rev
	APU 3/4(Display/Misc)	A1A
Date: Wednesday, April 24, 2013	Sheet 5 of 50	

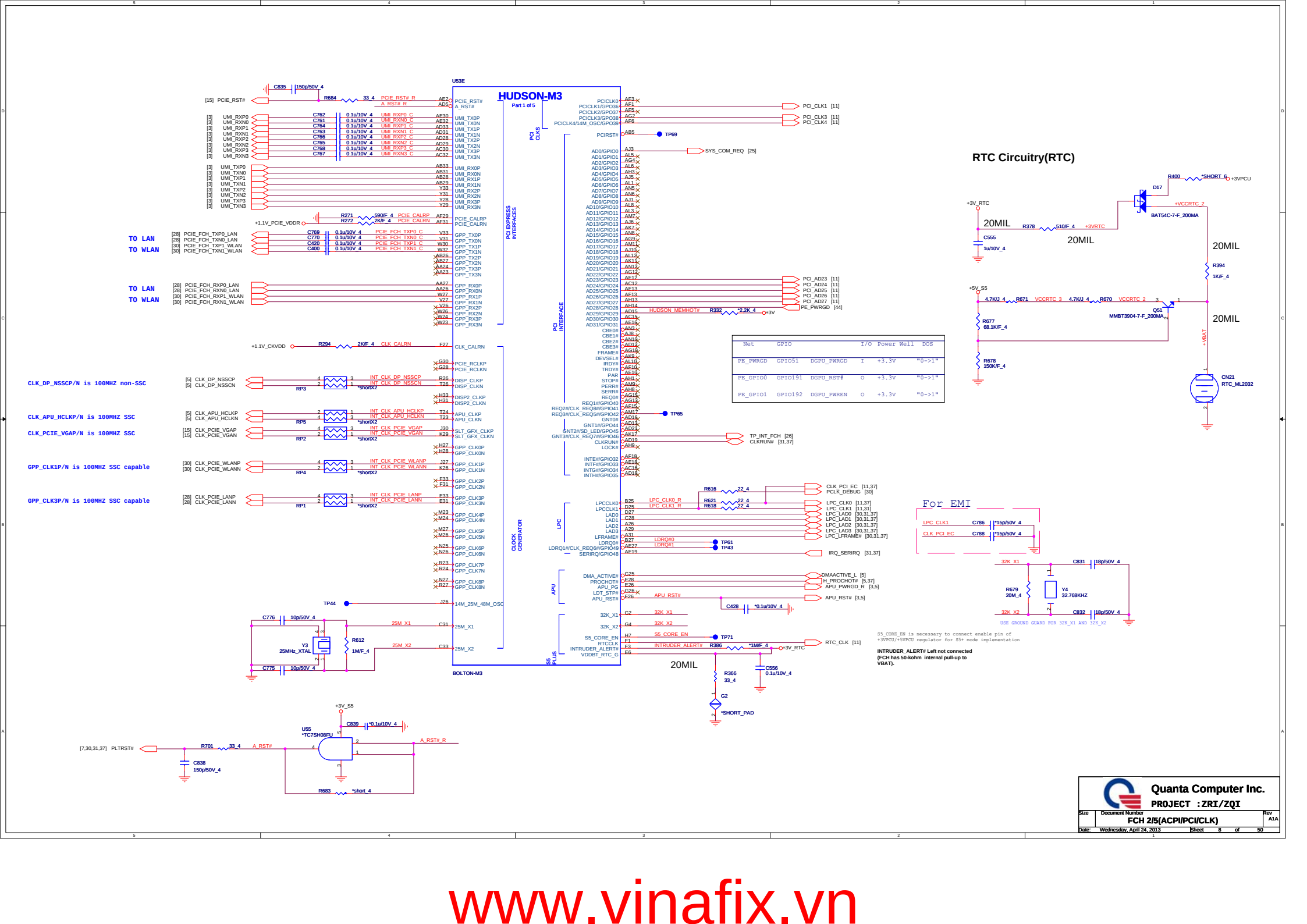


A10	AJ05757RT01
A8	AJ05557UT01
A6	AJ053578T01

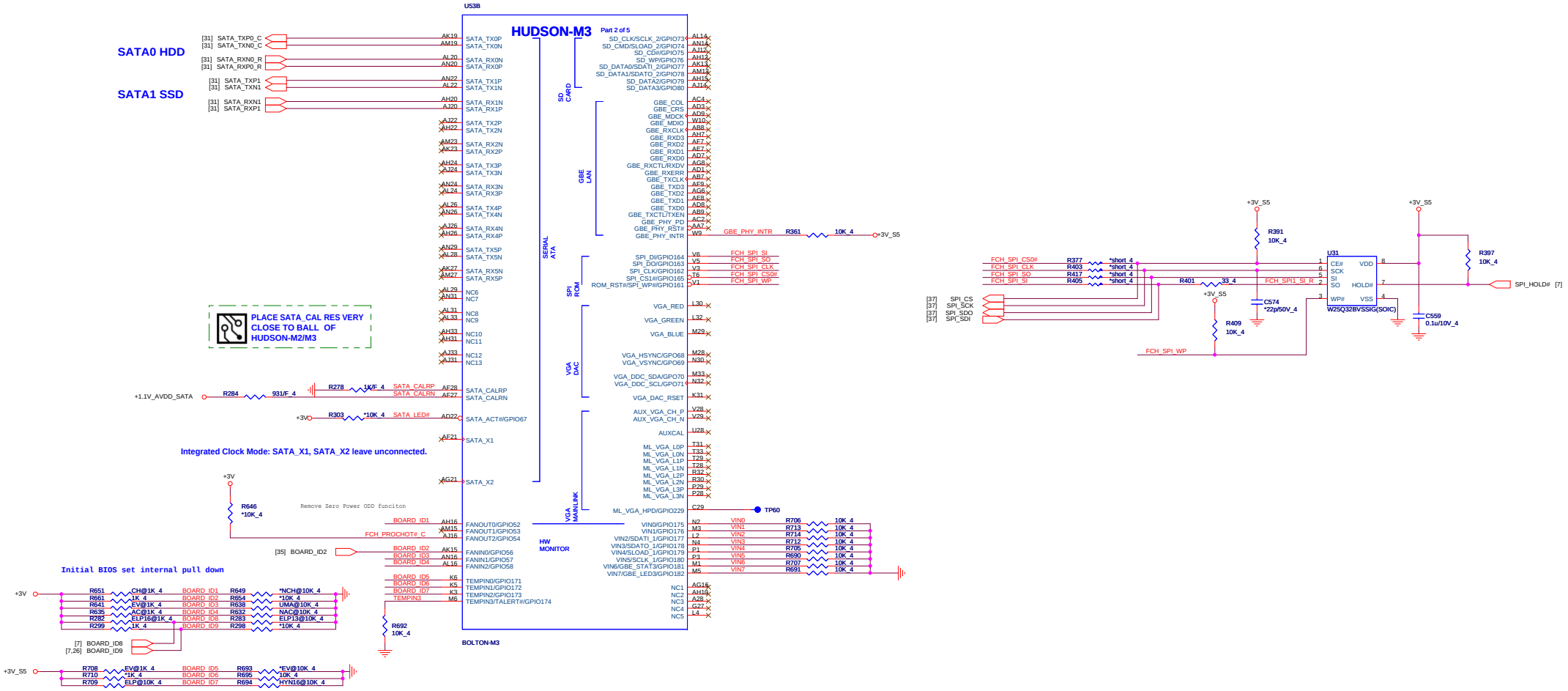
Quanta Computer Inc.
PROJECT : ZRI/ZQI

Size	Document Number	Rev
	APU 4/4(POWER/GND)	A1A
Date: Wednesday, April 24, 2013	Sheet 6 of 50	





Net	GPIO		I/O	Power Well	DOS
PE_PWRGD	GPIO51	DGPU_PWRGD	I	+3.3V	"0->1"
PE_GPIO0	GPIO191	DGPU_RST#	O	+3.3V	"0->1"
PE_GPIO1	GPIO192	DGPU_PWREN	O	+3.3V	"0->1"



BOARD ID SETTING

Board ID	ID1	ID2	ID3	ID4	ID5	ID9	
USB Charge No USB Charge	H L						
Reserved		H					
VGA SKU UMA SKU			H L				
AC No AC				H L			
VRAM 2G VRAM 4G					H L		
Non Touch Panel Touch Panel						H L	<= PD by cable

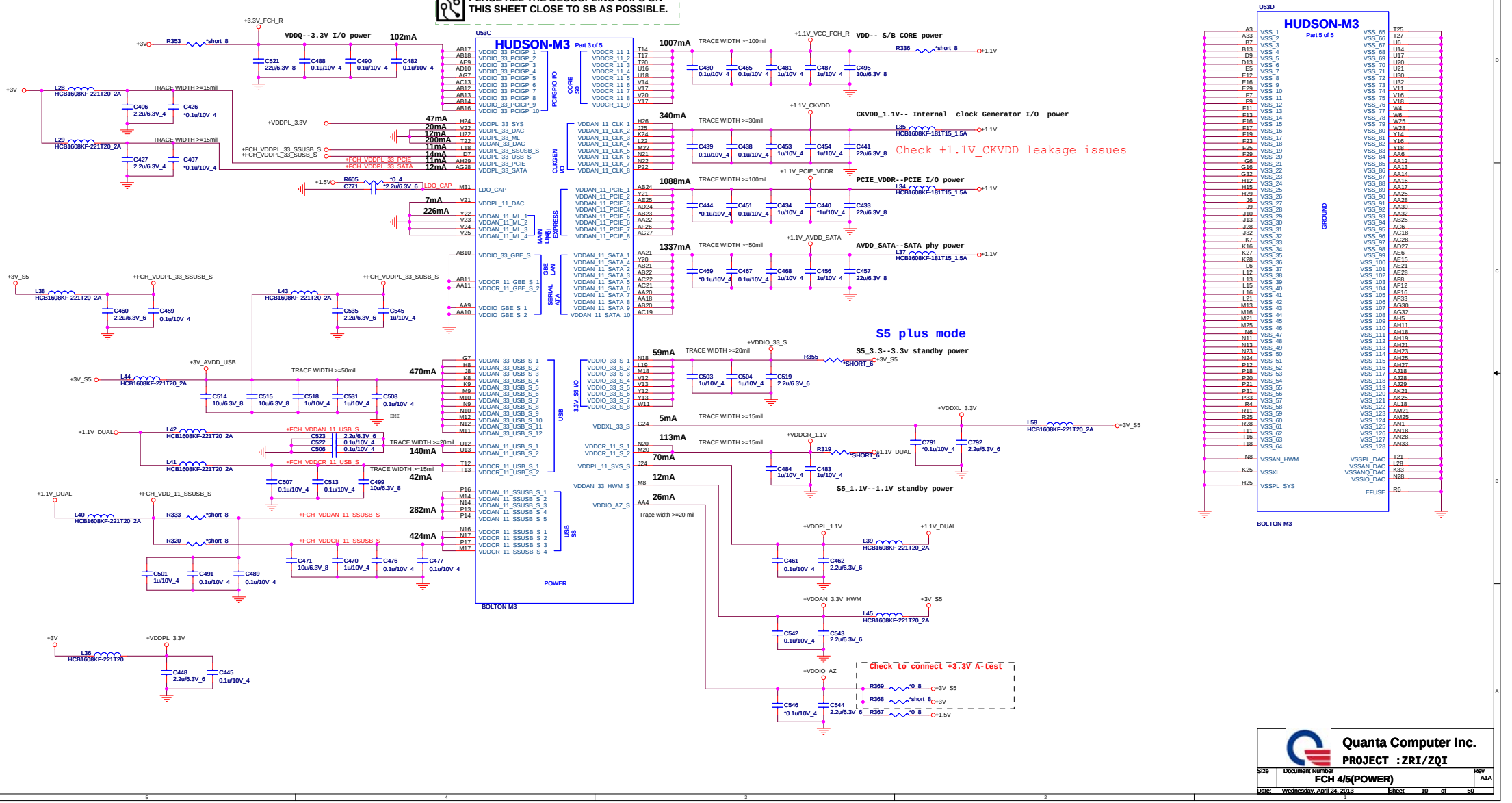
OnBorad RAM SETTING

ID6	ID7	ID8	
0	0	1	HYNIX DDR3L 1600 4GB H5TC4G63AFR-PBA
0	1	0	ELPIDA DDR3L 1333 4GB EDJ4216EBBG-DJ-F
0	1	1	ELPIDA DDR3L 1600 4GB EDJ4216EFBG-GNL-F
1	0	0	Disable OnBorad RAM

Quanta Computer Inc.
PROJECT : ZRI/ZQI

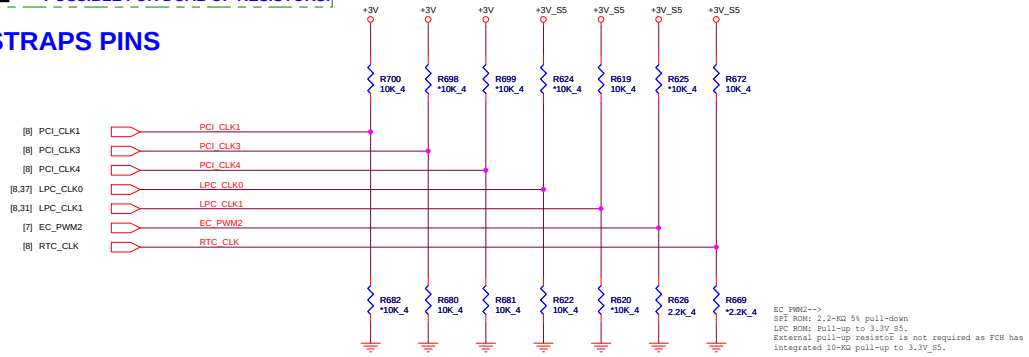
Size	Document Number	Rev
	FCH 3/5(SATA/VGA/GND/SPI)	A1A
Date: Wednesday, April 24, 2013	Sheet 9 of 50	

PLACE ALL THE DECOUPLING CAPS ON THIS SHEET CLOSE TO SB AS POSSIBLE.



OVERLAP COMMON PADS WHERE POSSIBLE FOR DUAL-OP RESISTORS.

STRAPS PINS

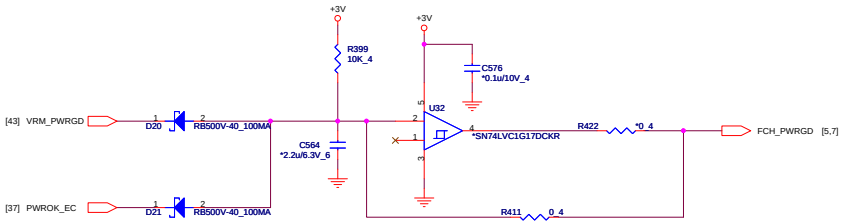


Remove PCI_CLK2 function

REQUIRED STRAPS

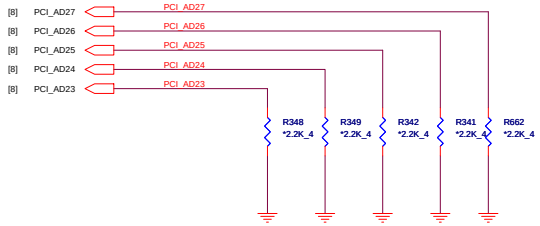
	--------	PCI_CLK1	PCI_CLK2	PCI_CLK3	PCI_CLK4	LPC_CLK0	LPC_CLK1	EC_PWM2	RTC_CLK
PULL HIGH	--------	ALLOW PCIE Gen2 DEFAULT	--------	USE DEBUG STRAP	non_Fusion CLOCK MODE	EC ENABLED	CLKGEN ENABLED DEFAULT	LPC ROM	S5 PLUS MODE DISABLED DEFAULT
PULL LOW	--------	FORCE PCIE Gen1	--------	IGNORE DEBUG STRAP DEFAULT	FUSION CLOCK MODE DEFAULT	EC DISABLED DEFAULT	CLKGEN DISABLED	SPI ROM DEFAULT	S5 PLUS MODE ENABLED

FCH PWRGD CKT



DEBUG STRAPS

FCH HAS 15K INTERNAL PU FOR PCI_AD[27:23]

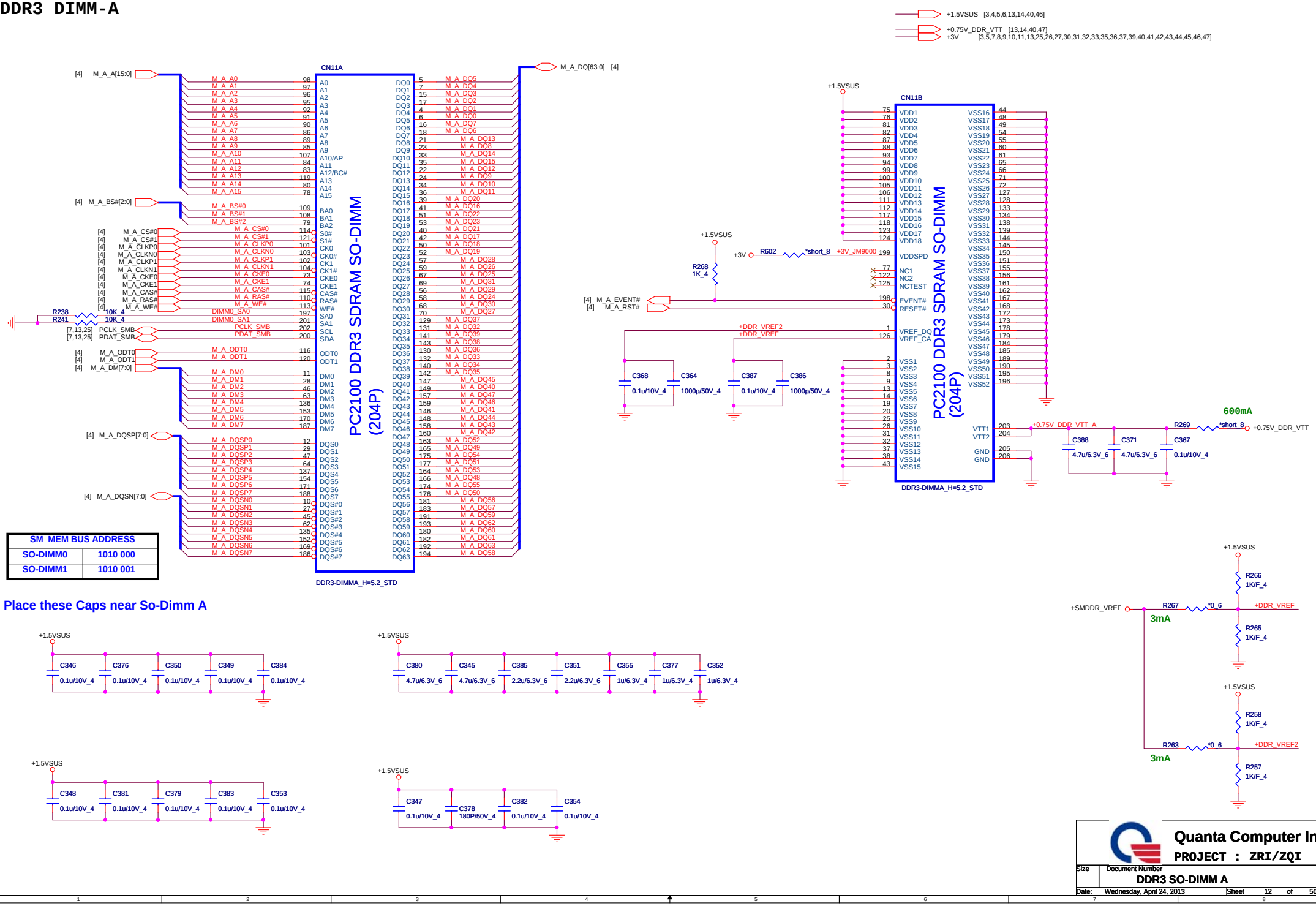


	PCI_AD27	PCI_AD26	PCI_AD25	PCI_AD24	PCI_AD23
PULL HIGH	USE PCI PLL DEFAULT	DISABLE ILA AUTORUN DEFAULT	USE FC PLL DEFAULT	USE DEFAULT PCIE STRAPS DEFAULT	DISABLE PCI MEM BOOT DEFAULT
PULL LOW	BYPASS PCI PLL	ENABLE ILA AUTORUN	BYPASS FC PLL	USE EEPROM PCIE STRAPS	ENABLE PCI MEM BOOT

Quanta Computer Inc.
PROJECT : ZRI/ZQI

Size	Document Number	Rev
	FCH 5/5(STRAP & PWRGD)	A1A
Date: Wednesday, April 24, 2013	Sheet 11 of 50	

DDR3 DIMM-A

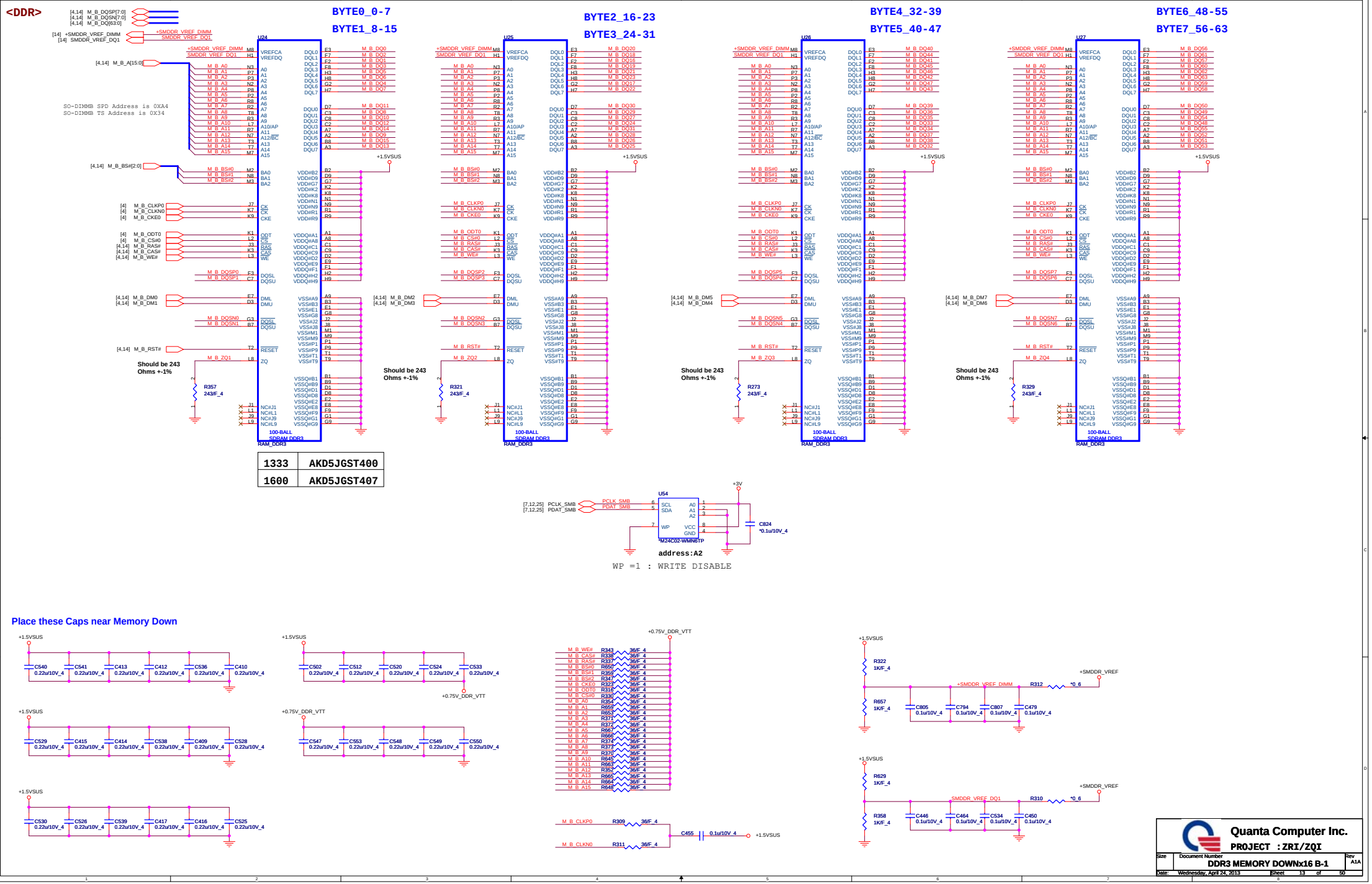


Quanta Computer Inc.

PROJECT : ZRI/ZQI

Size	Document Number	Rev
	DDR3 SO-DIMM A	A1A

Date: Wednesday, April 24, 2013 Sheet 12 of 50



<DDR>

BYTE0_0-7
BYTE1_8-15
BYTE2_16-23
BYTE3_24-31
BYTE5_40-47
BYTE4_32-39
BYTE7_56-63
BYTE6_48-55

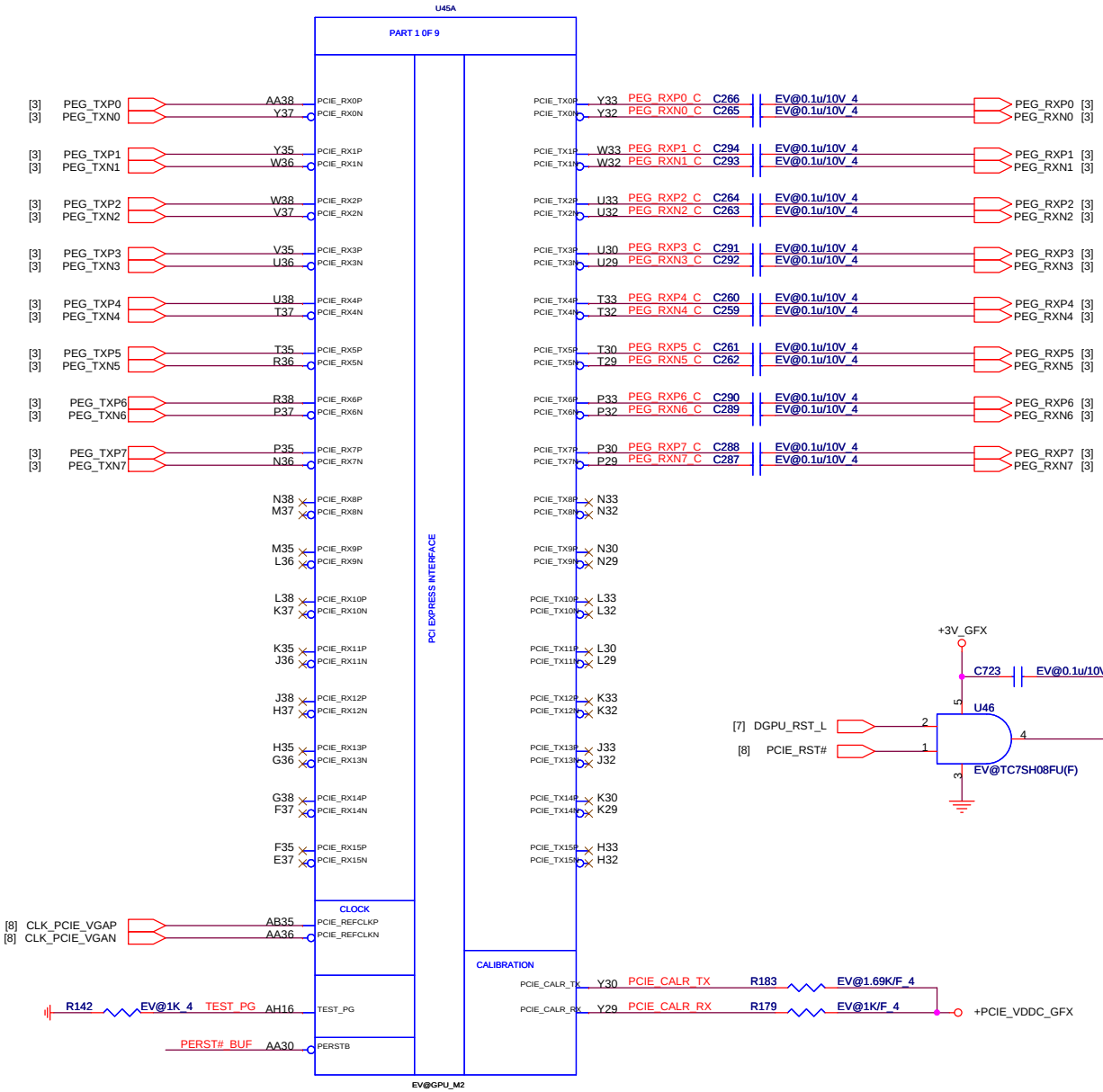
SO-DIMMB SPD Address is 0XA4
SO-DIMMB TS Address is 0X34

Should be 243 Ohms +-1%

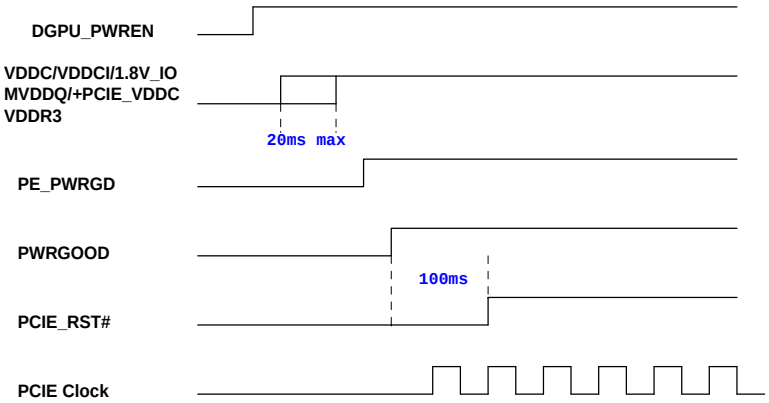
1333	AKD5JGST400
1600	AKD5JGST407

Place these Caps near Memory Down

Quanta Computer Inc.
PROJECT : ZRI/ZQI
Size | Document Number: DDR3 MEMORY DOWNx16 B-2 | Rev: A1A
Date: Wednesday, April 24, 2013 | Sheet 14 of 50



Thames(Pro,XT) and Mars Power-on sequence PX5.0(no BACO)

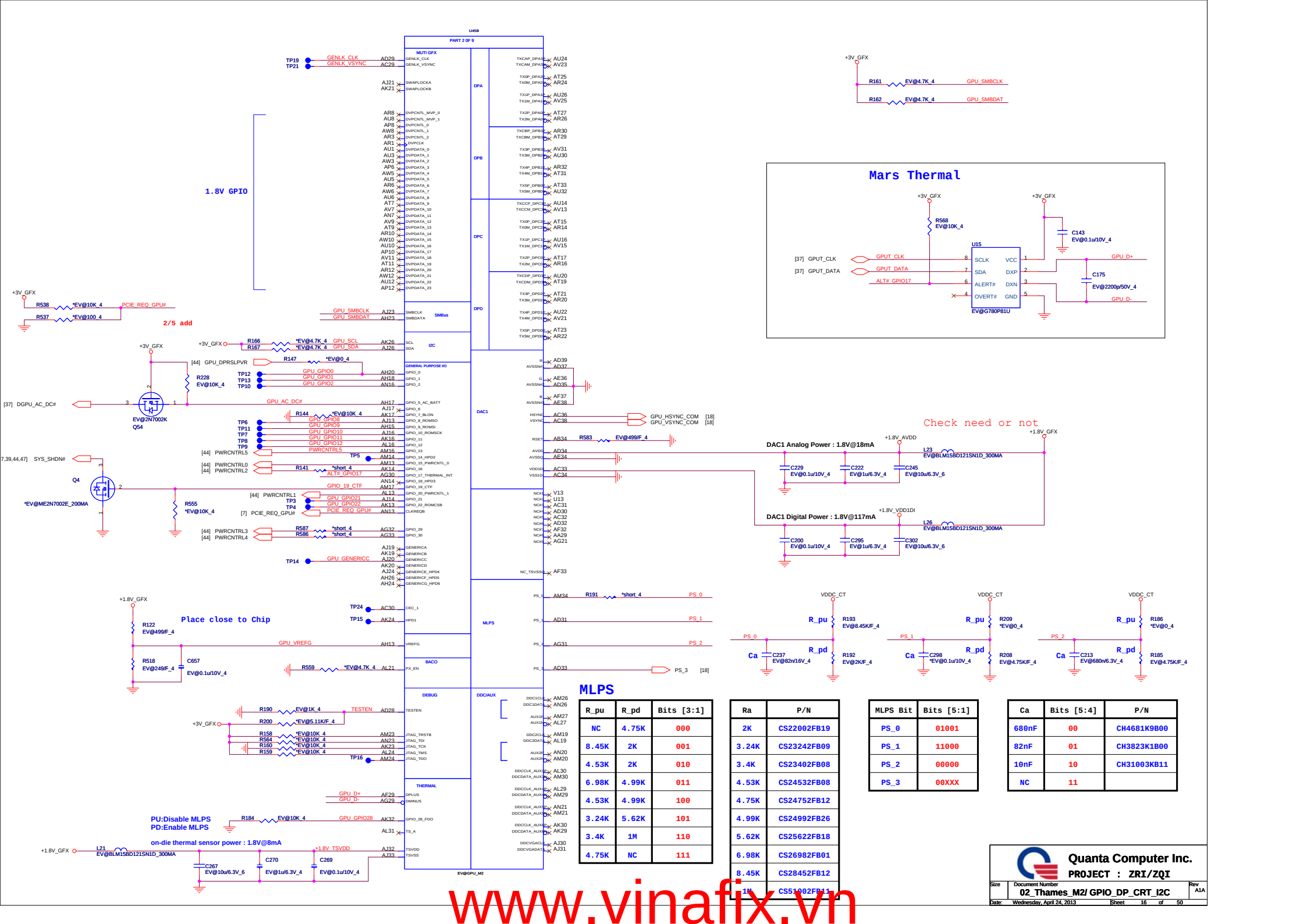


Quanta Computer Inc.

PROJECT : ZRI/ZQI

Size	Document Number	Rev
	Thames_M2/ PEG*16	A1A

Date: Wednesday, April 24, 2013 Sheet 15 of 50



MLPS

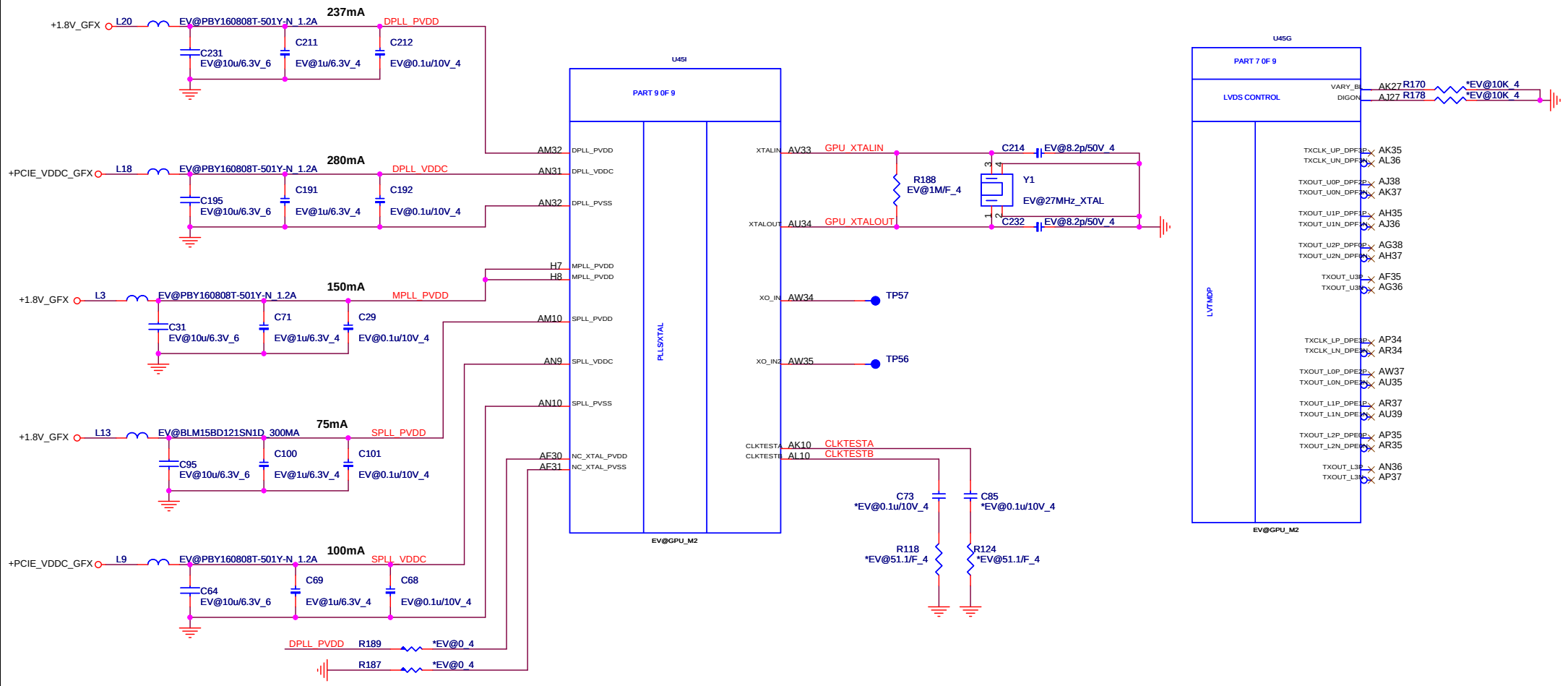
R_pu	R_pd	Bits [3:1]
NC	4.75K	000
8.45K	2K	001
4.53K	2K	010
6.98K	4.99K	011
4.53K	4.99K	100
3.24K	5.62K	101
3.4K	1M	110
4.75K	NC	111

Ra	P/N
2K	CS22002FB19
3.24K	CS23242FB09
3.4K	CS23402FB08
4.53K	CS24532FB08
4.75K	CS24752FB12
4.99K	CS24992FB26
5.62K	CS25622FB18
6.98K	CS26982FB01
8.45K	CS28452FB12
1M	CS51002FB11

MLPS Bit	Bits [5:1]
PS_0	01001
PS_1	11000
PS_2	00000
PS_3	00XXX

Ca	Bits [5:4]	P/N
680nF	00	CH4681K9B00
82nF	01	CH3823K1B00
10nF	10	CH31003KB11
NC	11	

Quanta Computer Inc.
PROJECT : ZRI/ZQI
Size: Document Number: 02_Thames_M2/ GPIO_DP_CRT_I2C Rev: A1A
Date: Wednesday, April 24, 2013 Sheet 16 of 50



Quanta Computer Inc.

PROJECT : ZRI/ZQI

Size	Document Number	Rev
	Thames_M2/ XTAL_LVDS	A1A
Date: Wednesday, April 24, 2013	Sheet 17 of 50	

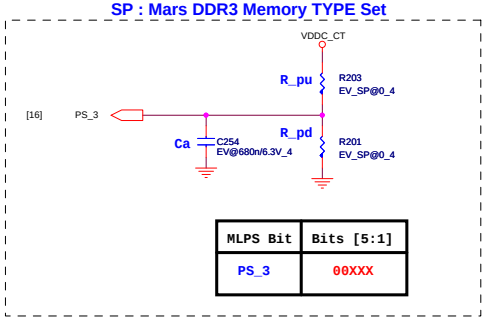
Mars USE

Vendor	Vendor P/N	STN B/S P/N	Size	MLPS
Hynix	H5TQ2G63DFR-11C (128M*16)	AKD5MGWTW17 * 8	2GB	000
	H5TC2G63FFR-11C (128M*16)	AKD5MZDTW05 * 8	2GB	001
Micron	MT41K256M16HA-107G (256M*16)	AKD5PGSTL05 * 8	4GB	011

CONFIGURATION STRAPS -- SEE EACH DATABOOK FOR STRAP DETAILS
ALLOW FOR PULLUP PADS FOR THESE STRAPS AND IF THESE GPIOS ARE USED,
THEY MUST NOT CONFLICT DURING RESET

STRAPS	MLPS	GPIO PIN	DESCRIPTION OF DEFAULT SETTINGS	Default Setting
MLPS_DISABLE	NA	GPIO_28_FDO	Enable MLPS, NA for Thames/Whistler/Seymour 0: Enable MLPS, disable GPIO PINSTRAP 1: Disable MLPS, enable GPIO PINSTRAP	X
TX_PWRS_ENB	PS_1[4]	GPIO0	Transmitter Power Savings Enable 0: 50% Tx output swing 1: Full Tx output swing	X
TX_DEEMPH_EN	PS_1[5]	GPIO1	PCIE Transmitter De-emphasis Enable 0: Tx de-emphasis disabled 1: Tx de-emphasis enabled	X
BIF_GEN3_EN_A	PS_1[1]	GPIO2	PCIE Gen3 Enable (NOTE: RESERVED for Thames/Whistler/Seymour) 0: GEN3 not supported at power-on 1: GEN3 supported at power-on	1
BIF_VGA DIS	PS_2[4]	GPIO9	VGA Control 0: VGA controller capacity enabled 1: VGA controller capacity disabled (for multi-GPU)	0
ROMIDCFG[2:0]	PS_0[3..1]	GPIO[13:11]	Serial ROM type or Memory Aperture Size Select If GPIO22 = 0, defines memory aperture size If GPIO22 = 1, defines ROM type 100 - 512Kbit M25P05A (ST) 101 - 1Mbit M25P10A (ST) 101 - 2Mbit M25P20 (ST) 101 - 4Mbit M25P40 (ST) 101 - 8Mbit M25P80 (ST) 100 - 512Kbit Pm25LV512 (Chingis) 101 - 1Mbit Pm25LV010 (Chingis)	XXX
BIOS_ROM_EN	PS_2[3]	GPIO22	Enable external BIOS ROM device 0: Disabled 1: Enabled	X
AUD[1] AUD[0]	NA NA	HSYNC VSYNC	00 - No audio function 01 - Audio for DP only 10 - Audio for DP and HDMI if dongle is detected 11 - Audio for both DP and HDMI HDMI must only be enabled on systems that are legally entitled. It is the responsibility of the system designer to ensure that the system is entitled to support this feature.	XX
CEC_DIS	PS_0[4]	GENLK_VSYNC	Enable CEC function. Reserved for Thames/Whistler/Seymour 0: Disabled 1: Enabled	X
			NOTE: ALLOW FOR PULLUP PADS FOR THE RESERVED STRAPS BUT DO NOT INSTALL RESISTOR IF THESE GPIOS ARE USEED, THEY MUST KEEP LOW AND NOT CONFLICT DURING RESET	
RESERVED	PS_1[3]	GENLK_CLK	Reserved	0
RESERVED	PS_1[2]	GPIO8	Reserved	0
RESERVED	NA	GPIO21	Reserved	0
RESERVED	NA	GENERICC	Reserved (for Thames/Whistler/Seymour only)	0
AUD_PORT_CONN_PINSTRAP[2] AUD_PORT_CONN_PINSTRAP[1] AUD_PORT_CONN_PINSTRAP[0]	PS_3[5] PS_3[4] PS_0[5]	NA NA NA	STRAPS TO INDICATE THE NUMBER OF AUDIO CAPABLE DISPLAY OUTPUTS 111 = 0 usable endpoints 110 = 1 usable endpoints 101 = 2 usable endpoints 100 = 3 usable endpoints 011 = 4 usable endpoints 010 = 5 usable endpoints 001 = 6 usable endpoints 000 = all endpoints are usable	XXX

SP : Mars DDR3 Memory TYPE Set



MLPS Bit	Bits [5:1]
PS_3	00XXX

MLPS

R_pu	R_pd	Bits [3:1]
NC	4.75K	D 000
8.45K	2K	F 001
4.53K	2K	B 010
6.98K	4.99K	011
4.53K	4.99K	100
3.24K	5.62K	101
3.4K	1M	110
4.75K	NC	111

Ra	P/N
2K	CS22002FB19
3.24K	CS23242FB09
3.4K	CS23402FB08
4.53K	CS24532FB08
4.75K	CS24752FB12
4.99K	CS24992FB26
5.62K	CS25622FB18
6.98K	CS26982FB01
8.45K	CS28452FB12
1M	CS51002FB11

Ca	Bits [5:4]	P/N
680nF	00	CH4681K9B00
82nF	01	CH3823K1B00
10nF	10	CH31003KB11
NC	11	

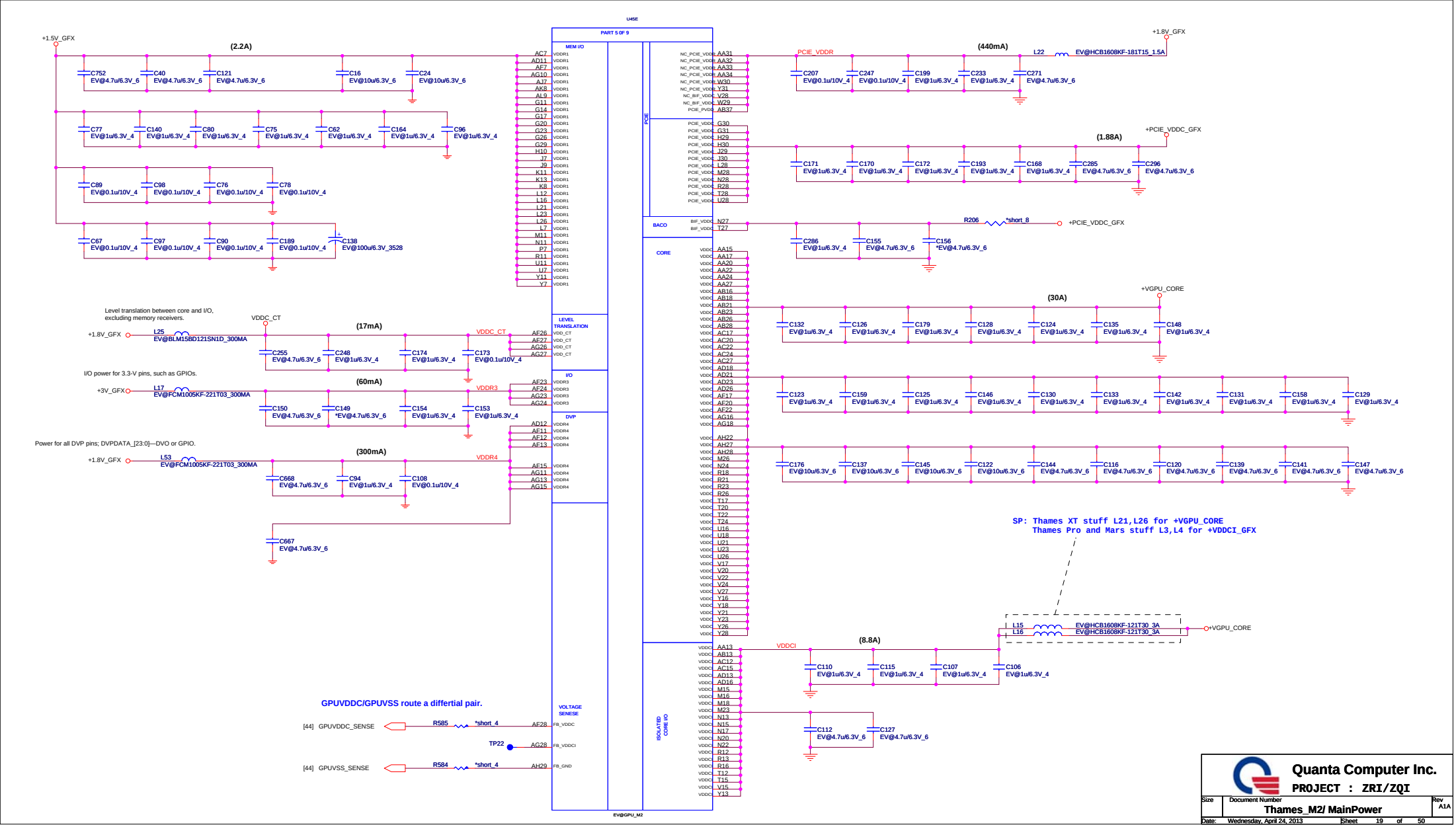
System Memory Aperture size

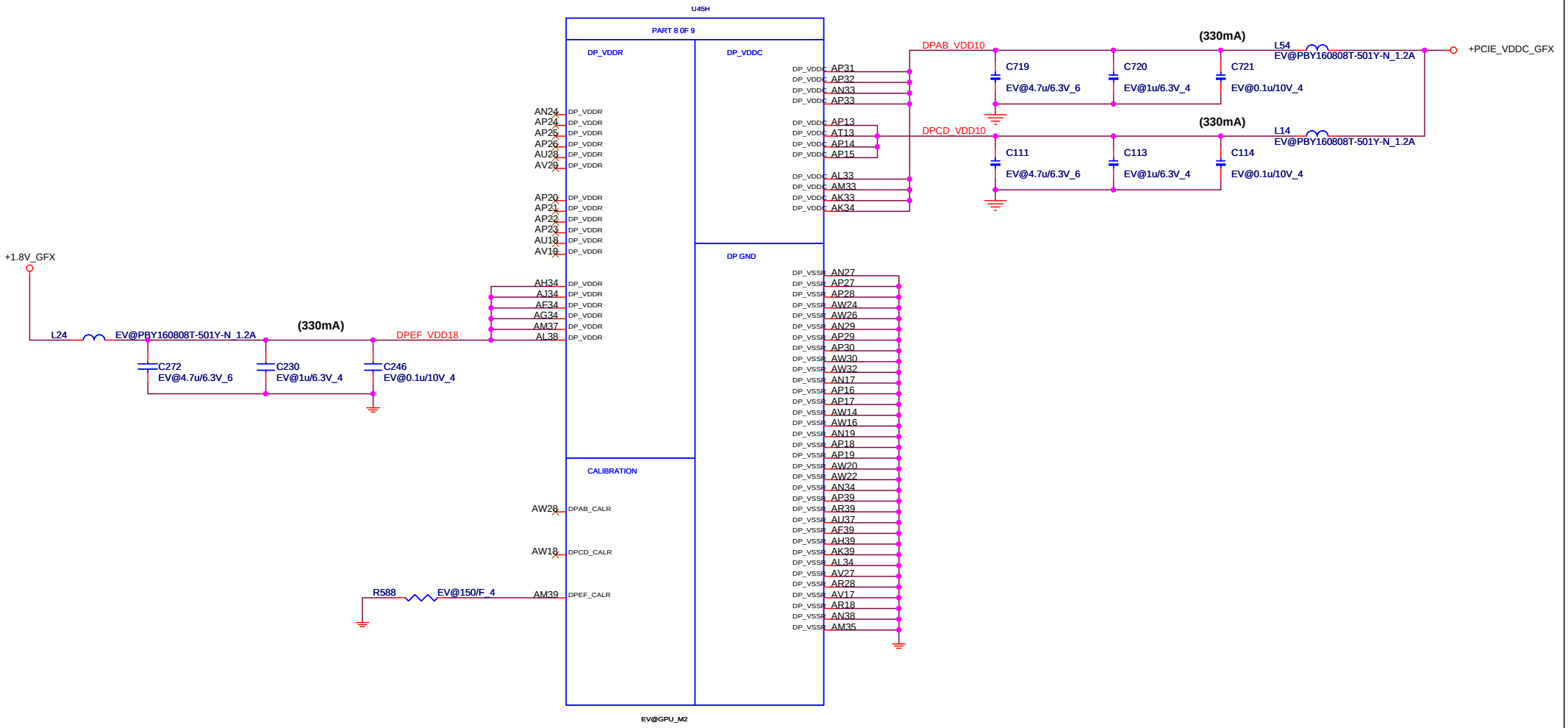
GPIO9 BIOSROM		GPIO11 ROMIDCFG0	GPIO12 ROMIDCFG1	GPIO13 ROMIDCFG2
0	128M	0	0	0
0	256M	1	0	0
0	64M	0	1	0
0	32M	1	1	0

Quanta Computer Inc.
PROJECT : ZRI/ZQI

Size	Document Number	Rev
	Thames_M2/ STRAPS_Thermal	A1A

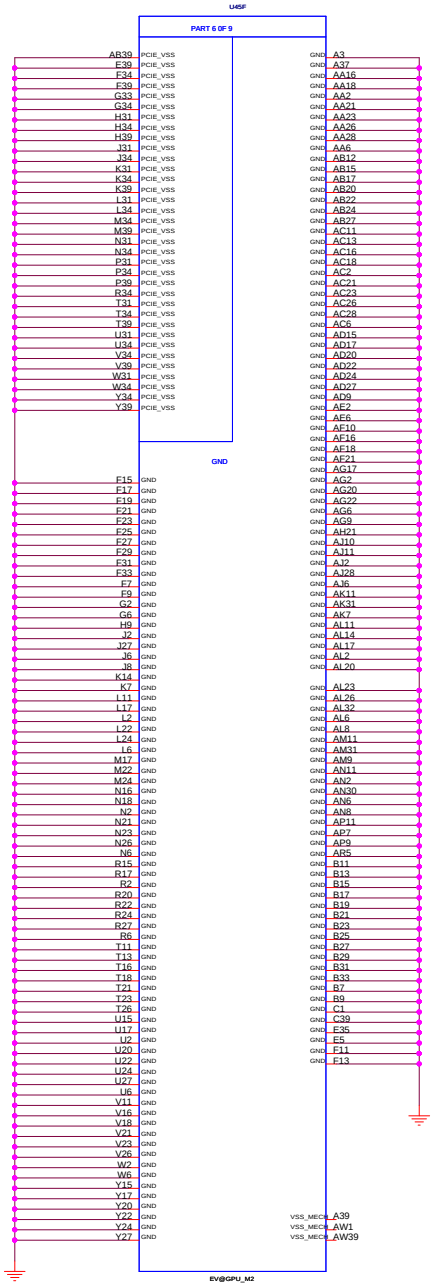
Date: Wednesday, April 24, 2013 Sheet 18 of 50





Quanta Computer Inc.		
PROJECT : ZRI/ZQI		
Size	Document Number: Thames_M2/ DP_Powers	Rev: A1A
Date: Wednesday, April 24, 2013	Sheet 20 of 50	

<VGA>

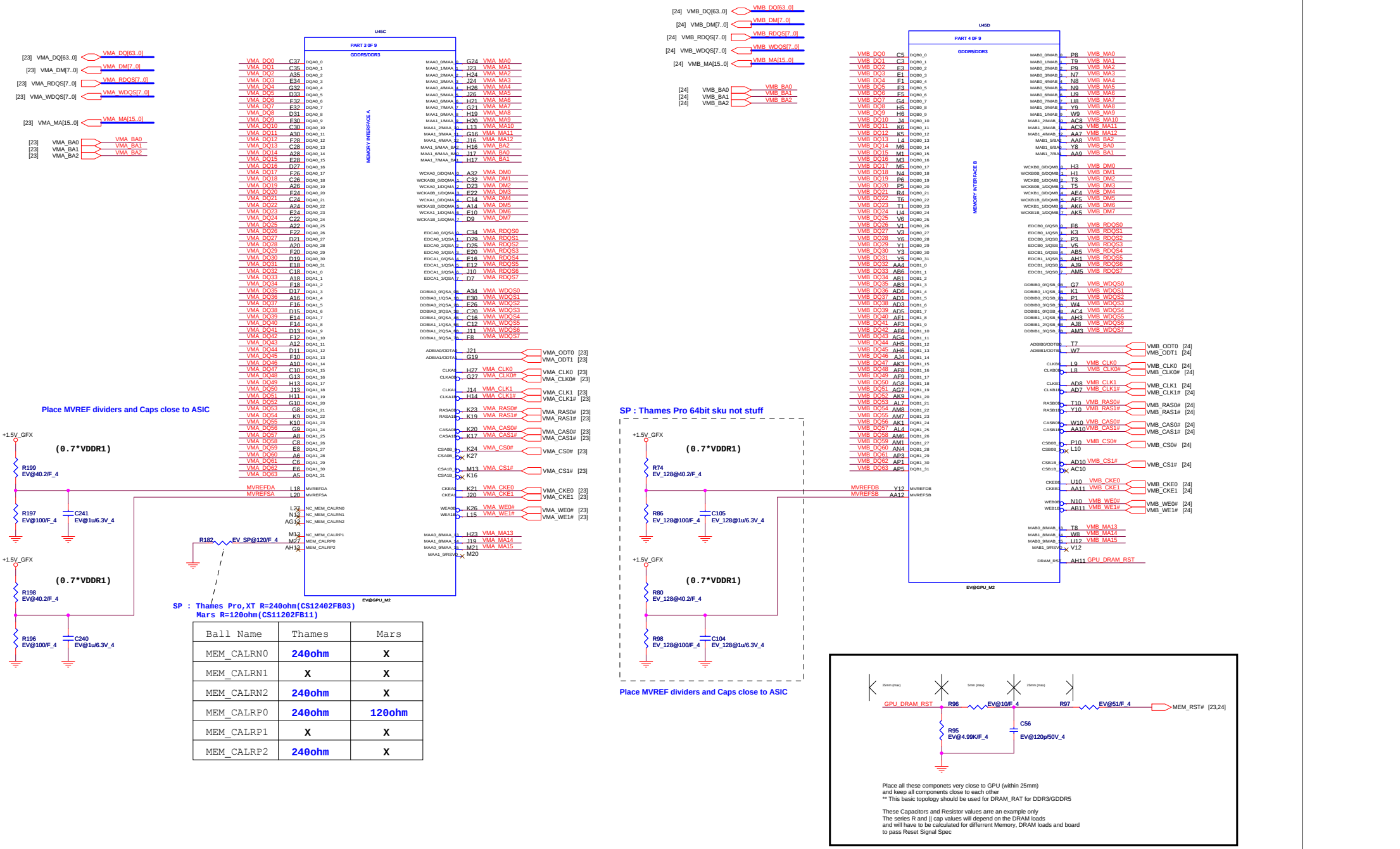


Quanta Computer Inc.

PROJECT : ZRI/ZQI

Size	Document Number	Rev
	Thames_M2/ GND	A1A
Date:	Wednesday, April 24, 2013	Sheet 21 of 50

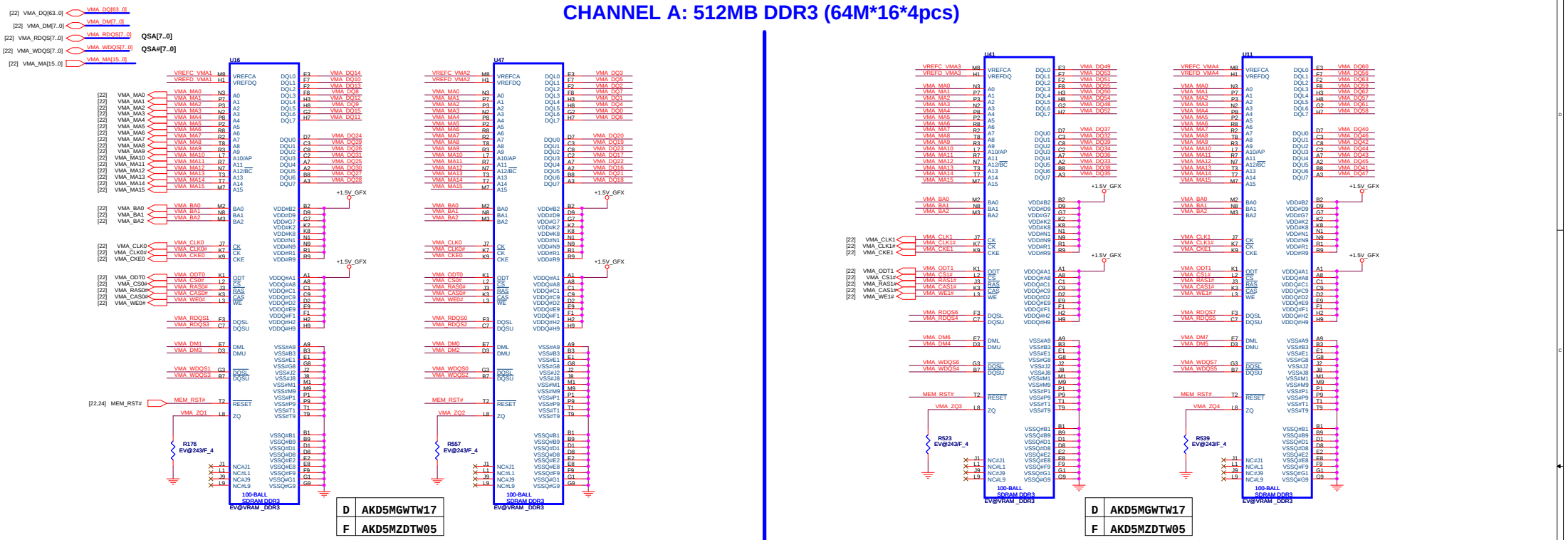
<VGA>



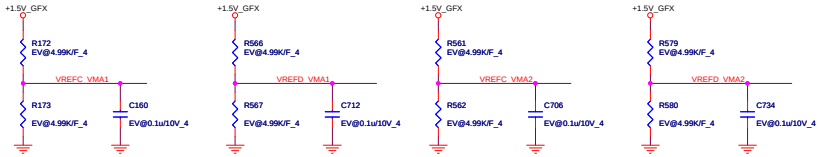
Ball Name	Thames	Mars
MEM_CALRN0	240ohm	X
MEM_CALRN1	X	X
MEM_CALRN2	240ohm	X
MEM_CALRP0	240ohm	120ohm
MEM_CALRP1	X	X
MEM_CALRP2	240ohm	X

Quanta Computer Inc.
PROJECT : ZRI/ZQI
Size | Document Number: Thames_M2/ MEM Interface | Rev A1A
Date: Wednesday, April 24, 2013 | Sheet 22 of 50

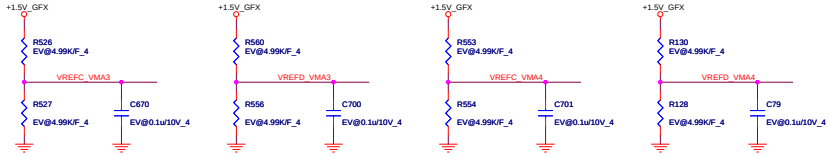
CHANNEL A: 512MB DDR3 (64M*16*4pcs)



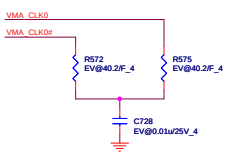
Group-A0 VREF



Group-A1 VREF

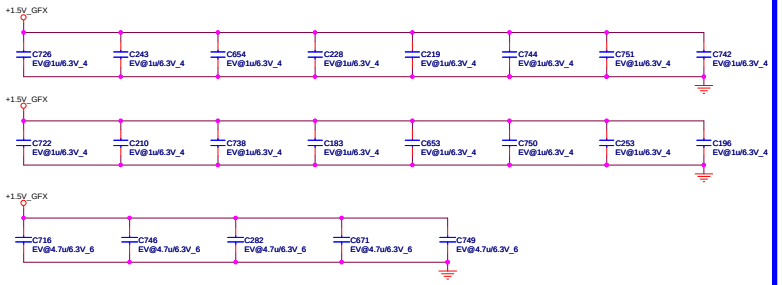


MEM_A0 CLK

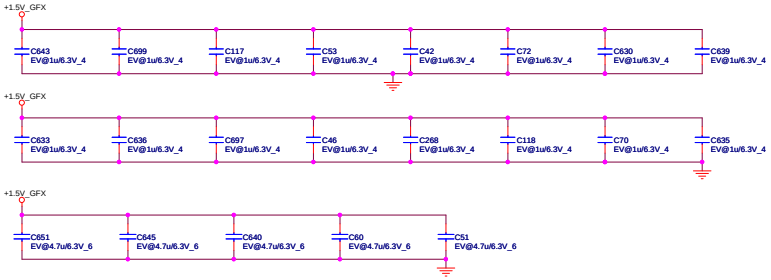


EV_SP@ : Thames Pro,XT R=56ohm(CS05602FB15)
Mars R=40.2ohm(CS04022FB28)

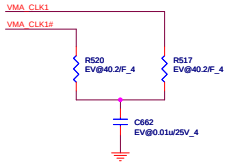
Group-A0 decoupling CAP



Group-A1 decoupling CAP



MEM_A1 CLK



EV_SP@ : Thames Pro,XT R=56ohm(CS05602FB15)
Mars R=40.2ohm(CS04022FB28)

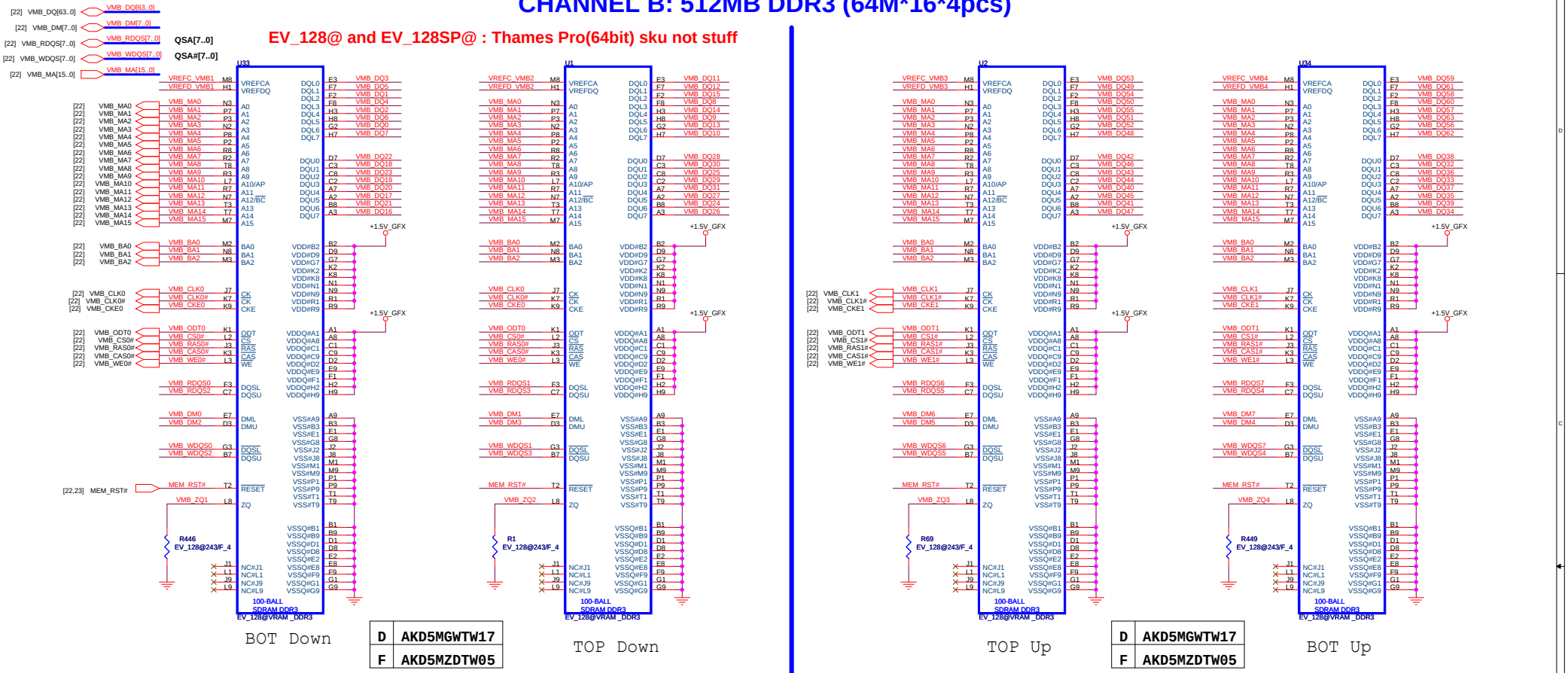
Quanta Computer Inc.
PROJECT : ZRI/ZQI

Size	Document Number	Rev
	Thames_M2/VRAM_A	A1A

Date: Wednesday, April 24, 2013 Sheet 23 of 50

CHANNEL B: 512MB DDR3 (64M*16*4pcs)

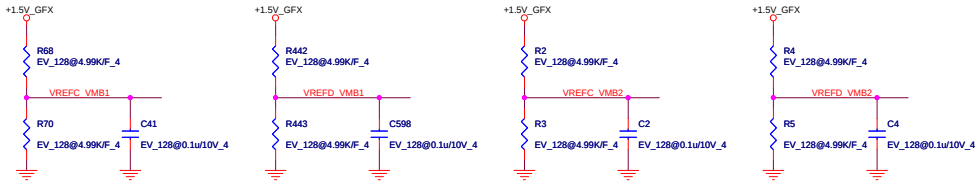
EV_128@ and EV_128SP@ : Thames Pro(64bit) sku not stuff



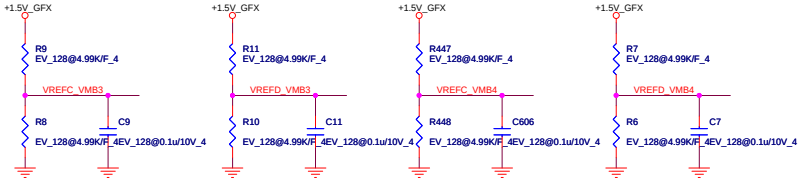
D	AKD5MGWTW17
F	AKD5MZDTW05

D	AKD5MGWTW17
F	AKD5MZDTW05

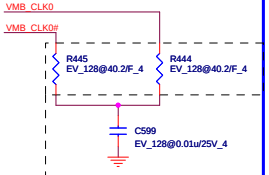
Group-B0 VREF



Group-B1 VREF

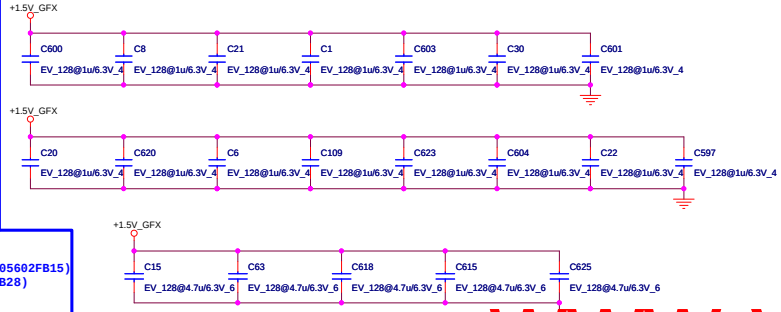


MEM_B0 CLK

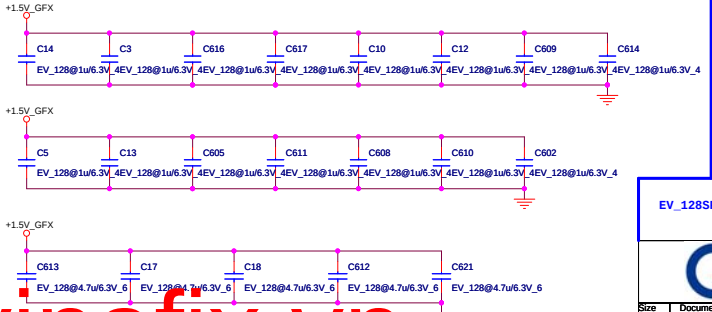


EV_128SP@ : Thames Pro,XT R=56ohm(CS05602FB15)
Mars R=40.2ohm(CS04022FB28)

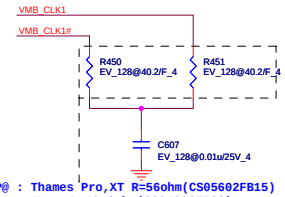
Group-B0 decoupling CAP



Group-B1 decoupling CAP



MEM_B1 CLK

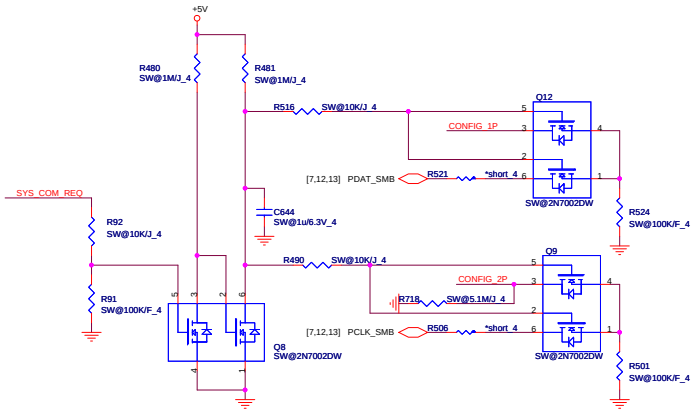


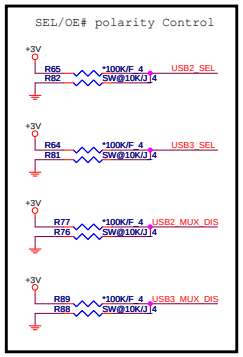
EV_128SP@ : Thames Pro,XT R=56ohm(CS05602FB15)
Mars R=40.2ohm(CS04022FB28)

Quanta Computer Inc.
PROJECT : ZRI/ZQI

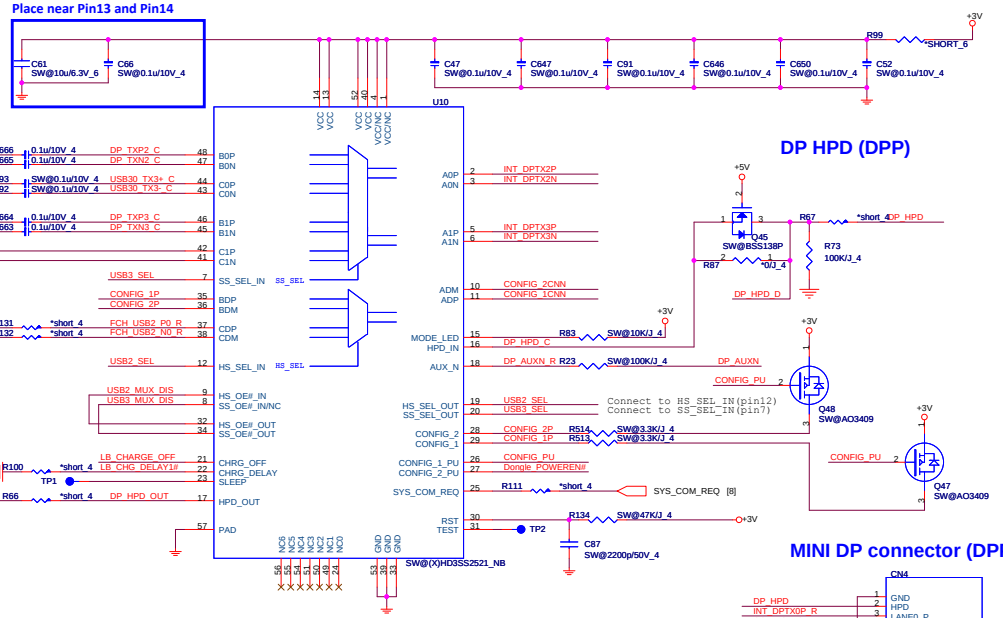
Size	Document Number	Rev
	Thames_M2/VRAM_B	A1A
Date: Wednesday, April 24, 2013	Sheet 24 of 50	

mini DP ML (DPP)



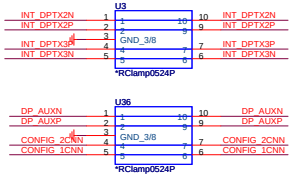


Layout Notes:
Place near Pin13 and Pin14



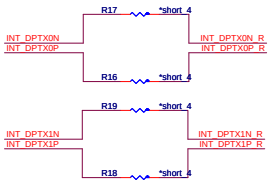
DP HPD (DPP)

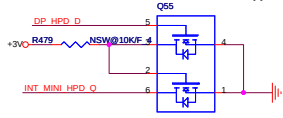
ESD Protect (EMC)

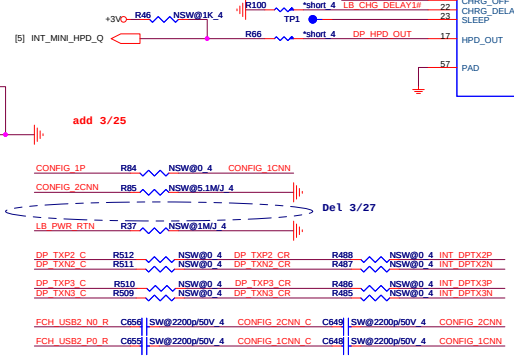


Layout Notes:
Place decoupling CAPs close to Connector

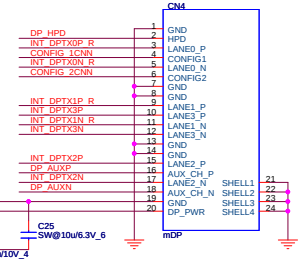
Close to DP connector

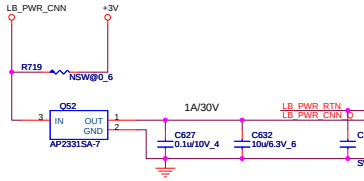




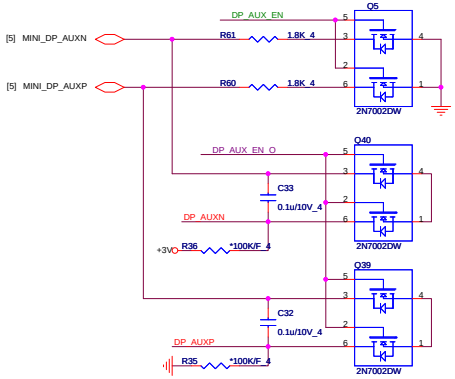


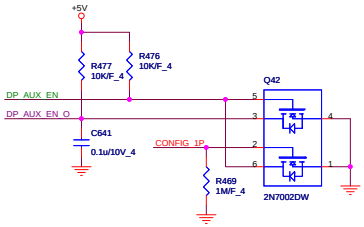
MINI DP connector (DPP)



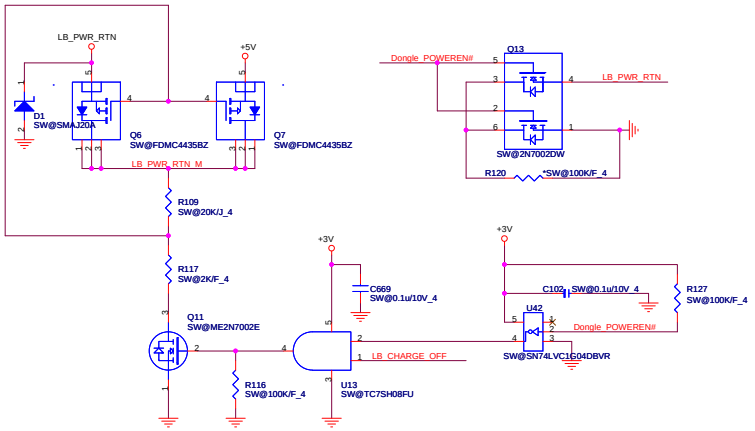


mDP AUX (DPP)





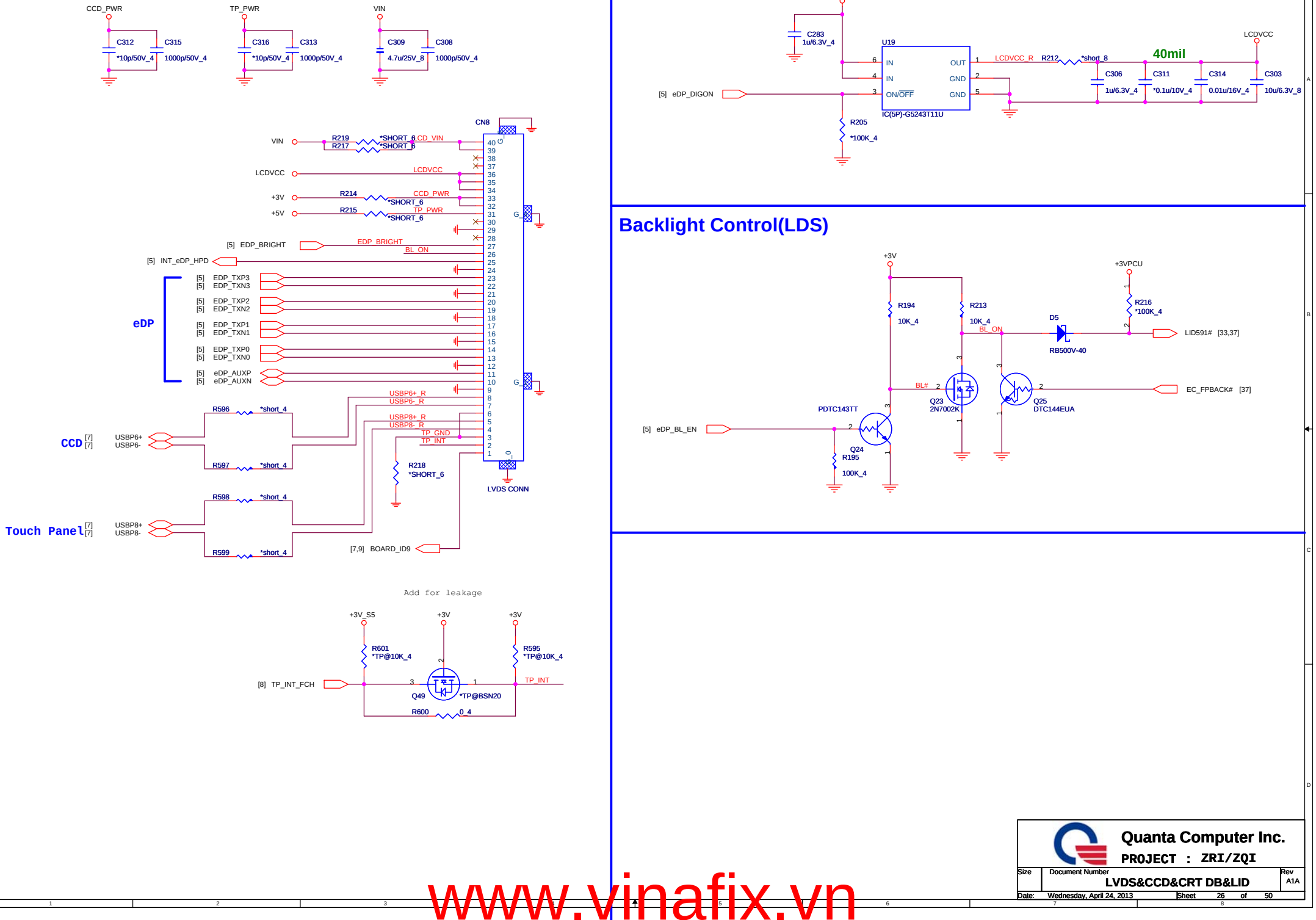
DP_CAD	Behavior
Low	DP signal (AC couple)
High	TMDS signal (DC couple)



Quanta Computer Inc.
PROJECT : ZRI/ZQI

Size	Document Number	Rev
	Mini DP	A1A
Date: Wednesday, April 24, 2013	Sheet 25 of 50	

eDP(LDS)



Add for leakage

LCD PW(LDS)

Backlight Control(LDS)

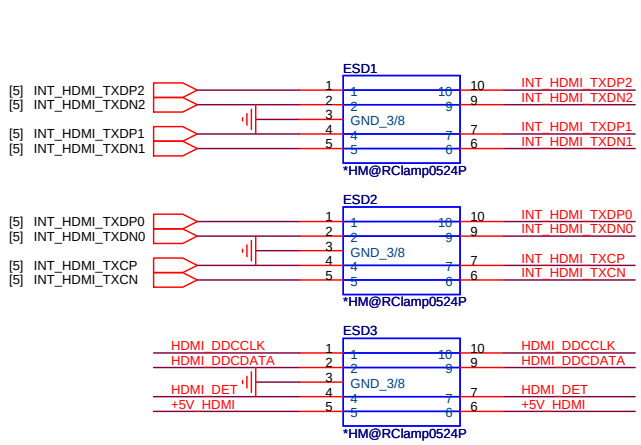
Quanta Computer Inc.
PROJECT : ZRI/ZQI

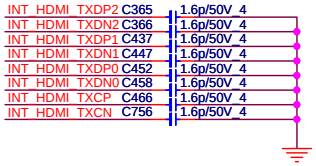
Size	Document Number	Rev
	LVDS&CCD&CRT DB&LID	A1A

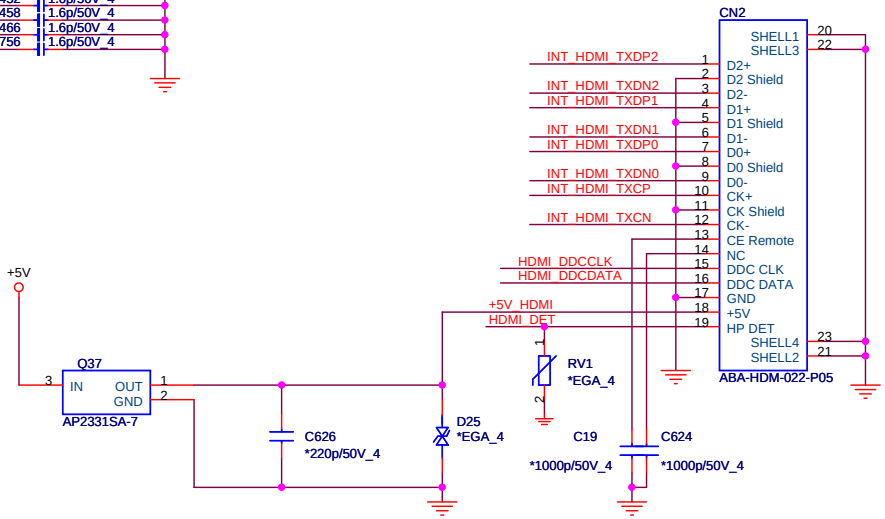
Date: Wednesday, April 24, 2013 Sheet 26 of 50

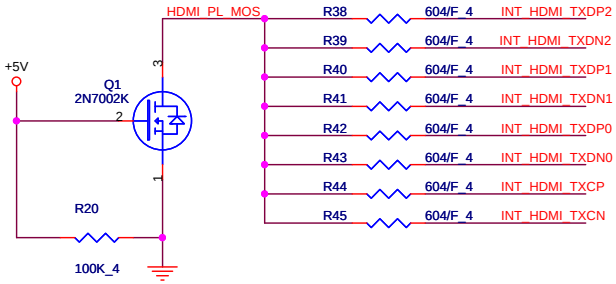
HDMI

ESD

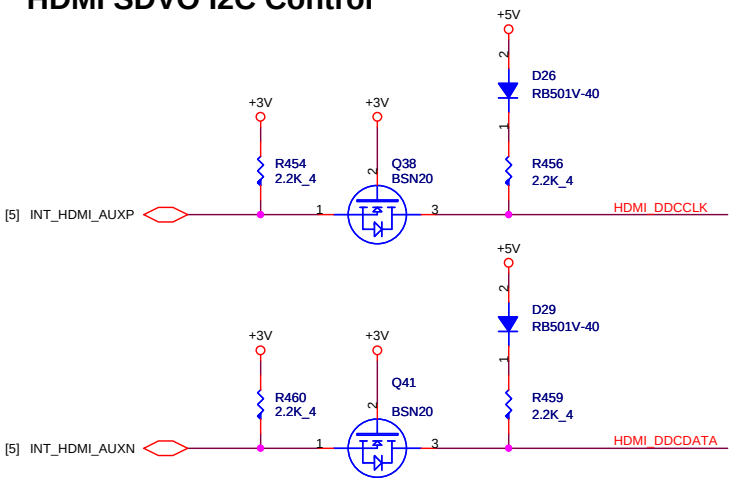




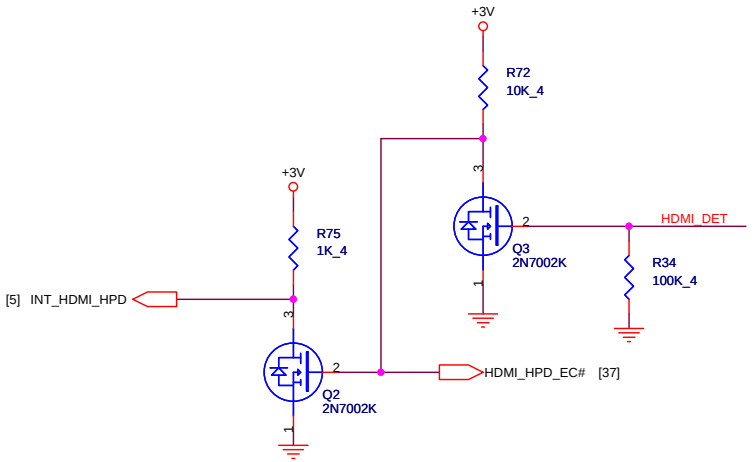




HDMI SDVO I2C Control

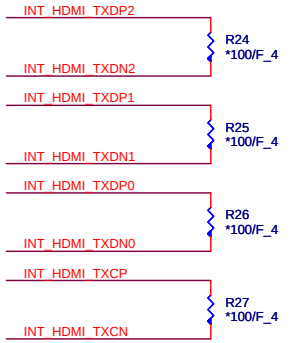


HDMI HPD SENSE



EMI reserve for HDMI(EMC)

Close connector



Quanta Computer Inc.

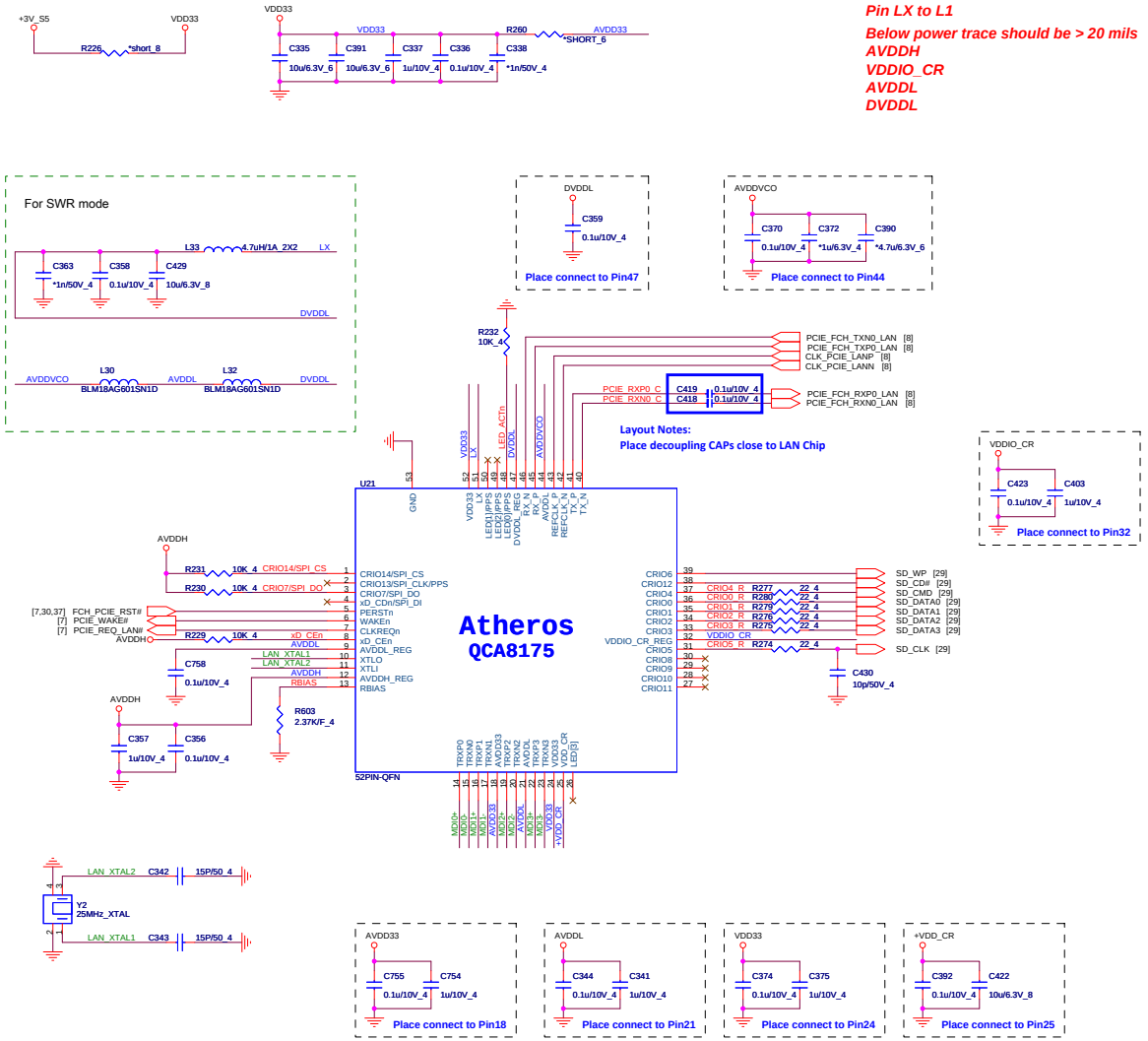
PROJECT : ZRI/ZQI

Size	Document Number	Rev
	HDMI	A1A
Date: Wednesday, April 24, 2013	Sheet 27 of 50	

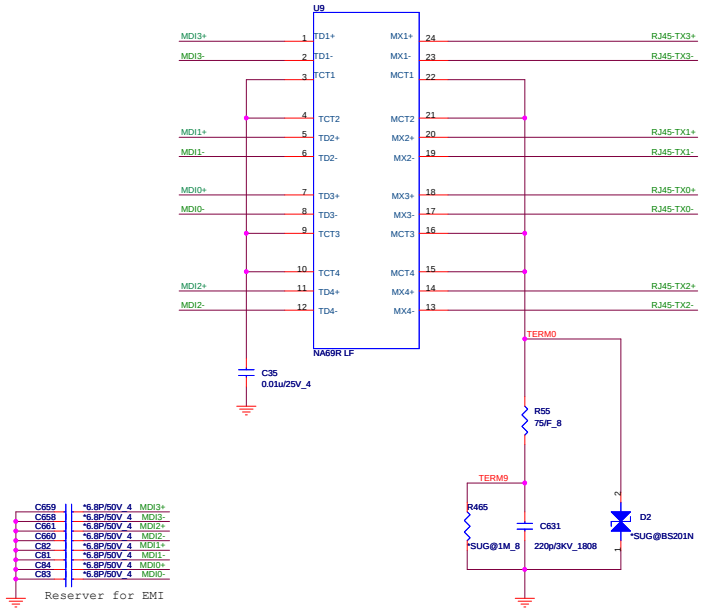
LAN/Card reader (LAN)

Below power trace should be > 30 mils
VDD33
AVDD33
VDD_CR
Pin LX to L1

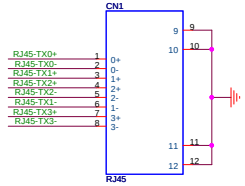
Below power trace should be > 20 mils
AVDDH
VDDIO_CR
AVDDL
DVDDL



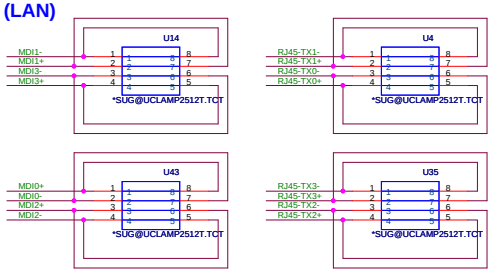
Transformer (LAN)



RJ45 CONNECTOR (LAN)



SURGE (LAN)

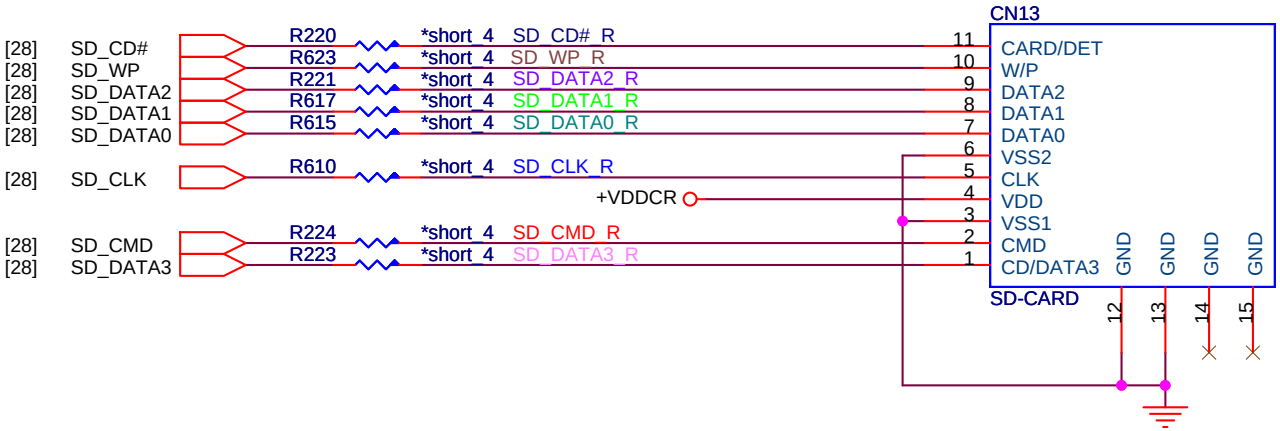


Quanta Computer Inc.
PROJECT : ZRI/ZQI

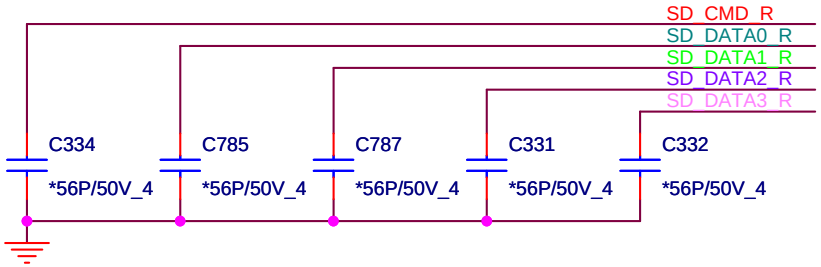
Size	Document Number	Rev
	LAN-RTL8411/CARD READER	A1A
Date: Wednesday, April 24, 2013	Sheet 28 of 50	

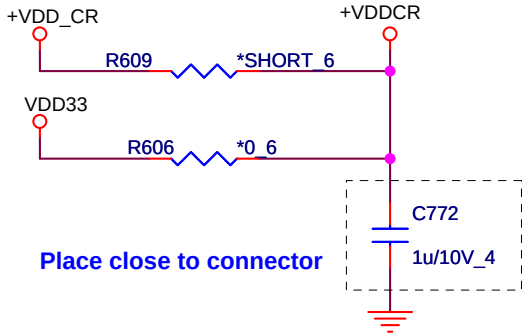
CARD READER CONNECTOR (MMC)

SD/MMC CARD READER (MMC)



EMI

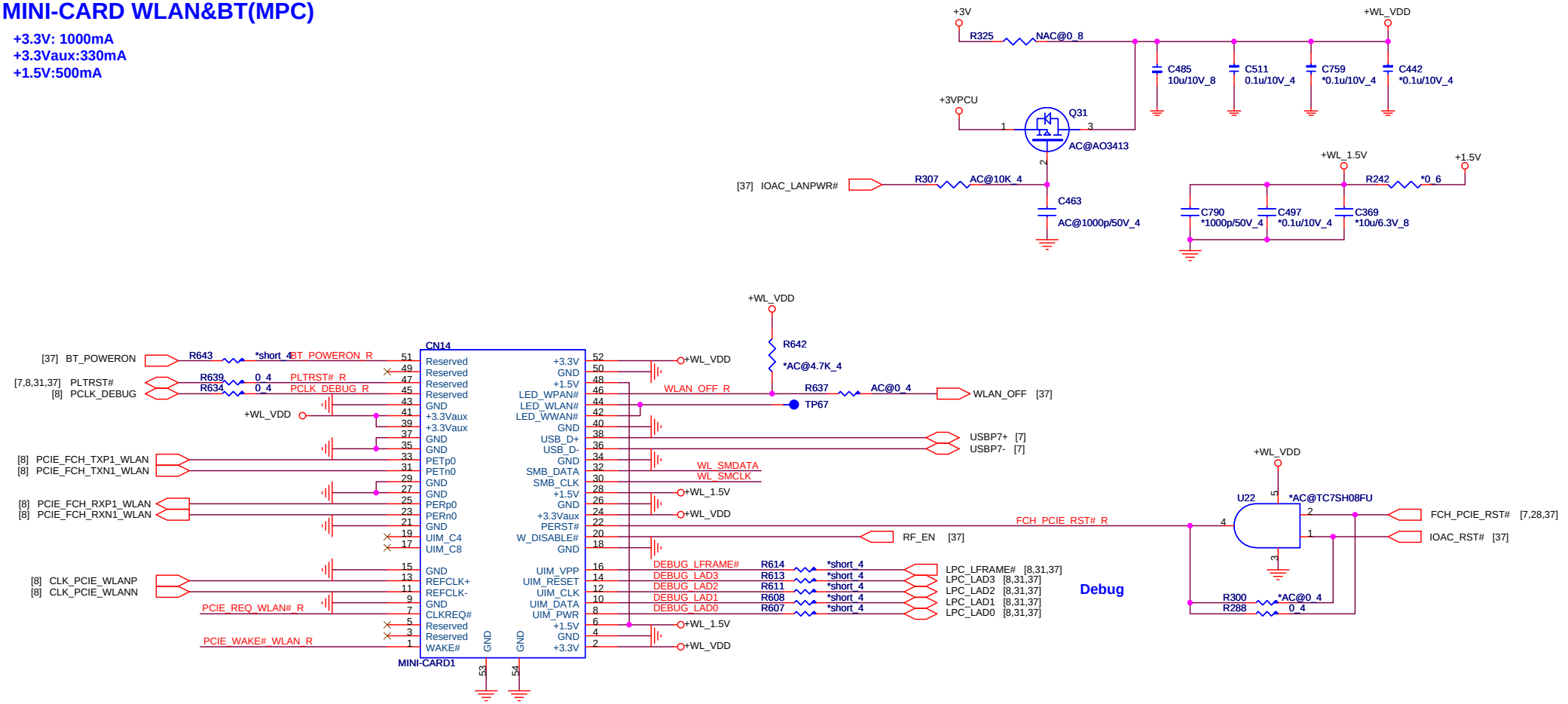




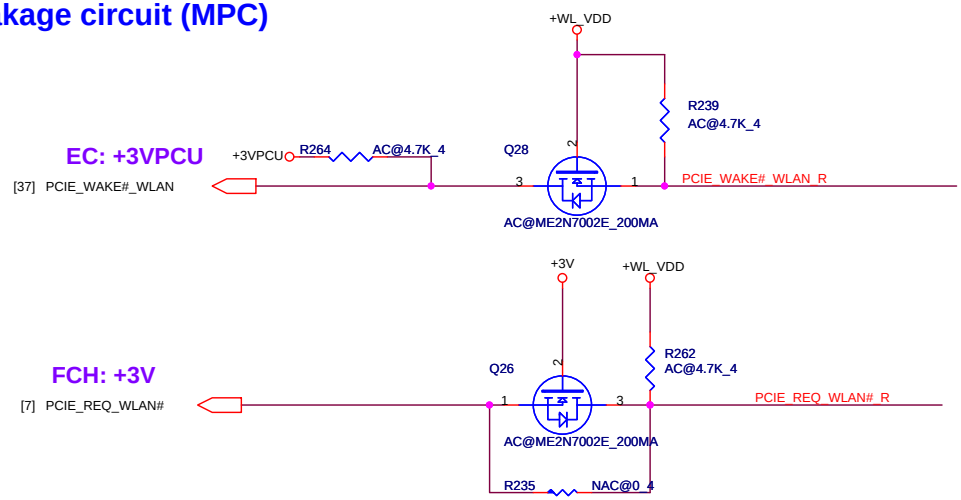
Quanta Computer Inc.		
PROJECT : ZRI/ZQI		
Size	Document Number: CARD READER CONNECTOR	Rev: A1A
Date: Wednesday, April 24, 2013	Sheet 29 of 50	

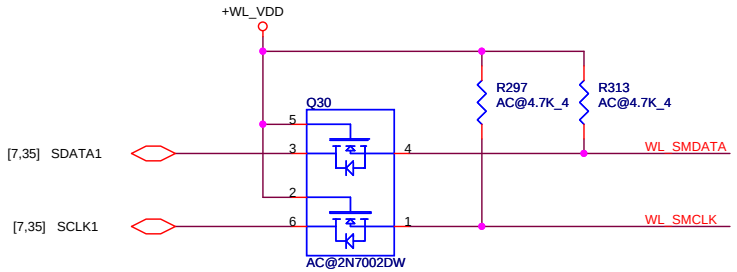
MINI-CARD WLAN&BT(MPC)

+3.3V: 1000mA
+3.3Vaux:330mA
+1.5V:500mA



Leakage circuit (MPC)

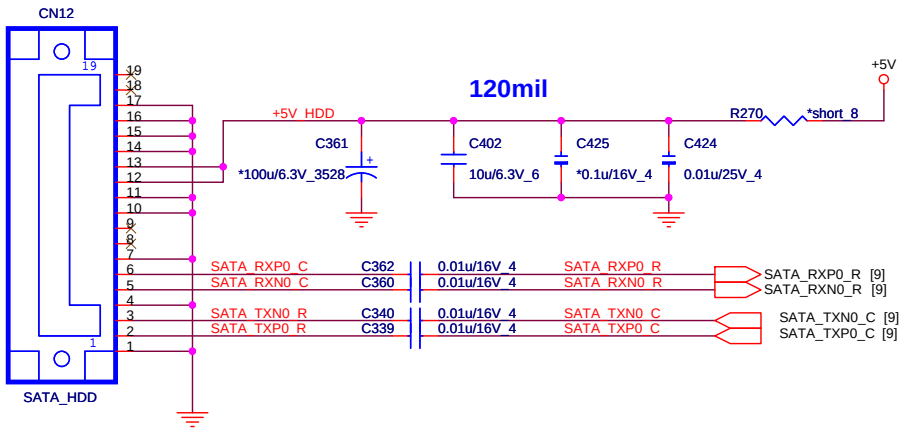




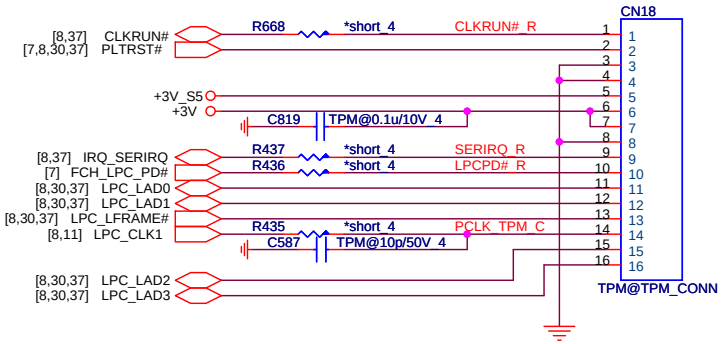
Quanta Computer Inc.
PROJECT : ZRI/ZQI

Size	Document Number	Rev
	MINI PCIE(WLAN/BT)	A1A
Date: Wednesday, April 24, 2013	Sheet 30 of 50	

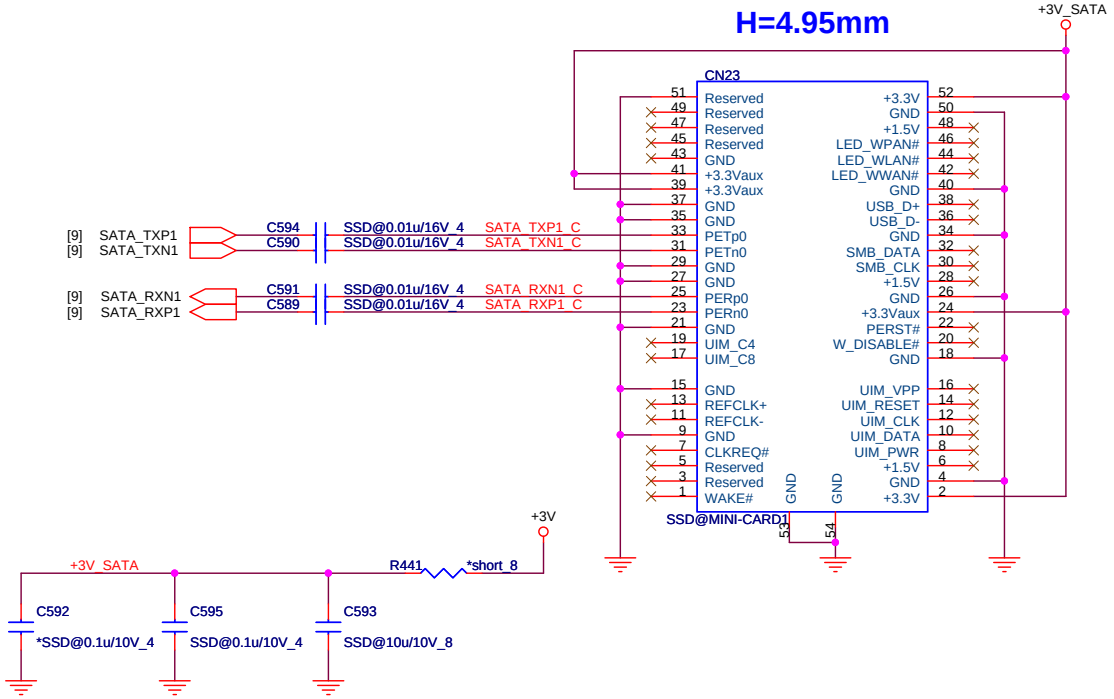
SATA HDD



TPM



MINI-CARD SSD



rating = 1000mA @ 128G

SATA Re-driver

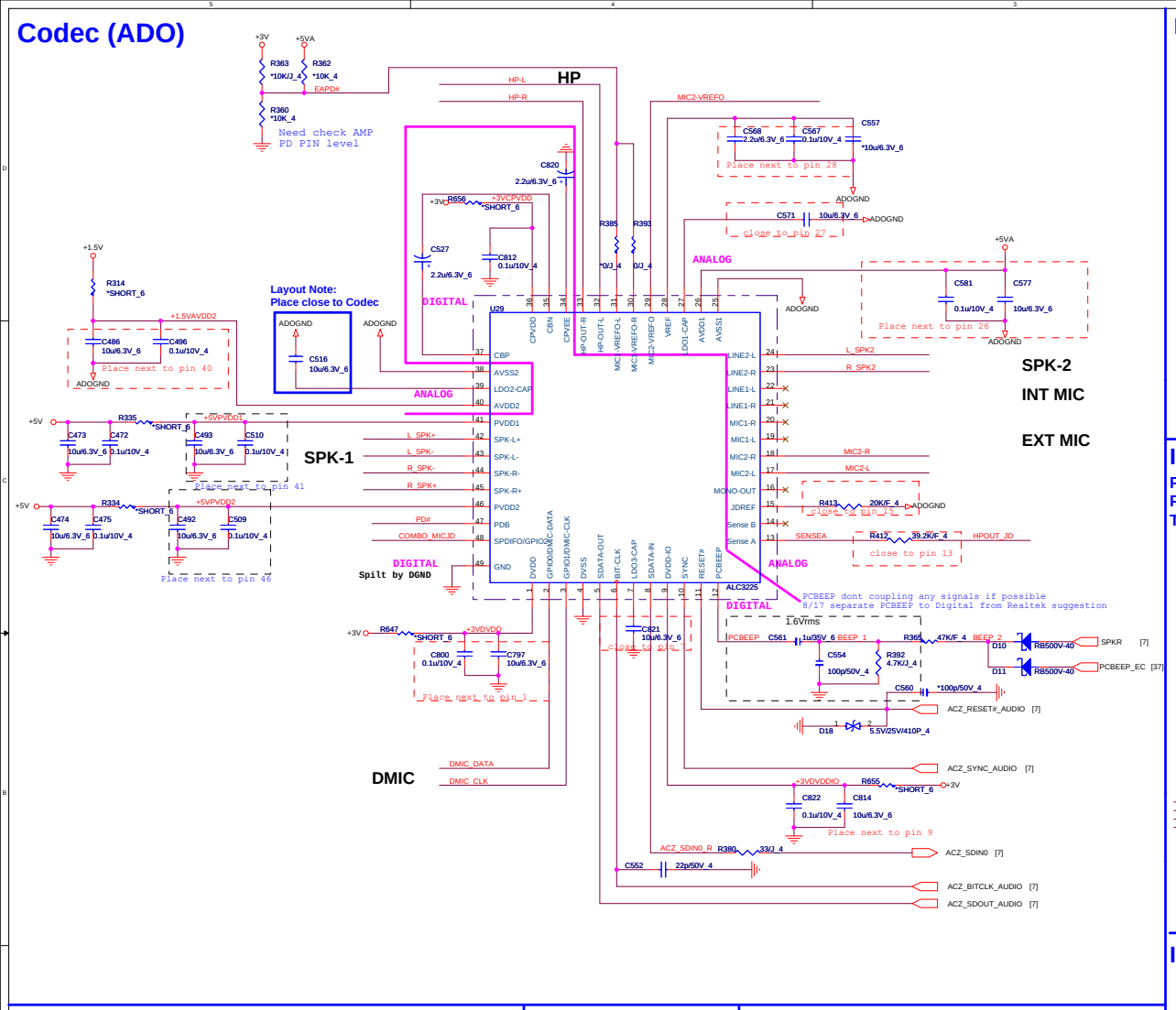
Quanta Computer Inc.

PROJECT : ZRI/ZQI

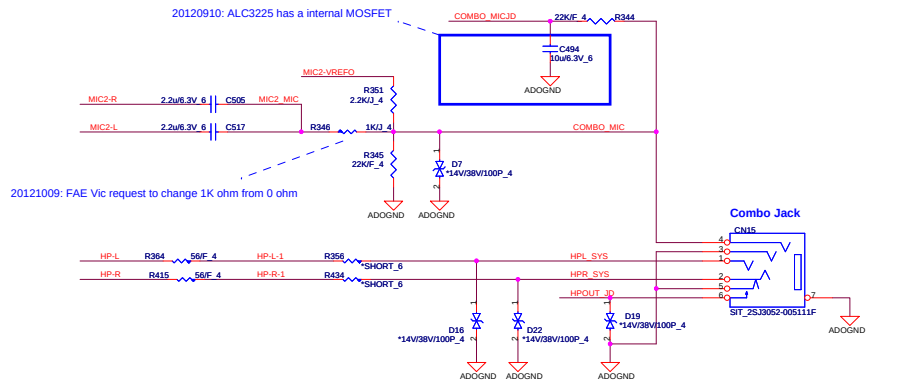
Size	Document Number	Rev
	SATA(HDD/SSD/TPM)	A1A

Date: Wednesday, April 24, 2013 Sheet 31 of 50

Codec (ADO)



HEADPHONE/Mic combo (AMP)

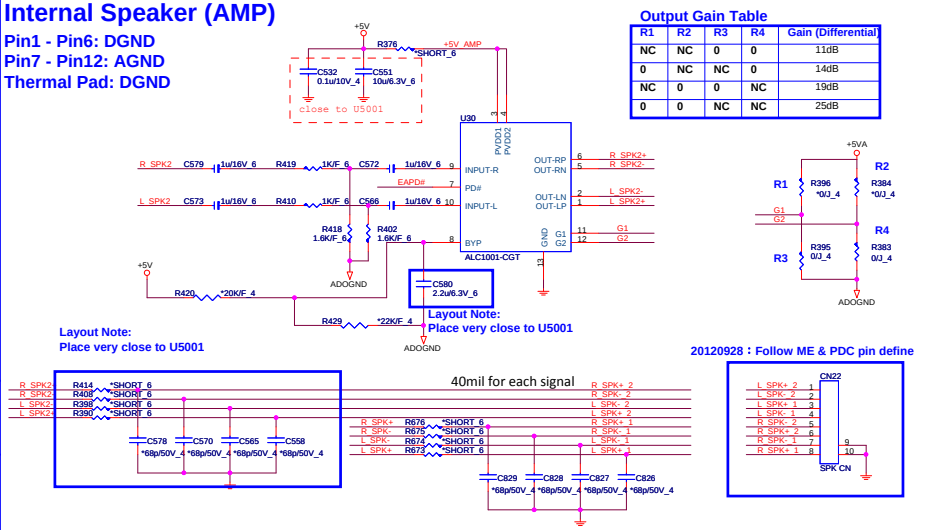


Internal Speaker (AMP)

Pin1 - Pin6: DGND
Pin7 - Pin12: AGND
Thermal Pad: DGND

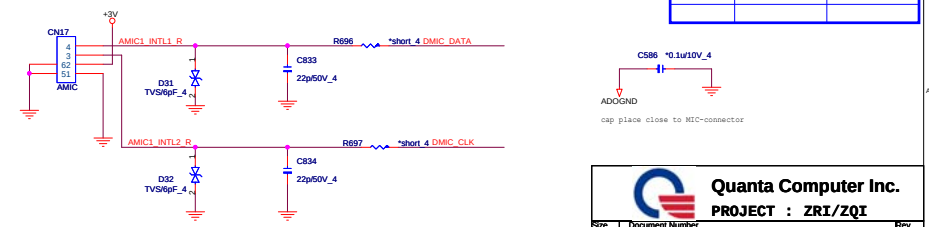
Output Gain Table

R1	R2	R3	R4	Gain (Differential)
NC	NC	0	0	11dB
0	NC	NC	0	14dB
NC	0	0	NC	19dB
0	0	NC	NC	25dB

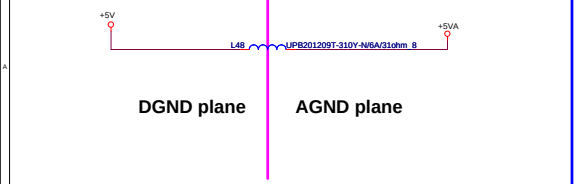


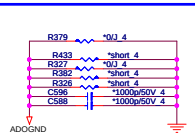
INT DIP AMIC(Reserve Stereo) (AMP)

	Mono MIC	Stereo MIC
CN1	N.C	stuff
R6	N.C	stuff
R5	stuff	N.C

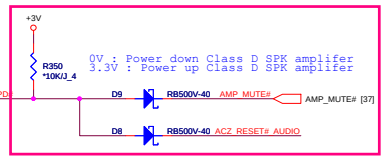


Power(ADO)





Mute(ADO)

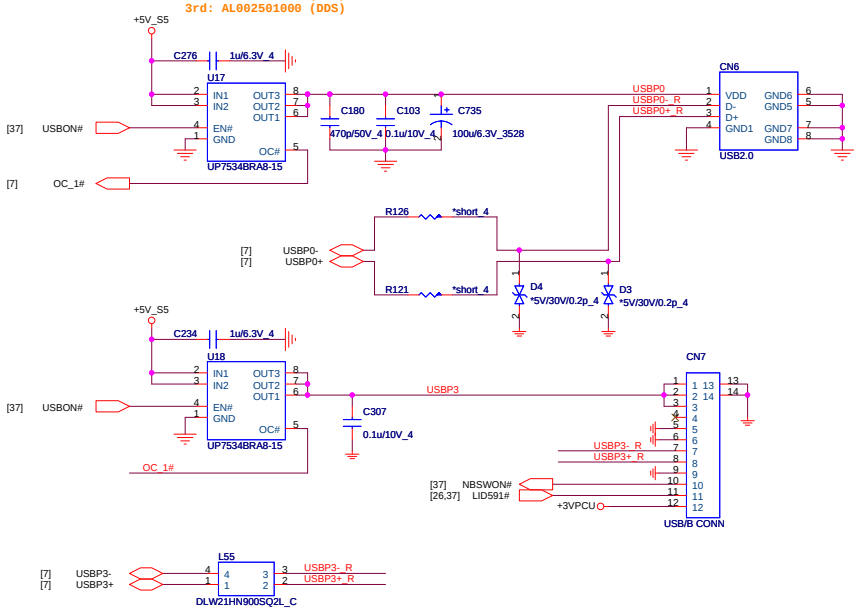


Quanta Computer Inc.
PROJECT : ZRI/ZQI

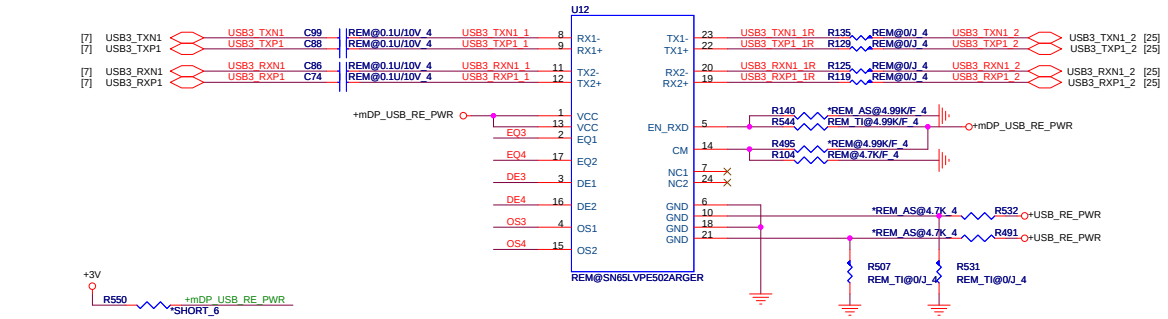
Size	Document Number	Rev
	REALTEK ALC3225	A1A
Date: Wednesday, April 24, 2013	Sheet 32 of 50	

INT & EXT USB2.0

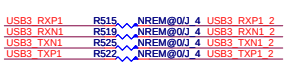
Active Low:
1st: AL007534000 (Promate)
2nd: AL000547005 (GMT)
3rd: AL002501000 (DDS)

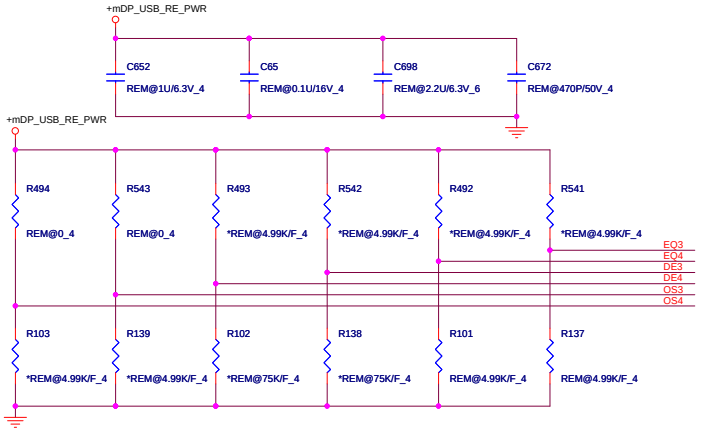


mDP USB3.0 re-driver IC



Control pins setting			
EN_RXD	Device function	CM	Device function
1(default)	Normal Operation	0(default)	Normal Operation
0	Sleep Mode	1	Compliance Test Mode



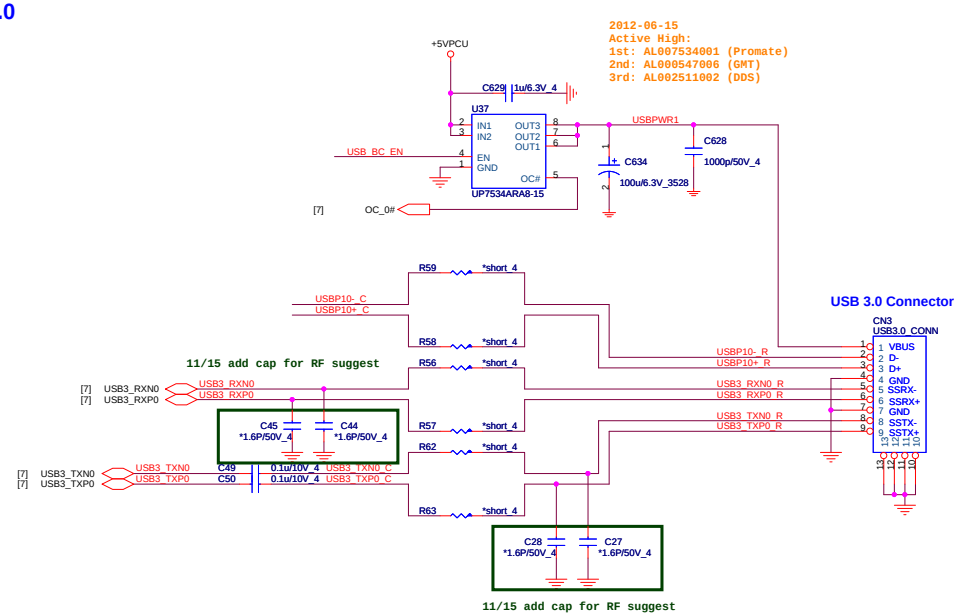


Quanta Computer Inc.
PROJECT : ZRI/ZQI

Size	Document Number	Rev
	INT&EXT USB	A1A

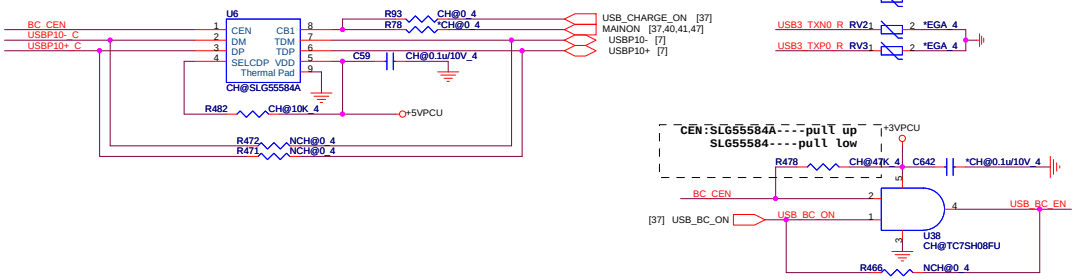
Date: Wednesday, April 24, 2013 Sheet 33 of 50

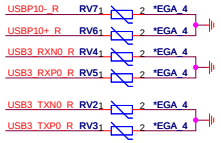
USB3.0/2.0



USB Charger to 3.0

CB	SELCDP	Funcion
0	X	DCP autodetect with mouse/keyboard wakeup
1	0	S0 charging with SDP only
1	1	S0 charging with CDP or SDP only (depending on external device)





USB3.0 re-driver IC

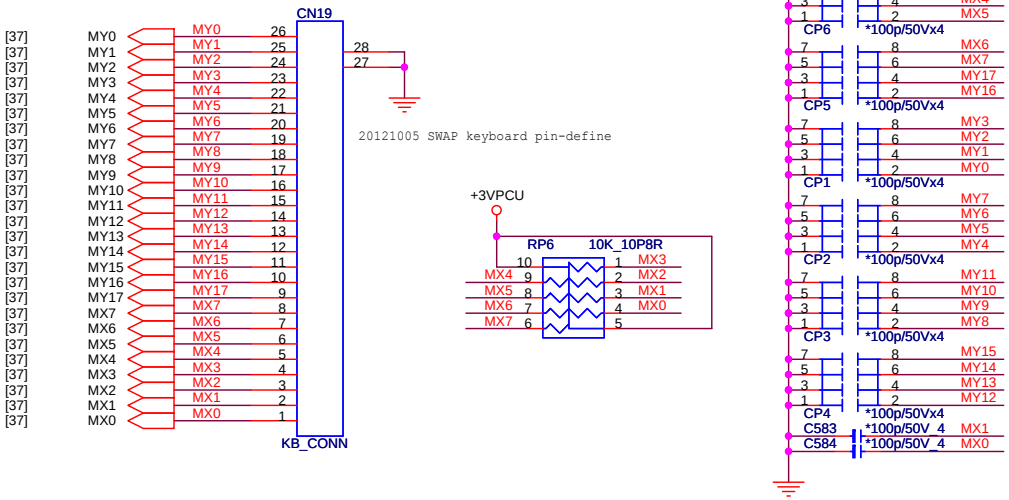
Quanta Computer Inc.

PROJECT : ZRI/ZQI

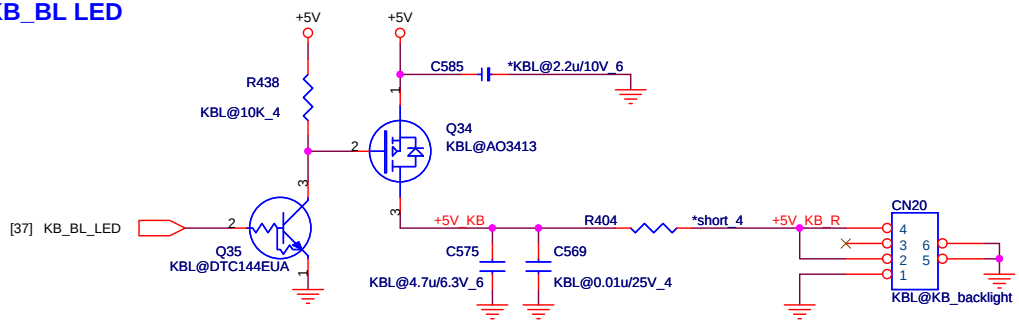
Size	Document Number	Rev
	INT&EXT USB	A1A

Date: Wednesday, April 24, 2013 Sheet 34 of 50

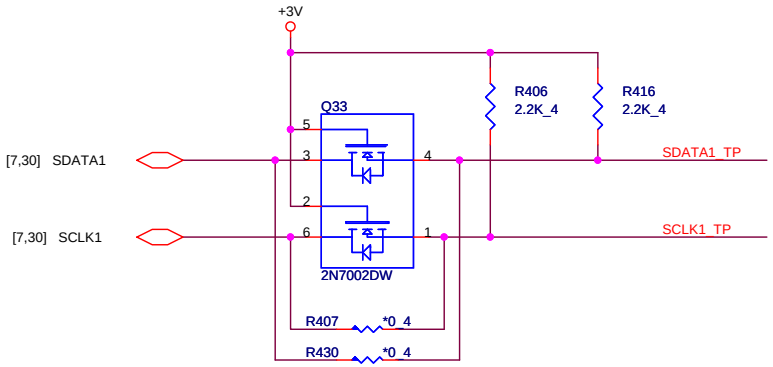
K/B(KBC)

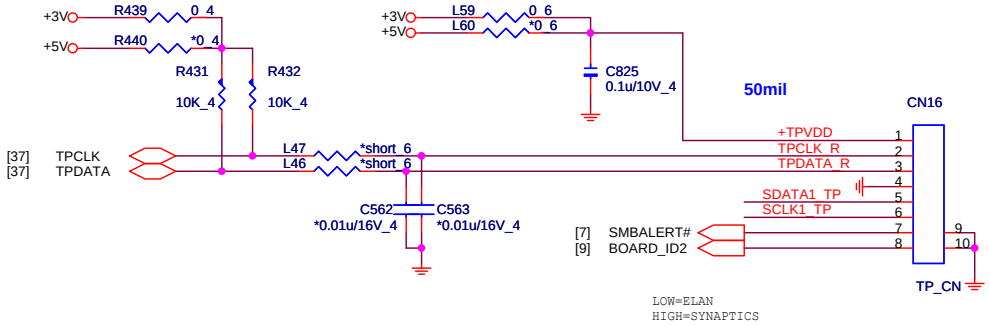


KB_BL LED



TOUCHPAD BOARD CONN(TPD)

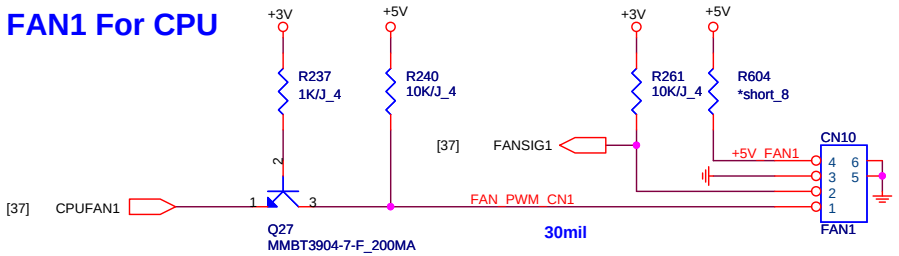




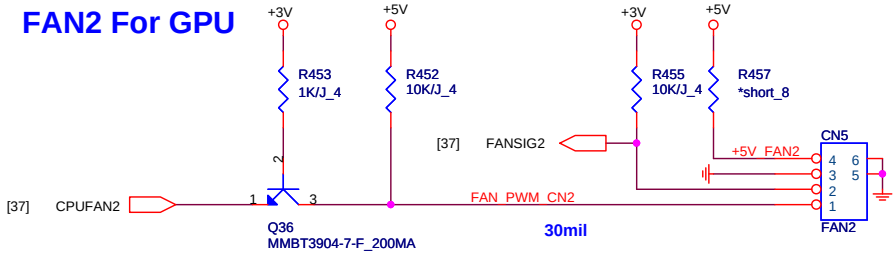
CPU FAN(THM)

If need to support XT(25) GPU, need check with thermal

FAN1 For CPU

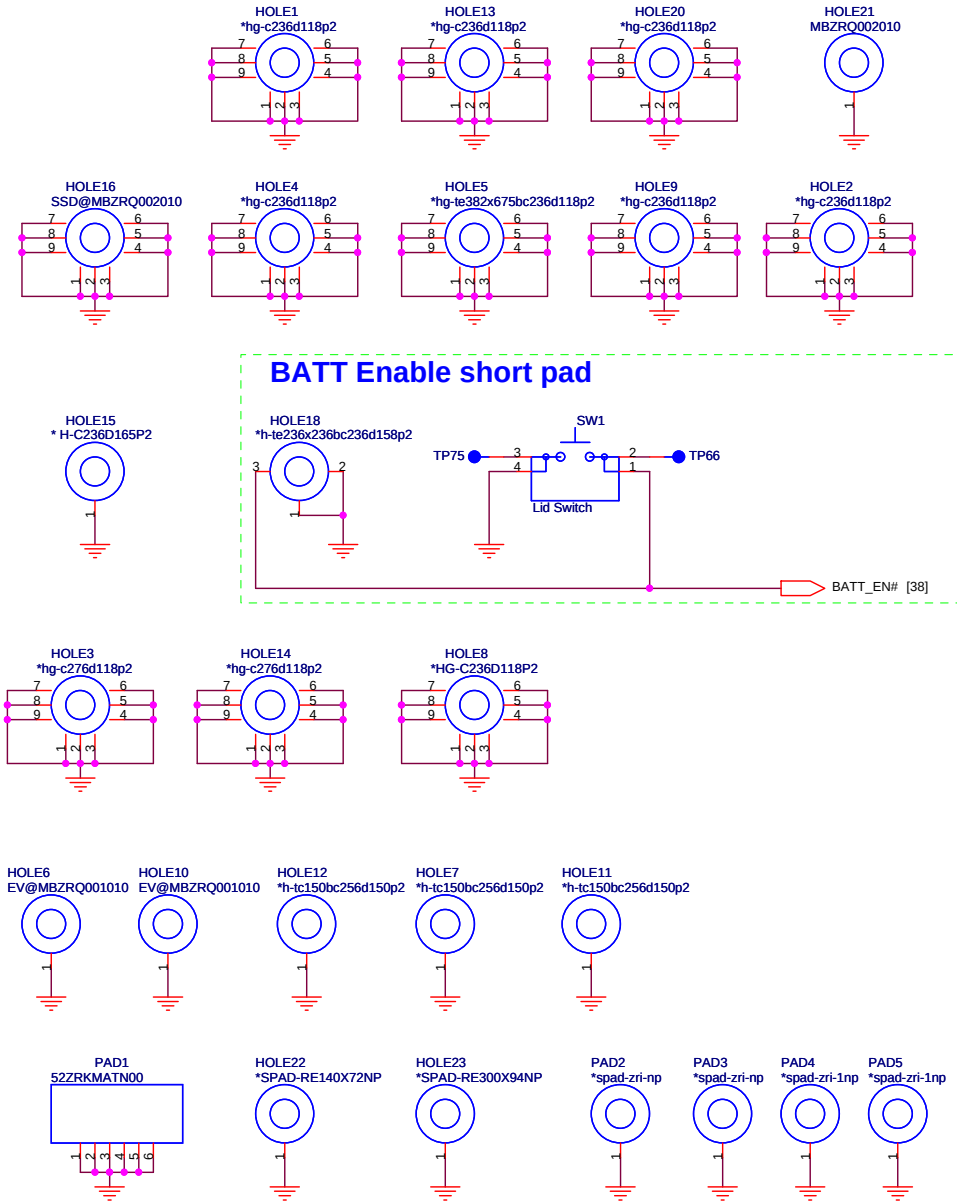


FAN2 For GPU

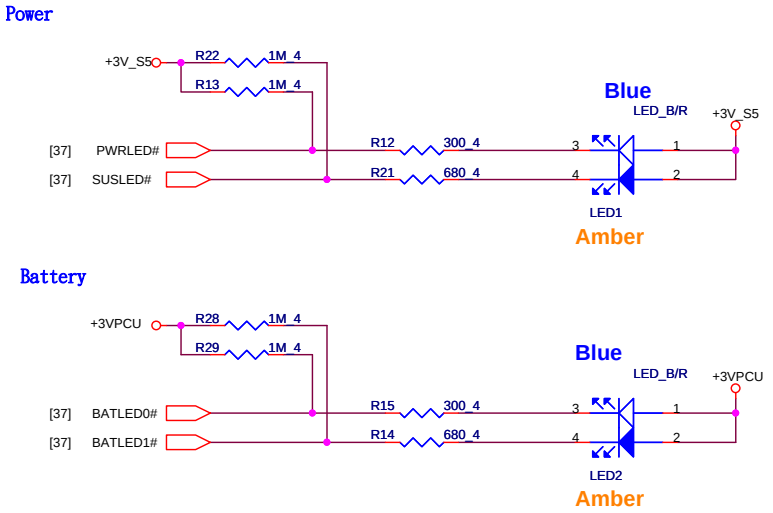


Quanta Computer Inc.		
PROJECT : ZRI/ZQI		
Size	Document Number: KB/TP/FAN	Rev: A1A
Date: Wednesday, April 24, 2013	Sheet 35 of 50	

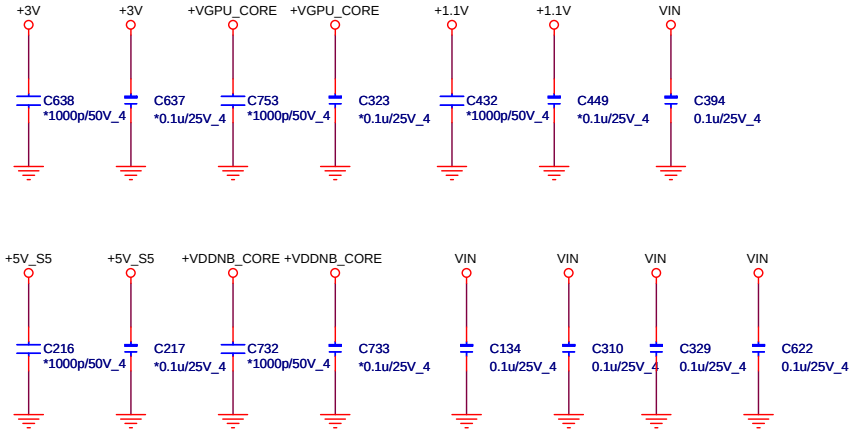
HOLE(OTH)



LED(UIF)

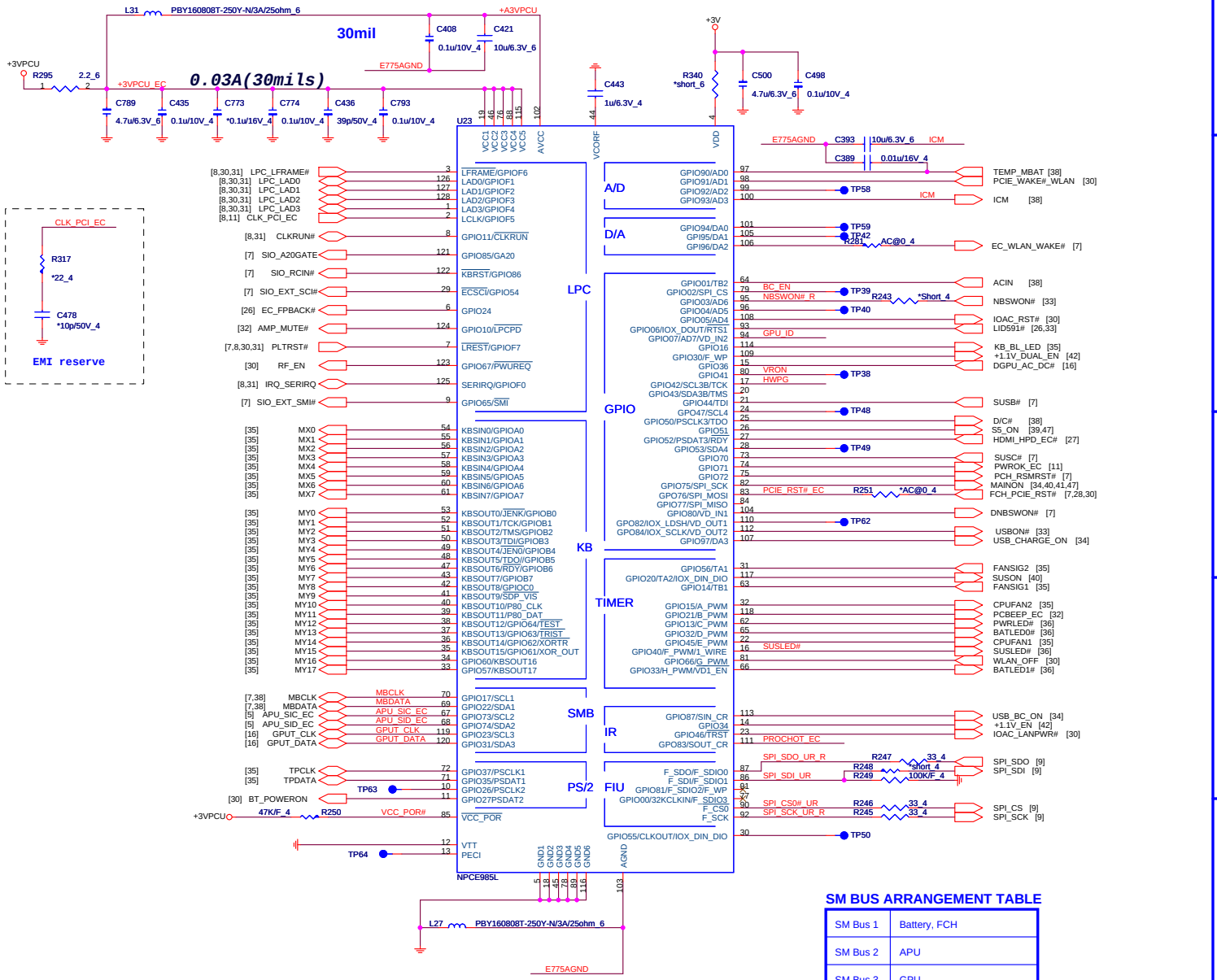


EE RETURN-PATH CAPACITORS(EMC)



Quanta Computer Inc.		
PROJECT : ZRI/ZQI		
Size	Document Number: LAN DB/ LED/ EMI/ Hole	Rev: A1A
Date: Wednesday, April 24, 2013	Sheet 36 of 50	

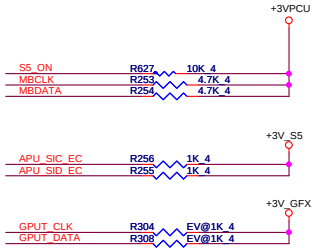
EC(KBC)

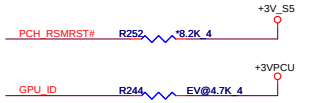


SM BUS ARRANGEMENT TABLE

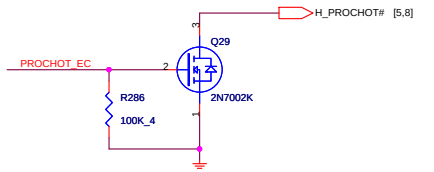
SM Bus 1	Battery, FCH
SM Bus 2	APU
SM Bus 3	GPU

SM BUS PU(KBC)

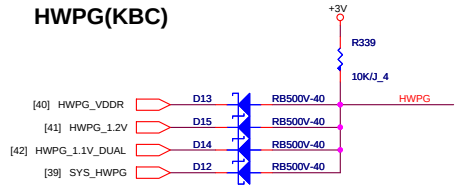




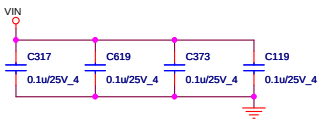
GPU_ID : H = Mars
L = Thames

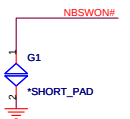


HWPG(KBC)

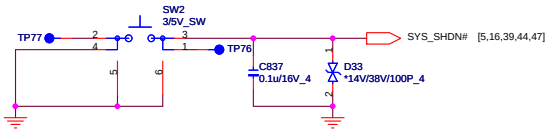


Placement for EC of VIN power plan





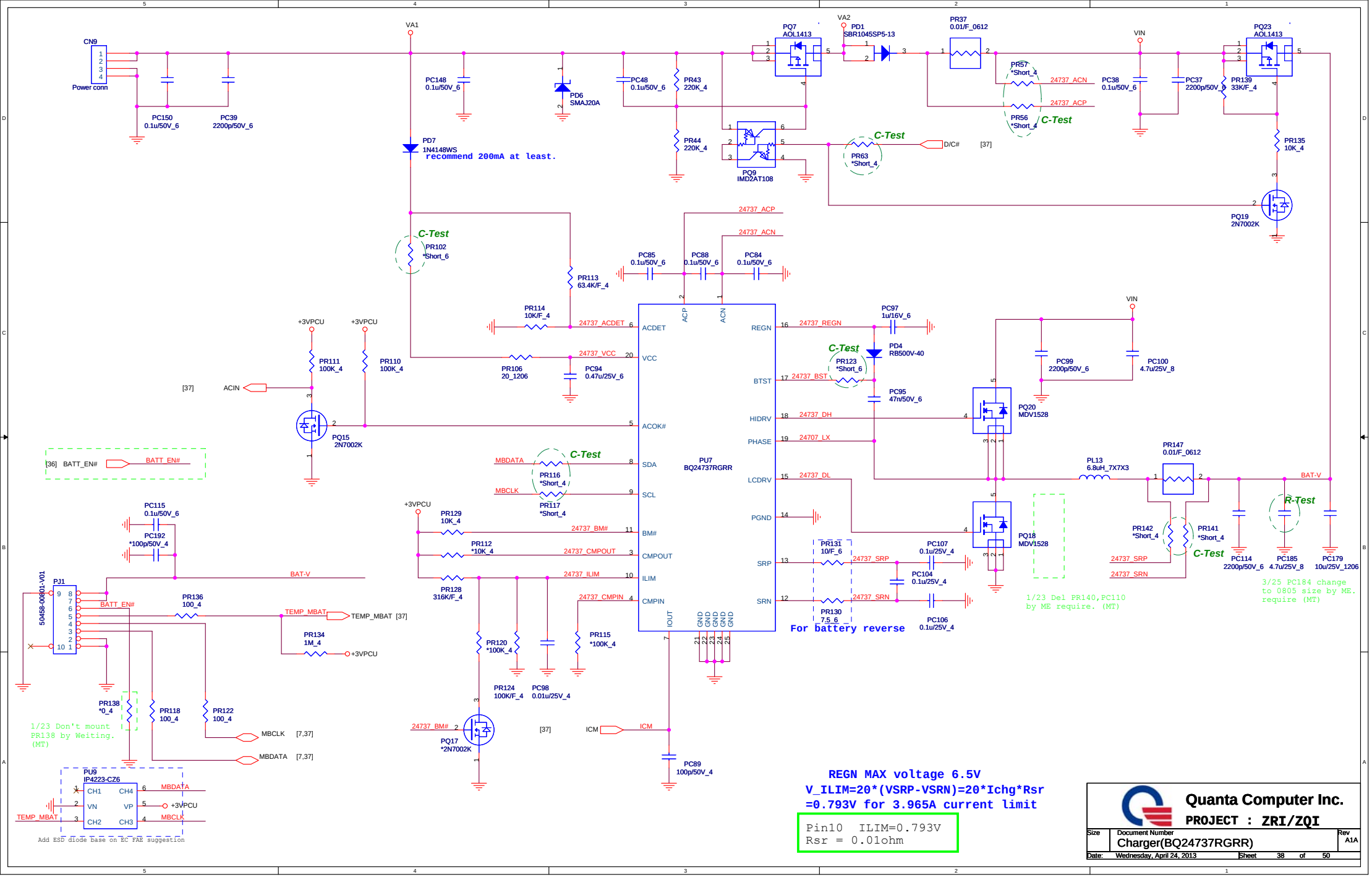
3/5VPCU reset switch (CLG)

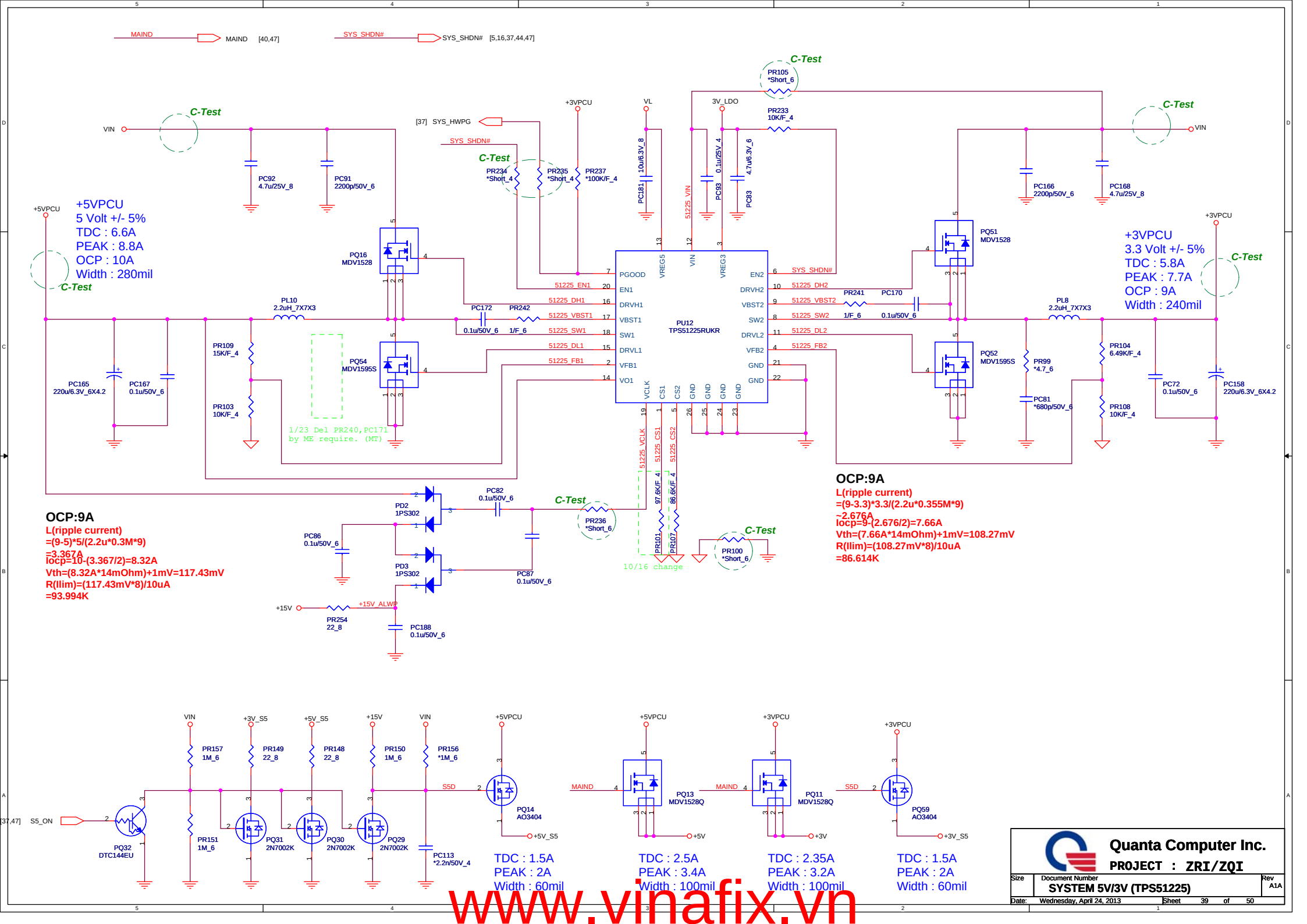


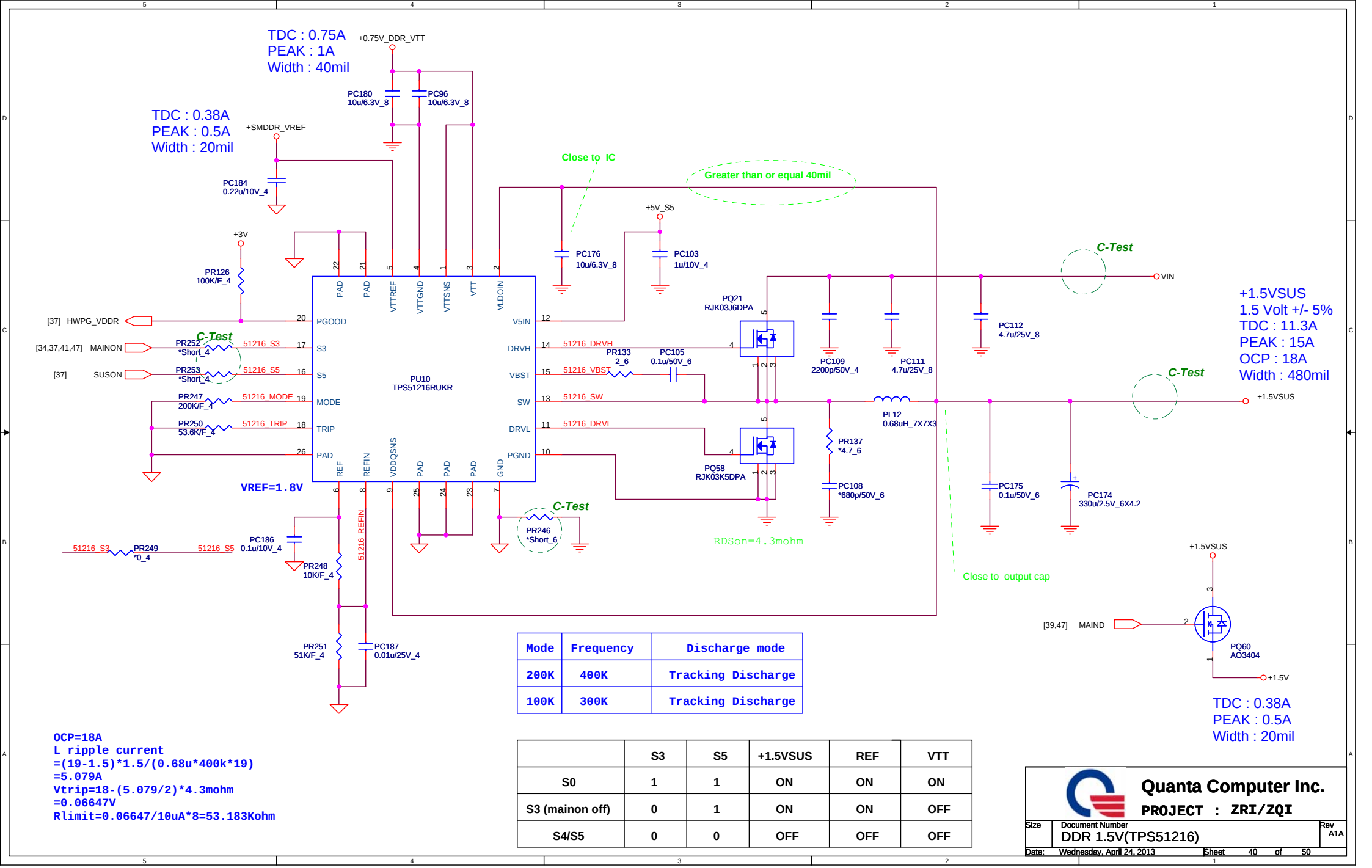
Quanta Computer Inc.
PROJECT : ZRI/ZQI

Size	Document Number	Rev
	NPCE885/FLASH	A1A

Date: Wednesday, April 24, 2013 Sheet 37 of 50




MAIND
MAIND [40,47]
SYS_SHDN#
SYS_SHDN# [5,16,37,44,47]
C-Test
VIN
PC92 4.7u/25V_8
PC91 2200p/50V_6
+3VPCU
VL
3V_LDO
[37] SYS_HWPG
SYS_SHDN#
PR234 *Short_4
PR235 *Short_4
PR237 *100K/F_4
PR105 *Short_6
PR233 10K/F_4
PC181 10u/6.3V_8
PC93 0.1u/25V_4
PC83 4.7u/6.3V_6
51225_VIN
PC166 2200p/50V_6
PC168 4.7u/25V_8
+5VPCU
+5VPCU
5 Volt +/- 5%
TDC : 6.6A
PEAK : 8.8A
OCP : 10A
Width : 280mil
PQ16 MDV1528
PL10 2.2uH_7X7X3
PC172 0.1u/50V_6
PR242 1/F_6
PU12 TPS51225RUKR
PGOOD
EN1
DRVH1
VBST1
SW1
DRVL1
VFB1
VO1
VCLK
CS1
CS2
VREG5
VIN
VREG3
EN2
DRVH2
VBST2
SW2
DRVL2
VFB2
GND
51225_EN1
51225_DH1
51225_VBST1
51225_SW1
51225_DL1
51225_FB1
51225_VCLK
51225_CS1
51225_CS2
51225_DH2
51225_VBST2
51225_SW2
51225_DL2
51225_FB2
PR241
PC170
1/F_6
0.1u/50V_6
PQ51 MDV1528
PQ52 MDV1595S
PL8 2.2uH_7X7X3
PR99 *4.7_6
PC81 *680p/50V_6
PR104 6.49K/F_4
PR108 10K/F_4
PC72 0.1u/50V_6
PC158 220u/6.3V_6X4.2
+3VPCU
+3VPCU
3.3 Volt +/- 5%
TDC : 5.8A
PEAK : 7.7A
OCP : 9A
Width : 240mil
PR109 15K/F_4
PR103 10K/F_4
PQ54 MDV1595S
PC165 220u/6.3V_6X4.2
PC167 0.1u/50V_6
1/23 Del PR240,PC171
by ME require. (MT)
OCP:9A
L(ripple current)
=(9-5)*5/(2.2u*0.3M*9)
=3.367A
Iocp=10-(3.367/2)=8.32A
Vth=(8.32A*14mOhm)+1mV=117.43mV
R(Ilim)=(117.43mV*8)/10uA
=93.994K
PC82 0.1u/50V_6
PD2 1PS302
PD3 1PS302
PC86 0.1u/50V_6
PC87 0.1u/50V_6
PR236 *Short_6
97.6K/F_4
86.6K/F_4
PR101
PR107
PR100 *Short_6
10/16 change
OCP:9A
L(ripple current)
=(9-3.3)*3.3/(2.2u*0.355M*9)
~2.676A
Iocp=9-(2.676/2)=7.66A
Vth=(7.66A*14mOhm)+1mV=108.27mV
R(Ilim)=(108.27mV*8)/10uA
=86.614K
+15V
+15V_ALW
PR254 22_8
PC188 0.1u/50V_6
VIN
+3V_S5
+5V_S5
+15V
VIN
PR157 1M_6
PR149 22_8
PR148 22_8
PR150 1M_6
PR156 *1M_6
S5D
[37,47] S5_ON
PQ32 DTC144EU
PR151 1M_6
PQ31 2N7002K
PQ30 2N7002K
PQ29 2N7002K
PC113 *2.2n/50V_4
+5VPCU
PQ14 AO3404
+5V_S5
TDC : 1.5A
PEAK : 2A
Width : 60mil
+5VPCU
MAIND
PQ13 MDV1528Q
+5V
TDC : 2.5A
PEAK : 3.4A
Width : 100mil
+3VPCU
MAIND
PQ11 MDV1528Q
+3V
TDC : 2.35A
PEAK : 3.2A
Width : 100mil
+3VPCU
S5D
PQ59 AO3404
+3V_S5
TDC : 1.5A
PEAK : 2A
Width : 60mil
Quanta Computer Inc.
PROJECT : ZRI/ZQI
Size
Document Number
SYSTEM 5V/3V (TPS51225)
Rev
A1A
Date: Wednesday, April 24, 2013
Sheet 39 of 50
www.vinafix.vn



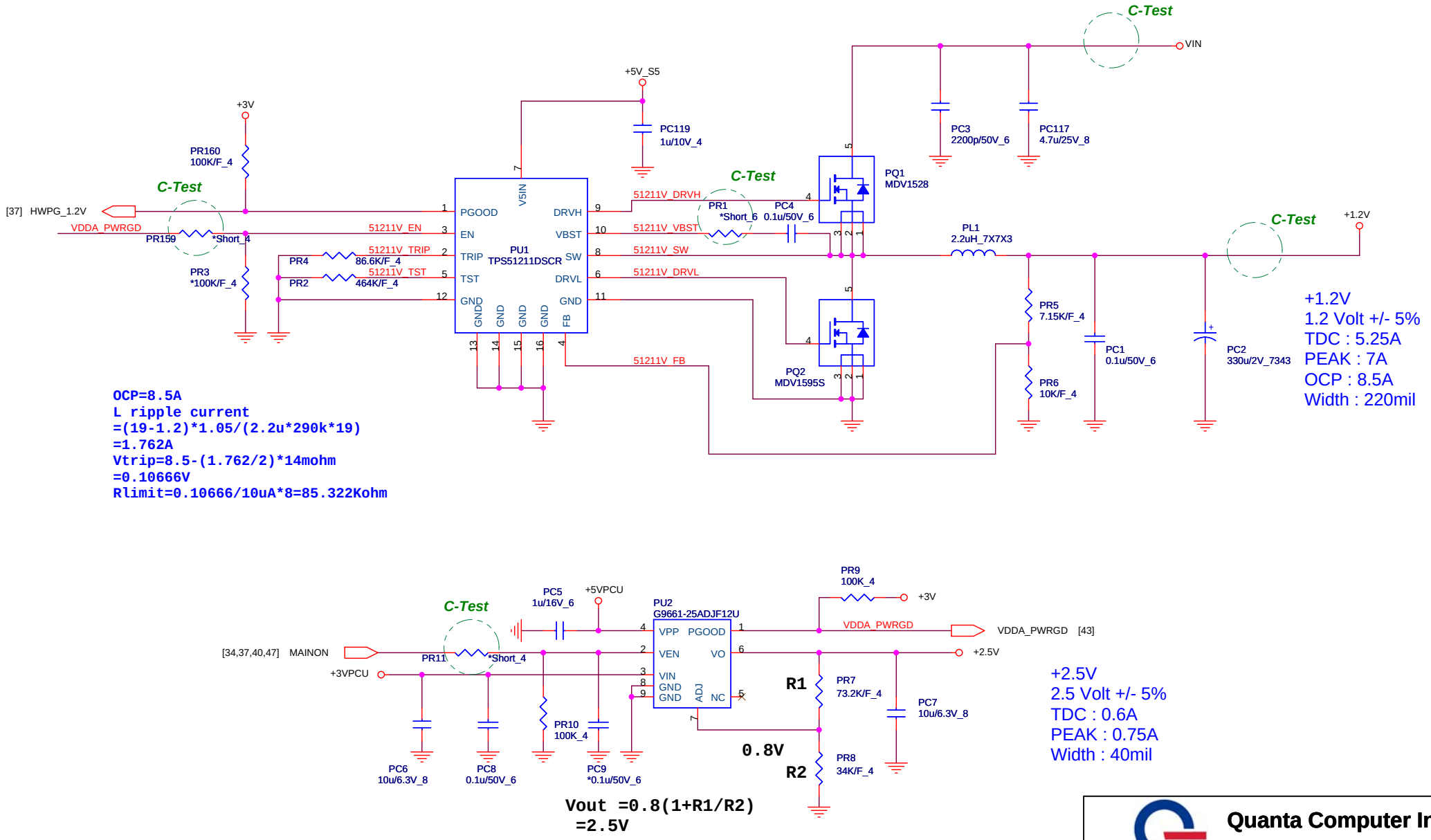
Mode	Frequency	Discharge mode
200K	400K	Tracking Discharge
100K	300K	Tracking Discharge

OCP=18A
L ripple current
=(19-1.5)*1.5/(0.68u*400k*19)
=5.079A
Vtrip=18-(5.079/2)*4.3mohm
=0.06647V
Rlimit=0.06647/10uA*8=53.183Kohm

	S3	S5	+1.5VSUS	REF	VTT
S0	1	1	ON	ON	ON
S3 (mainon off)	0	1	ON	ON	OFF
S4/S5	0	0	OFF	OFF	OFF

Quanta Computer Inc.
PROJECT : ZRI/ZQI

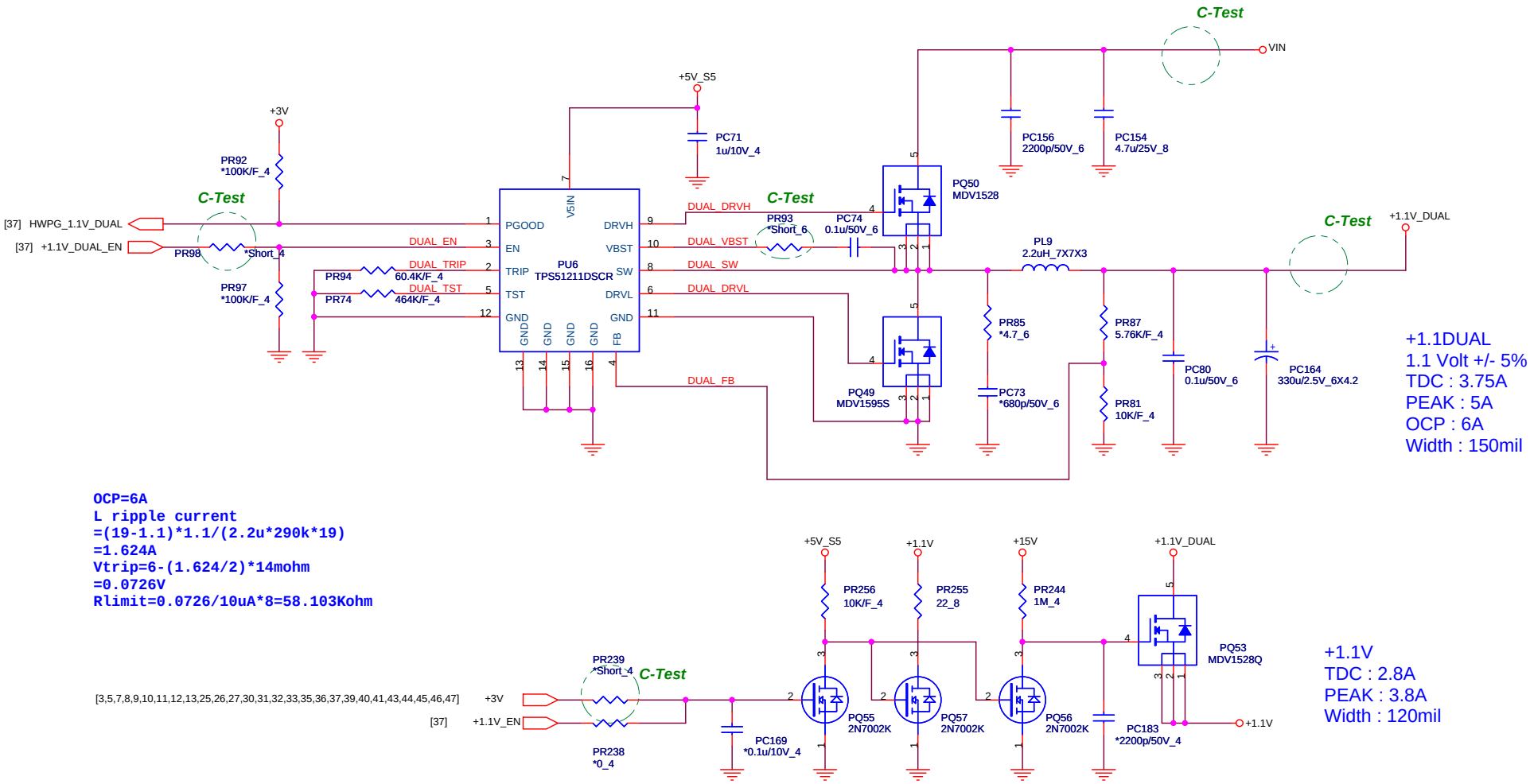
Size	Document Number	Rev
	DDR 1.5V(TPS51216)	A1A
Date: Wednesday, April 24, 2013	Sheet 40 of 50	



Quanta Computer Inc.

PROJECT : ZRI/ZQI

Size	Document Number	Rev
	+1.2V(TPS51211)/+2.5V	A1A
Date: Wednesday, April 24, 2013	Sheet 41 of 50	

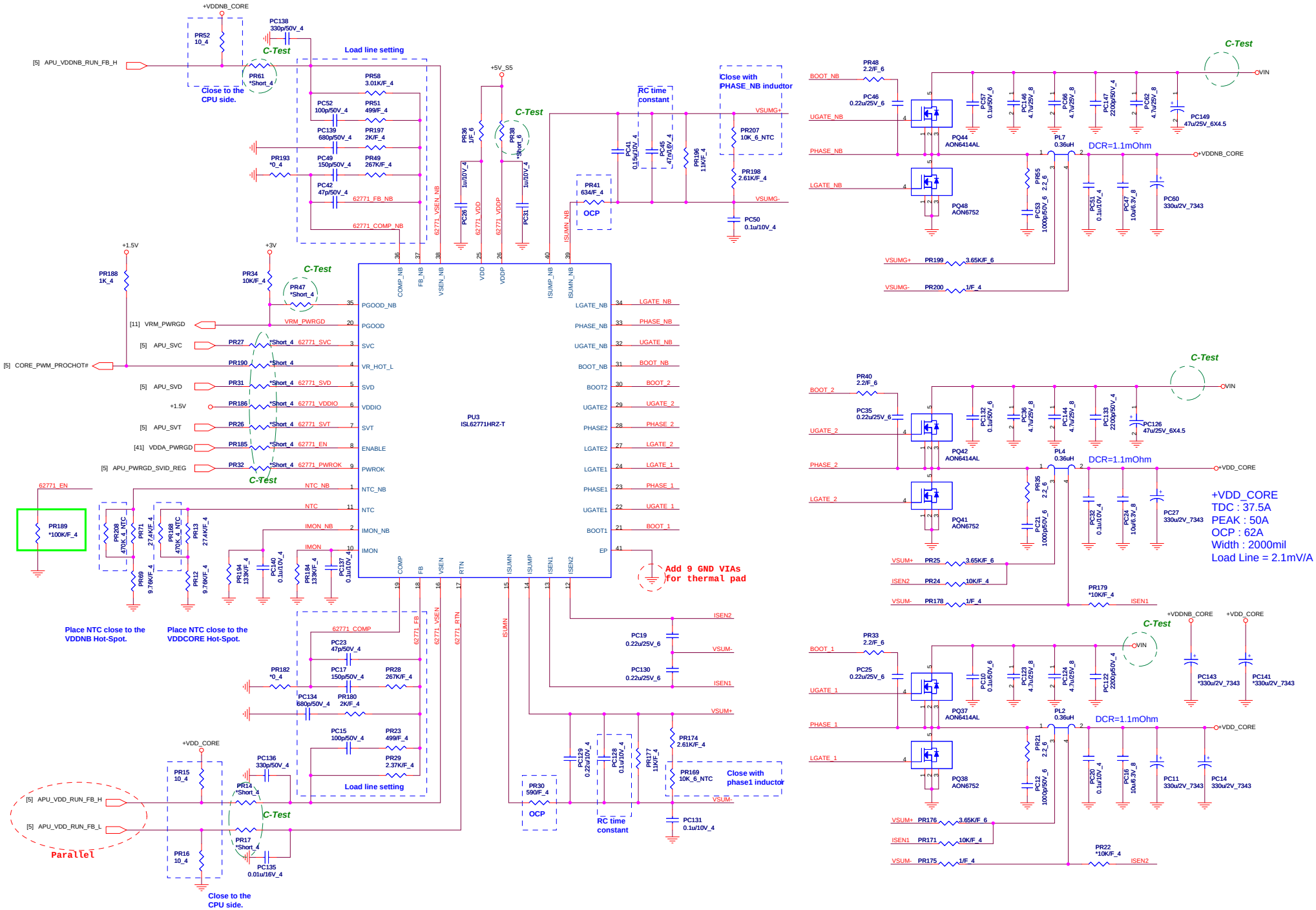


Quanta Computer Inc.

PROJECT : ZRI/ZQI

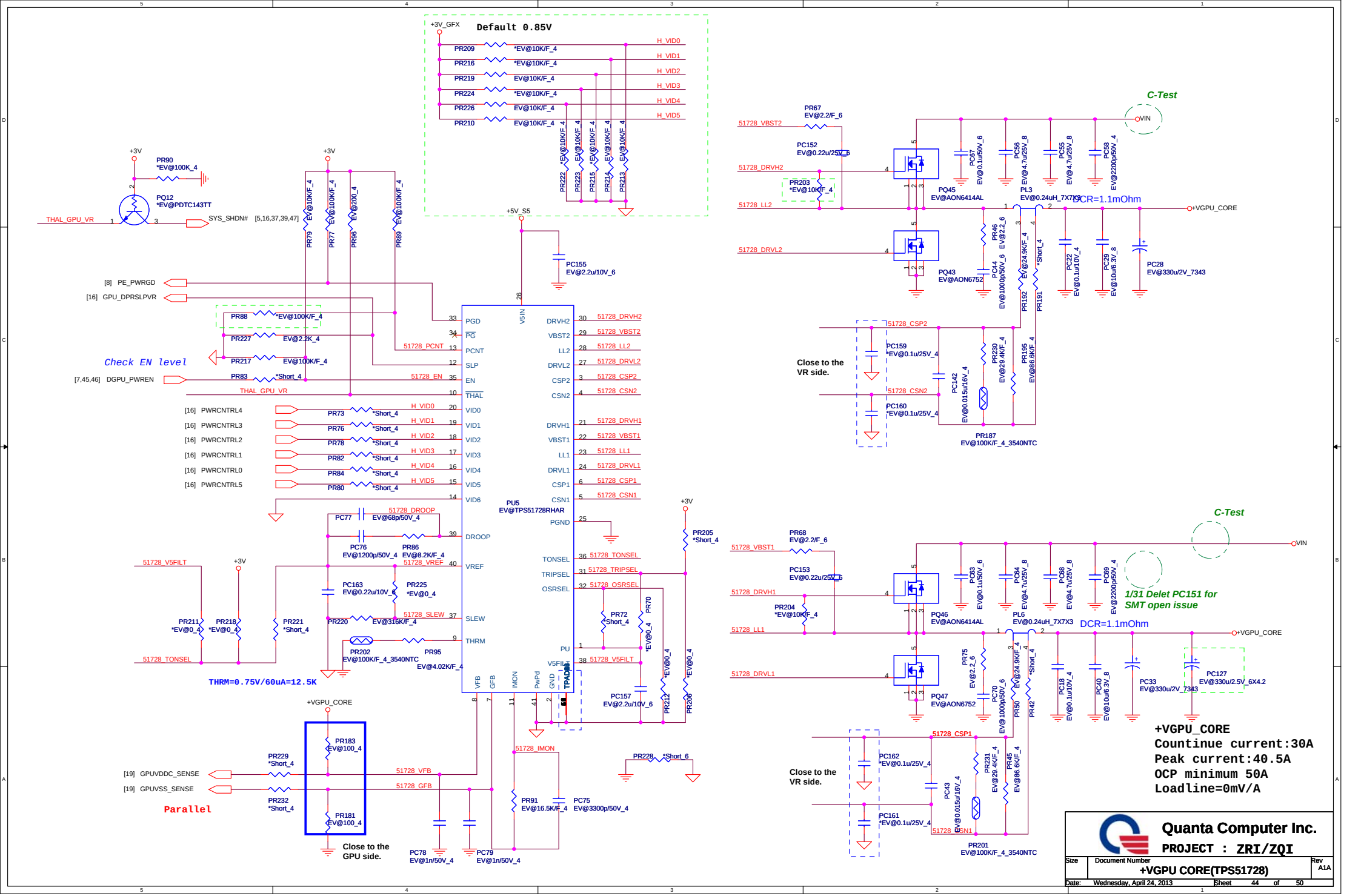
Size	Document Number	Rev
	+1.1V_DUAL(TPS51211)	A1A

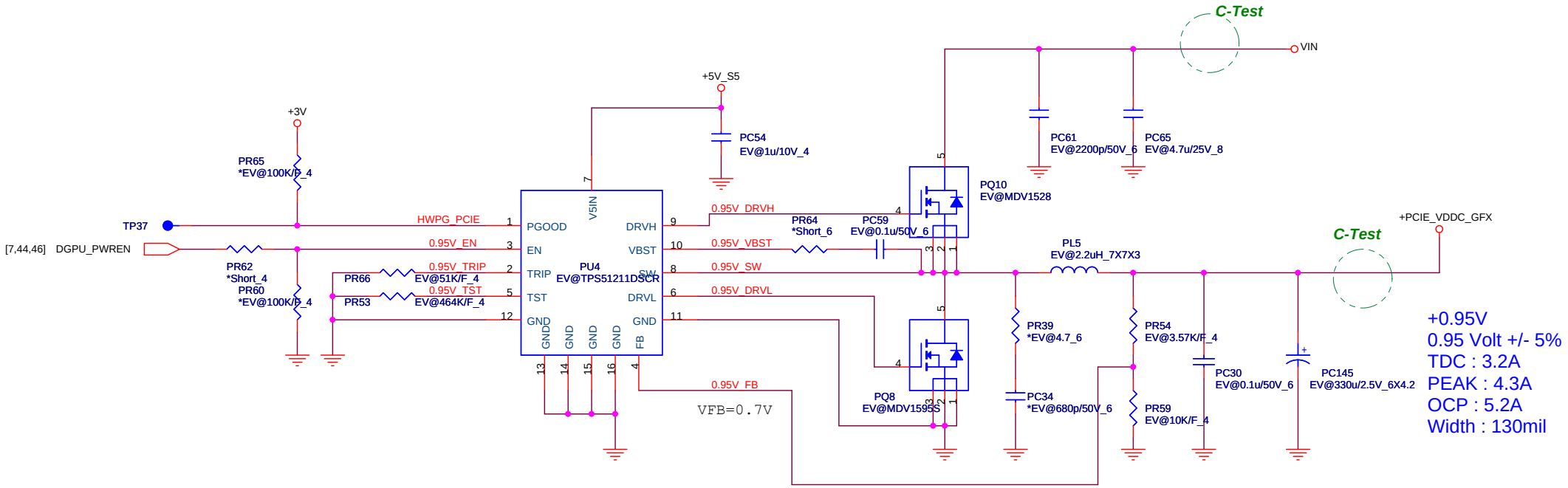
Date: Wednesday, April 24, 2013 Sheet 42 of 50



Quanta Computer Inc.
PROJECT : ZRI/ZQI

Size	Document Number	Rev
	VDD / VDDNB CORE (ISL62771)	A1A
Date: Wednesday, April 24, 2013	Sheet 43 of 50	

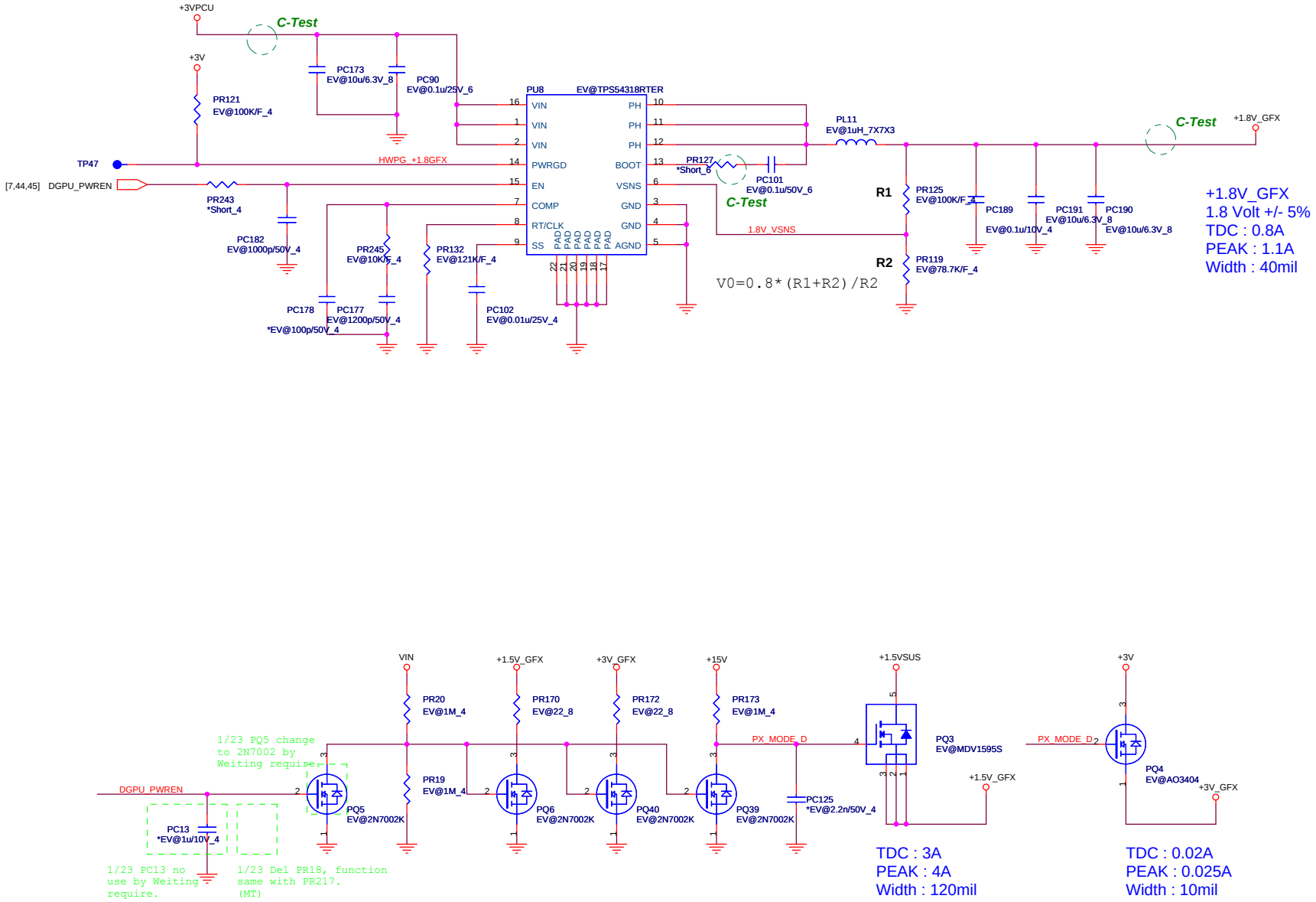




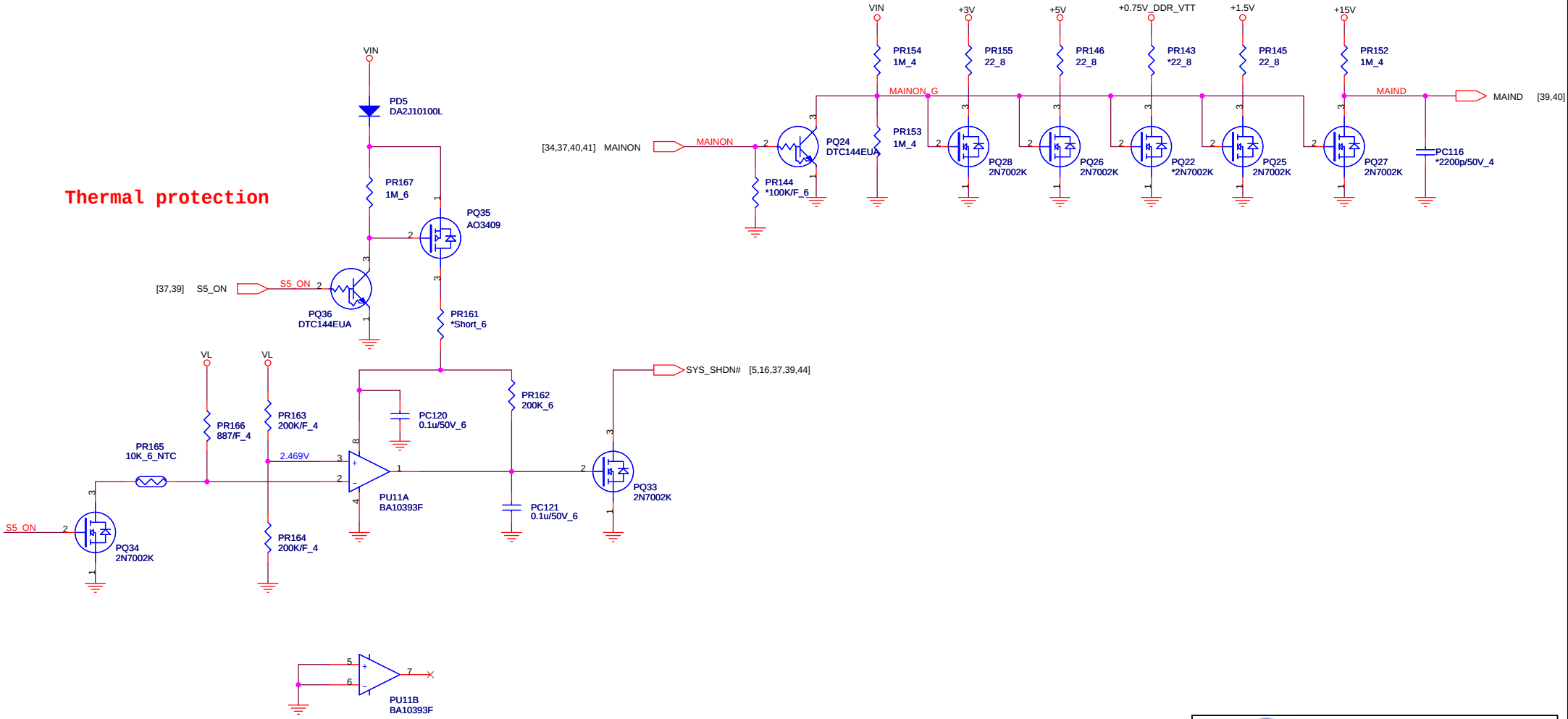
+0.95V
0.95 Volt +/- 5%
TDC : 3.2A
PEAK : 4.3A
OCP : 5.2A
Width : 130mil

OCP=5.2A
L ripple current
=(19-0.95)*0.95/(2.2u*290k*19)
=1.415A
Vtrip=5.2-(1.415/2)*14mohm
=0.06289V
Rlimit=0.06289/10uA*8=50.318Kohm

Quanta Computer Inc.		
PROJECT : ZRI/ZQI		
Size	Document Number: +1.05V(TPS51211)	Rev: A1A
Date: Wednesday, April 24, 2013	Sheet 45 of 50	



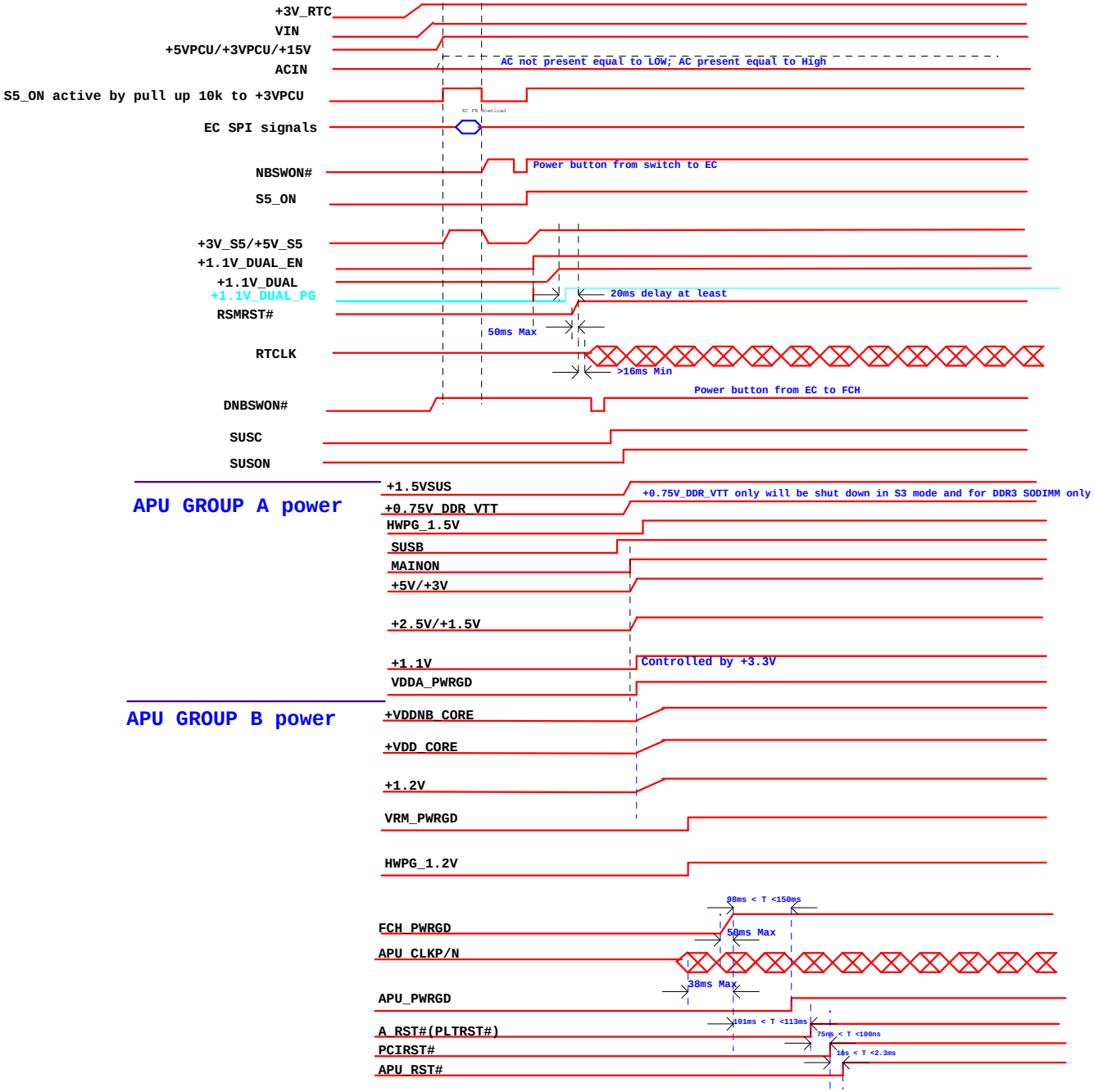
Quanta Computer Inc.		
PROJECT : ZRI/ZQI		
Size	Document Number: GPU_POWER/+1.8V_GPU	Rev: A1A
Date: Wednesday, April 24, 2013	Sheet 46 of 50	



For EC control thermal protection (output 3.3V)

Quanta Computer Inc.		
PROJECT : ZRI/ZQI		
Size	Document Number	Rev
	Discharge/Thermal	A1A
Date: Wednesday, April 24, 2013	Sheet 47 of 50	

ZRP Power On Sequence: S5 > S0



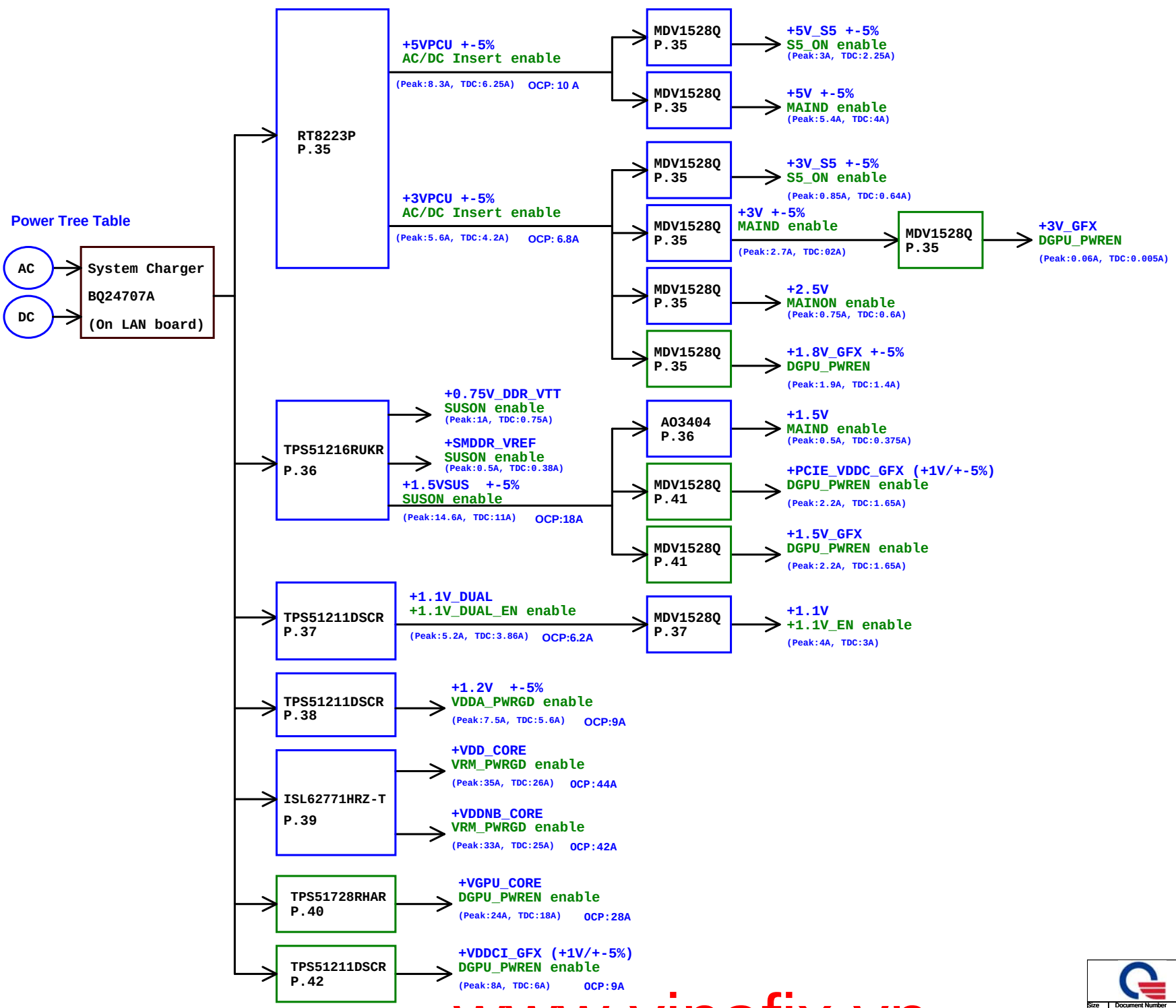
APU Power on sequence required:

Llano APU:
1.Group A (+1.5VSUS, +2.5V_VDDA) ramp before Group B (+VDD_CORE, +VDDNB_CORE, +1.2V_VDDPR)

HUDSON-M3:
1.+3V_S5 ramp before +1.1V_DUAL
2.+3V ramp before +1.1V
3.+3V_S5,+3V ramping down time > 300us
4.100uS <= +3V_S5,+3V <= 40mS
5.100uS <= All power rails except +3V_S5,+3V <= 40mS

Quanta Computer Inc.
PROJECT : ZRI/ZQI
Size | Document Number: POWER SEQUENCE | Rev: A1A
Date: Wednesday, April 24, 2013 | Sheet 48 of 50

Power Tree Table



Quanta Computer Inc.
PROJECT : ZRI/ZQI

Size	Document Number	Rev
	Power Tree	A1A

Date: Wednesday, April 24, 2013 Sheet 49 of 50