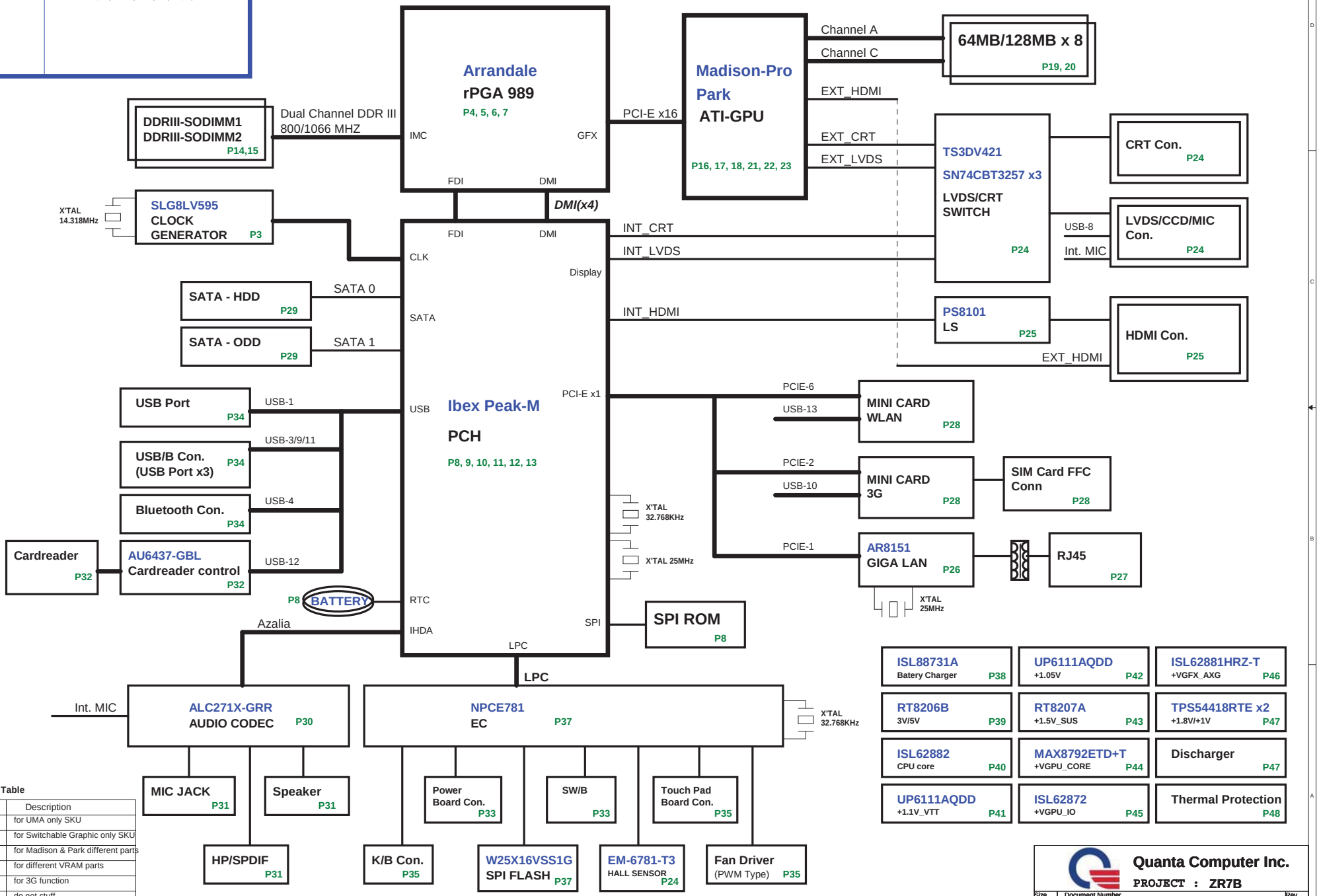
VER : 1A

BOM P/N	Description
31ZR7MB0000	ZR7B MB(UMA,BT)W/O CPU
31ZR7MB0010	ZR7B MB(SG,MADS,SAM,BT,3G)W/O CPU

ZR7B SYSTEM BLOCK DIAGRAM



BOM Option Table

Reference	Description
IV@	for UMA only SKU
SW@	for Switchable Graphic only SKU
MP@	for Madison & Park different parts
VRAM@	for different VRAM parts
3G@	for 3G function
*	do not stuff

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	Block Diagram	1A

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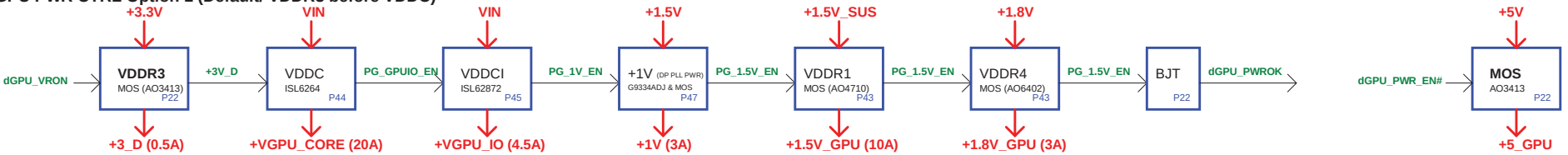
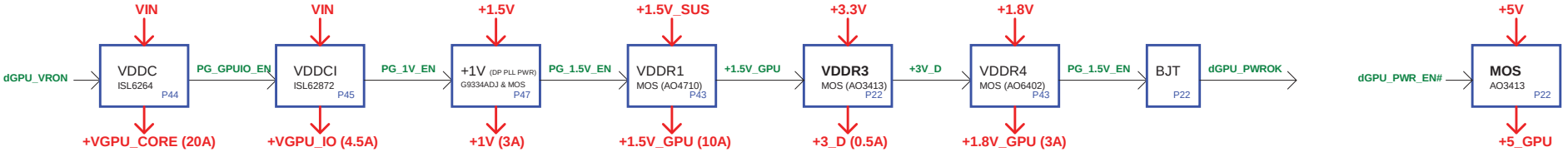
GPU PWR CTRL Option 1 (Default/ VDDR3 before VDDC)



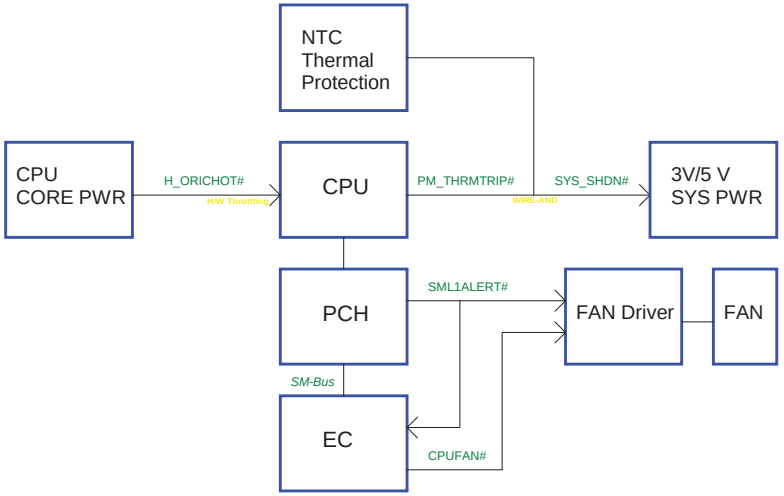
GPU PWR CTRL Option 2 (VDDR3 after VDDR1)



Power States

POWER PLANE	VOLTAGE	DESCRIPTION	CONTROL SIGNAL	ACTIVE IN
VIN	+10V~+19V	MAIN POWER	ALWAYS	ALWAYS
+VCCRTC	+3V~+3.3V	RTC POWER	ALWAYS	ALWAYS
+3VPCU	+3.3V	EC POWER	ALWAYS	ALWAYS
+5VPCU	+5V	CHARGE POWER	ALWAYS	ALWAYS
+15V	+15V	CHARGE PUMP POWER	ALWAYS	ALWAYS
+3V_S5	+3.3V	LAN/BT/CIR POWER	S5_ON	S0-S5
+5V_S5	+5V	USB POWER	S5_ON	S0-S5
+5V	+5V	HDD/ODD/Codec/TP/CRT/HDMI POWER	MAINON	S0
+3V	+3.3V	PCH/GPU/Peripheral component POWER	MAINON	S0
+1.5VSUS	+1.5V	CPU/SODIMM CORE POWER	SUSON	S0-S3
+0.75V_DDR_VTT	+0.75V	SODIMM Termination POWER	MAINON	S0
+VGFX_AXG	variation	Internal GPU POWER	GFX_ON	S0
+1.8V	+1.8V	CPU/PCH/Braidwood POWER	MAINON	S0
+1.5V	+1.5V	MINI CARD/NEW CARD POWER	MAINON	S0
+1.1V_VTT	+1.05V or +1.1V	CPU VTT POWER	MAINON	S0
+1.05V	+1.05V	PCH CORE POWER	MAINON	S0
+VCC_CORE	variation	CPU CORE POWER	VRON	S0
LCDVCC	+3.3V	LCD POWER	LVDS_VDDEN	S0
+5V_GPU	+5V	SWITCHABLE PWM IC POWER	dGPU_PWR_EN#	Discrete enable
+GPU_CORE	+0.9V~+1.1V	GPU CORE POWER	+3V_D	Discrete enable
+GPU_IO	+0.9V~+1.1V	GPU I/O POWER	PG_GPUIO_EN	Discrete enable
+1.5V_GPU	+1.5V	VRAM CORE POWER	PG_1.5V_EN	Discrete enable
+1.8V_GPU	+1.8V	GPU_CRE/LVDS/PLL POWER	+1.5V_GPU	Discrete enable
+1V	+1V	DP/PEG POWER	PG_1V_EN	Discrete enable

Thermal Follow Chart



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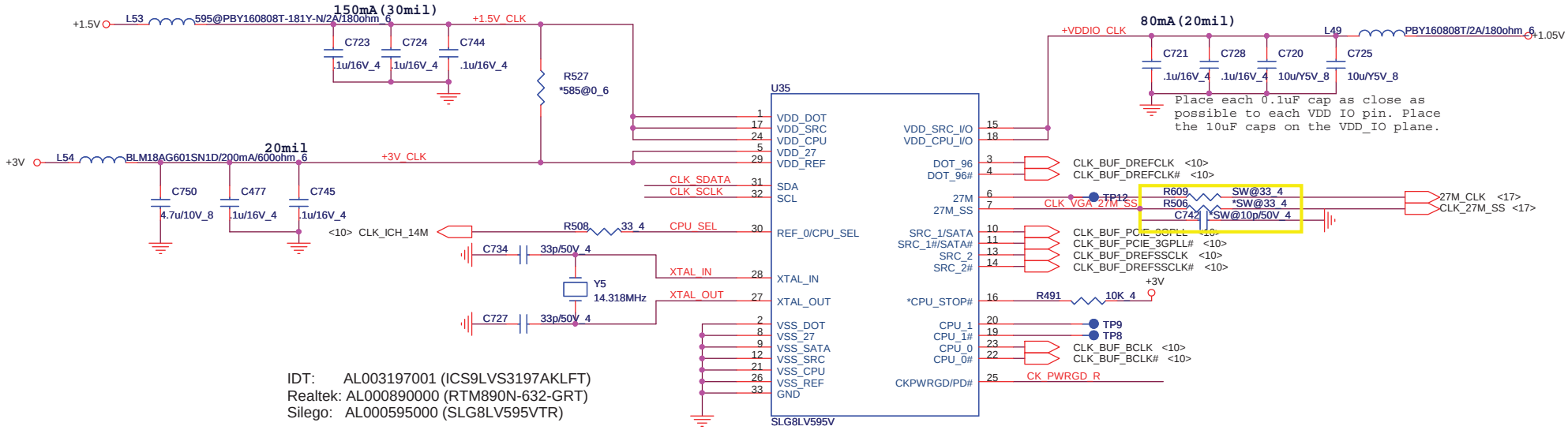
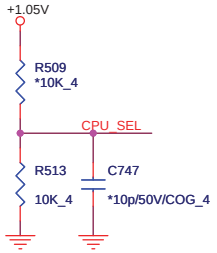


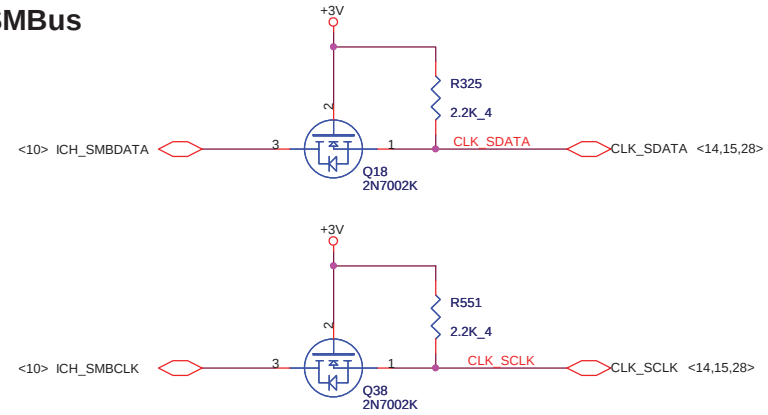
IDT: AL003197001 (ICS9LVS3197AKLFT)
Realtek: AL000890000 (RTM890N-632-GRT)
Silego: AL000595000 (SLG8LV595VTR)

CPU_CLK select

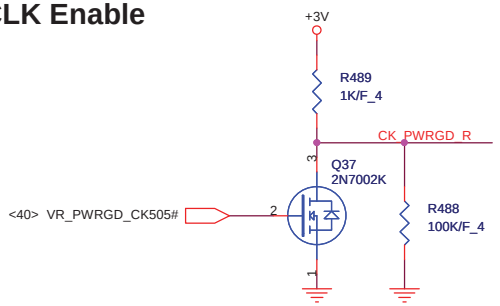


	0	1
CPU_SEL	CPU0/1=133MHz (default)	CPU0/1=100MHz

SMBus



CLK Enable



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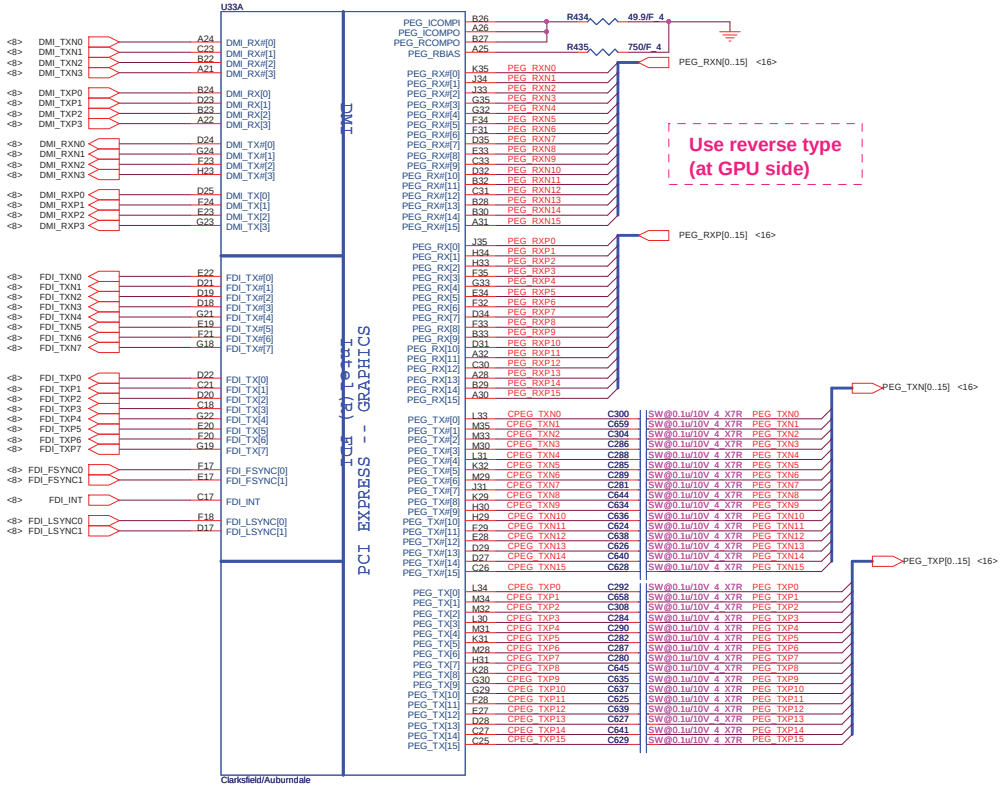
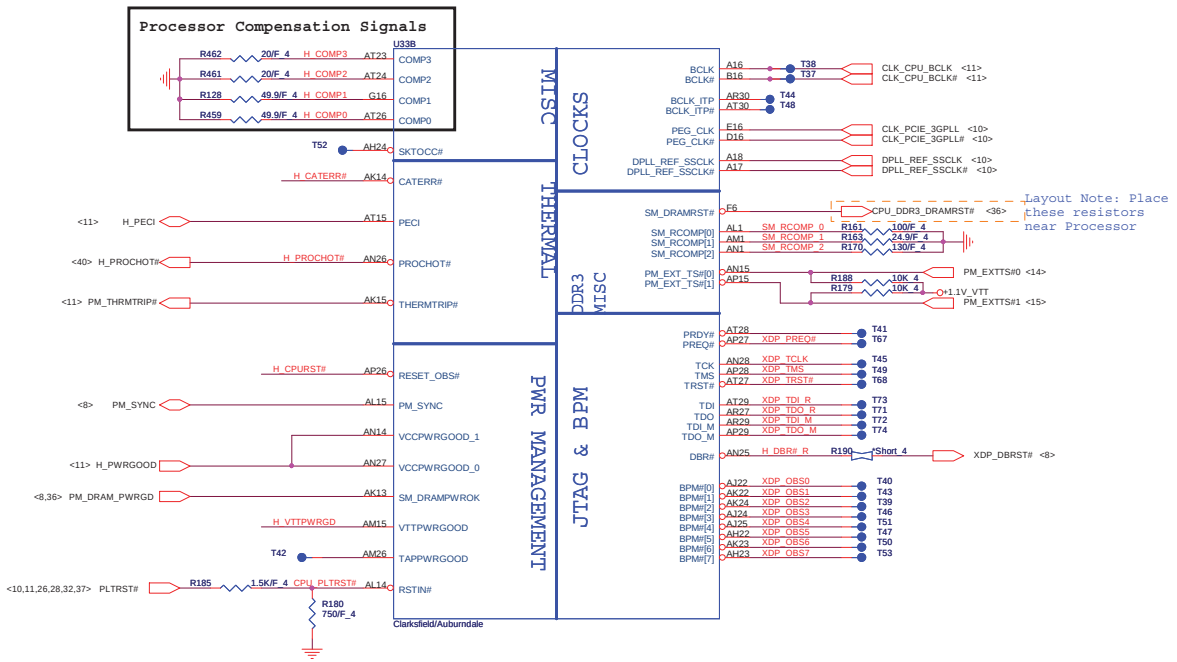
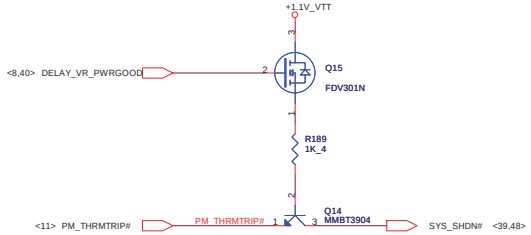
AUBURNDALE/CLARKSFIELD PROCESSOR (DMI,PEG,FDI)



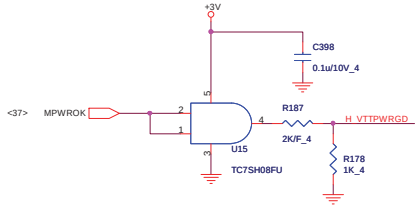
AUBURNDALE/CLARKSFIELD PROCESSOR (CLK,MISC,JTAG)



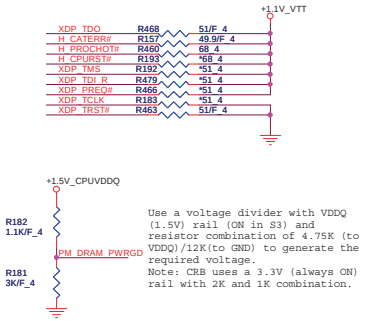
Thermaltrip protect



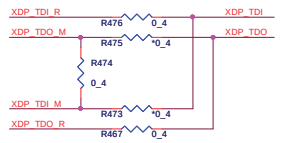
VTT PWR_Good



Processor pull-up



JTAG MAPPING



Scan Chain (Default)	STUFF -> R469, R491, R507 NO STUFF -> R489, R490
CPU Only	STUFF -> R490, R491 NO STUFF -> R469, R489, R507
GMCH Only	STUFF -> R489, R507 NO STUFF -> R491, R490, R469

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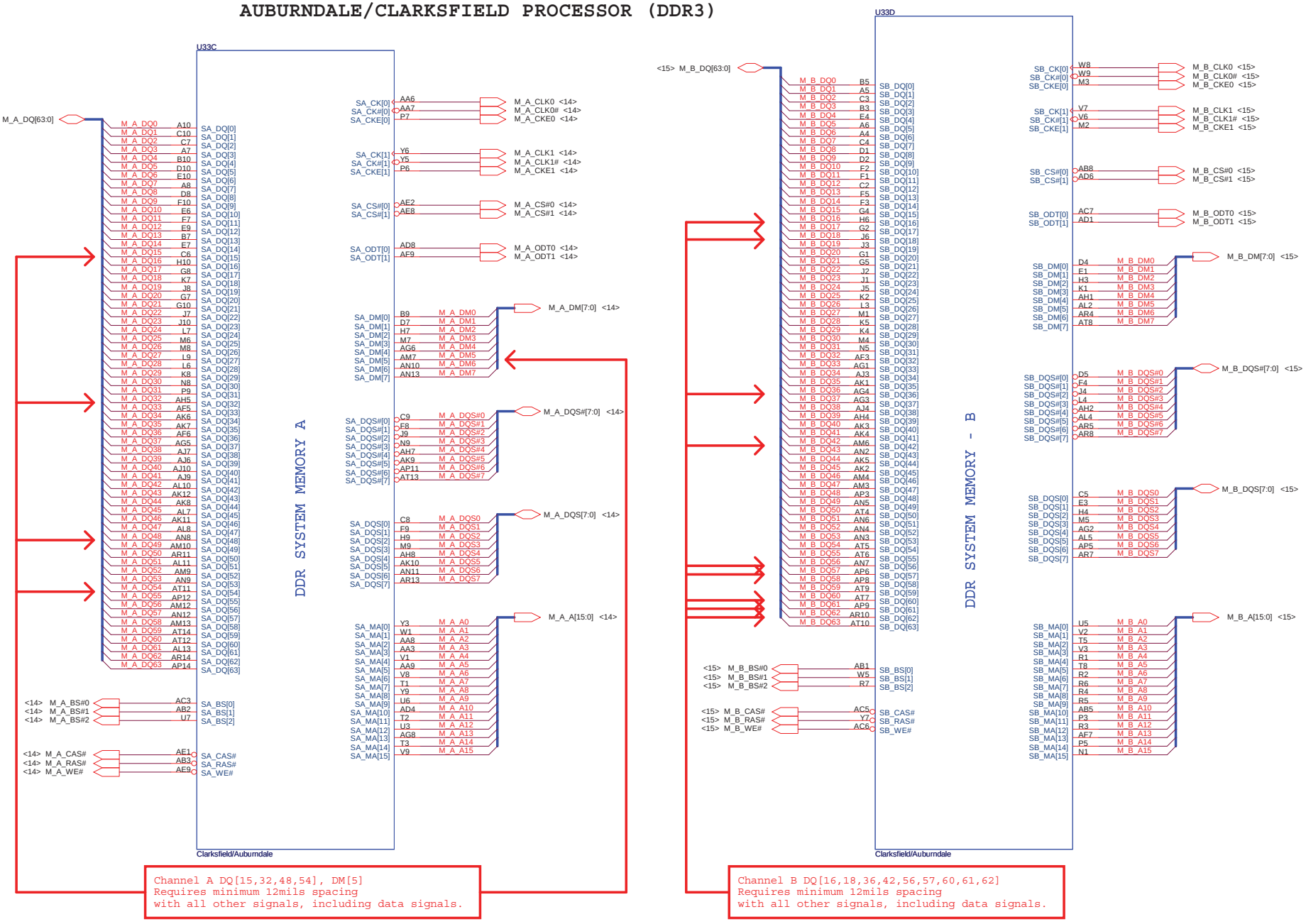
AUBURNDALE/CLARKSFIELD PROCESSOR (DDR3)



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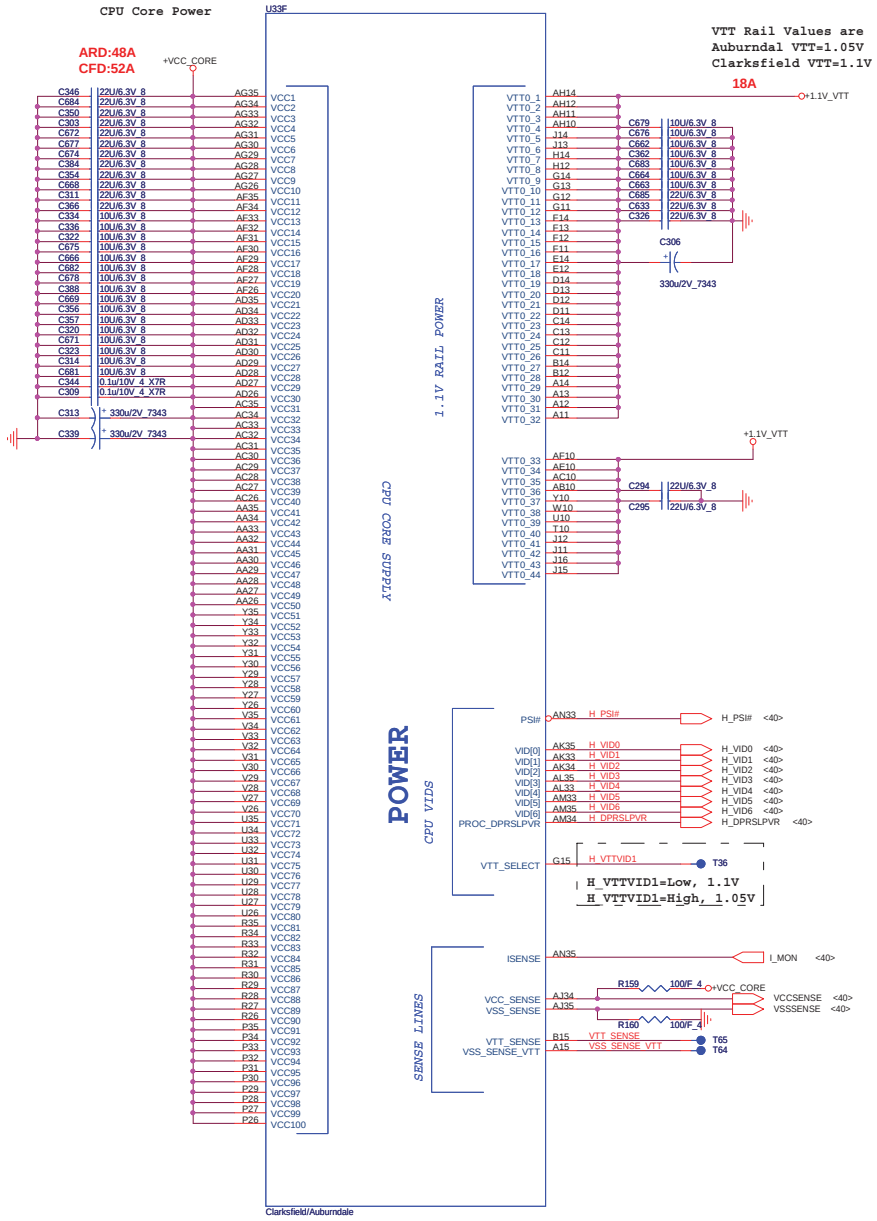
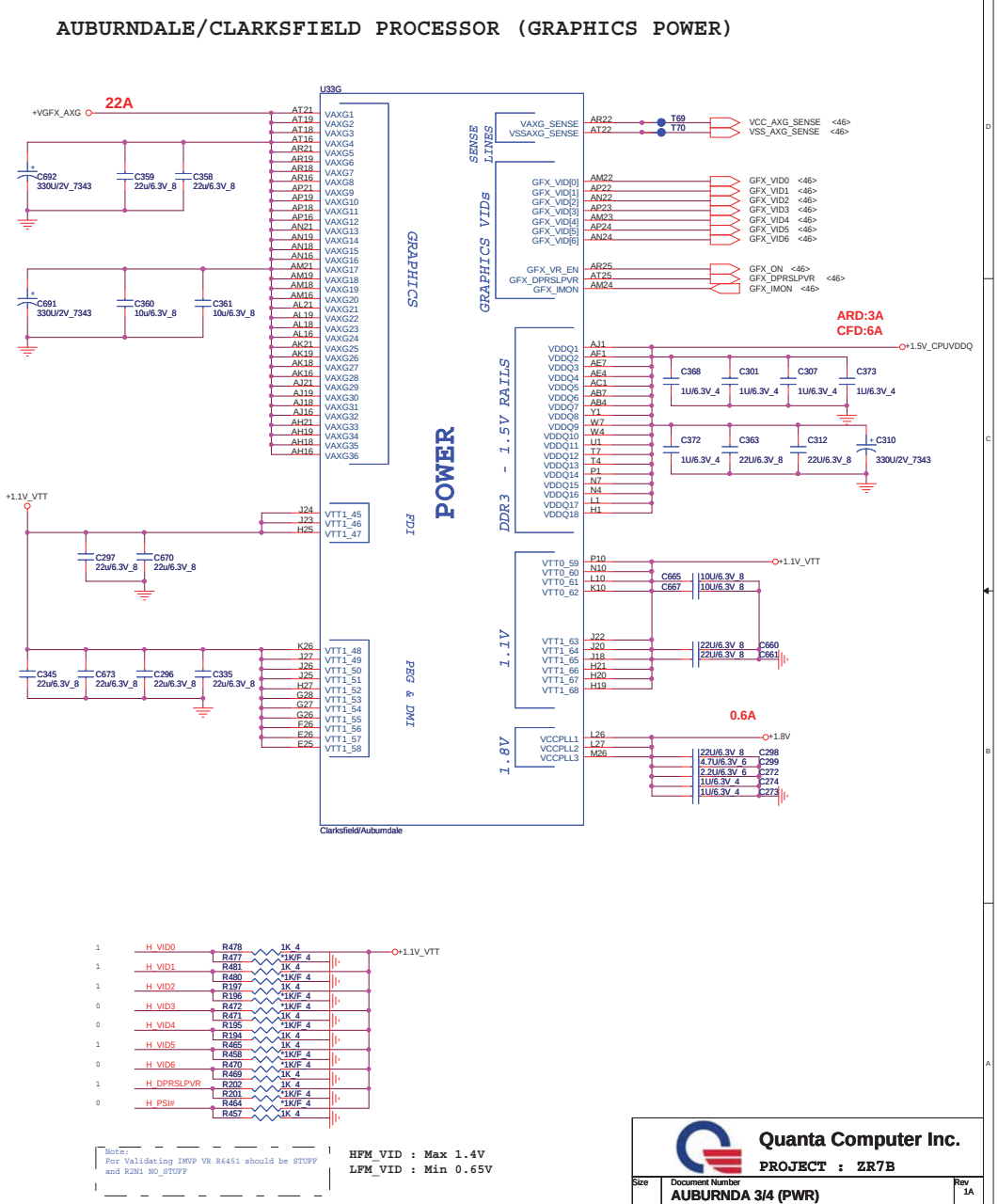


AUBURNDALE/CLARKSFIELD PROCESSOR (POWER)



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	AUBURNDA 3/4 (PWR)	1A

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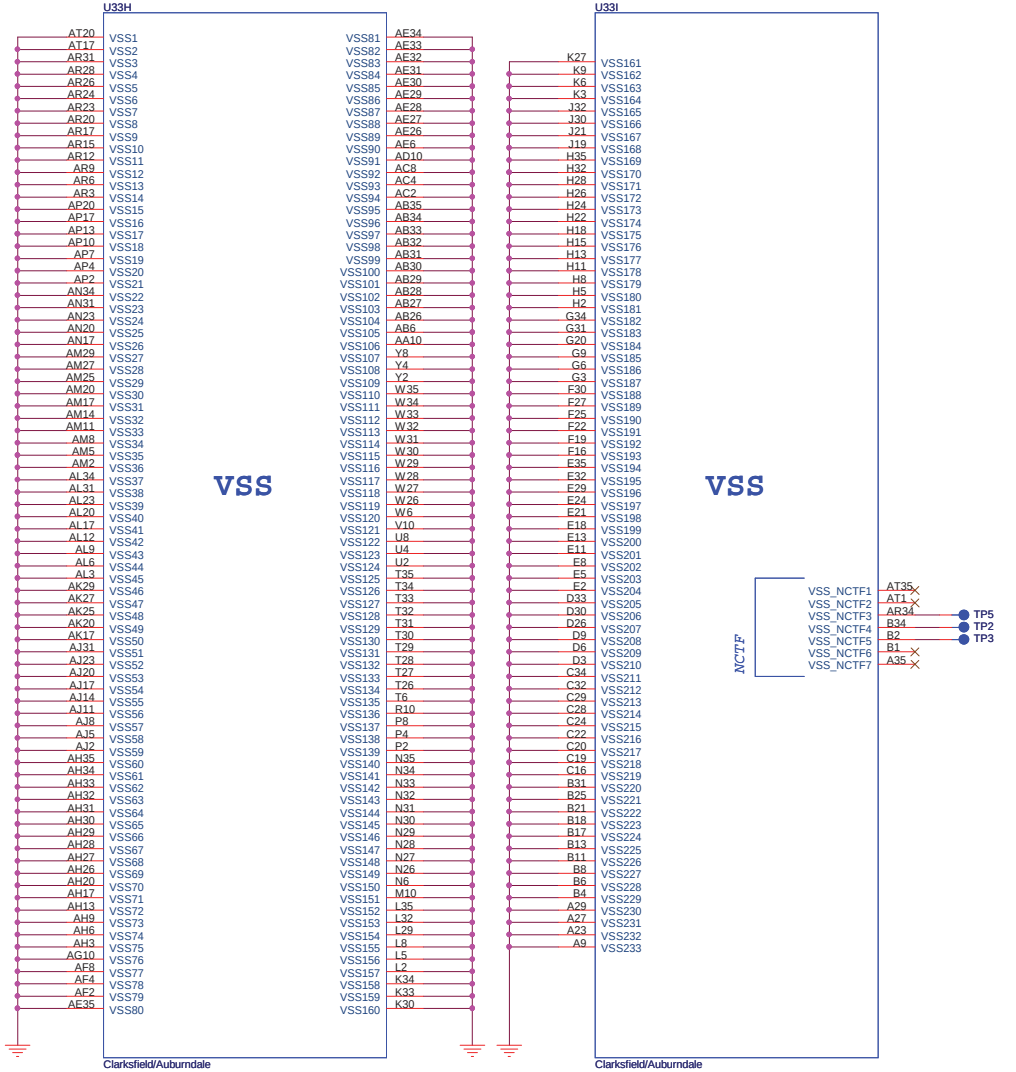
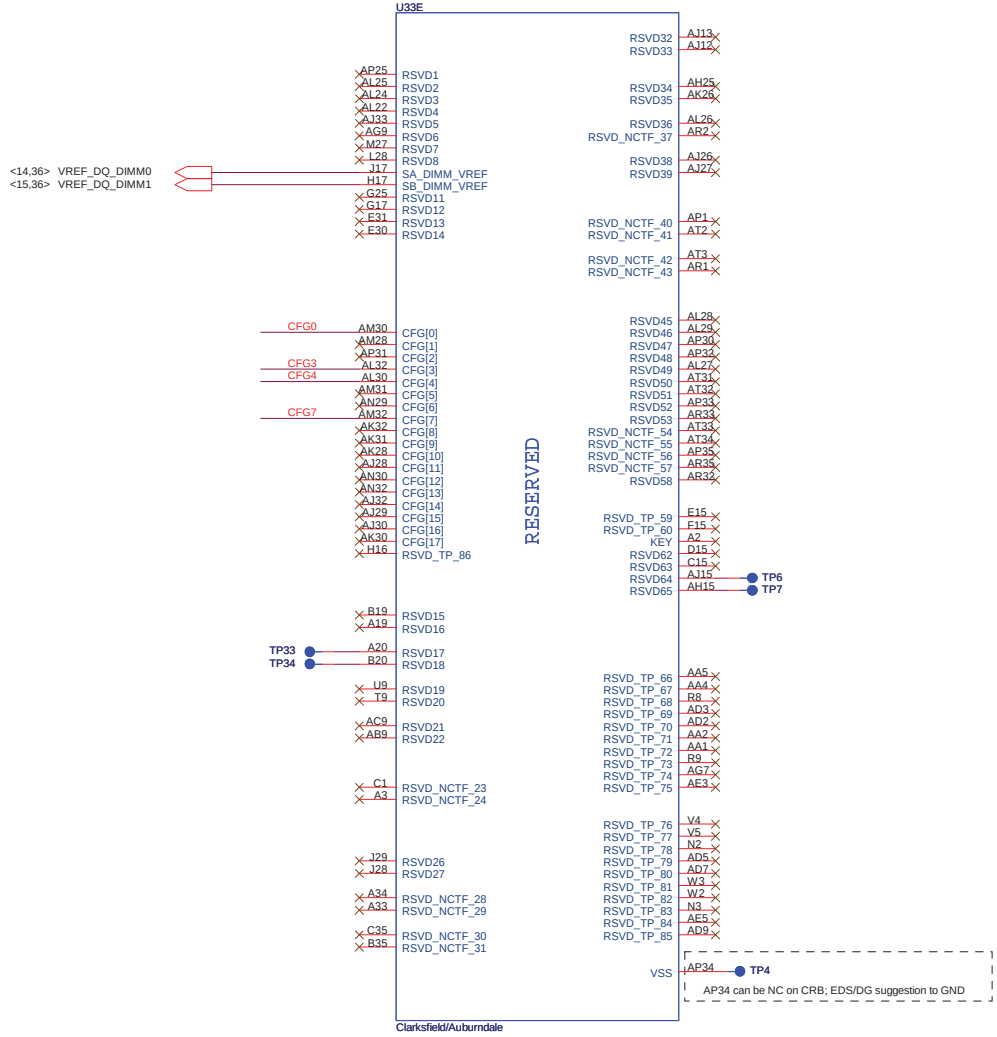
AUBURNDALE/CLARKSFIELD PROCESSOR (GND)



AUBURNDALE/CLARKSFIELD PROCESSOR(RESERVED, CFG)



Processor Strapping

	1	0	DEFAULT	
CFG0 (PCI-Epress Configuration Select)	Single PEG	Bifurcation enabled	1	CFG0 R186 *3.01K_NC
CFG3 (PCI-Epress Static Lane Reversal)	Normal Operation	Lane Numbers Reversed	1	CFG3 R169 3.01K/F_4
CFG4 (Embended Display Port Presence)	Disabled; No Physical Display Port attached to Embedded Diplay Port	Enabled; An external Display port device is connected to the Embedded Display port	1	CFG4 R162 *3.01K
T				CFG7 R172 *3.01K/F_4

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	AUBURNDA 4/4	1A

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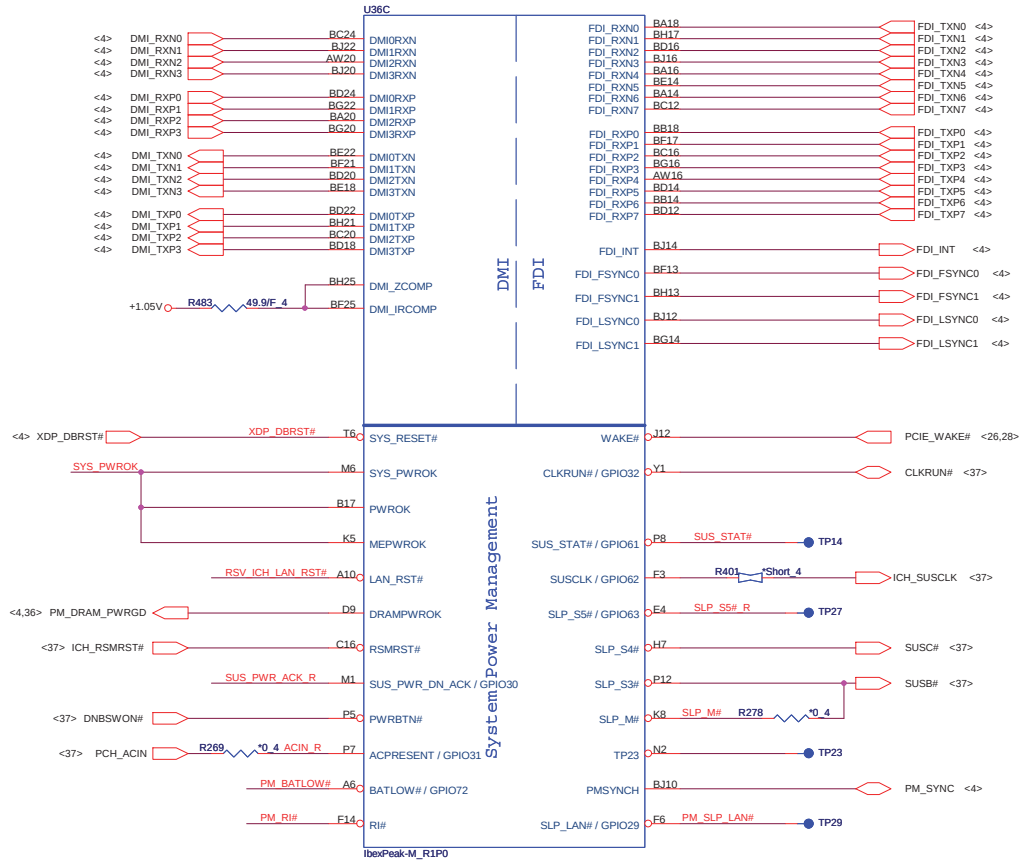
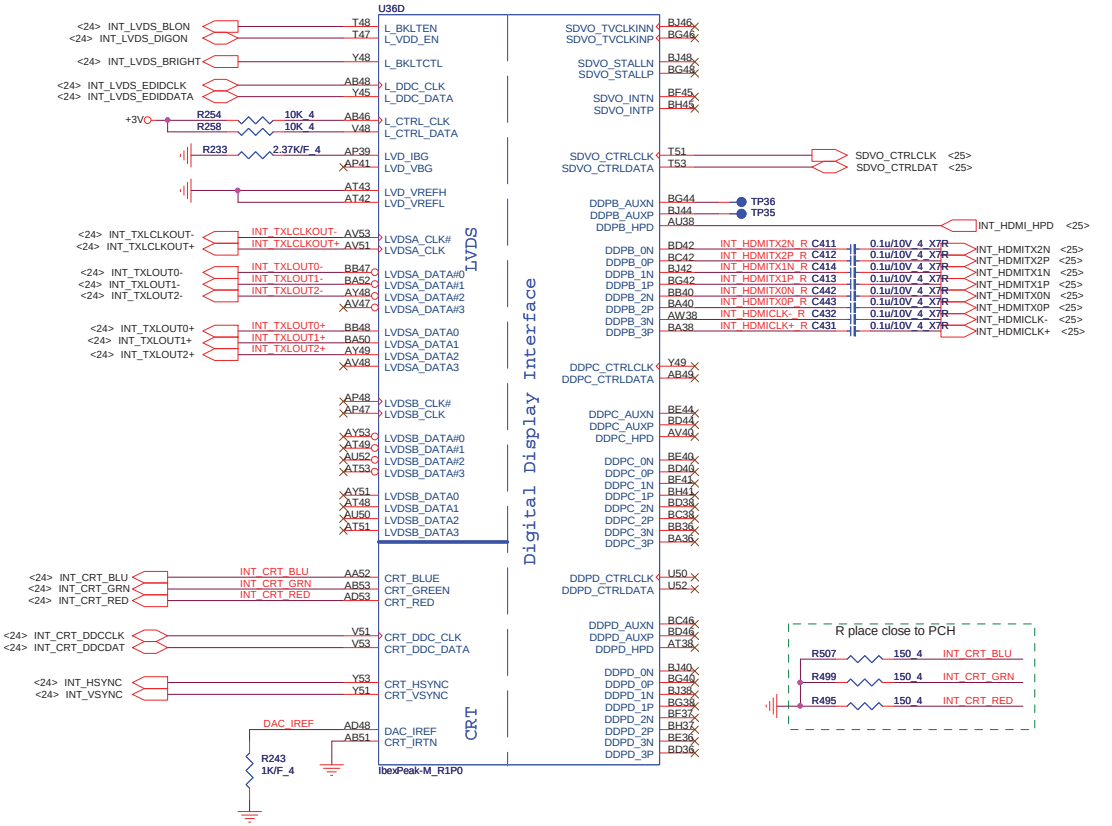
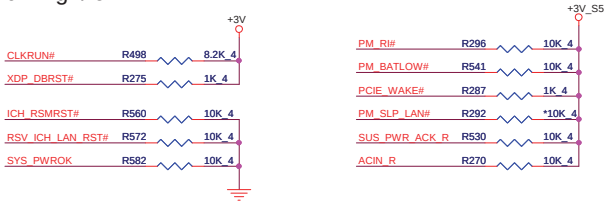
IBEX PEAK-M (DMI,FDI,GPIO)



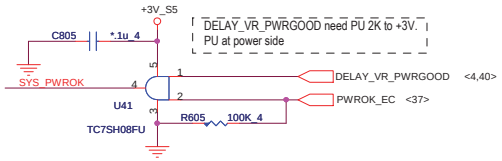
IBEX PEAK-M (LVDS,DDI)



PCH Pull-high/low



System PWR_OK



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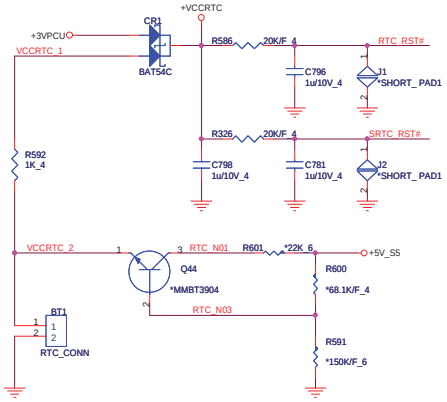
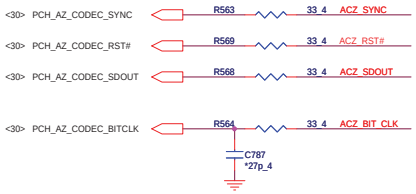
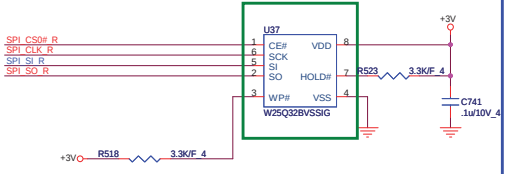
RTC Circuitry

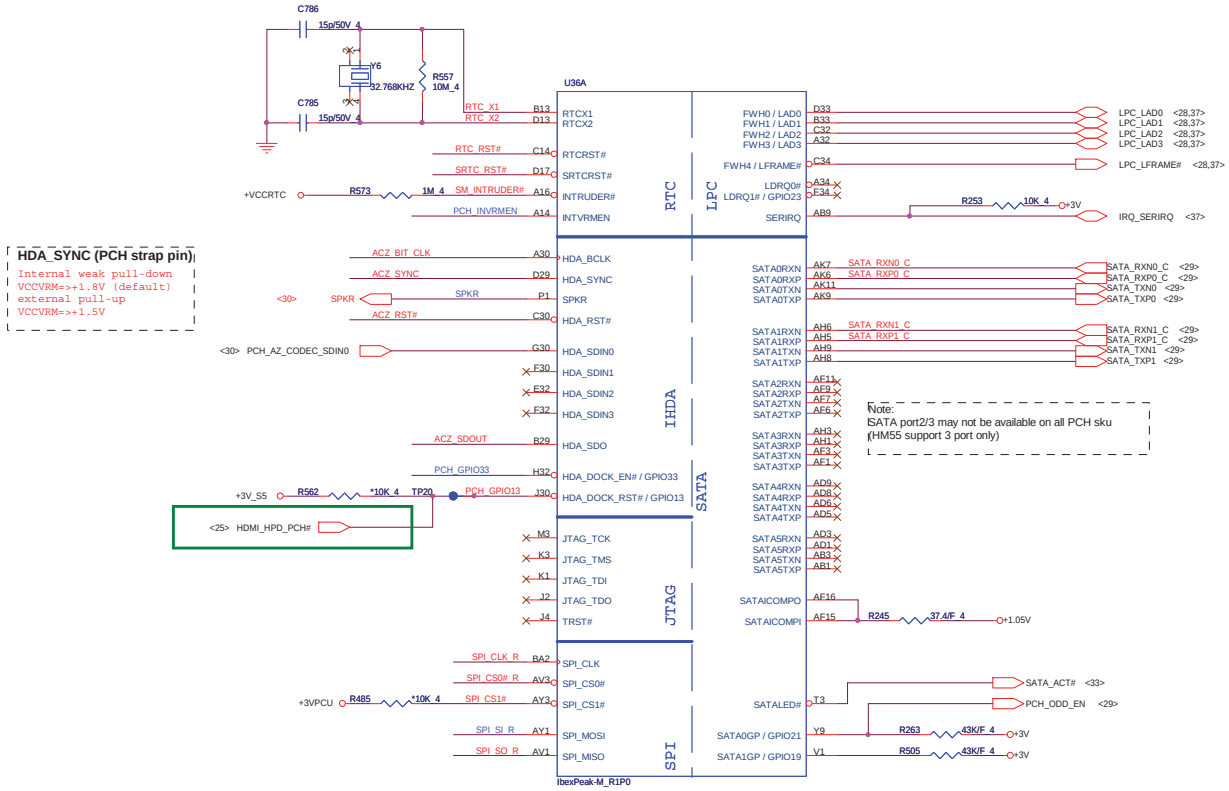


HDA Bus



PCH SPI





HDA_SYNC (PCH strap pin)
Internal weak pull-down
VCCVRM=>+1.8V (default)
external pull-up
VCCVRM=>+1.5V

PCH Strap Pin Configuration Table-1

INTVRMEN	Integrated 1.05V VRM Enable / Disable	1 = Integrated VRM is enabled 0 = Integrated VRM is disabled	+VCCRTC R593 330K_6 PCH_INVRMEN
SPI_MOSI	TPM Functionality Disable	1 = Enabled 0 = Disable	+3V R529 *1K_4 SPI_SI_R
SPKR	Reboot option at power-up	0 = Default Mode (Internal weak Pull-down) 1 = No Reboot Mode with TCO Disabled	+3V R522 *1K/F_4 SPKR
HDA_DOCK_EN #/GPIO33	Flash Descriptor Security Override	0 = Flash Descriptor Security will be overridden 1 = Security measure defined in the Flash Descriptor will be enabled.	PCH_GPIO33 R286 *1K/F_4 R293 *10K_4 +3V
GNT0#, GNT1#	Boot BIOS Strap	(0,0) = LPC (0,1) = Reserved NAND (1,0) = PCI (1,1) = SPI	R455 1K_4 R612 1K_4 R282 *1K_4 R285 *1K_4 +3V <10> PCI_GNT0# <10> PCI_GNT1#
GNT2#/ GPIO53	ESI Strap (Server Only)	ESI compatible mode is for server platforms only	<10,24> PWM_SELECT# R289 *1K/F_4
GNT3#/ GPIO55	Top-Block Swap Override	0 = Top Block Swap Mode 1 = Default Mode (Internal pull-up)	<20> PCI_GNT3# R528 *10K/F_4
NV_ALE	IntelR Anti-Theft Technology HDD Data Protection (Intel AT-d) Enable	1 = Enabled 0 = Disabled (Default)	<10> NV_ALE R225 *1K/F_4 +1.8V
NV_CLE	DMI Termination Voltage	DMI termination voltage. Weak internal pull-up. Do not pull low.	<10> NV_CLE R224 *1K/F_4 +1.8V

GPIO8	Reserved	This signal has a weak internal pull up. NOTE: This signal should not be pulled low	<11> RSV_GPIO8 R302 10K_4 +3V_S5 R295 *1K_4
GPIO15	Reserved	0 = Intel ME Crypto Transport Layer Security (TLS) cipher suite with no confidentiality 1 = Intel ME Crypto Transport Layer Security (TLS) cipher suite with confidentiality	<11> CR_WAKE# R266 1K_4 +3V_S5
GPIO27	On-Die PLL Voltage Regulator <internal weak pull-up>	0 = Disables the VccVRM. 1 = Enables the internal VccVRM to have a clean supply for analog rails.	<11> PCH_GPIO27 R247 *10K_4

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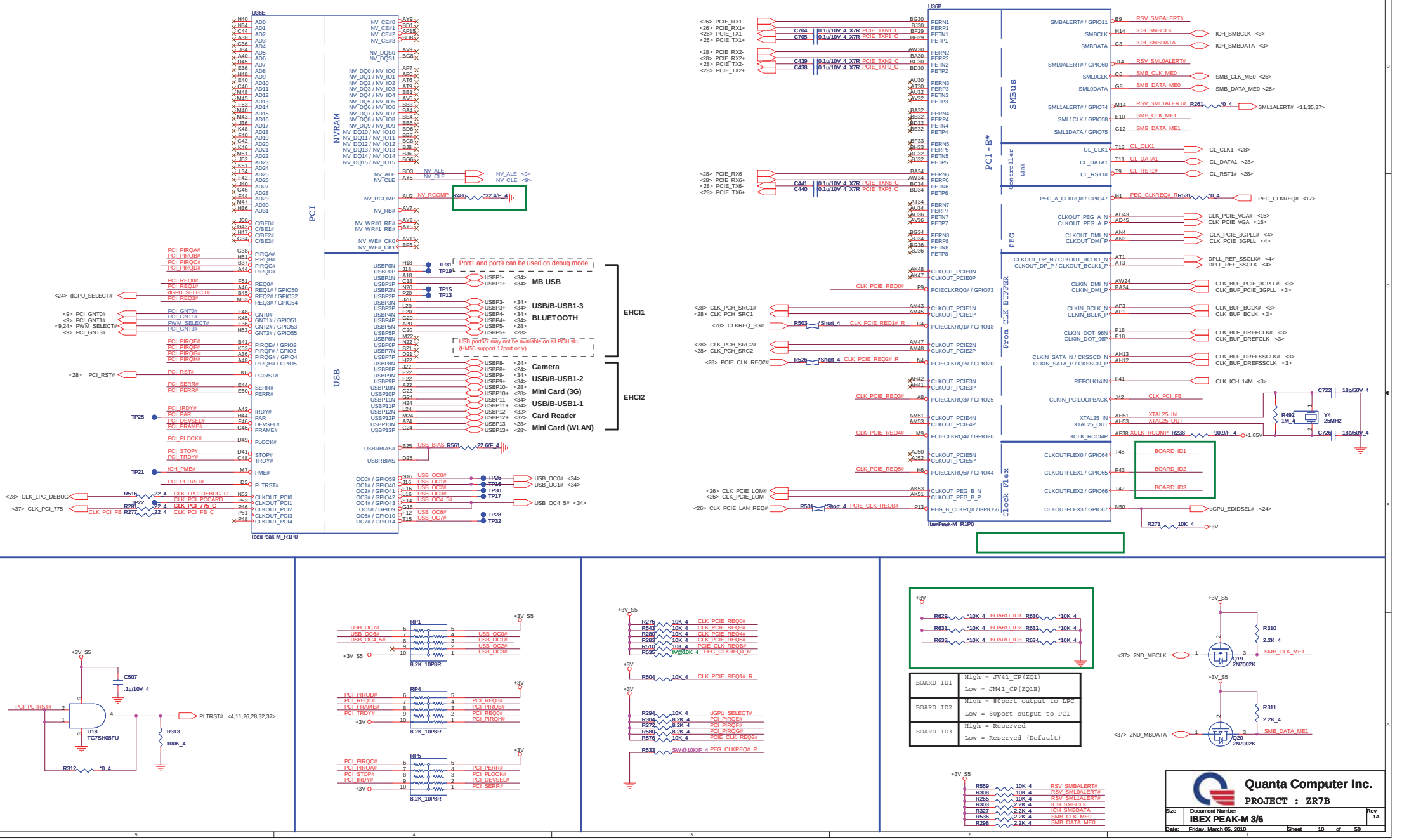

BOARD_ID1	High = JV41_CP(ZQ1) Low = JM41_CP(ZQ1B)
BOARD_ID2	High = 80port output to LPC Low = 80port output to PCI
BOARD_ID3	High = Reserved Low = Reserved (Default)

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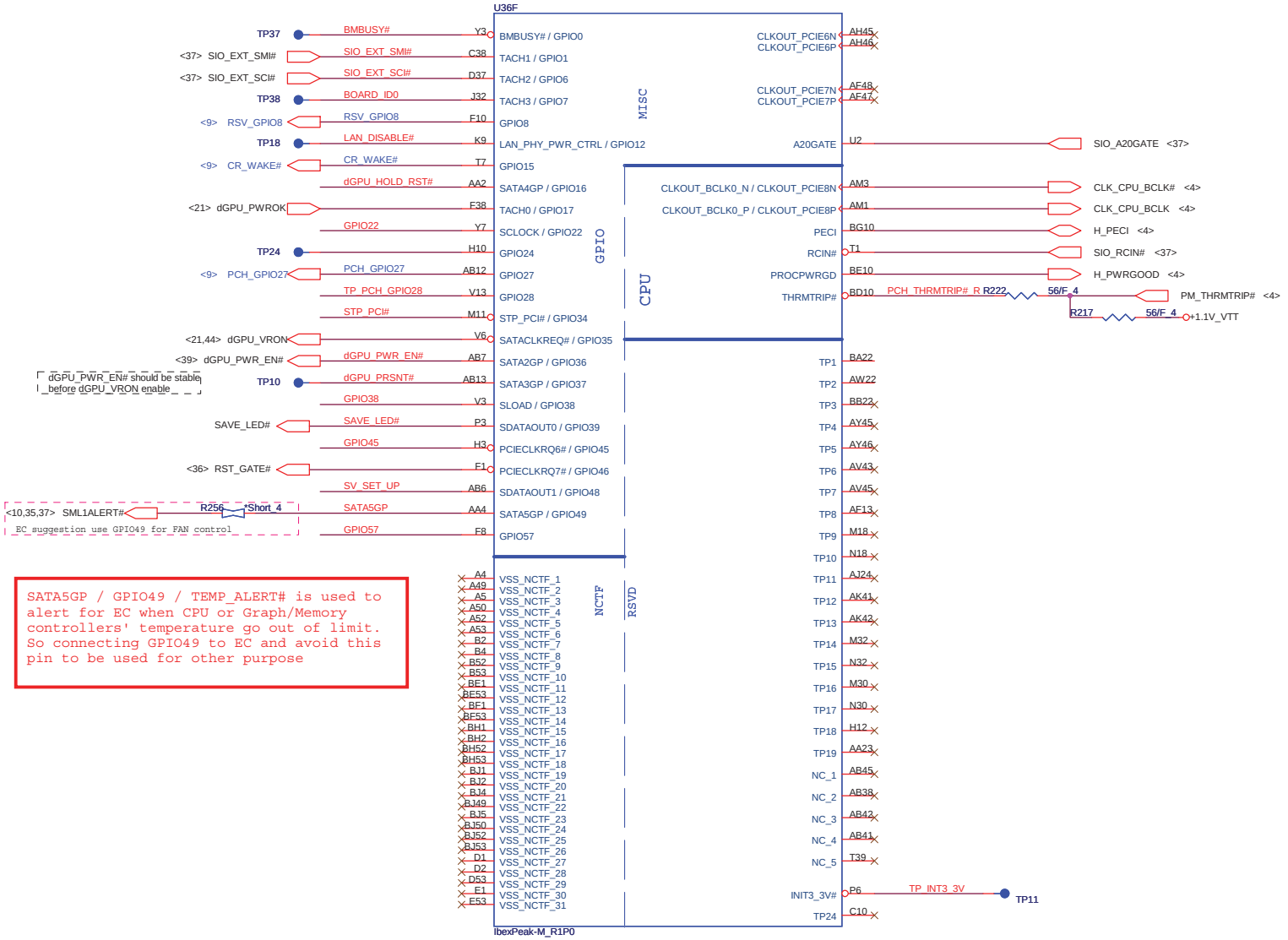
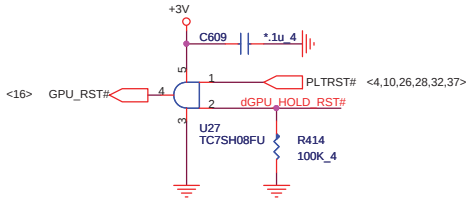
IBEX PEAK-M (GPIO,VSS_NCTF,RSVD)

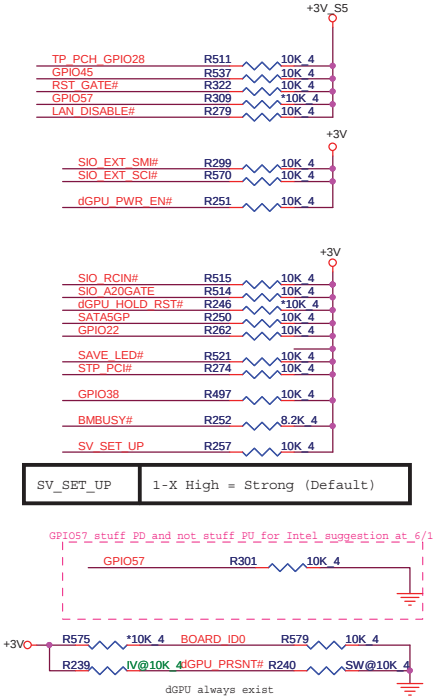


SATA5GP / GPIO49 / TEMP_ALERT# is used to alert for EC when CPU or Graph/Memory controllers' temperature go out of limit. So connecting GPIO49 to EC and avoid this pin to be used for other purpose

GPU RST#



GPIO Pull-up/Pull-down



SV_SET_UP	1-X High = Strong (Default)

BOARD_ID0	High = JV41/JM41 Low = JM51
RSV_GPIO8	High = Disable Low = Enable

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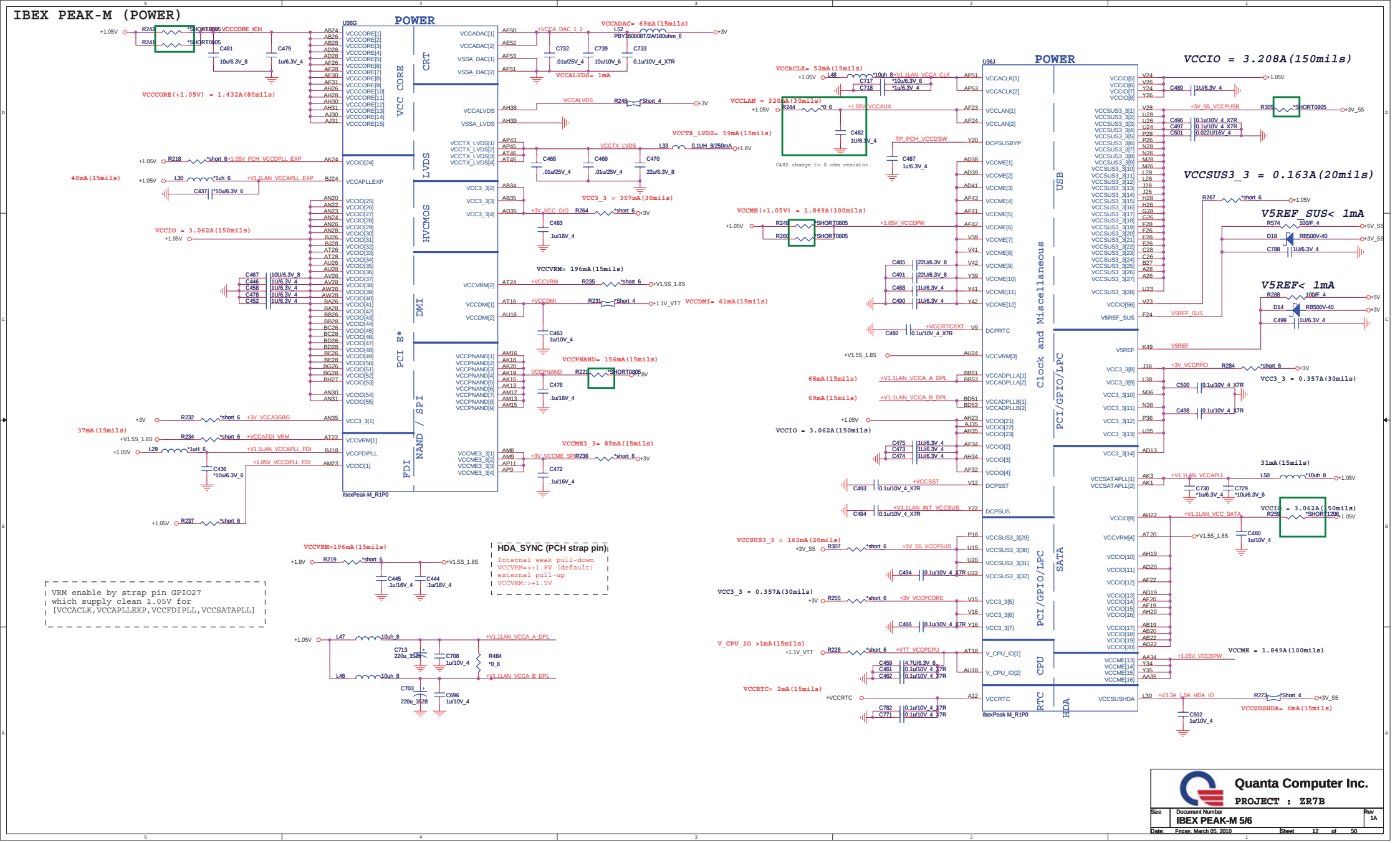
IBEX PEAK-M (POWER)
POWER
U36G
VCC CORE
CRT
LVDS
HVCMOS
DMI
PCI E*
NAND / SPI
FDI
ibexPeak-M_R1P0
VCCCORE(+1.05V) = 1.432A(80mils)
VCCIO = 3.062A(150mils)
VCCADAC= 69mA(15mils)
VCCALVDS= 1mA
VCCTX_LVDS= 59mA(15mils)
VCC3_3 = 357mA(30mils)
VCCVRM= 196mA(15mils)
VCCPNAND= 156mA(15mils)
VCCME3_3= 85mA(15mils)
VCCVRM=196mA(15mils)
VRM enable by strap pin GPIO27
which supply clean 1.05V for
[VCCACLK,VCCAPLLEXP,VCCFDIPLL,VCCSATAPLL]
HDA_SYNC (PCH strap pin)
Internal weak pull-down
VCCVRM=>+1.8V (default)
external pull-up
VCCVRM=>+1.5V
POWER
U36J
Clock and Miscellaneous
USB
PCI/GPIO/LPC
SATA
CPU
RTC
HDA
ibexPeak-M_R1P0
VCCIO = 3.208A(150mils)
VCCSUS3_3 = 0.163A(20mils)
V5REF_SUS< 1mA
V5REF< 1mA
VCCIO = 3.062A(150mils)
VCCACLK= 52mA(15mils)
VCCLAN = 320mA(30mils)
VCCME(+1.05V) = 1.849A(100mils)
VCCSUS3_3 = 163mA(20mils)
VCC3_3 = 0.357A(30mils)
V_CPU_IO >1mA(15mils)
VCCRTC= 2mA(15mils)
VCCME = 1.849A(100mils)
VCCSUSHDA= 6mA(15mils)
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IBEX PEAK-M 5/6
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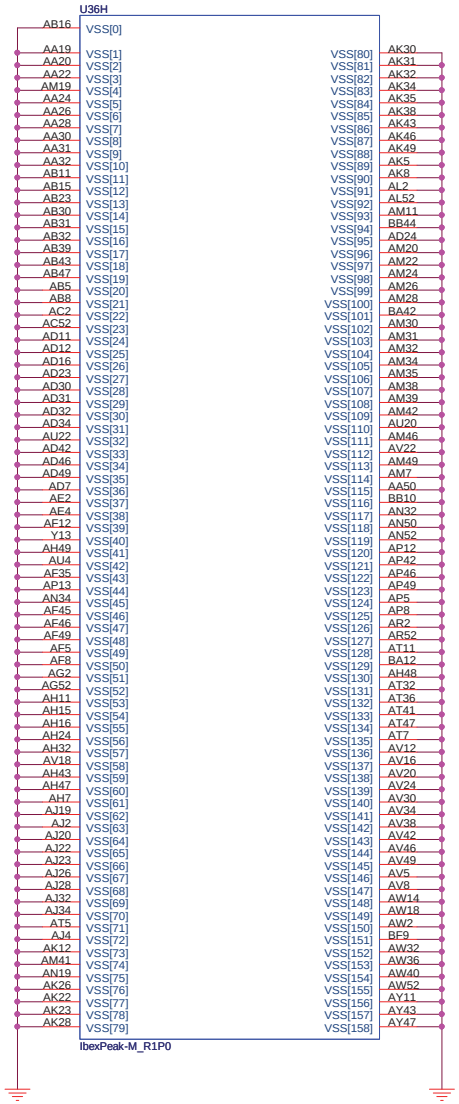
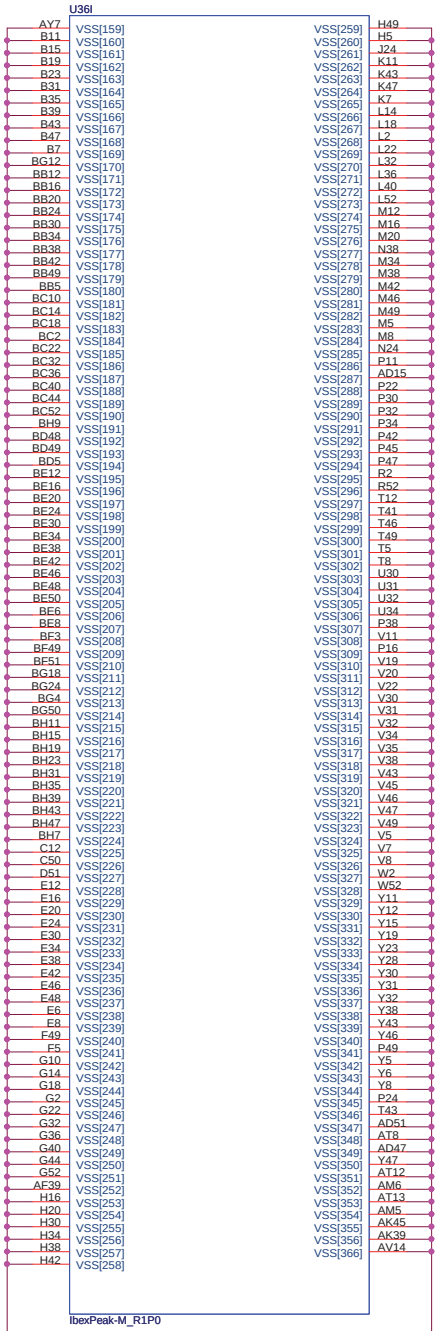
http://laptop-motherboard-schematic.blogspot.com/

IBEX PEAK-M (GND)





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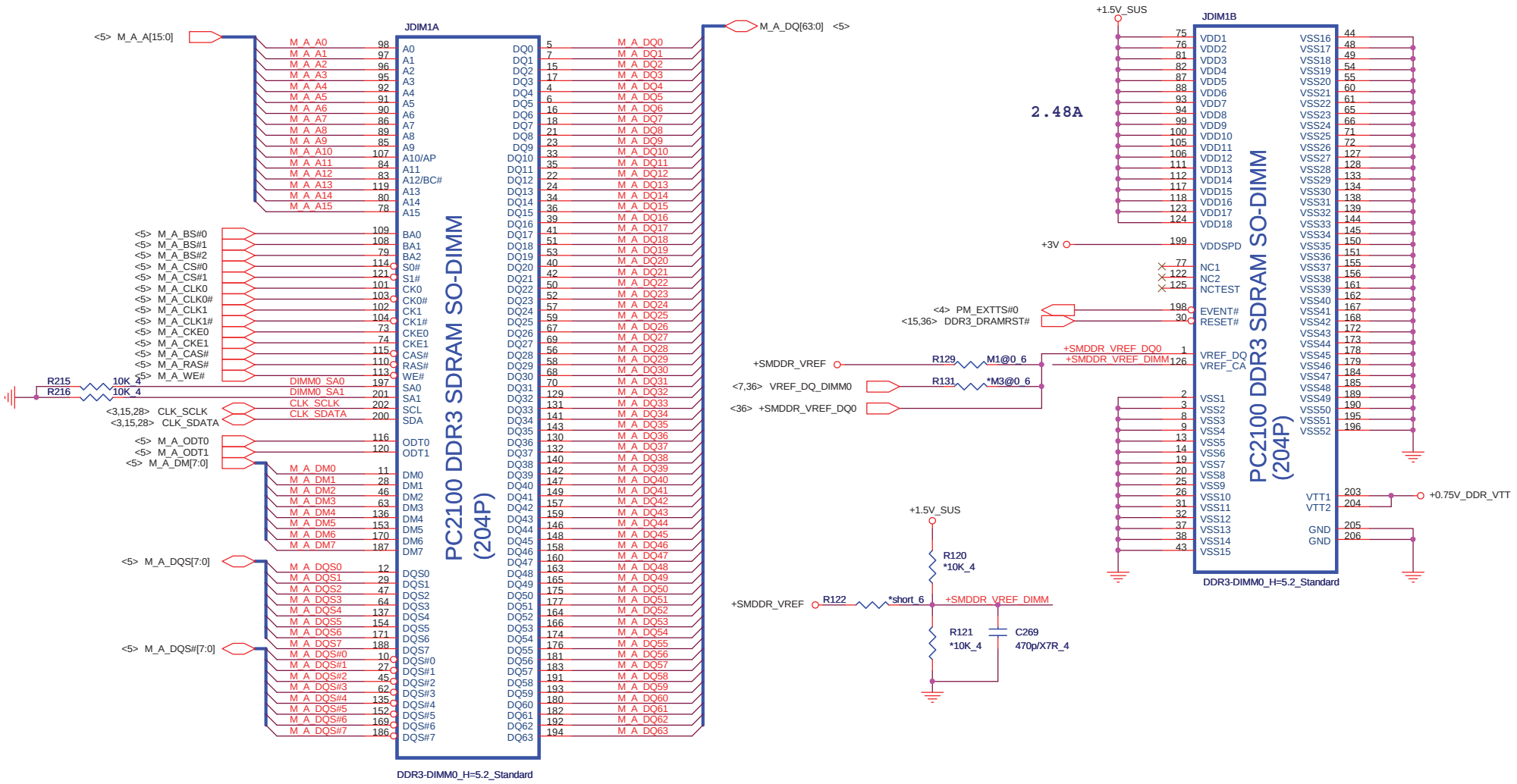
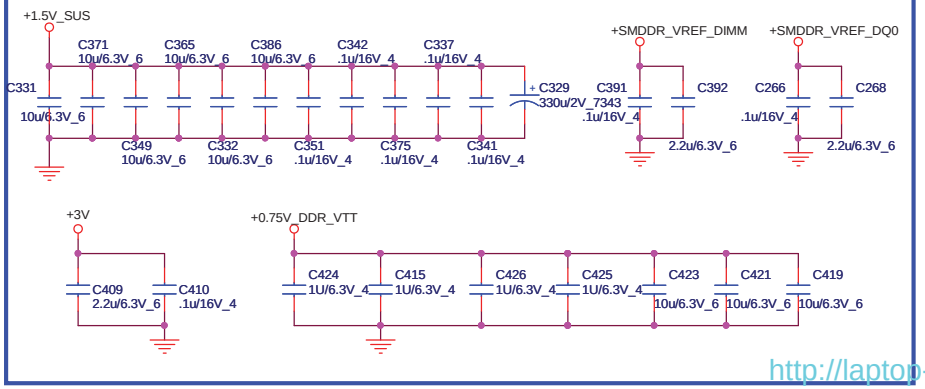
PROJECT : ZR7B

Size	Document Number	Rev
	IBEX PEAK-M 6/6	1A

Date: Friday, March 05, 2010 Sheet 13 of 50



Place these Caps near So-Dimm0.



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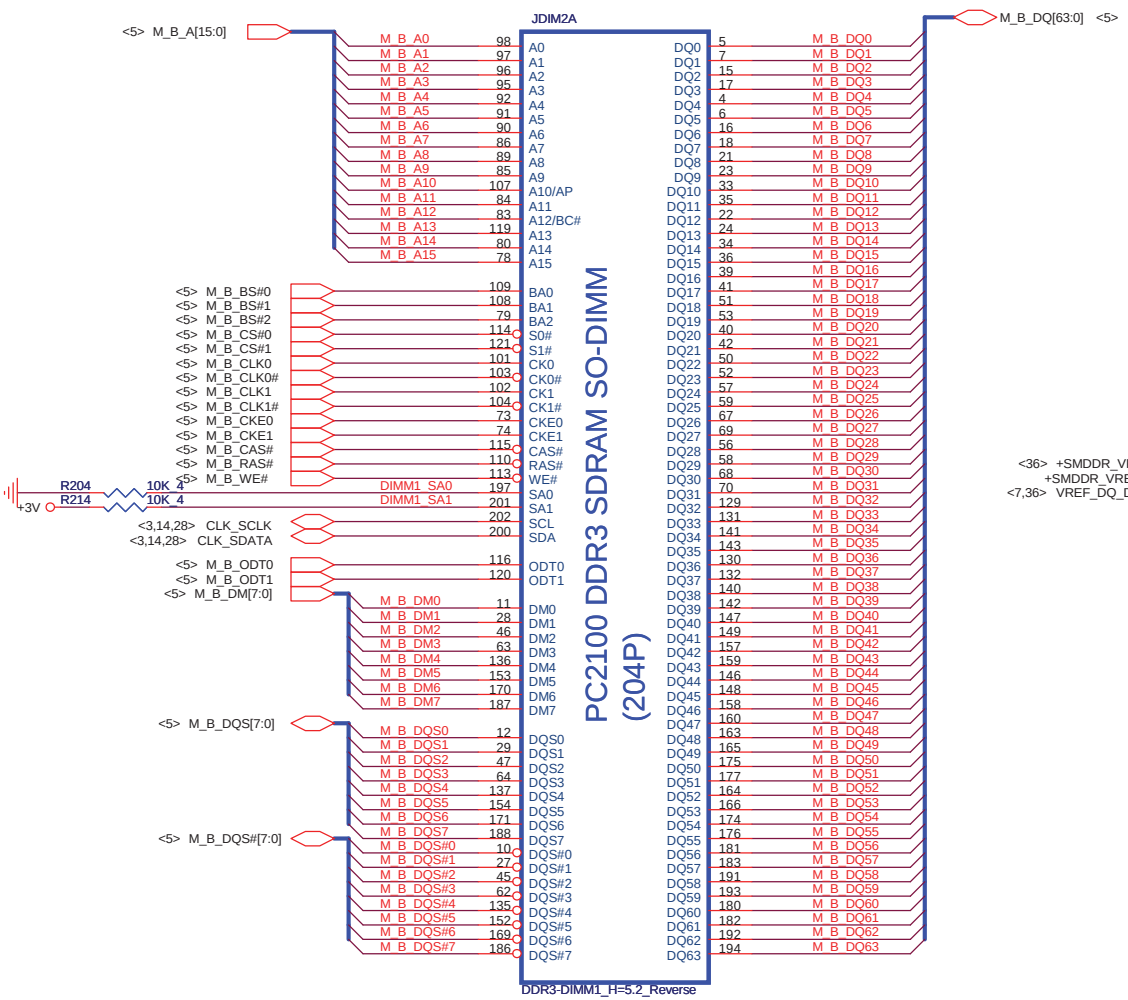
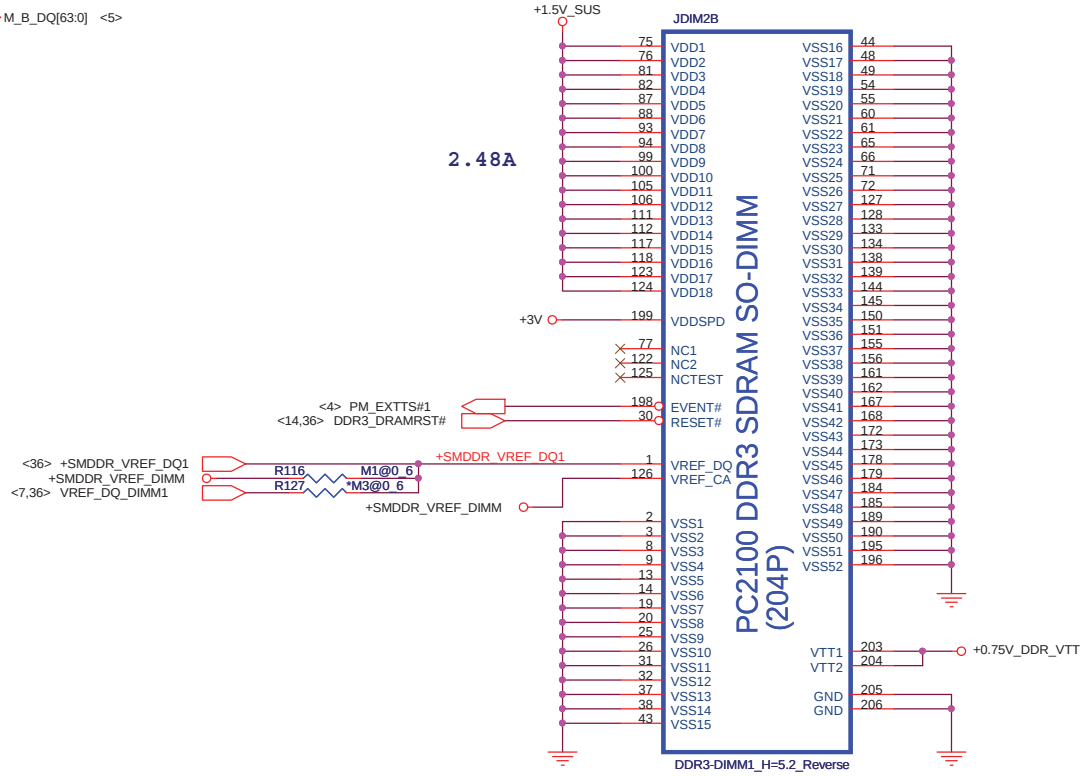
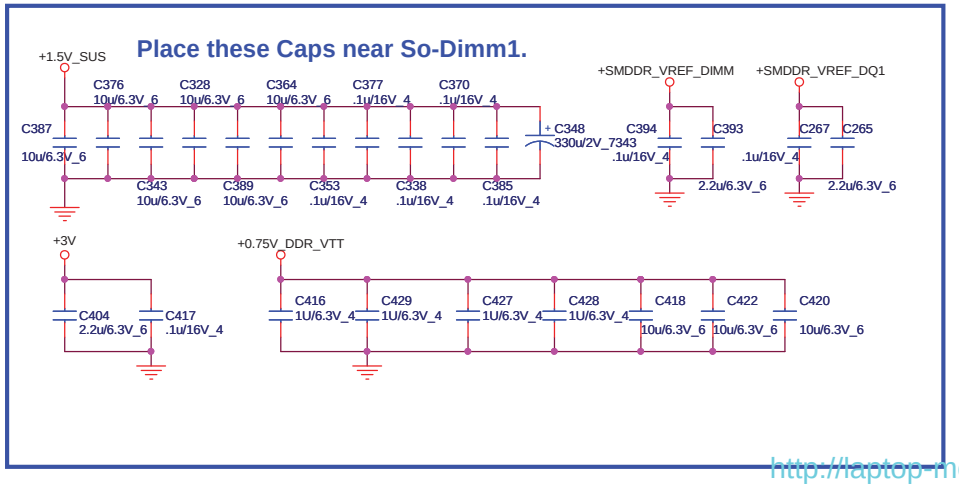
PROJECT : ZR7B

Size	Document Number	Rev
	DDRIII SO-DIMM-0	1A
Date: Friday, March 05, 2010	Sheet 14 of 50	







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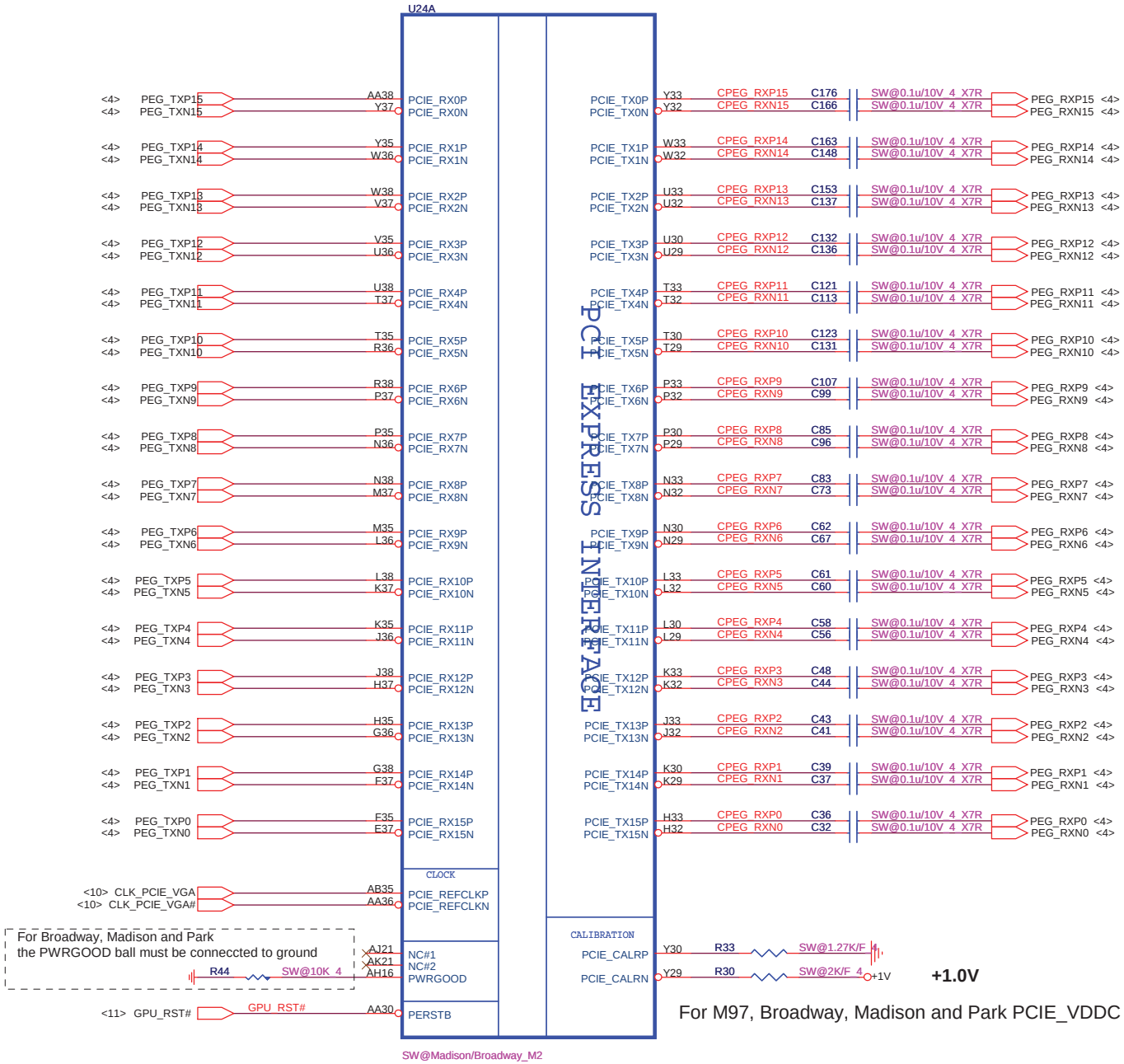
Size	Document Number	Rev
	DDRIII SO-DIMM-1	1A
Date: Friday, March 05, 2010	Sheet 15 of 50	



For M97, Broadway, Madison and Park PCIE_VDDC is 1.0V

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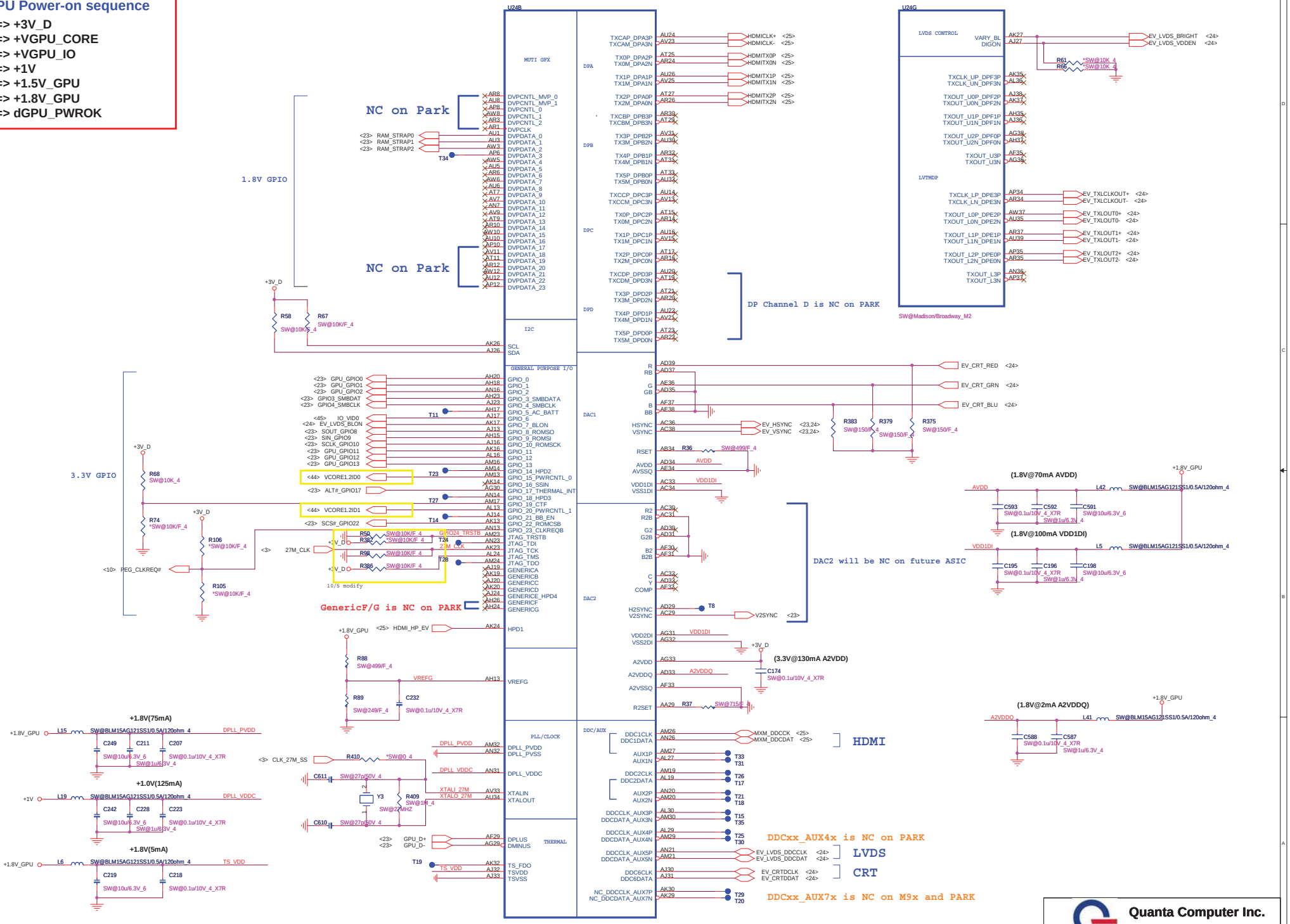
PROJECT : ZR7B

Size	Document Number	Rev
	Madison/Broadway-PCIE I/F	1A
Date: Friday, March 05, 2010	Sheet 16 of 50	

GPU Power-on sequence

1 => +3V_D
2 => +VGPU_CORE
3 => +VGPU_IO
4 => +1V
5 => +1.5V_GPU
6 => +1.8V_GPU
7 => dGPU_PWROK



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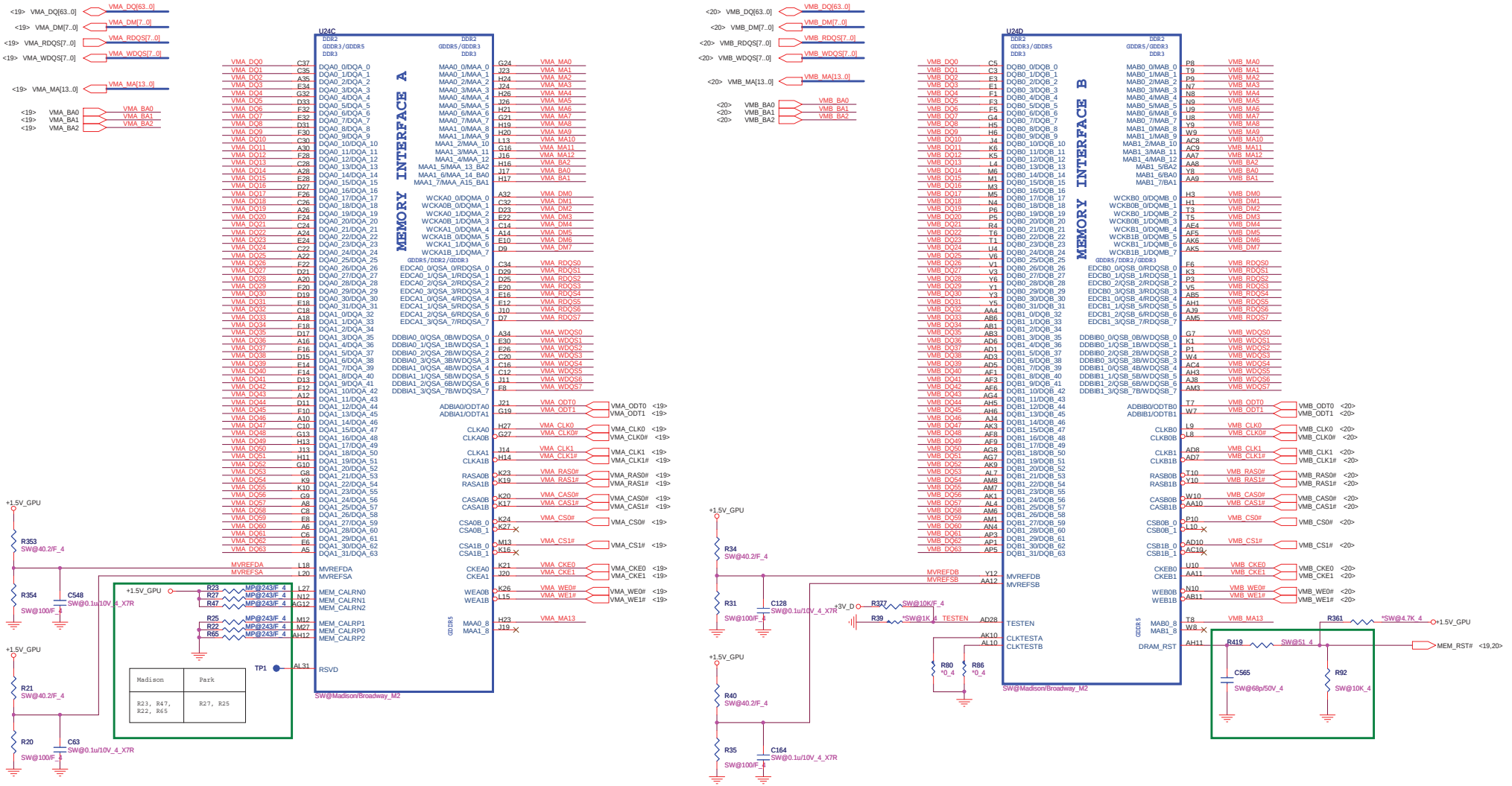
PROJECT : ZR7B

Size	Document Number	Rev
	Madison/Broadway-HOST I/F	1A
Date: Friday, March 05, 2010	Sheet 17 of 50	



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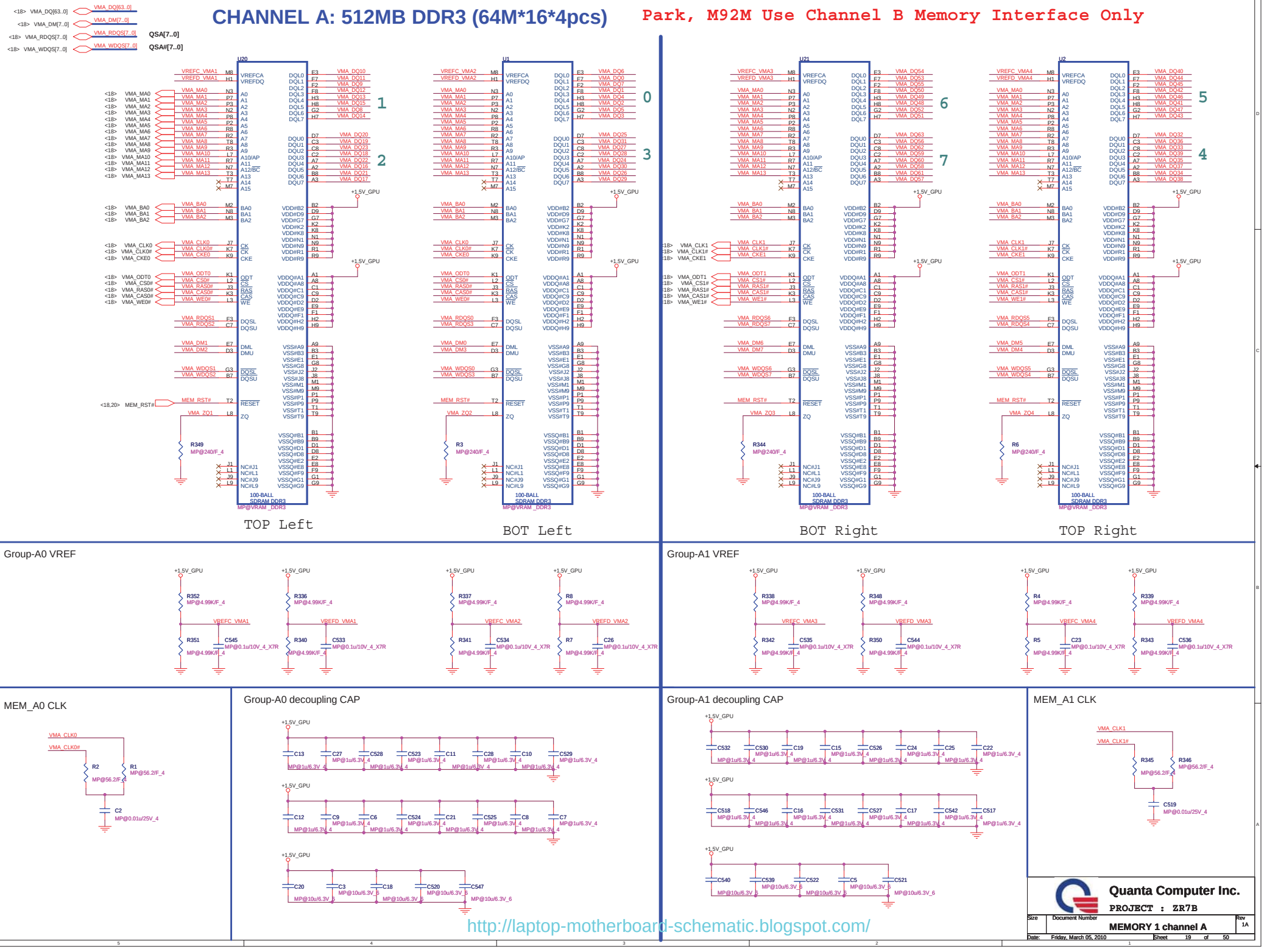
PROJECT : ZR7B

Size	Document Number	Rev
	Madison/Broadway-MEM I/F	1A
Date: Friday, March 05, 2010	Sheet 18 of 50	

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

Park, M92M Use Channel B Memory Interface Only



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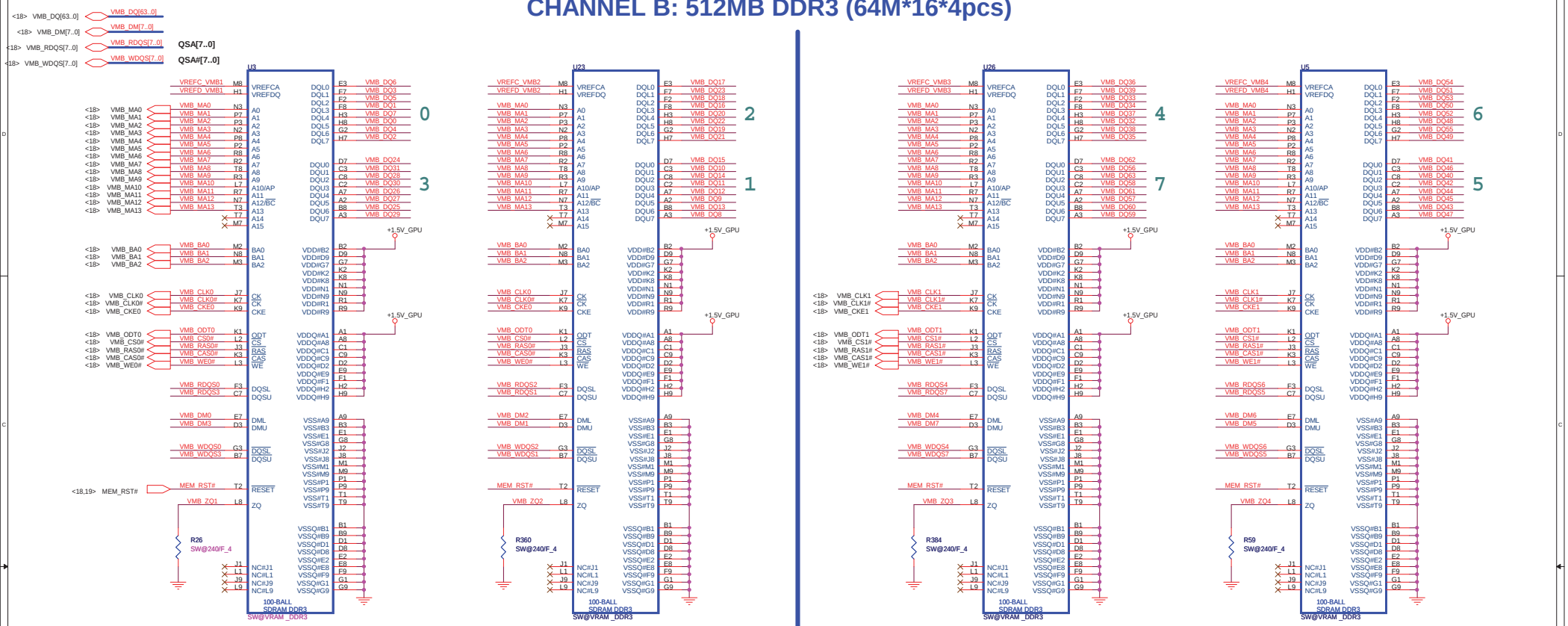
PROJECT : ZR7B

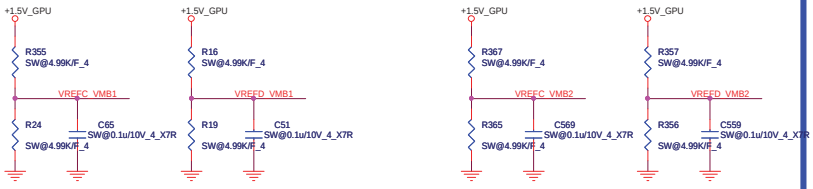
Size	Document Number	Rev
	MEMORY 1 channel A	1A

Date: Friday, March 05, 2010 Sheet 19 of 50

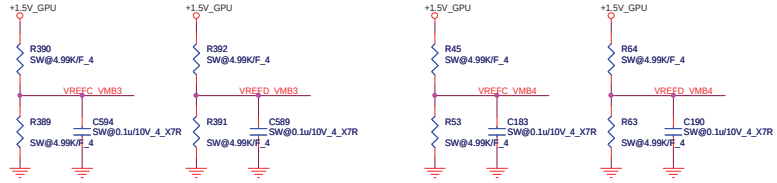
CHANNEL B: 512MB DDR3 (64M*16*4pcs)



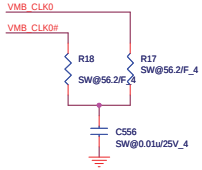
Group-B0 VREF



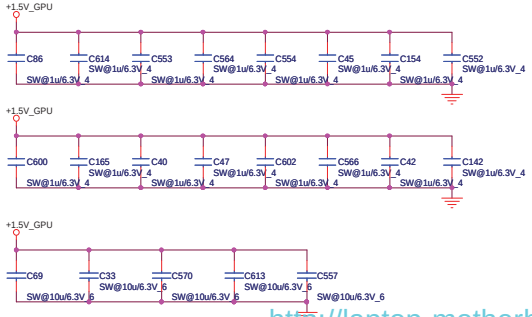
Group-B1 VREF



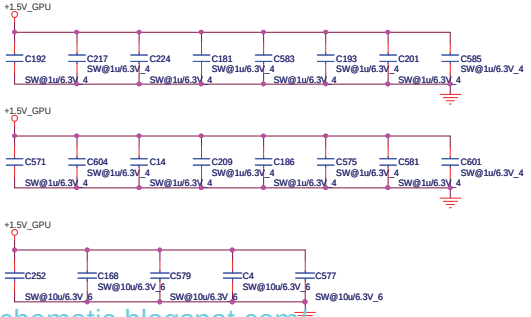
MEM_B0 CLK



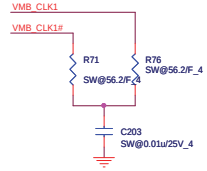
Group-B0 decoupling CAP



Group-B1 decoupling CAP



MEM_B1 CLK



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PROJECT : ZR7B

Size	Document Number	Rev
	MEMORY 2 channel B	1A

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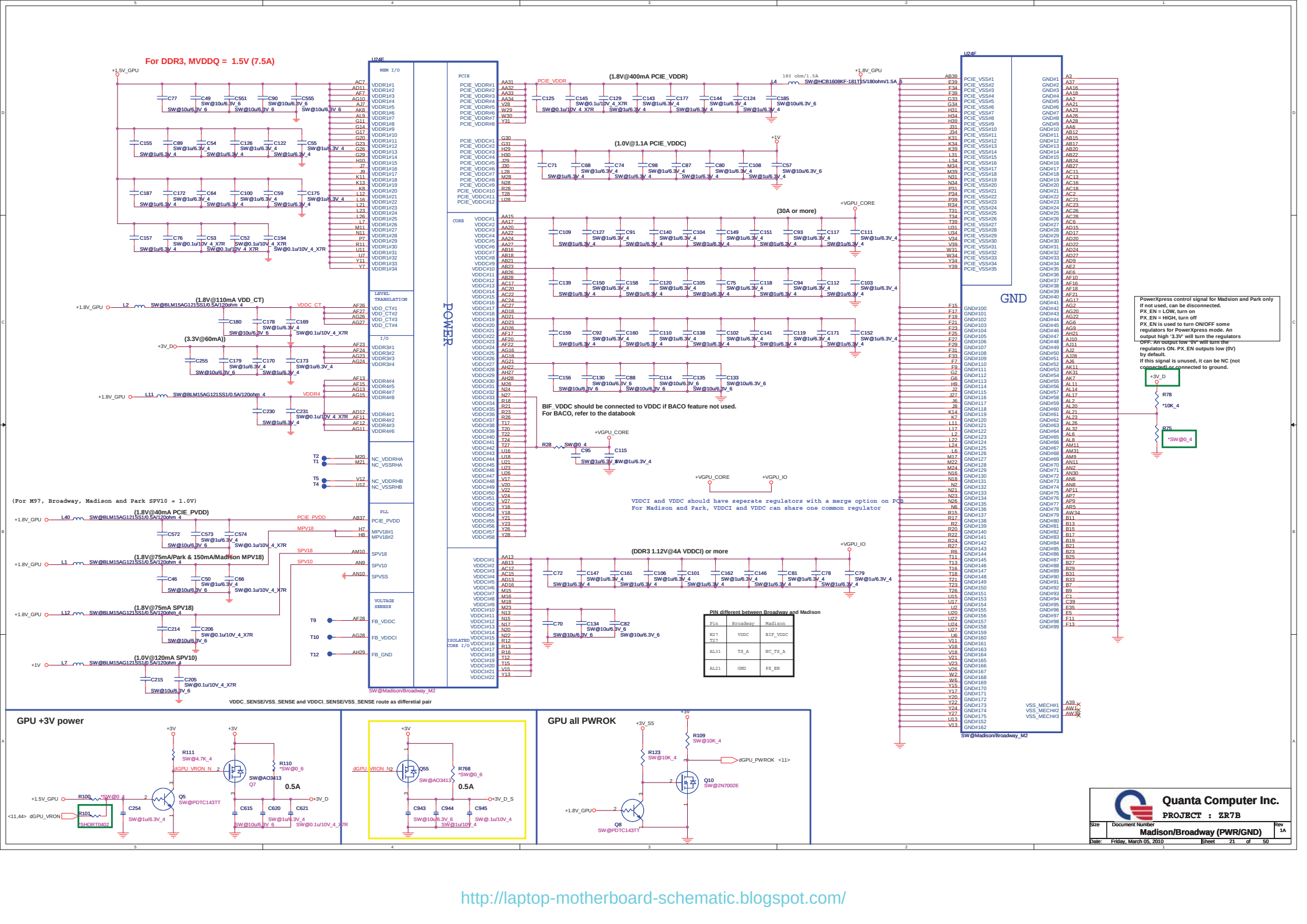
For DDR3, MVDDQ = 1.5V (7.5A)
U24E
POWER
(1.8V@400mA PCIE_VDDR)
(1.0V@1.1A PCIE_VDDR)
(30A or more)
(1.8V@110mA VDD_CT)
(3.3V@60mA))
(For M97, Broadway, Madison and Park SPV10 = 1.0V)
(1.8V@40mA PCIE_PVDD)
(1.8V@75mA/Park & 150mA/Madison MPV18)
(1.8V@75mA SPV18)
(1.0V@120mA SPV10)
(DDR3 1.12V@4A VDDCI) or more
BIF_VDDC should be connected to VDDC if BACO feature not used.
For BACO, refer to the databook
VDDCI and VDDC should have seperate regulators with a merge option on PCB
For Madison and Park, VDDCI and VDDC can share one common regulator
PIN different between Broadway and Madison
Pin | Broadway | Madison
N27 T27 | VDDC | BIF_VDDC
AL31 | TS_A | NC_TS_A
AL21 | GND | PX_EN
PowerXpress control signal for Madsion and Park only
If not used, can be disconnected.
PX_EN = LOW, turn on
PX_EN = HIGH, turn off
PX_EN is used to turn ON/OFF some regulators for PowerXpress mode. An output high '3.3V' will turn the regulators OFF. An output low '0V' will turn the regulators ON. PX_EN outputs low (0V) by default.
If this signal is unused, it can be NC (not connected) or connected to ground.
GND
SW@Madison/Broadway_M2
VDDC_SENSE/VSS_SENSE and VDDCI_SENSE/VSS_SENSE route as differetial pair
GPU +3V power
GPU all PWROK
Quanta Computer Inc.
PROJECT : ZR7B
Madison/Broadway (PWR/GND)
Rev 1A
Date: Friday, March 05, 2010
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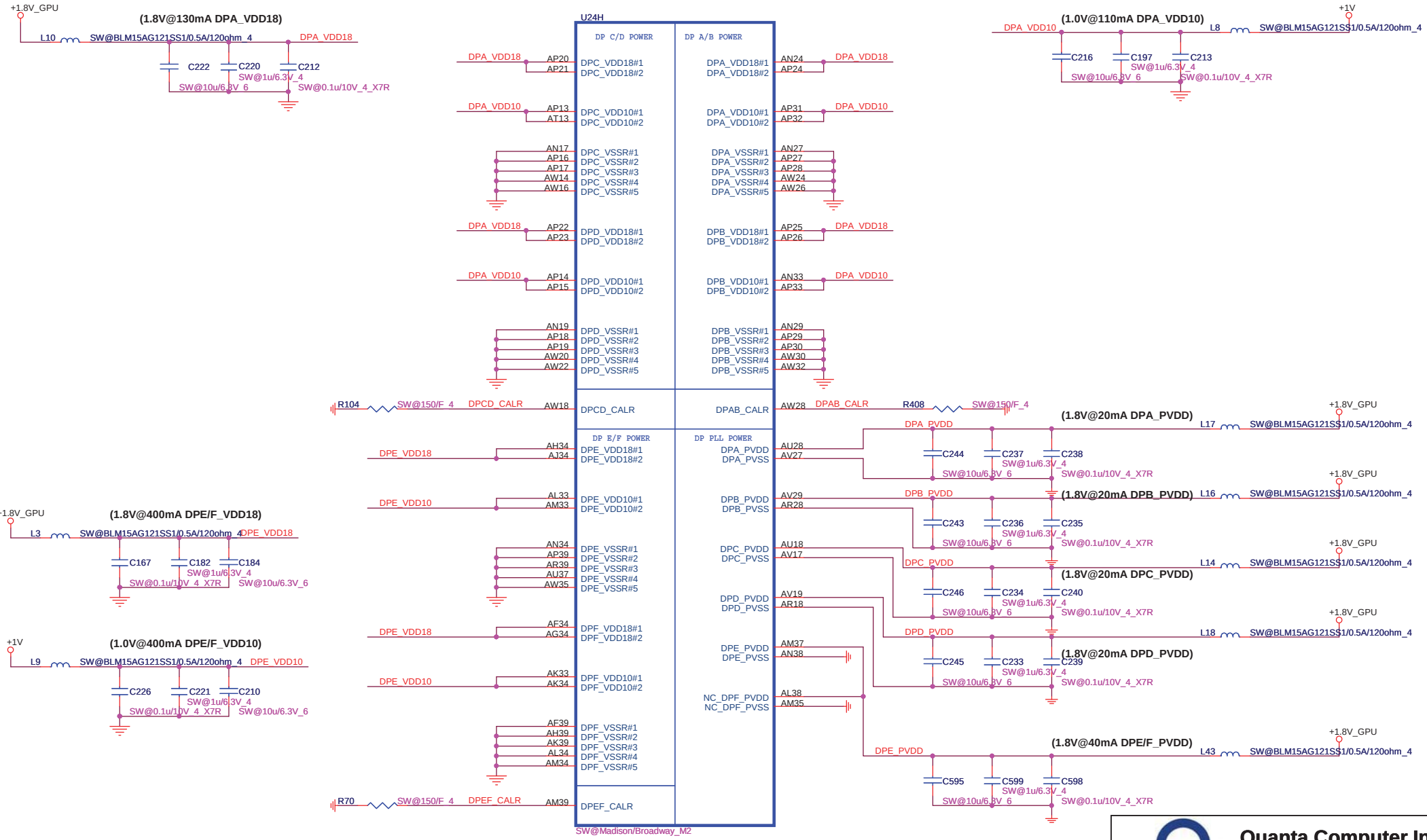
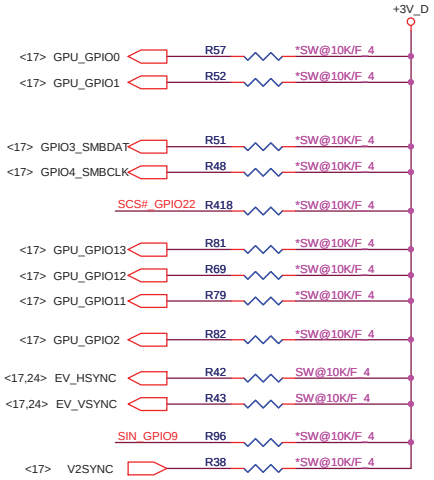
http://laptop-motherboard-schematic.blogspot.com/



PIN STRAPS



Memory Aperture size	
GPIO[13:11]	Size
000	128MB
001	256MB
010	64MB
011	32MB

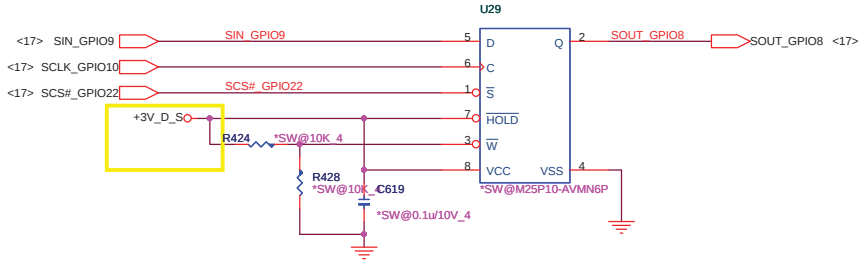
ROM Table		
EXT_HSYNC	EXT_VSYNC	Discription
0	0	No Audio
0	1	Any one by dectec
1	0	DP only
1	1	Both DP & HDMI

CONFIGURATION STRAPS

ALLOW FOR PULLUP PADS FOR THESE STRAPS AND IF THESE GPIOS ARE USED, THEY MUST NOT CONFLICT DURING RESET

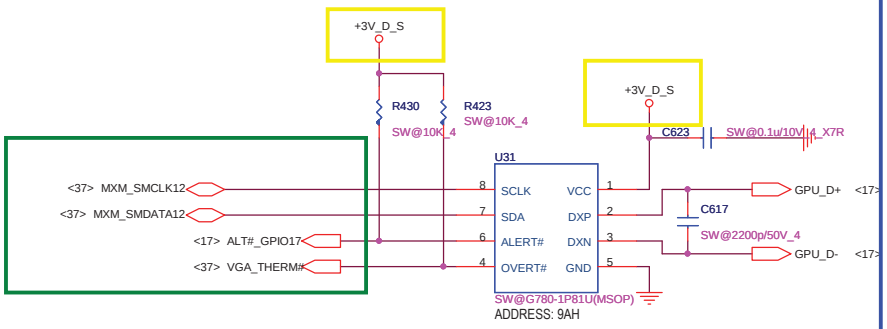
STRAPS	PIN	DESCRIPTION OF DEFAULT SETTINGS	DEFAULT	REMARK
TX_PWRS_ENB	GPIO0	0 = 50% TX OUTPUT SWING 1 = FULL TX OUTPUT SWING	0	
TX_DEEMPH_EN	GPIO1	PCIE TRANSMITTER DE-EMPHASIS ENABLED 0 = TX DE-EMPHASIS DISABLED 1 = TX DE-EMPHASIS ENABLED	0	
BIOS_ROM_EN	GPIO_22_ROMCSB	ENABLE EXTERNAL BIOS ROM 0 = DISABLE 1 = ENABLE	0	
ROMIDCFG(2:0)	GPIO[13:11]	SERIAL ROM TYPE OR MEMORY APERTURE SIZE SELECT NUMONYX M25P10A : 101	000	See Memory Aperture size
BIF_GEN2_EN_A	GPIO2	0 = PCIE DEVICE AS 2.5GT/S CAPABLE 1 = PCIE DEVICE AS 5GT/S CAPABLE	0	
GPIO_8_ROMSO H2SYNC GPIO_21_BB_EN	GPIO8 H2SYNC GPIO21	Reserved Only	0	
AUD[1] AUD[0]	HSYNC VSYNC	AUD[1:0] 00: NO AUDIO FUNCTION. 01: AUDIO FOR DISPLAYPORT AND HDMI IF ADAPTER IS DETECTED. 10: AUDIO FOR DISPLAYPORT ONLY. 11: AUDIO FOR BOTH DISPLAYPORT AND HDMI.	11	See Audio table
GPIO_9_ROMSI	GPIO9	0 = VGA controller capacity enable	0	
VIP_DEVICE_STRAP_ENA	V2SYNC	0 = DRIVER would ignore the value sample on VHAD_0 during RESET.	0	

EEPROM



Thermal Sensor

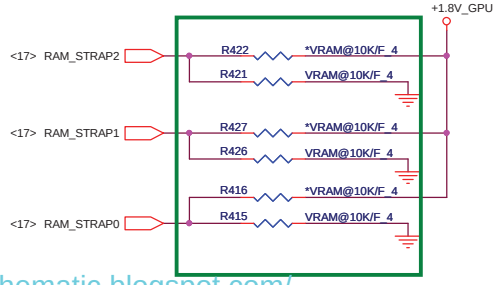
NS	none
WINDBOND	AL83L771K02
GMT	AL000780003



DDR3 Memory Aperture size

DDR3 Memory Aperture size

Vendor	Vendor P/N	STN B/S P/N	Size	RAM_STRAP2 DVPDATA_2	RAM_STRAP1 DVPDATA_1	RAM_STRAP0 DVPDATA_0
Hynix	H5TQ1G63BFR-12C	AKD5LZGTW04 (64M*16)	512MB	1	1	0
			1GB	1	0	0
			2GB	1	0	1
Samsung	K4W1G1646E-HC12	AKD5LGGT506 (64M*16)	512MB			
			1GB	0	0	0
	K4W2G1646B-HC12	AKD5MGGT500	2GB	0	0	1
AMD	23EY2387MA12-SZ	AKD5LGGT700	1GB	0	1	0



RAM_STRAP2 SET DDR3 Vendor
RAM_STRAP[1:0] SET SIZE.

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Size	Document Number	Rev
	Strip/Thermal	1A
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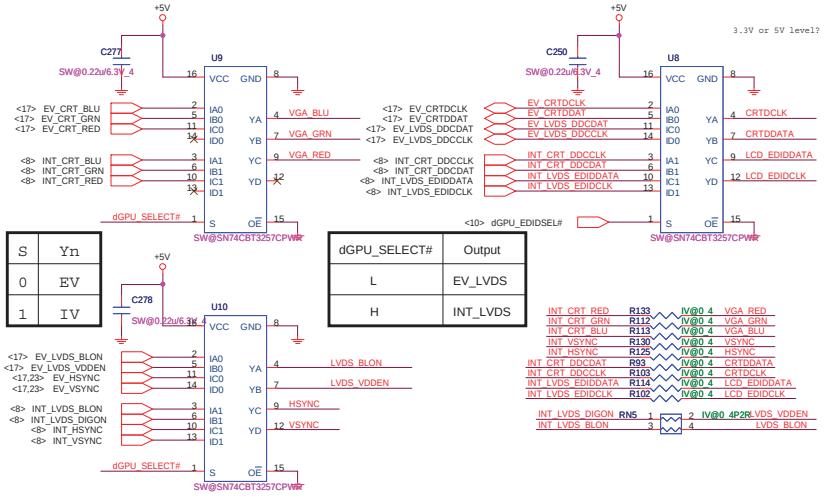
CRT Switch

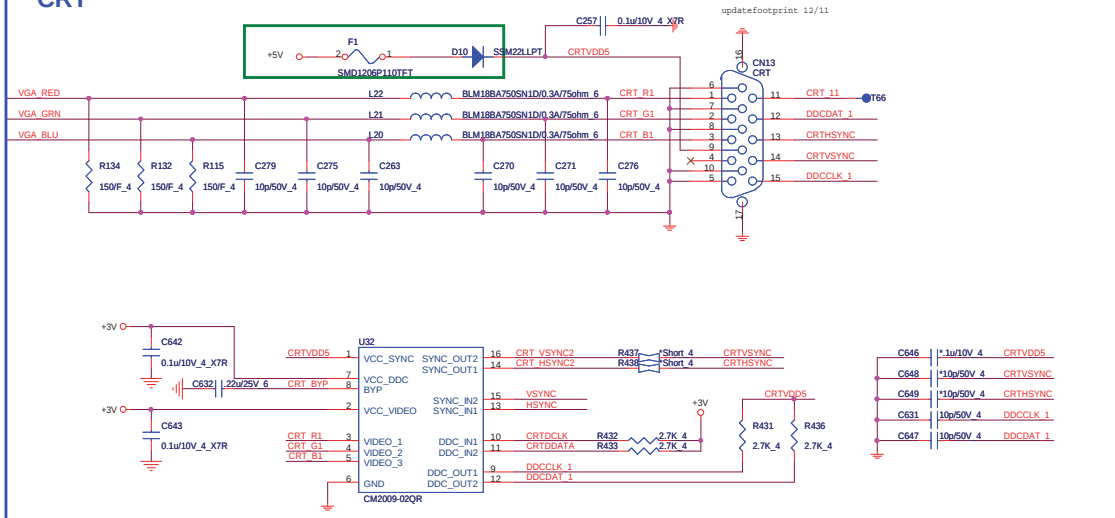
IV@
SW@



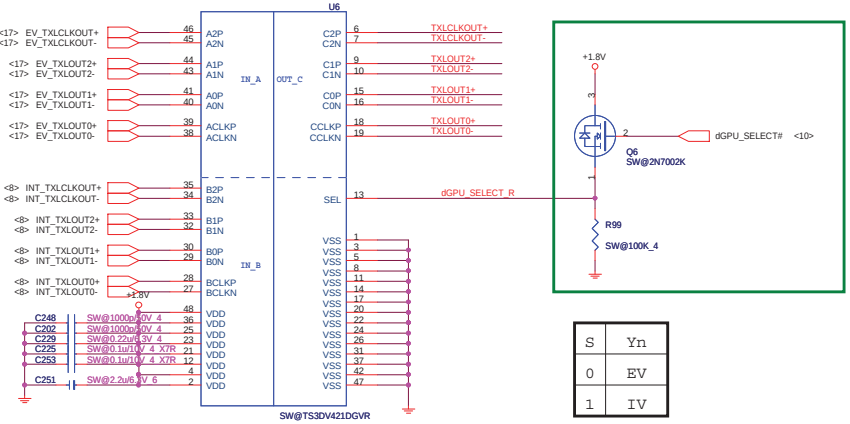
S	Yn
0	EV
1	IV

dGPU_SELECT#	Output
L	EV_LVDS
H	INT_LVDS

CRT

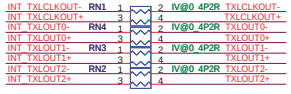


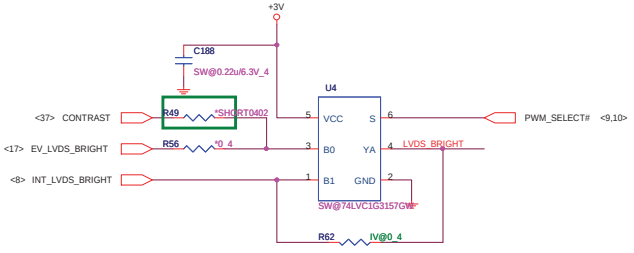
LVDS Switch



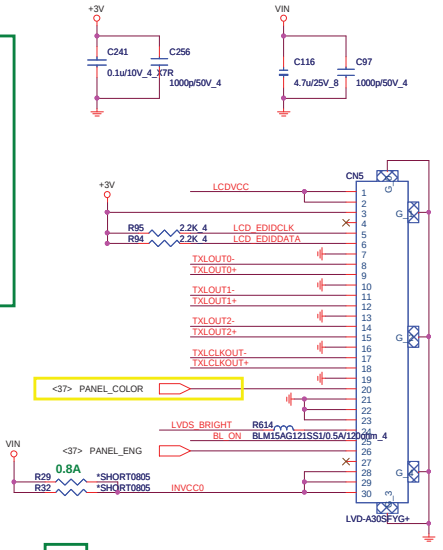
S	Yn
0	EV
1	IV

dGPU_SELECT#	Output
L	EV_LVDS
H	INT_LVDS

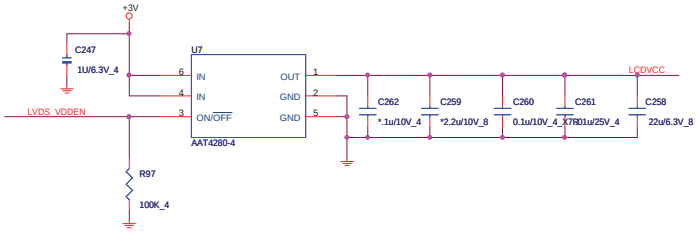




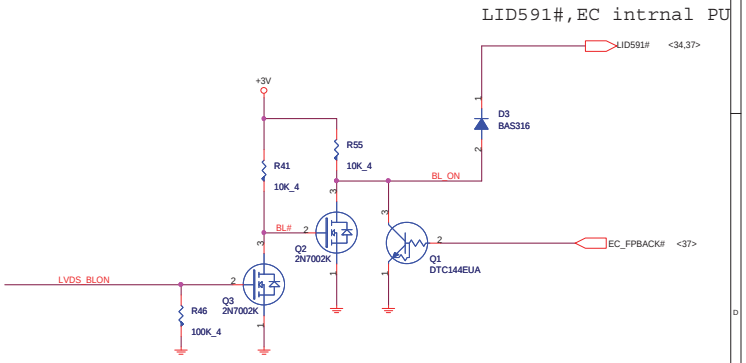
LVDS



LCD Power



Backlight Control



Quanta Computer Inc.
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Size	Document Number	Rev
	CRT/LVDS/CAMERA/LID	1A

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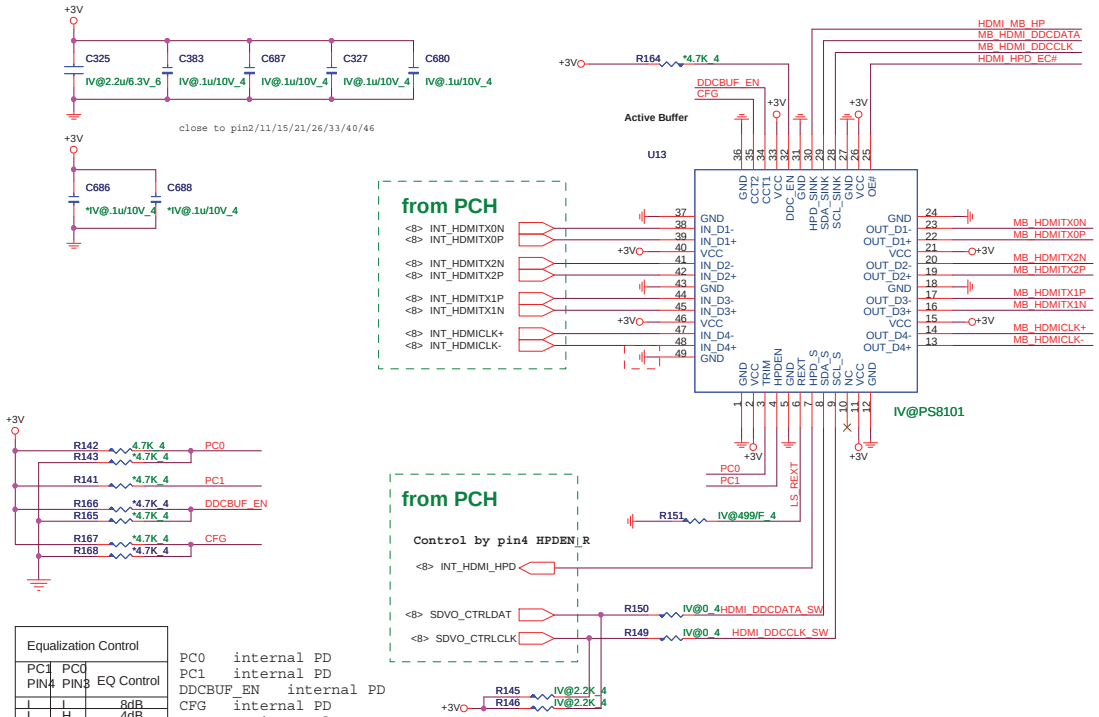
I@ HDMI LEVEL SHIFTER

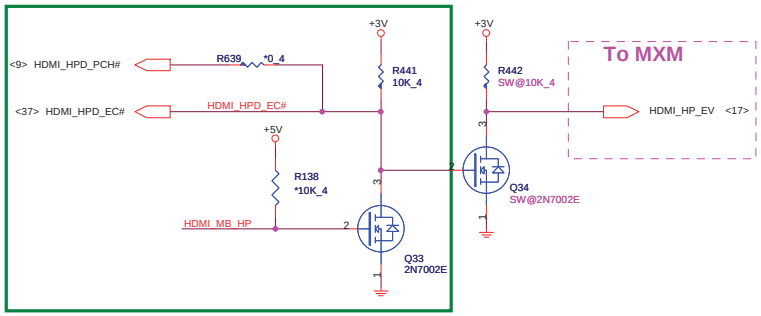
IV@
SW@
SP@



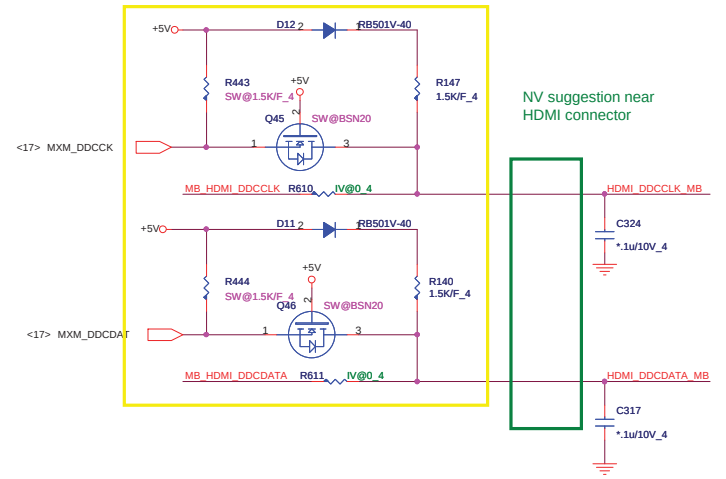
Equalization Control		
PC1 PIN4	PC0 PIN3	EQ Control
L	L	8dB
L	H	4dB
H	L	12dB
H	H	0dB

PC0 internal PD
PC1 internal PD
DDCBUF_EN internal PD
CFG internal PD
DDC_EN internal PU

SW@HDMI-detect

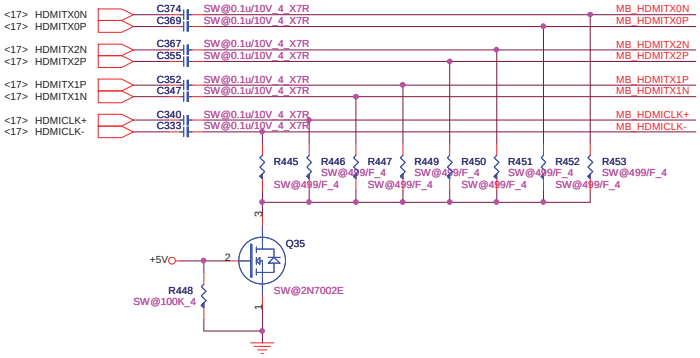


I2C



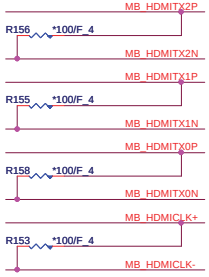
Switchable Graphic HDMI source

To MXM

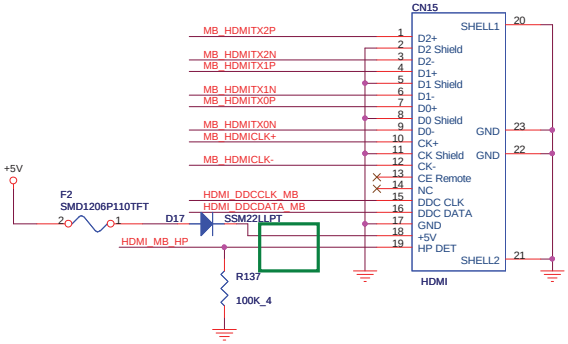


ESD Protect

EMI



HDMI connector



Quanta Computer Inc.
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Size	Document Number	Rev
	HDMI (PS8101)	1A
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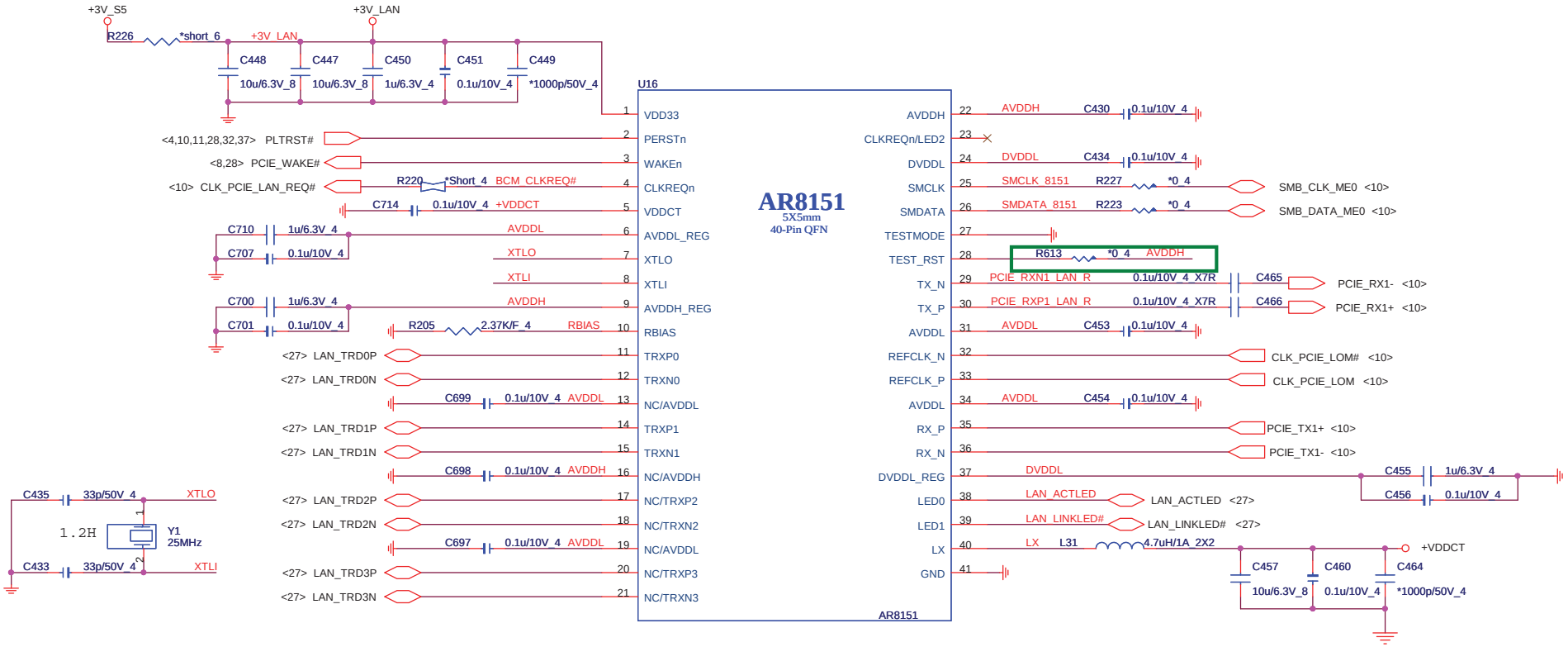
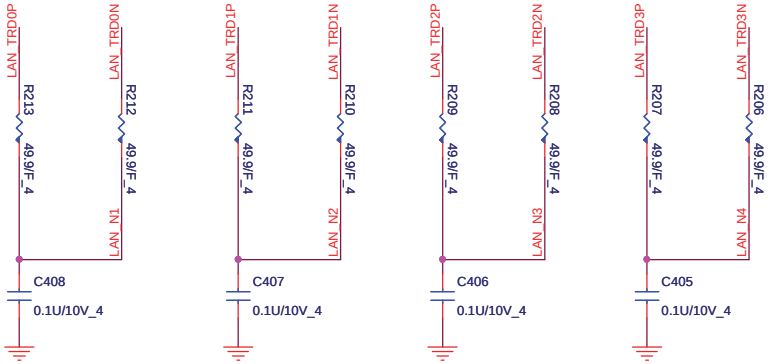
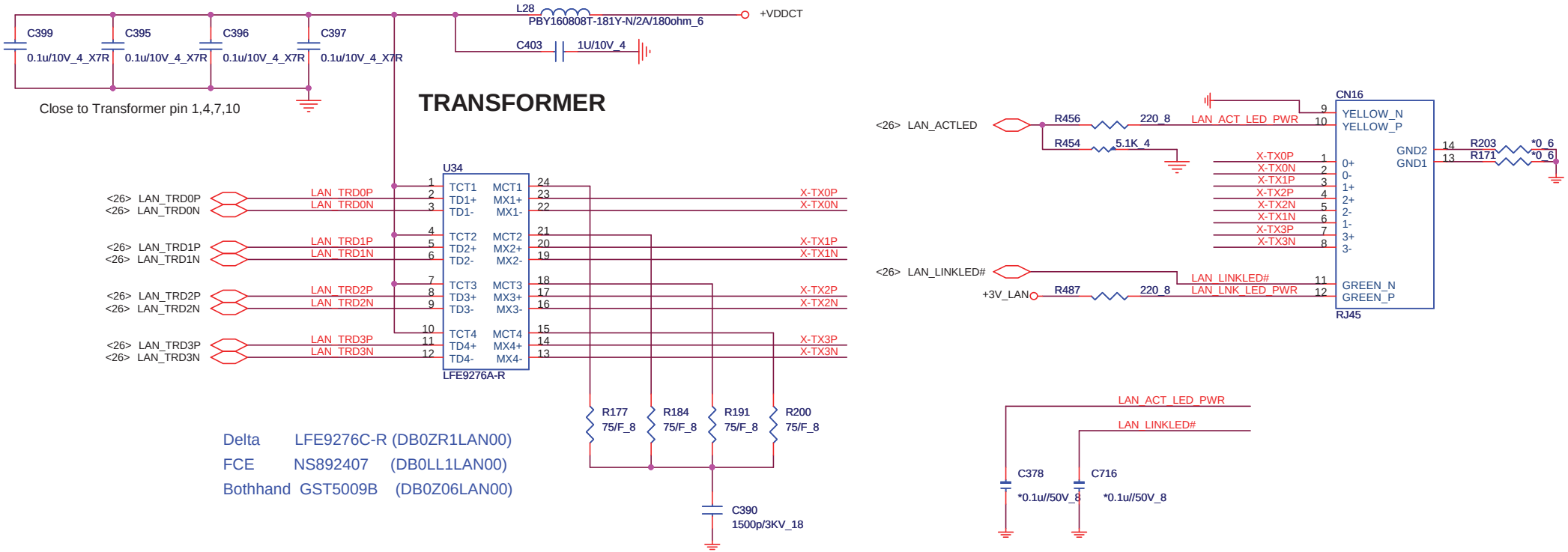
Giga-LAN AR8151





Quanta Computer Inc.		
PROJECT : ZR7B		
Size	Document Number: GLAN BCM57780	Rev: 1A
Date: Friday, March 05, 2010	Sheet 26 of 50	



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Size	Document Number	Rev
	LAN Transformer and RJ45	1A

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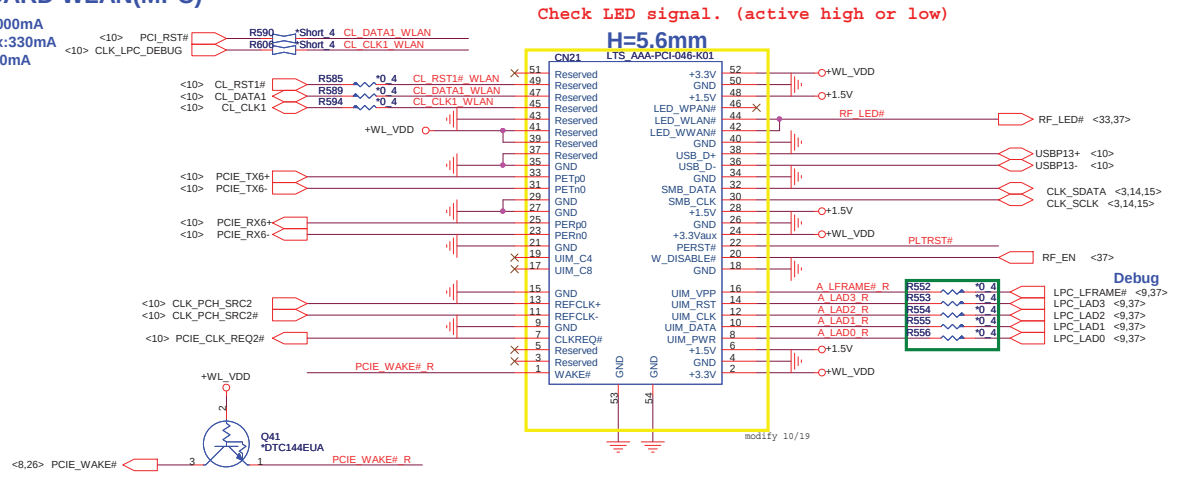
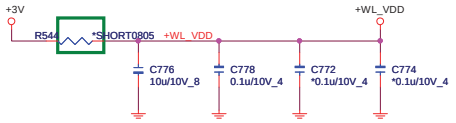
MINI-CARD WLAN(MPC)

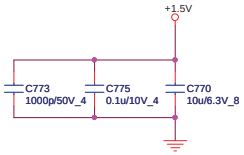
+3.3V: 1000mA
+3.3Vaux:330mA
+1.5V:500mA

Check LED signal. (active high or low)

H=5.6mm

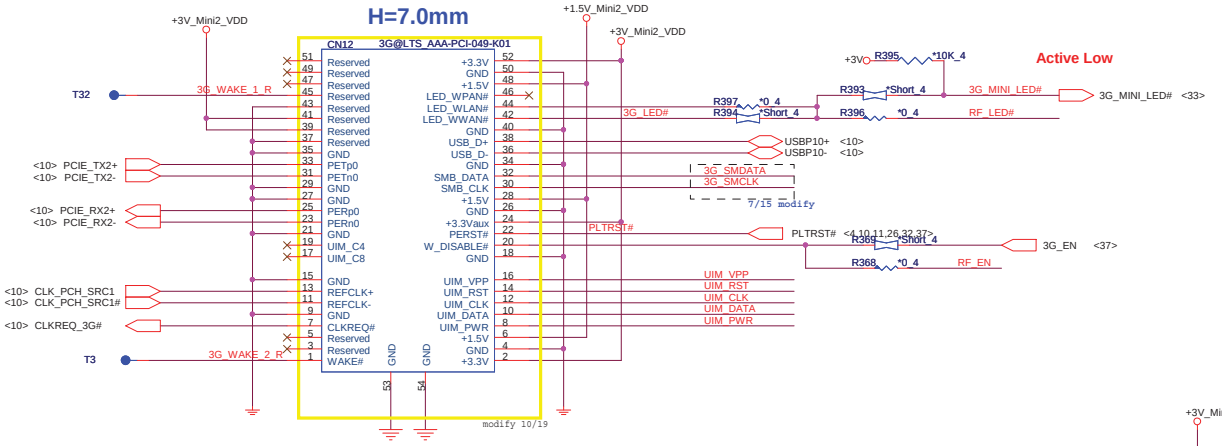


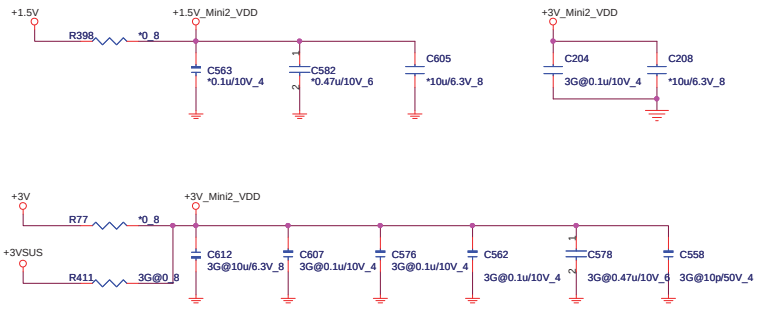




MINI-CARD 3G(MNC)Reserve for JV41-CP

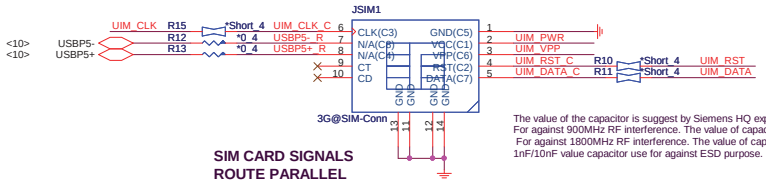
H=7.0mm





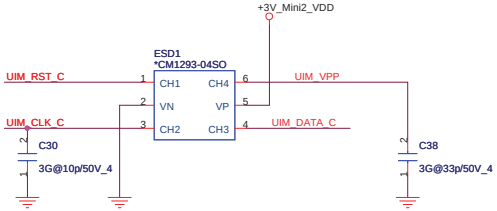
A:(10/17)FAE confirm:
3G module need +3VSUS and no need +1.5V and no need SMBUS

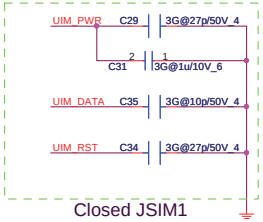
SIM CARD(RFM)Reserve for JV41-CP



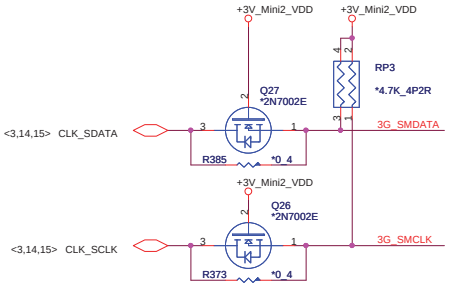
SIM CARD SIGNALS
ROUTE PARALLEL

The value of the capacitor is suggest by Siemens HQ expert.
For against 900MHz RF interference. The value of capacitor is 27pF.
For against 1800MHz RF interference. The value of capacitor is 10pF.
1nF/10nF value capacitor use for against ESD purpose.





Closed JSIM1



Quanta Computer Inc.		
PROJECT : ZR7B		
Size	Document Number	Rev
	MINI PCI-E card/TV	1A
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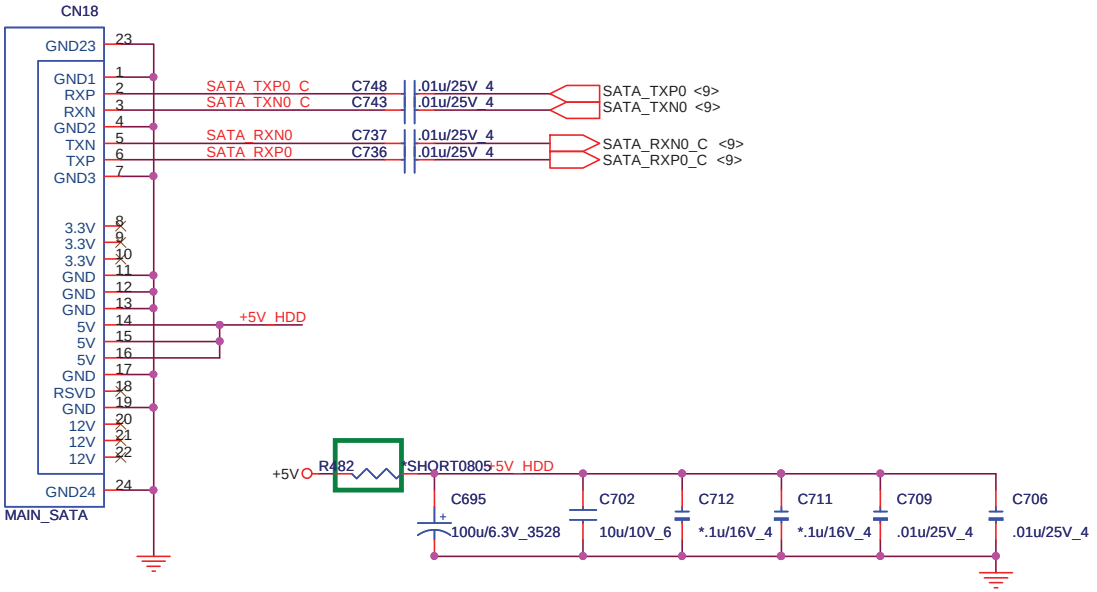
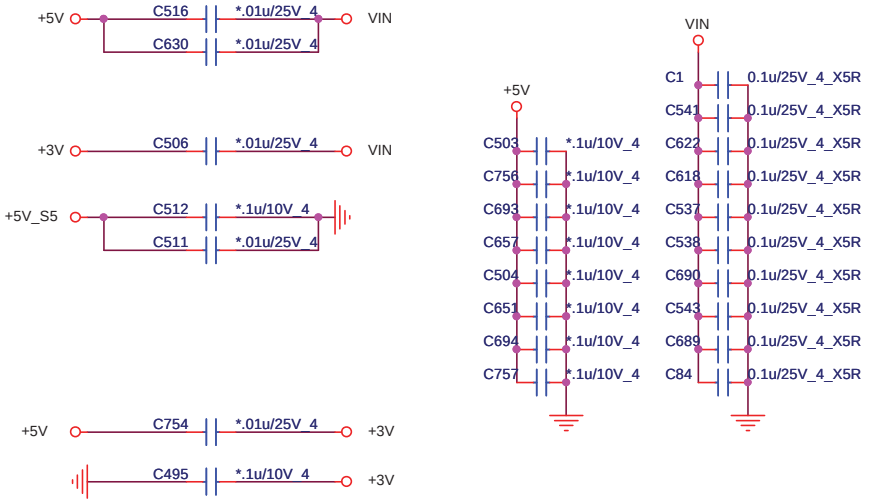
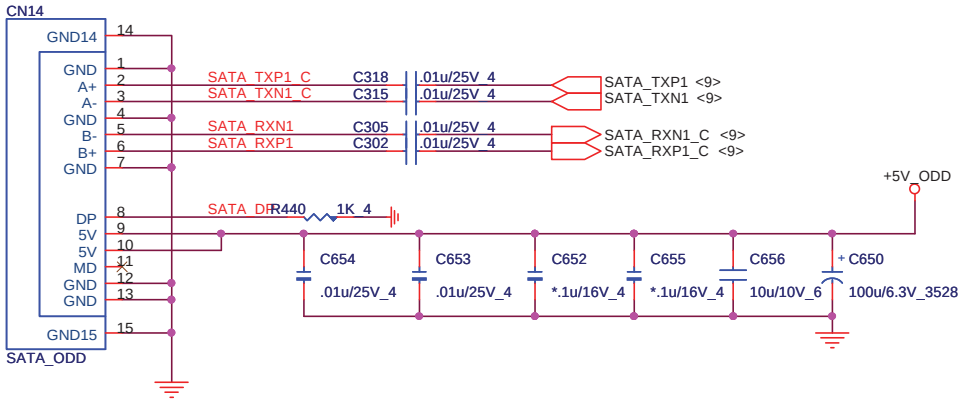
MAIN SATA HDD



EE RETURN-PATH CAPACITORS

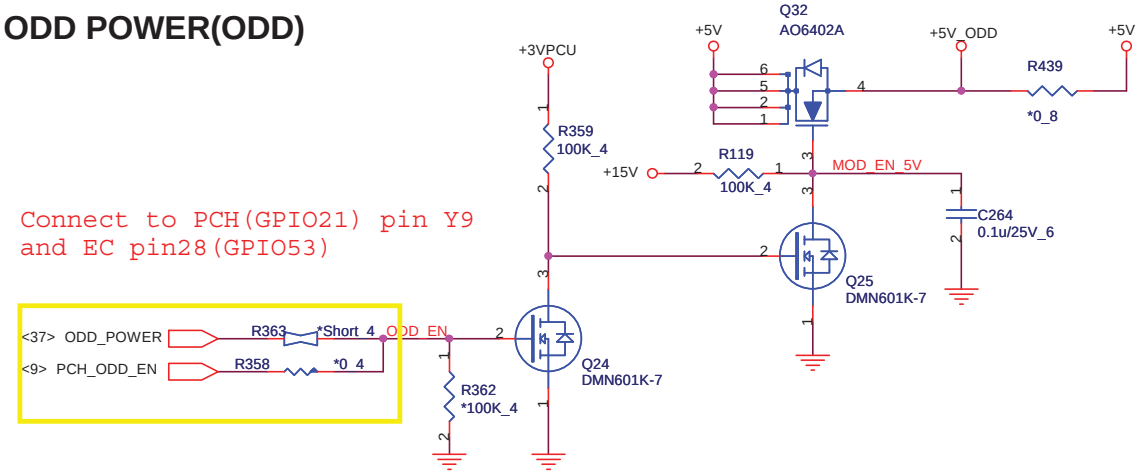


ODD (SATA)



ODD POWER(ODD)

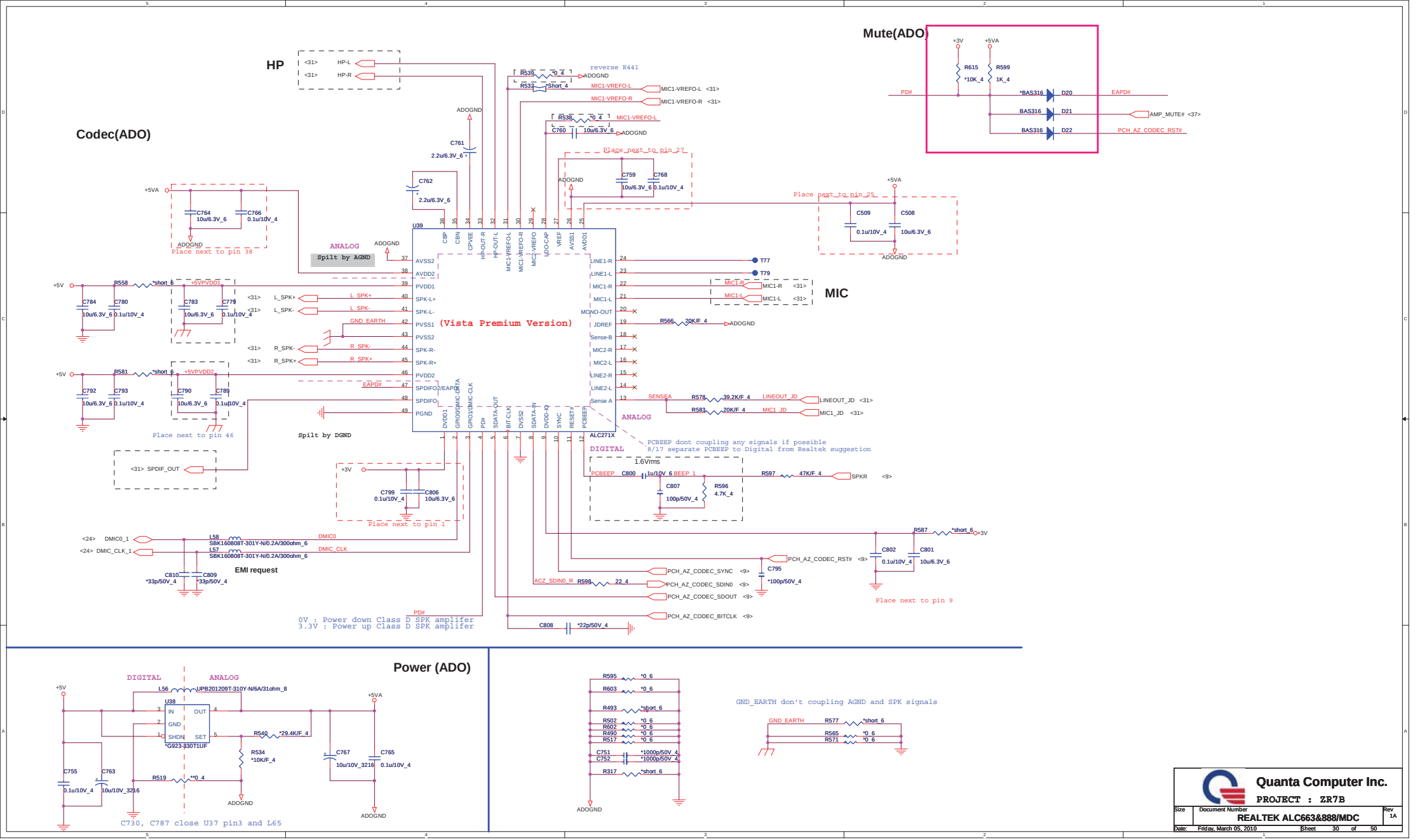
Connect to PCH(GPIO21) pin Y9
and EC pin28(GPIO53)



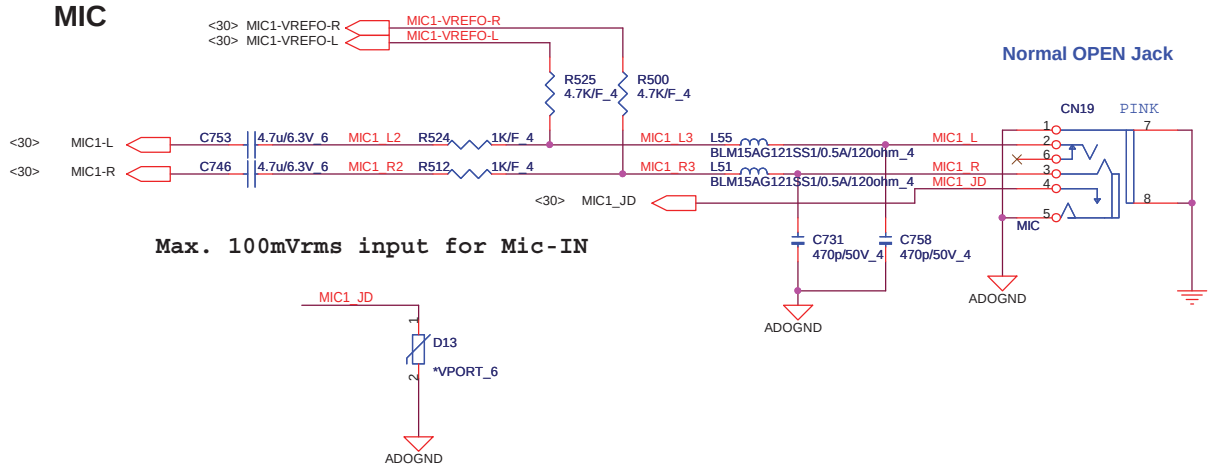
Quanta Computer Inc.

PROJECT : ZR7B

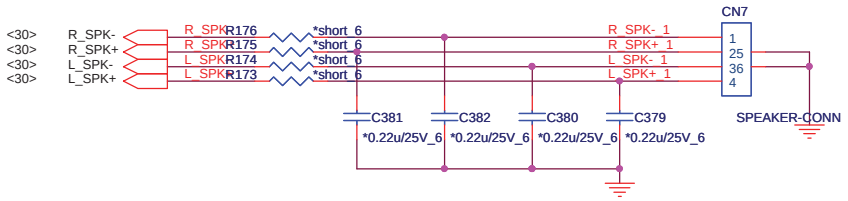
Size	Document Number	Rev
	SATA-HDD/ODD/USB-ESATA	1A
Date: Friday, March 05, 2010	Sheet 29 of 50	



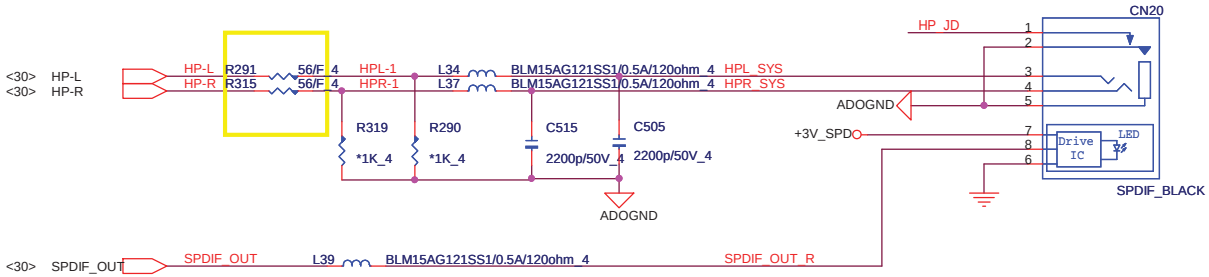
MIC

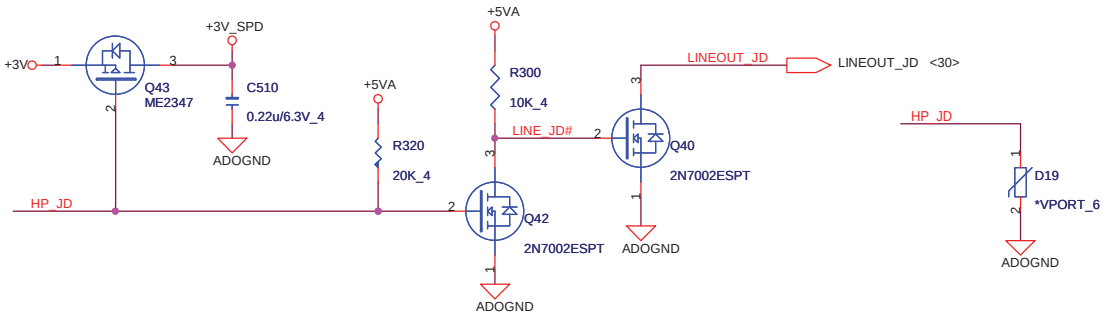


Internal Speaker



HP/SPDIF





Quanta Computer Inc.		
PROJECT : ZR7B		
Size	Document Number	Rev
	AMP /AUDIO JACK CONN	1A
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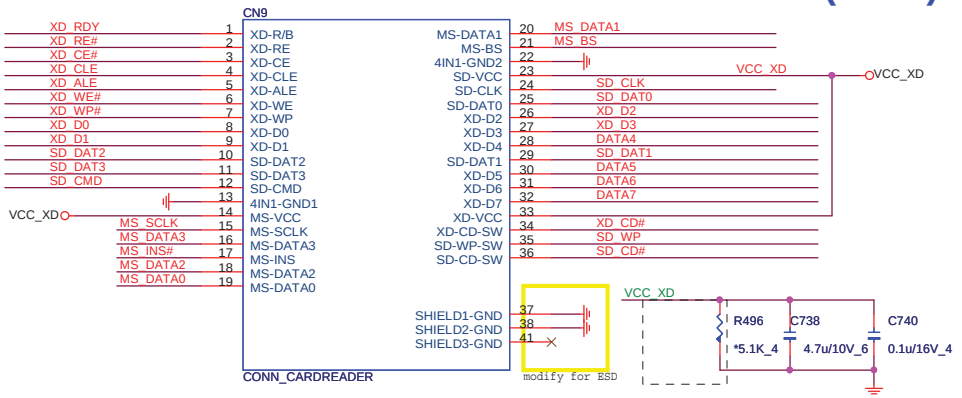
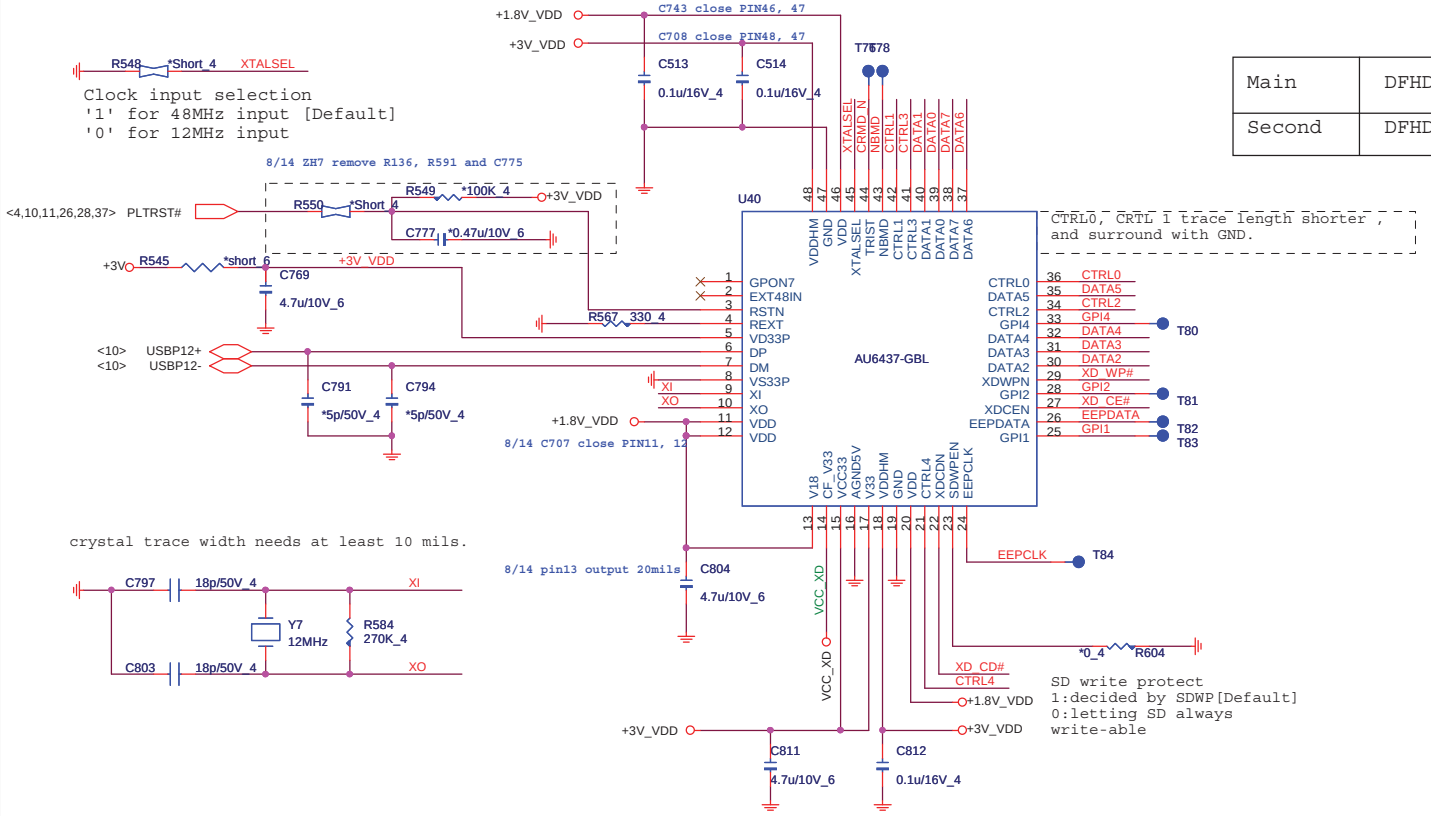
CARD READER Controller

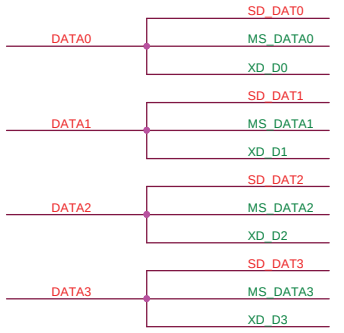
4 IN 1 CARD READER (MMC)

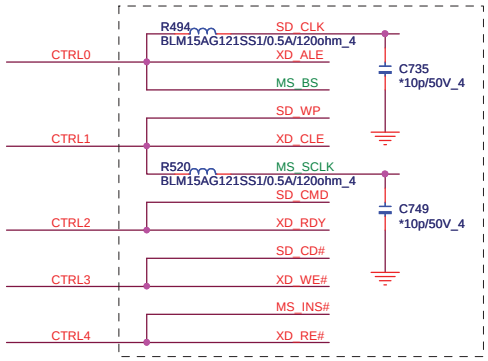


Close to CN14 pin 14 & pin23
4.7u CAP close to pin23

Main	DFHD36MS006
Second	DFHD36MS012







Quanta Computer Inc.
PROJECT : ZR7B

Size	Document Number	Rev
	AU6433 CardReader	1A

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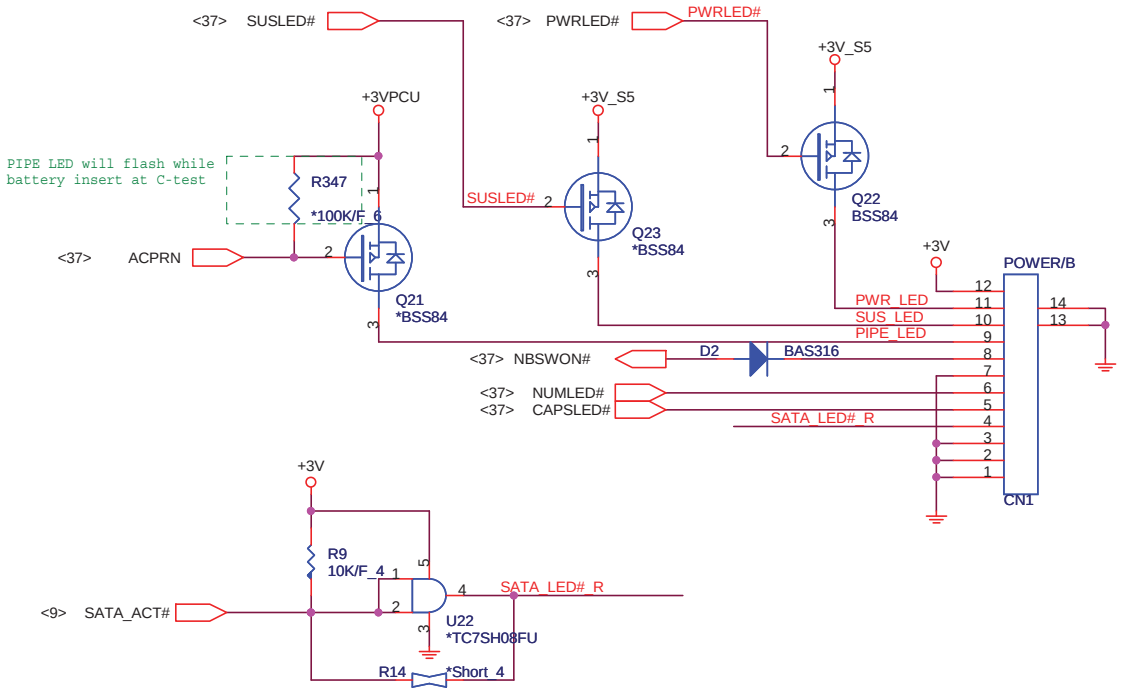
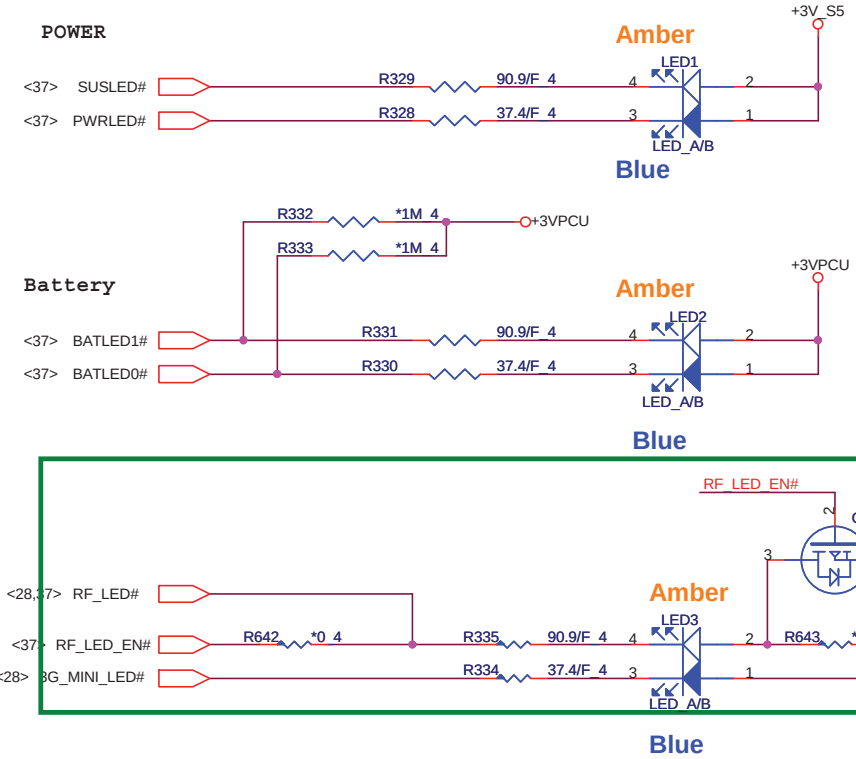
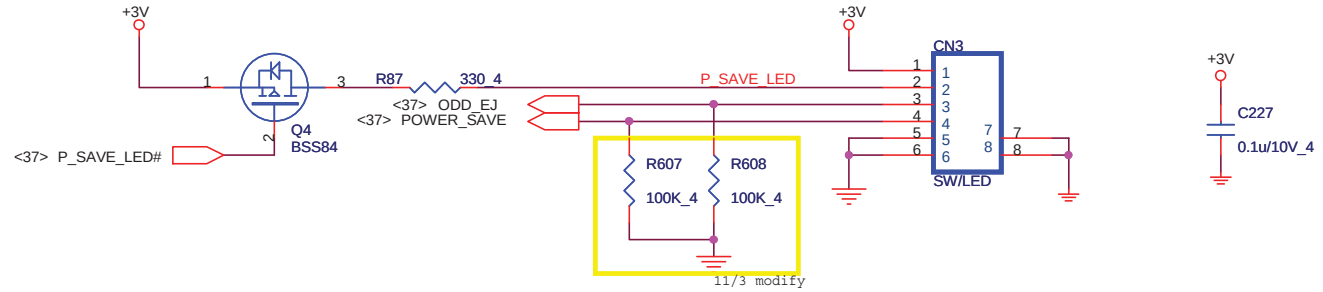
POWER BOARD CONN(UIF)



LED



SW /B



Quanta Computer Inc.

PROJECT : ZR7B

Size	Document Number	Rev
	POWER/MMB/LAUNCH/LED	1A
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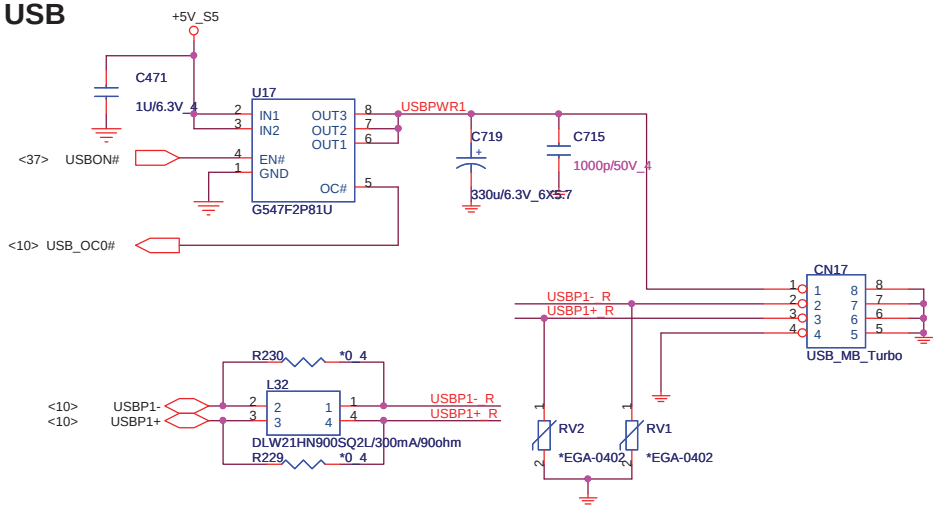
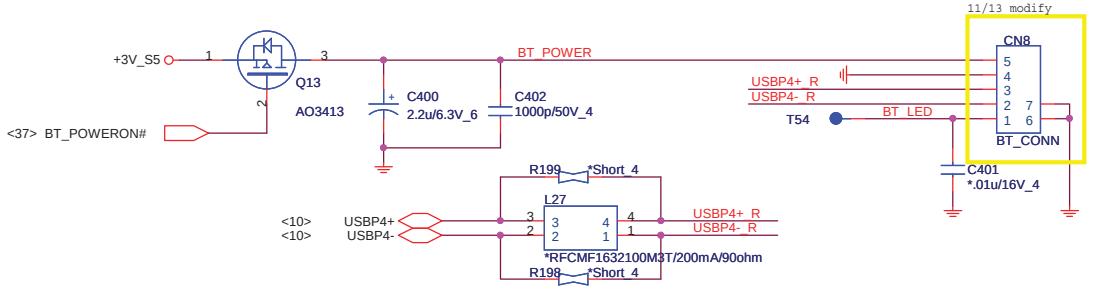
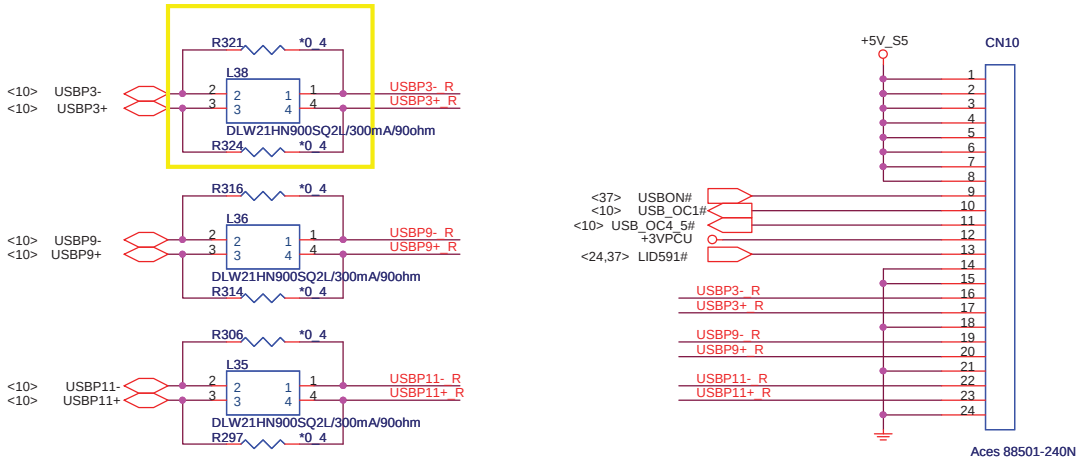
USB



BLUETOOTH CONNECTOR



USB/B



R230, R229, R321, R324, R316, R314, R306, R297

Quanta Computer Inc.		
PROJECT : ZR7B		
Size	Document Number: USB/ BT	Rev: 1A
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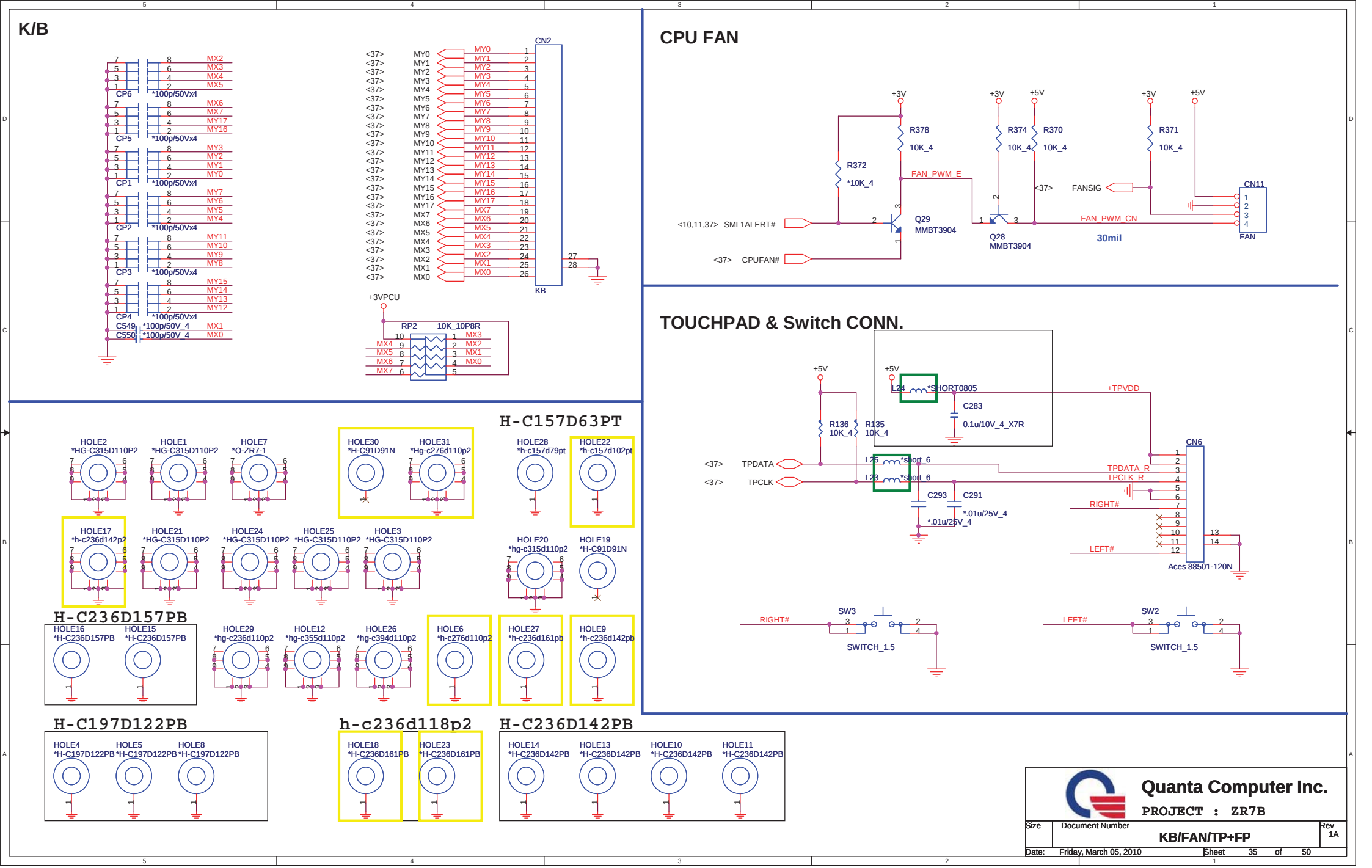
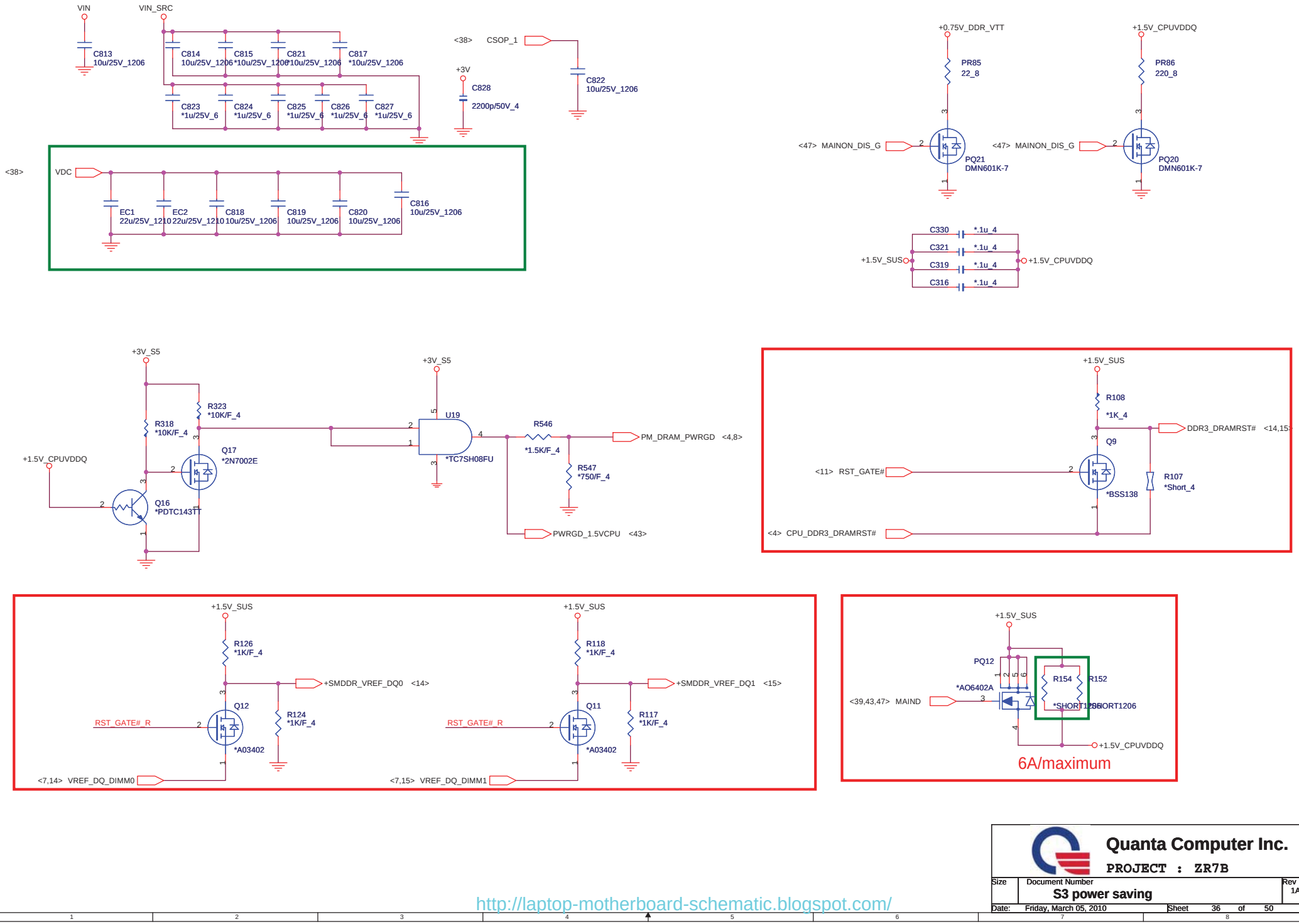


EMI decoupling



Quanta Computer Inc.		
PROJECT : ZR7B		
Size	Document Number: S3 power saving	Rev: 1A
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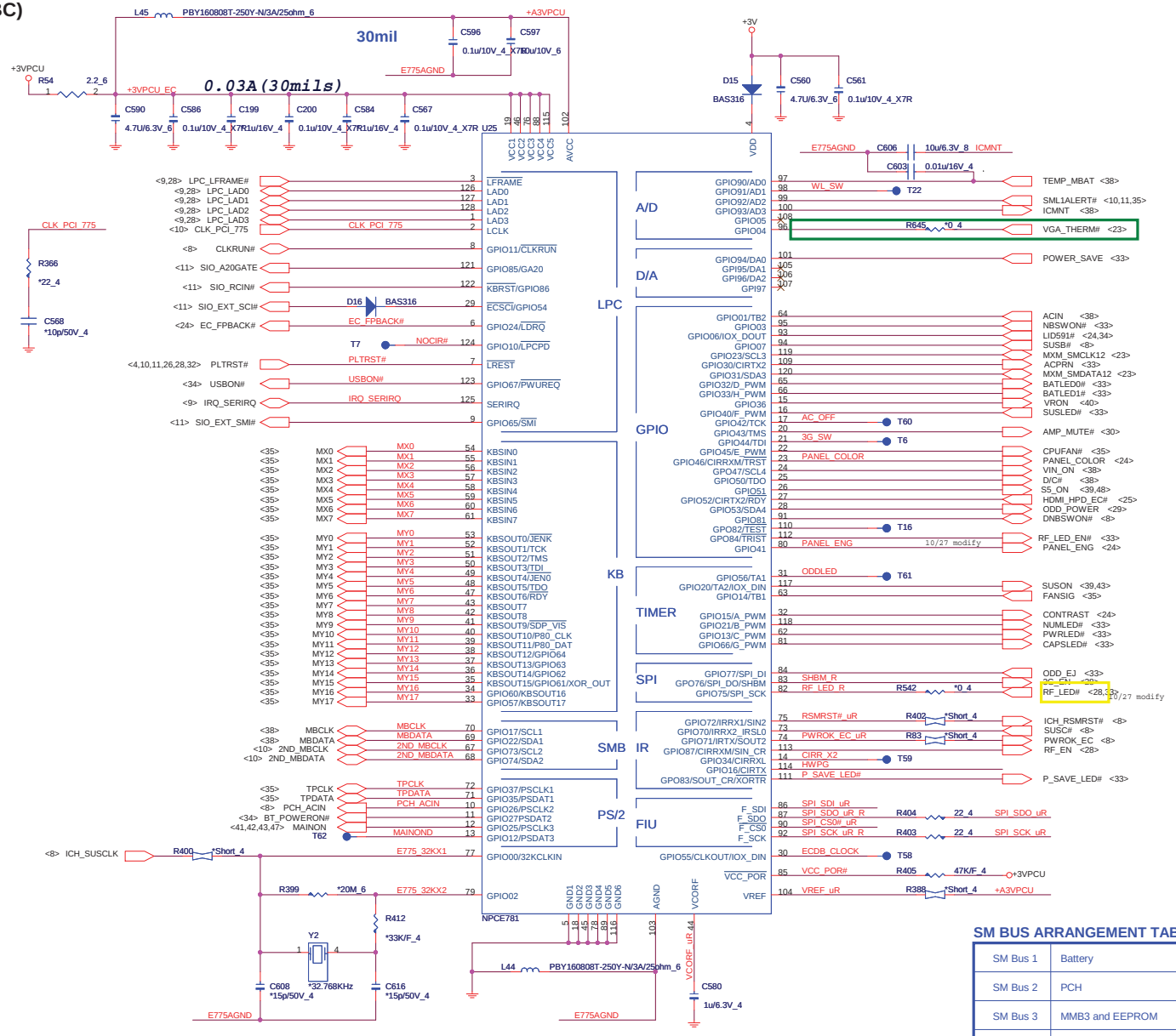
EC(KBC)



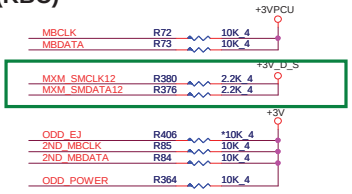
I/O ADDRESS SETTING(KBC)

SHBM=0: Enable shared memory with host BIOS

SHBM R407 10K_4

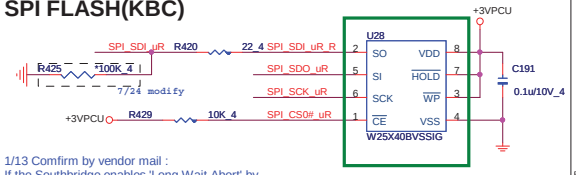
1/13 Comfirm by vendor mail :
Disabled ('1') if using FWH device on LPC.
Enabled ('0') if using SPI flash for both system BIOS and EC firmware

SM BUS PU(KBC)



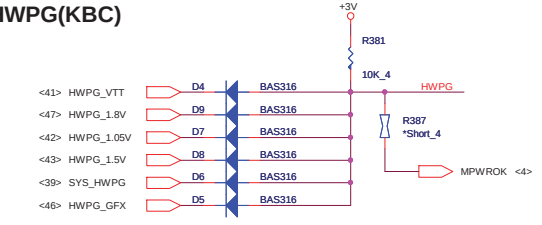
ACER ID(KBC)

SPI FLASH(KBC)

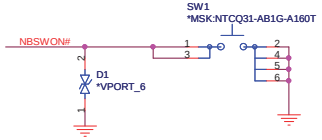


1/13 Comfirm by vendor mail :
If the Southbridge enables 'Long Wait Abort' by
default, the flash device should be 50MHz (or faster)

HWPG(KBC)



POWER-ON Switch(KBC)



INTERNAL KEYBOARD STRIP SET(KBC)

Quanta Computer Inc.
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Size	Document Number	Rev
	WPCE781 & FLASH	1A

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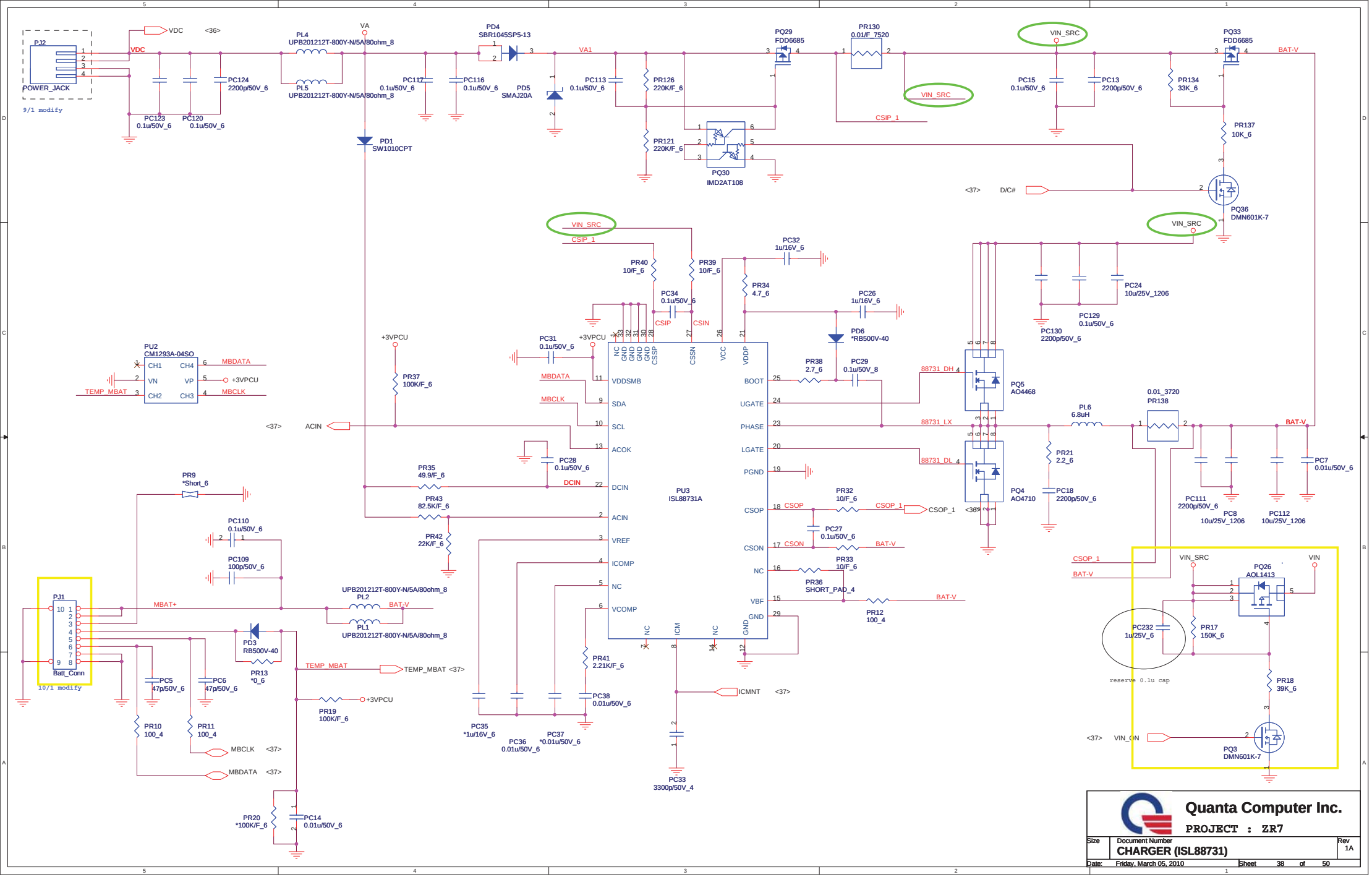

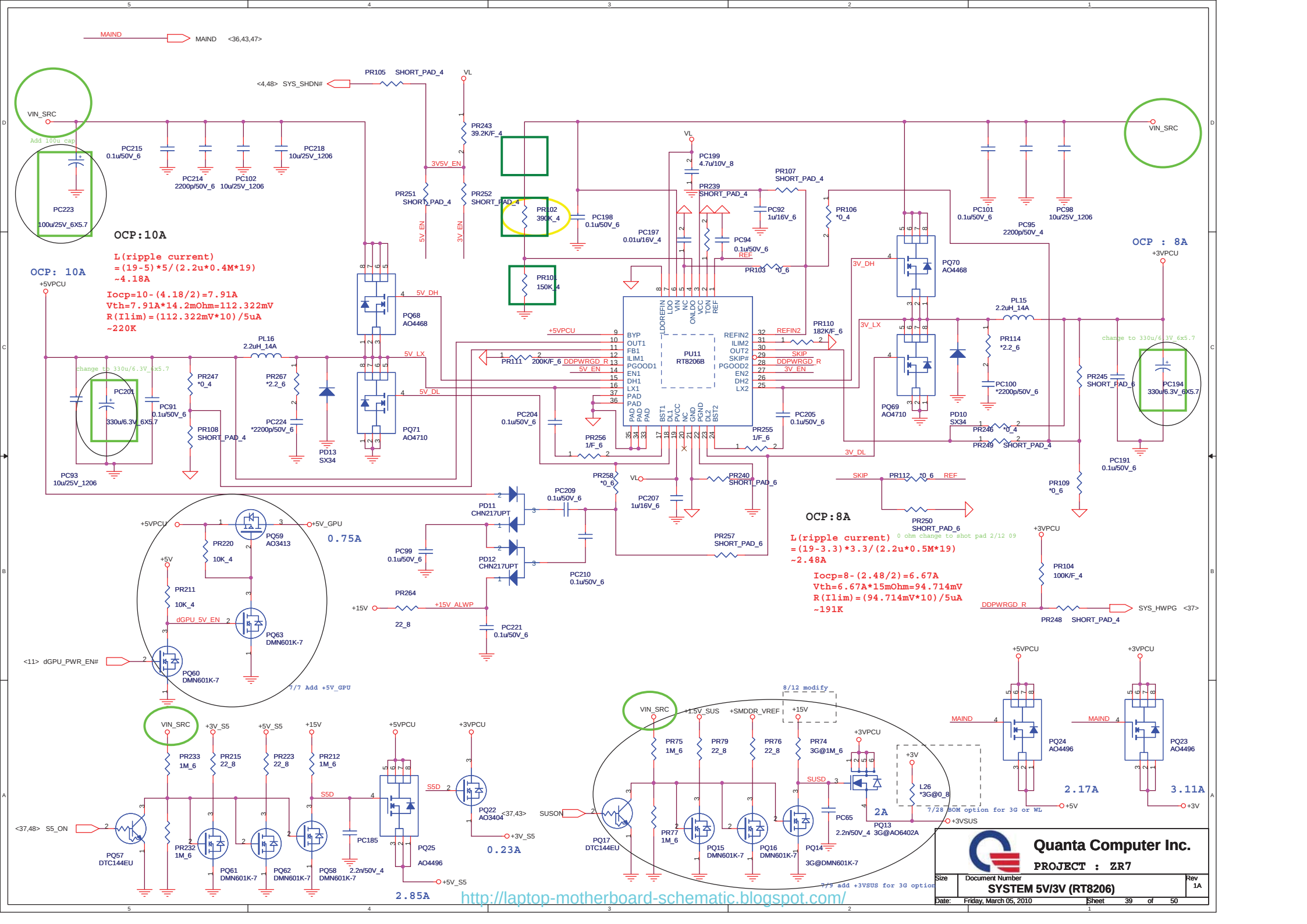
MAIND
MAIND <36,43,47>
VIN_SRC
Add 100u cap
PC223 100u/25V_6X5.7
PC215 0.1u/50V_6
PC214 2200p/50V_6
PC102 10u/25V_1206
PC218 10u/25V_1206
OCP:10A
L(ripple current) =(19-5)*5/(2.2u*0.4M*19) ~4.18A
Iocp=10-(4.18/2)=7.91A
Vth=7.91A*14.2mOhm=112.322mV
R(Ilim)=(112.322mV*10)/5uA
~220K
OCP: 10A
+5VPCU
PL16 2.2uH_14A
change to 330u/6.3V_6x5.7
PC201 330u/6.3V_6X5.7
PC91 0.1u/50V_6
PC93 10u/25V_1206
PR247 *0_4
PR108 SHORT_PAD_4
PR267 *2.2_6
PC224 *2200p/50V_6
PD13 SX34
PQ68 AO4468
PQ71 AO4710
5V_DH
5V_LX
5V_DL
PR105 SHORT_PAD_4
<4,48> SYS_SHDN#
VL
PR243 39.2K/F_4
3V5V_EN
PR251 SHORT_PAD_4
PR252 SHORT_PAD_4
PR102 390K_4
PR101 150K_4
PC198 0.1u/50V_6
PC197 0.01u/16V_4
PC199 4.7u/10V_8
PR239 SHORT_PAD_4
PR107 SHORT_PAD_4
PC92 1u/16V_6
PC94 0.1u/50V_6
PR103 *0_6
PR106 *0_4
REF
PU11 RT8206B
BYP
OUT1
FB1
ILIM1
PGOOD1
EN1
DH1
LX1
PAD
LDOREFIN
LDO
VIN
NC
ONLDO
VCC
TON
REF
REFIN2
ILIM2
OUT2
SKIP#
PGOOD2
EN2
DH2
LX2
BST1
DL1
PVCC
NC
GND
PSV
DL2
BST2
PR111 200K/F_6 DDPWRGD_R
5V_EN
PR110 182K/F_6
PC204 0.1u/50V_6
PC205 0.1u/50V_6
PR256 1/F_6
PR255 1/F_6
PR258 *0_6
PC207 1u/16V_6
PR240 SHORT_PAD_6
PR257 SHORT_PAD_6
PR250 SHORT_PAD_6
PR112 *0_6
SKIP
3V_EN
3V_DH
3V_LX
3V_DL
PQ70 AO4468
PQ69 AO4710
PD10 SX34
PL15 2.2uH_14A
PR114 *2.2_6
PC100 *2200p/50V_6
PR246 *0_4
PR249 SHORT_PAD_4
PR245 SHORT_PAD_6
PC194 330u/6.3V_6x5.7
PC191 0.1u/50V_6
PR109 *0_6
OCP : 8A
L(ripple current) =(19-3.3)*3.3/(2.2u*0.5M*19) ~2.48A
0 ohm change to shot pad 2/12 09
Iocp=8-(2.48/2)=6.67A
Vth=6.67A*15mOhm=94.714mV
R(Ilim)=(94.714mV*10)/5uA
~191K
PC101 0.1u/50V_6
PC95 2200p/50V_4
PC98 10u/25V_1206
PD11 CHN217UPT
PD12 CHN217UPT
PC209 0.1u/50V_6
PC99 0.1u/50V_6
PC210 0.1u/50V_6
PR264
+15V
+15V_ALWP
22_8
PC221 0.1u/50V_6
PR104 100K/F_4
DDPWRGD_R
SYS_HWPG <37>
PR248 SHORT_PAD_4
+5VPCU
PR220 10K_4
PQ59 AO3413
+5V_GPU
0.75A
+5V
PR211 10K_4
dGPU_5V_EN
PQ63 DMN601K-7
<11> dGPU_PWR_EN#
PQ60 DMN601K-7
7/7 Add +5V_GPU
VIN_SRC
+3V_S5
+5V_S5
+15V
PR233 1M_6
PR215 22_8
PR223 22_8
PR212 1M_6
S5D
<37,48> S5_ON
PQ57 DTC144EU
PR232 1M_6
PQ61 DMN601K-7
PQ62 DMN601K-7
PQ58 DMN601K-7
PC185 2.2n/50V_4
PQ25 AO4496
+5V_S5
2.85A
PQ22 AO3404
<37,43> SUSON
+3V_S5
0.23A
8/12 modify
+1.5V_SUS
+SMDDR_VREF
PR75 1M_6
PR79 22_8
PR76 22_8
PR74 3G@1M_6
SUSD
PQ17 DTC144EU
PR77 1M_6
PQ15 DMN601K-7
PQ16 DMN601K-7
PQ14 3G@DMN601K-7
PC65 2.2n/50V_4
PQ13 3G@AO6402A
2A
L26 *3G@0_8
+3VSUS
7/28 BOM option for 3G or WL
7/9 add +3VSUS for 3G option
MAIND
PQ24 AO4496
2.17A
PQ23 AO4496
3.11A
+5V
+3V
Quanta Computer Inc.
PROJECT : ZR7
Size
Document Number
SYSTEM 5V/3V (RT8206)
Rev 1A
Date: Friday, March 05, 2010
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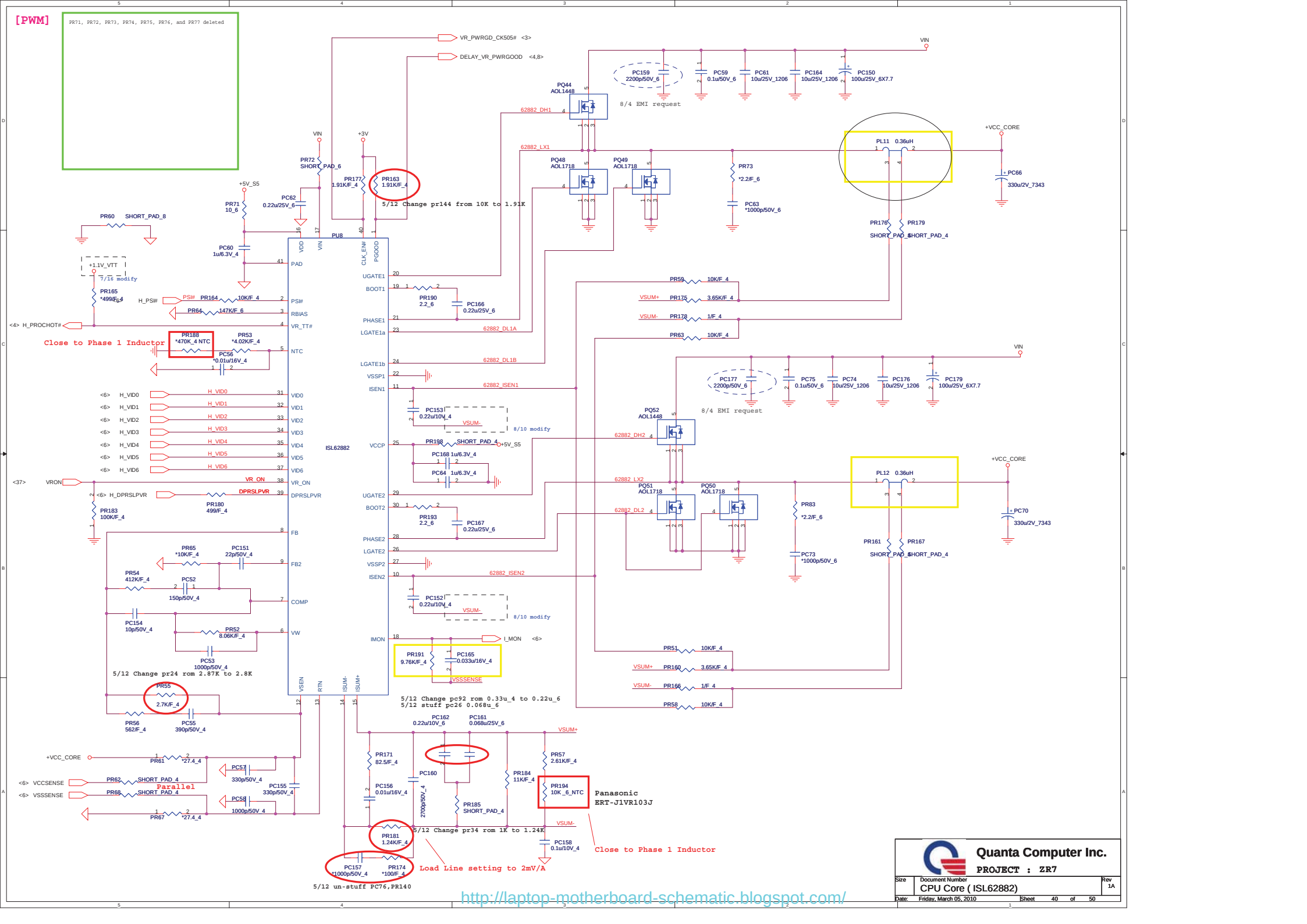
http://laptop-motherboard-schematic.blogspot.com/


[PWM]
PR71, PR72, PR73, PR74, PR75, PR76, and PR77 deleted
VR_PWRGD_CK505# <3>
DELAY_VR_PWRGOOD <4,8>
VIN
+3V
+5V_S5
+1.1V_VTT
7/16 modify
PR60 SHORT_PAD_8
PR71 10_6
PR72 SHORT_PAD_6
PR177 1.91K/F_4
PR163 1.91K/F_4
5/12 Change pr144 from 10K to 1.91K
PC62 0.22u/25V_6
PC60 1u/6.3V_4
PU8
ISL62882
VDD
VIN
CLK_EN#
PGOOD
PAD
UGATE1
BOOT1
PHASE1
LGATE1a
LGATE1b
VSSP1
ISEN1
VCCP
UGATE2
BOOT2
PHASE2
LGATE2
VSSP2
ISEN2
IMON
PSI#
RBIAS
VR_TT#
NTC
VID0
VID1
VID2
VID3
VID4
VID5
VID6
VR_ON
DPRSLPVR
FB
FB2
COMP
VW
VSEN
RTN
ISUM-
ISUM+
PR190 2.2_6
PC166 0.22u/25V_6
PR188 *470K_4 NTC
PR53 *4.02K/F_4
PC56 *0.01u/16V_4
Close to Phase 1 Inductor
PR164 10K/F_4
PR64 147K/F_6
PR165 *499/F_4
H_PSI#
H_PROCHOT#
H_VID0
H_VID1
H_VID2
H_VID3
H_VID4
H_VID5
H_VID6
VRON
VR_ON
DPRSLPVR
PR180 499/F_4
PR183 100K/F_4
PR65 *10K/F_4
PC151 22p/50V_4
PR54 412K/F_4
PC52 150p/50V_4
PC154 10p/50V_4
PR52 8.06K/F_4
PC53 1000p/50V_4
5/12 Change pr24 rom 2.87K to 2.8K
PR55 2.7K/F_4
PR56 562/F_4
PC55 390p/50V_4
PR193 2.2_6
PC167 0.22u/25V_6
PR191 9.76K/F_4
PC165 0.033u/16V_4
VSSSENSE
I_MON <6>
PC153 0.22u/10V_4
PC152 0.22u/10V_4
VSUM-
8/10 modify
PR198 SHORT_PAD_4
PC168 1u/6.3V_4
PC64 1u/6.3V_4
62882_DH1
62882_LX1
62882_DL1A
62882_DL1B
62882_ISEN1
62882_DH2
62882_LX2
62882_DL2
62882_ISEN2
PQ44 AOL1448
PQ48 AOL1718
PQ49 AOL1718
PQ52 AOL1448
PQ51 AOL1718
PQ50 AOL1718
PC159 2200p/50V_6
PC59 0.1u/50V_6
PC61 10u/25V_1206
PC164 10u/25V_1206
PC150 100u/25V_6X7.7
8/4 EMI request
PL11 0.36uH
PL12 0.36uH
+VCC_CORE
PC66 330u/2V_7343
PC70 330u/2V_7343
PR73 *2.2/F_6
PC63 *1000p/50V_6
PR83 *2.2/F_6
PC73 *1000p/50V_6
PR176 SHORT_PAD_4
PR179 SHORT_PAD_4
PR161 SHORT_PAD_4
PR167 SHORT_PAD_4
PC177 2200p/50V_6
PC75 0.1u/50V_6
PC74 10u/25V_1206
PC176 10u/25V_1206
PC179 100u/25V_6X7.7
PR59 10K/F_4
PR175 3.65K/F_4
PR178 1/F_4
PR63 10K/F_4
PR51 10K/F_4
PR160 3.65K/F_4
PR166 1/F_4
PR58 10K/F_4
VSUM+
PC162 0.22u/10V_6
PC161 0.068u/25V_6
PR171 82.5/F_4
PC160 2700p/50V_4
PC156 0.01u/16V_4
PR184 11K/F_4
PR57 2.61K/F_4
PR194 10K_6_NTC
Panasonic
ERT-J1VR103J
PR185 SHORT_PAD_4
PR181 1.24K/F_4
5/12 Change pr34 rom 1K to 1.24K
PC158 0.1u/10V_4
Close to Phase 1 Inductor
PC157 *1000p/50V_4
PR174 *100/F_4
Load Line setting to 2mV/A
5/12 un-stuff PC76,PR140
5/12 Change pc92 rom 0.33u_4 to 0.22u_6
5/12 stuff pc26 0.068u_6
+VCC_CORE
PR61 *27.4_4
PR67 *27.4_4
PC57 330p/50V_4
PC58 1000p/50V_4
PC155 330p/50V_4
VCCSENSE
VSSSENSE
PR62 SHORT_PAD_4
PR68 SHORT_PAD_4
Parallel
Quanta Computer Inc.
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CPU Core (ISL62882)
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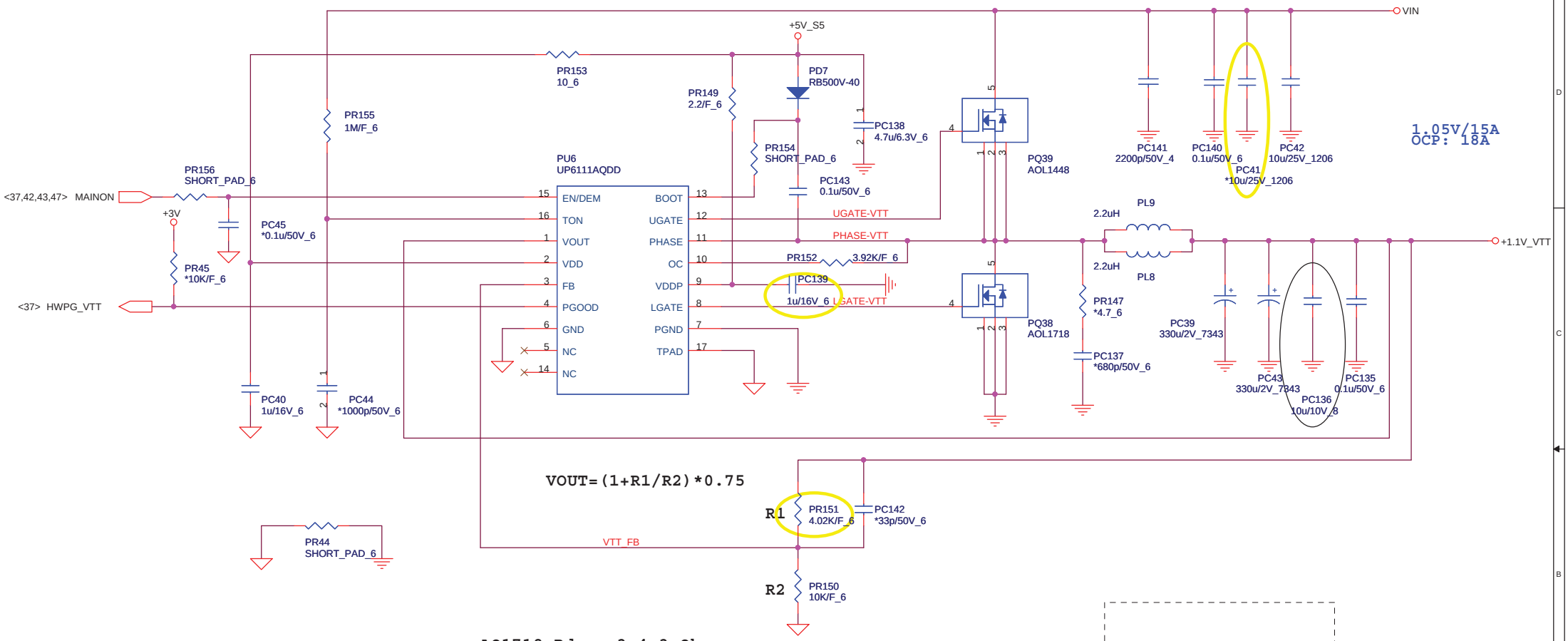
[PWM]



9/4 modify

TON=3.85p*RTON*Vout/(Vin-0.5)

Frequency=Vout/(Vin*TON)

TON=3.85p*1M*1/(Vin-0.5)

Frequency=1/(0.0036767)=272K

AO1718 Rdson=3~4.3mOhm

L(ripple current)
=(19-1.05)*1.05/(1u*272k*19)
~3.64A

4.3m*18=RILIM*20uA

RILIM=3.87K --- 3.92K

Quanta Computer Inc.		
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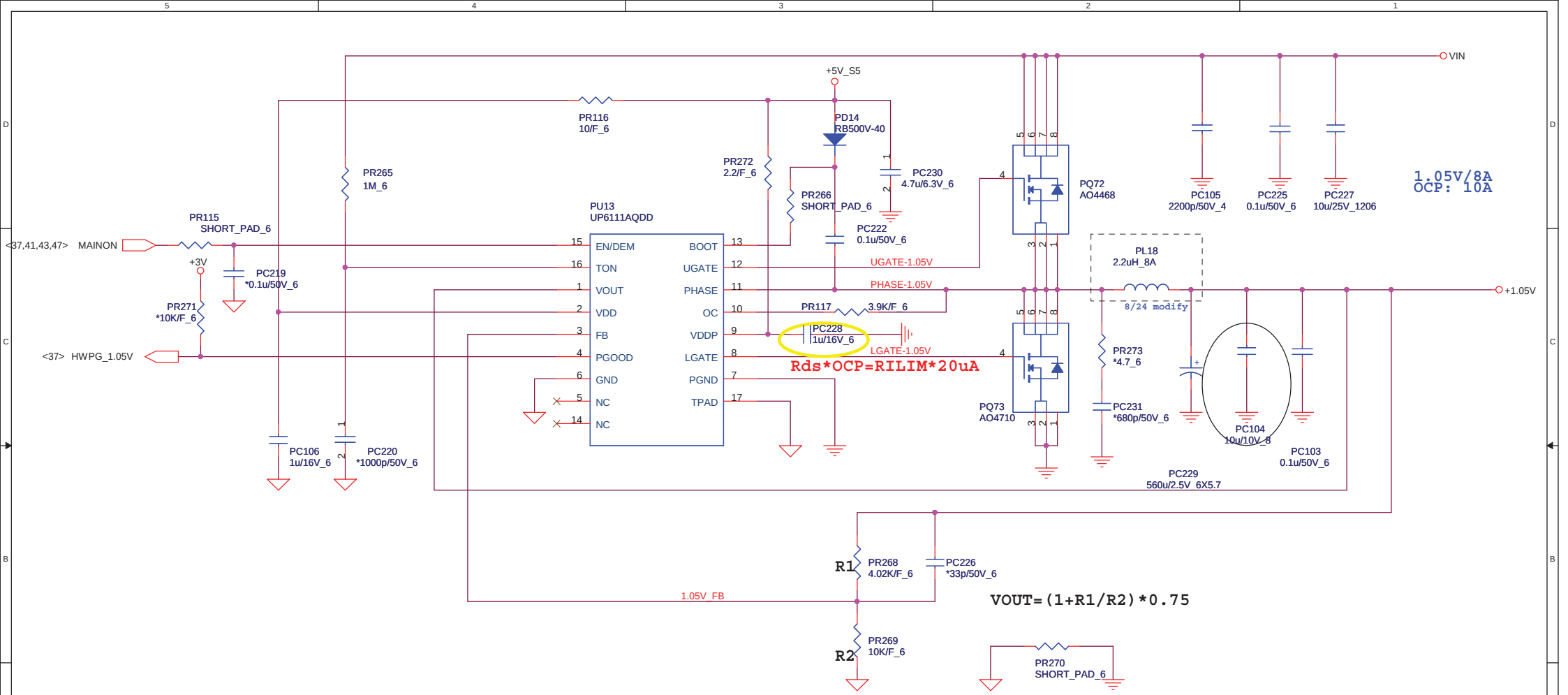

TON=3.85p*RTON*Vout/(Vin-0.5)

Frequency=Vout/(Vin*TON)

TON=3.85p*1M*1/(Vin-0.5)

Frequency=1/(0.0036767)=272K

AO4710 Rdson=11.7~14.2mOhm

L(ripple current)
=(19-1.05)*1.05/(1u*272k*19)
~3.646A

14.2m*10=RILIM*20uA
RILIM=7.1K--- 7.15K

Quanta Computer Inc.		
PROJECT : ZR7		
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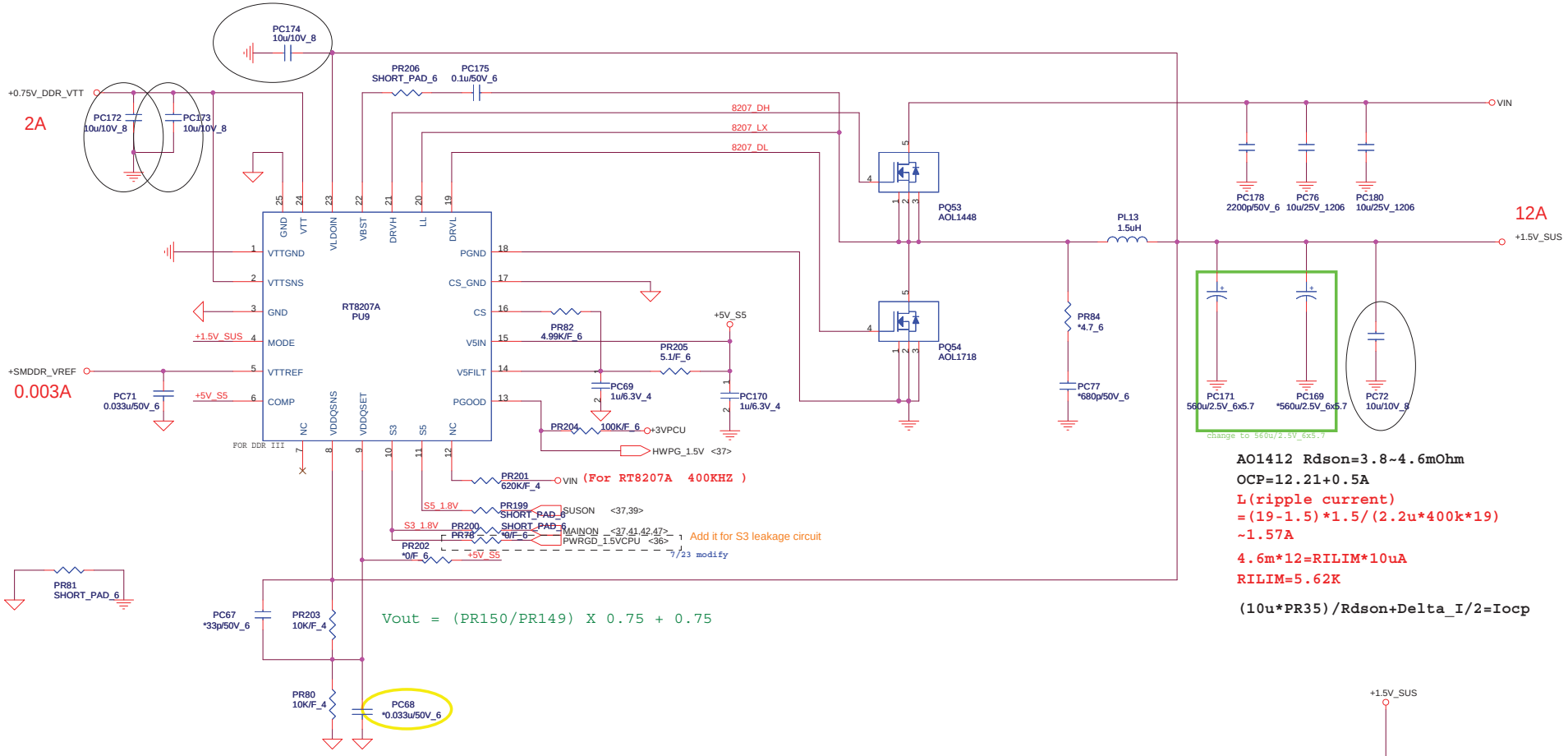

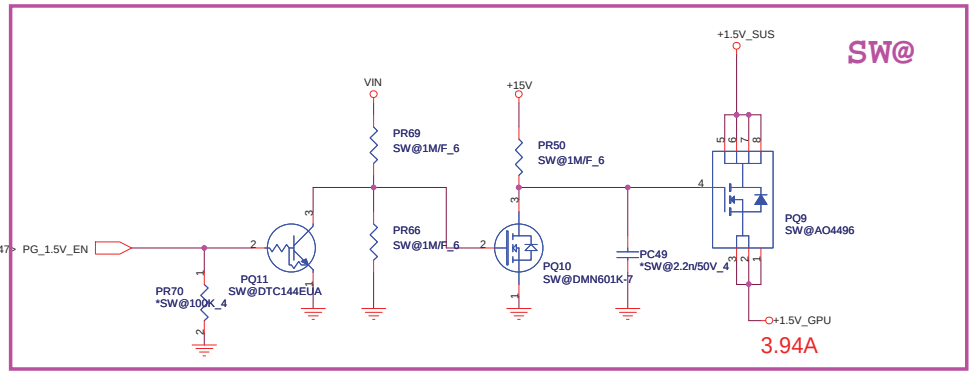

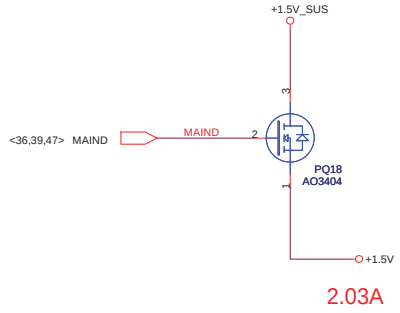

Quanta Computer Inc.

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Size	Document Number	Rev
	DDR III 1.5V(TPS51116)	1A

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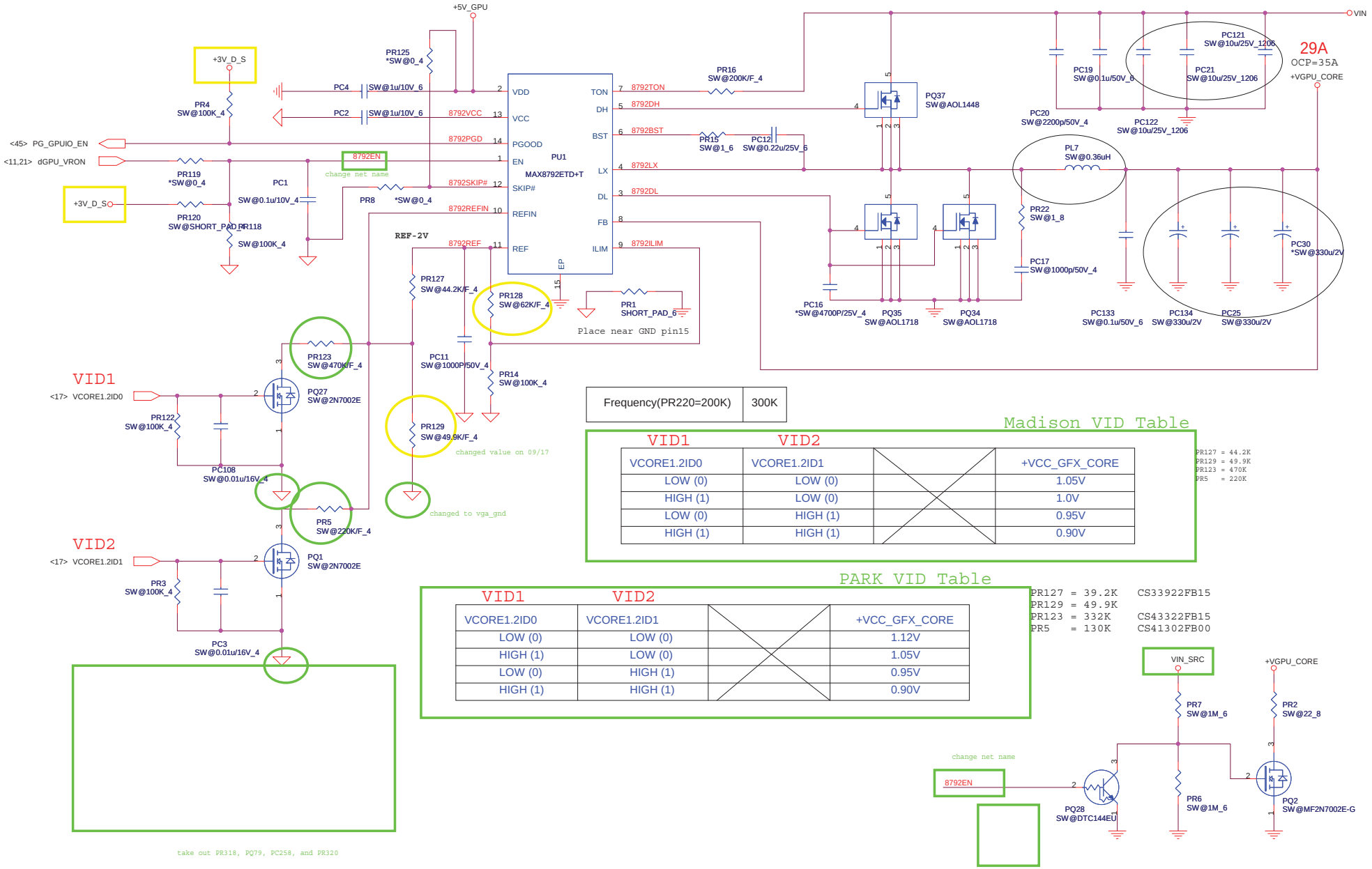

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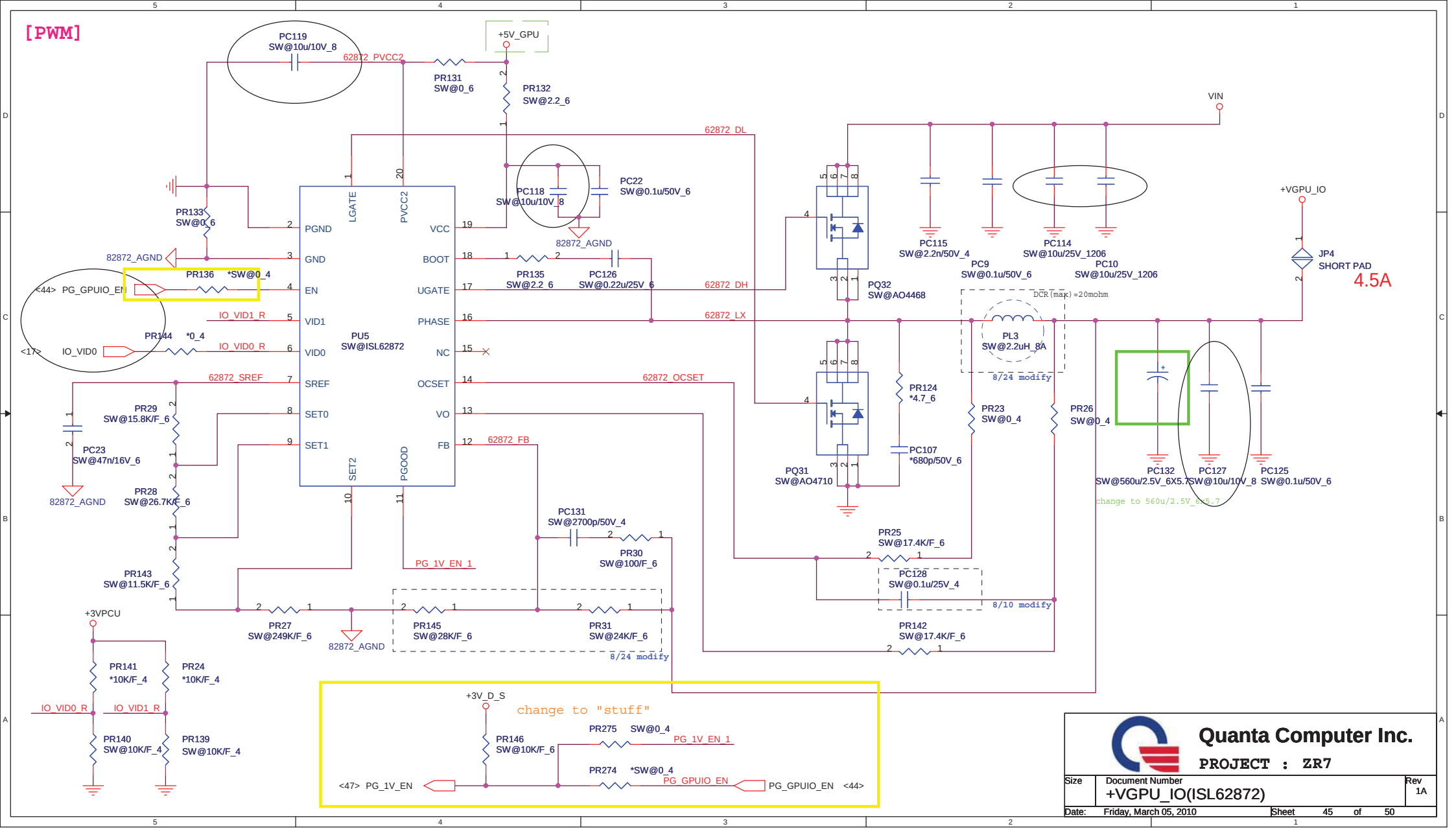
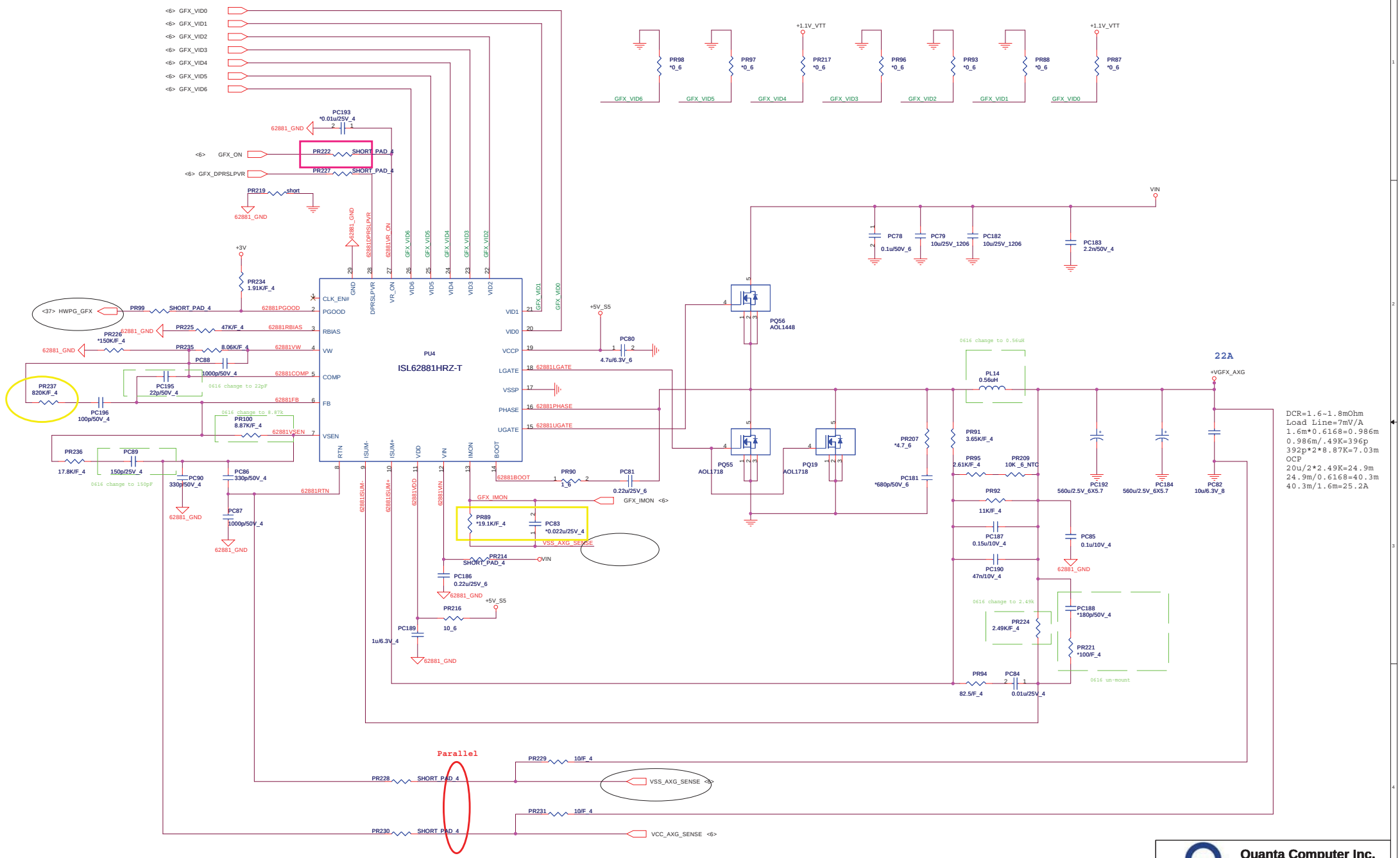


Int_VGA [PWM]



1.Level 1 Environment-related Substances Should NEVER be Used.
2.Purchase ink, paint, wire rods, and Molding resins only from the business Partners that Sony approves as Green Partners.

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Size	Document Number	Rev
	+VGFX_AXG (ISL62881)	1A

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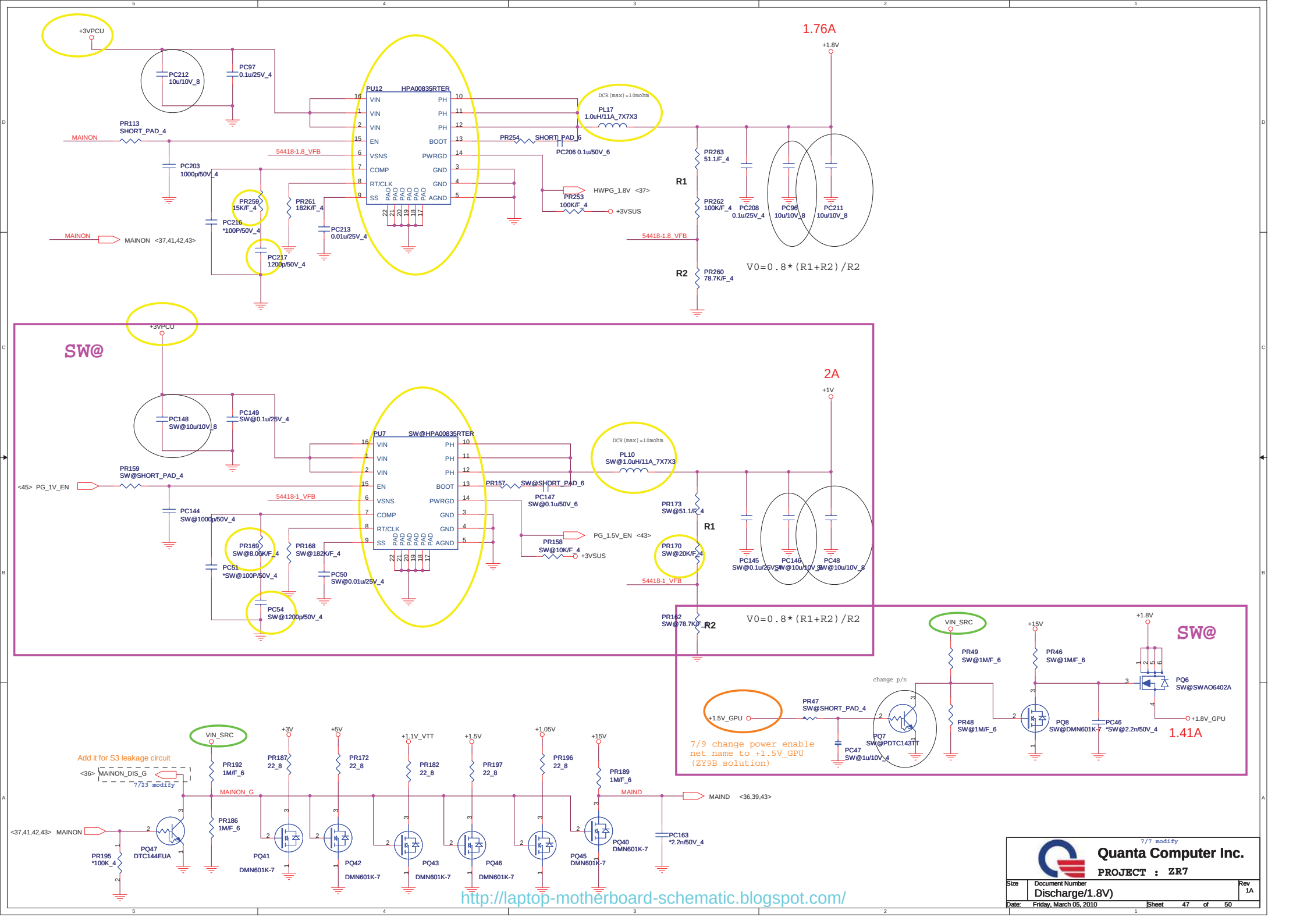
1.76A
+3VPCU
PC212 10u/10V_8
PC97 0.1u/25V_4
PU12 HPA00835RTER
VIN
PH
EN
BOOT
VSNS
PWRGD
COMP
GND
RT/CLK
SS
AGND
PAD
DCR (max) =10mohm
PL17 1.0uH/11A_7X7X3
+1.8V
PR113 SHORT_PAD_4
MAINON
PR254 SHORT_PAD_6
PC206 0.1u/50V_6
54418-1.8_VFB
PC203 1000p/50V_4
PR253 100K/F_4
HWPG_1.8V <37>
+3VSUS
PR263 51.1/F_4
R1
PR262 100K/F_4
PC208 0.1u/25V_4
PC96 10u/10V_8
PC211 10u/10V_8
PR259 15K/F_4
PR261 182K/F_4
PC216 *100P/50V_4
PC213 0.01u/25V_4
MAINON <37,41,42,43>
PC217 1200p/50V_4
R2
PR260 78.7K/F_4
V0=0.8*(R1+R2)/R2
SW@
2A
+1V
PC148 SW@10u/10V_8
PC149 SW@0.1u/25V_4
PU7 SW@HPA00835RTER
PL10 SW@1.0uH/11A_7X7X3
PR159 SW@SHORT_PAD_4
<45> PG_1V_EN
PR157 SW@SHORT_PAD_6
PC147 SW@0.1u/50V_6
54418-1_VFB
PC144 SW@1000p/50V_4
PG_1.5V_EN <43>
PR158 SW@10K/F_4
PR173 SW@51.1/F_4
PR169 SW@8.06K/F_4
PR168 SW@182K/F_4
PC51 *SW@100P/50V_4
PC50 SW@0.01u/25V_4
PR170 SW@20K/F_4
PC145 SW@0.1u/25V_4
PC146 SW@10u/10V_8
PC48 SW@10u/10V_8
PC54 SW@1200p/50V_4
PR162 SW@78.7K/F_4
Add it for S3 leakage circuit
<36> MAINON_DIS_G
7/23 modify
VIN_SRC
+3V
+5V
+1.1V_VTT
+1.5V
+1.05V
+15V
PR192 1M/F_6
PR187 22_8
PR172 22_8
PR182 22_8
PR197 22_8
PR196 22_8
PR189 1M/F_6
MAINON_G
MAIND
MAIND <36,39,43>
<37,41,42,43> MAINON
PR186 1M/F_6
PR195 *100K_4
PQ47 DTC144EUA
PQ41 DMN601K-7
PQ42 DMN601K-7
PQ43 DMN601K-7
PQ46 DMN601K-7
PQ45 DMN601K-7
PQ40 DMN601K-7
PC163 *2.2n/50V_4
SW@
change p/n
PR49 SW@1M/F_6
PR46 SW@1M/F_6
PQ6 SW@SWAO6402A
+1.5V_GPU
PR47 SW@SHORT_PAD_4
PR48 SW@1M/F_6
PQ7 SW@PDTC143TT
PQ8 SW@DMN601K-7
PC46 *SW@2.2n/50V_4
PC47 SW@1u/10V_4
+1.8V_GPU
1.41A
7/9 change power enable net name to +1.5V_GPU (ZY9B solution)
7/7 modify
Quanta Computer Inc.
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Discharge/1.8V)
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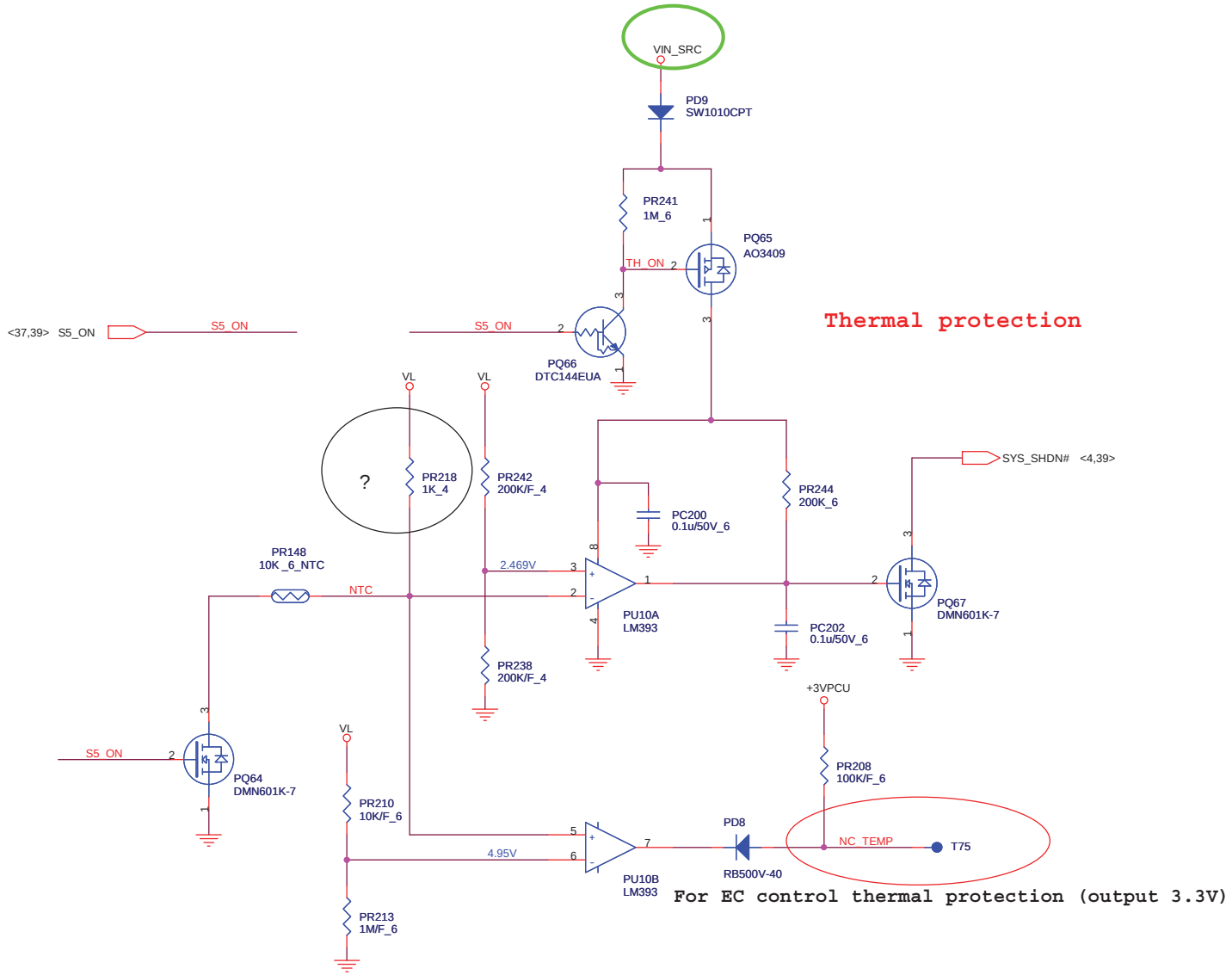

Quanta Computer Inc.

PROJECT : ZR7

Size	Document Number	Rev
	Thermal Protection	1A
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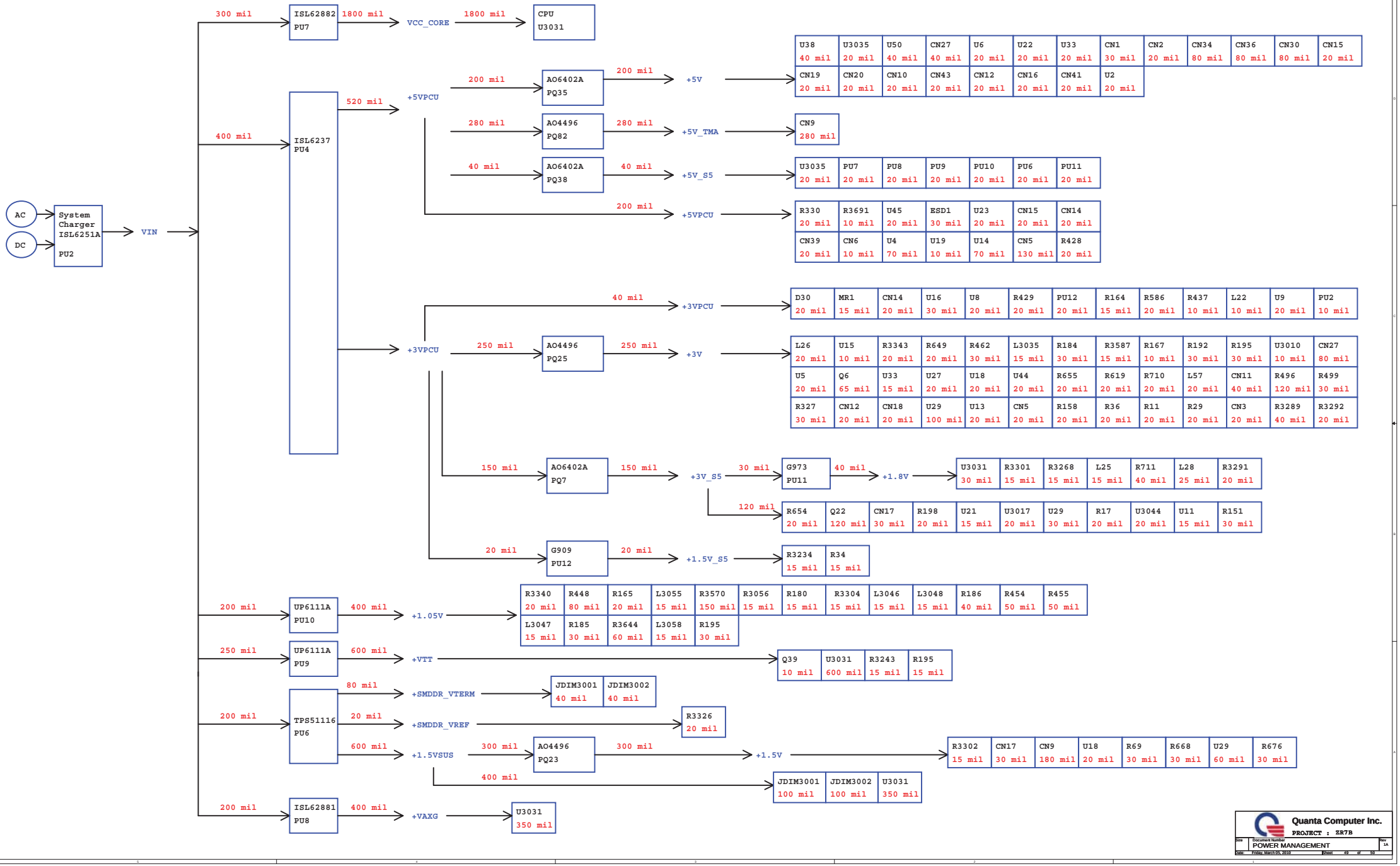

Model	REV	CHANGE LIST	MODEL ZR7 FROM	To

Model: ZR7B MB

REV 1A

10/6
1. Change Hole13,14,15,16,18,19,20,21,27 for layout requirement__P35
2. Rename__All
3. Unstuff R203, R171__P27

10/12
1. PQ6 and +1V power system add SW@ for power design change__P47
2. Swap VCORE1.2ID1 to pin AL13__P17
3. Change PR5, PR123, PR127, PR129 for power design change__P44
4. Unstuff PC68 for power design change__P43
5. Change Net name RST_GRTE#_R to RST_GRTE#__P36
6. Change U37 to 2M size__P9
7. Change PU7,PU12 for power design change__P47

REV 2A

10/19
1. Change U36 P/N for PCH version update__P8-P13
2. Del R358 for ODD power control__P29
3. Unstuff R588,R268, Stuff R587,R273 for Speaker issue__P12, P30
4. Power design change
   - PC223 change to use CC71004MZ01
   - PC201 change to use CC73301MZ04
   - PC194 change to use CC73301MZ04
   - PL11,PL12 change to use CV+1RV0MZ04
   - PC136, PC104, PC172, PC173, PC174,PC72 change to use CH6102K9A19
   - PC68 change to use CH33306K915
   - PR127 change to use CS34422FB00
   - PR123 change to use CS44702FR13
   - PR129 change to use CS34992FB01
   - PR5 change to use CS42202FR10
   - PC121 change to use CH61004M291
   - PC21 change to use CH61004M291
   - PL7 change to use CV+1RV0MZ04
   - PC25,PC134,PC30 change to use CH733RYE802
   - PC118,PC119,PC127 change to use CH6102K9A19
   - PC10,PC114 change to use CH61004M291
   - PC211,PC212, PC96,PC148,PC146,PC48 change to use CH6102K9A19
   - PR158 change to use CS91002FR16

10/28
1. R380,R376 PH with +3VPCU__P37
2. Mark +1V power system with sw@__P47
3. Mark +1.8V_GPU power system with sw@__P47
4. Change Net RF_LED_R and RF_LED# for BT and WLAN LED control__P37
5. Change CN4 P/N and footprint to 8pin for cost down__P24
6. Add R607, R608 for SW/B signal__P33
7. SMT product issues_All
   - CN12,CN21 change footprint__P28
   - PL10,PL17 change footprint__P47
   - PU8 change footprint__P40
   - PU4 change footprint__P46
   - PU5 change footprint__P45
   - Q36,Q40,Q42 change P/N__P31
   - U34 change footprint__P27
9. Add R609 for vender suggest__P3
10. Add R610,R611,Q45,Q46, del R444, R443 for HDMI test__P25
11. Add R291,R315 for Acer requirement__P31
12. PC25, PC30, PC134 change value to 330u/2V_P44

11/12
1. Change bead from CX08T121000 to CX5AG121001 for vender cost down requirement__All
2. Change Bead from CX05T121000 to CX5AG121001 for vender cost down requirement__All
3. CN8 change P/N and footprint for ME design change__P34
4. Add Q45, Q46, R610, R611, del R443, R444 for HDMI issue__P34
5. Change PJ1 for ME design change__P38
6. Change HOLE18, 23, 6, 9, 27, 22, 17 and add HOLE30, 31 for machenical change_P35
7. Add R444, R443 1.5K for HDMI test__P25
8. Stuff L32, L35, L36, L38, Unstuff R230, R229, R321, R324, R316, R314, R306, R297 for EMI requirement __P34
9. Change R494, R520 from 0ohm to bead for EMI requirement __P34
10. Change R419 from 680ohm to 51ohm for ATI design change __P18

11/17
1. Remove 30@, Add MP@ for separate different parts between Madison and Park__All
2. Remove Power Short Pad__All
3. Add PC232 for power design change__P38
4. Add Q47,R642 ,R542 for WiFi LED__P33
5. Change U16 P/N for update LAN chip version__P33
6. Change PJ1, CN8, CN4, RT1, CN14 for ODD, RTC, Battery connector change__All

REV 3A

11/18
1. Swap L38 for layout requirement__P34
2. Change CN9 P/N and footprint for ME issue__P32
3. Change HOLE18, 23, 6, 9, 27, 22, 17 for layout requirement_P35
4. Power design change
   - PR128, PR102, PR101, PR158, PR110, PR111, PR151, PL8, PL9, PR117, PL13, PR82 change P/N for power design change_All
   - Del PC68 for power design change_All
   - Add PC190 for power design change_All

12/9
1. Change PR17, PR18, PC232 for Power design change__P38
2. Del Q36, R455 and R441, Q33 change mark__P25
3. R22,R23,R25,R27,R47,R65 change mark to MP@__P18
4. Change R92, C565 location for ATI design change__P18
5. Reserve R639 and add HDMI_HPD_PCH# for EC requirement__P9,P25

12/18
1. Add R455,R612 PCH strap pin __P9
2. Del 0ohm_0402: R10,R11,R15,R14,R83,R402,R388,R90,R91,R107,R144, R190,R199,R198,R220,R231,R248,R256,R273,R363, R369,R393,R394,R387,R437,R438,R400,R401,R501, R503,R526,R532,R548,R550,R552,R553,R554,R555, R556,R590,R606__All
3. Del 0ohm_0603: R493,R122,R139,R148,R173,R174,R175,R176,R218, R219,R226,R228,R255,R232,R234,R235,R236,R237, R244,R264,R267,R284,R307,R545,R558,R581,R587__All
4. U16 change footprint for PM requirement__P26
5. Del R268,R588 for Audio I/O power level__P31
6. Add R590 for LAN design change__P26
7. Add R643 for W/L LED design change__P33
8. SMTPE requirement
   - *JHDMI change footprint
   - *PU3 change footprint
   - *PR130 change footprint

12/22
1. Cahnge Hole18, Hole23 for layout modify__P35

12/24
1. R455 & R612 reconnect_P9
2. R552/R553/R554/R555/R556 change back to 0 ohm for black screen issue verify_P28
3. CN9 footprint change footprint_P32
4. Update VRAM table and add VRAM@ mark_P23
5. EMI solution
   - R90 & R91 change to unstuff , L13 stuff._P24
   - Add R614 on LVDS_BRIGHT_P24
   - Adding C813 for VIN
   - Adding C814,C815,C816,C817,C818,C819,C820,C821 for VIN_SRC
   - Adding C822 for C3OP_1,PC102 change to stuff
   - Adding C823,C824,C825,C826,C827 for VIN_SRC
   - Add C828 to +3V
   - Change R614 to bead_P24
6. Add F1 & F2 for safety.
7. Add JP4 and delete JP5 for for change VGPU_IO source
8. Change PR55 to 2.7K for Power change design_P40
9. Add 3G@ for 3G function_All

REV 4A

12/31
1. U28 change to 512K, U37 change to 4M for BIOS design change_P9,P37
2. Change R328,R329,R330,R331,R334,R335 value for LED Brightness fine turn_P33
3. Stuff PR274,unstuff PR136, PR275 for change VGPU_IO source_P45

1/5
1. Reserve Board_ID PAD and unstuff R629,R630,R631,R632,R633,R634 _P10
2. Remove R417,R413,Q30,Q31 for costdown_P23,P37
3. Add trace VGA_THERM#_P23,P37
4. NONE
5. D10, F1 replace location_P24
6. Stuff R99, Change Q6<P/N modify> location for dGPU_SELECT_R control design change_P24

2010/01/11
1. unstuff R486
2. R244 change from shortpad to RC0603 and unstuff.
3. C482 change from cap to 0 ohm resistor.

2010/01/18
1. delete PAD of U11/U12/U14
2.
3. PD# PU change from +3V to +5VA & R599 change to 1K ohm resistor.

2010/01/19
1. PQ7 changes to RA001430Z49
2. PR1
3. remove shortpad R139/R148/R144
4. R152/R154/R259 change to SHORTPAD
5. R78 connect from +3V to +3V_D and R75 change to Unstuff.
6. F1/F2 update P/N.

2010/01/20
1. Unstuff R552/R553/R554/R555/R556
2. L23/L24/L25/R221/R249/R260/R305/R241/R242/R29/R32/R482/R544/ change to SHORTPAD
3. BOM for Board-ID,check again.

2010/01/21
1. add C829/RC1/RC2
2. Delete U30/C189
3. Delete D21/D22 , ADD Q36/Q39
4. Change PR21 to CS-2203J913
5. Change PC18 to CH22206K917
6. Unstuff<C815/C816/C817/C818/C820/C821/C823/C824/C825/C826/C827>

2010/01/22
1. R49/R101 change to SHORTPAD
2. Delete C829
3. C816/C818/C819/C820 change net and stuff.
4. Q36/Q39 should be always @ NOT SW@

2010/02/03
1. C777/PC190/PC1 update P/N & description.
2. PR222 Value change back to 0_4

2010/02/04
1. PR222 change to SHORTPAD
2. delete Q36/Q39 , add D21/D22, and reserve PAD of R615

2010/03/05
1. Delete PD2
2. PR101 & PR102 change P/N.

PR1 SHORT0603
PR44 SHORT0603
PR36 SHORT0402
PR72 SHORT0603
PR62 SHORT0402
PR81 SHORT0603
PR68 SHORT0402
PR115 SHORT0603
PR99 SHORT0402
PR154 SHORT0603
PR105 SHORT0402
PR156 SHORT0603
PR107 SHORT0402
PR206 SHORT0603
PR108 SHORT0402
PR240 SHORT0603
PR113 SHORT0402
PR245 SHORT0603
PR161 SHORT0402
PR250 SHORT0603
PR167 SHORT0402
PR254 SHORT0603
PR176 SHORT0402
PR257 SHORT0603
PR179 SHORT0402
PR266 SHORT0603
PR185 SHORT0402
PR270 SHORT0603
PR198 SHORT0402
PR60 SHORT0805
PR214 SHORT0402
PR120 SHORT0402
PR222 SHORT0402
PR199 SHORT0603
PR227 SHORT0402
PR200 SHORT0603
PR228 SHORT0402
PR230 SHORT0402
PR239 SHORT0402
PR248
PR249
PR251 SHORT0402
PR252 SHORT0402

SHORT0603
PR44 SHORT0603
PR36 SHORT0402
PR72 SHORT0603
PR62 SHORT0402
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PR239 SHORT0402
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PR252 SHORT0402

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Change list2

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