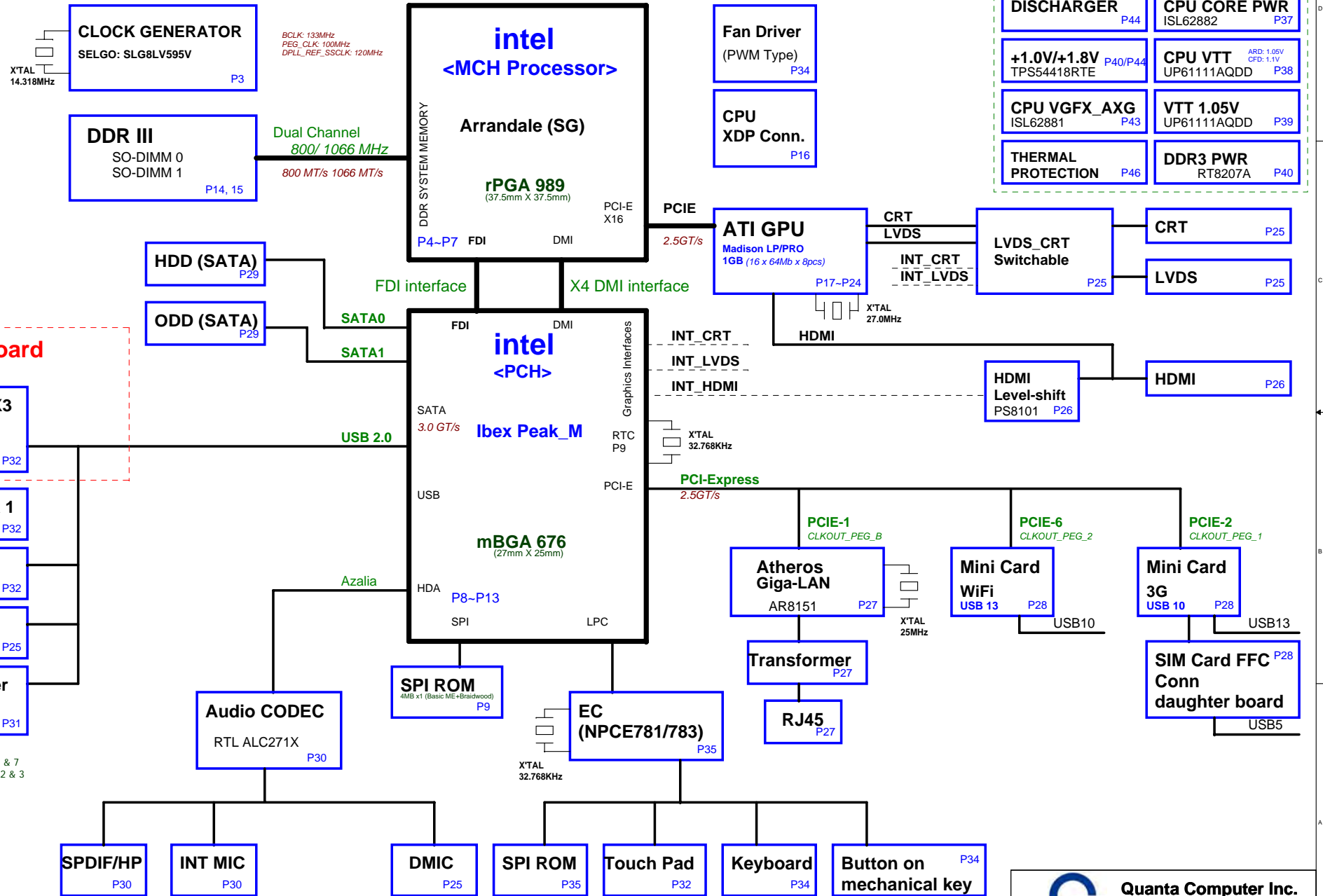
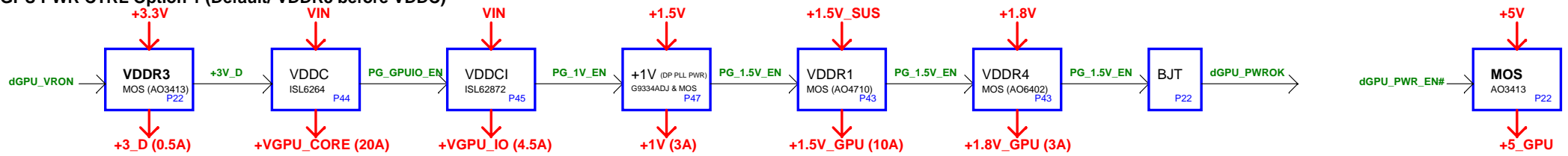


ZQ1 BLOCK DIAGRAM

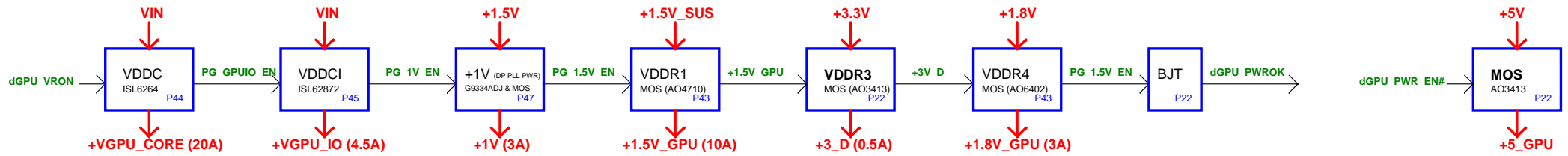


Note:
HM55 does not support USB 6 & 7
HM55 does not support SATA 2 & 3

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



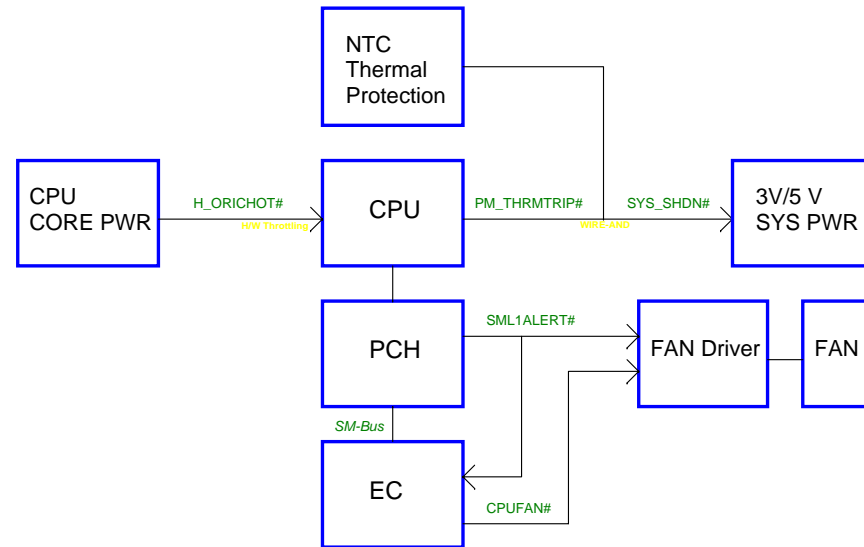
GPU PWR CTRL Option 2 (VDDR3 after VDDR1)



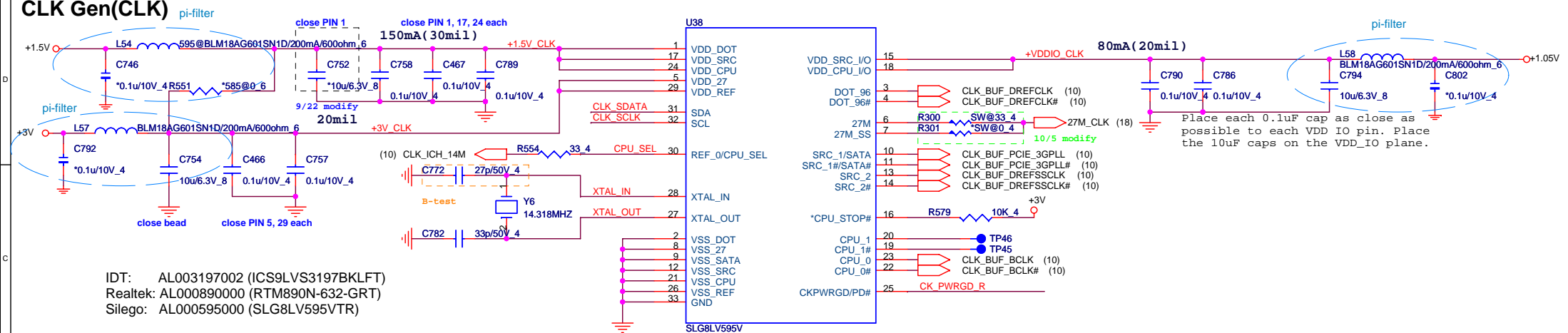
Power States

POWER PLANE	VOLTAGE	DESCRIPTION	CONTROL SIGNAL	ACTIVE IN
VIN	+10V~+19V	MAIN POWER		S0-S5
+RTC_CELL	+3V~+3.3V	RTC		S0-S5
+3VPCU	+3.3V	8051 POWER	ALWON	S0-S5
+5VPCU	+5V	CHARGE POWER	ALWON	S0-S5
+15V	+15V	LARGE POWER	+15V_ALWP	S0-S5
3V_LAN_S5	+3.3V	LAN POWER	AUX_ON	
+5VSUS	+5V		SUSD	
+3VSUS	+3.3V		SUSD	
+1.5V_SUS	+1.5V	SODIMM POWER	SUSON	
+0.75V_DDR_VTT	+0.9V	SODIMM POWER	MAINON	
+5V	+5V		MAIND	
+3V	+3.3V		MAIND	
+1.8V	+1.8V		MAINON	
+1.5V	+1.5V	PCH POWER	MAIND	
+1.1V_VTT	+1.05V~+1.1V	CPU POWER	MAINON	
+1.05V	+1.05V	PCH POWER	MAINON	
+VCC_CORE	0V~+1.5V	CPU CORE POWER	VRON	
LCDVCC	+3.3V	LCD Power	LVDS_VDDEN	
MBAT+	+10V~+17V	MAIN BATTERY		
+5V_S5	+5V		S5_ON	
+3V_S5	+3.3V		S5D	

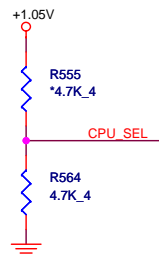
Thermal Follow Chart



CLK Gen(CLK)

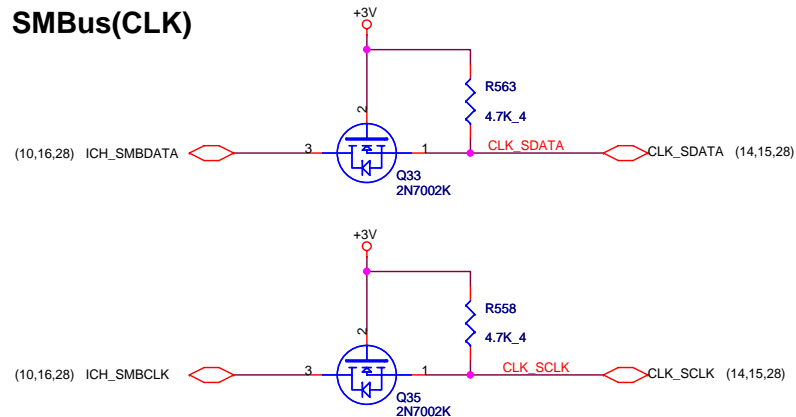


CPU_CLK select(CLK)

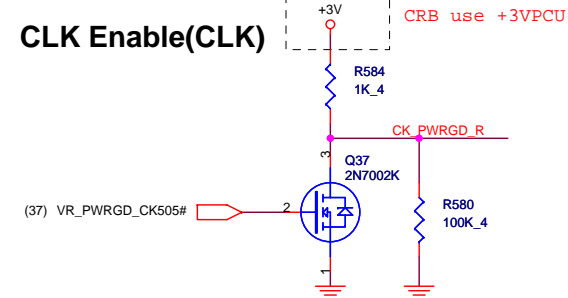


	0	1
CPU_SEL	CPU0/1=133MHz (default)	CPU0/1=100MHz

SMBus(CLK)



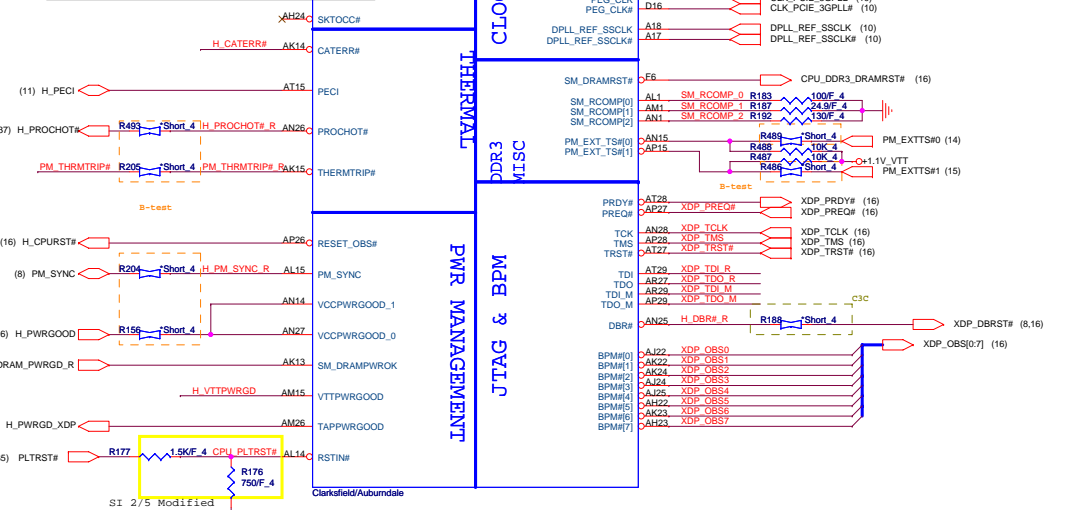
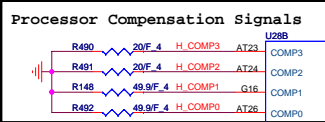
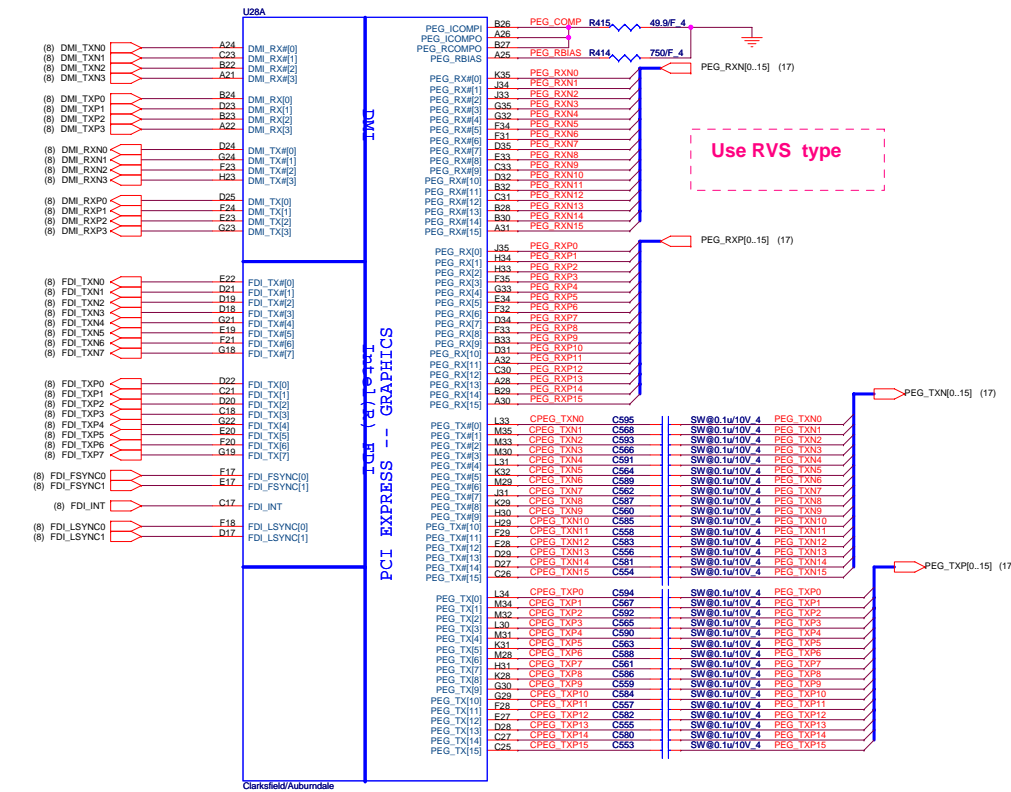
CLK Enable(CLK)

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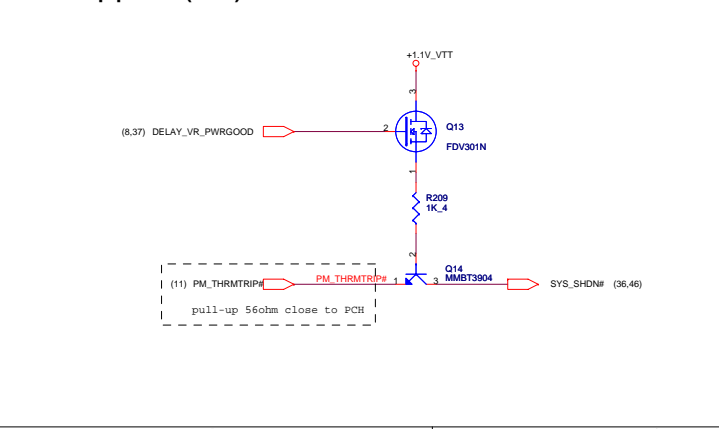
PROJECT : ZQ1

Size	Document Number Clock Generator	Rev 1A
Date:	Friday, January 22, 2010	Sheet 3 of 48

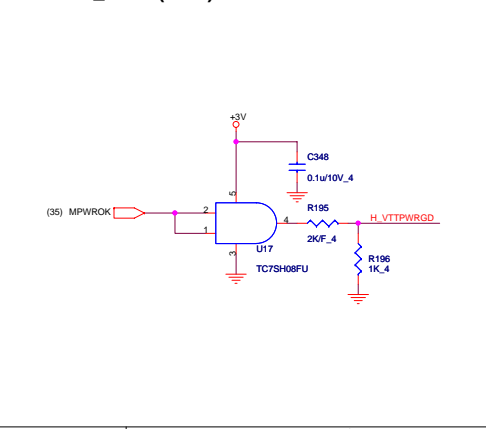
AUBURNDALE/CLARKSFIELD PROCESSOR (DMI,PEG,FDI)



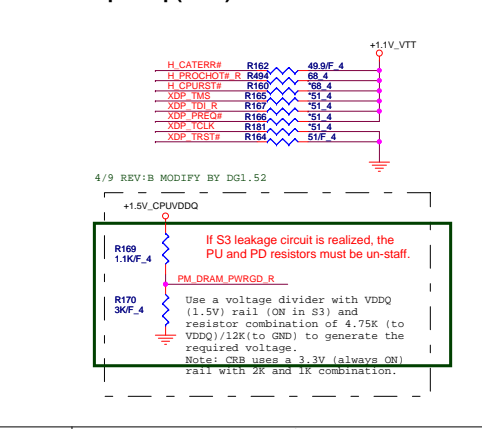
Thermaltrip protect(CPU)



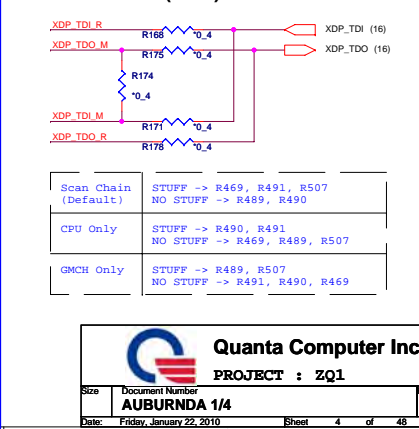
VTT PWR_Good(CPU)

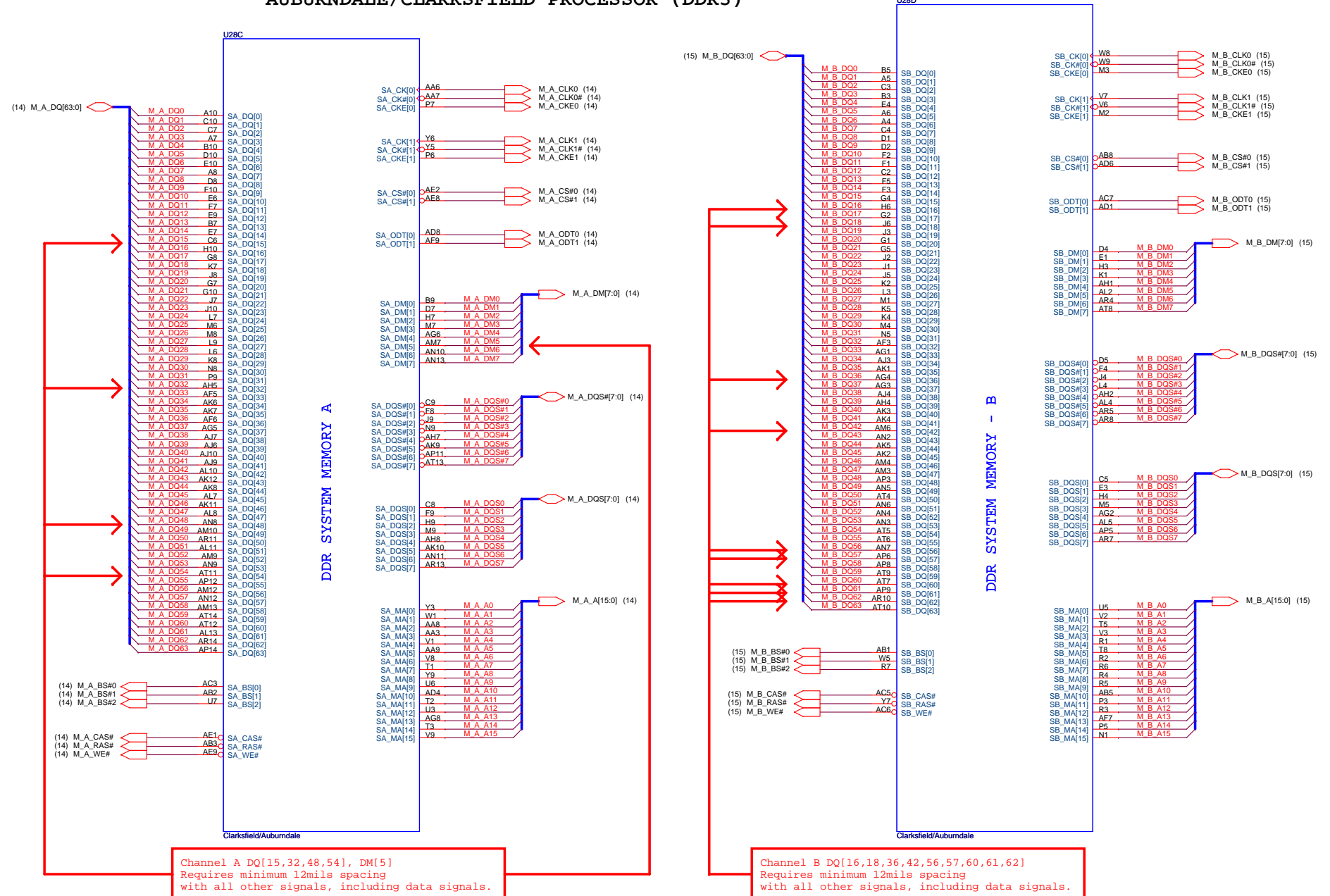


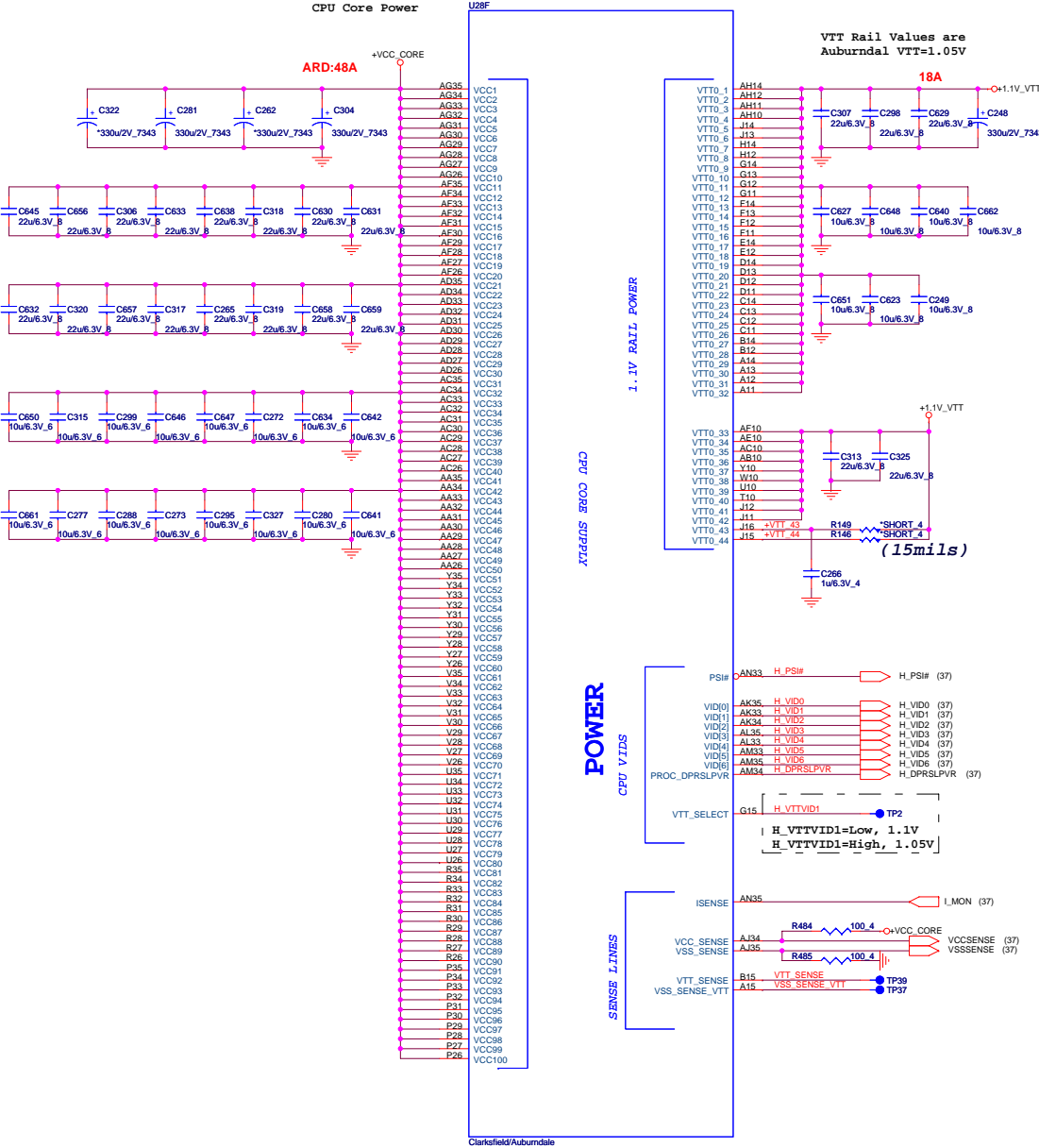
Processor pull-up(CPU)



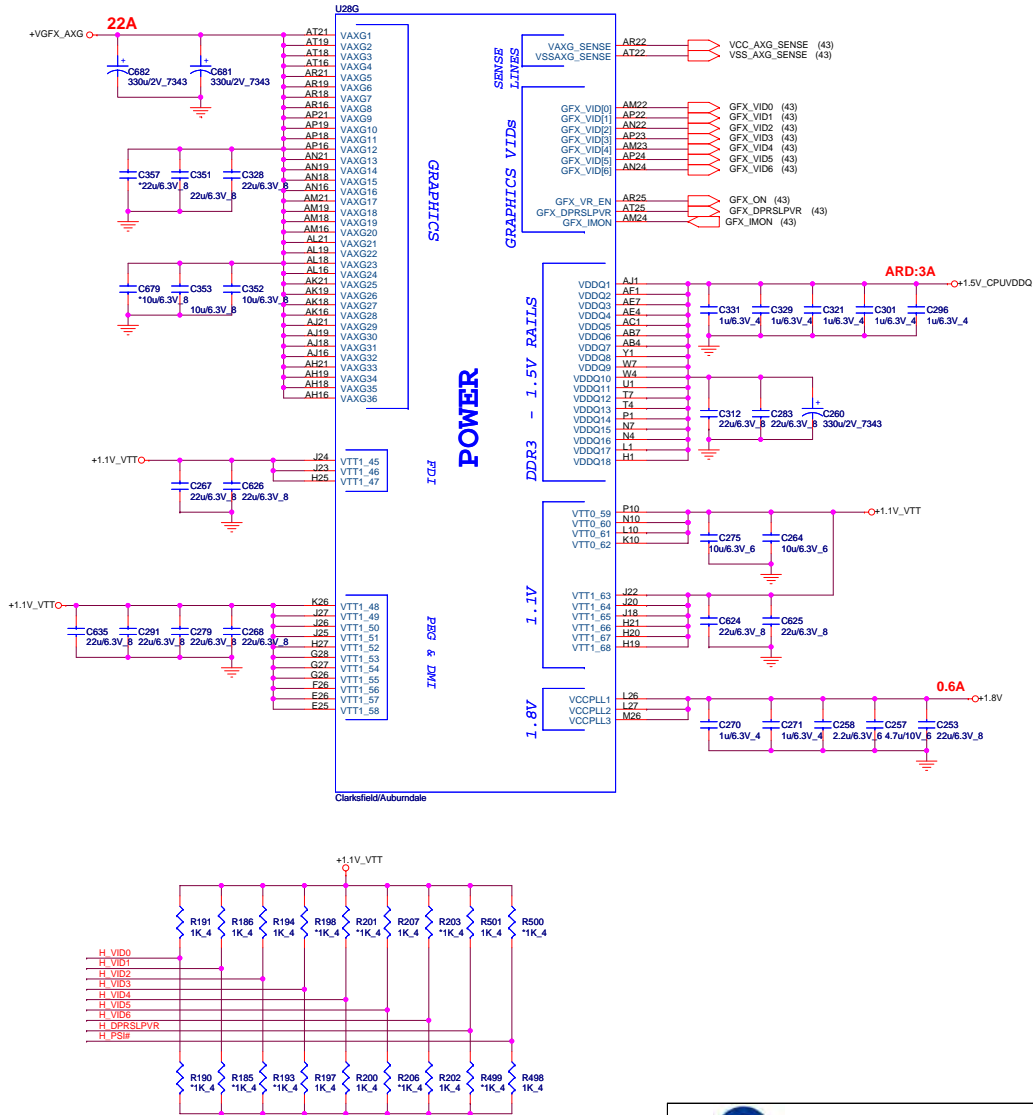
JTAG MAPPING(CPU)








AUBURNDALE/CLARKSFIELD PROCESSOR (POWER)



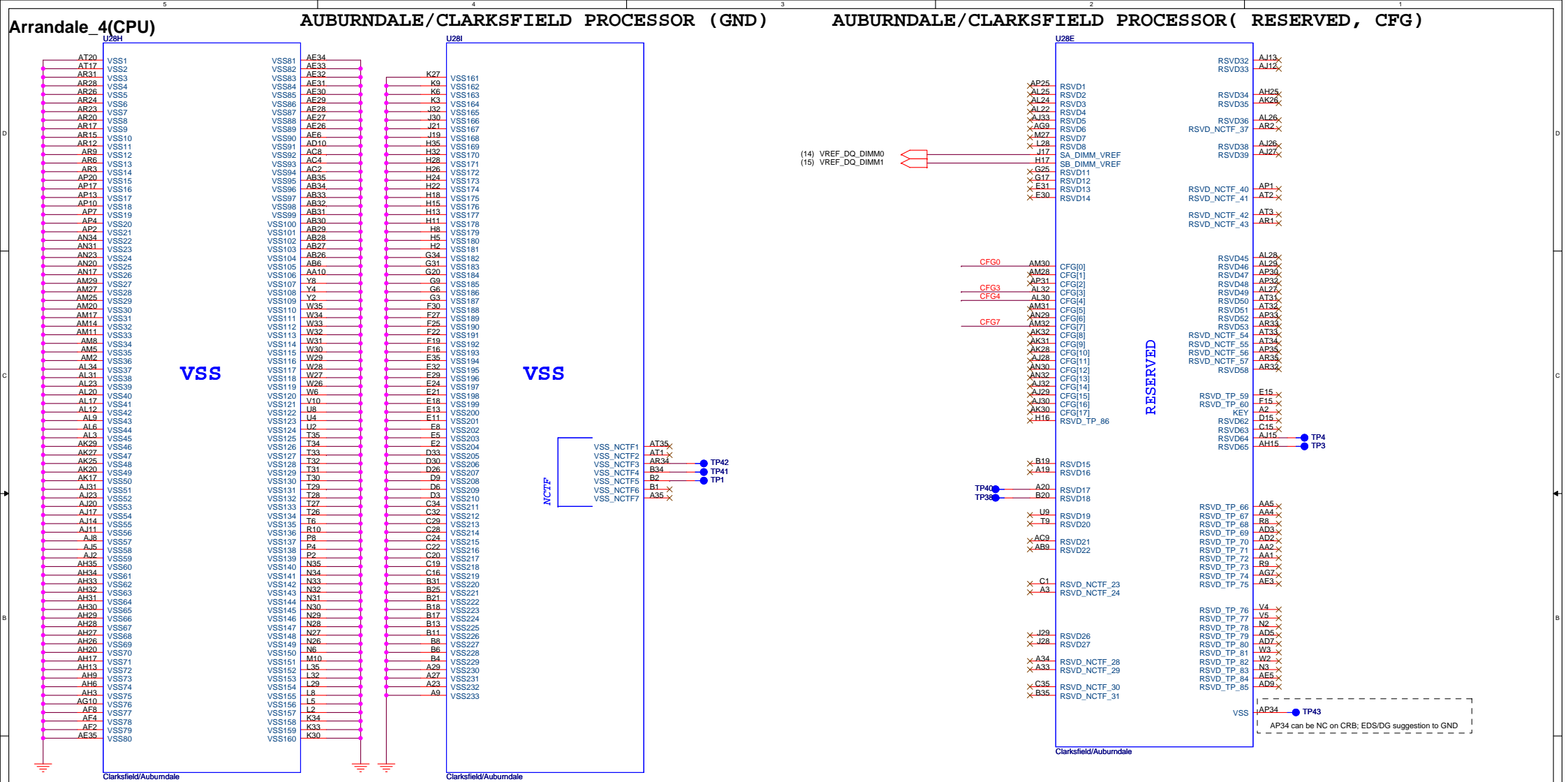
HFM_VID : Max 1.4V
LFM_VID : Min 0.65V

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PROJECT : ZQ1

Size: Document Number: **AUBURNDAL 3/4 (PWR)** Rev: 1A

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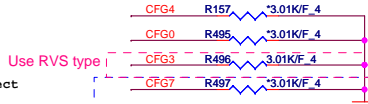


Processor Strapping

The CFG signals have a default value of '1' if not terminated on the board.

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

CFG[1:0] - PCI_Epress Configuration Select
* 11= 1 x 16 PEG
* 10= 2 x 8 PEG



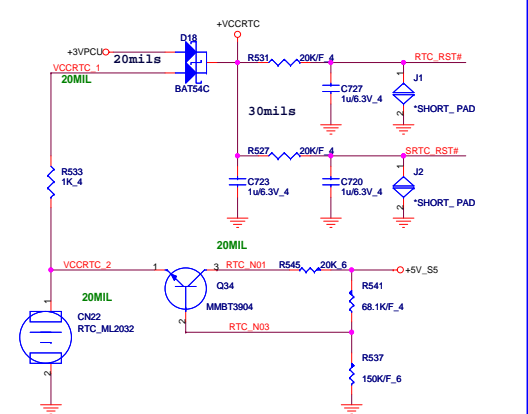
The Clarkfield processor's PCI Express interface may not meet PCI Express 2.0 jitter specifications. Intel recommends placing a 3.01K +/- 5% pull down resistor to VSS on CFG[7] pin for both rPGA and BGA components. This pull down resistor should be removed when this issue is fixed. (ES1 only)



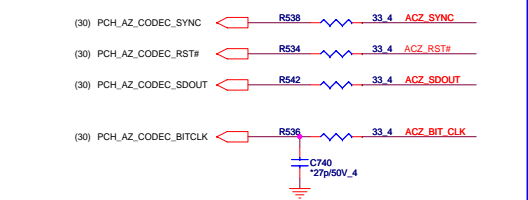
Quanta Computer Inc.
PROJECT : ZQ1

Size	Document Number	Rev
	AUBURNDAL 4/4	1A
Date:	Friday, January 22, 2010	Sheet 7 of 48

RTC Circuitry(RTC)

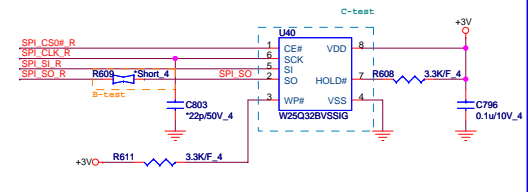


HDA Bus(CLG)

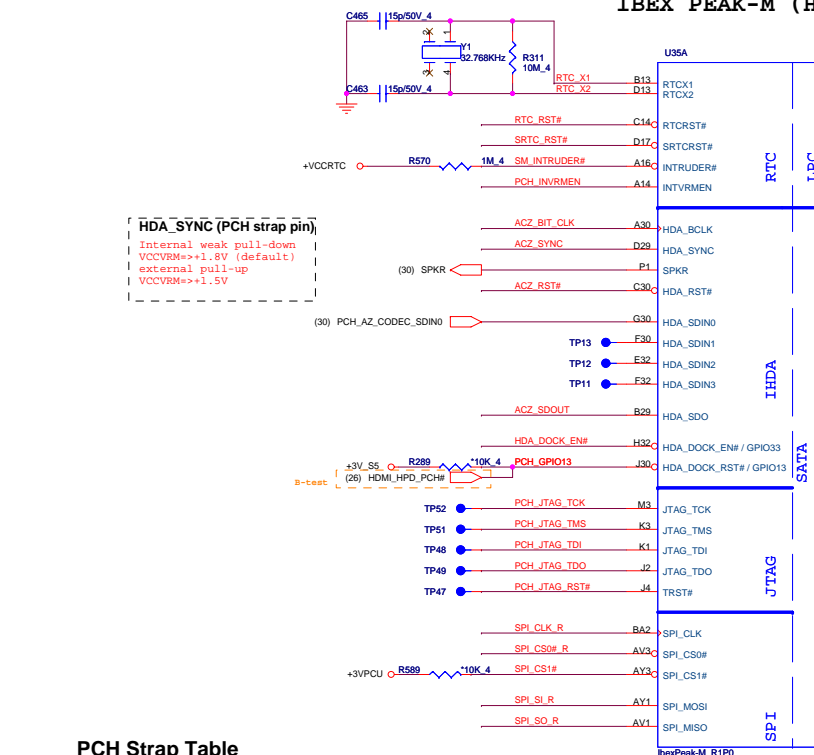


Place all series terms close to PCH except for SDIN input lines, which should be close to source. Placement of R should equal distance to the T split trace point. Basically, keep the same distance from T for all series termination resistors.





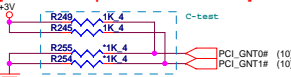




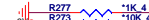








PCH SPI(CLG)



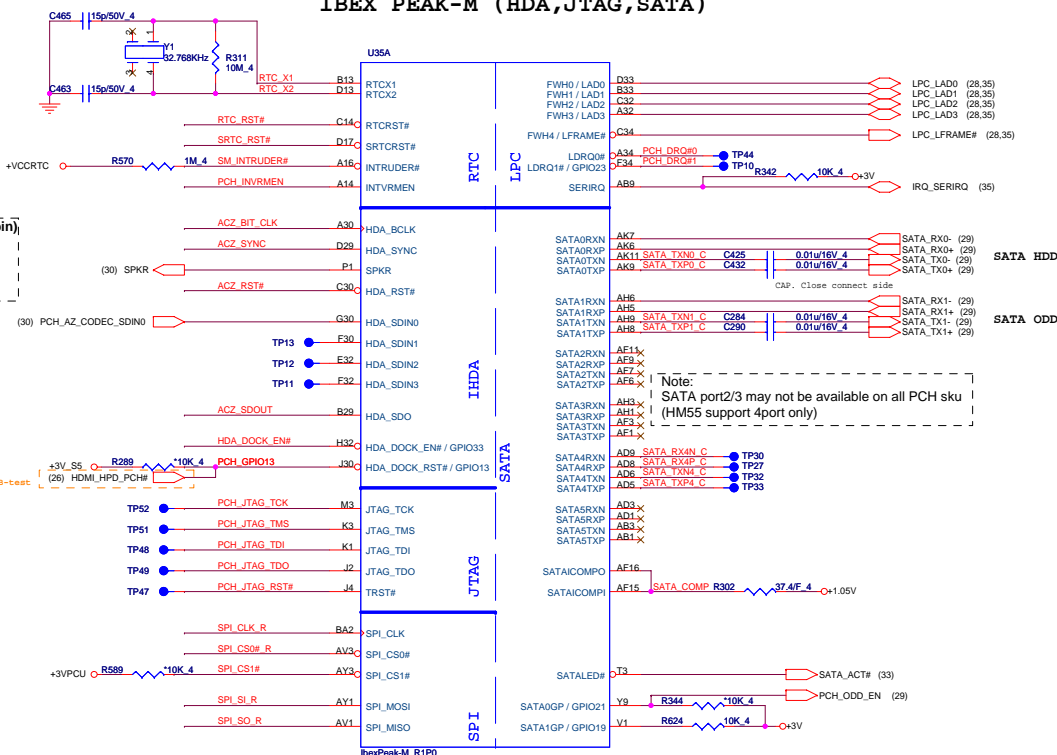
PCH2(CLG)



PCH Strap Table

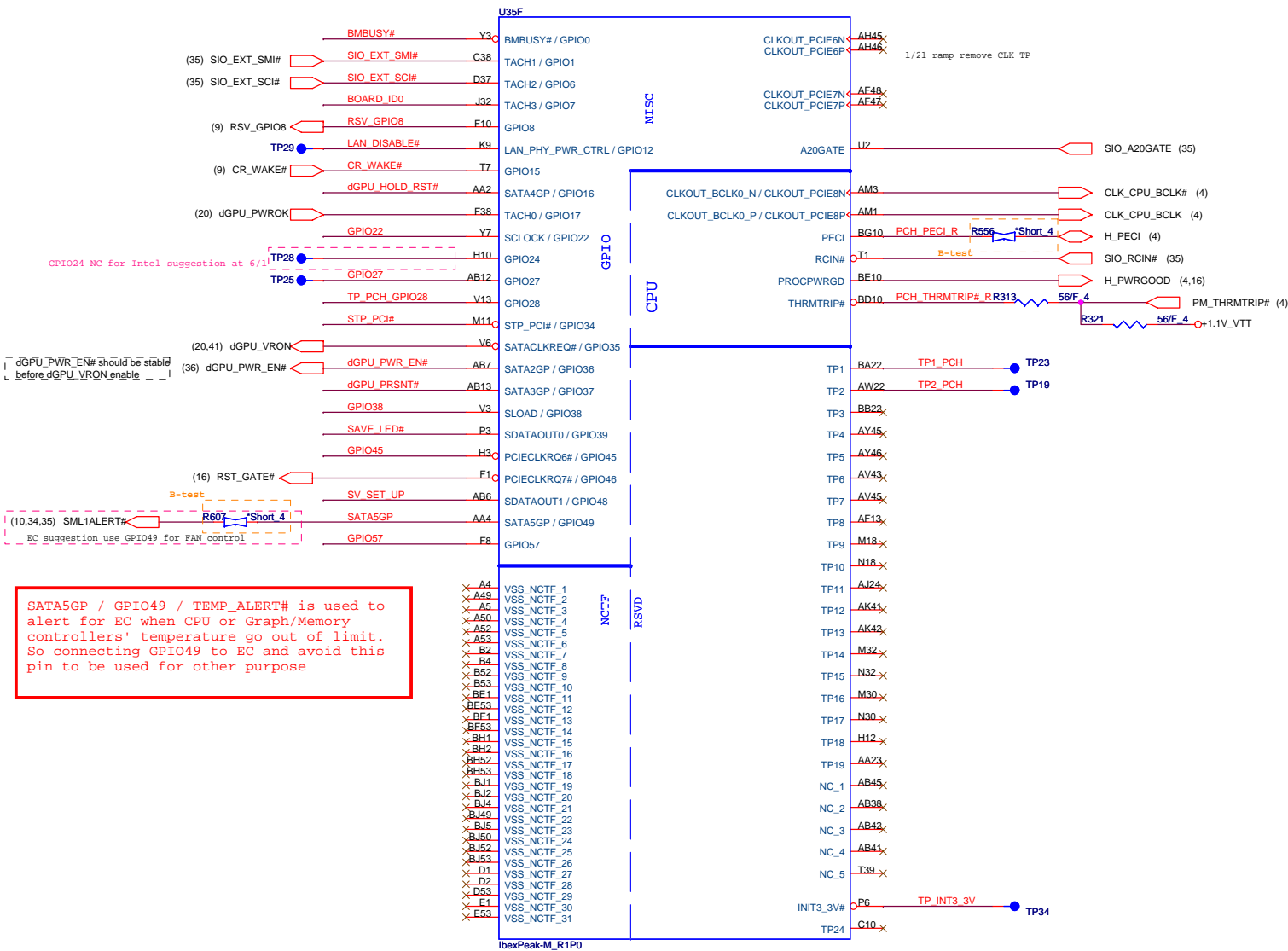
Pin Name	Strap description	Sampled	Configuration	ZQ1 note												
SPKR	No reboot mode setting	PWROK	0 = Default (weak pull-down 20K) 1 = Setting to No-Reboot mode	+3V _O  												
INIT3_3V	Reserved	PWROK	1 = Default (weak pull-up 20K) Should not be pull-down													
GNT3# / GPIO55	Top-Block Swap Override	PWROK	0 = "top-block swap" mode 1 = Default (weak pull-up 20K)	 												
INTVRMEN	Integrated 1.05V VRM enable	ALWAYS	Should be always pull-up	+VCCRTC  												
GNT1# / GPIO51	Boot BIOS Selection 1 [bit-1]	PWROK	<table border="1"><thead><tr><th>GNT1#</th><th>GNT0#</th><th>Boot Location</th></tr></thead><tbody><tr><td>1</td><td>1</td><td>SPI</td></tr><tr><td>1</td><td>0</td><td>PCI</td></tr><tr><td>0</td><td>0</td><td>LPC</td></tr></tbody></table>	GNT1#	GNT0#	Boot Location	1	1	SPI	1	0	PCI	0	0	LPC	Default weak pull-up on GNT0/1# [Need external pull-down for LPC BIOS]
GNT1#	GNT0#	Boot Location														
1	1	SPI														
1	0	PCI														
0	0	LPC														
GNT0#	Boot BIOS Selection 0 [bit-0]	PWROK														
GNT2# / GPIO53	ESI strap (Server only)	PWROK	Should not be pull-down (weak pull-up 20K)	USE GPIO PIN												
NV_ALE	Intel Anti-Theft HDD protection	PWROK	0 = Disable (Internal pull-down 32ohm)	+1.8V _O  												
NV_CLE	DMI Termination voltage	PWROK	weak pull-down 32ohm	+1.8V _O  												
HDA_DOCK_EN#/GPIO33	Flash Descriptor Security	PWROK	0 = Override 1 = Default (weak pull-up 20K)	  												
SPI_MOSI	iTPM function Disable	MEPWROK	0 = Default (weak pull-down 20K) 1 = Enable	+3V _O  												
HDA_SDO	Reserved	RSMRST#	Should not be pull-up (weak pull-down 20K)													
GPIO8	Reserved	RSMRST#	Should not be pull-down (weak pull-up 20K)	+3V_S5  												
GPIO27	On-die PLL Voltage Regulator	RSMRST#	0 = Disable 1 = Enable (weak pull-up 20K)													
HDA_SYNC	On-die PLL PWR supply select	RSMRST#	0 = 1.8V supply (weak pull-down 20K) 1 = 1.5V supply	use default (0 = 1.8V supply)												
GPIO15	Reserved	RSMRST#	0 = TLS no Confidentiality (weak pull-down 20K) 1 = TLS Confidentiality	+3V_S5  												

IBEX PEAK-M (HDA,JTAG,SATA)

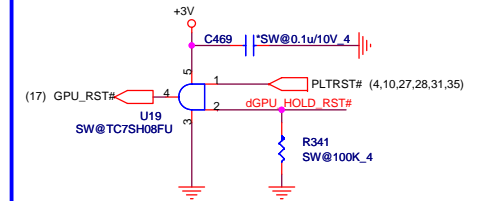


PCH4 (CLG)

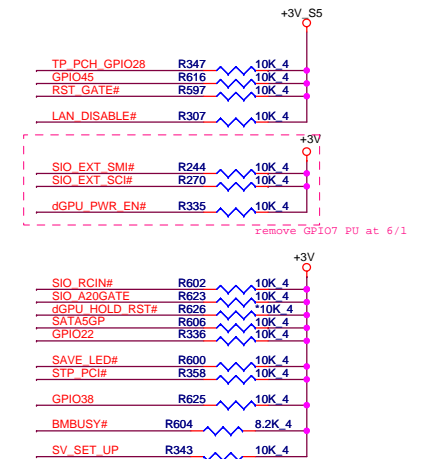
IBEX PEAK-M (GPIO,VSS_NCTF,RSVD)



GPU RST#(CLG)



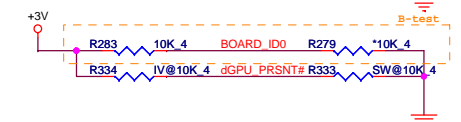
GPIO Pull-up/Pull-down(CLG)



SV_SET_UP	1-X High = Strong (Default)
-----------	-----------------------------

GPI057 stuff PD and not stuff PU for Intel suggestion at 6/1

The diagram shows a horizontal line representing a signal trace. A red label 'GPI057' is placed above the line on the left. Further to the right, a blue label 'R324' is placed above the line. Below the line, a blue zigzag line represents a resistor, with a blue label '10K' placed above it. To the right of the resistor, a blue label '4' is placed above the line. The entire diagram is enclosed in a dashed rectangular box.



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

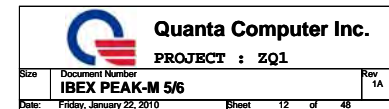


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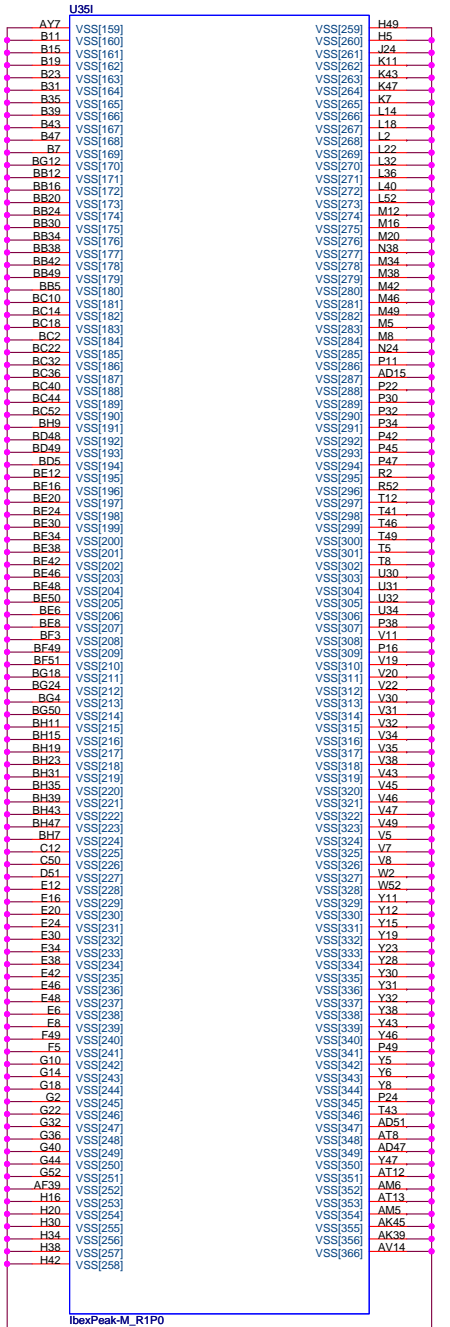
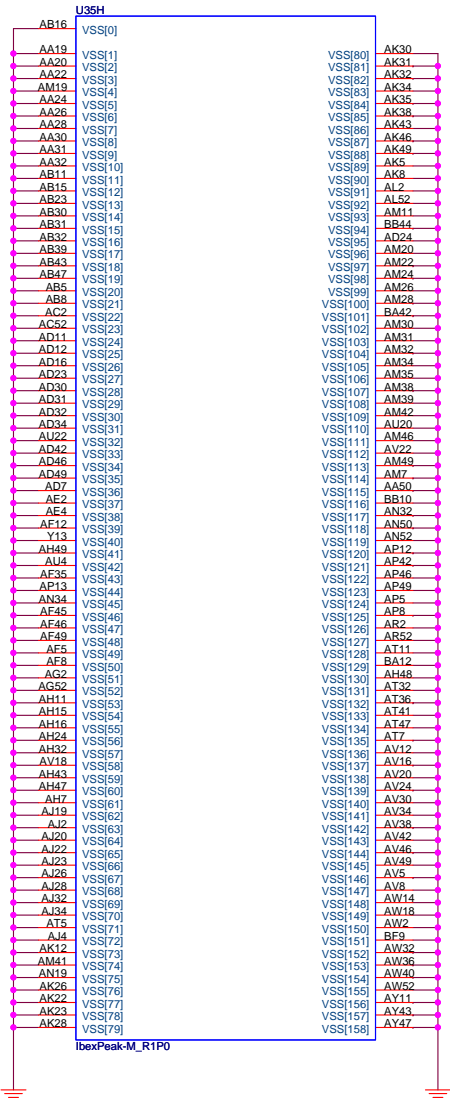
PROJECT : ZQ1

Size	Document Number IBEX PEAK-M 4/6	Rev 1A
Date:	Friday, January 22, 2010	Sheet 11 of 48

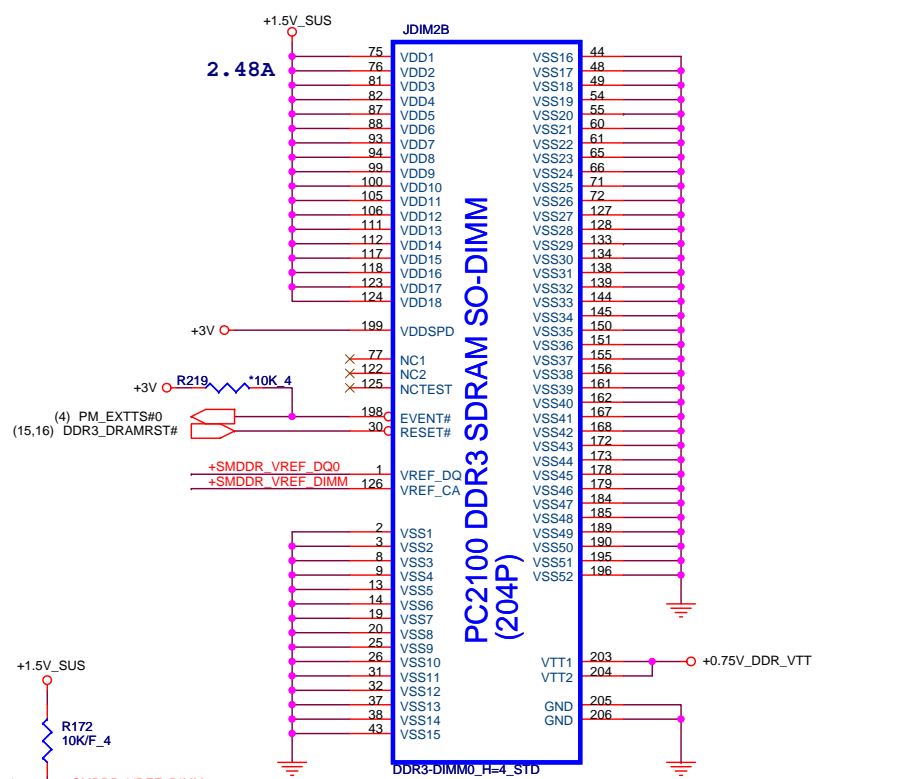
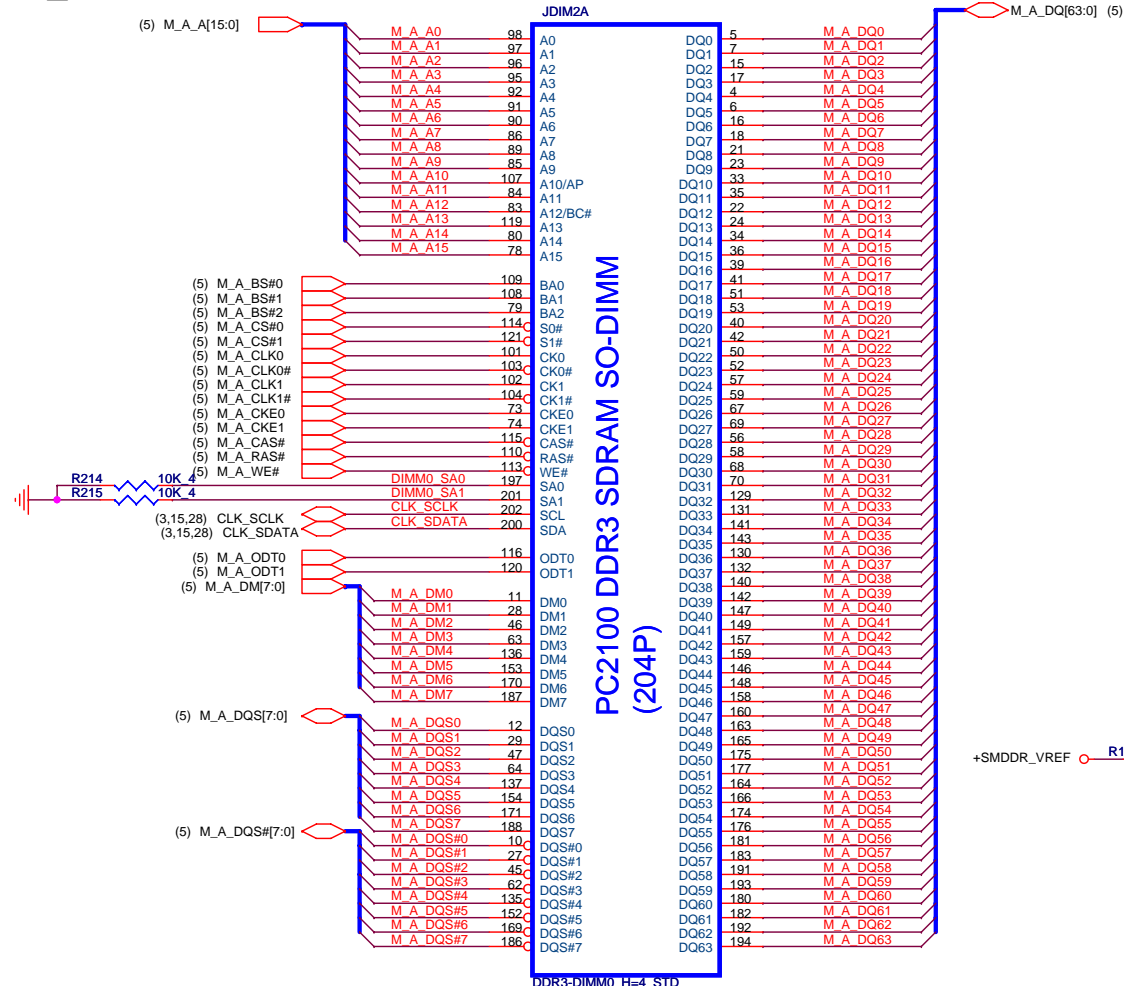
IBEX PEAK-M (POWER)



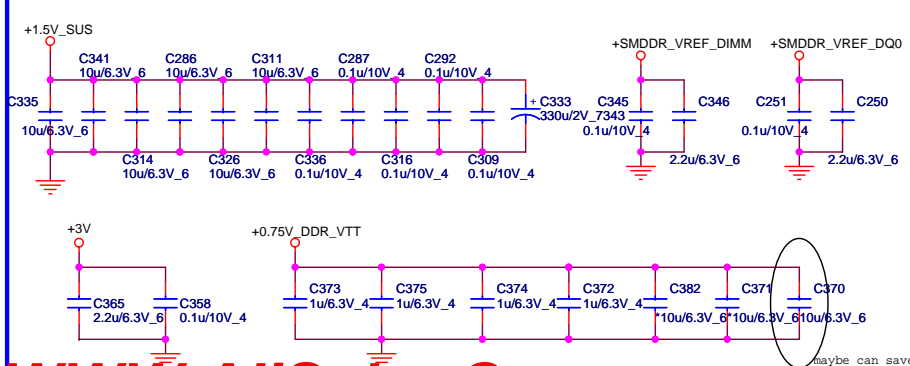
IBEX PEAK-M (GND)



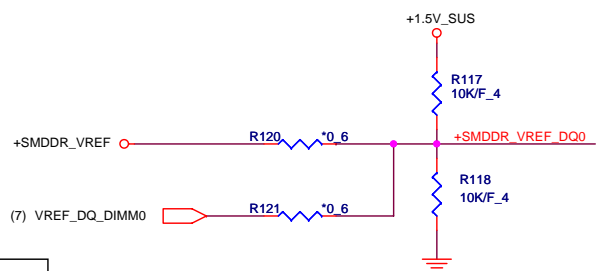
DDR_STD (DDR)




Place these Caps near So-Dimm0.



	STD 4H	STD 8H
FOX		
LTK	DGMK4000004	DGMK4000097
SUY		
MLX	DGMK4000011	DGMK4000080
Standard 4H type:DDR-C-2013289-204p		



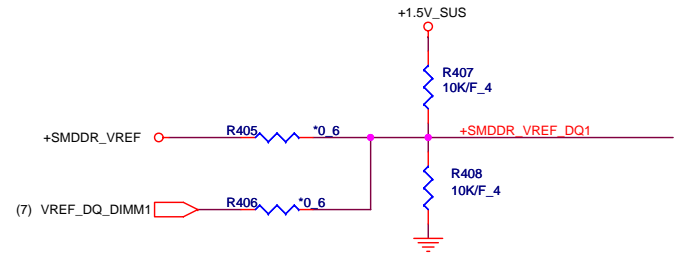
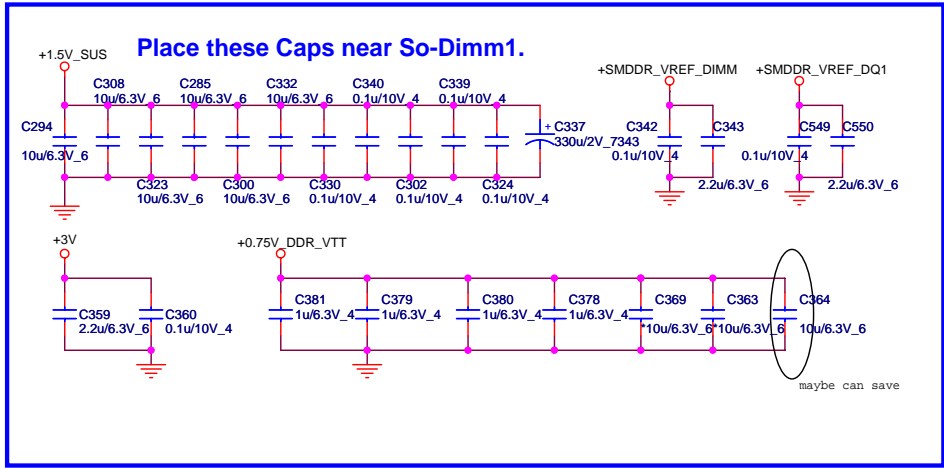
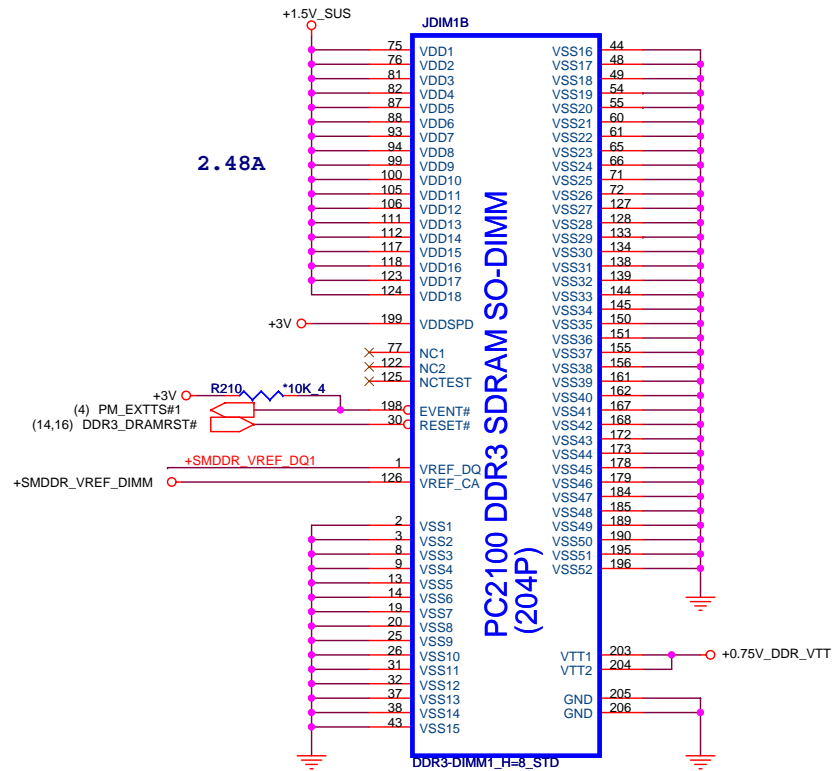
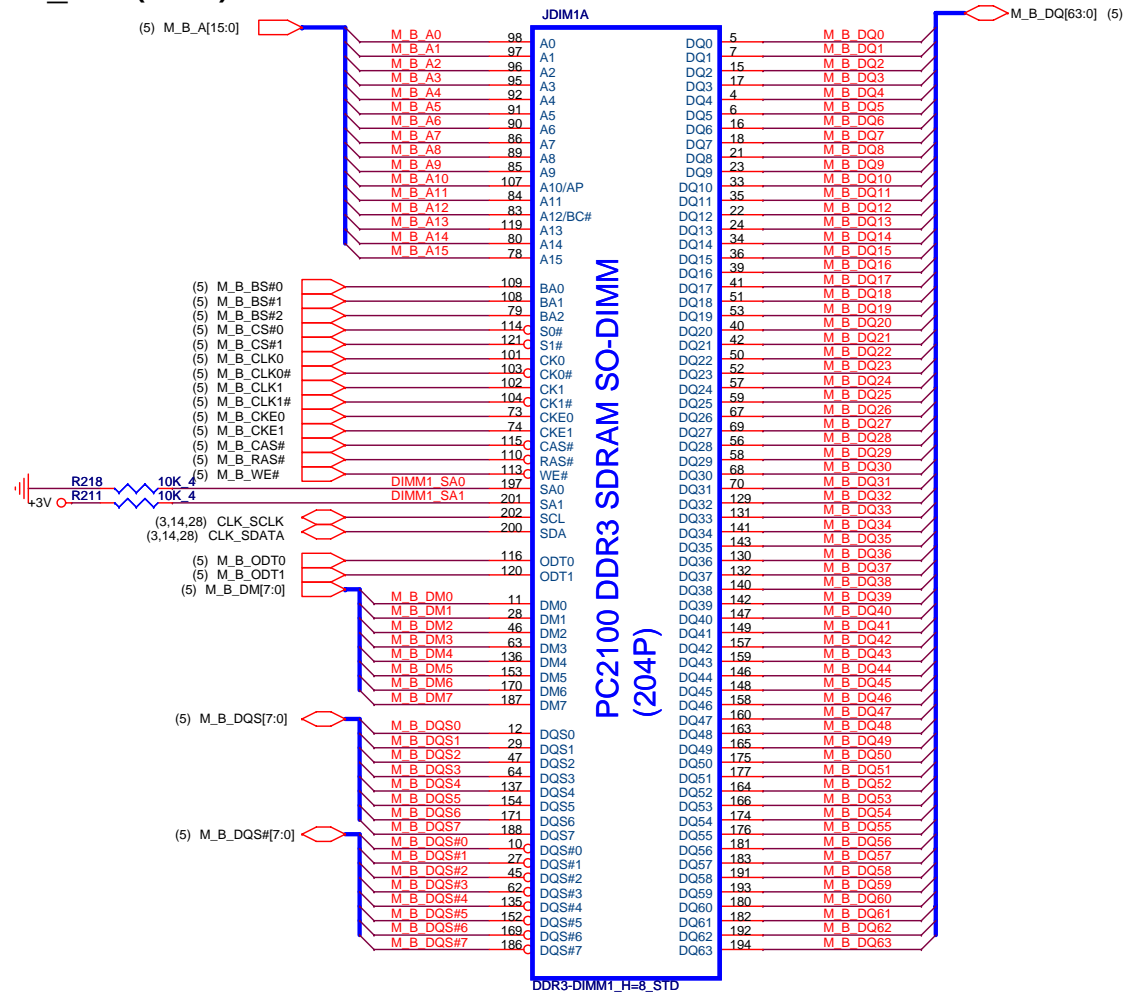
M1:PWR SMDRR_VREF
M1+:voltage divider(Default)
M3:CPU VREF_DQ_DIMM0



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Size	Document Number	Rev
	DDRIII SO-DIMM-0	1A
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DDR_STD (DDR)



	STD 4H	STD 8H
FOX		
LTK	DGMK4000004	DGMK4000097
SUY		
MLX	DGMK4000011	DGMK4000080
Standard 8H type:DDR-C-2013310-204p-1		

M1:PWR SMDRR_VREF

M1+:voltage divider(Default)

M3:CPU VREF_DQ_DIMM0

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PROJECT : ZQ1

Size

Document Number

Rev

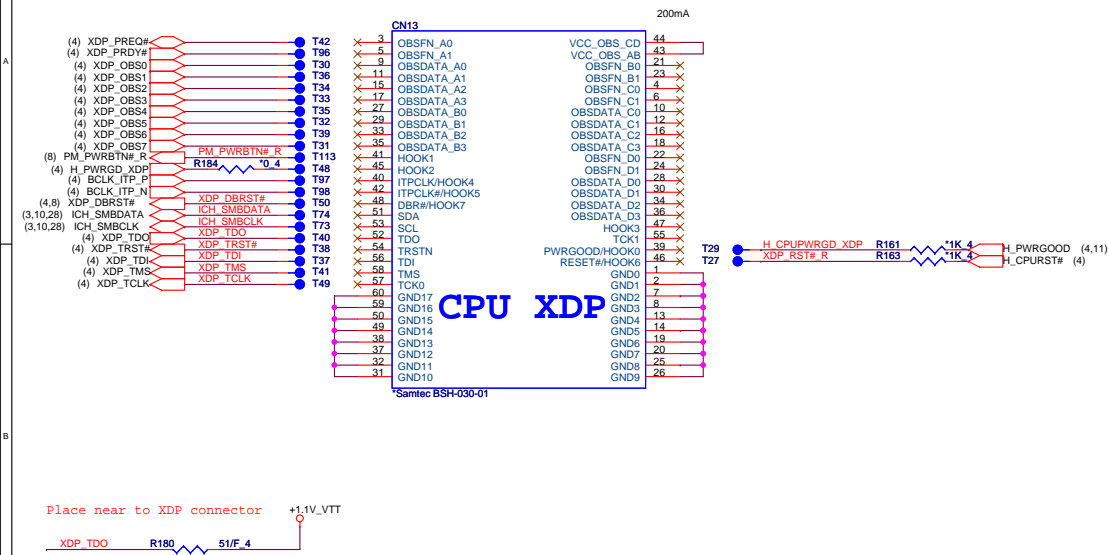
DDRIII SO-DIMM-1

1A

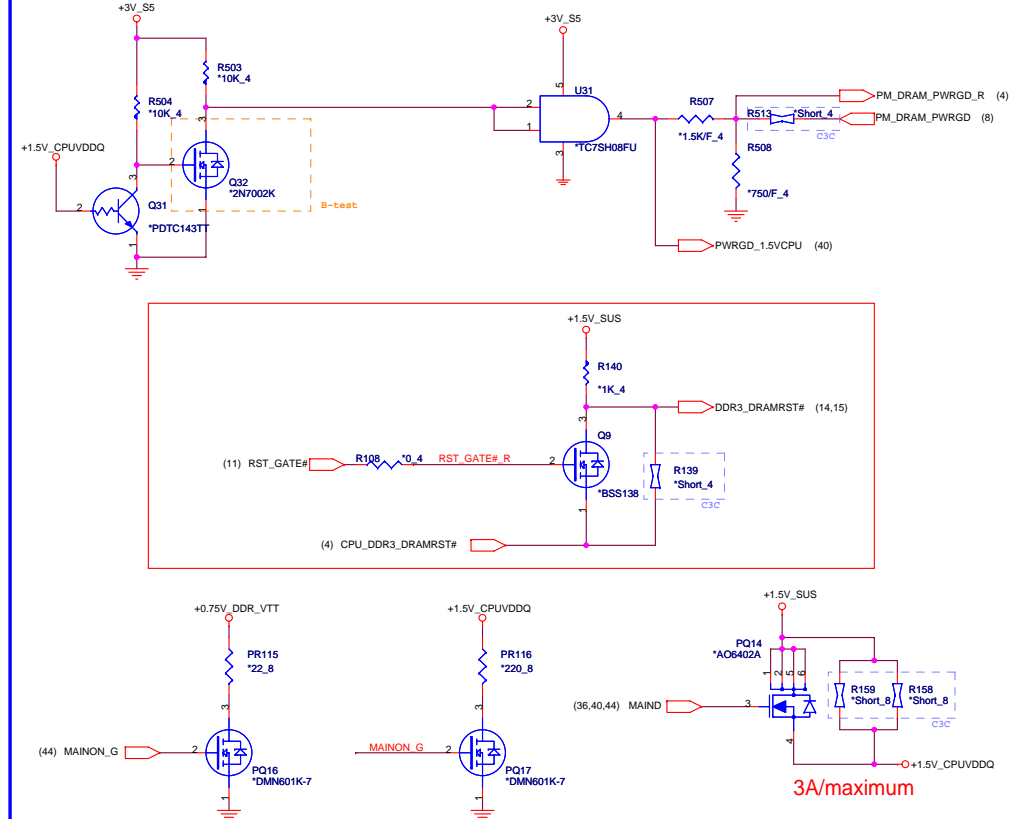
Date: Friday, January 22, 2010

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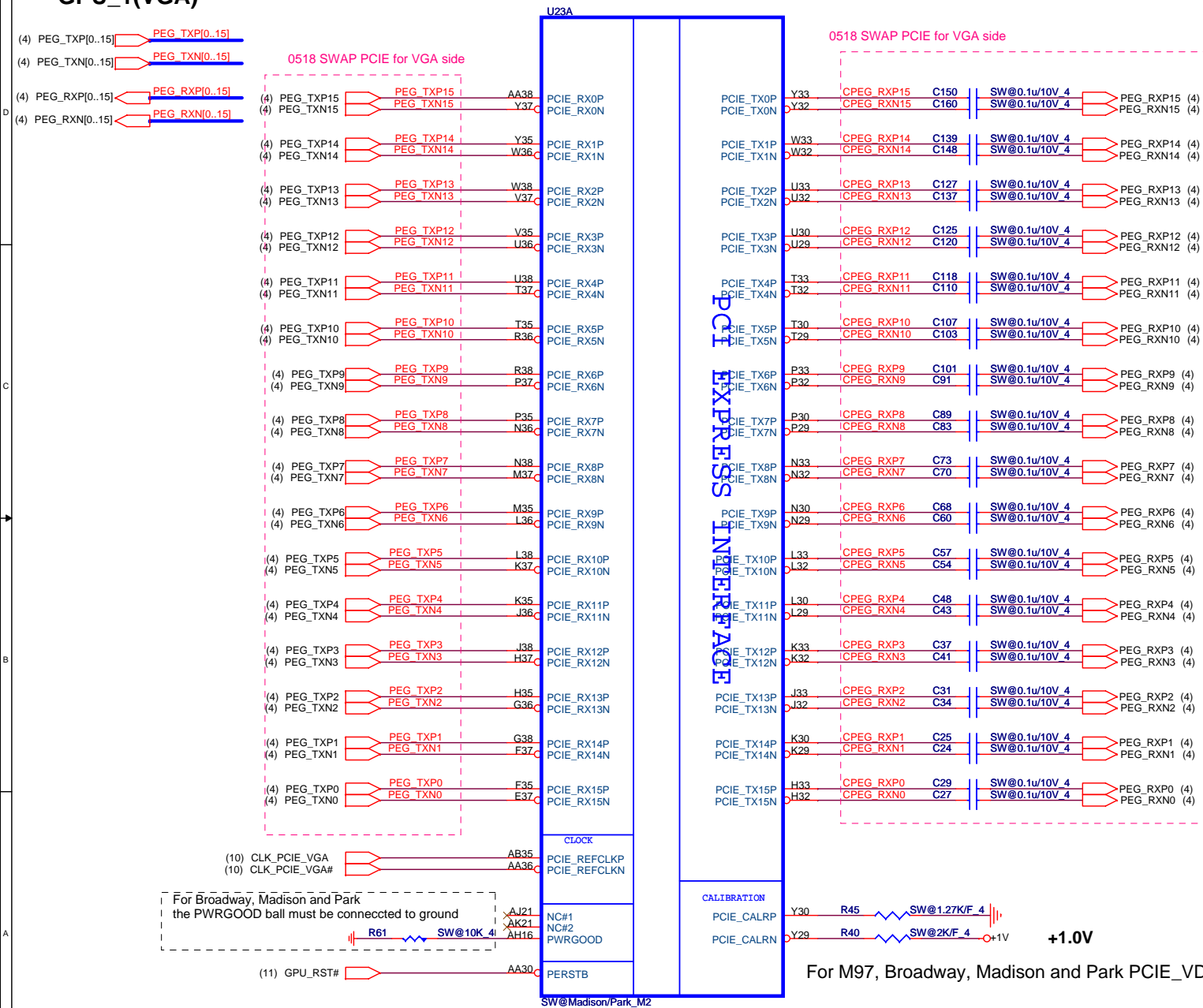
CPU XDP Connector(CPU)



S3 leakage solution(CLG)



GPU_1(VGA)



Madison	AJ007720T02
Park	AJ077400T08



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	Madison/Park M2-PCIE I/F	1A
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GPU Power-on sequence

1.8V GPIO

NC on Park

NC on Park

3.3V GPIO

Channel D N.C for Park-M2

SW@Madison/Park_M2

DAC2 will be NC on future ASIC

HDMI

DDC AUX4 NC for Park M2

LVDS

CRT

DDC AUX7 NC for Park_M2

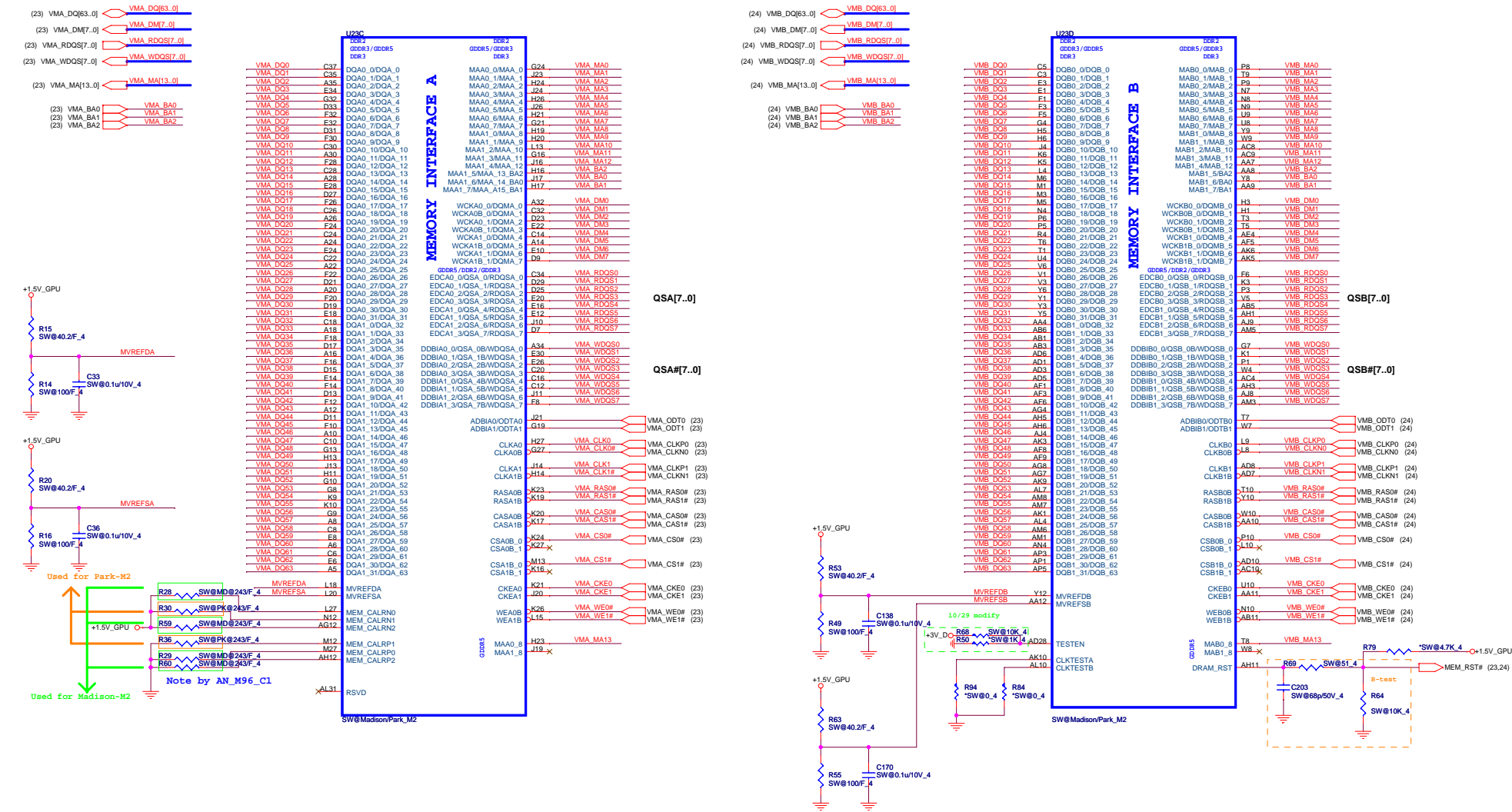
Quanta Computer Inc.

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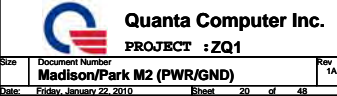
Size	Document Number	Rev
	Madison/Park M2-HOST I/F	1A
Date:	Friday, January 22, 2010	Sheet 18 of 48

GPU_3(VGA)

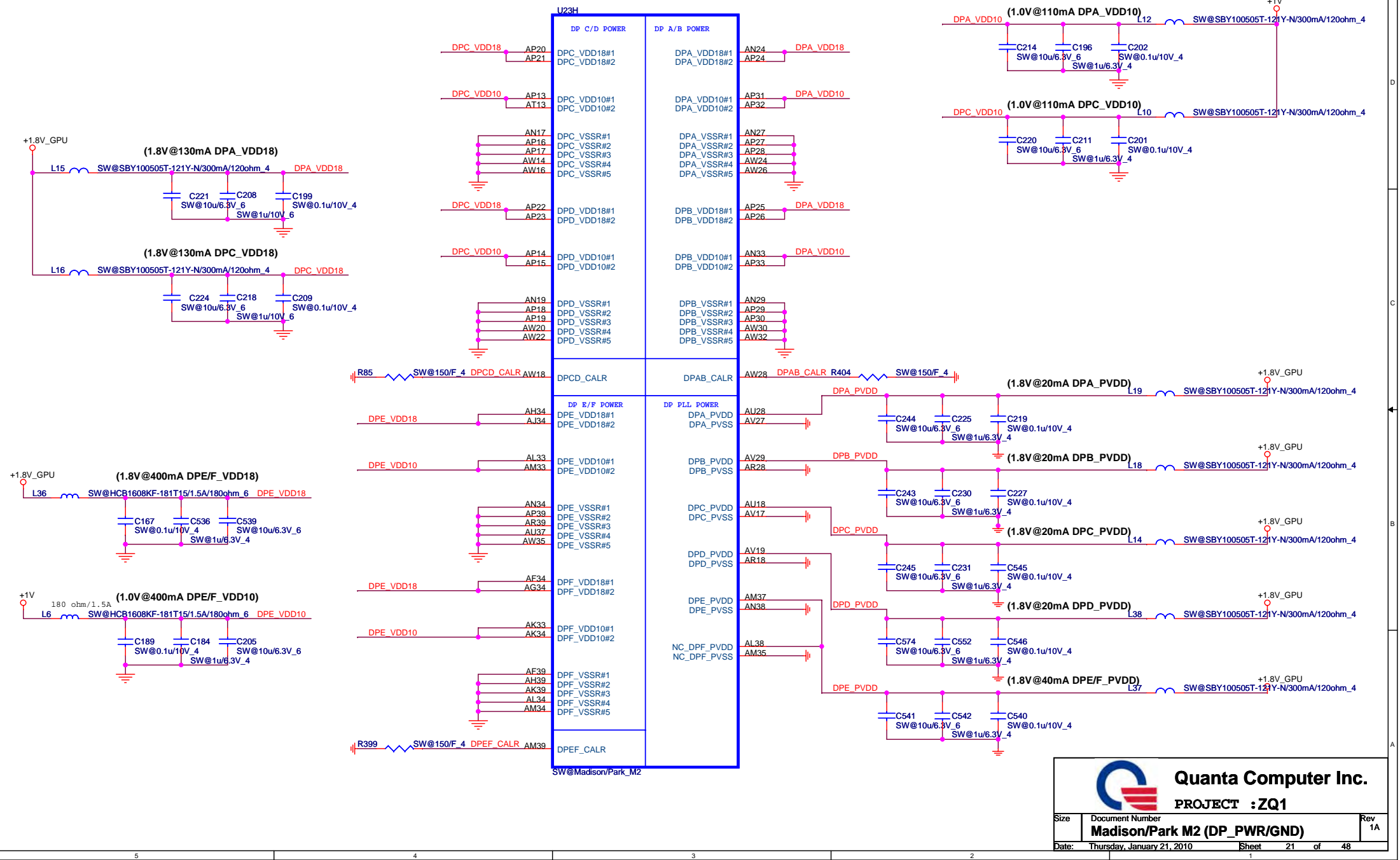
Park M2-channel B used(S3 package use Channel A)



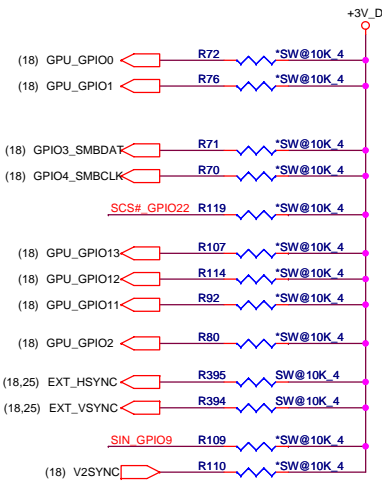
WWW.AliSaler.Com



GPU_5(VGA)



PIN STRAPS(VGA)



ROM Table		
Manufacturer	Part Number	Code
Numonyx ST Microelectronics	M25P05A	100
	M25P10A	101
	M25P20	101
	M25P40	101
	M25P80	101
Chingis PMC	Pm25LV512A	100
	Pm25LV010A	101

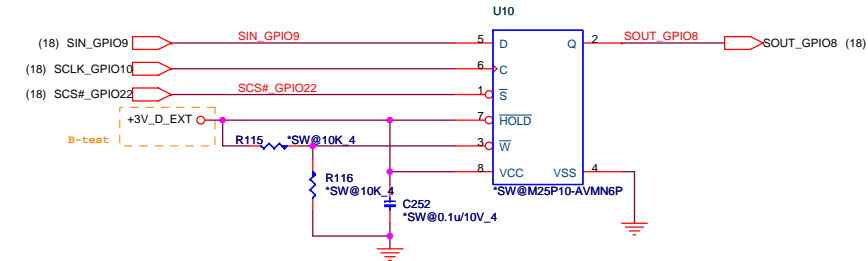
ROM Table		
EXT_HSYNC	EXT_VSYNC	Discription
0	0	No Audio
0	1	Any one by detectec
1	0	DP only
1	1	Both DP & HDMI

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	1	
ROMIDCFG(2:0)	GPIOQ[13:11]	SERIAL ROM TYPE OR MEMORY APERTURE SIZE SELECT NUMONYX M25P10A : 101	101	See ROM table
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	

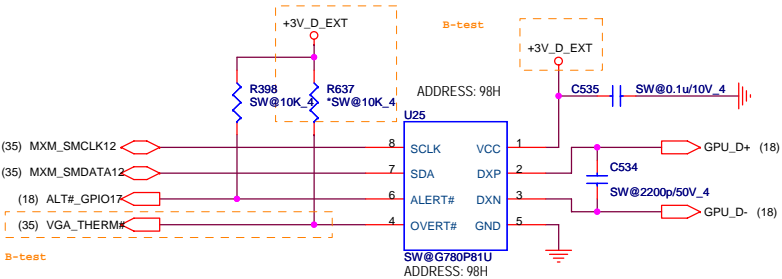
EEPROM(VGA)



Thermal Sensor(VGA)

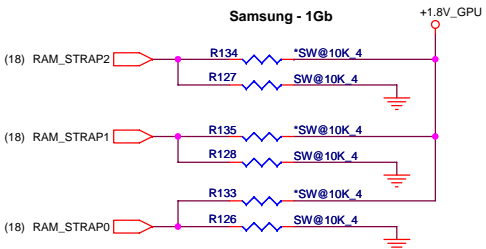
Vendor	P/N
WINDBOND	AL83L771K01
GMT	AL000780000

USD0.16




DDR3 Memory Aperture size(GPU)

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			512Mb	1	1	0
	H5TQ1G63BFR-12C	AKD5LZGTW04 (64M*16)	1Gb	1	0	0
			2Gb	1	0	1
Samsung			512Mb			
	K4W1G1646E-HC12	AKD5LGGT506 (64M*16)	1Gb	0	0	0
	K4W2G1646B-HC12	AKD5MGGT500	2Gb	0	0	1
AMD	23EY2387MA12-SZ	AKD5LGGT700	1Gb	0	1	0



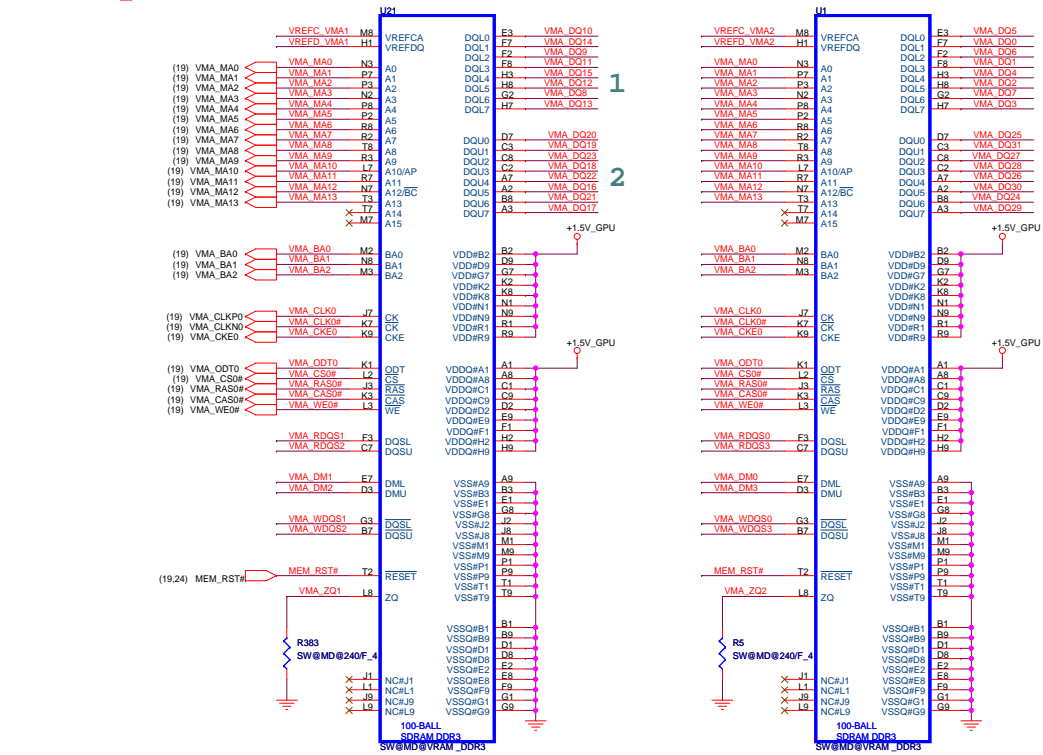
RAM_STRAP2 SET DDR3 Vendor
RAM_STRAP[1:0] SET SIZE.



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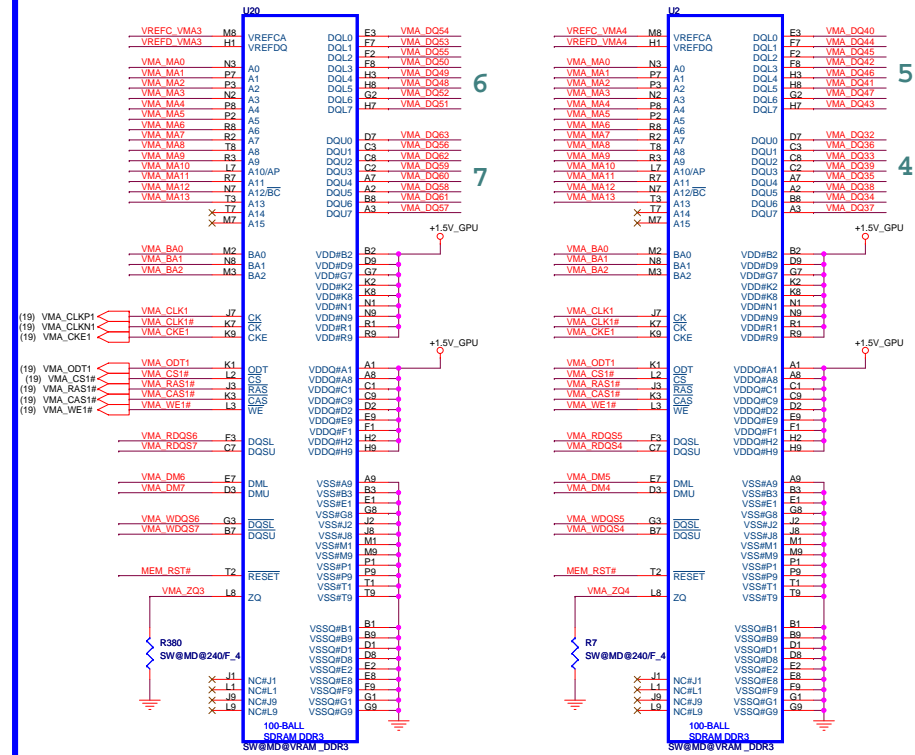
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Park, M92M Use Channel B Memory Interface Only



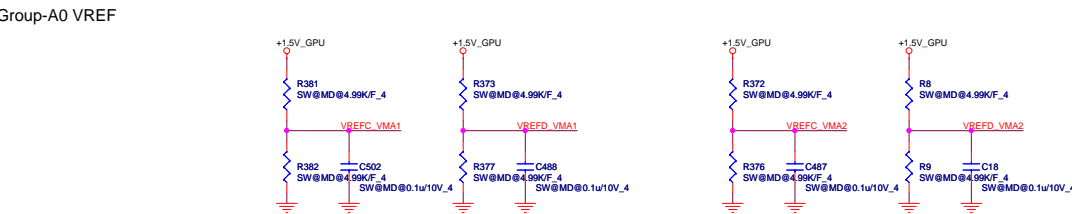
TOP Left

BOT Left

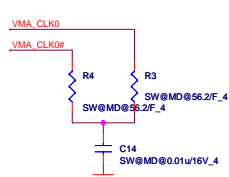


BOT Right

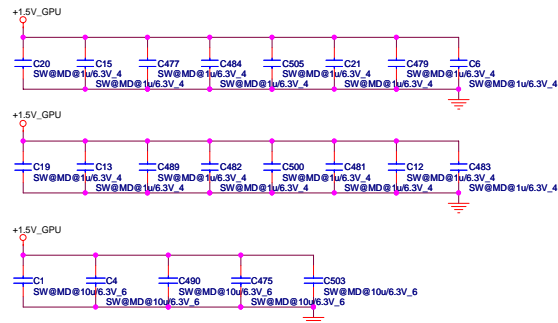
TOP Right



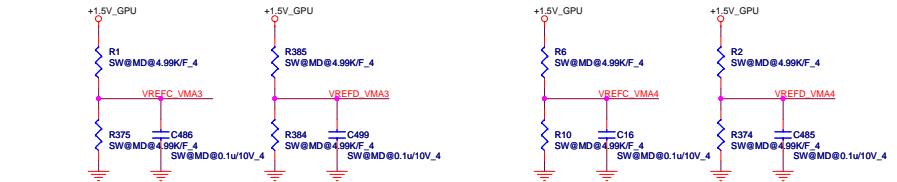
MEM_A0 CLK



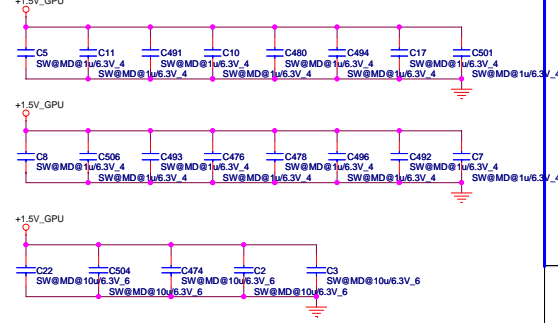
Group-A0 decoupling CAP



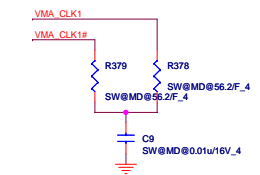
Group-A1 VREF



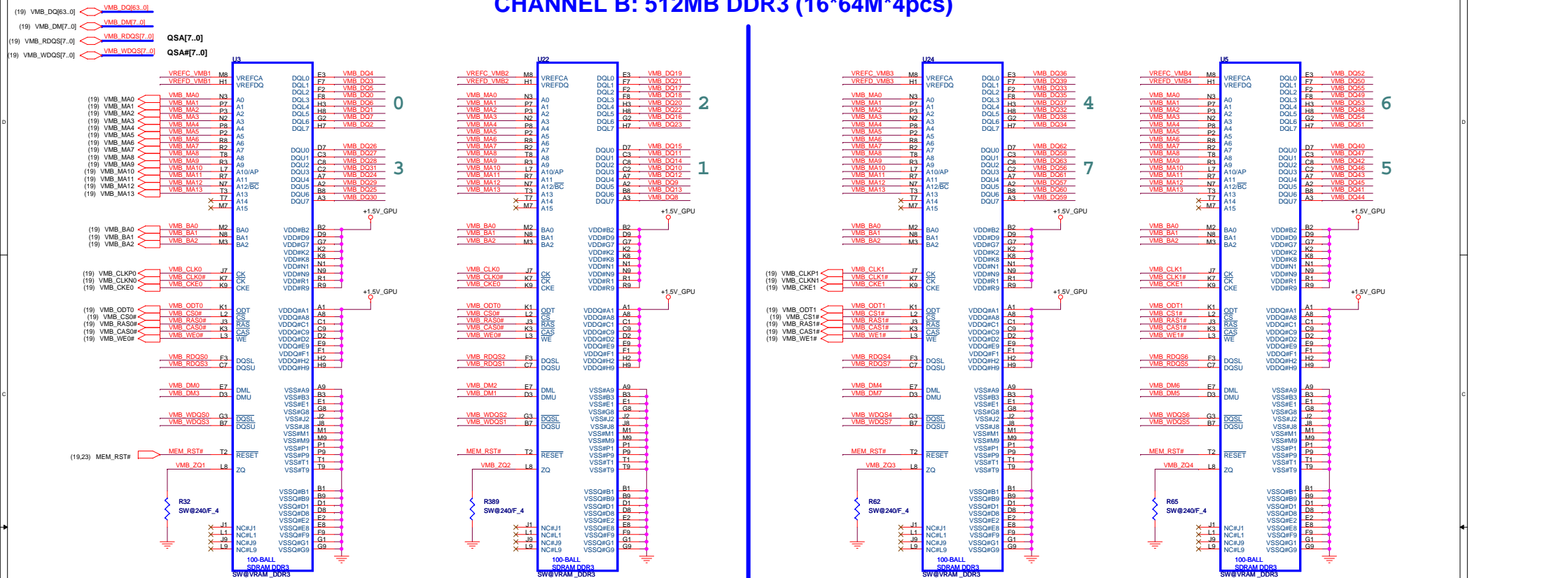
Group-A1 decoupling CAP



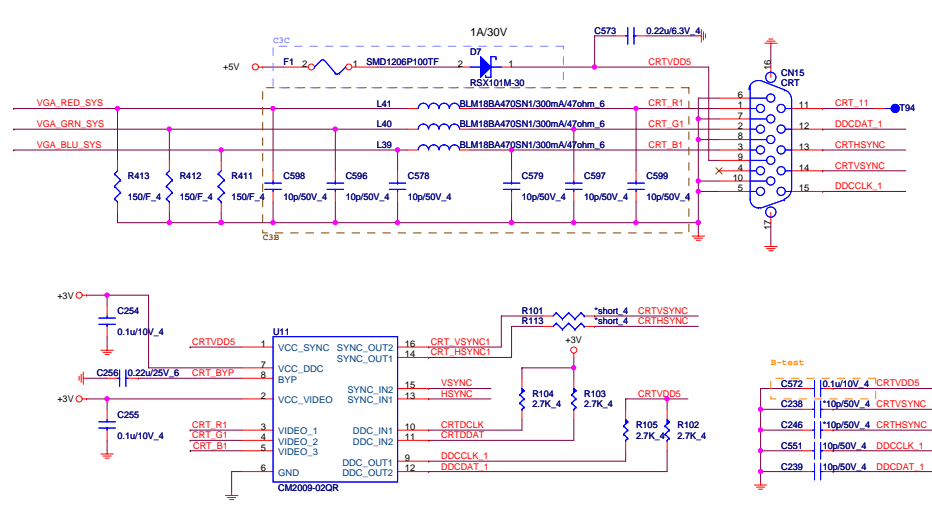
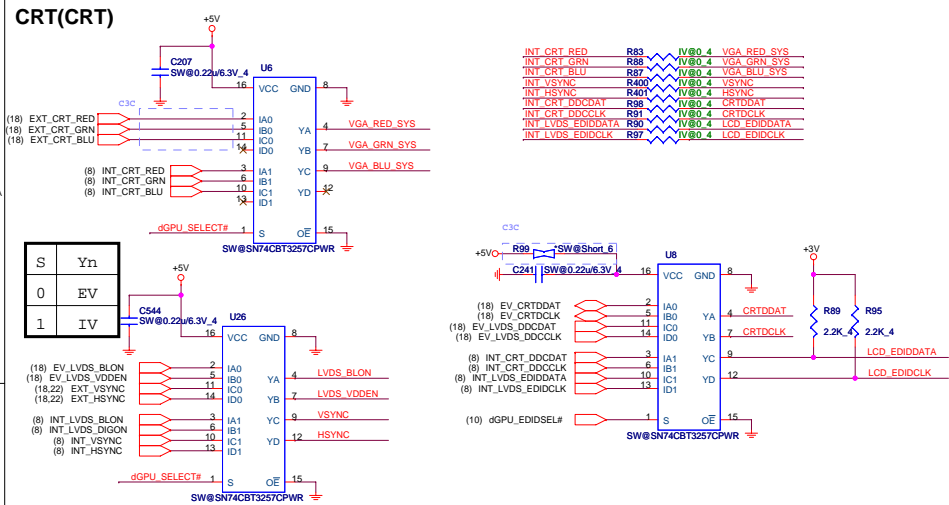
MEM_A1 CLK



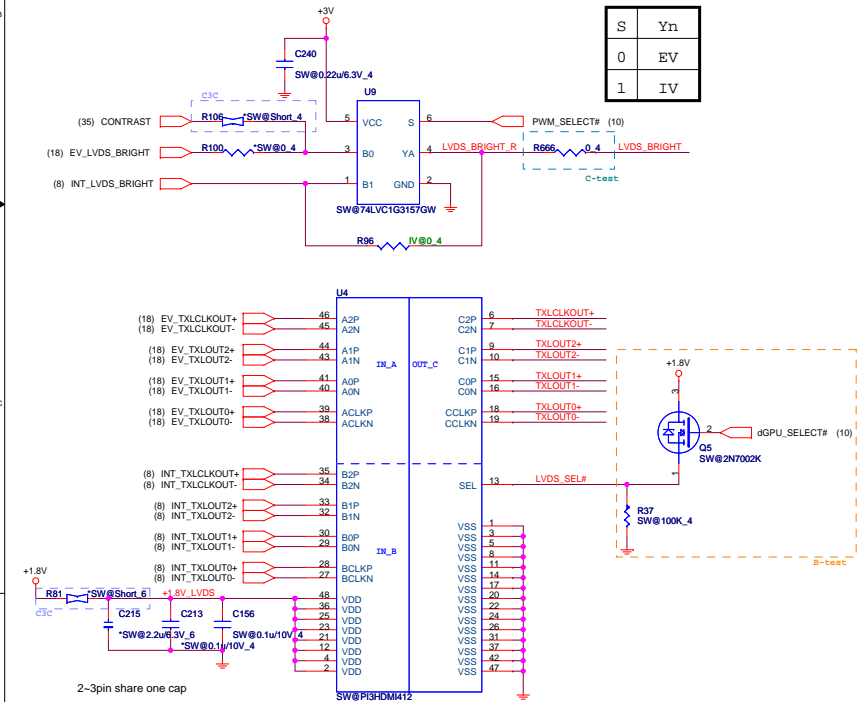
CHANNEL B: 512MB DDR3 (16*64M*4pcs)



CRT(CRT)

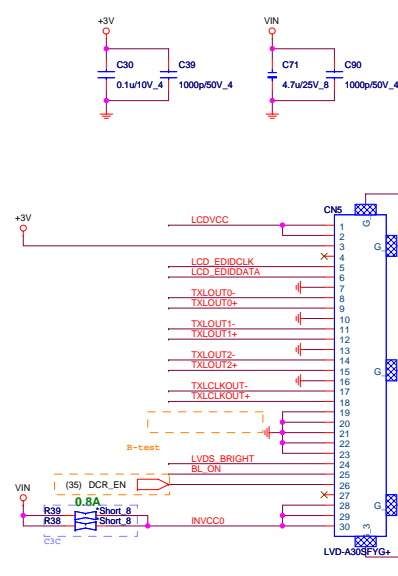


LVDS(LDS)

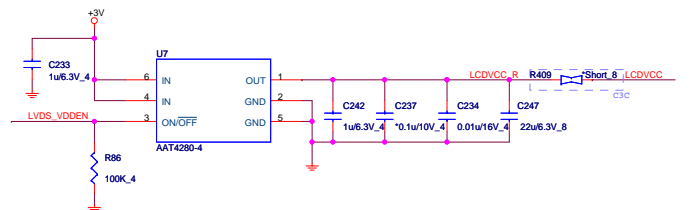


dGPU_SELECT#	Output
L	EV_LVDS
H	INT_LVDS

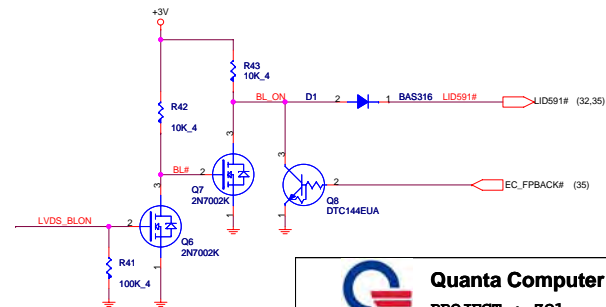
TI	AL3DV421V00
Pericom	AL000412W00



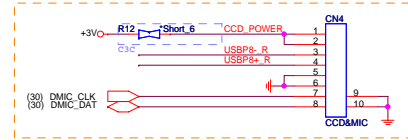
LCD Power(LDS)



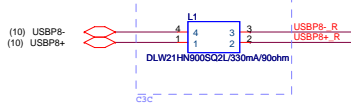
Backlight Control(LDS)

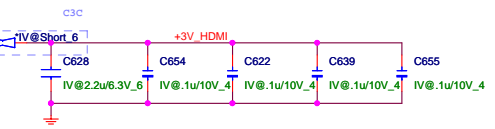
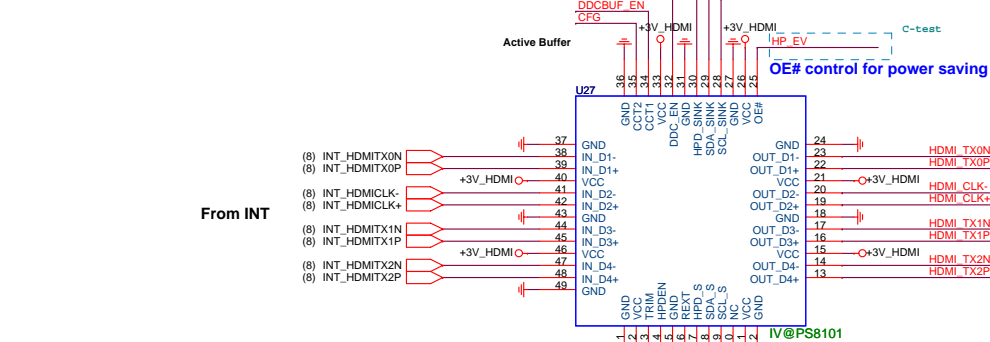
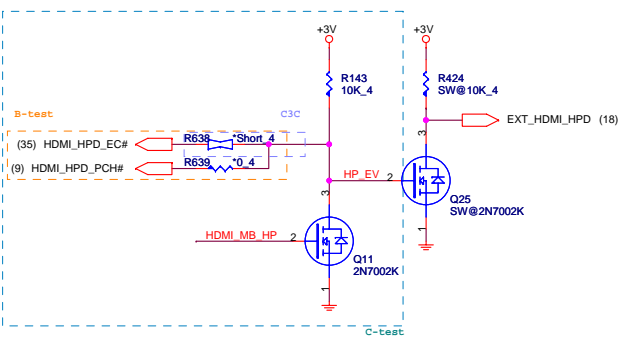


CCD&DMIC Conn.(CCD)



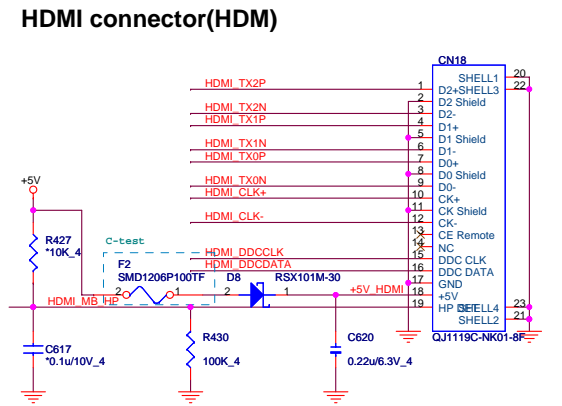
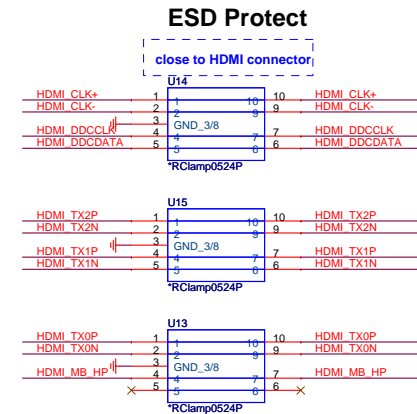
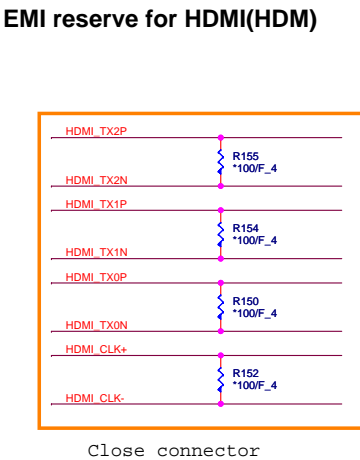
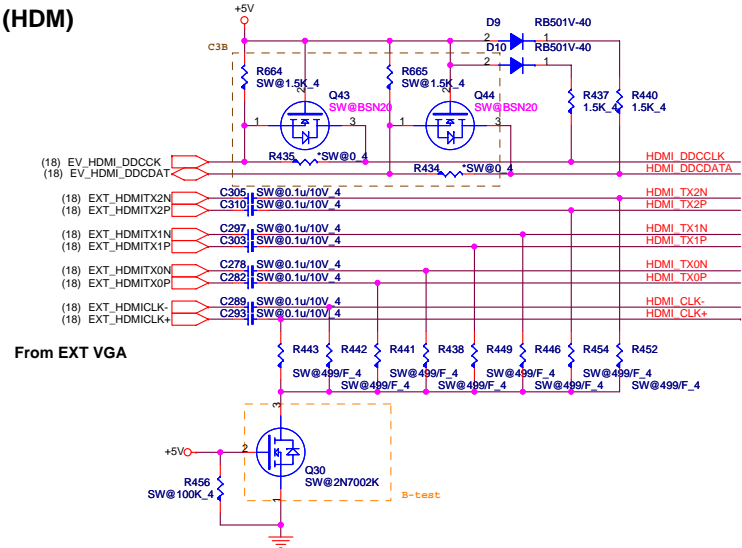
CAMERA Module(CCD)






Equalization Control			
PC1	PC0	PIN#	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

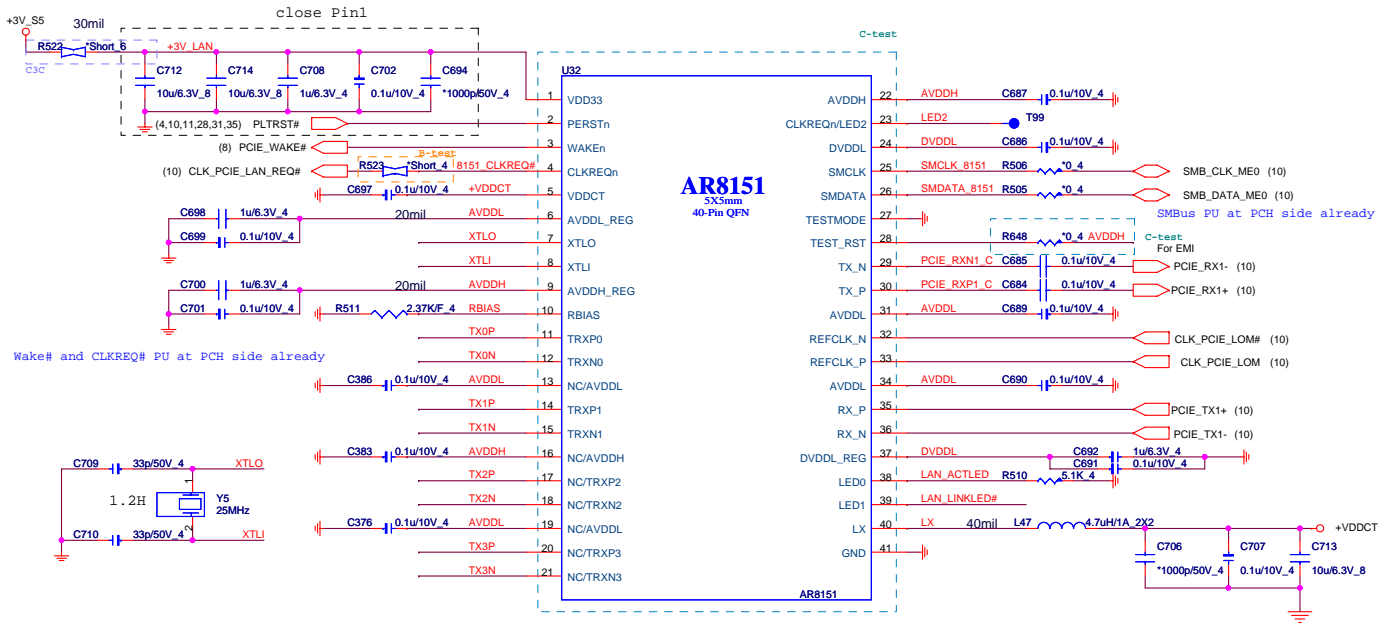




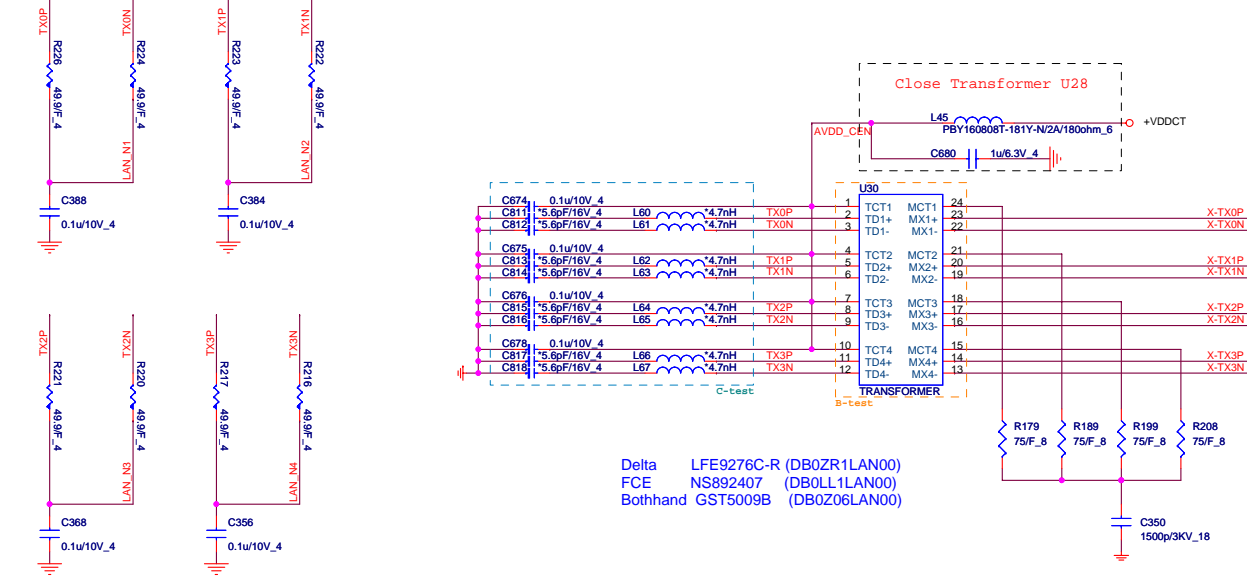
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HDMI		1A
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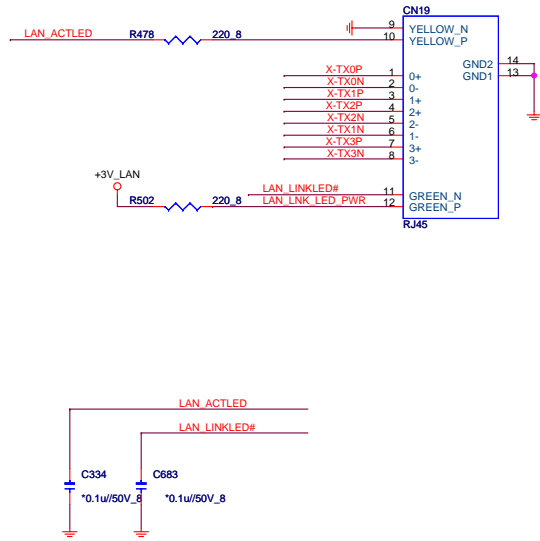
Giga-LAN AR8151(LAN)



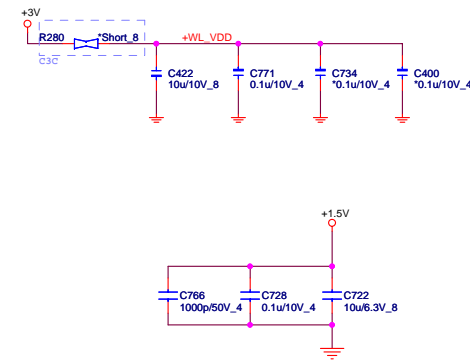
TRANSFORMER(LAN)



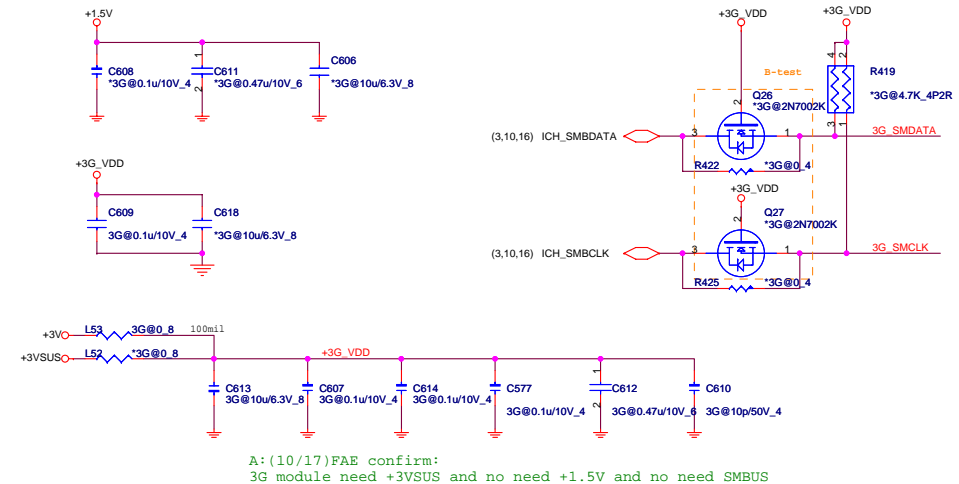
RJ45(LAN)



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



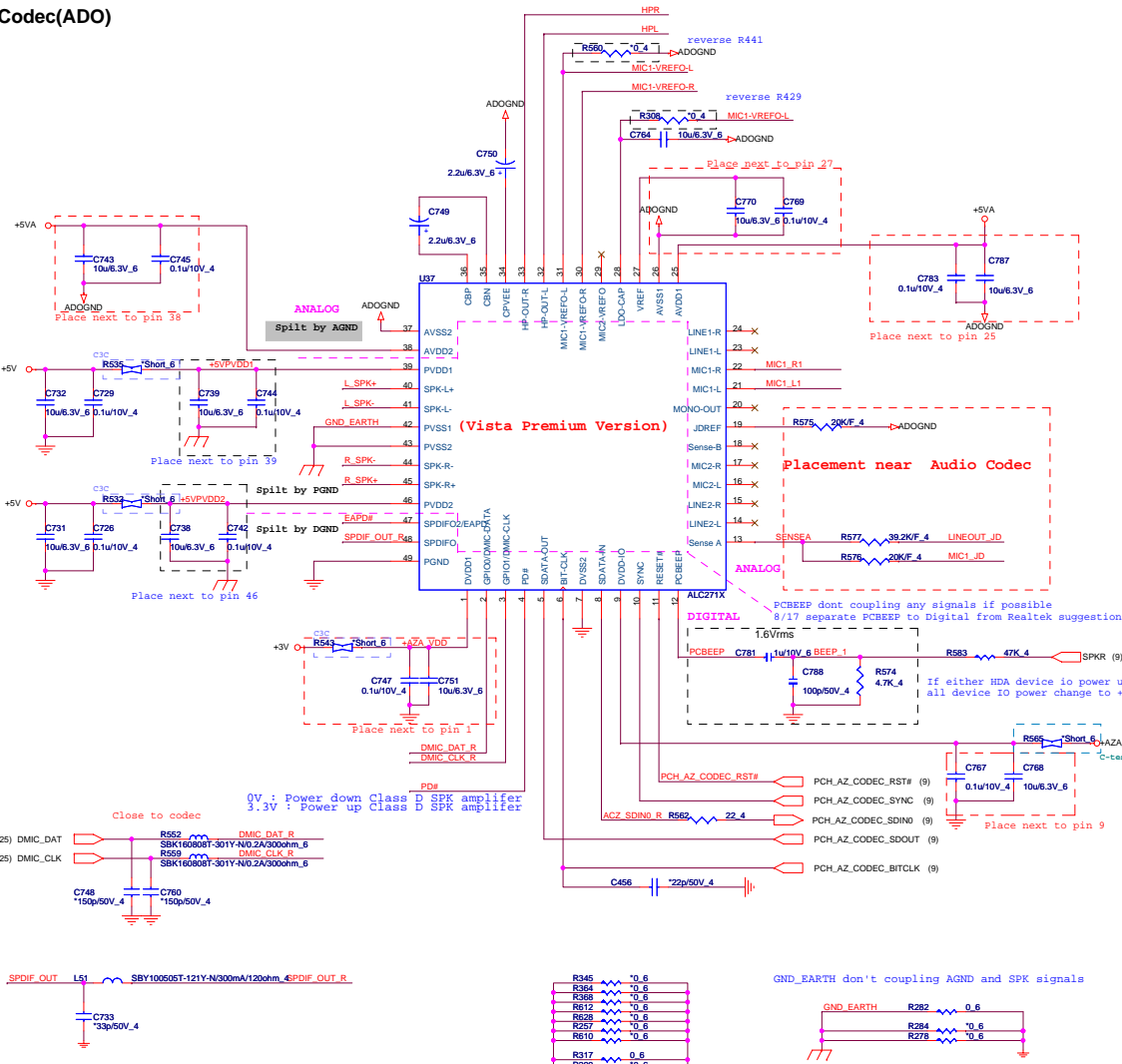
+3G_VDD **H=7.0mm**



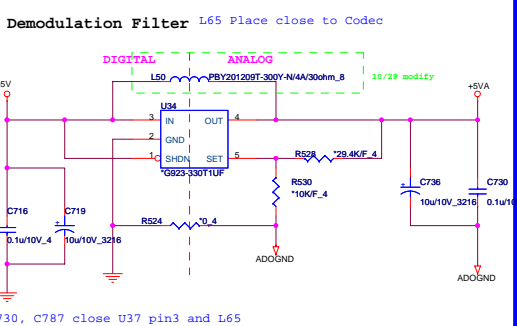
Pin connection diagram for CN1 connector:

- Pin 1: UIM_PWR
- Pin 2: R640 (3G@0.4)
- Pin 3: R641 (3G@0.4)
- Pin 4: (10) USBP5+
- Pin 5: (10) USBP5-
- Pin 6: UIM_VPP
- Pin 7: UIM_RST
- Pin 8: UIM_CLK
- Pin 9: UIM_DATA
- Pin 10: UIM_DATA
- Pin 11: 3G@SIM_CARD CON
- Pin 12: 3G@SIM_CARD CON

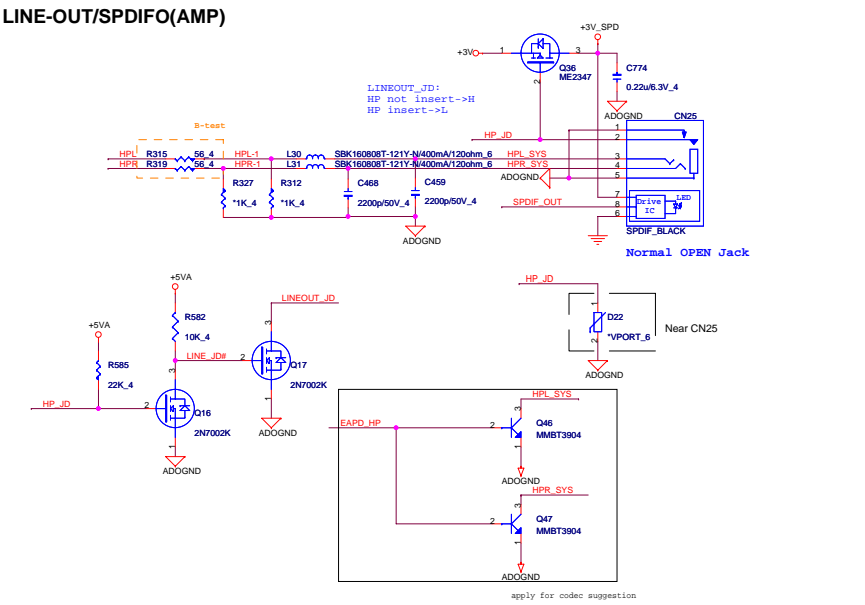
Codec(ADO)



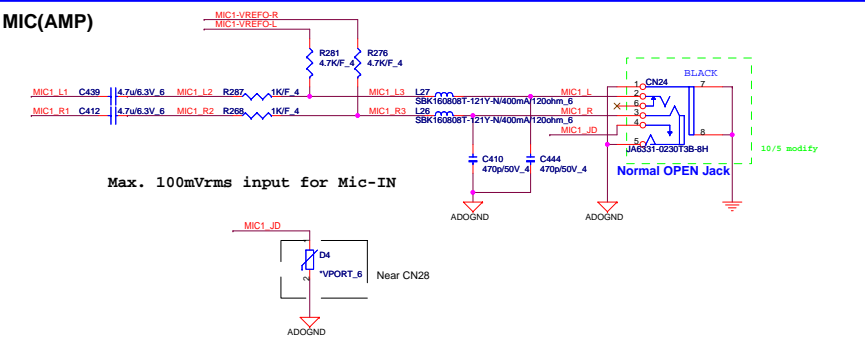
Power (ADO)



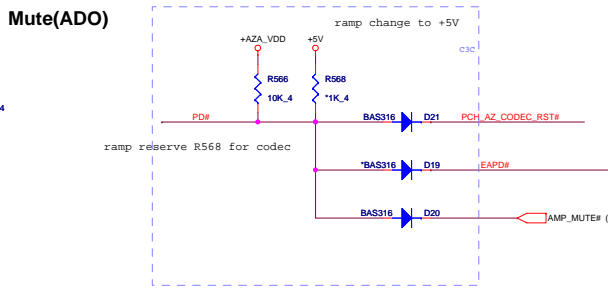
LINE-OUT/SPDIFO(AMP)



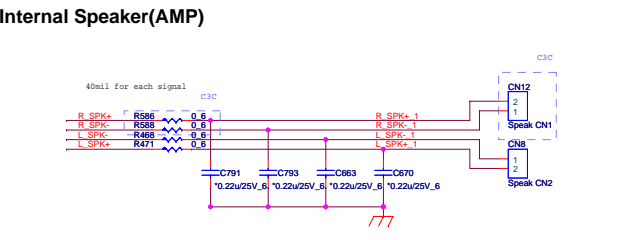
MIC(AMP)



Mute(ADO)

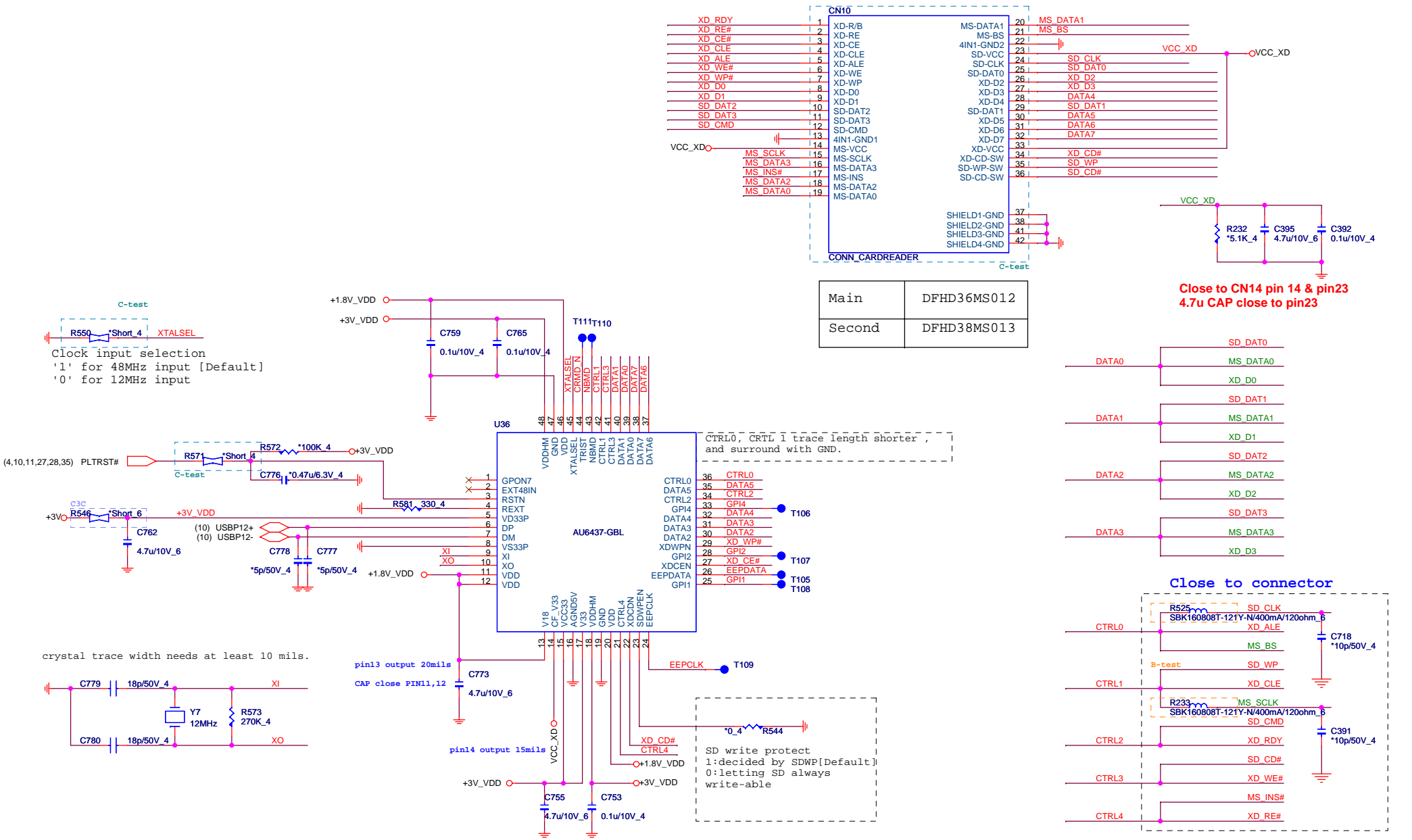


Internal Speaker(AMP)



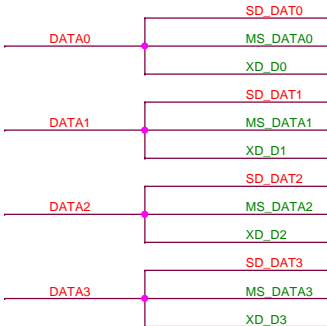
Cardreader(MMC)

4 IN 1 CARD READER (MMC)

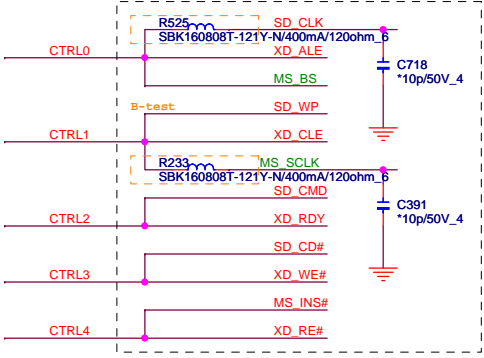


Main	DFHD36MS012
Second	DFHD38MS013

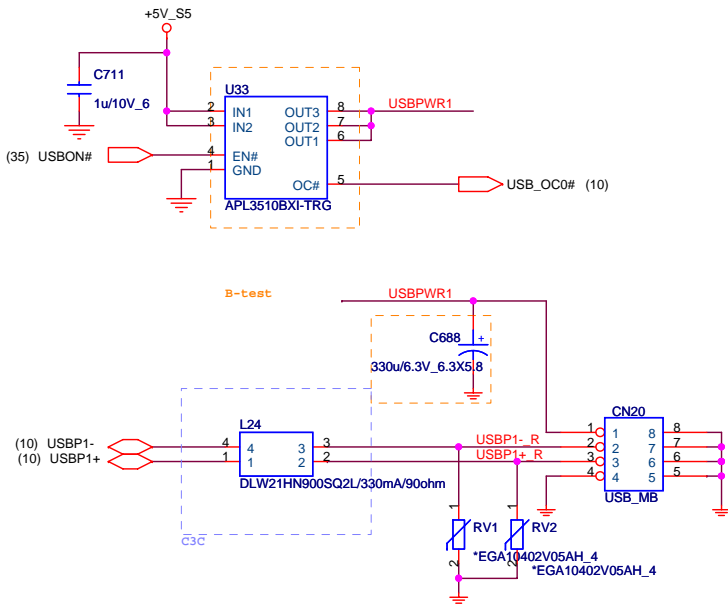
Close to CN14 pin 14 & pin23
4.7u CAP close to pin23



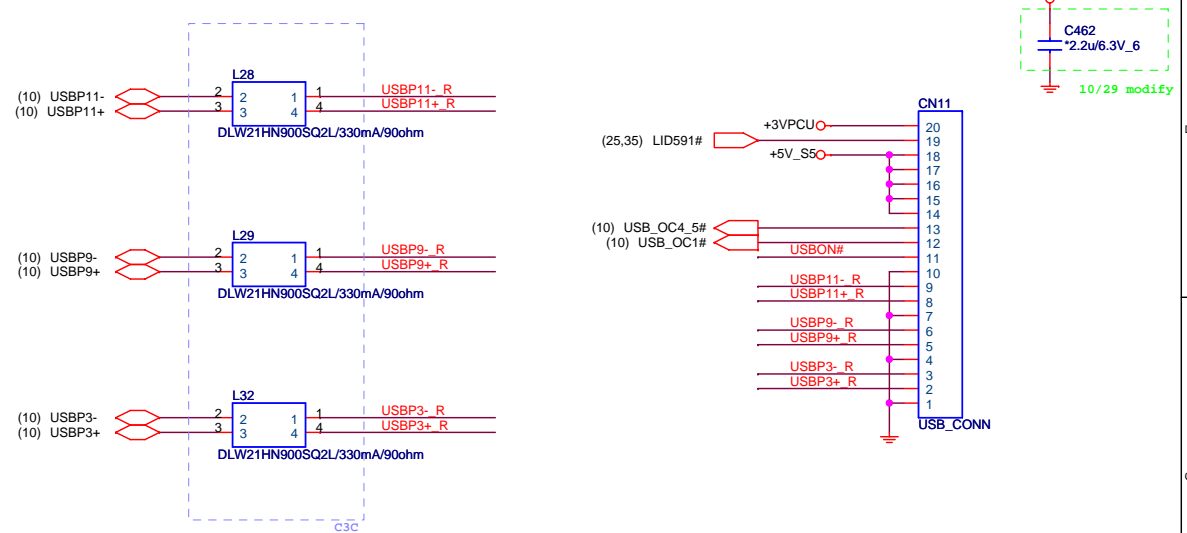
Close to connector



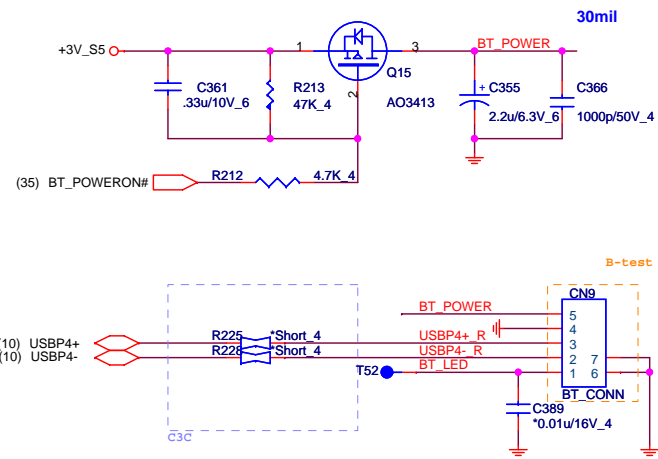
USB PORT(USB)



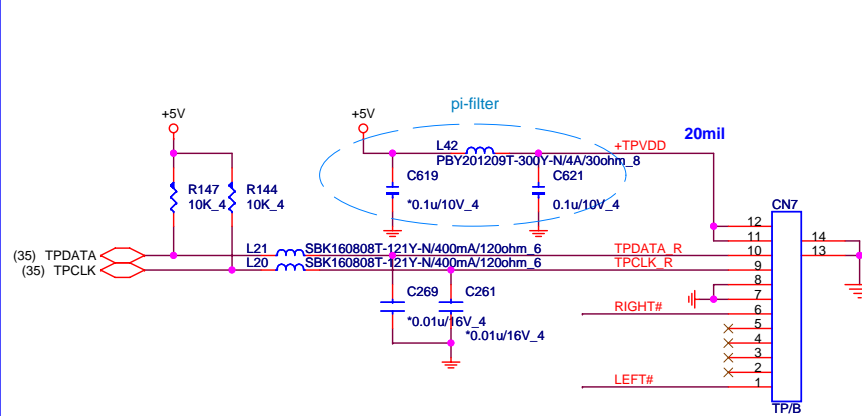
USB BOARD CONN(USB)



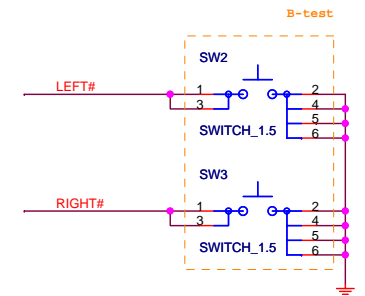
BLUETOOTH CONN(BTM)



TOUCHPAD BOARD CONN(TPD)



TP SWITCH(UIF)



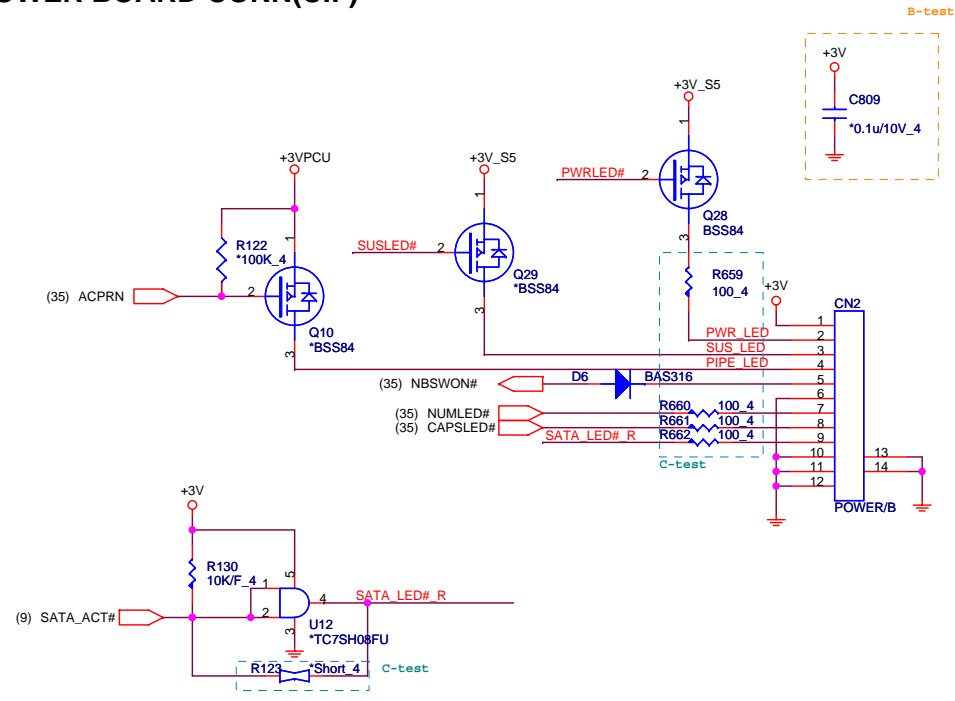
Quanta Computer Inc.

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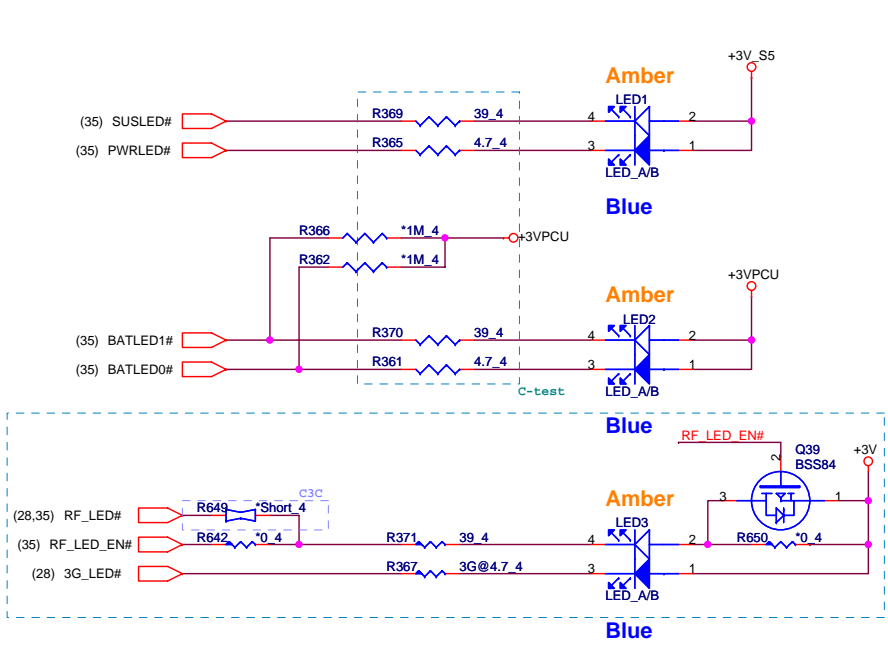
eSATA/USB

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	eSATA/USB	1A
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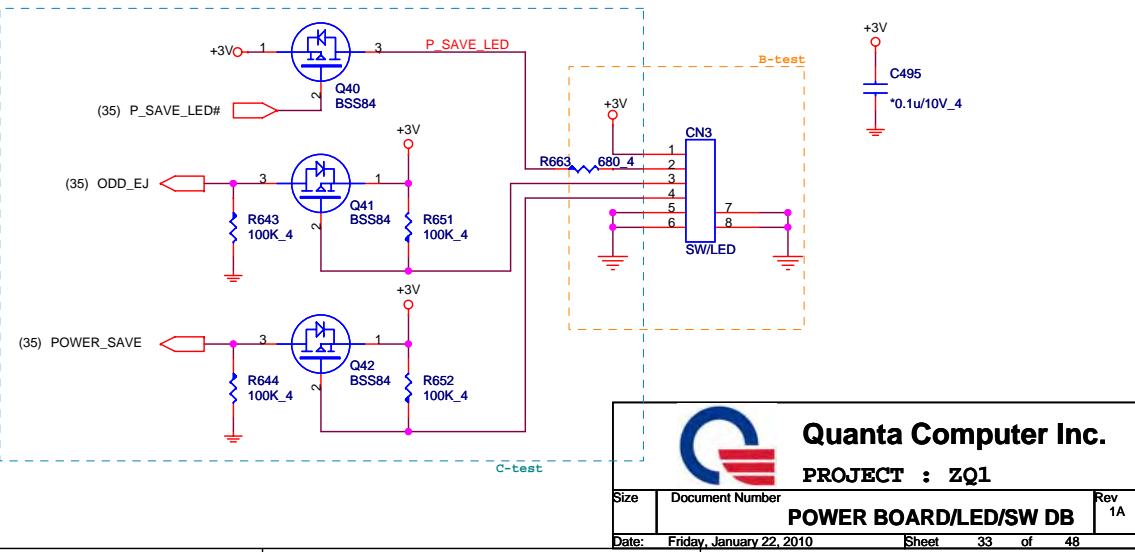
POWER BOARD CONN(UIF)



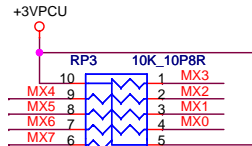
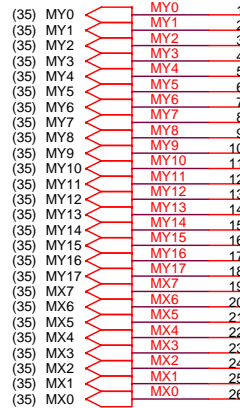
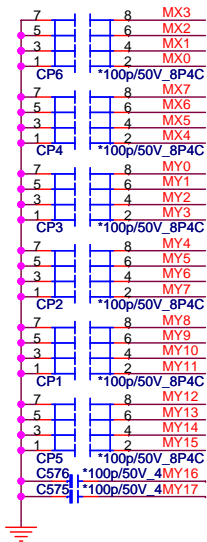
LED(UIF)



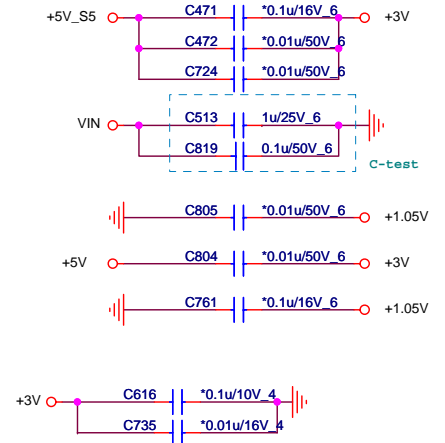
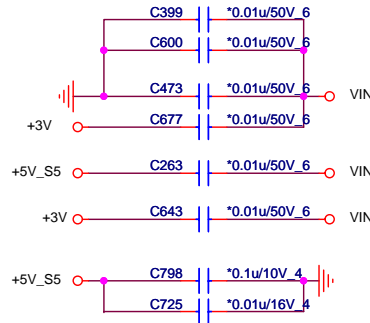
SW BOARD CONNECTOR(UIF)



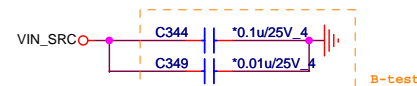
14" K/B(KBC)



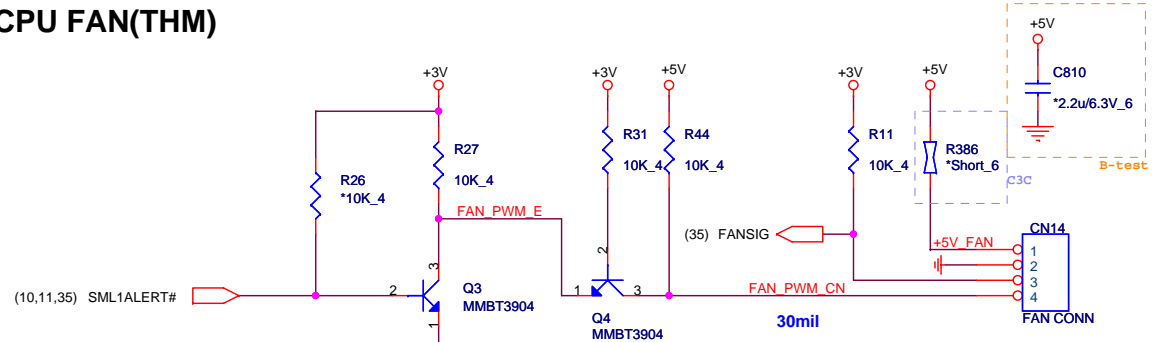
EE RETURN-PATH CAPACITORS(EMC)



STITCHING for LPC



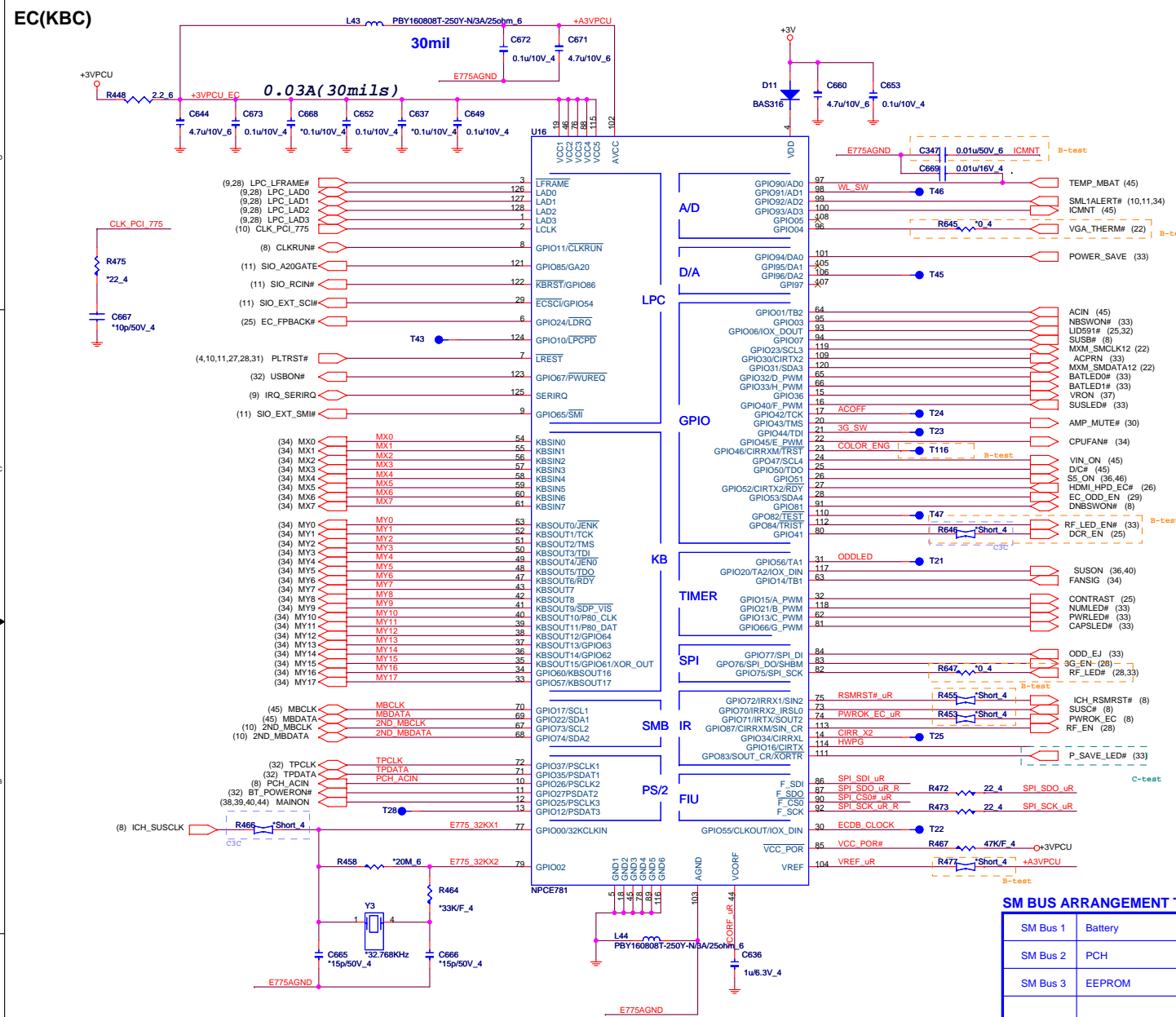
CPU FAN(THM)



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EC(KBC)



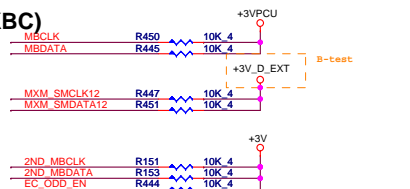
I/O ADDRESS SETTING(KBC)

SHBM=0: Enable shared memory with host BIOS

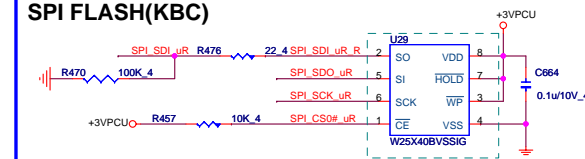
SHBM 

1/13 Confirm 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)

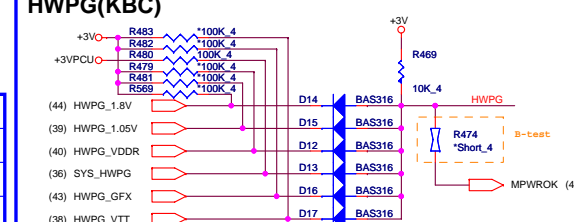


SPI FLASH(KBC)

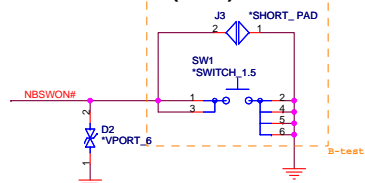


1/13 Confirm by vendor mail :
If the Southbridge enables 'Long Wait Abort' by default, the flash device should be 50MHz (or faster)

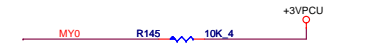
HWPG(KBC)

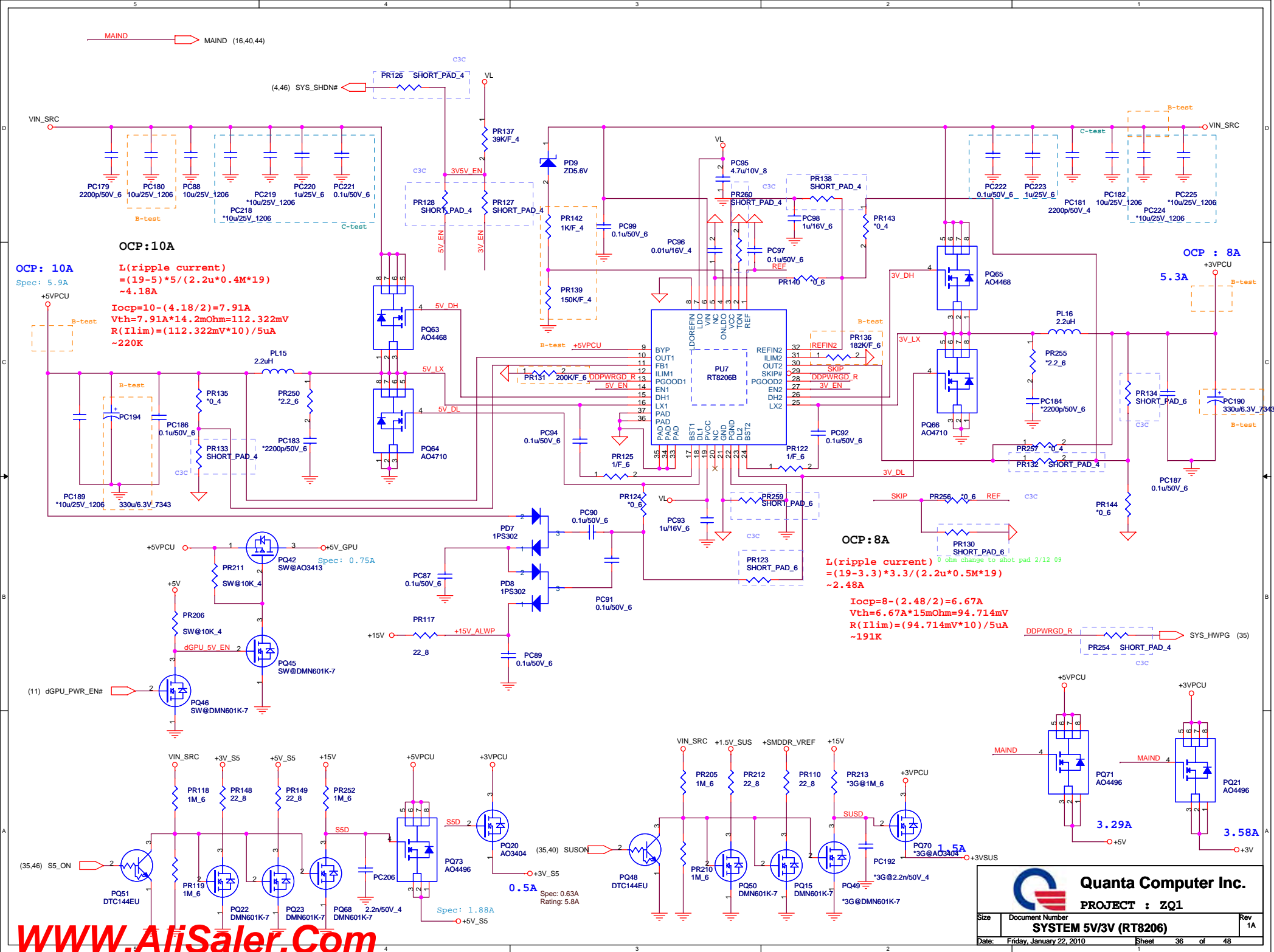


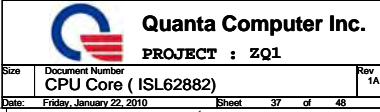
POWER-ON Switch(KBC)



INTERNAL KEYBOARD STRIP SET(KBC)







WWW.AliSaler.Com

