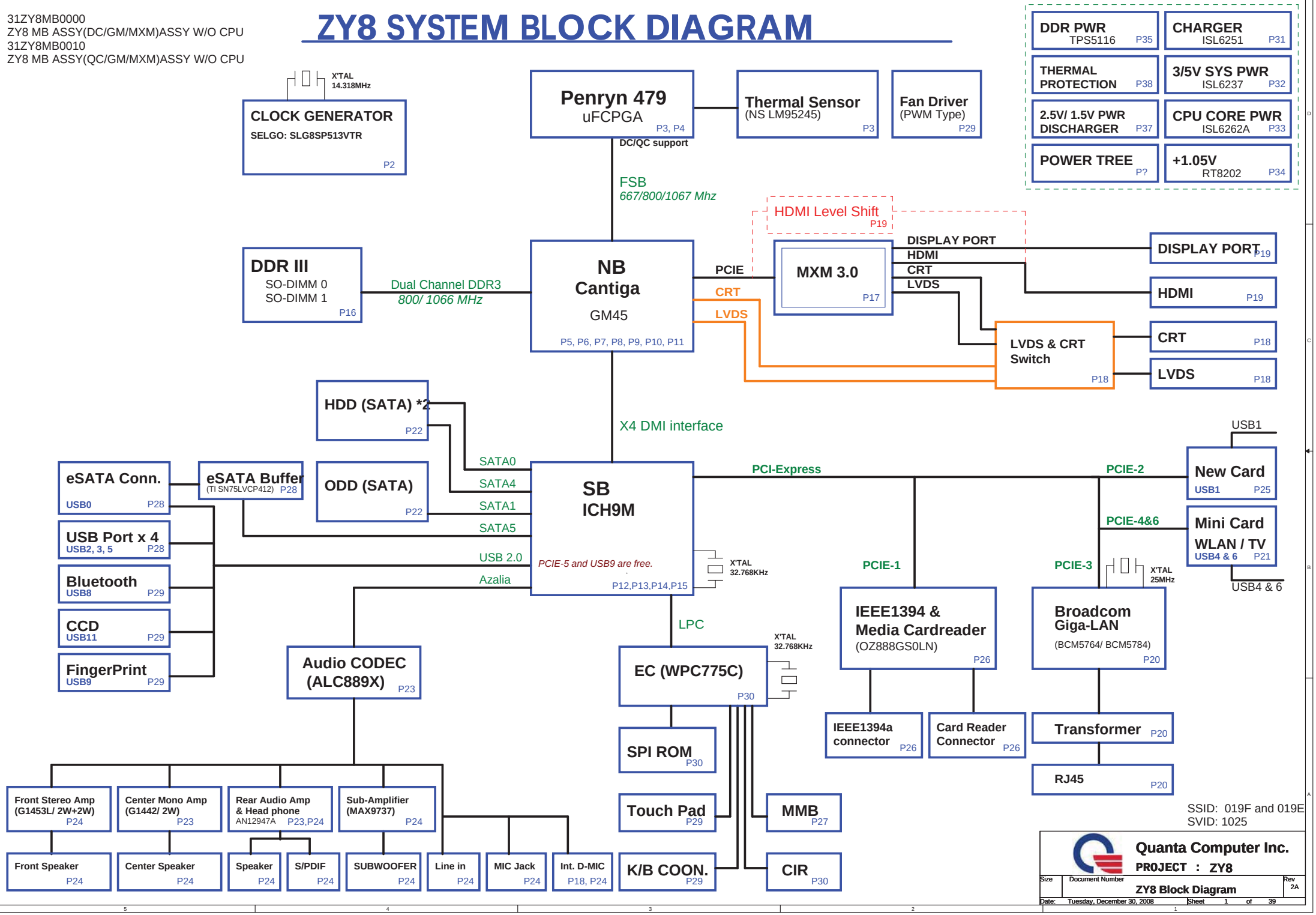
31ZY8MB0000
ZY8 MB ASSY(DC/GM/MXM)ASSY W/O CPU
31ZY8MB0010
ZY8 MB ASSY(QC/GM/MXM)ASSY W/O CPU

ZY8 SYSTEM BLOCK DIAGRAM



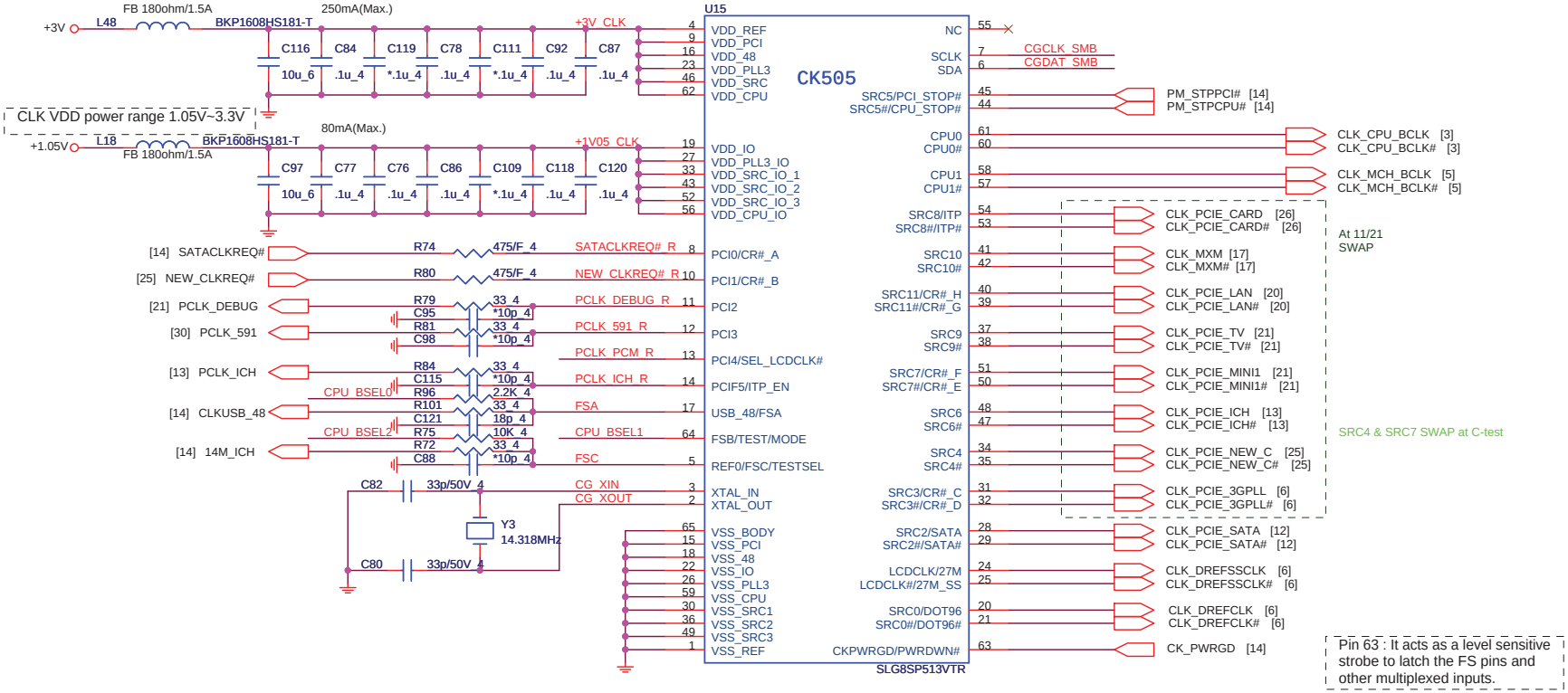
SSID: 019F and 019E
SVID: 1025

Quanta Computer Inc.
PROJECT : ZY8

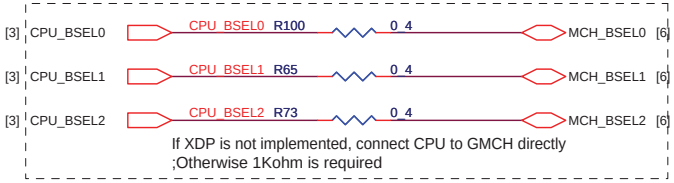
Size	Document Number	Rev
	ZY8 Block Diagram	2A

Date: Tuesday, December 30, 2008 Sheet 1 of 39

Clock Generator



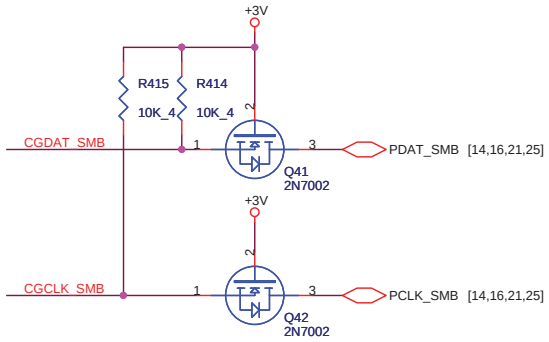
CPU Clock select



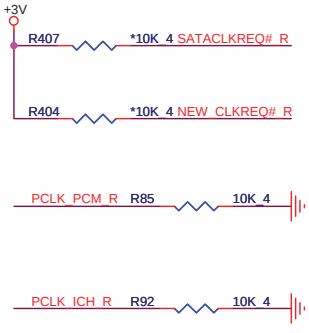
BSEL Frequency Select Table

FSC	FSB	FSA	Frequency
0	0	0	266Mhz
0	0	1	133Mhz
0	1	1	166Mhz
0	1	0	200Mhz
1	1	0	400Mhz
1	1	1	Reserved
1	0	1	100Mhz
1	0	0	333Mhz

SMBus



Strap table



Pin 8 : PCI_0 or CKREQ#_A selection
0 = PCI_0 output
1 = CKREQ#_A (Control SRC_0 & SRC_2)

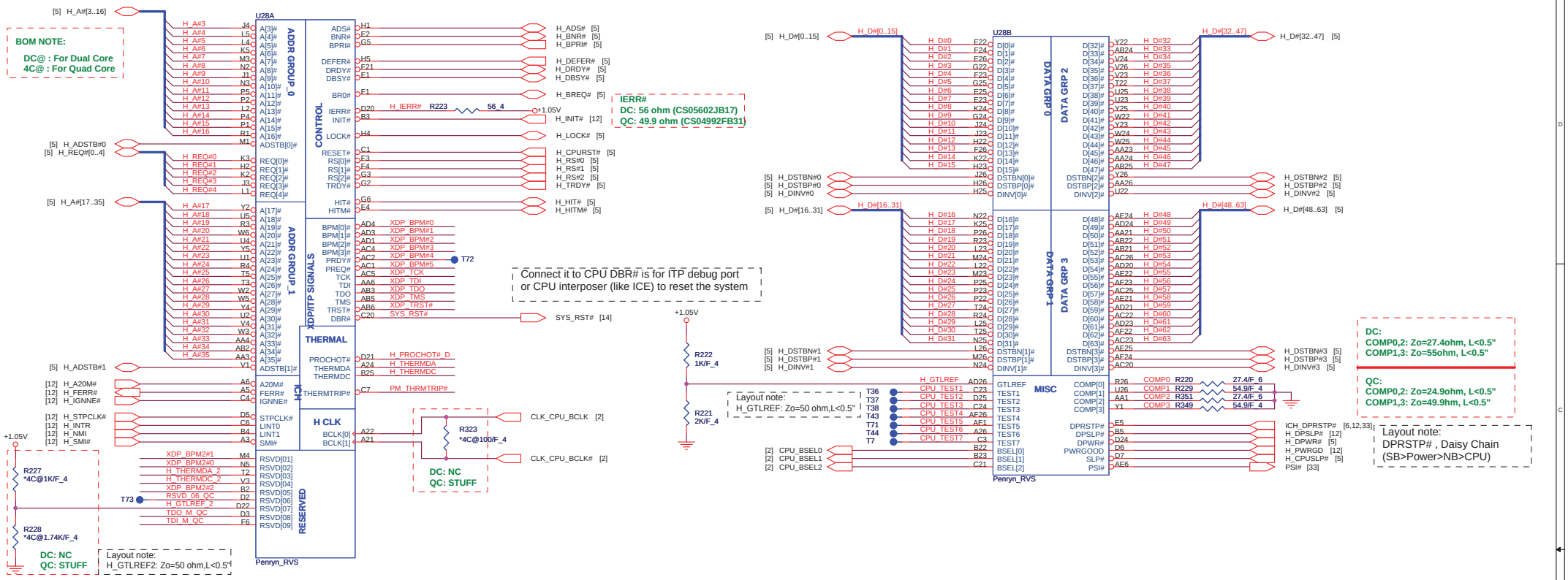
Pin 10 : PCI_1 or CKREQ#_B selection
0 = PCI_1 output
1 = CKREQ#_B (Control LCDCLK & SRC_4)

Pin 13 : For Pin 20/21 and 24/25 selection
0 = LCDCLK & DOT96 for internal graphic (Setting)
1 = 27M & 27M_SS &SRC_0 for external graphic

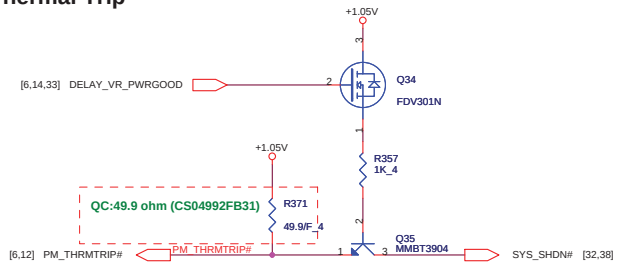
Pin 14 : For Pin 53/54 (CPU_ITP or SRC_8) selection
0 = SRC_8 (Setting)
1 = CPU_ITP

Quanta Computer Inc.
PROJECT : ZY8

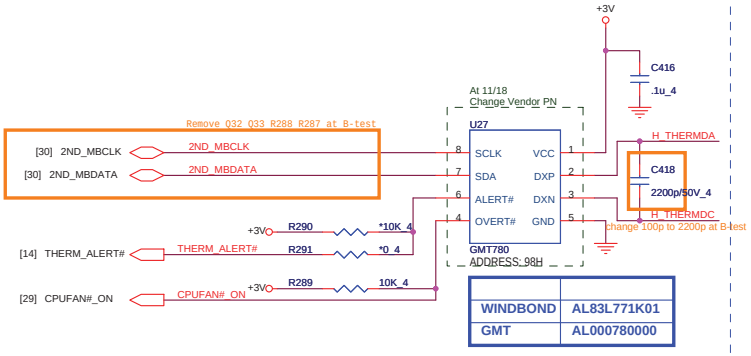
Size	Document Number	Rev
	CLOCK GENERATOR	2A
Date: Tuesday, February 17, 2009	Sheet 2 of 39	



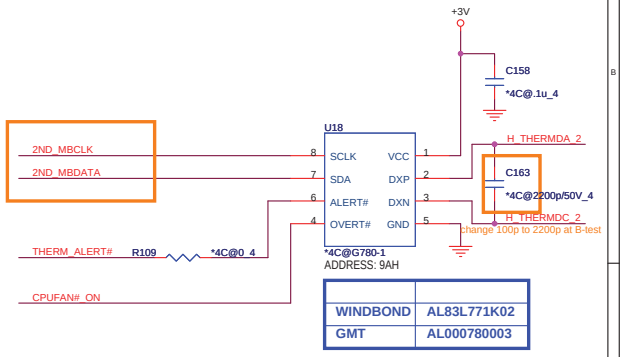
Thermal Trip



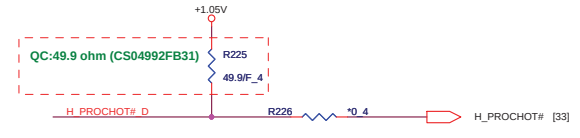
CPU #1 Thermal monitor



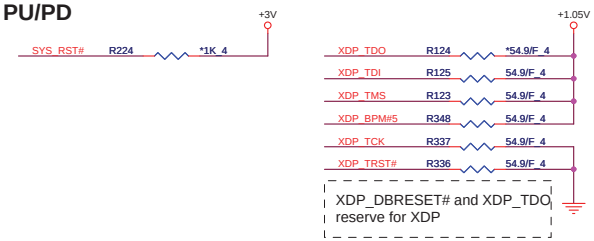
CPU #2 Thermal monitor

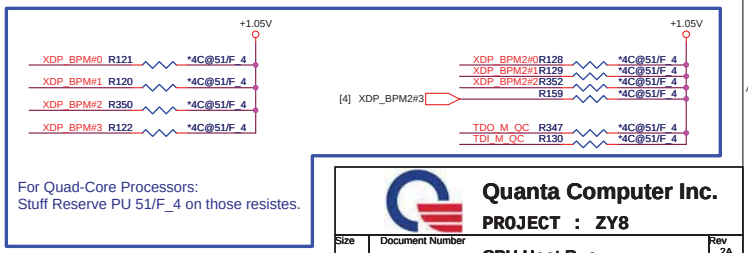


Processor hot



XDP PU/PD

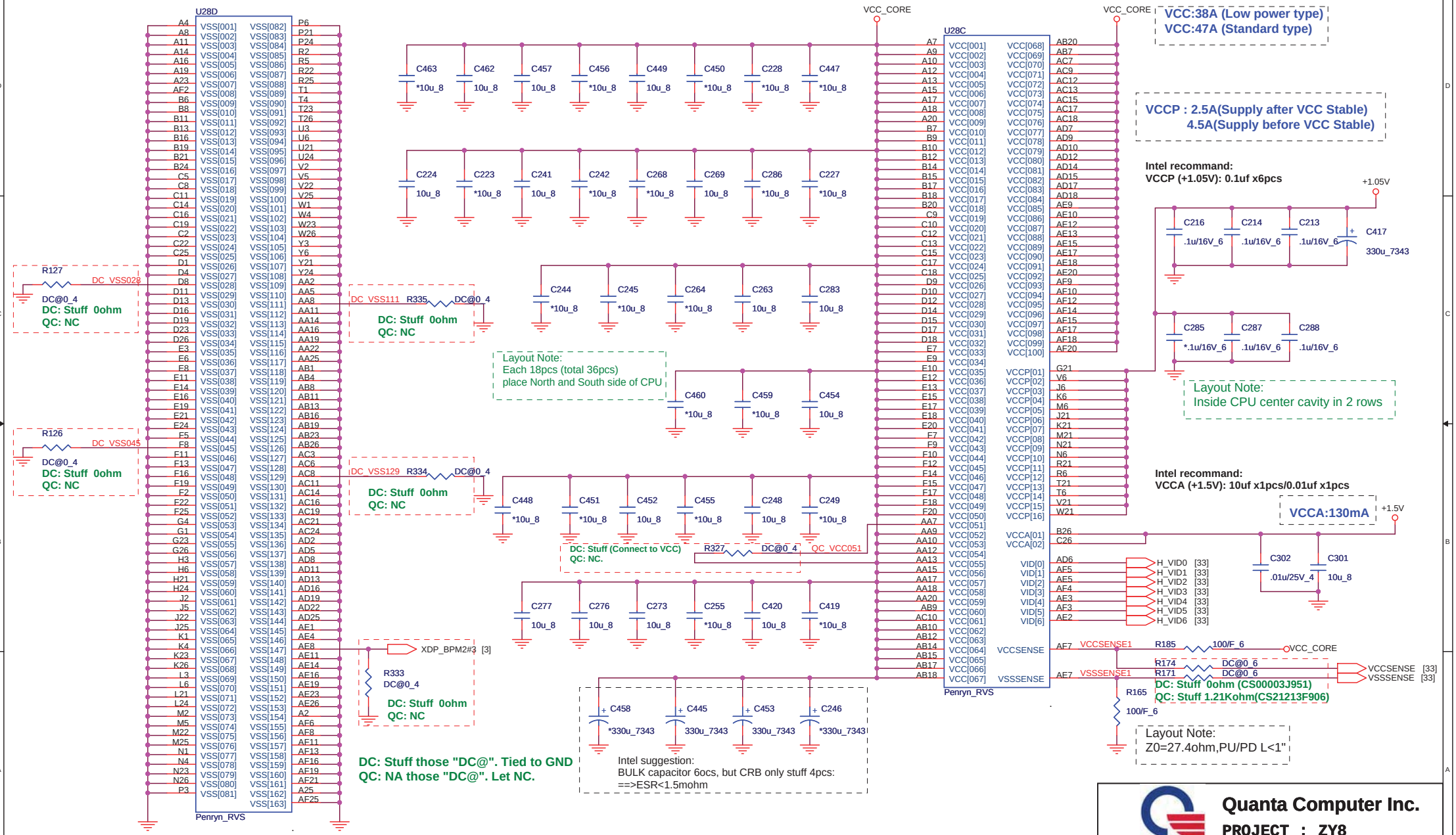




Quanta Computer Inc.
PROJECT : ZY8

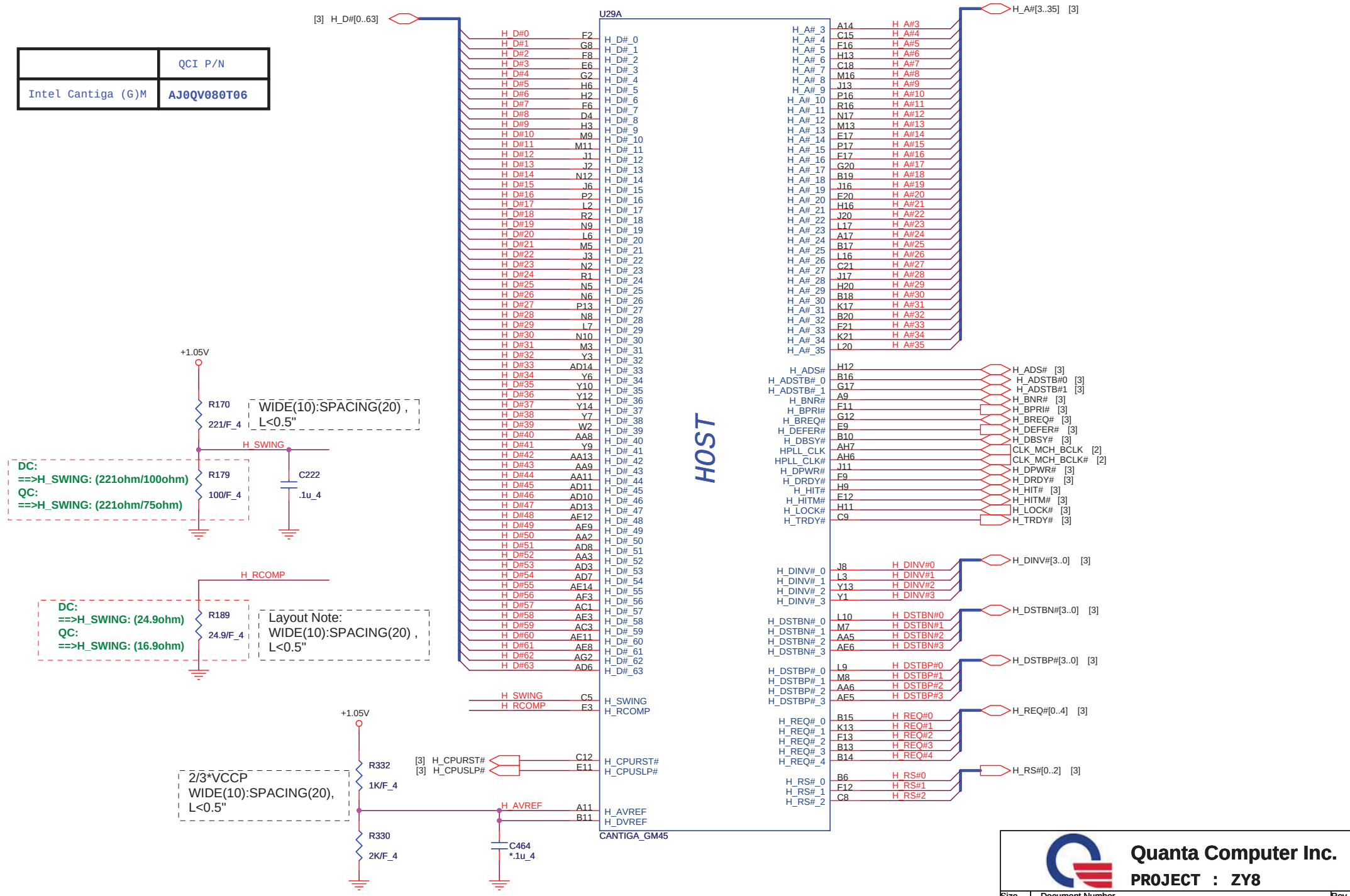
Size	Document Number	Rev
	CPU Host Bus	2A

Date: Friday, February 13, 2009 Sheet 3 of 39



Quanta Computer Inc.		
PROJECT : ZY8		
Size	Document Number	Rev
	CPU Power	3B
Date: Wednesday, February 04, 2009	Sheet 4 of 39	

	QCI P/N
Intel Cantiga (G)M	AJ0QV080T06



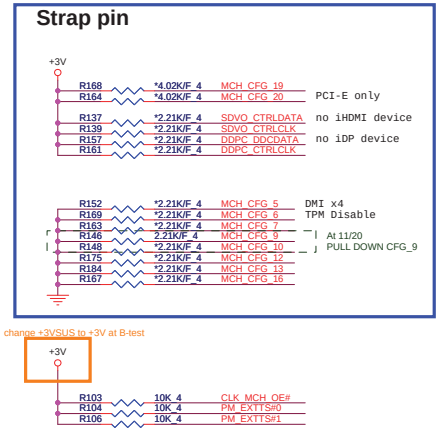
Quanta Computer Inc.
PROJECT : ZY8

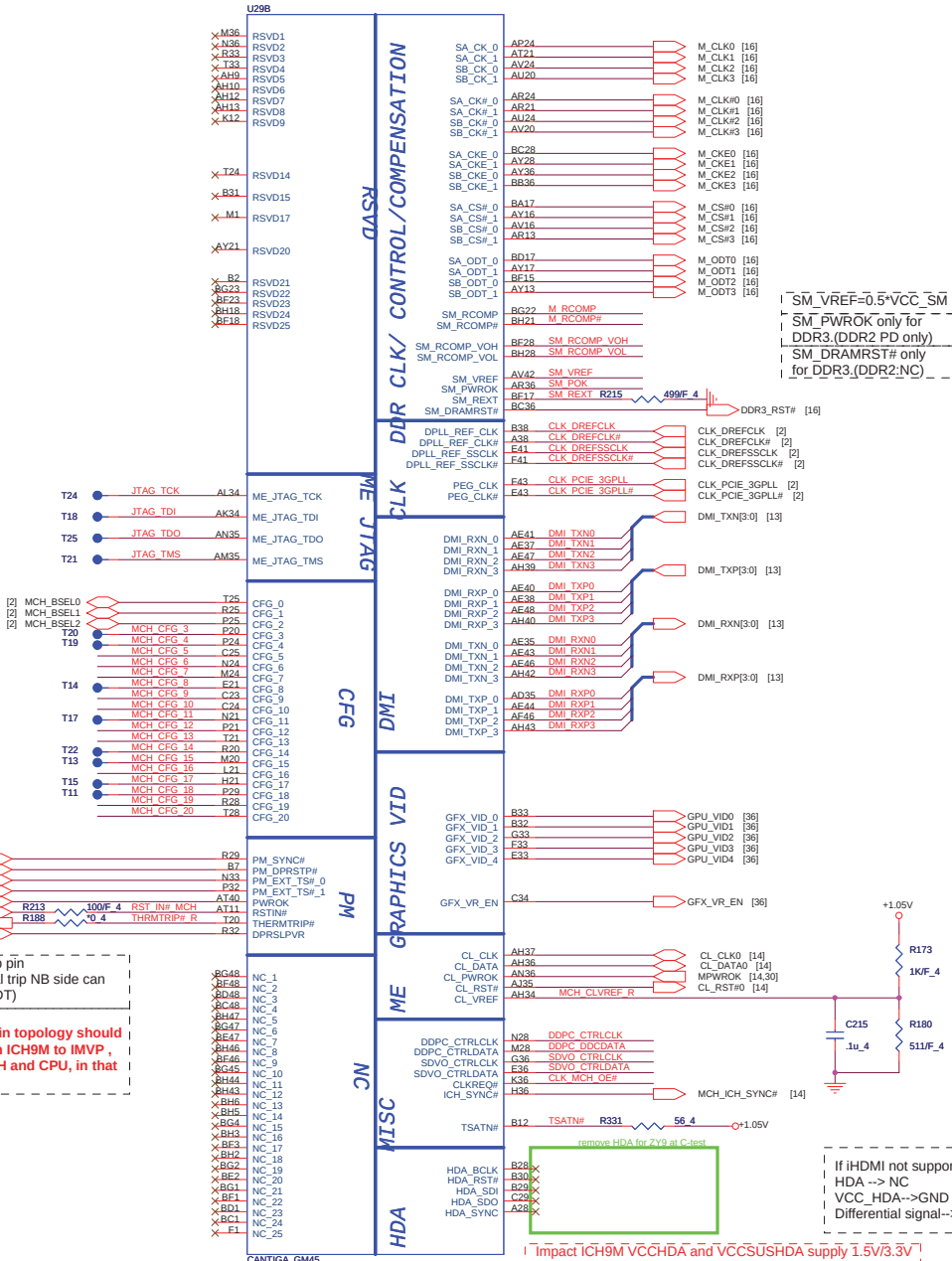
Size	Document Number	Rev
	GMCH HOST	3B
Date: Wednesday, February 11, 2009	Sheet 5 of 39	

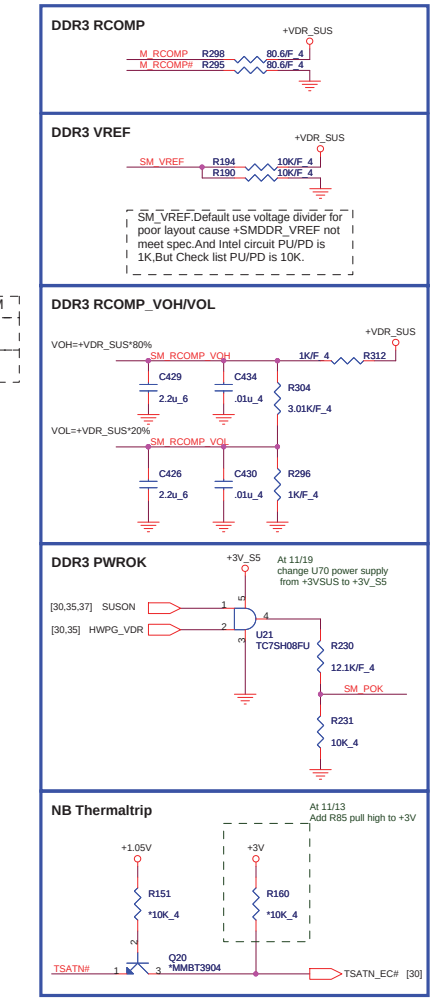
Strap table

Pin Name	Strap description	Configuration
CFG[2:0]	FSB Frequency Select	000= FSB 1066MHz 010 = FSB 800MHz 011 = FSB 667MHz
CFG[4:3]	Reserved	
CFG5	DMI X2 Select	0 = DMI X2 1 = DMI X4(Default)
CFG6	iTPM Host Interface	0 = iTPM Host Interface is enabled 1 = iTPM Host Interface is disabled(Default)
CFG7	ME TLS Confidentiality	0 = AMT Firmware will use TLS cipher suite with no confidentiality 1 = AMT Firmware will use TLS cipher suite with confidentiality(Default)
CFG8	Reserved	
CFG9	PCIE Graphics Lane Reversal	0 = Reverse Lanes 1 = Normal operation(Default)
CFG10	PCIE Loopback enable	0 = Enabled 1 = Disabled (Default)
CFG11	Reserved	
CFG12	ALLZ	0 = ALLZ mode enable 1 = disable(Default)
CFG13	XOR	0 = XOR mode enable 1 = disable(Default)
CFG[15:14]	Reserved	
CFG16	FSB Dynamic ODT	0 = Dynamic ODT disable 1 = Dynamic ODT Enable(Default)
CFG[18:17]	Reserved	
CFG19	DMI Lane Reversal	0 = Normal (Default) 1 = Lanes Reversed
CFG20	Digital Display Port (SDVO/DP/iHDMI) Concurrent with PCIE	0 = Only Digital Display port (SDVO/DP/iHDMI) or PCIE is operational (Default) 1 = Digital Display port (SDVO/DP/iHDMI) and PCIE are operating simultaneously via PEG port
SDVO_CTRLDATA	SDVO Present	0 = No SDVO/iHDMI Device Present(Default) 1 = SDVO/iHDMI Device present
DDPC_CTRLDATA	Digital Display Present	0 = Digital display(HDMI/DP) device absent(Default) 1 = Digital display(HDMI/DP) device present

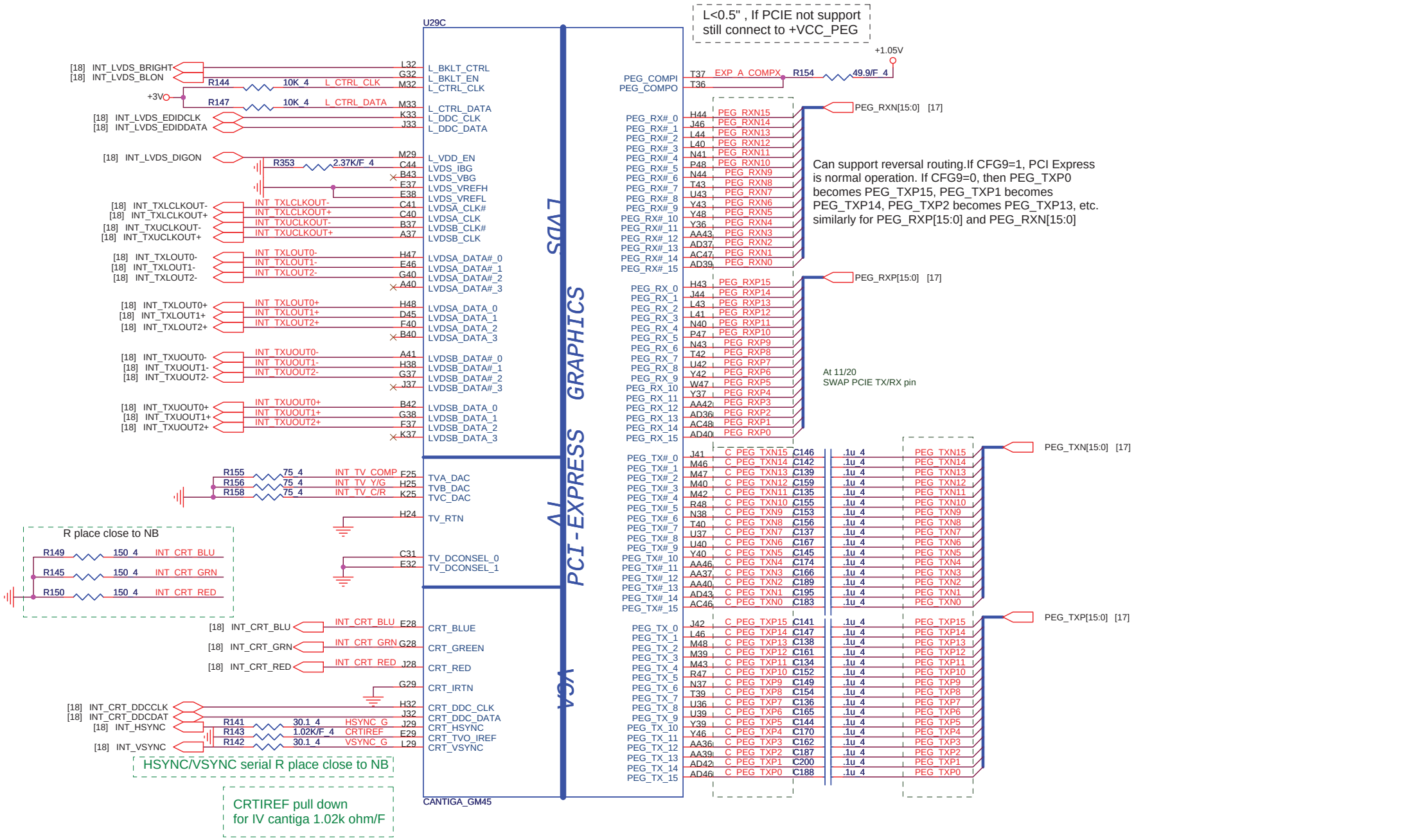
Strap pin



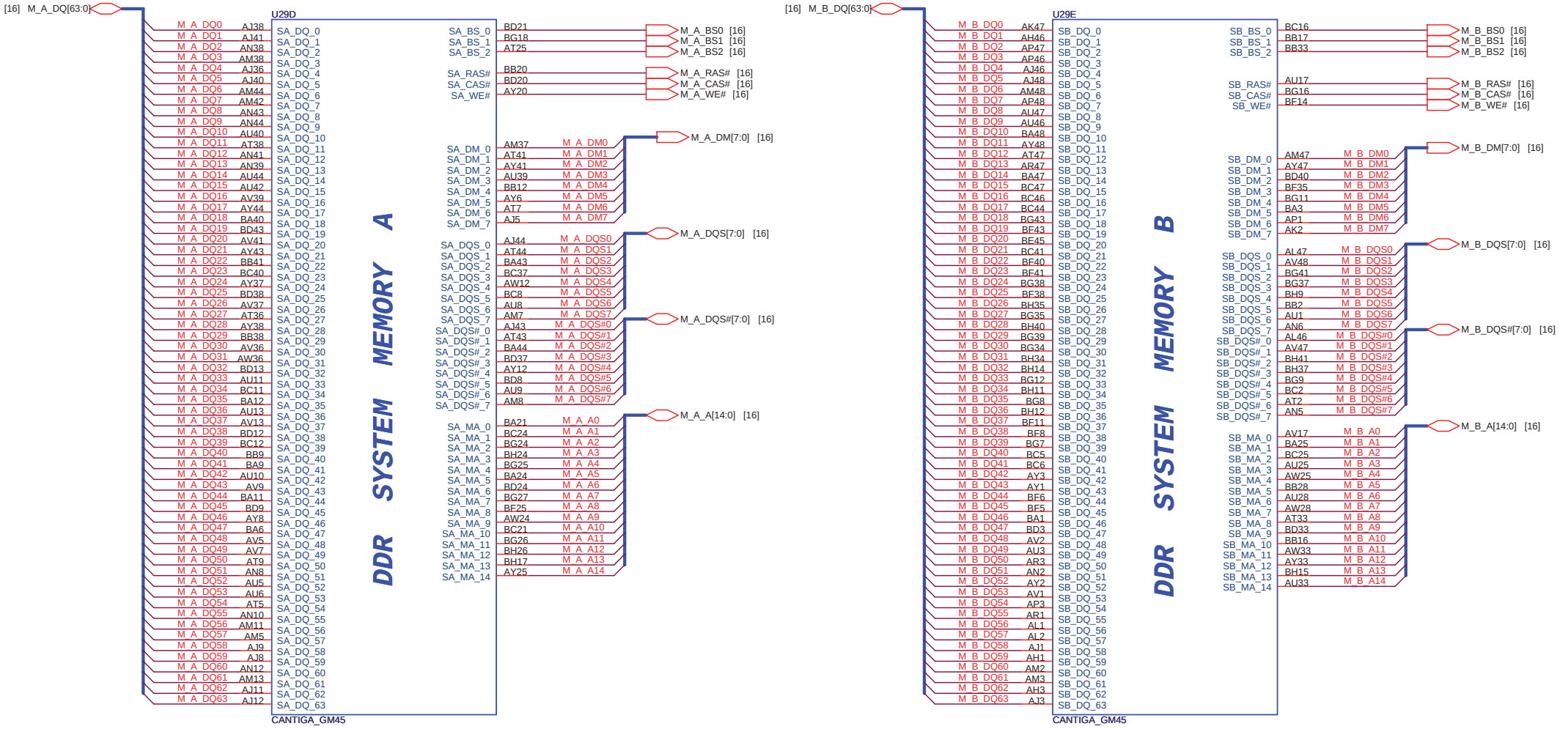




Quanta Computer Inc.			
PROJECT : ZY8			
Size	Document Number		Rev
	GMCH DMI		3B
Date: Wednesday, February 11, 2009	Sheet 6	of 39	



Quanta Computer Inc.		
PROJECT : ZY8		
Size	Document Number	Rev
	GMCH VGA/PEG	3B
Date: Wednesday, February 11, 2009	Sheet 7 of 39	



GMCH (CANTIGA)

Quanta Computer Inc.

PROJECT : ZY8

Size	Document Number	Rev
	GMCH DDR I/F	3B

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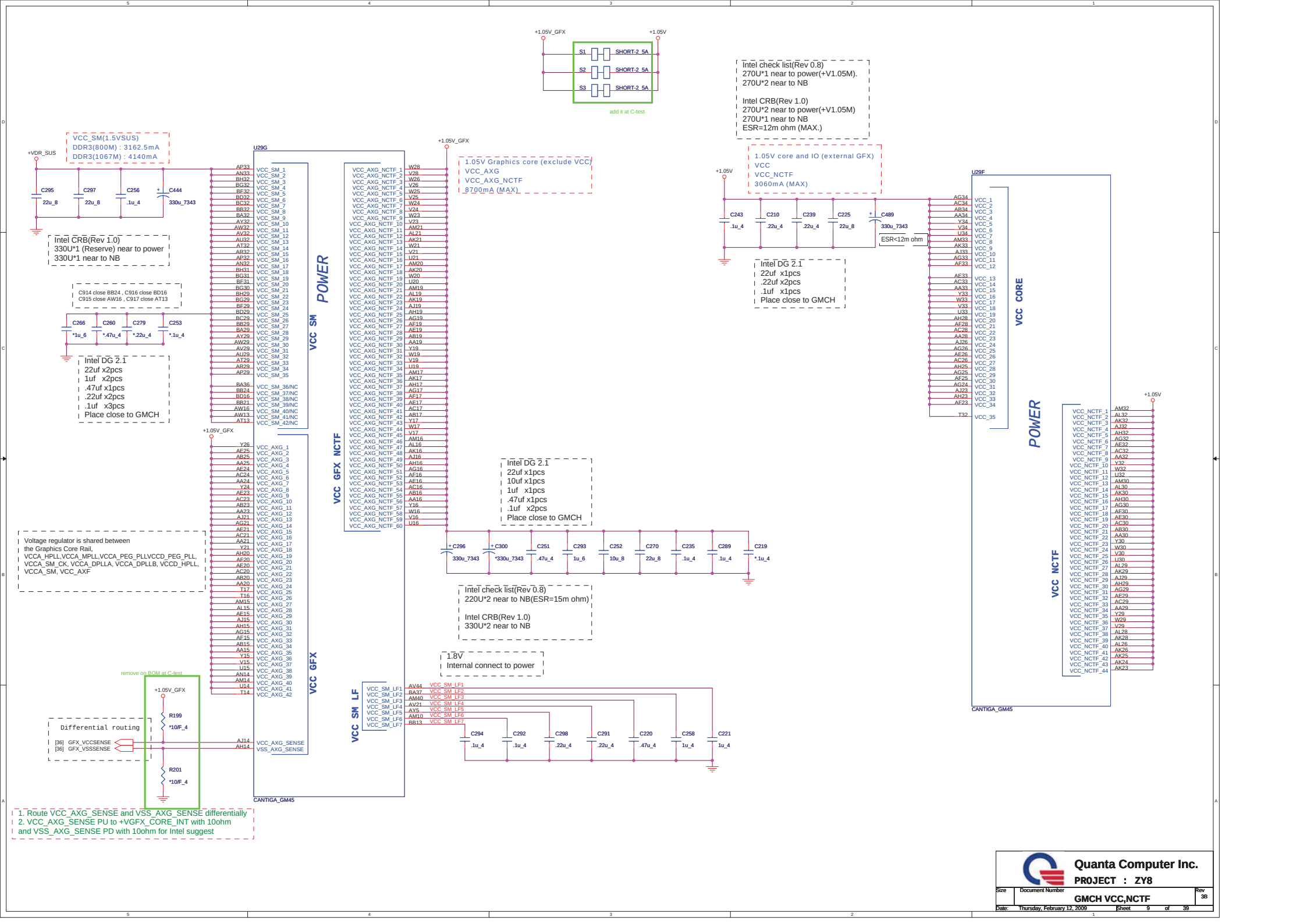
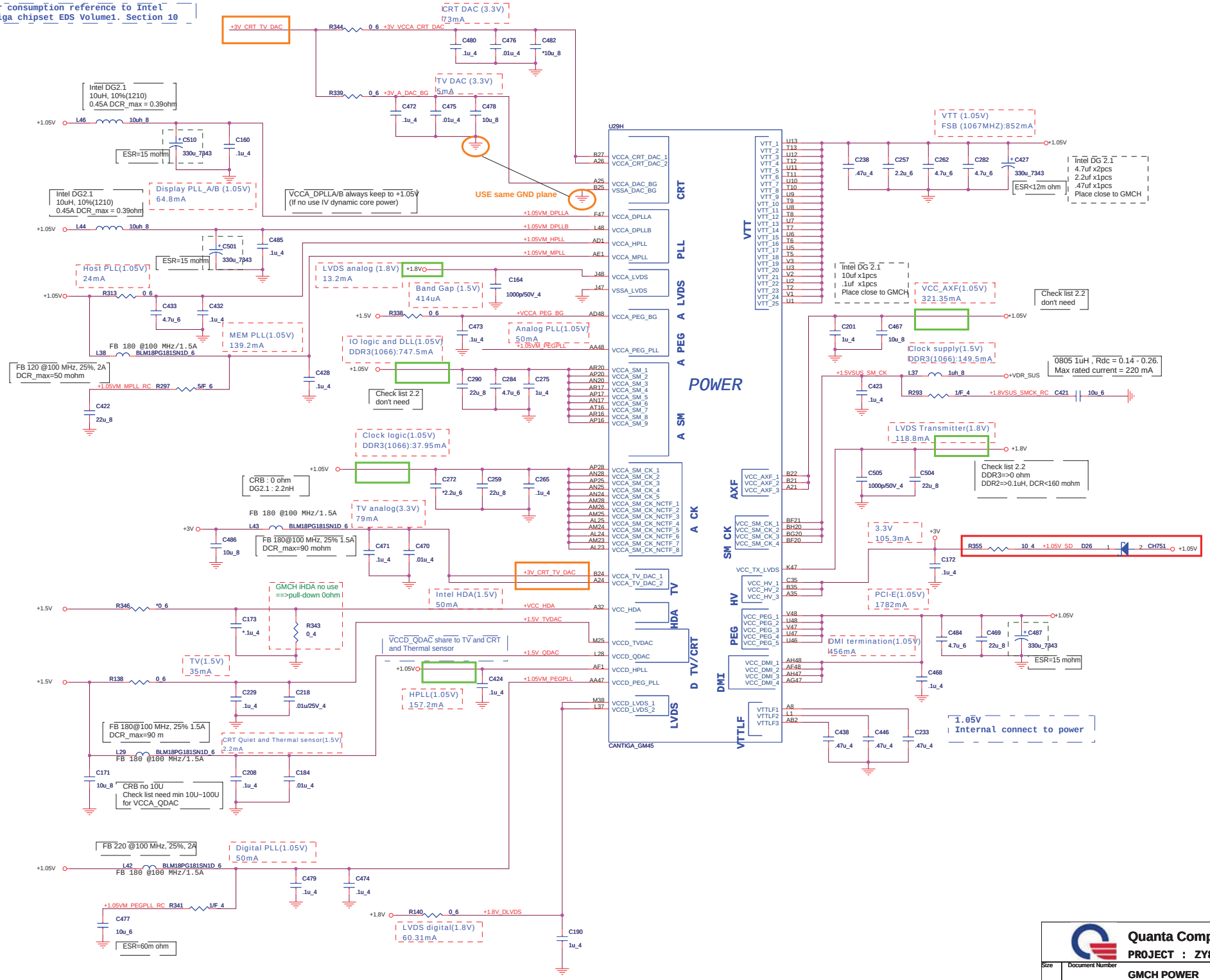
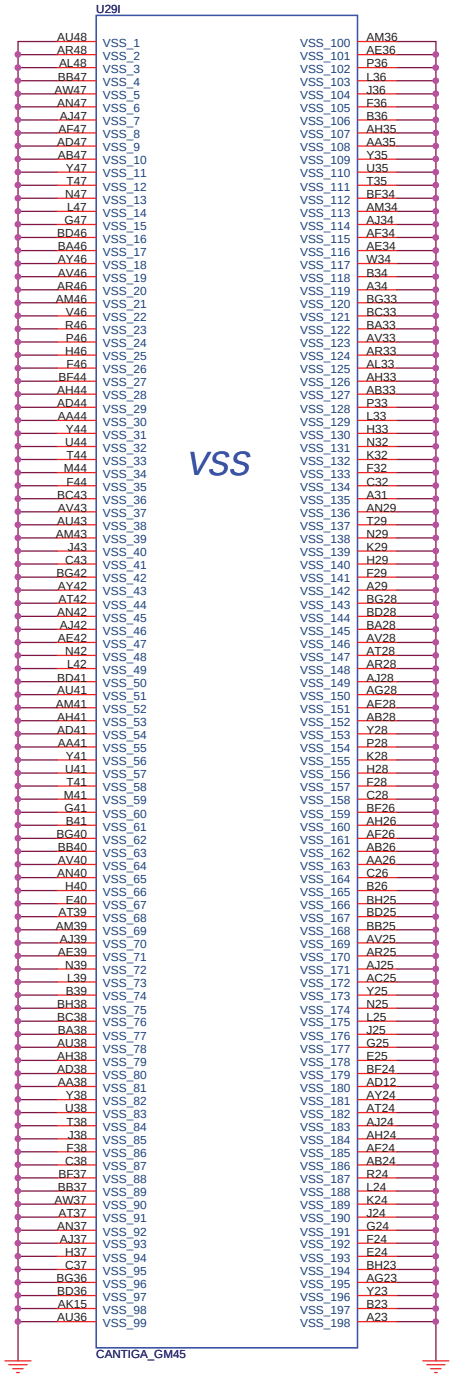
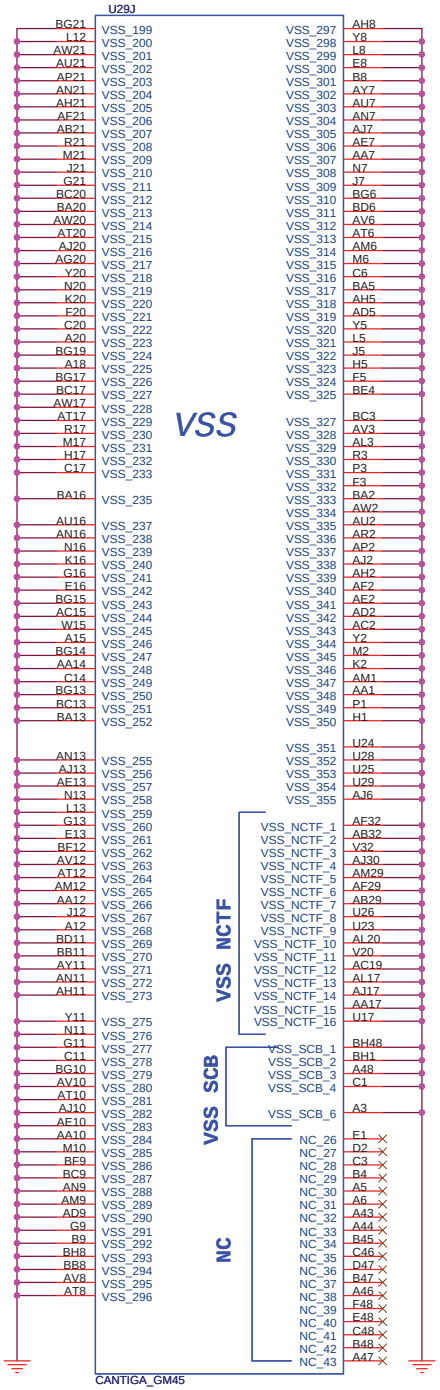

+1.05V_GFX
+1.05V
S1
SHORT-2 5A
S2
SHORT-2 5A
S3
SHORT-2 5A
add it at C-test
Intel check list(Rev 0.8)
270U*1 near to power(+V1.05M).
270U*2 near to NB
Intel CRB(Rev 1.0)
270U*2 near to power(+V1.05M)
270U*1 near to NB
ESR=12m ohm (MAX.)
VCC_SM(1.5VSUS)
DDR3(800M) : 3162.5mA
DDR3(1067M) : 4140mA
+VDR_SUS
C295 22u_8
C297 22u_8
C256 .1u_4
C444 330u_7343
Intel CRB(Rev 1.0)
330U*1 (Reserve) near to power
330U*1 near to NB
C914 close BB24 , C916 close BD16
C915 close AW16 , C917 close AT13
C266 *1u_6
C260 *.47u_4
C279 *.22u_4
C253 *.1u_4
Intel DG 2.1
22uf x2pcs
1uf x2pcs
.47uf x1pcs
.22uf x2pcs
.1uf x3pcs
Place close to GMCH
U29G
VCC_SM_1
VCC_SM_2
VCC_SM_3
VCC_SM_4
VCC_SM_5
VCC_SM_6
VCC_SM_7
VCC_SM_8
VCC_SM_9
VCC_SM_10
VCC_SM_11
VCC_SM_12
VCC_SM_13
VCC_SM_14
VCC_SM_15
VCC_SM_16
VCC_SM_17
VCC_SM_18
VCC_SM_19
VCC_SM_20
VCC_SM_21
VCC_SM_22
VCC_SM_23
VCC_SM_24
VCC_SM_25
VCC_SM_26
VCC_SM_27
VCC_SM_28
VCC_SM_29
VCC_SM_30
VCC_SM_31
VCC_SM_32
VCC_SM_33
VCC_SM_34
VCC_SM_35
VCC_SM_36/NC
VCC_SM_37/NC
VCC_SM_38/NC
VCC_SM_39/NC
VCC_SM_40/NC
VCC_SM_41/NC
VCC_SM_42/NC
VCC SM
POWER
+1.05V_GFX
1.05V Graphics core (exclude VCC)
VCC_AXG
VCC_AXG_NCTF
8700mA (MAX)
VCC_AXG_NCTF_1
VCC_AXG_NCTF_2
VCC_AXG_NCTF_3
VCC_AXG_NCTF_4
VCC_AXG_NCTF_5
VCC_AXG_NCTF_6
VCC_AXG_NCTF_7
VCC_AXG_NCTF_8
VCC_AXG_NCTF_9
VCC_AXG_NCTF_10
VCC_AXG_NCTF_11
VCC_AXG_NCTF_12
VCC_AXG_NCTF_13
VCC_AXG_NCTF_14
VCC_AXG_NCTF_15
VCC_AXG_NCTF_16
VCC_AXG_NCTF_17
VCC_AXG_NCTF_18
VCC_AXG_NCTF_19
VCC_AXG_NCTF_20
VCC_AXG_NCTF_21
VCC_AXG_NCTF_22
VCC_AXG_NCTF_23
VCC_AXG_NCTF_24
VCC_AXG_NCTF_25
VCC_AXG_NCTF_26
VCC_AXG_NCTF_27
VCC_AXG_NCTF_28
VCC_AXG_NCTF_29
VCC_AXG_NCTF_30
VCC_AXG_NCTF_31
VCC_AXG_NCTF_32
VCC_AXG_NCTF_33
VCC_AXG_NCTF_34
VCC_AXG_NCTF_35
VCC_AXG_NCTF_36
VCC_AXG_NCTF_37
VCC_AXG_NCTF_38
VCC_AXG_NCTF_39
VCC_AXG_NCTF_40
VCC_AXG_NCTF_41
VCC_AXG_NCTF_42
VCC_AXG_NCTF_43
VCC_AXG_NCTF_44
VCC_AXG_NCTF_45
VCC_AXG_NCTF_46
VCC_AXG_NCTF_47
VCC_AXG_NCTF_48
VCC_AXG_NCTF_49
VCC_AXG_NCTF_50
VCC_AXG_NCTF_51
VCC_AXG_NCTF_52
VCC_AXG_NCTF_53
VCC_AXG_NCTF_54
VCC_AXG_NCTF_55
VCC_AXG_NCTF_56
VCC_AXG_NCTF_57
VCC_AXG_NCTF_58
VCC_AXG_NCTF_59
VCC_AXG_NCTF_60
VCC GFX NCTF
Intel DG 2.1
22uf x1pcs
10uf x1pcs
1uf x1pcs
.47uf x1pcs
.1uf x2pcs
Place close to GMCH
C296 330u_7343
C300 *330u_7343
C251 .47u_4
C293 1u_6
C252 10u_8
C270 22u_8
C235 .1u_4
C289 .1u_4
C219 *.1u_4
Intel check list(Rev 0.8)
220U*2 near to NB(ESR=15m ohm)
Intel CRB(Rev 1.0)
330U*2 near to NB
1.8V
Internal connect to power
VCC_SM_LF1
VCC_SM_LF2
VCC_SM_LF3
VCC_SM_LF4
VCC_SM_LF5
VCC_SM_LF6
VCC_SM_LF7
VCC SM LF
C294 .1u_4
C292 .1u_4
C298 .22u_4
C291 .22u_4
C220 .47u_4
C258 1u_4
C221 1u_4
+1.05V
1.05V core and IO (external GFX)
VCC
VCC_NCTF
3060mA (MAX)
C243 .1u_4
C210 .22u_4
C239 .22u_4
C225 22u_8
C489 330u_7343
ESR<12m ohm
Intel DG 2.1
22uf x1pcs
.22uf x2pcs
.1uf x1pcs
Place close to GMCH
U29F
VCC_1
VCC_2
VCC_3
VCC_4
VCC_5
VCC_6
VCC_7
VCC_8
VCC_9
VCC_10
VCC_11
VCC_12
VCC_13
VCC_14
VCC_15
VCC_16
VCC_17
VCC_18
VCC_19
VCC_20
VCC_21
VCC_22
VCC_23
VCC_24
VCC_25
VCC_26
VCC_27
VCC_28
VCC_29
VCC_30
VCC_31
VCC_32
VCC_33
VCC_34
VCC_35
VCC CORE
POWER
VCC_NCTF_1
VCC_NCTF_2
VCC_NCTF_3
VCC_NCTF_4
VCC_NCTF_5
VCC_NCTF_6
VCC_NCTF_7
VCC_NCTF_8
VCC_NCTF_9
VCC_NCTF_10
VCC_NCTF_11
VCC_NCTF_12
VCC_NCTF_13
VCC_NCTF_14
VCC_NCTF_15
VCC_NCTF_16
VCC_NCTF_17
VCC_NCTF_18
VCC_NCTF_19
VCC_NCTF_20
VCC_NCTF_21
VCC_NCTF_22
VCC_NCTF_23
VCC_NCTF_24
VCC_NCTF_25
VCC_NCTF_26
VCC_NCTF_27
VCC_NCTF_28
VCC_NCTF_29
VCC_NCTF_30
VCC_NCTF_31
VCC_NCTF_32
VCC_NCTF_33
VCC_NCTF_34
VCC_NCTF_35
VCC_NCTF_36
VCC_NCTF_37
VCC_NCTF_38
VCC_NCTF_39
VCC_NCTF_40
VCC_NCTF_41
VCC_NCTF_42
VCC_NCTF_43
VCC_NCTF_44
VCC NCTF
CANTIGA_GM45
Voltage regulator is shared between
the Graphics Core Rail,
VCCA_HPLL,VCCA_MPLL,VCCA_PEG_PLLVCCD_PEG_PLL,
VCCA_SM_CK, VCCA_DPLLA, VCCA_DPLLB, VCCD_HPLL,
VCCA_SM, VCC_AXF
remove on BOM at C-test
Differential routing
[36] GFX_VCCSENSE
[36] GFX_VSSSENSE
R199 *10/F_4
R201 *10/F_4
VCC_AXG_SENSE
VSS_AXG_SENSE
VCC GFX
CANTIGA_GM45
1. Route VCC_AXG_SENSE and VSS_AXG_SENSE differentially
2. VCC_AXG_SENSE PU to +VGFX_CORE_INT with 10ohm
and VSS_AXG_SENSE PD with 10ohm for Intel suggest
Quanta Computer Inc.
PROJECT : ZY8
Size
Document Number
GMCH VCC,NCTF
Rev 3B
Date: Thursday, February 12, 2009
Sheet 9 of 39

Power consumption reference to Intel Cantiga chipset EDS Volume1. Section 10

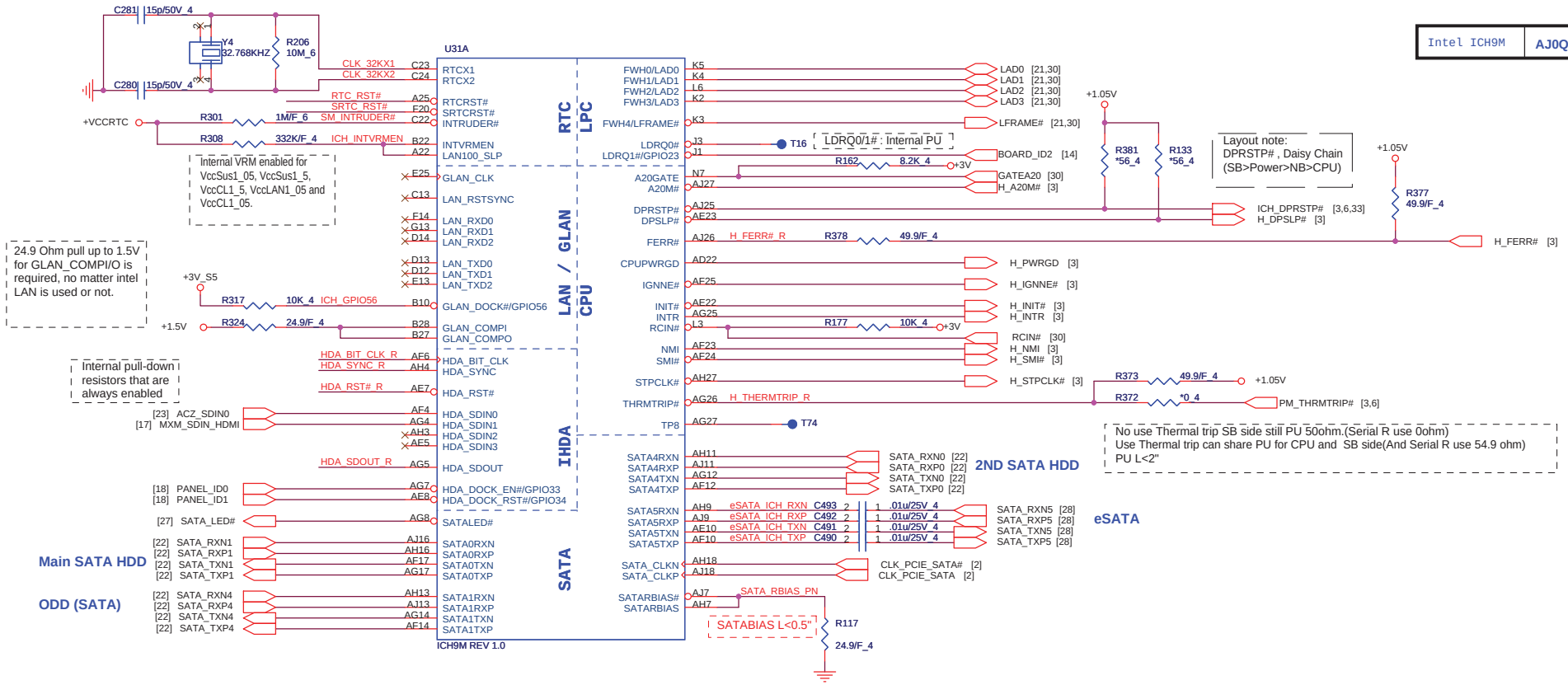






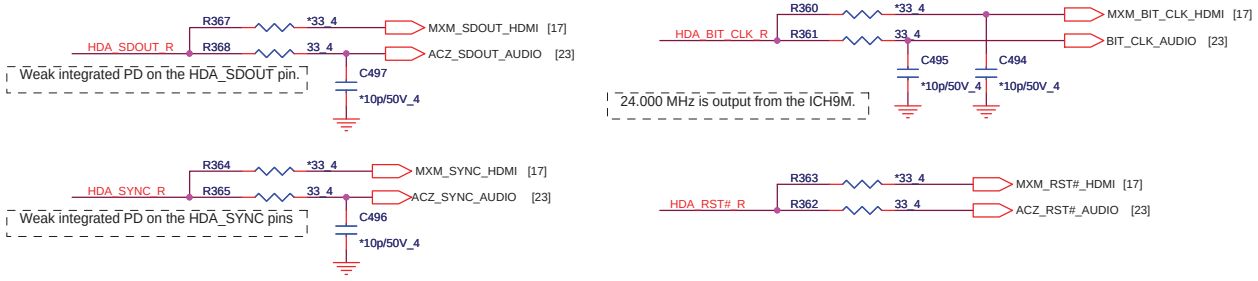
Quanta Computer Inc.			
PROJECT : ZY8			
Size	Document Number		Rev
	GMCH VSS		3B
Date: Wednesday, February 11, 2009		Sheet 11 of 39	

ICH9M

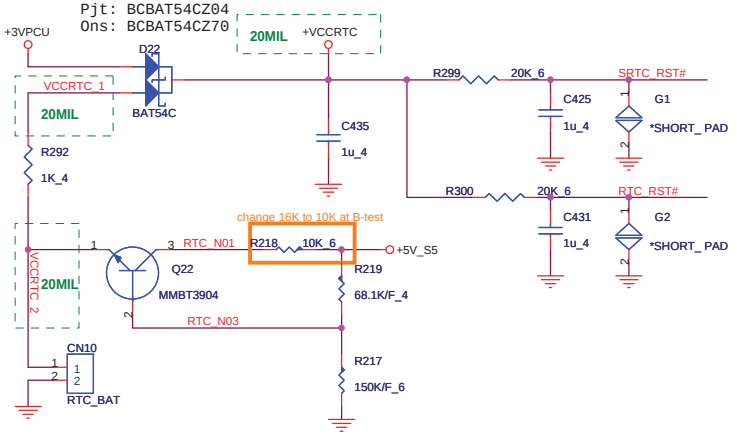


Intel ICH9M	AJ0QT090T01

HD Audio



RTC



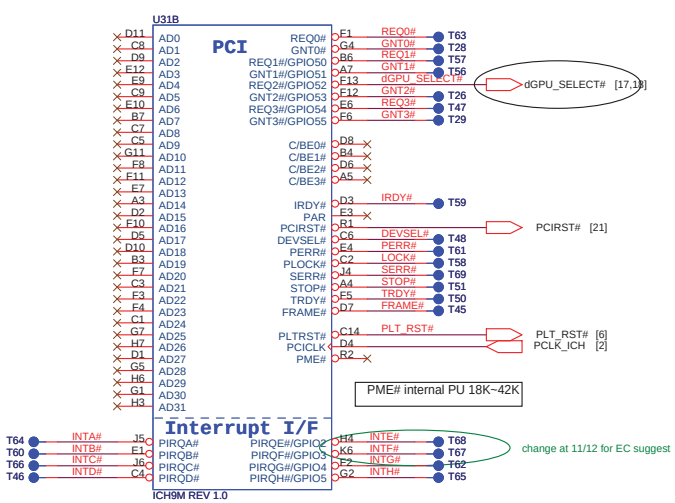
South Bridge Strap Pin (1/3)

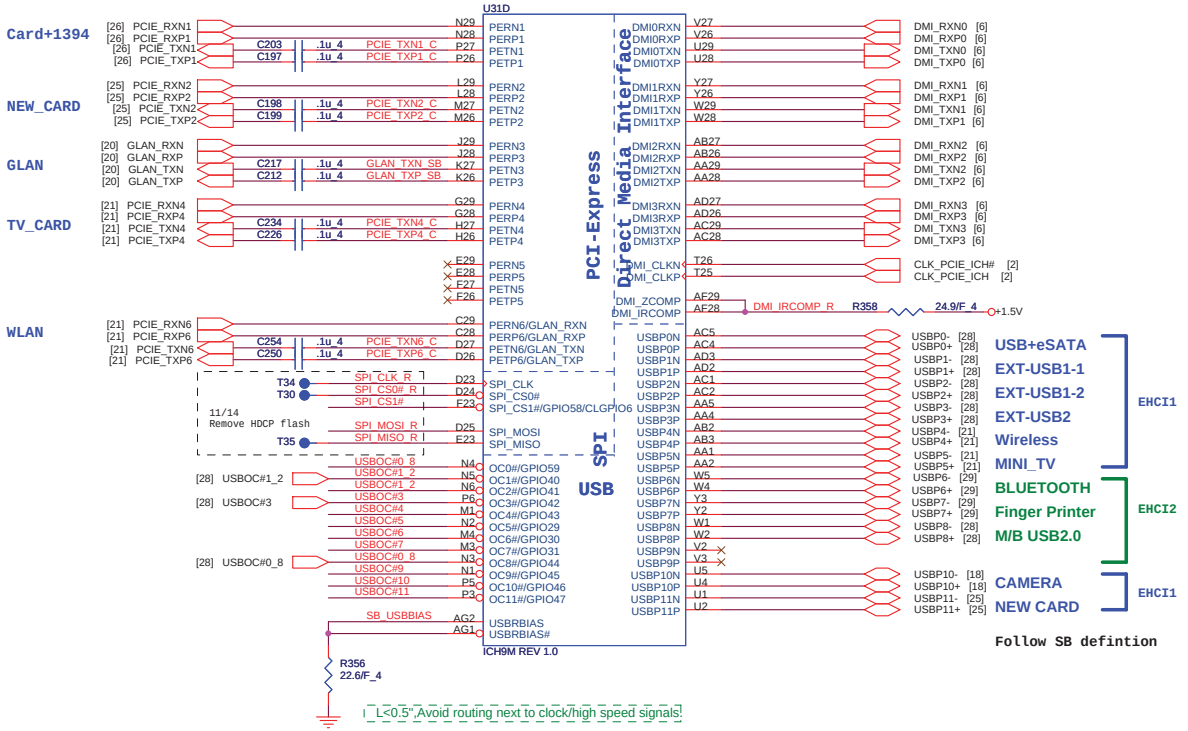
Pin Name	Strap description	Sampled	Configuration	PU/PD
HDA_DOCK_EN/ GPIO33	Flash Descriptor Security Override Strap	PWROK	0 = The Flash Descriptor Security will be overridden. 1 = The security measures defined in the Flash Descriptor will be in effect	This strap should only be enabled in manufacturing environments using an external pull-up resistor.
SATALED#	PCI Express Lane Reversal (Lanes 1-4)	PWROK	Internal PU	
TP3	XOR Chain Entrance	PWROK	ICH_TP3 / HDA_SDOUT / Description 0 / 0 / RSVD 0 / 1 / Enter XOR Chain 1 / 0 / Normal opration(Default) 1 / 1 / Set PCIE port config bit 1	[14] ICH_TP3 — ICH_TP3 — R316 — *1K_4
HDA_SDOUT	XOR Chain Entrance /PCI Express* Port Config 1 bit 1(Port 1-4)	PWROK		HDA_SDOUT_R — R366 — *1K_4 — +3V

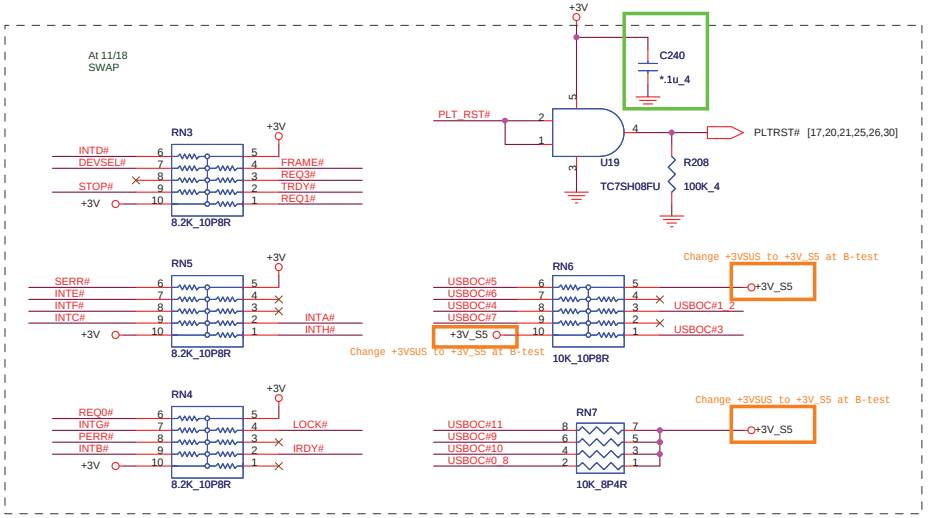
Quanta Computer Inc.
PROJECT : ZY8

Size	Document Number	Rev
	ICH9M HOST	3B
Date: Tuesday, February 10, 2009	Sheet 12 of 39	

ICH9M







South Bridge Strap Pin (2/3)

Pin Name	Strap description	Sampled	Configuration	PU/PD
HDA_SYNC	PCI Express Port Config 1 bit 0 (Port 1-4)	PWROK	0 = Default 1 = Setting bit 0	
GNT2# / GPIO53	PCI Express Port Config 2 bit 2 (Port 5-6)	PWROK	0 = Setting bit 2 1 = Default	
GNT1# / GPIO51	ESI Strap(Server Only)	PWROK	0 = DMI for ESI-compatible 1 = Default	
GNT3# / GPIO55	Top-Block Swap Override	PWROK	0 = "top-block swap" mode 1 = Default	GNT3# R193 *1K_4
SPI_MOSI	Integrated TPM Enable	CLPWROK	0 = INT TPM disable(Default) 1 = INT TPM enable	SPI_MOSI_R R200 *20K_4 +3V_S5
GNT0#	Boot BIOS Selection 0	PWROK	PCI_GNT#0 / SPI_CS#1 / Boot Location 0 / 1 / SPI	GNT0# R186 *1K_4
SPI_CS1# / GPIO58 / CLGPIO6	Boot BIOS Selection 1	CLPWROK	1 / 0 / PCI 1 / 1 / **LPC(Default)**	SPI_CS1# R191 *1K_4

Quanta Computer Inc.
PROJECT : ZY8

Size	Document Number	Rev
	ICH9M PCIE / PCI / USB	3B

Date: Friday, February 13, 2009 Sheet 13 of 39

MXM PU

SATA[x]GP pins if unused require
8.2-k to 10-k pull-up to Vcc3_3 or
8.2-k to 10-k pull-down to ground

PWRBTN : 16 ms of internal debounce logic on this pin and internal PU 24K

TPM Physical Presence for iTPM.

<Checklist ver0.8>
If integrated LAN is not used LAN_RST# tie it to GND.NC serial R from RSMRST#.
If Intel LAN is used with Wake On LAN, tie LAN_RST# to RSMRST# and NC 0ohm.

CL_PWROK must not assert after PWROK asserts for IAMT.
CL_PWROK to the NB and SB should be connected to existing PWROK inputs on the NB and SB on a platform with no IAMT

not support IAMT. So this interface follow CRB/Checklist PU only

At 11/19
GPIO7 change from No-use to "dGPU_EDIDSEL#"

CL VREF

VREF1 CRB connect to +3V_S5
Checklist connect to +3V(iAMT reserve)

The ICH9M Controller Link 1 VREF circuit is required only if Intel AMT is to be supported.

ICH PWROK

DELAY_VR_PWRGOOD need PU 2K to +3V.
PU at power side

Resume RST

Change +3VSUS to +3V_S5 at B-test

Intel FAE suggestion to add for to protect RTC/CMOS data from corruption when system encounters an abnormal power down sequence
Power source need the same with SB VCCSUS3_3, to aveoid leakeag.

M/B ID

Board ID	ID2	ID1	ID0
default	0	0	0
	0	0	1
	0	1	0
	0	1	1
	1	0	0

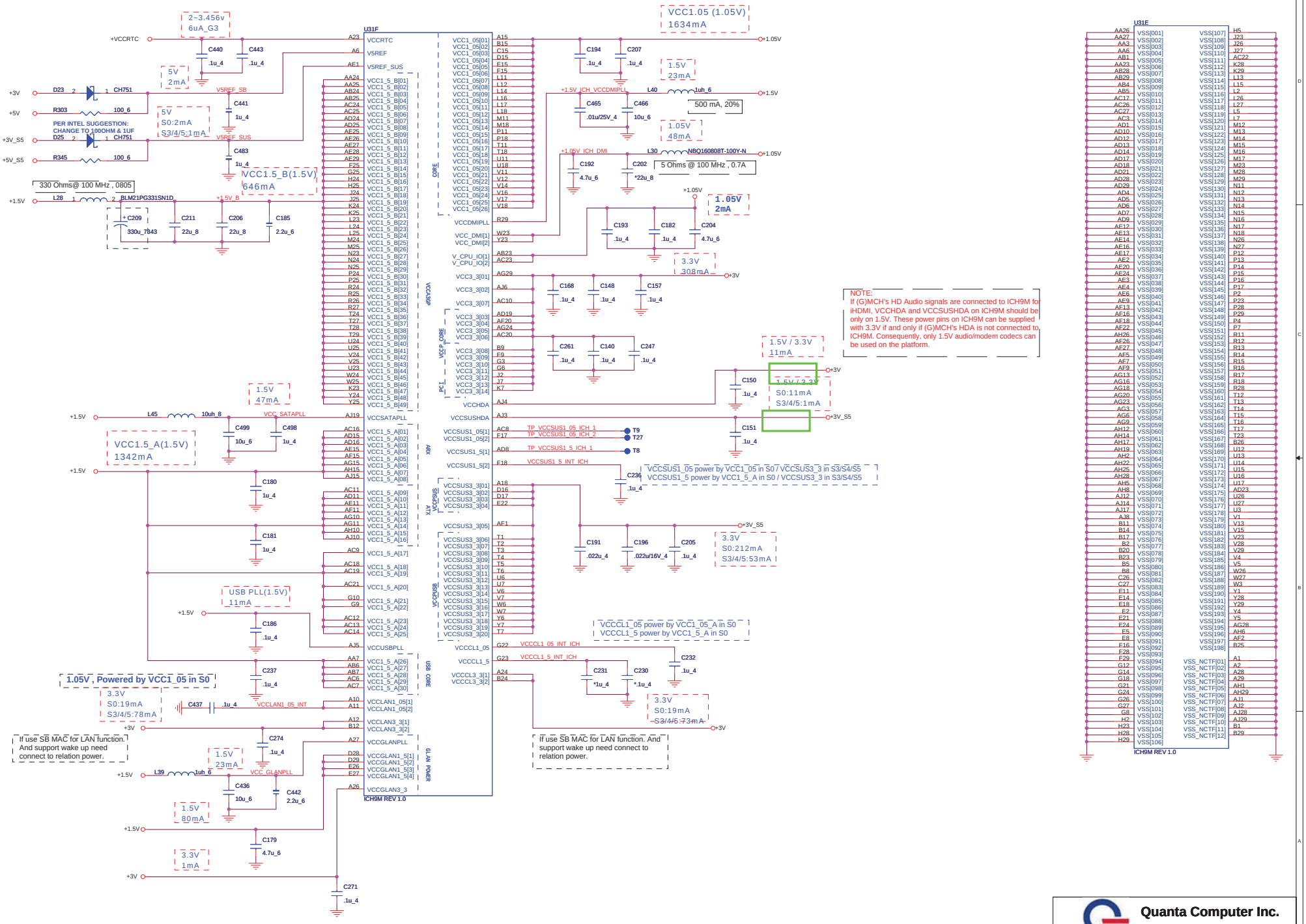
South Bridge Strap Pin (3/3)

Pin Name	Strap description	Sampled	Configuration	PU/PD
GPIO20	Reserved	PWROK		
SPKR	No Reboot	PWROK	0 = Default 1 = No Reboot mode	PCSPK R166 *1K_4 +3V
GPIO49	DMI Termination Voltage	PWROK	0 = for desktop applications 1 = for mobile applications Internal PU	DMI_TERM_SEL R383 *1K_4

CLK Enable

Quanta Computer Inc.
PROJECT : ZY8
Size | Document Number | ICH9M GPIO | Rev 3B
Date: Monday, January 05, 2009 | Sheet 14 of 39

ICH9M



Quanta Computer Inc.
PROJECT : ZY8

Size	Document Number	Rev
	ICH9 POWER	3B

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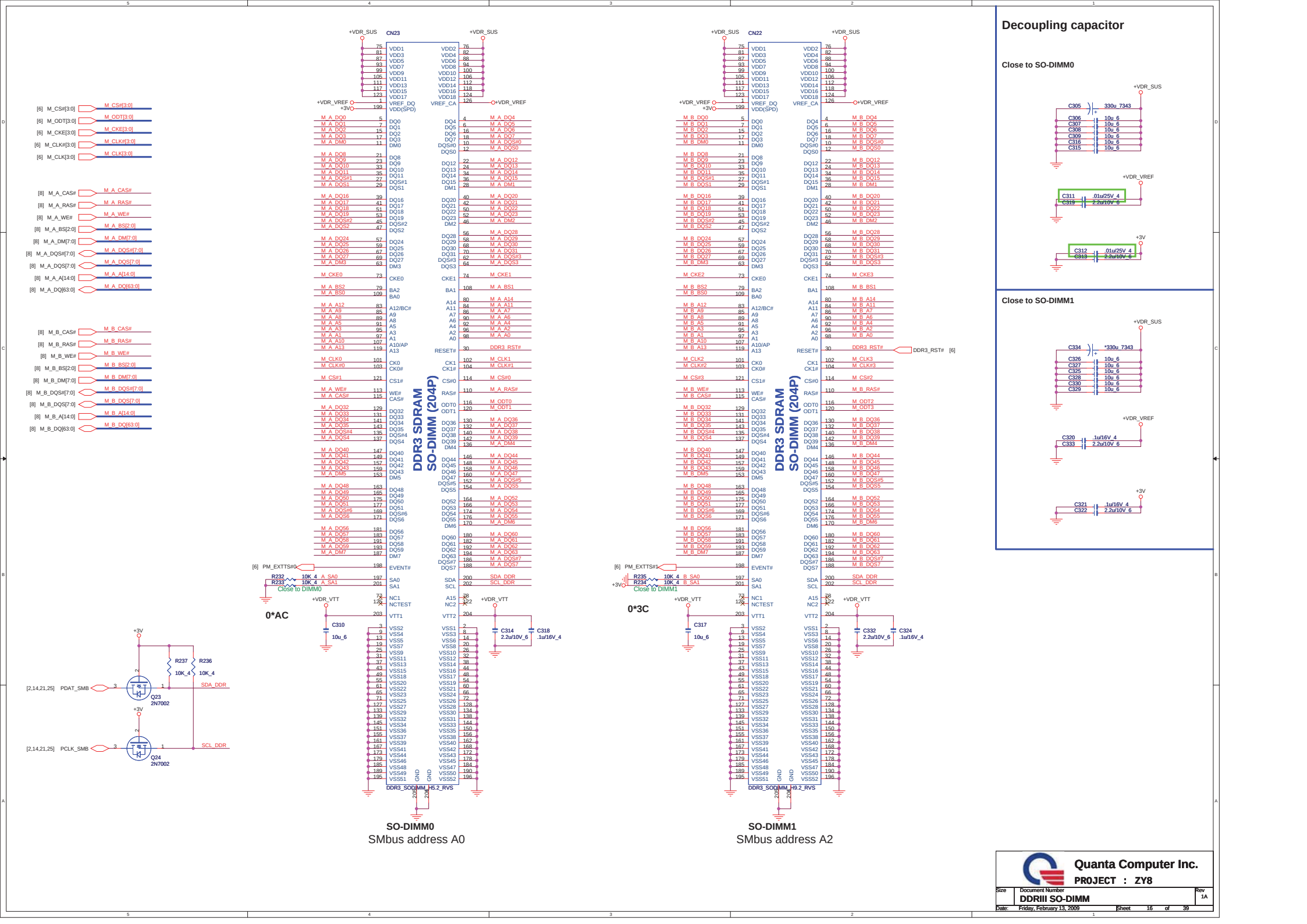
Decoupling capacitor
Close to SO-DIMM0
Close to SO-DIMM1
DDR3 SDRAM SO-DIMM (204P)
DDR3_SODIMM_H5.2_RVS
DDR3_SODIMM_H9.2_RVS
0*AC
0*3C
Close to DIMM0
Close to DIMM1
SO-DIMM0
SMbus address A0
SO-DIMM1
SMbus address A2
Quanta Computer Inc.
PROJECT : ZY8
DDRIII SO-DIMM
Friday, February 13, 2009

MXM Module

dGPU_PRSNT#	Sku
Low	MXM
High	WO/ MXM

At 11/21
update MXM footprint to mxm-mm70-314-310b1-1-270p

CN25A — MXM3_2.0 CONNECTOR

CN25B — MXM3_2.0 CONNECTOR

PEX_Swing adjust

At 11/13
Modify Net Name

MXM3.0	n-Vidia	AMD
LVDS	LVDS	LVDS/Int. DP
DP_D	Int. DP	X
DP_A	HDMI	HDMI
DP_C	Ext. DP/DVI	Ext. DP/DVI
DP_B	N/A	N/A

38 OEM0 HDA_BCLK_R
39 OEM1 HDA_RST_R*
40 OEM2 HDA_SDO_R
41 OEM3 HD_SDI_R
41 OEM4 HD_SYNC_R
43 OEM5 SPDIF_MXM
44 OEM6 GND_COMMON

At 11/19
add Switch for HDA
Remove R86/R87 at C-test

change to +3V at B-test
change to +3_MXM at B-test

MXM Reset

change to +3V at B-test
change to 2N7002 at B-test

Thermo SMBus

MXM VIN Power switch

dGPU_PWR_EN#	Behavior
Low	Enable dGPU PWR
High	Disable dGPU PWR

MXM 3V/5V Power switch

At 11/14 Add it

S	Yn
0	IA0
1	IA1

U13 *SN74CBT3257CPWR

At 11/18 Add it
CPU it at B-test

change 耐壓到25V
change size to 0603
change cap value to 5.6u at B-test

MXM use SPDIF output at B-test

Quanta Computer Inc.
PROJECT : ZY8

Size	Document Number	Rev
	MXM3.0	3B

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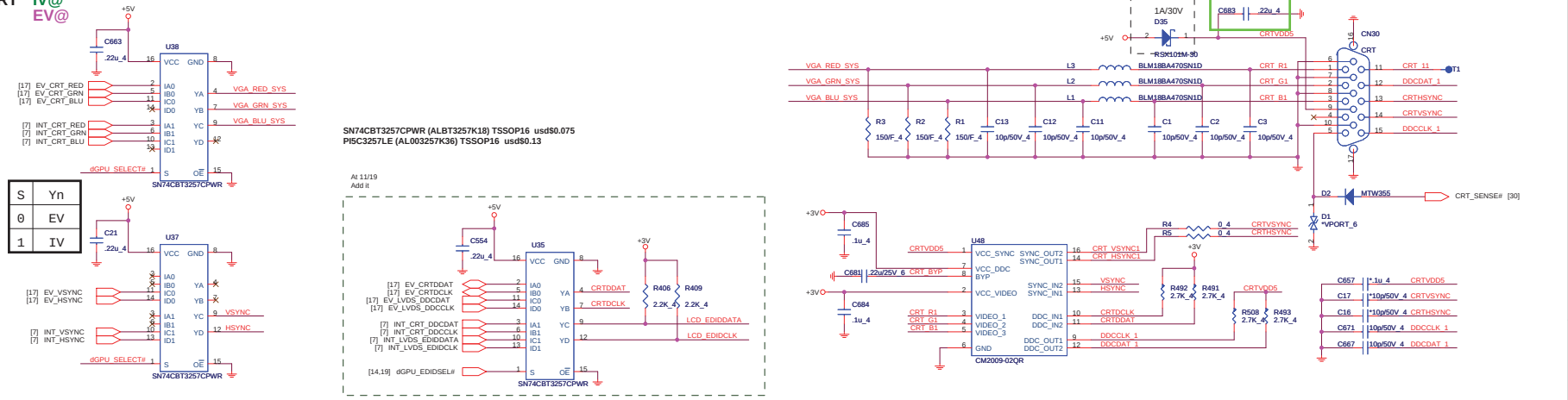
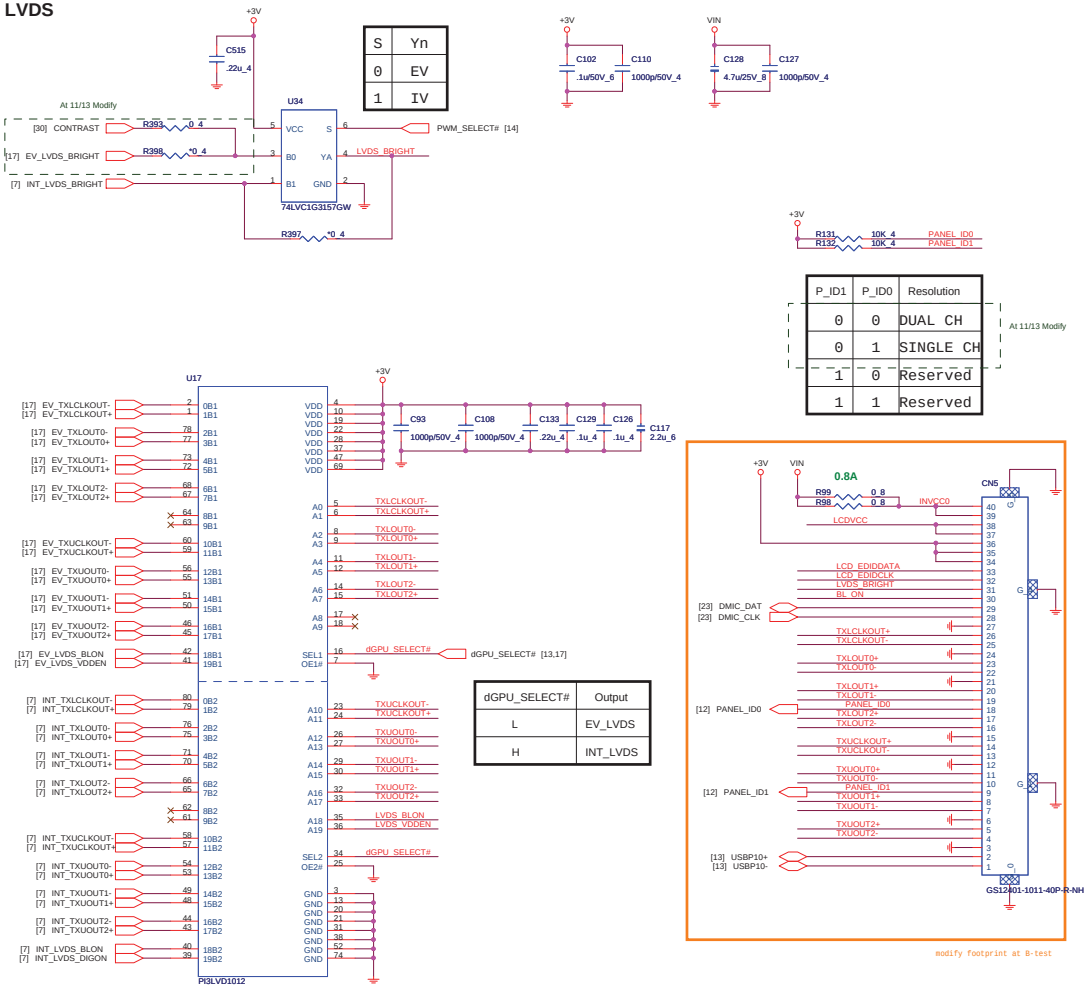
CRT

IV@
EV@



S	Yn
0	EV
1	IV

LVDS

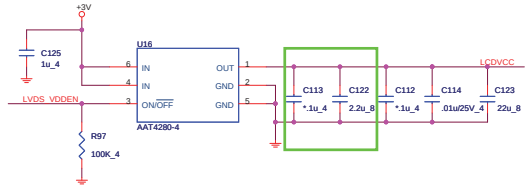


S	Yn
0	EV
1	IV

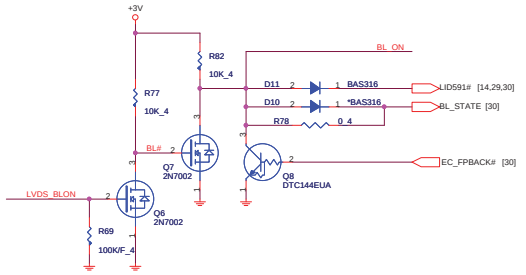
dGPU_SELECT#	Output
L	EV_LVDS
H	INT_LVDS

P_ID1	P_ID0	Resolution
0	0	DUAL CH
0	1	SINGLE CH
1	0	Reserved
1	1	Reserved

LCD Power



Backlight Control



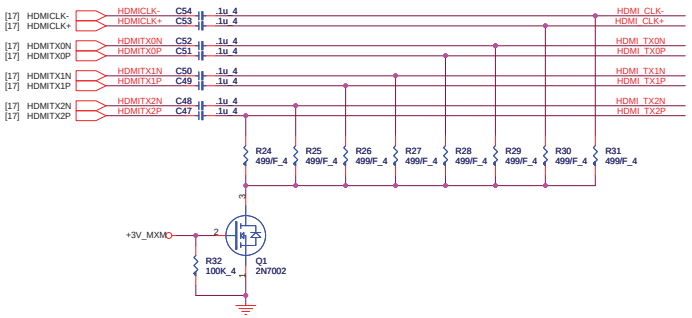
Quanta Computer Inc.
PROJECT : ZY8

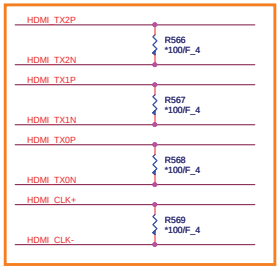
Size	Document Number	Rev
	CRT/LVDS/LID	3B

Date: Friday, February 13, 2009 Sheet 18 of 39

HDMI

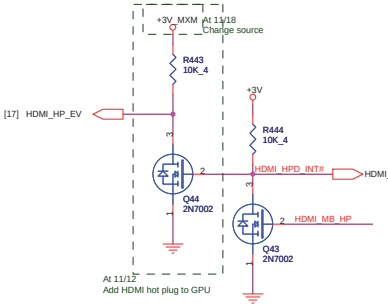
TMDS (DC-coupled)
DP(AC-coupled)



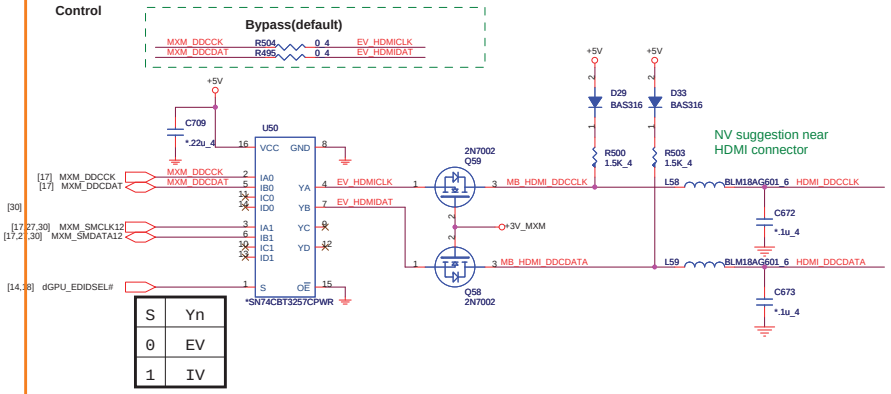


Close CN27

HDMI Hot-PLUG to SB and GPU

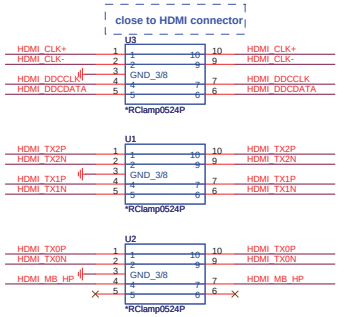


SDVO I2C Control

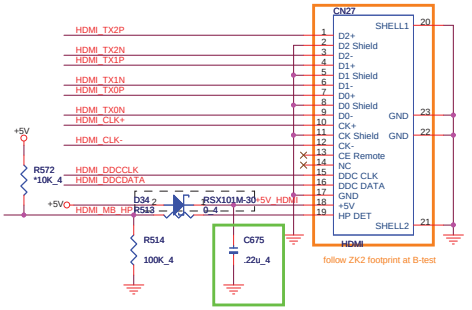


S	Yn
0	EV
1	IV

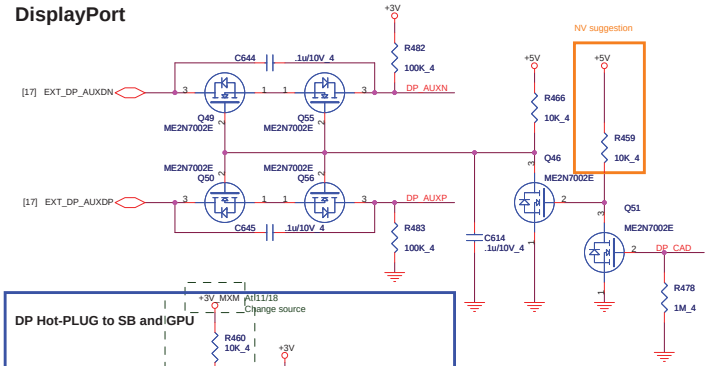
ESD Protect

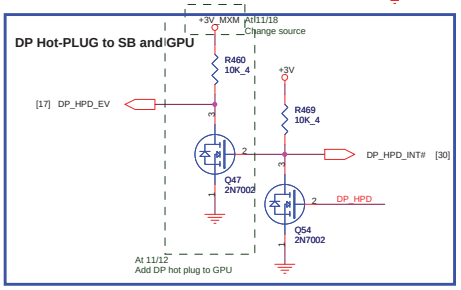


HDMI connector



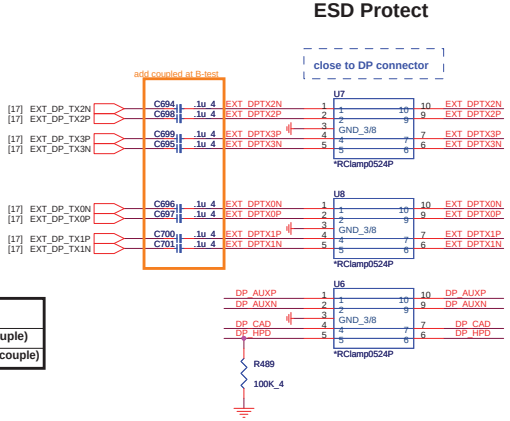
DisplayPort





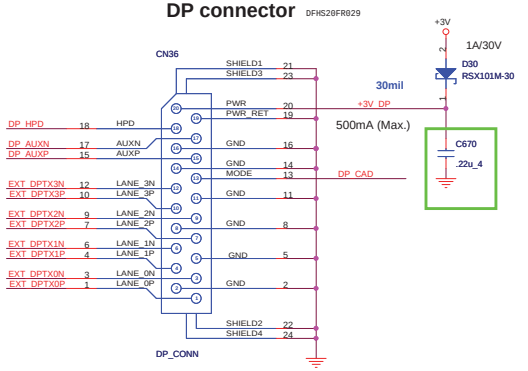
DP_CAD	Behavior
Low	DP signal (AC couple)
High	TMDS signal (DC couple)

ESD Protect



DP connector

DFHS20FR029



Quanta Computer Inc.
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Size	Document Number	Rev
	HDMI/DP	3B

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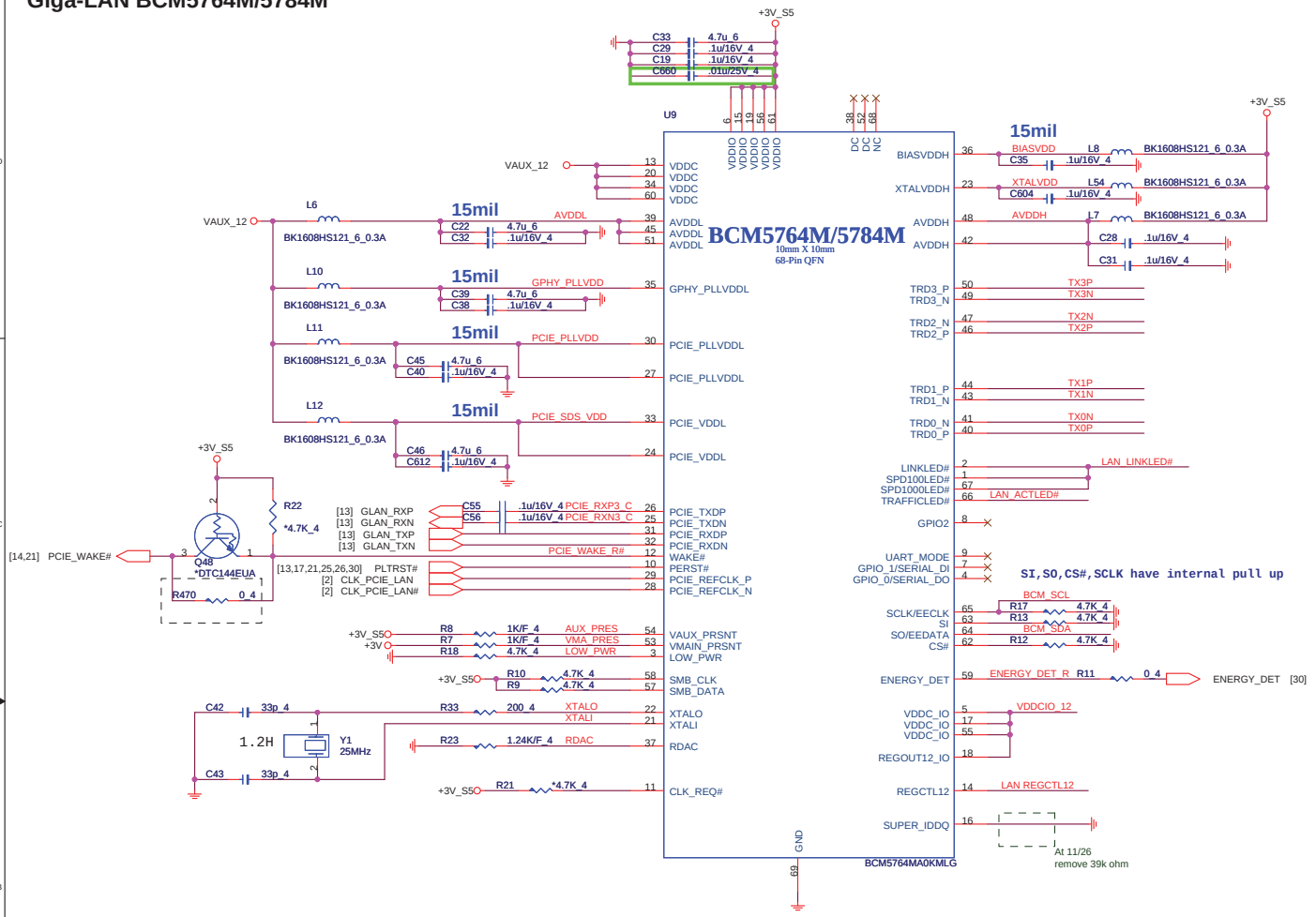
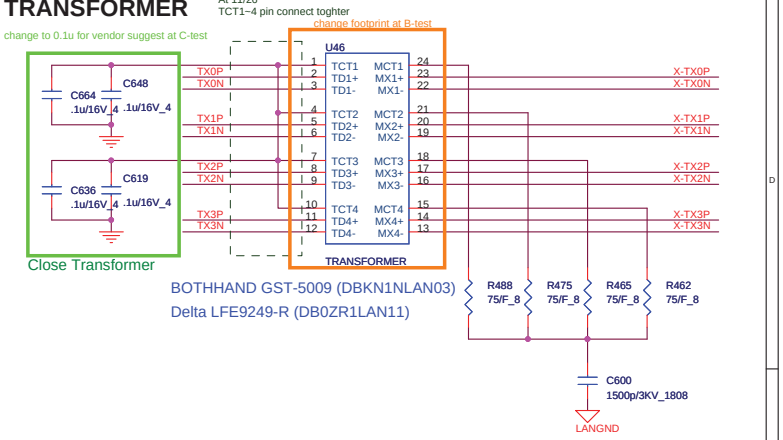
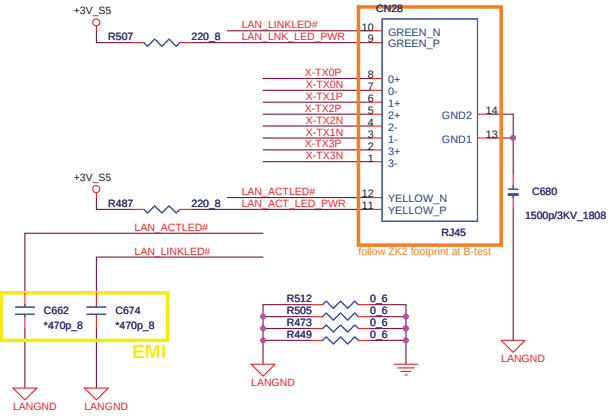
Giga-LAN BCM5764M/5784M



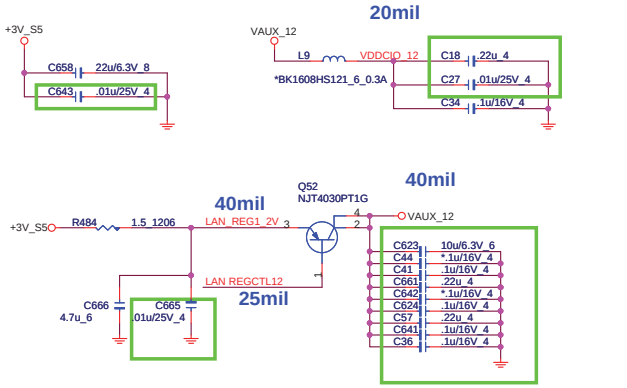
TRANSFORMER



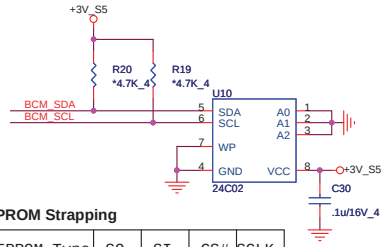
RJ45



LAN POWER



EEPROM



EEPROM Strapping

EEPROM Type	SO	SI	CS#	SCLK
24c02	1	0	0	0

Quanta Computer Inc.

PROJECT : ZY8

Size	Document Number	Rev
	LAN (BCM5764M/5784M)	3B

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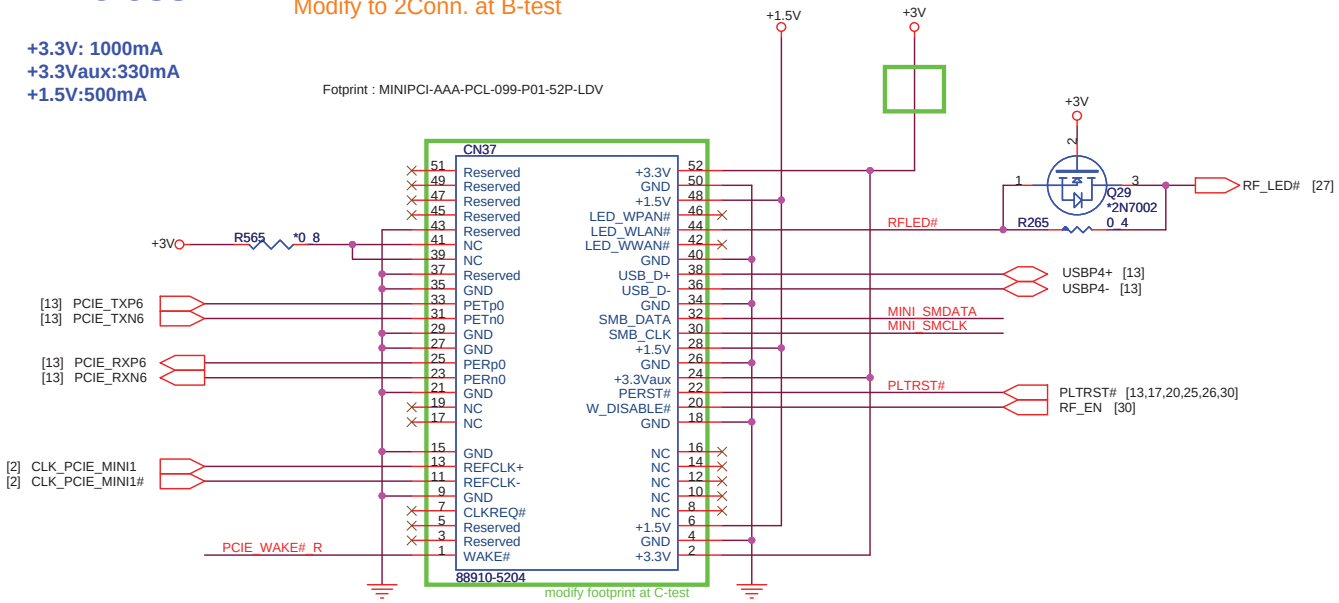
Wireless

Modify to 2Conn. at B-test

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

Fotprint : MINIPCI-AAA-PCL-099-P01-52P-LDV



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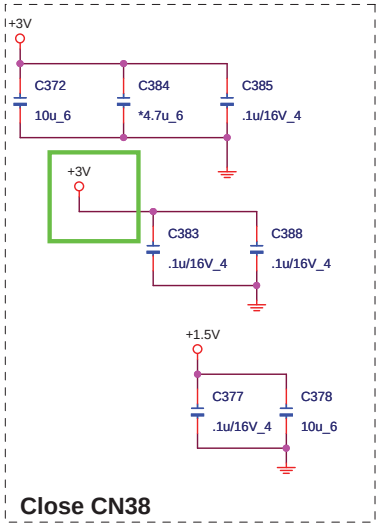
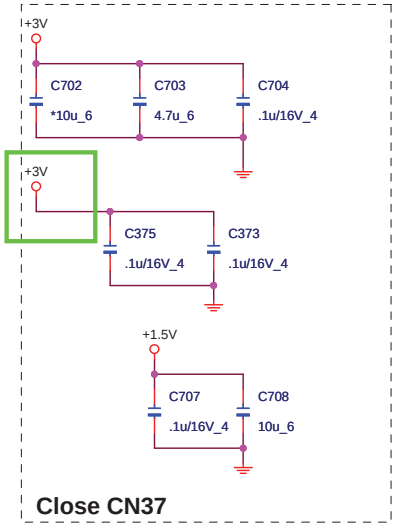
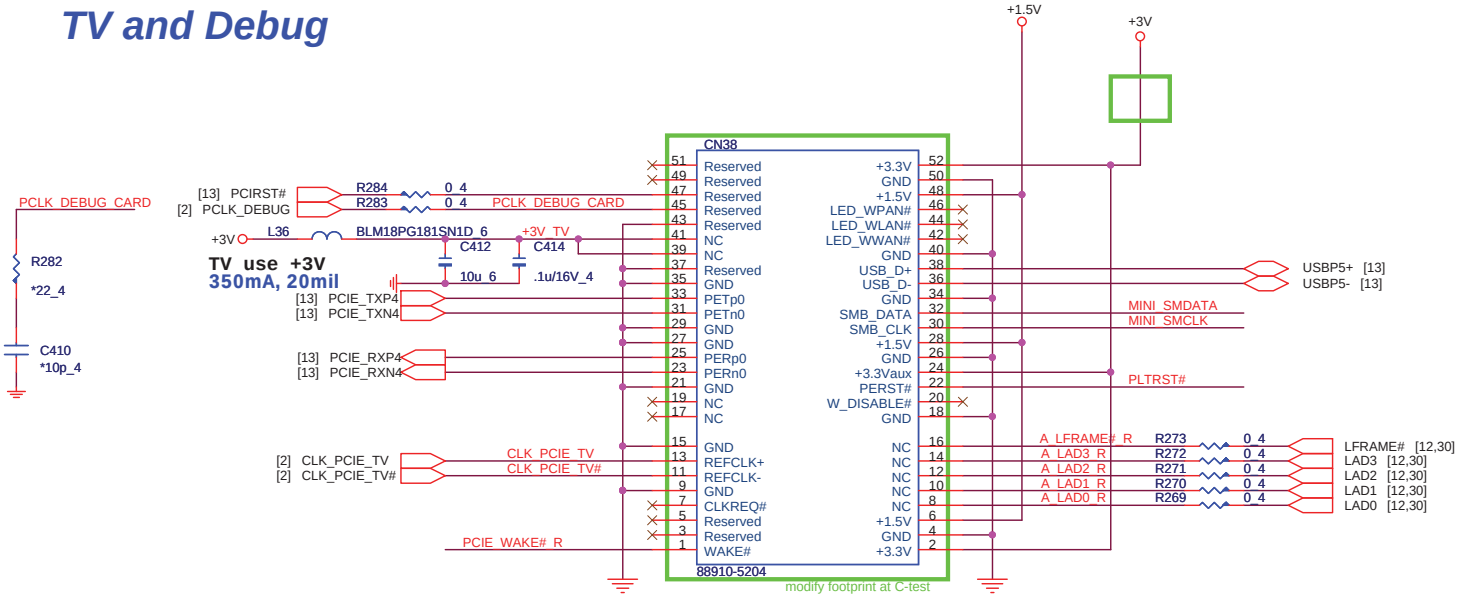




TV and Debug



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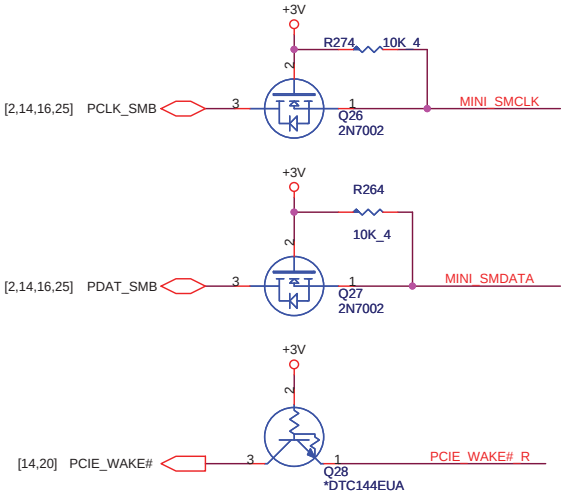

Quanta Computer Inc.

PROJECT : ZY8

Size	Document Number	Rev
	MINI PCI-E card/TV	3B
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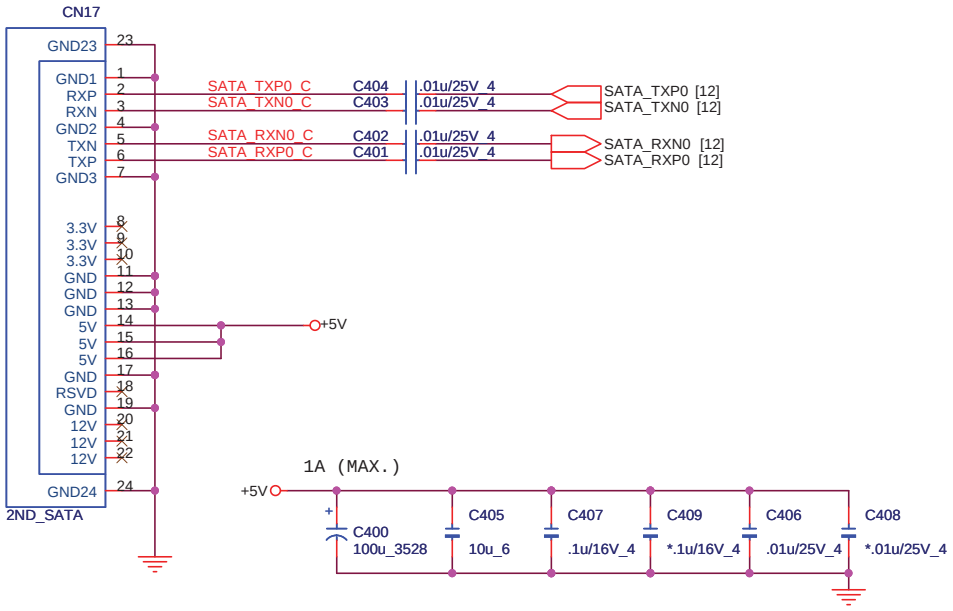
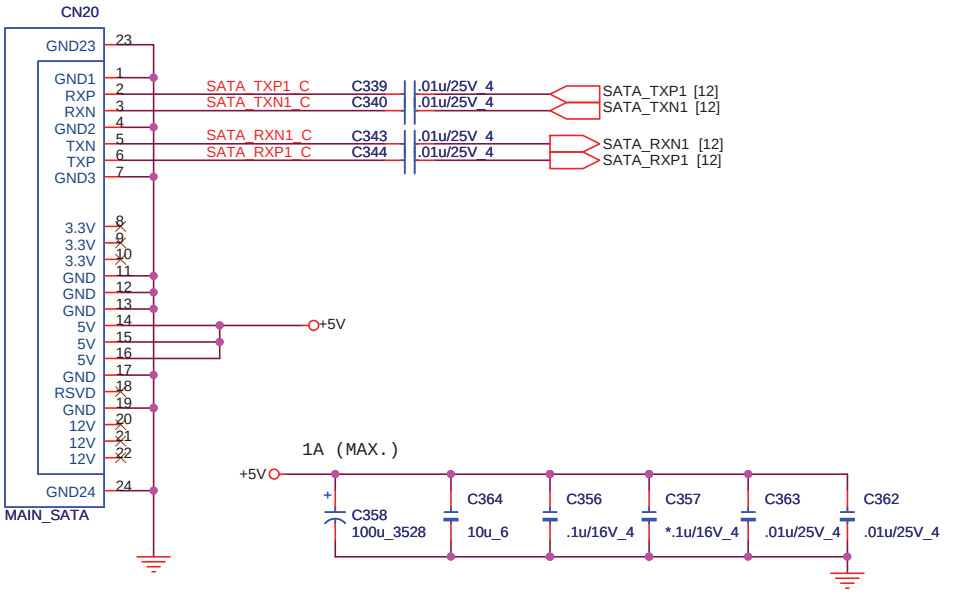
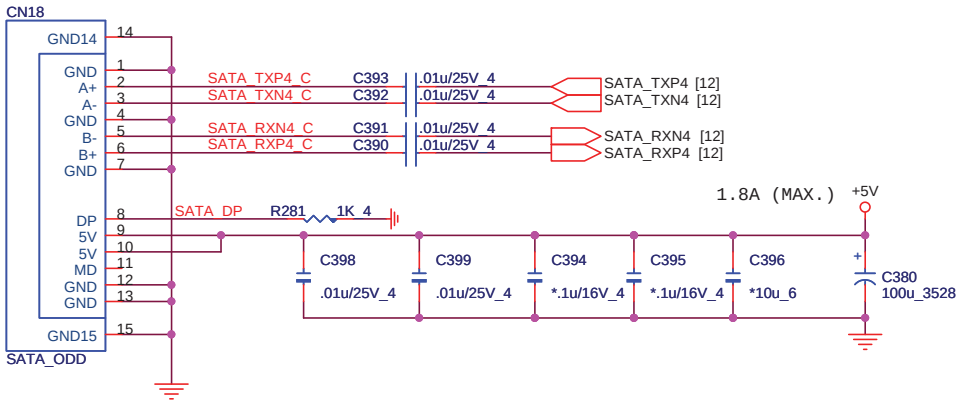
2nd SATA HDD (edge of board)



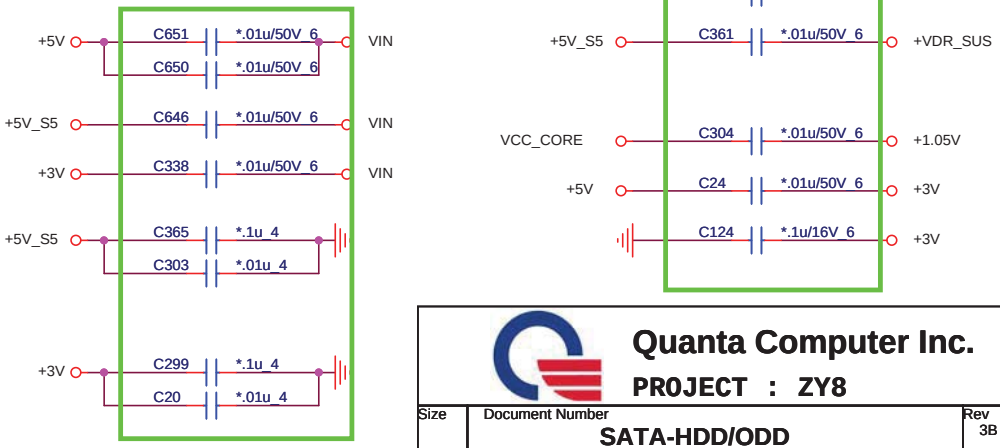
MAIN SATA HDD



ODD (SATA)



EE RETURN-PATH CAPACITORS



Quanta Computer Inc.

PROJECT : ZY8

Size	Document Number	Rev
	SATA-HDD/ODD	3B
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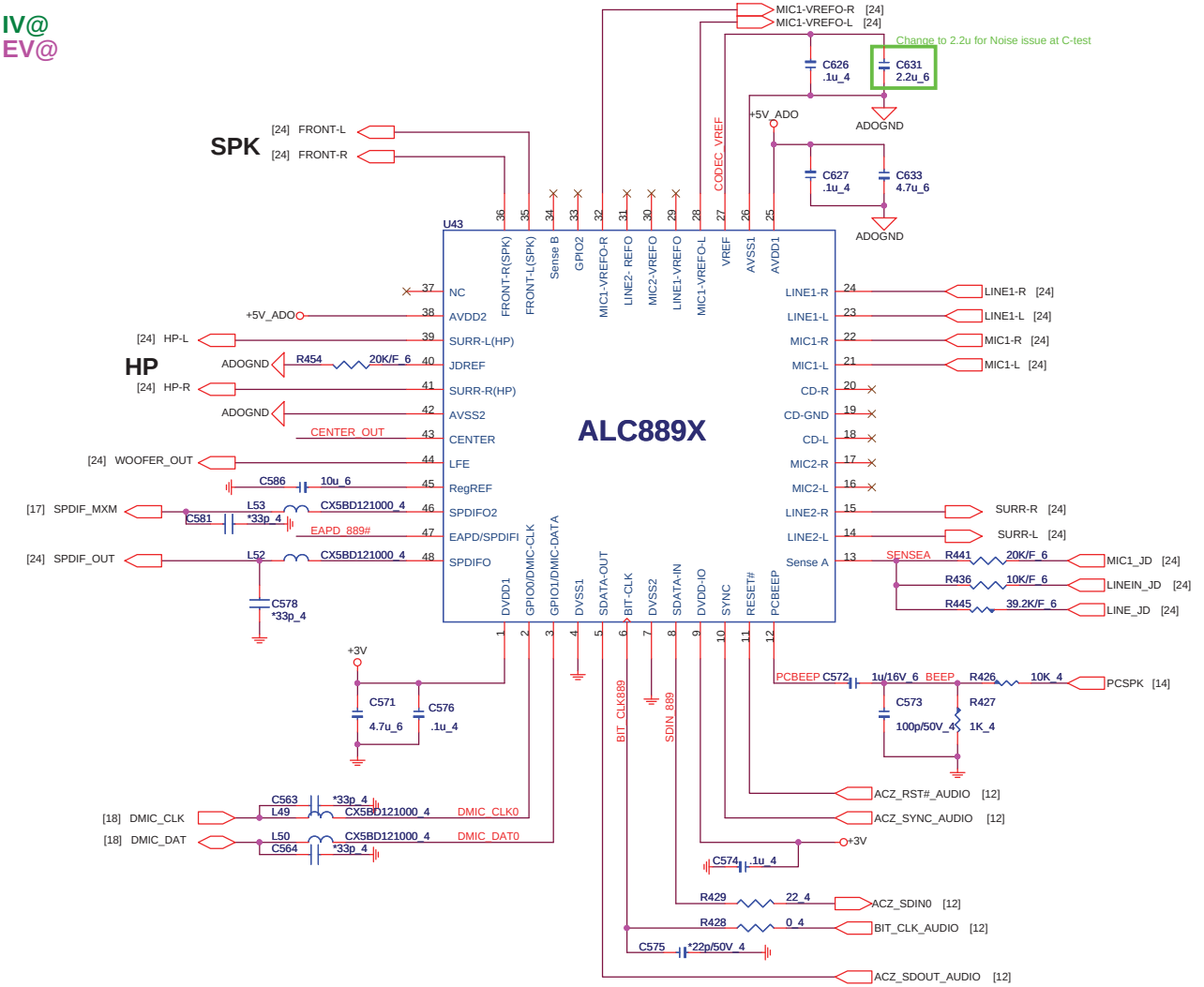
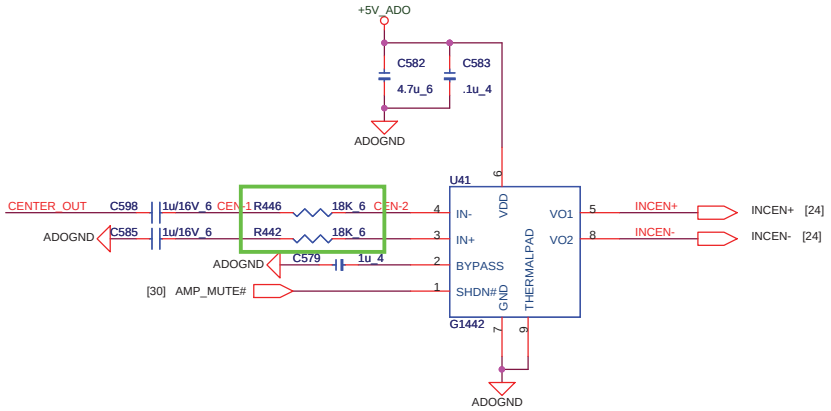
CODEC(ALC889X)

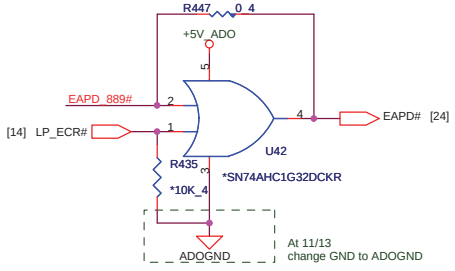
IV@
EV@



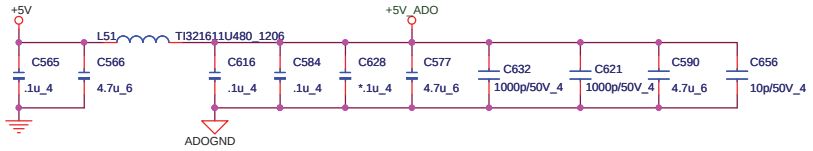
CENTER MONO



EAPD pin



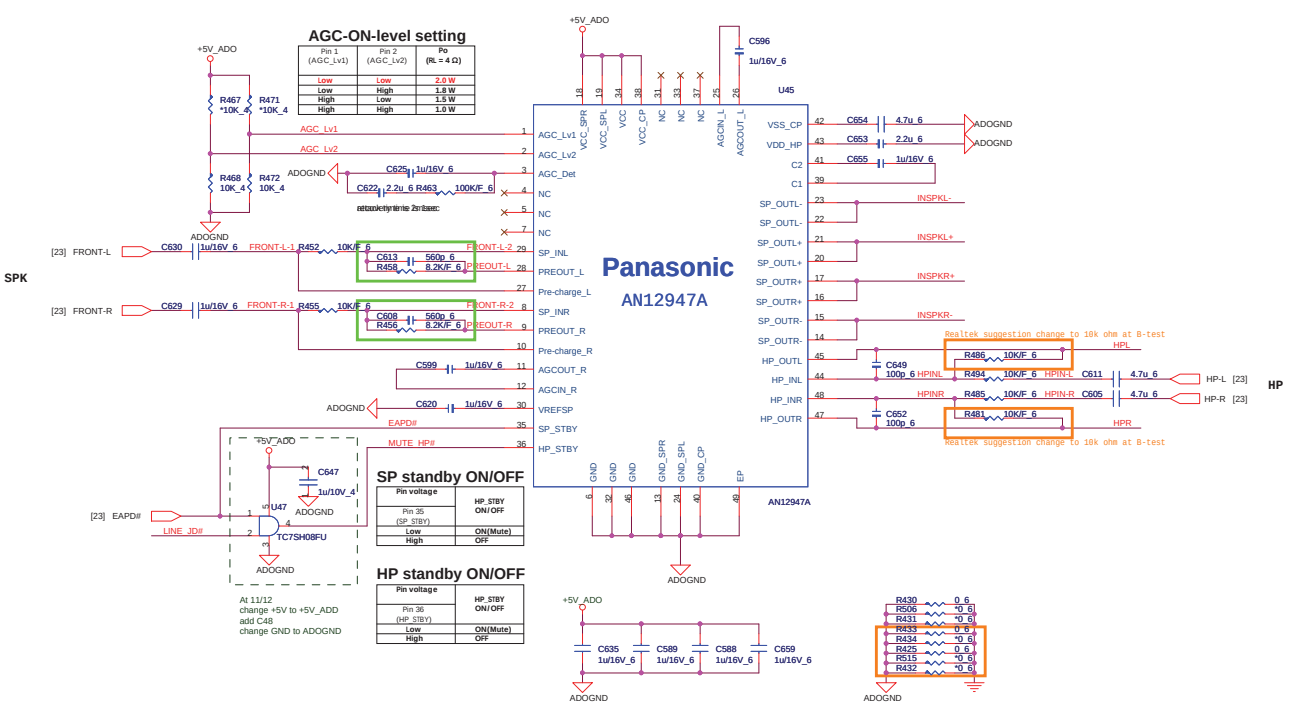
CODEC/AMP Power



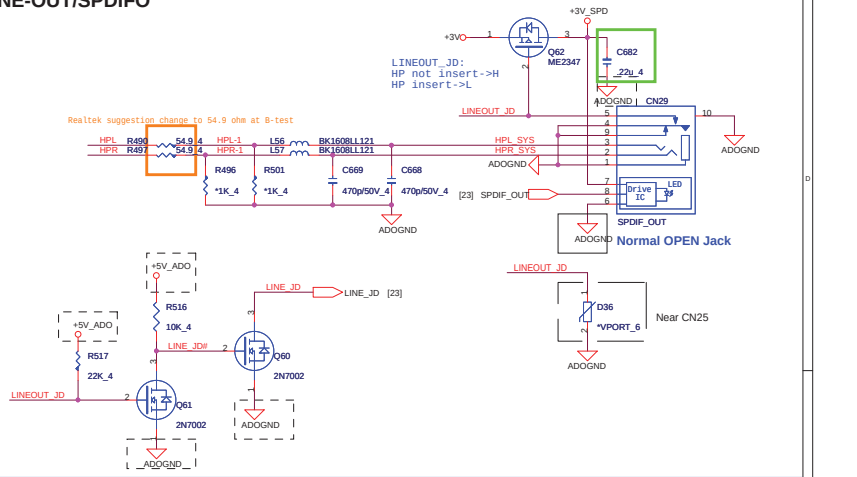
Quanta Computer Inc.
PROJECT : ZY8

Size	Document Number	Rev
	REALTEK ALC889X/MONO-AMP	3B
Date: Tuesday, February 17, 2009	Sheet 23 of 39	

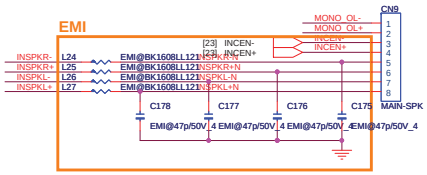
SPEAKER/HP AMP.



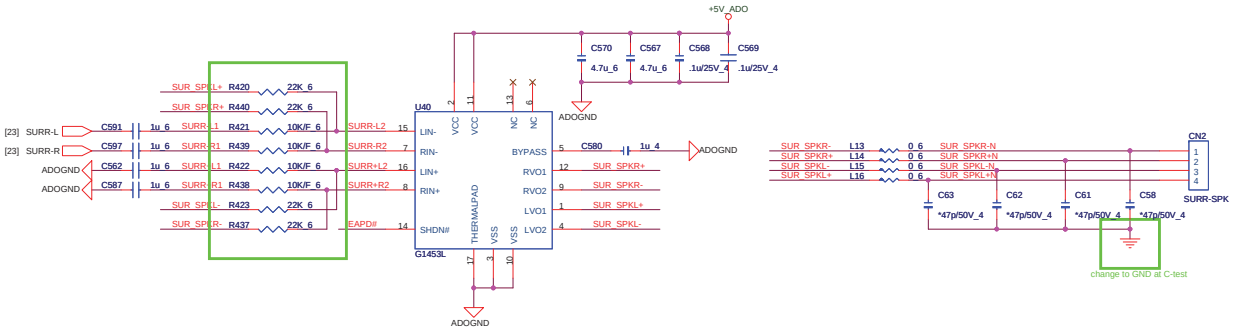
LINE-OUT/SPDIFO



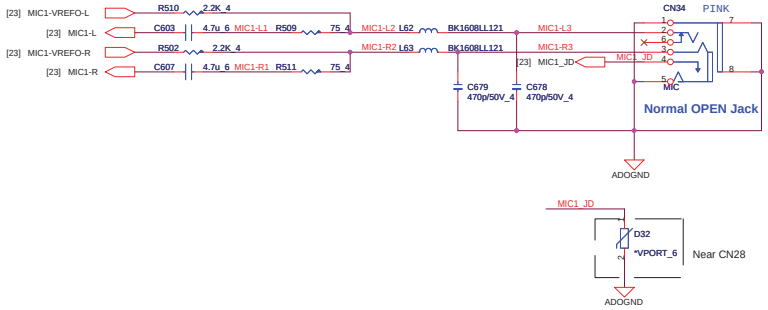
Main SPK/Center/Subwoofer



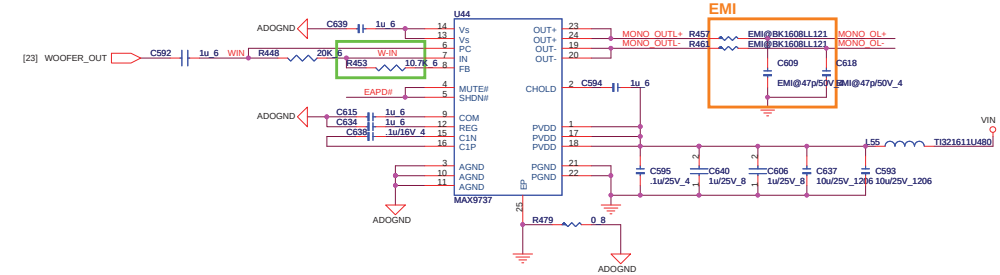
SURR-SPK



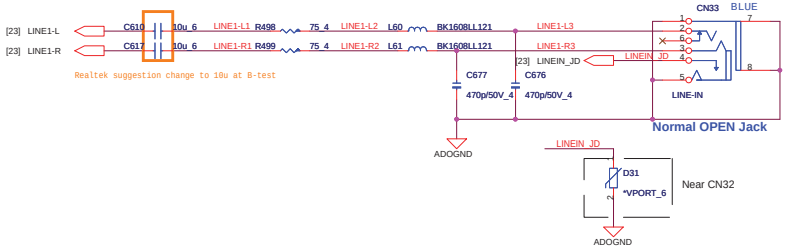
MIC



SUBWOOFER

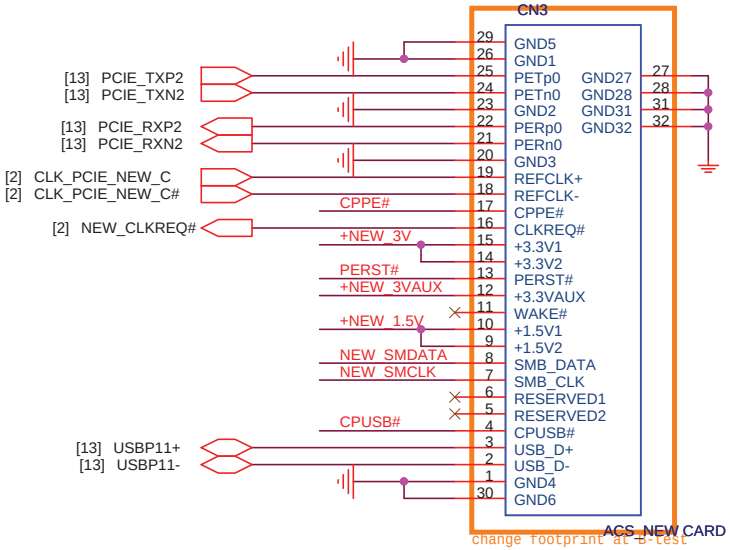


LINE IN



Quanta Computer Inc.
PROJECT : ZY8
AMP/AUDIO JACK/WOOFER
Rev 3B
Date: Tuesday, February 17, 2009
Sheet 24 of 39

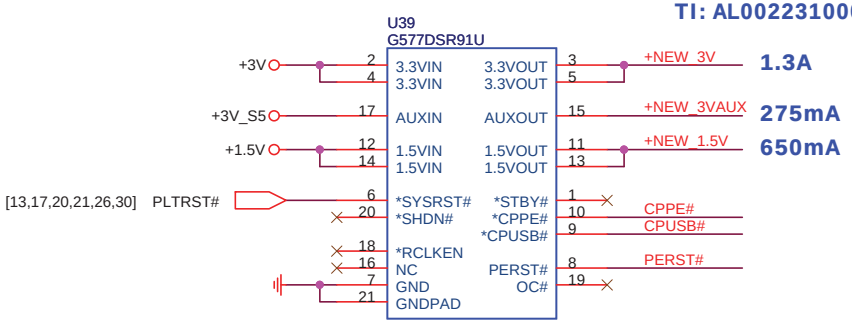
NEW CARD

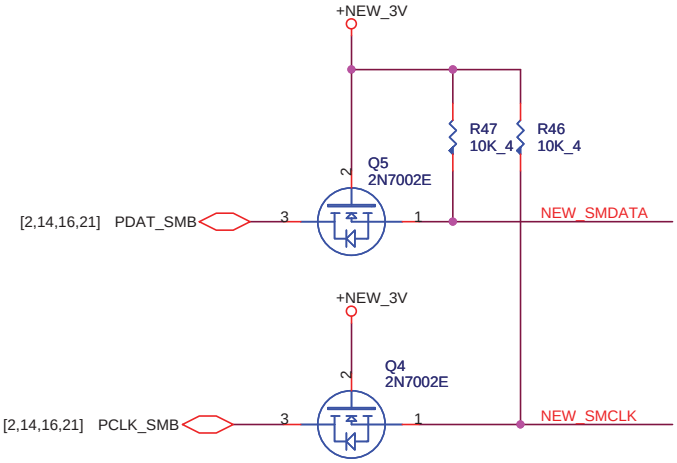


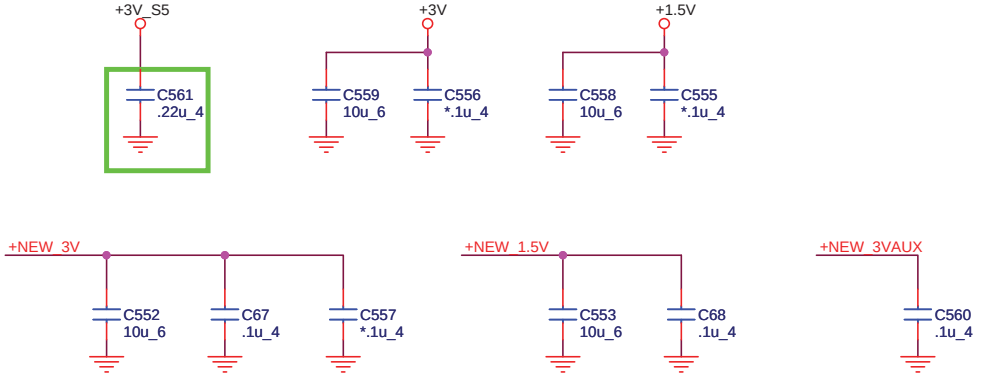
At 11/18
Change GMT cost down version.

NEW CARD'S POWER SWITCH

GMT: AL000577002
TI: AL002231000







Quanta Computer Inc.
PROJECT : ZY8

Size	Document Number	Rev
	NEW CARD	3B

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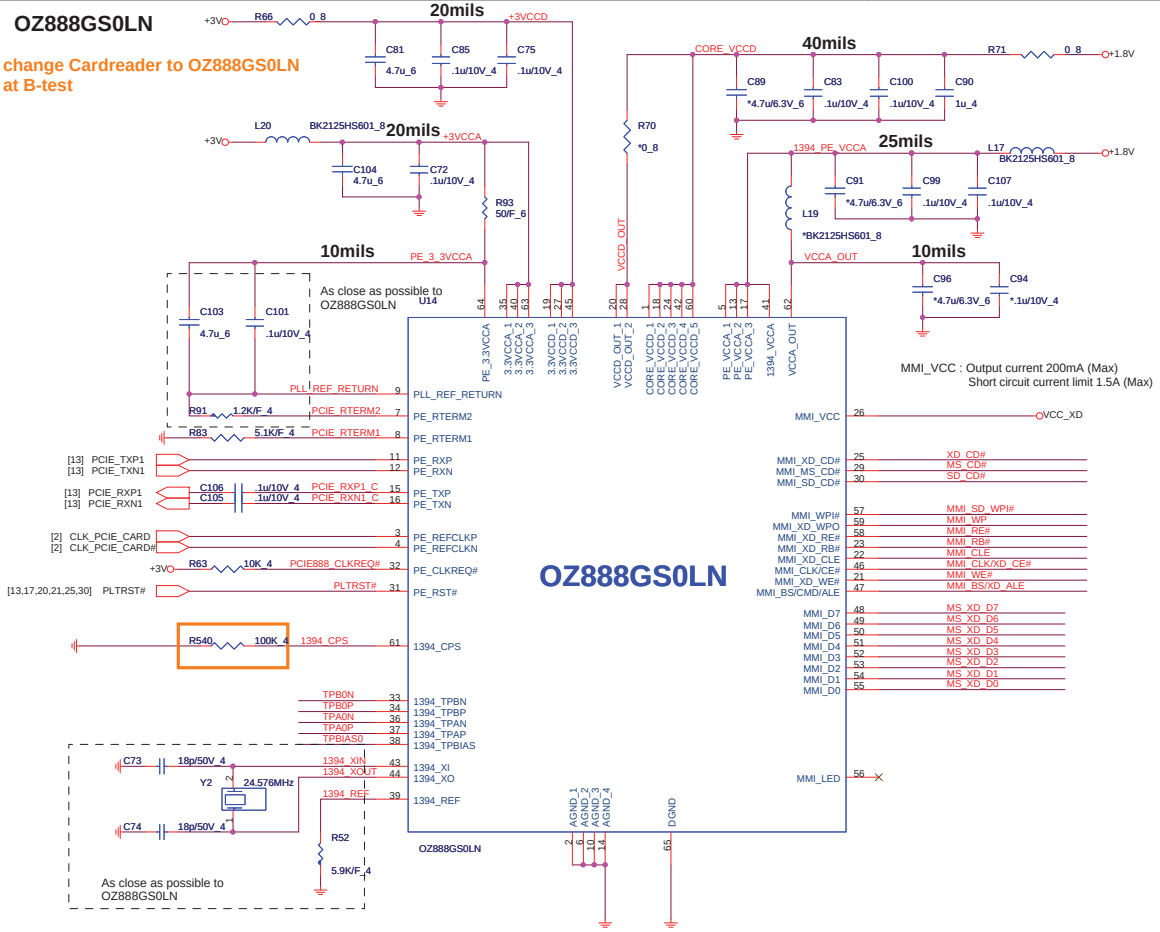
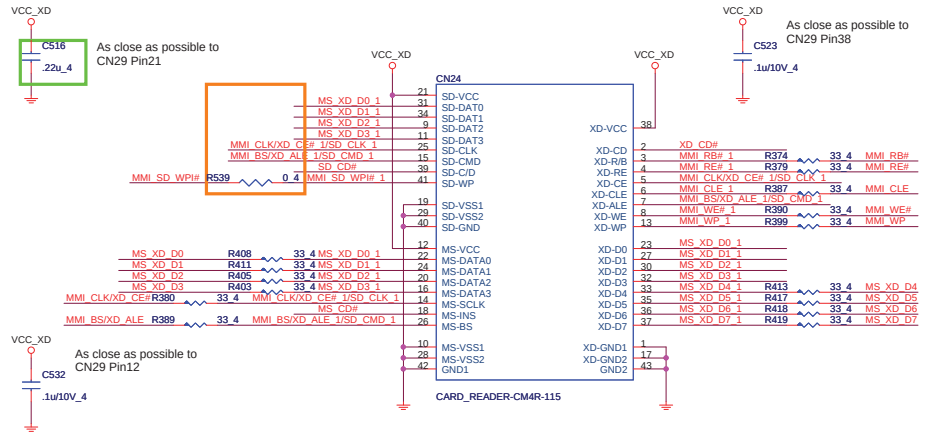
OZ888GS0LN

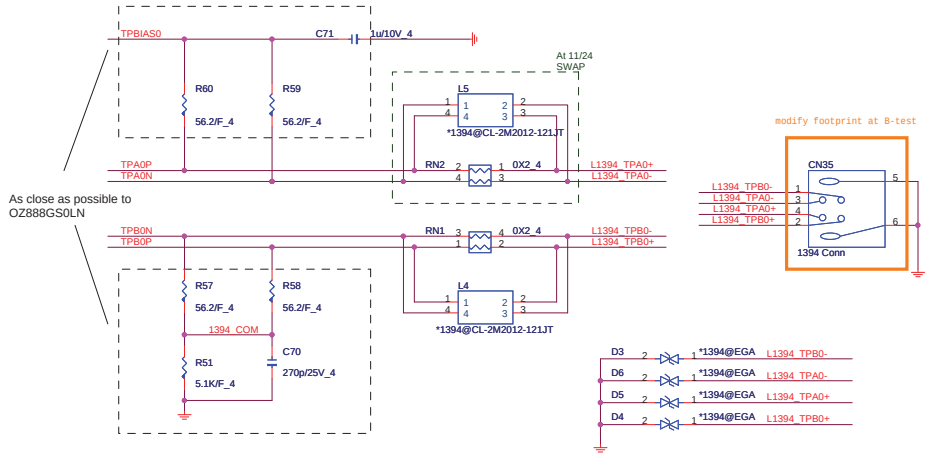
change Cardreader to OZ888GS0LN at B-test



5 IN 1 CARD READER

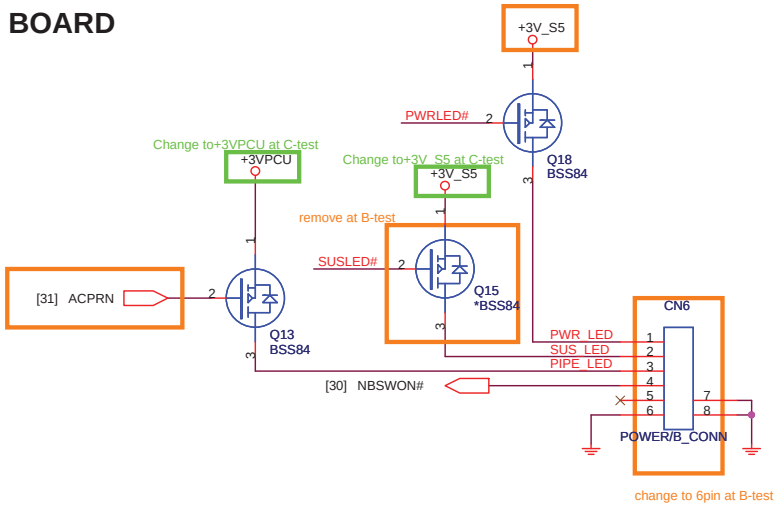


1394

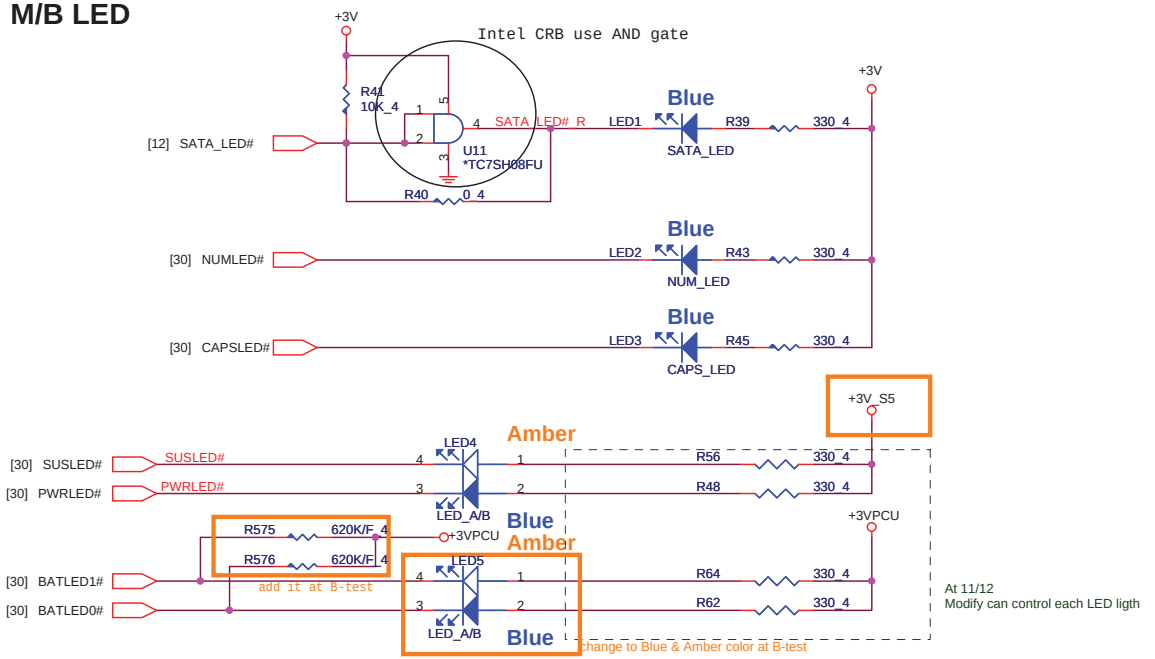


Quanta Computer Inc.			
PROJECT : ZY8			
Size	Document Number		Rev
	OZ888GS0L1N		3B
Date: Friday, February 13, 2009	Sheet 26 of 39		

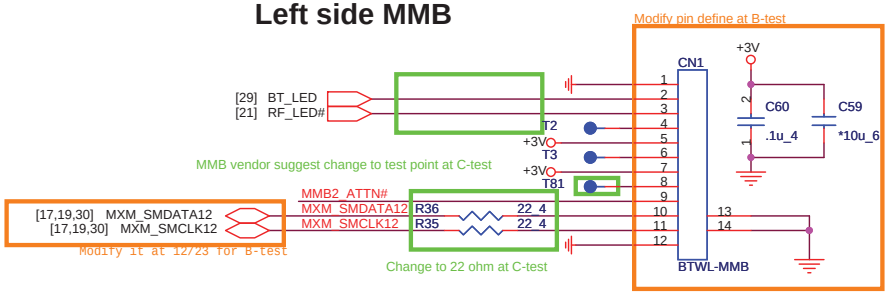
POWER BOARD



M/B LED

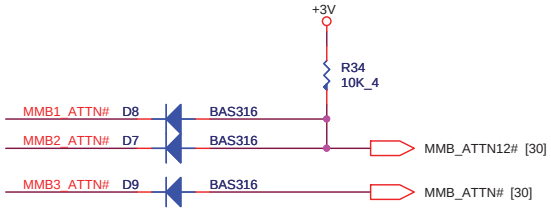


Left side MMB

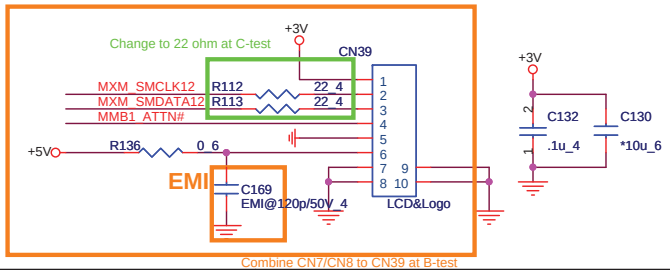


MXMCLK=MXM_SMCLK; MXMDATA=MXM_SMDATA12
MMB1 and MMB2 need add ISOLATE circuit where are on MXM page.

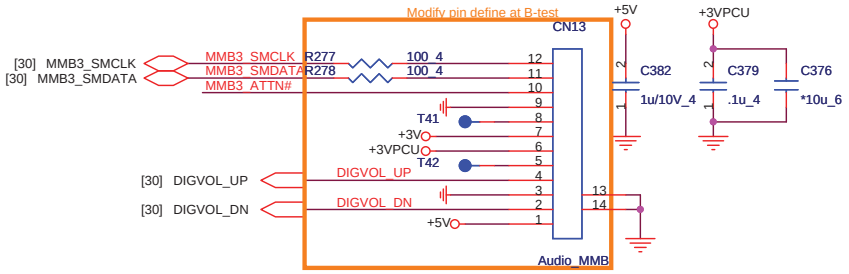
MMB Status



LCD BL_ON/OFF MMB & Backlight Logo LED



Right Side MMB



Quanta Computer Inc.		
PROJECT : ZY8		
Size	Document Number	Rev
	POWER/MMB/LAUNCH/LED	3B
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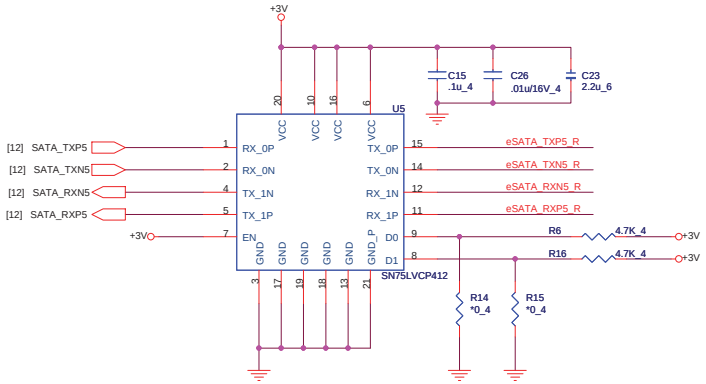
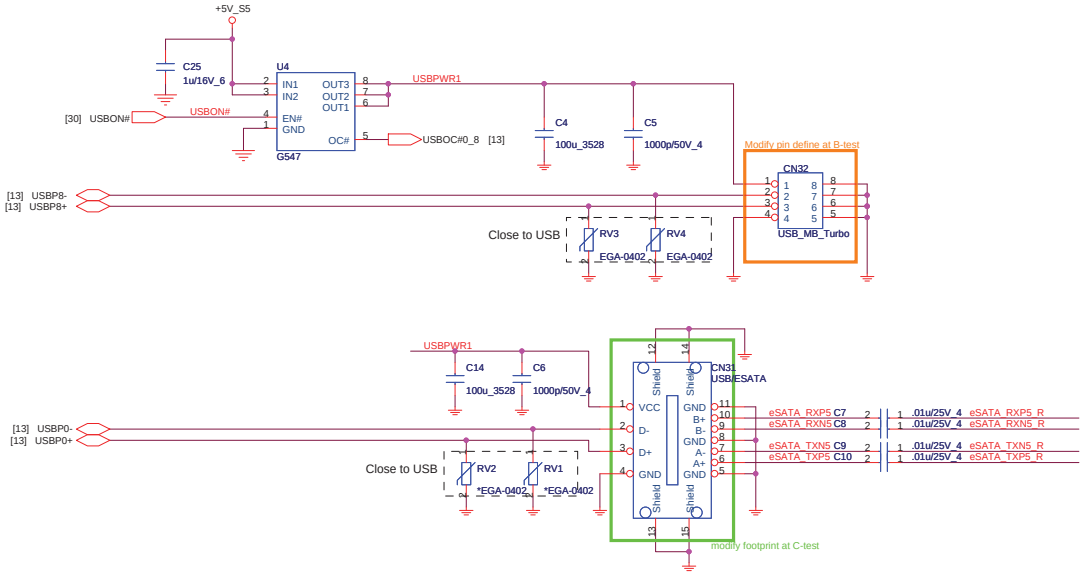
USB & ESATA

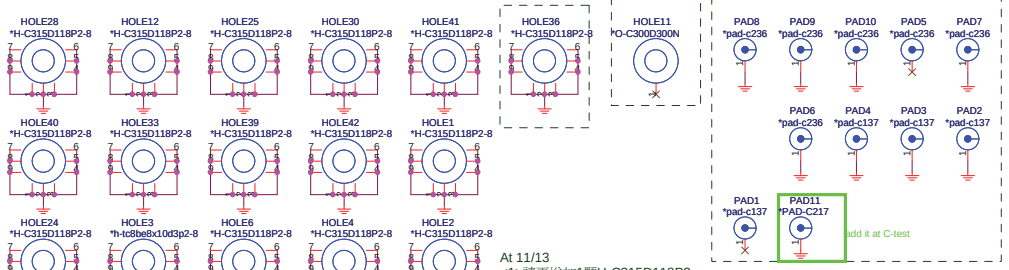


EN	D0	D1	CH-0	CH-1
0	X	X	Standby	Standby
1	0	0	0dB	0dB
1	1	0	Pre-emphasis (5dB)	0dB
1	0	1	0dB	Pre-emphasis (5dB)
1	1	1	Pre-emphasis (5dB)	Pre-emphasis (5dB)

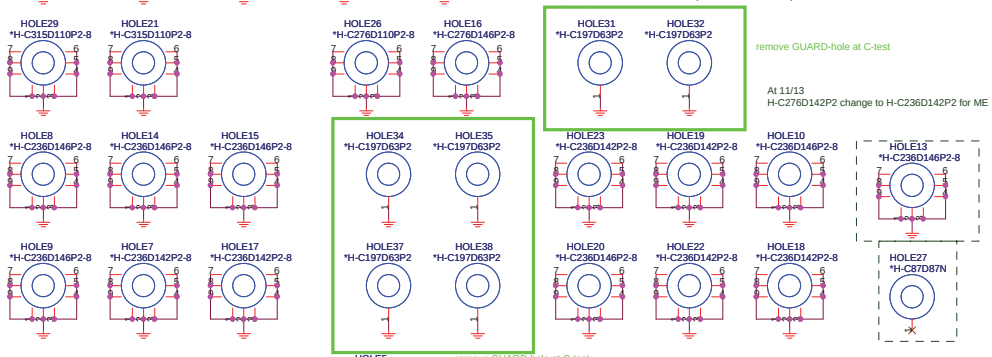


HOLES

At 11/13
change HOLE1~38 1PIN to 9PIN



At 11/13
<1>請再增加1顆H-C315D118P2
<2> HOLE22 請變更爲H-C236D142P2 (機構有改小)
<3>增加 1顆固定孔H-C87D87N ,(1788.00 944.00)



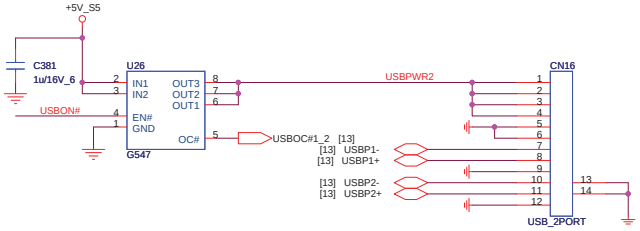
At 11/13
H-C276D142P2 change to H-C236D142P2 for ME

At 11/18
機構螺孔的部份變更如下
1.H-C236D142P2-8
=>HOLE23,HOLE24,HOLE25,HOLE31,HOLE32,HOLE33
2.H-C276D146P2-8
==>HOLE19,HOLE30,HOLE22,HOLE36
3.LAN CONN下方的螺孔未加上請, 增加一顆H-C276D118P2-8

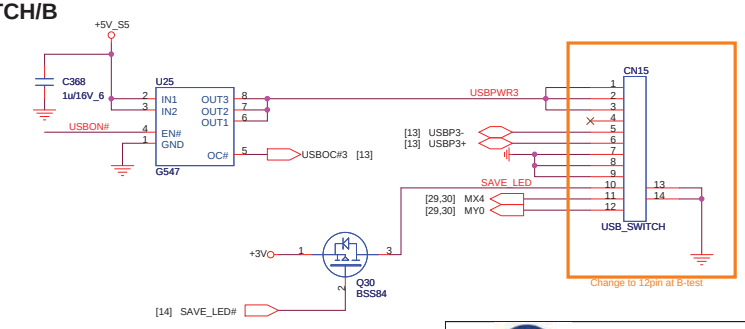
At 11/19
3.Sorry~ HOLE19,HOLE30,HOLE22,HOLE36
原先H-C276D146P2-8
請幫忙變更爲H-C236D146P2-8 才對

At 11/21
.機構變更爲馬蹄形的兩個螺孔請幫忙修改footprint
HOLE41 和 HOLE12

USB_2PORT/B



USB_SWITCH/B



Quanta Computer Inc.
PROJECT : ZY8

Size	Document Number	Rev
	USB/eSATA	3B
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INT K/B

At 11/18 SWAP

CP6 *100px4: MX3 MX2 MX1 MX0
CP5 *100px4: MX7 MX6 MX5 MX4
CP1 *100px4: MY0 MY1 MY2 MY3
CP2 *100px4: MY4 MY5 MY6 MY7
CP3 *100px4: MY8 MY9 MY10 MY11
CP4 *100px4: MY12 MY13 MY14 MY15
C323 *100p_4 MY16
C331 *100p_4 MY17

CN11 → KB

[28,30] MY0 MY1 MY2 MY3 MY4 MY5 MY6 MY7 MY8 MY9 MY10 MY11 MY12 MY13 MY14 MY15 MY16 MY17
[30] MX7 MX6 MX5
[28,30] MX4
[30] MX3 MX2 MX1 MX0

+3VPCU
RP1 10K_10P8R: MX4 MX5 MX6 MX7 → MX3 MX2 MX1 MX0

TOUCHPAD & Finger-Printer CONN.

+5V
R238 10K_4
R239 10K_4
L31 BLM21P300S
C335 .1u/16V_4
20mil
+TPVDD
[30] TPDATA → L32 LZA10-2ACB104MT → TPDATA_R
[30] TPCLK → L33 LZA10-2ACB104MT → TPCLK_R
C337 *.01u/25V_4
C336 *.01u/25V_4
[13] USBP7- → USBP7-
[13] USBP7+ → USBP7+
MX2
MY0
TP_LED
+3V
Q25 BSS84
[30] TP_LED#
[14,18,30] LID591#
+3VPCU
CN12 → TP_FP_CONN
RV5 *EGA-0402 USBP7-
RV6 *EGA-0402 USBP7+
add ESD protect at B-test

BLUETOOTH CONNECTOR

Change +3VSUS to +3V_S5 at B-test
+3V_S5
Q31 AO3413
[30] BT_POWERON#
30mil
BT_POWER
C389 2.2u_6
C397 1000p/50V_4
[13] USBP6+
[13] USBP6-
[27] BT_LED
CN14 → BT_CONN
C386 *.01u_4

Keyboard LED control

Remove: U12, C64, R44, C66.
Stuff: Q3, R42, Q2
at C-test

+5V
C64 *2.2u_6
U12 *G991: VIN, /FON, VSET, VO, GND, GND, GND, GND
R44 *10K_4
[30] KB_LED
KBPWR = 1.6*VSET
20mil
KB_LED_PWR
C66 *10u_6
C65 .01u/25V_4
change pin define at B-test
CN4 KB_LED
check pin define
R42 10K_4
Q3 AO3413
KB_LED#
Q2 DTC144EU

CPU FAN

+3V
R480 10K_4
FAN_PWM_E
[3] CPUFAN#_ON
R476 10K_4
FAN_PWM_B
Q57 MMBT3904
[30] CPUFAN#
R464 10K_4
R474 10K_4
Q53 MMBT3904
FAN_PWM_CN
30mil
R477 10K_4
[30] FANSIG
CN26 FAN

Quanta Computer Inc.
PROJECT : ZY8

Size	Document Number	Rev
	KB/FAN/TP+FP/BT	3B
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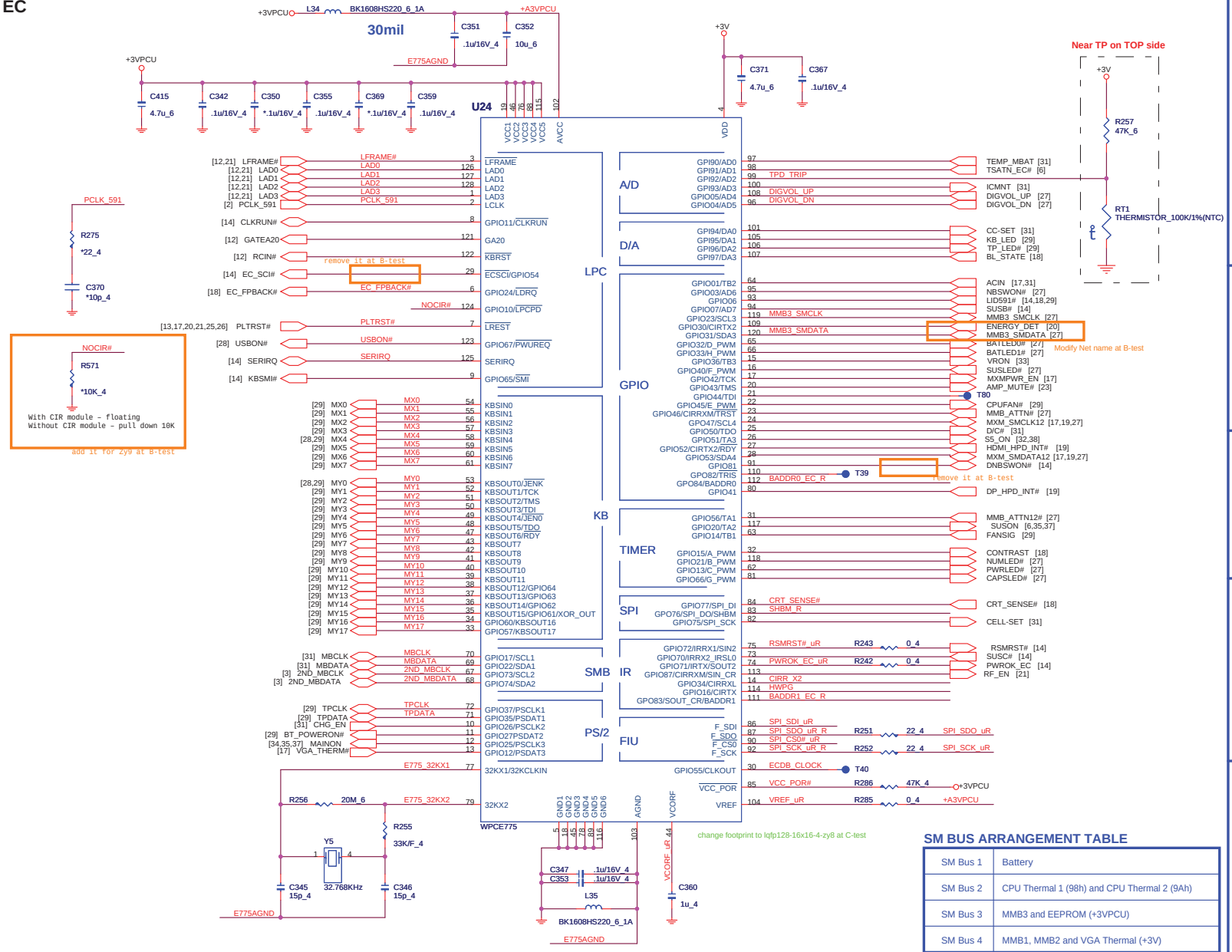
EC



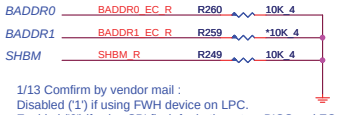
SM BUS ARRANGEMENT TABLE

SM Bus 1	Battery
SM Bus 2	CPU Thermal 1 (98h) and CPU Thermal 2 (9Ah)
SM Bus 3	MMB3 and EEPROM (+3VPCU)
SM Bus 4	MMB1, MMB2 and VGA Thermal (+3V)

I/O ADDRESS SETTING

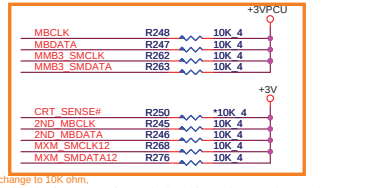
BADDR1-0	I/O Address	
0 0	XOR TREE TEST MODE	
0 1	CORE DEFINED	
1 0	2Eh	2Fh
1 1	164Eh	164Fh

SHBM=0: Enable shared memory with host BIOS



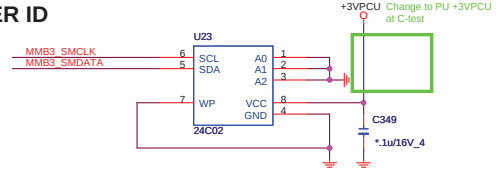
1/13 Comfirm by vendor mail :
Disabled ('1') if using FWH device on LPC.
Enabled ('0') if using SPI flash for both system BIOS and EC firmware

SM BUS PU

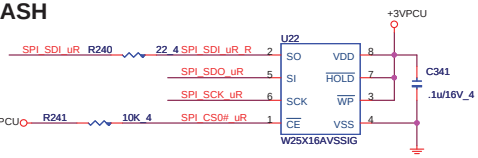


change to 10K ohm,
2nd MBCLK/MBDATA and MXM_SMCLK12/MXM_SMDATA12 PU to +3V at B-test

ACER ID



SPI FLASH

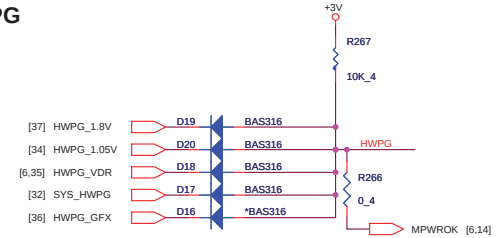


1/13 Comfirm by vendor mail :
If the Southbridge enables 'Long Wait Abort' by default, the flash device should be 50MHz (or faster)

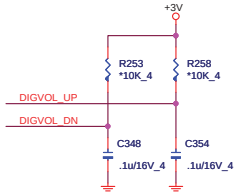
At 11/24 add

Winbond	W25X16AVSSIG	AKE38ZP0N01
MXIC	MX25L1605AM2C-15G	AKE37FP0Z13
EON	EN25F16-100HIP	AKE38ZA0Q00
AMIC	A25L016	AKE38ZN0800

HWPG

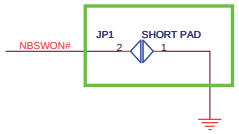


VR Cap.

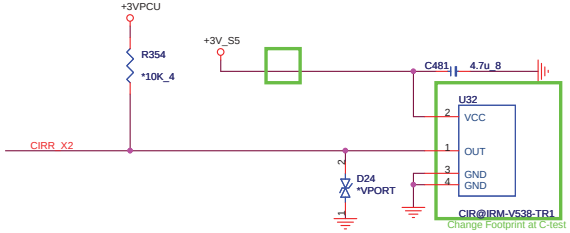


Place two near EC

POWER-ON Switch



CIR



INTERNAL KEYBOARD STRIP SET

Quanta Computer Inc.
PROJECT : ZY8

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	WPCE775C_0DG & FLASH	3B

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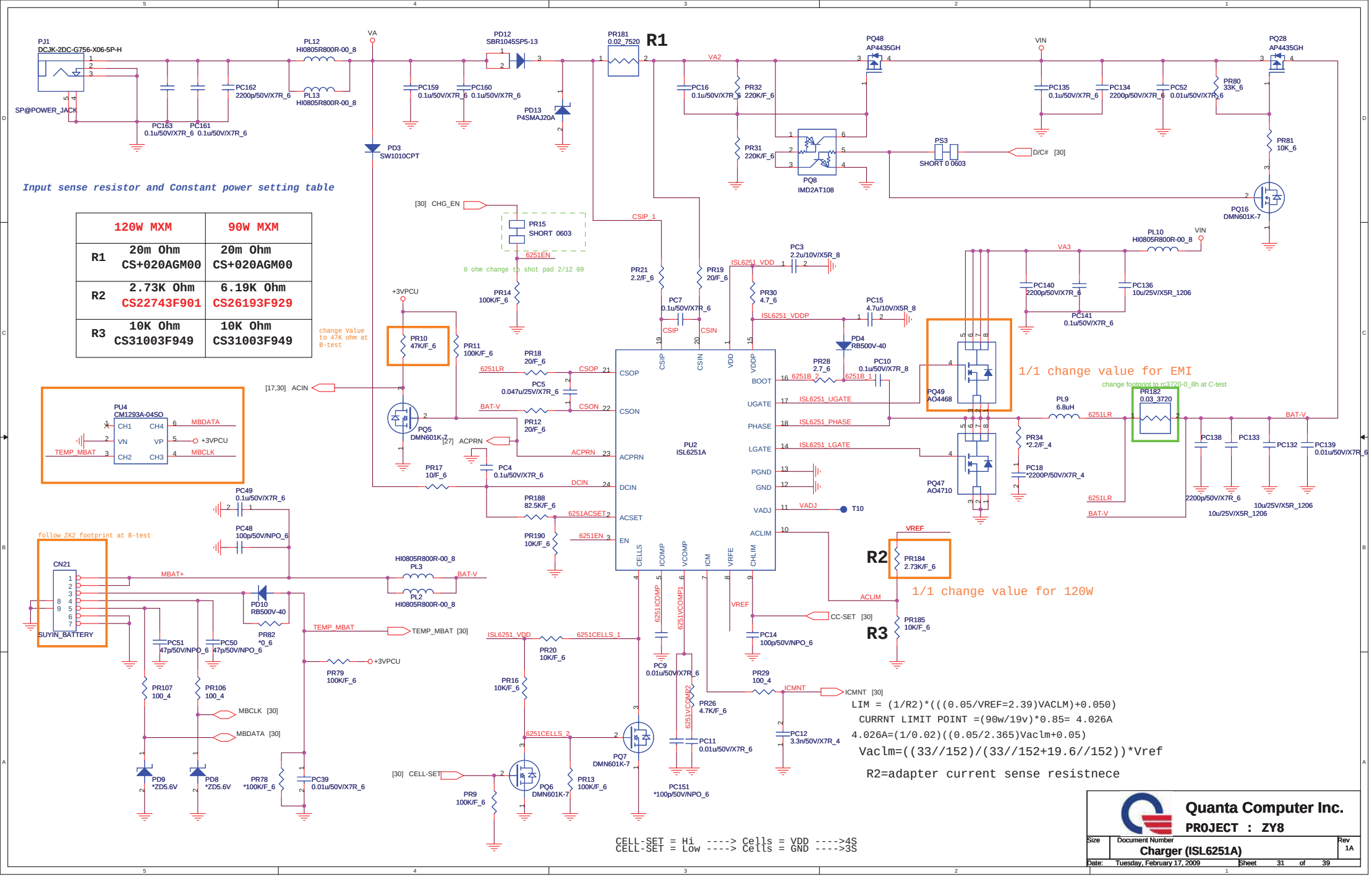
Input sense resistor and Constant power setting table
120W MXM
90W MXM
R1
20m Ohm CS+020AGM00
20m Ohm CS+020AGM00
R2
2.73K Ohm CS22743F901
6.19K Ohm CS26193F929
R3
10K Ohm CS31003F949
10K Ohm CS31003F949
change Value to 47K ohm at B-test
0 ohm change to shot pad 2/12 09
1/1 change value for EMI
change footprint to rc3720-0_8h at C-test
1/1 change value for 120W
follow ZK2 footprint at B-test
PJ1 DCJK-2DC-G756-X06-5P-H
SP@POWER_JACK
PU2 ISL6251A
PU4 CM1293A-04SO
CN21
SUYIN_BATTERY
PQ48 AP4435GH
PQ28 AP4435GH
PQ8 IMD2AT108
PQ16 DMN601K-7
PQ5 DMN601K-7
PQ7 DMN601K-7
PQ6 DMN601K-7
PQ49 AO4468
PQ47 AO4710
PD3 SW1010CPT
PD4 RB500V-40
PD10 RB500V-40
PD12 SBR1045SP5-13
PD13 P4SMAJ20A
PD9 *ZD5.6V
PD8 *ZD5.6V
PS3 SHORT 0 0603
PR15 SHORT 0603
PR182 0.03_3720
PR184 2.73K/F_6
PR185 10K/F_6
PL2 HI0805R800R-00_8
PL3 HI0805R800R-00_8
PL9 6.8uH
PL10 HI0805R800R-00_8
PL12 HI0805R800R-00_8
PL13 HI0805R800R-00_8
LIM = (1/R2)*(((0.05/VREF=2.39)VACLM)+0.050)
CURRNT LIMIT POINT =(90w/19v)*0.85= 4.026A
4.026A=(1/0.02)((0.05/2.365)Vaclm+0.05)
Vaclm=((33//152)/(33//152+19.6//152))*Vref
R2=adapter current sense resistnece
CELL-SET = Hi ----> Cells = VDD ---->4S
CELL-SET = Low ----> Cells = GND ---->3S
Quanta Computer Inc.
PROJECT : ZY8
Charger (ISL6251A)
Rev 1A
Date: Tuesday, February 17, 2009
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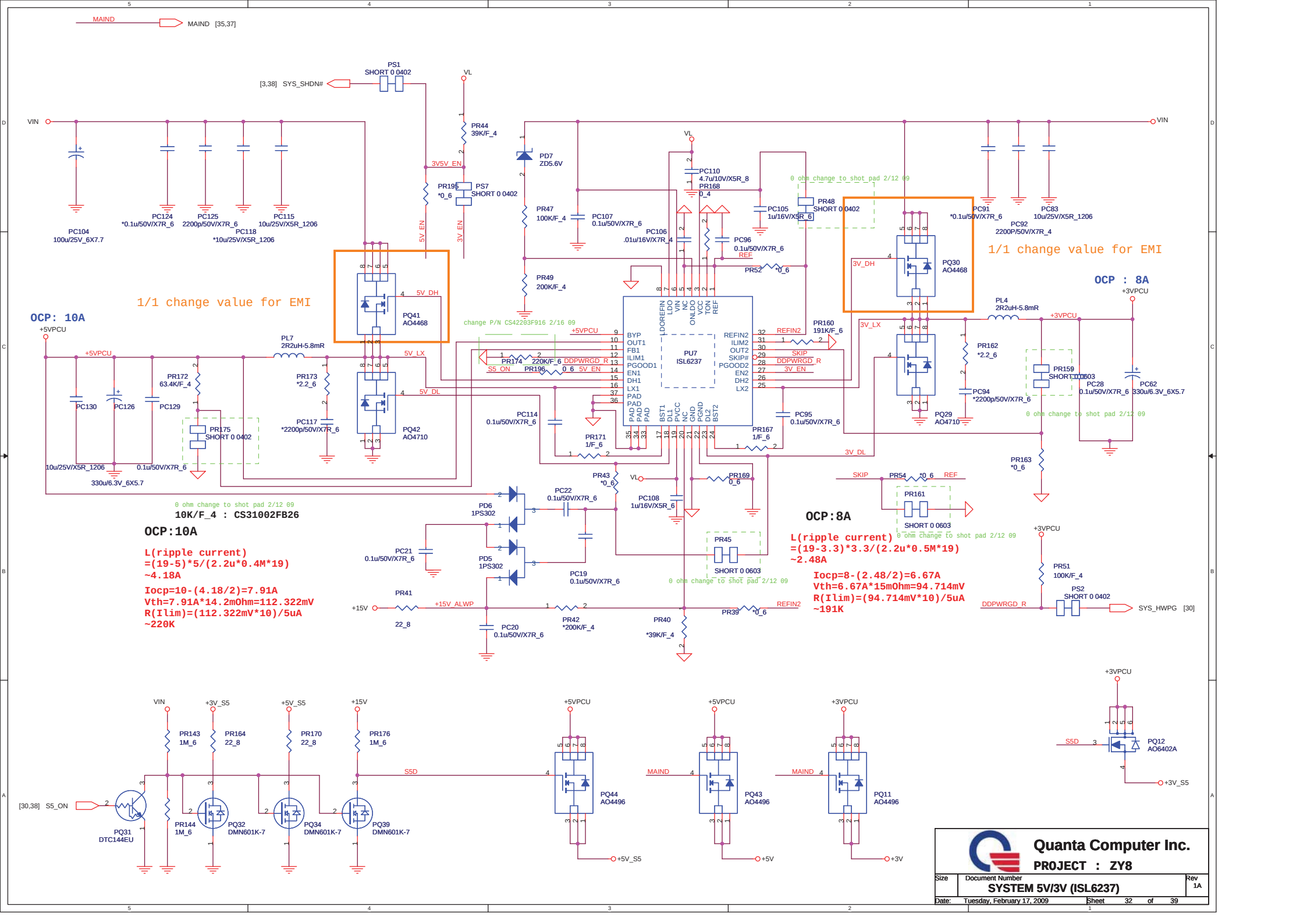
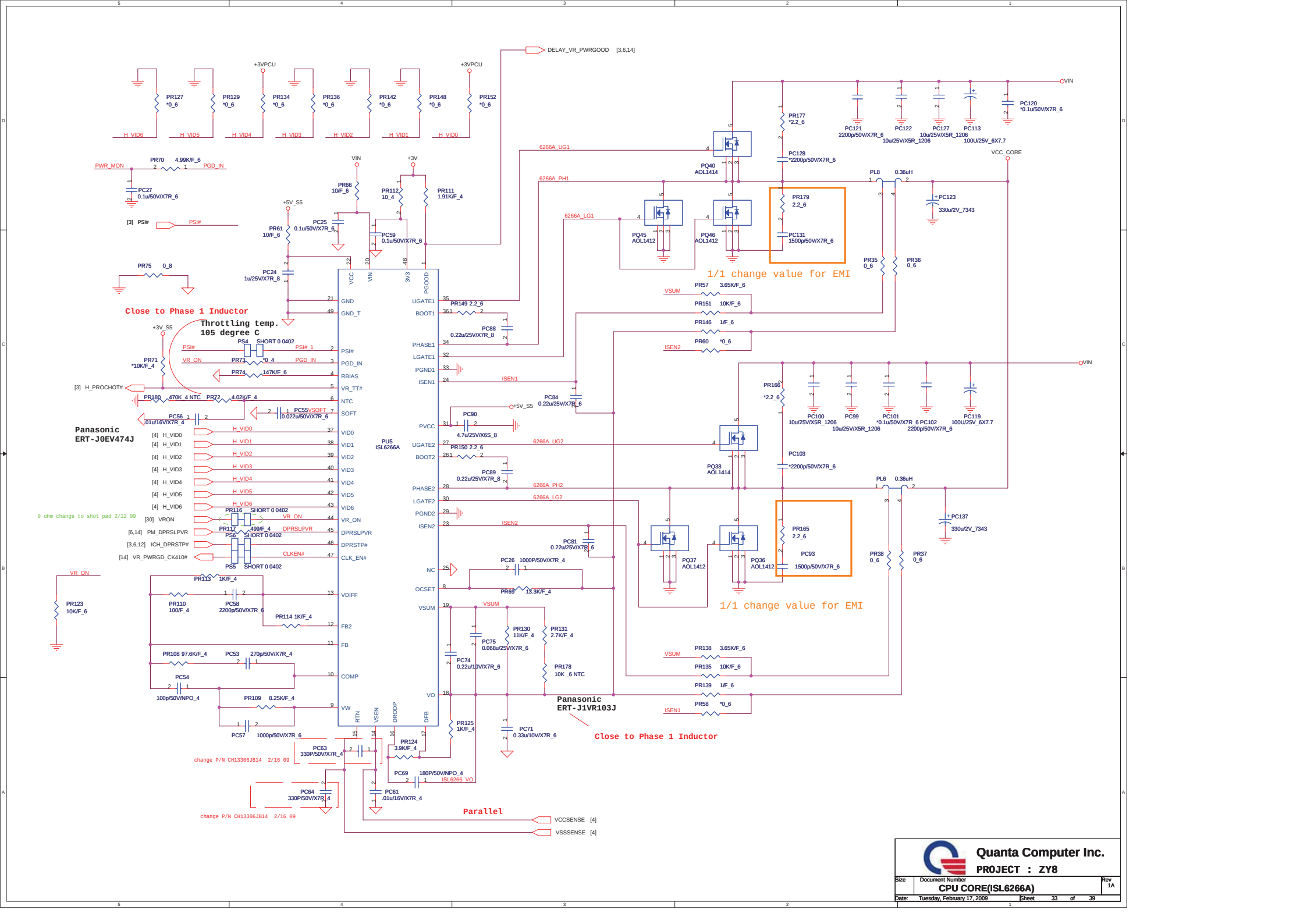
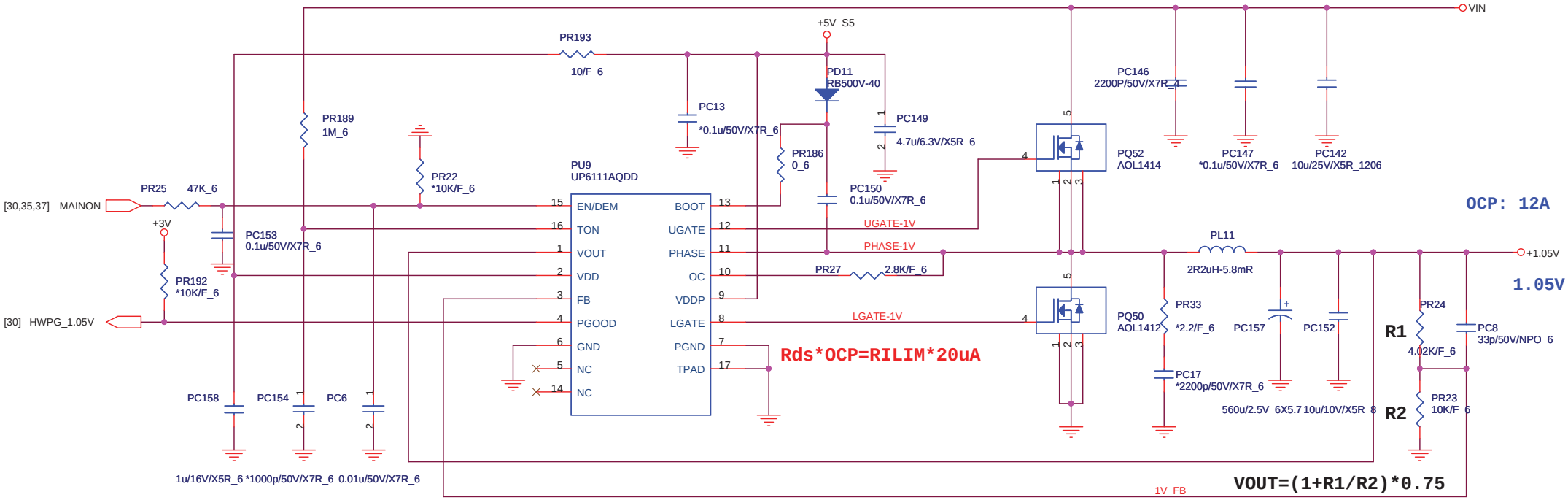

MAIND
MAIND [35,37]
PS1
SHORT 0 0402
[3,38] SYS_SHDN#
VL
VIN
PR44
39K/F_4
3V5V_EN
PR195
*0_6
PS7
SHORT 0 0402
PD7
ZD5.6V
PR47
100K/F_4
PC107
0.1u/50V/X7R_6
PR49
200K/F_4
PC110
4.7u/10V/X5R_8
PR168
0_4
PC106
.01u/16V/X7R_4
PC96
0.1u/50V/X7R_6
REF
PR52
*0_6
PC105
1u/16V/X5R_6
PR48
SHORT 0 0402
0 ohm change to shot pad 2/12 09
PC104
100u/25V_6X7.7
PC124
*0.1u/50V/X7R_6
PC125
2200p/50V/X7R_6
PC118
*10u/25V/X5R_1206
PC115
10u/25V/X5R_1206
PC91
*0.1u/50V/X7R_6
PC92
2200P/50V/X7R_4
PC83
10u/25V/X5R_1206
1/1 change value for EMI
OCP : 8A
OCP: 10A
PQ41
AO4468
5V_DH
5V_LX
5V_DL
PQ42
AO4710
PQ30
AO4468
3V_DH
3V_LX
PQ29
AO4710
PL7
2R2uH-5.8mR
PL4
2R2uH-5.8mR
+5VPCU
+3VPCU
change P/N CS42203F916 2/16 09
PU7
ISL6237
LDOREFIN
LDO
VIN
NC
ONLDO
VCC
TON
REF
BYP
OUT1
FB1
ILIM1
PGOOD1
EN1
DH1
LX1
PAD
REFIN2
ILIM2
OUT2
SKIP#
PGOOD2
EN2
DH2
LX2
BST1
DL1
PVCC
NC
GND
DL2
BST2
PR160
191K/F_6
PR174
220K/F_6
DDPWRGD_R
S5_ON
PR196
0_6
5V_EN
SKIP
3V_EN
PR172
63.4K/F_4
PR173
*2.2_6
PR175
SHORT 0 0402
PC117
*2200p/50V/X7R_6
PC130
PC126
PC129
10u/25V/X5R_1206
330u/6.3V_6X5.7
0.1u/50V/X7R_6
PC114
0.1u/50V/X7R_6
PR171
1/F_6
PR167
1/F_6
PC95
0.1u/50V/X7R_6
PR162
*2.2_6
PC94
*2200p/50V/X7R_6
PR159
SHORT 0603
PC28
0.1u/50V/X7R_6
PC62
330u/6.3V_6X5.7
PR163
*0_6
PR43
*0_6
PR169
0_6
PC108
1u/16V/X5R_6
PR54
*0_6
PR161
SHORT 0 0603
PR45
SHORT 0 0603
0 ohm change to shot pad 2/12 09
10K/F_4 : CS31002FB26
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:8A
L(ripple current)
=(19-3.3)*3.3/(2.2u*0.5M*19)
~2.48A
Iocp=8-(2.48/2)=6.67A
Vth=6.67A*15mOhm=94.714mV
R(Ilim)=(94.714mV*10)/5uA
~191K
PD6
1PS302
PD5
1PS302
PC22
0.1u/50V/X7R_6
PC21
0.1u/50V/X7R_6
PC19
0.1u/50V/X7R_6
PC20
0.1u/50V/X7R_6
PR41
22_8
+15V
+15V_ALWP
PR42
*200K/F_4
PR40
*39K/F_4
PR39
*0_6
REFIN2
PR51
100K/F_4
PS2
SHORT 0 0402
DDPWRGD_R
SYS_HWPG [30]
PR143
1M_6
PR164
22_8
PR170
22_8
PR176
1M_6
S5D
[30,38] S5_ON
PQ31
DTC144EU
PR144
1M_6
PQ32
DMN601K-7
PQ34
DMN601K-7
PQ39
DMN601K-7
PQ44
AO4496
PQ43
AO4496
PQ11
AO4496
PQ12
AO6402A
+5V_S5
+5V
+3V
+3V_S5
Quanta Computer Inc.
PROJECT : ZY8
Size
Document Number
SYSTEM 5V/3V (ISL6237)
Rev
1A
Date: Tuesday, February 17, 2009
Sheet 32 of 39



Quanta Computer Inc.		
PROJECT : ZY8		
Size	Document Number	Rev
	CPU CORE(ISL6266A)	1A
Date: Tuesday, February 17, 2009	Sheet 33 of 39	



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

AOL1412 Rdson=4.6mOhm

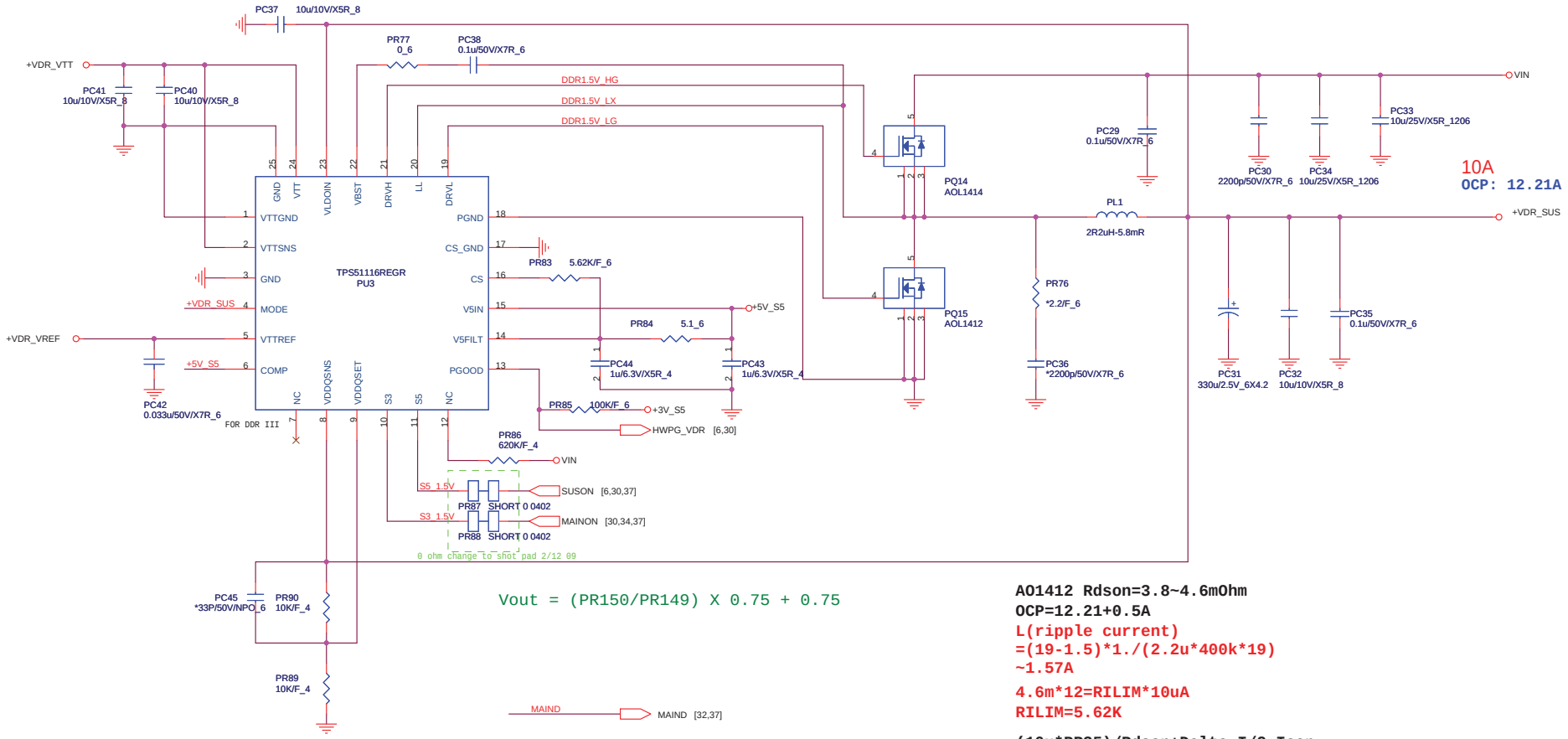
OCP=16-0.8A

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

4.6m*12=RILIM*20uA

RILIM=2.76K--- 2.8K

Quanta Computer Inc.		
PROJECT : ZY8		
Size	Document Number: VCCP 1.05V(UP6111A)	Rev: 1A
Date: Tuesday, February 17, 2009	Sheet 34 of 39	



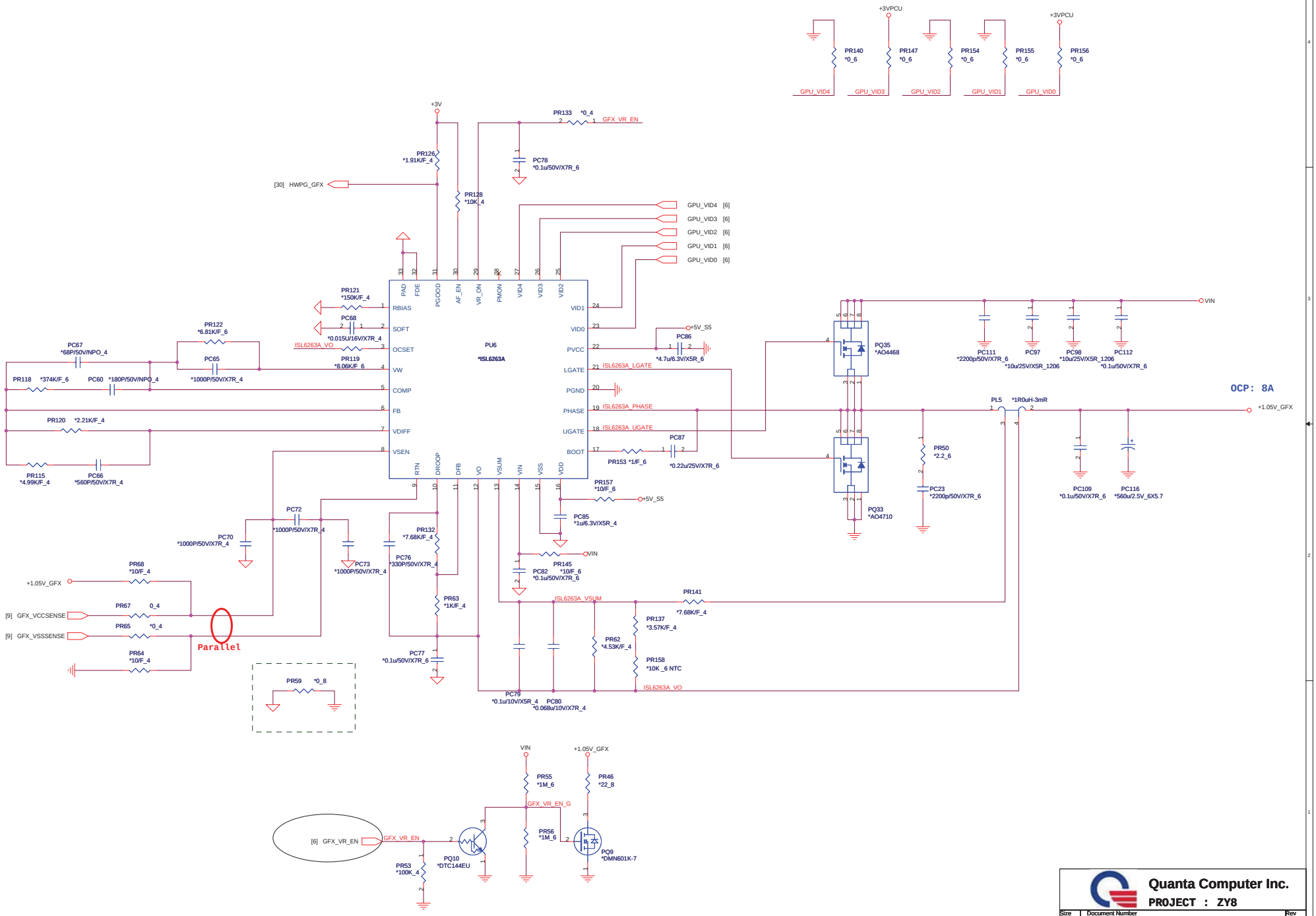
AO1412 Rdson=3.8~4.6mOhm
OCP=12.21+0.5A
L(ripple current)
=(19-1.5)*1./(2.2u*400k*19)
~1.57A

4.6m*12=RILIM*10uA
RILIM=5.62K

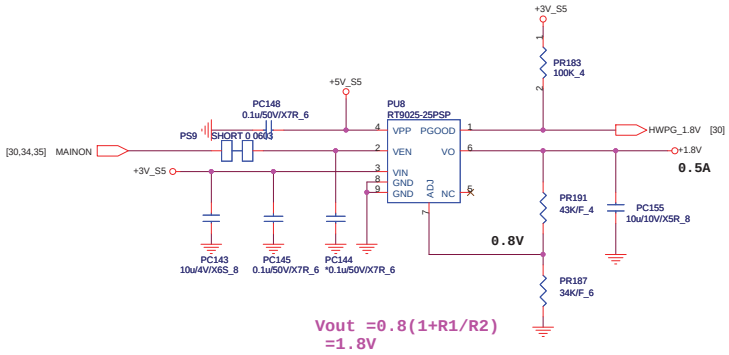
(10u*PR35)/Rdson+Delta_I/2=Iocp

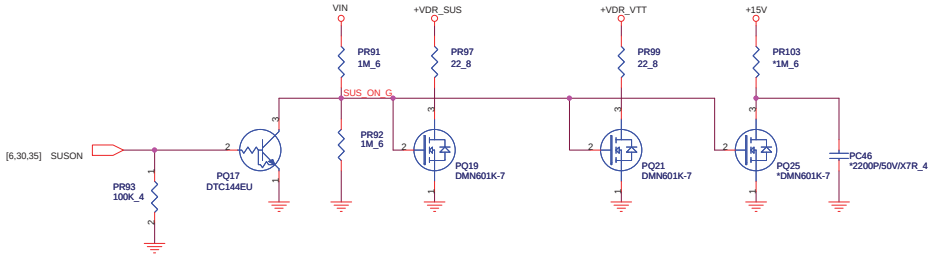
Quanta Computer Inc.
PROJECT : ZY8

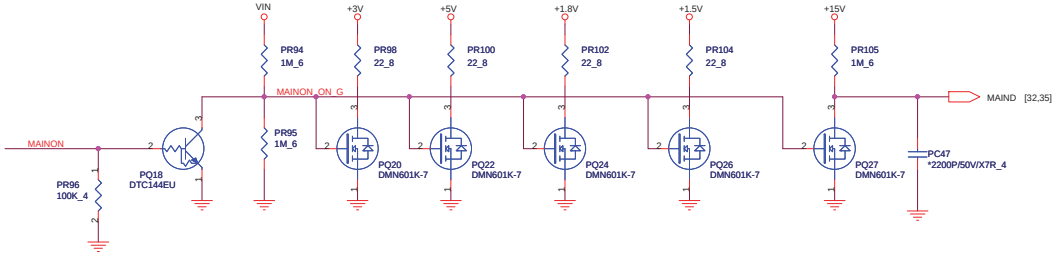
Size	Document Number	Rev
	DDR 1.8V(TPS51116)	1A
Date: Tuesday, February 17, 2009	Sheet 35 of 39	



Quanta Computer Inc.		
PROJECT : ZY8		
Size	Document Number: 1.05V GFX (ISL6263A)	Rev: 1A
Date: Tuesday, February 17, 2009	Sheet 36 of 39	





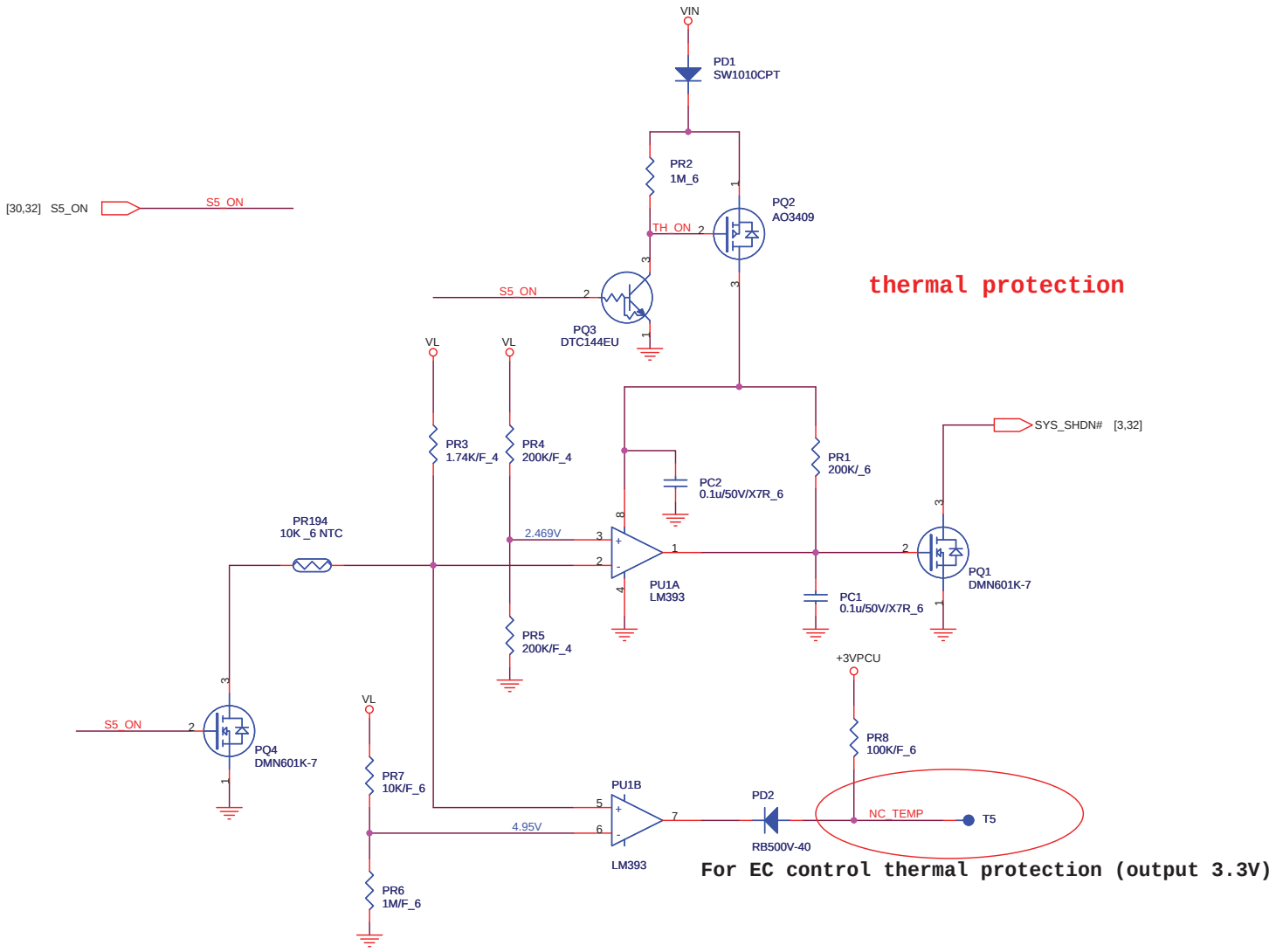


Quanta Computer Inc.

PROJECT : ZY8

Size	Document Number	Rev
	Discharge/1.5V	1A

Date: Tuesday, February 17, 2009 Sheet 37 of 39



Quanta Computer Inc.		
PROJECT : ZY8		
Size	Document Number: Thermal Protection	Rev: 1A
Date: Tuesday, February 17, 2009	Sheet 38 of 39	

CHANGE LIST

Model	REV	CHANGE LIST
ZY8 MB	1A	FIRST RELEASED: E20080?-???? (PCB: DA0ZY8MB6A0)
	2A	Page10 : Correct LVDS power of NorthBridge to +VDR_SUS Page12 : Change 32.768KHz (Y2) to normal type(H3.5) Change RTC battery connector type (CN34) to DFHD02MR311 Swap SATA port between port-1 (ODD) and port-4 (2ND HDD) Page3 :Remove Q32, Q33, R288,R287,R111 and R110 for Thermal monitor Page6 :Change PU power +3VSUS to +3V Add HDA function for ZY9 Page7 :Add HSYNC/VSYNC to GND for ZY9 MXM Page12 :Add HDA function for ZY9 Page17 :Add iHMDI function for ZY9 Change U33 power and Input Change U36 power Page19 :Add HDMI Level Shift for ZY9 Add Cap. for DP signal Change HDMI Conn footprint Page20 :Change transformer and RJ45 footprint Page21 :Change Conn pcs to Two pcs Page23 :Co-layout ALC888 for ZY9 Page25 :Change New Card Conn footprint Page26 :Change CardReader to OZ888GS0LN Page27 :Change Power Board Conn to 6 pin Change CN1 and CN13 pin define Combine LCD BL ON/OFF and Logo LED conn. to CN39 Page28 :Change USB CN32 pin define Change CN15 to 12pin Page29 :Add ESD protect for FP change PQ37 from BAM14140001 to BAM14120000 change PQ35, PQ30,PQ49 from BAM44960000 to BAM44680003 change PC131,PC93 from CH22206KB16 to CH21506K915 changePR184 from CS26193F929 to CH22743F901 PR179,PR165 mount PC112,PC109,PC120,PC101,PC147,PC156,PC91,PC29,PC35,PC135,PC160,PC159,PC141 un-mount change PU9 from AL0006111002 to AL008202001 change PU7 from AL006237000 to AL008206000 change PU3 from AL051116008 to AL008207000
	3A	
	3C	

MODEL	ZY8	
	FROM	To
	X	1A
	X	1A
	1A	2A
	1A	2A
	1A	2A
	1A	2A
	1A	2A
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	3A	3B
	3A	3B
	3A	3B

DOC NO.	PROJECT MODEL :	ZY8	APPROVED BY:		DATE:	2008/06/27
	PART NUMBER:		DRAWING BY:		REVISON:	1A