

KZ1 Block Diagram

PCB STACK UP

LAYER 1 : TOP
LAYER 2 : GND
LAYER 3 : IN1
LAYER 4 : SVCC
LAYER 5 : IN2
LAYER 6 : IN3
LAYER 7 : GND
LAYER 8 : BOT

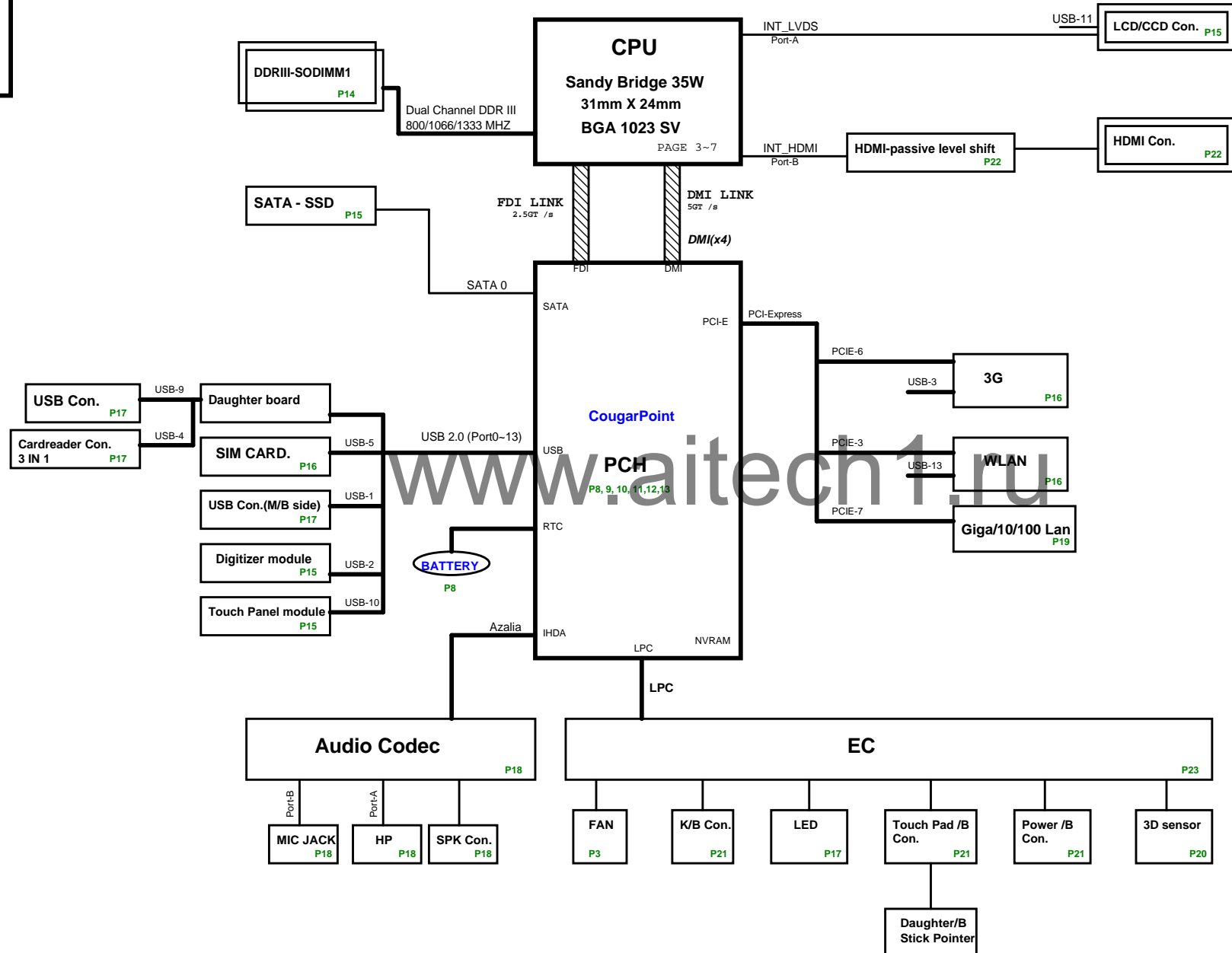


Table of Contents

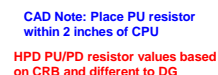
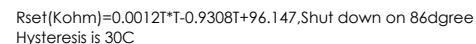
PAGE	DESCRIPTION	BOI-FUNCTIONS
1	Schematic Block Diagram	
2	Front Page	
3-7	Processor	CPU
8-13	PCH	CLG
9	RTC	RTC
14	DDRIII SO-DIMM	DDR
	VGA Connector	VGA
15	LCD Panel	LDS
	CRT & CRT BUS SWITCH	CRT
15	CCD	CCD
	HALL SENSOR&BACK LIGHT SWITCH	HSR
	Display Port	DPP
22	HDMI comm part	HDM
	HDMI for GM	HMG
	SATA ODD	ODD
	Main SATA HDD & 2nd SATA HDD	HDD
	G-Sensor	H3D
	5 IN 1 Card reader	MMC
	IEEE1394	FIW
16	MINI Card (Wi-Fi & WIMAX)	WLN
16	MINI Card 2nd	MNC
	MINI Card 3rd	MNC
	TMA Connector	TMA
21	INT KeyBoard & K/B LED Power	KBC
17	LED Board	LED
21	TP&FP board	TPD,FPD
	Bluetooth Connector	BTM
	Felica Connector	FEC
	MMB Connector	MMB
21	Power SW	PSW
	B-CAS Connector	BCS
	New Card (Express Card)	EXC
	E-SATA comb USB	ESA
17	USB Connector	USB
	Audio & USB Board	USB,ADO
	Light Sensor	LSN
	Satellite LED	LED
	RF LED / WIMAX LED / Kill SW	KSW
26	EC WP8763LDG/WPC8769L(O)	KBC
	CIR	CIR
18	Codec (CX20671-21Z)	ADO
	FM Tunner	FMM
	Modem Connector	MDM
21	HOLE	
19	Atheros LAN(AR8151B/52B)	LAN
	NVRAM Connecyor	NVR
24	Charger (ISL88731C)	PWM
25	System 5V/3V (RT8223)	PWM
29	CPU CORE (ISL95835HRTZ)	PWM

POWER PLANE	VOLTAGE	CONTROL SIGNAL	Power States ACTIVE IN
VIN	10V~+19V		S0-S5
+VCCRTC	+3.0V~+3.3V		S0-S5
+3V	+3.3V	MAIN_ON	S0
+3V_S5	+3.3V	S5_ON	S0-S5
+3V_HDP	+3.3V	MAIN_ON	S0
+3VPCU	+3.3V	AC/DC Insert enable	S0
+5V	+5V	MAIN_ON	S0
+5V_S5	+5V	S5_ON	S0-S5
+5VPCU	+5V	AC/DC Insert enable	S0-S5
WIMAX_P	+3.3V	WMAX_P for EC	
+VCCSA		HWPG_VTT	S0
+1.8V	+1.8V	MAIN_ON	S0
+1.5V	+1.5V	MAIN_ON	S0
+1.5V_SUS	+1.5V	SUSON	S0-S3
+VCC_CORE		VRON	S0
+VTT	+1.05V~+1.1V	MAIN_ON	S0
+1.05V	+1.05V	MAIN_ON	S0
+VAXG		GFXVR_EN	S0

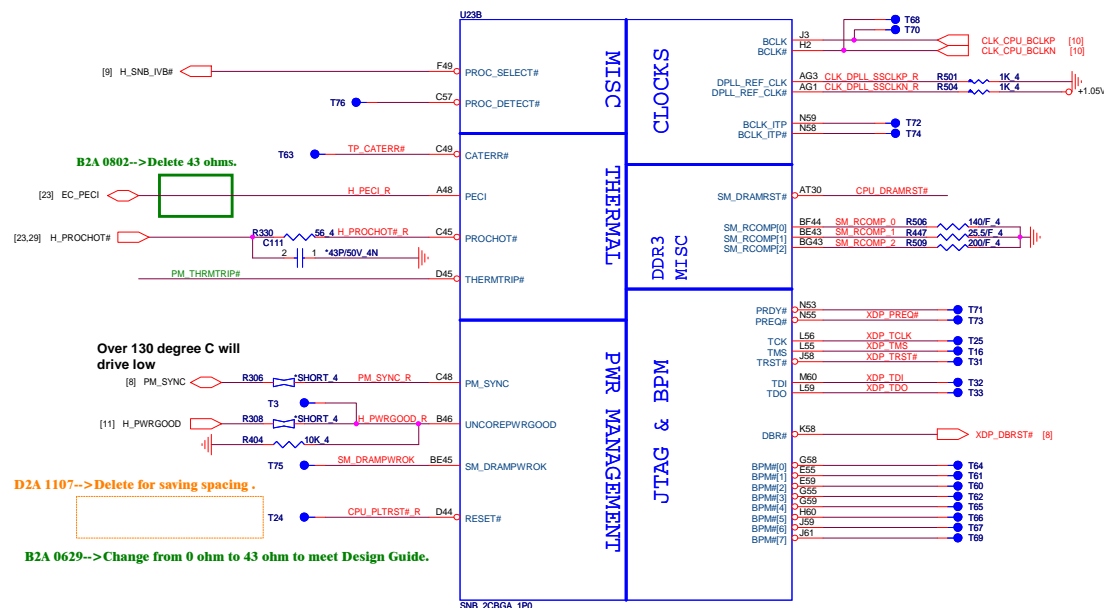
GND PLANE	PAGE
AGND_DC/DC	18
GND	ALL

PAGE	DESCRIPTION	BOI-FUNCTIONS
29	VAXG (ISL95835HRTZ)	PWM
27	+VTT (OZ80116)	PWM
27	+1.05V (OZ80116)	PWM
26	DDR 1.5V (TPS51216)	PWM
28	+VCCSA (TPS51461)	PWM
30	+1.8V(G966A)	PWM
31	PCH Power Plane	
	Power Management	
	Change List	

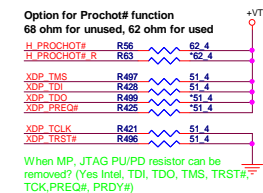
ITEM	Value Code	FUNCTIONS
1	EV@	DISCRETE
2	IV@	UMA
3	U3@	USB 3.0
4	U2@	USB 2.0 (colay W USB 3.0)
5	HM@	HDMI
6	IHM@	Internal HDMI
7	EHM@	External HDMI
8	3G@	3G
9	C@&CD@	Cost issue
10	MDC@	Modem
11	S3@	S3 Power Reduction
12	NS3@	No S3 Power Reduction
13	E@	EMI
14	51@	1G LAN
15	52@	10/100 LAN
16	GS@	G-SENSOR
17	NGS@	No G-SENSOR



Sandy Bridge Processor (CLK,MISC,JTAG)<CPU>

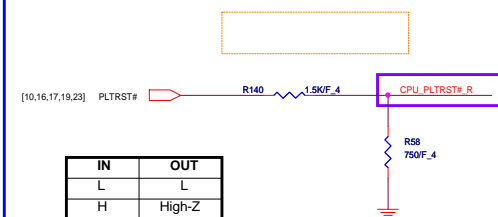


Processor pull-up <CPU>



Level Shift <CPU>

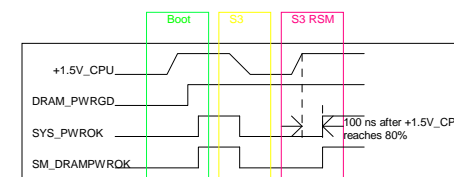
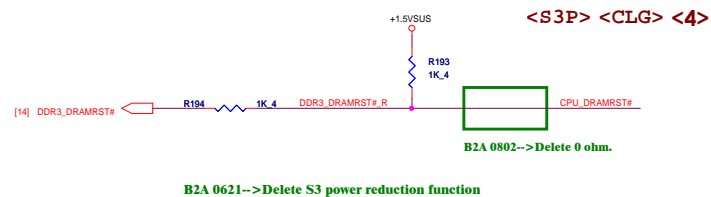
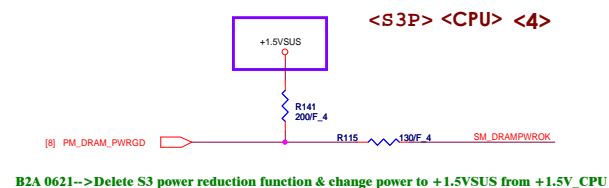
B2A 0629-->Modify two ways to control CPU PLTRST#.
D2A 1107-->Delete for saving spacing.



www.aitech1.ru

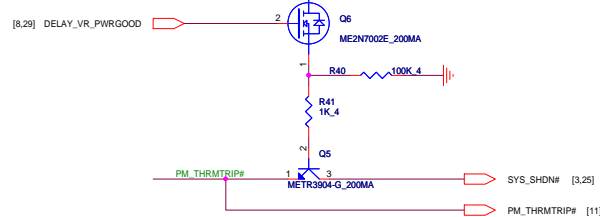
No support S3 power Reduction (SM_DRAMPWROK)

No support S3 power Reduction (SM_DRAMRST#)



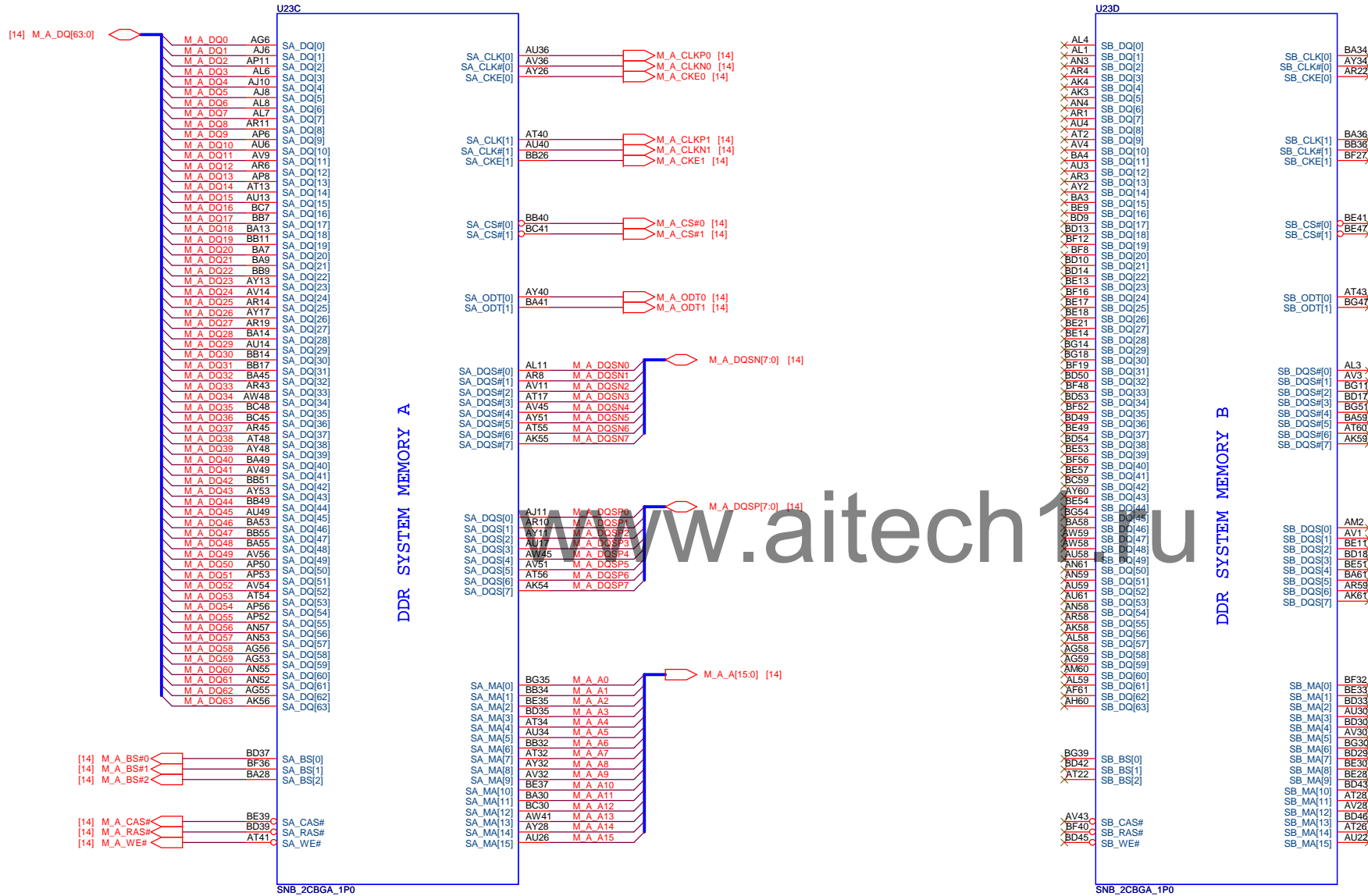
Thermal Trip<CPU>

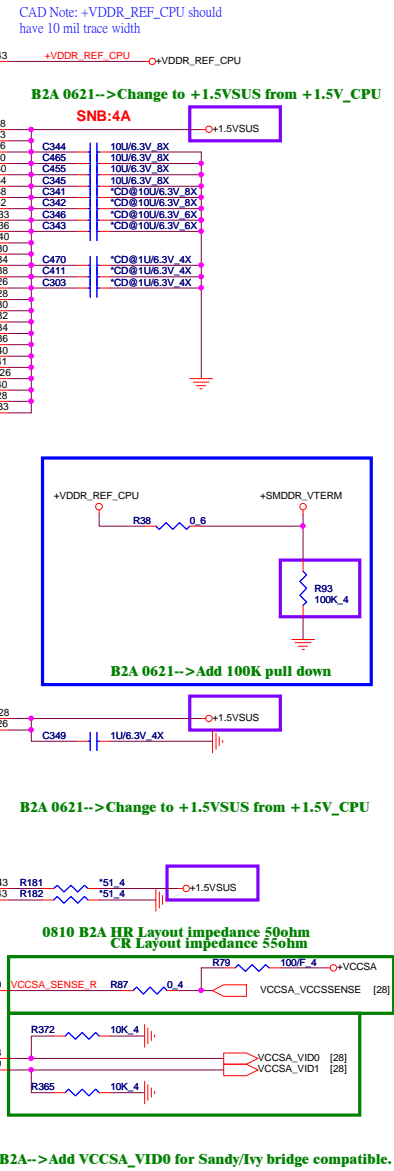
No support S3 power Reduction (CPU Power)




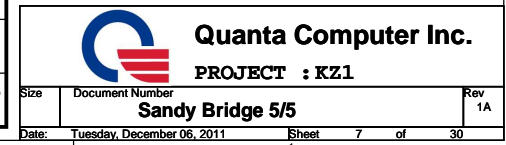
Sandy Bridge Processor (DDR3)<DDR>

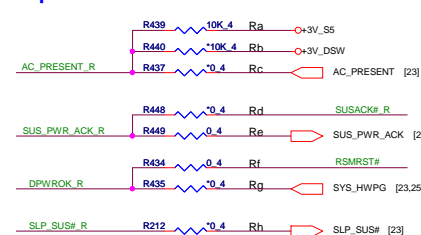
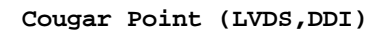
05





 Quanta Computer Inc. PROJECT : KZ1		
Size	Document Number	Rev 1A
Sandy Bridge 4/5		
Date:	Thursday, December 08, 2011	Sheet 6 of 30





Net Name	Deep Sx Support	Deep Sx No Support
AC_PRESENT	Rb,Rc stuff	Ra stuff
SUS_PWR_ACK	Rd stuff	Re stuff
DPWROK	Rg stuff	Rf stuff
SLP_SUS	Rh stuff	Rh No stuff

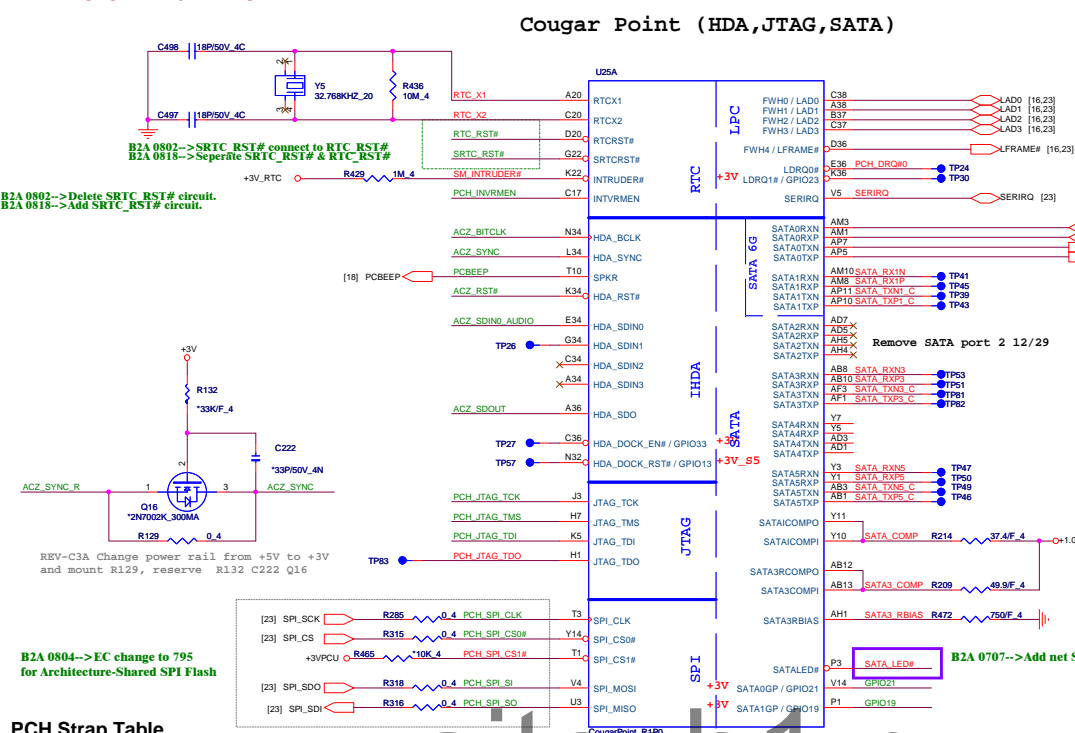
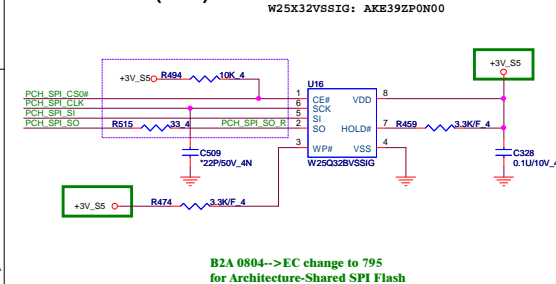
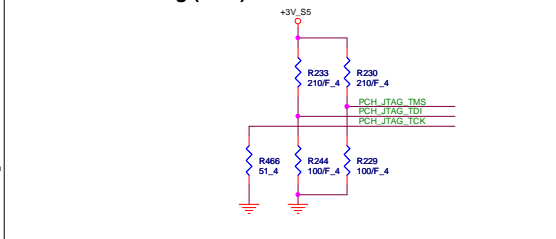
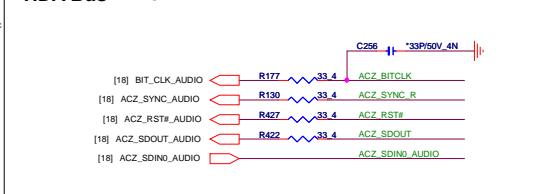
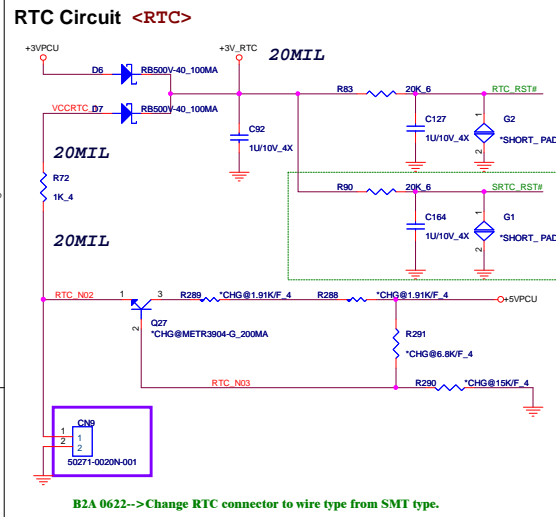


Quanta Computer Inc.
PROJECT : KZ1

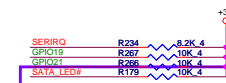
ter

Size	Document Number	Rev
	Cougar Point 1/6	1A
Date:	Tuesday, December 06, 2011	Sheet 8 of 30

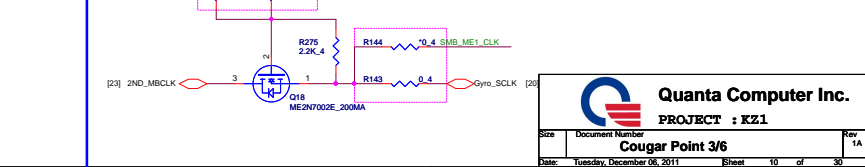
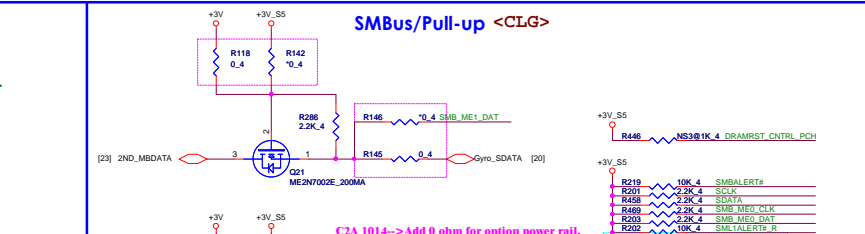
Date: Tuesday, December 06, 2011 Sheet 8 of 30



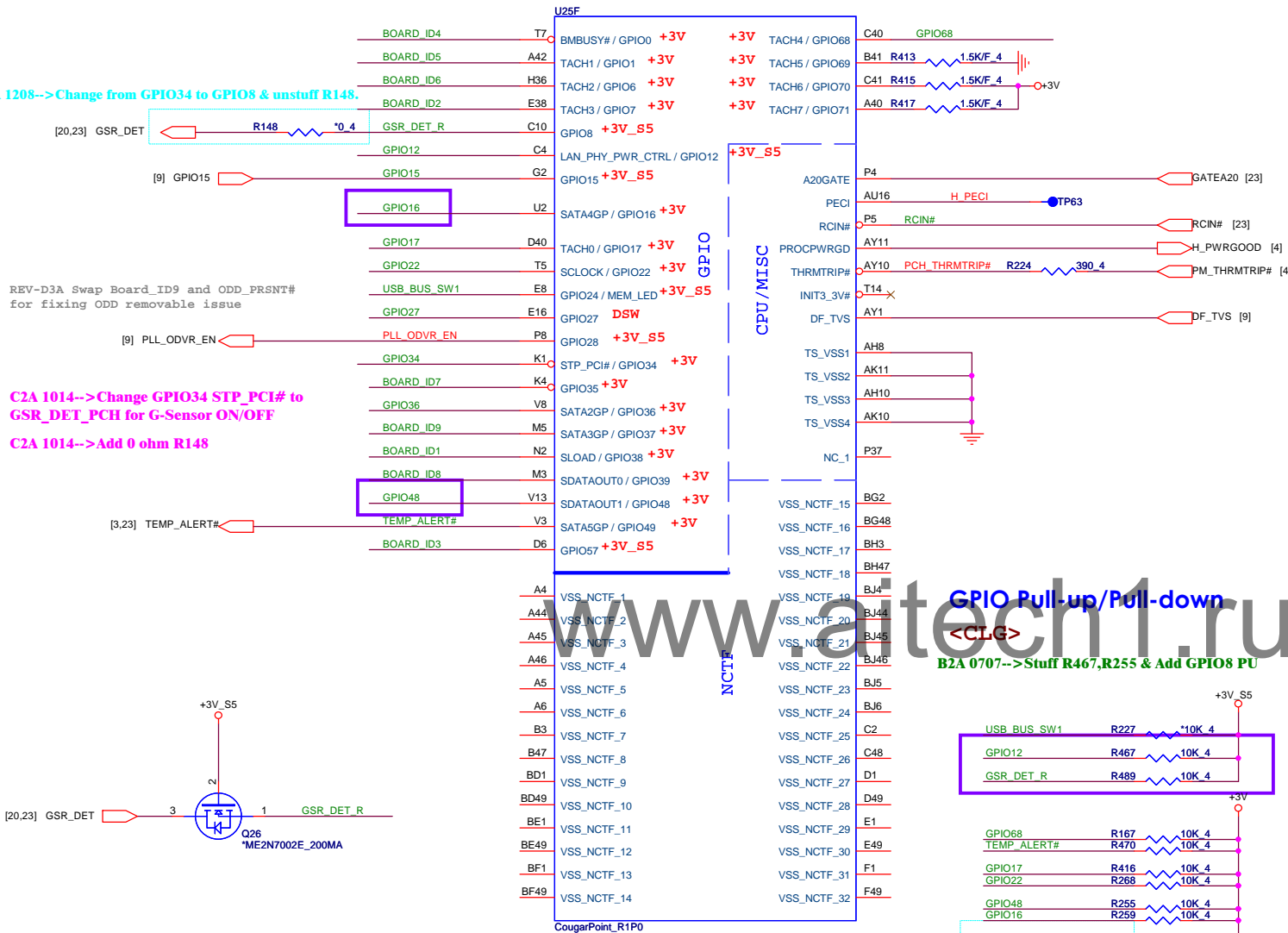
Pin Name	Strap description	Sampled	Configuration										
SPKR	No-reboot mode setting	PWROK	0 = Default (weak pull-down 20K) 1 = Setting to No-Reboot mode										
GNT3# / GPIO55	Top-Block Swap Override	PWROK	0 = "top-block swap" mode 1 = Default (weak pull-up 20K)										
INTVRMEN	Integrated 1.05V VRM enable	ALWAYS	Should be always pull-up										
GNT1# / GPIO51	Boot BIOS Selection 1 [bit-1]	PWROK	<table><tr><th>GNT1#</th><th>GPIO19</th><th>Boot Location</th></tr><tr><td>1</td><td>1</td><td>SPI *</td></tr><tr><td>0</td><td>0</td><td>LPC</td></tr></table>	GNT1#	GPIO19	Boot Location	1	1	SPI *	0	0	LPC	
GNT1#	GPIO19	Boot Location											
1	1	SPI *											
0	0	LPC											
GPIO19	Boot BIOS Selection 0 [bit-0]	PWROK											
HDA_SDO	Flash Descriptor Security	RSMRST	0 = Override 1 = Default (weak pull-up 20K)										
DF_TV5	DMI/FDI Termination voltage	PWROK	0 = Set to Vss 1 = Set to Vcc (weak pull-down 20K)										
GPIO28	On-die PLL Voltage Regulator	RSMRST#	0 = Disable 1 = Enable (Default)										
HDA_SYNC	On-Die PLL VR Voltage Select	RSMRST	0 = Support by 1.8V (weak pull-down) 1 = Support by 1.5V										
GPIO15	TLS Confidentiality	RSMRST	0 = Default. TLS No Confidentiality 1 = TLS Confidentiality										
DSWVRMEN	Deep S4/S5 Well On -Die Voltage Regulator Enable	ALWAYS	0 = Disable 1 = Enable										
INIT3_3V#	Reserved	PWROK	1 = Default (weak pull-up 20K)	Should not pull low, leave as No Connect									
GNT2# / GPIO53	ESI Strap (Server Only)	PWROK	1 = Default. Should not be pulled low for desktop and mobile	Should not pull low for desktop and mobile									
L_DDC_DATA	LVDS Detected	PWROK	0 = Default. Not Detected 1 = Detected	1 = PU to 3V									
SDVO_CTRLDATA	Port B Detected	PWROK	0 = Default. Not Detected 1 = Detected	1 = PU to 3V									
DDPC_CTRLDATA	Port C Detected	PWROK	0 = Default. Not Detected 1 = Detected	0=NC									
DDPD_CTRLDATA	Port D Detected	PWROK	0 = Default. Not Detected 1 = Detected	0=NC									
SATA3GP / GPIO37	Reserved	PWROK	0 = Default	Should not be pulled high when strap is sampled									
SATA2GP / GPIO36	Reserved	PWROK	0 = Default	Should not be pulled high when strap is sampled									



U25

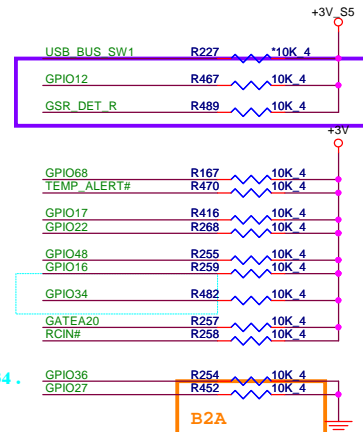
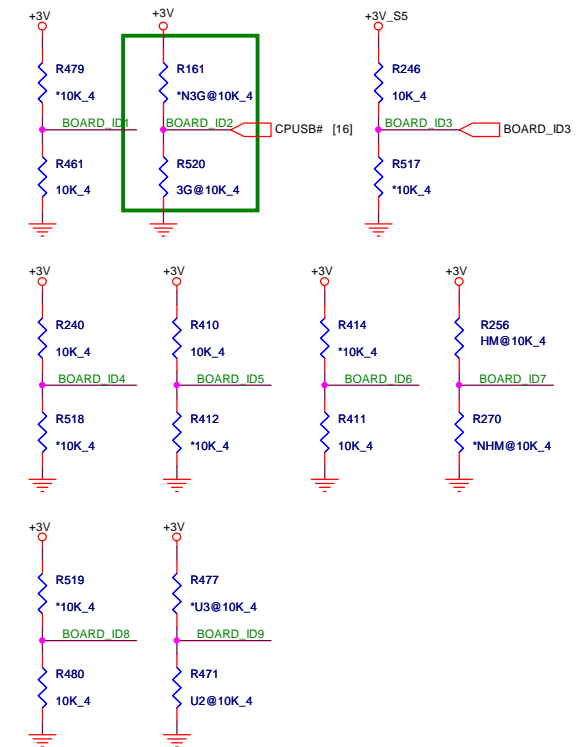


Cougar Point (GPIO,VSS_NCTF,RSVD)



GPIO Pull-up/Pull-down

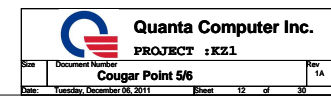
B2A 0707-->Stuff R467,R255 & Add GPIO8 PU

[illegible]

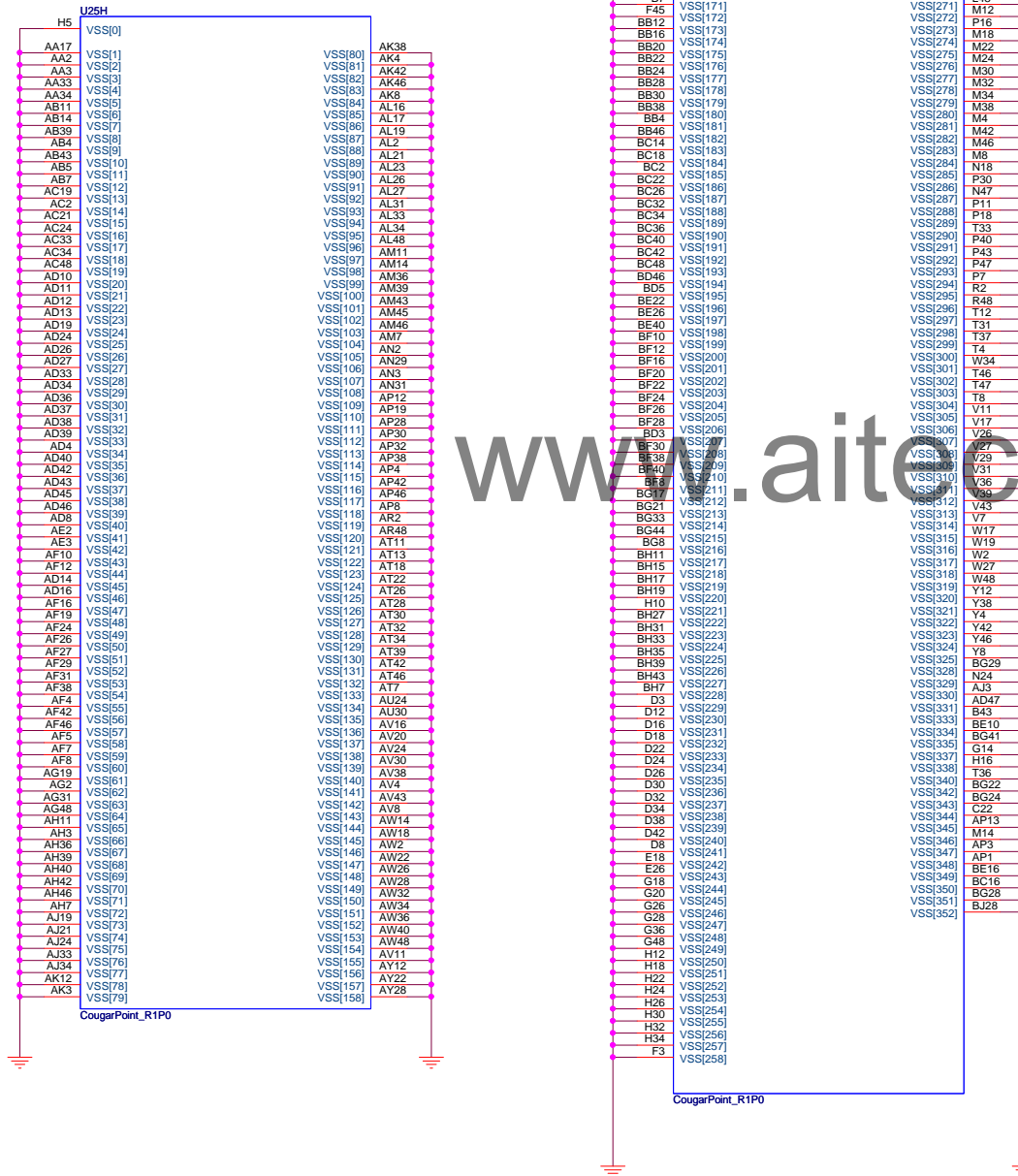
Quanta Computer Inc.
PROJECT : KZ1

Cougar Point 4/6

Size	Document Number	Rev
	Cougar Point 4/6	1A
Date:	Thursday, December 08, 2011	Sheet 11 of 30

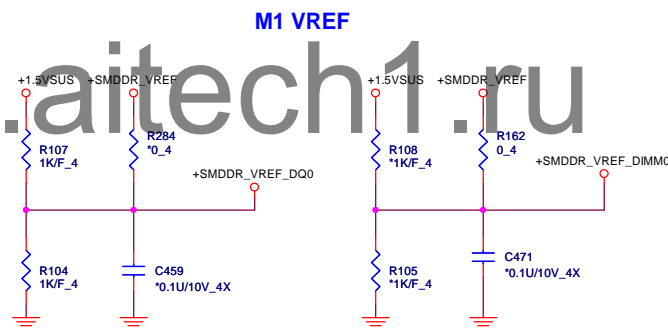
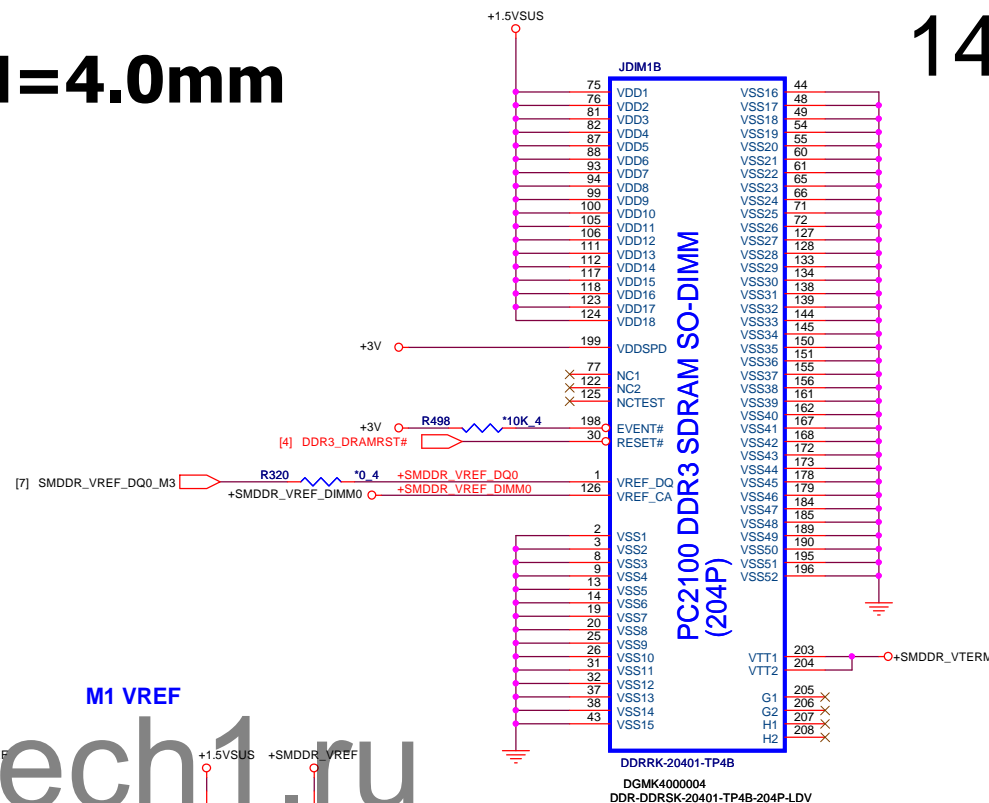


IBEX PEAK-M (GND)

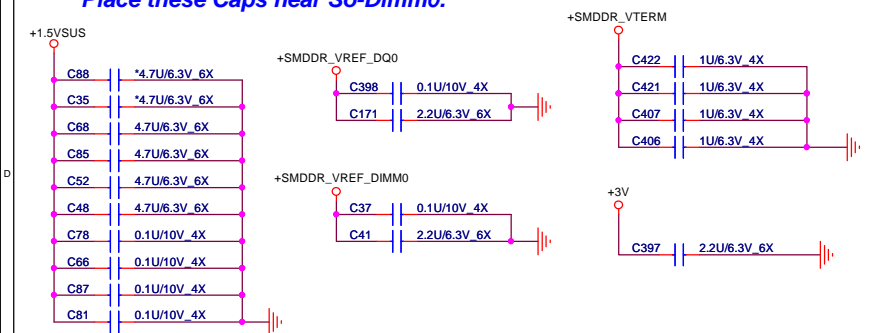
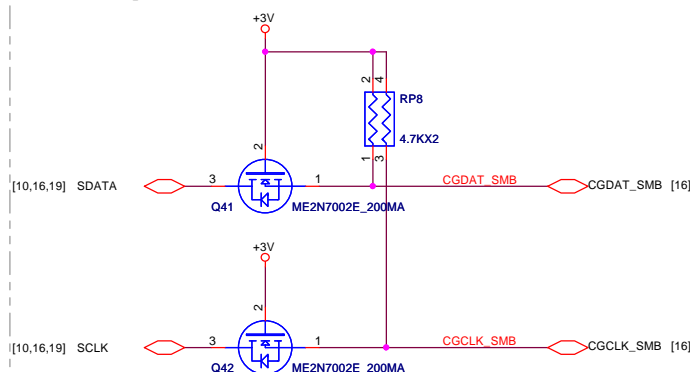


Quanta Computer Inc.
PROJECT : KZ1

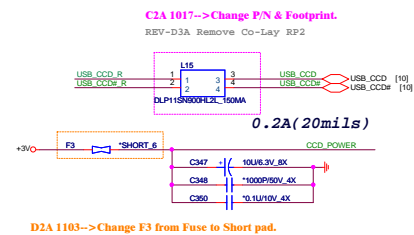
Size	Document Number	Rev
	Cougar Point 6/6	1A
Date:	Tuesday, December 06, 2011	Sheet 13 of 30

**SMBus(DDR3/3G)**

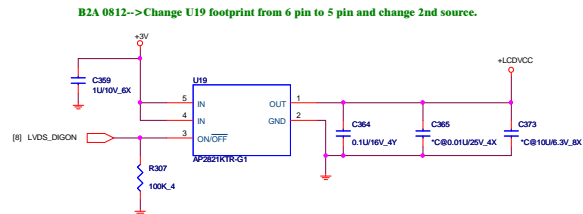
BU7-A1A Separate SMBUS level shift(+3V)-0728



CCD <CCD>



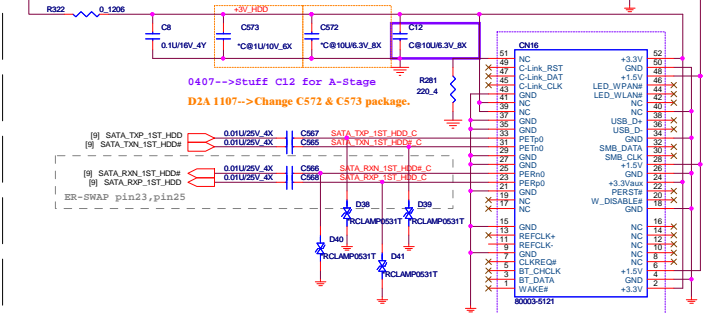
LCD POWER SWITCH <LDS>



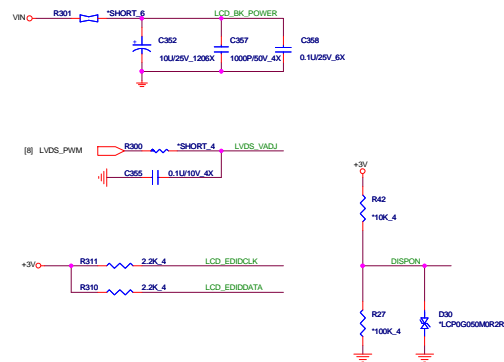
HDD (SSD-mSATA) <H1D>

B2A 0628--> Change SSD connector from (P=0.8/H=4) to (P=0.7/H=7).
B2A 0831--> Change SSD connector from (P=0.7/H=7) to (P=0.8/H=4).

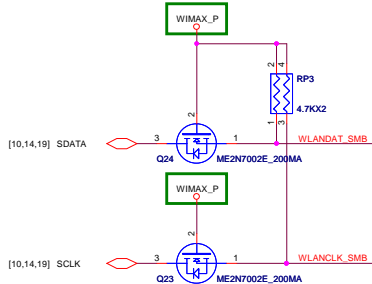
128GB Write peak 4W, current 1.33A
Via need 2pcs, trace need 60mil



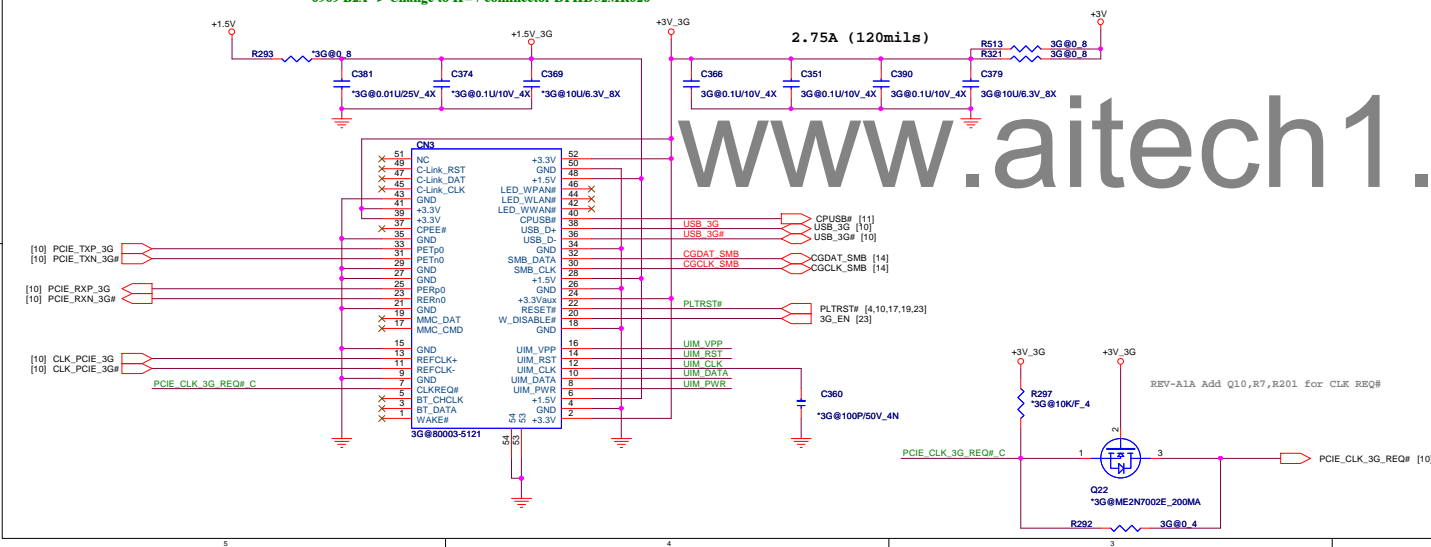
LCD Panel Module <LDS>



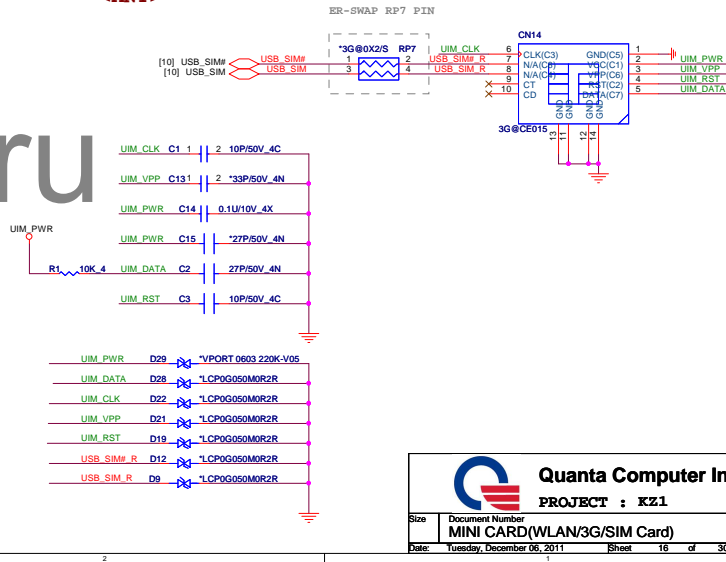
REV-C3A Mount C368



0909 B2A--> Change to H=7 connector DFHD52MR020

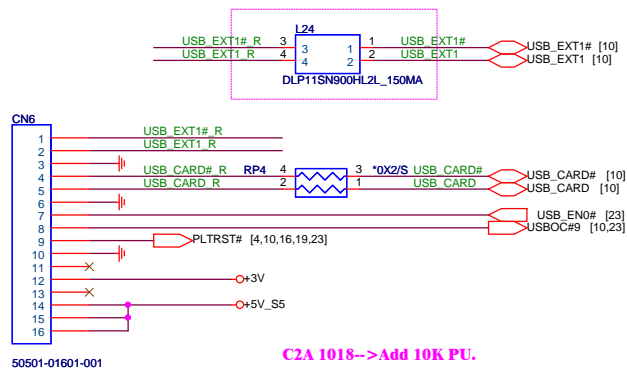


SIM Card <MNT>

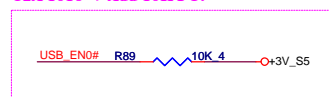


<U2B> <MMC> <USB> <EMI>

C2A 1017-->Add C.M choke for EMI.

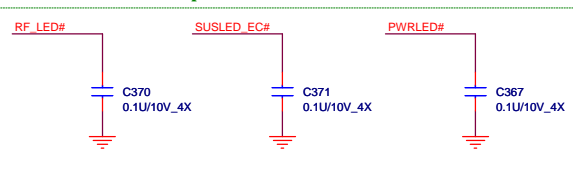


C2A 1018-->Add 10K PU.

[illegible]

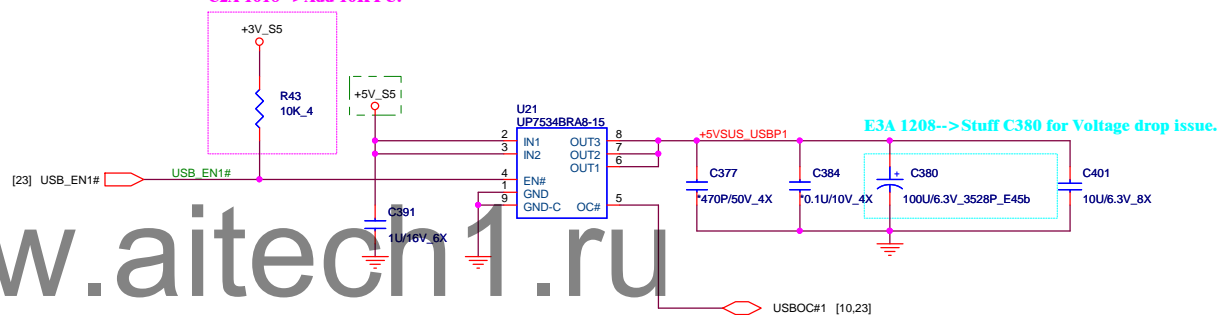
748421001C1

C2A 0826--> Mount EMI cap C367,C370,C371.
B2A 0826--> Add EMI cap.



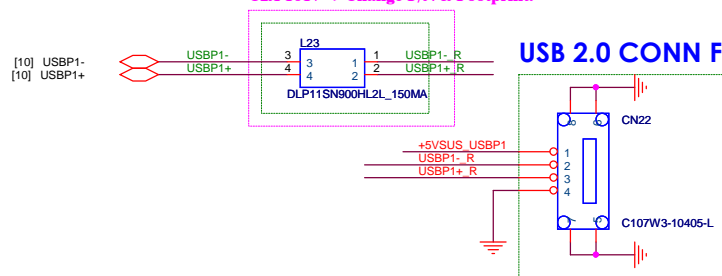
For 機構開洞 solution

C2A 1018-->Add 10K PU.



E3A 1208--> Stuff C380 for Voltage drop issue.

C2A 1017-->Change P/N & Footprint.



B2A 0914-->Mirror CN22 pin define



Figure 1: Pin connections for the 6ES7 300-1EA00-0AB0

Pinout Table for CN1:

Signal	Pin	Signal	Pin
SPK_L+	R453	PBY1000MT-501V-N_12A	INSPKL-N
SPK_L-	R454	PBY1000MT-501V-N_12A	INSPKL-N
SPK_R+	R455	PBY1000MT-501V-N_12A	INSPKR-N
SPK_R-	R456	PBY1000MT-501V-N_12A	INSPKR-N

Close to CN2:

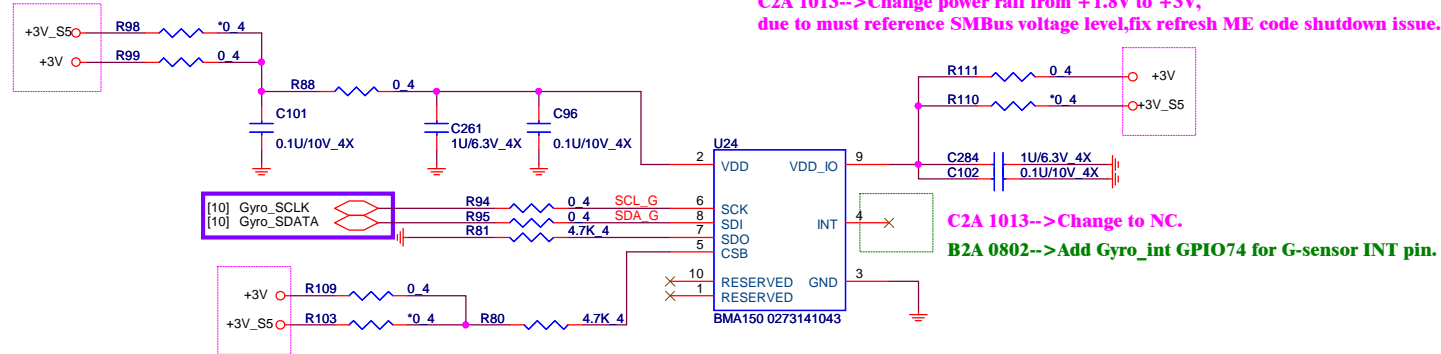
Wiring diagram showing connections for INSPKL-N, INSPKR-N, and INSPKR-N to ground via capacitors C313, C312, C310, and C311 (1000P/50V_4X).

Close to I/O modules:

Wiring diagram showing connections for INSPKR-N, INSPKR-N, INSPKL-N, and INSPKL-N to I/O modules via diodes D27, D26, D24, and D25. The modules are labeled *I*PORT 0603 220K-V05.

G Sensor <GSR>

C2A 1013-->Change power rail from +3V_S5 to +3V.



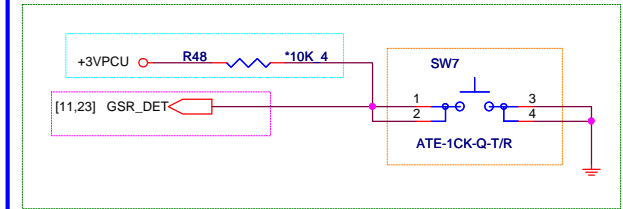
C2A 1013-->Change power rail from +1.8V to +3V, due to must reference SMBus voltage level,fix refresh ME code shutdown issue.

C2A 1013-->Change to NC.

B2A 0802-->Add Gyro_int GPIO74 for G-sensor INT pin.

C2A 1013-->Change power rail from +1.8V to +3V, due to must reference SMBus voltage level,fix refresh ME code shutdown issue.

G-Sensor Detect Switch <GSR>



C2A 0928-->Add G-Sensor detect function for switching NB/Tablet mode.

C2A 1014-->Add GSR_DET to PCH.

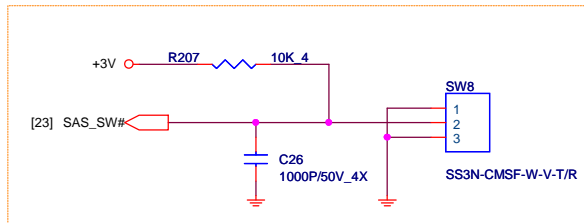
D2A 1102-->Stuff R48

D2A 1104-->Swap SW7 pin define.

E3A 1205-->Change Power railfrom +3V to +3VPCU & unstuff R48.

SAS Switch <PSW>

D2A 1103-->Add R207,C26,SW8



www.aitech1.ru



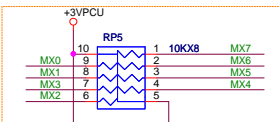
Quanta Computer Inc.

PROJECT : KZ1

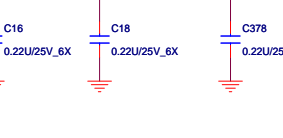
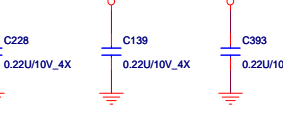
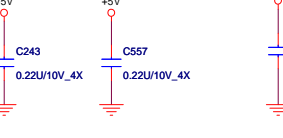
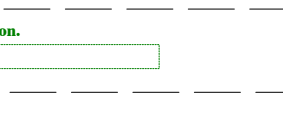
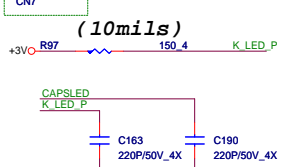
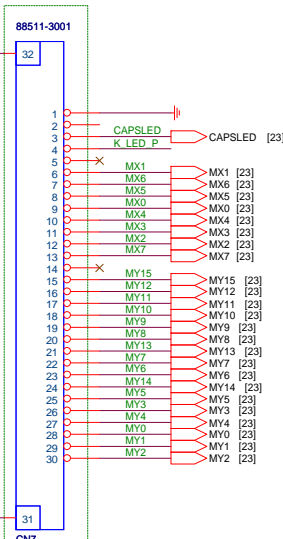
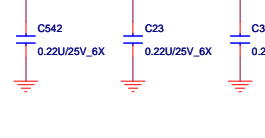
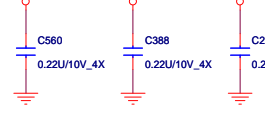
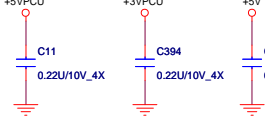
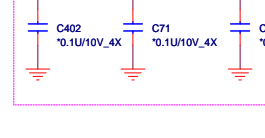
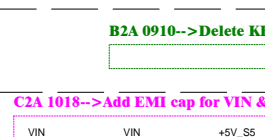
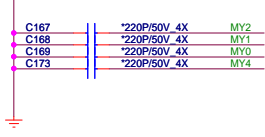
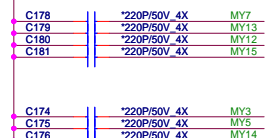
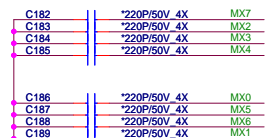
Size	Document Number	Rev
	Gyroscope (MPU-3050)	1A

Date: Thursday, December 08, 2011 Sheet 20 of 30

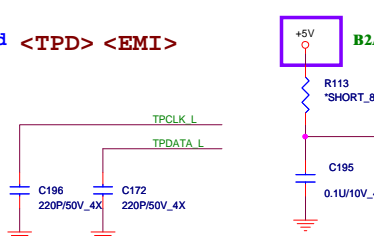
INT Keyboard <KBC> <EMI>



D2A 1102-->Add R55



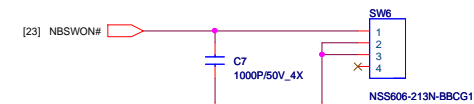
TP board <TPD> <EMI>



B2A 0628--> Change to +5V from +3V for track point touch pad module

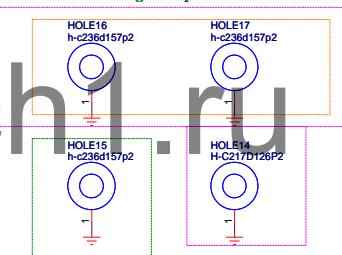
Power Switch (Slider Type)

<PSW>

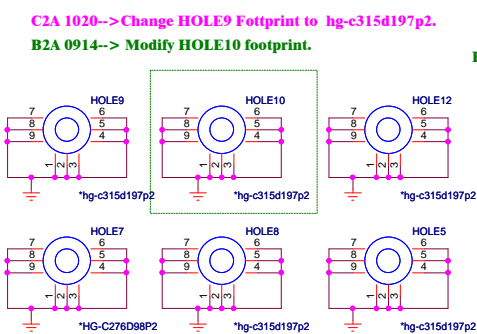


HOLE <OTH>

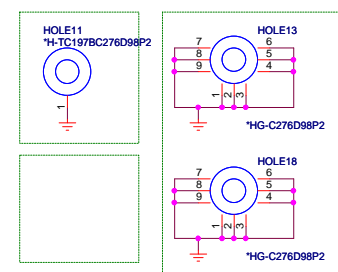
C2A 1020-->Change Fottpint to H-TC217BC173D126P2 .
B2A 0905-->Change Fottpint to H-TC217BC173D134P2 .



B2A 0823--> Add HOLE15 for 3G function.
C2A 1020-->Change HOLE14 Fottpint to H-C217D126P2.



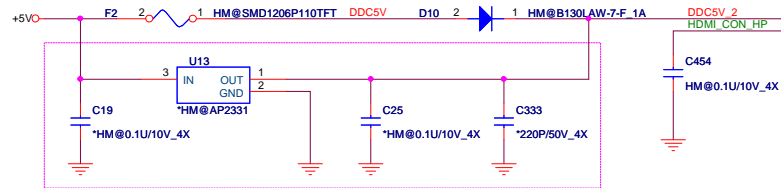
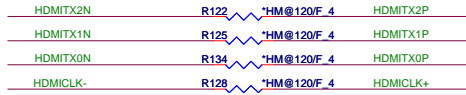
B2A 0829--> Add HOLE11/HOLE13/HOLE18.



B2A 0914--> Remove HOLE6.

HDMI Conn <HDM>

REV-A1A For EMI close to connector



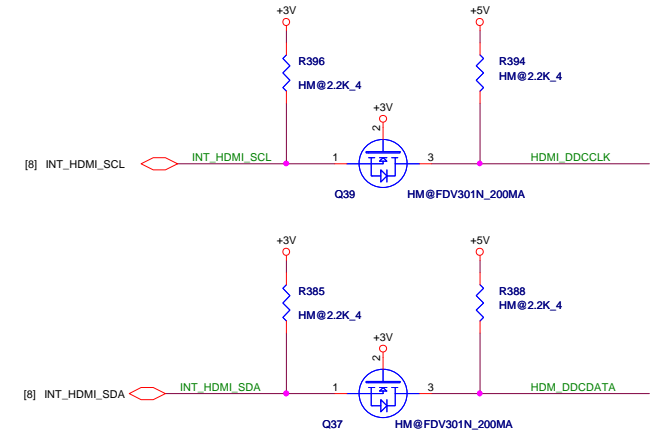
C2A 1014-->Reserve

0407-->Change P/N from DFHD19MR156 to DFHD19MR129 for shortage issue.

B2A-->Change P/N to DFHD19MR156

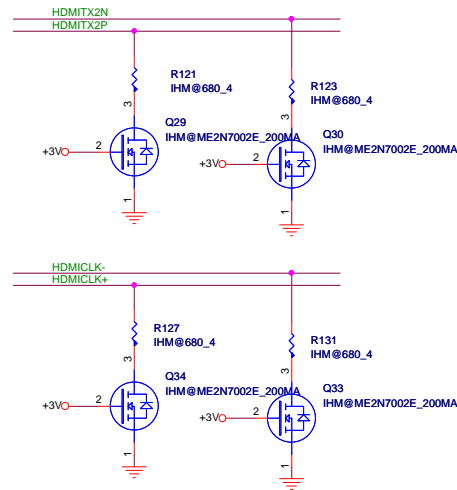
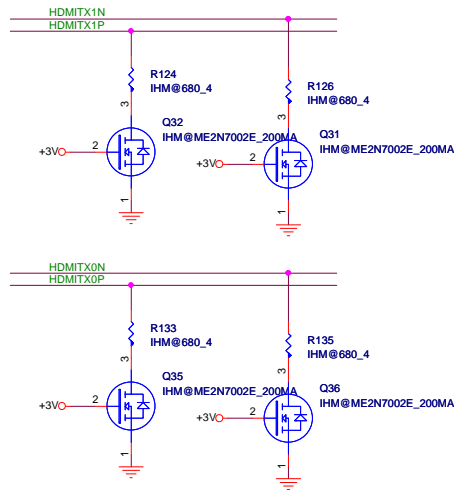
REV-C3A Modify footprint and P/N
Add pin22, pin23

HDMI-SMBus <HDM>

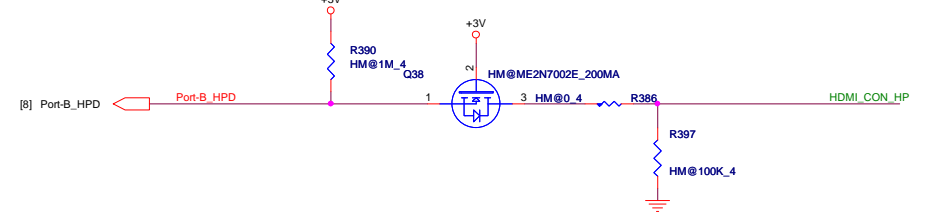


22

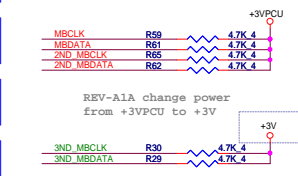
HDMI-passive level shift <HDM>



HDMI-HPD <HDM>



www.aitech1.ru



[29] HWPG_VAXG

D6

*1VS3355_100MA

R71

0.4

[28] HWPG_VCCSA

D4

*1VS3355_100MA

R25

0.4

[30] HWPG_1.8V

D3

*1VS3355_100MA

R18

0.4

[8,25] SYS_HWPG

D2

*1VS3355_100MA

R15

0.4

[26] HWPG_1.5V

D1

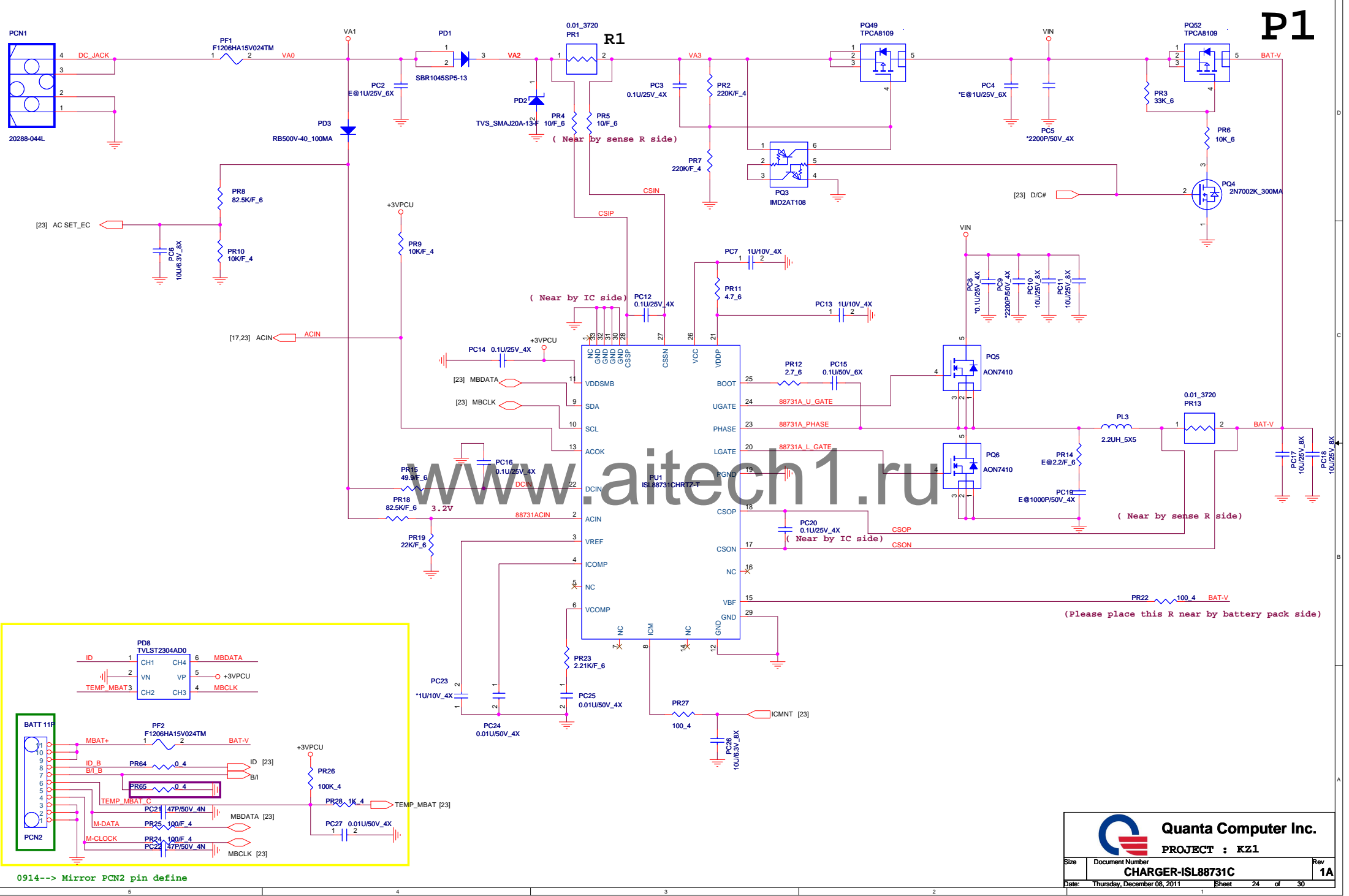
*1VS3355_100MA

R8

0.4

HWPG

Strap	123
BU6	= 000
KZ1	= 001
BY1 UMA	= 010



f : 300k Hz
ESR :
Total capacitor : 370 uF
(Peak 9.479A ,AVG 6.635A)
OCP:10.25A

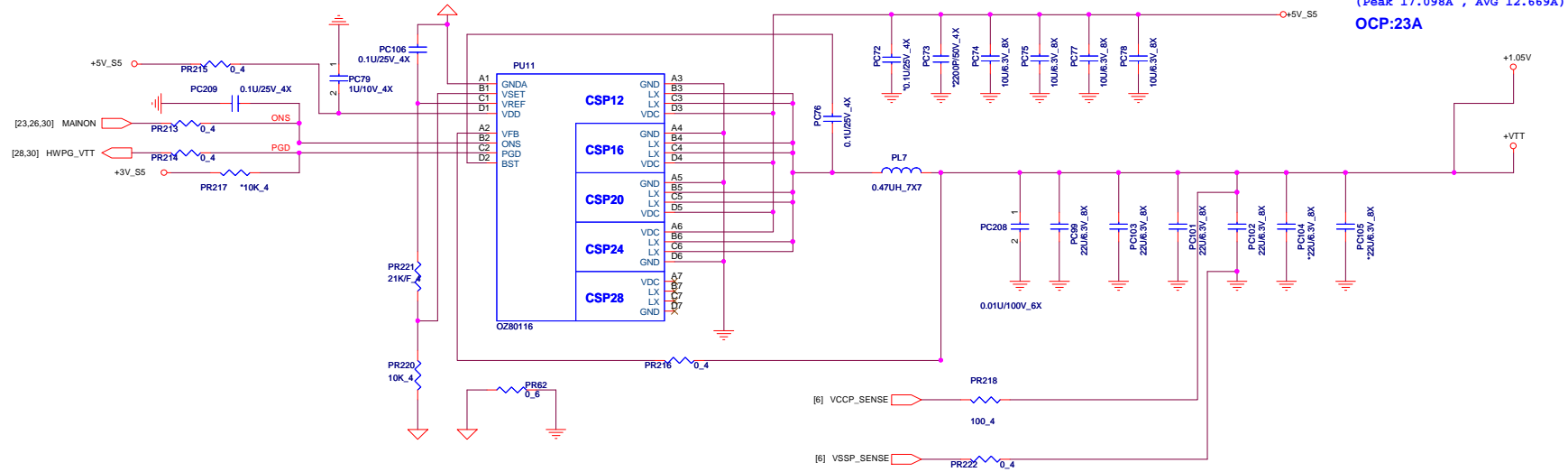
f : 375k Hz
ESR :
Total capacitor : 342uF
(Peak 11.921A, AVG 8.345A)
OCP:12.52~12.23A

(Peak 3.5A, AVG 2.4A)

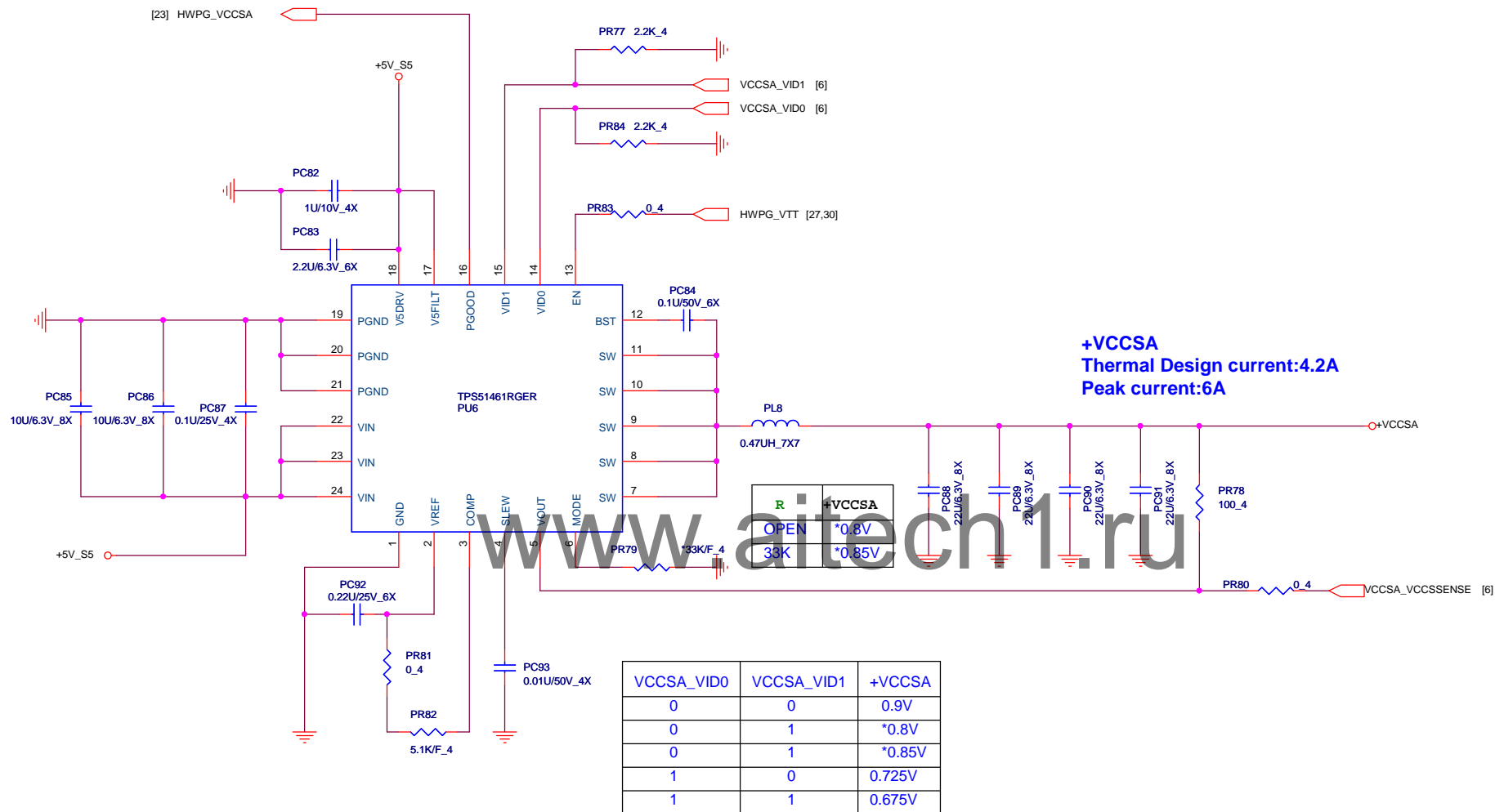
(Peak 6A, AVG 4.2A)

www.aitech1.ru





www.aitech1.ru



*0.8V FOR SV TYPE
*0.85V FOR LV/ULV TYPE



Quanta Computer Inc.

PROJECT : KZ1

Size	Document Number	Rev
	+VCCSA (SL95870A)	1A
Date:	Tuesday, December 06, 2011	Sheet 28 of 30



