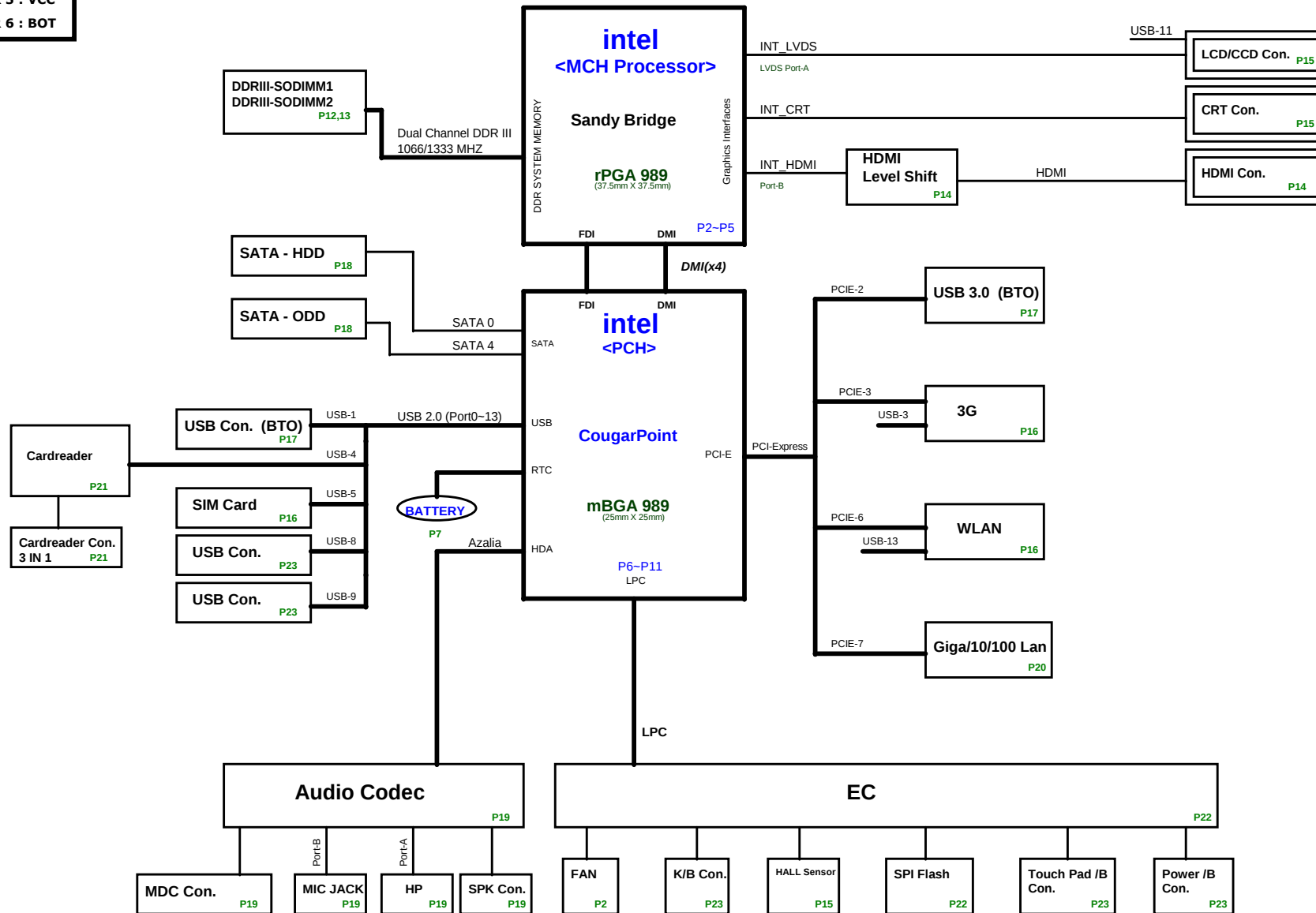


BLB Block Diagram

PCB STACK UP

LAYER 1 : TOP
LAYER 2 : GND
LAYER 3 : IN1
LAYER 4 : IN2
LAYER 5 : VCC
LAYER 6 : BOT



POWER SYSTEM

ISL88731CHRTZ-T P. 25
ISL95835HRTZ-T P. 30
RT8207LGQW P. 27
RT8240BGQW P. 28
G9661-25ADJF12U P. 31
PM6686TR P. 26
ISL95870AHRUZ-T P. 29

+VCC_CORE

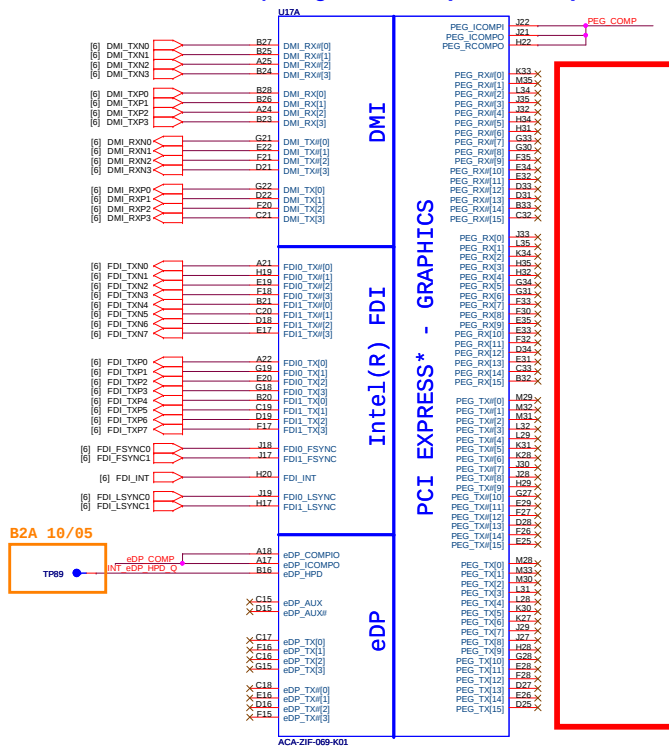
+1.5V
+1.5VSUS

+VTT
+1.05V

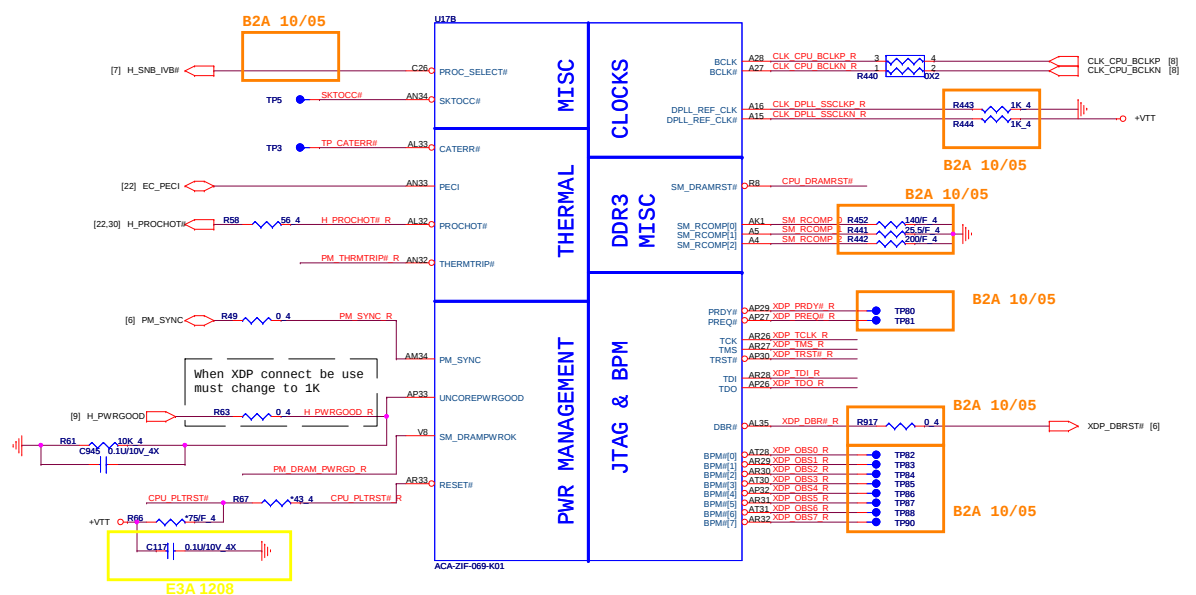
+1.8V

+3VPCU
+3V_S5
+3V
+5VPCU
+5V_S5
+5V
+SMDDR_VTERM
+SMDDR_VREF
+VGPU_CORE
+VAXG
+VCCSA

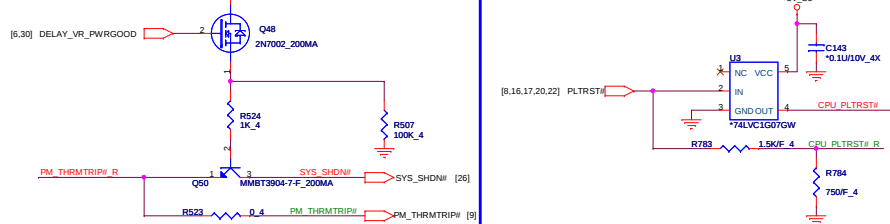
Sandy Bridge Processor (DMI,PEG,FDI) <CPU>



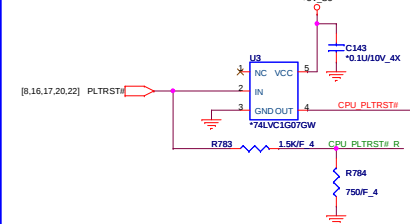
Sandy Bridge Processor (CLK,MISC,JTAG) <CPU>



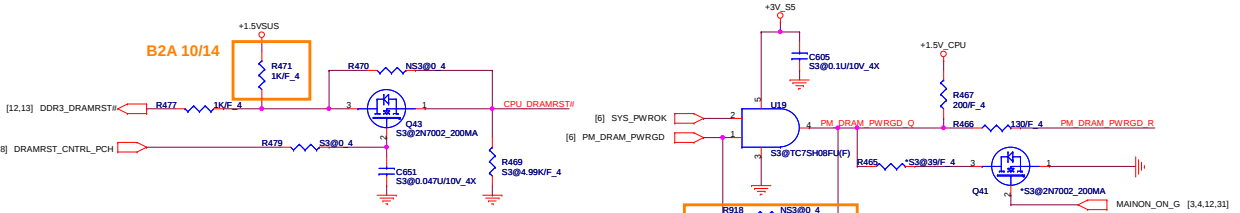
Thermal Trip <CPU>



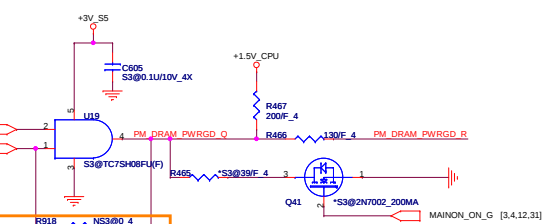
Level Shift <CPU>



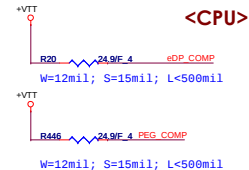
S3 Power Reduction (SM_DRAMRST#) <S3P>



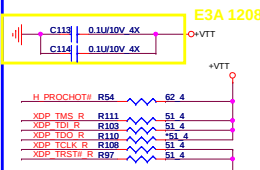
S3 Power Reduction (SM_DRAMPWROK) <S3P>



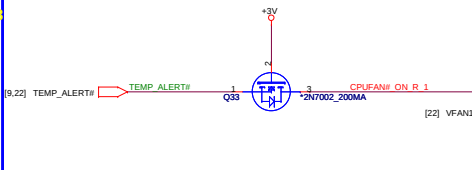
DP & PEG Compensation <CPU>



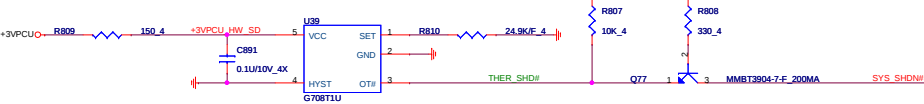
Processor pull-up <CPU>



FAN Control-->For one FAN solution <THC/THV>



CPU Thermal sensor / MB Local TEMP <THC>



Rset(Kohm)=0.0012T*-0.9308T+96.147, Shut down on 86dgree
Hysteresis is 30C

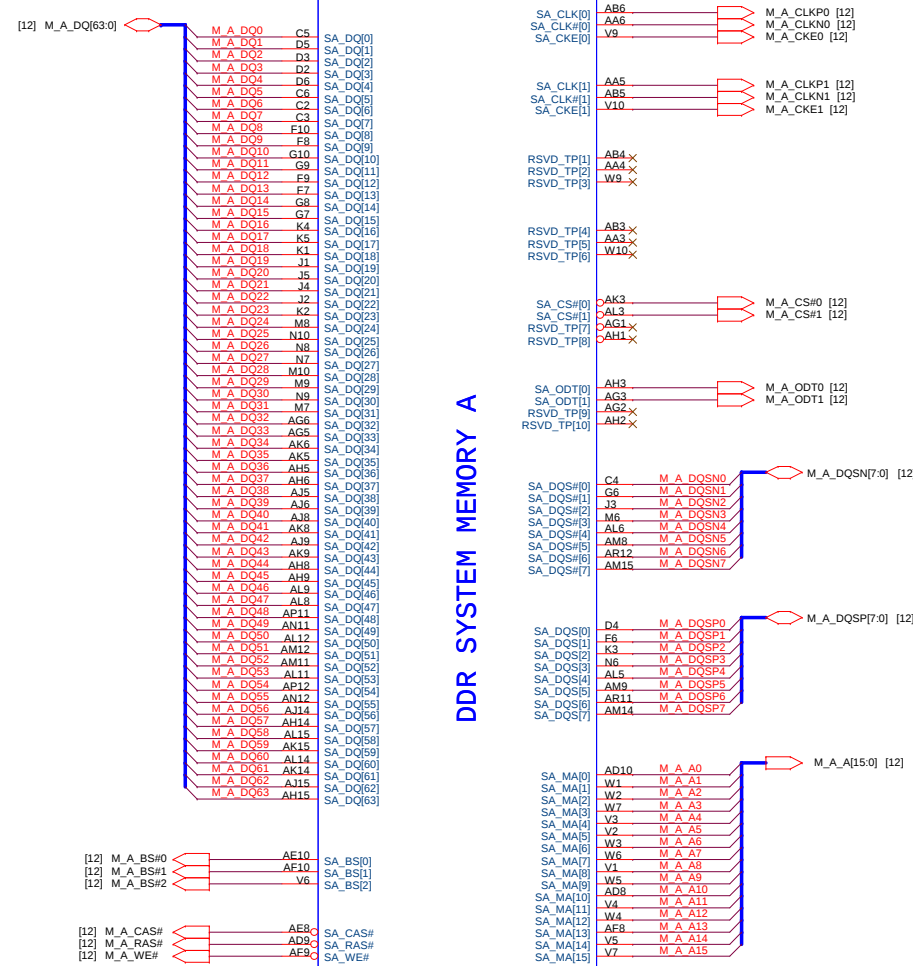
Sandy Bridge Processor (DDR3) <CPU>

03

U17C

DDR SYSTEM MEMORY A

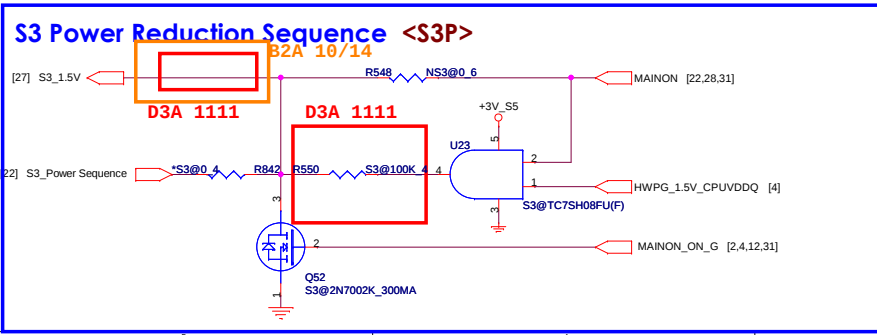
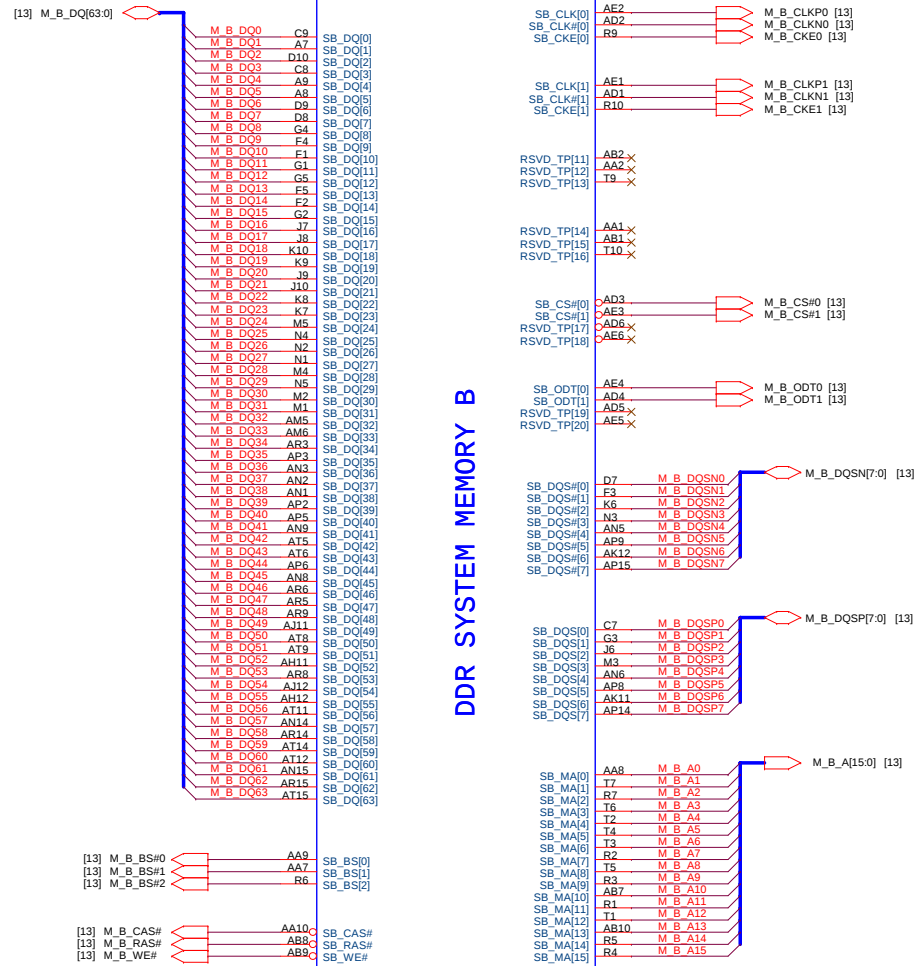
ACA-ZIF-069-K01



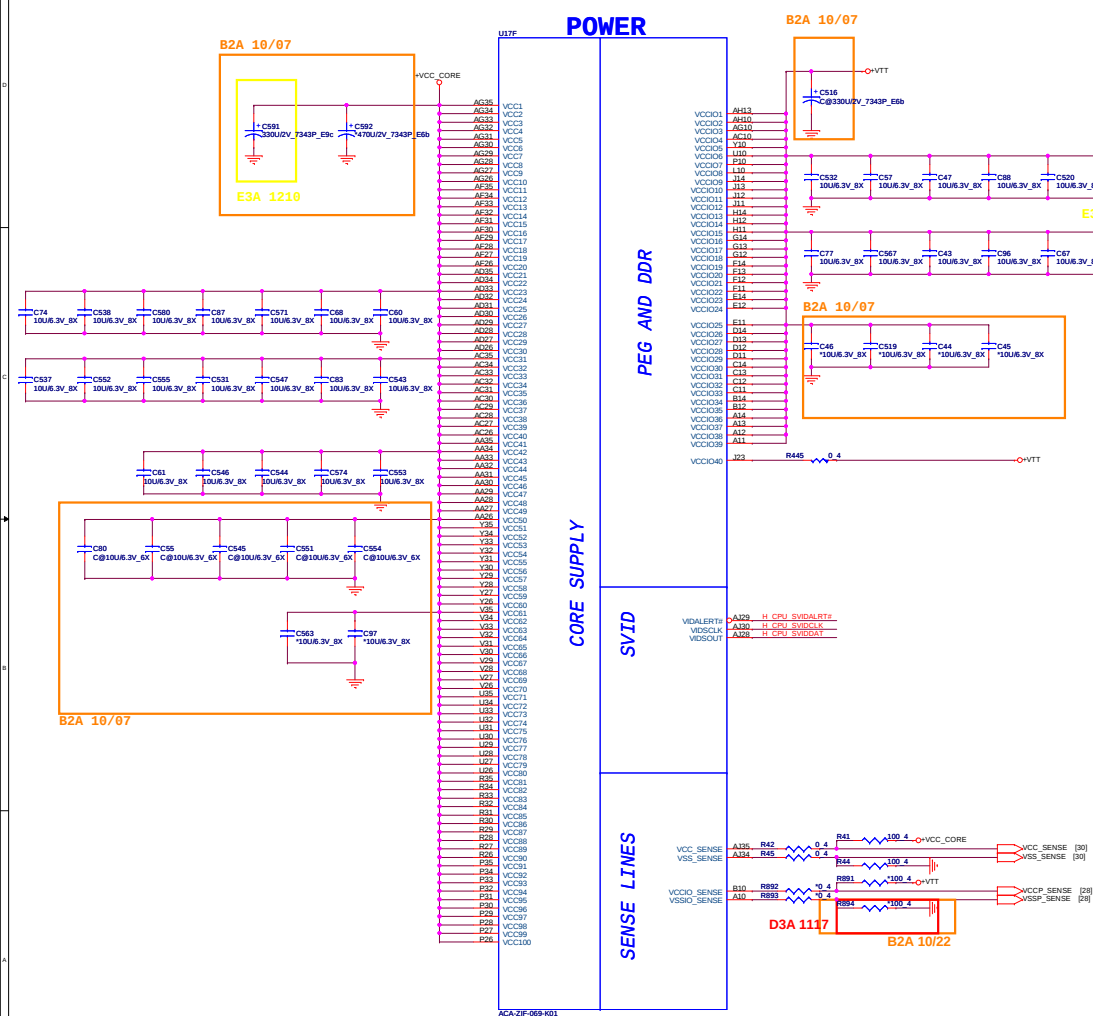
U17D

DDR SYSTEM MEMORY B

ACA-ZIF-069-K01

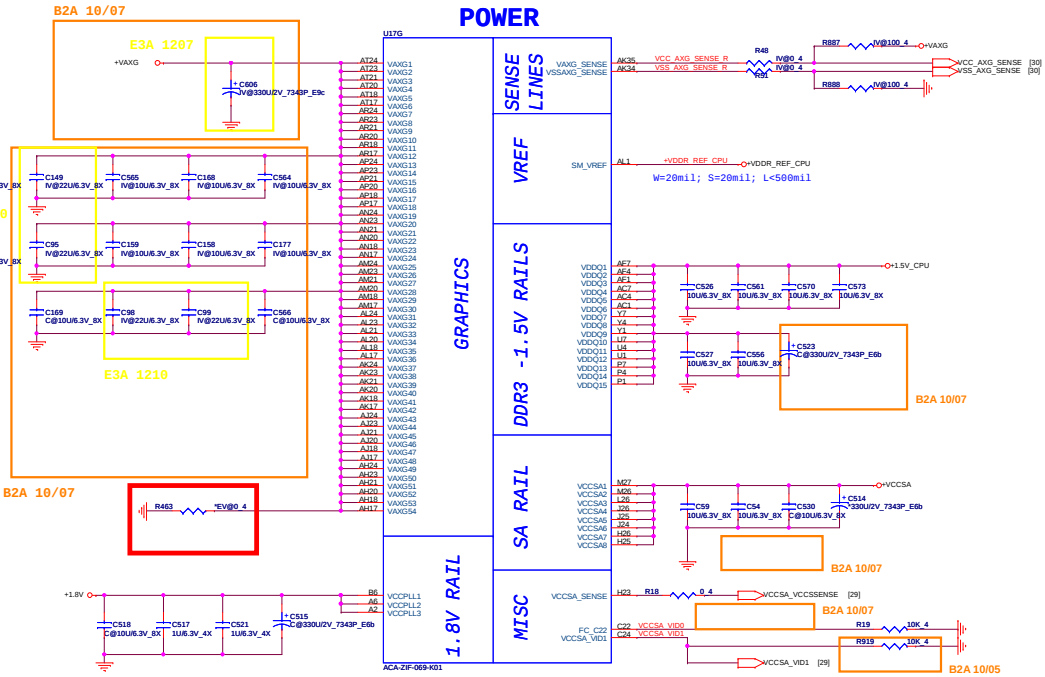


POWER



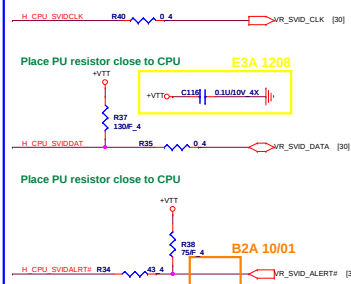
Sandy Bridge Processor (GRAPHIC POWER) <CPU>

POWER

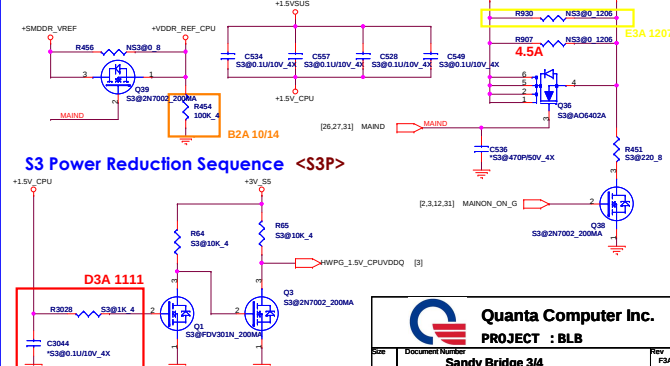


SVID <CPU>

Layout note: need routing together and ALERT need between CLK and DATA



S3 Power Reduction (CPU POWER) <S3P>



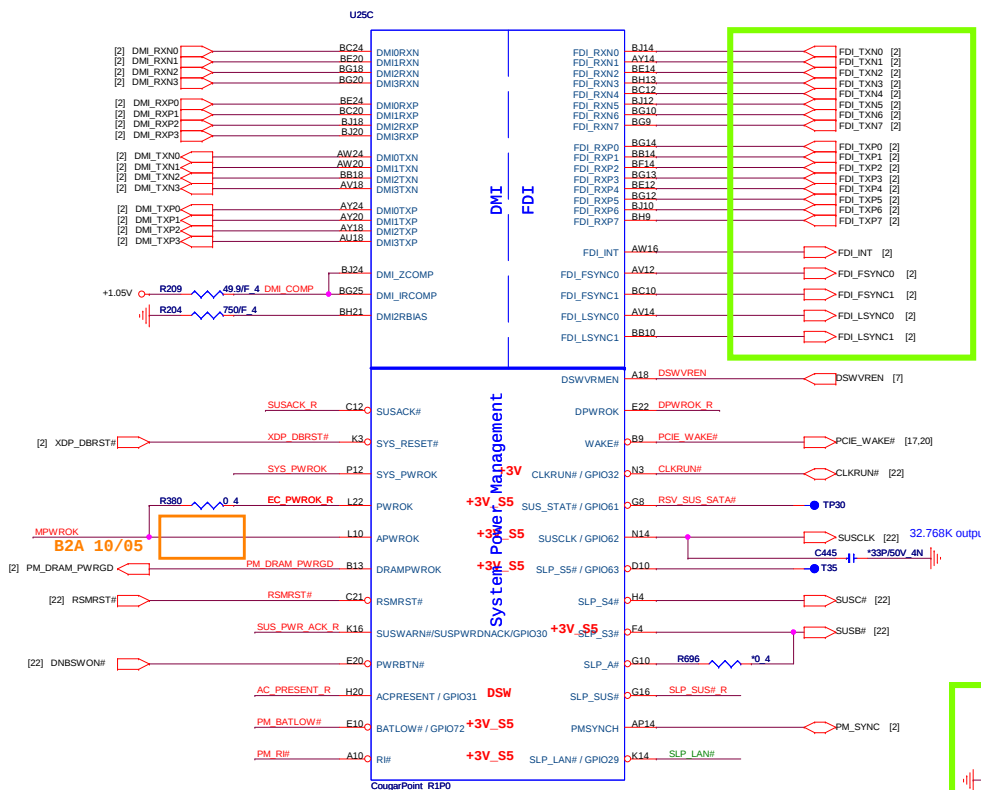


CFG5 R69 *1K/F 4
CFG6 R70 *1K/F 4

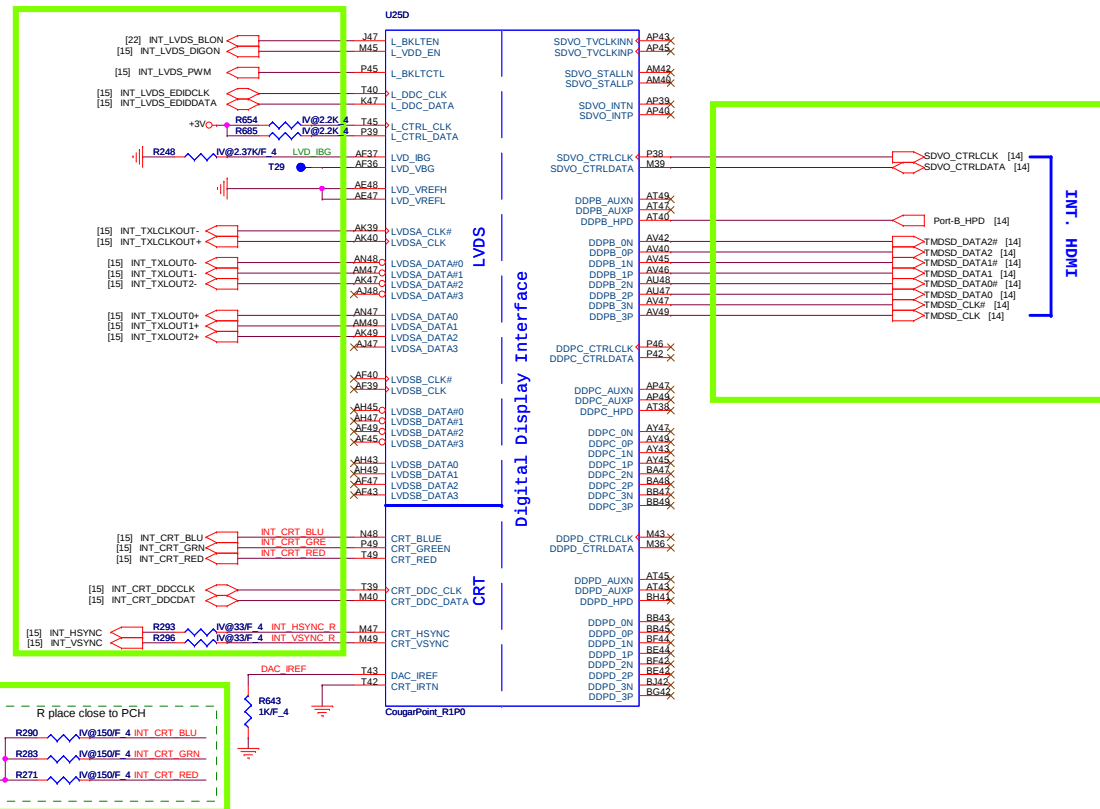
```
11: (Default) x16 - Device 1 functions 1 and 2 disabled
10: x8, x8 - Device 1 function 1 enabled ; function 2 disabled
01: Reserved - (Device 1 function 1 disabled ; function 2 enabled)
00: x8,x4,x4 - Device 1 functions 1 and 2 enabled
```

	1	0
CFG2 (PEG Static Lane Reversal)	Normal Operation	Lane Reversed
CFG4 (DP Presence Strap)	Disable; No physical DP attached to eDP	Enable; An ext DP device is connected to eDP
CFG7 (PEG Defer Training)	PEG train immediately following xxRESETB de assertion	PEG wait for BIOS training

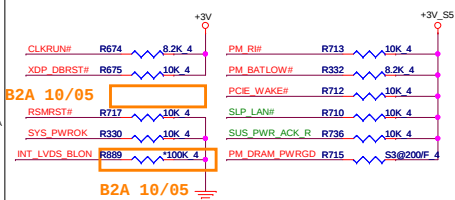
Cougar Point (DMI,FDI,PM) <CLG>



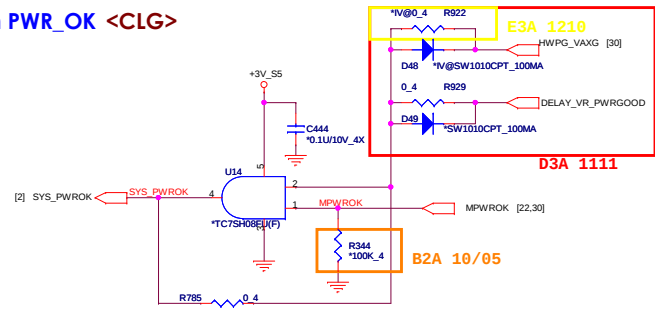
Cougar Point (LVDS,DDI) <CLG/UGA>



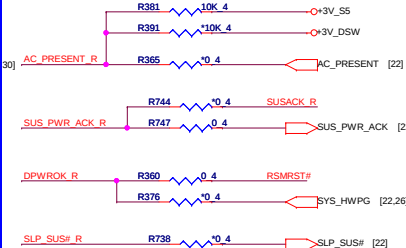
PCH Pull-high/low <CLG>



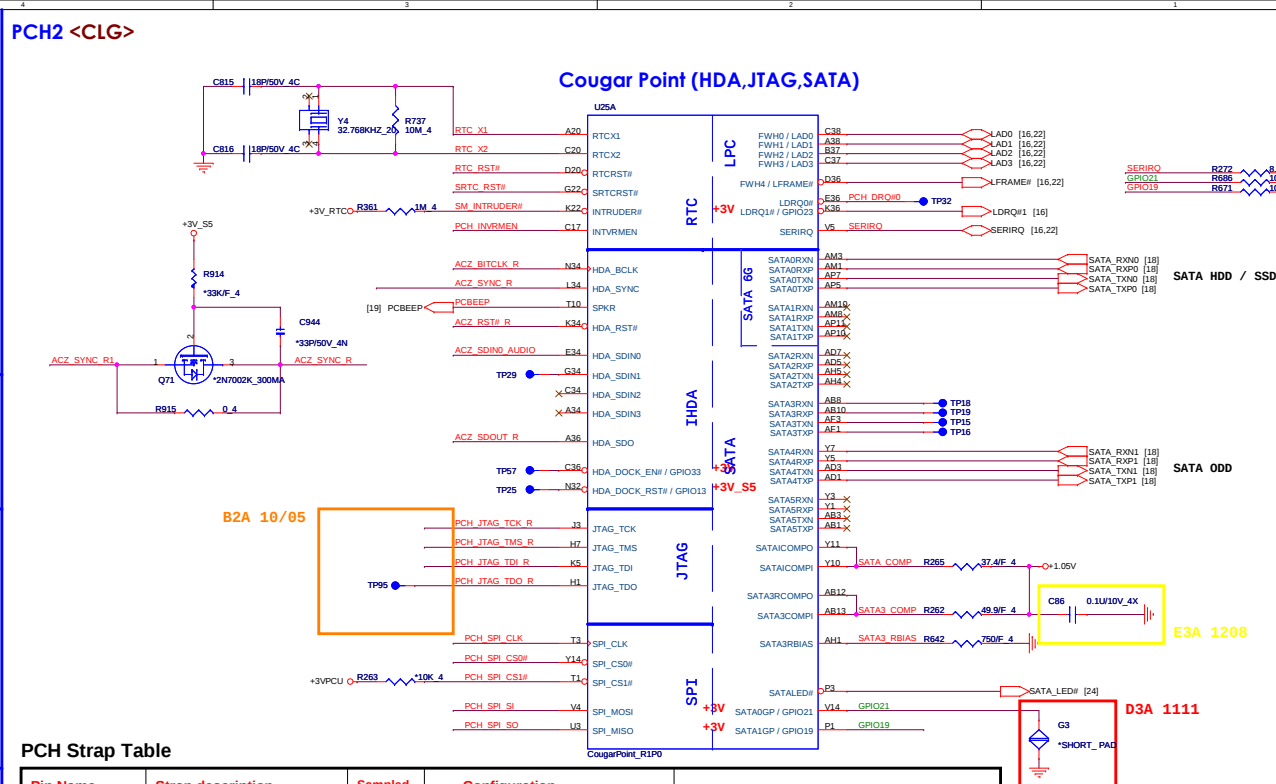
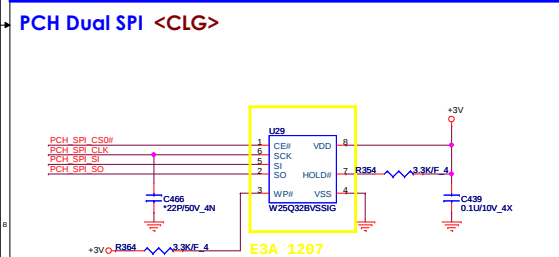
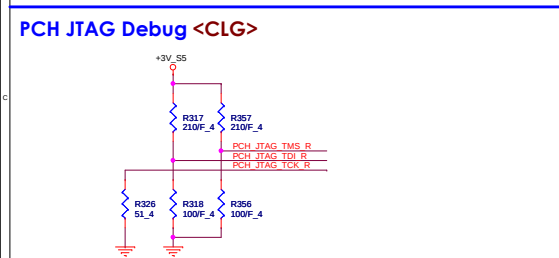
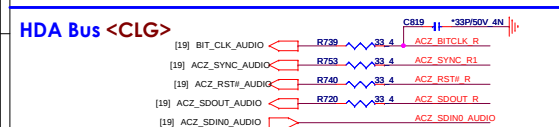
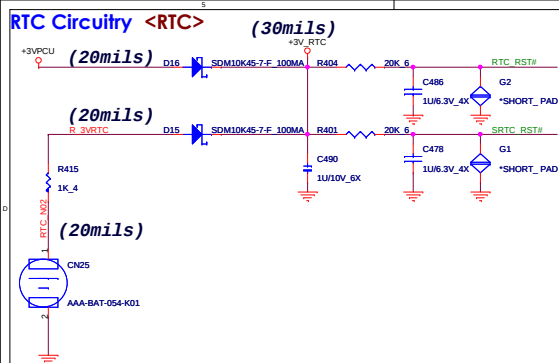
System PWR_OK <CLG>



Deep Sx <CLG>



Net Name	Deep Sx Support	Deep Sx No Support
AC_PRESENT	R391,R365 stuff	R381 stuff
SUS_PWR_ACK	R744 stuff	R747 stuff
DPWROK	R376 stuff	R360 stuff
SLP_SUS	R738 stuff	R738 No stuff

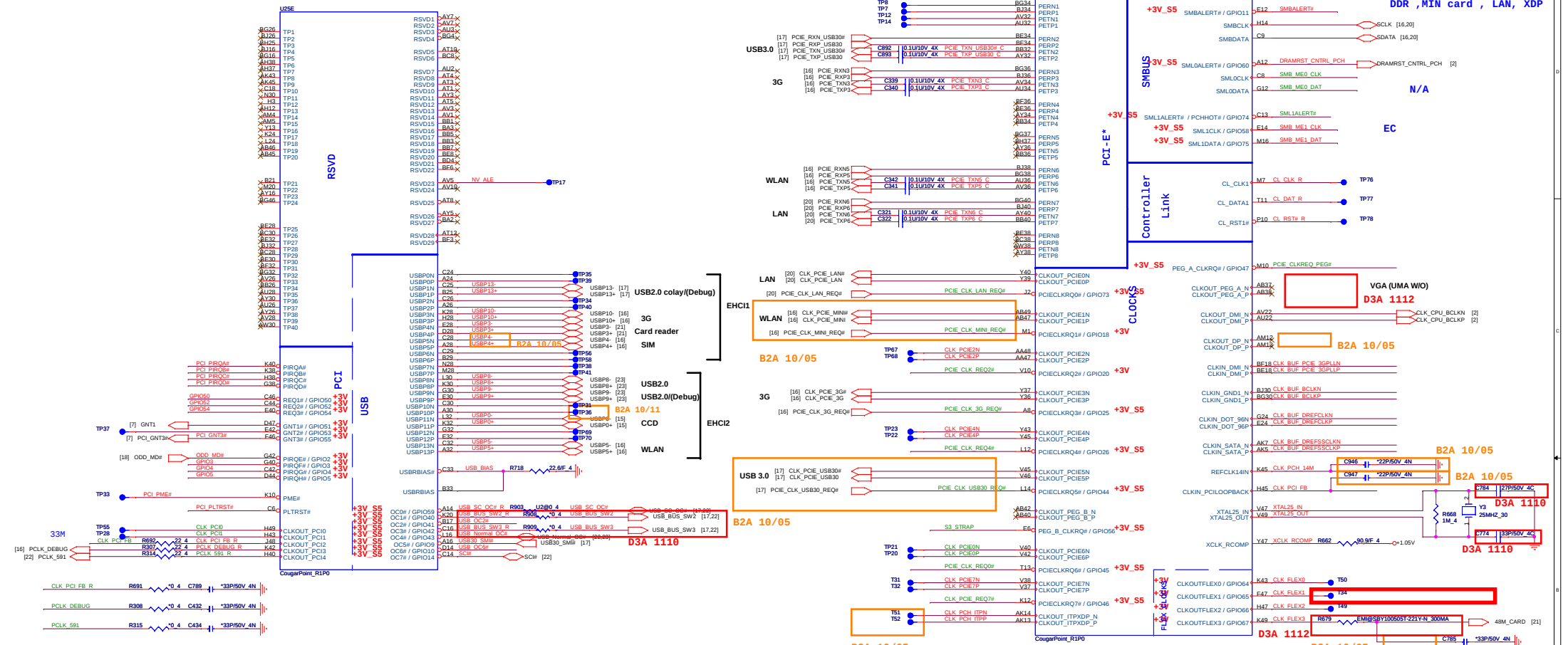


PCH Strap Table

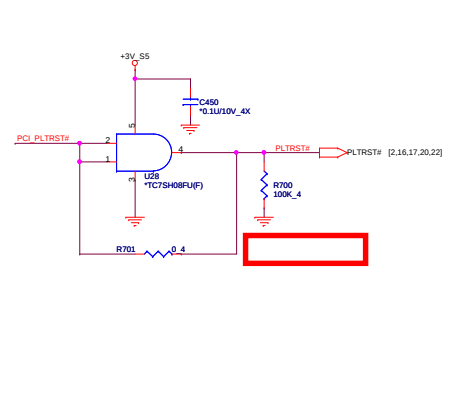
Pin Name	Strap description	Sampled	Configuration										
SPKR	No reboot mode setting	PWROK	0 = Default (weak pull-down 20K) 1 = Setting to No-Reboot mode										
INIT3_3V#	Reserved	PWROK	1 = Default (weak pull-up 20K)	Should not pull low. leave as No Connect									
GNT3#/GPIO55	Top-Block Swap Override	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 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>0</td><td>0</td><td>LPC</td></tr></tbody></table>	GNT1#	GNT0#	Boot Location	1	1	SPI *	0	0	LPC	
GNT1#	GNT0#	Boot Location											
1	1	SPI *											
0	0	LPC											
GPIO19	Boot BIOS Selection 0 [bit-0]	PWROK											
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									
HDA_SDO	Flash Descriptor Security	RSMRST	0 = Default (weak pull-up 20K) 1 = Override										
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 = Default. Support by 1.8V 1 = Support by 1.5V										
GPIO15	TLS Confidentiality	RSMRST	0 = Default. TLS no Confidentiality 1 = TLS Confidentiality										
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 C Detected	PWROK	0 = Default. Not Detected 1 = Detected	0=NC									
DSWVRMEN	Deep S4/S5 Well On -Die Voltage Regulator Enable	ALWAYS	0 = Disable 1 = Enable										
SATA2GP/GPIO36	Reserved	PWROK	0 = Default	Should not be pulled high when strap is sampled									
SATA3GP/GPIO37	Reserved	PWROK	0 = Default	Should not be pulled high when strap is sampled									

Cougar Point-M (PCI-E,SMBUS,CLK) <CLG>

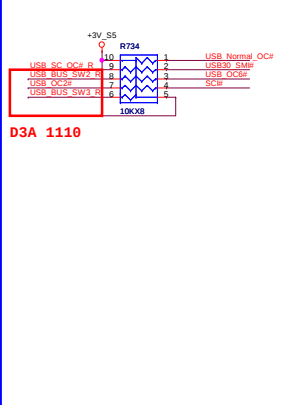
Cougar Point-M (PCI,USB,NVRAM) <CLG>



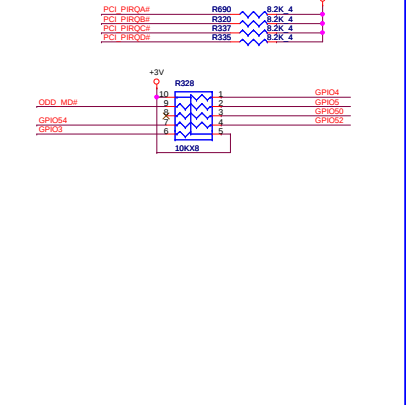
PLTRST# <CLG>



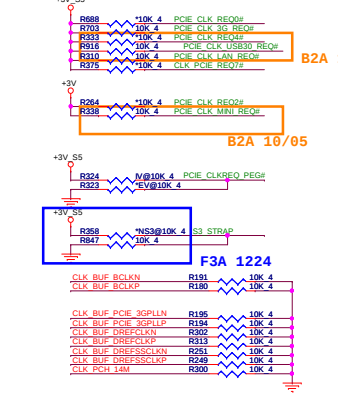
PCI/USBOC# Pull-up <CLG>



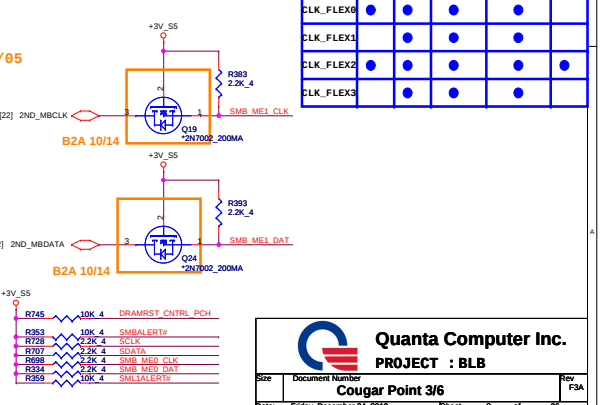
CLK_REQ/Strap Pin <CLG>



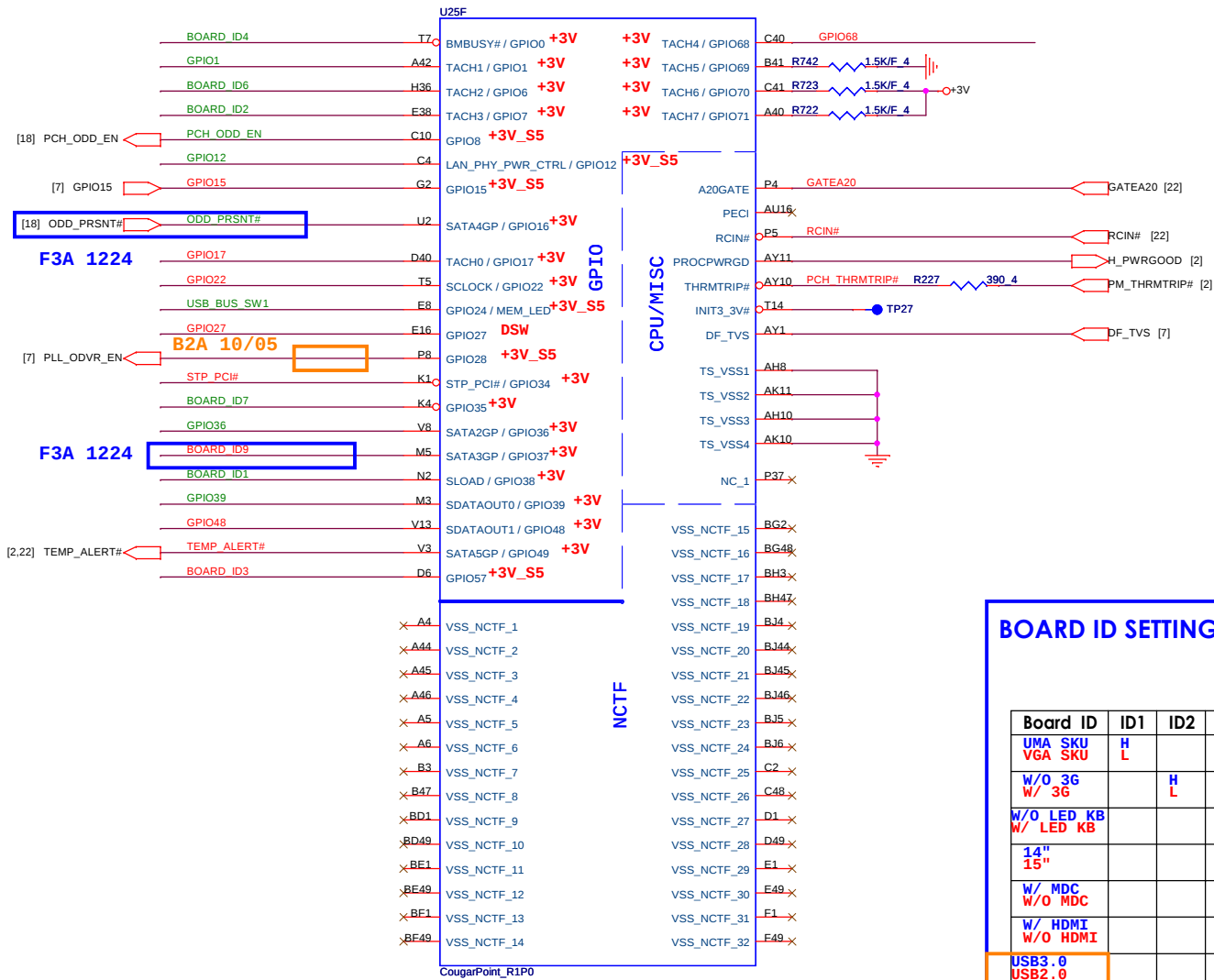
SMBus/Pull-up <CLG>



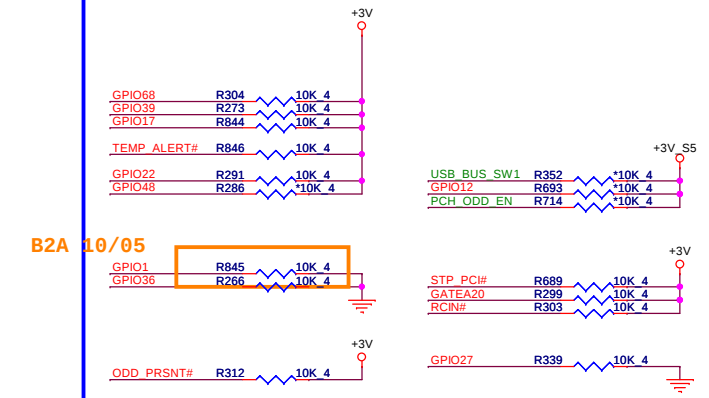
33MHz 27MHz 48/24MHz 14.318MHz 25MHz



Cougar Point (GPIO,VSS_NCTF,RSVD) <CLG>



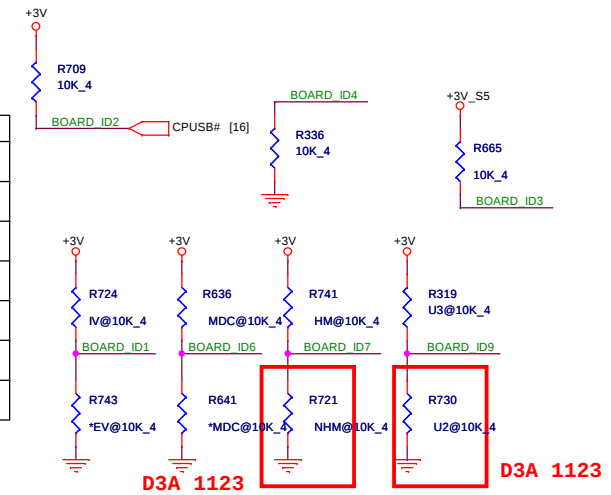
GPIO Pull-up/Pull-down <CLG>

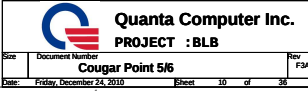


BOARD ID SETTING <CLG>

Board ID	ID1	ID2	ID3	ID4	ID6	ID7	ID9
UMA SKU	H						
VGA SKU	L						
W/O 3G		H					
W/O 3G		L					
W/O LED KB			H				
W/ LED KB			L				
14"				H			
15"				L			
W/ MDC					H		
W/O MDC					L		
W/ HDMI						H	
W/O HDMI						L	
USB3.0							H
USB2.0							L

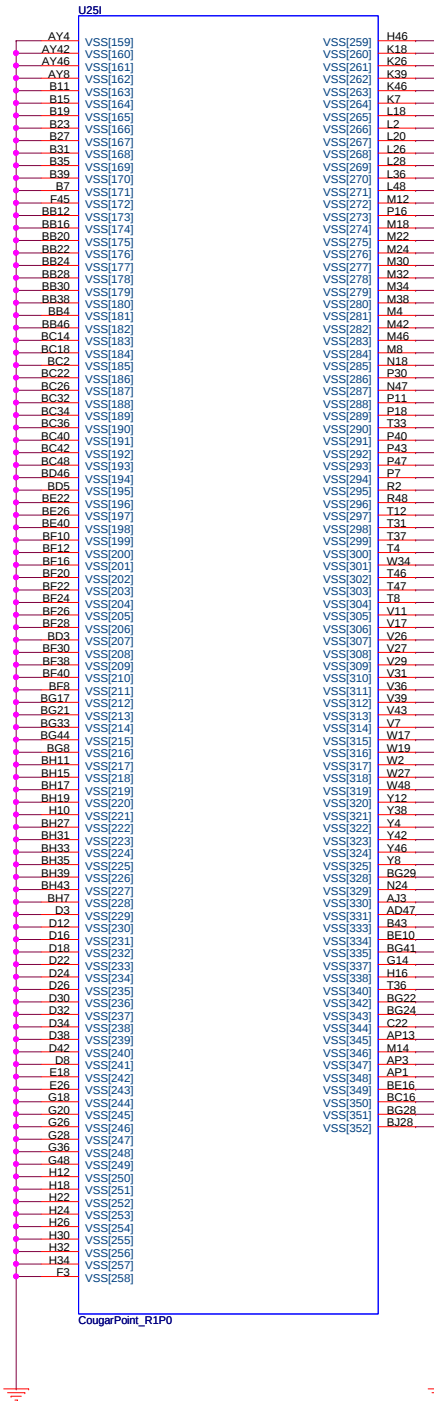
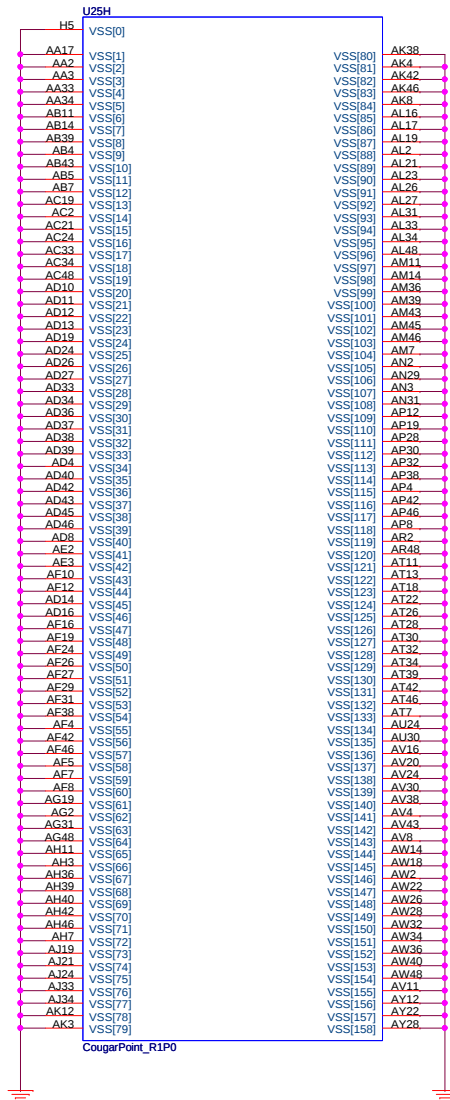
B2A 10/05





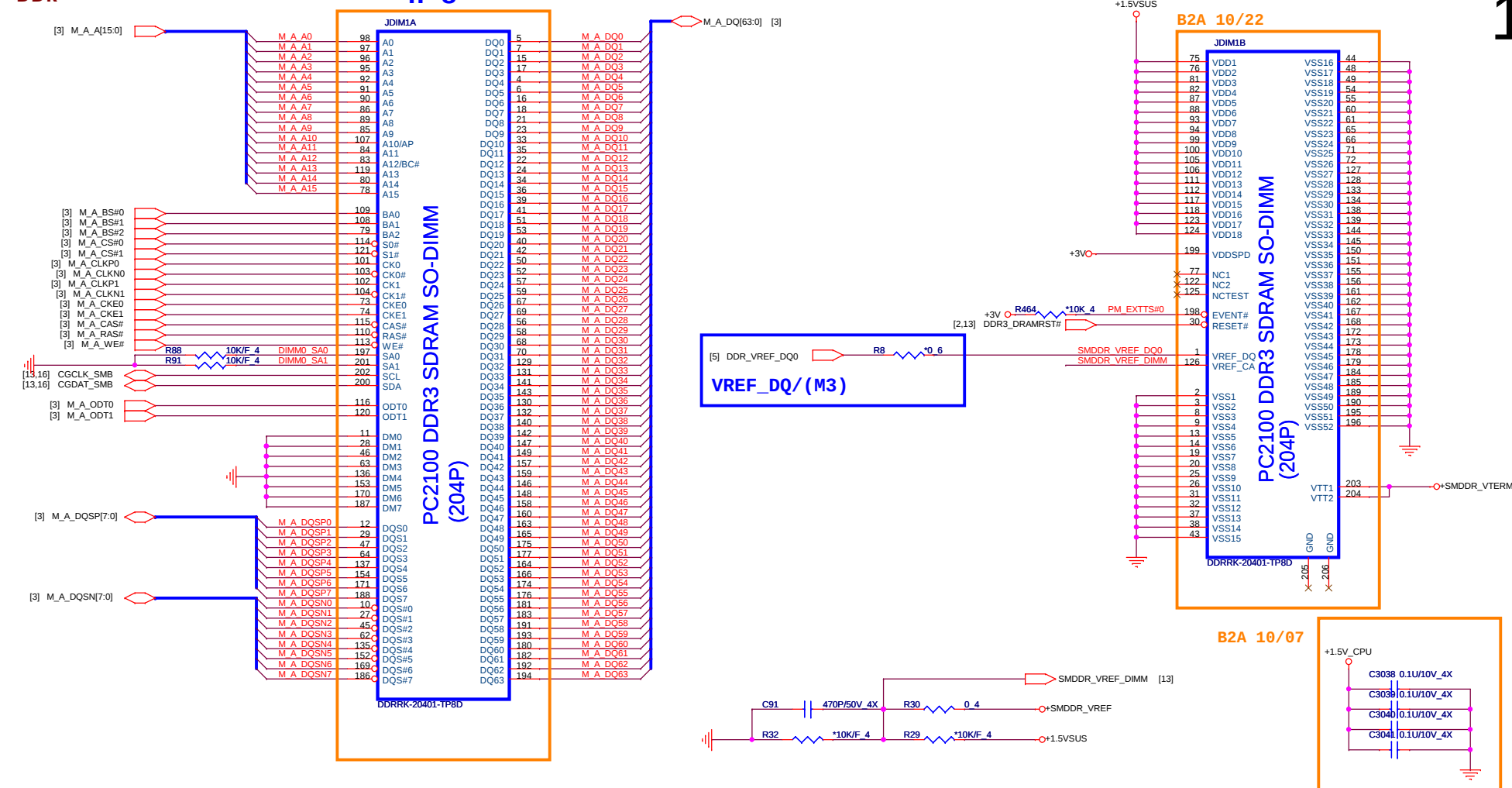
Cougar Point (GND)

Cougar Point (GND)

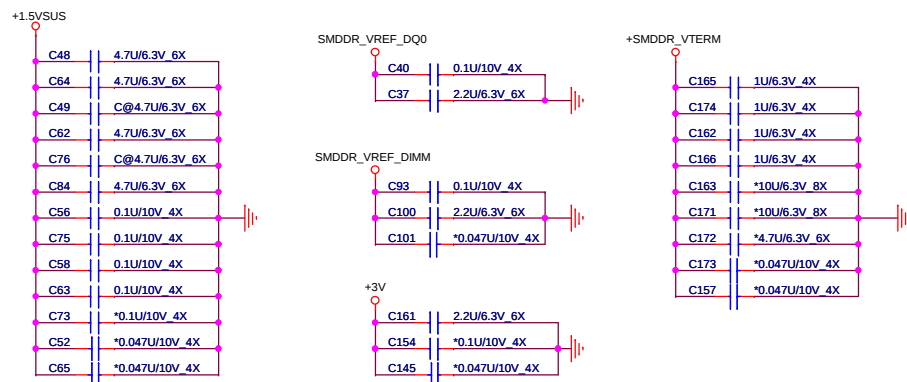


Quanta Computer Inc.
PROJECT : BLB

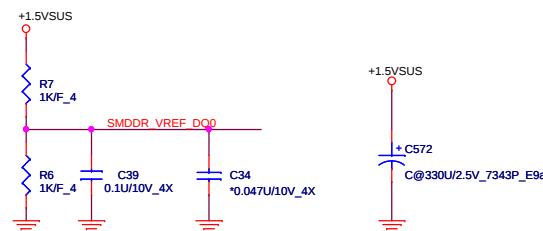
Size	Document Number	Rev
	Cougar Point 6/6	F3A
Date:	Friday, December 24, 2010	Sheet 11 of 36



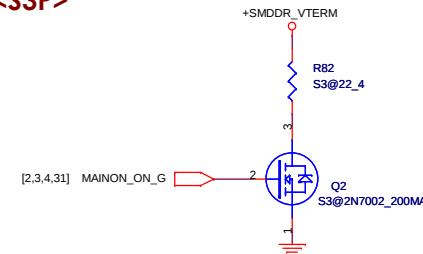
Place these Caps near So-Dimm0. <DDR>



VREF DQ/(M1) <DDR>

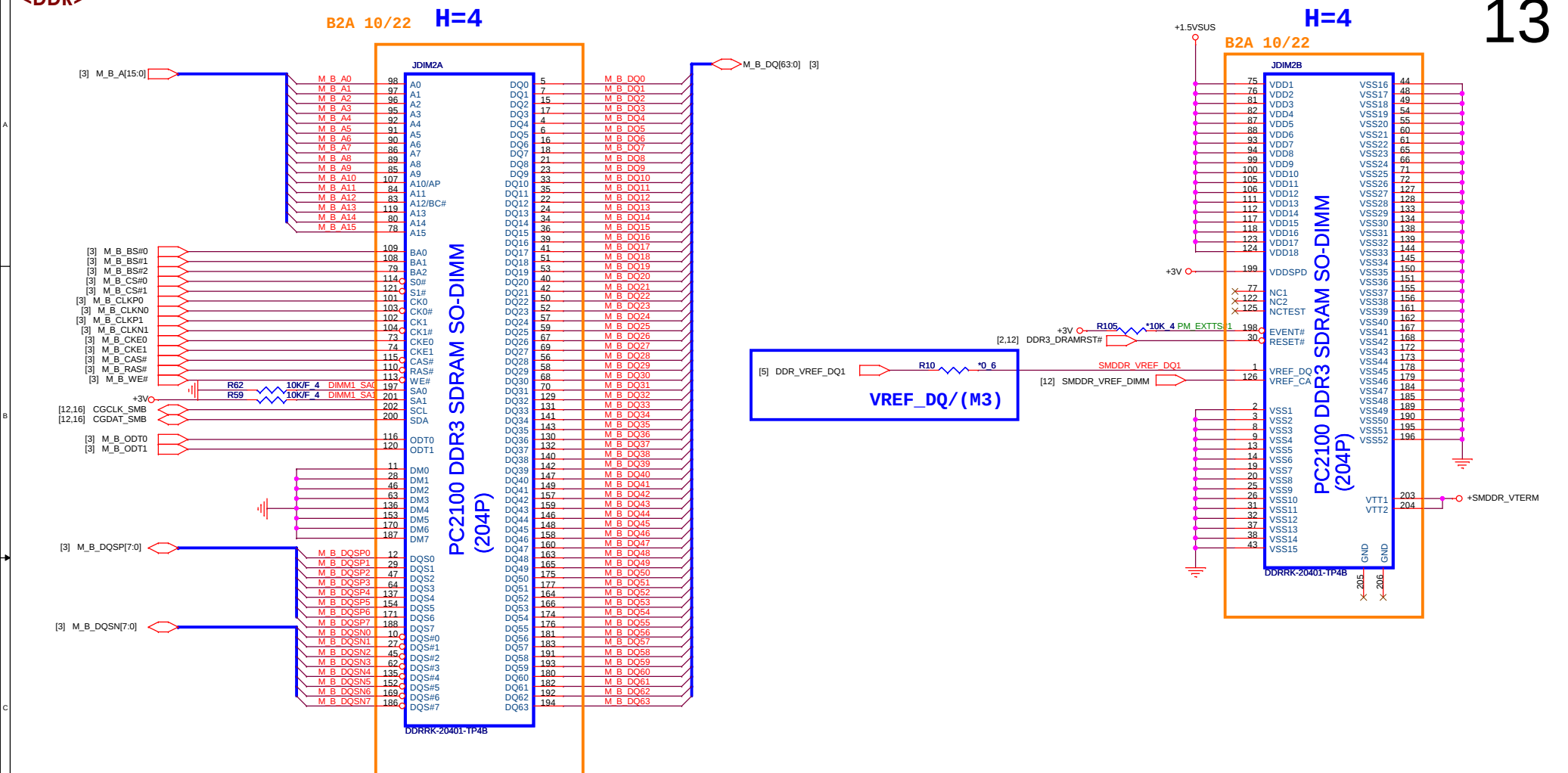


For S3 Power Reduction VTT discharge
<S3P>

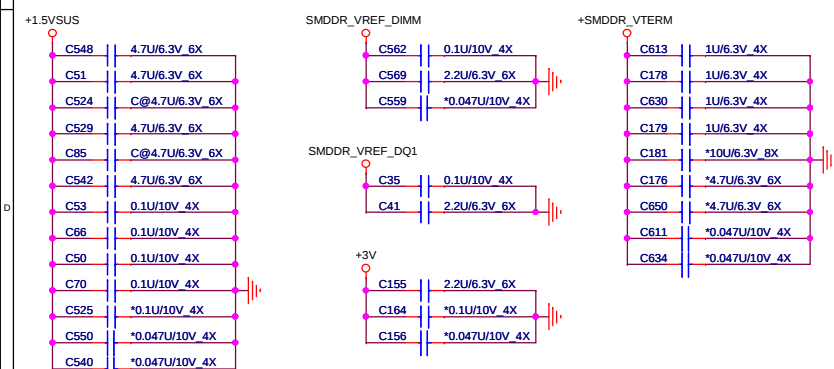


Quanta Computer Inc.
PROJECT : BLB

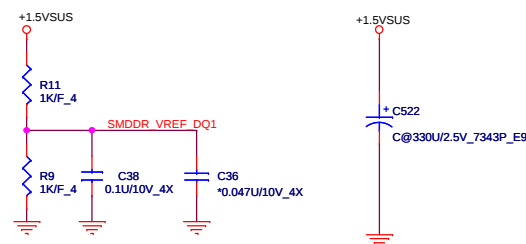
DDR3 DIMM-0

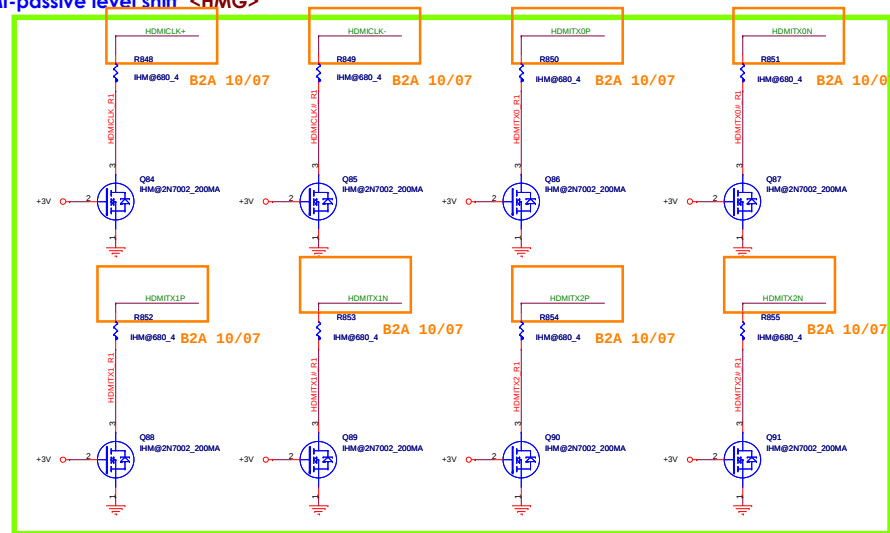


Place these Caps near So-Dimm1. <DDR>

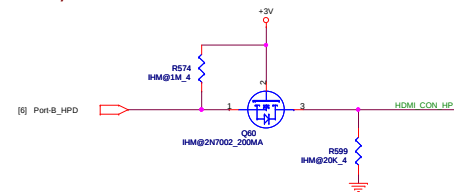
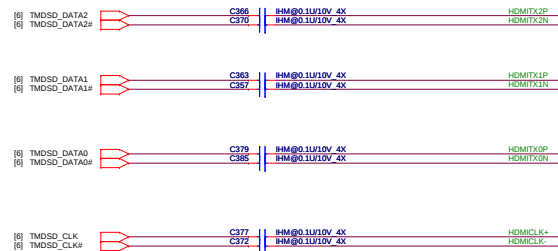


VREF_DQ/(M1) <DDR>

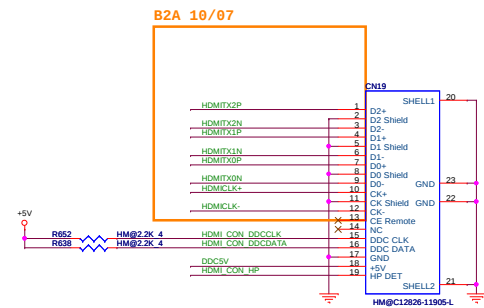
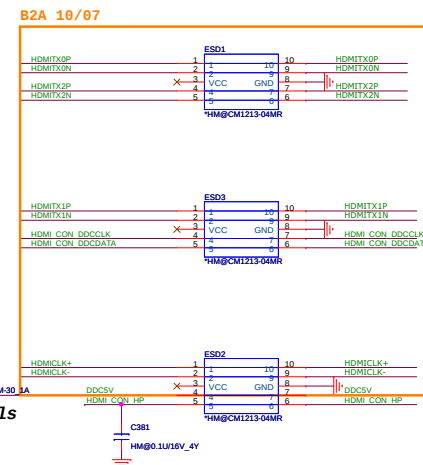
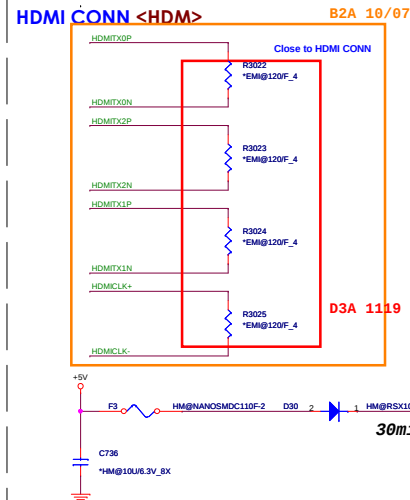
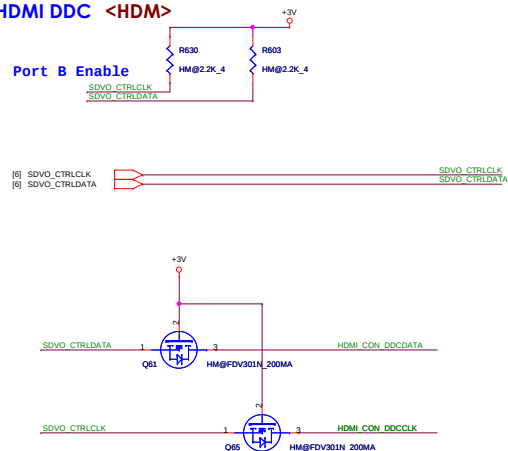




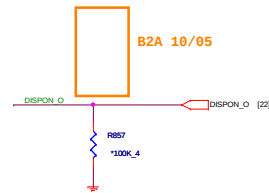
HDMI HPD <HMP/HMG>



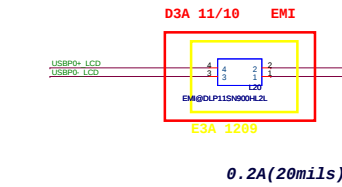
HDMI CONN <HDM>



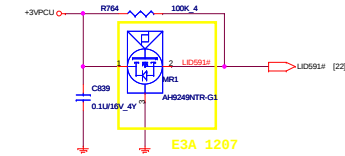
Panel backlight control <LDS>



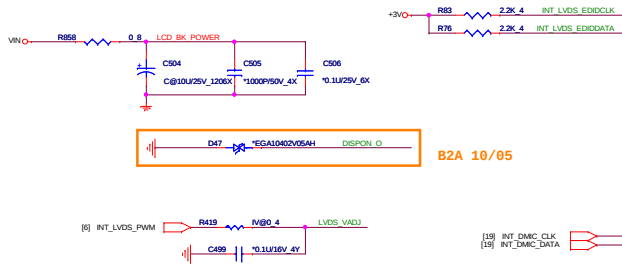
CCD <CCD>



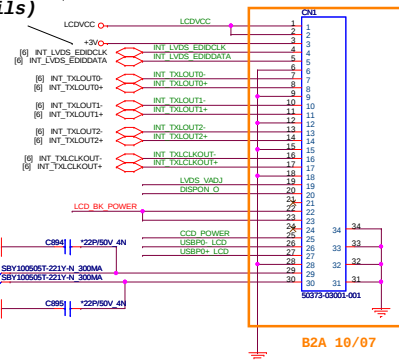
HALL SENSOR <HSR>



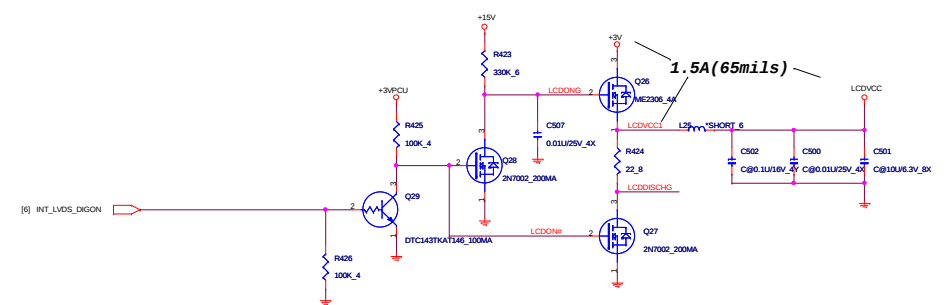
LCD Panel Module <LDS>



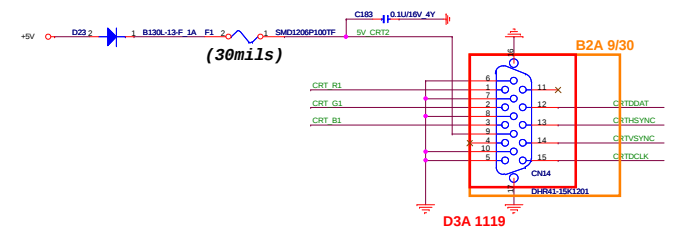
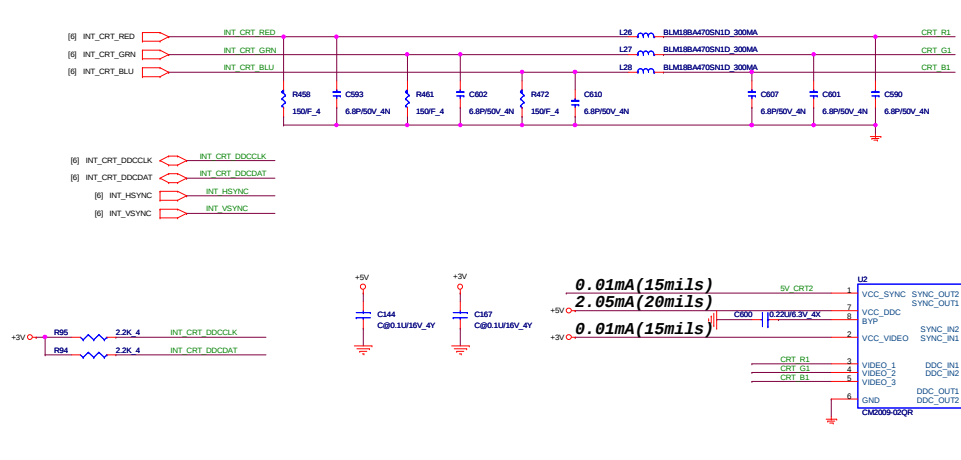
0.3A (20mils)

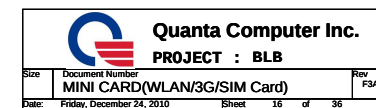


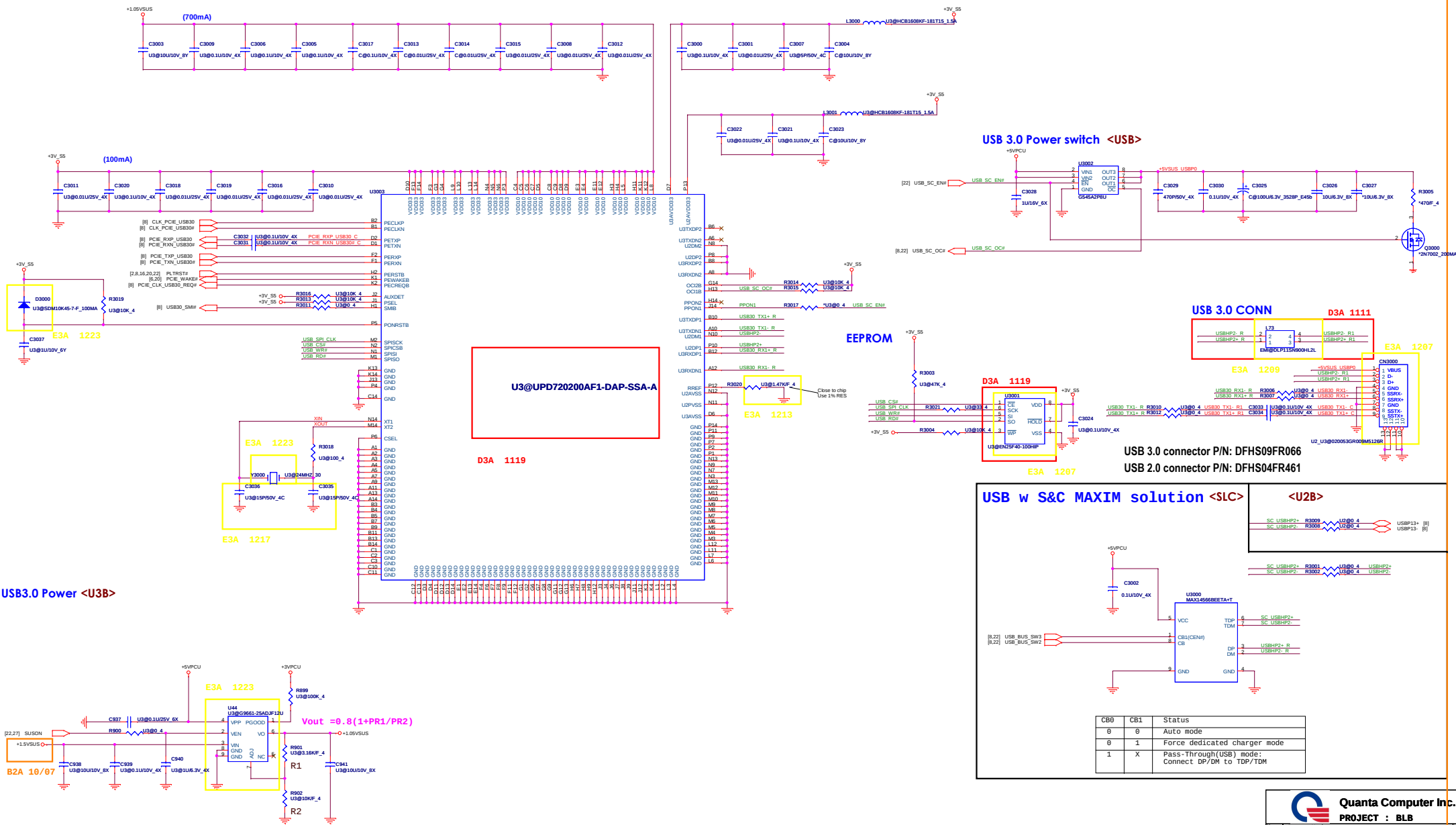
LCD POWER SWITCH <LDS>



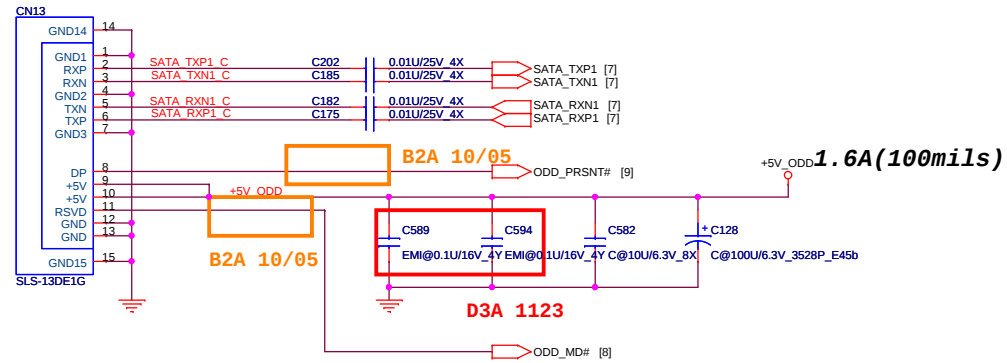
CRT <CRT>



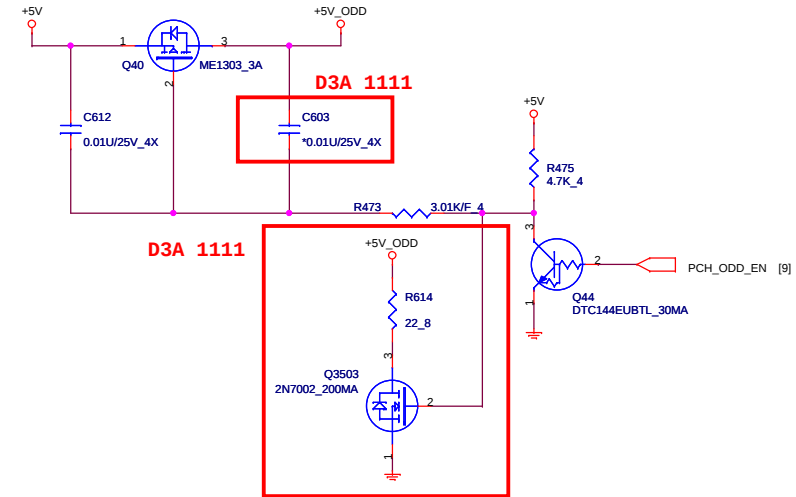




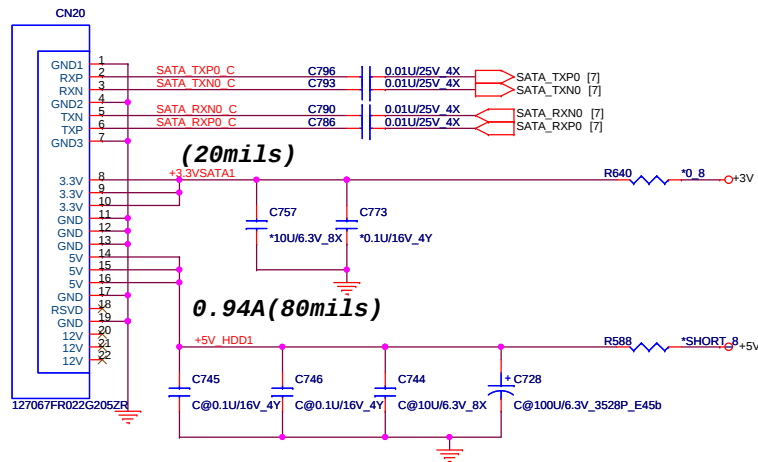
SATA ODD <ODD>



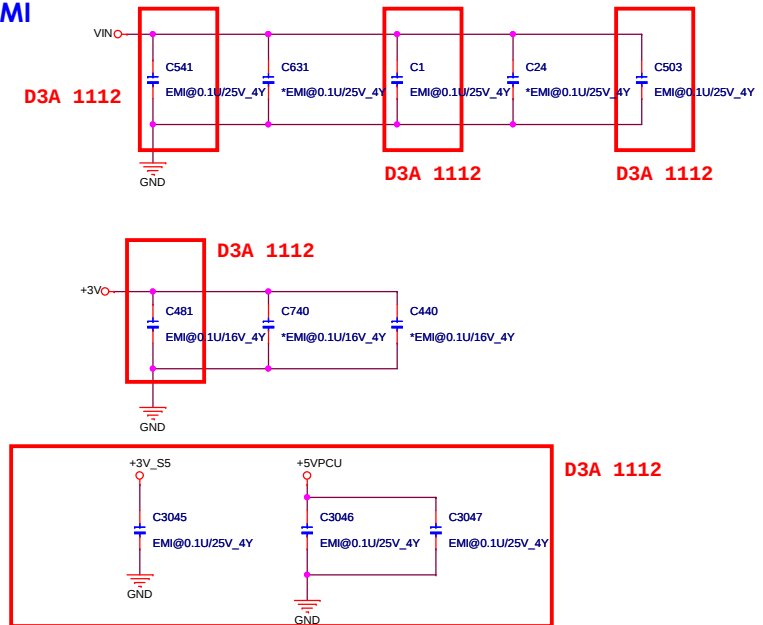
ODD Zero power . (Only for Intel) <OZP>

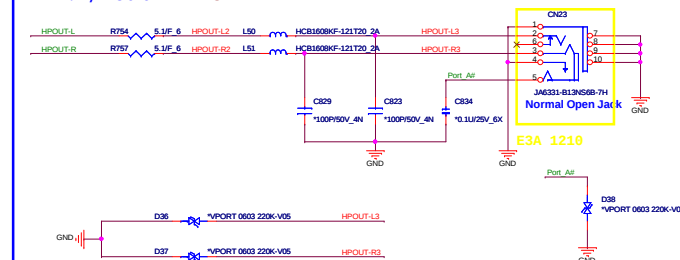


SATA HDD <HDD>

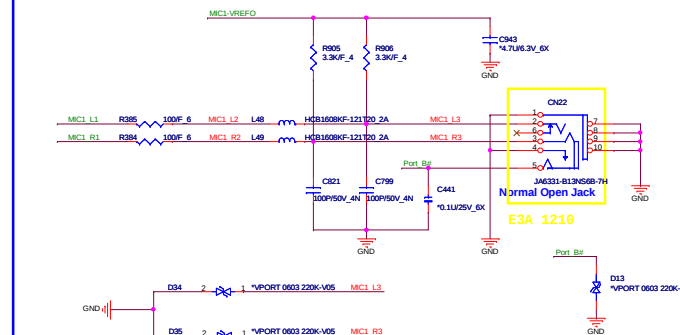


EMI





100



Close to U15

SPI Pin	U15	U15 Pin	U15 Pin
SPI_M	R5	PBY10000T 50V-N 1.2A	INSPIK-N
SPI_R	R4	PBY10000T 50V-N 1.2A	INSPIK-N
SPI_L	R0	PBY10000T 50V-N 1.2A	INSPIK-N
SPI_L	R2	PBY10000T 50V-N 1.2A	INSPIK-N

Close to U15

INSPIK-N
INSPIK-N
INSPIK-N
INSPIK-N

Close to U15

C35 1000P150V_4X
C36 1000P150V_4X
C38 1000P150V_4X
C37 1000P150V_4X

B2A 10/07

INSPIK-N
INSPIK-N
INSPIK-N
INSPIK-N

D02 *VPORT 0603 220K-V05
D21 *VPORT 0603 220K-V05
D19 *VPORT 0603 220K-V05
D20 *VPORT 0603 220K-V05

GND

The schematic diagram illustrates the electrical connections for the E3A 1213 board. It features two diode components: MDC and MDC2. The MDC component, labeled MDC@130P150V_4N, is connected to the DB_P and DB_N pins. The MDC2 component, labeled MDC@68015-12N0, is also connected to the DB_P and DB_N pins. Both components have their cathodes connected to GND. The diagram shows the internal wiring and component placement on the PCB.



LAN-Transformer <LAN/LN1/LNG>

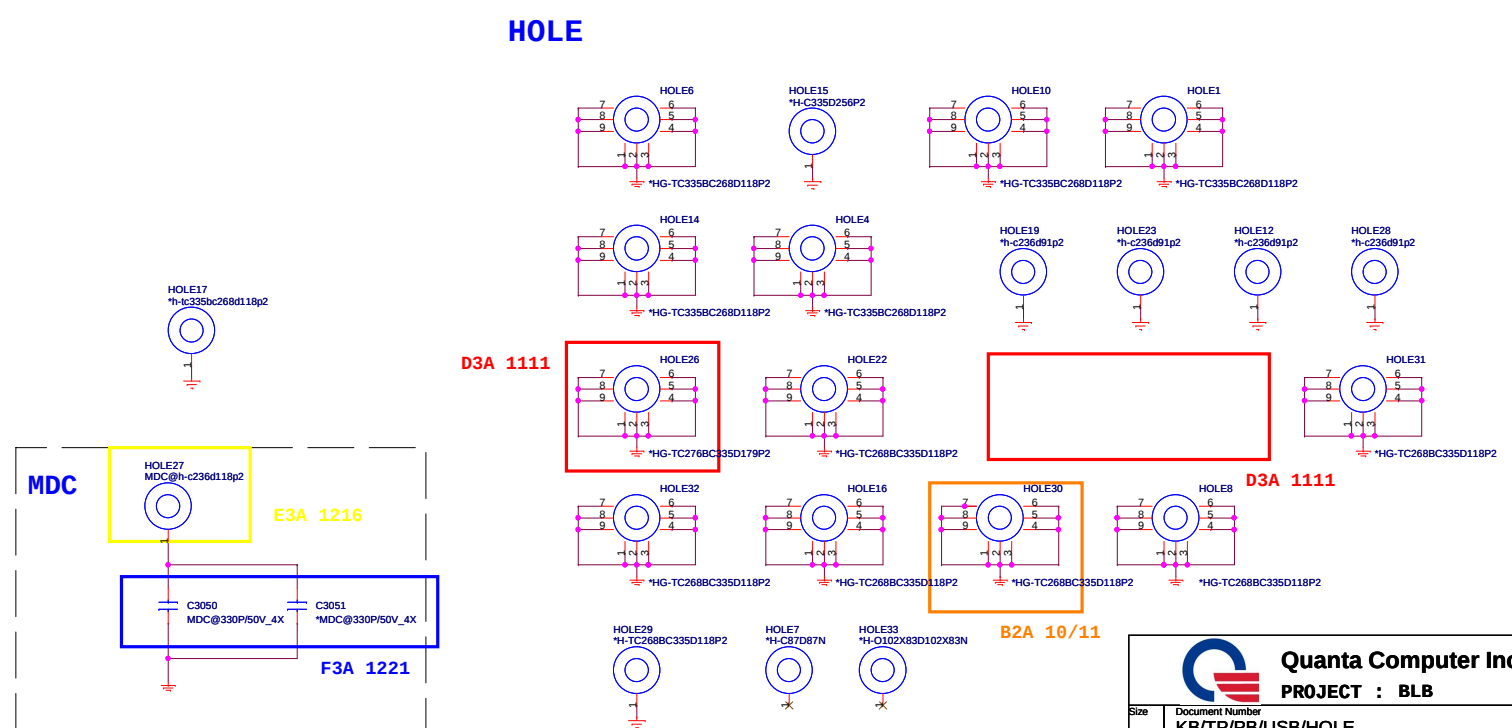
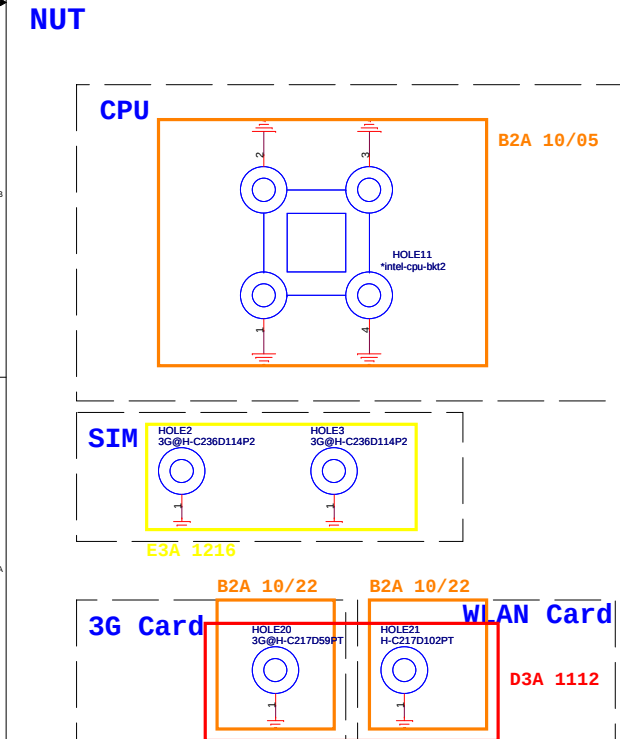
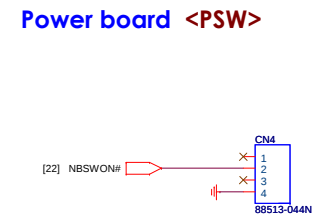
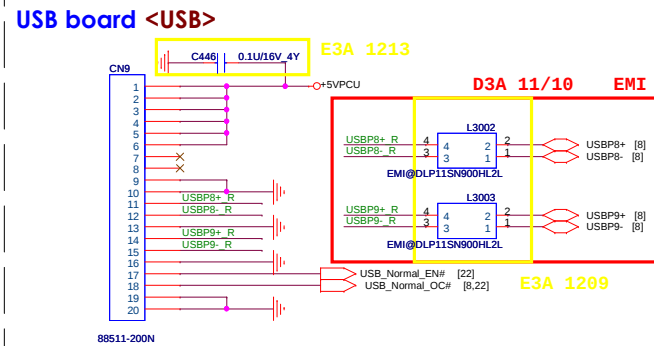
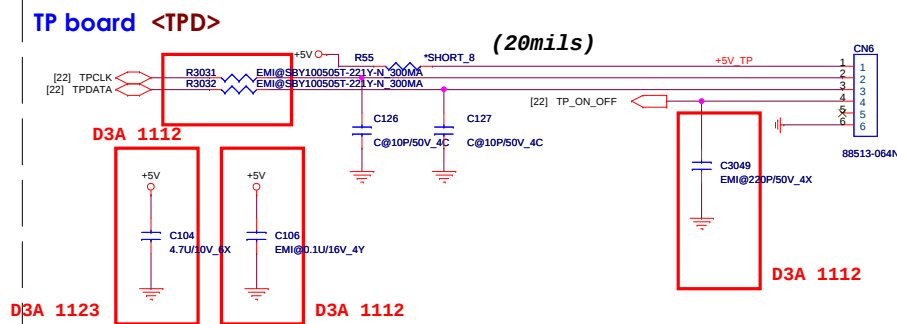
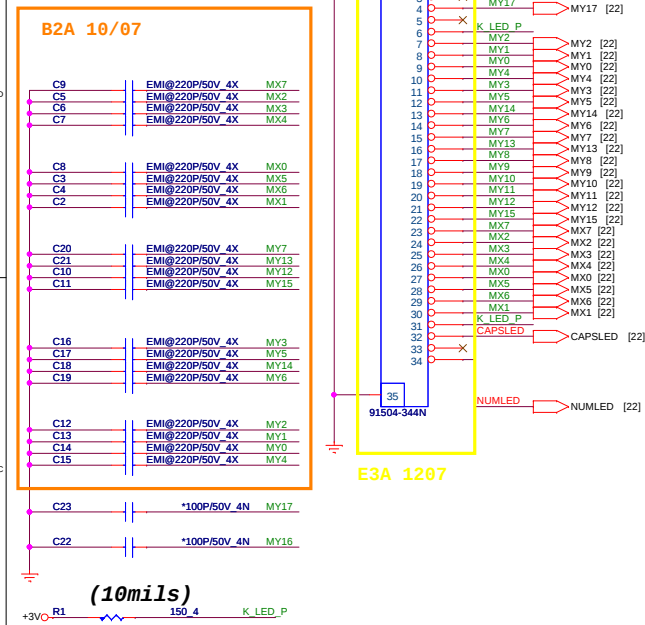


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Card reader controller <MMC>

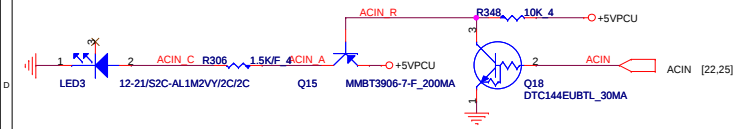


HOLE

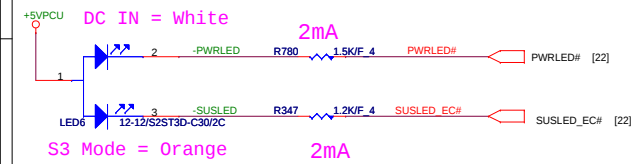


LED <LED>

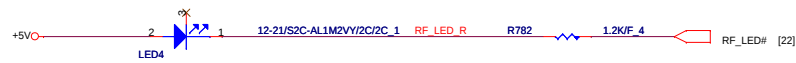
AC-IN



POWER



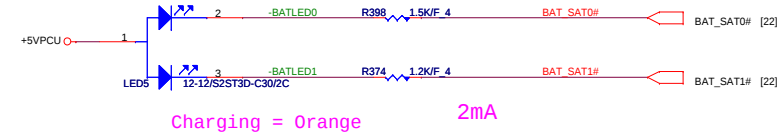
RF LED



BATTERY

Full Charge = White

2mA

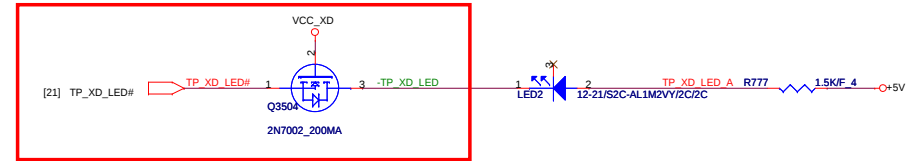


Charging = Orange

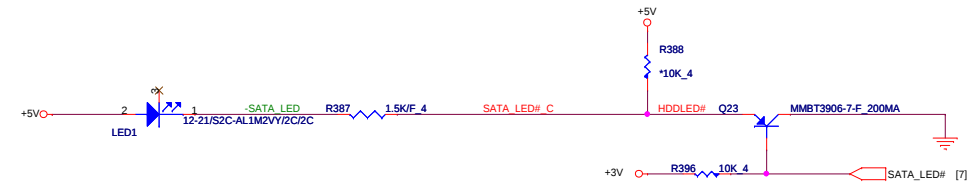
2mA

CARDREADER

D3A 1110

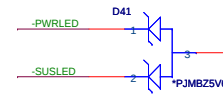


HDD/ODD



ESD Protect

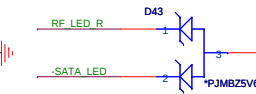
FOR POWER LED



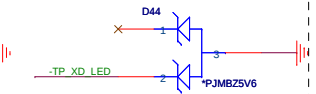
FOR BATTERY LED



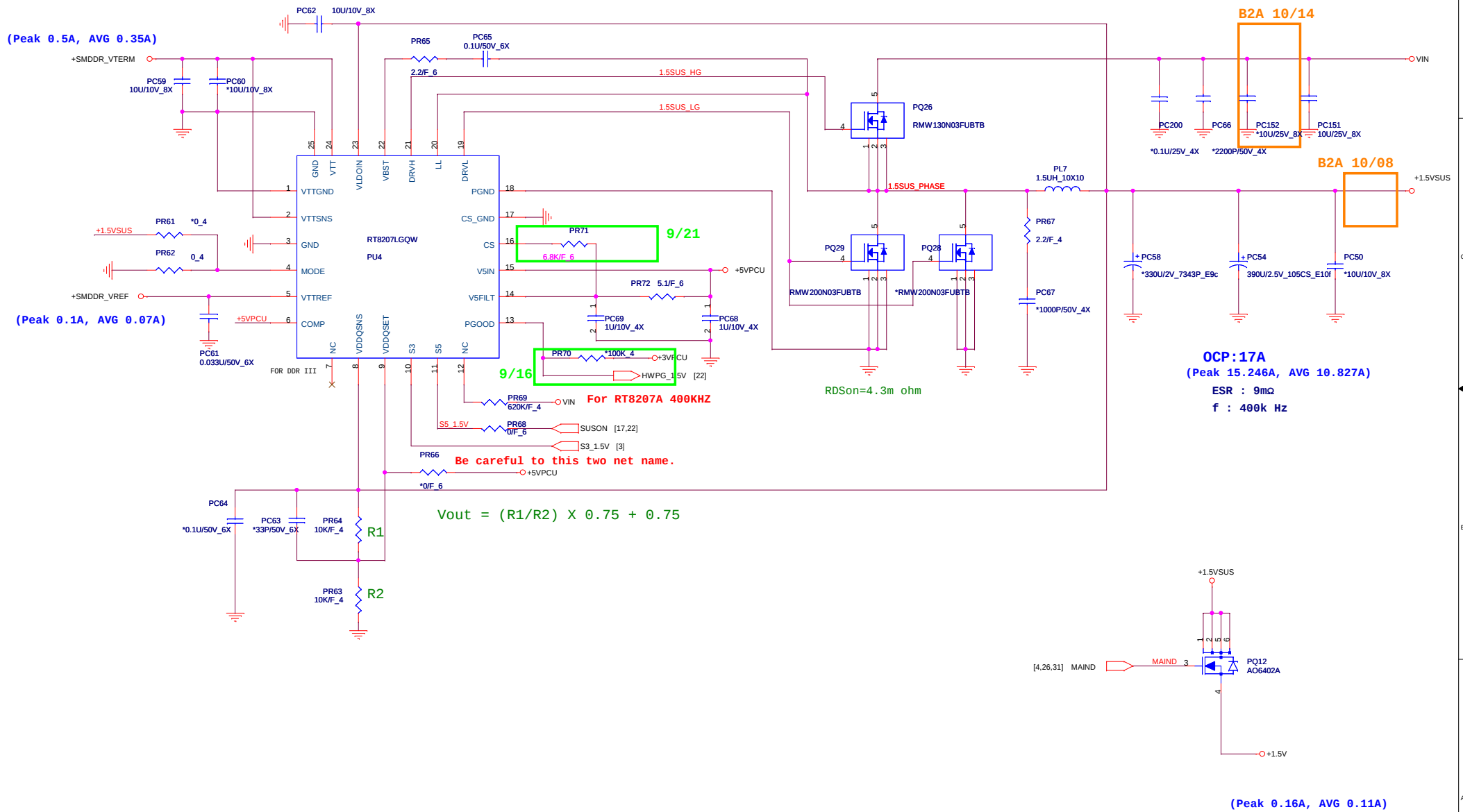
FOR HDD/RF LED



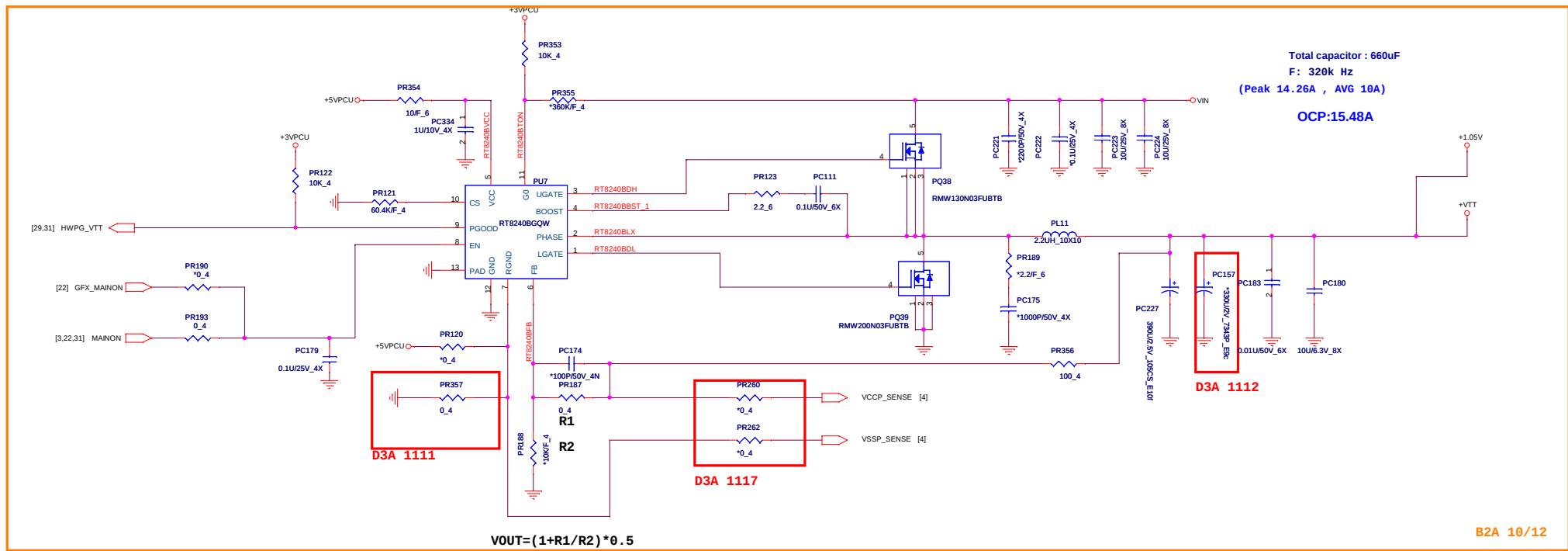
FOR CARDREADER LED

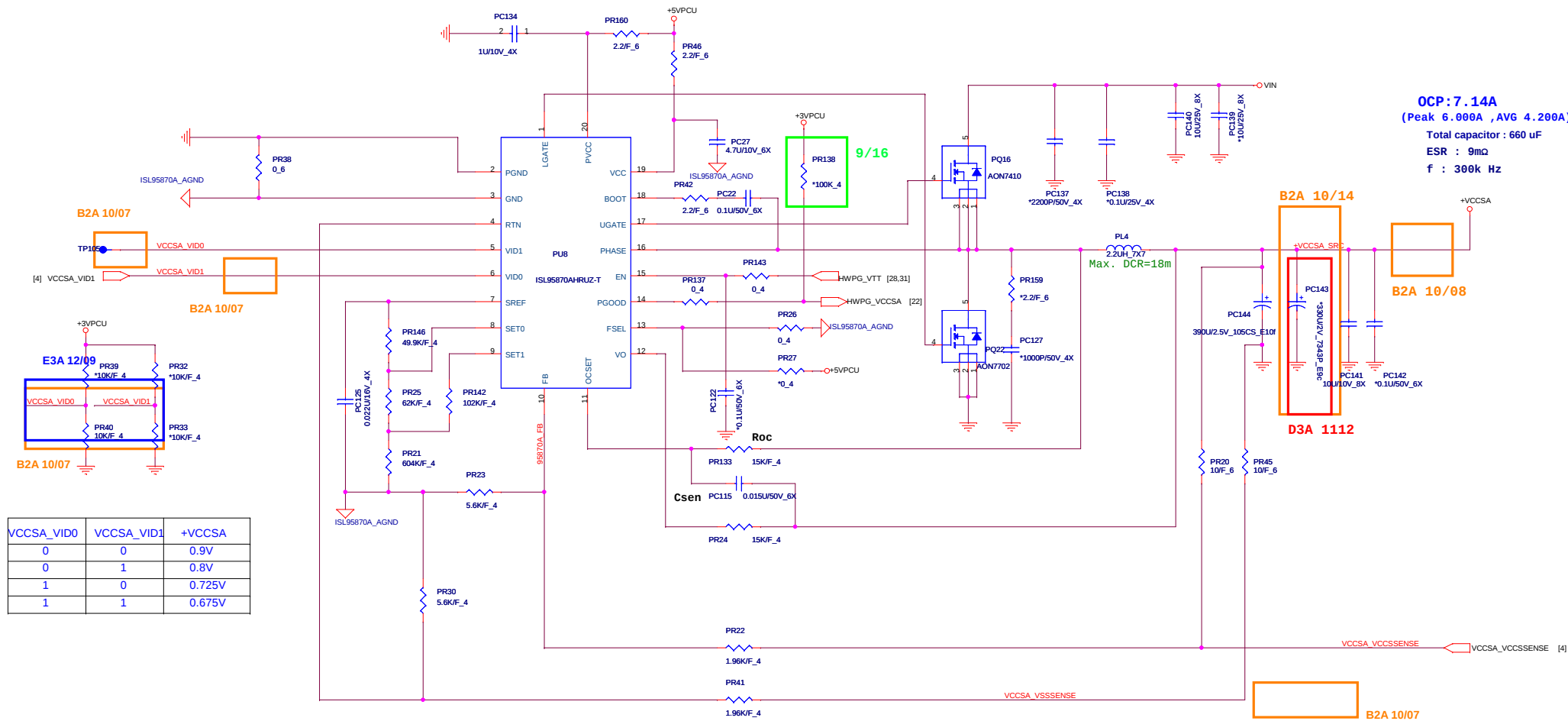


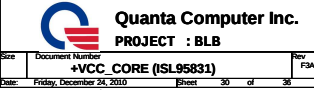


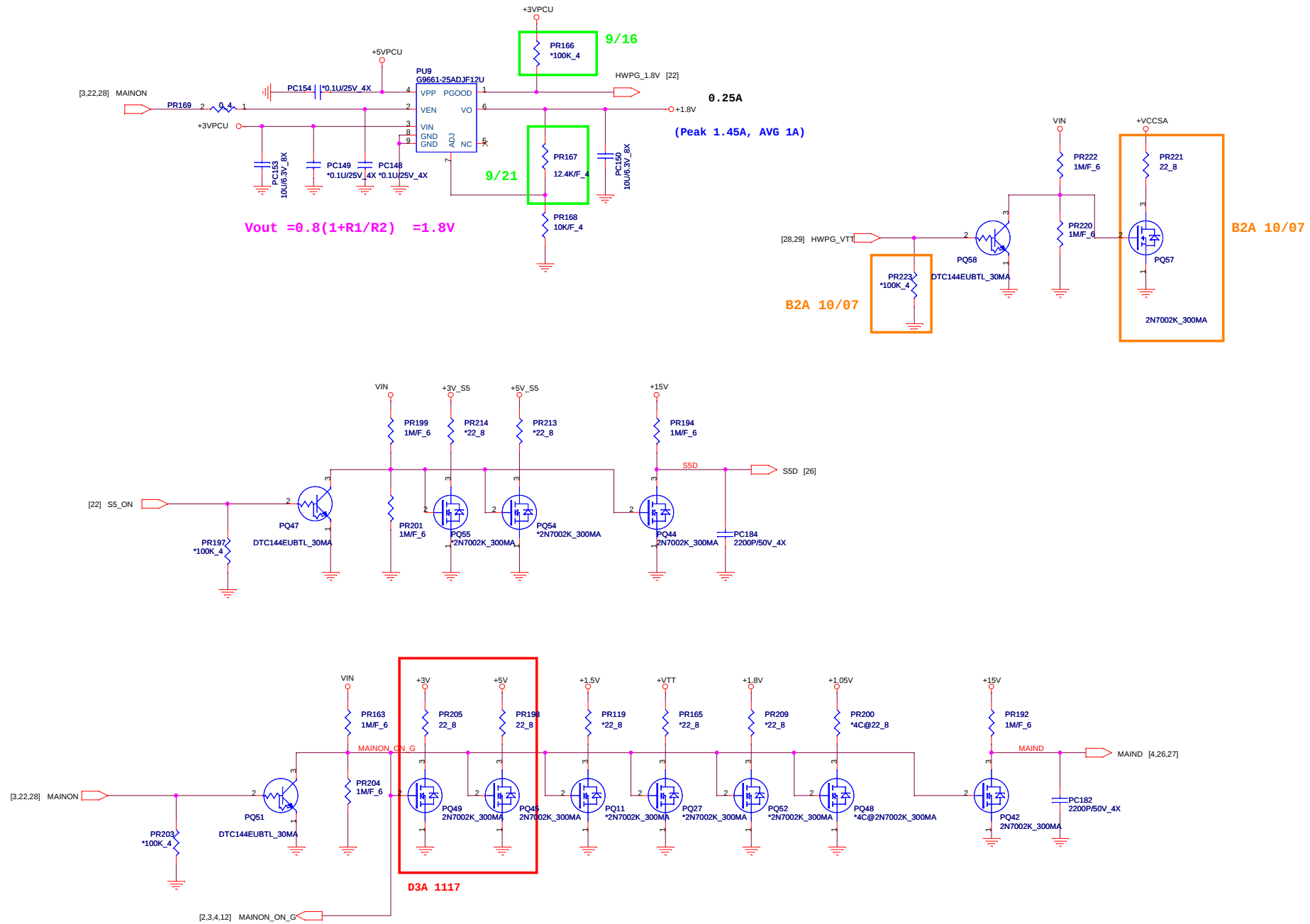


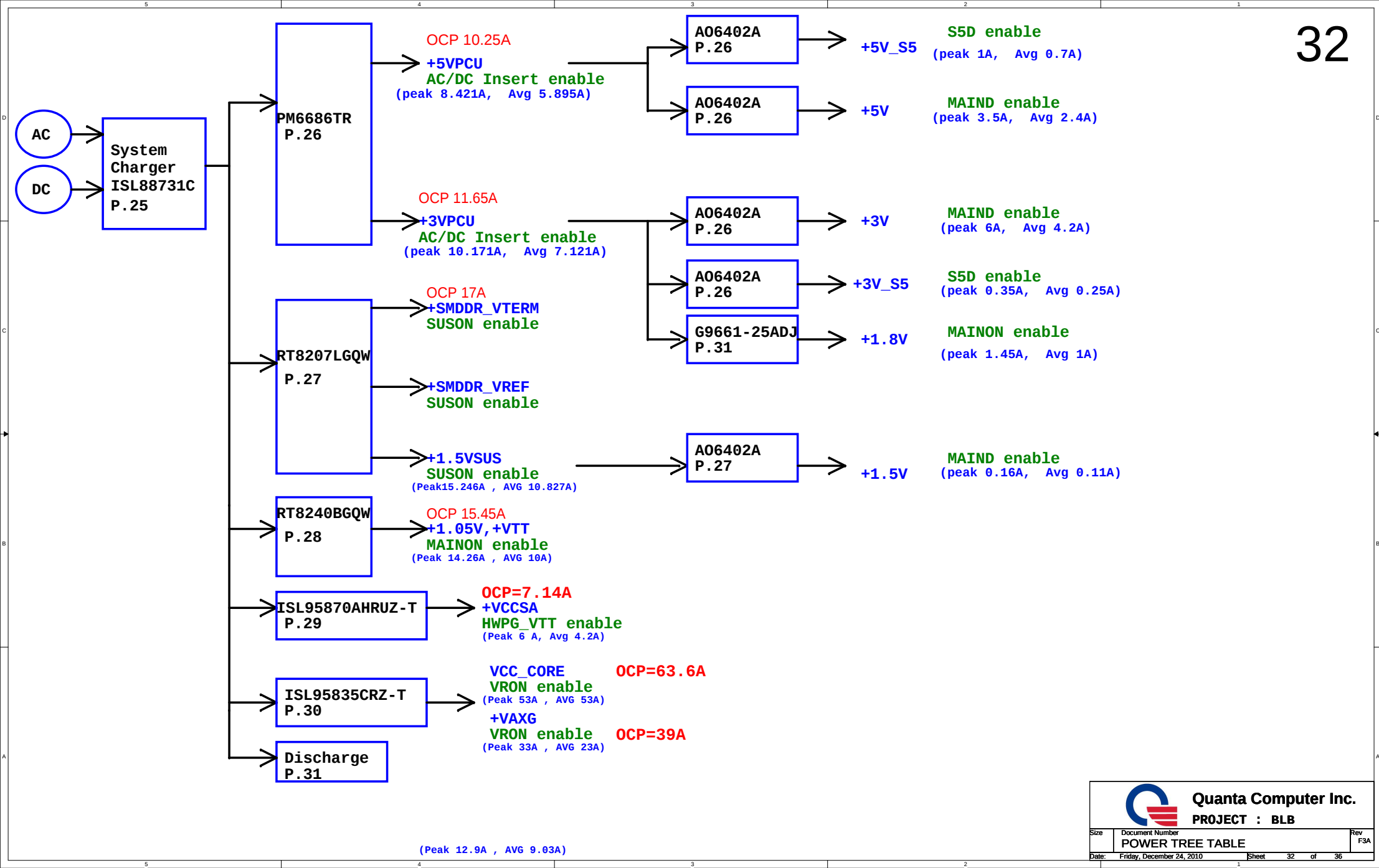
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PROJECT : BLB











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PROJECT : BLB

Size	Document Number	Rev
	POWER TREE TABLE	F3A
Date:	Friday, December 24, 2010	Sheet 32 of 36

Model		REV	CHANGE LIST				MODEL BLB		
							PAGE	FROM	To
BLB MB	D3A	PAGE 17 : Add L73 for EMI.					1	2A	3A
		PAGE 18 : C603 add " * " no stuff for ODD zero power.					2	2A	3A
		PAGE 18 : Add R614, Q3503 for ODD zero power.					3	2A	3A
		PAGE 18 : C541, C1, C503, C481remove " * " stuff for EMI.					4	2A	3A
		PAGE 18 : Add C3045, C3046, C3047, C589, C594 for EMI.					5	2A	3A
		PAGE 19 : C840, C471, C798 remove " * " stuff for EMI.					6	2A	3A
		PAGE 20 : C533 change to 47p for EMI.					7	2A	3A
		PAGE 20 : Add C30458 for EMI.					8	2A	3A
		PAGE 22: Add R3029, R3030 for USB Sleep and Charge.					9	2A	3A
		PAGE 22: R923, R924, R925 change to PU to +3VPCU.					10	2A	3A
		PAGE 22: R895 add " * " no stuff					11	2A	3A
		PAGE 22: R536,R535 change to 4.7K					12	2A	3A
		PAGE 23 : Add L3002,L3003, C3049, R3031, R3032 , C106 for EMI.					13	2A	3A
		PAGE 23 : C104 remove " * " stuff					14	2A	3A
		PAGE 23 : HOLE20, HOLE21, HOLE26 change footprint.					15	2A	3A
		PAGE 23 : Remove Hole5, Hole9					16	2A	3A
		PAGE 24 : Remove Q22 and add Q3504 for card reader LED.					17	2A	3A
		PAGE 25 : PC51, PC52, PC133, PR5, PC2 stuff for EMI.					18	2A	3A
		PAGE 26 : PD14 remove " * " stuff.					19	2A	3A
		PAGE 26 : PR351 add " * " no stuff.					20	2A	3A
		PAGE 26 : PR79 change to 150K ohm 1%					21	2A	3A
		PAGE 26 : PR352 change to 147K ohm 1%					22	2A	3A
		PAGE 26 : PU5 Change Main source P/N: AL006686000; 2nd source P/N: AL006188000					23	2A	3A
		PAGE 28 : Add PR357, PC157.					24	2A	3A
		PAGE 28 : PR260, PR262 add " * " no stuff.					25	2A	3A
		PAGE 29 : PC143 change to 330U/2V_7343P_E9c.					26	2A	3A
		PAGE 30 : PR338 change to 750 ohm 1%					27	2A	3A
		PAGE 30 : PR332 change to 2.8K ohm 1%					28	2A	3A
		PAGE 30 : PR322 change to 330p 50V					29	2A	3A
		PAGE 30 : PR334 change to 2K ohm 1%					30	2A	3A
		PAGE 30 : PR31 change to 1.47K ohm 1%					31	2A	3A
		PAGE 30 : PR139 change to 3.16K ohm 1%					32	2A	3A
		PAGE 30 : PR132 remove " * " stuff.					33	2A	3A
		PAGE 30 : PC300 remove " * " stuff.					34	2A	3A
		PAGE 30 : PR156, PR127, PR128, PC4 remove " * " stuff.					35	2A	3A
	PAGE 30 : PQ23, PQ20, PQ24, PQ25, PQ60, PQ61 Change Main source P/N: BAM02000000 ; 2nd source P/N: BAM14120000								
	PAGE 30 : PC145, PC56, PC146, PC57, PC314, PC316 change to 330U/2V_7343P_E9c.								
	PAGE 30 : PR341, PC329 stuff for EMI.								
	PAGE 31 : Add PR205, PQ49, PR198, PQ45.								
E3A	PAGE 2 : Add C113,C114,C117 for ESD								
	PAGE 4 : Add R930								
	PAGE 4 : C606 remove " * " stuff.								
	PAGE 4 : Change the C591 to 330uF .								
	PAGE 4 : Add C116 for ESD								
	PAGE 6 : R922 remove " * " stuff.								
	PAGE 6, 7, 8, 9, 10, 11 : PCH U25 change to AJSLH9D0T06								
	PAGE 7: U29 change to AKE391P0N00								
	PAGE 7 : Add C86 for ESD								
	PAGE 10: Add C69, C71,C78,C81,C82,C90,C92,C112,C118,C119,C123,C132,C133,C134 for ESD								
	PAGE 15: MR1 remove 2ND soucre AL002618001, add 2ND soucre AL003661003								
	PAGE 15: L20 change footprint.								
	PAGE 16 : C720 remove " * " stuff.								
	PAGE 16 : Add R883								
	PAGE 16 : R644 remove " * " stuff								
	PAGE 16 : R605,R648,R649,R568,R569,R570,R571,R572 add " * " no stuff								
	PAGE 17 : CN3000 change footprint to usb-020053gr009m5176r-9p-smt								
	PAGE 17: U3001 change to AKE37ZN0Q01								
	PAGE 17: L73 change footprint.								
	PAGE 17 : R3020 change to 1.47k.								
	PAGE 17 : C3036, C3035 change to 15pf								
	PAGE 19 : CN2 change P/N to DFHD04MR752								
	PAGE 19 : CN22,CN23 change footprint.								
	PAGE 19 : C832 and C833 change to 150p for EMI								
	PAGE 20 : C958,C959,C960,C961 change to 0.01U/100V 0805								
DOC NO. 204		PROJECT MODEL :		BLB	APPROVED BY:	DATE:	2010/12/21	 Quanta Computer Inc. PROJECT : BLB	
		PART NUMBER:		31BLBMB0IG0	DRAWING BY:	REVISION:	F3A		
								Size	Rev
								Document Number	F3A
								Change list	
								Date:	Friday, December 24, 2010
								Sheet	35 of 36

Model		REV	CHANGE LIST	MODEL BLB		
				PAGE	FROM	To
BLB MB	E3A	PAGE 20 : Remove C3048 and add D24,D25 for ESD	1	2A	3A	
		PAGE 21 : R276,R275,R280,R279,R289,R277,R274,R288 change to 33ohm for EMI.	2	2A	3A	
		PAGE 22: U10 change to AKE37FN0N01	3	2A	3A	
		PAGE 22: U5 remove 2ND soucre AKE3K8B0Y17	4	2A	3A	
		PAGE 22 : Add R122 for ESD	5	2A	3A	
		PAGE 23: CN3 remove 2ND soucre DFFC34R002	6	2A	3A	
		PAGE 23: HOLE2, HOLE3 ,Hole27 change footprint and P/N.	7	2A	3A	
		PAGE 23: L3002, L3003 change footprint.	8	2A	3A	
		PAGE 23 : C446 remove " * " stuff for EMI.	9	2A	3A	
		PAGE 30 : Add C115 for ESD	10	2A	3A	
		PAGE 30 : Change the PC132 to 0.15uF from 0.1uF.	11	2A	3A	
		PAGE 30 : Change the PR338 to 7870hm from 7500hm	12	2A	3A	
		PAGE 30 : Change the PR334 to 20kOhm from NC.	13	2A	3A	
		PAGE 04 : Change the C95,C149 to 22uF from 10uF.	14	2A	3A	
		PAGE 04 : Change the C98,C99 to 22uF from NC.	15	2A	3A	
		PAGE 29 : PR40 *10K/F 4 Change the 10K/F 4	16	2A	3A	
		PAGE 30 : PR11 change to 20.5k	17	2A	3A	
		PAGE 25 : Add PU10 for ESD	18	2A	3A	
		PAGE 20 : C124,C121,C108,C105 add "51@" for Giga LAN	19	2A	3A	
		PAGE 17 : D3000 ,Y3000,U44 remove 2ND source.	20	2A	3A	
		PAGE 25 : PD9 remove 2ND source.	21	2A	3A	
		F3A	PAGE 9 : NET: ODD_PRSNT# change to PCH pin U2 <SATA4GP/GPIO16>	22	2A	3A
	PAGE 9 : NET: BOARD_ID9 change to PCH pin M5 <SATA3GP/GPIO37>		23	2A	3A	
	PAGE 8 : R358 add "*" no stuff.		24	2A	3A	
	PAGE 8 : R847 remove "S3@" and stuff.		25	2A	3A	
	PAGE 23 : Add C3050, C3051 for EMI		26	2A	3A	
	PAGE 20 : Add C160,C170,C180,C184 for EMI		27	2A	3A	
			28	2A	3A	
			29	2A	3A	
			30	2A	3A	
			31	2A	3A	
			32	2A	3A	
			33	2A	3A	
			34	2A	3A	
		35	2A	3A		
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				 Quanta Computer Inc. PROJECT : BLB Change list		Rev F3A