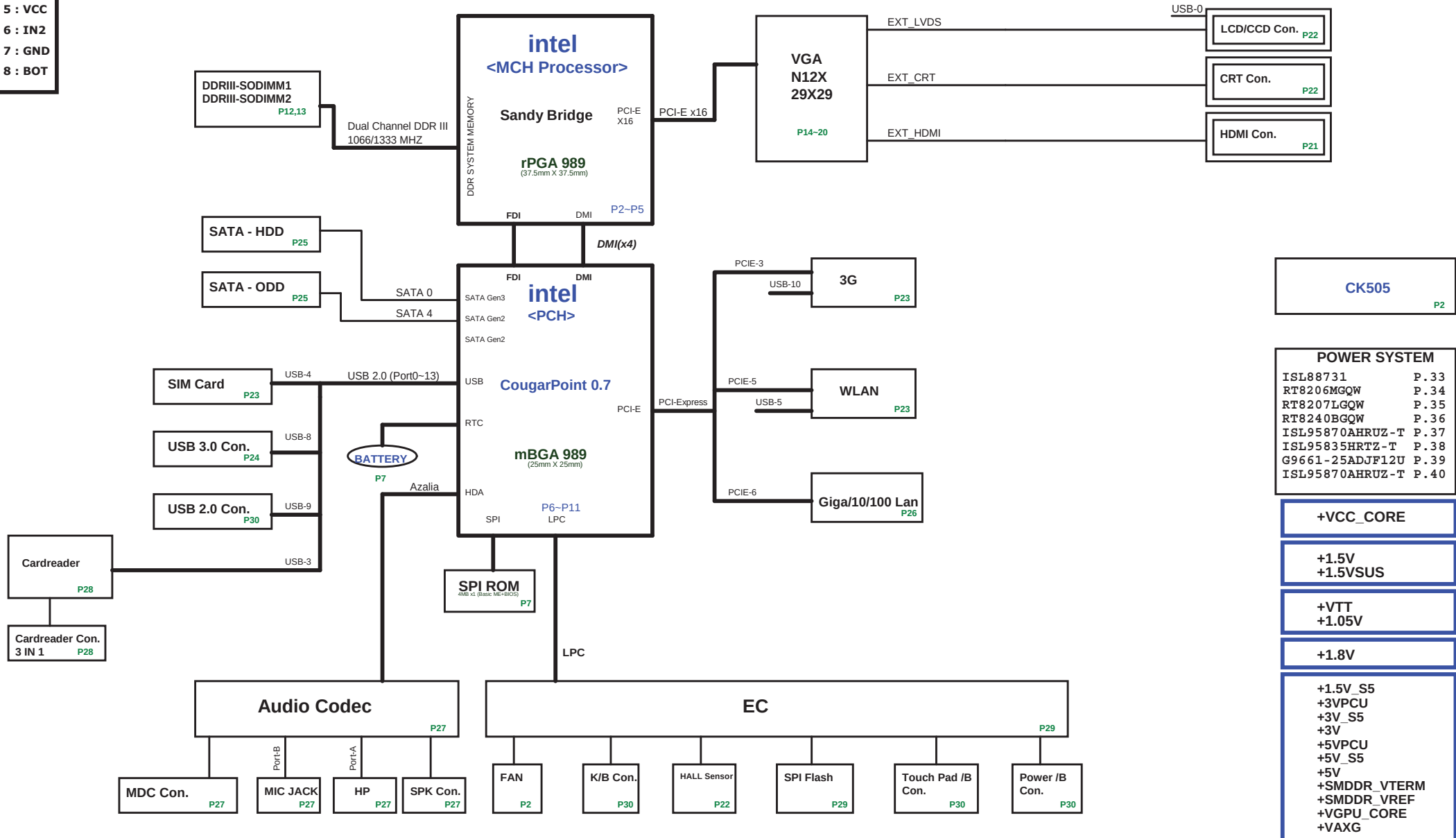


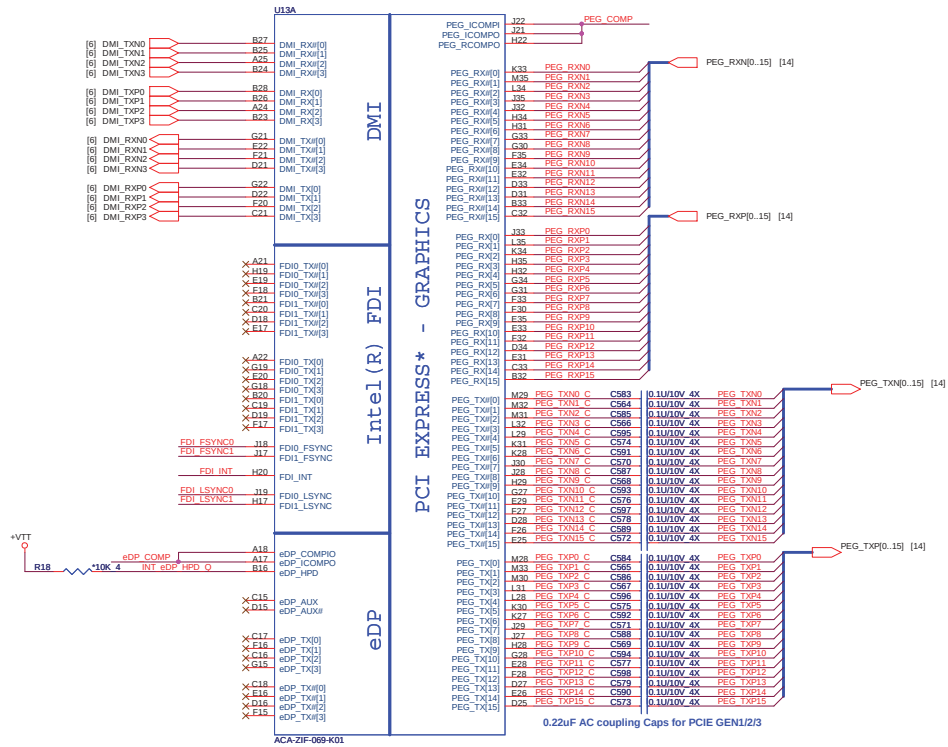
BLBD Block Diagram

PCB STACK UP

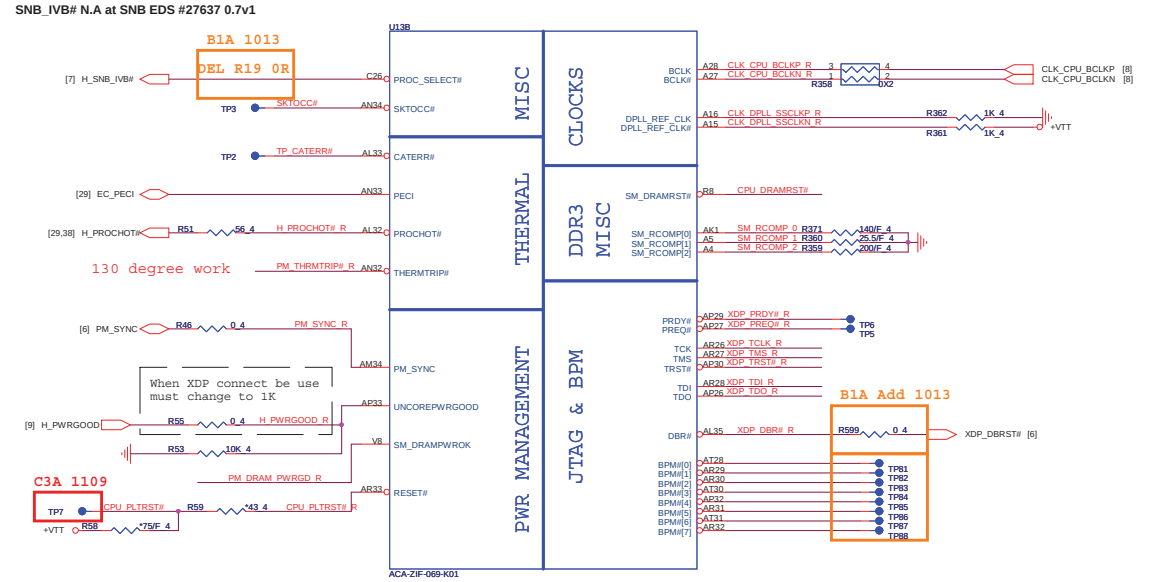
LAYER 1 : TOP
LAYER 2 : GND
LAYER 3 : IN1
LAYER 4 : GND
LAYER 5 : VCC
LAYER 6 : IN2
LAYER 7 : GND
LAYER 8 : BOT



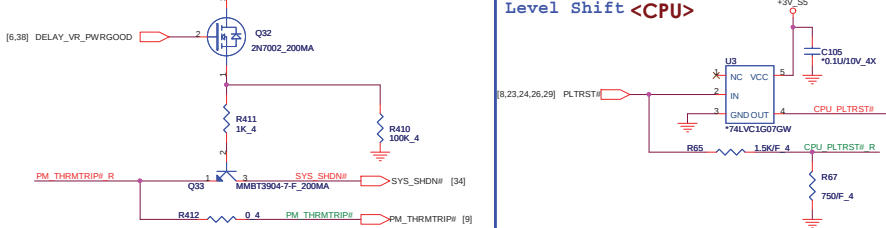
Sandy Bridge Processor (DMI, PEG, FDI)



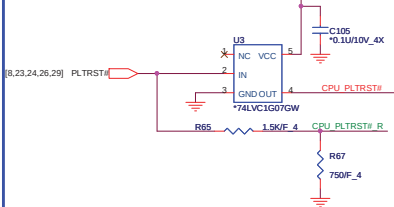
Sandy Bridge Processor (CLK,MISC,JTAG)



Thermal Trip

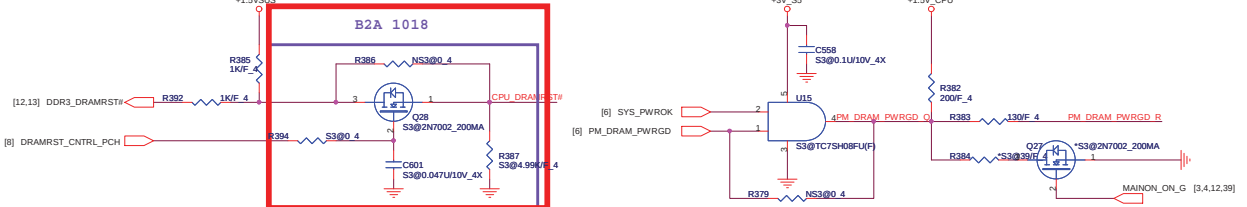


Level Shift <CPU>

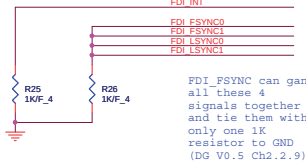


S3 Power Reduction

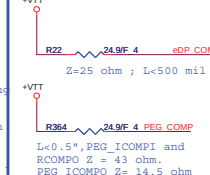
C3A 1118 (討論結果:保留S3)



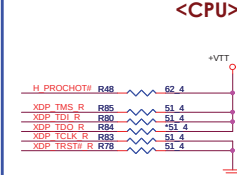
FDI Disabling (Discrete Only)
[CPU]



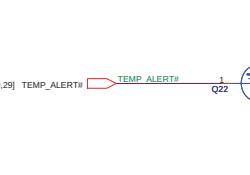
DP & PEG Compensation



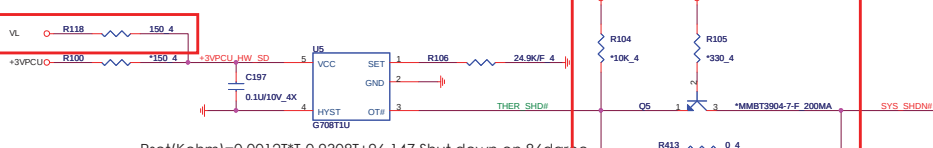
Processor pull-up



CPU FAN CTRL <THC/THV>



CPU Thermal sensor / MB Local TEMP

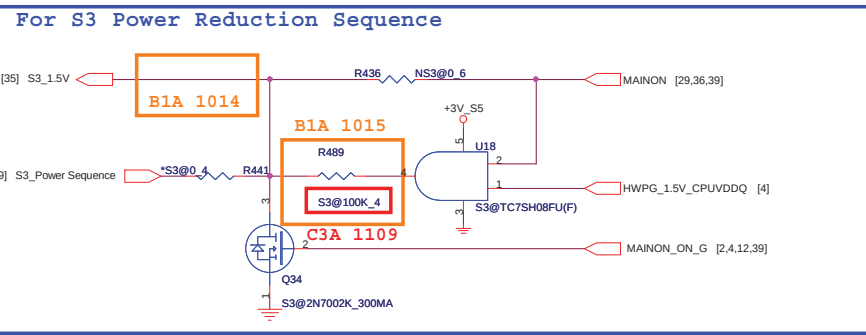
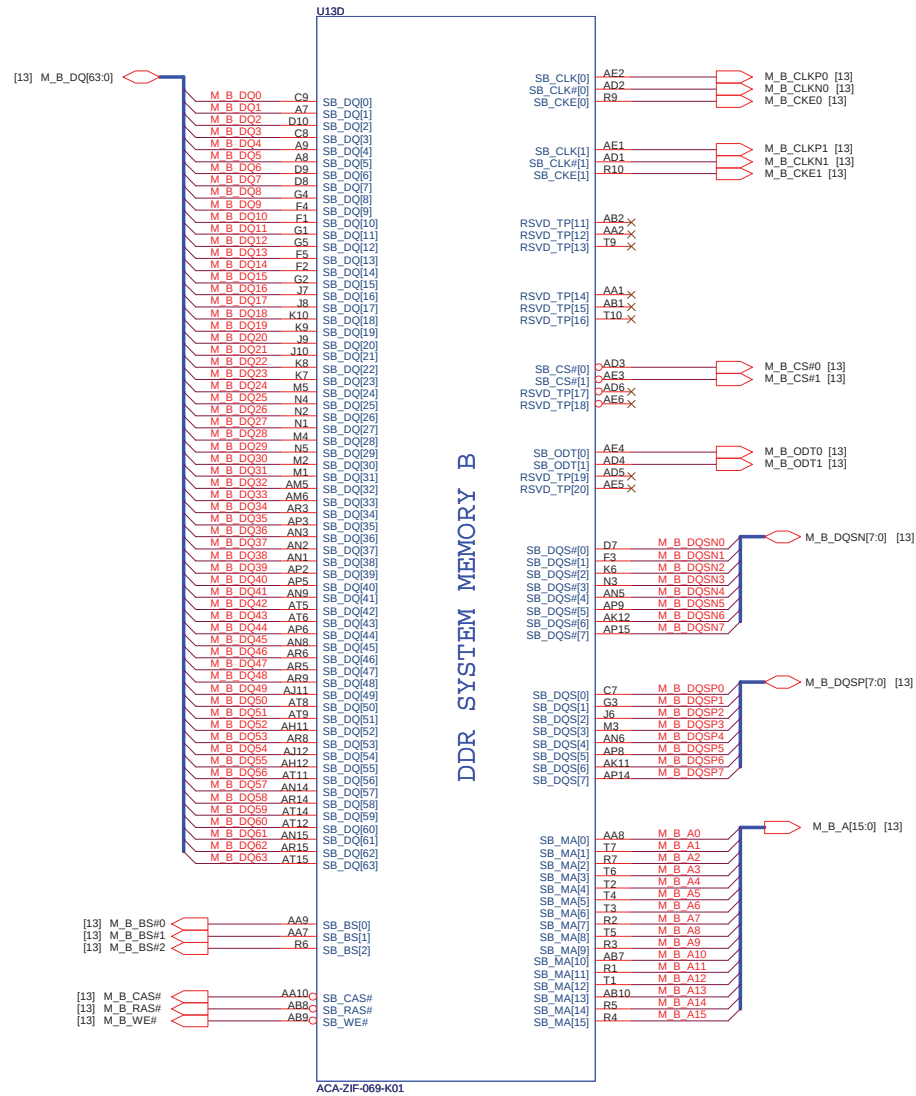
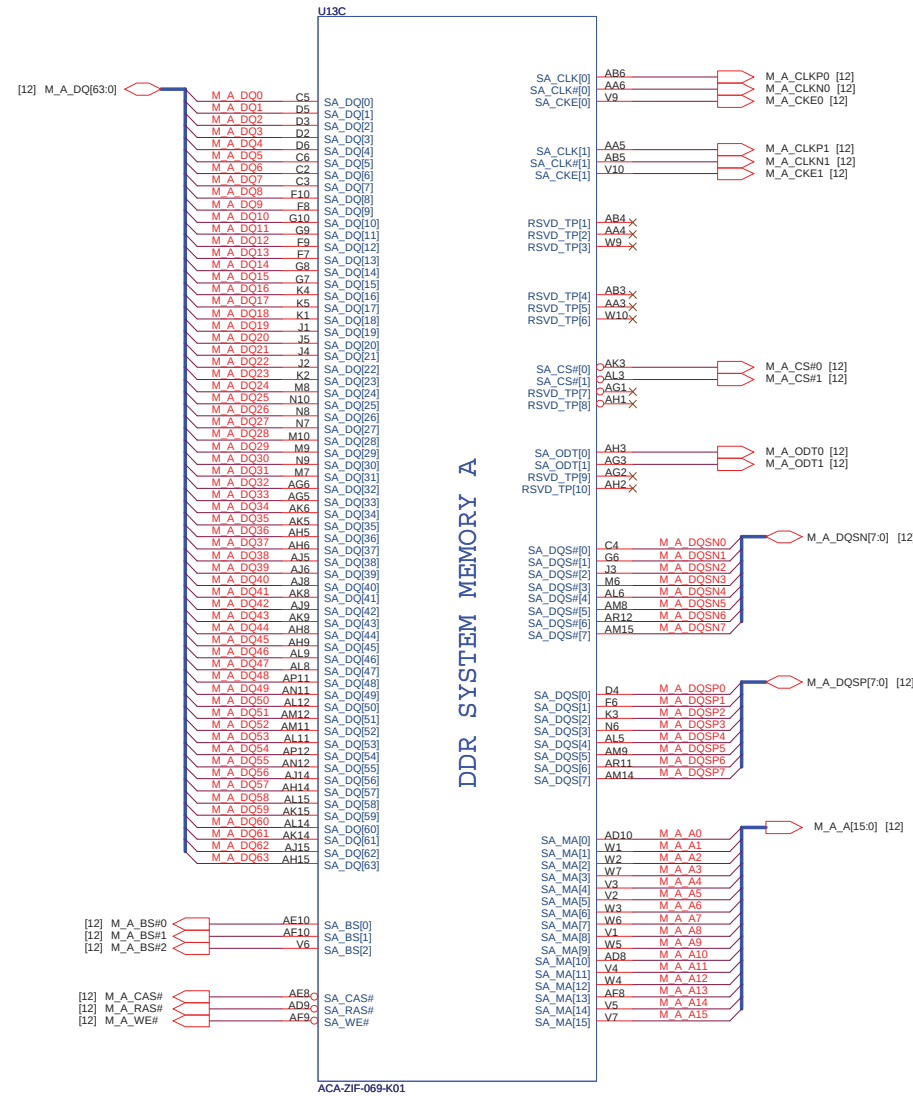


Rset(Kohm)=0.0012T*-0.9308T+96.147, Shut down on 86degree
Hysteresis is 30C

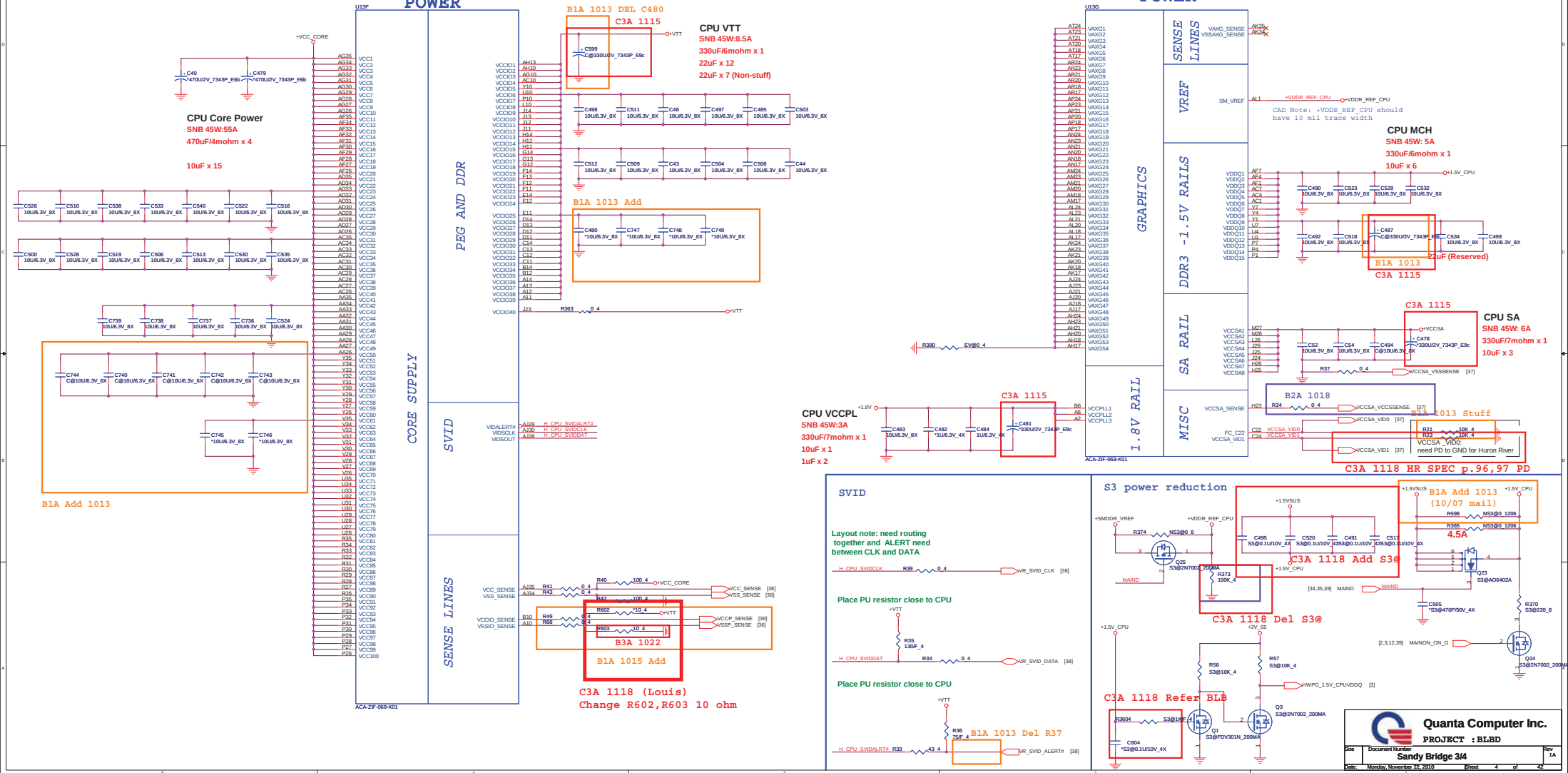
C3A 1116 mail 1018 for cost down Q5

Sandy Bridge Processor (DDR3)

03



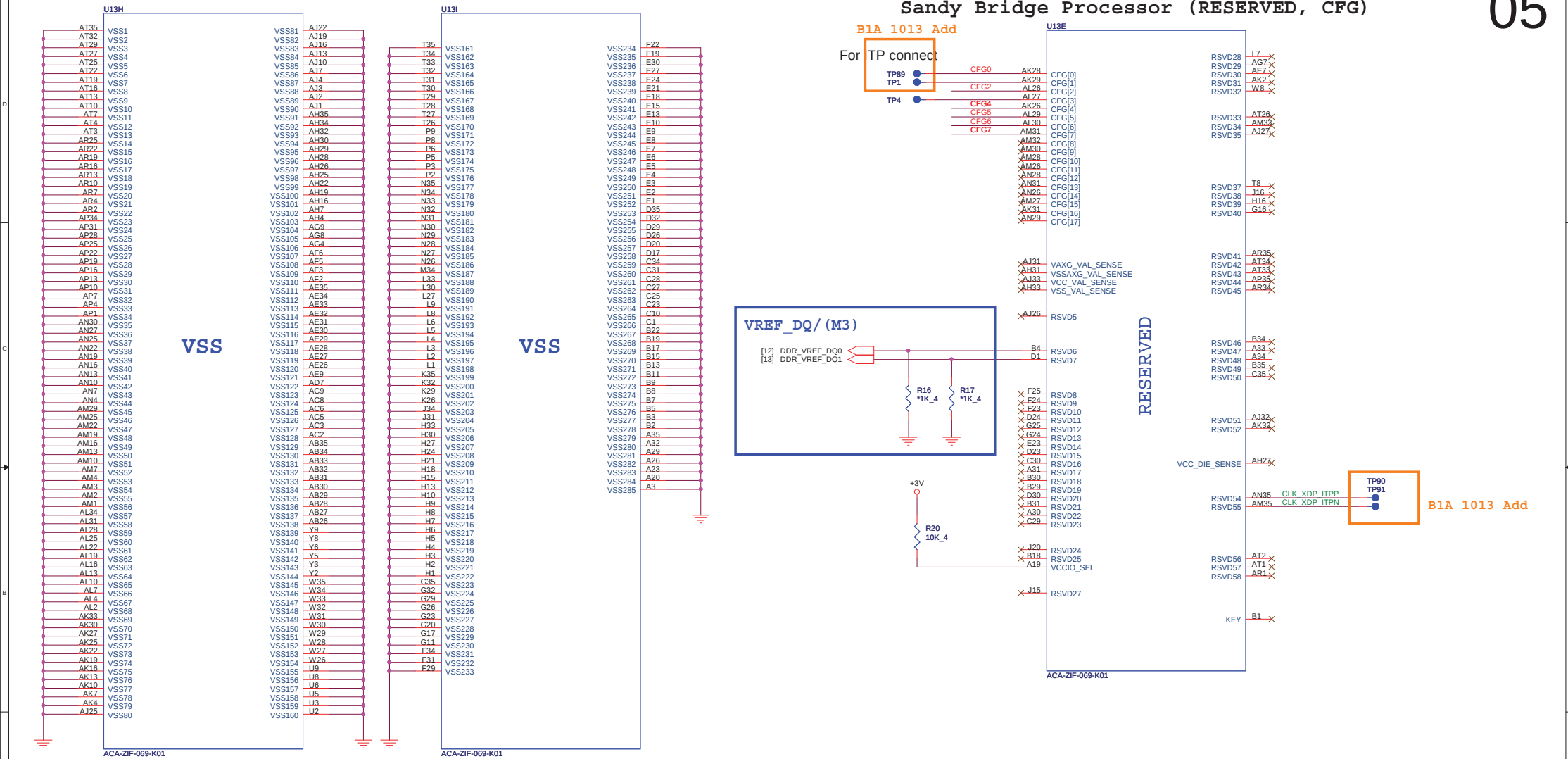
POWER



Sandy Bridge Processor (GND)

Sandy Bridge Processor (RESERVED, CFG)

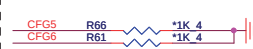
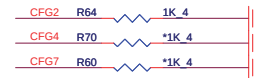
05



Processor Strapping

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

	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



CFG[6:5] (PCIe Port Bifurcation Straps)

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



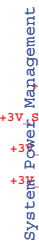
Quanta Computer Inc.

PROJECT : BLBD

Size	Document Number	Rev
	Sandy Bridge 4/4	1A

Date: Monday, November 22, 2010 Sheet 5 of 42

U19C



Cougar Point (LVDS,DDI)



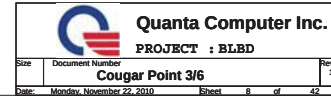
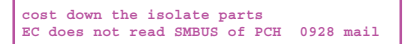
The schematic diagram illustrates the resistor network for the R322-R568 components. It shows a series of resistors connected to various pins and signal lines. The resistors are labeled with values such as 10K 4, 0.4, 0.4, 0.4, 0.4, 0.4, 0.4, and 0.4. The signal lines are labeled with values like 3V_SS, 3V_DSW, AC_PRESENT [29], SUS_PWR_ACK [26], RSMRST#, SYS_HWPW [29,34], and SLP_SUS# [29]. A note 'Rc stuff for turbo mode' is present near R314.

 Quanta Computer Inc. PROJECT : BLBD	
Size	Document Number Cougar Point 1/6
Date:	Monday, November 22, 2010 Sheet 6 of 42

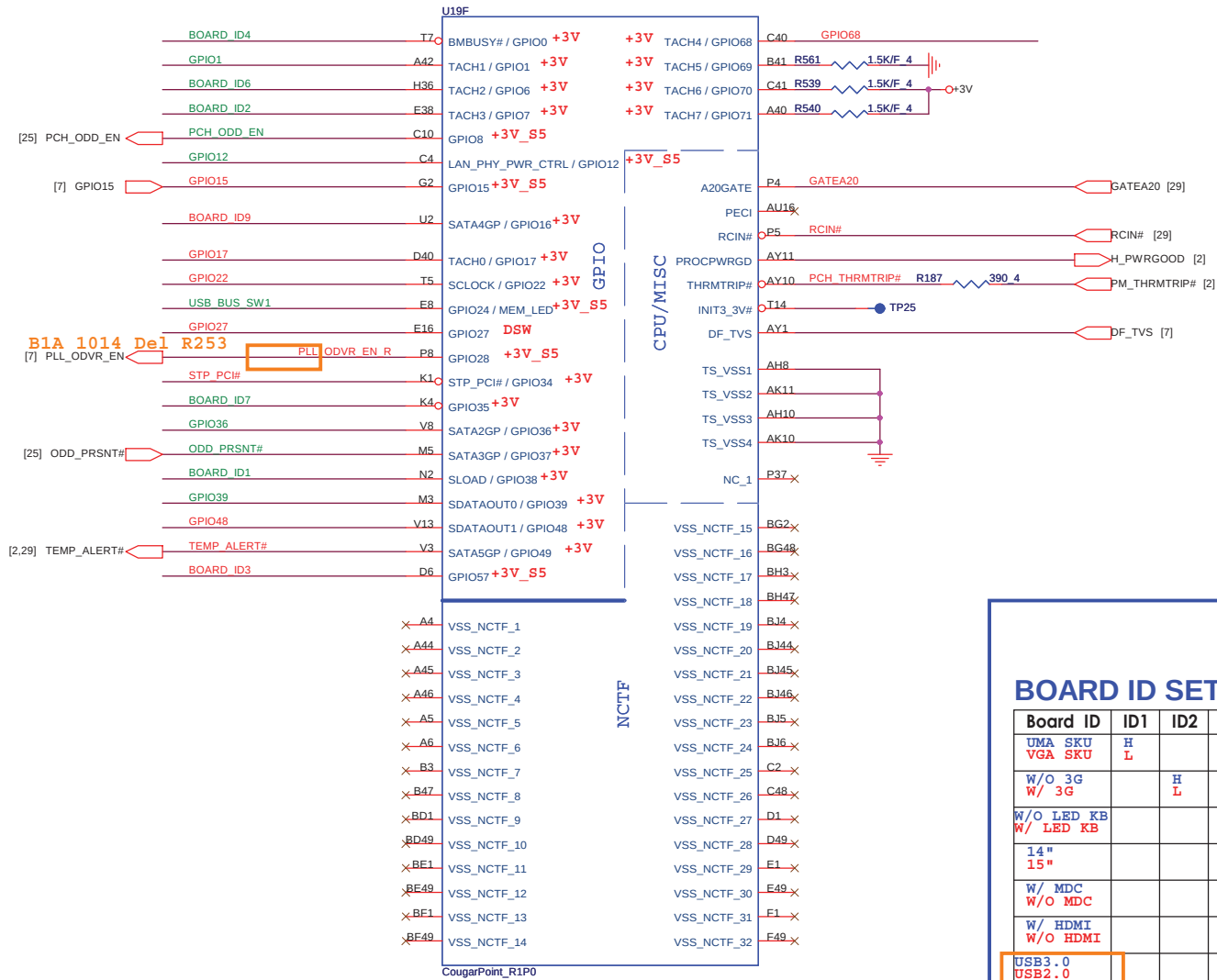
07



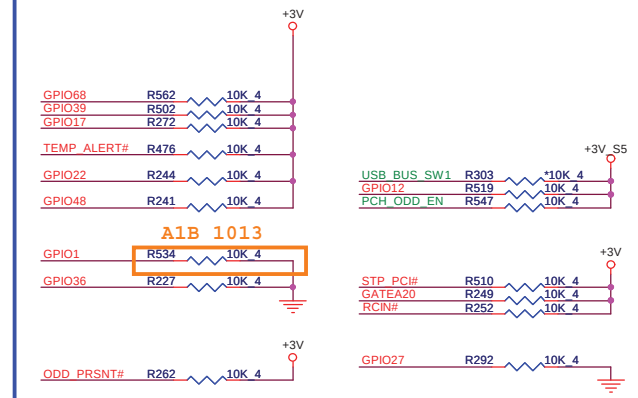
U19



Cougar Point (GPIO,VSS_NCTF,RSVD)



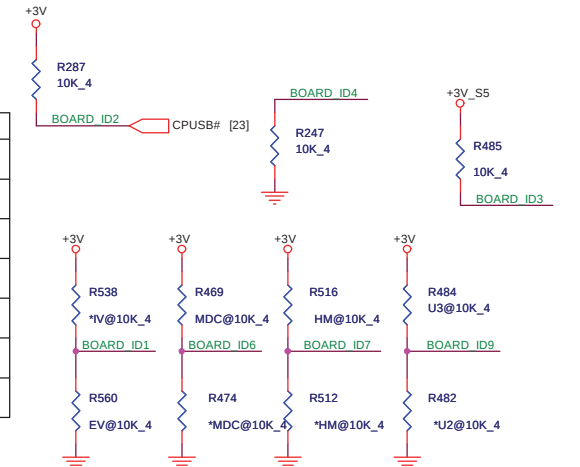
GPIO Pull-up/Pull-down (CLG)



BOARD ID SETTING

Board ID	ID1	ID2	ID3	ID4	ID6	ID7	ID9
UMA SKU	H						
VGA SKU	L						
W/O 3G		H					
W/ 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

B1A 1014



Quanta Computer Inc.

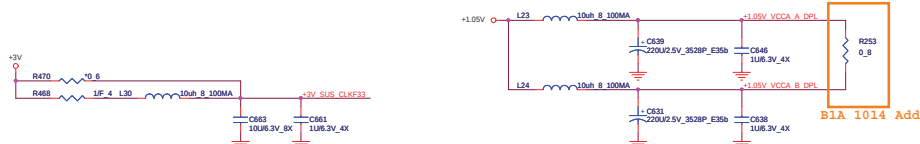
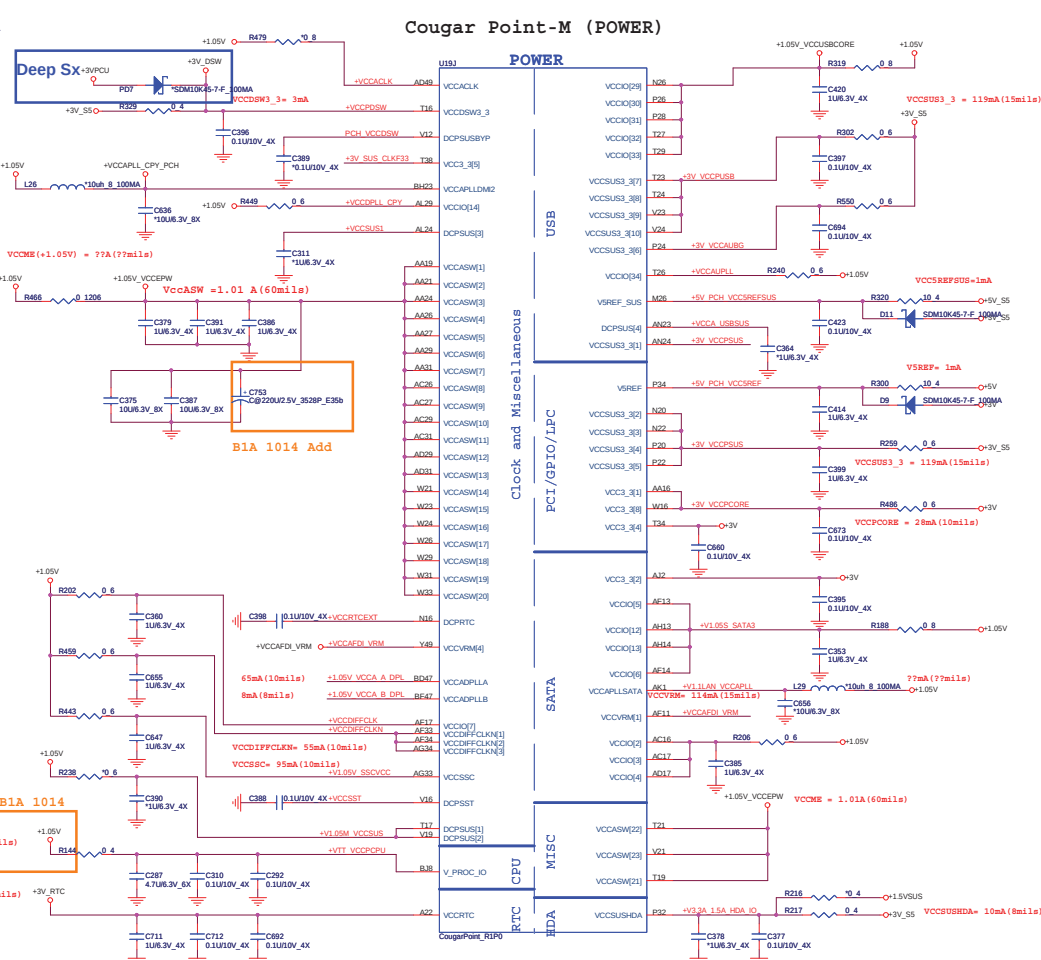
PROJECT : BLBD

Size Document Number
Cougar Point 4/6

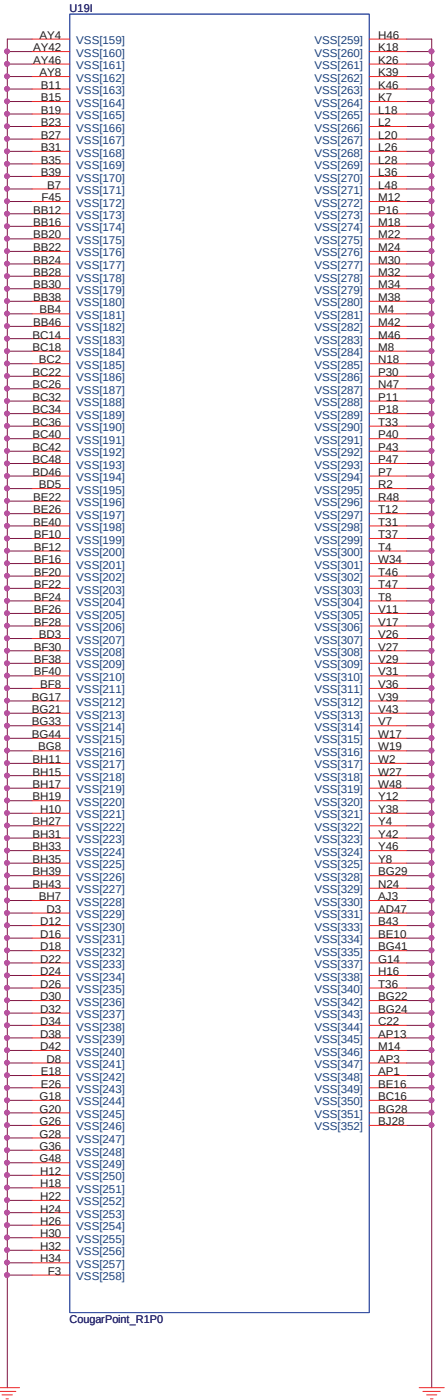
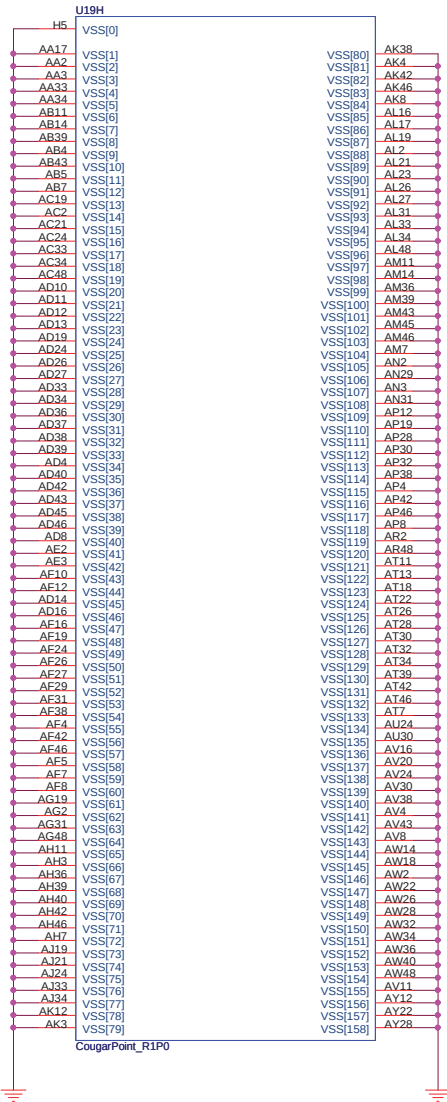
Date: Monday, November 22, 2010 Sheet 9 of 42

Rev 1A

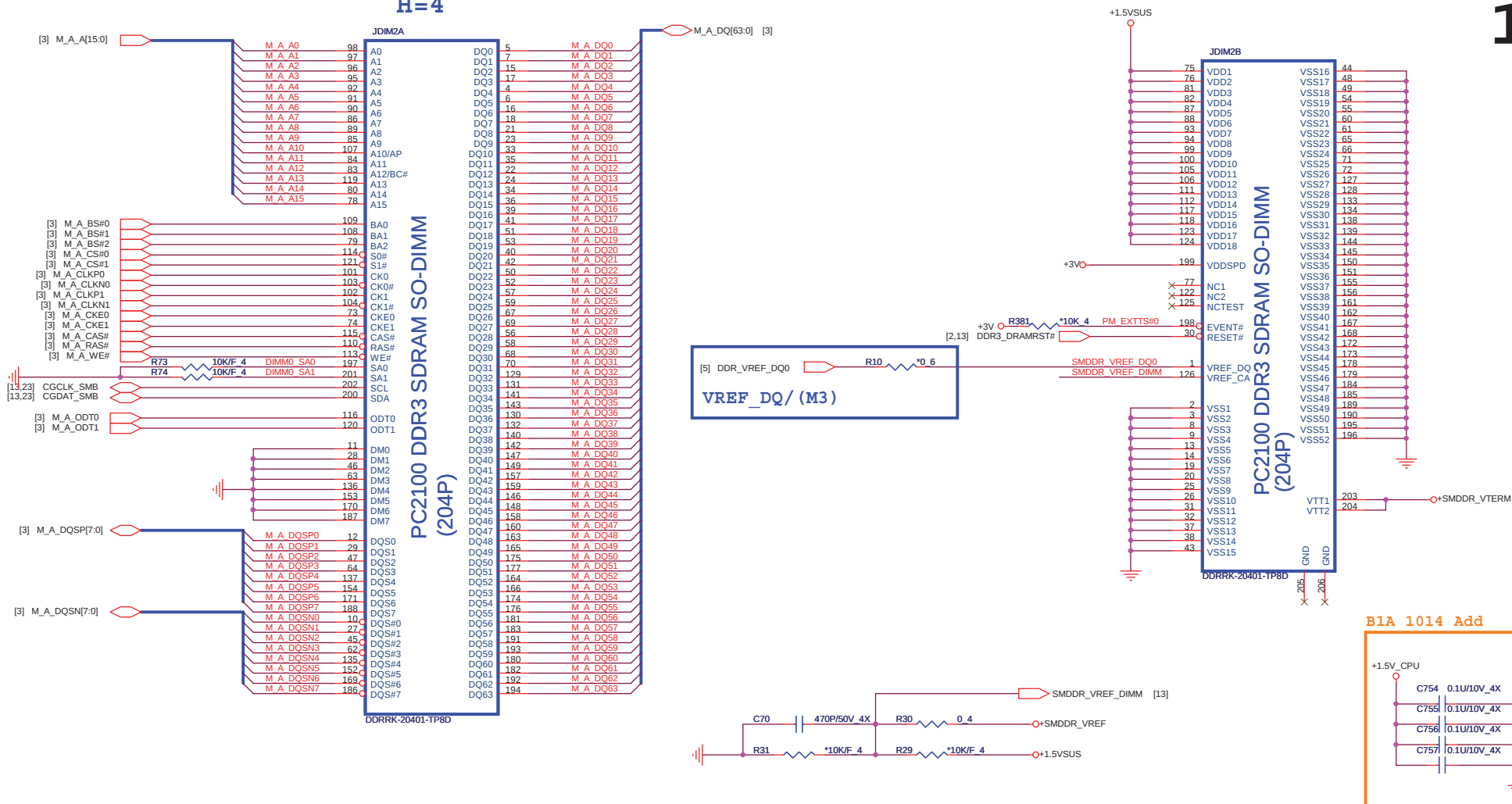
Cougar Point-M (POWER)



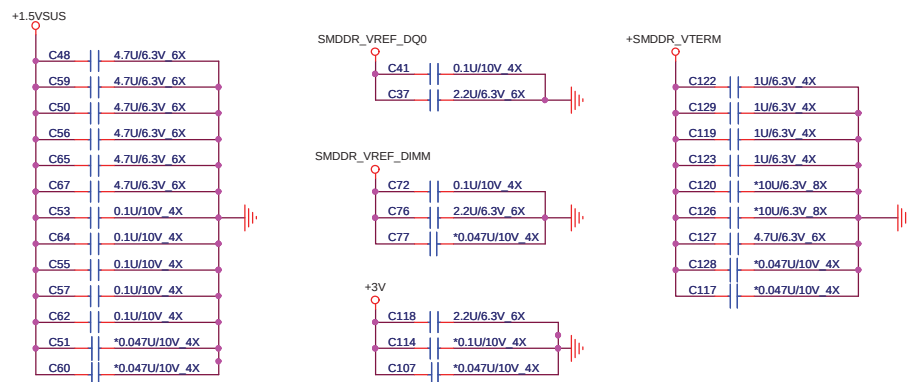
IBEX PEAK-M (GND)



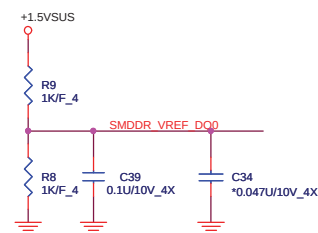
H=4



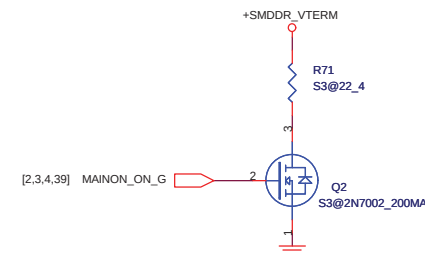
Place these Caps near So-Dimm0.



VREF_DQ/ (M1)



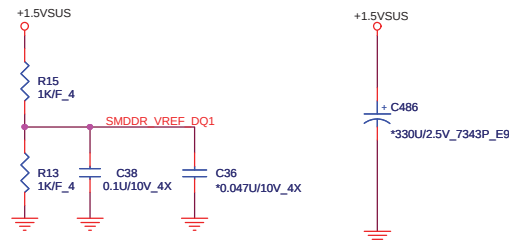
S3 Power Reduction



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PROJECT : BLBD

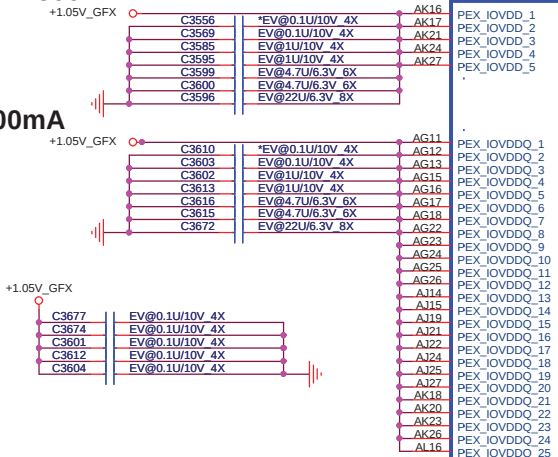


VREF_DQ/ (M1)

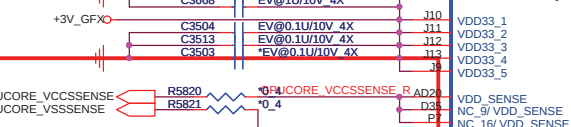
Rev
1A

PEX IOVDD+PEX IOVDDQ+PEX PLLVDD >2.2A

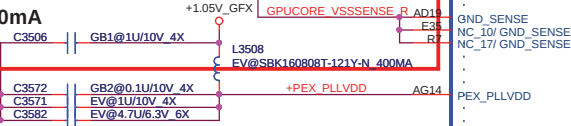
~ 500mA



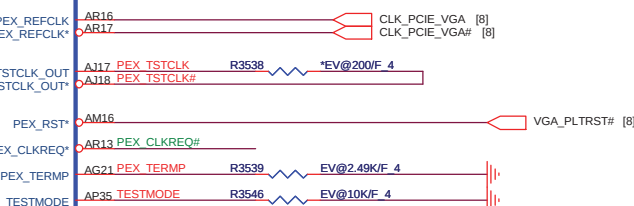
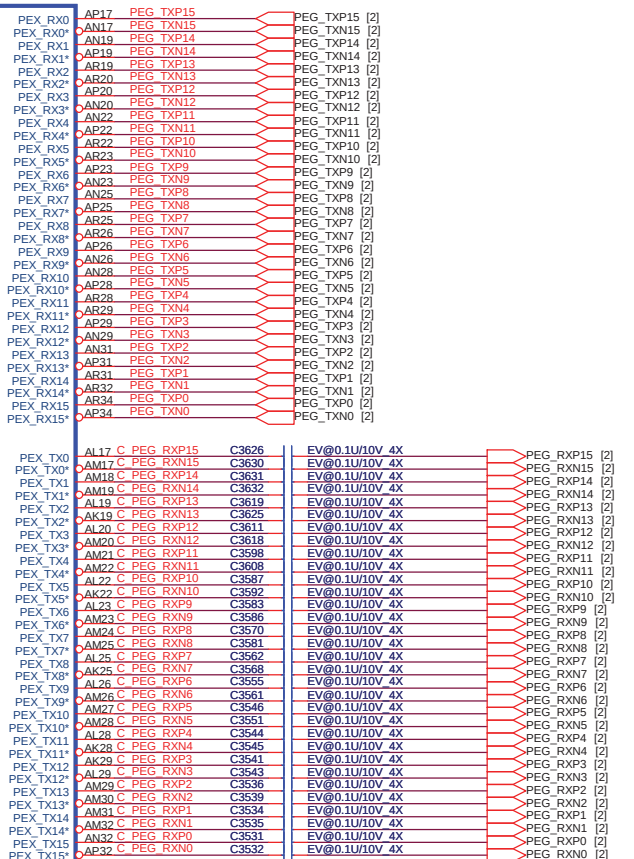
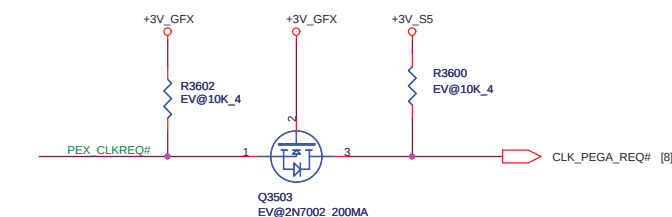
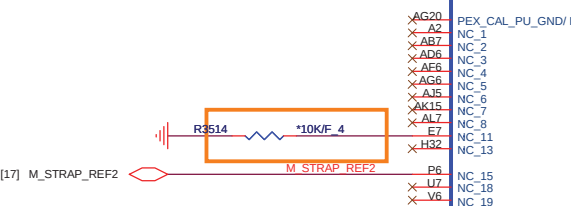
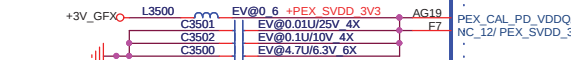
PCI EXPRESS



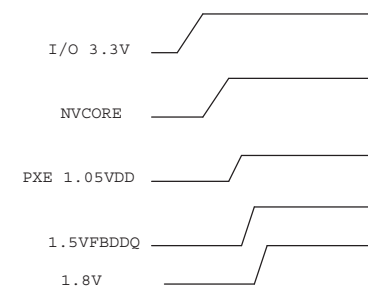
16 mils width

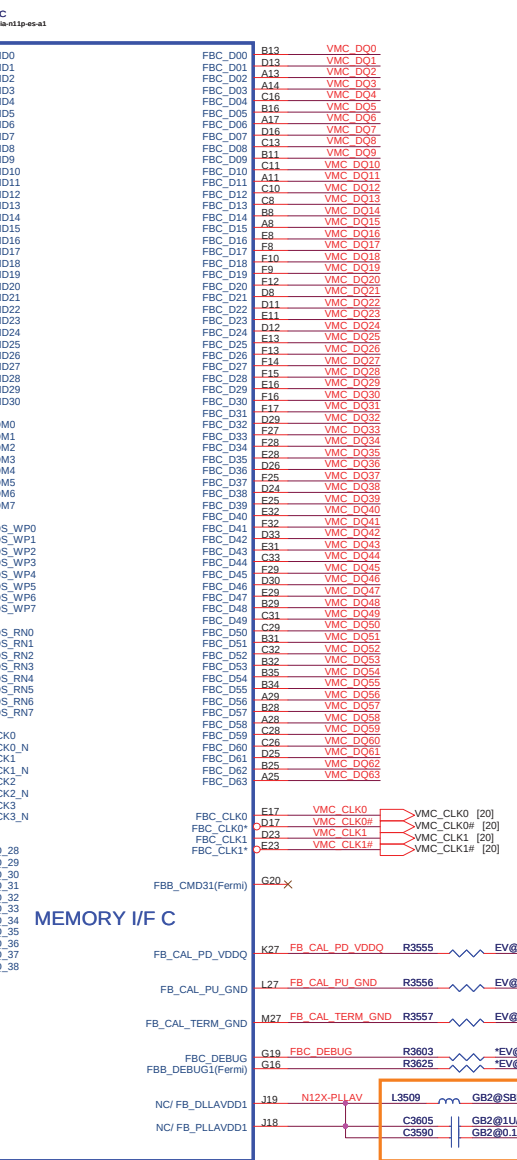
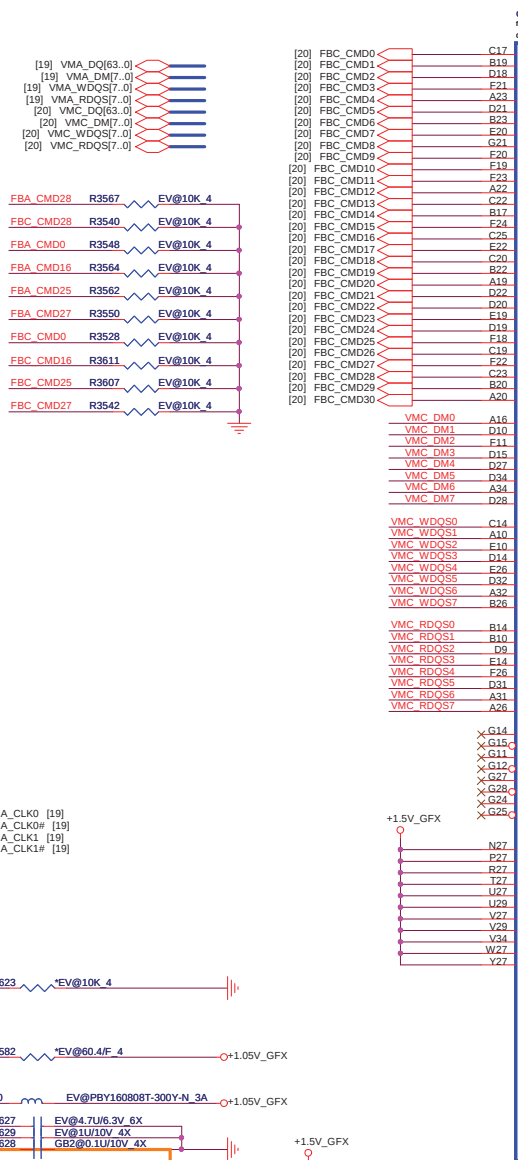
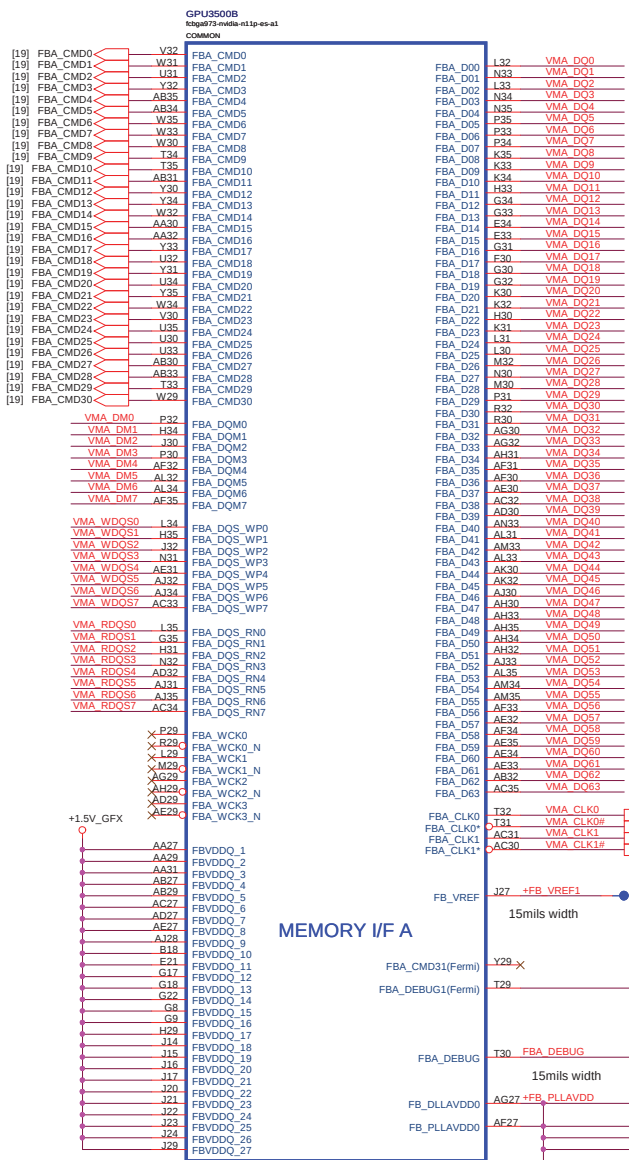


12~16 mils width



power up sequence





17-V

220 mA

200 mA

220 mA

285 mA (1.05V +/- 3%)

120 mA

60mA

45mA

GPU3500D
fcbg973-nvidia-n11p-es-a1
COMMON

IFPAB(LVDS)

IFPC

IFPCD

IFPEF

DACA(CRT)

DACC(CRT2)

DACB(TV)

XTAL_PLL

IFPA_TXC
IFPA_TXC'
IFPA_TXD0
IFPA_TXD0'
IFPA_TXD1
IFPA_TXD1'
IFPA_TXD2
IFPA_TXD2'
IFPA_TXD3
IFPA_TXD3'
IFPB_TXC
IFPB_TXC'
IFPB_TXD4
IFPB_TXD4'
IFPB_TXD5
IFPB_TXD5'
IFPB_TXD6
IFPB_TXD6'
IFPB_TXD7
IFPB_TXD7'

I2CW_SDA/IFPC_AUX_N
I2CW_SCL/IFPC_AUX_N
IFPC_L3_N
IFPC_L3
IFPC_L2_N
IFPC_L2
IFPC_L1_N
IFPC_L1
IFPC_L0_N
IFPC_L0
I2CX_SDA/IFPD_AUX_N
I2CX_SCL/IFPD_AUX_N
IFPD_L3_N
IFPD_L3
IFPD_L2_N
IFPD_L2
IFPD_L1_N
IFPD_L1
IFPD_L0_N
IFPD_L0

I2CY_SCL/IFPE_AUX
I2CY_SDA/IFPE_AUX
IFPE_L0
IFPE_L0'
IFPE_L1
IFPE_L1'
IFPE_L2
IFPE_L2'
IFPE_L3
IFPE_L3'
I2CZ_SCL/IFPF_AUX
I2CZ_SDA/IFPF_AUX
IFPF_L0
IFPF_L0'
IFPF_L1
IFPF_L1'
IFPF_L2
IFPF_L2'
IFPF_L3
IFPF_L3'

DACA_RED
DACA_GREEN
DACA_BLUE
DACA_HSYNC
DACA_VSYNC
I2CA_SCL
I2CA_SDA
/DACC_RED
/DACC_GREEN
/DACC_BLUE
DACC_HSYNC
DACC_VSYNC
I2CB_SCL
I2CB_SDA
NC/DACB_RED
NC/DACB_GREEN
NC/DACB_BLUE
CEC/DACB_CSYNC

XTAL_SSIN
XTAL_OUTBUFF
XTAL_IN
XTAL_OUT

AM11
AM12
AM8
AL3
AM10
AM9
AK10
AL10
AK11
AL11
AP13
AM13
AN8
AB8
AP10
AN10
AR11
AR10
AN11
AP11

AM3
AR2
AP1
AM4
AM3
AM5
AL5
AM6
AM7
AN4
AP4
AR4
AR5
AP5
AN5
AN7
AP7
AR7
AR8

AE4
AD4
AH6
AH5
AH4
AG4
AE4
AE5
AE6
AE5
AE3
AE2
AL2
AL3
AJ3
AJ2
AJ1
AH1
AH2
AH3

AM15
AM14
AL14
R3527
R3526
R3523

G1
G4
AK4
AL4
AJ4
AM1
AM2

G3
G2
AA4
AB4
Y4
AB5

D2
D1
B1
B2

R3592
R3591
R3594

R3592
R3591
R3594

R3592
R3591
R3594

R3592
R3591
R3594

R3592
R3591
R3594

R3592
R3591
R3594

B2A 1020

HDMI_SDA [21]
HDMI_SCL [21]
HDMICLK [21]
HDMICLK+ [21]
HDMICLK- [21]
HDMITX0P [21]
HDMITX0N [21]
HDMITX1P [21]
HDMITX1N [21]
HDMITX2P [21]
HDMITX2N [21]

CRT_RED [22]
CRT_GRN [22]
CRT_BLU [22]
CRT_HSYNC [22]
CRT_VSYNC [22]
CRT_DDCCLK [22]
CRT_DDCDAT [22]

XTAL_SSIN
XTAL_OUTBUFF
XTAL_IN
XTAL_OUT

R3592
R3591
R3594

R3592
R3591
R3594

R3592
R3591
R3594

R3592
R3591
R3594

R3592
R3591
R3594

R3592
R3591
R3594

LCD_TXCLKOUT+ [22]
LCD_TXCLKOUT- [22]
LCD_TXLCLKOUT+ [22]
LCD_TXLCLKOUT- [22]
LCD_TXLCLKOUT+ [22]
LCD_TXLCLKOUT- [22]
LCD_TXLCLKOUT+ [22]
LCD_TXLCLKOUT- [22]

AM11
AM12
AM8
AL3
AM10
AM9
AK10
AL10
AK11
AL11
AP13
AM13
AN8
AB8
AP10
AN10
AR11
AR10
AN11
AP11

AM3
AR2
AP1
AM4
AM3
AM5
AL5
AM6
AM7
AN4
AP4
AR4
AR5
AP5
AN5
AN7
AP7
AR7
AR8

AE4
AD4
AH6
AH5
AH4
AG4
AE4
AE5
AE6
AE5
AE3
AE2
AL2
AL3
AJ3
AJ2
AJ1
AH1
AH2
AH3

AM15
AM14
AL14
R3527
R3526
R3523

G1
G4
AK4
AL4
AJ4
AM1
AM2

G3
G2
AA4
AB4
Y4
AB5

D2
D1
B1
B2

R3592
R3591
R3594

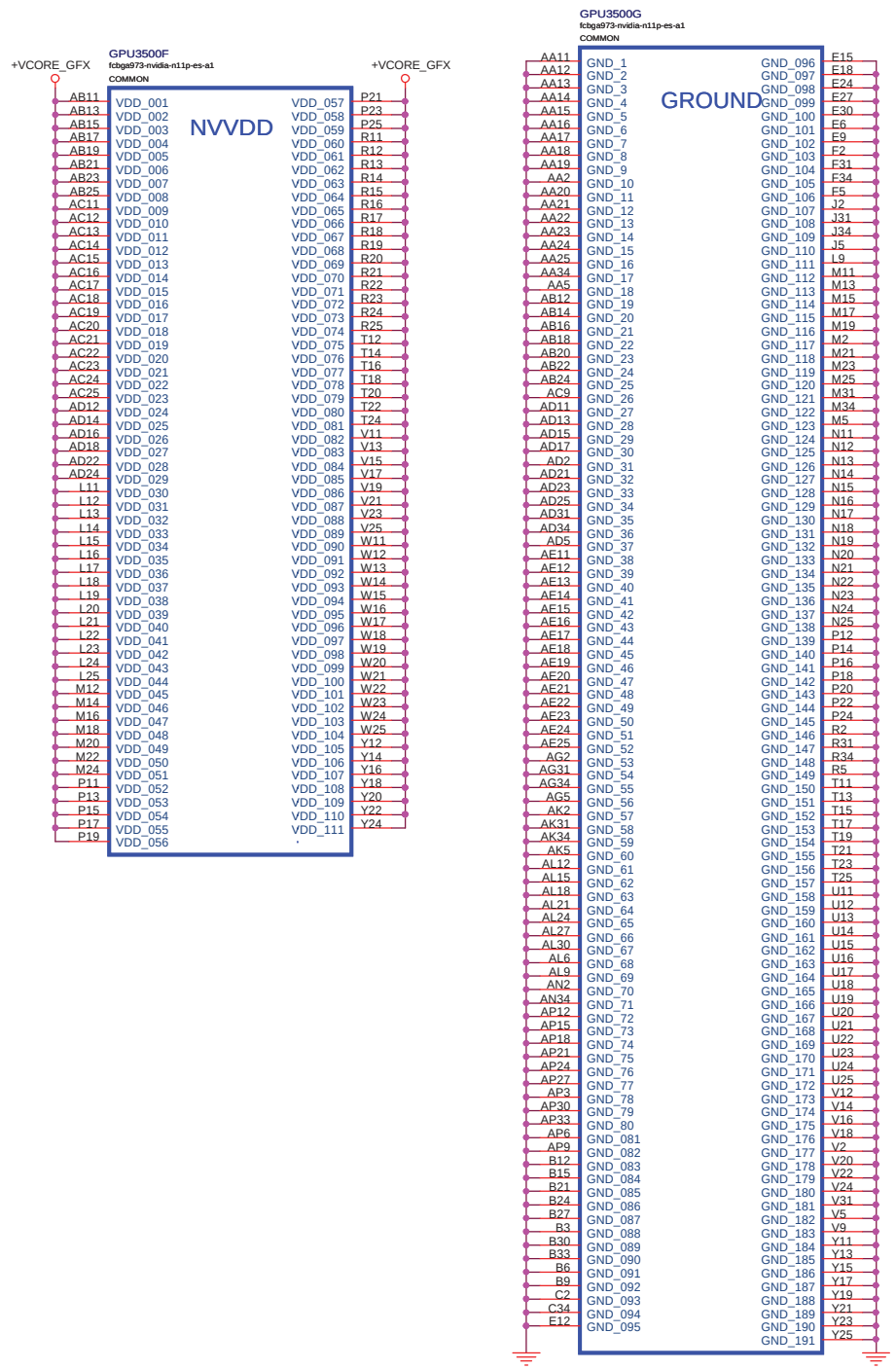
R3592
R3591
R3594

R3592
R3591
R3594

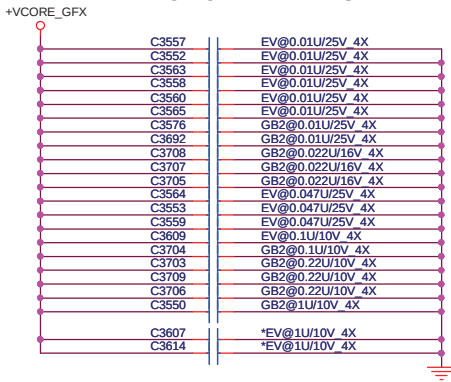
R3592
R3591
R3594

R3592
R3591
R3594

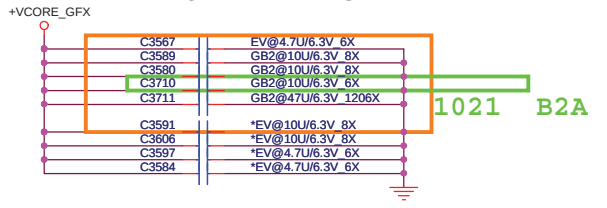
19-V



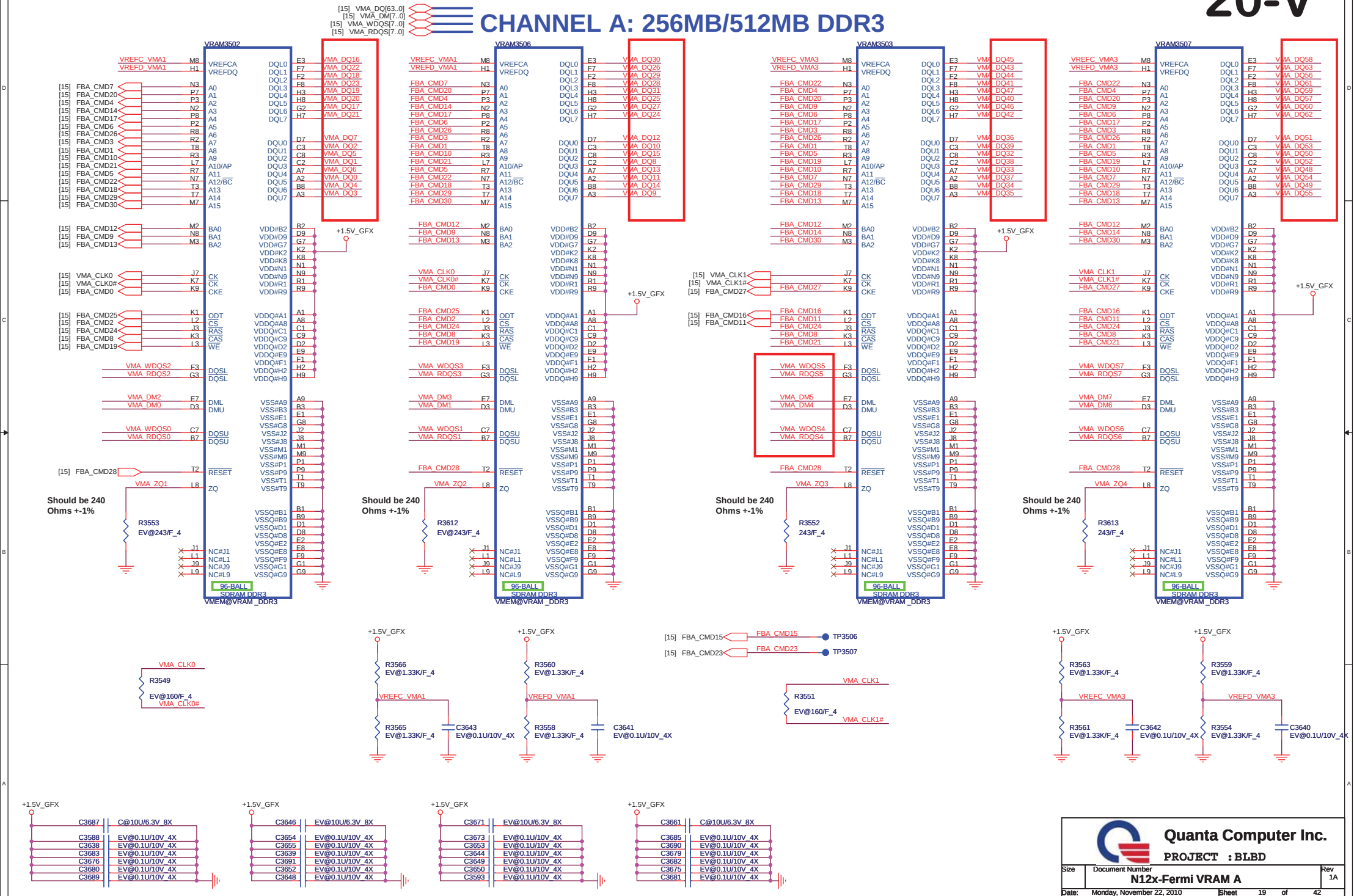
PLACE UNDER BALLS



PLACE NEAR BALLS

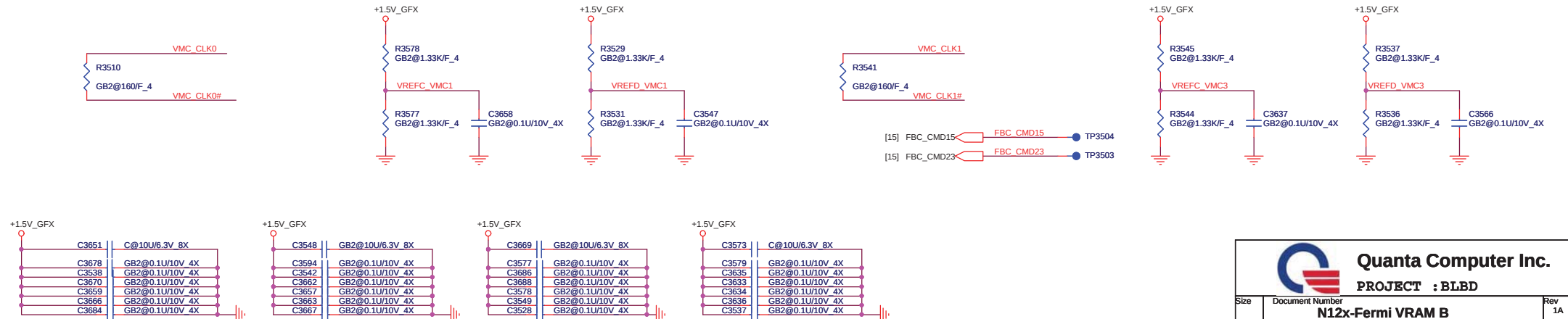
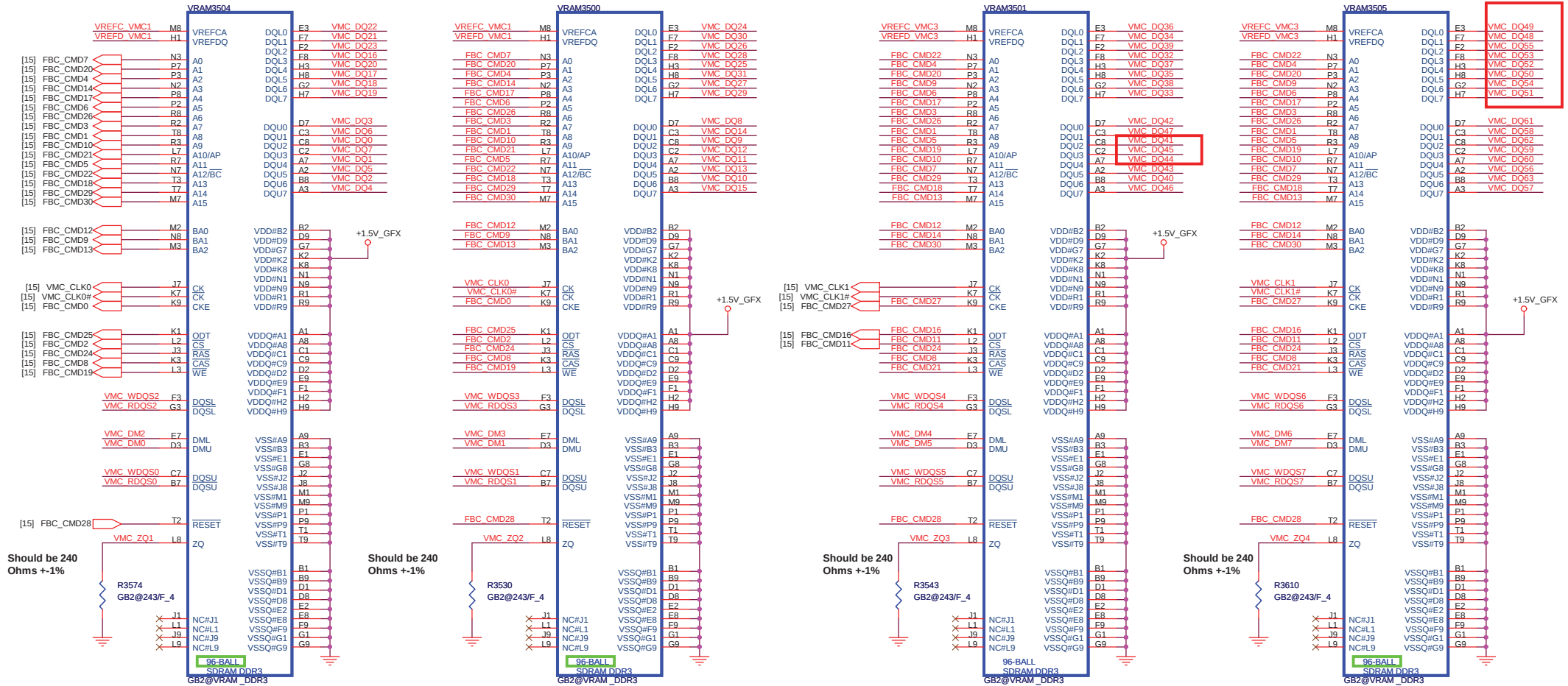


CHANNEL A: 256MB/512MB DDR3



[15] VMC_DQ[63:0]
[15] VMC_DM[7:0]
[15] VMC_WDQS[7:0]
[15] VMC_RDQS[7:0]

CHANNEL B: 256MB/512MB DDR3



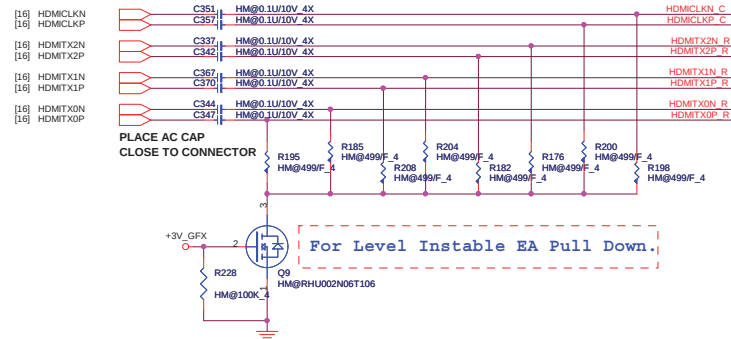
Quanta Computer Inc.
PROJECT : BLBD

VGA HDMI

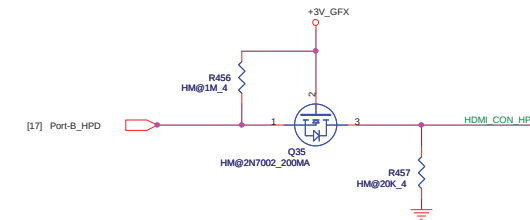
HDMI-passive level shift <HMP/HMG>

HDMI Interface

Angelo 0921

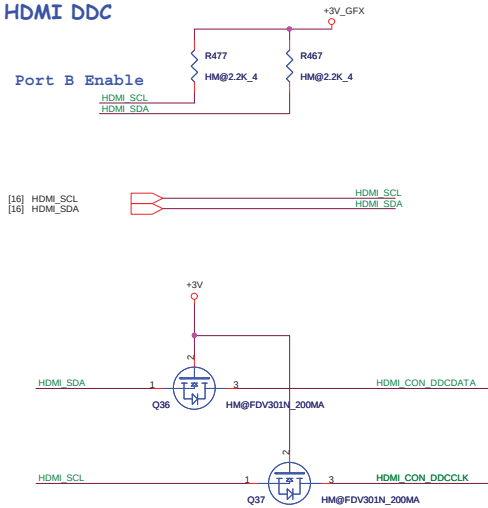


HDMI HPD

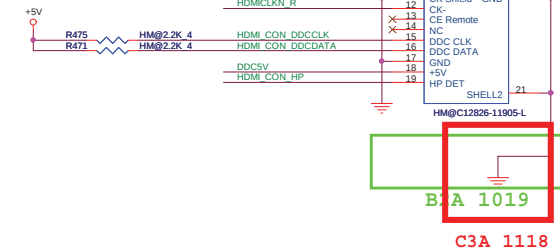
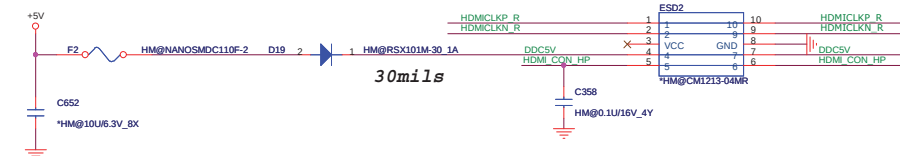
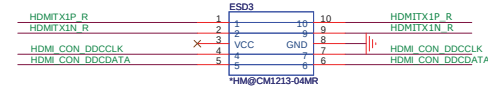
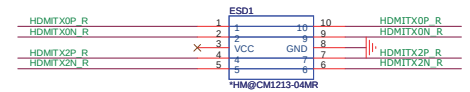
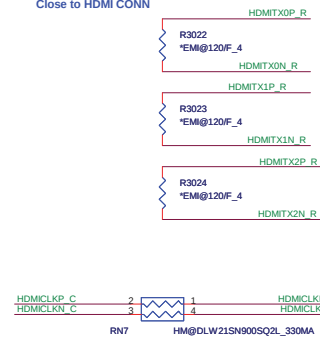


HDMI DDC

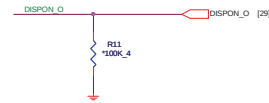
Port B Enable



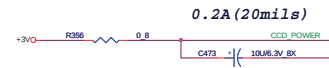
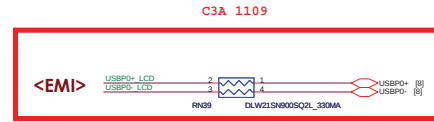
Close to HDMI CONN



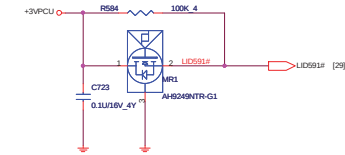
Panel backlight control <LDS>



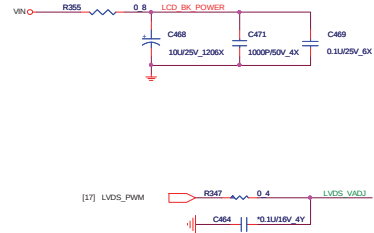
CCD <CCD>



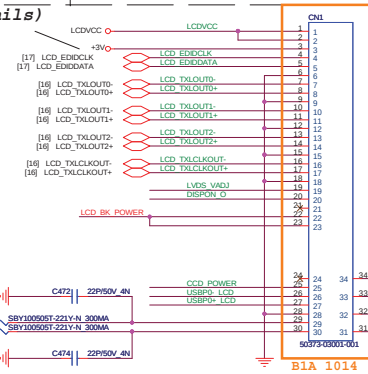
HALL SENSOR&BACK LIGHT SWITCH **<HSR>**



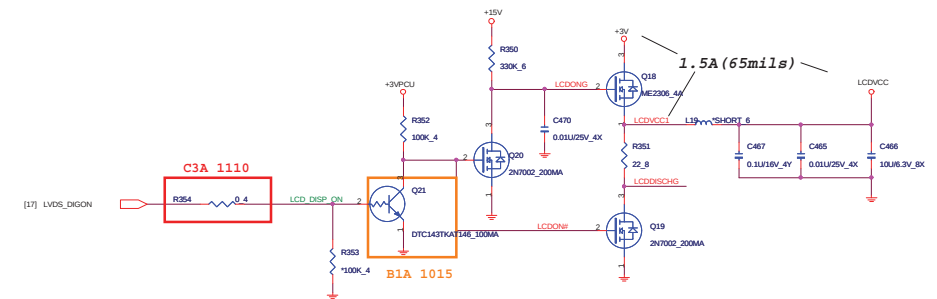
LCD Panel Module <LDS>



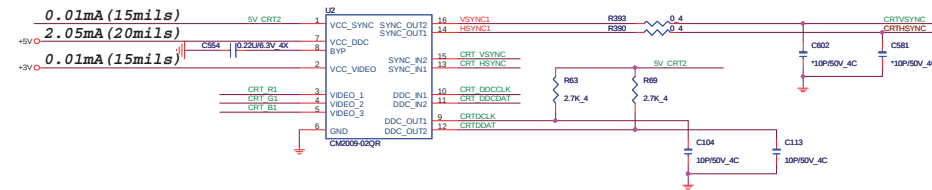
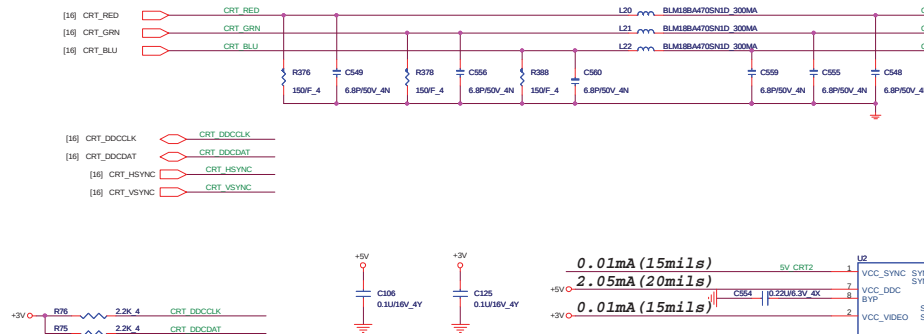
0.3A (20mils)



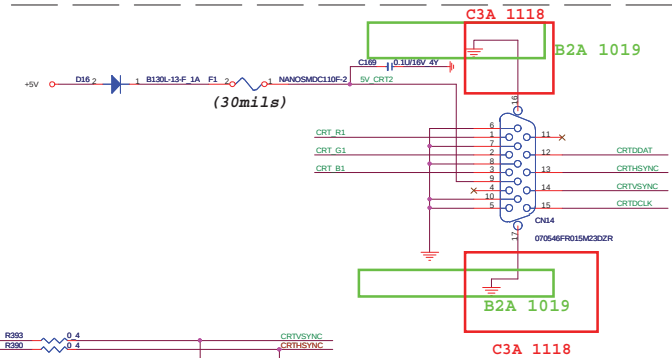
LCD POWER SWITCH <LDS>

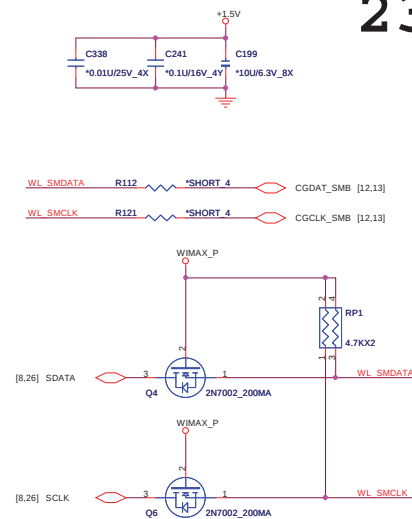
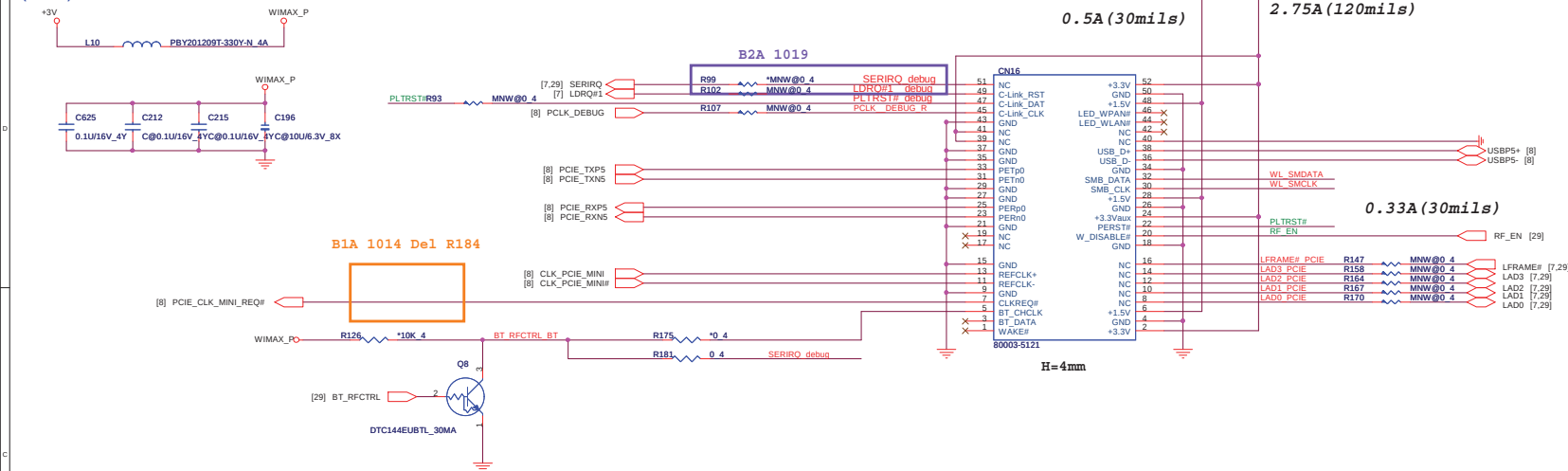
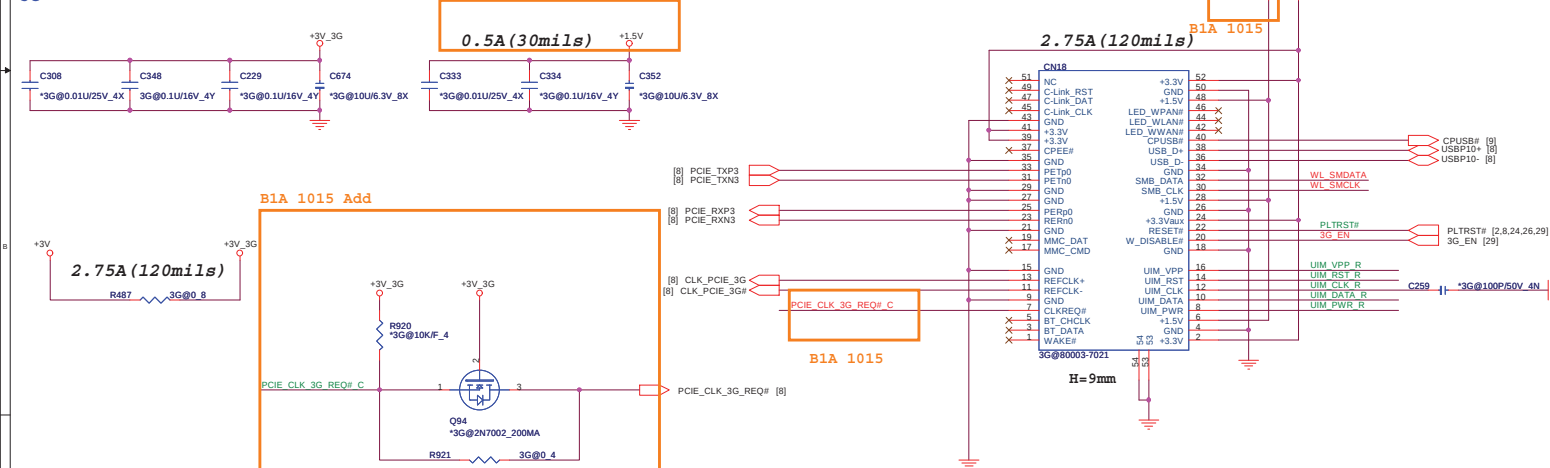


CRT <CRT>

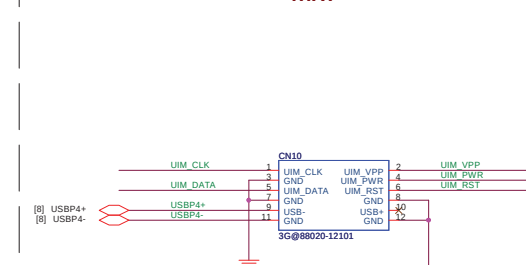


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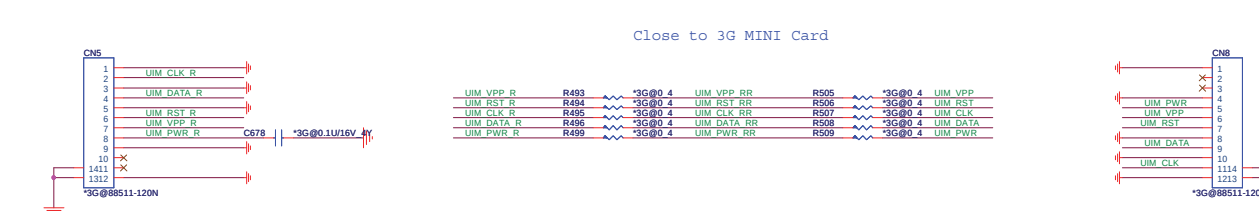


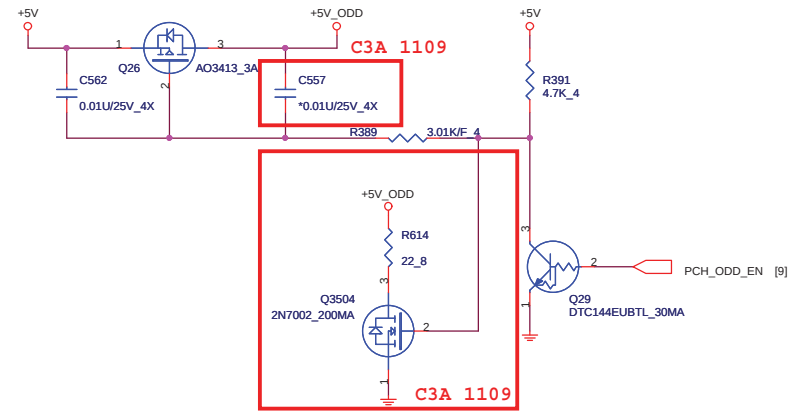
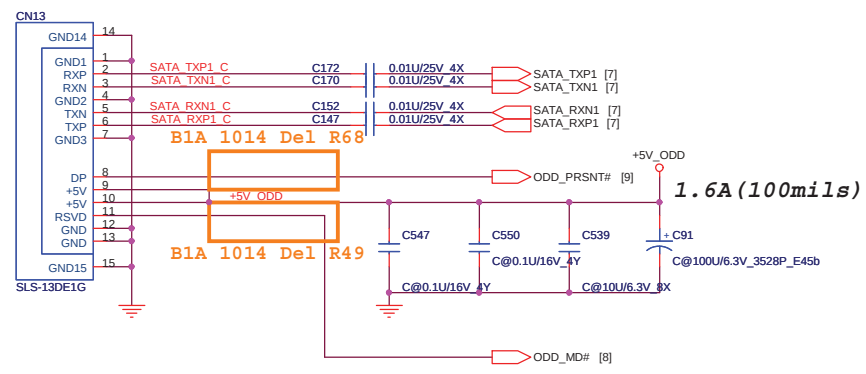
MINI Card Slot#1 <MNW>
(WiFi)MINI Card Slot#2 <MNT>
3G

SIM CARD board to board <MNT>

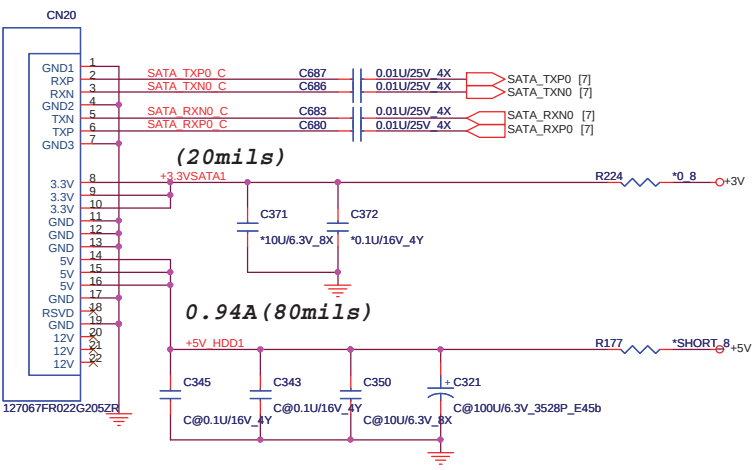


3G CONN <MNT>

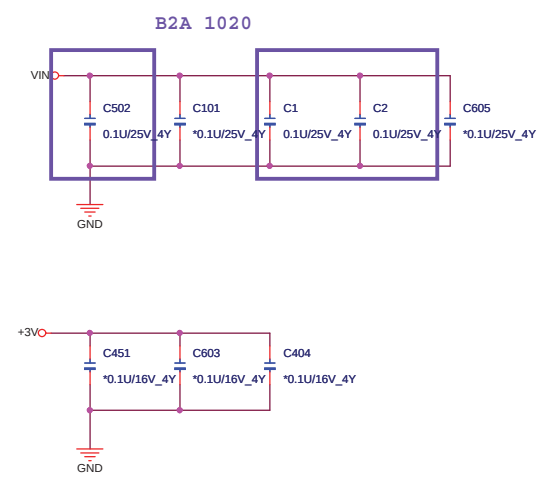


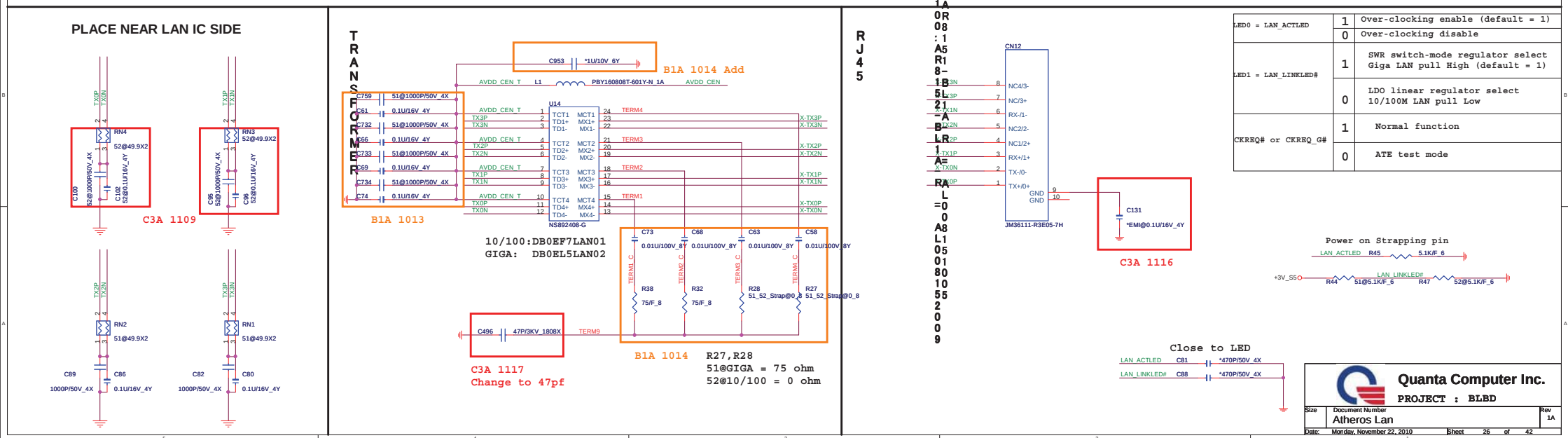
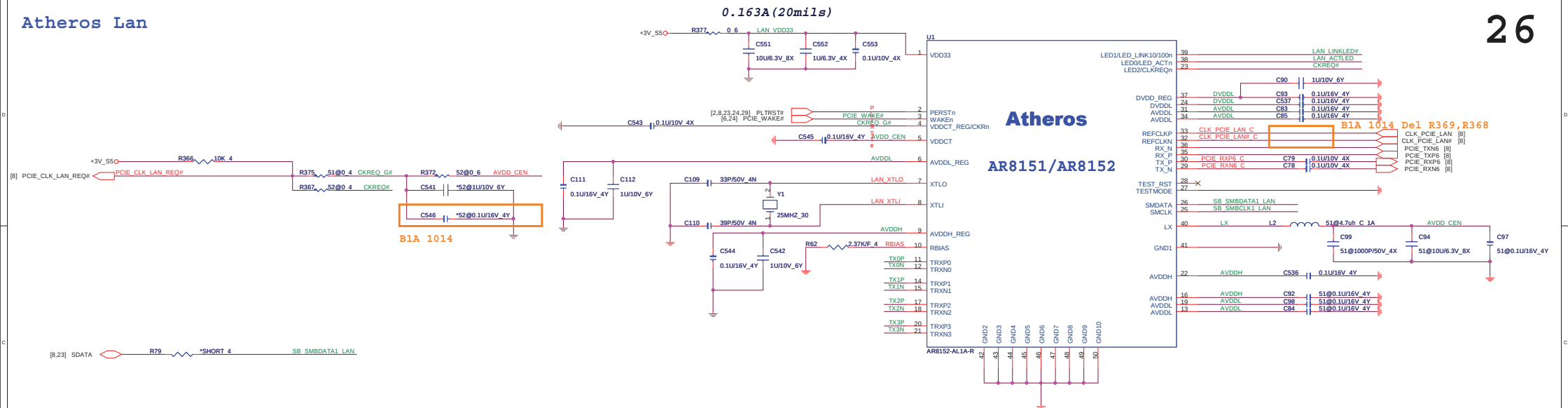


SATA HDD



EMI





AUDIO JACKS



27



C3A 1118
Remov. B606 0 ohm

B2A 1019

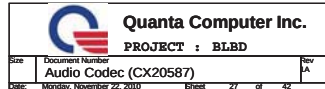


Close to U15

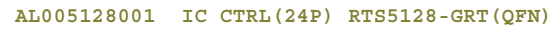
Close to U15



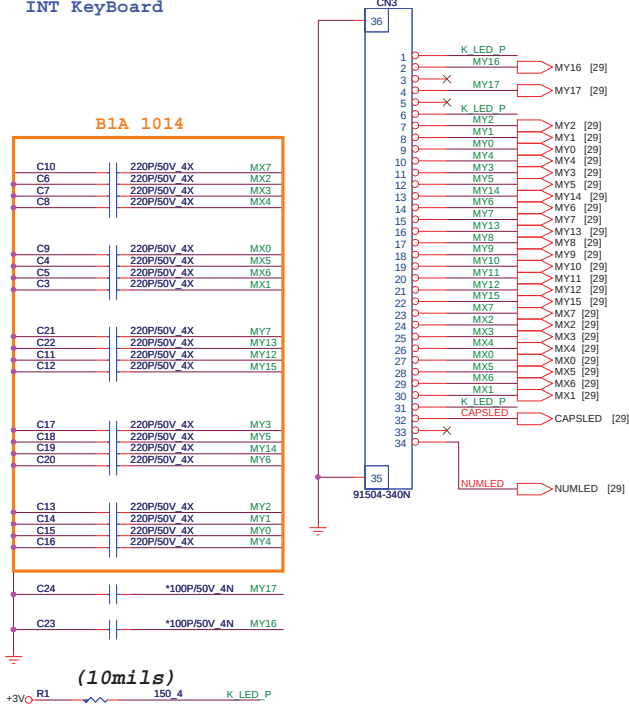
DM>



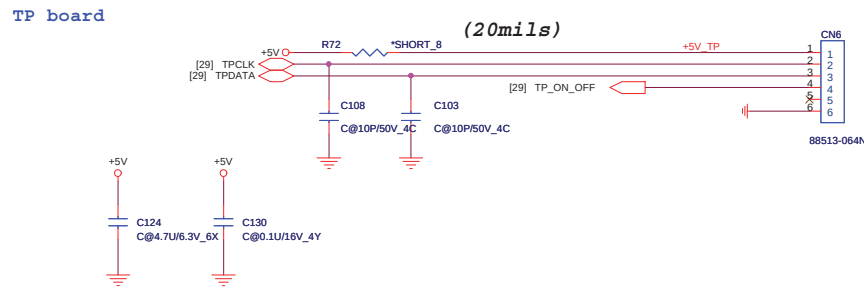
28



INT Keyboard



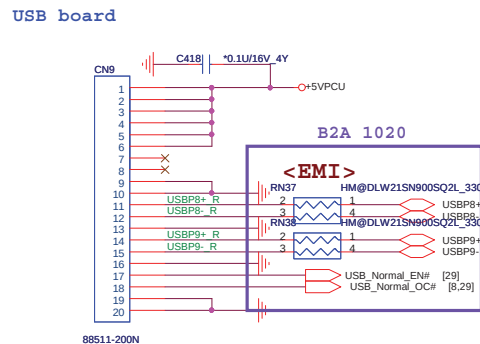
TP board



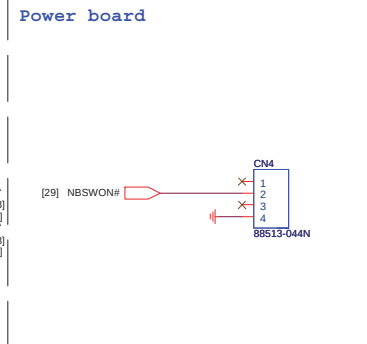
Bluetooth

30

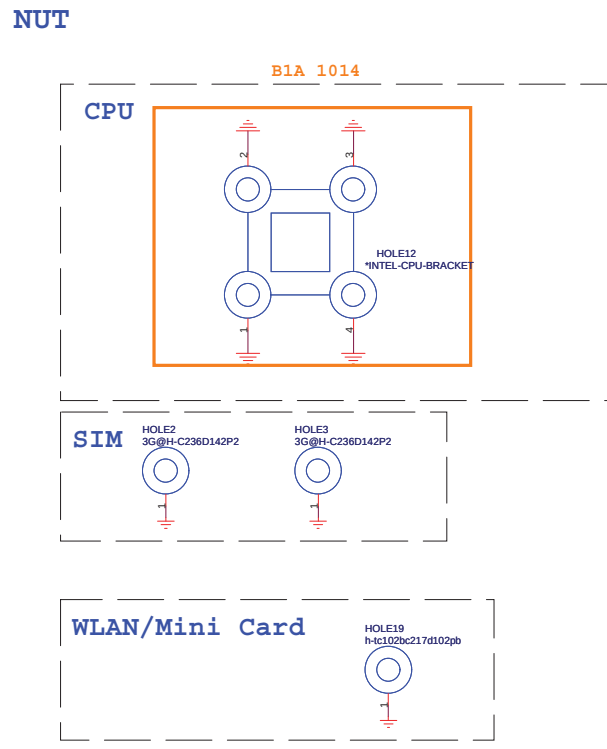
USB board



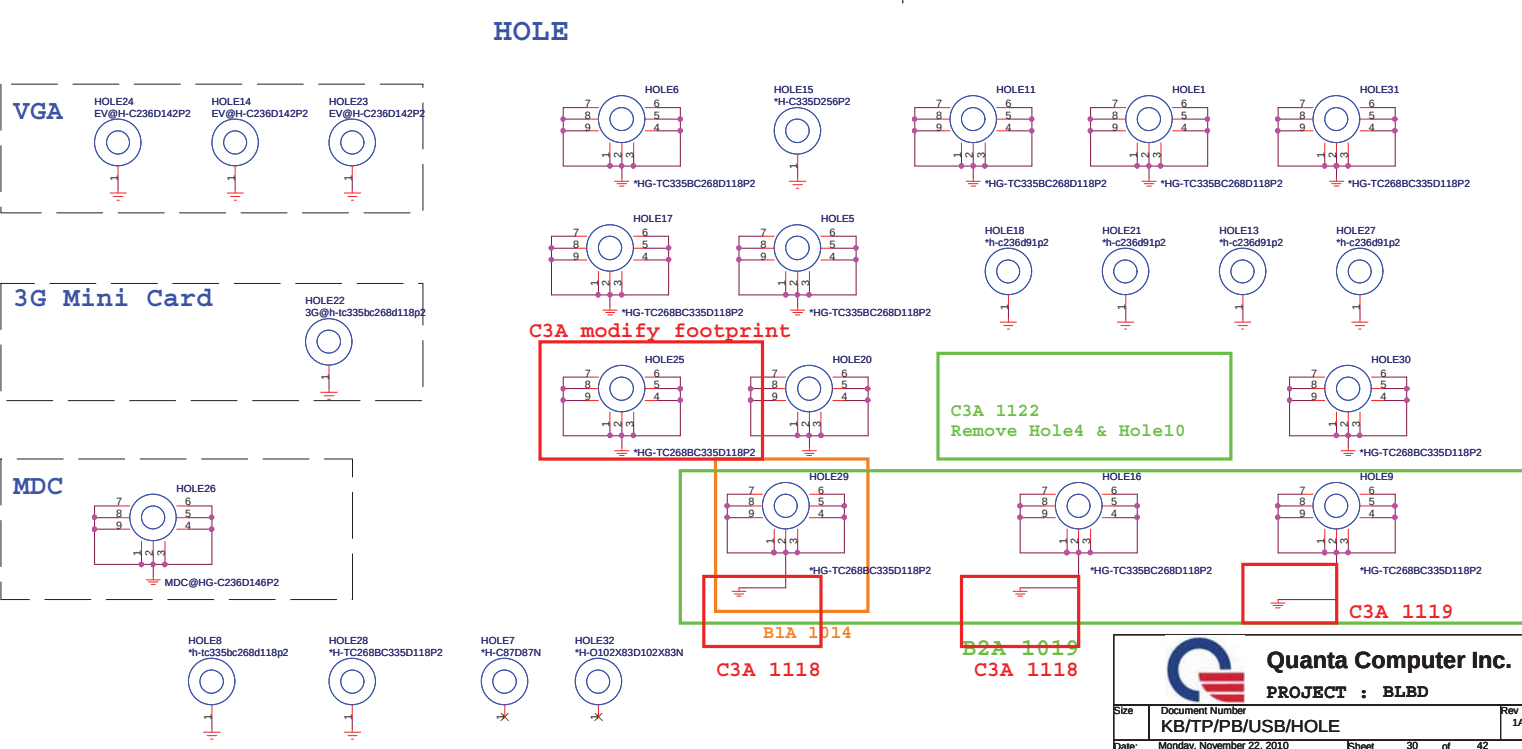
Power board



NUT

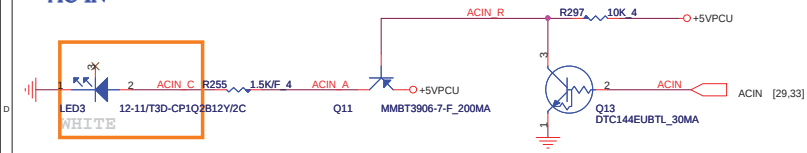


HOLE



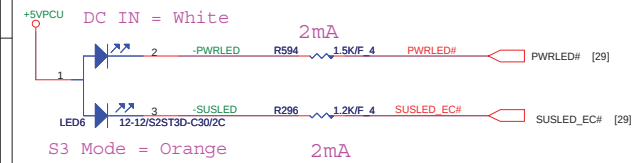
LED

AC-IN

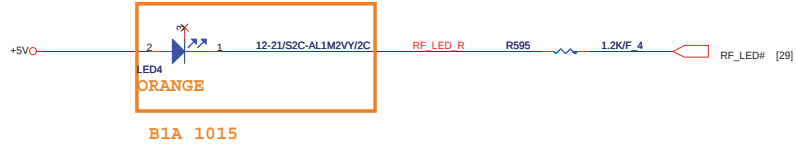


B1A 1015

POWER



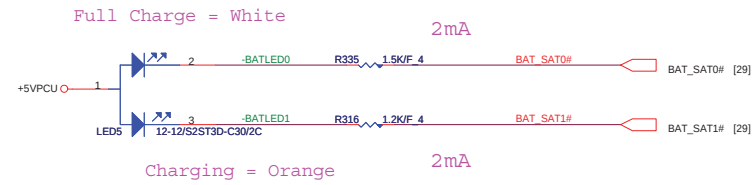
RF LED



B1A 1015

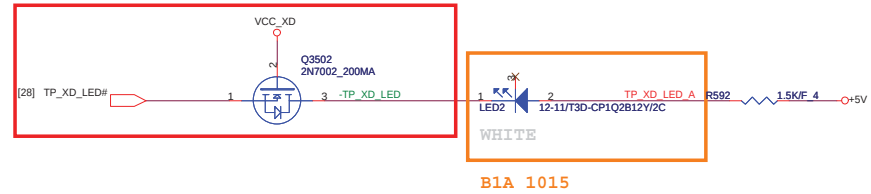
HDD/ODD

BATTERY

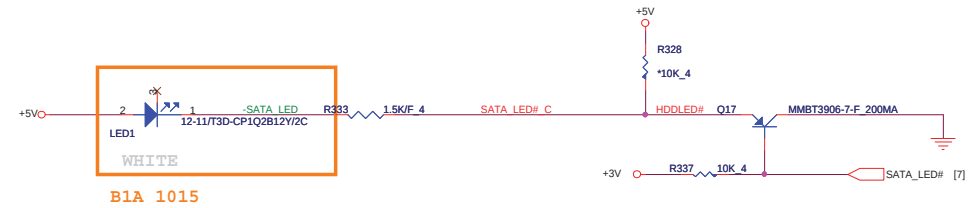


CARDREADER

```
C3A 1109
DEL Q16, Add Q3502
```

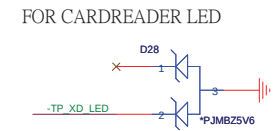
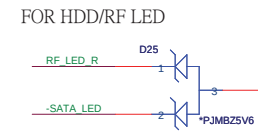
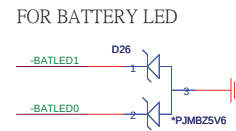
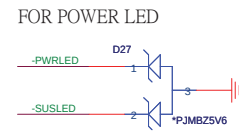


B1A 1015

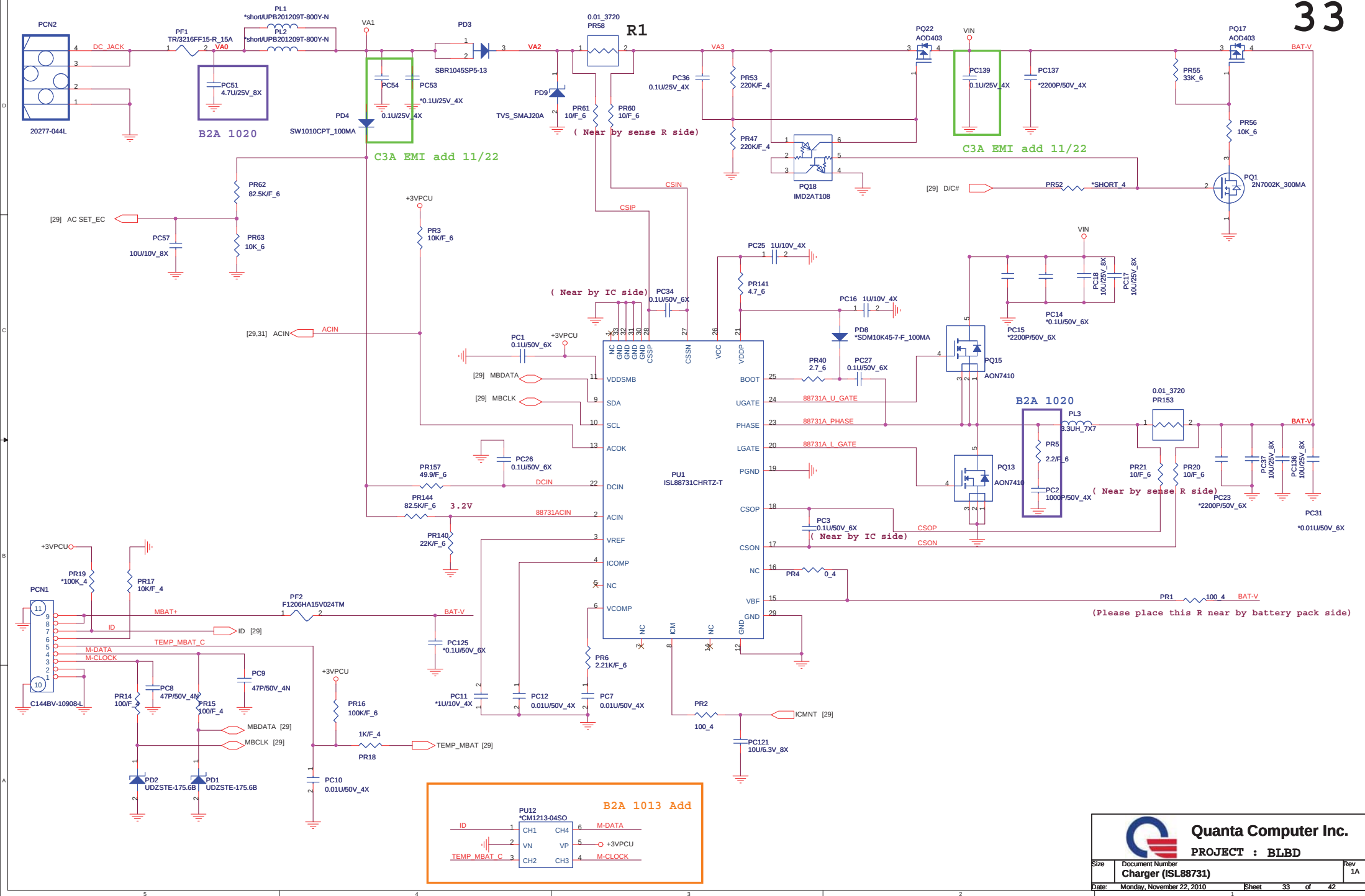


B1A 1015

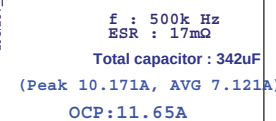
ESD Protect



BLANK



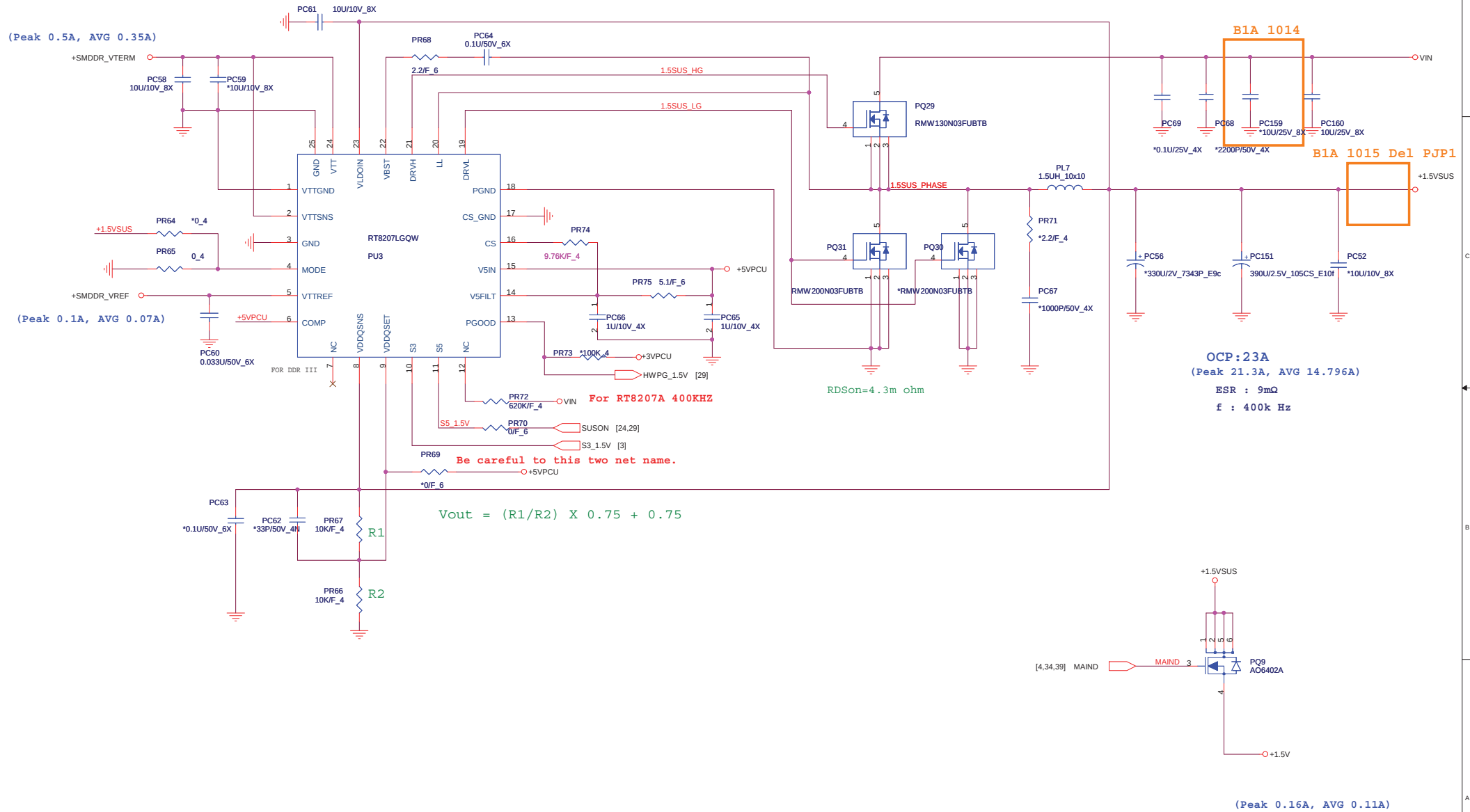
For PM6886 ZD5.6V , 150K/F 4 & 147K/F 4



```
f : 400k Hz
ESR : 17mΩ
Total capacitor : 370 uF
(Peak 8.421A , AVG 5.895A)
OCP:10.25A
```

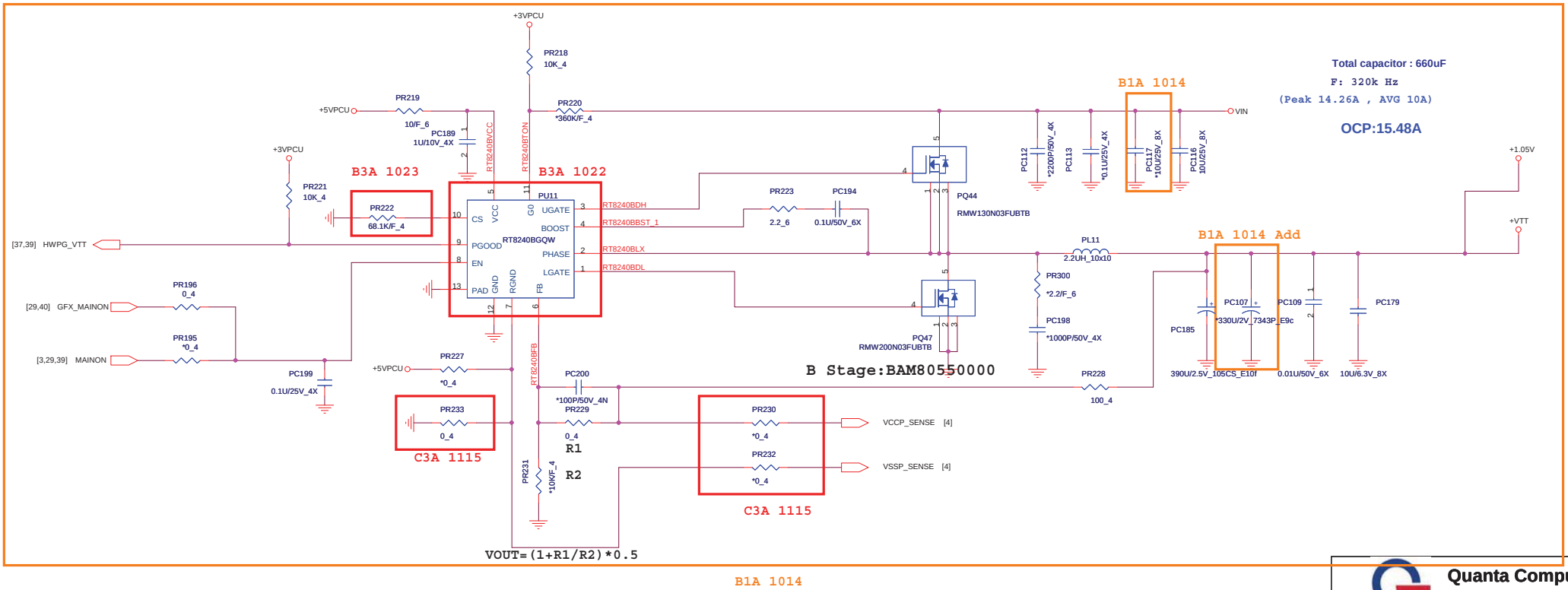
B1A 1015 Del PJP9

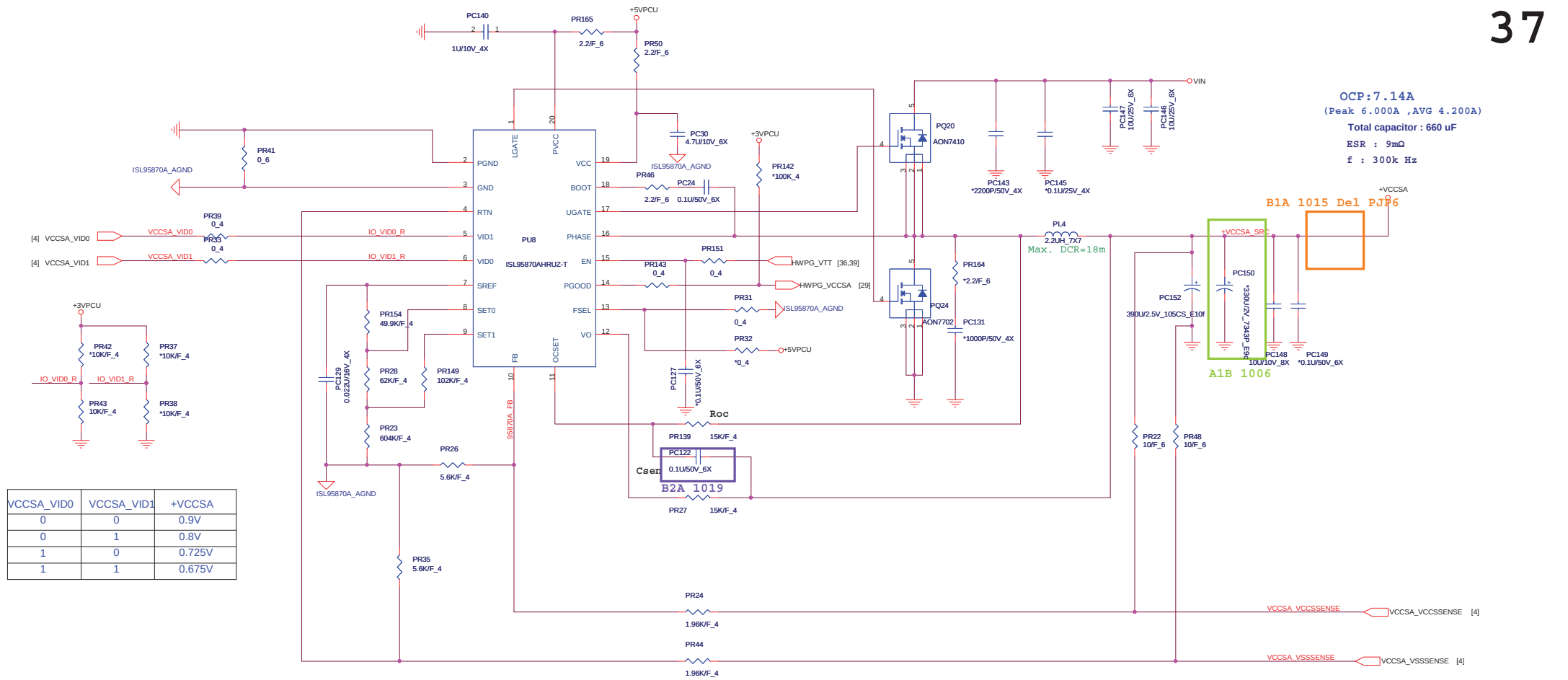
B1A 1015 Del PJP7

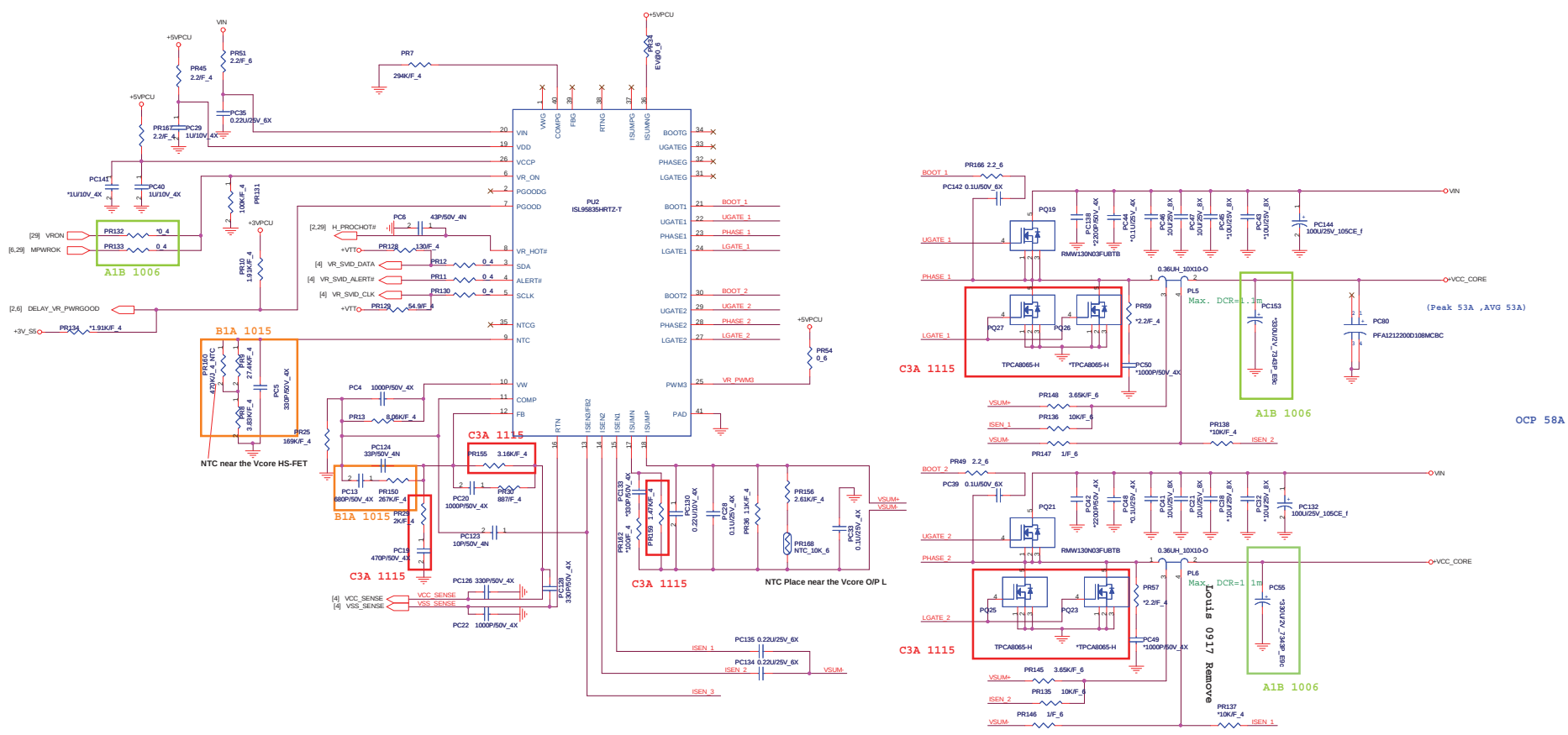


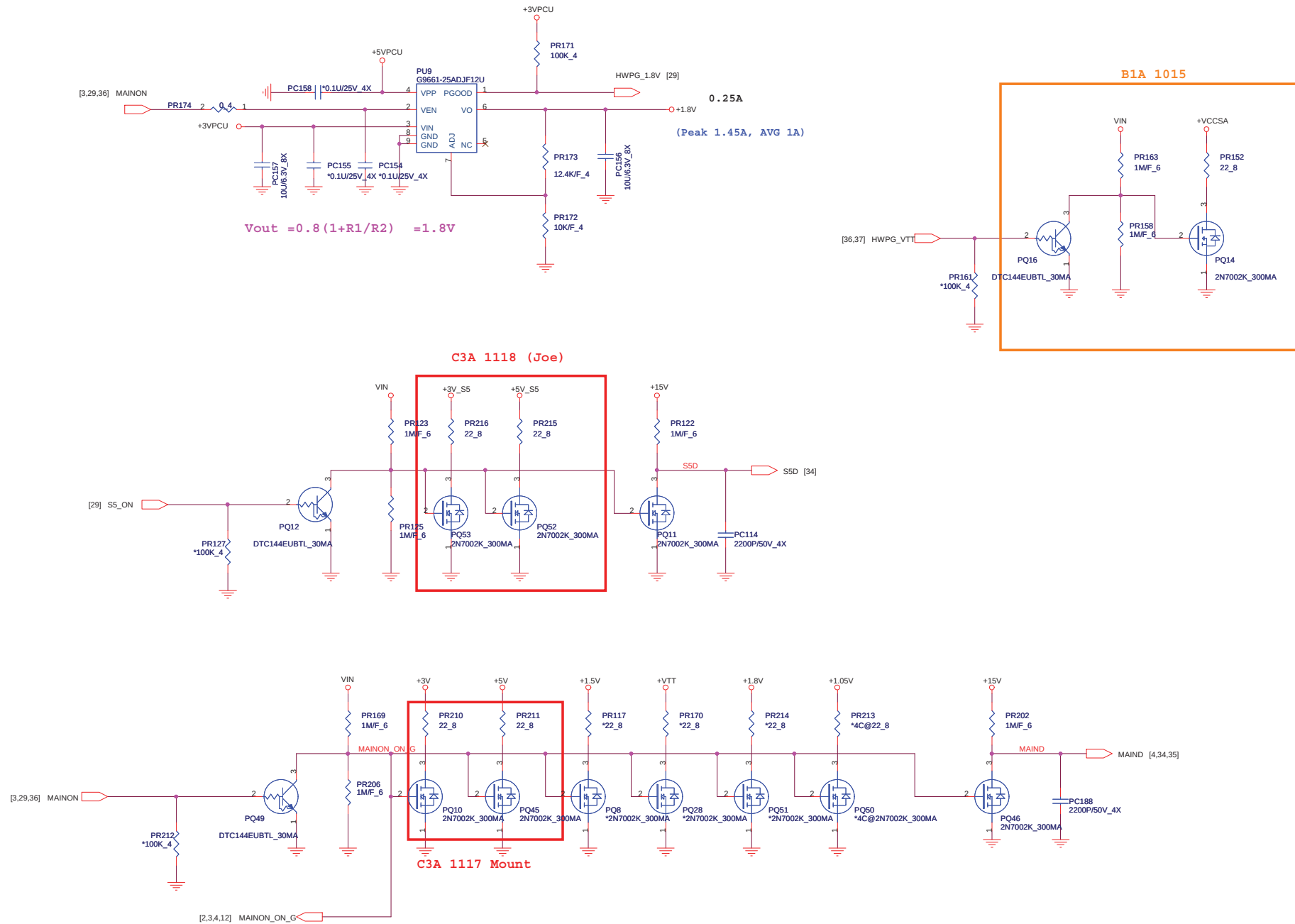
Quanta Computer Inc.
PROJECT : BLBD

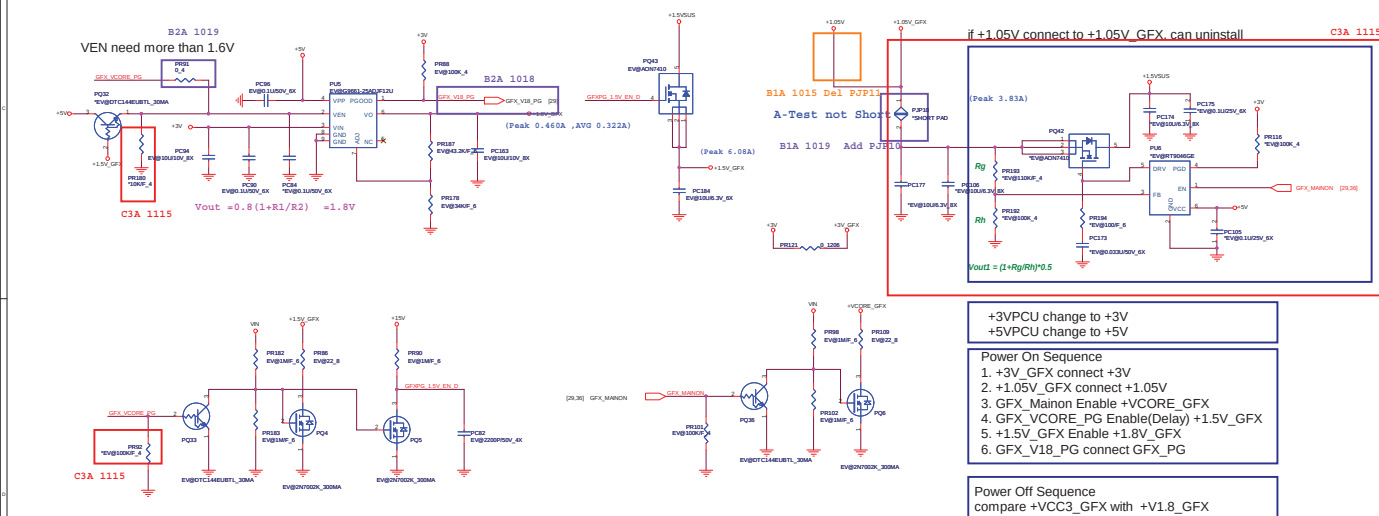
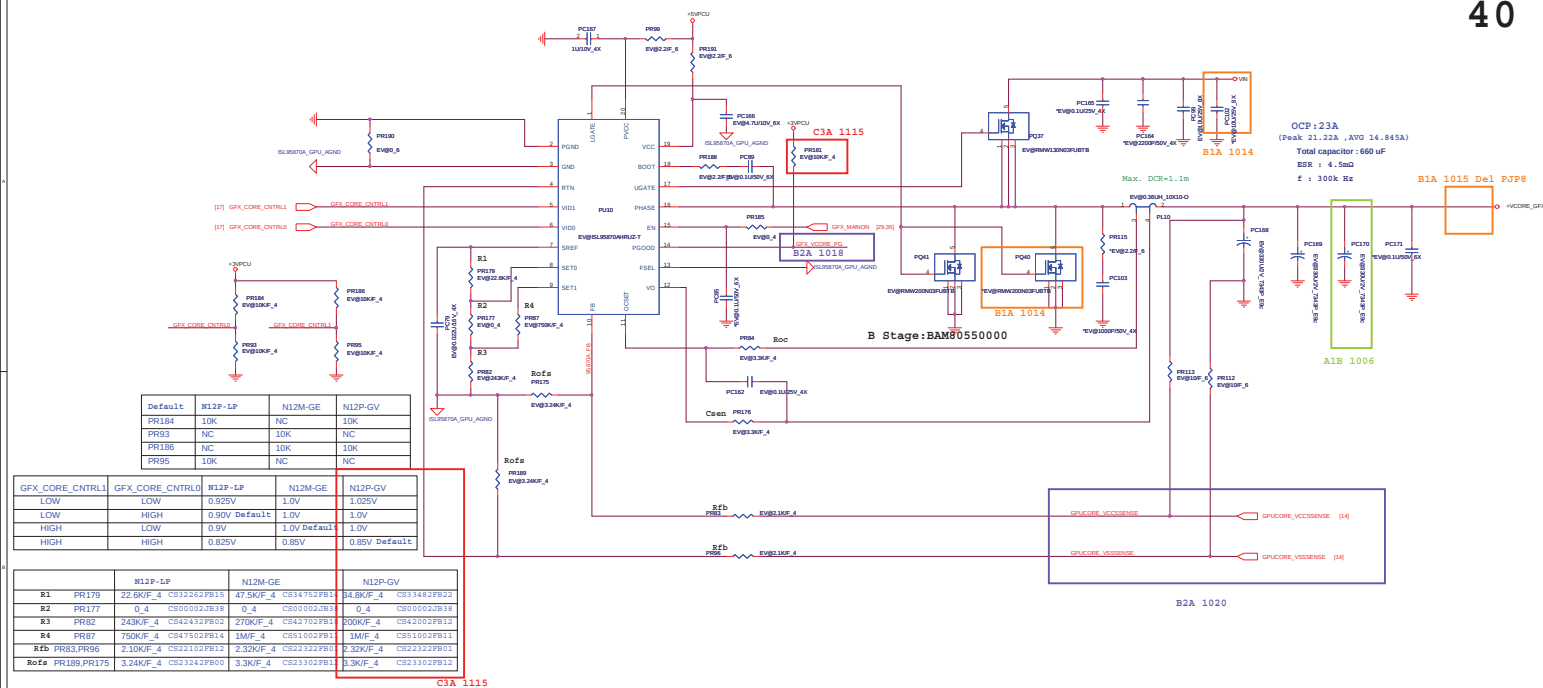
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	DDR 1.5V(RT8207LGQW)	1A
Date:	Monday, November 22, 2010	Sheet 35 of 42

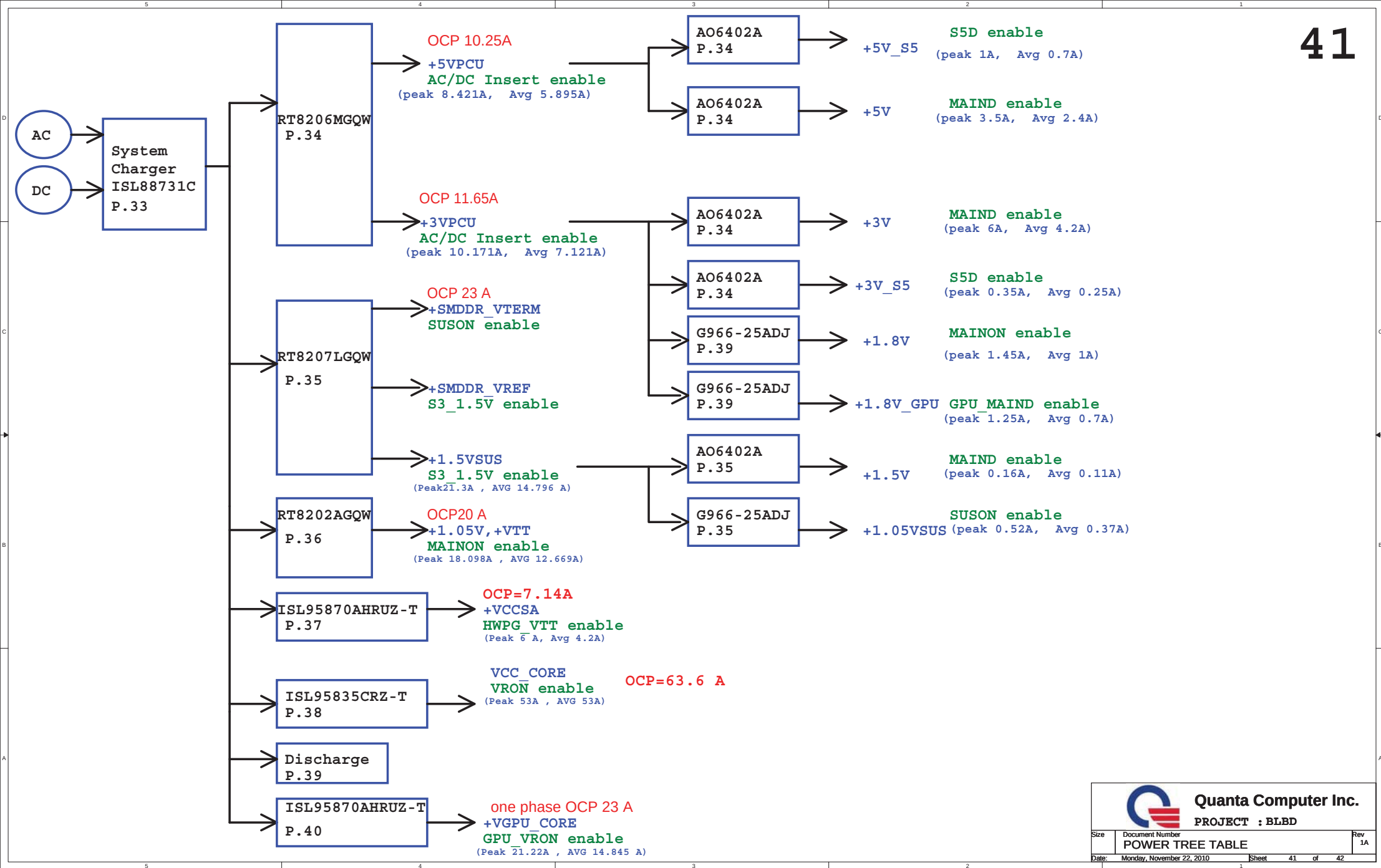












Model		REV	CHANGE LIST				MODEL			BLBD		
							PAGE	FROM	To			
BLBD MB	1A	PAGE 2: Del R19 0 ohm					1	1A				
		PAGE 2: ADD R599 0 ohm, TP81,TP82,TP83,TP84,TP85,TP86,TP87					2	1A				
		PAGE 2: STUFF R385,R394,Q28,C601,R387. NC R386					3	1A				
		PAGE 4: DEL C430, R37, R23, Add C477,C478,C479,C480,C740,C741,C742,C743,C744,C745,C746,R602,R603,R598, Stuff R21					4	1A				
		PAGE 5: ADD TP89, TP1					5	1A				
		PAGE 6: DEL R293, R503, NC R52, ADDR294					6	1A				
		PAGE 8: ADD C750, C751, R601, STUFF R501, NC Q14, Q15					7	1A				
		PAGE 9: DEL R253; R534 CHANGE TO PD					8	1A				
		PAGE 9: CHANGE Board ID9 strap Function name					9	1A				
		PAGE 10: ADD R604					10	1A				
		PAGE 17: CHANGE GPU MULTI level strap select					11	1A				
		PAGE 17: MODIFY GPU STRAP 1 SETTING					12	1A				
		PAGE 22: CHANGE LVDS CN1 FOOTPRINT					13	1A				
		PAGE 23: MINI CARD NC R99, DEL R184					14	1A				
		PAGE 23: ADD Q94,R920 BUT NC, ADD R921 AND MOUNT					15	1A				
		PAGE 25: DEL R68, R49					16	1A				
		PAGE 25: MOUNT C502, C1, C2					17	1A				
		PAGE 26: DEL R368, R369					18	1A				
		PAGE 26: ADD C953 BUT NC					19	1A				
		PAGE 26: ADD C759,C732,C733,C734					20	1A				
		PAGE 27: CHANGE ADOGND TO GND					21	1A				
		PAGE 27: ADD R342 BUT NC					22	1A				
		PAGE 27: NC C735					23	1A				
		PAGE 28: DEL R579, ADD C758					24	1A				
		PAGE 28: ADD R579, R600 PULL 3ND_MBCLK,3ND_MBDATA, NC R197					25	1A				
		PAGE 28: ADD SKU_STRAP1,SKU_STRAP2,SKU_STRAP3					26	1A				
		PAGE 28: CHANGE NET NAME FOR GFX_VCORE_PG TO GFX_V18_PG					27	1A				
		PAGE 31: LED1,LED4,LED5,LED6 change symbol and Foot-print					28	1A				
		PAGE 33: MOUNT PR5,PC2,PC51, ADD PU12 BUT NC					29	1A				
		PAGE 34: CHANGE PU4 TO PM6886					30	1A				
		PAGE 34: NC PR100,PR114,PR208,PR77,PR78, DEL PJP7					31	1A				
		PAGE 35: NC PR159, DEL PJP1,PJP2					32	1A				
		PAGE 36: CHANGE +VTT/+1.05V SCHEMATIC, CHANGE PU11 TO RT8240					33	1A				
		PAGE 37: DEL PJP6					34	1A				
		PAGE 40: DEL PJP8,PJP11, ADD PR91, NC PQ40					35	1A				
		PAGE 28: ADD Q3502					36	1A				
		PAGE 3: Add S3 Power reduction componet R489					37	2A				
		PAGE 31: Delete Card Reader LED componet Q16					38	2A				
		PAGE 31: Add Card Reader LED componet Q3052					39	2A				
		PAGE 8: Add USB_BUS_SW2/3 0 ohm R596,R597					40	2A				
		PAGE 10: Add +VCCAFDI_VRM_PD_Cap_C381					41	2A				
		PAGE 17: Add 15K strap3/4 for GPU R3518,R3534					42	2A				
		PAGE 24: Add common choke for USB EMI solution L73					43	2A				
		PAGE 24: Reserve resistor for USB EMI solution RP24					44	2A				
		PAGE 25: Add ODD Zero power diischarge R614					45	2A				
		PAGE 25: Reserve ODD Zero power diischarge C577					46	2A				
		PAGE 26: Change Value for LAN 51@ to 52@, C95,C96,C100,C102,RN3,RN4					47	2A				
		PAGE 27: Change Card Reader controller U22 source					48	2A				
		PAGE 29: Change MS Strap Power name +3V_PCU to +3VPCU					49	2A				
		PAGE 36: 1.Add PR233 0 ohm PD form Pin7, NC PR230,PR232					50	2A				
		PAGE 38: Change PR155 3.09K to 3.16K, PR159 1.37K to 1.47K, mount PR29,PC19										
PAGE 38: Change PQ26,PQ27,PQ23,PQ25 RMW200N03FUBTB to TPCA8065-H												
PAGE 40: Change PR181 to 10K												
PAGE 40: Change PR181 to 10K,Reserve PR92 100K ,Reserve +1.05 part all material, Reserve PR180 10K												
PAGE 40: Voltage Setting for N12P-GV												
PAGE 2: Add R118 R413, reserve R104,R105,Q5 for cost down Q5												
DOC NO. 204		PROJECT MODEL :	BLBD	APPROVED BY:	Angelo Su	DATE:	2010/10/01	Quanta Computer Inc. PROJECT : BLBD Change list Monday, November 22, 2010Sheet 42 of 42				
		PART NUMBER:		DRAWING BY:	Angelo Su	REVISION:	1A					