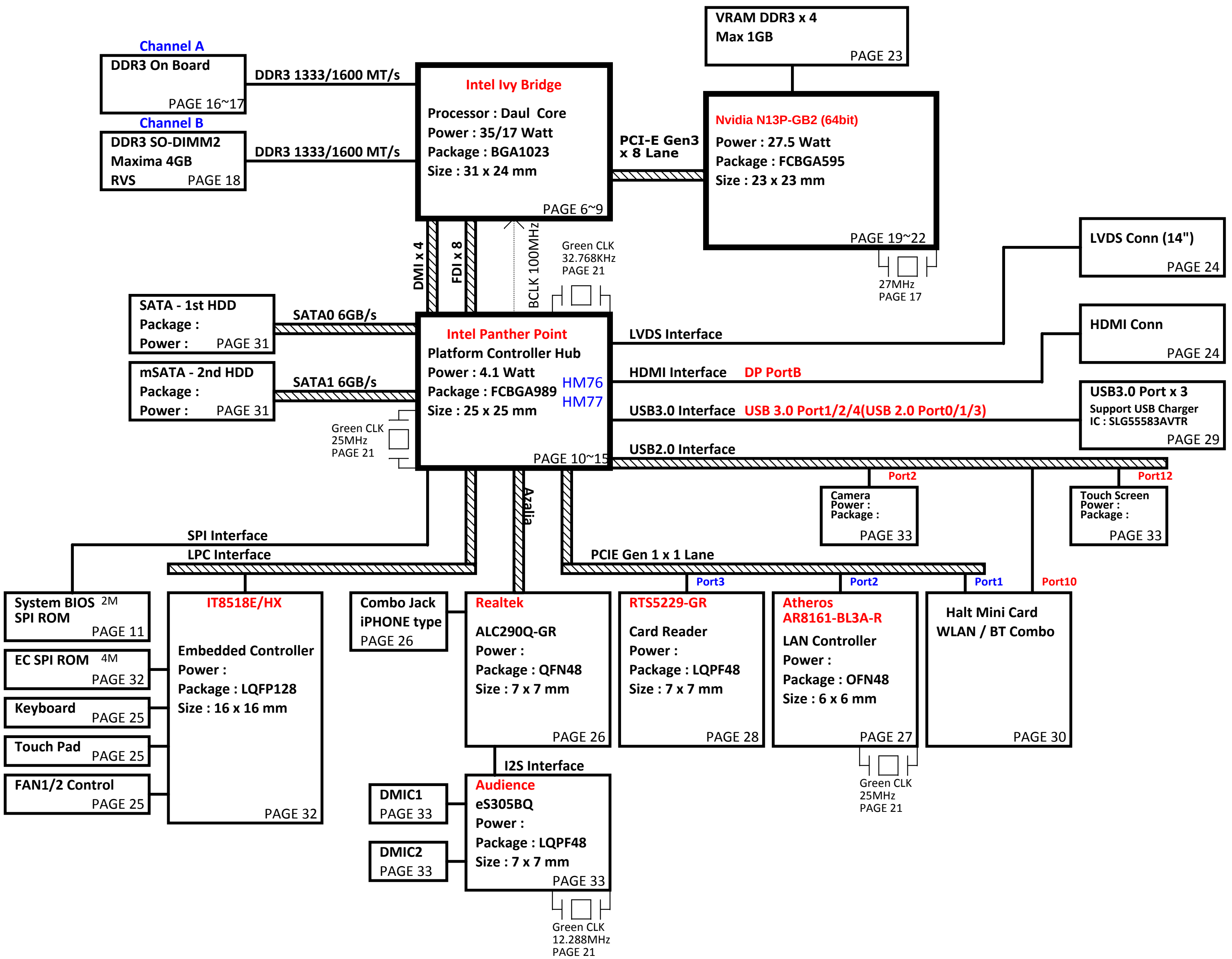
JW8 DIS (14") Super Ultra

Intel Chief River Platform Block Diagram



PCB 6L STACK UP

- LAYER 1 : TOP
- LAYER 2 : SGND
- LAYER 3 : IN1(High)
- LAYER 4 : IN2(Low)
- LAYER 5 : SVCC
- LAYER 6 : BOT

Power Source

Controller	Function	Page
OZ8681	System Charger Power (+BATCHG)	PAGE 34
RT8223P	System Power (+3VS5/+5VS5)	PAGE 35
RT8207	System Memory Power (+1.5VSUS/ +0.75V_DDR_VTT/DDR_VTTREF)	PAGE 36
G978F1	Processor Power (+VCCSA)	PAGE 37
RT8240/G5173R4	PCH Power (+1.05V/+1.8V)	PAGE 38/39
NCP3218G	DGPU Power (+VGACORE/+3V_GFX/ +1.5V_GFX/+1.05V_GFX)	PAGE 40/41
NCP6132	Processor Power (+VCC_CORE/ +VCC_GFX)	PAGE 42/43
SLG55448V	System Discharger Power (+3V/+5V/+3VLANVCC)	PAGE 44

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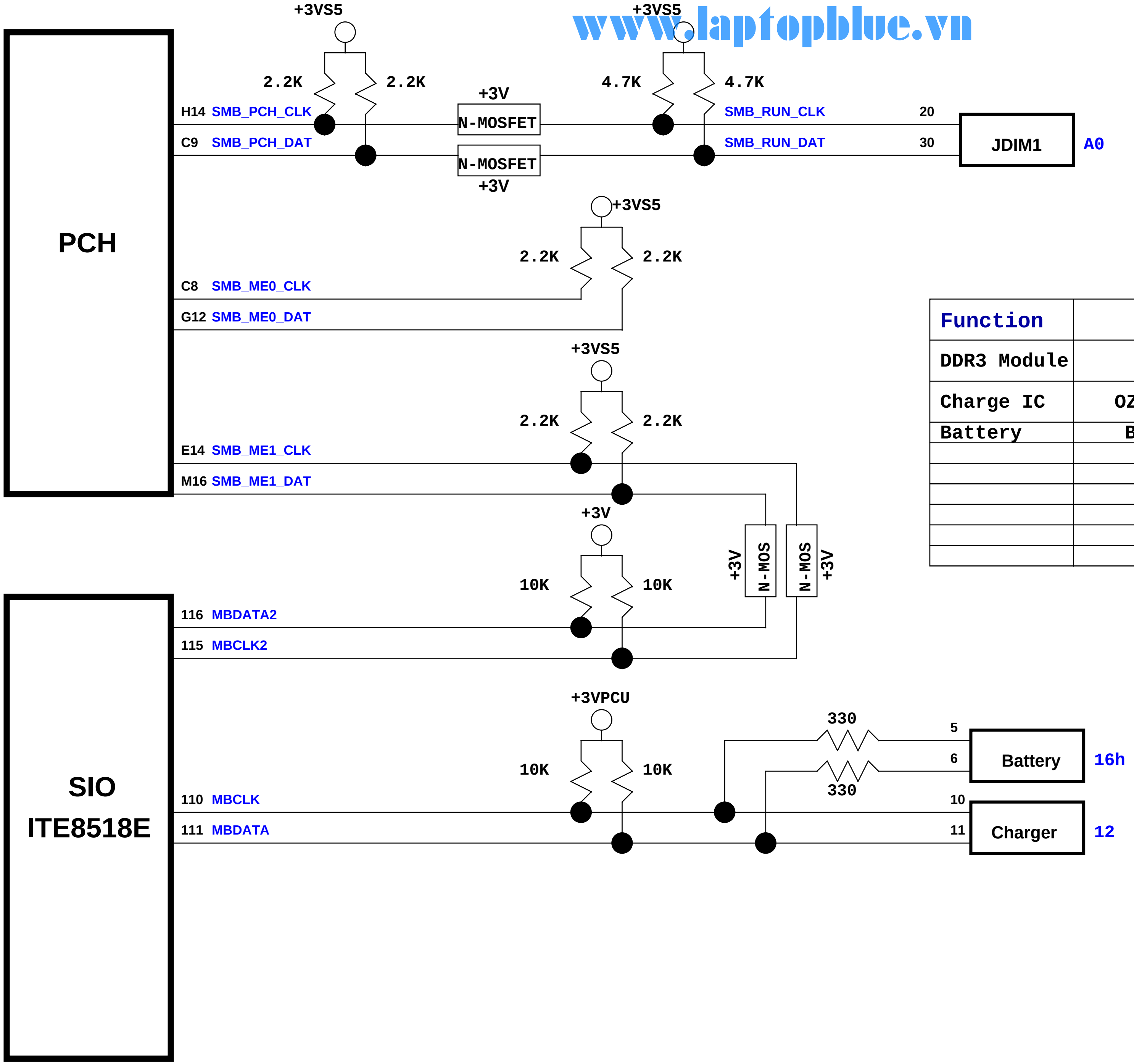
PROJECT : JW8

Size	Document Number	Rev
	Block Diagram	3A

Date: Friday, November 02, 2012 Sheet 01 of 46



Function	IC	SMBus Address
DDR3 Module	JDIM1	A0h
Charge IC	OZ8681NL	0b0001001x (0x12h)
Battery	Battery	16h

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PROJECT : JW8

Size	Document Number	Rev
	SMB	3A

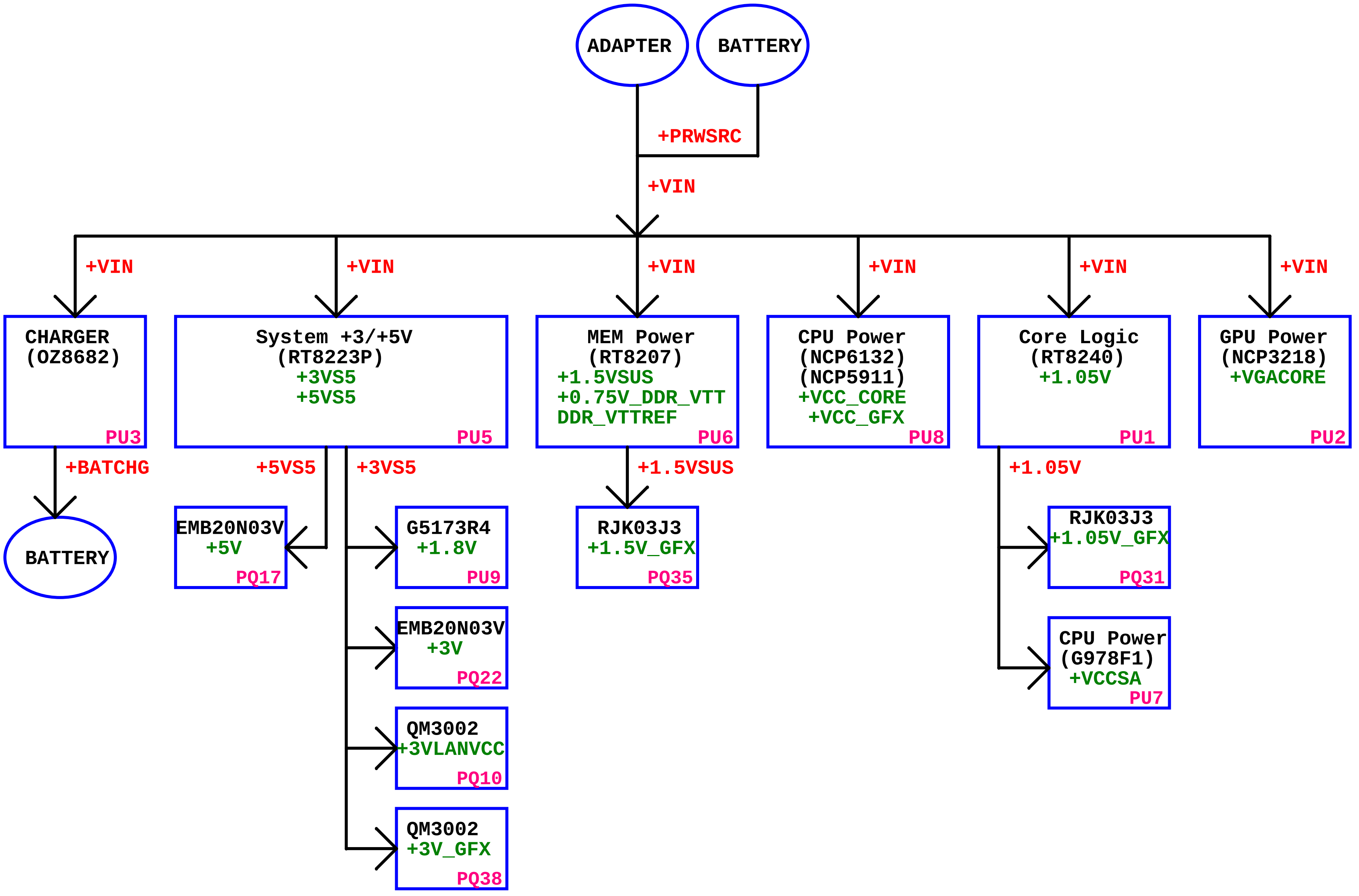
Date: Friday, November 02, 2012 Sheet 02 of 46

USB Master	Port Assignment
USB0	External port#1 (USB3.0)
USB1	External port#2 (USB3.0)
USB2	Camera
USB3	External port#3 (USB3.0)
USB4	NC
USB5	NC
USB6	NC
USB7	NC
USB8	NC
USB9	Debug
USB10	WLAN
USB11	NC
USB12	Touch Screen
USB13	NC

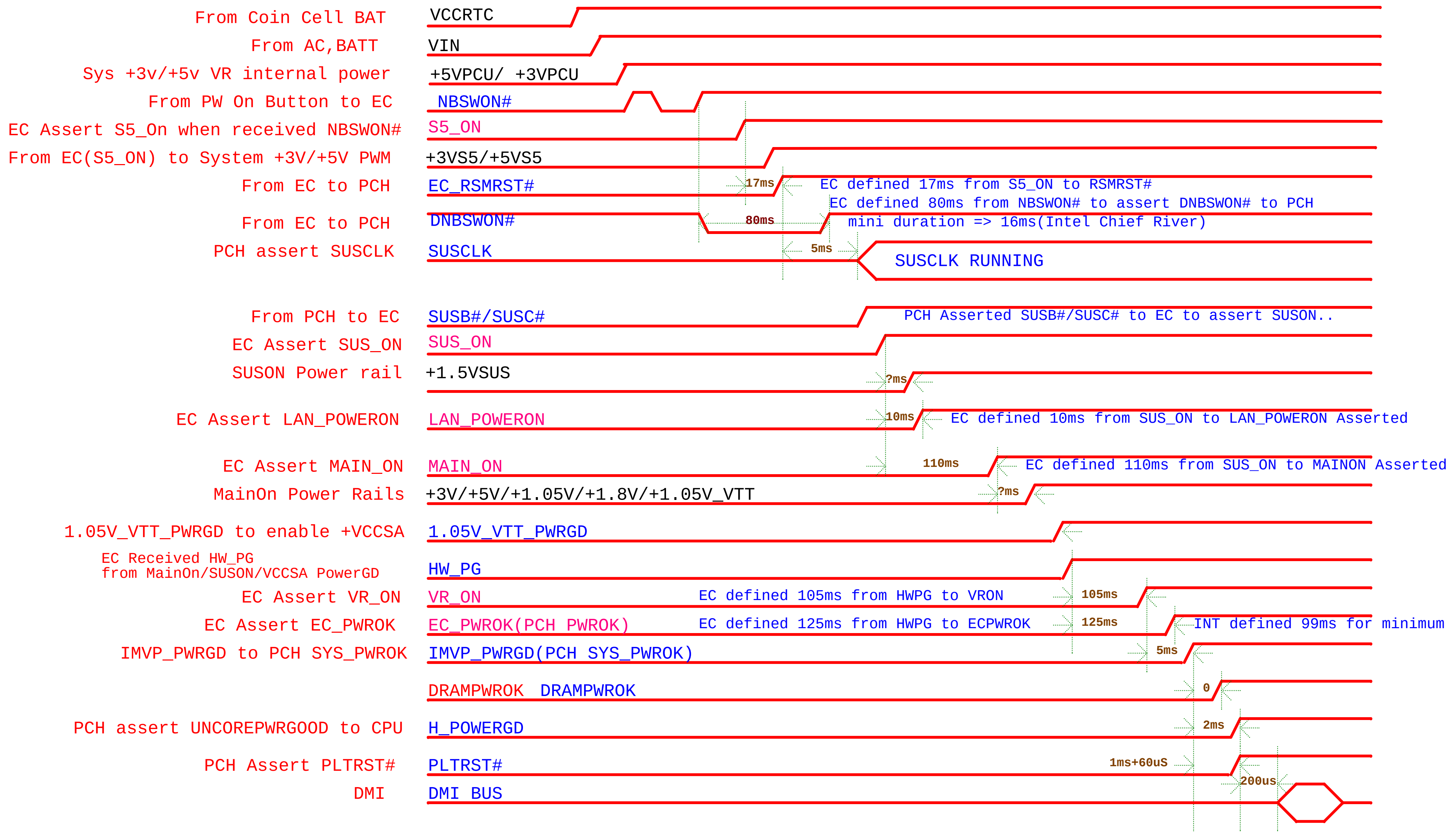
SATA Master	Port Assignment
SATA0	HDD
SATA1	mSATA
SATA2	NC
SATA3	NC
SATA4	NC
SATA5	NC

PCIE Master	Port Assignment
PCIE 1	WLAN
PCIE 2	LAN
PCIE 3	Card reader
PCIE 4	NC
PCIE 5	NC
PCIE 6	NC
PCIE 7	NC
PCIE 8	NC

Main Power tree



Chief River mainly Power On Sequence(G3 to S0)

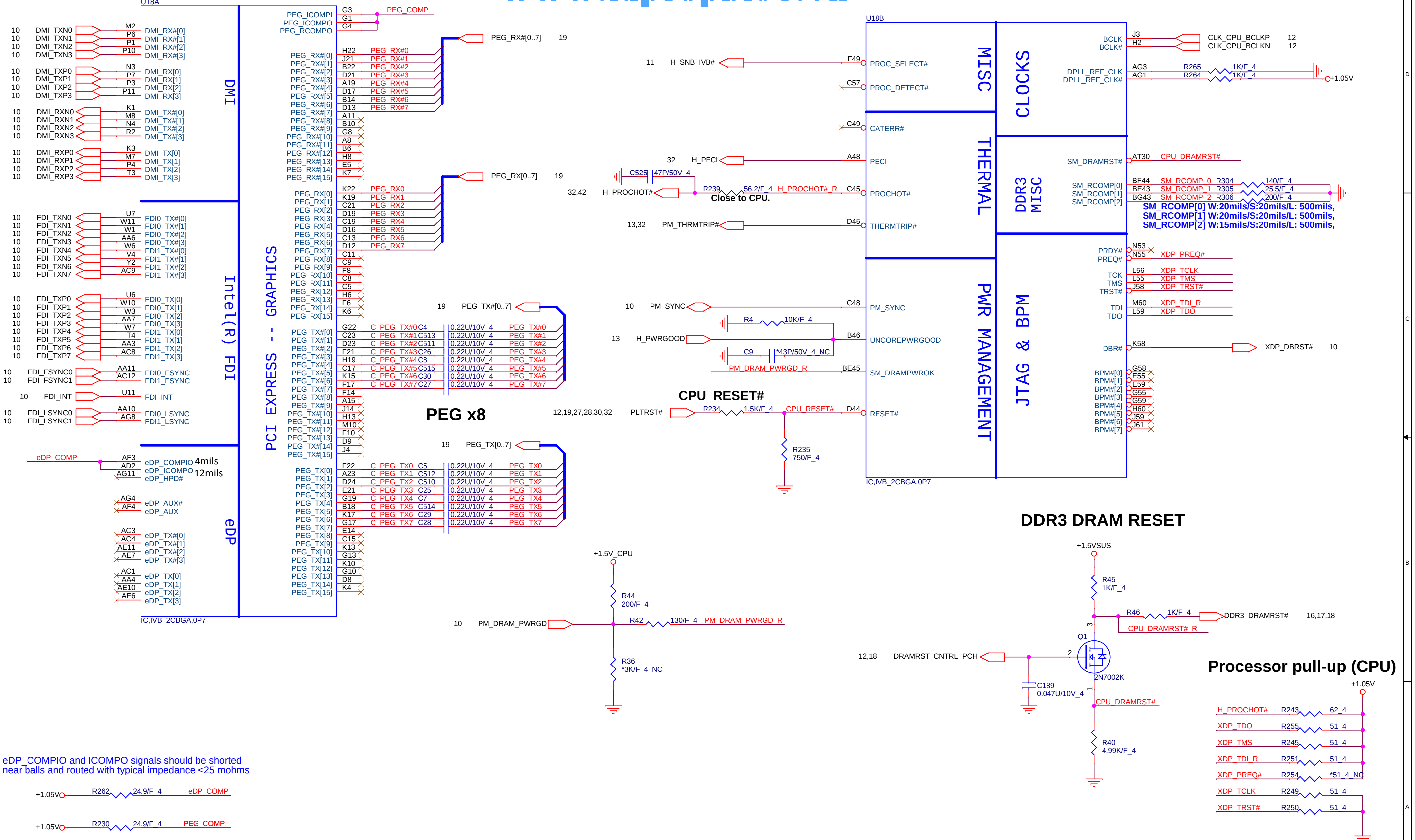


Quanta Computer Inc.		
PROJECT : JW8		
Size	Document Number: Power On Sequence	Rev 3A
Date: Friday, November 02, 2012	Sheet 05 of 46	

Ivy Bridge Processor (DMI,PEG,FDI)

06

PEG_COMP connect to PIN G3&G4 W:4mils/S:15mils/L: 500mils.
PEG_COMP connect to PIN G1 W:12mils/S:15mils/L: 500mils.



eDP_COMPIO and ICOMPO signals should be shorted
near balls and routed with typical impedance <25 mohms

+1.05V R262 24.9/F_4 eDP_COMP

+1.05V R230 24.9/F_4 PEG_COMP

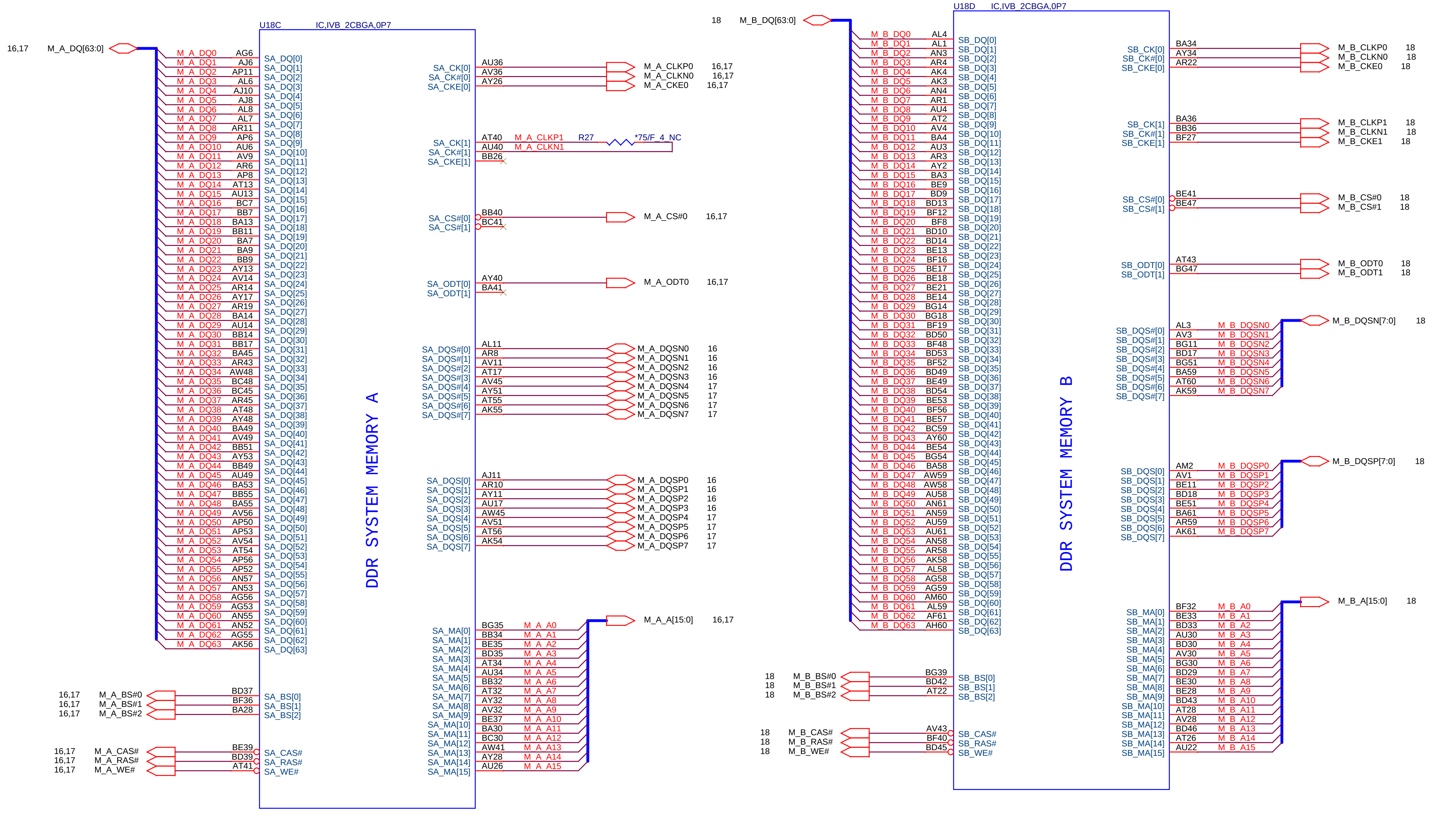
Quanta Computer Inc.

PROJECT : JW8

Size	Document Number	Rev
	Processor 1/4 (Host/GPU)	3A

Date: Friday, November 02, 2012 Sheet 06 of 46

Ivy Bridge Processor (DDR3)



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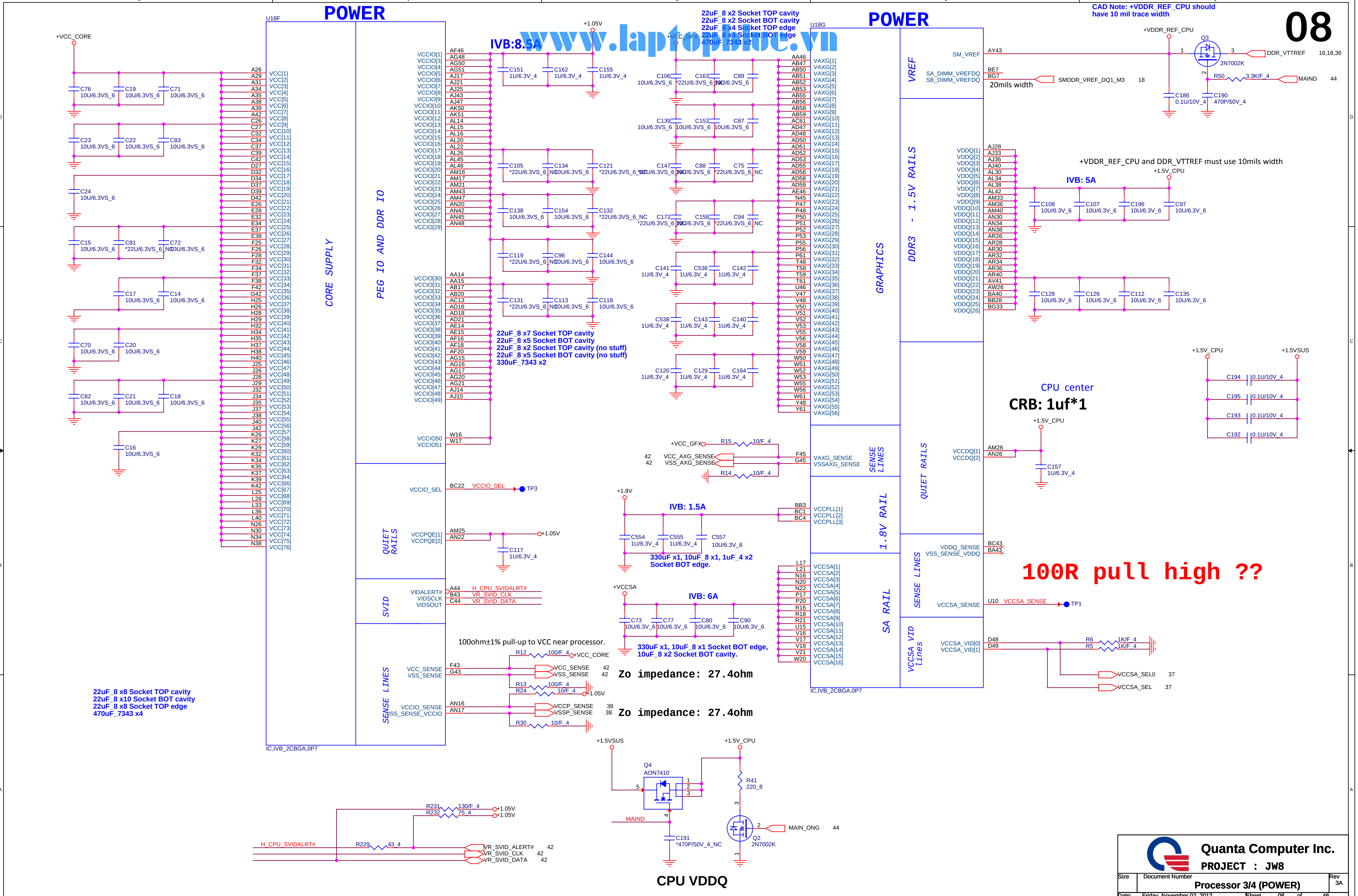
PROJECT : JW8

Size	Document Number	Rev
	Processor 2/5 (DDR3 I/F)	3A

Date: Friday, November 02, 2012 Sheet 07 of 46

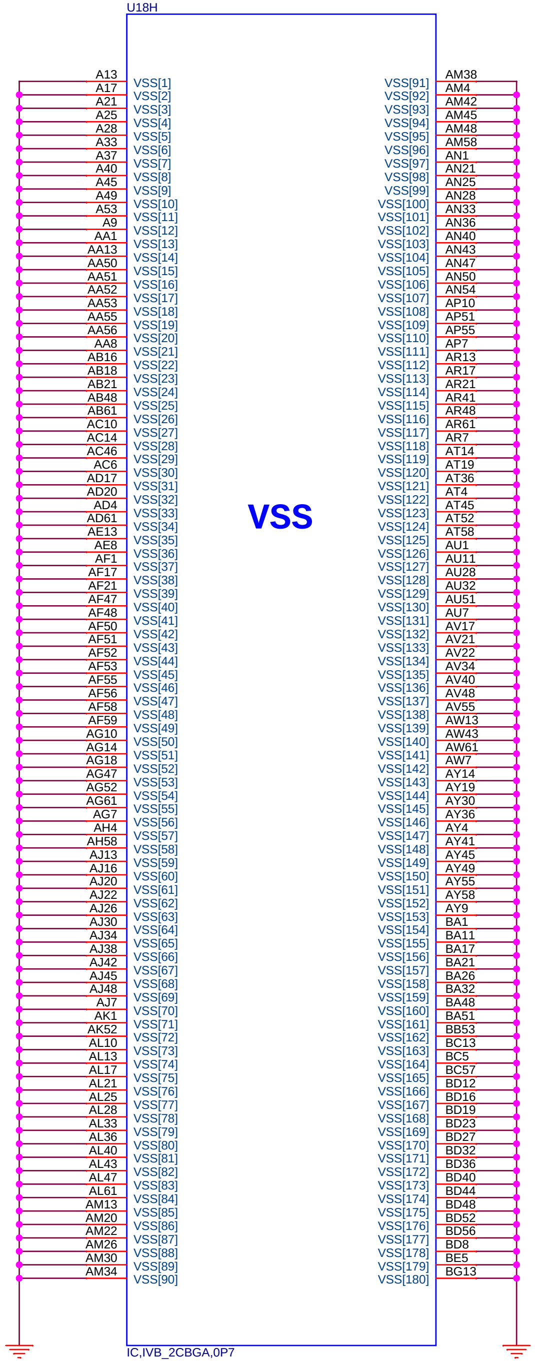


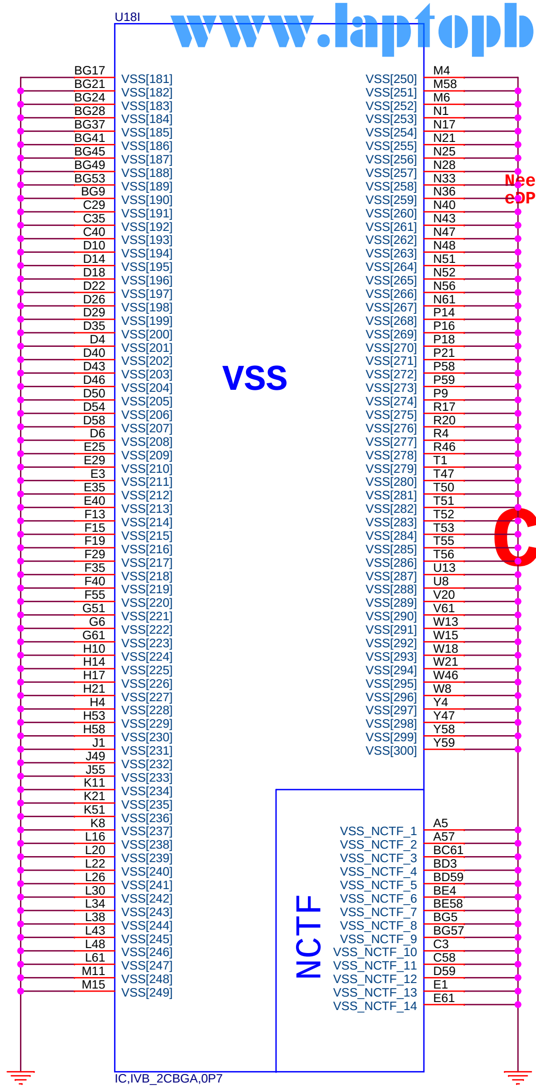
Quanta Computer Inc.

PROJECT : JW8

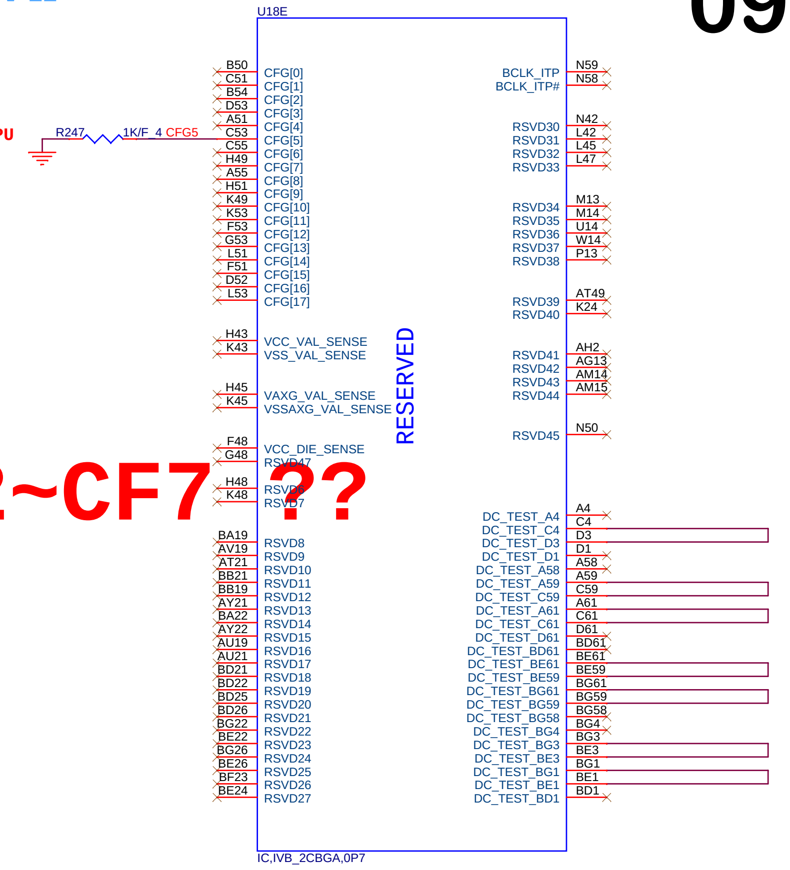
Size	Document Number	Rev
	Processor 3/4 (POWER)	3A

Date: Friday, November 02, 2012 Sheet 08 of 46





Need check GPU
eDP Enable



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

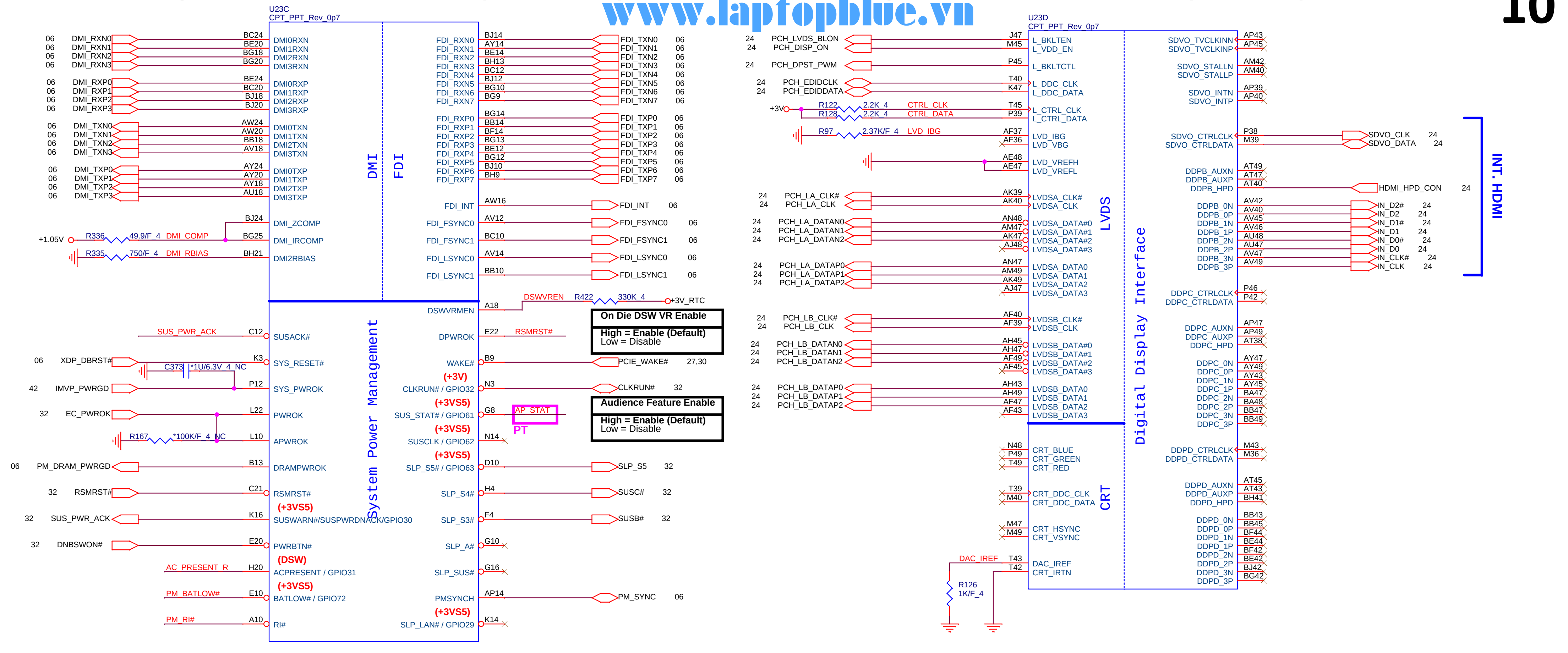
Processor Strapping

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

	1	0
CFG2 (PCIe Static x16 Lane Numbering Reversal.)	Normal Operation(Default)	Lane Reversed
CFG4 (DP Presence Strap)	Disable; No physical DP attached to eDP	Enable; An ext DP device is connected to eDP

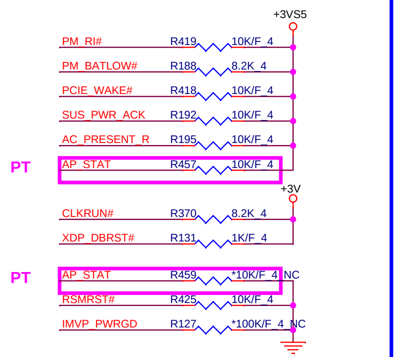
Cougar Point/Panther Point (DMI,FDI,PM)

Cougar Point/Panther Point (LVDS,DDI)



R126 Change 5%

PCH Pull-high/low(CLG)



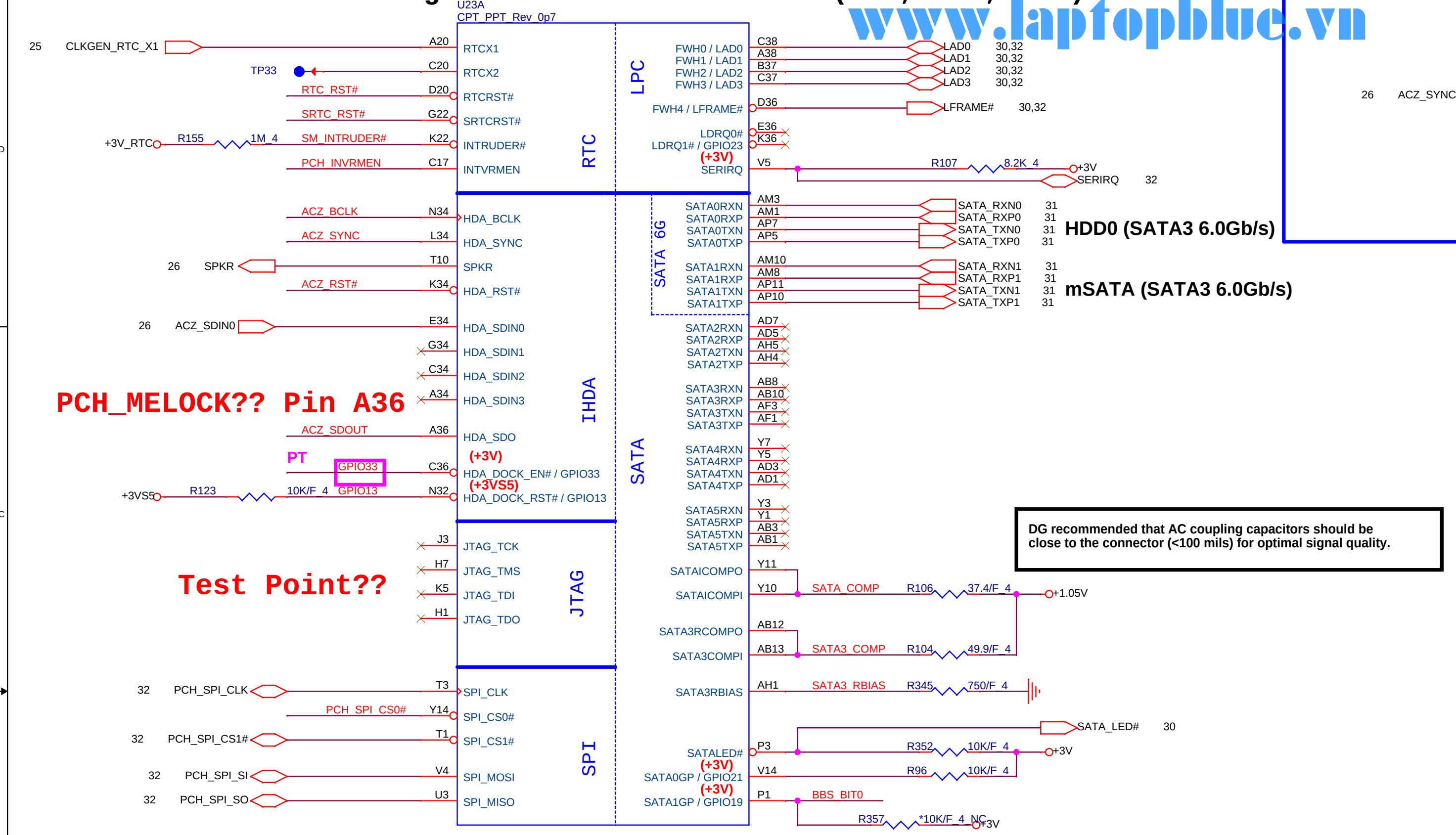
Quanta Computer Inc.

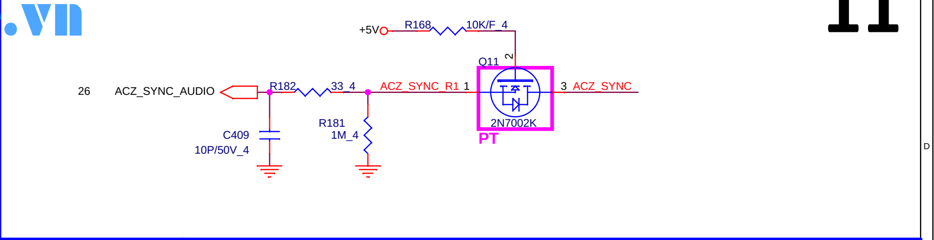
PROJECT : JW8

Size	Document Number	Rev
	PCH 1/6 (Host/Display)	3A

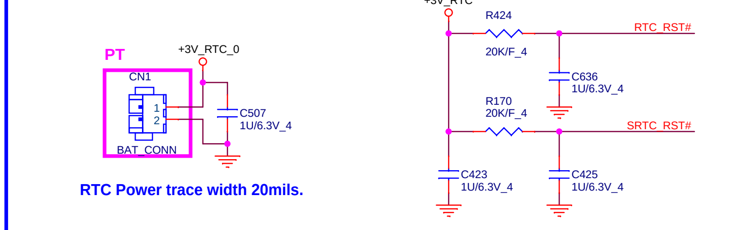
Date: Friday, November 02, 2012 Sheet 10 of 46

Cougar Point/Panther Point (HDA,JTAG,SATA)



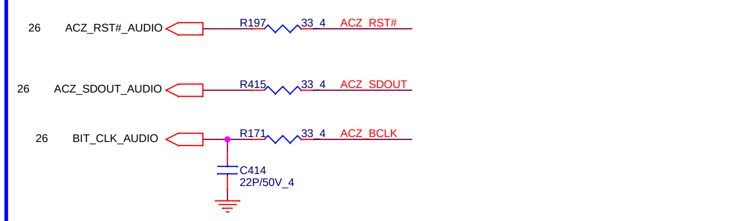


RTC Circuitry(RTC)



RTC Power trace width 20mils.

HDA Bus(CLG)

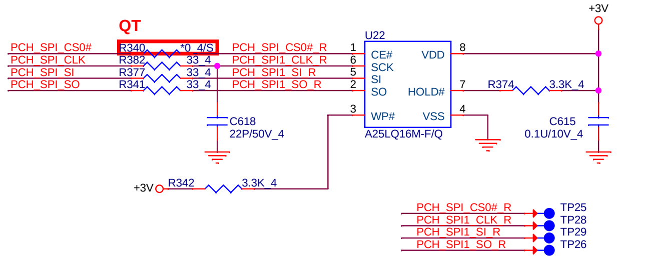


PCH Strap Table

Pin Name	Strap description	Sampled	Configuration	Circuit
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)	+3V R387 10K/F_4 PCI_GNT3# 12
INTVRMEN	Integrated 1.05V VRM enable	ALWAYS	Should be always pull-up	+3V_RTC R423 330K_4 PCH_INVRMEN
HDA_DOCK_EN#/GPIO33	Flash Descriptor Security Only for Interposer	PWROK	0 = Override 1 = Default (weak pull-up 20K)	GPIO33 R444 *1K/F_4_NC ACZ_SDOUT 32 PT
GNT1# / GPIO51	Boot BIOS Selection 1 [bit-1]	PWROK	GNT1# / GNT0# / Boot Location: 1 1 SPI 0 0 LPC	[Need external pull-down for LPC BIOS] Default weak pull-up on GNT0/1# R356 *1K/F_4_NC BBS_BIT0 R381 *1K/F_4_NC BBS_BIT1 12
GPIO19 Different from Calpella	Boot BIOS Selection 0 [bit-0]	PWROK		
GNT2# / GPIO53	ESI strap (Server only)	PWROK	Should not be pull-down (weak pull-up 20K)	USE GPIO PIN
NV_ALE	Intel Anti-Theft HDD protection Only for Interposer	PWROK	0 = Disable (Internal pull-down 20kohm)	
NV_CLE	DMI Termination voltage	PWROK	weak pull-down 20kohm	+1.8V R343 2.2K_4 R344 1K/F_4 NV_CLE 13 H_SNB_IVB# 06
HDA_SYNC	On-Die PLL VR Voltage Select	RSMRST	0 = Support by 1.8V (weak pull-down) 1 = Support by 1.5V	+3VS5 R164 1K/F_4 ACZ_SYNC
HDA_SDO	Flash Descriptor Security	PWROK	0 = Override 1 = Default (weak pull-up 20K)	+3VS5 R445 *1K/F_4_NC ACZ_SDOUT PT
GPIO8	Integrated Clock Chip Enable	RSMRST#	Should be pull-down (weak pull-up 20K)	
GPIO28 Different from Calpella	On-die PLL Voltage Regulator	RSMRST#	0 = Disable 1 = Enable (Default)	
SPI_MOSI	iTPM function Disable	APWROK	0 = Default (weak pull-down 20K) 1 = Enable	

Vender	Size	P/N
AMIC	2MB	AKE38ZN0802 (A25LQ16M-F/Q)
GGD	2MB	AKE38GN0Q00 (GD25Q16BSIGR)

PCH SPI ROM(CLG)



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PROJECT : JW8

Size	Document Number	Rev
	PCH 2/6 (HDA/RTC/SATA/SPI)	3A

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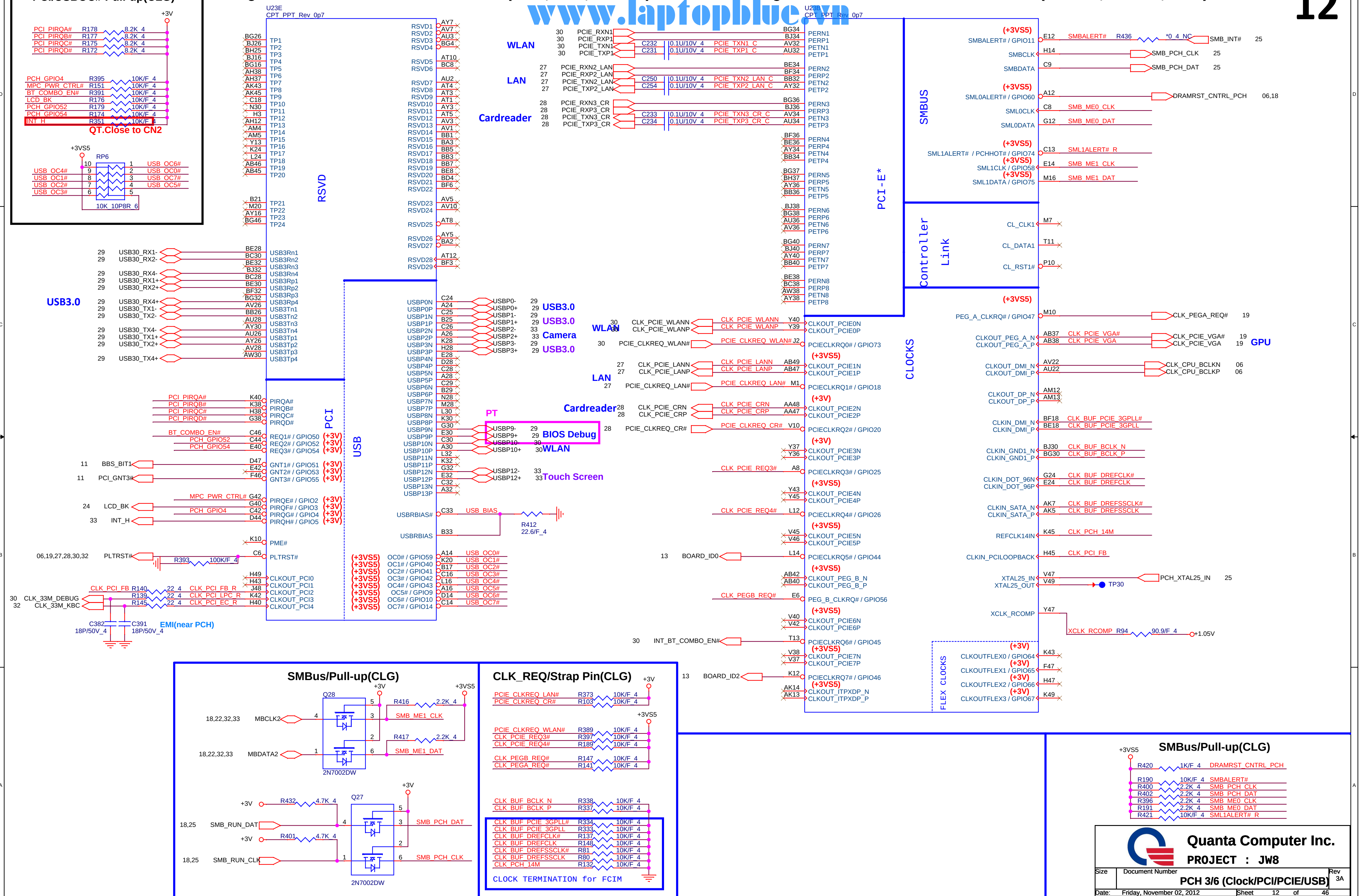
Cougar Point-M/Panther Point (PCI,USB,NVRAM)

Cougar Point-M/Panther Point (PCI-E,SMBUS,CLK)



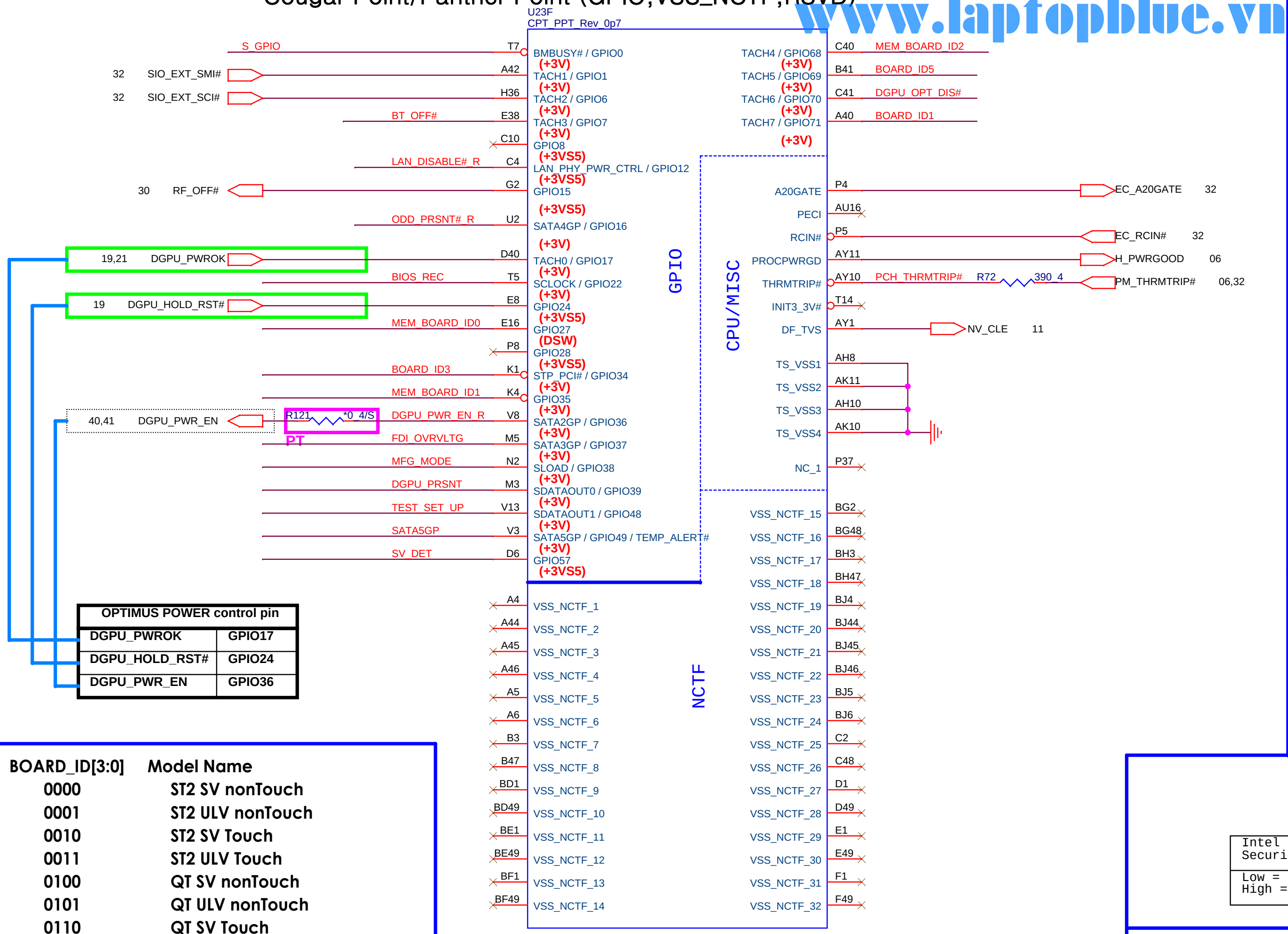
Quanta Computer Inc.

PROJECT : JW8

Size	Document Number	Rev
	PCH 3/6 (Clock/PCI/PCIE/USB)	3A

Date: Friday, November 02, 2012 Sheet 12 of 46

Cougar Point/Panther Point (GPIO,VSS_NCTF,RSVD)

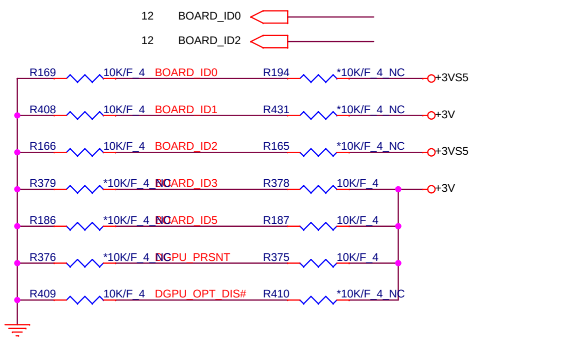


OPTIMUS POWER control pin	
DGPU_PWROK	GPIO17
DGPU_HOLD_RST#	GPIO24
DGPU_PWR_EN	GPIO36

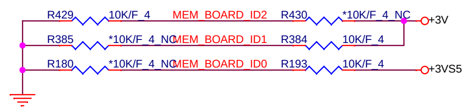
BOARD_ID[3:0]	Model Name
0000	ST2 SV nonTouch
0001	ST2 ULV nonTouch
0010	ST2 SV Touch
0011	ST2 ULV Touch
0100	QT SV nonTouch
0101	QT ULV nonTouch
0110	QT SV Touch
0111	QT ULV Touch
1000	ST1 SV nonTouch
1001	Reserve
1010	ST1 SV Touch
1011	Reserve

Chief River BOARD ID SETTING

BOARD_ID0	GPIO44	SV=0, ULV=1
BOARD_ID1	GPIO71	NonTouch=0, Touch=1
BOARD_ID2	GPIO46	Phase select
BOARD_ID3	GPIO34	Phase select
BOARD_ID5	GPIO69	HM76=0,HM77=1
DGPU_PRSNT	GPIO39	Optimus=1, UMA=0
DGPU_OPT_DIS#	GPIO70	Optimus=0, Dis only=1



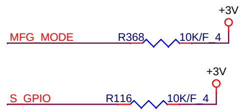
Default: HYNIX DDR3-1600 2GB

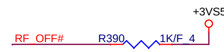


System Memory BOARD ID SETTING

	GPIO68 MEM_BOARD_ID2	GPIO35 MEM_BOARD_ID1	GPIO27 MEM_BOARD_ID0
HYNIX DDR3-1600 2GB	0	0	0
SAMSUNG DDR3-1600 2GB	0	0	1
On Board DDR3 N.C	0	1	1
RESERVE	0	1	0
RESERVE	1	0	0
RESERVE	1	0	1
RESERVE	1	1	1
RESERVE	1	1	0

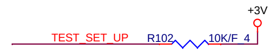
MFG-TEST



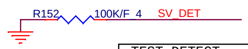


Intel ME Crypto Transport Layer Security (TLS) cipher suite
Low = Disable (Default) High = Enable

BIOS RECOVERY	High = Disable (Default) Low = Enable

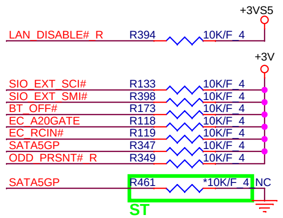


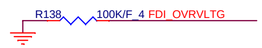
SV_SET_UP
High = Strong (Default)



TEST DETECT
Low = Default

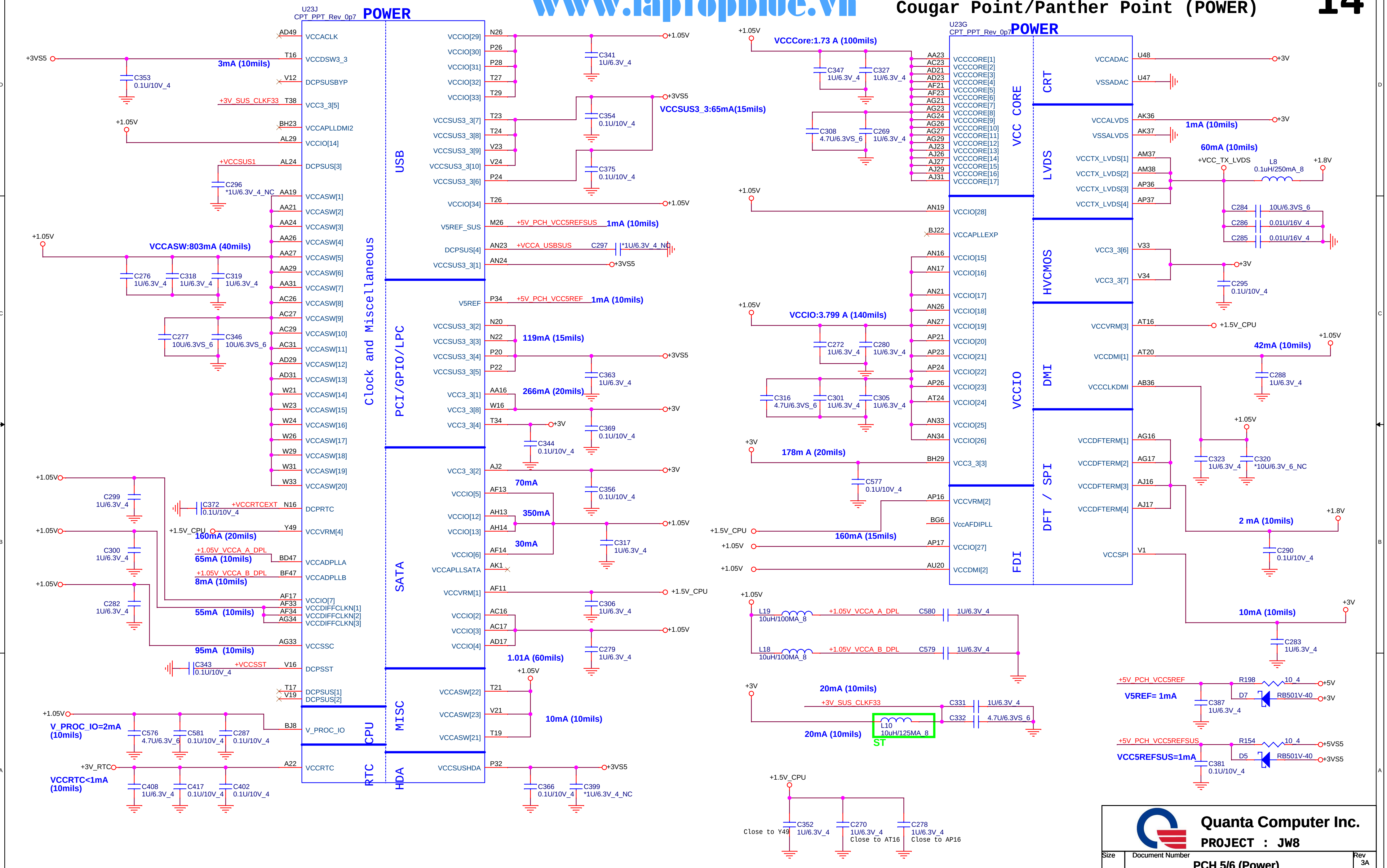
GPIO Pull-up/Pull-down(CLG)





FDI TERMINATION VOLTAGE OVERRIDE	Reserved only

Cougar Point/Panther Point (POWER)



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PROJECT : JW8

Size	Document Number	Rev
	PCH 5/6 (Power)	3A

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Cougar Point/Panther Point (GND)

U23I CPT_PPT_Rev_0p7

Pin	Signal	Signal	Pin
AY4	VSS[159]	VSS[259]	H46
AY42	VSS[160]	VSS[260]	K18
AY46	VSS[161]	VSS[261]	K26
AY8	VSS[162]	VSS[262]	K39
B11	VSS[163]	VSS[263]	K46
B15	VSS[164]	VSS[264]	K7
B19	VSS[165]	VSS[265]	L18
B23	VSS[166]	VSS[266]	L2
B27	VSS[167]	VSS[267]	L20
B31	VSS[168]	VSS[268]	L26
B35	VSS[169]	VSS[269]	L28
B39	VSS[170]	VSS[270]	L36
B7	VSS[171]	VSS[271]	L48
F45	VSS[172]	VSS[272]	M12
BB12	VSS[173]	VSS[273]	P16
BB16	VSS[174]	VSS[274]	M18
BB20	VSS[175]	VSS[275]	M22
BB22	VSS[176]	VSS[276]	M24
BB24	VSS[177]	VSS[277]	M30
BB28	VSS[178]	VSS[278]	M32
BB30	VSS[179]	VSS[279]	M34
BB38	VSS[180]	VSS[280]	M38
BB4	VSS[181]	VSS[281]	M4
BB46	VSS[182]	VSS[282]	M42
BC14	VSS[183]	VSS[283]	M46
BC18	VSS[184]	VSS[284]	M8
BC2	VSS[185]	VSS[285]	N18
BC22	VSS[186]	VSS[286]	P30
BC26	VSS[187]	VSS[287]	N47
BC32	VSS[188]	VSS[288]	P11
BC34	VSS[189]	VSS[289]	P18
BC36	VSS[190]	VSS[290]	T33
BC40	VSS[191]	VSS[291]	P40
BC42	VSS[192]	VSS[292]	P43
BC48	VSS[193]	VSS[293]	P47
BD46	VSS[194]	VSS[294]	P7
BD5	VSS[195]	VSS[295]	R2
BE22	VSS[196]	VSS[296]	R48
BE26	VSS[197]	VSS[297]	T12
BE40	VSS[198]	VSS[298]	T31
BF10	VSS[199]	VSS[299]	T37
BF12	VSS[200]	VSS[300]	T4
BF16	VSS[201]	VSS[301]	W34
BF20	VSS[202]	VSS[302]	T46
BF22	VSS[203]	VSS[303]	T47
BF24	VSS[204]	VSS[304]	T8
BF26	VSS[205]	VSS[305]	V11
BF28	VSS[206]	VSS[306]	V17
BD3	VSS[207]	VSS[307]	V26
BF30	VSS[208]	VSS[308]	V27
BF38	VSS[209]	VSS[309]	V29
BF40	VSS[210]	VSS[310]	V31
BF8	VSS[211]	VSS[311]	V36
BG17	VSS[212]	VSS[312]	V39
BG21	VSS[213]	VSS[313]	V43
BG33	VSS[214]	VSS[314]	V7
BG44	VSS[215]	VSS[315]	W17
BG8	VSS[216]	VSS[316]	W19
BH11	VSS[217]	VSS[317]	W2
BH15	VSS[218]	VSS[318]	W27
BH17	VSS[219]	VSS[319]	W48
BH19	VSS[220]	VSS[320]	Y12
H10	VSS[221]	VSS[321]	Y38
BH27	VSS[222]	VSS[322]	Y4
BH31	VSS[223]	VSS[323]	Y42
BH33	VSS[224]	VSS[324]	Y46
BH35	VSS[225]	VSS[325]	Y8
BH39	VSS[226]	VSS[328]	BG29
BH43	VSS[227]	VSS[329]	N24
BH7	VSS[228]	VSS[330]	AJ3
D3	VSS[229]	VSS[331]	AD47
D12	VSS[230]	VSS[333]	B43
D16	VSS[231]	VSS[334]	BE10
D18	VSS[232]	VSS[335]	BG41
D22	VSS[233]	VSS[337]	G14
D24	VSS[234]	VSS[338]	H16
D26	VSS[235]	VSS[340]	T36
D30	VSS[236]	VSS[342]	BG22
D32	VSS[237]	VSS[343]	BG24
D34	VSS[238]	VSS[344]	C22
D38	VSS[239]	VSS[345]	AP13
D42	VSS[240]	VSS[346]	M14
D8	VSS[241]	VSS[347]	AP3
E18	VSS[242]	VSS[348]	AP1
E26	VSS[243]	VSS[349]	BE16
G18	VSS[244]	VSS[350]	BC16
G20	VSS[245]	VSS[351]	BG28
G26	VSS[246]	VSS[352]	BJ28
G28	VSS[247]		
G36	VSS[248]		
G48	VSS[249]		
H12	VSS[250]		
H18	VSS[251]		
H22	VSS[252]		
H24	VSS[253]		
H26	VSS[254]		
H30	VSS[255]		
H32	VSS[256]		
H34	VSS[257]		
F3	VSS[258]		

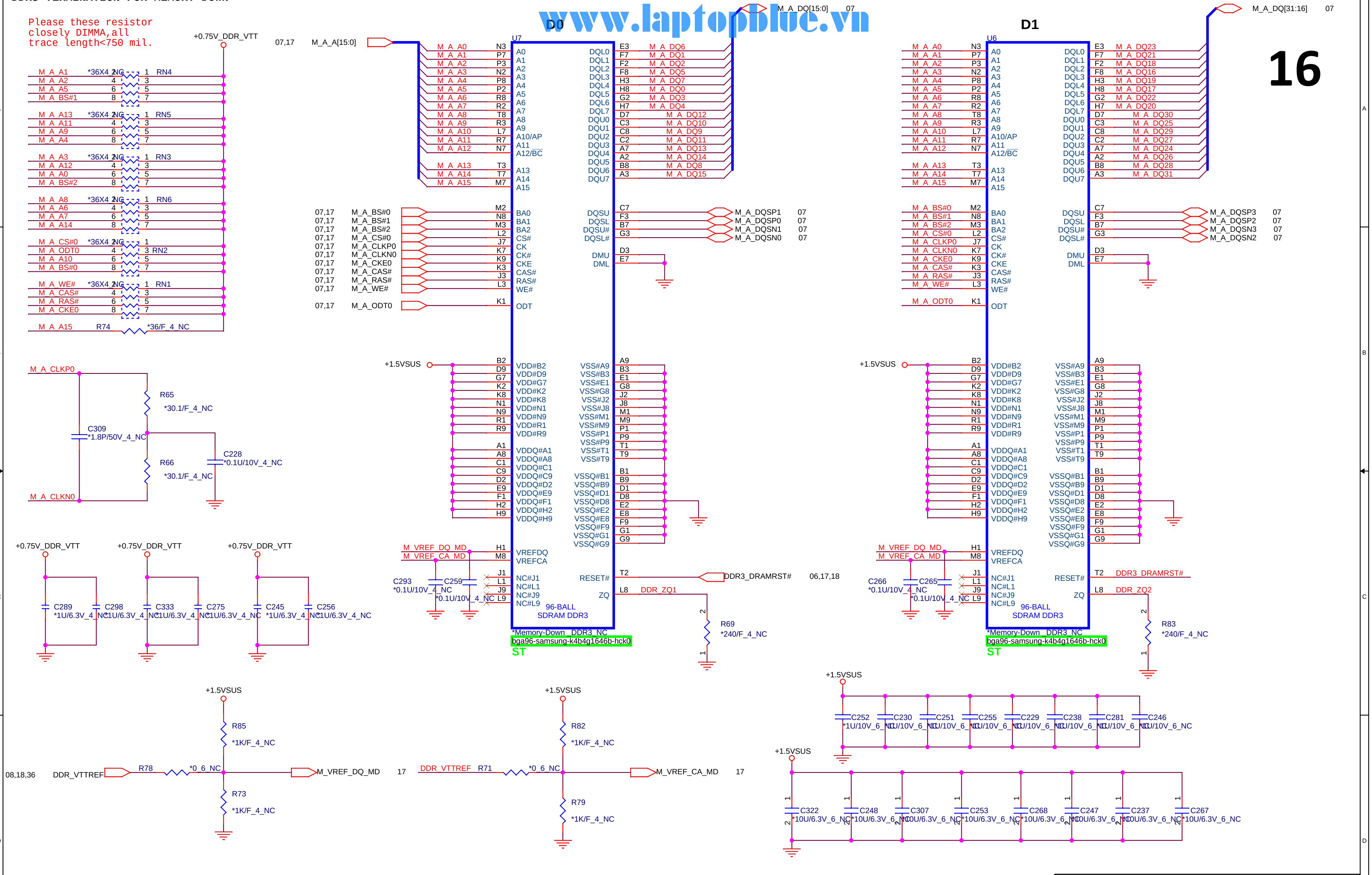
Cougar Point/Panther Point (GND)

U23H CPT_PPT_Rev_0p7

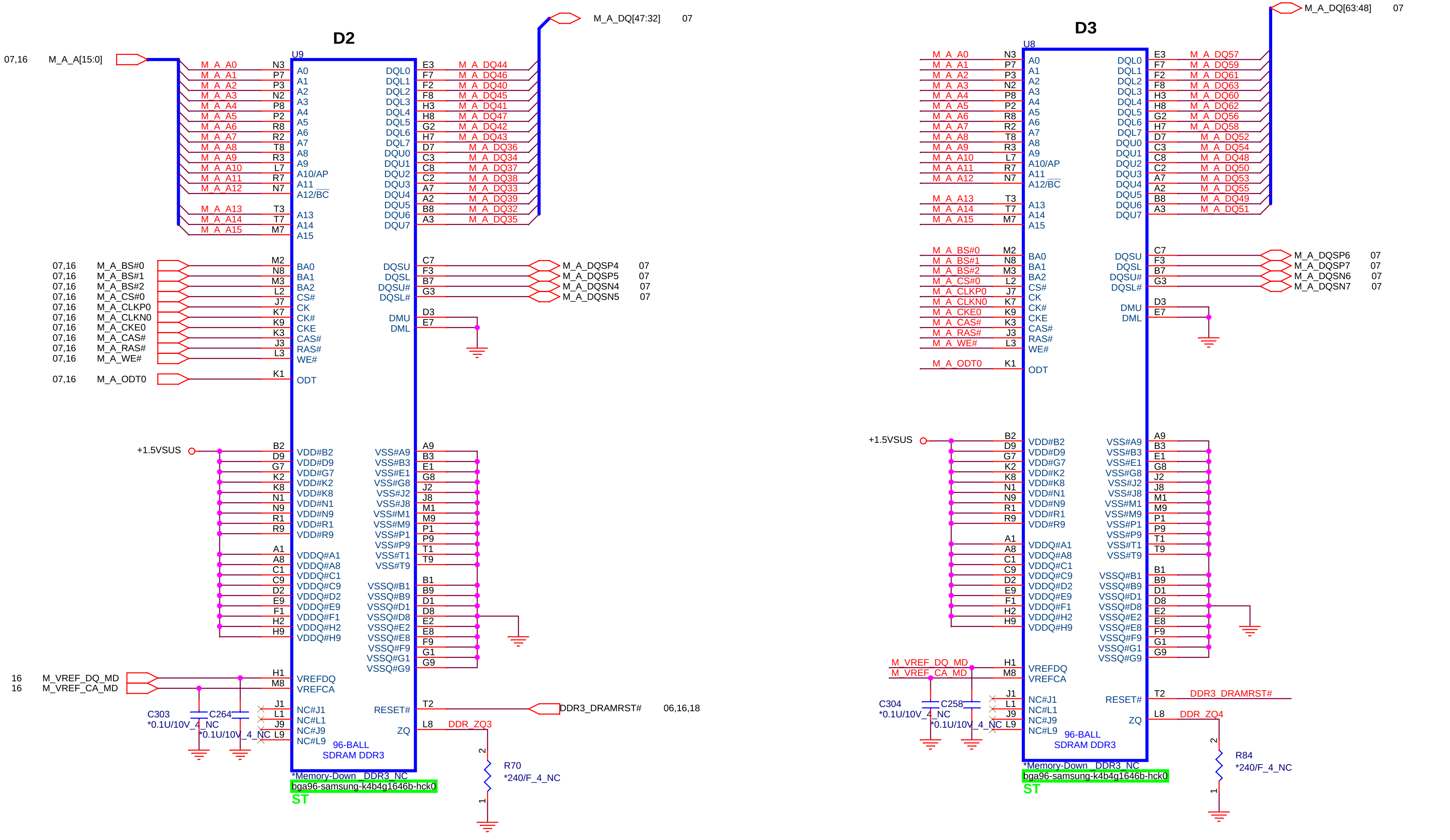
Pin	Signal	Signal	Pin
H5	VSS[0]		
AA17	VSS[1]	VSS[80]	AK38
AA2	VSS[2]	VSS[81]	AK4
AA3	VSS[3]	VSS[82]	AK42
AA33	VSS[4]	VSS[83]	AK46
AA34	VSS[5]	VSS[84]	AK8
AB11	VSS[6]	VSS[85]	AL16
AB14	VSS[7]	VSS[86]	AL17
AB39	VSS[8]	VSS[87]	AL19
AB4	VSS[9]	VSS[88]	AL2
AB43	VSS[10]	VSS[89]	AL21
AB5	VSS[11]	VSS[90]	AL23
AB7	VSS[12]	VSS[91]	AL26
AC19	VSS[13]	VSS[92]	AL27
AC2	VSS[14]	VSS[93]	AL31
AC21	VSS[15]	VSS[94]	AL33
AC24	VSS[16]	VSS[95]	AL34
AC33	VSS[17]	VSS[96]	AL48
AC34	VSS[18]	VSS[97]	AM11
AC48	VSS[19]	VSS[98]	AM14
AD10	VSS[20]	VSS[99]	AM36
AD11	VSS[21]	VSS[100]	AM39
AD12	VSS[22]	VSS[101]	AM43
AD13	VSS[23]	VSS[102]	AM45
AD19	VSS[24]	VSS[103]	AM46
AD24	VSS[25]	VSS[104]	AM7
AD26	VSS[26]	VSS[105]	AN2
AD27	VSS[27]	VSS[106]	AN29
AD33	VSS[28]	VSS[107]	AN3
AD34	VSS[29]	VSS[108]	AN31
AD36	VSS[30]	VSS[109]	AP12
AD37	VSS[31]	VSS[110]	AP19
AD38	VSS[32]	VSS[111]	AP28
AD39	VSS[33]	VSS[112]	AP30
AD4	VSS[34]	VSS[113]	AP32
AD40	VSS[35]	VSS[114]	AP38
AD42	VSS[36]	VSS[115]	AP4
AD43	VSS[37]	VSS[116]	AP42
AD45	VSS[38]	VSS[117]	AP46
AD46	VSS[39]	VSS[118]	AP8
AD8	VSS[40]	VSS[119]	AR2
AE2	VSS[41]	VSS[120]	AR48
AE3	VSS[42]	VSS[121]	AT11
AF10	VSS[43]	VSS[122]	AT13
AF12	VSS[44]	VSS[123]	AT18
AD14	VSS[45]	VSS[124]	AT22
AD16	VSS[46]	VSS[125]	AT26
AF16	VSS[47]	VSS[126]	AT28
AF19	VSS[48]	VSS[127]	AT30
AF24	VSS[49]	VSS[128]	AT32
AF26	VSS[50]	VSS[129]	AT34
AF27	VSS[51]	VSS[130]	AT39
AF29	VSS[52]	VSS[131]	AT42
AF31	VSS[53]	VSS[132]	AT46
AF38	VSS[54]	VSS[133]	AT7
AF4	VSS[55]	VSS[134]	AU24
AF42	VSS[56]	VSS[135]	AU30
AF46	VSS[57]	VSS[136]	AV16
AF5	VSS[58]	VSS[137]	AV20
AF7	VSS[59]	VSS[138]	AV24
AF8	VSS[60]	VSS[139]	AV30
AG19	VSS[61]	VSS[140]	AV38
AG2	VSS[62]	VSS[141]	AV4
AG31	VSS[63]	VSS[142]	AV43
AG48	VSS[64]	VSS[143]	AV8
AH11	VSS[65]	VSS[144]	AW14
AH3	VSS[66]	VSS[145]	AW18
AH36	VSS[67]	VSS[146]	AW2
AH39	VSS[68]	VSS[147]	AW22
AH40	VSS[69]	VSS[148]	AW26
AH42	VSS[70]	VSS[149]	AW28
AH46	VSS[71]	VSS[150]	AW32
AH7	VSS[72]	VSS[151]	AW34
AJ19	VSS[73]	VSS[152]	AW36
AJ21	VSS[74]	VSS[153]	AW40
AJ24	VSS[75]	VSS[154]	AW48
AJ33	VSS[76]	VSS[155]	AV11
AJ34	VSS[77]	VSS[156]	AY12
AK12	VSS[78]	VSS[157]	AY22
AK3	VSS[79]	VSS[158]	AY28

DDR3 TERMINATION FOR MEMORY DOWN

16



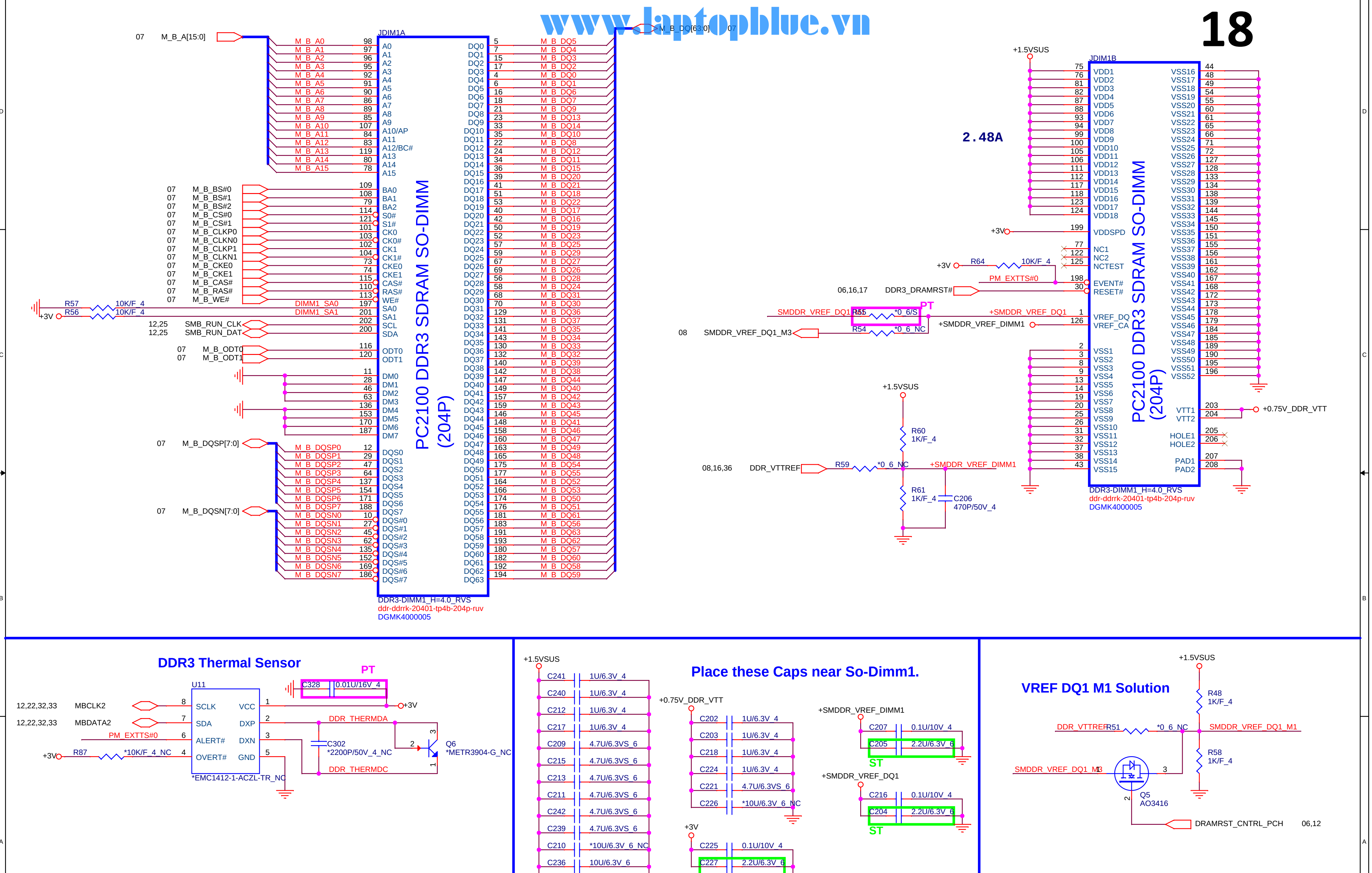
Quanta Computer Inc.			
PROJECT : JW8			
Size	Document Number: DDR3 (A) On Board_A,1Rank		Rev 3A
Date: Friday, November 02, 2012	Sheet 16	of	46



Quanta Computer Inc.

PROJECT : JW8

Size	Document Number	Rev
	DDR3 (A) On Board_B,1Rank	3A
Date: Friday, November 02, 2012	Sheet 17 of 46	

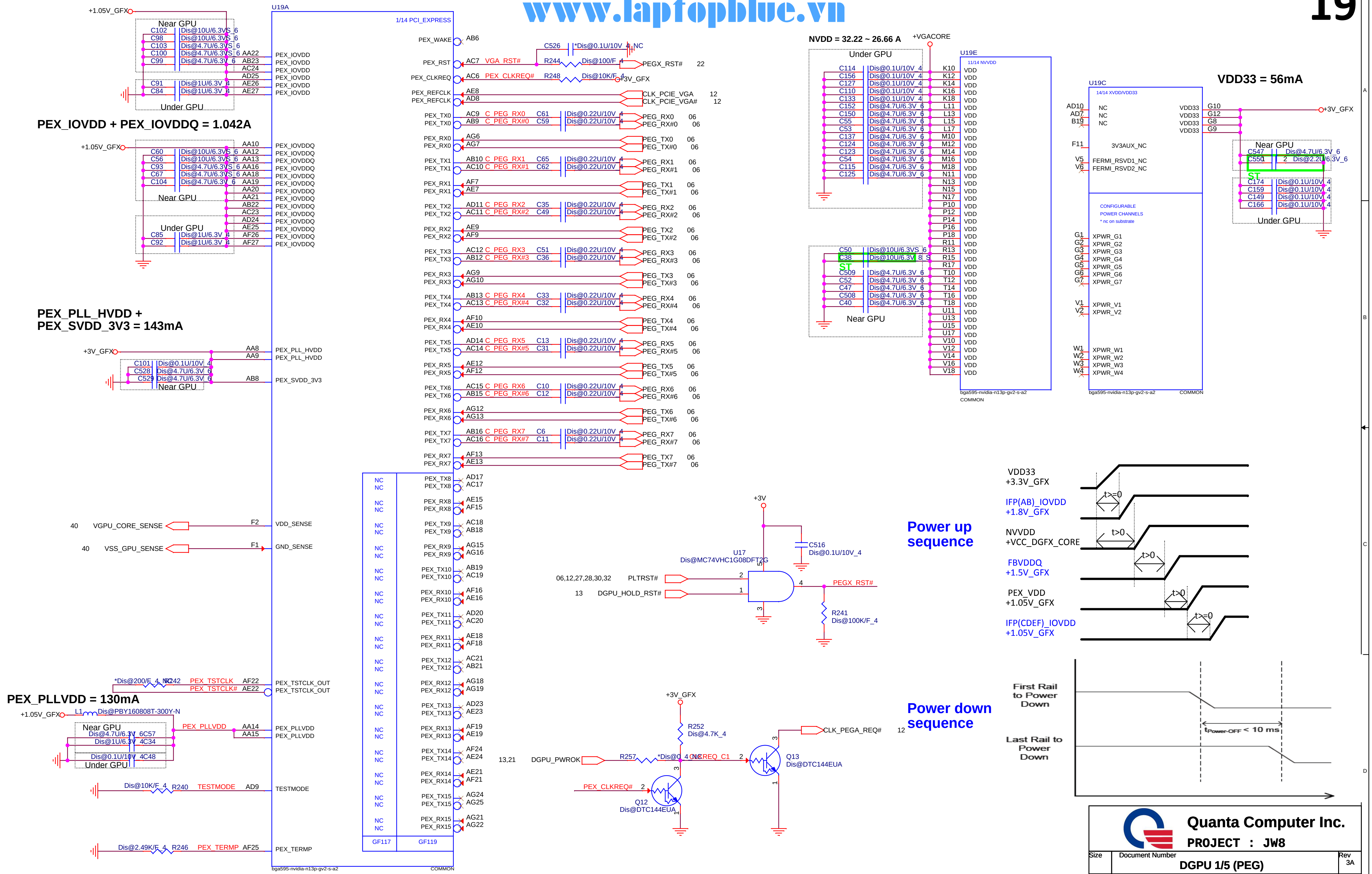


Quanta Computer Inc.

PROJECT : JW8

Size	Document Number	Rev
	System Memory (4.0H)	3A

Date: Friday, November 02, 2012 Sheet 18 of 46

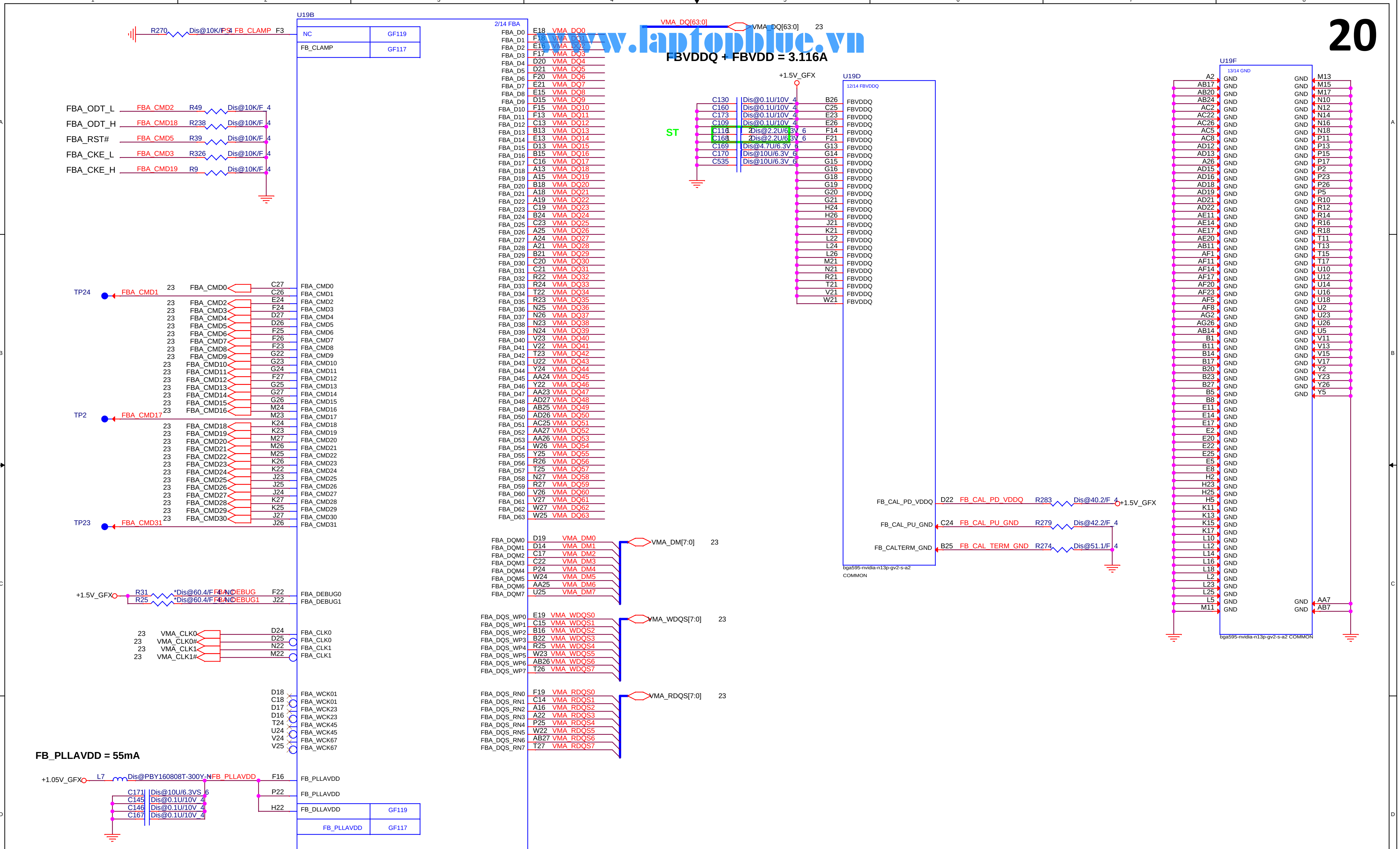


Quanta Computer Inc.

PROJECT : JW8

Size	Document Number	Rev
	DGPU 1/5 (PEG)	3A

Date: Friday, November 02, 2012 Sheet 19 of 46

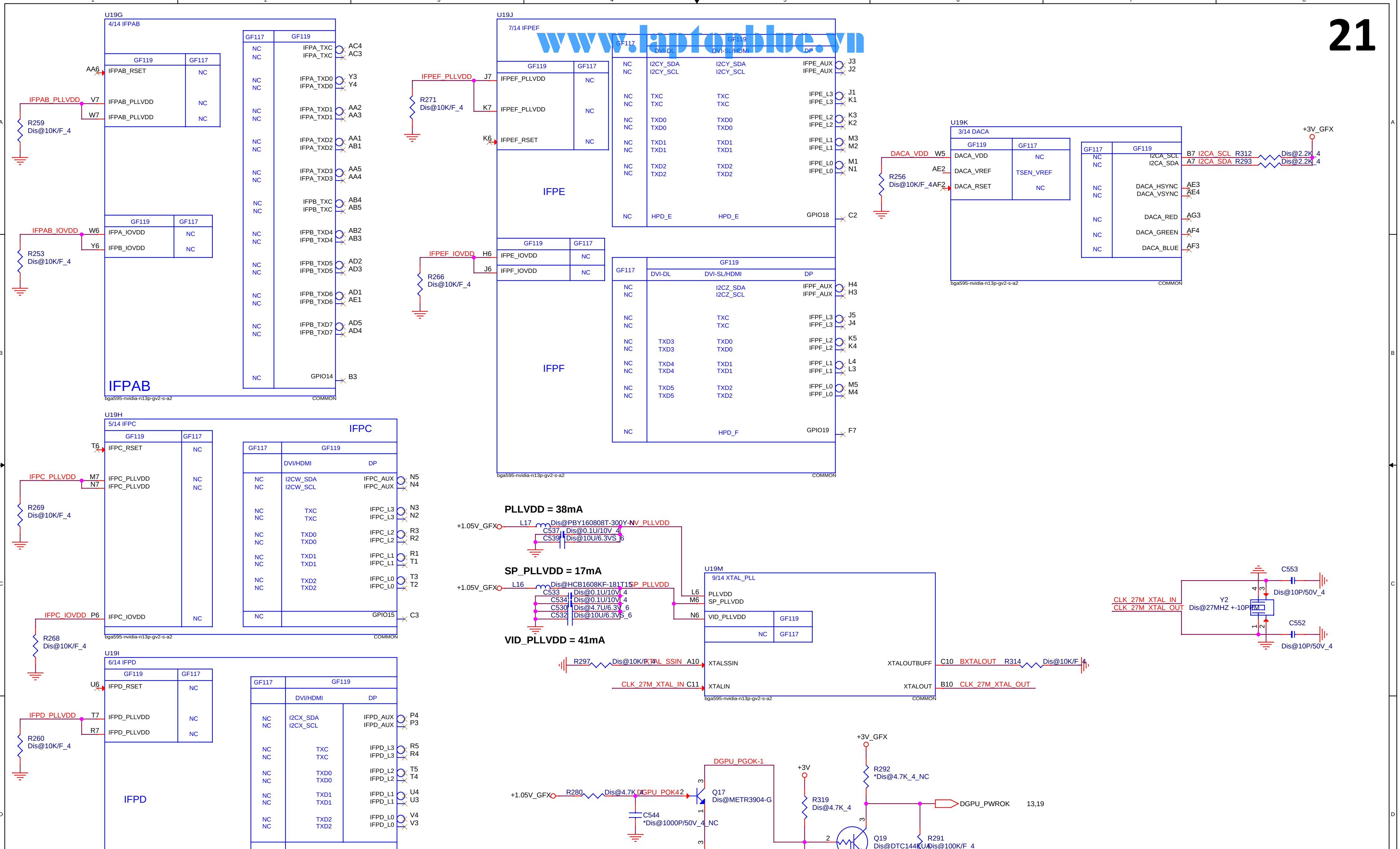


Quanta Computer Inc.

PROJECT : JW8

Size	Document Number	Rev
	DGPU 2/5 (Memory)	3A

Date: Friday, November 02, 2012 Sheet 20 of 46

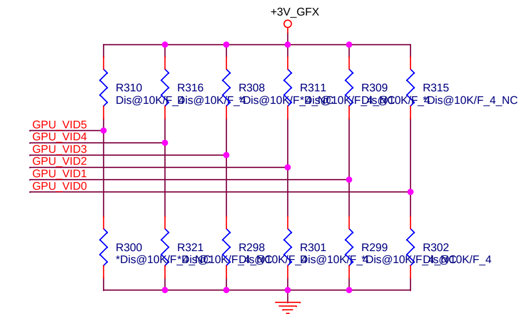


Quanta Computer Inc.

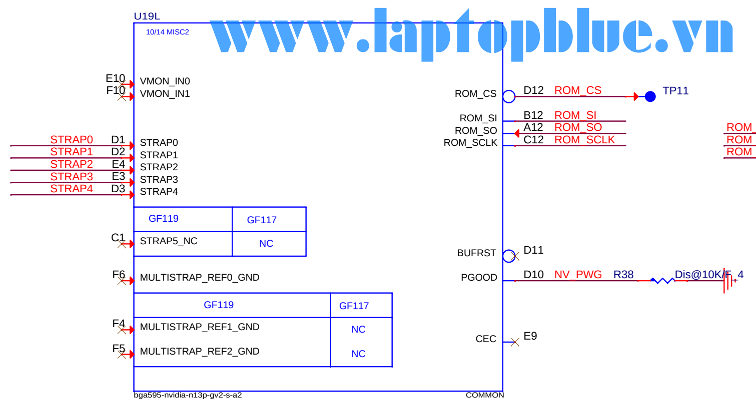
PROJECT : JW8

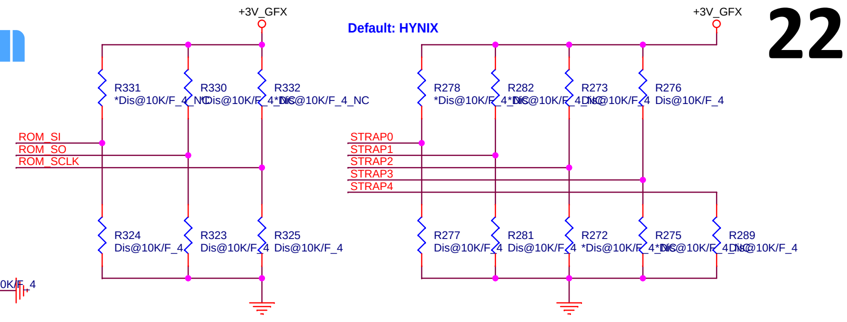
Size	Document Number	Rev
	DGPU 3/5 (Display)	3A

Date: Friday, November 02, 2012 Sheet 21 of 46



N13P-GV2 NVDD HW BOOT Voltage = 0.875V
VID = 110010



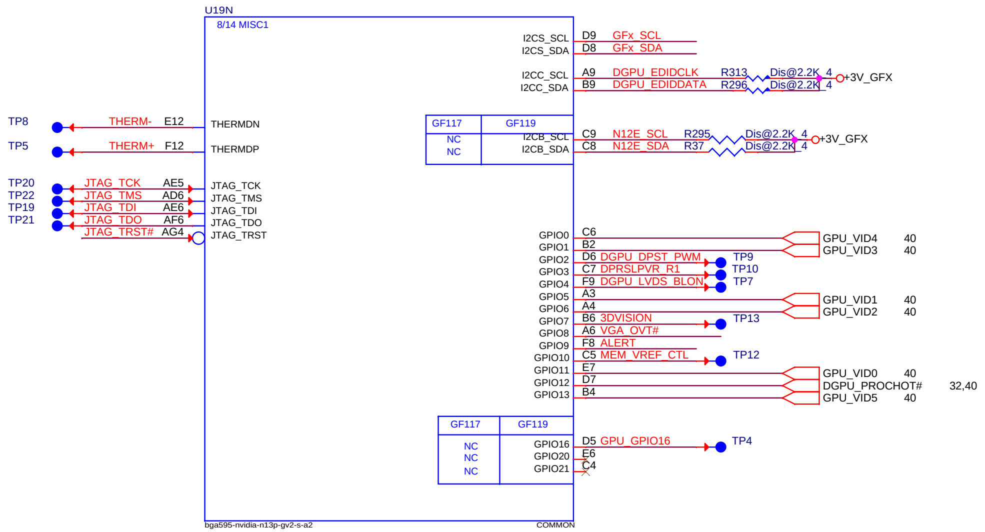


Binary Strap Mode Mapping

Strap Pin name	Strap Mapping	Resistance	Polarity
ROM_SCLK	SMB_ALT_ADDR	10Kohm	Pull-down to GND
ROM_SI	SUB_VENDOR	10Kohm	Pull-UP to 3V3 if VBIOS ROM Exists Pull-down to GND if no VBIO ROM
ROM_SO	VGA_DEVICE	10Kohm	Pull-down to GND (no dispaly)
STRAP0	RAMCFG[0]	10Kohm	USER defined
STRAP1	RAMCFG1]	10Kohm	USER defined
STRAP2	RAMCFG[2]	10Kohm	USER defined
STRAP3	RAMCFG[3]	10Kohm	USER defined
STRAP4	PCIE_MAX_SPEED	10Kohm	Pull-down to GND

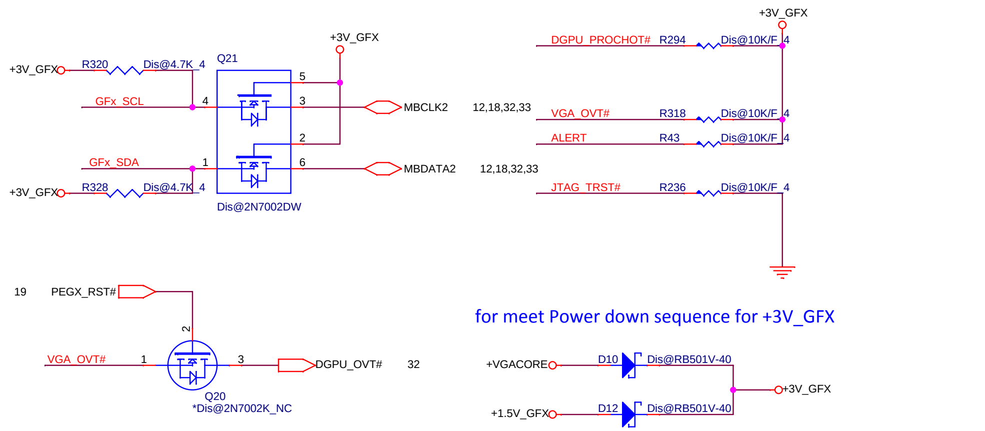
VRAM Configuration Table

RAMCFG [3:0]	DESCRIPTION	Vendor	Vendor P/N	QCI P/N	
0000		Reserved			
1100	DDR3 128Mx16x4, 64bit, 2Gb,900MHz	HYNIX	H5TQ2G63DFR-11C	AKD5MGWTW16	
1011	DDR3 128Mx16x4, 64bit, 2Gb,900MHz	SAMSUNG	K4W2G1646E-BC11	AKD5MGGT526	
	DDR3 256Mx16x4, 64bit, 4Gb,900MHz	HYNIX	H5TQ4G63MFR-11C	AKD5PGWTW04	
	DDR3 256Mx16x4, 64bit, 4Gb,900MHz	SAMSUNG	K4W4G1646B-HC11	AKD5MGWT516	



GPIO ASSIGNMENTS

GPIO	I/O	PIN	USAGE
0	OUT	GPU_VID4	GPU CORE_VDD VID4
1	OUT	GPU_VID3	GPU CORE_VDD VID3
2	OUT	LCD_BL_PWM	LCD BACKLIGHT PWM
3	OUT	LCD_VCC	PANEL POWER ENABLE
4	OUT	LCD_BLEN	PANEL BACKLIGHT ENABLE
5	OUT	GPU_VID1	GPU CORE_VDD VID1
6	OUT	GPU_VID2	GPU CORE_VDD VID2
7	OUT	3D VISION	3D VISION LEFT/RIGHT VISION
8	I/O	OVERT	ACTIVE LOW THERMAL OVER TEMP
9	I/O	ALERT	ACTIVE LOW THERMAL ALERT
10	OUT	MEM VREF	MEMMORY VREF CONTROL
11	OUT	GPU_VID0	GPU CORE_VDD VID0
12	IN	PWR_LEVEL	Power Detect ,HIGH=AC, LOW=DC
13	OUT	GPU_VID5	GPU CORE_VDD VID5
14	IN	HPD_AB	HOT PLUG DETECT FOR IFPAB
15	IN	HPD_C	HOT PLUG DETECT FOR IFPC
16	OUT	MEM VDD	MEMMORY VDD CONTROL
17	IN	HPD_D	HOT PLUG DETECT FOR IFPD
18	IN	HPD_E	HOT PLUG DETECT FOR IFPE
19	IN	HPD_F	HOT PLUG DETECT FOR IFPF
20/21		RESERVE	



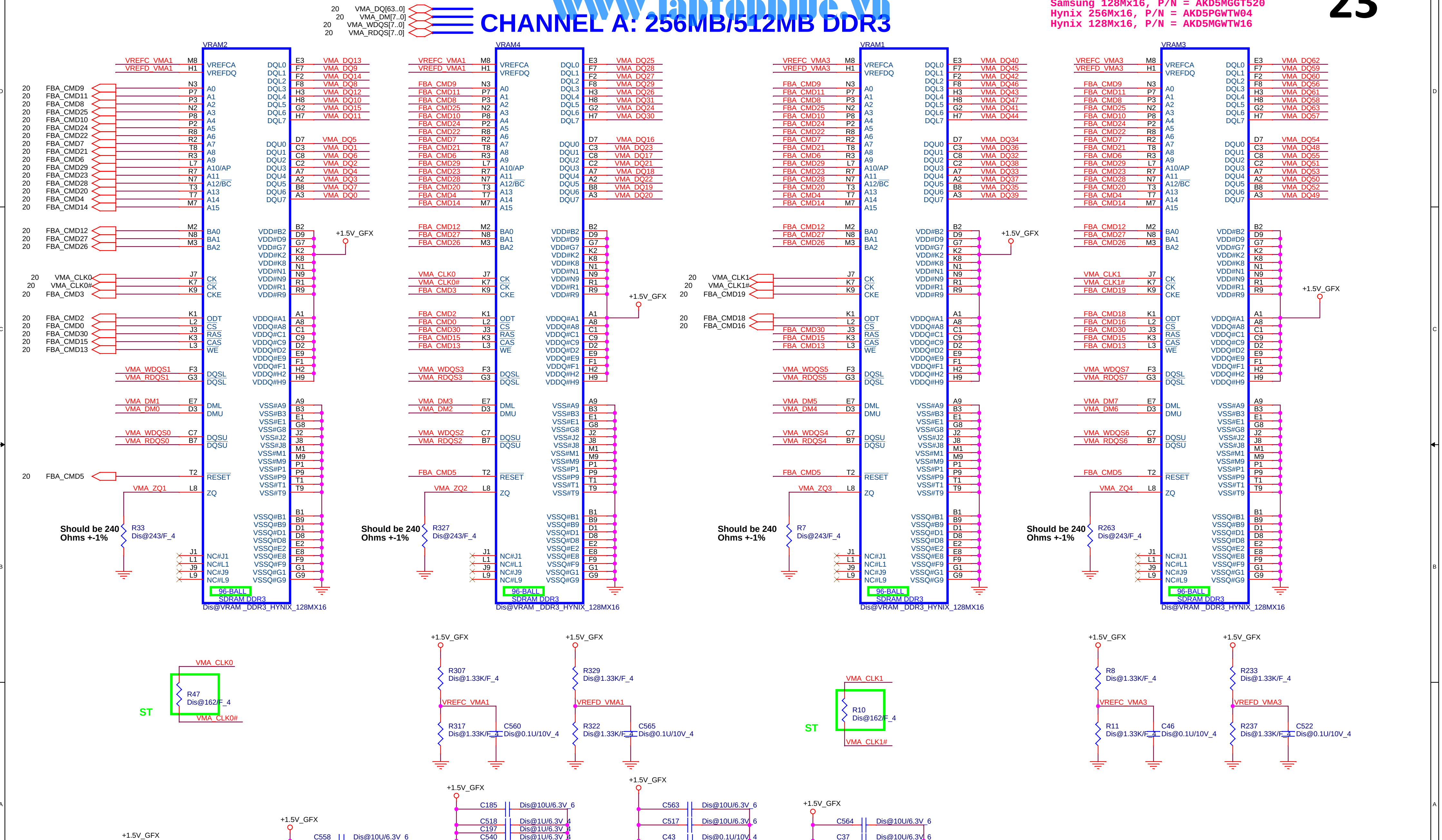
Quanta Computer Inc.
PROJECT : JW8

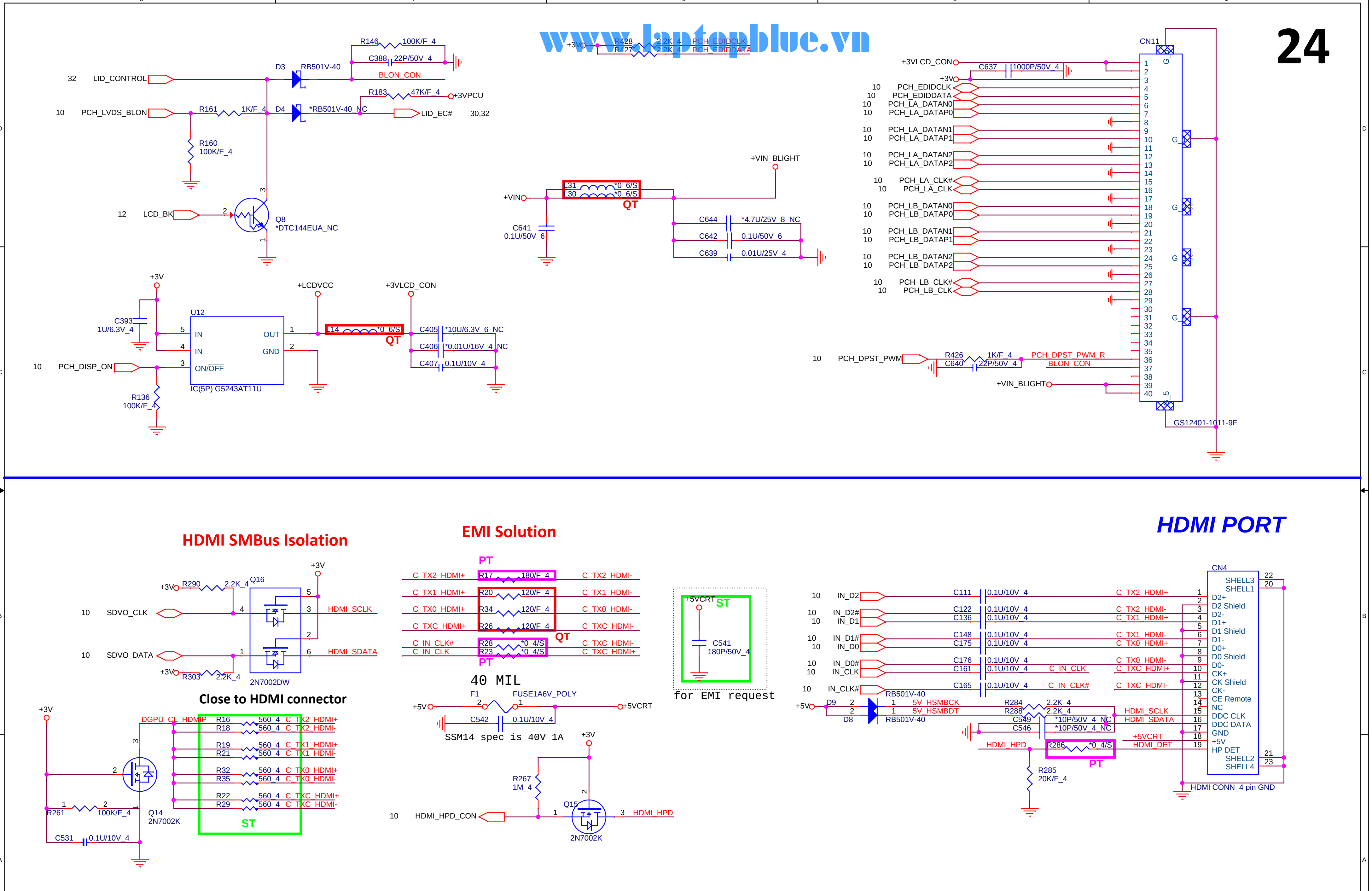
Size	Document Number	Rev
	DGPU 4/5 (MIO/GPIO)	3A

Date: Friday, November 02, 2012 Sheet 22 of 46

900MHz VRAM size:
Samsung 256Mx16, P/N = AKD5MGWT516
Samsung 128Mx16, P/N = AKD5MGGT520
Hynix 256Mx16, P/N = AKD5PGWTW04
Hynix 128Mx16, P/N = AKD5MGWTW16

CHANNEL A: 256MB/512MB DDR3



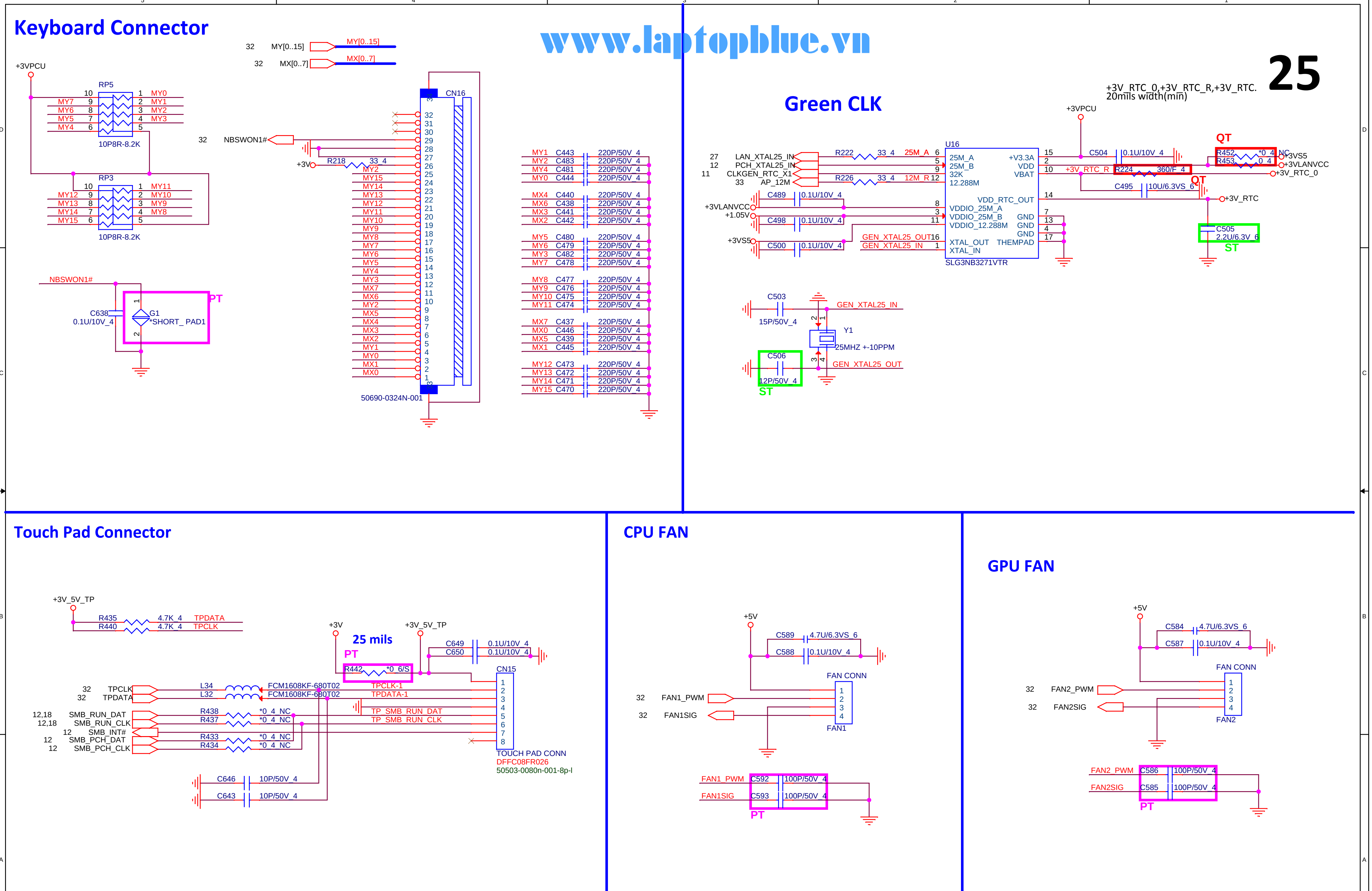


Quanta Computer Inc.

PROJECT : JW8

Size	Document Number	Rev
	LVDS/HDMI	3A

Date: Friday, November 02, 2012 Sheet 24 of 46

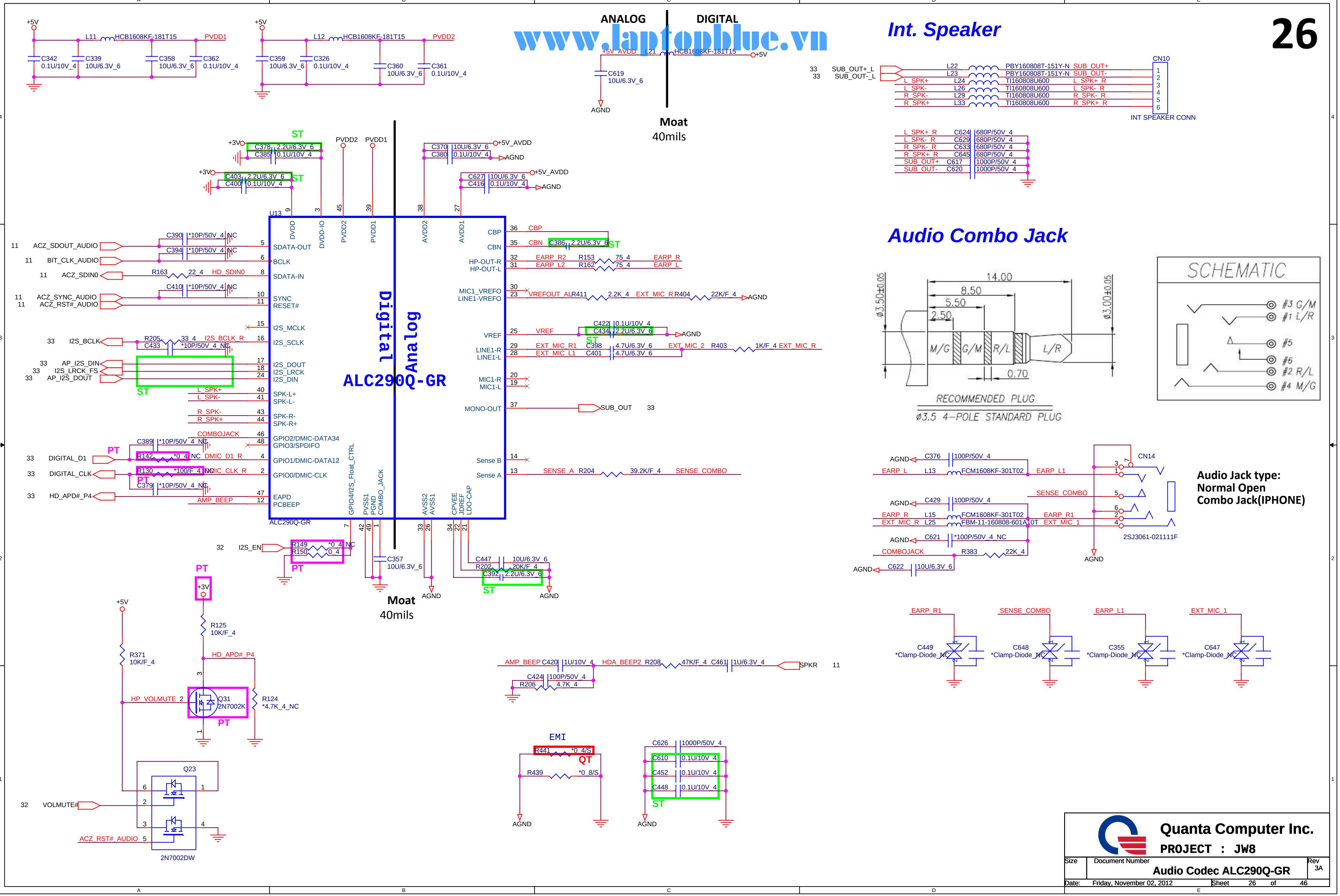


Quanta Computer Inc.

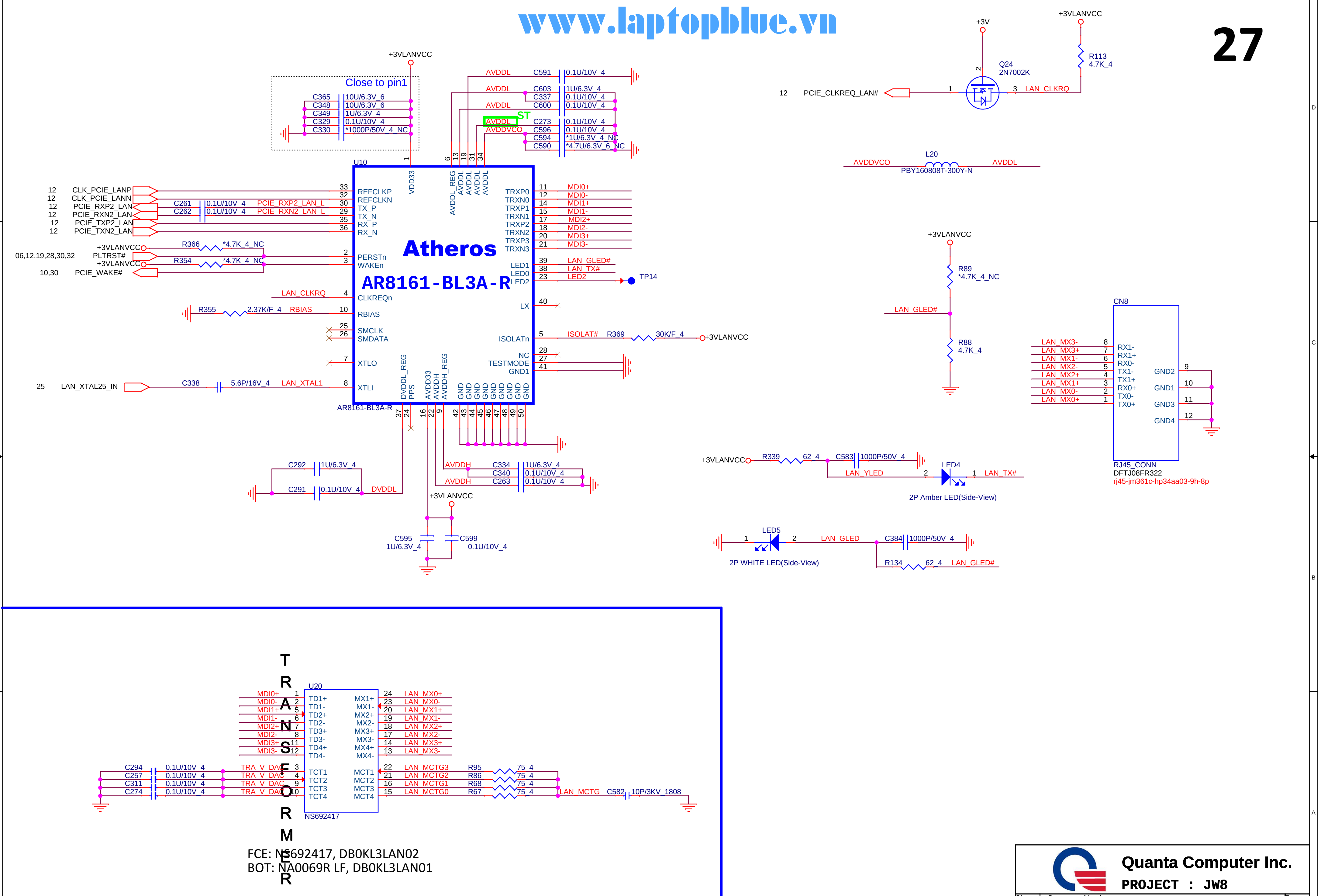
PROJECT : JW8

Size	Document Number	Rev
	KB/CLK Gen/FAN/TP	3A

Date: Friday, November 02, 2012 Sheet 25 of 46



ANALOG
DIGITAL
www.laptopblue.vn
Int. Speaker
Moat
40mils
+5V
L11 HCB1608KF-181T15
PVDD1
C342 0.1U/10V_4
C339 10U/6.3V_6
C358 10U/6.3V_6
C362 0.1U/10V_4
L12 HCB1608KF-181T15
PVDD2
C359 10U/6.3V_6
C326 0.1U/10V_4
C360 10U/6.3V_6
C361 0.1U/10V_4
+5V_AVDD L21 HCB1608KF-181T15
C619 10U/6.3V_6
AGND
SUB_OUT+_L
SUB_OUT-_L
L22 PBY160808T-151Y-N SUB_OUT+
L23 PBY160808T-151Y-N SUB_OUT-
L24 TI160808U600 L_SPK+_R
L26 TI160808U600 L_SPK-_R
L29 TI160808U600 R_SPK-_R
L33 TI160808U600 R_SPK+_R
CN10
INT SPEAKER CONN
C624 680P/50V_4
C629 680P/50V_4
C633 680P/50V_4
C645 680P/50V_4
C617 1000P/50V_4
C620 1000P/50V_4
ST
C378 2.2U/6.3V_6
C385 0.1U/10V_4
C403 2.2U/6.3V_6
C400 0.1U/10V_4
C370 10U/6.3V_6
C380 0.1U/10V_4
C627 10U/6.3V_6
C416 0.1U/10V_4
U13
DVDD
DVDD-IO
PVDD2
PVDD1
AVDD2
AVDD1
Digital
Analog
ALC290Q-GR
SDATA-OUT
BCLK
SDATA-IN
SYNC
RESET#
I2S_MCLK
I2S_SCLK
I2S_DOUT
I2S_LRCK
I2S_DIN
SPK-L+
SPK-L-
SPK-R-
SPK-R+
GPIO2/DMIC-DATA34
GPIO3/SPDIFO
GPIO1/DMIC-DATA12
GPIO0/DMIC-CLK
EAPD
PCBEEP
CBP
CBN
HP-OUT-R
HP-OUT-L
MIC1_VREFO
LINE1-VREFO
VREF
LINE1-R
LINE1-L
MIC1-R
MIC1-L
MONO-OUT
Sense B
Sense A
ACZ_SDOUT_AUDIO
BIT_CLK_AUDIO
ACZ_SDIN0
ACZ_SYNC_AUDIO
ACZ_RST#_AUDIO
I2S_BCLK
AP_I2S_DIN
I2S_LRCK_FS
AP_I2S_DOUT
DIGITAL_D1
DIGITAL_CLK
HD_APD#_P4
C390 *10P/50V_4_NC
C394 *10P/50V_4_NC
R163 22_4 HD_SDIN0
C410 *10P/50V_4_NC
R205 33_4 I2S_BCLK_R
C433 *10P/50V_4_NC
COMBOJACK
C389 *10P/50V_4_NC
R142 *0_4_NC DMIC_D1_R
R130 *100/F_4_NC DMIC_CLK_R
C379 *10P/50V_4_NC
AMP_BEEP
PT
C386 2.2U/6.3V_6
EARP_R2 R153 75_4 EARP_R
EARP_L2 R162 75_4 EARP_L
VREFOUT_AL R411 2.2K_4 EXT_MIC_R R404 22K/F_4
C422 0.1U/10V_4
C434 2.2U/6.3V_6
EXT_MIC_R1 C398 4.7U/6.3V_6 EXT_MIC_2 R403 1K/F_4 EXT_MIC_R
EXT_MIC_L1 C401 4.7U/6.3V_6
SUB_OUT
SENSE_A R204 39.2K/F_4 SENSE_COMBO
I2S_EN
R149 *0_4_NC
R150 0_4
C357 10U/6.3V_6
C447 10U/6.3V_6
R202 20K/F_4
C392 2.2U/6.3V_6
Audio Combo Jack
SCHEMATIC
RECOMMENDED PLUG
Ø3.5 4-POLE STANDARD PLUG
Audio Jack type:
Normal Open
Combo Jack(IPHONE)
CN14
2SJ3061-021111F
C376 100P/50V_4
L13 FCM1608KF-301T02 EARP_L1
SENSE_COMBO
C429 100P/50V_4
L15 FCM1608KF-301T02 EARP_R1
L25 FBM-11-160808-601A10T EXT_MIC_1
C621 *100P/50V_4_NC
R383 22K_4
C622 10U/6.3V_6
C449 *Clamp-Diode_NC
C648 *Clamp-Diode_NC
C355 *Clamp-Diode_NC
C647 *Clamp-Diode_NC
R125 10K/F_4
HD_APD#_P4
R371 10K/F_4
HP_VOLMUTE
Q31 2N7002K
R124 *4.7K_4_NC
Q23
2N7002DW
VOLMUTE#
ACZ_RST#_AUDIO
AMP_BEEP C420 1U/10V_4 HDA_BEEP2 R208 47K/F_4 C461 1U/6.3V_4 SPKR
C424 100P/50V_4
R206 4.7K_4
EMI
R441 *0_4/S
QT
R439 *0_8/S
C626 1000P/50V_4
C610 0.1U/10V_4
C452 0.1U/10V_4
C448 0.1U/10V_4
Quanta Computer Inc.
PROJECT : JW8
Size
Document Number
Audio Codec ALC290Q-GR
Rev
3A
Date: Friday, November 02, 2012
Sheet 26 of 46

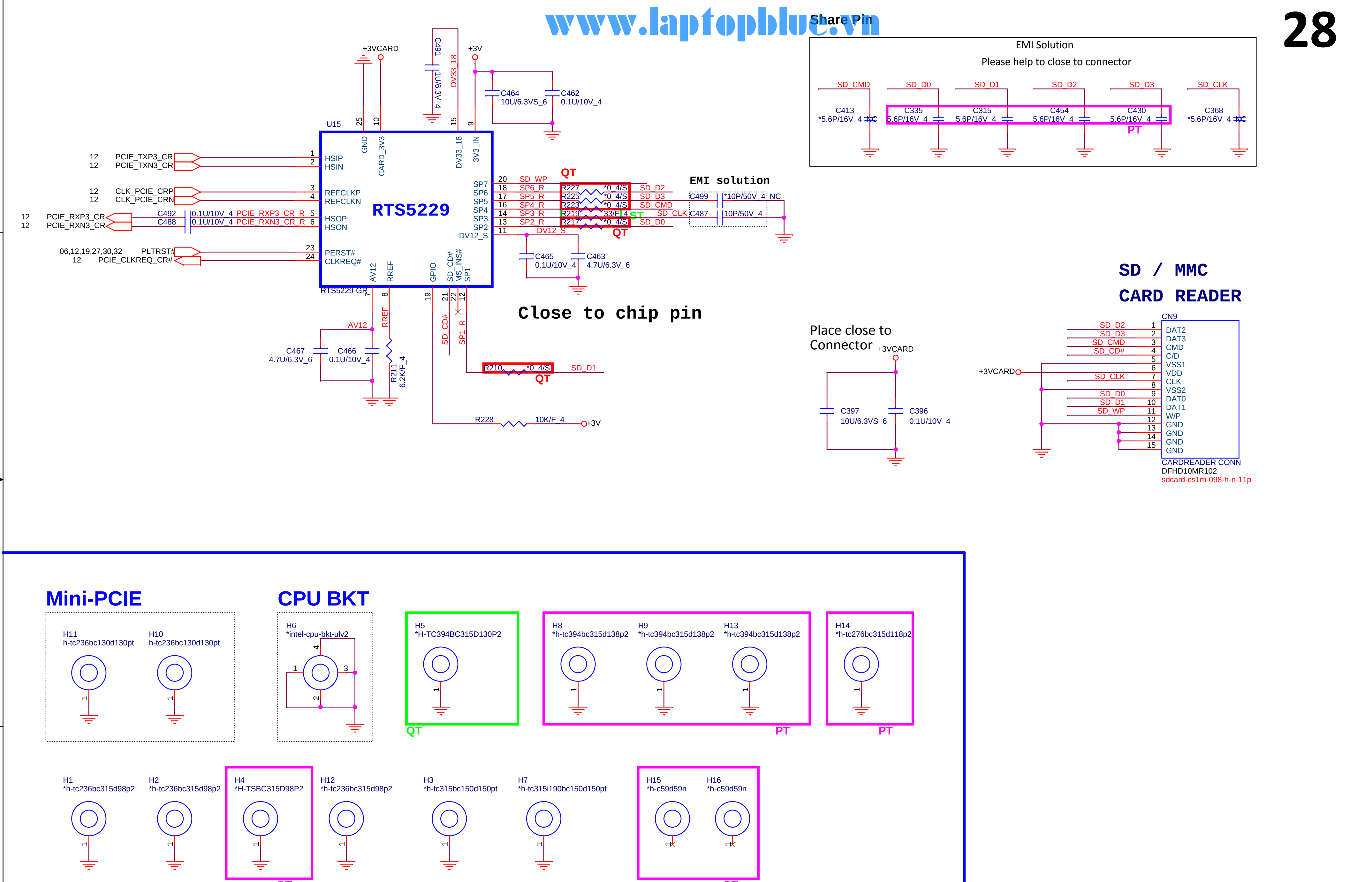


Quanta Computer Inc.

PROJECT : JW8

Size	Document Number	Rev
	LAN Controller (Atheros_AR8161)	3A

Date: Friday, November 02, 2012 Sheet 27 of 46



Quanta Computer Inc.

PROJECT : JW8

Size	Document Number	Rev
	CR RTS5229-GR/Holes	3A

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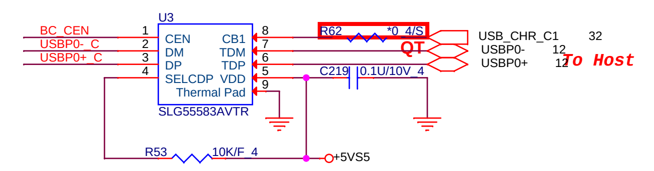
Charger USB



CB	SELCDP	Funcion
0	X	DCP autodetect with mouse/keyboard wakeup
1	0	S0 charging with SDP only
1	1	S0 charging with CDP or SDP only (depending on external device)

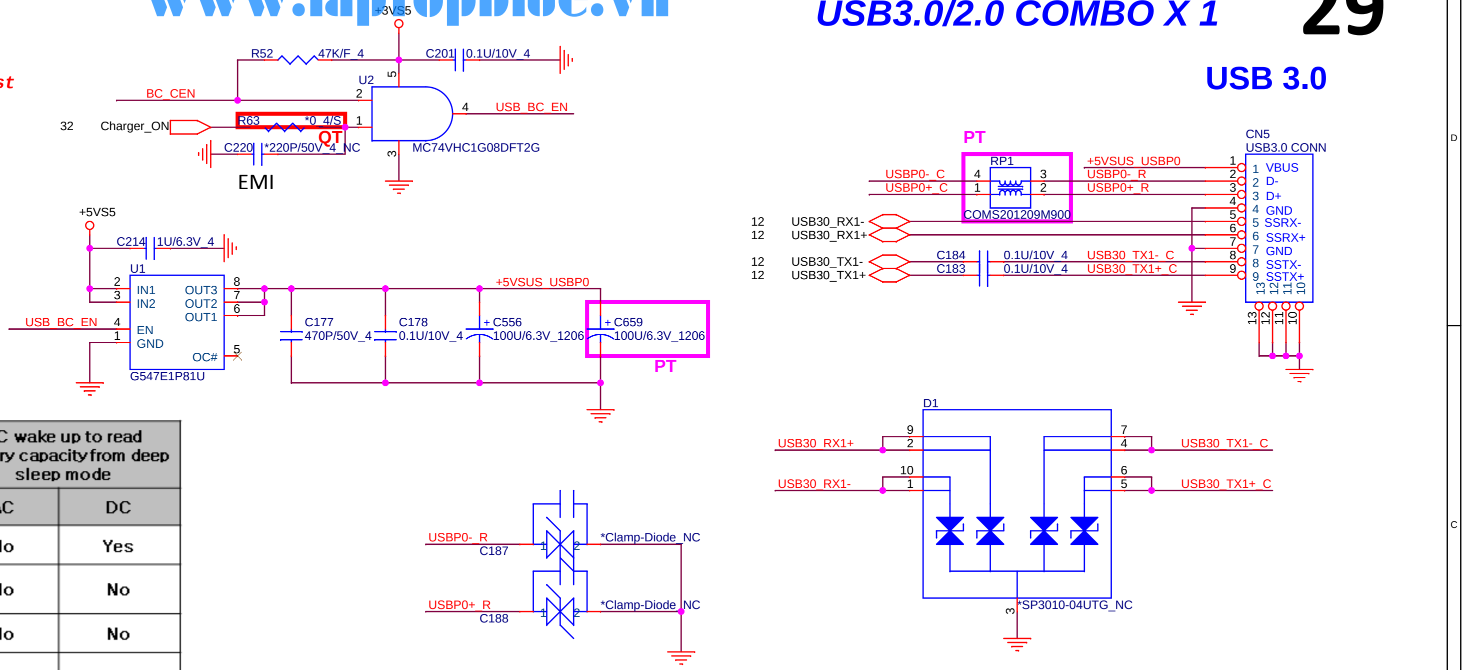
• USB Charge at S0 / S3 / S4 / S5 (Set by BIOS)

Current Battery Capacity	USB Charge (Set by BIOS)	S0		S3		S4/S5		EC wake up to read battery capacity from deep sleep mode	
		AC	DC	AC	DC	AC	DC	AC	DC
> battery level (20%)	Enable	CDP	CDP	DCP	DCP	DCP	DCP	No	Yes
	Disable (Default)	CDP	CDP	Off	Off	Off	Off	No	No
<= battery level (20%)	Enable	CDP	CDP	DCP	Off	DCP	Off	No	No
	Disable (Default)	CDP	CDP	Off	Off	Off	Off	No	No

USB3.0/2.0 COMBO X 1

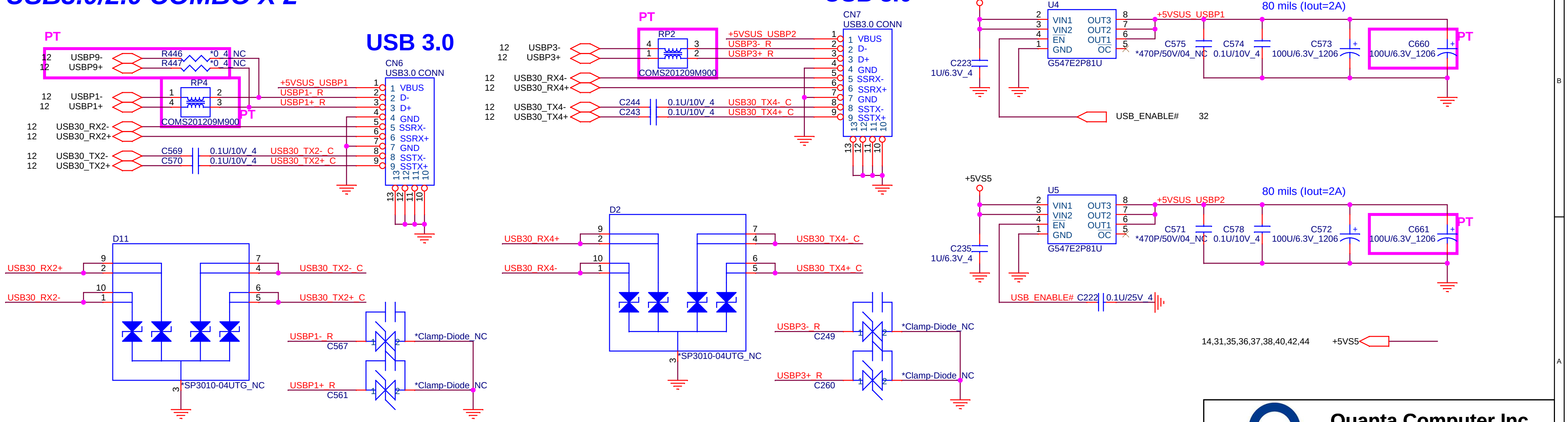
29

USB 3.0



USB3.0/2.0 COMBO X 2

USB 3.0

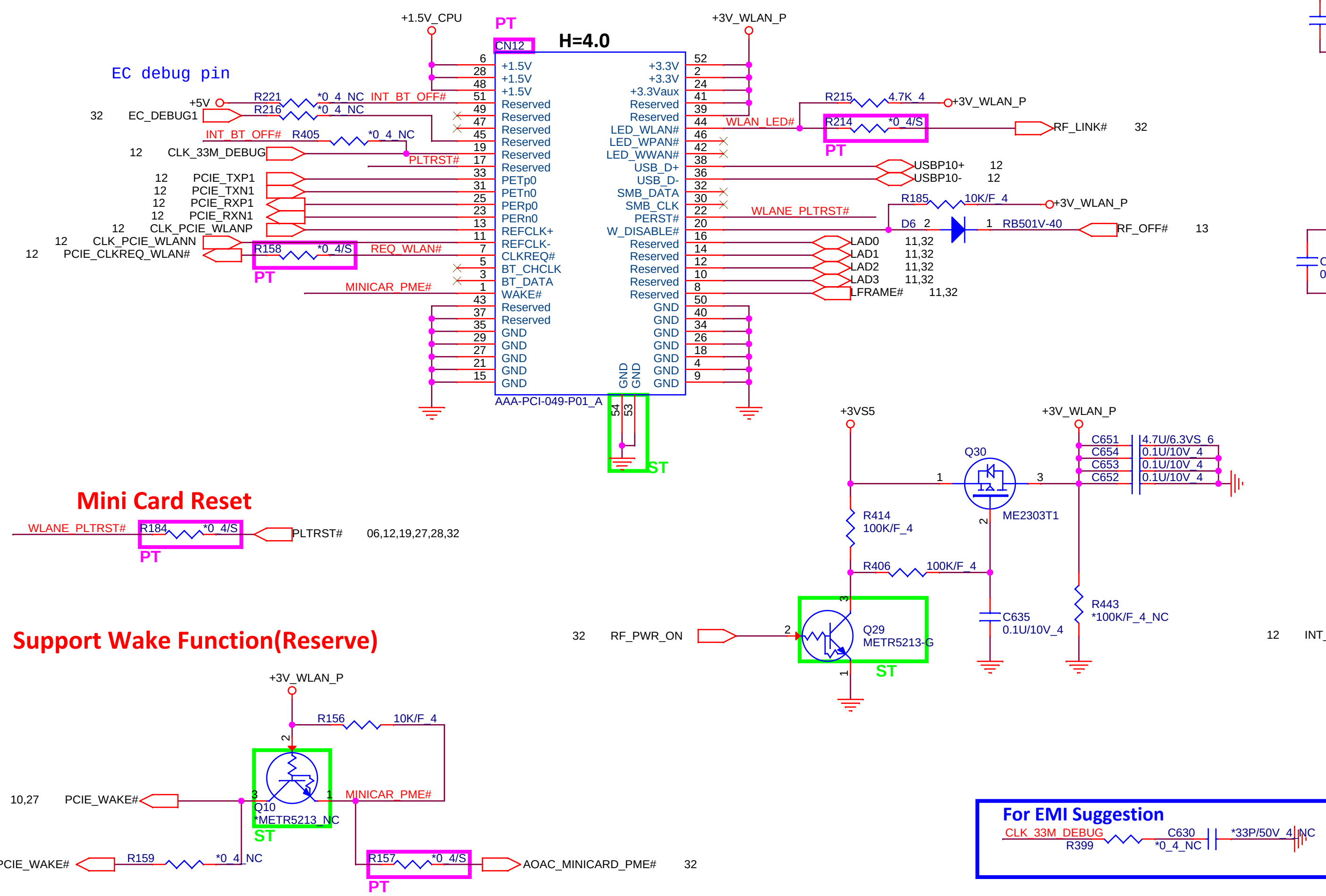


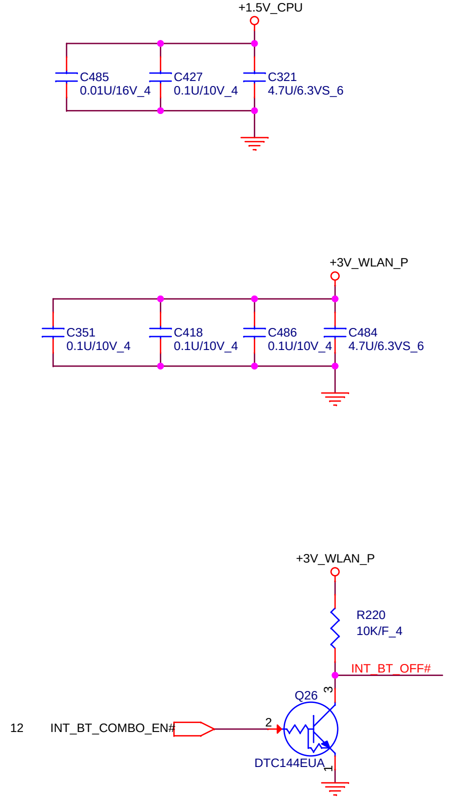
Quanta Computer Inc.

PROJECT : JW8

Size	Document Number	Rev
	USB3/USB Charger	3A
Date: Friday, November 02, 2012	Sheet 29 of 46	

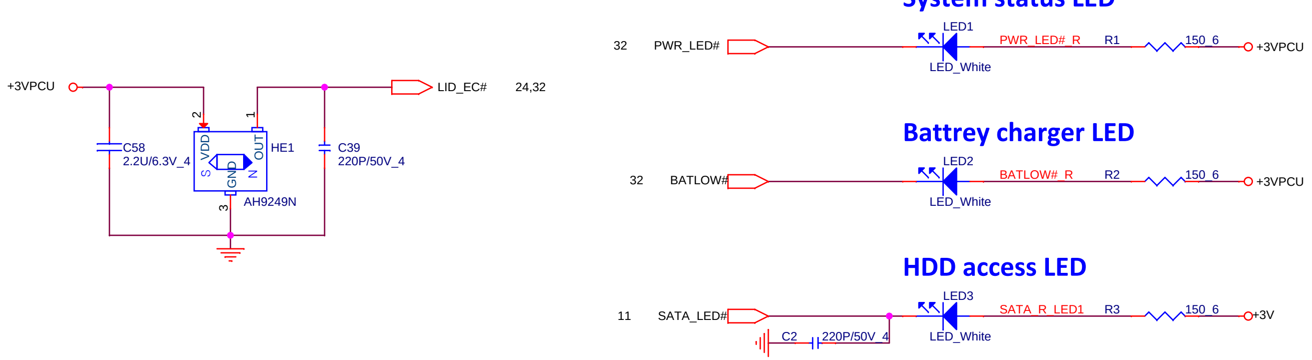
Mini Card
WLAN/BT(Option)





LGE mini-pcie power status		
WLAN	Bluetooth	+3V_WLAN_P
Radio-ON	Radio-ON	Power-ON
Radio-ON	Radio-OFF	Power-ON
Radio-OFF	Radio-ON	Power-ON
Radio-OFF	Radio-OFF	Power-OFF

LED Status



Quanta Computer Inc.

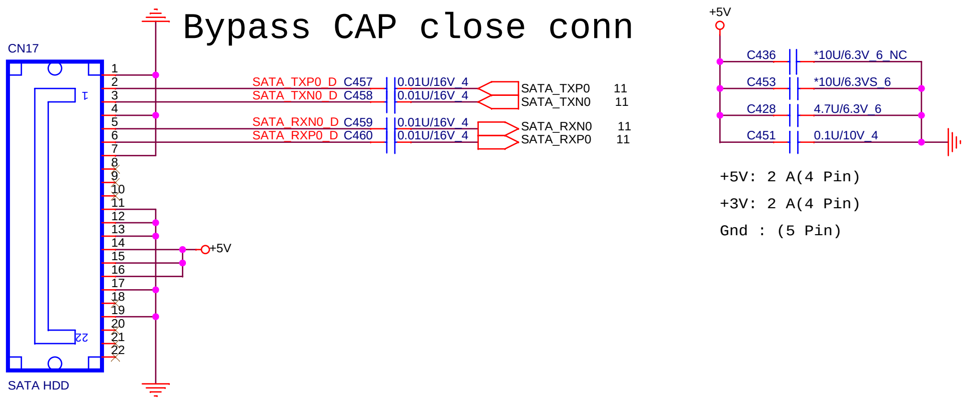
PROJECT : JW8

Size	Document Number	Rev
	WLAN/BT/LED	3A

Date: Friday, November 02, 2012 Sheet 30 of 46

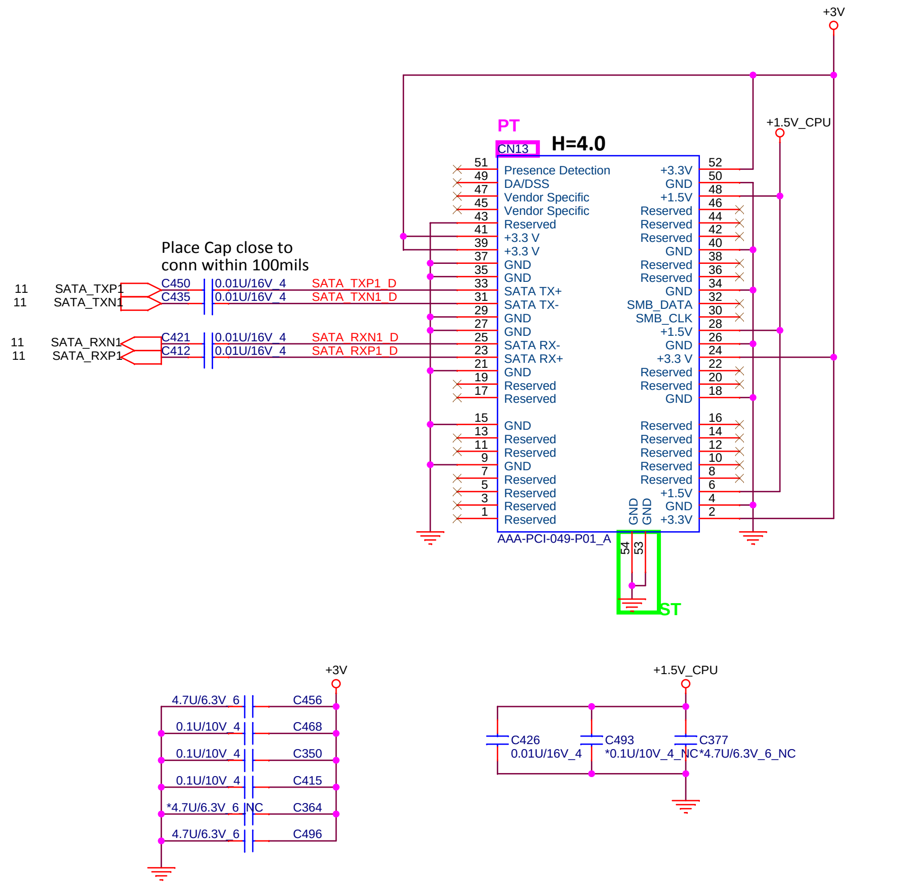
SATA HDD Connector

Bypass CAP close conn

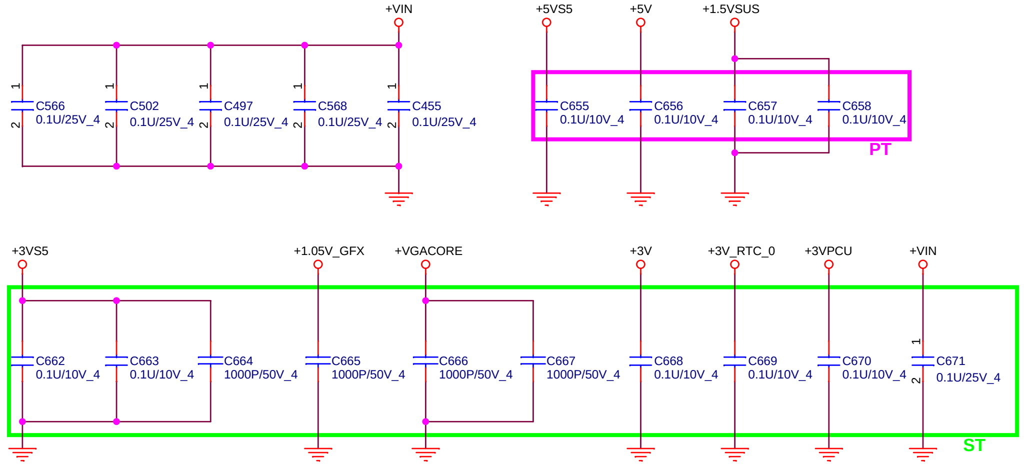


+5V: 2 A(4 Pin)
+3V: 2 A(4 Pin)
Gnd : (5 Pin)

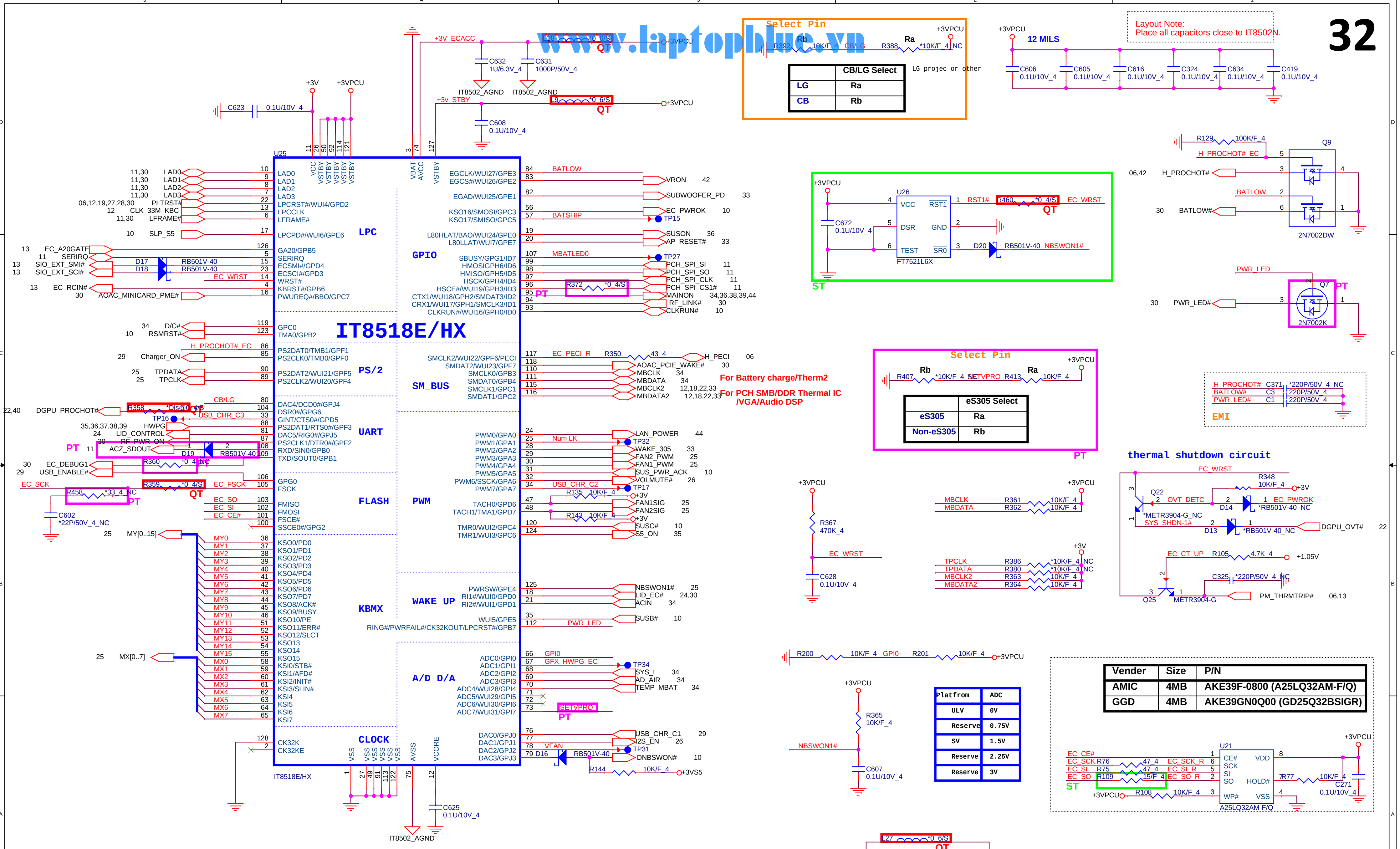
mSATA



EMI



Quanta Computer Inc.		
PROJECT : JW8		
Size	Document Number: SATA HDD/mSATA/EMI	Rev 3A
Date: Friday, November 02, 2012	Sheet 31 of 46	



	CB/LG Select
LG	Ra
CB	Rb

	eS305 Select
eS305	Ra
Non-eS305	Rb

Platfrom	ADC
ULV	0V
Reserve	0.75V
SV	1.5V
Reserve	2.25V
Reserve	3V

Vender	Size	P/N
AMIC	4MB	AKE39F-0800 (A25LQ32AM-F/Q)
GGD	4MB	AKE39GN0Q00 (GD25Q32BSIGR)

Quanta Computer Inc.

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	Embedded Controller (ITE_IT8518)	3A

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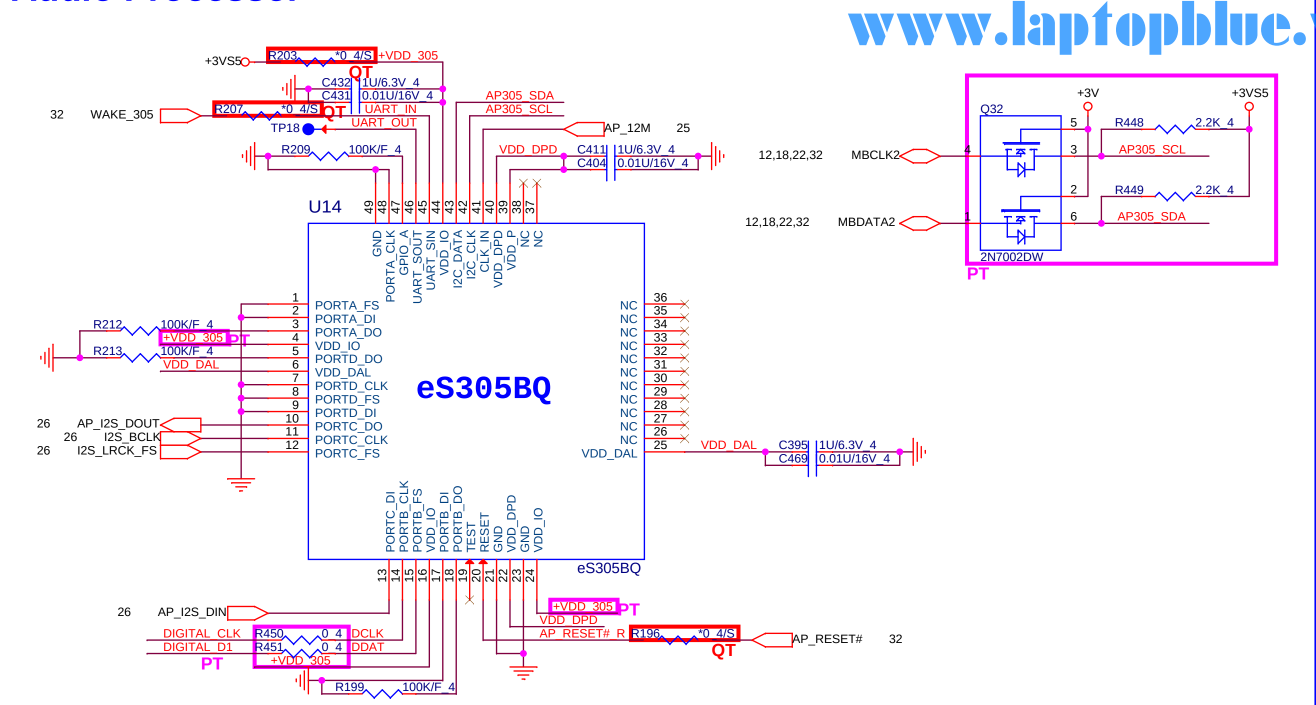
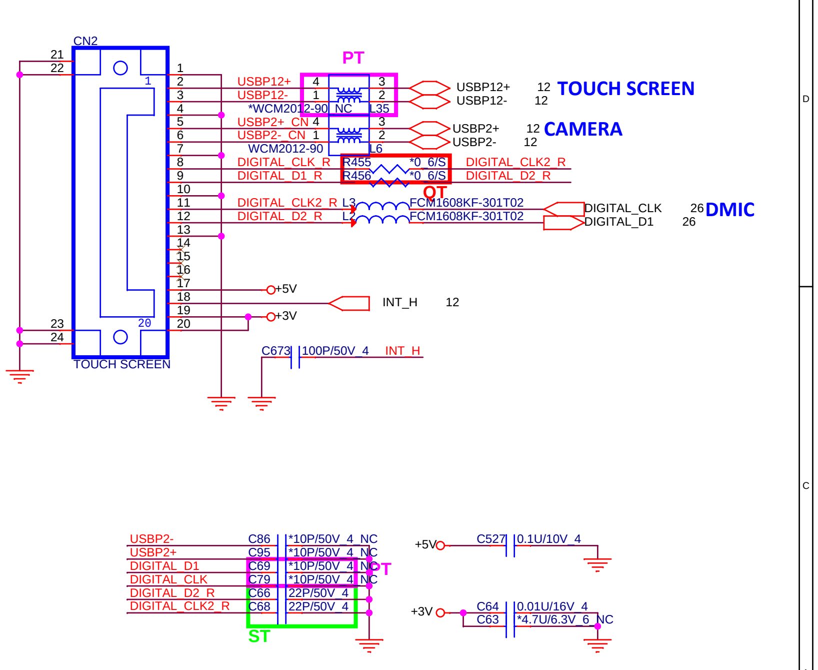
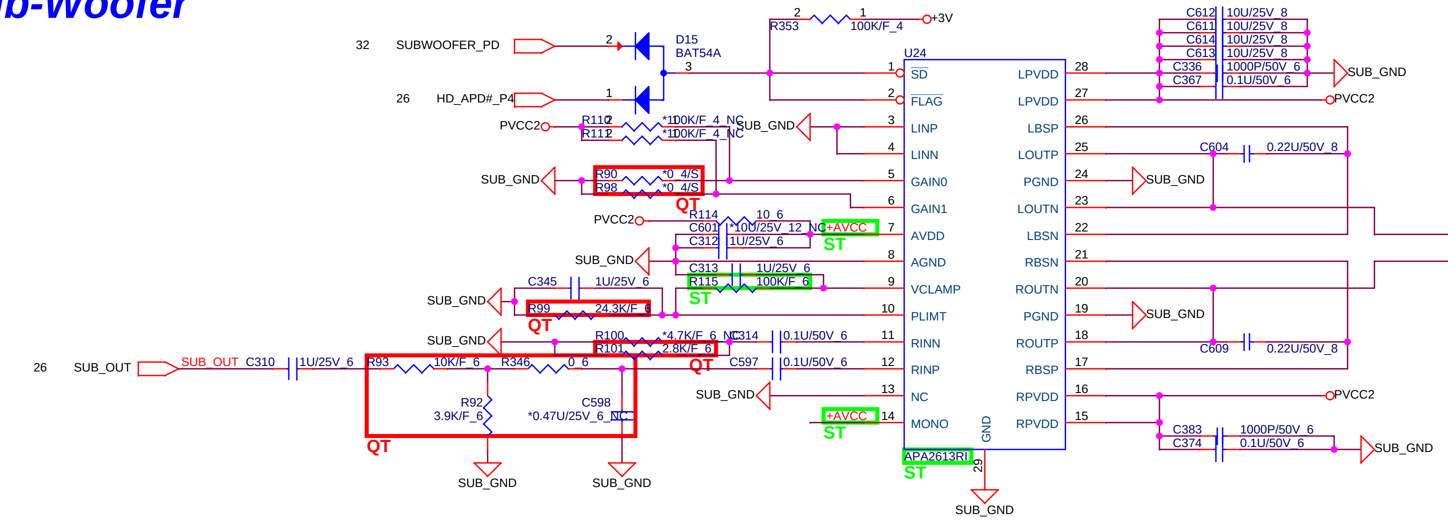
Audio Processor

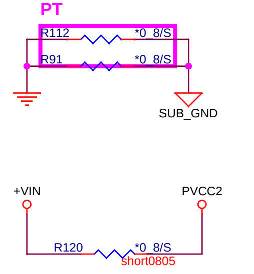


Touch Screen



Sub-Woofer





GAIN1	GAIN0	dB
0	0	20
0	1	26
1	0	32
1	1	36

ANC: APA2613RI-TRG, AL002613K00
TIC: TPA3111D1PWPR, AL003111K00

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	AudioDSP/TouchScreen/Subwoofer	3A

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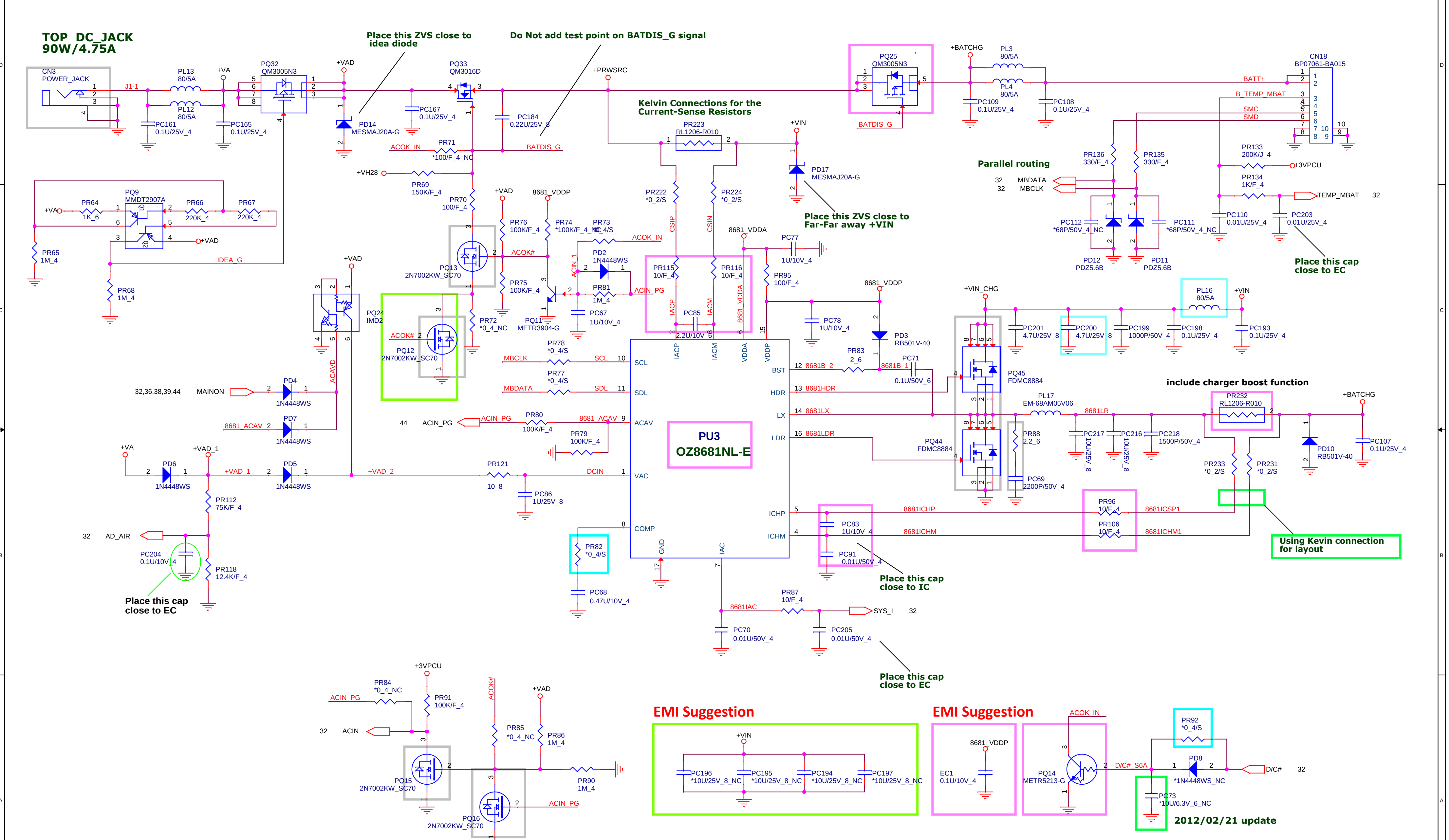

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Size	Document Number	Rev
	Charger (OZ8681)	3A

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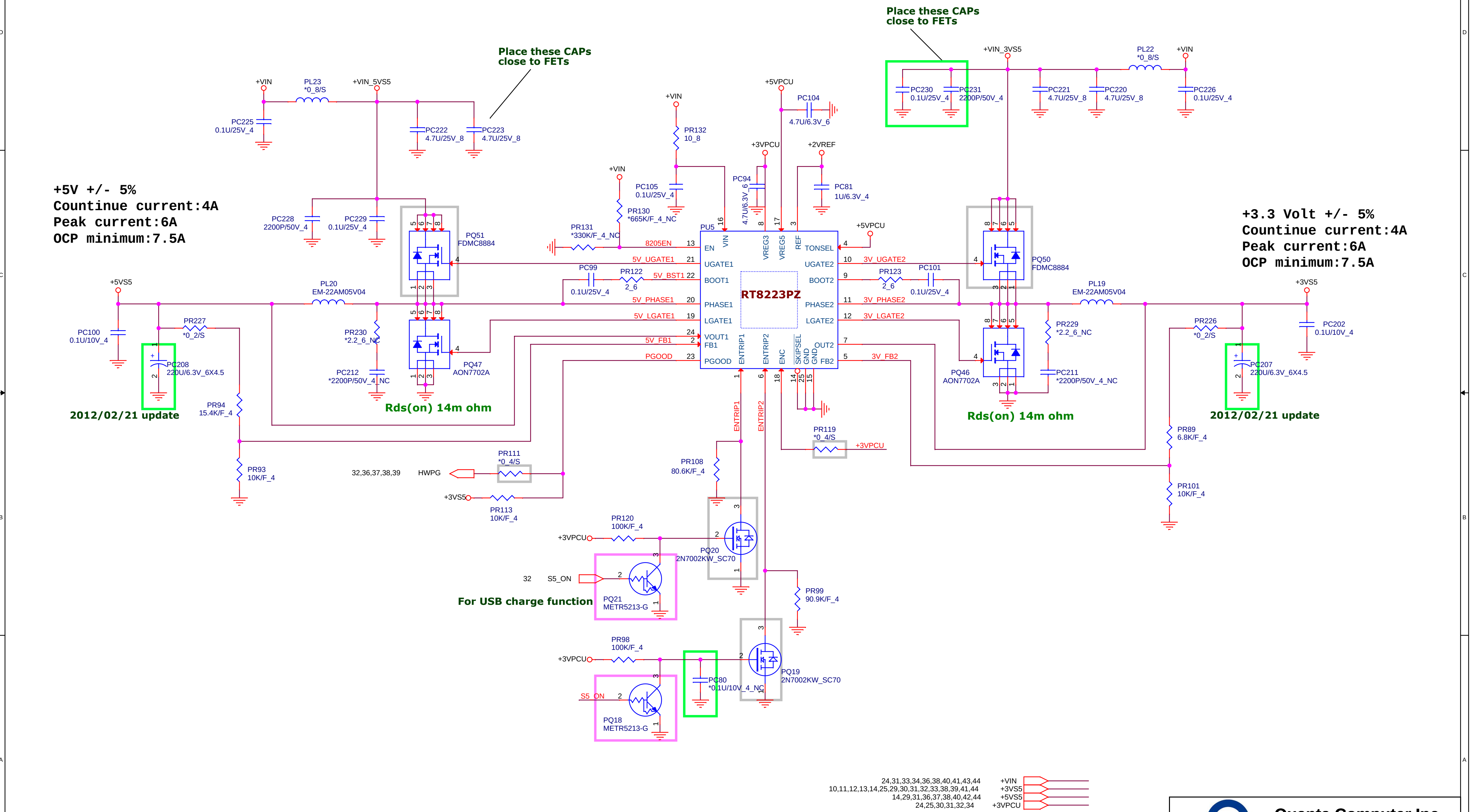
DC/DC +3V_ALW/+5V_ALW/+5V_ALW2 /+15V_ALW



Quanta Computer Inc.			
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Size	Document Number 3/5VS5 (RT8223P)		Rev 3A
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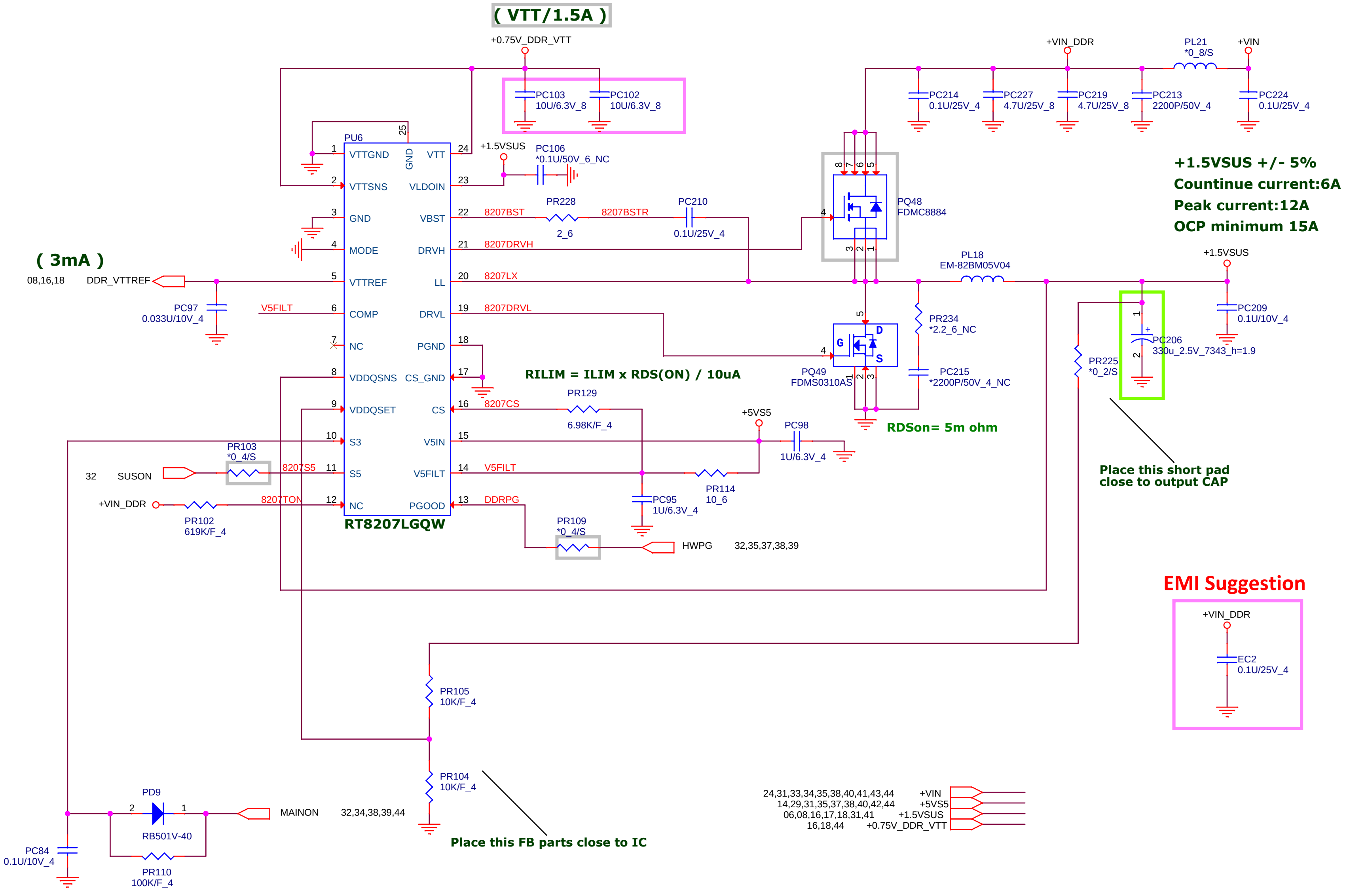

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Size	Document Number	Rev
	DDR3 (RT8207)	3A

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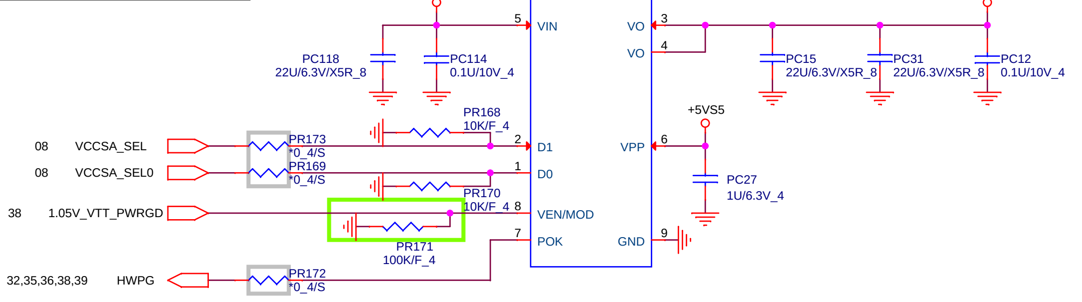
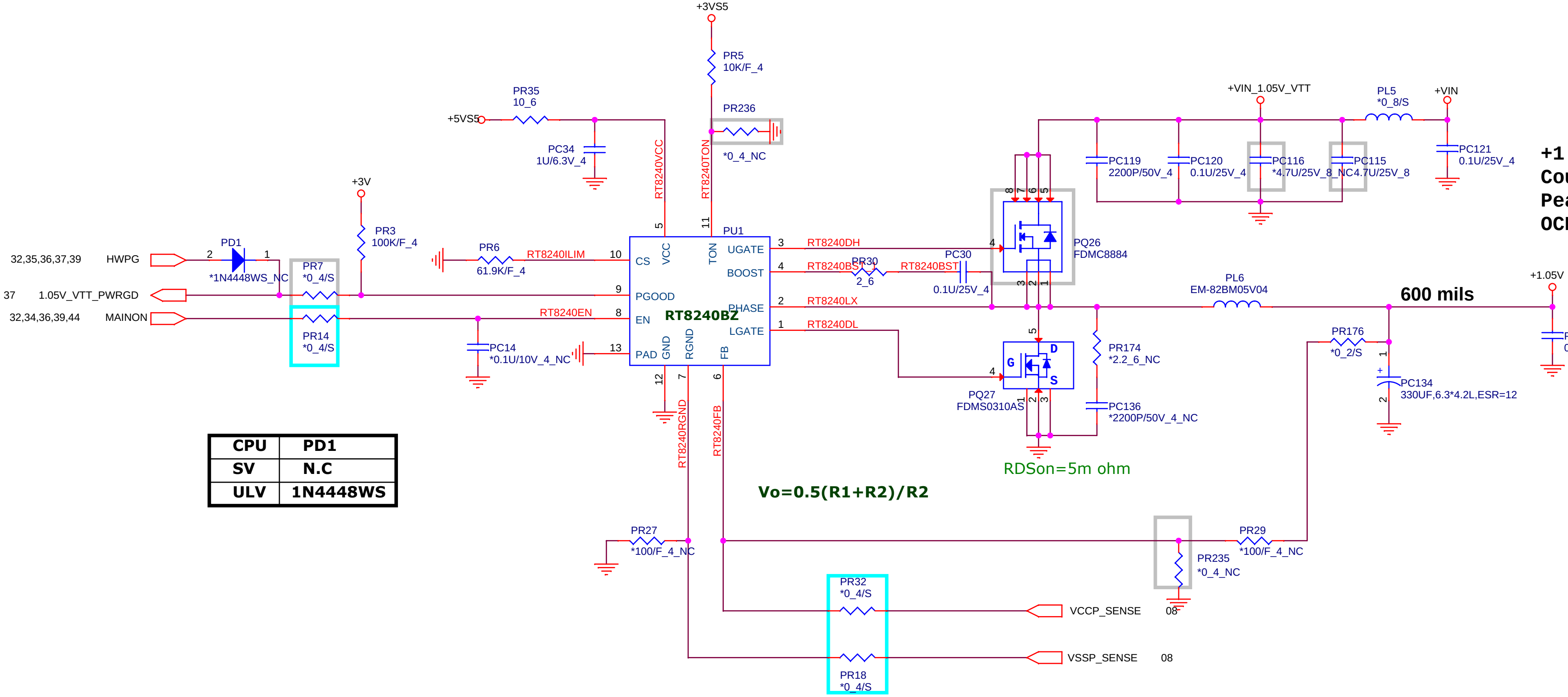
D0	D1	SV +VCCSA	ULV +VCCSA
0	0	0.9V	0.9V
0	1	0.8V	0.85V
1	0	0.725V	0.775V
1	1	0.675V	0.75V

+VCCSA Volt +/- 5%
Countinue current:4A
Peak current:6A
OCP minimum:7A

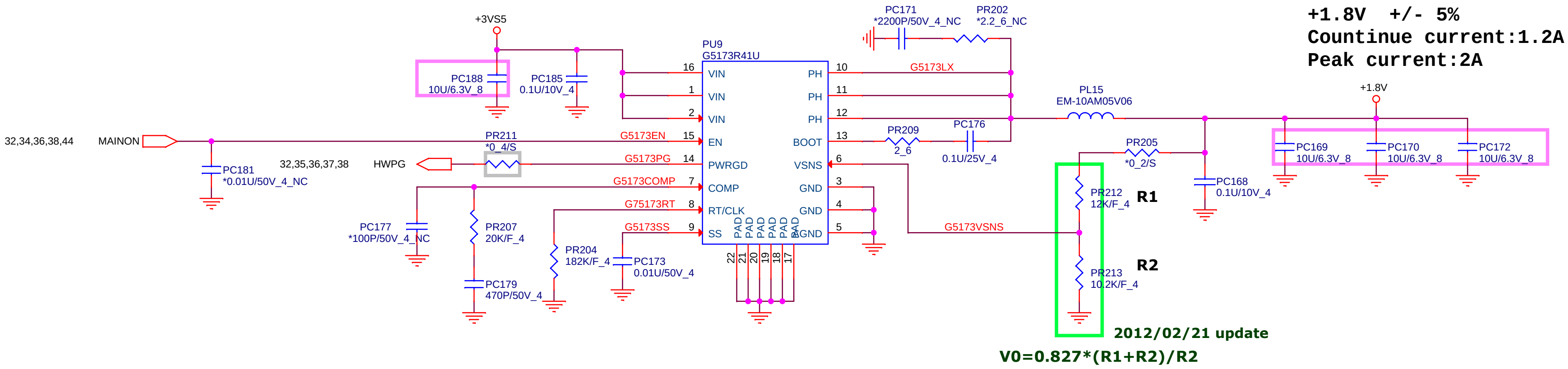


CPU	PR171
SV	100K/F_4
ULV	N.C



+1.05V_VTT +/- 5%
Countinue current:10A
Peak current: 12A
OCP minimum: 14.5A

CPU	PD1
SV	N.C
ULV	1N4448WS



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Size	Document Number	Rev
	+1.8V (G9661)	3A

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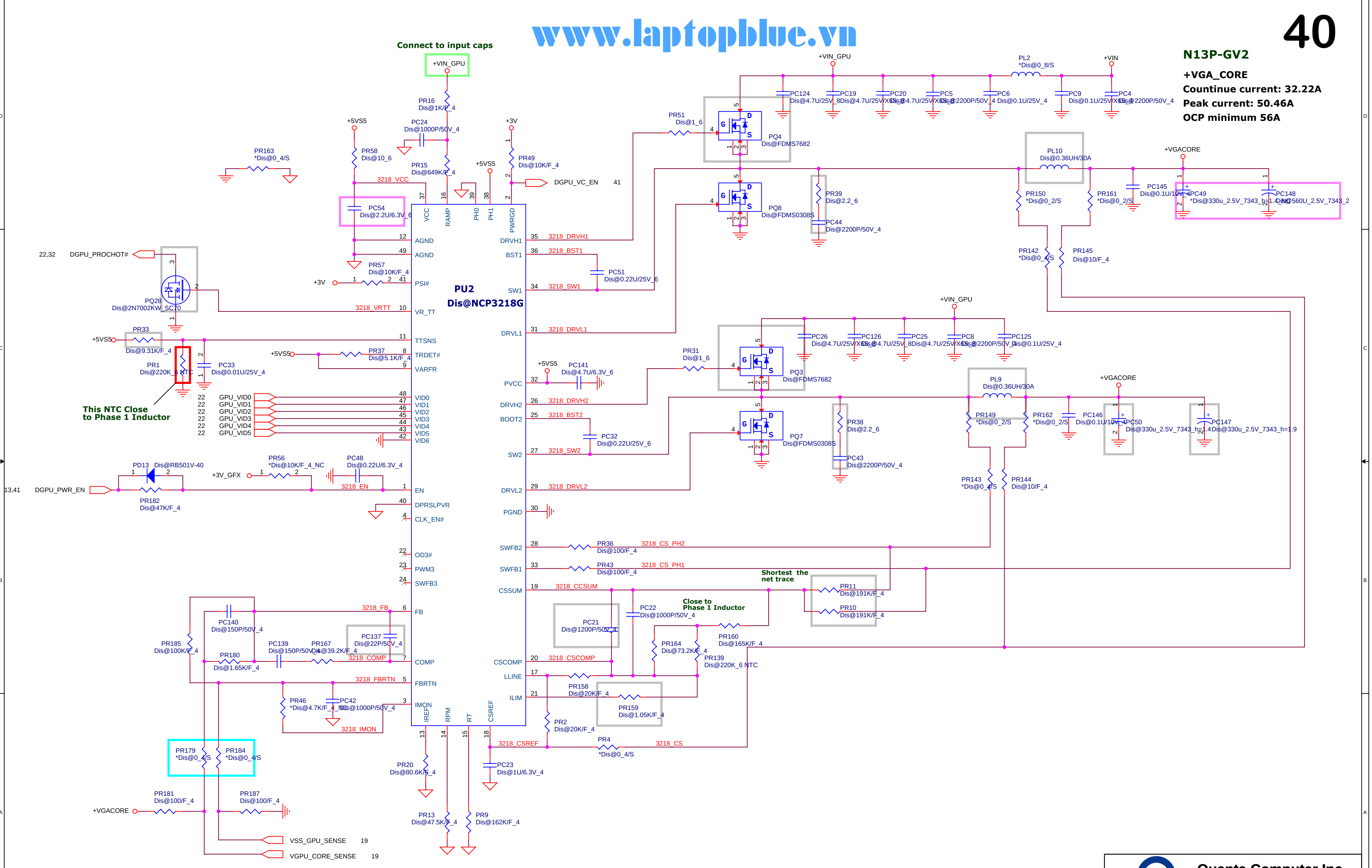
N13P-GV2

+VGA_CORE
Countinue current: 32.22A
Peak current: 50.46A
OCP minimum 56A



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Size	Document Number: +VGA CORE (NCP3218G)	Rev 3A
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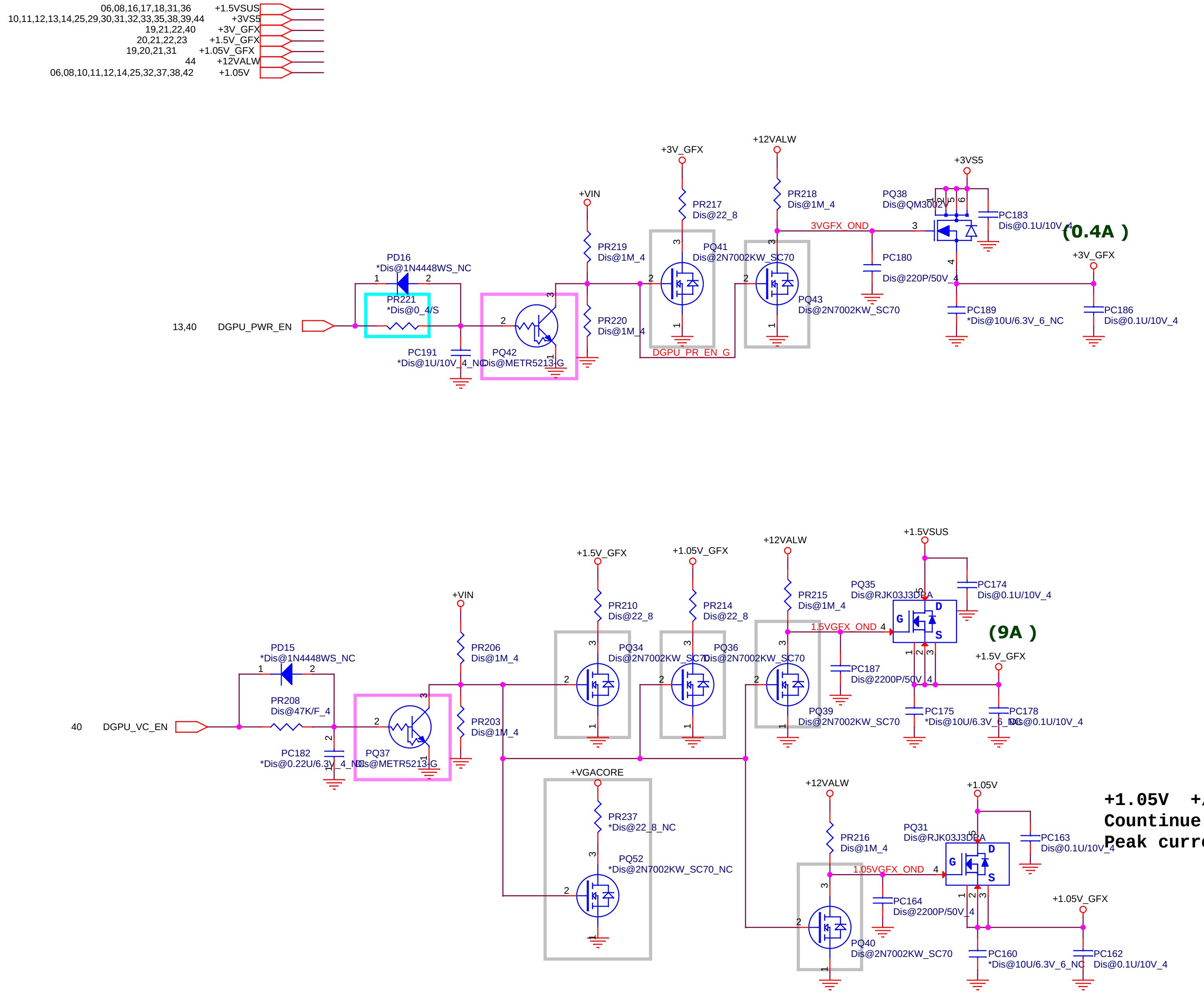
VGA



+1.05V +/- 3%
Countinue current:2.1A
Peak current:3A

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Size	Document Number: +VGA POWER	Rev 3A
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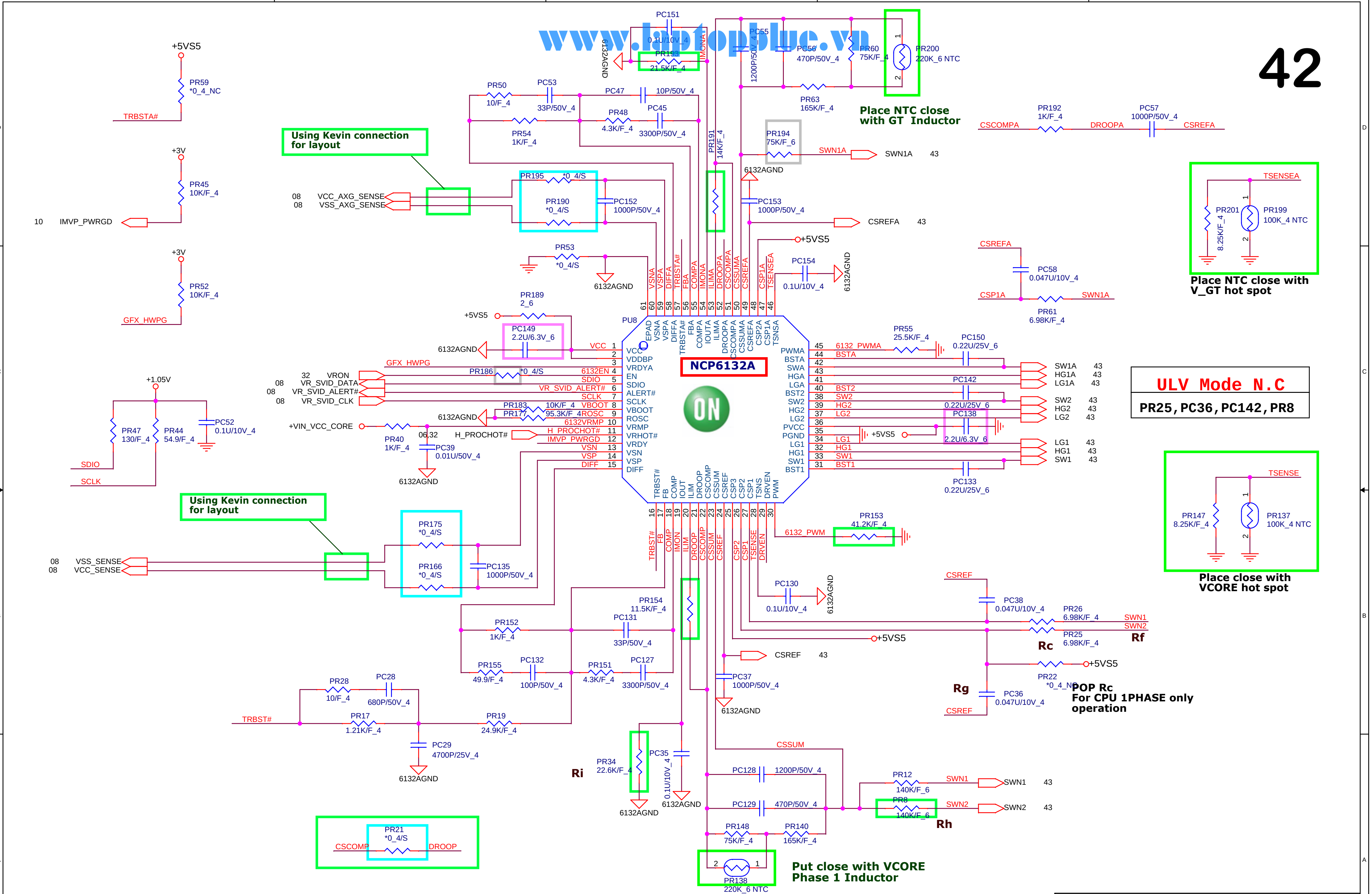

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Size	Document Number	Rev
	CPU Core1 (NCP6132B)DC	3A

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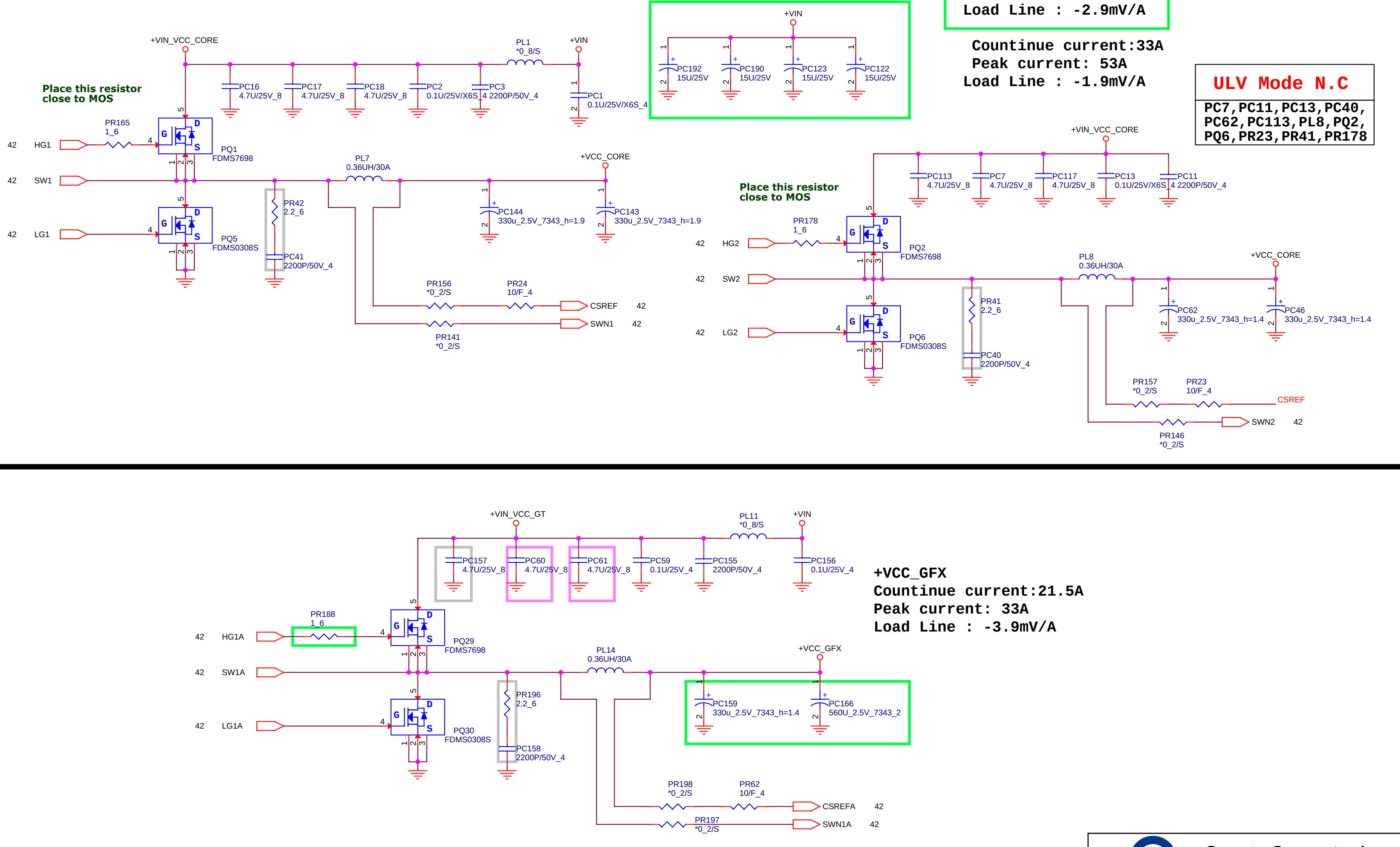

+VCC_CORE (ULV 17W)
TDC : 25A
Peak current: 33A
Load Line : -2.9mV/A

Countinue current:33A
Peak current: 53A
Load Line : -1.9mV/A

ULV Mode N.C

PC7,PC11,PC13,PC40,
PC62,PC113,PL8,PQ2,
PQ6,PR23,PR41,PR178

+VCC_GFX
Countinue current:21.5A
Peak current: 33A
Load Line : -3.9mV/A

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Size	Document Number	Rev
	CPU Core2 (NCP5911)DC	3A

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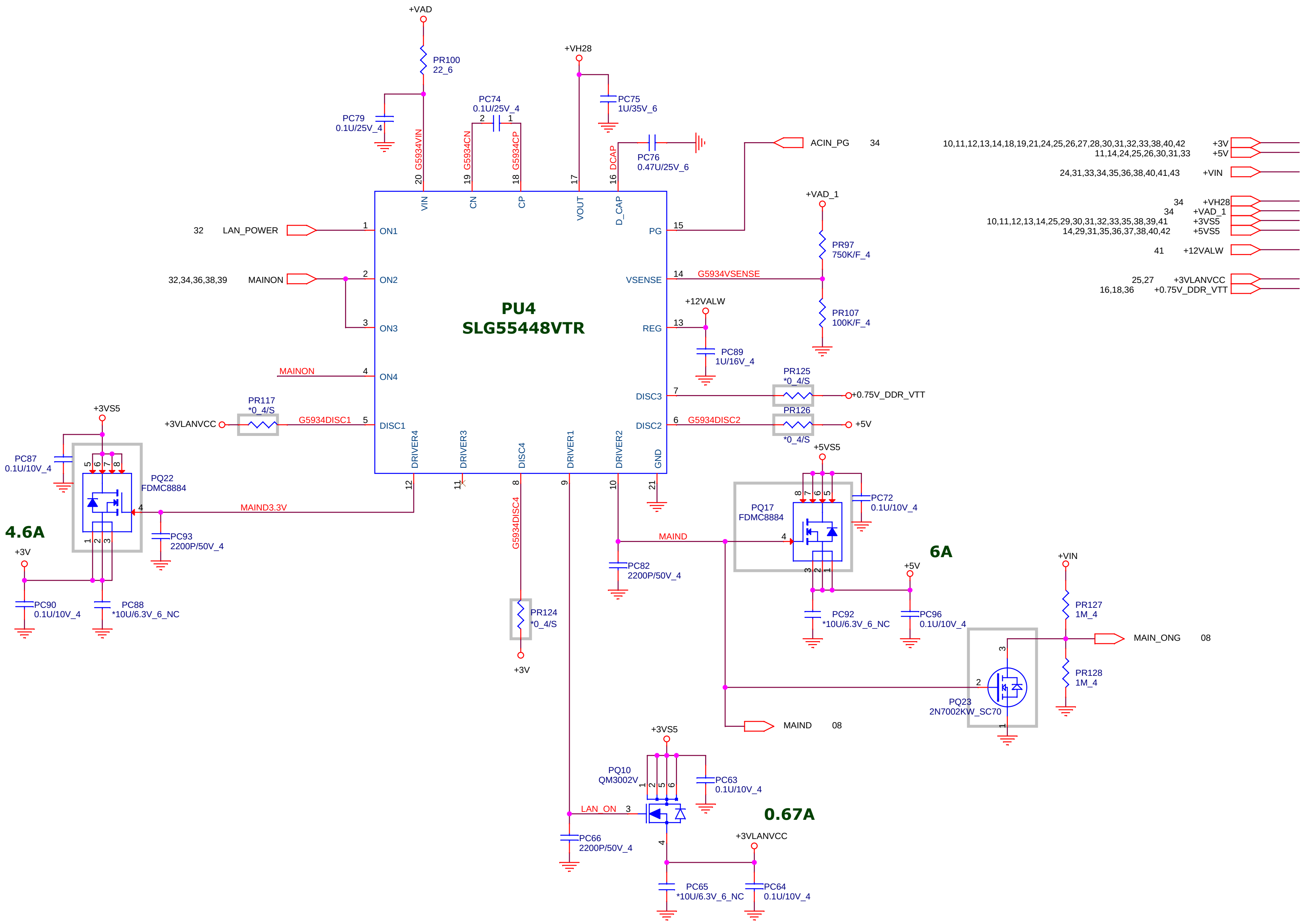

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Size	Document Number	Rev
	Dis-charge IC (SLG55448V)	3A
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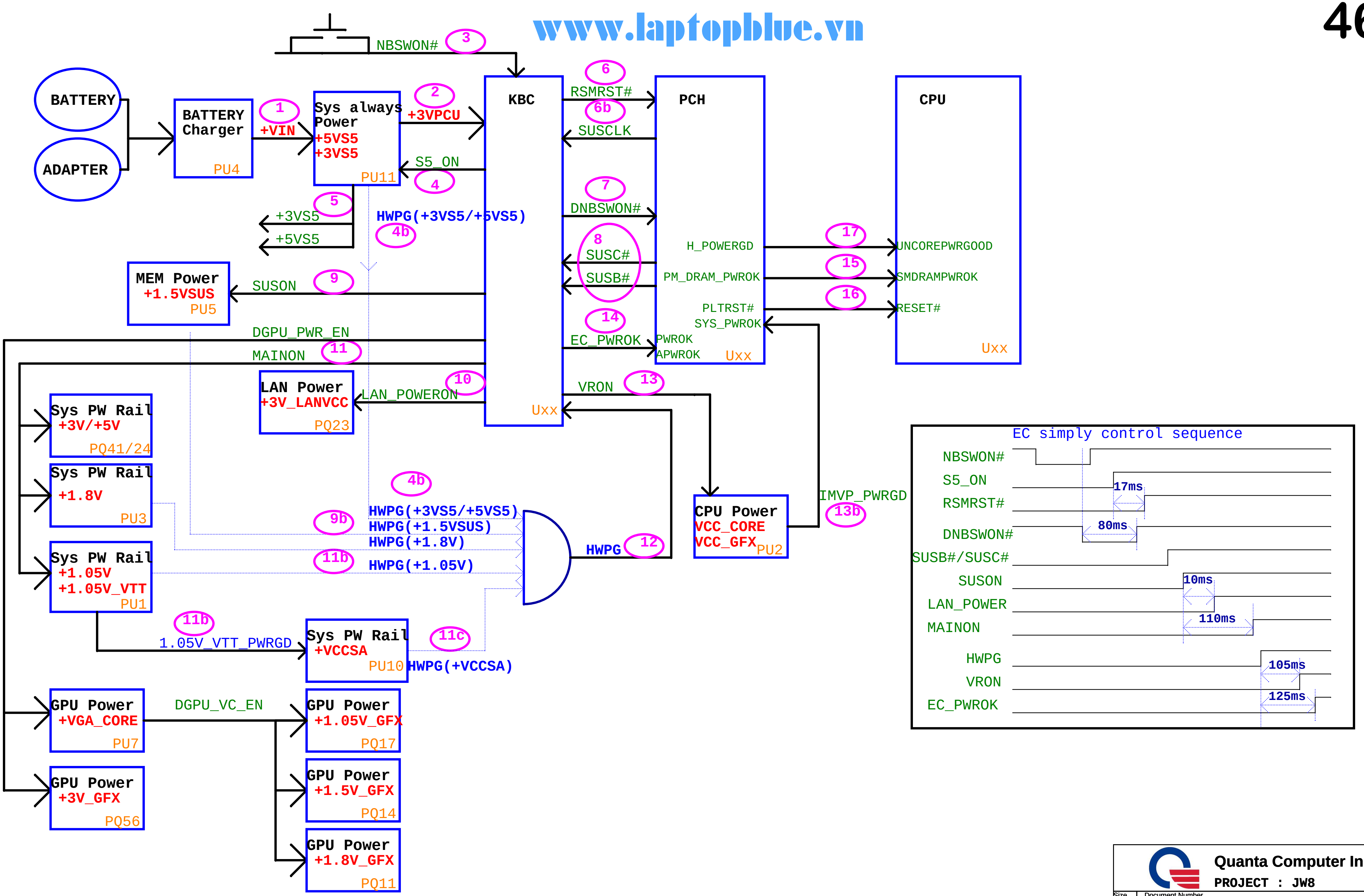

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Size	Document Number	Rev
	Control Procedure	3A

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