

Model Name: GA-P61-S3-B3

1.0

SHEET

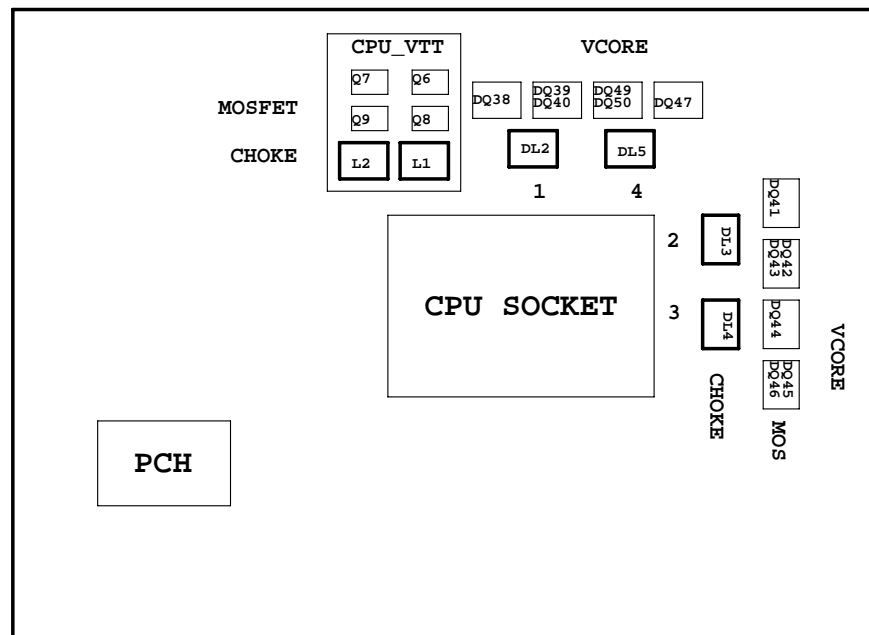
TITLE

01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	CPU_LGA1155-A
05	CPU_LGA1155-B
06	CPU_LGA1155-C
07	DDR III CHANNEL A
08	DDR III CHANNEL B
09	PCH_FDI,DMI,USB,PCIE,NVRAM
10	PCH_DP,CLK BUFFER
11	PCH_HOST,SATA,PCI
12	PCH_GPIO,CTRL,AUDIO
13	PCH_PWR,GND
14	PCI EXPRESS*16 SLOT
15	PCI EXPRESS*4 SLOT
16	PCI EXPRESS*1 SLOTS X2
17	PCI SLOT 1&2&3
18	I/O ITE8728
19	COM, -PROHOT, ESATA CONNECT
20	Dual BIOS
21	ALC892
22	REAR AUDIO JACK
23	VCORE PWM_ISL6364CRZ-1
24	VCORE PWM_ISL6364CRZ-2
25	DISCRETE POWER
26	DDR_15V & VCC1_05_PCH PWM_ISL6545CBZ
27	CPU_VTT PWM_ISL6322G

SHEET

TITLE

28	VCCSA POWER
29	F_PANEL , F_USB
30	ATX POWER, CLOCK GEN
31	HWM,KB/MS , FAN CTRL
32	REALTEK RTL8111E
33	NEC USB3.0
34	TABLE LIST
35	
36	
37	
38	
39	
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Title		
Cover Sheet		
Size	Document Number	Rev
Custom	GA-P61-S3-B3	1.0
Date:	Friday, May 20, 2011	Sheet 1 of 34

Component value change history

Circuit or PCB layout change

Gigabyte Technology

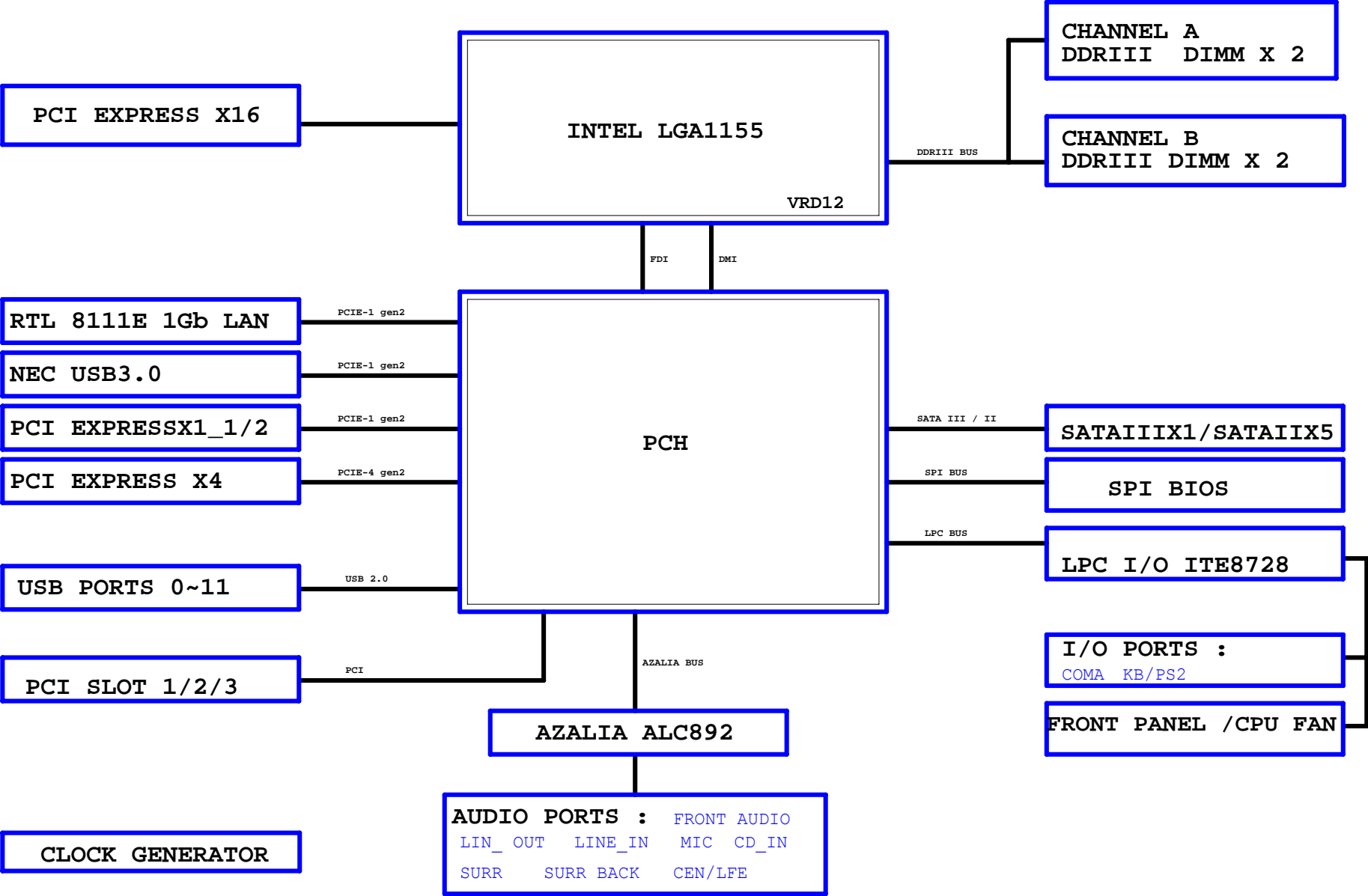
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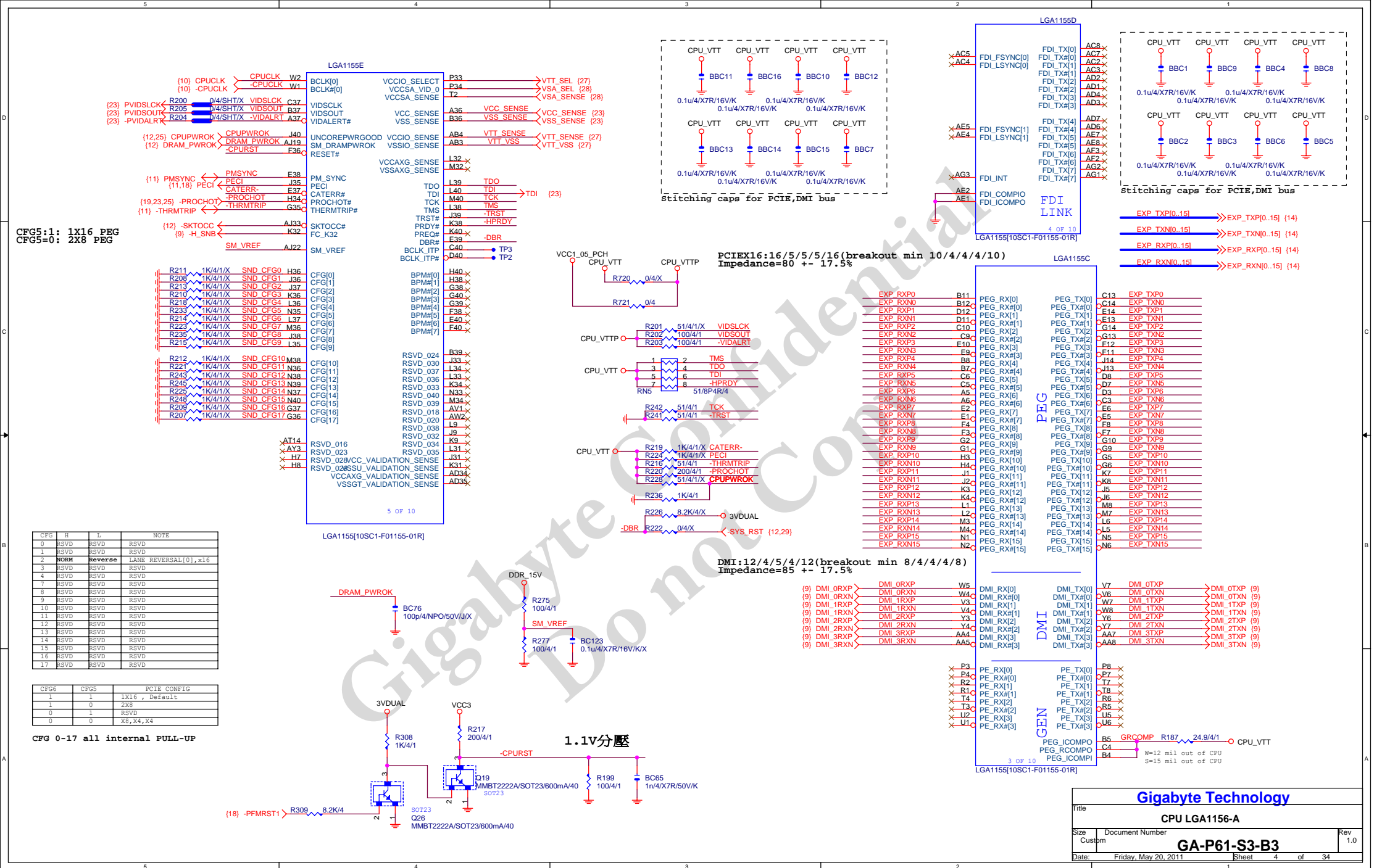
Size Custom	Document Number GA-P61-S3-B3
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Date: Friday, May 20, 2011 Sheet 2 of 34

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BLOCK DIAGRAM





LGA1155A

MAAA0	AV27	SA_MA[0]	SA_DS[0]	AK3	DQSA0
MAAA1	AY24	SA_MA[1]	SA_DS[0]	AK2	-DQSA0
MAAA2	AW24	SA_MA[2]			
MAAA3	AW23	SA_MA[3]			
MAAA4	AV23	SA_MA[4]	SA_DS[0]	AJ3	MDA0
MAAA5	AT24	SA_MA[5]	SA_DS[1]	AJ4	MDA1
MAAA6	AT23	SA_MA[6]	SA_DS[2]	AL3	MDA2
MAAA7	AU22	SA_MA[7]	SA_DS[3]	AL4	MDA3
MAAA8	AV22	SA_MA[8]	AJ2	MDA4	
MAAA9	AT22	SA_MA[9]	AJ1	MDA5	
MAAA10	AV28	SA_MA[10]	SA_DS[6]	AL2	MDA6
MAAA11	AU21	SA_MA[11]	SA_DS[7]	AL1	MDA7
MAAA12	AT21	SA_MA[12]			
MAAA13	AW32	SA_MA[13]	SA_DS[11]	AP3	DQSA1
MAAA14	AU20	SA_MA[14]	SA_DS[11]	AP2	-DQSA1
MAAA15	AT20	SA_MA[15]			
(7) -SWEA	AW29	SA_WE#	SA_DS[8]	AN1	MDA8
(7) -SCASA	AV30	SA_CAS#	SA_DS[9]	AN4	MDA9
(7) -SRASA	AU28	SA_RAS#	SA_DS[10]	AR3	MDA10
			SA_DS[11]	AR4	MDA12
(7) SBAA0	SBAA0	SA_BS[0]	AN2	MDA11	
(7) SBAA1	SBAA1	SA_BS[1]	AN3	MDA13	
(7) SBAA2	SBAA2	SA_BS[2]	AR2	MDA14	
			AR1	MDA15	
(7) -CSA0	CSA0	SA_CS#	SA_DS[2]	AW4	DQSA2
(7) -CSA1	CSA1	SA_CS#	SA_DS[2]	AW4	-DQSA2
			SA_DS[3]	AW4	-DQSA2
(7) CKEA0	CKEA0	SA_CKE[0]	SA_DS[3]	AW2	MDA16
(7) CKEA1	CKEA1	SA_CKE[1]	SA_DS[16]	AW3	MDA17
			SA_DS[17]	AW5	MDA18
			SA_DS[18]	AW5	MDA19
			SA_DS[19]	AU2	MDA20
			SA_DS[20]	AU3	MDA21
			SA_DS[21]	AU5	MDA22
			SA_DS[22]	AY5	MDA23
			SA_DS[23]		
			SA_DS[3]	AW8	DQSA3
			SA_DS[3]	AW8	-DQSA3
(7) DCLKA0	DCLKA0	SA_CK[0]	SA_DS[24]	AY7	MDA24
(7) -DCLKA0	-DCLKA0	SA_CK#	SA_DS[25]	AU7	MDA25
(7) DCLKA1	DCLKA1	SA_CK[1]	SA_DS[26]	AY9	MDA26
			SA_DS[27]	AU9	MDA27
			SA_DS[28]	AY7	MDA28
			SA_DS[29]	AW7	MDA29
			SA_DS[30]	AW9	MDA30
			SA_DS[31]	AY9	MDA31
			SA_DS[4]	AV37	DQSA4
			SA_DS[4]	AV36	-DQSA4
			SA_DS[32]	AU35	MDA32
			SA_DS[33]	AW37	MDA33
			SA_DS[34]	AU39	MDA34
			SA_DS[35]	AU36	MDA35
			SA_DS[36]	AY36	MDA37
			SA_DS[37]	AU38	MDA38
			SA_DS[38]	AU37	MDA39
			SA_DS[39]		
			SA_DS[5]	AP38	DQSA5
			SA_DS[5]	AP39	-DQSA5
			SA_DS[40]	AR40	MDA40
			SA_DS[41]	AR37	MDA41
			SA_DS[42]	AN38	MDA42
			SA_DS[43]	AN37	MDA43
			SA_DS[44]	AR39	MDA44
			SA_DS[45]	AR38	MDA45
			SA_DS[46]	AN39	MDA46
			SA_DS[47]	AN40	MDA47
			SA_DS[6]	AK38	DQSA6
			SA_DS[6]	AK39	-DQSA6
			SA_DS[48]	AL40	MDA48
			SA_DS[49]	AL37	MDA49
			SA_DS[50]	AJ38	MDA50
			SA_DS[51]	AJ37	MDA51
			SA_DS[52]	AL39	MDA52
			SA_DS[53]	AL38	MDA53
			SA_DS[54]	AJ39	MDA54
			SA_DS[55]	AJ40	MDA55
			SA_DS[7]	AF38	DQSA7
			SA_DS[7]	AF39	-DQSA7
			SA_DS[56]	AG40	MDA56
			SA_DS[57]	AG37	MDA57
			SA_DS[58]	AE38	MDA58
			SA_DS[59]	AE37	MDA59
			SA_DS[60]	AG39	MDA60
			SA_DS[61]	AG38	MDA61
			SA_DS[62]	AE39	MDA62
			SA_DS[63]	AE40	MDA63

DDR_0

1 OF 10

LGA1155[10SC1-F01155-01R]

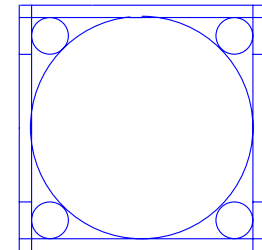
LGA1155B

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MAAB2	AM19	SB_MA[2]			
MAAB3	AK18	SB_MA[3]			
MAAB4	AP19	SB_MA[4]	SB_DS[0]	AG7	MDB0
MAAB5	AP18	SB_MA[5]	SB_DS[1]	AG8	MDB1
MAAB6	AM18	SB_MA[6]	SB_DS[2]	AJ9	MDB2
MAAB7	AL18	SB_MA[7]	SB_DS[3]	AJ8	MDB3
MAAB8	AN18	SB_MA[8]	SB_DS[4]	AG5	MDB4
MAAB9	AY17	SB_MA[9]	SB_DS[5]	AG6	MDB5
MAAB10	AN23	SB_MA[10]	SB_DS[6]	AJ6	MDB6
MAAB11	AU17	SB_MA[11]	SB_DS[7]	AJ7	MDB7
MAAB12	AT18	SB_MA[12]			
MAAB13	AR26	SB_MA[13]	SB_DS[11]	AM8	DQSB1
MAAB14	AY16	SB_MA[14]	SB_DS[11]	AL8	-DQSB1
MAAB15	AV16	SB_MA[15]			
(8) -SWEB	SWEB	SB_WE#	SB_DS[8]	AM7	MDB8
(8) -SCASB	SCASB	SB_CAS#	SB_DS[9]	AM7	MDB9
(8) -SRASB	SRASB	SB_RAS#	SB_DS[10]	AM10	MDB10
			SB_DS[11]	AL6	MDB11
(8) SBAB0	SBAB0	SB_BS[0]	SB_DS[12]	AM6	MDB12
(8) SBAB1	SBAB1	SB_BS[1]	SB_DS[13]	AL9	MDB13
(8) SBAB2	SBAB2	SB_BS[2]	SB_DS[14]	AM9	MDB15
			SB_DS[15]		
(8) -CSB0	CSB0	SB_CS#	SB_DS[2]	AR8	DQSB2
(8) -CSB1	CSB1	SB_CS#	SB_DS[2]	AP8	-DQSB2
			SB_CS[3]		
(8) CKEB0	CKEB0	SB_CKE[0]	SB_DS[16]	AP7	MDB16
(8) CKEB1	CKEB1	SB_CKE[1]	SB_DS[17]	AR7	MDB17
			SB_DS[18]	AP10	MDB18
			SB_DS[19]	AR10	MDB19
			SB_DS[20]	AP6	MDB20
			SB_DS[21]	AP6	MDB21
			SB_DS[22]	AP9	MDB22
			SB_DS[23]	AR9	MDB23
			SB_DS[3]	AN13	DQSB3
			SB_DS[3]	AN12	-DQSB3
(8) DCLKB0	DCLKB0	SB_CK[0]	SB_DS[24]	AM12	MDB24
(8) -DCLKB0	-DCLKB0	SB_CK#	SB_DS[25]	AM13	MDB25
(8) DCLKB1	DCLKB1	SB_CK[1]	SB_DS[26]	AR13	MDB26
(8) -DCLKB1	-DCLKB1	SB_CK#	SB_DS[27]	AP13	MDB27
			SB_DS[28]	AL12	MDB28
			SB_DS[29]	AL13	MDB29
			SB_DS[30]	AR12	MDB30
			SB_DS[31]	AP12	MDB31
			SB_DS[4]	AN28	DQSB4
			SB_DS[4]	AN28	-DQSB4
(8) VREF_DQB	VREF_DQB	FC_AH1	SB_DS[32]	AR28	MDB32
(7) VREF_DQA	VREF_DQA	FC_AH4	SB_DS[33]	AR29	MDB33
			SB_DS[34]	AL28	MDB34
			SB_DS[35]	AL29	MDB35
			SB_DS[36]	AP28	MDB36
			SB_DS[37]	AP29	MDB37
			SB_DS[38]	AM28	MDB38
			SB_DS[39]	AM29	MDB39
			SB_DS[5]	AP33	DQSB5
			SB_DS[5]	AR33	-DQSB5
			SB_DS[40]	AP32	MDB40
			SB_DS[41]	AP31	MDB41
			SB_DS[42]	AP32	MDB42
			SB_DS[43]	AP34	MDB43
			SB_DS[44]	AR31	MDB44
			SB_DS[45]	AR31	MDB45
			SB_DS[46]	AR33	MDB46
			SB_DS[47]	AR34	MDB47
			SB_DS[6]	AL33	DQSB6
			SB_DS[6]	AM33	-DQSB6
			SB_DS[48]	AM32	MDB48
			SB_DS[49]	AM31	MDB49
			SB_DS[50]	AL35	MDB50
			SB_DS[51]	AL32	MDB51
			SB_DS[52]	AM34	MDB52
			SB_DS[53]	AL31	MDB53
			SB_DS[54]	AM35	MDB54
			SB_DS[55]	AL34	MDB55
			SB_DS[7]	AG35	DQSB7
			SB_DS[7]	AG34	-DQSB7
			SB_DS[56]	AH35	MDB56
			SB_DS[57]	AH34	MDB57
			SB_DS[58]	AE34	MDB58
			SB_DS[59]	AE35	MDB59
			SB_DS[60]	AJ35	MDB60
			SB_DS[61]	AJ34	MDB61
			SB_DS[62]	AE33	MDB62
			SB_DS[63]	AE33	MDB63

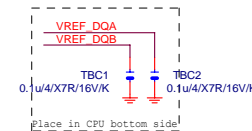
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LGA1155[10SC1-F01155-01R]

LGA1155
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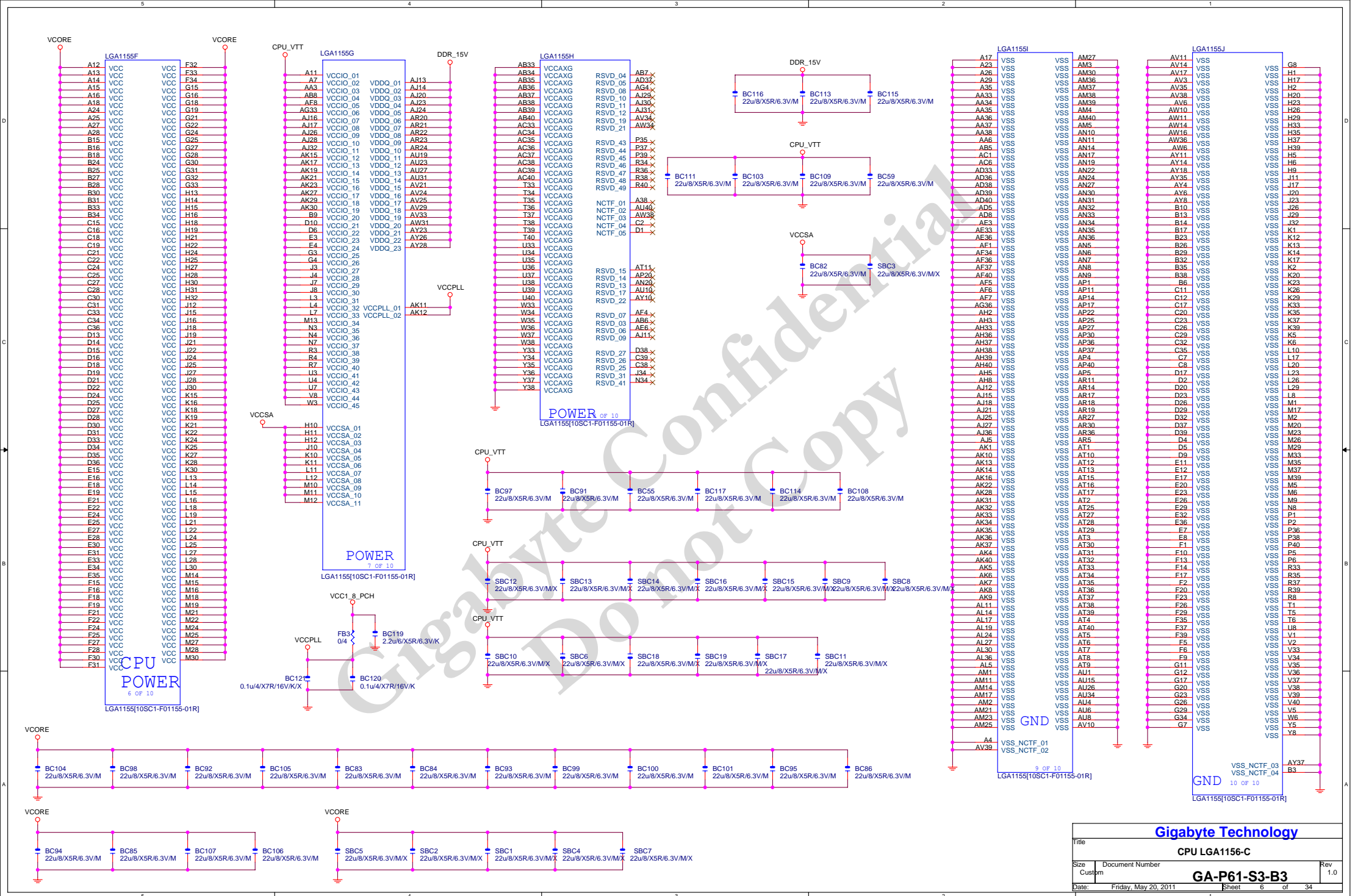
Need check the new CPU ME

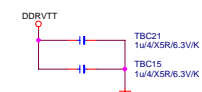
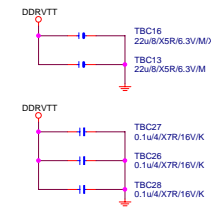
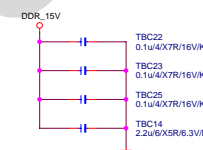
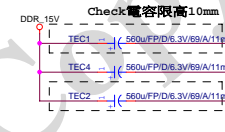
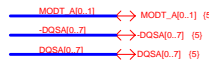


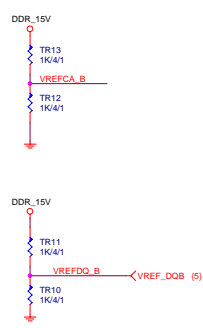
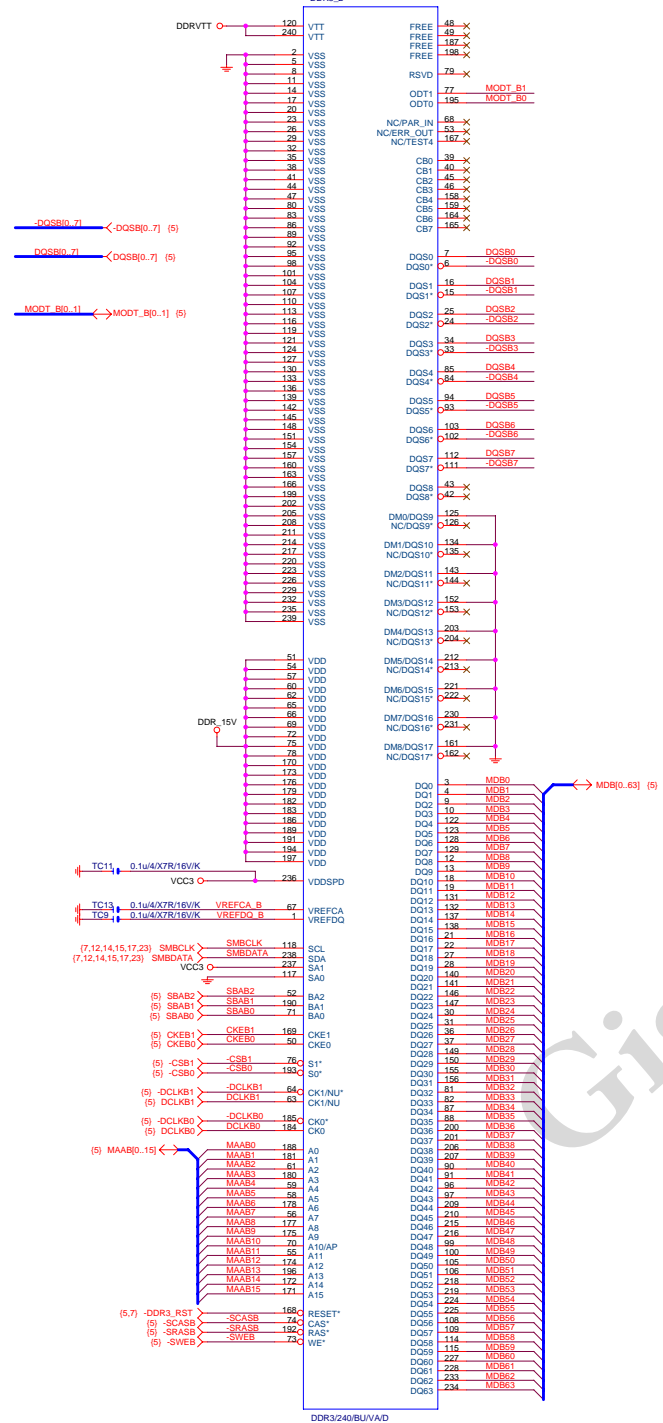
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CPU LGA1156-B

Size	Document Number	Rev
Custom	GA-P61-S3-B3	1.0
Date:	Friday, May 20, 2011	Sheet 5 of 34





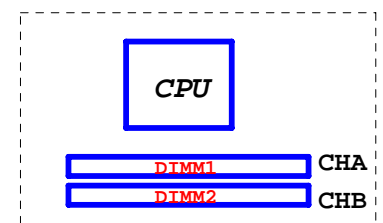
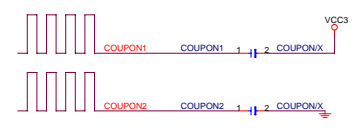


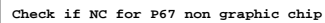
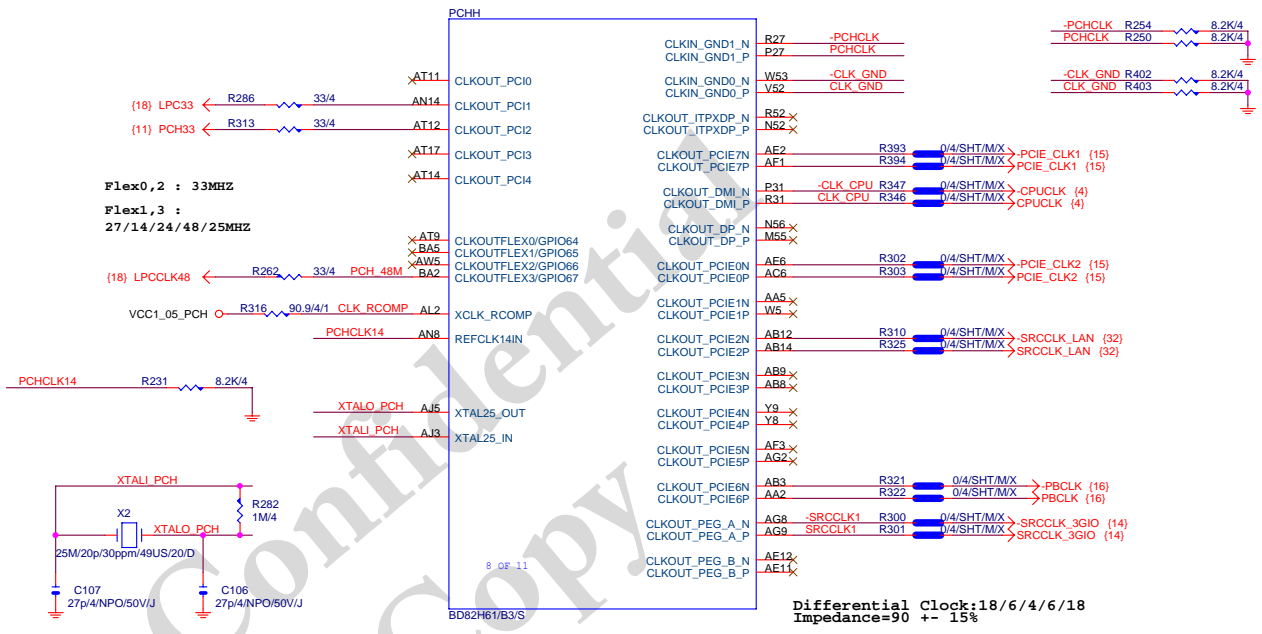
DDR3 1066,1333,1600MHZ BANDWIDTH

DDR3 1066MHZ
DDR3 clock=533MHZ
DDR3 single channel bandwidth=533x2x8Byte=8.5GB/s
DDR3 dual channel bandwidth=533x2x2x8Byte=17GB/s

DDR3 1333MHZ
DDR3 clock=667MHZ
DDR3 single channel bandwidth=10.6GB/s
DDR3 dual channel bandwidth=21GB/s

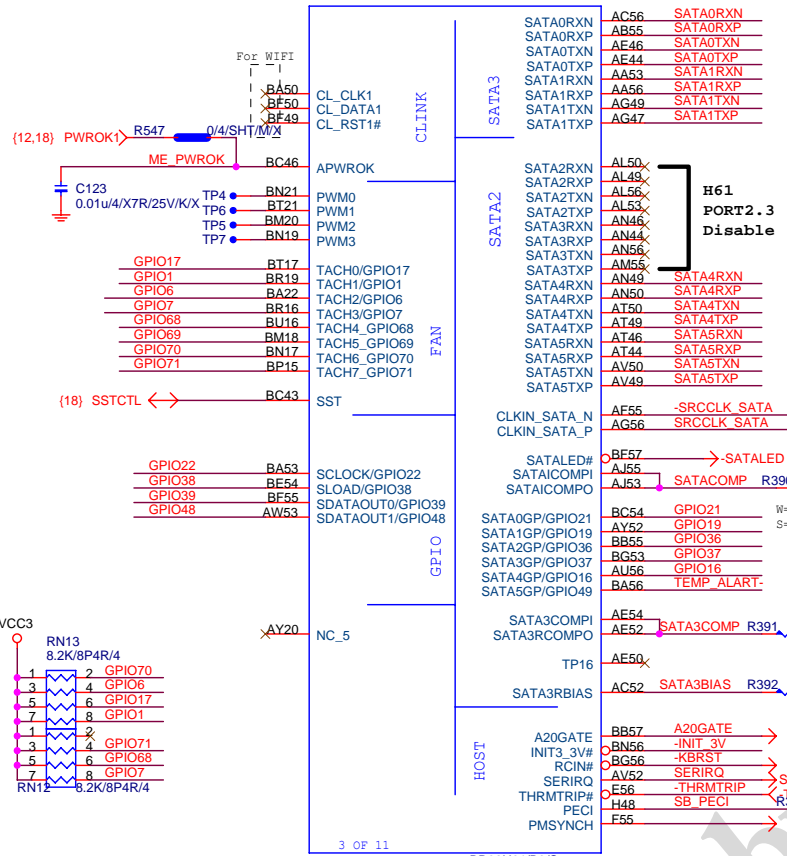
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DDR3 clock=800MHZ
DDR3 single channel bandwidth=12.8GB/s
DDR3 dual channel bandwidth=25.6GB/s



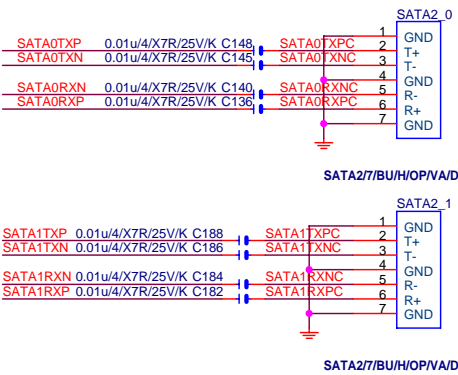


SATA:20/4.5/7.5/4.5/20 (breakout min 8/4/4/4/8)
Impedance=90 +- 17.5%

PCHC

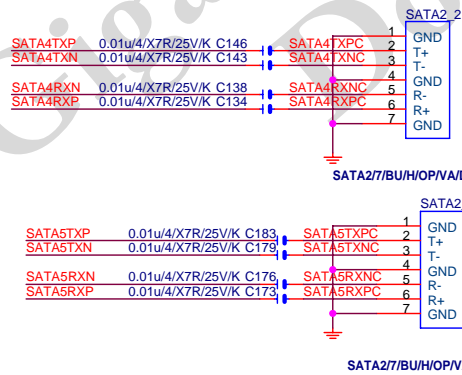


BD82H61/B3/S



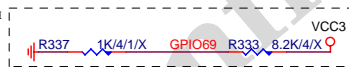
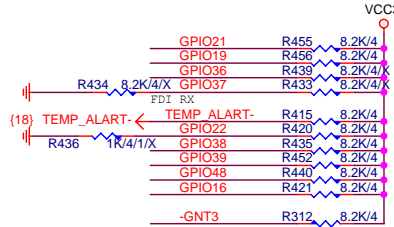
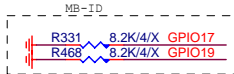
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SATA27/BU/H/OP/VA/D1/B



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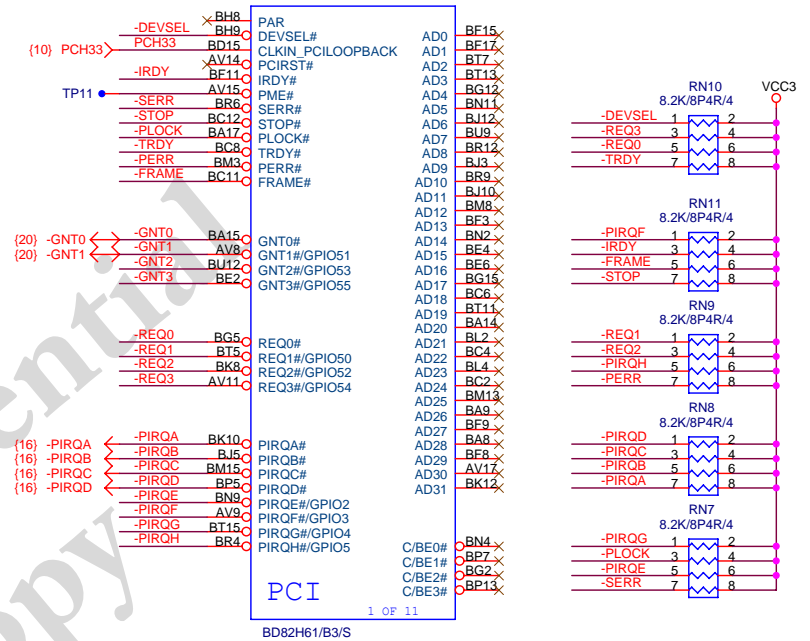


VCC3

VCC3

To prevent PCH PECL crosstalk to CPU when disable PCH PECL

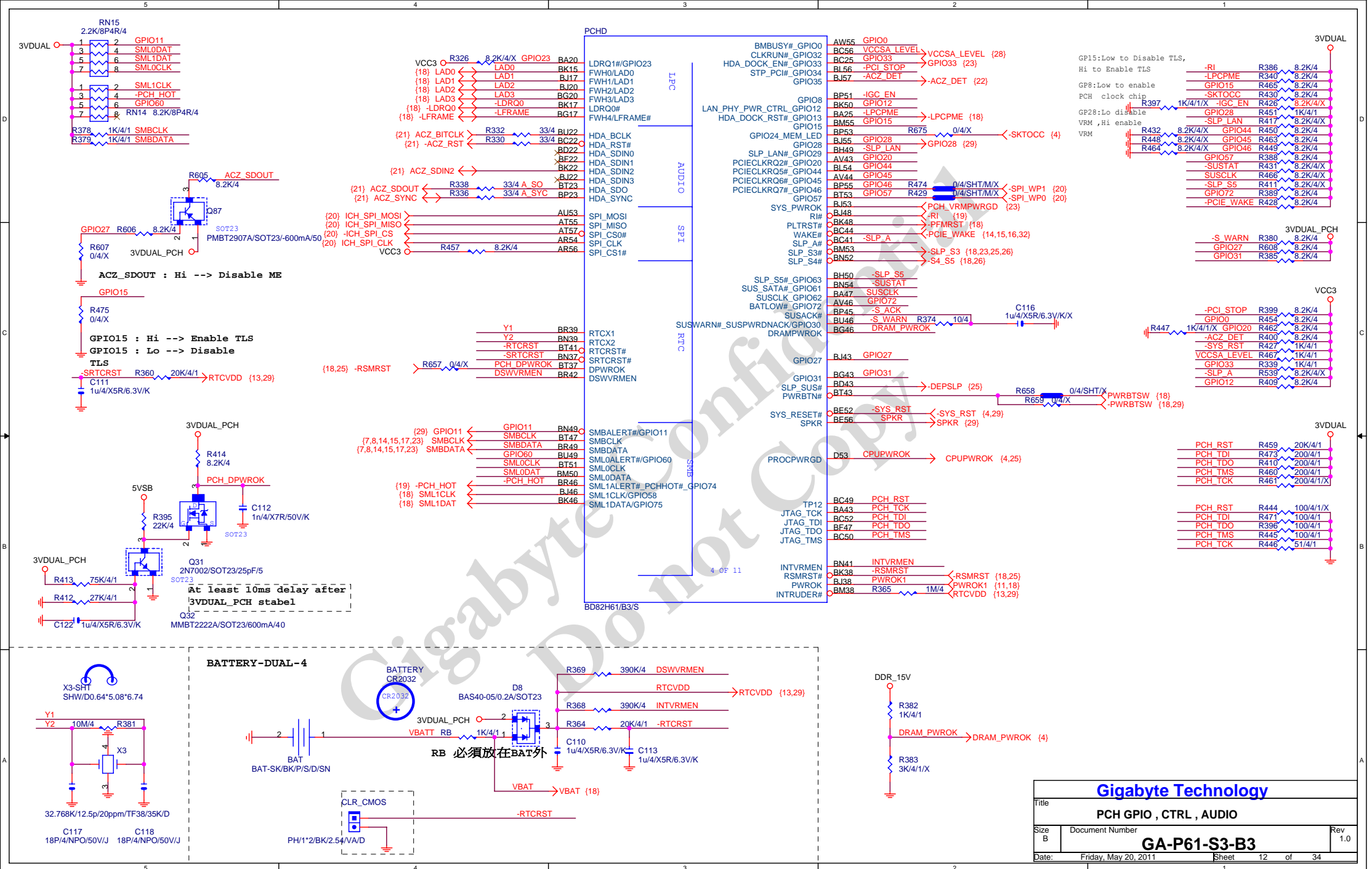
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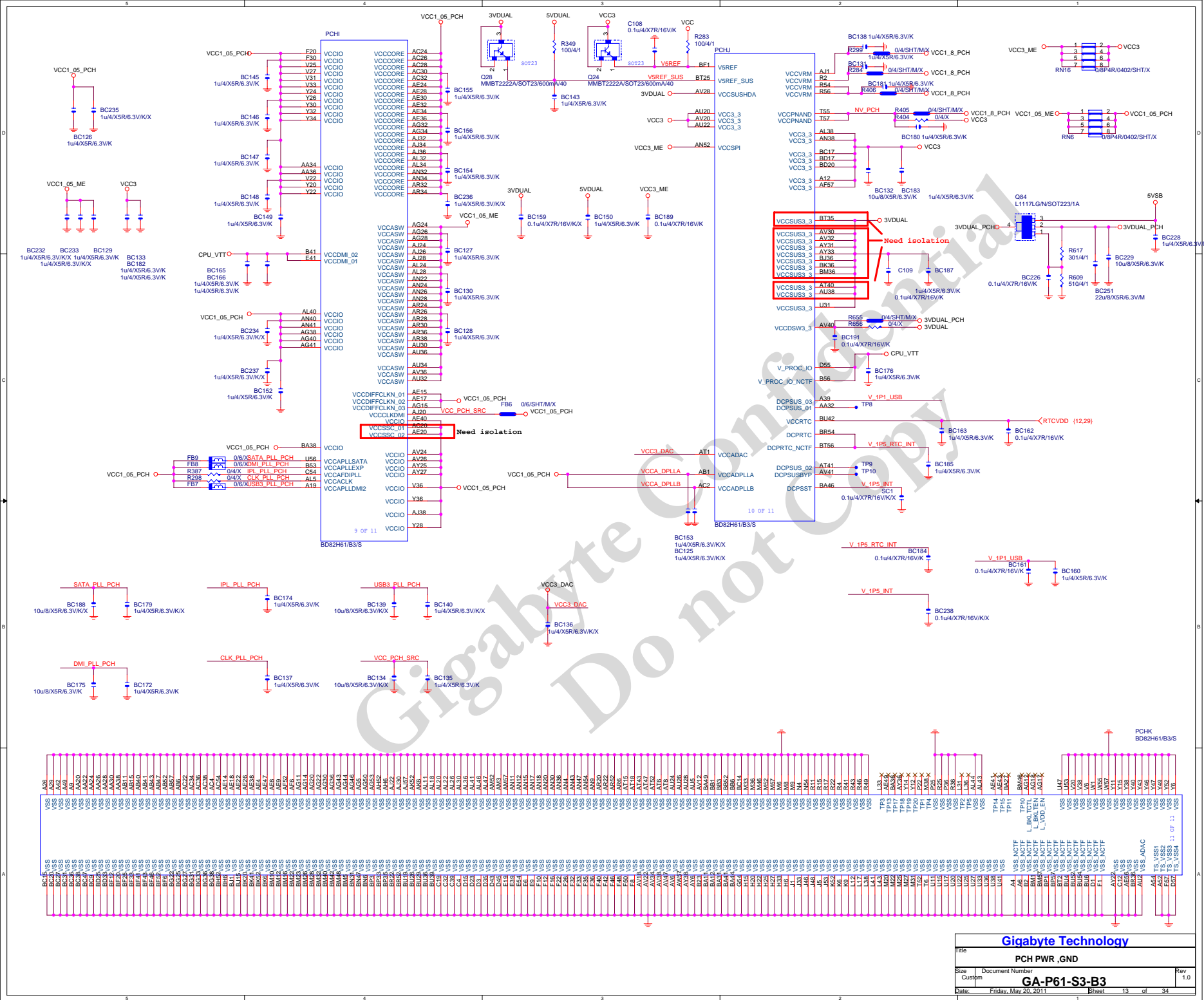


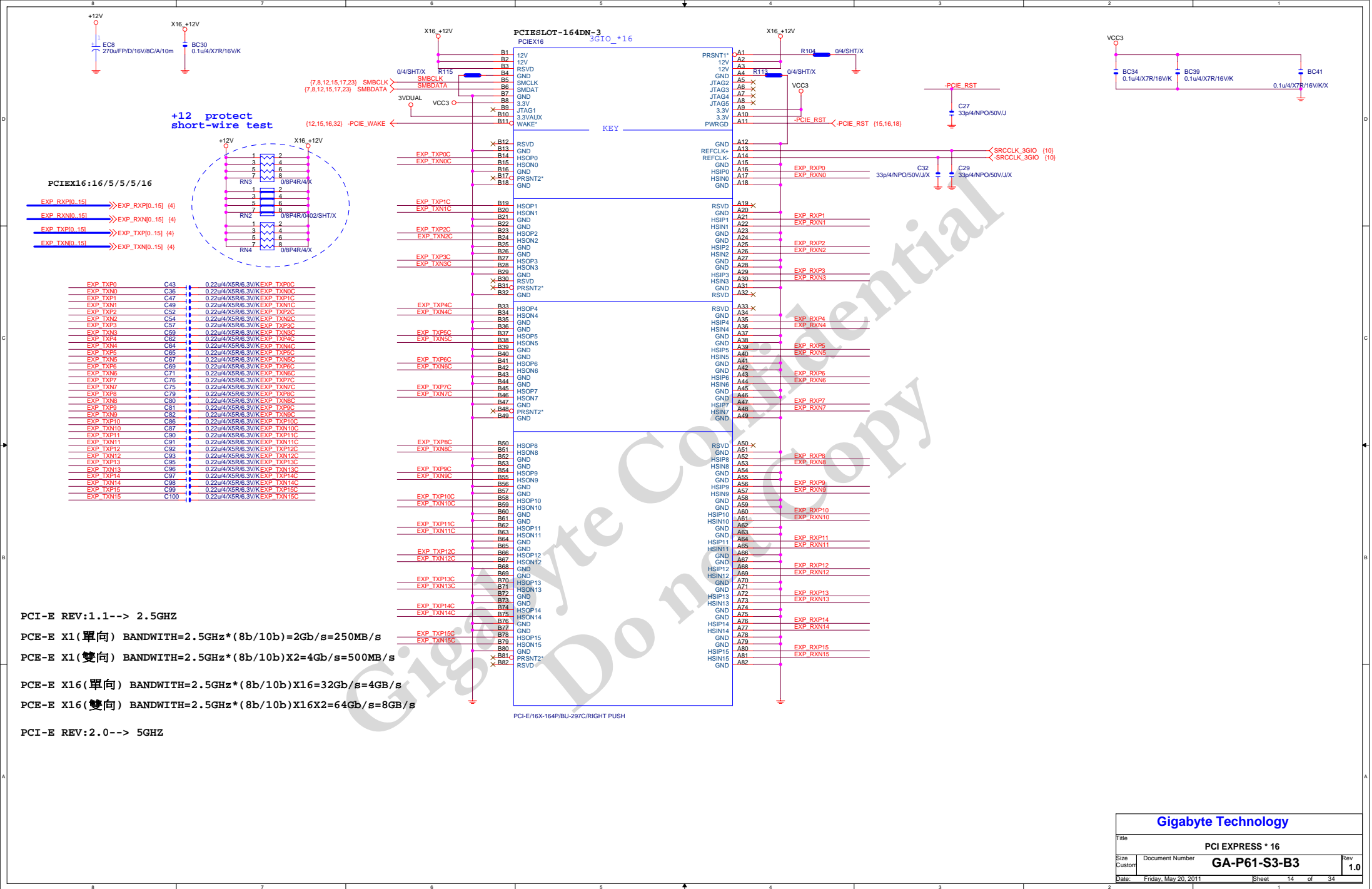
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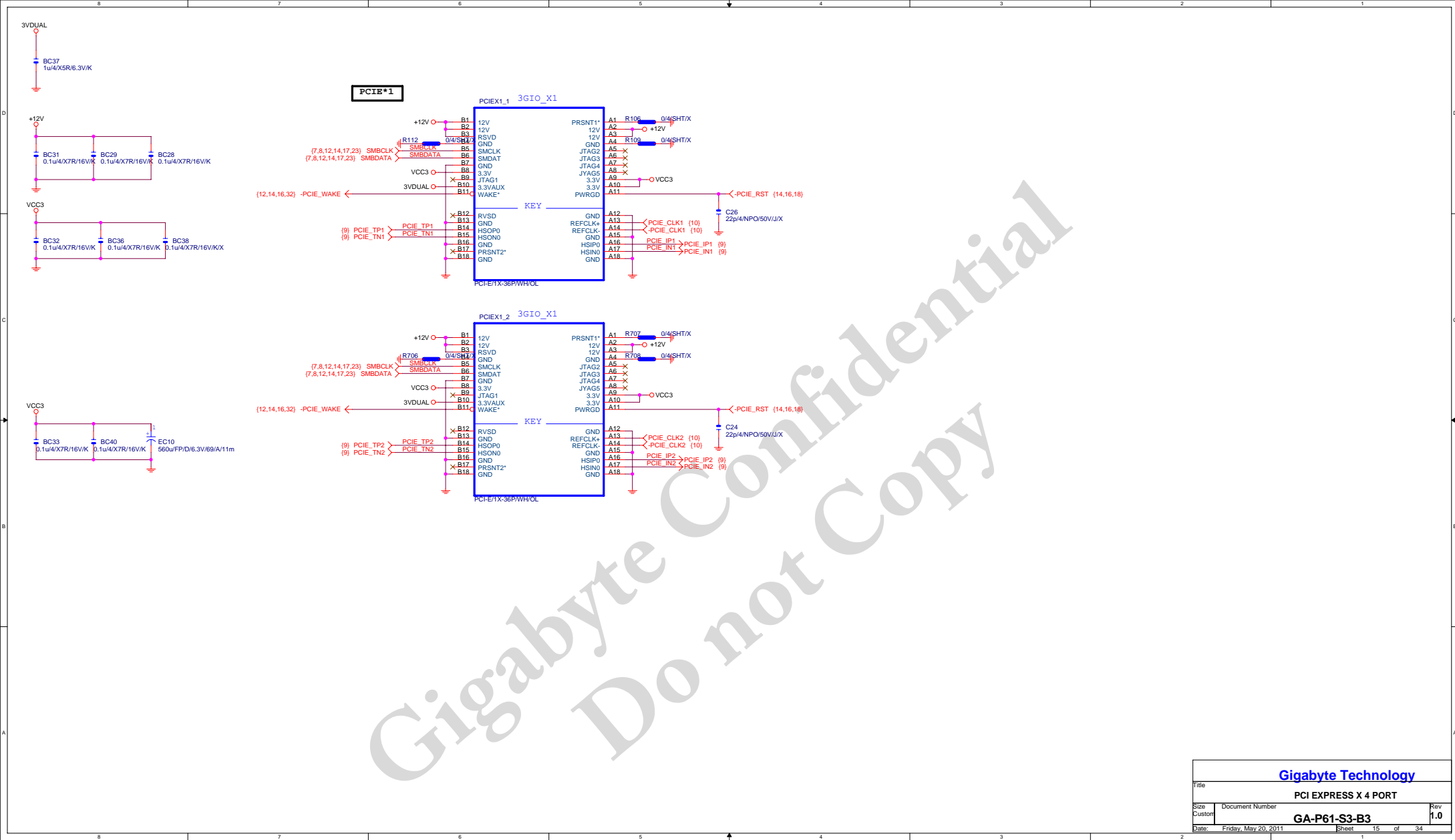
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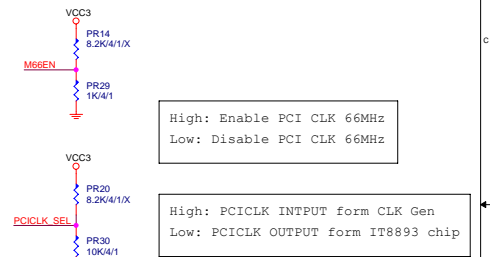
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Size	Document Number		Rev	
B	GA-P61-S3-B3		1.0	
Date:	Friday, May 20, 2011	Sheet	11	of 34

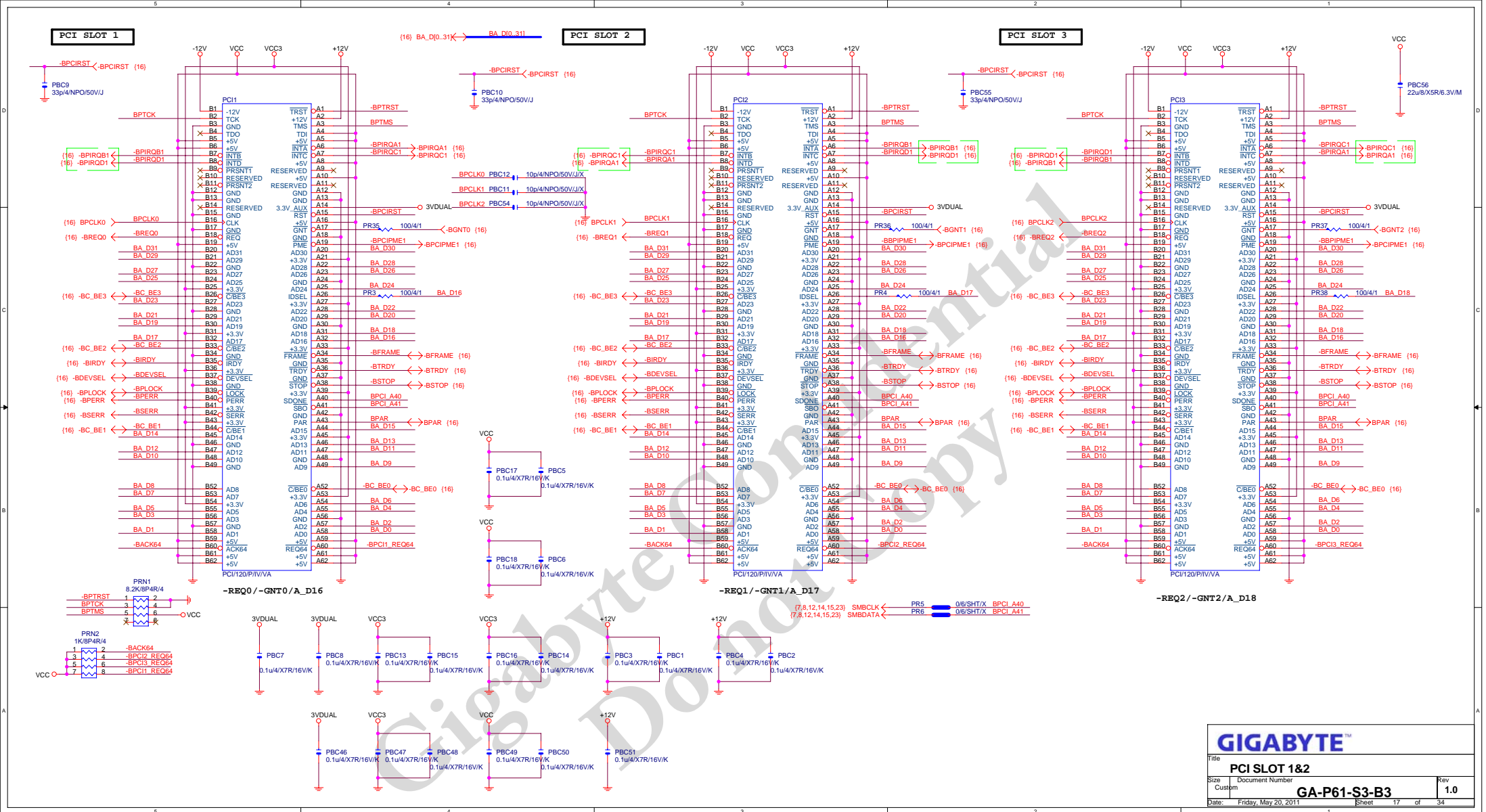


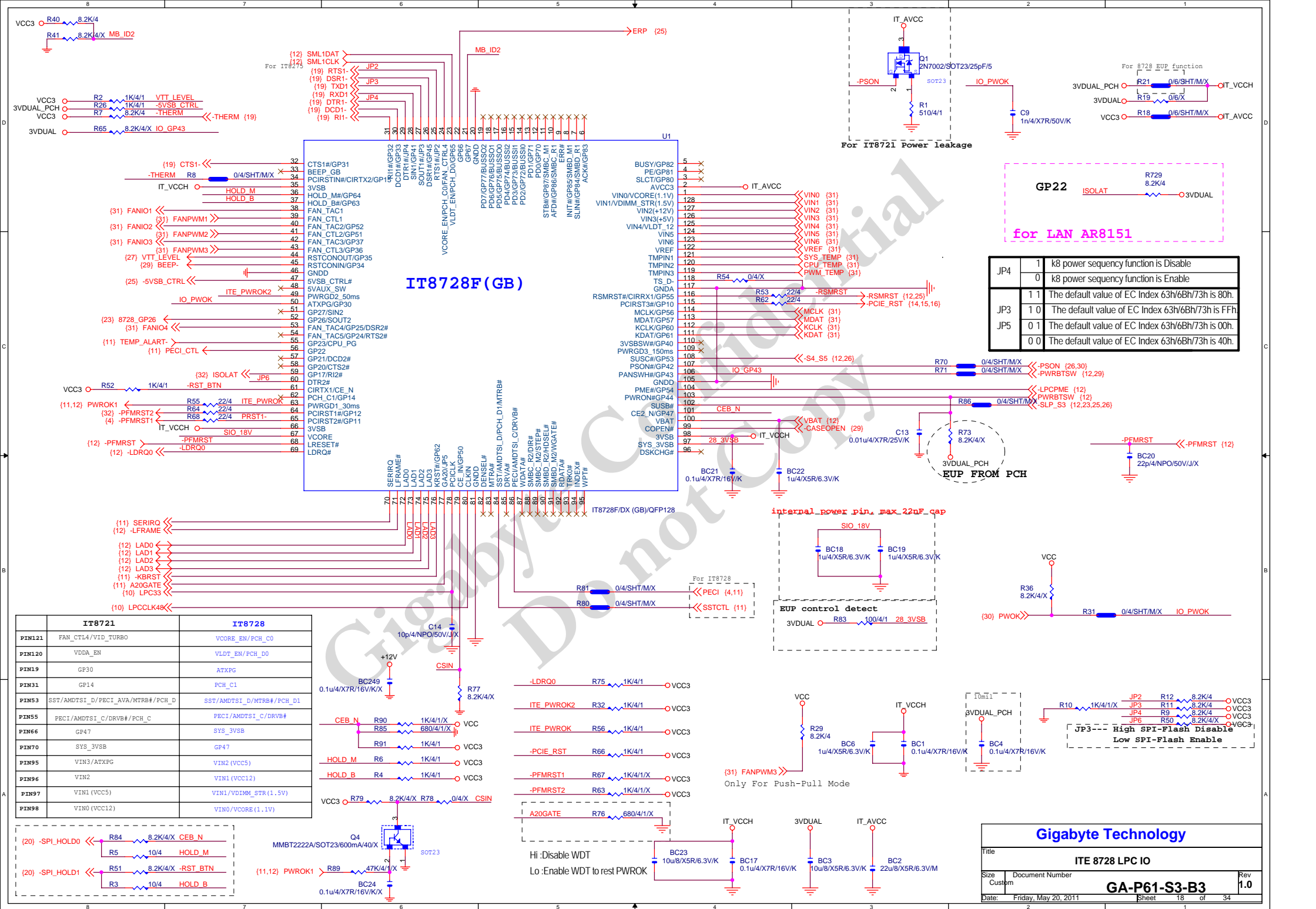




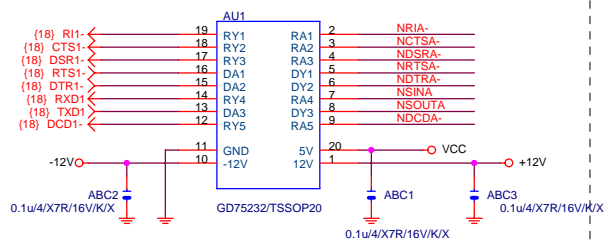




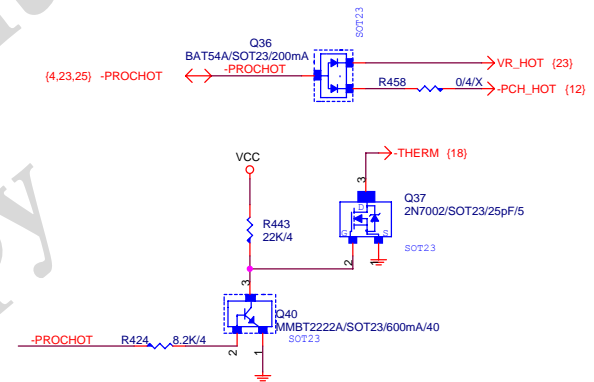
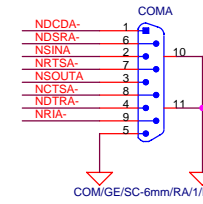
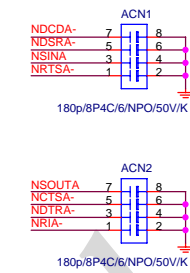
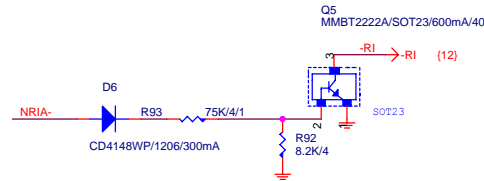




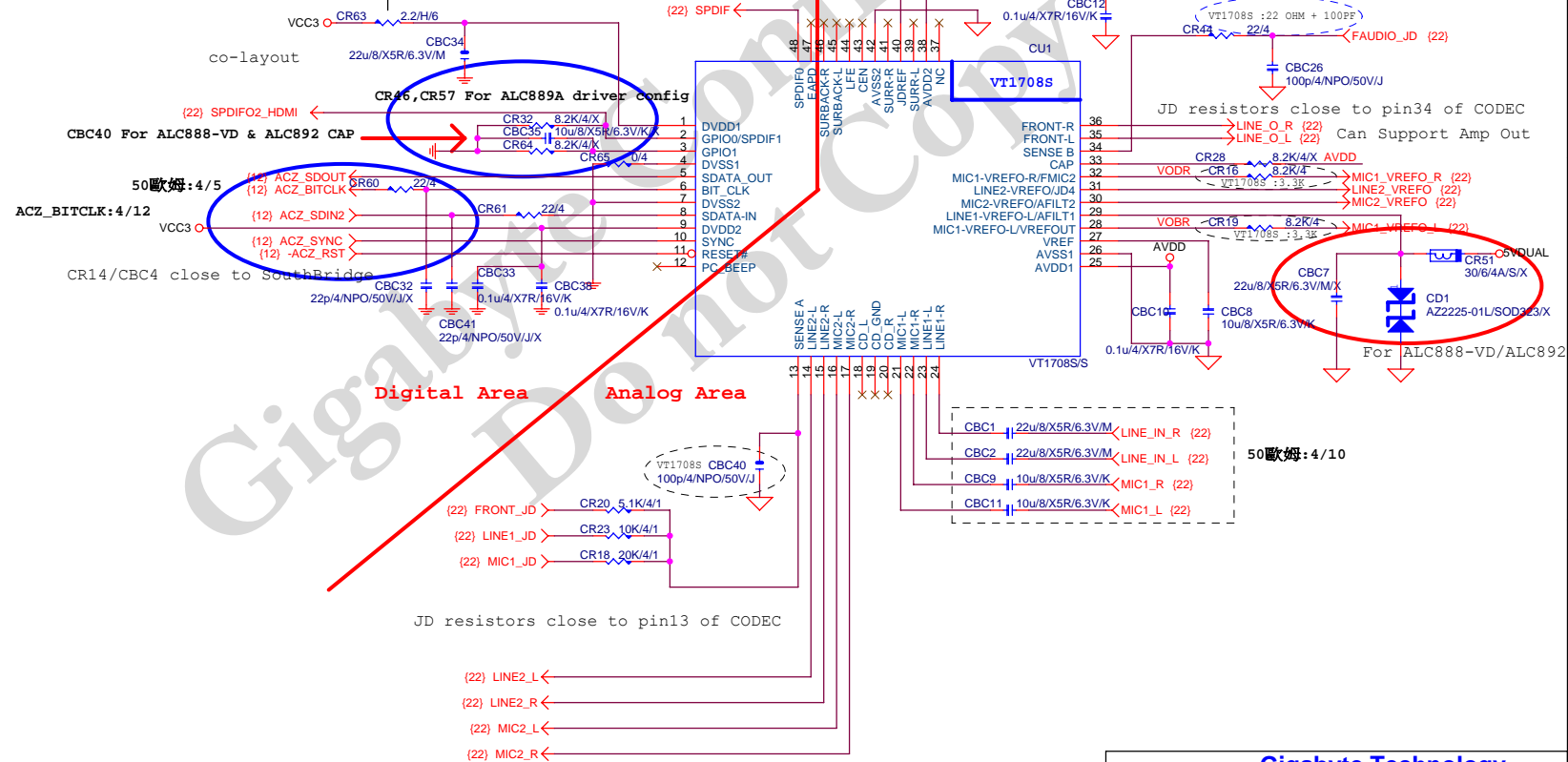
COMA



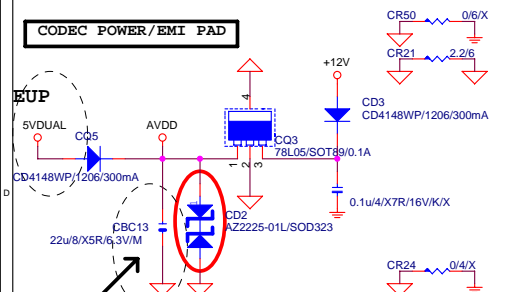
COM RI



	ALC887~VD	ALC889	VT1708S	VT1708SCE
CR65	X	O	O	X
CR64	X	X	X	O
CR44/CBC6	47ohm+1nF	47ohm+1nF	22ohm+100P	22ohm+100P
CR34	20K/1%	20K/1%	5.1K/1%	5.1K/1%
CR31	O	O	O	O
CR30	X	X	X	X
CBC1/CBC2	22uF/X5R	22uF/X5R	22uF/X5R	22uF/X5R
CR20	5.11K/4/1	5.11K/4/1	5.1K/4/1	5.1K/4/1
CR34	20K/4/1	20K/4/1	5.1K/4/1	5.1K/4/1
CBC39/CBC40	N/A	N/A	100P/4	100P/4
CR6/CR7/CR54/CR58	22K/4	22K/4	10K/4	10K/4
CR5/CR8/CR11/CR4/ CR17/CR22/CR45/CR33/ CR47/CR40/CR26/CR37/ CR13/CR11/CR57/CR53	75 ohm	62 ohm	75 ohm	75 ohm
CR51/CD1/CBC7	O	X	X	O
CD2/CD3/CQ3/CQ5	X	O	O	X

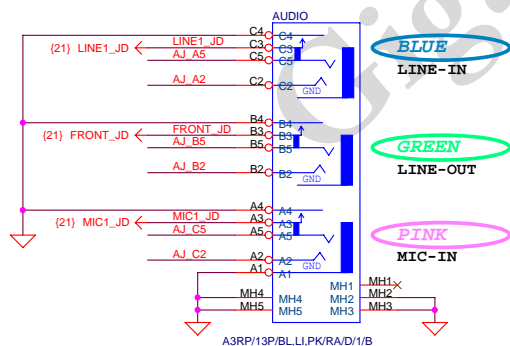
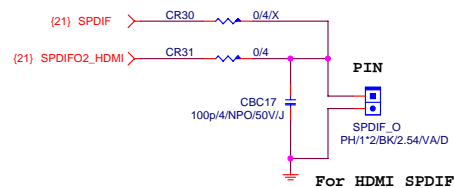


CODEC POWER/EMI PAD

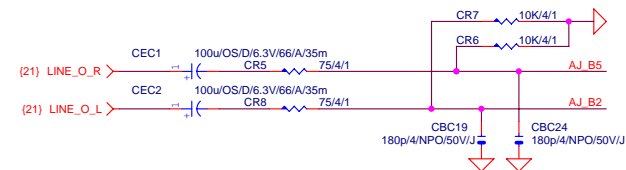


上ALC892時,此顆電容要保留
ADD CD2 For ESD PROTECT DIODE

SPDIF_OUT



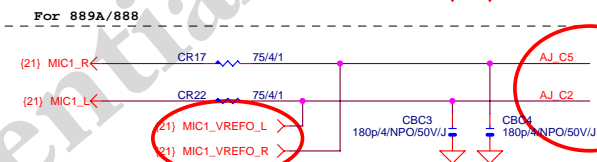
LINE-OUT



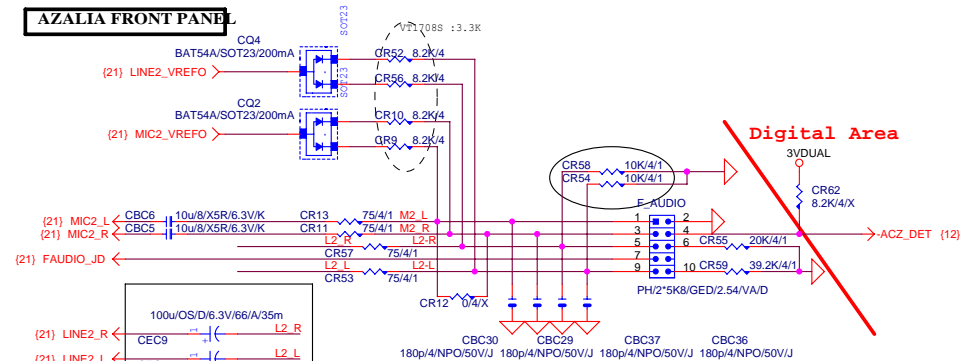
LINE-IN

Verify MIC function
in LINE-in

MIC-IN

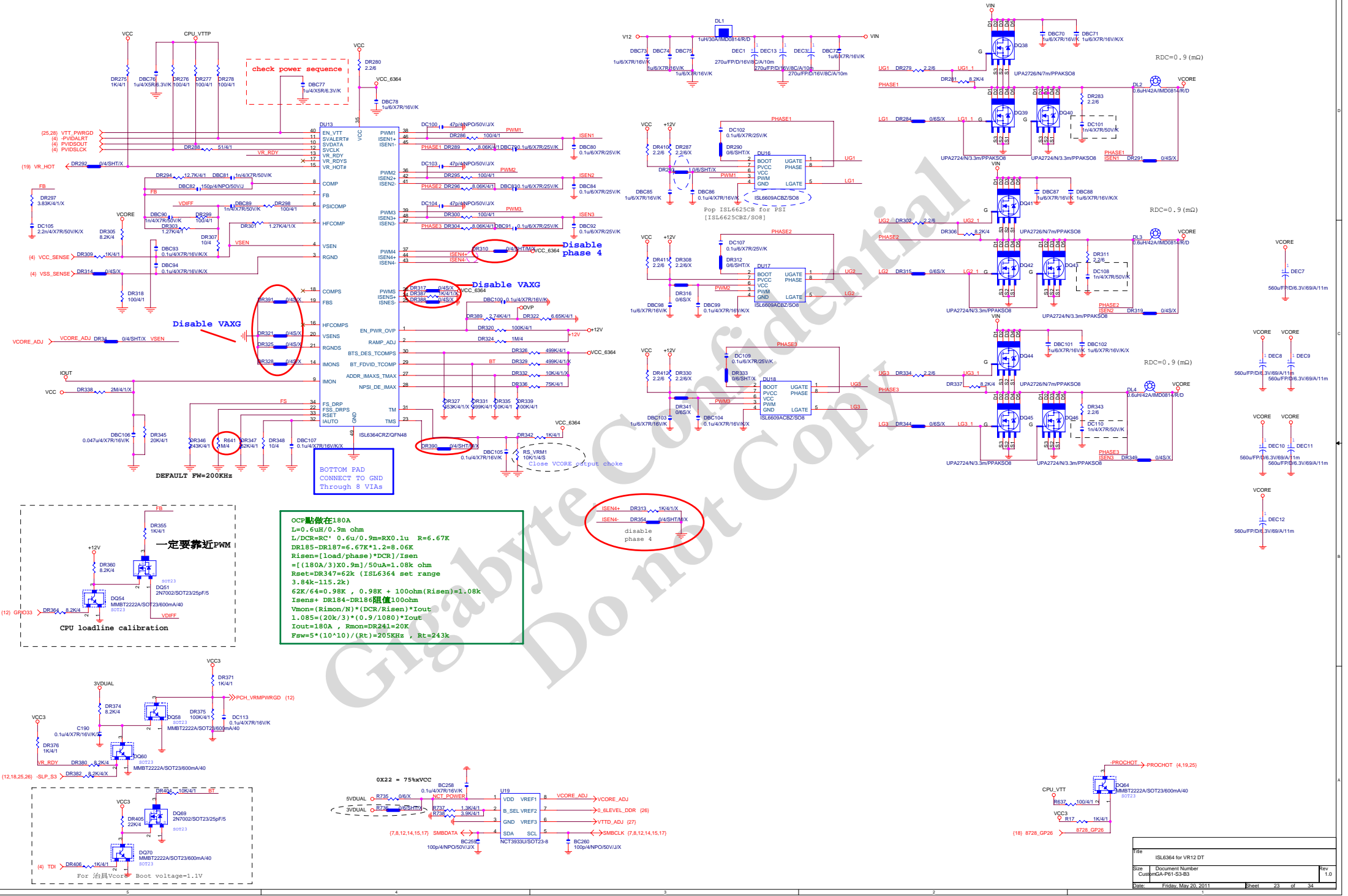


AZALIA FRONT PANEL



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Title		
AUDIO JACK		
Size	Document Number	Rev
Custom	GA-P61-S3-B3	1.0
Date:	Friday, May 20, 2011	Sheet 22 of 34

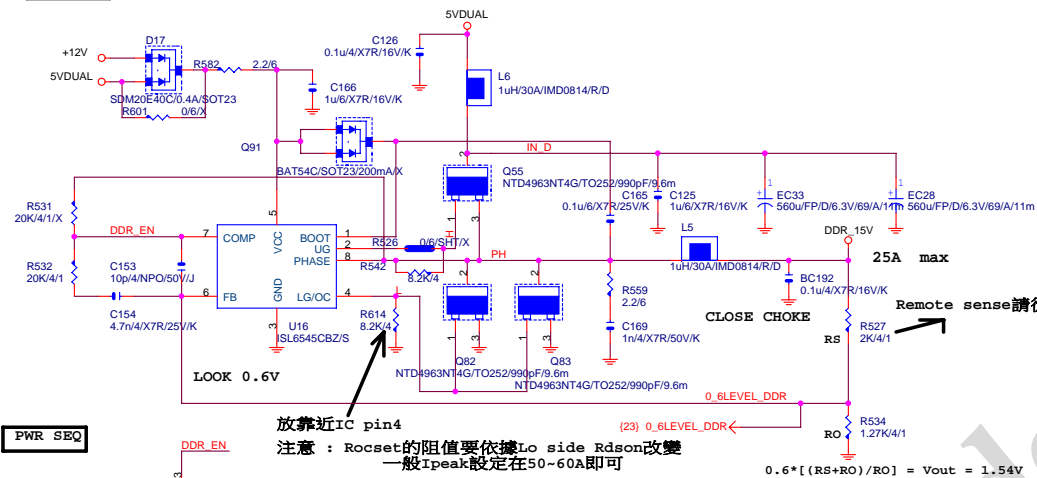


	5	4	3	2	1
D					
C					
B					
A					
	5	4	3	2	1

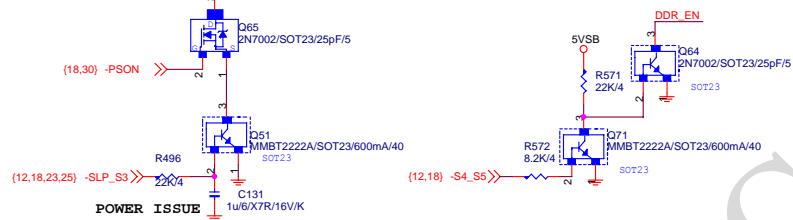
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Gigabyte Technology		
Title CPU CORE VR-2		
Size Custom	Document Number GA-P61-S3-B3	Rev 1.0
Date: Friday, May 20, 2011	Sheet 24 of 34	

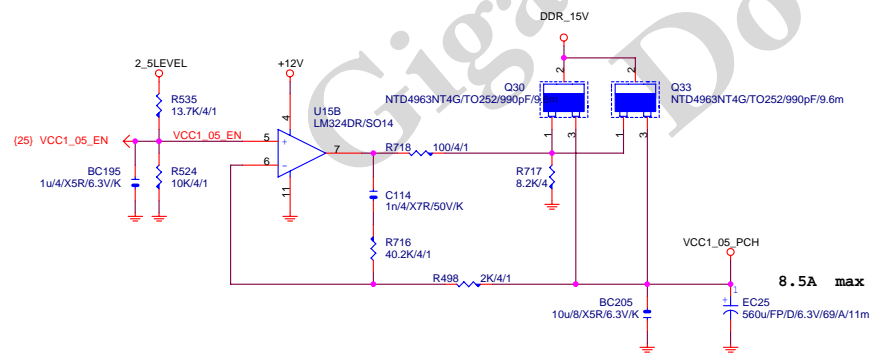
DDR18V



PWR SEQ



VCC1_05_PCH



CPU_VTT

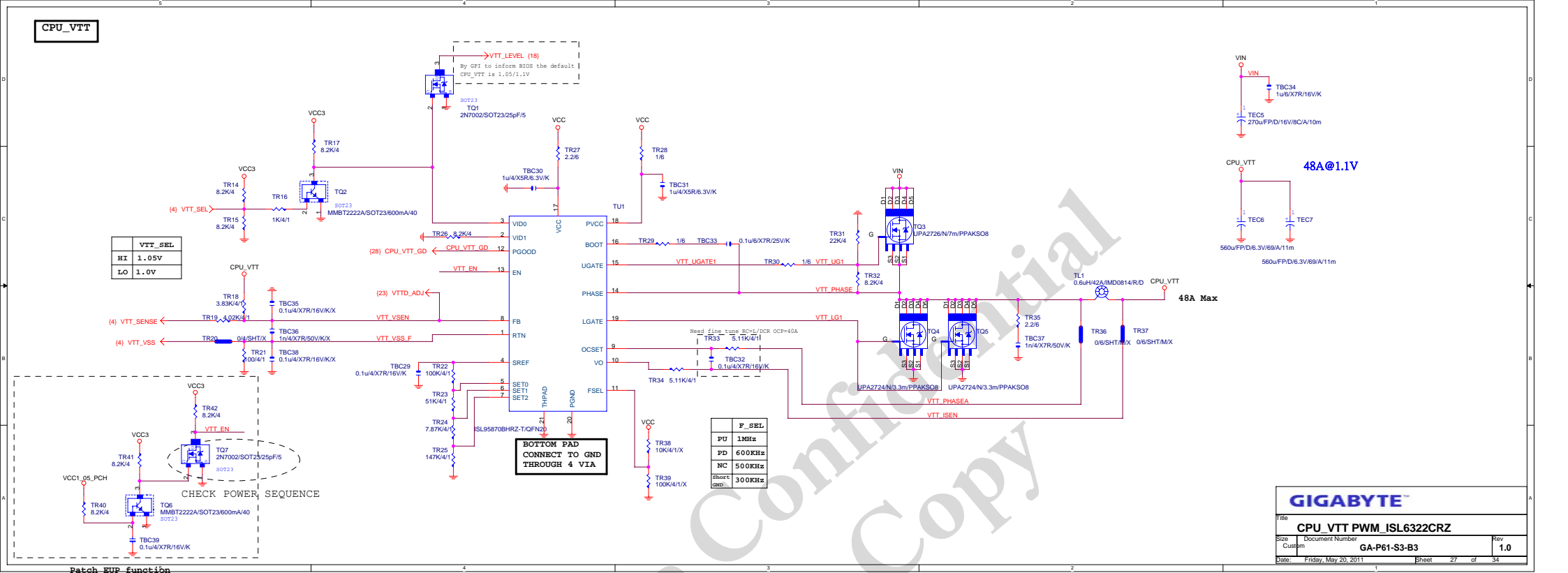
VTT_SEL	
HI	1.05V
LO	1.0V

By GPI to inform BIOS the default CPU_VTT is 1.05/1.1V

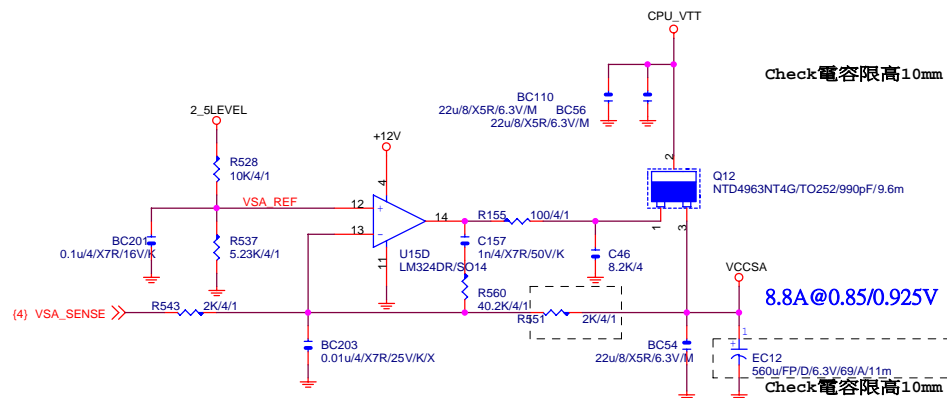
BOTTOM PAD
CONNECT TO GND
THROUGH 4 VIA

F_SEL	
FU	1MHz
PD	600KHz
NC	500KHz
gnd	300KHz

GIGABYTE		
Title		
CPU_VTT PWM_ISL6322CRZ		
Size	Document Number	Rev
Custm	GA-P61-S3-B3	1.0
Date:	Friday, May 20, 2011	Sheet 27 of 34

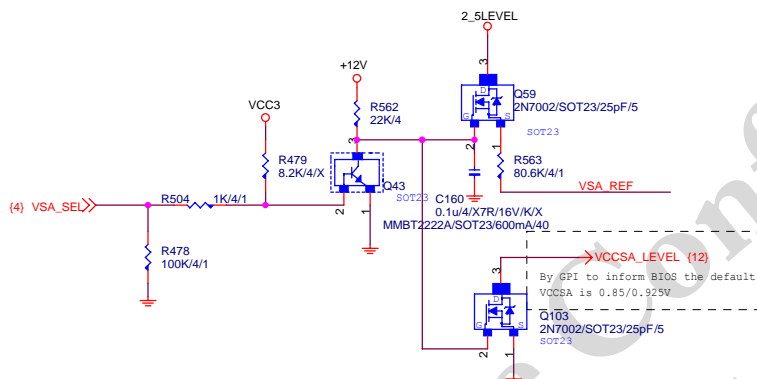


VCC_SA

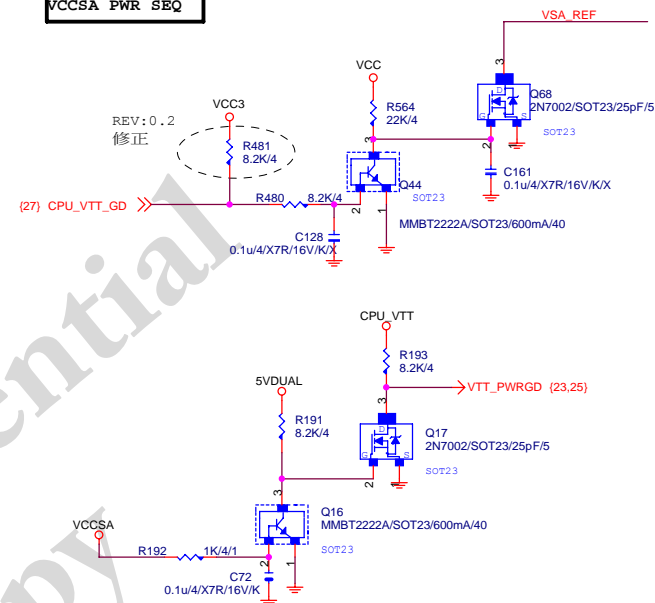


PDG 1.01

	VSA_SEL
HI	0.85V
LO	0.925V

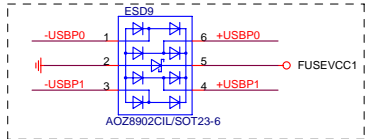
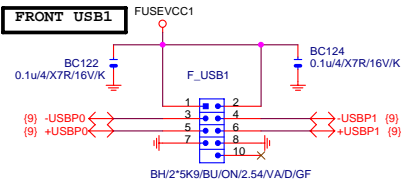


VCCSA PWR SEQ

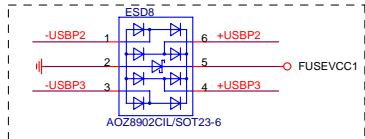
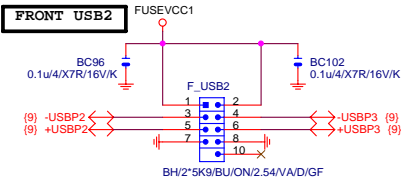


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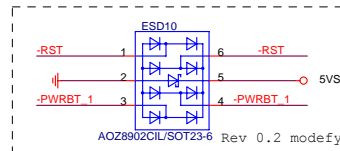
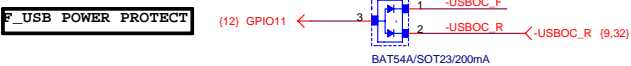
Title		
CPU VTT PWM_ISL6312		
Size	Document Number	Rev
Custom	GA-P61-S3-B3	1.0
Date:	Friday, May 20, 2011	Sheet 28 of 34



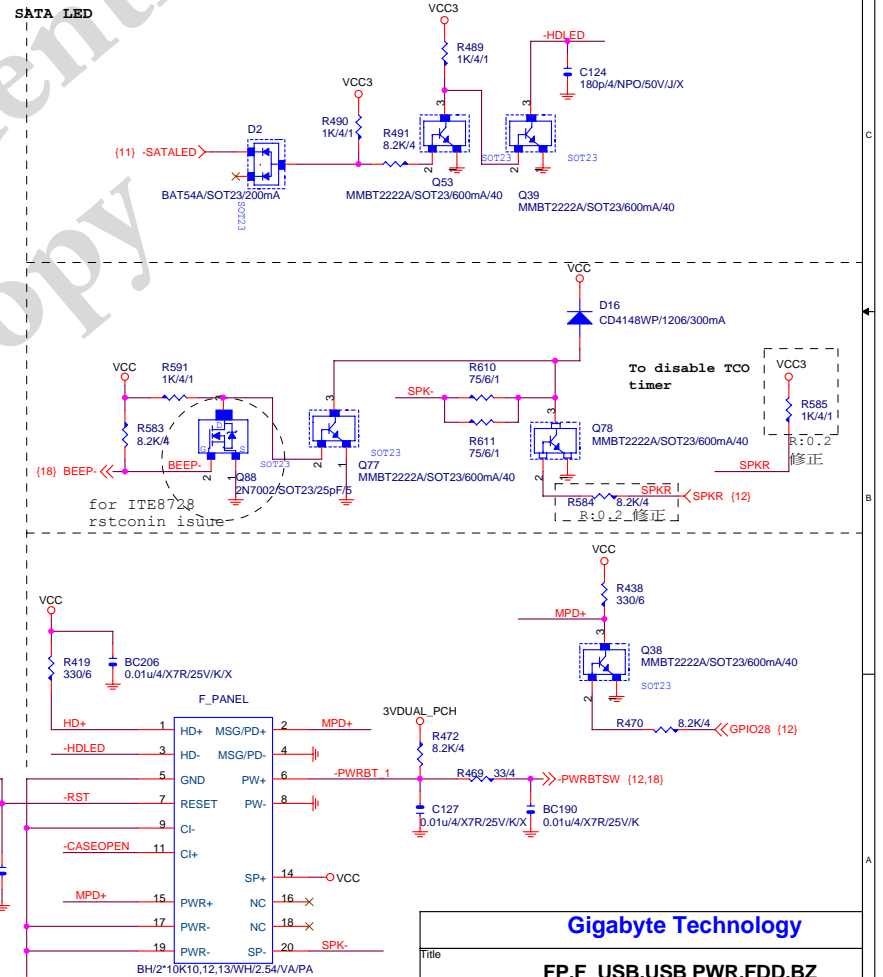
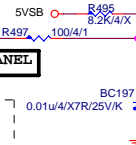
Close to connector



Close to connector



INTEL FRONT PANEL

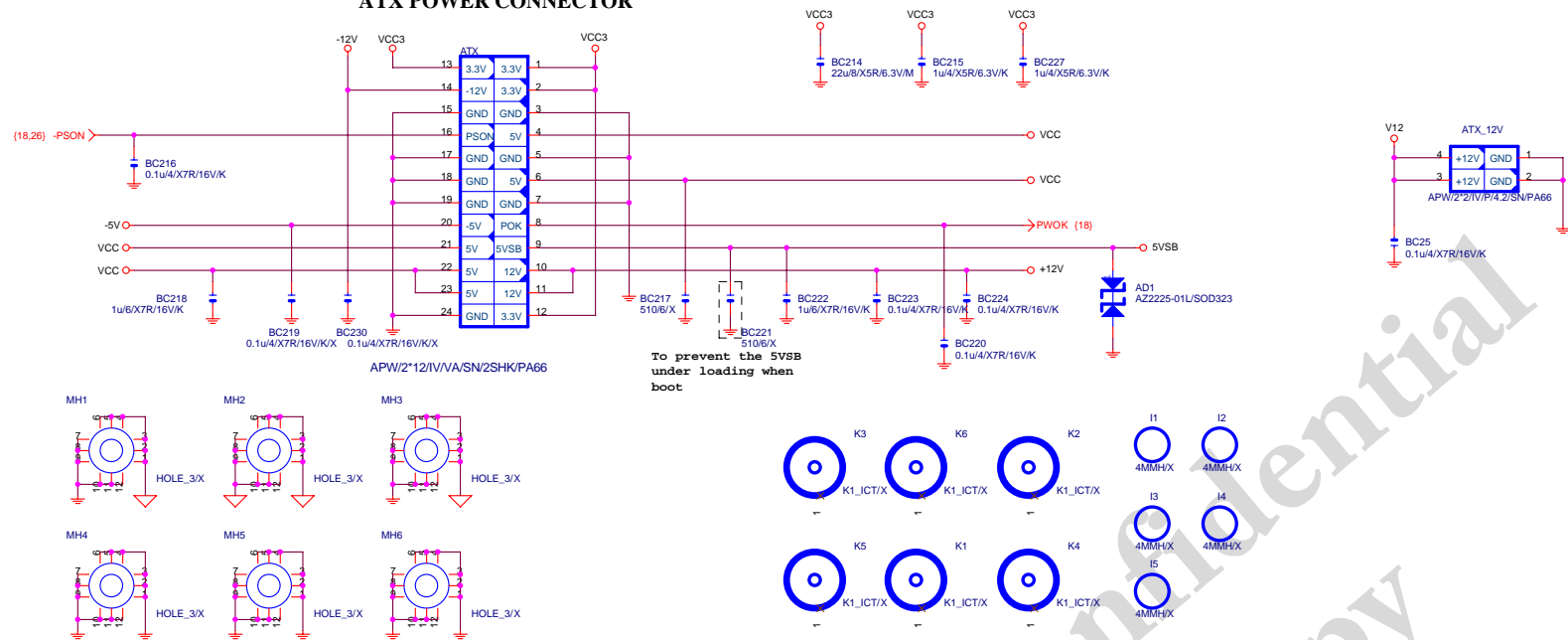


CASE OPEN

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Title			FF,P_USB,USB PWR,FDD,BZ	
Size	Document Number	GA-P61-S3-B3		Rev
Custom				1.0
Date:	Friday, May 20, 2011	Sheet	29	of 34

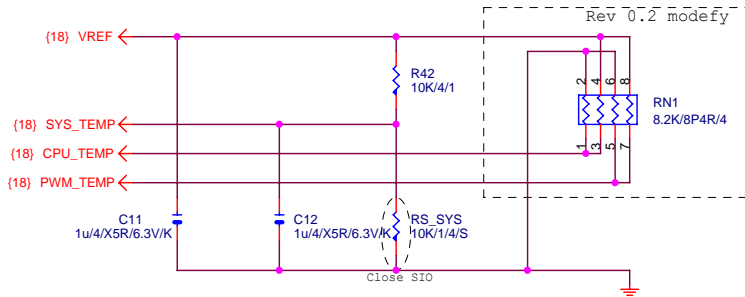
ATX POWER CONNECTOR



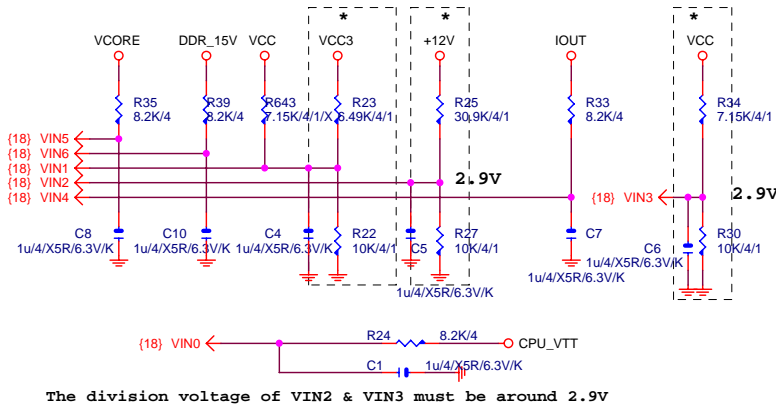
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Title		
ATX POWER CONNECTOR		
Size	Document Number	Rev
Custom	GA-P61-S3-B3	1.0
Date:	Friday, May 20, 2011	Sheet 30 of 34

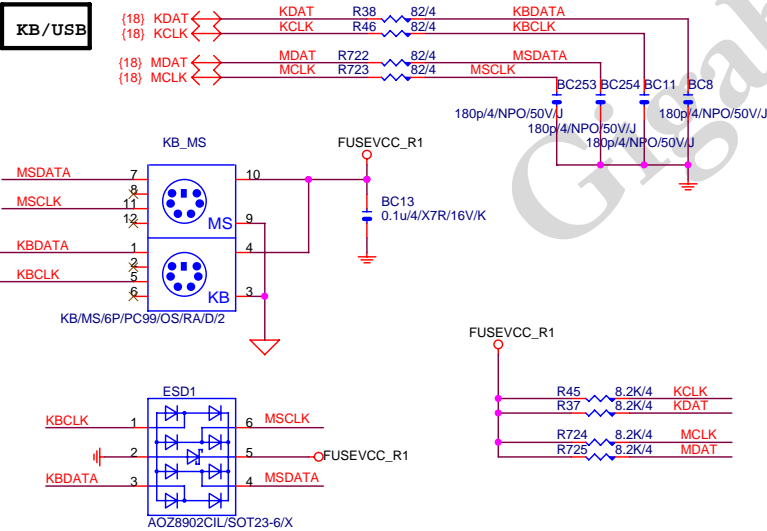
TEMP H/W MONITOR



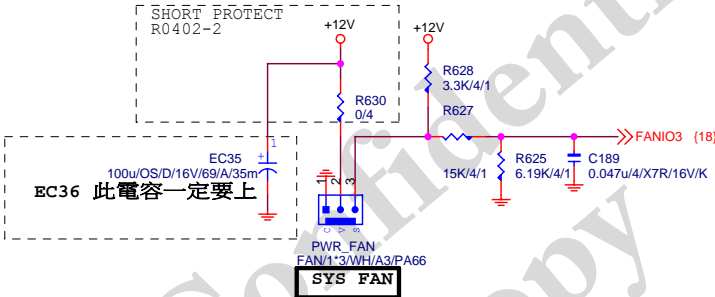
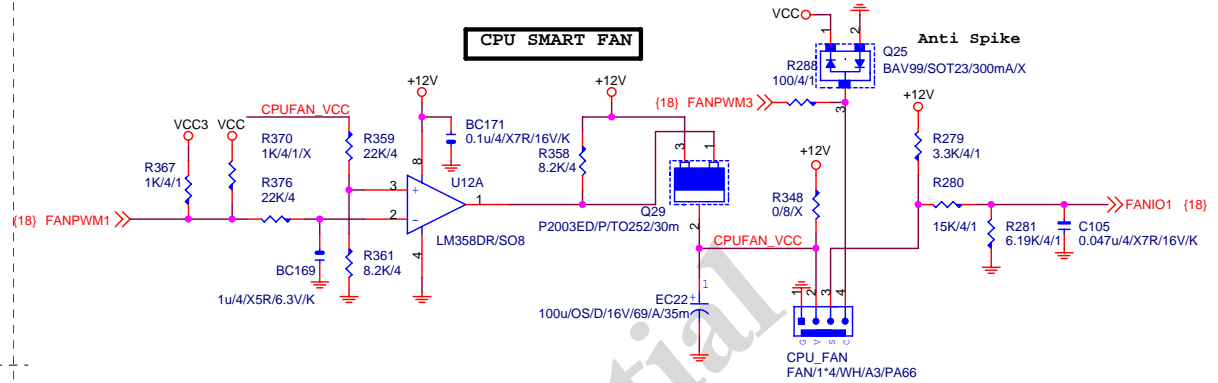
VOLTAGE-- H/W MONITOR



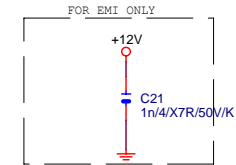
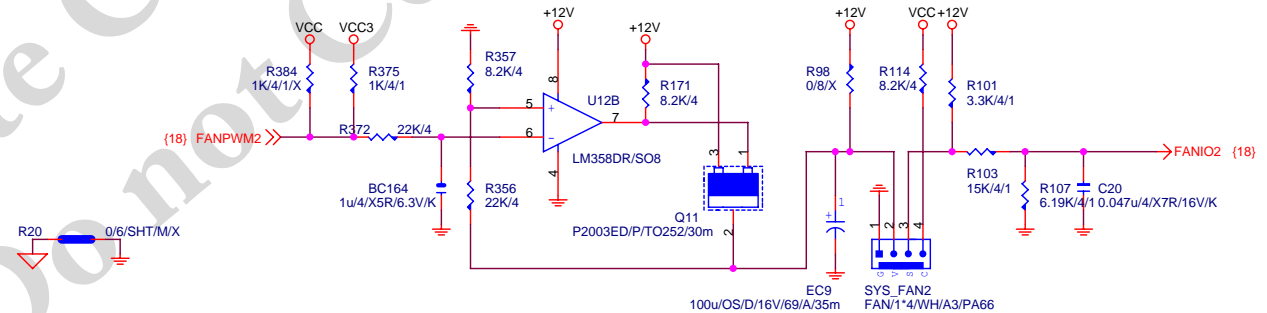
KB/USB



CPU SMART FAN



Linear SYS_FAN



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Title		
HWM,KB/MS, FAN CTRL		
Size	Document Number	Rev
Custom	GA-P61-S3-B3	1.0
Date:	Friday, May 20, 2011	Sheet 31 of 34

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Title			EJ168		
Size	Document Number				Rev
Custom	GA-P61-S3-B3				1.0
Date: Friday, May 20, 2011		Sheet 33 of 34			

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GIGABYTE™		
Title Marvell 9172 SATA 3.0		
Size Custom	Document Number GA-P61-S3-B3	Rev. 1.0
Date: Friday, May 20, 2011		Sheet 34 of 34