

Model Name: GA-P61-USB3-B3

1.1

SHEET

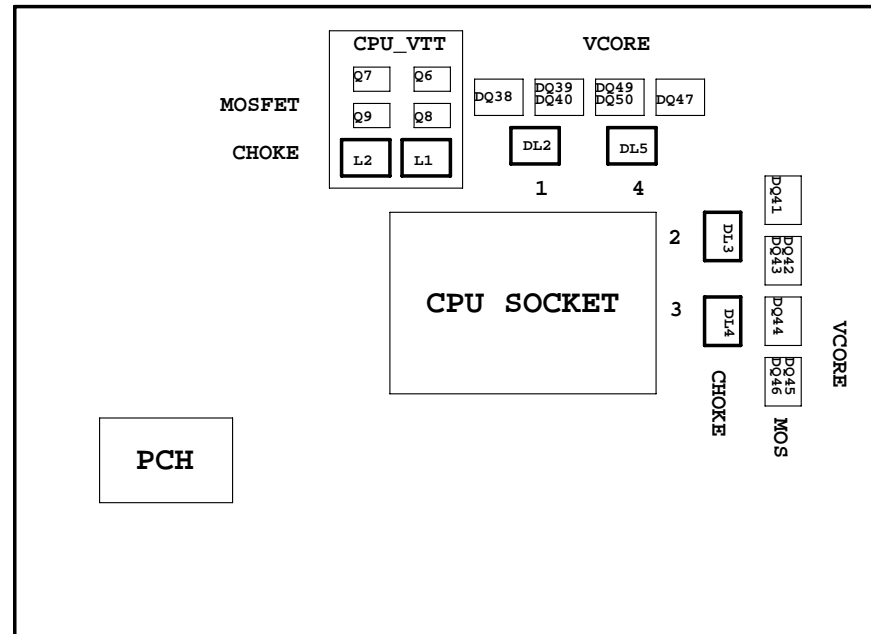
TITLE

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
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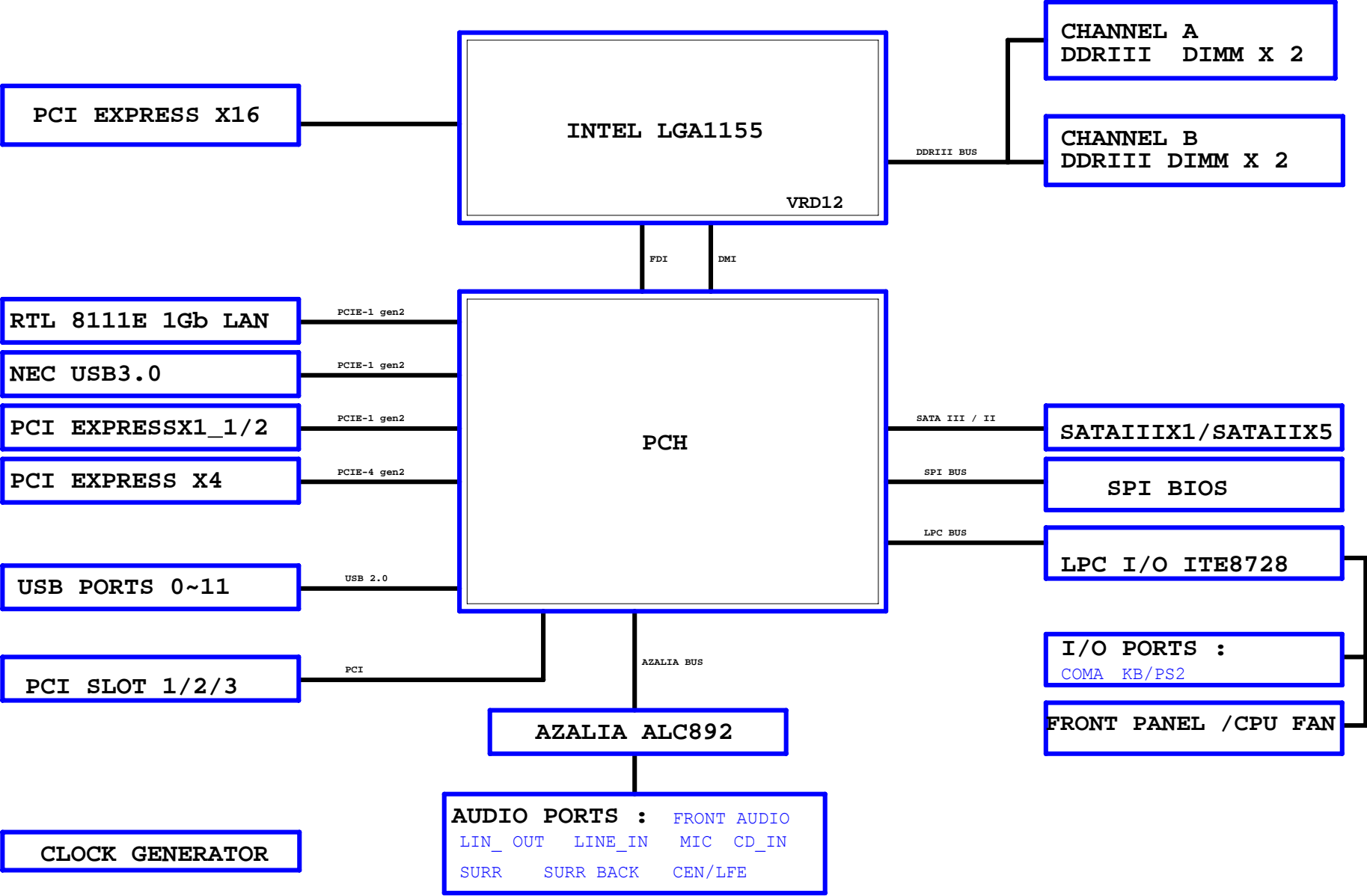


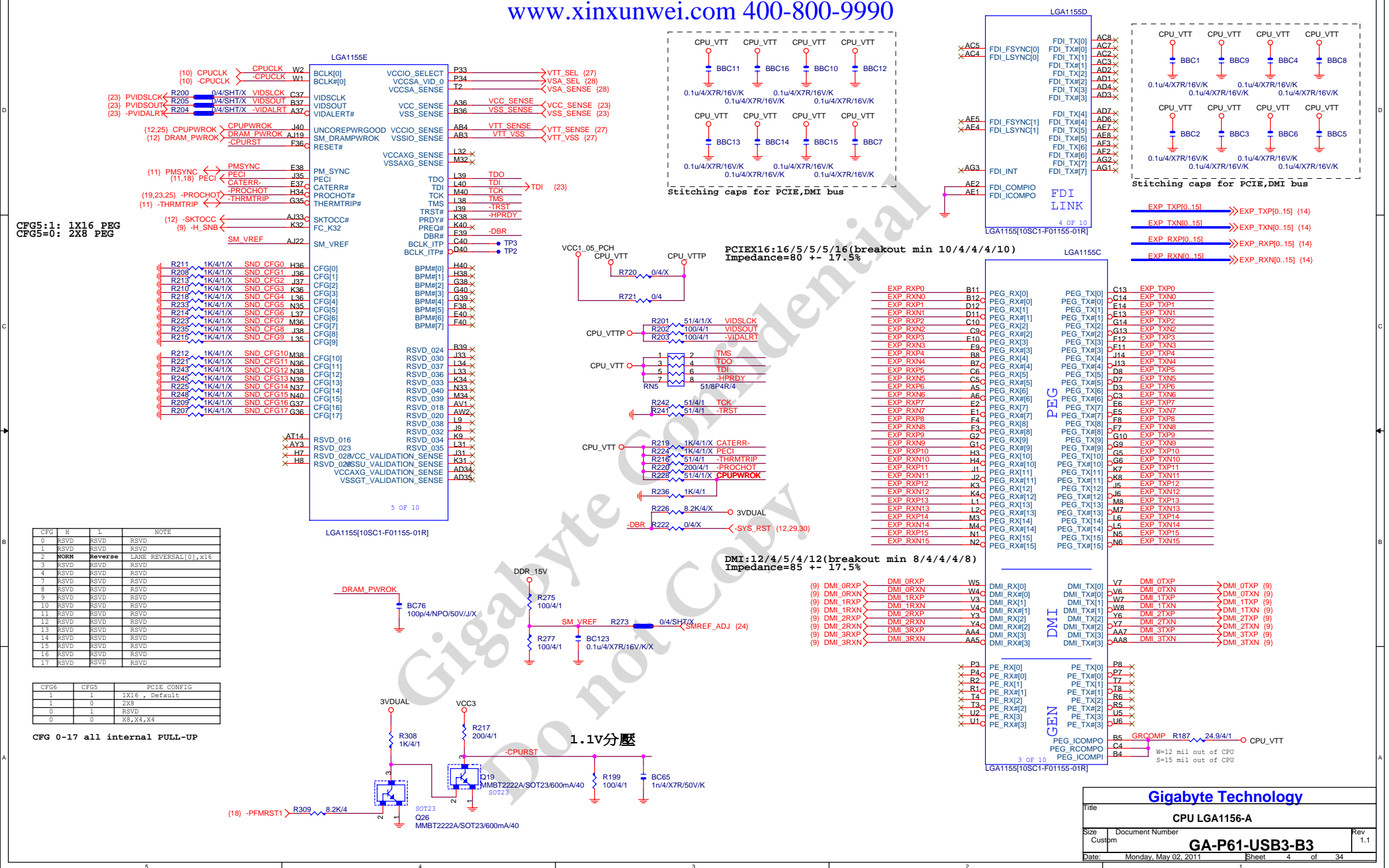
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Title		Cover Sheet	
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[illegible]

BLOCK DIAGRAM





## LGA1155A

MAAA0	AV27	SA_MA[0]	SA_DQS[0]	AK3	DQSA0
MAAA1	AY24	SA_MA[1]	SA_DQS[0]	AK2	-DQSA0
MAAA2	AW24	SA_MA[2]			
MAAA3	AW23	SA_MA[3]			
MAAA4	AV23	SA_MA[4]	SA_DQ[0]	AJ3	MDA0
MAAA5	AT24	SA_MA[5]	SA_DQ[1]	AJ4	MDA1
MAAA6	AT23	SA_MA[6]	SA_DQ[2]	AL3	MDA2
MAAA7	AV22	SA_MA[7]	SA_DQ[3]	AL4	MDA3
MAAA8	AV22	SA_MA[8]	AJ2	MDA4	
MAAA9	AT22	SA_MA[9]	SA_DQ[4]	AJ1	MDA5
MAAA10	AV28	SA_MA[10]	SA_DQ[5]	AL2	MDA6
MAAA11	AU21	SA_MA[11]	SA_DQ[6]	AL1	MDA7
MAAA12	AT21	SA_MA[12]			
MAAA13	AW32	SA_MA[13]	SA_DQS[1]	AP3	DQSA1
MAAA14	AU20	SA_MA[14]	SA_DQS[1]	AP2	-DQSA1
MAAA15	AT20	SA_MA[15]			
(7) -SWEA	AW29	SA_WE#	SA_DQ[8]	AN1	MDA8
(7) -SCASA	AV30	SA_CAS#	SA_DQ[9]	AN4	MDA9
(7) -SRASA	AU28	SA_RAS#	SA_DQ[10]	AR3	MDA10
			SA_DQ[11]	AR4	MDA11
(7) SBAA0	AY29	SA_BS[0]	SA_DQ[12]	AN2	MDA12
(7) SBAA1	AW28	SA_BS[1]	SA_DQ[13]	AN3	MDA13
(7) SBAA2	AV20	SA_BS[2]	SA_DQ[14]	AR2	MDA14
			SA_DQ[15]	AR1	MDA15
(7) -CSA0	AY29	SA_CS#	SA_DQS[2]	AW4	DQSA2
(7) -CSA1	AV32	SA_CS#	SA_DQS[2]	AW4	-DQSA2
	AW30	SA_CS#			
	AW33	SA_CS#			
(7) CKEA0	AV19	SA_CKE[0]	SA_DQ[16]	AV2	MDA16
(7) CKEA1	AT19	SA_CKE[1]	SA_DQ[17]	AW3	MDA17
	AU18	SA_CKE[2]	SA_DQ[18]	AV5	MDA18
	AV18	SA_CKE[3]	SA_DQ[19]	AW5	MDA19
			SA_DQ[20]	AU2	MDA20
MODT_A0	AV31	SA_ODT[0]	SA_DQ[21]	AU3	MDA21
MODT_A1	AU32	SA_ODT[1]	SA_DQ[22]	AU5	MDA22
	AW30	SA_ODT[2]	SA_DQ[23]	AY5	MDA23
	AW33	SA_ODT[3]			
(7) DCLKA0	AY25	SA_CK[0]	SA_DQS[3]	AV8	DQSA3
(7) -DCLKA0	AW25	SA_CK#	SA_DQS[3]	AW8	-DQSA3
(7) DCLKA1	AU24	SA_CK[1]			
(7) -DCLKA1	AU25	SA_CK#	SA_DQ[24]	AY7	MDA24
	AW27	SA_CK[2]	SA_DQ[25]	AU7	MDA25
	AY27	SA_CK[3]	SA_DQ[26]	AV9	MDA26
	AW26	SA_CK[4]	SA_DQ[27]	AU9	MDA27
	AW26	SA_CK[5]	SA_DQ[28]	AV7	MDA28
	AW26	SA_CK[6]	SA_DQ[29]	AW7	MDA29
			SA_DQ[30]	AW9	MDA30
			SA_DQ[31]	AY9	MDA31
(7,8) -DDR3_RST	TR1	SM_DRAMRST#			
	TBC9		SA_DQS[4]	AV37	DQSA4
	0.1u4/X7R/16V/K/X		SA_DQS[4]	AV36	-DQSA4
			SA_DQ[32]	AU35	MDA32
			SA_DQ[33]	AW37	MDA33
			SA_DQ[34]	AU39	MDA34
			SA_DQ[35]	AU36	MDA35
			SA_DQ[36]	AW35	MDA36
			SA_DQ[37]	AY36	MDA37
			SA_DQ[38]	AU38	MDA38
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			SA_DQ[43]	AN37	MDA43
			SA_DQ[44]	AR39	MDA44
			SA_DQ[45]	AR38	MDA45
			SA_DQ[46]	AN39	MDA46
			SA_DQ[47]	AN40	MDA47
			SA_DQS[6]	AK38	DQSA6
			SA_DQS[6]	AK39	-DQSA6
			SA_DQ[48]	AL40	MDA48
			SA_DQ[49]	AL37	MDA49
			SA_DQ[50]	AJ38	MDA50
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			SA_DQ[54]	AJ39	MDA54
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			SA_DQS[7]	AF39	-DQSA7
			SA_DQ[56]	AG40	MDA56
			SA_DQ[57]	AG37	MDA57
			SA_DQ[58]	AE38	MDA58
			SA_DQ[59]	AE37	MDA59
			SA_DQ[60]	AG39	MDA60
			SA_DQ[61]	AG38	MDA61
			SA_DQ[62]	AE39	MDA62
			SA_DQ[63]	AE40	MDA63

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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_DQ[0]	AG7	MDB0
MAAB5	AP18	SB_MA[5]	SB_DQ[1]	AG8	MDB1
MAAB6	AM18	SB_MA[6]	SB_DQ[2]	AJ9	MDB2
MAAB7	AL18	SB_MA[7]	SB_DQ[3]	AJ8	MDB3
MAAB8	AN18	SB_MA[8]	SB_DQ[4]	AG5	MDB4
MAAB9	AY17	SB_MA[9]	SB_DQ[5]	AG6	MDB5
MAAB10	AN23	SB_MA[10]	SB_DQ[6]	AJ6	MDB6
MAAB11	AU17	SB_MA[11]	SB_DQ[7]	AJ7	MDB7
MAAB12	AT18	SB_MA[12]			
MAAB13	AR26	SB_MA[13]	SB_DQS[1]	AM8	DQSB1
MAAB14	AY16	SB_MA[14]	SB_DQS[1]	AL8	-DQSB1
MAAB15	AV16	SB_MA[15]			
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(8) -SCASB	AK25	SB_CAS#	SB_DQ[9]	AM7	MDB9
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			SB_DQ[11]	AL10	MDB11
(8) SBAB0	SBAB0	SB_BS[0]	SB_DQ[12]	AL6	MDB12
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(8) SBAB2	SBAB2	SB_BS[2]	SB_DQ[14]	AM9	MDB15
			SB_DQ[15]		
(8) -CSB0	AN25	SB_CS#	SB_DQS[2]	AR8	DQSB2
(8) -CSB1	AN26	SB_CS#	SB_DQS[2]	AP8	-DQSB2
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	AL26	SB_CS#			
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	AV15	SB_CKE[3]	SB_DQ[19]	AR10	MDB19
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MODT_B0	AL26	SB_ODT[0]	SB_DQ[21]	AP9	MDB21
MODT_B1	AP26	SB_ODT[1]	SB_DQ[22]	AR9	MDB22
	AM26	SB_ODT[2]	SB_DQ[23]	AR9	MDB23
	AK26	SB_ODT[3]			
			SB_DQS[3]	AN13	DQSB3
			SB_DQS[3]	AN12	-DQSB3
(8) DCLKB0	AL21	SB_CK[0]			
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(8) DCLKB1	AL22	SB_CK[1]	SB_DQ[25]	AM13	MDB25
(8) -DCLKB1	DCLKB1	SB_CK#	SB_DQ[26]	AR13	MDB26
	AK20	SB_CK[2]	SB_DQ[27]	AP13	MDB27
	AL23	SB_CK[3]	SB_DQ[28]	AL12	MDB28
	AM22	SB_CK[4]	SB_DQ[29]	AL13	MDB29
	AP21	SB_CK[5]	SB_DQ[30]	AR12	MDB30
	AN21	SB_CK[6]	SB_DQ[31]	AP12	MDB31
(8) VREF_DQB	AH1	FC_AH1	SB_DQS[4]	AN29	DQSB4
(7) VREF_DQA	AH4	FC_AH4	SB_DQS[4]	AN28	-DQSB4
			SB_DQ[32]	AR28	MDB32
			SB_DQ[33]	AR29	MDB33
			SB_DQ[34]	AL28	MDB34
			SB_DQ[35]	AL29	MDB35
			SB_DQ[36]	AP28	MDB36
			SB_DQ[37]	AP29	MDB37
			SB_DQ[38]	AM28	MDB38
			SB_DQ[39]	AM29	MDB39
			SB_DQS[5]	AP33	DQSB5
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			SB_DQ[40]	AP32	MDB40
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			SB_DQ[45]	AR31	MDB45
			SB_DQ[46]	AR35	MDB46
			SB_DQ[47]	AR34	MDB47
			SB_DQS[6]	AL33	DQSB6
			SB_DQS[6]	AM33	-DQSB6
			SB_DQ[48]	AM32	MDB48
			SB_DQ[49]	AM31	MDB49
			SB_DQ[50]	AL35	MDB50
			SB_DQ[51]	AL32	MDB51
			SB_DQ[52]	AM34	MDB52
			SB_DQ[53]	AL31	MDB53
			SB_DQ[54]	AM35	MDB54
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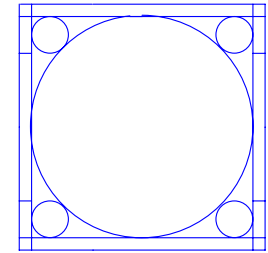
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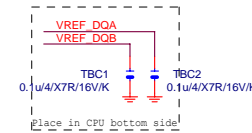
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LGA1155

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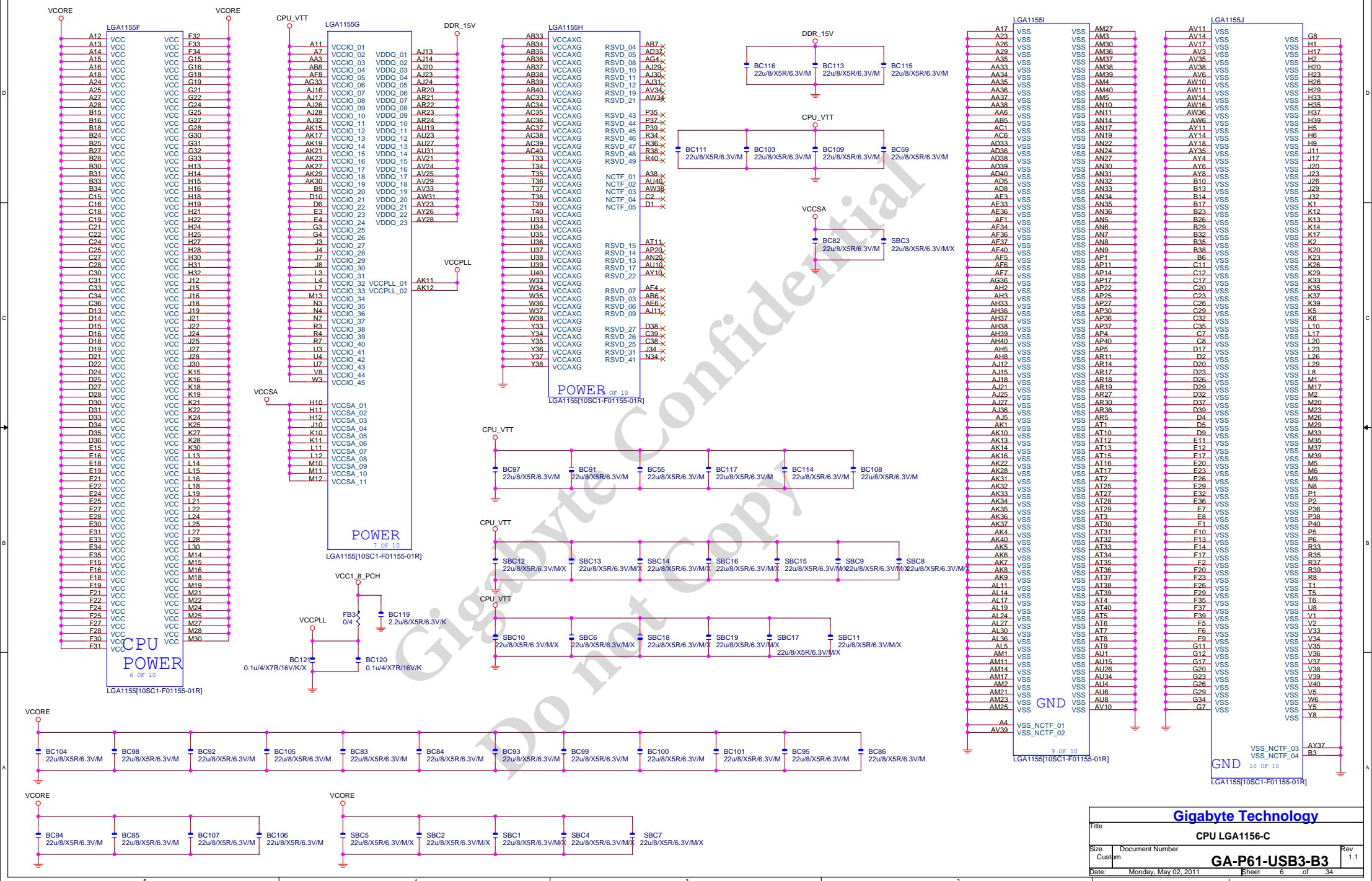
Need check the new CPU ME



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CPU LGA1156-B

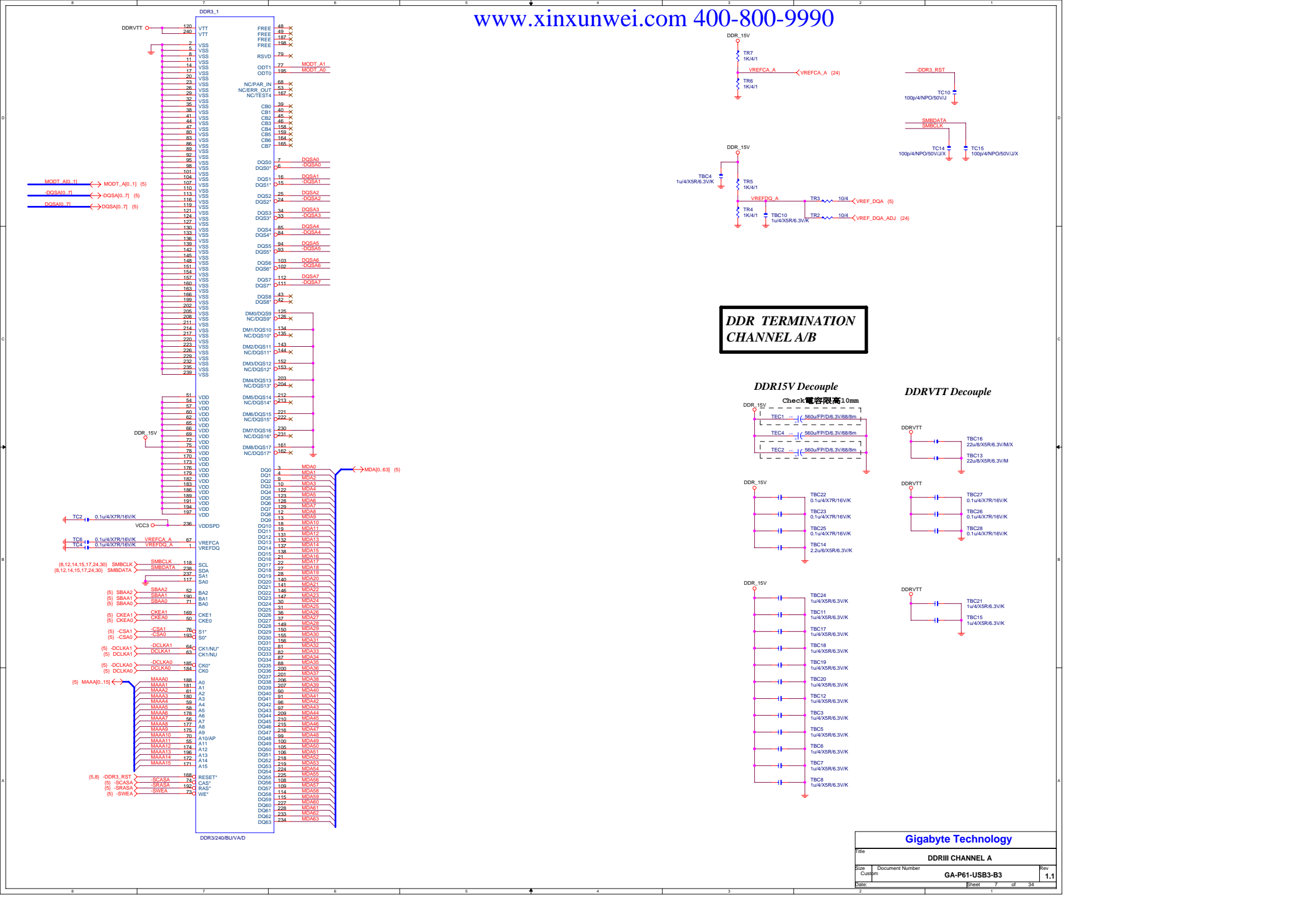
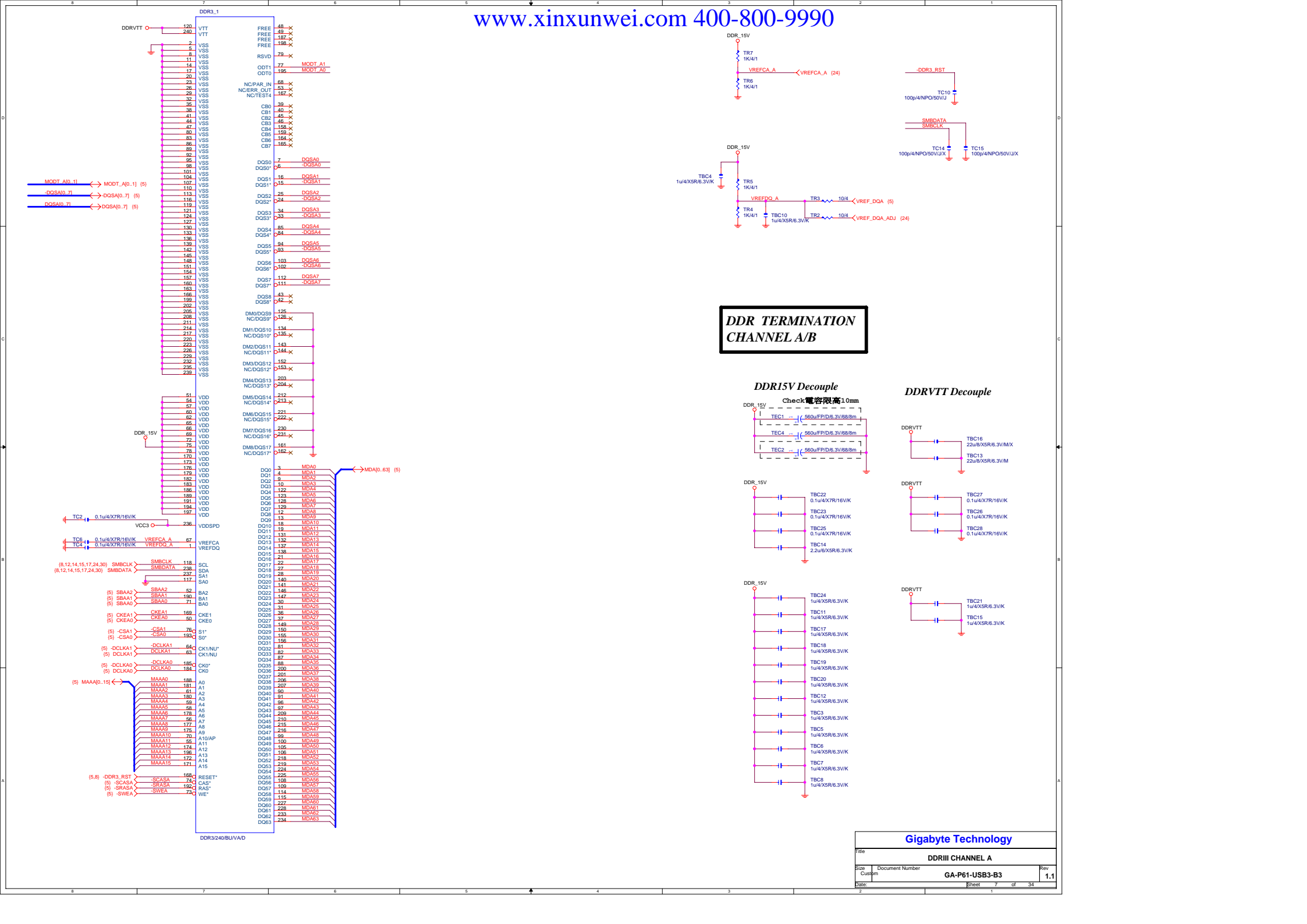
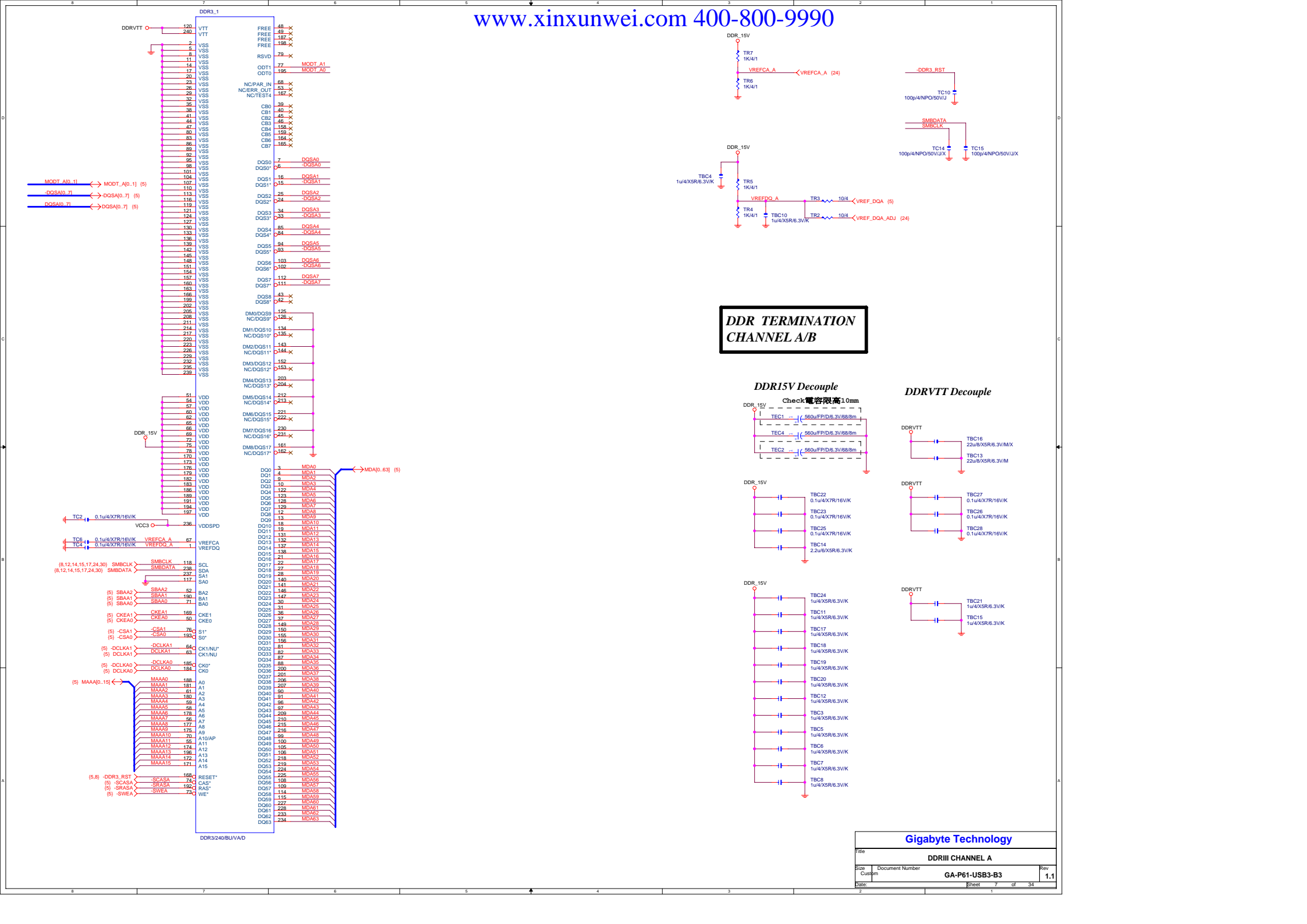
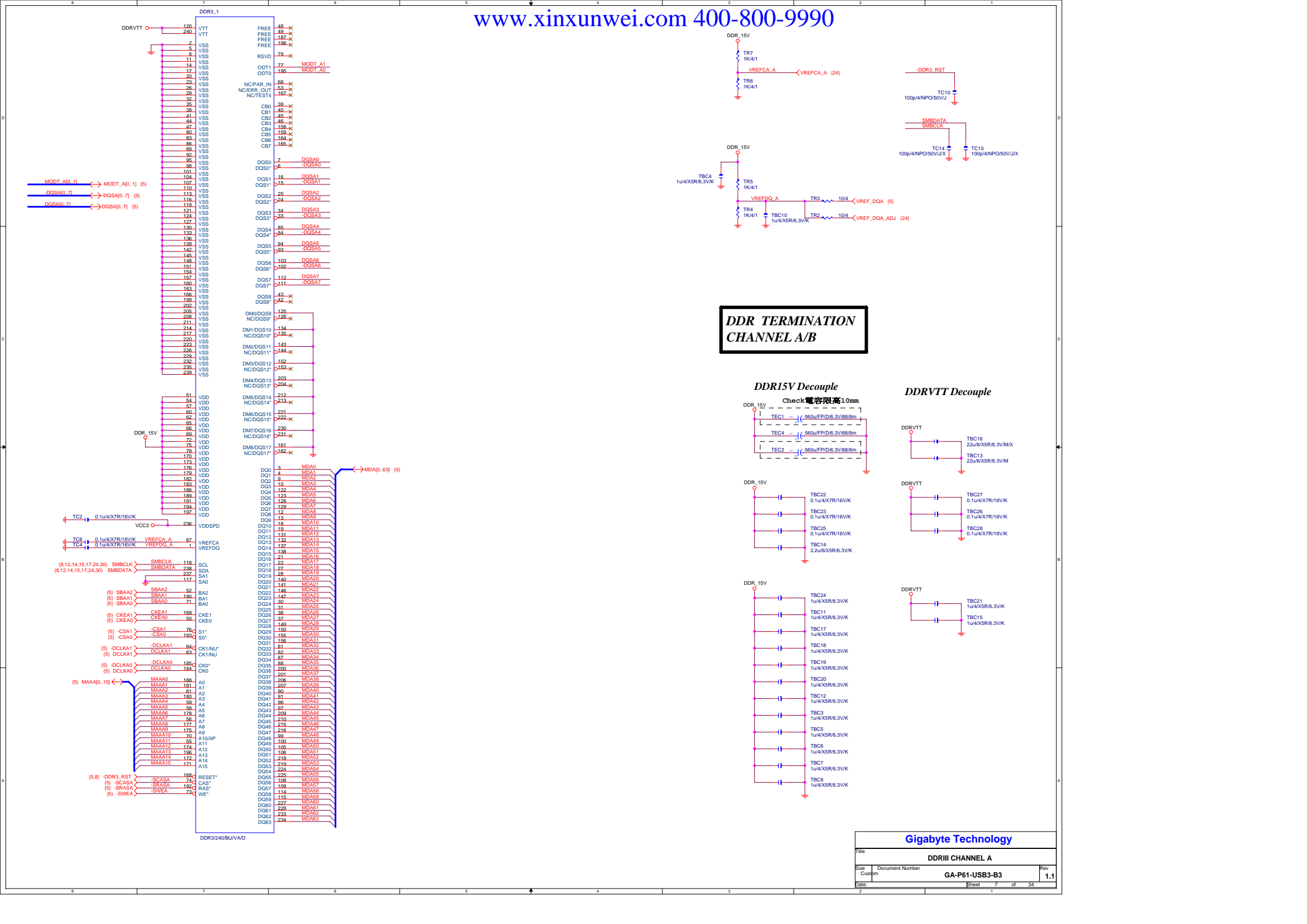
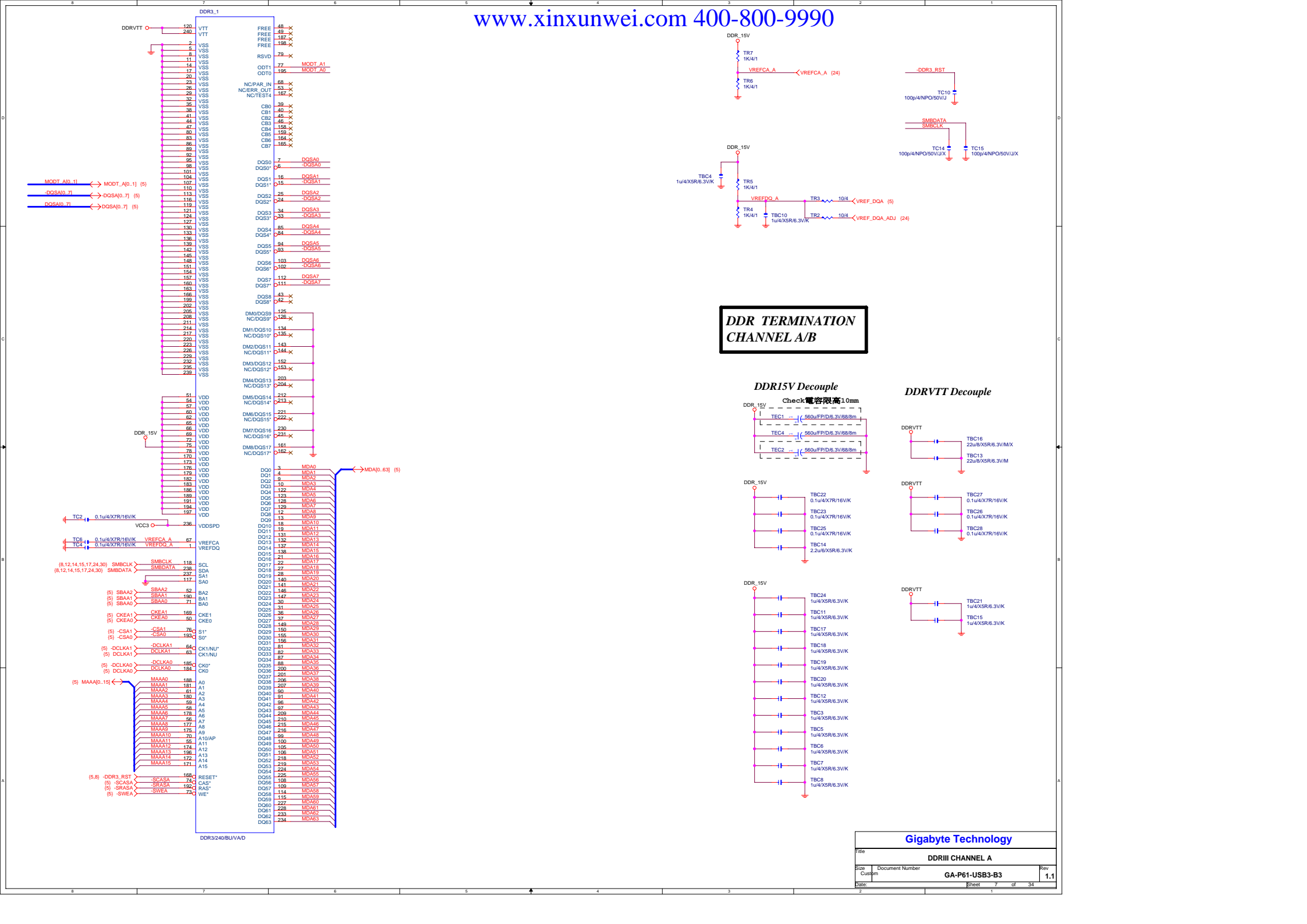
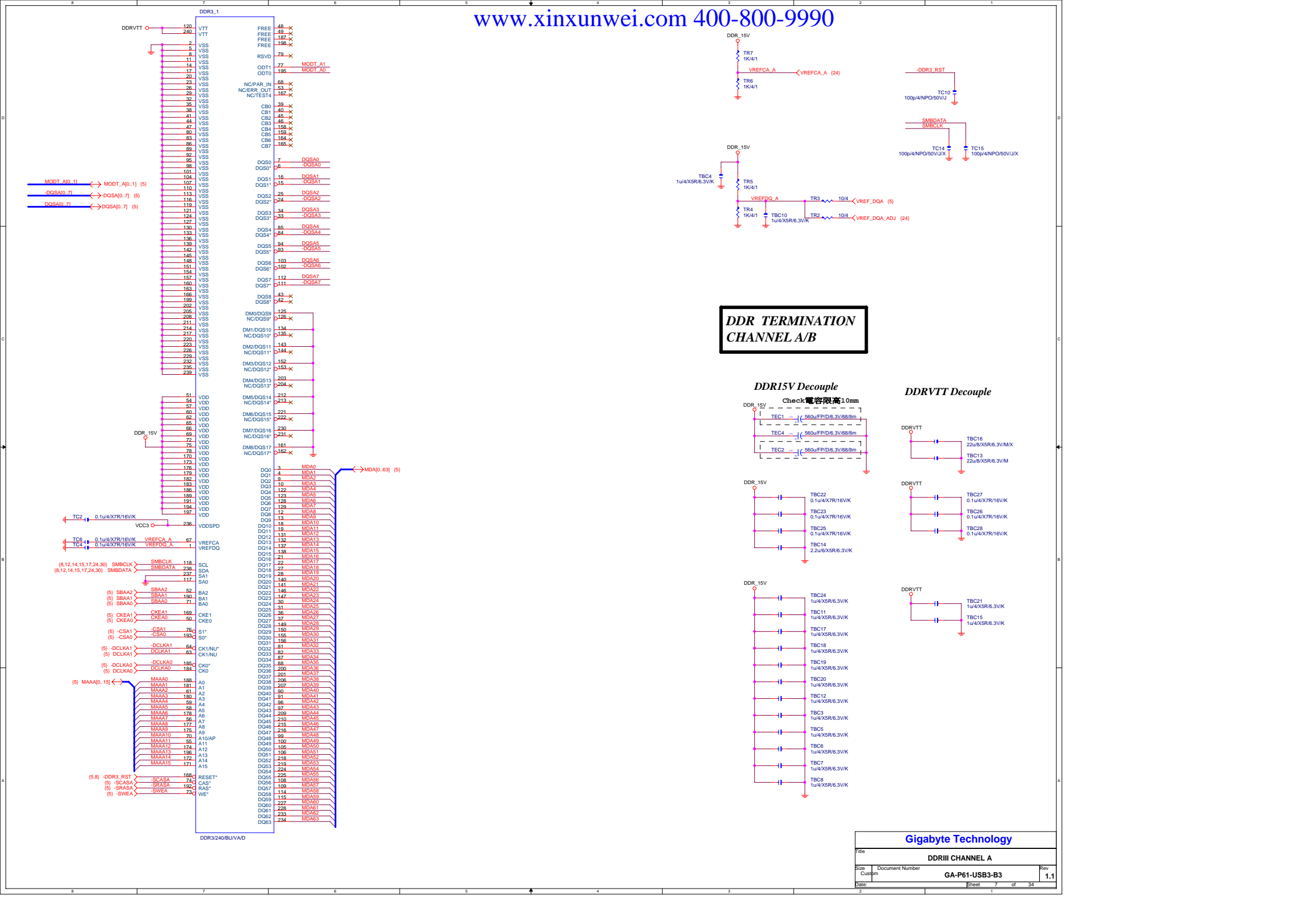
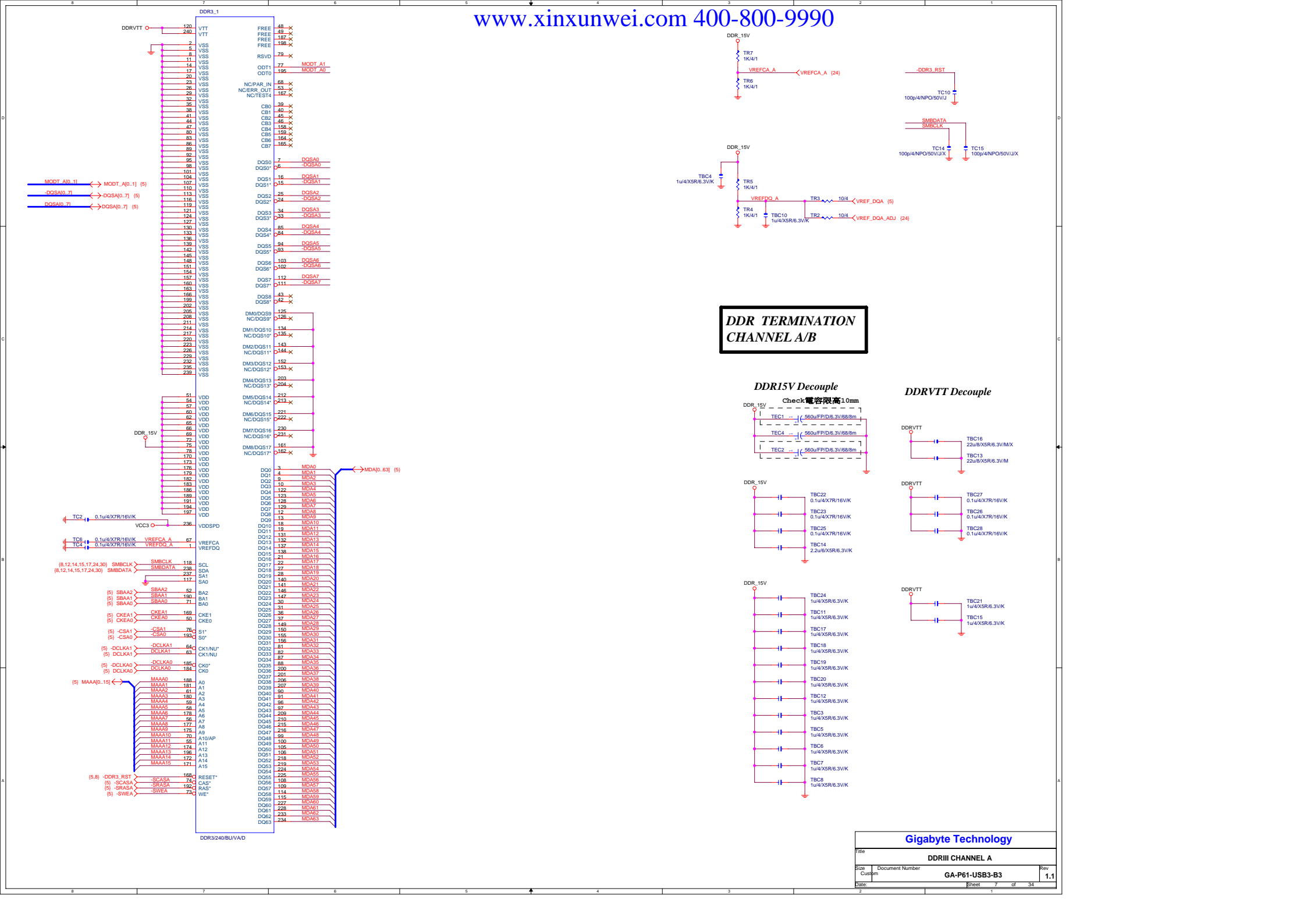
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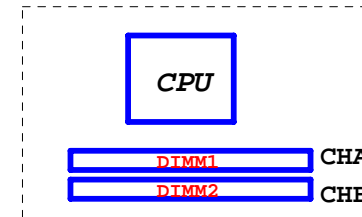


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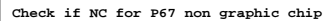
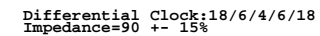
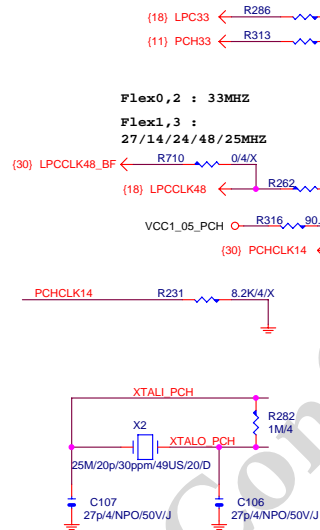


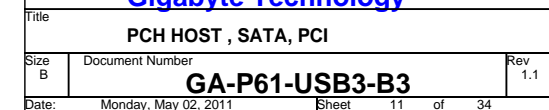
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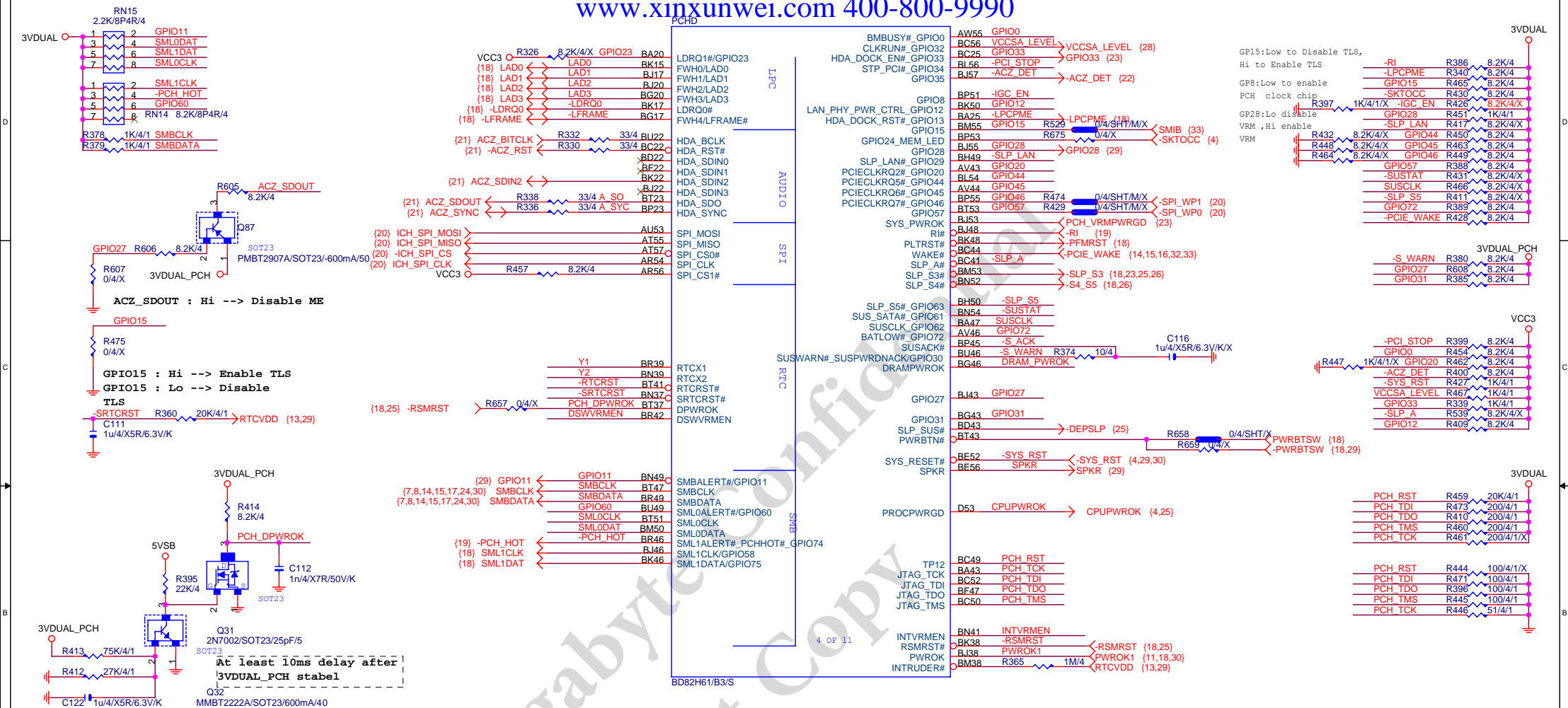






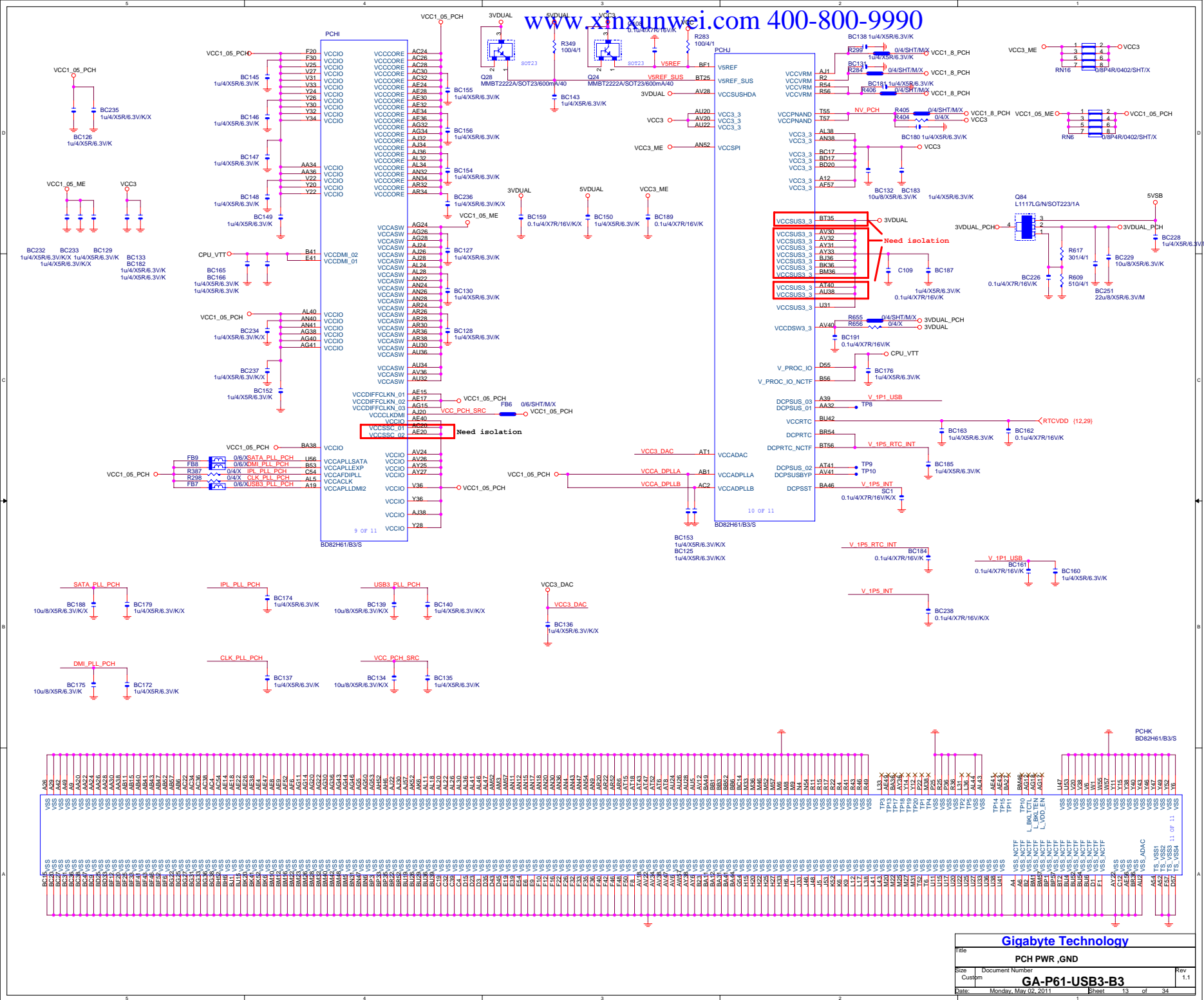


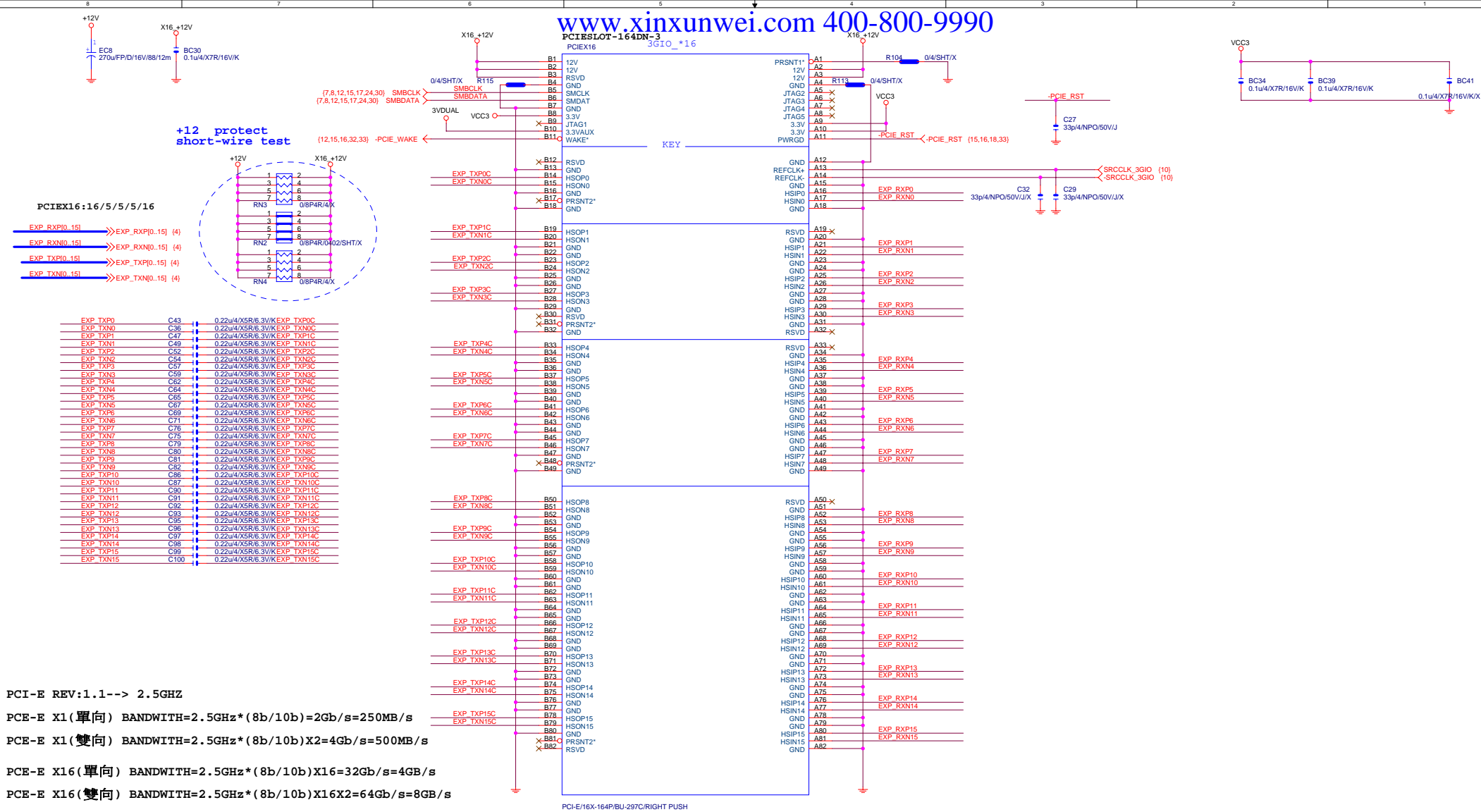




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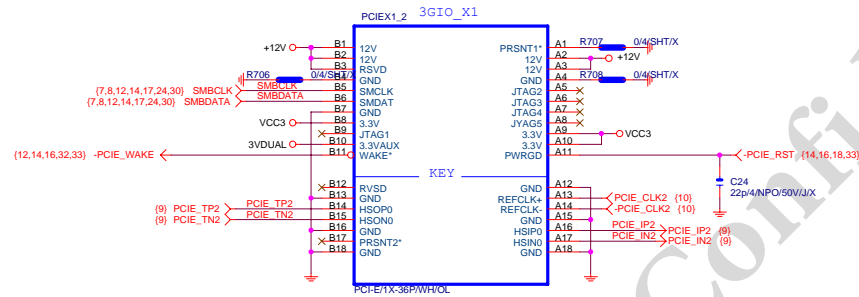
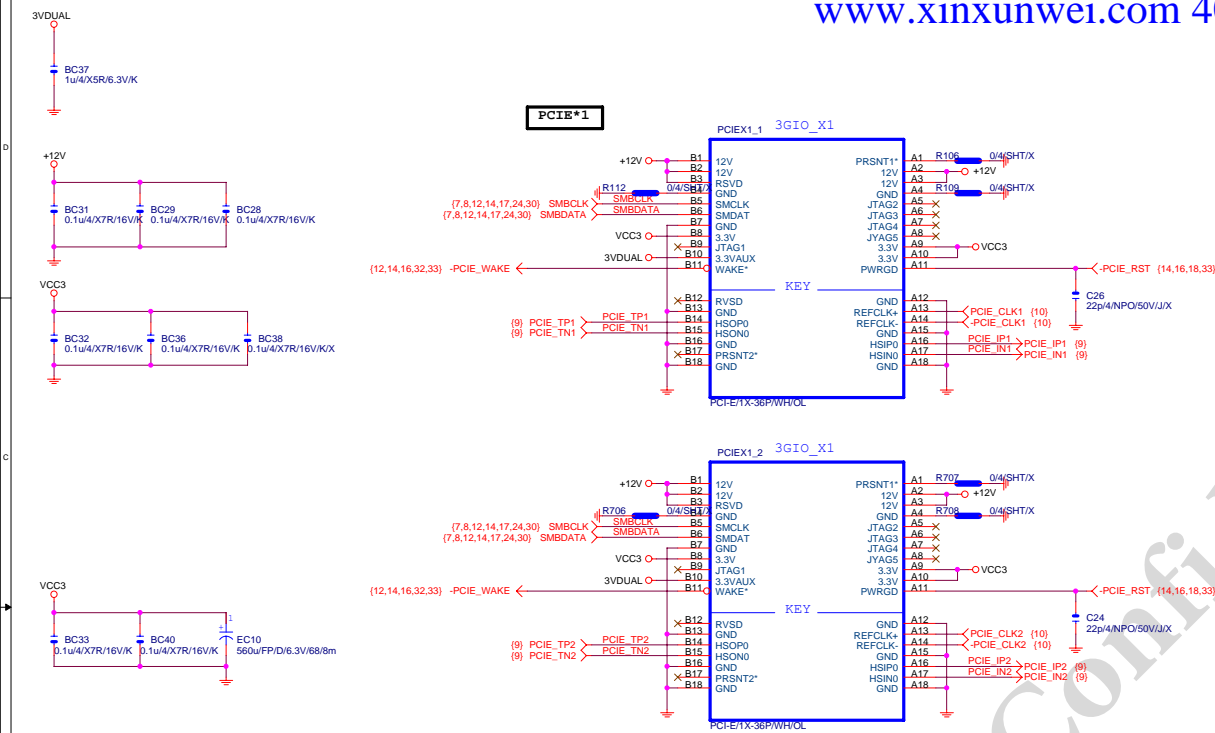




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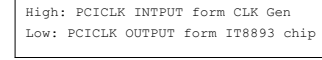
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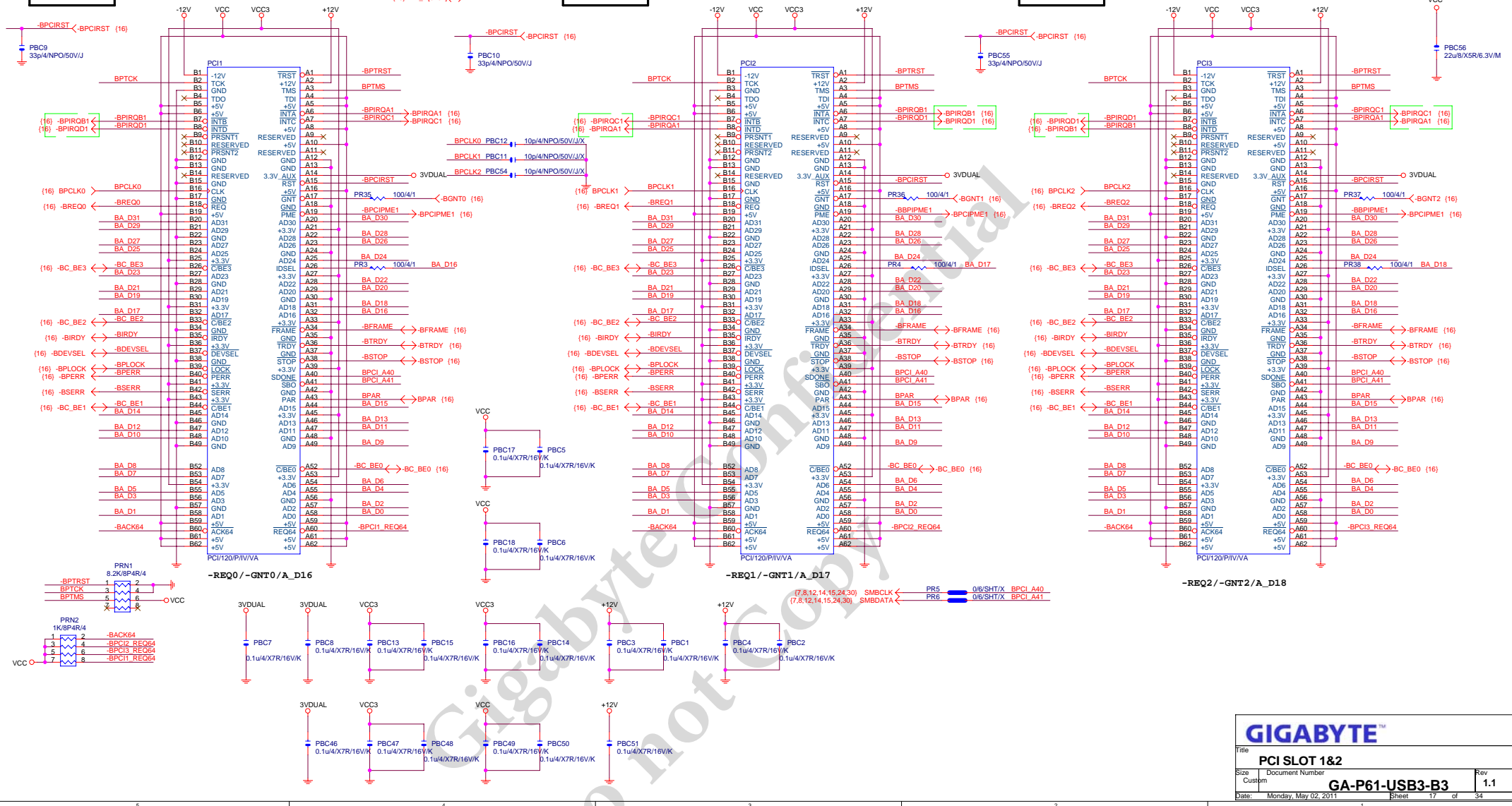
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PCI SLOT 1

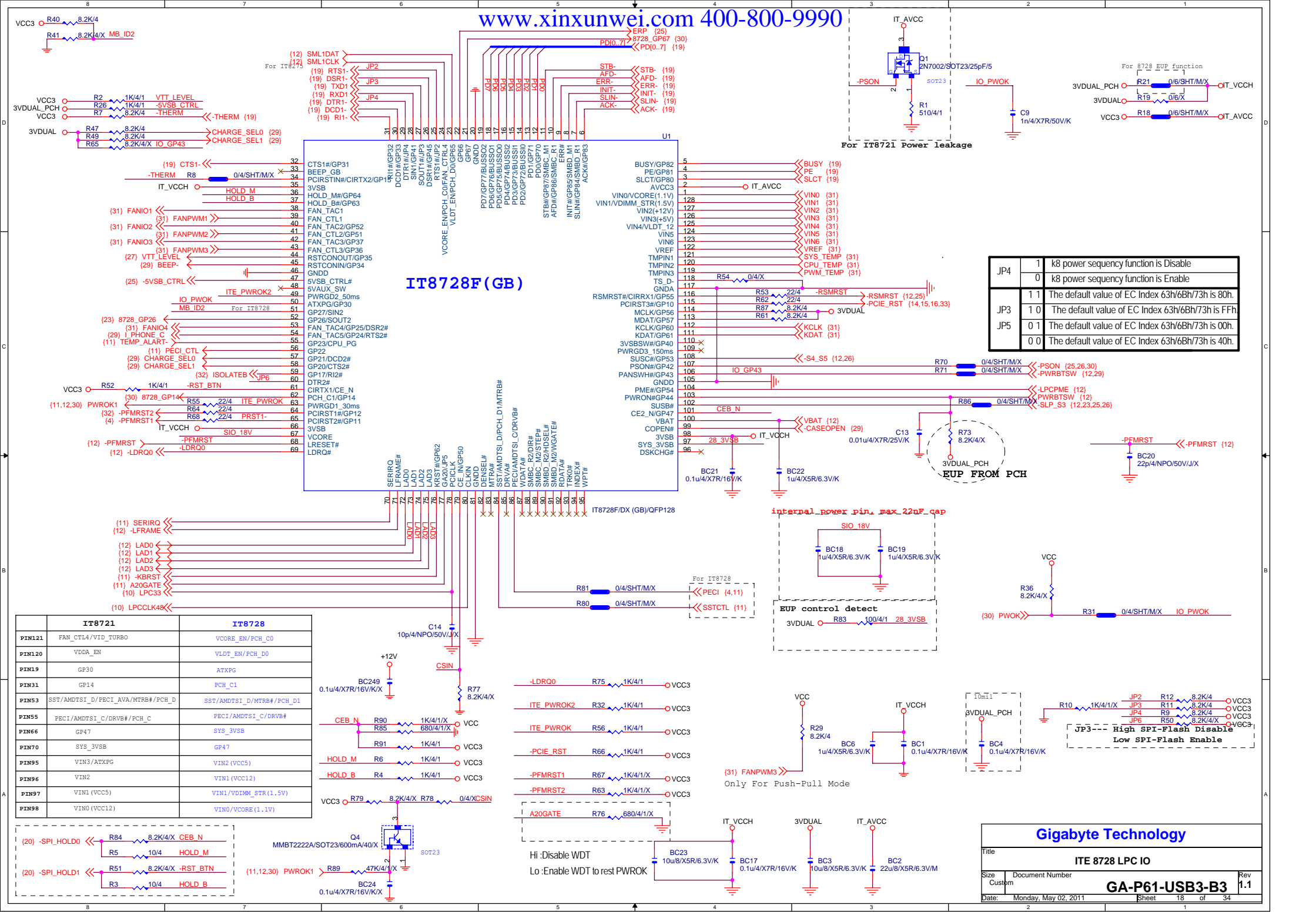
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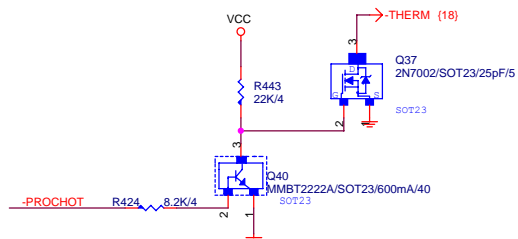
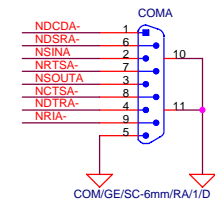
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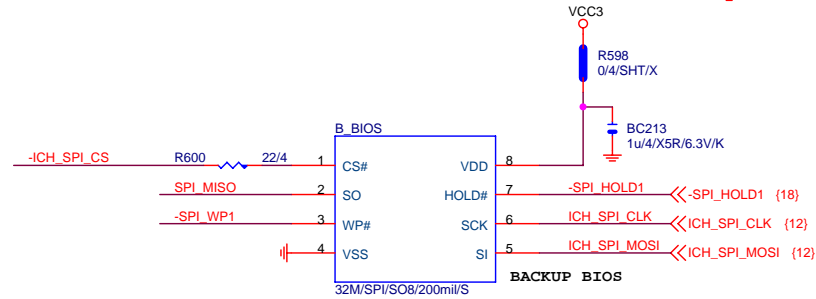
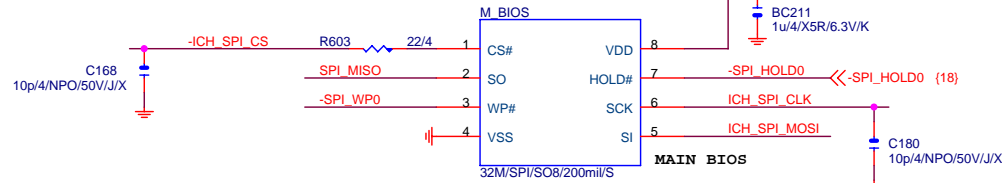
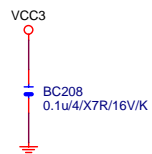
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**PCI SLOT 1&2**Size  
CustomDocument Number  
**GA-P61-USB3-B3**Rev  
**1.1**

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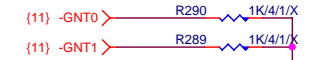
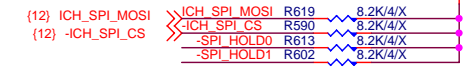
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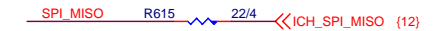




## MOSI For DMI RX Termination Voltage



## Default int pull up



BOOT DEVICE	GNT0	GNT1
LPC	0	0
PCI	0	1
NAND	1	0
SPI	1	1

1 means floating  
0 means PD 1K

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Title			BIOS
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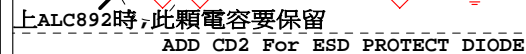
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CR26: 20K/4/1% @others



Title	HD AUDIO ALC892
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Verify MIC function  
in LINE-in



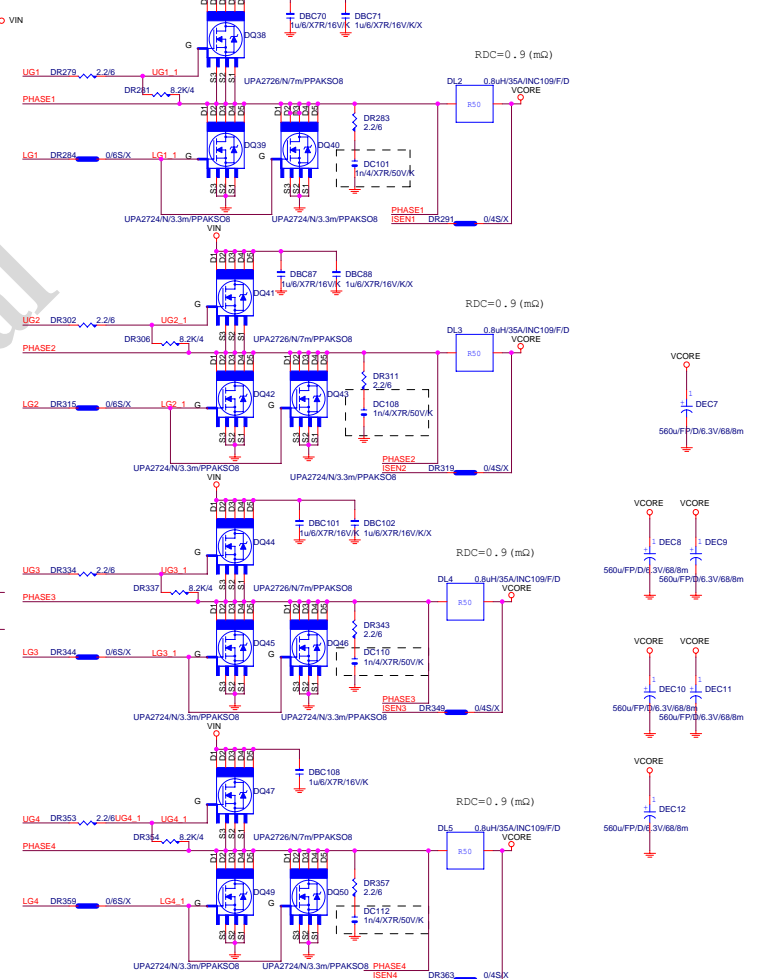
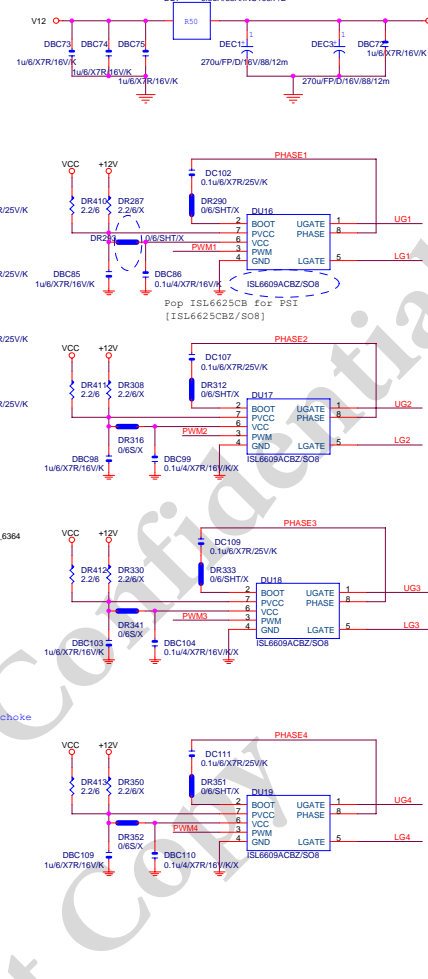
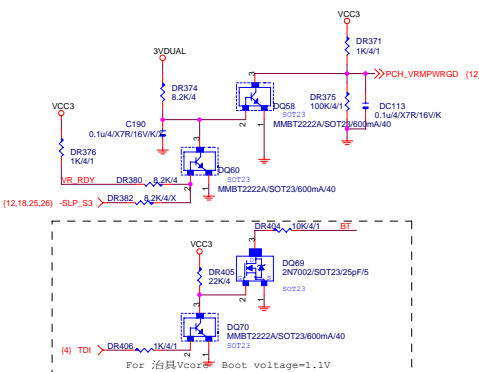
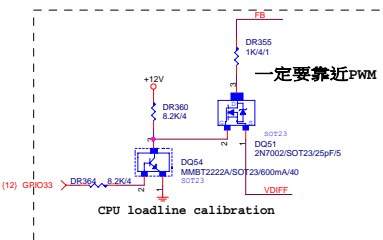
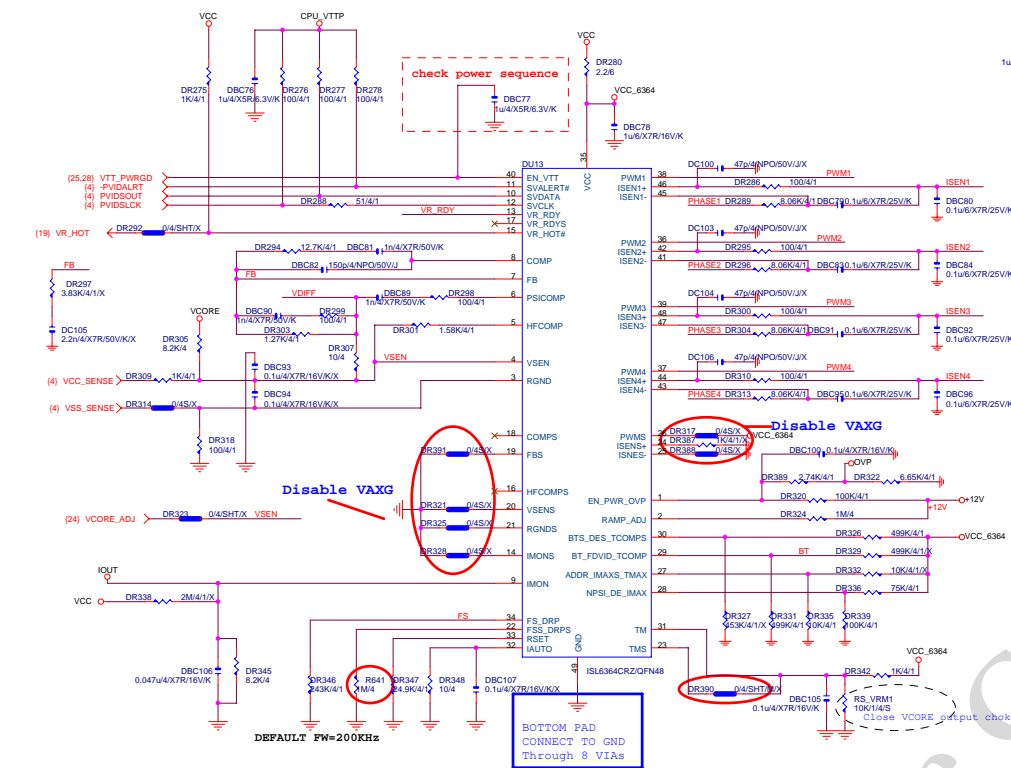
**GREEN**  
LINE OUT

**PINK**  
**MIC-IN**



## Digital Area

<b>Gigabyte Technology</b>			
Title			
<b>AUDIO JACK</b>			
Size Custom	Document Number	<b>GA-P61-USB3-B3</b>	Rev 1.
Date:	Monday, May 02, 2011	Sheet 22 of 34	



MOS HEATSINK

HEAT SINK/H67MA-D2H/MOSFET/KG/[12SP2-090007-01R\_12SP2-090007-02R]/X

**PROCHOT** → **PROCHOT** (4,19,25)

CPU\_VTT

R637 100/4/1  $\Omega$

VCC3  
R17 1K/4/1

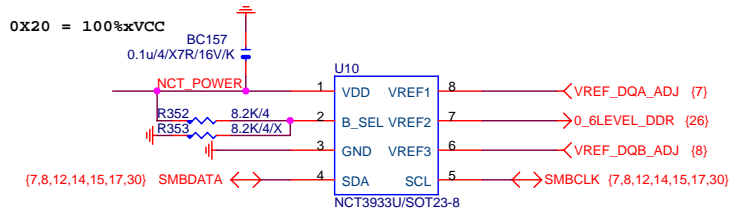
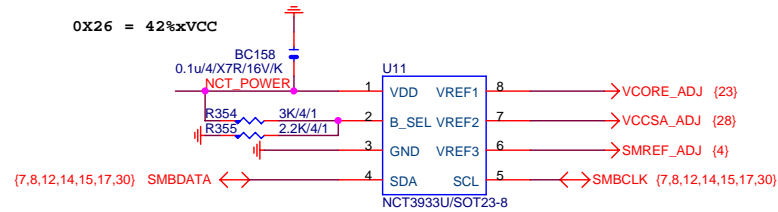
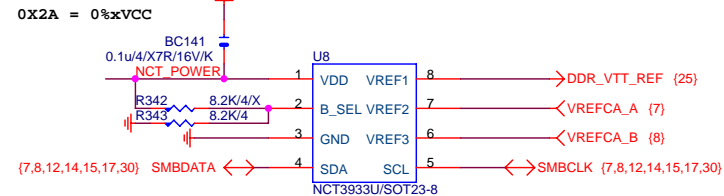
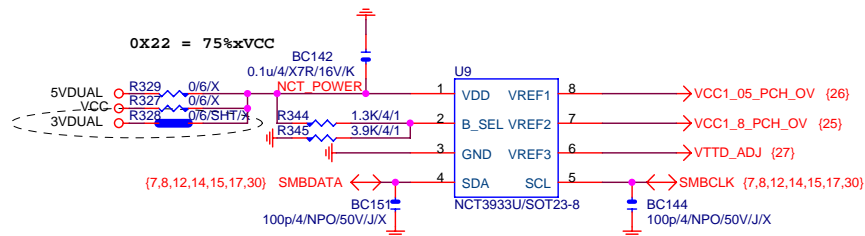
8728\_GP26

{18} 8/26\_GP26

	Title
	ISI 6364 for VR12

Size	Document Number
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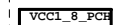
CustomGA-P61-USB3-B3
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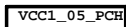


up6262	0X2A	0X20	0X22	0X26
VREF1	DDR_VTT	VREF_DDRA_DQ	VCC1_05_PCH	VCORE
VREF2	VREF_DDRA_CA	DDR15V	VCC1_8_PCH	VCCSA
VREF3	VREF_DDRA_CAVREF_DDRB_DQ		CPU_VTT	SMREF

Gigabyte Technology

Title			CPU CORE VR-2
Size	Document Number	Rev	
Custom		GA-P61-USB3-B3 1.1	
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## CPU\_VTT

VTT_SEL	
HI	1.05V
LO	1.0V

(4) VTT_SEL	
(4) VTT_SENSE	
(4) VTT_VSS	

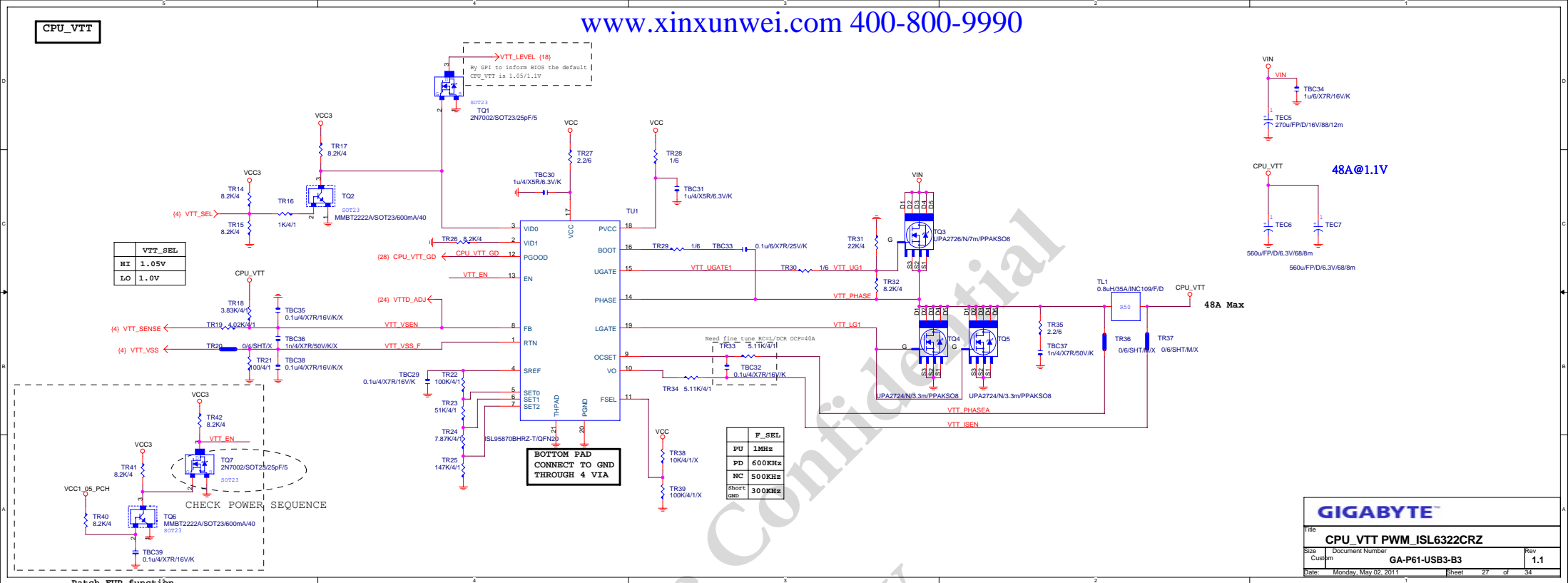
BOTTOM PAD  
CONNECT TO GND  
THROUGH 4 VIA

F_SEL	
PU	1MHz
PD	600KHz
NC	500KHz
Blank gnd	300KHz

GIGABYTE™

CPU\_VTT PWM\_ISL6322CRZ

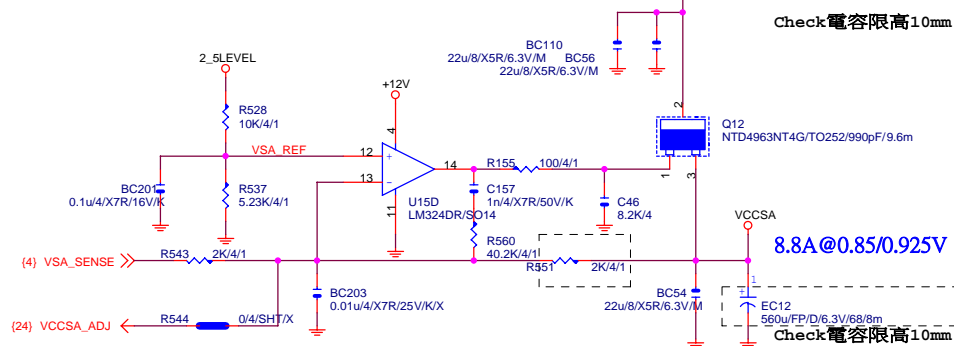
Size	Document Number	Rev
Cust	GA-P61-USB3-B3	1.1
Date:	Monday, May 02, 2011	Sheet 27 of 34



VCC\_SA

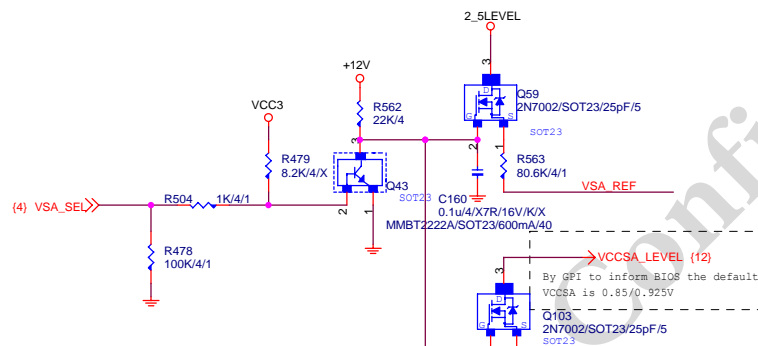
www.xinxunwei.com 400-800-9990

Check電容限高10mm

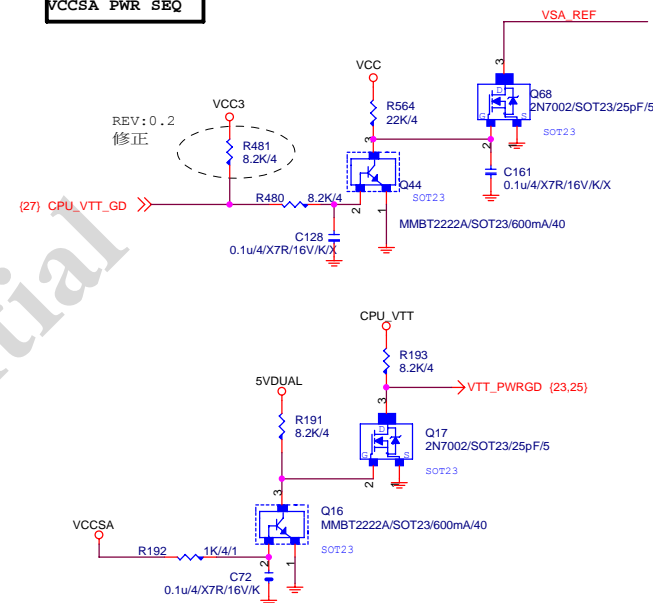


PDG 1.01

	VSA_SEL
HI	0.85V
LO	0.925V

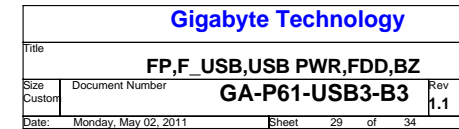


VCCSA PWR SEQ



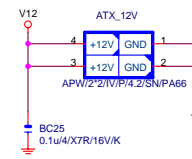
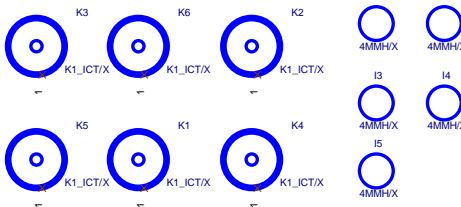
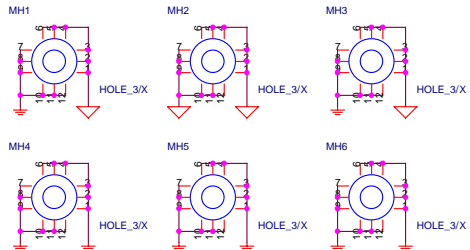
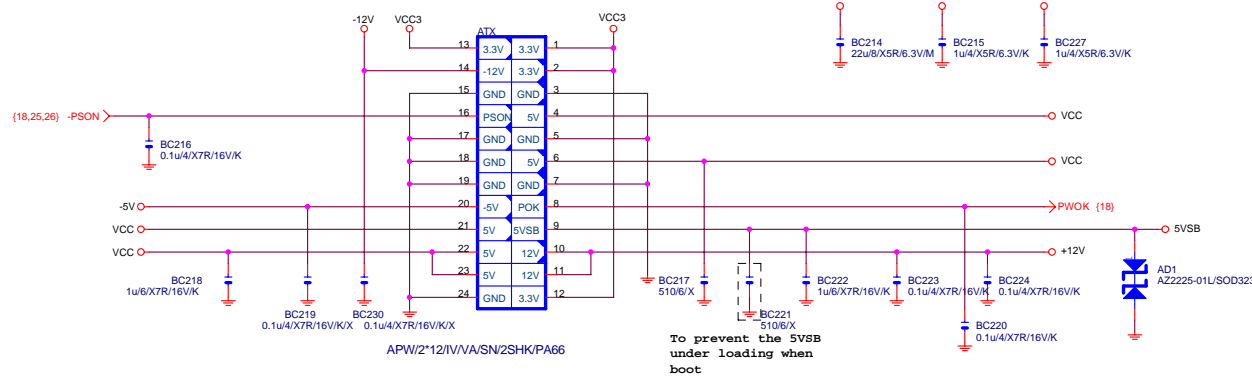
Gigabyte Technology

Title		
CPU VTT PWM_ISL6312		
Size	Document Number	Rev
Custom	GA-P61-USB3-B3	1.1
Date:	Monday, May 02, 2011	Sheet 28 of 34

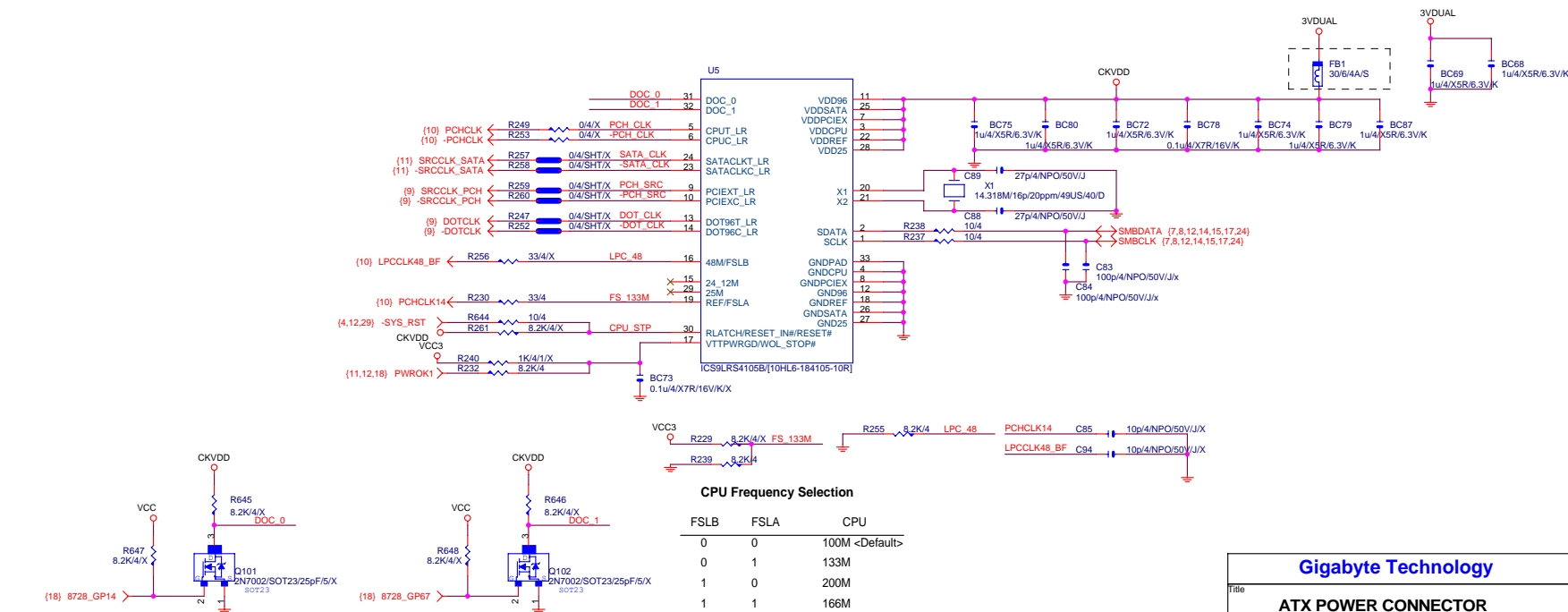


# ATX POWER CONNECTOR

www.xinxunwei.com 400-800-9990



To prevent the 5VSB under loading when boot

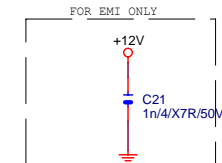
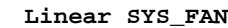
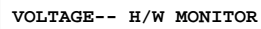


## CPU Frequency Selection

FSLB	FSLA	CPU
0	0	100M <Default>
0	1	133M
1	0	200M
1	1	166M

Gigabyte Technology

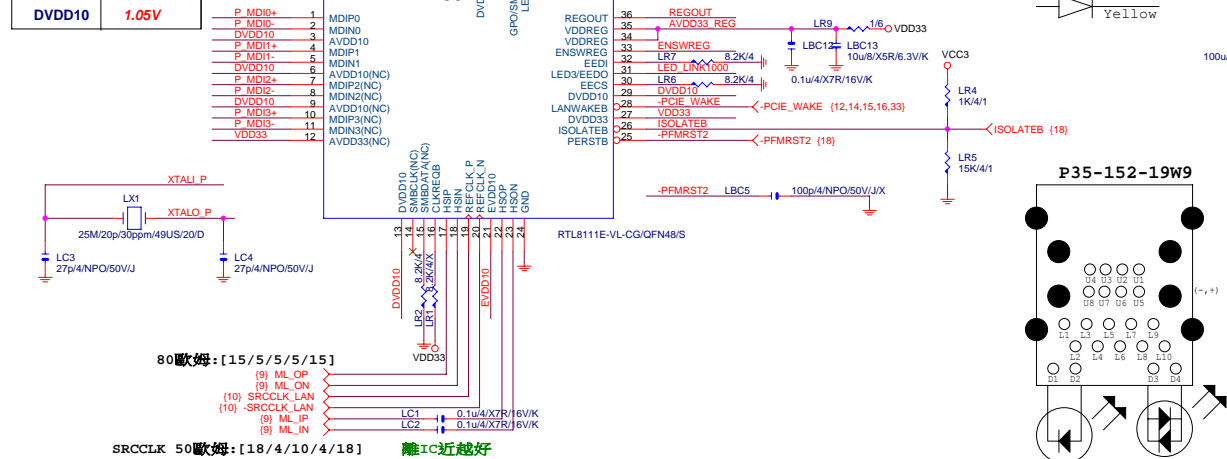
Title		
ATX POWER CONNECTOR		
Size	Document Number	Rev
Custom	GA-P61-USB3-B3	1.1
Date:	Monday, May 02, 2011	Sheet 30 of 34



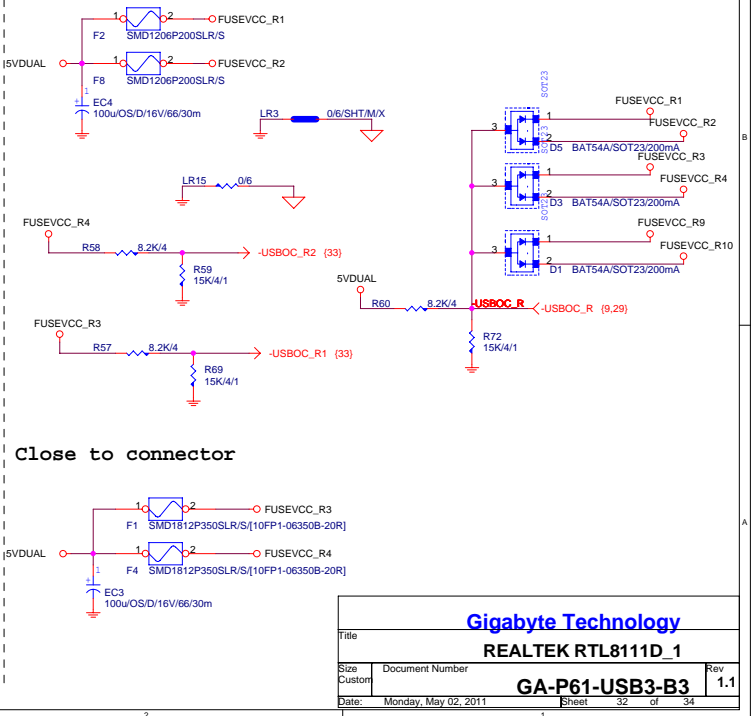
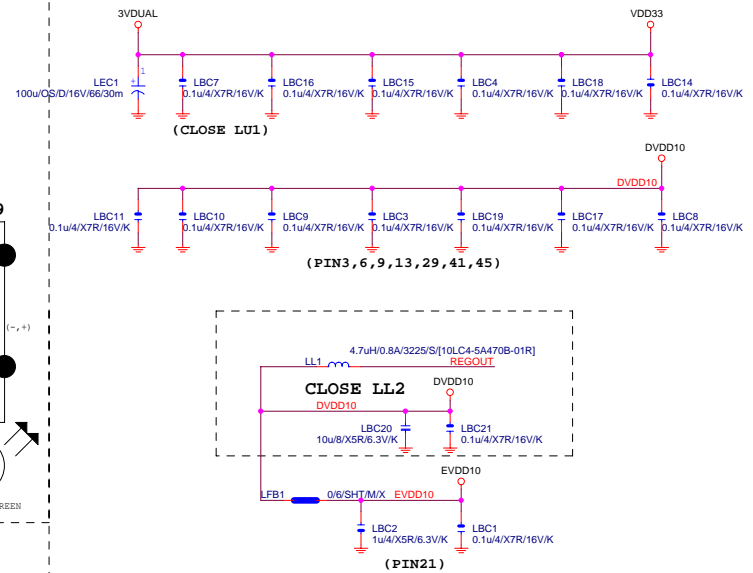
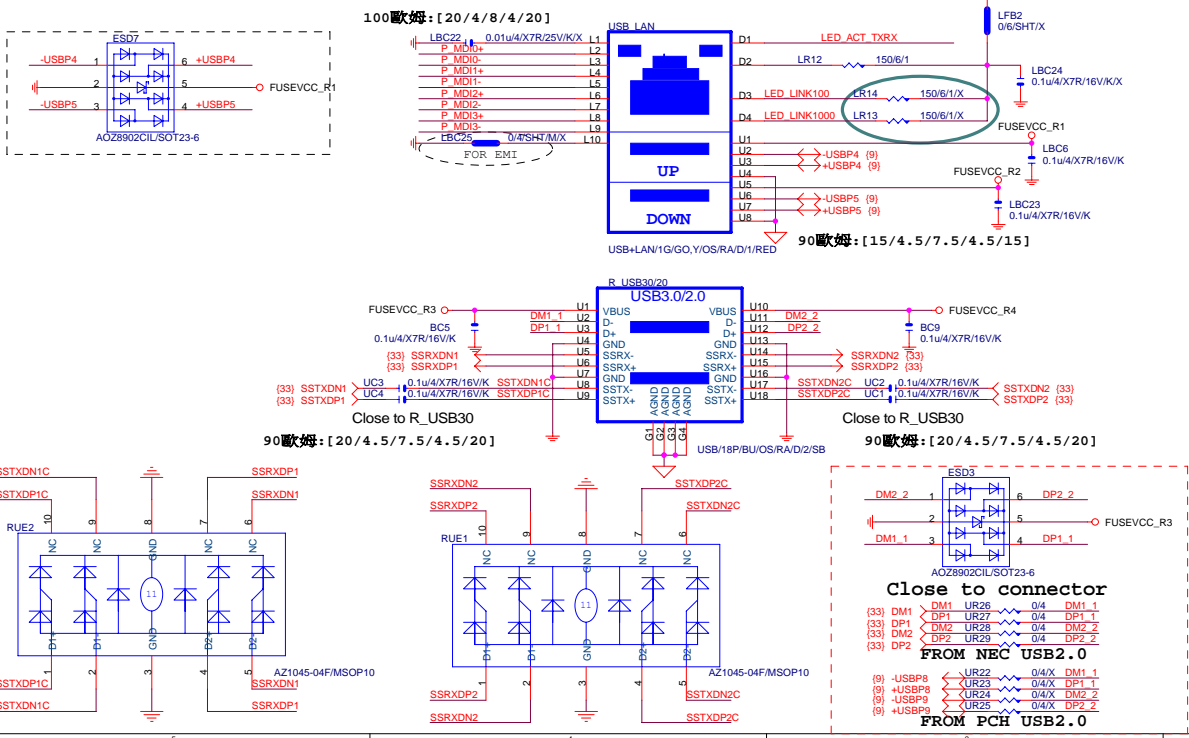
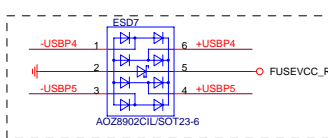
## PCI-E-1G LAN

## Power domain chart

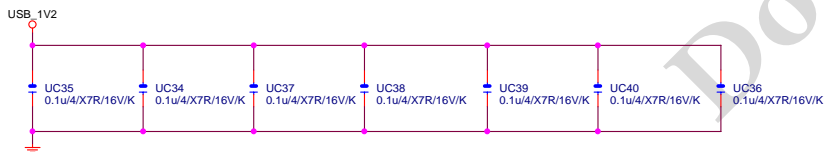
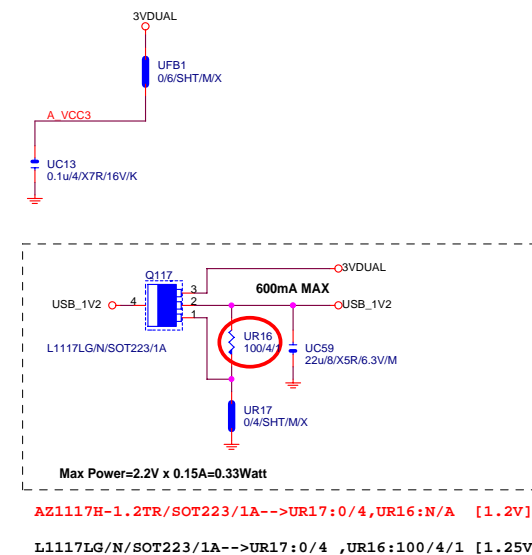
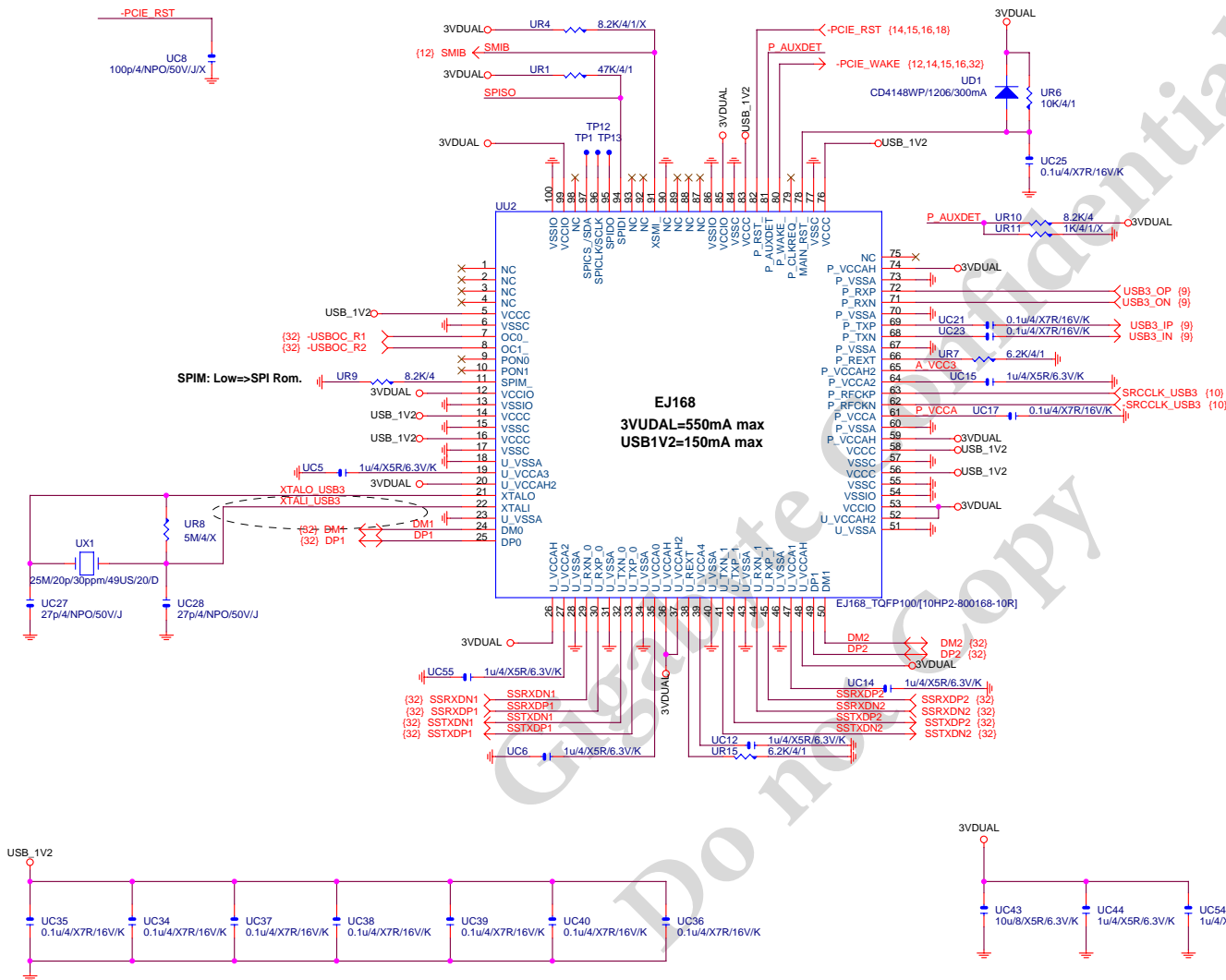
	RTL8111E
AVDD33	3.3V
DVDD33	3.3V
VDDREG	3.3V
DVDD10	1.05V



## USB30\_LAN CONNECTOR







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<b>GIGABYTE™</b>		
Title <b>Marvell 9172 SATA 3.0</b>		
Size Custom	Document Number <b>GA-P61-USB3-B3</b>	Rev <b>1.1</b>
Date: Monday, May 02, 2011 Sheet 34 of 34		