Model Name: X48-DS5 *1.11*

SHEET	TITLE
01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	TABLE LIST
05	P4_LGA775_A
06	P4_LGA775_B
07	P4_LGA775_C
08	P4_LGA775_D
09	GMCH-BEARLAKE_HOST
10	GMCH-BEARLAKE_DDRII
11	GMCH-BEARLAKE_PCI E, DMI
12	GMCH-BEARLAKE_INT VGA
13	GMCH-BEARLAKE_GND
14	DDRII CHANNEL A 1,2
15	DDRII CHANNEL B 1,2
16	DDRII TERMINATION
17	PCI EXPRESS X 16 SLOT1
18	ICH9 PCI, USB, DMI, LAN
19	ICH9 GPIO, CTRL
20	ICH9 SATA, FAN PWM
21	ICH9 VCC, GND
22	CLOCK GEN ICS9LPRS914
23	PCI EXPRESS X16 SLOT 2
24	PCI SLOT 1, 2
25	PCI EXPRESS X1 SLOT 1, 2 ,3
26	ITE 8718 EX ,TPM
27	COM_LPT, -PROHOT,DYNAMIC OC

SHEET	TITLE
28	DUAL BIOS
29	ALC889
30	REAR AUDIO JACK
31	VCORE PWM_ISL6327CRZ-1
32	VCORE PWM_ISL6327CRZ-2
33	VCORE PWM_ISL6327CRZ-3
34	DISCRETE POWER I
35	DISCRETE POWER II
36	ATX POWER
37	REALTEK RTL8111B-1
38	REALTEK RTL8111B-2
39	FP,FUSB,FDD
40	TI TSB43AB23 1394
41	JMB363
42	HWM,KB/MS, FAN CTRL
43	DDR POWER
44	GMCH POWER

Gigabyte Technology

Title: Cover Sheet

Size: Custom | Document Number: X48-DS5 | Rev: 1.11

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GA-X48-DS5 Version: 1.11

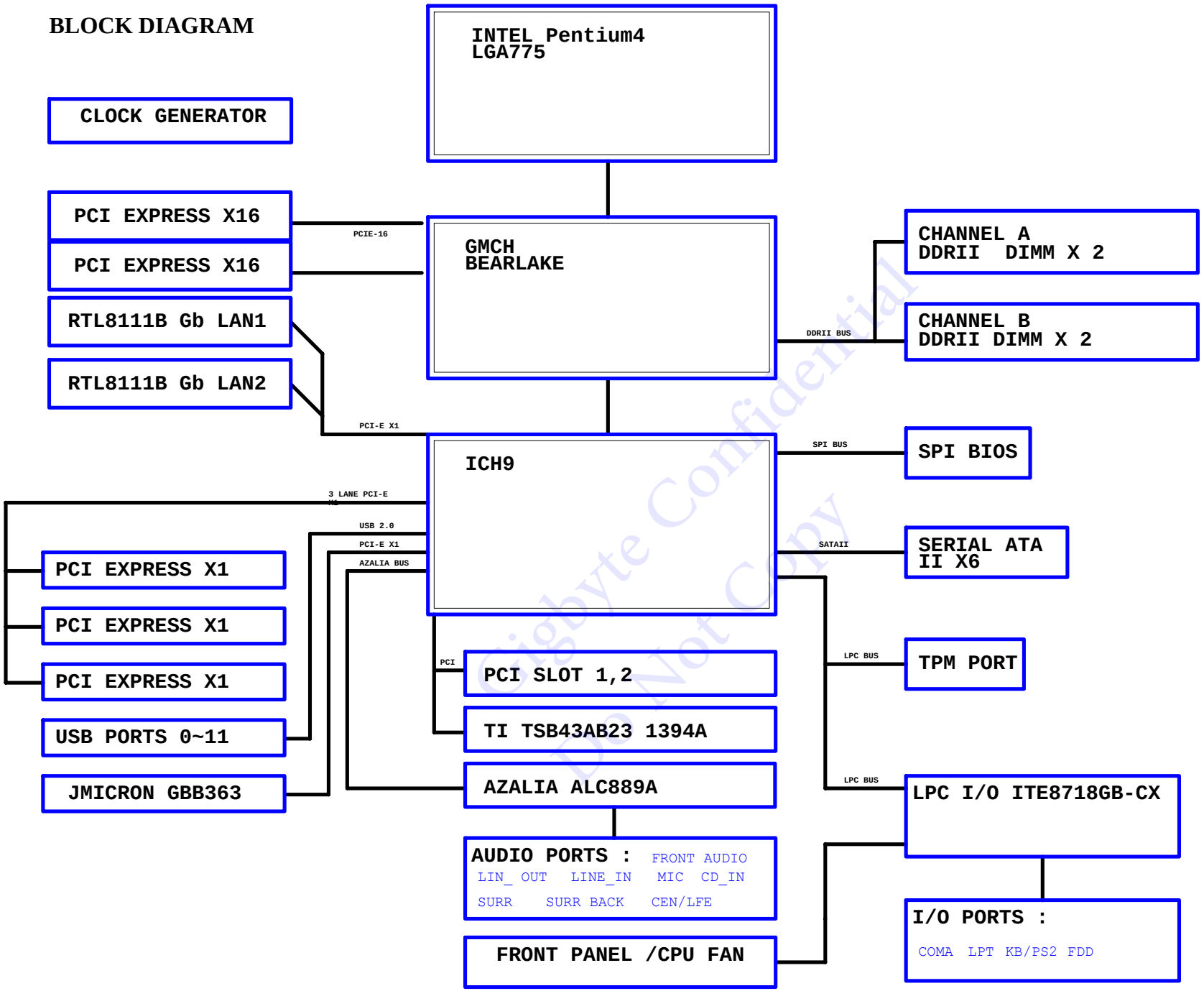
Circuit or PCB layout change for next version

DATE	Change Item	Reason

Component value change history

Data	Change Item	Reason
11/20	PCB與X48-DQ6 r1.11共用	

BLOCK DIAGRAM



Gigabyte Technology		
Title: BLOCK DIAGRAM		
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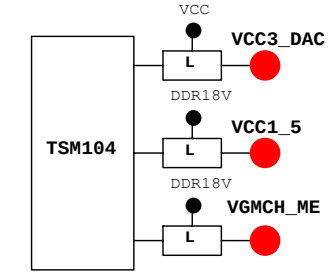
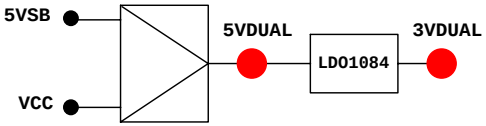
LOW

ICH9 GPIO LIST TABLE

PIN NAME	PWR WELL		AFTER/PLTRST	USAGE	NOTE
GP0	MAIN		IN	VTT_GMCH_OV3	
GP1/TACH1	MAIN		IN	ICH_FAN_TACH1	P/U 8.2K VCC3
GP2/PIRQE#	MAIN		IN	-PIRQE	P/U 8.2K VCC3
GP3/PIRQF#	MAIN		IN	-PIRQF	P/U 8.2K VCC3
GP4/PIRQG#	MAIN		IN	-PIRQG	P/U 8.2K VCC3
GP5/PIRQH#	MAIN		IN	-PIRQH	P/U 8.2K VCC3
GP6/TACH2	MAIN		IN	ICH_FAN_TACH2	P/U 8.2K VCC3
GP7/TACH3	MAIN		IN	ICH_FAN_TACH3	P/U 8.2K VCC3
GP8	STBY		IN	DDR18V_OV4	
GP9	STBY		H-Z	GPIO9(DUALBIOS_INPUT)	
GP10	STBY		H-Z	DDR18V_OV5	P/D 100K GND/X
GP11/SMBALERT#	STBY		NATIVE	-SMBALRT	P/U 8.2K 3VDUAL
GP12	STBY	L	OUT	AUDIO DETECT	P/U 8.2K VCC3
GP13	STBY	L	IN	-LPCPME	P/U 8.2K 3VDUAL
GP14	STBY		H-Z	DDR18V_OV2	P/U 8.2K 3VDUAL
GP15	STBY		H-Z	SPI_WP	STP_PCI#
GP16	MAIN	L	OUT	DUAL BIOS CONTROL	N/A
GP17/TACH0	MAIN		IN	ICH_FAN_TACH0	P/U 8.2K VCC3
GP18	MAIN	H	OUT	MB_ID1	P/U 8.2K VCC3
GP19	MAIN		IN	VCC15_OV1	P/U 8.2K VCC3/X
GP20	MAIN		OUT	-SPI_WP0	P/U 1K 3VCL
GP21	MAIN		IN	VCC15_OV3	P/U 8.2K VCC3
GP22	MAIN		IN	VCORE_OV3	P/U 8.2K VCC3
GP23	MAIN		OUT	-LDRQ1	P/U 8.2K VCC3
GP24	STBY		OUT	TLS	P/U 8.2K 3VDUAL
GP25	STBY		IN	MB_ID2(STP_CPU-)	P/U 8.2K 3VDUAL
GP26/S4_STATE#	STBY		OUT	MB_ID0	P/U 8.2K 3VDUAL
GP27	STBY		OUT/LOW	GPIO27(EL_STATE0)	P/U 8.2K 3VDUAL
GP28	STBY		OUT/LOW	DUAL BIOS CONTROL	N/A
GP29/OC5#	STBY		IN	-USBOC_R	P/U FUSEVCC
GP30/OC6#	STBY		IN	-USBOC_R	P/U FUSEVCC
GP31/OC7#	STBY		IN	-USBOC_R	P/U FUSEVCC
GP32	MAIN		OUT	DUAL_BIOS	P/U 100K+1M VCC3
GP33	MAIN		OUT		
GP34	MAIN		OUT/LOW		N/A
GP35	MAIN	L	OUT	400K FS CONTROL	N/A
GP36	MAIN		IN	DUAL BIOS CONTROL	P/U 8.2K VCC3
GP37	MAIN		IN	150K FS CONTROL	P/U 8.2K VCC3
GP38	MAIN		IN	VCORE_OV2	P/U 8.2K VCC3
GP39	MAIN		IN	GPIO39	P/D 8.2K GND
GP48	MAIN		IN	VCORE_OV1	P/U 8.2K VCC3
GP49	MAIN		IN	STARPPING	P/D 8.2K

PIN NAME	PWR WELL	AFTER/PLTRST	USAGE	NOTE
GP50	MAIN	IN	REQ1#	
GP51	MAIN	IN	GNT1#	P/U 8.2K VCC3
GP52	MAIN	IN	REQ2#	P/U 8.2K VCC3
GP53	MAIN	IN	GNT2#	P/U 8.2K VCC3
GP54	MAIN	IN	REQ3#	P/U 8.2K VCC3
GP55	MAIN	IN	GNT3#	P/U 8.2K VCC3
GP56	STBY	IN	VCORE_OV5	
GP57	STBY	IN	VCORE_OV4	
GP58	STBY	IN	SPI_CS1#	
GP59	STBY		-USBOC_R	
GP60	STBY		LINKALRT#	





	3 pin FAN control	4 pin FAN control	FAN speed	Controller
CPU FAN	FANPWM1	FANPWM3	FANIO1	IT8718
	ICH_FAN_PWM2	ICH_FAN_PWM0	ICH_FAN_TACH0	ICH8
SYS FAN	FANPWM2	N/A	FANIO2	IT8718
	ICH_FAN_PWM1	N/A	ICH_FAN_TACH1	ICH8
PWR FAN	N/A	N/A	FANIO3	IT8718
			ICH_FAN_TACH2	ICH8

VCORE_OV5

Gigabyte Technology

Title: TABLE LIST

Size: B | Document Number: X48-DS5 | Rev: 1.11

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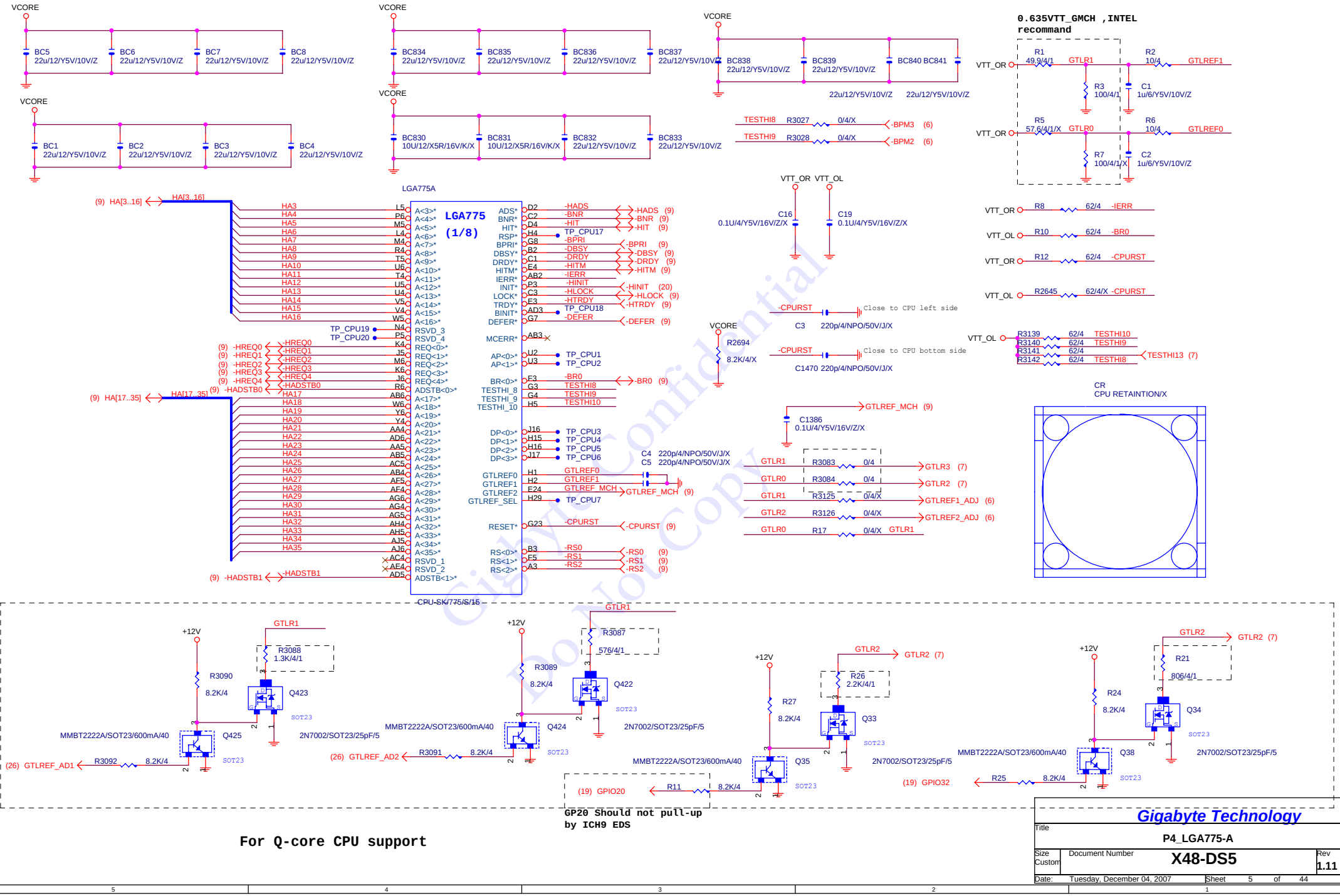

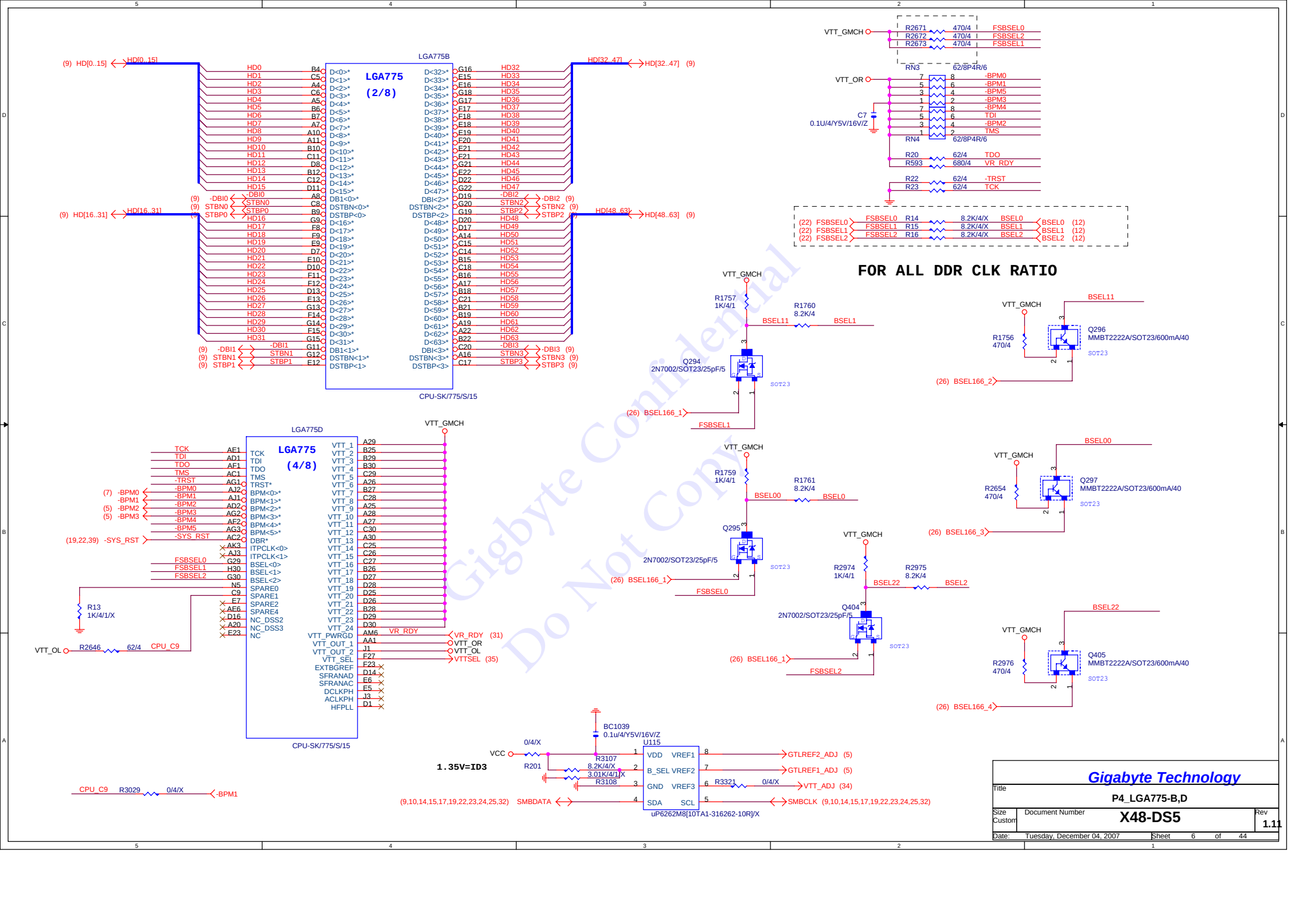
LGA775B
LGA775
(2/8)
CPU-SK/775/S/15
LGA775D
LGA775
(4/8)
CPU-SK/775/S/15
FOR ALL DDR CLK RATIO
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P4_LGA775-B,D
X48-DS5
1.11
Tuesday, December 04, 2007

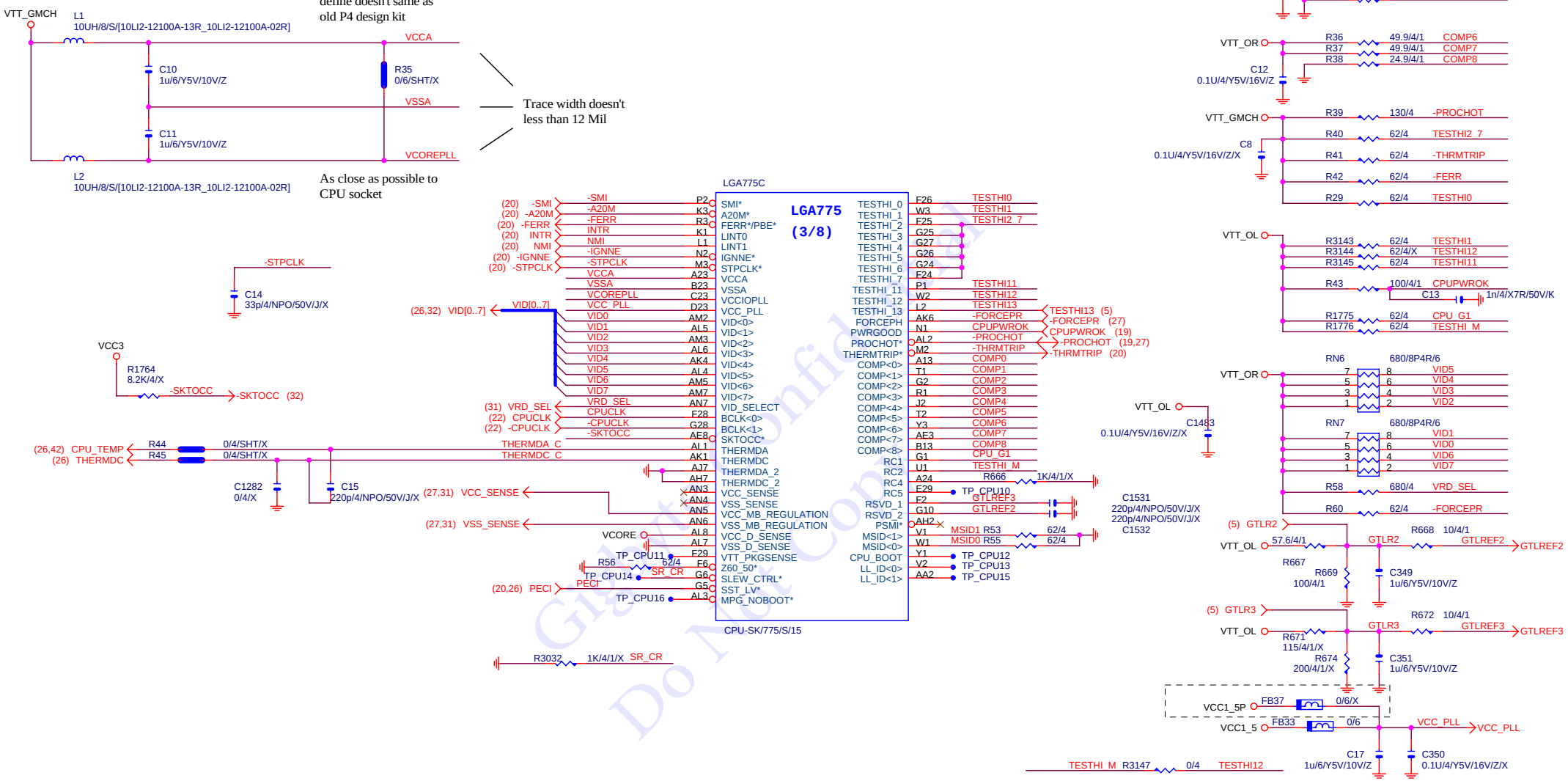
Note:

VCCA & VCOREPLL define doesn't same as old P4 design kit

Trace width doesn't less than 12 Mil

As close as possible to CPU socket

Place outside of CPU socket



Gigabyte Technology		
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Size: B	Document Number: X48-DS5	Rev: 1.11
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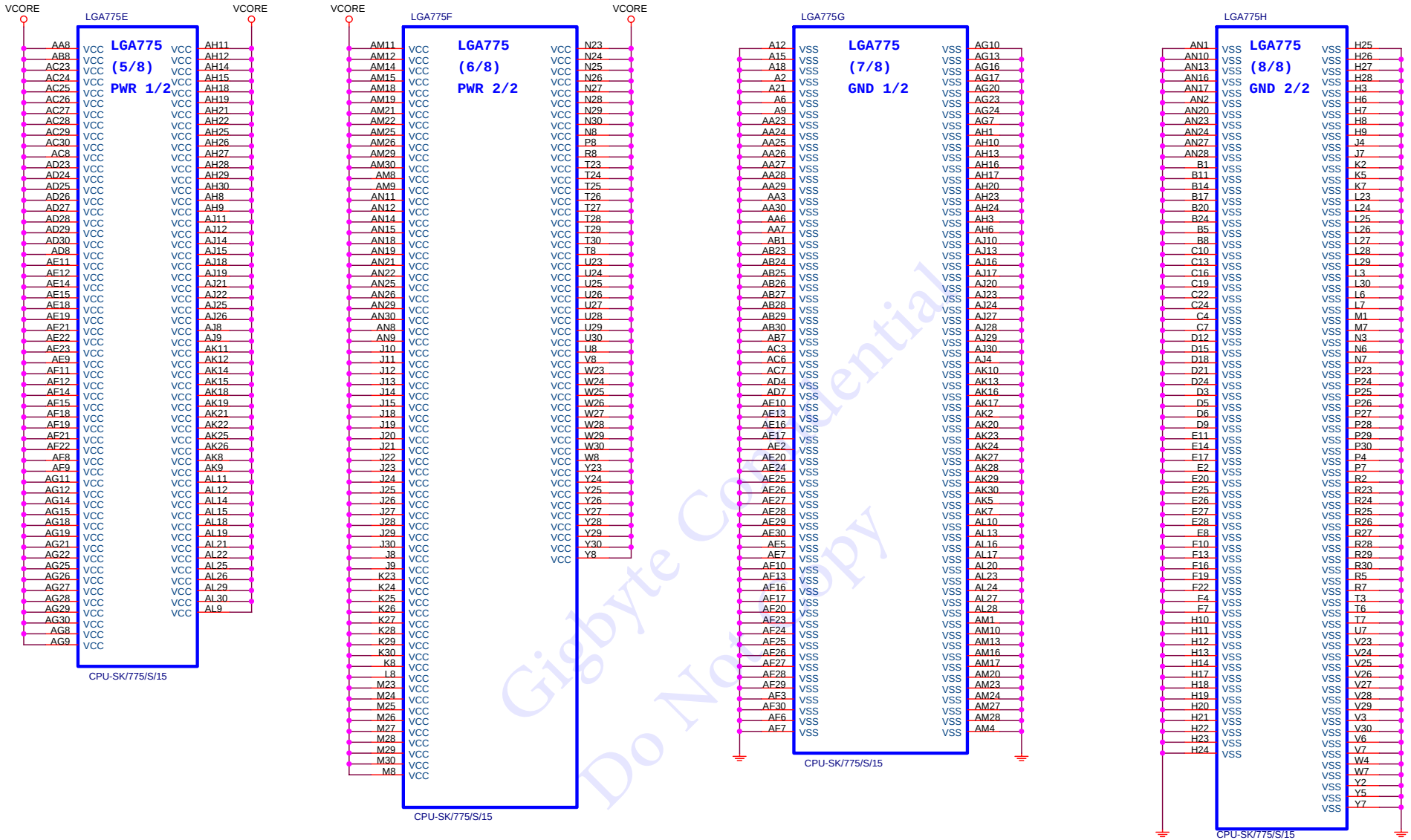

Gigabyte Technology		
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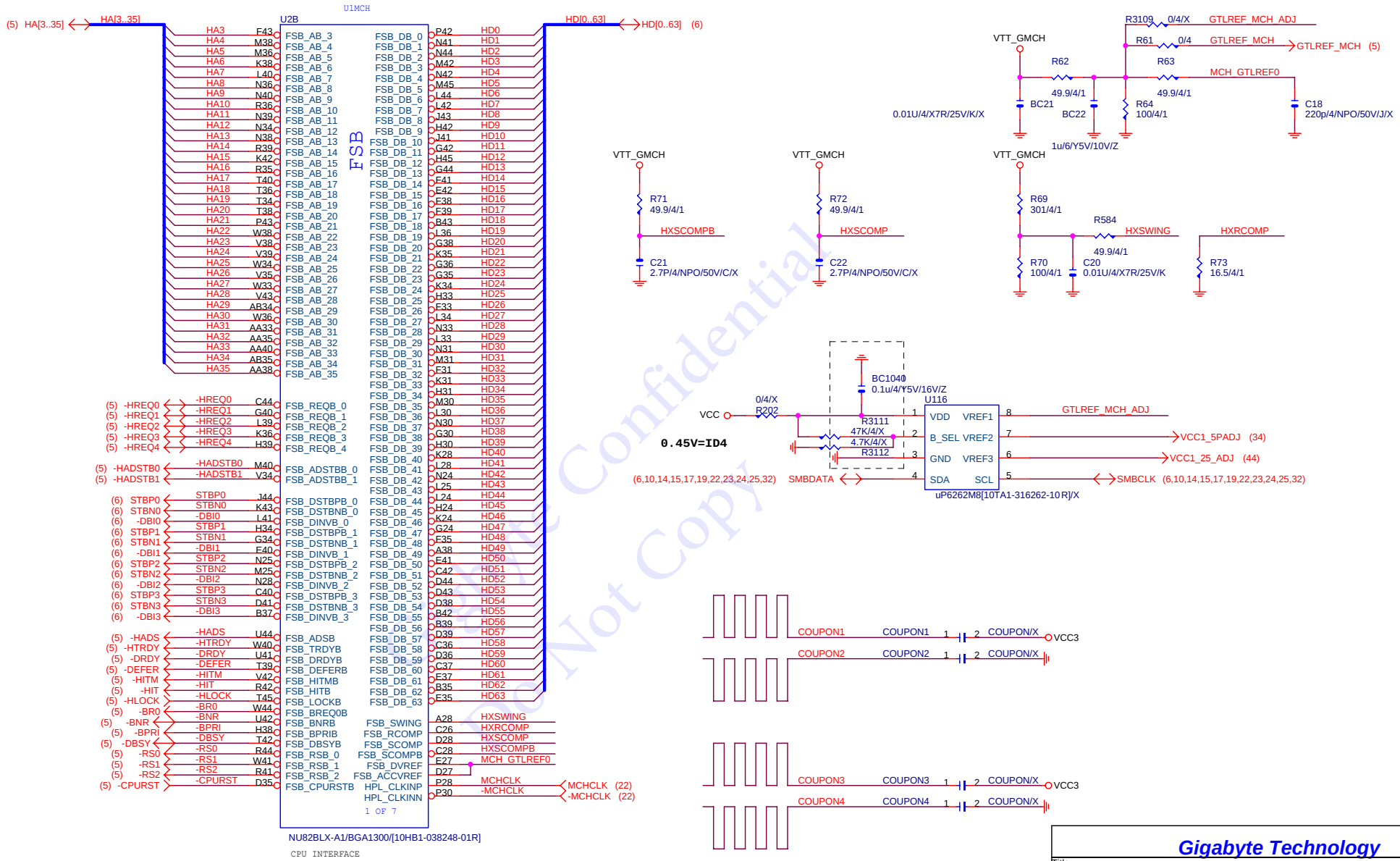
Size: B	Document Number: X48-DS5	Rev: 1.11
Date: Tuesday, December 04, 2007	Sheet 8 of 44	



Gigabyte Technology		
Title: GMCH-HOST		
Size: B	Document Number: X48-DS5	Rev: 1.11
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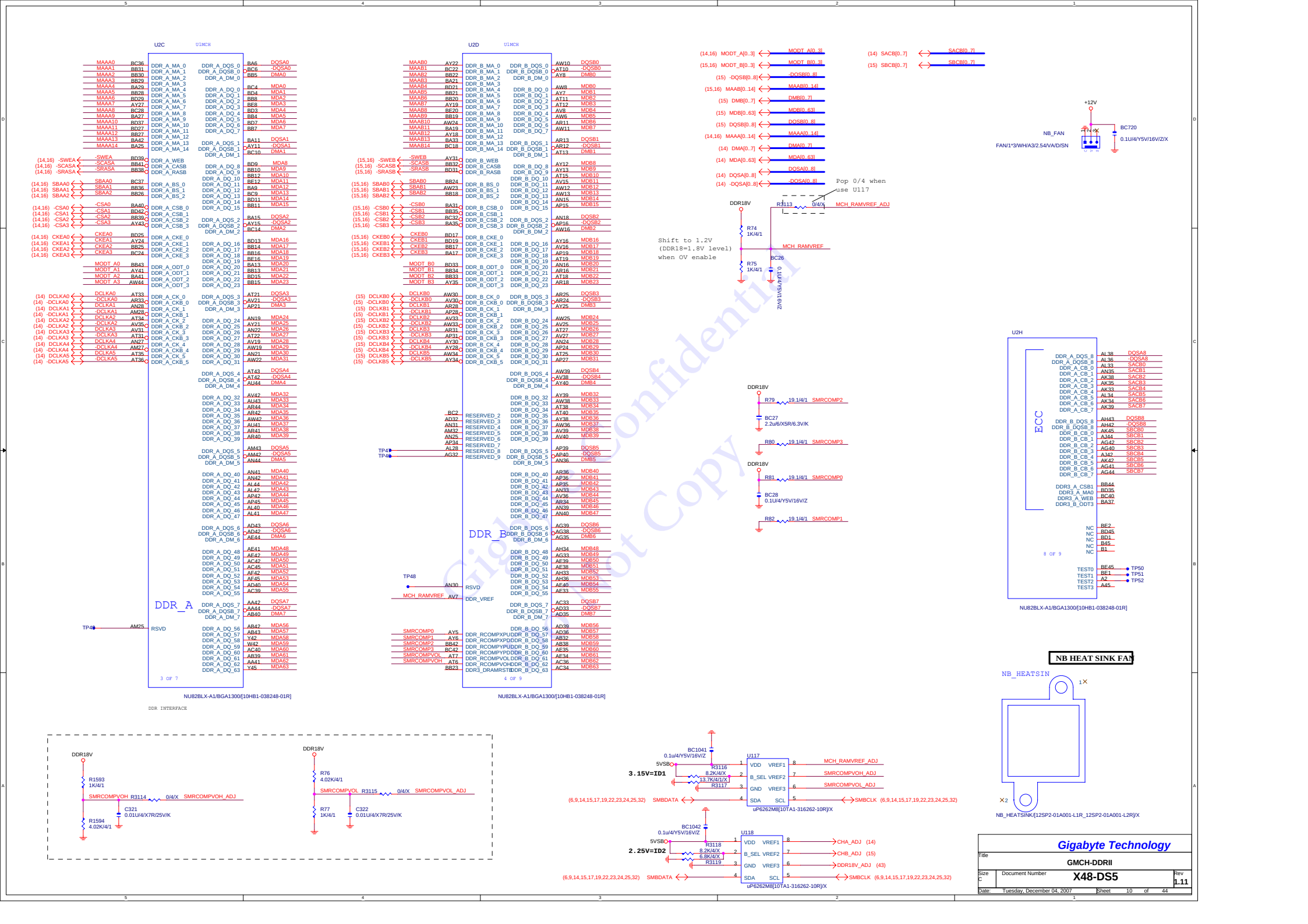
U2C
U1MCH
DDR_A
3 OF 7
NU82BLX-A1/BGA1300/[10HB1-038248-01R]
DDR INTERFACE
U2D
U1MCH
DDR_B
4 OF 9
NU82BLX-A1/BGA1300/[10HB1-038248-01R]
Shift to 1.2V
(DDR18=1.8V level)
when OV enable
Pop 0/4 when
use U117
U2H
ECC
8 OF 9
NU82BLX-A1/BGA1300/[10HB1-038248-01R]
NB_FAN
FAN/1*3/WH/A3/2.54/VA/D/SN
NB HEAT SINK FAN
NB_HEATSIN
NB_HEATSINK/[12SP2-01A001-L1R_12SP2-01A001-L2R]/X
uP6262M8[10TA1-316262-10R]/X
3.15V=ID1
2.25V=ID2
Gigabyte Technology
GMCH-DDRII
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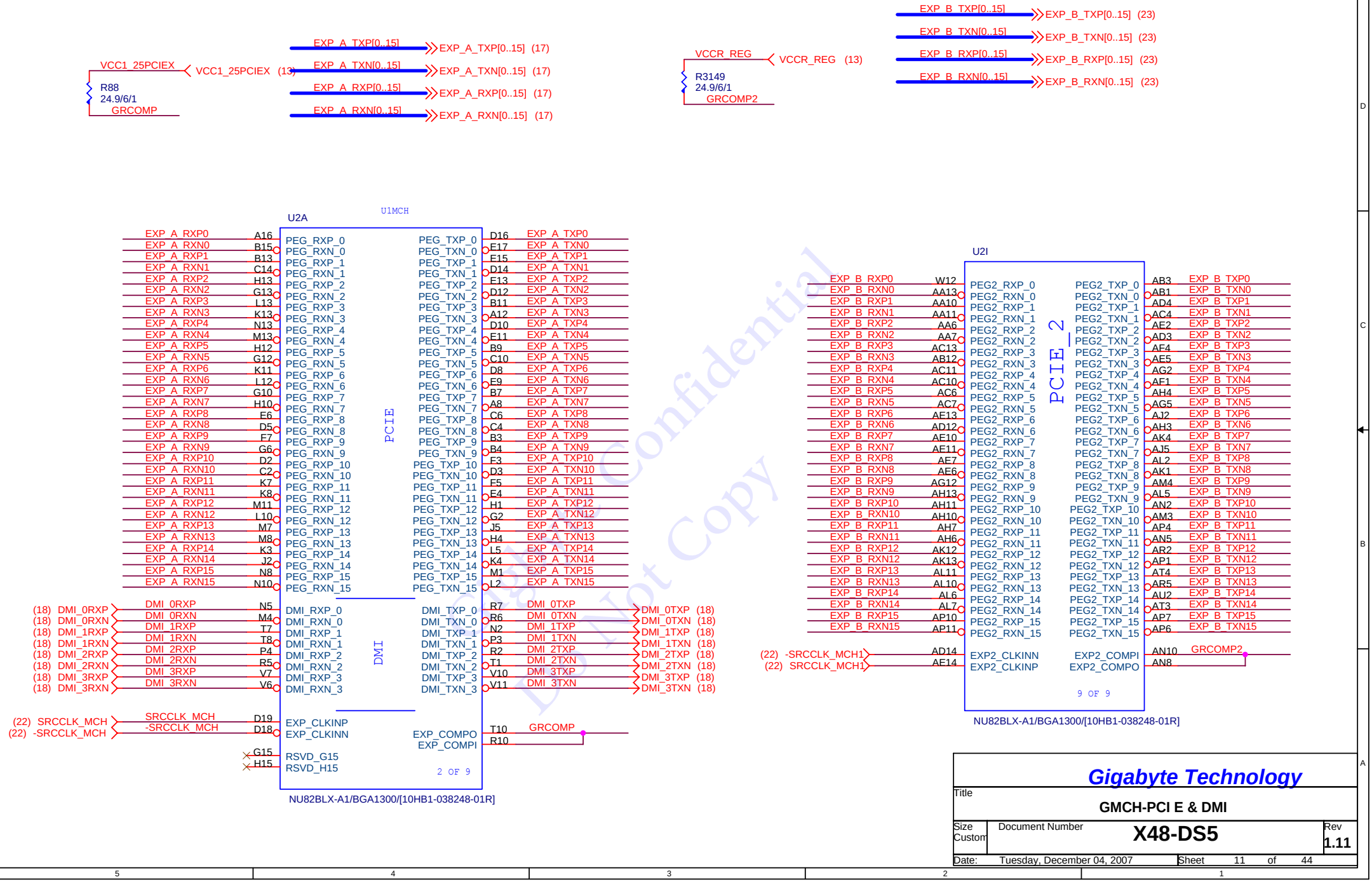
VCC1_25PCIEX
VCC1_25PCIEX (13)
R88
24.9/6/1
GRCOMP
EXP_A_TXP[0..15]
EXP_A_TXN[0..15]
EXP_A_RXP[0..15]
EXP_A_RXN[0..15]
EXP_A_TXP[0..15] (17)
EXP_A_TXN[0..15] (17)
EXP_A_RXP[0..15] (17)
EXP_A_RXN[0..15] (17)
VCCR_REG
VCCR_REG (13)
R3149
24.9/6/1
GRCOMP2
EXP_B_TXP[0..15]
EXP_B_TXN[0..15]
EXP_B_RXP[0..15]
EXP_B_RXN[0..15]
EXP_B_TXP[0..15] (23)
EXP_B_TXN[0..15] (23)
EXP_B_RXP[0..15] (23)
EXP_B_RXN[0..15] (23)
U1MCH
U2A
PCIE
DMI
PEG_RXP_0
PEG_RXN_0
PEG_RXP_1
PEG_RXN_1
PEG_RXP_2
PEG_RXN_2
PEG_RXP_3
PEG_RXN_3
PEG_RXP_4
PEG_RXN_4
PEG_RXP_5
PEG_RXN_5
PEG_RXP_6
PEG_RXN_6
PEG_RXP_7
PEG_RXN_7
PEG_RXP_8
PEG_RXN_8
PEG_RXP_9
PEG_RXN_9
PEG_RXP_10
PEG_RXN_10
PEG_RXP_11
PEG_RXN_11
PEG_RXP_12
PEG_RXN_12
PEG_RXP_13
PEG_RXN_13
PEG_RXP_14
PEG_RXN_14
PEG_RXP_15
PEG_RXN_15
PEG_TXP_0
PEG_TXN_0
PEG_TXP_1
PEG_TXN_1
PEG_TXP_2
PEG_TXN_2
PEG_TXP_3
PEG_TXN_3
PEG_TXP_4
PEG_TXN_4
PEG_TXP_5
PEG_TXN_5
PEG_TXP_6
PEG_TXN_6
PEG_TXP_7
PEG_TXN_7
PEG_TXP_8
PEG_TXN_8
PEG_TXP_9
PEG_TXN_9
PEG_TXP_10
PEG_TXN_10
PEG_TXP_11
PEG_TXN_11
PEG_TXP_12
PEG_TXN_12
PEG_TXP_13
PEG_TXN_13
PEG_TXP_14
PEG_TXN_14
PEG_TXP_15
PEG_TXN_15
DMI_RXP_0
DMI_RXN_0
DMI_RXP_1
DMI_RXN_1
DMI_RXP_2
DMI_RXN_2
DMI_RXP_3
DMI_RXN_3
DMI_TXP_0
DMI_TXN_0
DMI_TXP_1
DMI_TXN_1
DMI_TXP_2
DMI_TXN_2
DMI_TXP_3
DMI_TXN_3
EXP_CLKINP
EXP_CLKINN
EXP_COMPO
EXP_COMPI
RSVD_G15
RSVD_H15
2 OF 9
NU82BLX-A1/BGA1300/[10HB1-038248-01R]
U2I
PCIE_2
PEG2_RXP_0
PEG2_RXN_0
PEG2_RXP_1
PEG2_RXN_1
PEG2_RXP_2
PEG2_RXN_2
PEG2_RXP_3
PEG2_RXN_3
PEG2_RXP_4
PEG2_RXN_4
PEG2_RXP_5
PEG2_RXN_5
PEG2_RXP_6
PEG2_RXN_6
PEG2_RXP_7
PEG2_RXN_7
PEG2_RXP_8
PEG2_RXN_8
PEG2_RXP_9
PEG2_RXN_9
PEG2_RXP_10
PEG2_RXN_10
PEG2_RXP_11
PEG2_RXN_11
PEG2_RXP_12
PEG2_RXN_12
PEG2_RXP_13
PEG2_RXN_13
PEG2_RXP_14
PEG2_RXN_14
PEG2_RXP_15
PEG2_RXN_15
PEG2_TXP_0
PEG2_TXN_0
PEG2_TXP_1
PEG2_TXN_1
PEG2_TXP_2
PEG2_TXN_2
PEG2_TXP_3
PEG2_TXN_3
PEG2_TXP_4
PEG2_TXN_4
PEG2_TXP_5
PEG2_TXN_5
PEG2_TXP_6
PEG2_TXN_6
PEG2_TXP_7
PEG2_TXN_7
PEG2_TXP_8
PEG2_TXN_8
PEG2_TXP_9
PEG2_TXN_9
PEG2_TXP_10
PEG2_TXN_10
PEG2_TXP_11
PEG2_TXN_11
PEG2_TXP_12
PEG2_TXN_12
PEG2_TXP_13
PEG2_TXN_13
PEG2_TXP_14
PEG2_TXN_14
PEG2_TXP_15
PEG2_TXN_15
EXP2_CLKINN
EXP2_CLKINP
EXP2_COMPI
EXP2_COMPO
9 OF 9
NU82BLX-A1/BGA1300/[10HB1-038248-01R]
(22) -SRCCLK_MCH1
(22) SRCCLK_MCH1
(18) DMI_0RXP
(18) DMI_0RXN
(18) DMI_1RXP
(18) DMI_1RXN
(18) DMI_2RXP
(18) DMI_2RXN
(18) DMI_3RXP
(18) DMI_3RXN
(22) SRCCLK_MCH
(22) -SRCCLK_MCH
GRCOMP
GRCOMP2
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Title
GMCH-PCI E & DMI
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Custom
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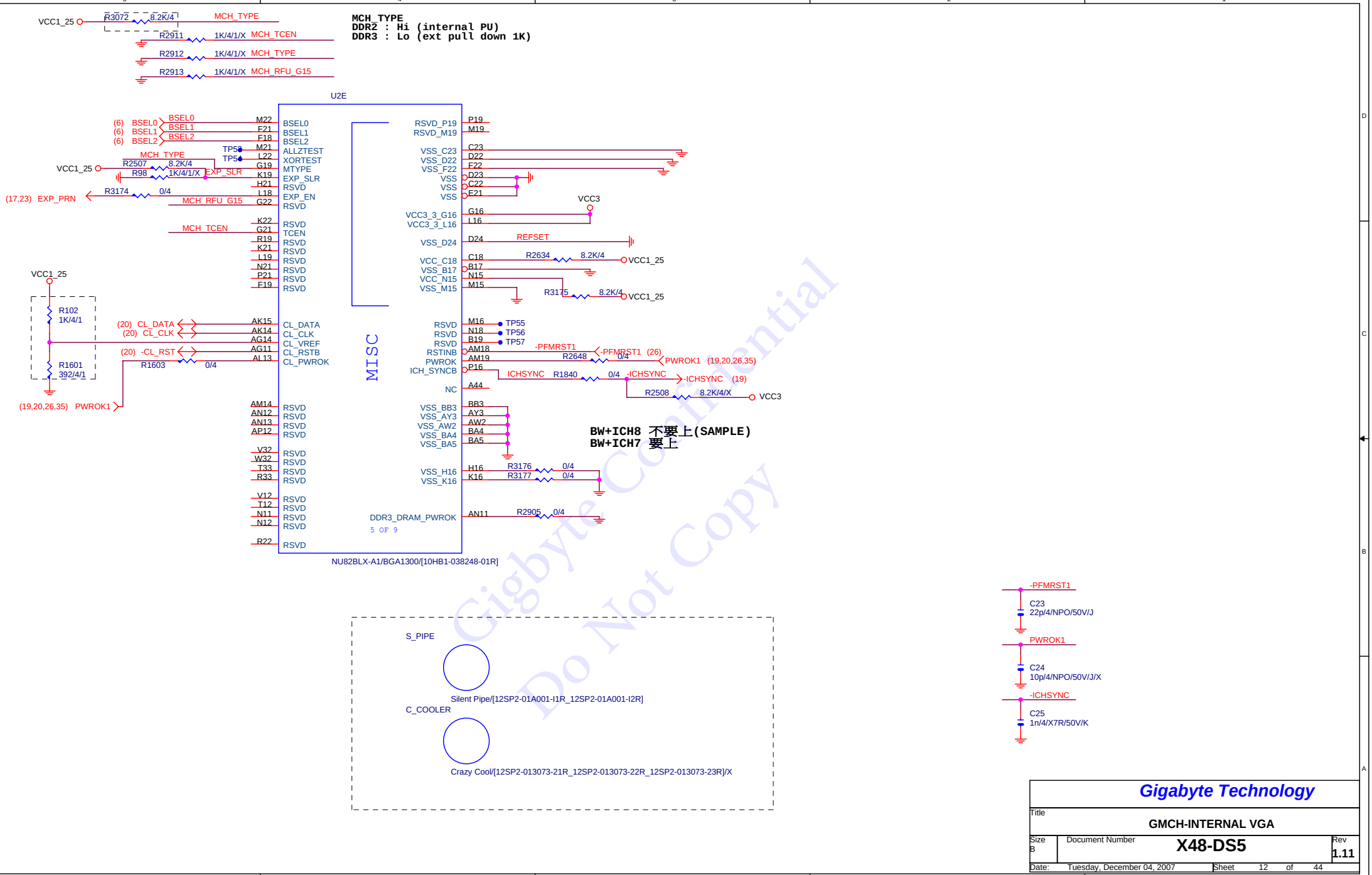
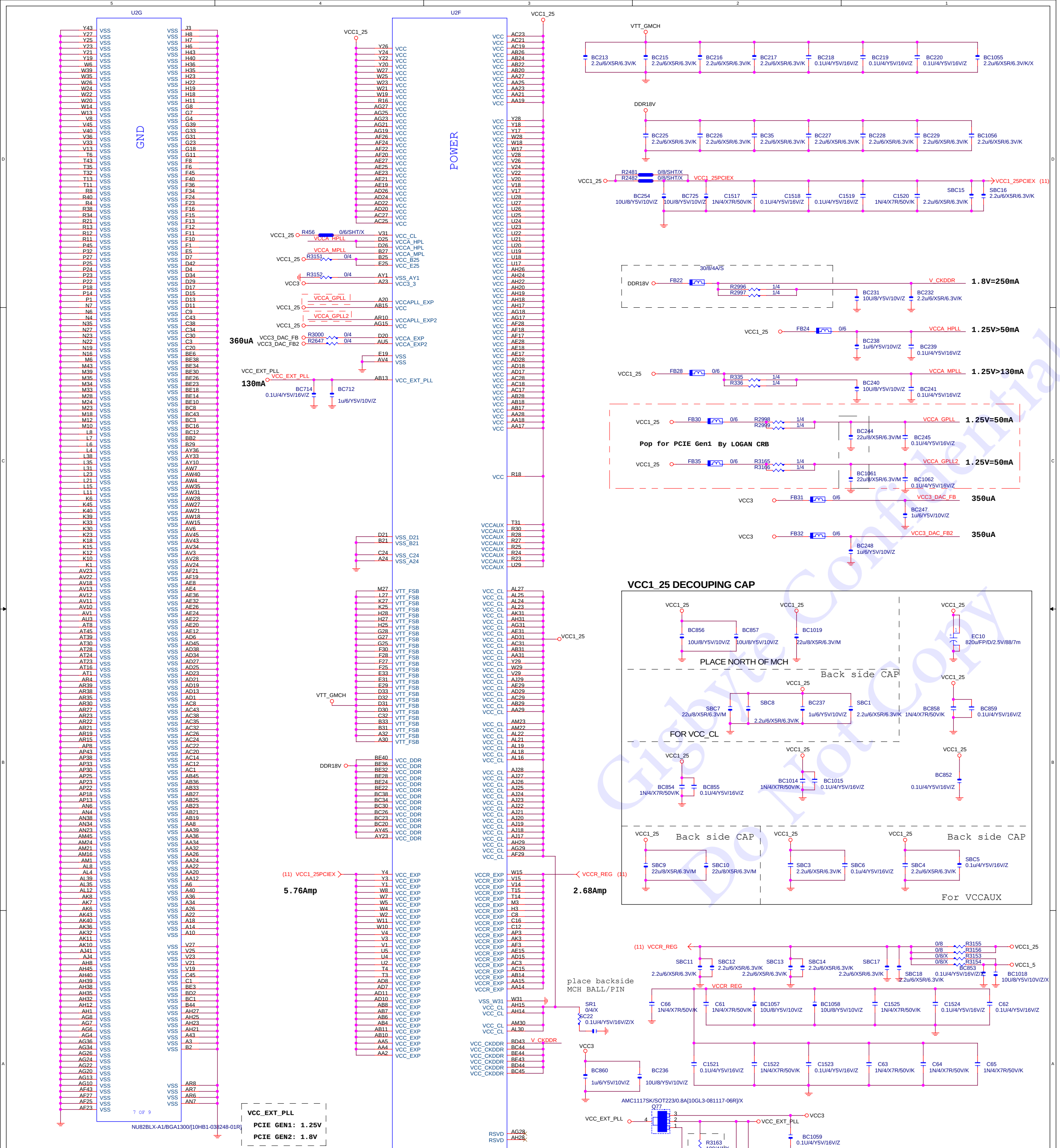


Gigabyte Technology			
Title	GMCH-INTERNAL VGA		
Size B	Document Number X48-DS5		Rev 1.11
Date: Tuesday, December 04, 2007	Sheet 12 of 44		



Gigabyte Technology

Title: GMCH-GND

Size: Custom | Document Number: X48-DS5 | Rev: 1.11

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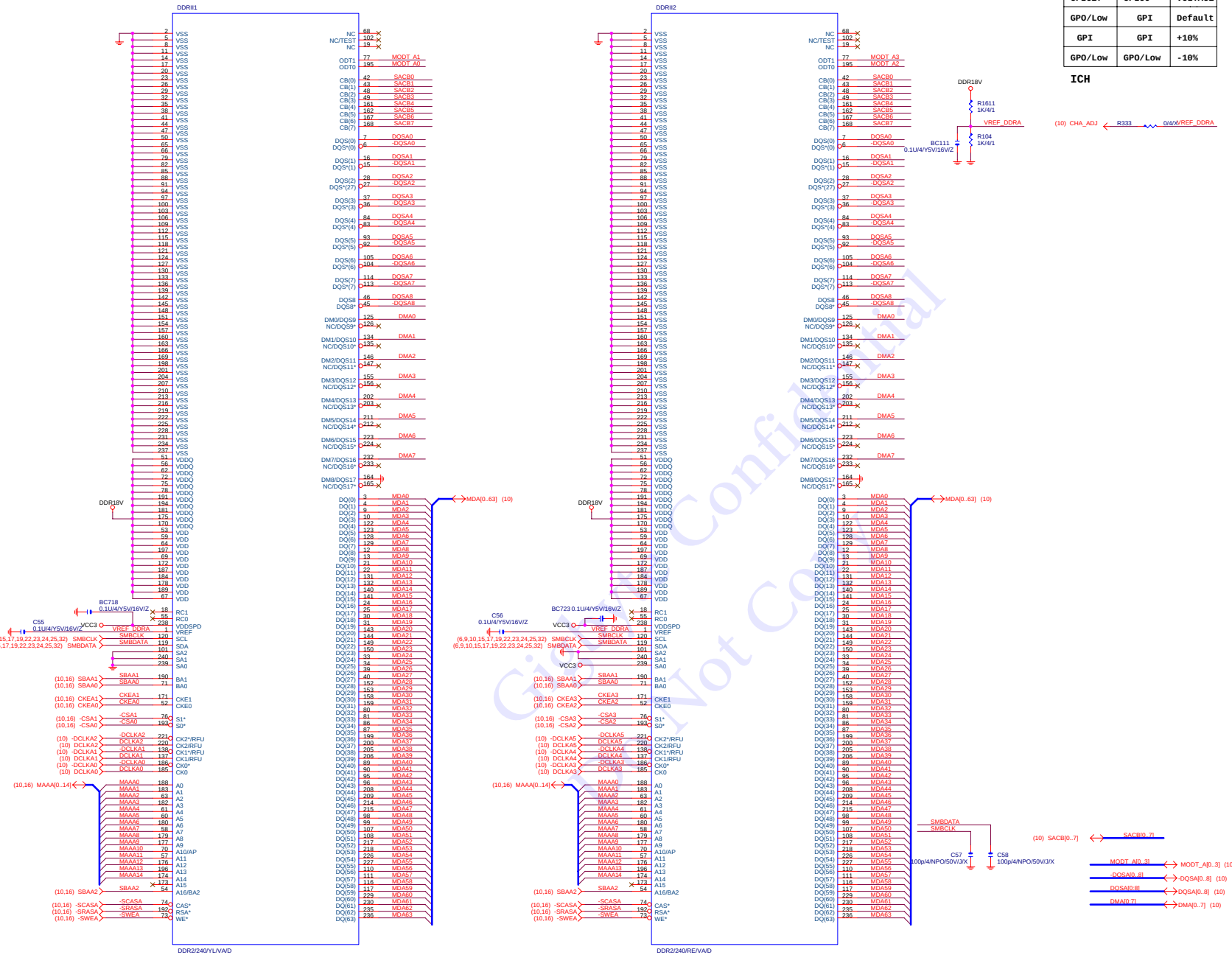
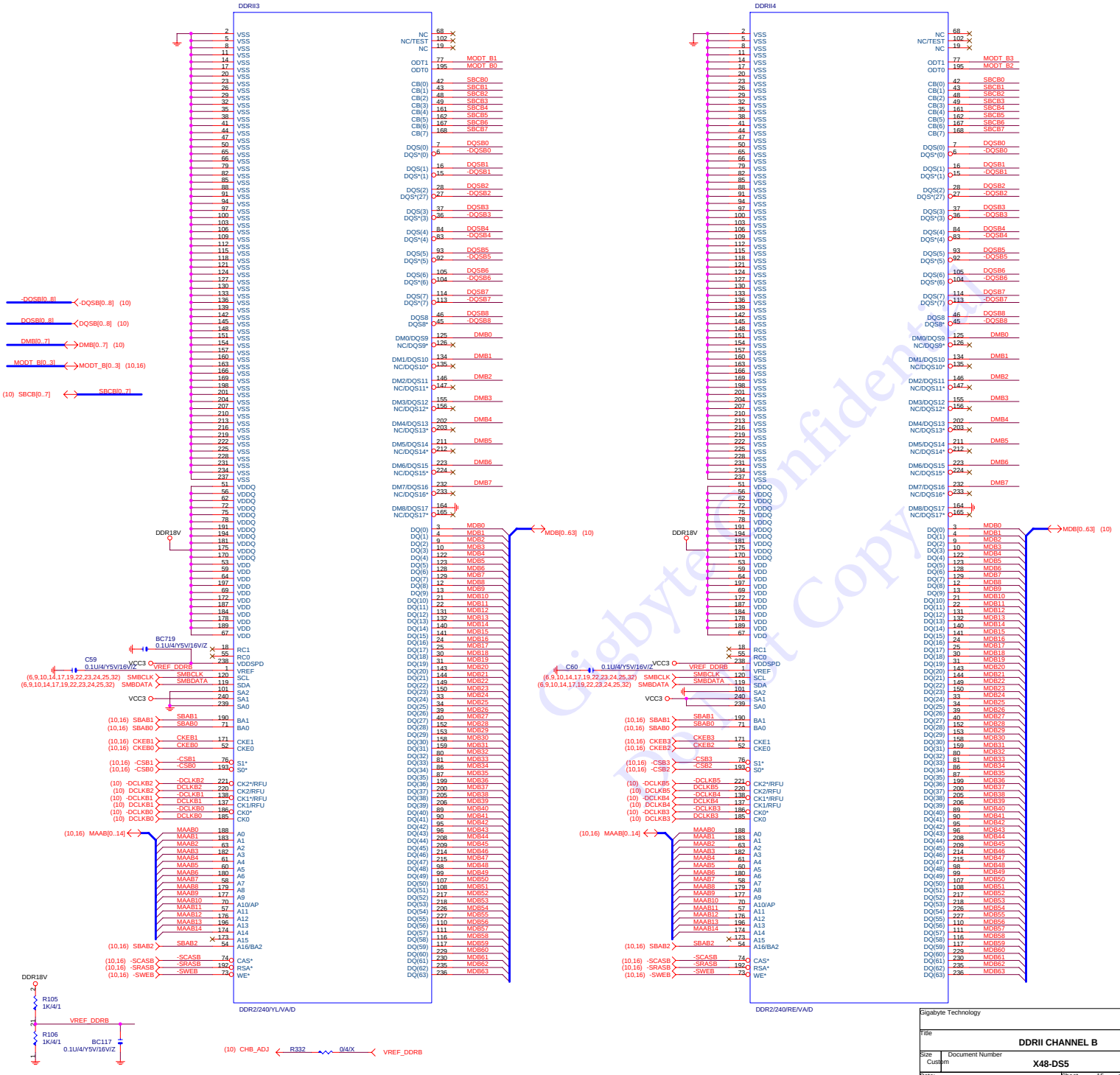
GPIO27	GPIO9	VOLTAGE
GPO/Low	GPI	Default
GPI	GPI	+10%
GPO/Low	GPO/Low	-10%

ICH



Gigabyte Technology		
Title: DDRII CHANNEL A		
Size: Custom	Document Number: X48-DS5	Rev: 1.11
Date:	Sheet 14 of 44	



Gigabyte Technology		
Title	DDRII CHANNEL B	
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DDR TERMINATION CHANNEL A

DDRVTT Decouple

DDRVTT EC15 820u/FP/D/2.5V/88/7m

DDR18V EC16 560u/FP/D/6.3V/89/8m
EC17 560u/FP/D/6.3V/89/8m

DDRVTT BC46 22u/8/X5R/6.3V/M BC47 22u/8/X5R/6.3V/M

DDRVTT BC1020 22u/8/X5R/6.3V/M BC1021 22u/8/X5R/6.3V/M

DDR18V Decouple

DDR18V BC52 0.1U/4/Y5V/16V/Z BC54 0.1U/4/Y5V/16V/Z BC56 0.1U/4/Y5V/16V/Z

DDRVTT Decouple

DDRVTT BC1034 0.1U/4/Y5V/16V/Z BC60 0.1U/4/Y5V/16V/Z BC1035 0.1U/4/Y5V/16V/Z

DDR18V SC15 0.1U/4/Y5V/16V/Z/X SC17 0.1U/4/Y5V/16V/Z/X SC18 0.1U/4/Y5V/16V/Z/X BC1112 22u/8/X5R/6.3V/M

DDR18V SC16 0.1U/4/Y5V/16V/Z/X

DDR18V BC992 BC993 BC995 BC997 BC999 BC1001 BC1002 0.1U/4/Y5V/16V/Z

DDRVTT

MAAA1 R168 33/4
MODT_A1 MODT_A3 MODT_A0 -CSA3 RN30 39/8P4R/4
MODT_A2 R171 39/4

MAAA5 MAAA8 MAAA7 MAAA9 RN31 33/8P4R/4
SBAA0 MAAA10 SBAA1 MAAA0 RN32 33/8P4R/4
MAAA2 MAAA3 MAAA4 MAAA6 RN33 33/8P4R/4
CKEA2 CKEA0 CKEA1 CKEA3 RN34 39/8P4R/4

-CSA0 R173 39/4
-CSA2 R160 39/4
-CSA1 R172 39/4

MAAA11 MAAA12 SBAA2 MAAA14 RN36 33/8P4R/4
MAAA13 R161 33/4
R162 33/4
R163 33/4
R169 33/4

(10,14) -SWEA
(10,14) -SCASA
(10,14) -SRASA

SBAA[0..2] SBAA[0..2] (10,14)
-CSA[0..3] -CSA[0..3] (10,14)
CKEA[0..3] CKEA[0..3] (10,14)
MAAA[0..14] MAAA[0..14] (10,14)
MODT_A[0..3] MODT_A[0..3] (10,14)

DDR18V BC994 BC996 BC998 BC1000 BC1003 BC1004 0.01U/4/X7R/25V/K

DDRVTT

DDR TERMINATION CHANNEL B

DDR18V Decouple

DDR18V BC51 0.1U/4/Y5V/16V/Z BC53 0.1U/4/Y5V/16V/Z BC55 2.2u/6/X5R/6.3V/K

DDRVTT Decouple

DDRVTT BC59 0.1U/4/Y5V/16V/Z BC61 0.1U/4/Y5V/16V/Z

DDRVTT BC1045 0.1U/4/Y5V/16V/Z BC1046 0.1U/4/Y5V/16V/Z BC1047 0.1U/4/Y5V/16V/Z BC1048 0.1U/4/Y5V/16V/Z BC1049 0.1U/4/Y5V/16V/Z BC1050 0.1U/4/Y5V/16V/Z BC1051 0.1U/4/Y5V/16V/Z BC1052 0.1U/4/Y5V/16V/Z BC1053 0.1U/4/Y5V/16V/Z BC1054 0.1U/4/Y5V/16V/Z

DDRVTT BC986 BC987 BC988 BC989 BC990 BC991 0.01U/4/X7R/25V/K

DDR18V BC1024 BC1025 BC1026 BC1027 BC1028 0.01U/4/X7R/25V/K

DDRVTT BC1029 BC1030 BC1031 BC1032 BC1033 0.01U/4/X7R/25V/K

DDRVTT

MAAB2 MAAB1 MAAB3 MAAB4 RN38 33/8P4R/4
MAAB5 MAAB6 MAAB8 MAAB7 RN39 33/8P4R/4
MAAB9 MAAB11 MAAB12 MAAB14 RN40 33/8P4R/4
MODT_B1 MODT_B0 MODT_B3 -CSB1 RN41 39/8P4R/4
SBAB0 MAAB10 SBAB1 MAAB0 RN42 33/8P4R/4

SBAB2 R164 33/4
R165 33/4
R166 33/4
MAAB13 R167 33/4

(10,15) -SWEB
(10,15) -SRASB

MODT_B[0..3] MODT_B[0..3] (10,15)
SBAB[0..2] SBAB[0..2] (10,15)
-CSB[0..3] -CSB[0..3] (10,15)
CKEB[0..3] CKEB[0..3] (10,15)
MAAB[0..14] MAAB[0..14] (10,15)

DDRVTT

-CSB0 R174 39/4
-CSB3 R175 39/4
MODT_B2 R176 39/4
-CSB2 R177 39/4

CKEB0 CKEB3 CKEB1 CKEB2 RN45 39/8P4R/4

(10,15) -SCASB R170 33/4

Gigabyte Technology

Title	DDRII TERMINATOR	
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colayout

PCIESLOT-164DN-2

+12V
BC65
0.1U/4/Y5V/16V/Z

VCC3
EC1146
560u/FP/D/6.3V/89/8m

VCC3
BC66 0.1U/4/Y5V/16V/Z
BC67 0.1U/4/Y5V/16V/Z
BC68 0.1U/4/Y5V/16V/Z
BC69 0.1U/4/Y5V/16V/Z

+12V
EC69
470u/FP/D/16V/AC

R3185
0/4/X

3GIO_*16

PCIE_16_1

	B1	12V	PRSNT1*	A1	
	B2	12V	12V	A2	
	B3	RSVD	12V	A3	
	B4	GND	GND	A4	
(6,9,10,14,15,19,22,23,24,25,32) SMBCLK	B5	SMBCLK	JTAG2	A5	
(6,9,10,14,15,19,22,23,24,25,32) SMBDATA	B6	SMBDATA	JTAG3	A6	
	B7	SMDAT	JTAG4	A7	
	B8	GND	JTAG5	A8	
3VDUAL	B9	3.3V	3.3V	A9	VCC3
VCC3	B10	JTAG1	3.3V	A10	
(19,23,25,37,38) -PCIE_WAKE	B11	3.3VAUX	PWRGD	A11	-PCIE_RST -PCIE_RST (23,25,26)
		WAKE*			
		KEY			
	B12	RSVD	GND	A12	
EXP_A_TXP0C	B13	GND	REFCLK+	A13	SRCCLK_3GIO (22)
EXP_A_TXN0C	B14	HSOP0	REFCLK-	A14	-SRCCLK_3GIO (22)
	B15	HSON0	GND	A15	
	B16	GND	HSIP0	A16	EXP_A_RXP0
	B17	PRSNT2*	HSIN0	A17	EXP_A_RXN0
	B18	GND	GND	A18	
EXP_A_TXP1C	B19	HSOP1	RSVD	A19	
EXP_A_TXN1C	B20	HSON1	GND	A20	
	B21	GND	HSIP1	A21	EXP_A_RXP1
	B22	GND	HSIN1	A22	EXP_A_RXN1
EXP_A_TXP2C	B23	HSOP2	GND	A23	
EXP_A_TXN2C	B24	HSON2	GND	A24	
	B25	GND	HSIP2	A25	EXP_A_RXP2
	B26	GND	HSIN2	A26	EXP_A_RXN2
EXP_A_TXP3C	B27	HSOP3	GND	A27	
EXP_A_TXN3C	B28	HSON3	GND	A28	
	B29	GND	HSIP3	A29	EXP_A_RXP3
	B30	RSVD	HSIN3	A30	EXP_A_RXN3
	B31	PRSNT2*	GND	A31	
	B32	GND	RSVD	A32	
EXP_A_TXP4C	B33	HSOP4	RSVD	A33	
EXP_A_TXN4C	B34	HSON4	GND	A34	
	B35	GND	HSIP4	A35	EXP_A_RXP4
	B36	GND	HSIN4	A36	EXP_A_RXN4
EXP_A_TXP5C	B37	HSOP5	GND	A37	
EXP_A_TXN5C	B38	HSON5	GND	A38	
	B39	GND	HSIP5	A39	EXP_A_RXP5
	B40	GND	HSIN5	A40	EXP_A_RXN5
EXP_A_TXP6C	B41	HSOP6	GND	A41	
EXP_A_TXN6C	B42	HSON6	GND	A42	
	B43	GND	HSIP6	A43	EXP_A_RXP6
	B44	GND	HSIN6	A44	EXP_A_RXN6
EXP_A_TXP7C	B45	HSOP7	GND	A45	
EXP_A_TXN7C	B46	HSON7	GND	A46	
	B47	GND	HSIP7	A47	EXP_A_RXP7
(12,23) EXP_PRN	B48	PRSNT2*	HSIN7	A48	EXP_A_RXN7
	B49	GND	GND	A49	
EXP_A_TXP8C	B50	HSOP8	RSVD	A50	
EXP_A_TXN8C	B51	HSON8	GND	A51	
	B52	GND	HSIP8	A52	EXP_A_RXP8
	B53	GND	HSIN8	A53	EXP_A_RXN8
EXP_A_TXP9C	B54	HSOP9	GND	A54	
EXP_A_TXN9C	B55	HSON9	GND	A55	
	B56	GND	HSIP9	A56	EXP_A_RXP9
	B57	GND	HSIN9	A57	EXP_A_RXN9
EXP_A_TXP10C	B58	HSOP10	GND	A58	
EXP_A_TXN10C	B59	HSON10	GND	A59	
	B60	GND	HSIP10	A60	EXP_A_RXP10
	B61	GND	HSIN10	A61	EXP_A_RXN10
EXP_A_TXP11C	B62	HSOP11	GND	A62	
EXP_A_TXN11C	B63	HSON11	GND	A63	
	B64	GND	HSIP11	A64	EXP_A_RXP11
	B65	GND	HSIN11	A65	EXP_A_RXN11
EXP_A_TXP12C	B66	HSOP12	GND	A66	
EXP_A_TXN12C	B67	HSON12	GND	A67	
	B68	GND	HSIP12	A68	EXP_A_RXP12
	B69	GND	HSIN12	A69	EXP_A_RXN12
EXP_A_TXP13C	B70	HSOP13	GND	A70	
EXP_A_TXN13C	B71	HSON13	GND	A71	
	B72	GND	HSIP13	A72	EXP_A_RXP13
	B73	GND	HSIN13	A73	EXP_A_RXN13
EXP_A_TXP14C	B74	HSOP14	GND	A74	
EXP_A_TXN14C	B75	HSON14	GND	A75	
	B76	GND	HSIP14	A76	EXP_A_RXP14
	B77	GND	HSIN14	A77	EXP_A_RXN14
EXP_A_TXP15C	B78	HSOP15	GND	A78	
EXP_A_TXN15C	B79	HSON15	GND	A79	
	B80	GND	HSIP15	A80	EXP_A_RXP15
	B81	PRSNT2*	HSIN15	A81	EXP_A_RXN15
	B82	RSVD	GND	A82	

PCI-E/16X-164P/BU-297C/PULLPUSH

-PCIE_RST
C91
33p/4/NPO/50V/J

EXP_A_TXP[0..15] → EXP_A_TXP[0..15] (11)
EXP_A_TXN[0..15] → EXP_A_TXN[0..15] (11)

EXP_A_RXP[0..15] → EXP_A_RXP[0..15] (11)
EXP_A_RXN[0..15] → EXP_A_RXN[0..15] (11)

EXP_A_TXP0	C92	0.1U/4/Y5V/16V/Z	EXP_A_TXP0C
EXP_A_TXN0	C93	0.1U/4/Y5V/16V/Z	EXP_A_TXN0C
EXP_A_TXP1	C94	0.1U/4/Y5V/16V/Z	EXP_A_TXP1C
EXP_A_TXN1	C95	0.1U/4/Y5V/16V/Z	EXP_A_TXN1C
EXP_A_TXP2	C96	0.1U/4/Y5V/16V/Z	EXP_A_TXP2C
EXP_A_TXN2	C97	0.1U/4/Y5V/16V/Z	EXP_A_TXN2C
EXP_A_TXP3	C98	0.1U/4/Y5V/16V/Z	EXP_A_TXP3C
EXP_A_TXN3	C99	0.1U/4/Y5V/16V/Z	EXP_A_TXN3C
EXP_A_TXP4	C100	0.1U/4/Y5V/16V/Z	EXP_A_TXP4C
EXP_A_TXN4	C101	0.1U/4/Y5V/16V/Z	EXP_A_TXN4C
EXP_A_TXP5	C102	0.1U/4/Y5V/16V/Z	EXP_A_TXP5C
EXP_A_TXN5	C103	0.1U/4/Y5V/16V/Z	EXP_A_TXN5C
EXP_A_TXP6	C104	0.1U/4/Y5V/16V/Z	EXP_A_TXP6C
EXP_A_TXN6	C105	0.1U/4/Y5V/16V/Z	EXP_A_TXN6C
EXP_A_TXP7	C106	0.1U/4/Y5V/16V/Z	EXP_A_TXP7C
EXP_A_TXN7	C107	0.1U/4/Y5V/16V/Z	EXP_A_TXN7C
EXP_A_TXP8	C108	0.1U/4/Y5V/16V/Z	EXP_A_TXP8C
EXP_A_TXN8	C109	0.1U/4/Y5V/16V/Z	EXP_A_TXN8C
EXP_A_TXP9	C110	0.1U/4/Y5V/16V/Z	EXP_A_TXP9C
EXP_A_TXN9	C111	0.1U/4/Y5V/16V/Z	EXP_A_TXN9C
EXP_A_TXP10	C112	0.1U/4/Y5V/16V/Z	EXP_A_TXP10C
EXP_A_TXN10	C113	0.1U/4/Y5V/16V/Z	EXP_A_TXN10C
EXP_A_TXP11	C114	0.1U/4/Y5V/16V/Z	EXP_A_TXP11C
EXP_A_TXN11	C115	0.1U/4/Y5V/16V/Z	EXP_A_TXN11C
EXP_A_TXP12	C116	0.1U/4/Y5V/16V/Z	EXP_A_TXP12C
EXP_A_TXN12	C117	0.1U/4/Y5V/16V/Z	EXP_A_TXN12C
EXP_A_TXP13	C118	0.1U/4/Y5V/16V/Z	EXP_A_TXP13C
EXP_A_TXN13	C119	0.1U/4/Y5V/16V/Z	EXP_A_TXN13C
EXP_A_TXP14	C120	0.1U/4/Y5V/16V/Z	EXP_A_TXP14C
EXP_A_TXN14	C121	0.1U/4/Y5V/16V/Z	EXP_A_TXN14C
EXP_A_TXP15	C122	0.1U/4/Y5V/16V/Z	EXP_A_TXP15C
EXP_A_TXN15	C123	0.1U/4/Y5V/16V/Z	EXP_A_TXN15C

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Title: PCI EXPRESS X 16 PORT 1

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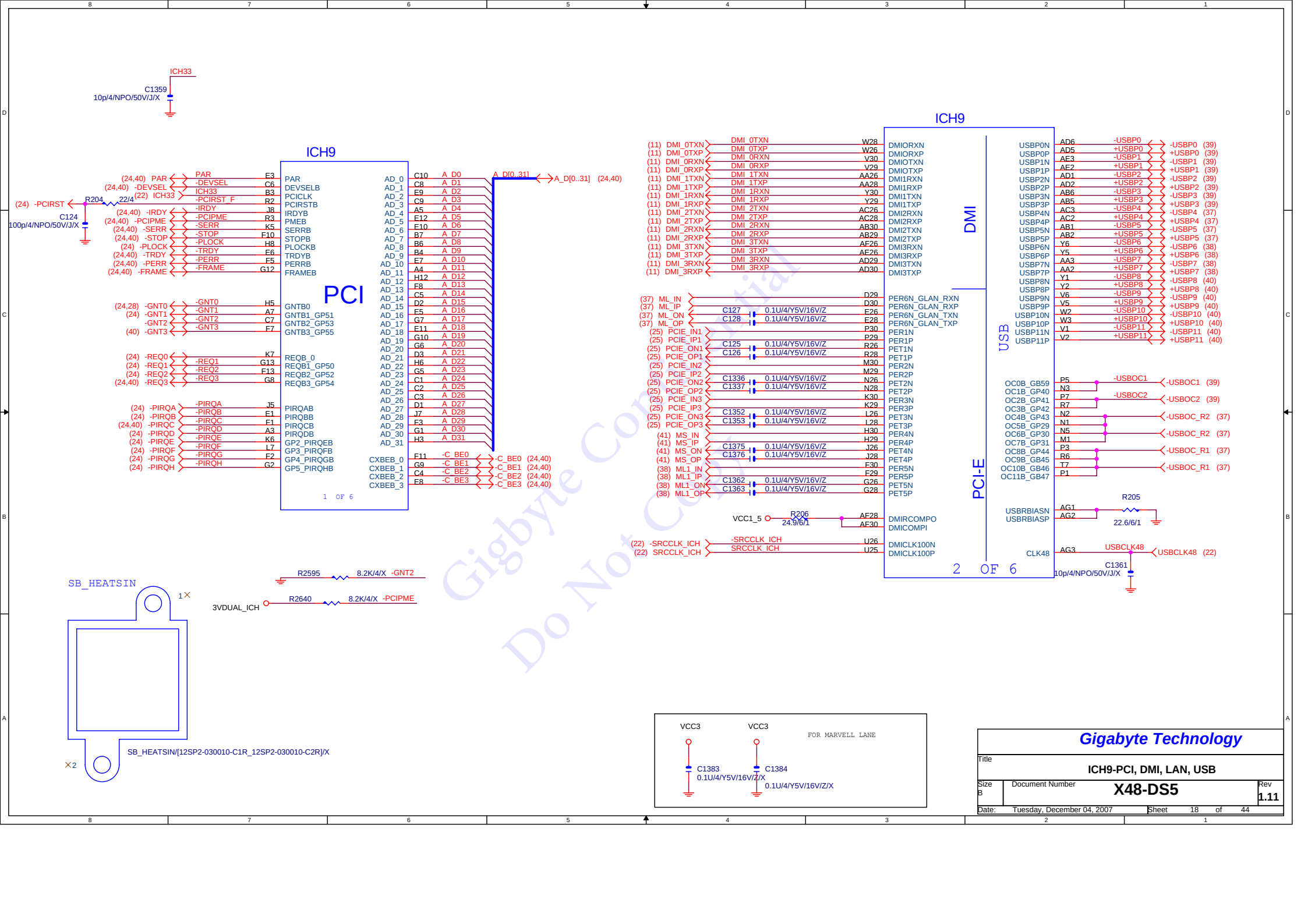

Gigabyte Technology	
Title	ICH9-PCI, DMI, LAN, USB
Size B	Document Number X48-DS5
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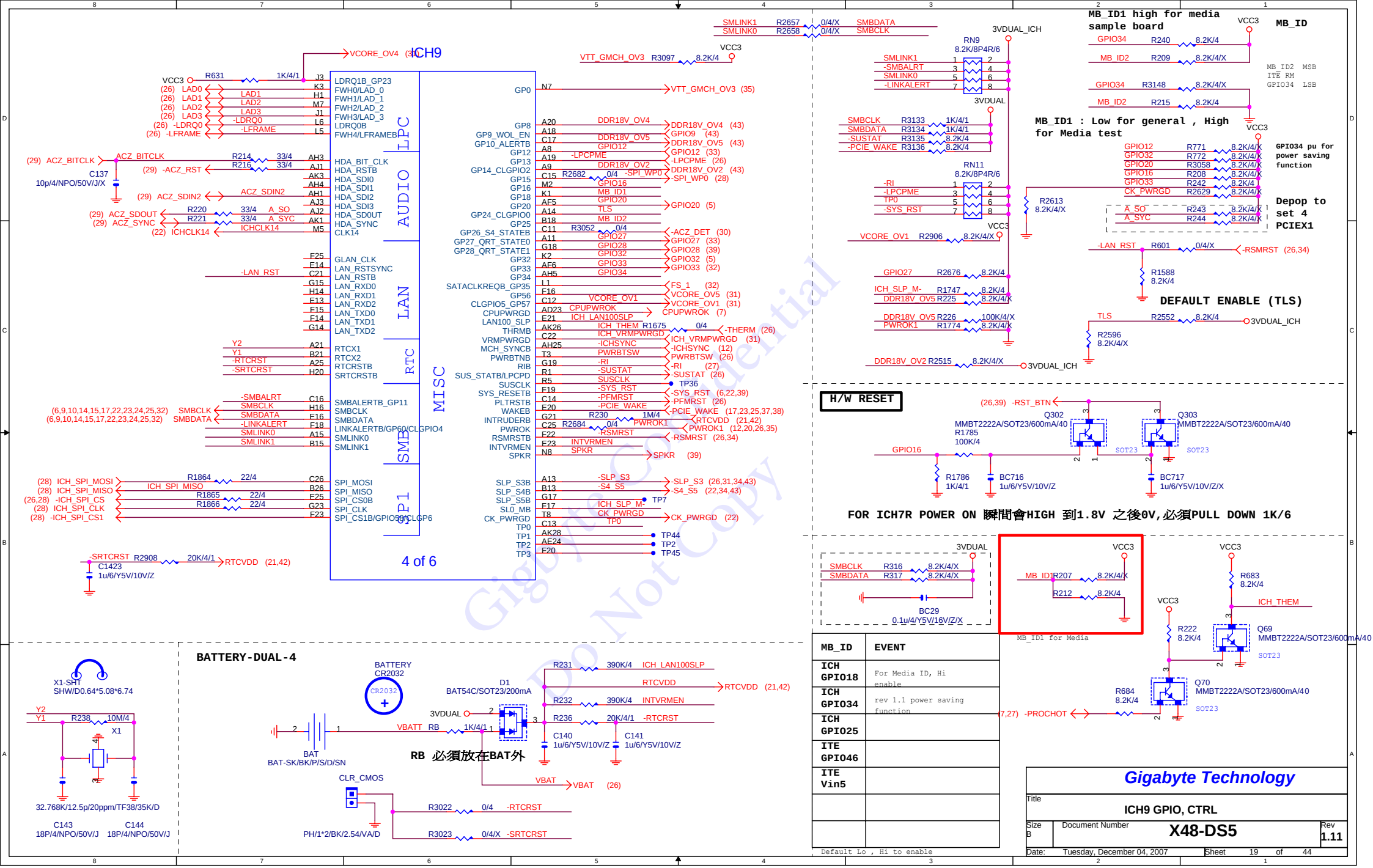

MB_ID	EVENT
ICH GPIO18	For Media ID, Hi enable
ICH GPIO34	rev 1.1 power saving function
ICH GPIO25	
ITE GPIO46	
ITE Vin5	

Default Lo , Hi to enable

Gigabyte Technology

Title: ICH9 GPIO, CTRL

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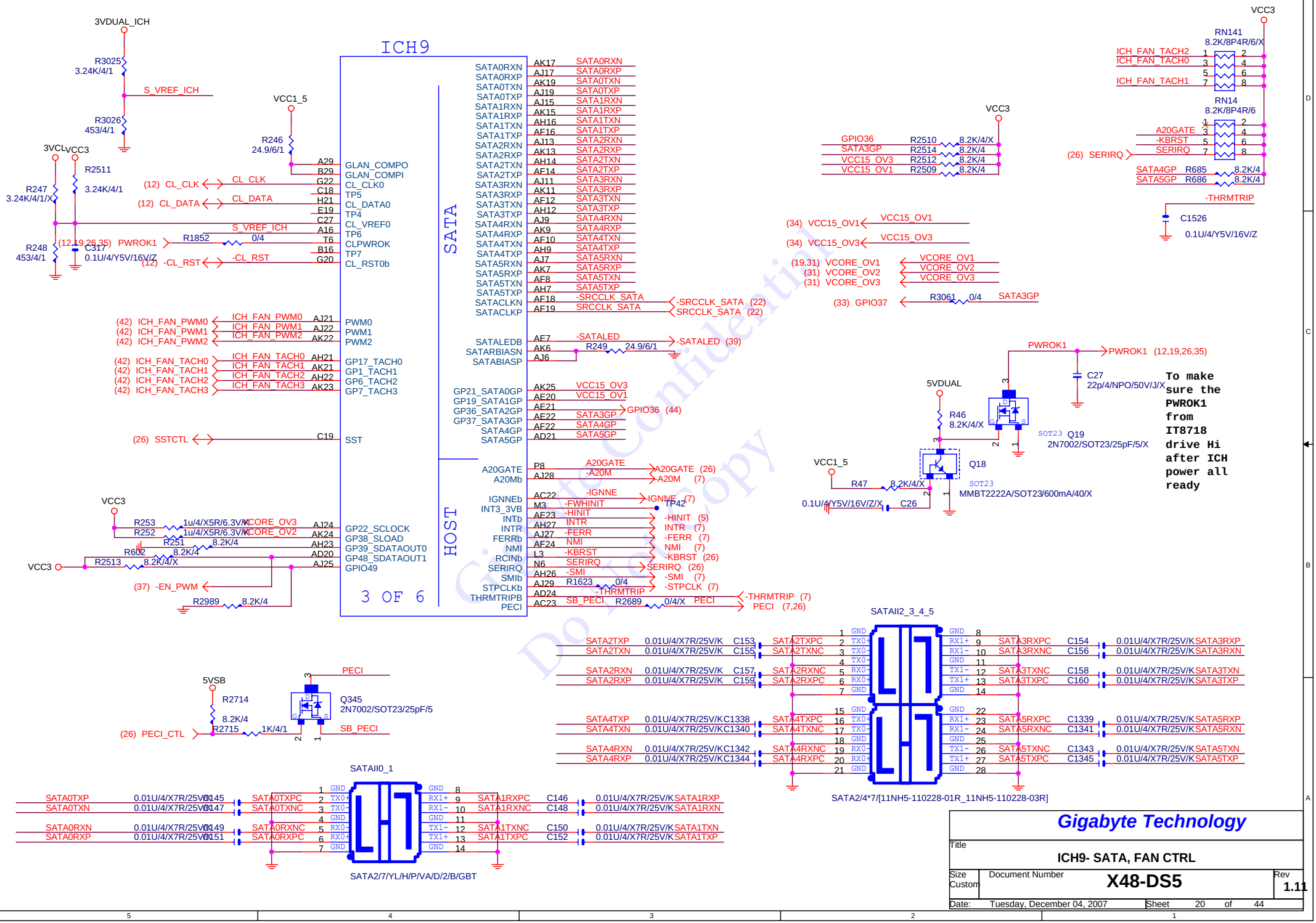
ICH9
SATA
HOST
3 OF 6
3VDUAL_ICH
R3025 3.24K/4/1
S_VREF_ICH
R3026 453/4/1
VCC1_5
R246 24.9/6/1
3VCL
VCC3
R2511
R247 3.24K/4/1/X
3.24K/4/1
R248 453/4/1
C317 0.1U/4/Y5V/16V/Z
(12) CL_CLK
(12) CL_DATA
(12,19,26,35) PWROK1
R1852 0/4
(12) -CL_RST
GLAN_COMPO
GLAN_COMPI
CL_CLK0
TP5
CL_DATA0
TP4
CL_VREF0
TP6
CLPWROK
TP7
CL_RST0b
(42) ICH_FAN_PWM0
(42) ICH_FAN_PWM1
(42) ICH_FAN_PWM2
PWM0
PWM1
PWM2
(42) ICH_FAN_TACH0
(42) ICH_FAN_TACH1
(42) ICH_FAN_TACH2
(42) ICH_FAN_TACH3
GP17_TACH0
GP1_TACH1
GP6_TACH2
GP7_TACH3
(26) SSTCTL
C19
SST
VCC3
R253 1u/4/X5R/6.3V/K
R252 1u/4/X5R/6.3V/K
CORE_OV3
CORE_OV2
R251 8.2K/4
R602 8.2K/4
R2513 8.2K/4/X
(37) -EN_PWM
R2989 8.2K/4
GP22_SCLOCK
GP38_SLOAD
GP39_SDATAOUT0
GP48_SDATAOUT1
GPIO49
SATA0RXN
SATA0RXP
SATA0TXN
SATA0TXP
SATA1RXN
SATA1RXP
SATA1TXN
SATA1TXP
SATA2RXN
SATA2RXP
SATA2TXN
SATA2TXP
SATA3RXN
SATA3RXP
SATA3TXN
SATA3TXP
SATA4RXN
SATA4RXP
SATA4TXN
SATA4TXP
SATA5RXN
SATA5RXP
SATA5TXN
SATA5TXP
SATACLKN
SATACLKP
-SRCCLK_SATA (22)
SRCCLK_SATA (22)
SATALEDB
SATARBIASN
SATABIASP
-SATALED
R249 24.9/6/1
-SATALED (39)
GP21_SATA0GP
GP19_SATA1GP
GP36_SATA2GP
GP37_SATA3GP
SATA4GP
SATA5GP
VCC15_OV3
VCC15_OV1
GPIO36 (44)
SATA3GP
SATA4GP
SATA5GP
A20GATE
A20Mb
A20GATE (26)
-A20M
A20M (7)
IGNNEb
INT3_3VB
INTb
INTR
FERRb
NMI
RCINb
SERIRQ
SMIb
STPCLKb
THRMTRIPB
PECI
-IGNNE
IGNNE (7)
TP42
-FWHINIT
-HINIT
INTR
-FERR
NMI
-KBRST
SERIRQ
-SMI
-STPCLK (7)
-THRMTRIP
SB_PECI R2689 0/4/X
-HINIT (5)
INTR (7)
-FERR (7)
NMI (7)
-KBRST (26)
SERIRQ (26)
-SMI (7)
-THRMTRIP (7)
PECI (7,26)
5VSB
R2714 8.2K/4
R2715 1K/4/1
(26) PECI_CTL
PECI
Q345 2N7002/SOT23/25pF/5
SB_PECI
SATAII0_1
SATA0TXP 0.01U/4/X7R/25V/K C145
SATA0TXN 0.01U/4/X7R/25V/K C147
SATA0RXN 0.01U/4/X7R/25V/K C149
SATA0RXP 0.01U/4/X7R/25V/K C151
SATA0TXPC
SATA0TXNC
SATA0RXNC
SATA0RXPC
SATA1RXP 0.01U/4/X7R/25V/K
SATA1RXN 0.01U/4/X7R/25V/K
SATA1TXN 0.01U/4/X7R/25V/K
SATA1TXP 0.01U/4/X7R/25V/K
SATA1RXPC C146
SATA1RXNC C148
SATA1TXNC C150
SATA1TXPC C152
SATA2/7/YL/H/P/VA/D/2/B/GBT
SATAII2_3_4_5
SATA2TXP 0.01U/4/X7R/25V/K C153
SATA2TXN 0.01U/4/X7R/25V/K C155
SATA2RXN 0.01U/4/X7R/25V/K C157
SATA2RXP 0.01U/4/X7R/25V/K C159
SATA4TXP 0.01U/4/X7R/25V/K C1338
SATA4TXN 0.01U/4/X7R/25V/K C1340
SATA4RXN 0.01U/4/X7R/25V/K C1342
SATA4RXP 0.01U/4/X7R/25V/K C1344
SATA2TXPC
SATA2TXNC
SATA2RXNC
SATA2RXPC
SATA4TXPC
SATA4TXNC
SATA4RXNC
SATA4RXPC
SATA3RXP 0.01U/4/X7R/25V/K SATA3RXP
SATA3RXN 0.01U/4/X7R/25V/K SATA3RXN
SATA3TXN 0.01U/4/X7R/25V/K SATA3TXN
SATA3TXP 0.01U/4/X7R/25V/K SATA3TXP
SATA5RXP 0.01U/4/X7R/25V/K SATA5RXP
SATA5RXN 0.01U/4/X7R/25V/K SATA5RXN
SATA5TXN 0.01U/4/X7R/25V/K SATA5TXN
SATA5TXP 0.01U/4/X7R/25V/K SATA5TXP
SATA3RXPC C154
SATA3RXNC C156
SATA3TXNC C158
SATA3TXPC C160
SATA5RXPC C1339
SATA5RXNC C1341
SATA5TXNC C1343
SATA5TXPC C1345
SATA2/4*7/[11NH5-110228-01R_11NH5-110228-03R]
VCC3
GPIO36 R2510 8.2K/4/X
SATA3GP R2514 8.2K/4
VCC15_OV3 R2512 8.2K/4
VCC15_OV1 R2509 8.2K/4
(34) VCC15_OV1
(34) VCC15_OV3
VCC15_OV1
VCC15_OV3
(19,31) VCORE_OV1
(31) VCORE_OV2
(31) VCORE_OV3
VCORE_OV1
VCORE_OV2
VCORE_OV3
(33) GPIO37
R3061 0/4
SATA3GP
RN141 8.2K/8P4R/6/X
ICH_FAN_TACH2
ICH_FAN_TACH0
ICH_FAN_TACH1
RN14 8.2K/8P4R/6
A20GATE
-KBRST
SERIRQ
(26) SERIRQ
SATA4GP R685 8.2K/4
SATA5GP R686 8.2K/4
-THRMTRIP
C1526
0.1U/4/Y5V/16V/Z
PWROK1
PWROK1 (12,19,26,35)
C27 22p/4/NPO/50V/J/X
5VDUAL
R46 8.2K/4/X
SOT23 Q19 2N7002/SOT23/25pF/5/X
VCC1_5
R47 8.2K/4/X
Q18
SOT23 MMBT2222A/SOT23/600mA/40/X
0.1U/4/Y5V/16V/Z/X
C26
To make sure the PWROK1 from IT8718 drive Hi after ICH power all ready
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Gigabyte Technology
Title
ICH9- SATA, FAN CTRL
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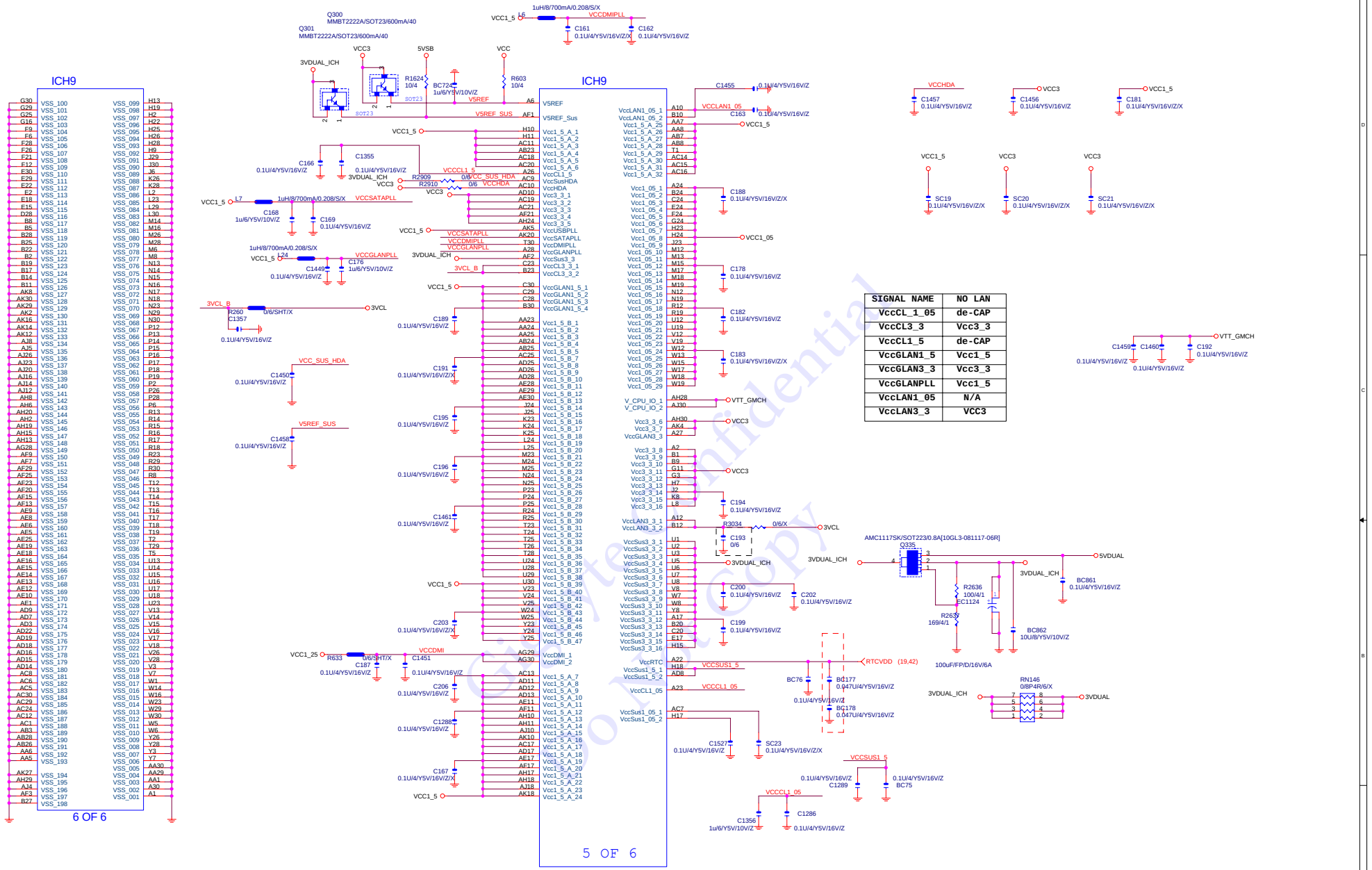

SIGNAL NAME	NO LAN
VccCL_1_05	de-CAP
VccCL3_3	Vcc3_3
VccCL1_5	de-CAP
VccGLAN1_5	Vcc1_5
VccGLAN3_3	Vcc3_3
VccGLANPLL	Vcc1_5
VccLAN1_05	N/A
VccLAN3_3	VCC3

Gigabyte Technology			
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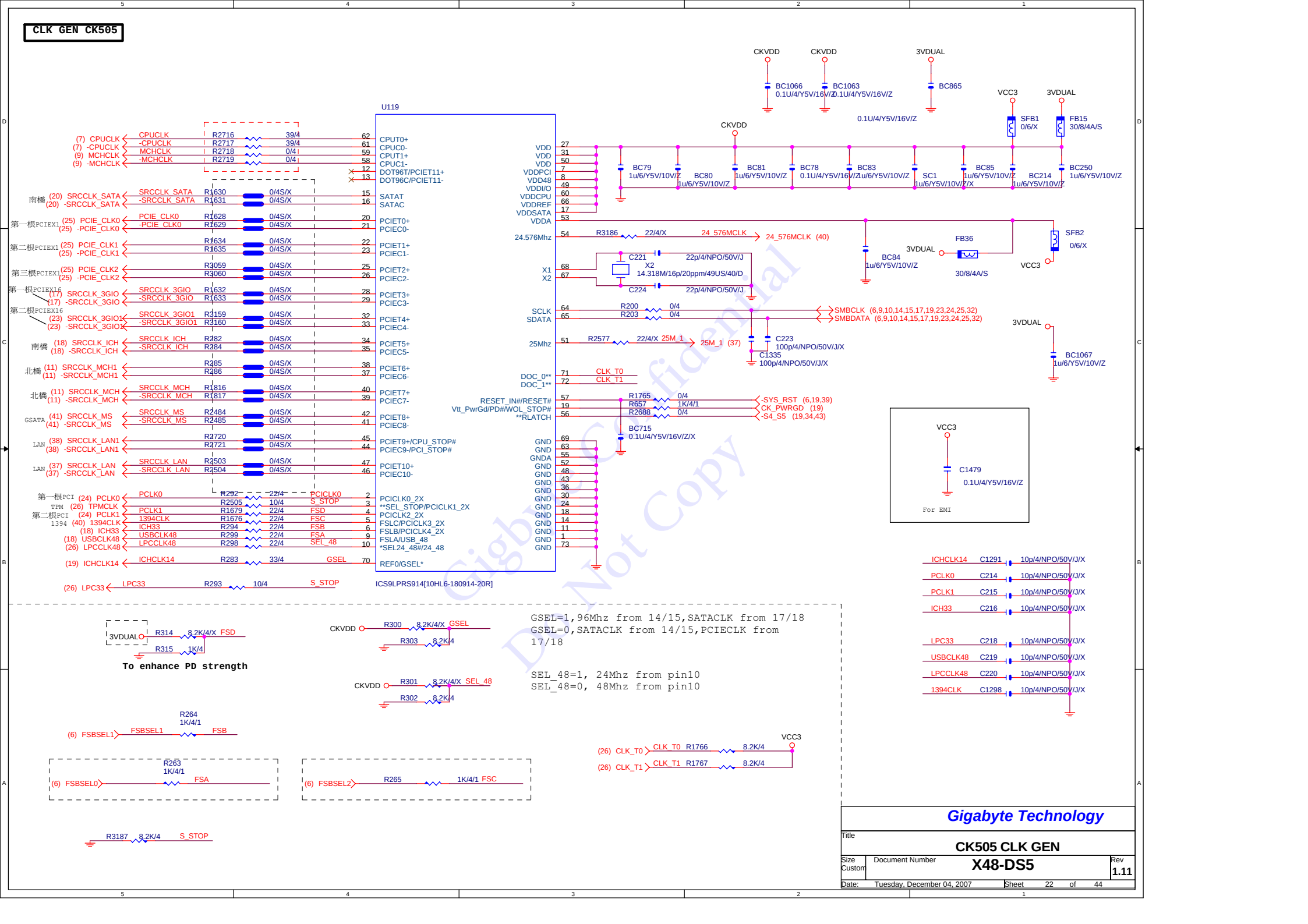
CLK GEN CK505



Title	CK505 CLK GEN
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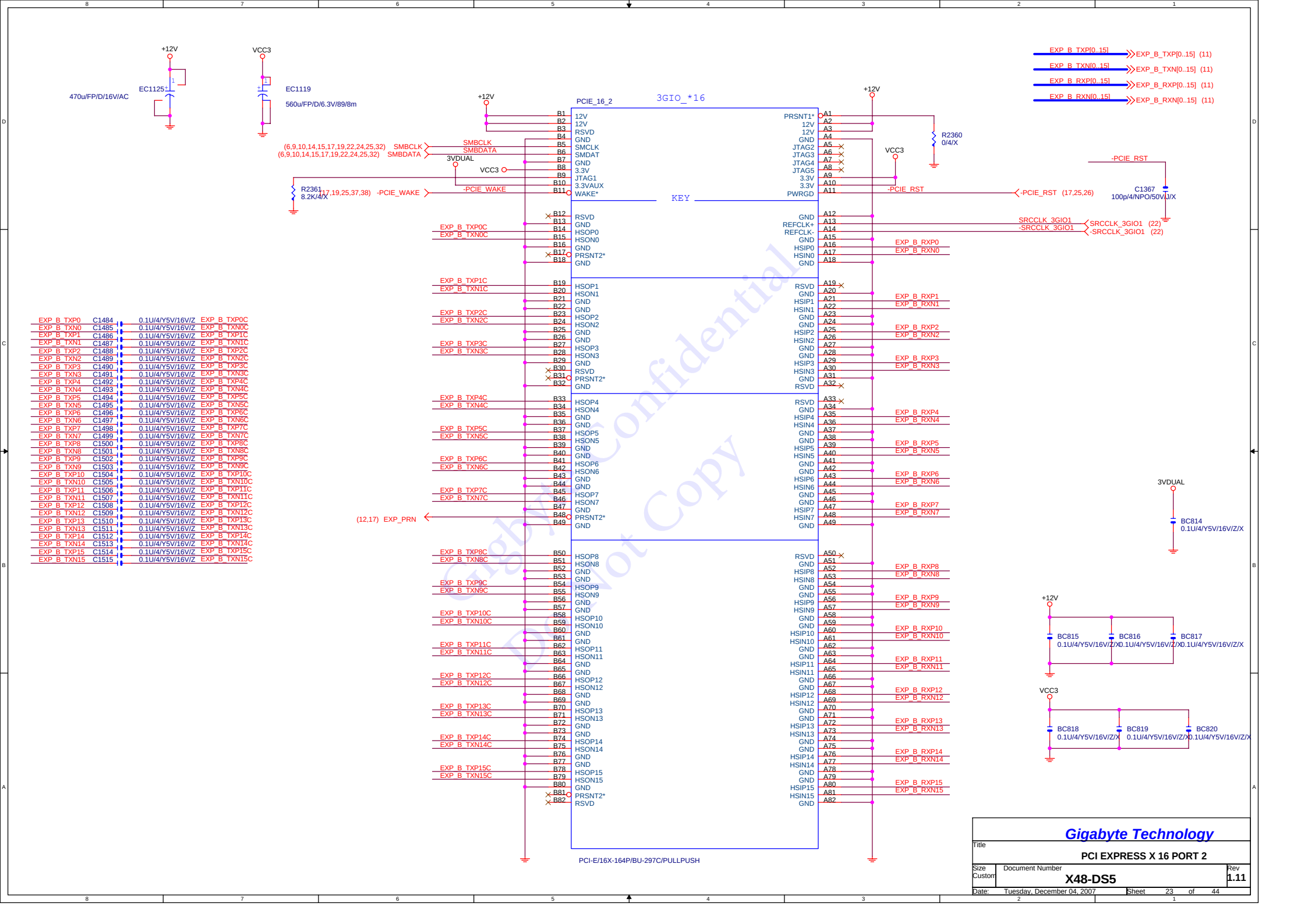

Title	PCI EXPRESS X 16 PORT 2
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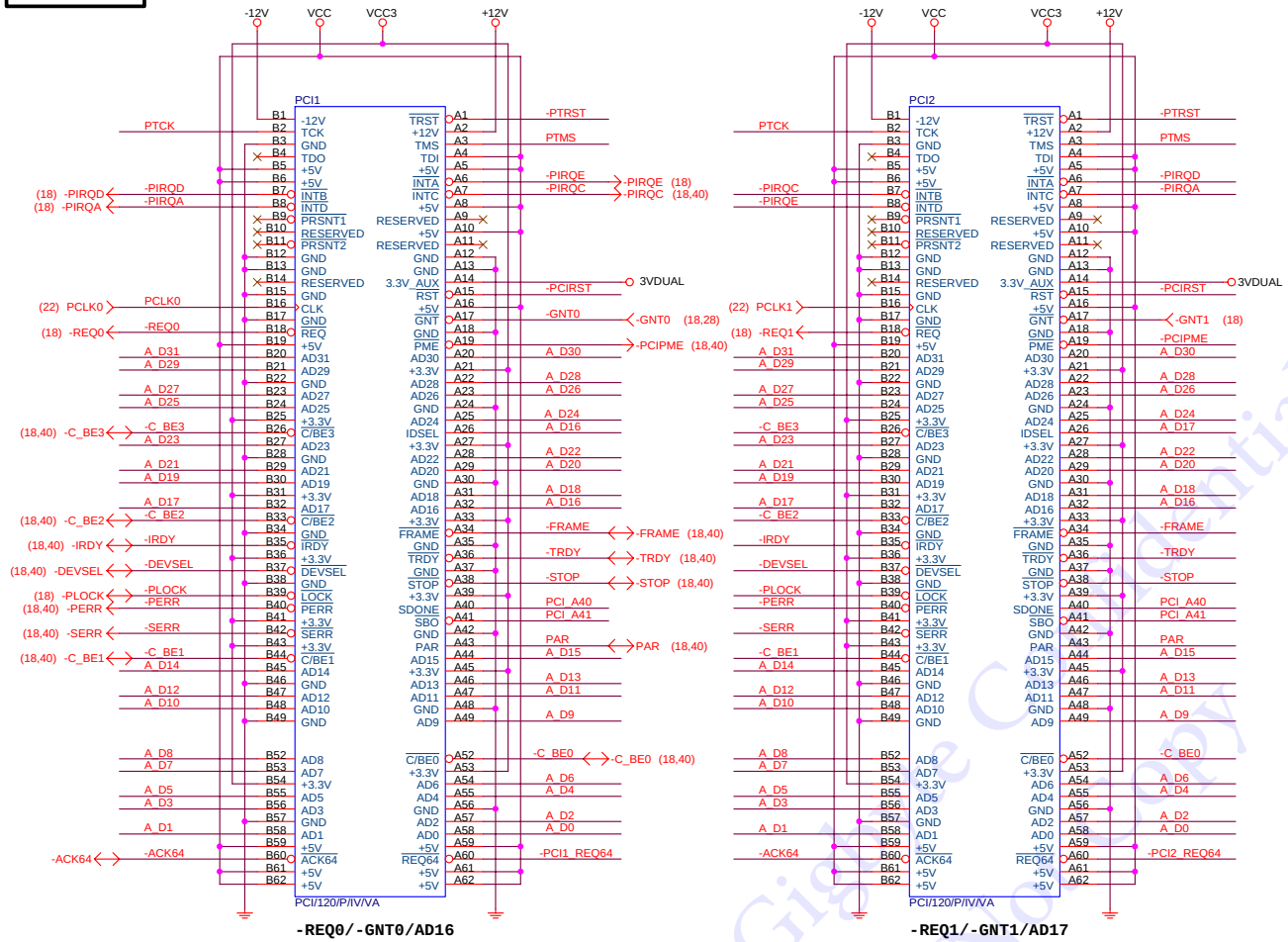
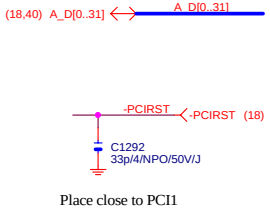
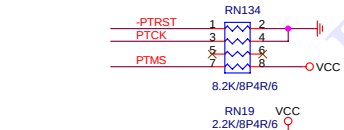
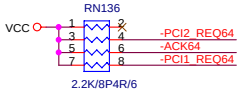
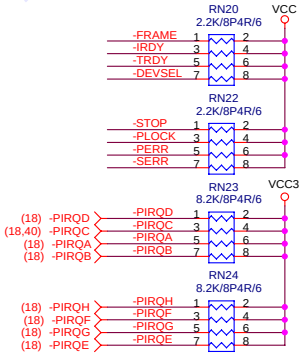
PCI1,2 SLOT



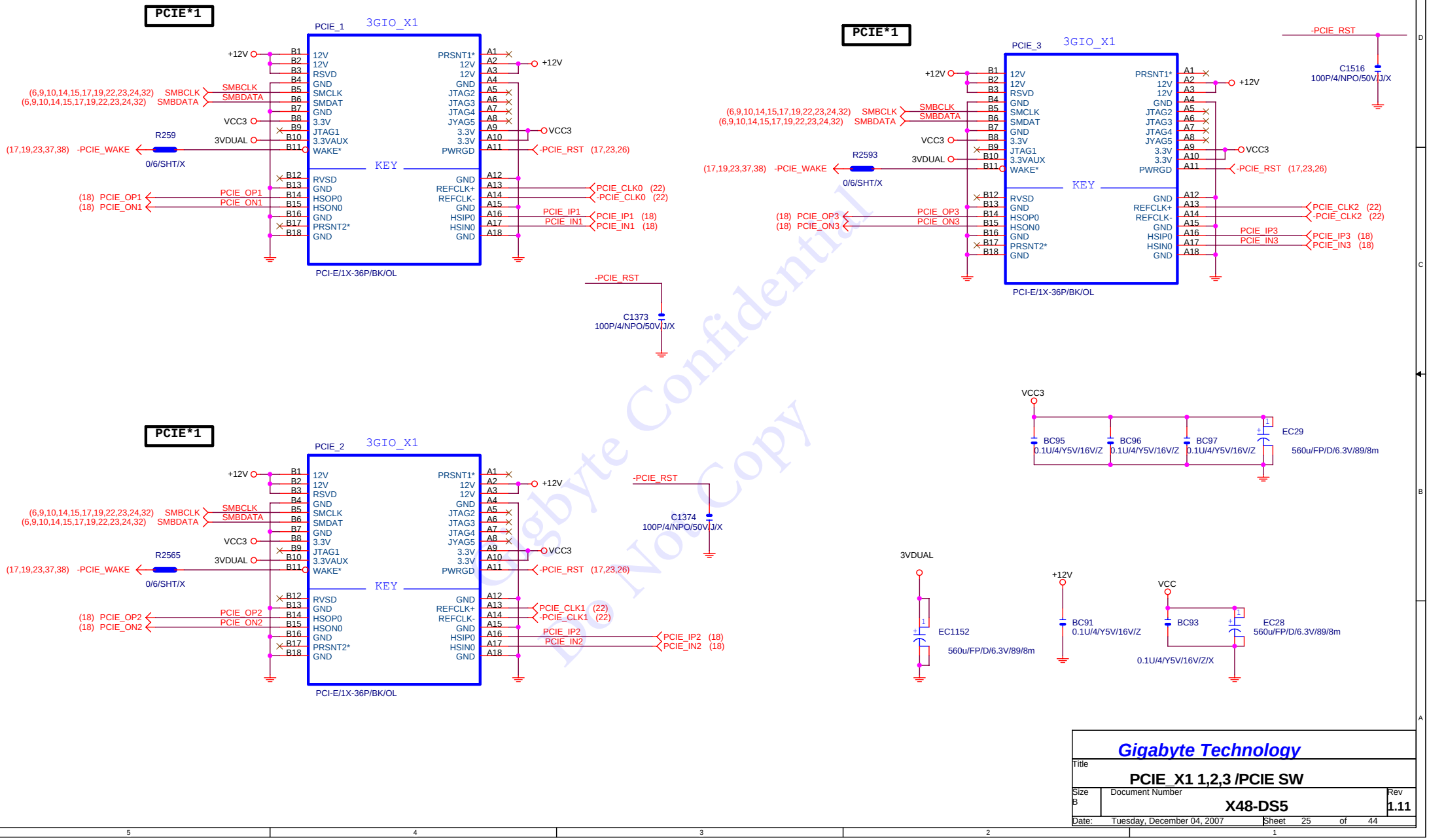








Gigabyte Technology		
Title: PCI SLOT 1, 2		
Size: Custom	Document Number: X48-DS5	Rev: 1.11
Date: Tuesday, December 04, 2007	Sheet 24 of 44	



Gigabyte Technology		
Title: PCIE_X1 1,2,3 /PCIE SW		
Size: B	Document Number: X48-DS5	Rev: 1.11
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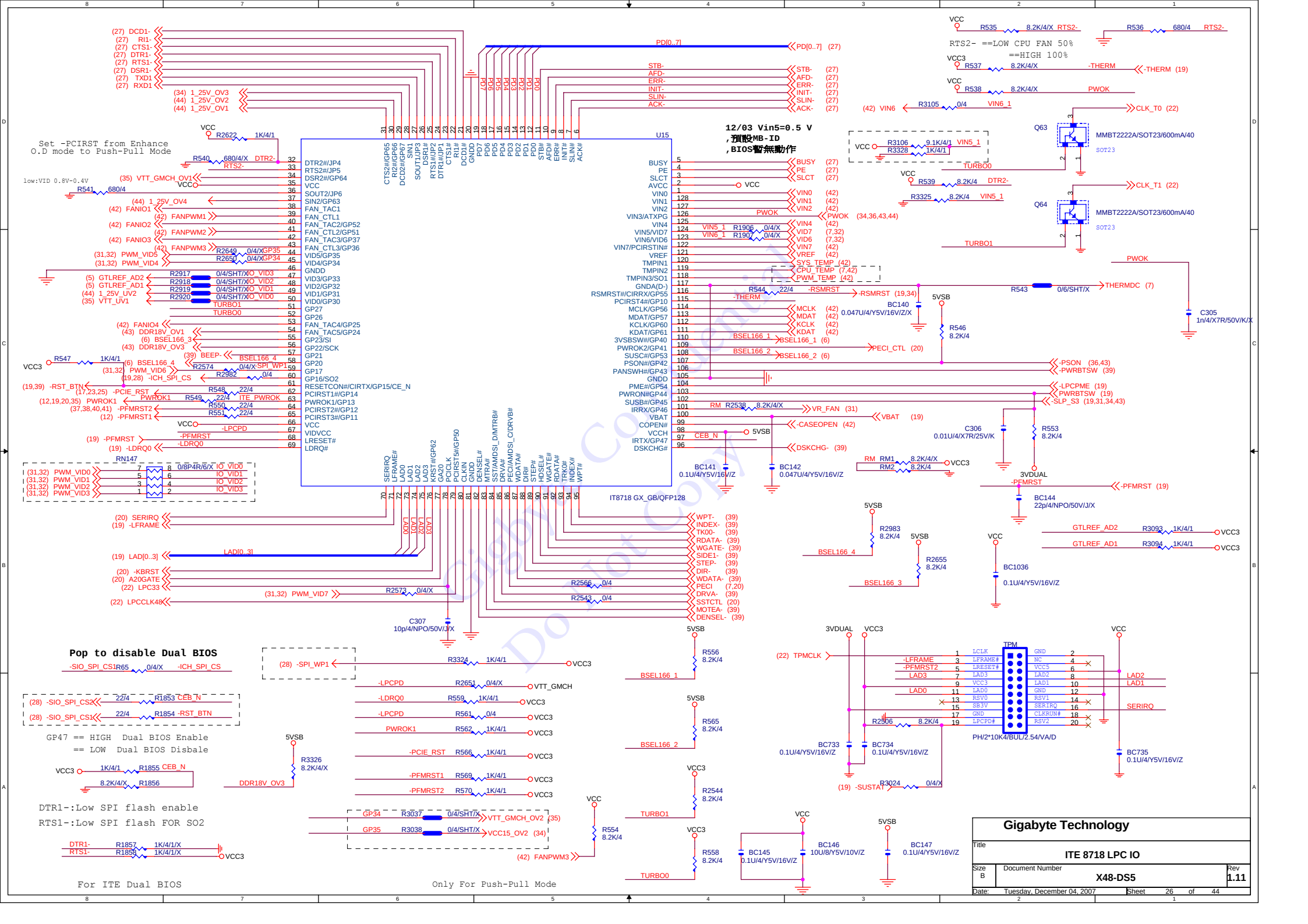
U15
IT8718 GX_GB/QFP128
12/03 Vin5=0.5 V ,預設MB-ID ,BIOS暫無動作
Set -PCIRST from Enhance O.D mode to Push-Pull Mode
low:VID 0.8V~0.4V
Pop to disable Dual BIOS
GP47 == HIGH Dual BIOS Enable
== LOW Dual BIOS Disbale
DTR1-:Low SPI flash enable
RTS1-:Low SPI flash FOR SO2
For ITE Dual BIOS
Only For Push-Pull Mode
RTS2- ==LOW CPU FAN 50%
==HIGH 100%
Gigabyte Technology
ITE 8718 LPC IO
X48-DS5
1.11
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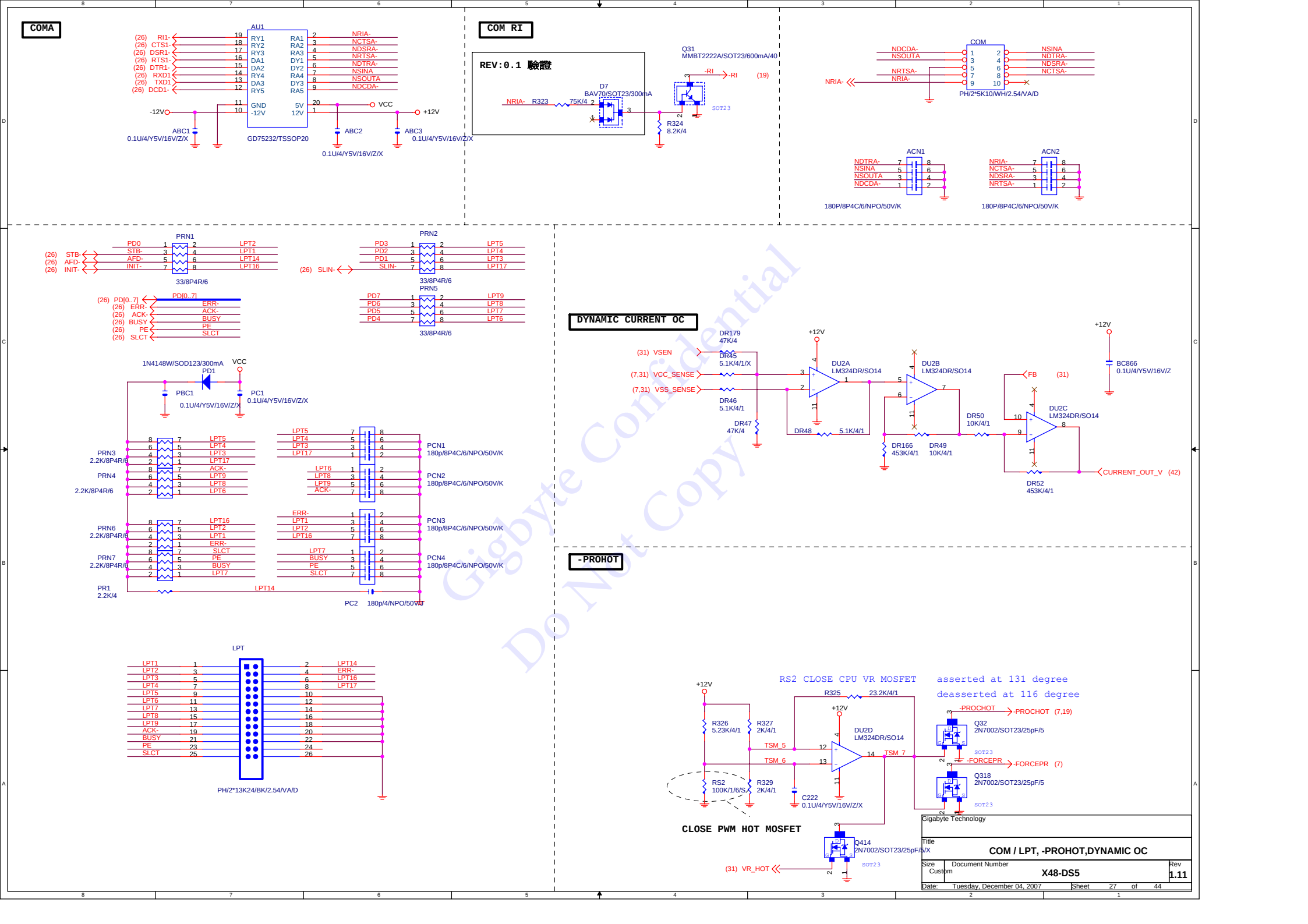
COMA
AU1
GD75232/TSSOP20
ABC1
ABC2
ABC3
0.1U/4/Y5V/16V/Z/X
COM RI
REV:0.1 驗證
Q31
MMBT2222A/SOT23/600mA/40
D7
BAV70/SOT23/300mA
R323
75K/4
R324
8.2K/4
COM
PH/2*5K10/WH/2.54/VA/D
ACN1
ACN2
180P/8P4C/6/NPO/50V/K
PRN1
PRN2
PRN5
33/8P4R/6
1N4148W/SOD123/300mA
PD1
PBC1
PC1
PRN3
PRN4
PRN6
PRN7
2.2K/8P4R/6
PCN1
PCN2
PCN3
PCN4
180p/8P4C/6/NPO/50V/K
PR1
2.2K/4
PC2
180p/4/NPO/50V/X
LPT
PH/2*13K24/BK/2.54/VA/D
DYNAMIC CURRENT OC
DR179
47K/4
DR45
5.1K/4/1/X
DR46
5.1K/4/1
DR47
47K/4
DR48
5.1K/4/1
DU2A
LM324DR/SO14
DU2B
DR50
10K/4/1
DR166
453K/4/1
DR49
10K/4/1
DU2C
DR52
453K/4/1
BC866
0.1U/4/Y5V/16V/Z
-PROHOT
RS2 CLOSE CPU VR MOSFET
asserted at 131 degree
deasserted at 116 degree
R325
23.2K/4/1
R326
5.23K/4/1
R327
2K/4/1
R329
2K/4/1
RS2
100K/1/6/S
C222
0.1U/4/Y5V/16V/Z/X
DU2D
LM324DR/SO14
Q32
2N7002/SOT23/25pF/5
Q318
2N7002/SOT23/25pF/5
Q414
2N7002/SOT23/25pF/5/X
CLOSE PWM HOT MOSFET
Gigabyte Technology
COM / LPT, -PROHOT,DYNAMIC OC
X48-DS5
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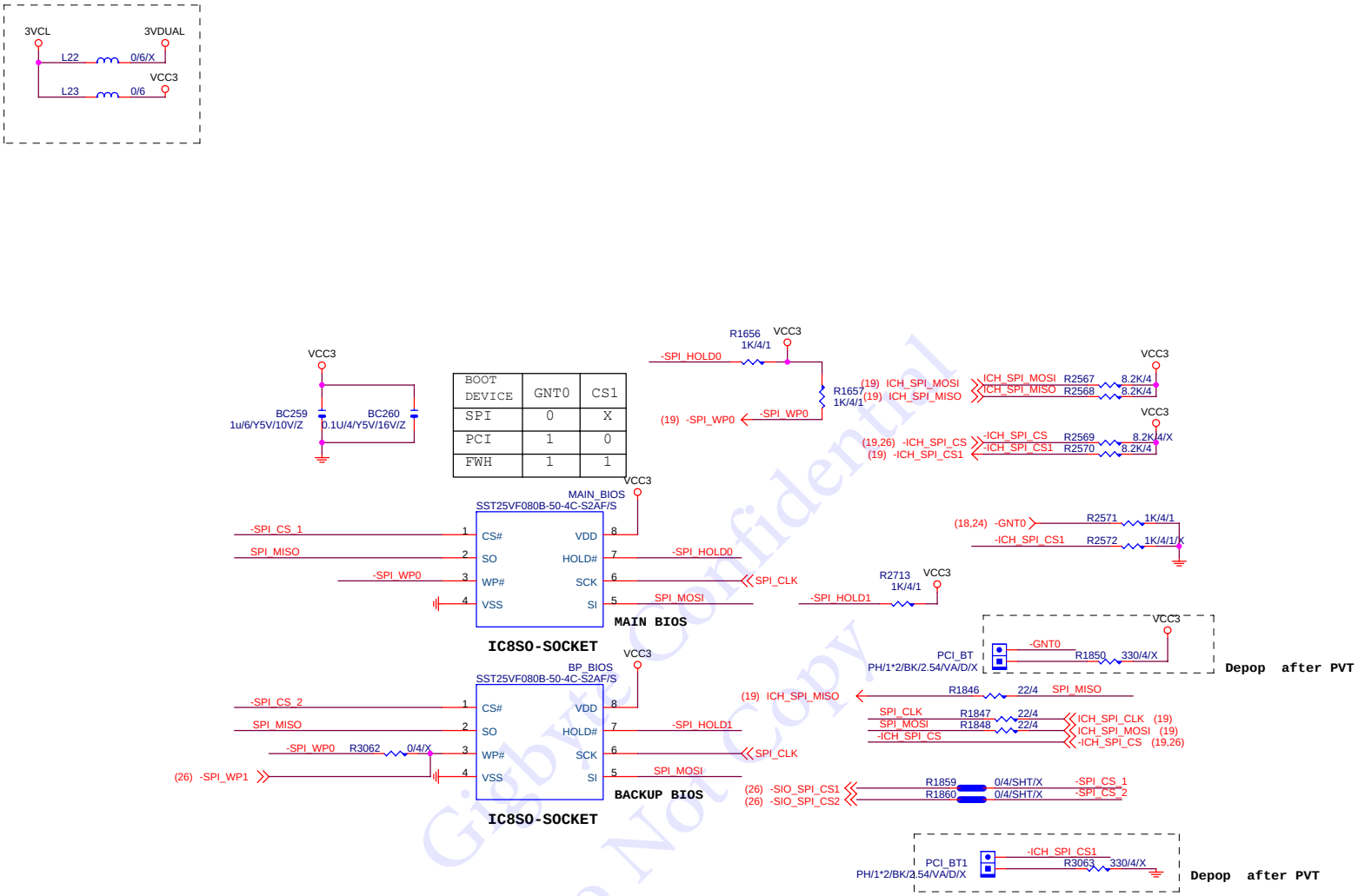
Gigabyte Confidential
Do Not Copy



Gigabyte Technology			
Title: DUAL BIOS			
Size: Custom	Document Number: X48-DS5		Rev: 1.11
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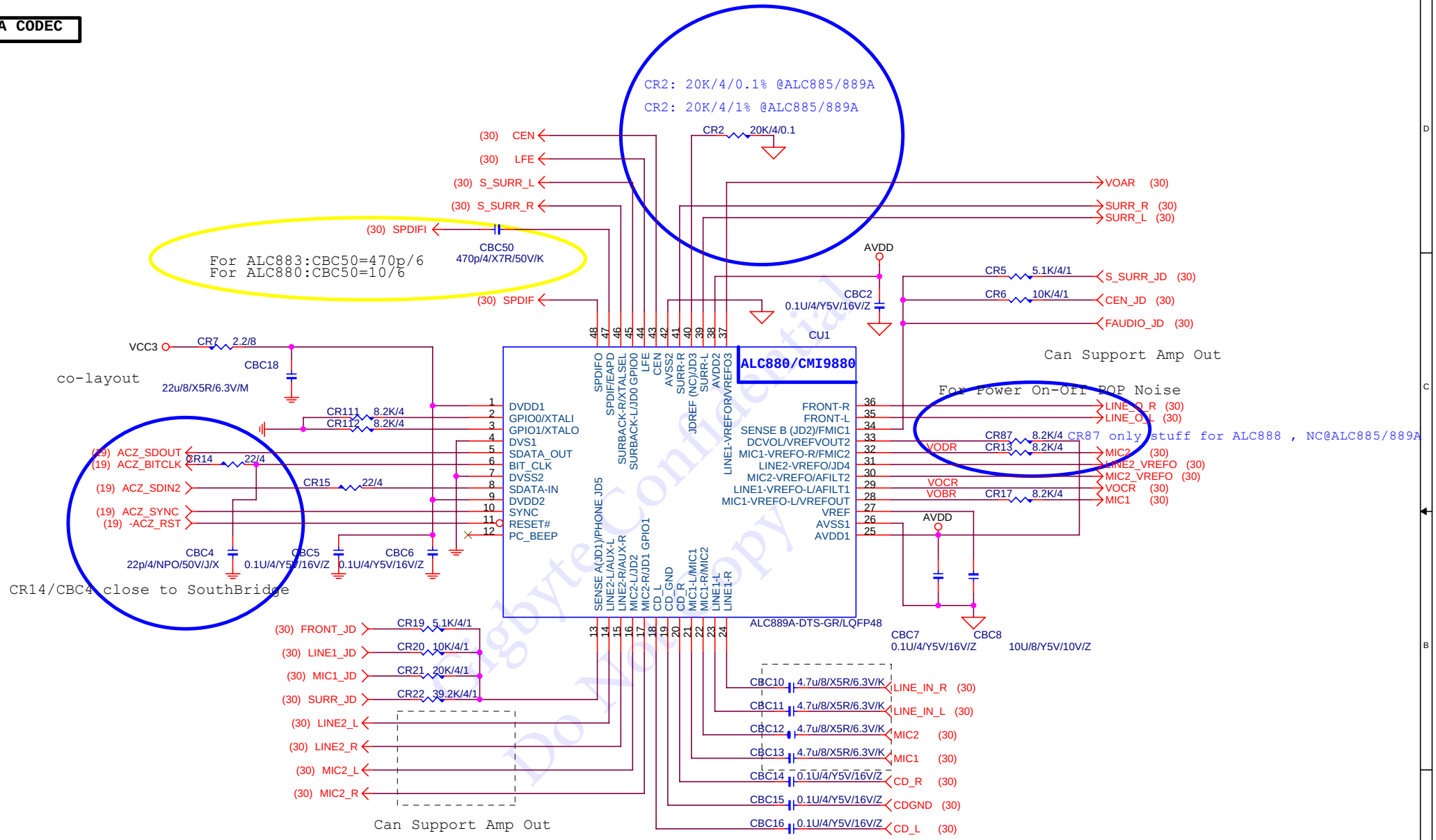
AZALIA CODEC



Gigabyte Technology		
Title: HD AUDIO ALC889A		
Size: Custom	Document Number: X48-DS5	Rev: 1.11
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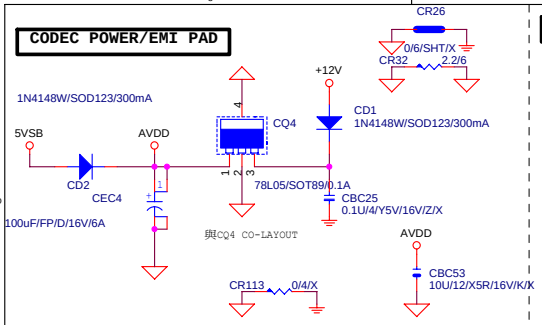
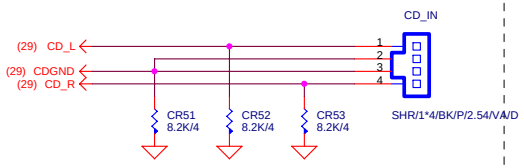
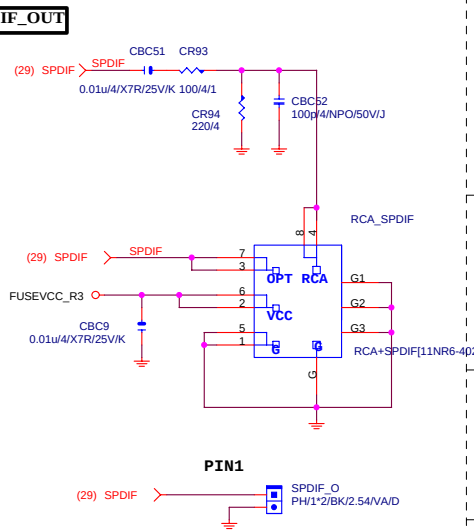
CODEC POWER/EMI PAD



CD IN

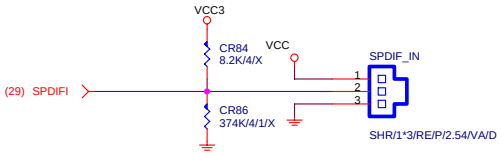


SPDIF_OUT



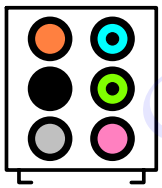
For HDMI SPDIF

SPDIF_IN

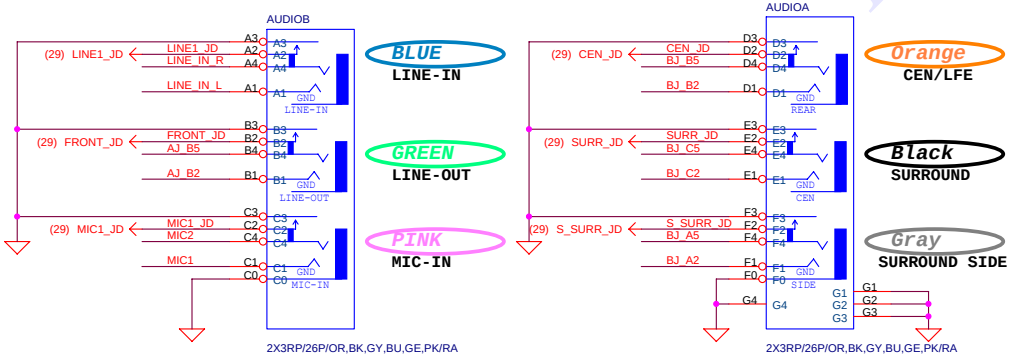


AZALIA JACK

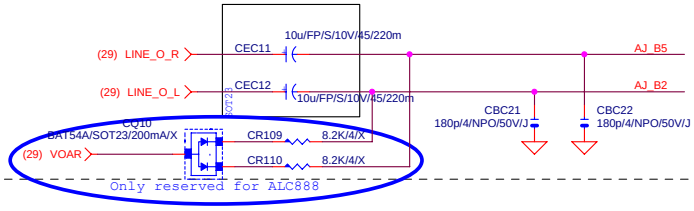
BTX AZALIA CONNECTOR



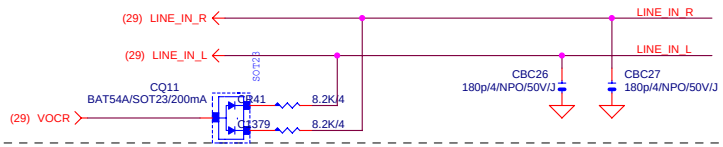
11NR6-403007-21R



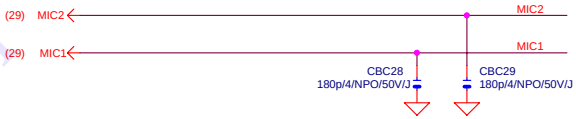
LINE-OUT



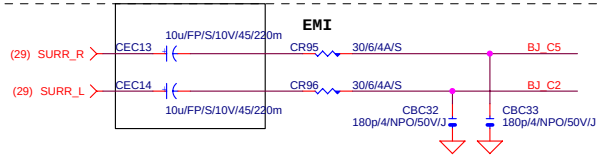
LINE-IN



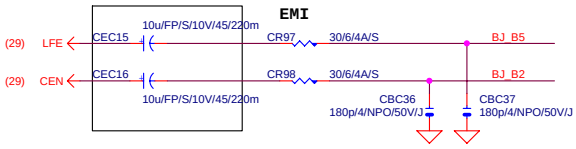
MIC-IN



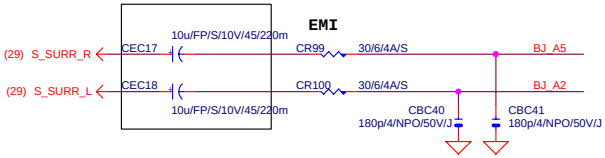
SURROUND



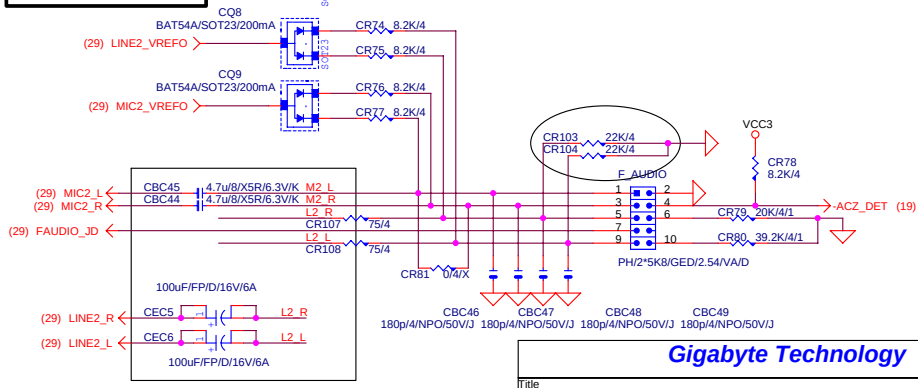
CEN/LFE



SURR BACK



AZALIA FRONT PANEL



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Title	AUDIO JACK	
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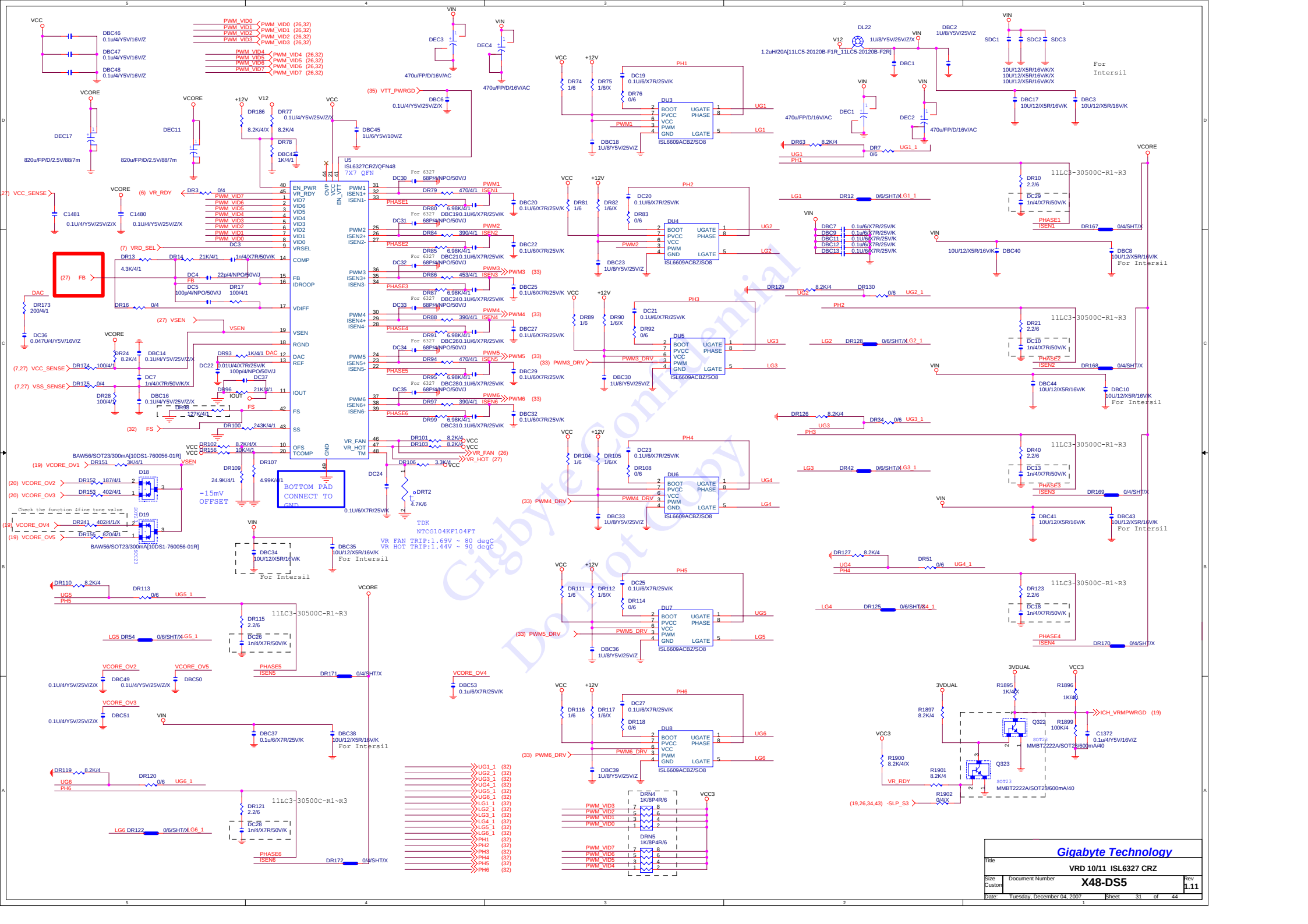
U5
ISL6327CRZ/QFN48
7X7 QFN
U6
ISL6609ACBZ/SO8
U7
ISL6609ACBZ/SO8
U8
ISL6609ACBZ/SO8
U9
ISL6609ACBZ/SO8
U10
ISL6609ACBZ/SO8
11LC3-30500C-R1~R3
BOTTOM PAD
CONNECT TO
GND
-15mV
OFFSET
TDK
NTCG104KF104FT
VR FAN TRIP:1.69V ~ 80 degC
VR HOT TRIP:1.44V ~ 90 degC
Check the function &fine tune value
BAW56/SOT23/300mA[10DS1-760056-01R]
MMBT2222A/SOT23/600mA/40
For Intersil
Gigabyte Technology
VRD 10/11 ISL6327 CRZ
X48-DS5
1.11
Tuesday, December 04, 2007
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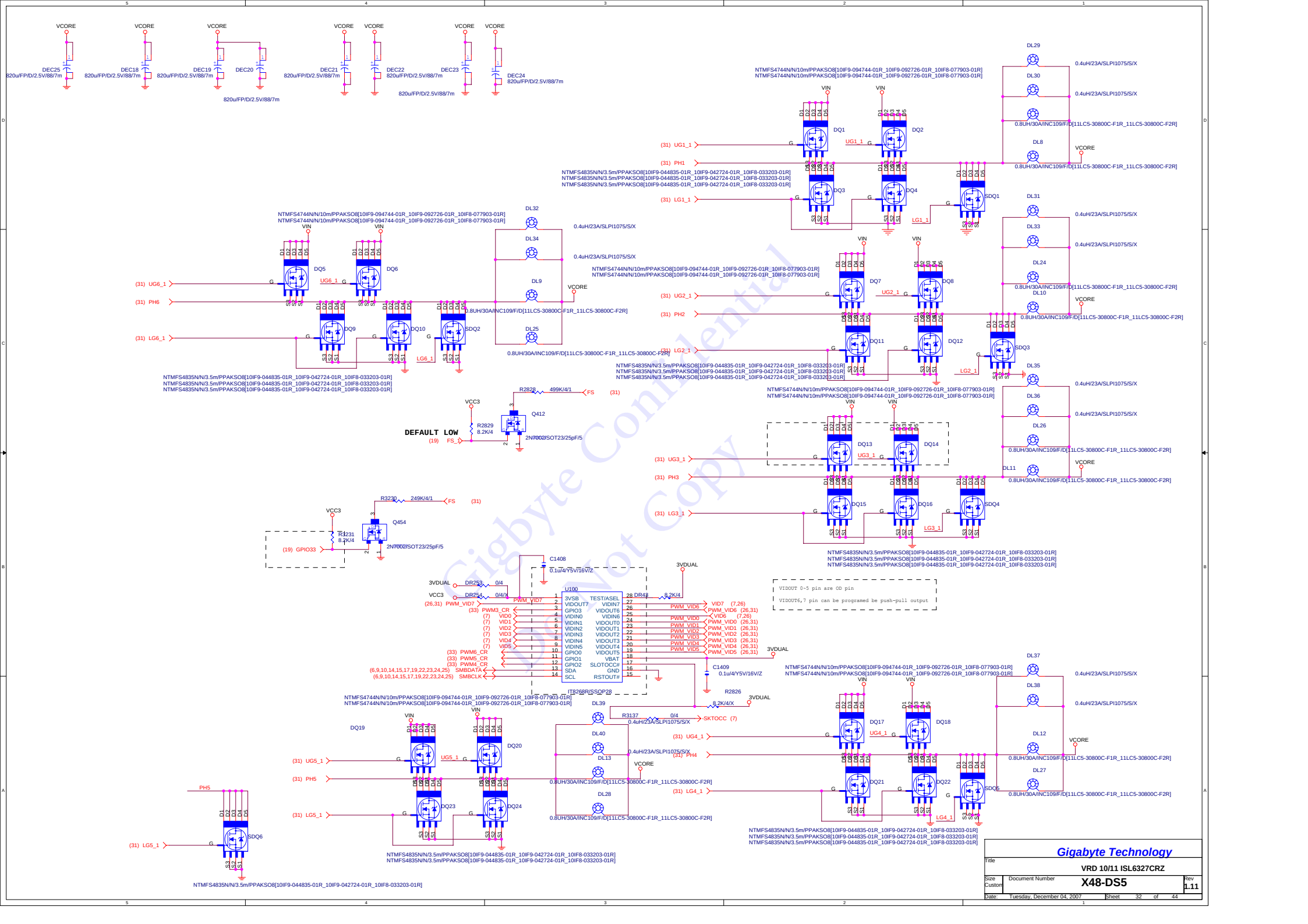

Gigabyte Technology			
Title	VRD 10/11 ISL6327CRZ		
Size: Custom	Document Number: X48-DS5		Rev: 1.11
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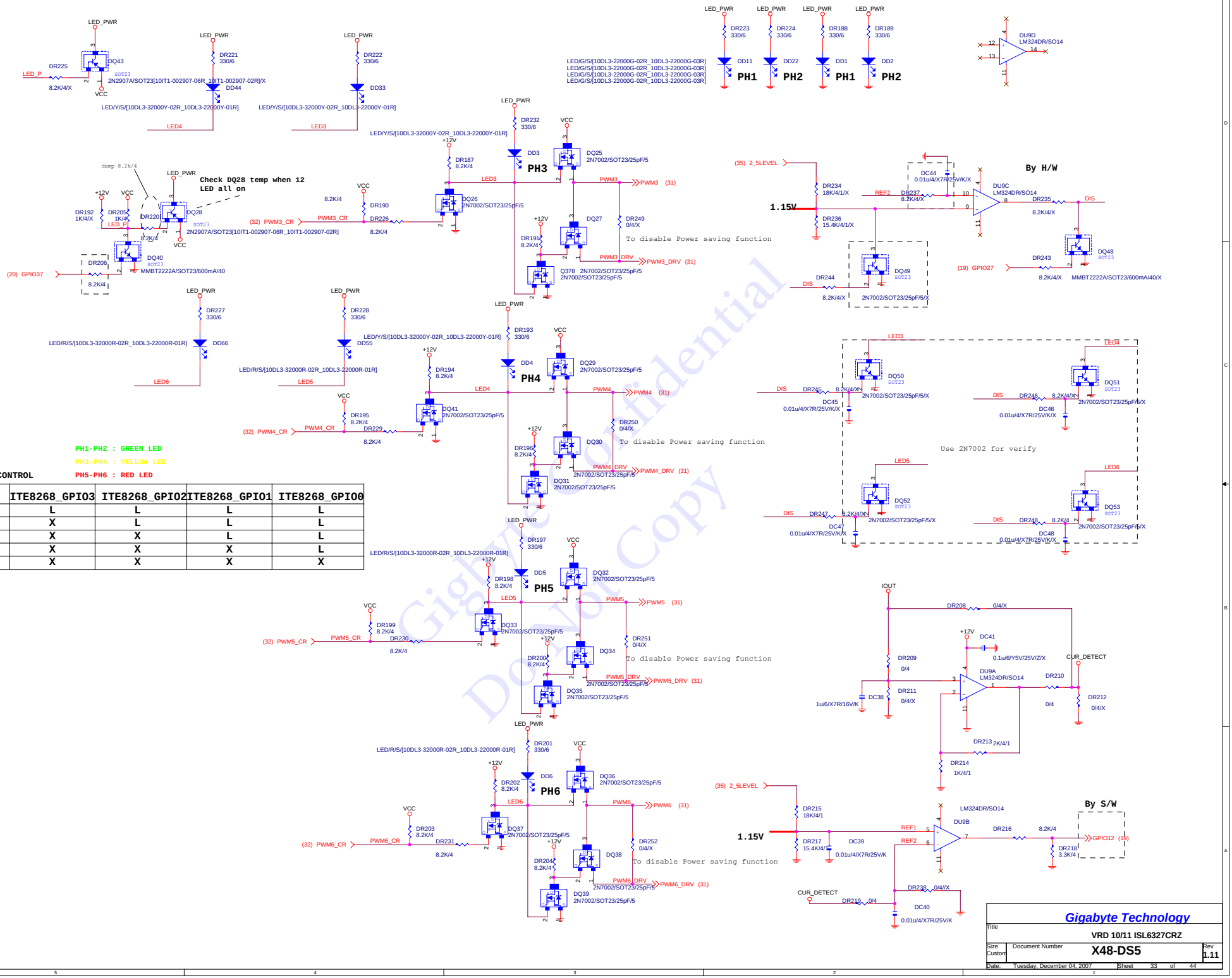

	ITE8268_GPIO3	ITE8268_GPIO2	ITE8268_GPIO1	ITE8268_GPIO0
2 PHASE	L	L	L	L
3 PHASE	X	L	L	L
4 PHASE	X	X	L	L
5 PHASE	X	X	X	L
6 PHASE	X	X	X	X

Gigabyte Technology				
Title	VRD 10/11 ISL6327CRZ			
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5VDUAL

5VSB 5VSB 5VSB +12V

C1452 0.1U/4/Y5V/16V/Z

R306 0/4 KA3 U17A KA393D/SO8 R307 8.2K/4

(35,43,44) PWOK 5VSB R304 1K/4/1 R305 1K/4/1 C1444 0.1U/4/Y5V/16V/Z

5VDL_G1 5VDL_G2

U17B KA393D/SO8 R308 8.2K/4

VCC Q37 2SK3918/TO252/1300pF/7.5m 5VDUAL

5V_DRV 5V_DRV (39)

R309 1K/4/1 5VDL_G1 P_EN Q293 5VDUAL 5VSB

EC33 100uF/FP/D/16V/6A EC34 560uF/FP/D/6.3V/89/8m

PMOS/SOT89/[10IF5-509435-01R_10IFC-450603-01R]

To makr sure the main power ready

VCC R310 1K/4/X

PD2 BAT54A/SOT23/200mA/X KA3 R312 1K/4/X +12V R311 4.7K/4/X C50 1u/6/Y5V/10V/Z/X

C1528 0.01U/4/X7R/25V/K/X C51 1u/6/Y5V/10V/Z/X R313 4.7K/4/X

The reference value need fine tune

3VDUAL

3VDUAL R3314 1.2K/4/1/X VCC15P_FB U88A LM358DR/SO8[10TA1-710358-12R_10TA1-710358-15R]

BC1107 0.01U/4/X7R/25V/K/X R3315 1K/4/1/X

VCC1_5P VCC3 C1546 1u/6/Y5V/10V/Z/X LQ5 2SB1132/SOT89/-1A/82/X

R3316 100/6/X C1547 1n/4/X7R/50V/K/X R3317 20K/4/X C1548 8.2K/4/X

(9) VCC1_5PADJ R3318 0/4/X VCC15P_FB BC1108 R3319 1K/4/1/X BC1109 VCC1_5P (1.5V/2.2A)

0.01U/4/X7R/25V/K/X 22u/8/X5R/6.3V/M/X BC1110

50mV 100mV

VCC1_5P 22u/8/X5R/6.3V/M/X

The OV1,OV3 will pull low during Boot To reduce the over voltage , swap the sequ about OV2,OV3 in R2.11

5VDUAL 3VDUAL EC1157 100uF/FP/D/16V/6A/X

C234 0.1U/4/Y5V/16V/Z C236 EC32 560uF/FP/D/6.3V/89/8m

R373 1K/4/1 -RSMRST (19,26)

C1329 0.01U/4/X7R/25V/K

Q36 APE1084GH/TO252/5A[10GL6-501085-01R]

R1735 100/4/1 R1737 169/4/1

VCC1_5

DDR18V C211 1u/6/Y5V/10V/Z/X

(35) V_LEVEL R1718 12.7K/4/1 +12V 2SK3918/TO252/1300pF/7.5m Q289

VCC15_EN U98C LM324DR/SO14 R2641 VCC15_G Max level is 2.1 V

BC731 0.1u/4/X7R/16V/K R1723 20K/4/1 C1387 1n/4/X7R/50V/K R3178 C1326 8.2K/4

20K/4/X R2545 1K/4/1 VCC1_5 (1.5V/2.2A)

BAW56/SOT23/300mA[10DI1-760056-01R] R463 22K/4 R2551 9.53K/4/1 R464 7.15K/4/1 R3188 3.74K/4/1

(20) VCC15_OV1 (20) VCC15_OV3 (26) VCC15_OV2 (26) 1_25V_OV3

200mV 400mV

BC1043 0.01U/4/X7R/25V/K/X EC1120 EC170 560uF/FP/D/6.3V/89/8m

The OV1,OV3 will pull low during Boot To reduce the over voltage , swap the sequ about OV2,OV3 in R2.11

VCC3_DAC

3VDUAL +12V U88B LM358DR/SO8[10TA1-710358-12R_10TA1-710358-15R] Q250 MMBT2222A/SOT23/600mA/40

R1729 1K/4/1 R1739 3K/4/1/X R1728 1K/4/1 C1327 8.2K/4 C666 R3179 20K/4 1n/4/X7R/50V/K

BC732 0.01U/4/X7R/25V/K VCC1_25 EC1122 820u/FP/D/2.5V/88/7m

BC1044 0.01U/4/X7R/25V/K/X

CLOSE N/B CHIPSET

(3.3V/70mA+360uA)

VCC VCC3_DAC VCC3 FB17 0/8/X

(N/A)

EC171 100uF/FP/D/16V/6A

DDR18V/DDRVTT/VCC1_05/VTT_GMCH

放在U17裡

VCC R3016 8.2K/4/X PWOK (26,35,43,44) 5VSB

(19,26,31,43) -SLP_S3 (19,22,43) -S4_S5 5VSB

U114 UPI7501/X SOT23-8

S3# S5# MODE GND 5VCC 5VSB 5VCC_DRV 5VSB_DRV

R3017 200K/4/X 5V_DRV 5VDL_G1 BC1005 0.01U/4/X7R/25V/K/X

C1448 0.01U/4/X7R/25V/K/X 5VDUAL

2N2907A/SOT23[10IT1-002907-06R_10IT1-002907-02R]

8.2K/4 5VSB R3070 8.2K/4 R3073 5VSB Q416 Q428 P_EN BAT54C/SOT23/200mA

C1471 0.01U/4/X7R/25V/K/X C77 0.1U/4/Y5V/16V/Z/X

5VDUAL R3069 1K/4/1

5VSB R3068 100K/4/1 MMBT2222A/SOT23/600mA/40 Q415 120mil

R3067 100K/4/1 C1469 1u/6/Y5V/10V/Z RS3 10K/1/6/S

RS3 close Q293 ASAP

DDR18V BC884 0.1U/4/Y5V/16V/Z R2861 1K/4/1

U104 VIN GND VREF1 VOUT VREF2 ENABLE VCNTL BOOT_SEL GND W83310S-R2/SO8/2.0A

3VDUAL BC885 10U/8/Y5V/10V/Z

(6) VTT_ADJ R361 0/4/X VTT_REF R2862 1K/4/1 C1477 1u/6/Y5V/10V/Z

DDRVTT

VTT_EN VTT_EN (35)

5VSB R2614 8.2K/4 Q328 2N7002/SOT23/25pF/5

VCC1_5 R2615 22K/4 0.1u/4/X7R/16V/K C73 Q329 C1380 0.1U/4/Y5V/16V/Z/X

MMBT2222A/SOT23/600mA/40 R3189 0/4/X

Q436 MMBT2222A/SOT23/600mA/40

VCC1_05 R3190 8.2K/4 0.1u/4/X7R/16V/K/X C1529

VTT_GMCH D12 BAW56/SOT23/300mA/X VCC1_5

VTT_GMCH D22 BAW56/SOT23/300mA/X VCC1_5P

VTT_UV1	VTT_OV1	VOLTAGE
GPI	GPI	Default
GPI	GPO/LOW	+50mV
GPO/LOW	GPI	-50mV

3VDUAL EC1153 100uF/FP/D/16V/6A

5VSB R1825 8.2K/4 VCC15_EN Q315 2N7002/SOT23/25pF/5

Q316 2N7002/SOT23/25pF/5 C1354 1n/4/X7R/50V/K/X

5VDL_G1 R1826 8.2K/4 C72 0.1U/4/Y5V/16V/Z/X VTT_EN Q437 2N7002/SOT23/25pF/5

5V_DRV 5VSB R3010 1K/4/1/X Q409 2N7002/SOT23/25pF/5/X

Q410 R3011 8.2K/4/X C1447 1n/4/X7R/50V/K/X

(19,26,31,43) -SLP_S3 -SLP_S3 MMBT2222A/SOT23/600mA/40 /X

Gigabyte Technology

Title: **DISCRETE POWER**

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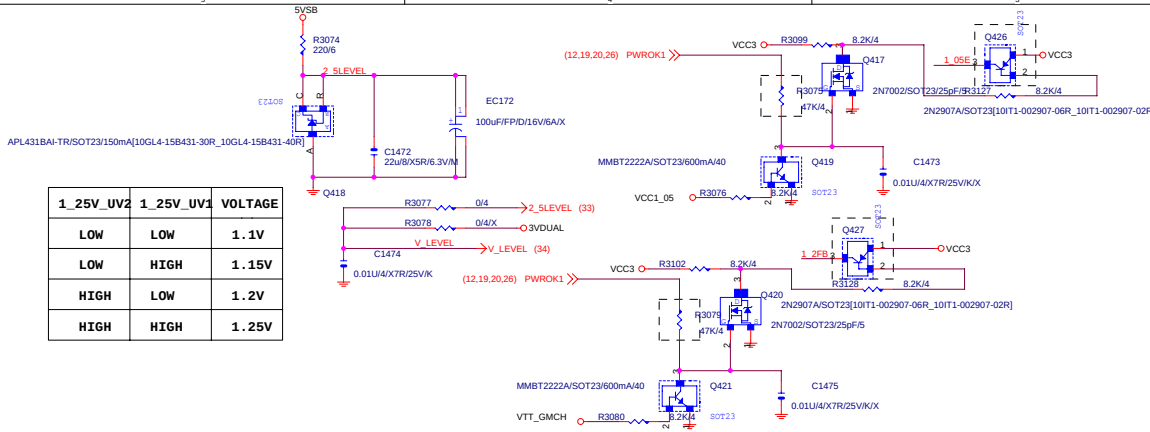
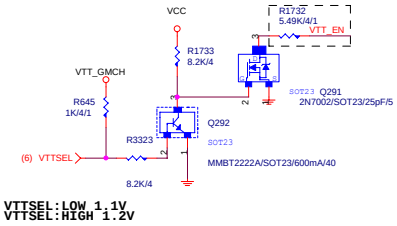
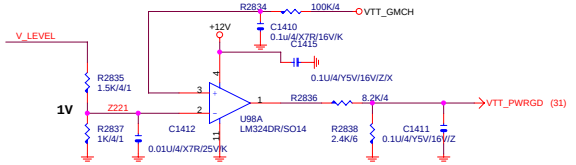
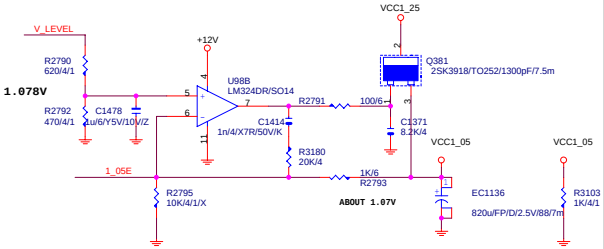
1_25V_UV2	1_25V_UV1	VOLTAGE
LOW	LOW	1.1V
LOW	HIGH	1.15V
HIGH	LOW	1.2V
HIGH	HIGH	1.25V

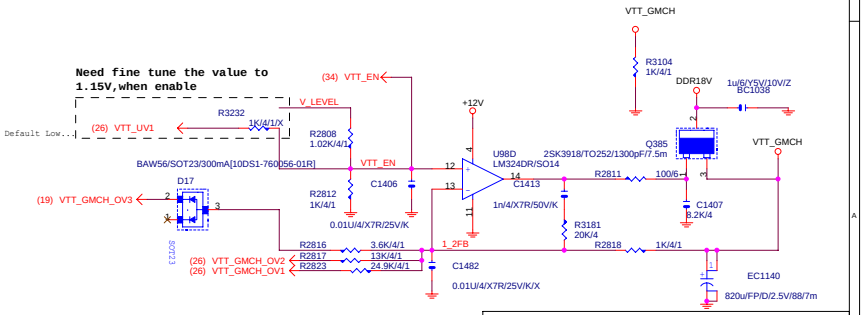




VTTSEL:LOW 1.1V
VTTSEL:HIGH 1.2V







Gigabyte Technology		
Title: DISCRETE POWER II		
Size: C	Document Number: X48-DS5	Rev: 1.11
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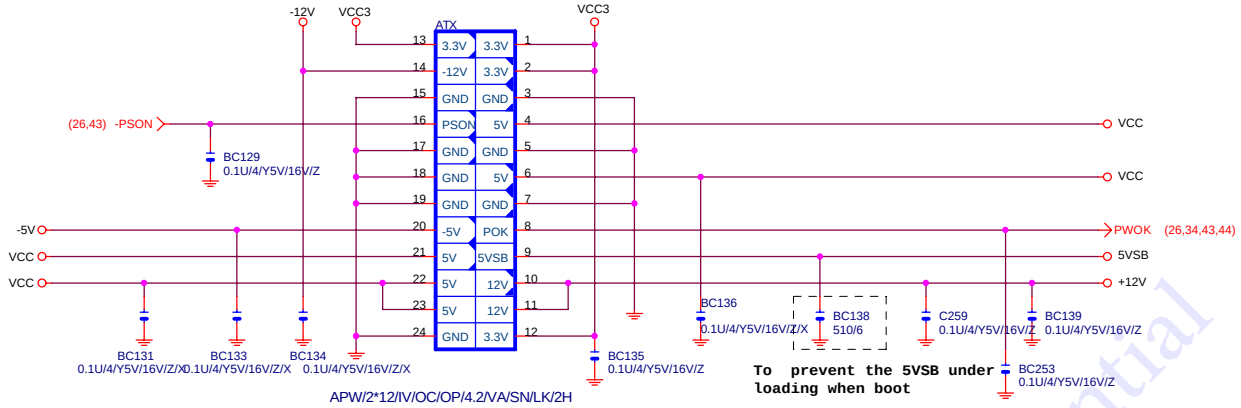
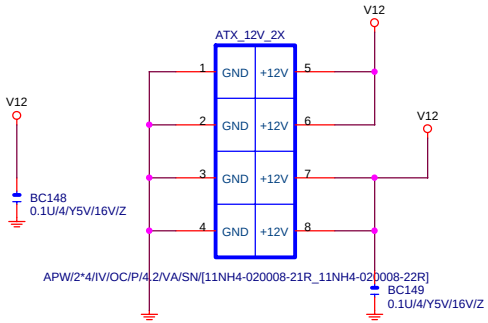
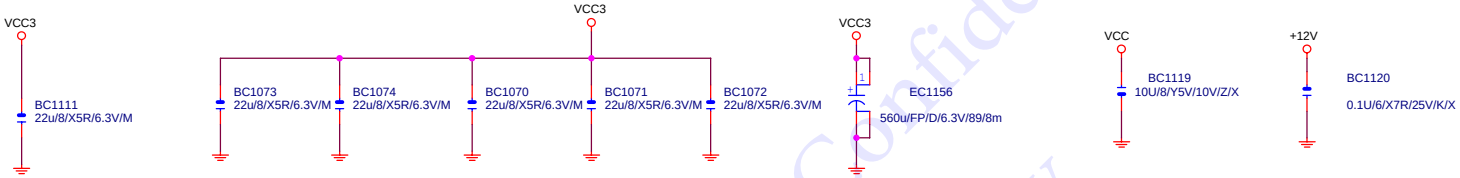
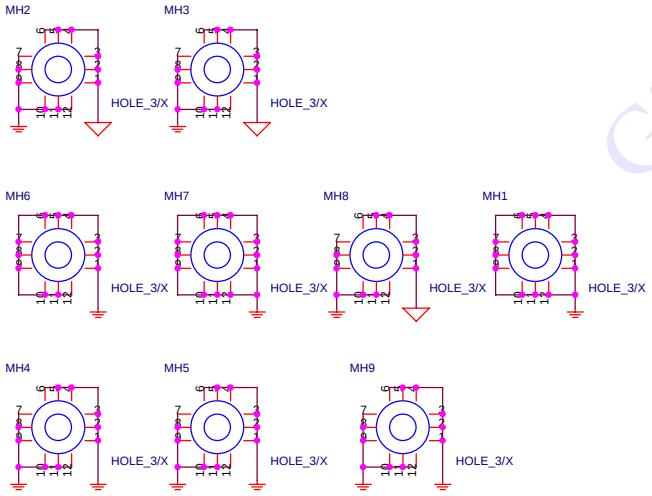
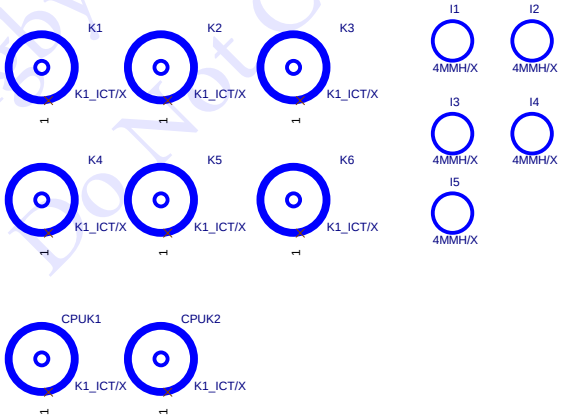
ATX POWER CONNECTOR











Gigabyte Technology		
Title: ATX POWER CONNECTOR		
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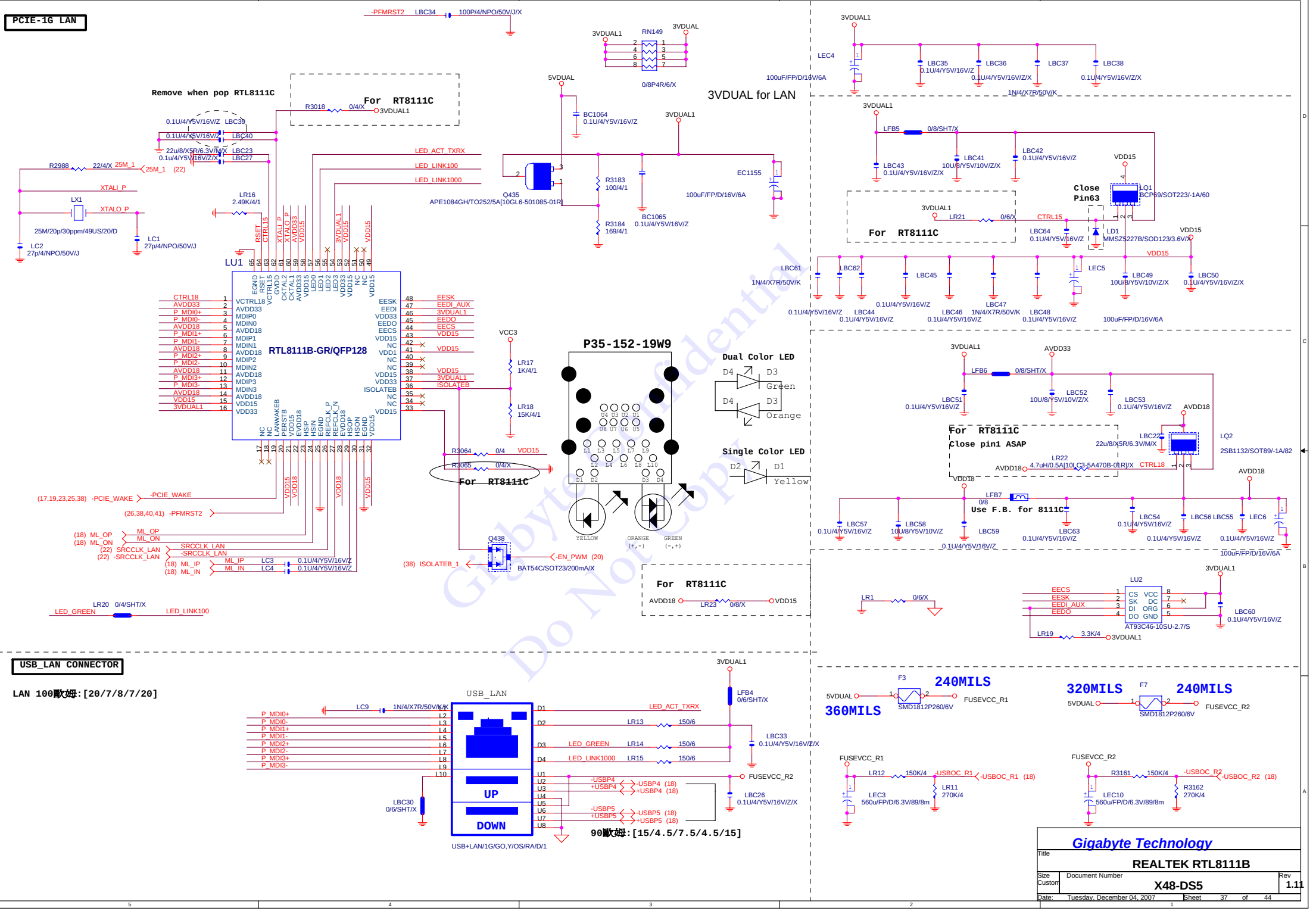
PCIE-1G LAN



Gigabyte Technology

Title: REALTEK RTL8111B

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PCIE-1G LAN

-PFMRST2 LBC65 100P/4/NPO/50V/J/X

P35-152-19W9

Remove when pop RTL8111C

For RT8111C
LR24 0/4/X 3VDUAL1

0.1U/4/Y5V/16V/Z/X LBC70
0.1U/4/Y5V/16V/Z/X LBC71
22u/8/X5R/6.3V/M/X LBC25
0.1u/4/Y5V/16V/Z/X LBC28

LED1_ACT_TXRX
LED1_LINK100
LED1_LINK1000

XTALI_P_1
LX2
XTALO_P_1
25M/20p/30ppm/49US/20/D/X
LC6 27p/4/NPO/50V/J/X
LC5 27p/4/NPO/50V/J/X

LR25 2.49K/4/1/X
RSET_1
CTRL15_1

LU3
RTL8111B-GR/QFP128/X

CTRL18_1	1	VCTRL18	
AVDD33_1	2	AVDD33	
P1_MDI0+	3	MDIP0	
P1_MDI0-	4	MDIN0	
AVDD18_1	5	AVDD18	
P1_MDI1+	6	MDIP1	
P1_MDI1-	7	MDIN1	
AVDD18_1	8	AVDD18	
P1_MDI2+	9	MDIP2	
P1_MDI2-	10	MDIN2	
AVDD18_1	11	AVDD18	
P1_MDI3+	12	MDIP3	
P1_MDI3-	13	MDIN3	
AVDD18_1	14	AVDD18	
VDD15_1	15	VDD15	
3VDUAL1	16	VDD33	
	48	EESK	EESK_1
	47	EEDI	EEDI_AUX_1
	46	VDD33	3VDUAL1
	45	EEDO	EEDO_1
	44	EECS	EECS_1
	43	VDD15	VDD15_1
	42	NC	
	41	VDD1	VDD15_1
	40	NC	
	39	NC	
	38	VDD15	VDD15_1
	37	VDD33	3VDUAL1
	36	ISOLATEB	ISOLATEB_1
	35	NC	
	34	NC	
	33	VDD15	

VCC3
LR27 1K/4/1/X
ISOLATEB_1 (37)
LR28 15K/4/1/X

R3167 0/4/X VDD15_1
R3168 0/4/X
For RT8111C

(17,19,23,25,37) -PCIE_WAKE
(26,37,40,41) -PFMRST2
(18) ML1_OP
(18) ML1_ON
(22) SRCCLK_LAN1
(22) -SRCCLK_LAN1
(18) ML1_IP
(18) ML1_IN
LC7 0.1U/4/Y5V/16V/Z/X
LC8 0.1U/4/Y5V/16V/Z/X

LR31 0/4/SHT/X
LED1_GREEN
LED1_LINK100

For RT8111C
AVDD18_1 LR30 0/8/X VDD15_1
LBC29 0.1u/4/Y5V/16V/Z/X

Dual Color LED
D4 D3 Green
D4 D3 Orange

Single Color LED
D2 D1 Yellow

3VDUAL1
LEC11 100uF/FP/D/16V/6A/X
LBC66 1N/4/X7R/50V/K/X
LBC68 0.1U/4/Y5V/16V/Z/X

LFB8 0/8/SHT/X
LBC74 0.1U/4/Y5V/16V/Z/X
LBC72 10U/8/Y5V/10V/Z/X
LBC73 0.1U/4/Y5V/16V/Z/X
VDD15_1
LQ3 BCP69/SOT223/-1A/60/X
Close Pin63
For RT8111C
LR26 0/6/X CTRL15_1
LBC75 0.1U/4/Y5V/16V/Z/X
LD2 MMSZ5227B/SOD123/3.6V/X
LEC12
LBC83 10U/8/Y5V/10V/Z/X
LBC84 0.1U/4/Y5V/16V/Z/X
100uF/FP/D/16V/6A/X

LBC76 1N/4/X7R/50V/K/X
LBC99 0.1U/4/Y5V/16V/Z/X
LBC77 0.1U/4/Y5V/16V/Z/X
LBC78 0.1U/4/Y5V/16V/Z/X
LBC79 0.1U/4/Y5V/16V/Z/X
LBC80 0.1U/4/Y5V/16V/Z/X
LBC81 0.1U/4/Y5V/16V/Z/X
LBC82 1N/4/X7R/50V/K/X

LFB9 0/8/SHT/X
LBC85 0.1U/4/Y5V/16V/Z/X
LBC86 10U/8/Y5V/10V/Z/X
LBC87 1N/4/X7R/50V/K/X
AVDD18_1
For RT8111C
Close pin1 ASAP
LBC24 22u/8/X5R/6.3V/M/X
LQ4 2SB1132/SOT89/-1A/82/X
LR29 4.7uH/0.5A[10LC3-5A470B-01R]/X CTRL18_1
VDD18_1
Use F.B. for 8111C
LFB10 0/8/X
LBC92 0.1U/4/Y5V/16V/Z/X
LBC93 10U/8/Y5V/10V/Z/X
LBC94 1N/4/X7R/50V/K/X
LBC88 1N/4/X7R/50V/K/X
LBC89 0.1U/4/Y5V/16V/Z/X
LBC90 0.1U/4/Y5V/16V/Z/X
LBC91 0.1U/4/Y5V/16V/Z/X
LEC13 100uF/FP/D/16V/6A/X

LU4
AT93C46-10SU-2.7/S/X
EECS_1
EESK_1
EEDI_AUX_1
EEDO_1
LBC95 0.1U/4/Y5V/16V/Z/X
LR32 3.3K/4/X

USB_LAN CONNECTOR

LAN 100歐姆:[20/7/8/7/20]

USB_LAN
LC10 1N/4/X7R/50V/K/X
P1_MDI0+
P1_MDI0-
P1_MDI1+
P1_MDI1-
P1_MDI2+
P1_MDI2-
P1_MDI3+
P1_MDI3-
L1 L2 L3 L4 L5 L6 L7 L8 L9 L10
D1 LED1_ACT_TXRX
D2 LR35 150/6/X
D3 LED1_GREEN LR36 150/6/X
D4 LED1_LINK1000 LR37 150/6/X
U1 U2 U3 U4 U5 U6 U7 U8
UP
DOWN
LBC98 0/6/SHT/X
-USBP6 +USBP6
-USBP6 (18) +USBP6 (18)
-USBP7 +USBP7
-USBP7 (18) +USBP7 (18)
LFB11 0/6/SHT/X
LBC96 0.1U/4/Y5V/16V/Z/X
FUSEVCC_R2
LBC97 0.1U/4/Y5V/16V/Z
USB/A/O/BLACK/GF/2/RA/D
90歐姆:[15/4.5/7.5/4.5/15]

LR38 0/6/X

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FRONT USB1

(18) +USBP1 — +USBP1 — P1+
(18) -USBP1 — -USBP1 — P1-
(18) +USBP0 — +USBP0 — P0+
(18) -USBP0 — -USBP0 — P0-

FUSEVCC1
R362 150K/4 -USBOC1 -USBOC1 (18)
R363 270K/4

FUSEVCC1 0.1U/4/Y5V/16V/Z
F_USB1
BC110
P0- P0+ P1- P1+
PH/2*5K9/YL/2.54/VA/D

5VDUAL
EC26
560u/FP/D/6.3V/89/8m

FUSEVCC1
LEC7
100uF/FP/D/16V/6A

FLOPPY

VCC
RN25 470/8P4R/6
R339 470/4
FDD
DENSEL- DENSEL- (26)
INDEX- INDEX- (26)
MOTEA- MOTEA- (26)
DRVA- DRVA- (26)
DIR- DIR- (26)
STEP- STEP- (26)
WDATA- WDATA- (26)
WGATE- WGATE- (26)
TK00- TK00- (26)
WPT- WPT- (26)
RDATA- RDATA- (26)
SIDE1- SIDE1- (26)
DSKCHG- DSKCHG- (26)
BH/2*17K5/BK/SHN/2.54/VA/D/GF

SATA LED

VCC3
R340 1K/4/1
-HDLED
C231 180p/4/NPO/50V/J/X
VCC3
R341 1K/4/1
R342 8.2K/4
(20) -SATALED -SATALED
SOT23 SOT23
Q11 MMBT2222A/SOT23/600mA/40
Q12 MMBT2222A/SOT23/600mA/40

FRONT USB2

(18) +USBP3 — +USBP3 — P3+
(18) -USBP3 — -USBP3 — P3-
(18) +USBP2 — +USBP2 — P2+
(18) -USBP2 — -USBP2 — P2-

F5
5VDUAL 160MILS FUSEVCC2
SMD1812P160/8V

FUSEVCC2
R2709 150K/4 -USBOC2 -USBOC2 (18)
R2710 270K/4

FUSEVCC2
F_USB2
BC112 0.1U/4/Y5V/16V/Z
P2- P2+ P3- P3+
PH/2*5K9/YL/2.54/VA/D

FUSEVCC2
LEC8
100uF/FP/D/16V/6A

VCC
D3
BAV70/SOT23/300mA
R345 75/4
SPK-
To disable TCO timer
VCC3
R2656 1K/4/1
VCC
R346 1K/4/1 Q15 MMBT2222A/SOT23/600mA/40
Q16 MMBT2222A/SOT23/600mA/40
R347 75/4
Q17 MMBT2222A/SOT23/600mA/40
R348 8.2K/4
R350 1K/4/1
SPKR
(26) BEEP- BEEP-
SOT23 SOT23
SPKR SPKR (19)

USB POWER

5VDUAL
5000MILS 160MILS FUSEVCC1
F2
SMD1812P160/8V
BC175 0.1U/4/Y5V/16V/Z
VCC +12V
R1787 8.2K/4/X
Q304 2SK3918/TO252/1300pF/7.5m
5V_DRV (34)

INTEL FRONT PANEL

PWR_LED
MPD+
3 PIN POWER LED LAYOUT PLACE CLOSE TO F_PANEL
PH/1*3/BK/2.54/VA/D

VCC
R352 330/6
BC109 0.01U/4/X7R/25V/K/X
F_PANEL
HD+ HD- GND RESET RSV GD+ GD- GN+ GN- MSG/PD+ MSG/PD- PW+ PW- SP+ NC NC SP-
MPD+ -PWRBTSW SPK-
VCC
PH/2*10K10,11,12,13,15,17,19/BK/2.54/VA/D/PA

RESET
5VSB
R1827 8.2K/4/X
R1828 0/4
Q317
(41) -HDLED -HDLED
(6,19,22) -SYS_RST
(19,26) -RST_BTN
R2628 0/4/X
BAT54C/SOT23/200mA/X

VCC
R344 330/6
MPD+
Q14 MMBT2222A/SOT23/600mA/40
SOT23
R349 1K/4/1
GPIO28 (19)

5VSB
R353 8.2K/4
-PWRBTSW -PWRBTSW (26)
C232 0.01U/4/X7R/25V/K
Q20 BAV99/SOT23/300mA
5VSB

Gigabyte Technology

Title: FP,F_USB,USB PWR,FDD,BZ

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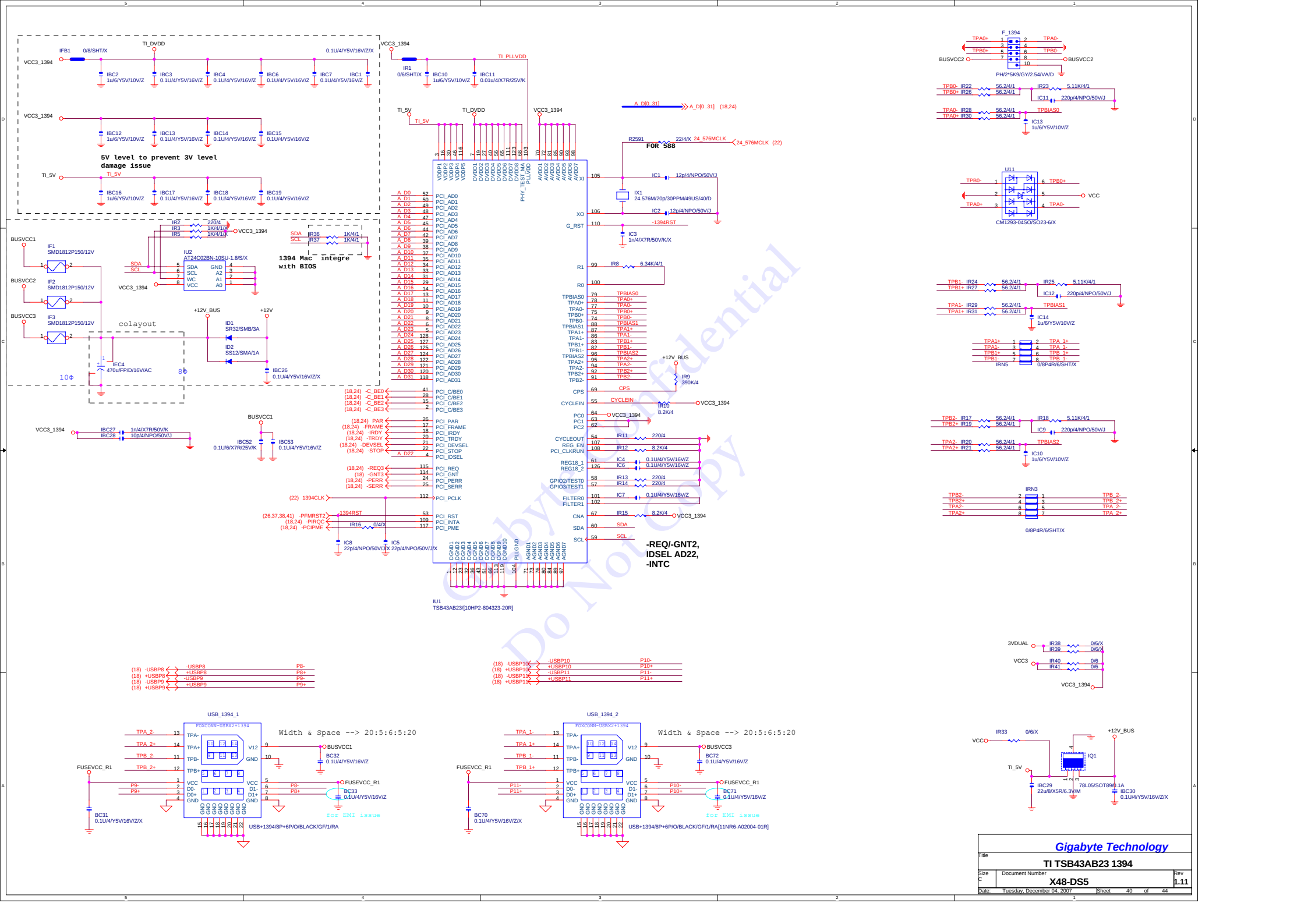
5V level to prevent 3V level damage issue
1394 Mac integre with BIOS
colayout
-REQ/-GNT2, IDSEL AD22, -INTC
IU1
TSB43AB23/[10HP2-804323-20R]
USB_1394_1
USB_1394_2
FOXCONN-USBX2+1394
Width & Space --> 20:5:6:5:20
for EMI issue
USB+1394/8P+6P/O/BLACK/GF/1/RA
USB+1394/8P+6P/O/BLACK/GF/1/RA[11NR6-A02004-01R]
F_1394
PH/2*5K9/GY/2.54/VA/D
CM1293-04SO/SO23-6/X
IRN5
IRN3
0/8P4R/6/SHT/X
78L05/SOT89/0.1A
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TI TSB43AB23 1394
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Do Not Copy

3.3V to 1.8V Voltage Regulator

AMC1117SK/SOT223/0.8A[10GL3-081117-06R]

RQ1 — VCC_1.8V — VCC3

RR2 100/4/1 — RR3 44.2/4/1 — RBC1 0.1U/4/Y5V/16V/Z — RBC2 22u/8/X5R/6.3V/M — REC1 560u/FP/D/6.3V/89/8m

JMB363

LQFP 100 14x14

RU1 — GBB636/LQFP100/[10HP2-640363-20R]

RBC3 RBC4 RBC5 RBC6 RBC7 RBC8 RBC9 — close to IC

RBC10 RBC11 RBC12 RBC13 — REC2 560u/FP/D/6.3V/89/8m — Close to U49 pin94 and pin105

RBC15 RBC14 RBC16 RBC17 RBC18 — close to IC

RBC19 RBC20 RBC21 — close to U49 pin110

RBC22 RBC23 RBC24 — close to U49 pin99

RBC25 RBC26 — CLOSE TO U49 PIN61

RBC27 RBC28 RBC29 — close to U49 pin56

RBC30 RBC31 RBC32 — 2.2u/6/X5R/6.3V/K/X — 10U/8/Y5V/10V/Z/X — 10U/8/Y5V/10V/Z/X

RR31 1K/4/1 — RR32 8.2K/4 — RQ3 MMBT2222A/SOT23/600mA/40 — PH_RESETnA — RESETnA

RR11 12K/4/1 — RR12 12K/4/1 — RR13 12K/4/1 — Near to PIN

RR9 IORDYA 1K/4/1 — RR10 CSELA 0/4 — RR14 DMARQA 8.2K/4 — RR15 INTRQA 8.2K/4 — RR16 DD7A 8.2K/4

XTALI — RC1 33P/4/NPO/50V/J — RR1 1M/4 — RX1 25M/20p/30ppm/49US/20/D — RC2 33P/4/NPO/50V/J — XTALO

RR4 8.2K/4 — RR5 8.2K/4 — SMB_CLK — SMB_DAT

RD1 BAT54A/SOT23/200mA/X — DASPnXA — HD_LEDn — RR17 0/4 — RC4 180p/4/NPO/50V/J/X — RR8 1K/4/1 — RQ2 MMBT2222A/SOT23/600mA/40 — -HDLED — -HDLED (39)

RRN1 33/8P4R/6 — PH_DD7 PH_DD8 PH_DD6 PH_DD9 — DD7A DD8A DD6A DD9A

RRN2 33/8P4R/6 — PH_DD5 PH_DD10 PH_DD4 PH_DD11 — DD5A DD10A DD4A DD11A

RRN3 33/8P4R/6 — PH_DD3 PH_DD13 PH_DD12 PH_DD2 — DD3A DD13A DD12A DD2A

RRN4 33/8P4R/6 — PH_DD1 PH_DD14 PH_DD0 PH_DD15 — DD1A DD14A DD0A DD15A

PH_DIOW_N RR18 82/4 DIOWnA
PH_DIOR_N RR19 82/4 DIORnA
PH_DMACK_N RR20 82/4 DMACKnA
PH_DA1 RR21 82/4 DA1A
PH_DA0 RR22 82/4 DA0A
PH_CS0_N RR23 82/4 CS0nA
PH_DA2 RR24 82/4 DA2A
PH_CS1_N RR25 82/4 CS1nA
PH_RESETnA RR26 82/4/X RESETnA

PH_IORDY RR27 22/4 IORDYA
PH_DMARQ RR28 22/4 DMARQA
PH_INTRQ RR29 22/4 INTRQA
PH_CBLID_N RR30 22/4 PDIAGnA

IDE Connector

IDE — BH/2*20K20/GEL/N/2.54/RA/D/GF/[11NR3-010220-D1R]

PH_RESETnA PH_DD7 PH_DD6 PH_DD5 PH_DD4 PH_DD3 PH_DD2 PH_DD1 PH_DD0 — (#20 key-pin)
PH_DMARQ PH_DIOW_N PH_DIOR_N PH_IORDY PH_DMACK_N PH_INTRQ PH_DA1 PH_DA0 PH_CS0_N DASPnXA — (#28 CSEL) CSELA — (#32 IOCS16) PH_CBLID_N
PH_DD8 PH_DD9 PH_DD10 PH_DD11 PH_DD12 PH_DD13 PH_DD14 PH_DD15 — PH_DA2 PH_CS1_N

SATA Connector

SATA_TXP0 RC7 SATA_TXN0 RC9 — SATA_RXN0 RC11 SATA_RXP0 RC13 — RC8 RC10 SATA_RXP1 SATA_RXN1 — RC12 RC14 SATA_TXN1 SATA_TXP1

GSATAIIA_B — V-A SATA II/2*7P/7438C/[11NH5-110214-21R_11NH5-110214-23R]

Gigabyte Technology			
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TEMP H/W MONITOR

(26) VREF
(26) SYS_TEMP
(26) PWM_TEMP
(7,26) CPU_TEMP
R1651 10K/4/1
R269 10K/4/1
R270 30K/4/1/X
C1294 1u/6/Y5V/10V/Z
C1295 1u/6/Y5V/10V/Z
RS1 10K/1/6/S
R1652 30K/6/1
C1296 5.6n/4/X7R/25V/K

CPU SMART FAN

+12V
C1468 1n/4/X7R/50V/K
FOR EMI ONLY

ICH8 FAN CTRL

VCC3
R615 8.2K/4
R588 1K/4/1
(20) ICH_FAN_PWM0
R617 8.2K/4
R382 0/4/X
SOT23
Q60 2N7002/SOT23/25pF/5
Q61 2N7002/SOT23/25pF/5

CASE OPEN

(19,21) RTCVDD
R279 1M/4
-CASEOPEN
-CASEOPEN (26)
C1297 0.01U/4/X7R/25V/K
CI
PH/1*2/BK/2.54/VA/D

Case Open Circuits

VOLTAGE-- H/W MONITOR

VCORE DDR18V VCC3 +12V
SC24 0.01u/4/X7R/25V/K
SC25 0.01u/4/X7R/25V/K
SC26 0.01u/4/X7R/25V/K
SC27 0.01u/4/X7R/25V/K
R366 8.2K/4
R367 8.2K/4
R368 8.2K/4
R369 24K/4/1
(26) VIN0
(26) VIN1
(26) VIN2
(26) VIN7
(26) VIN4
R2576 8.2K/4
R370 10K/4/1
R377 10K/4/1/X
(26) VIN6
CUR_DETECT
CURRENT_OUT_V (27)
R2922 10K/4/1
C1476 1u/6/Y5V/10V/Z

KB/MS

(26) KDAT
(26) KCLK
(26) MDAT
(26) MCLK
RN138
82/8P4R/6
CN1 180P/8P4C/6/NPO/50V/K
FUSEVCC_R3
RN29 8.2K/8P4R/6
KB_MS
MSDATA
MSCLK
KBDATA
KBCLK
MS
KB
KB/MS/6P/PC99/OS/RA/D/2
BC108 0.1U/4/Y5V/16V/Z
BC258 0.1U/4/Y5V/16V/Z
5VDUAL
F6 SMD1812P160/8V

SYS FAN

Linear SYS_FAN

CPUFAN_VCC
R2601 1K/4/1
R2604
(26) FANPWM1
(20) ICH_FAN_PWM2
R2602 0/4
R1744 1K/4/1/X
R1746 47K/4
BC115 1u/6/Y5V/10V/Z
R385 22K/4
R391 8.2K/4
U89B
BC114 0.1U/4/Y5V/16V/Z
R1743 8.2K/4
AP3310H/TO252/300pF/150m
LM358DR/SO8[10TA1-710358-12R_10TA1-710358-15R]
R384 0/6/X
R383 0/6
Q21
CE2 100uF/FP/D/16V/6A
R1592 0/8/X
CPU_FAN FAN/1*4/WH/A3/2.54/VA/D/SN
(26) FANPWM3
R381 100/6
R378 3.3K/4
R379 15K/4/1
R390
R2616 0/4
R1745 6.2K/4/1
C1331 0.047U/4/Y5V/16V/Z
FANIO1 (26)
ICH_FAN_TACH0 (20)

R1814 3.3K/4
R1815
R2639
R2623 0/4
R2624 6.2K/4/1
C1351 0.047U/4/Y5V/16V/Z
15K/4/1
FANIO3 (26)
ICH_FAN_TACH2 (20)
PWR_FAN FAN/1*3/WH/A3/2.54/VA/D/SN

R3039 3.3K/4
R3041
R3040
R3042 0/4
R3043 6.2K/4/1
C1454 0.047U/4/Y5V/16V/Z
15K/4/1
FANIO4 (26)
ICH_FAN_TACH3 (20)
SYS_FAN1
FAN/1*3/WH/A3/2.54/VA/D/SN

SYSFAN_VCC
R2599 1K/4/1
R2491 22K/4
R2498 8.2K/4
SFAN_OP+
R2494 1K/4/1/X
R2600 47K/4
R2496 0/4
R2603 0/4/X
BC726 1u/6/Y5V/10V/Z
U89A R2670 8.2K/4
R387 0/6/X
R386 0/6
Q344
AP3310H/TO252/300pF/150m
LM358DR/SO8[10TA1-710358-12R_10TA1-710358-15R]
SYSFAN_VCC
100uF/FP/D/16V/6A
EC173
R2625 8.2K/4
R2489 0/8/X
SYS_FAN2 FAN/1*4/WH/A3/2.54/VA/D/SN
R2488 3.3K/4
R2626
R2627 0/4
R2490 15K/4/1
R2493 6.2K/4/1
C1364 0.047U/4/Y5V/16V/Z
FANIO2 (26)
ICH_FAN_TACH1 (20)

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Title: HWM,KB/MS, FAN CTRL		
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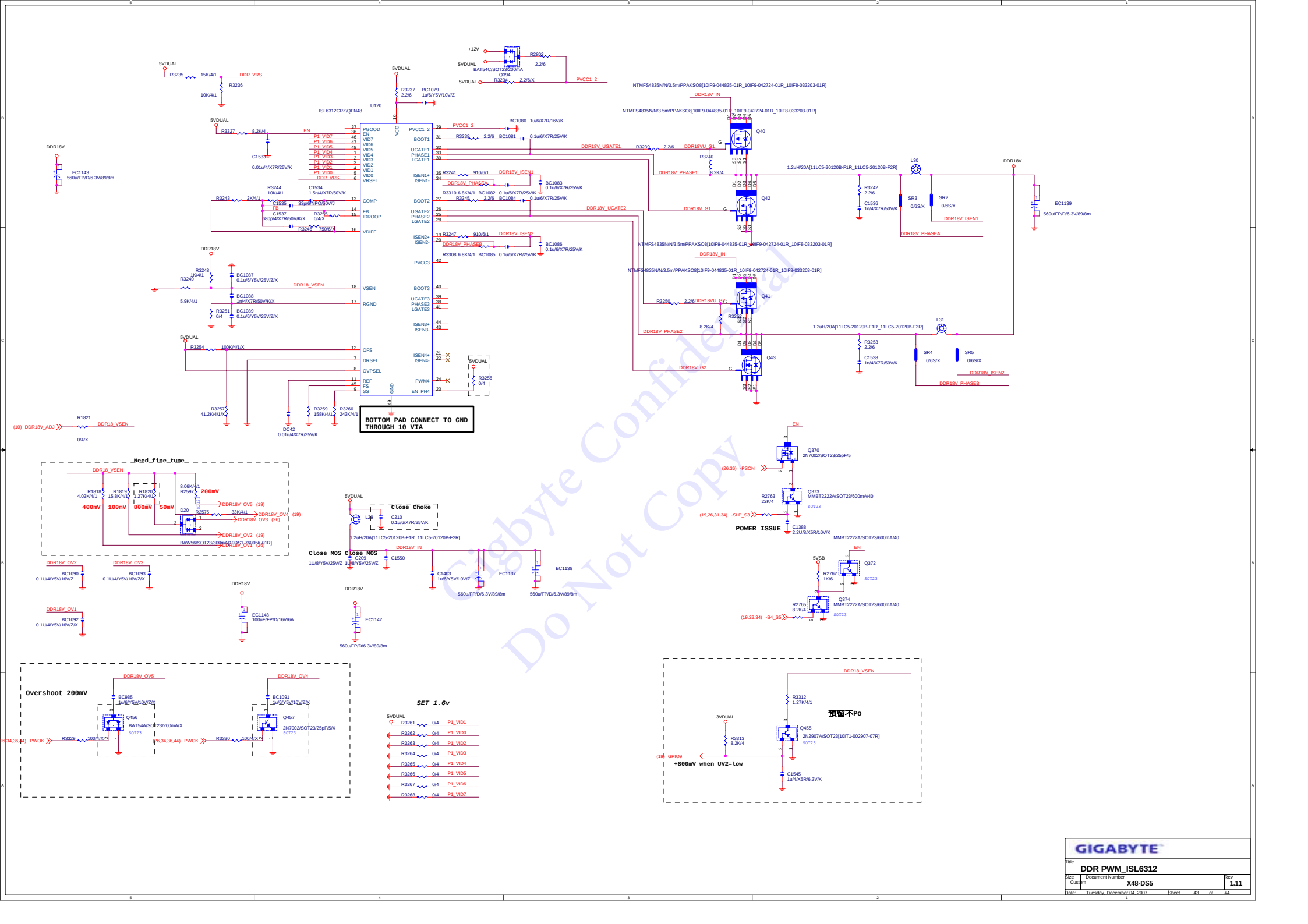

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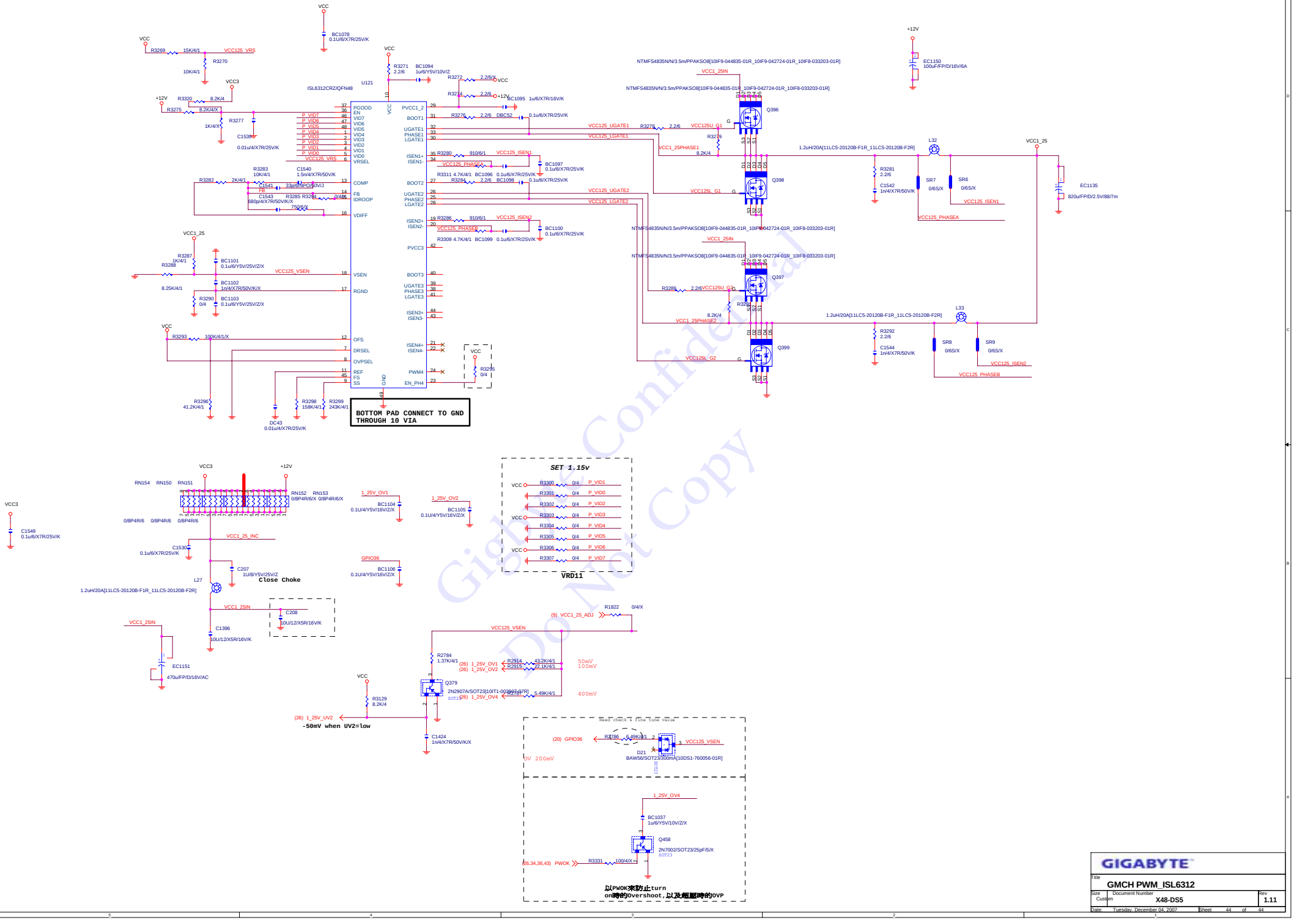

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