

Model Name: GA-H61M-S2P-R3

Revision 3.01

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*1 SLOT
16	IT8892E
17	PCI SLOT1&2
18	ITE 8728 LPC IO
19	COM,KB_USB,USB_ESATA,-PROCHOT
20	HWM,FAN CTRL,OV,
21	DUAL BIOS
22	FP,FUSB,SPK,SATALED
23	Realtek ALC887-VD2
24	REAR AUDIO JACK
25	REALTEK RTL8111F-VL
26	DISCRETE POWER
27	ATX

SHEET	TITLE
28	LINEAR CPU_VTT
29	VCORE ISL95836_1
30	VCORE ISL95836_2
31	VCORE ISL95836_3
32	LPT
33	USB3.0 VL805

Model Name: GA-H61M-S2P-R3 *Revision 3.01*

Component value change history

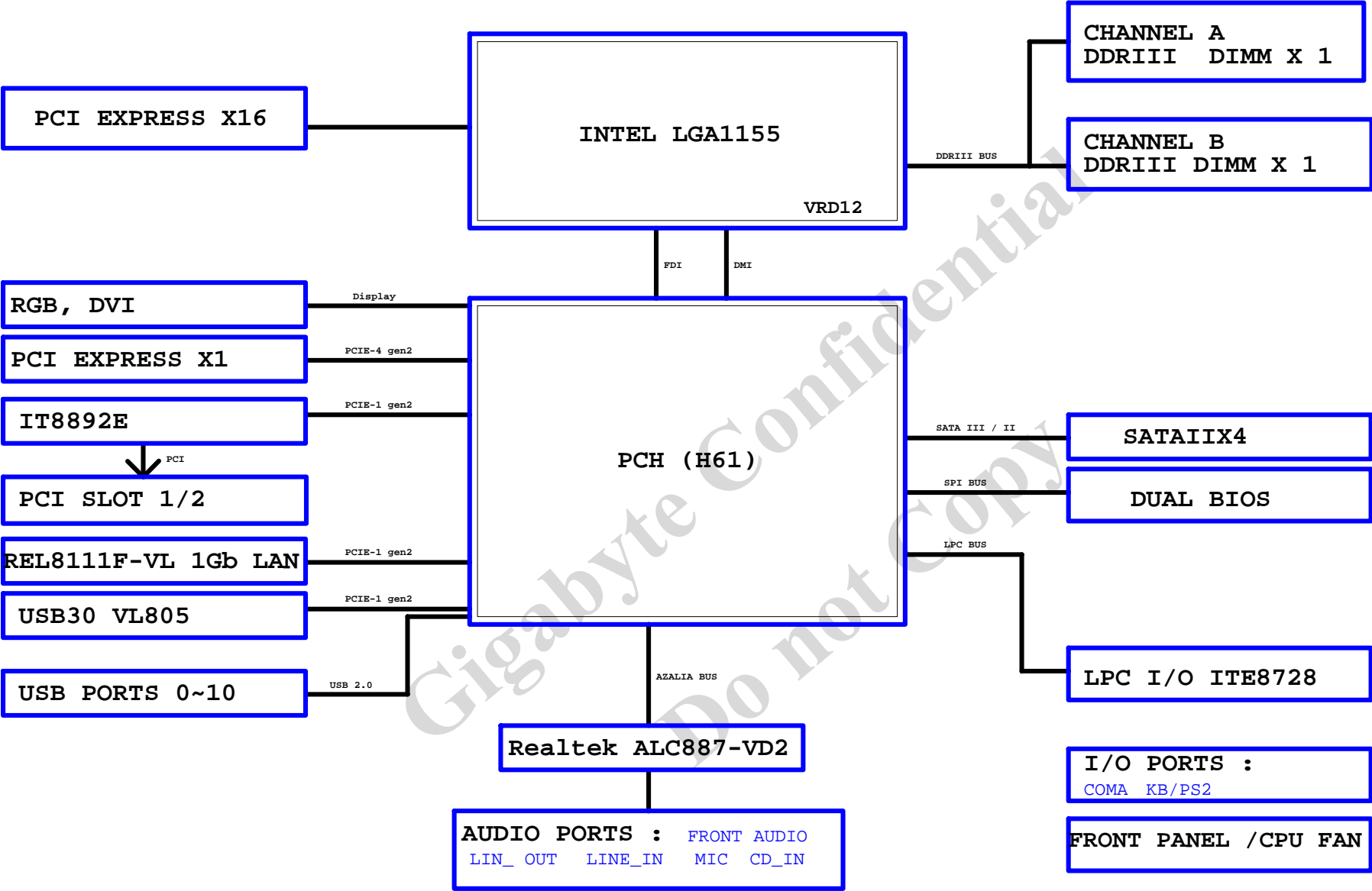
2013/04/18

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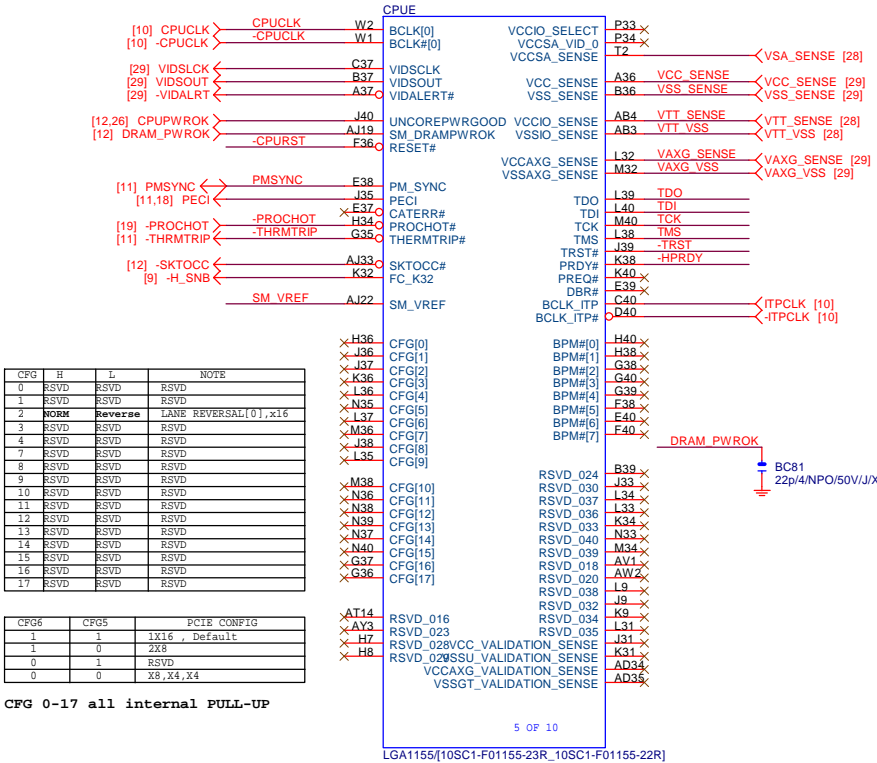
Circuit or PCB layout change

[illegible]

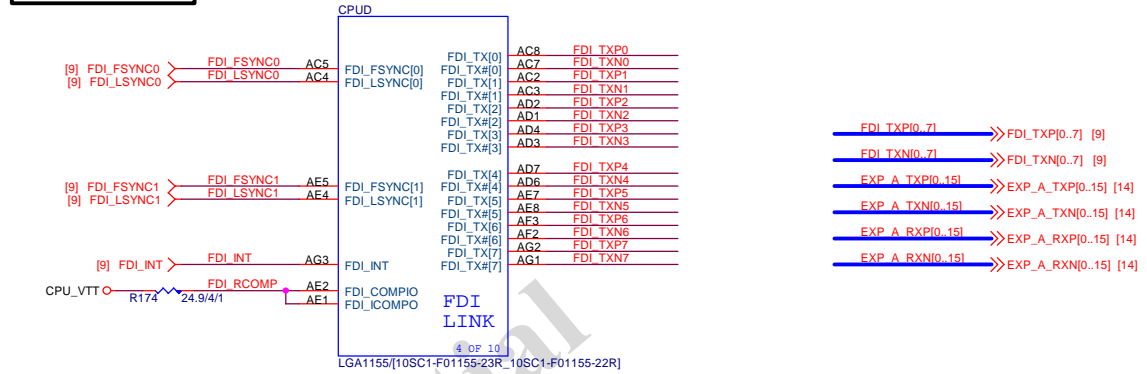
BLOCK DIAGRAM



CPU E



CPU D FDI

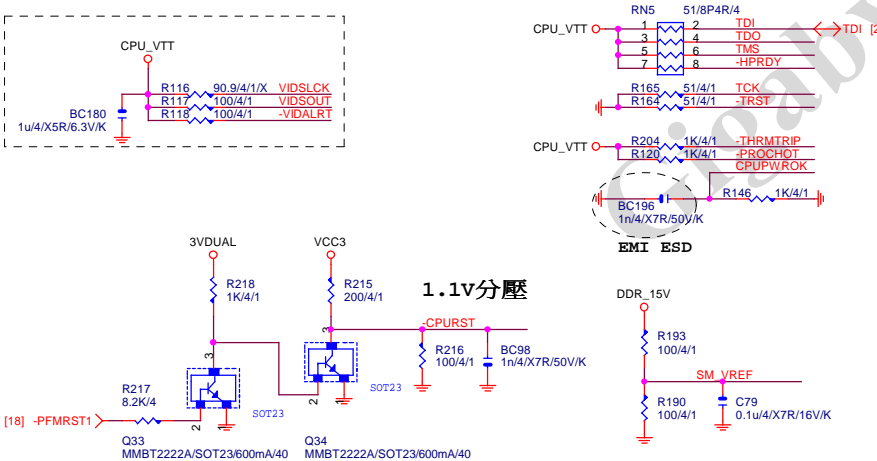


CPU C



N/A

Stitching caps for PCIE,DMI,FDI bus



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Title: CPU LGA1155-A

Size: Custom

Document Number: GA-H61M-S2P-R3

Date: Thursday, April 18, 2013

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CPU A

CPUA

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[3]	SA_DQ[0]	AJ3	MDA0
MAAA5	AT24	SA_MA[4]	SA_DQ[1]	AJ4	MDA1
MAAA6	AT23	SA_MA[5]	SA_DQ[2]	AL3	MDA2
MAAA7	AU22	SA_MA[6]	SA_DQ[3]	AL4	MDA3
MAAA8	AV22	SA_MA[7]	SA_DQ[3]	AJ2	MDA4
MAAA9	AT22	SA_MA[8]	SA_DQ[4]	AJ1	MDA5
MAAA10	AV28	SA_MA[10]	SA_DQ[6]	AL2	MDA6
MAAA11	AU21	SA_MA[11]	SA_DQ[7]	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	MDA12
[7] SBAA0	AY29	SA_BS[0]	SA_DQ[12]	AN2	MDA11
[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	AU29	SA_CS#	SA_DQS[2]	AW4	DQSA2
[7] -CSA1	AV32	SA_CS#	SA_DQS[2]	AW4	-DQSA2
	AW30	SA_CS#	SA_DQS[2]	AL2	C
	AW33	SA_CS#	SA_DQS[2]	AT26	C
[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
	AV31	SA_ODT[0]	SA_DQ[21]	AU3	MDA21
	MODT_A1	SA_ODT[1]	SA_DQ[22]	AU5	MDA22
	AU30	SA_ODT[2]	SA_DQ[23]	AU5	MDA23
	AW33	SA_ODT[3]			
			SA_DQS[3]	AV8	DQSA3
			SA_DQS[3]	AW8	-DQSA3
[7] DCLKA0	AY25	SA_CLK[0]			
[7] -DCLKA0	AW25	SA_CLK[0]			
[7] DCLKA1	AU24	SA_CLK[1]	SA_DQ[24]	AY7	MDA24
[7] -DCLKA1	AU25	SA_CLK[1]	SA_DQ[25]	AU7	MDA25
	AW27	SA_CLK[2]	SA_DQ[26]	AV9	MDA26
	AY27	SA_CLK[2]	SA_DQ[27]	AU9	MDA27
	AV26	SA_CLK[3]	SA_DQ[28]	AV7	MDA28
	AW26	SA_CLK[3]	SA_DQ[29]	AW7	MDA29
			SA_DQ[30]	AW9	MDA30
			SA_DQ[31]	AY9	MDA31
			SA_DQS[4]	AV37	DQSA4
			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
			SA_DQ[39]	AU37	MDA39
			SA_DQS[5]	AP38	DQSA5
			SA_DQS[5]	AP39	-DQSA5
			SA_DQ[40]	AR40	MDA40
			SA_DQ[41]	AR37	MDA41
			SA_DQ[42]	AN38	MDA42
			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
			SA_DQ[51]	AJ37	MDA51
			SA_DQ[52]	AL39	MDA52
			SA_DQ[53]	AL38	MDA53
			SA_DQ[54]	AJ39	MDA54
			SA_DQ[55]	AJ40	MDA55
			SA_DQS[7]	AF38	DQSA7
			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]	AE38	MDA61
			SA_DQ[62]	AE39	MDA62
			SA_DQ[63]	AE40	MDA63

DDR_0

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LGA1155[10SC1-F01155-23R_10SC1-F01155-22R]

CPU B

CPUB

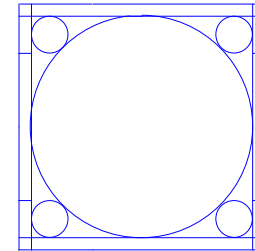
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MAAB1	AM20	SB_MA[1]	SB_DQS[0]	AH6	-DQSB0
MAAB2	AM19	SB_MA[2]			
MAAB3	AK18	SB_MA[3]			
MAAB4	AP19	SB_MA[3]	SB_DQ[0]	AG7	MDB0
MAAB5	AP18	SB_MA[4]	SB_DQ[1]	AG8	MDB1
MAAB6	AM18	SB_MA[5]	SB_DQ[2]	AJ9	MDB2
MAAB7	AL18	SB_MA[6]	SB_DQ[3]	AJ8	MDB3
MAAB8	AL18	SB_MA[7]	SB_DQ[3]	AG5	MDB4
MAAB9	AY17	SB_MA[8]	SB_DQ[4]	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	AY16	SB_MA[15]			
[8] -SWEB	AR25	SB_WE#	SB_DQ[8]	AL7	MDB8
[8] -SCASB	AK25	SB_CAS#	SB_DQ[9]	AM7	MDB9
[8] -SRASB	AP24	SB_RAS#	SB_DQ[10]	AM10	MDB10
			SB_DQ[11]	AL10	MDB11
[8] SBAB0	AP23	SB_BS[0]	SB_DQ[12]	AL2	MDB12
[8] SBAB1	AM24	SB_BS[1]	SB_DQ[13]	AM6	MDB13
[8] SBAB2	AW17	SB_BS[2]	SB_DQ[14]	AL9	MDB14
			SB_DQ[15]	AM9	MDB15
[8] -CSB0	AN25	SB_CS#	SB_DQS[2]	AR8	DQSB2
[8] -CSB1	AN26	SB_CS#	SB_DQS[2]	AP8	-DQSB2
	AL25	SB_CS#	SB_DQS[2]		
	AT26	SB_CS#	SB_DQS[2]		
[8] CKEB0	AU16	SB_CKE[0]	SB_DQ[16]	AP7	MDB16
[8] CKEB1	AY15	SB_CKE[1]	SB_DQ[17]	AR7	MDB17
	AW15	SB_CKE[2]	SB_DQ[18]	AP10	MDB18
	AV15	SB_CKE[3]	SB_DQ[19]	AR10	MDB19
			SB_DQ[20]	AP6	MDB20
	AL26	SB_ODT[0]	SB_DQ[21]	AR6	MDB21
	AP26	SB_ODT[1]	SB_DQ[22]	AP9	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_CLK[0]			
[8] -DCLKB0	AL22	SB_CLK[0]			
[8] DCLKB1	AL20	SB_CLK[1]	SB_DQ[24]	AM12	MDB24
[8] -DCLKB1	AK20	SB_CLK[1]	SB_DQ[25]	AM13	MDB25
	AL23	SB_CLK[2]	SB_DQ[26]	AR13	MDB26
	AM22	SB_CLK[2]	SB_DQ[27]	AP13	MDB27
	AK21	SB_CLK[2]	SB_DQ[28]	AL12	MDB28
	AN21	SB_CLK[3]	SB_DQ[29]	AL13	MDB29
		SB_CLK[3]	SB_DQ[30]	AR12	MDB30
			SB_DQ[31]	AP12	MDB31
			SB_DQS[4]	AN29	DQSB4
			SB_DQS[4]	AN28	-DQSB4
VREF DOB	AH1	FC_AH1			
VREF DOA	AH4	FC_AH4			
			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
			SB_DQS[5]	AR33	-DQSB5
			SB_ECC_CB[0]	AP32	MDB40
			SB_ECC_CB[1]	AP31	MDB41
			SB_ECC_CB[2]	AP35	MDB42
			SB_ECC_CB[3]	AP34	MDB43
			SB_ECC_CB[4]	AR32	MDB44
			SB_ECC_CB[5]	AR31	MDB45
			SB_DQ[43]	AR35	MDB46
			SB_DQ[44]	AR34	MDB47
			SB_DQ[45]		
			SB_DQ[46]		
			SB_DQ[47]		
			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
			SB_DQ[55]	AL34	MDB55
			SB_DQS[7]	AG35	DQSB7
			SB_DQS[7]	AG34	-DQSB7
			SB_DQ[56]	AH35	MDB56
			SB_DQ[57]	AH34	MDB57
			SB_DQ[58]	AE34	MDB58
			SB_DQ[59]	AE35	MDB59
			SB_DQ[60]	AJ35	MDB60
			SB_DQ[61]	AJ34	MDB61
			SB_DQ[62]	AF33	MDB62
			SB_DQ[63]	AF35	MDB63

DDR_1

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LGA1155[10SC1-F01155-23R_10SC1-F01155-22R]

CPU SOCKET

CR
CPU RETENTION/X

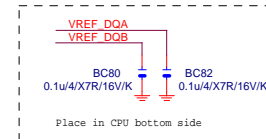
Need check the new CPU ME

CPU_P



ILM_BP/1156/CSP/ILM_BP/1156/CSP/12KRC-0F0001-52R_12KRC-0F0001-51R]

DDR SIGNAL



[7] MODT_A[0..1] <-- MODT_A[0..1]

[8] MODT_B[0..1] <-- MODT_B[0..1]

[7] MDA[0..63] <-- MDA[0..63]

[8] MDB[0..63] <-- MDB[0..63]

[7] DQSA[0..7] <-- DQSA[0..7]

[7] -DQSA[0..7] <-- -DQSA[0..7]

[7] MAA[A0..15] <-- MAA[A0..15]

[8] MAAB[0..15] <-- MAAB[0..15]

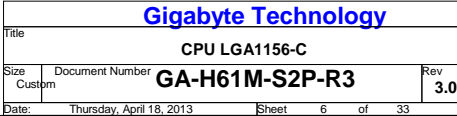
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[8] -DQSB[0..7] <-- -DQSB[0..7]

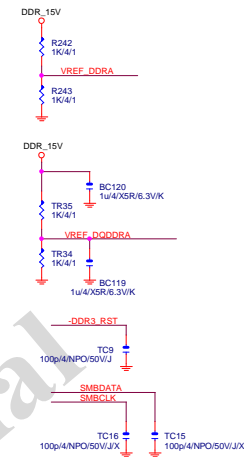
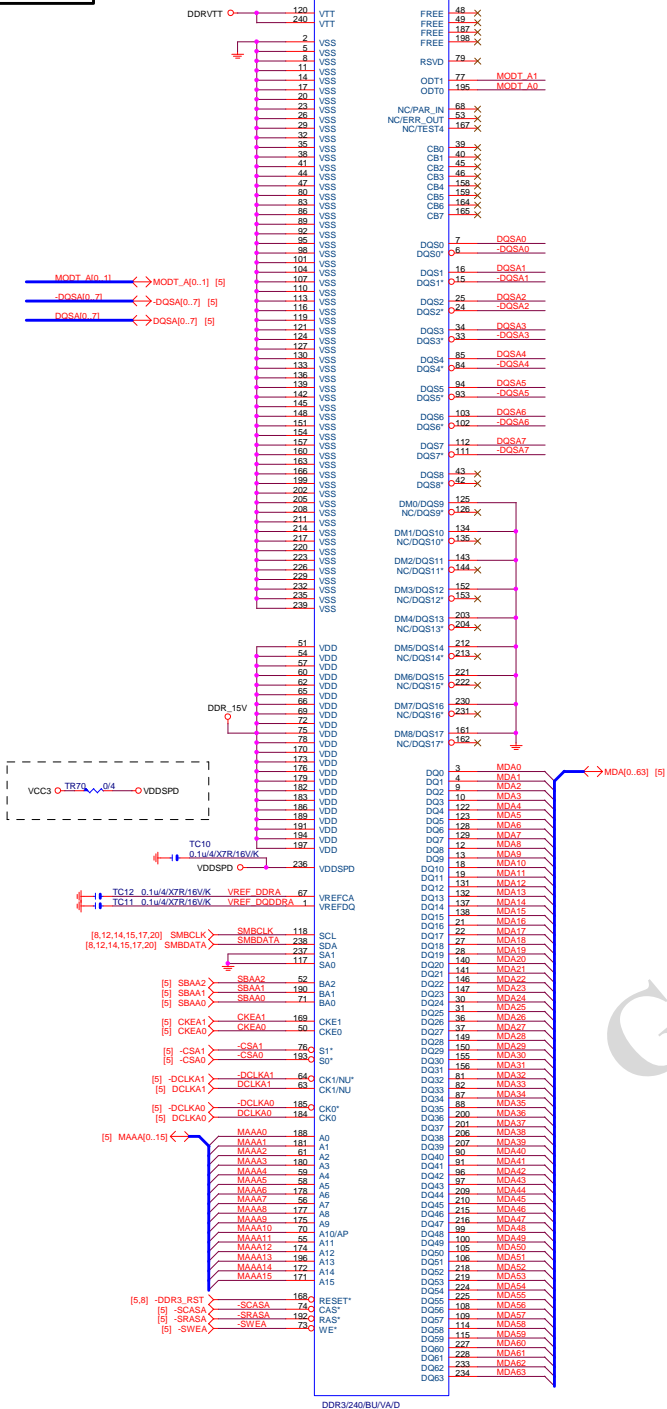
Gigabyte Technology

Title			
CPU LGA1156-B			
Size	Document Number	Rev	
Custom	GA-H61M-S2P-R3	3.01	
Date:	Thursday, April 18, 2013	Sheet	5 of 33

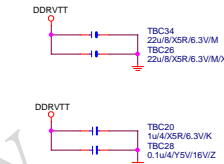
CPU I,J GND



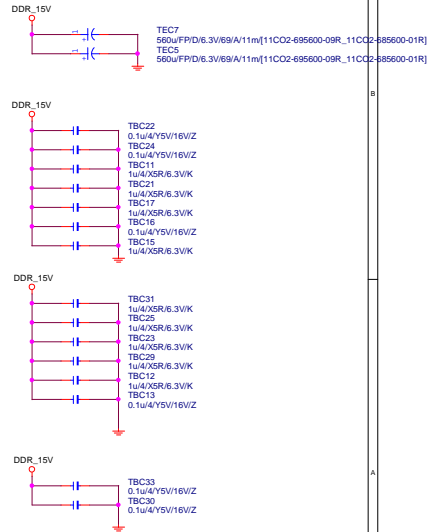
DDRII A



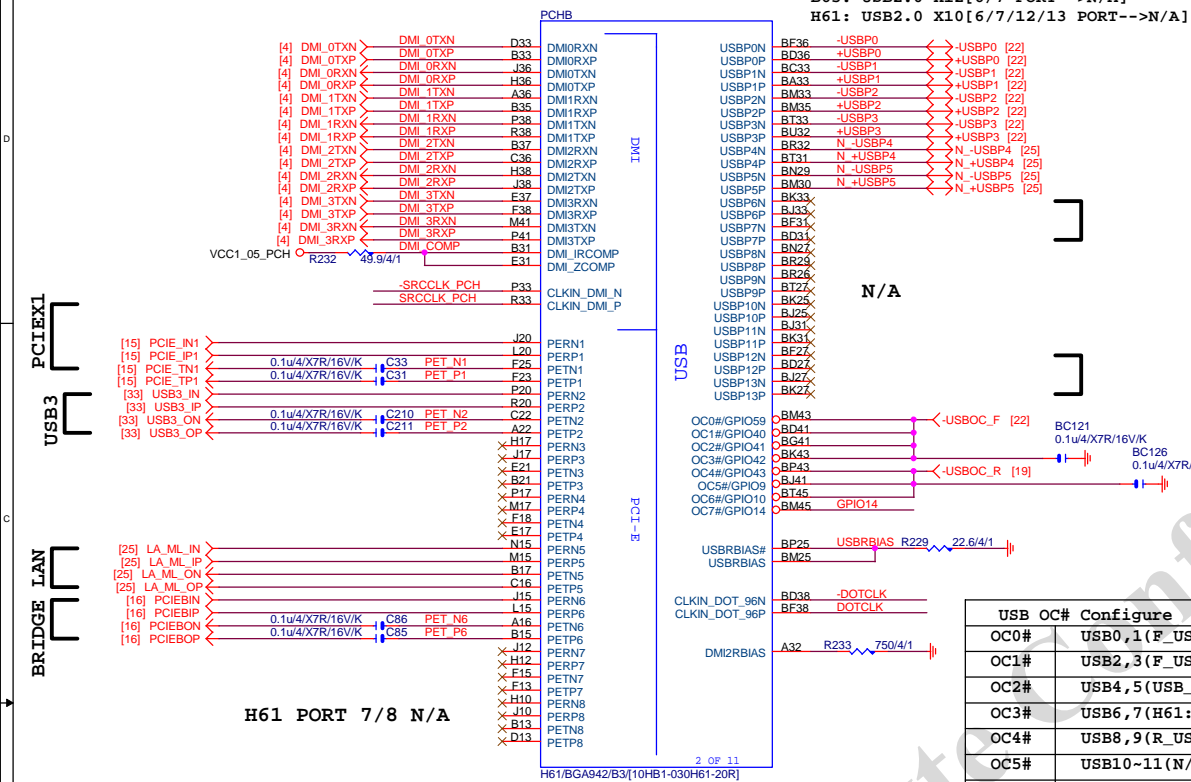
DDRVTT Decouple



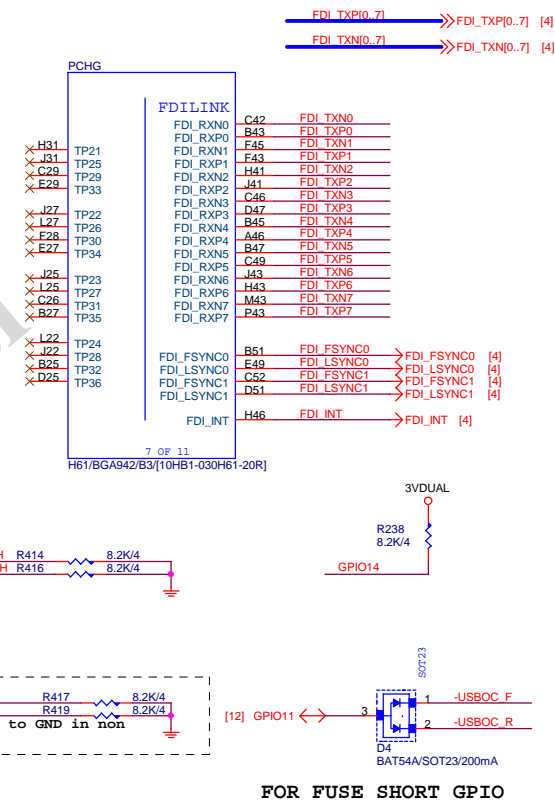
DDR15V Decouple



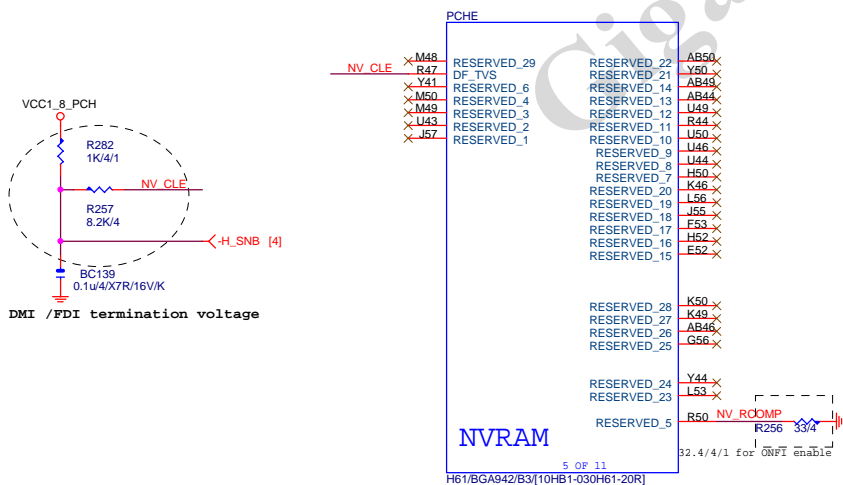
PCH B



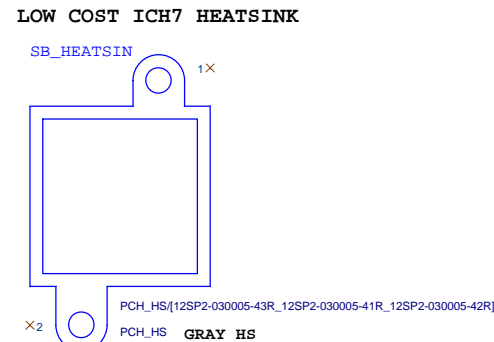
PCH G FDI



PCH E



PCH HS



PCFH

X T1	DDPB_HPD	CRT_HS_YNC	AR4	H SYNC	R212	33/4	GHSYNC
X N2	DDPC_HPD	CRT_VSYNC	AR2	V SYNC	R213	33/4	GVSYNC
X M1	DDPD_HPD						
X R8	DDPB_AUXP	CRT_RED	AN6	R			
X R9	DDPB_AUXN	CRT_GREEN	AN2	G			
X U14	DDPC_AUXP	CRT_BLUE	AM1	B			
X U12	DDPC_AUXN						
X N6	DDPD_AUXP	CRT_IRTN	AM6				
X R6	DDPD_AUXN						
X R14	DDPB_0P	CRT_DDC_DATA	AW1	DDCDAATA			
X R12	DDPB_UN	CRT_DDC_CLK	AW3	DDCCLK			
X M11	DDPB_1P						
X M12	DDPB_1N	DAC_IREF	AT3	VGA RSET R211	1K/4/1		
X H8	DDPB_2P						
X K3	DDPB_2N						
X L5	DDPB_3P						
X M3	DDPB_3N						
X L2	DDPC_0P						
X J3	DDPC_0N	TP6	Y18				
X G2	DDPC_1P	TP7	Y17				
X G4	DDPC_1N	TP8	AB18				
X F3	DDPC_2P	TP9	AB17				
X E4	DDPC_2N						
X E2	DDPC_3P						
X D5	DDPD_0P						
X B6	DDPD_0N						
X C6	DDPD_1P						
X D7	DDPD_1N						
X B7	DDPD_2P						
X C9	DDPD_2N						
X E11	DDPD_3P						
X B11	DDPD_3N						
X U2	SDVO_INTP	DDPC_CTRLCLK	AL12				
X T3	SDVO_INTN	DDPC_CTRLDATA	AL14				
X W3	SDVO_STALLP	DDPD_CTRLCLK	AL9				
X U5	SDVO_STALLN	DDPD_CTRLDATA	AL8				
X U8	SDVO_TVCLKINP	SDVO_CTRLCLK	AL15				
X U9	SDVO_TVCLKINN	SDVO_CTRLDATA	AL17				

Pop 0/4 for non graphic skus

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H61/BGA942/B3(110H61-030H61-20R)

CONFIDENTIAL

PCBH

CLKIN_GND1_N R27 -PCHCLK
CLKIN_GND1_P P27 PCHCLK

CLKIN_GND0_N W53 -CLK_GND
CLKIN_GND0_P V52 CLK_GND

CLKOUT_ITPXD_P R52 -CLK_ITP → -ITPCLK [4]
CLKOUT_ITPXD_P_P NS2 CLK_ITP → -ITPCLK [4]

CLKOUT_PCIE7N AE2 ×
CLKOUT_PCIE7P AE1 ×

CLKOUT_DMI_N P31 -CLK_CPU → -CPUCLK [4]
CLKOUT_DMI_P R31 CLK_CPU → CPUCLK [4]

CLKOUT_DP_N N56 ×
CLKOUT_DP_P M53 ×

CLKOUT_PCIE0N AE6 -SRCCLK0 → -SRCCLK_PCIE1 [15]
CLKOUT_PCIE0P AC6 SRCCLK0 → SRCCLK_PCIE1 [15]

CLKOUT_PCIE1N AA5 ×
CLKOUT_PCIE1P W5 ×

CLKOUT_PCIE2N AB12 ×
CLKOUT_PCIE2P AB14 ×

CLKOUT_PCIE3N AB9 -SRCCLK3 → -LA_SRCCLK_LAN [25]
CLKOUT_PCIE3P AB8 SRCCLK3 → -LA_SRCCLK_LAN [25]

CLKOUT_PCIE4N Y9 -SRCCLK_USB3 → -SRCCLK_USB3 [33]
CLKOUT_PCIE4P Y8 SRCCLK_USB3 → SRCCLK_USB3 [33]

CLKOUT_PCIE5N AF3 ×
CLKOUT_PCIE5P AG2 ×

CLKOUT_PCIE6N AB3 -PBCLK → -PBCLK [16]
CLKOUT_PCIE6P AA2 PBCLK → PBCLK [16]

CLKOUT_PEG_A_N AG8 -SRCCLKA → -SRCCLK_PCIE16 [14]
CLKOUT_PEG_A_P AG9 SRCCLKA → SRCCLK_PCIE16 [14]

CLKOUT_PEG_B_N AE12 ×
CLKOUT_PEG_B_P AE11 ×

FOR OC

PCIEI1

LAN

USB30

BRIDGE

PCIEI16

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H61/BGA942/B3[10HB1-030H61-20R]

AT11 CLKOUT_PCI0
AN14 CLKOUT_PCI1
AT12 CLKOUT_PCI2
AT17 CLKOUT_PCI3
AT14 CLKOUT_PCI4

AT9 CLKOUTFLEX0/GPIO64
BA5 CLKOUTFLEX1/GPIO65
AW5 CLKOUTFLEX2/GPIO66
BA2 CLKOUTFLEX3/GPIO67

R209 33/4 PCH 48M
native 48MHz

R206 90.9/4 CLK_RCOMP
VCC1_05_PCH

AT2 XCLK_RCOMP
AN8 REFCLK14IN

AJ5 XTAL25_OUT
AJ3 XTAL25_IN

R197 1M/4
X1 XTALI PCH
XTALO PCH
25M/20p/30ppm/49US/20/D

C81 27p/4/NPO/50V/J
C82 27p/4/NPO/50V/J

R201 33/4
R405 33/4
R209 33/4
R206 90.9/4
R197 1M/4
R278 8.2K/4
R279 8.2K/4
R412 8.2K/4
R411 8.2K/4
R210 8.2K/4

AT11
AN14
AT12
AT17
AT14
AT9
BA5
AW5
BA2
AT2
AN8
AJ5
AJ3
X1
C81
C82
R278
R279
R412
R411
R210

Flex0,2 : 33MHZ
Flex1,3 :
27/14/24/48/25MHZ

[18] LPC33
[11] PCH33
[18] LPCCLK48
VCC1_05_PCH
XTALI PCH
XTALO PCH
C81
C82
R278
R279
R412
R411
R210

CONFIDENTIAL

SSOP6_ESD

Pin connections for SSOP6_ESD package:

- Pin 1: VGADDDCDA
- Pin 2: GHSYNC
- Pin 3: GHSYNC
- Pin 4: GVSYSN
- Pin 5: VCC
- Pin 6: VGADDDCLK

[illegible]

FUSEVCC_R

BC9
0.1uF/4X7R/16V/K/X

VGA

VGA_R

VGA_G

VGA_B

VGADDCDATA

GHSYNC

GVSYSNC

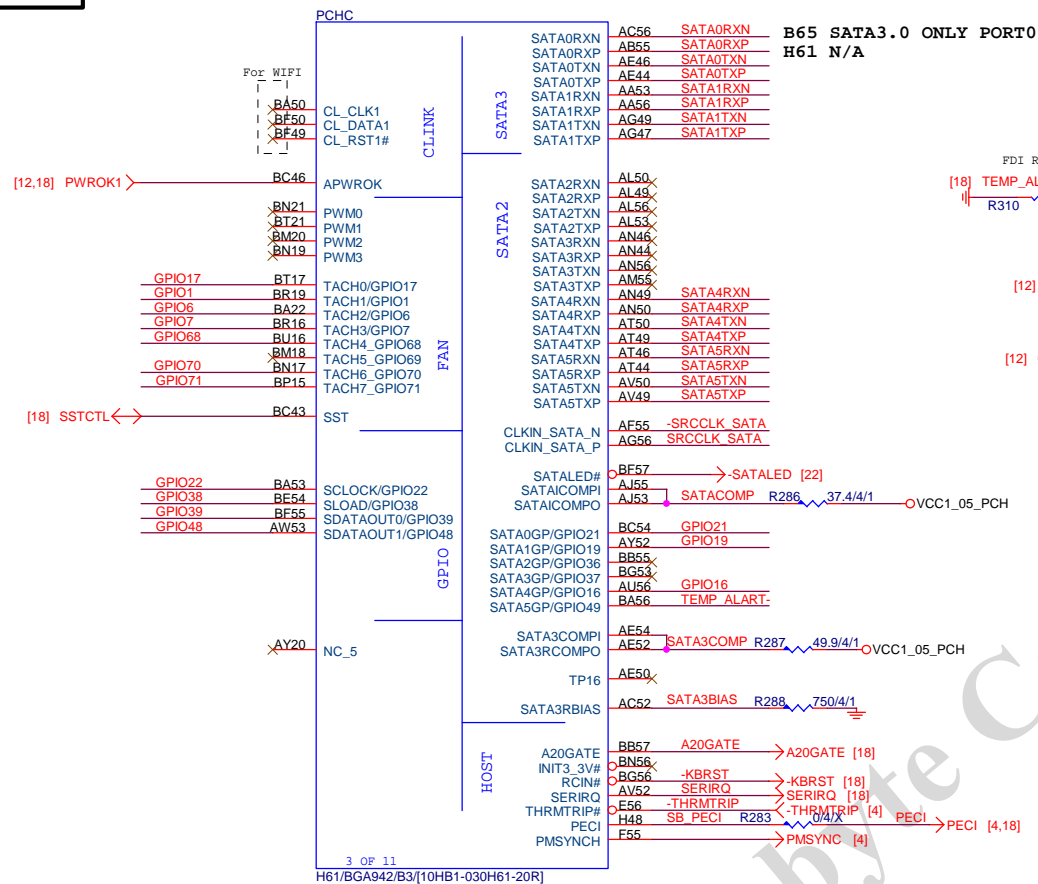
VGADDCCLK

VGA/BU/SC-11/RA/D/L[11NR6-101015-3MR_11NR6-101015-3FR]

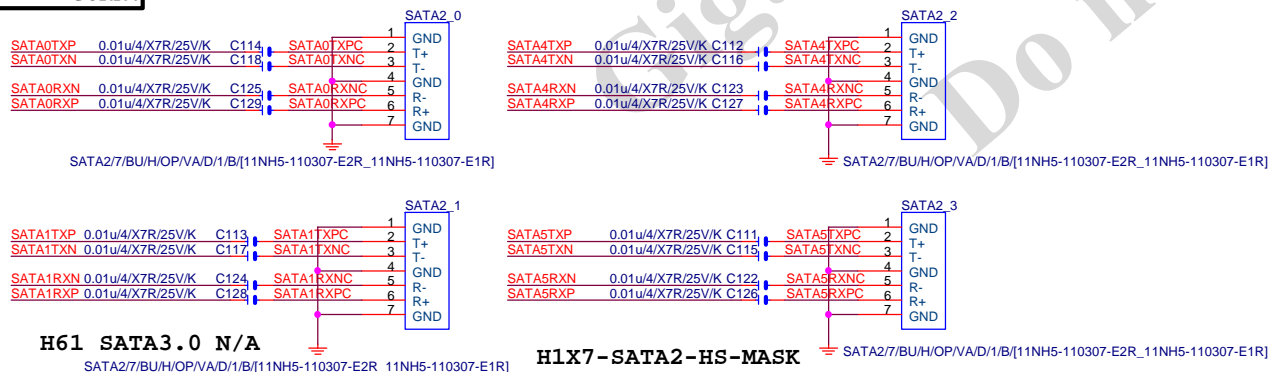
VITE -3MR

Gigabyte Technology				
Title				
PCH DISPLAY ,CLK BUFFER				
Size	Document Number	GA-H61M-S2P-R3		Rev
Custom				3.01
Date:	Thursday, April 18, 2013	Sheet	10 of 33	

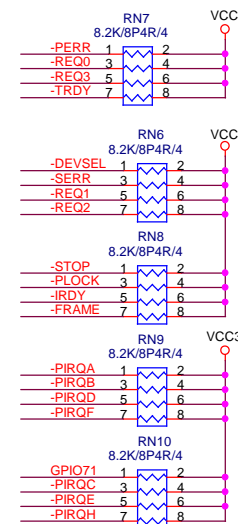
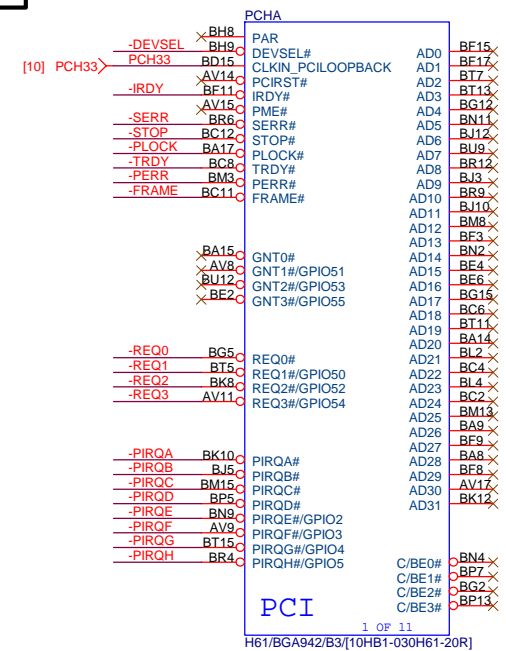
PCH C



SATA CONN.

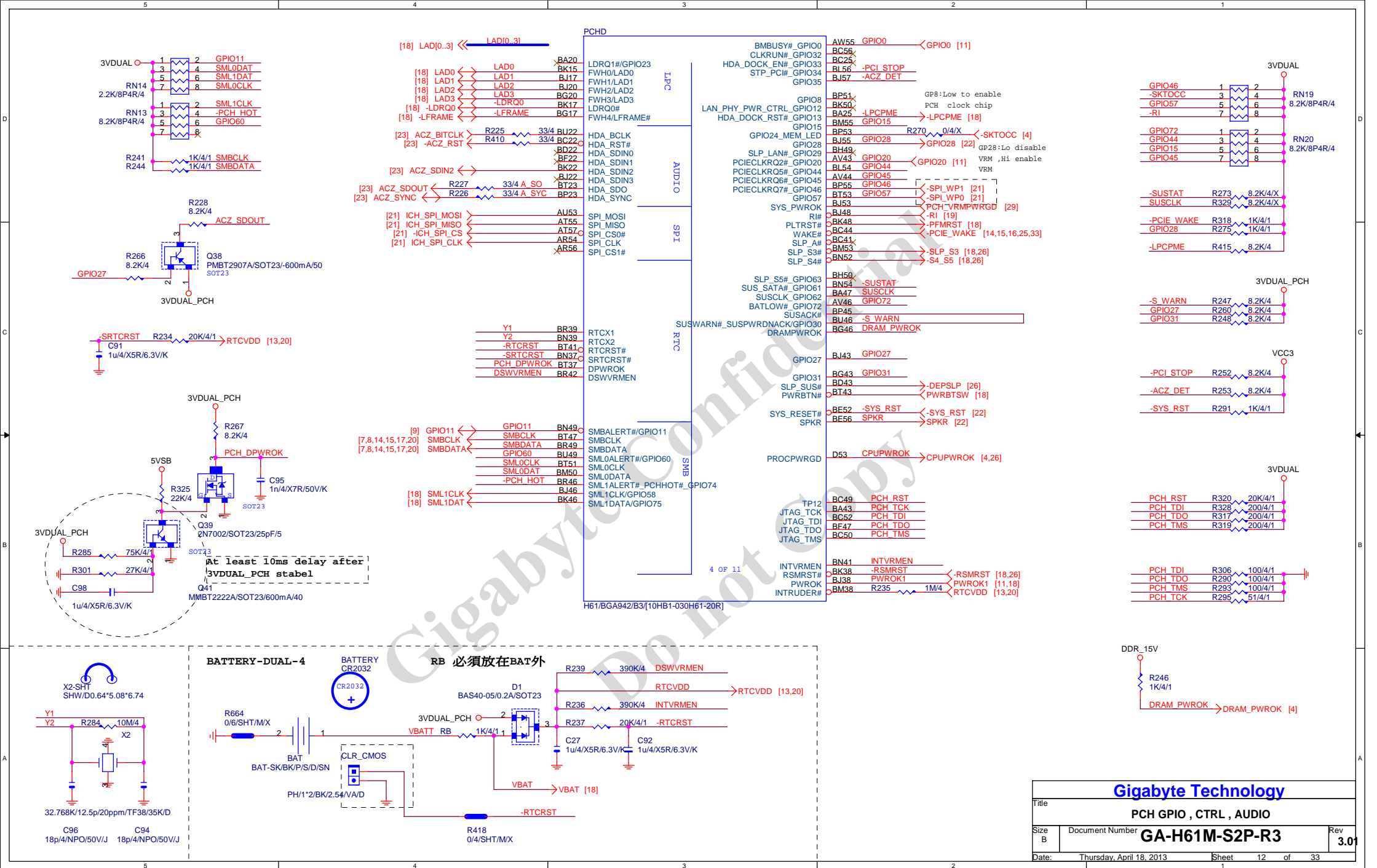


PCH A

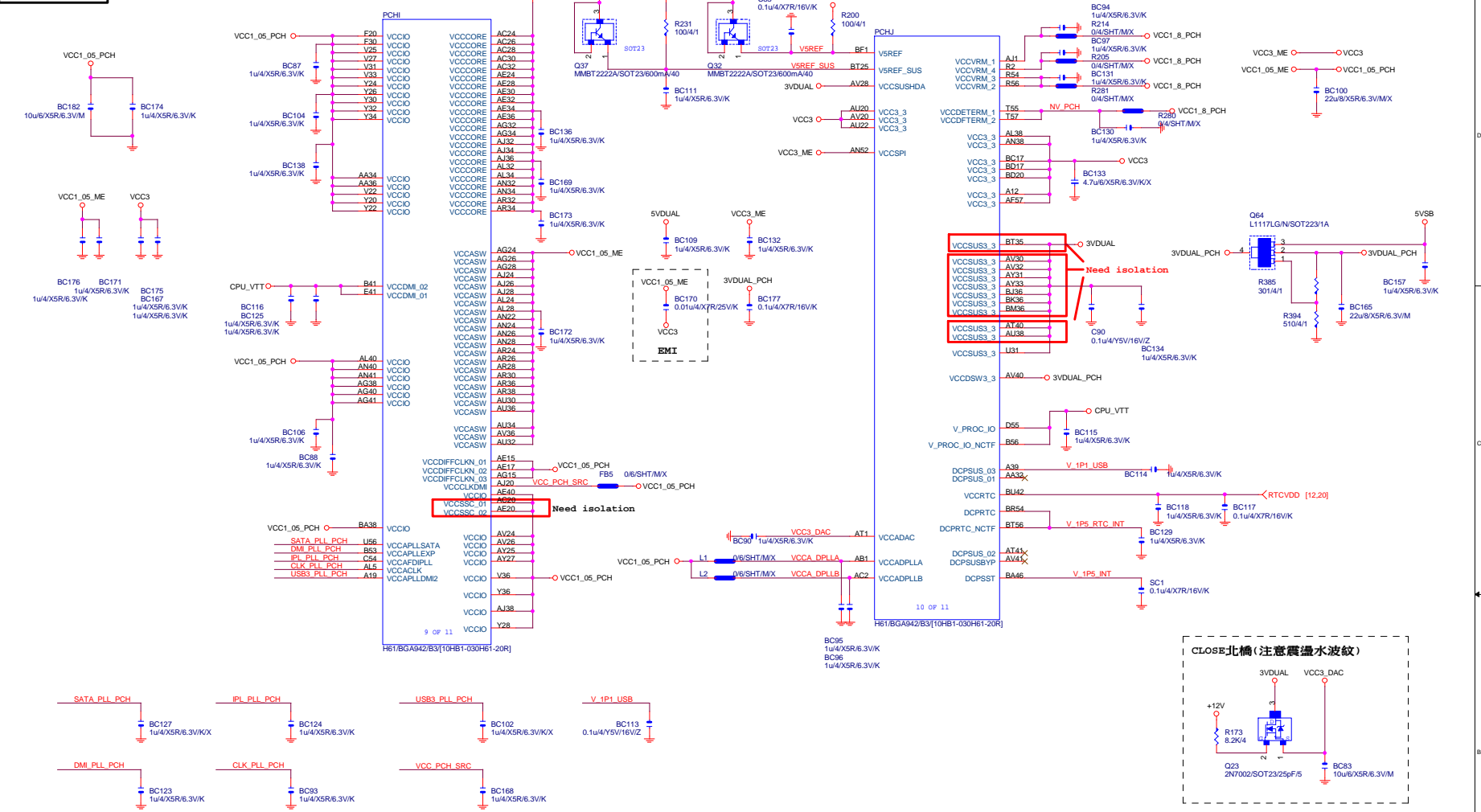


Gigabyte Technology

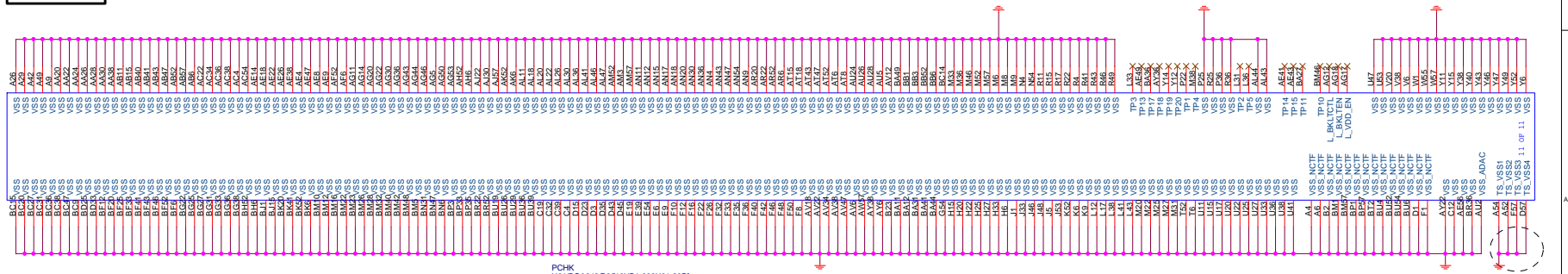
Title			
PCH HOST , SATA, PCI			
Size B	Document Number		Rev
	GA-H61M-S2P-R3		3.01
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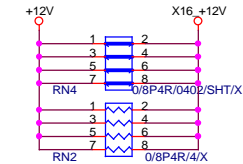
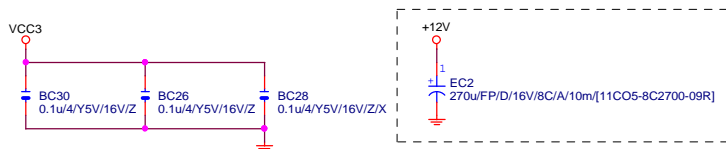
PCH I POWER



PCH K GND

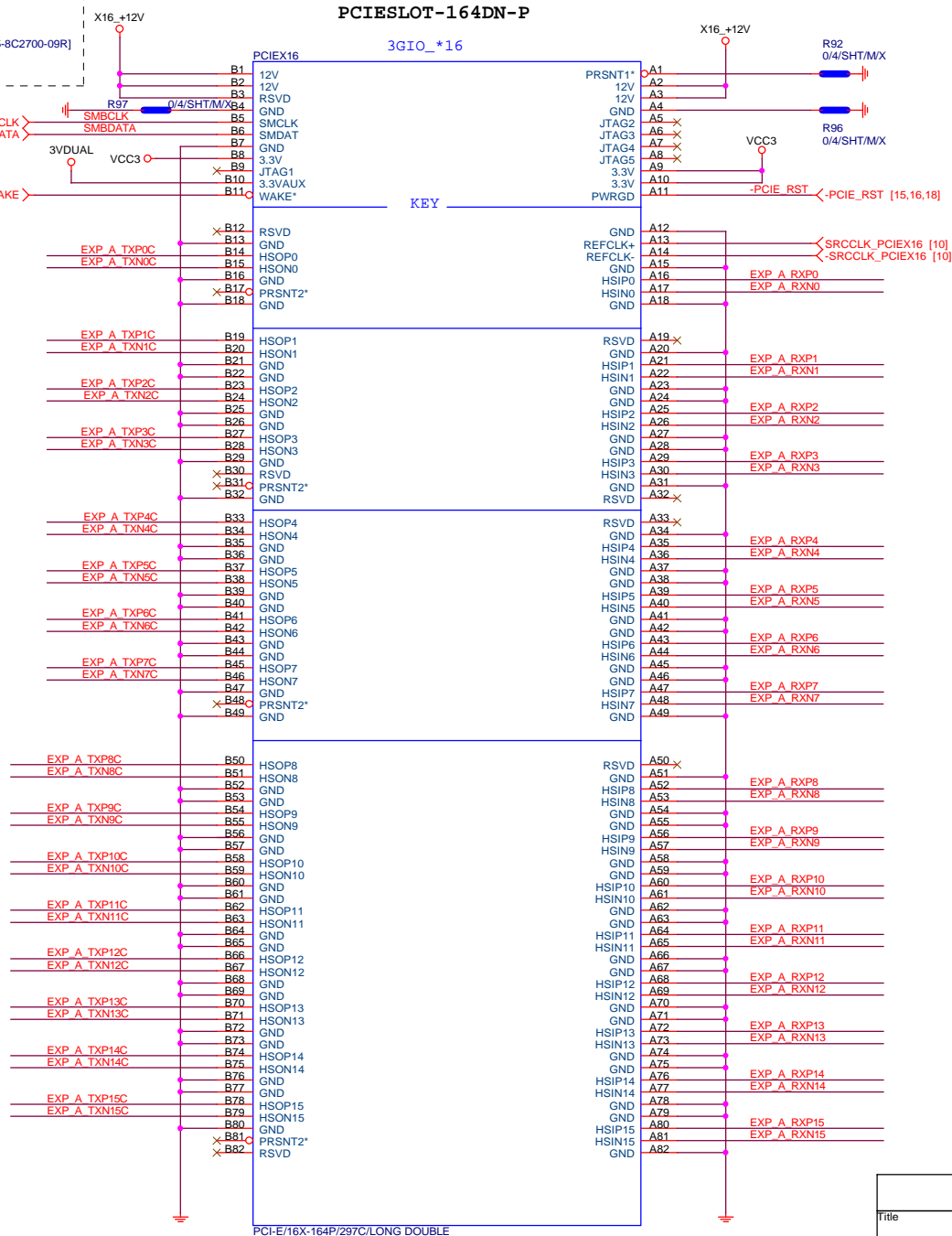


PCIE X16



EXP A RXP0..15] >> EXP_A_RXP[0..15] [4]
EXP A RXN0..15] >> EXP_A_RXN[0..15] [4]
EXP A TXP0..15] >> EXP_A_TXP[0..15] [4]
EXP A TXN0..15] >> EXP_A_TXN[0..15] [4]

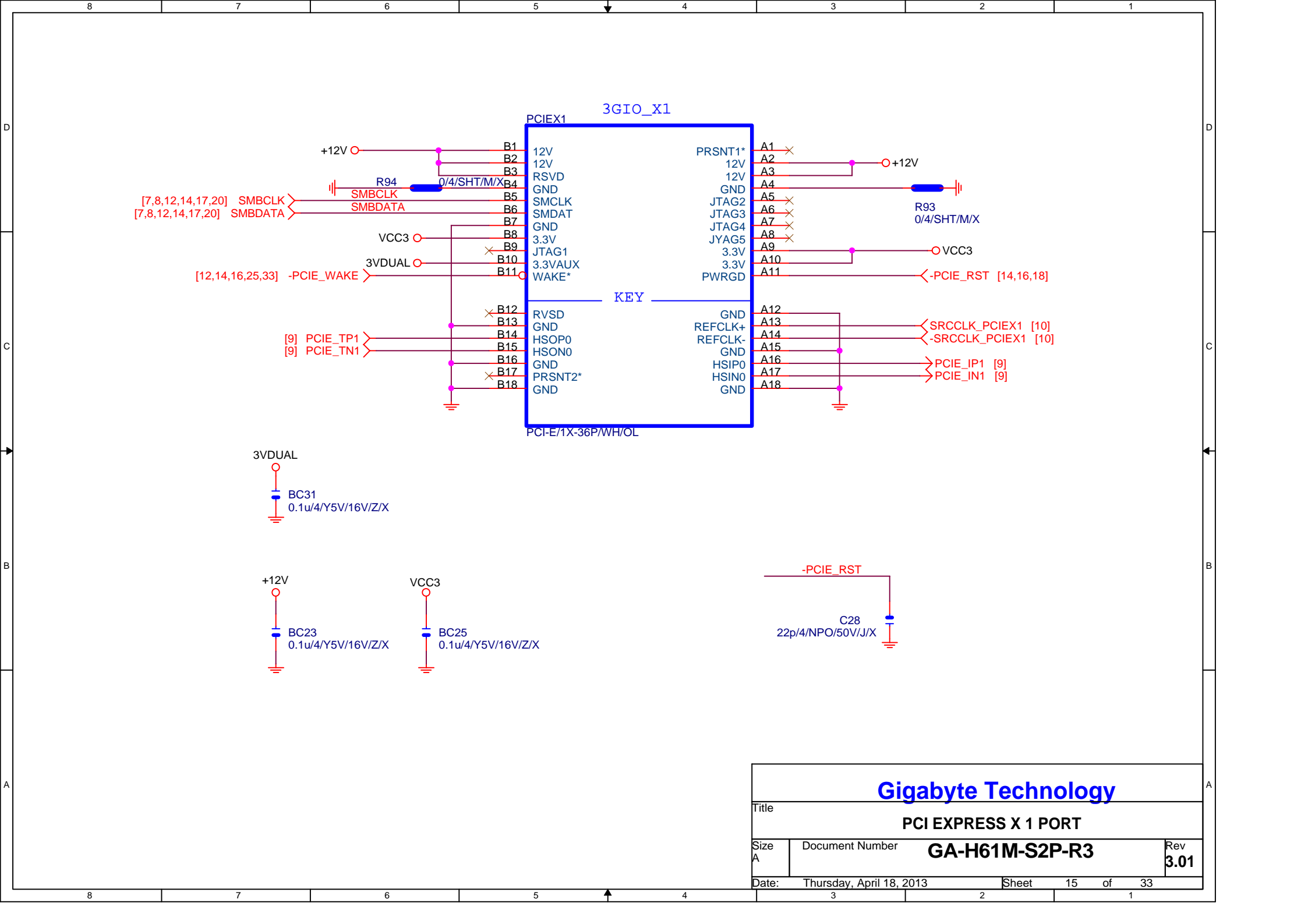
EXP A TXP0	C32	0.22u/4/X5R/6.3V/K	EXP A TXP0C
EXP A TXN0	C30	0.22u/4/X5R/6.3V/K	EXP A TXN0C
EXP A TXP1	C35	0.22u/4/X5R/6.3V/K	EXP A TXP1C
EXP A TXN1	C37	0.22u/4/X5R/6.3V/K	EXP A TXN1C
EXP A TXP2	C39	0.22u/4/X5R/6.3V/K	EXP A TXP2C
EXP A TXN2	C41	0.22u/4/X5R/6.3V/K	EXP A TXN2C
EXP A TXP3	C43	0.22u/4/X5R/6.3V/K	EXP A TXP3C
EXP A TXN3	C45	0.22u/4/X5R/6.3V/K	EXP A TXN3C
EXP A TXP4	C46	0.22u/4/X5R/6.3V/K	EXP A TXP4C
EXP A TXN4	C49	0.22u/4/X5R/6.3V/K	EXP A TXN4C
EXP A TXP5	C50	0.22u/4/X5R/6.3V/K	EXP A TXP5C
EXP A TXN5	C51	0.22u/4/X5R/6.3V/K	EXP A TXN5C
EXP A TXP6	C52	0.22u/4/X5R/6.3V/K	EXP A TXP6C
EXP A TXN6	C54	0.22u/4/X5R/6.3V/K	EXP A TXN6C
EXP A TXP7	C57	0.22u/4/X5R/6.3V/K	EXP A TXP7C
EXP A TXN7	C58	0.22u/4/X5R/6.3V/K	EXP A TXN7C
EXP A TXP8	C60	0.22u/4/X5R/6.3V/K	EXP A TXP8C
EXP A TXN8	C61	0.22u/4/X5R/6.3V/K	EXP A TXN8C
EXP A TXP9	C62	0.22u/4/X5R/6.3V/K	EXP A TXP9C
EXP A TXN9	C63	0.22u/4/X5R/6.3V/K	EXP A TXN9C
EXP A TXP10	C64	0.22u/4/X5R/6.3V/K	EXP A TXP10C
EXP A TXN10	C65	0.22u/4/X5R/6.3V/K	EXP A TXN10C
EXP A TXP11	C66	0.22u/4/X5R/6.3V/K	EXP A TXP11C
EXP A TXN11	C67	0.22u/4/X5R/6.3V/K	EXP A TXN11C
EXP A TXP12	C68	0.22u/4/X5R/6.3V/K	EXP A TXP12C
EXP A TXN12	C70	0.22u/4/X5R/6.3V/K	EXP A TXN12C
EXP A TXP13	C72	0.22u/4/X5R/6.3V/K	EXP A TXP13C
EXP A TXN13	C73	0.22u/4/X5R/6.3V/K	EXP A TXN13C
EXP A TXP14	C74	0.22u/4/X5R/6.3V/K	EXP A TXP14C
EXP A TXN14	C75	0.22u/4/X5R/6.3V/K	EXP A TXN14C
EXP A TXP15	C77	0.22u/4/X5R/6.3V/K	EXP A TXP15C
EXP A TXN15	C78	0.22u/4/X5R/6.3V/K	EXP A TXN15C



PCI-E/16X-164P/297C/LONG DOUBLE

LONG DOUBLE PUSH LATCH

Gigabyte Technology			
Title			
PCI EXPRESS * 16			
Size	Document Number	Rev	
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Gigabyte Technology

Title

PCI EXPRESS X 1 PORT

Size
A

Document Number

GA-H61M-S2P-R3

Rev
3.01

Date: Thursday, April 18, 2013

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PCIe TO PCI

PCI:5/4/5 Impedance=50 +- 15%

BA D[0..31] ↔ BA D[0..31] [17]

-BC BE0 → BC BE0 [17]
-BC BE1 → BC BE1 [17]
-BC BE2 → BC BE2 [17]
-BC BE3 → BC BE3 [17]

-BPERR → BPERR [17]
-BSERR → BSERR [17]

BPAR → BPAR [17]
-BPLOCK → BPLOCK [17]
-BDEVSEL → BDEVSEL [17]
-BSTOP → BSTOP [17]
-BTRDY → BTRDY [17]
-BIRDY → BIRDY [17]
-BFRAME → BFRAME [17]

-PCIE_RST → PCIE_RST [14,15,18]

-BPCIRST → BPCIRST [17]

-BREQ0 → BREQ0 [17]
-BREQ1 → BREQ1 [17]
-BGNT0 → BGNT0 [17]
-BGNT1 → BGNT1 [17]

-BPCIPME1 → BPCIPME1 [17]

[17] BPCLK0 ← PR24 47/4/1 CLKOUT0

[17] BPCLK1 ← PR19 47/4/1 CLKOUT1

RREF PR13 12K/4/1

TEST_EN PR21 10K/4/1

EXT_ARB PR22 10K/4/1

RST_SEL PR7 10K/4/1

High: Enable PCI CLK 66MHz
Low: Disable PCI CLK 66MHz

M66EN

PR42 1K/4/1

High: PCICLK INPUT form CLK Gen
Low: PCICLK OUTPUT form IT8893 chip

PCICLK_SEL

PR47 10K/4/1

IT8892

PCI slot

PCI slot

chipset side

PRN14 0/8P4R/0402/SHT/X
-BPIROA 1 2 ↔ -BPIROA1 [17]
-BPIROD 3 4 ↔ -BPIROD1 [17]
-BPIROC 5 6 ↔ -BPIROC1 [17]
-BPIROB 7 8 ↔ -BPIROB1 [17]

VCCP PR26 0/4/SHT/M/X 3VDUAL

-BPCIPME1 PR27 0/4/SHT/M/X -PCIE_WAKE [12,14,15,25,33]

3VDUAL PR2 0/4/SHT/M/X

PCIEWAKE PR34 10K/4/1

-BPCIPME PR43 10K/4/1

PRN1 2.2K/8P4R/4 VCC

-BFRAME 1 2

-BTRDY 3 4

-BSTOP 5 6

-BDEVSEL 7 8

PRN2 2.2K/8P4R/4

-BIRDY 1 2

-BPERR 3 4

-BSERR 5 6

-BPLOCK 7 8

PRN15 2.2K/8P4R/4

-BPIROB 1 2

-BPIROC 3 4

-BPIROD 5 6

-BPIROA 7 8

PRN4 2.2K/8P4R/4

-BGNT1 1 2

-BREQ1 3 4

-BGNT2 5 6

-BREQ2 7 8

PRN5 2.2K/8P4R/4

-BGNT0 1 2

-BREQ0 3 4

-BGNT3 5 6

-BREQ3 7 8

BPAR PR41 2.2K/4/1

LDO 18V PFB1 0/6/SHT/M/X 1.8VA

PFB2 0/6/SHT/M/X 1.8VD

LDOAUX 18V PFB3 0/6/SHT/M/X 1.8V_AUX

PFB4 0/6/SHT/M/X 1.8V_AUXA

PCIEWAKE 1
-BPCIPME 2
WAKE# 3
PME# 4
GNDP_AUX 5
VCCP_AUX 6
LDOAUX 18V 7
VSS_AUX 8
VCCP_AUX 9
NC 10
CLKN 11
CLKP 12
VCC18A 13
VCC18A 14
GNDP 15
GNDP 16
RREF 17
DIP 18
DIN 19
VCC18A_AUX 20
DON 21
DOP 22
VSS 23
VCCP 24
SEG_EN1/GP3 25
SEG_EN2/GP4 26
ECCS# 27
EECLK 28
EEDDATA 29
AD0 30
AD1 31
SEG_G 32

[10] -PBCLK

[10] PBCLK

[9] PCIEBOP

[9] PCIEBON

1.8V_AUXA

PBC43 0.1u/4/X7R/16V/K

PBC44 0.1u/4/X7R/16V/K

1.8VD

BA D0

BA D1

SEG_G

BA D2

BA D3

BA D4

BA D5

BA D6

BA D7

1.8VD

BA D8

BA D9

BA D10

BA D11

BA D12

BA D13

BA D14

BA D15

BA D16

BA D17

BA D18

BA D19

BA D20

BA D21

BA D22

BA D23

BA D24

BA D25

BA D26

BA D27

BA D28

BA D29

BA D30

BA D31

BA D32

BA D33

BA D34

BA D35

BA D36

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BA D39

BA D40

BA D41

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BA D44

BA D45

BA D46

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BA D157

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BA D162

BA D163

BA D164

BA D165

BA D166

BA D167

BA D168

BA D169

BA D170

BA D171

BA D172

BA D173

BA D174

BA D175

BA D176

BA D177

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BA D183

BA D184

BA D185

BA D186

BA D187

BA D188

BA D189

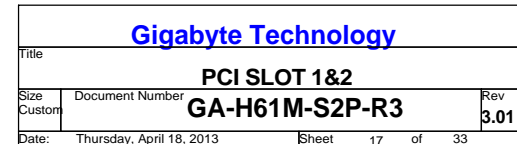
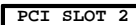
BA D190

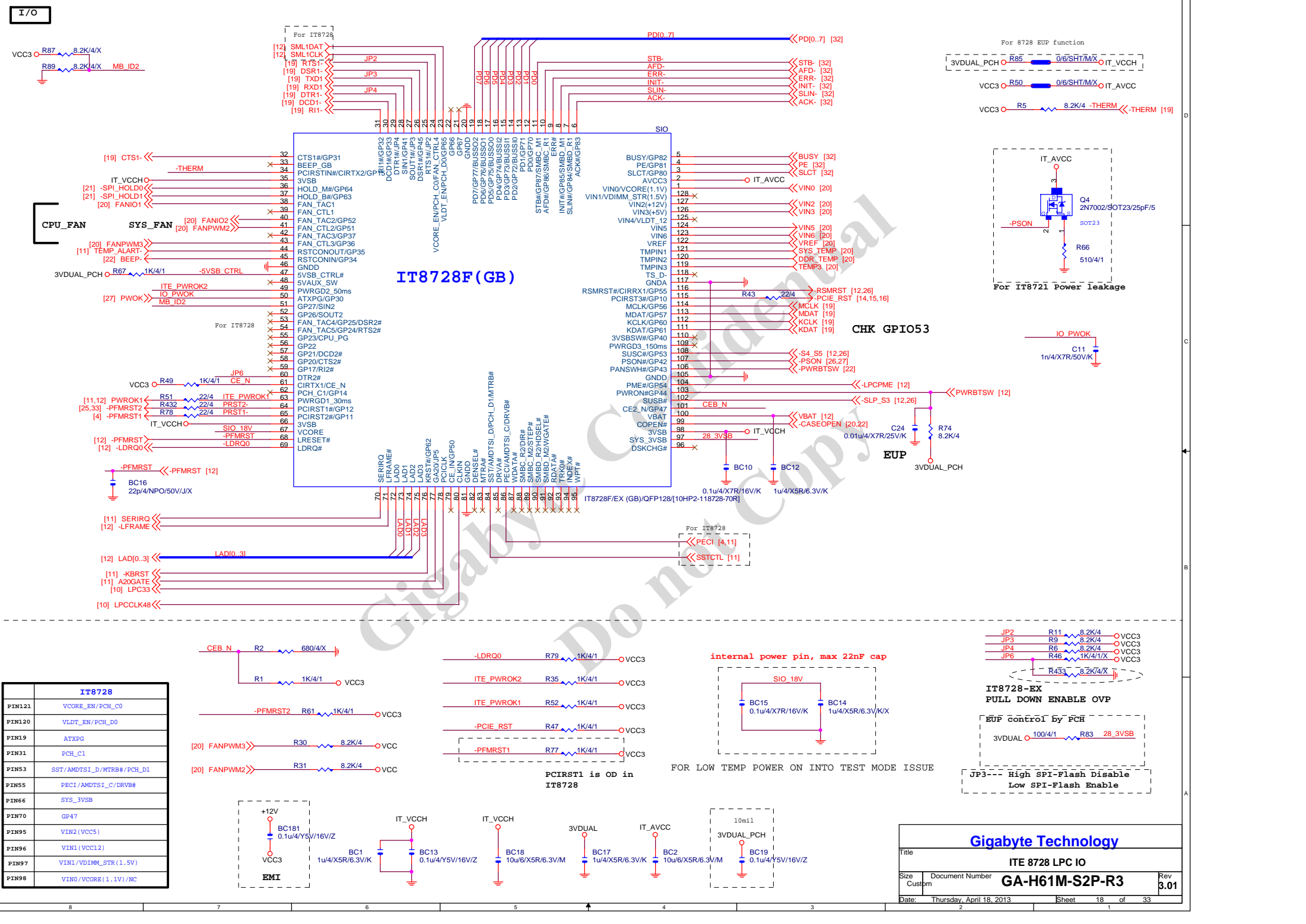
BA D191

BA D192

BA D193

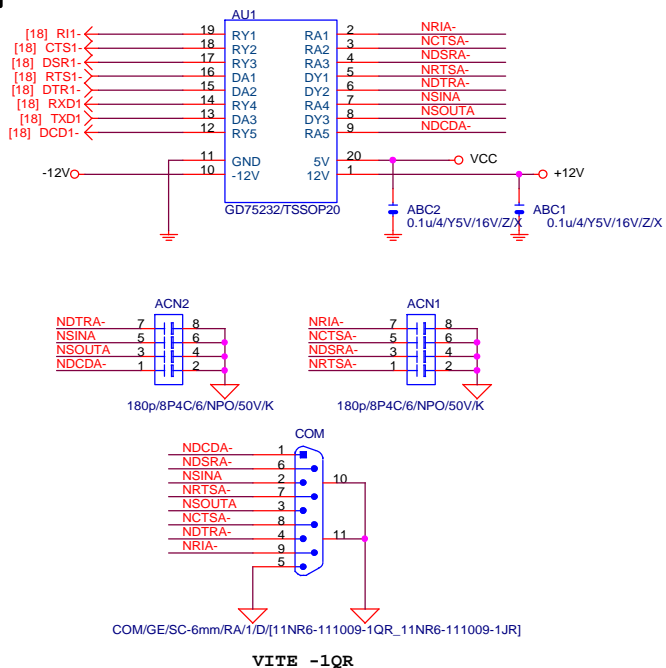
BA D194



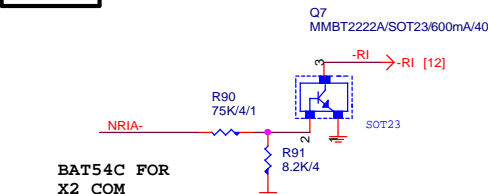


IT8728	
PIN121	VCORE_EN/PCH_C0
PIN120	VLDT_EN/PCH_D0
PIN19	ATXPG
PIN31	PCH_C1
PIN53	SST/AMDT_S1_D/MTRB#/PCH_D1
PIN66	PEC1/AMDT_S1_C/DRV#
PIN66	SYS_3VSB
PIN70	GP47
PIN95	VIN2 (VCC5)
PIN96	VIN1 (VCC12)
PIN97	VIN1/VDIMM_STR (1.5V)
PIN98	VIN0/VCORE (1.1V)/NC

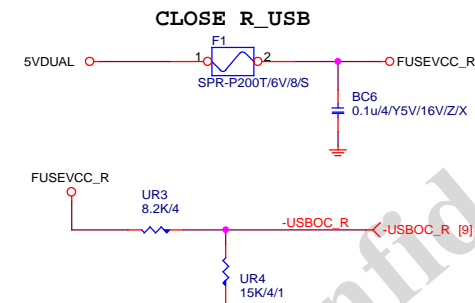
COM



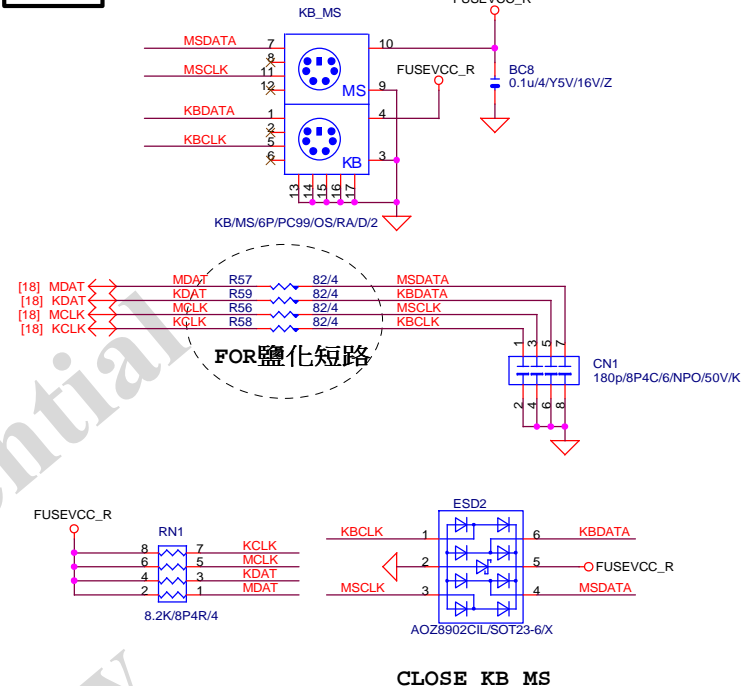
COM RI



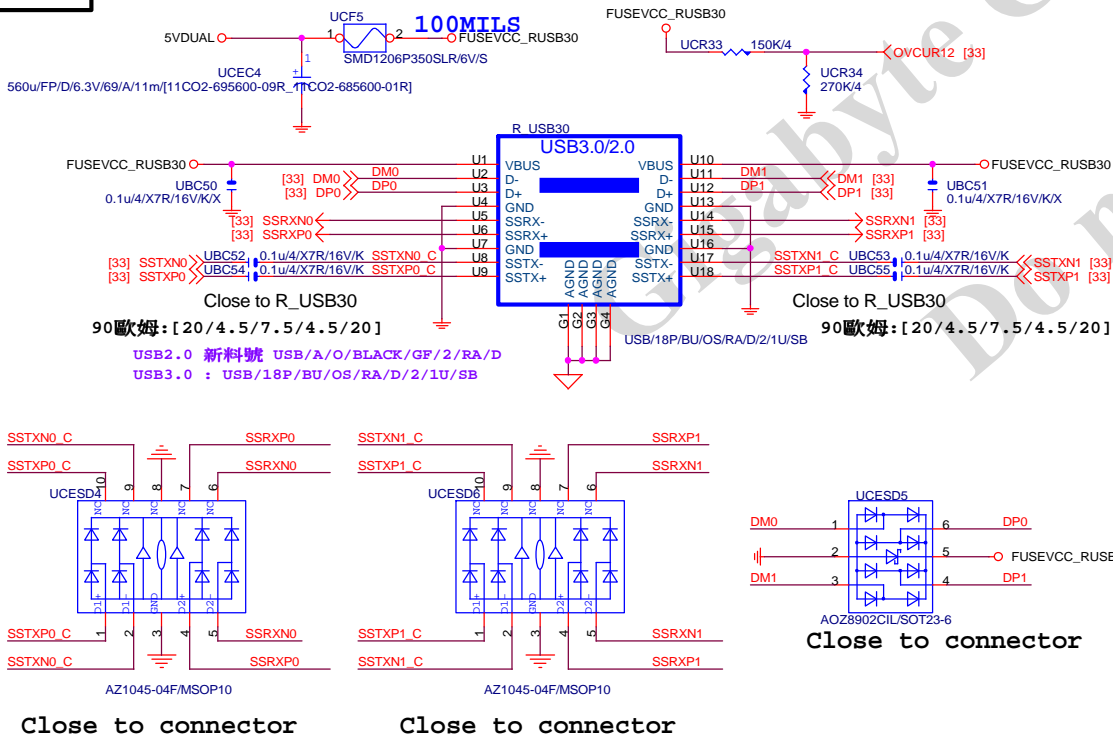
R_USB POWER



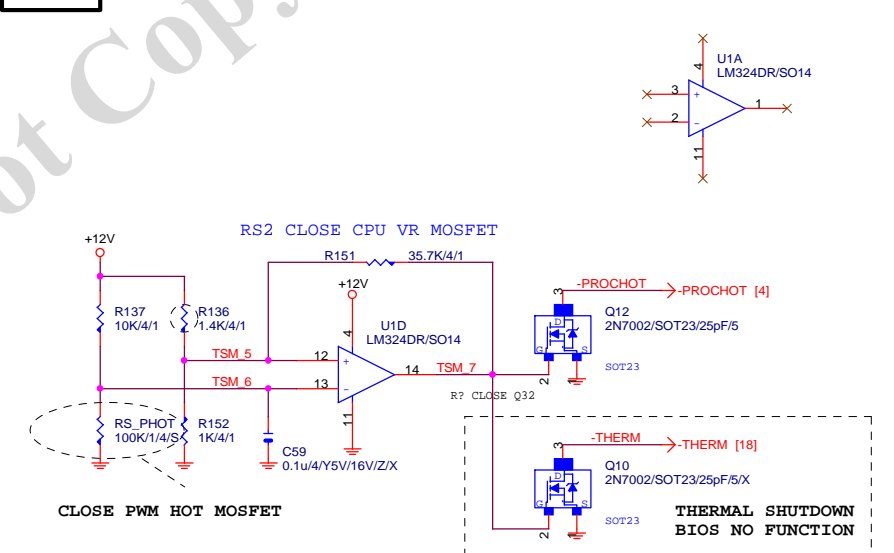
KB/MS



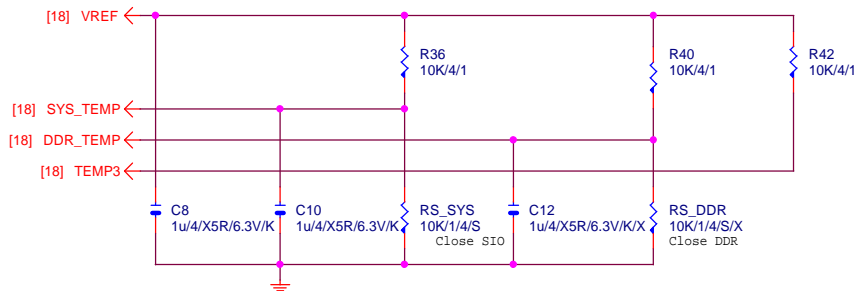
R_USB30



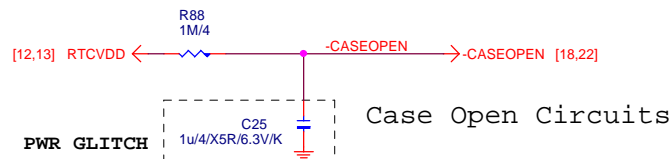
-PROHOT



TEMP H/W MONITOR

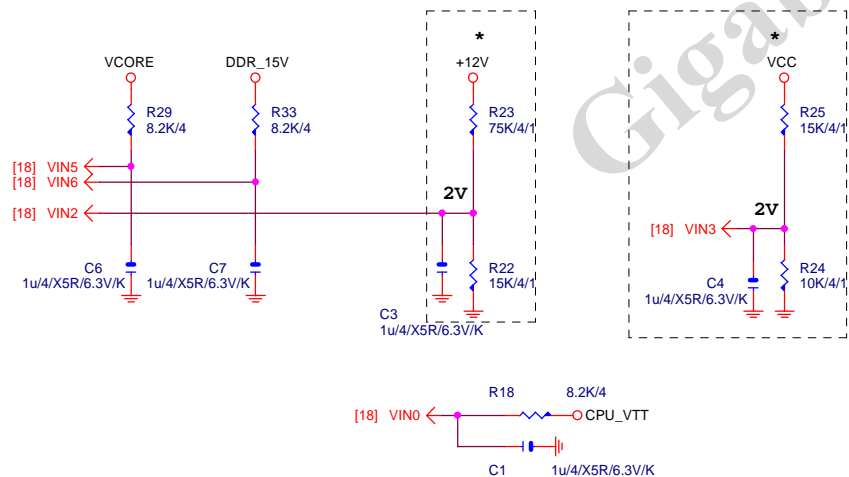


CASE OPEN

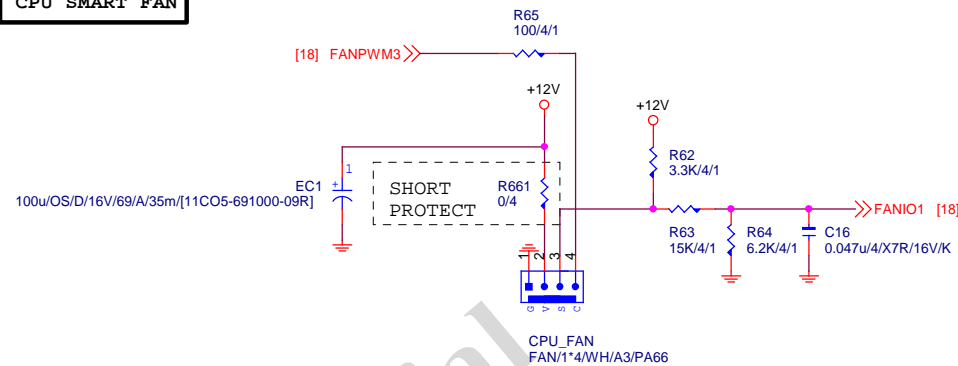


VOLTAGE-- H/W MONITOR

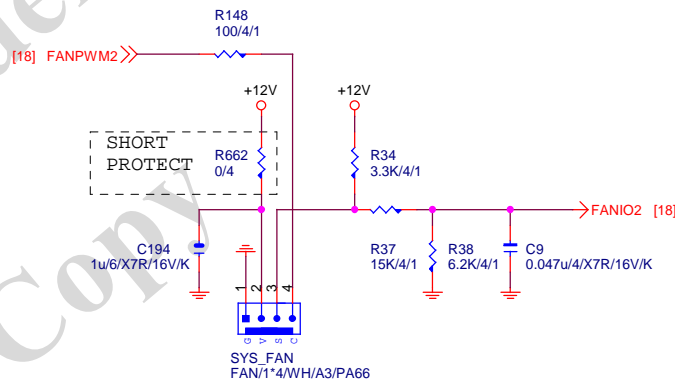
IT8728/EX VIN2/VIN3-->2V



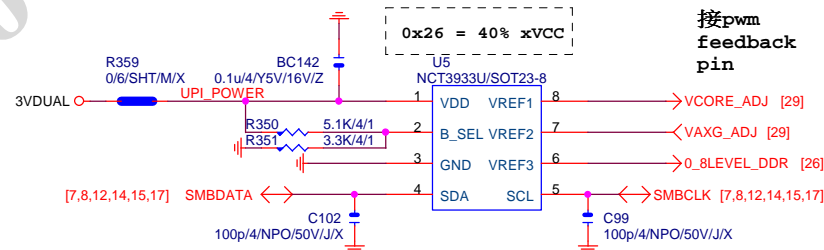
CPU SMART FAN



SYS SMART FAN



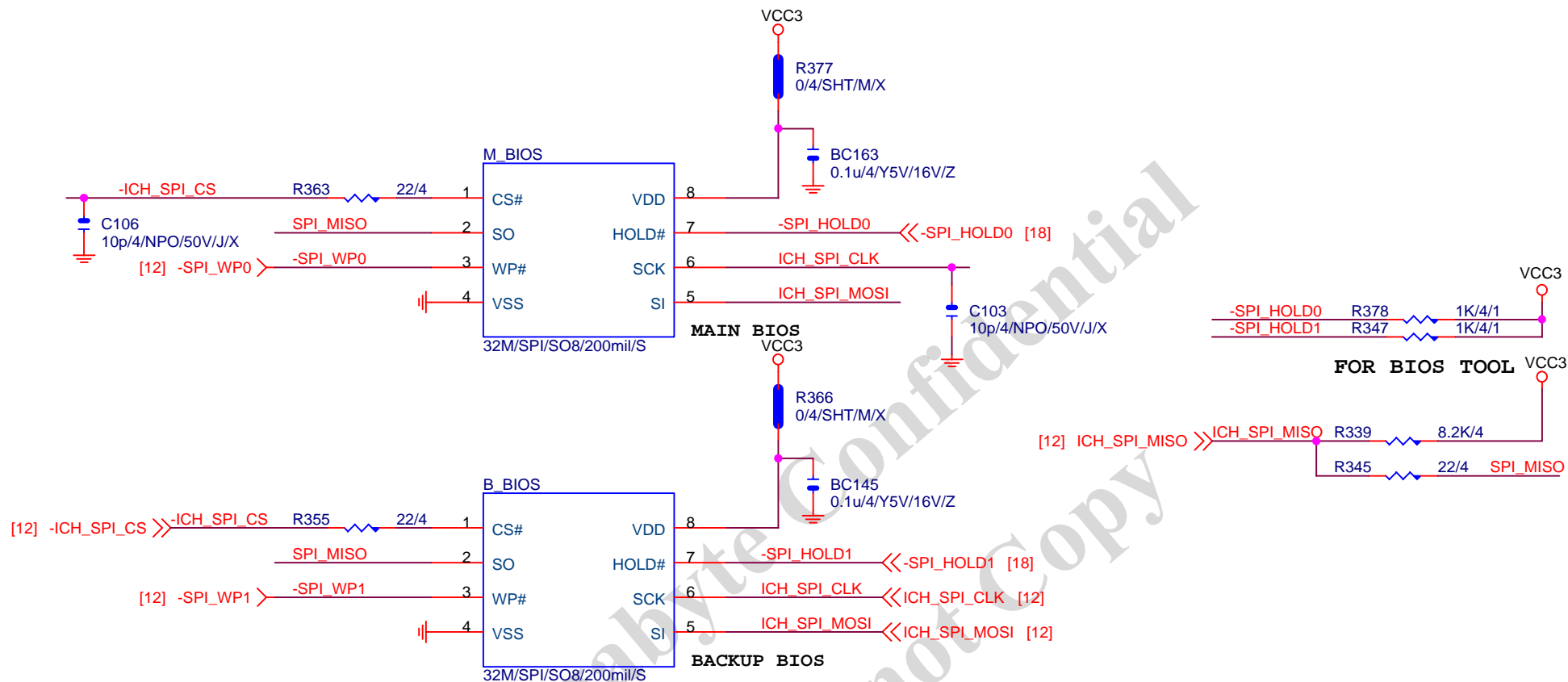
O.V.



Gigabyte Technology

Title			HWM,FAN CTRL,OV	
Size	Document Number	GA-H61M-S2P-R3		Rev
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DUAL BIOS



B65使用64M BIOS
使用H67暫用32M
H61使用32M BIOS

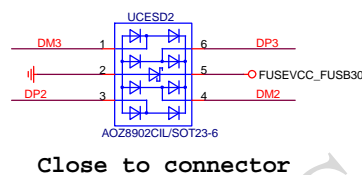
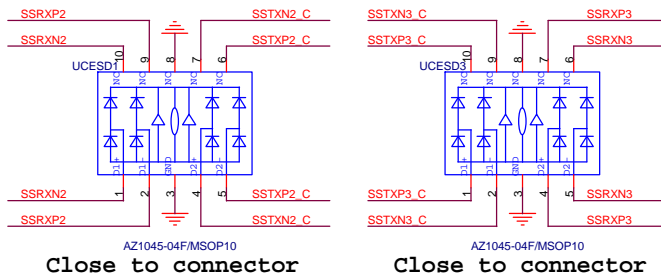
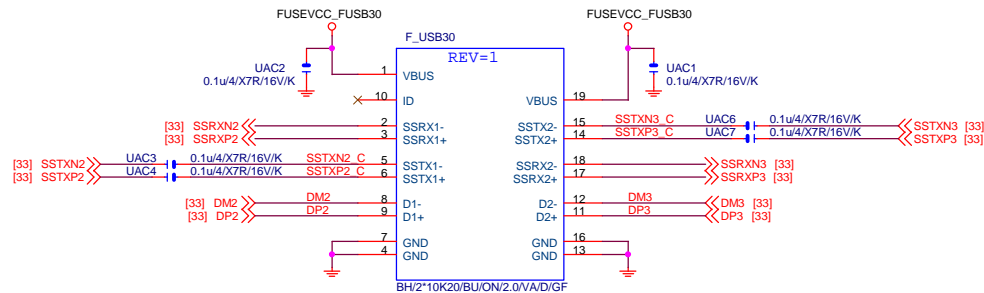
BOOT DEVICE	GNT1	GNT0
LPC	0	0
PCI	0	1
SPI	1	1

1 means floating
0 means PD 1K

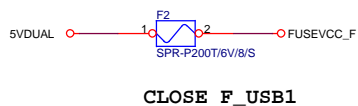
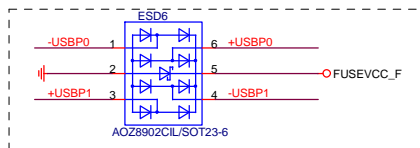
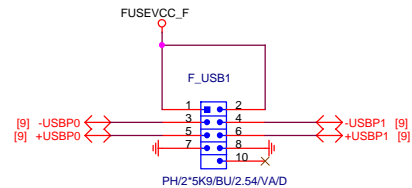
Gigabyte Technology

Title		
DUAL BIOS		
Size A	Document Number	Rev
	GA-H61M-S2P-R3	3.01
Date:	Thursday, April 18, 2013	Sheet 21 of 33

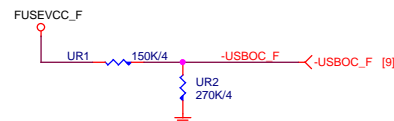
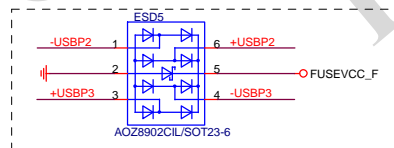
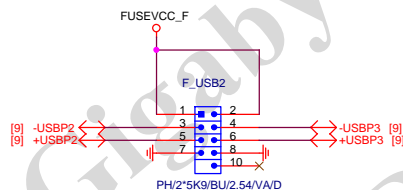
F_USB30



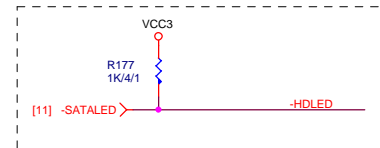
FRONT USB1



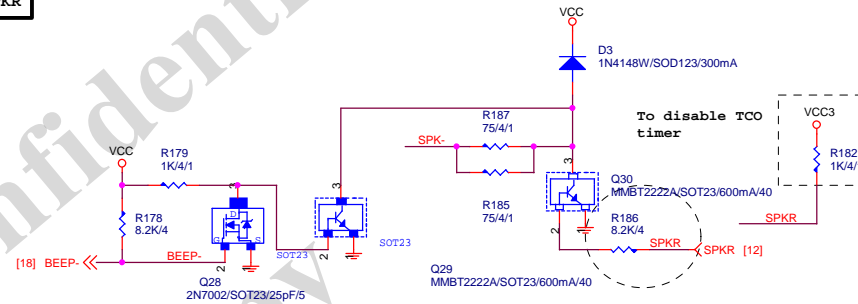
FRONT USB2



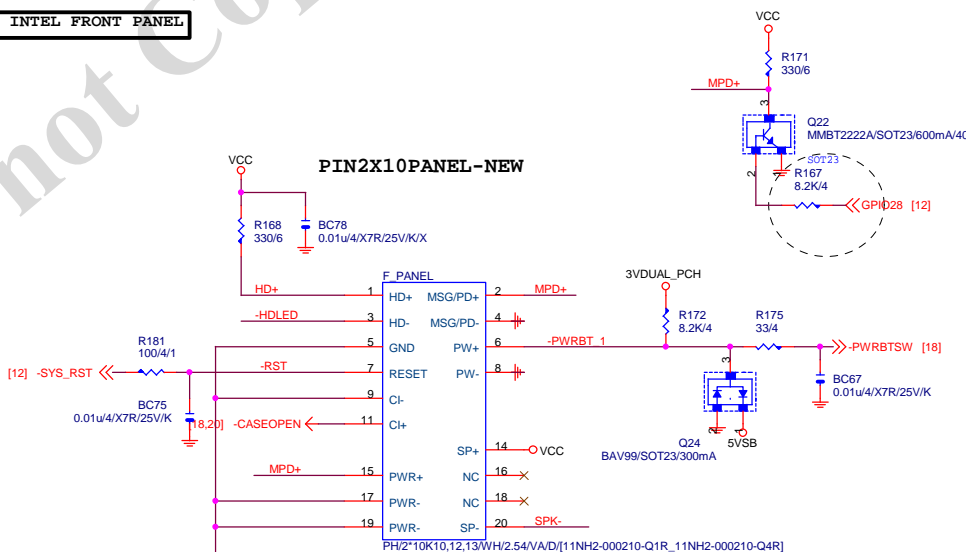
SATA LED



SPKR



INTEL FRONT PANEL



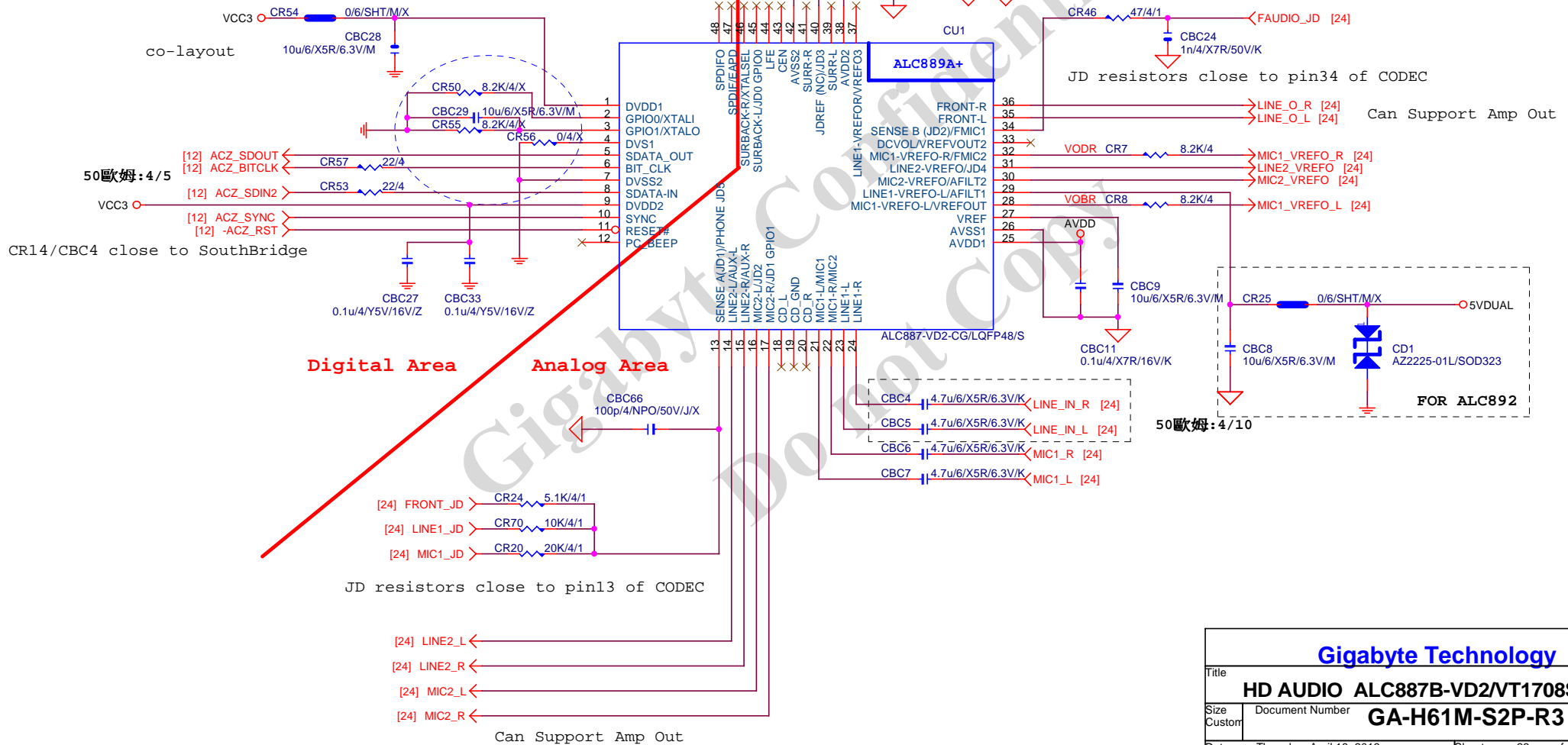
Gigabyte Technology

Title			FP,F_USB,USB PWR,SPKR,SATA LED
Size	Document Number	GA-H61M-S2P-R3	
Custom		Rev	3.01
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AZALIA CODEC

ALC892/ALC889A/ALC889/ALC888B Colay

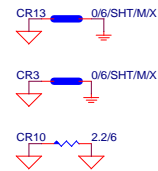
	ALC888B	ALC888-VA	ALC889A	ALC888-VD	ALC892
CR59	X	O	O	O	O
CR53,58	X	X	O	X	X
CR56	O	O	O	O	X
CR63	X	X	X	X	O
CR34	20K/1%	20K/1%	20K/0.1%	20K/1%	20K/1%



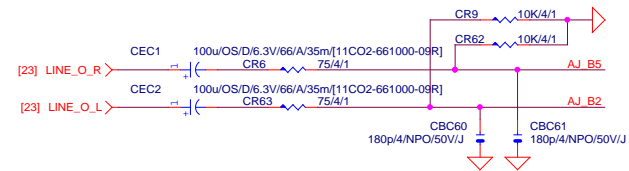
Gigabyte Technology

Title	HD AUDIO ALC887B-VD2/VT1708S/VT2021		
Size	Document Number	GA-H61M-S2P-R3	Rev
Custom			3.01
Date:	Thursday, April 18, 2013	Sheet	23 of 33

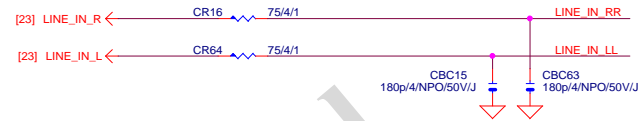
CODEC POWER/EMI PAD



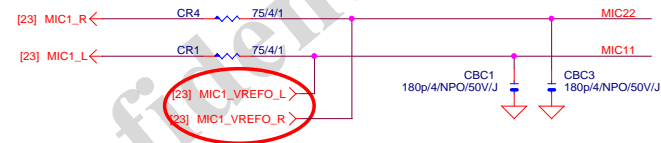
LINE-OUT



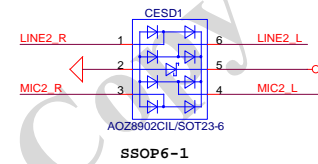
LINE-IN



MIC-IN



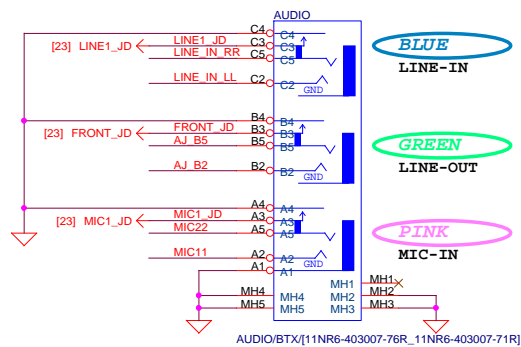
F_AUDIOESD



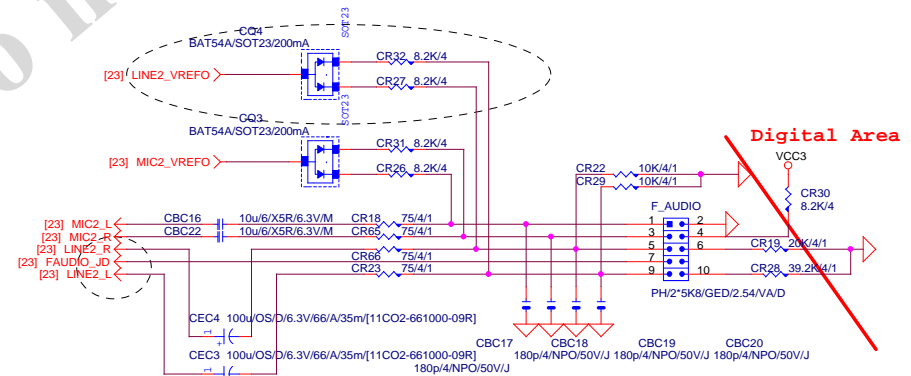
SPDIF

N/A

AZALIA JACK

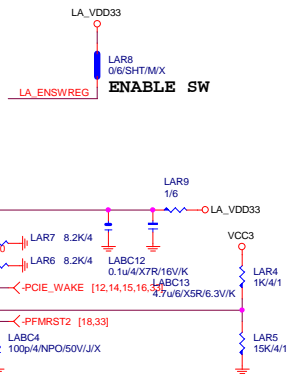


AZALIA FRONT PANEL



Gigabyte Technology

Title			
AUDIO JACK			
Size	Document Number	GA-H61M-S2P-R3	Rev
Custom			3.01
Date:	Thursday, April 18, 2013	Sheet	24 of 33

[illegible]

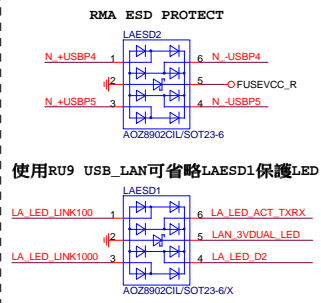
```

[9] LA_ML_O
[9] LA_ML_ON
[10] LA_SRCCLK_LAN
[10] LA_-SRCCLK_LAN
[9] LA_ML_I
[9] LA_ML_IN

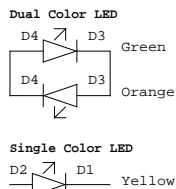
```

離IC近越好

LA_MDI-->100歐姆:[20/4/8/4/20]



注意:LAN LED PROTECT:(CO-LAYOUT)
1.ESD(6PIN):AOZ8902CIL/SOT23-6(DEFAULT)
2.SURGE(5PIN):AZ2025-04S/SOT23-5L



(CLOSE LAU1 PIN:12,27,39,42,47,48)

LA_VDDIO10

LABC11 0.1u4/X7R/16V/K

LABC10 0.1u4/X7R/16V/K

LABC9 0.1u4/X7R/16V/K

LABC3 0.1u4/X7R/16V/K

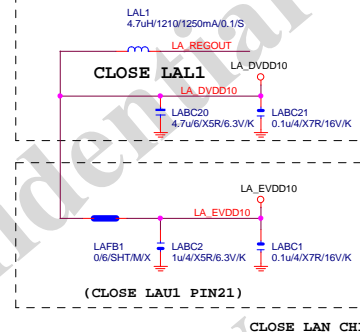
LABC19 0.1u4/X7R/16V/K

LABC17 0.1u4/X7R/16V/K

LABC8 0.1u4/X7R/16V/K

(CLOSE LAUI PIN3,6,9,13,29,41,45)

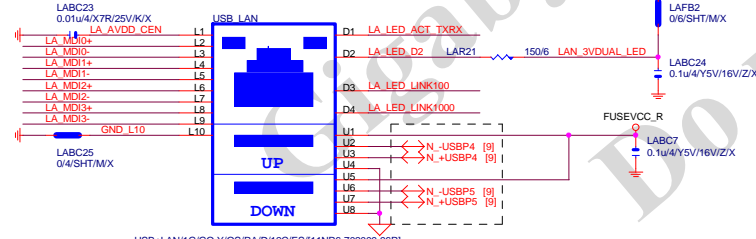
(CLOSE LAU1 PIN36)



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

EMI SHORT PAD

PS:視EMI需求

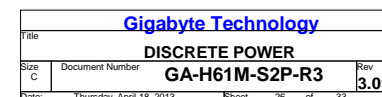


注意:USB PORT(目前:暫代6,7PORT)
USB-->90歐姆:[15/4.5/7.5/4.5/15]

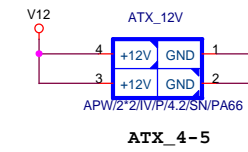
料號	規格	廠商
11NR6-702009-0ER	1G LAN (12core)	UDE
11NR6-702009-91R	1G LAN(8 core)	FOXCONN
11NR6-702009-92R	1G LAN(8 core)	UDE
11NR6-702009-11R	1G LAN(12core/RED)	UDE
11NR6-702009-12R	1G LAN(8 core/RED)	FOXCONN

USB_LAN BOM區分:

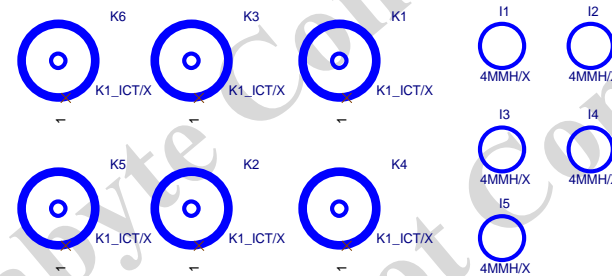
1. (紅色/12CORE/三倍):USB+LAN/1G/GO,Y/OS/RA/D/1/RED
2. (黑色/12CORE):USB+LAN/1G/GO,Y/OS/RA/D/1
3. (黑色/8CORE):USB+LAN/1G/GO,Y/OS/RA/D/8C



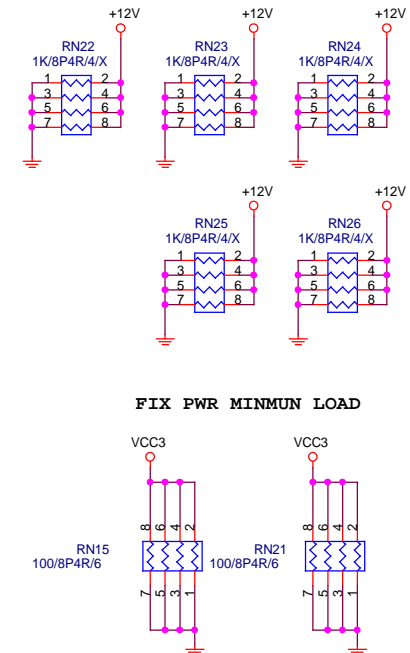
ATXX4 POWER CONNECTOR



FIX PWR MINMUN LOAD



```
| To prevent the 5VSB  
| under loading when  
| boot
```

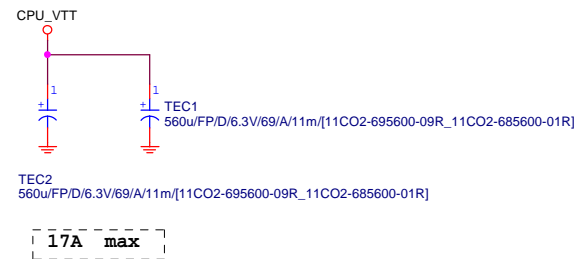
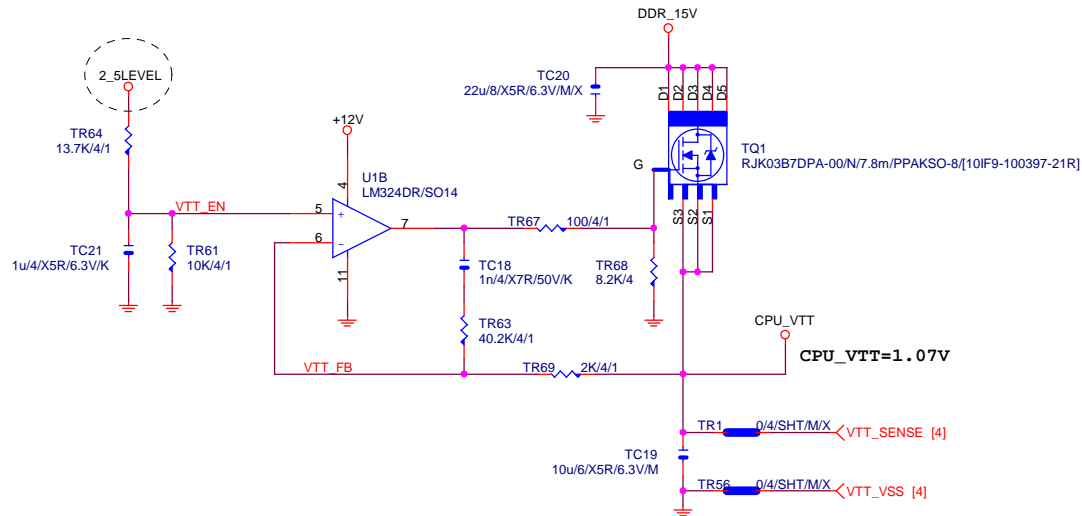


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ATX CONNECTOR

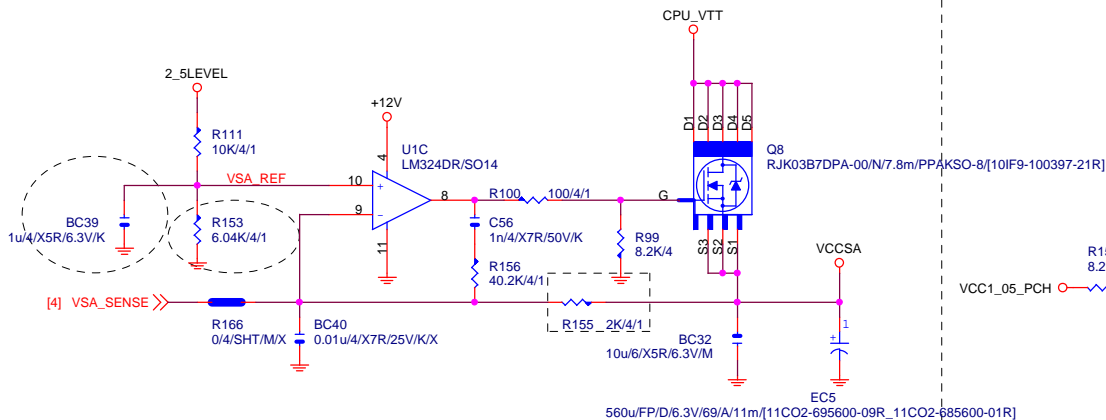
Size Custom	Document Number GA-H61M-S2P-R3	Rev 3.01
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CPU_VTT

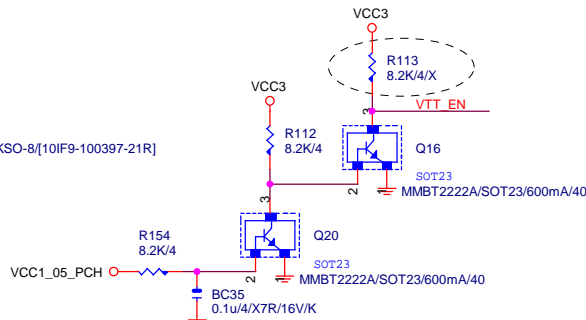


1.7A max

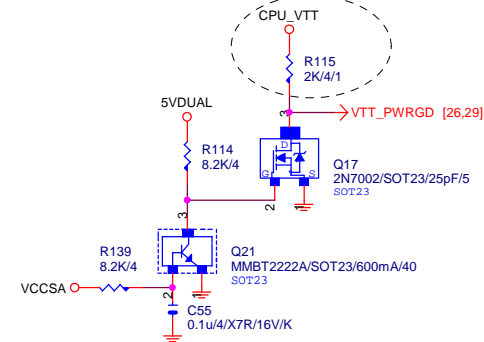
VCCSA



CPU_VTT PWR SEQ



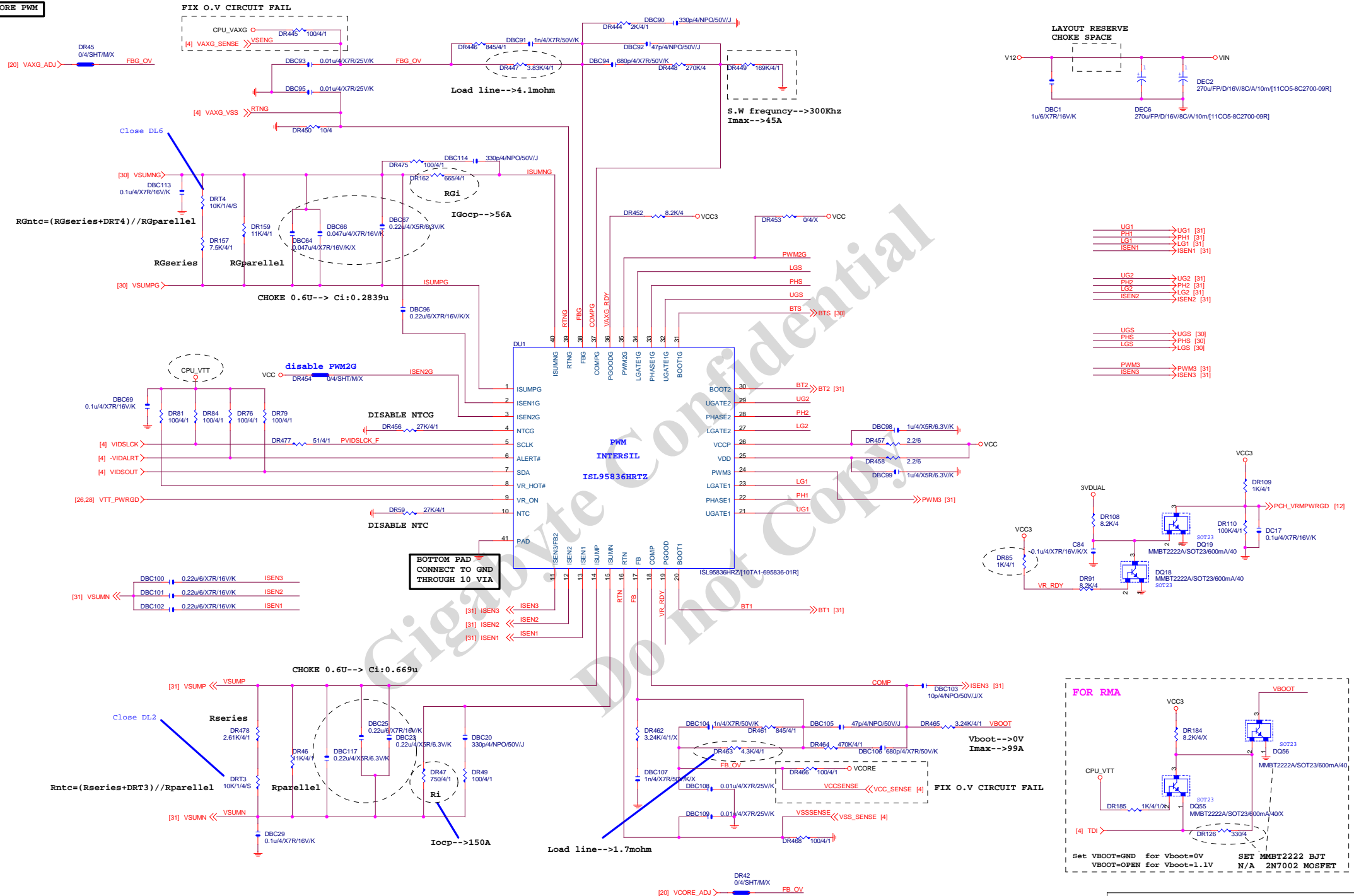
VTT_PWRGD



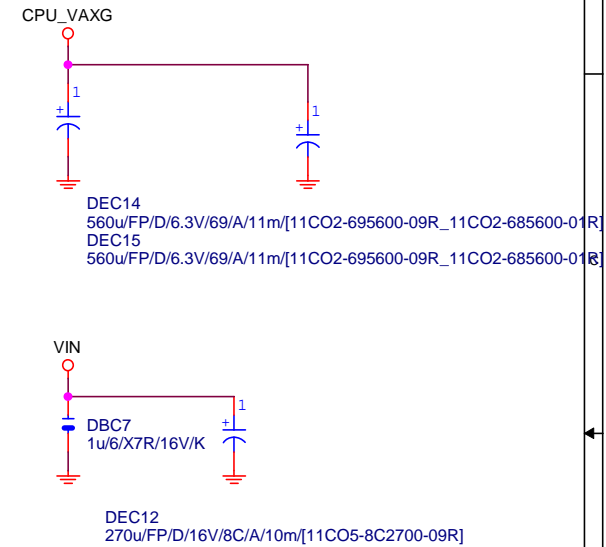
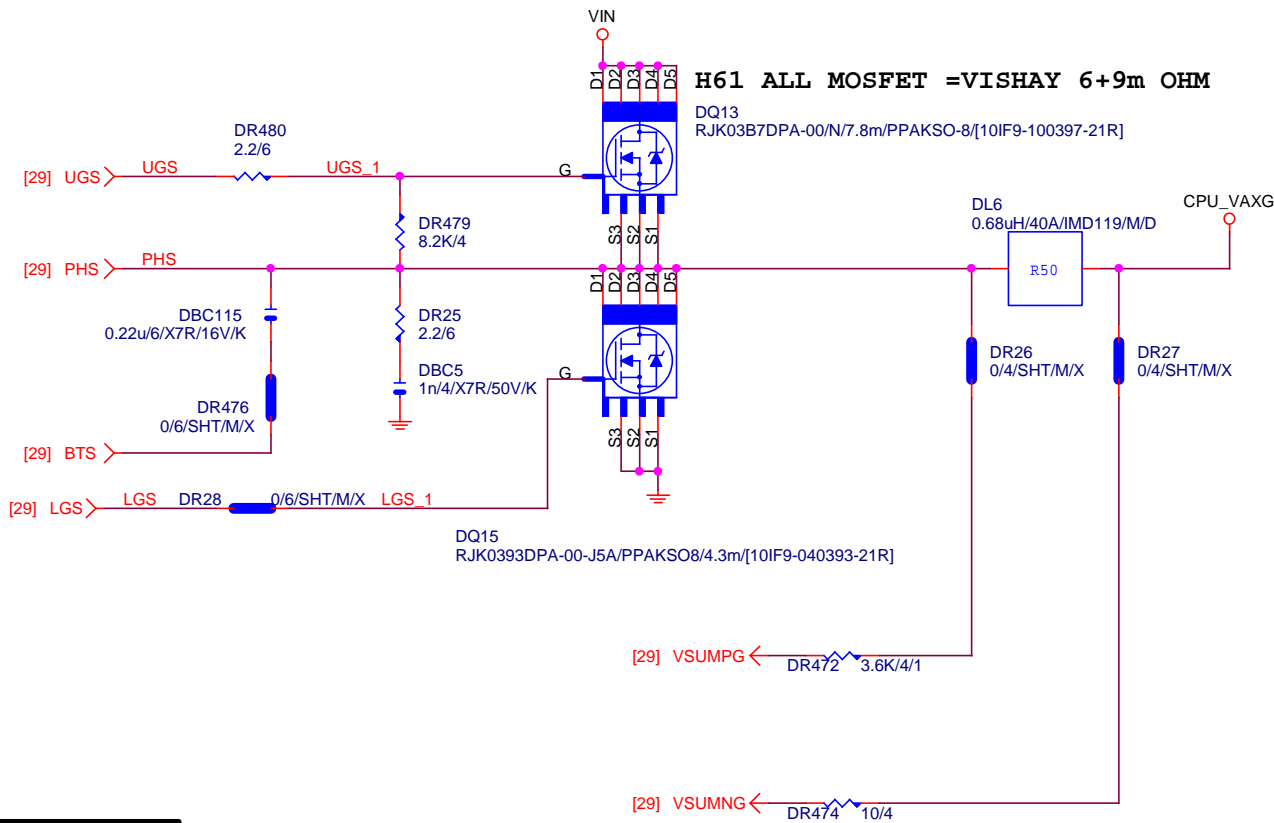
GIGABYTE™

Title		
CPU_VTT PWM_RT8120		
Size	Document Number	Rev
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VCORE PWM



VAXG

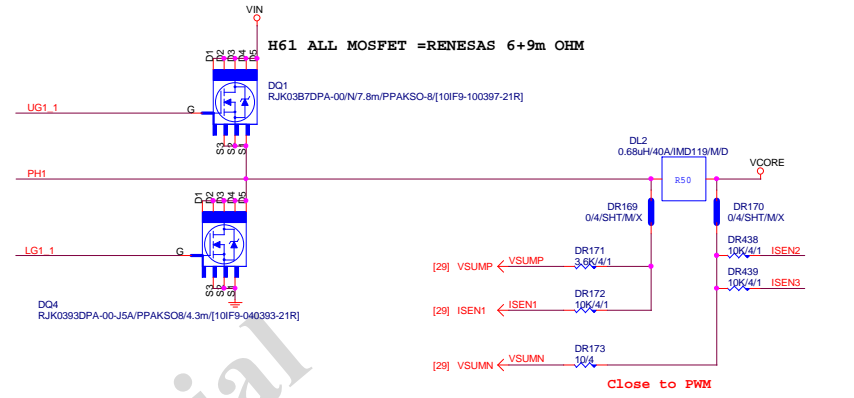
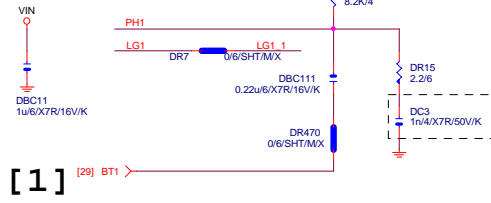


MOS HEATSINK

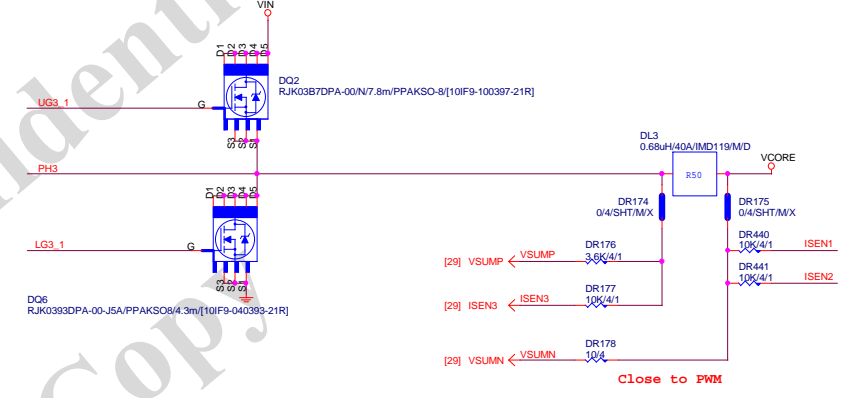
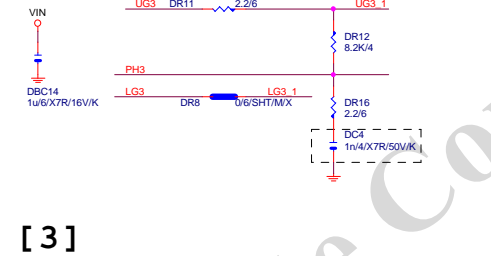
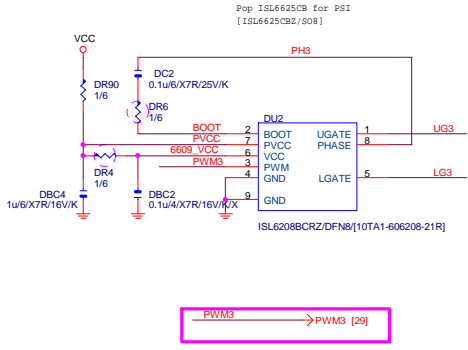
N/A

Gigabyte Technology			
Title			
CPU CORE VR-2			
Size	Document Number	GA-H61M-S2P-R3	
Custom		Rev 3.01	
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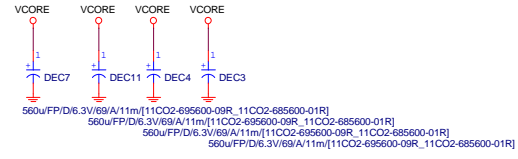
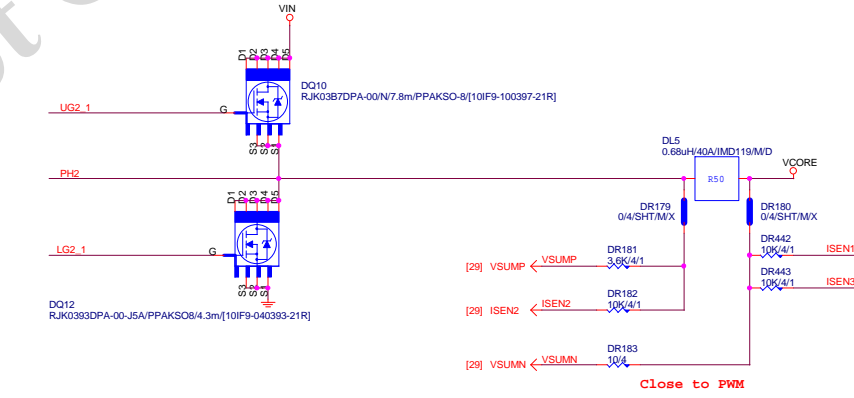
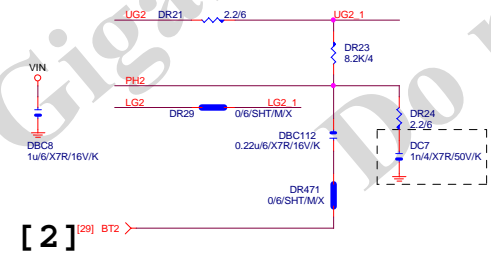
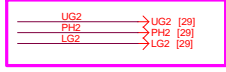
PHASE 1



PHASE 3



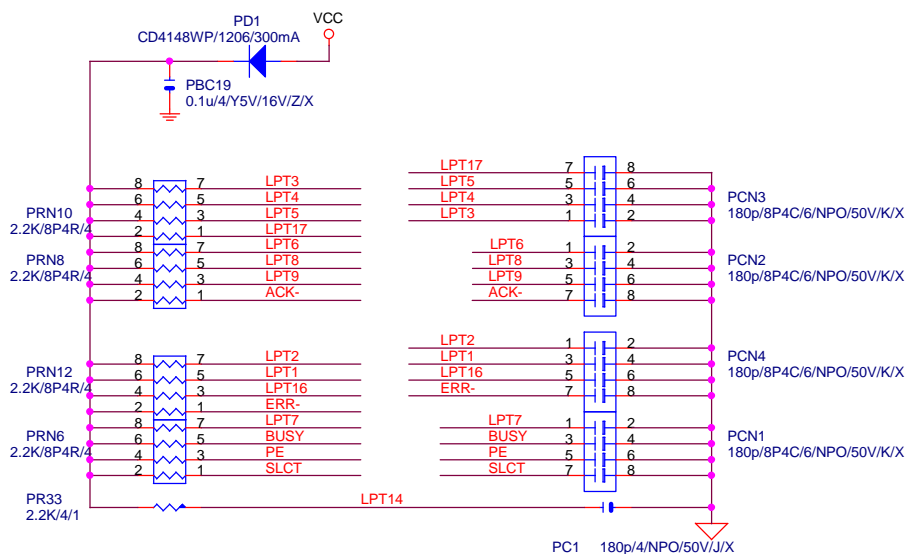
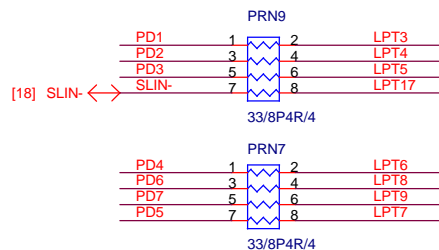
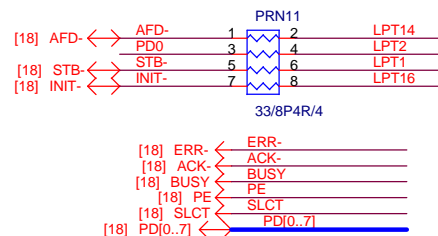
PHASE 2



TPM

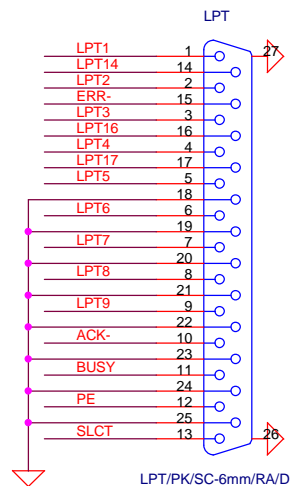
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LPT PORT



COMB

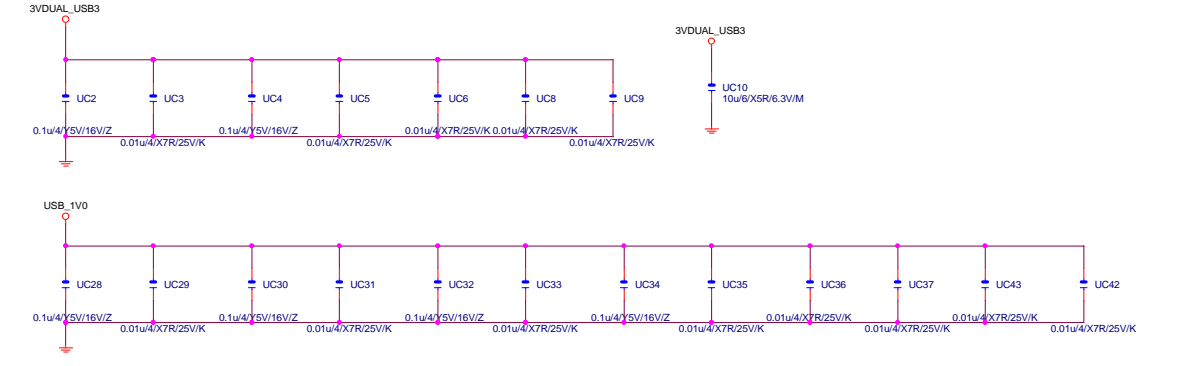
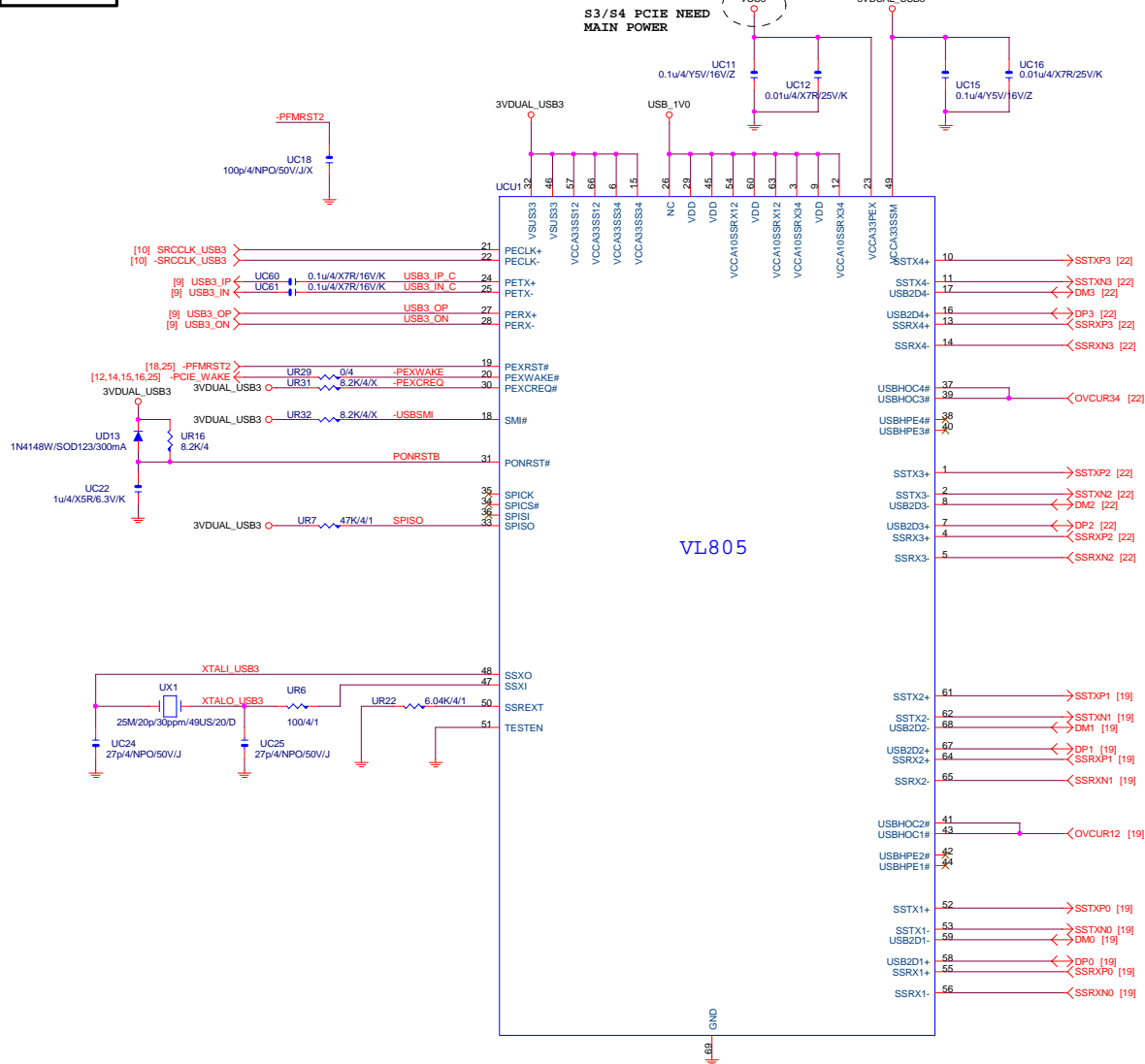
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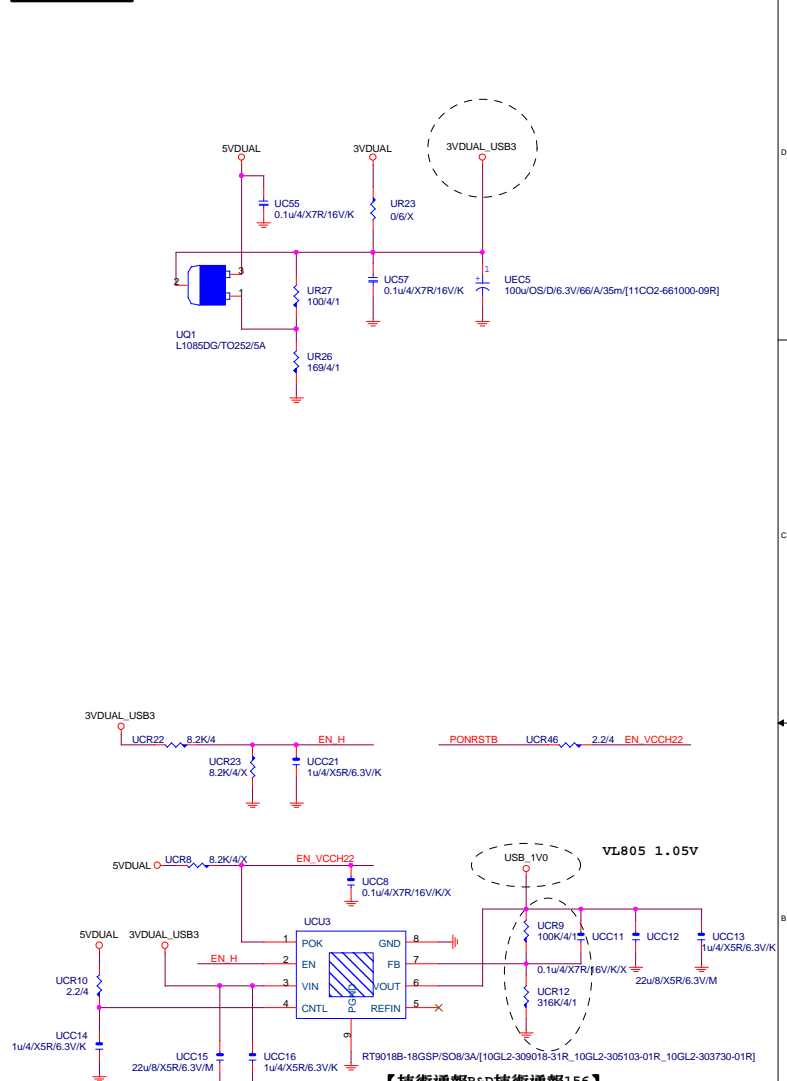
Gigabyte Technology

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Custom			Rev 3.01	
Date: Thursday, April 18, 2013			Sheet 32 of 33	

USB3.0 VL805



USB3.0 POWER



【技術通報R&D技術通報156】
RT9018 (RICHTER) 與 NCT3730 (NUVOTON),
EM5103GE (EMC) 做共用, 針對 PIN7 (FB) 分壓阻值部份
須做修改為 100K 以上電阻值