Model Name: GA-H61M-S2PV-WG *Revision 2.11*

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	RT8120_CPU_VTT
29	VCORE ISL95836_1
30	VCORE ISL95836_2
31	VCORE ISL95836_3
32	LPT
33	DVI

Gigabyte Technology

Title: Cover Sheet

Size: Custom | Document Number: GA-H61M-S2PV-WG | Rev: 2.11

Date: Tuesday, August 07, 2012 | Sheet 1 of 33

Model Name: GA-H61M-S2PV-WG

Revision 2.11

Component value change history

2012/07/31

Data	Change Item	Reason
2011/06/09	MODIFY FROM H61M-D2P-B3 R1.01. VCORE 3PHASE.LAN/CODEC.PCIE*1.	PBOM:9M61MS2PB-00-10B
2011/07/05	Update Rev: 1.1 Cost Down	
	Model Name Remove "-B3"	
2011/07/26	Model Name ADD "-B3"	
2011/08/04	P-BOM 9M61MS2PB-00-11B	
	Codec Change VIA VT2021	
2011/08/15	Rev: 1.2.LAN Change Realtek RTL8111E-VL.	
	Codec Change Realtek ALC887-VD2.Co-Lay IT8893.	
2011/09/07	R2.0.Add DVI PORT.COM Port Move to Fornt.	
2011/10/27	R2.01 ,PWM VCORE ISL95836+ISL6208B.	
	VTT/DDR RT8120.CODEC ALC887-VB2.COST DOWN.	
2011/10/27	R2.0 RENAME FROM H61M-S2P-B3 R2.01,Add DVI PORT.COM Port Move to Fornt.	
2011/11/29	R2.01 UPDATE ISL95836 CIRCUIT.	PBOM:9M61M2PV-00-20B.
2011/12/07	ECN U6 CHANGE RT9199.	
2011/12/08	MODIFY ISL95836 RC MATCH.	FPBOM:9M61M2PV-00-20C.
2011/12/21	MODIFY IT8728/EX.	PBOM:9M61M2PV-00-20D.
2012/01/17	ADD NXP LEVEL SHIFTER PTN3360BBS.	
2012/03/20	FOR JCH REMOVE DDR3 SOCKET LOTES.	PBOM:9M61M2PV-00-20E.
2012/04/27	FIX PWM O.V CIRCUIT FB FAIL, MODIFY LOAD LINE.	FPBOM:9M61M2PV-00-20F.
2012/05/25	MODIFY LAN REALTEK RTL8111F.ADD 4.7U/6 FOR POWER SUPPLY.	BOM:9M61M2PV-00-21A.
2012/06/19	PBOM.	PBOM:9M61M2PV-00-21A.
2012/07/09	R2.11.ADD CPU/SYS FAN +12V 防燒.	
2012/07/11	UPDATE DVI EMI .	
2012/07/31	FOR WG BOM.ADD EMI LPT CAPACITOR.DVI SHIELD.	PBOM:9M61M2PV-WG-21B.

Circuit or PCB layout change

DATE	Change Item	Reason

Gigabyte Technology

Title: BOM & PCB MODIFY HISTORY

Size: Custom | Document Number: GA-H61M-S2PV-WG | Rev: 2.11

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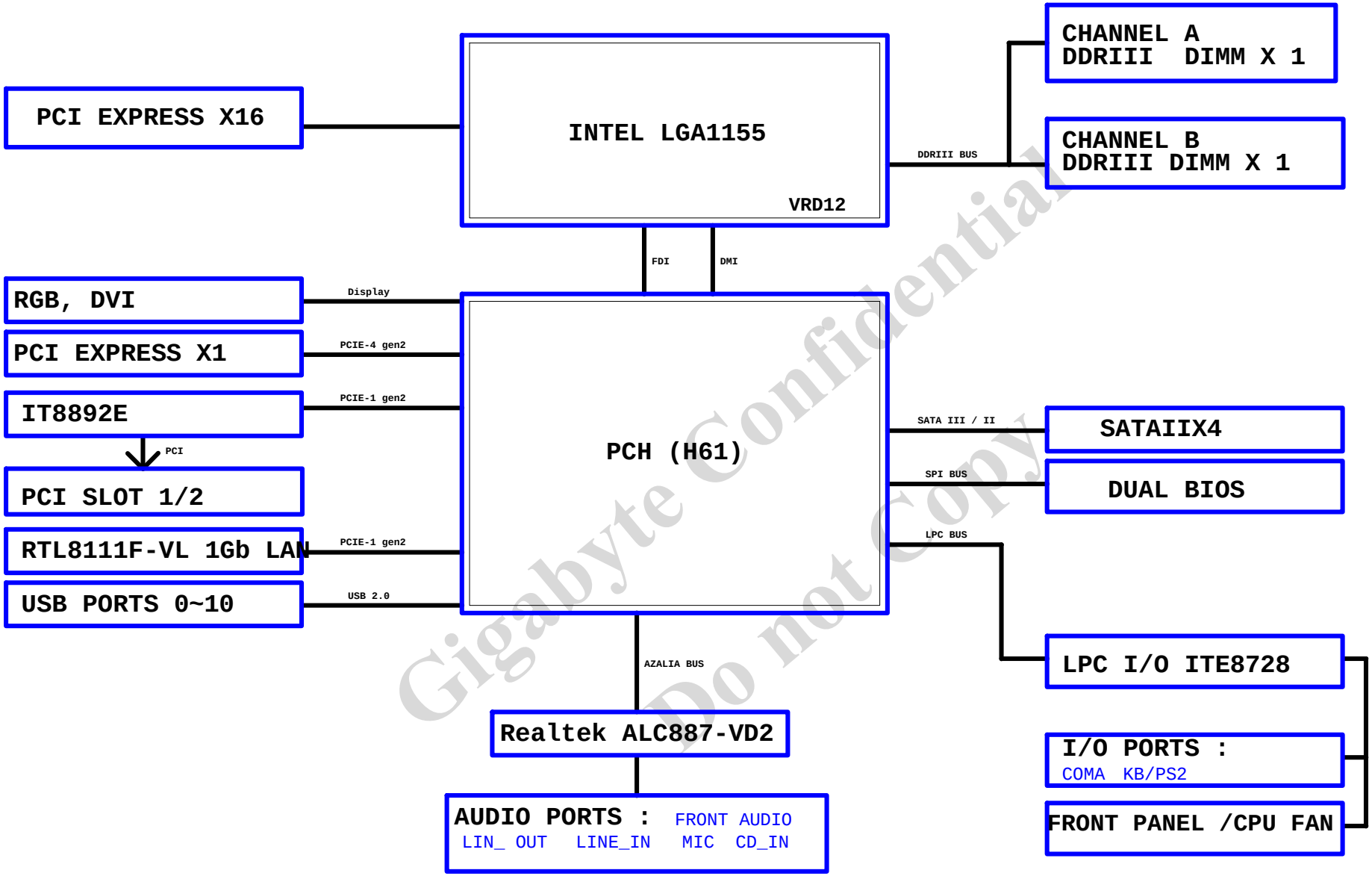
BLOCK DIAGRAM



Gigabyte Technology			
Title: BLOCK DIAGRAM			
Size: C	Document Number: GA-H61M-S2PV-WG		Rev: 2.11
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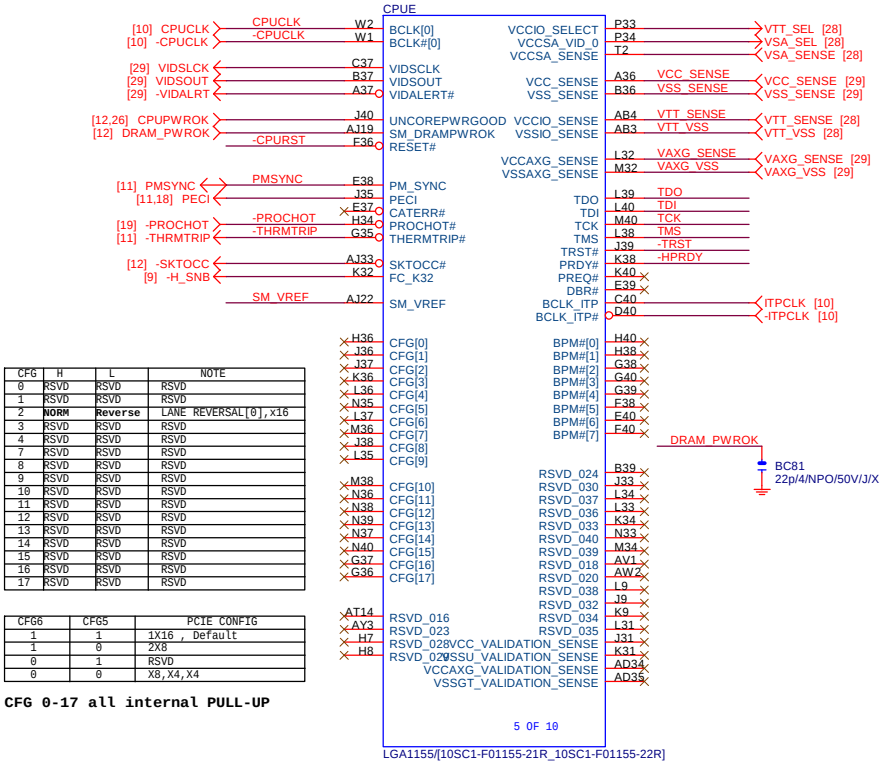
CPU E

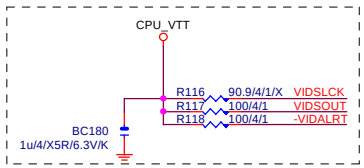


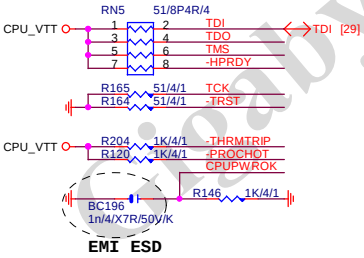
LGA1155/[10SC1-F01155-21R_10SC1-F01155-22R]

CFG	H	L	NOTE
0	RSVD	RSVD	RSVD
1	RSVD	RSVD	RSVD
2	**NORM**	**Reverse**	LANE REVERSAL[0],x16
3	RSVD	RSVD	RSVD
4	RSVD	RSVD	RSVD
7	RSVD	RSVD	RSVD
8	RSVD	RSVD	RSVD
9	RSVD	RSVD	RSVD
10	RSVD	RSVD	RSVD
11	RSVD	RSVD	RSVD
12	RSVD	RSVD	RSVD
13	RSVD	RSVD	RSVD
14	RSVD	RSVD	RSVD
15	RSVD	RSVD	RSVD
16	RSVD	RSVD	RSVD
17	RSVD	RSVD	RSVD

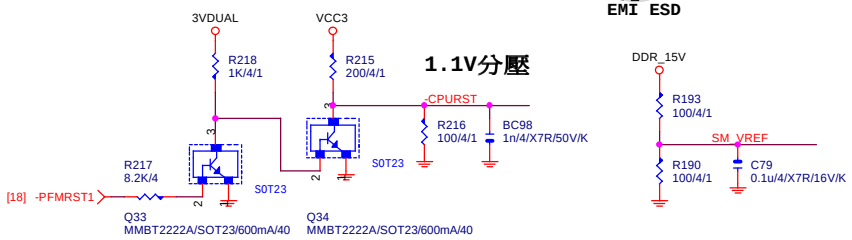
CFG6	CFG5	PCIE CONFIG
1	1	1X16 , Default
1	0	2X8
0	1	RSVD
0	0	X8,X4,X4

CFG 0-17 all internal PULL-UP

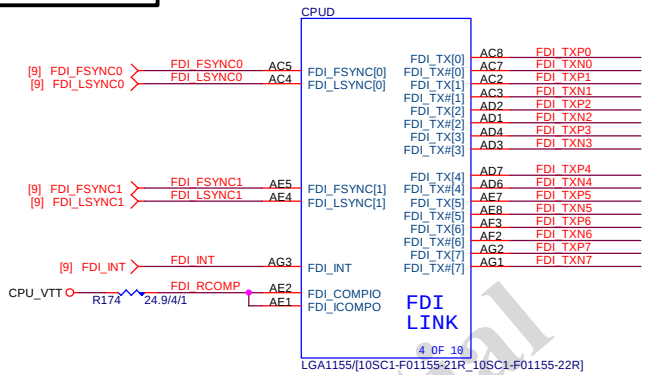




EMI ESD

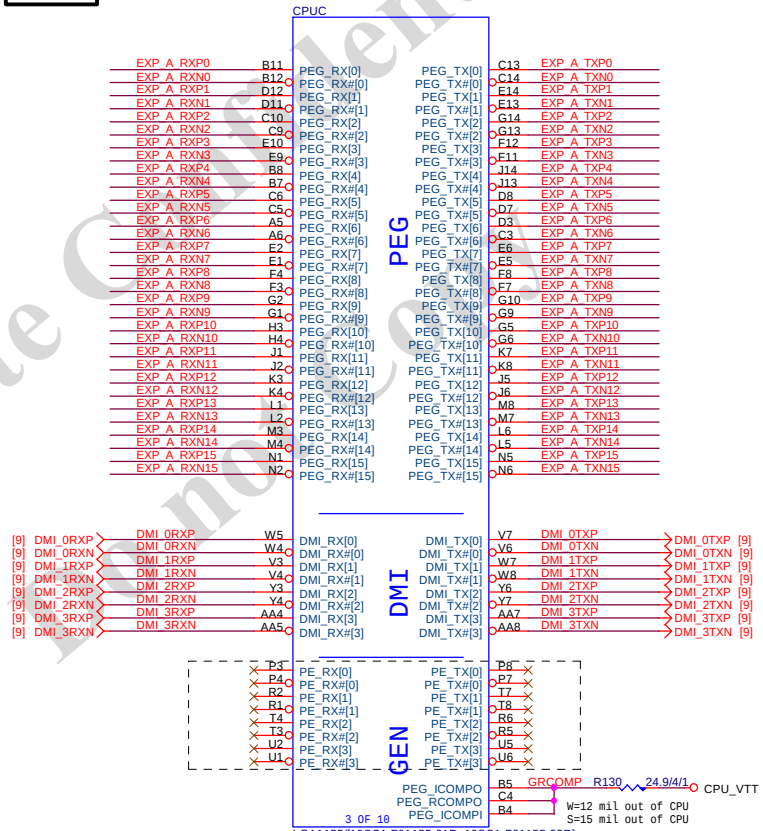


CPU D FDI



LGA1155/[10SC1-F01155-21R_10SC1-F01155-22R]

CPU C



LGA1155/[10SC1-F01155-21R_10SC1-F01155-22R]

STITCHING CAP.

N/A

Stitching caps for PCIE,DMI,FDI bus

Gigabyte Technology			
Title: CPU LGA1155-A			
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CPU_A

CPUA

DDR_0

1 OF 10

LGA1155/[10SC1-F01155-21R_10SC1-F01155-22R]

CPU_B

CPUB

DDR_1

2 OF 10

LGA1155/[10SC1-F01155-21R_10SC1-F01155-22R]

CPU_SOCKET

CR

CPU RETAINTION/X

Need check the new CPU ME

CPU_P

ILM_BP/1156/CSP/ILM_BP/1156/CSP/[12KRC-0F0001-05R_12KRC-0F0001-31R]

DDR_SIGNAL

VREF_DQA

VREF_DQB

BC80 0.1u/4/X7R/16V/K

BC82 0.1u/4/X7R/16V/K

Place in CPU bottom side

[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] MAAA[0..15] — MAAA[0..15]

[8] MAAB[0..15] — MAAB[0..15]

[8] DQSB[0..7] — DQSB[0..7]

[8] -DQSB[0..7] — -DQSB[0..7]

Gigabyte Technology			
Title: CPU LGA1156-B			
Size: Custom	Document Number: GA-H61M-S2PV-WG		Rev: 2.11
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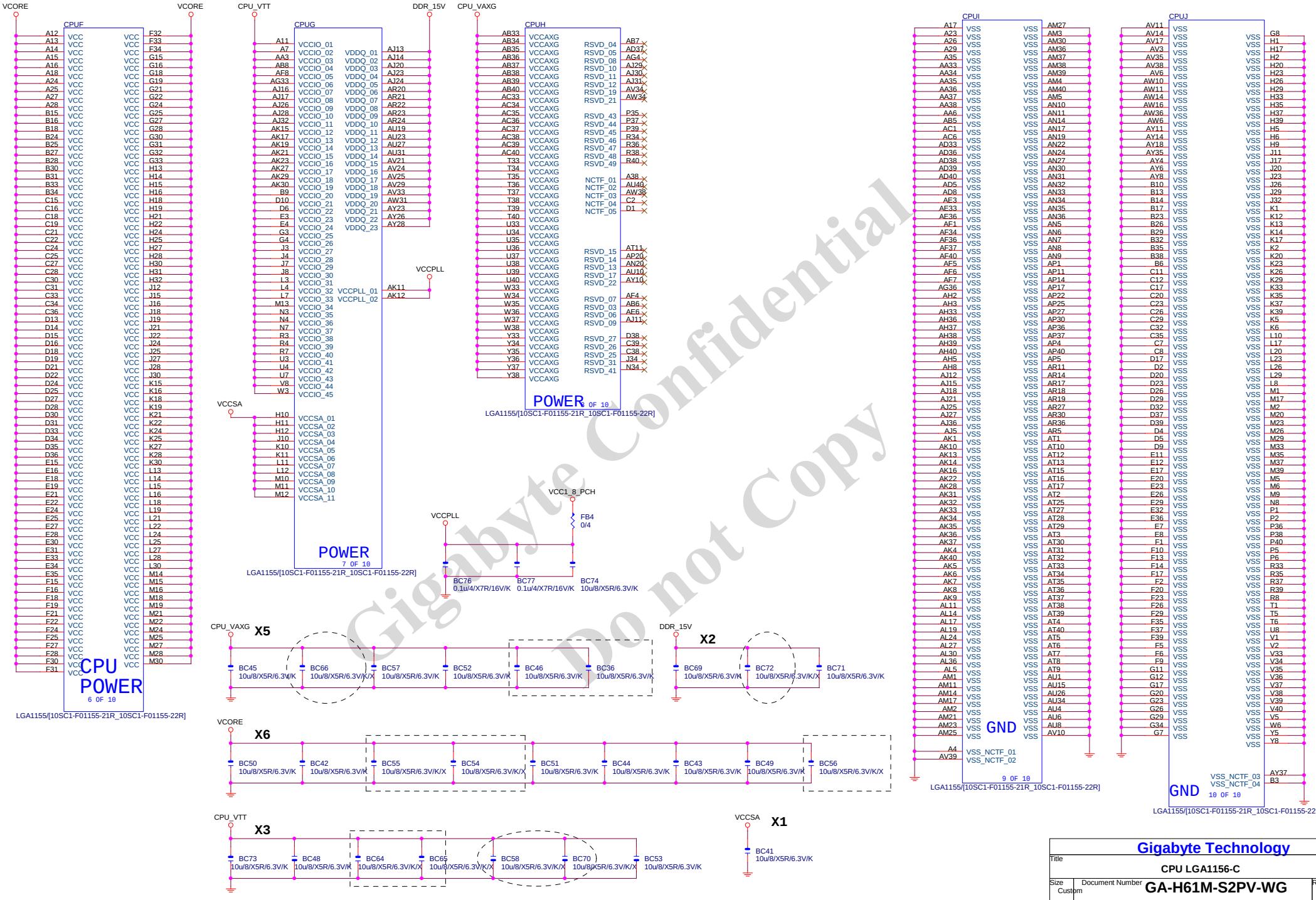
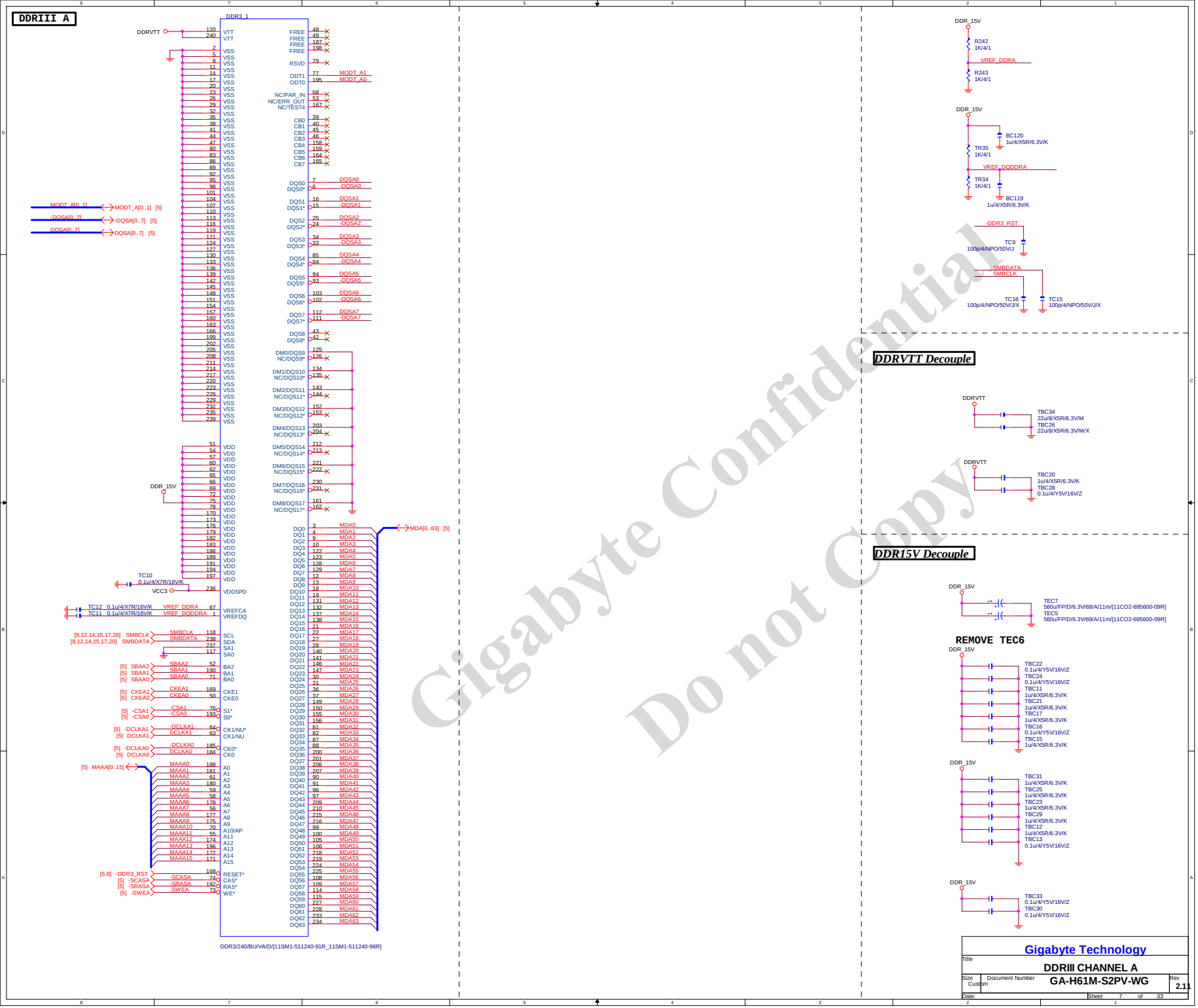
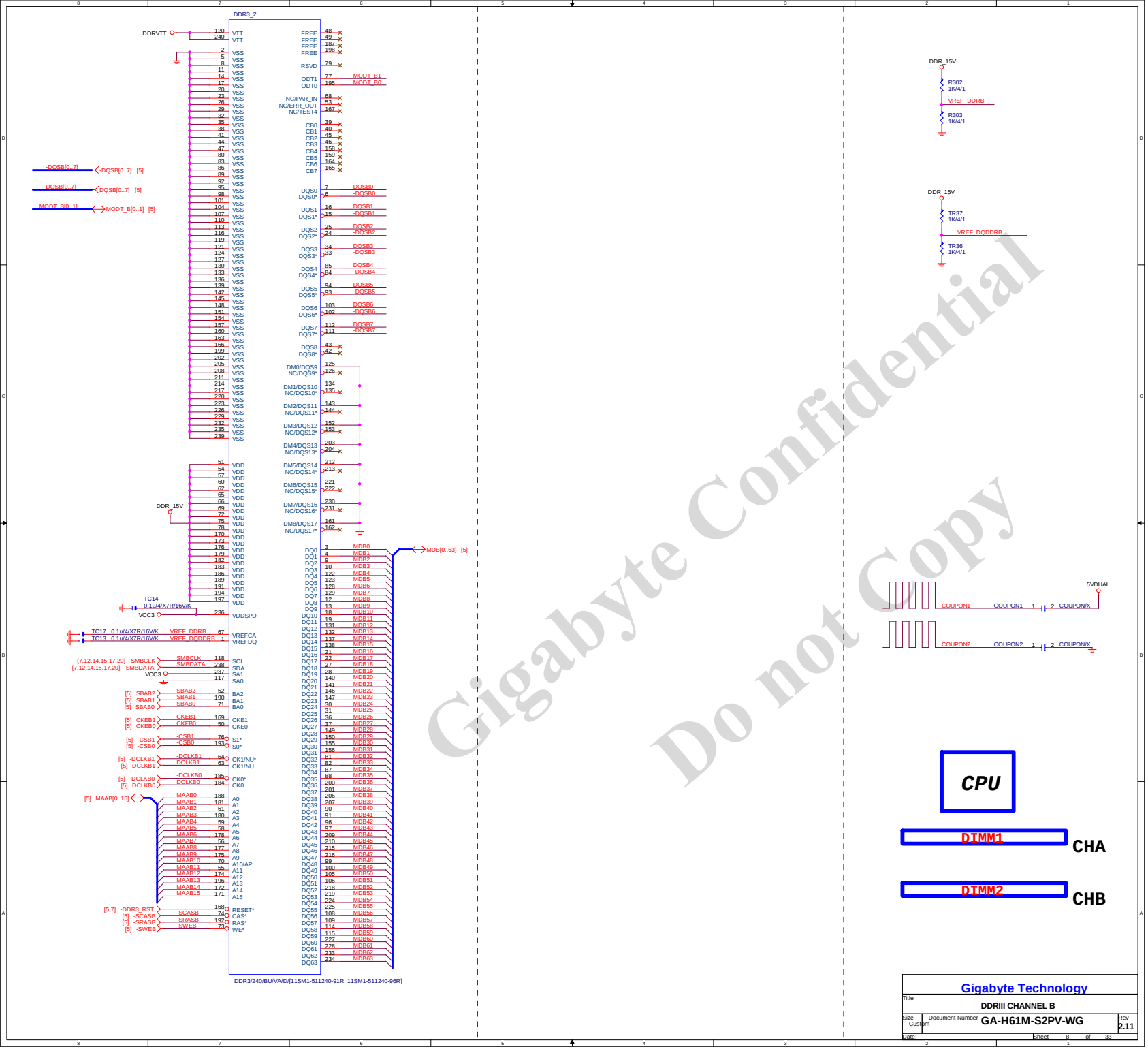
CPU F,G,H POWER



CPU I,J GND

Gigabyte Technology		
Title: CPU LGA1156-C		
Size: Custom	Document Number: GA-H61M-S2PV-WG	Rev: 2.11
Date: Tuesday, August 07, 2012	Sheet 6 of 33	

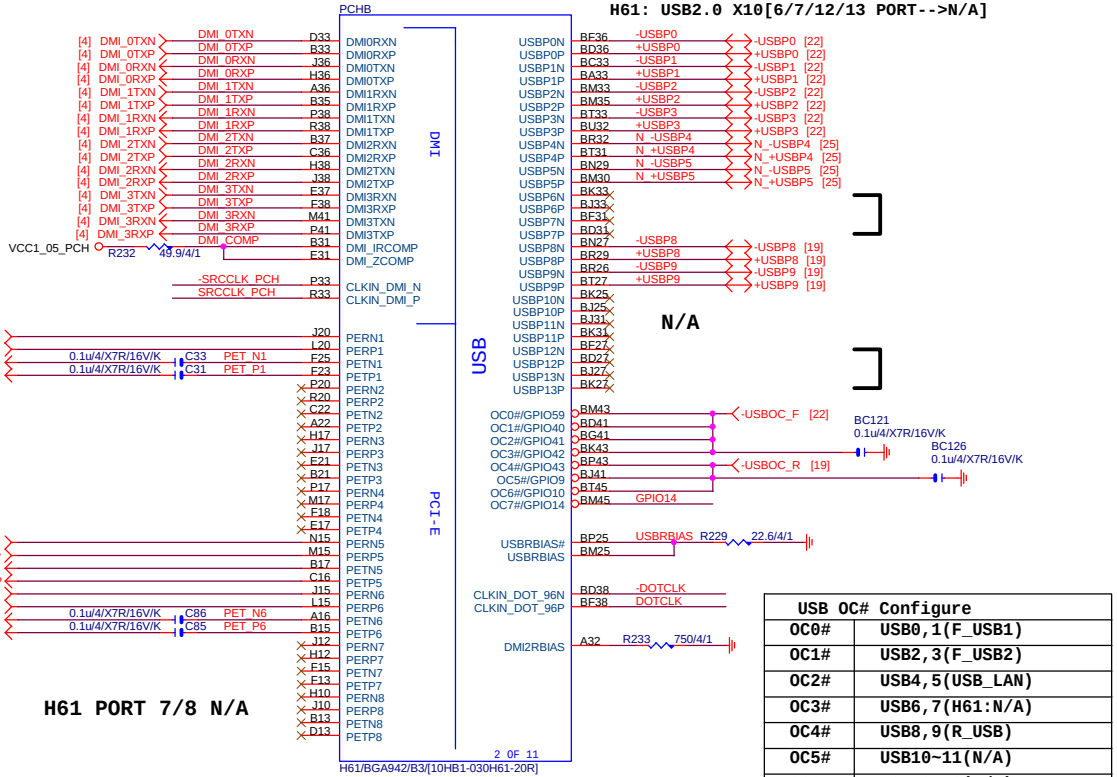




Gigabyte Technology			
Title: DDRIII CHANNEL B			
Size: Custom	Document Number: GA-H61M-S2PV-WG	Rev: 2.11	
Date:	Sheet 8 of 33		

PCH B

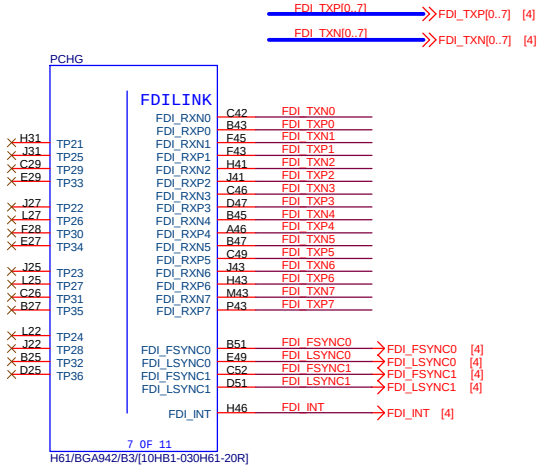
H67: USB2.0 X14
B65: USB2.0 X12[6/7 PORT-->N/A]
H61: USB2.0 X10[6/7/12/13 PORT-->N/A]

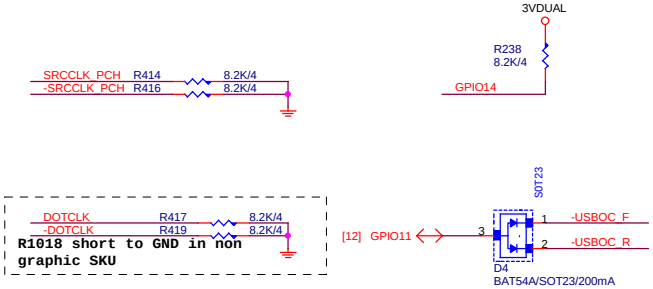


H61 PORT 7/8 N/A

USB OC# Configure	
OC0#	USB0,1(F_USB1)
OC1#	USB2,3(F_USB2)
OC2#	USB4,5(USB_LAN)
OC3#	USB6,7(H61:N/A)
OC4#	USB8,9(R_USB)
OC5#	USB10~11(N/A)
OC6#	USB12~13(N/A)
OC7#	GPIO14

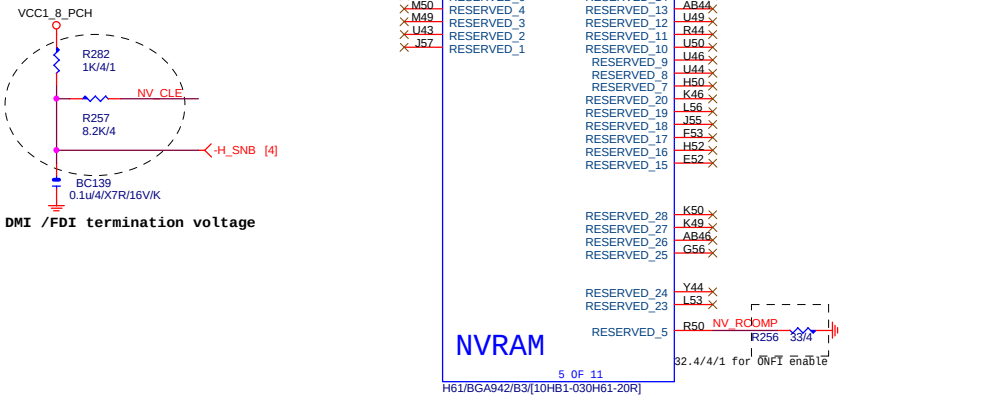
PCH G FDI





FOR FUSE SHORT GPIO

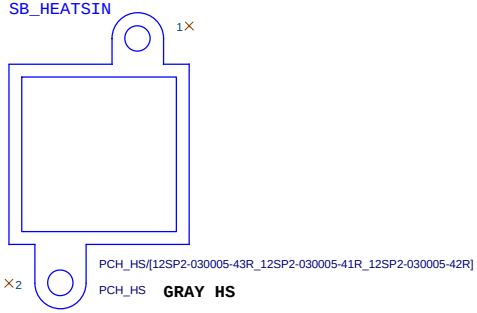
PCH E



DMI /FDI termination voltage

PCH HS

LOW COST ICH7 HEATSINK



GRAY HS

Gigabyte Technology		
Title: PCH FDI,DMI,USB ,PCIE,NVRAM		
Size: Custom	Document Number: GA-H61M-S2PV-WG	Rev: 2.11
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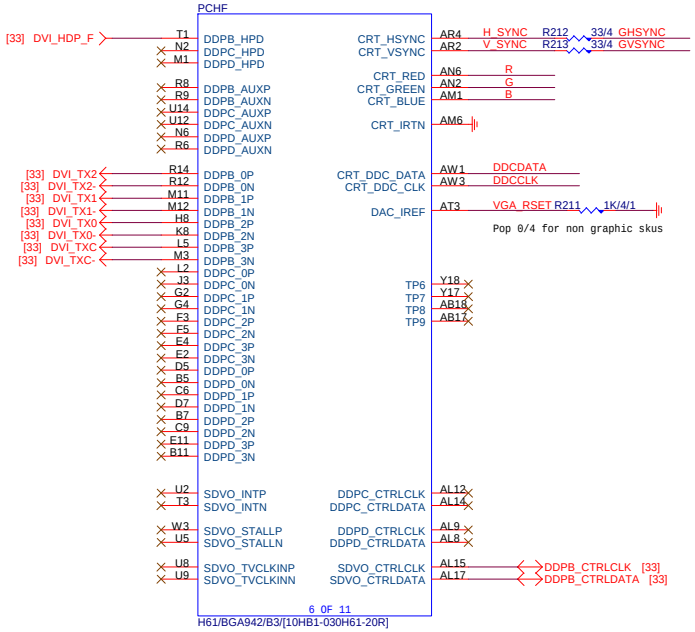
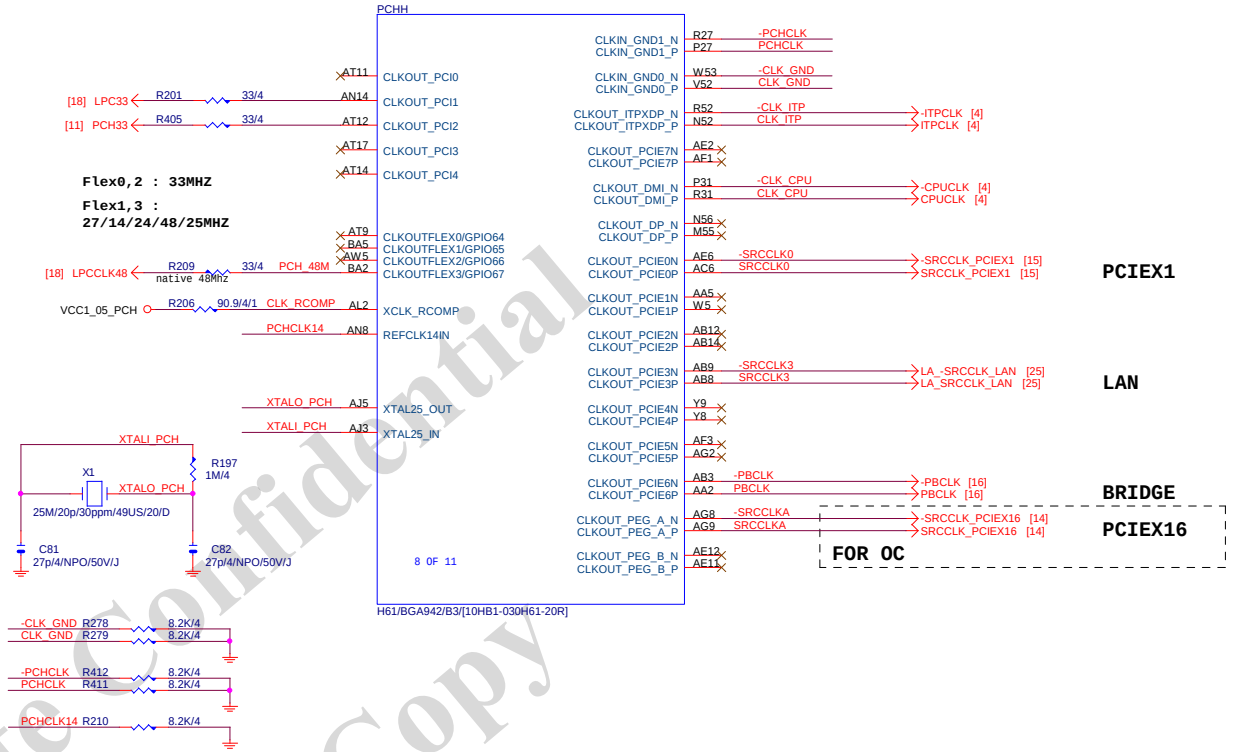
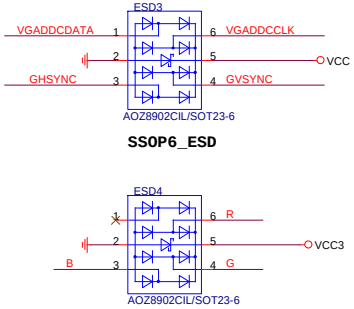
PCH F DISPLAY



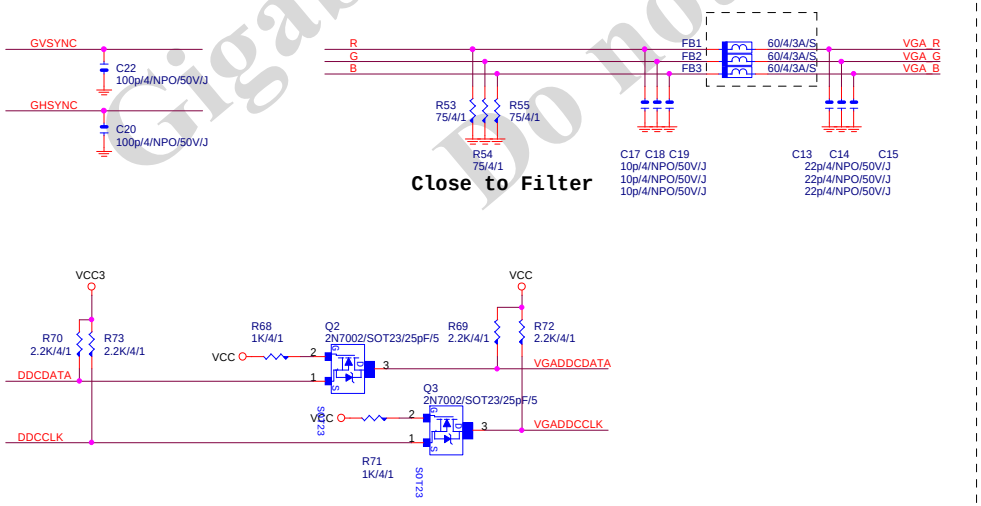
PCH H CLK BUFFER



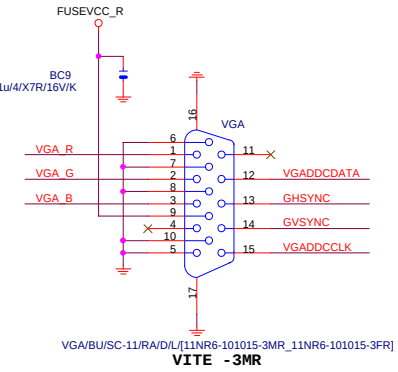
VGA ESD



VGA SIGNAL



D-SUB



Gigabyte Technology		
Title	PCH DISPLAY ,CLK BUFFER	
Size: Custom	Document Number: GA-H61M-S2PV-WG	Rev: 2.11
Date: Tuesday, August 07, 2012	Sheet 10 of 33	

PCH C

PCHC

For WIFI

BA50 CL_CLK1
BF50 CL_DATA1
BF49 CL_RST1#
CLINK

[12,18] PWROK1 — BC46 APWROK

BN21 PWM0
BT21 PWM1
BM20 PWM2
BN19 PWM3

GPIO17 BT17 TACH0/GPIO17
GPIO1 BR19 TACH1/GPIO1
GPIO6 BA22 TACH2/GPIO6
GPIO7 BR16 TACH3/GPIO7
GPIO68 BU16 TACH4_GPIO68
BM18 TACH5_GPIO69
GPIO70 BN17 TACH6_GPIO70
GPIO71 BP15 TACH7_GPIO71
FAN

[18] SSTCTL — BC43 SST

GPIO22 BA53 SCLOCK/GPIO22
GPIO38 BE54 SLOAD/GPIO38
GPIO39 BF55 SDATAOUT0/GPIO39
GPIO48 AW53 SDATAOUT1/GPIO48
GPIO

AY20 NC_5

SATA3

SATA0RXN AC56 SATA0RXN
SATA0RXP AB55 SATA0RXP
SATA0TXN AE46 SATA0TXN
SATA0TXP AE44 SATA0TXP
SATA1RXN AA53 SATA1RXN
SATA1RXP AA56 SATA1RXP
SATA1TXN AG49 SATA1TXN
SATA1TXP AG47 SATA1TXP

SATA2

SATA2RXN AL50
SATA2RXP AL49
SATA2TXN AL56
SATA2TXP AL53
SATA3RXN AN46
SATA3RXP AN44
SATA3TXN AN56
SATA3TXP AM55
SATA4RXN AN49 SATA4RXN
SATA4RXP AN50 SATA4RXP
SATA4TXN AT50 SATA4TXN
SATA4TXP AT49 SATA4TXP
SATA5RXN AT46 SATA5RXN
SATA5RXP AT44 SATA5RXP
SATA5TXN AV50 SATA5TXN
SATA5TXP AV49 SATA5TXP

CLKIN_SATA_N AF55 -SRCCLK_SATA
CLKIN_SATA_P AG56 SRCCLK_SATA

SATALED# BF57 -SATALED [22]
SATAICOMPI AJ55
SATAICOMPO AJ53 SATACOMP R286 37.4/4/1 VCC1_05_PCH

SATA0GP/GPIO21 BC54 GPIO21
SATA1GP/GPIO19 AY52 GPIO19
SATA2GP/GPIO36 BB55
SATA3GP/GPIO37 BG53
SATA4GP/GPIO16 AU56 GPIO16
SATA5GP/GPIO49 BA56 TEMP_ALART-

SATA3COMPI AE54
SATA3RCOMPO AE52 SATA3COMP R287 49.9/4/1 VCC1_05_PCH

TP16 AE50

SATA3RBIAS AC52 SATA3BIAS R288 750/4/1

HOST

A20GATE BB57 A20GATE — A20GATE [18]
INIT3_3V# BN56
RCIN# BG56 -KBRST — -KBRST [18]
SERIRQ AV52 SERIRQ — SERIRQ [18]
THRMTRIP# E56 -THRMTRIP — -THRMTRIP [4]
PECI H48 SB_PECI
PMSYNCH F55 PMSYNC [4]

3 OF 11
H61/BGA942/B3/[10HB1-030H61-20R]

B65 SATA3.0 ONLY PORT0
H61 N/A

FDI RX
[18] TEMP_ALART- — R310 1K/4/1/X
GPIO19 TEMP_ALART- GPIO22 A20GATE — RN16 8.2K/8P4R/4
GPIO16 SERIRQ GPIO48 GPIO0 — RN17 8.2K/8P4R/4
[12] GPIO0
GPIO21 GPIO38 GPIO39 GPIO20 — RN18 8.2K/8P4R/4
[12] GPIO20
-KBRST — R304 1K/4/1
VCC3

SRCCLK_SATA R261 8.2K/4
-SRCCLK_SATA R262 8.2K/4

VCC3
RN12 8.2K/8P4R/4: GPIO70 GPIO6 GPIO17 GPIO1 -PIRQG GPIO68 GPIO7
RN11 8.2K/8P4R/4

MB-ID
R224 8.2K/4/X GPIO17
R333 8.2K/4/X GPIO19

PCH A

PCHA

[10] PCH33 — PCH33 BD15
-DEVSEL BH9
-IRDY BF11
-SERR BR6
-STOP BC12
-PLOCK BA17
-TRDY BC8
-PERR BM3
-FRAME BC11
BH8 PAR
DEVSEL#
CLKIN_PCILOOPBACK
PCIRST#
IRDY#
PME#
SERR#
STOP#
PLOCK#
TRDY#
PERR#
FRAME#

[21] -GNT0 — -GNT0 BA15
[21] -GNT1 — -GNT1 AV8
BU12 GNT0#
BE2 GNT1#/GPIO51
GNT2#/GPIO53
GNT3#/GPIO55

-REQ0 BG5
-REQ1 BT5
-REQ2 BK8
-REQ3 AV11
REQ0#
REQ1#/GPIO50
REQ2#/GPIO52
REQ3#/GPIO54

-PIRQA BK10
-PIRQB BJ5
-PIRQC BM15
-PIRQD BP5
-PIRQE BN9
-PIRQF AV9
-PIRQG BT15
-PIRQH BR4
PIRQA#
PIRQB#
PIRQC#
PIRQD#
PIRQE#/GPIO2
PIRQF#/GPIO3
PIRQG#/GPIO4
PIRQH#/GPIO5

AD0 BF15
AD1 BF17
AD2 BT7
AD3 BT13
AD4 BG12
AD5 BN11
AD6 BJ12
AD7 BU9
AD8 BR12
AD9 BJ3
AD10 BR9
AD11 BJ10
AD12 BM8
AD13 BF3
AD14 BN2
AD15 BE4
AD16 BE6
AD17 BG15
AD18 BC6
AD19 BT11
AD20 BA14
AD21 BL2
AD22 BC4
AD23 BL4
AD24 BC2
AD25 BM13
AD26 BA9
AD27 BF9
AD28 BA8
AD29 BF8
AD30 AV17
AD31 BK12

C/BE0# BN4
C/BE1# BP7
C/BE2# BG2
C/BE3# BP13

PCI
1 OF 11
H61/BGA942/B3/[10HB1-030H61-20R]

RN7 8.2K/8P4R/4: -PERR -REQ0 -REQ3 -TRDY — VCC
RN6 8.2K/8P4R/4: -DEVSEL -SERR -REQ1 -REQ2 — VCC
RN8 8.2K/8P4R/4: -STOP -PLOCK -IRDY -FRAME — VCC
RN9 8.2K/8P4R/4: -PIRQA -PIRQB -PIRQD -PIRQF — VCC3
RN10 8.2K/8P4R/4: GPIO71 -PIRQC -PIRQE -PIRQH

SATA CONN.

SATA2_0
SATA0TXP 0.01u/4/X7R/25V/K C114 SATA0TXPC
SATA0TXN 0.01u/4/X7R/25V/K C118 SATA0TXNC
SATA0RXN 0.01u/4/X7R/25V/K C125 SATA0RXNC
SATA0RXP 0.01u/4/X7R/25V/K C129 SATA0RXPC
GND T+ T- GND R- R+ GND
SATA2/7/BU/H/OP/VA/D/1/B

SATA2_2
SATA4TXP 0.01u/4/X7R/25V/K C112 SATA4TXPC
SATA4TXN 0.01u/4/X7R/25V/K C116 SATA4TXNC
SATA4RXN 0.01u/4/X7R/25V/K C123 SATA4RXNC
SATA4RXP 0.01u/4/X7R/25V/K C127 SATA4RXPC
GND T+ T- GND R- R+ GND
SATA2/7/BU/H/OP/VA/D/1/B

SATA2_1
SATA1TXP 0.01u/4/X7R/25V/K C113 SATA1TXPC
SATA1TXN 0.01u/4/X7R/25V/K C117 SATA1TXNC
SATA1RXN 0.01u/4/X7R/25V/K C124 SATA1RXNC
SATA1RXP 0.01u/4/X7R/25V/K C128 SATA1RXPC
GND T+ T- GND R- R+ GND
SATA2/7/BU/H/OP/VA/D/1/B

H61 SATA3.0 N/A

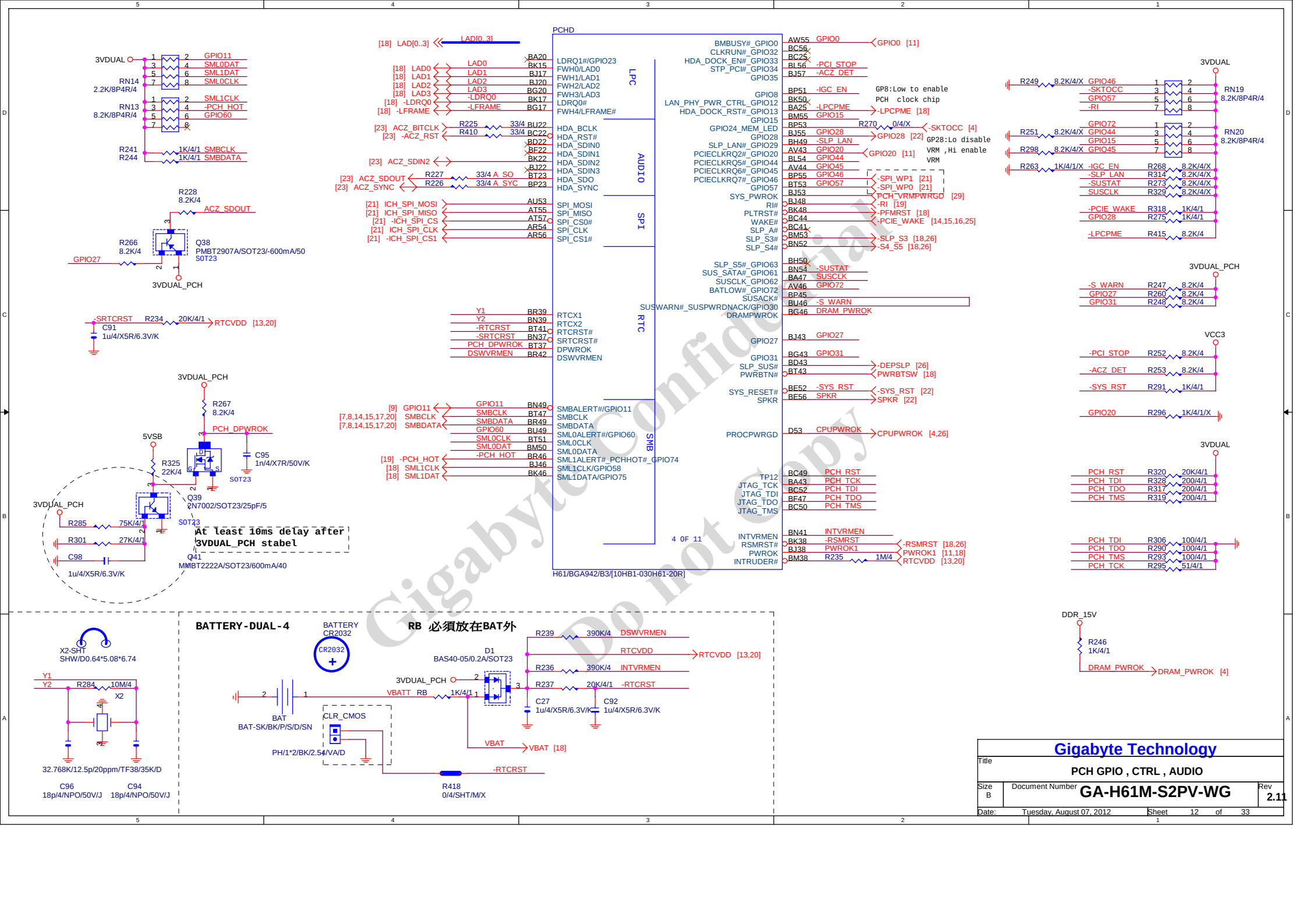
SATA2_3
SATA5TXP 0.01u/4/X7R/25V/K C111 SATA5TXPC
SATA5TXN 0.01u/4/X7R/25V/K C115 SATA5TXNC
SATA5RXN 0.01u/4/X7R/25V/K C122 SATA5RXNC
SATA5RXP 0.01u/4/X7R/25V/K C126 SATA5RXPC
GND T+ T- GND R- R+ GND
SATA2/7/BU/H/OP/VA/D/1/B

H1X7-SATA2-HS-MASK

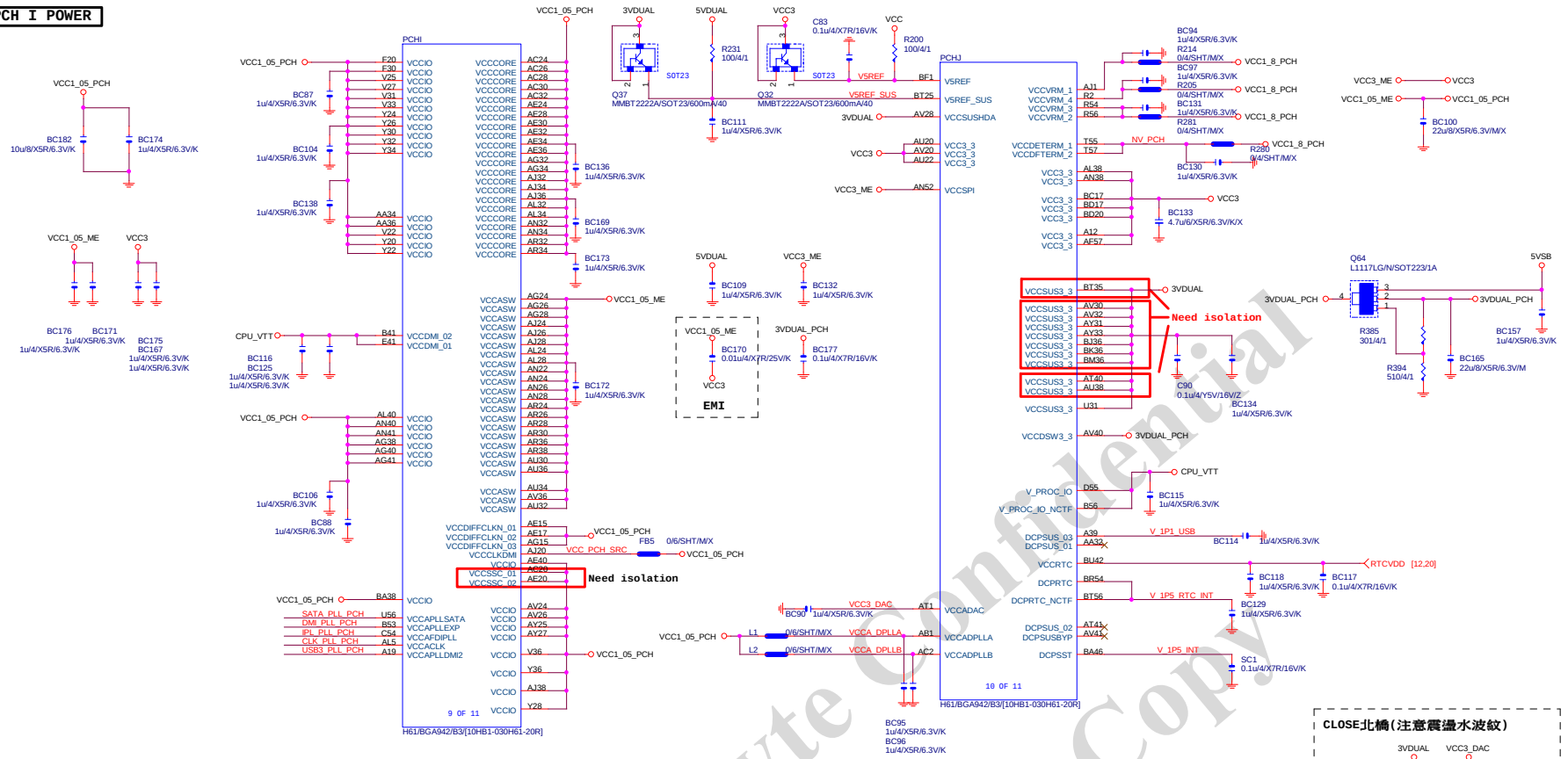
N/A

VCC
R265 8.2K/4/X
[18] PECI_CTL — R283 1K/4/1/X
PECI — PECI [4,18]
Q40 MMBT2222A/SOT23/600mA/40/X
S0T23_SB_PECI

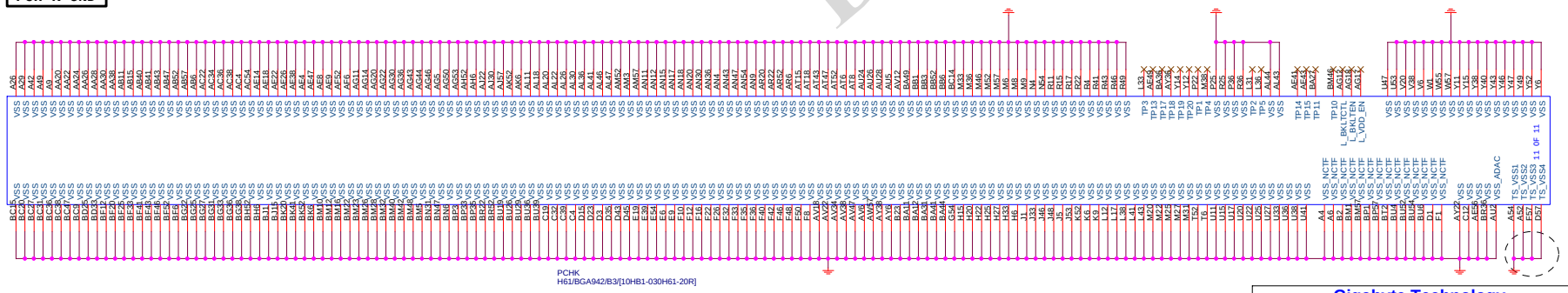
Gigabyte Technology			
Title: PCH HOST , SATA, PCI			
Size: B	Document Number: GA-H61M-S2PV-WG		Rev: 2.11
Date: Tuesday, August 07, 2012		Sheet 11 of 33	



PCH I POWER

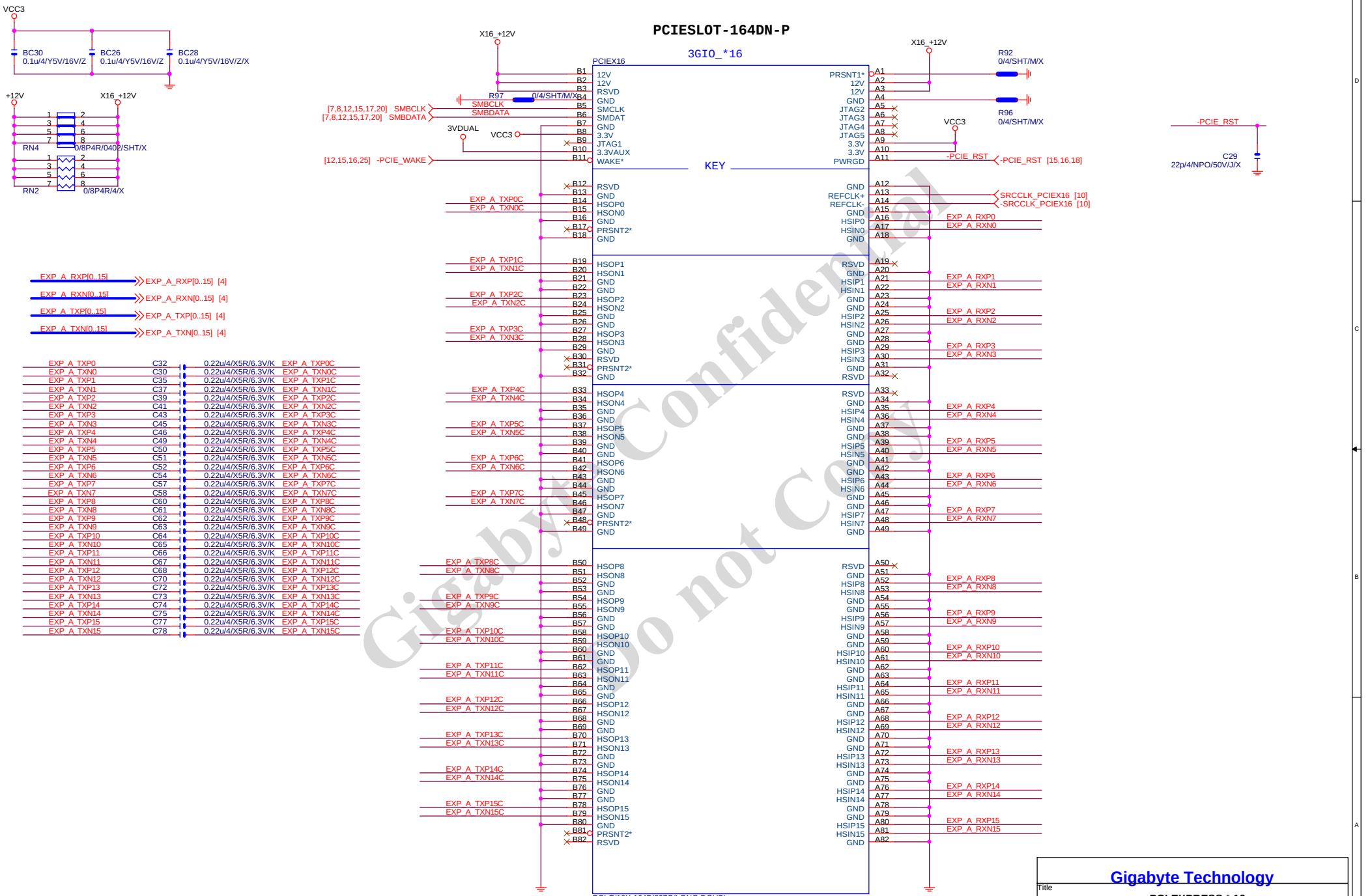


PCH K GND



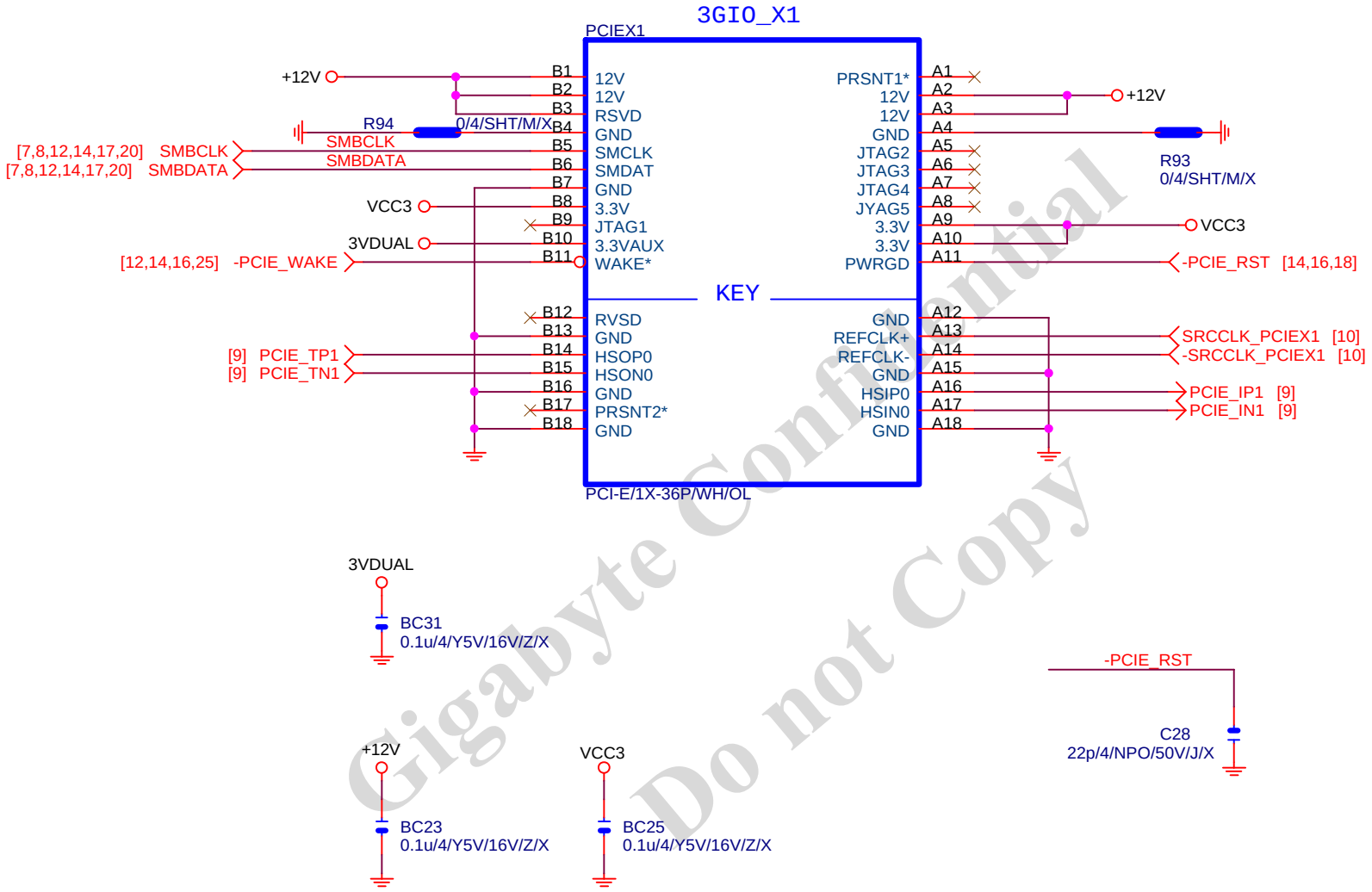
Gigabyte Technology			
Title: PCH PWR ,GND			
Size: Custom	Document Number: GA-H61M-S2PV-WG		Rev: 2.11
Date: Tuesday, August 07, 2012	Sheet 13 of 33		

PCIEX16



Title	PCI EXPRESS * 16	
Size: Custom	Document Number: GA-H61M-S2PV-WG	Rev: 2.11
Date: Tuesday, August 07, 2012	Sheet 14 of 33	

Gigabyte Technology



Gigabyte Technology		
Title: PCI EXPRESS X 1 PORT		
Size: A	Document Number: GA-H61M-S2PV-WG	Rev: 2.11
Date: Tuesday, August 07, 2012	Sheet 15 of 33	

PCIE TO PCI

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

Co-Lay IT8893 (IT8893 CLKOUT1 N/A)

IT8892: PR24 -> 47ohm
IT8893: PR24 -> 22ohm

IT8892: PR46 -> X
IT8893: PR46 -> O

IT8892: PR19 -> O
IT8893: PR19 -> X

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

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

IT8892E/BX LQFP128

IT8892E/EX/S/[10HP2-698892-30R_10HP2-698892-40R]

IT8892

PCI slot

PCI slot

chipset side

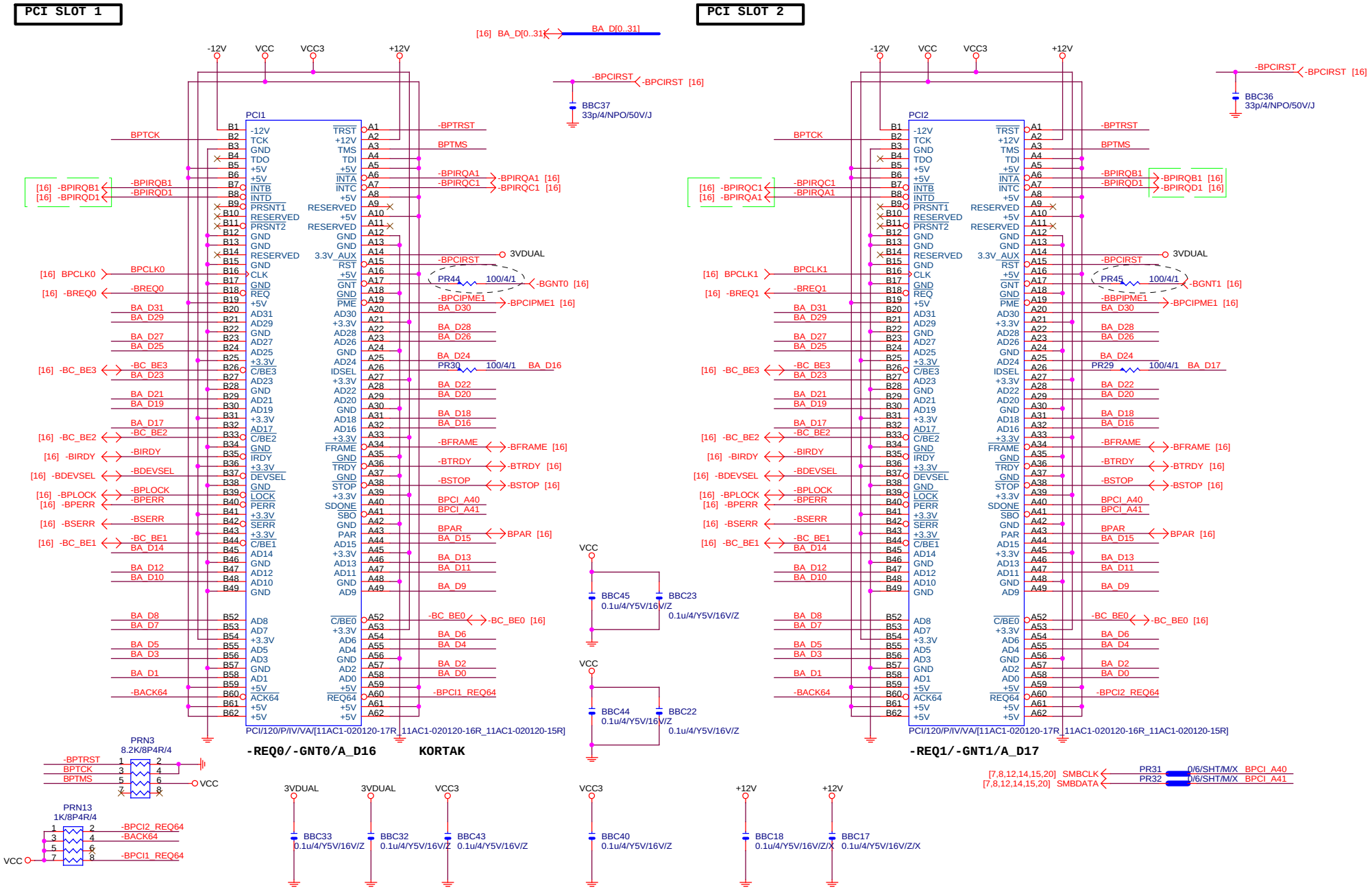
PCB layout note: Close to chip

Close to chip

PCB layout note: Close to chip

Gigabyte Technology

Title	ITE IT8892E	
Size: Custom	Document Number: GA-H61M-S2PV-WG	Rev: 2.11
Date: Tuesday, August 07, 2012	Sheet 16 of 33	



Gigabyte Technology			
Title: PCI SLOT 1&2			
Size: Custom	Document Number: GA-H61M-S2PV-WG		Rev: 2.11
Date: Tuesday, August 07, 2012	Sheet 17 of 33		

I/O

HI FOR H61M-S2P-B3 Rev:1.0
LO FOR H61M-S2P Rev:1.1

IT8728F(GB)

CPU_FAN SYS_FAN

CHK GPIO53

EUP

For IT8721 Power leakage

IT8728F/EX (GB)/QFP128/[10HP2-118728-70R]

	IT8728
PIN121	VCORE_EN/PCH_C0
PIN120	VLDT_EN/PCH_D0
PIN19	ATXPG
PIN31	PCH_C1
PIN53	SST/AMDTSI_D/MTRB#/PCH_D1
PIN55	PECI/AMDTSI_C/DRVB#
PIN66	SYS_3VSB
PIN70	GP47
PIN95	VIN2(VCC5)
PIN96	VIN1(VCC12)
PIN97	VIN1/VDIMM_STR(1.5V)
PIN98	VIN0/VCORE(1.1V)/NC

internal power pin, max 22nF cap

FOR LOW TEMP POWER ON INTO TEST MODE ISSUE

IT8728-EX
PULL DOWN ENABLE OVP

EUP control by PCH

JP3--- High SPI-Flash Disable
Low SPI-Flash Enable

PCIRST1 is OD in IT8728

Title	ITE 8728 LPC IO
Size	Custom
Document Number	GA-H61M-S2PV-WG
Rev	2.11
Date:	Tuesday, August 07, 2012
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Gigabyte Technology

COM

AU1
GD75232/TSSOP20
ABC2 0.1u/4/Y5V/16V/Z/X
ABC1 0.1u/4/Y5V/16V/Z/X

ACN2
180p/8P4C/6/NPO/50V/K

ACN1
180p/8P4C/6/NPO/50V/K

PIN2X5-CUT10-COM

COM
PH/2*5K10/WH/2.54/VA/D

COM RI

Q7
MMBT2222A/SOT23/600mA/40
R90 75K/4/1
R91 8.2K/4
S0T23

BAT54C FOR X2 COM

KB/MS

KB_MS
BC8 0.1u/4/Y5V/16V/Z
AGND1
KB/MS/6P/PC99/OS/RA/D/2

ESD2
AOZ8902CIL/SOT23-6/X

CLOSE KB_MS

R663 0/6/SHT/M/X
AGND1

EMI BETWEEN VGA,KB/MS

FOR鹽化短路

CN1
180p/8P4C/6/NPO/50V/K

RN1
8.2K/8P4R/4

R_USB1

CLOSE R_USB

F1
SMD1812P260/6V

UR3 8.2K/4
UR4 15K/4/1

R_USB
BC6 0.1u/4/Y5V/16V/Z/X
USB/A/O/BLACK/GF/2/RA/D

ESD1
AOZ8902CIL/SOT23-6

CLOSE R_USB1

-PROHOT

N/A

Q13
BAT54A/SOT23/200mA/X
R105 8.2K/4/X
R103 0/4/X

deasserted at 116 degree

RS2 CLOSE CPU VR MOSFET

R151 35.7K/4/1
R137 10K/4/1
R136 1.4K/4/1
U1D LM324DR/SO14
RS_PHOT 100K/1/4/S
R152 1K/4/1
C59 0.1u/4/Y5V/16V/Z/X
Q12 2N7002/SOT23/25pF/5
R? CLOSE Q32

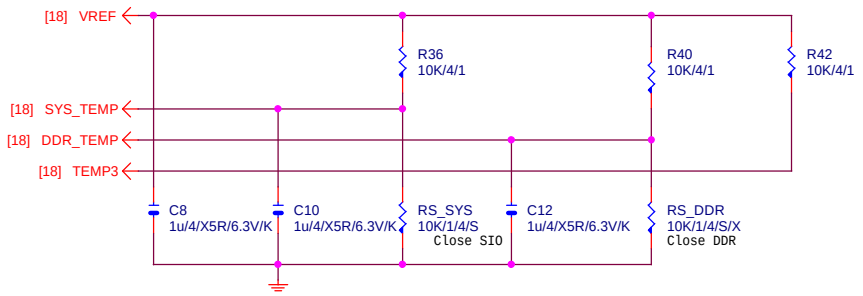
CLOSE PWM HOT MOSFET

Q10 2N7002/SOT23/25pF/5/X

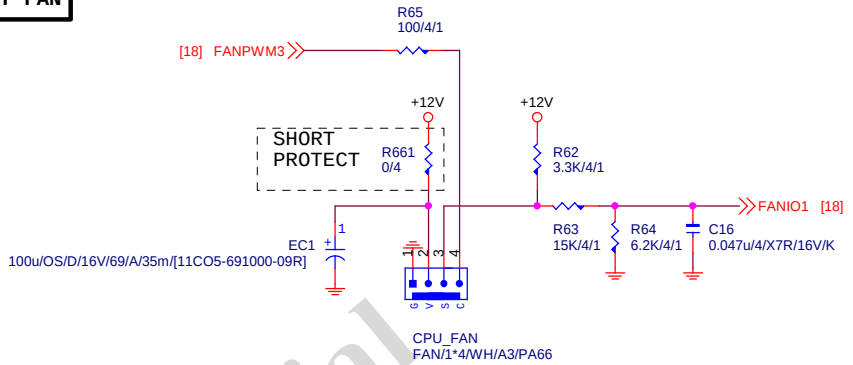
THERMAL SHUTDOWN BIOS NO FUNCTION

Gigabyte Technology		
Title: COM,-RI,KB_USB,USB_ESATA,-PROCHOT		
Size: Custom	Document Number: GA-H61M-S2PV-WG	Rev: 2.11
Date: Tuesday, August 07, 2012	Sheet 19 of 33	

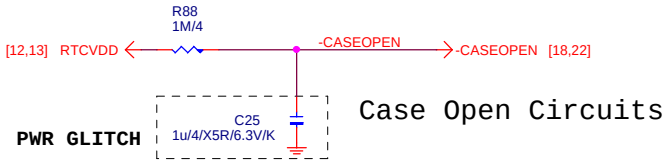
TEMP H/W MONITOR



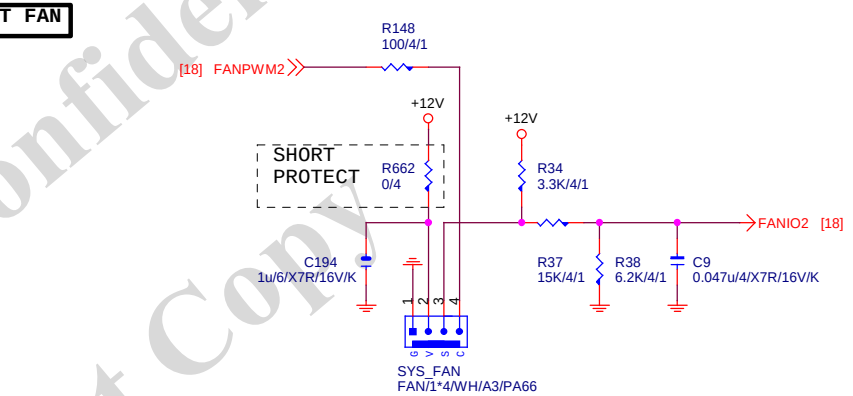
CPU SMART FAN



CASE OPEN

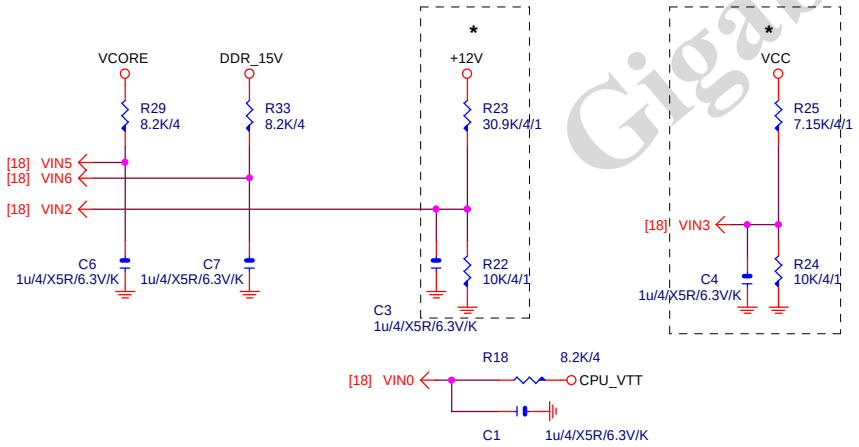


SYS SMART FAN

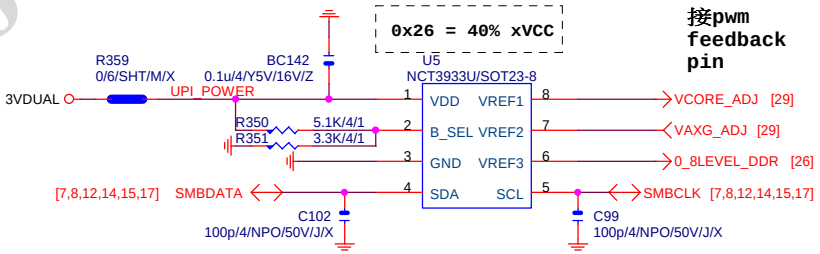


VOLTAGE-- H/W MONITOR

IT8728/EX VIN2/VIN3-->2V

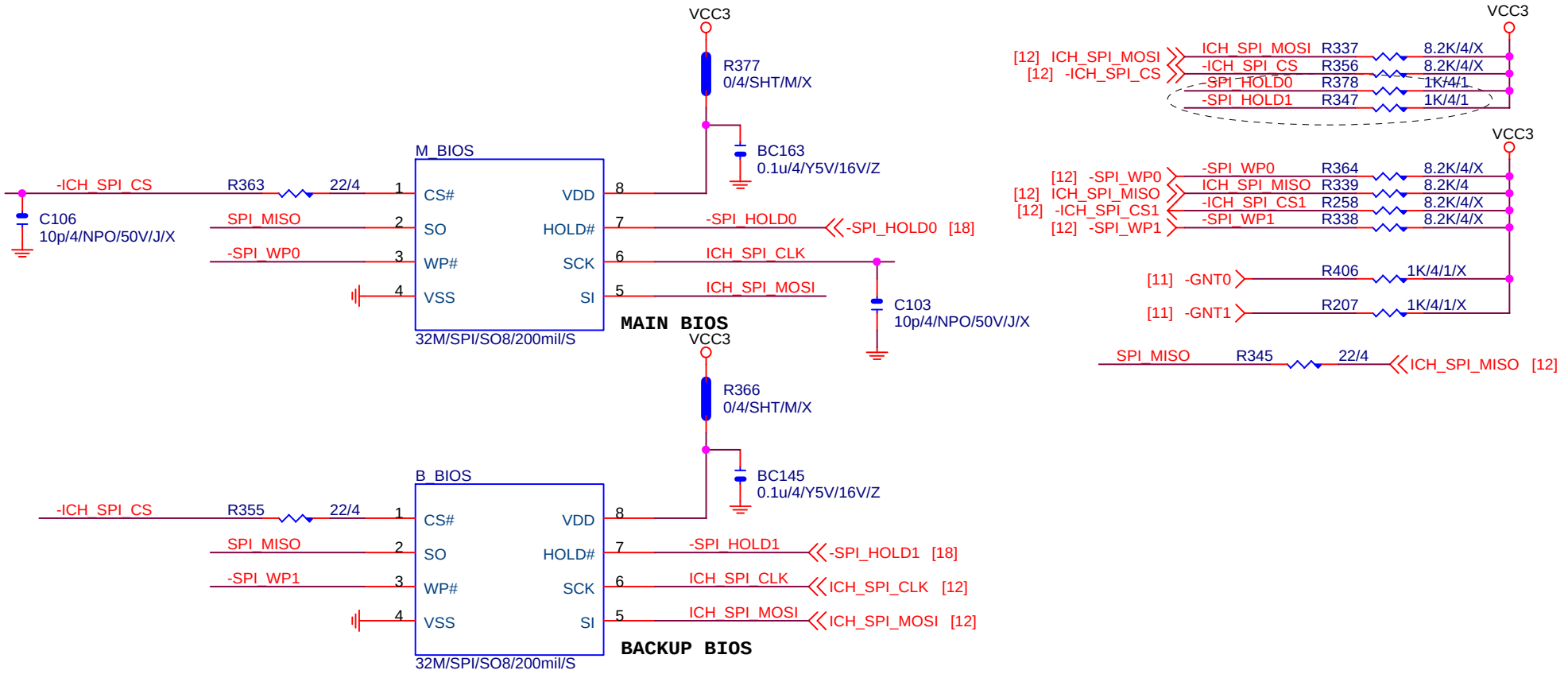


O.V.



Gigabyte Technology		
Title: HWM,FAN CTRL,OV		
Size: Custom	Document Number: GA-H61M-S2PV-WG	Rev: 2.11
Date: Tuesday, August 07, 2012	Sheet 20 of 33	

DUAL BIOS



B65使用64M BIOS

使用H67暫用32M

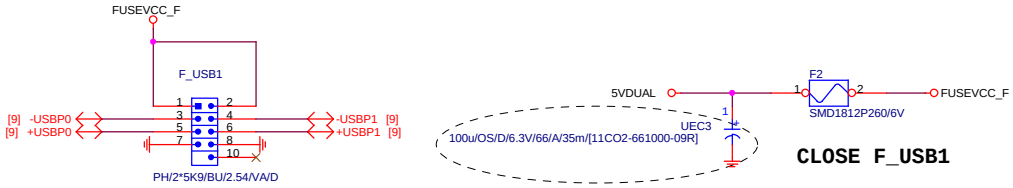
H61使用32M BIOS

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

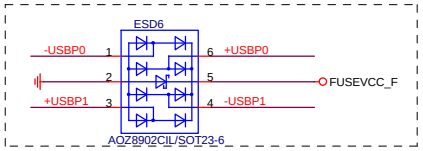
1 means floating
0 means PD 1K

Gigabyte Technology		
Title: DUAL BIOS		
Size: A	Document Number: GA-H61M-S2PV-WG	Rev: 2.11
Date: Tuesday, August 07, 2012	Sheet 21 of 33	

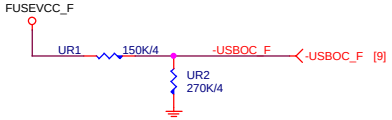
FRONT USB1



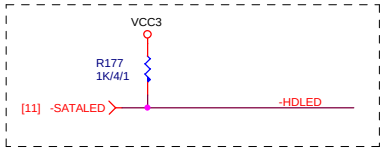
CLOSE F_USB1



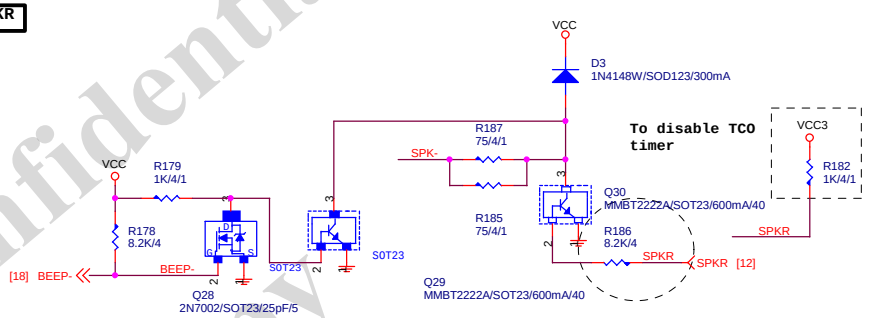
Close to connector



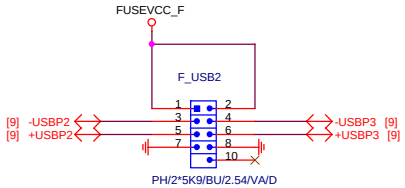
SATA LED

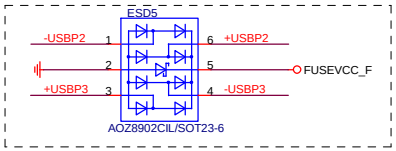


SPKR



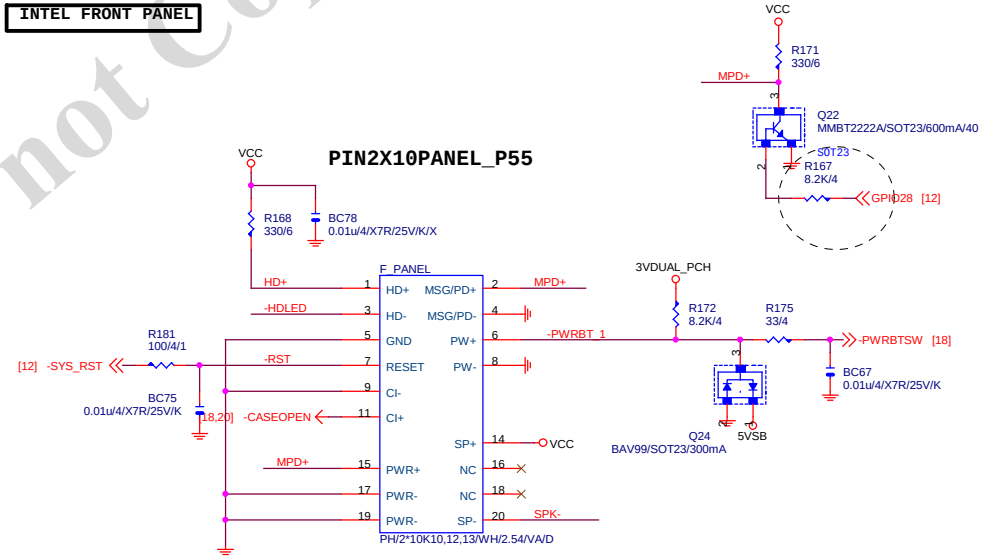
FRONT USB2





Close to connector

INTEL FRONT PANEL



Gigabyte Technology		
Title: FP,F_USB,USB PWR,SPKR,SATA LED		
Size: Custom	Document Number: GA-H61M-S2PV-WG	Rev: 2.11
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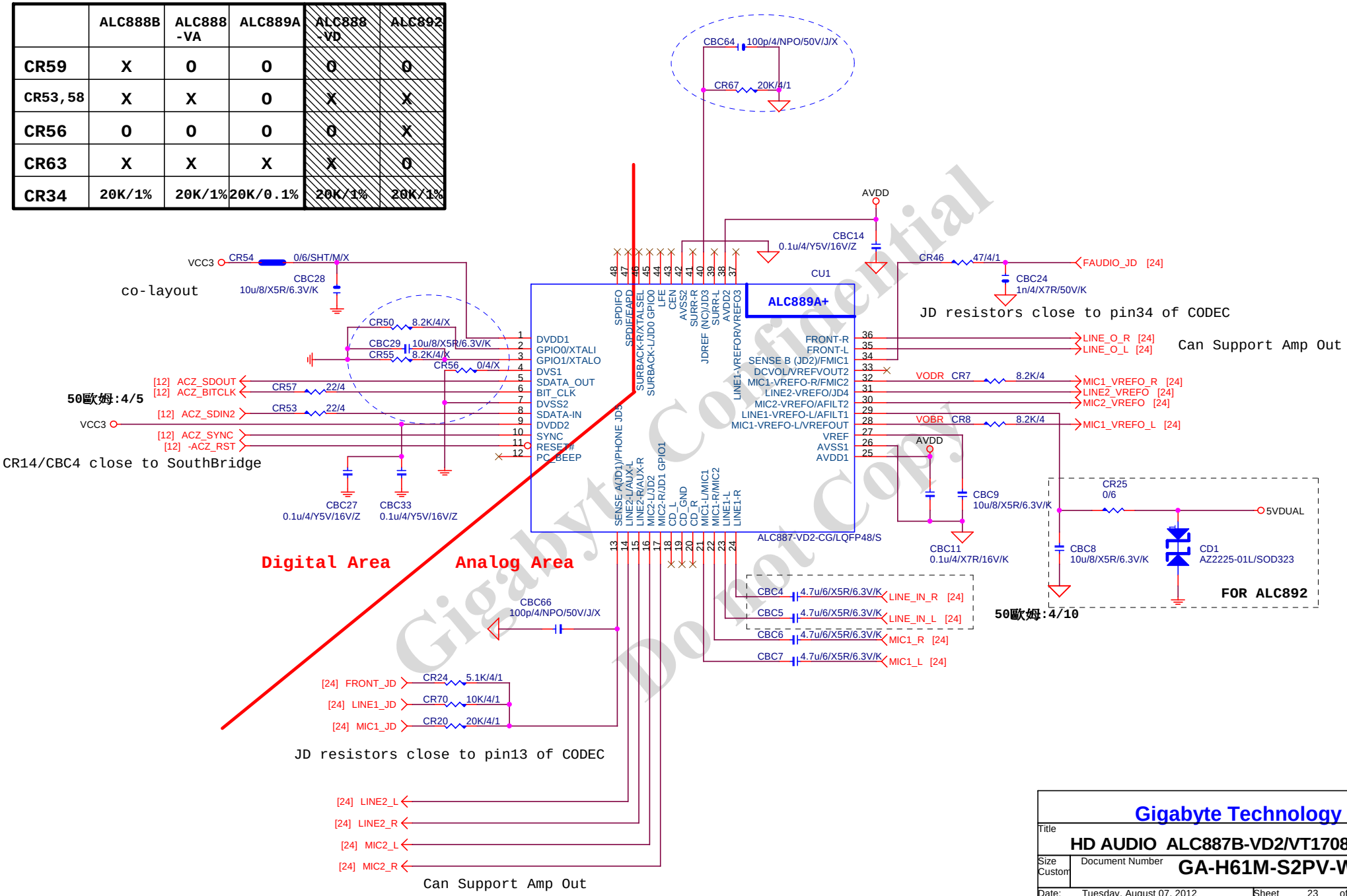
AZALIA CODEC *ALC892/ALC889A/ALC889/ALC888B Colay*

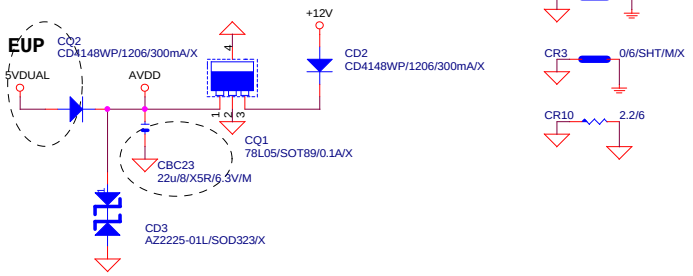
	ALC888B	ALC888 -VA	ALC889A	ALC888 -VD	ALC892
CR59	X	0	0	0	0
CR53,58	X	X	0	X	X
CR56	0	0	0	0	X
CR63	X	X	X	X	0
CR34	20K/1%	20K/1%	20K/0.1%	20K/1%	20K/1%



Gigabyte Technology

Title	HD AUDIO ALC887B-VD2/VT1708S/VT2021	
Size: Custom	Document Number: GA-H61M-S2PV-WG	Rev: 2.11
Date: Tuesday, August 07, 2012	Sheet 23 of 33	

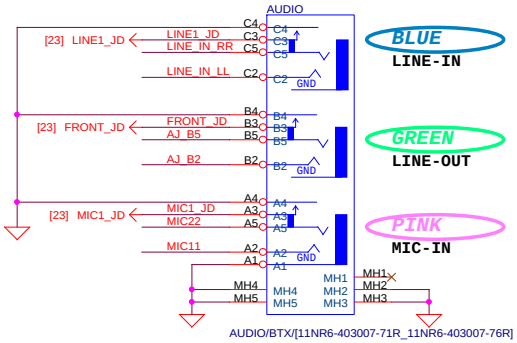
CODEC POWER/EMI PAD



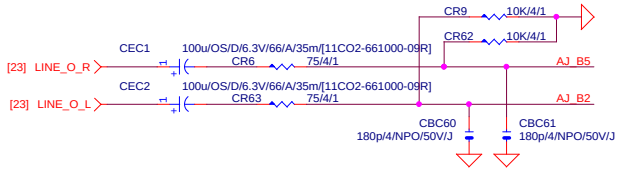
SPDIF

N/A

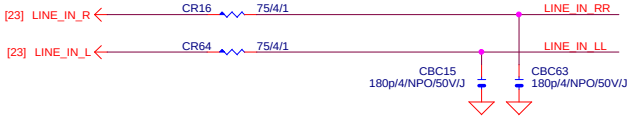
AZALIA JACK



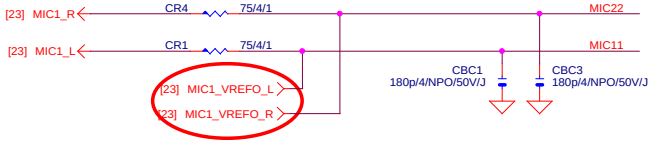
LINE-OUT



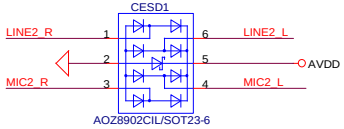
LINE-IN



MIC-IN

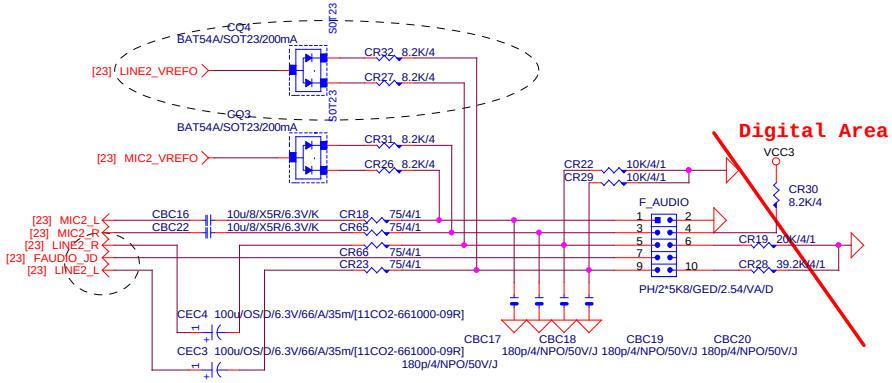


F_AUDIO ESD



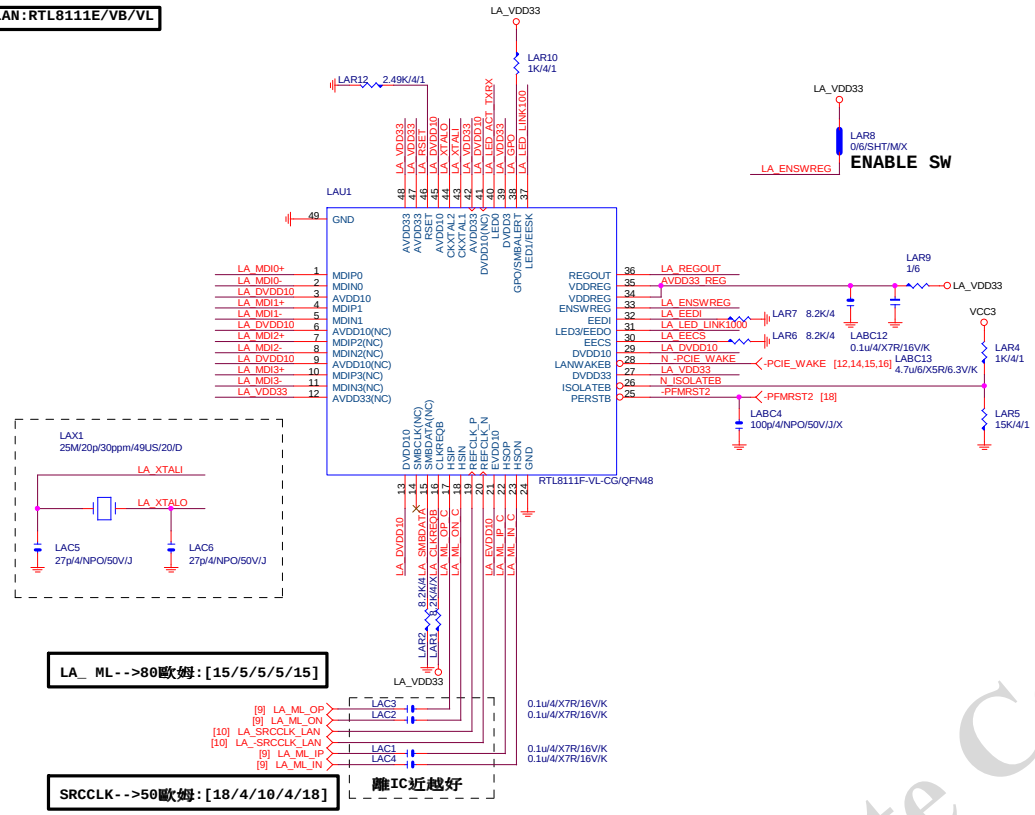
SS0P6-1

AZALIA FRONT PANEL

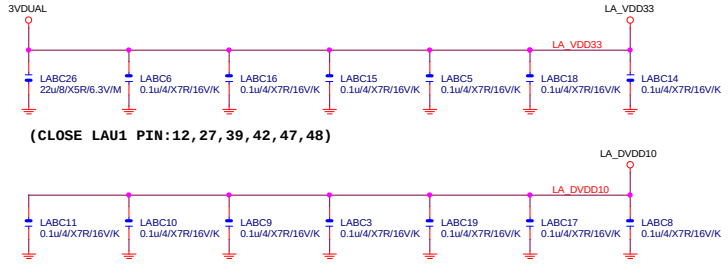


Gigabyte Technology			
Title: AUDIO JACK			
Size: Custom	Document Number: GA-H61M-S2PV-WG		Rev: 2.11
Date: Tuesday, August 07, 2012	Sheet 24 of 33		

LAN:RTL8111E/VB/VL



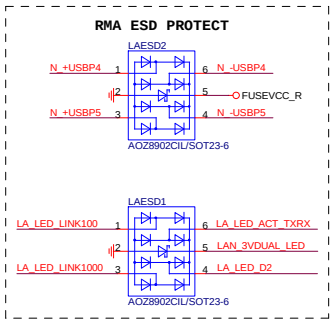
LAN POWER



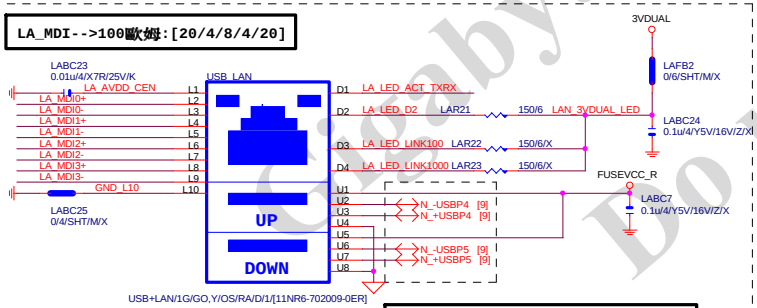
Power domain chart

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

USB_LAN CONNECTOR



LA_MDI-->100歐姆:[20/4/8/4/20]



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

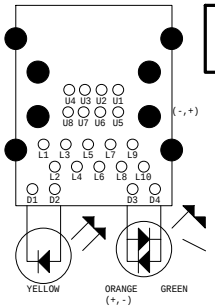
USB X3 POWER

Close to connector

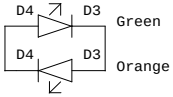
EMI SHORT PAD

PS:視EMI需求

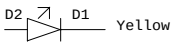
注意:LAN LED PROTECT:(CO-LAYOUT)
1.ESD(6PIN):AOZ8902CIL/SOT23-6(DEFAULT)
2.SURGE(5PIN):AZ2025-04S/SOT23-5L



Dual Color LED



Single Color LED



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

Gigabyte Technology

Title: REALTEK RTL8111F-VL

Size: Custom | Document Number: GA-H61M-S2PV-WG | Rev: 2.11

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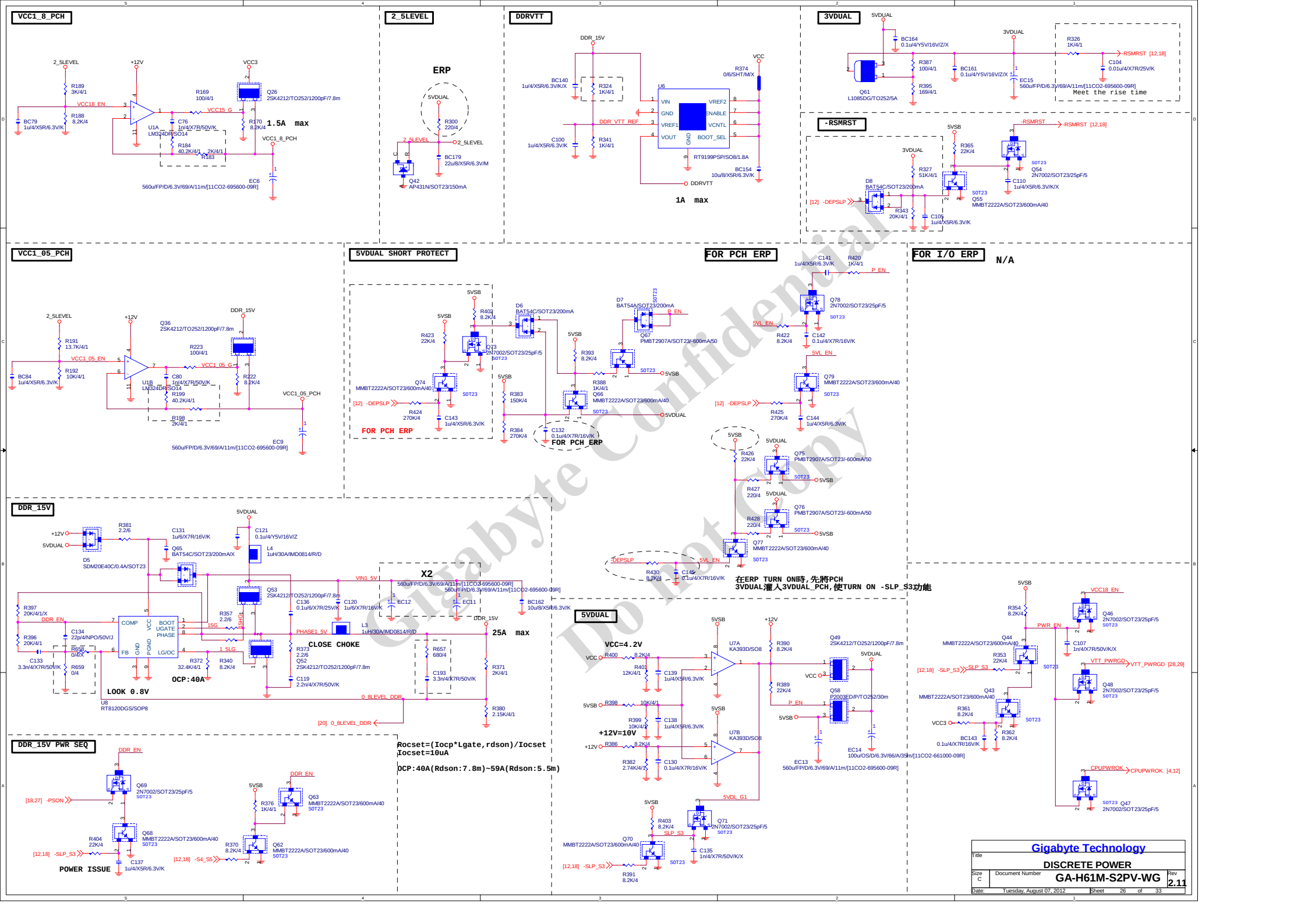
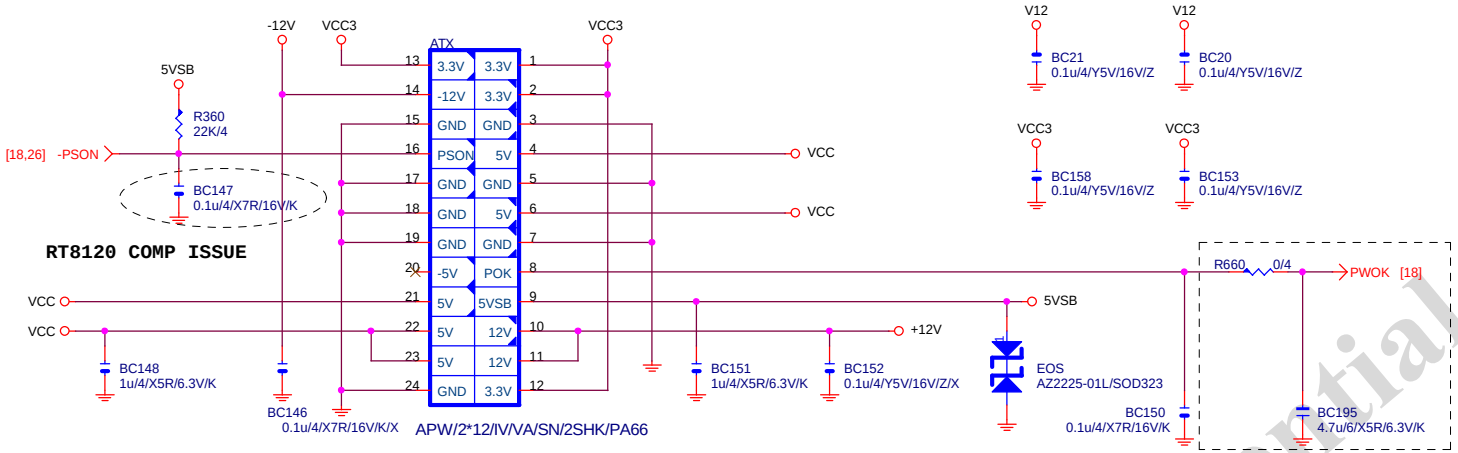
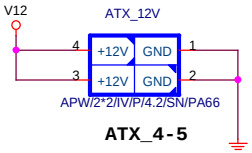


ATXX24 POWER CONNECTOR



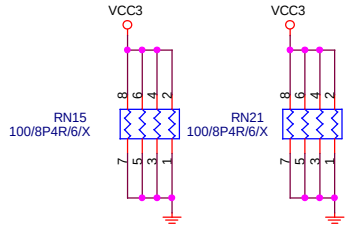
ATXX4 POWER CONNECTOR

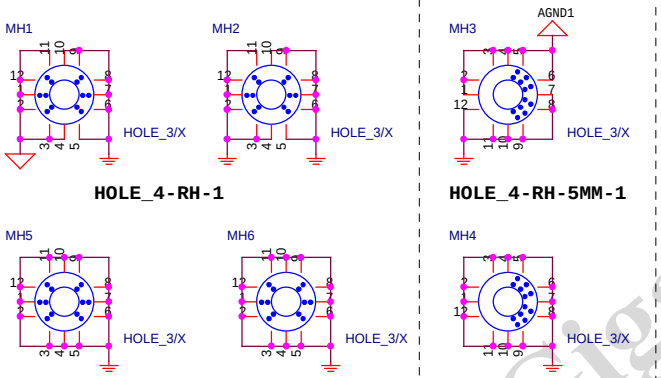


ATX_4-5

MIN. LOAD

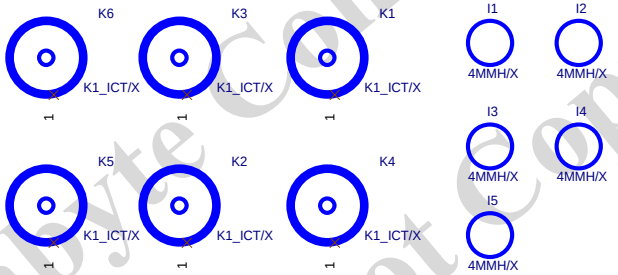
FIX PWR MINMUN LOAD





HOLE_4-RH-1

HOLE_4-RH-5MM-1



To prevent the 5VSB under loading when boot

Gigabyte Technology		
Title: ATX CONNECTOR		
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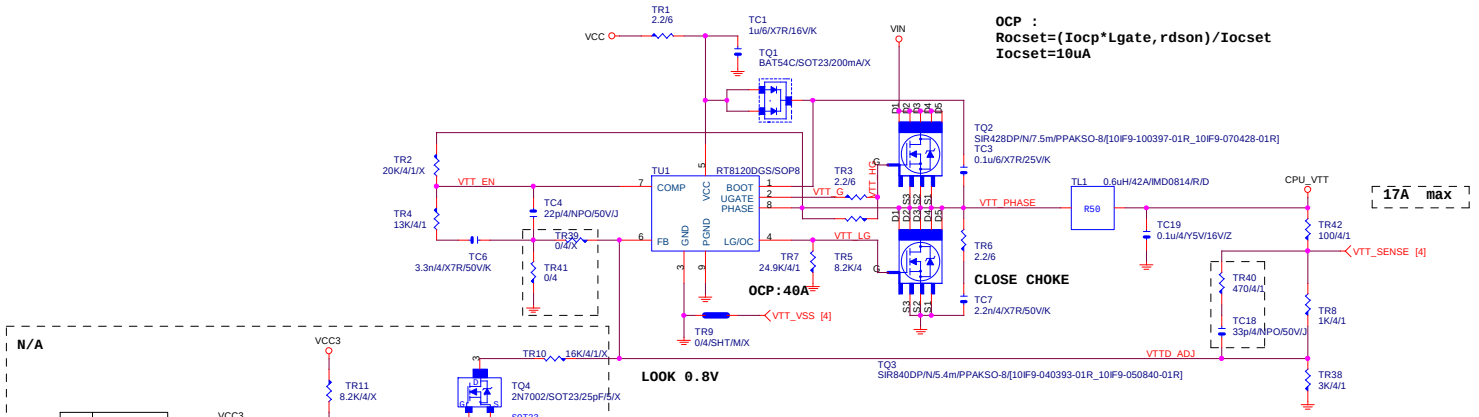
CPU_VTT



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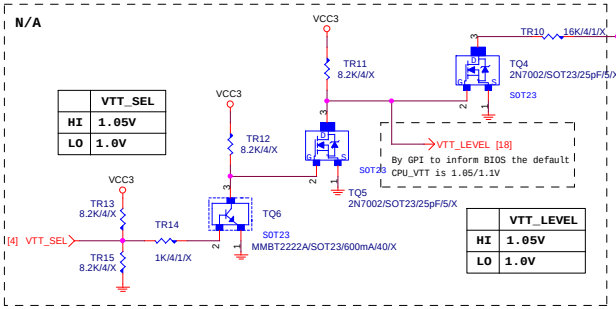
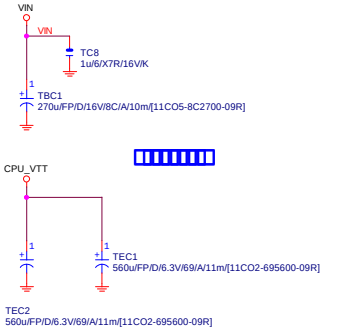


	VTT_SEL
HI	1.05V
LO	1.0V

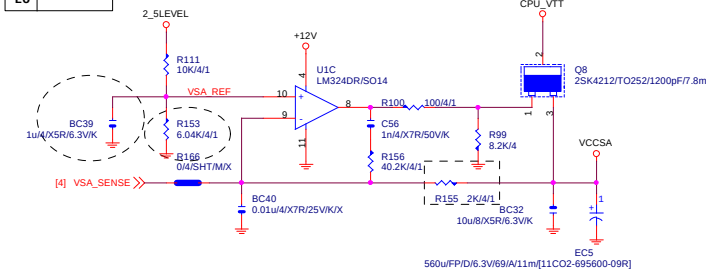
	VTT_LEVEL
HI	1.05V
LO	1.0V



VCCSA

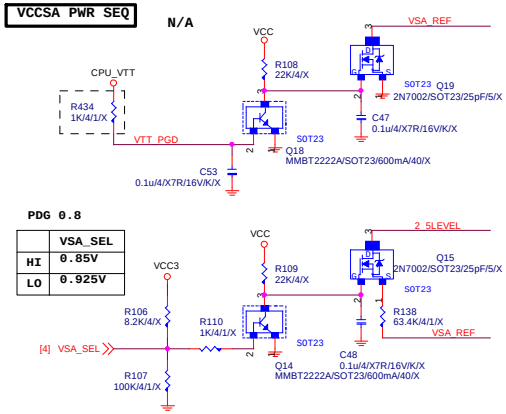
PDG 0.8

	VSA_SEL
HI	0.85V
LO	0.925V



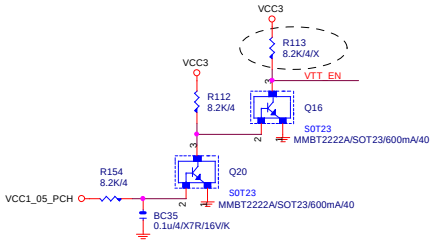
VCCSA PWR SEQ

N/A

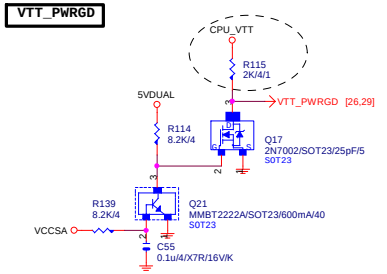


	VSA_SEL
HI	0.85V
LO	0.925V

CPU_VTT PWR SEQ



VTT_PWRGD



GIGABYTE™

Title	CPU_VTT PWM_ISL95870CRZ	
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VCORE PWM

FIX O.V CIRCUIT FAIL

CPU_VAXG
[4] VAXG_SENSE
VSENG
DR445 100/4/1
DR482 0/4/SHT/M/X

[20] VAXG_ADJ
DR45 0/4/SHT/M/X
FBG_OV

DBC93 0.01u/4/X7R/25V/K
DBC95 0.01u/4/X7R/25V/K

[4] VAXG_VSS
RTNG
DR450 10/4

DR446 845/4/1
DBC91 1n/4/X7R/50V/K
DR447 3.6K/4/1
DBC90 330p/4/NPO/50V/J
DR444 2K/4/1
DBC92 47p/4/NPO/50V/J
DBC94 680p/4/X7R/50V/K
DR448 270K/4
DR449 169K/4/1

Load line-->4.1mohm

S.W frequncy-->300Khz
Imax-->45A

LAYOUT RESERVE
CHOKE SPACE

V12
VIN
DBC1 1u/6/X7R/16V/K
DEC6 270u/FP/D/16V/8C/A/10m/[11CO5-8C2700-09R]
DEC2 270u/FP/D/16V/8C/A/10m/[11CO5-8C2700-09R]

Close DL6

[30] VSUMNG
DBC113 0.1u/4/X7R/16V/K
DRT4 10K/1/4/S
DR157 7.5K/4/1
DR159 11K/4/1
DBC64 0.047u/4/X7R/16V/K/X
DBC66 0.047u/4/X7R/16V/K/X
DBC57 0.22u/4/X5R/6.3V/K
DR475 100/4/1
DBC114 330p/4/NPO/50V/J
ØR162 549/4/1
ISUMNG

RGntc=(RGseries+DRT4)//RGparellel
RGseries
RGparellel
RGi
IGocp-->56A

[30] VSUMPG
ISUMPG

CHOKE 0.6U--> Ci:0.2839u

DBC96 0.22u/6/X7R/16V/K/X

DR452 8.2K/4
VCC3
DR453 0/4/X
VCC

PWM2G
LGS
PHS
UGS
BTS
BTS [30]

DU1

ISUMNG RTNG FBG COMPG VAXG_RDY PGOODG PWM2G LGATE1G PHASE1G UGATE1G BOOT1G

1 ISUMPG
2 ISEN1G
3 ISEN2G
4 NTCG
5 SCLK
6 ALERT#
7 SDA
8 VR_HOT#
9 VR_ON
10 NTC
41 PAD

30 BOOT2
29 UGATE2
28 PHASE2
27 LGATE2
26 VCCP
25 VDD
24 PWM3
23 LGATE1
22 PHASE1
21 UGATE1

BT2
UG2
PH2
LG2
LG1
PH1
UG1
PWM3 [31]

DBC98 1u/4/X5R/6.3V/K
DR457 2.2/6
DR458 2.2/6
DBC99 1u/4/X5R/6.3V/K
VCC

PWM
INTERSIL
ISL95836HRTZ

ISL95836HRZ/[10TA1-695836-01R]

UG1 PH1 LG1 ISEN1
UG1 [31] PH1 [31] LG1 [31] ISEN1 [31]

UG2 PH2 LG2 ISEN2
UG2 [31] PH2 [31] LG2 [31] ISEN2 [31]

UGS PHS LGS
UGS [30] PHS [30] LGS [30]

PWM3 ISEN3
PWM3 [31] ISEN3 [31]

CPU_VTT
VCC
disable PWM2G
DR454 0/4/SHT/M/X
ISEN2G

DBC69 0.1u/4/X7R/16V/K
DR81 100/4/1
DR84 100/4/1
DR76 100/4/1
DR79 100/4/1

DISABLE NTCG
DR456 27K/4/1

[4] VIDSLCK
[4] -VIDALRT
[4] VIDSOUT
DR477 51/4/1 PVIDSLCK_F

[19] VR_HOT
DR82 10/4/X
[26,28] VTT_PWRGD

DR59 27K/4/1
DISABLE NTC

BOTTOM PAD
CONNECT TO GND
THROUGH 10 VIA

3VDUAL
VCC3
DR108 8.2K/4
C84 0.1u/4/X7R/16V/K/X
DR85 1K/4/1
VR_RDY
DR91 8.2K/4
DQ18 MMBT2222A/SOT23/600mA/40
DQ19 MMBT2222A/SOT23/600mA/40
S0T23
DR109 1K/4/1
DR110 100K/4/1
DC17 0.1u/4/X7R/16V/K
PCH_VRMPWRGD [12]

DBC100 0.22u/6/X7R/16V/K
DBC101 0.22u/6/X7R/16V/K
DBC102 0.22u/6/X7R/16V/K
[31] VSUMN
ISEN3
ISEN2
ISEN1

[31] ISEN3
[31] ISEN2
[31] ISEN1

ISEN3FB2 ISEN2 ISEN1 ISUMP ISUMN RTN FB COMP PGOOD BOOT1

VR_RDY
BT1
BT1 [31]
DR460 8.2K/4
VCC3

CHOKE 0.6U--> Ci:0.669u

[31] VSUMP
VSUMP

Close DL2
Rseries
DR478 2.61K/4/1
DRT3 10K/1/4/S
Rparellel
DR46 11K/4/1
DBC117 0.22u/4/X5R/6.3V/K
DBC25 0.22u/6/X7R/16V/K
DBC23 0.22u/4/X5R/6.3V/K
DR47 620/4/1
Ri
DBC20 330p/4/NPO/50V/J
DR49 100/4/1

Rntc=(Rseries+DRT3)//Rparellel

[31] VSUMN
VSUMN
DBC29 0.1u/4/X7R/16V/K

Iocp-->150A

COMP
DBC103 10p/4/NPO/50V/J/X
ISEN3 [31]

DBC104 1n/4/X7R/50V/K
DR461 845/4/1
DBC105 47p/4/NPO/50V/J
DR465 3.24K/4/1
VBOOT
DR462 3.24K/4/1/X
DR463 4.02K/4/1
DR464 470K/4/1
DBC106 680p/4/X7R/50V/K

Vboot-->0V
Imax-->99A

FB_OV
DBC107 1n/4/X7R/50V/K/X
DBC108 0.01u/4/X7R/25V/K
DR483 0/4/SHT/M/X
VCCSENSE
VCC_SENSE [4]
DR466 100/4/1
VCORE

FIX O.V CIRCUIT FAIL

DBC109 0.01u/4/X7R/25V/K
VSSSENSE
VSS_SENSE [4]
DR468 100/4/1

Load line-->1.7mohm

DR42 0/4/SHT/M/X
[20] VCORE_ADJ
FB_OV

FOR RMA

VCC3
VBOOT
DR184 8.2K/4/X
S0T23
DQ56
MMBT2222A/SOT23/600mA/40
CPU_VTT
DR185 1K/4/1/X
S0T23
DQ55
MMBT2222A/SOT23/600mA/40/X
[4] TDI
DR126 510/4/1

Set VBOOT=GND for Vboot=0V
VBOOT=OPEN for Vboot=1.1V

SET MMBT2222 BJT
N/A 2N7002 MOSFET

Gigabyte Technology			
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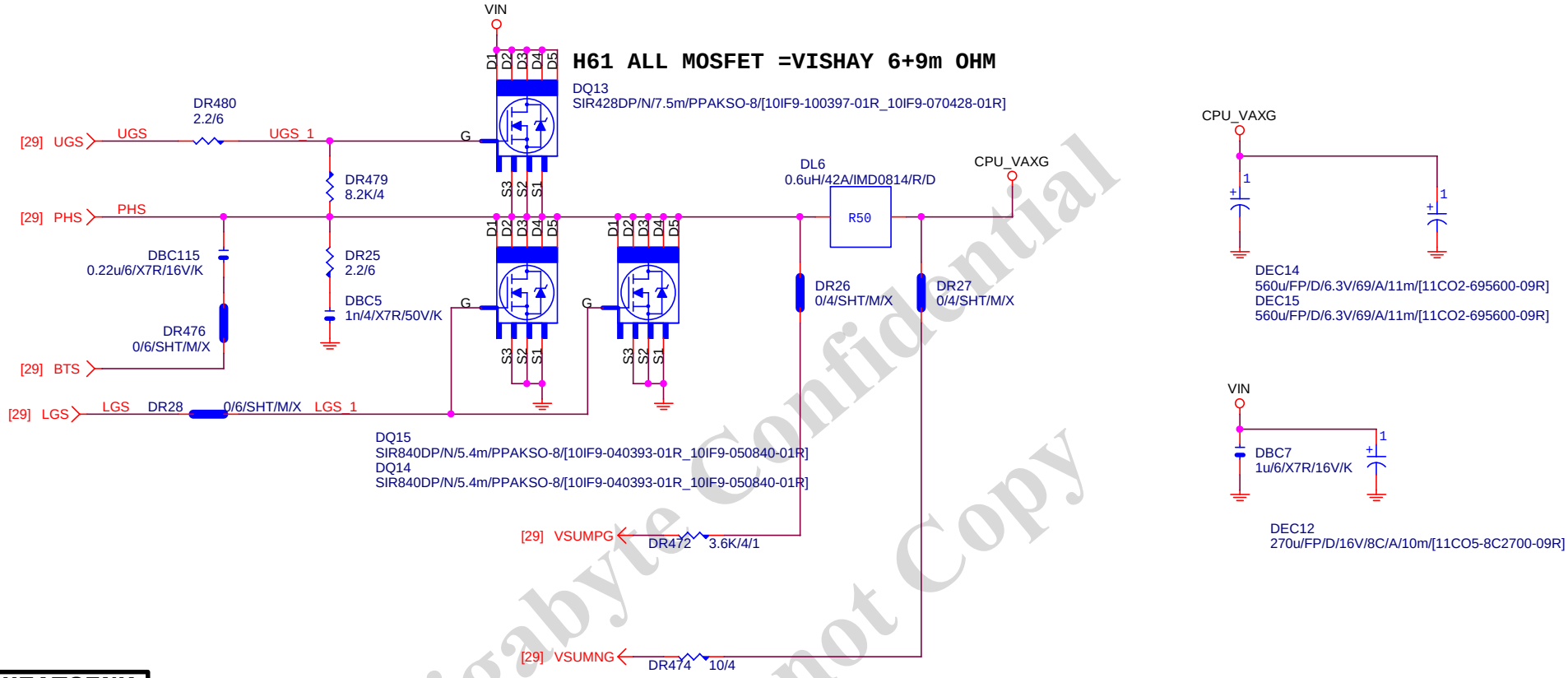
VAXG



MOS HEATSINK

Gigabyte Technology			
Title: CPU CORE VR-2			
Size: Custom	Document Number: GA-H61M-S2PV-WG		Rev: 2.11
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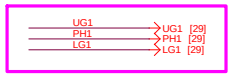
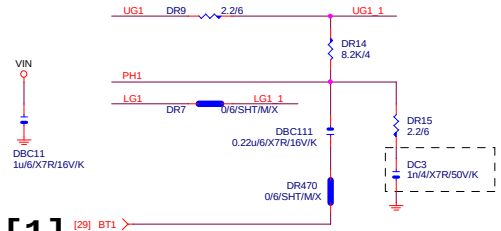
PHASE 1





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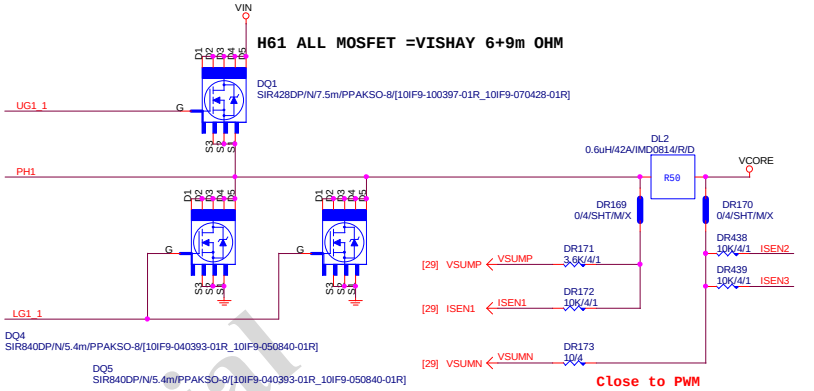
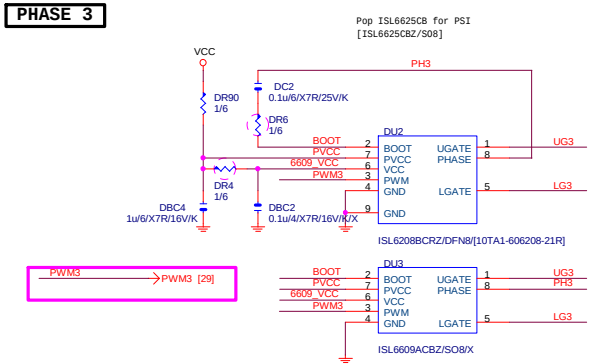
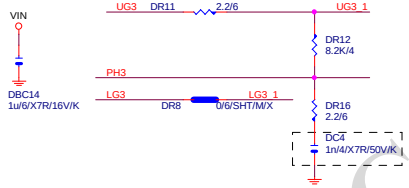


PHASE 3



6609 colay with 6208



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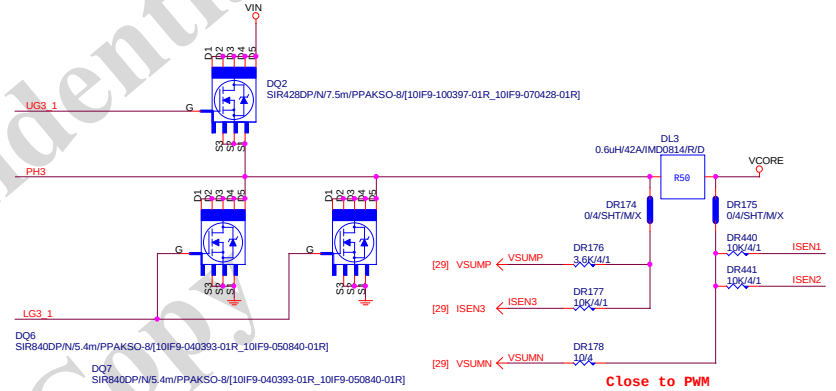
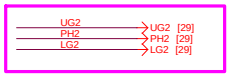
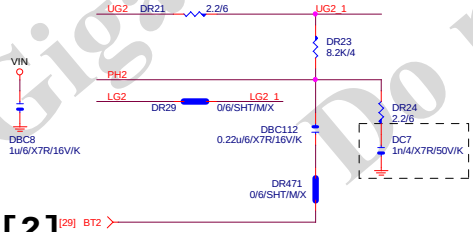


PHASE 2





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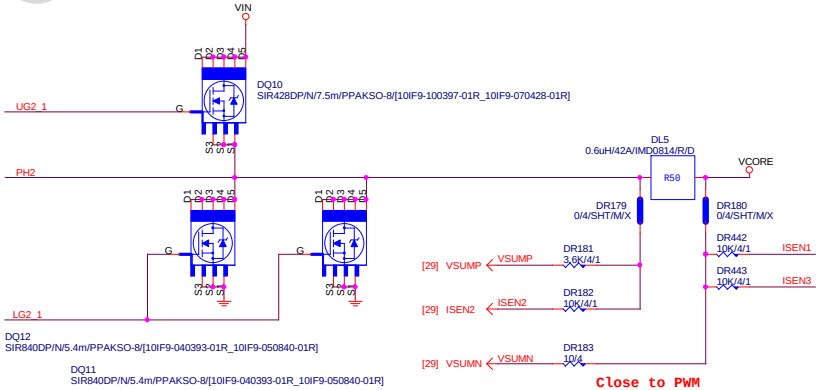

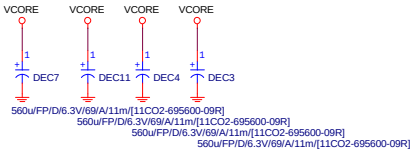

Gigabyte Technology		
Title: CPU CORE VR-3		
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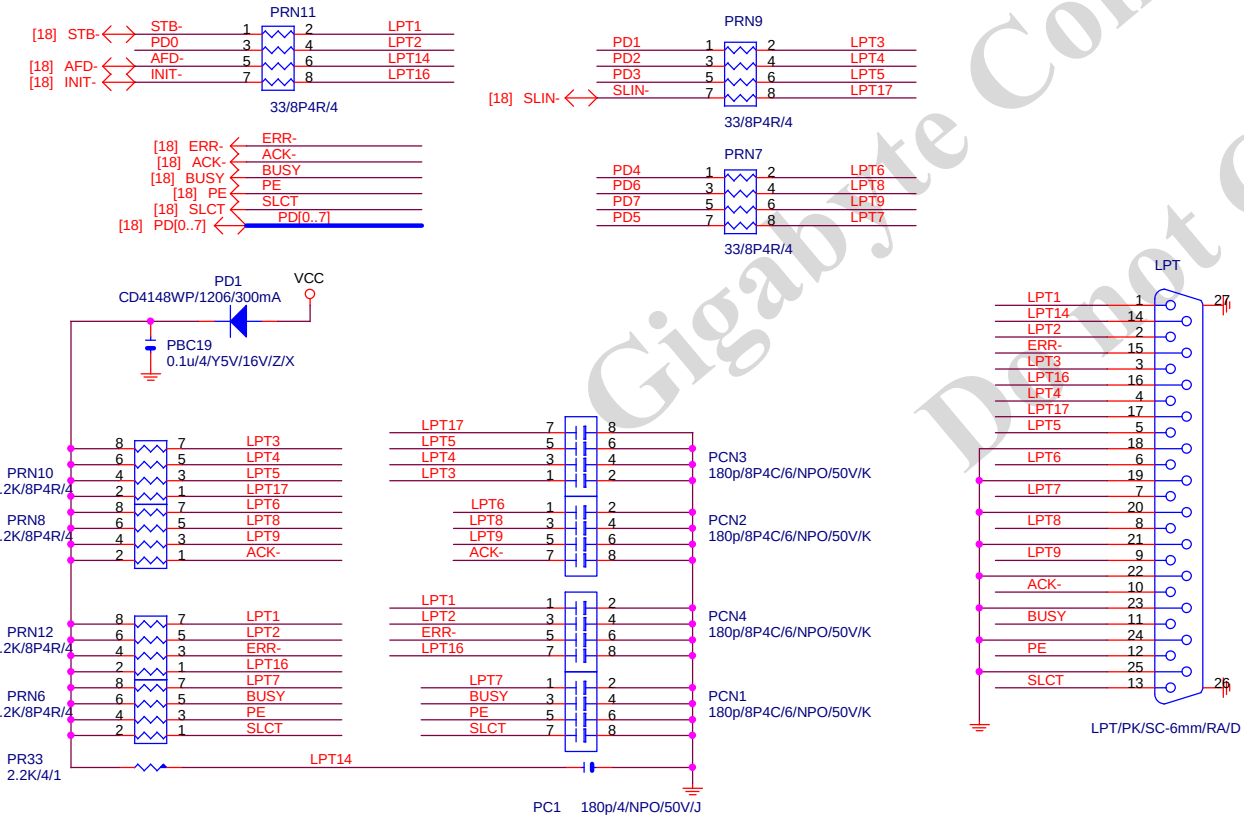
TPM

N/A

LPT PORT



COMB

N/A

Gigabyte Technology			
Title: LPT			
Size: Custom	Document Number: GA-H61M-S2PV-WG		Rev: 2.11
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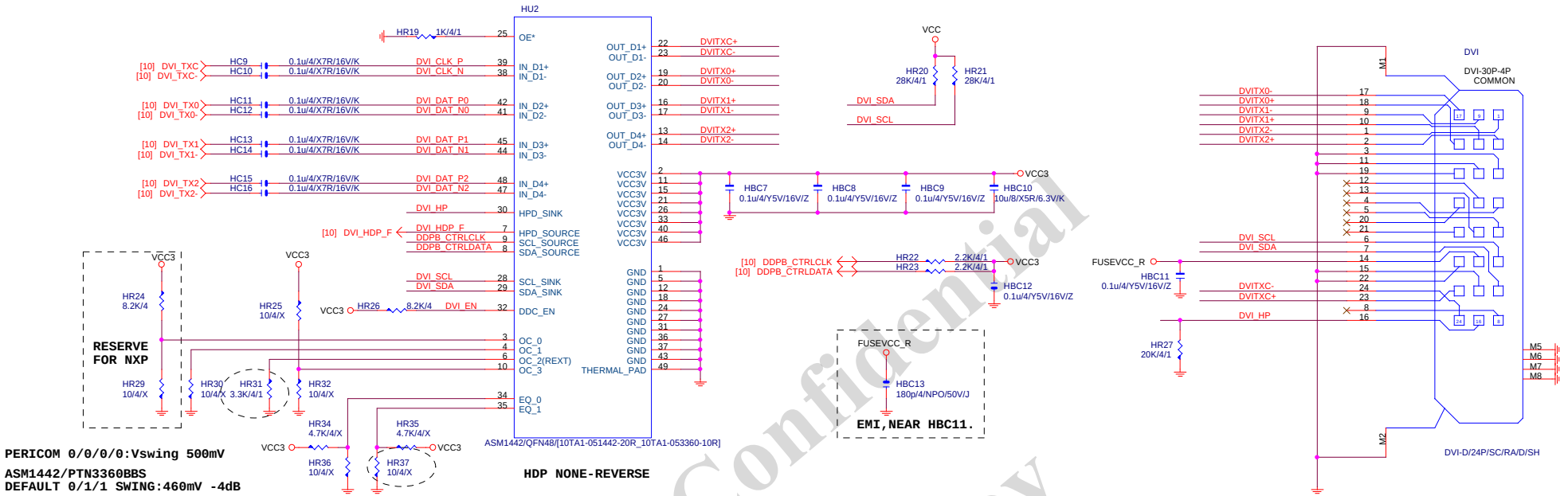
DVI LEVEL SHIFT



PERICOM 0/0/0/0:Vswing 500mV

ASM1442/PTN3360BBS
DEFAULT 0/1/1 SWING:460mV -4dB

PI3DV411 0 0:3dB
ASM1442 1 1:3dB

HDP NONE-REVERSE

FOOTPRINT:DVI-30P-4P

DEFAULT:DVI-D/24P/SC/RA/D
EMI:DVI-D/24P/SC/RA/D/SH

Gigabyte Technology		
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