Model Name: GA-H61M-D2H-USB3

Revision 1.0

SHEET	TITLE
01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	CPU_LGA1155-A
05	CPU_LGA1155-B
06	CPU_LGA1155-C
07	DDR III CHANNEL A 1,2
08	DDR III CHANNEL B 1,2
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/CLK GEN
16	ITE 8728
17	KB_MS,R_USB,-PROCHOT,RI
18	HWM,FAN CTRL,OV,COMB,LPT
19	DUAL BIOS
20	FP,F_USB,SPKR,SATA LED
21	AUDIO ALC889
22	REAR AUDIO JACK
23	ATHEROS AR8151/USB_LAN
24	HDMI/DVI
25	DISCRETE POWER
26	ATX
27	ISL95870_CPU_VTT

SHEET	TITLE
28	VCORE ISL6364_1
29	VCORE ISL6364_2,VAXG
30	VCORE ISL6364_3,VCORE
31	Etron USB3.0
32	IT8892E
33	PCI SLOT 1.2

Gigabyte Technology

Title: Cover Sheet

Size: Custom | Document Number: GA-H61M-D2H-USB3 | Rev: 1.0

Date: Thursday, August 25, 2011 | Sheet 1 of 33

Model Name: GA-H61M-D2H-USB3 *Revision1.0*

Component value change history

2011/03/25

Data	Change Item	Reason
2010.12.31	9MH61MUB3-00-10B	first release
	Add PCIEX1_1 , 9172 , HDMI	
	Remove PCI2 , LPT	
2011.07.26	REV0.1	
	Vcore 改3phase; 4 dimm; 2 PCI; HDMI; DVI etc;1PCIEx1	
2011.08.01	REV0.1A	
	日固 + ALC889	
2011.08.03	REV0.2	
	REMOVE DDR3 clock buffer	
	GA-H61M-D2H-USB3	
2011.08.04	REV0.2	
	BOM option from H61M-D2H REV0.2 , add USB3.0 & 改文字面	
2011.08.25	REV1.0A	
	from REV0.2 TURN 1.0A BOM	

Circuit or PCB layout change

DATE	Change Item	Reason
2010.12.30	H61M-USB3 1.00 gerber out	
	GA-H61M-D2H-USB3	
2010.12.30	REV0.2	
	BOM option from H61M-D2H REV0.2 PCB , add USB3.0 & 增加USB3.0文字面	

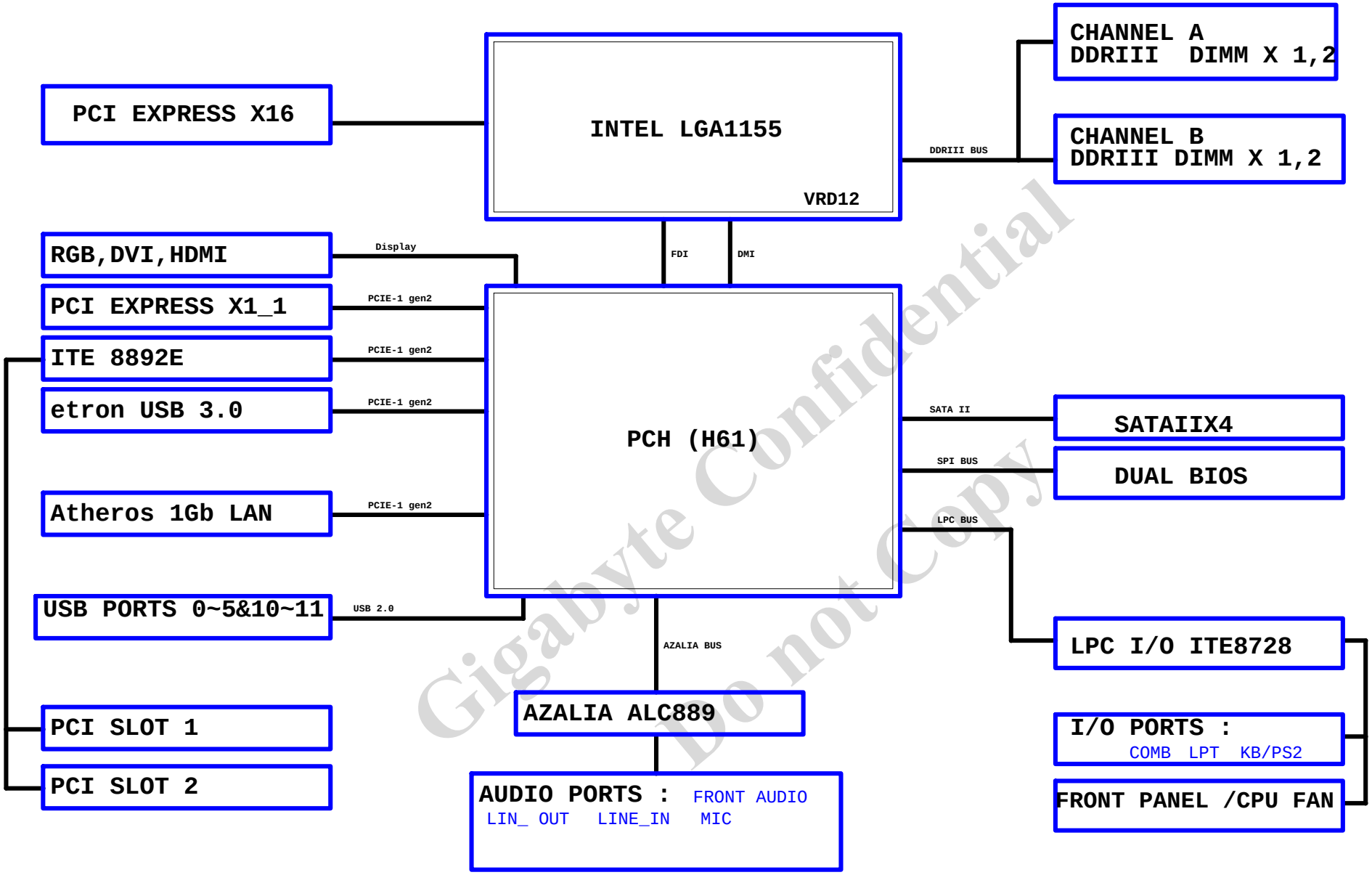
Gigabyte Technology

Title: BOM & PCB MODIFY HISTORY

Size: Custom | Document Number: GA-H61M-D2H-USB3 | Rev: 1.0

Date: Thursday, August 25, 2011 | Sheet 2 of 33

BLOCK DIAGRAM



Gigabyte Technology		
Title: BLOCK DIAGRAM		
Size: C	Document Number: GA-H61M-D2H-USB3	Rev: 1.0
Date: Monday, August 29, 2011	Sheet 3 of 33	

R88 R93 R92 0 change to short

CPUE

LGA1155[10SC1-F01155-01R_10SC1-F01155-02R]

CPUD

LGA1155[10SC1-F01155-01R_10SC1-F01155-02R]

Stitching caps for PCIE,DMI,FDI bus

CPUC

LGA1155[10SC1-F01155-01R_10SC1-F01155-02R]

R208 R103 R156 R154 change to RN

R91 75 change to 100

R90 121 change to 100

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

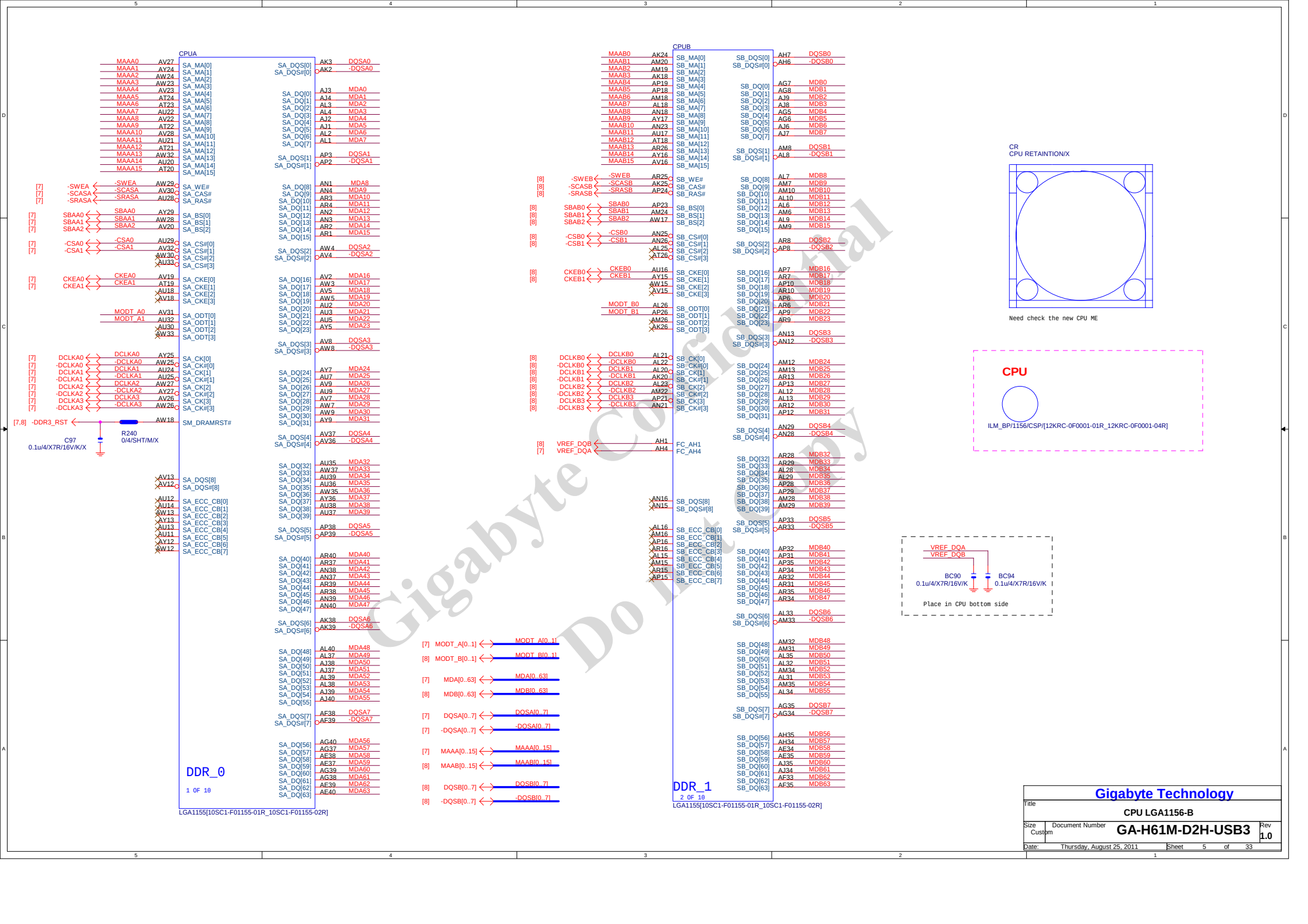
CFG6	CFG5	PCIE CONFIG
1	1	1X16 , Default
1	0	2X8
0	1	RSVD
0	0	X8,X4,X4

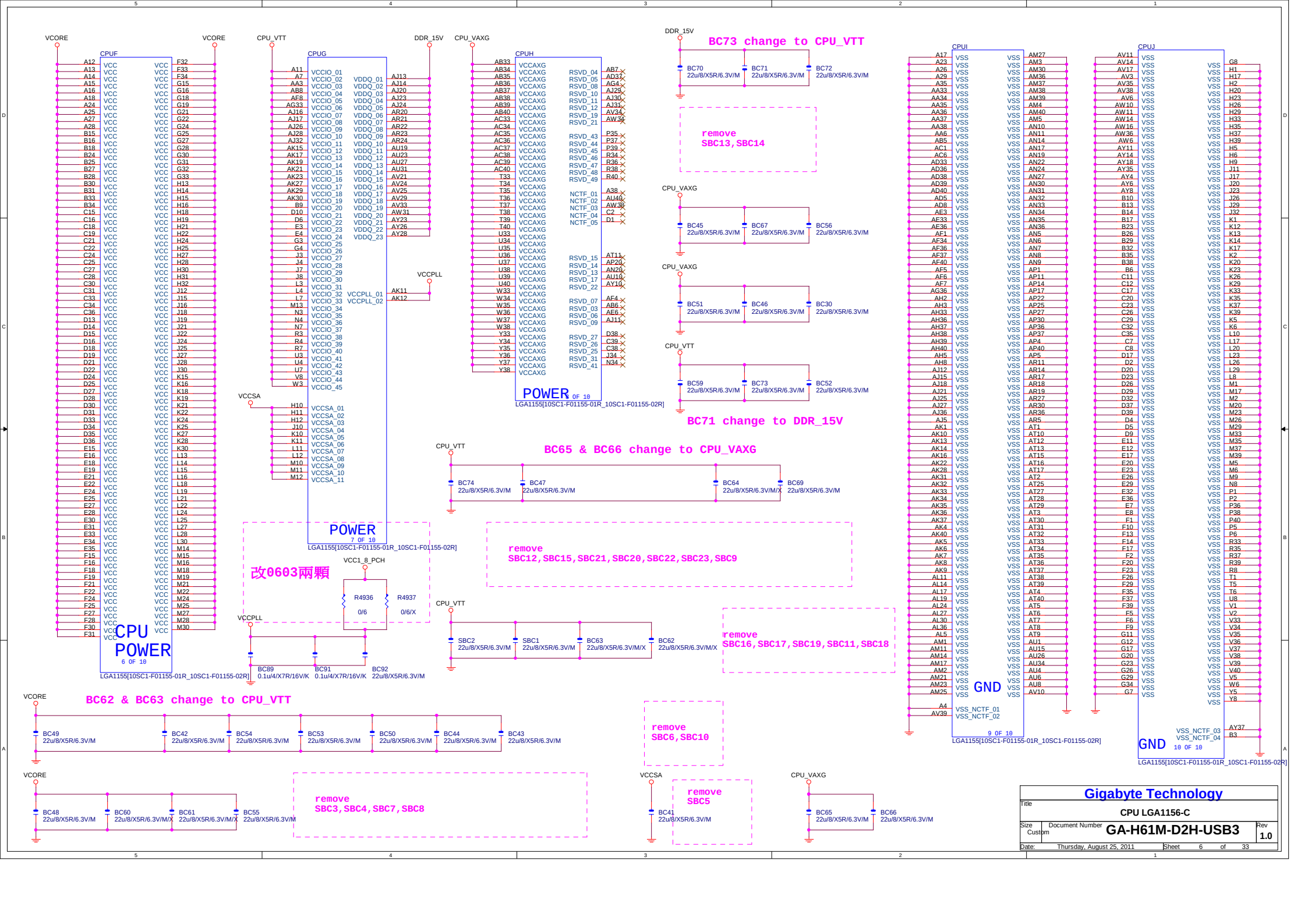
CFG 0-17 all internal PULL-UP

建議用料

1.1V分壓

Gigabyte Technology	
Title	CPU LGA1155-A
Size: Custom	Document Number: GA-H61M-D2H-USB3
Rev	1.0
Date: Thursday, August 25, 2011	Sheet 4 of 33


CPUA
DDR_0
1 OF 10
LGA1155[10SC1-F01155-01R_10SC1-F01155-02R]
CPUB
DDR_1
2 OF 10
LGA1155[10SC1-F01155-01R_10SC1-F01155-02R]
CR
CPU RETAINTION/X
Need check the new CPU ME
CPU
ILM_BP/1156/CSP/[12KRC-0F0001-01R_12KRC-0F0001-04R]
C97
0.1u/4/X7R/16V/K/X
R240
0/4/SHT/M/X
BC90
0.1u/4/X7R/16V/K
BC94
0.1u/4/X7R/16V/K
Place in CPU bottom side
Gigabyte Technology
CPU LGA1156-B
GA-H61M-D2H-USB3
Rev 1.0
Thursday, August 25, 2011
Sheet 5 of 33


CPUF
CPU POWER
6 OF 10
LGA1155[10SC1-F01155-01R_10SC1-F01155-02R]
CPUG
POWER
7 OF 10
LGA1155[10SC1-F01155-01R_10SC1-F01155-02R]
CPUH
POWER
8 OF 10
LGA1155[10SC1-F01155-01R_10SC1-F01155-02R]
CPUI
GND
9 OF 10
LGA1155[10SC1-F01155-01R_10SC1-F01155-02R]
CPUJ
GND
10 OF 10
LGA1155[10SC1-F01155-01R_10SC1-F01155-02R]
VCORE
VCCSA
VCCPLL
DDR_15V
CPU_VTT
CPU_VAXG
VCC1_8_PCH
BC73 change to CPU_VTT
remove SBC13,SBC14
BC71 change to DDR_15V
BC65 & BC66 change to CPU_VAXG
remove SBC12,SBC15,SBC21,SBC20,SBC22,SBC23,SBC9
改0603兩顆
R4936 0/6
R4937 0/6/X
remove SBC16,SBC17,SBC19,SBC11,SBC18
BC62 & BC63 change to CPU_VTT
remove SBC6,SBC10
remove SBC3,SBC4,SBC7,SBC8
remove SBC5
Gigabyte Technology
Title
CPU LGA1156-C
Size Custom
Document Number GA-H61M-D2H-USB3
Rev 1.0
Date: Thursday, August 25, 2011
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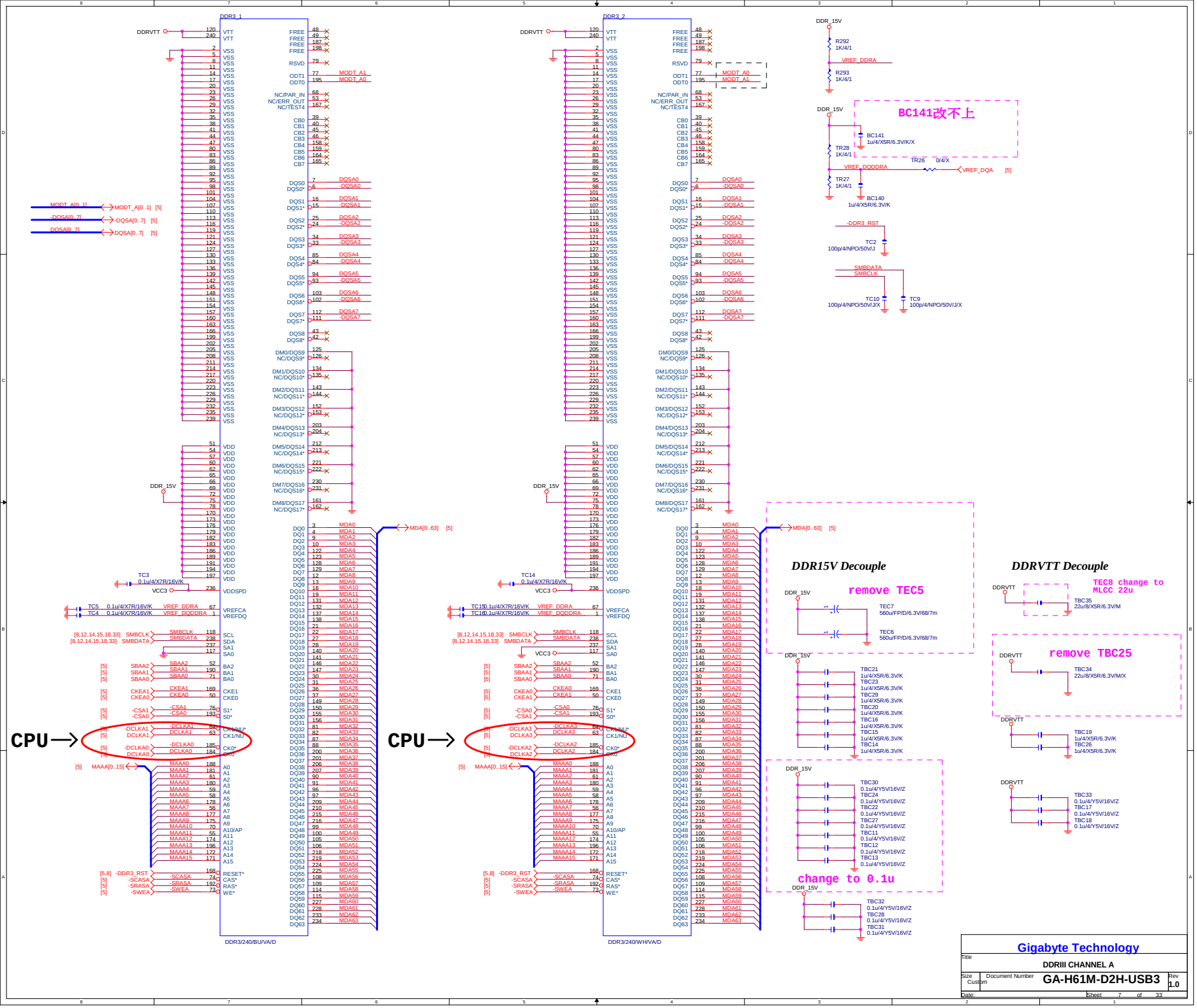
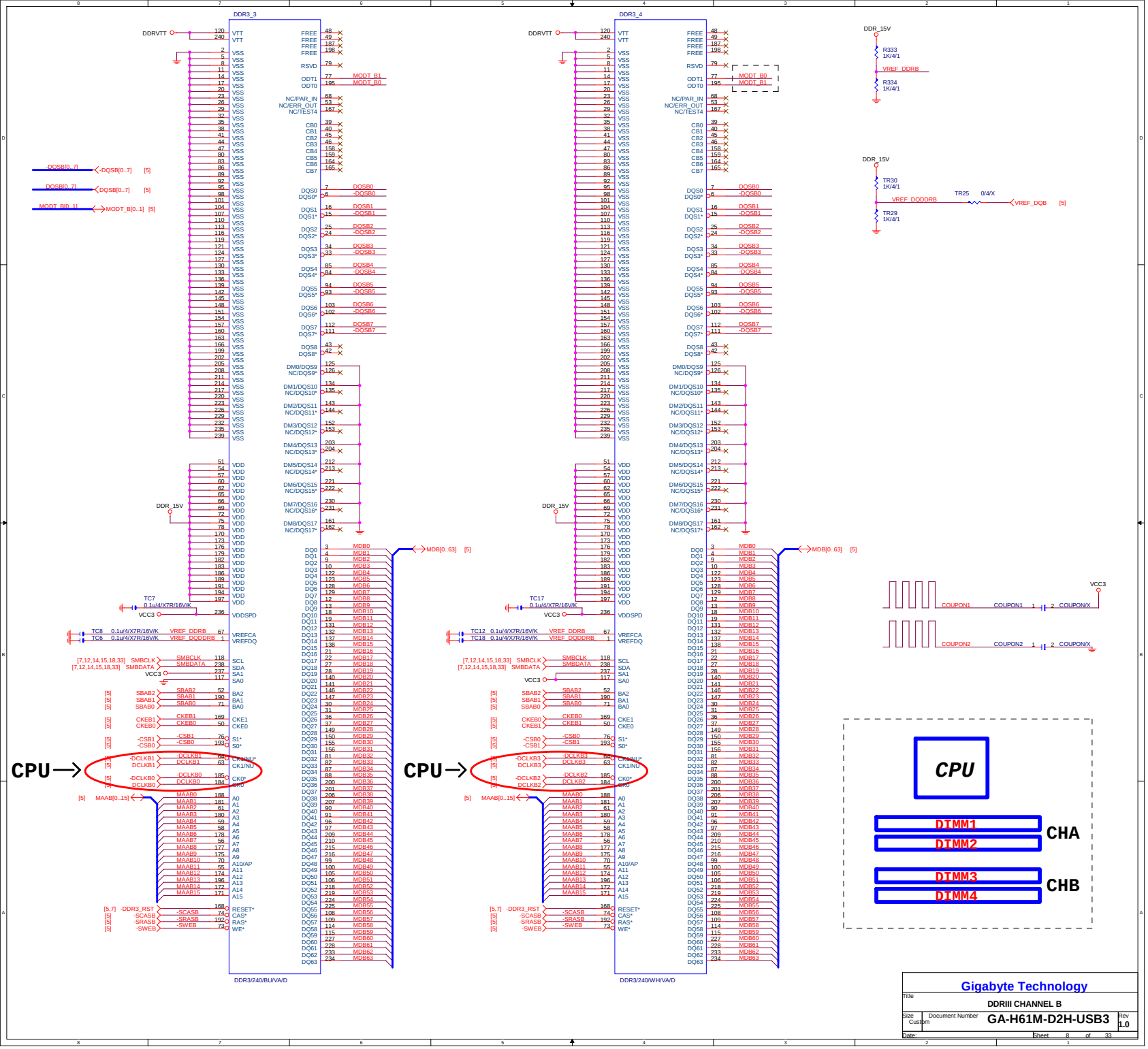

DDR3_1
DDR3_2
DDRVTT
DDR_15V
VCC3
VDDSPD
VREFCA
VREFDQ
SMBCLK
SMBDATA
MODT_A[0..1]
-DQSA[0..7]
DQSA[0..7]
MDA[0..63]
MAAA[0..15]
-DDR3_RST
-SCASA
-SRASA
-SWEA
CPU
DDR3/240/BU/VA/D
DDR3/240/WH/VA/D
R292 1K/4/1
R293 1K/4/1
VREF_DDRA
VREF_DQDDRA
BC141改不上
BC141 1u/4/X5R/6.3V/K/X
TR28 1K/4/1
TR26 0/4/X
TR27 1K/4/1
BC140 1u/4/X5R/6.3V/K
VREF_DQA
TC2 100p/4/NPO/50V/J
SMBDATA
SMBCLK
TC10 100p/4/NPO/50V/J/X
TC9 100p/4/NPO/50V/J/X
DDR15V Decouple
remove TEC5
TEC7 560u/FP/D/6.3V/68/7m
TEC6 560u/FP/D/6.3V/68/7m
TBC21 1u/4/X5R/6.3V/K
TBC23 1u/4/X5R/6.3V/K
TBC29 1u/4/X5R/6.3V/K
TBC20 1u/4/X5R/6.3V/K
TBC16 1u/4/X5R/6.3V/K
TBC15 1u/4/X5R/6.3V/K
TBC14 1u/4/X5R/6.3V/K
TBC30 0.1u/4/Y5V/16V/Z
TBC24 0.1u/4/Y5V/16V/Z
TBC22 0.1u/4/Y5V/16V/Z
TBC27 0.1u/4/Y5V/16V/Z
TBC11 0.1u/4/Y5V/16V/Z
TBC12 0.1u/4/Y5V/16V/Z
TBC13 0.1u/4/Y5V/16V/Z
change to 0.1u
TBC32 0.1u/4/Y5V/16V/Z
TBC28 0.1u/4/Y5V/16V/Z
TBC31 0.1u/4/Y5V/16V/Z
DDRVTT Decouple
TEC8 change to MLCC 22u
TBC35 22u/8/X5R/6.3V/M
remove TBC25
TBC34 22u/8/X5R/6.3V/M/X
TBC19 1u/4/X5R/6.3V/K
TBC26 1u/4/X5R/6.3V/K
TBC33 0.1u/4/Y5V/16V/Z
TBC17 0.1u/4/Y5V/16V/Z
TBC18 0.1u/4/Y5V/16V/Z
Gigabyte Technology
DDRIII CHANNEL A
GA-H61M-D2H-USB3
1.0
Sheet 7 of 33



Gigabyte Technology	
Title	DDRIII CHANNEL B
Size: Custom	Document Number: GA-H61M-D2H-USB3
Rev: 1.0	
Date:	Sheet 8 of 33

H61 disable
USB6,7,12,13

FRONT

REAR

PCHB

DMI_0TXN DMI_0TXP DMI_0RXN DMI_0RXP DMI_1TXN DMI_1TXP DMI_1RXN DMI_1RXP DMI_2TXN DMI_2TXP DMI_2RXN DMI_2RXP DMI_3TXN DMI_3TXP DMI_3RXN DMI_3RXP DMI_COMP

VCC1_05_PCH R226 49.9/4/1

-SRCCLK_PCH SRCCLK_PCH

CLKIN_DMI_N CLKIN_DMI_P

DMI

USB

PCI-E

PCIEX1_1

BRIDGE

USB3.0

LAN

PCIE_IN1 PCIE_IP1 PCIE_TN1 PCIE_TP1 PCIEBIN PCIEBIP PCIEBON PCIEBOP USB3_IN USB3_IP USB3_ON USB3_OP

ML_IN ML_IP ML_ON ML_OP

0.1u/4/X7R/16V/K

C27 PET_N1 C23 PET_P1 C161 PET_N2 C162 PET_P2 C163 PET_N3 C164 PET_P3 C88 PET_N5 C87 PET_P5

PERN1 PERP1 PETN1 PETP1 PERN2 PERP2 PETN2 PETP2 PERN3 PERP3 PETN3 PETP3 PERN4 PERP4 PETN4 PETP4 PERN5 PERP5 PETN5 PETP5 PERN6 PERP6 PETN6 PETP6 PERN7 PERP7 PETN7 PETP7 PERN8 PERP8 PETN8 PETP8

2 0F 11

BD82H61/B3/S

USBP0N USBP0P USBP1N USBP1P USBP2N USBP2P USBP3N USBP3P USBP4N USBP4P USBP5N USBP5P USBP6N USBP6P USBP7N USBP7P USBP8N USBP8P USBP9N USBP9P USBP10N USBP10P USBP11N USBP11P USBP12N USBP12P USBP13N USBP13P

-USBP0 +USBP0 -USBP1 +USBP1 -USBP2 +USBP2 -USBP3 +USBP3 -USBP4 +USBP4 -USBP5 +USBP5 -USBP10 +USBP10 -USBP11 +USBP11

OC0#/GPIO59 OC1#/GPIO40 OC2#/GPIO41 OC3#/GPIO42 OC4#/GPIO43 OC5#/GPIO9 OC6#/GPIO10 OC7#/GPIO14

-USBOC_F -USBOC_R OC3# OC4# OC6# GPIO14

BC75 0.1u/4/X7R/16V/K

BC120 0.1u/4/X7R/16V/K

H61 OC change

USBRBIAS# USBRBIAS

USBRBIAS R218 20/4/1

finetune USB driving

CLKIN_DOT_96N CLKIN_DOT_96P

-DOTCLK DOTCLK

NEW

DMI2RBIAS R227 750/4/1

GPIO11

S0723

-USBOC_F -USBOC_R

D8 BAT54A/SOT23/200mA

FOR FUSE SHORT GPIO

H61 disable
PCI-E 7,8

PCHG

FDILINK

FDI_RXN0 FDI_RXP0 FDI_RXN1 FDI_RXP1 FDI_RXN2 FDI_RXP2 FDI_RXN3 FDI_RXP3 FDI_RXN4 FDI_RXP4 FDI_RXN5 FDI_RXP5 FDI_RXN6 FDI_RXP6 FDI_RXN7 FDI_RXP7

FDI_TXN0 FDI_TXP0 FDI_TXN1 FDI_TXP1 FDI_TXN2 FDI_TXP2 FDI_TXN3 FDI_TXP3 FDI_TXN4 FDI_TXP4 FDI_TXN5 FDI_TXP5 FDI_TXN6 FDI_TXP6 FDI_TXN7 FDI_TXP7

FDI_FSYNC0 FDI_LSYNC0 FDI_FSYNC1 FDI_LSYNC1 FDI_INT

7 0F 11

BD82H61/B3/S

FDI_TXP[0..7] FDI_TXP[0..7] [4]

FDI_TXN[0..7] FDI_TXN[0..7] [4]

PCHE

NV_CLE

RESERVED_29 DF_TVS RESERVED_6 RESERVED_4 RESERVED_3 RESERVED_2 RESERVED_1

RESERVED_22 RESERVED_21 RESERVED_14 RESERVED_13 RESERVED_12 RESERVED_11 RESERVED_10 RESERVED_9 RESERVED_8 RESERVED_7 RESERVED_20 RESERVED_19 RESERVED_18 RESERVED_17 RESERVED_16 RESERVED_15

RESERVED_28 RESERVED_27 RESERVED_26 RESERVED_25

RESERVED_24 RESERVED_23

RESERVED_5 R50 NV_RCOMP R273 33/4

32.4/4/1 for ONFI enable

NVRAM

5 0F 11

BD82H61/B3/S

3VDUAL R4944 8.2K/4 OC4#

3VDUAL R4941 8.2K/4 OC3#

3VDUAL R4942 8.2K/4 OC6#

3VDUAL R236 8.2K/4 GPIO14

VCC3 BC80 1u/4/X5R/6.3V/K/X

BC80改不上

NEW FOOTPRINT:BGAHSINK_PCH_HS

USB OC# Configure for H61	
OC0#	USB0,1(F_USB1)
OC1#	USB2,3(F_USB2)
OC2#	USB4,5(USB_LAN)
OC3#	N/A
OC4#	N/A
OC5#	N/A
OC6#	N/A
OC7#	GPIO14

PCH_HS

PCH_HS SB_HS/[12SP2-030005-42R_12SP2-030005-43R]

VCC1_8_PCH R274 1K/4/1 NV_CLE R275 8.2K/4 -H_SNB BC139 0.1u/4/X7R/16V/K

DMI /FDI termination voltage

R274 2.2K change to 1K
R275 4.7K change to 8.2K

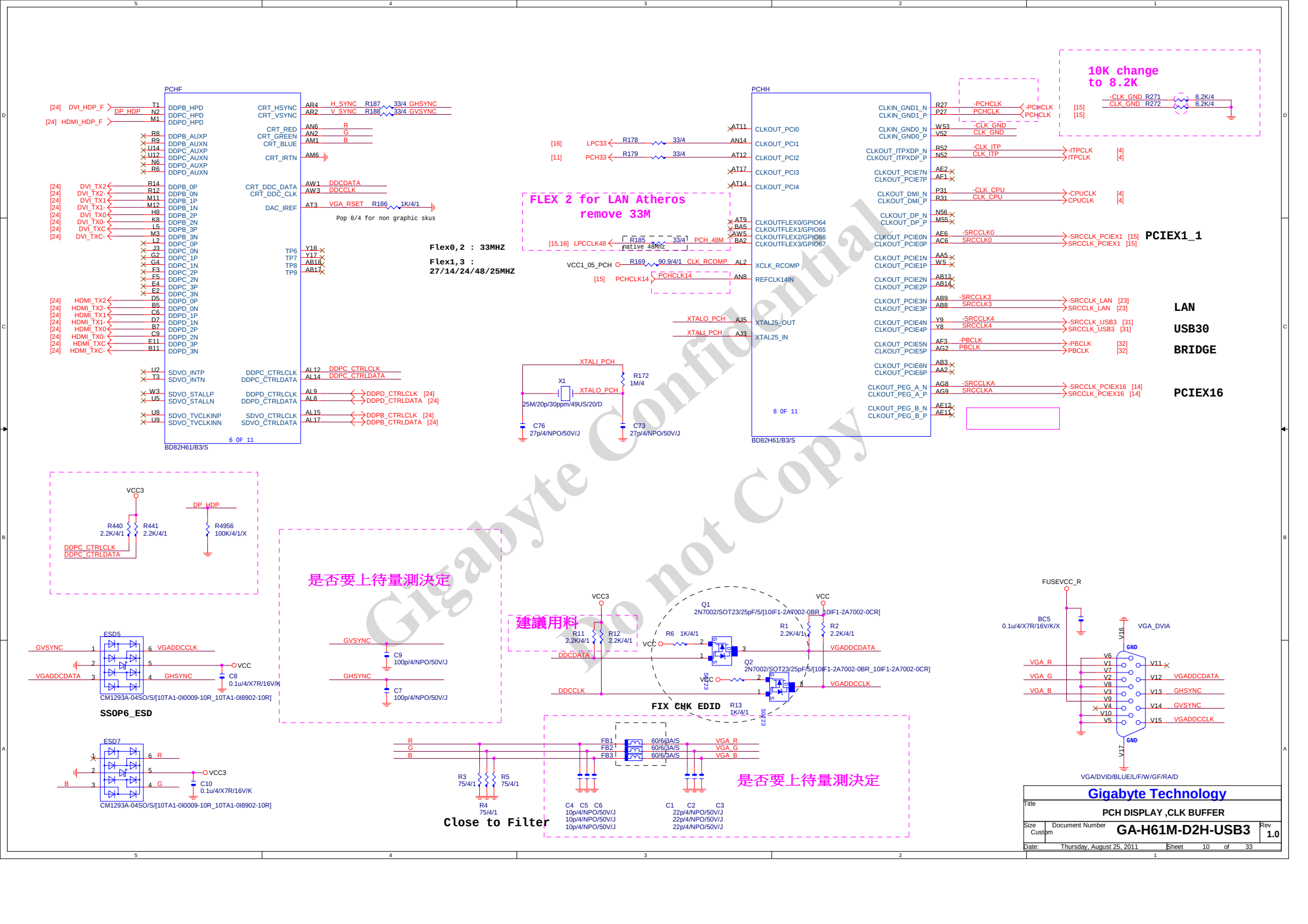
[4] R1018 short to GND in non graphic SKU

Gigabyte Technology

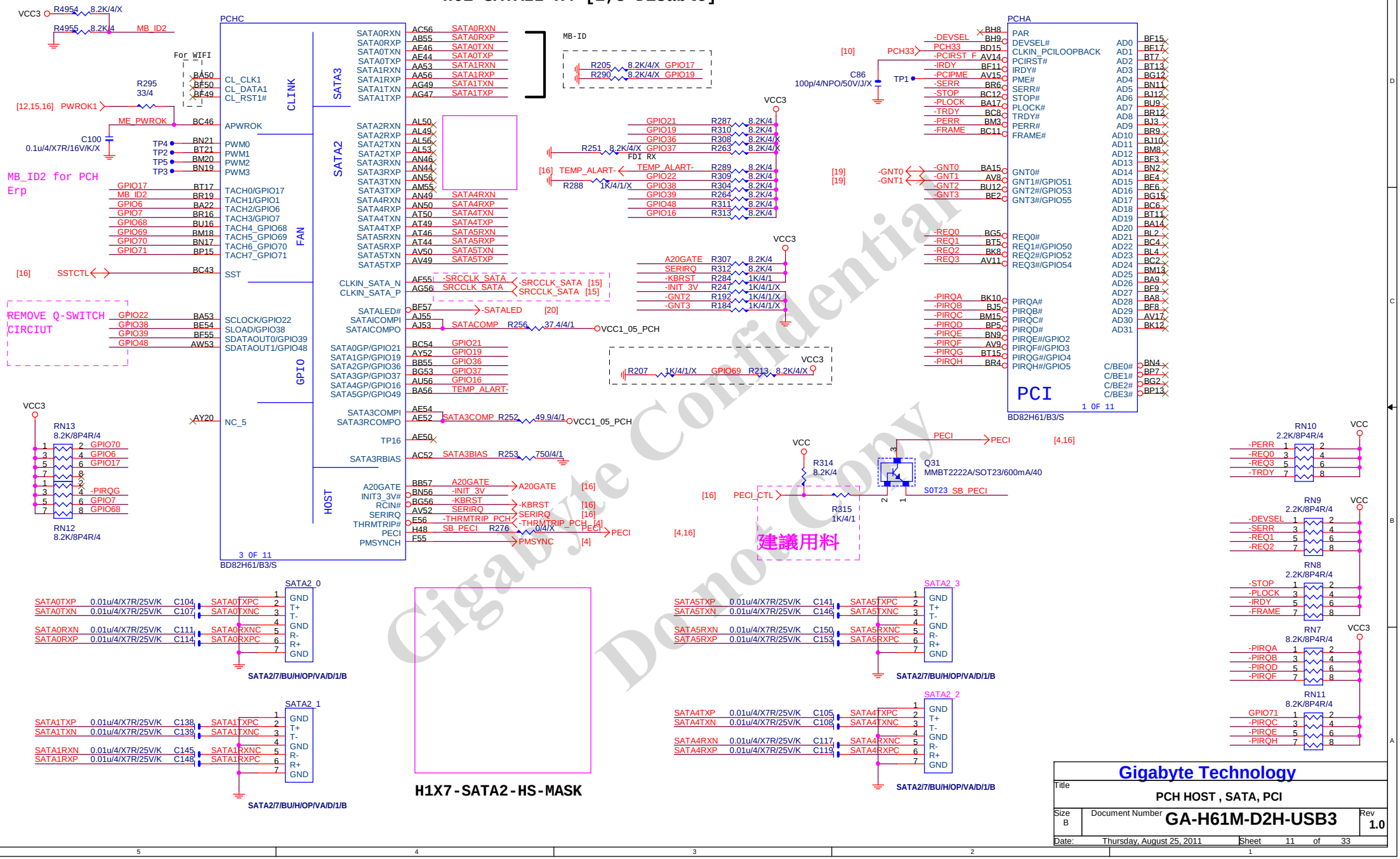
Title: PCH FDI,DMI,USB ,PCIE,NVRAM

Size: Custom | Document Number: GA-H61M-D2H-USB3 | Rev: 1.0

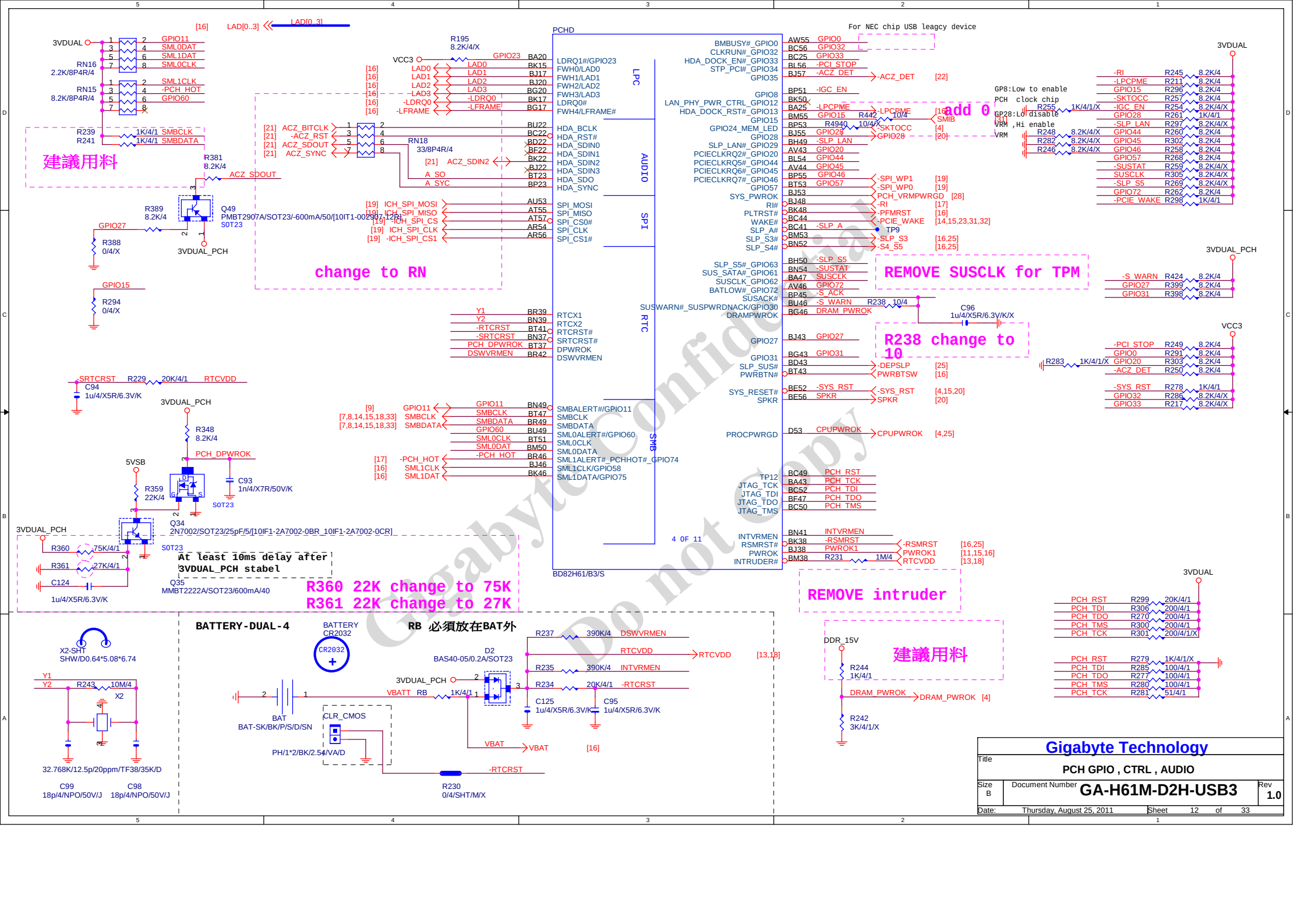
Date: Thursday, August 25, 2011 | Sheet 9 of 33

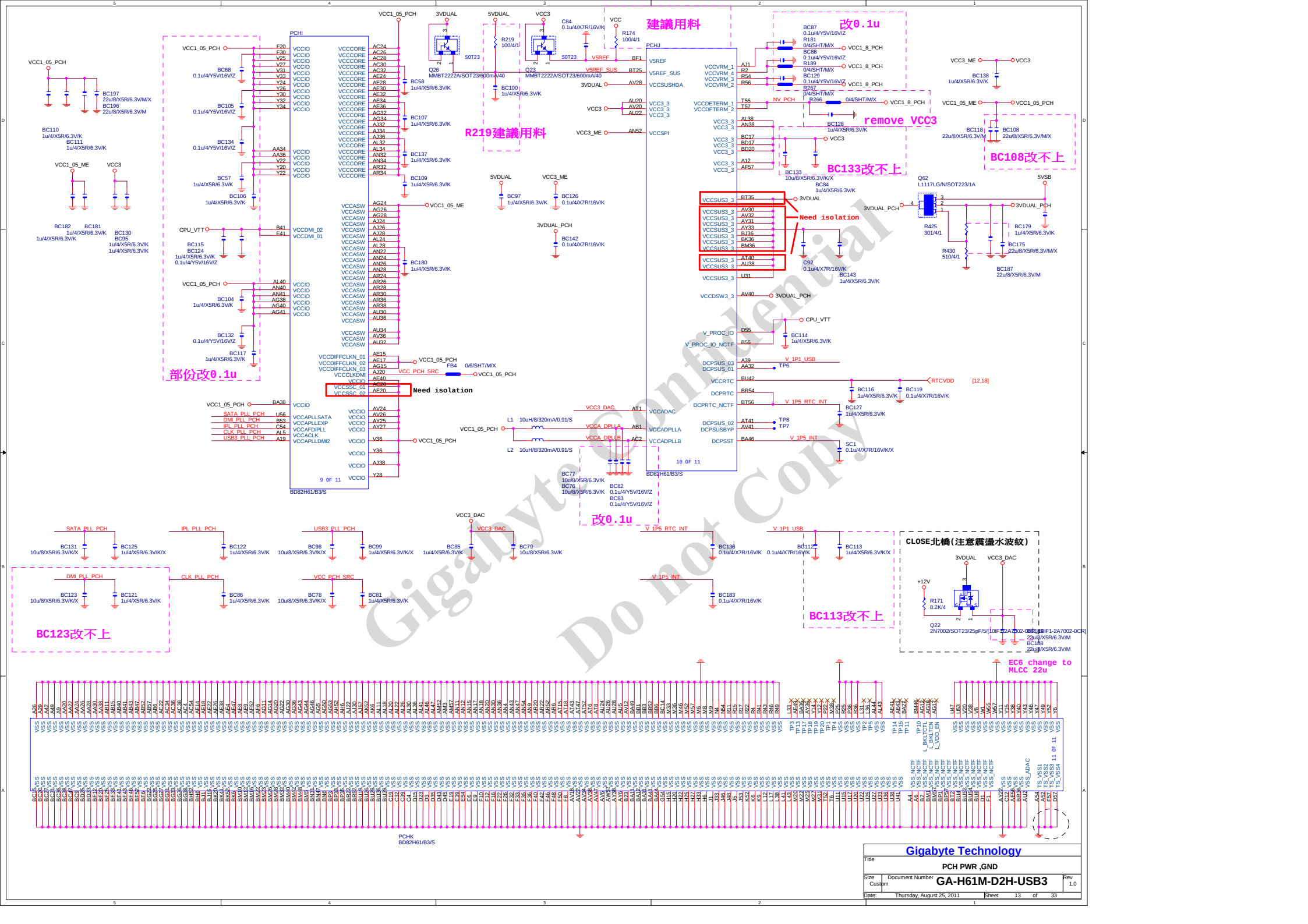

PCHF
BD82H61/B3/S
6 OF 11
Flex0,2 : 33MHZ
Flex1,3 :
27/14/24/48/25MHZ
FLEX 2 for LAN Atheros
remove 33M
PCHH
BD82H61/B3/S
8 OF 11
10K change
to 8.2K
PCIEX1_1
LAN
USB30
BRIDGE
PCIEX16
Do not Copy
Gigabyte Confidential
是否要上待量測決定
建議用料
FIX CHK EDID
SSOP6_ESD
CM1293A-04SO/S/[10TA1-0I0009-10R_10TA1-0I8902-10R]
Close to Filter
是否要上待量測決定
VGA/DVID/BLUE/L/F/W/GF/RA/D
Gigabyte Technology
PCH DISPLAY ,CLK BUFFER
GA-H61M-D2H-USB3
1.0
Thursday, August 25, 2011
10
33

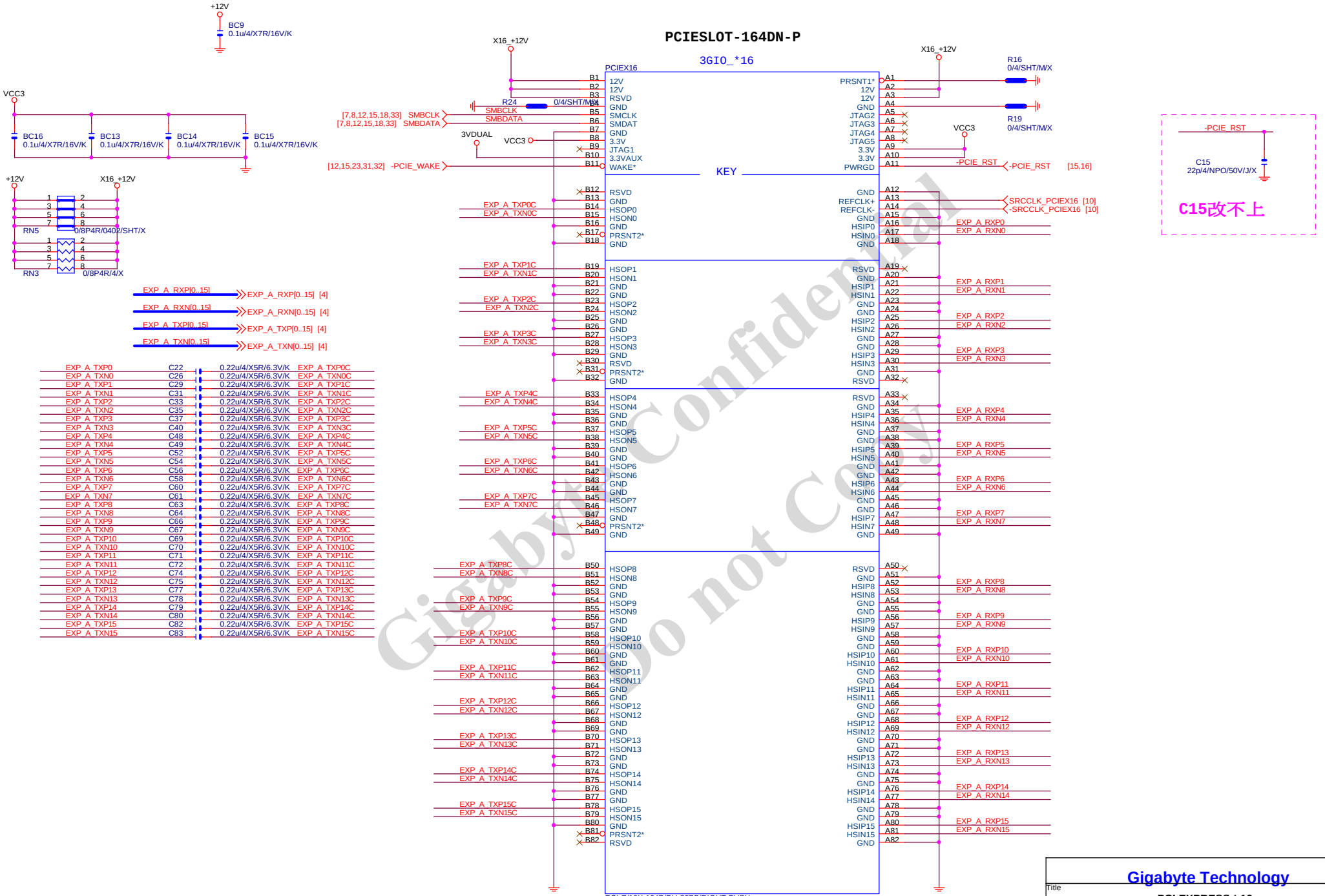
H61 SATAII x4 [2,3 Disable]



Gigabyte Technology	
Title	PCH HOST , SATA, PCI
Size B	Document Number GA-H61M-D2H-USB3 Rev 1.0
Date: Thursday, August 25, 2011	Sheet 11 of 33

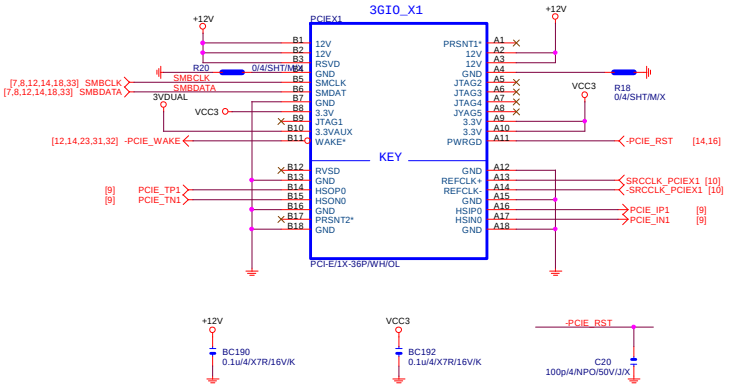






Gigabyte Technology		
Title	PCI EXPRESS * 16	
Size: Custom	Document Number: GA-H61M-D2H-USB3	Rev: 1.0
Date: Thursday, August 25, 2011	Sheet 14 of 33	

PCIEX1

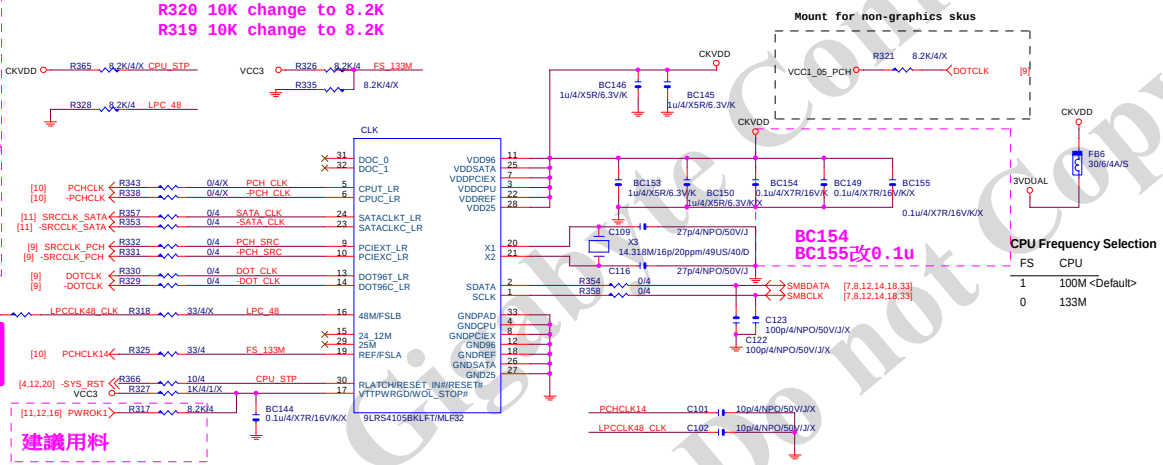


INTERNAL CLK STRAPPING

SRCCLK_PCH R323 8.2K/4/X
-SRCCLK_PCH R322 8.2K/4/X
DOTCLK R320 8.2K/4/X
-DOTCLK R319 8.2K/4/X
PCHCLK14 R316 8.2K/4/X
10K change to 8.2K
SRCCLK_SATA R356 8.2K/4/X
-SRCCLK_SATA R352 8.2K/4/X
-PCHCLK R339 8.2K/4
PCHCLK R344 8.2K/4

CLK GEN

R323 10K change to 8.2K
R322 10K change to 8.2K
R320 10K change to 8.2K
R319 10K change to 8.2K



10K change to 8.2K

R4935 close to (402,-4502) bottom side

建議用料

BC154
BC155改0.1u

CPU Frequency Selection

FS	CPU
1	100M <Default>
0	133M

Gigabyte Technology

Title: PCIE X 1/CLK GEN

Size: Custom | Document Number: GA-H61M-D2H-USB3 | Rev: 1.0

Date: Thursday, August 25, 2011 | Sheet 15 of 33

GP22 Default GP22 DIOD8

GP23 Default CPU_PG DOD8

REMOVE R146,R149

powerflow change to 3VDUAL_PCH

R83 R66 change to 10

ADD LPT PORT

R109 0 change to 10

CPU_FAN

SYS_FAN

FOR AR8161

COMB

-PFMRST2 for TPM

IT8728F(GB)

IT8728F/DX (GB)/QFP128

REMOVE ON/OFF CHARGER

GP40 Default 3VSBSW# DO8

CHK GPIO53

(-PSON FOR TEST ATX)

EUP

internal power pin, max 22nF cap

GP22

for LAN AR8151

For IT8721 Power leakage

For 8728 EUP function

remove DTR1- & RTS1-

EUP control by PCH

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

remove IO GP43 pull high

REMOVEQ20 R158 & R155 for ITE 8728 DX

建議用料

建議用料

PCIRST1 is OD in IT8728

REMOVE R61 & R141 .R77 R136 改上件 for ITE 8728 DX

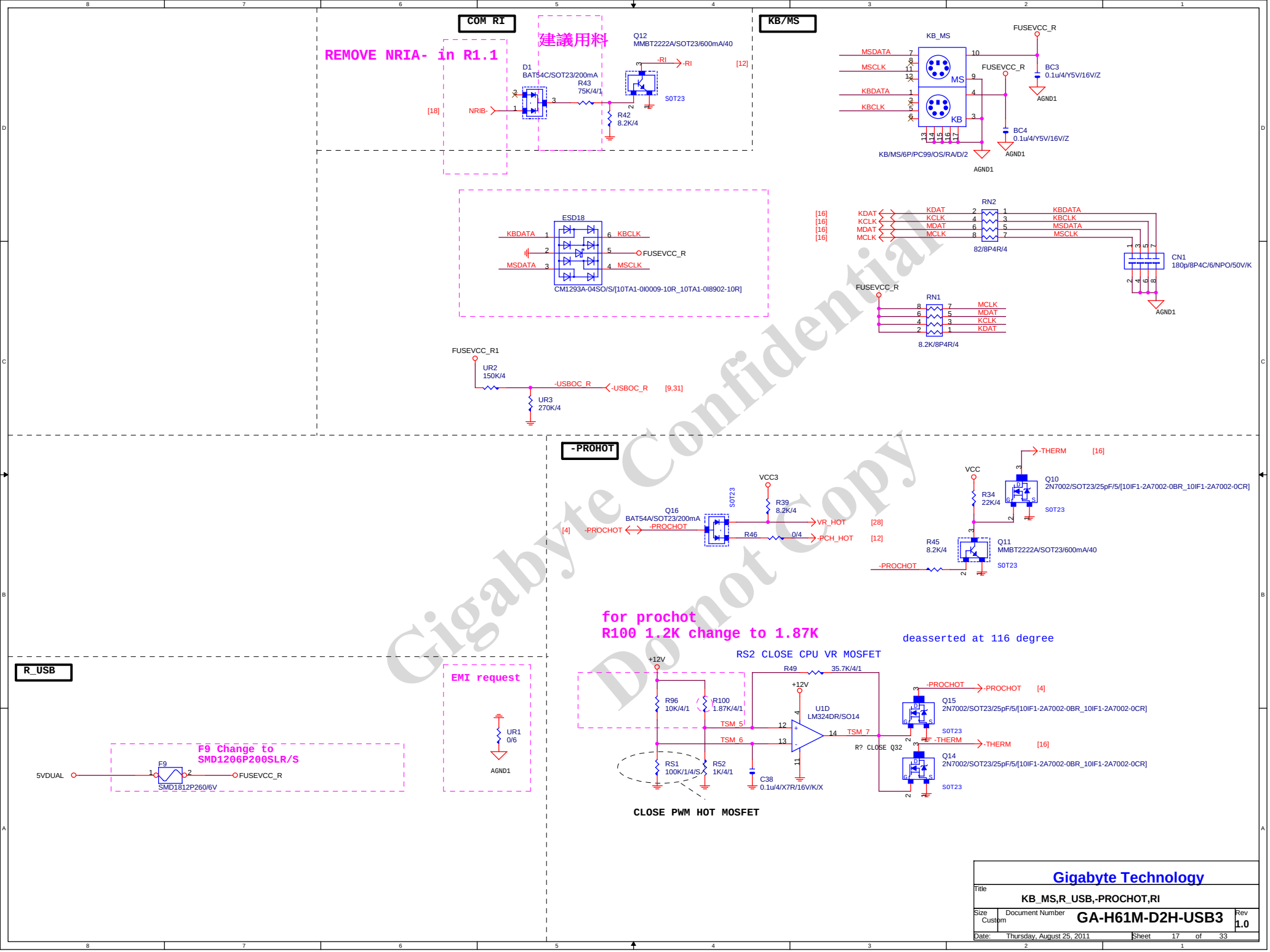
	IT8728
PIN121	VCORE_EN/PCH_C0
PIN120	VLDT_EN/PCH_D0
PIN19	ATXPG
PIN31	PCH_C1
PIN53	SST/AMDTSI_D/MTRB#/PCH_D1
PIN55	PECI/AMDTSI_C/DRVB#
PIN66	SYS_3VSB
PIN70	GP47
PIN95	VIN2(VCC5)
PIN96	VIN1(VCC12)
PIN97	VIN1/VDIMM_STR(1.5V)
PIN98	VIN0/VCORE(1.1V)/NC

Gigabyte Technology

Title: ITE 8728 LPC IO

Size: B | Document Number: GA-H61M-D2H-USB3 | Rev: 1.0

Date: Thursday, August 25, 2011 | Sheet 16 of 33



Gigabyte Technology		
Title: KB_MS,R_USB,-PROCHOT,RI		
Size: Custom	Document Number: GA-H61M-D2H-USB3	Rev: 1.0
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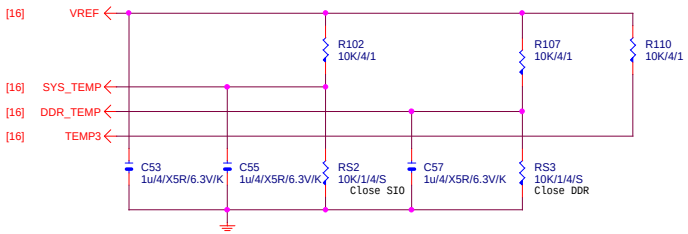
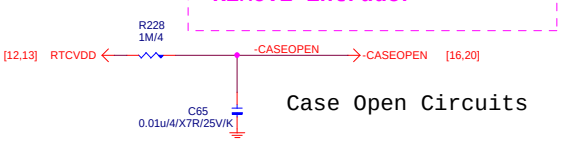
TEMP H/W MONITOR



CASE OPEN

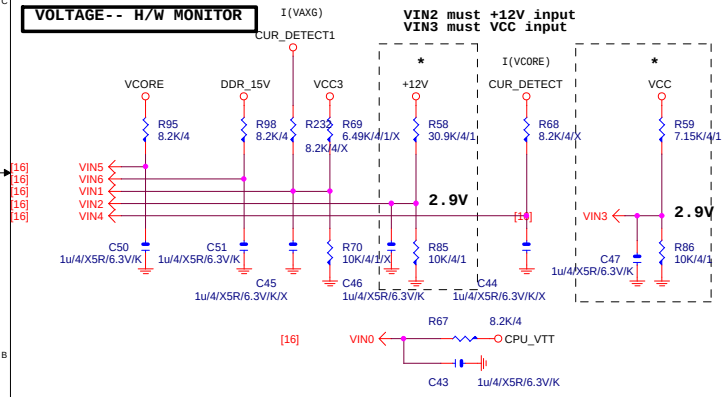
REMOVE intruder



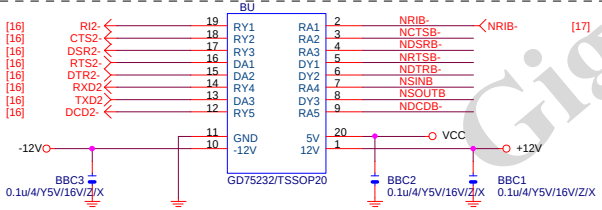
Case Open Circuits

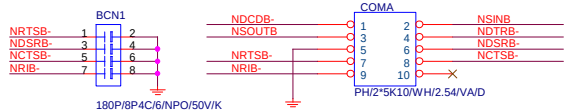
VOLTAGE-- H/W MONITOR

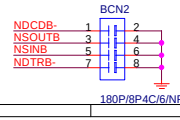
VIN2 must +12V input
VIN3 must VCC input



COMB



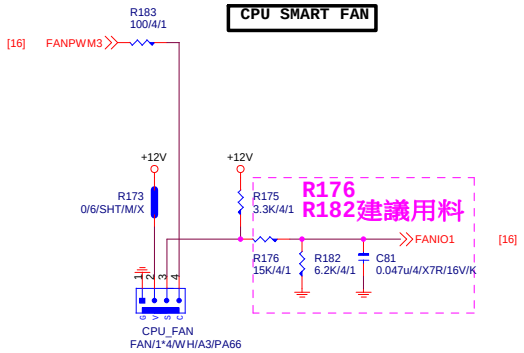




COMB改pinheader

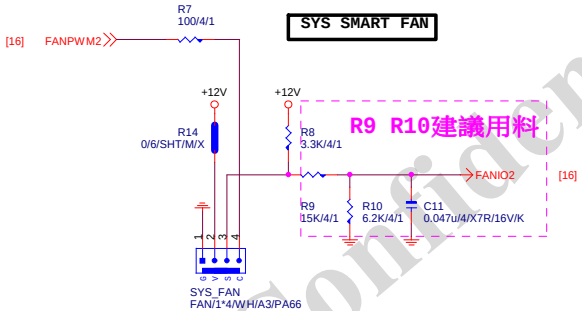
COMB改COMA 1.1

CPU SMART FAN



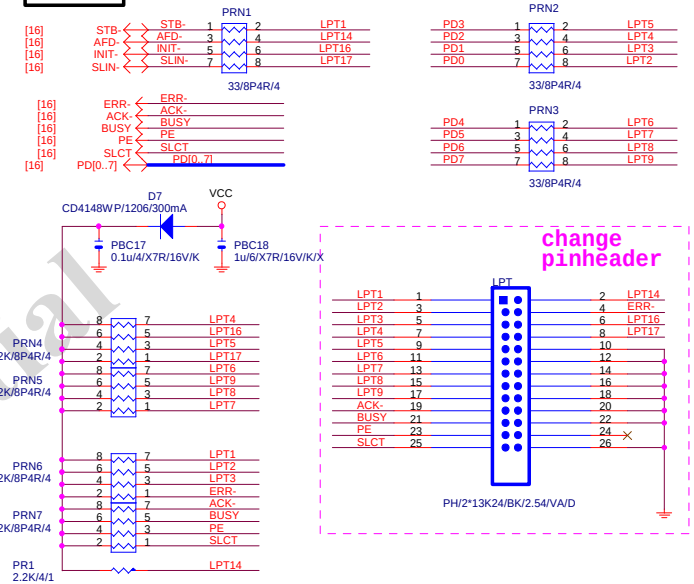
R176
R182建議用料

SYS SMART FAN



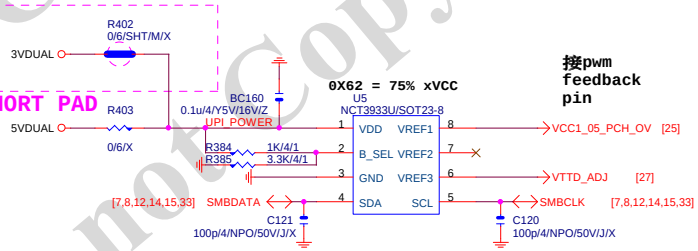
R9 R10建議用料

LPT PORT

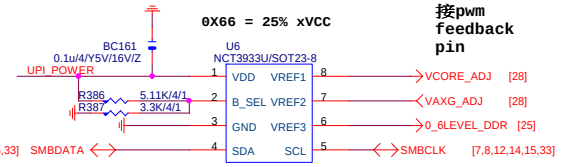


change pinheader

R402 change to SHORT PAD



接pwm feedback pin



接pwm feedback pin

Gigabyte Technology			
Title: HWM,FAN CTRL,OV,COMB,LPT			
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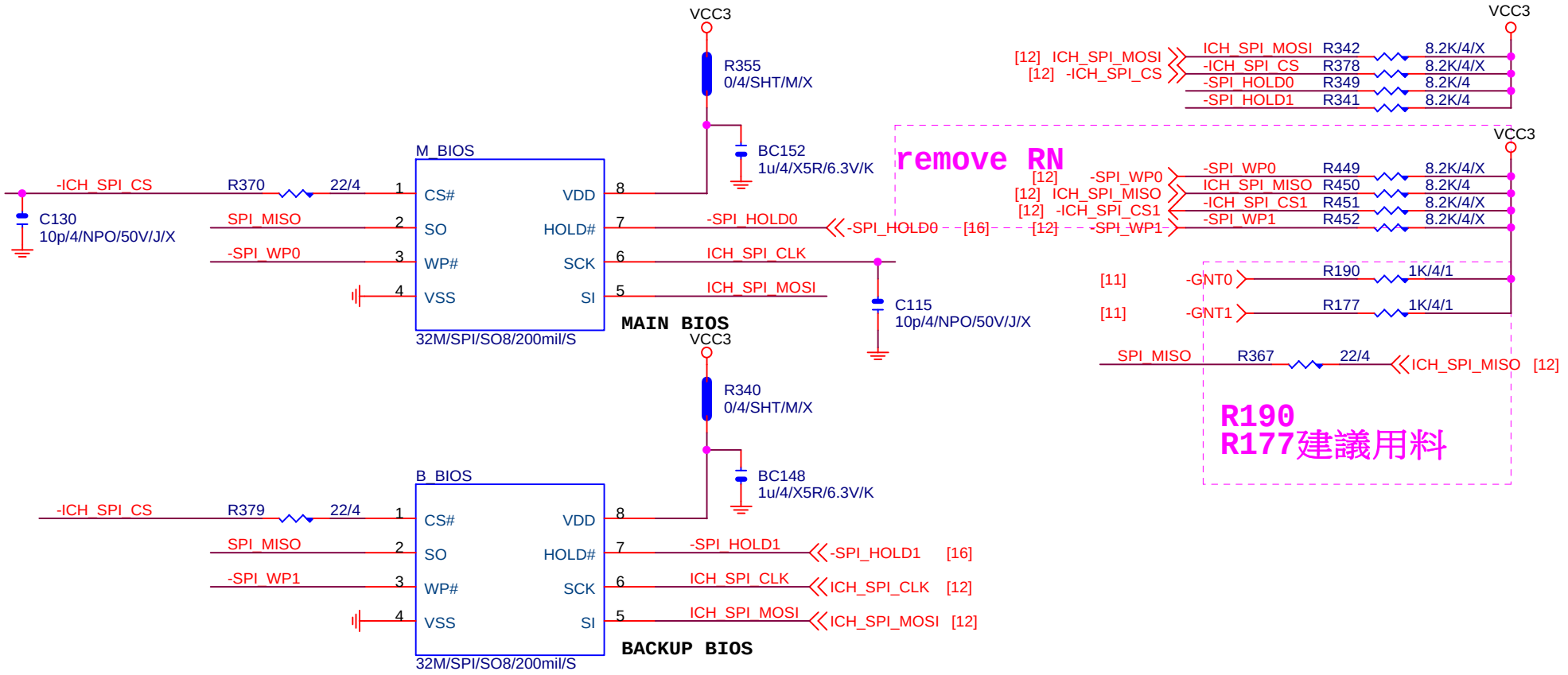
DUAL BIOS

R349 R341 改上件 for ITE 8728 DX



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	Document Number	Rev
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FRONT USB1

FU改pinheader

FUSEVCC_F FUSEVCC_F

UBC10 0.1u/4/Y5V/16V/Z F_USB1 UBC9 0.1u/4/Y5V/16V/Z

[9] -USBP0 +USBP0 [9] -USBP1 +USBP1 [9]

PH/2*5K9/BU/2.54/VA/D

change to BLUE COLOR

ESD10

+USBP0 -USBP0 FUSEVCC_F +USBP1 -USBP1

CM1293A-04SO/S/[10TA1-0I0009-10R_10TA1-0I8902-10R]

Close to connector

SATA LED

[11] -SATALED -HDLED

CLOSE R_USB

5VDUAL F15 FUSEVCC_F

SMD1812P260/6V

CLOSE F_USB1

UEC9 100u/OS/D/16V/66/30m

add UEC9 for USB Port 0,1

SPKR

RESETCONIN DEFAULT LOW
4sec,會發BEEP,故改2N7002

8.2K change to 1K

VCC D6 1N4148W/SOD123/300mA

To disable TCO timer

VCC3 R414 1K/4/1

VCC R407 1K/4/1 R413 75/4/1 SPK-

R397 8.2K/4 R422 75/4/1 Q65 MMBT2222A/SOT23/600mA/40

R423 8.2K/4 SPKR SPKR [12]

[16] BEEP- BEEP- S0T23 S0T23

Q50 2N7002/SOT23/25pF/5/[10IF1-2A7002-0BR_10IF1-2A7002-0CR]

Q59 MMBT2222A/SOT23/600mA/40

1K change to 8.2K

FRONT USB2

FUSEVCC_F FUSEVCC_F

UBC7 0.1u/4/Y5V/16V/Z F_USB2 UBC8 0.1u/4/Y5V/16V/Z

[9] -USBP2 +USBP2 [9] -USBP3 +USBP3 [9]

PH/2*5K9/BU/2.54/VA/D

ESD9

+USBP2 -USBP2 FUSEVCC_F +USBP3 -USBP3

CM1293A-04SO/S/[10TA1-0I0009-10R_10TA1-0I8902-10R]

Close to connector

FU改pinheader

INTEL FRONT PANEL

改VCC3

VCC3

H2X10PANEL-2

ESD17

-RST -RST 5VSB -PWRBT_1 -PWRBT_1

CM1293A-04SO/S/[10TA1-0I0009-10R_10TA1-0I8902-10R]

ESD for PWRBT & RSTBT

改100/4/1

R324 100/4/1 BC173 0.01u/4/X7R/25V/K/X

5VSB改3VDUAL_PCH

3VDUAL_PCH

F_PANEL

HD+ MSG/PD+ MPD+

-HDLED HD- MSG/PD-

GND PW+ -PWRBT_1

R383 100/4/1 [4,12,15] -SYS_RST -RST RESET PW-

BC162 0.01u/4/X7R/25V/K CI-

[16,18] -CASEOPEN CI+

SP+ VCC

MPD+ PWR+ NC

PWR- NC

PWR- SP- SPK-

PH/2*10K10,12,13/WH/2.54/VA/D

R377 8.2K/4 R364 33/4 -PWRBTSW [16]

C131 0.01u/4/X7R/25V/K/X BC151 0.01u/4/X7R/25V/K

Q48 BAV99/SOT23/300mA 5VSB

FP改pinheader

VCC R337 330/6 MPD+

Q32 MMBT2222A/SOT23/600mA/40

S0T23 R336 1K/4/1 GPIO28 [12]

FUSEVCC_F UR25 150K/4 -USBOC_F -USBOC_F [9]

UR24 270K/4

Gigabyte Technology		
Title: FP,F_USB,SPKR,SATA LED		
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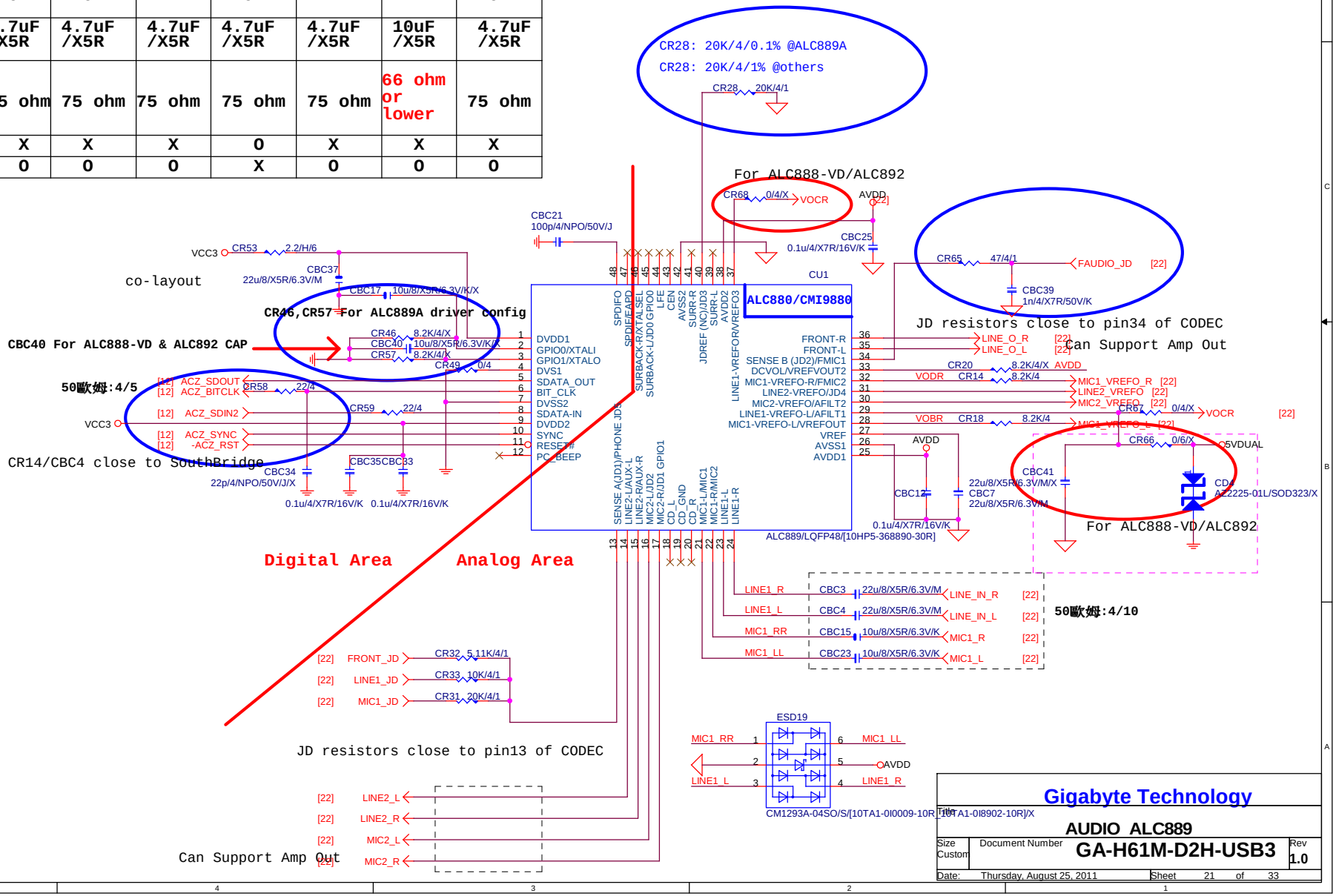
AZALIA CODEC

ALC883/ALC888-A/ALC888B/ALC888-VD/ALC892R/ALC889/ALC889A Colay

	ALC883	ALC888-VA	ALC888B	ALC888-VD	ALC892R	ALC889	ALC889A
CR46	X	X	X	X	X	X	O
CR57	X	X	X	X	X	X	O
CR49	O	O	X	X	X	O	O
CBC40	X	X	X	10uF/X5R	10uF/X5R	X	X
CR20	O	X	X	X	X	X	X
CR28	20K/1%	20K/1%	20K/1%	20K/1%	20K/1%	20K/1%	20K/0.1%
CR47	X	X	O	X	O	O	X
CR48	O	O	X	O	X	X	O
CBC2/CBC4/CBC5/ CBC6/CBC10/CBC11	4.7uF /X5R	4.7uF /X5R	4.7uF /X5R	4.7uF /X5R	4.7uF /X5R	10uF /X5R	4.7uF /X5R
CR1/CR3/CR10/CR12/ CR15/CR19/CR56/CR27/ CR55/CR37/CR28/CR34/ CR6/CR9/CR51/CR61	75 ohm	75 ohm	75 ohm	75 ohm	75 ohm	66 ohm or lower	75 ohm
CR66/CR68/CD3/CBC41	X	X	X	O	X	X	X
CR67/CD1/CD2/CQ3/CQ5	O	O	O	X	O	O	O



Gigabyte Technology

Title: AUDIO ALC889

Size	Document Number	Rev
Custom	GA-H61M-D2H-USB3	1.0

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CODEC POWER/EMI PAD

EUP
CD3
CD4148WP/1206/300mA
5VDUAL
AVDD
CQ1
78L05/SOT89/0.1A
CBC20
0.1u/4/Y5V/16V/Z
CBC16
22u/8/X5R/6.3V/M
CD2
AZ2225-01L/SOD323
change to DGND

+12V
CR8
2.2/4
CR8 short PAD change to 2.2

CR4
0/6/SHT/M/X
close MH1
CR69
0/6/SHT/M/X
close CU1

MOATC3
MOATC2
MOATC1
SMOATR1
0.1u/4/X7R/16V/K/X
0/6/SHT/M/X

LINE-OUT

[21] LINE_O_R
[21] LINE_O_L
CEC4
CEC3
100u/OS/D/16V/66/30m
CR5
CR10
62/4
CR9
CR6
22K/4
AJ_B5
AJ_B2
CBC9
CBC8
180p/4/NPO/50V/J

LINE-IN

Only reserved for ALC888

Verify MIC function in LINE-in

[21] LINE_IN_R
[21] LINE_IN_L
[21] VOCR
CQ5
SOT23
CR1
CR2
CR11
CR22
62/4
8.2K/4/X
For 889A/888
BAT54A/SOT23/200mA/X
CBC10
CBC11
180p/4/NPO/50V/J
AJ_A5
AJ_A2

MIC-IN

[21] MIC1_R
[21] MIC1_L
CR19
CR21
62/4
[21] MIC1_VREFO_L
[21] MIC1_VREFO_R
CBC1
CBC2
180p/4/NPO/50V/J
AJ_C5
AJ_C2

AZALIA JACK

ESD4
LINE2_R
MIC2_R
LINE2_L
MIC2_L
AVDD
CM1293A-04SO/S/[10TA1-0I0009-10R_10TA1-0I8902-10R]

AUDIO
[21] LINE1_JD
LINE1_JD
AJ_A5
AJ_A2
[21] FRONT_JD
FRONT_JD
AJ_B5
AJ_B2
[21] MIC1_JD
MIC1_JD
AJ_C5
AJ_C2
GND
MH1
MH2
MH3
MH4
MH5
BLUE
LINE-IN
GREEN
LINE-OUT
PINK
MIC-IN
AUDIO/BTX/[11NR6-403007-71R_11NR6-403007-76R]

AZALIA FRONT PANEL

CQ2
CQ4
BAT54A/SOT23/200mA
SOT23
[21] LINE2_VREFO
[21] MIC2_VREFO
CR17
CR23
CR29
CR36
8.2K/4
F_AUDIO_H
FP改pinheader
Digital Area
3VDUAL
CR37
8.2K/4
CR24
CR15
22K/4
F_AUDIO
CR12
20K/4/1
CR13
39.2K/4/1
ACZ_DET
[12]
PH/2*5K8/GED/2.54/VA/D/[11NH2-000205-K1R]
[21] MIC2_L
[21] MIC2_R
CBC19
CBC18
10u/8/X5R/6.3V/K
CR38
CR27
62/4
M2_L
M2_R
L2-R
L2-L
[21] FAUDIO_JD
CR26
CR16
[21] LINE2_R
[21] LINE2_L
CEC1
CEC2
100u/OS/D/16V/66/30m
CBC28
CBC24
CBC22
CBC13
180p/4/NPO/50V/J
轉換方向

Gigabyte Technology
Title
AUDIO JACK
Size Custom
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LAN:AR8151/AR8161

離IC近越好

LA_ ML-->80歐姆:[15/5/5/5/15]

SRCCLK-->50歐姆:[18/4/10/4/18]

AR8161-->N/A

AR8161-->(O)

AR8161-->N/A (LBC17)

AR8161-->N/A (LR32,LBC5)

close to artheros AR8151

AR8161-->N/A

AR8152-->N/A

AR8151:AVDDH
AR8161:3VDUAL

LAN POWER

NEW DESIGN ONLY FOR INTERNAL SWR
AR8151:LAR3(O),LAR5(X)
AR8161:LAR5(O),LAR3/LAR4(X)

CLOSE
LA_LX 200mil

AR8161-->N/A
(LAR3,LAR4)

AR8151 POWER

AR8161-->(O)

AR8161-->BEAD
AR8151-->N/A

AR8161-->BEAD
AR8151-->0/6

AR8161 POWER

AR8161-->(O)

AR8161-->(O)

Power domain chart

	AR8151	AR8161
AVDD33	N/A	3.3V
VDD33	3.3V	3.3V
AVDDH	2.7V	2.7V
AVDDL/DVDDL	1.1V	1.1V
VDDCT	1.7V	

AR8161-->N/A

AR8152-->N/A

CLOSE LAN CHIP

USB_LAN CONNECTOR

USB_LAN

CLOSE USB_LAN

LR21:AR8151(O),AR8152(X)

EMI

USB+LAN/1G/GO,Y/OS/RA/D/1/[11NR6-702009-0ER_11NR6-702009-91R]

USB-->90歐姆:[15/4.5/7.5/4.5/15]

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: ARTHEROS AR8151/AR8161

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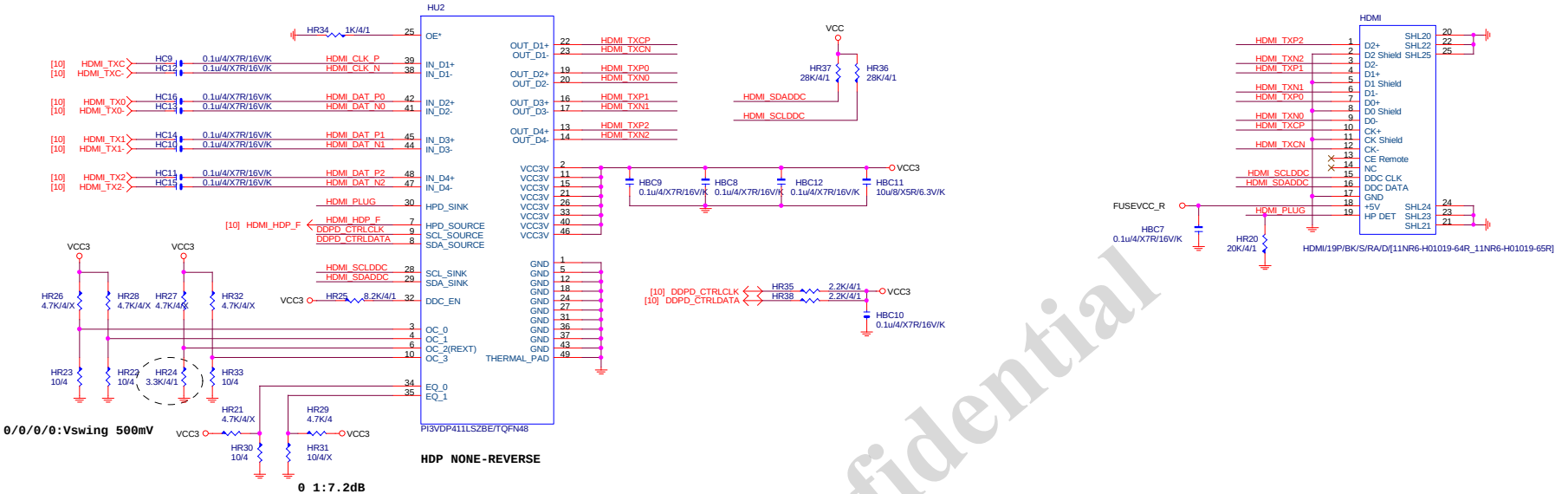

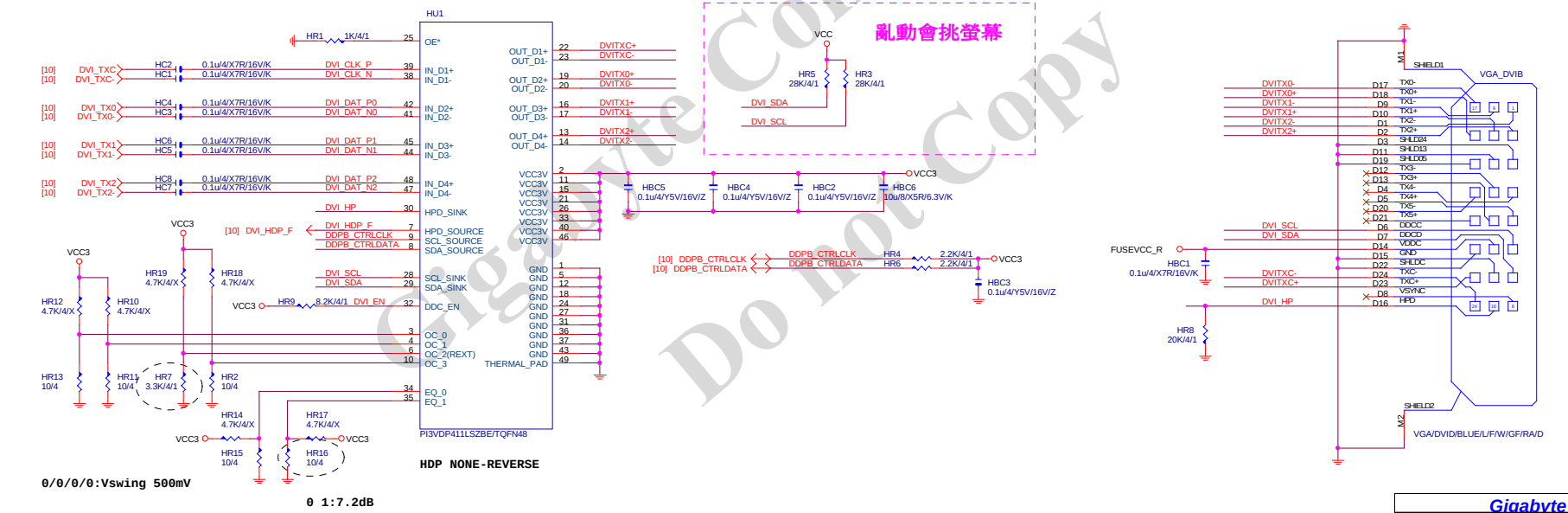

Gigabyte Technology

Title: HDMI / DVI

Size: Custom | Document Number: GA-H61M-D2H-USB3 | Rev: 1.0

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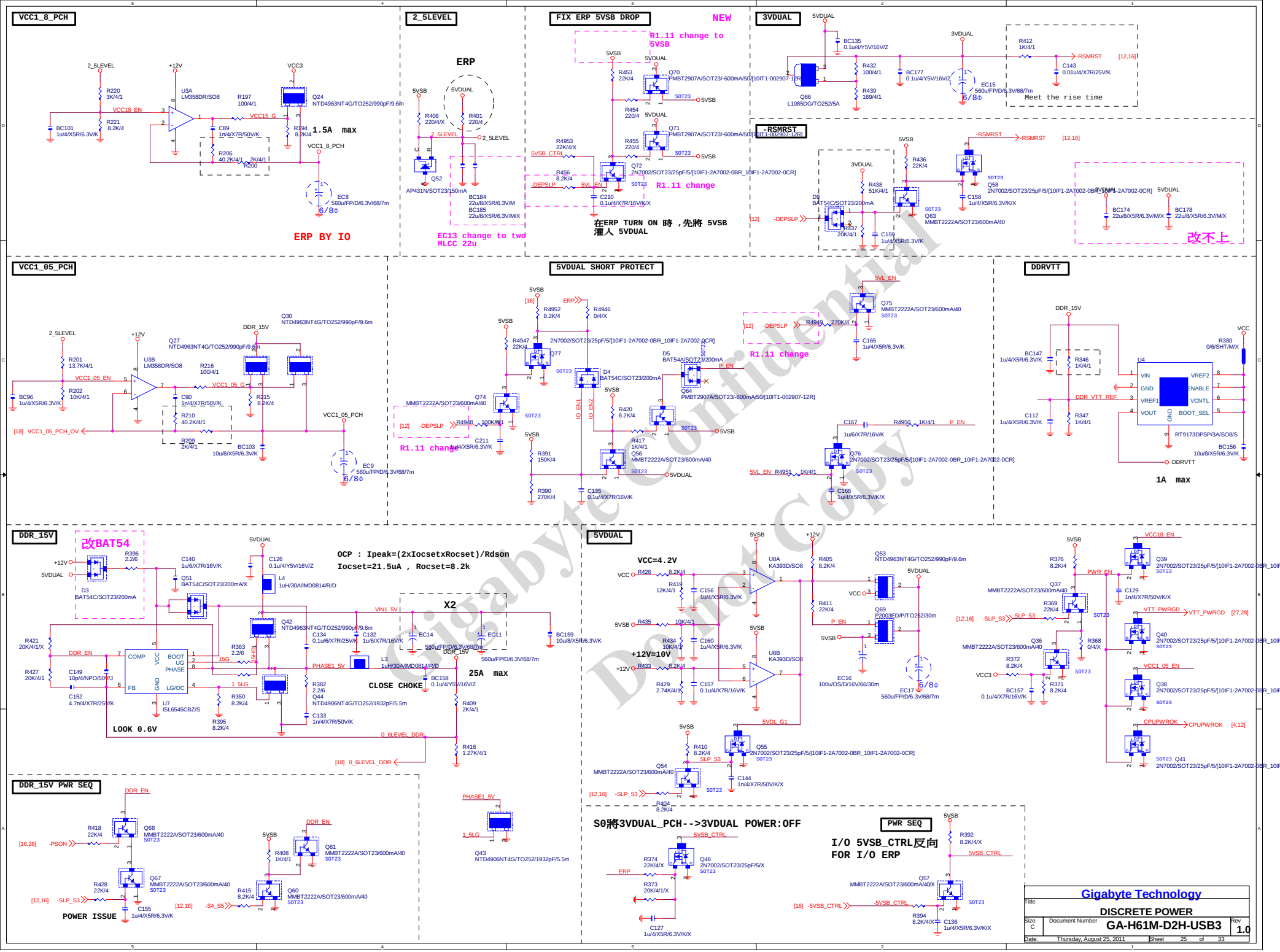
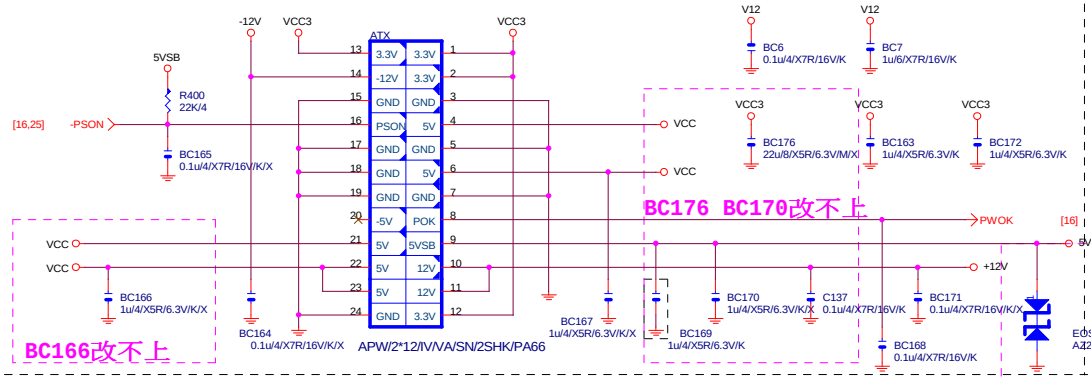
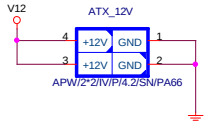
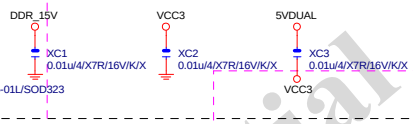


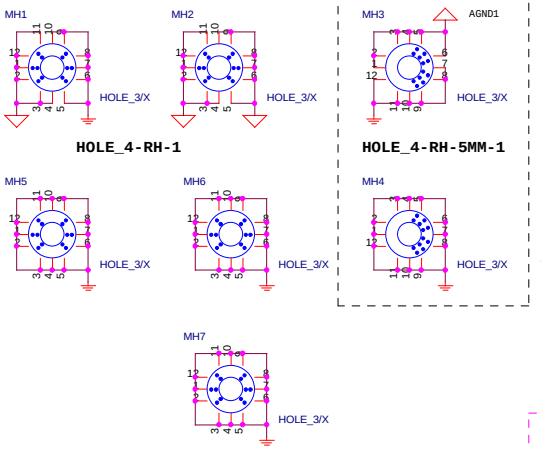
ATXX24 POWER CONNECTOR

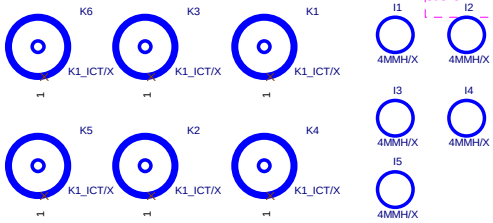


ATXX4 POWER CONNECTOR





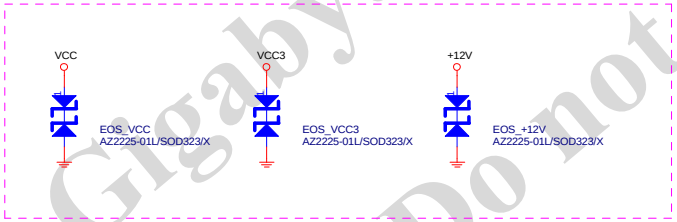




To prevent the 5VSB under loading when boot

5VDUAL1(USB PORT/DDRIII POWER)
5VDUAL(3VDUAL/OTHER)

-S_WARN-->5VDUAL1-->-S_ACK(PCH)-->-DEPSLP/-RSMRST-->5VDUAL-->3VDUAL



Gigabyte Technology		
Title: ATX CONNECTOR		
Size: Custom	Document Number: GA-H61M-D2H-USB3	Rev: 1.0
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CPU_VTT

TR23 2K change to 3.83K

TR23 0 change to 4.02K

TR22 change to short pad

TR8 0 change to 1

TR2 0 change to 1

TR7 0 change to 1

改PPAK & Ferrite Core

TR19 change to 5.1K

	VTT_SEL
HI	1.05V
LO	1.0V

	F_SEL
PU	1MHz
PD	600KHz
NC	500KHz
Short GND	300KHz

BOTTOM PAD CONNECT TO GND THROUGH 4 VIA

48A Max

remove TEC3

VCCSA

PDG 0.8

	VSA_SEL
HI	0.85V
LO	0.925V

BC22 BC23改不上

R94 change to short pad

VCCSA PWR SEQ

CPU_VTT PWR SEQ

VTT_PWRGD

Title	CPU_VTT PWM_ISL95870CRZ
Size	Custom
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DR85 150 change to 51
DR69 6.8K change to 11K
DR82 0 change to 10
DR62 2.1K change to 1.1K
DR65 1.6K change to 1.1K
DR57 100 change to 8.2K
DR102 100 change to 8.2K
DR54 short change to 750
DR103 short change to 1K
DR91 6.8K change to 10K
DR100 3.3K change to 1K
DR69 11K change to 20K
DR54 750 change to 1.2K

DR84 56.2 change to 51
DR92 2.1K change to 1K

DR52 16.2K change to 24.9K

改 Ferrite Core

DR46 DR48 DR45 DR47 change to 10

DR86 change to 750

FOLLOW SB VALUE

FOR DVCS

FOLLOW SB VALUE

DR56 10K change to 0

BOTTOM PAD CONNECT TO GND THROUGH 10 VIA

Close VCORE output choke

Close VXG output choke

disable PHASE4

disable VAXG

FOR CUT5 IC

FOR RMA

Set BT=PD 10K for Vboot=1.1V

remove VAXG RDY

Gigabyte Technology	
Title	CPU CORE VR-1
Size: Custom	Document Number: GA-H61M-D2H-USB3
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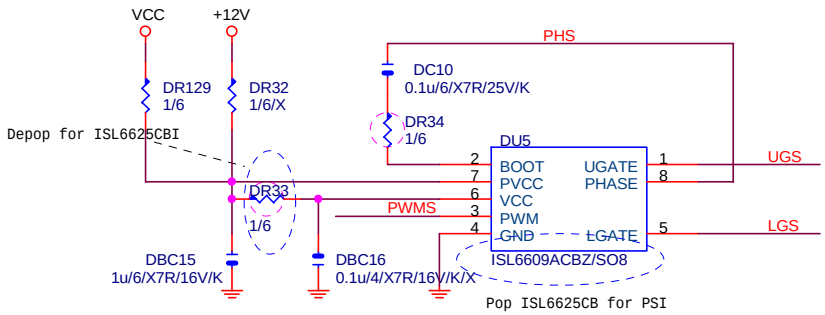
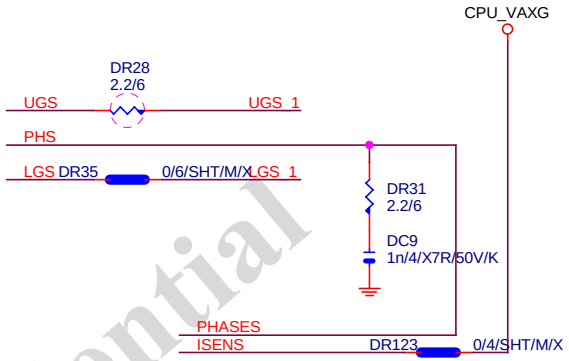
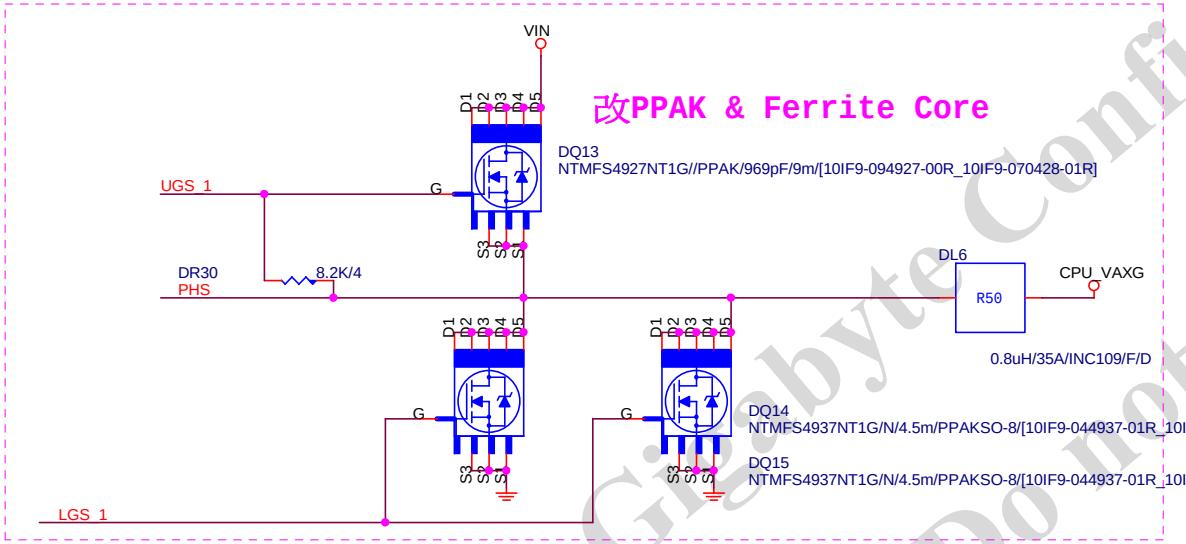
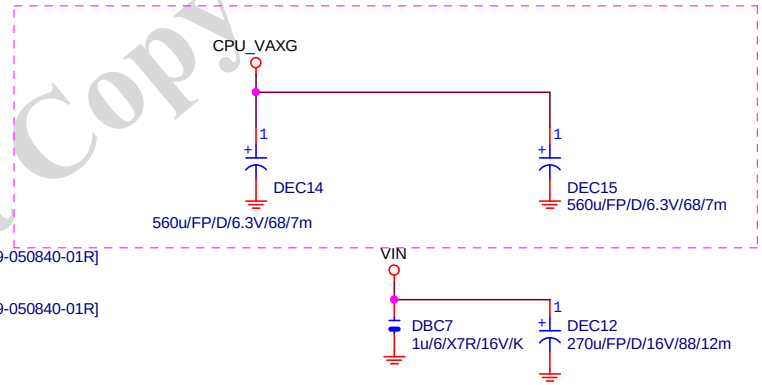
VAXG

DR33 0 change to 1
DR34 0 change to 1
DR28 0 change to 2.2









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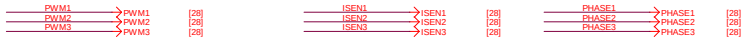
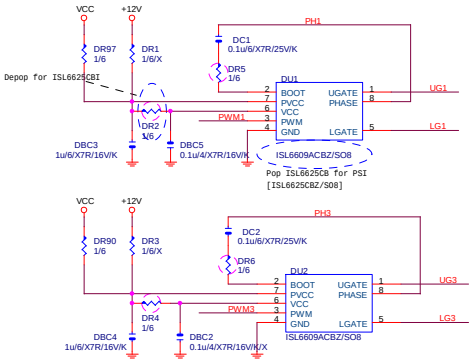
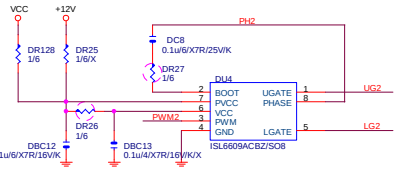
改PPAK & Ferrite Core

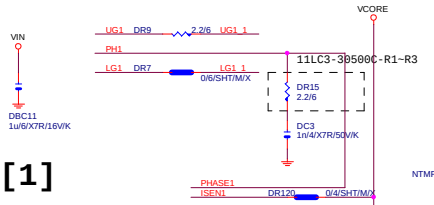
DR5 0 change to 1
DR2 0 change to 1
DR4 0 change to 1
DR6 0 change to 1

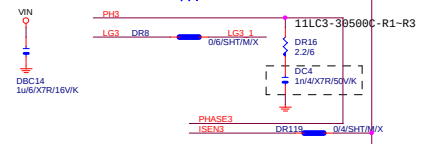
DR20 0 change to 1
DR19 0 change to 1
DR26 0 change to 1
DR27 0 change to 1

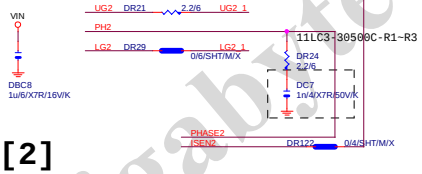


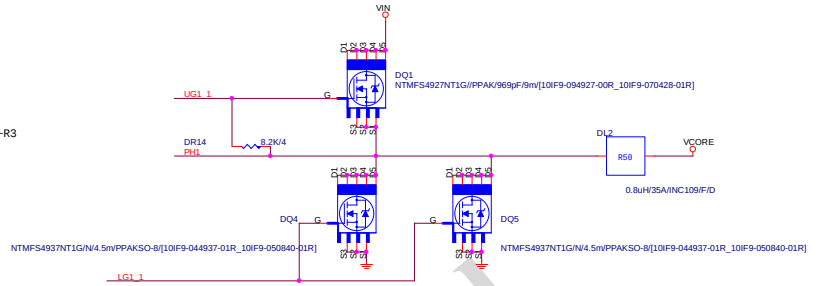


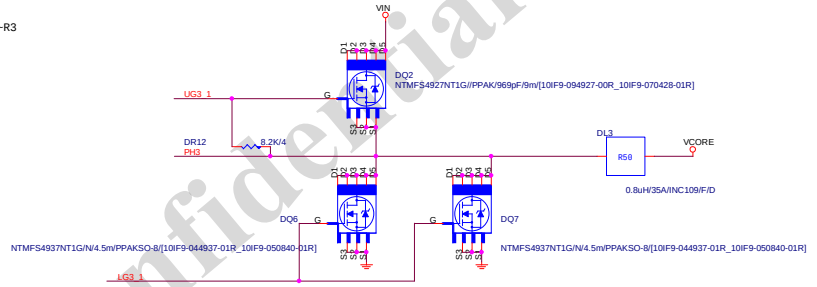


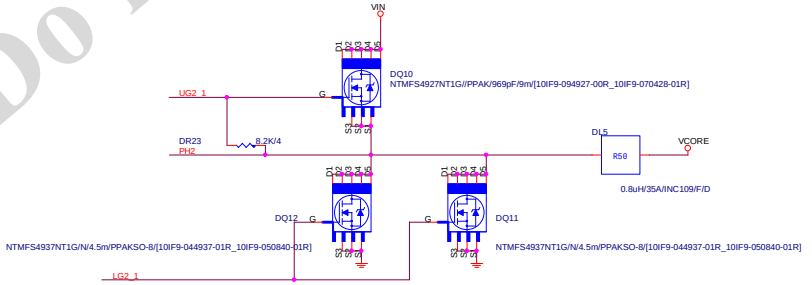


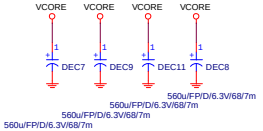












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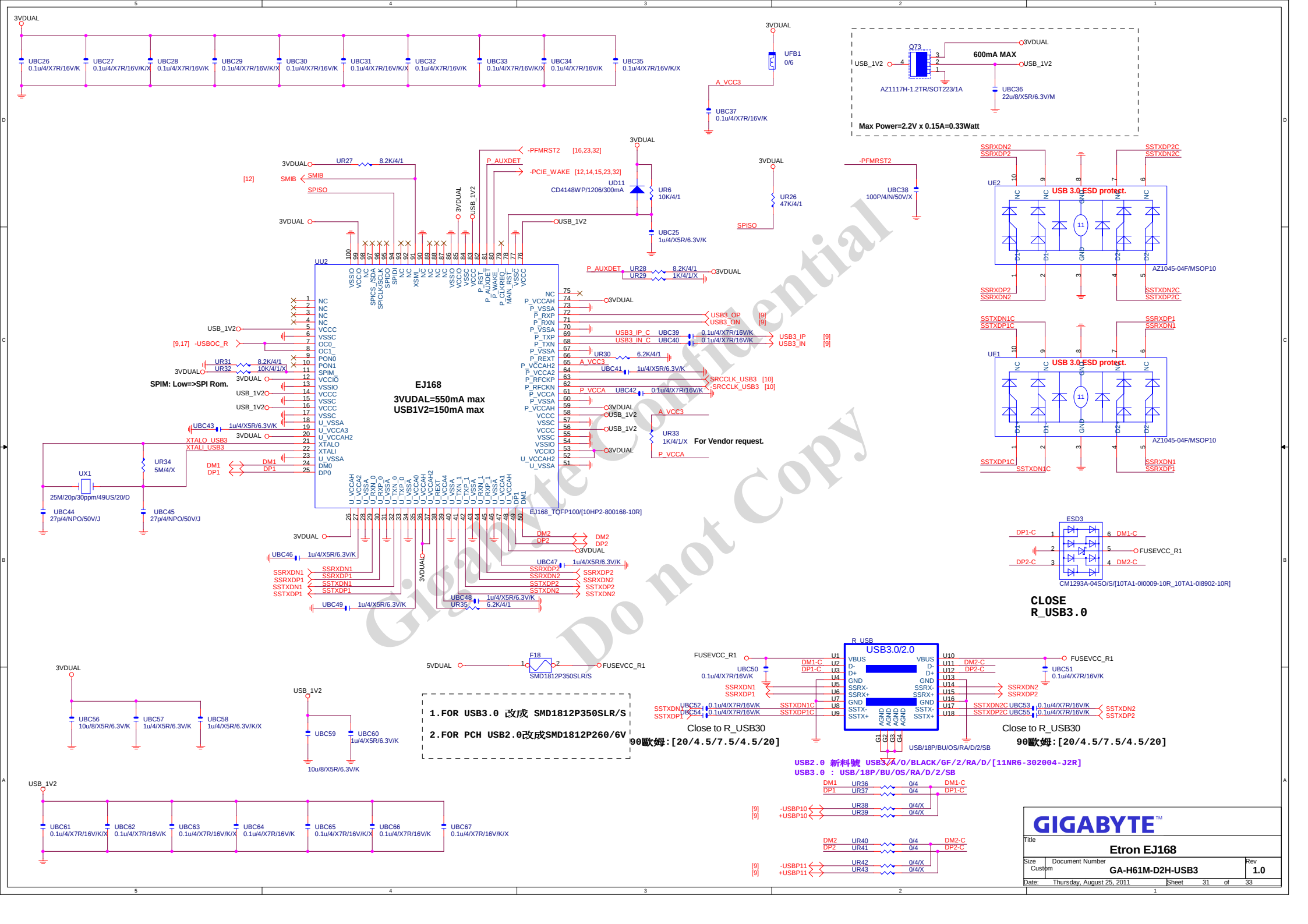

GIGABYTE		
Title	Etron EJ168	
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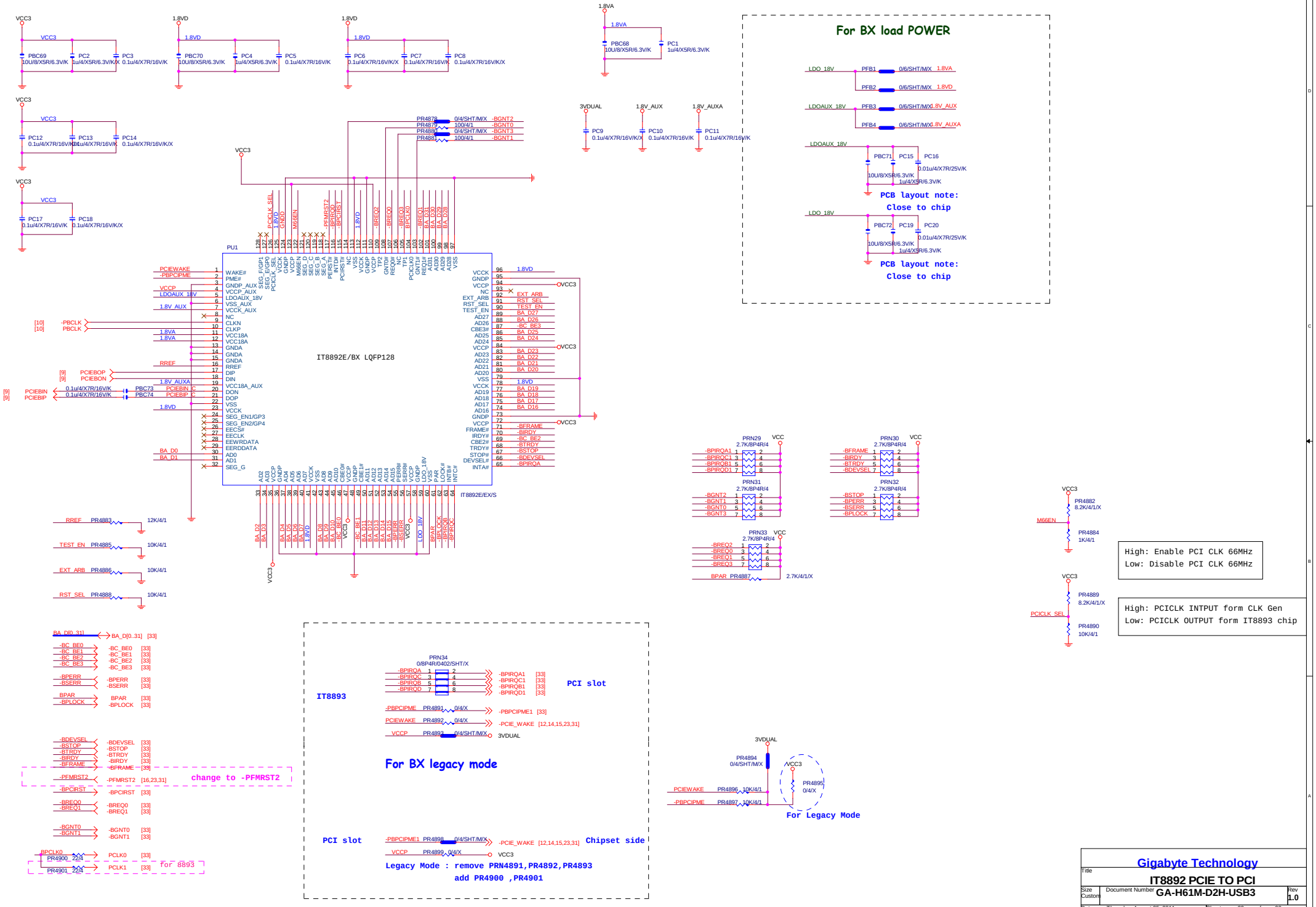
For BX load POWER
LDO_18V
PFB1
0/6/SHT/M/X
1.8VA
PFB2
1.8VD
LDOAUX_18V
PFB3
1.8V_AUX
PFB4
1.8V_AUXA
PBC71
PC15
PC16
0.01u/4/X7R/25V/K
10U/8/X5R/6.3V/K
1u/4/X5R/6.3V/K
PCB layout note:
Close to chip
PBC72
PC19
PC20
IT8892E/BX LQFP128
PU1
IT8892E/EX/S
PRN29
PRN30
PRN31
PRN32
PRN33
2.7K/8P4R/4
-BPIRQA1
-BPIRQC1
-BPIRQB1
-BPIRQD1
-BFRAME
-BIRDY
-BTRDY
-BDEVSEL
-BGNT2
-BGNT1
-BGNT0
-BGNT3
-BSTOP
-BPERR
-BSERR
-BPLOCK
-BREQ2
-BREQ0
-BREQ1
-BREQ3
BPAR PR4887
2.7K/4/1/X
PR4882
8.2K/4/1/X
M66EN
PR4884
1K/4/1
High: Enable PCI CLK 66MHz
Low: Disable PCI CLK 66MHz
PR4889
8.2K/4/1/X
PCICLK_SEL
PR4890
10K/4/1
High: PCICLK INTPUT form CLK Gen
Low: PCICLK OUTPUT form IT8893 chip
RREF PR4883 12K/4/1
TEST_EN PR4885 10K/4/1
EXT_ARB PR4886 10K/4/1
RST_SEL PR4888 10K/4/1
change to -PFMRST2
for 8893
PR4900 22/4
PR4901 22/4
IT8893
PRN34
0/8P4R/0402/SHT/X
PCI slot
-PBPCIPME PR4891 0/4/X
PCIEWAKE PR4892 0/4/X
VCCP PR4893 0/4/SHT/M/X
3VDUAL
For BX legacy mode
PCI slot
-PBPCIPME1 PR4898 0/4/SHT/M/X
VCCP PR4899 0/4/X
Chipset side
Legacy Mode : remove PRN4891,PR4892,PR4893
add PR4900 ,PR4901
PR4894 0/4/SHT/M/X
PR4896 10K/4/1
PR4897 10K/4/1
PR4895 0/4/X
For Legacy Mode
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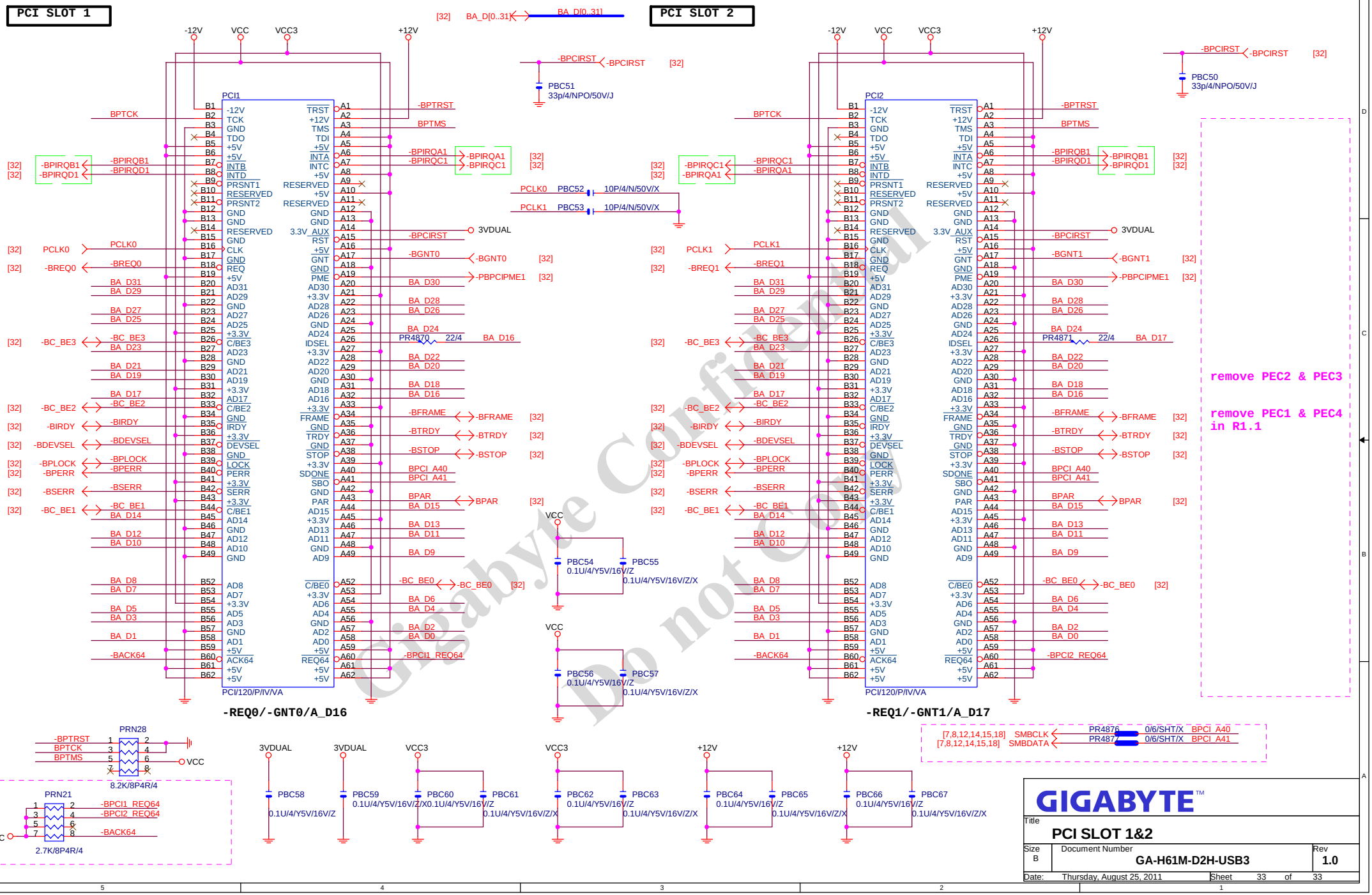
PCI SLOT 1
PCI SLOT 2
PCI1
PCI2
PCI/120/P/IV/VA
-REQ0/-GNT0/A_D16
-REQ1/-GNT1/A_D17
remove PEC2 & PEC3
remove PEC1 & PEC4 in R1.1
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Do not Copy
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Title
PCI SLOT 1&2
Size B
Document Number
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