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	

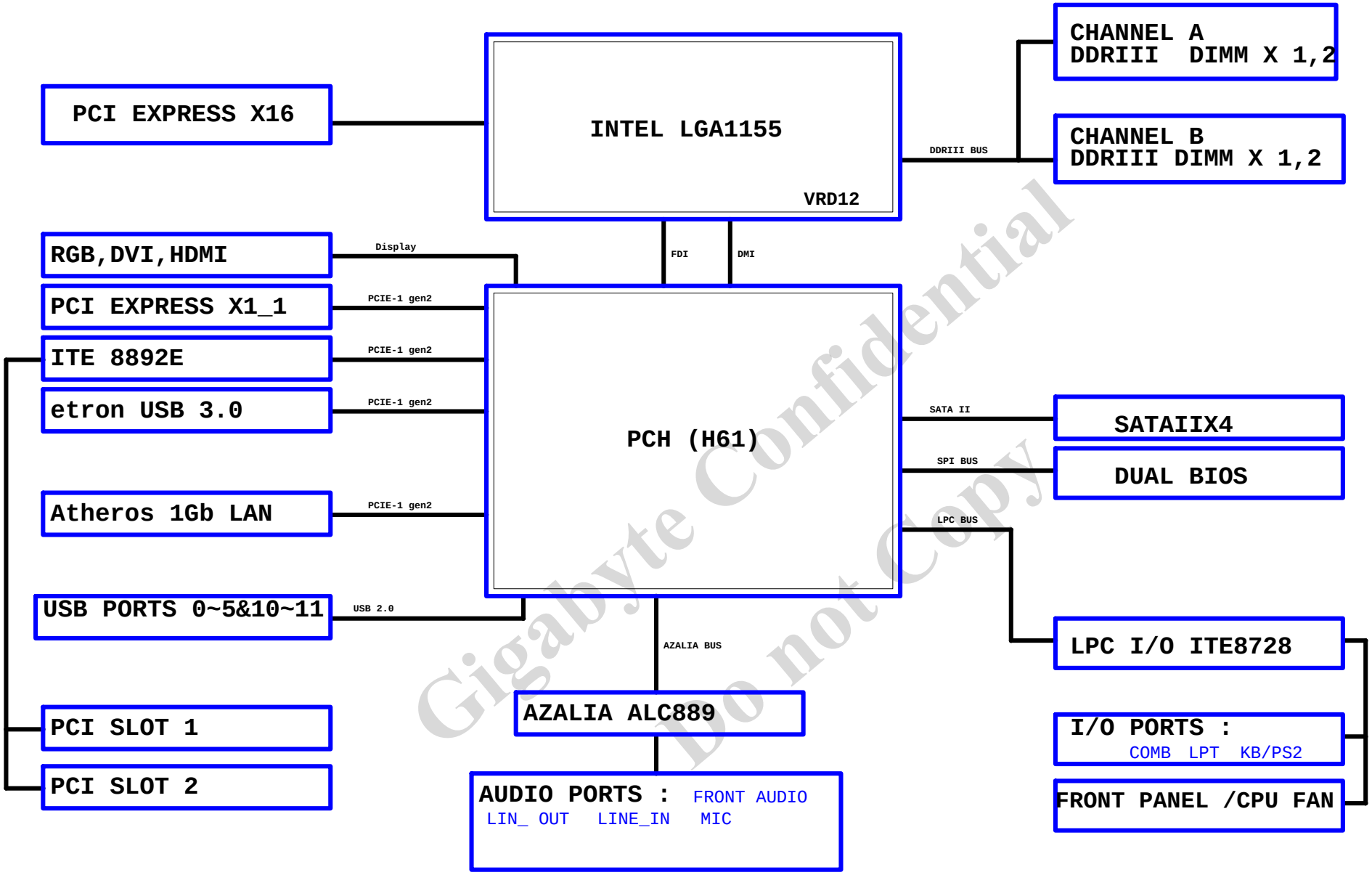
Gigabyte Technology

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

CPUD

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

Stitching caps for PCIE,DMI,FDI bus

R208 R103 R156 R154 change to RN

R91 75 change to 100

R90 121 change to 100

CPUC

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

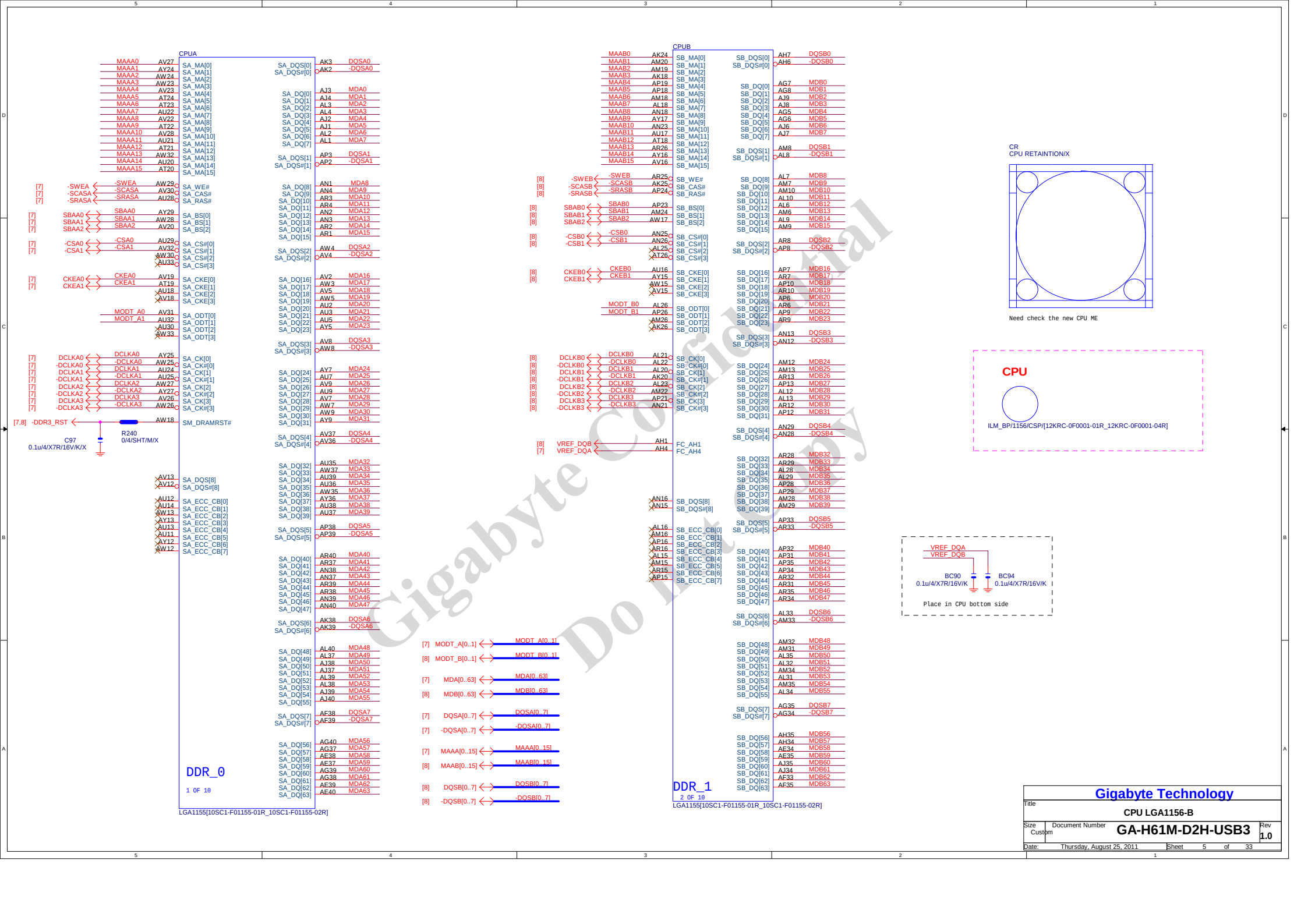
CFG6	CFG5	PCIE CONFIG
1	1	1X16 , Default
1	0	2X8
0	1	RSVD
0	0	X8,X4,X4

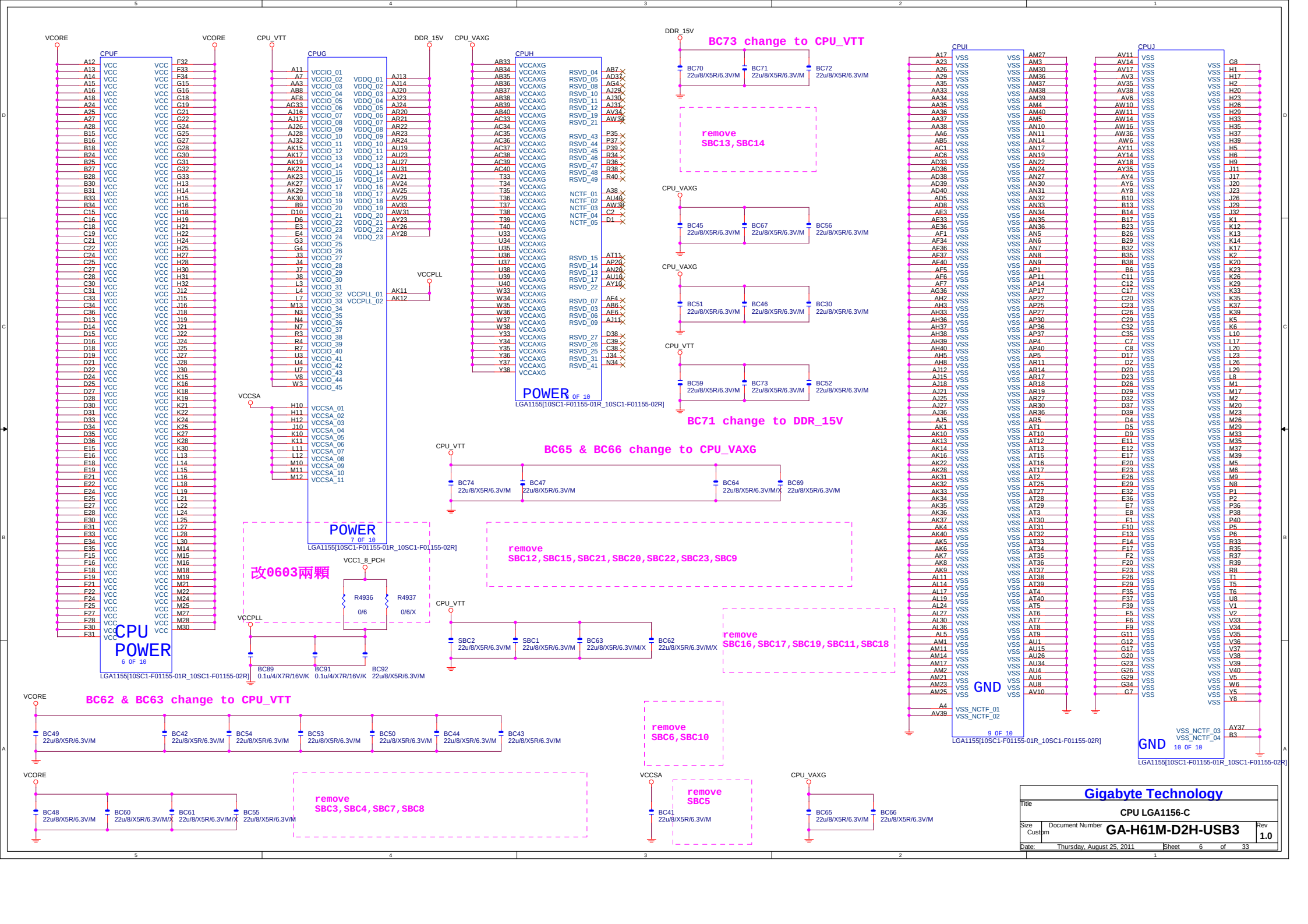
CFG 0-17 all internal PULL-UP

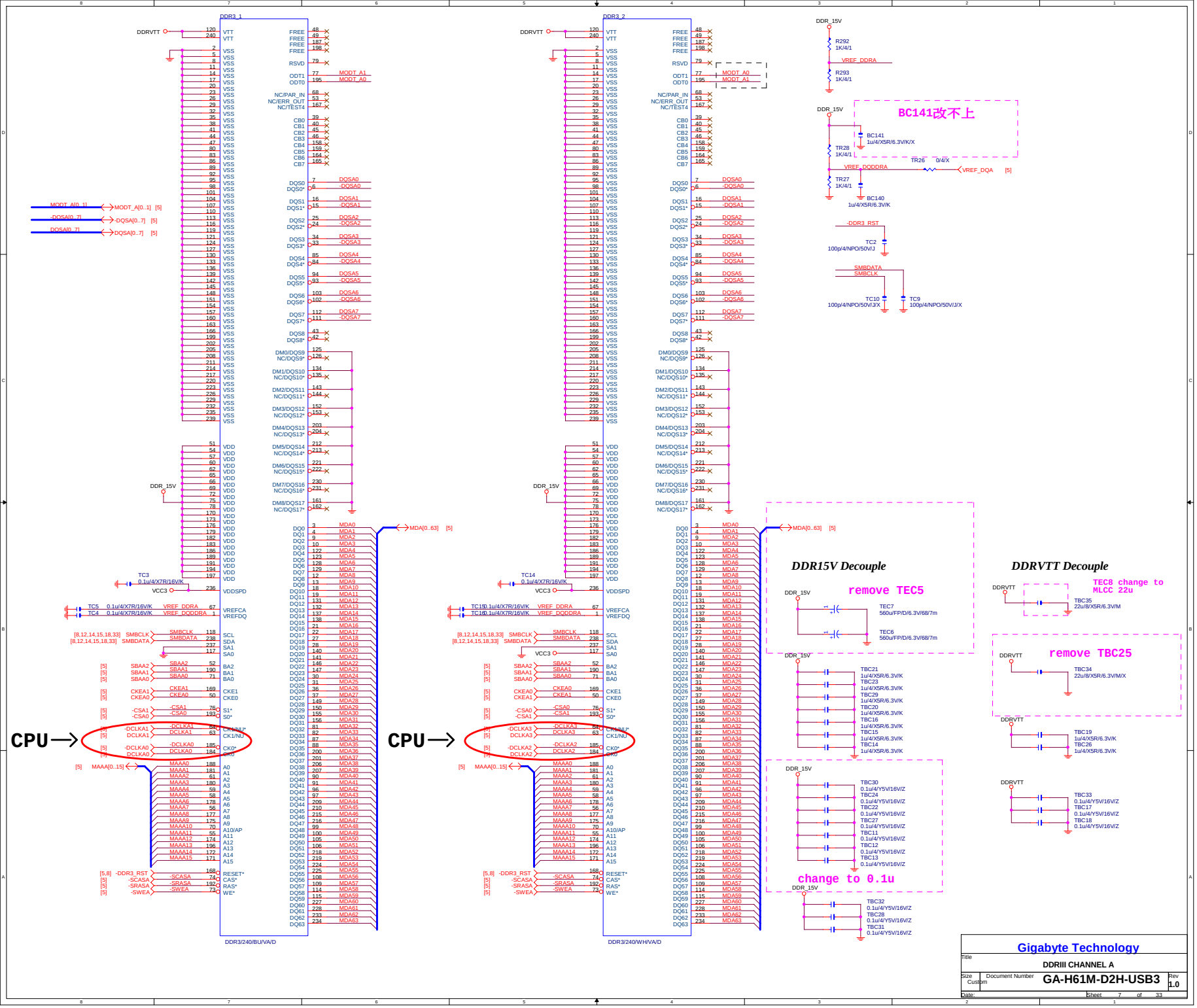
建議用料

1.1V分壓

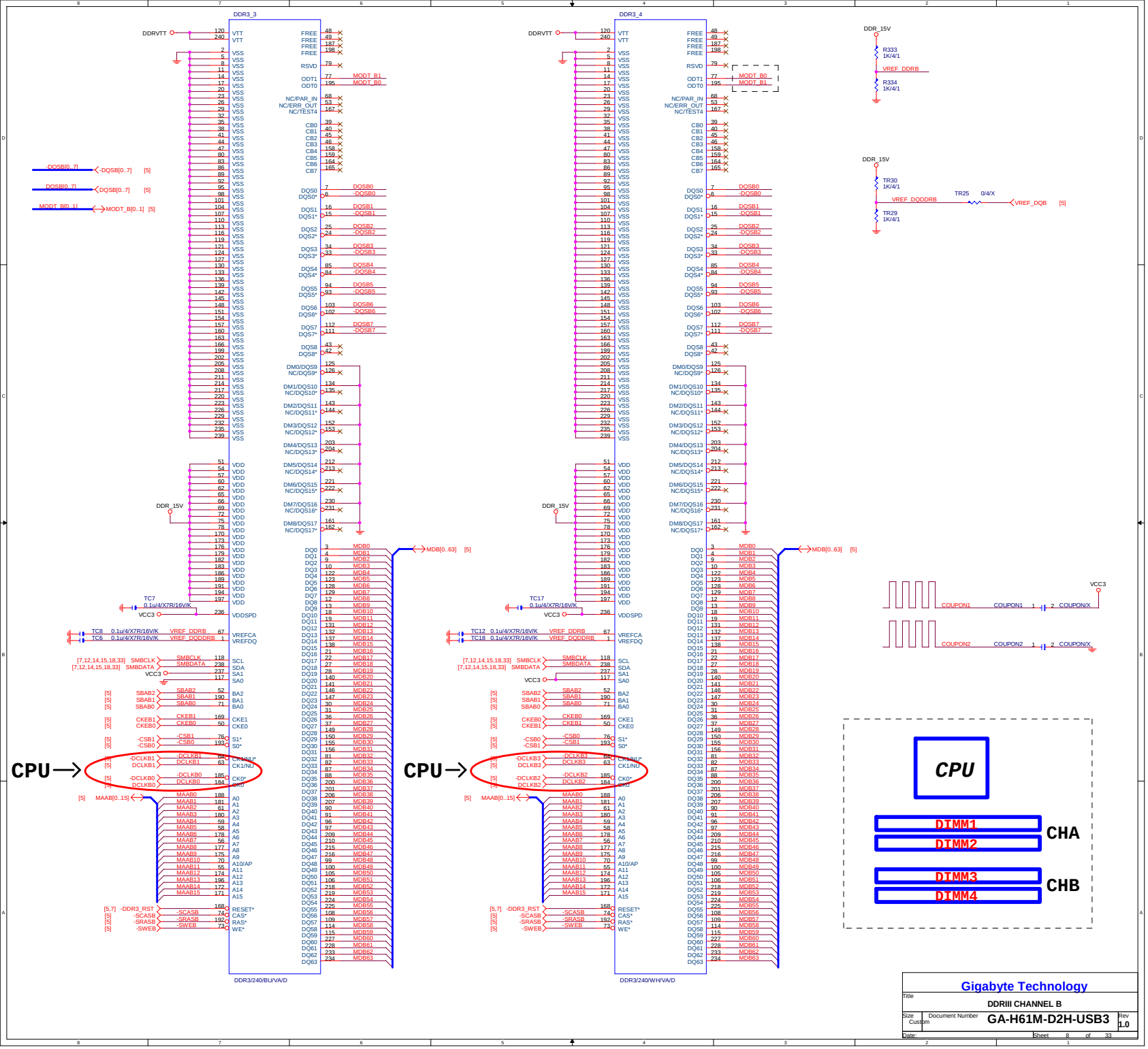
Gigabyte Technology	
Title	CPU LGA1155-A
Size: Custom	Document Number: GA-H61M-D2H-USB3 Rev: 1.0
Date: Thursday, August 25, 2011	Sheet 4 of 33




VCORE
CPUF
CPU POWER
6 OF 10
LGA1155[10SC1-F01155-01R_10SC1-F01155-02R]
CPU_VTT
CPUG
POWER
7 OF 10
LGA1155[10SC1-F01155-01R_10SC1-F01155-02R]
DDR_15V
CPU_VAXG
CPUH
POWER
8 OF 10
LGA1155[10SC1-F01155-01R_10SC1-F01155-02R]
VCCPLL
VCCSA
BC73 change to CPU_VTT
BC70 22u/8/X5R/6.3V/M
BC71 22u/8/X5R/6.3V/M
BC72 22u/8/X5R/6.3V/M
remove SBC13,SBC14
CPU_VAXG
BC45 22u/8/X5R/6.3V/M
BC67 22u/8/X5R/6.3V/M
BC56 22u/8/X5R/6.3V/M
CPU_VAXG
BC51 22u/8/X5R/6.3V/M
BC46 22u/8/X5R/6.3V/M
BC30 22u/8/X5R/6.3V/M
CPU_VTT
BC59 22u/8/X5R/6.3V/M
BC73 22u/8/X5R/6.3V/M
BC52 22u/8/X5R/6.3V/M
BC71 change to DDR_15V
CPUI
CPUJ
GND
9 OF 10
10 OF 10
LGA1155[10SC1-F01155-01R_10SC1-F01155-02R]
BC65 & BC66 change to CPU_VAXG
CPU_VTT
BC74 22u/8/X5R/6.3V/M
BC47 22u/8/X5R/6.3V/M
BC64 22u/8/X5R/6.3V/M/X
BC69 22u/8/X5R/6.3V/M
改0603兩顆
VCC1_8_PCH
R4936 0/6
R4937 0/6/X
VCCPLL
BC89 0.1u/4/X7R/16V/K
BC91 0.1u/4/X7R/16V/K
BC92 22u/8/X5R/6.3V/M
remove SBC12,SBC15,SBC21,SBC20,SBC22,SBC23,SBC9
CPU_VTT
SBC2 22u/8/X5R/6.3V/M
SBC1 22u/8/X5R/6.3V/M
BC63 22u/8/X5R/6.3V/M/X
BC62 22u/8/X5R/6.3V/M/X
remove SBC16,SBC17,SBC19,SBC11,SBC18
BC62 & BC63 change to CPU_VTT
VCORE
BC49 22u/8/X5R/6.3V/M
BC42 22u/8/X5R/6.3V/M
BC54 22u/8/X5R/6.3V/M
BC53 22u/8/X5R/6.3V/M
BC50 22u/8/X5R/6.3V/M
BC44 22u/8/X5R/6.3V/M
BC43 22u/8/X5R/6.3V/M
remove SBC6,SBC10
VCORE
BC48 22u/8/X5R/6.3V/M
BC60 22u/8/X5R/6.3V/M/X
BC61 22u/8/X5R/6.3V/M/X
BC55 22u/8/X5R/6.3V/M
remove SBC3,SBC4,SBC7,SBC8
VCCSA
BC41 22u/8/X5R/6.3V/M
remove SBC5
CPU_VAXG
BC65 22u/8/X5R/6.3V/M
BC66 22u/8/X5R/6.3V/M
Gigabyte Technology
Title
CPU LGA1156-C
Size Custom
Document Number GA-H61M-D2H-USB3
Rev 1.0
Date: Thursday, August 25, 2011
Sheet 6 of 33



Gigabyte Technology		
Title	DDRIII CHANNEL A	
Size: Custom	Document Number: GA-H61M-D2H-USB3	Rev: 1.0
Date:	Sheet 7 of 33	

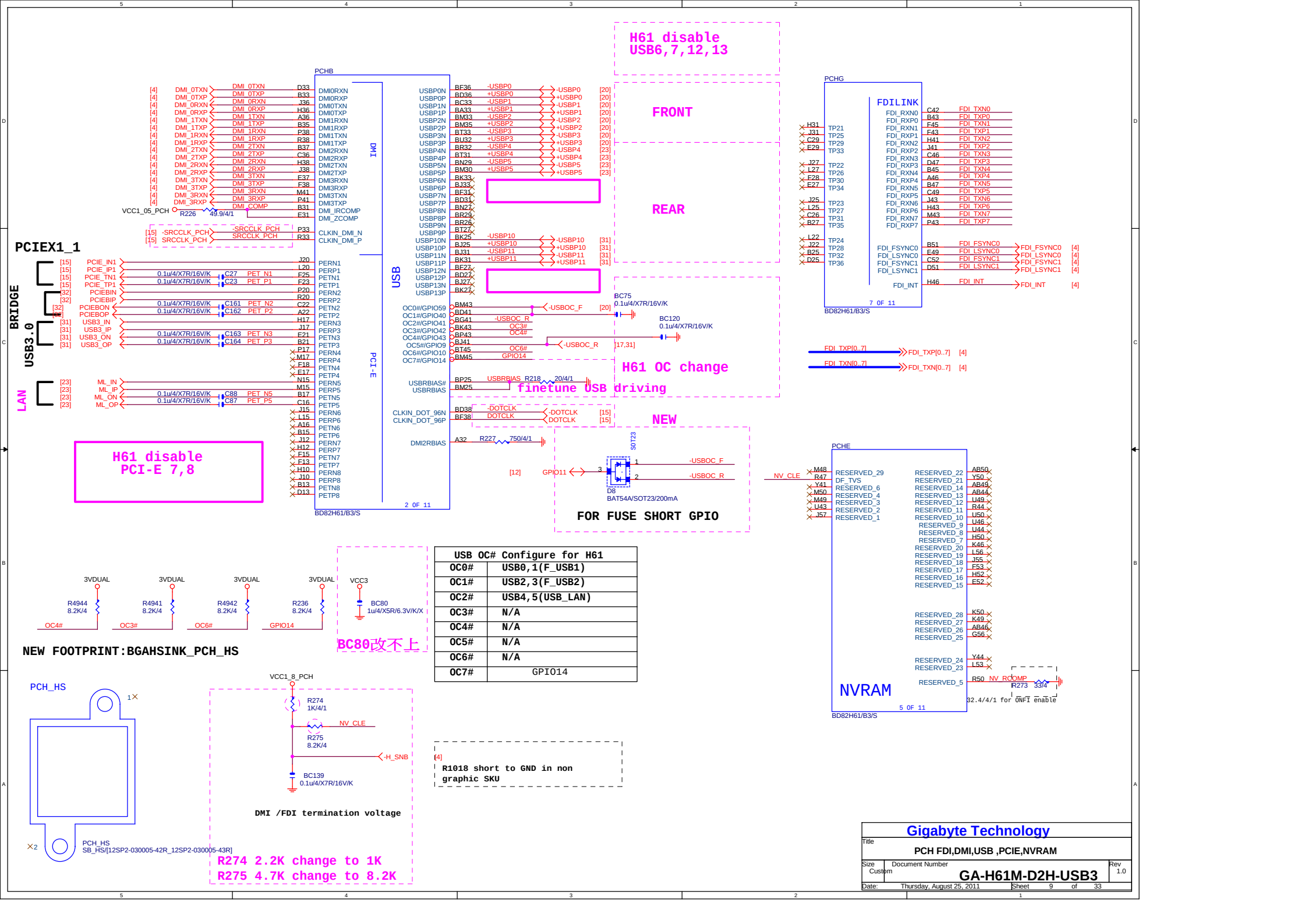


Gigabyte Technology

Title: DDRIII CHANNEL B

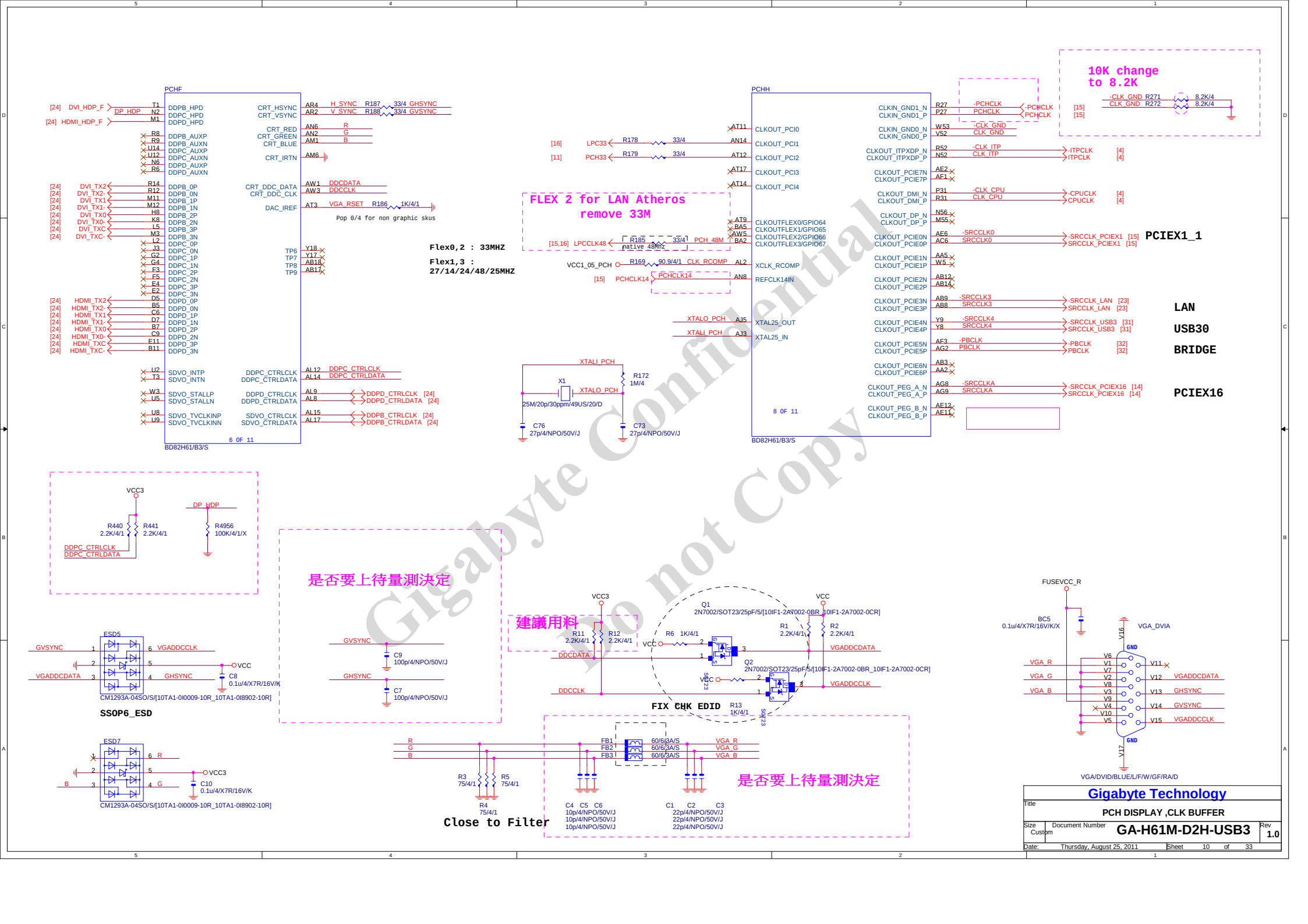
Size: Custom | Document Number: GA-H61M-D2H-USB3 | Rev: 1.0

Date: | Sheet 8 of 33

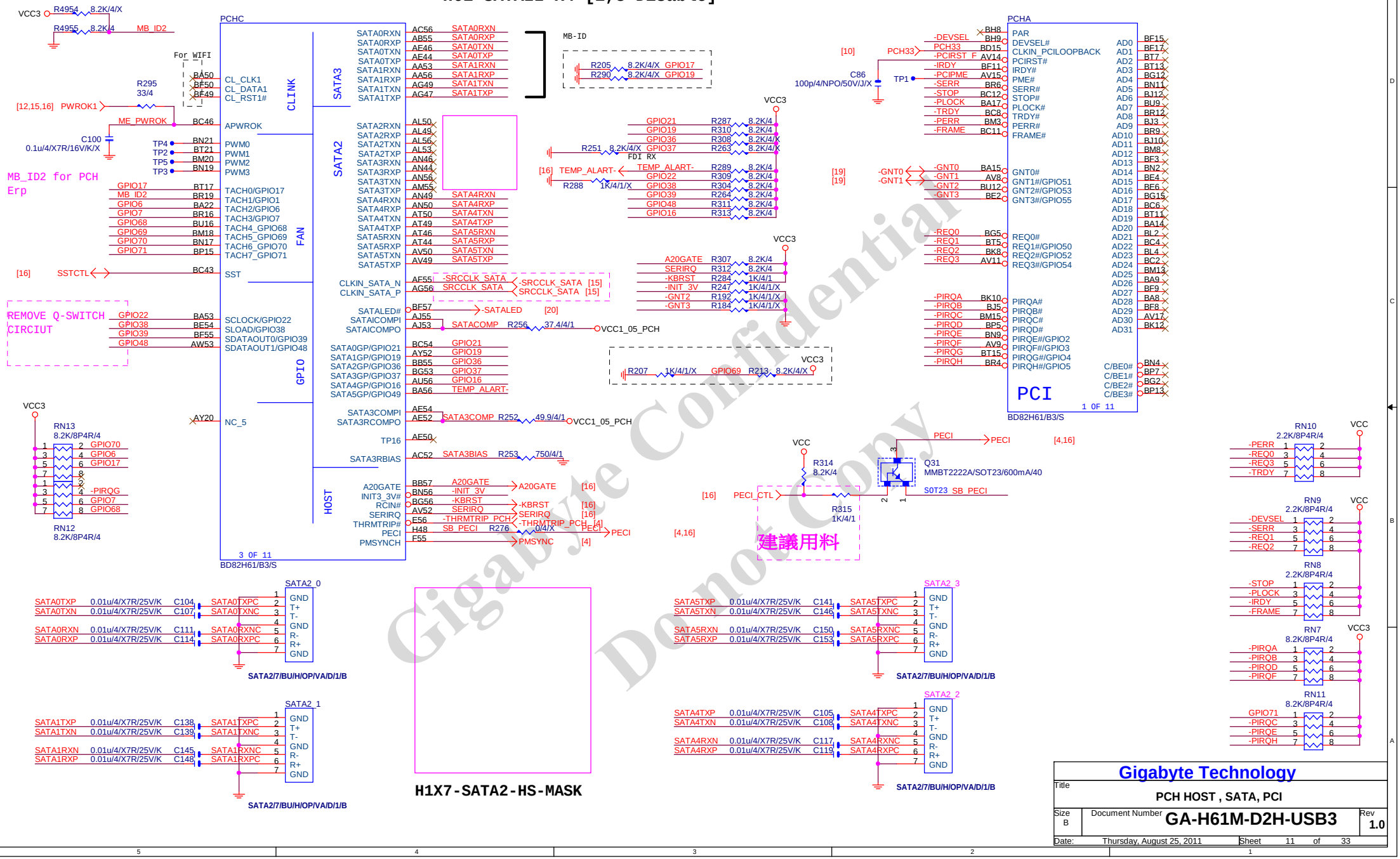


USB OC# Configure for H61	
OC0#	USB0,1(F_USB1)
OC1#	USB2,3(F_USB2)
OC2#	USB4,5(USB_LAN)
OC3#	N/A
OC4#	N/A
OC5#	N/A
OC6#	N/A
OC7#	GPIO14

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

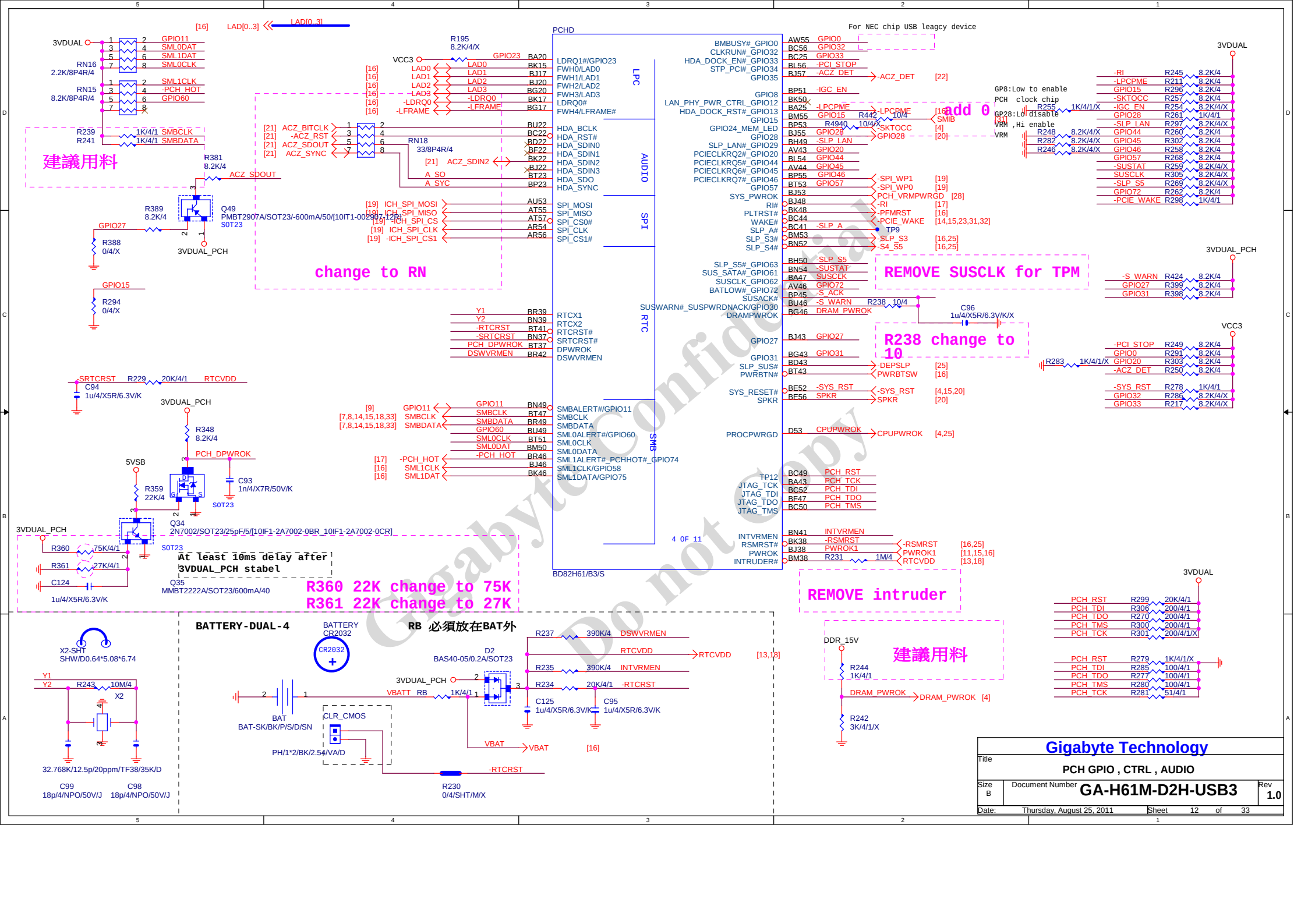

PCHF
BD82H61/B3/S
6 OF 11
Pop 0/4 for non graphic skus
Flex0,2 : 33MHZ
Flex1,3 : 27/14/24/48/25MHZ
FLEX 2 for LAN Atheros remove 33M
PCHH
BD82H61/B3/S
8 OF 11
10K change to 8.2K
PCIEX1_1
LAN
USB30
BRIDGE
PCIEX16
Gigabyte Confidential
Do not Copy
是否要上待量測決定
建議用料
SSOP6_ESD
CM1293A-04SO/S/[10TA1-0I0009-10R_10TA1-0I8902-10R]
FIX CHK EDID
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	


建議用料
change to RN
add 0
REMOVE SUSCLK for TPM
R238 change to 10
REMOVE intruder
建議用料
At least 10ms delay after 3VDUAL_PCH stabel
R360 22K change to 75K
R361 22K change to 27K
BATTERY-DUAL-4
RB 必須放在BAT外
For NEC chip USB leagcy device
PCHD
BD82H61/B3/S
LPC
AUDIO
SPI
RTC
SMB
Gigabyte Technology
PCH GPIO , CTRL , AUDIO
GA-H61M-D2H-USB3
Rev 1.0
Date: Thursday, August 25, 2011
Sheet 12 of 33
Size B
Title
Document Number
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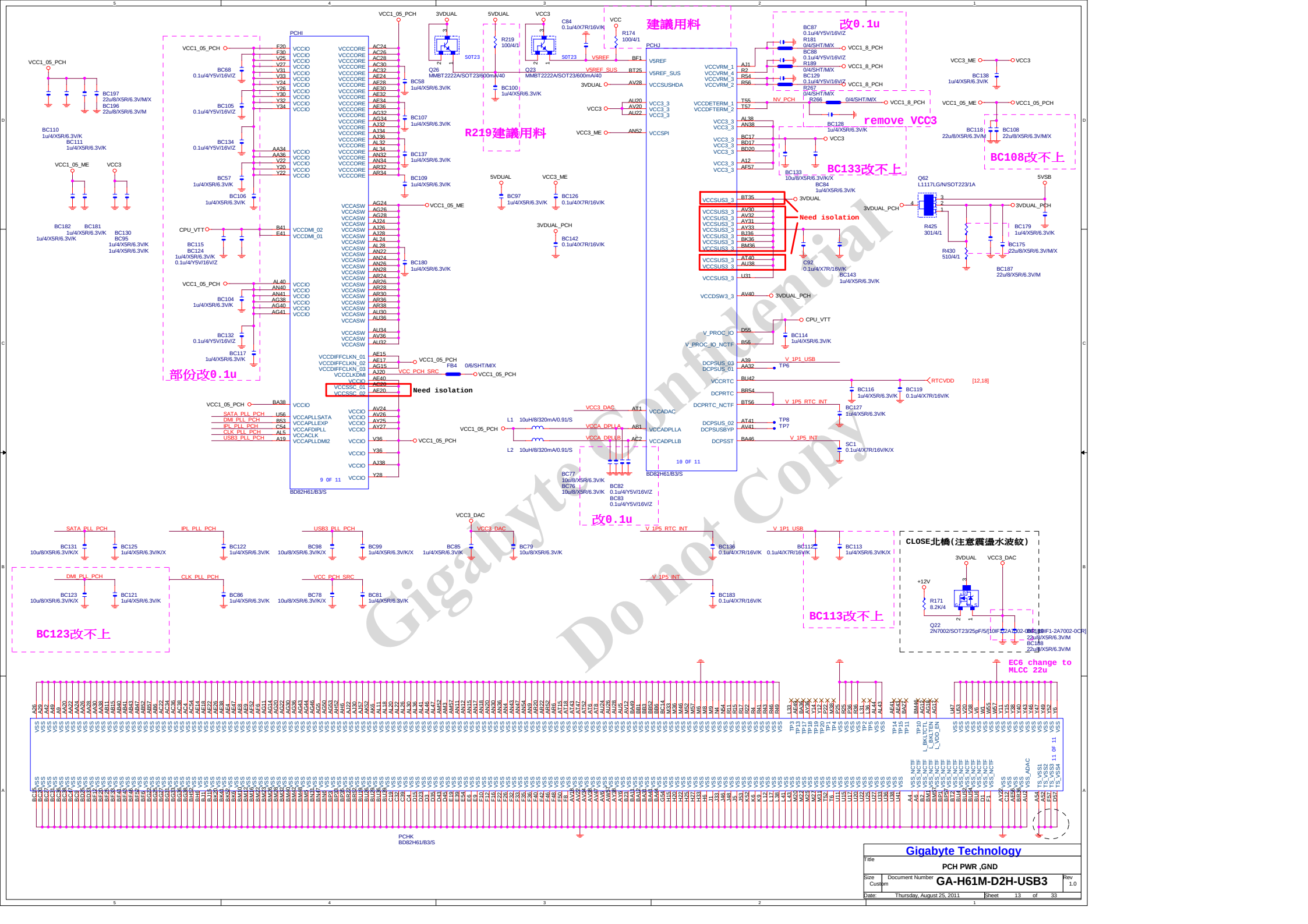
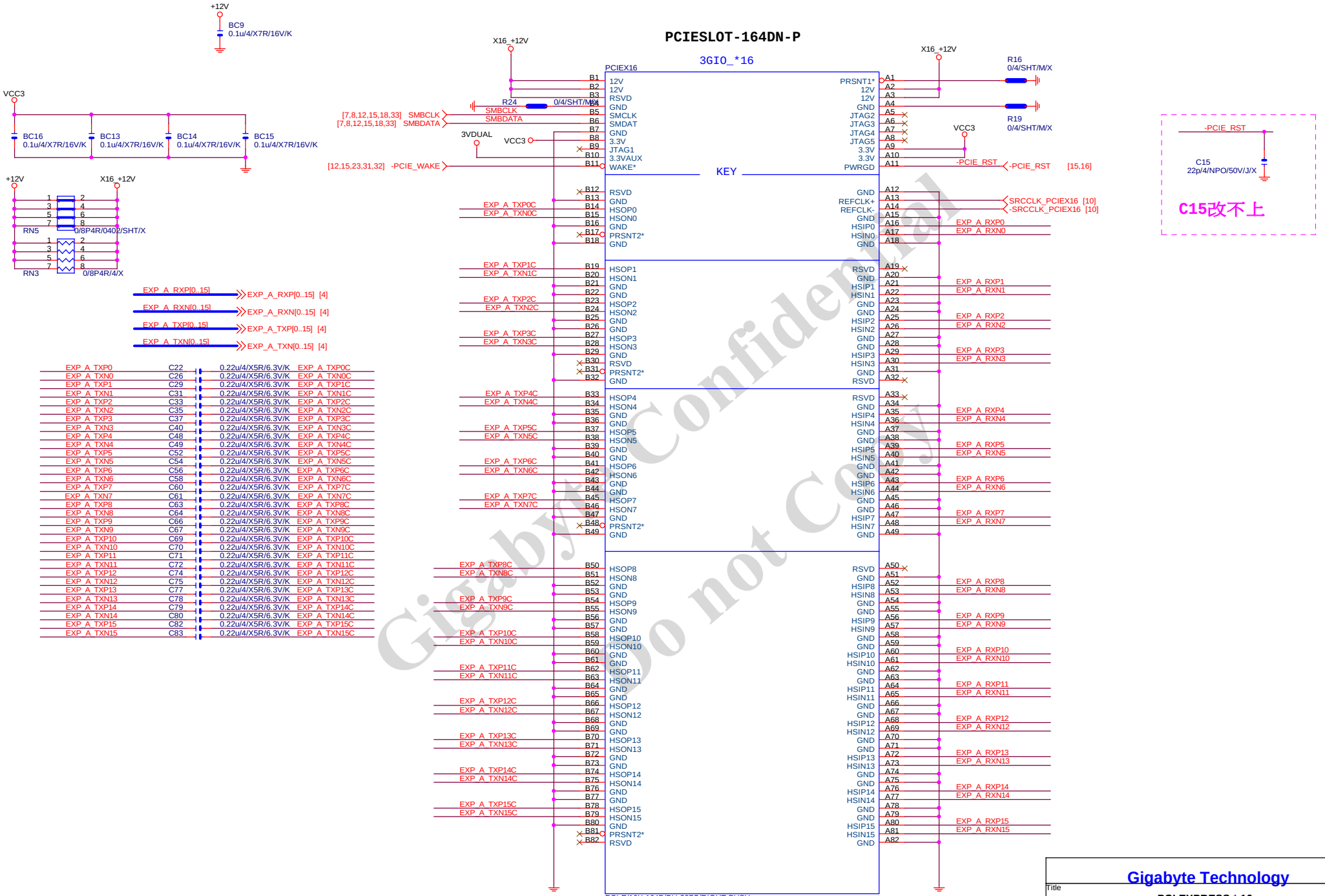
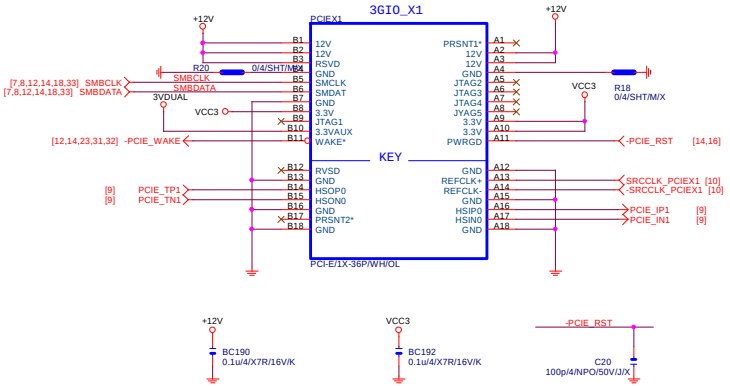

建議用料
改0.1u
R219建議用料
remove VCC3
BC108改不上
BC133改不上
Need isolation
部份改0.1u
BC123改不上
BC113改不上
CLOSE北橋(注意震盪水波紋)
EC6 change to MLCC 22u
Gigabyte Technology
PCH PWR ,GND
GA-H61M-D2H-USB3
Rev 1.0
Thursday, August 25, 2011
Sheet 13 of 33
Gigabyte Confidential
Do not Copy



EXP_A_TXP0	C22	0.22u/4/X5R/6.3V/K EXP_A_TXP0C
EXP_A_TXN0	C26	0.22u/4/X5R/6.3V/K EXP_A_TXN0C
EXP_A_TXP1	C29	0.22u/4/X5R/6.3V/K EXP_A_TXP1C
EXP_A_TXN1	C31	0.22u/4/X5R/6.3V/K EXP_A_TXN1C
EXP_A_TXP2	C33	0.22u/4/X5R/6.3V/K EXP_A_TXP2C
EXP_A_TXN2	C35	0.22u/4/X5R/6.3V/K EXP_A_TXN2C
EXP_A_TXP3	C37	0.22u/4/X5R/6.3V/K EXP_A_TXP3C
EXP_A_TXN3	C40	0.22u/4/X5R/6.3V/K EXP_A_TXN3C
EXP_A_TXP4	C48	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	C52	0.22u/4/X5R/6.3V/K EXP_A_TXP5C
EXP_A_TXN5	C54	0.22u/4/X5R/6.3V/K EXP_A_TXN5C
EXP_A_TXP6	C56	0.22u/4/X5R/6.3V/K EXP_A_TXP6C
EXP_A_TXN6	C58	0.22u/4/X5R/6.3V/K EXP_A_TXN6C
EXP_A_TXP7	C60	0.22u/4/X5R/6.3V/K EXP_A_TXP7C
EXP_A_TXN7	C61	0.22u/4/X5R/6.3V/K EXP_A_TXN7C
EXP_A_TXP8	C63	0.22u/4/X5R/6.3V/K EXP_A_TXP8C
EXP_A_TXN8	C64	0.22u/4/X5R/6.3V/K EXP_A_TXN8C
EXP_A_TXP9	C66	0.22u/4/X5R/6.3V/K EXP_A_TXP9C
EXP_A_TXN9	C67	0.22u/4/X5R/6.3V/K EXP_A_TXN9C
EXP_A_TXP10	C69	0.22u/4/X5R/6.3V/K EXP_A_TXP10C
EXP_A_TXN10	C70	0.22u/4/X5R/6.3V/K EXP_A_TXN10C
EXP_A_TXP11	C71	0.22u/4/X5R/6.3V/K EXP_A_TXP11C
EXP_A_TXN11	C72	0.22u/4/X5R/6.3V/K EXP_A_TXN11C
EXP_A_TXP12	C74	0.22u/4/X5R/6.3V/K EXP_A_TXP12C
EXP_A_TXN12	C75	0.22u/4/X5R/6.3V/K EXP_A_TXN12C
EXP_A_TXP13	C77	0.22u/4/X5R/6.3V/K EXP_A_TXP13C
EXP_A_TXN13	C78	0.22u/4/X5R/6.3V/K EXP_A_TXN13C
EXP_A_TXP14	C79	0.22u/4/X5R/6.3V/K EXP_A_TXP14C
EXP_A_TXN14	C80	0.22u/4/X5R/6.3V/K EXP_A_TXN14C
EXP_A_TXP15	C82	0.22u/4/X5R/6.3V/K EXP_A_TXP15C
EXP_A_TXN15	C83	0.22u/4/X5R/6.3V/K EXP_A_TXN15C

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

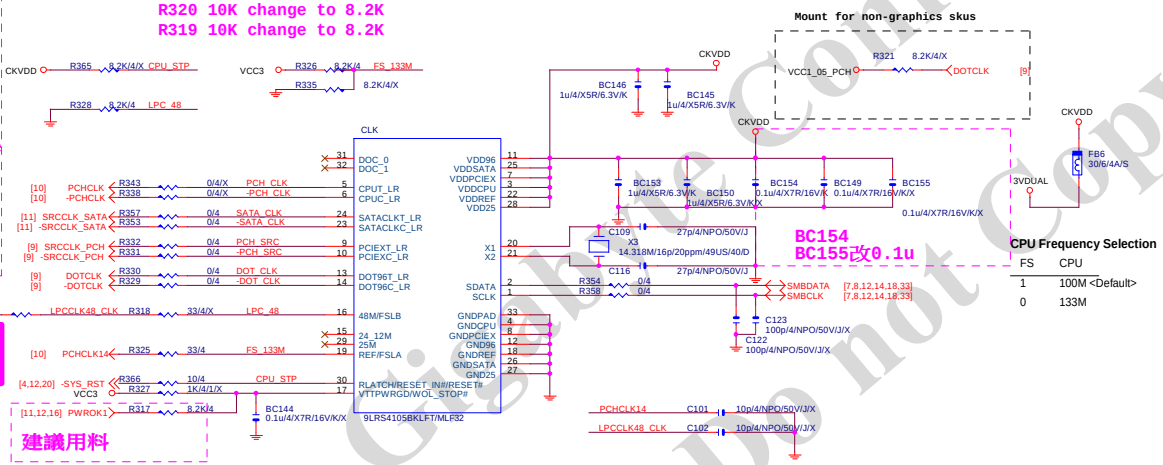


INTERNAL CLK STRAPPING

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



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

R109 0 change to 10

ADD LPT PORT

IT8728F(GB)

IT8728F/DX (GB)/QFP128

For IT8728

For IT8721 Power leakage

For 8728 EUP function

GP22 for LAN AR8151

GP40 Default 3VSBSW# DO8

CHK GPIO53

REMOVE ON/OFF CHARGER

(-PSON FOR TEST ATX)

CPU_FAN

SYS_FAN

FOR AR8161

COMB

-PFMRST2 for TPM

EUP

internal power pin, max 22nF cap

remove IO GP43 pull high

remove DTR1- & RTS1-

EUP control by PCH

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

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

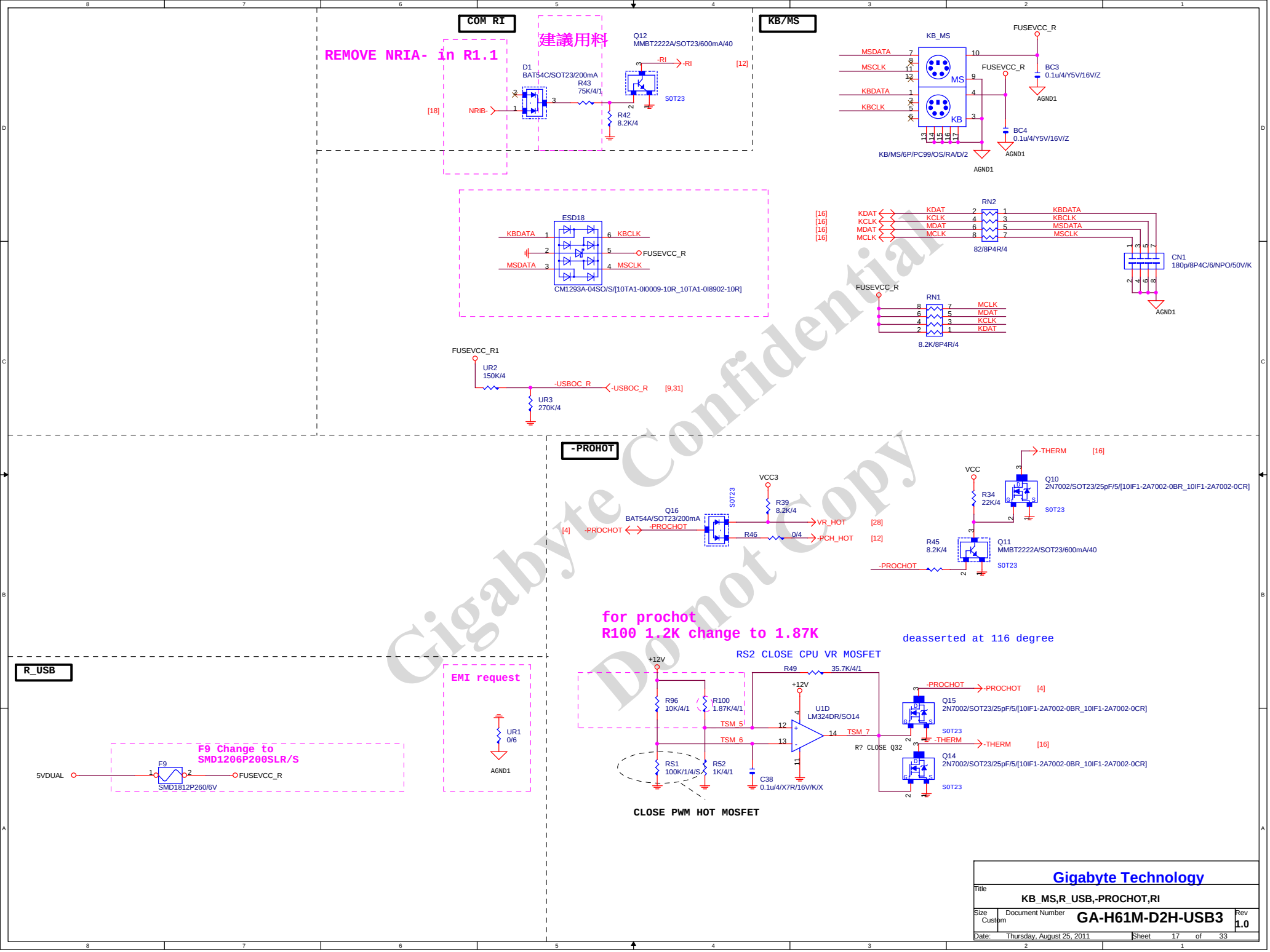
	IT8728
PIN121	VCORE_EN/PCH_C0
PIN120	VLDT_EN/PCH_D0
PIN19	ATXPG
PIN31	PCH_C1
PIN53	SST/AMDTSI_D/MTRB#/PCH_D1
PIN55	PECI/AMDTSI_C/DRVB#
PIN66	SYS_3VSB
PIN70	GP47
PIN95	VIN2(VCC5)
PIN96	VIN1(VCC12)
PIN97	VIN1/VDIMM_STR(1.5V)
PIN98	VIN0/VCORE(1.1V)/NC

Gigabyte Technology

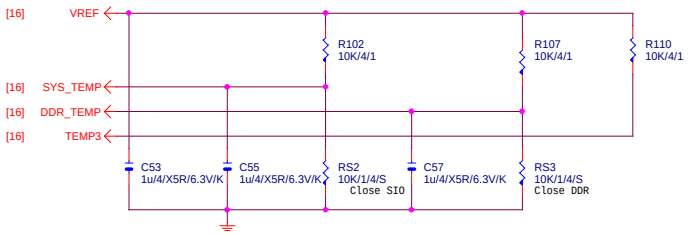
Title: ITE 8728 LPC IO

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

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

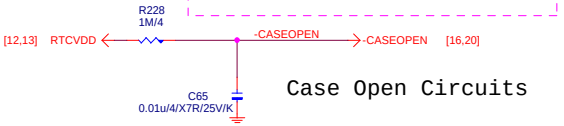

COM RI
REMOVE NRIA- in R1.1
建議用料
Q12
MMBT2222A/SOT23/600mA/40
D1
BAT54C/SOT23/200mA
R43
75K/4/1
R42
8.2K/4
-RI
[12]
[18]
NRIB-
KB/MS
KB_MS
MSDATA
MSCLK
KBDATA
KBCLK
FUSEVCC_R
BC3
0.1u/4/Y5V/16V/Z
BC4
0.1u/4/Y5V/16V/Z
AGND1
KB/MS/6P/PC99/OS/RA/D/2
ESD18
KBDATA
KBCLK
FUSEVCC_R
MSDATA
MSCLK
CM1293A-04SO/S/[10TA1-0I0009-10R_10TA1-0I8902-10R]
RN2
KDAT
KCLK
MDAT
MCLK
82/8P4R/4
CN1
180p/8P4C/6/NPO/50V/K
RN1
8.2K/8P4R/4
FUSEVCC_R1
UR2
150K/4
UR3
270K/4
-USBOC_R
[9,31]
-PROHOT
Q16
BAT54A/SOT23/200mA
-PROCHOT
SOT23
VCC3
R39
8.2K/4
R46
0/4
VR_HOT
-PCH_HOT
[28]
[12]
[4]
VCC
R34
22K/4
R45
8.2K/4
Q10
2N7002/SOT23/25pF/5/[10IF1-2A7002-0BR_10IF1-2A7002-0CR]
Q11
MMBT2222A/SOT23/600mA/40
-THERM
[16]
for prochot
R100 1.2K change to 1.87K
deasserted at 116 degree
RS2 CLOSE CPU VR MOSFET
+12V
R96
10K/4/1
R100
1.87K/4/1
R49
35.7K/4/1
U1D
LM324DR/SO14
TSM_5
TSM_6
TSM_7
RS1
100K/1/4/S
R52
1K/4/1
C38
0.1u/4/X7R/16V/K/X
R? CLOSE Q32
Q15
2N7002/SOT23/25pF/5/[10IF1-2A7002-0BR_10IF1-2A7002-0CR]
Q14
2N7002/SOT23/25pF/5/[10IF1-2A7002-0BR_10IF1-2A7002-0CR]
CLOSE PWM HOT MOSFET
R_USB
F9 Change to
SMD1206P200SLR/S
5VDUAL
F9
SMD1812P260/6V
EMI request
UR1
0/6
AGND1
Gigabyte Confidential
Do not Copy
Gigabyte Technology
Title
KB_MS,R_USB,-PROCHOT,RI
Size
Custom
Document Number
GA-H61M-D2H-USB3
Rev
1.0
Date:
Thursday, August 25, 2011
Sheet
17
of
33

TEMP H/W MONITOR



CASE OPEN

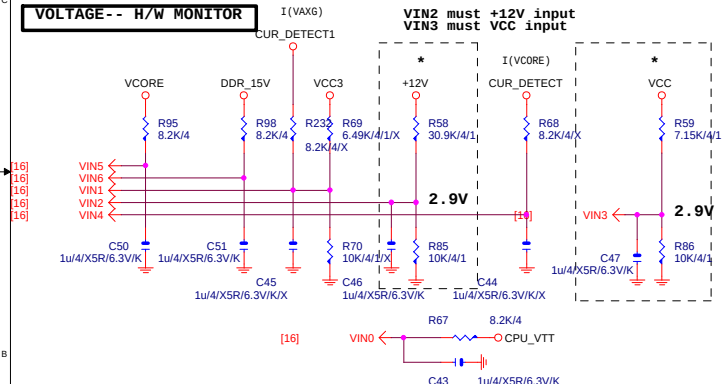
REMOVE intruder



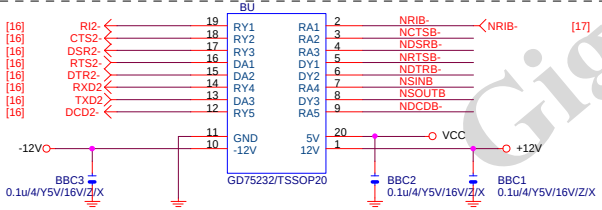
Case Open Circuits

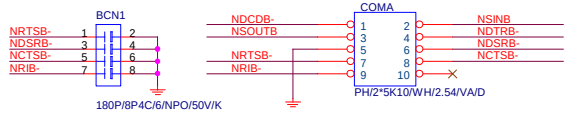
VOLTAGE-- H/W MONITOR

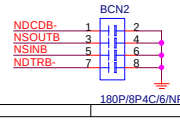
VIN2 must +12V input
VIN3 must VCC input



COMB





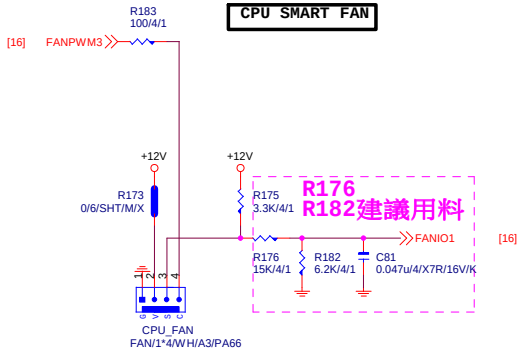


COMB改pinheader

COMB改COMA 1.1

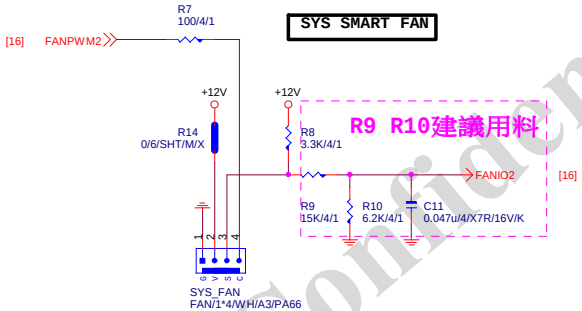
CPU SMART FAN

R176 R182建議用料

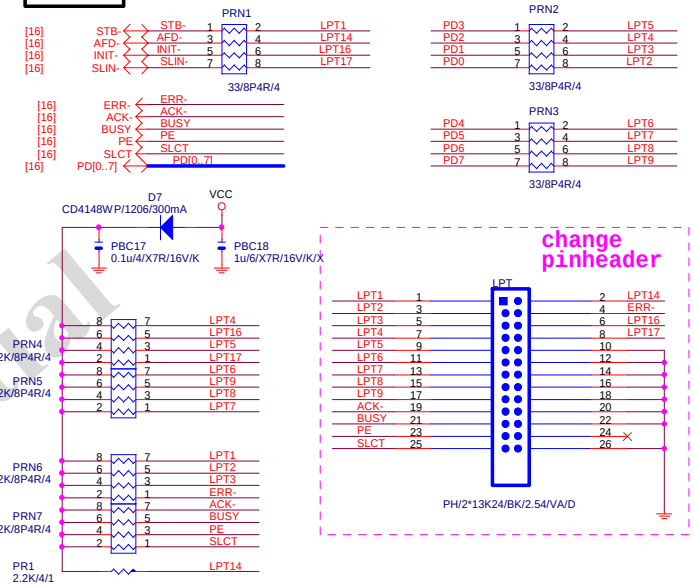


SYS SMART FAN

R9 R10建議用料

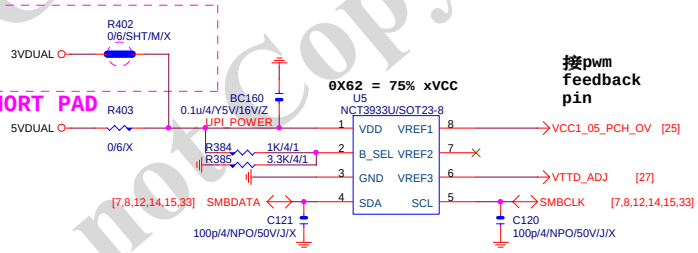


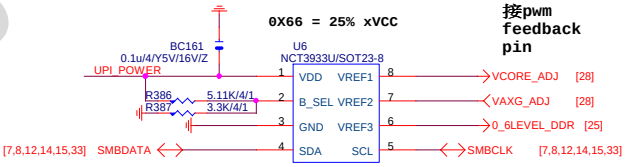
LPT PORT



change pinheader

R402 change to SHORT PAD

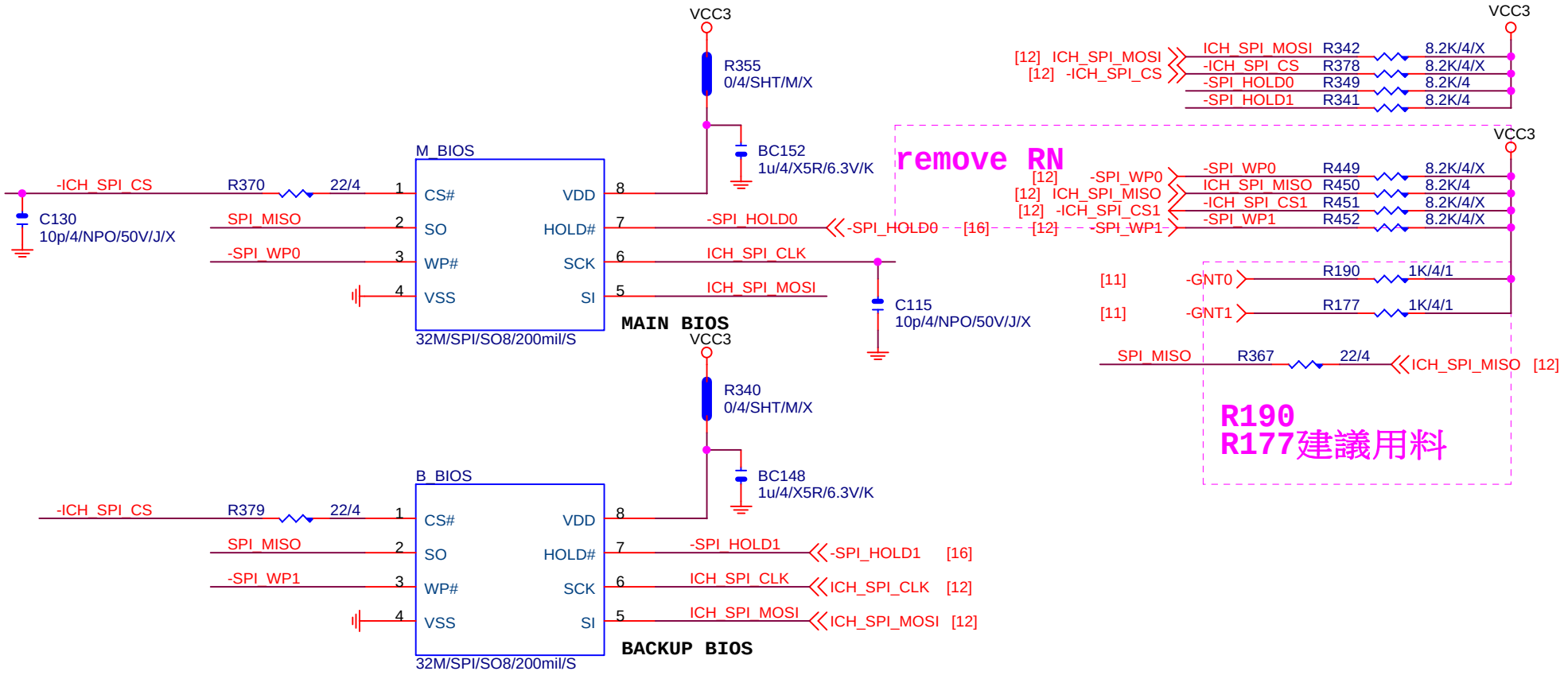




Gigabyte Technology			
Title: HWM,FAN CTRL,OV,COMB,LPT			
Size: Custom	Document Number: GA-H61M-D2H-USB3		Rev: 1.0
Date: Thursday, August 25, 2011	Sheet 18 of 33		

DUAL BIOS

R349 R341 改上件 for ITE 8728 DX



remove RN

R190
R177建議用料

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-D2H-USB3 | Rev: 1.0

Date: Thursday, August 25, 2011 | Sheet 19 of 33

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 SMD1812P260/6V FUSEVCC_F

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

CLOSE F_USB1

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

R413 75/4/1 SPK- R422 75/4/1

To disable TCO timer

VCC3 R414 1K/4/1

VCC R407 1K/4/1 R397 8.2K/4 BEEP-

[16] BEEP-

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

S0T23 S0T23

Q65 MMBT2222A/SOT23/600mA/40

R423 8.2K/4 SPKR SPKR [12]

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

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

UR24 270K/4

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

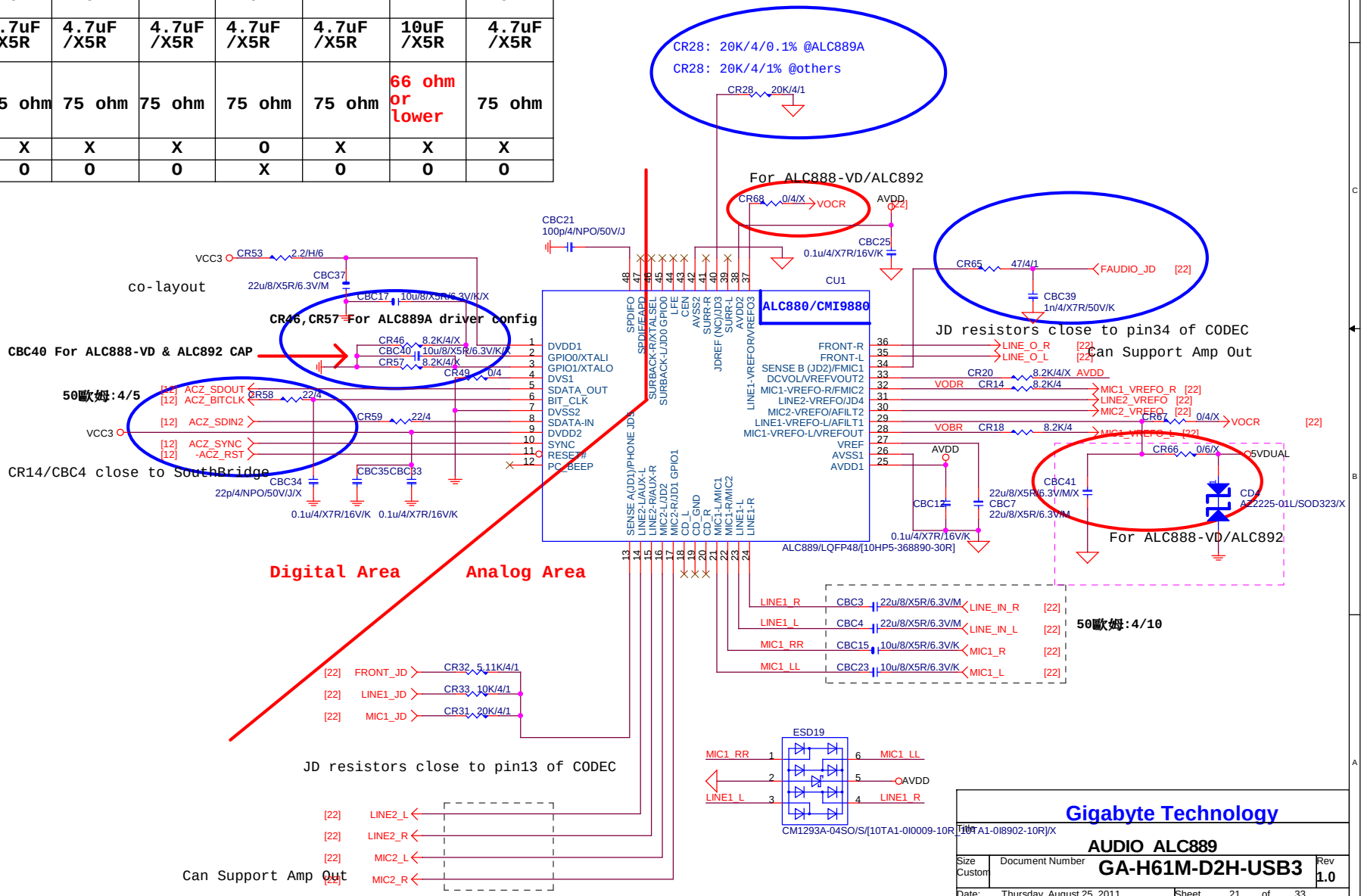
S0T23 R336 1K/4/1 GPIO28 [12]

Gigabyte Technology		
Title: FP,F_USB,SPKR,SATA LED		
Size: Custom	Document Number: GA-H61M-D2H-USB3	Rev: 1.0
Date: Thursday, August 25, 2011	Sheet 20 of 33	

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

Date: Thursday, August 25, 2011 Sheet 21 of 33

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

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

Verify MIC function in LINE-in

MIC-IN

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

AZALIA JACK

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

AUDIO
[21] LINE1_JD
[21] FRONT_JD
[21] MIC1_JD
BLUE
LINE-IN
GREEN
LINE-OUT
PINK
MIC-IN
MH1
MH2
MH3
MH4
MH5
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
[21] FAUDIO_JD
CBC19
CBC18
10u/8/X5R/6.3V/K
CR38
CR27
CR26
CR16
62/4
M2_L
M2_R
L2_R
L2_L
L2-R
L2-L
[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
Document Number: GA-H61M-D2H-USB3
Rev: 1.0
Date: Thursday, August 25, 2011
Sheet 22 of 33

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)

Atheros

AR8151/AR8161

AR8151-BL1A-R/S

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

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-->(O)

AR8161-->(O)

AR8161-->N/A

AR8152-->N/A

CLOSE LAN CHIP

USB_LAN CONNECTOR

USB_LAN

LR21:AR8151(O),AR8152(X)

EMI

CLOSE USB_LAN

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:

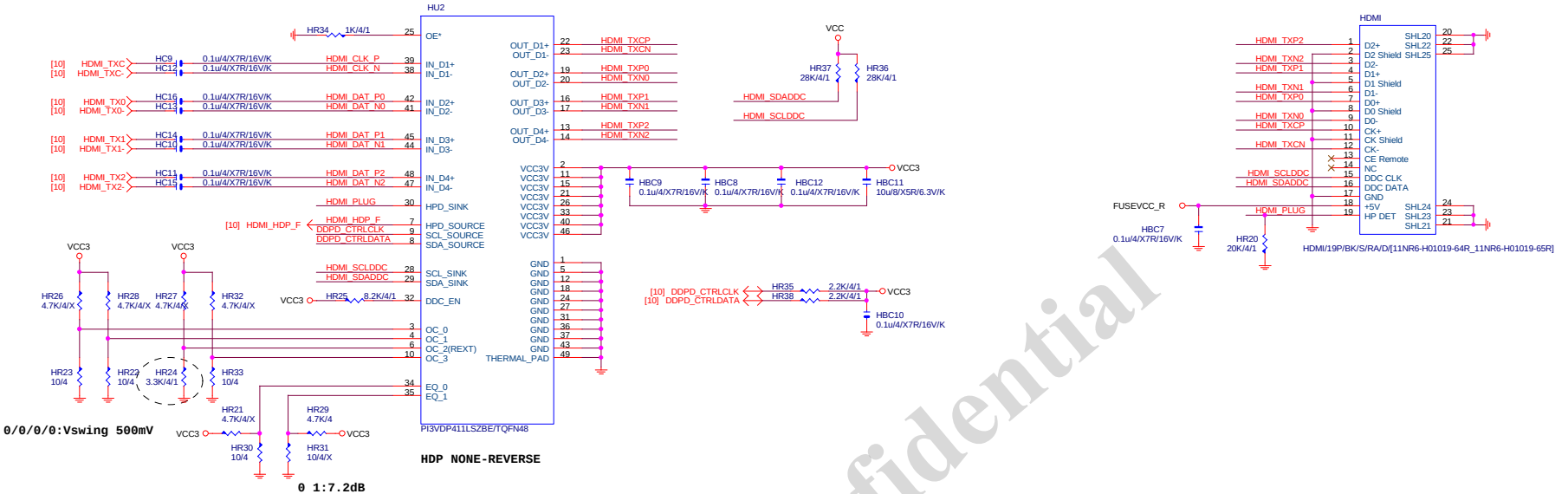
1.(紅色/12CORE/三倍):USB+LAN/1G/GO,Y/OS/RA/D/1/RED
2.(黑色/12CORE):USB+LAN/1G/GO,Y/OS/RA/D/1
3.(黑色/8CORE):USB+LAN/1G/GO,Y/OS/RA/D/8C

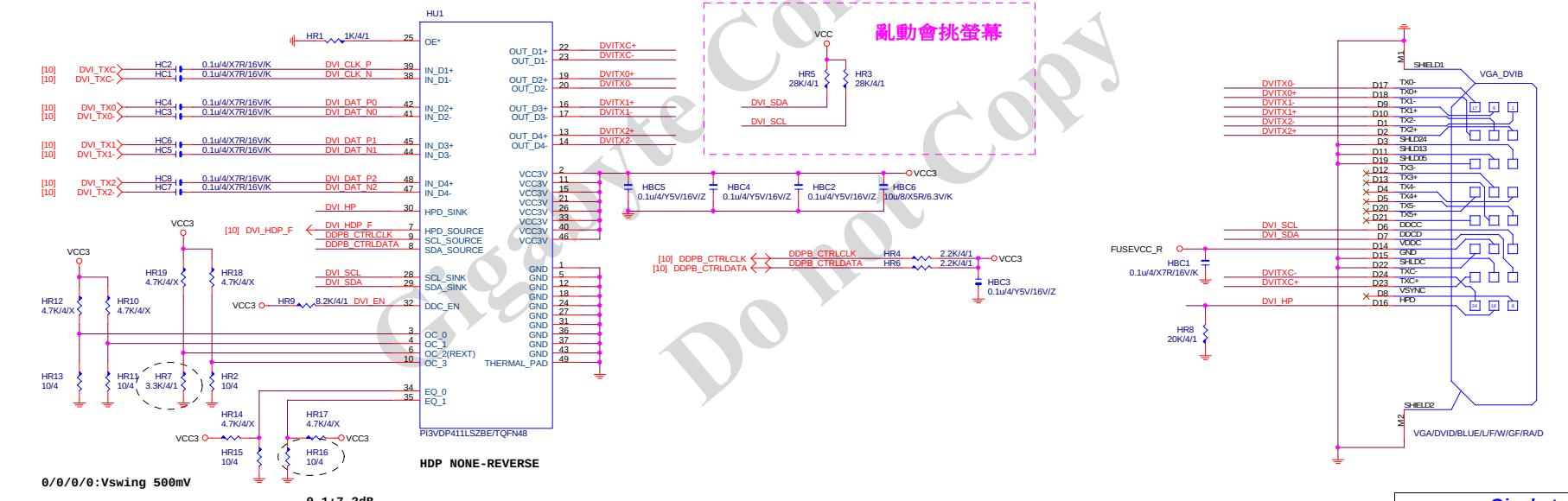
Gigabyte Technology

Title: ARTHEROS AR8151/AR8161

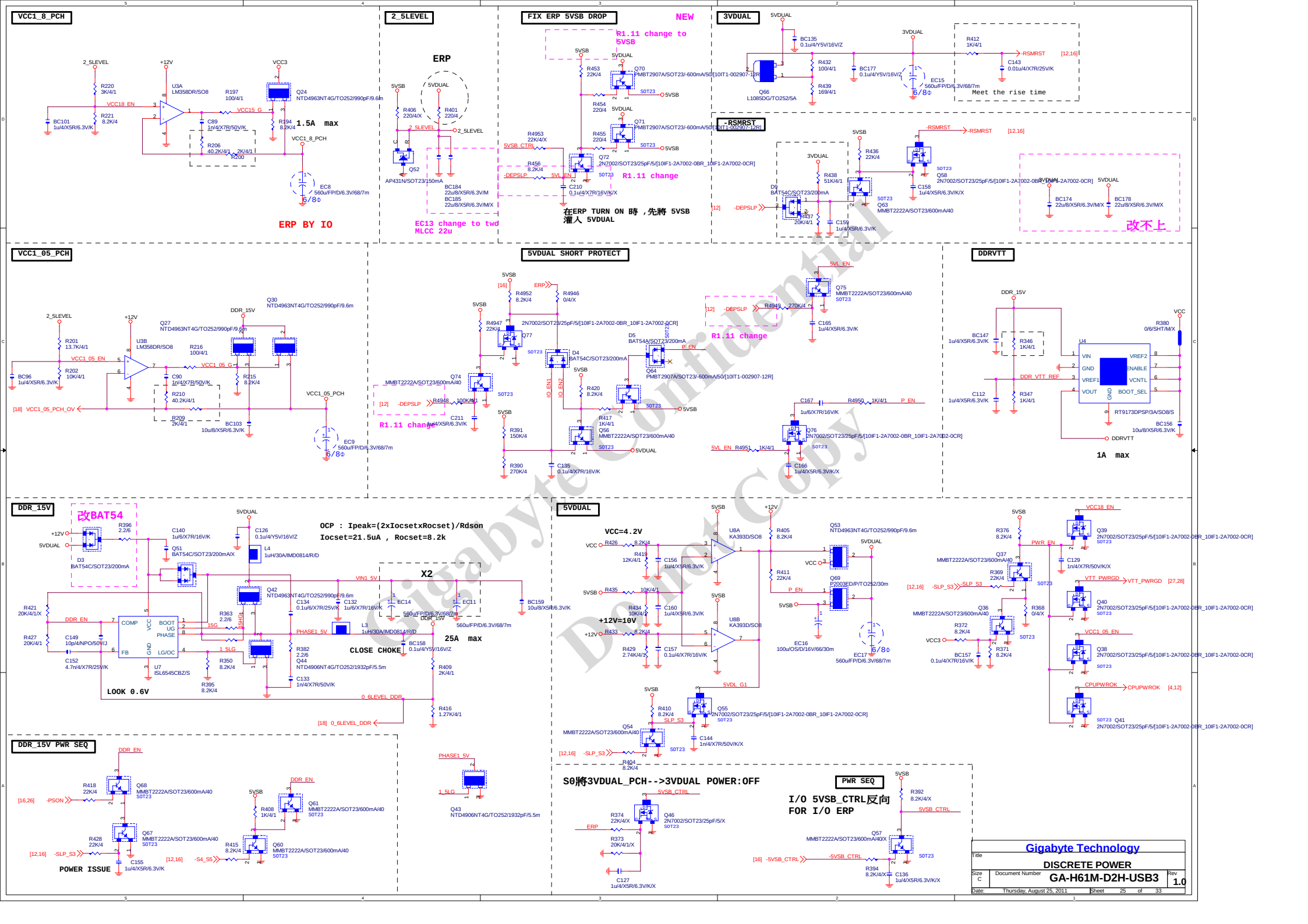
Size: Custom | Document Number: GA-H61M-D2H-USB3 | Rev: 1.0

Date: Thursday, August 25, 2011 | Sheet 23 of 33

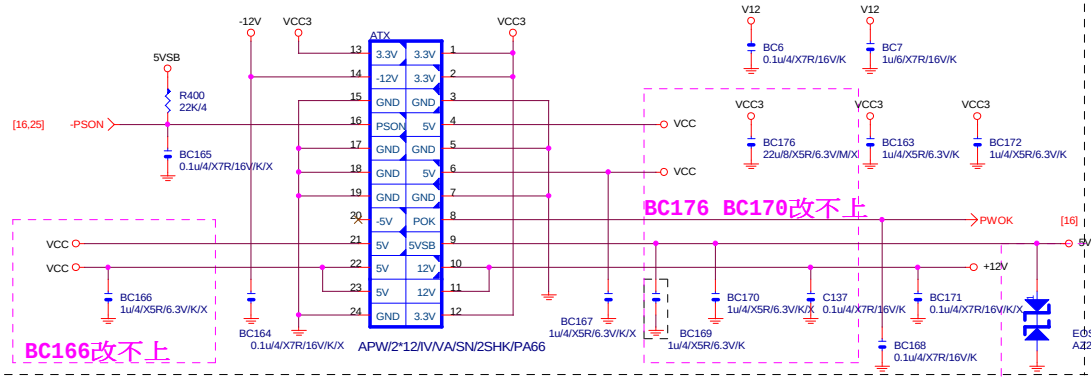




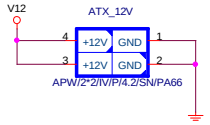
Gigabyte Technology		
Title: HDMI / DVI		
Size: Custom	Document Number: GA-H61M-D2H-USB3	Rev: 1.0
Date: Thursday, August 25, 2011	Sheet 24 of 33	



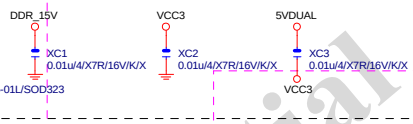
ATXX24 POWER CONNECTOR



ATXX4 POWER CONNECTOR

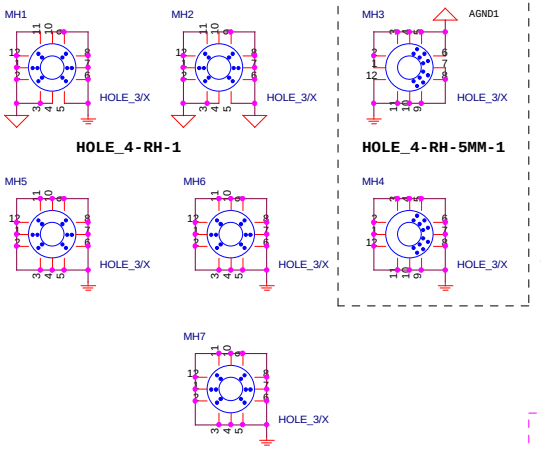


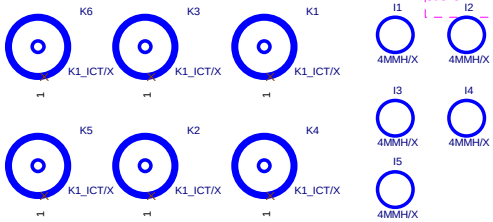
ATX_4_4



add AZ2225

change to VCC3 for EMI

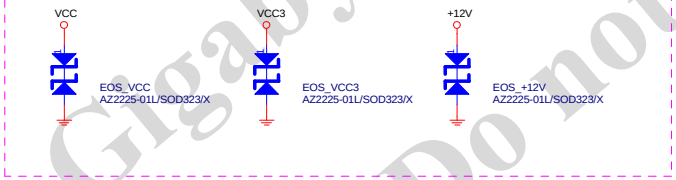




To prevent the 5VSB under loading when boot

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
Date: Thursday, August 25, 2011	Sheet 26 of 33	

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

	VTT_SEL
HI	1.05V
LO	1.0V

TR19 change to 5.1K

48A Max

remove TEC3

BOTTOM PAD CONNECT TO GND THROUGH 4 VIA

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

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

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

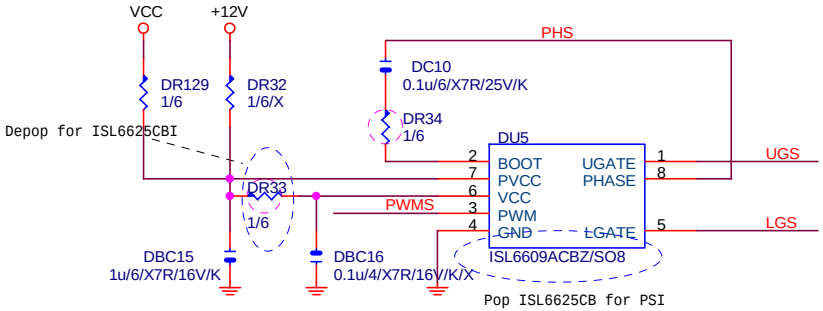
remove VAXG RDY

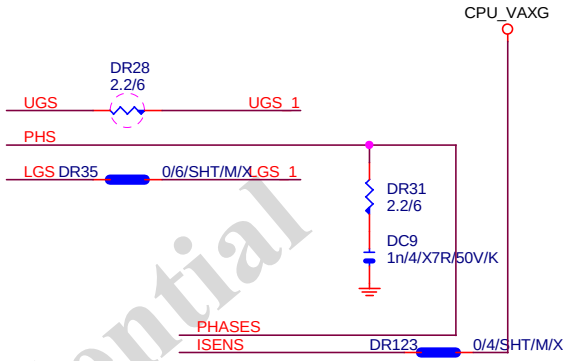
ISL6364CRZ/QFN48

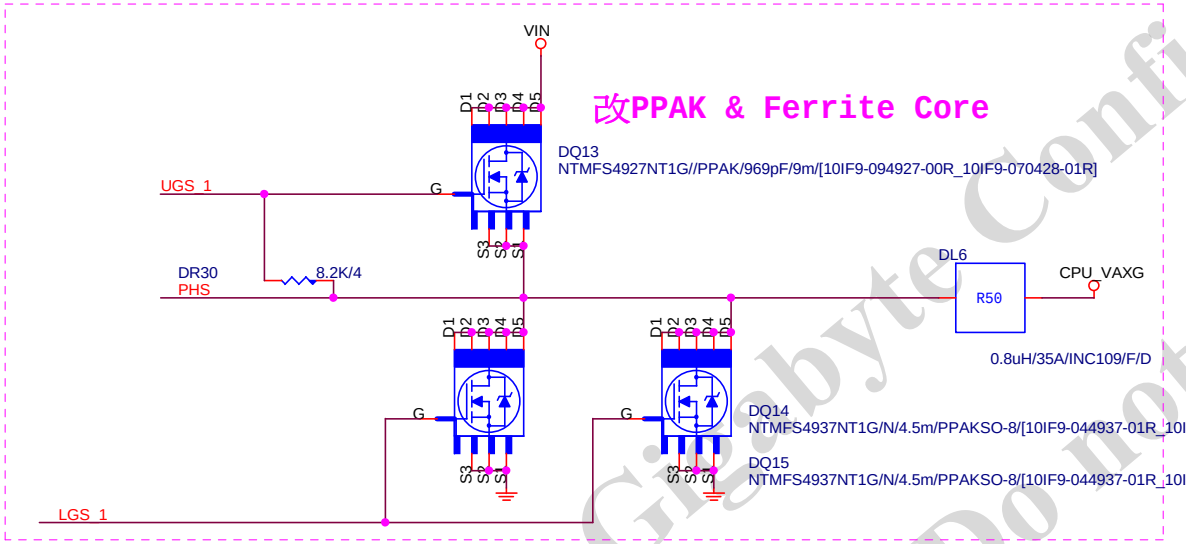
Gigabyte Technology	
Title	CPU CORE VR-1
Size: Custom	Document Number: GA-H61M-D2H-USB3
Rev	1.0
Date: Thursday, August 25, 2011	Sheet 28 of 33

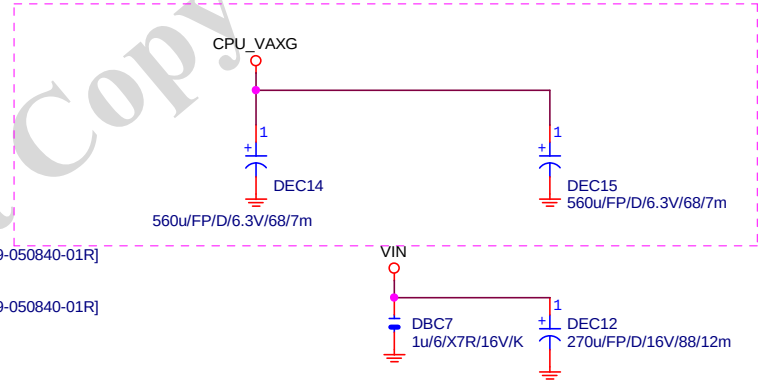
VAXG

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









Gigabyte Technology			
Title: CPU CORE VR-2			
Size: Custom	Document Number: GA-H61M-D2H-USB3		Rev: 1.0
Date: Thursday, August 25, 2011	Sheet 29 of 33		

改PPAK & Ferrite Core

PWM1 PWM2 PWM3 [28]
ISEN1 ISEN2 ISEN3 [28]
PHASE1 PHASE2 PHASE3 [28]

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

[1]
[3]
[2]

11LC3-30500C-R1~R3

ISL6609ACBZ/SO8

NTMFS4937NT1G/N/4.5m/PPAKSO-8/[10IF9-044937-01R_10IF9-050840-01R]

0.8uH/35A/INC109/F/D

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Title	CPU CORE VR-3
Size / Custom	Document Number: GA-H61M-D2H-USB3
Rev	1.0
Date:	Thursday, August 25, 2011
Sheet	30 of 33

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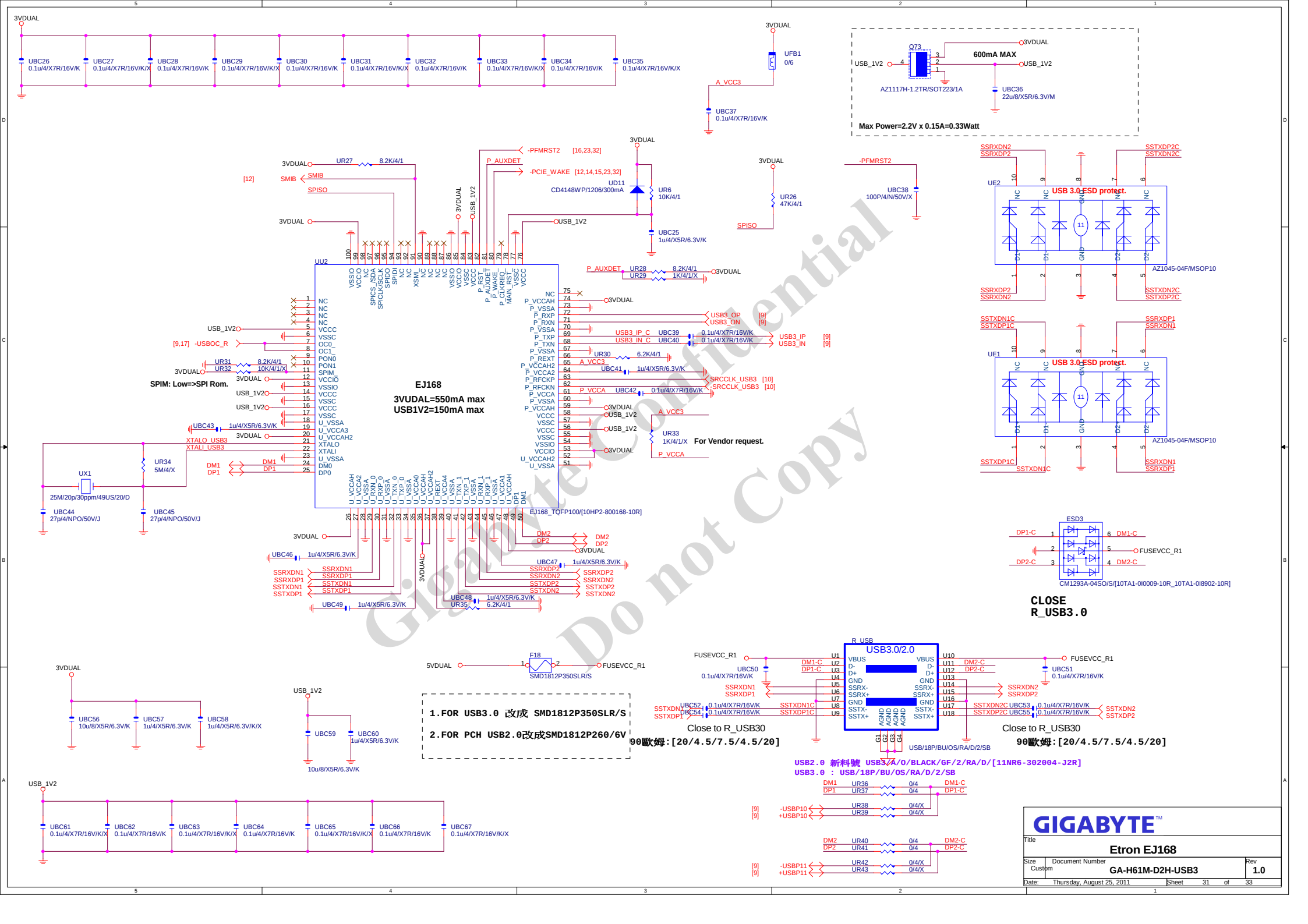
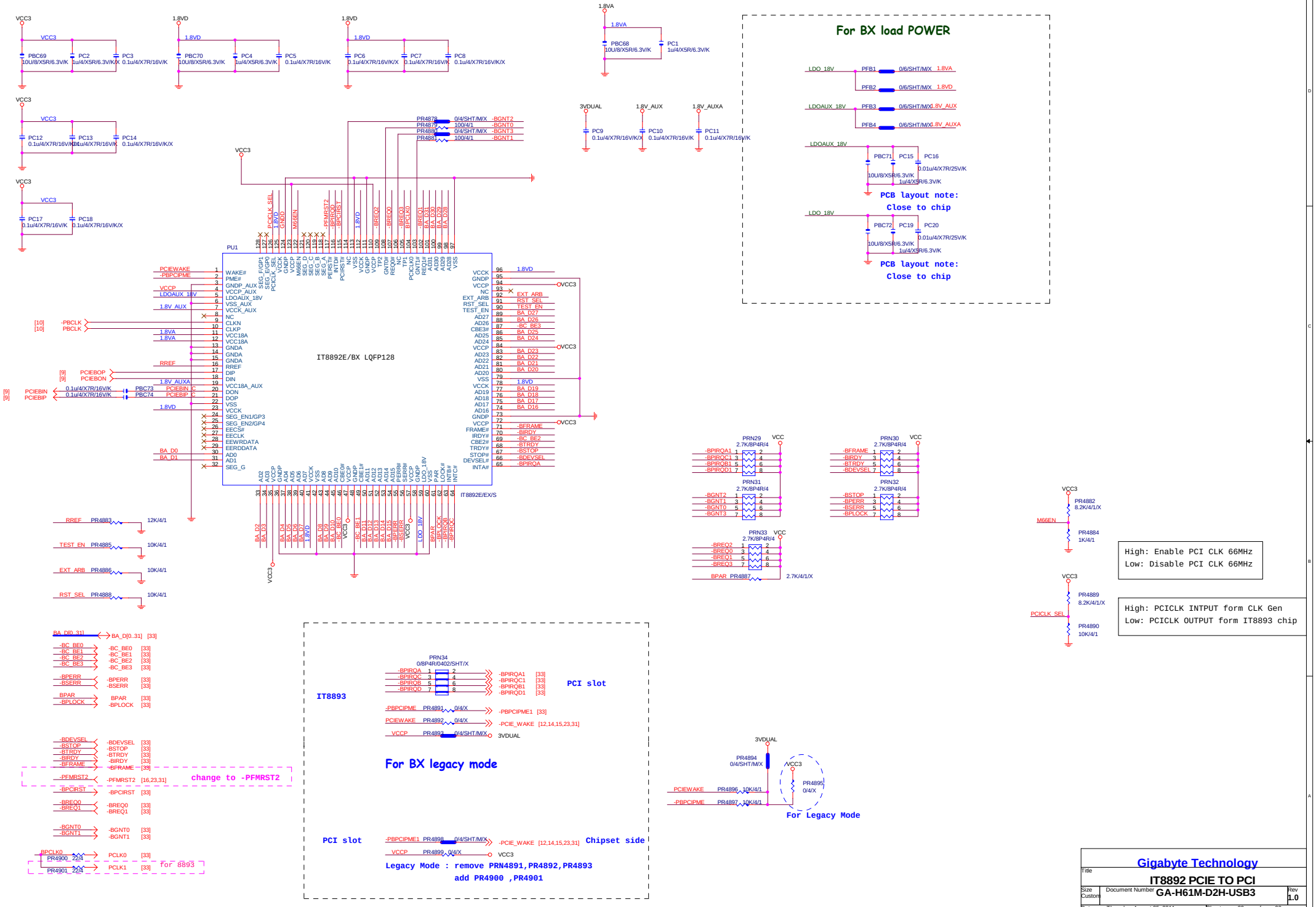
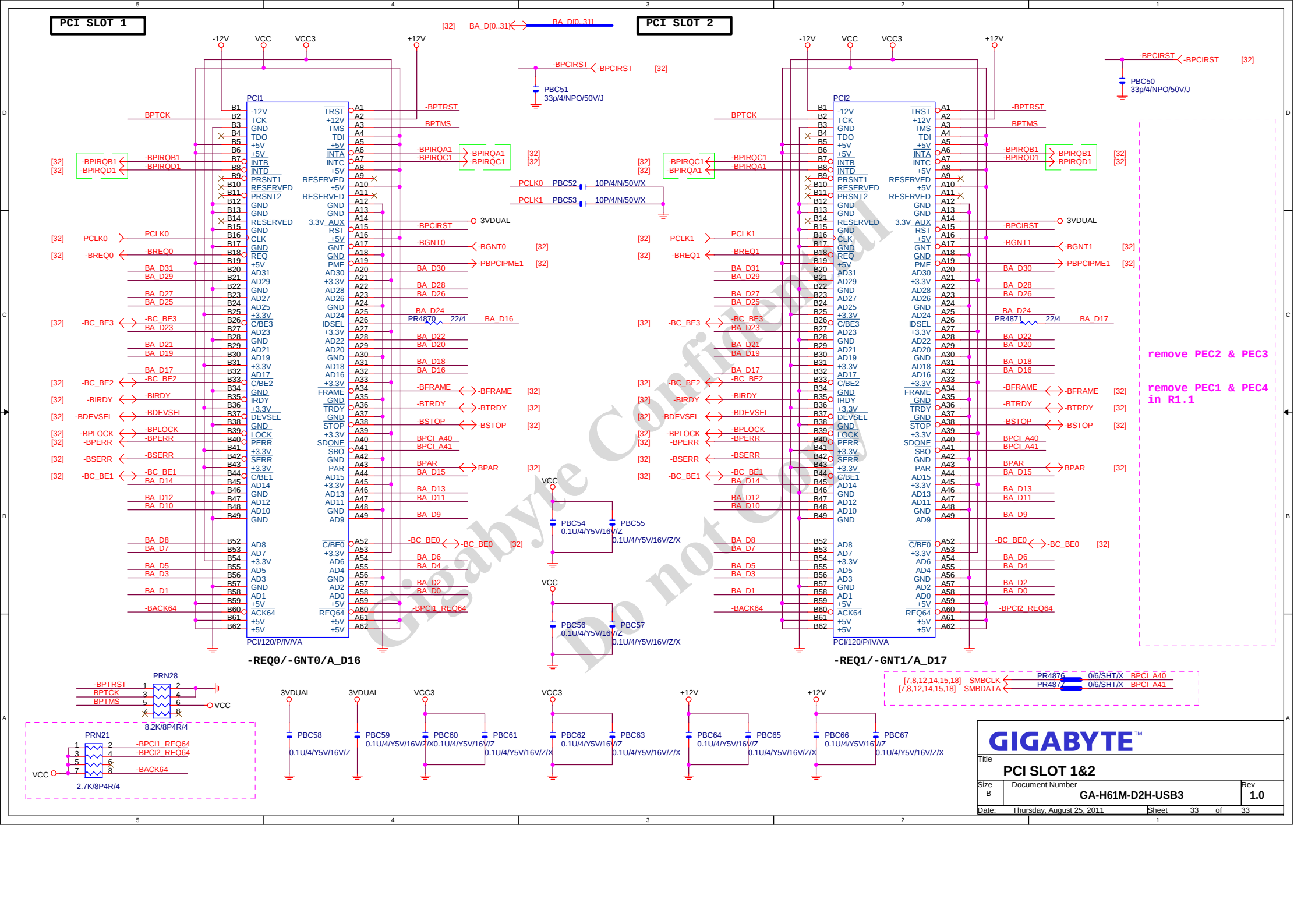



For BX load POWER
LDO_18V
LDOAUX_18V
PCB layout note:
Close to chip
IT8892E/BX LQFP128
IT8892E/EX/S
PU1
PCIEWAKE
-PBPCIPME
RREF
TEST_EN
EXT_ARB
RST_SEL
PRN29
PRN30
PRN31
PRN32
PRN33
PRN34
2.7K/8P4R/4
0/8P4R/0402/SHT/X
High: Enable PCI CLK 66MHz
Low: Disable PCI CLK 66MHz
High: PCICLK INTPUT form CLK Gen
Low: PCICLK OUTPUT form IT8893 chip
IT8893
PCI slot
For BX legacy mode
change to -PFMRST2
for 8893
Chipset side
Legacy Mode : remove PRN4891,PR4892,PR4893
add PR4900 ,PR4901
For Legacy Mode
Gigabyte Technology
IT8892 PCIE TO PCI
GA-H61M-D2H-USB3
Thursday, August 25, 2011



Title	PCI SLOT 1&2		
Size B	Document Number GA-H61M-D2H-USB3		Rev 1.0
Date: Thursday, August 25, 2011		Sheet 33 of 33	