

**Model Name: GA-H61M-USB3-B3** Revision 1.11

SHEET

TITLE

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06	CPU_LGA1155-C
07	DDR III CHANNEL A
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09	PCH_FDI,DMI,USB,PCIE,NVRAM
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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	PCI SLOT 1 & 2
17	ITE 8728 LPC IO
18	COMA,KB_MS,R_USB,-PROCHOT
19	HWM,FAN CTRL,OV,COMB
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21	FP,FUSB,SPK,SATALED
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24	ATHEROS AR8151/USB_LAN
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26	DISCRETE POWER
27	ATX,-S_WARN,-S_ACK,5VDUAL1

28	ISL95870_CPU_VTT
29	VCORE ISL6364_1
30	VCORE ISL6364_2
31	VCORE ISL6364_3
32	TPM
33	LPT
34	etron USB 3.0
35	ITE 8892E

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**Model Name: GA-H61M-USB3-B3****Revision 1.11****Component value change history**

2011/03/25

Data	Change Item	Reason
2010.12.31	9MH61MUB3-00-10B	first release
	add F8,F10 fuse	BACK IO USB change to per fuse per port
	remove COMB & TPM	SPM request
	remove DEC13 & TEC4	costdown
2011.01.21	9MH61MUB3-00-10C	
	R100 change to 1.87K	for prohot issue
	DR69 change to 20K	for when C3/C6 enable cant into OS issue
	remove Q25, R196 & R199 add R204	for thrmtrip issue
	BC34 & BC35 change to 1U	SIO -10 degree cant power on issue
	change to B3 chipset for PVT	
2011.02.08	9MH61MB3B-00-10A	
	modify LAN_USB Conn to -92R	Atheros has compatibility issue with -93R
2011.02.14	9MH61MB3B-00-10B	
	remove HR11,HR2 & HR13 HU1 change to ASM1442/QFN48	change DVI level shift IC
2011.02.16	9MH61MB3B-00-10C	
	DR54 750 change to 1.2K	fix Vcore OV not accurate issue
2011.03.01	9MH61MB3B-00-10D	
	remove R137	ITE 8728 issue
	DBC22,DBC24,DBC21,DBC23,DBC42 change to 0.1u	vendor suggestion
2011.03.10	9MH61MB3B-00-10E	
	remove UEC1	KBMS DIP CAP
	remove DEC3, DEC4	Vcore DIP CAP
	remove EC3	PCIE SLOT VCC3 DIP CAP
	TEC8 change to MLCC 22u	DDRVTI DIP CAP
	EC12 change to two MLCC 22u	3VDUAL_PCH LDO DIP CAP
	remove TEC3	VIT DIP CAP
	EC13 change to two MLCC 22u	2_5LEVEL DIP CAP
	EC6 change to two MLCC 22u	VCC3_DAC DIP CAP
	remove PEC1 & PEC4	PCI 3VDUAL & VCC DIP CAP
	add Clock gen	OC solution

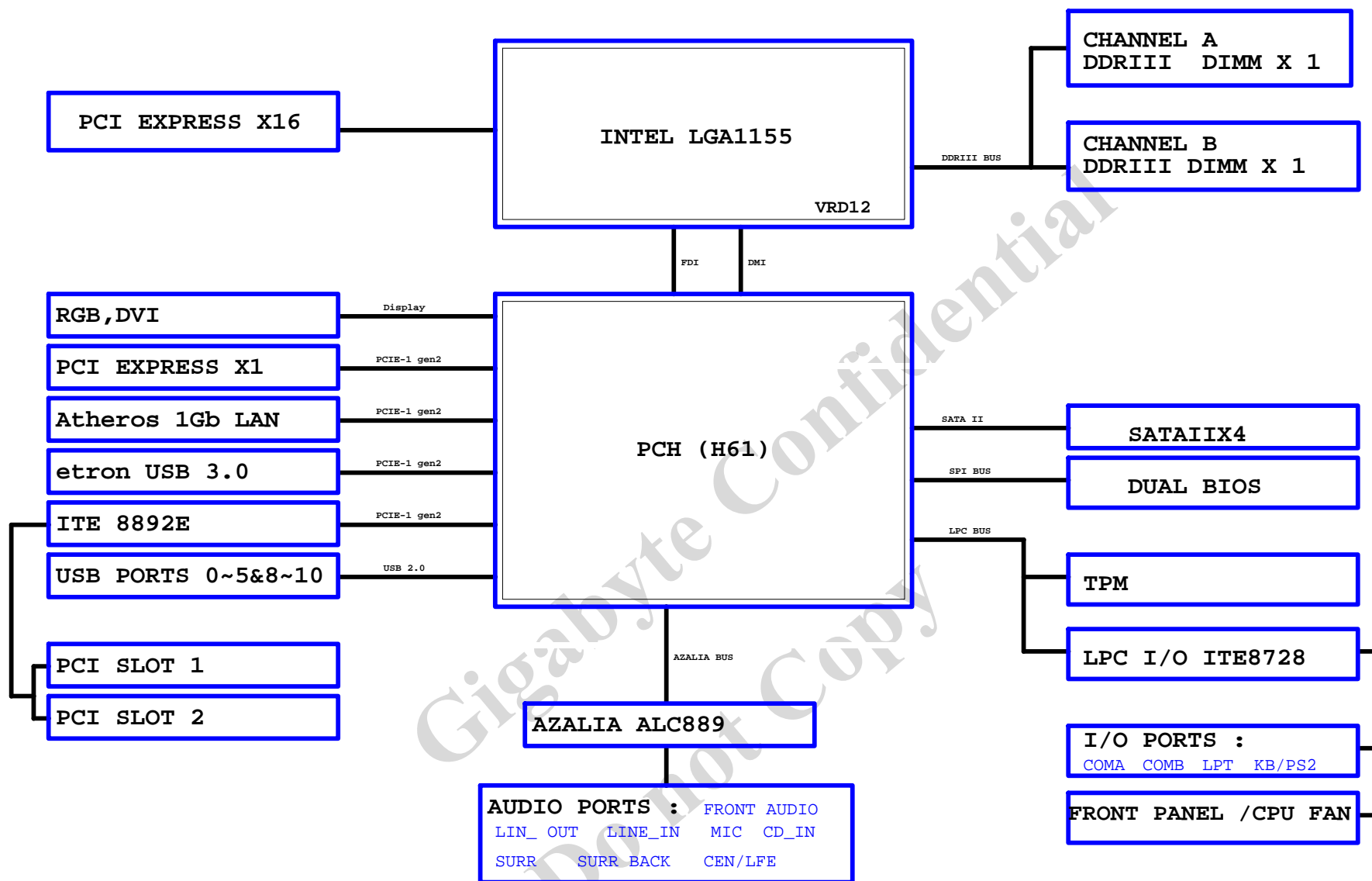
**Circuit or PCB layout change**

DATE	Change Item	Reason
2010.12.30	H61M-USB3 1.00 gerber out	
	修改SATA文字面	SATA 排序問題
	BACK IO USB change to per fuse per port	spec change
	LAN switching power layout change	LAN 1G fail issue
	LAN25MCLK change to PCH GPIO66	PCH GPIO66 can provide LAN25M
	CD2 change to DGND	REALTEK request
2011.01.21	H61M-USB3 1.01 gerber out	
2011.02.01	H61M-USB3-B3 1.01 gerber out	
2011.03.25	add Clock gen	OC solution
	remove UEC1	KBMS DIP CAP
	remove DEC3, DEC4	Vcore DIP CAP
	remove EC3	PCIE SLOT VCC3 DIP CAP
	TEC8 change to MLCC 22u	DDRVTI DIP CAP
	EC12 change to two MLCC 22u	3VDUAL_PCH LDO DIP CAP
	remove TEC3	VIT DIP CAP
	EC13 change to two MLCC 22u	2_5LEVEL DIP CAP
	EC6 change to two MLCC 22u	VCC3_DAC DIP CAP
	remove PEC1 & PEC4	PCI 3VDUAL & VCC DIP CAP

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BOM & PCB MODIFY HISTORY			
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# BLOCK DIAGRAM



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BLOCK DIAGRAM			
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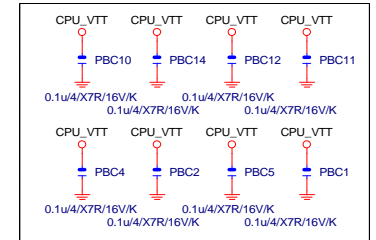
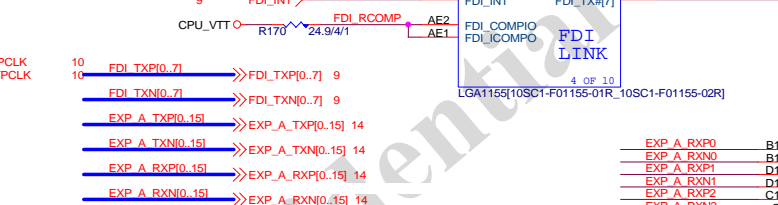
R88 R93 R92 0 change to short

10 CPUCLK CPUCLK  
10 -CPUCLK -CPUCLK  
29 VIDSCLK VIDSCLK  
29 VIDSOUT VIDSOUT  
29 VIDALRT VIDALRT

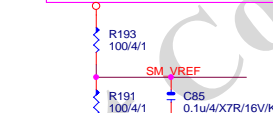
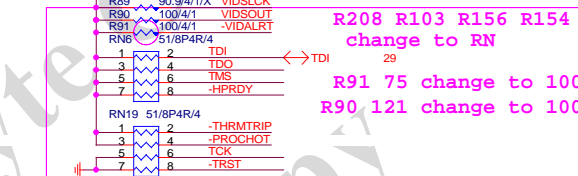
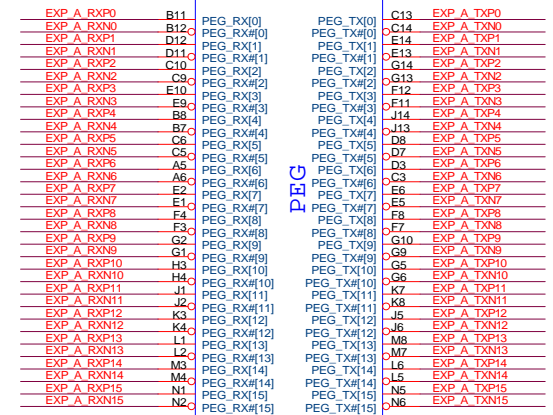


CFG6	CFG5	PCI-E CONFIG
1	1	1x16 , Default
1	0	2x8
0	1	RSVD
0	0	X8,X4,X4

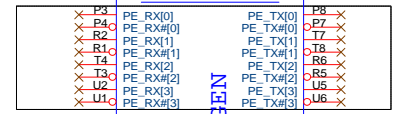
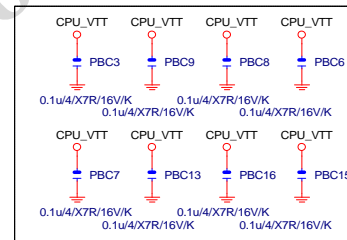
CFG 0-17 all internal PULL-UP



### Stitching caps for PCIE,DMI,FDI bus



### Stitching caps for PCIE,DMI,FDI bus



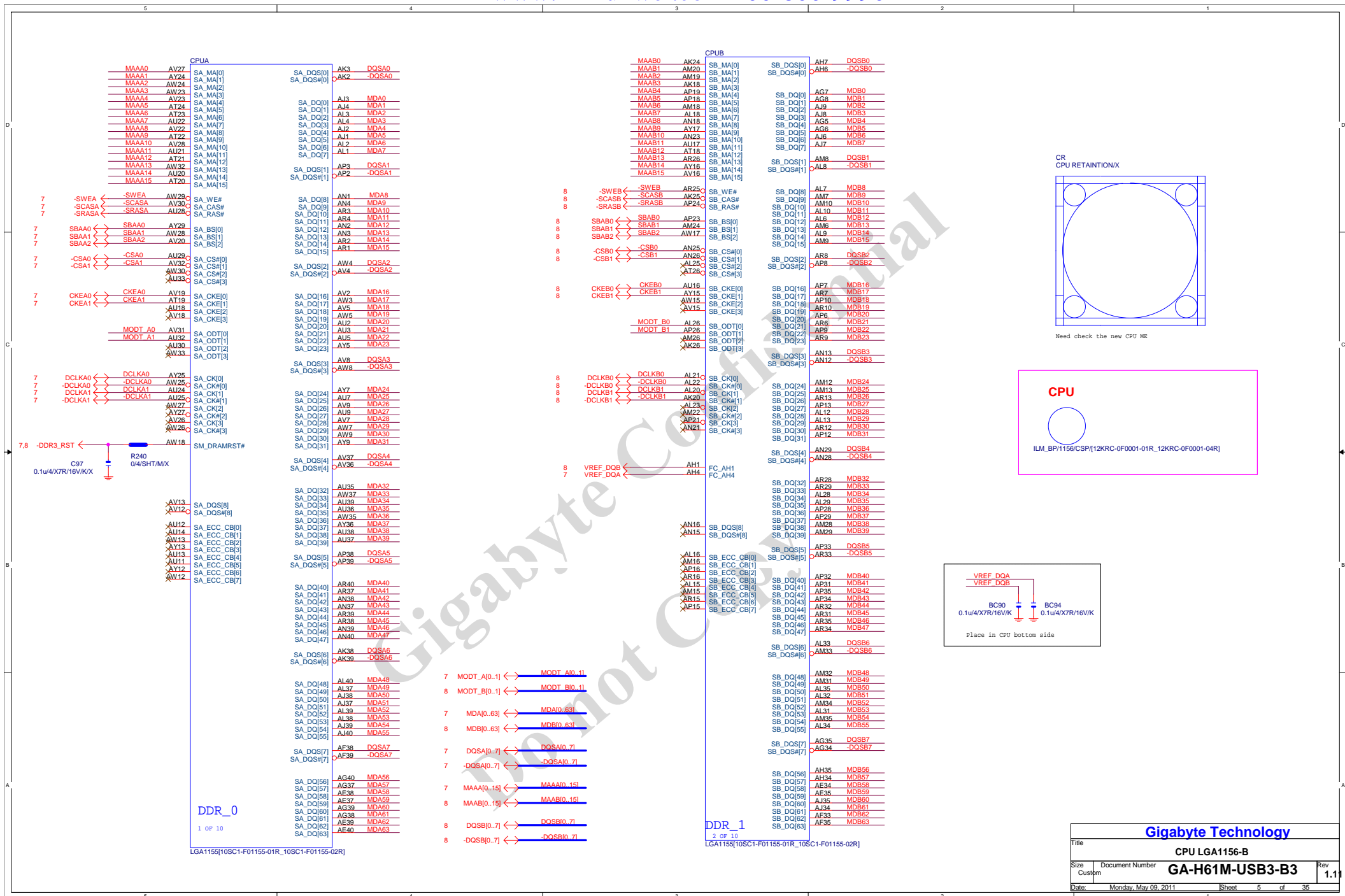
3 OF 10 PEG\_ICOMPI B4 W= S= LGA1155[10SC1-F01155-01R\_10SC1-F01155-02R]

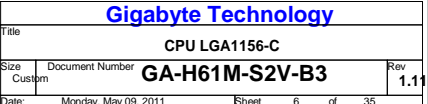
## Gigabyte Technology

**CPU LGA1155-A**

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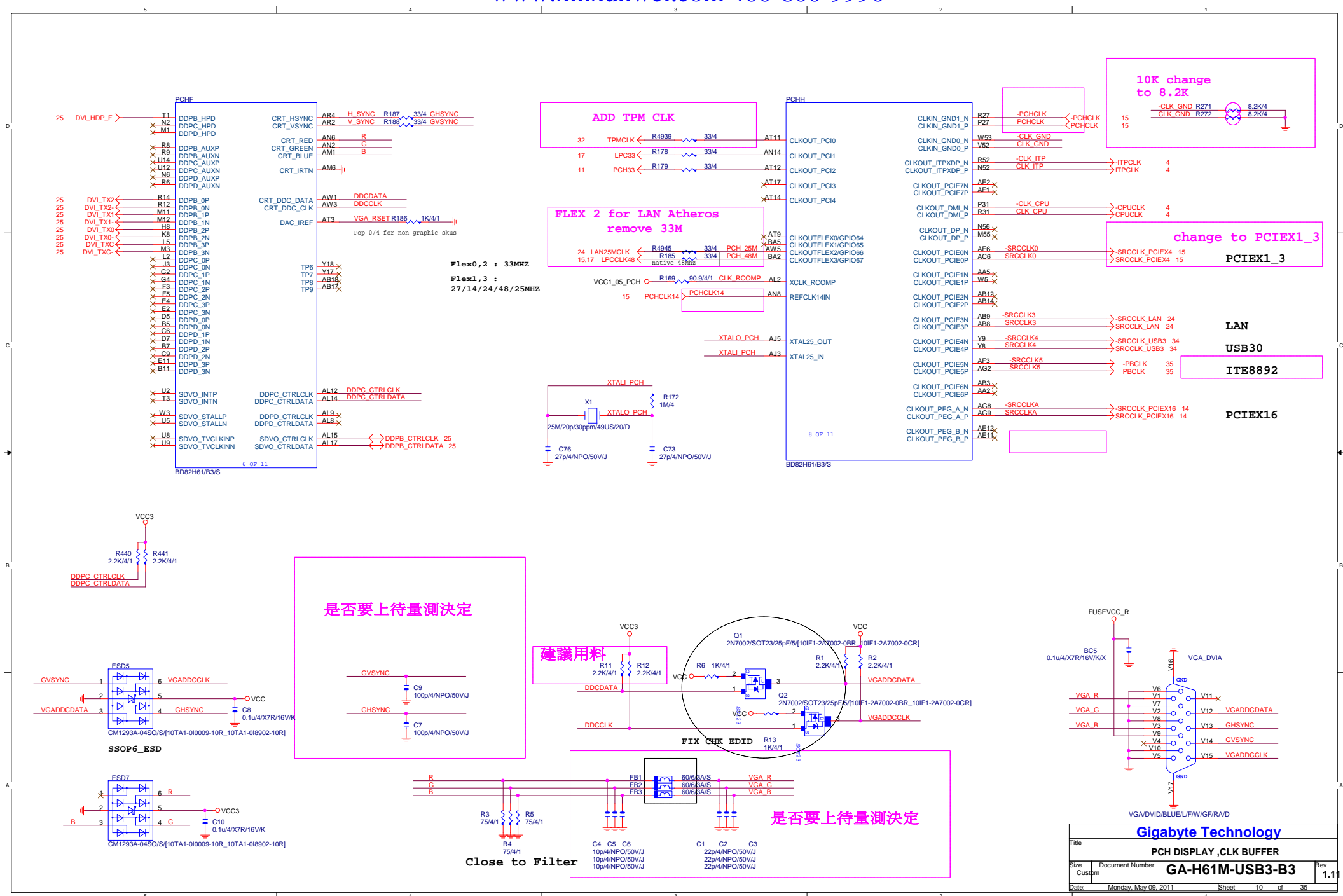




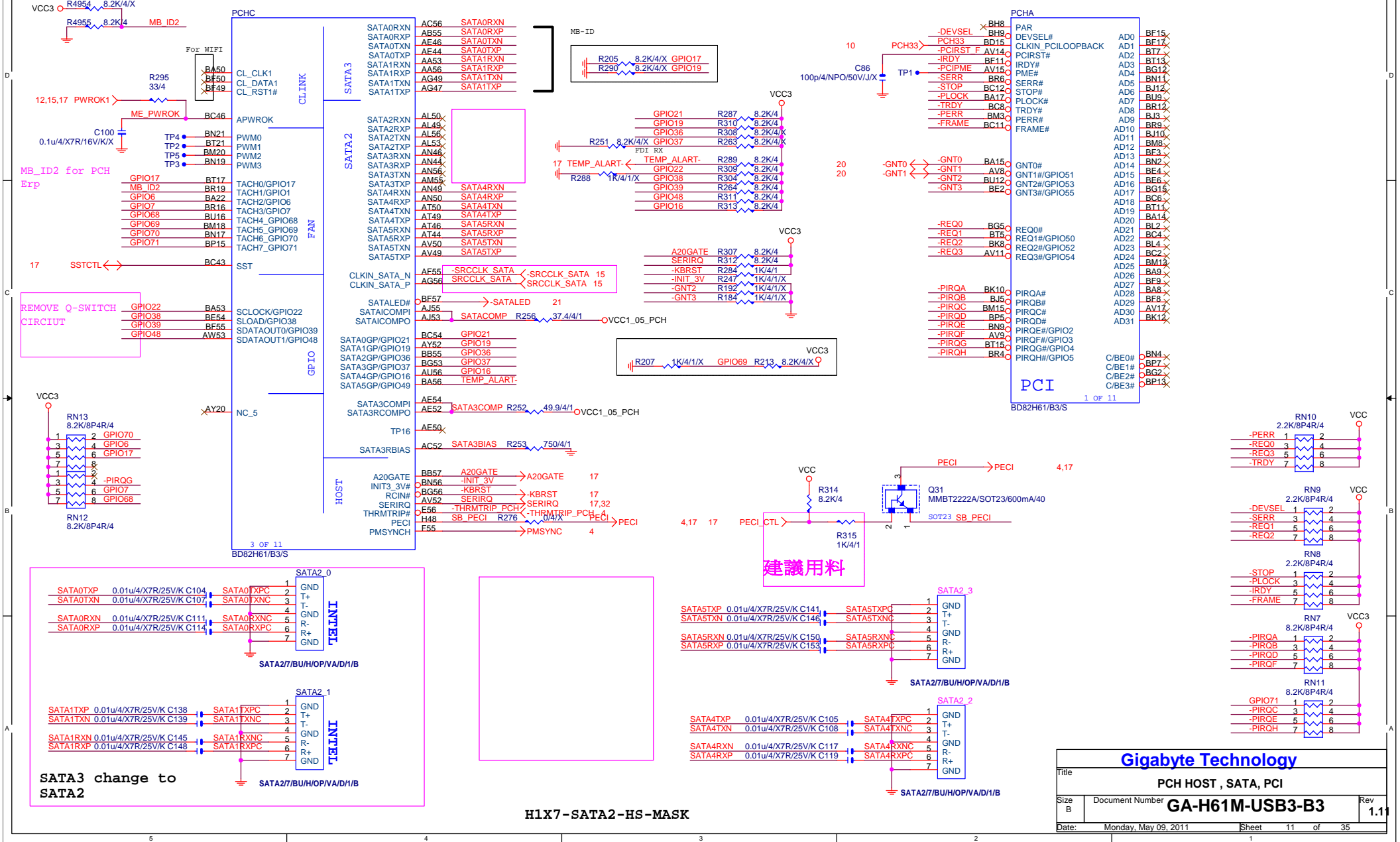


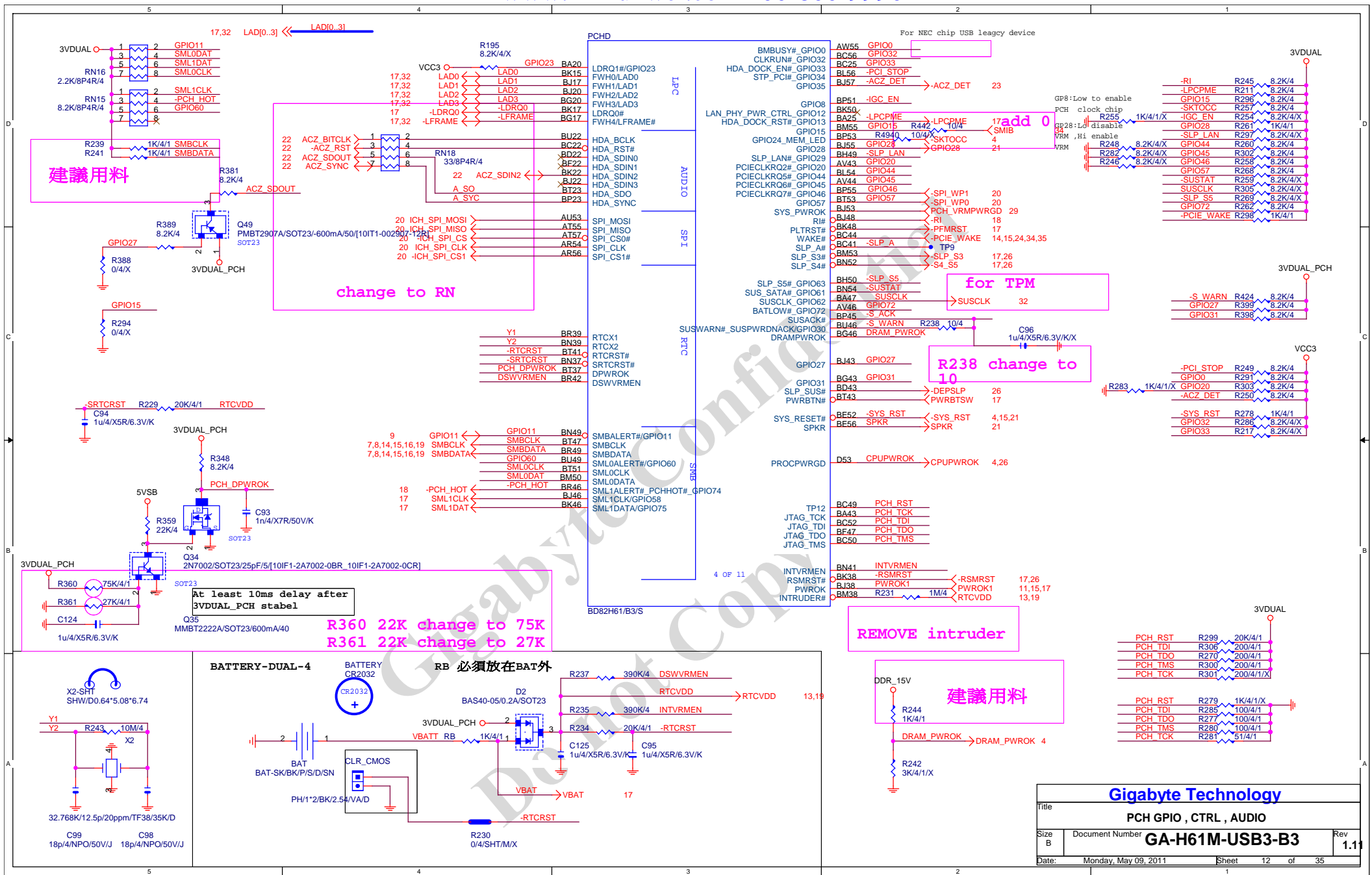


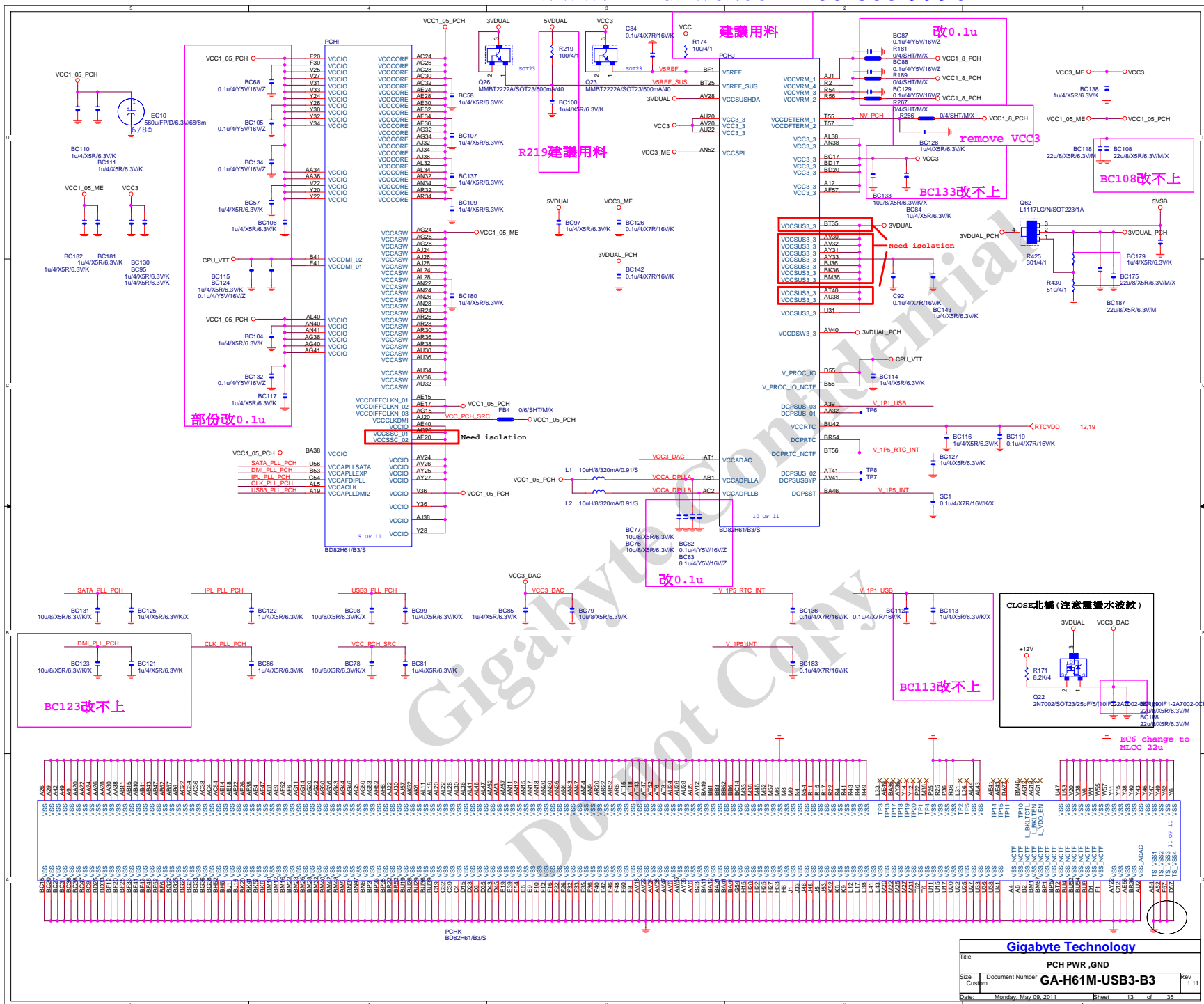




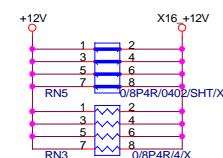
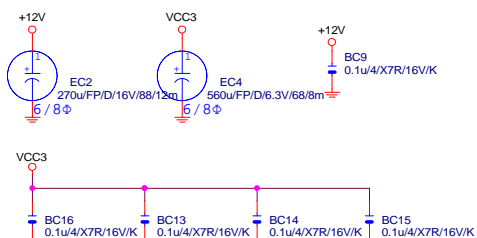
## H61 SATA3.0 Disable



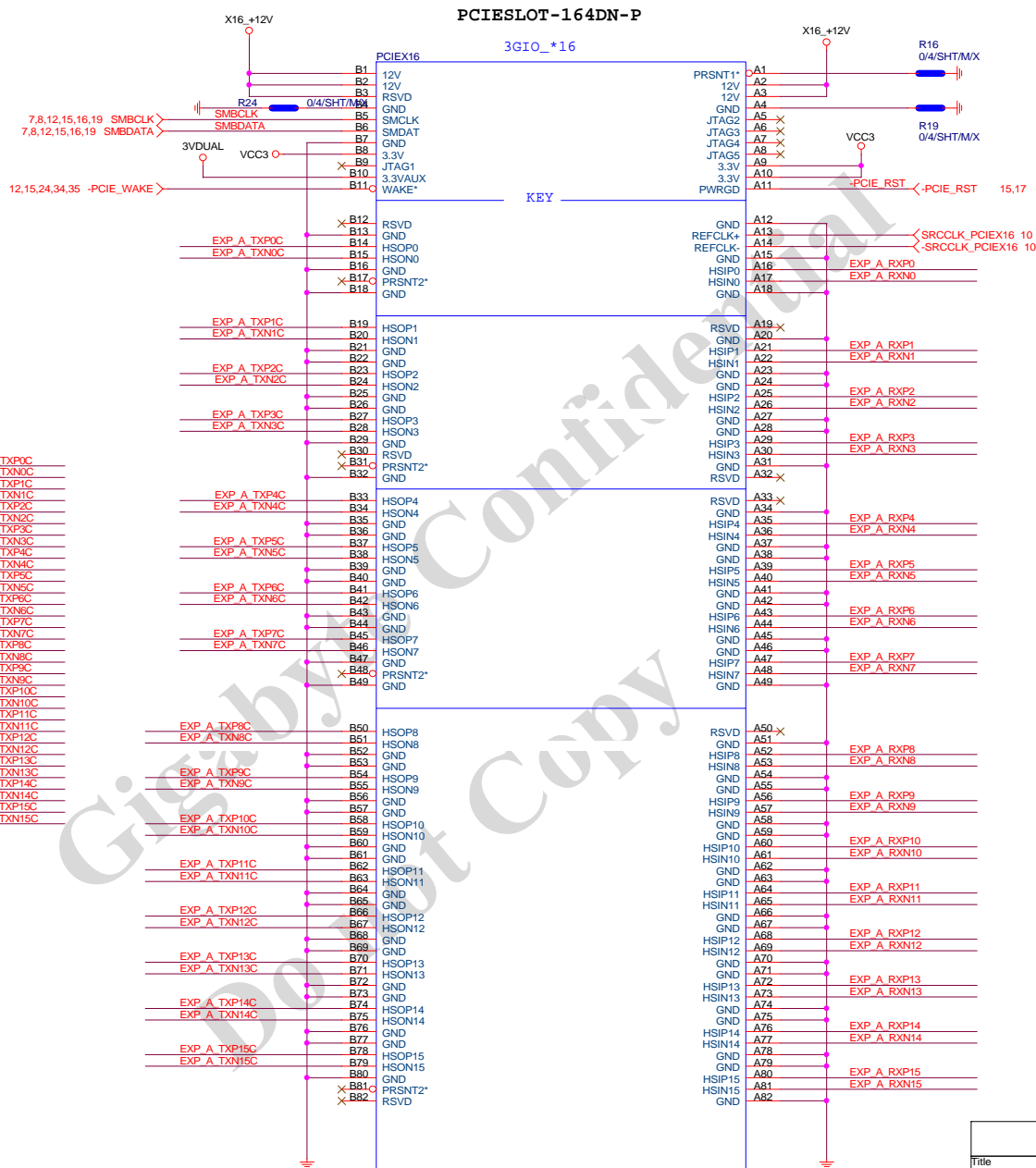








EXP A TXP0	C22	0.22u4X5R6.3VK	EXP A TXP0C
EXP A TXP1	C26	0.22u4X5R6.3VK	EXP A TXP0C
EXP A TXP1	C29	0.22u4X5R6.3VK	EXP A TXP1C
EXP A TXP1	C31	0.22u4X5R6.3VK	EXP A TXP1C
EXP A TXP2	C33	0.22u4X5R6.3VK	EXP A TXP2C
EXP A TXP2	C37	0.22u4X5R6.3VK	EXP A TXP2C
EXP A TXP3	C37	0.22u4X5R6.3VK	EXP A TXP3C
EXP A TXP3	C40	0.22u4X5R6.3VK	EXP A TXP3C
EXP A TXP4	C48	0.22u4X5R6.3VK	EXP A TXP4C
EXP A TXP4	C49	0.22u4X5R6.3VK	EXP A TXP4C
EXP A TXP5	C53	0.22u4X5R6.3VK	EXP A TXP5C
EXP A TXP5	C54	0.22u4X5R6.3VK	EXP A TXP5C
EXP A TXP6	C56	0.22u4X5R6.3VK	EXP A TXP6C
EXP A TXP6	C58	0.22u4X5R6.3VK	EXP A TXP6C
EXP A TXP7	C60	0.22u4X5R6.3VK	EXP A TXP7C
EXP A TXP7	C61	0.22u4X5R6.3VK	EXP A TXP7C
EXP A TXP8	C63	0.22u4X5R6.3VK	EXP A TXP8C
EXP A TXP8	C64	0.22u4X5R6.3VK	EXP A TXP8C
EXP A TXP9	C66	0.22u4X5R6.3VK	EXP A TXP9C
EXP A TXP9	C67	0.22u4X5R6.3VK	EXP A TXP9C
EXP A TXP10	C69	0.22u4X5R6.3VK	EXP A TXP10C
EXP A TXP10	C70	0.22u4X5R6.3VK	EXP A TXP10C
EXP A TXP11	C71	0.22u4X5R6.3VK	EXP A TXP11C
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EXP A TXP12	C75	0.22u4X5R6.3VK	EXP A TXP12C
EXP A TXP13	C77	0.22u4X5R6.3VK	EXP A TXP13C
EXP A TXP13	C78	0.22u4X5R6.3VK	EXP A TXP13C
EXP A TXP14	C79	0.22u4X5R6.3VK	EXP A TXP14C
EXP A TXP14	C80	0.22u4X5R6.3VK	EXP A TXP14C
EXP A TXP15	C82	0.22u4X5R6.3VK	EXP A TXP15C
EXP A TXP15	C83	0.22u4X5R6.3VK	EXP A TXP15C



C15改不上



REMOVE RN

BC8 BC12改不上

```
remove EC3
```

PCIEX4 change to PCIEX1

## INTERNAL CLK STRAPPING

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

### 建議用料

R4935 close to  
(402,-4502)  
bottom side

Mount for non-graphics skus

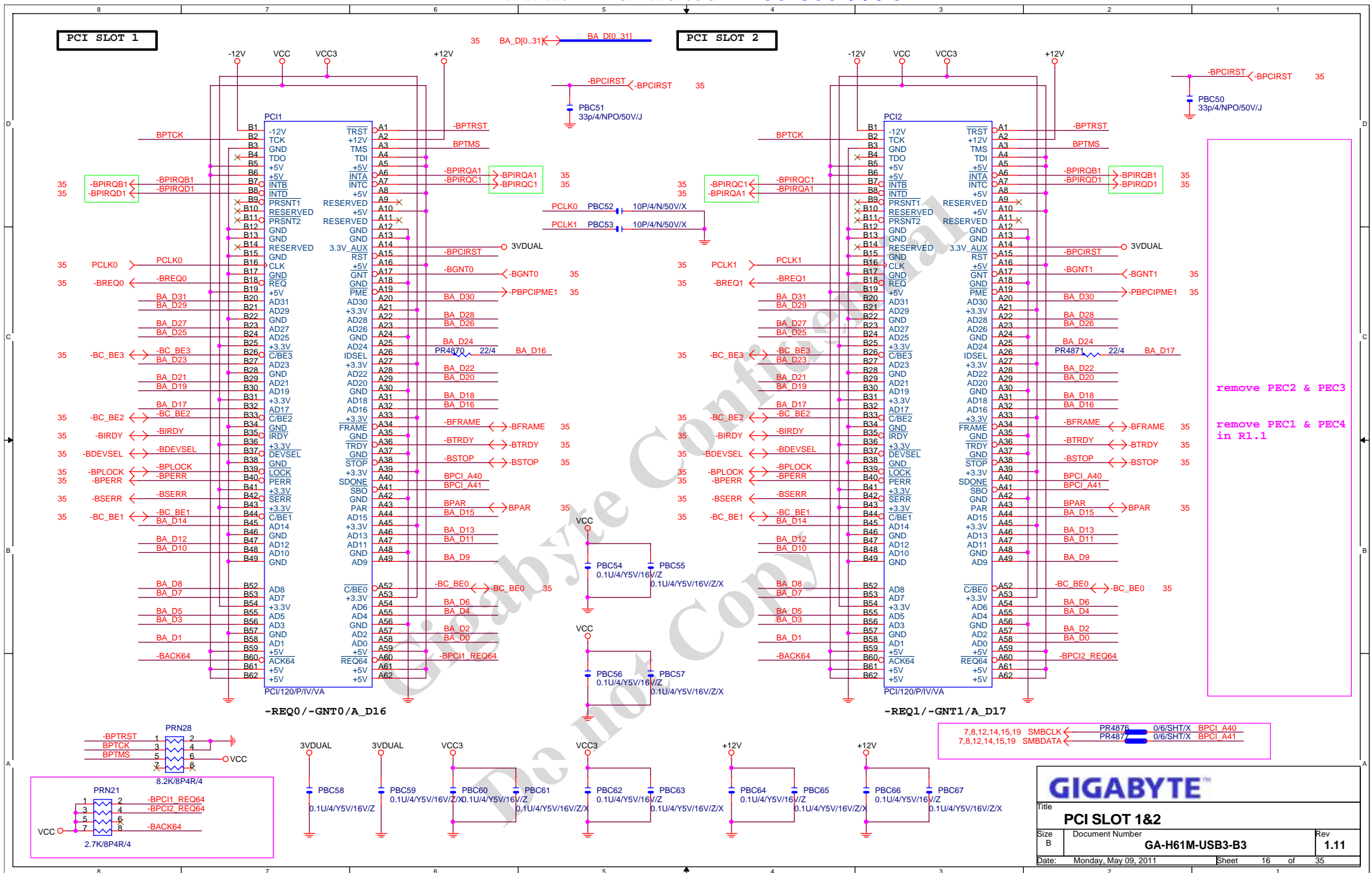
VCC1\_05 PCH   DOTCLK

### CPU Frequency Selection

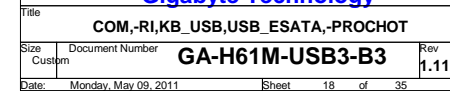
1	100M <Default>
0	133M

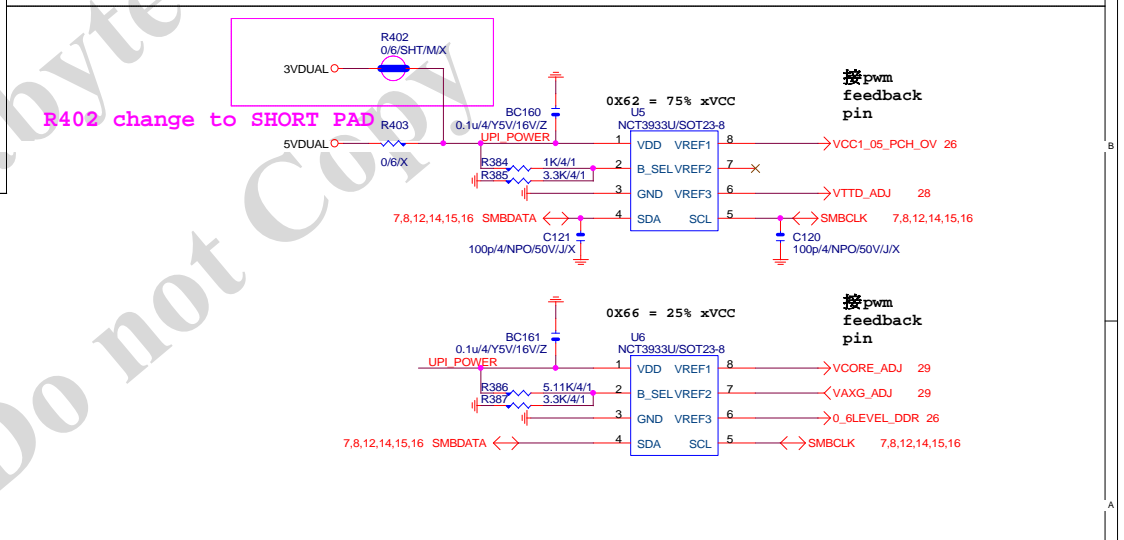
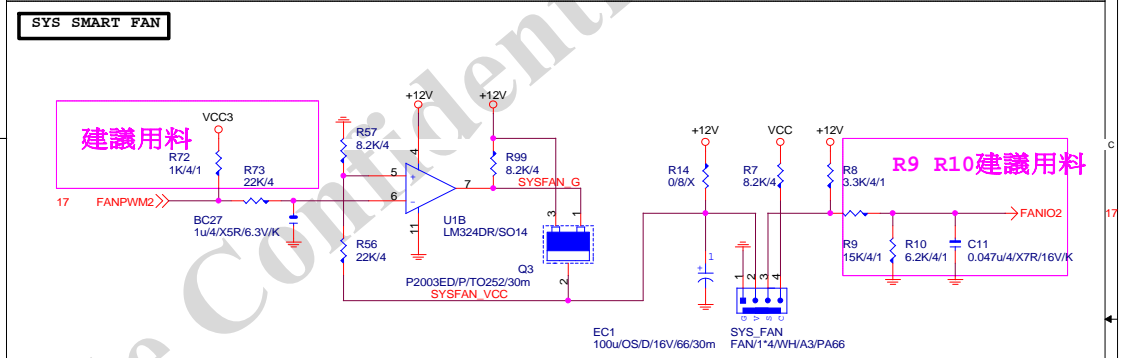
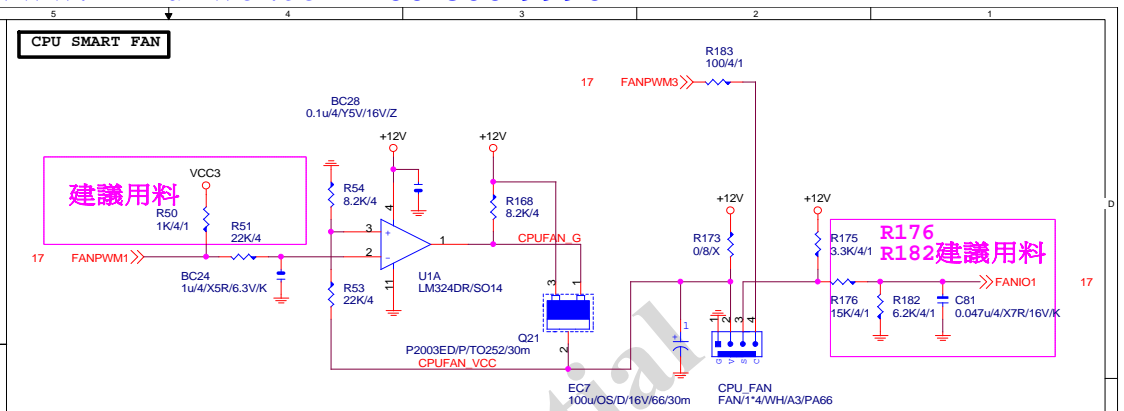
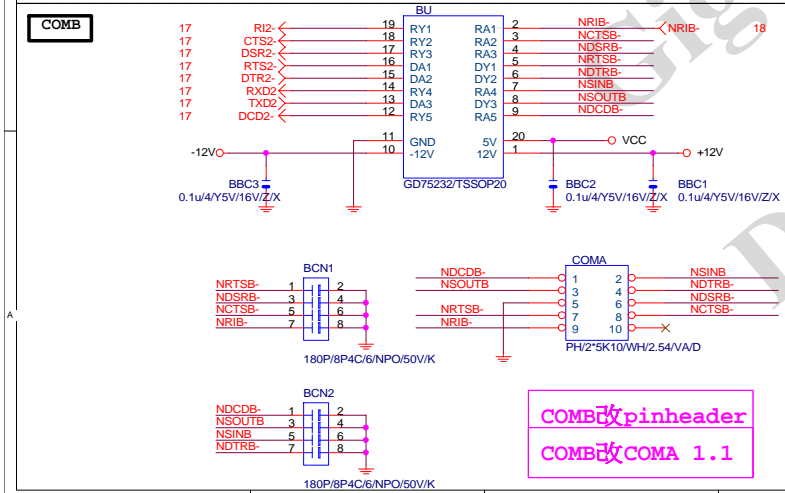
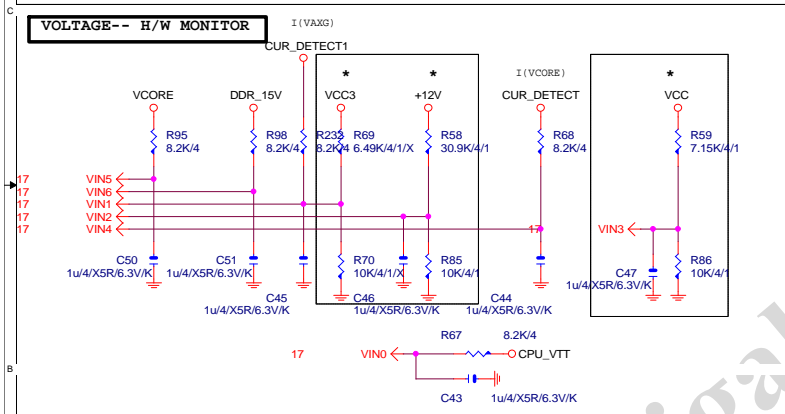
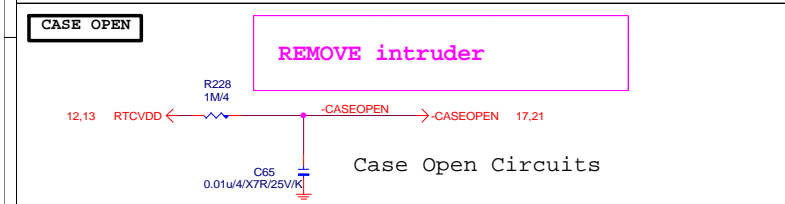
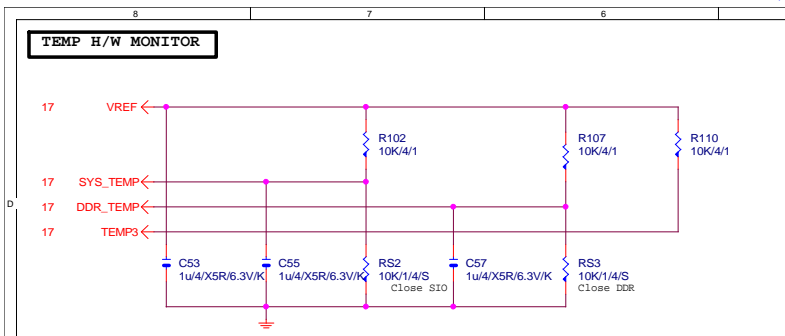
## Gigabyte Technology


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PCIE X 1/CLK GEN			
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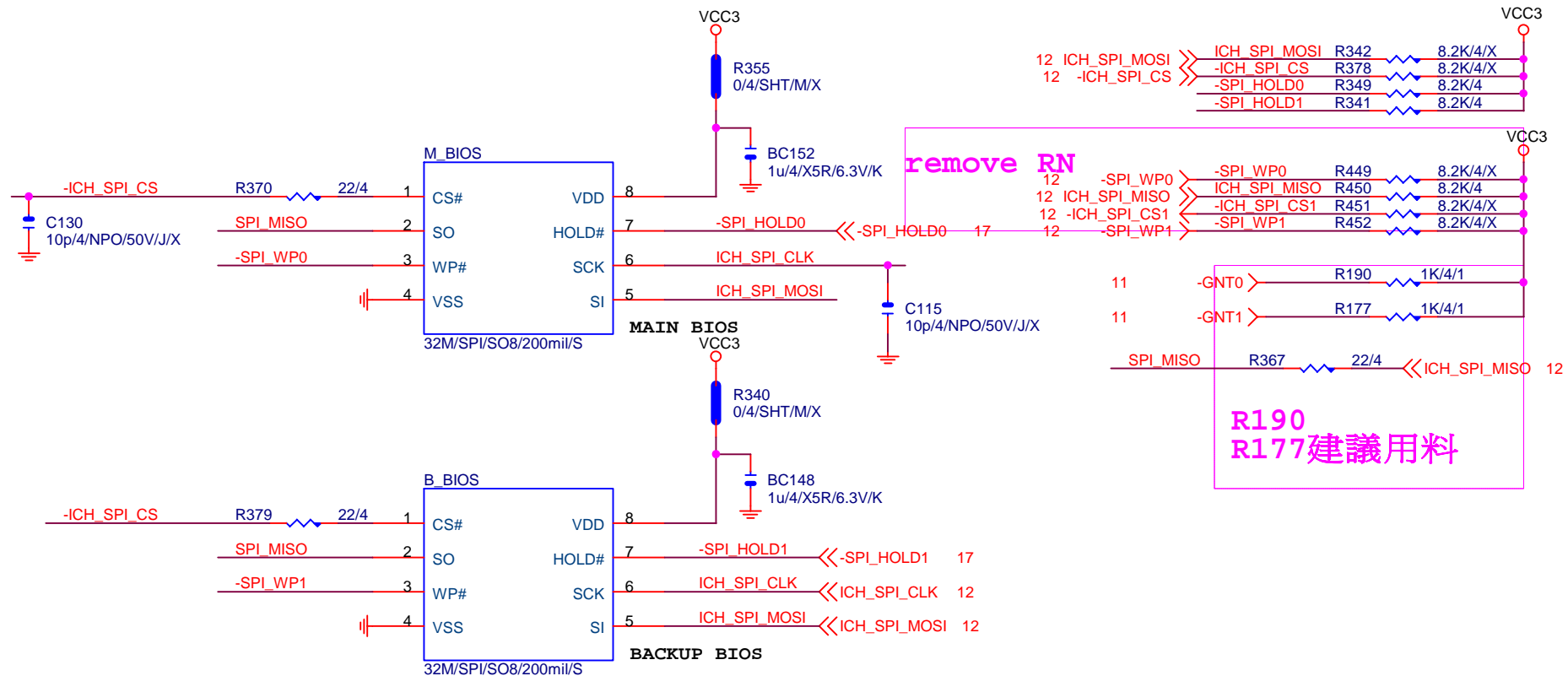




				
Title				
HWM,FAN CTRL,OV				
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# DUAL BIOS

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  
A

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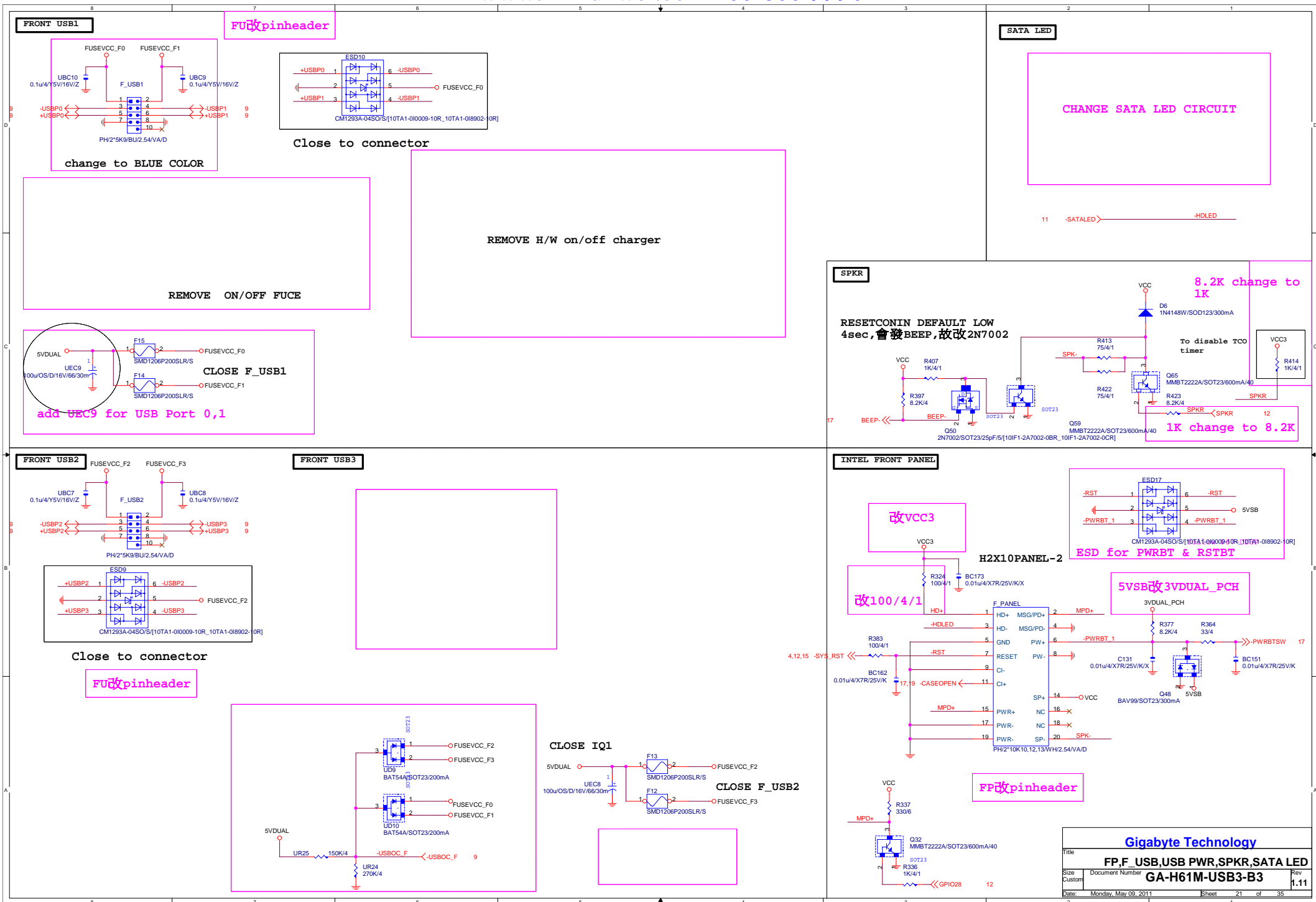
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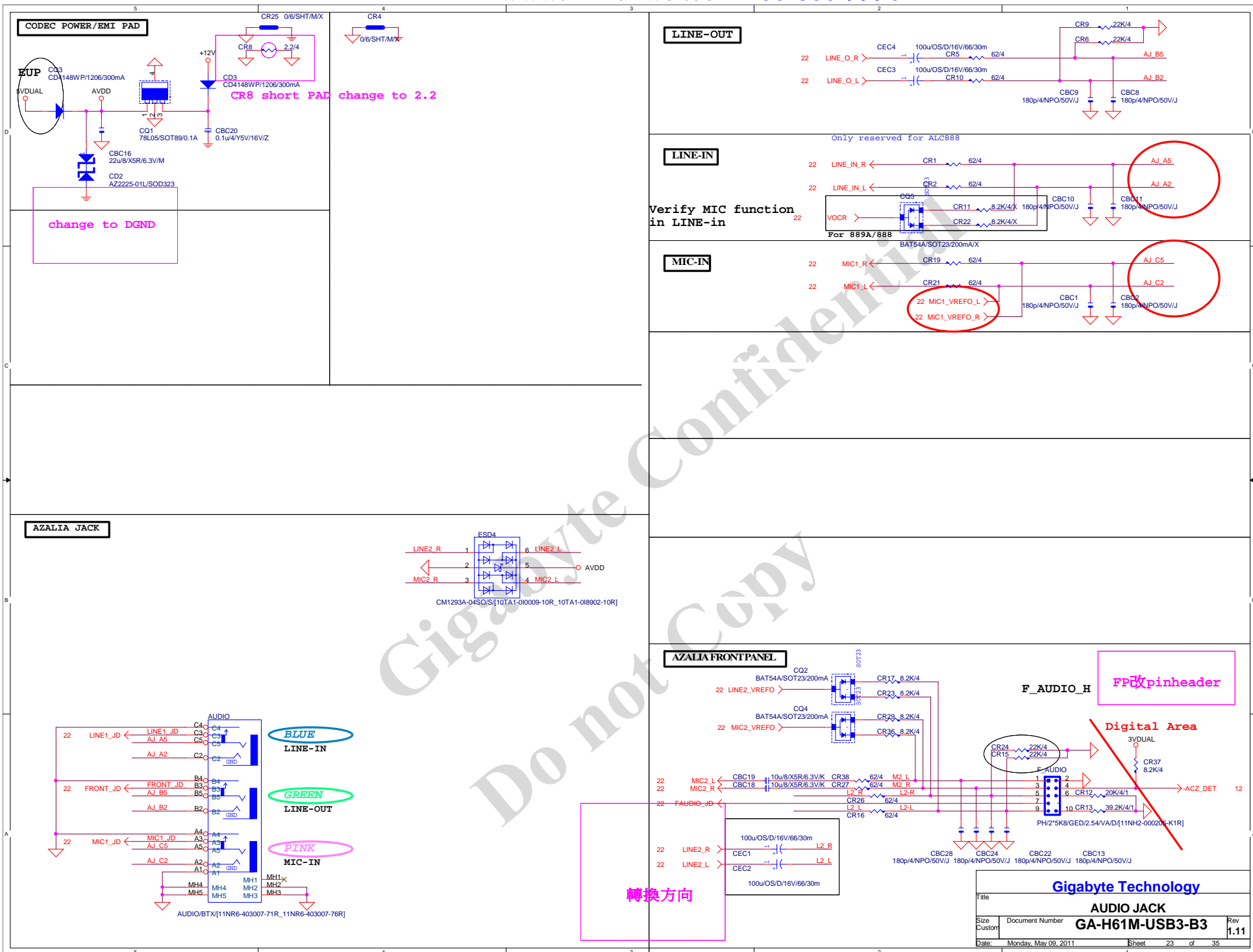
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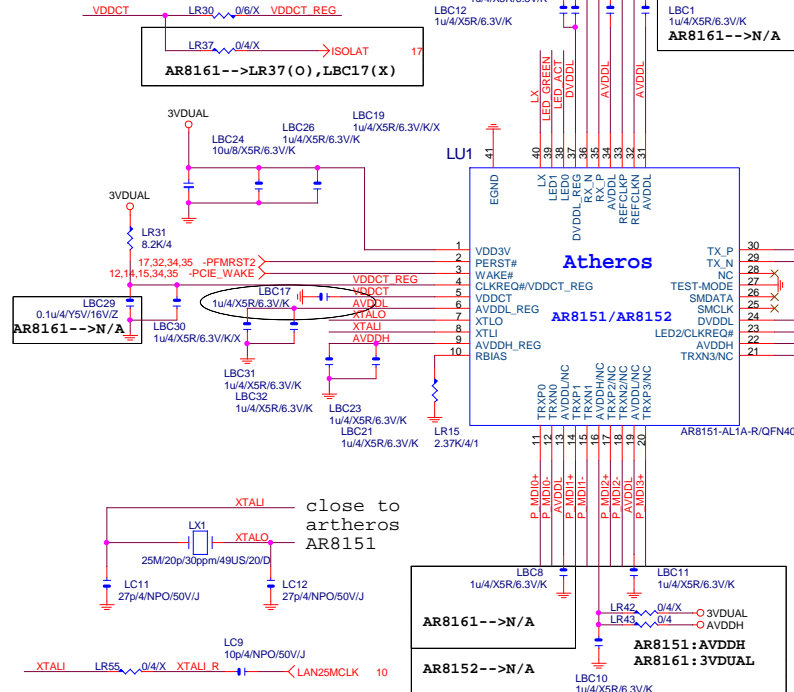
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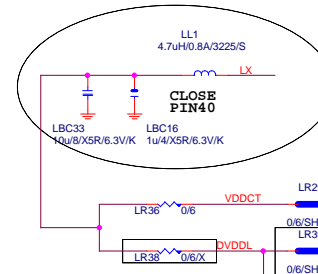
# PCIE-1G LAN

AR8131/AR8132 SWR:  
LL1, LBC27, LBC16(O), LR30(X)

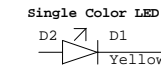
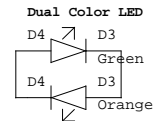
AR8152 LDO OUTPUT(PIN4):LL1(X)  
1. AL1A:LR30(O), LBC27, 26(O)  
2. BL1A:LR30(O), LBC27, 26(X)



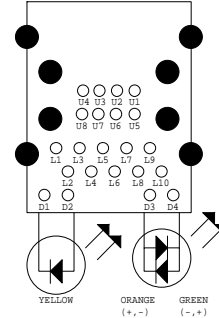
# CHOKE4U7-500MA-1



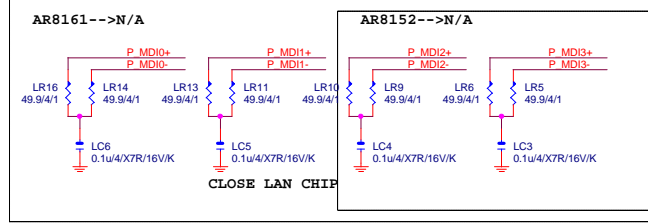
FOR INTERNAL SWR  
AR8151:LR36(O), LR38(X)  
AR8161:LR38(O), LR36(X)



# P35-152-19W9

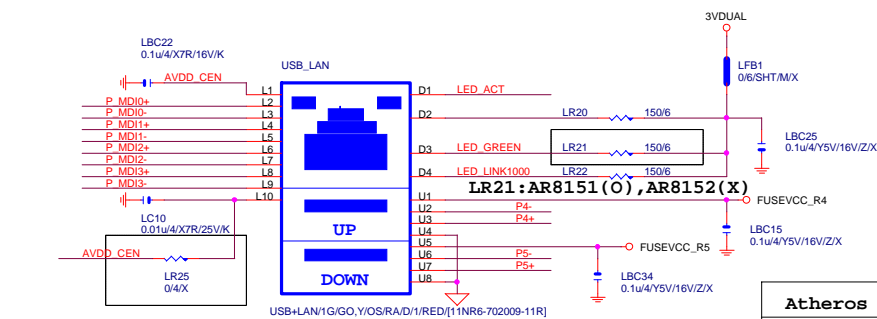


CLKREQ# PULL-UP FOR EFUSE:  
1. AR8151:LR31(O), LR32(X)  
2. AR8152:LR31(X), LR32(O)

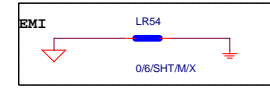


# USB\_LAN CONNECTOR

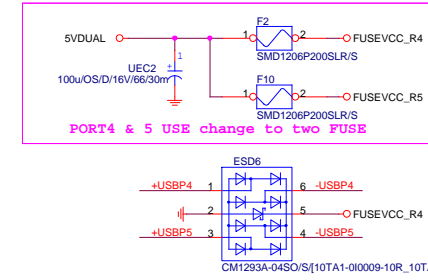
1G :USB+LAN/1G/GO,Y/OS/RA/D/1  
100M:USB+LAN/100/GO,Y/OS/RA/D/1



# USB\_LAN

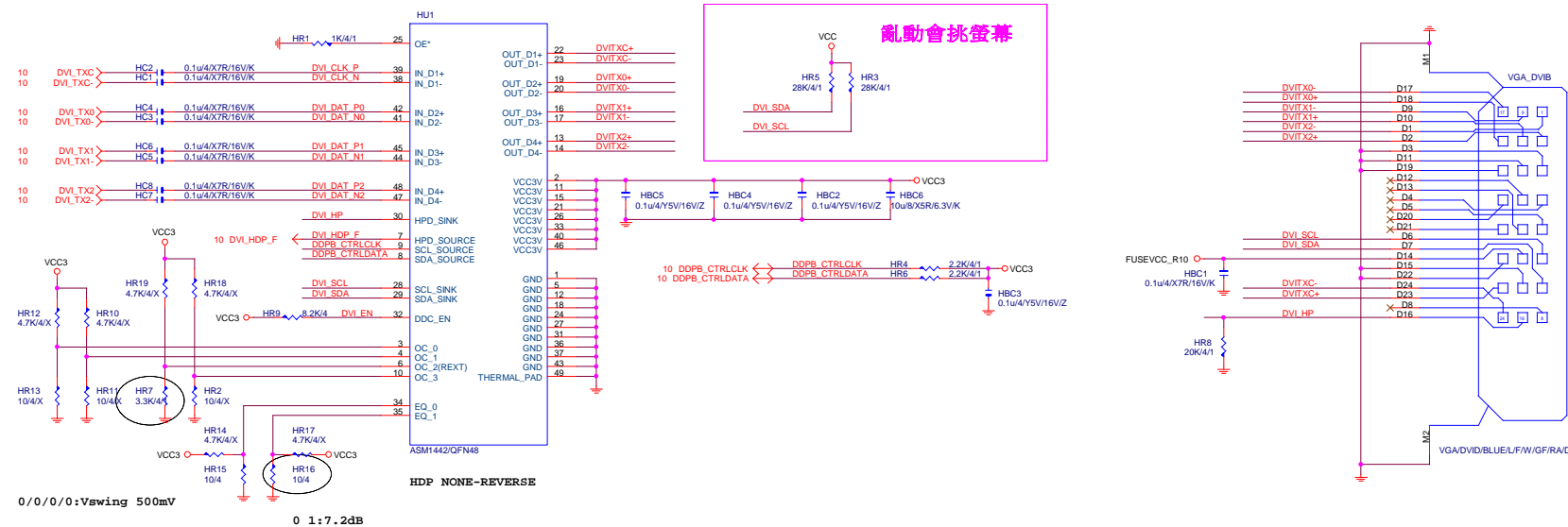


# CLOSE USB\_LAN

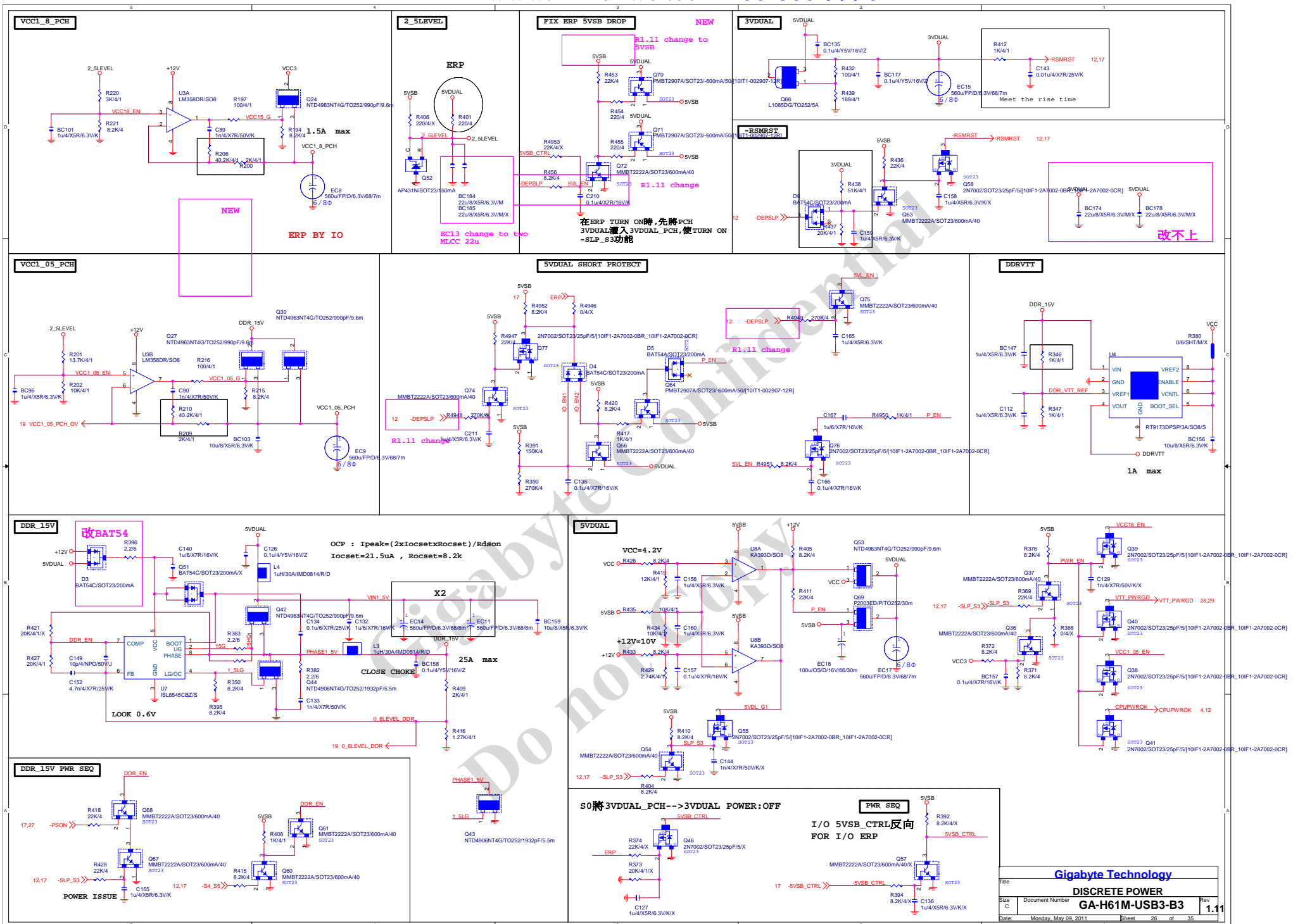


Atheros	UDE 11NR6-702009-92R
Realtek	UDE 11NR6-702009-0ER & FOXCONN 11NR6-702009-93R
Dual Lan	UDE 11NR6-702009-0ER

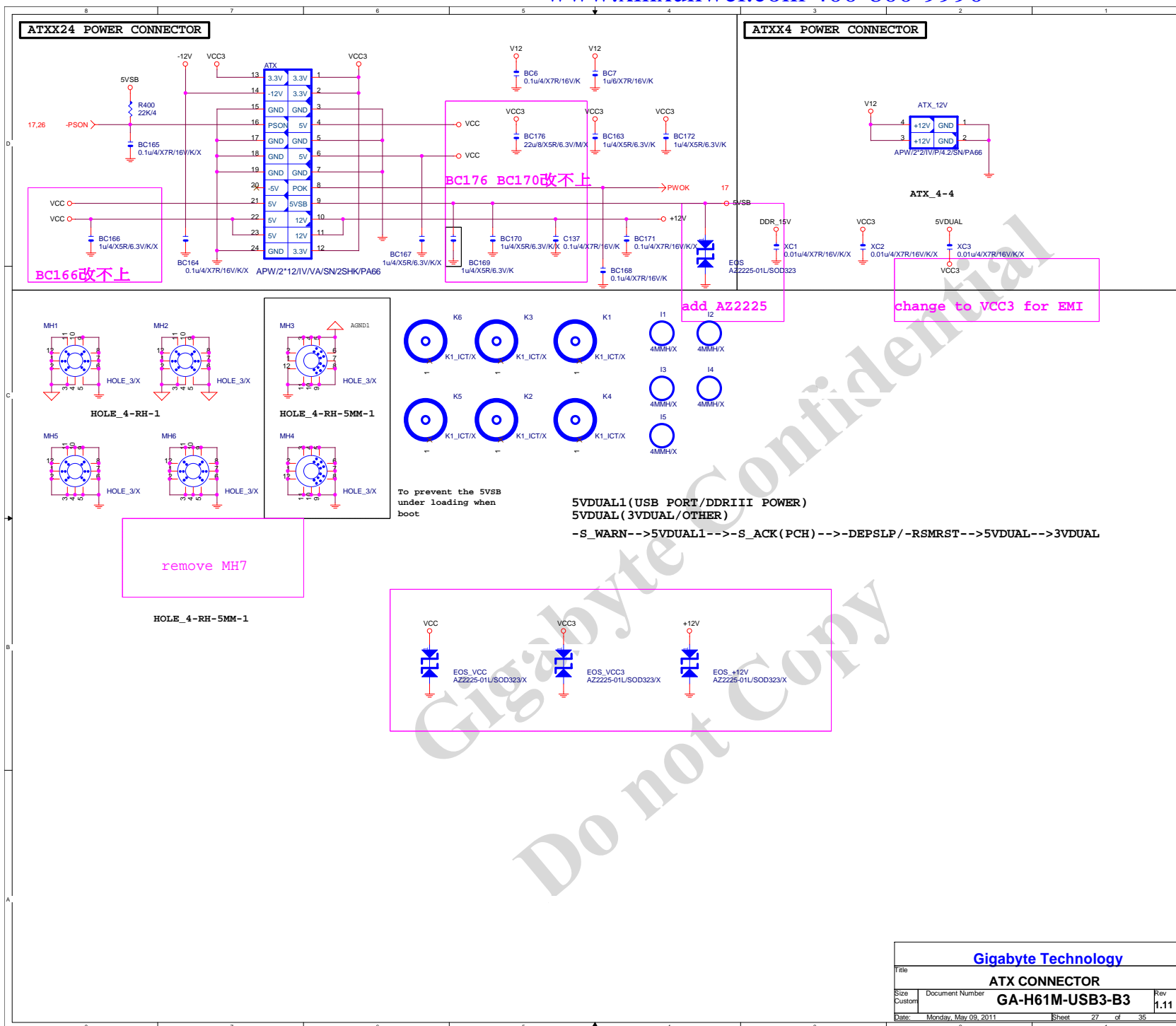
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ARTHEROS AR8151/AR8161			
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HDMI / DVI			
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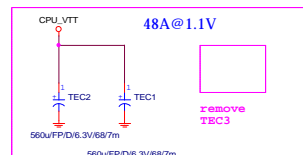
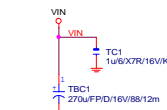
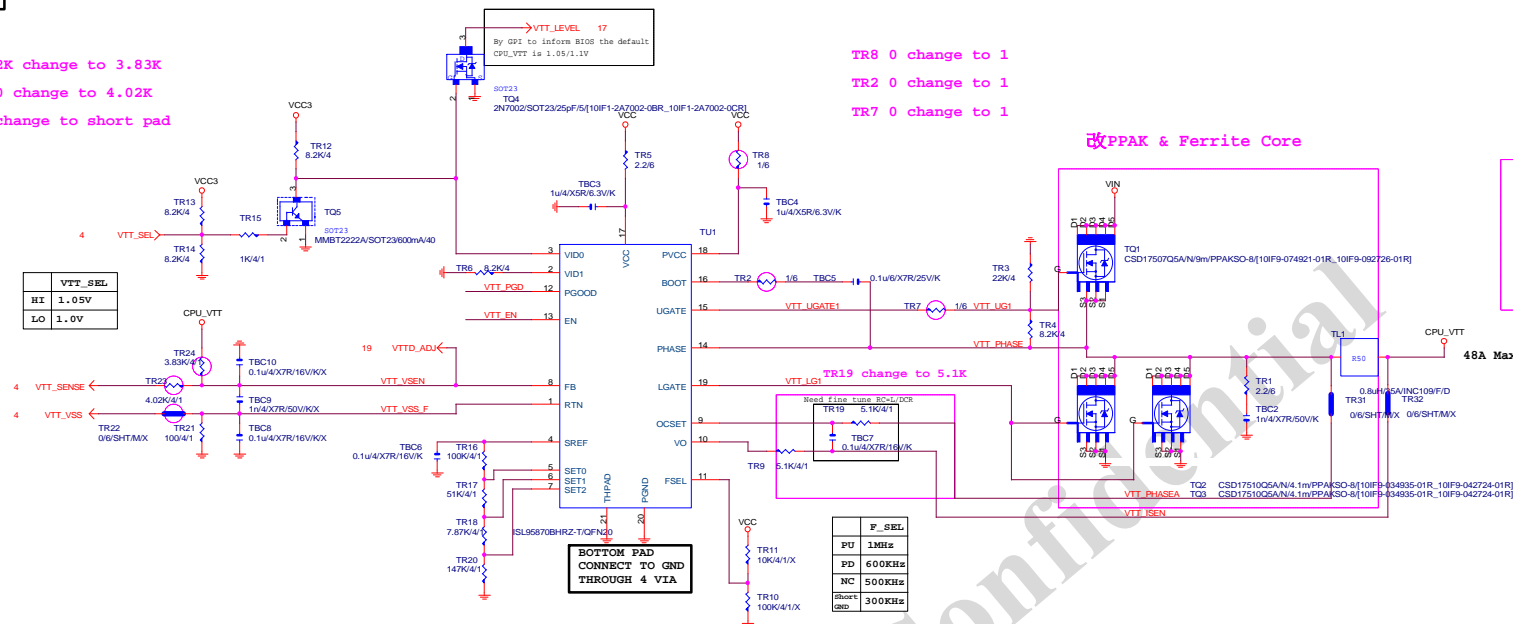


# CPU\_VTT

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

VTT_SEL	
HI	1.05V
LO	1.0V

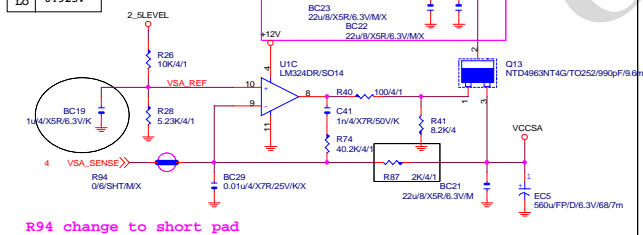


48A Max

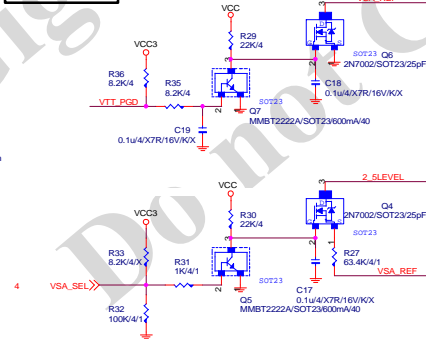
## VCCSA

PDG 0.8

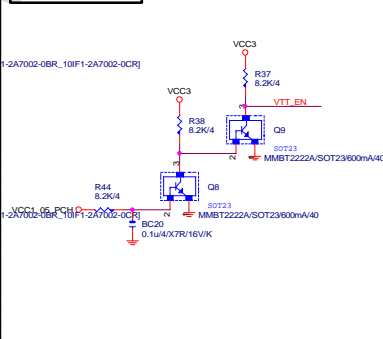
VSA_SEL	
HI	0.85V
LO	0.925V



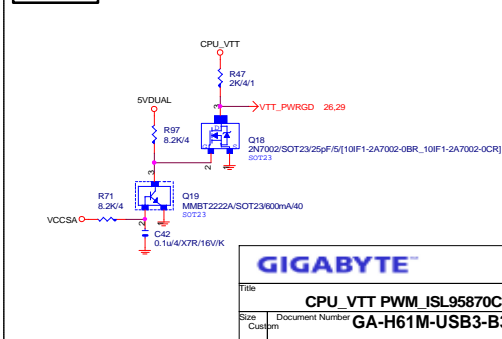
## VCCSA PWR SEQ



## CPU\_VTT PWR SEQ



## VTT\_PWRGD



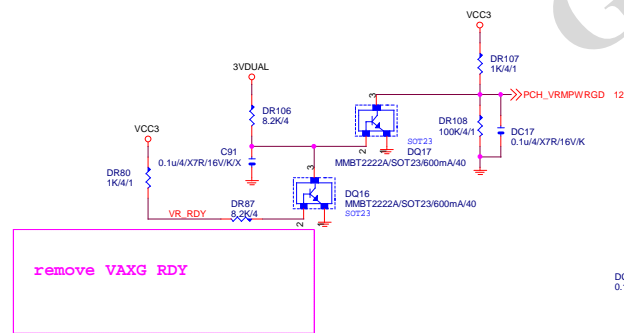
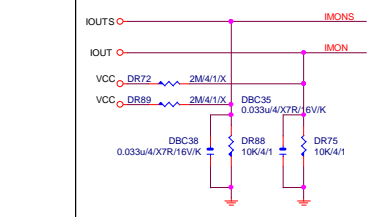
GIGABYTE

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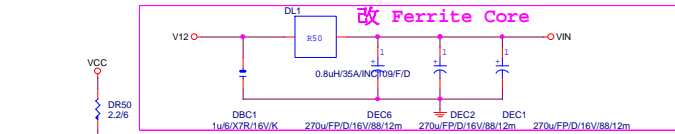
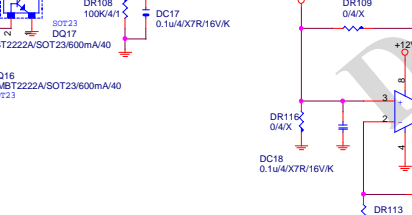
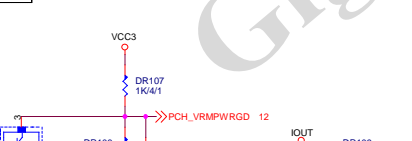
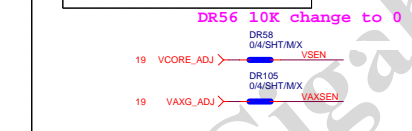
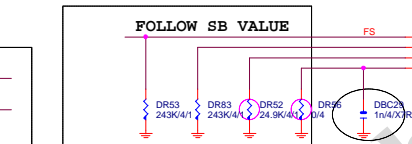
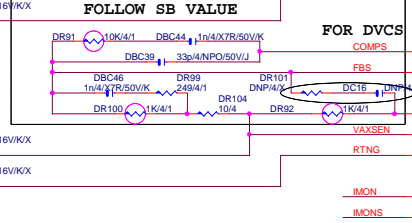
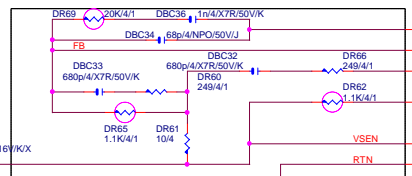
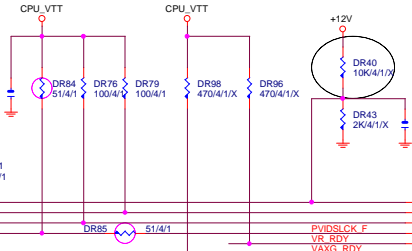
DR85 150 change to 51  
 DR69 6.8K change to 11K  
 DR82 0 change to 10  
 DR62 2.1K change to 1.1K  
 DR65 1.6K change to 1.1K  
 DR57 100 change to 8.2K  
 DR102 100 change to 8.2K  
 DR54 short change to 750  
 DR103 short change to 1K  
 DR91 6.8K change to 10K  
 DR100 3.3K change to 1K  
 DR69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

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

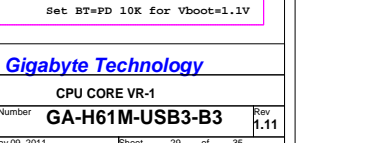
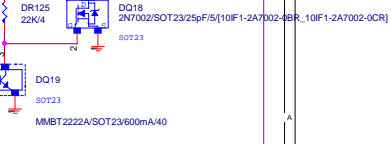
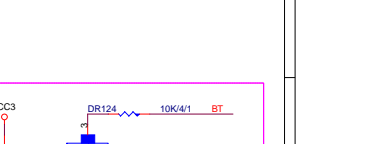
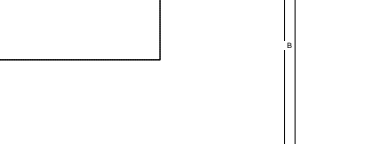
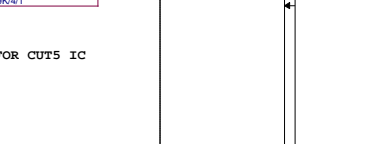
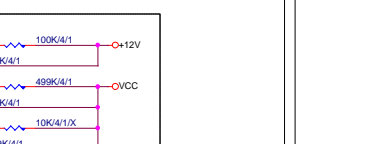
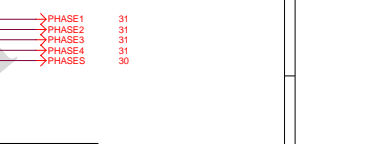
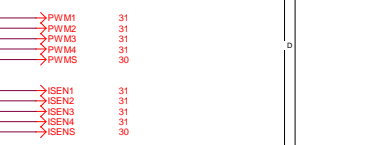
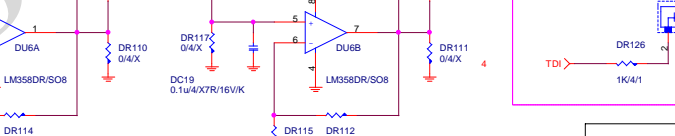
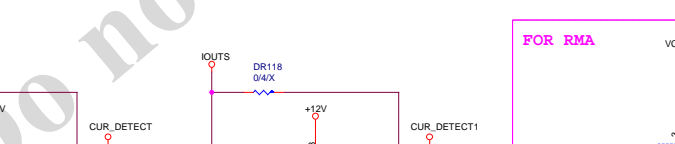
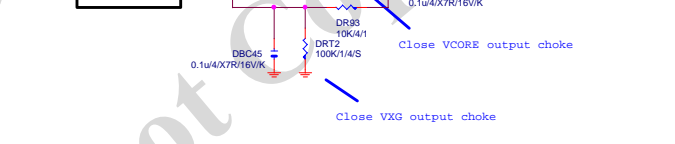
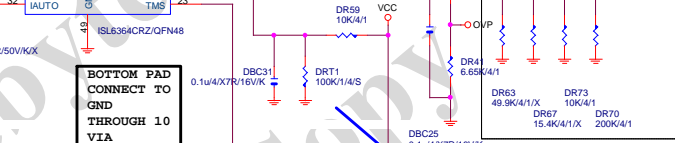
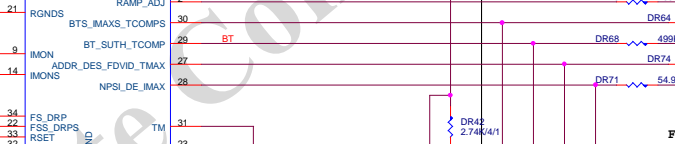
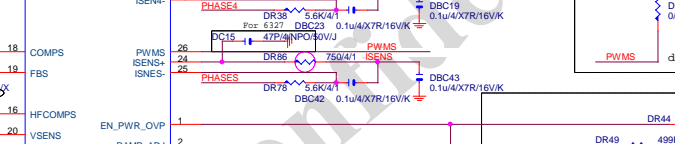
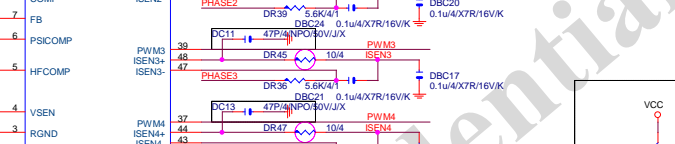
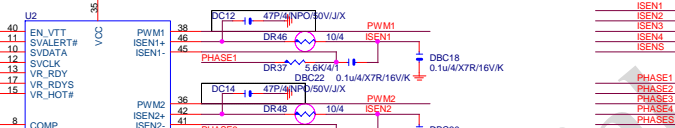
DR52 16.2K change to 24.9K



remove VAXG RDY



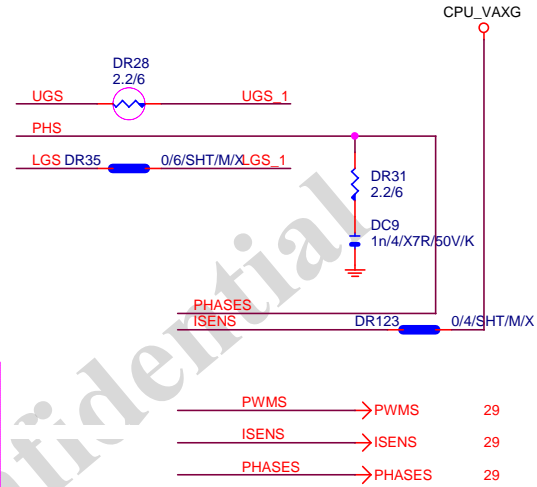
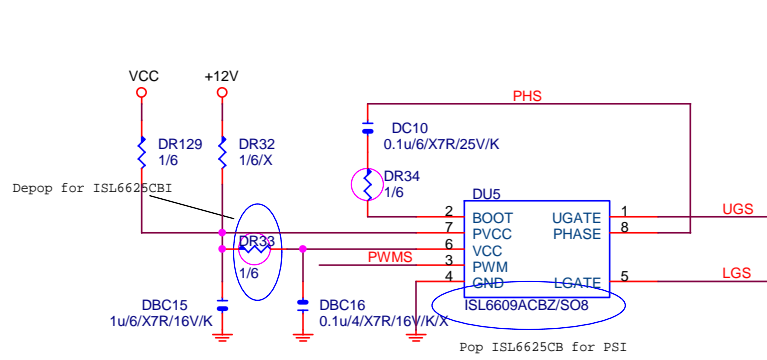
DR46 DR48 DR45 DR47 change to 10  
 DR86 change to 750



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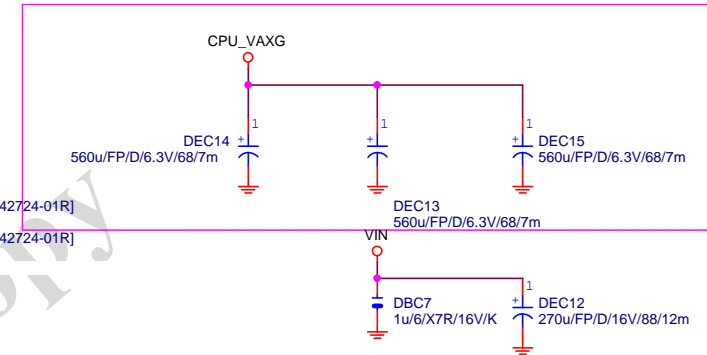
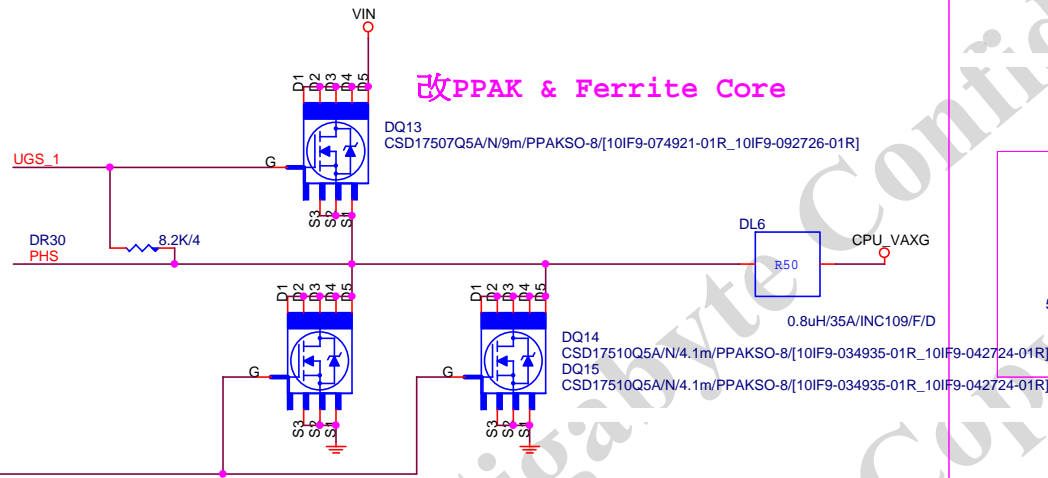
# VAXG

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



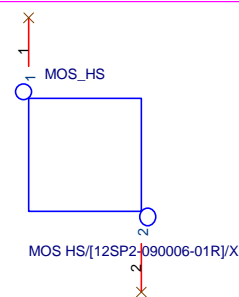
PWMS → PWMS 29  
ISENS → ISENS 29  
PHASES → PHASES 29

## 改PPAK & Ferrite Core



# MOS HEATSINK

改不上



Gigabyte Technology

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