

Model Name: GA-H61M-D2H-USB3

Revision 1.11

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 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 ALC887
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			
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Model Name: GA-H61M-D2H-USB3 *Revision1.11*

Circuit or PCB layout change

Component value change history

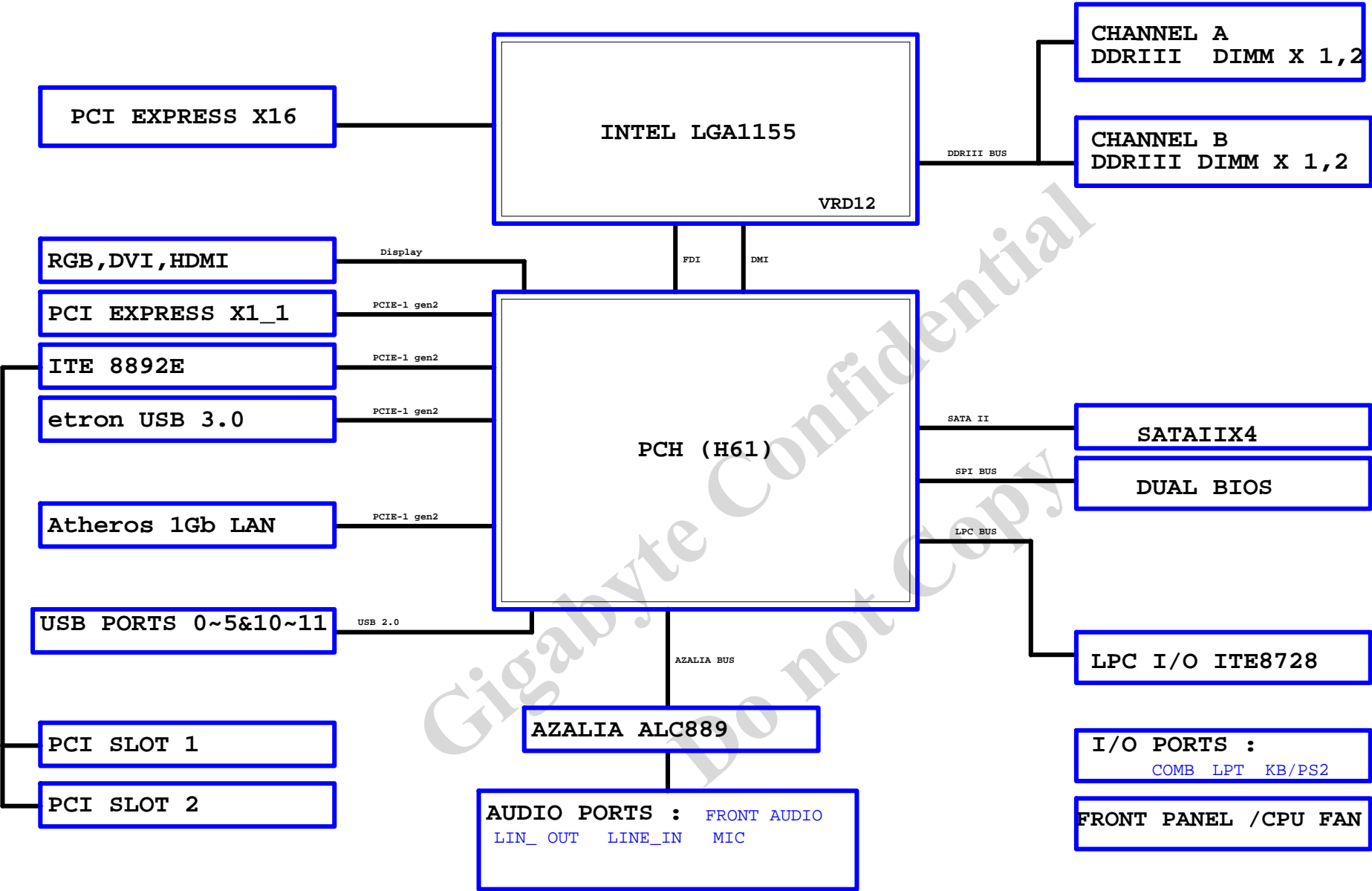
2011/03/25

Data	Change Item	Reason
2010.12.31	9MH61MUB3-00-10B	first release
	Add PCIE1_1 , 9172 , HDMI	
	Remove PCI2 , LPT	
2011.07.26	REV0.1	
	Vcore 改3phase; 4 dimm; 2 PCI; HDMI; DVI etc;	PCIEx1
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	
2011.11.16	REV1.0B	
	Level Shift IC更換成Asmedia 修改BOM	
2011.12.23	REV1.0C	
	更換 IT8728E/EX(GB)	
2012.07.13	REV1.1A	
	codec 889 沒有料,改上co-lay 887	
	修改PCB1.1 for業務需求改上co-lay 887	
2013.05.31	REV1.1B	
	修改PCB1.11 for修改 PCIE 12v防燒保護線路 ; RN5 short pad 改成0ohm	

[illegible]

<i>Gigabyte Technology</i>			
BOM & PCB MODIFY HISTORY			
Size Custom	Document Number	GA-H61M-D2H-USB3	Rev 1.11
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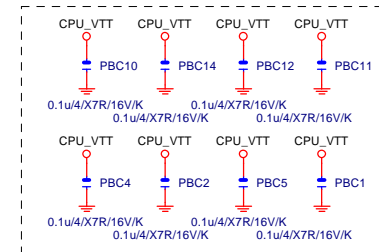
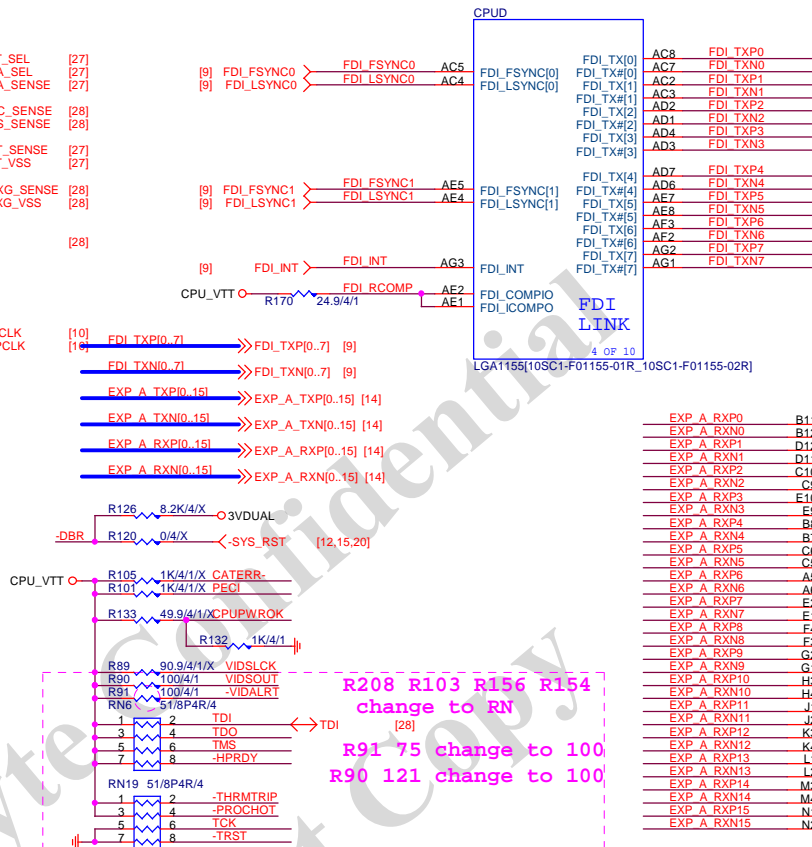
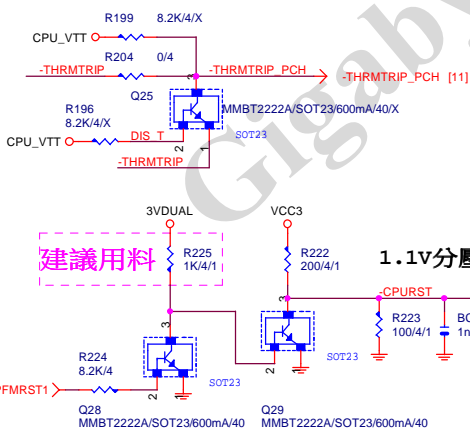
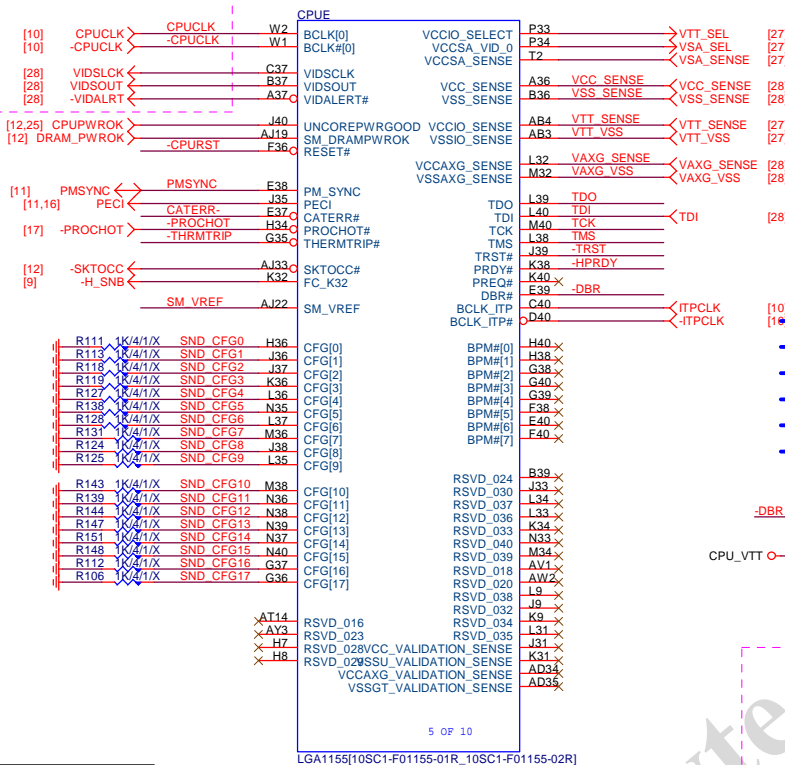
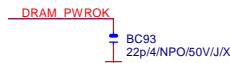
BLOCK DIAGRAM



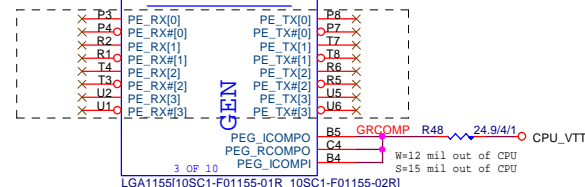
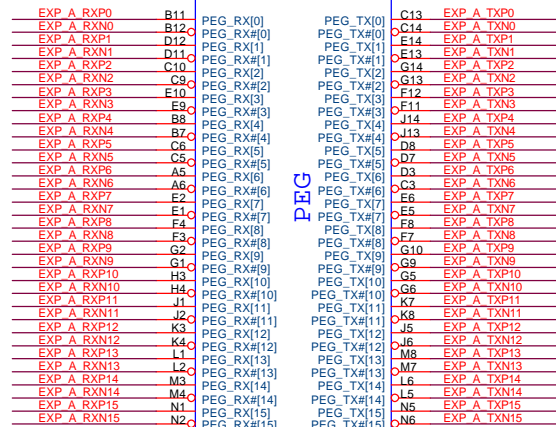
CFG	H	L	NOTE
0	RSVD	RSVD	RSVD
1	RSVD	RSVD	RSVD
2	MMIO	Reverse	LANE REVERSAL[0], x16
3	RSVD	RSVD	RSVD
4	RSVD	RSVD	RSVD
7	RSVD	RSVD	RSVD
8	RSVD	RSVD	RSVD
9	RSVD	RSVD	RSVD
10	RSVD	RSVD	RSVD
11	RSVD	RSVD	RSVD
12	RSVD	RSVD	RSVD
13	RSVD	RSVD	RSVD
14	RSVD	RSVD	RSVD
15	RSVD	RSVD	RSVD
16	RSVD	RSVD	RSVD
17	RSVD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



Stitching caps for PCIE,DMI,FDI bus



Gigabyte Technology

Title			
CPU LGA1155-A			
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CPUA

MAAA0	AV27	SA_MA[0]	SA_DQS[0]	AK3	DQSA0
MAAA1	AY24	SA_MA[1]	SA_DQS[0]	AK2	-DQSA0
MAAA2	AW24	SA_MA[2]			
MAAA3	AW23	SA_MA[3]			
MAAA4	AV23	SA_MA[4]	SA_DQ[0]	AJ3	MDA0
MAAA5	AT24	SA_MA[5]	SA_DQ[1]	AJ4	MDA1
MAAA6	AT23	SA_MA[6]	SA_DQ[2]	AL3	MDA2
MAAA7	AU22	SA_MA[7]	SA_DQ[3]	AL4	MDA3
MAAA8	AV22	SA_MA[8]	SA_DQ[4]	AJ2	MDA4
MAAA9	AT22	SA_MA[9]	SA_DQ[5]	AJ1	MDA5
MAAA10	AV28	SA_MA[10]	SA_DQ[6]	AL2	MDA6
MAAA11	AU21	SA_MA[11]	SA_DQ[7]	AL1	MDA7
MAAA12	AT21	SA_MA[12]			
MAAA13	AW32	SA_MA[13]	SA_DQS[1]	AP3	DQSA1
MAAA14	AU20	SA_MA[14]	SA_DQS[1]	AP2	-DQSA1
MAAA15	AT20	SA_MA[15]			

[7]
[7]
[7]

-SWEA ← -SCASA
-SRASA ← -SRASA

[7]
[7]
[7]

SBA00 ← SBA00
SBA01 ← SBA01
SBA02 ← SBA02

[7]
[7]

-CSA0 ← -CSA0
-CSA1 ← -CSA1

[7]
[7]

CKEA0 ← CKEA0
CKEA1 ← CKEA1

MODT_A0
MODT_A1

[7]
[7]
[7]
[7]
[7]
[7]
[7]

DCLKA0 ← DCLKA0
-DCLKA0 ← -DCLKA0
DCLKA1 ← DCLKA1
-DCLKA1 ← -DCLKA1
DCLKA2 ← DCLKA2
-DCLKA2 ← -DCLKA2
DCLKA3 ← DCLKA3
-DCLKA3 ← -DCLKA3

[7,8] -DDR3_RST ← AW18

C97
0.1u4/X7R/16V/K/X

R240

0.4/SHT/M/X

SM_DRAMRST#

AV13
AV12

SA_DQS[8]
SA_DQS[8]
SA_ECC_CB[0]
SA_ECC_CB[1]
SA_ECC_CB[2]
SA_ECC_CB[3]
SA_ECC_CB[4]
SA_ECC_CB[5]
SA_ECC_CB[6]
SA_ECC_CB[7]

DDR_0

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

CPUB

MAAB0	AK24	SB_MA[0]	SB_DQS[0]	AH7	DQSB0
MAAB1	AM20	SB_MA[1]	SB_DQS[0]	AH6	-DQSB0
MAAB2	AM19	SB_MA[2]			
MAAB3	AK18	SB_MA[3]			
MAAB4	AP19	SB_MA[4]	SB_DQ[0]	AG7	MDB0
MAAB5	AP18	SB_MA[5]	SB_DQ[1]	AG8	MDB1
MAAB6	AM18	SB_MA[6]	SB_DQ[2]	AJ9	MDB2
MAAB7	AL18	SB_MA[7]	SB_DQ[3]	AJ8	MDB3
MAAB8	AN18	SB_MA[8]	SB_DQ[4]	AG5	MDB4
MAAB9	AY17	SB_MA[9]	SB_DQ[5]	AG6	MDB5
MAAB10	AN23	SB_MA[10]	SB_DQ[6]	AJ6	MDB6
MAAB11	AU17	SB_MA[11]	SB_DQ[7]	AJ7	MDB7
MAAB12	AT18	SB_MA[12]			
MAAB13	AR26	SB_MA[13]	SB_DQS[1]	AM8	DQSB1
MAAB14	AY16	SB_MA[14]	SB_DQS[1]	AL8	-DQSB1
MAAB15	AV16	SB_MA[15]			

-SWEB ← -SWEA
-SCASB ← -SCASA
-SRASB ← -SRASA

SBAB0 ← SBAB0
SBAB1 ← SBAB1
SBAB2 ← SBAB2

-CSB0 ← -CSB0
-CSB1 ← -CSB1

CKEB0 ← CKEB0
CKEB1 ← CKEB1

MODT_B0
MODT_B1

AV8
AV8

DCLKB0 ← DCLKB0
-DCLKB0 ← -DCLKB0
DCLKB1 ← DCLKB1
-DCLKB1 ← -DCLKB1
DCLKB2 ← DCLKB2
-DCLKB2 ← -DCLKB2
DCLKB3 ← DCLKB3
-DCLKB3 ← -DCLKB3

VREF_DQB
VREF_DOA

AN16
AN15

AL16
AL15

AP16
AP15

AR16
AR15

AK38
AK39

AL40
AL39

AK38
AK39

AL40
AL39

AK38
AK39

AL40
AL39

AK38
AK39

AL40
AL39

AK38
AK39

AL40
AL39

AK38
AK39

AL40
AL39

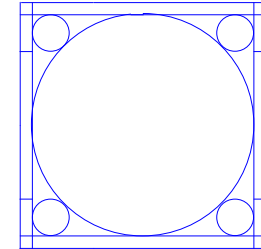
AK38
AK39

AL40
AL39

DDR_1

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

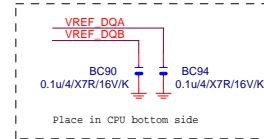
CR
CPU RETENTION/X

Need check the new CPU ME

CPU

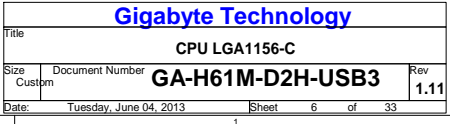


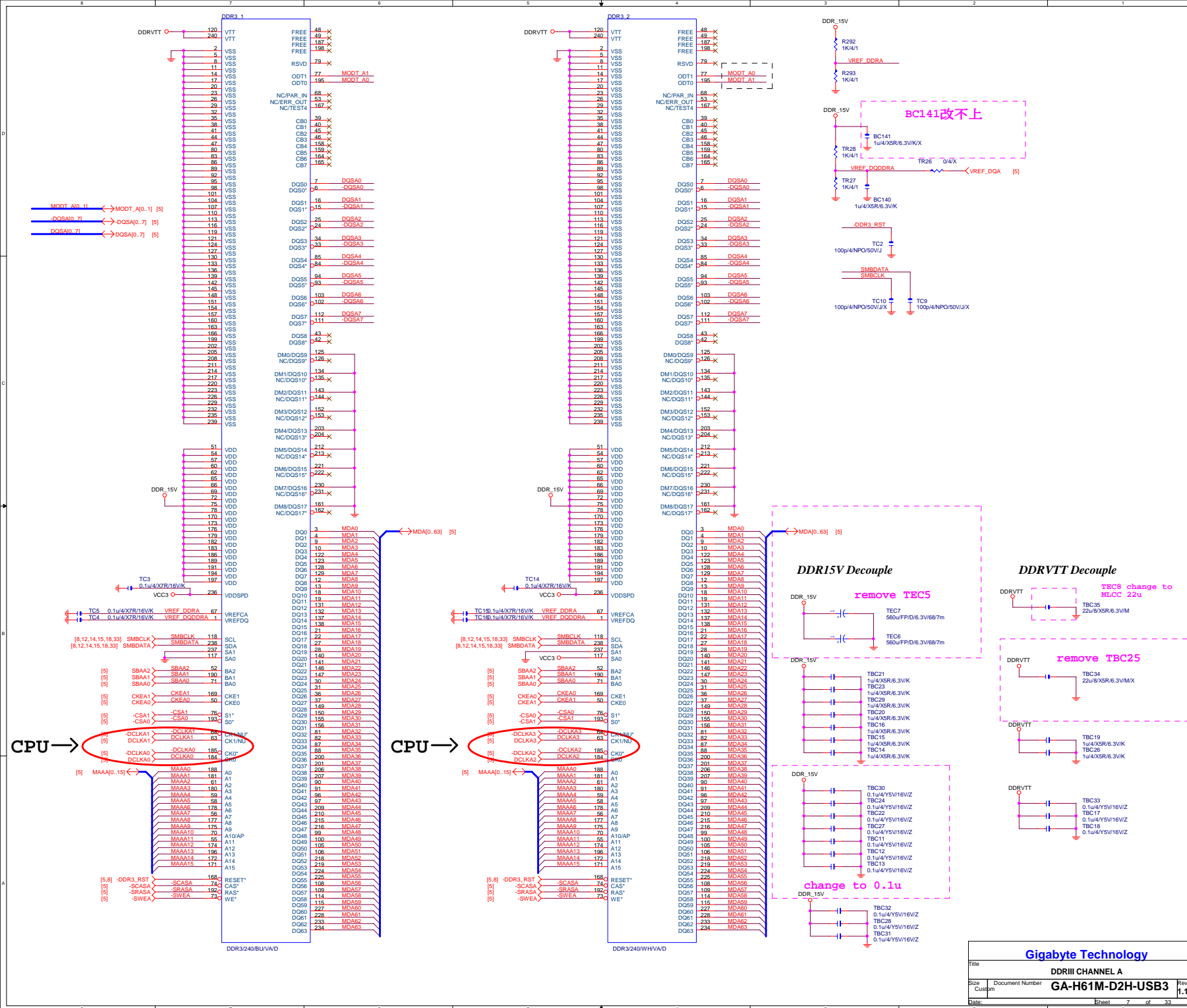
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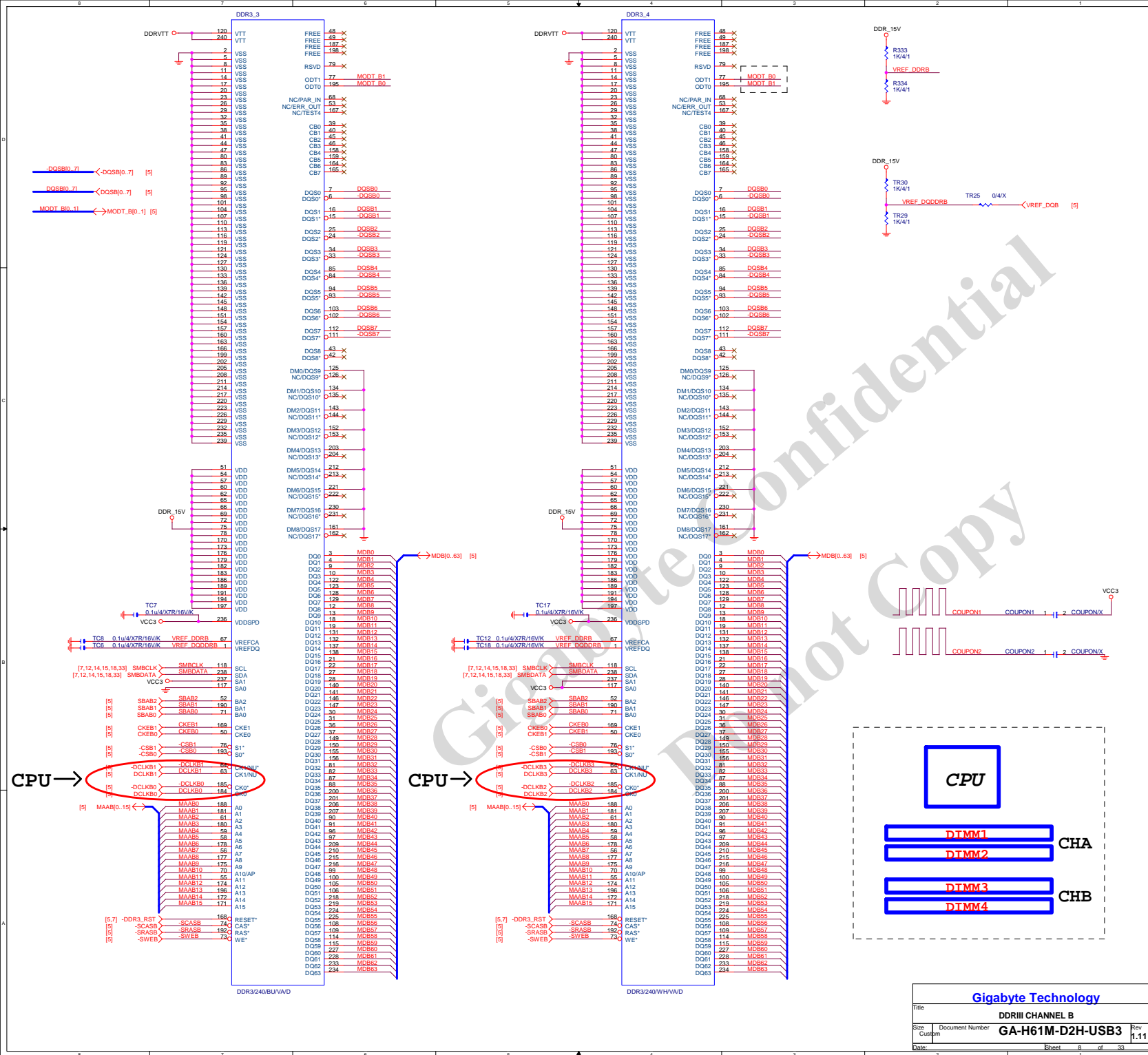


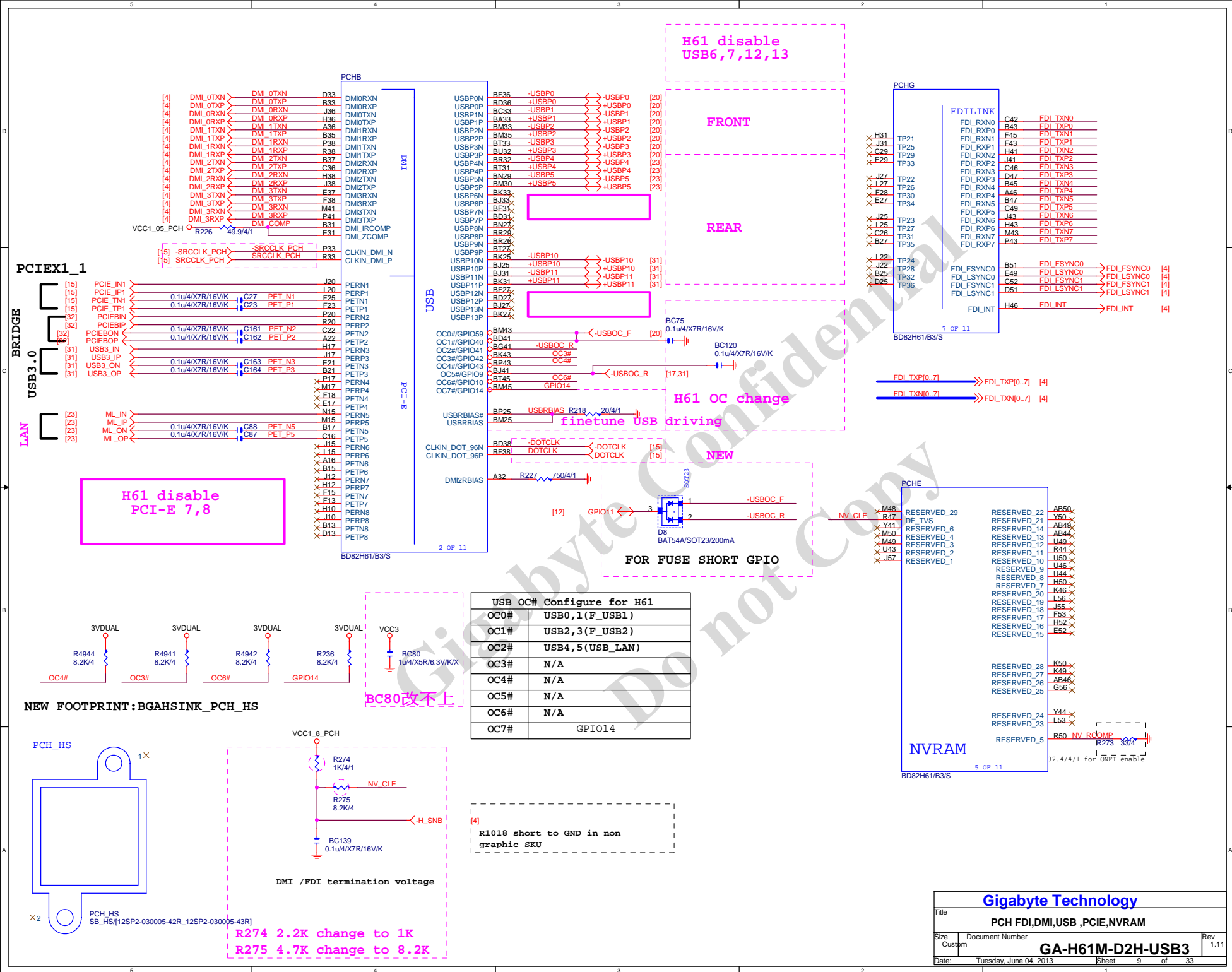
Gigabyte Technology

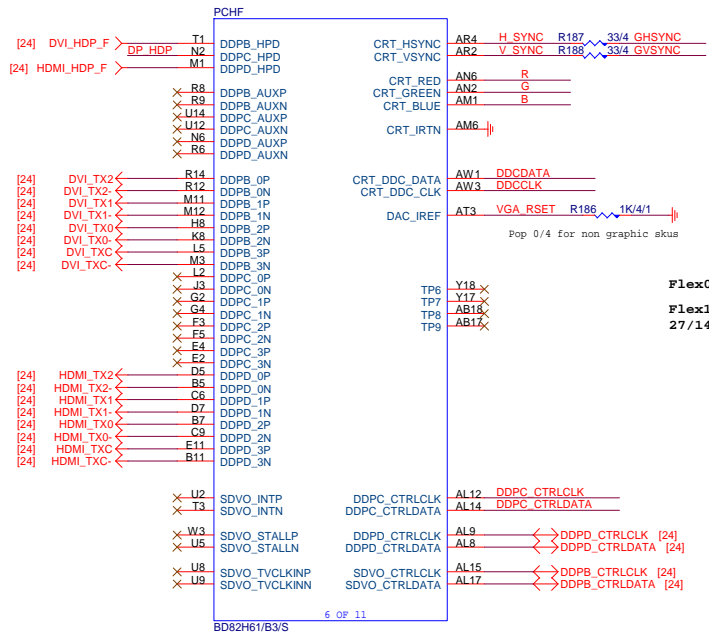
Title		CPU LGA1156-B	
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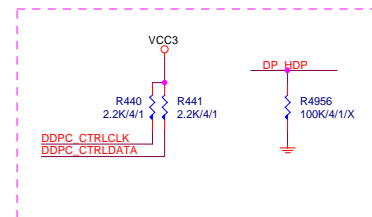
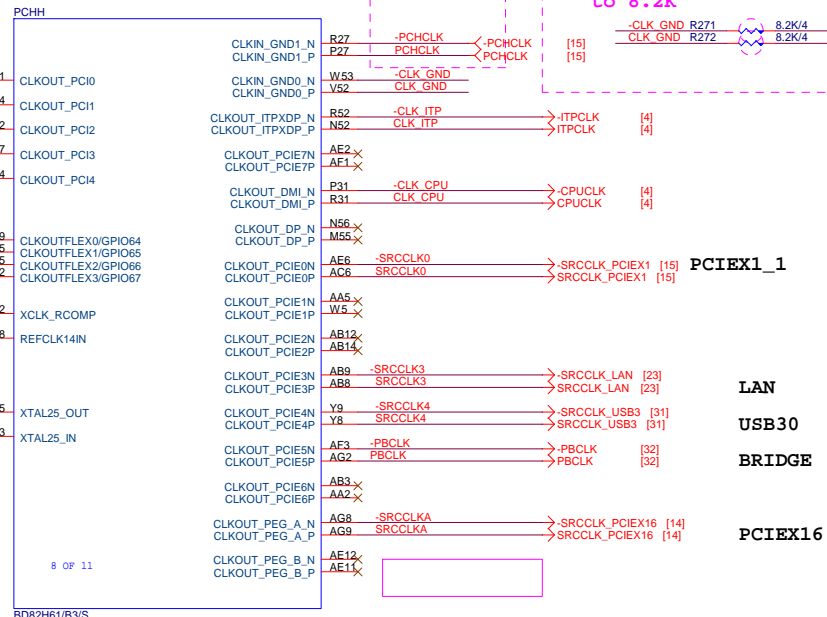
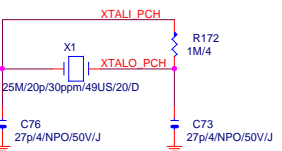
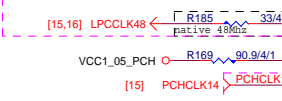






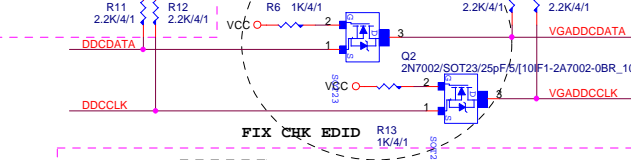
Flex0,2 : 33MHZ
Flex1,3 :
27/14/24/48/25MHZ

FLEX 2 for LAN Atheros
remove 33M



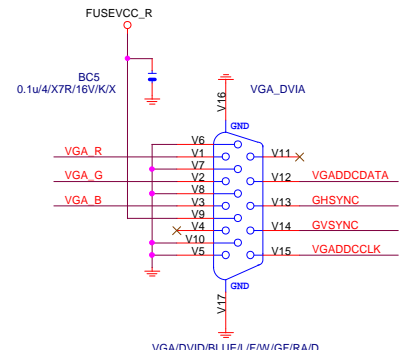
是否要上待量測定

建議用料



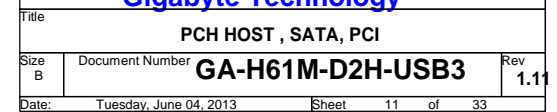
是否要上待量測定

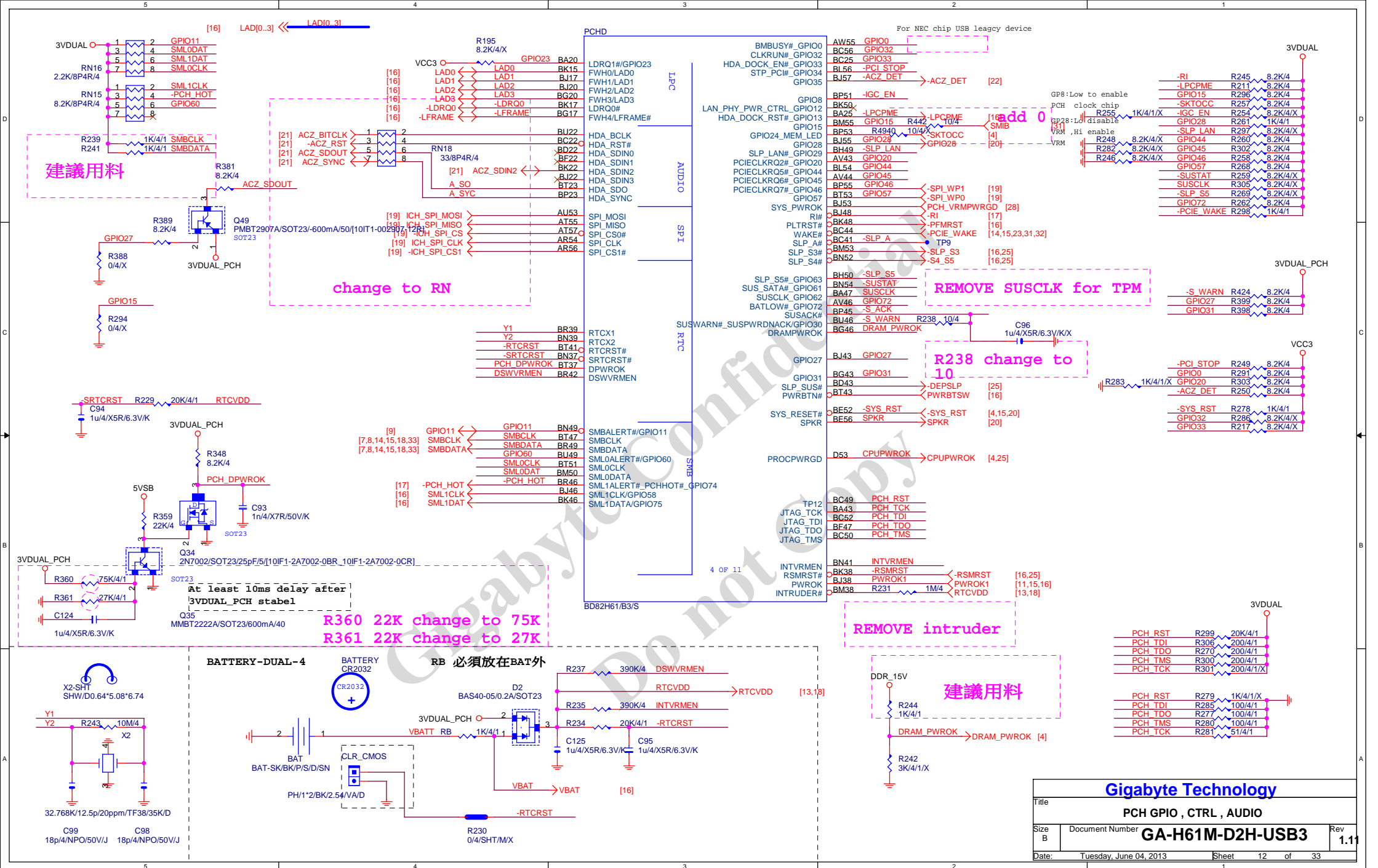
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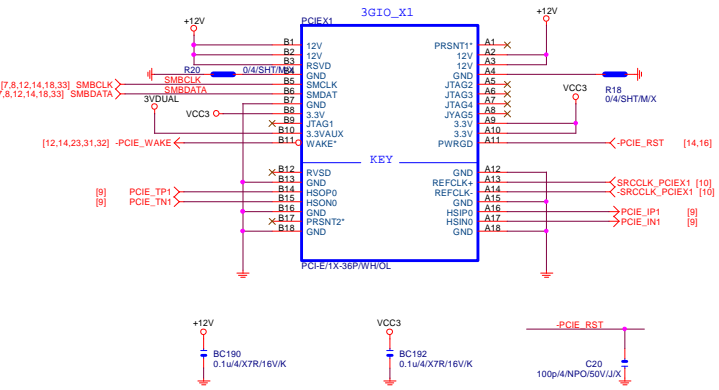
Gigabyte Technology			
PCH DISPLAY, CLK BUFFER			
GA-H61M-D2H-USB3			
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Custom			
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X7-SATA2-HS-MASK

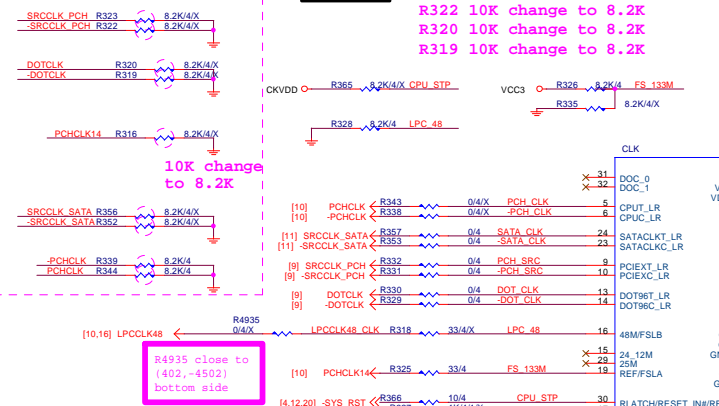




PCIE X1

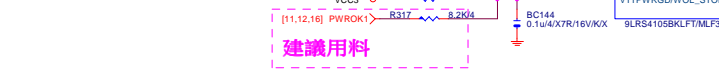


INTERNAL CLK STRAPPING

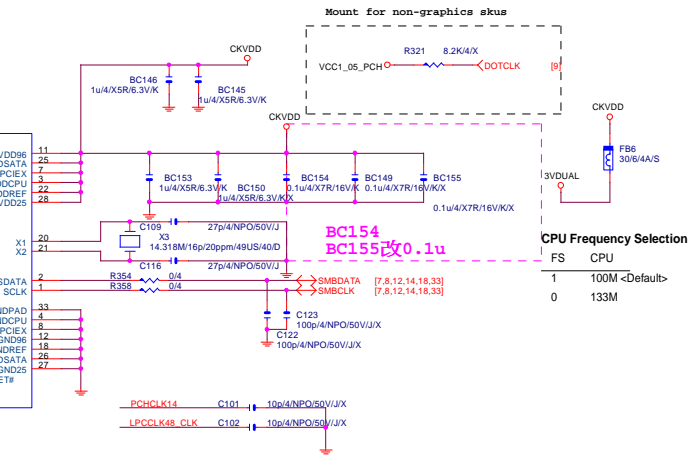


CLK GEN

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



建議用料



Mount for non-graphics skus



CPU Frequency Selection

FS	CPU
1	100M <Default>
0	133M

GP22 Default GP22 DIODS

GP23 Default CPU_PG DOD8

REMOVE R146,R149

powerflow change to 3VDUAL_PCH

R109 0 change to 10

FOR AR8161

-PFMRST2 for TPM

REMOVE Q20 R158 & R155 for ITE 8728 DX

IT8728	
PIN121	VCORE_EN#/PCR_C0
PIN120	VLDT_EN#/PCR_D0
PIN19	ATXPG
PIN31	PCR_C1
PIN53	SST/AMDTSI_D#/MTRB#/PCR_D1
PIN55	PECI#/AMDTSI_C#/DRV#
PIN66	SYS_3VSB
PIN70	GP47
PIN95	VIN2 (VCC5)
PIN96	VIN1 (VCC12)
PIN97	VIN1/VDIMM_STR (1.5V)
PIN98	VIN0/VCORE (1.1V)/NC

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

R83 R66 change to 10

IT8728F(GB)

ADD LPT PORT

REMOVE ON/OFF CHARGER

建議用料

建議用料

remove IO GP43 pull high

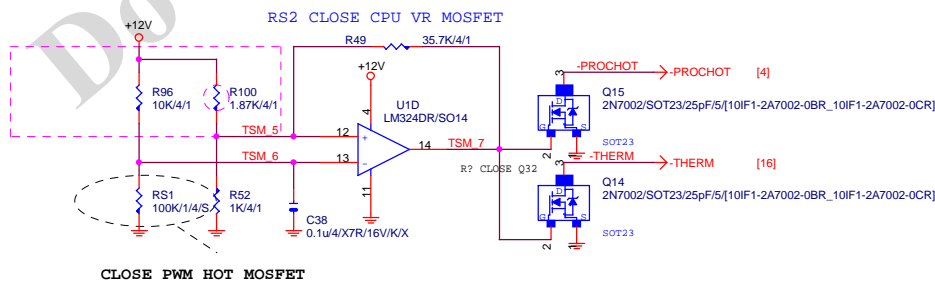
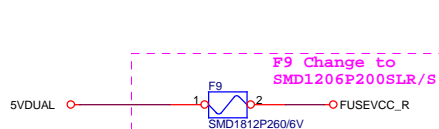
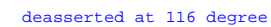
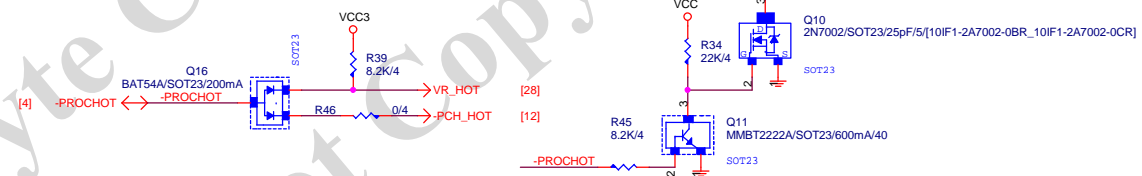
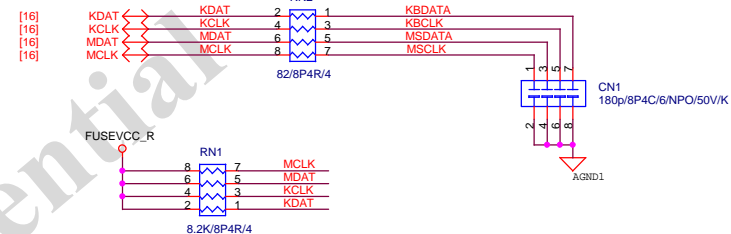
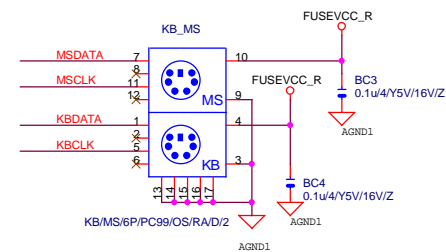
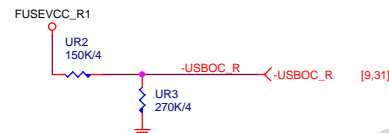
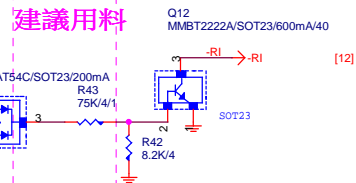
Gigabyte Technology

ITE 8728 LPC IO

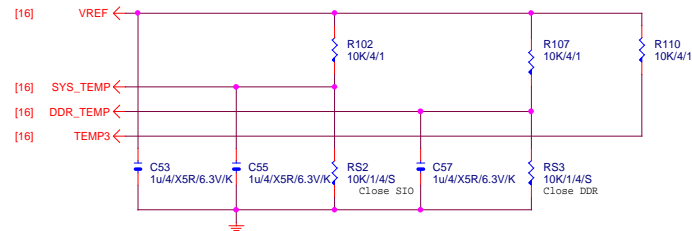
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TEMP H/W MONITOR

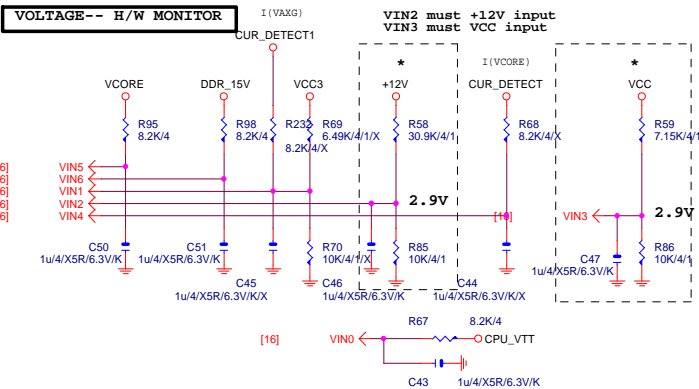


CASE OPEN

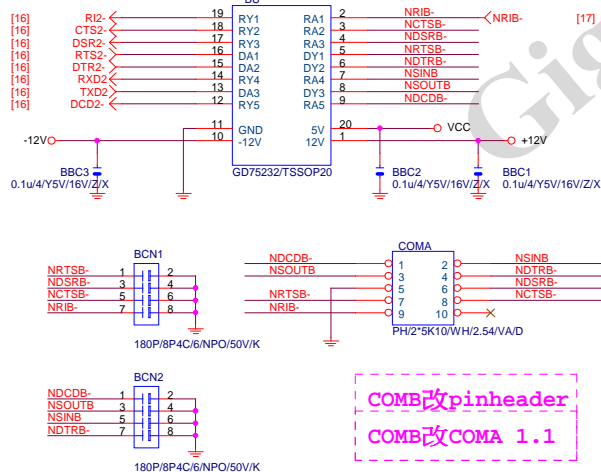
REMOVE intruder

Case Open Circuits

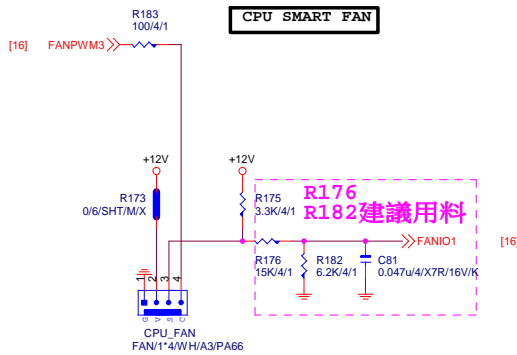
VOLTAGE-- H/W MONITOR



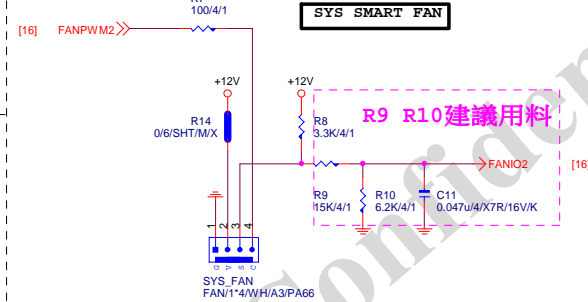
COMB



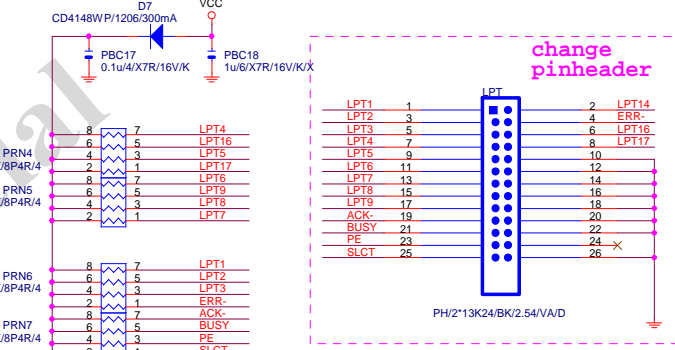
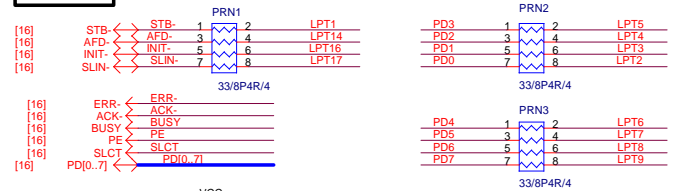
CPU SMART FAN



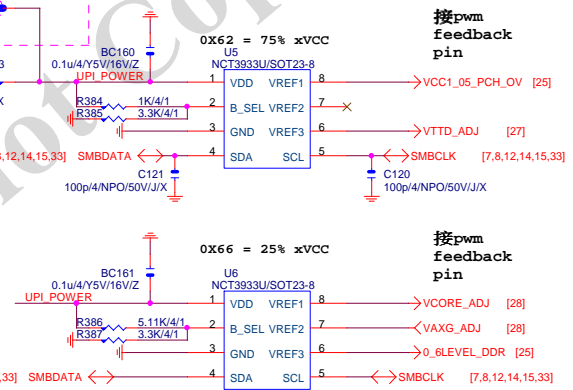
SYS SMART FAN



LPT PORT



R402 change to SHORT PAD



接pwm feedback pin

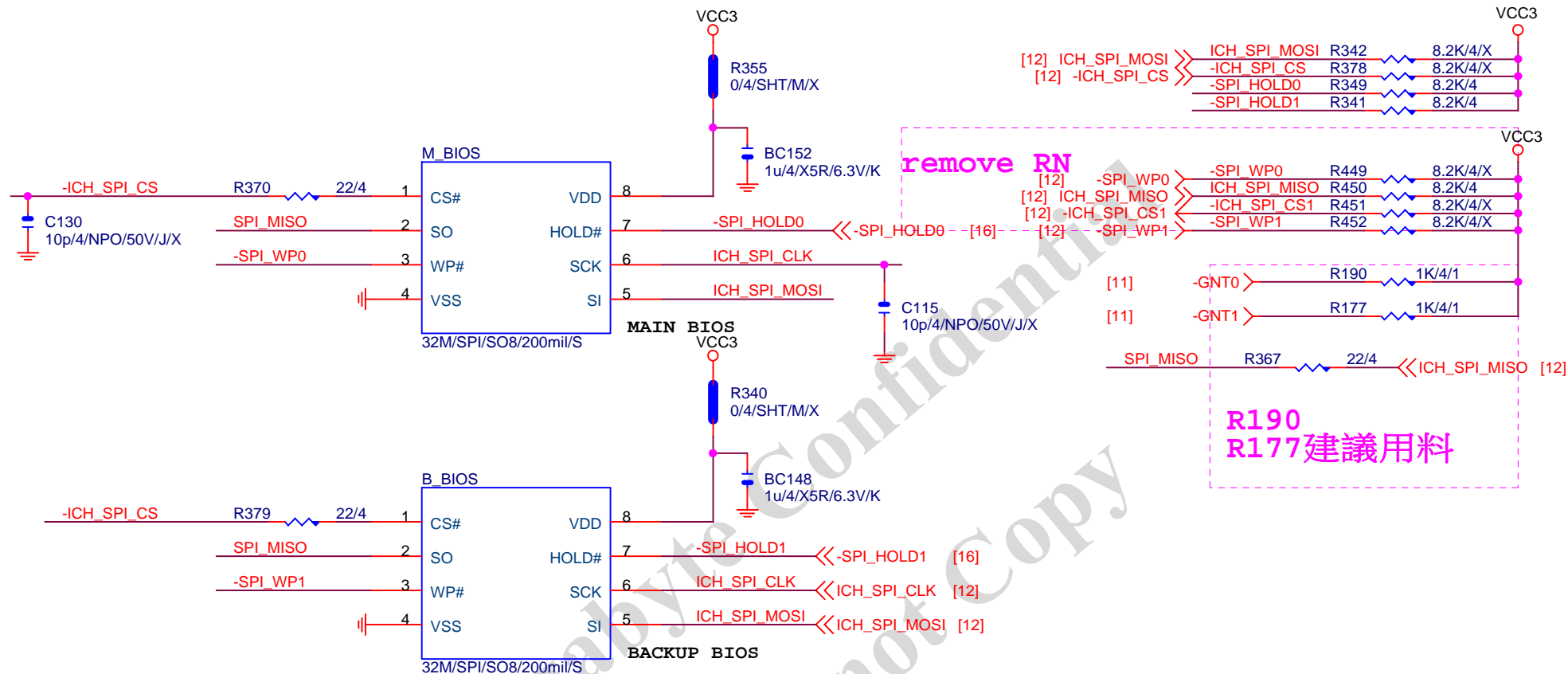
接pwm feedback pin

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

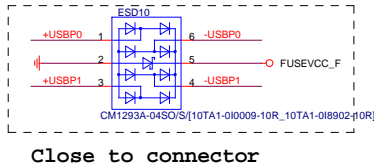
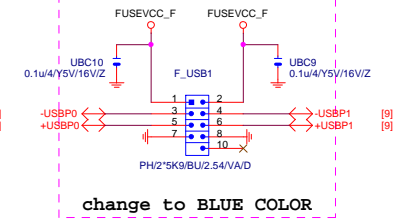
1 means floating
0 means PD 1K

Gigabyte Technology

Title		
DUAL BIOS		
Size A	Document Number	Rev
	GA-H61M-D2H-USB3	1.11
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FRONT USB1

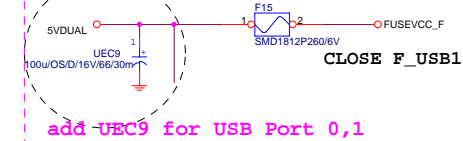
FU改pinheader



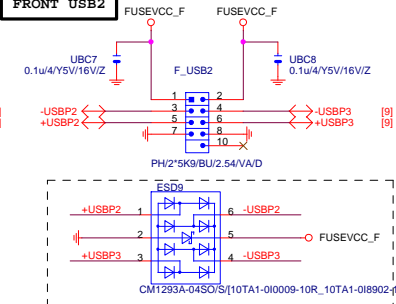
SATA LED

[11] -SATALED -HDLED

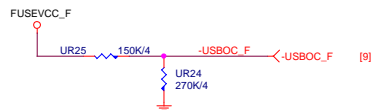
CLOSE R_USB



FRONT USB2

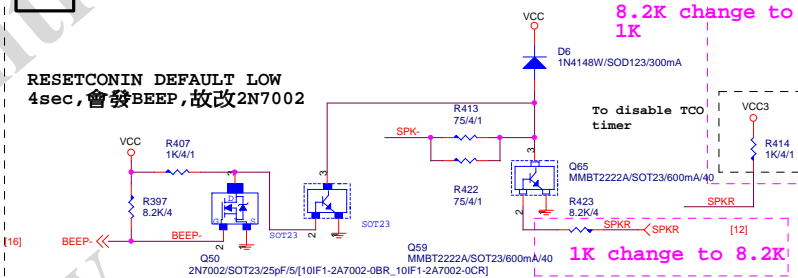


FU改pinheader



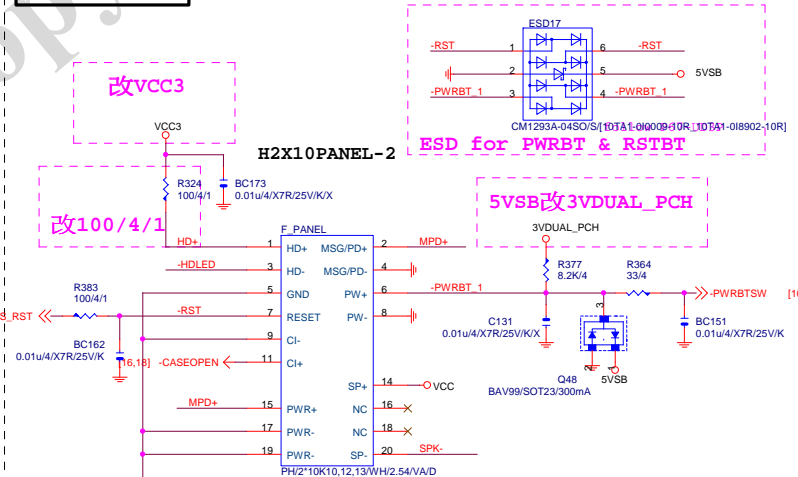
SPKR

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

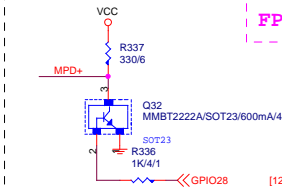


INTEL FRONT PANEL

改VCC3

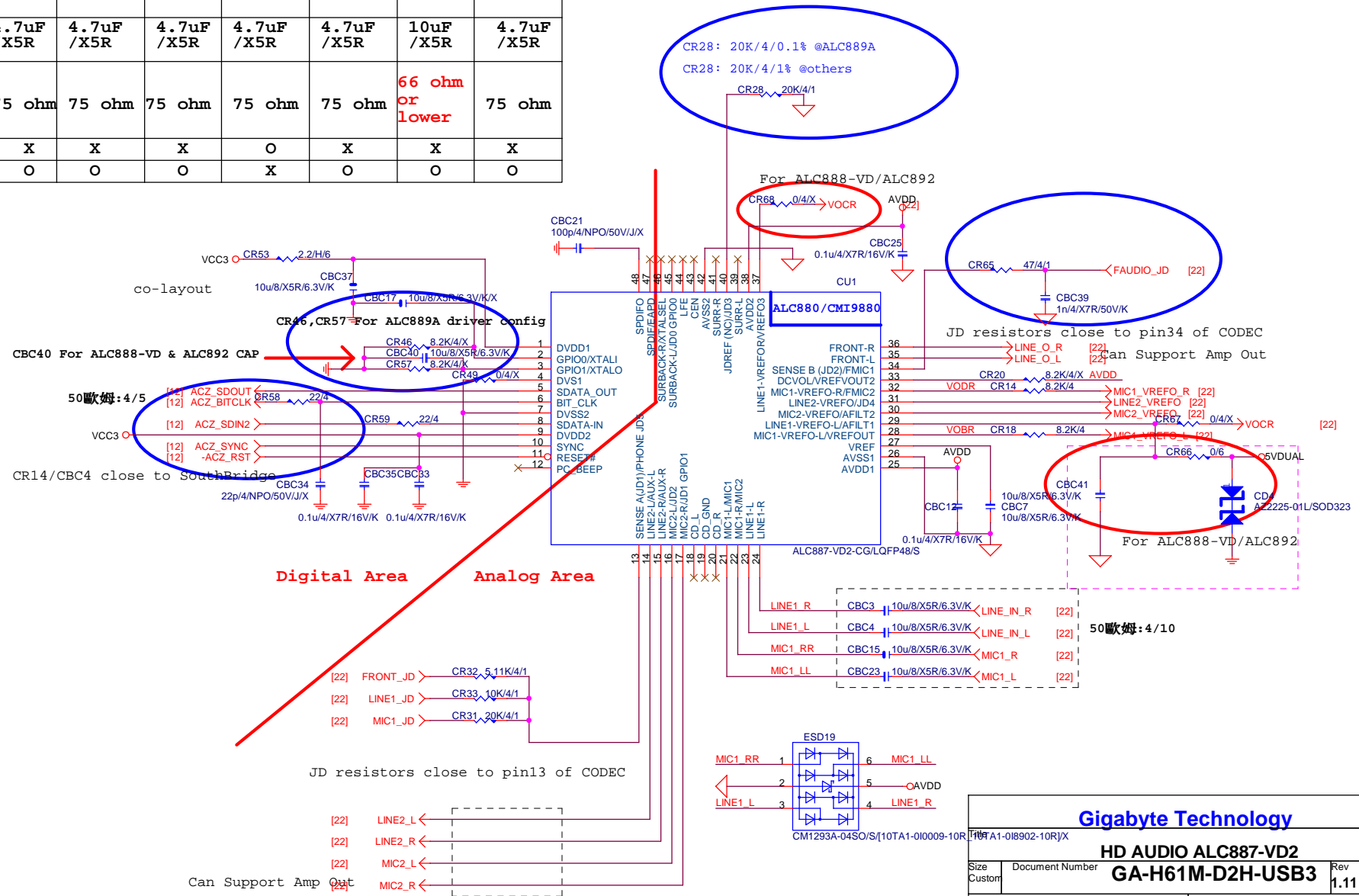


FP改pinheader

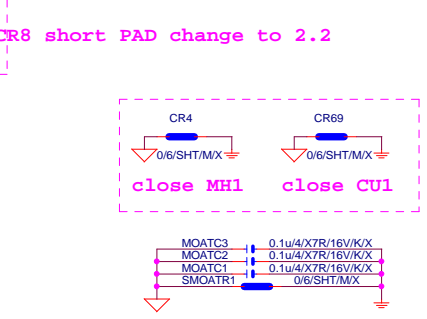
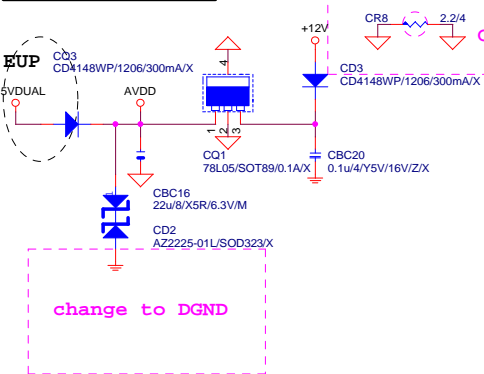


Gigabyte Technology			
Title	FP, F_USB, SPKR, SATA LED		
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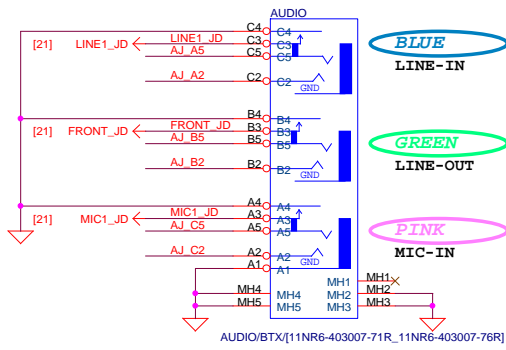
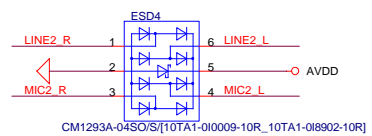
	ALC883	ALC888-VA	ALC888B	ALC888-VD	ALC892R	ALC889	ALC889A
CR46	X	X	X	X	X	X	O
CR57	X	X	X	X	X	X	O
CR49	O	O	X	X	X	O	O
CBC40	X	X	X	10uF/X5R	10uF/X5R	X	X
CR20	O	X	X	X	X	X	X
CR28	20K/1%	20K/1%	20K/1%	20K/1%	20K/1%	20K/1%	20K/0.1%
CR47	X	X	O	X	O	O	X
CR48	O	O	X	O	X	X	O
CBC2/CBC4/CBC5/ CBC6/CBC10/CBC11	4.7uF /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



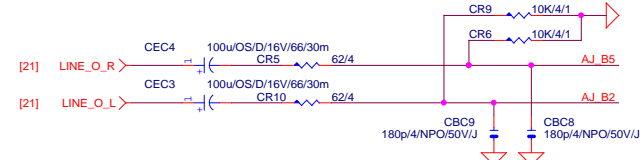
CODEC POWER/EMI PAD



AZALIA JACK

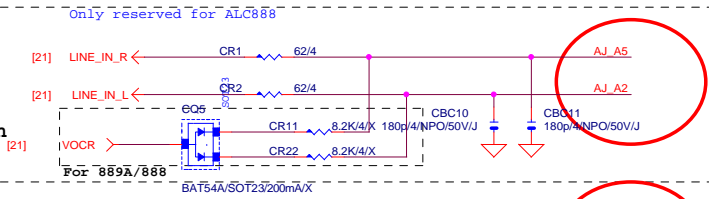


LINE-OUT

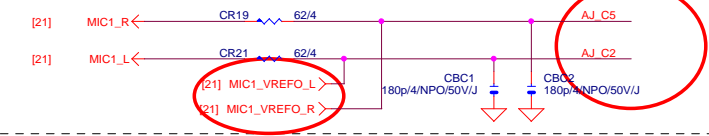


LINE-IN

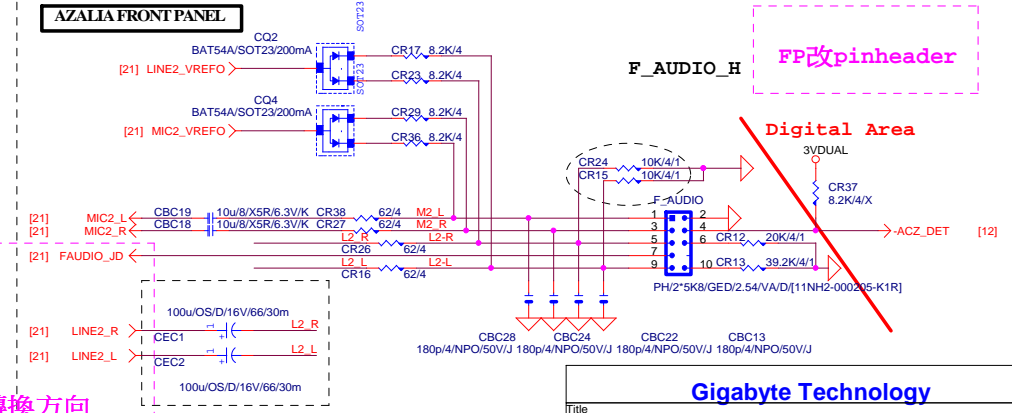
Verify MIC function in LINE-in



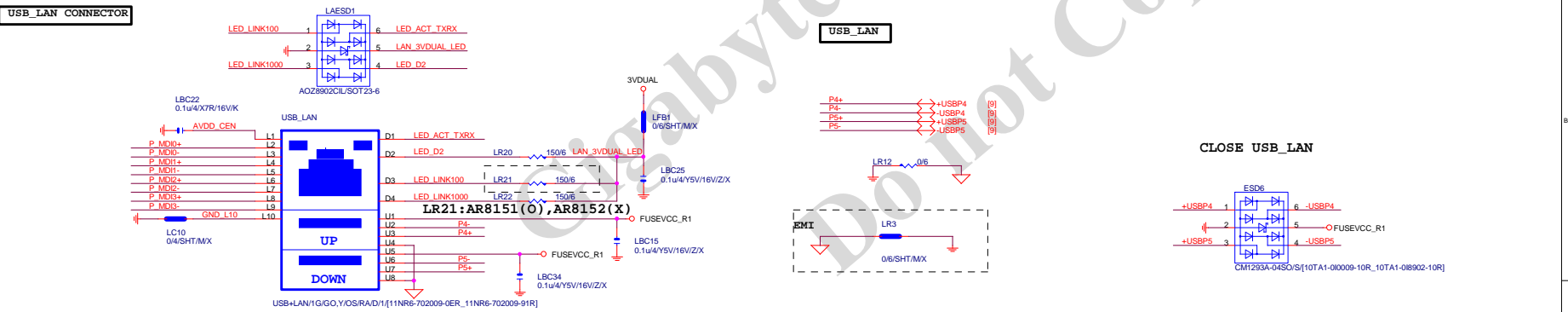
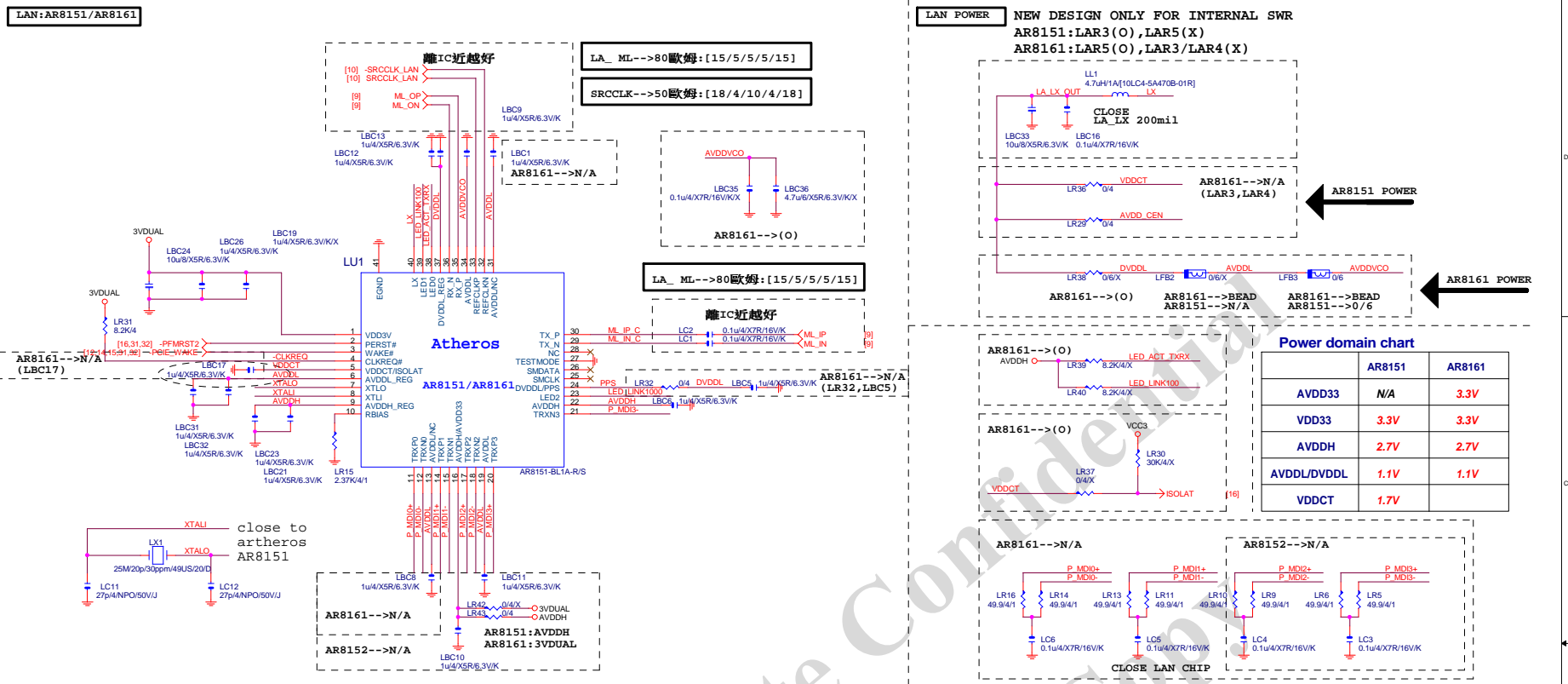
MIC-IN



AZALIA FRONT PANEL



Gigabyte Technology			
AUDIO JACK			
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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:

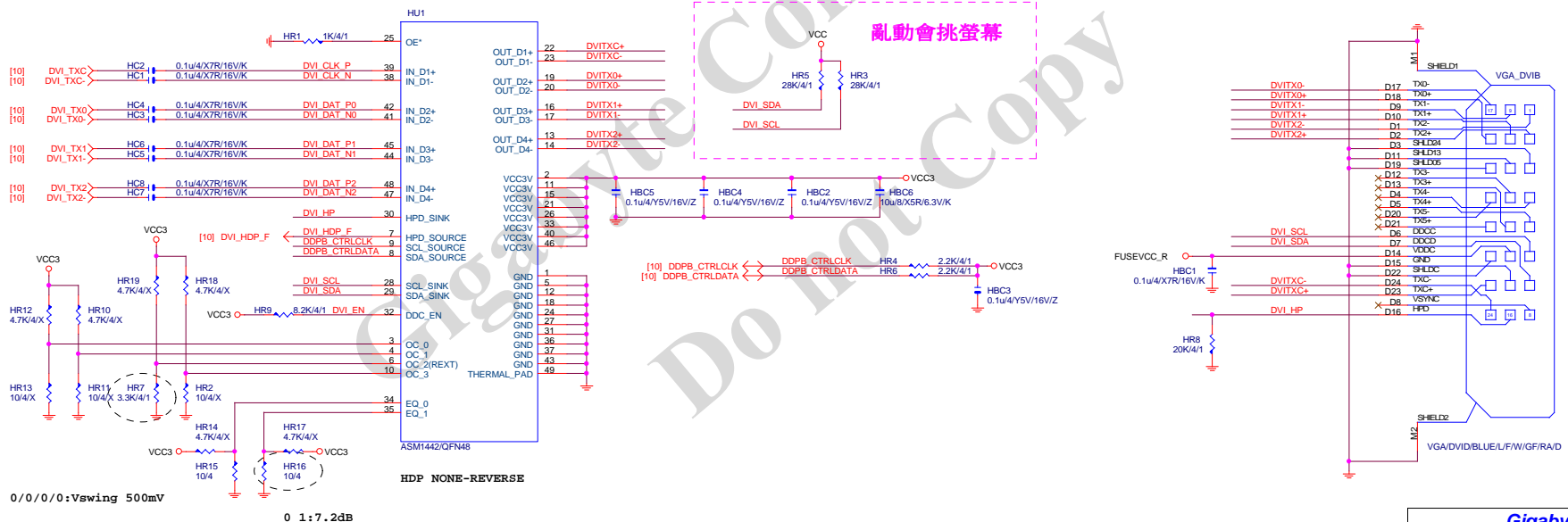
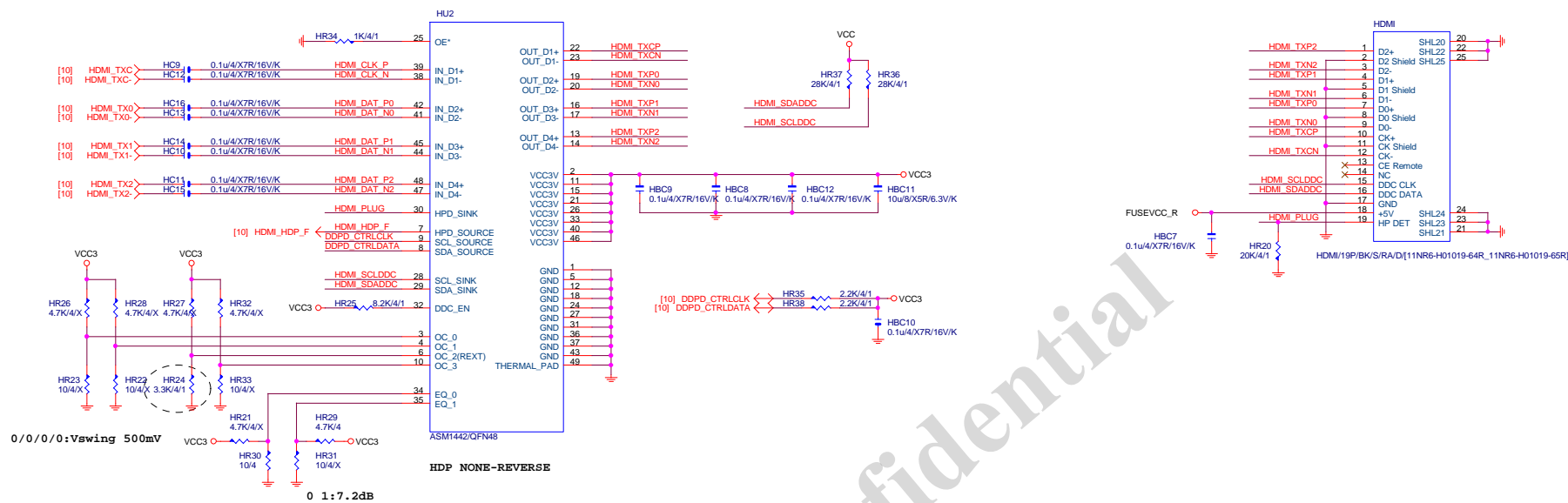
- (紅色/12CORE/三倍): USB+LAN/1G/GO,Y/OS/RA/D/1/RED
- (黑色/12CORE): USB+LAN/1G/GO,Y/OS/RA/D/1
- (黑色/8CORE): USB+LAN/1G/GO,Y/OS/RA/D/8C

Gigabyte Technology

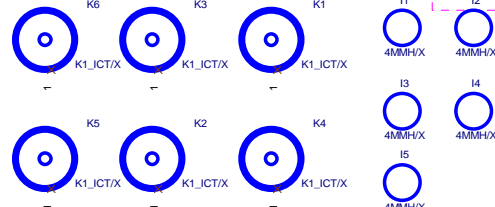
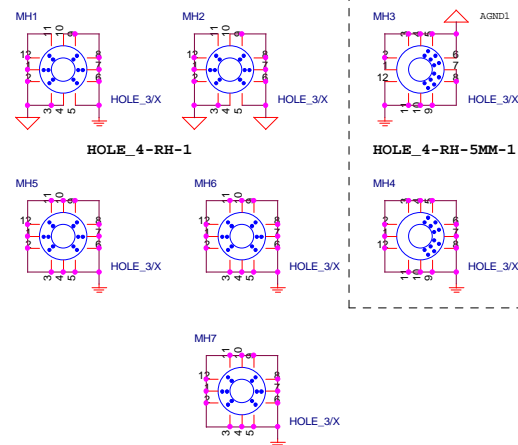
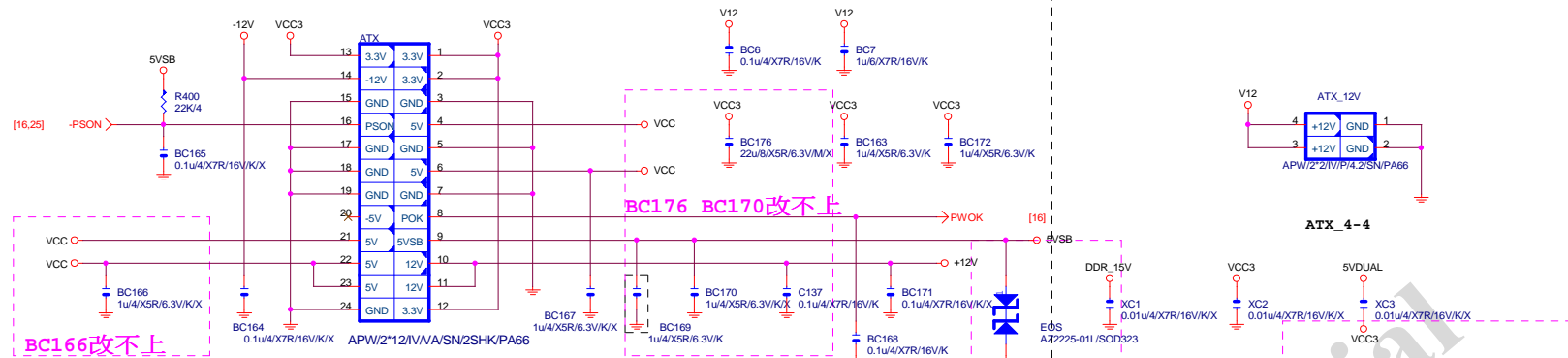
File ARtheros AR8151/AR8161

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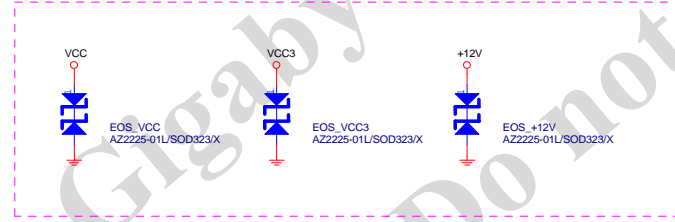
ATXX4 POWER CONNECTOR



To prevent the 5VSB
under loading when
boot

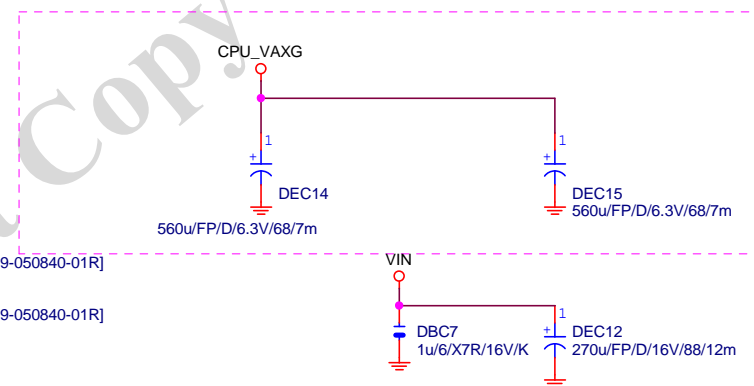
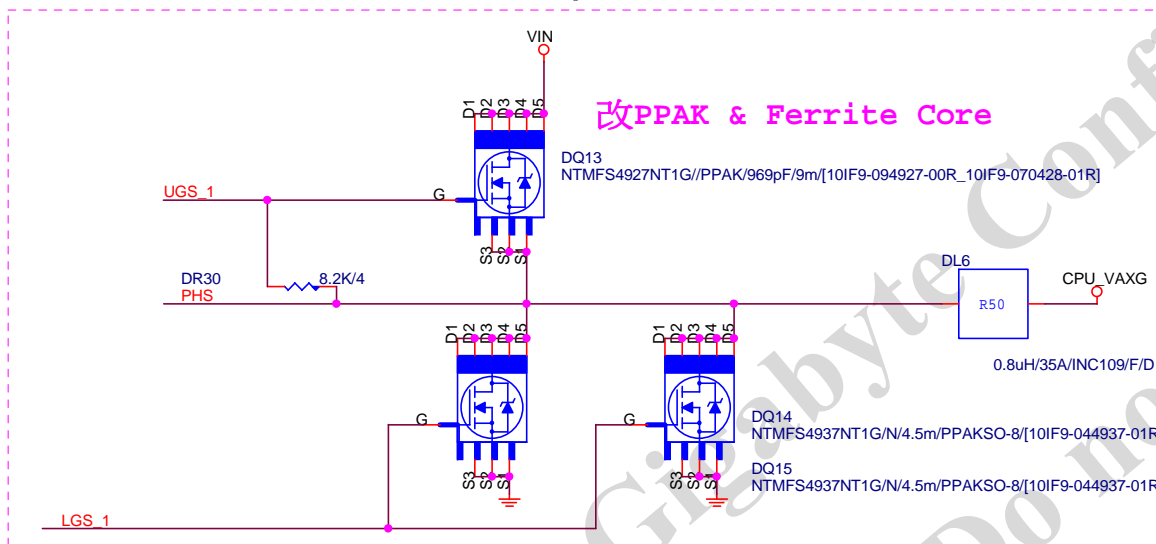
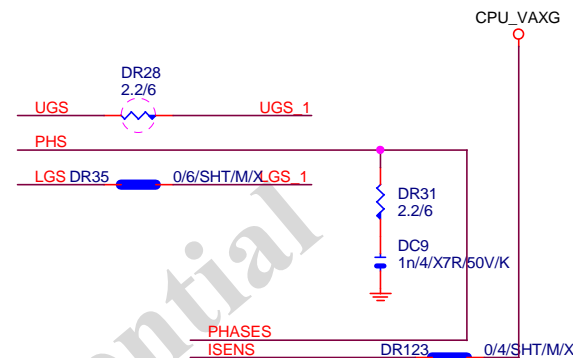
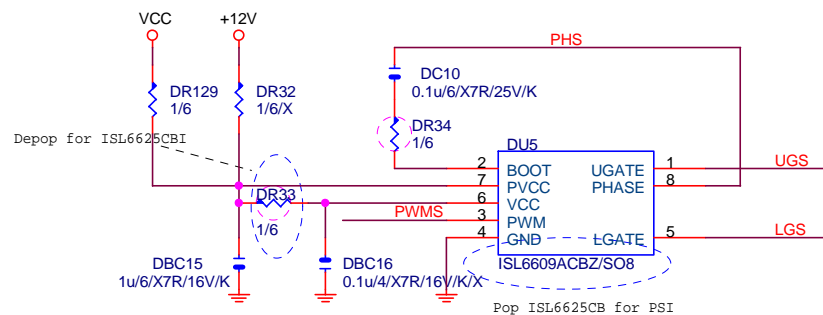
5VDUAL1(USB PORT/DDRIII POWER)
5VDUAL(3VDUAL/OTHER)

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



VAXG

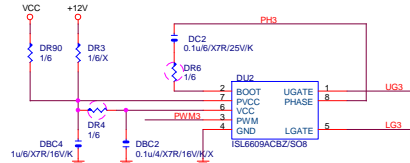
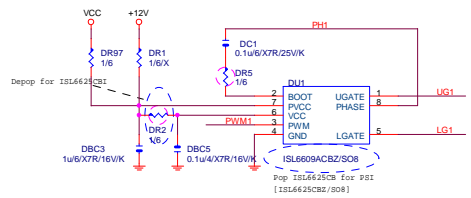
DR33 0 change to 1
DR34 0 change to 1
DR28 0 change to 2.2



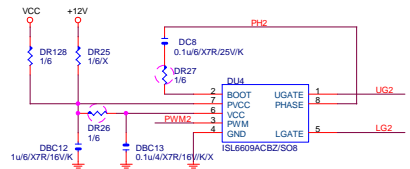
Gigabyte Technology

Title			
CPU CORE VR-2			
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DR5 0 change to 1
 DR2 0 change to 1
 DR4 0 change to 1
 DR6 0 change to 1



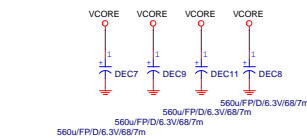
DR20 0 change to 1
 DR19 0 change to 1
 DR26 0 change to 1
 DR27 0 change to 1



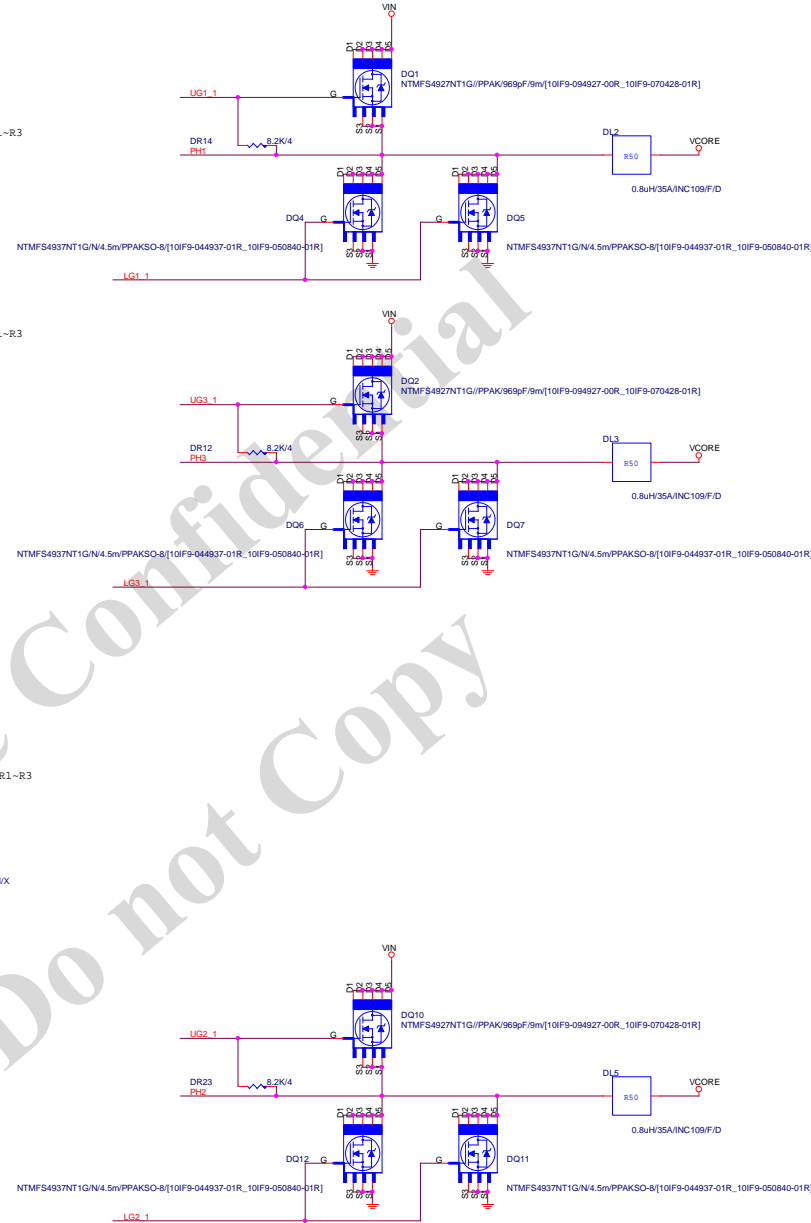
[1]

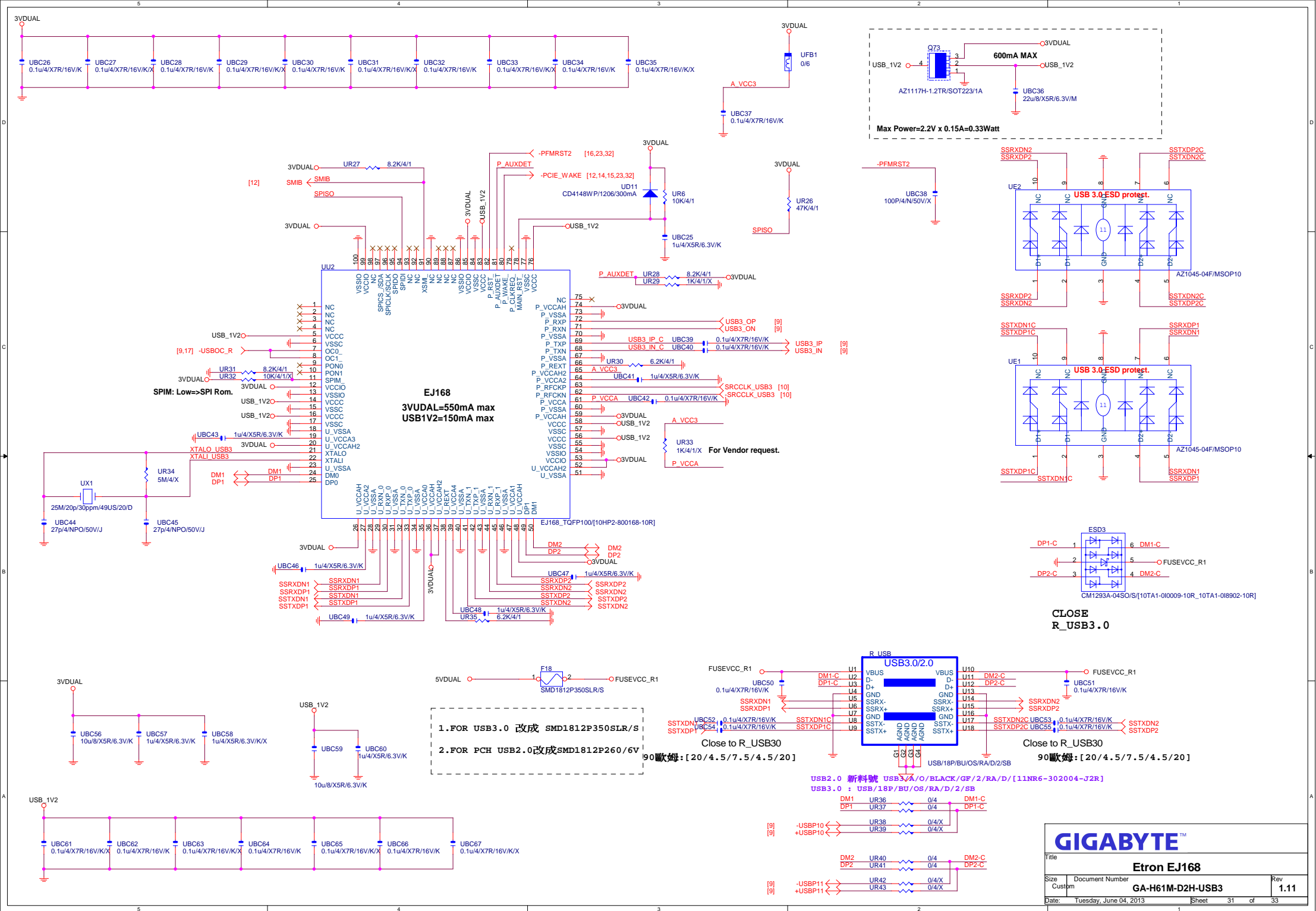
[3]

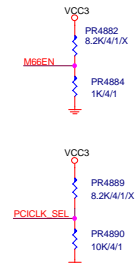
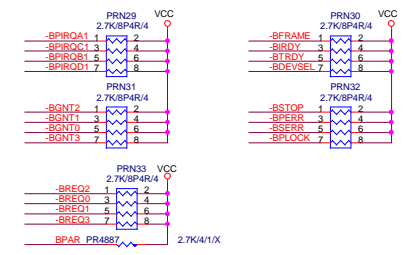
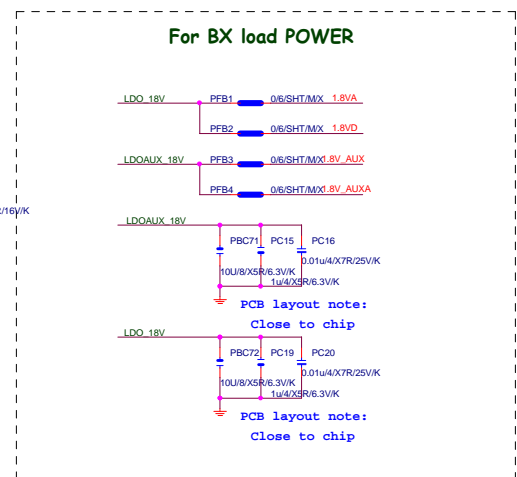
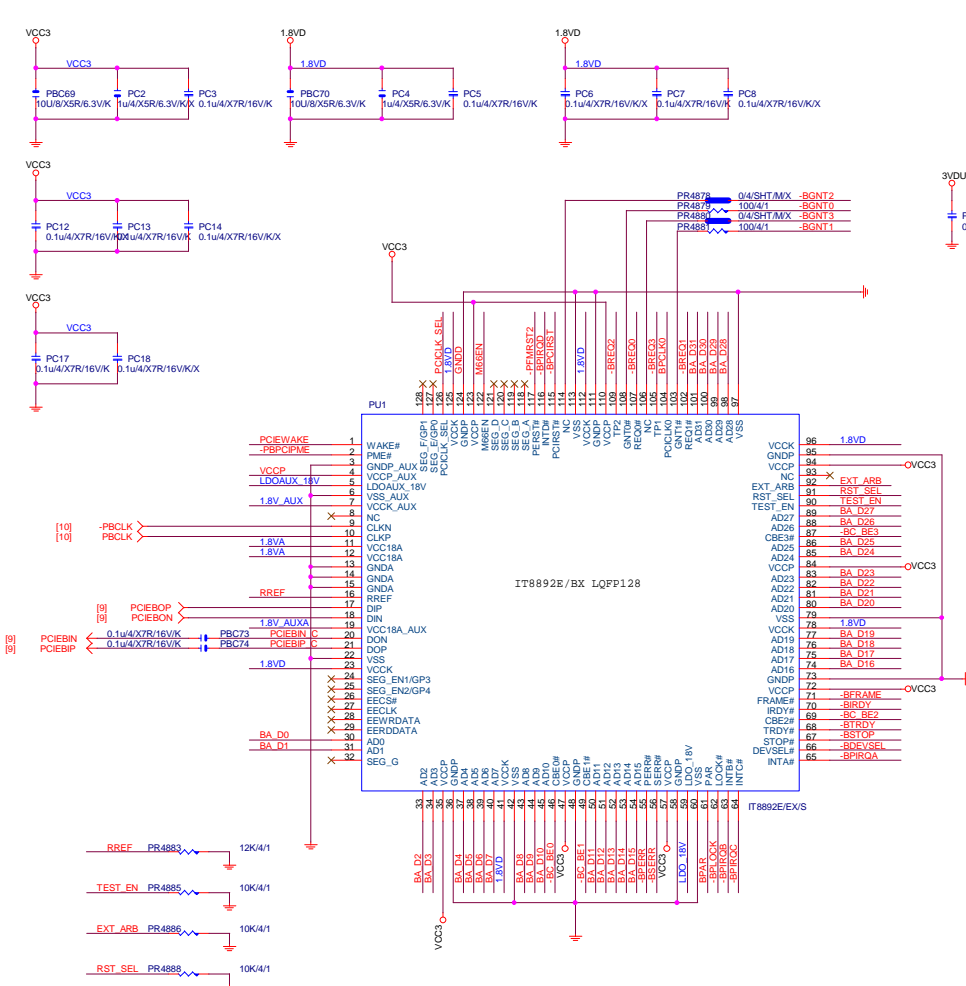
[2]



改PPAK & Ferrite Core







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

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

