

Model Name:GA-EP41T-UD3L

Rev:1.3

SHEET

TITLE

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02	BLOCK DIAGRAM
03	BOM & PCB MODIFY HISTORY
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05	L775 B,D
06	L775 C
07	L775 E,F,G,H
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09	GMCH-Eaglelake DDRII
10	GMCH-Eaglelake PCI E, DMI
11	GMCH-Eaglelake INT VGA
12	GMCH-Eaglelake GND
13	GMCH-Eaglelake PWR
14	DDR3 CHANNEL A-SHARE 1,2
15	DDR3 CHANNEL B-SHARE 1,2
16	DDR3 CLOCK BUFFER / TERMINATION
17	PCI EXPRESS*16 SLOT
18	ICH7 DMI, PCI, USB
19	ICH7 IDE, GPIO, SATA, CTRL
20	ICH7 VCC, GND
21	CK505
22	ATX,ATX_12V CONNECT,BIOS
23	PCI EXPRESS*1 SLOT 1,2,3
24	PCI SLOT 1,2,3
25	HWM/ FAN CONTROL
26	IDE/FLOPPY
27	KB_PS2

SHEET

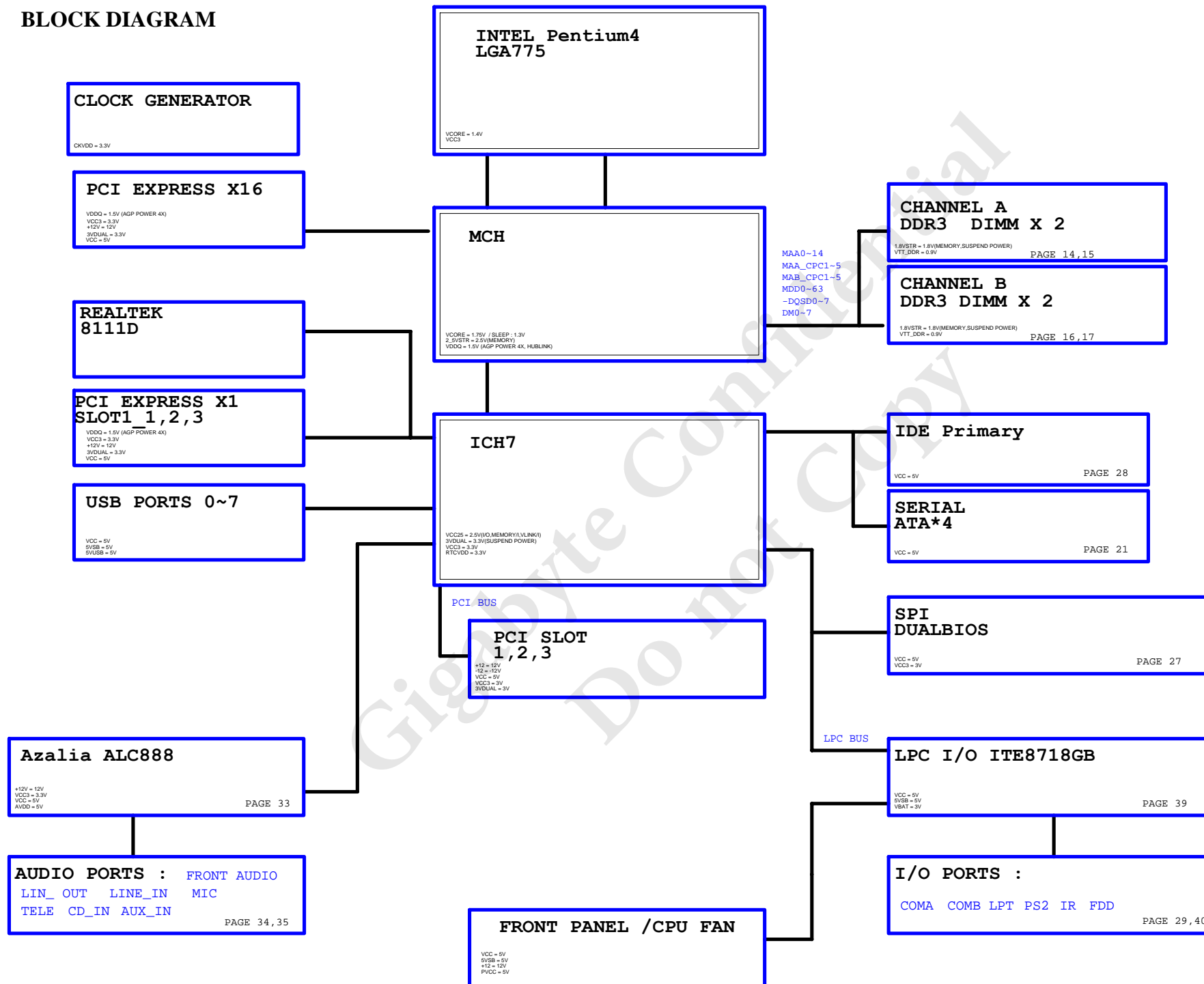
TITLE

28	FRONT PANEL
29	FRONT USB,REAL USB CONNECT
30	PROCESSOR HOT
31	ALC888
32	REAR AUDIO JACK
33	FRONT AUDIO CONNECTOR
34	RTL8111D
35	ITE 8718
36	COM LPT
37	VCORE PWM ISL6336
38	DISCRETE POWER
39	GPIO DEFINE
40	GPIO DEFINE
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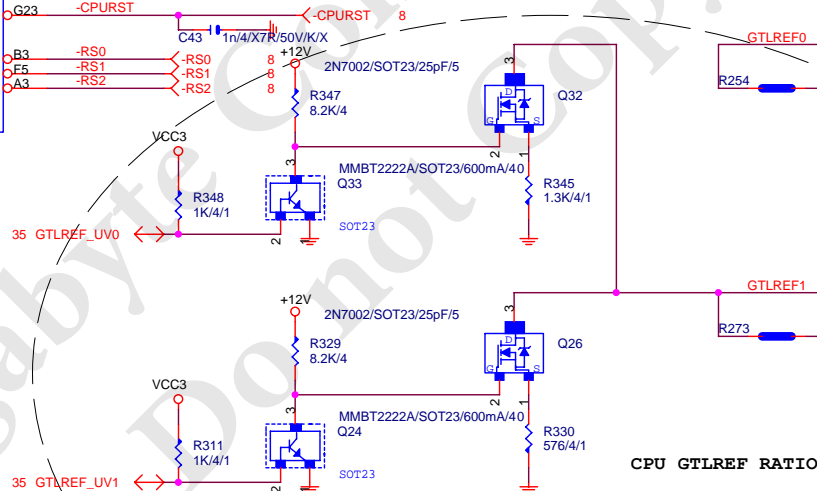
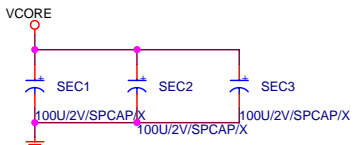
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Cover Sheet			
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BLOCK DIAGRAM

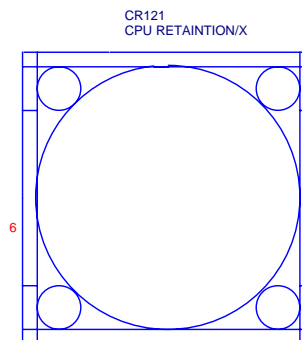


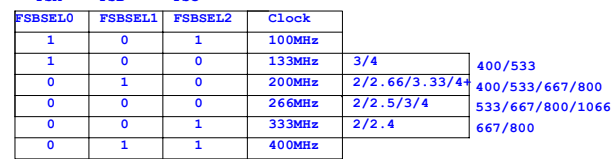
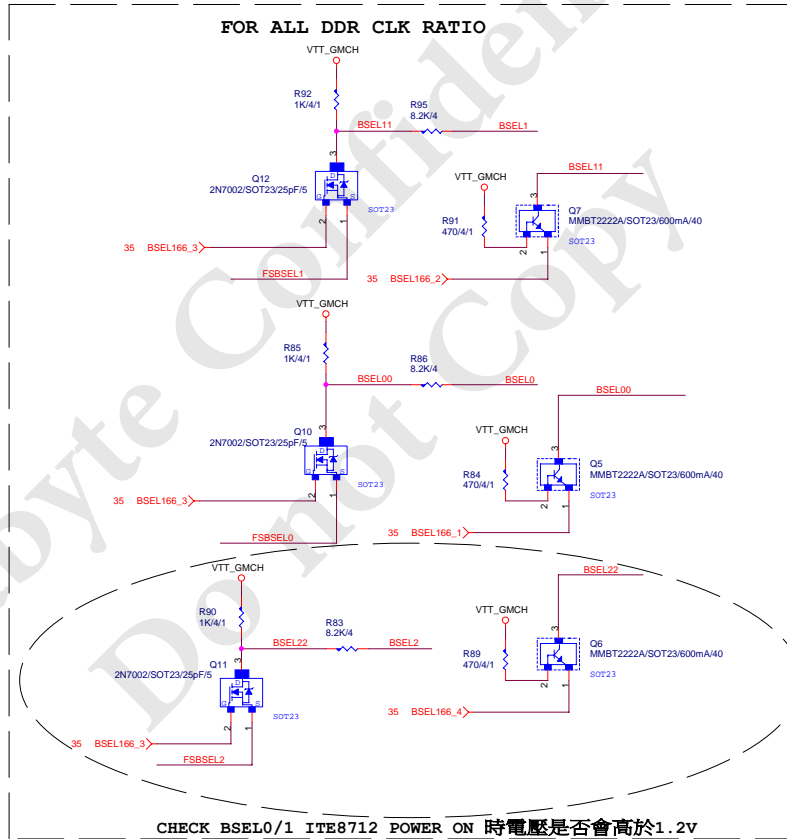
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BOM & PCB MODIFY HISTORY			
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GTLREF_UV0	GTLREF_UV1	Ratio Set
HIGH	HIGH	0.67
LOW	HIGH	0.65
HIGH	LOW	0.63
LOW	LOW	0.615





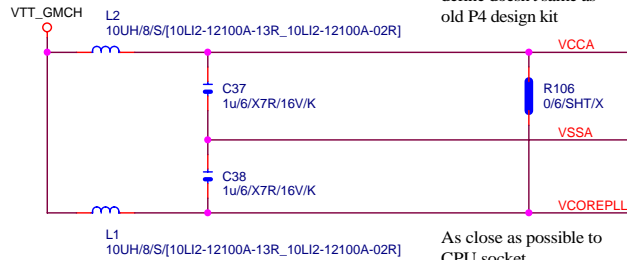
Gigabyte Technology

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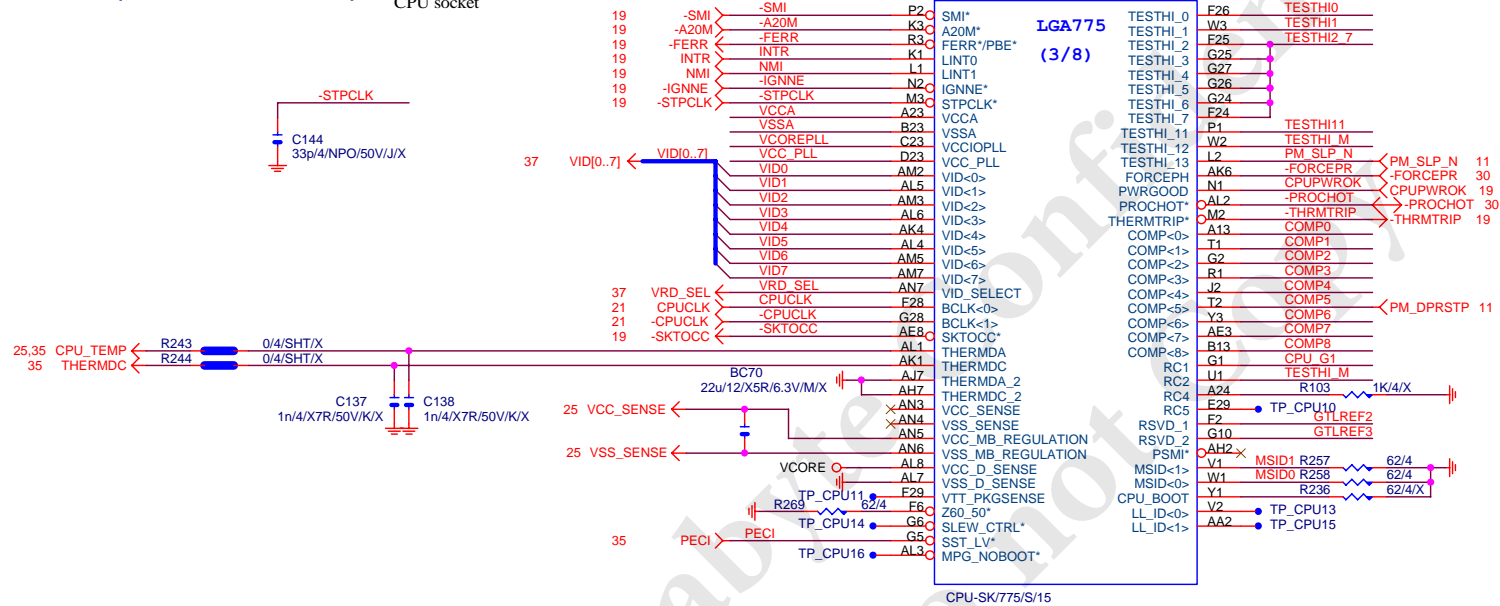
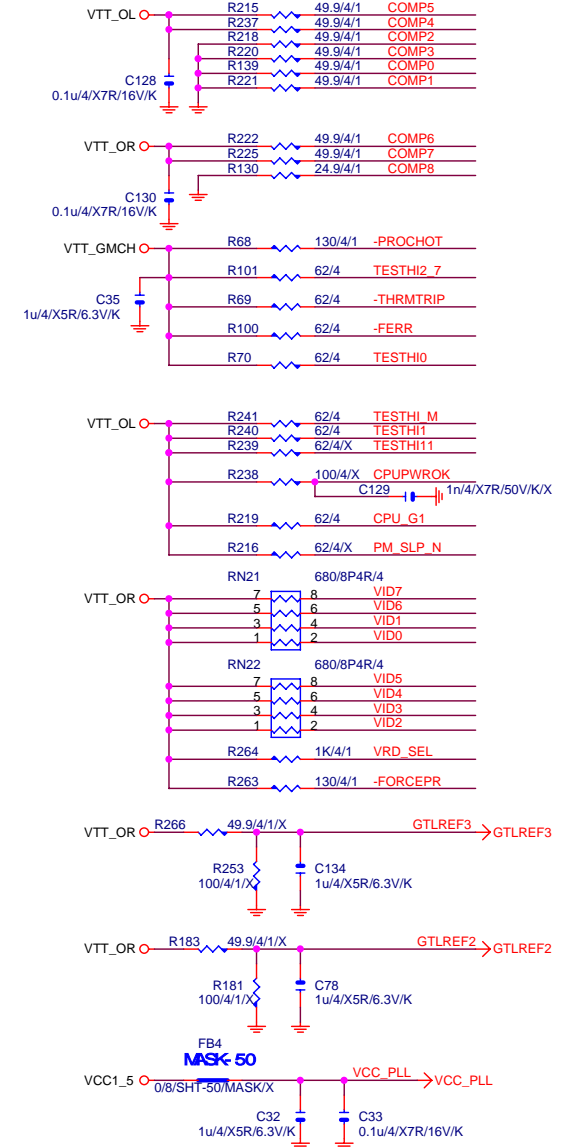
Note:

VCCA & VCOREPLL
define doesn't same as
old P4 design kit



Trace width doesn't
less than 12 Mil

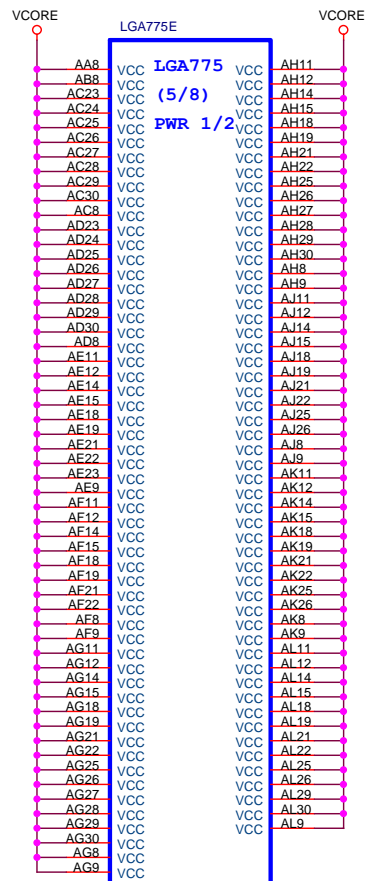
As close as possible to
CPU socket

**Place outside of CPU socket**

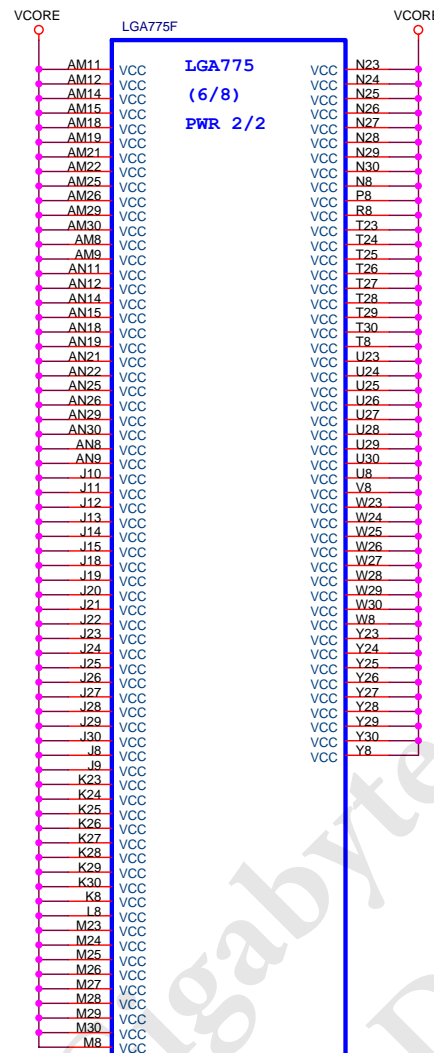
PECI:Platform Environment Control Interface

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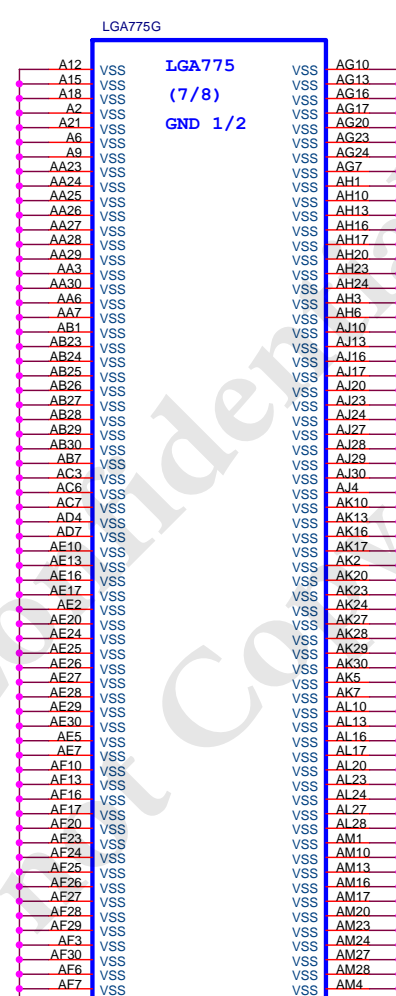
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Size	Document Number	GA-EP41T-UD3L	
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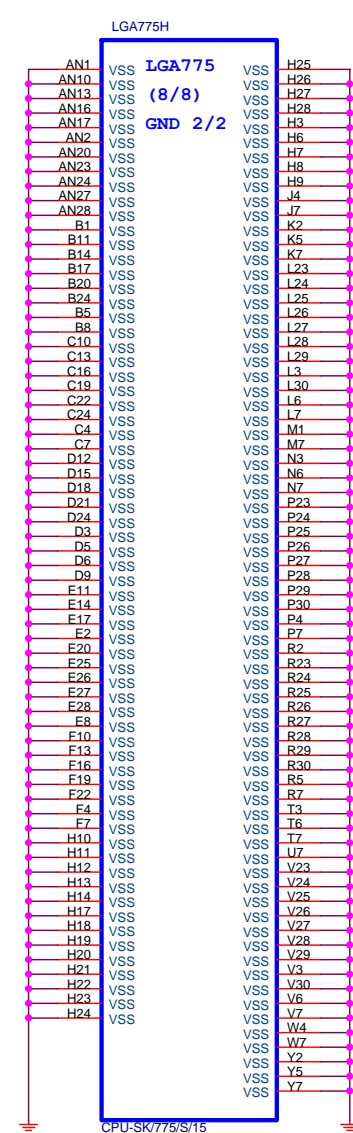
CPU-SK/775/S/15



CPU-SK/775/S/15



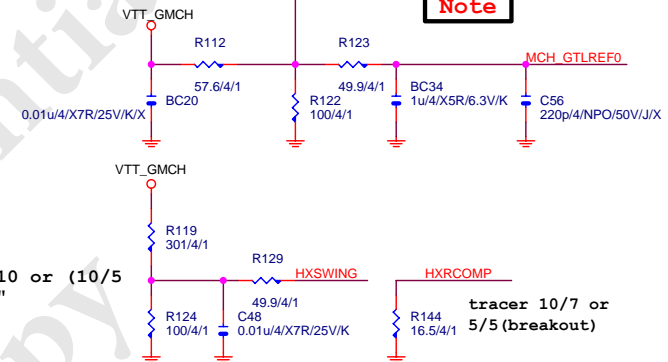
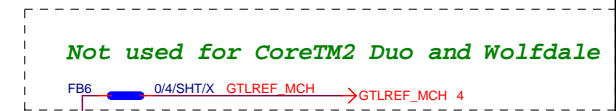
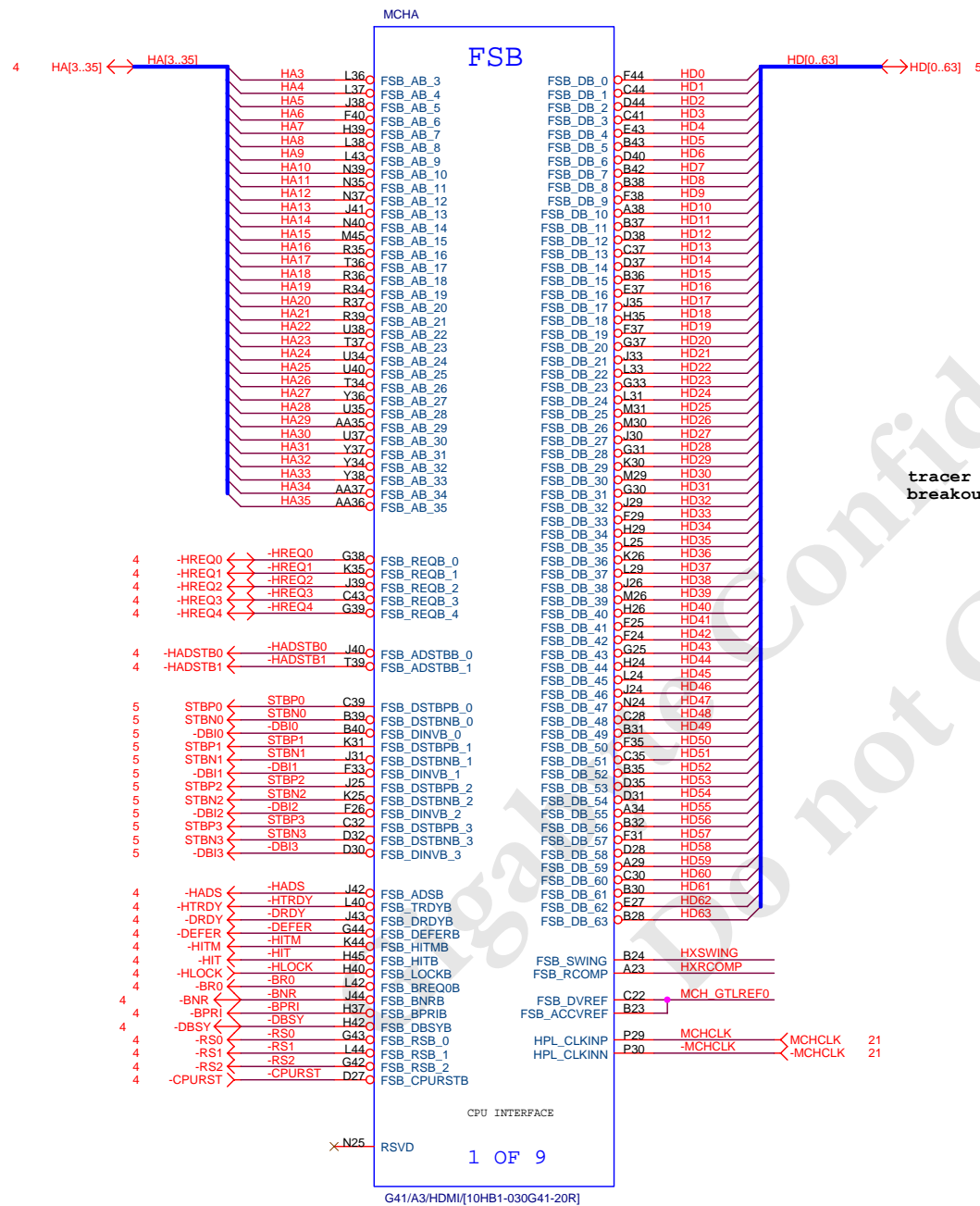
CPU-SK/775/S/15



CPU-SK/775/S/15

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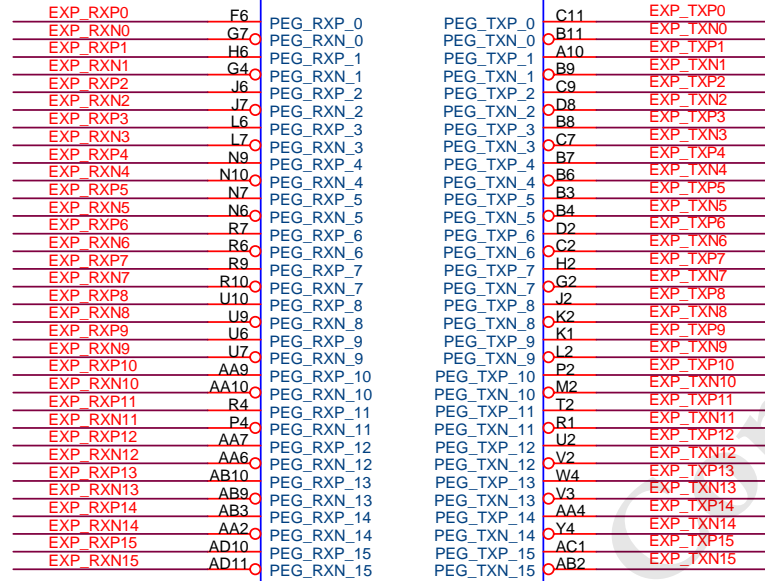
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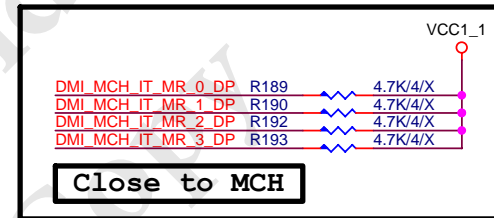
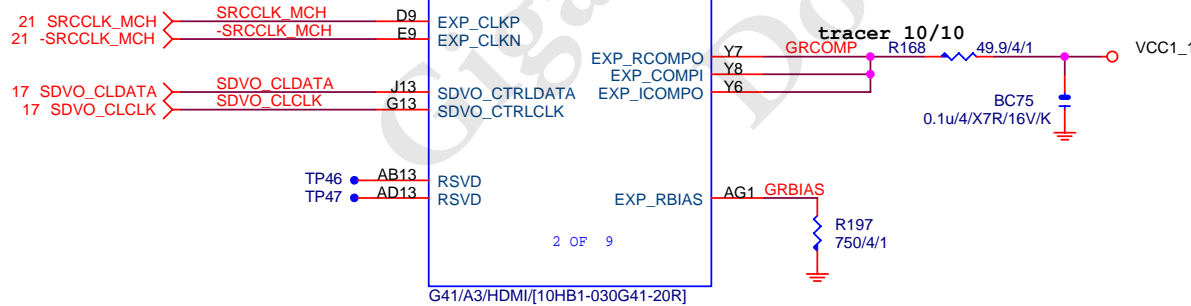
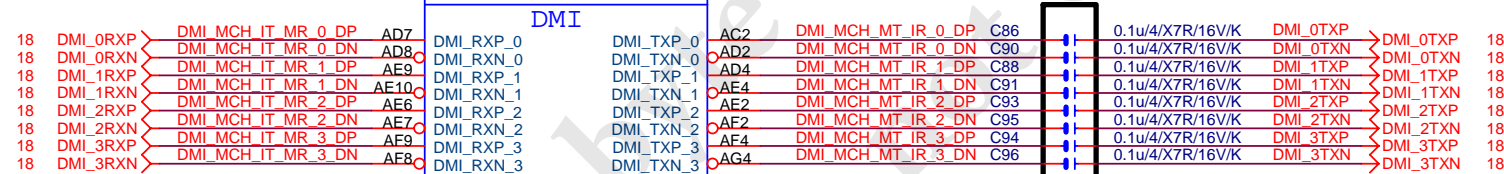


PCIEX16:16/5/5/5/16(breakout min 8/4/5/4/8)

Impedance=85 +/- 17.5%



EXP_TXP[0..15] >> EXP_TXP[0..15] 17
 EXP_TXN[0..15] >> EXP_TXN[0..15] 17
 EXP_RXP[0..15] >> EXP_RXP[0..15] 17
 EXP_RXN[0..15] >> EXP_RXN[0..15] 17

DMI:12/4/8/4/12
Impedance=95 +/- 17.5%

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GMCH-PCI E & DMI			
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EXP_SM

0:SDVO OR PCIE

1:BOTH SDVO AND

PCIE_SLR:

0:BTX PCIE are reversed

1:ATX PCIE normal

MCHE

VGA

MISC

5 OF 9

G41/A3/HDMI[10HB1-030G41-20R]

4/10//15<500 MILS

1th RGB:7.5/6 < 300 MILS

2th RGB:4/20 <5"~8" inch

R.G.B SIGNAL不够LOW 3th RGB:4/20 < 800 MILS

ON-BOARD VGA 75ohm
non-ON-BOARD VGA 0ohmON-BOARD VGA 1.02k
non-ON-BOARD VGA 0ohm

FOR EMI ISSUE

BW+ICH8 不要上 (SAMPLE)
BW+ICH7 要上

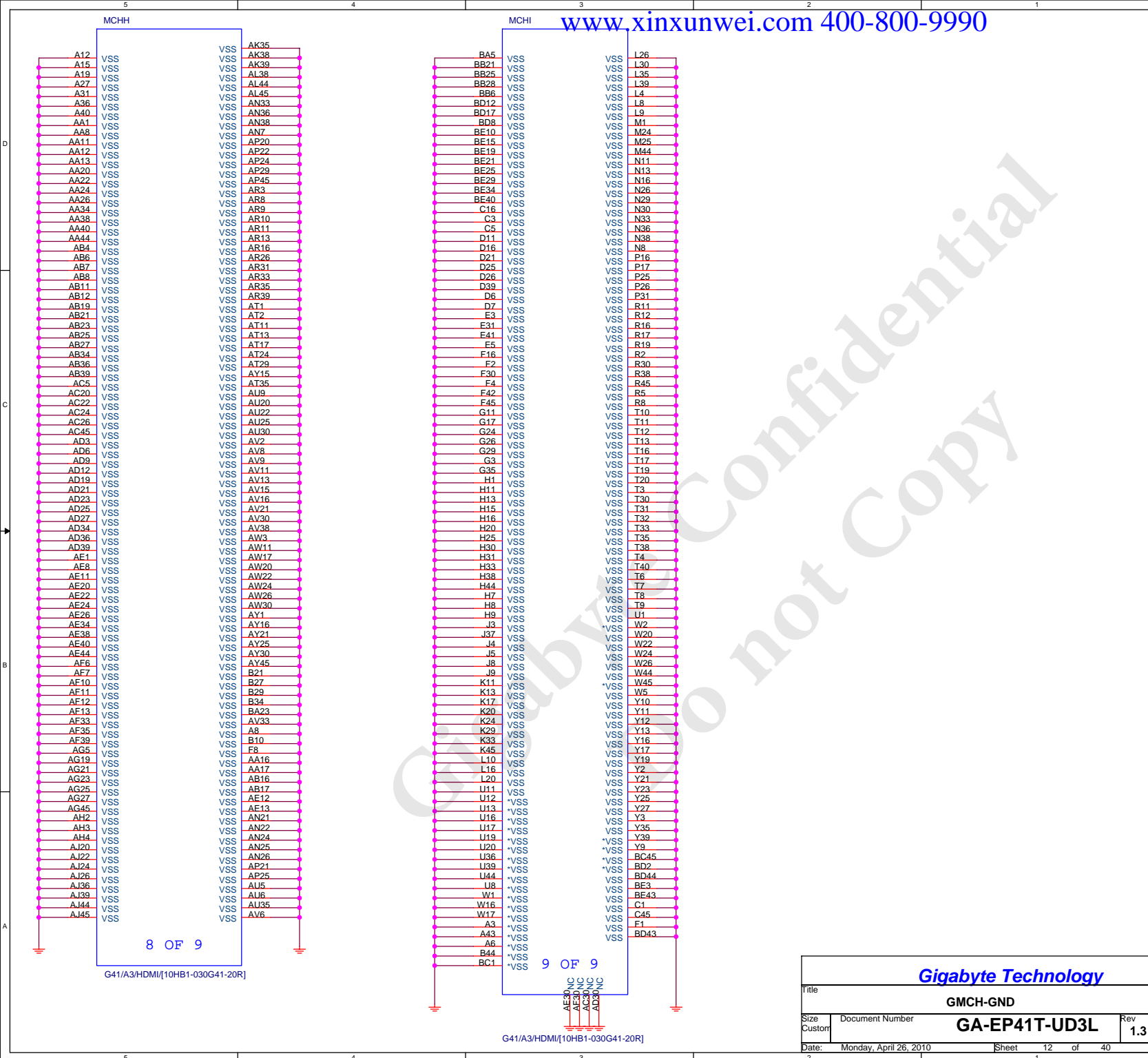
SSOP6_ESD

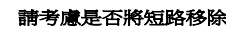
SSOP6_ESD

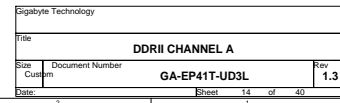
G41CHIP 都要上

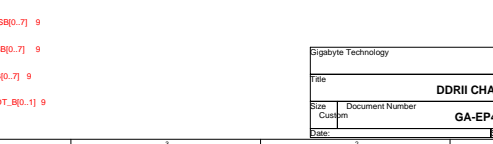
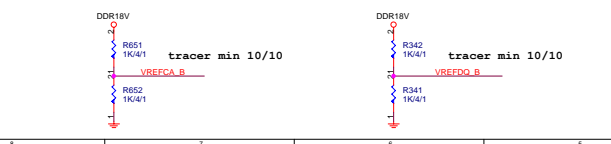
Gigabyte Technology

Title			GMCH-INTERNAL VGA	
Size	Document Number	GA-EP41T-UD3L		Rev
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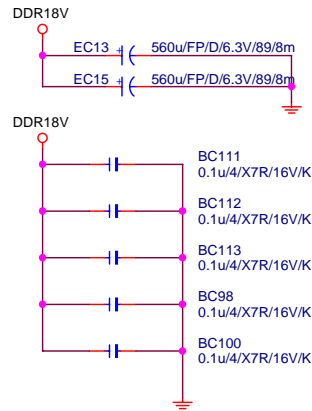


DDR3 CLOCK BUFFER

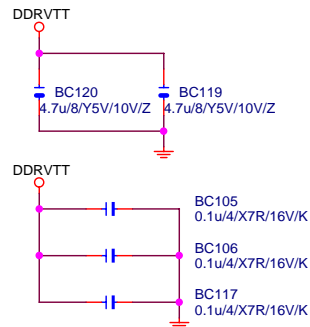
DDR TERMINATION

CHANNEL A

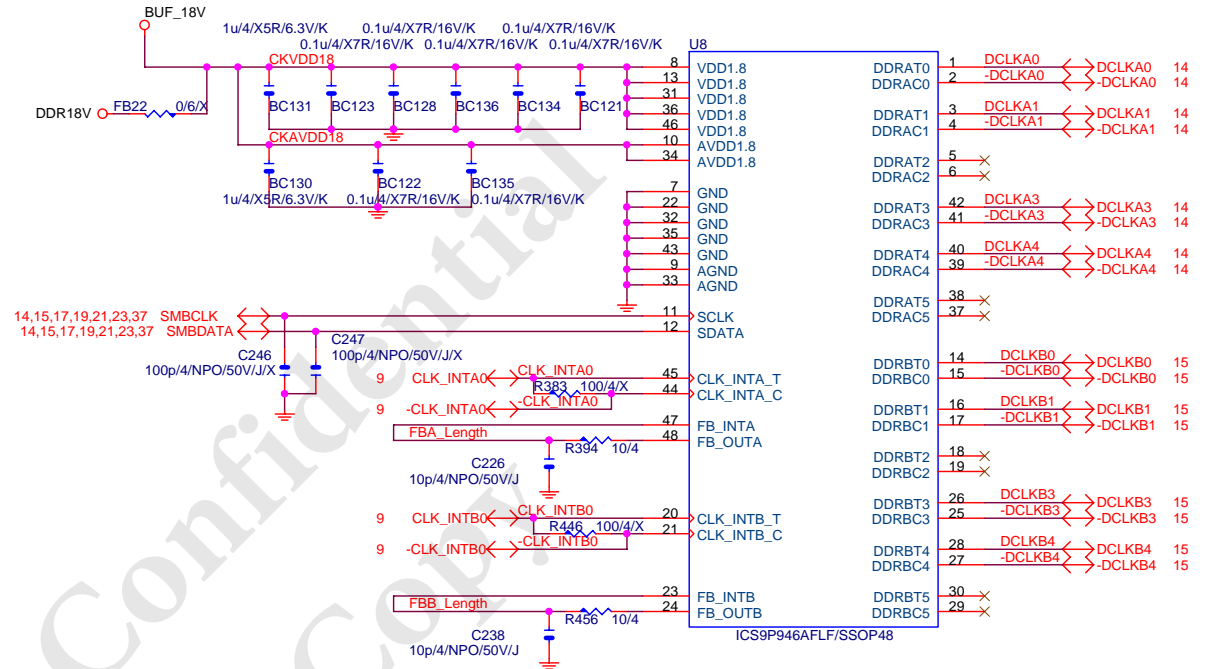
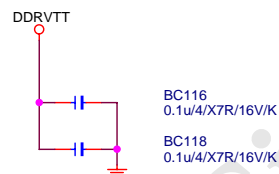
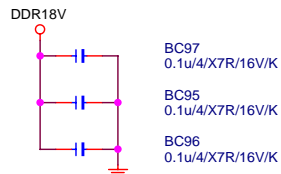
DDR18V Decouple



DDRVTT Decouple

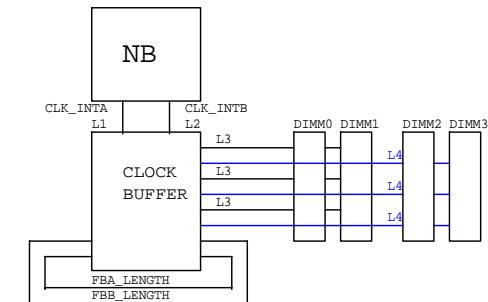
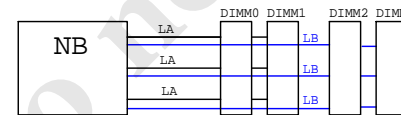


CHANNEL B

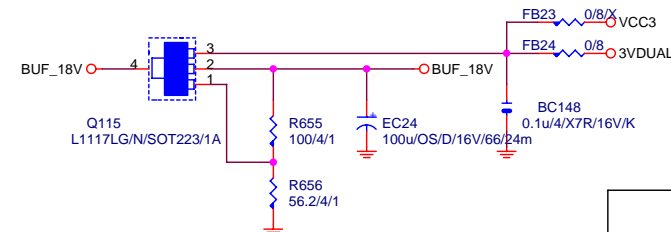


NOTICE

FBA_LENGTH=L1+L3-LA
FBB_LENGTH=L2+L4-LB



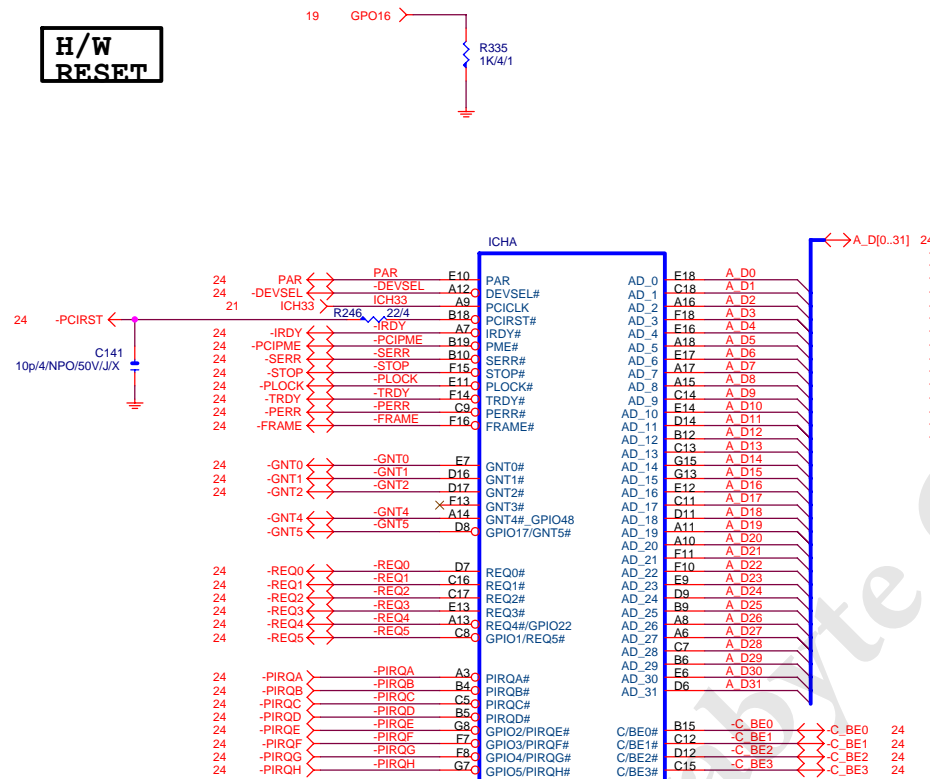
3.3V to 1.8V Voltage Regulator



Gigabyte Technology

Title			
DDR2 TERMINATOR			
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FOR ICH7R POWER ON 瞬間會HIGH 到1.8V 之後0V,必須PULL DOWN 1K/6

H/W
RESET

ICH7/A1/QJ01(NH82801GB)[10HB1-032801-N2R]

10HB1-032801-M1 REV:NON

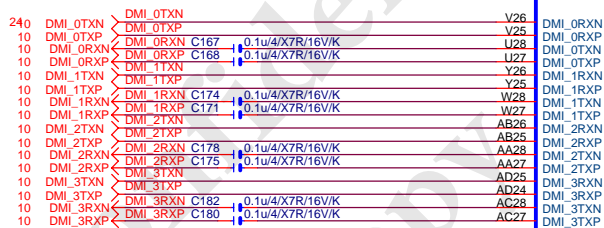
SB_HEATSIN

NEW GRAY SB_HS 對邊

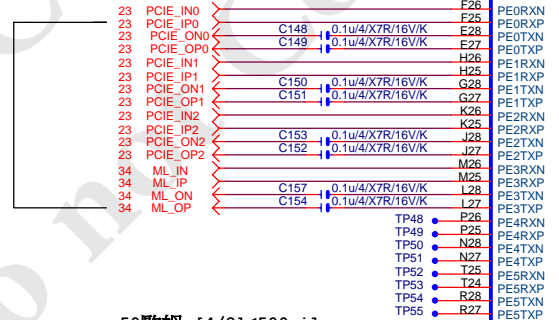
SB_HS[12SP2-030005-42R_12SP2-030005-43R]

SB_HS

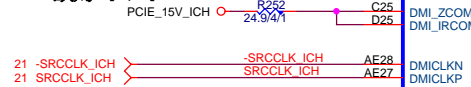
BOOT DEVICE	GNT4#	GNT5#
SPI=	1	0
PCI=	0	1
LPC=	1	1

95歐姆:[12/4/8/4/12]
Close to ICH

95歐姆:[15/4/8/4/15]

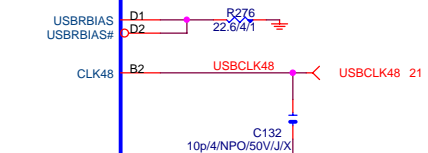
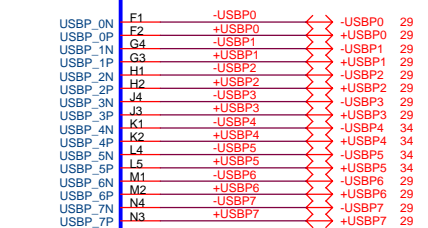


50歐姆:[4/8]<500mil



ICHB

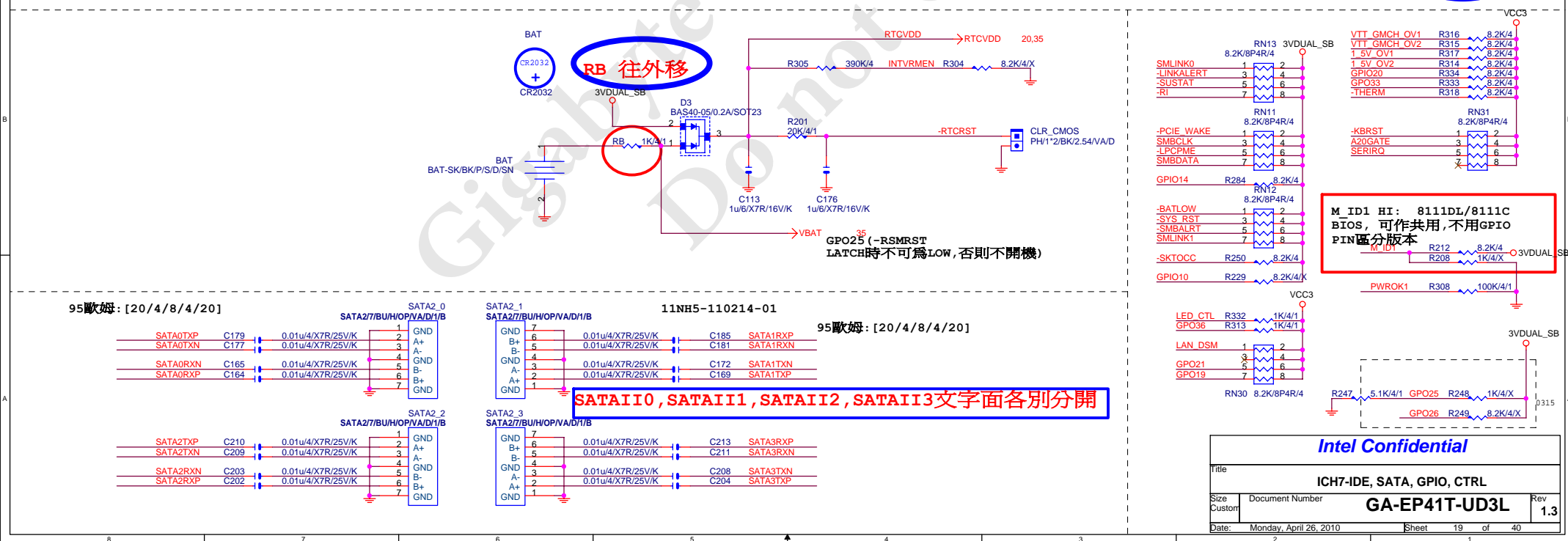
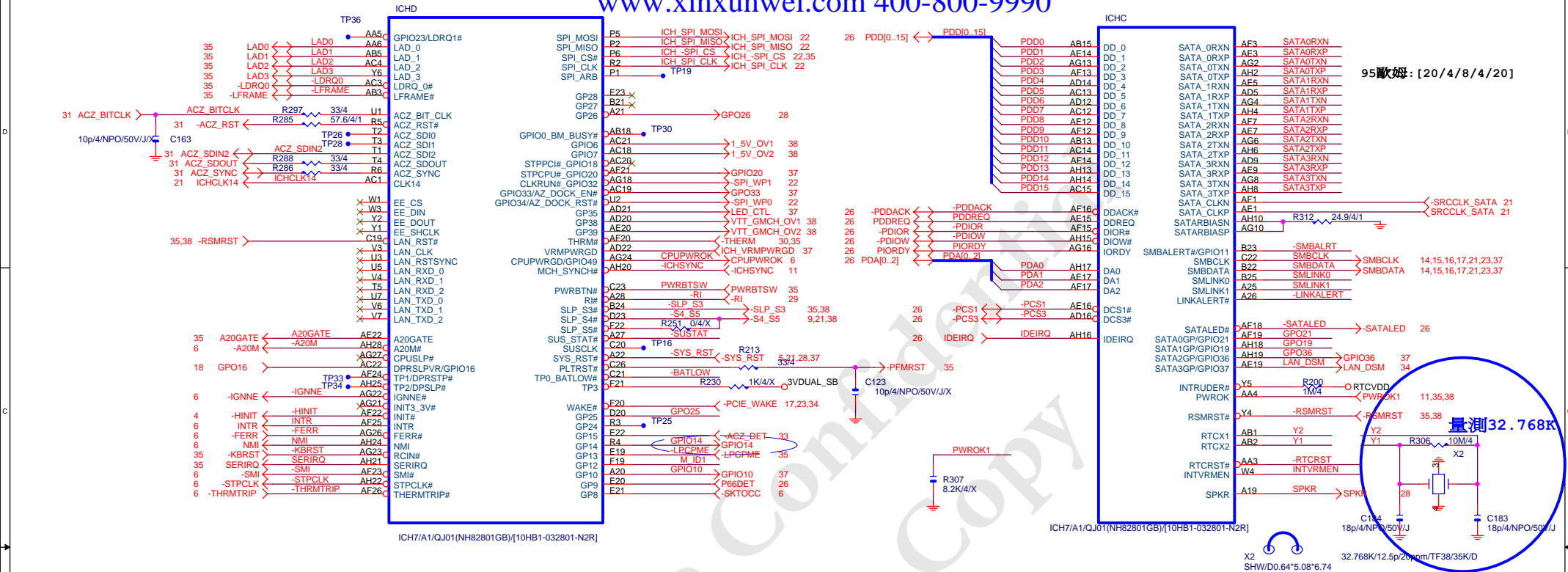
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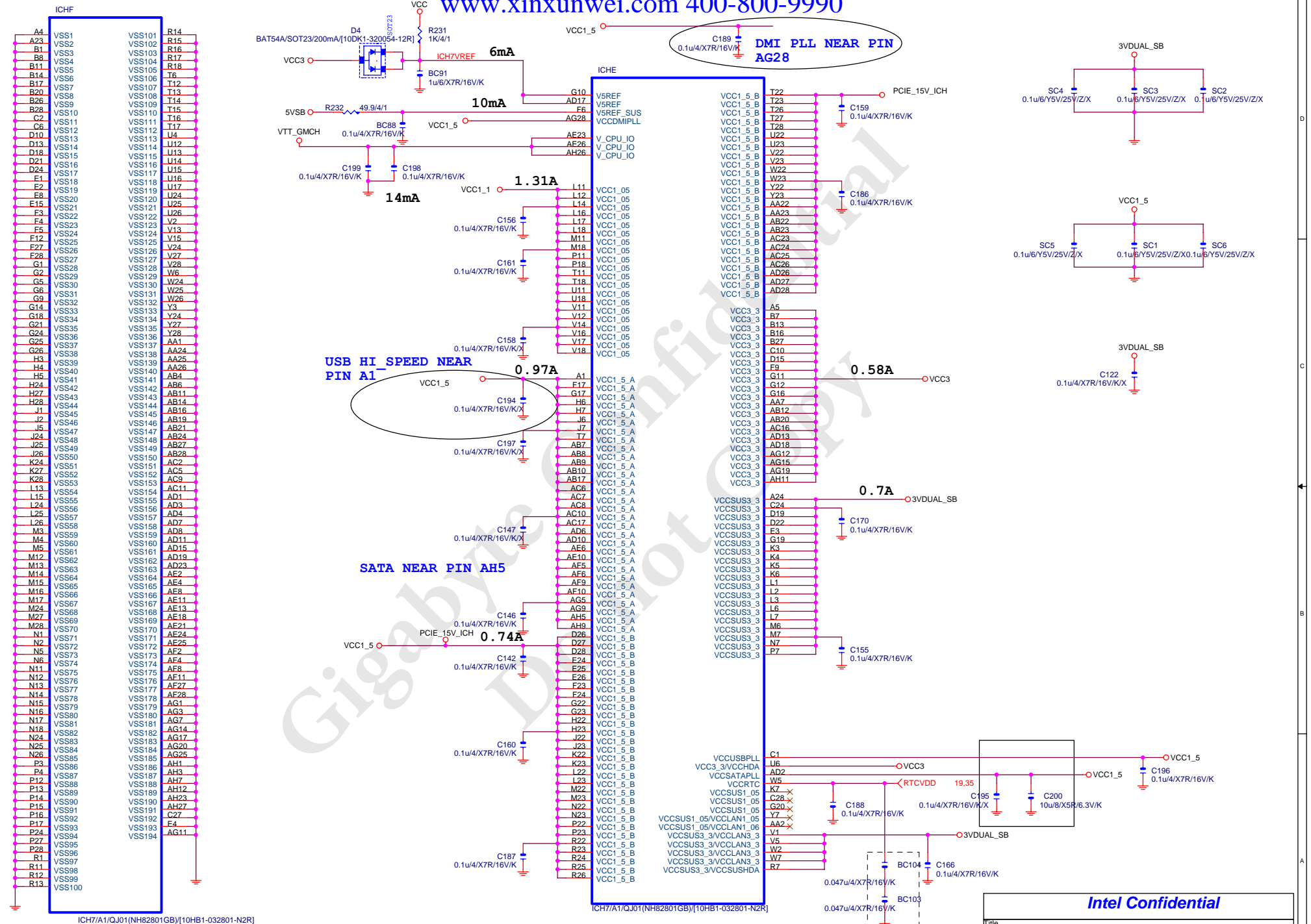


ICH7/A1/QJ01(NH82801GB)[10HB1-032801-N2R]

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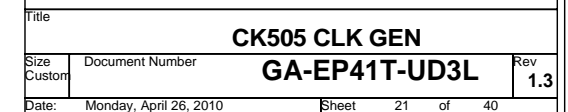
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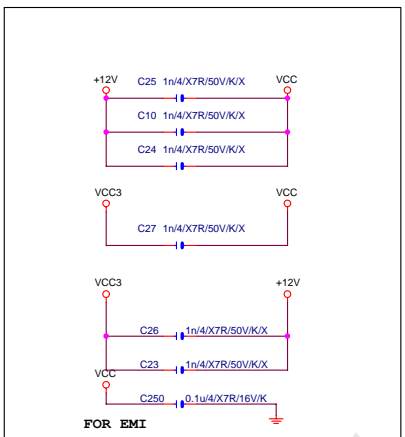
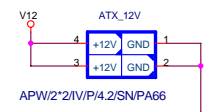
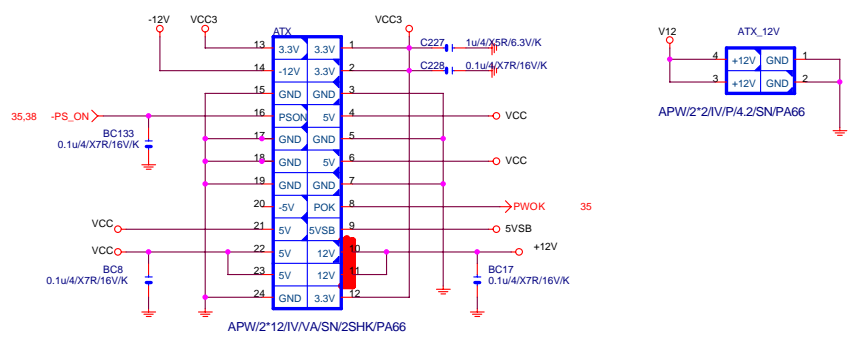
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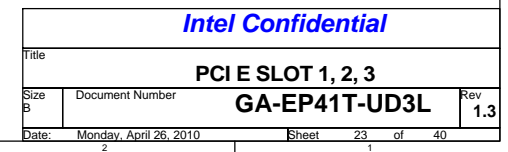
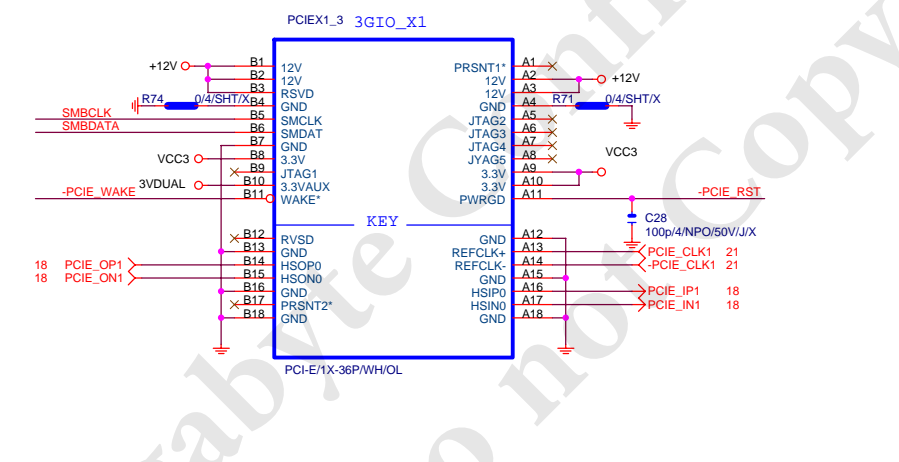
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ICH6-PWR & GND			
Size B	Document Number	GA-EP41T-UD3L	Rev 1.3
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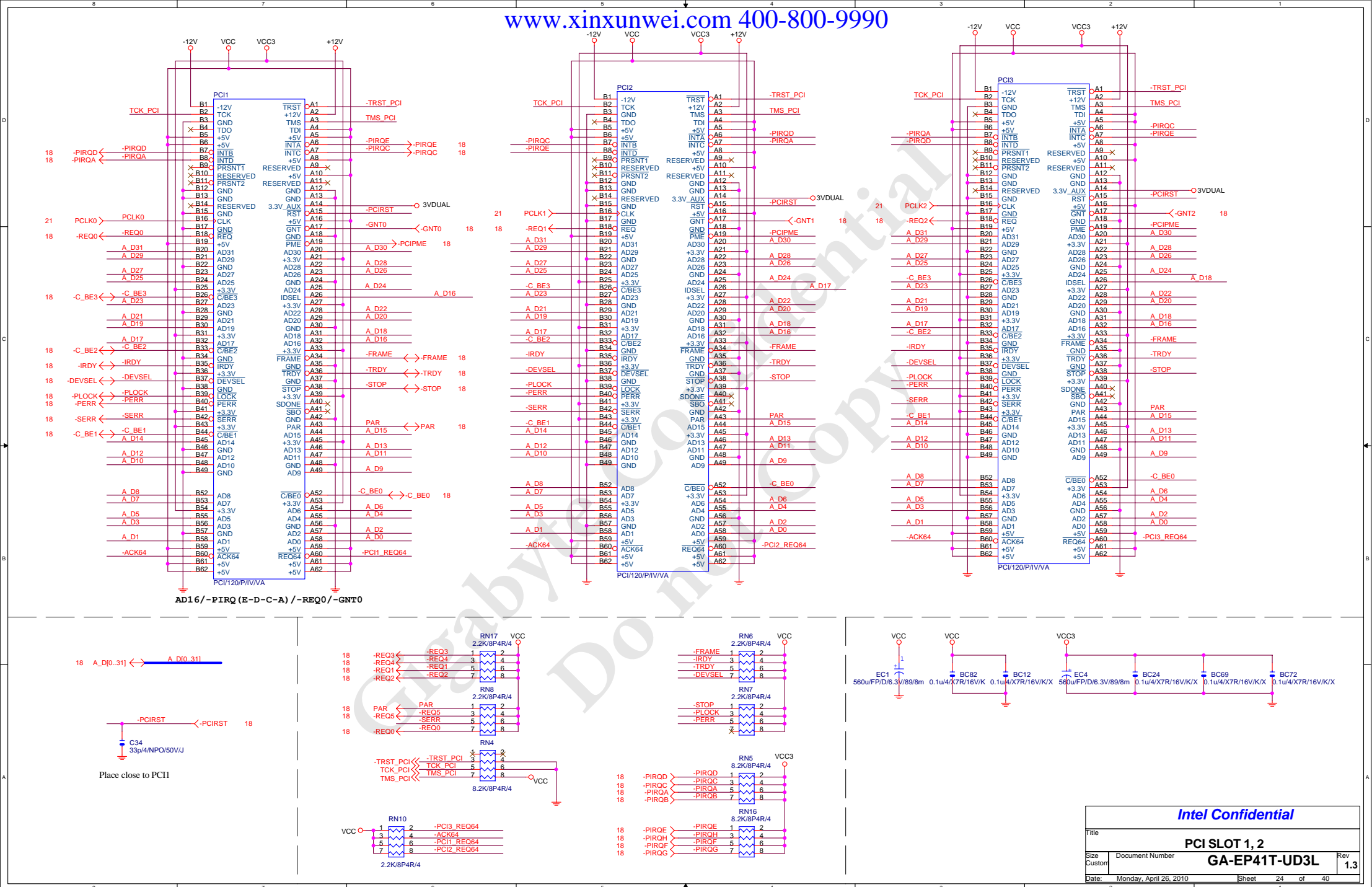


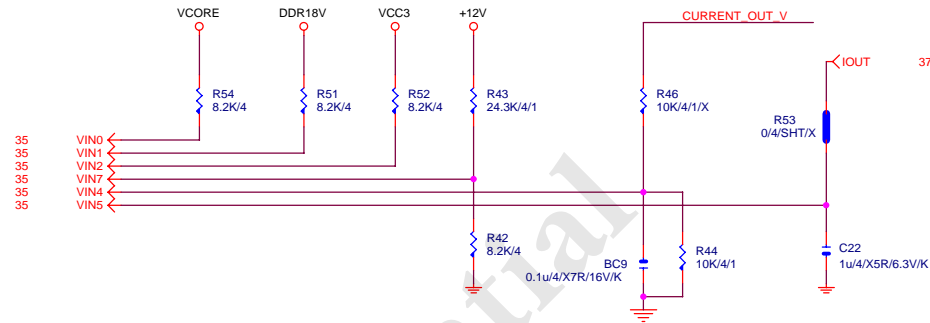
ATX POWER CONNECTOR

www.xinxunwei.com 400-800-9990









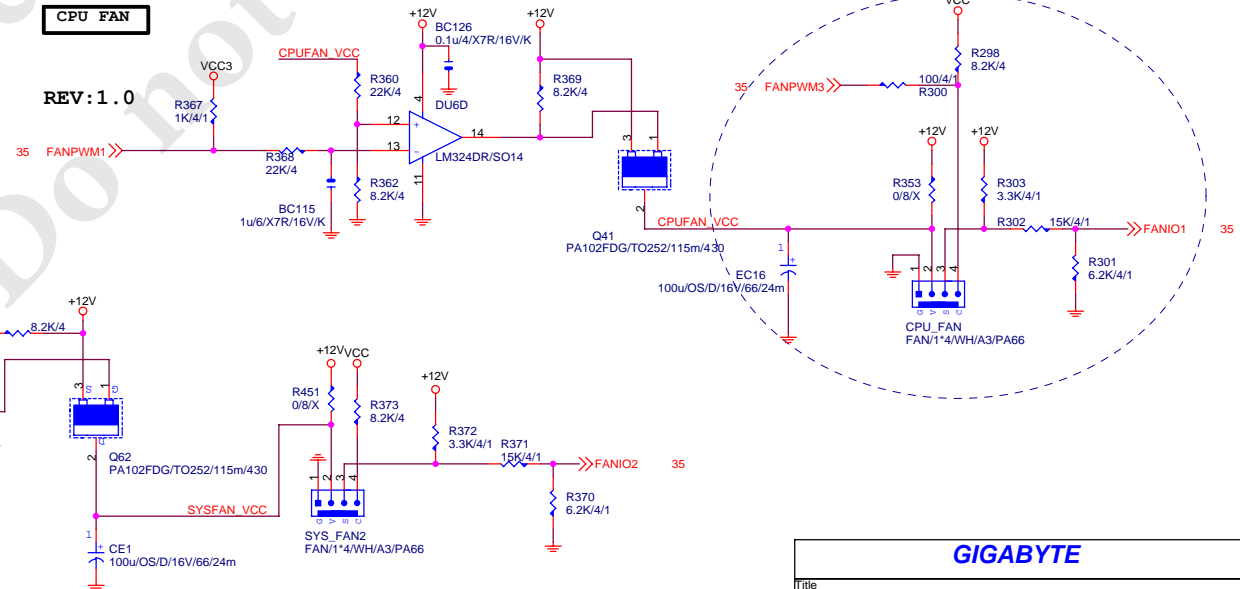
CPU/SYS FAN

If use PBSS5240 1pcs : (with airflow)

```
CPUFAN_VCC=12V: Temp=33 deg
CPUFAN_VCC=11V: Temp=62 deg
CPUFAN_VCC=10V: Temp=86 deg
CPUFAN_VCC= 9V: Temp=117 deg
CPUFAN_VCC= 8V: Temp>122 deg
```

+12V不需預留330uF電容

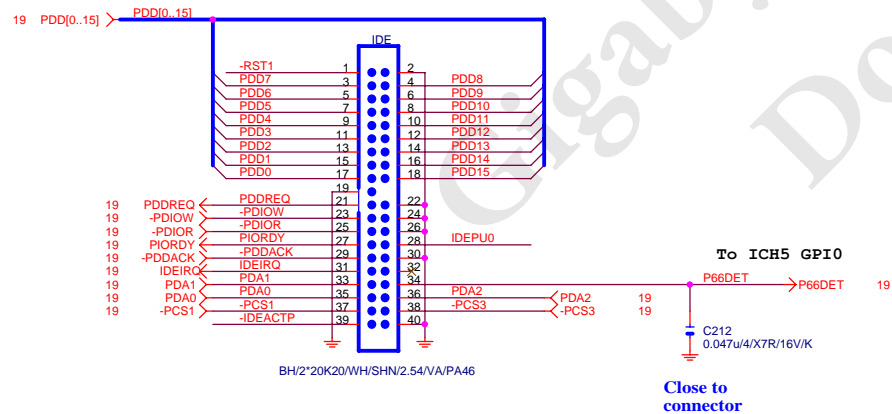
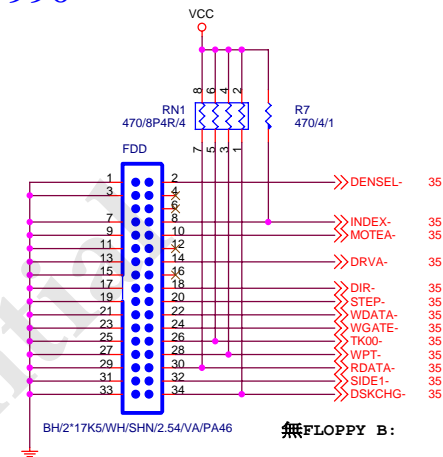
REV:1.0

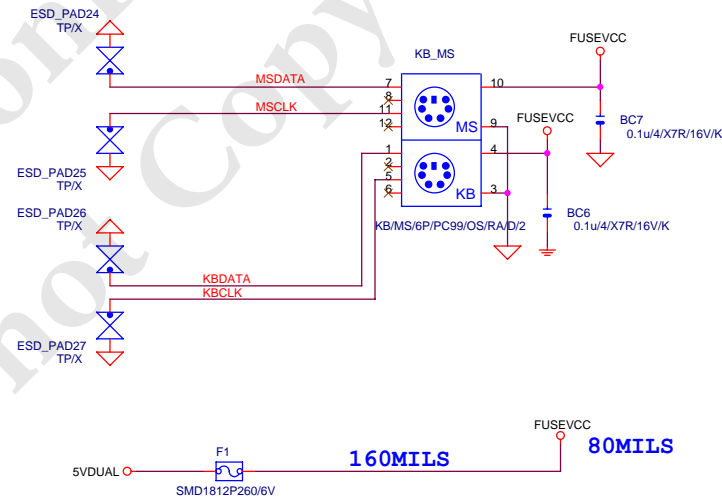
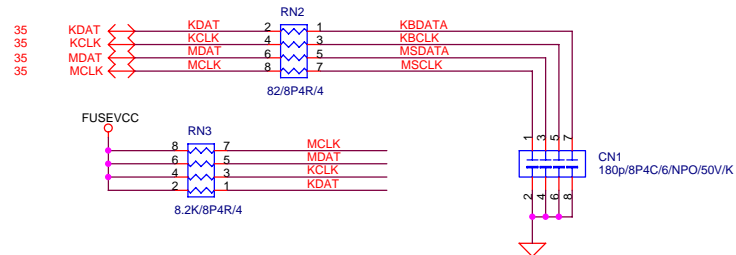
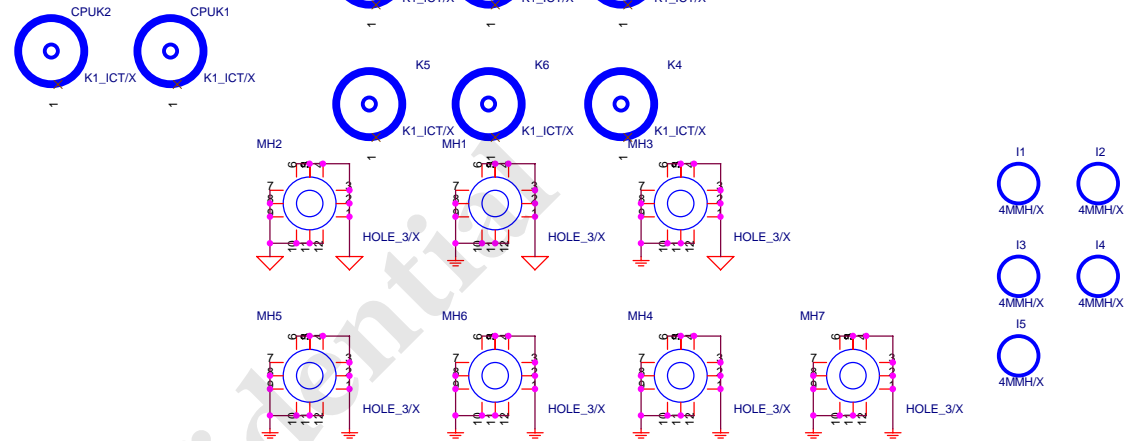
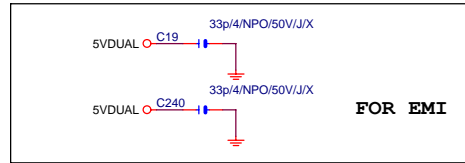


HWM/FAN/CI

1.3

2	1
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GIGABYTE CORP.

Title

KB & PS2 MOUSE

Size B

Document Number

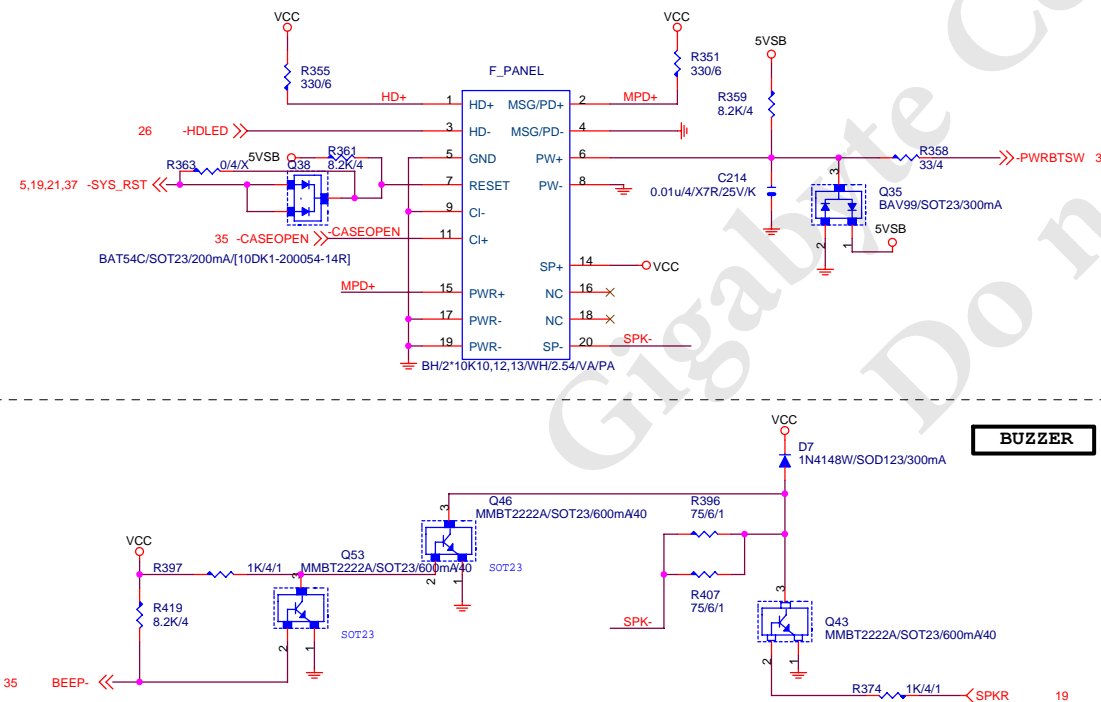
GA-EP41T-UD3L

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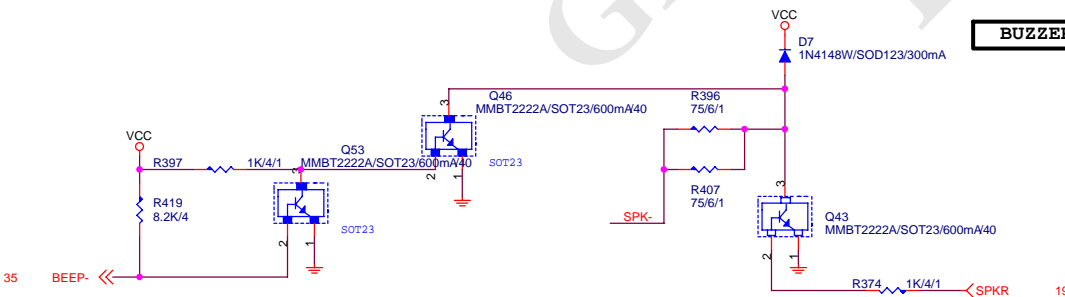
Date:

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INTEL FRONT PANEL



BUZZER

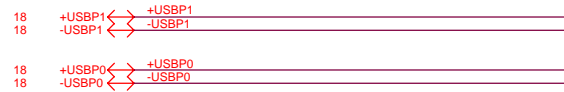


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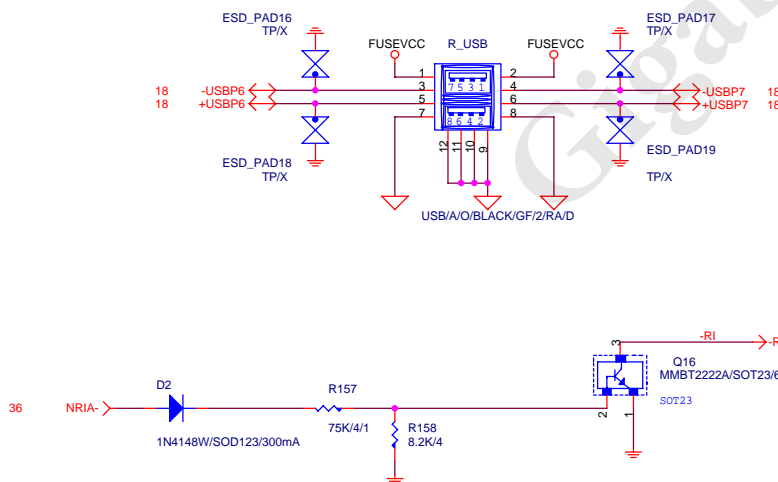
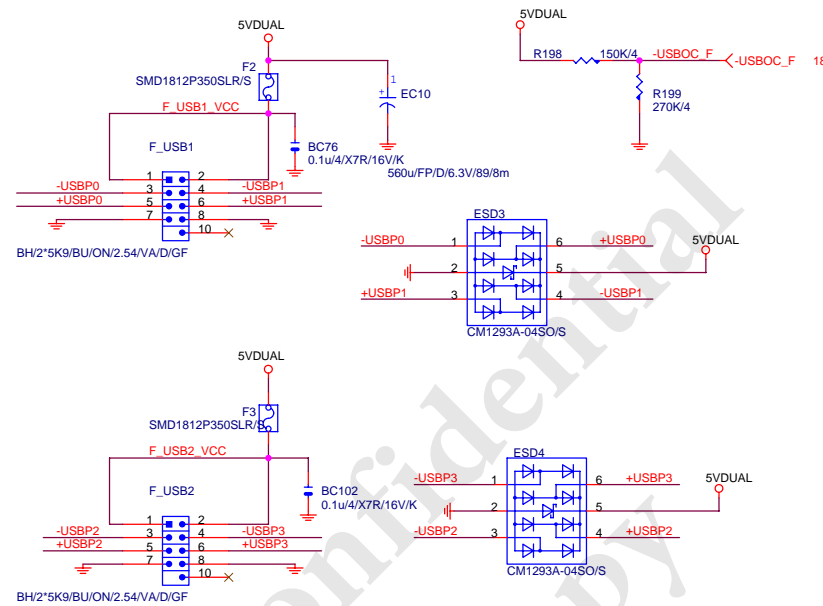
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FRONT PANEL			
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FRONT USB

90欧姆: [15/4.5/7.5/4.5/15]



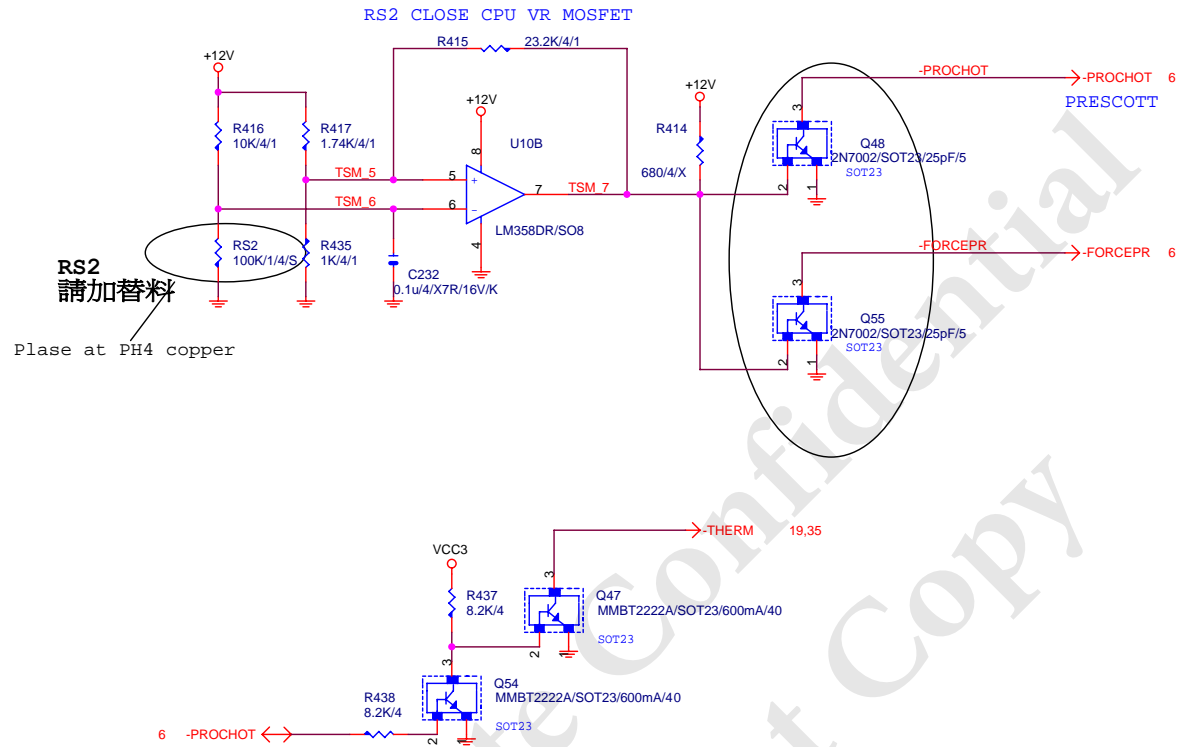
90欧姆: [15/4.5/7.5/4.5/15]

FOR 882 EMI
靠近USB

靠近FRONT USB

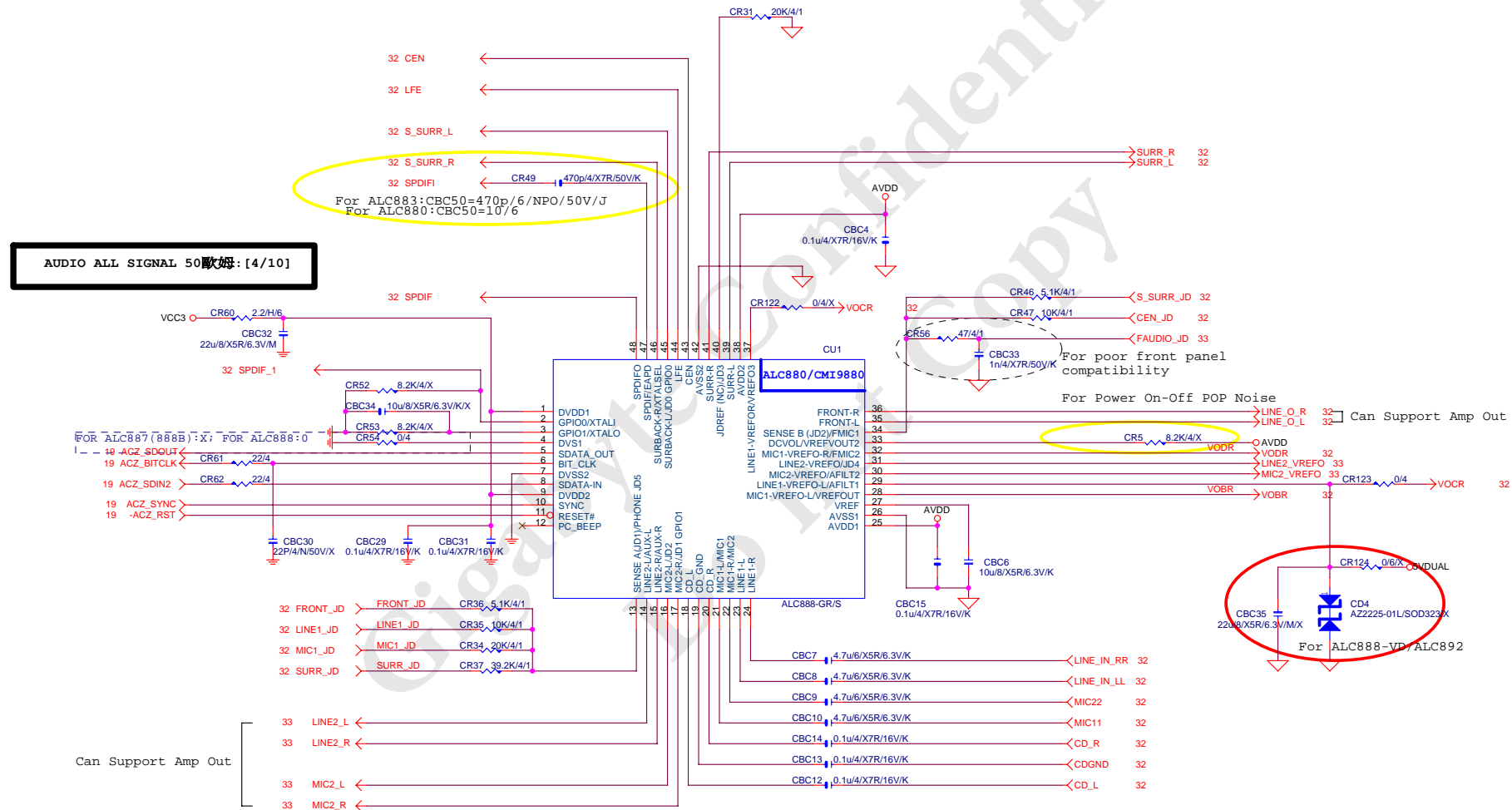
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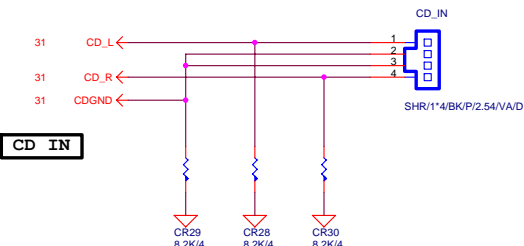
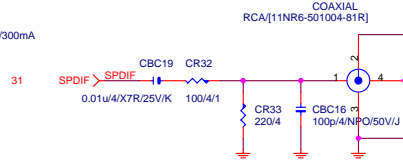
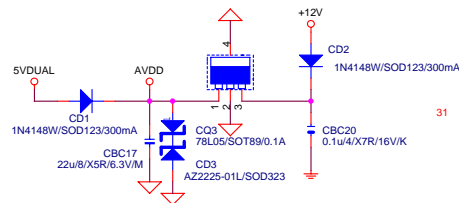
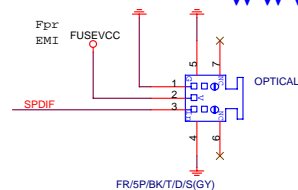
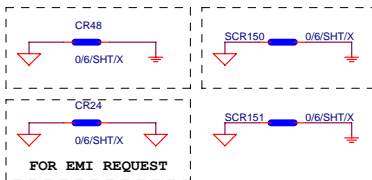
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FRONT USB CONNECTOR			
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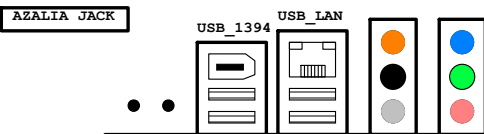
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PROCHOT			
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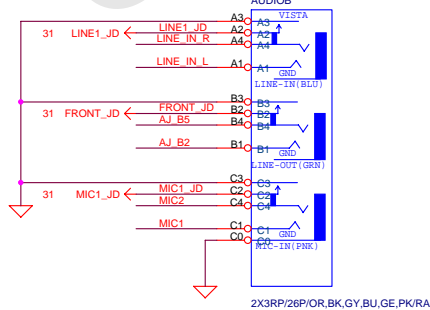
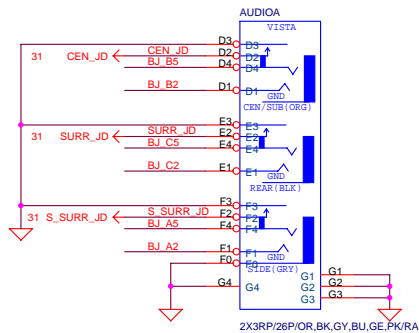
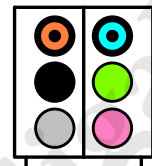


47Kohm For CMI9880
8.2Kohm for ALC880

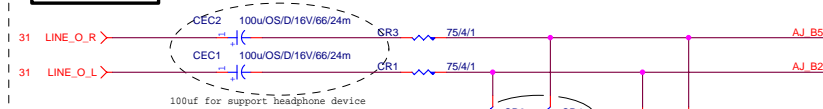
-SUR DET: cable detect to SB or I/O
insert cable : low
default : high



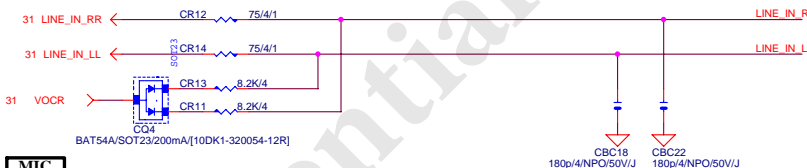
BTX AZALIA CONNECTOR



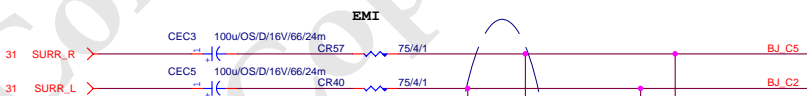
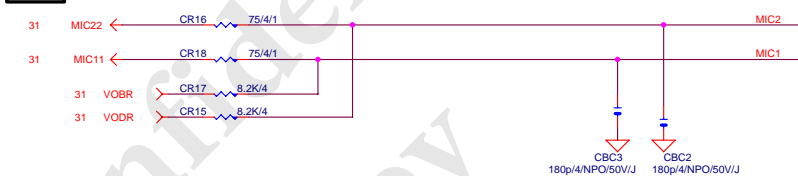
FRONT OUT



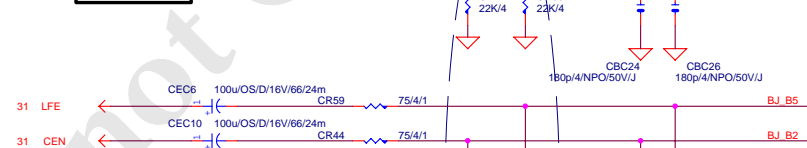
LINE-IN



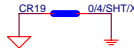
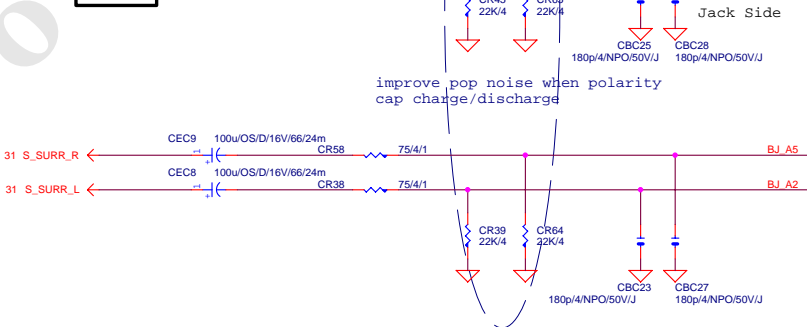
MIC



SURROUND

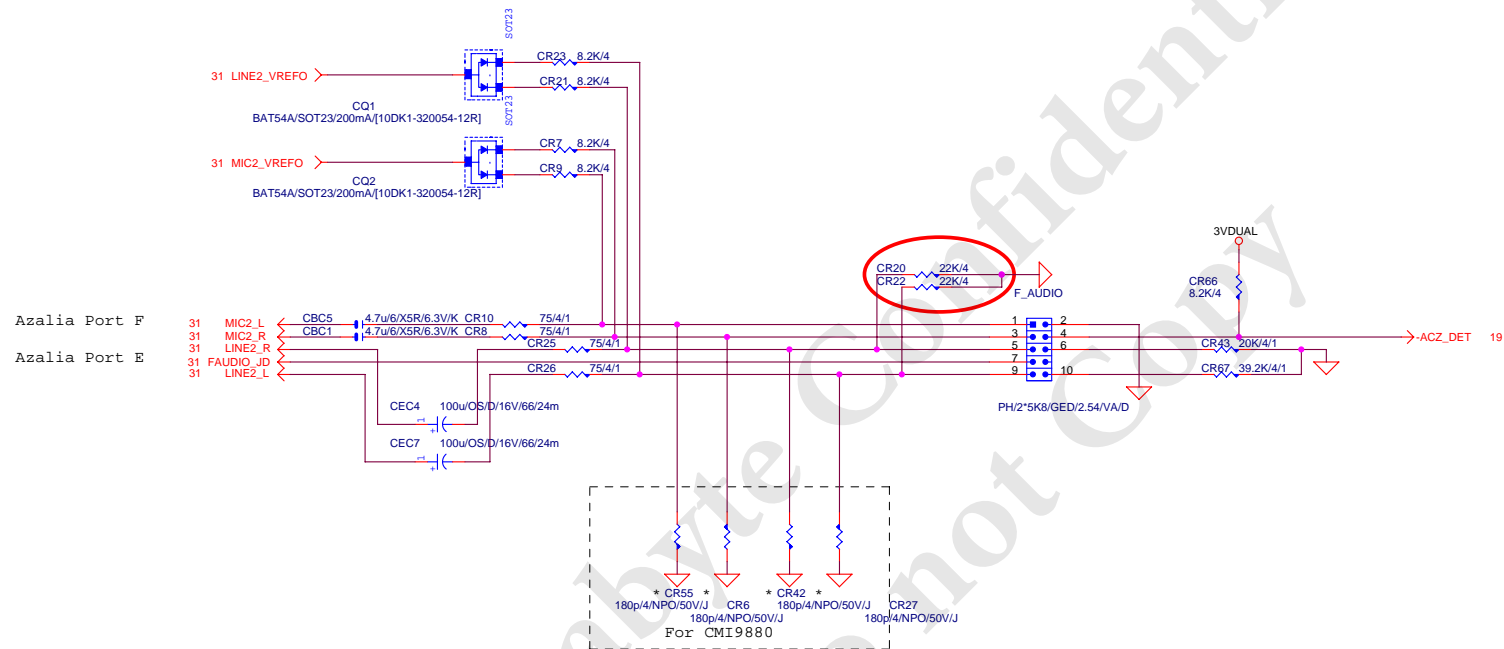


CEN/LFE



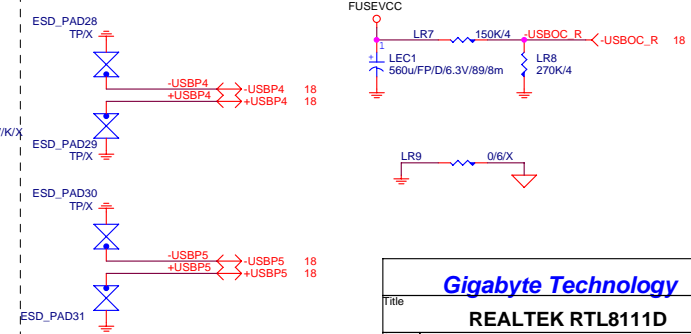
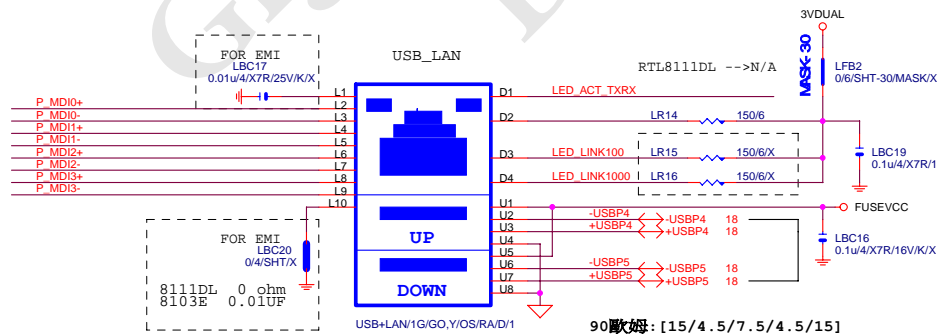
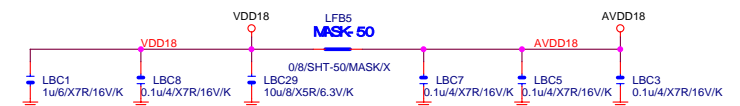
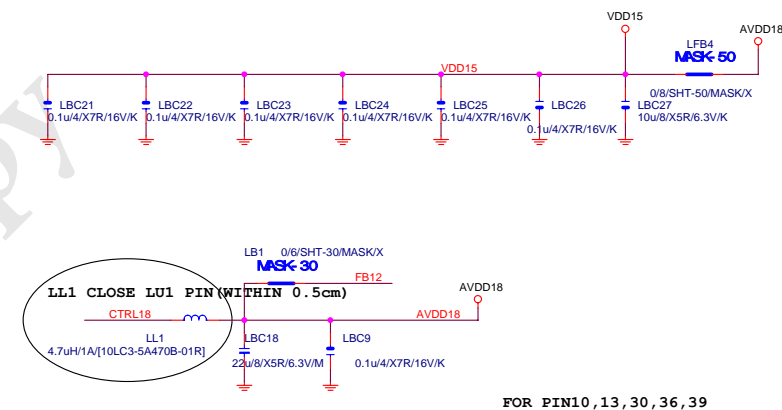
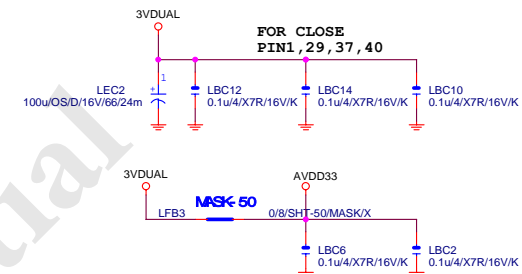
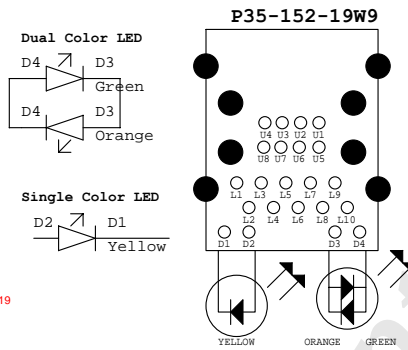
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Title		
AUDIO JACK		
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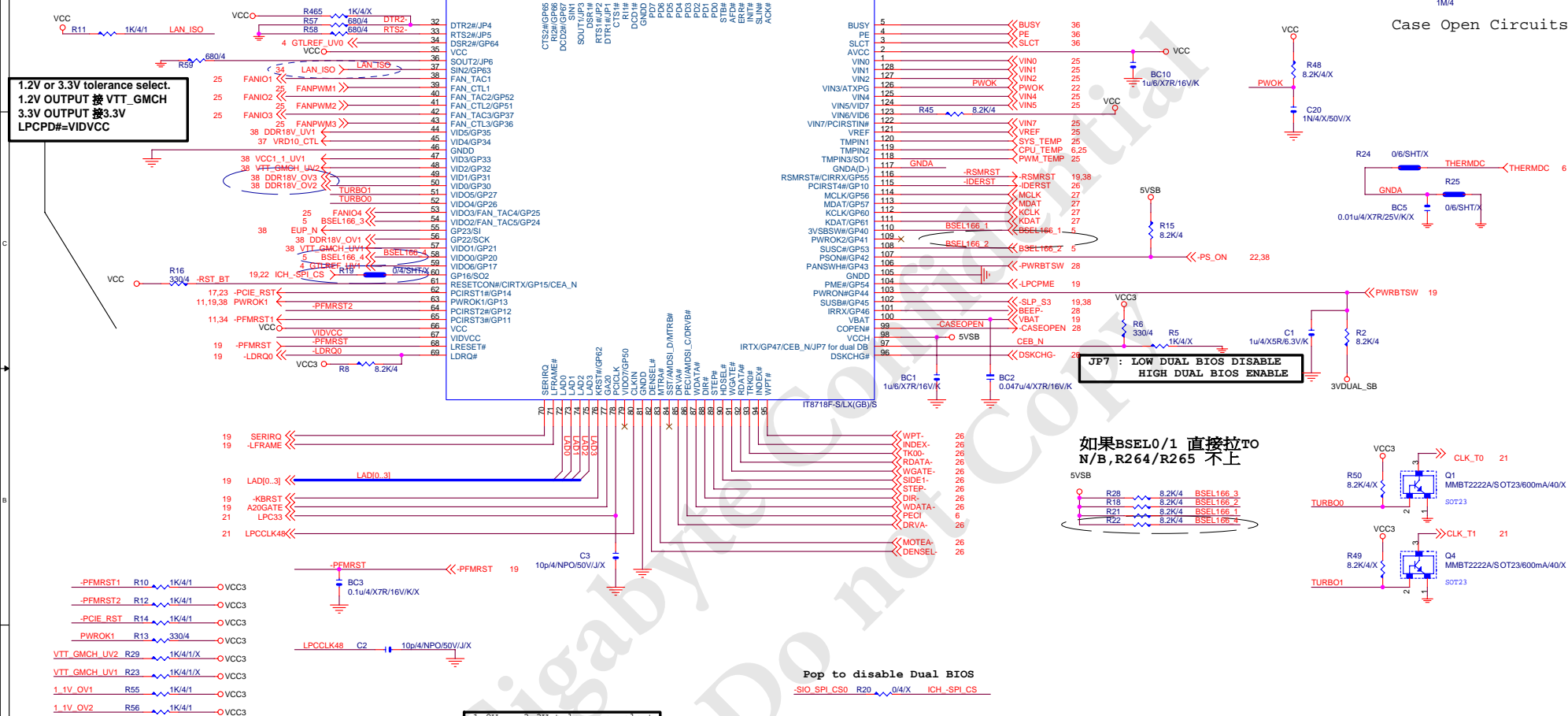
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Title			
FRONT AUDIO CONNECTOR			
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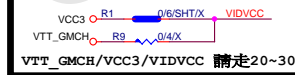
RTS2- ==LOW CPU FAN 50%
==HIGH 100%

SOUT2	1	VID pins threshold voltage select: Vih / Vil : 2.0 / 0.8V
	0	VID pins threshold voltage select: Vih / Vil : 0.8 / 0.4V

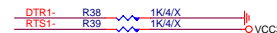


SOUT2	1	VID pins threshold voltage select: Vih / Vil : 2.0 / 0.8V
	0	VID pins threshold voltage select: Vih / Vil : 0.8 / 0.4V

DTR2-	1	Open Drain pin: Driving 軟弱
	0	Push-pull Pin: Driving 軟弱
RTS2-	1	CPU FAN 100%
	0	CPU FAN 50%



DTR1-: Low SPI flash enable
RTS1-: Low SPI flash FOR SO2

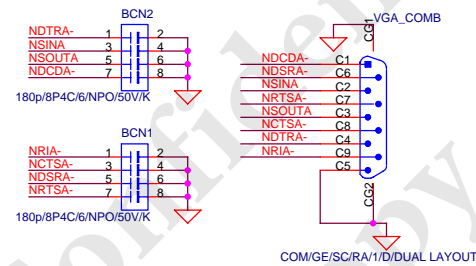
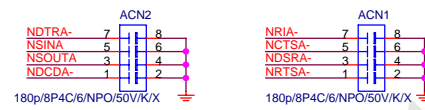
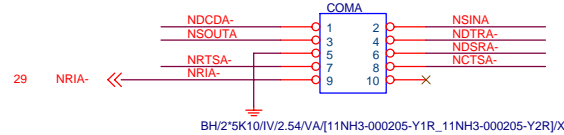
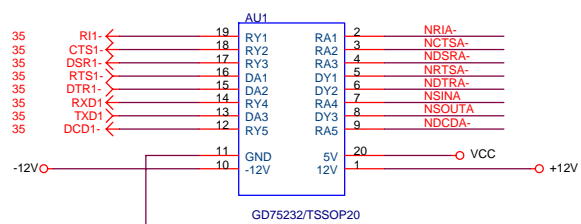


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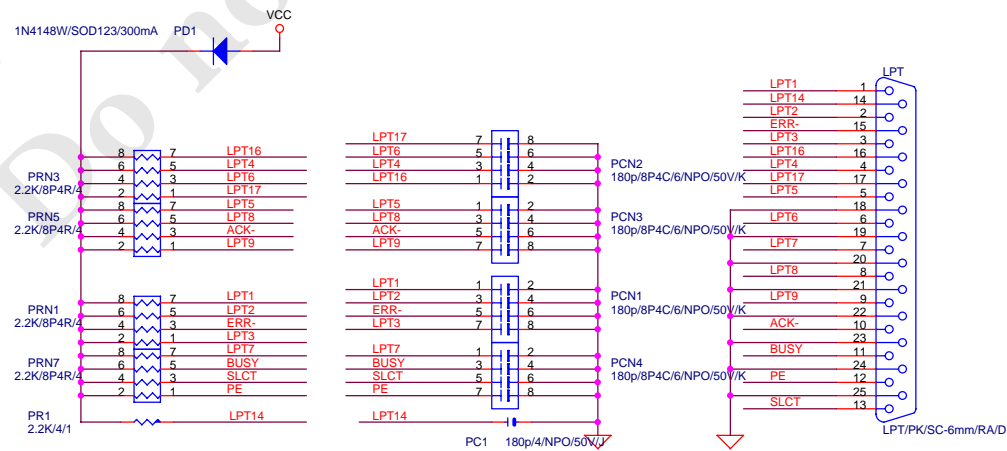
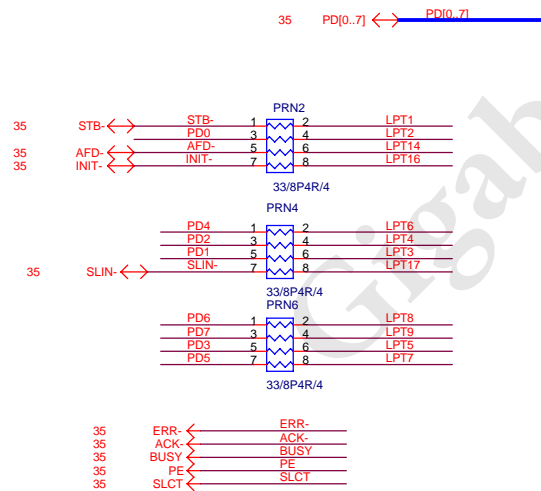
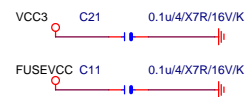
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ITE 8718 LPC IO

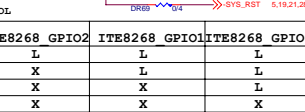
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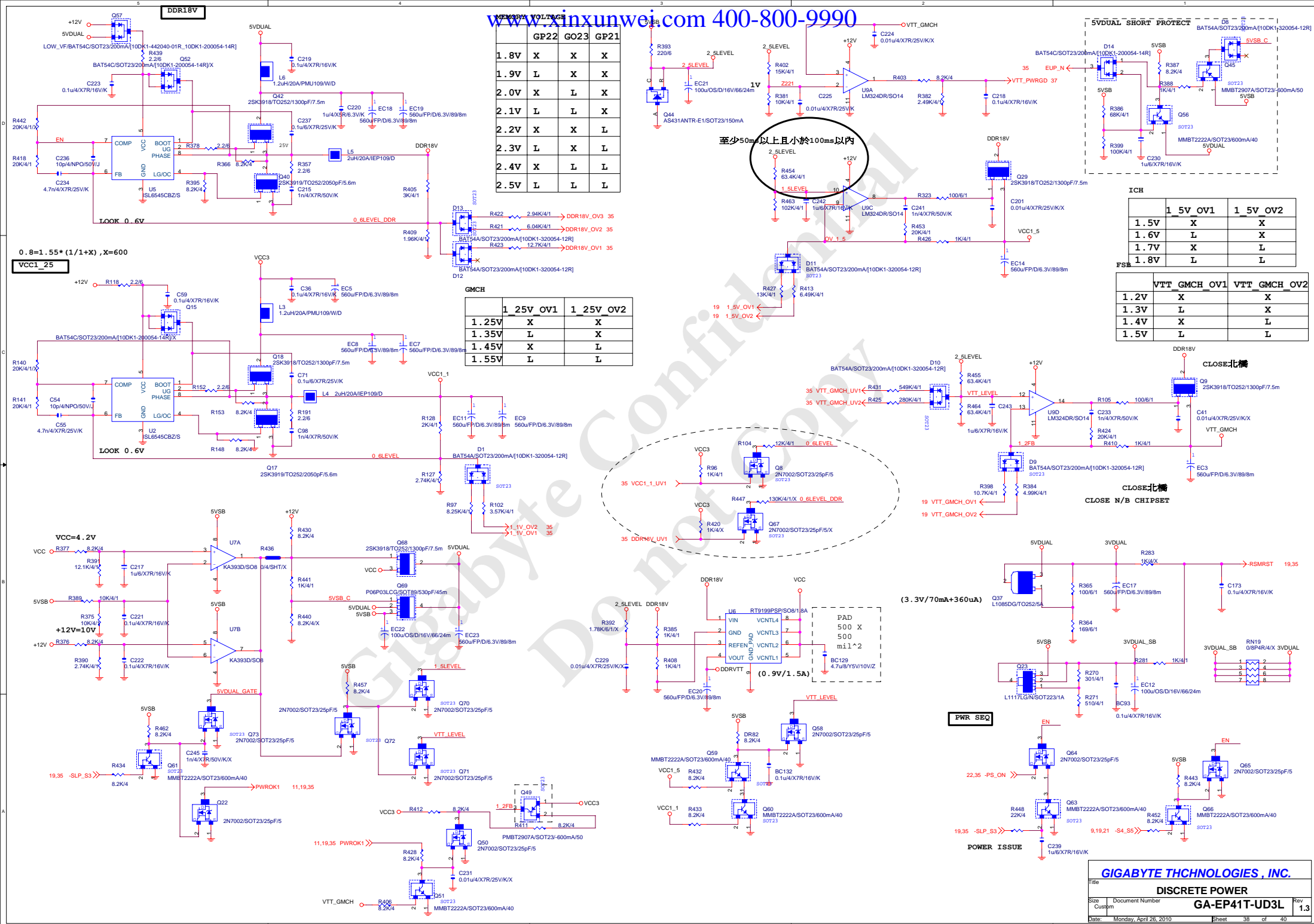


PLACE NEAR VGA_COM CONNECTOR





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ICH7 GPIO Table:

NAME	PWR LANE	USAGE	NAME	PWR LANE	USAGE
GPI0	V5REF	M/B ID (-REQ6)	GPI41	VCC3	M/B ID
GPI1	V5REF	-REQ5	GPO48	VCC3	-GNT4
GPI2	V5REF	-PIRQE	GPO49	V-CPUIO	CPUPWOK
GPI3	V5REF	-PIRQF			
GPI4	V5REF	-PIRQG			
GPI5	V5REF	-PIRQH			
GPI6	VCC3	-SLP_BTN			
GPI7	VCC3	DUAL BIOS			
GPI8	3VDAUL	-LANWAKE			
GPI9	3VDAUL	-USBOC4			
GPI10	3VDAUL	-USBOC5			
GPI11	3VDAUL	-SMBALT			
GPI12	VCC3	ATX_DET			
GPI13	3VDAUL	-LPCPME			
GPI14	3VDAUL	-USBOC6			
GPI15	3VDAUL	-USBOC7			
GPO16	VCC3	CPU OV1 (-GNT6)			
GPO17	VCC3	-GNT5			
GPO18	VCC3	CPU OV2			
GPO19	VCC3	DUAL BIOS			
GPO20	VCC3	BIOS T-BLOCK			
GPO21	VCC3	DUAL BIOS			
GPO23	VCC3	DDR OV0			
GPI024	3VDAUL	GREEN LED			
GPI025	3VDAUL	DDR OV1			
GPI26	VCC3	SATA_GP0			
GPI027	3VDAUL	+PWRLED			
GPI028	3VDAUL	-PWRLED			
GPI29	VCC3	SATA GP1			
GPI30	VCC3	SATA GP2			
GPI31	VCC3	SATA GP3			
GPI032	VCC3	BIOS WP			
GPI033	VCC3	AZALIA DET			
GPI034	VCC3	PWRLED			
GPI40	V5REF	-REQ4			

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PWROK/RESET Table:

ITE8712BHX PIN	NET NAME	TARGET
PIN62/-PCIRST1	-PCIE_RST	1. PCI-E * 1 Slot1 2. PCI-E * 1 Slot2 3. PCI-E * 1 Slot3 4. PCI-E * 16 Slot
PIN64/-PCIRST2	-PFMRST2	1. Onboard PCI Lan 2. Onboard 1394 Chip 3. OnBoard FWH
PIN65/-PCIRST3	-PFMRST1	1. Onboard PCI-E Lan 2. Onboard SATA Chip 3. GMCH
PIN115/-PCIRST4	-PFMRST -IDERST	Reserved For IDE
PIN63/PWROK1	PWROK1	1. GMCH 2. ICH6 3. 5VDUAL SWITCH 4. DPS CONTROL
PIN109/PWROK2	-THERM	1. ICH6

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