

# Model Name : GA-945PL-S3

SHEET TITLE

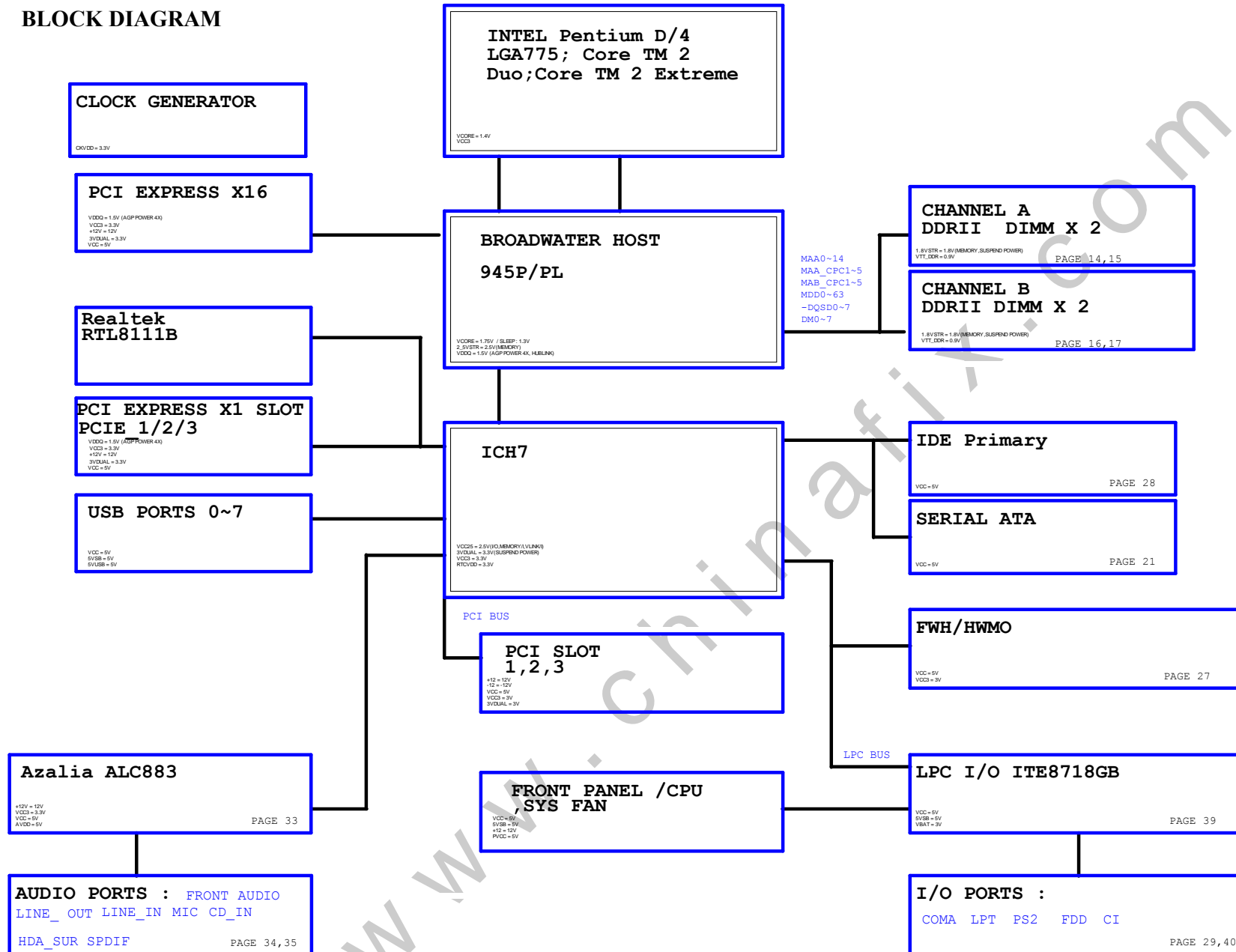
SHEET TITLE

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02	BLOCK DIAGRAM
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05	L775 B,D
06	L775 C
07	L775 E,F,G,H
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09	BROADWATER DDR
10	BROADWATER PCI EXP 16,DMI
11	BROADWATER VGA,MISC
12	BROADWATER GND
13	BROADWATER PWR
14	DDR II CHANNEL A-SHARE 1,2
15	DDR II CHANNEL B-SHARE 3,4
16	DDR II TERMINATION
17	PCI EXPRESS*16 SLOT
18	ICH7 DMI, PCI, USB
19	ICH7 IDE, GPIO, SATA, CTRL
20	ICH7 VCC, GND
21	ICS954148AF CLOCK.
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23	PCI EXPRESS*1 SLOT 1,2,3
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28	FRONT PANEL
29	FRONT USB,REAL USB CONNECT
30	PROCESSOR HOT
31	ALC883
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40	GPIO DEFINE
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# BLOCK DIAGRAM



Model Name:GA-945PL-S3  
PCB :1.01  
BOM :9M945PLS3R-00-10C

# Component value change history

2006

Data	Change Item	Reason
1.0A	EVT Release	
1.0B	1. PCB Rev1.0 --> REv1.01	
	2. ADD R2007 8.2K/4	
	3. DDRVTT EC32 1000uF REMOVE	
	4. ATX : 11NH4-020024-71R-->11NH4-020024-81R~84R	
	5. PWM 溫度補償 DR68 200/6 --> 300/6	
	6. PROCHOT TEMP R379 2K/6/1 --> 1.78K/6/1	
	7. LAN LED REMOVE LD1 , ADD LR20	
	8. PROCHOT & STPCLK D13=BAT54A REMOVE	
	9.包材修改	
	10.ADD R101 30/6/1 COMP8	
	11.REMOVE PCI_BT1,PCI_BT2,PCI_BT2 Jump,Add R233 1K/4	
	12.Modified R169 22k/4,R1898.2k,BC51 1uf for Conroe CPU FSB ratio issue	
	13.Add BC79,BC84 0.1UF/6 CAP	
95/07/24	1.發ECN BOM. DEL R458,ADD R459,LBC35,LBC45,LBC55,LEC4,LEC6	
	2.發ECN BOM.修改R62替料27R-->26R;BC461,BC464,BC465,BC467增加 X7R替料	
95/07/25	1.發ECN BOM.修改包材替料及增加大陸PCB板廠	
95/07/28	1. BOM10B-->10C; DEL R458,ADD R459,LBC35,LBC45,LBC55,LEC4,LEC6	
	2.修改R62替料27R-->26R;BC461,BC464,BC465,BC467增加 X7R替料	
	3.修改包材替料及增加大陸PCB板廠	
95/08/18	1.發ECN BOM.增加CPU DIP SOCKET替料	

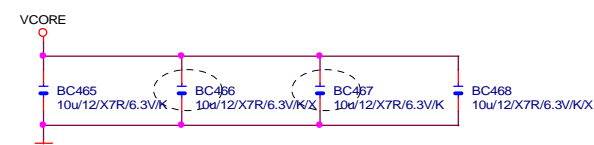
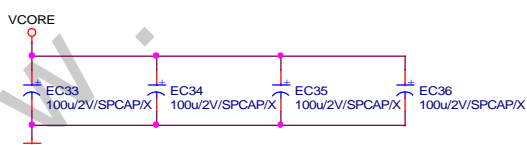
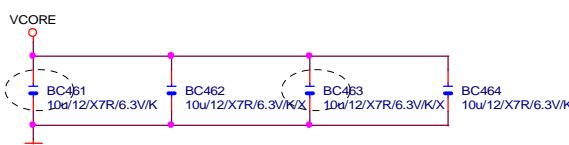
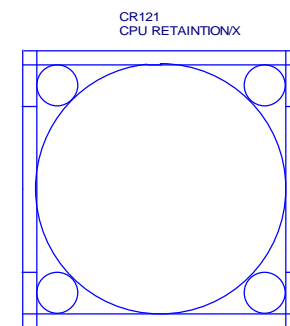
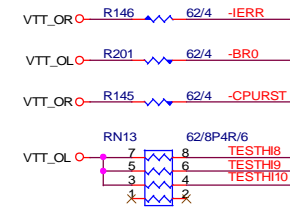
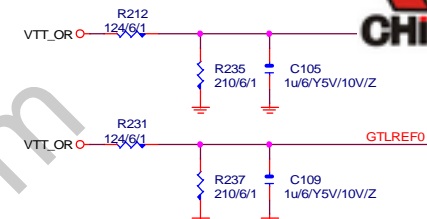
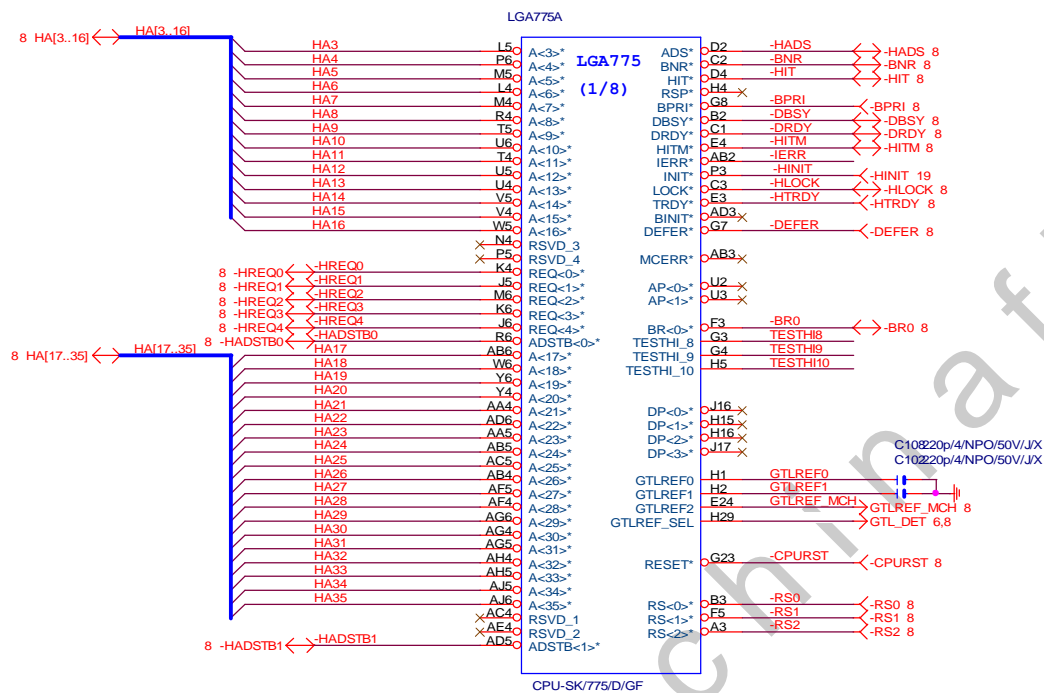
## Circuit or PCB layout change for next version

DATE	Change Item	Reason
1.0	1. GA-946PL-S3 Rev1.01 --> GA-945PL-S3 Rev1.0	
1.01	文字面 Dual Channel DDRII移除	
	LAN LED LD1 REMOVE	

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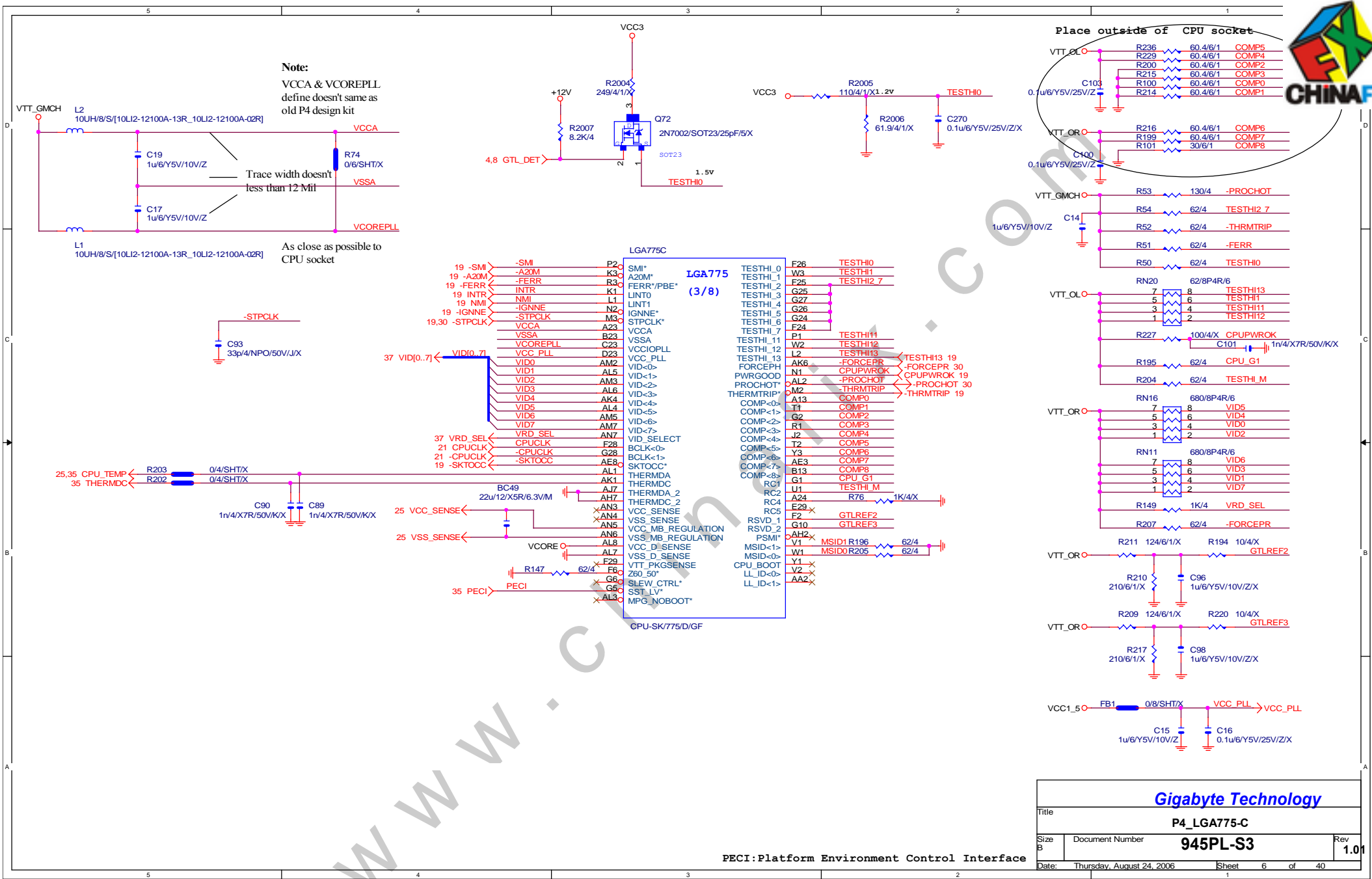
Title			BOM & PCB MODIFY HISTORY	
Size	Document Number	945PL-S3		Rev
Custom				1.01
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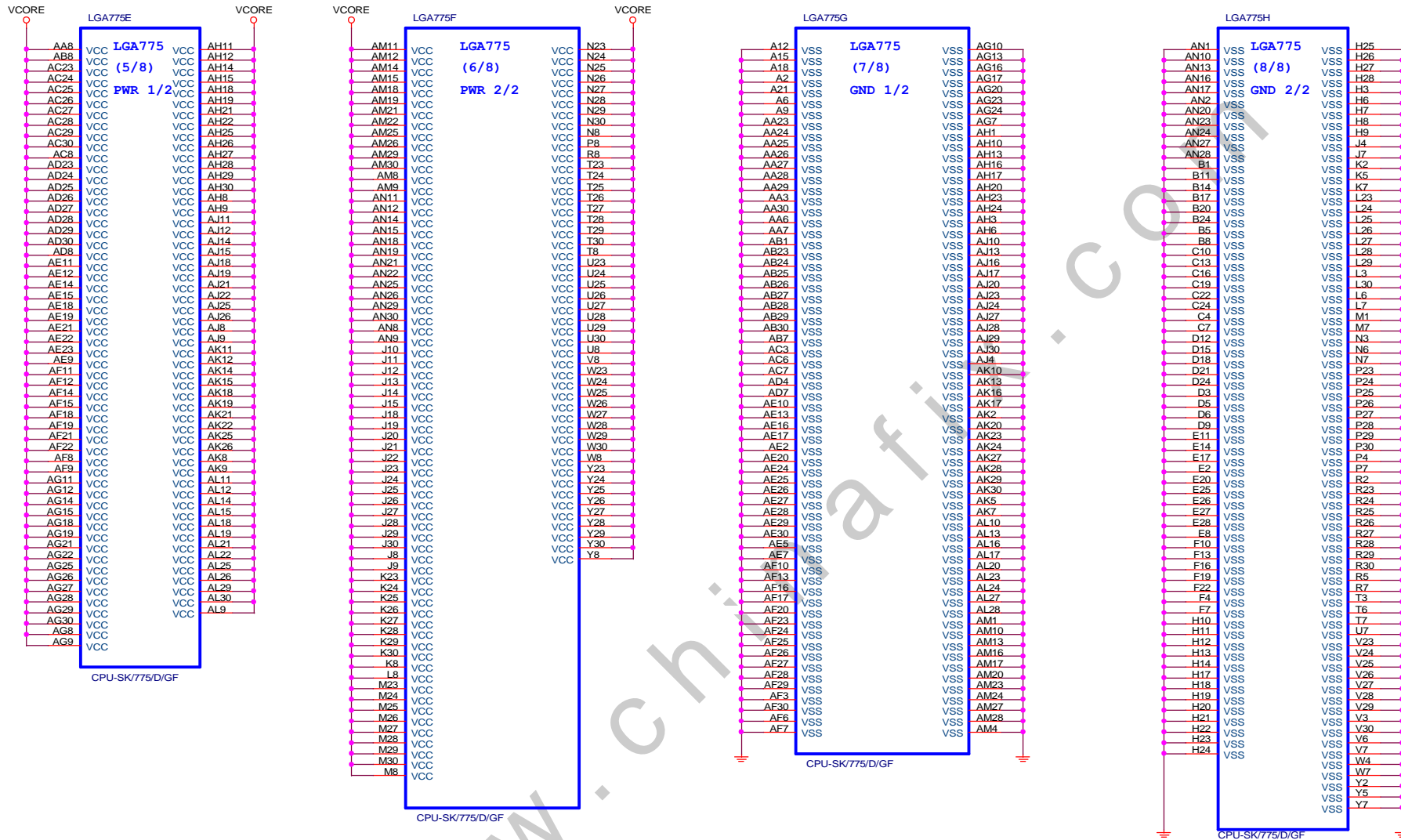
HA/REQ: 5/13  
ADSTB: 5/17

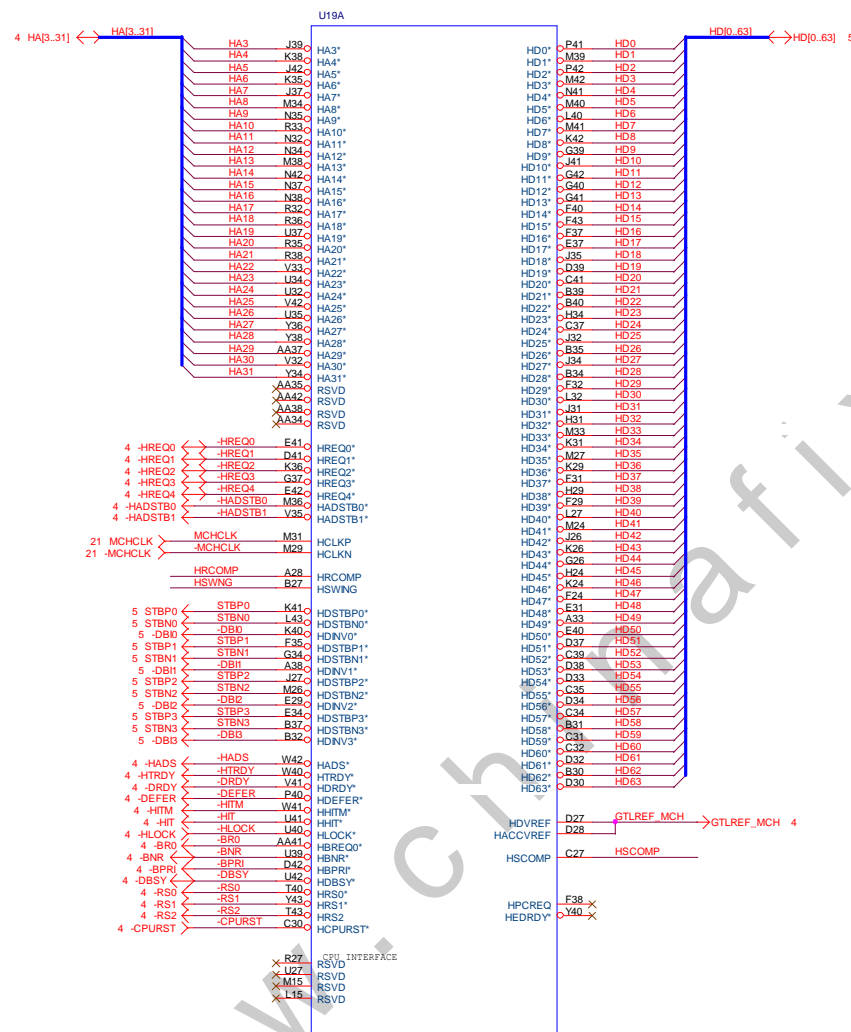


Gigabyte Technology			
Title			
P4_LGA775-A			
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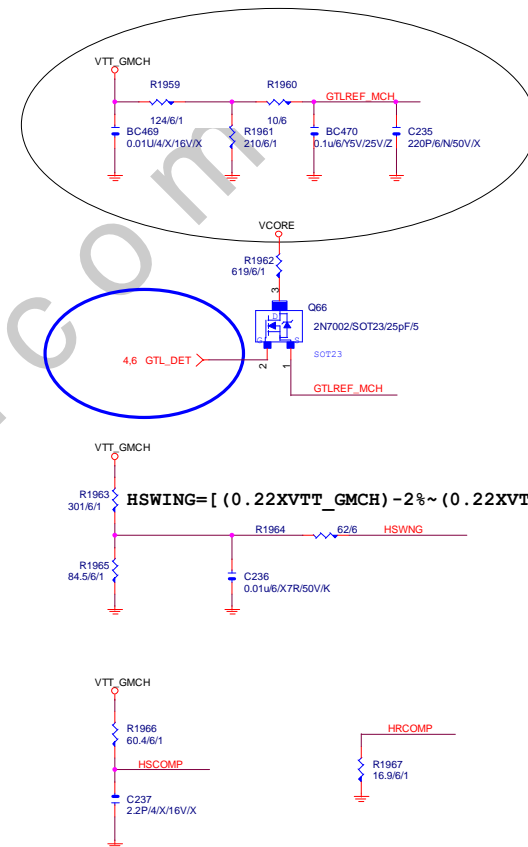






945PL-A1/BGA1202

10HB1-033000-11-REV:A1  
10HB1-033000-21-REV:A2 FOR ACER



$$HSWING = [ (0.22 \times V_{TT\_GMCH}) - 2\% \sim (0.22 \times V_{TT\_GMCH}) + 2\% ]$$



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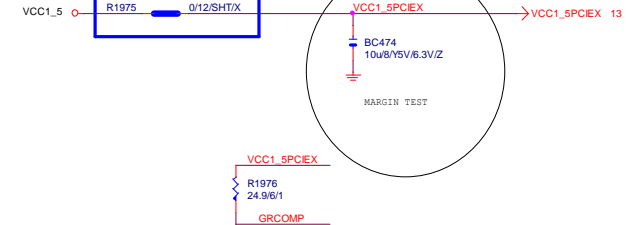
GMCH-HOST		
Title	Document Number	Rev
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100歐姆 : [20/5/7/5/20]

100歐姆 : [20/5/7/5/20]

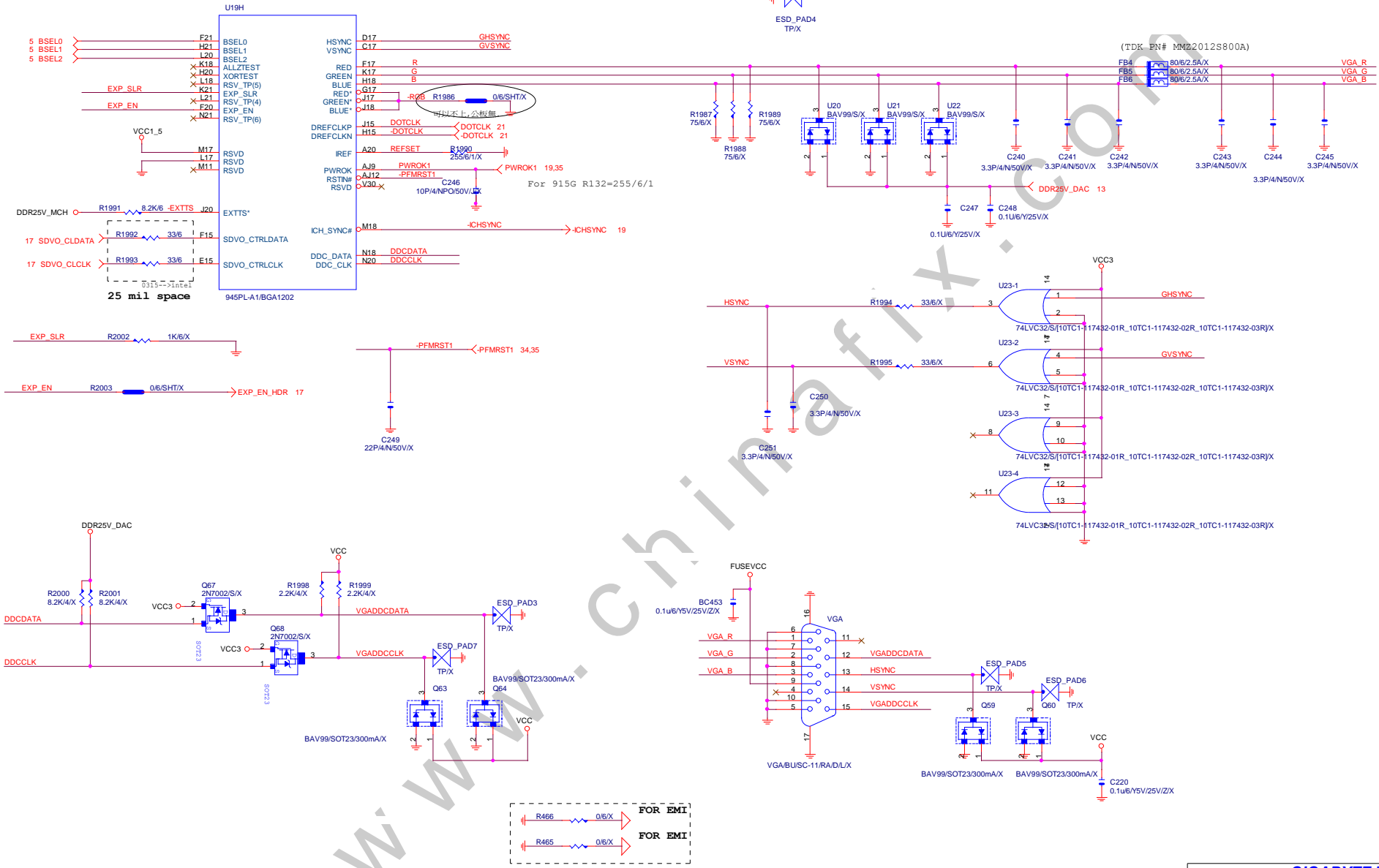
SPEC: 1.5A



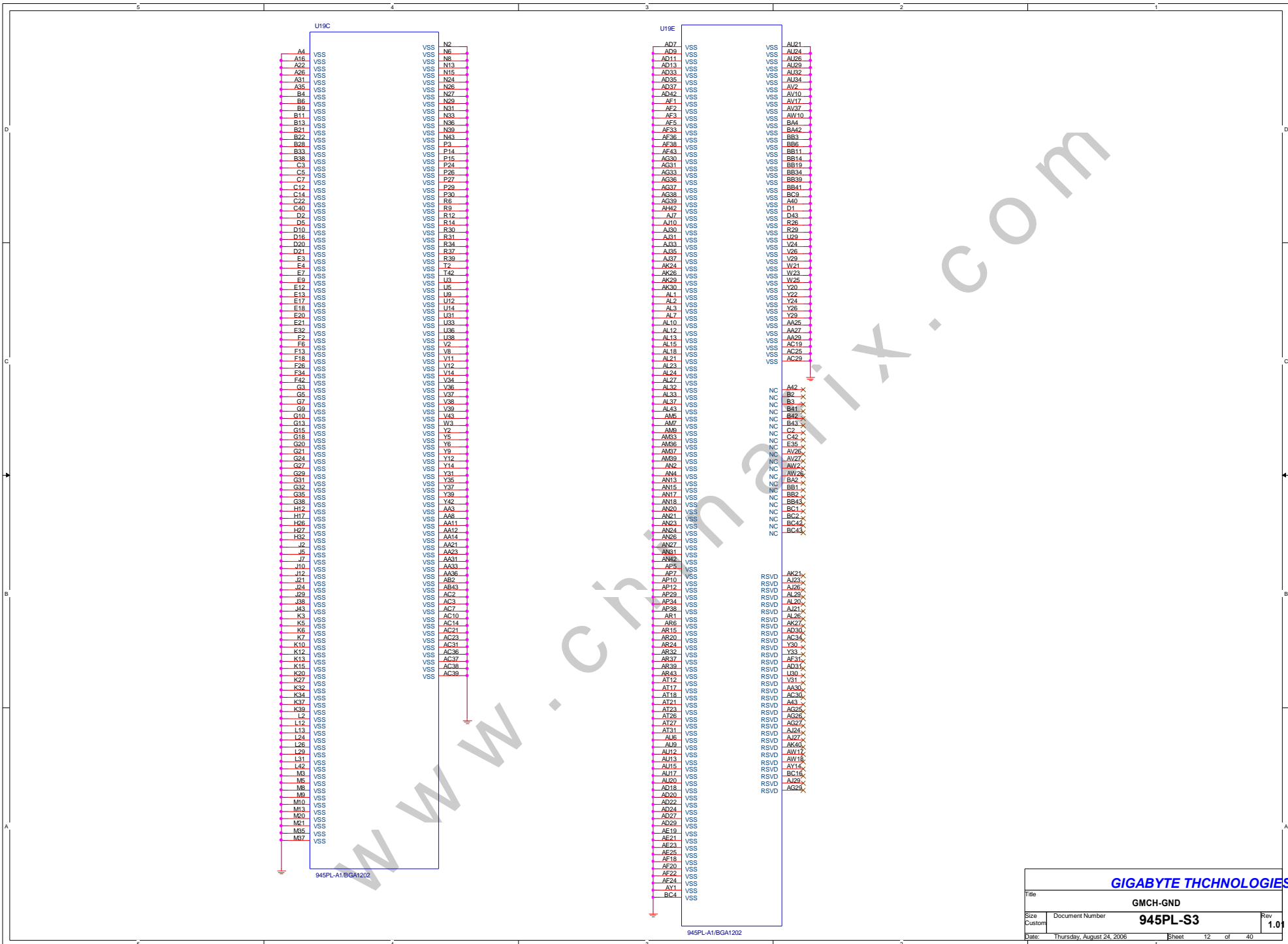
21 SRCLK\_MCH  
21 -SRCLK\_MCH

100歐姆 : [20/5/7/5/20]

945PL-A1/BGA1202



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GMCH-INTERNAL VGA			
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Custom			
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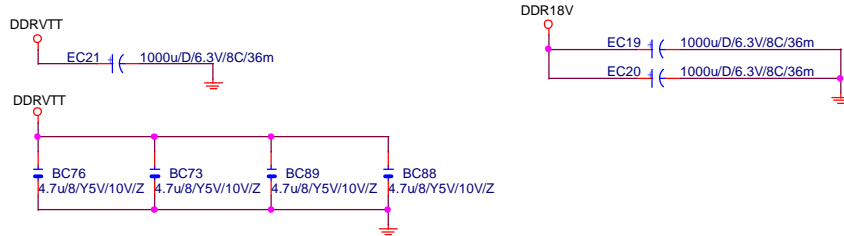






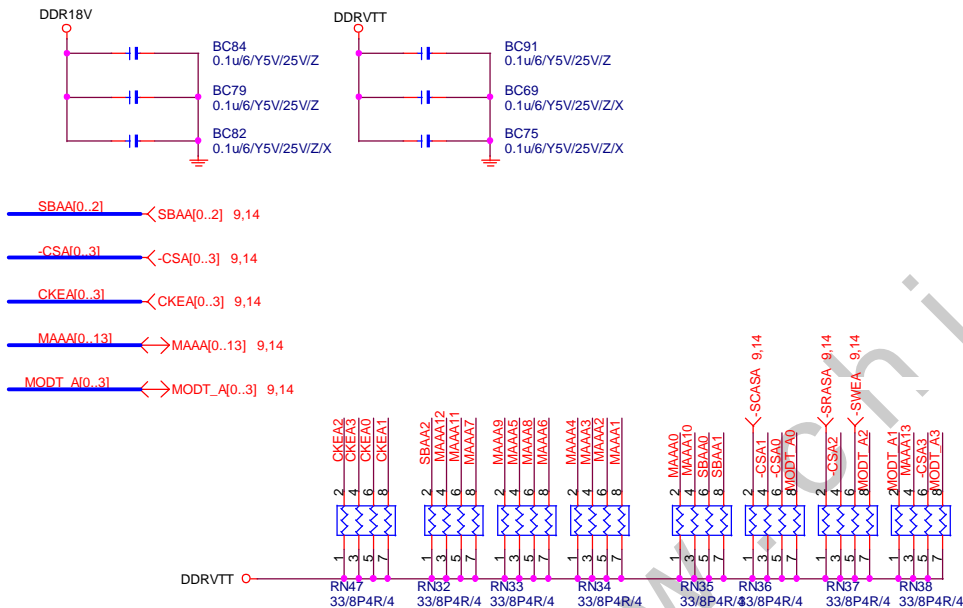
## DDR TERMINATION CHANNEL A

### DDRVTT Decouple



### DDR18V Decouple

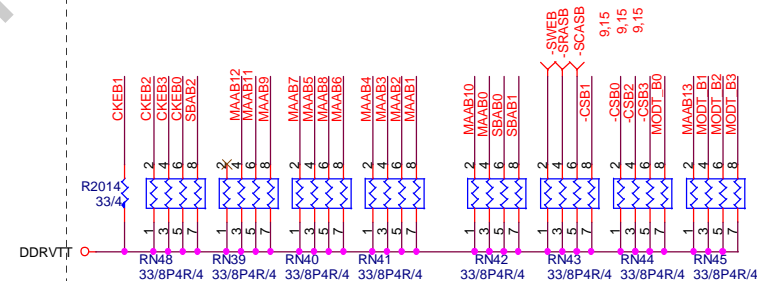
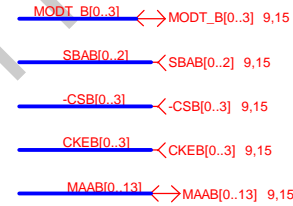
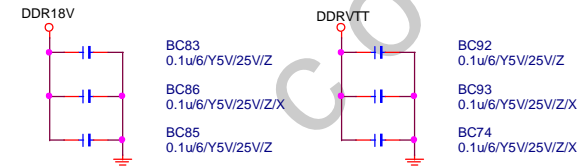
### DDRVTT Decouple



## DDR TERMINATION CHANNEL B

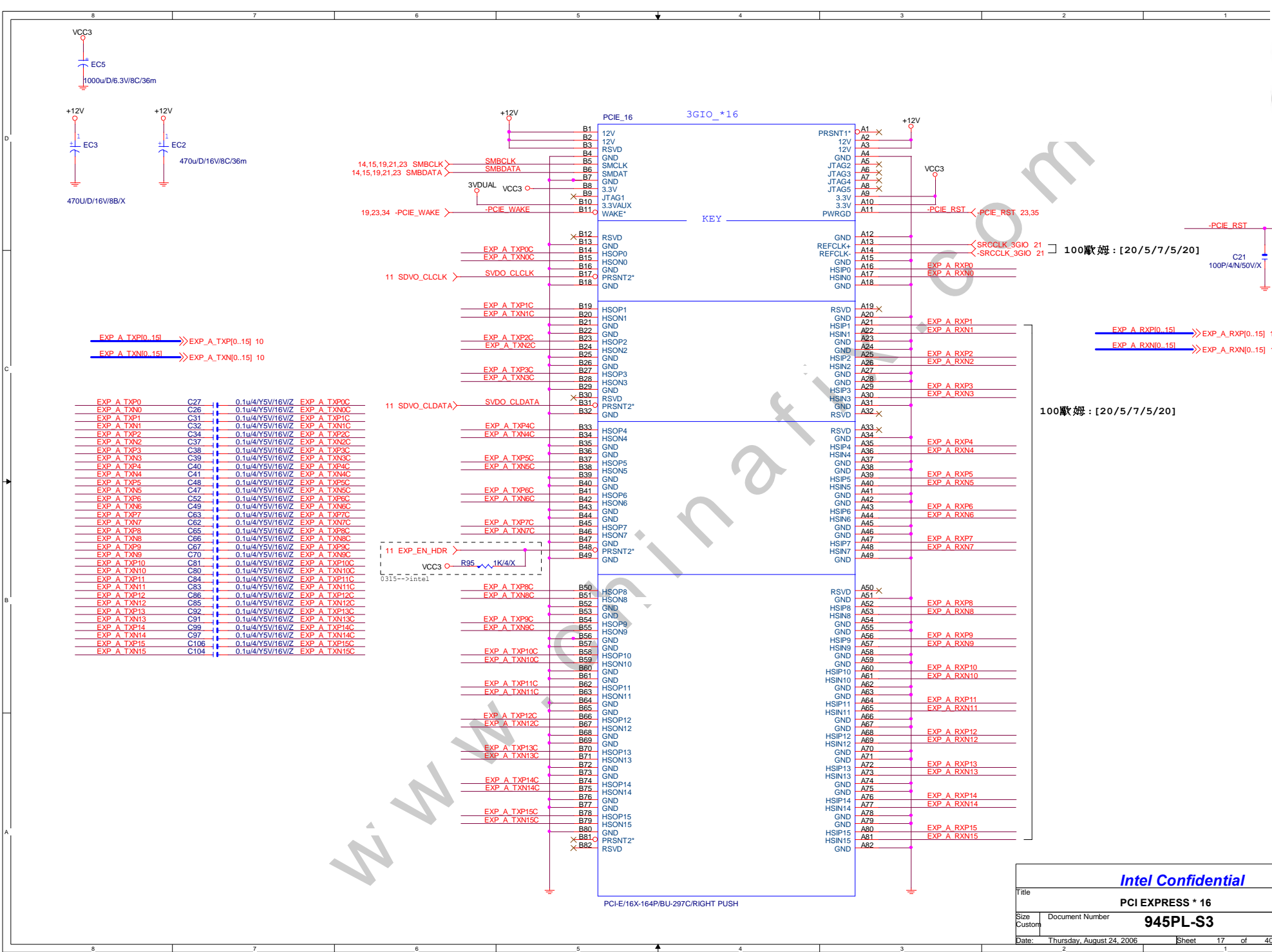
### DDR18V Decouple

### DDRVTT Decouple



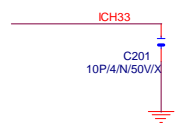
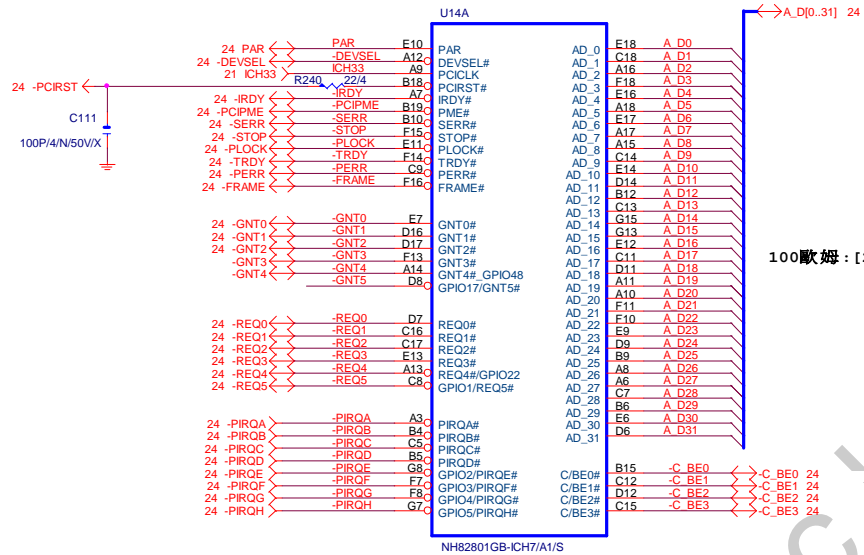
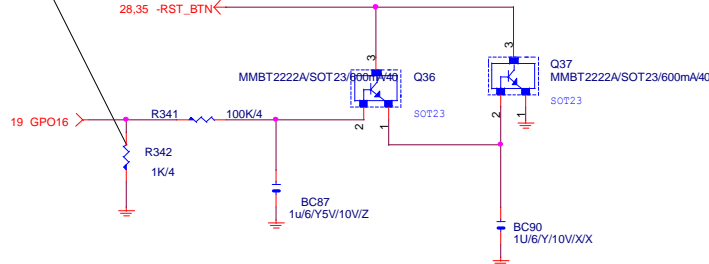
**Gigabyte Technology**

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

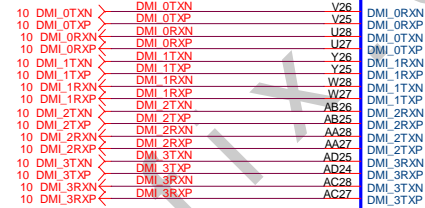
H/W  
RESET



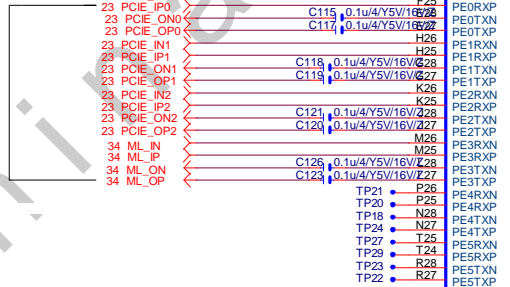
	GNT4#	GNT5#
SPI=	1	0
PCI=	0	1
LPC=	1	1



100歐姆 : [20/5/7/5/20]

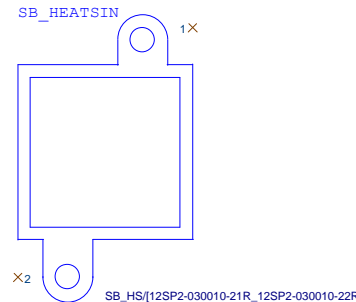
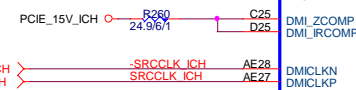
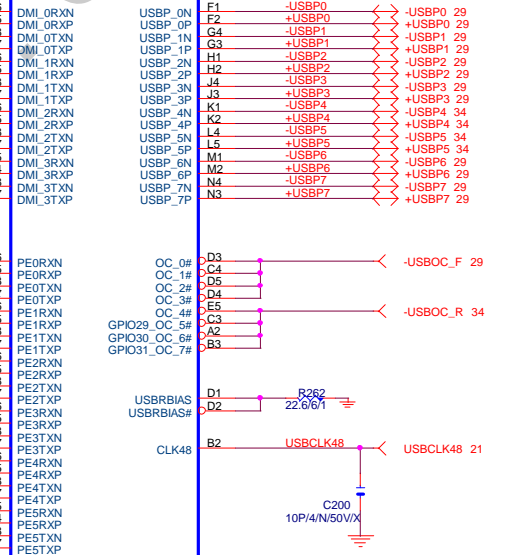


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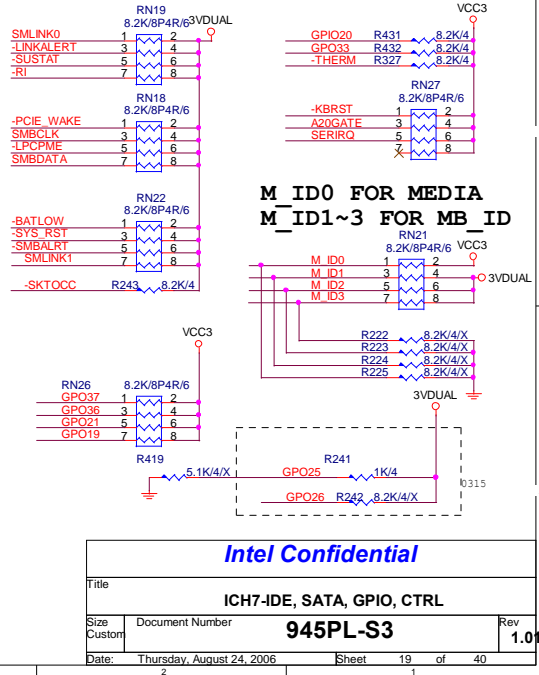
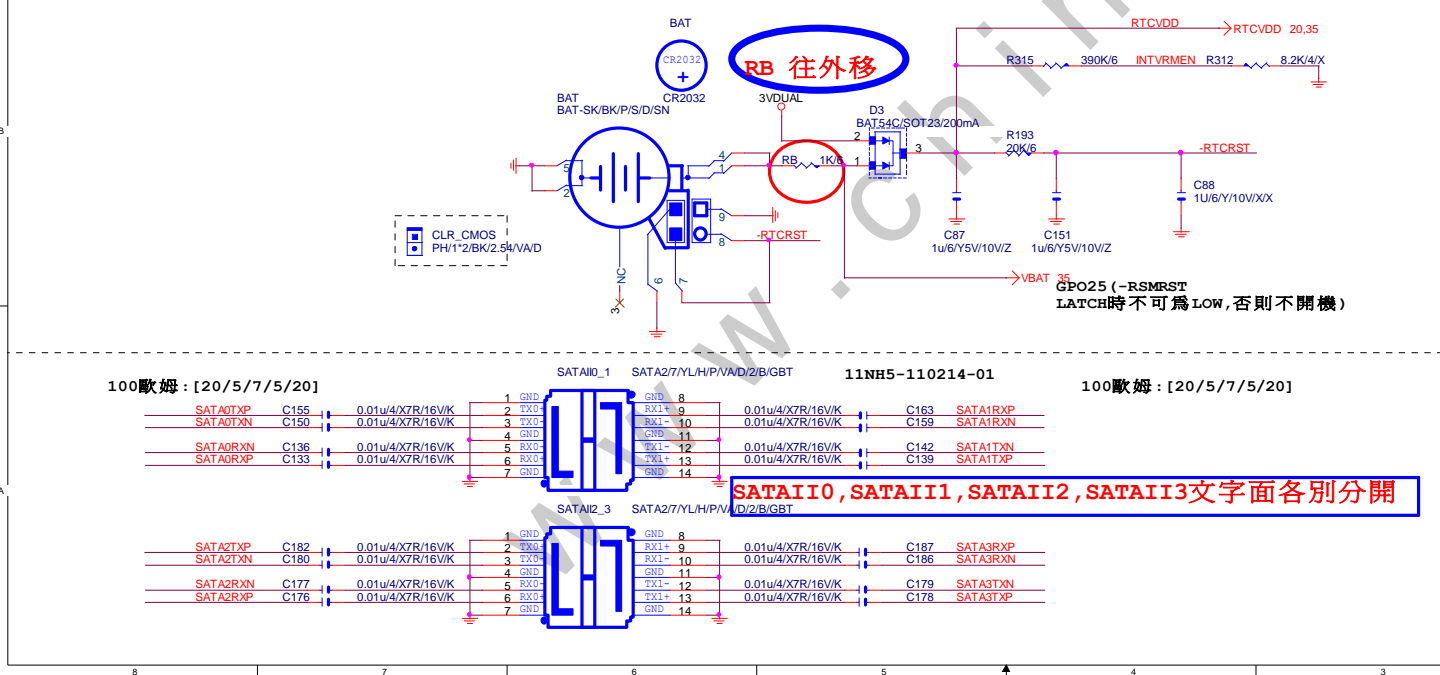
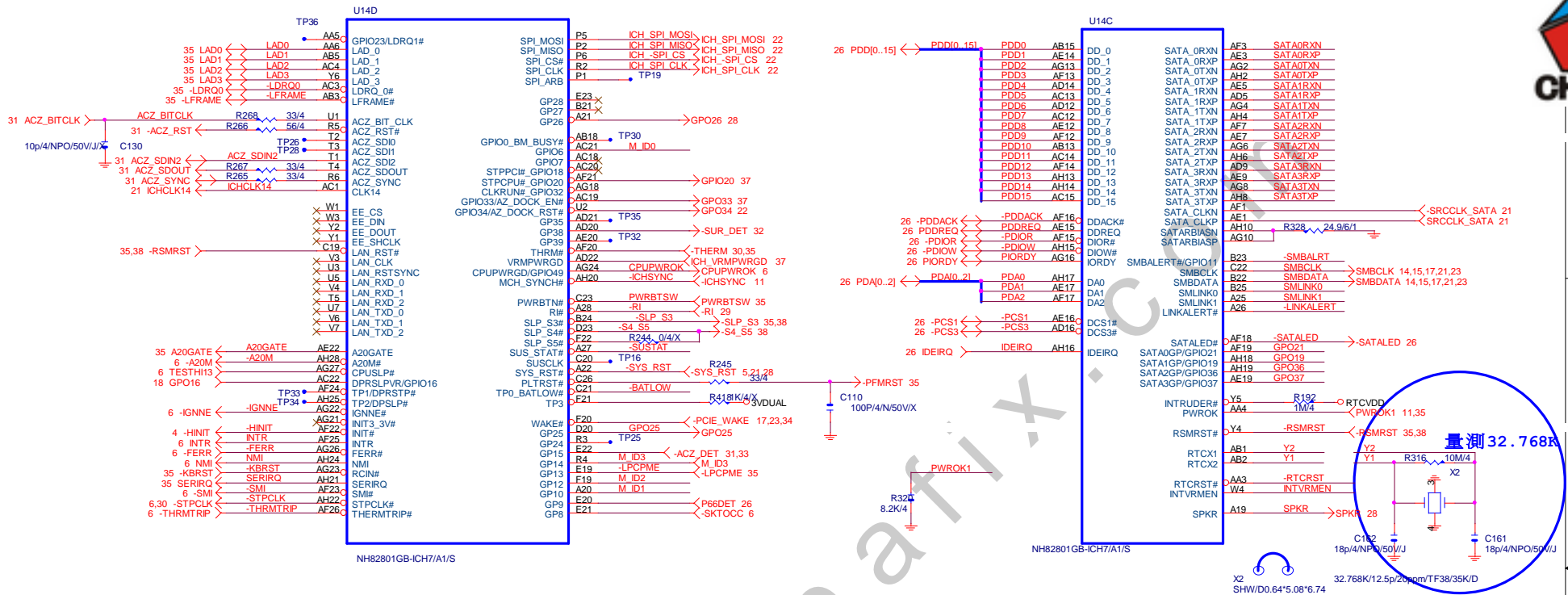
U14B

90歐姆 : [20/7.5/7.5/7.5/20]



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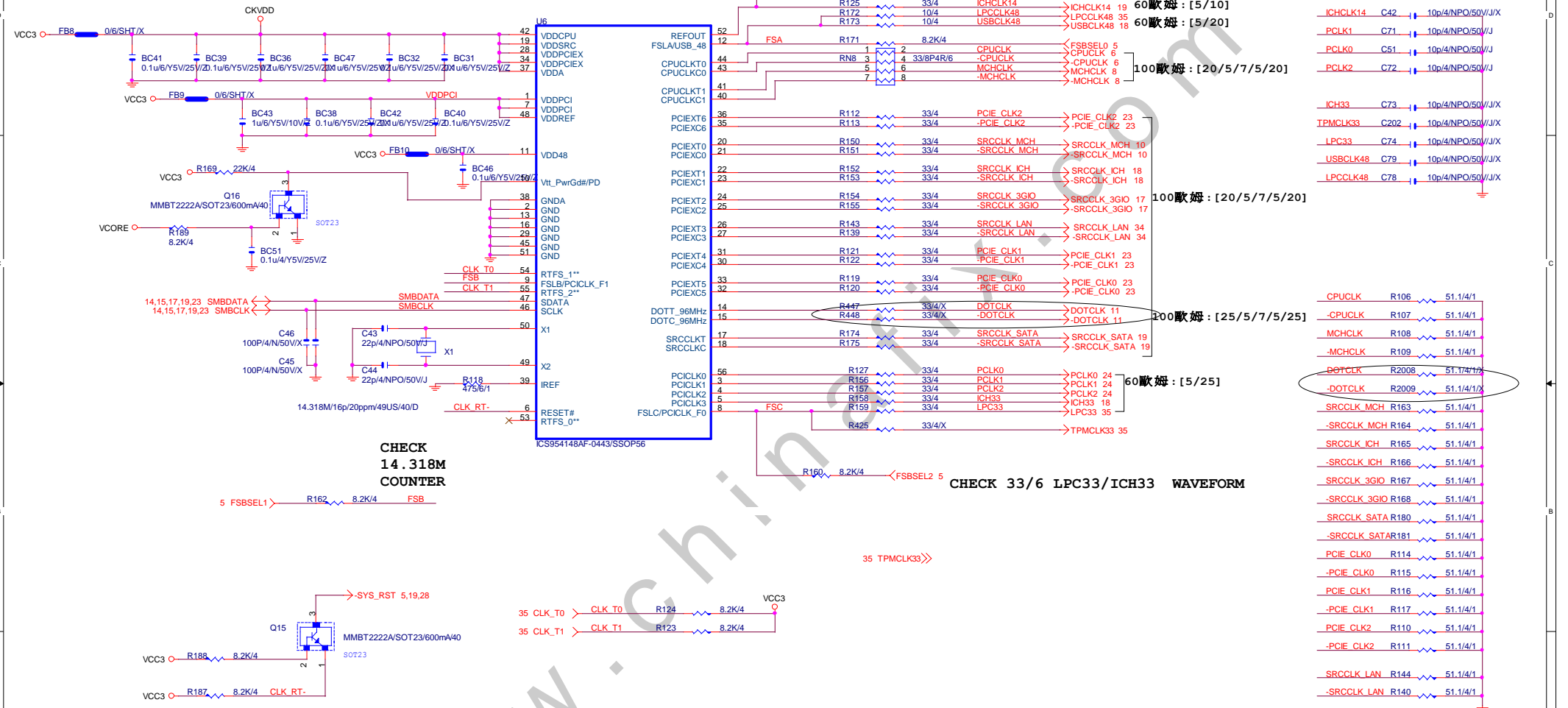
Title			ICH7-PCI, DMI, LAN, USB		
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CLK GEN CK505

GSEL=1, DOT FREQ=96MHZ  
GSEL=0, DOT  
FREQ=100MHZ

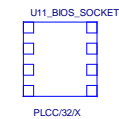
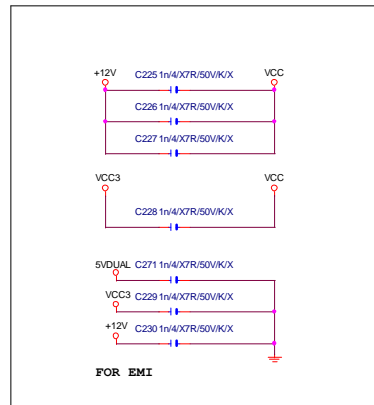
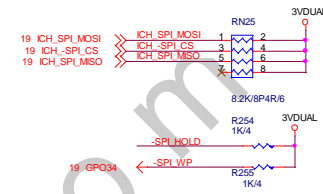
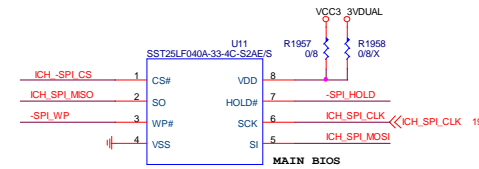
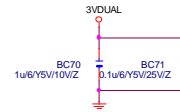
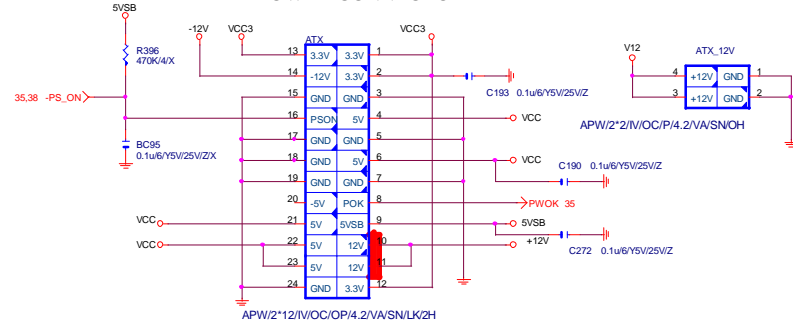


CHECK  
14.318M  
COUNTER

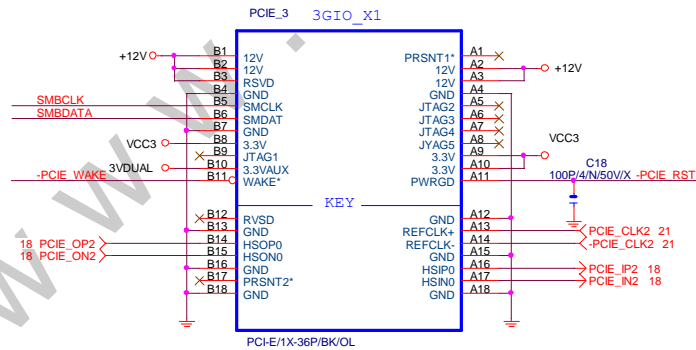
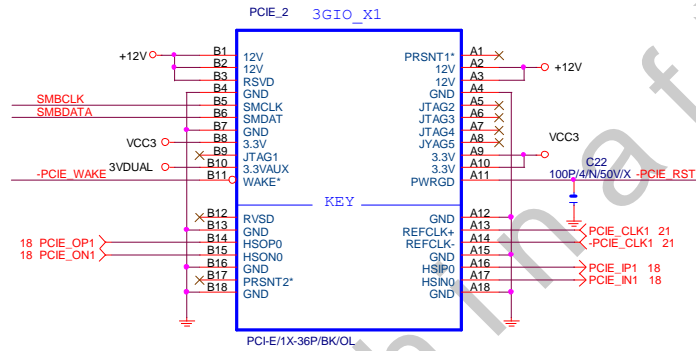
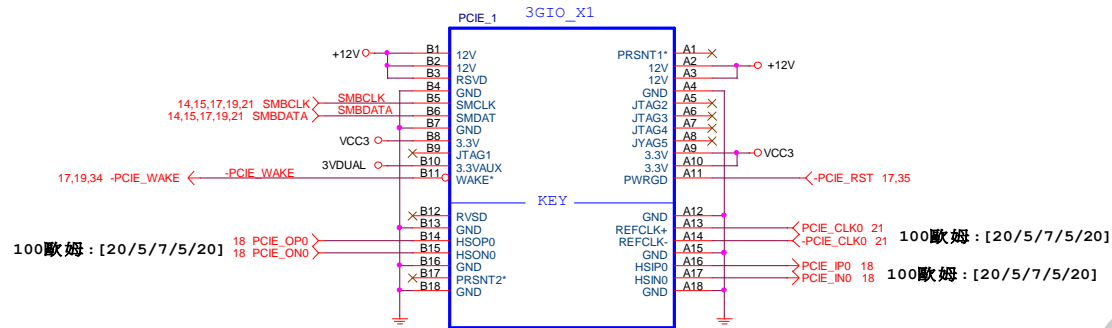
CHECK 33/6 LPC33/ICH33 WAVEFORM

Gigabyte Technology			
Title			
ICS954148AF CLK GEN			
Size	Document Number	Rev	
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# ATX POWER CONNECTOR

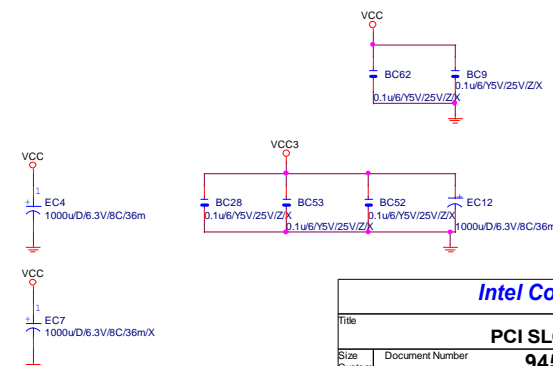
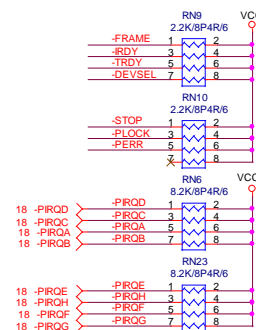
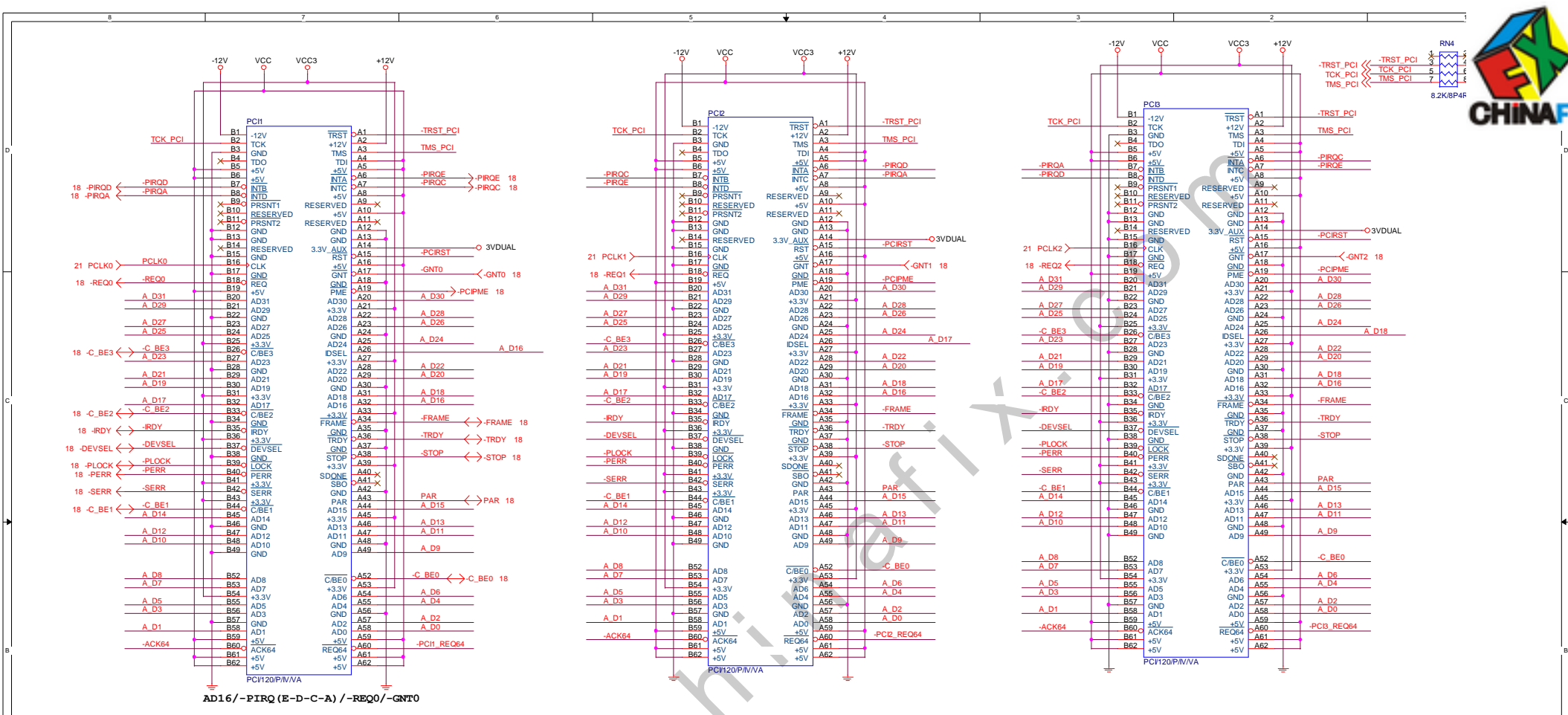


GIGABYTE			
Title	ATX POWER CONNECTOR,SPI BIOS		
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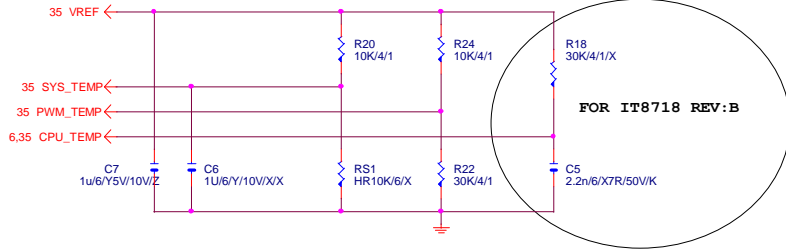
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Title			PCI E SLOT 1, 2, 3
Size B	Document Number	945PL-S3	
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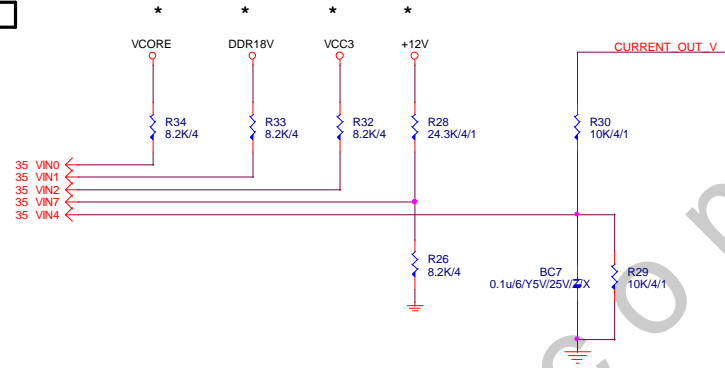


PDF "pdfFactory Pro"   

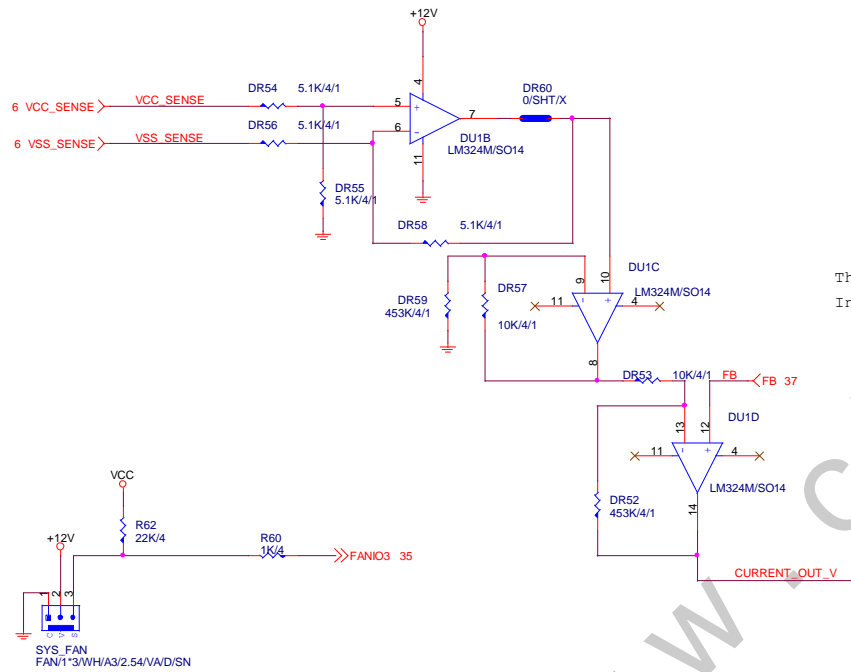
## TEMP. SENSE



## VOLTAGE SENSE



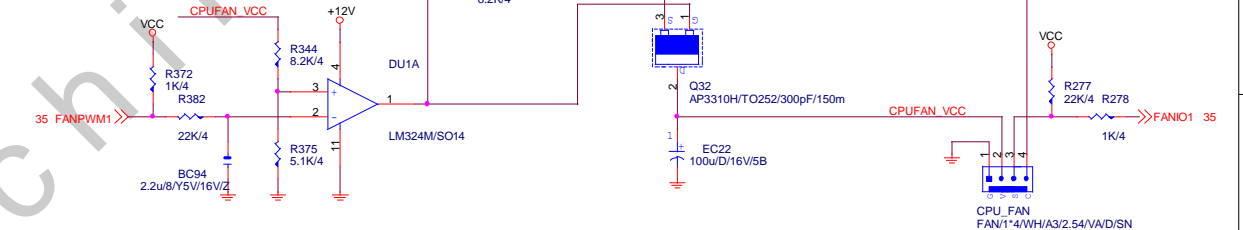
## DUAL POWER



## CPU/SYS FAN

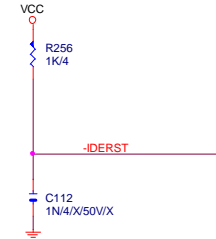
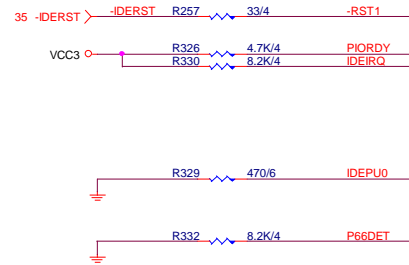
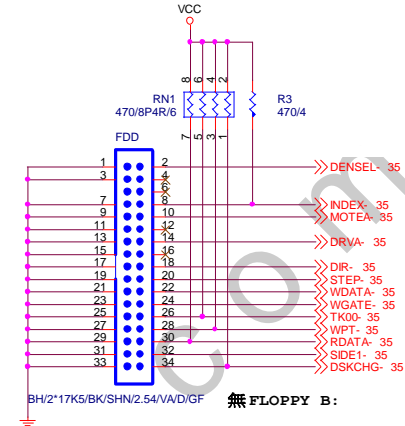
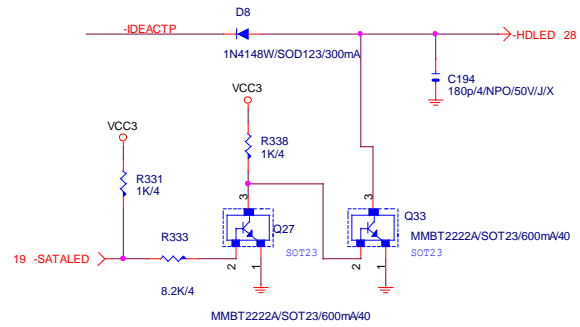
If use PBSS5240 1pcs : (non airflow)	If use PBSS5240 1pcs : (with airflow)
CPUFAN_VCC=12V: Temp=40 deg	CPUFAN_VCC=12V: Temp=33 deg
CPUFAN_VCC=11V: Temp=82 deg	CPUFAN_VCC=11V: Temp=62 deg
CPUFAN_VCC=10V: Temp=70 deg	CPUFAN_VCC=10V: Temp=86 deg
CPUFAN_VCC= 9V: Temp=110 deg	CPUFAN_VCC= 9V: Temp=117 deg
CPUFAN_VCC= 8V: Temp>200 deg	CPUFAN_VCC= 8V: Temp>122 deg

ThermalTake FAN Power Consumption: 0.82A  
Intel FAN Power Consumption Spec: 1.1A

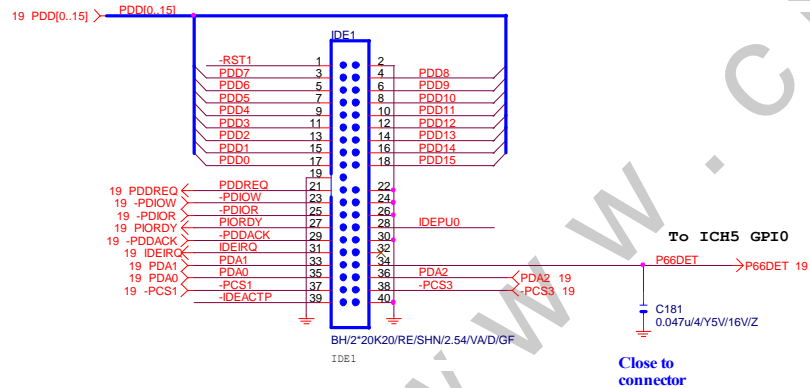


## GIGABYTE

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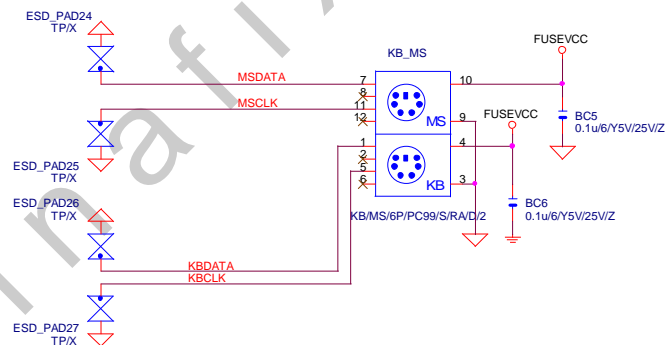
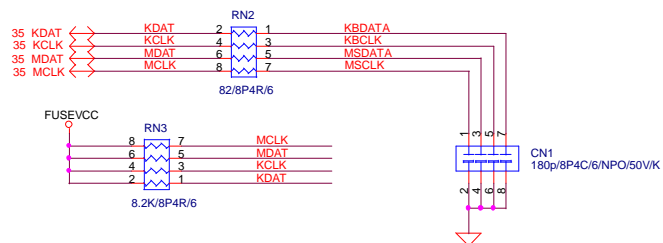
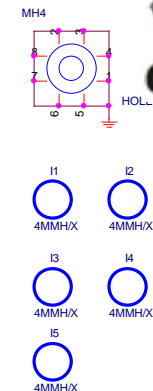
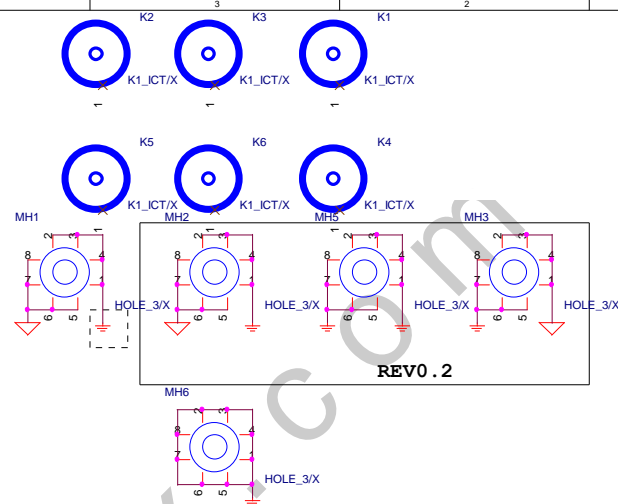
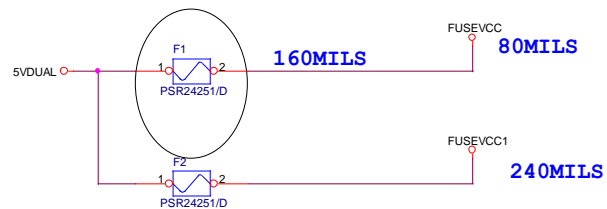


Default 不上,由IT8712 OUTPUT,REV0.2 驗證



PRIMARY IDE CONNECTOR

Intel Confidential		
Title IDE , FDD		
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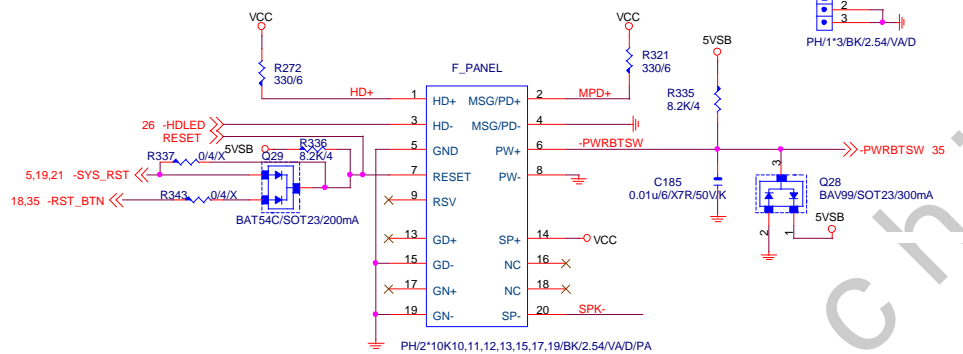


GIGABYTE CORP.			
Title			
KB & PS2 MOUSE			
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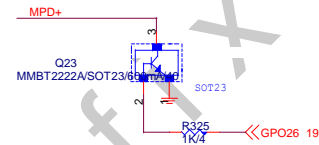
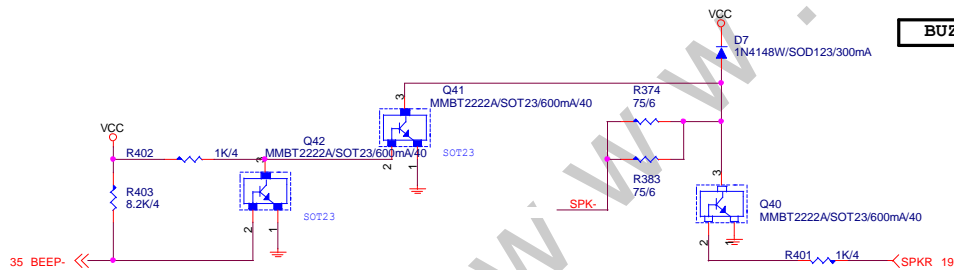
# INTEL FRONT PANEL

3 PIN POWER LED  
LAYOUT PLACE CLOSE  
TO F\_PANEL

PWR\_LED  
1 MPD+  
2 MPD+  
3 PH/1\*3/BK/2.54/V/D



BUZZER

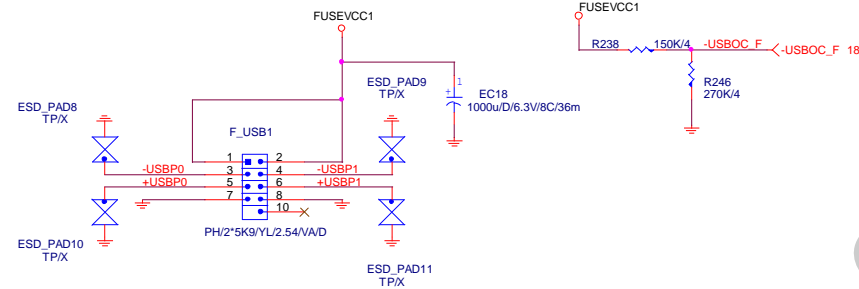


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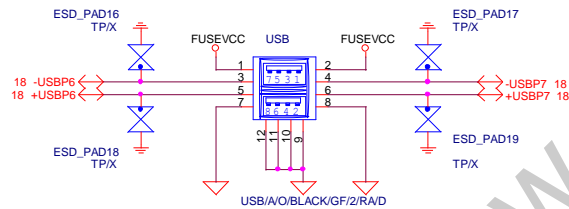
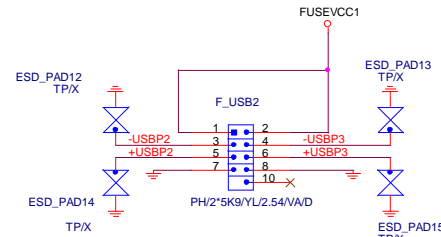
Title			FRONT PANEL
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# FRONT USB

90欧姆 : [20/7.5/7.5/7.5/20]



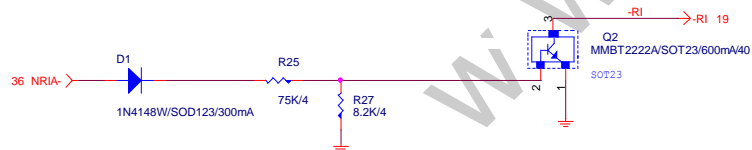
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90欧姆 : [20/7.5/7.5/7.5/20]

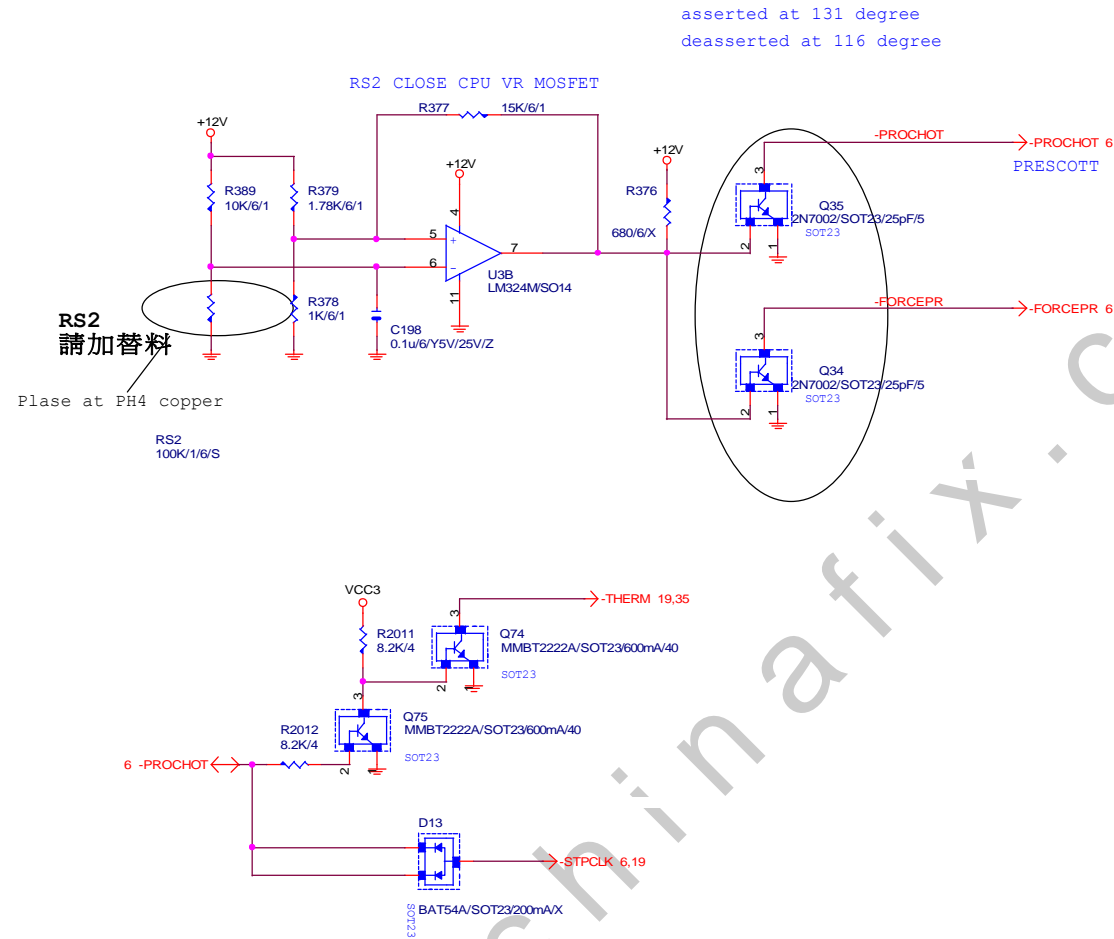
FOR 882 EMI  
靠近USB

靠近FRONT USB

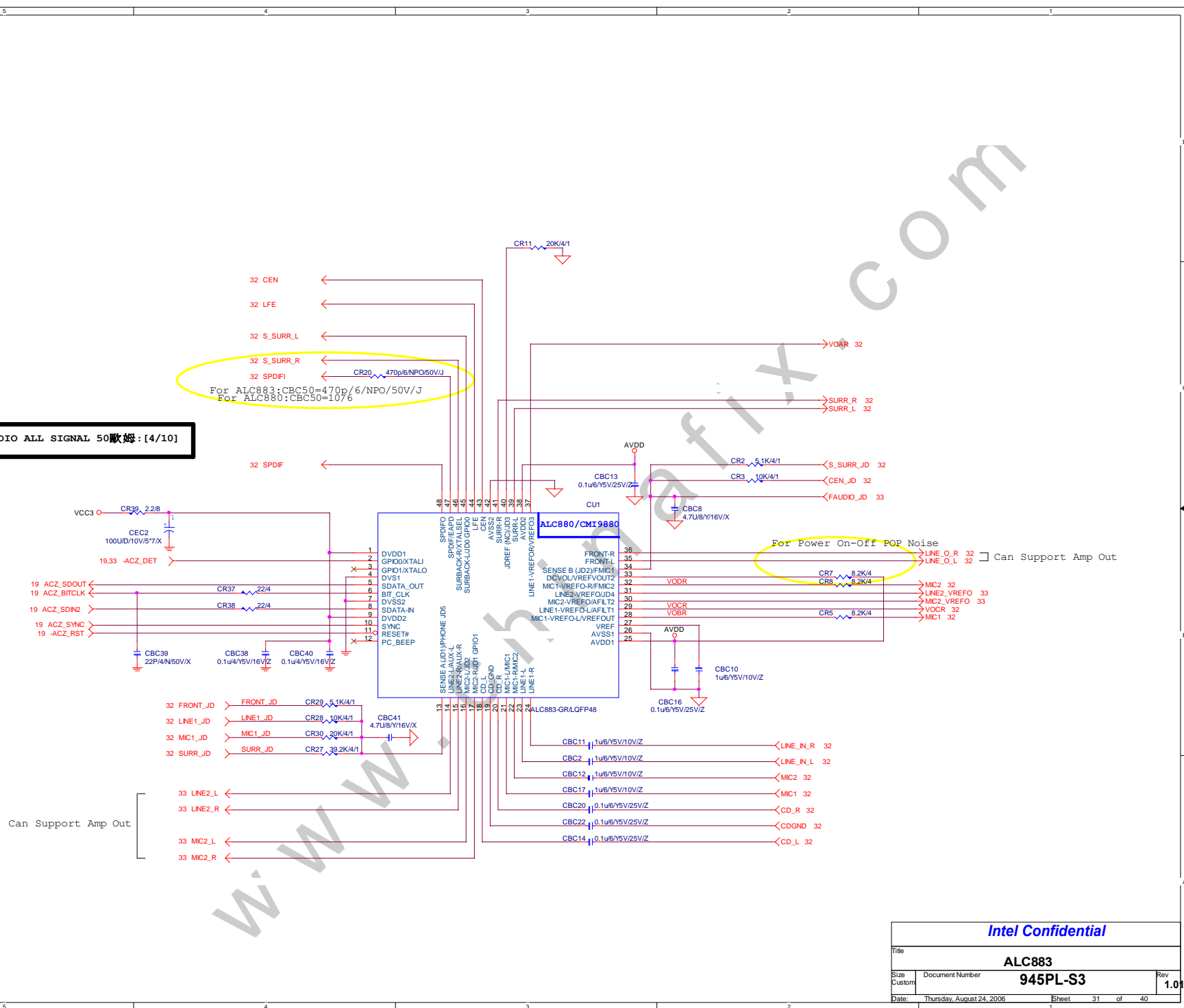


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Title		
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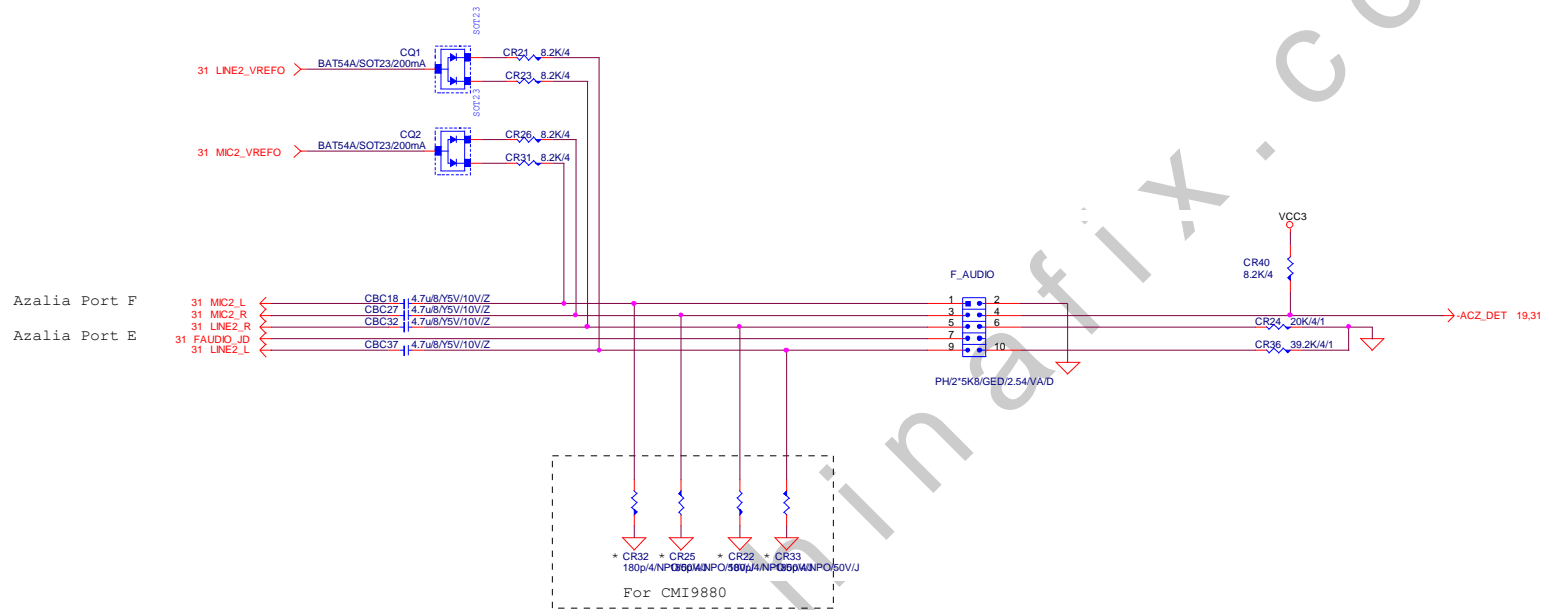


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Title		PROCHOT CONTROL	
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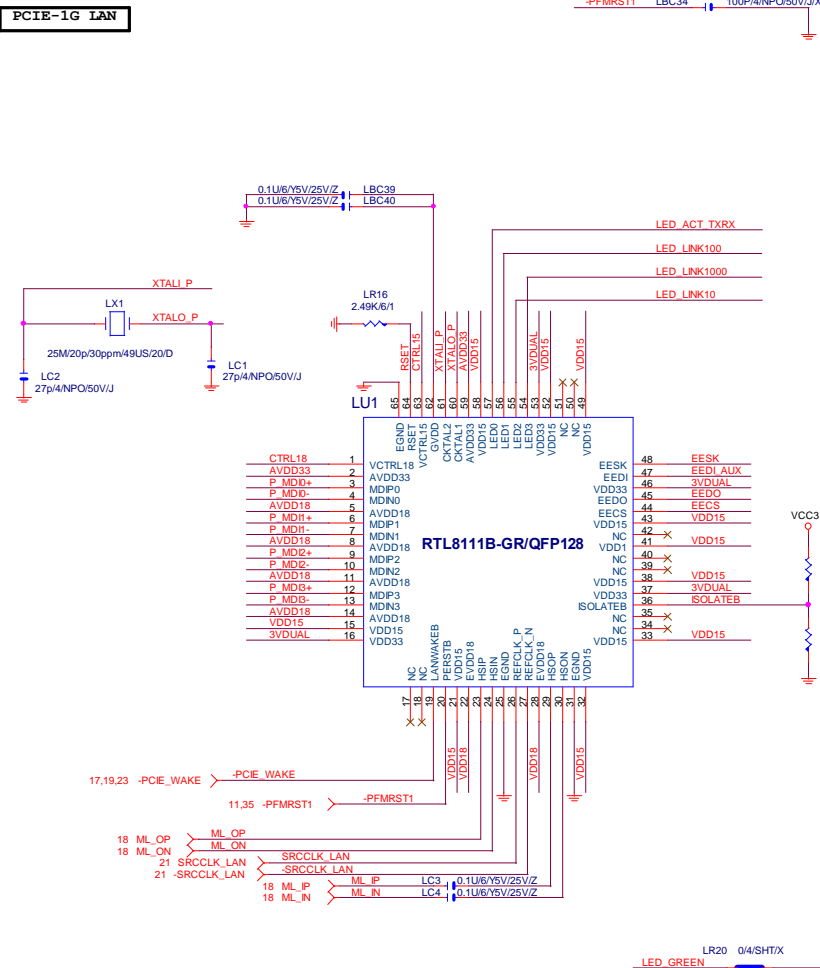


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Title			
ALC883			
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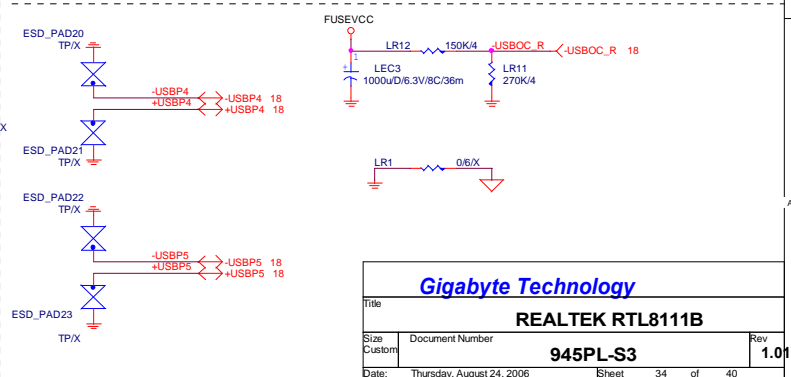
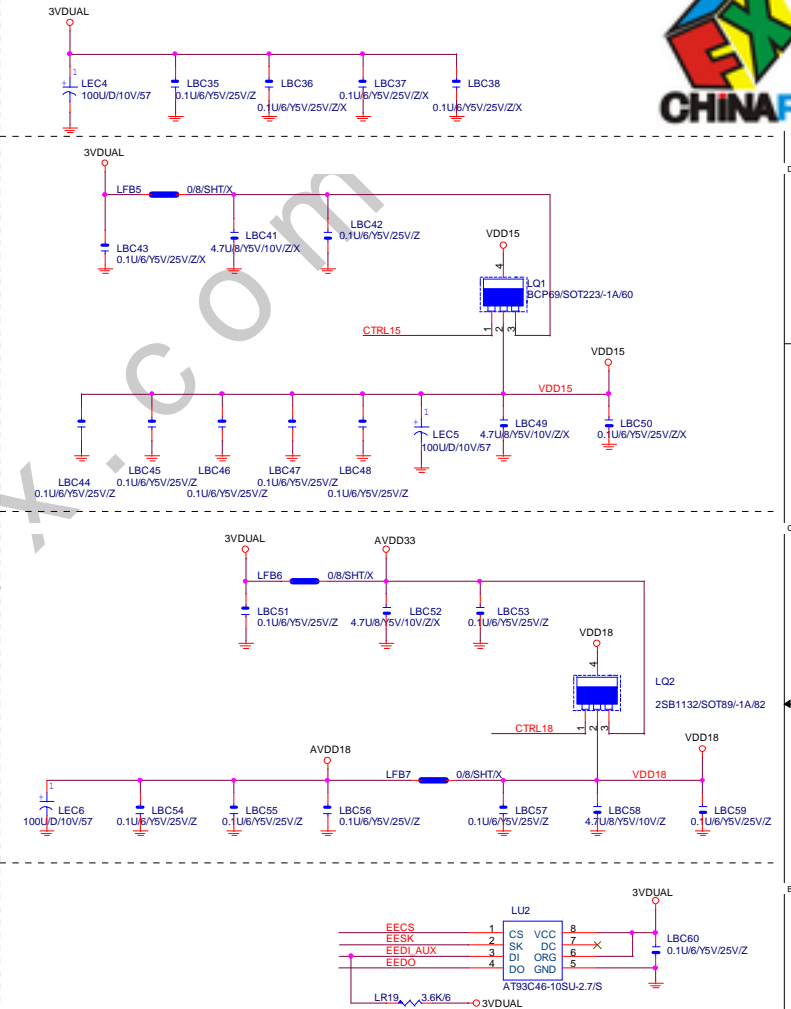
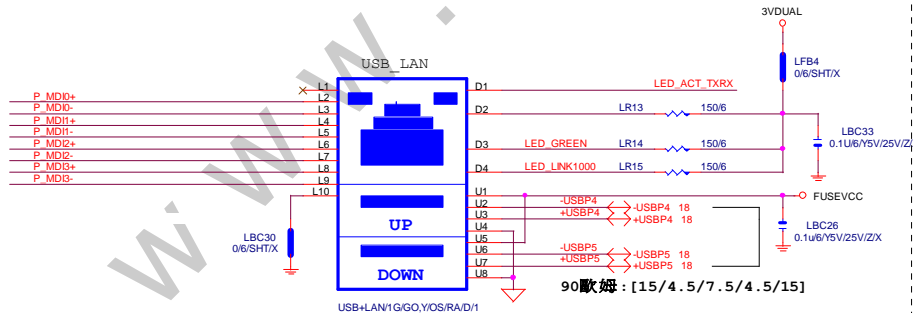


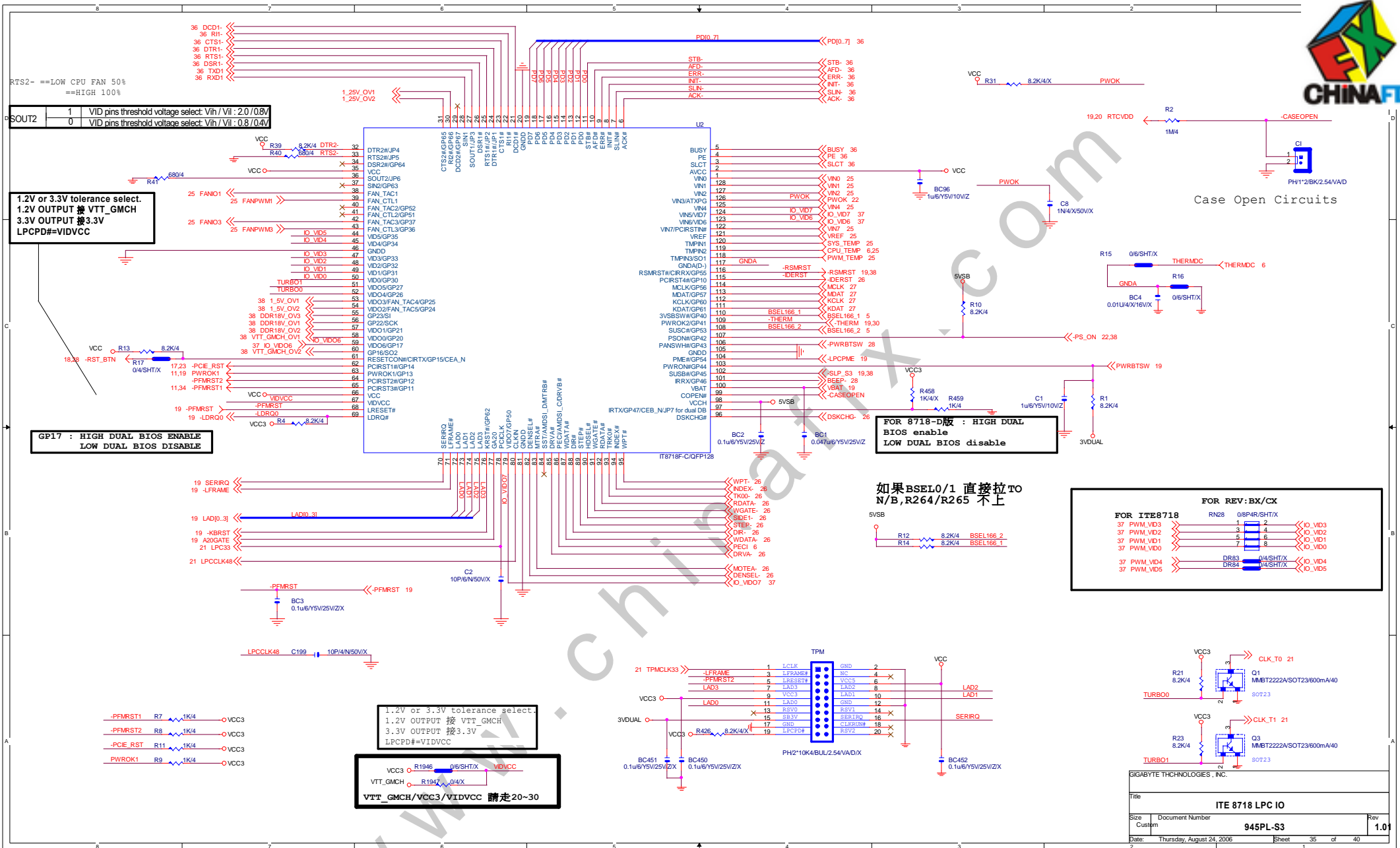
# PCIE-1G LAN

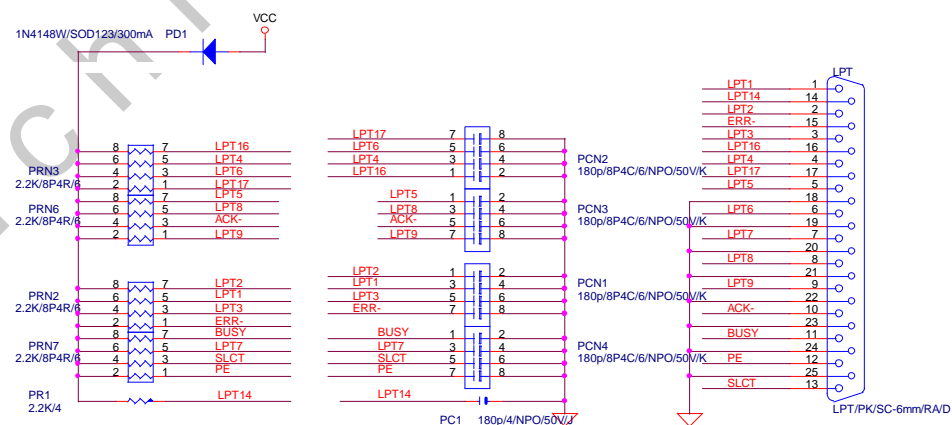
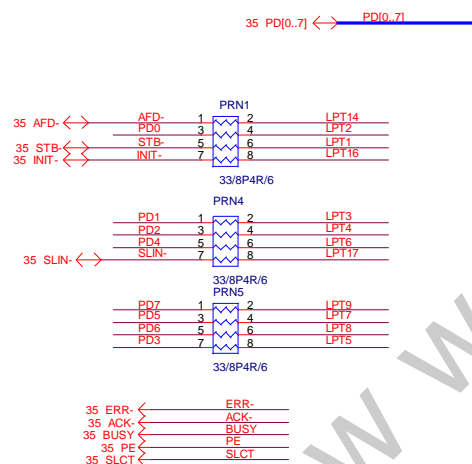
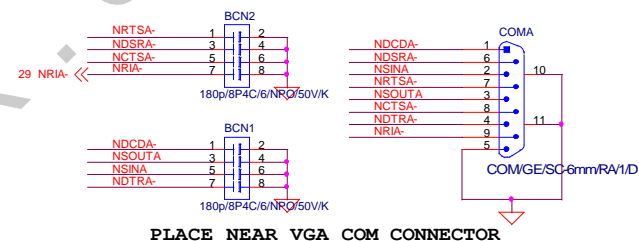
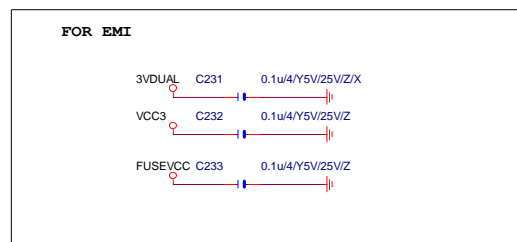
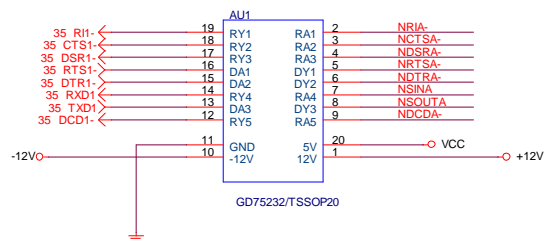


# USB\_LAN CONNECTOR

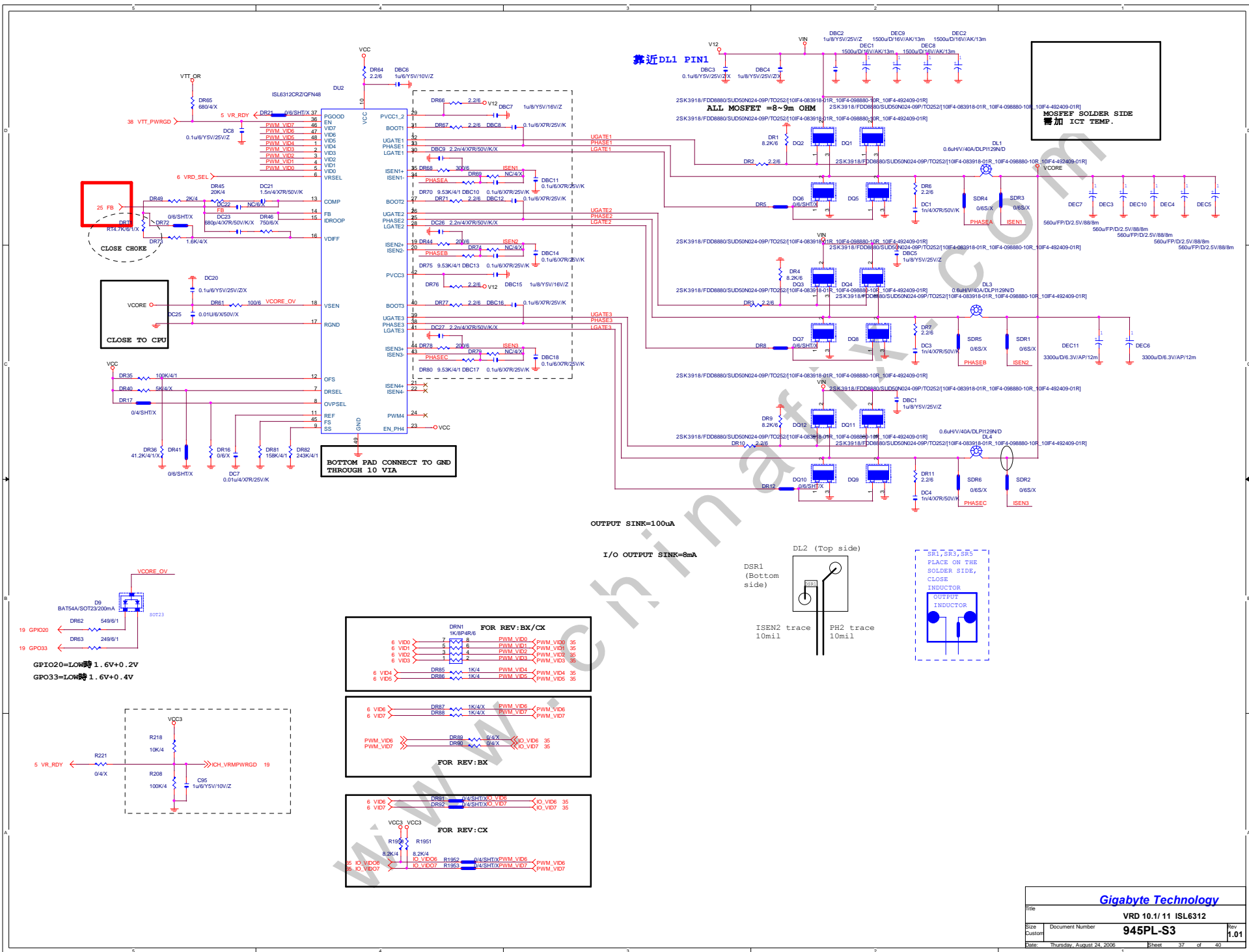
LAN 100欧姆: [20/7/8/7/20]







GIGABYTE TECHNOLOGIES, INC.			
Title			
<b>COM &amp; LPT PORT</b>			
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紅字表示CPI/O 同PIN

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			

PWROK/RESET Table:

ITE8718F-C 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
PIN63/PWROK1	PWROK1	1. GMCH 2. ICH7
PIN64/-PCIRST2	-PFMRST2	1. Reserved For TPM
PIN65/-PCIRST3	-PFMRST1	1. GMCH 2. Onboard PCIE Lan
PIN68/LRESET#	-PFMRST	1. ICH7
PIN109/PWROK2	-THERM	1. ICH7
PIN115/-PCIRST4	-IDERST	1. IDE



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