

Model Name: GA-H77N-WIFI

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
08	DDR III CHANNEL B
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	ITE 8728 LPC IO
16	COM ,KB USB30
17	HWM ,FAN CTRL ,OV , -PROCHOT
18	DUAL BIOS
19	FP ,FUSB ,SPK ,SATALED
20	Realtek ALC892
21	REAR AUDIO JACK
22	Realtek RT8111E / RT8111F (A)
23	Realtek RT8111E / RT8111F (B)
24	DISCRETE POWER
25	ATX ,CLK GEN
26	RT8120 CPU VTT
27	RT8120 DDR POWER

www.xinxunwei.com 400-800-9990

Revision 1.1

SHEET

TITLE

28	VCORE ISL95836 1
29	VCORE ISL95836 2
30	DVI-I
31	HDMI * 2
32	mini PCI-E

Gigabyte Technology

Cover Sheet		
Size Custom	Document Number GA-H77N-WIFI	Rev 1.1
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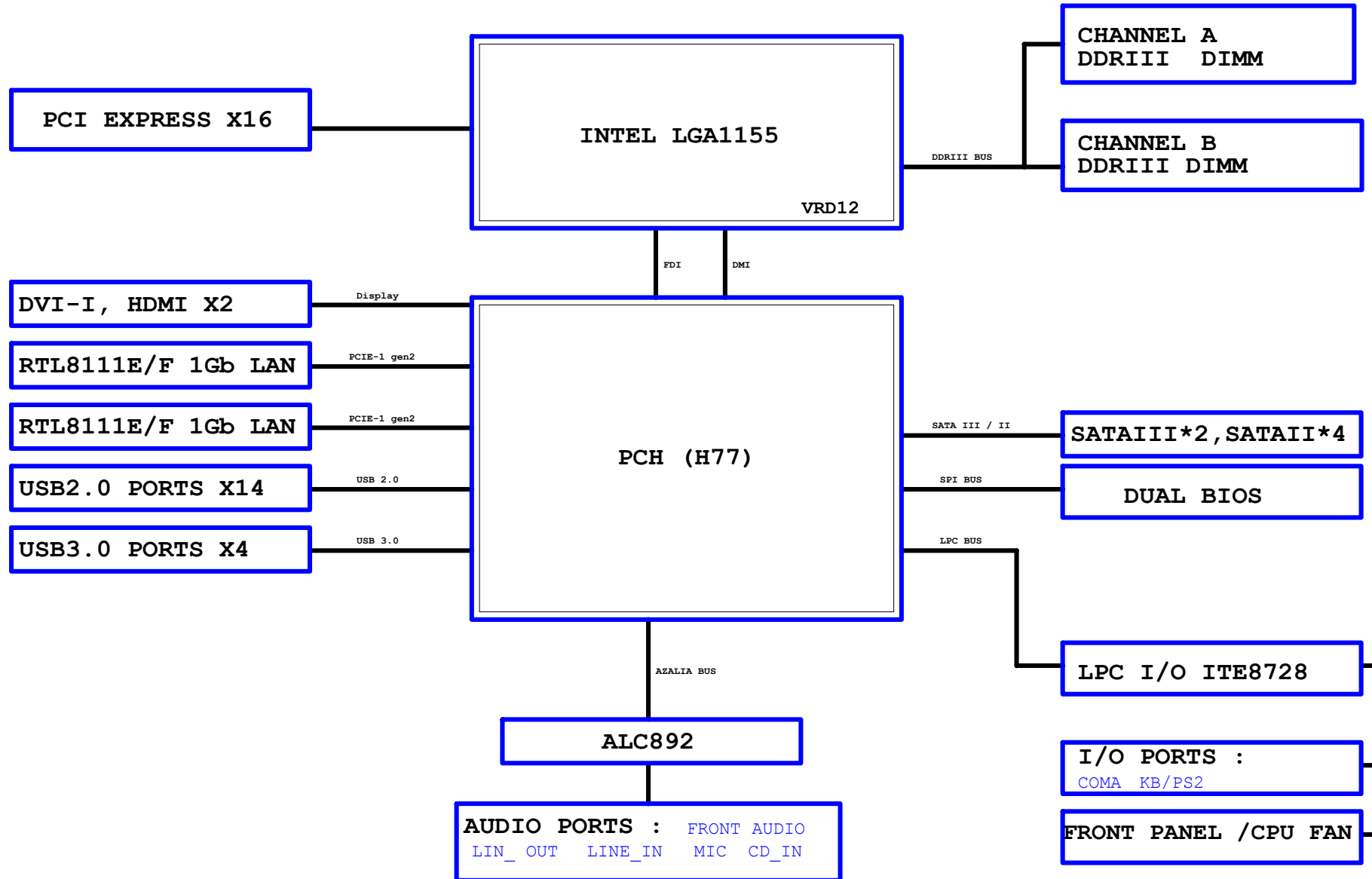
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2013/07/23

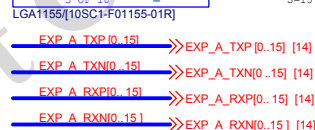
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## Circuit or PCB layout change

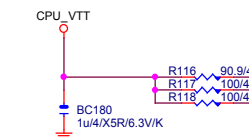
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**BLOCK DIAGRAM**

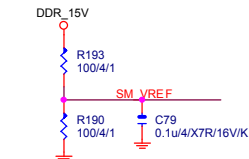
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## CPU SVID



## SM REF



## Gigabyte Technology

Title			
CPU LGA1155-A			
Size	Document Number		Rev
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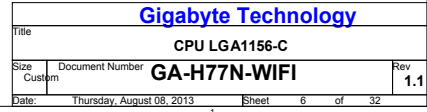
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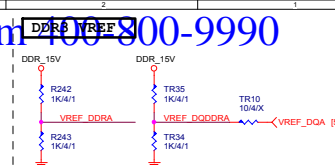
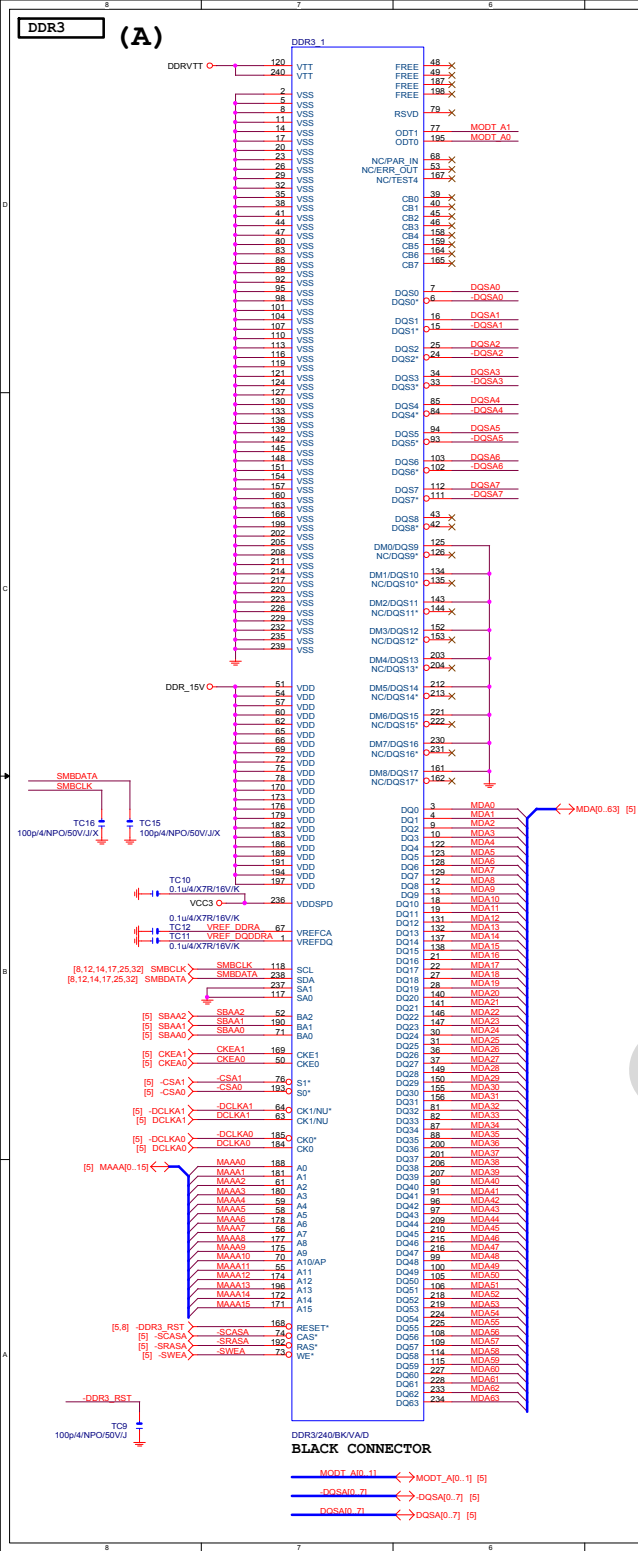


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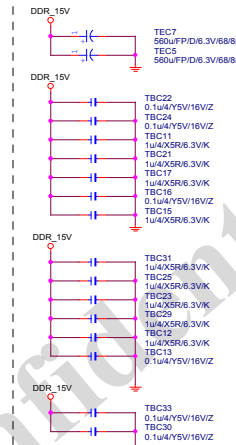


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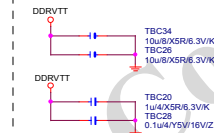




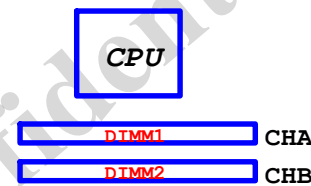
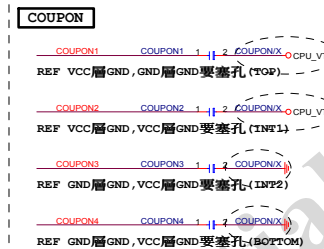
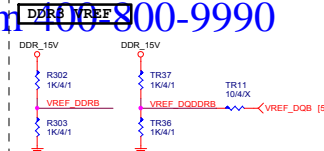
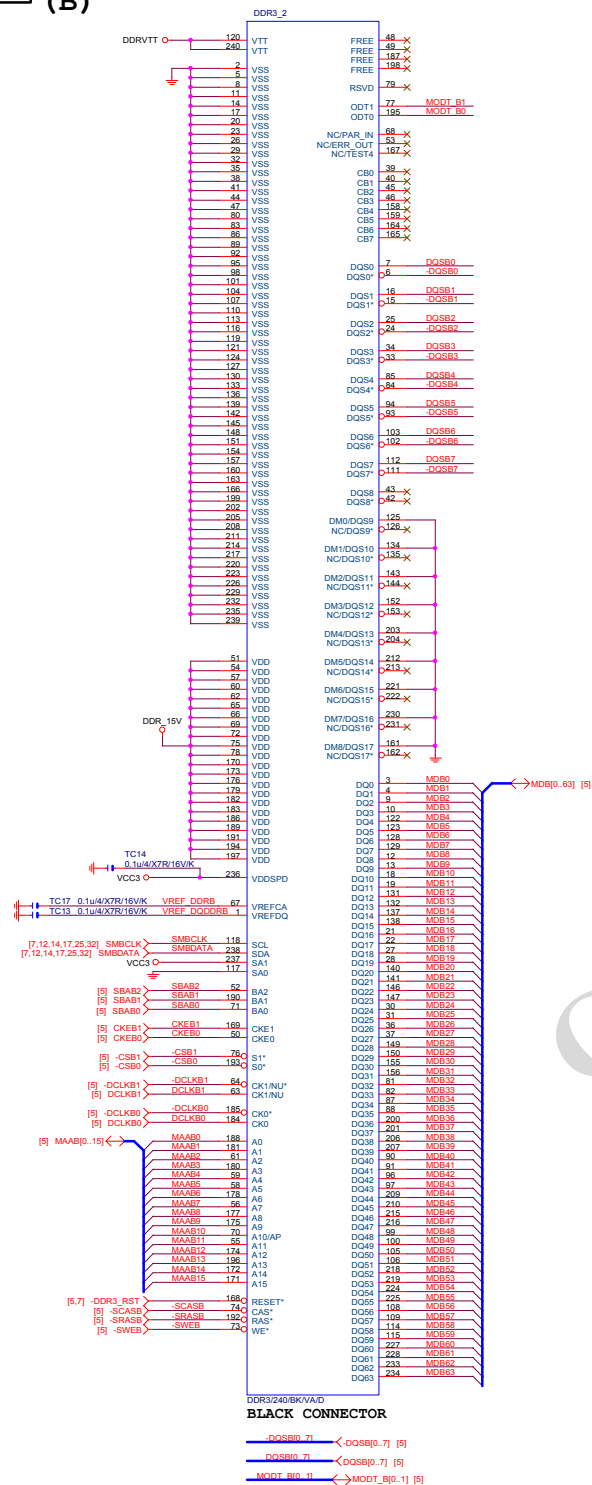
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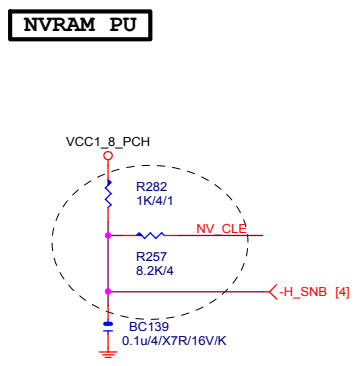
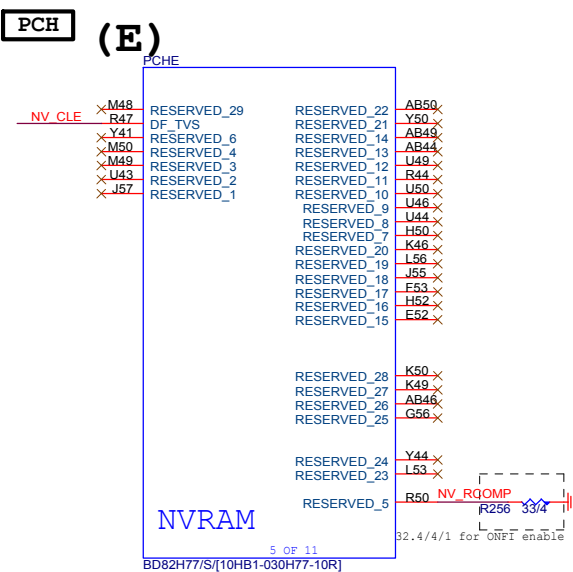
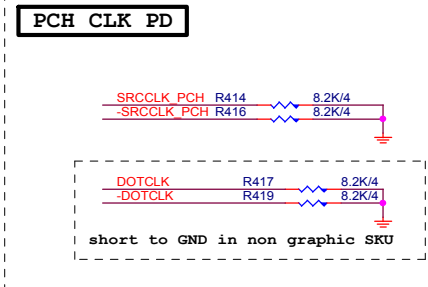
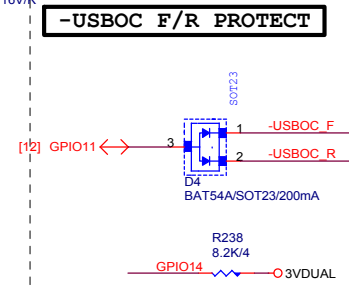
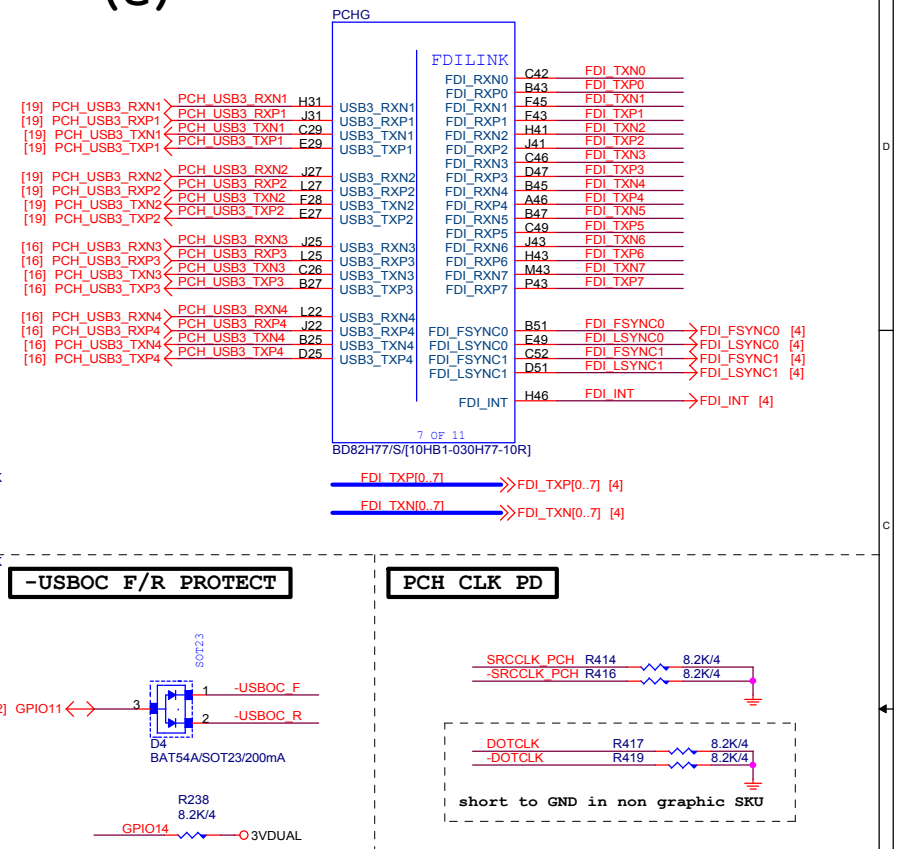
DDRVTT Decouple







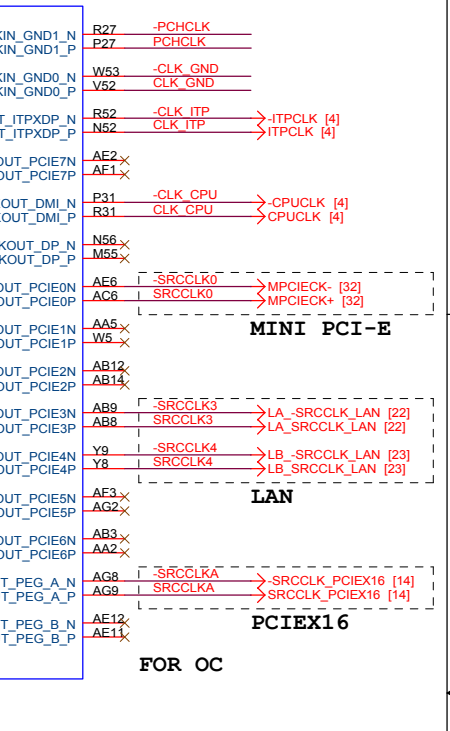
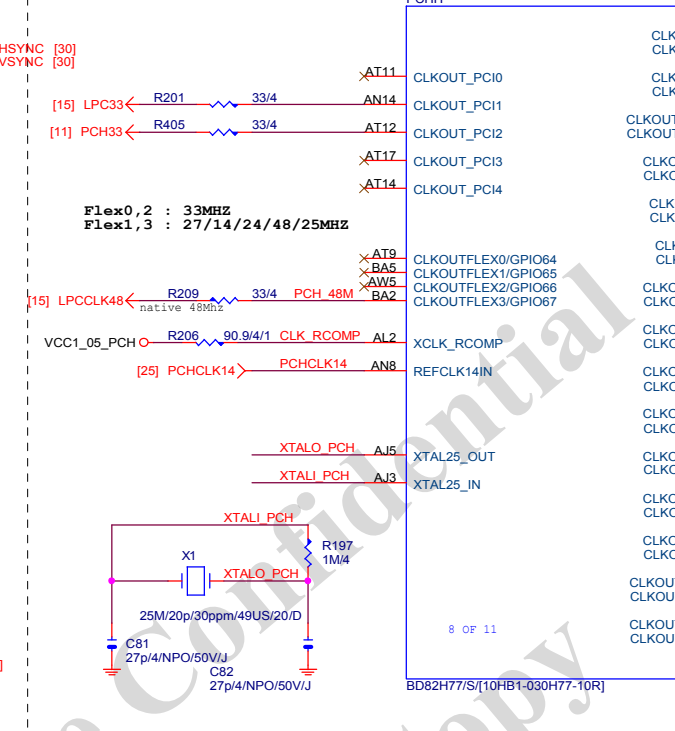
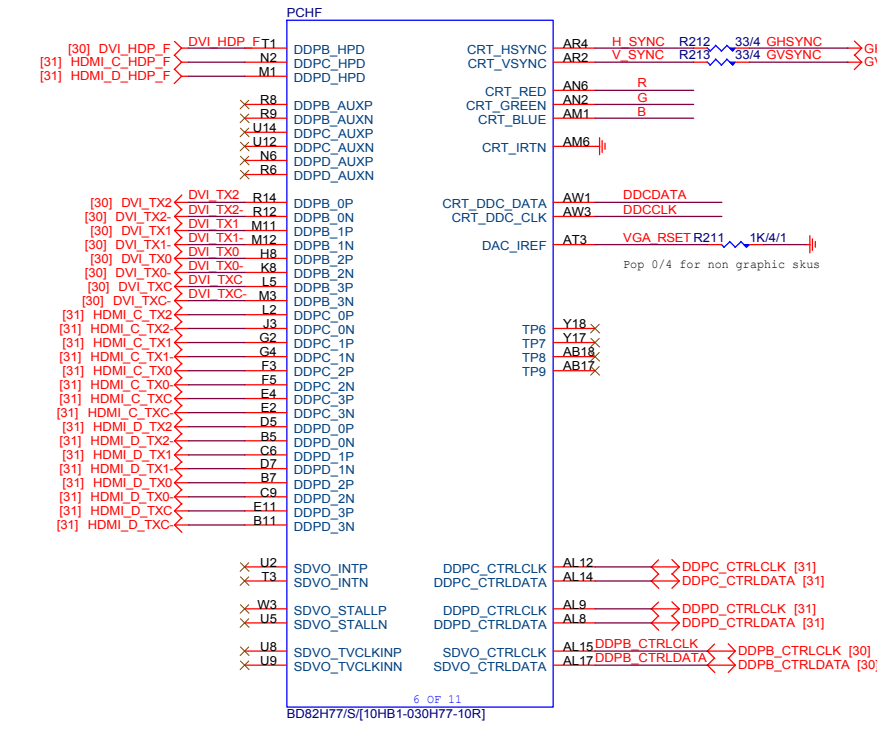




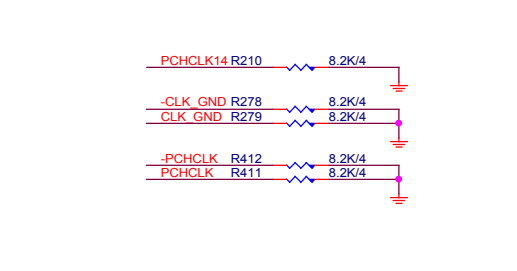
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<b>USB OC# Configure</b>	
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<b>OC2#</b>	<b>USB4 ,5 (F_USB1)</b>
<b>OC3#</b>	<b>USB6 ,7 (B75:N/A)</b>
<b>OC4#</b>	<b>USB8 ,9 (USB_LAN)</b>
<b>OC5#</b>	<b>USB10 ,11 (KB_USB)</b>
<b>OC6#</b>	<b>USB12 (mini PCI-E)</b>
<b>OC7#</b>	<b>N/A</b>

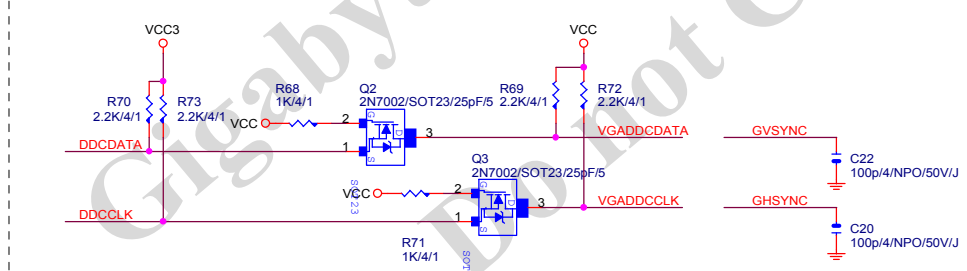
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<b>Title PCH FDI,DMI,USB ,PCIE,NVRAM</b>	
<b>Size Custom</b>	<b>Document Number GA-H77N-WIFI</b>
<b>Date:</b> Thursday, August 08, 2013	<b>Rev 1.1</b>
<b>Sheet</b> 9	<b>of 32</b>



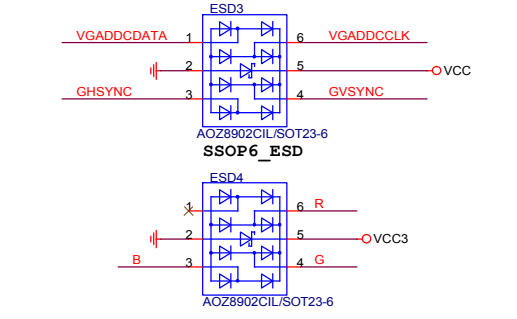
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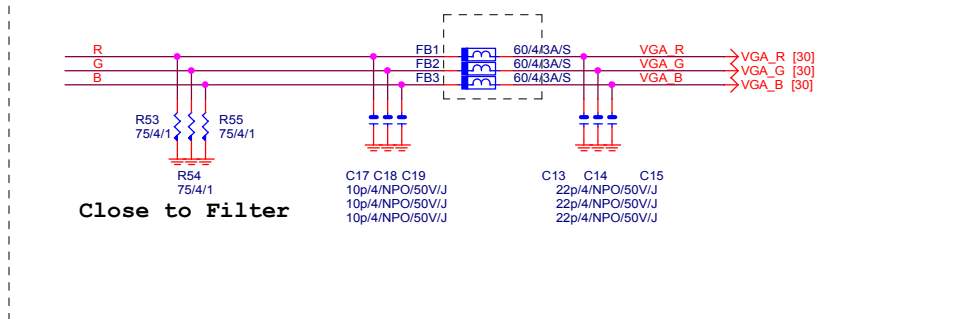
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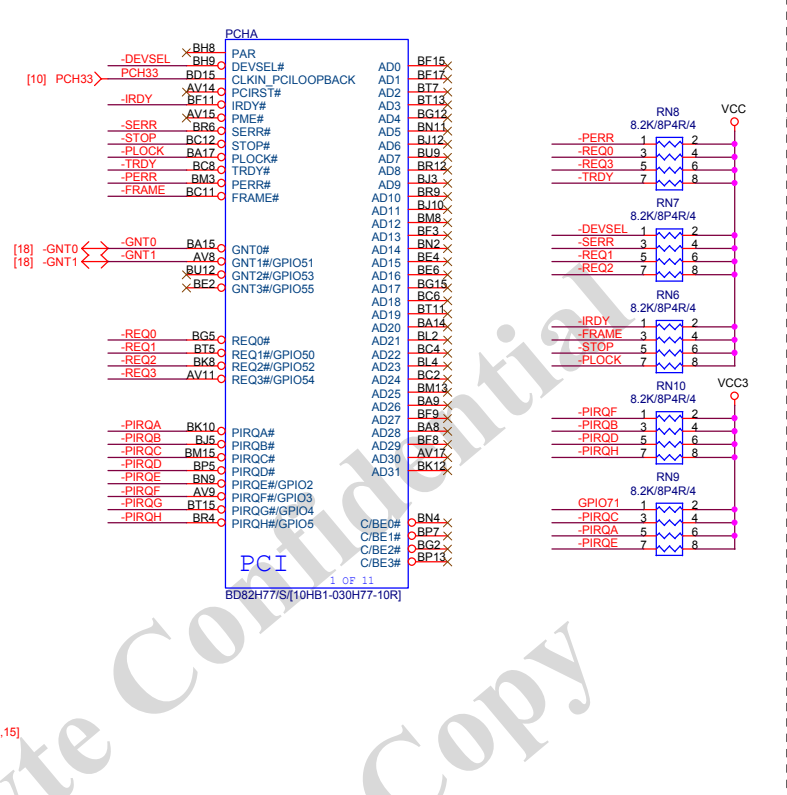
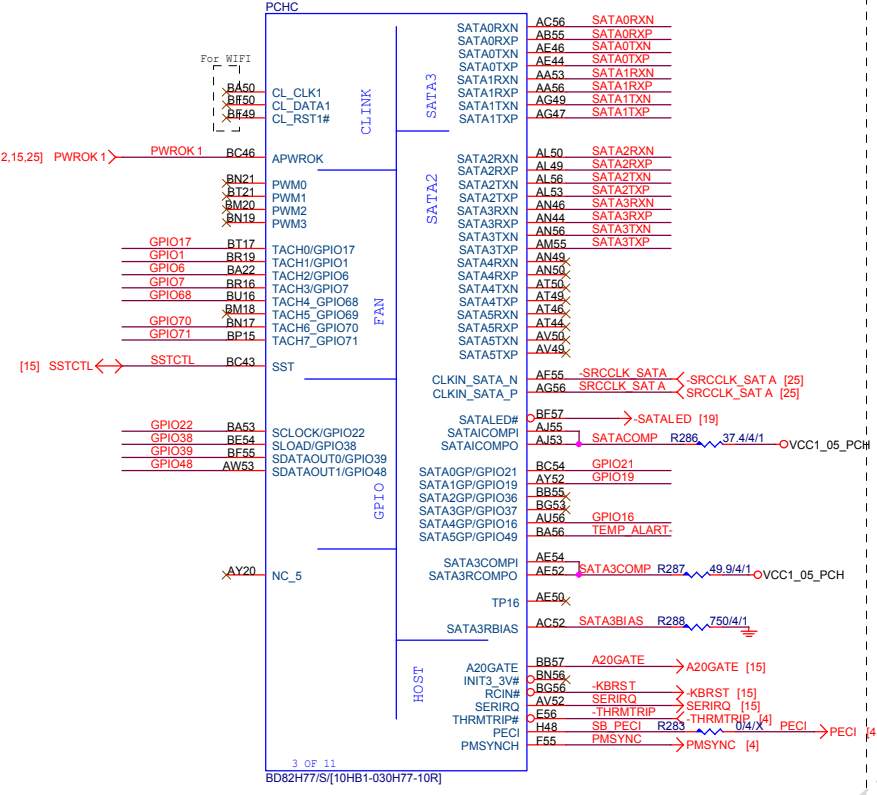


VGA ESD



VGA DDC

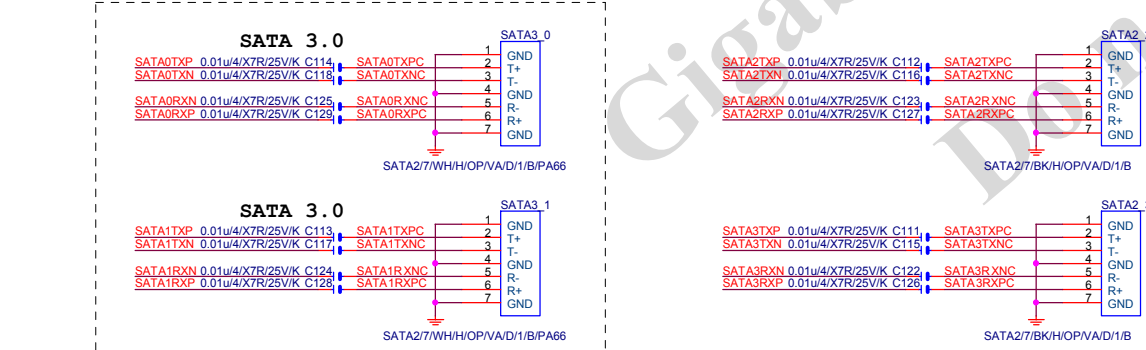


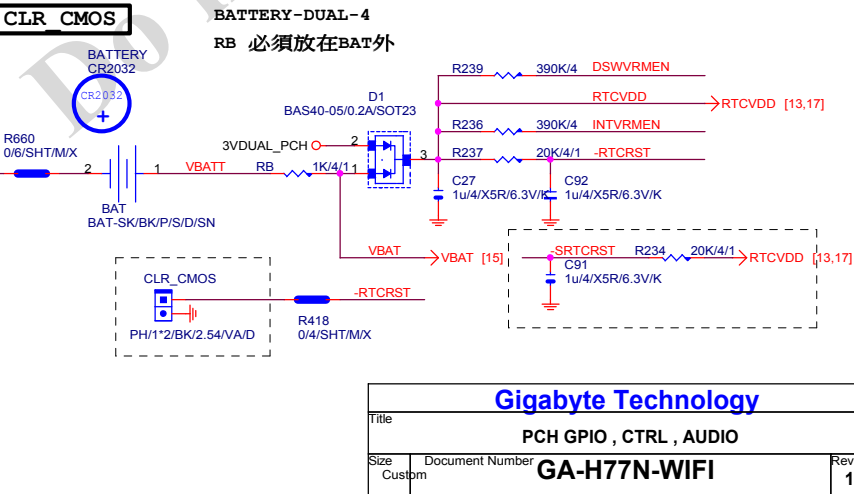
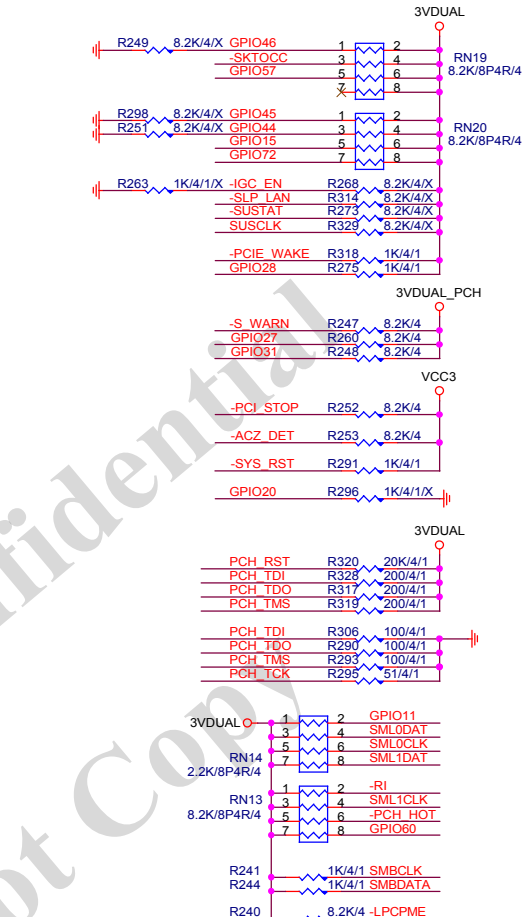


SATA CONNECTOR

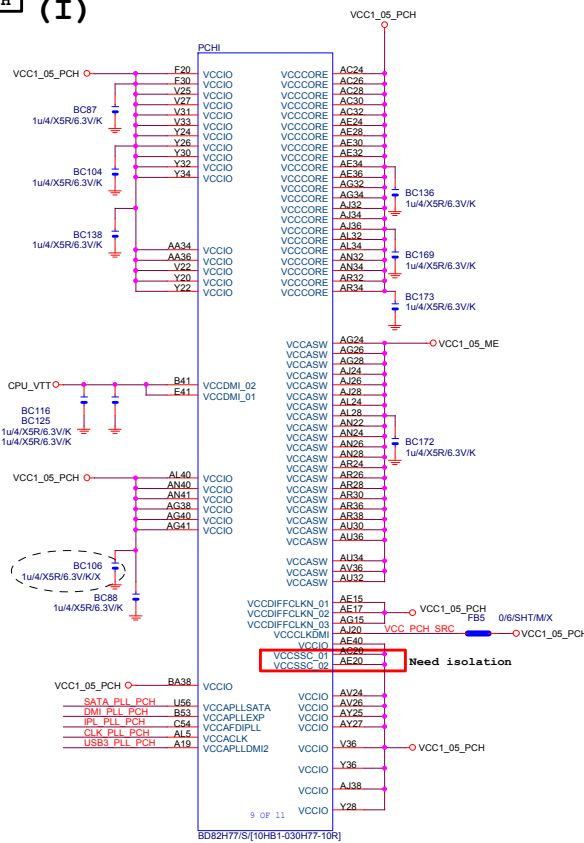
WHITE CONNECTOR

BLACK CONNECTOR

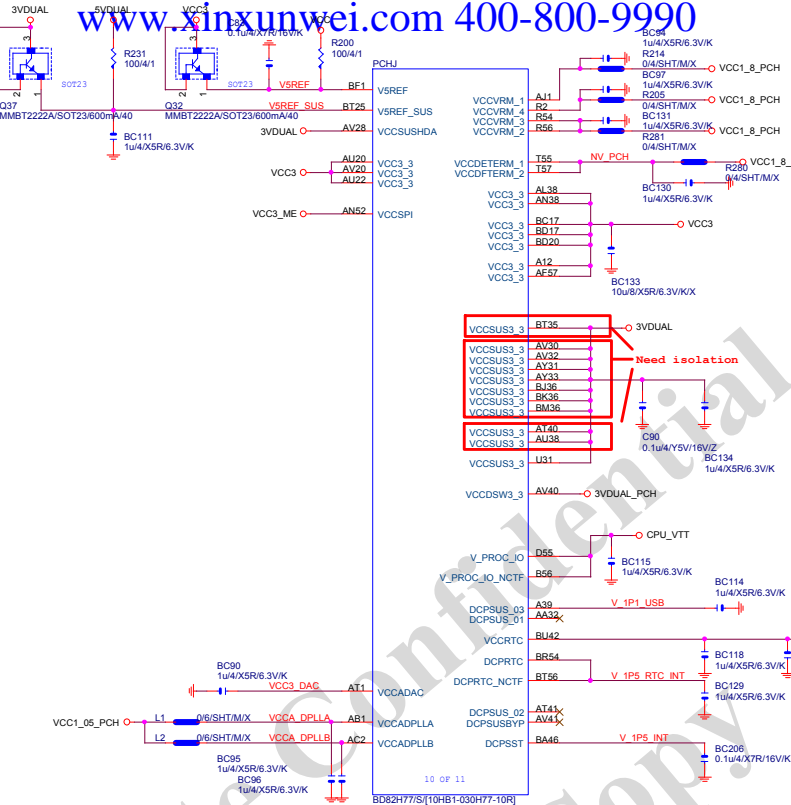




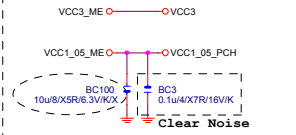
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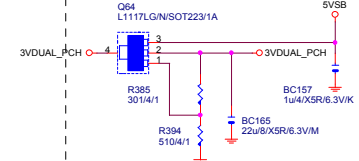
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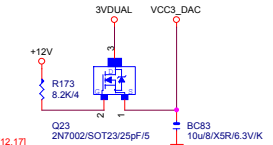


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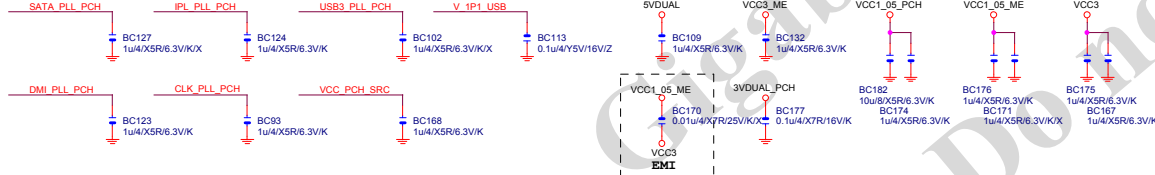


Q64  
L1117LG/N/SOT223

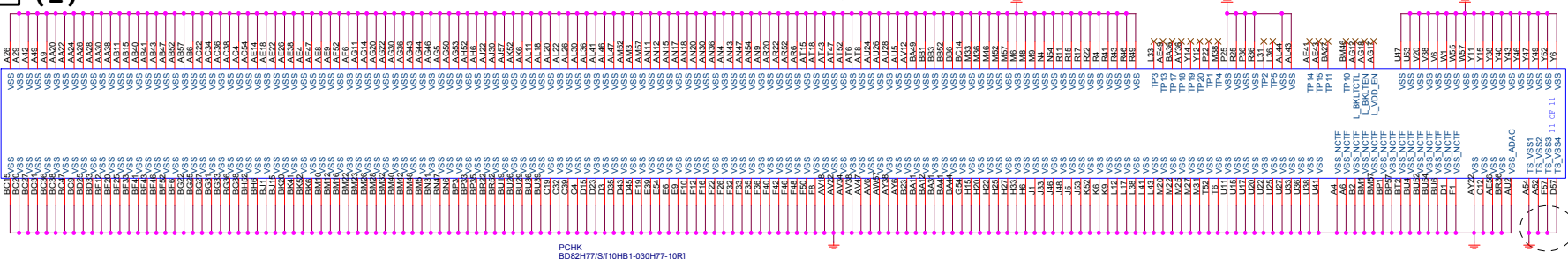


CLOSE北橋(注意震盪水波紋)

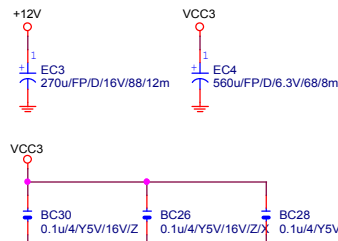
SA\*

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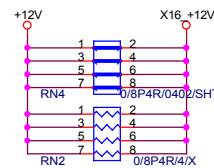




## PCIEX16 CAP



## PCIEX16 PROTECT SHT

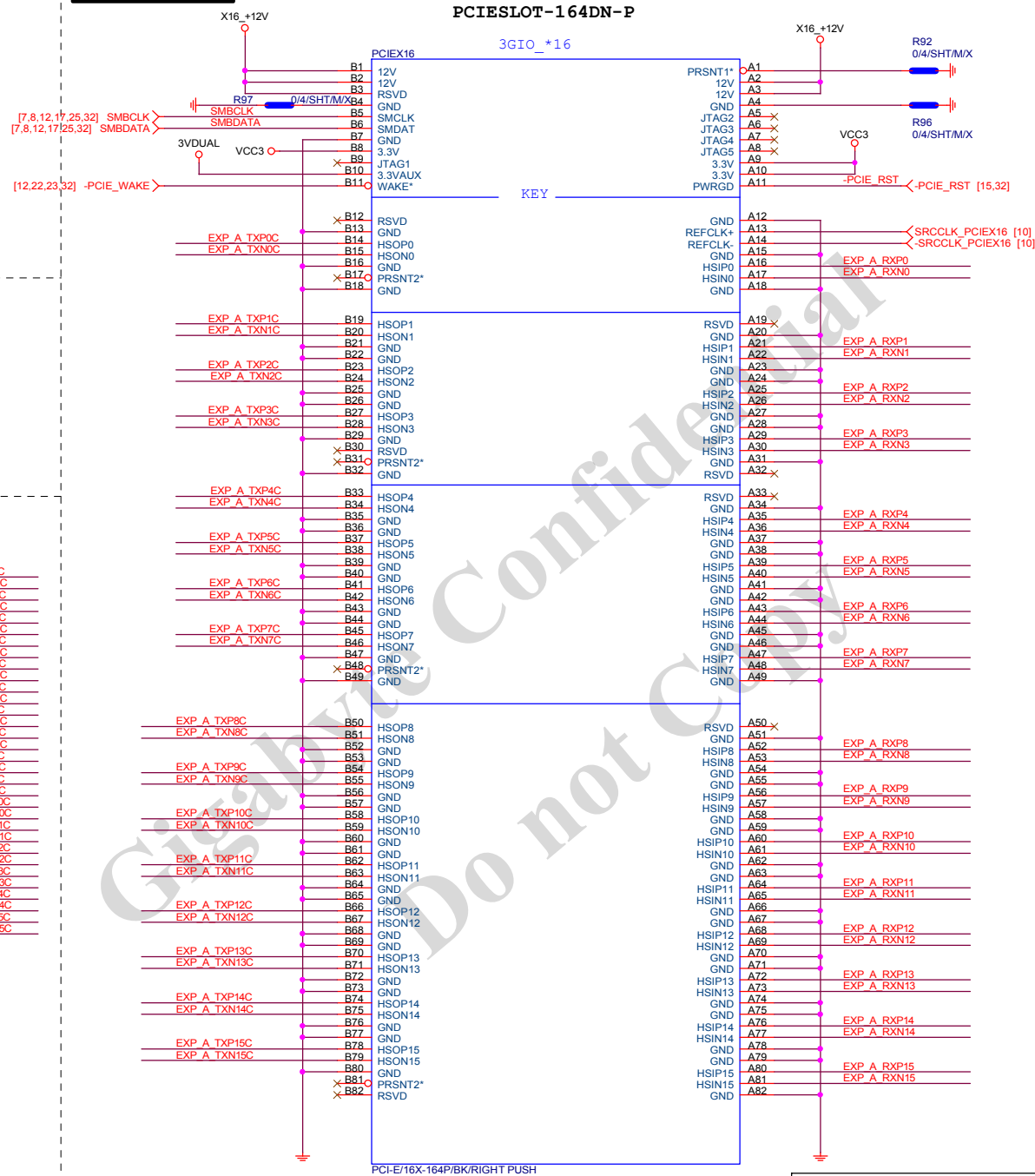


## PCIEX16 AC CAP

EXP A TXP0	C32	0.22u/4/X5R/6.3V/K	EXP A TXP0C
EXP A TXN0	C30	0.22u/4/X5R/6.3V/K	EXP A TXN0C
EXP A TXP1	C35	0.22u/4/X5R/6.3V/K	EXP A TXP1C
EXP A TXN1	C37	0.22u/4/X5R/6.3V/K	EXP A TXN1C
EXP A TXP2	C39	0.22u/4/X5R/6.3V/K	EXP A TXP2C
EXP A TXN2	C41	0.22u/4/X5R/6.3V/K	EXP A TXN2C
EXP A TXP3	C43	0.22u/4/X5R/6.3V/K	EXP A TXP3C
EXP A TXN3	C45	0.22u/4/X5R/6.3V/K	EXP A TXN3C
EXP A TXP4	C46	0.22u/4/X5R/6.3V/K	EXP A TXP4C
EXP A TXN4	C49	0.22u/4/X5R/6.3V/K	EXP A TXN4C
EXP A TXP5	C50	0.22u/4/X5R/6.3V/K	EXP A TXP5C
EXP A TXN5	C51	0.22u/4/X5R/6.3V/K	EXP A TXN5C
EXP A TXP6	C52	0.22u/4/X5R/6.3V/K	EXP A TXP6C
EXP A TXN6	C54	0.22u/4/X5R/6.3V/K	EXP A TXN6C
EXP A TXP7	C57	0.22u/4/X5R/6.3V/K	EXP A TXP7C
EXP A TXN7	C58	0.22u/4/X5R/6.3V/K	EXP A TXN7C
EXP A TXP8	C60	0.22u/4/X5R/6.3V/K	EXP A TXP8C
EXP A TXN8	C61	0.22u/4/X5R/6.3V/K	EXP A TXN8C
EXP A TXP9	C62	0.22u/4/X5R/6.3V/K	EXP A TXP9C
EXP A TXN9	C63	0.22u/4/X5R/6.3V/K	EXP A TXN9C
EXP A TXP10	C64	0.22u/4/X5R/6.3V/K	EXP A TXP10C
EXP A TXN10	C65	0.22u/4/X5R/6.3V/K	EXP A TXN10C
EXP A TXP11	C66	0.22u/4/X5R/6.3V/K	EXP A TXP11C
EXP A TXN11	C67	0.22u/4/X5R/6.3V/K	EXP A TXN11C
EXP A TXP12	C68	0.22u/4/X5R/6.3V/K	EXP A TXP12C
EXP A TXN12	C70	0.22u/4/X5R/6.3V/K	EXP A TXN12C
EXP A TXP13	C72	0.22u/4/X5R/6.3V/K	EXP A TXP13C
EXP A TXN13	C73	0.22u/4/X5R/6.3V/K	EXP A TXN13C
EXP A TXP14	C74	0.22u/4/X5R/6.3V/K	EXP A TXP14C
EXP A TXN14	C75	0.22u/4/X5R/6.3V/K	EXP A TXN14C
EXP A TXP15	C77	0.22u/4/X5R/6.3V/K	EXP A TXP15C
EXP A TXN15	C78	0.22u/4/X5R/6.3V/K	EXP A TXN15C

EXP A RXP0[0..15] >>> EXP\_A\_RXP[0..15] [4]  
EXP A RXN0[0..15] >>> EXP\_A\_RXN[0..15] [4]  
EXP A TXP0[0..15] >>> EXP\_A\_TXP[0..15] [4]  
EXP A TXN0[0..15] >>> EXP\_A\_TXN[0..15] [4]

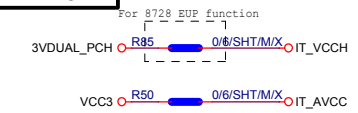
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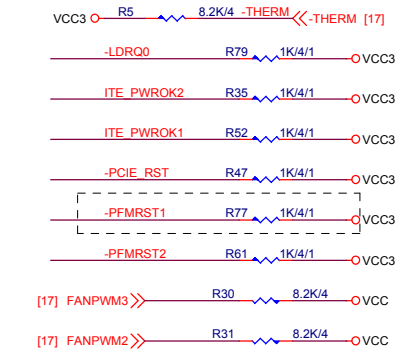
BLACK CONNECTOR

Gigabyte Technology

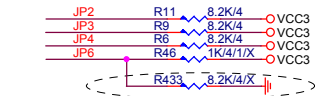
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Size			GA-H77N-WIFI		
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Date: Thursday, August 08, 2013			Sheet 14 of 32		



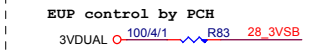
## SIO PU



## SIO STRAP



IT8728-EX  
PULL DOWN ENABLE OVP

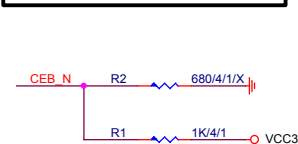


JP3--- High SPI-Flash Disable  
Low SPI-Flash Enable

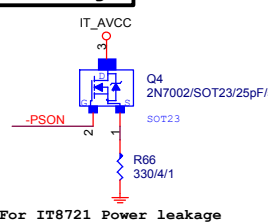
## IT8728F NOTE

	IT8728
PIN121	VCORE_EN/PCH_C0
PIN120	VLDT_EN/PCH_D0
PIN19	ATXPG
PIN31	PCH_C1
PIN53	SST/AMDTSI_D/MTTB# /PCH_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

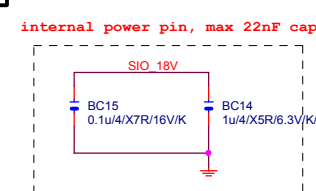
## DUAL BIOS OPT STRAP



## Power leakage

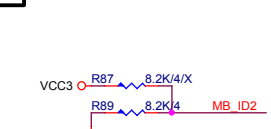


## SIO\_18V



FOR LOW TEMP POWER ON INTO TEST MODE ISSUE

## MB ID

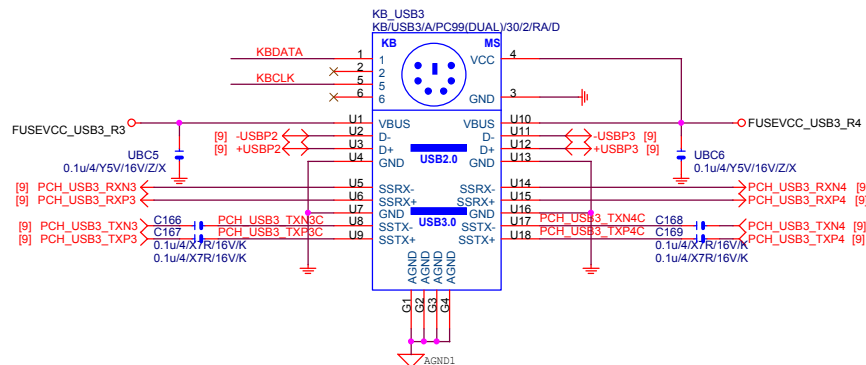


## Gigabyte Technology

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Size	Document Number	GA-H77N-WIFI	
Custom			Rev 1.1
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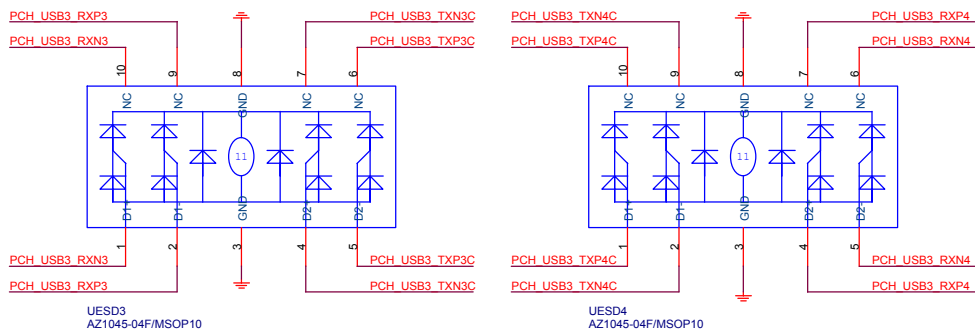


KB/MS

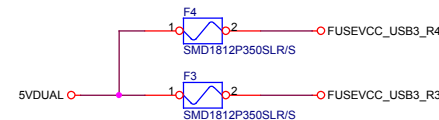


## USB3.0 LAN ESD PROTECT

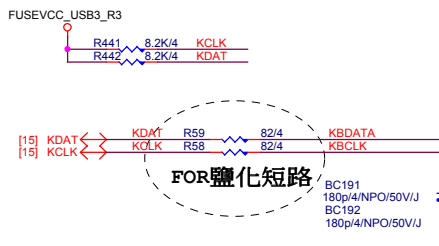
## USB3.0 ESD



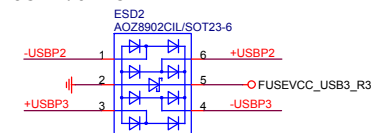
USB3.0 FWR



## USB3.0 1Port - 1Fuse (3.5A)

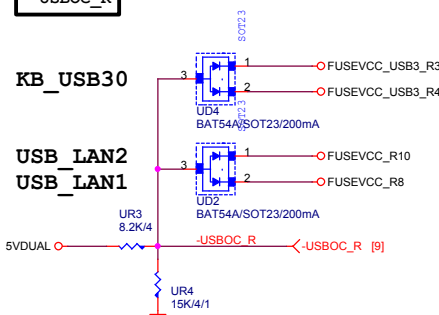


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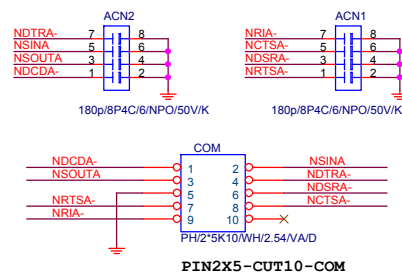
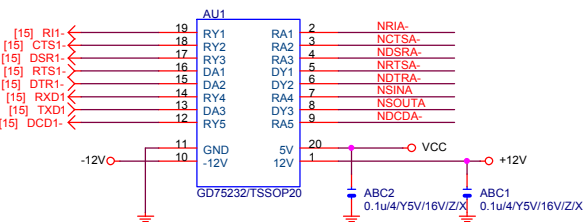


## -USBOC\_R

## KB\_USB30

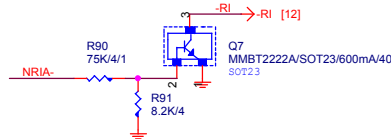
USB\_LAN2  
USB\_LAN1

COM



PIN2X5-CUT10-COM

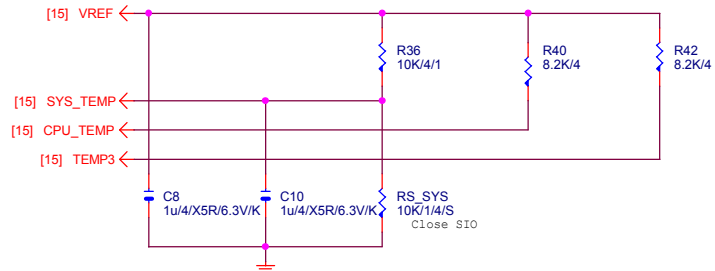
COM RI



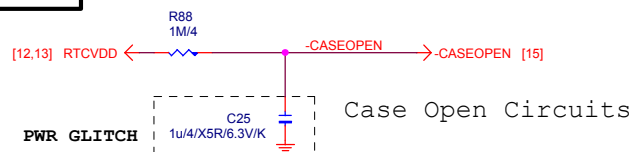
Gigabyte Technology

Title			COM,-RI,KB_USB,USB_ESATA,-PROCHOT		
Size	Document Number	GA-H77N-WIFI			Rev
Custom				1.1	
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# TEMP H/W MONITOR

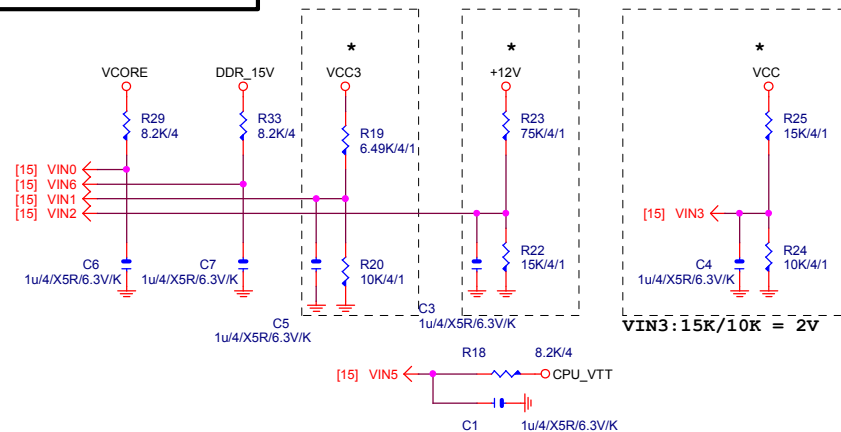


# CASE OPEN



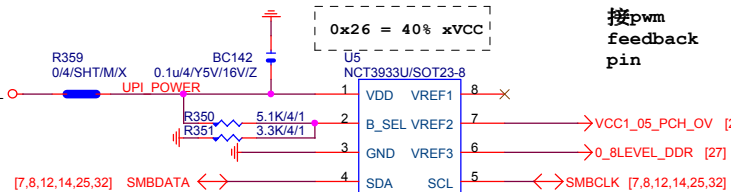
# VOLTAGE-- H/W MONITOR

VIN2: 75K/15K = 2V

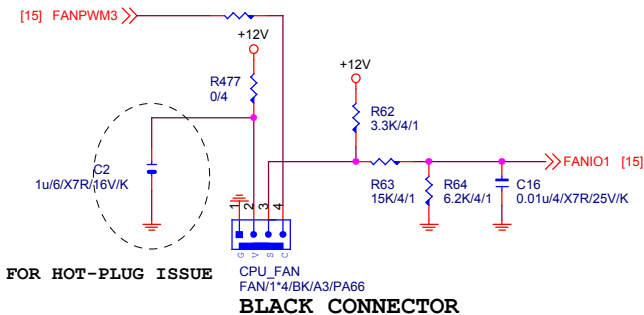


# OV NCT3933

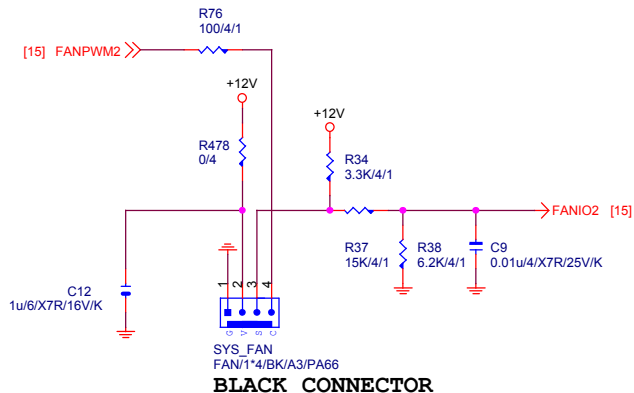
接pwm  
feedback  
pin



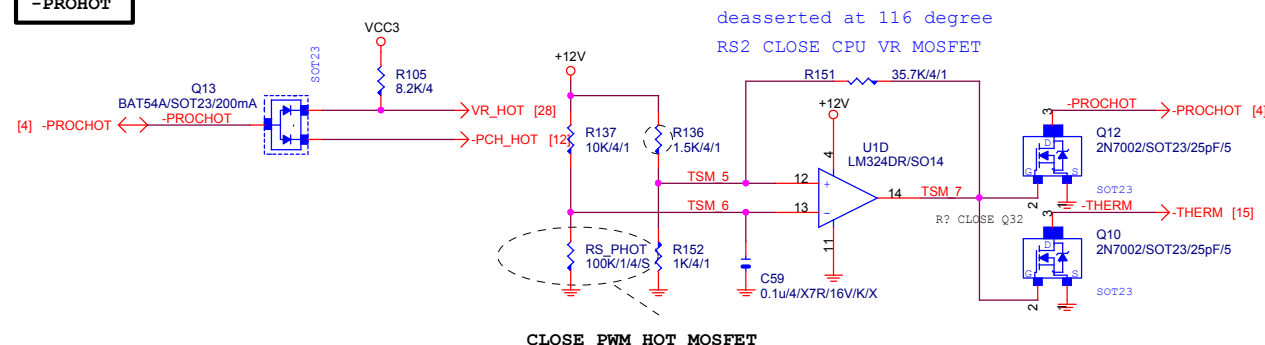
# CPU SMART FAN



# SYS SMART FAN



# -PROHOT

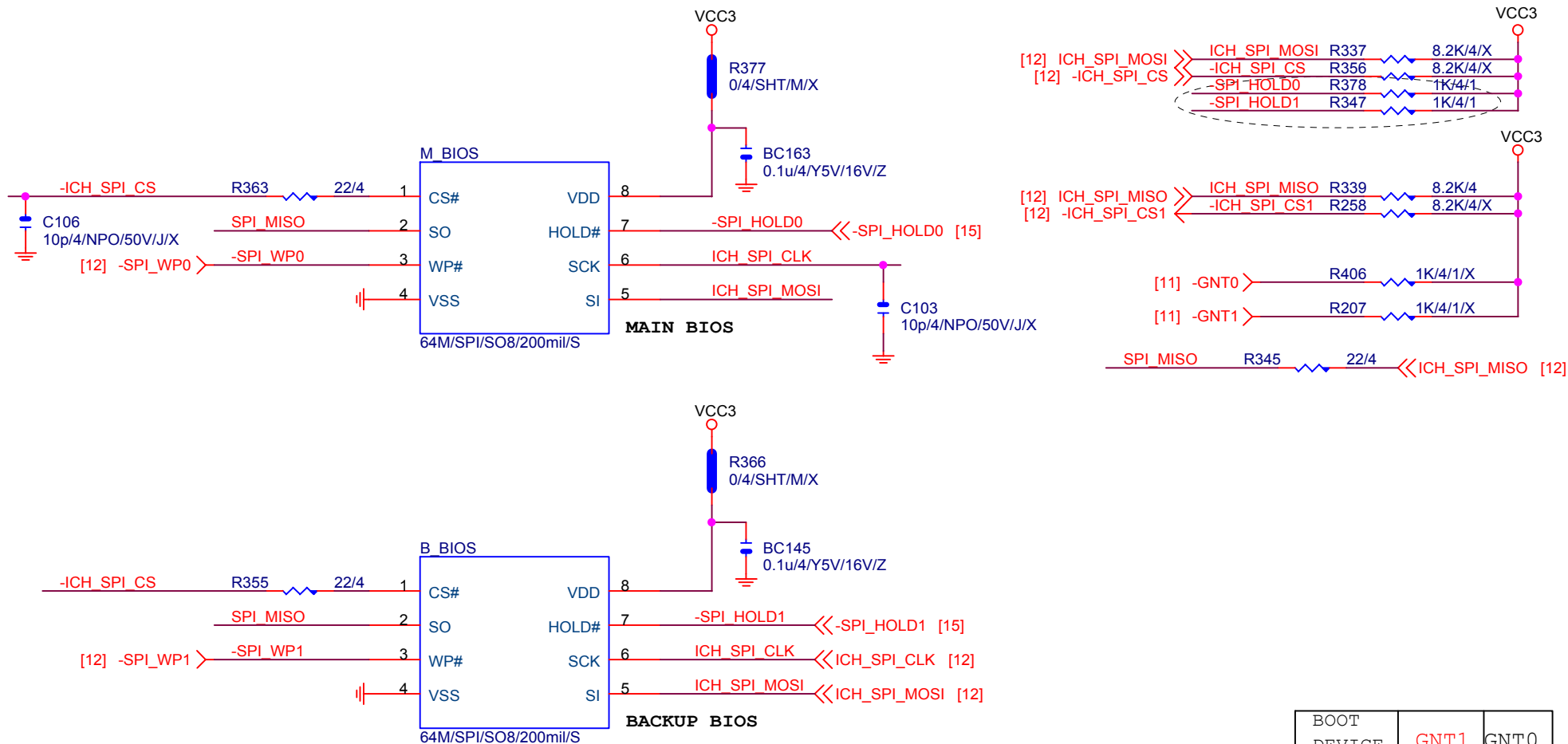


Gigabyte Technology

Title			HWM,FAN CTRL,OV
Size	Document Number	GA-H77N-WIFI	
Custom		Rev	1.1
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# DUAL BIOS

www.xinxunwei.com 400-800-9990



B65使用64M BIOS

使用H67暫用32M

H61使用32M BIOS

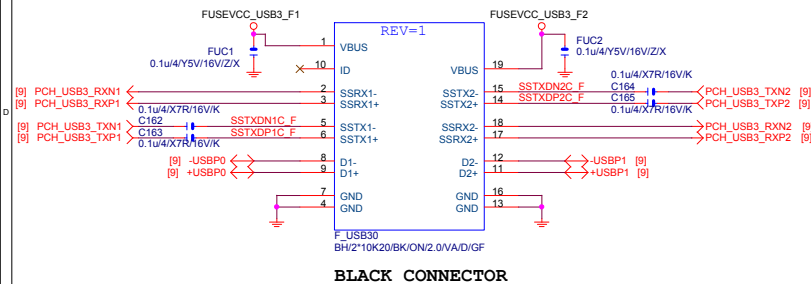
BOOT DEVICE	GNT1	GNT0
LPC	0	0
PCI	0	1
SPI	1	1

1 means floating  
0 means PD 1K

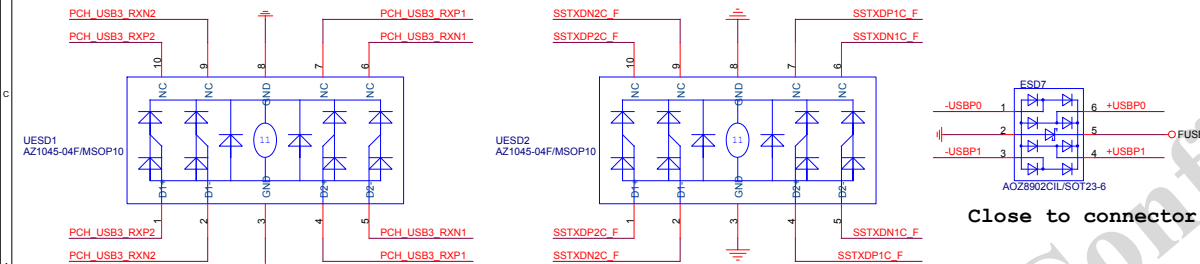
**Gigabyte Technology**

Title		
DUAL BIOS		
Size A	Document Number	Rev
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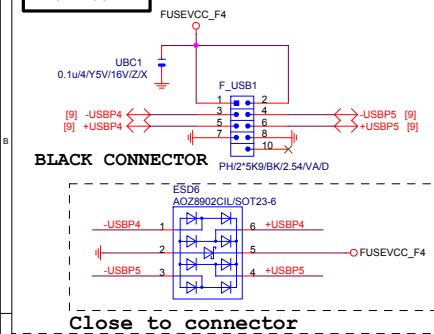
**F\_USB30**



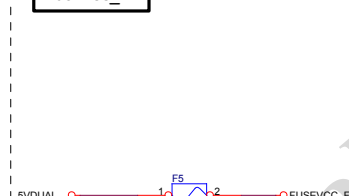
F_USB30 ESD PROTECT
---------------------



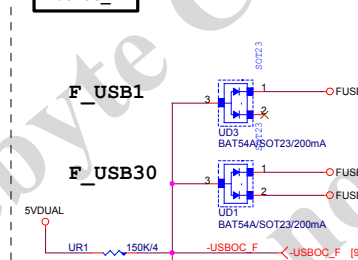
FRONT USB1



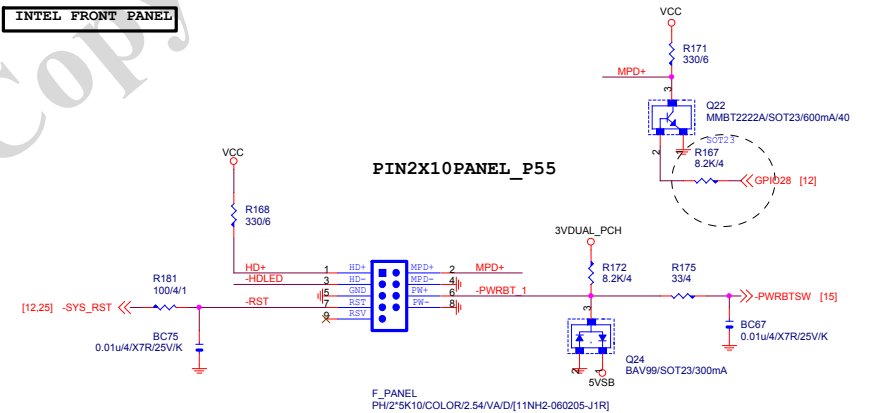
## FUSEVCC\_F



-USBOC\_F

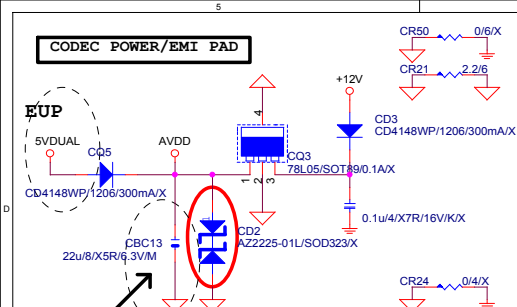


#### INTEL FRONT PANEL





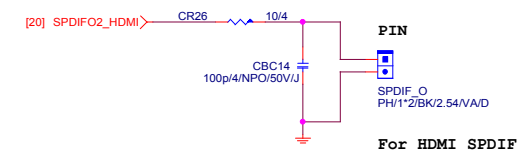
## CODEC POWER/EMI PAD



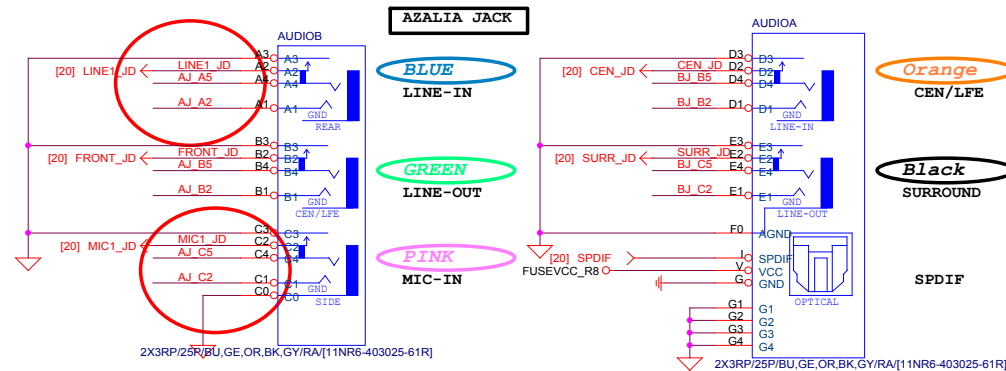
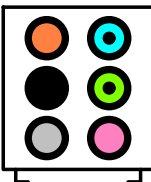
上ALC892時,此顆電容要保留

ADD CD2 For ESD PROTECT DIODE

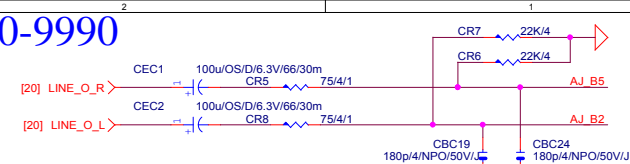
## SPDIF\_OUT



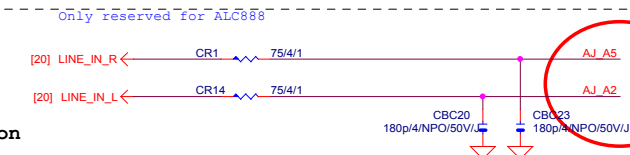
## AZALIA JACK



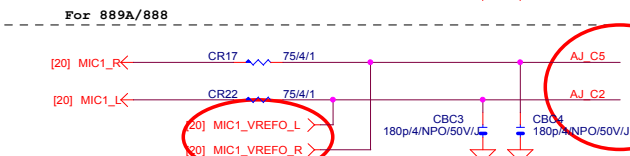
## LINE-OUT



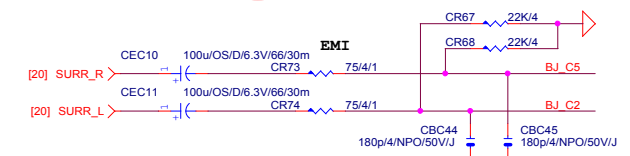
## LINE-IN

Verify MIC function  
in LINE-in

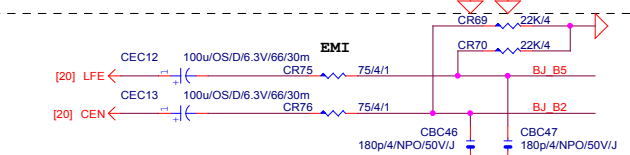
## MIC-IN



## SURROUND

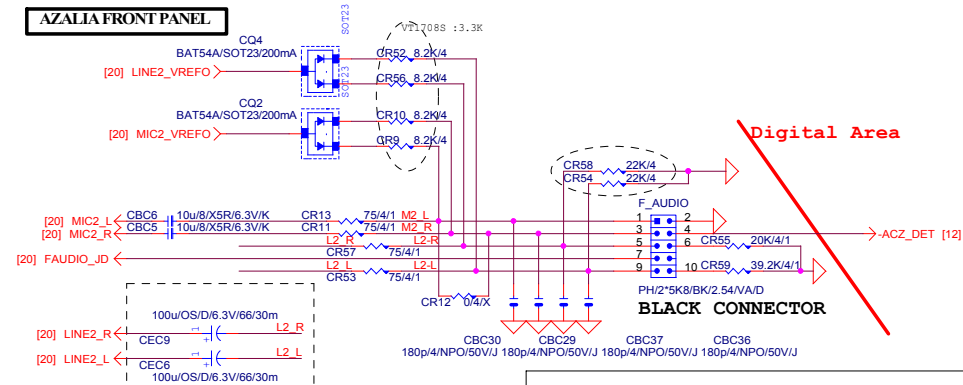


## CEN/LFE



## SURRBACK

## AZALIA FRONT PANEL



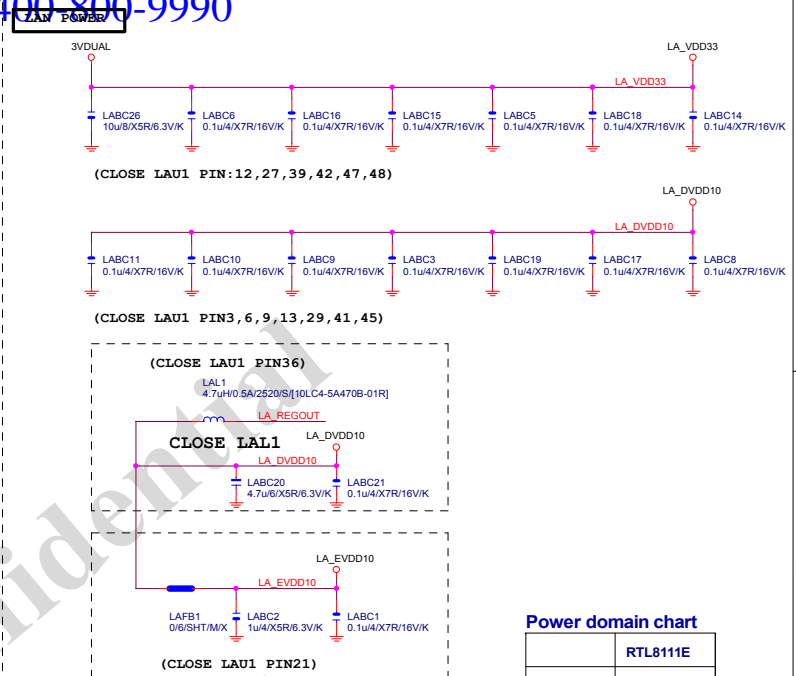
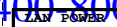
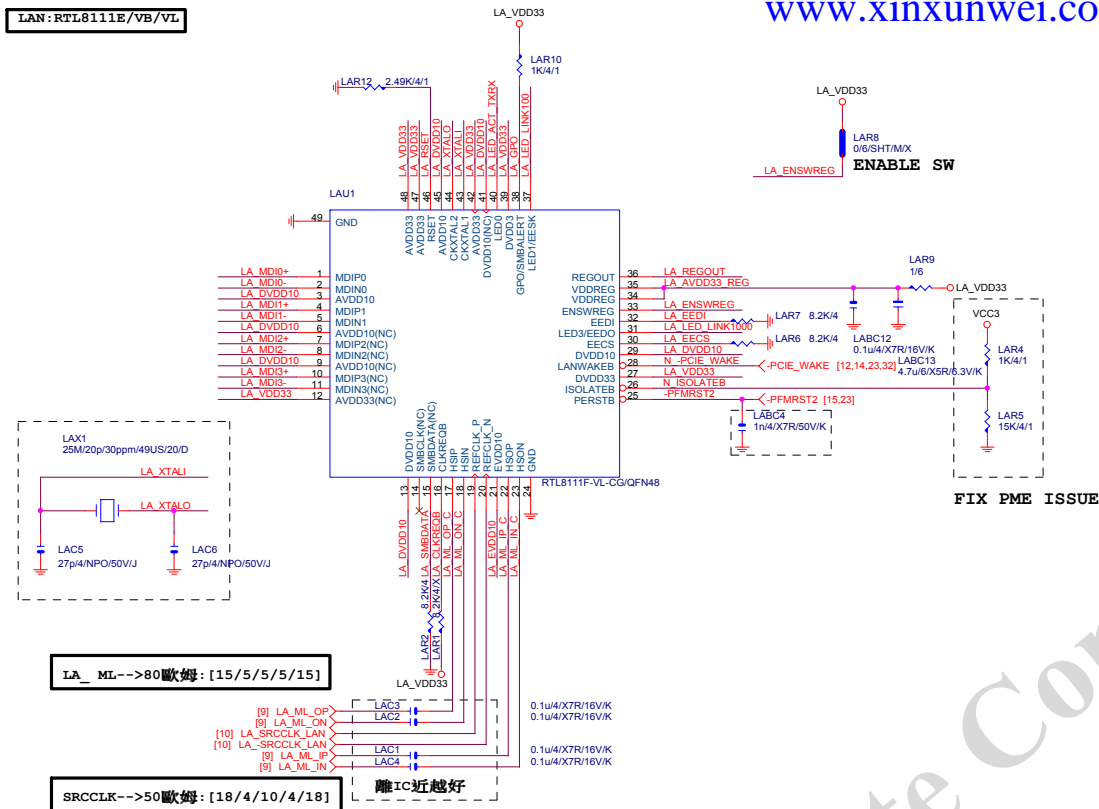
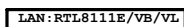
Gigabyte Technology

AUDIO JACK

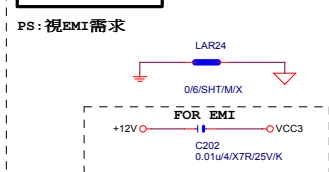
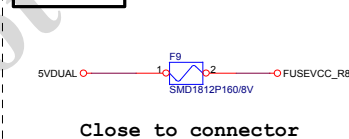
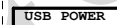
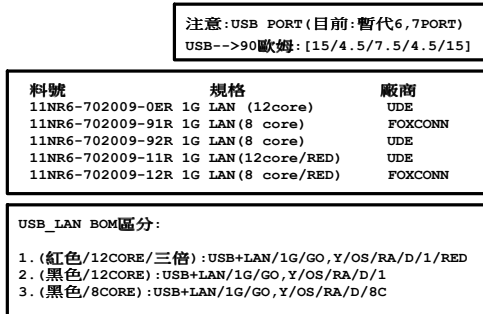
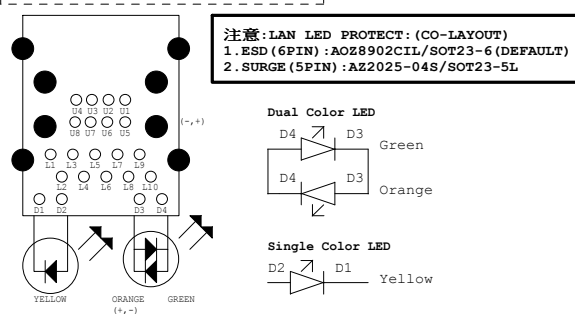
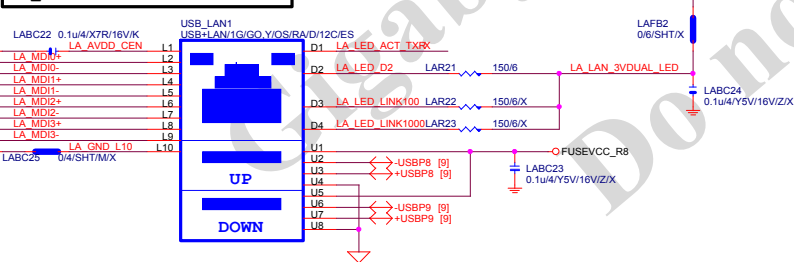
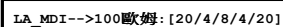
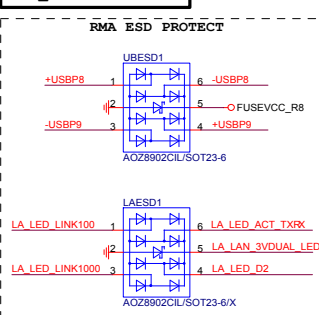
GA-H77N-WIFI

Rev 1.1

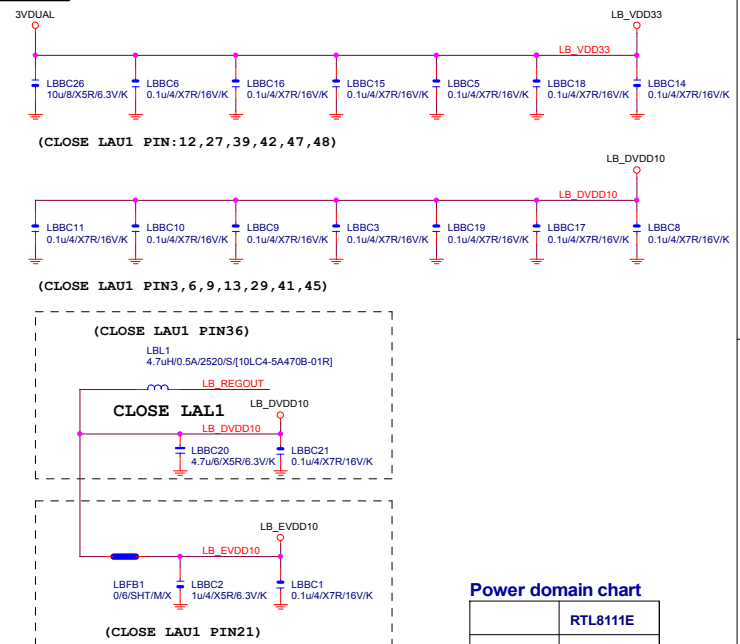
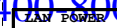
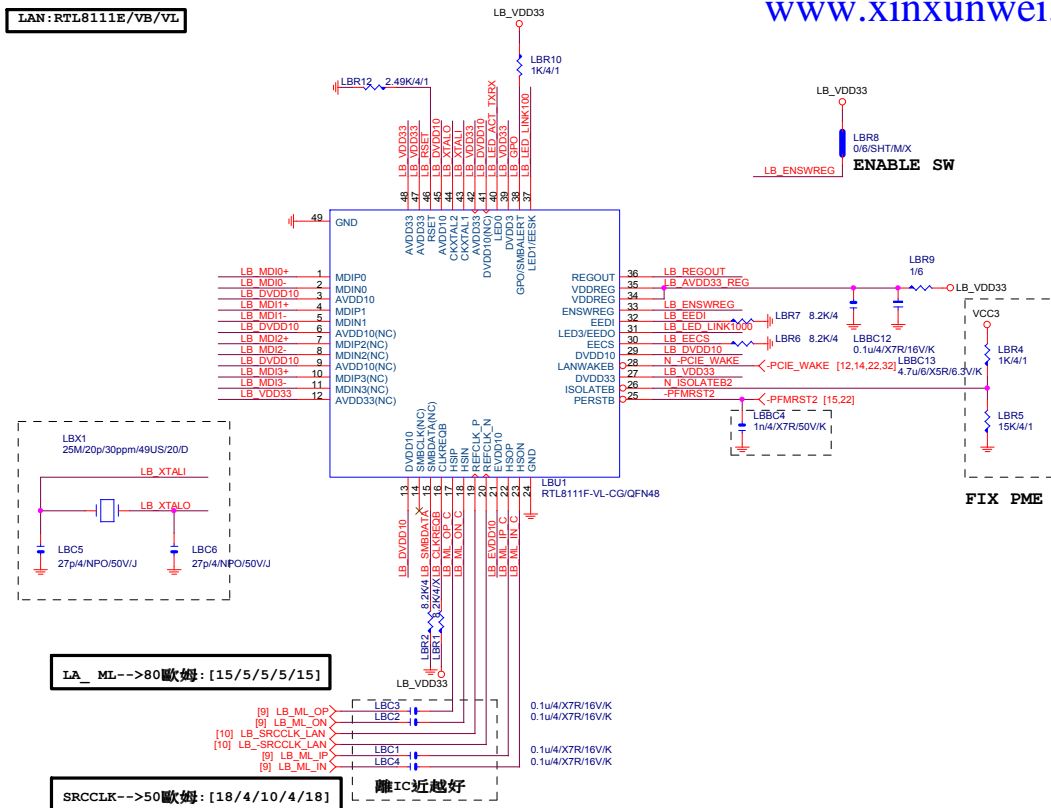
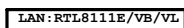
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Power domain chart	
	RTL8111E
AVDD33	3.3V
DVDD33	3.3V
VDDREG	3.3V
DVDD10	1.05V

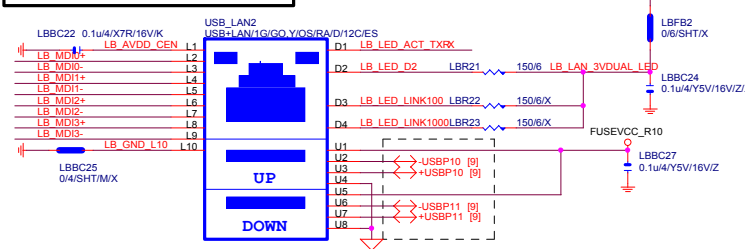
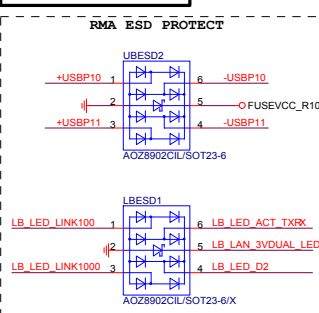
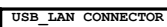






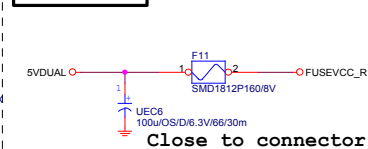
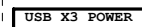
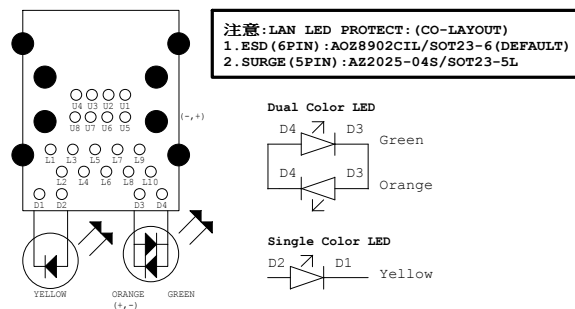
### Power domain chart

	RTL8111E
AVDD33	3.3V
DVDD33	3.3V
VDDREG	3.3V
DVDD10	1.05V

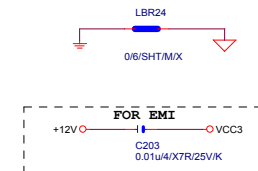


注意:USB PORT(目前:暫代6,7PORT)

USB-->90Ω母: [15/4.5/7.5/4.5/15]



PS:視EMI需求

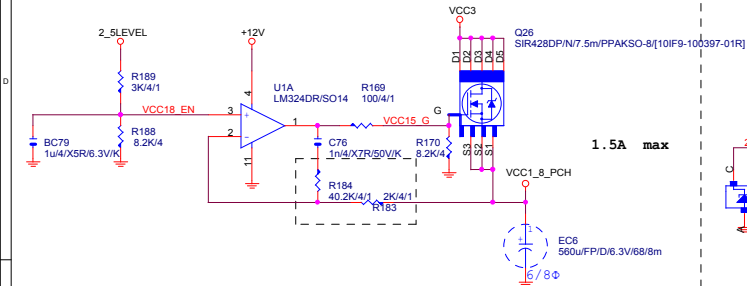


料號	規格	廠商
11NR6-702009-0ER	1G LAN (12core)	UDE
11NR6-702009-91R	1G LAN (8 core)	FOXCONN
11NR6-702009-92R	1G LAN (8 core)	UDE
11NR6-702009-11R	1G LAN (12core/RED)	UDE
11NR6-702009-12R	1G LAN (8 core/RED)	FOXCONN

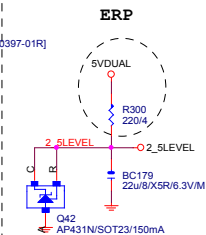
USB\_LAN BOM區分:

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

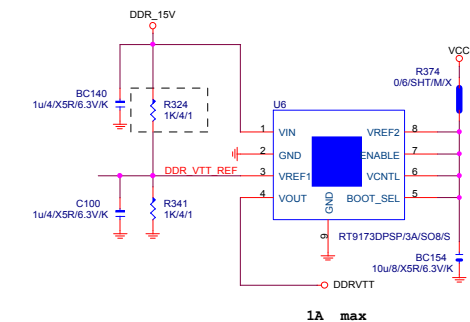
VCC1\_8\_PCH



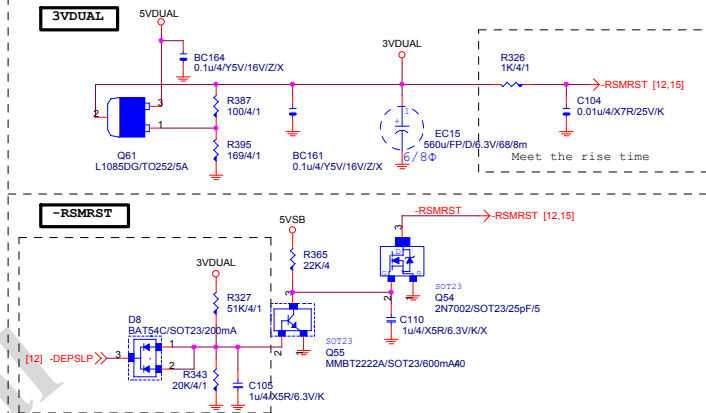
2\_5LEVEL



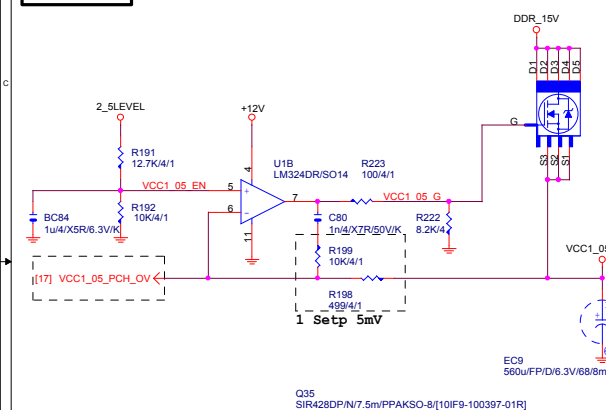
DDR\_VTT



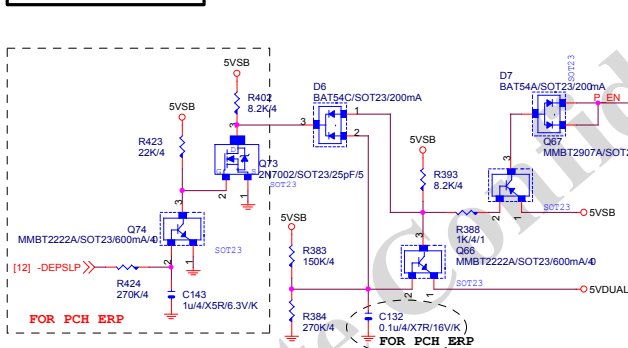
3VDUAL



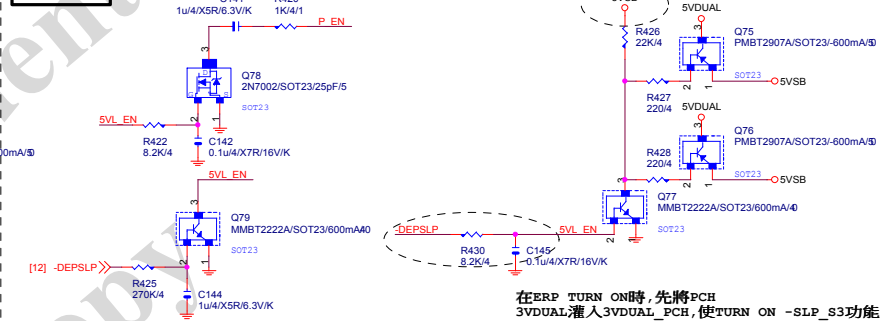
VCC1\_05\_PCH



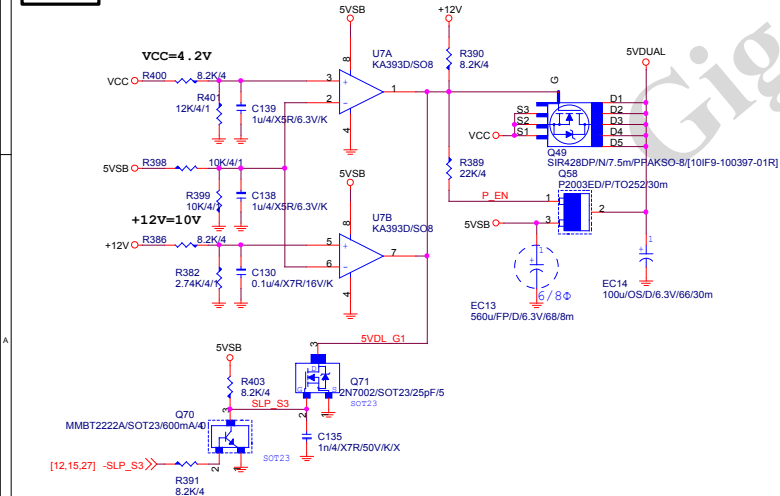
5VDUAL SHORT PROTECT



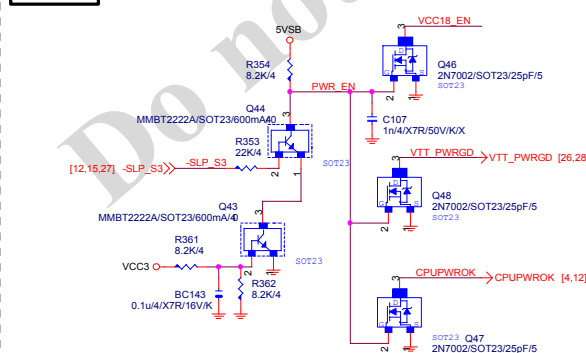
PCH ERP

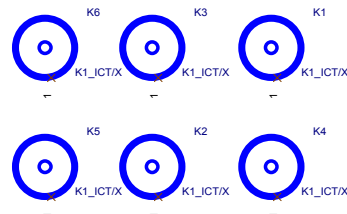
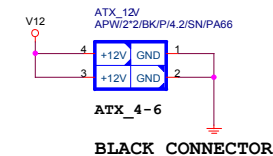


5VDUAL

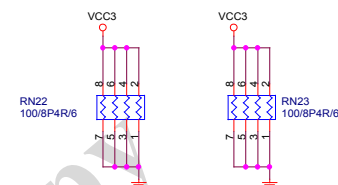


PWR SEQ



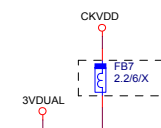
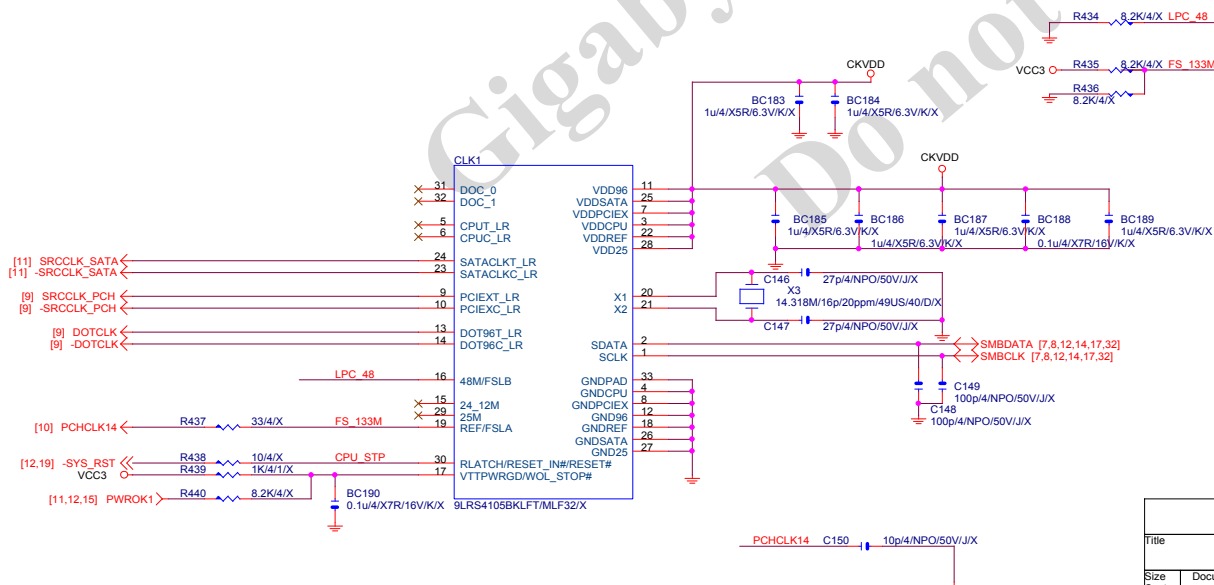


FIX PWR MINMUN LOAD

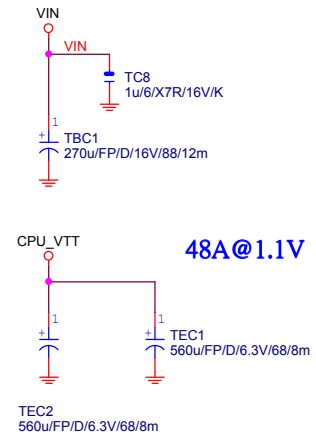
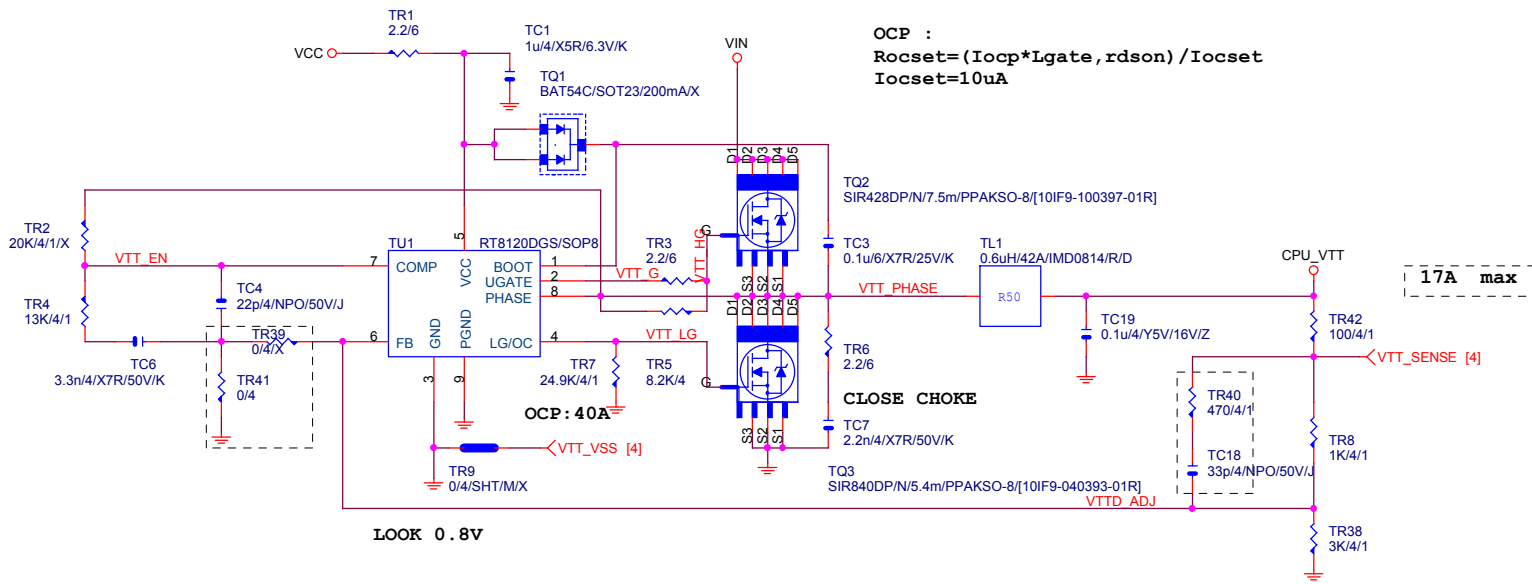


### CPU Frequency Selection

FS	CPU
0	100M <Default>
1	133M



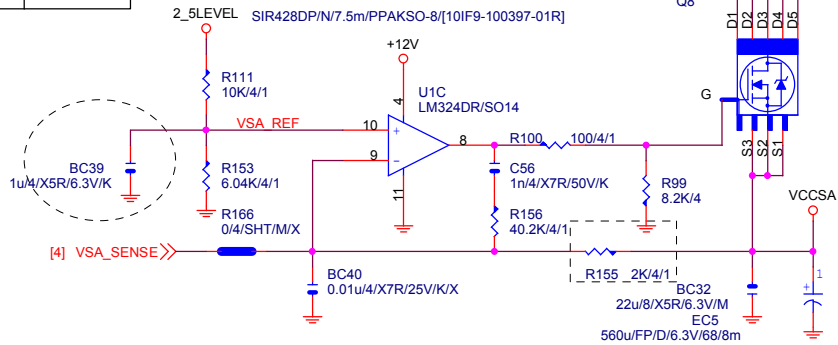
# CPU\_VTT



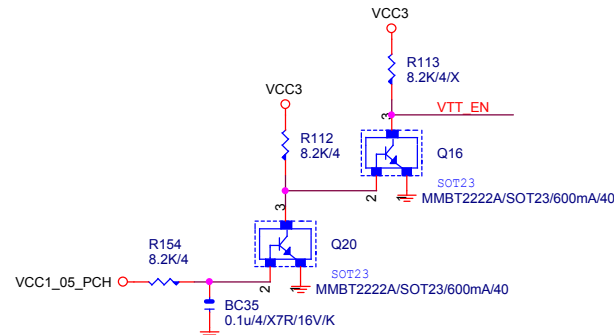
## VCCSA

PDG 0.8

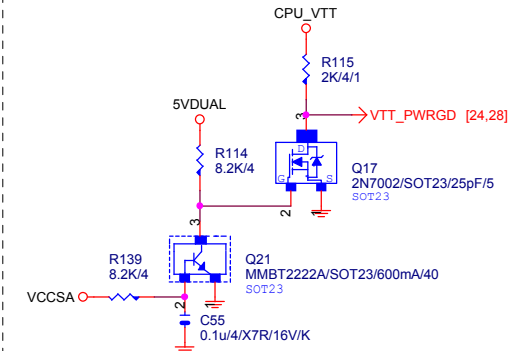
	VSA_SEL
HI	0.85V
LO	0.925V



## CPU\_VTT PWR SEQ



## VTT\_PWRGD

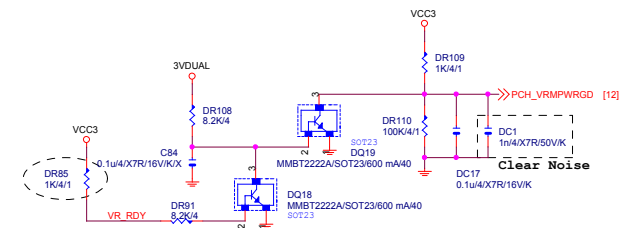
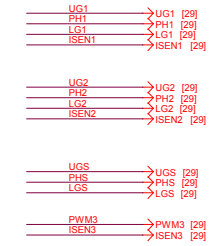
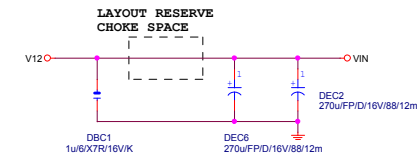


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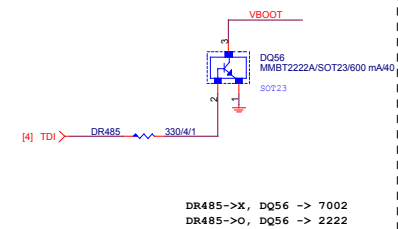
Title			
CPU_VTT			
Size	Document Number	Rev	
Custm	GA-H77N-WIFI	1.1	
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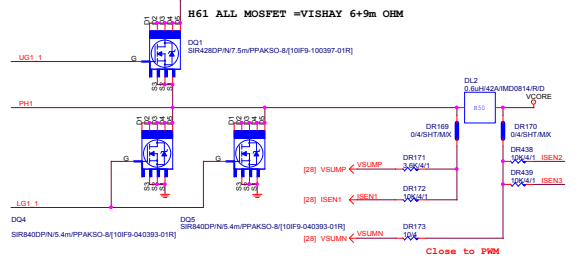
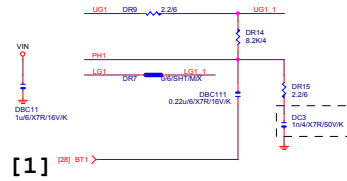
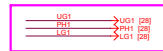
Size Custom	Document Number	<b>GA-H77N-WIFI</b>	Rev	<b>1.1</b>
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```
FOR RMA      Set VBOOT=GND  for Vboot=0V
              VBOOT=OPEN for
              Vboot=1.1V
```



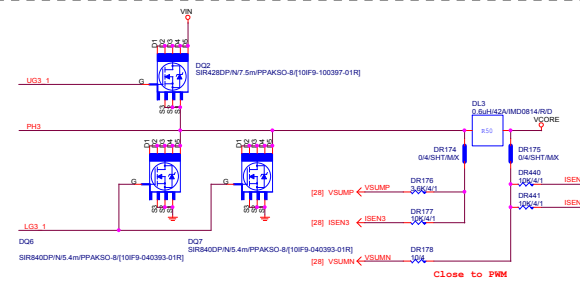
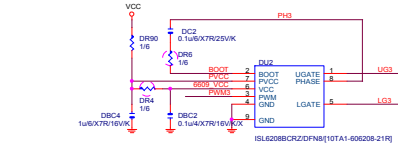
## PHASE 1



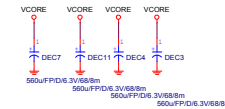
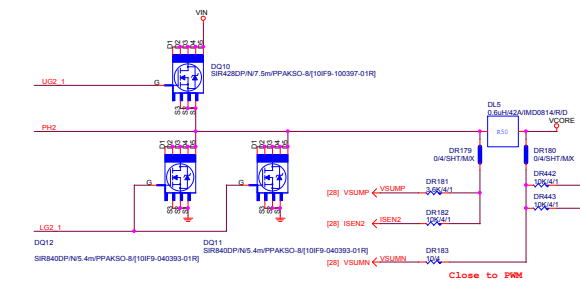
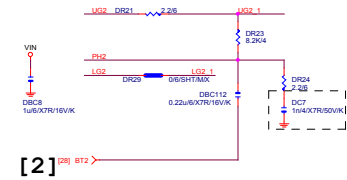
## PHASE 3

Pop 120.6625C8 for P31

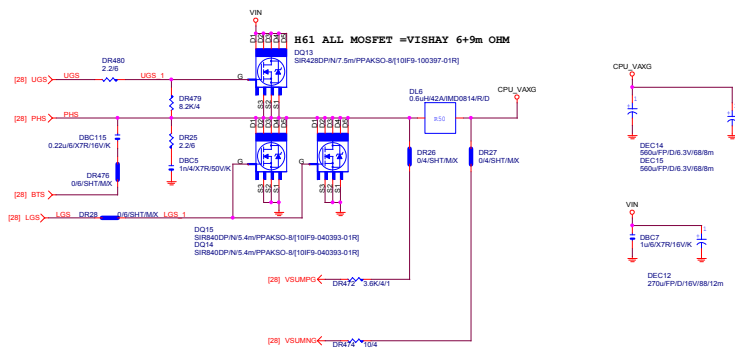
(100.6625C8 (P31))



## PHASE 2

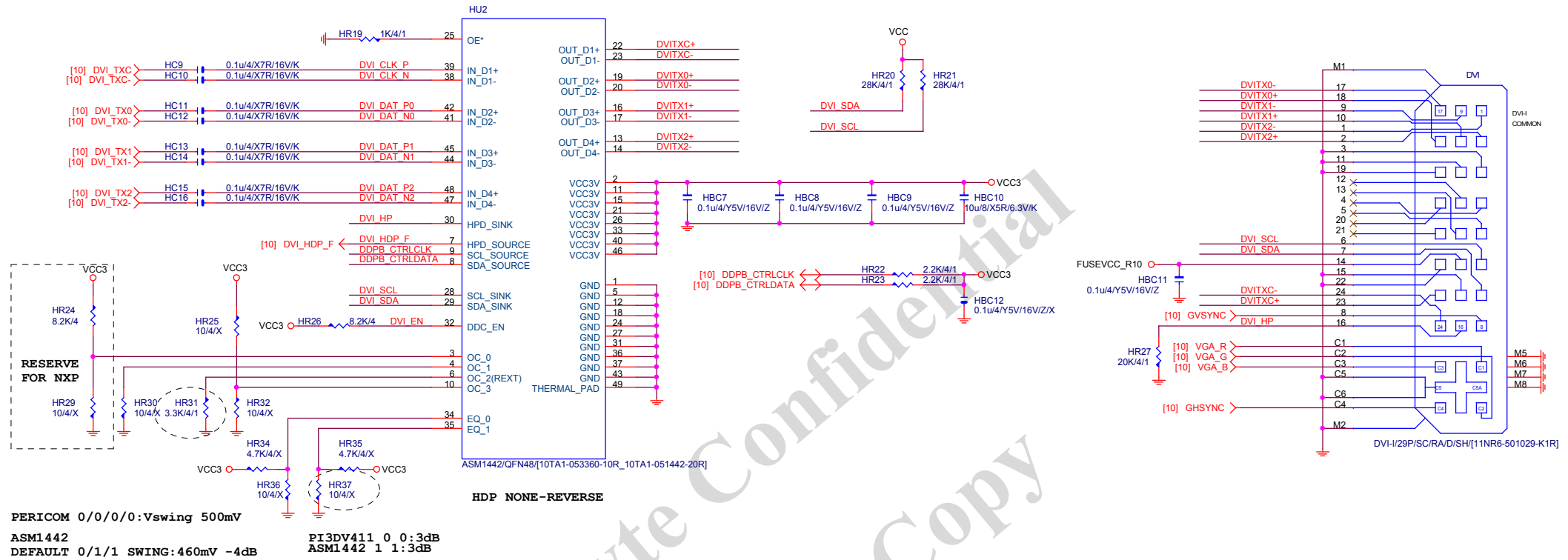


## VAXG





## DVI LEVEL SHIFT



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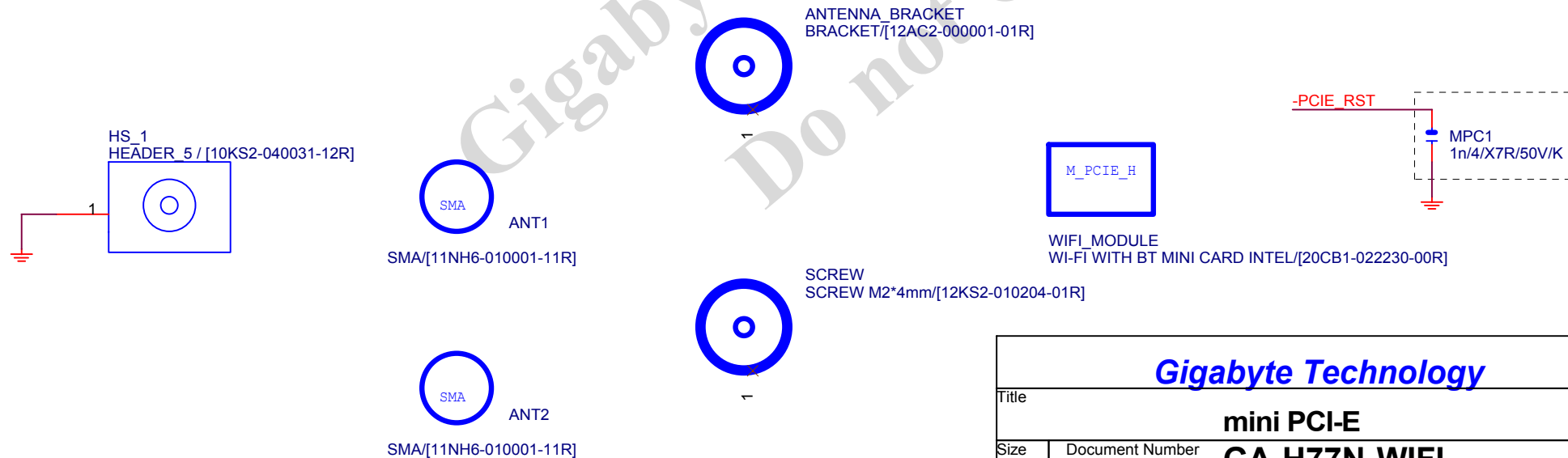
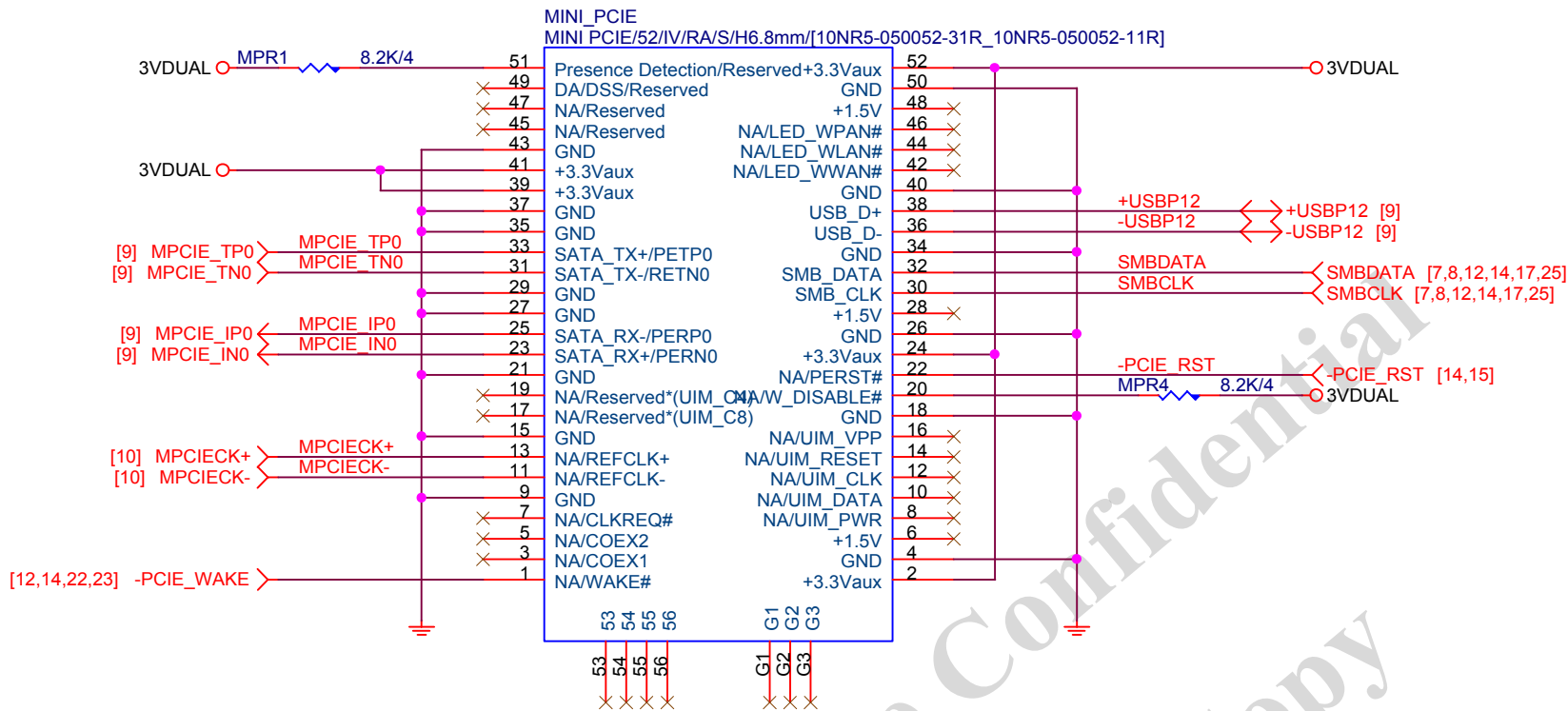
DVI

GA-H77N-WIFI

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Gigabyte Technology			
Title			
mini PCI-E			
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