

Model Name: 8I915P-D PRO

SHEET TITLE Revision 2.0

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02	BLOCK DIAGRAM
03	BOM & PCB MODIFY HISTORY
04	P4_LGA775_A
05	P4_LGA775_B
06	P4_LGA775_C
07	P4_LGA775_D
08	GMCH-GRANTSDALE_HOST
09	GMCH-GARNTSDALE_DDR
10	GMCH-GRANTSDALE_PCI E, DMI
11	GMCH-GRANTSDALE_INT VGA
12	GMCH-GRANTSDALE_GND
13	GMCH-GRANTSDALE_PWR
14	DDRII CHANNEL A
15	DDRII CHANNEL B
16	DDR TERMINATION
17	ICH6 PCI, USB, DMI, LAN
18	ICH6 IDE, GPIO, SATA, CTRL
19	ICH6 VCC, GND
20	PCI EXPRESS*16 SLOT
21	PCI EXPRESS*1 SLOT 1,2,3
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SHEET TITLE

23	DUAL BIOS
24	CK410M CLOCK.
25	ITE8712HX_GB
26	HARDWARE MONITOR
27	IDE & FDD
28	KB_PS2 & IR
29	FRONT PANEL
30	FAN CONTROL
31	COM_LPT
32	F_USB & R_USB CONNECTOR
33	AZALIA ALC880/CMI9880
34	REAR AUDIO JACK
35	FRONT AUDIO JACK
36	Marvell 88E8001 1G LAN
37	TSB43AB23 1394A
38	VCORE POWER (VRD10.1 ISL6556)
39	DISCRETE POWER
40	ATX POWER CONN.

COMPONENT SIDE  
(1 oz. Copper)  
VCC SIDE  
(1 oz. Copper)  
GND SIDE  
(1 oz. Copper)  
SOLDER SIDE  
(1 oz. Copper)

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Title

Cover Sheet

Size

Document Number

8I915P-D PRO

Rev

2.0

Date:

Tuesday, September 14, 2004

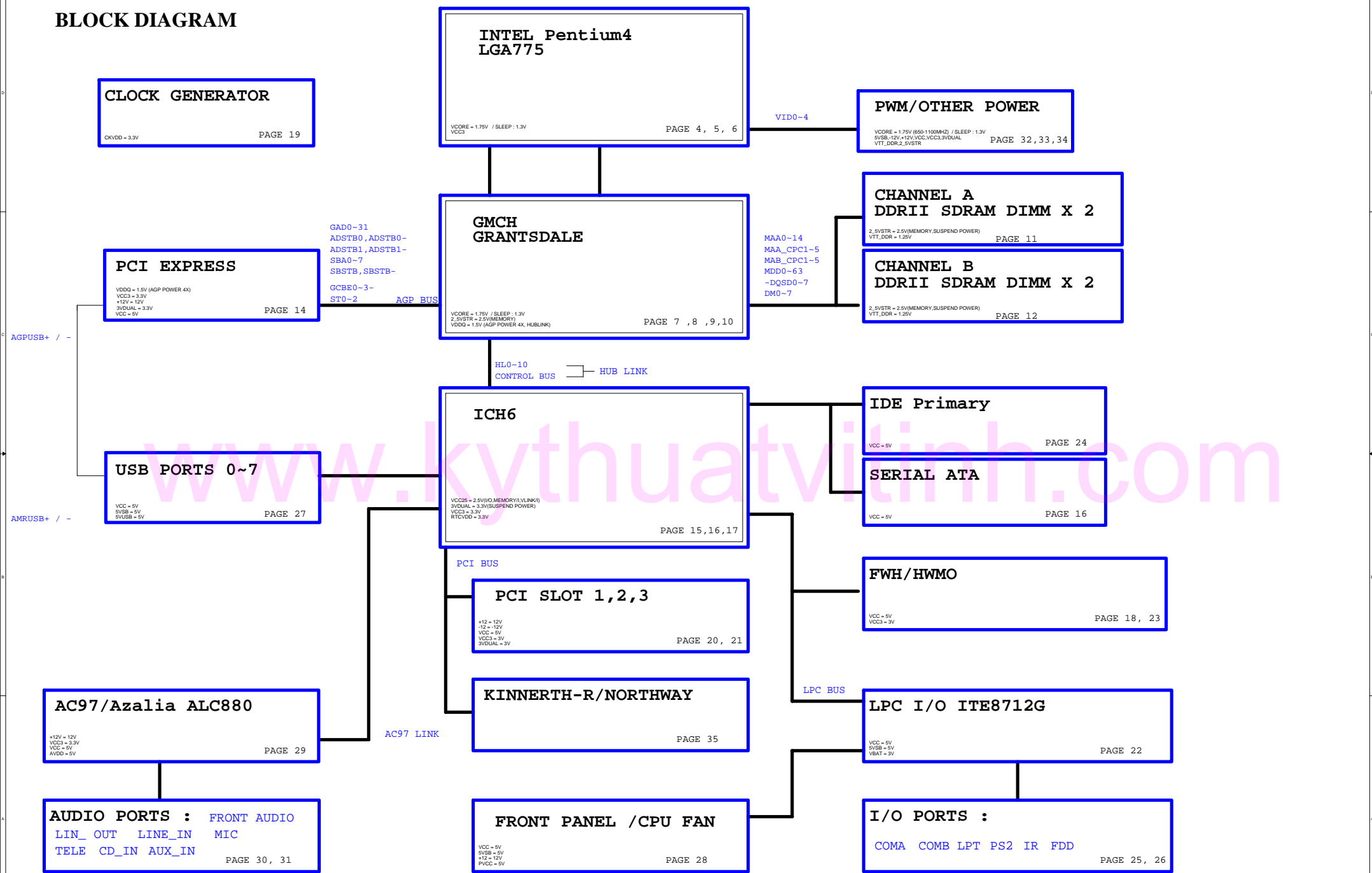
Sheet

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BLOCK DIAGRAM



Model Name: 8I915P-D PRO

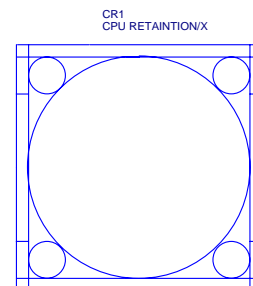
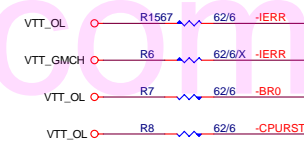
Version: 2.0

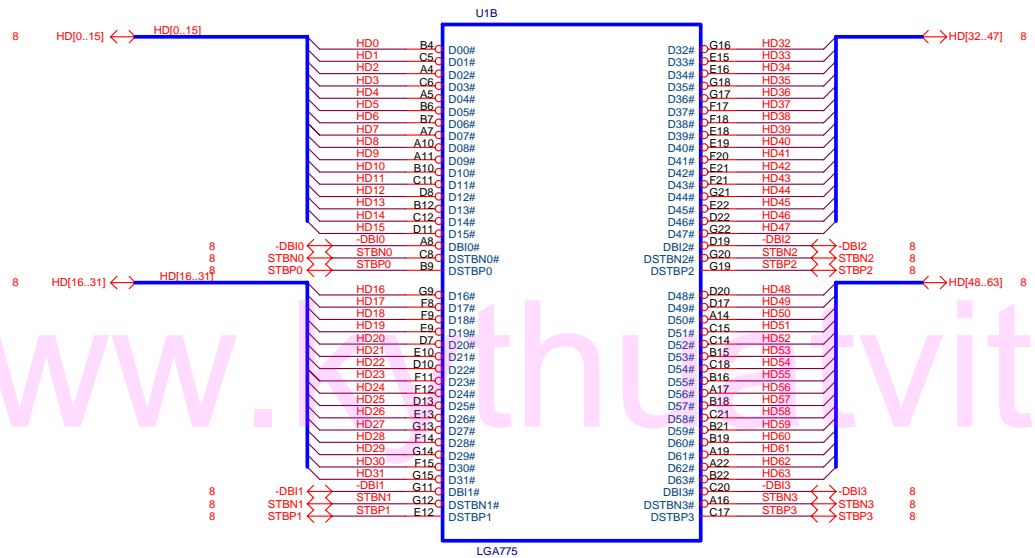
Component value change history

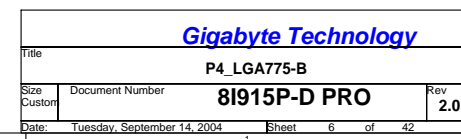
Data	Change Item	Reason
93.05.10_1.0A	BOM Change from 8I915GDP_10A	
	U78: Phoenix Label, U77: Dual Bios Label	
	FDD6670(Q42,44,45)改9m ohm.	
	SPDIF_IN & OUT remove spring, AZALIA_FP change to Green Color	
	ALC880 Rev.E change to date code 0417 and after	Fix F_AUDIO noise
	Grantsdale-G change to Grantsdale-P	
	add 包材(Manual, Driver,...)	
	DR16 : 2.7K --> 2.2K	For Temperature balance
	NB_HEATSINK改12SP2-04F003-11/12/13	
	12LC2-03DUAL-00 --> 貼在PCI slot上	
93.05.18_1.0B	Remove C37,C38,C39	Remove 915P unused parts
	DDRVTT pull-down 100/6 for ISL6537 issue	For ISL6537 DDRVTT OVP issue.
	Remove R126, R127, R128	For 915P can not boot issue
	Line-out改串10U	For Frequency Response fail issue
	14.318 XTAL change to 22P	For RTC time is not correct issue.
93.05.28_1.0C	Q36加替料P06P03 (10IF4-450603-01)	for AP3310H single source issue.
	RS2改100K(10RH2-001003-21) for 功率問題。	For HR10K 功率不足issue.
	RS2:HR10K-->100K,R564: 1K/6/1-->10K/6/1, R565:1.69K/6/1-->2.32K/6/1	For RS2 功率不足issue
	680/6 from R1523 move to R1562	For CPU not mount Vcore output 7.8V issue.
	U28:IT8712(IX4主料, IX3 替料)	IT8712(IX4主料, IX3 替料)
	10U/12/X5R/16V實驗後改成Y5V	
93.06.01_10D	CPU pull-up from 51 ohm change to 62 ohm	減少零件種類
	R328 mount 470/6	For IDE cable select function
	MB_ID1(-REQ6) pull-up to VCC3	For PCI bandwidth is not enough issue.
	Remove RS1(HR10K)	don't need to detect system temp.
93.06.15_10D_ECNI	Add Color Box Feature & CPU Manual	包材修正

Circuit or PCB layout change for next version

PAGE	Change Item	Reason
93.02.18_0.2	-IO_PSON change to -PS_ON	
	R401與R400文字左右顛倒	
	SB HEATSINK改爲push-pin(RELAYOUT)	
	VTT_PWRGD改接VCC3分壓，不由ISL6537來	
	Remove SATACLK, SRCCLK_LAN trace & parts	
	Remove ACK64, PCI_A40,PCI_A41,GPO25,-LANWAKE ,-smbalrt,ATXGPO0,S66DET module port	
	invert DELAY1 and connect to DUAL_BIOS_DELAY	
	Add BAV70 for -NRIA & -NRIB enable -RI	
	Add 8.2K/6 between U24.12 and FSBSEL0	
	Rear FUSEVCC加寬, SB: VCC1_5銅箔修改	
	Vcore Power, Clock Gen, Reset circuit modify	
93.03.23_0.3	Vcore電感改DIP, MOS上1下2	
	VCC_SENSE與VSS_SENSE之間預留電容於CPU socket右邊	
	PCI test pin分別接GND與VCC	
	增加Turbo pin function (DU6), And Linear FAN control	
	U13: 74HCT32 change to IC14SOIC package	
	CPU socket內改成4個SP-CAP與10個1206電容共layout	
	Marvell LAN之電容位置修改, 5VDUAL整組移到ATX右方	
	北橋Grantsdale文字錯誤, PWROK1斷線修正	
	FB5~FB7 change to 0603	
	F2・EC35・IEC2, IEC3 卡到PCI2 長卡	
	CD_IN反轉180度，並略向下移	
	5VDUAL整組移到ATX右方	
1.0	Audio改後6・remove GAME, Add COMA(2x5)	
	VGA_COM改爲與COMA Co-Layout	
	F1向左上方移位以免折斷	
	加5VDUAL 1000U電容於L19左側	
	EC156 100U DIP/SMD共layout	
	4-wire FAN FANPWM3 add damping resistor 100 ohm.	For ITE chip burn-out issue.



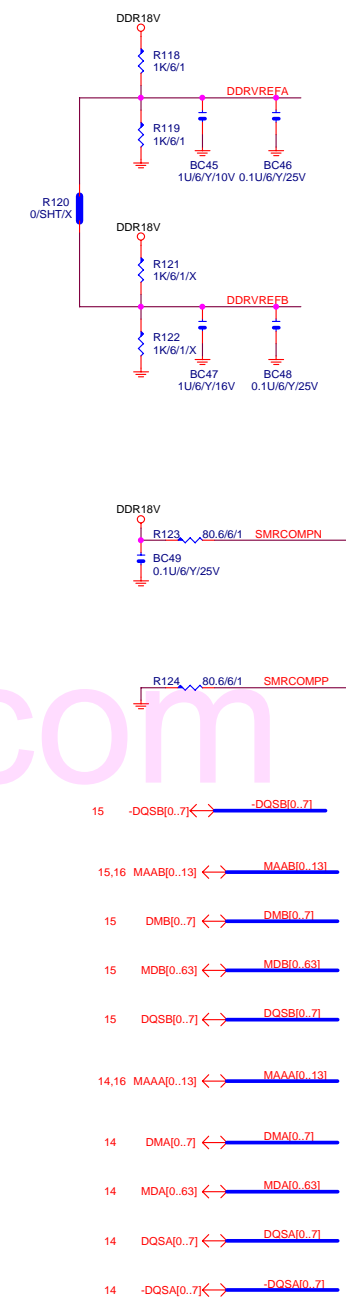


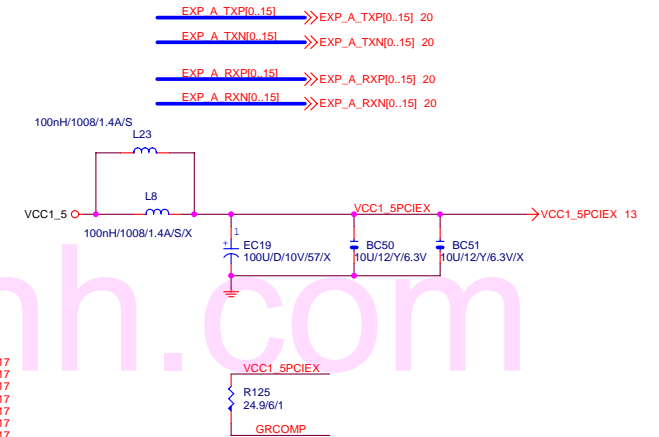
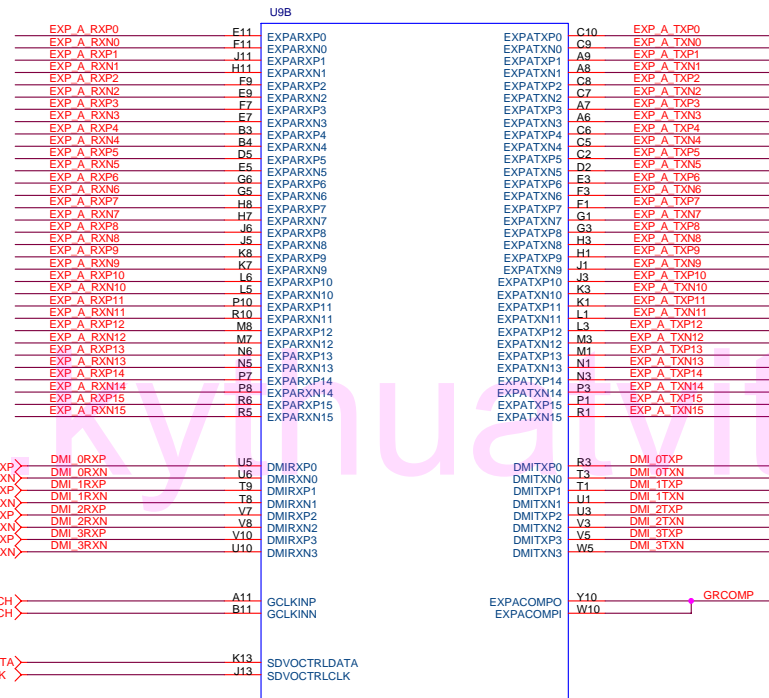




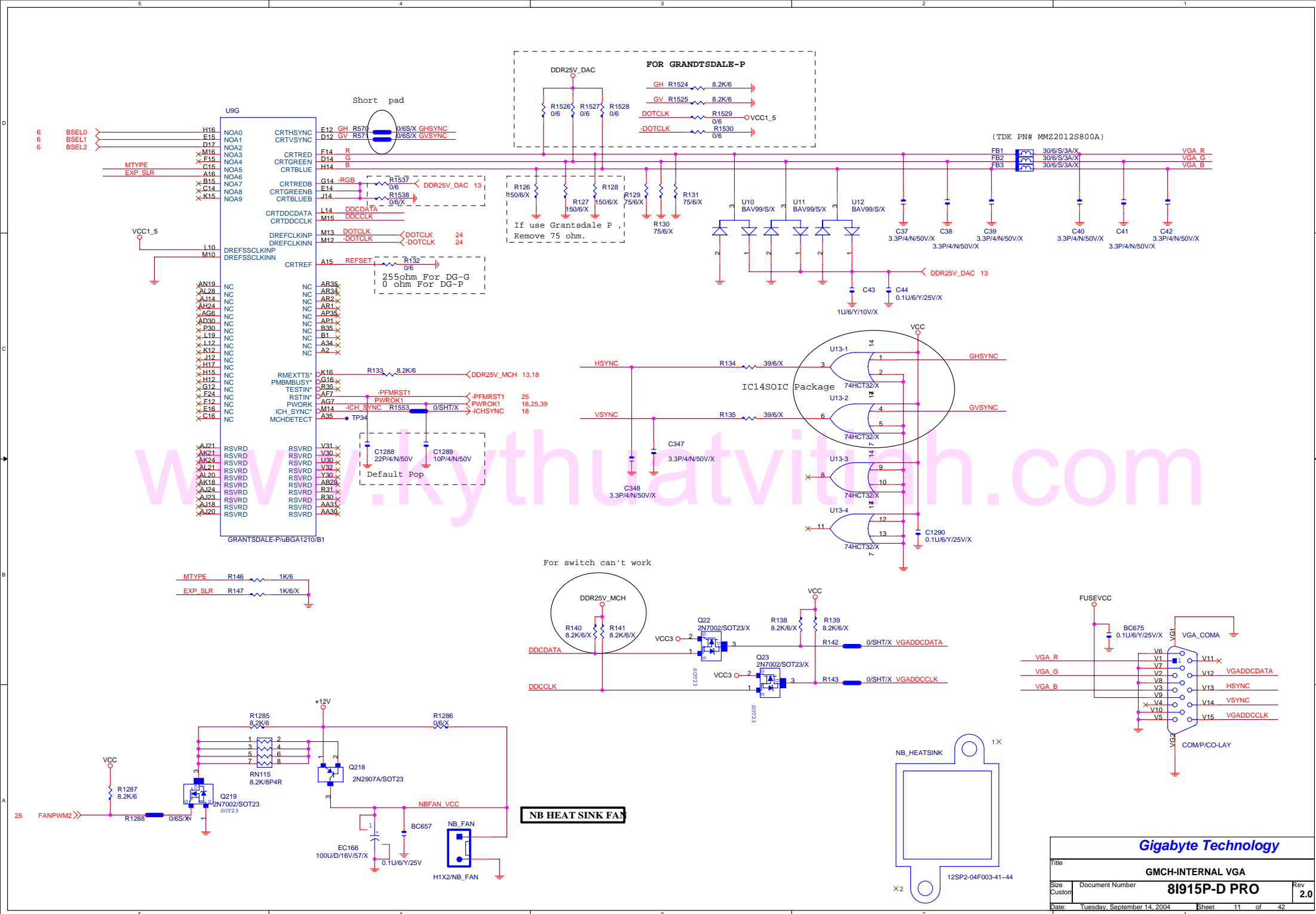


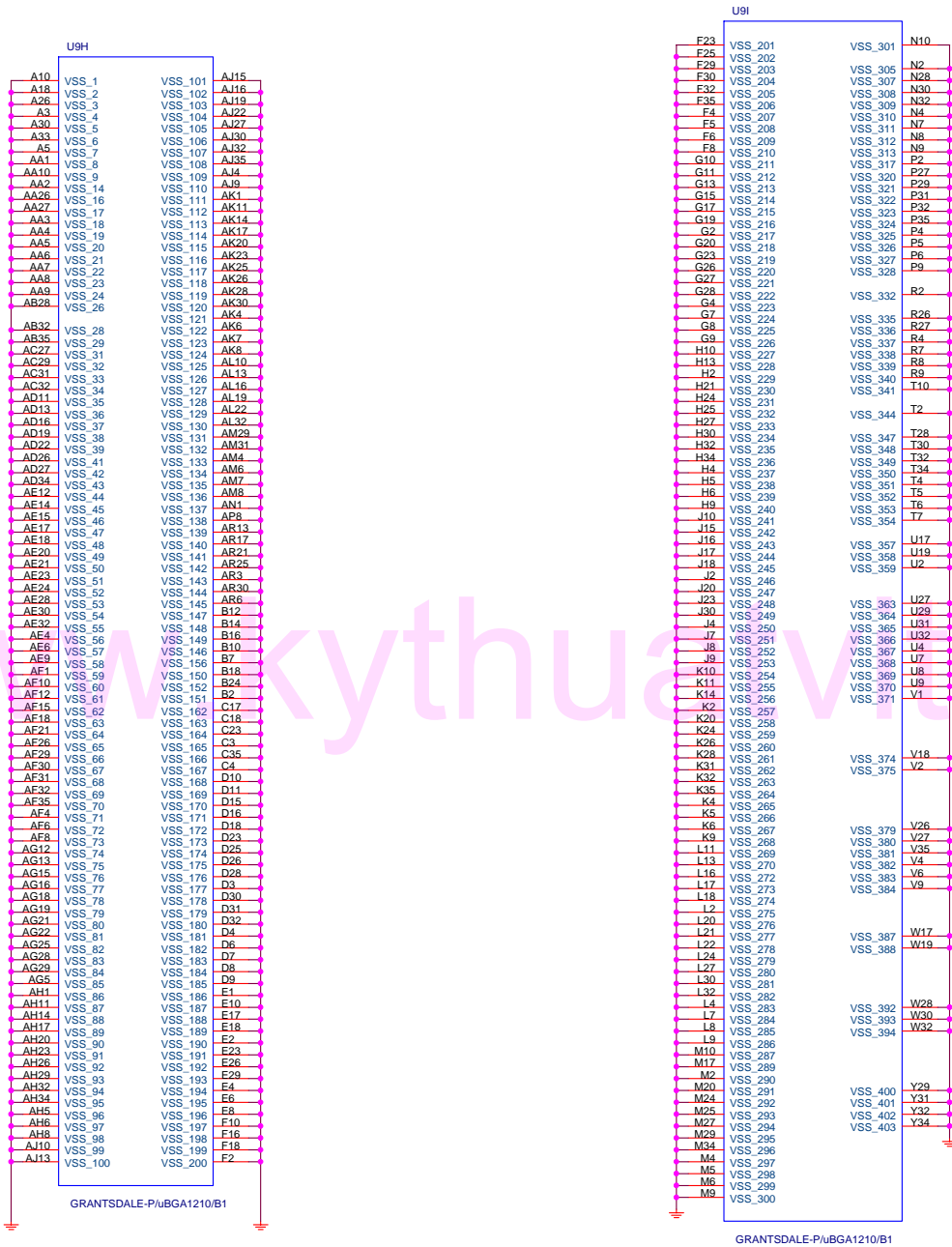


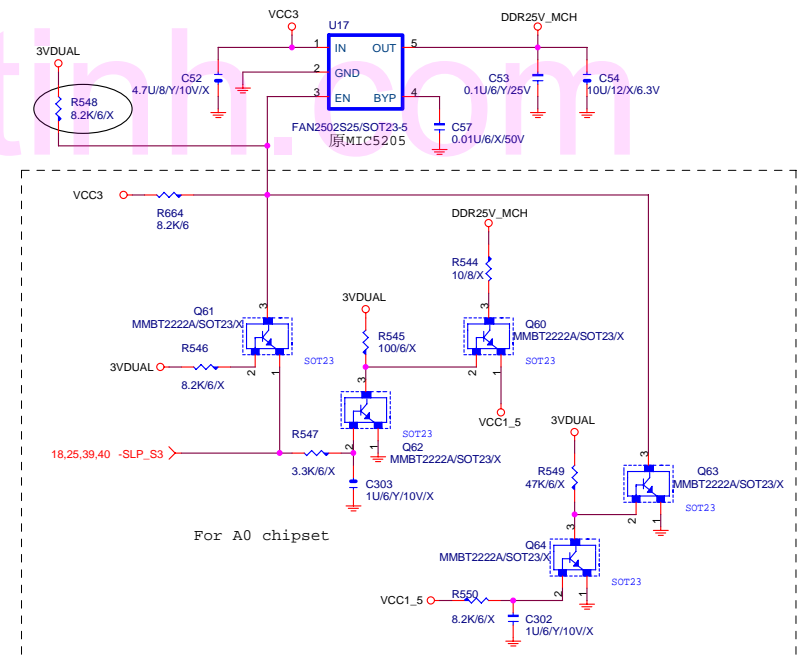
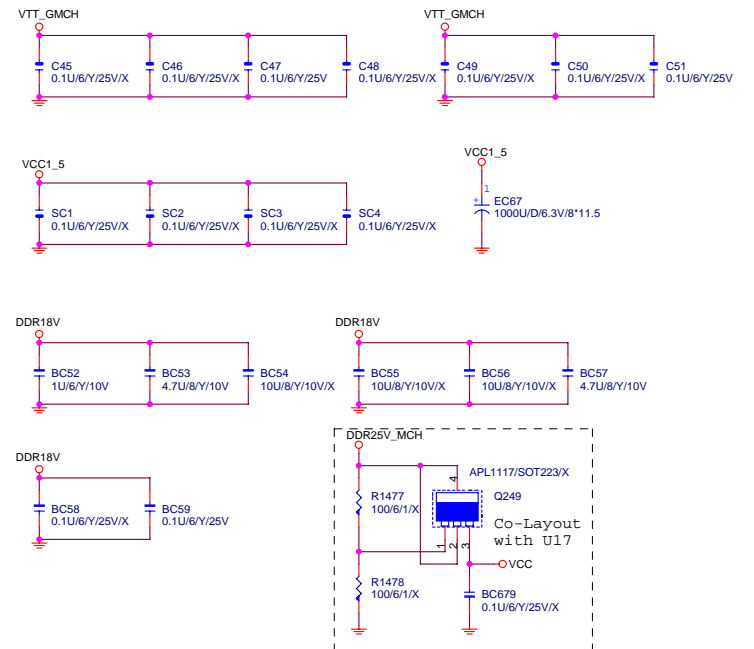
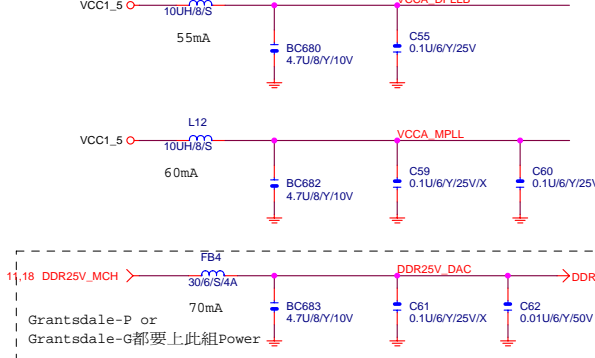
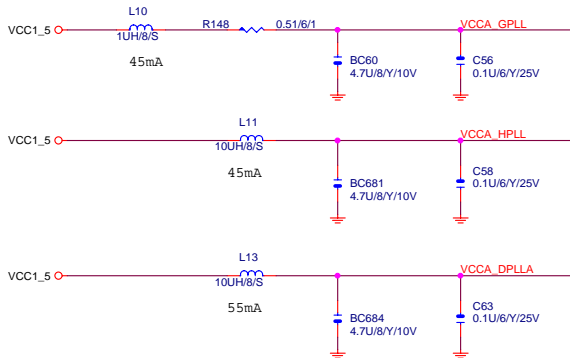
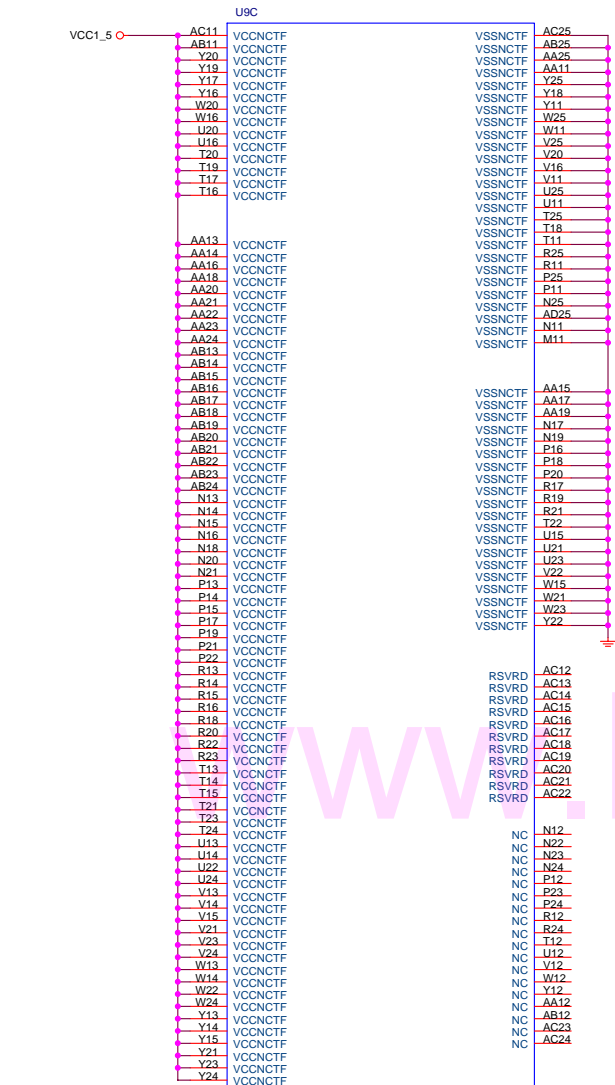




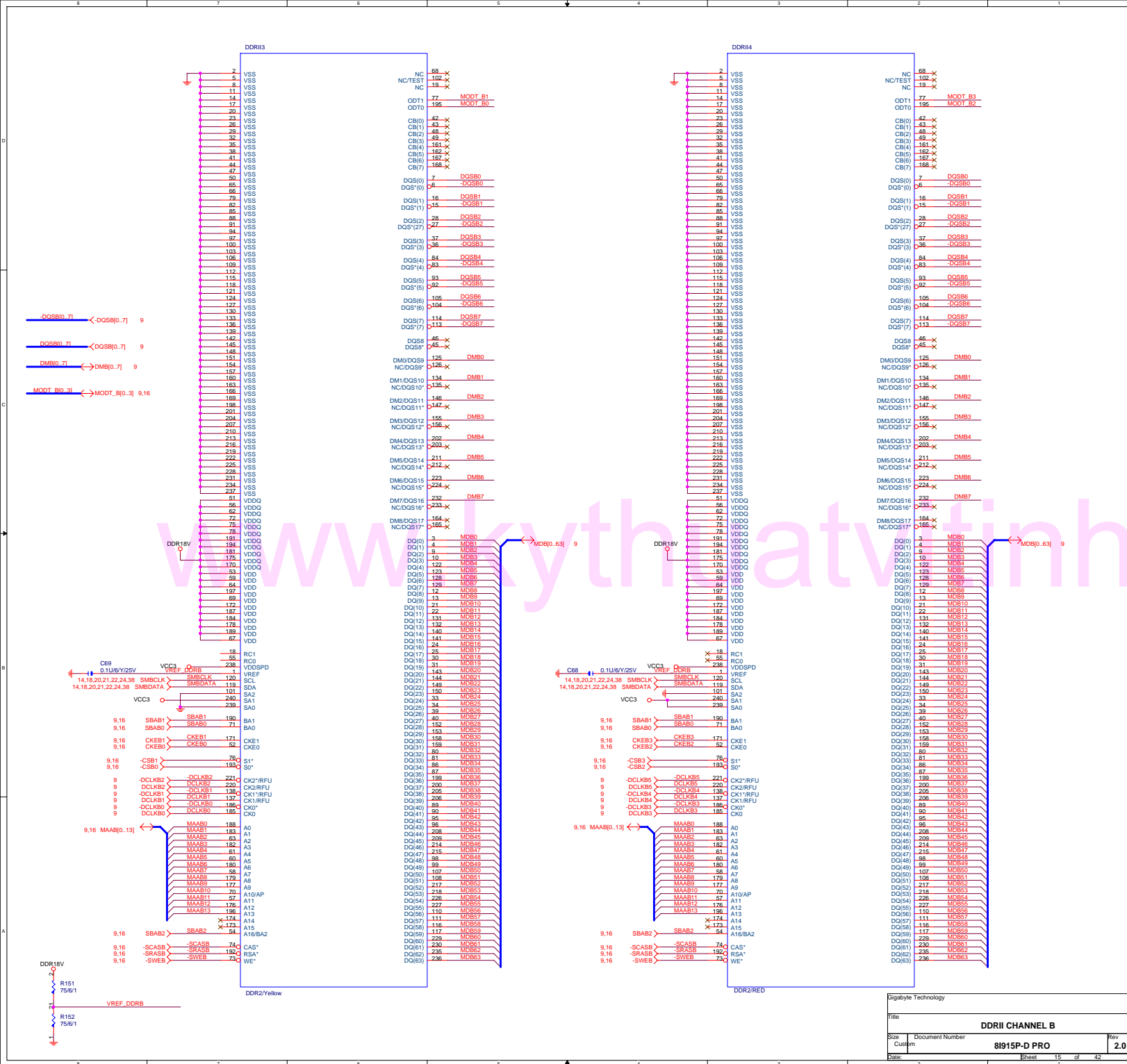
For DVO Function





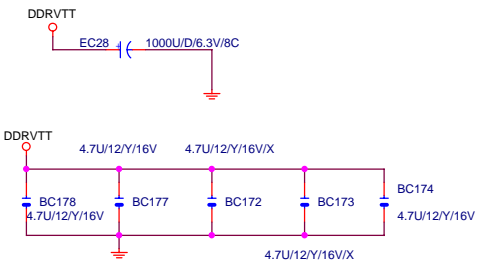




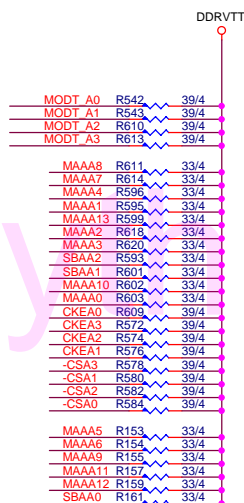
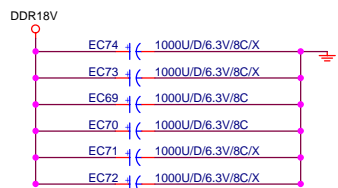




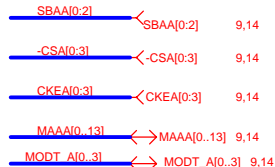
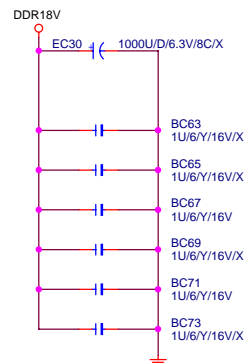
## DDRVTT Decouple



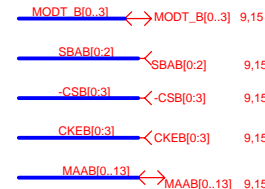
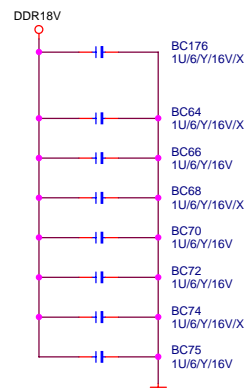
## DDR TERMINATION CHANNEL A



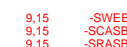
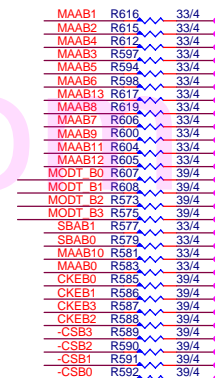
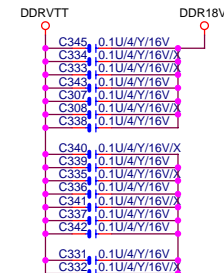
## DDR18V Decouple



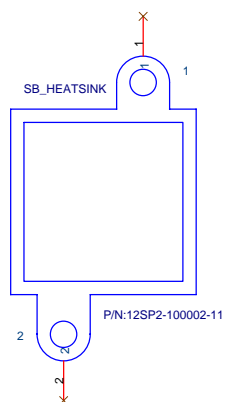
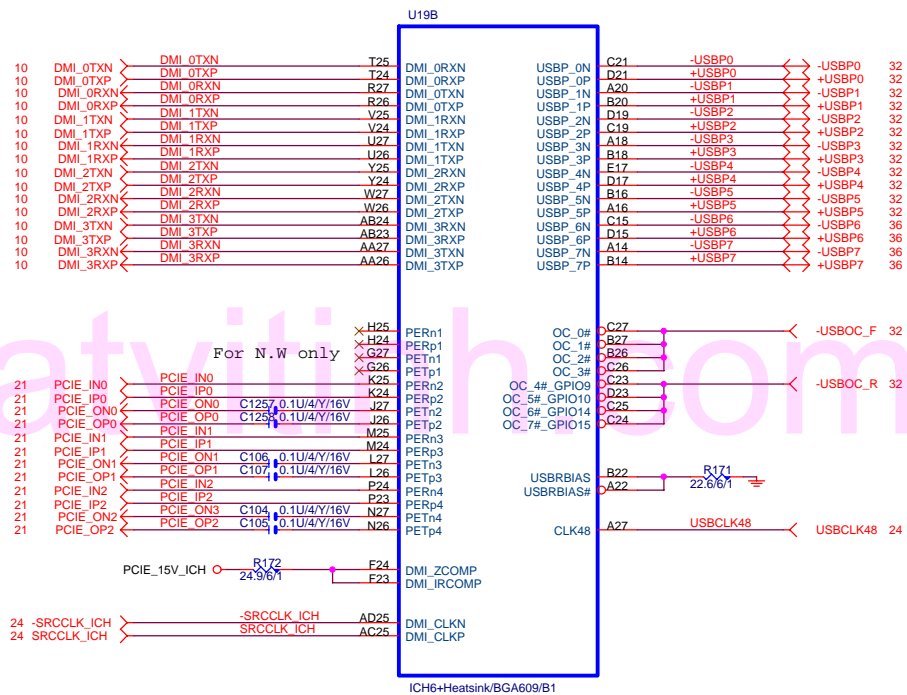
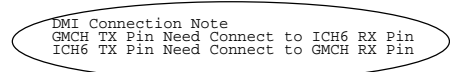
## DDR18V Decouple



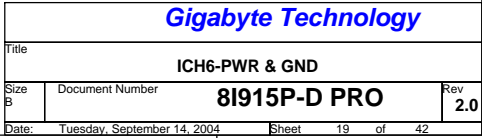
## CHANNEL B

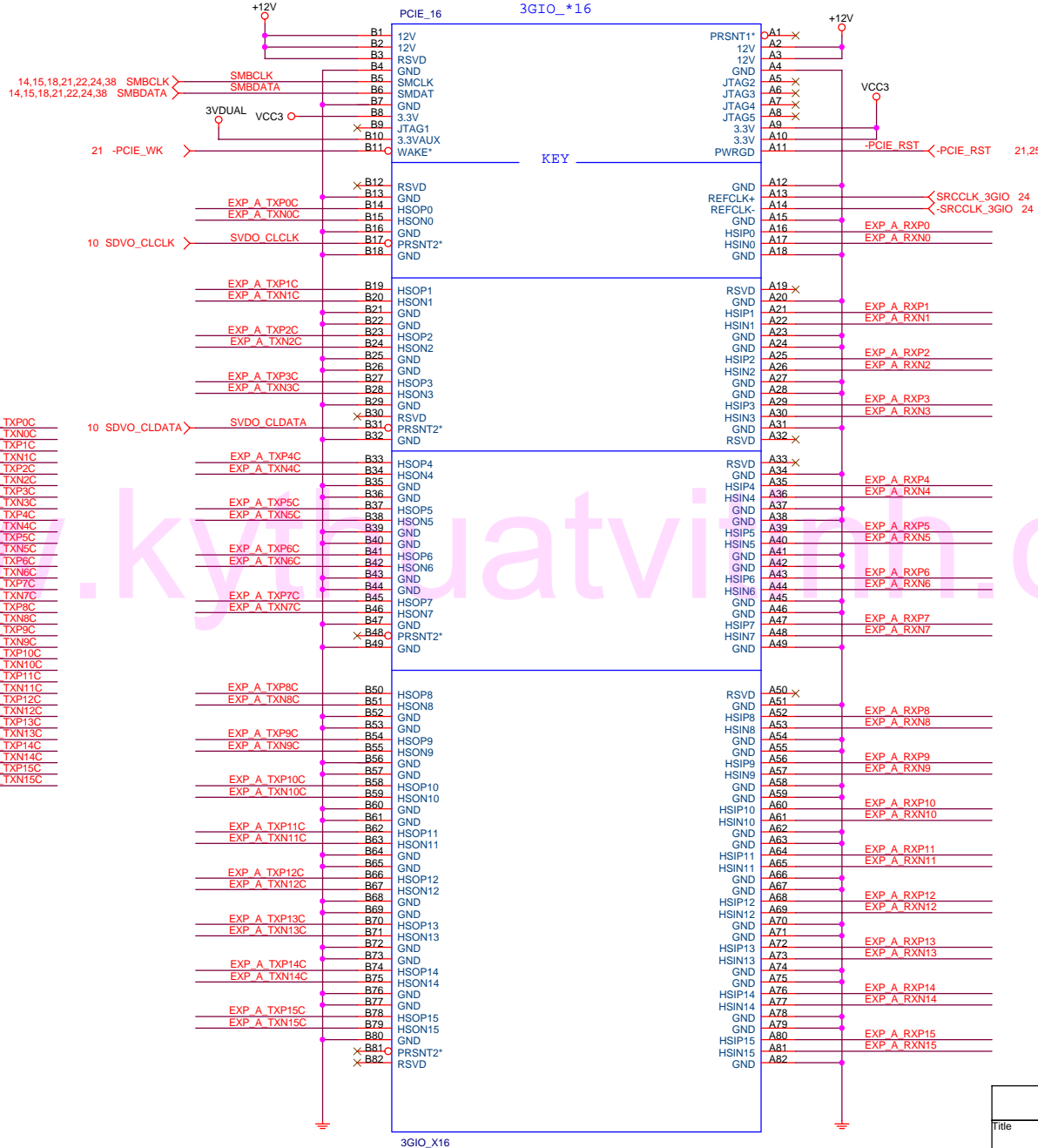
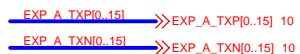


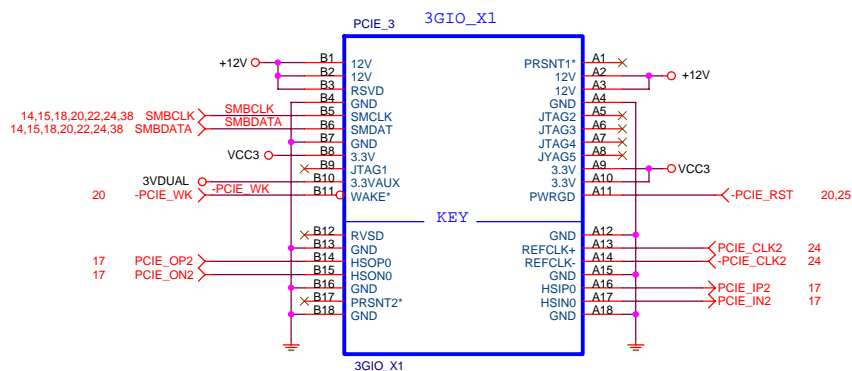
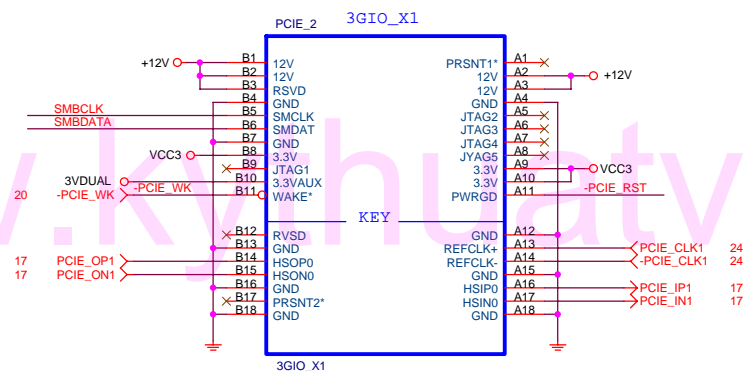
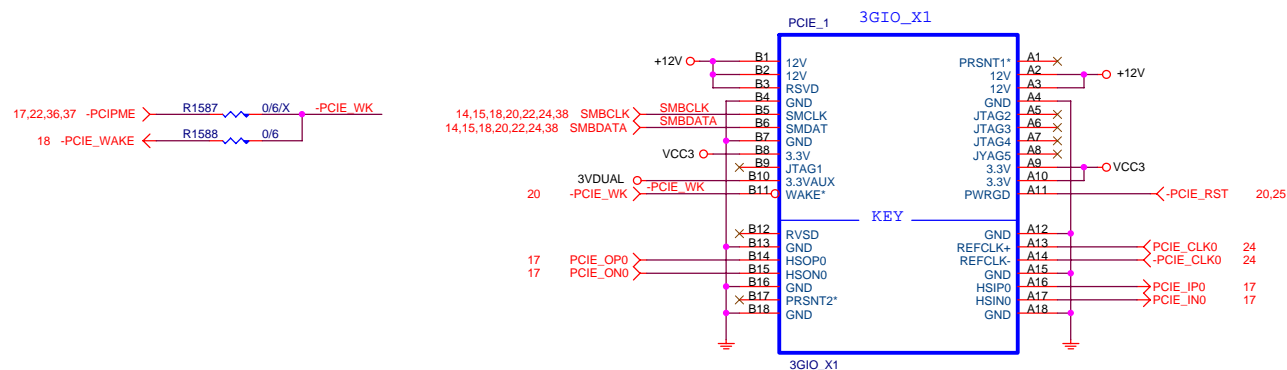






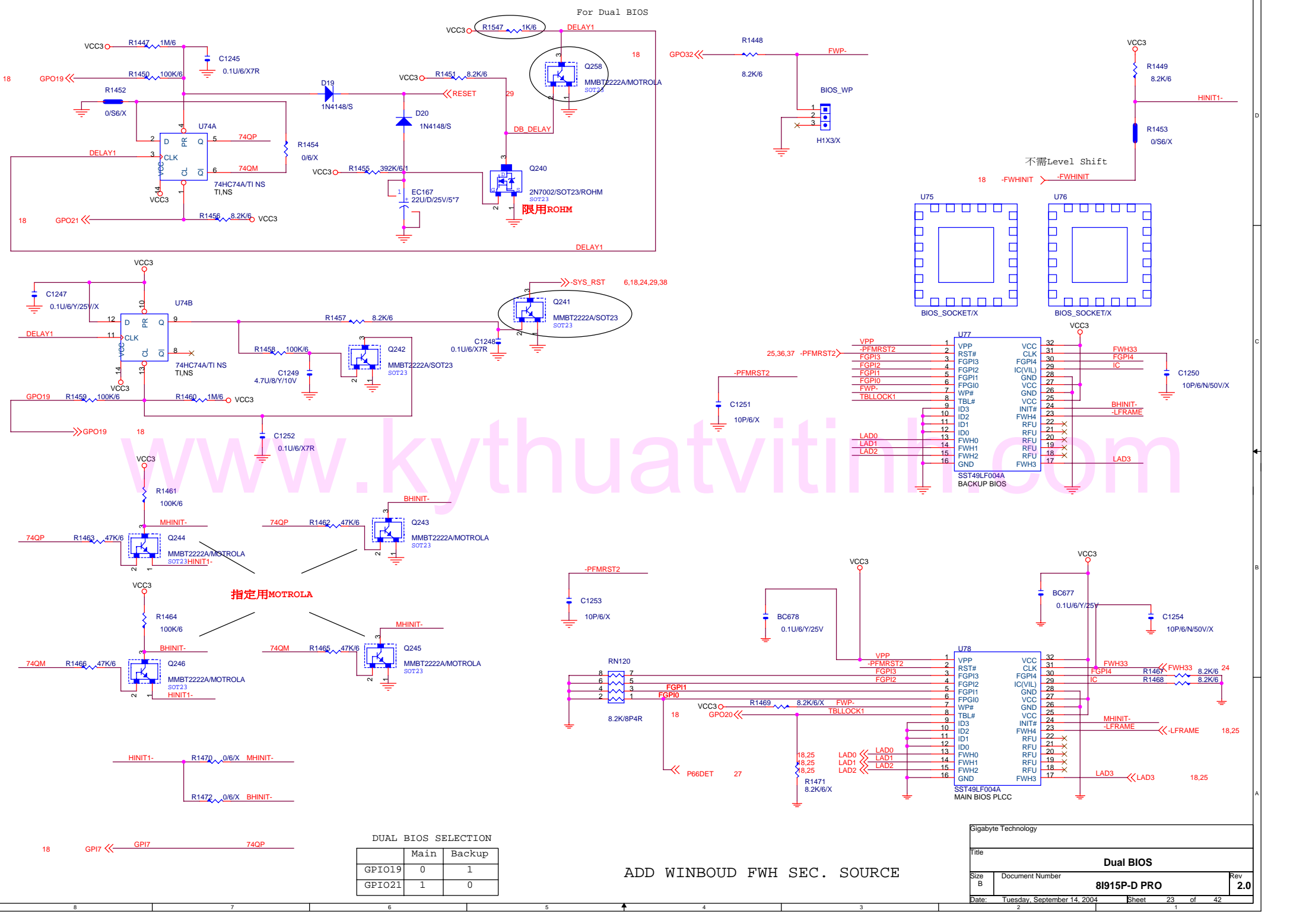












DUAL BIOS SELECTION

	Main	Backup
GPIO19	0	1
GPIO21	1	0

ADD WINBOUD FWH SEC. SOURCE

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Title

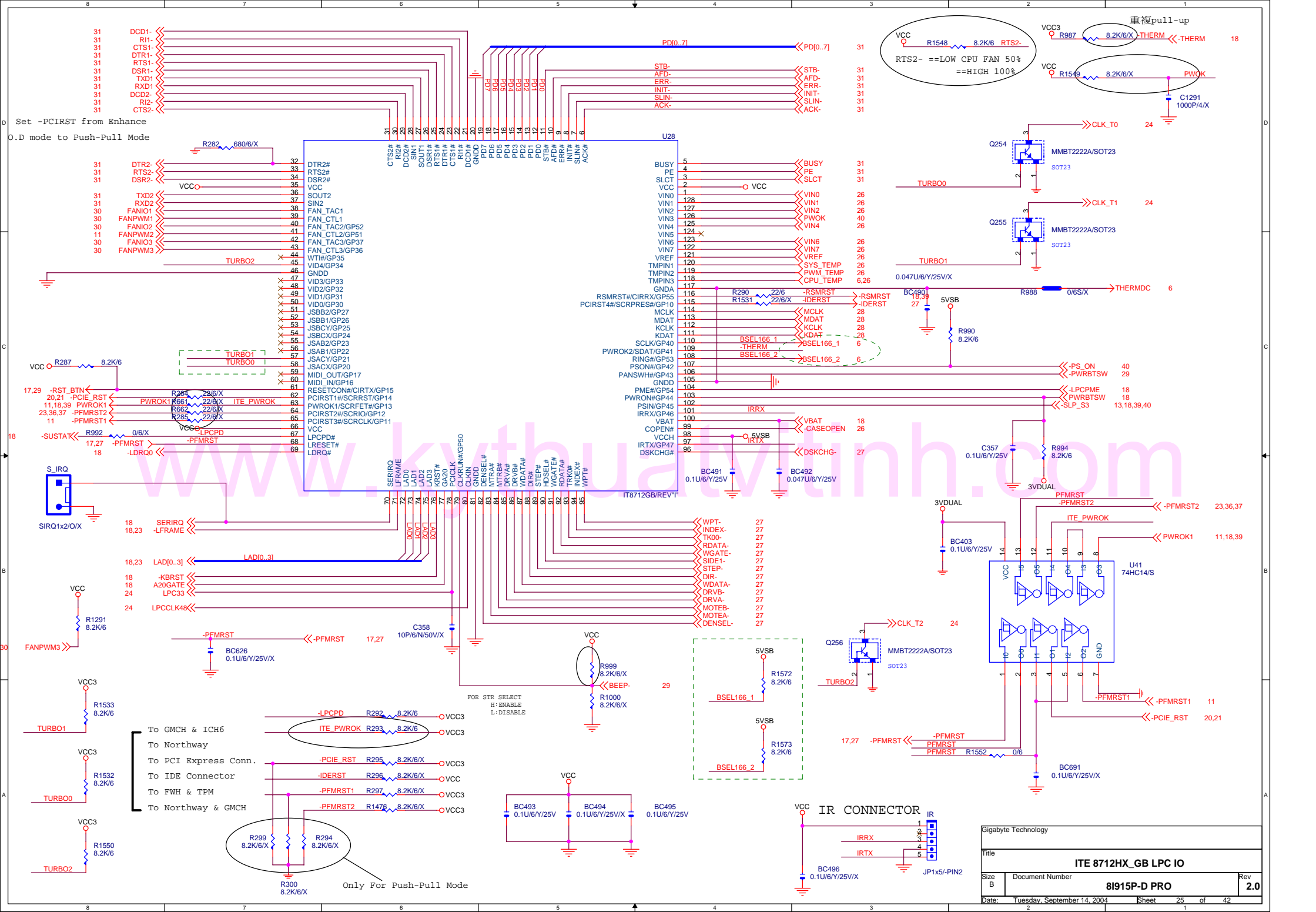
Dual BIOS

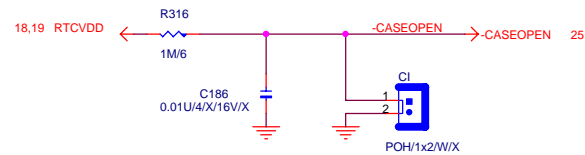
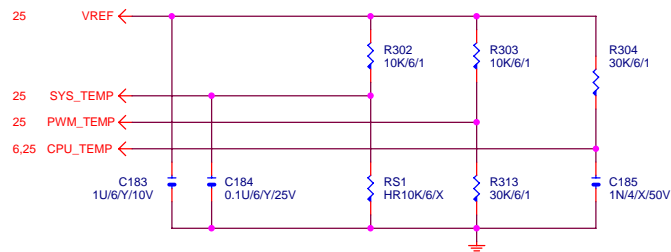
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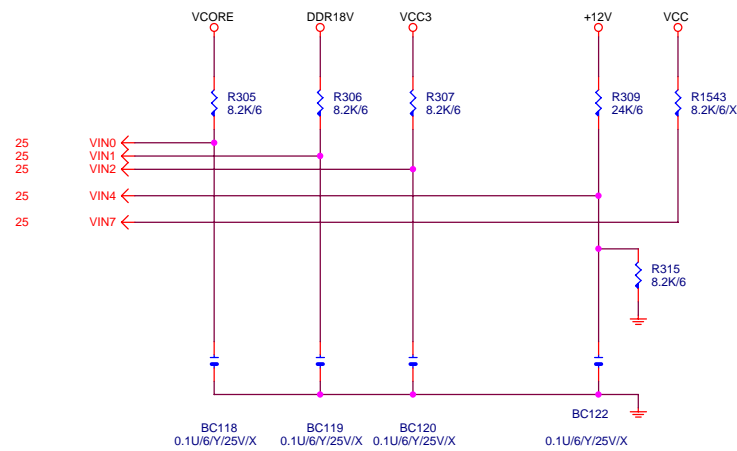




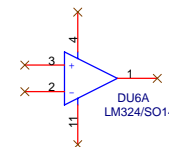
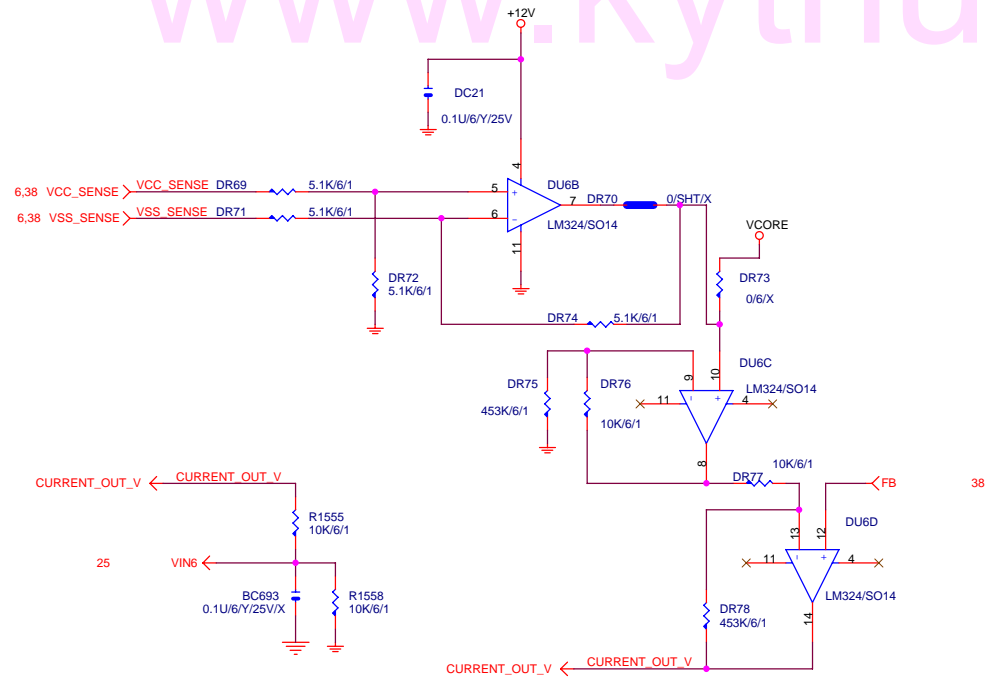


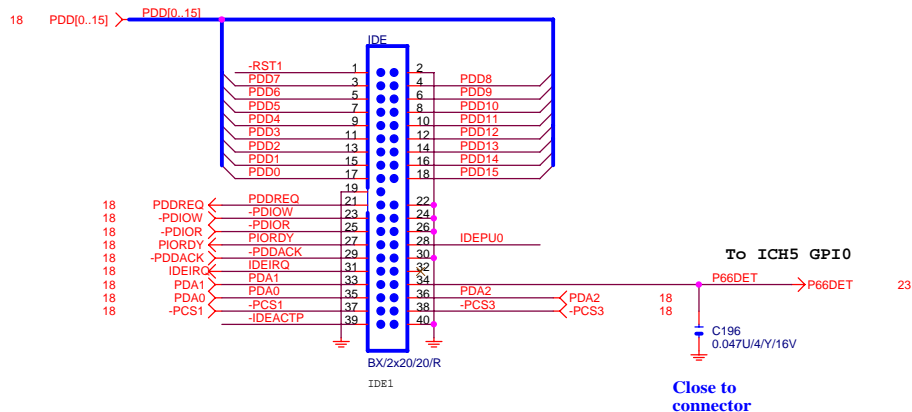
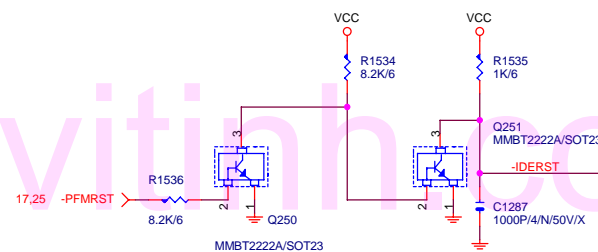
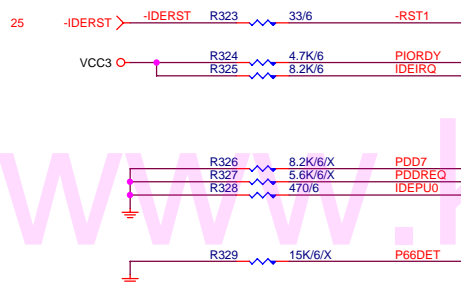
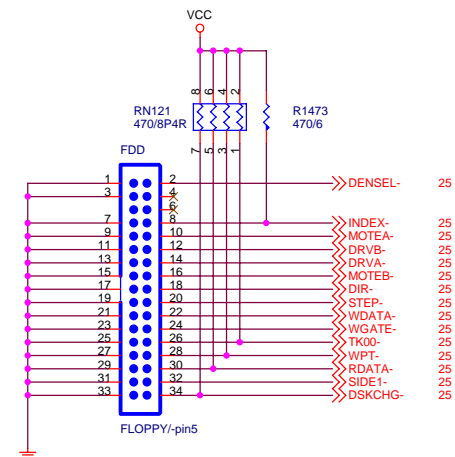
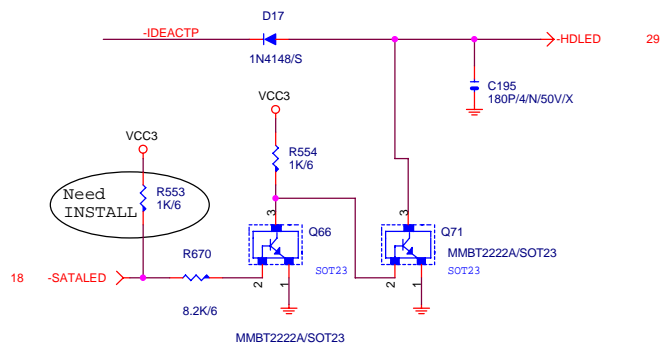


Case Open Circuits



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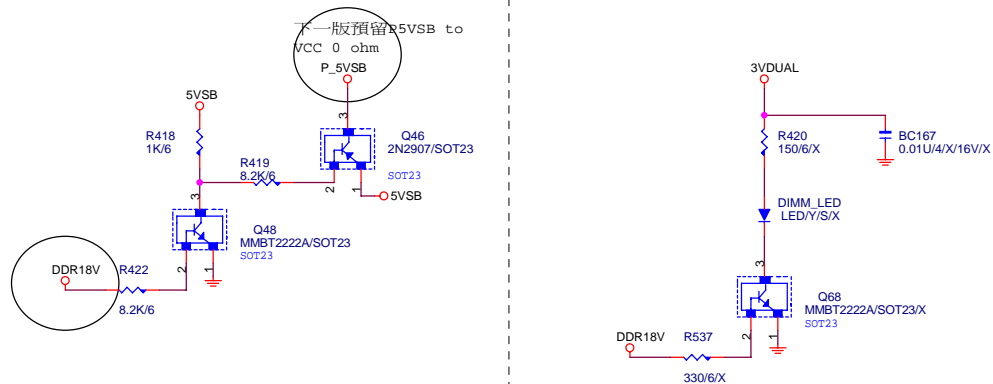




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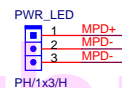
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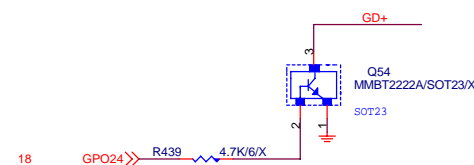
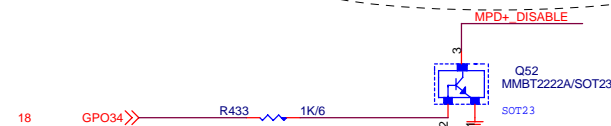


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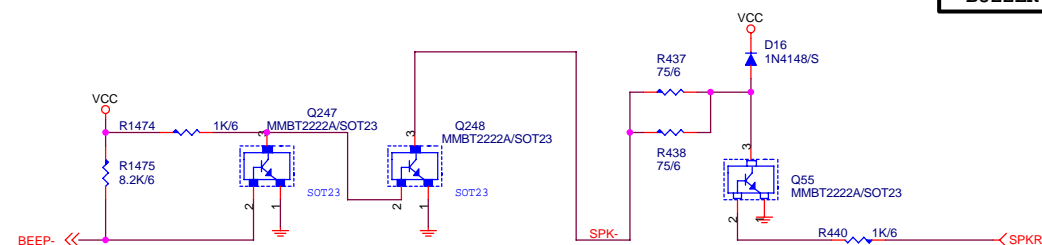
3 PIN POWER LED  
LAYOUT PLACE CLOSE  
TO F\_PANEL



PREVENT SO W/O CPU, GREEN IS ON.



## BUZZER



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Title			
FRONT PANEL			
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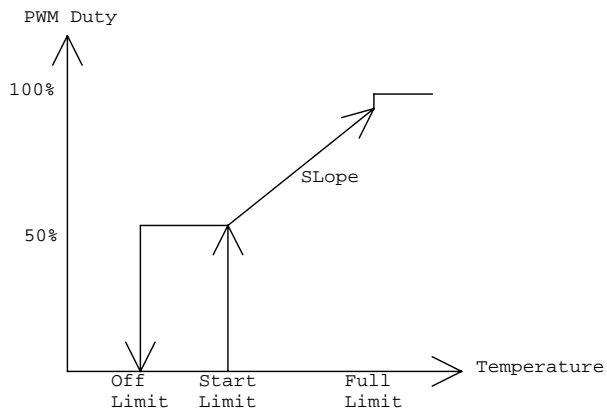
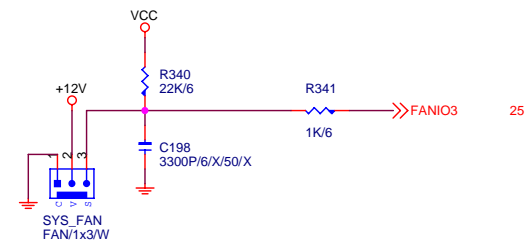
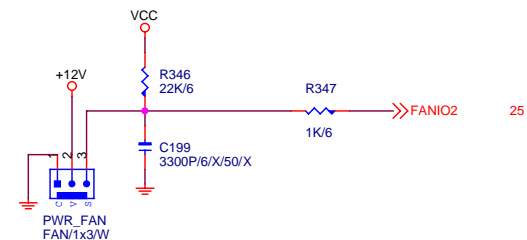
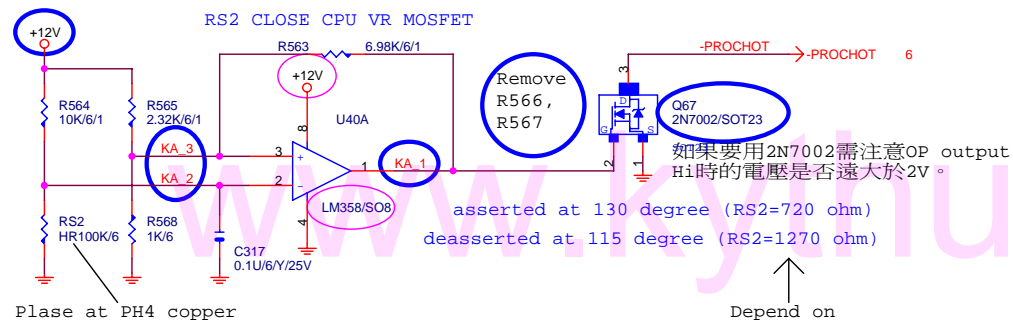


Table1: 3 pin FAN		
Off Limit	0 degree	0 PWM
Start Limit	40 degree	77 PWM
Full Limit	65 degree	127 PWM
Slope	2 PWM/degree	

Table2: 4 pin FAN		
Off Limit	0 degree	0 PWM
Start Limit	40 degree	0 PWM
Full Limit	65 degree	127 PWM
Slope	1 PWM/degree	

If +12V=12.15V, LM358 output Hi=10.93V

KA393改為LM358，電源pin改接+12V，Prochot#溫度需重新調整之。



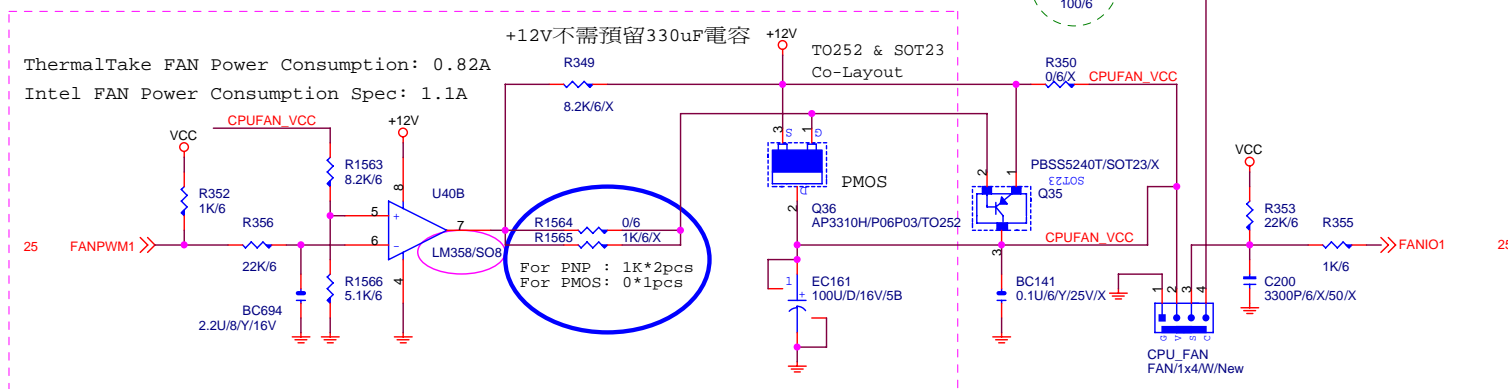
FAN_VCC	PWM_DUTY
11.5V	87 %
11.0V	84 %
10.5V	80 %
10.0V	76 %
9.50V	72 %
9.00V	69 %
8.80V	67 %~19%

If use PBSS5240 1pcs : (non airflow)

CPUFAN\_VCC=12V: Temp=40 deg  
 CPUFAN\_VCC=11V: Temp=82 deg  
 CPUFAN\_VCC=10V: Temp=70 deg  
 CPUFAN\_VCC= 9V: Temp=110 deg  
 CPUFAN\_VCC= 8V: Temp>200 deg

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



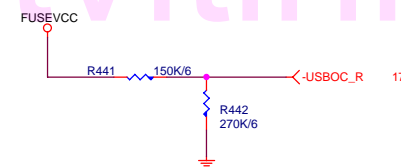
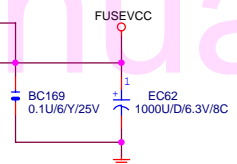
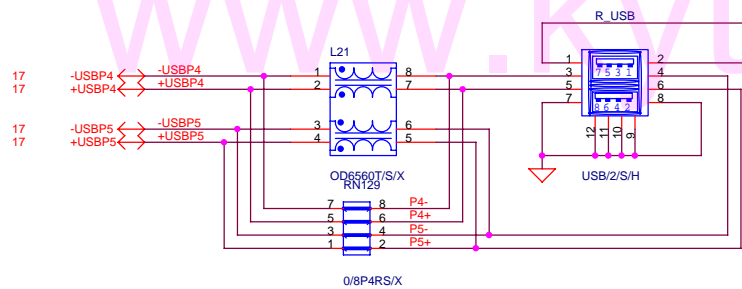
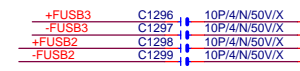
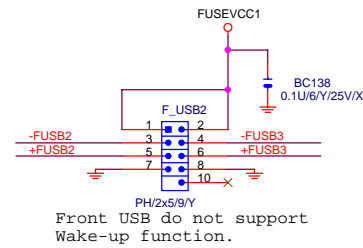
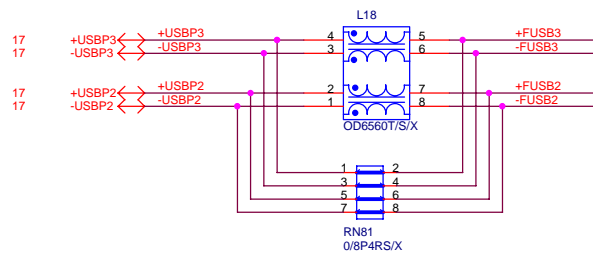
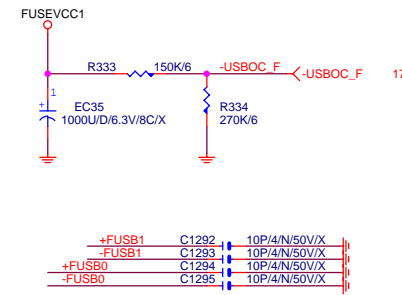
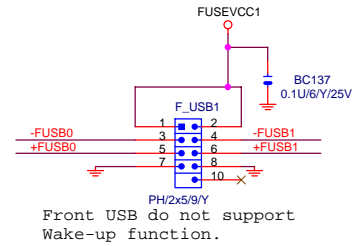
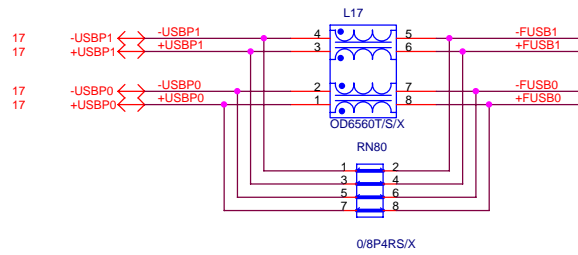
Gigabyte Technology

Title			
FAN CONTROL			
Size	Document Number	Rev	
B	8I915P-D PRO	2.0	
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# FRONT USB

## ICH6 USB2.0

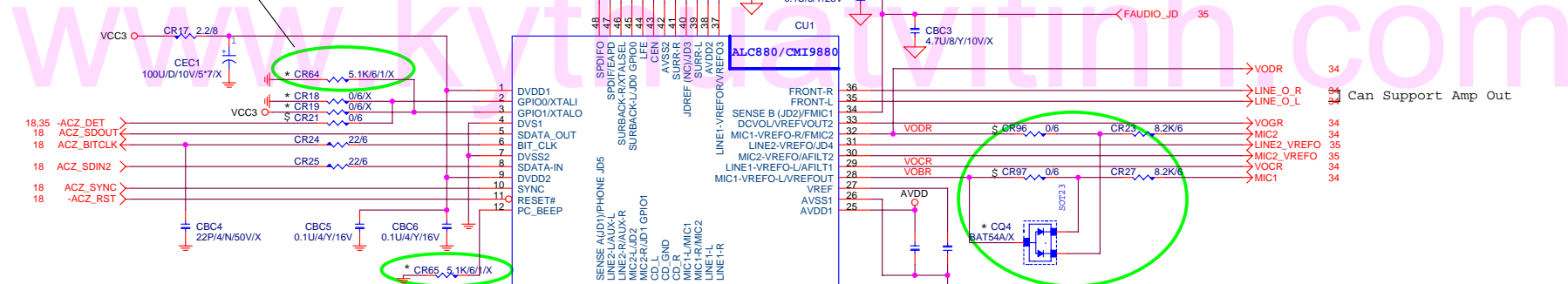


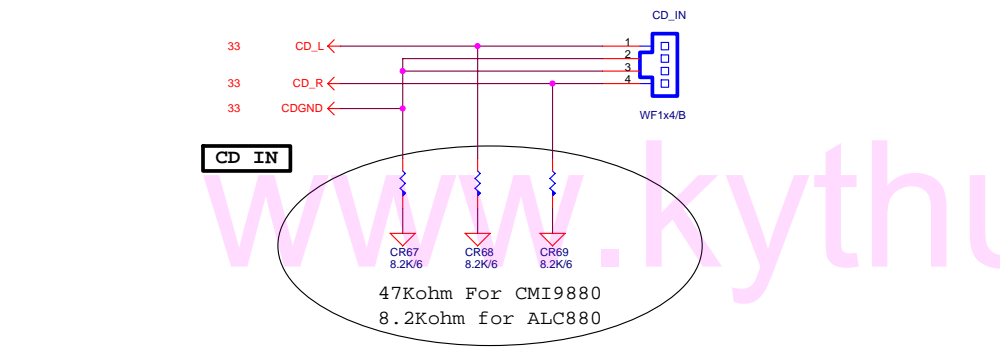
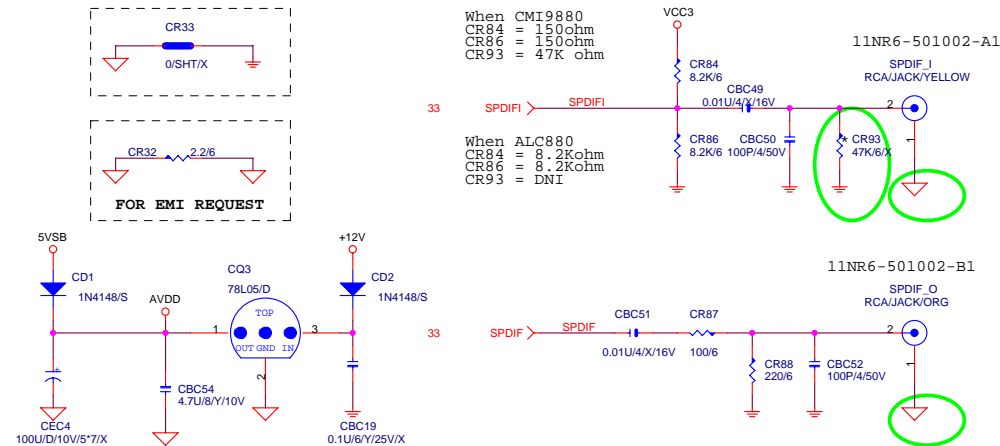
Gigabyte Technology

Title			
F_USB & R_USB CONNECTOR			
Size	Document Number	8I915P-D PRO	Rev
B			2.0
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	2	1	



"\$" means for ALC880 only  
 "\*" means for CMI9880 only





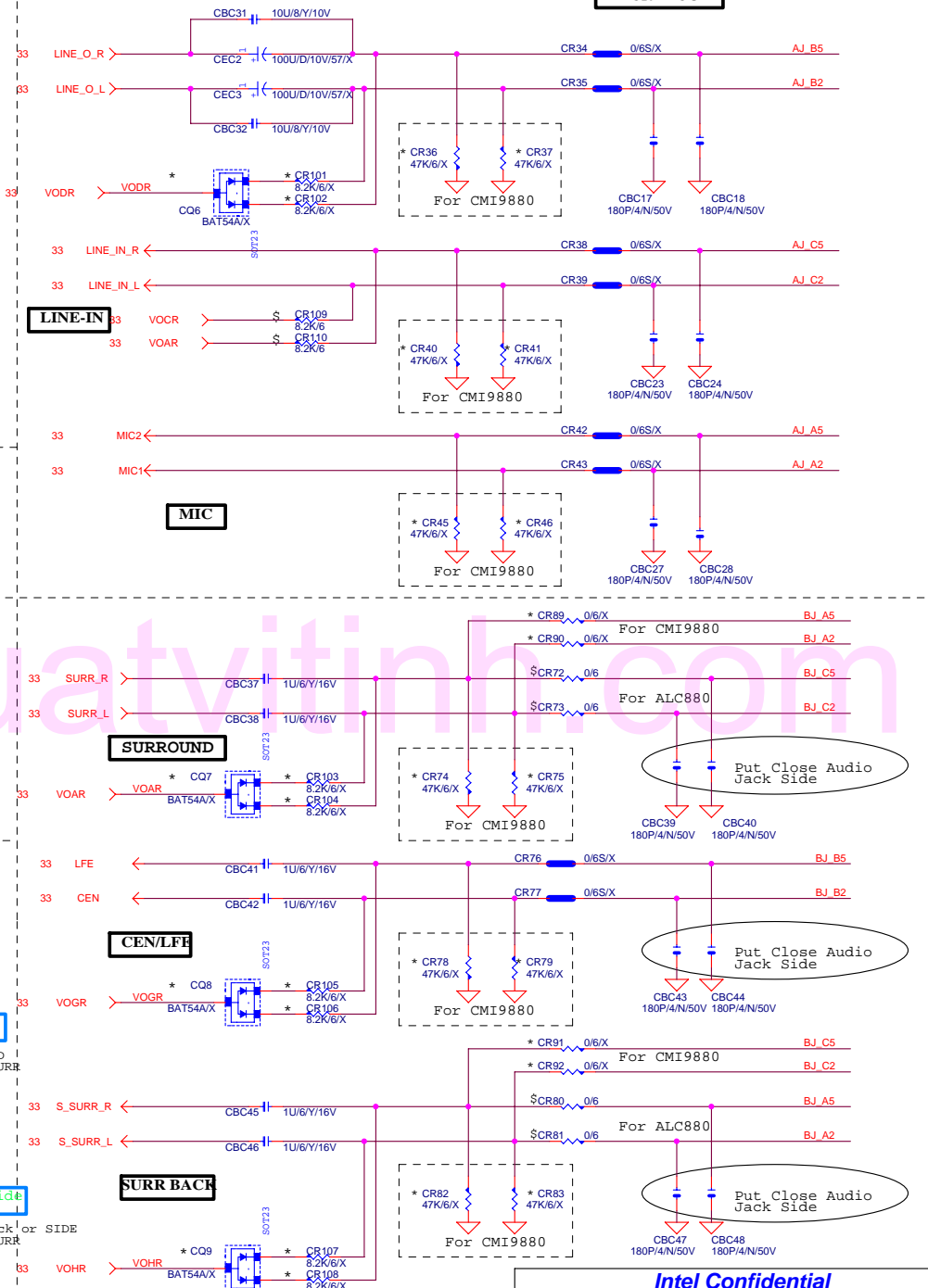
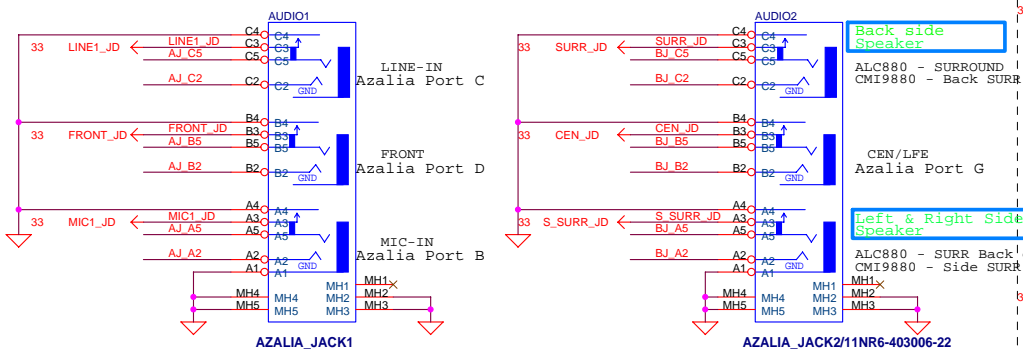
Azalia Jack

Normal --> pin4/pin3 open

Plug jack --> pin4/pin3 close

CMI9880 Port A is Side SURROUND, Port H is Back SURROUND

ALC880 Port A is SURROUND, Port H is SIDE

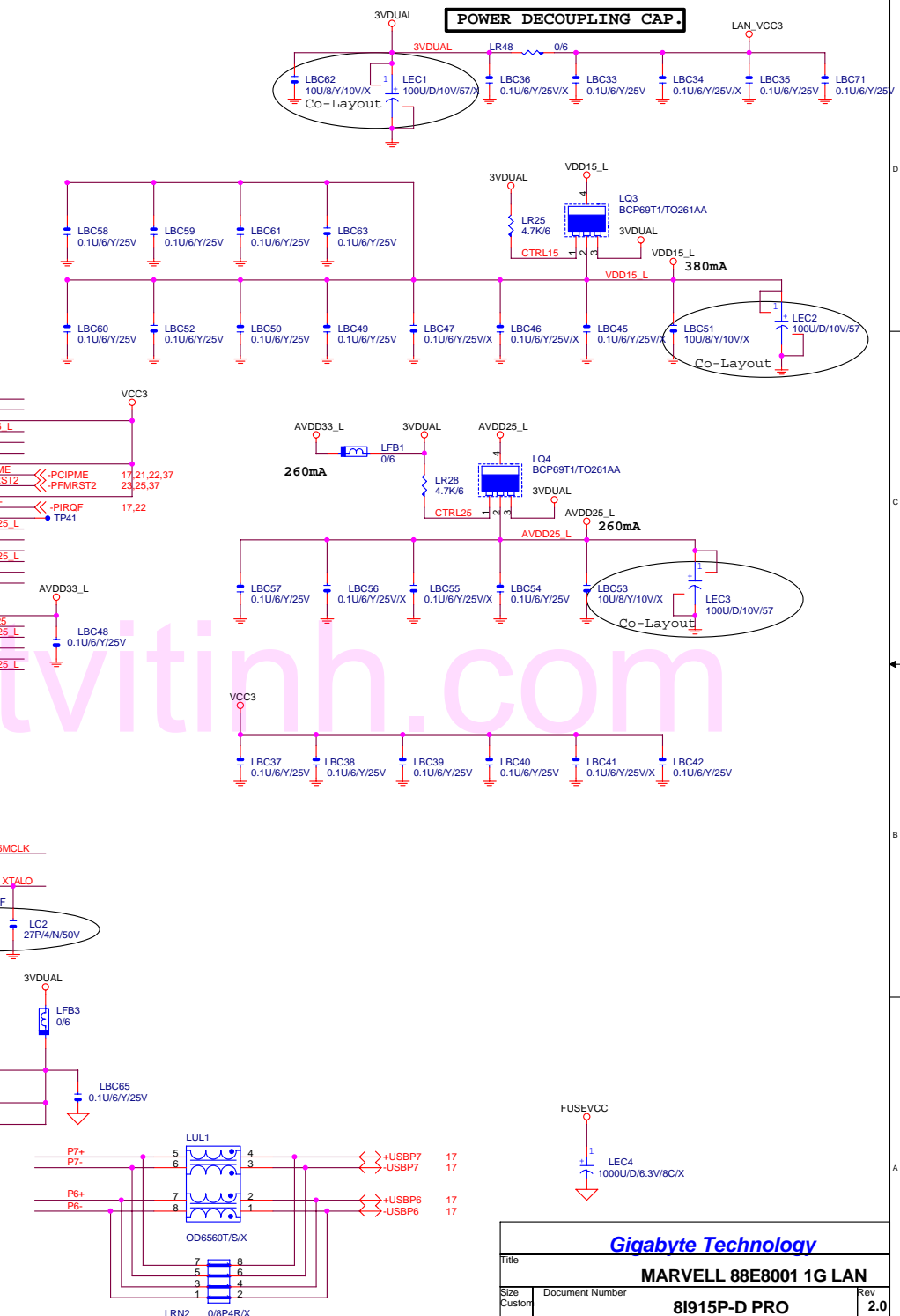
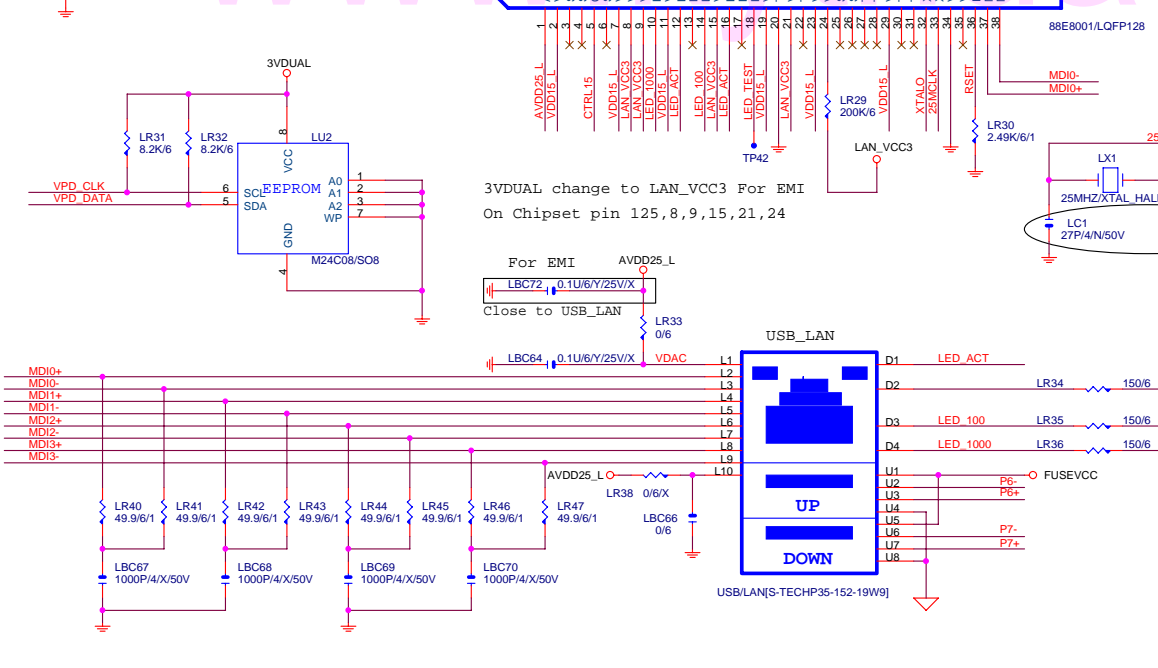
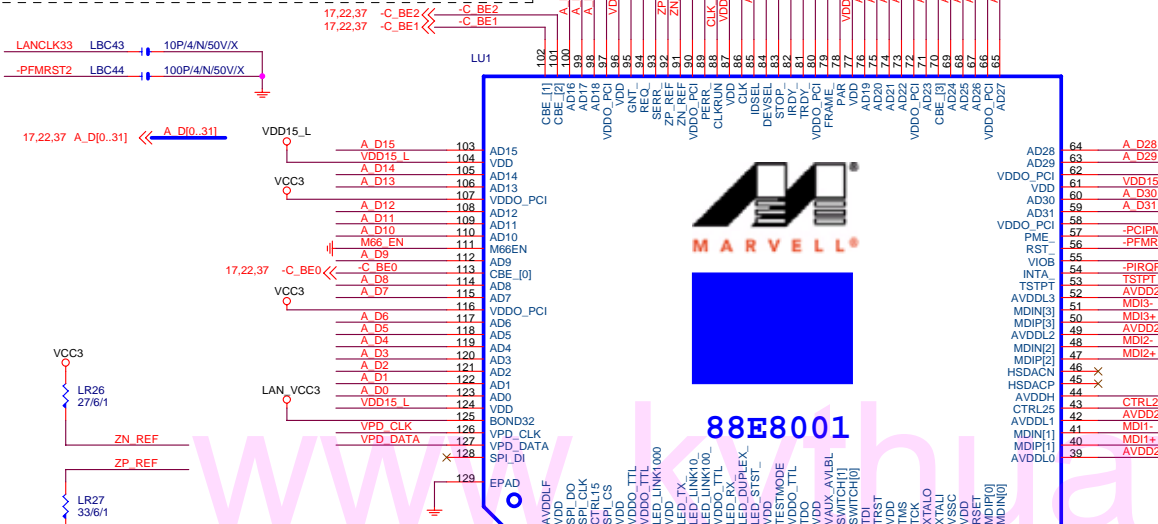


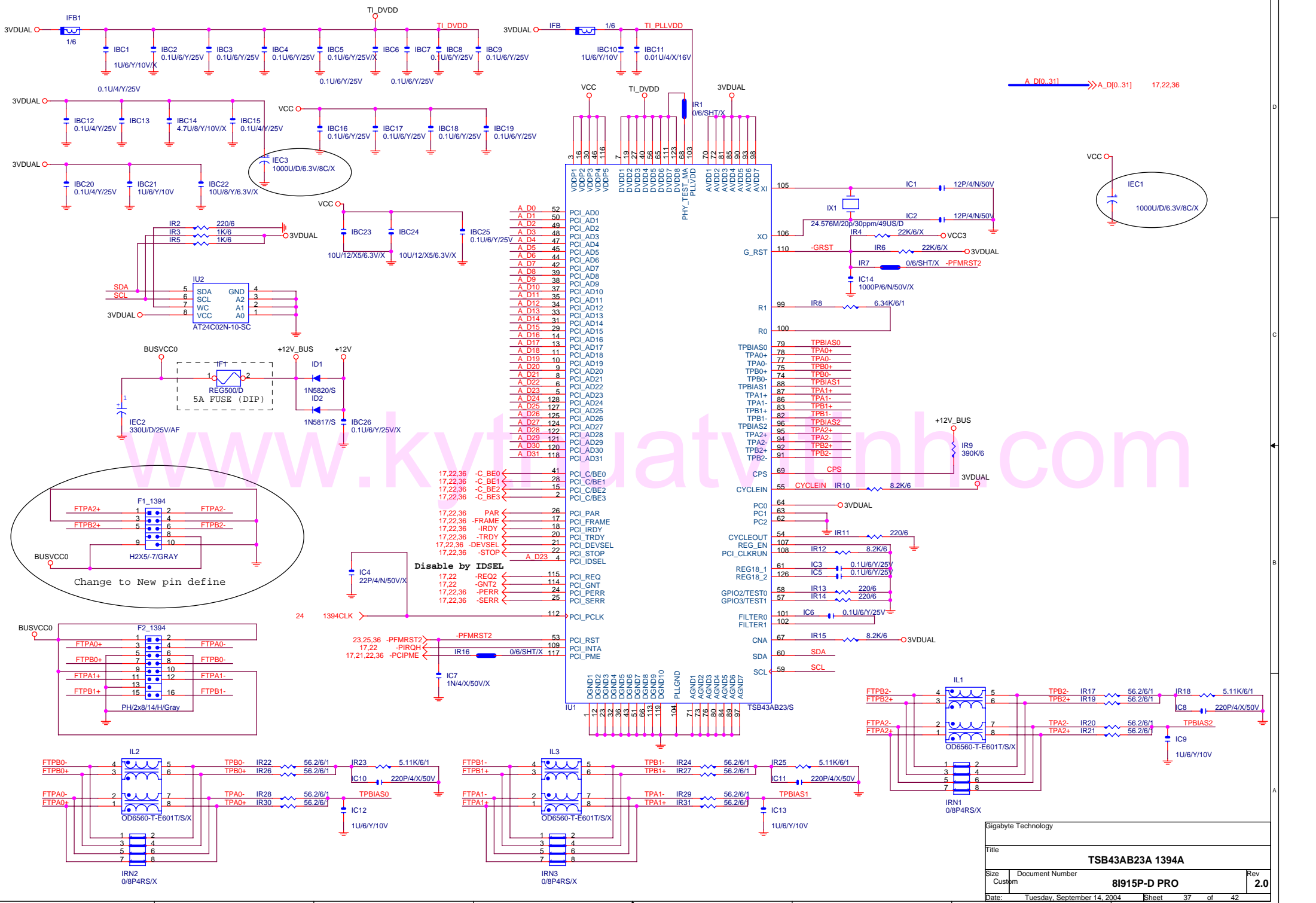
Intel Confidential			
Title			
AUDIO JACK			
8I915P-D PRO			
Size	Document Number	Rev	
Custom		2.0	
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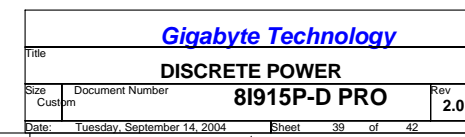
# Layout Check 注意事項

1. LU1 Pin129 需下內層GND, 打 12 VIA
2. 3VDUAL, VCC3, VDD15\_L, AVDD25\_L 至少走20mil寬, 並且電容擺設每兩pin至少放一顆Bypass Cap.
3. X'TAL 25MHz 兩訊號線, TRACE 愈短愈好, 線寬12mil
4. MDI正負0-3, TRACE 8:7:8, 每對之間保持 40mil

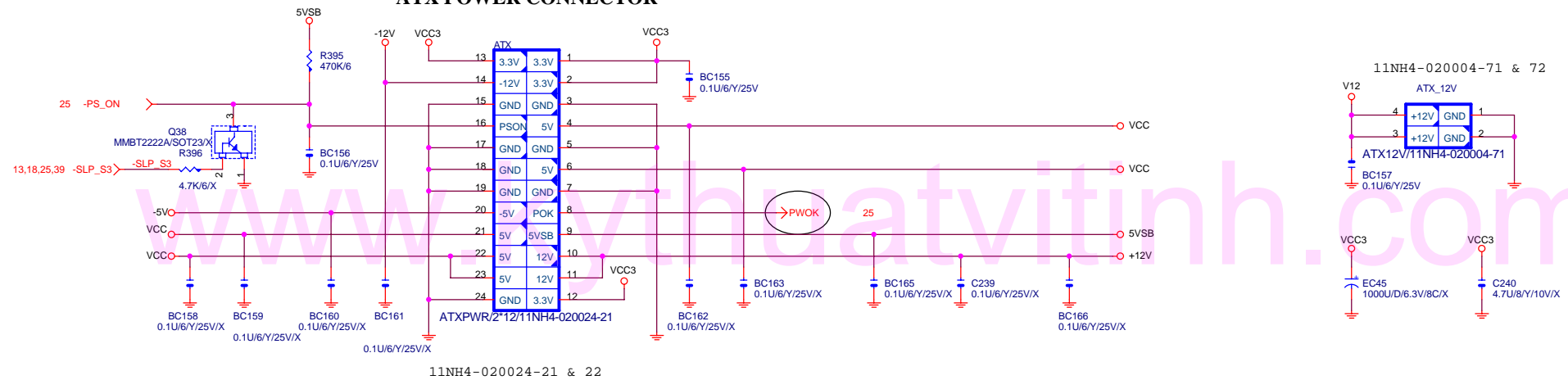








## ATX POWER CONNECTOR





**ICH6 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 (NC)			
GPO17	VCC3	-GNT5			
GPO18	VCC3	CPU OV2 (NC)			
GPO19	VCC3	DUAL BIOS			
GPO20	VCC3	BIOS T-BLOCK			
GPO21	VCC3	DUAL BIOS			
GPO23	VCC3	DDR OV0 (NC)			
GPI024	3VDAUL	GREEN LED			
GPI025	3VDAUL	DDR OV1 (NC)			
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:**

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	-IDERST	Reserved For IDE
PIN63/PWROK1	PWROK1	1. GMCH 2. ICH6 3. 5VDUAL SWITCH 4. DPS CONTROL
PIN109/PWROK2	-THERM	1. ICH6

**GIGABYTE THCHNOLOGIES , INC.**

Title			
GPIO/RESET TABLE			
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AUTOBOM  
92/11/11

**Circuit or PCB layout change for next version**

### Component value change history

[illegible][illegible]