


GIGABYTE GA-8I845GV Schematics *Revision 1.03*

SHEET	TITLE
01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	SYSTEM BLOCK DIAGRAM
04	P4_478A
05	P4_478B
06	P4_478C
07	GMCH-A(845GV)CPU,DDR INTERFACE U1
08	GMCH-A(845GV)DDR,VGA INTERFACE
09	GMCH-A(845GV)POWER INTERFACE
10	DDR SERIAL TERMINATION
11	DDR1,2
12	VTT_DDR TERMMINATOR
13	ICH4-1 (HUB,PCI,CNR,AC97,USB) U12
14	ICH4-2
15	FWH (FLASH ROM)
16	CLOCK GENERATOR(ICS950211AF) U13
17	PCI1 & PCI2 SLOT
18	PCI3 SLOT
19	LPC I/O IR(ITE 8712 VER:GX) U14
20	IDE1, 2 CONNECTOR
21	PS/2 KB & MOUSE & F_USB
22	FLOPPY, COM & LPT & WOR & WOL CONNECTOR
23	FAN & H/W MONITOR ,CASE OPEN

SHEET	TITLE
24	FRONT PANEL,LED
25	AC97 CODEC REALTEK ALC655
26	LINE OUT & FRONT AUDIO CONN
27	LINE IN,MIC,CDIN,AUX(CD-IN2) GAME PORT
28	MISC. PWR & ATX POWER (3VDUAL, VDDQ)
29	VCORE PWM(FAN5090)
30	DDR POWER (5VDUAL,2_5VSTR,VTT_DDR)
31	RTL8100C Transformer
32	GPIO PIN LIST
33	PCI ROUNTING

		
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Title COVER SHEET		
Size Custom	Document Number GA-8I845GV	Rev 1.03
Date: 星期二, 三月 30, 2004	Sheet 1	of 34

Model Name: GA-8I845GV

Version : 1.03

243.84mm X 209.98mm, 60+/-15%, C Type

Component value change history

PAGE	Change Item	Reason
08/06 0.1		
	Form 8VD667 change to 8I845GV	New project
08/28 1.0	背板零件修改為一般的 footprint	
	C26 change	
	EC32,EC36 default 上	
	R657 拉 tress	
	R734 330 歐母移除直接拉 tress	
	Printer,COM port 0612 180P 刪除	
	CPUSLP- add 1000P/4 電容	
	Support Willamatte CPU	
08/28 1.0	Add 8I845GV-C BOM	Remove Onboard LAN
09/12 1.0	1.0B BOM, C102 0603 change to 0402,	
	R313 1.07K change to 931	VCCVID change to 1.3V
	C953 remove	CPUSLP-
09/12 1.01	RN121 remove 修 trace,上 0/8P4R	For CH BOM
	RN120,RN122 Remove 0/8P4R,改為直接修 Trace	
	R561 改為直接修 Trace	
09/16 1.01	Add CH1 BOM	For 大陸地區客戶需求
	Add BIOS_WP(3 Pin & Jumper)	
	Add WOL(WOL,R724,R725,BC330,BC331,Q50)	
	Add Rear USB choke (L15)	
	Add AUX_IN(AUX_IN,C831,C832)	
	Add Buzzer(BZ)	
	BIOS 2M change to 3M(U12)	
	包材修改為蜂巢式,免 Manual,Cable,IC SH,RM	
09/16 1.01	Add CH2 BOM	
	845GV chipset change to 845GL	CH1 修改部分CH2都修改,
	R163 8.2K/6 remove	但多將 Chipset change to GL
09/23 1.02	Socket 478 PCB 改為防呆孔位	
	-C,00,CH1,CH2 BOM 均加注 Clr_CMOS INSERT "1-2"	
09/24 1.02	新建 DL CKD BOM,移除彩盒,Manual,Add USB Port Cable	

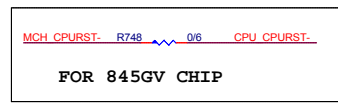
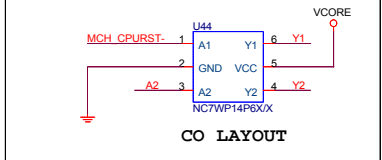
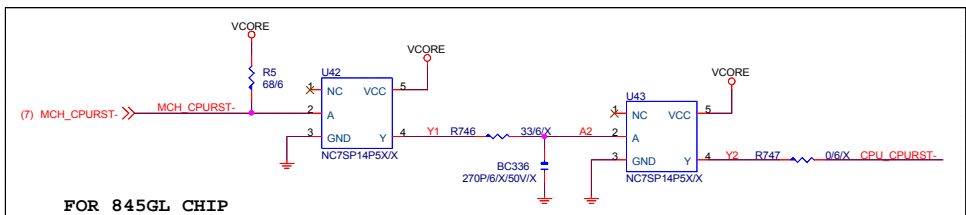
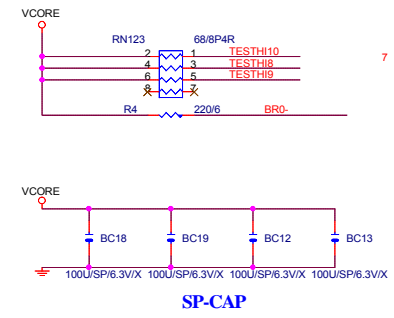
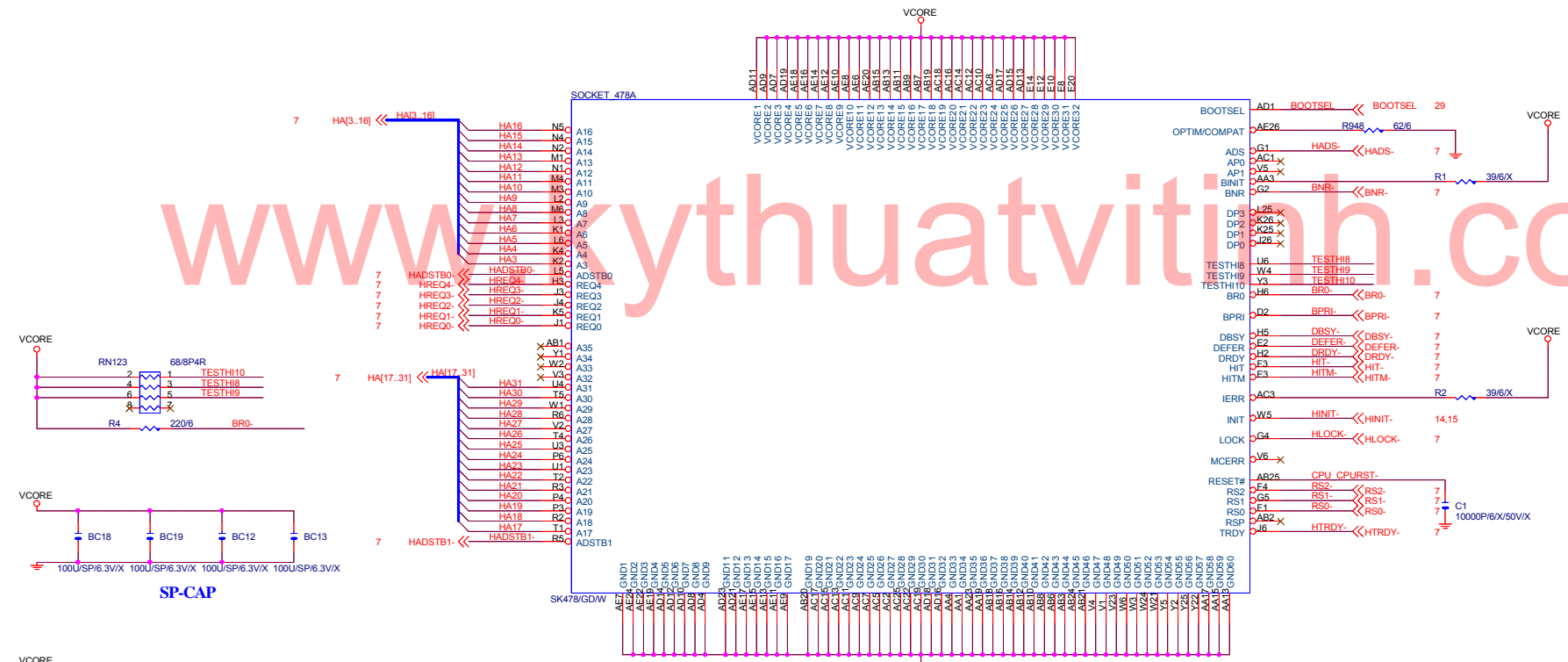
Circuit or PCB layout change for next version

PAGE	Change Item	Reason
09/24 1.02	新建 8I845GV-C 寧波(NB) BOM	
10/6 1.02	新增 8LD533-P 2.01 Model,只修改 Model name	
11/11 1.03	1.CPU trace 只走單線	
	2.Front Pannel change to 簡化線路	技術通報 118
	3.25Vstr 100u 5顆改 4.7 SMD,但1顆不上	P9,P12
	4.VTTDDR 排容CN17-30)改電容(BC342-361), 100u 3顆改4.7u,1顆不上	P12,P30
	5.Codec AVDD 10u改4.7u,4顆100u 改 2.2u(2顆原本就不上)	P25,26
	6.On.VGA U2 移除,改 0歐姆直接串,U3,U4,U8,U9移除	P8
	7.L1,L2,L3,L4,L6 改成 0/6(R956-R960)	EMI 建議 P5,9
	8. Front Audio AVDD 1K(R961) 對地,解決Pop issue	P26
	9.BC31 -35 因干涉移除掉預留位子	原本 P4
	10. Add 8I845GL support HT 線路	P4
	11. EC32,EC34 add EC72,EC73 8m co-layout	P29
	12. Vcore 3顆 3300u(EC34,37,70) 改為1500u(EC35,72,73)	P29
10/14 1.02	新增 8I845GV Mustek(MS) BOM	
	Add IDE Cable, change color box, RM 移到包材階	
10/8 1.02	新增 8I845GV NB BOM	
	CH1,CH2 BOM update to 1.0C	
10/16 1.02	BC260,BC261 add 1K/6	solve shutdown pop noise
10/21 1.02	新增 8I845GV HI BOM,移除 KTS Battery 替代料	
10/24 1.02	新建 8I845GVC DL CKD BOM,移除彩盒,Manual,Add USB Port Cable	
11/11 1.02	CH2 BOM update to 1.0D, for customer request 南北橋用專屬料號	
11/19 1.02	CH1,CH2 BOM 解決大陸方正 Speaker shutdown 有 noise issue	
	BC269 add 1K ohm, Q23 僅保留主料,替料全移除(替料AVDD 放電慢有 noise)	
11/28 1.03	Add 10E BOM, BC363 add 2.2u,EC1,EC65	Solve DC13 memory unstable
	add 100u, BC362,BC366 remove 4.7u	
	移除育富,鼎富 PCB	隔離孔過大,導致電源不穩
12/1 1.03	8I845GV 1.03 rename to 8LD533-P 2.02	
	Update 8I845GV-C BOM to 1.0E	For PCB 1.03
12/8 1.03	Update 8I845GV/8I845GV-C NB CKD 1.0E BOM	For PCB 1.03
12/10 1.02	Update 8I845GV/8I845GV-C DL 1.0C ECN	CKD BOM, Add Sponge
12/16 1.03	BOM 1.0F FB5 改成直接 short-wire	

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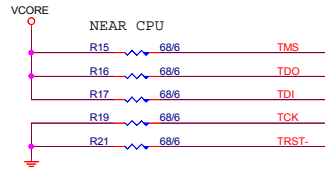
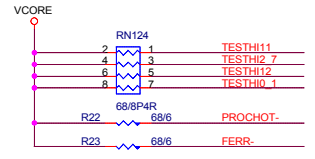
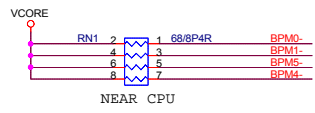
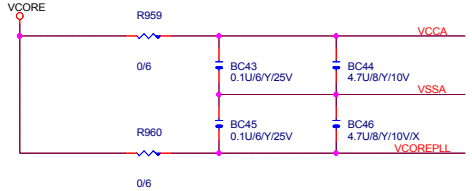
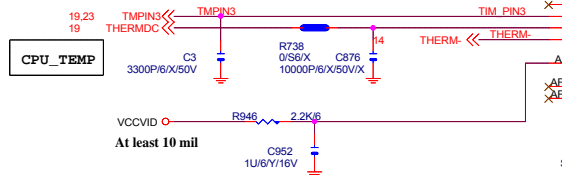
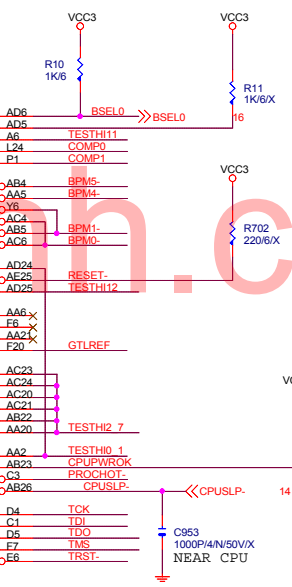
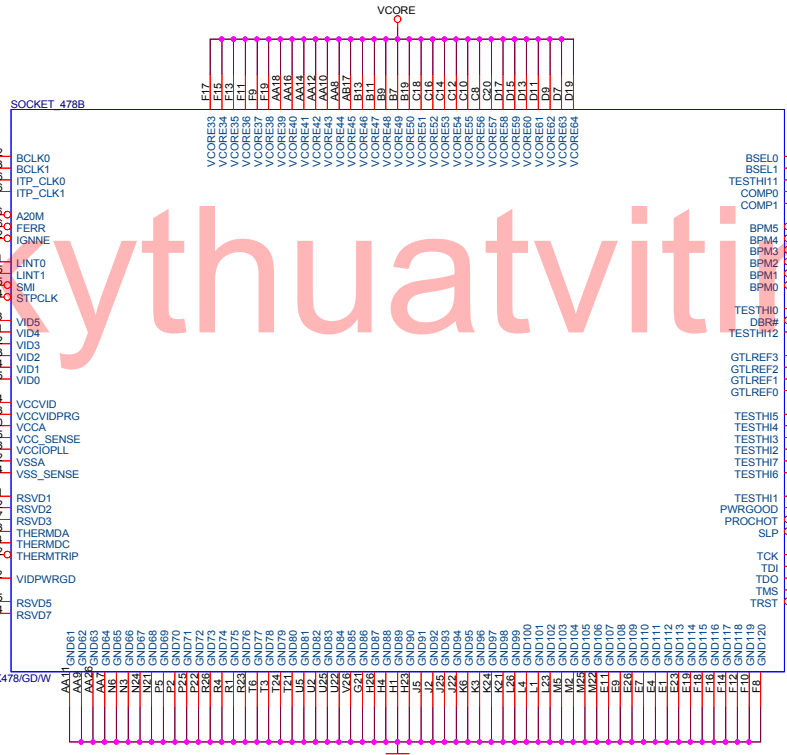
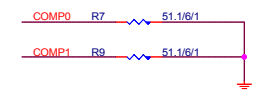
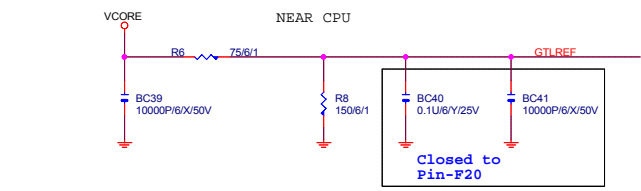
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Title			
Size	Document Number	GA-8I845GV	Rev 1.03
Custom			
Date	星期二, 三月 30, 2004	Sheet 2	of 34

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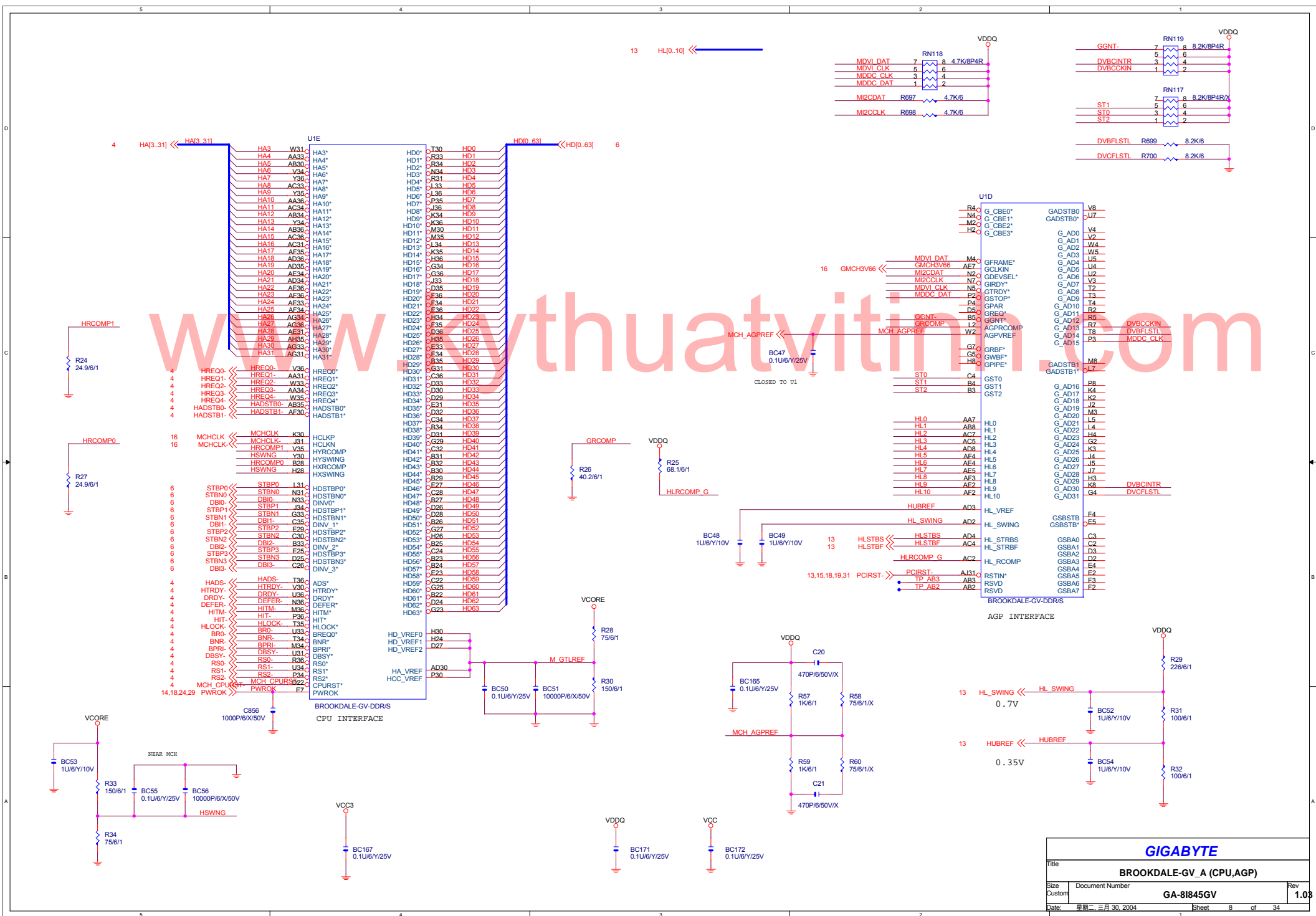


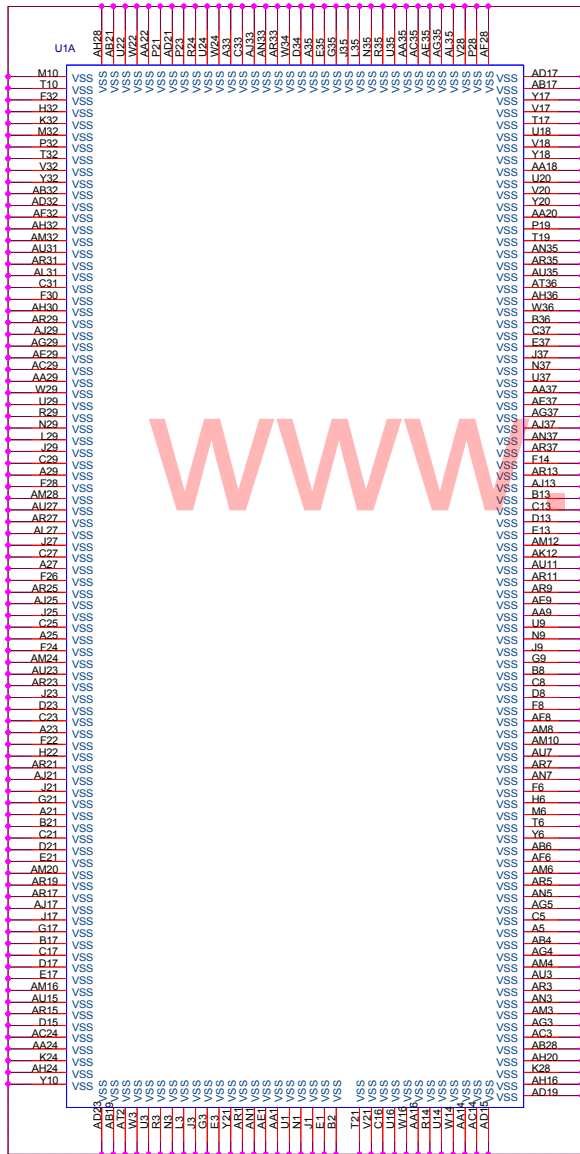
GIGABYTE		
P4 478A		
Title	Document Number	
Size	GA-81845GV	
Custom	Rev 1.03	
Date	日期: 三月 30, 2004	Sheet 5 of 34

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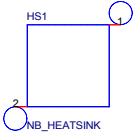


Title			GIGABYTE		
Size			P4 478B		
Custom	Document Number	GA-81845GV		Rev	1.03
Date:	星期三, 三月 30, 2004	Sheet	6	of	34

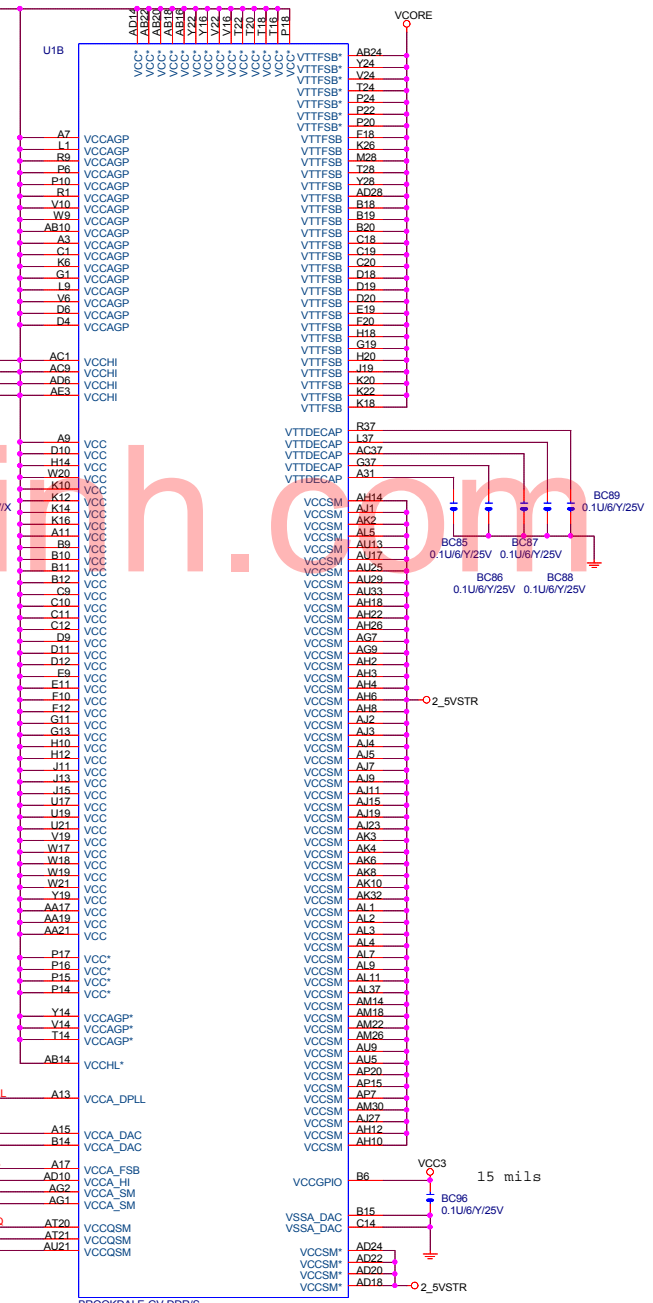
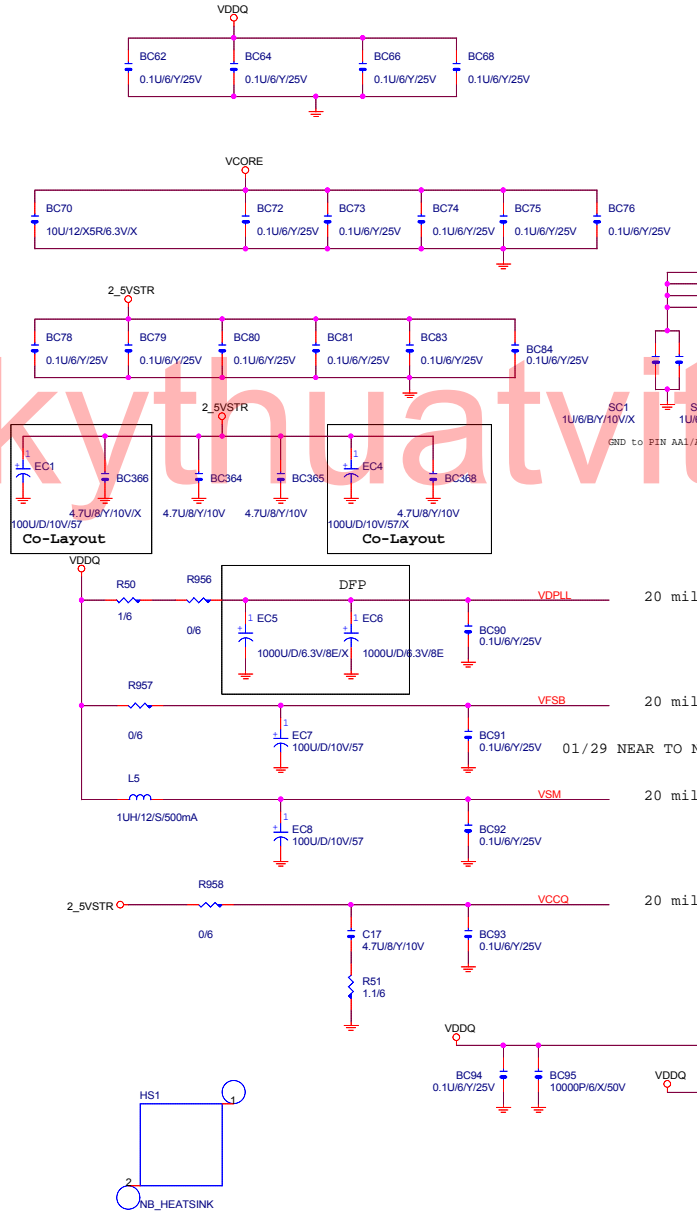




BROOKDALE-GV-DDR/S



NB_HEATSINK



BROOKDALE-GV-DDR/S

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BROOKDALE-GV_C (POWER)			
Title	Document Number	Rev	
Size	GA-81845GV	1.03	
Custom			
Date	星期二, 三月 30, 2004	Sheet	10 of 34

11,12 MD[0..63] << <<MD[0..63] 8

11,12 DM[0..7] >> >>DM[0..7] 8

11,12 -DQS[0..7] << <<-DQS[0..7] 8

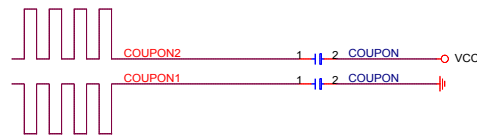
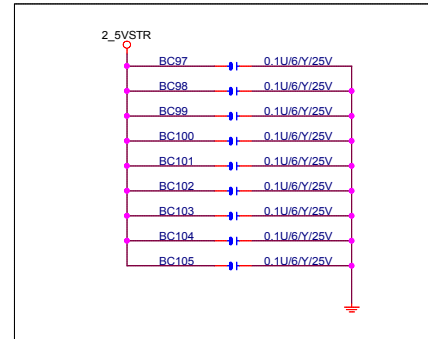
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-DQS 0		3	4	-DQS0
MD 2		5	6	MD2
MD 6		7	8	MD6
MD 0	RN5	1	2 0/8P4R/X	MD0
MD 4		3	4	MD4
MD 5		5	6	MD5
MD 1		7	8	MD1
MD 12	RN6	1	2 0/8P4R/X	MD12
MD 13		3	4	MD13
-DQS 1		5	6	-DQS1
DM 1		7	8	DM1
MD 14	RN7	1	2 0/8P4R/X	MD14
MD 15		3	4	MD15
MD 10		5	6	MD10
MD 11		7	8	MD11
-DQS 2	RN9	1	2 0/8P4R/X	-DQS2
DM 2		3	4	DM2
MD 18		5	6	MD18
MD 22		7	8	MD22
MD 25	RN11	1	2 0/8P4R/X	MD25
MD 25		3	4	MD25
-DQS 3		5	6	-DQS3
DM 3		7	8	DM3
MD 25	RN12	1	2 0/8P4R/X	MD25
MD 30		3	4	MD30
MD 27		5	6	MD27
MD 31		7	8	MD31
MD 32	RN13	1	2 0/8P4R/X	MD32
MD 36		3	4	MD36
MD 33		5	6	MD33
MD 37		7	8	MD37
MD 39	RN14	1	2 0/8P4R/X	MD39
MD 35		3	4	MD35
MD 40		5	6	MD40
MD 44		7	8	MD44
-DQS 4	RN15	1	2 0/8P4R/X	-DQS4
DM 4		3	4	DM4
MD 34		5	6	MD34
MD 38		7	8	MD38
MD 45	RN16	1	2 0/8P4R/X	MD45
MD 41		3	4	MD41
DM 5		5	6	DM5
-DQS 5		7	8	-DQS5
MD 48	RN17	1	2 0/8P4R/X	MD48
MD 49		3	4	MD49
MD 52		5	6	MD52
MD 53		7	8	MD53
MD 50	RN18	1	2 0/8P4R/X	MD50
MD 51		3	4	MD51
MD 60		5	6	MD60
MD 61		7	8	MD61
DM 6	RN19	1	2 0/8P4R/X	DM6
-DQS 6		3	4	-DQS6
MD 54		5	6	MD54
MD 55		7	8	MD55
MD 56	RN20	1	2 0/8P4R/X	MD56
MD 57		3	4	MD57
DM 7		5	6	DM7
-DQS 7		7	8	-DQS7
MD 62	RN21	1	2 0/8P4R/X	MD62
MD 58		3	4	MD58
MD 63		5	6	MD63
MD 59		7	8	MD59

MD 20	RN2	1	2 0/8P4R/X	MD20
MD 16		3	4	MD16
MD 17		5	6	MD17
MD 21		7	8	MD21
MD 42	RN4	1	2 0/8P4R/X	MD42
MD 46		3	4	MD46
MD 43		5	6	MD43
MD 47		7	8	MD47

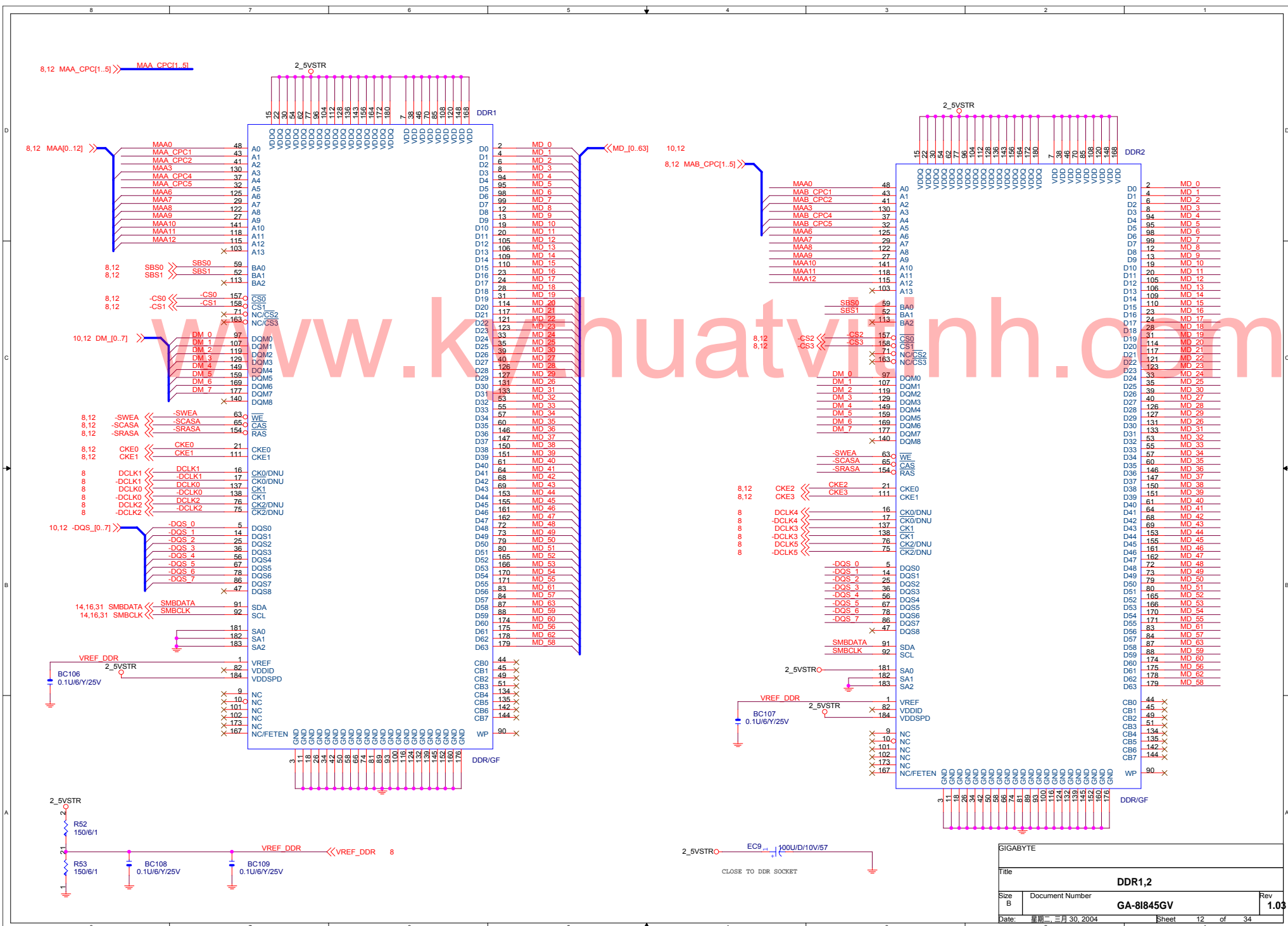
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MD 3		3	4	MD3
MD 8		5	6	MD8
MD 9		7	8	MD9
MD 19	RN10	1	2 0/8P4R/X	MD19
MD 23		3	4	MD23
MD 24		5	6	MD24
MD 28		7	8	MD28

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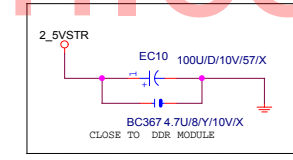
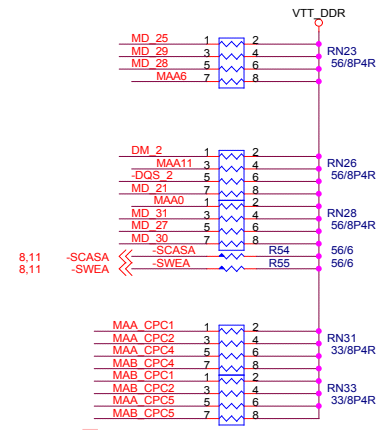
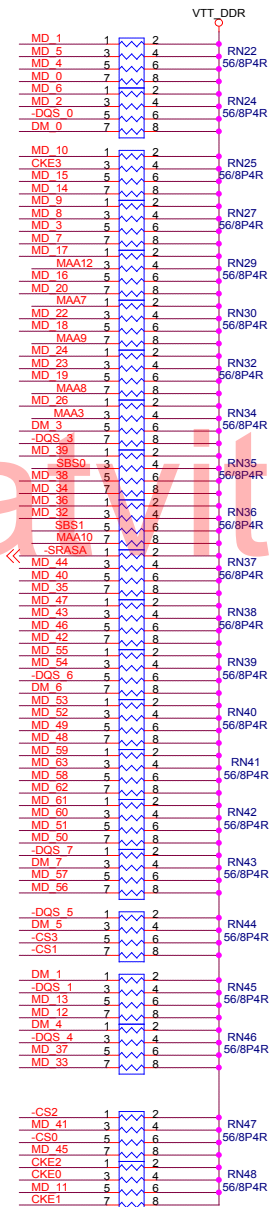
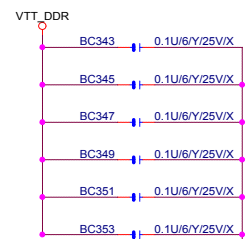
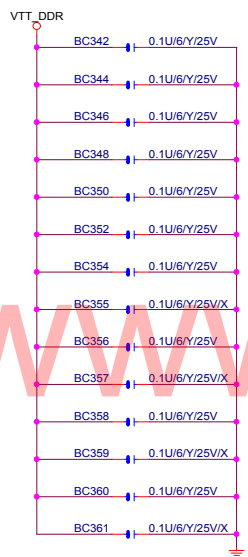
BETWEEN DIMM1 & DIMM2



SIGABYTE		
Title		
DDR SERIAL TERM.		
Size B	Document Number	Rev
	GA-81845GV	1.03
Date:	星期三, 三月 30, 2004	Sheet 11 of 34



SIGNAL BYTE		
Title		
DDR1,2		
Size	Document Number	Rev
B	GA-81845GV	1.03
Date:	星期三, 三月 30, 2004	Sheet 12 of 34

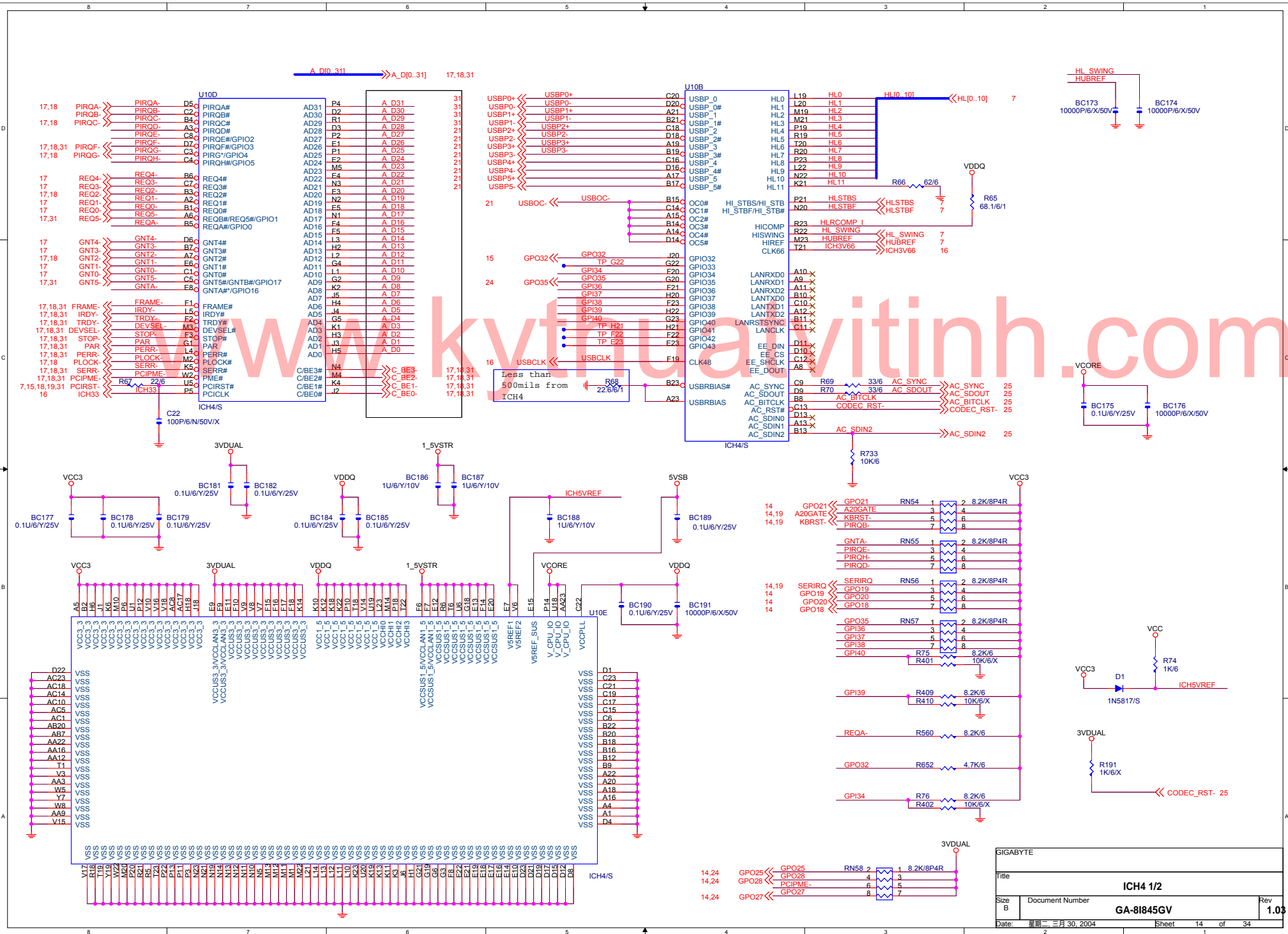


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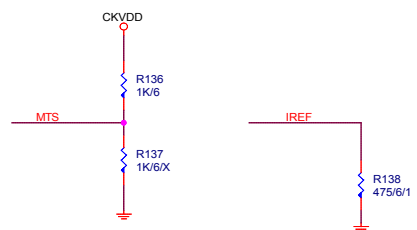
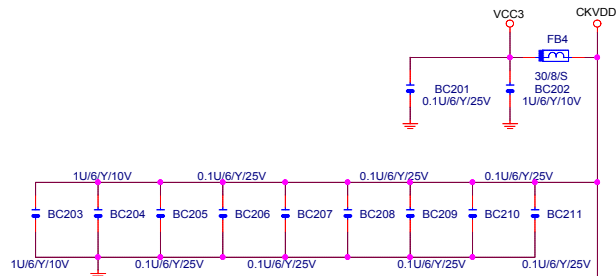
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- 10,11 -DQS[0..7] << -DQS[0..7]
- 8,11 MAA[0..12] << MAA[0..12]
- 8,11 -CS[0..3] << -CS[0..3]
- 8,11 CKE[0..3] << CKE[0..3]
- 8,11 SBS[0..1] << SBS[0..1]
- 8,11 MAA_CPC[1..5] << MAA_CPC[1..5]
- 8,11 MAB_CPC[1..5] << MAB_CPC[1..5]

CLOSE TO DDR TERMINATOR(1 CAP. FOR 2 R-PACKS)

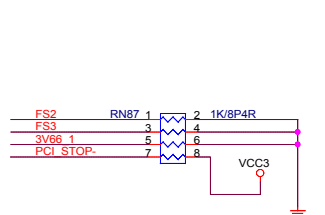
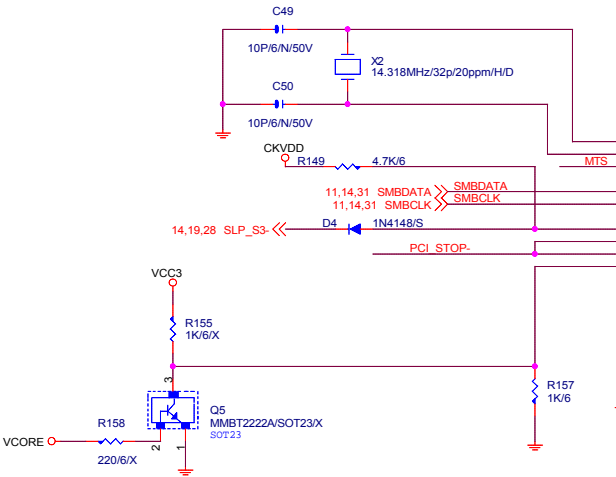
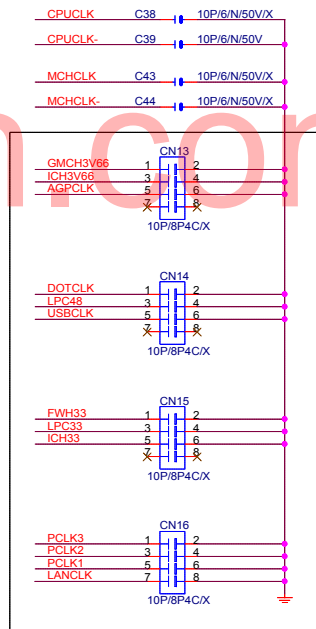
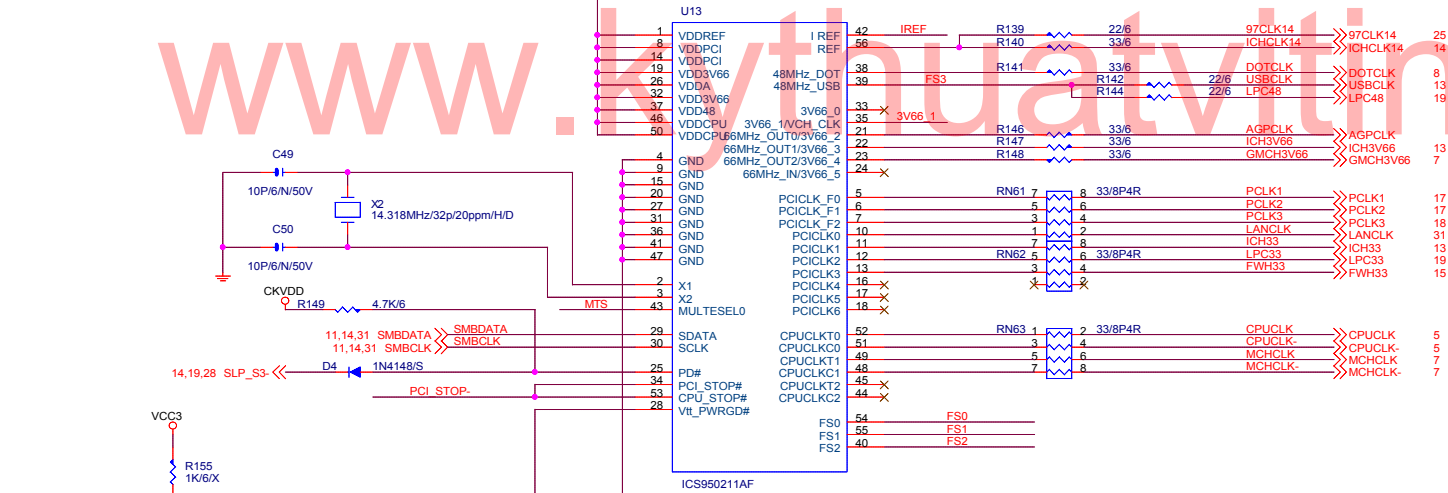
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DDR TERM.		
Size B	Document Number	Rev
	GA-81845GV	1.03
Date:	星期二, 三月 30, 2004	Sheet 13 of 34



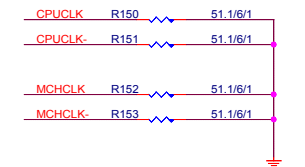
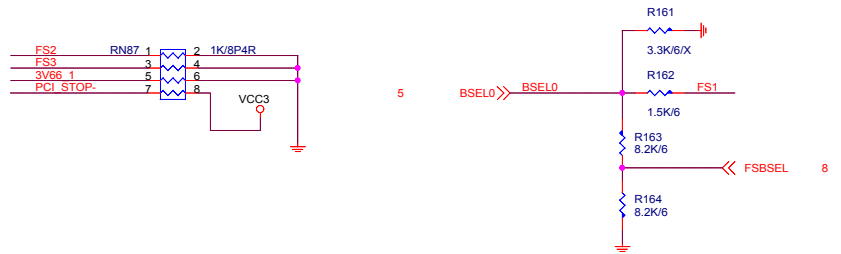
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ICH4 1/2		
Size	Document Number	Rev
B	GA-81845GV	1.03
Date:	星期二, 三月 30, 2004	Sheet 14 of 34



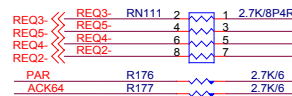
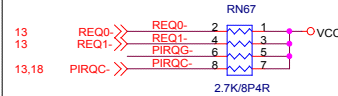
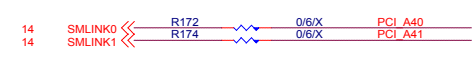
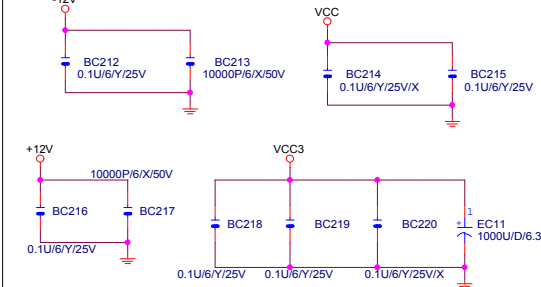
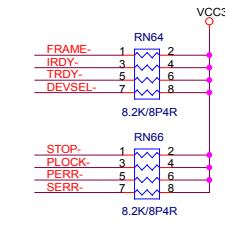
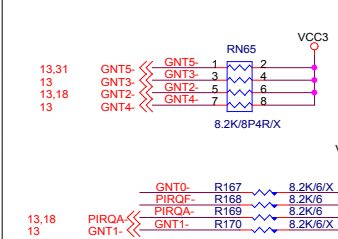
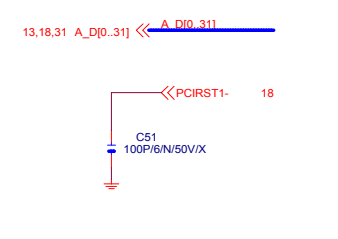
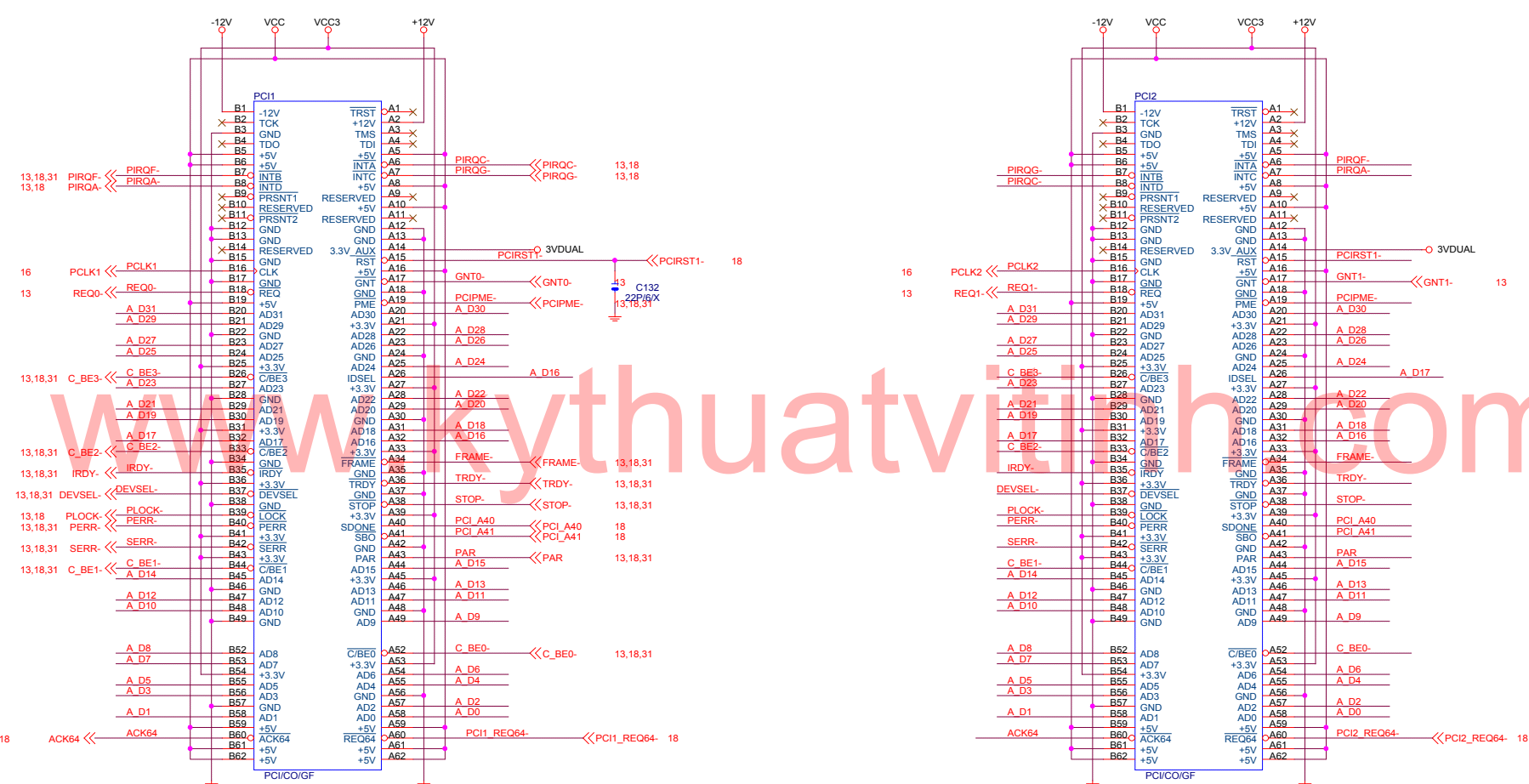
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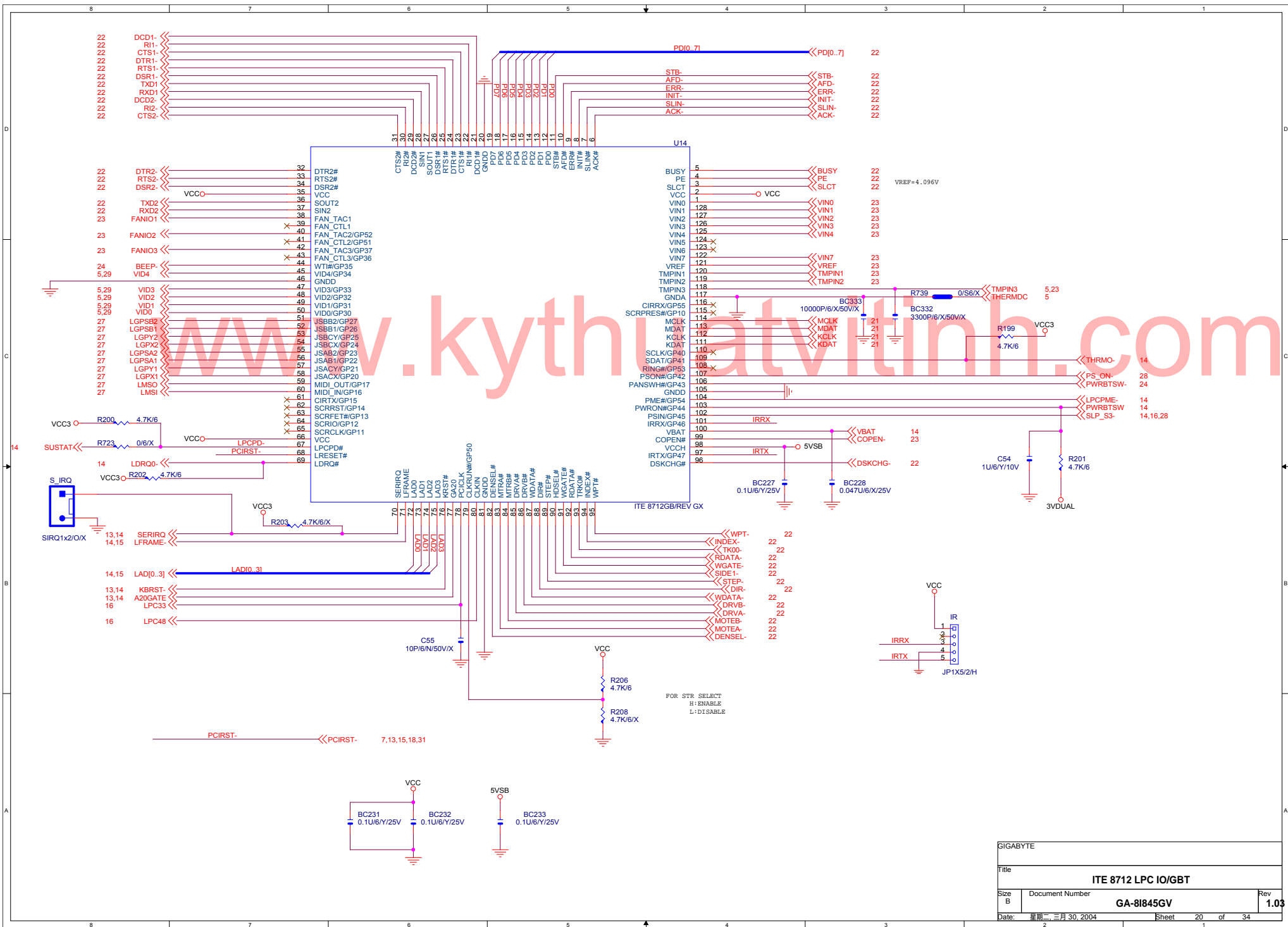
BSEL0 Pull-up at another page.



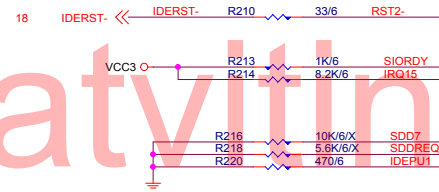
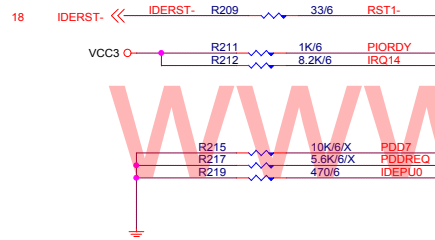
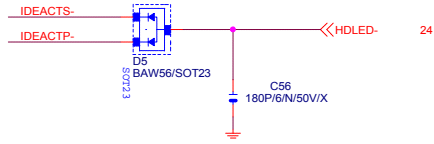
SIGABYTE		
Title		
CLOCK GENERATOR		
Size Custom	Document Number	Rev
	GA-81845GV	1.03
Date:	星期二, 三月 30, 2004	Sheet 17 of 34



SIGABYTE		
Title PCI SLOT 1/2		
Size B	Document Number GA-81845GV	Rev 1.03
Date: 星期二, 三月 30, 2004	Sheet 18	of 34

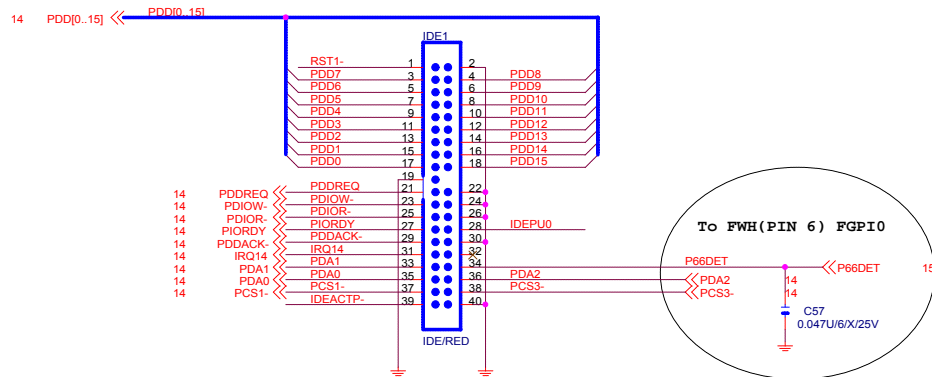


SIGABYTE		
Title ITE 8712 LPC IO/GBT		
Size B	Document Number GA-81845GV	Rev 1.03
Date: 星期二, 三月 30, 2004	Sheet 20	of 34

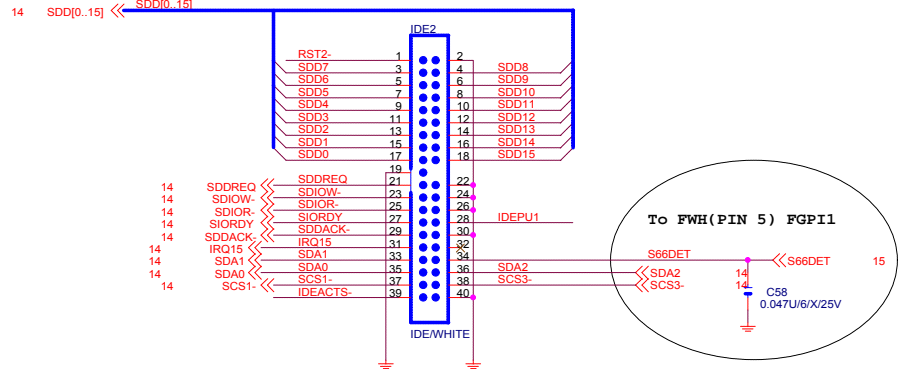


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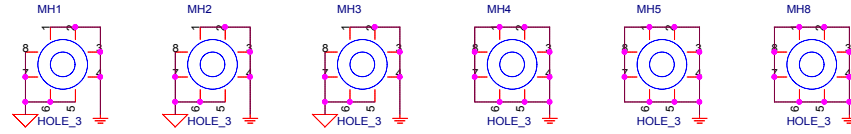
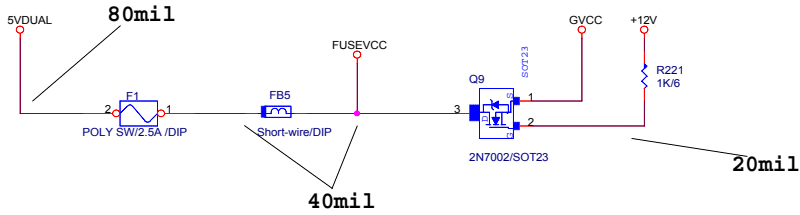
PRIMARY IDE CONNECTOR



SECONDARY IDE CONNECTOR

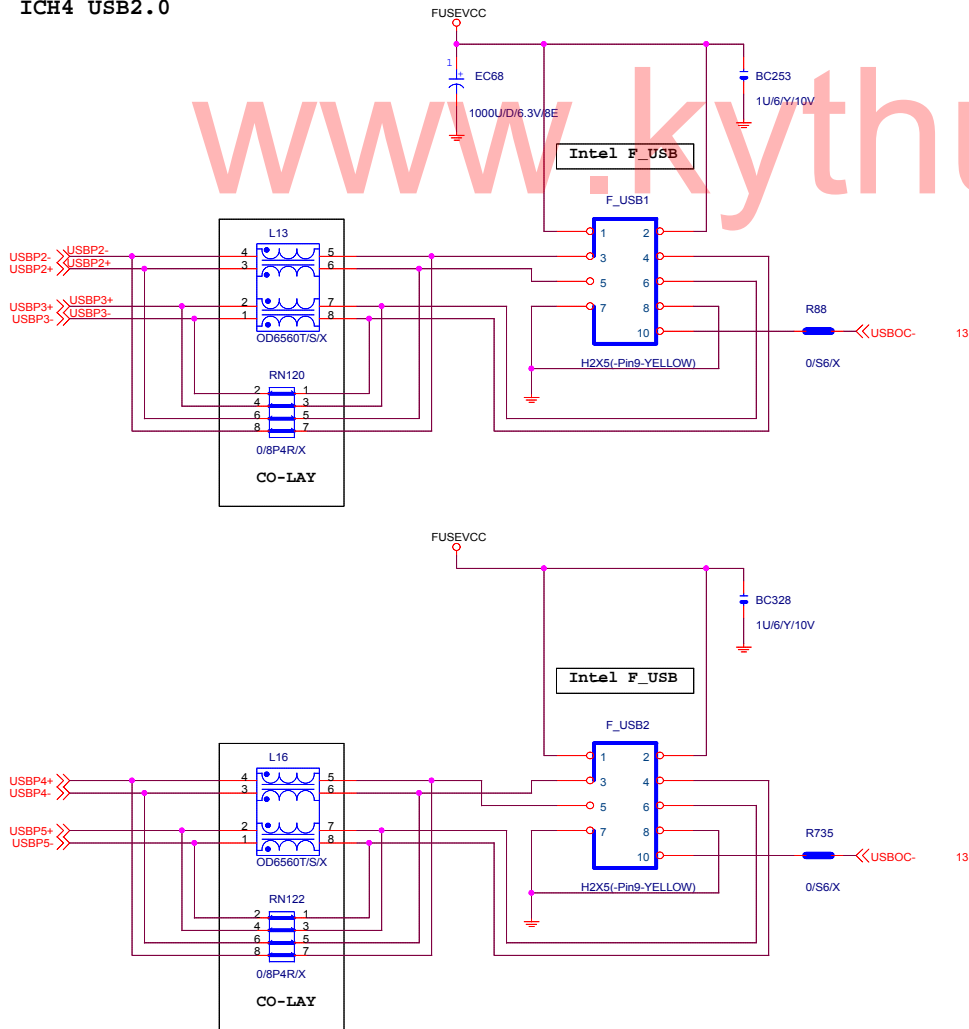


GIGABYTE		
Title IDE CONNECTOR		
Size B	Document Number GA-8I845GV	Rev 1.03
Date: 星期二, 三月 30, 2004	Sheet 21	of 34

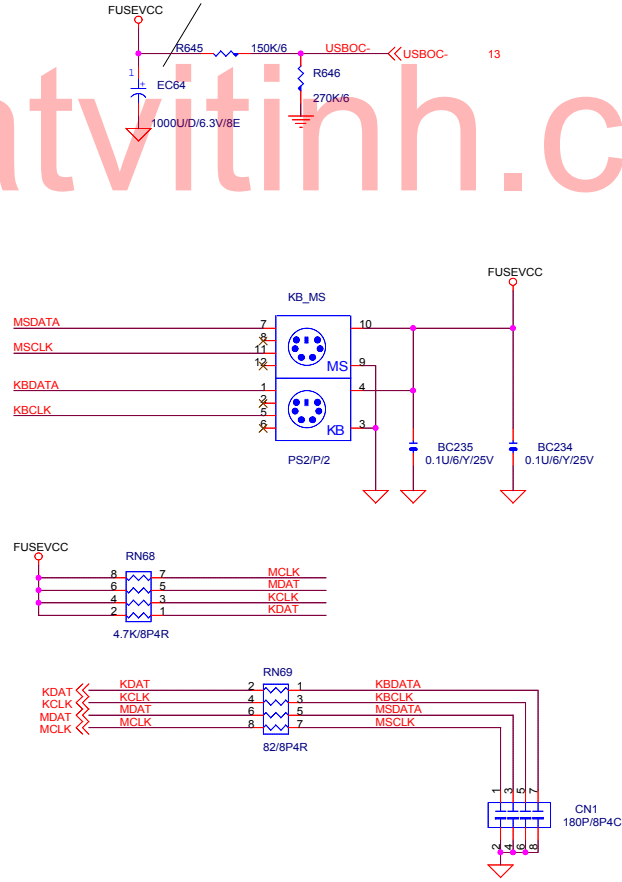


FRONT USB CONN

ICH4 USB2.0

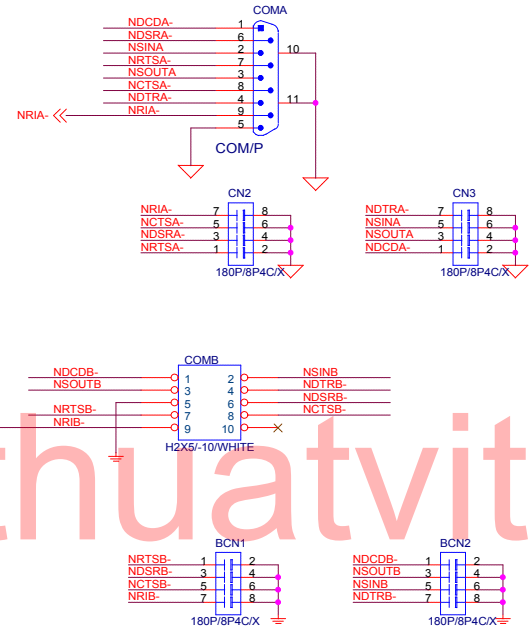
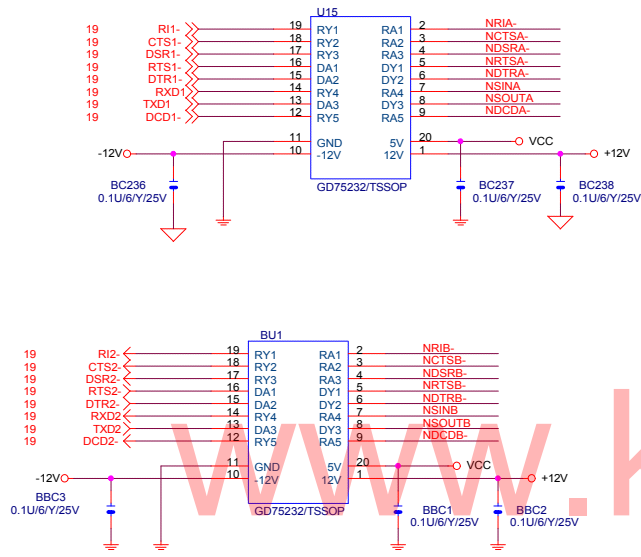


EC64 要靠近USB_PORT的FUSEVCC

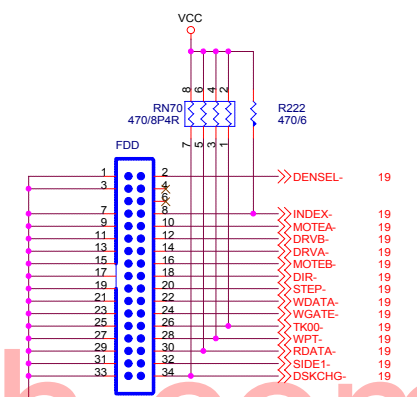


SIGABYTE		
Title KB & PS2 MOUSE & IR		
Size B	Document Number GA-8I845GV	Rev 1.03
Date: 星期二, 三月 30, 2004	Sheet 22	of 34

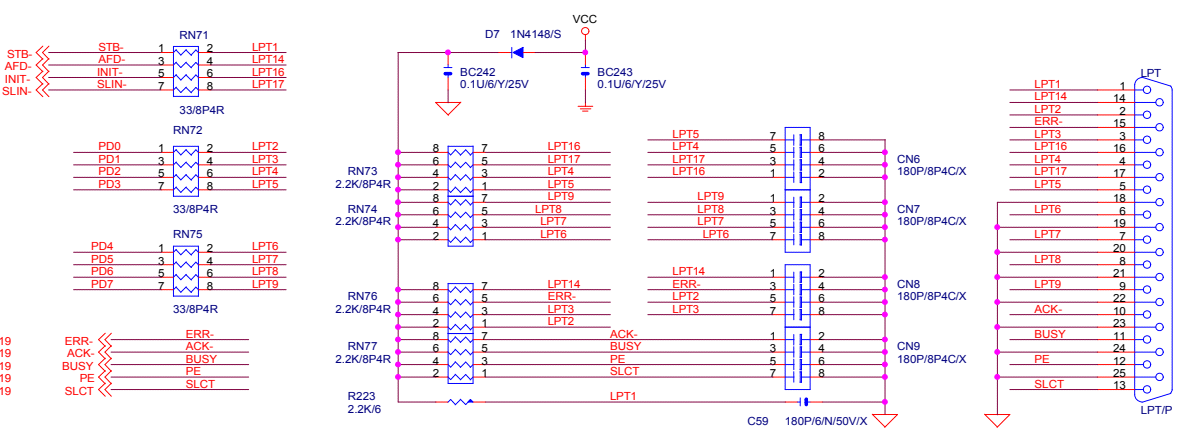
COMA



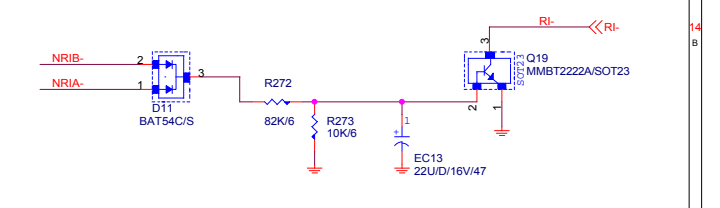
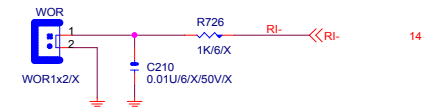
FLOPPY



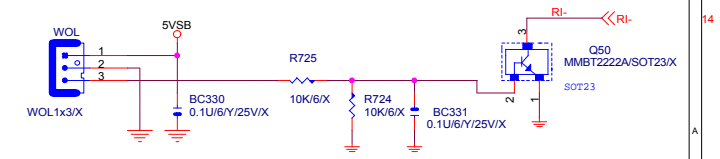
19 PD[0..7] <-> PD[0..7]



WOR

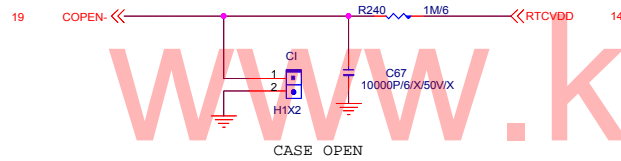
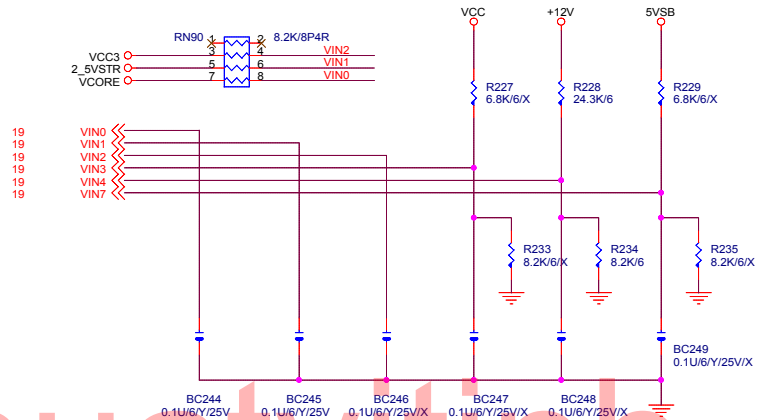
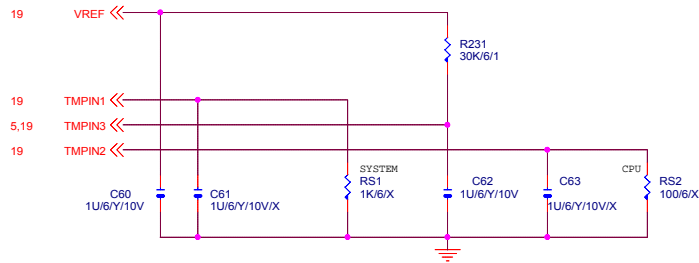


WOL

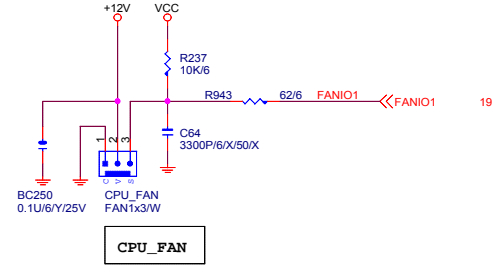
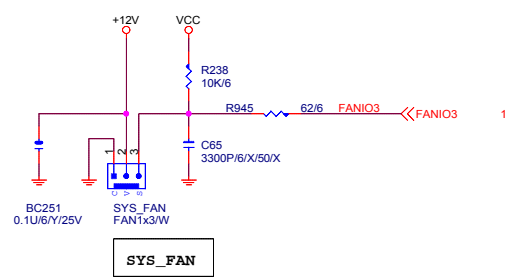
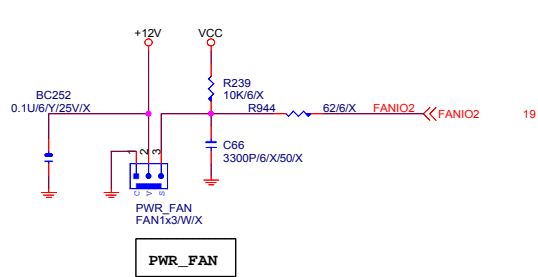
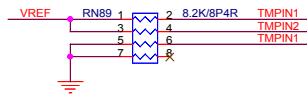


GIGABYTE			
Title			
COM & WOR & WOL & LPT PORT & FLOOPY			
Size B	Document Number	GA-81845GV	Rev 1.03
Date:	星期二, 三月 30, 2004	Sheet 23	of 34

Hardware Monitor circuits

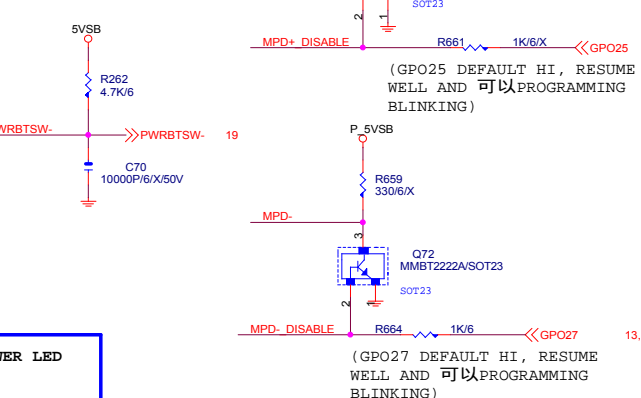
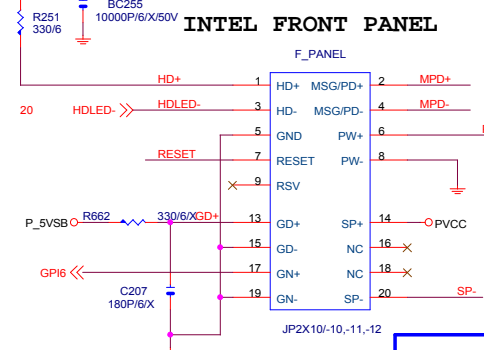
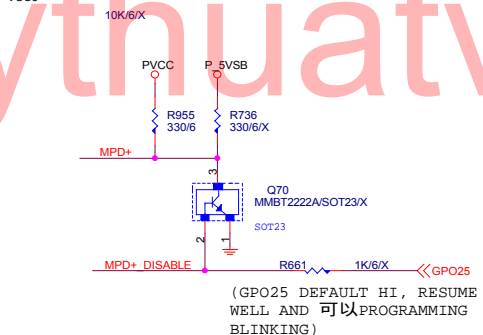
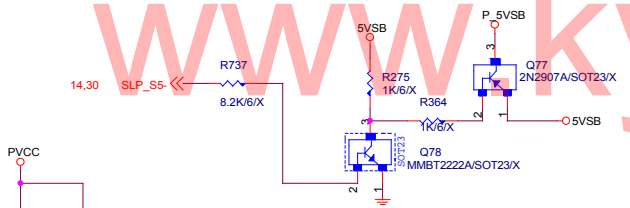
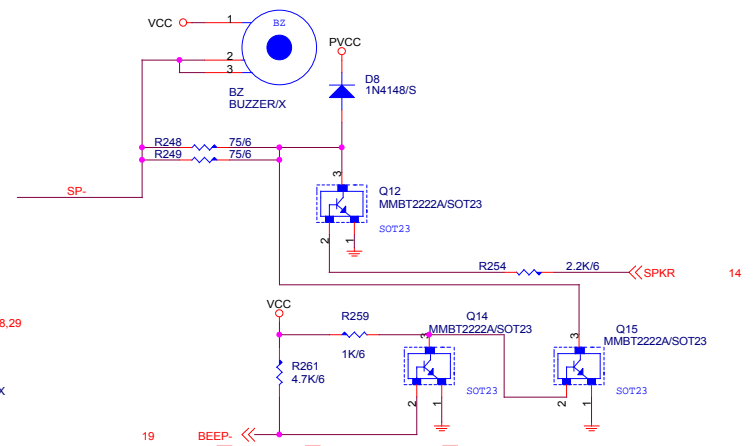
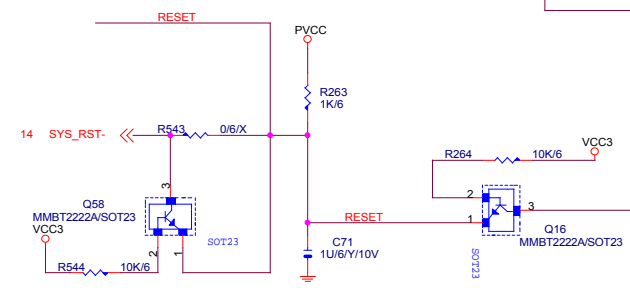


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SIGABYTE		
Title		
FAN/ HW MONITOR		
Size	Document Number	Rev
B	GA-81845GV	1.03
Date:	星期二, 三月 30, 2004	Sheet 24 of 34

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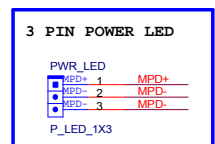
States for a single-color power LED

LED States	ACPI States	GPO25	GPO27	GPO35
OFF	S1, S3, S5	1	1	NO1
Steady Green	S0	0	1	0
Blinking Green	S0(message waiting)	0	B	0

NO1 GPO35 只需在 S1 PROGRAMMING

States for a dual-color power LED

LED States	ACPI States	GPO25	GPO27	GPO35
OFF	S5	1	1	X
Steady Green	S0	0	1	0
Blinking Green	S0(message waiting)	0	B	0
Steady Yellow	S1, S3	1	0	NO1
Blinking Yellow	S1, S3(message waiting)	1	B	NO1

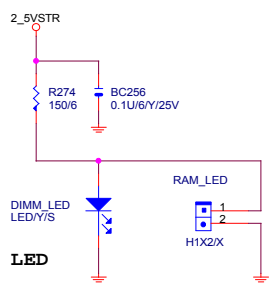


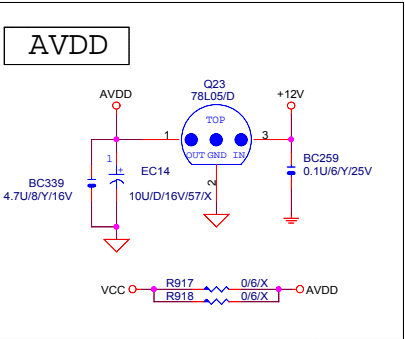
(GPO28 DEFAULT HIGH, RESUME WELL)
States for green LED

LED States	ACPI States	GPO28
ON	S1, S3	0
OFF	S0, S5	1

(DEFAULT High, main power)
IF GPO35 有 SUPPORT S5
LOW, S0 HIGH
則不需使用此CIRCUIT

STR_LED/DIMM LED

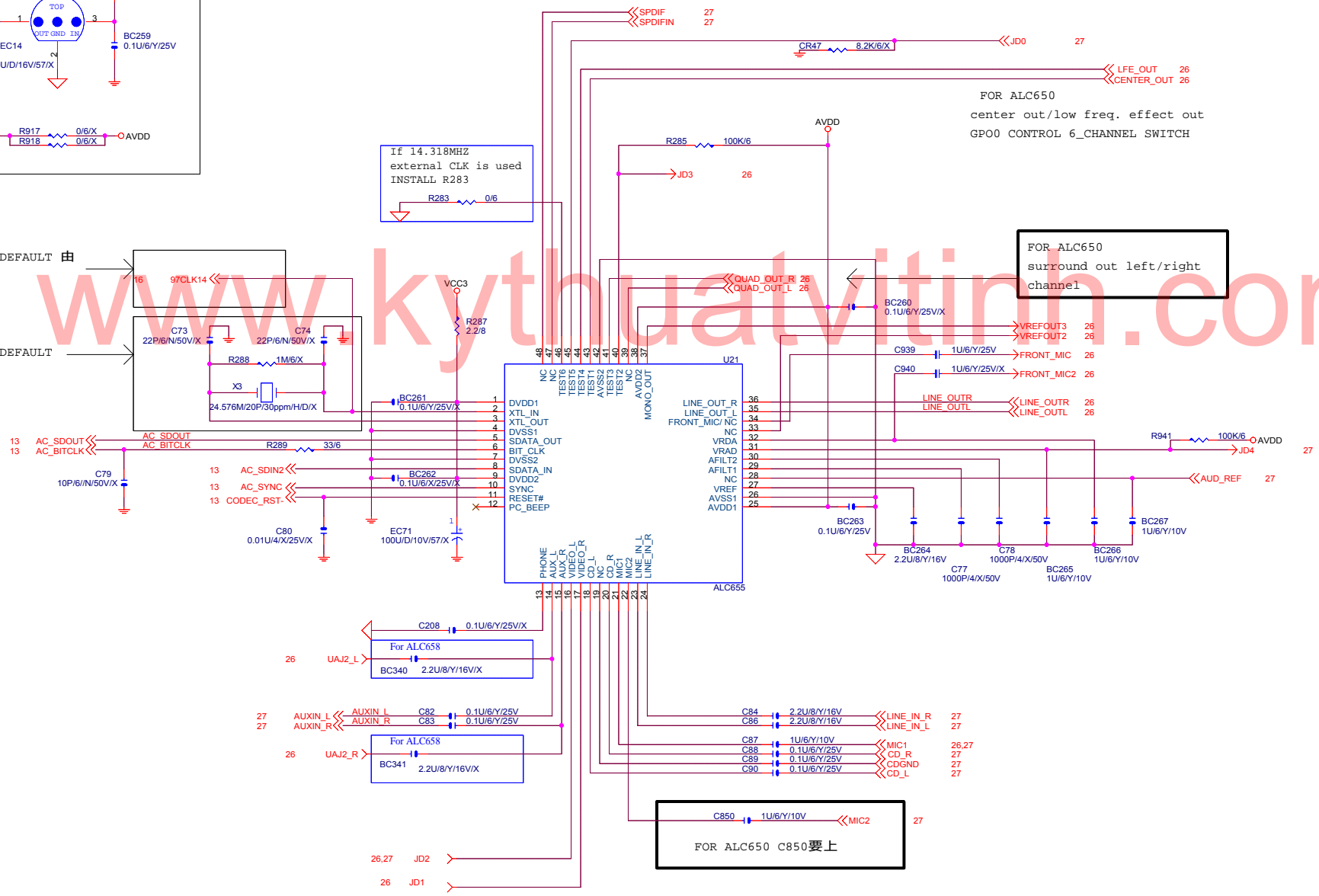




If 14.318MHZ external CLK is used
INSTALL R283

FOR 101 DEFAULT
FOR 650 DESIGN DEFAULT 由
CLOCK GEN 来

FOR 650 DESIGN DEFAULT
不上 CRYSTAL



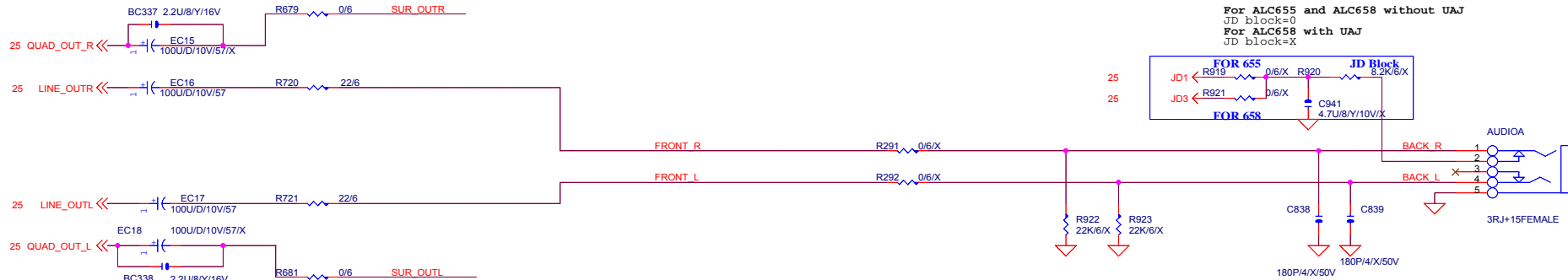
FOR ALC650
center out/low freq. effect out
GPO0 CONTROL 6_CHANNEL SWITCH

FOR ALC650
surround out left/right
channel

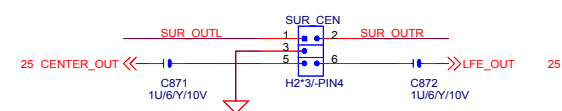
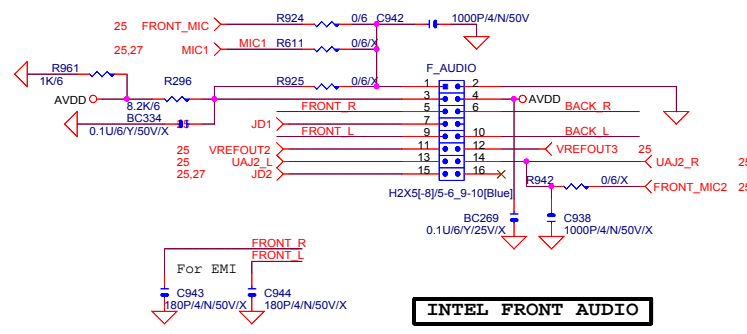
FOR ALC650 C850要上

SIGABYTE		
Title AC97 CODEC		
Size B	Document Number GA-81845GV	Rev 1.03
Date: 星期二, 三月 30, 2004	Sheet 26	of 34

LINE-OUT

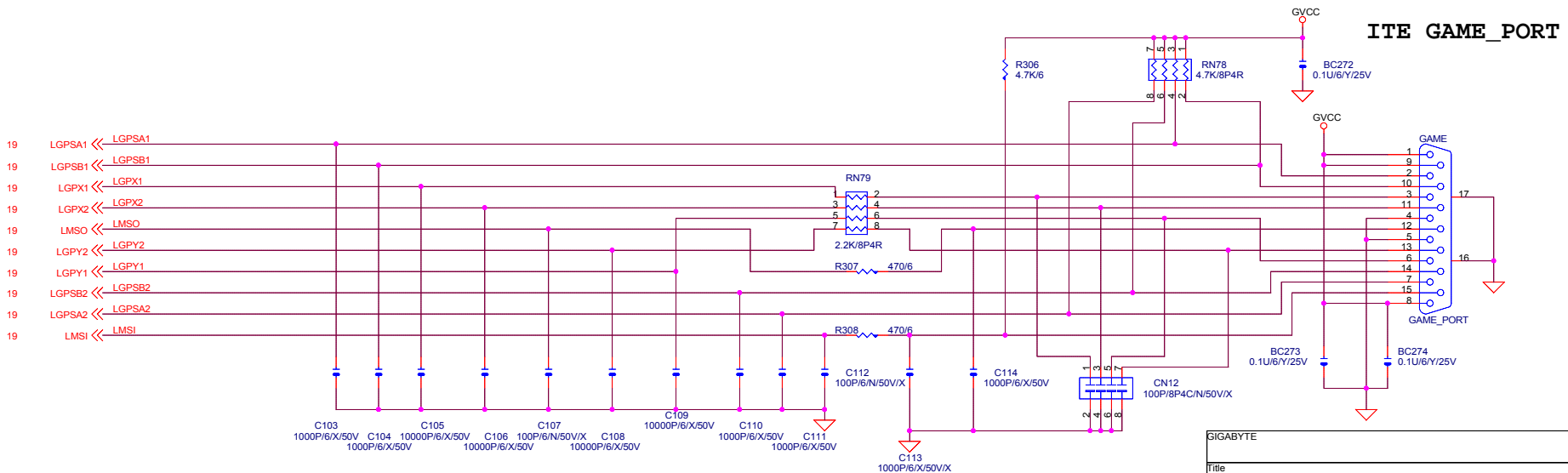
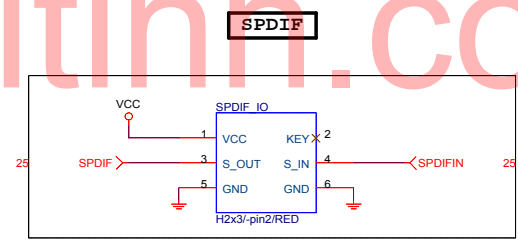
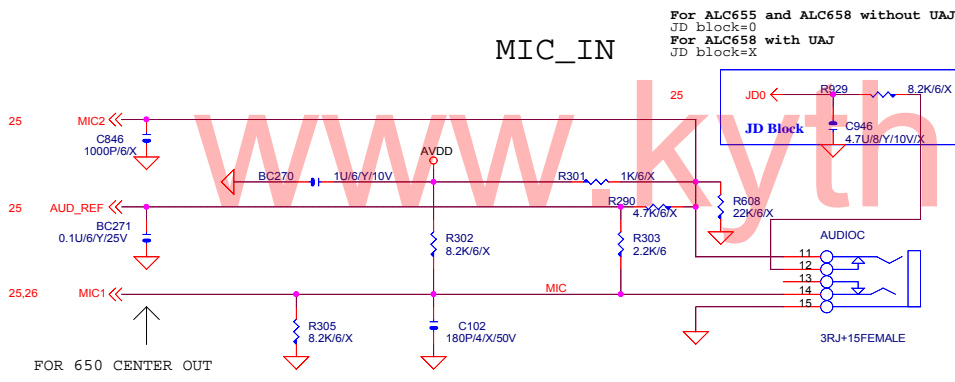
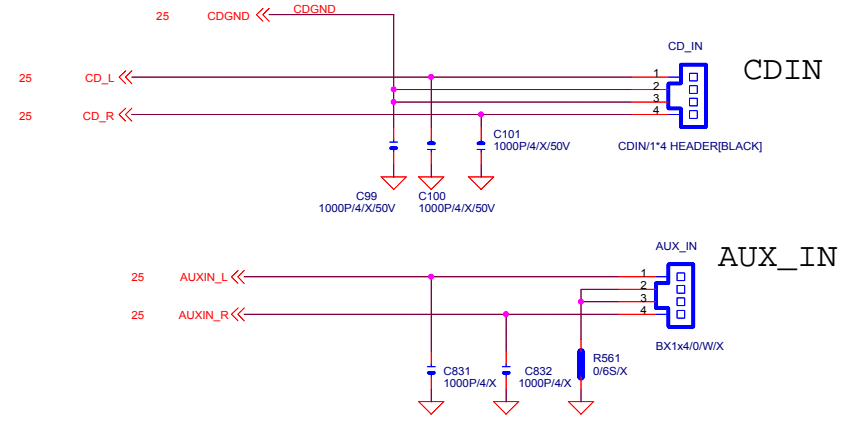
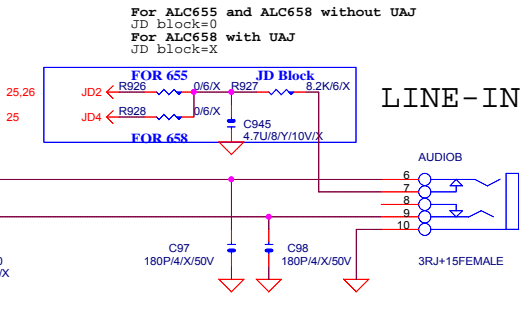


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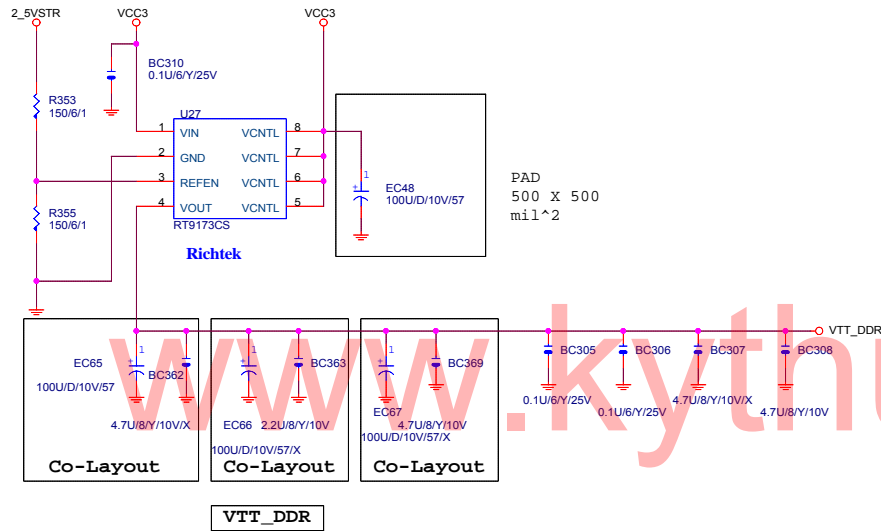
FOR SUPPORT 6 CHANNEL,
 SURROUND OUT
 SURR_CEN_LFE CENTER OUT, LOW
 FREQUENCY
 EFFECT OUT

SIGABYTE		
Title LJACK LINE OUT		
Size B	Document Number GA-8I845GV	Rev 1.03
Date: 星期二, 三月 30, 2004	Sheet 27	of 34



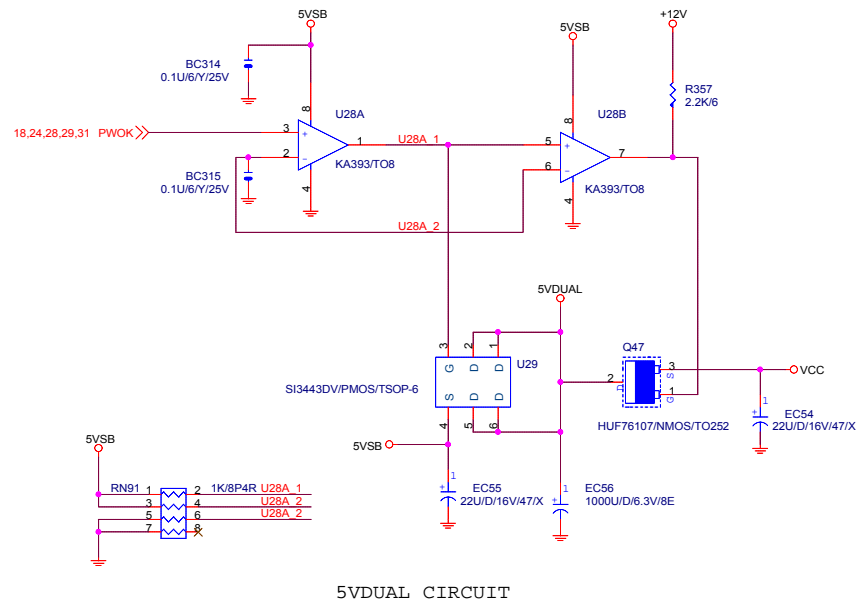
SIGABYTE		
Title		
PHONE JACK, GAME PORT		
Size	Document Number	Rev
B	GA-8I845GV	1.03
Date:	星期二, 三月 30, 2004	Sheet 28 of 34

1.25V VTT_DDR LINEAR SOLUTION

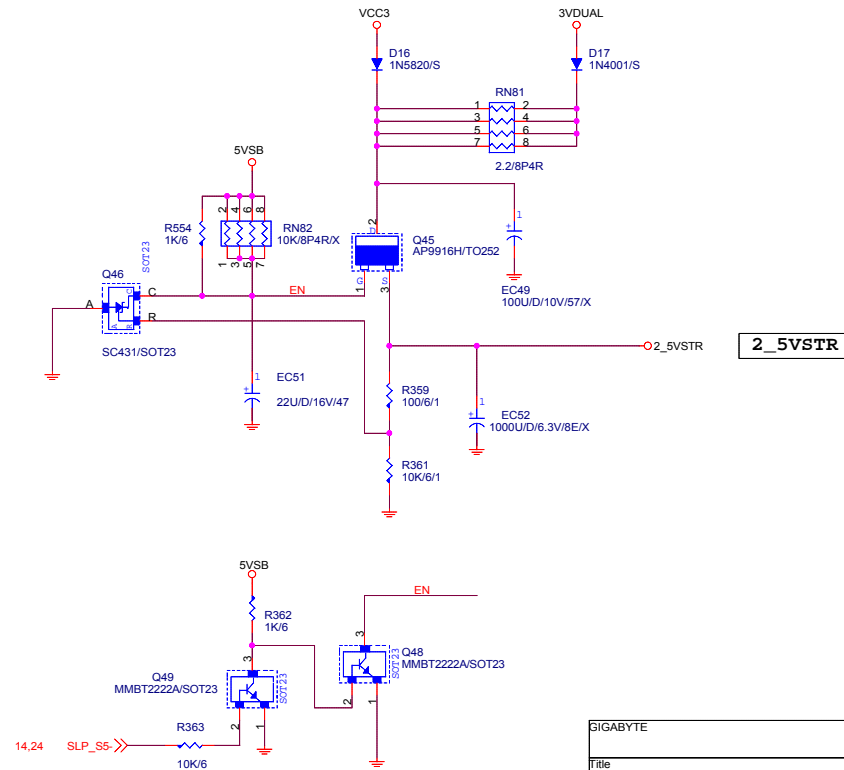


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5VDUAL



5VDUAL CIRCUIT

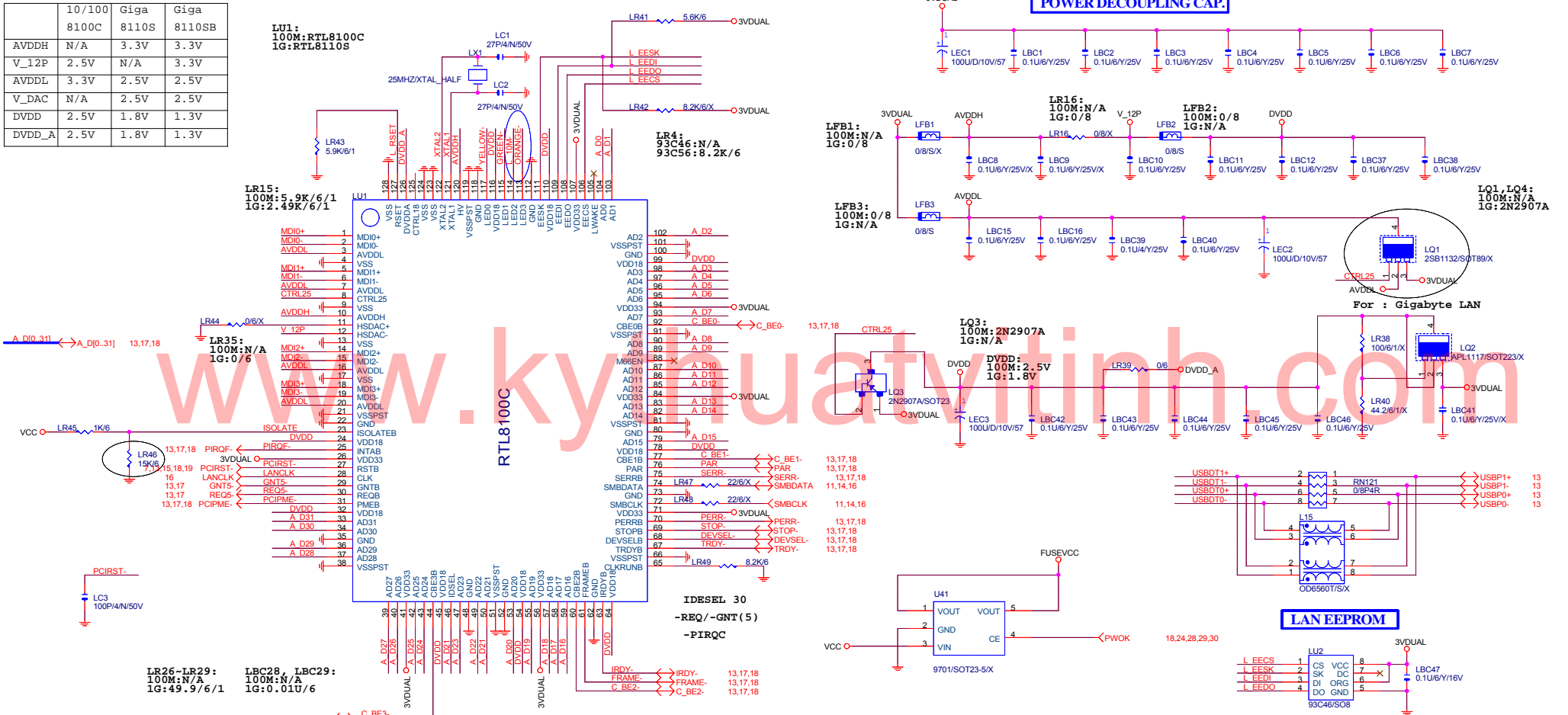


2_5VSTR

SIGABYTE		
Title DDR POWER		
Size B	Document Number GA-81845GV	Rev 1.03
Date: 星期二, 三月 30, 2004	Sheet 31	of 34

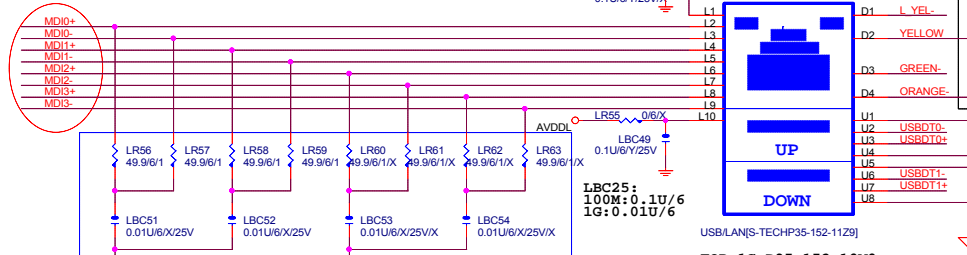
	10/100	Giga	Giga
	8100C	8110S	8110SB
AVDDH	N/A	3.3V	3.3V
V_12P	2.5V	N/A	3.3V
AVDDL	3.3V	2.5V	2.5V
V_DAC	N/A	2.5V	2.5V
DVDD	2.5V	1.8V	1.3V
DVDD_A	2.5V	1.8V	1.3V

LU1:
100M:RTL8100C
1G:RTL8110S



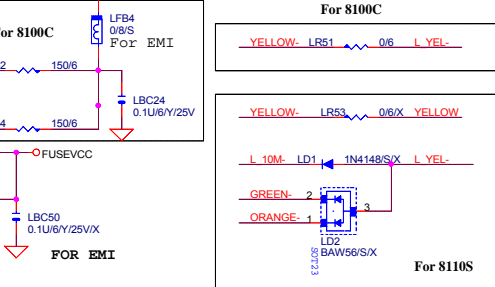
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Spacing : at least 50 mils between each differential pair



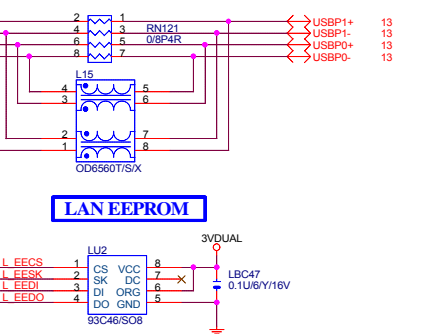
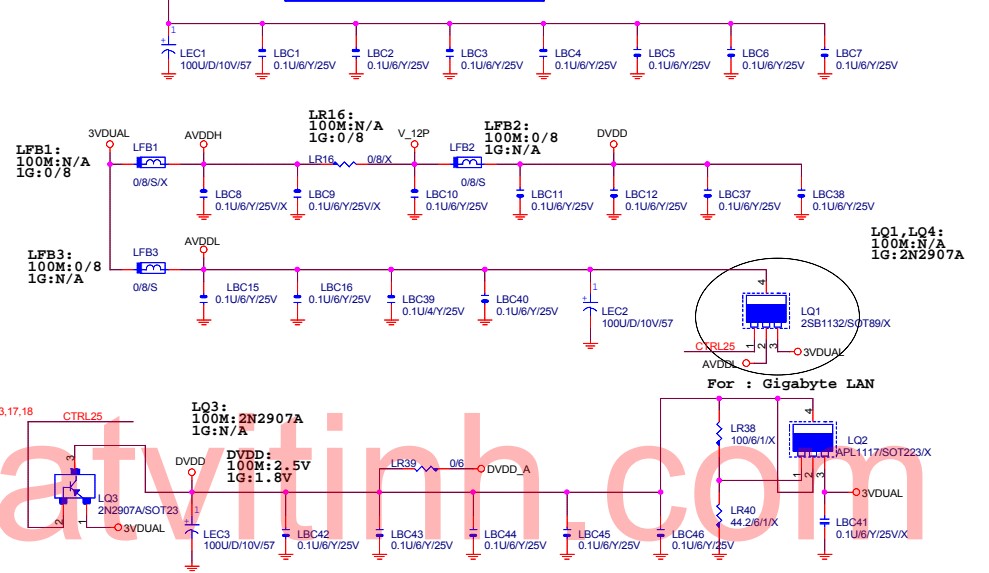
LR56, LR57, LBC51 Close to Lan Chip
Realtek suggestion (TX+, TX-).

LR58, LR59, LBC52 Close to Lan Chip
Realtek Suggestion (RX+, RX-).



FOR 1G: P35-152-19W9
FOR 100M: P35-152-11Z9

POWER DECOUPLING CAP.



When Inetl & GBT Gigabit (8110S)
Note: LEDSI-0 must set to 00 in EEPROM

	Status	Dual Color LED		
		Yellow	Green	Orange
RTL8110S Gigabit	10Mb	---	OFF	OFF
	100Mb	---	ON	OFF
	1Gb	---	OFF	ON
	Link	ON	---	---
RTL8100C 10M/100M	Active	Blink	---	---
	10Mb	---	ON	OFF
	100Mb	---	ON	OFF
	Link	---	ON	---
Active	Blink	---	---	

GIGABYTE GA-8I845GV PCI ROUNTING LIST *Revision 1.03*

PCI DEVICE	IDSEL	INT	CLOCK	REQ	GNT
PCI SLOT1	16	C,F,G,A	PCLK1	REQ0-	GNT0-
PCI SLOT2	17	F,G,A,C	PCLK2	REQ1-	GNT1-
PCI SLOT3	18	G,A,C,F	PCLK3	REQ2-	GNT2-
	19				
	20				
	21				
	26				
	28				
	23				
	NA				

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GIGABYTE GA-8I845GV GPIO LIST

Revision 1.03

SHEET TITLE

GPI		
PIRQB-		PULL 8.2K TO VCC3
PIRQD-		PULL 8.2K TO VCC3
PIRQE-		PULL 8.2K TO VCC3
PIRQH-		PULL 8.2K TO VCC3
GPI6		PULL 8.2K TO VCC3 (GREEN_BUTTON)
GPI7		NOT IMPLEMENTED
GPI8		PULL 8.2K TO 3VDUAL, LPC PME.
GPI9	NA	NOT IMPLEMENTED
GPI10	NA	NOT IMPLEMENTED
GPI11		PULL 4.7K TO 3VDUAL (SMBALERT)
GPI12		PULL DOWN 10K.
GPI13		PULL DOWN 10K, CNR_PRIMARY
GPI14	NA	NOT IMPLEMENTED
GPI15	NA	NOT IMPLEMENTED

SHEET TITLE

GPO		
GPO18		PULL 8.2K TO VCC3
GPO19		PULL 8.2K TO VCC3
GPO20		PULL 8.2K TO VCC3
GPO21		PULL 8.2K TO VCC3
GPO22		PULL 8.2K TO VCC3
GPO23		PULL 8.2K TO VCC3
GPO24		PULL 1K TO 3VDUAL (TOP BLOCK)
GPO25		PULL 4.7K TO 3VDUAL, BIOS WRITE PROTECT.
GPO26		NOT IMPLEMENTED
GPO27		PULL 8.2K TO 3VDUAL, LAN 100/10 DETECT.
GPO28		PULL 8.2K TO 3VDUAL