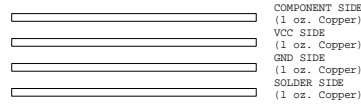


GIGABYTE GA-8I848E Schematics

Revision
1.01

SHEET	TITLE
01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	P4_478A
05	P4_478B
06	P4_478C
07	SPRINGDALE HOST
08	SPRINGDALE DDR
09	SPRINGDALE AGP, HUB, CSA, VGA
10	SPRINGDALE PWR
11	DDR1,2 CHANNEL A
12	DDR3 CHANNEL A
13	DDR TERMINATION
14	AGP
15	ICH5 PCI, USB, HUB, LAN
16	ICH5 IDE, GPIO, SATA, CTRL
17	ICH5 VCC, GND
18	FWH
19	ICS952603 CLOCK GEN
20	PCI1_2
21	PCI3_4
22	PCI5_6

SHEET	TITLE
23	CODEC
24	AUDIO JACK, L_OUT, F_AUDIO
25	ITE 8712
26	COM_LPT
27	IDE
28	FAN/HWMO
29	KB_PS2
30	FPANEL
31	USB CONN
32	DDR POWER
33	VCORE POWER
34	ATX, OTHERS POWER
35	KINNERETH-R LNA(CSA-1)
36	KINNERETH-R LNA(CSA-2)
37	KINNERETH-R LNA(CSA-3)

	
GIGABYTE CORP.	
Title: COVER SHEET	
Size: Custom	Document Number: GA-8I848E
Date:	Rev: 1.01
Sheet 1 of 38	

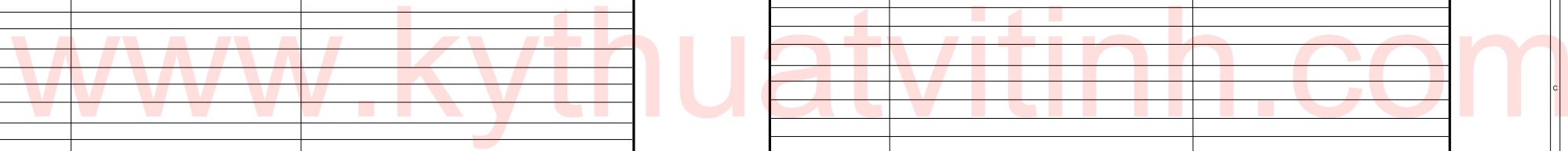
Model Name: GA-8I848E

Component history

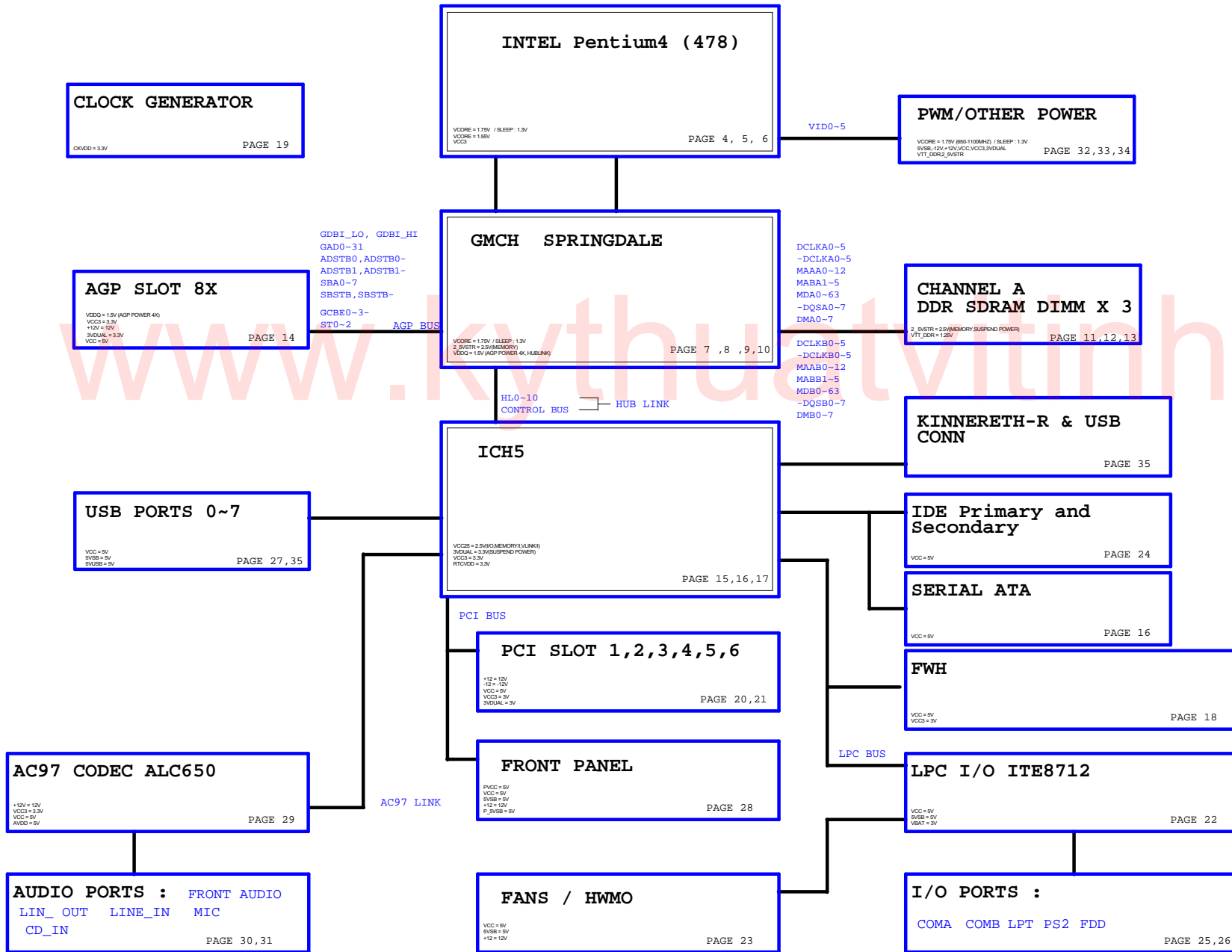
Date	Change Item	Reason
EVT BOM READY		
8I848E-00-10A	PCB 1.0 尺寸304.8X204.97	
8I848E-00-10C	ADD R1247 62/6	
	PCB REV1.0 CHANGE TO REV1.01	
8I848E-00-10D	ADD C431 1000P/6/X/50V	FOR 未鎖頻 W.M. CPU
9MK8I848E-NB-10D	FOR 大中國 CKD(-NB)	不開機
8I848E-00-10E	ROM R1247 62/6 --> 1K/6	FOR CHECKSUM ERROR ISSUE

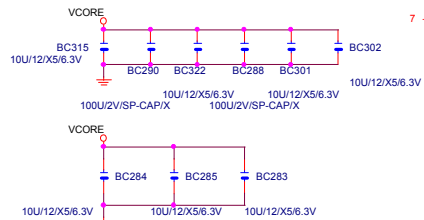
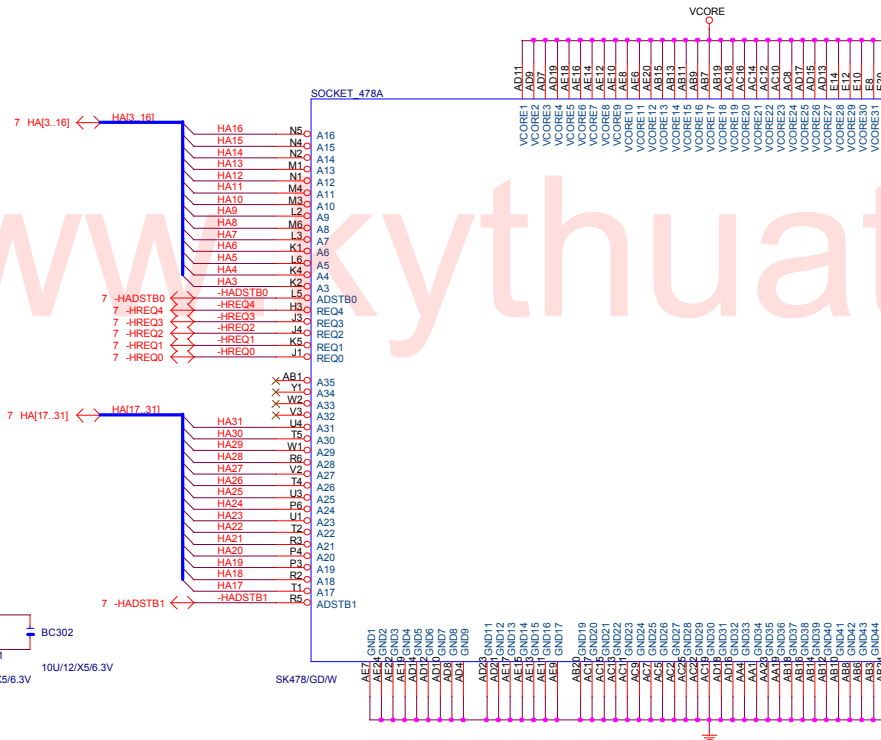
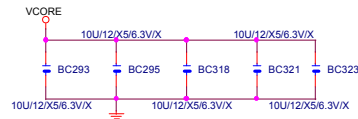
Circuit or PCB layout history

Date	Change Item	Reason
8IPE1000S-00-10A		

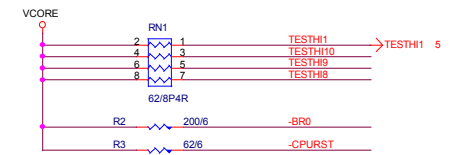
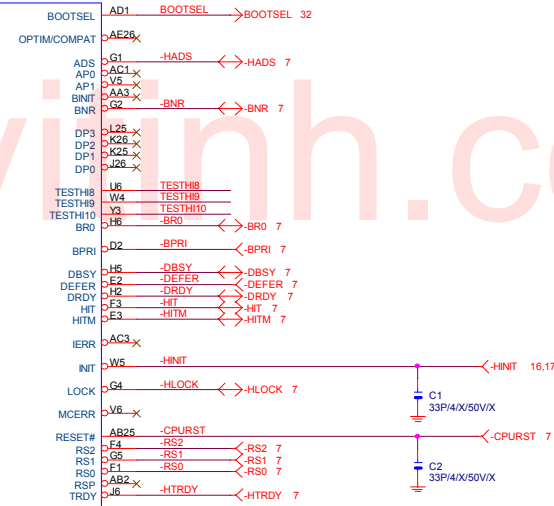
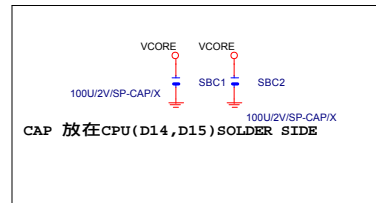
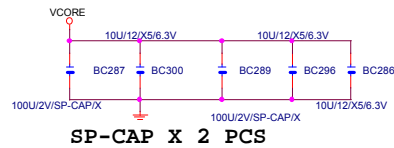


BLOCK DIAGRAM

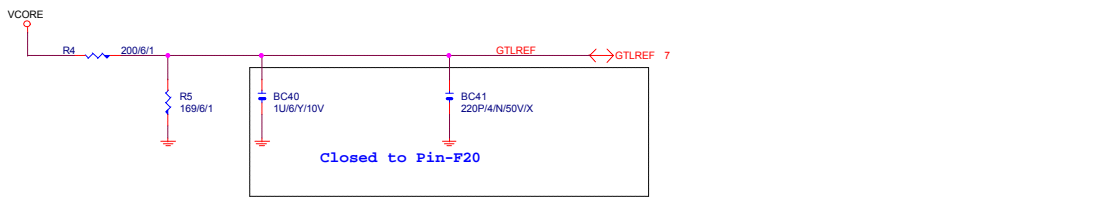




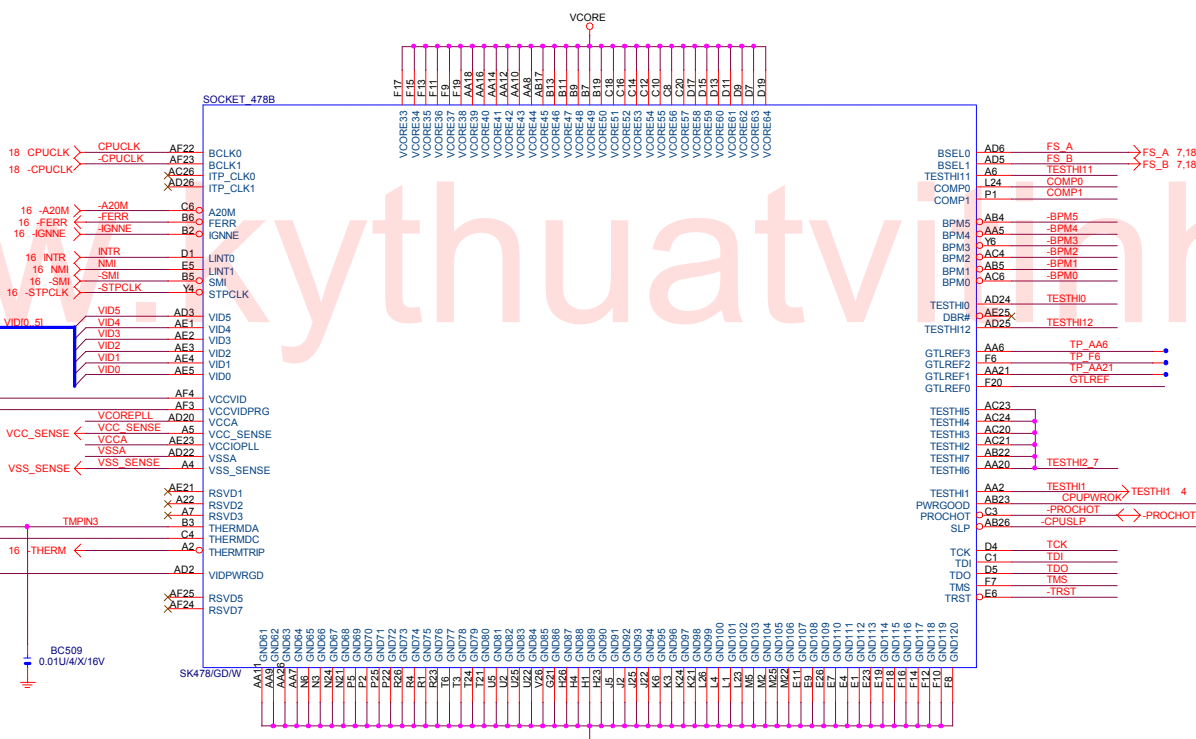
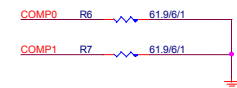
CPU SCKET



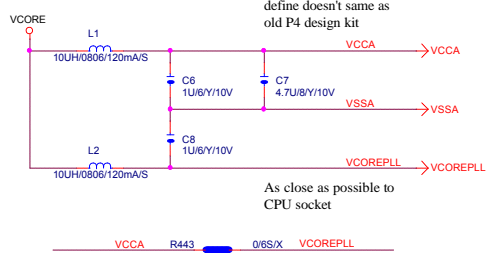
Title			P4 478A		
Size	Document Number	GA-81848E			Rev
Custom					1.01
Date	Sheet 4 of 38				



Place outside of CPU socket

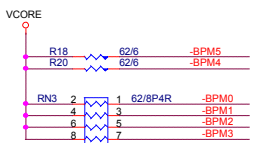
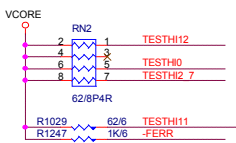


Note:
VCCA & VCOREPLL
define doesn't same as
old P4 design kit

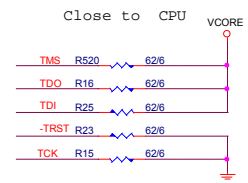


Trace width doesn't
less than 12 Mil

As close as possible to
CPU socket



Close to CPU

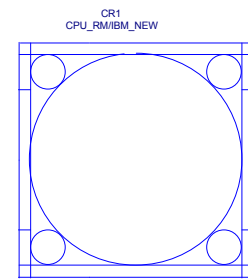
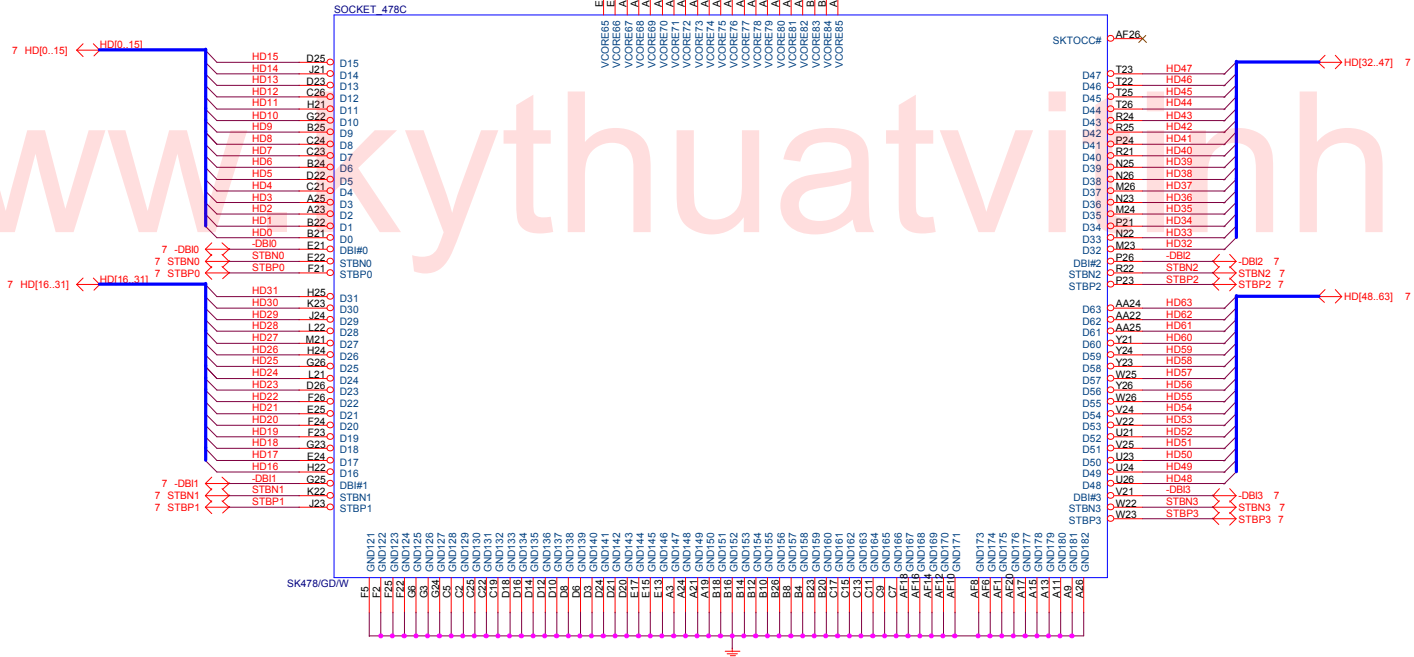
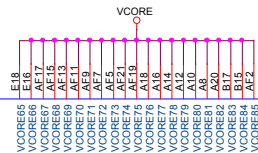
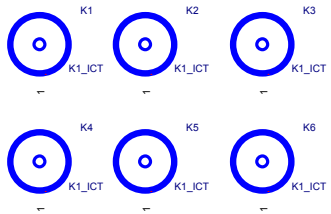


Close to CPU

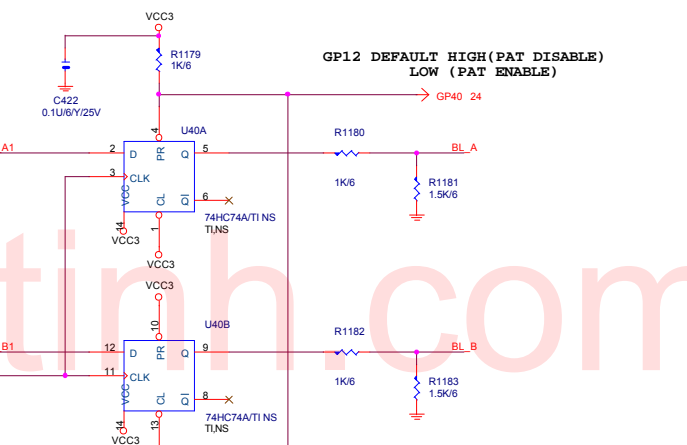
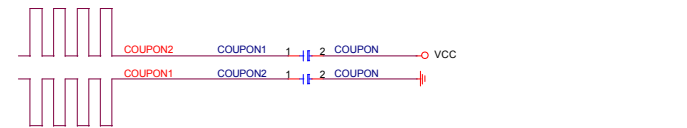
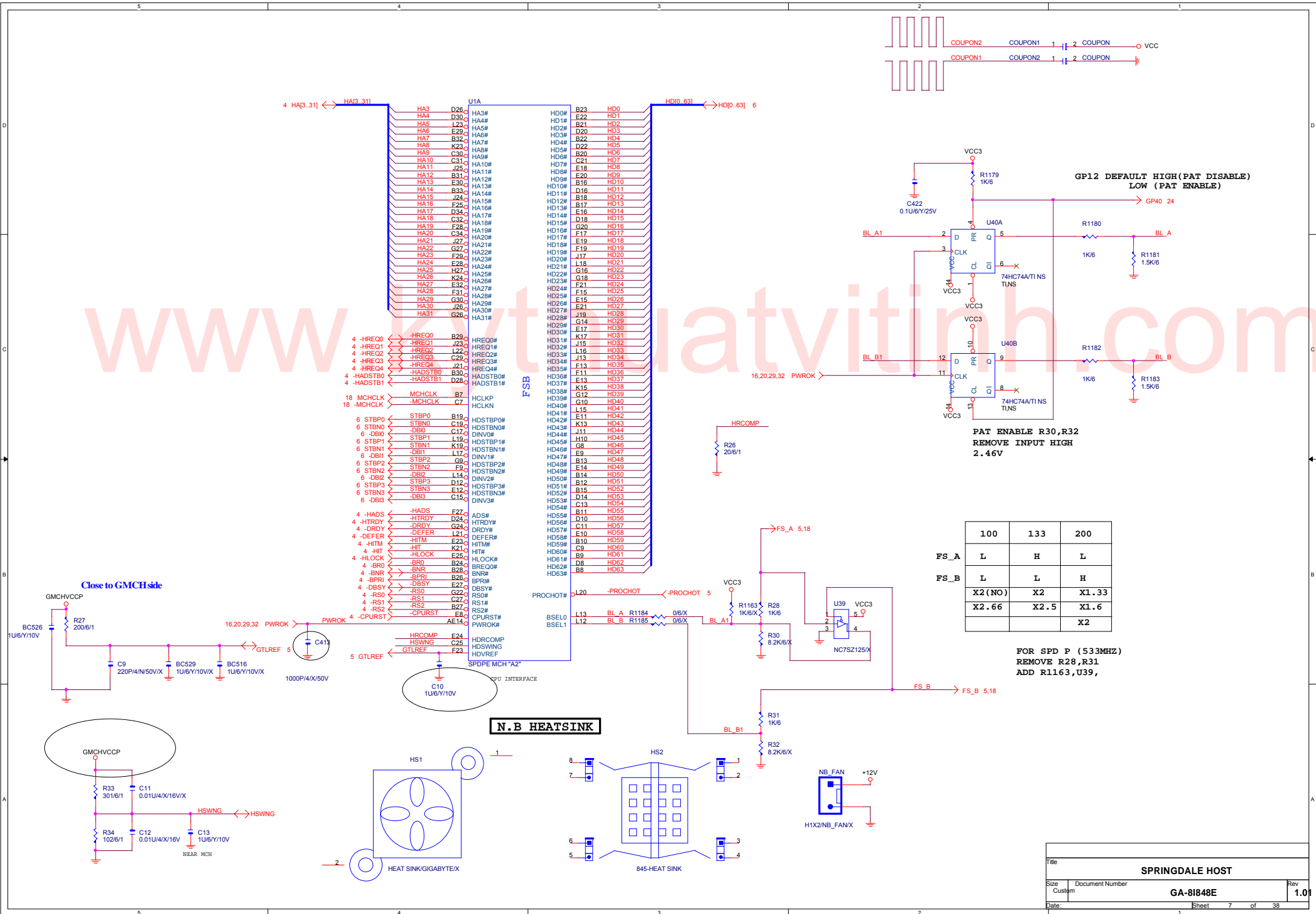


Pull up must place end
of route

Title			P4 478B		
Size	Document Number			Rev	
Custom	GA-81848E			1.01	
Date	Sheet 5 of 38				



Title		P4 478C	
Size	Document Number	Rev	
Custom	GA-81848E	1.01	
Date:	Sheet		6 of 38



PAT ENABLE R30,R32 REMOVE INPUT HIGH 2.46V

	100	133	200
FS_A	L	H	L
FS_B	L	L	H
X2 (NO)	X2	X2	X1.33
X2.66	X2.5	X2.5	X1.6
			X2

FOR SPD P (533MHZ) REMOVE R28,R31 ADD R1163,U39,

N.B HEATSINK

11,12,13 MAAA[0..12] ← MAAA0_12
 11,12 MABA[1..5] ← MABA1_5
 11,12,13 DMA[0..7] ← DMA0_7
 11,12,13 MDA[0..63] ← MDA0_63
 11,12,13 DQSA[0..7] ← DQSA0_7

U1B

MAAA0 AJ34 SMAA_A0
 MAAA1 AL33 SMAA_A1
 MAAA2 AK29 SMAA_A2
 MAAA3 AN31 SMAA_A3
 MAAA4 AL30 SMAA_A4
 MAAA5 AL28 SMAA_A5
 MAAA6 AL28 SMAA_A6
 MAAA7 AN25 SMAA_A7
 MAAA8 AP26 SMAA_A8
 MAAA9 AP24 SMAA_A9
 MAAA10 AJ33 SMAA_A10
 MAAA11 AN23 SMAA_A11
 MAAA12 AN21 SMAA_A12

MABA1 AL34 SMAB_A1
 MABA2 AM34 SMAB_A2
 MABA3 AP32 SMAB_A3
 MABA4 AP31 SMAB_A4
 MABA5 AM26 SMAB_A5

SWEA AB34 SWE_A#
 SCASA Y34 SCAS_A#
 SRASA AC33 SRAS_A#

SBA0 AE33 SBA_A0
 SBA1 AH34 SBA_A1

CSA0 CSA1 SCS_A0#
 CSA2 Y32 SCS_A1#
 CSA3 W34 SCS_A2#
 CSA4 W34 SCS_A3#

CKEA0 AN19 SCKE_A0
 CKEA1 AN19 SCKE_A1
 CKEA2 AM20 SCKE_A2
 CKEA3 AP20 SCKE_A3

DCLKA0 AK32 SCMDCLK_A0
 DCLKA1 AP17 SCMDCLK_A1#
 DCLKA2 N33 SCMDCLK_A2#
 DCLKA2 N34 SCMDCLK_A2#
 DCLKA3 AK33 SCMDCLK_A3#
 DCLKA4 AM16 SCMDCLK_A4#
 DCLKA4 AL16 SCMDCLK_A4#
 DCLKA5 P31 SCMDCLK_A5#
 DCLKA5 P32 SCMDCLK_A5#

DDRVRFA E34 SMVREF_A
 SMXRCOMP AK9 SMXRCOMP
 SMXRCOMPVOH AN9 SMXRCOMPVOH
 SMXRCOMPVOL AL9 SMXRCOMPVOL

SDQS_A0 AN11 DQSA0
 SDQ_A0 AP10 MDA0
 SDQ_A1 AP11 MDA1
 SDQ_A2 AM12 MDA2
 SDQ_A3 AN13 MDA3
 SDQ_A4 AM10 MDA4
 SDQ_A5 AL10 MDA5
 SDQ_A6 AL12 MDA6
 SDQ_A7 AP13 MDA7

SDQS_A1 AP15 DQSA1
 SDQ_A8 AP14 MDA8
 SDQ_A9 AM14 MDA9
 SDQ_A10 AL18 MDA10
 SDQ_A11 AL14 MDA11
 SDQ_A12 AL14 MDA12
 SDQ_A13 AN15 MDA13
 SDQ_A14 AP18 MDA14
 SDQ_A15 AM18 MDA15

SDQS_A2 AP23 DQSA2
 SDQ_A16 AP22 MDA16
 SDQ_A17 AM22 MDA17
 SDQ_A18 AL24 MDA18
 SDQ_A19 AN27 MDA19
 SDQ_A20 AP21 MDA20
 SDQ_A21 AL22 MDA21
 SDQ_A22 AP25 MDA22
 SDQ_A23 AP27 MDA23

SDQS_A3 AM30 DQSA3
 SDQ_A24 AP28 MDA24
 SDQ_A25 AP25 MDA25
 SDQ_A26 AP33 MDA26
 SDQ_A27 AM33 MDA27
 SDQ_A28 AM28 MDA28
 SDQ_A29 AN29 MDA29
 SDQ_A30 AM31 MDA30
 SDQ_A31 AN34 MDA31

SDQS_A4 AF34 DQSA4
 SDQ_A32 AH32 MDA32
 SDQ_A33 AF34 MDA33
 SDQ_A34 AF32 MDA34
 SDQ_A35 AD32 MDA35
 SDQ_A36 AH31 MDA36
 SDQ_A37 AG33 MDA37
 SDQ_A38 AE34 MDA38
 SDQ_A39 AD34 MDA39

SDQS_A5 V34 DQSA5
 SDQ_A40 AC34 MDA40
 SDQ_A41 AB31 MDA41
 SDQ_A42 V32 MDA42
 SDQ_A43 V31 MDA43
 SDQ_A44 AD31 MDA44
 SDQ_A45 AB32 MDA45
 SDQ_A46 U34 MDA46
 SDQ_A47 U33 MDA47

SDQS_A6 M32 DQSA6
 SDQ_A48 T34 MDA48
 SDQ_A49 T32 MDA49
 SDQ_A50 K34 MDA50
 SDQ_A51 K32 MDA51
 SDQ_A52 T31 MDA52
 SDQ_A53 P34 MDA53
 SDQ_A54 L34 MDA54
 SDQ_A55 L33 MDA55

SDQS_A7 H31 DQSA7
 SDQ_A56 J33 MDA56
 SDQ_A57 H34 MDA57
 SDQ_A58 E33 MDA58
 SDQ_A59 F32 MDA59
 SDQ_A60 K31 MDA60
 SDQ_A61 J34 MDA61
 SDQ_A62 G34 MDA62
 SDQ_A63 F34 MDA63

U1C

SMAA_B0 AP12 MDA0
 SMAA_B1 AD27 MDA1
 SMAA_B2 AE24 MDA2
 SMAA_B3 AK27 MDA3
 SMAA_B4 AG25 MDA4
 SMAA_B5 AL25 MDA5
 SMAA_B6 AE21 MDA6
 SMAA_B7 AL23 MDA7
 SMAA_B8 AE22 MDA8
 SMAA_B9 AL21 MDA9
 SMAA_B10 AM21 MDA10
 SMAA_B11 AL20 MDA11
 SMAA_B12 AM20 MDA12

SMAB_B1 AE27 MDA8
 SMAB_B2 AD26 MDA9
 SMAB_B3 AL29 MDA10
 SMAB_B4 AL27 MDA11
 SMAB_B5 AE23 MDA12

SWE_B# W27 MDA14
 SCAS_B# W31 MDA14
 SRAS_B# W26 MDA14

SBA_B0 Y25 MDA18
 SBA_B1 AA25 MDA18

SCS_B0# U26 MDA18
 SCS_B1# T29 MDA18
 SCS_B2# V25 MDA18
 SCS_B3# W26 MDA18

SCKE_B0 AK19 MDA18
 SCKE_B1 AF19 MDA18
 SCKE_B2 AG19 MDA18
 SCKE_B3 AE19 MDA18

SCMDCLK_B0 AG29 MDA25
 SCMDCLK_B0# AG30 MDA25
 SCMDCLK_B1 AE17 MDA25
 SCMDCLK_B1# AG17 MDA25
 SCMDCLK_B2 N27 MDA25
 SCMDCLK_B2# N27 MDA25
 SCMDCLK_B3 AN29 MDA25
 SCMDCLK_B3# AN29 MDA25
 SCMDCLK_B4 AK15 MDA25
 SCMDCLK_B4# AK15 MDA25
 SCMDCLK_B5 AN30 MDA25
 SCMDCLK_B5# AN30 MDA25

SMVREF_B AP9 SMVREF_B
 SMYRCOMP AA33 SMYRCOMP
 SMYRCOMPVOH R34 SMYRCOMPVOH
 SMYRCOMPVOL R33 SMYRCOMPVOL

SDQS_B0 AE15 MDA18
 SDQ_B0 AD27 MDA18
 SDQ_B1 AE15 MDA18
 SDQ_B2 AE15 MDA18
 SDQ_B3 AE15 MDA18
 SDQ_B4 AE15 MDA18
 SDQ_B5 AE15 MDA18
 SDQ_B6 AK11 MDA18
 SDQ_B7 AG14 MDA18

SDQS_B1 AG13 MDA18
 SDQ_B8 AE17 MDA18
 SDQ_B9 AL13 MDA18
 SDQ_B10 AK14 MDA18
 SDQ_B11 AL17 MDA18
 SDQ_B12 AK14 MDA18
 SDQ_B13 AL17 MDA18
 SDQ_B14 AL16 MDA18
 SDQ_B15 AL16 MDA18

SDQS_B2 AG21 MDA18
 SDQ_B16 AE19 MDA18
 SDQ_B17 AE20 MDA18
 SDQ_B18 AK23 MDA18
 SDQ_B19 AK23 MDA18
 SDQ_B20 AL19 MDA18
 SDQ_B21 AK21 MDA18
 SDQ_B22 AL22 MDA18
 SDQ_B23 AE24 MDA18

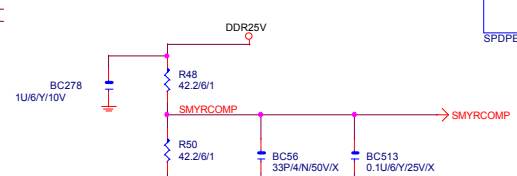
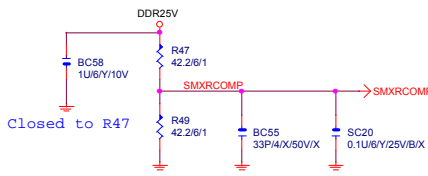
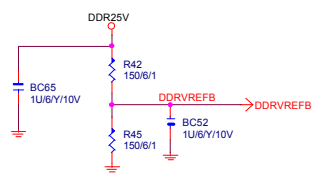
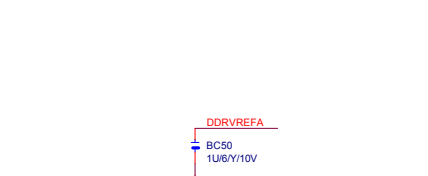
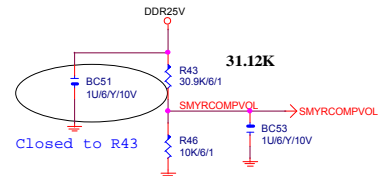
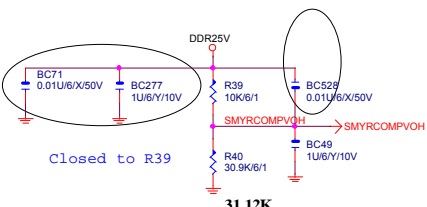
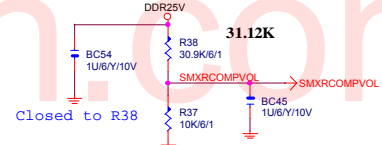
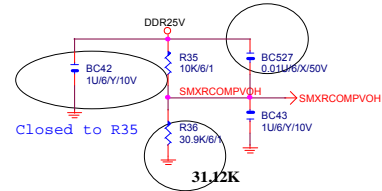
SDQS_B3 AH27 MDA18
 SDQ_B24 AK25 MDA18
 SDQ_B25 AK25 MDA18
 SDQ_B26 AE27 MDA18
 SDQ_B27 AE27 MDA18
 SDQ_B28 AL26 MDA18
 SDQ_B29 AD25 MDA18
 SDQ_B30 AE28 MDA18
 SDQ_B31 AE28 MDA18

SDQS_B4 AD28 MDA18
 SDQ_B32 AC34 MDA18
 SDQ_B33 AE30 MDA18
 SDQ_B34 AC27 MDA18
 SDQ_B35 Y29 MDA18
 SDQ_B36 AE31 MDA18
 SDQ_B37 AE29 MDA18
 SDQ_B38 AA26 MDA18
 SDQ_B39 AA27 MDA18

SDQS_B5 U30 MDA18
 SDQ_B40 W30 MDA18
 SDQ_B41 U27 MDA18
 SDQ_B42 T25 MDA18
 SDQ_B43 AA33 MDA18
 SDQ_B44 V29 MDA18
 SDQ_B45 U25 MDA18
 SDQ_B46 R27 MDA18

SDQS_B6 L27 MDA18
 SDQ_B48 P29 MDA18
 SDQ_B49 R30 MDA18
 SDQ_B50 K28 MDA18
 SDQ_B51 L30 MDA18
 SDQ_B52 R31 MDA18
 SDQ_B53 R28 MDA18
 SDQ_B54 P25 MDA18
 SDQ_B55 L32 MDA18

SDQS_B7 J30 MDA18
 SDQ_B56 H29 MDA18
 SDQ_B57 F32 MDA18
 SDQ_B58 G33 MDA18
 SDQ_B59 N25 MDA18
 SDQ_B60 M25 MDA18
 SDQ_B61 J29 MDA18
 SDQ_B62 G32 MDA18



Title			SPRINGDALE DDR		
Size	Document Number	GA-81848E		Rev	1.01
Date	Sheet 8 of 38				

14 GAD[0..31] <-> GAD[0..31]
 14 SBA[0..7] <-> SBA[0..7]
 15 HL[0..10] <-> HL[0..10]

U10

14 -GCBE0	<->	-GCBE0	Y7	GCBE0	AC6	ADSTB0	<->	ADSTB0	14
14 -GCBE1	<->	-GCBE1	W5	GCBE1	AC5	ADSTB0	<->	ADSTB0	14
14 -GCBE2	<->	-GCBE2	AA3	GCBE2					
14 -GCBE3	<->	-GCBE3	U2	GCBE3					
14 -GFRAME	<->	-GFRAME	U6	GFRAME	AE6	GAD0			
18 GMCH3V66	<->	GMCH3V66	I14	GCLKIN	AC11	GAD1			
14 -GDEVSEL	<->	-GDEVSEL	AB4	GDEVSEL	AE5	GAD2			
14 -GIRDY	<->	-GIRDY	W11	GIRDY	AA10	GAD4			
14 -GTRDY	<->	-GTRDY	AB5	GTRDY	AC9	GAD5			
14 -GSTOP	<->	-GSTOP	W11	GSTOP	AB7	GAD7			
14 GPAR	<->	GPAR	AB2	GSTOP	AA9	GAD8			
14 -GREQ	<->	-GREQ	N6	GREQ	AA6	GAD9			
14 -GGNT	<->	-GGNT	M7	GREQ	AA5	GAD10			
				GREQ	W10	GAD11			
				GREQ	AA11	GAD12			
				GREQ	W6	GAD13			
				GREQ	W9	GAD14			
				GREQ	V7	GAD15			
14 GSWING	<->	GRCOMP	AC2	GRCOMP	AC2	GRCOMP			
14 MCH_AGPREF	<->	MCH_AGPREF	AD2	GRCOMP	AC3	GRCOMP			
				GRCOMP	AD2	GRCOMP			
14 -RBF	<->	-RBF	R10	GRBF	R10	ADSTB1	<->	ADSTB1	14
14 -WBF	<->	-WBF	R9	GRBF	R9	ADSTB1	<->	ADSTB1	14
14 -PIPE	<->	-PIPE	M4	GRBF	M4	ADSTB1	<->	ADSTB1	14
14 GDBI_LO	<->	GDBI_LO	M5	GRBF	M5	ADSTB1	<->	ADSTB1	14
				GRBF	M4	ADSTB1	<->	ADSTB1	14
				GRBF	M5	ADSTB1	<->	ADSTB1	14
14 ST0	<->	ST1	N3	GST0	Y2	GAD16			
14 ST1	<->	ST2	N2	GST1	Y2	GAD17			
14 ST2	<->	ST2	N2	GST2	Y2	GAD18			
				GST0	Y2	GAD19			
				GST1	Y2	GAD20			
				GST2	Y2	GAD21			
				GST0	Y2	GAD22			
				GST1	Y2	GAD23			
				GST2	Y2	GAD24			
				GST0	Y2	GAD25			
				GST1	Y2	GAD26			
				GST2	Y2	GAD27			
				GST0	Y2	GAD28			
				GST1	Y2	GAD29			
				GST2	Y2	GAD30			
				GST0	Y2	GAD31			
				GST1	Y2	GAD32			
				GST2	Y2	GAD33			

AGP

HUB

CSA

VGA

Close to MCH
 C27 0.01u4/x/16V
 C28 0.01u4/x/16V

HLRCOMP MCH
 HL_SWING MCH
 HL_VREF MCH

HL
 HL0 AF5 H0
 HL1 AG3 H1
 HL2 AK2 H2
 HL3 AG5 H3
 HL4 AK5 H4
 HL5 AL3 H5
 HL6 AL2 H6
 HL7 AL4 H7
 HL8 AJ2 H8
 HL9 AJ2 H9
 HL10 AJ3 H10
 HL11 AJ3 H11

HLSTBF
 HLSTBS

HLRCOMP MCH
 HL_SWING MCH
 HL_VREF MCH

CLRCOMP
 CLSWING_SPG
 CLVREF_SPG

DOTCLK
 DOTCLK

CLRCOMP
 CLRCOMP

TP GMCH AP8
 -ICHSYNC
 -ICRIST

TP GMCH AG10
 -RESERVED_1
 -RESERVED_2
 -RESERVED_3
 -RESERVED_4
 -RESERVED_5

SPDPE MCH

DDCA_DATA
 DDCA_CLK

REFSET
 REFSET

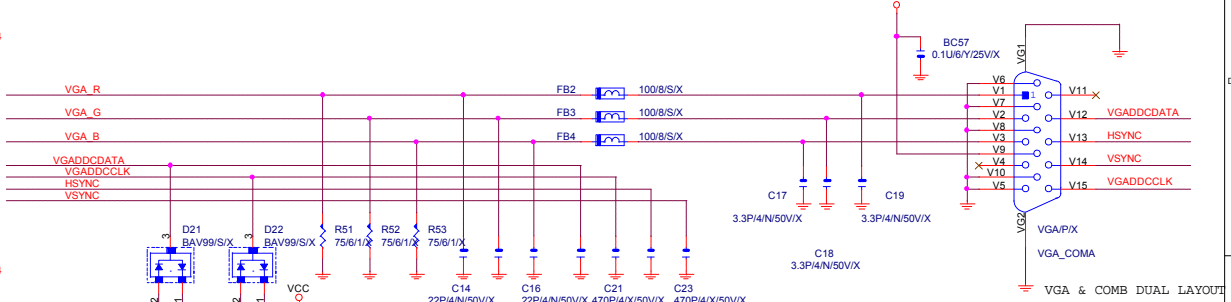
NC
 NC_1
 NC_2
 NC_3
 NC_4
 NC_5
 NC_6
 NC_7
 NC_8
 NC_9
 NC_10
 NC_11
 NC_12
 NC_13
 NC_14
 NC_15
 NC_16
 NC_17
 NC_18
 NC_19
 NC_20

RESERVED
 RESERVED_1
 RESERVED_2
 RESERVED_3
 RESERVED_4
 RESERVED_5

GSWING
 MCH_AGPREF

VDDQ
 R74 52.3k/1
 R75 43.2k/1

HLRCOMP MCH
 GRCOMP



10 mil trace with 7 mil space

Place mid of bus trace

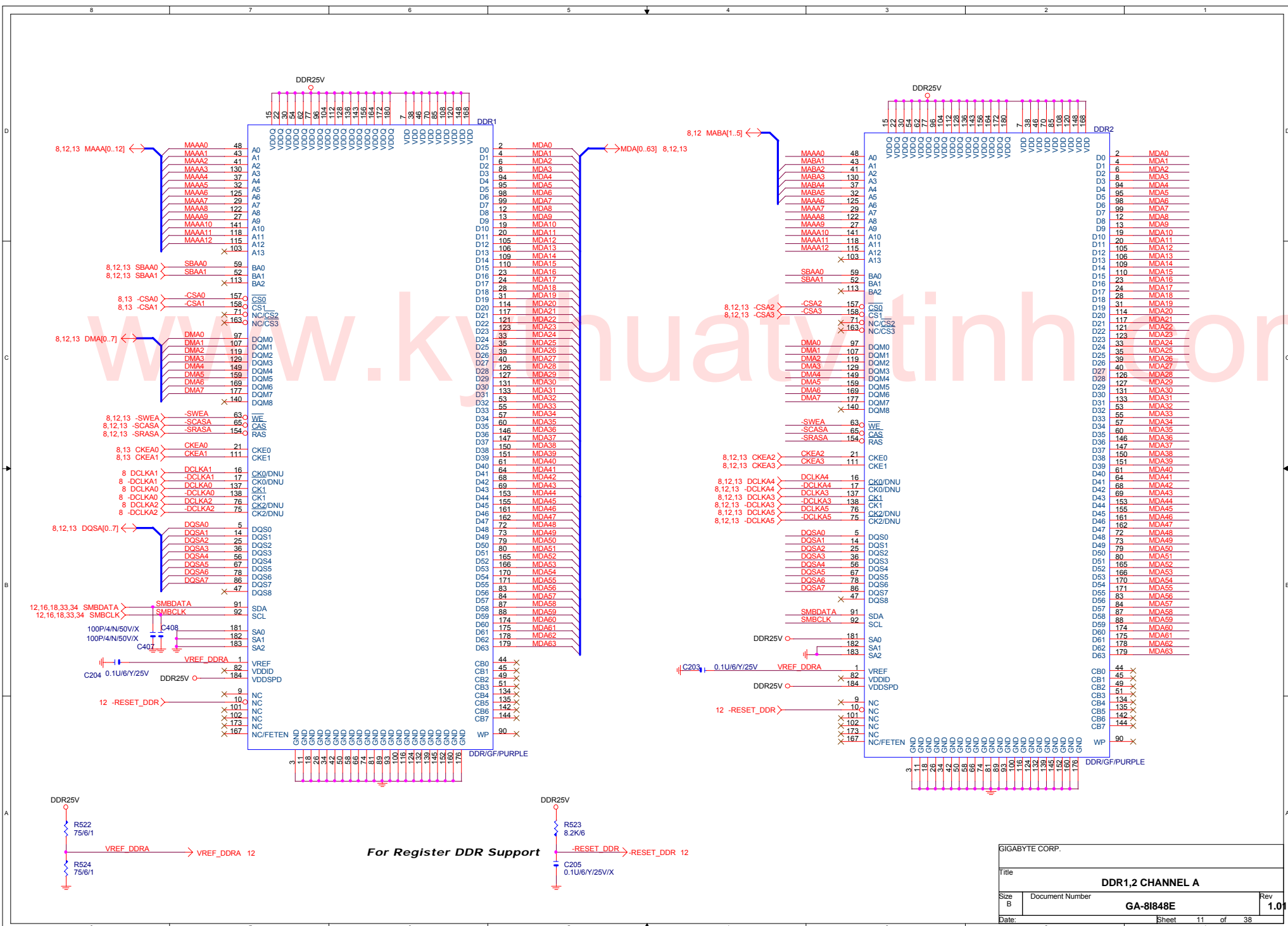
HL_SWING_MCH <-> HL_SWING_MCH
 HL_SWING_ICh <-> HL_SWING_ICh
 HL_VREF_MCH <-> HL_VREF_MCH
 HL_VREF_ICh <-> HL_VREF_ICh

R70 226/6/1
 R72 147/6/1
 R73 0/6/S/X
 R76 113/6/1

C36 0.1u6/Y/25V
 C38 0.1u6/Y/25V

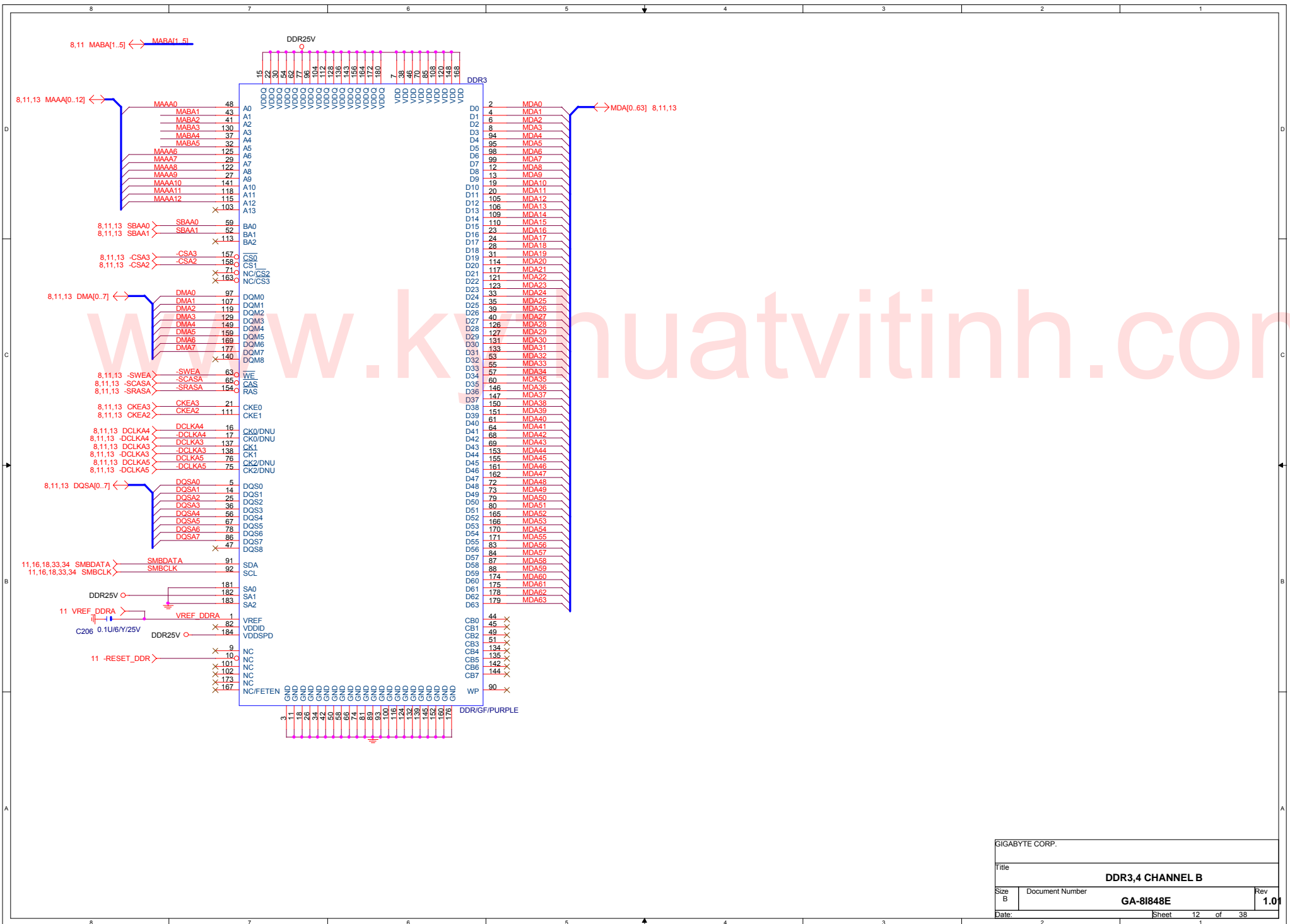
VDDQ * 0.233

Title		
SPRINGDALE AGP,HUB,CSA,VGA		
Size	Document Number	Rev
Custom	GA-81848E	1.01
Date	Sheet	9 of 38



For Register DDR Support

GIGABYTE CORP.		
Title		
DDR1,2 CHANNEL A		
Size	Document Number	Rev
B	GA-8B48E	1.01
Date:	Sheet 11	of 38

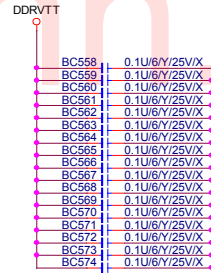
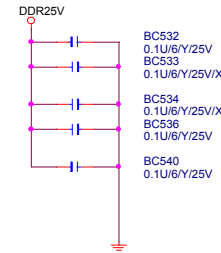
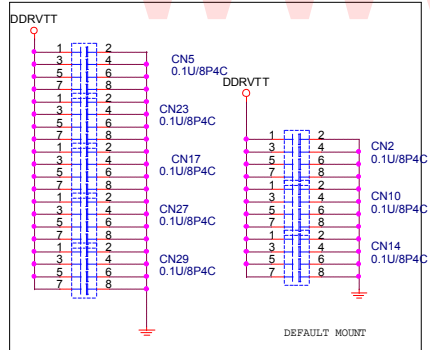
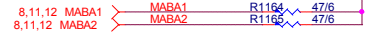
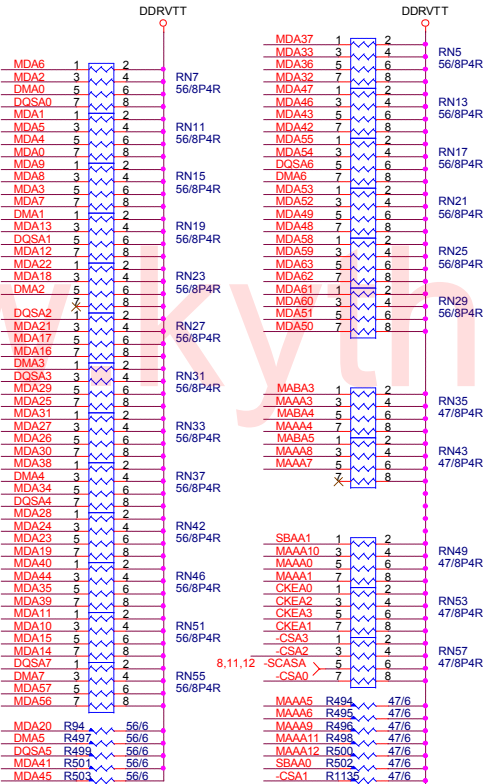
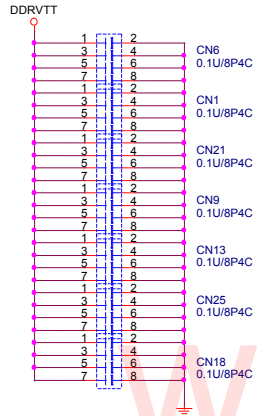


DDRVTT Decouple

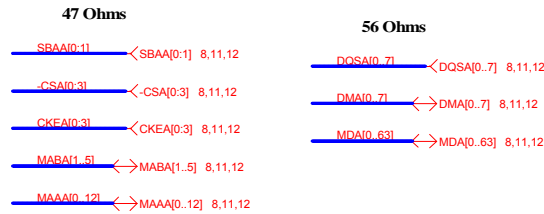
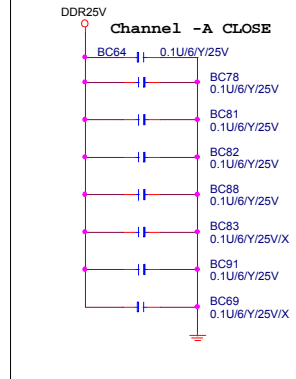
DDR TERMINATION CHANNEL A

DDRVTT Decouple

CHANNEL B

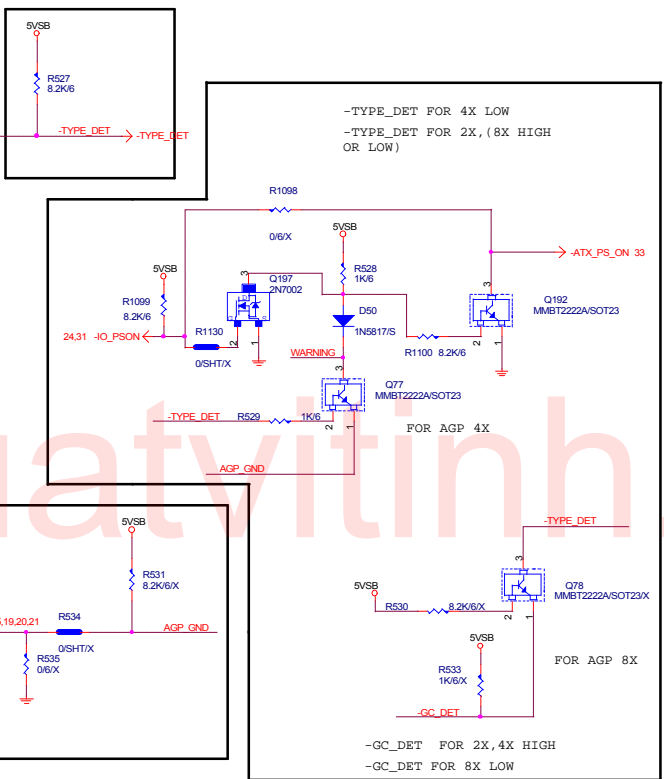
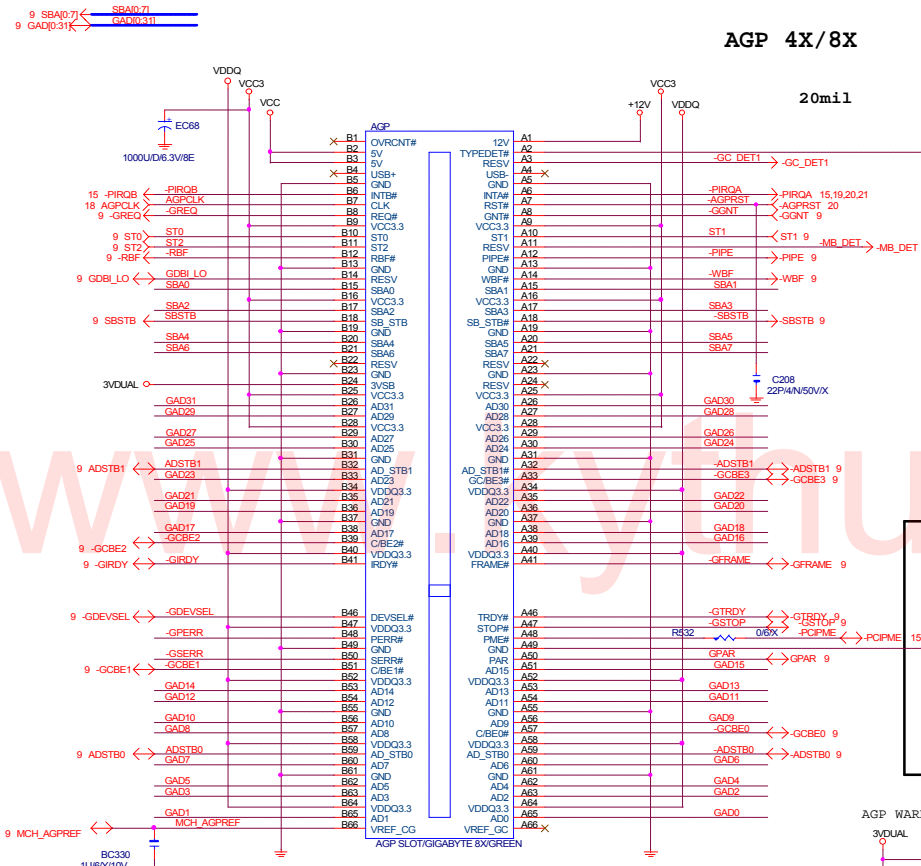


DDR25V Decouple



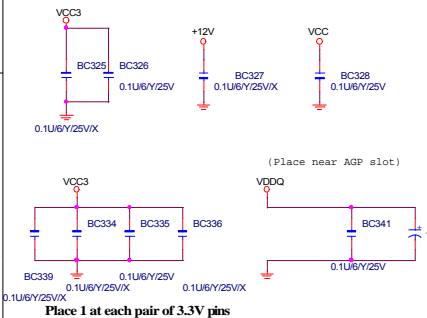
AGP 4X/8X

20mil

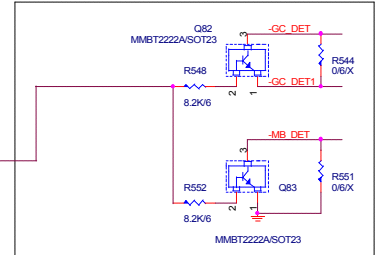


AGP_4X:

ON	AGP 4X
OFF	AGP 8X



Place 1 at each pair of 3.3V pins
Place 1 at each pair of VDDQ pins
Place an additional for spread from A14- A33



Note: 1.GPO pin must power on default High

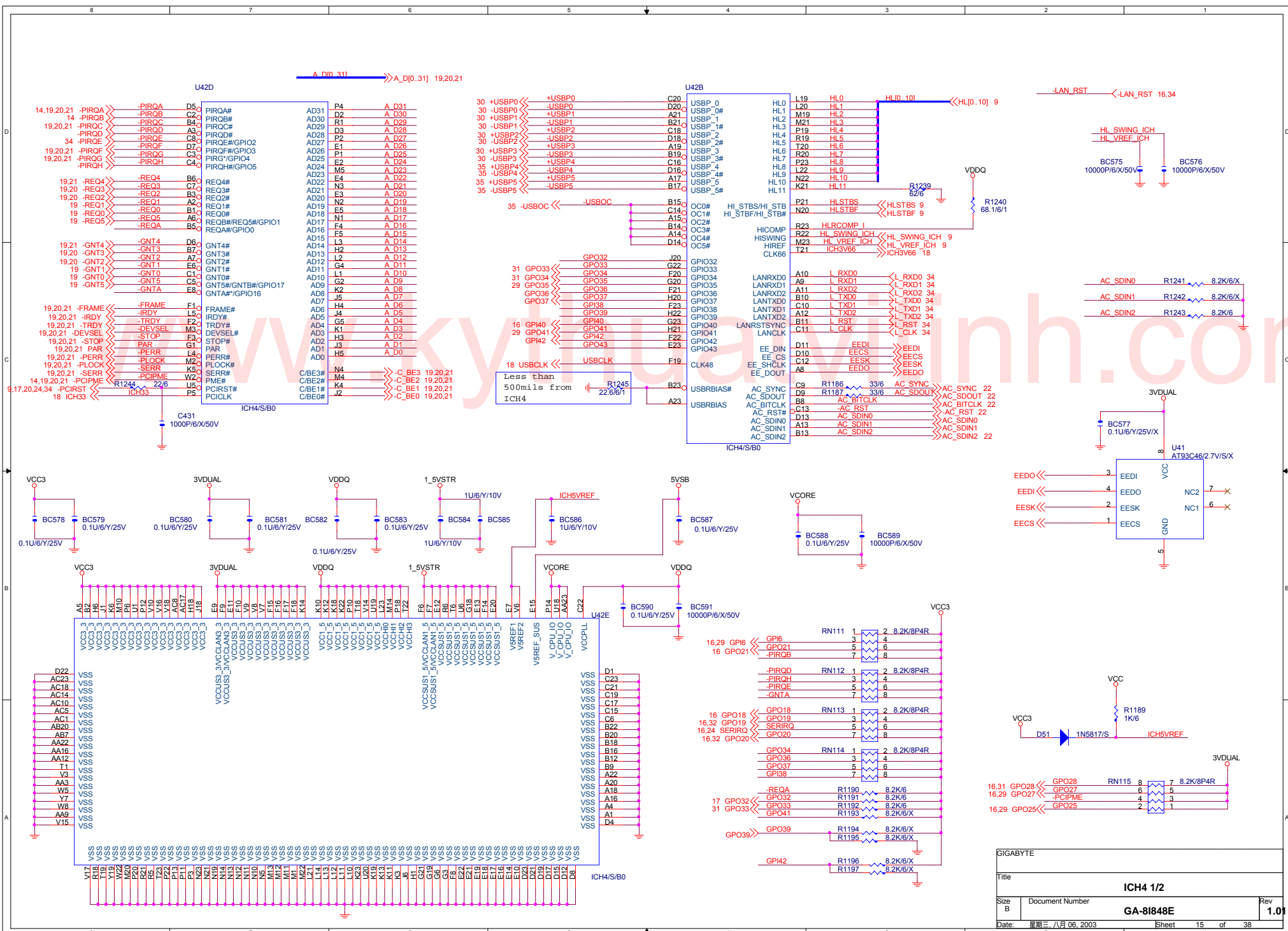
GIGABYTE CORP.

AGP SLOT

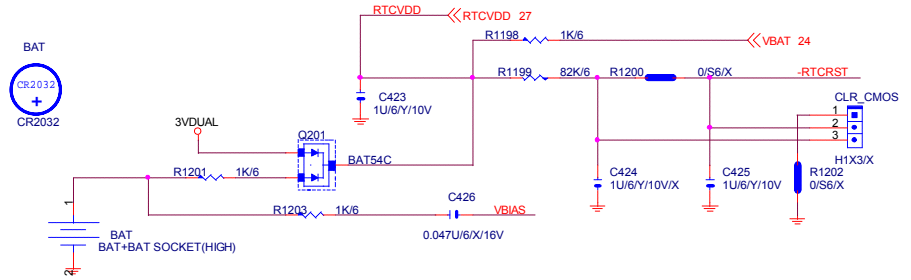
GA-81848E

Rev 1.01

Date: 星期三, 八月 06, 2003 Sheet 14 of 38



GIGABYTE		
Title		
ICH4 1/2		
Size	Document Number	Rev
B	GA-81848E	1.0
Date:	星期三, 八月 06, 2003	Sheet 15 of 38

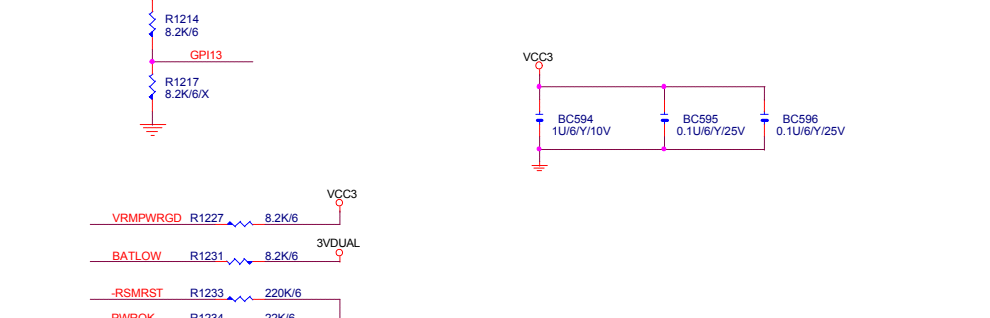
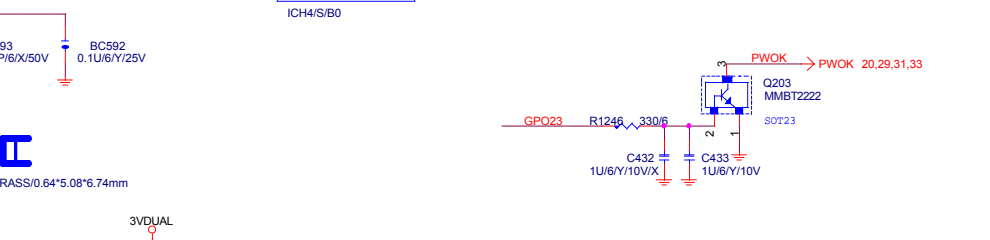
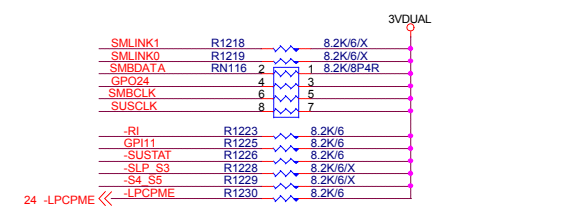
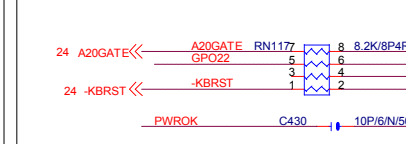
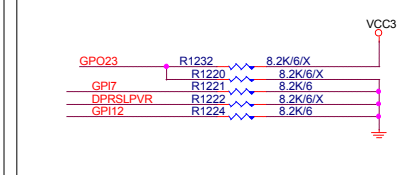
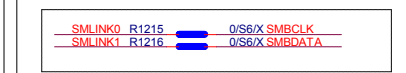
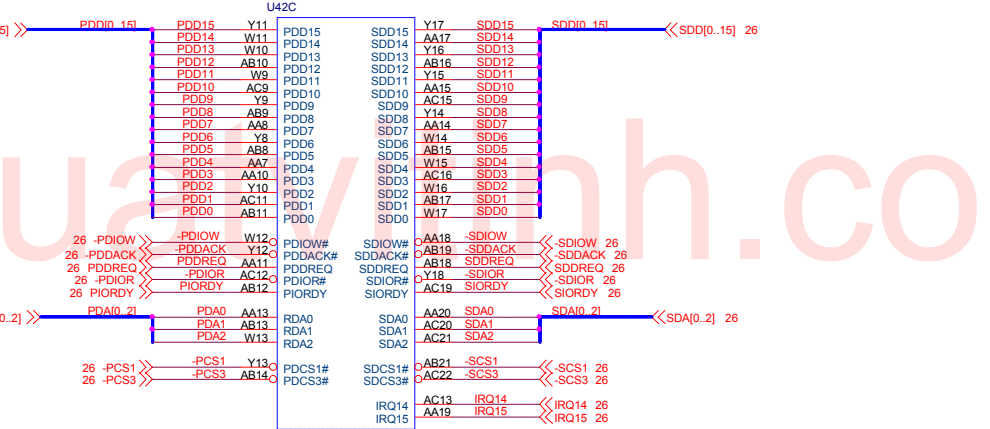
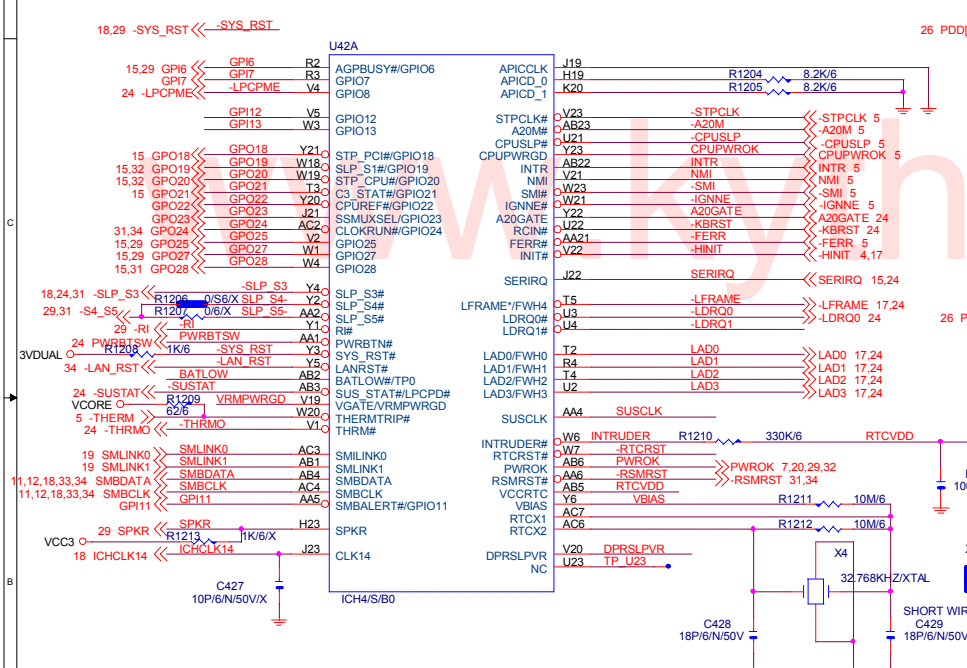
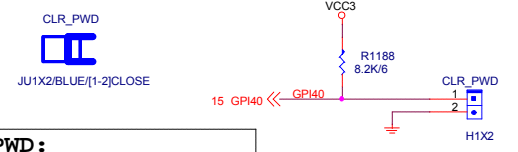


CLR_CMOS :

1-2	CLEAR CMOS
2-3	NORMAL

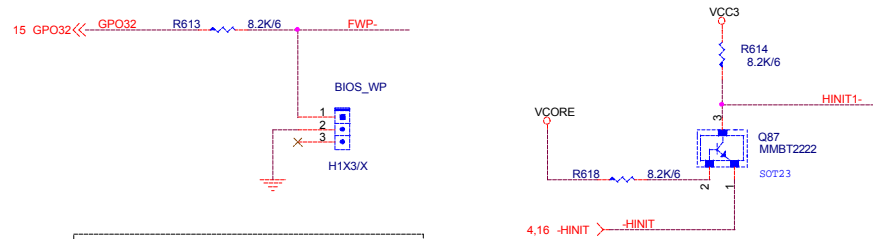
CLR_PWD :

OPEN	CLEAR PASSWORD
CLOSE	NORMAL



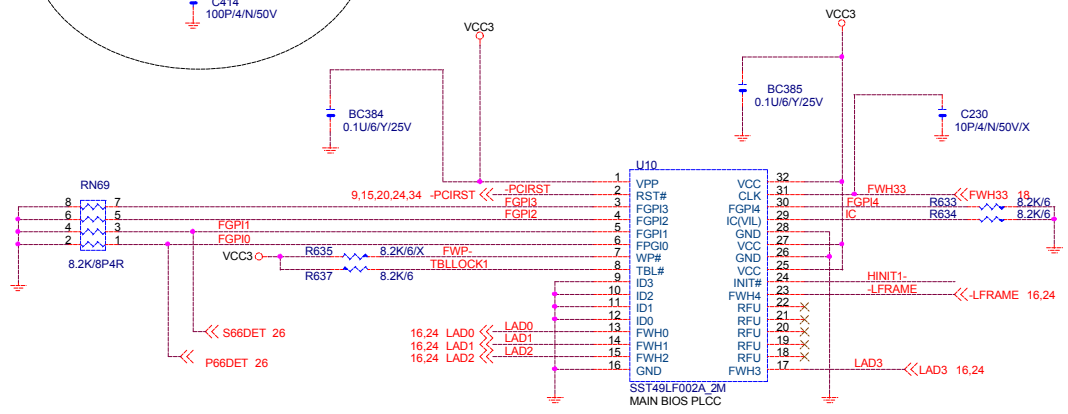
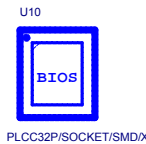
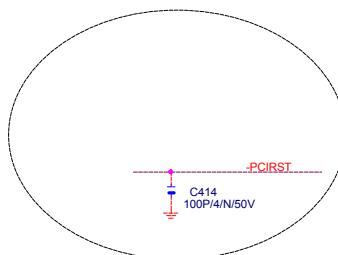
GIGABYTE

Title			ICH4 2/2		
Size	Document Number			Rev	
Custom	GA-81848E			1.01	
Date:	星期三, 八月 06, 2003	Sheet	16	of	38



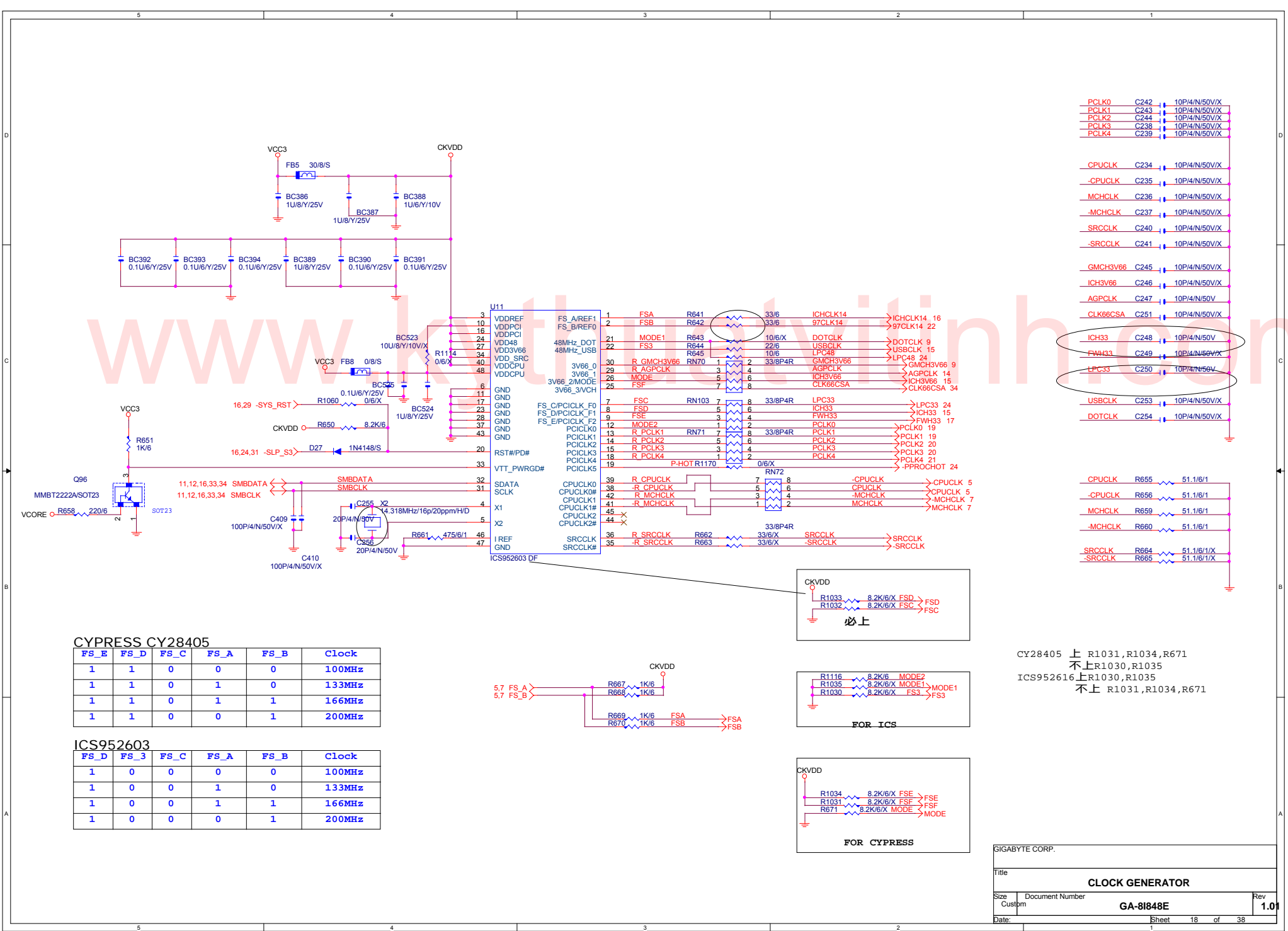
BIOS_WP:	
1-2	WRITE PROTECT
2-3	DISABLE

www.kythatvithinh.com



ADD WINBOUD FWH SEC. SOURCE

GIGABYTE CORP.		
Title		
FWH		
Size	Document Number	Rev
B	GA-81848E	1.01
Date:	星期三, 八月 06, 2003	Sheet 17 of 38



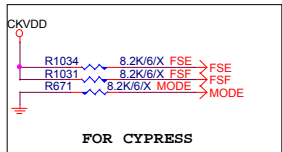
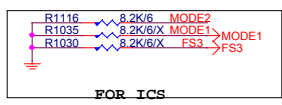
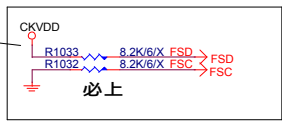
PCLK0	C242	10P/4/N/50V/X
PCLK1	C243	10P/4/N/50V/X
PCLK2	C244	10P/4/N/50V/X
PCLK3	C238	10P/4/N/50V/X
PCLK4	C239	10P/4/N/50V/X
CPUCLK	C234	10P/4/N/50V/X
-CPUCLK	C235	10P/4/N/50V/X
MCHCLK	C236	10P/4/N/50V/X
-MCHCLK	C237	10P/4/N/50V/X
SRCLK	C240	10P/4/N/50V/X
-SRCLK	C241	10P/4/N/50V/X
GMCH3V66	C245	10P/4/N/50V/X
ICH3V66	C246	10P/4/N/50V/X
AGPCLK	C247	10P/4/N/50V
CLK66CSA	C251	10P/4/N/50V/X
ICH33	C248	10P/4/N/50V
FWH33	C249	10P/4/N/50V/X
LPC33	C250	10P/4/N/50V
USBCLK	C253	10P/4/N/50V/X
DOTCLK	C254	10P/4/N/50V/X
CPUCLK	R655	51.1/6/1
-CPUCLK	R656	51.1/6/1
MCHCLK	R659	51.1/6/1
-MCHCLK	R660	51.1/6/1
SRCLK	R664	51.1/6/1/X
-SRCLK	R665	51.1/6/1/X

CYPRESS CY28405

FS_E	FS_D	FS_C	FS_A	FS_B	Clock
1	1	0	0	0	100MHz
1	1	0	1	0	133MHz
1	1	0	1	1	166MHz
1	1	0	0	1	200MHz

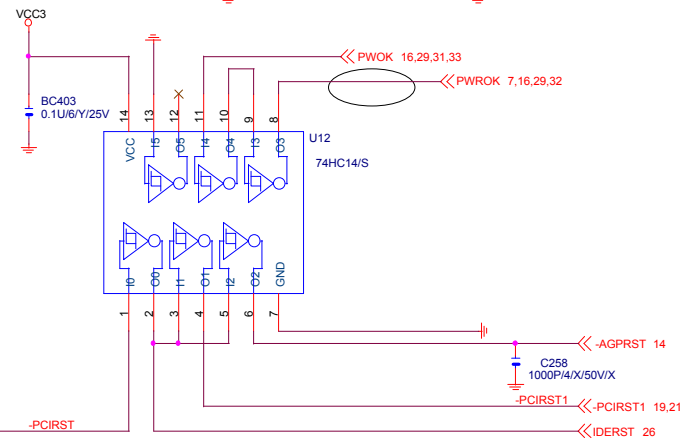
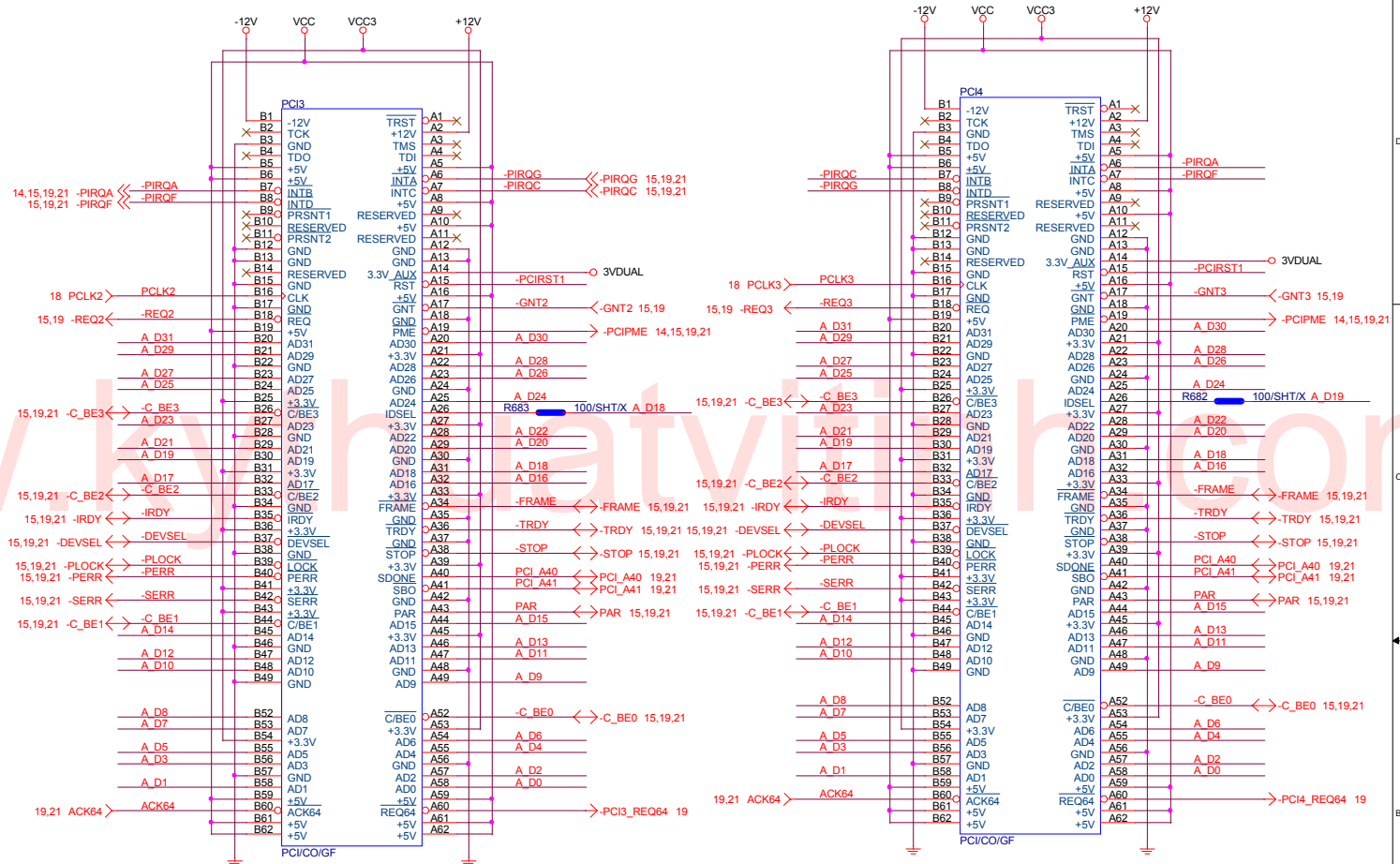
ICS952603

FS_D	FS_3	FS_C	FS_A	FS_B	Clock
1	0	0	0	0	100MHz
1	0	0	1	0	133MHz
1	0	0	1	1	166MHz
1	0	0	0	1	200MHz



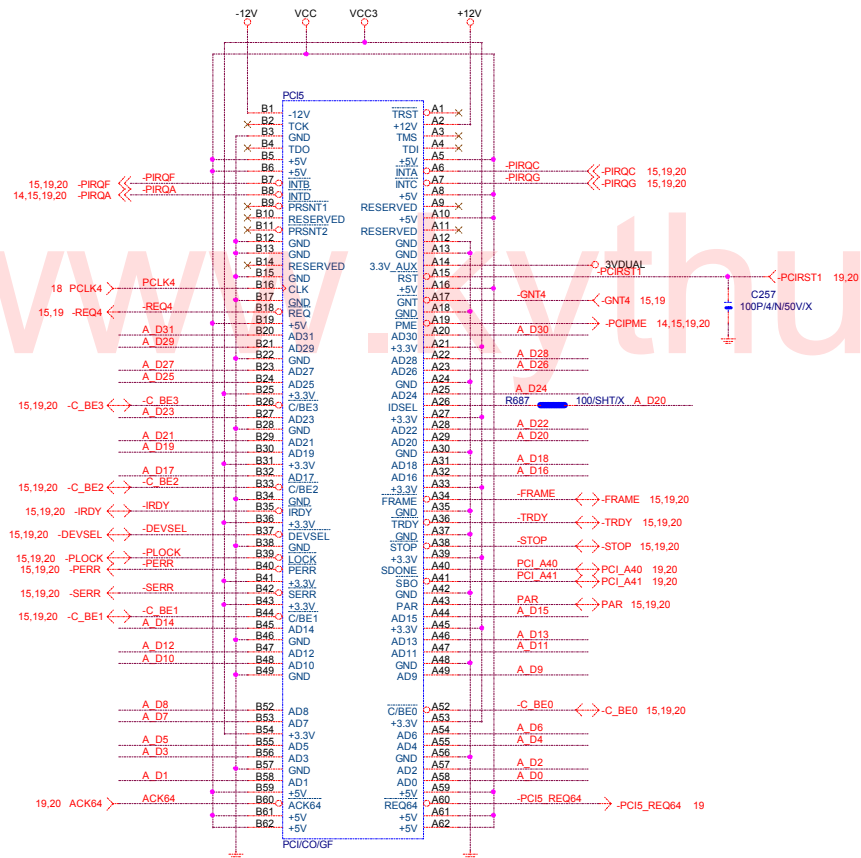
CY28405 上 R1031,R1034,R671
不上 R1030,R1035
ICS952616 上 R1030,R1035
不上 R1031,R1034,R671

15,19,21 A_D0[31] << A_D0_311



GIGABYTE CORP.		
Title		
PCI SLOT 3/4		
Size	Document Number	Rev
B	GA-81848E	1.01
Date:	星期三, 八月 06, 2003	Sheet 20 of 38

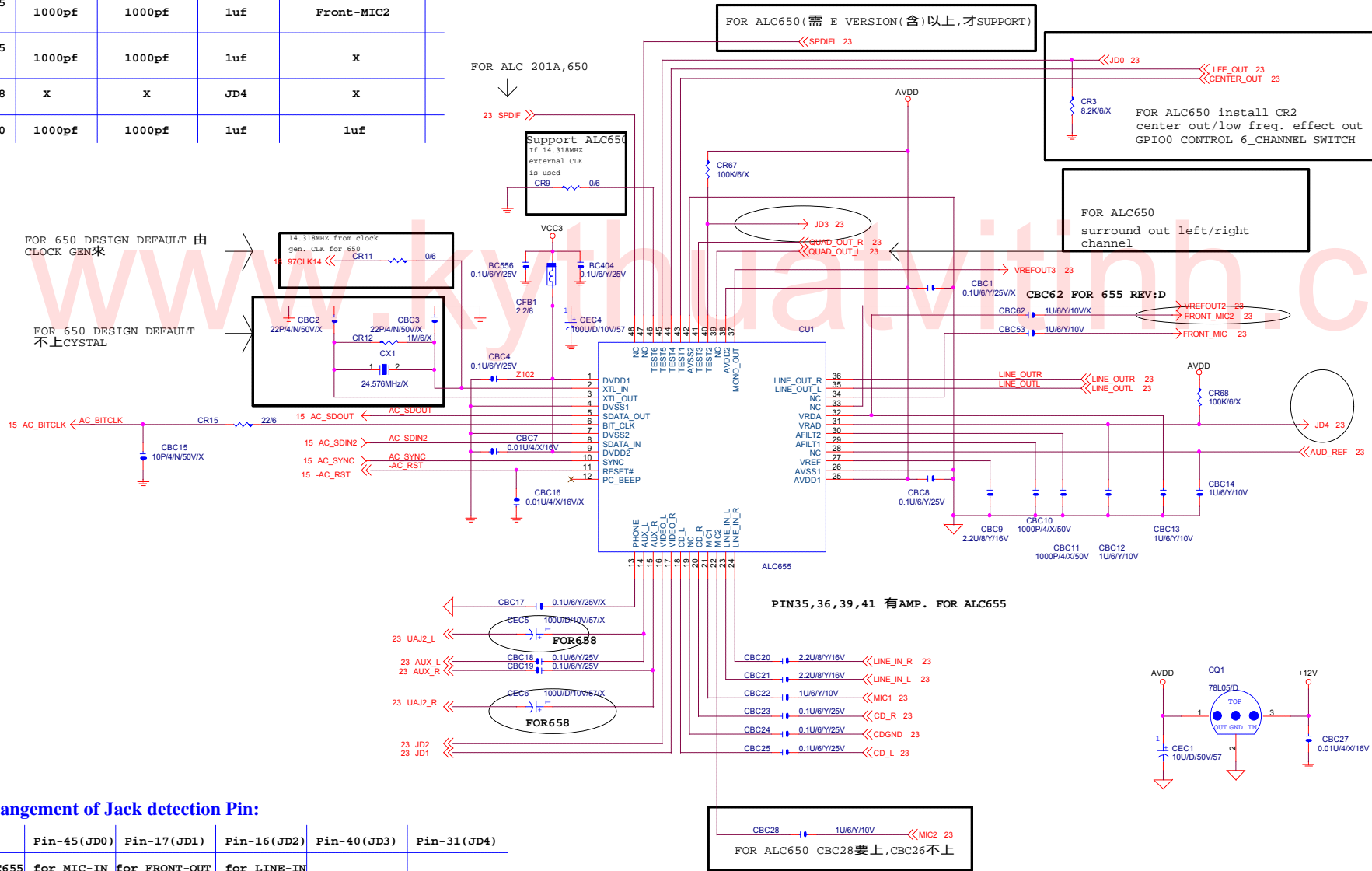
15,19,20 A_D0..31] << A D0..31



SIGABYTE CORP.			
Title			
PCI SLOT 5/6			
Size	Document Number	Rev	
Custom	GA-81848E	1.01	
Date:	星期二, 八月 06, 2003	Sheet	21 of 38

Filter Cap design:

	Pin-29	Pin-30	Pin-31	Pin-32
ALC655 Rev D	1000pf	1000pf	1uf	Front-MIC2
ALC655 Rev C	1000pf	1000pf	1uf	X
ALC658	X	X	JD4	X
ALC650	1000pf	1000pf	1uf	1uf

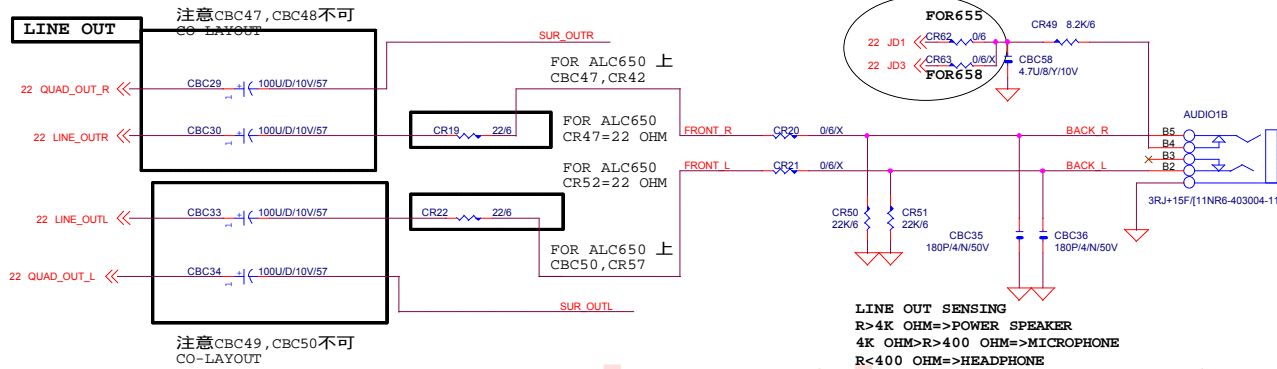


Arrangement of Jack detection Pin:

	Pin-45(JD0)	Pin-17(JD1)	Pin-16(JD2)	Pin-40(JD3)	Pin-31(JD4)
ALC655	for MIC-IN	for FRONT-OUT	for LINE-IN		
ALC658	for MIC-IN	for UAJ1	for UAJ2	for FRONT-OUT	for LINE-IN External pull high is needed

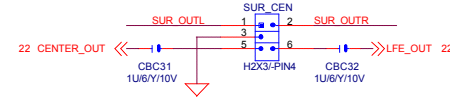
JDO,JD2,GPIO0 為偵測DEVICE INPUT 時由LOW TO HIGH Edge trigger(pop manual)

1/2(3.14)RC=1/2(3.14)8.2K*4.7U=4.3HZ以上AC 信號全部衰減 TO 0V 不會造成JDO 誤動作(無device 時play wav)



FOR SUPPORT 6 CHANNEL, SURROUND OUT

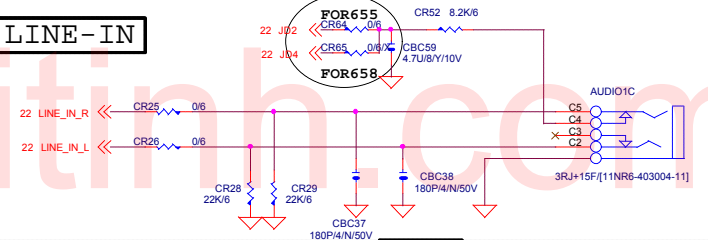
CENTER OUT, LOW FREQUENCY EFFECT OUT



LINE IN SENSING(當OUTPUT)
R>4K OHM=>POWER SPEAKER
4K OHM>R>400 OHM=>MICROPHONE
R<400 OHM=>HEADPHONE

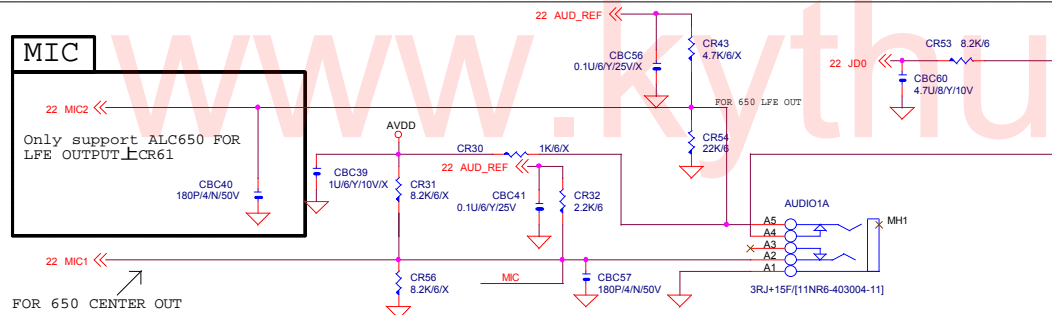
LINE IN SENSING(當INPUT)
swing of input signal>-40dbv(10mv)====>line in device active
swing of input signal<-40dbv(10mv)====>unknown line in device

LINE-IN



MIC

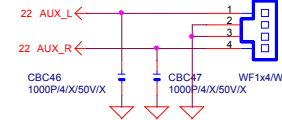
Only support ALC650 FOR LFE OUTPUT上CR61



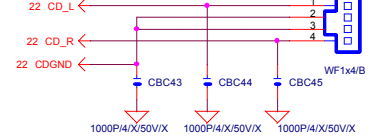
MICROPHONE IN SENSING(當INPUT)(利用vref 偏壓與CR43,CR32 並聯求出阻抗)
7.1k ohm>R>2.3k ohm====>microphone in
R<2.3k ohm or R>7.1k ohm====>unknown device

MICROPHONE IN SENSING(當OUTPUT)
R>4K OHM=>POWER SPEAKER
4K OHM>R>400 OHM=>MICROPHONE
R<400 OHM=>HEADPHONE

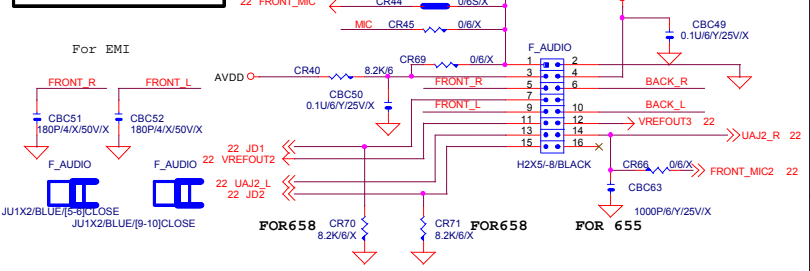
AUX IN DEFAULT NO POP



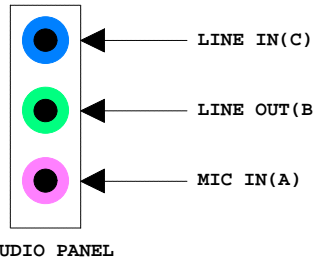
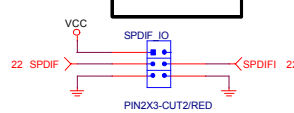
CD IN



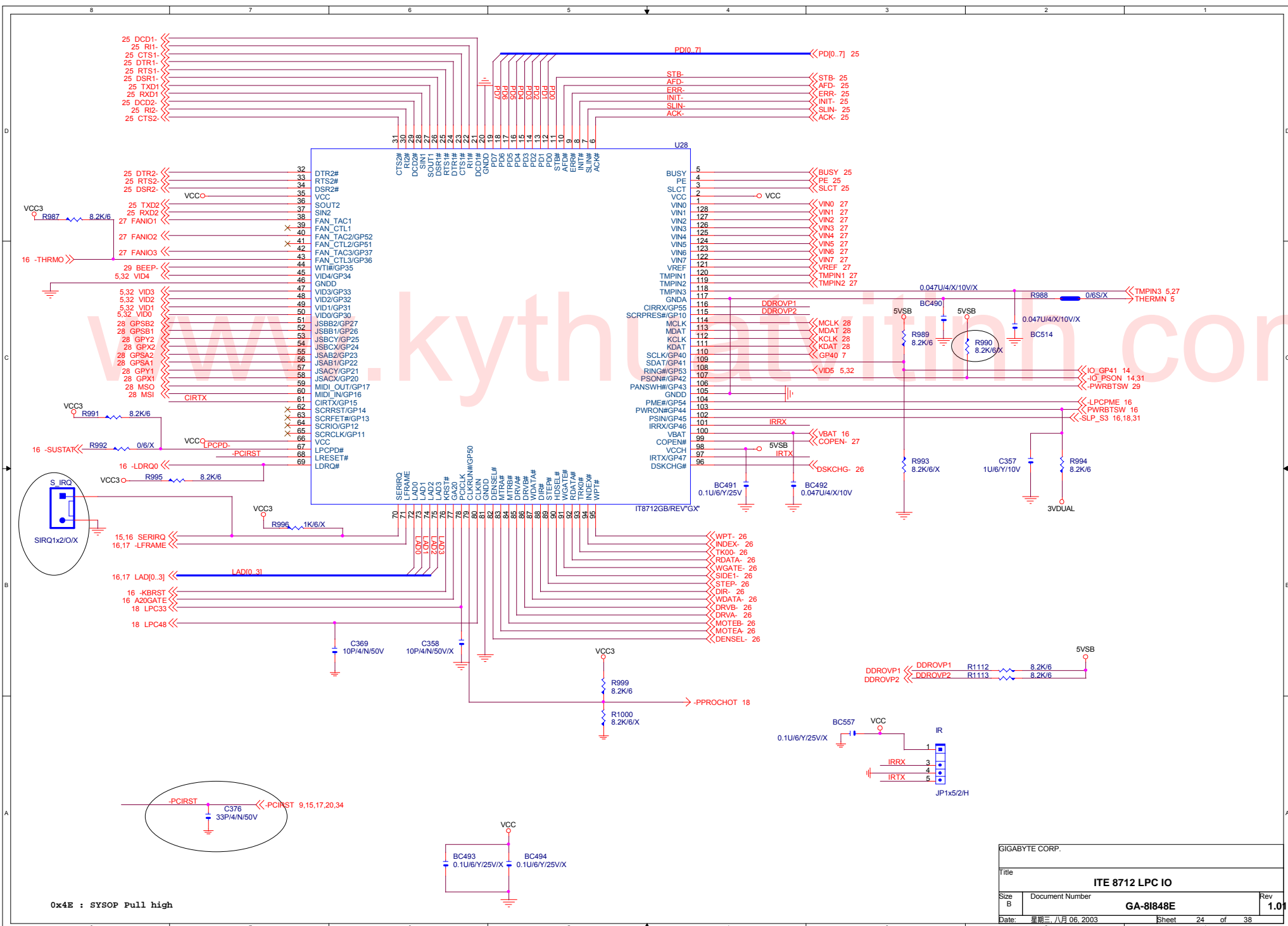
INTEL FRONT AUDIO



SPDIF IO

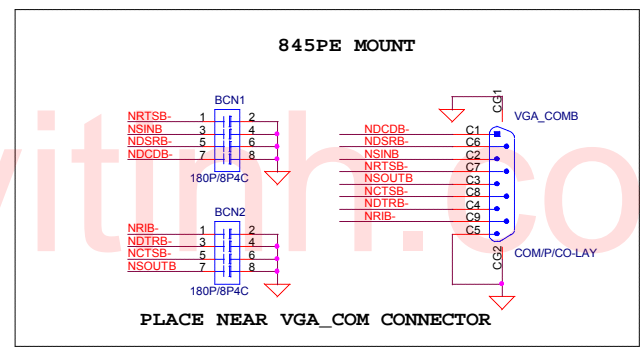
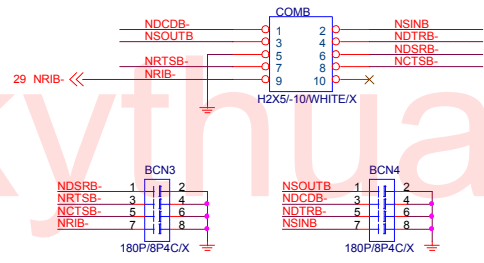
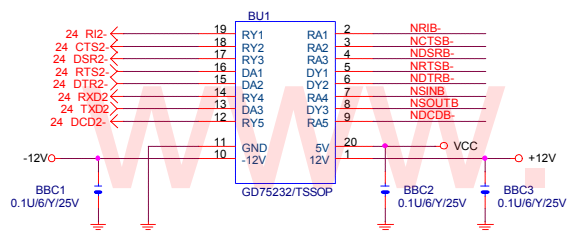
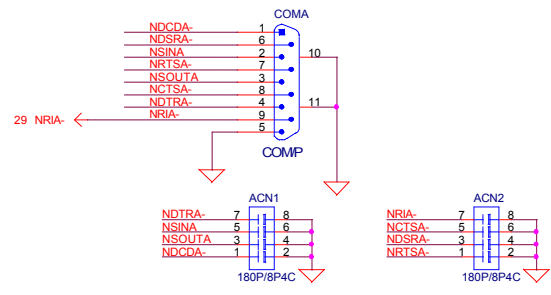
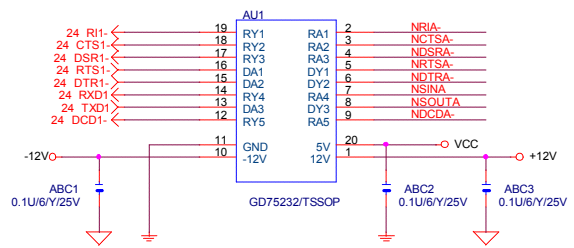


GIGABYTE CORP.			
AUDIO OUTPUT, GAME PORT			
Title	Document Number	Rev	
Size	GA-81848E	1.01	
Custom			
Date	星期二, 八月 06, 2003	Sheet	23 of 38

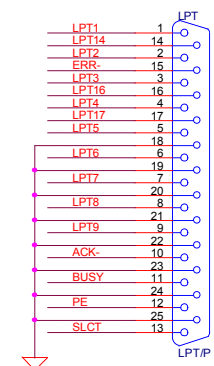
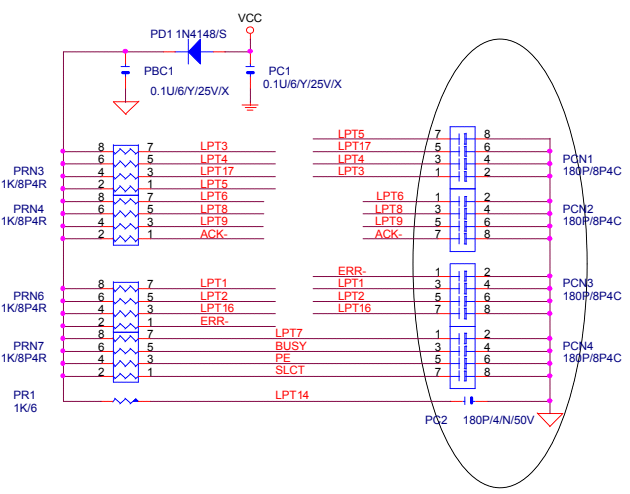
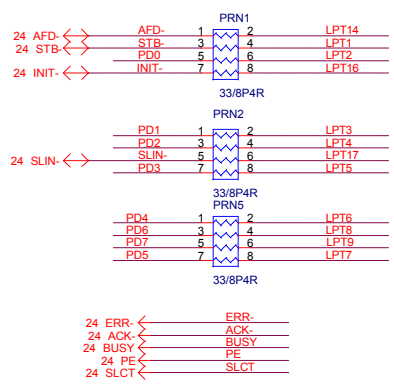


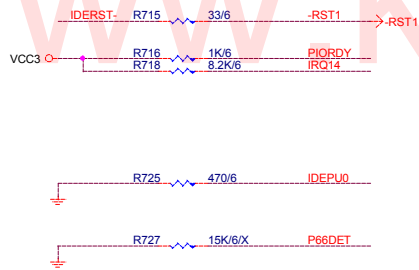
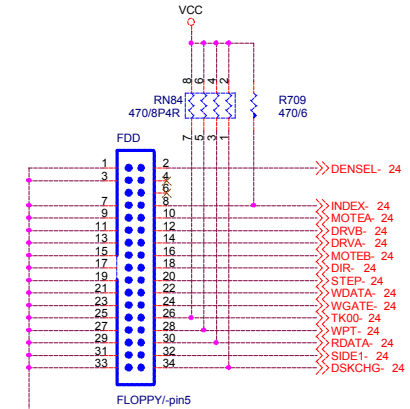
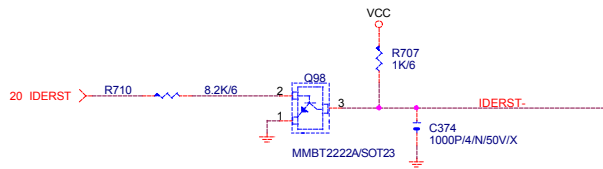
0x4E : SYSOP Pull high

GIGABYTE CORP.		
Title ITE 8712 LPC IO		
Size B	Document Number GA-8I848E	Rev 1.01
Date: 星期三, 八月 06, 2003 Sheet 24 of 38		

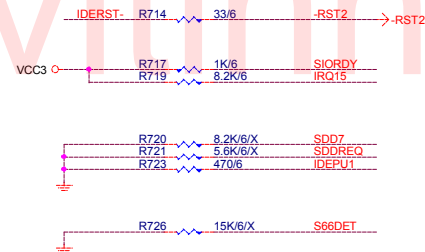


24 PD[0..7] ↔ PD[0..7]

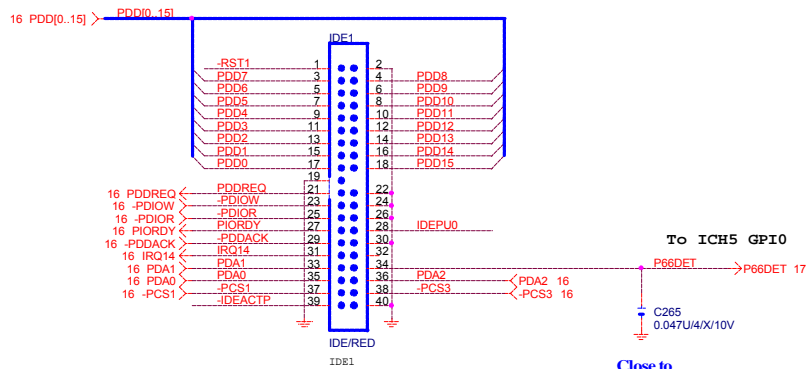




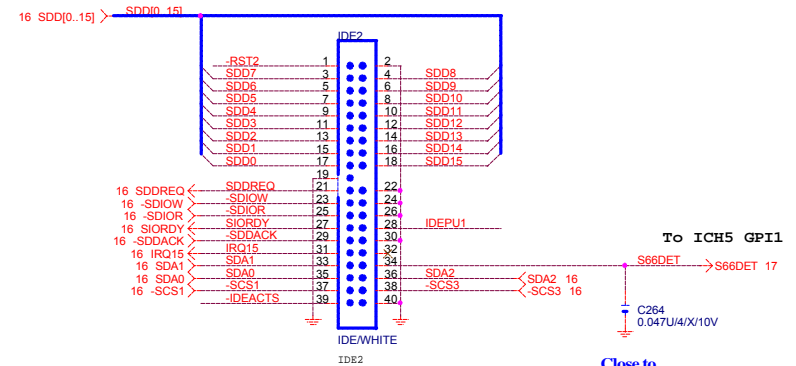
PRIMARY IDE CONNECTOR



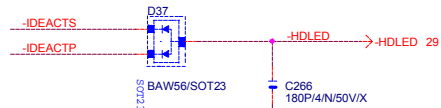
SECONDARY IDE CONNECTOR



Close to connector

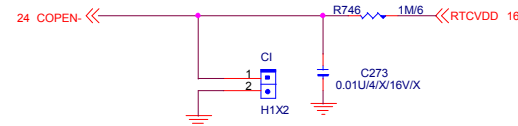
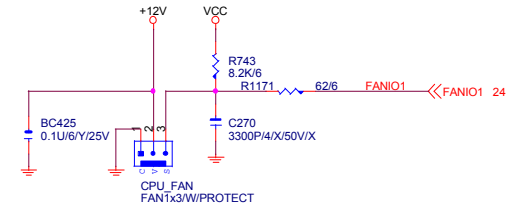
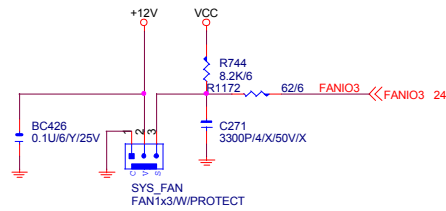
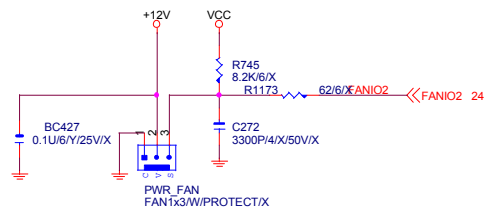
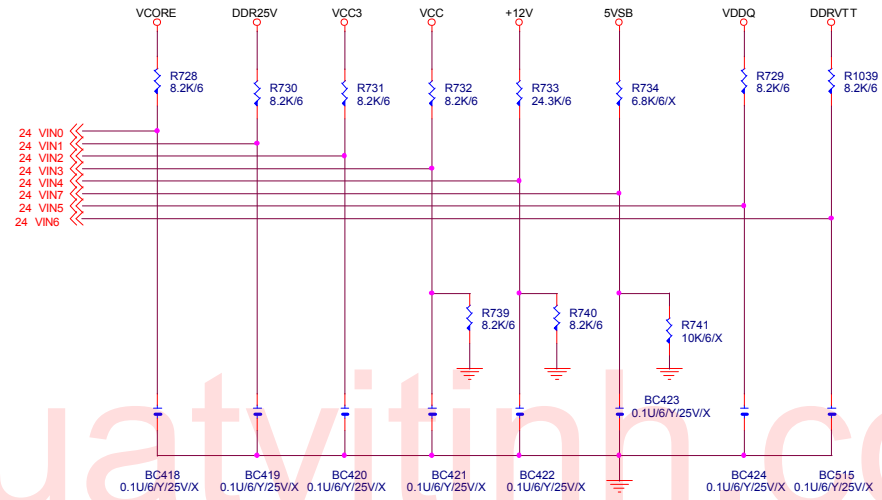
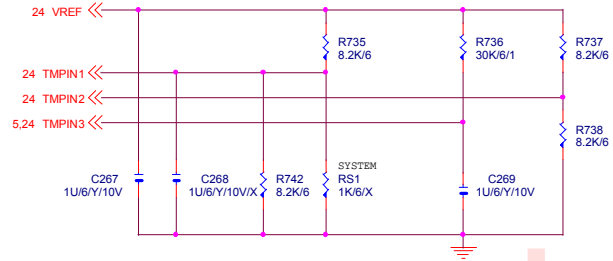


Close to connector



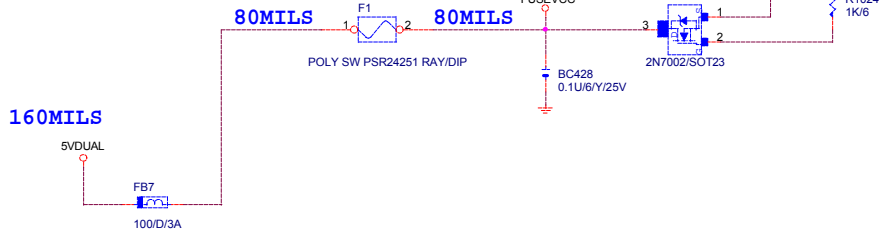
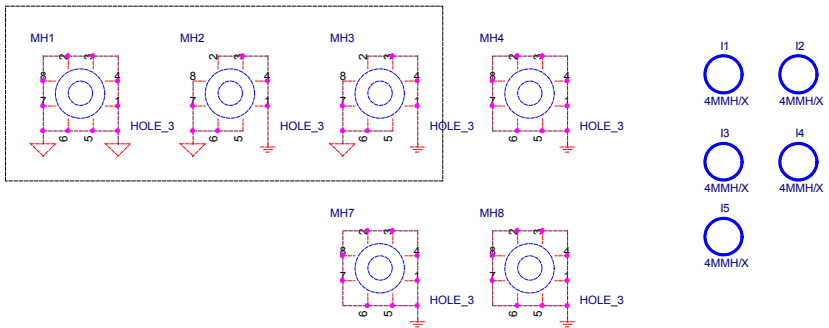
GIGABYTE CORP.		
Title		
IDE CONNECTOR		
Size	Document Number	Rev
B	GA-81848E	1.01
Date:	Sheet 26	of 38

Hardware Monitor circuits

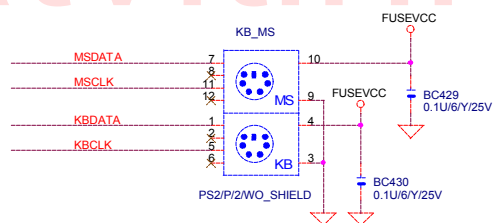
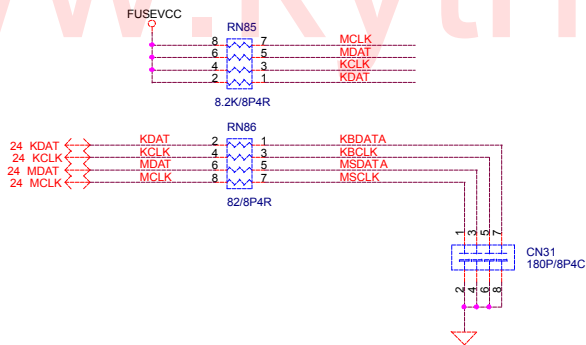


GIGABYTE CORP.		
Title		
FAN/HWMO		
Size	Document Number	Rev
B	GA-8I848E	1.01
Date:	星期三, 八月 06, 2003	Sheet 27 of 38

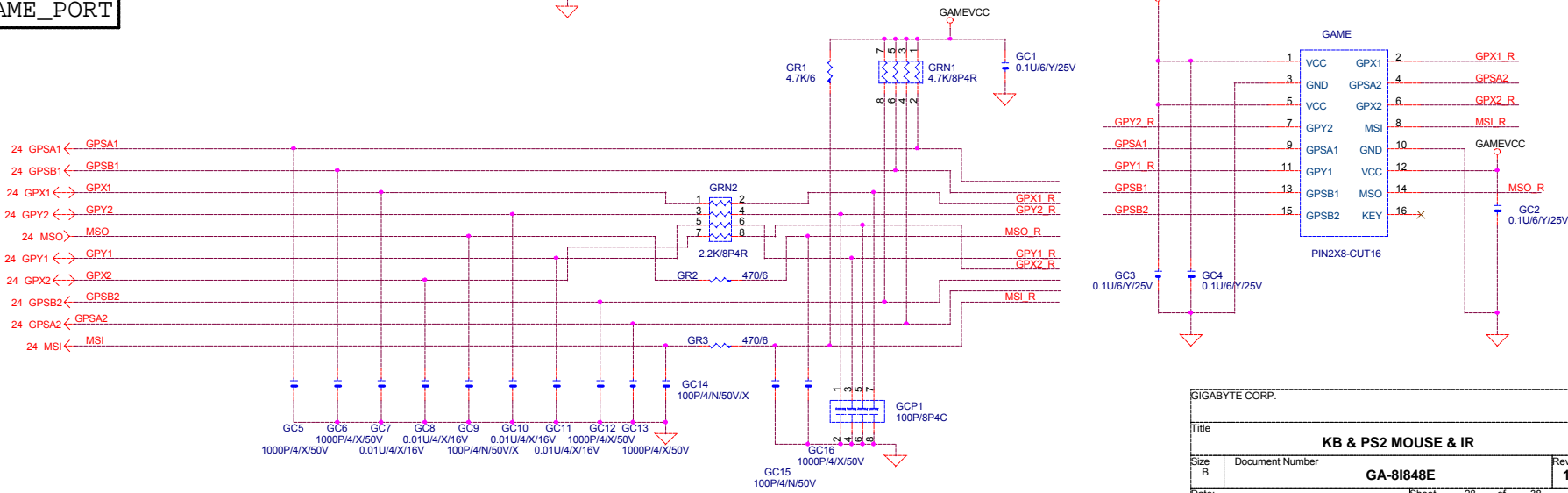
ATX AGND 與 GND 切割必須有三個



www.kvthuatvith.com

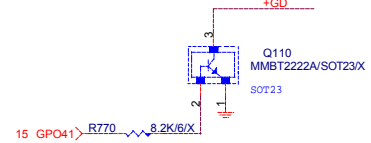
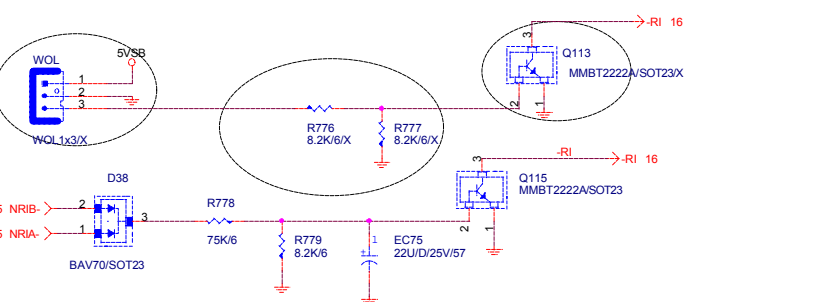
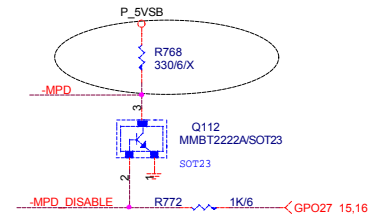
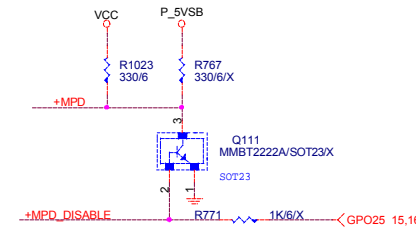
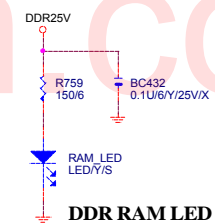
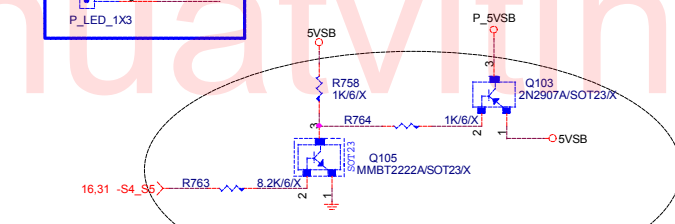
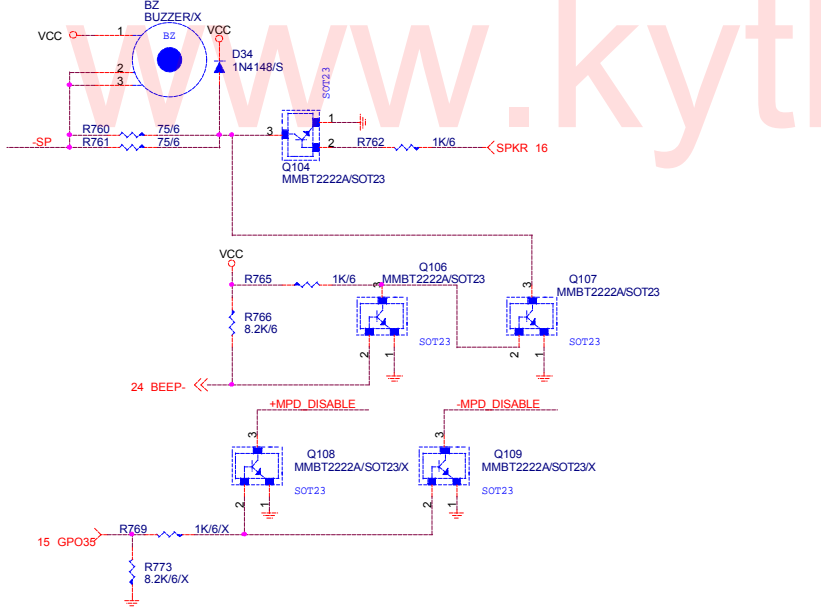
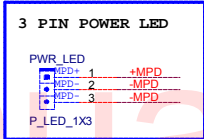
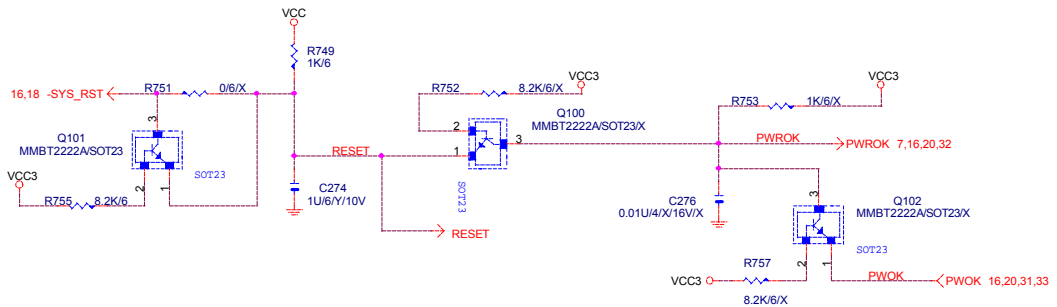
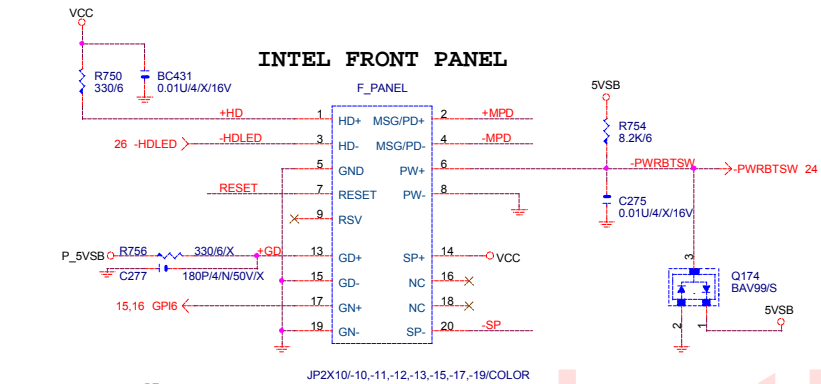


GAME_PORT

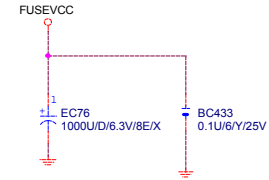


GIGABYTE CORP.		
Title		
KB & PS2 MOUSE & IR		
Size	Document Number	Rev
B	GA-8I848E	1.01
Date:	Sheet 28	of 38

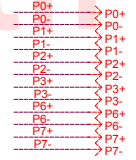
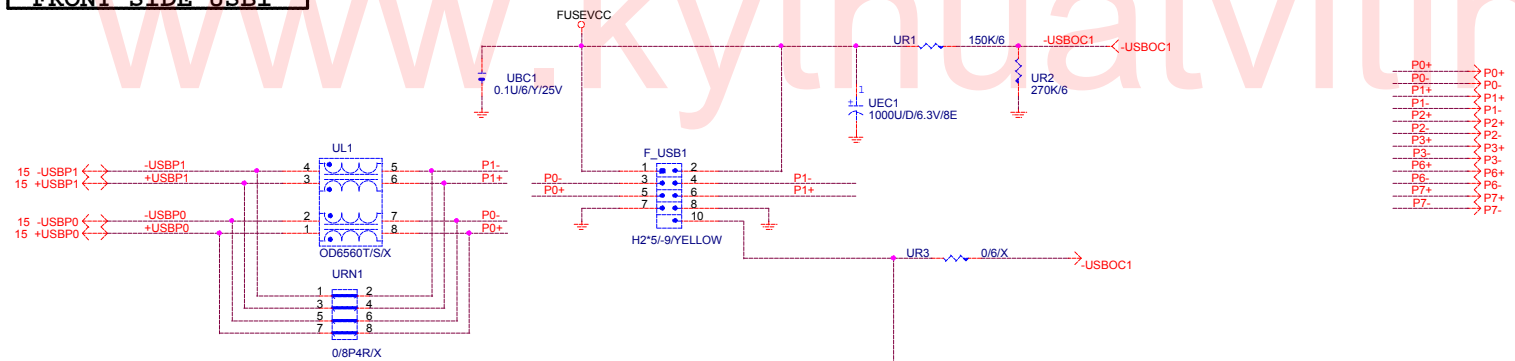
INTEL FRONT PANEL



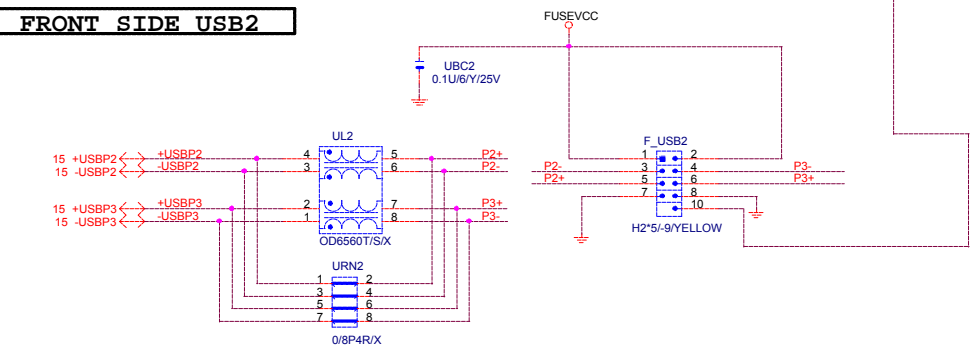
GIGABYTE CORP.		
Title: PANEL & STR LED & RI		
Size B	Document Number: GA-81848E	Rev: 1.01
Date:	Sheet 29 of 38	



FRONT SIDE USB1



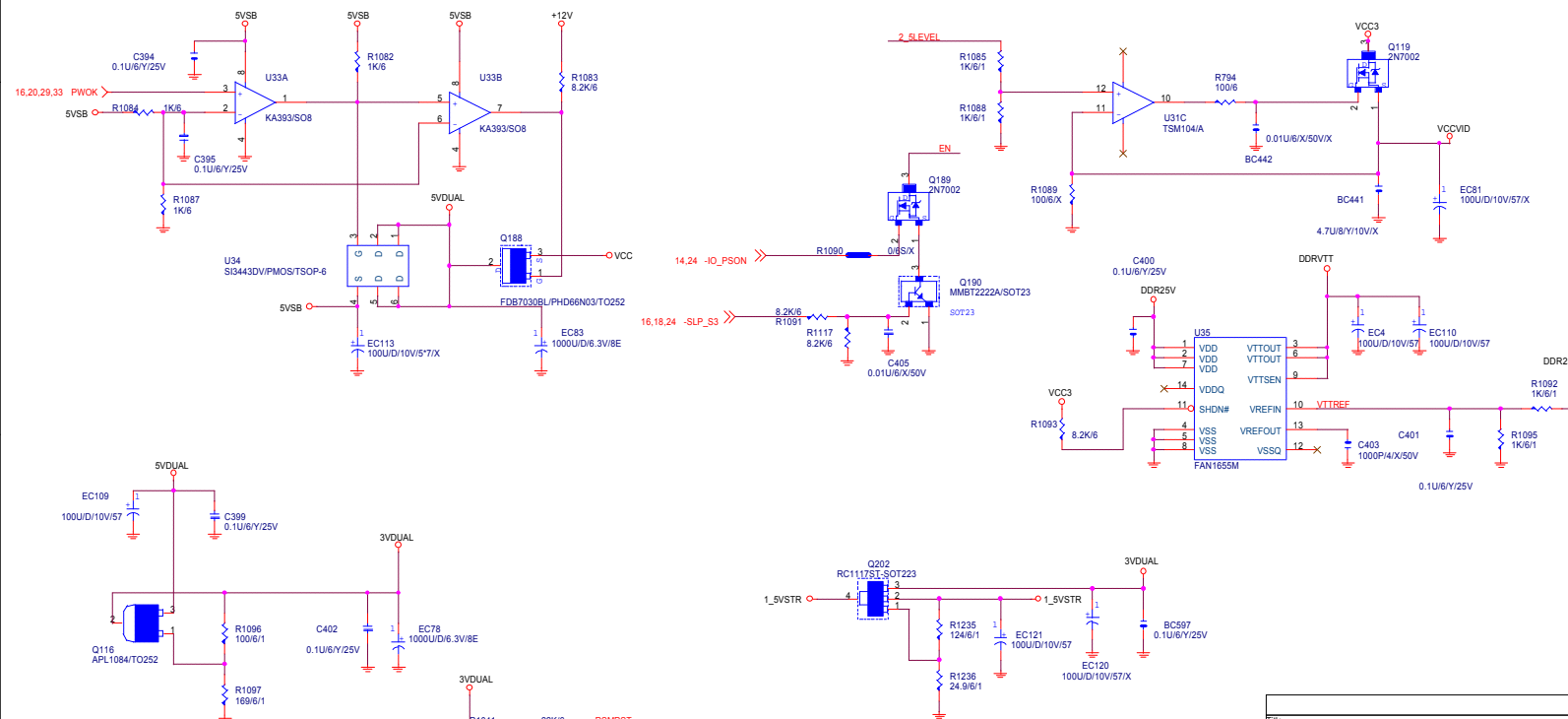
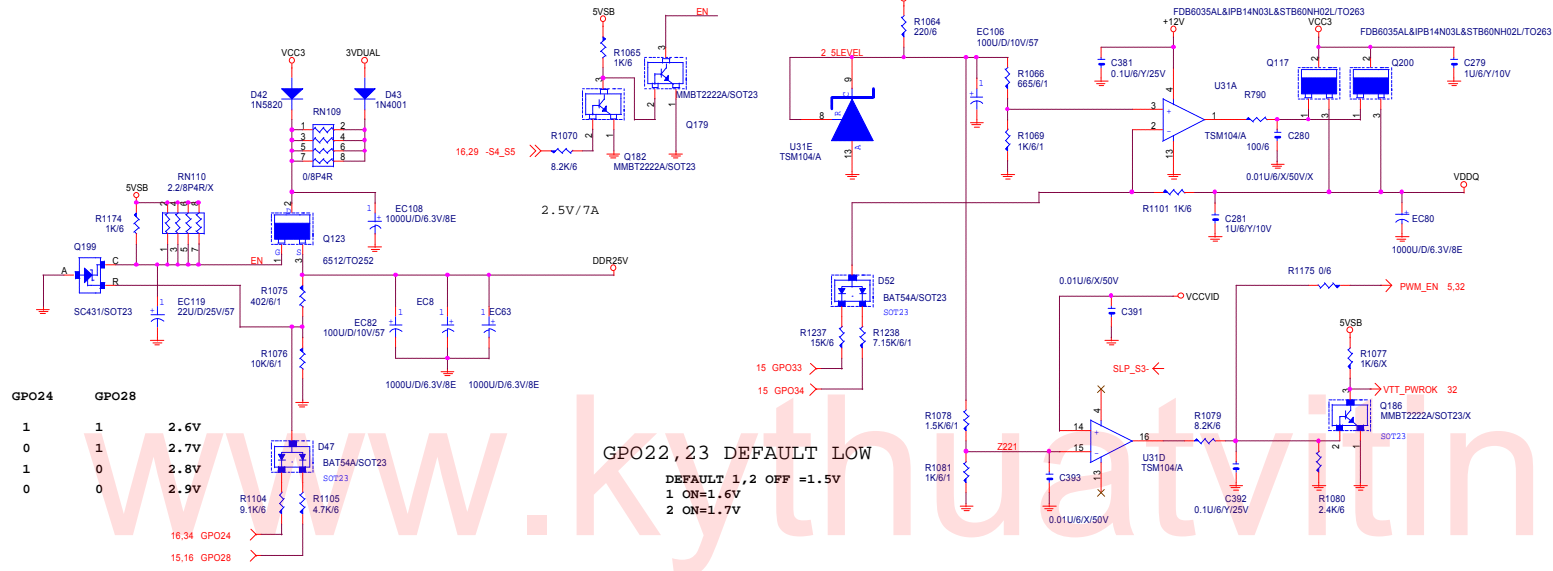
FRONT SIDE USB2



GIGABYTE CORP.		
Title		
ICH USB PORT		
Size B	Document Number	Rev
	GA-81848E	1.01
Date:	Sheet 30 of 38	

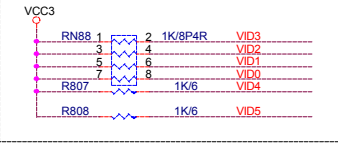
DDR25V FOR DDR DIMM & NB

VDDQ FOR AGP 4X/8X



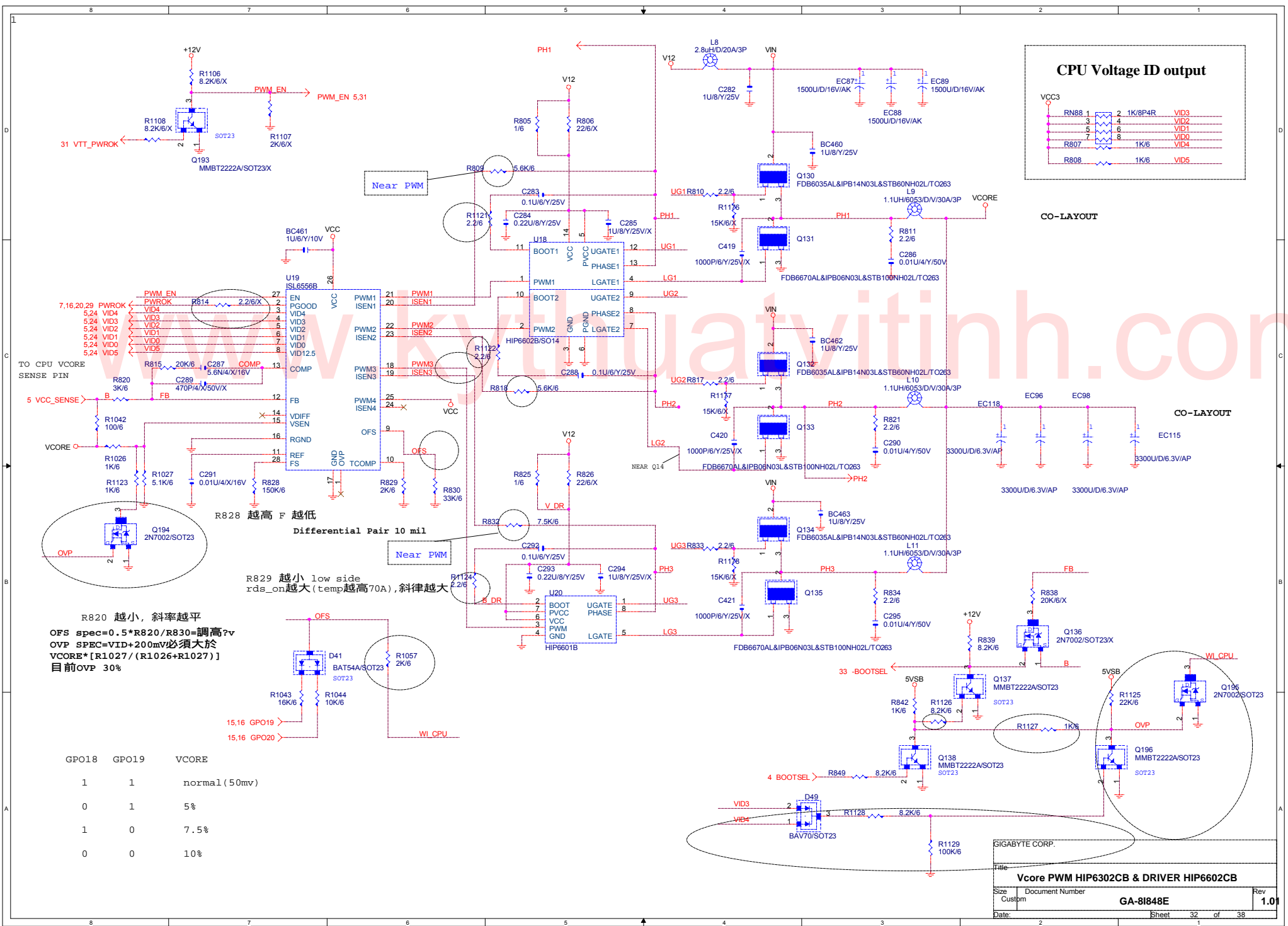
Title		
ISL6556B Springdale power ckt		
Size	Document Number	Rev
	GA-81848E	1.01
Date:	日期	Sheet
2003 年 8 月 06 日	31	of 38

CPU Voltage ID output



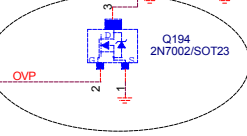
CO-LAYOUT

CO-LAYOUT



7.16.20.29 PWROK
5.24 VID4
5.24 VID3
5.24 VID2
5.24 VID1
5.24 VID0
5.24 VID5

TO CPU VCORE
SENSE PIN
5 VCC_SENSE



R820 越小, 斜率越平
OFS spec=0.5*R820/R830=調高?v
OVP SPEC=VID+200mv必須大於
VCORE*[R1027/(R1026+R1027)]
目前OVP 30%

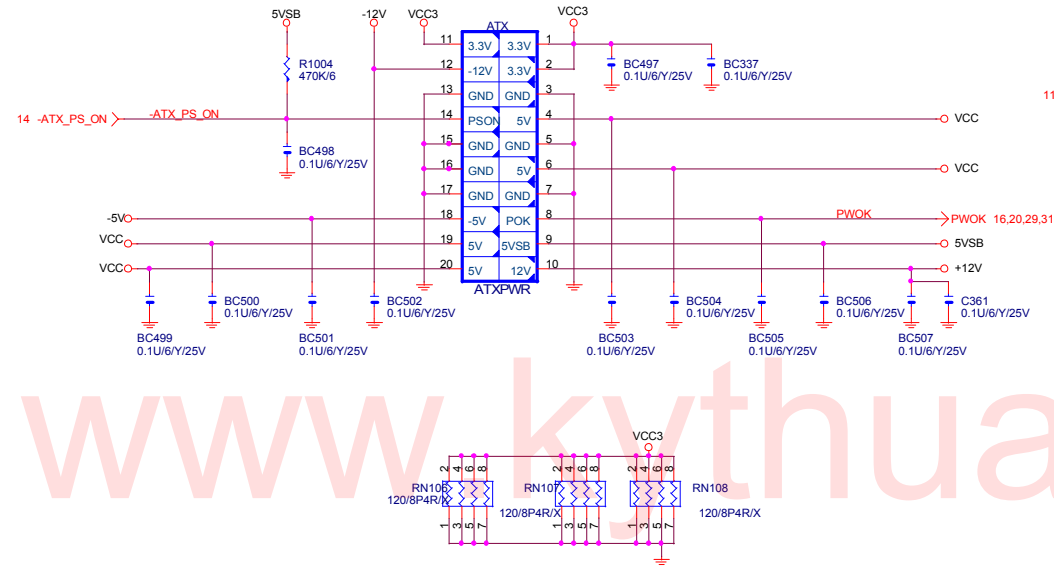
R828 越高 F 越低

Differential Pair 10 mil

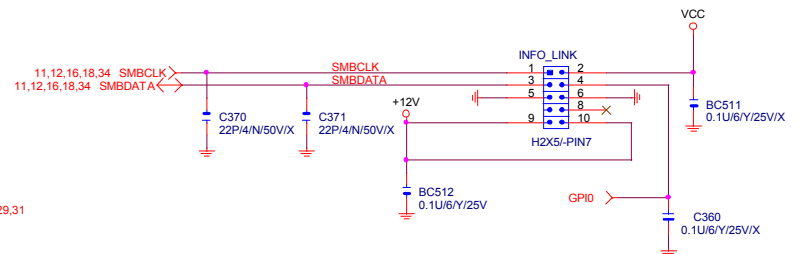
R829 越小 low side
rds_on 越大 (temp 越高 70A), 斜率 越大

GPO18	GPO19	VCORE
1	1	normal (50mv)
0	1	5%
1	0	7.5%
0	0	10%

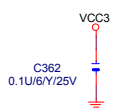
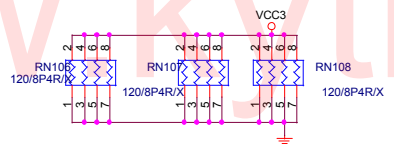
ATX POWER CONNECTOR



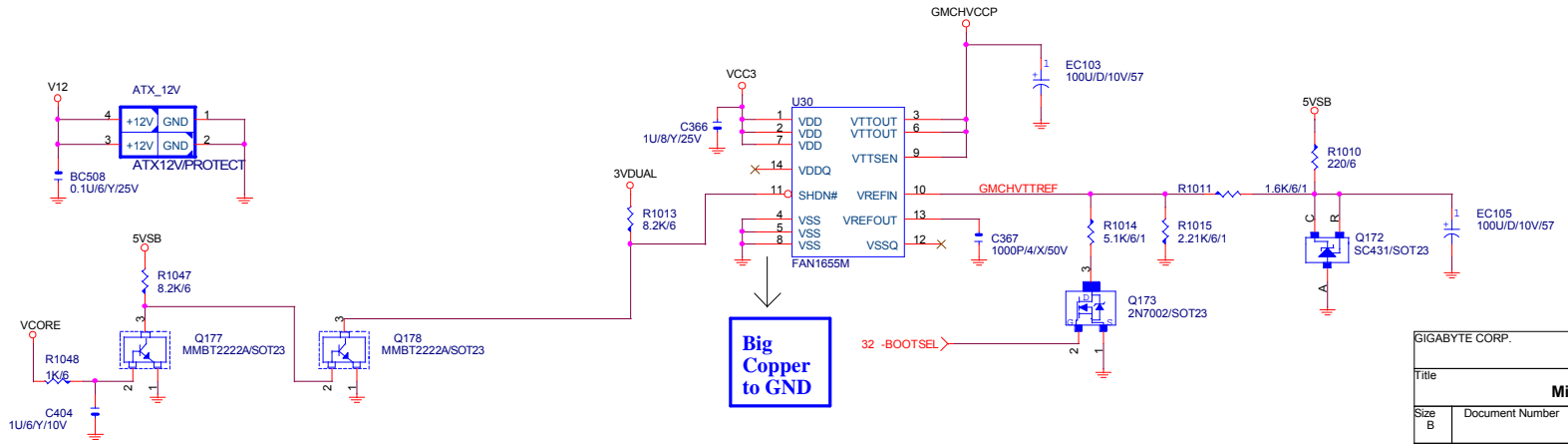
SMBUS CONN.



www.kythuatvith.com

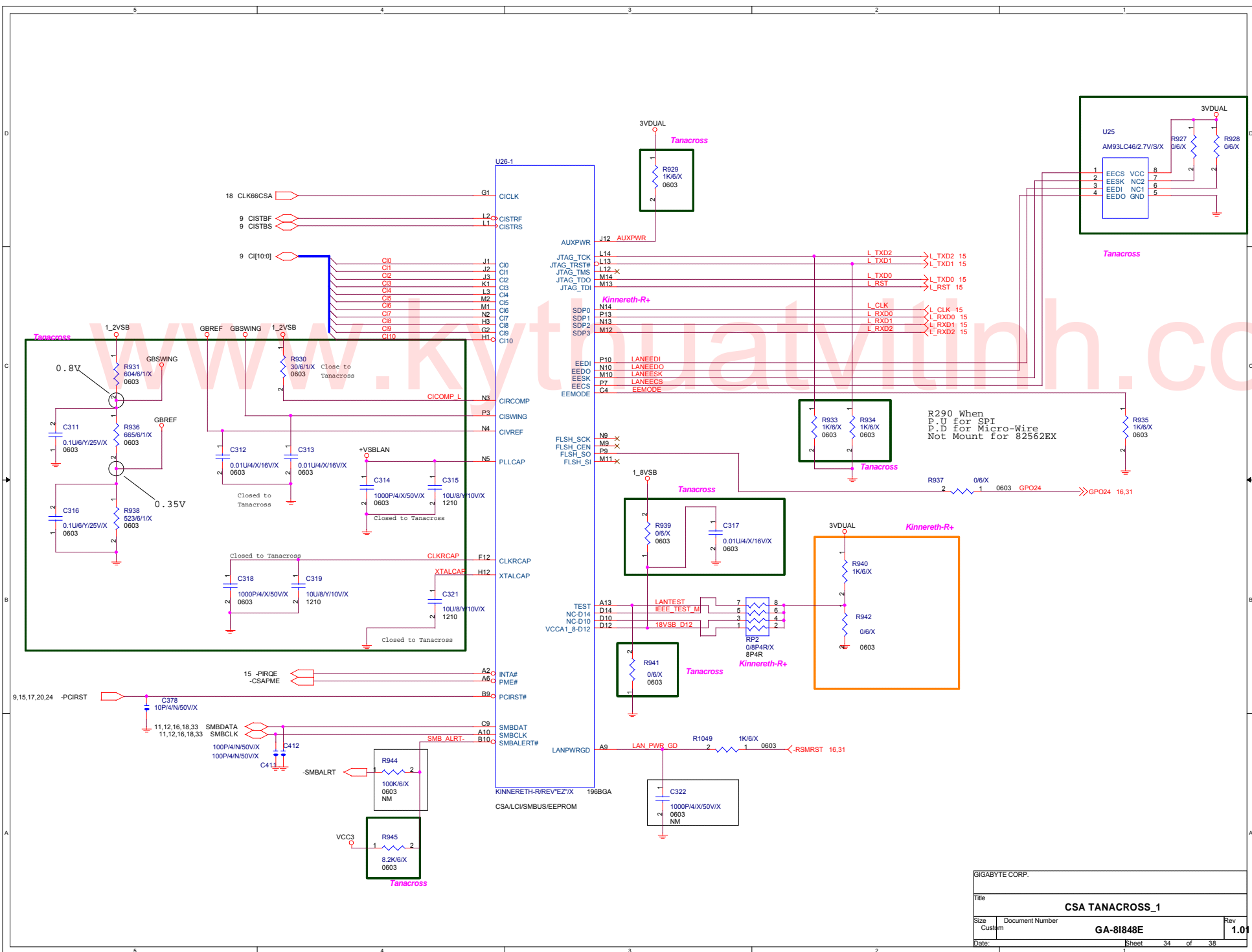


Northwood: +1.45V
Prescott: +1.225V

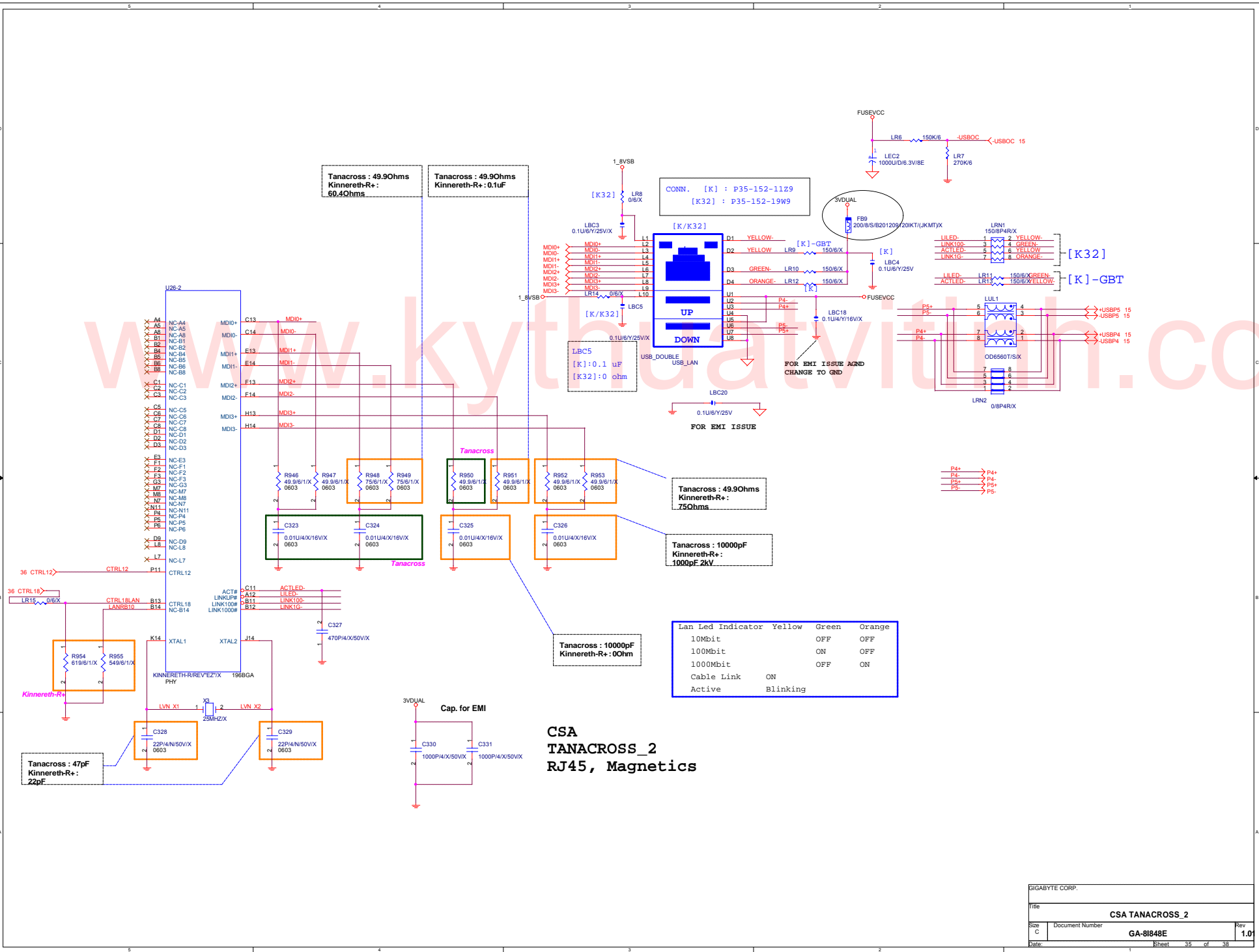


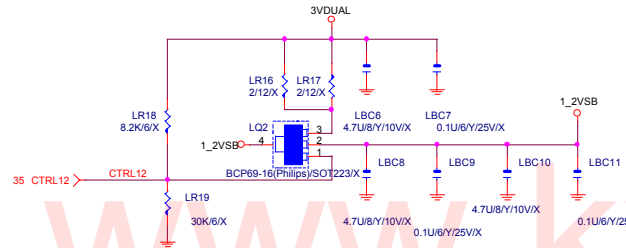
Big Copper to GND

GIGABYTE CORP.		
Title		
Misc. PWR & ATX CONN.		
Size B	Document Number	Rev
	GA-81848E	1.01
Date:	Sheet 33	of 38

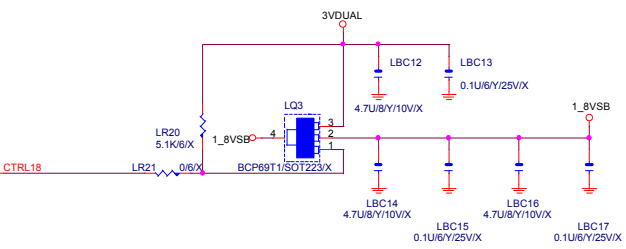


SIBYBYTE CORP.			
Title			
CSA TANACROSS_1			
Size	Document Number	Rev	
Custom	GA-81848E	1.01	
Date:	Sheet	34	of 38

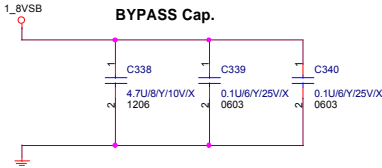
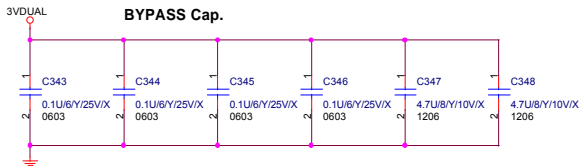
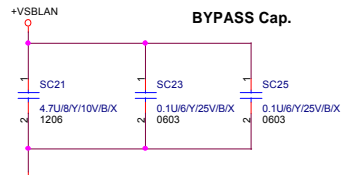
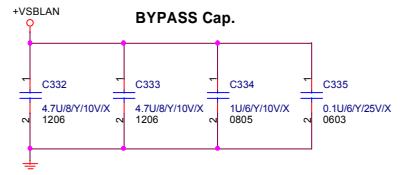
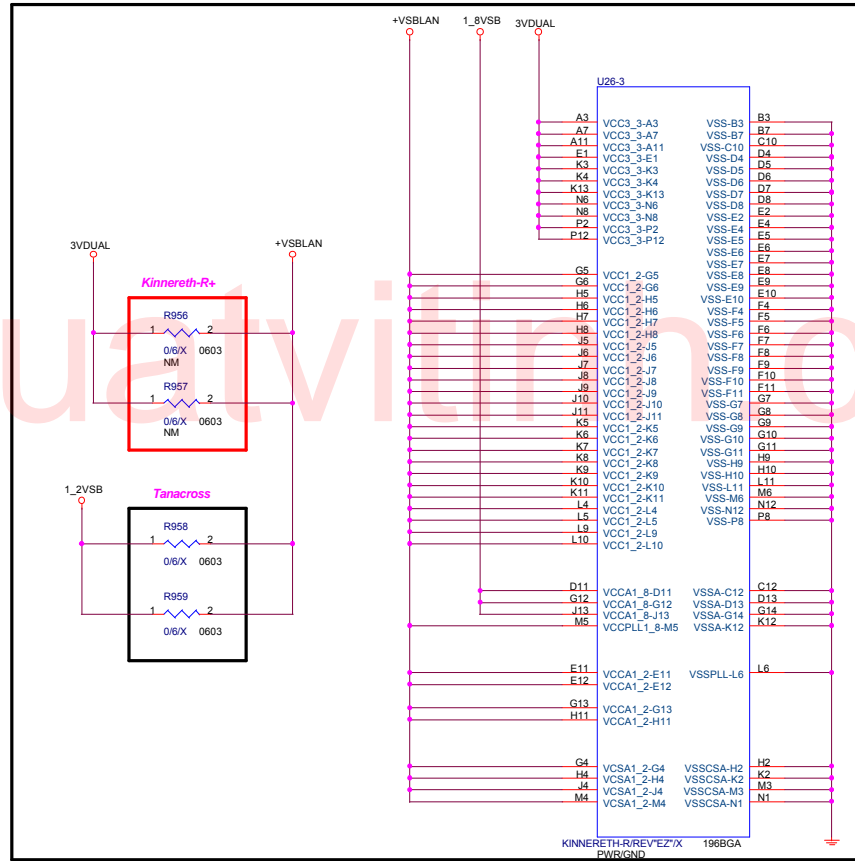




+1.2VSB
Max800mA
Typ500mA



+1.8VSB
Max500mA
Typ250mA



SIGABYTE CORP.			
Title			
CSA TANACROSS_3			
Size	Document Number	Rev	
Custom	GA-81848E	1.01	
Date:	Sheet	36	of 38

GIGABYTE GA-8I848E PCI ROUTING LIST

PCI DEVICE	IDSEL	INT	CLOCK	REQ	GNT	
PCI SLOT1	16	C,F,G,A	PCLK0	REQ0-	GNT0-	
PCI SLOT2	17	F,G,A,C	PCLK1	REQ1-	GNT1-	
PCI SLOT3	18	G,A,C,F	PCLK2	REQ2-	GNT2-	
PCI SLOT4	19	A,C,F,G	PCLK3	REQ3-	GNT3-	
PCI SLOT5	20	C,F,G,A	PCLK4	REQ4-	GNT4-	
VIA 1394	21	F	PCICLK1394	REQ5-	GNT5-	

GIGABYTE CORP.

Title			PCI ROUNT LIST
Size	Document Number	Rev	
Custom	GA-8I848E	1.01	
Date:	星期三, 八月 06, 2003	Sheet	37 of 38

GIGABYTE GA-8I848E GPIO LIST

SHEET

TITLE

GPIP	I/O	FUNCTION
GPI0/REQA-	I	PULL HIGH 8.2K to VCC3, SMB connector.
GPI1/REQ5-		PULL HIGH 8.2K to VCC, REQ5-.
GPI2/PIRQE-		PULL HIGH 8.2K to VCC3, PIRQE-.
GPI3/PIRQF-		PULL HIGH 8.2K to VCC3, PIRQF-.
GPI4/PIRQG-		PULL HIGH 8.2K to VCC, PIRQG-.
GPI5/PIRQH-	NA	PULL HIGH 8.2K to VCC
GPI6/AGPBUSY-	I	PULL 8.2K TO VCC3, PANEL GREEN_BUTTON
GPI7	I	DUAL BIOS FIRST BOOT SELECT.
GPI8	I	PULL 8.2K TO 3VDUAL, -CAS PME.
GPI9/OC4-	NA	USB OC4-.
GPI10/OC5-	NA	USB OC5-.
GPI11/-SMBALRT	NA	PULL 8.2K TO 3VDUAL, -SMBALERT.
GPI12	I	PULL 8.2K TO VCC3, M/B REVERSION ID.
GPI13	I	LPC PME.
GPI14/OC6-	NA	USB OC6-.
GPI15/OC7-	NA	USB OC7-.
GPO16/GNTA-	NA	GPO16.
GPO17/GNT5-		GNT5-.
GPO18/STP_PCI-	NA	GPO18.
GPO19/SLP_S1-	O	DUAL BIOS.
GPO20/SLP_CPU-	O	DUAL BIOS.
GPO21/C3_SATA-	O	BLOCK TOP TABLE.
GPO22/CPUPERF-	O	PULL 8.2K TO VCC3, PANEL S3 POWER LED.

SHEET

TITLE

GPIP	I/O	FUNCTION
GPO16		PULL 8.2K TO VCC3
GPO17		PULL 8.2K TO VCC3 (GNT5-)
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, LAN 100/10 DETECT.
GPO26		NOT IMPLEMENTED
GPO27		PULL 8.2K TO 3VDUAL, BIOS WRITE PROTECT.
GPO28		PULL 8.2K TO 3VDUAL

GIGABYTE CORP.

Title			GPIO LIST		
Size	Document Number				Rev
Custom	GA-8I848E				1.01
Date:	星期三, 八月 06, 2003	Sheet	38	of	38