8I845GE775-G

Revision 1.0

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Title	COVER SHEET	
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Model Name: GA-8I845GE775-G

Version:1.0

Component value change history

293.95x210. 5 mil 60±15% C Type

DATE	Change Item	Reason
2005.01.17	0.1 NEW BOM RELEASE	
2005.03.11	1.0A BOM RELEASE	
	ATX USE: 11NH4-020020-61/-62 CPU RM REMOVE	
	Add EMI solution. ACN1,ACN2=180P	
	Add U12 SST 49LF003B 2nd source	
	Clock Gen change to RTM350-110R	
	Add 9701 for USB Drop Issue	
	Add 0.1u at SLP_S3- but no pop BC9	
	Add VCC E-CAPx2 but pop 1 EC1	
	DL1 change to 11NH2-011507-01 wire.	
2005.03.31	1.0B BOM	Main stream 1.4 or performance
	DU2 change to 10TA1-605019-10	Homer: DC8:150P, DR32:100ohm, DR28:0, DR31:120K, DR6,DR7,DR8:100K
	Add Q28 to minimum Q27 temperature. Only Q27 run 3D will reach 100C	
	Package	

Circuit or PCB layout change for next version

DATE	Change Item	Reason
2005.01.13	0.1 GERBER OUT.	
2005.03.10	1.0 GERBER OUT.	

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Title: BOM & PCB MODIFY HISTORY

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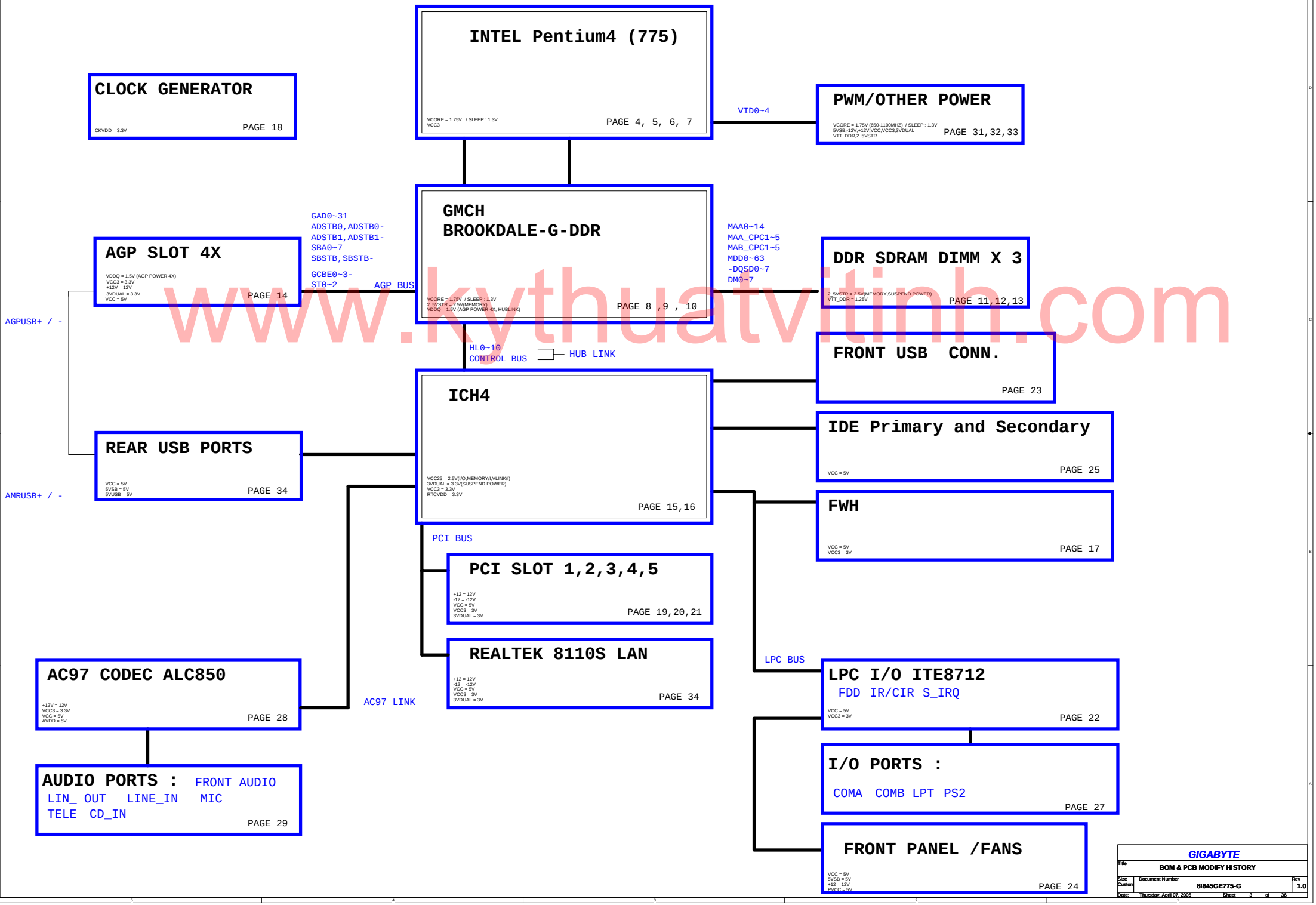
BLOCK DIAGRAM



GIGABYTE			
Title	BOM & PCB MODIFY HISTORY		
Size: Custom	Document Number: 8I845GE775-G		Rev: 1.0
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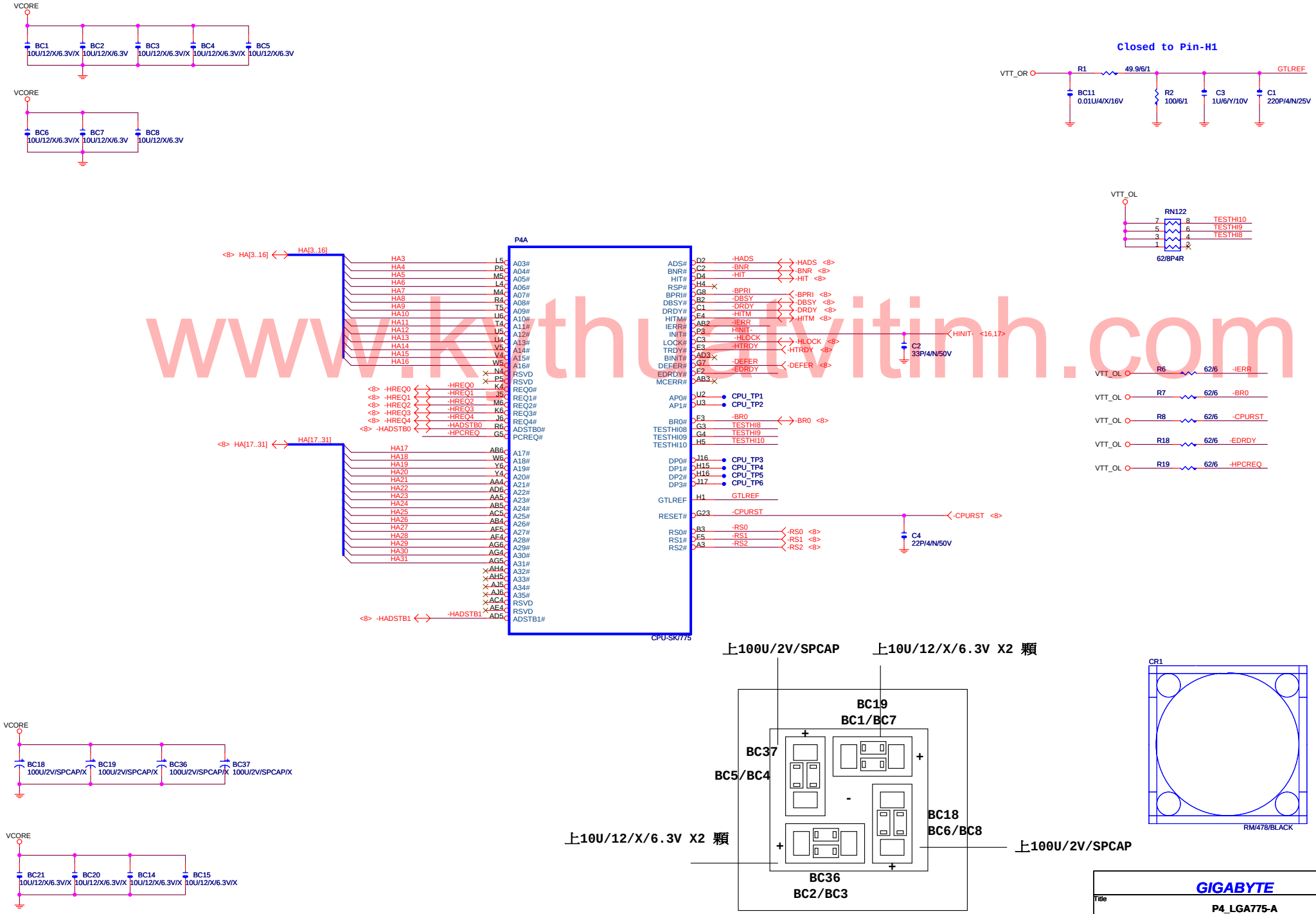

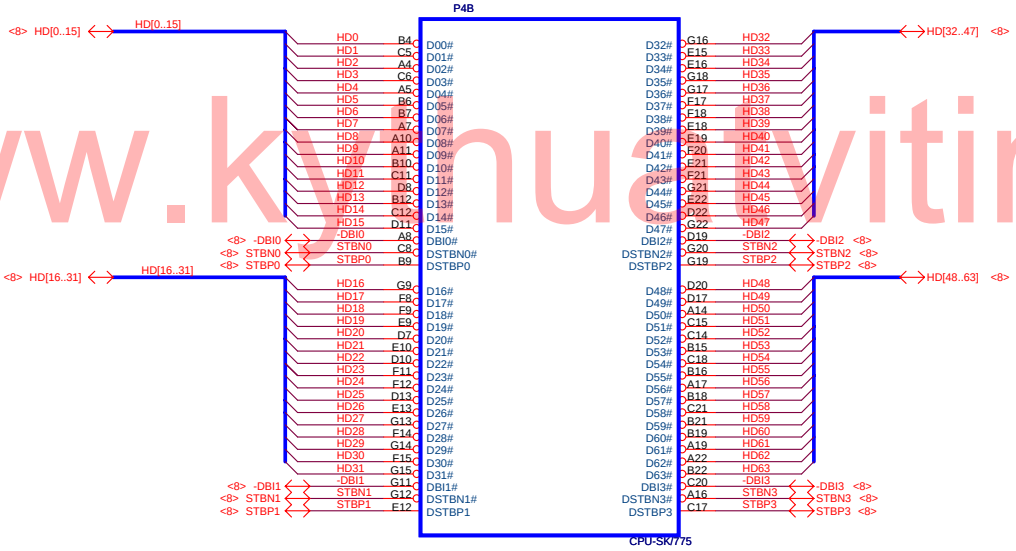

GIGABYTE		
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Size: Custom	Document Number: 8I845GE775-G	Rev: 1.0
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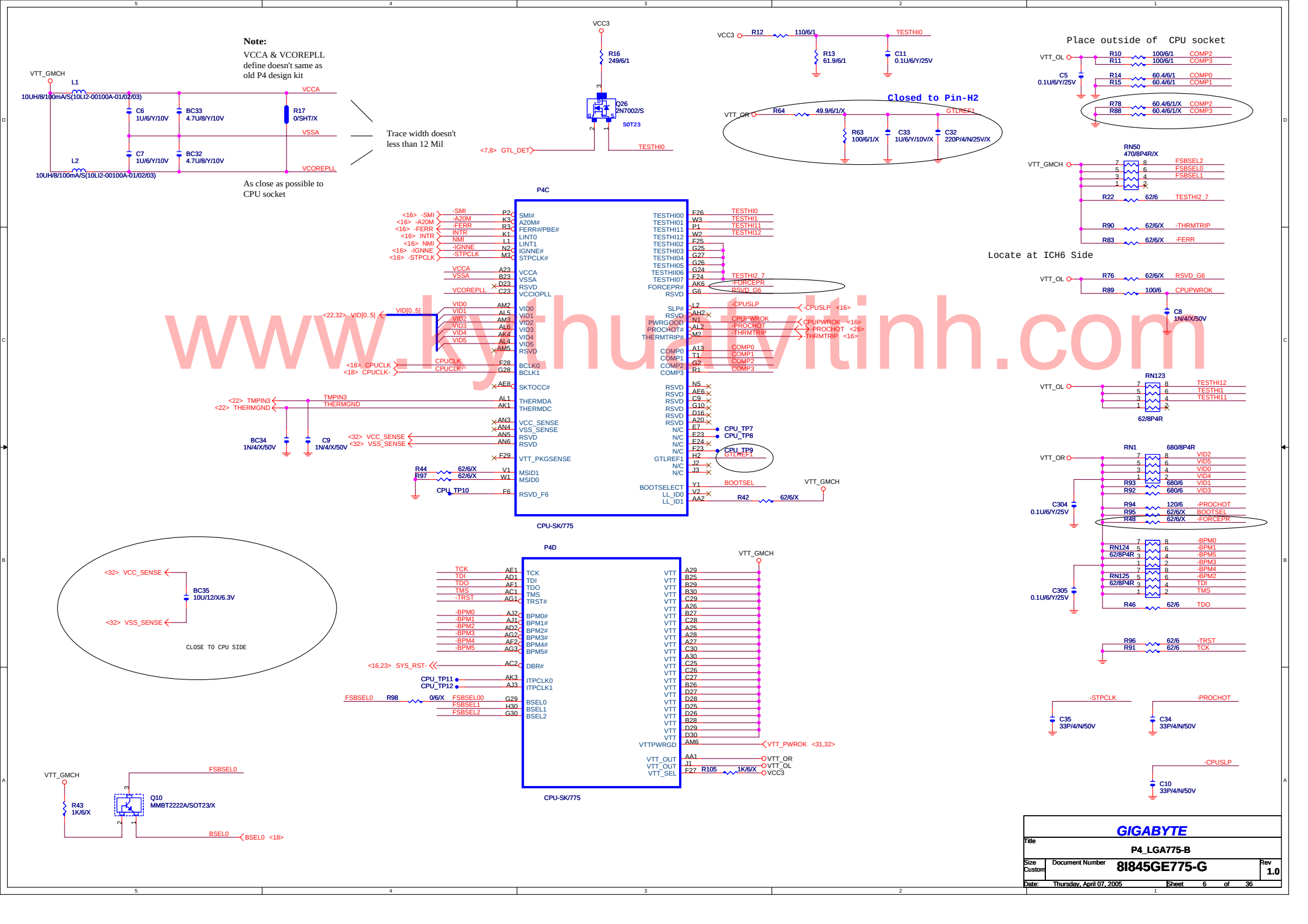
Note:
VCCA & VCOREPLL define doesn't same as old P4 design kit
Trace width doesn't less than 12 Mil
As close as possible to CPU socket
Closed to Pin-H2
Place outside of CPU socket
Locate at ICH6 Side
P4C
CPU-SK/775
P4D
CPU-SK/775
CLOSE TO CPU SIDE
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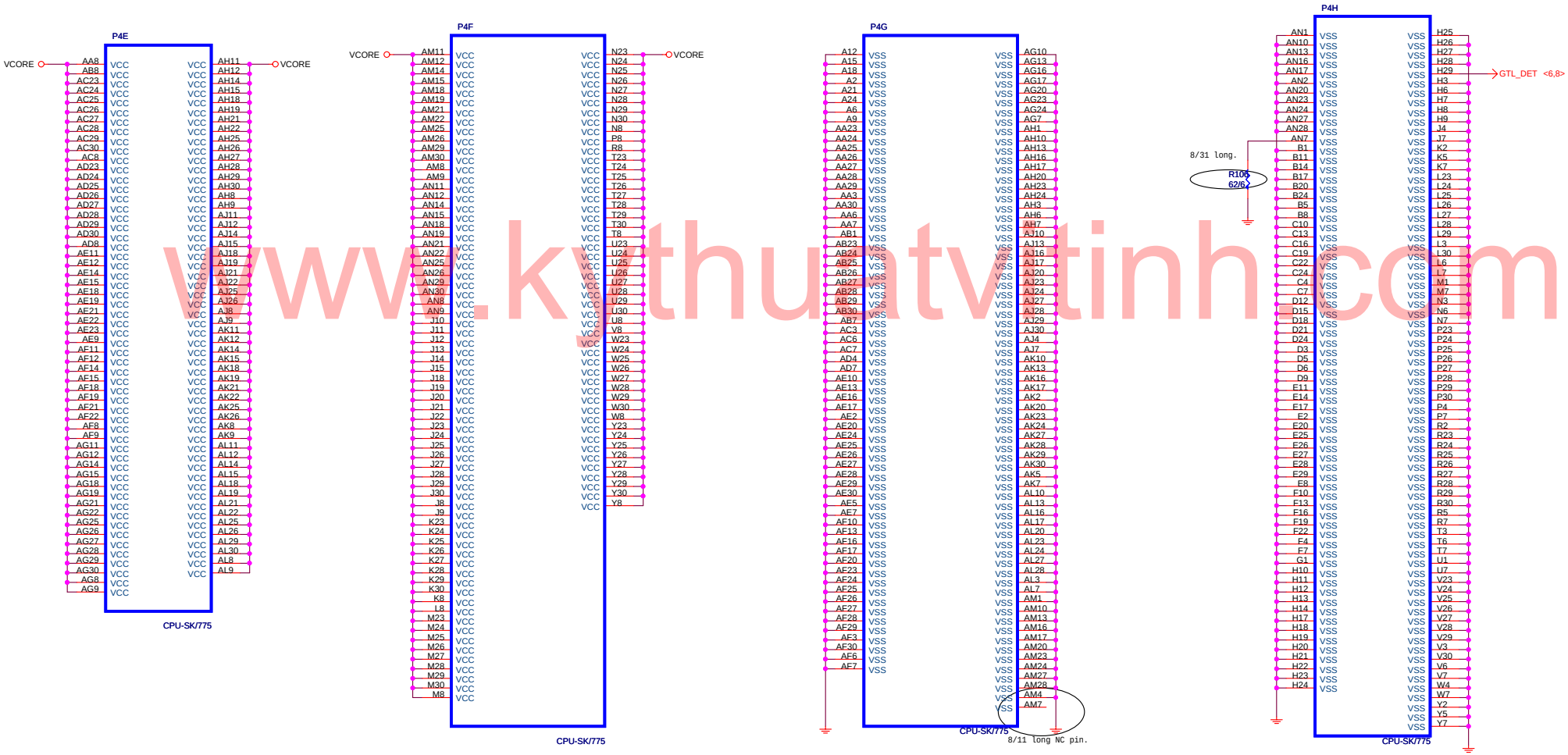

GIGABYTE		
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Size: Custom	Document Number: 8I845GE775-G	Rev: 1.0
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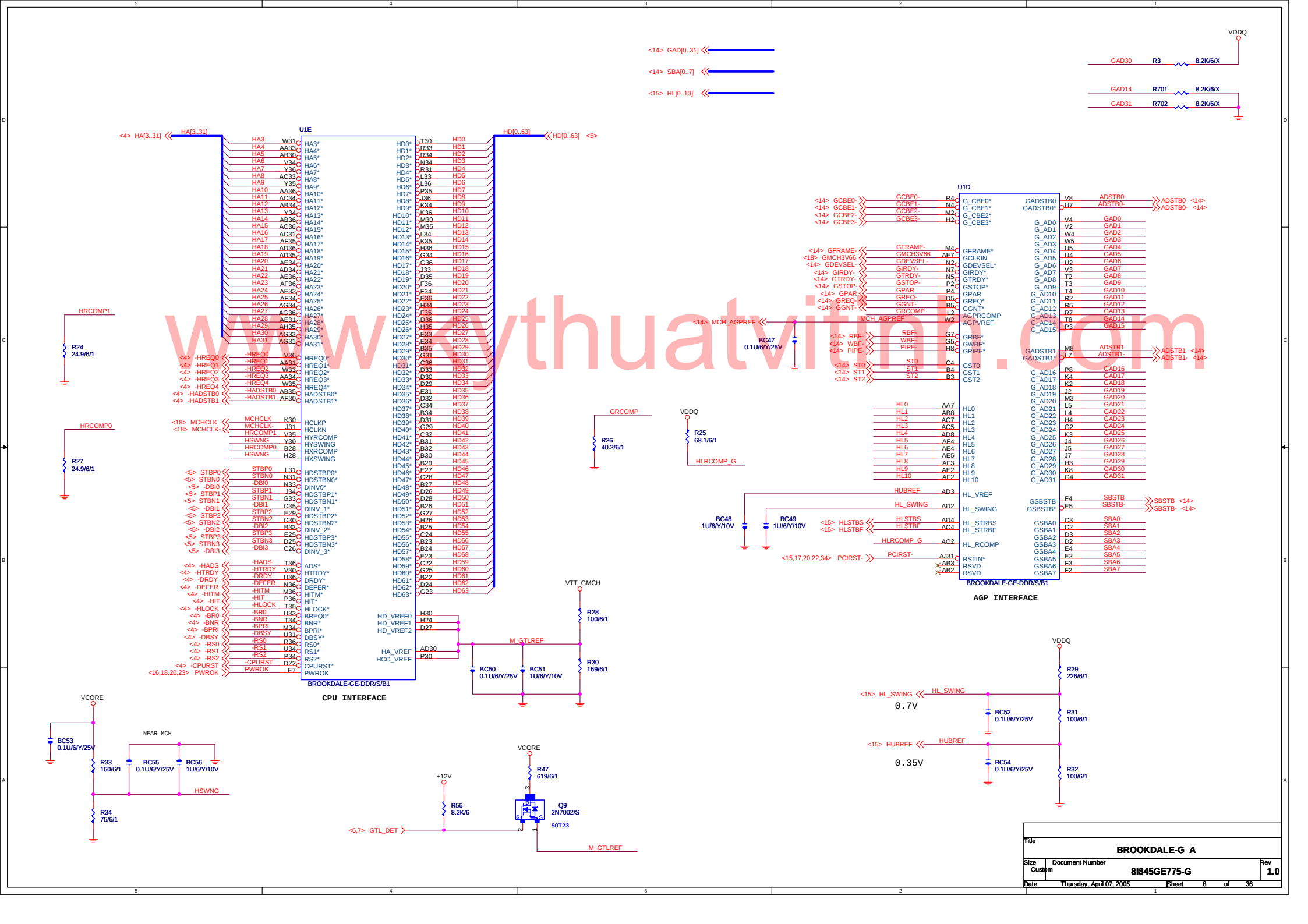

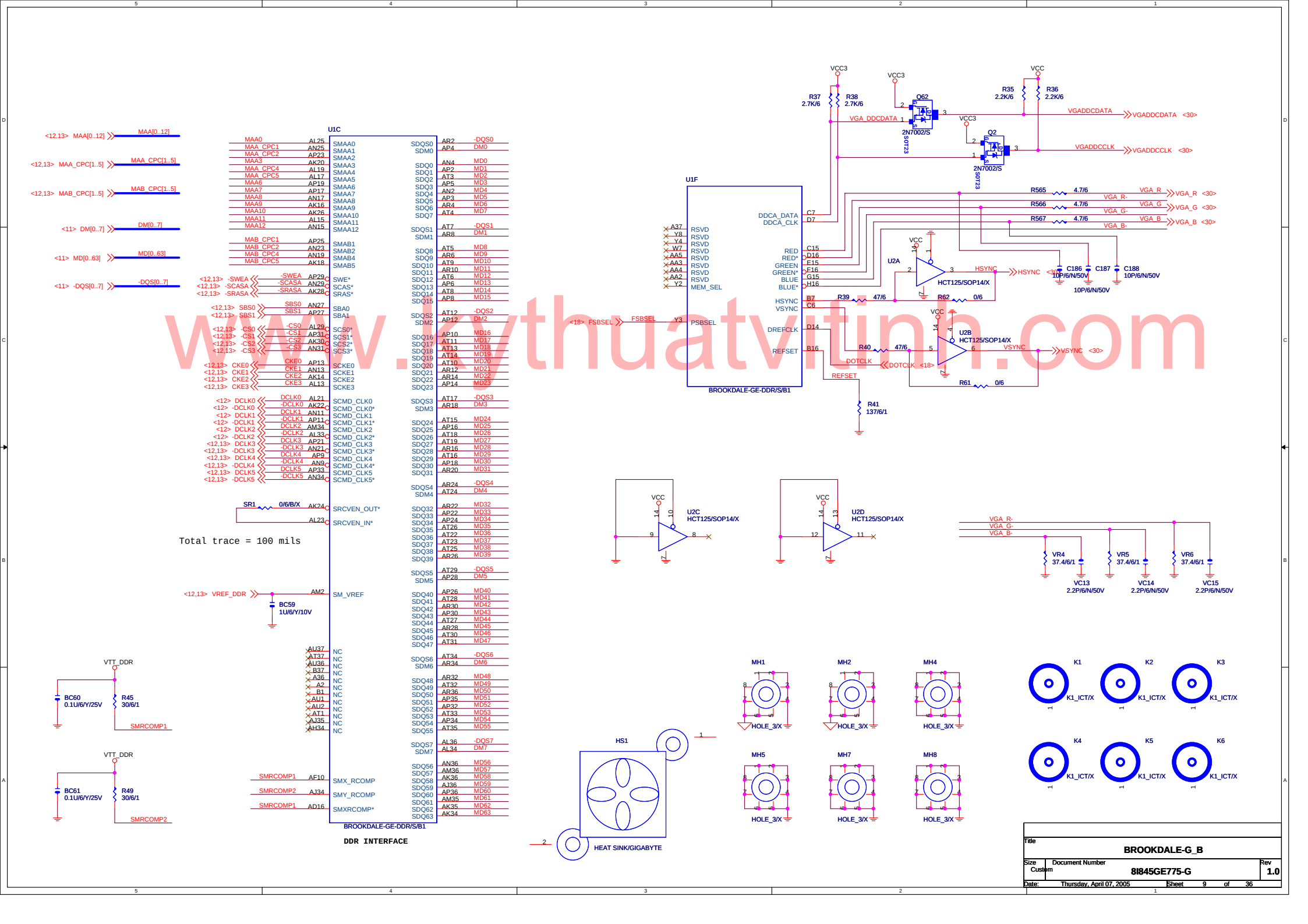

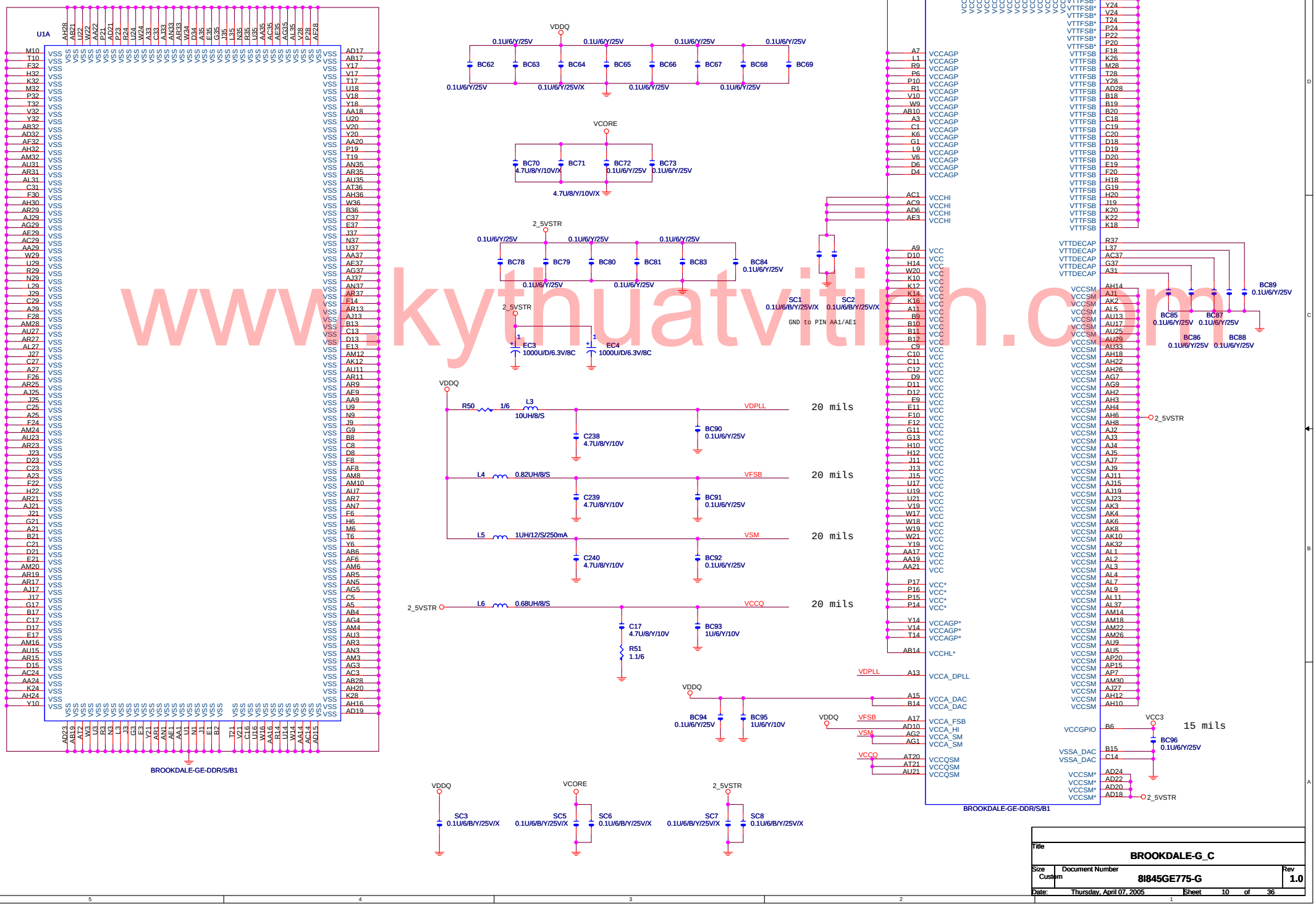

Title	BROOKDALE-G_C	
Size: Custom	Document Number: 8I845GE775-G	Rev: 1.0
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<12,13> MD_[0..63] MD[0..63] <9>

<12,13> DM_[0..7] DM[0..7] <9>

<12,13> -DQS_[0..7] -DQS[0..7] <9>

DM_0	RN3	1	2 0/8P4R/X	DM0	
-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_29	RN11	1	2 0/8P4R/X	MD29	
MD_25		3	4	MD25	
-DQS_3		5	6	-DQS3	
DM_3		7	8	DM3	
MD_26	RN12	1	2 0/8P4R/X	MD26	
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_59	RN21	7	8 0/8P4R/X	MD59	
MD_63		5	6	MD63	
MD_58		3	4	MD58	
MD_62		1	2	MD62	

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

MD_7	RN8	1	2 0/8P4R/X	MD7
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

2_5VSTR

BC97	0.1U/6/Y/25V/X	
BC98	0.1U/6/Y/25V	
BC99	0.1U/6/Y/25V	
BC100	0.1U/6/Y/25V	
BC101	0.1U/6/Y/25V/X	
BC102	0.1U/6/Y/25V	
BC103	0.1U/6/Y/25V	
BC104	0.1U/6/Y/25V	
BC105	0.1U/6/Y/25V/X	
BC352	0.1U/6/Y/25V	

COUPON2 COUPON1 1 2 COUPON/X 2_5VSTR

COUPON1 COUPON2 1 2 COUPON/X

GIGABYTE			
Title	DDR SERIAL TERM.		
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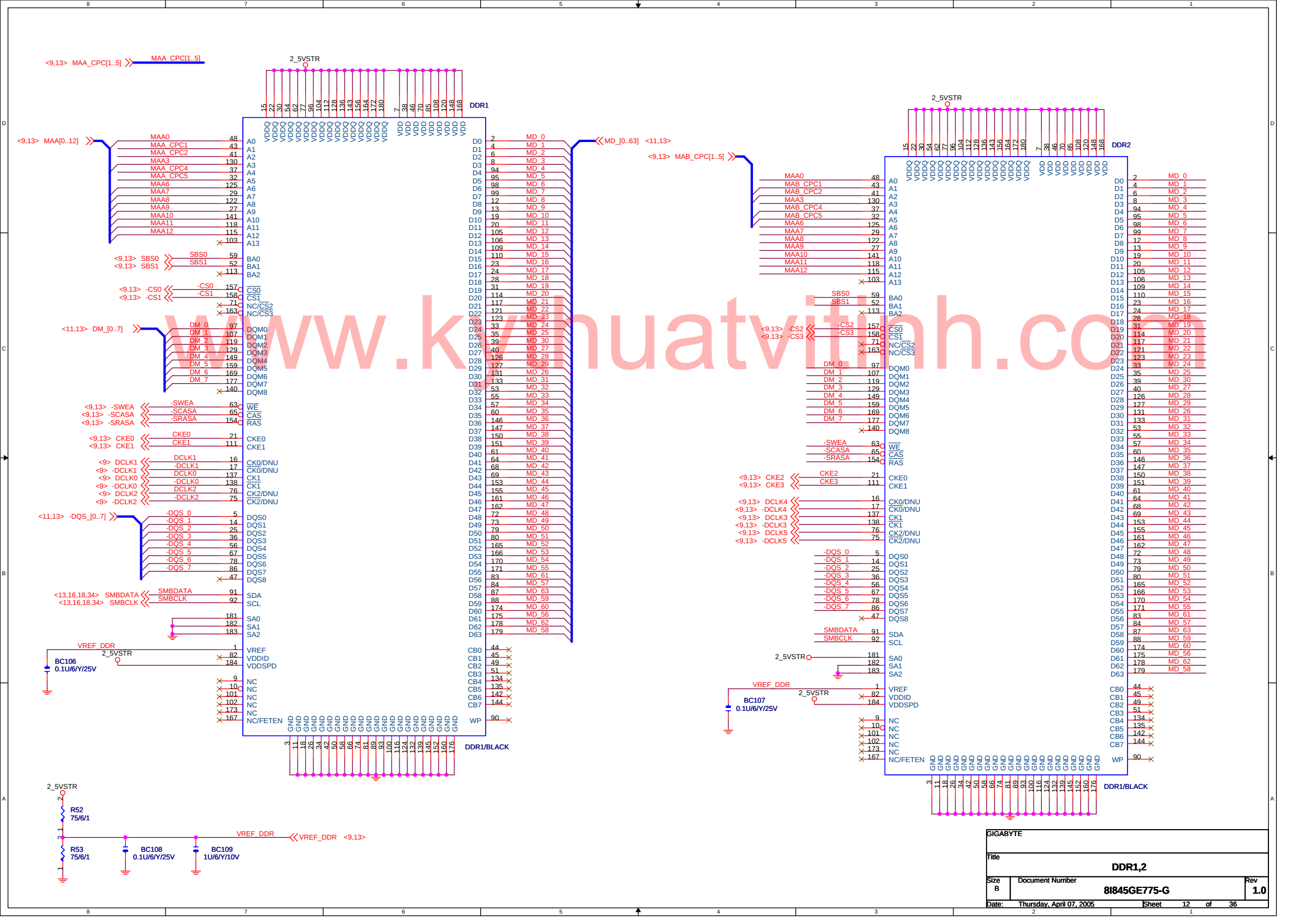

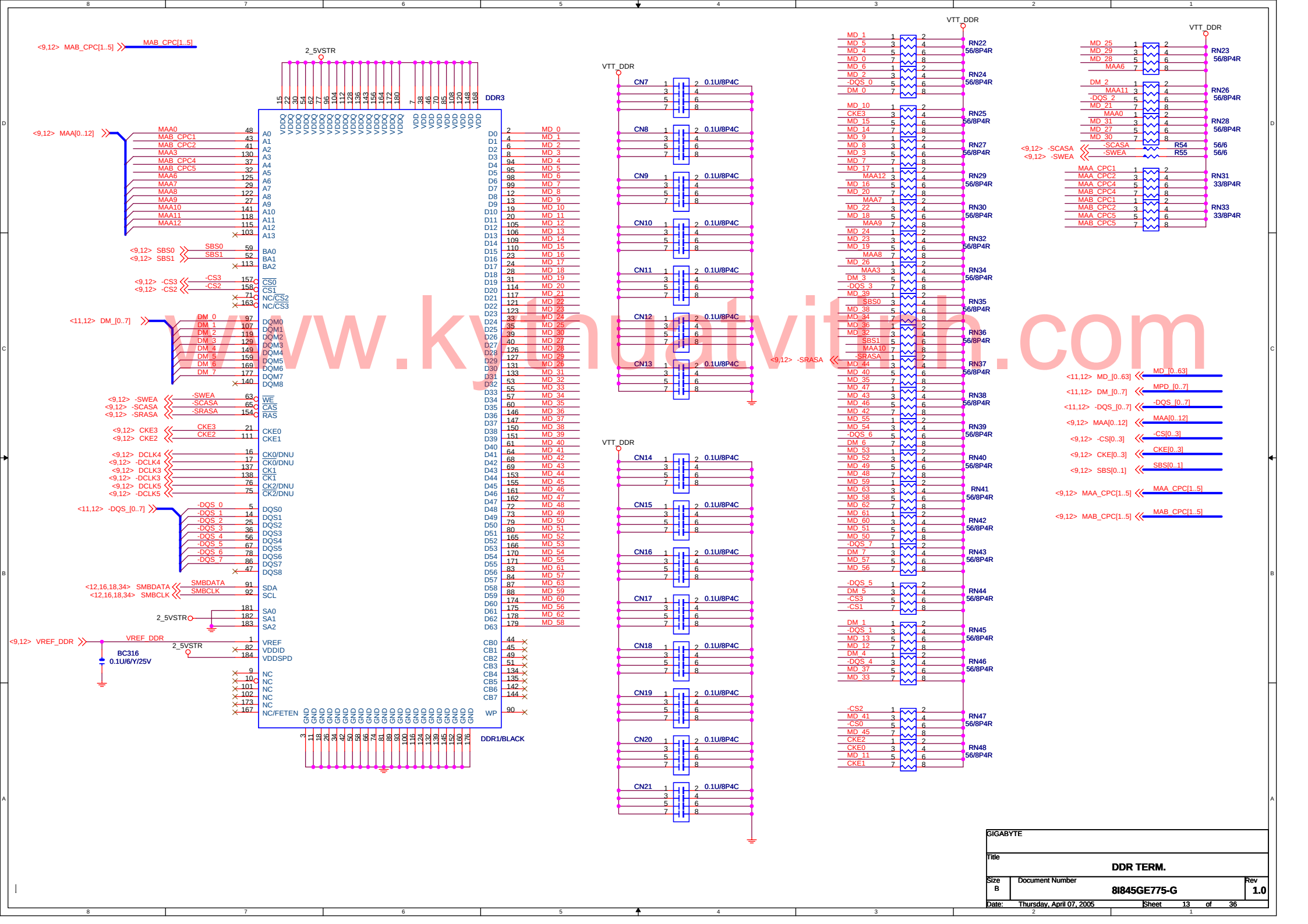

GIGABYTE	
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Size: B	Document Number: 8I845GE775-G
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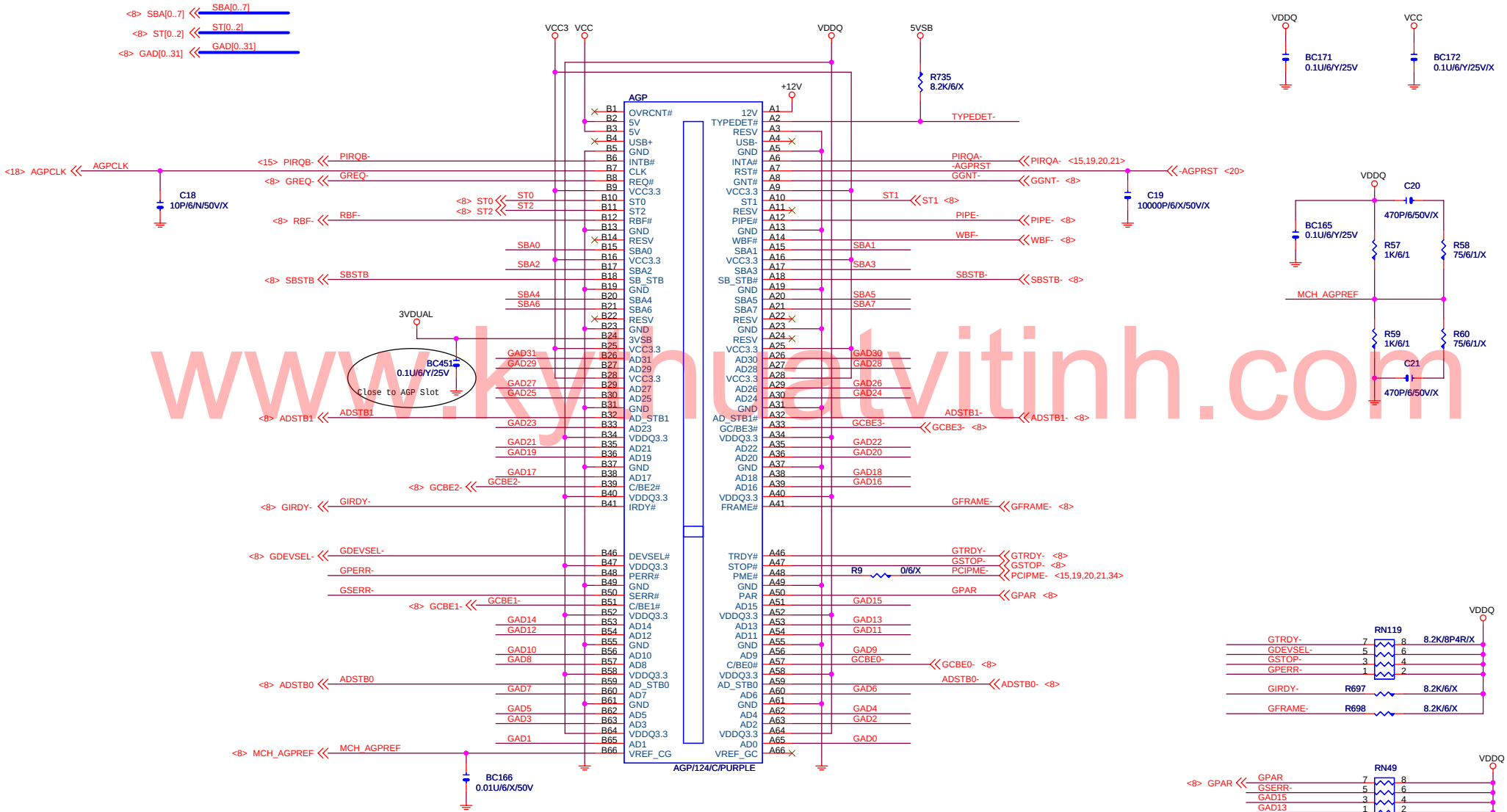

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Size: Custom	Document Number: 8I845GE775-G	Rev: 1.0
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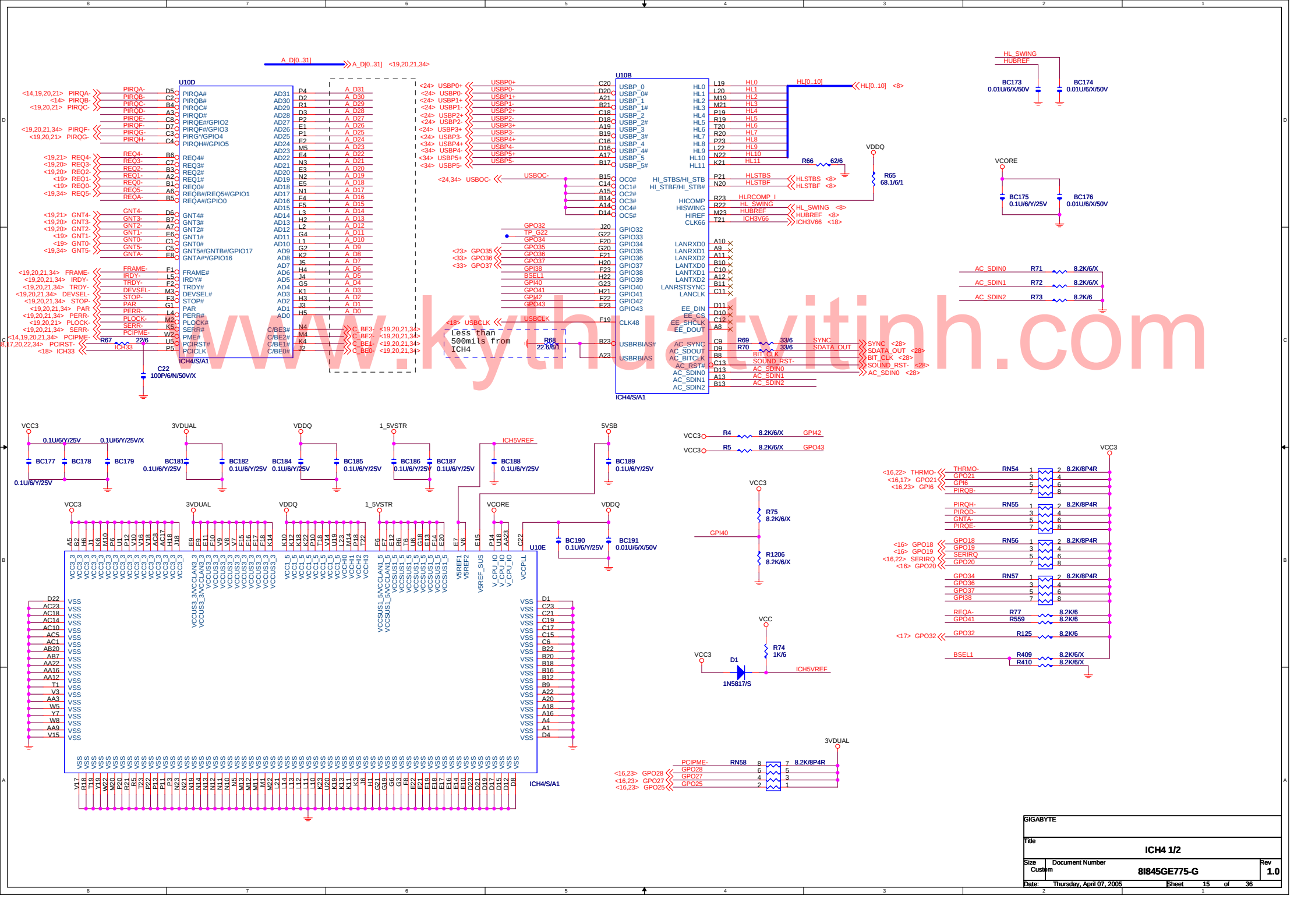

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Size: Custom	Document Number: 81845GE775-G
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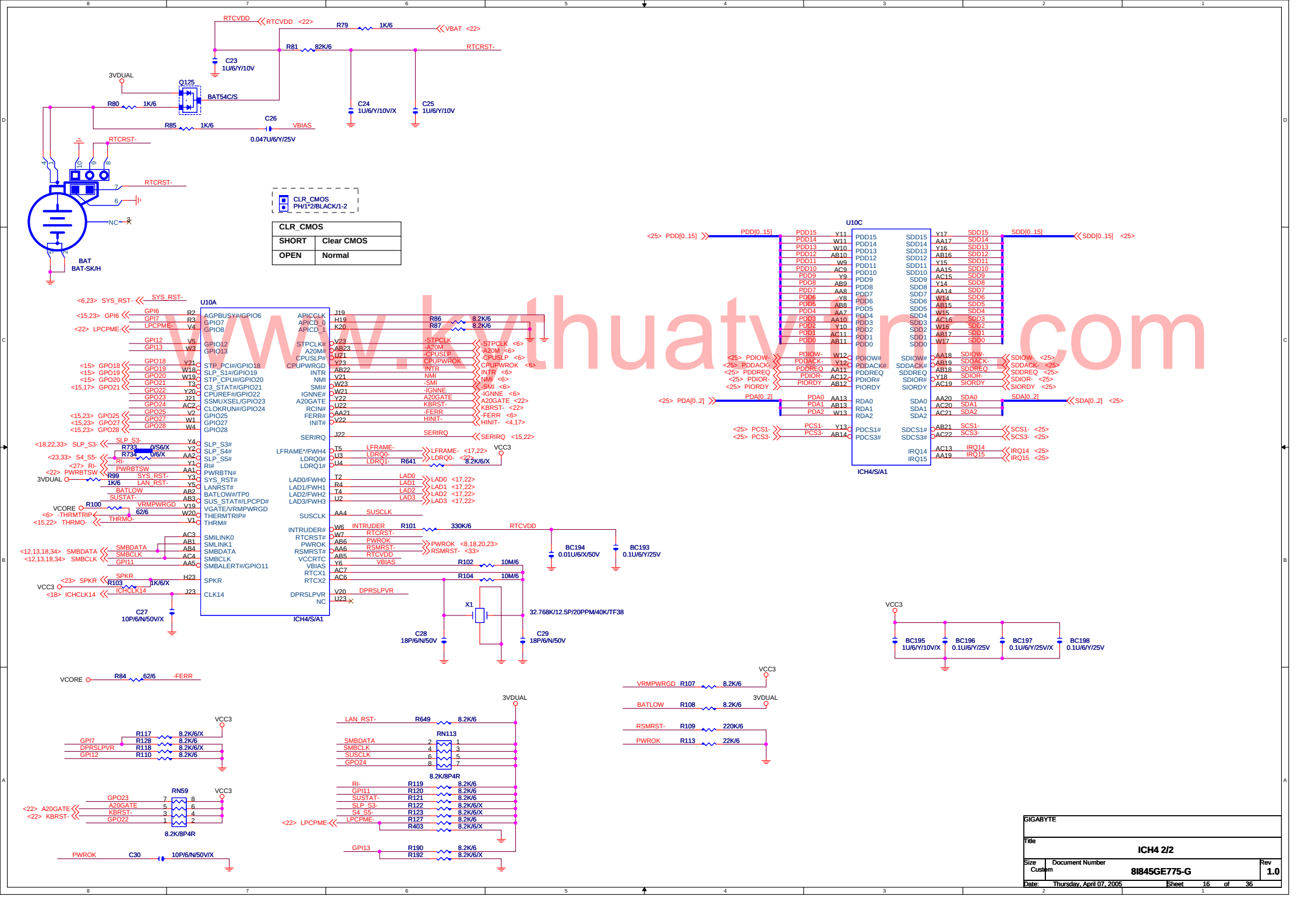

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Size: Custom	Document Number: 8I845GE775-G
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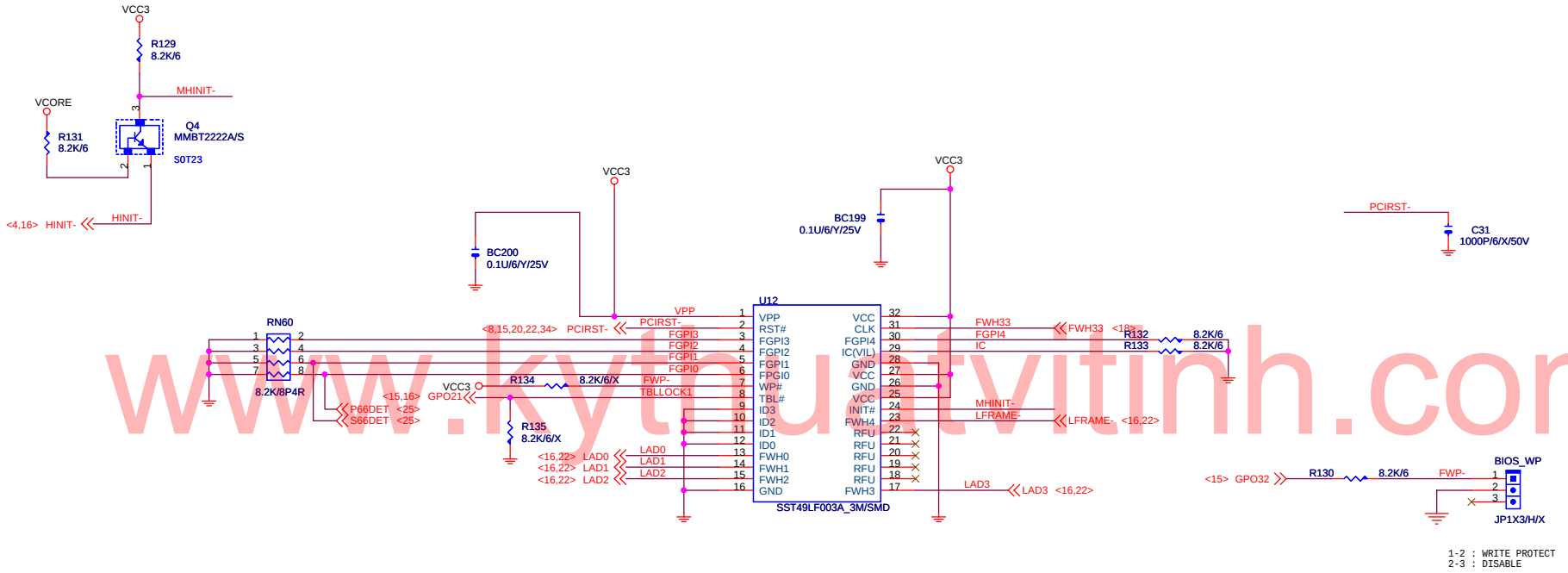

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Size: B	Document Number: 81845GE775-G	Rev: 1.0
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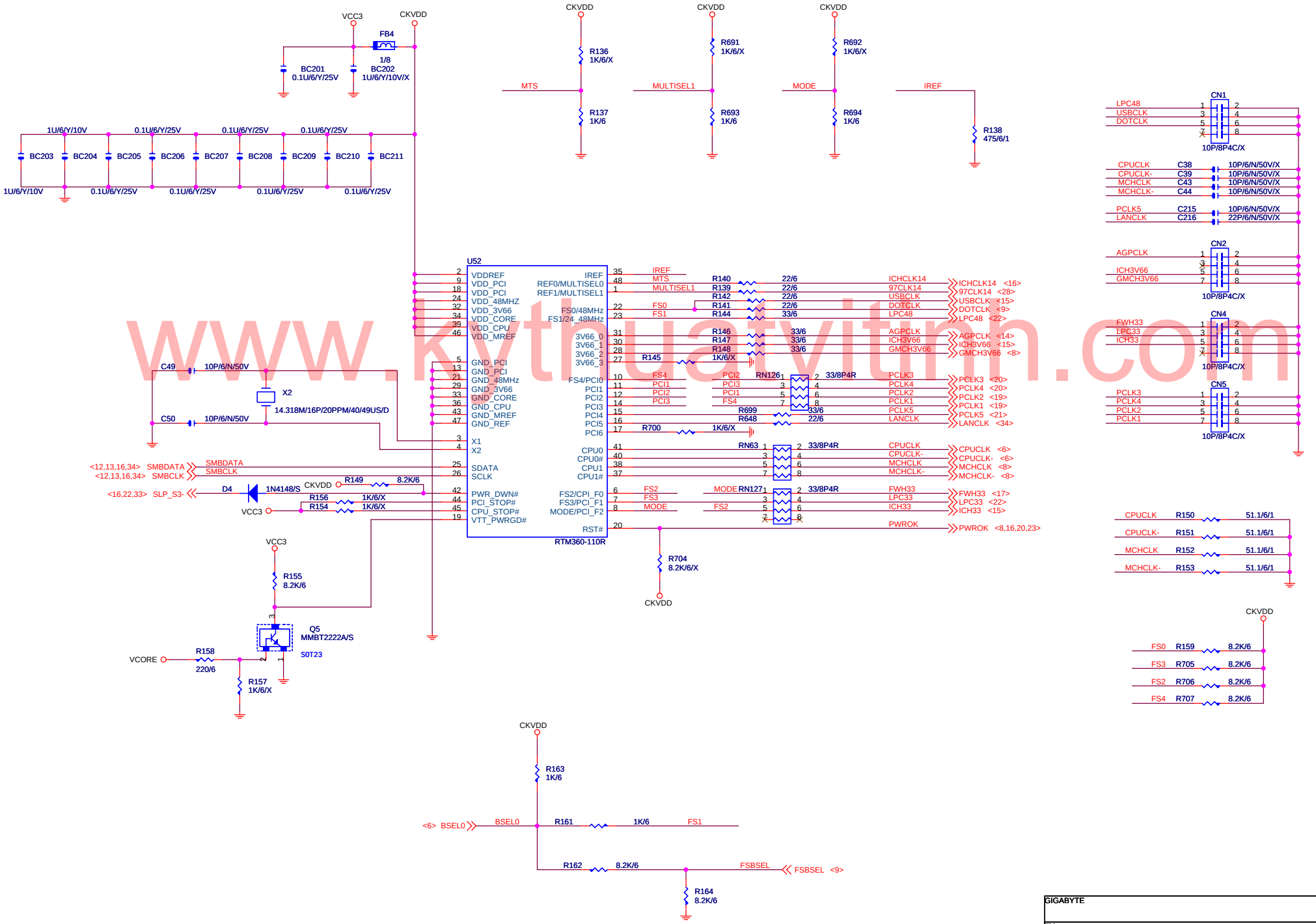

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Size: Custom	Document Number: 8I845GE775-G
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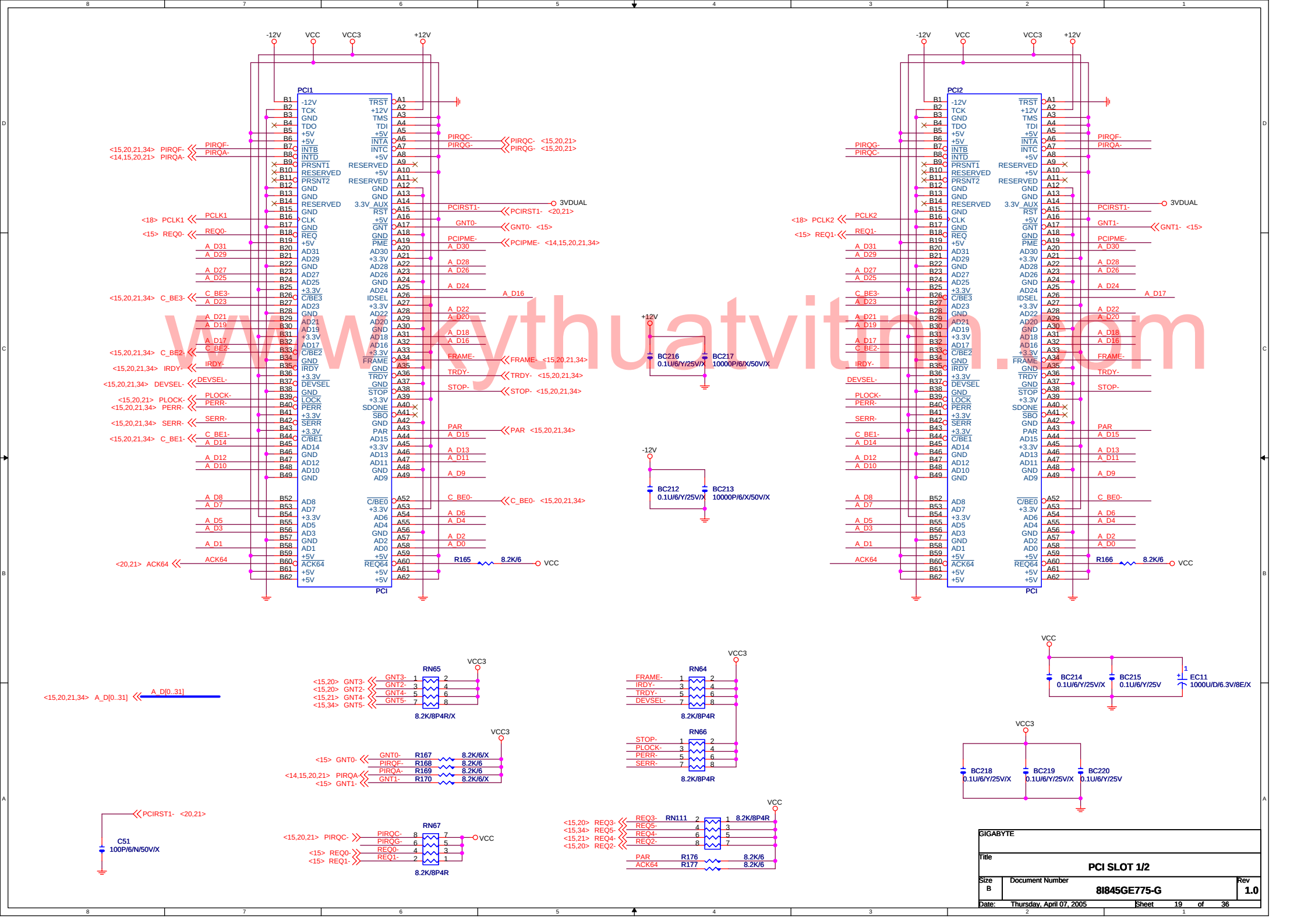

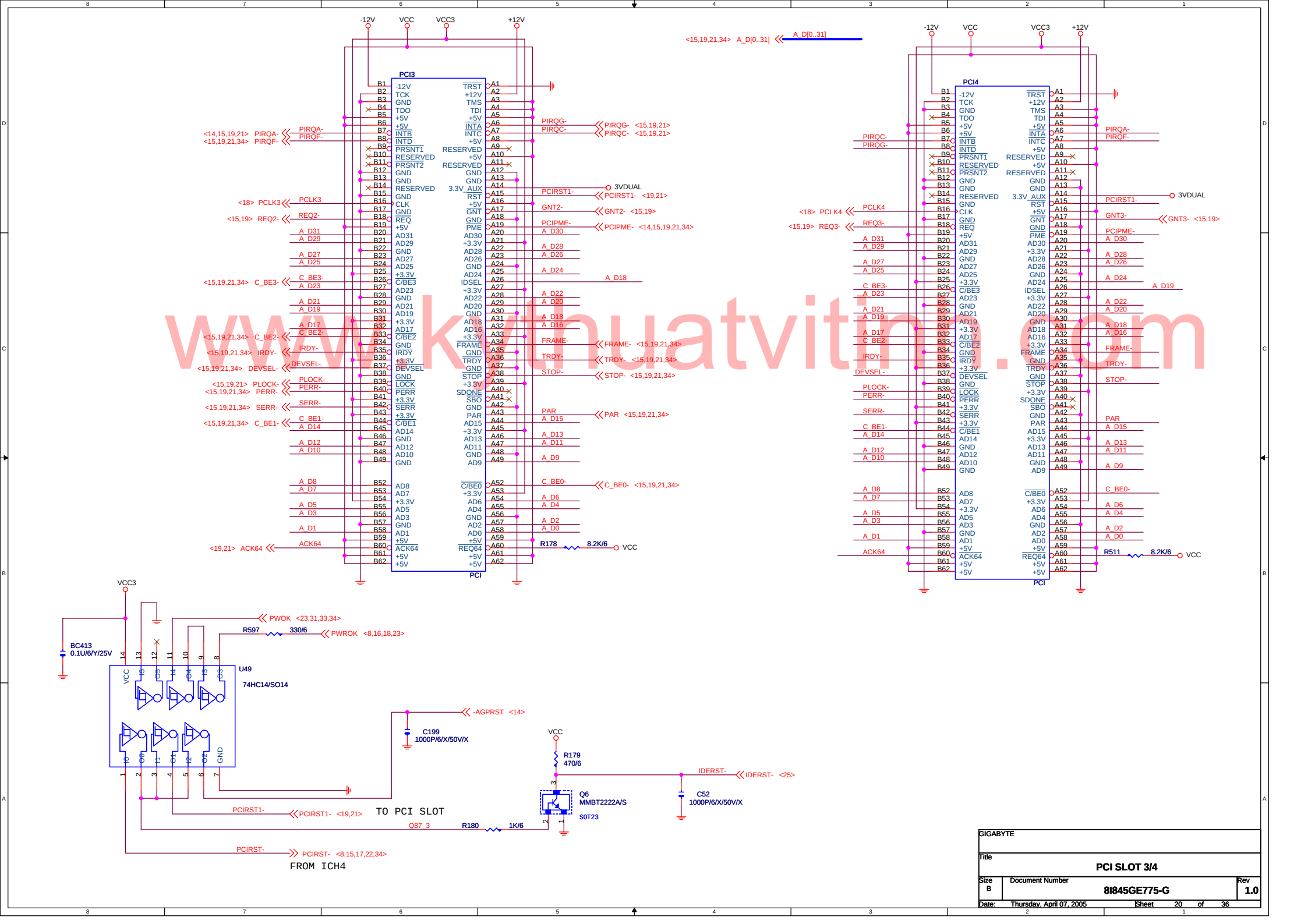

GIGABYTE	
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Size B	Document Number 8I845GE775-G
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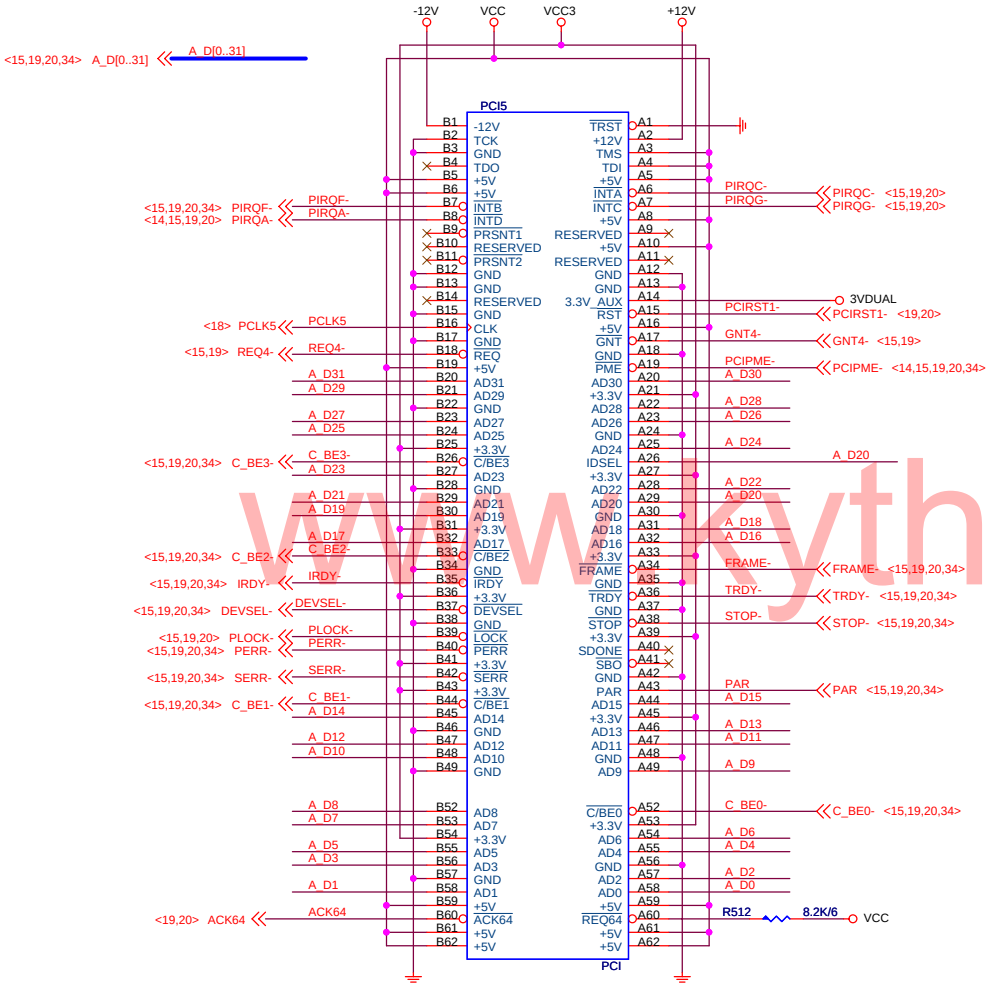

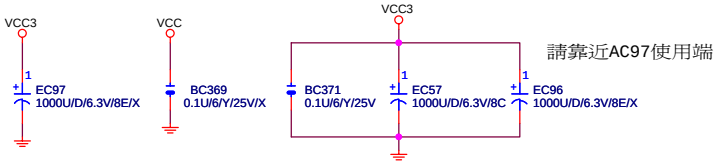

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Size: B	Document Number: 81845GE775-G	Rev: 1.0
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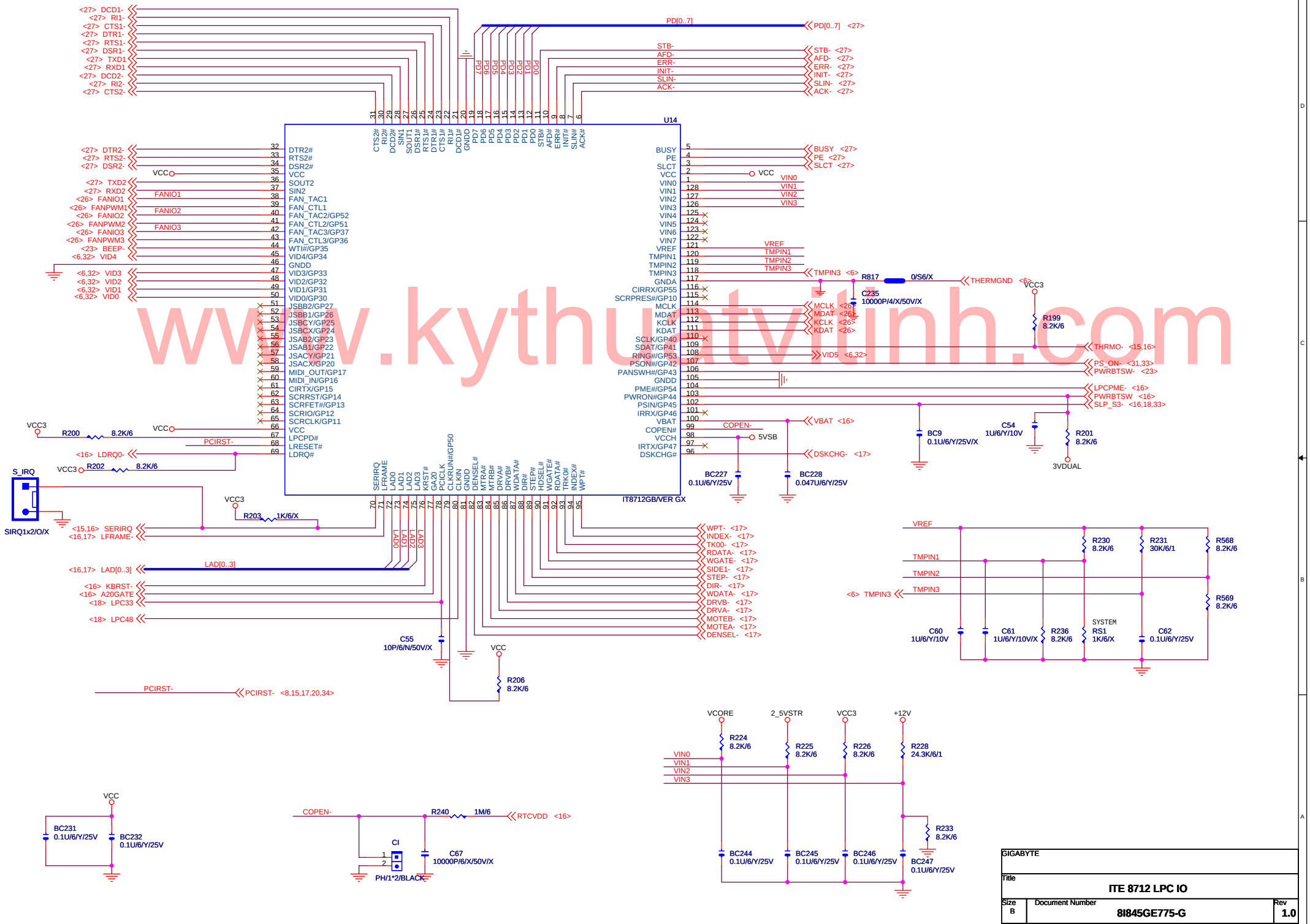

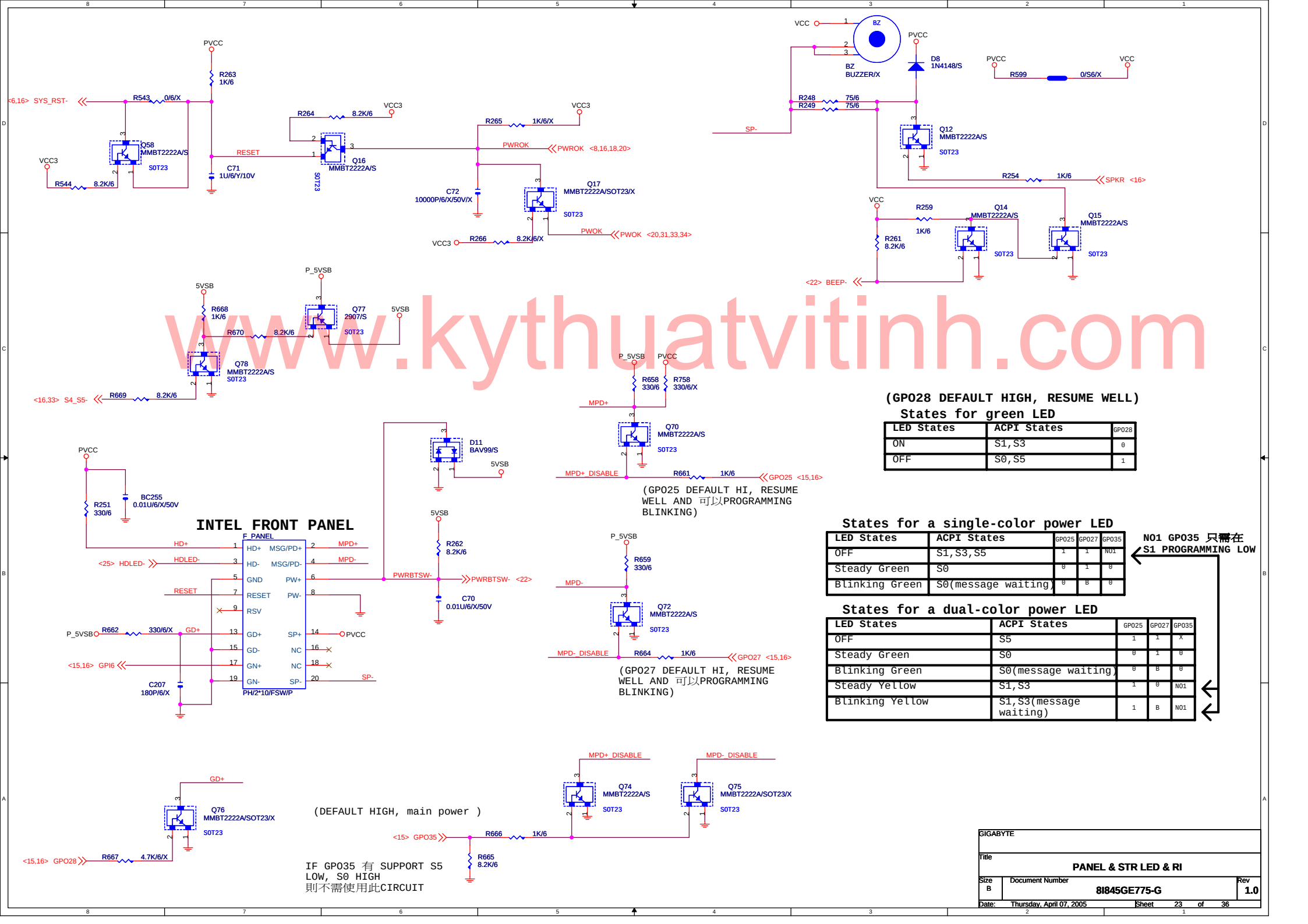

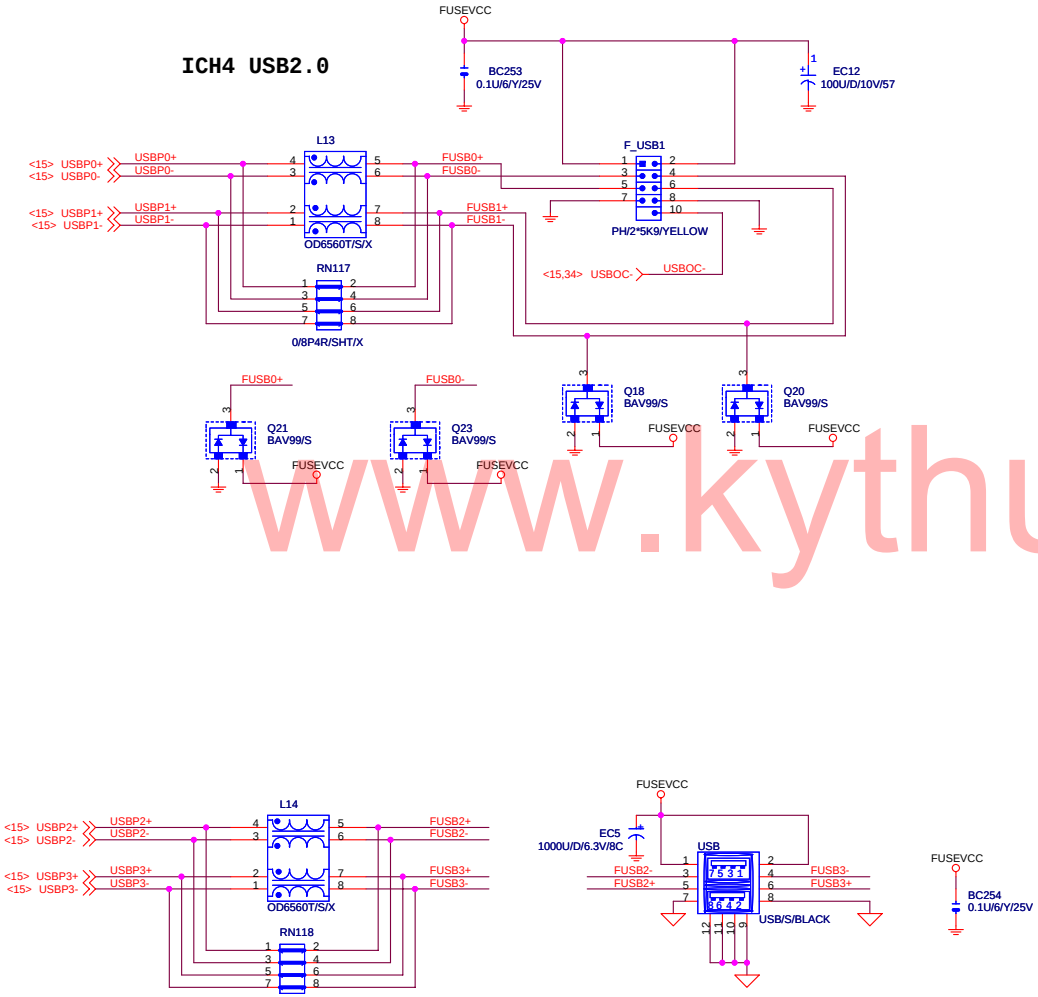

GIGABYTE		
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Size: Custom	Document Number: 8I845GE775-G	Rev: 1.0
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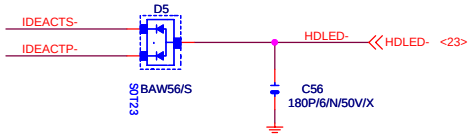
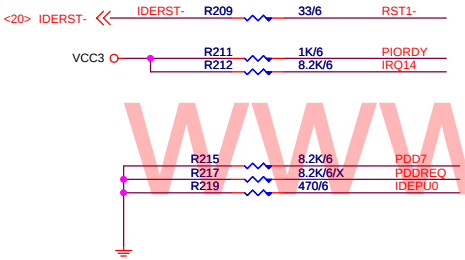
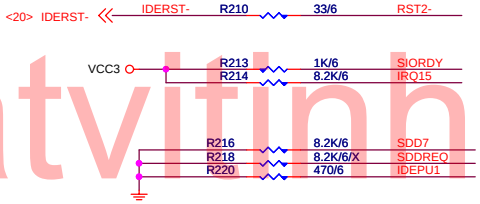
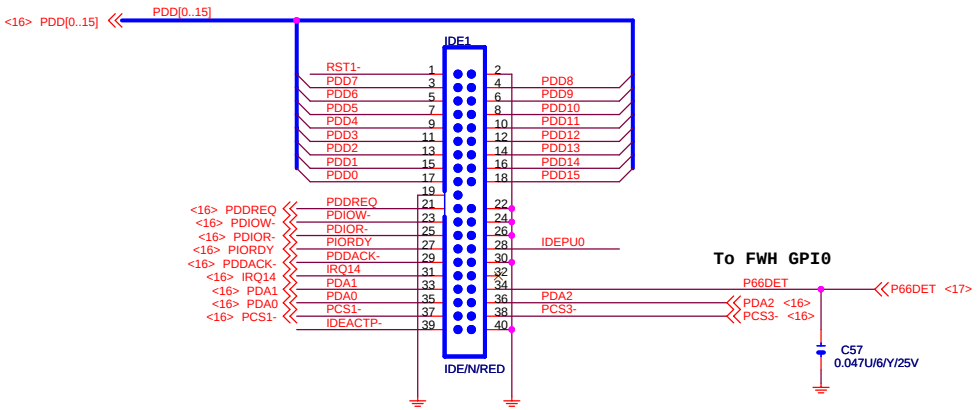


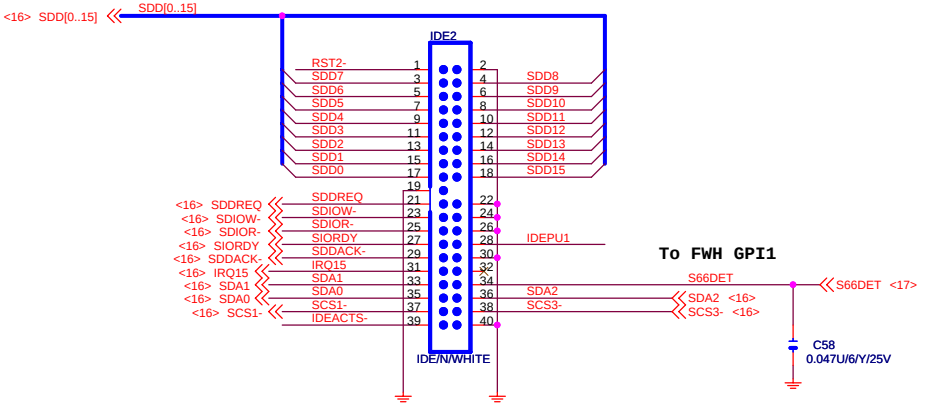




PRIMARY IDE CONNECTOR



SECONDARY IDE CONNECTOR



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Title: IDE CONNECTOR		
Size: B	Document Number: 8I845GE775-G	Rev: 1.0
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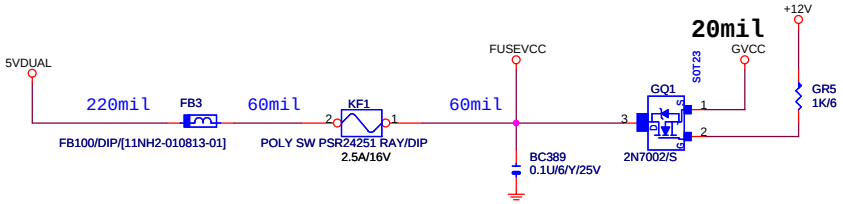
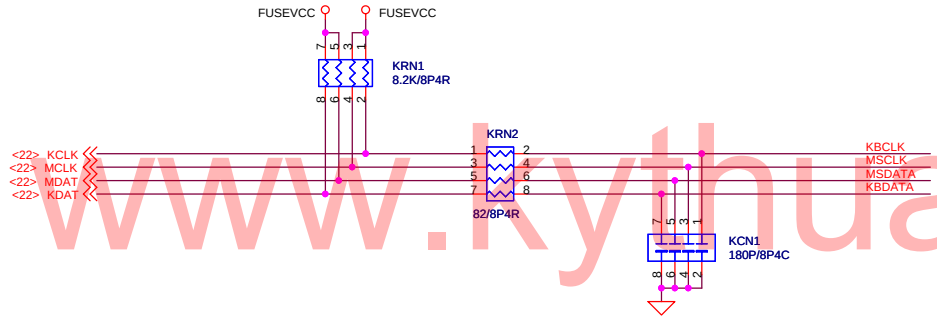
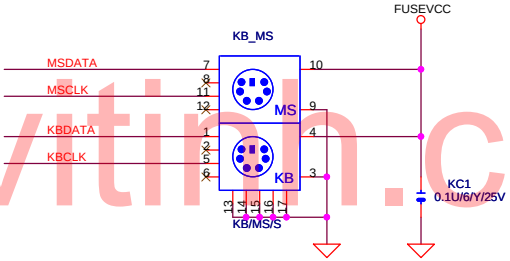
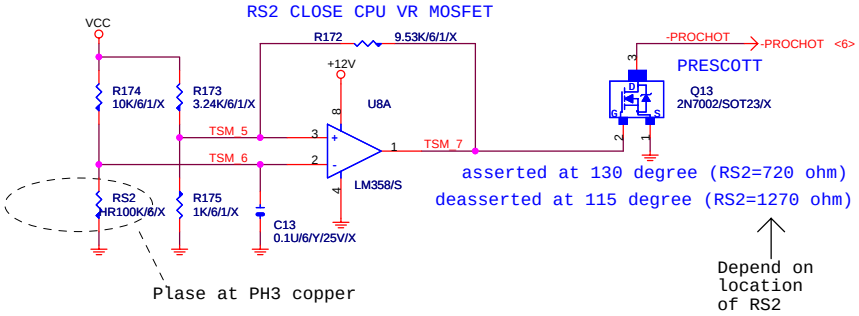


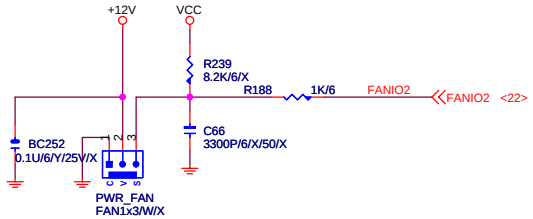




PROCESSOR HOT

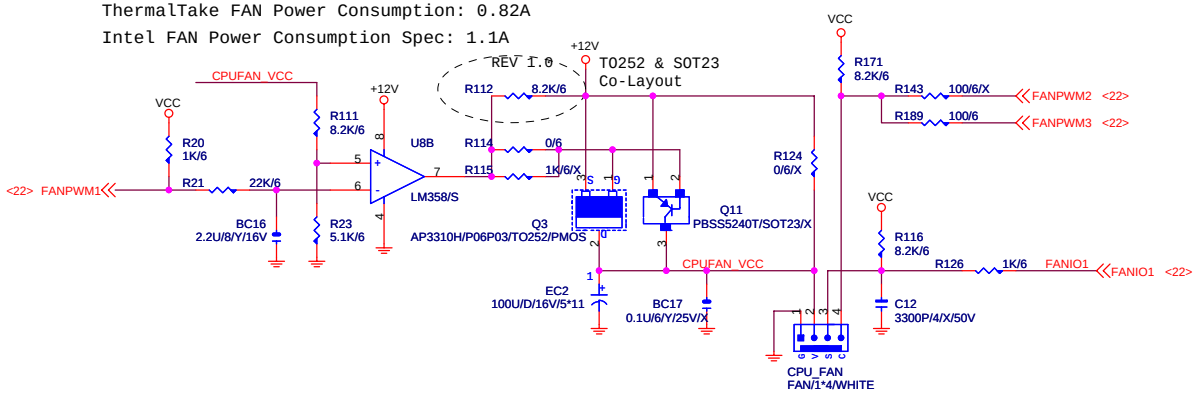
U-ATX PROCESSOR HOT NO POP

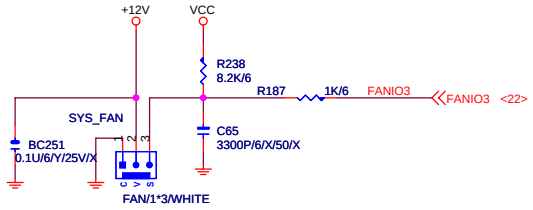




ThermalTake FAN Power Consumption: 0.82A

Intel FAN Power Consumption Spec: 1.1A





CPU_FAN PIN3,4 CO-LAYOUT

GIGABYTE		
Title: KB & PS2 MOUSE & IR		
Size: B	Document Number: 81845GE775-G	Rev: 1.0
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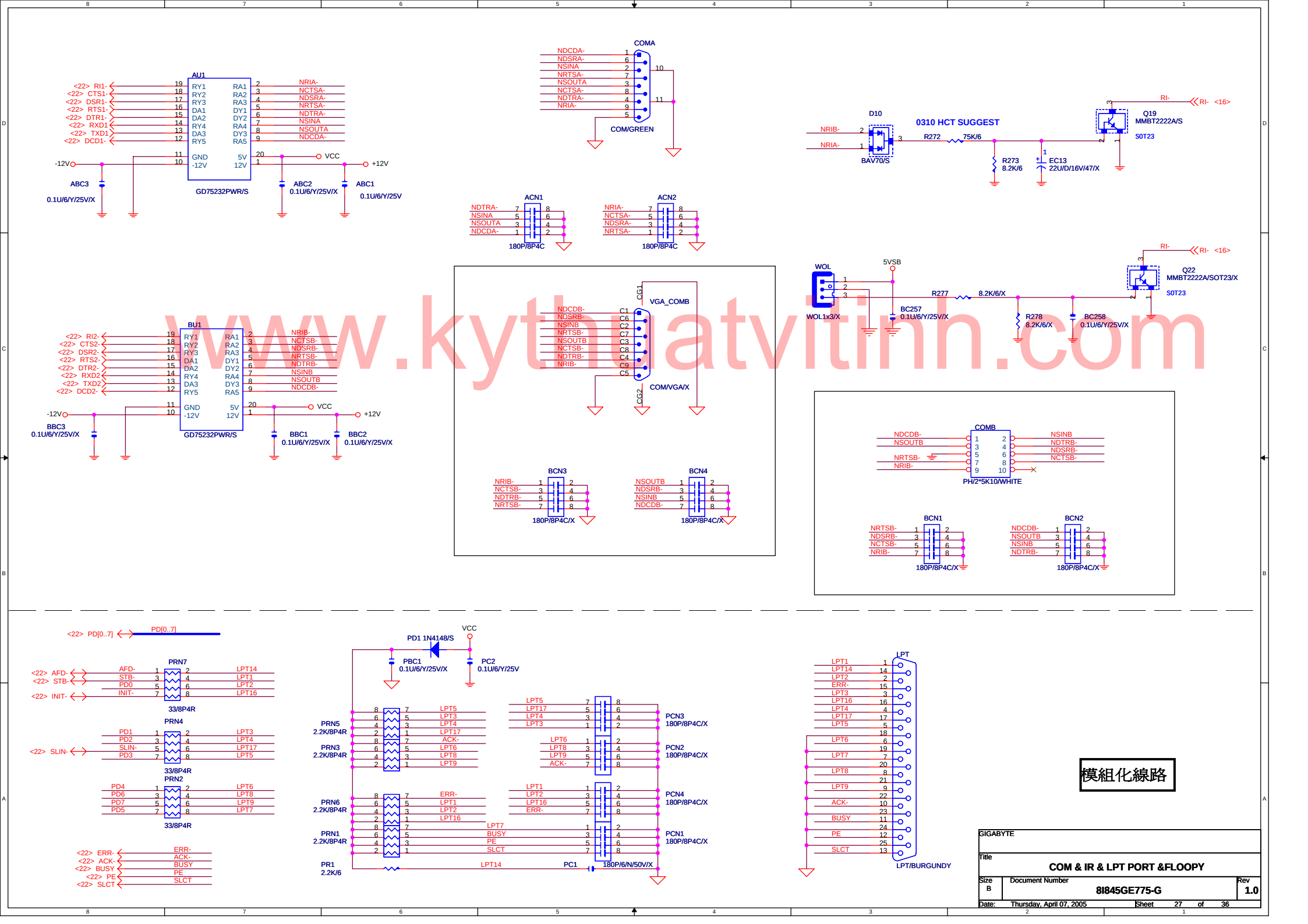
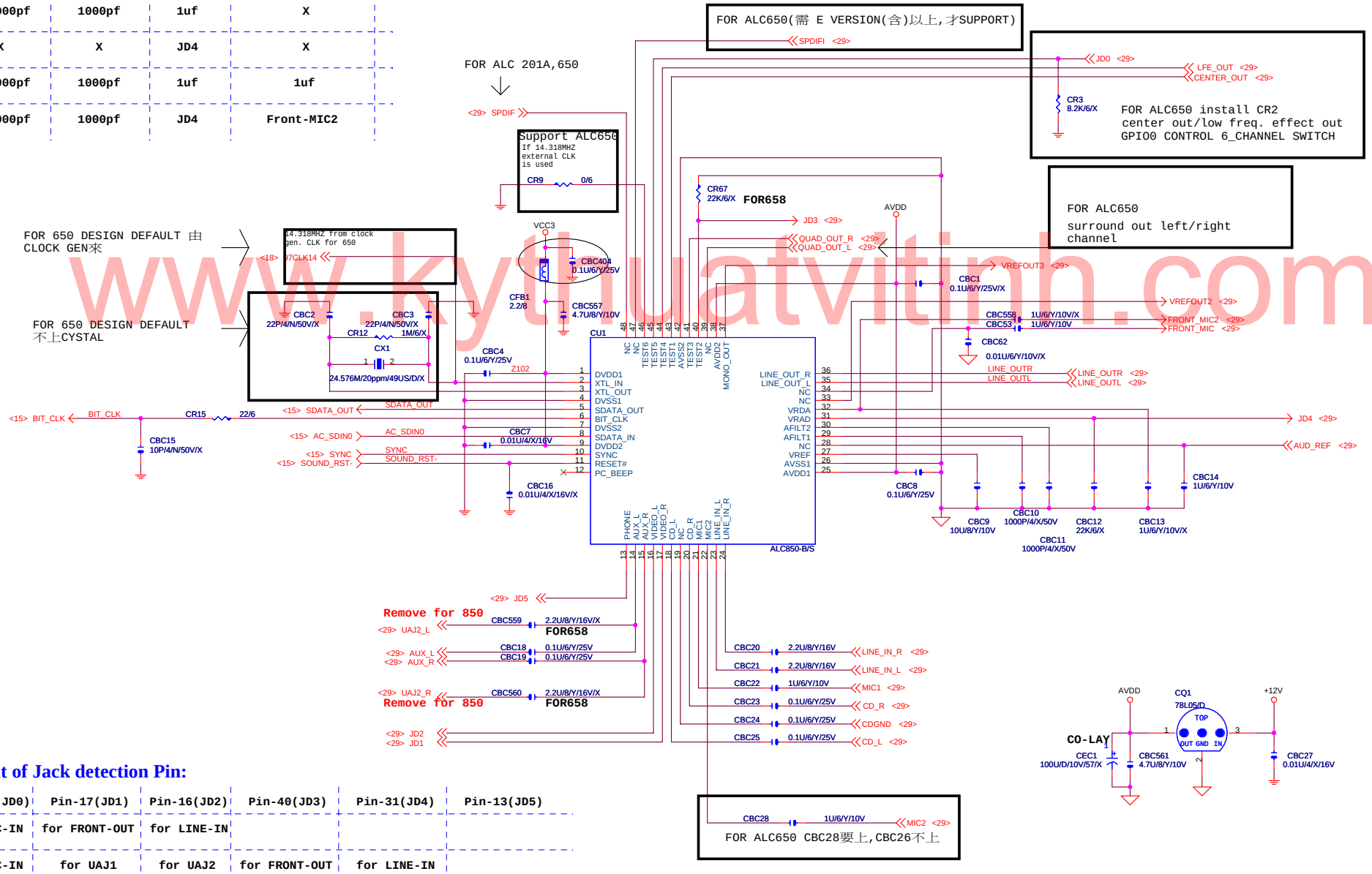


Filter Cap design:

	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
ALC850	1000pf	1000pf	JD4	Front-MIC2



Arrangement of Jack detection Pin:

	Pin-45(JD0)	Pin-17(JD1)	Pin-16(JD2)	Pin-40(JD3)	Pin-31(JD4)	Pin-13(JD5)
ALC655	for MIC-IN	for FRONT-OUT	for LINE-IN			
ALC658	for MIC-IN	for UAJ1	for UAJ2	for FRONT-OUT Exernal pull high is needed	for LINE-IN Exernal pull high is needed	
ALC850	for MIC-IN	for Front Pannel OUT	for Front Pannel IN	for FRONT-OUT	for LINE-IN	for SurrBack Out

GIGABYTE

Title: AC97 ALC850

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JDO,JD2,GPIO0 爲偵測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)

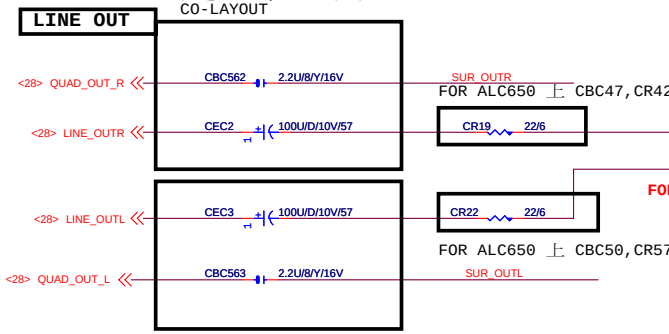
2x5 header for 850

For 850 if JD5 = low AUX-In is configued as input

For 850 if JD5 = high AUX-In is configued as output, Surr-Back out

LINE OUT

注意CBC47,CBC48不可
CO-LAYOUT

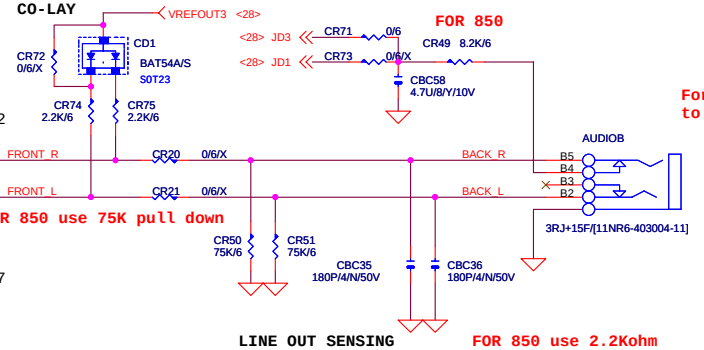


FOR ALC650 上 CBC47,CR42

FOR ALC650 上 CBC50,CR57

注意CBC49,CBC50不可
CO-LAYOUT

CO-LAY



FOR 850

FOR 850 use 75K pull down

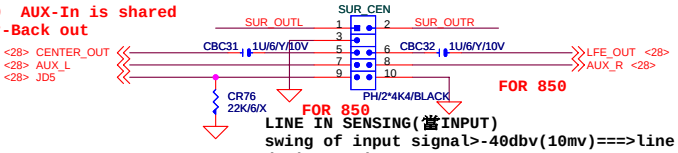
FOR 850 use 2.2Kohm

LINE OUT SENSING
R>4K OHM=>POWER SPEAKER
4K OHM>R>400
OHM=>MICROPHONE
R<400 OHM=>HEADPHONE

FOR SUPPORT 6 CHANNEL,
SURROUND OUT

CENTER OUT,LOW
FREQUENCY
EFFECT OUT

For 850 AUX-In is shared to Surr-Back out

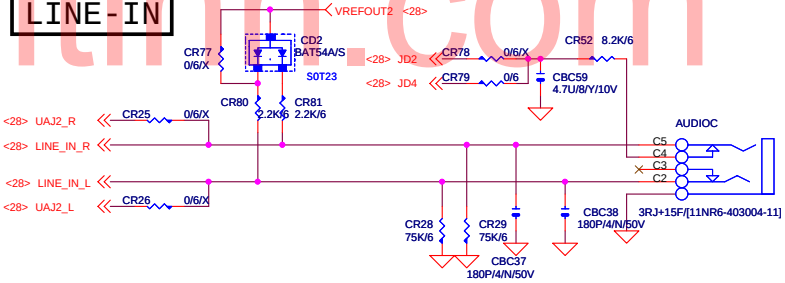


FOR 850

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

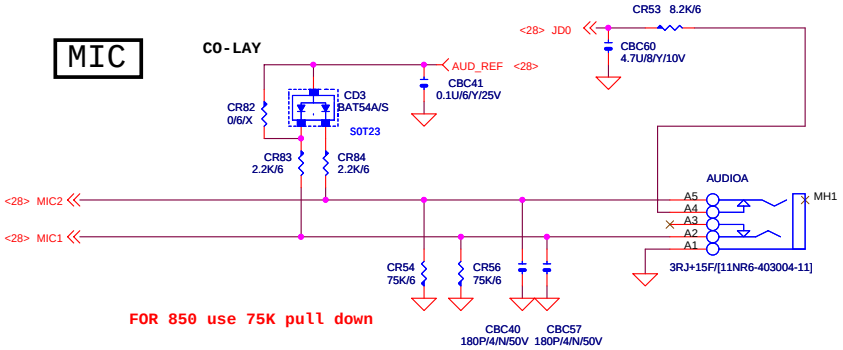
CO-LAY



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

MIC

CO-LAY

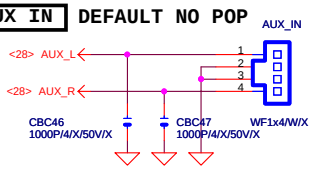


FOR 850 use 75K pull down

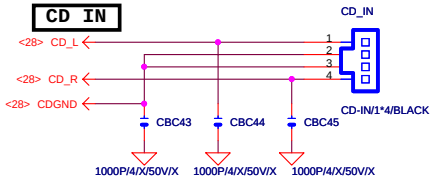
MICROPHONE IN SENSING(當INPUT)(利用vref 偏壓與CR43,CR32 並聯求出阻抗)
7.1k ohm>R>2.3k ohm===>microphone in
R<2.3k ohm or R>7.1k ohm===>unknown device

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

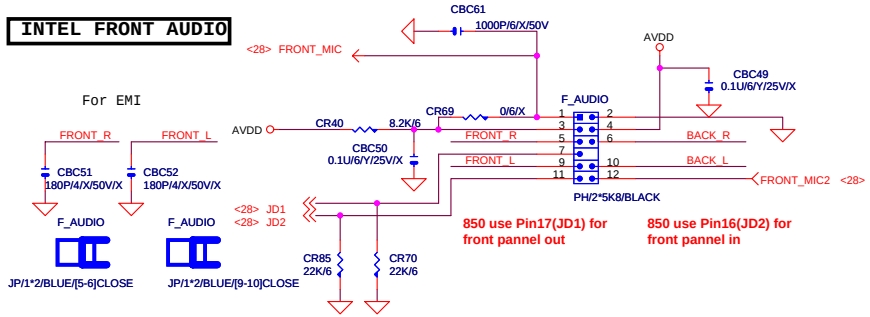
AUX IN DEFAULT NO POP



CD IN

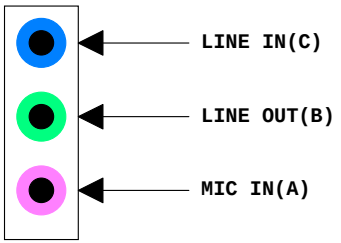


INTEL FRONT AUDIO



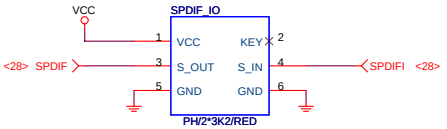
850 use Pin17(JD1) for front pannel out

850 use Pin16(JD2) for front pannel in



AUDIO PANEL

SPDIF



GIGABYTE

Title: AC97 OUTPUT,GAME PORT

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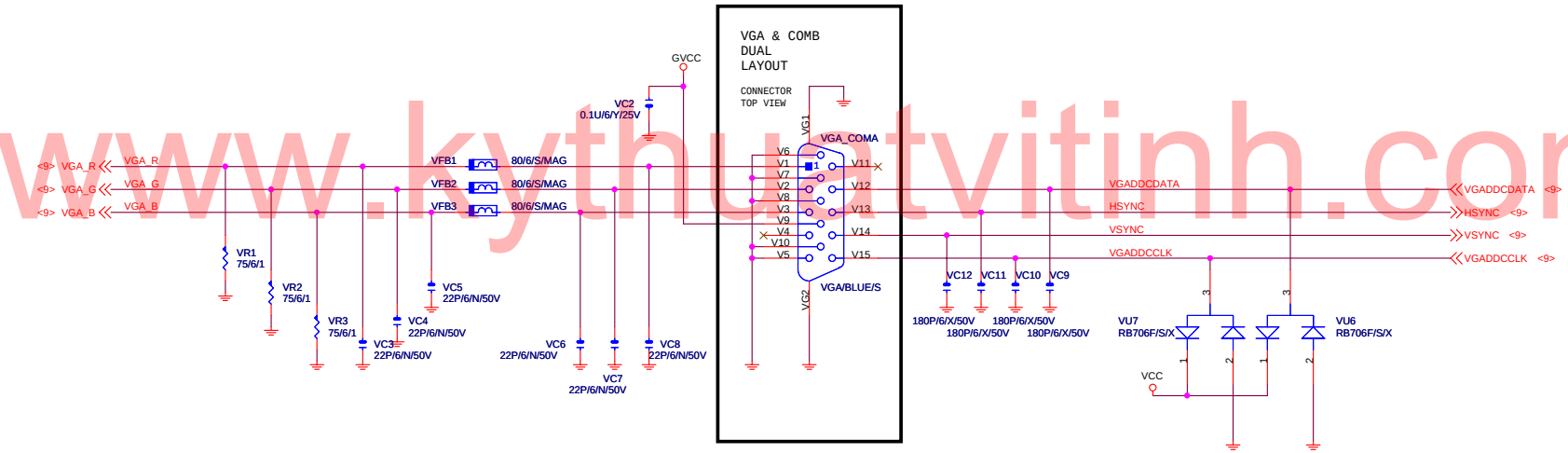

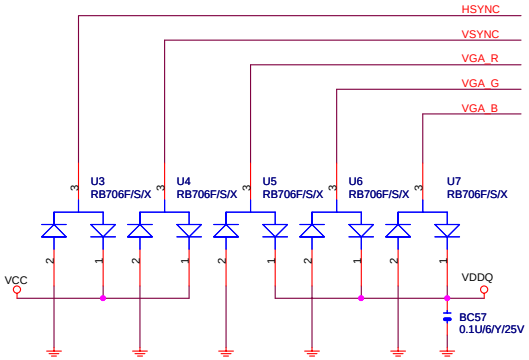

模組化線路

Title	VGA CONNECTOR	
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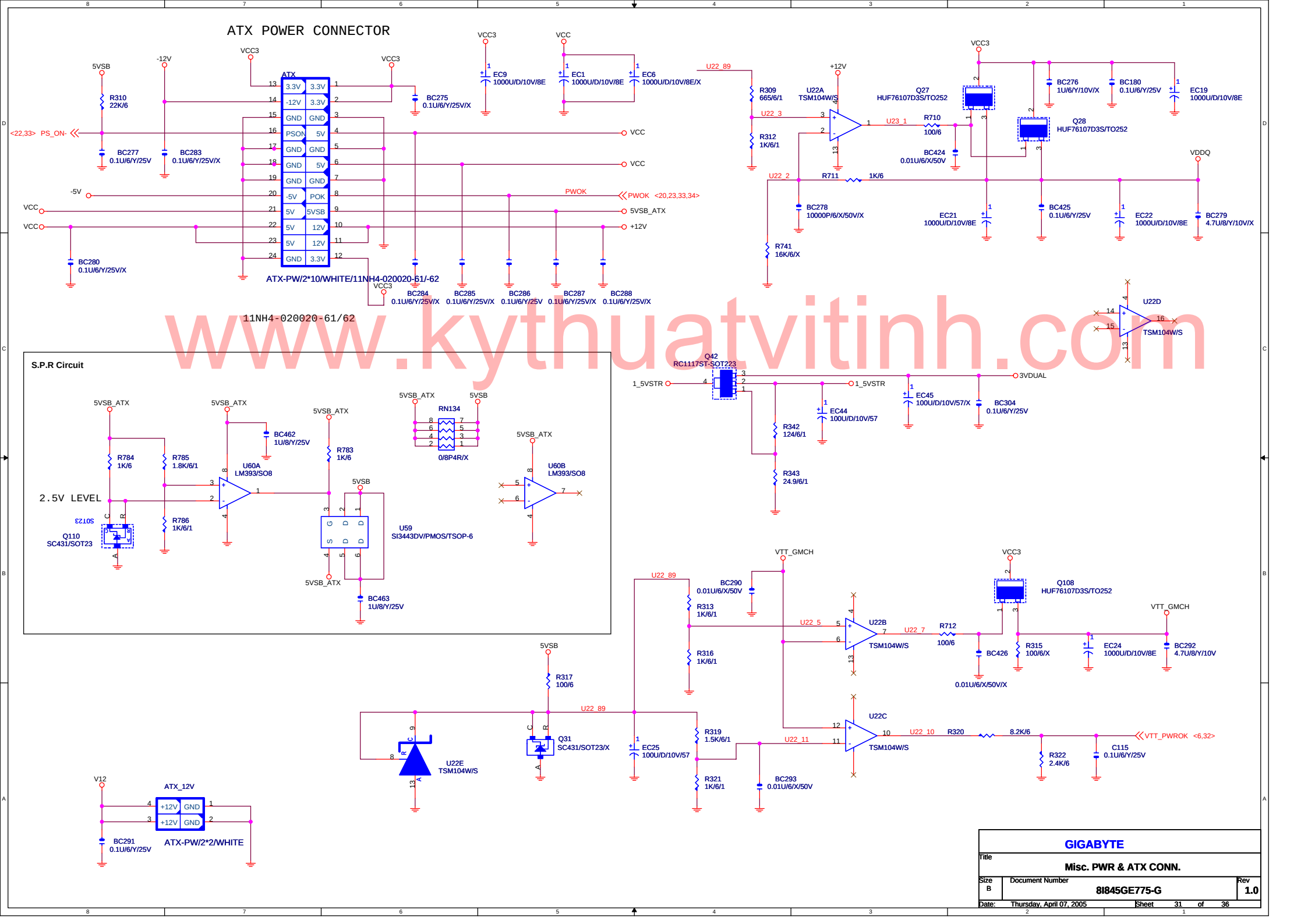

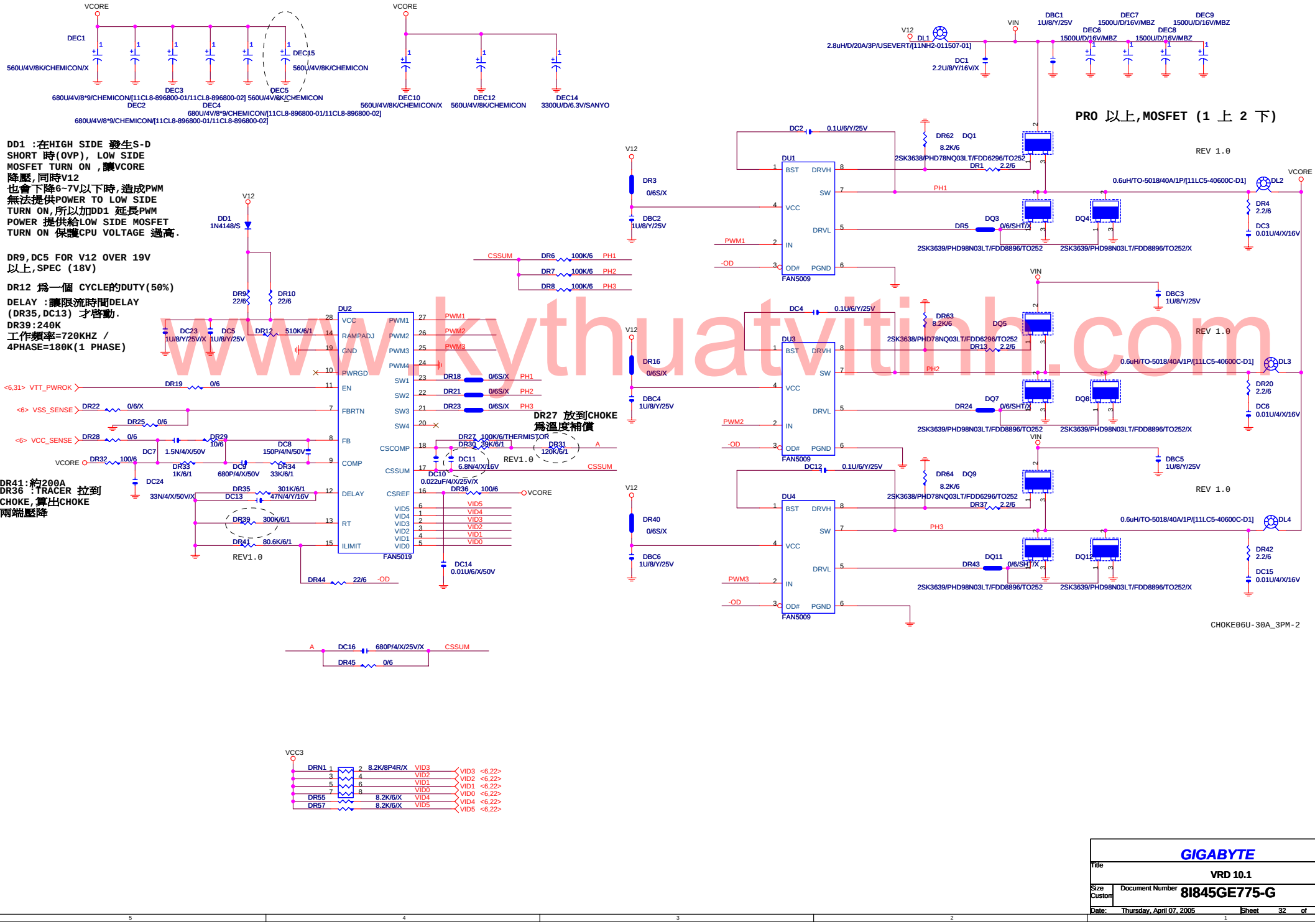

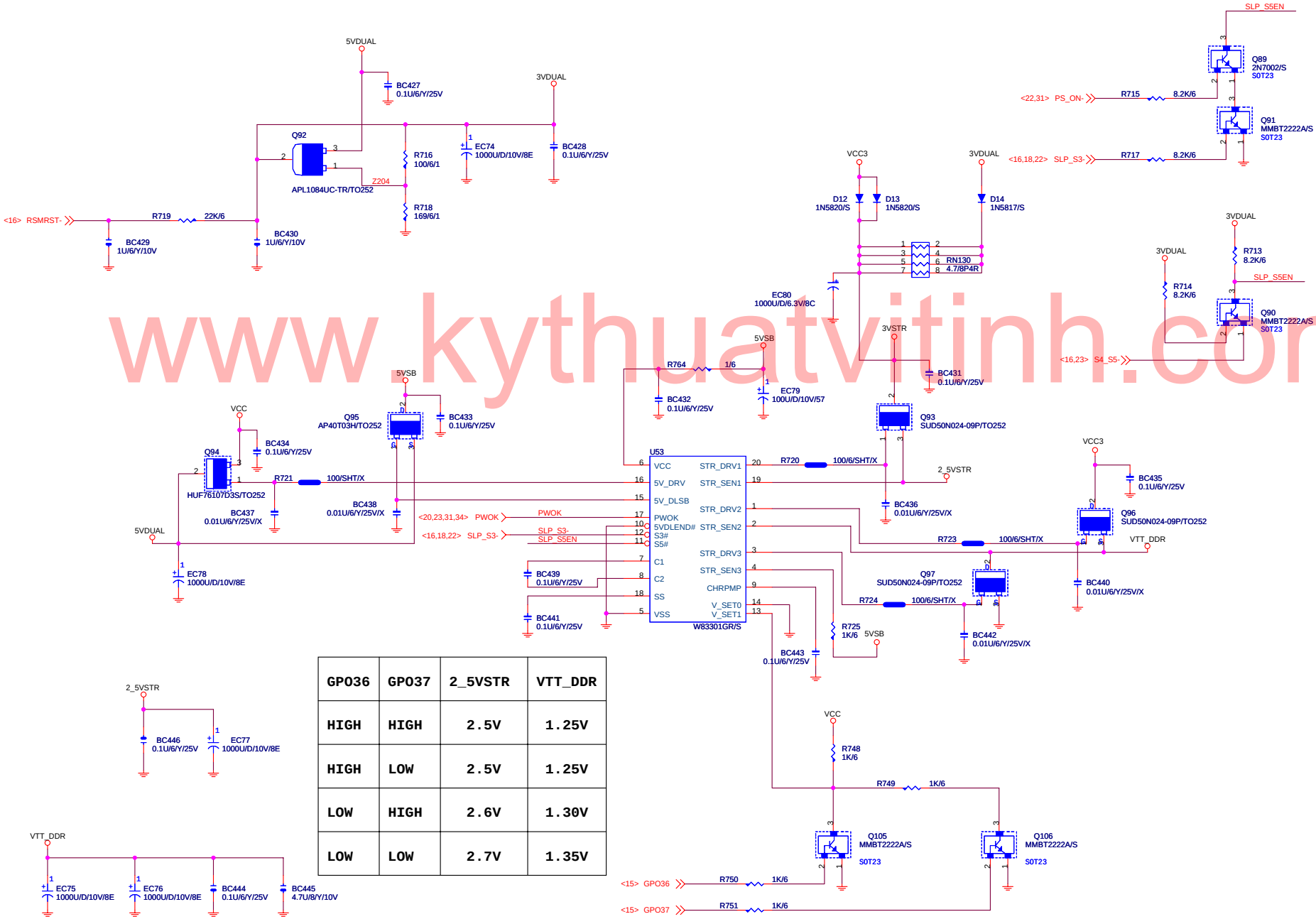

GPO36	GPO37	2_5VSTR	VTT_DDR
HIGH	HIGH	2.5V	1.25V
HIGH	LOW	2.5V	1.25V
LOW	HIGH	2.6V	1.30V
LOW	LOW	2.7V	1.35V

GIGABYTE

Title: DDR POWER

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	10/100 8100C	Giga 8110S	Giga 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

		Dual Color LED	
	Yellow	Green	Orange
10Mb	---	OFF	OFF
100Mb	---	ON	OFF
1Gb	---	OFF	ON
Link	ON	---	---
Active	Blink	---	---

LU1:
100M:RTL8100C
1G:RTL8110SB

LR15:
100M:5.9K/6/1
1G:2.49K/6/1

LR35:
100M:N/A
1G:0/6

FOR EMI

RTL8110S/S

LAN EEPROM

LBC28, LBC29:
100M:N/A
1G:0.01U/6

LR4:
93C46:N/A
93C56:8.2K/6

IDESEL 30
-REQ/-GNT(5)
-INTC

LBC23:
100M:N/A
1G:N/A

LR17:
100M:N/A
1G:0/6

LR26~LR29:
100M:N/A
1G:49.9/6/1

Spacing : at least 50 mils between each differential pair

Trace 8:7:8

LBC25:
100M:0.1U/6
1G:0/6

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

LR22, LR23, LBC26 Close to Lan Chip
Realtek suggestion (TX+, TX-).

LR24, LR25, LBC27 Close to Lan Chip
Realtek Suggestion (RX+, RX-).

POWER DECOUPLING CAP.

LFB1:
100M:N/A
1G:0/8

LR16:
100M:N/A
1G:0/8

LFB2:
100M:0/8
1G:N/A

LFB3:
100M:0/8
1G:N/A

LQ3:
100M:2N2907A
1G:N/A

DVDD:
100M:2.5V
1G:1.8V

SOT89
Package

LQ1:
100M:N/A
1G:2SB1132

For RTL8100S

For RTL8100SB

USB

UEC1 要靠近USB_PORT的FUSEVCC

USB_LAN

For EMI

For 8100C

For 8110S

Close to USB_Lan

GIGABYTE			
Title	LAN RTL8100C		
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Revision : 0.1

GIGABYTE GA-8I845GE775-G PCI ROUNTING LIST

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-	
PCI SLOT4	19	A,C,F,G	PCLK4	REQ3-	GNT3-	
PCI SLOT5	20	C,F,G,A	PCLK5	REQ4-	GNT4-	
LAN	21	F	LANCLK	REQ5-	GNT5-	

GIGABYTE

Title: PCI ROUNT LIST

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Revision 1.0

GIGABYTE GA-8I845GE775-G GPIO LIST

SHEET		TITLE
GPI		
GPI0/REQA-		PULL DOWN 15K, detect IDE1 connector type.
GPI1/REQ5-		PULL DOWN 15K, detect IDE2 connector type.
GPI2/PIRQE-		PULL 8.2K TO VCC3
GPI3/PIRQF-		PULL 8.2K TO VCC3
GPI4/PIRQG-		PULL 8.2K TO VCC3
GPI5/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		
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, POWER LED CONTROL.
GPO26		NOT IMPLEMENTED
GPO27		PULL 8.2K TO 3VDUAL, POWER LED CONTROL.
GPO28		PULL 8.2K TO 3VDUAL,GREEN LED.
GPO32		PULL 8.2K TO 3VDUAL,BIOS WRITE PROTECT.
GPO35		PULL DOWN 10K, POWER LED CONTROL.

GIGABYTE

Title: GPIO LIST

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