GIGABYTE 8I865GVME Schematics

Revision 1.0

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01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04~07	CPU LGA478
08	SPRINGDALE HOST
09	SPRINGDALE DDR
10	SPRINGDALE AGP, HUB, CSA, VGA
11	SPRINGDALE PWR
12	DDR1,2 CHANNEL A
13	DDR3,4 CHANNEL B
14	DDR TERMINATION
15	AGU SLOT
16	ICH5 PCI, USB, HUB, LAN
17	ICH5 IDE, GPIO, SATA, CTRL
18	ICH5 VCC, GND
19	FWH-BIOS
20	ICS952603 CLOCK GENERATOR
21	PCI SLOT1/SLOT2
22	PCI SLOT3,RESET
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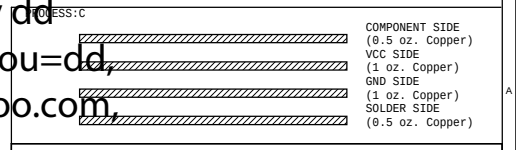
24	IDE
25	COM,LPT,FDD

SHEET	TITLE
26	KB,MS
27	USB CONN
28	AC97 ALC655
29	AUDIO JACK
30	FRONT PANEL
31	POWER,CPU_FAN
32	VCORE PWM
33	ATX POWER
34	DDR POWER
35	LAN RTL8100C
36	PCI ROUTING LIST
37	GPIO LIST

Digitally signed by dd
DN: cn=dd, o=dd, ou=dd, email=dddd@yahoo.com, c=US
Date: 2009.11.05 19:39:41 +07'00'



GIGABYTE

Title: COVER SHEET

Size	Document Number	Rev
Custom	GA-8I865GVME	1.0

Date: Sheet 1 of 35

Model Name: 8I865GVME

REV 1.0

Component history

2004/12/15

Date	Change Item	Reason
05/12	9M8I865GVME-00-01	
1.0A	1. ADD CLR_CMOS 1X2	
	2. CR101,CR102,CR108,CR109,CR112,CR113 REMOVE 22K/6 FOR POP NOISE	
	3. PROCHOT- , R1450 1.07K --> 1.58K , R1448 9.53K --> 8.06K	
	4. REMOVE CPU THERMAL BC509,BC510 1N/4/X/50V	
	5. CPU VCORE LOAD-LINE R1058 5.1K-->4.7K,R829 7.5K-->10K	
	6. VCCVID C3 1U/6 --> 10U/8	
	7. ADD VCORE , DDR25V OVER VOLTAGE	
	8. Add EC102 1000u/D/6.3V/10V	
	9. U5 CHANGE TO FW82801EB-A3/S/[10HB1-032801-FE]	
	10. L6 CHANGE TO 0805	
	11. VCORE R830=47K REMOVE 1.42V --> 1.37V	
	12. LAN_DIS R1481=22K/6 , R1482=22K/6 REMOVE	
10B-0623	1. N/B HEAT SINK CHANGE TO COST-DOWN 料號	

Circuit or PCB layout history

Date	Change Item	Reason
0.1	1. 8I865GVME Rev0.1 EVT	
1.0	1. N/B PIN1 標示移至定位孔外面	
	2. BAT R573 --> RB並移至BAT SOCKET外面	
	3. VCCVID C3 1U/6 --> 10U/8	

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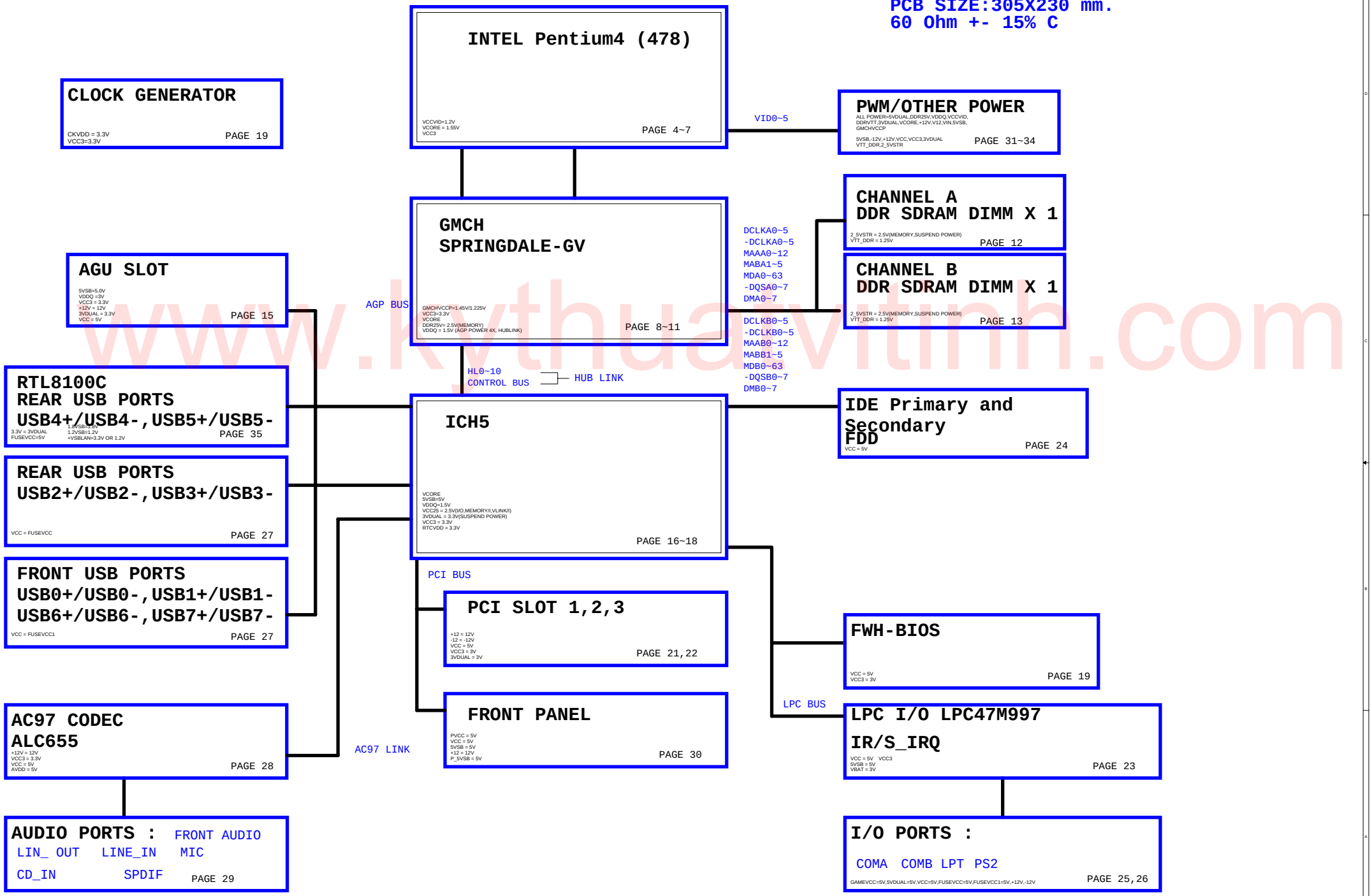
Title: BOM & PCB MODIFY HISTORY

Size: Custom | Document Number: GA-8I865GVME | Rev: 1.0

Date: | Sheet 2 of 35

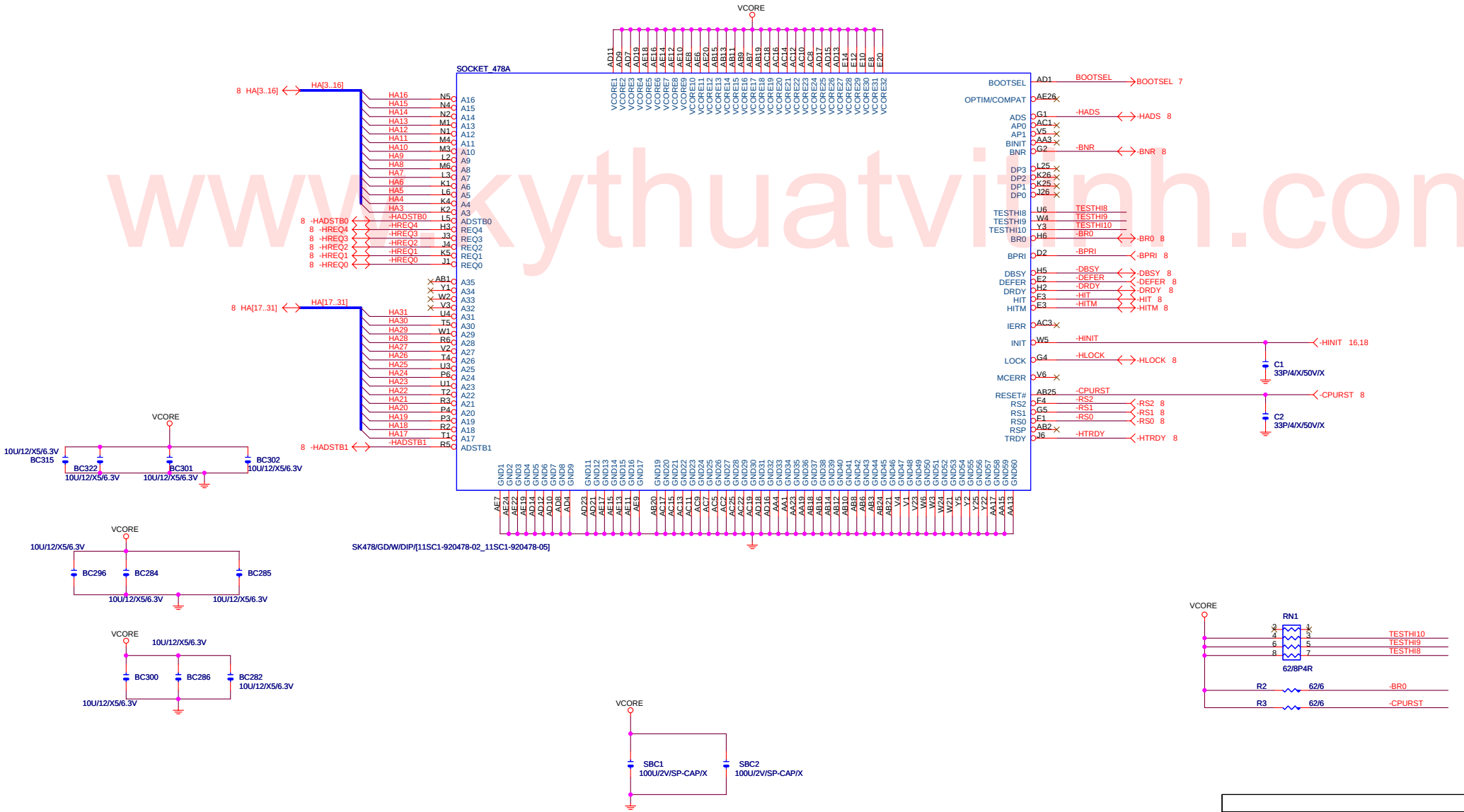
BLOCK DIAGRAM

PCB SIZE:305X230 mm.
60 Ohm +- 15% C



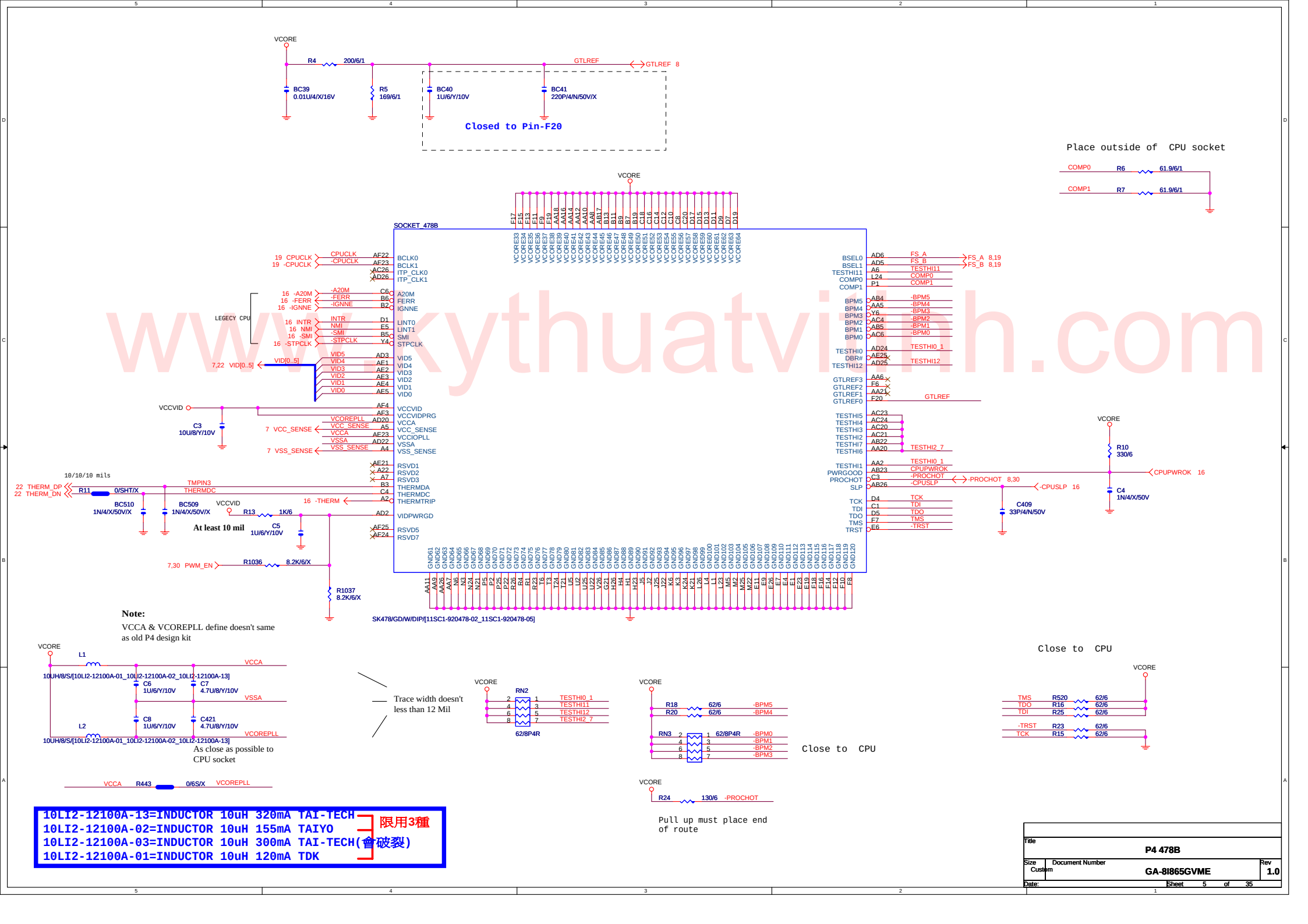
GIGABYTE

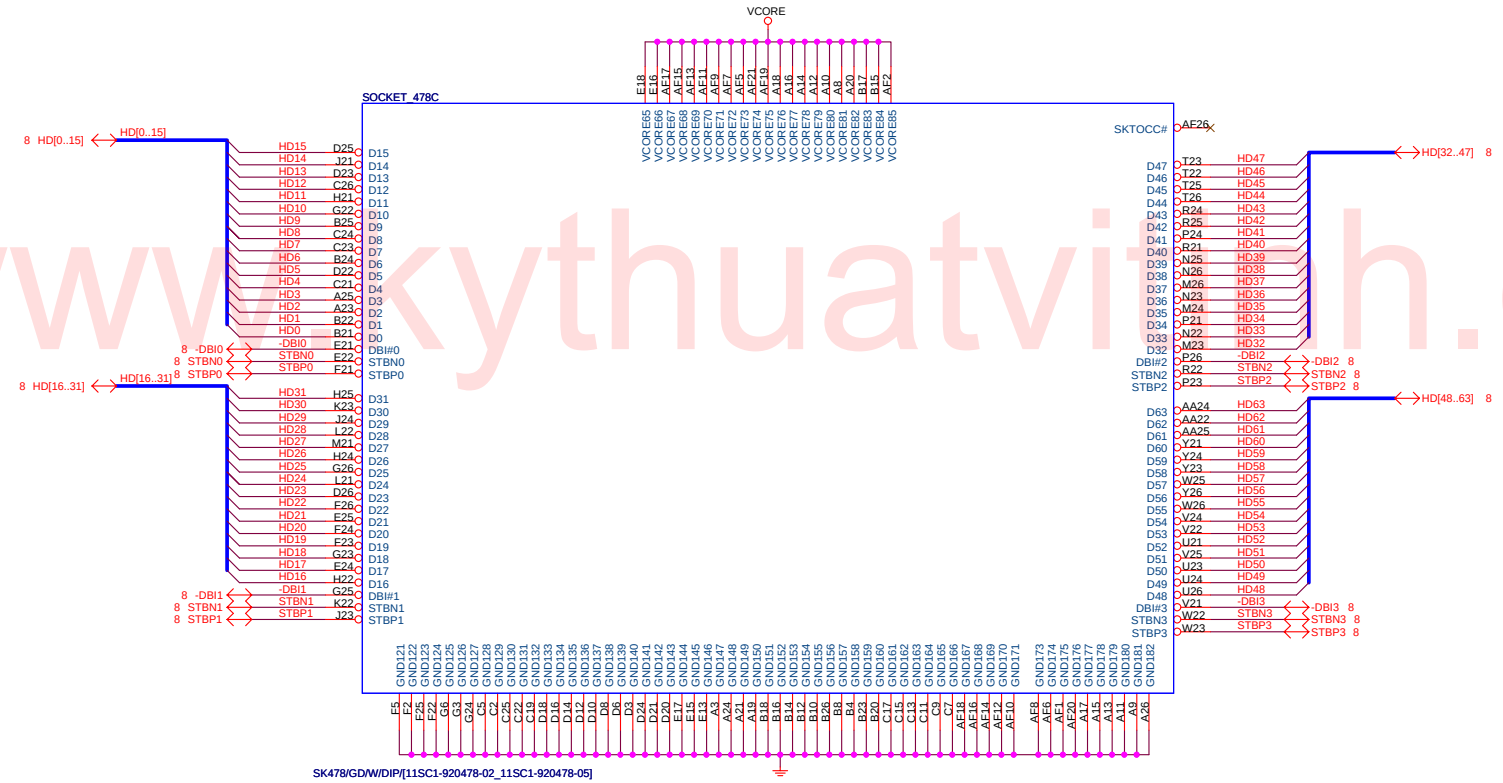
Title	BOM & PCB MODIFY HISTORY	
Size: Custom	Document Number: GA-8I865GVME	Rev: 1.0
Date:	Sheet 3 of 35	



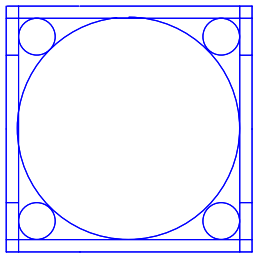
CAP place at (D14,D15) solder side

Title	P4 478A	
Size: Custom	Document Number: GA-8I865GVME	Rev: 1.0
Date:	Sheet 4 of 35	

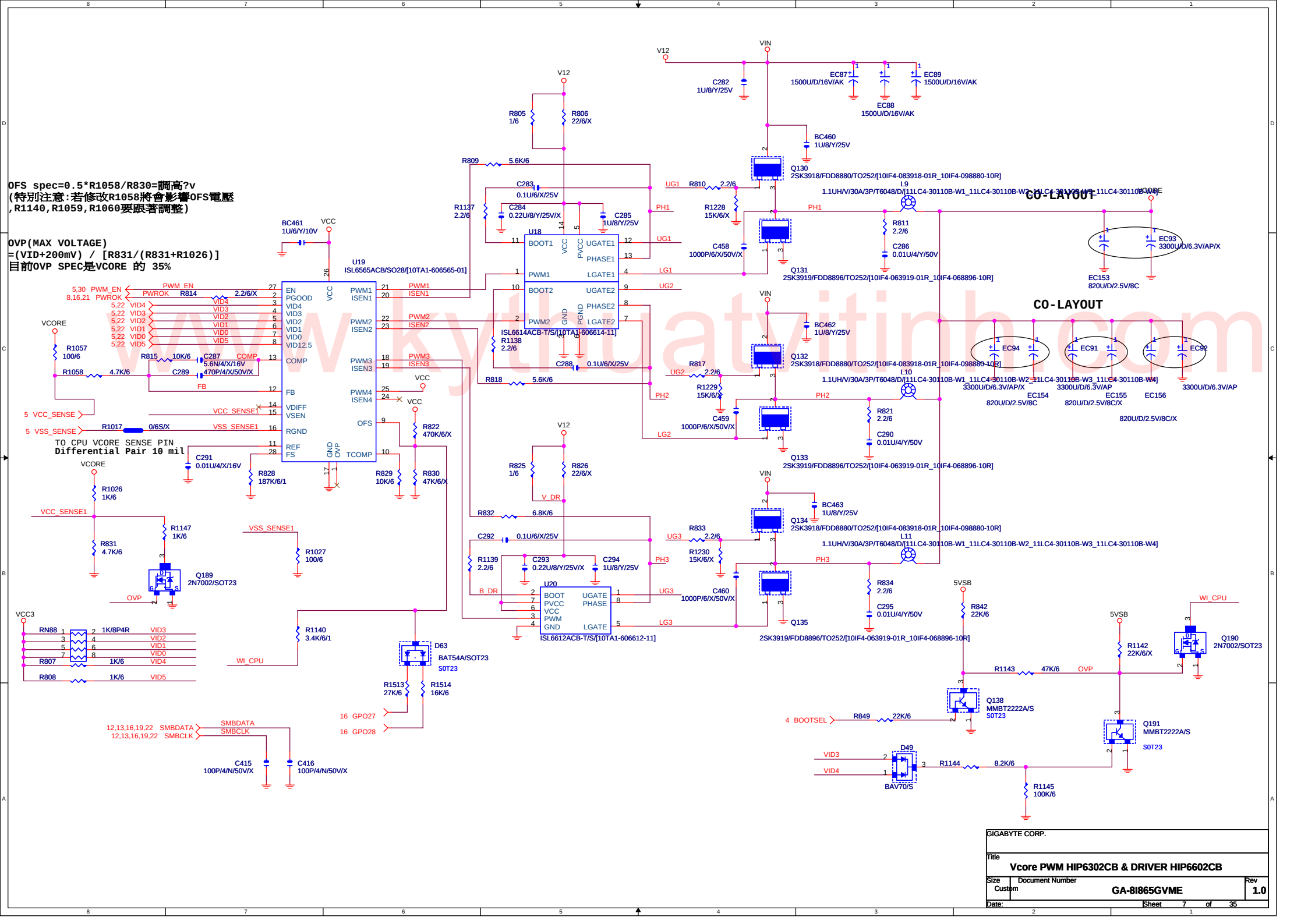




CR1
CPU_RM/BLACK/[12KRC-040003-31_12KRC-040003-32_12KRC-040003-3A]



Title	P4 478C	
Size: Custom	Document Number: GA-8I865GVME	Rev: 1.0
Date:	Sheet 6 of 35	


OFS spec=0.5*R1058/R830=調高?v
(特別注意:若修改R1058將會影響OFS電壓
,R1140,R1059,R1060要跟著調整)
OVP(MAX VOLTAGE)
=(VID+200mV) / [R831/(R831+R1026)]
目前OVP SPEC是VCORE 的 35%
CO-LAYOUT
CO-LAYOUT
TO CPU VCORE SENSE PIN
Differential Pair 10 mil
U19
ISL6565ACB/SO28/[10TA1-606565-01]
U18
ISL6614ACB-T/S/[10TA1-606614-11]
U20
ISL6612ACB-T/S/[10TA1-606612-11]
Q130
2SK3918/FDD8880/TO252/[10IF4-083918-01R_10IF4-098880-10R]
Q131
2SK3919/FDD8896/TO252/[10IF4-063919-01R_10IF4-068896-10R]
Q132
2SK3918/FDD8880/TO252/[10IF4-083918-01R_10IF4-098880-10R]
Q133
2SK3919/FDD8896/TO252/[10IF4-063919-01R_10IF4-068896-10R]
Q134
2SK3918/FDD8880/TO252/[10IF4-083918-01R_10IF4-098880-10R]
Q135
2SK3919/FDD8896/TO252/[10IF4-063919-01R_10IF4-068896-10R]
L9
1.1UH/V/30A/3P/T6048/D/[11LC4-30110B-W1_11LC4-30110B-W2_11LC4-30110B-W3_11LC4-30110B-W4]
L10
1.1UH/V/30A/3P/T6048/D/[11LC4-30110B-W1_11LC4-30110B-W2_11LC4-30110B-W3_11LC4-30110B-W4]
L11
1.1UH/V/30A/3P/T6048/D/[11LC4-30110B-W1_11LC4-30110B-W2_11LC4-30110B-W3_11LC4-30110B-W4]
Q189
2N7002/SOT23
Q190
2N7002/SOT23
Q138
MMBT2222A/S
SOT23
Q191
MMBT2222A/S
SOT23
D63
BAT54A/SOT23
S0T23
D49
BAV70/S
RN88
1K/8P4R
GIGABYTE CORP.
Title
Vcore PWM HIP6302CB & DRIVER HIP6602CB
Size
Custom
Document Number
GA-8I865GVME
Rev
1.0
Date:
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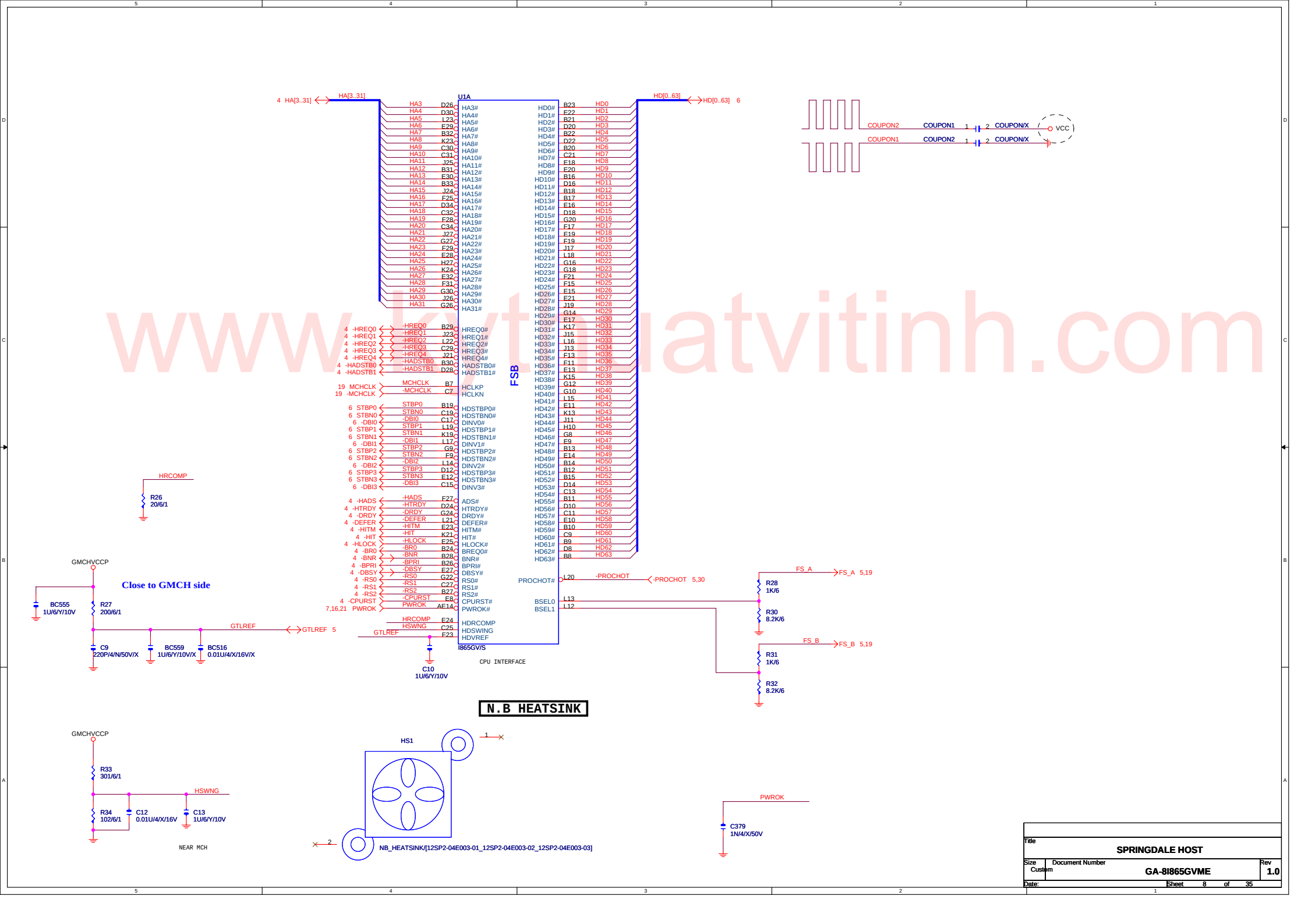
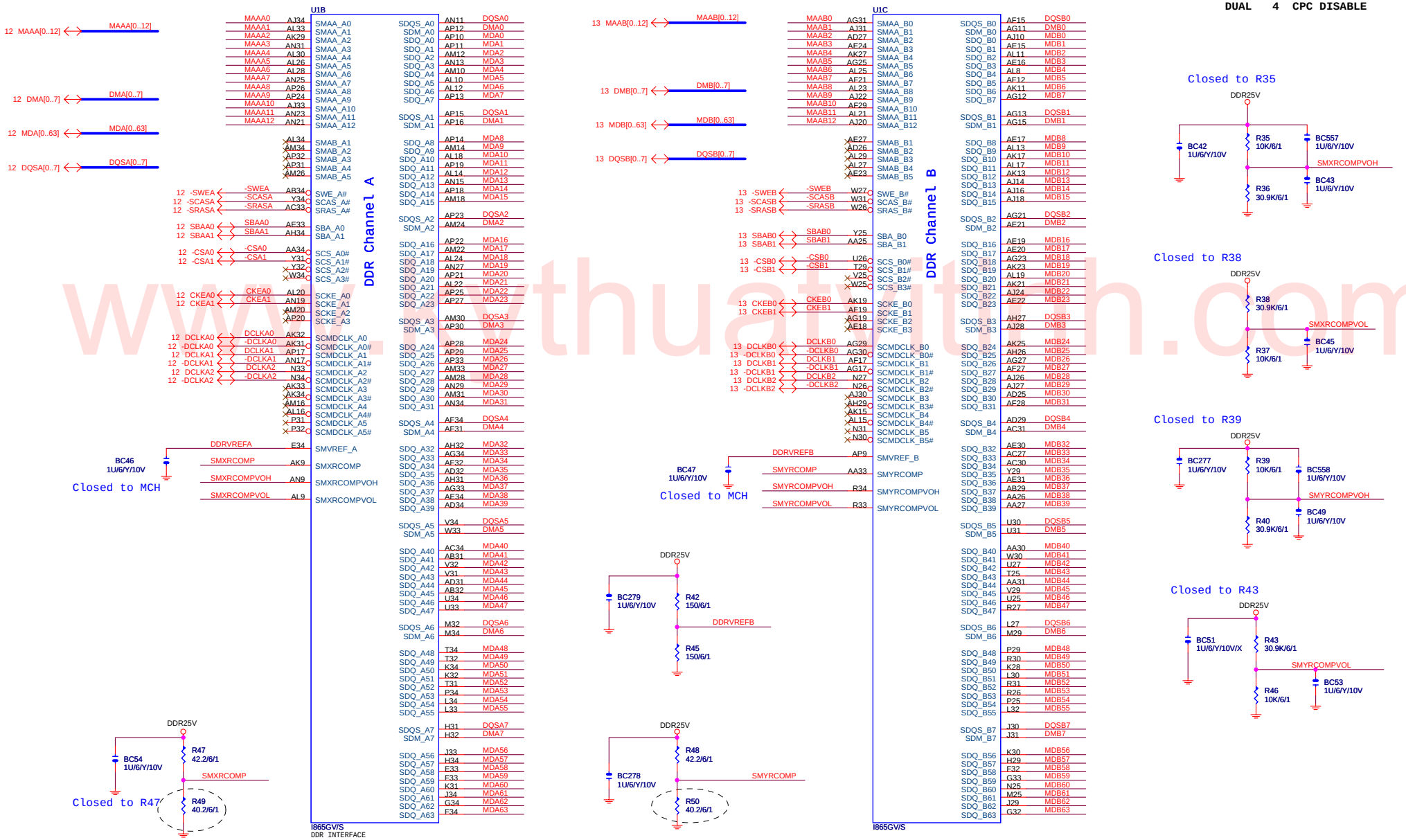
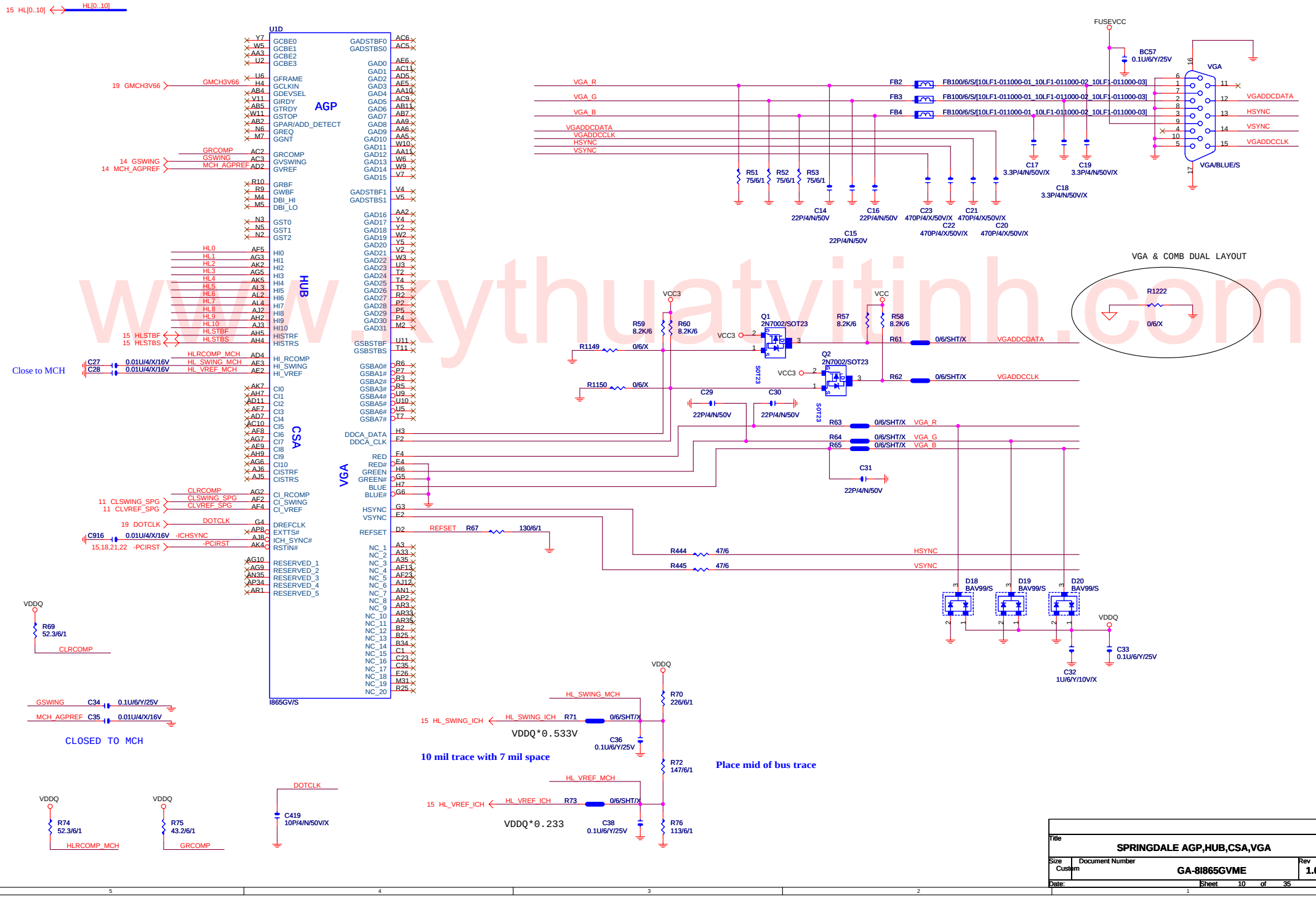
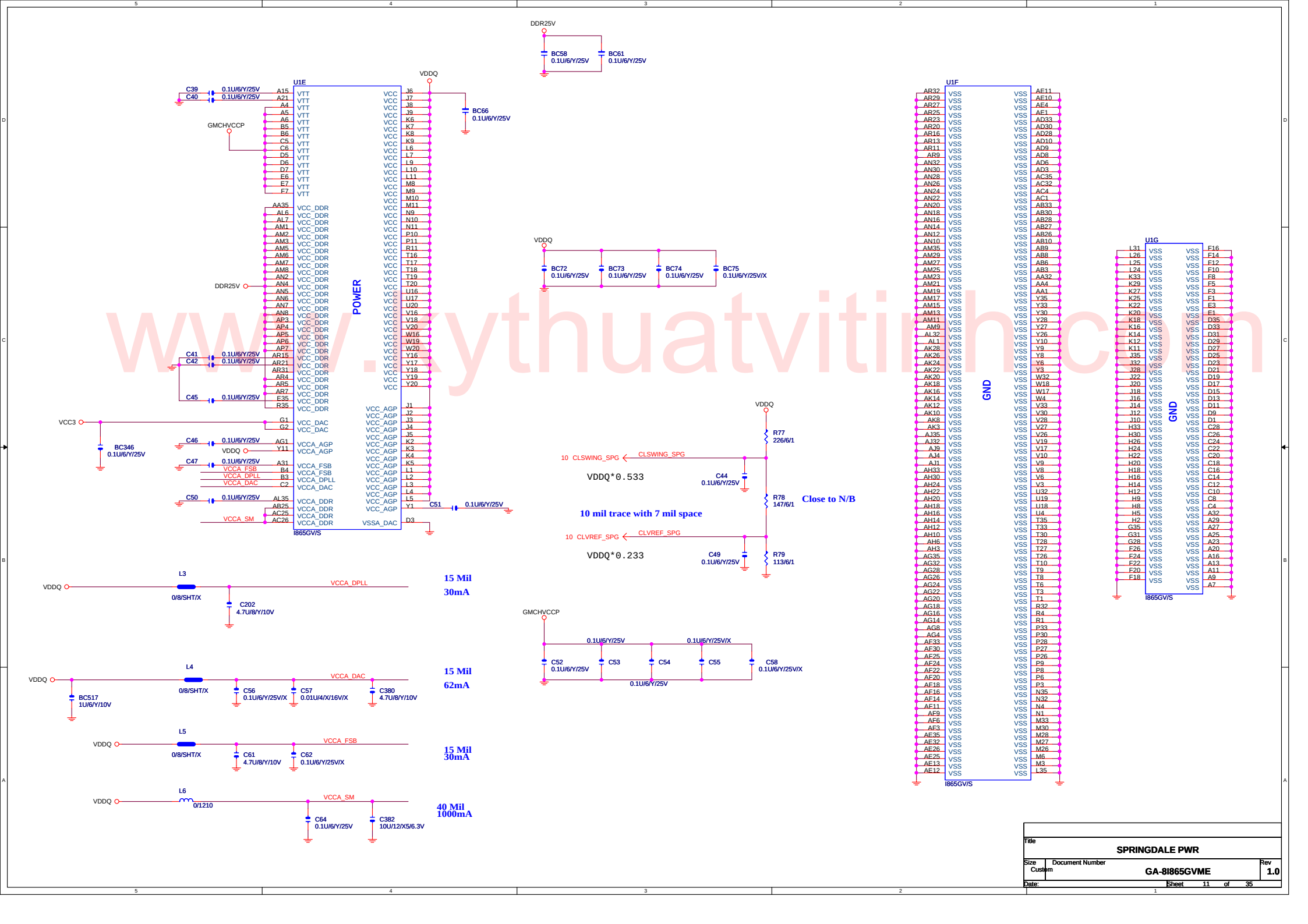
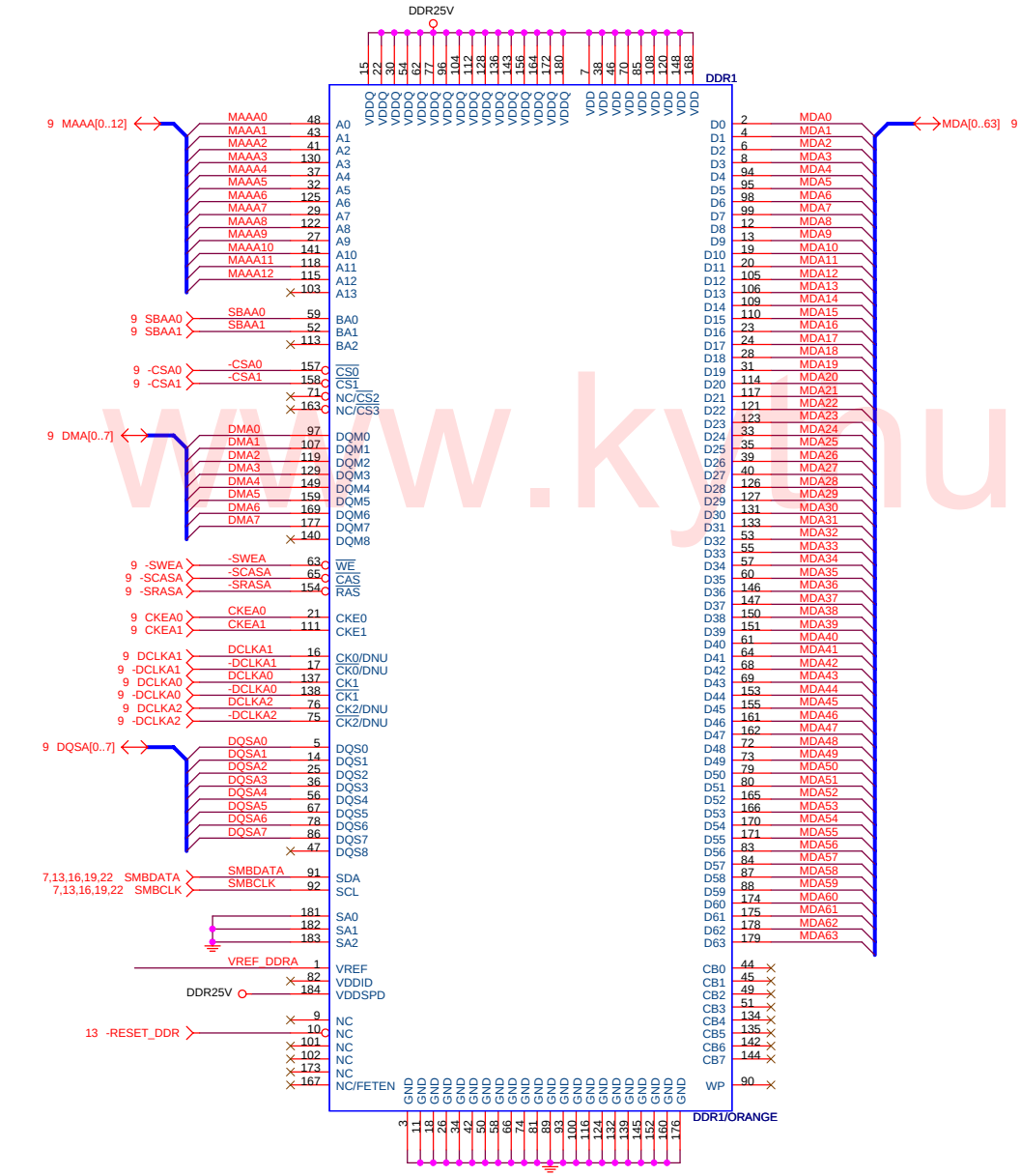






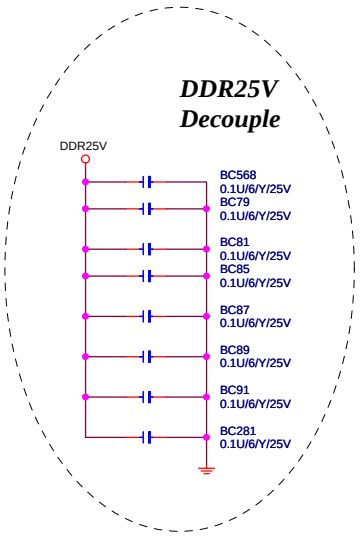


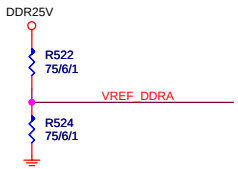
Title	SPRINGDALE PWR	
Size: Custom	Document Number: GA-8I865GVME	Rev: 1.0
Date:	Sheet 11 of 35	



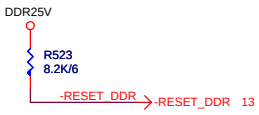
REV1.0

改0603-->0.1U,不可用0402,會漏電

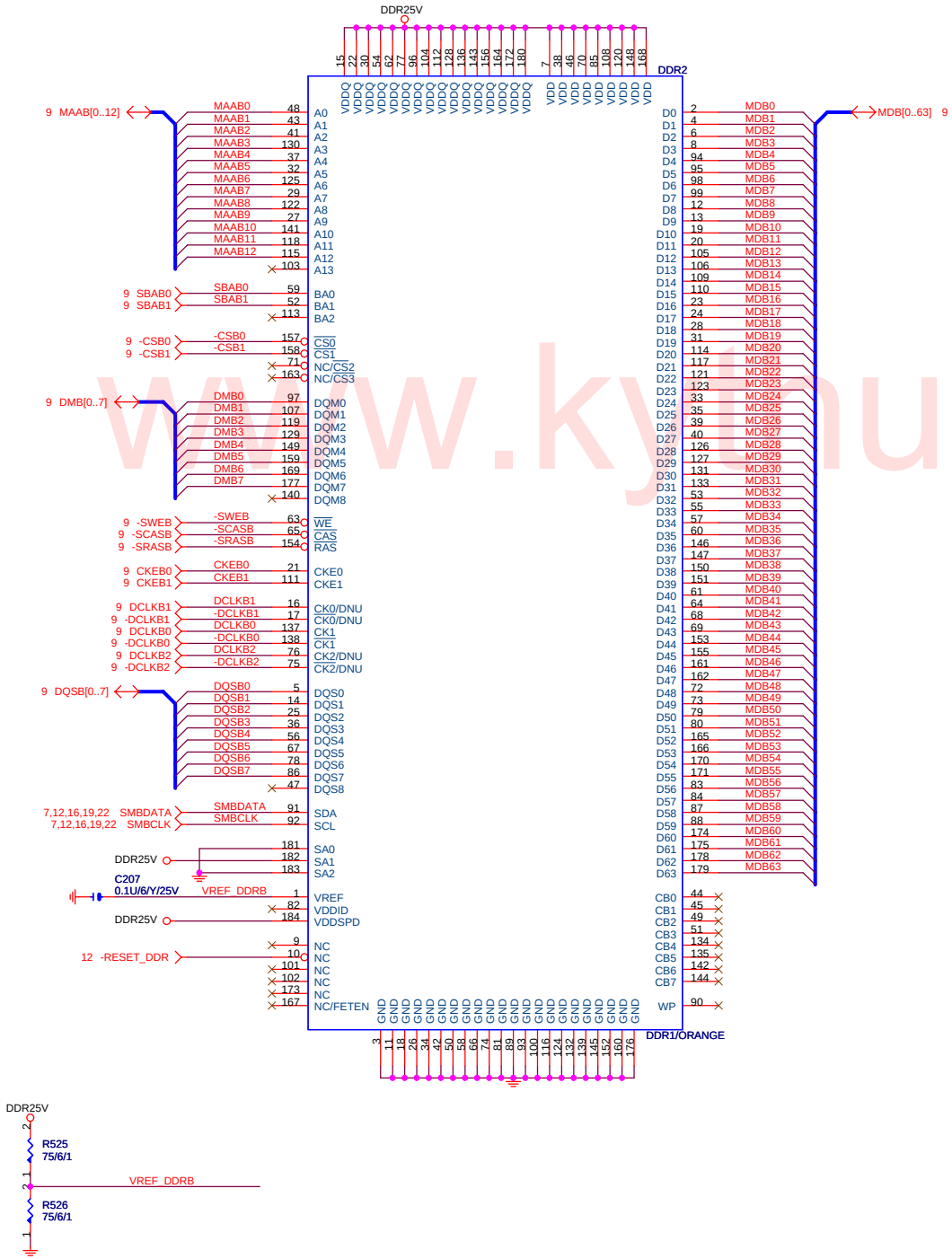




For Register DDR Support



GIGABYTE		
Title	DDR1 CHANNEL A	
Size B	Document Number GA-8I865GVME	Rev 1.0
Date:	Sheet 12 of 35	



GIGABYTE	
Title	DDR3,4 CHANNEL B
Size B	Document Number GA-8I865GVME
Rev	1.0
Date:	Sheet 13 of 35

15,20,21 A_D[0:31] A_D[0:31]

5VSB

R1132
8.2K/6/x

16,19,31,32 -SLP_S3 -ATX_PS_ON -ATX_PS_ON 16,19,31,32

VDDQ

R543
60.4/6/1

GSWING GSWING 10

R546
39.2/6/1

C209
0.1U/6/Y/25V

MCH_AGPREF MCH_AGPREF 10

R550
100/6/1

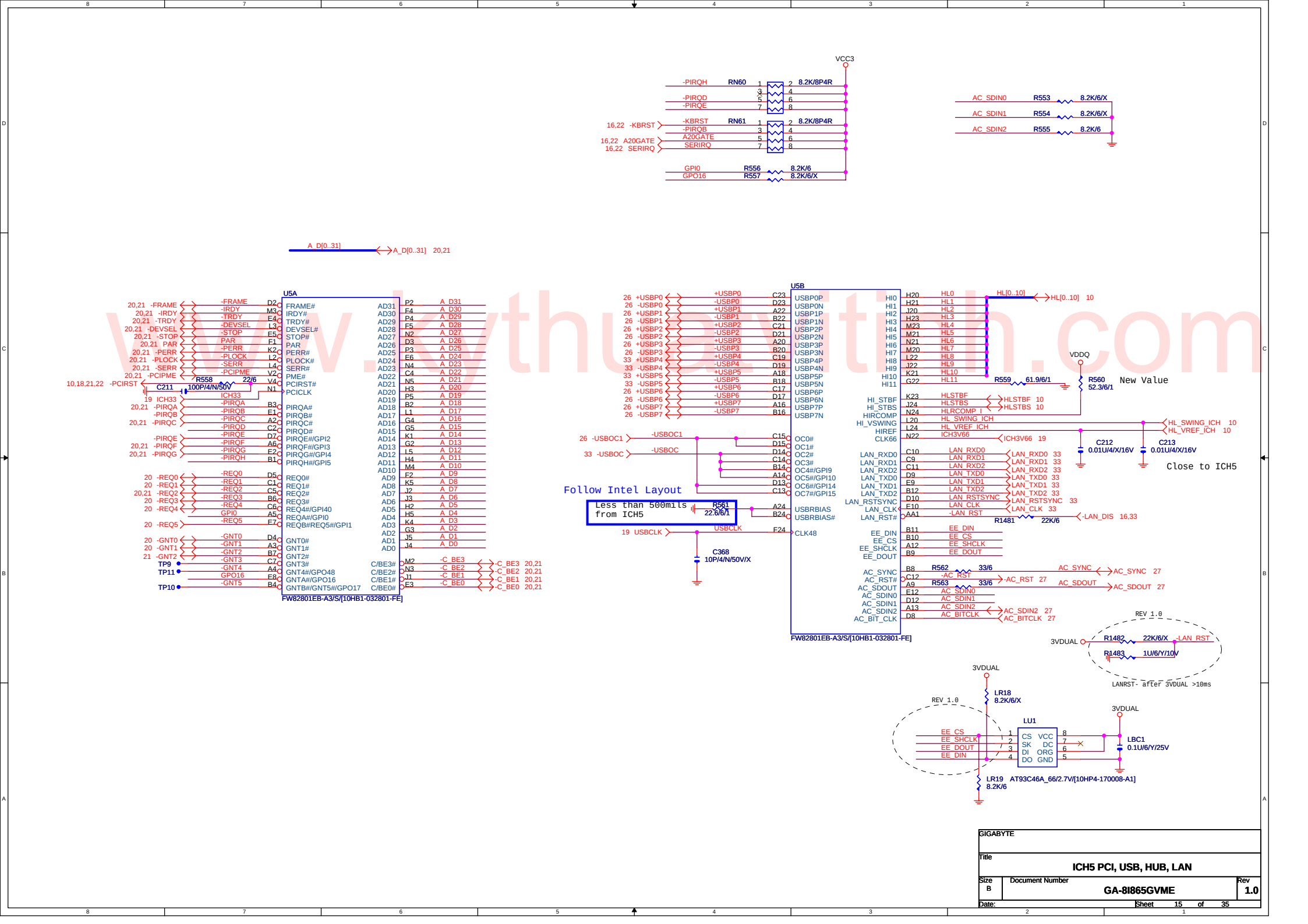
C210
0.1U/6/Y/25V

VDDQ

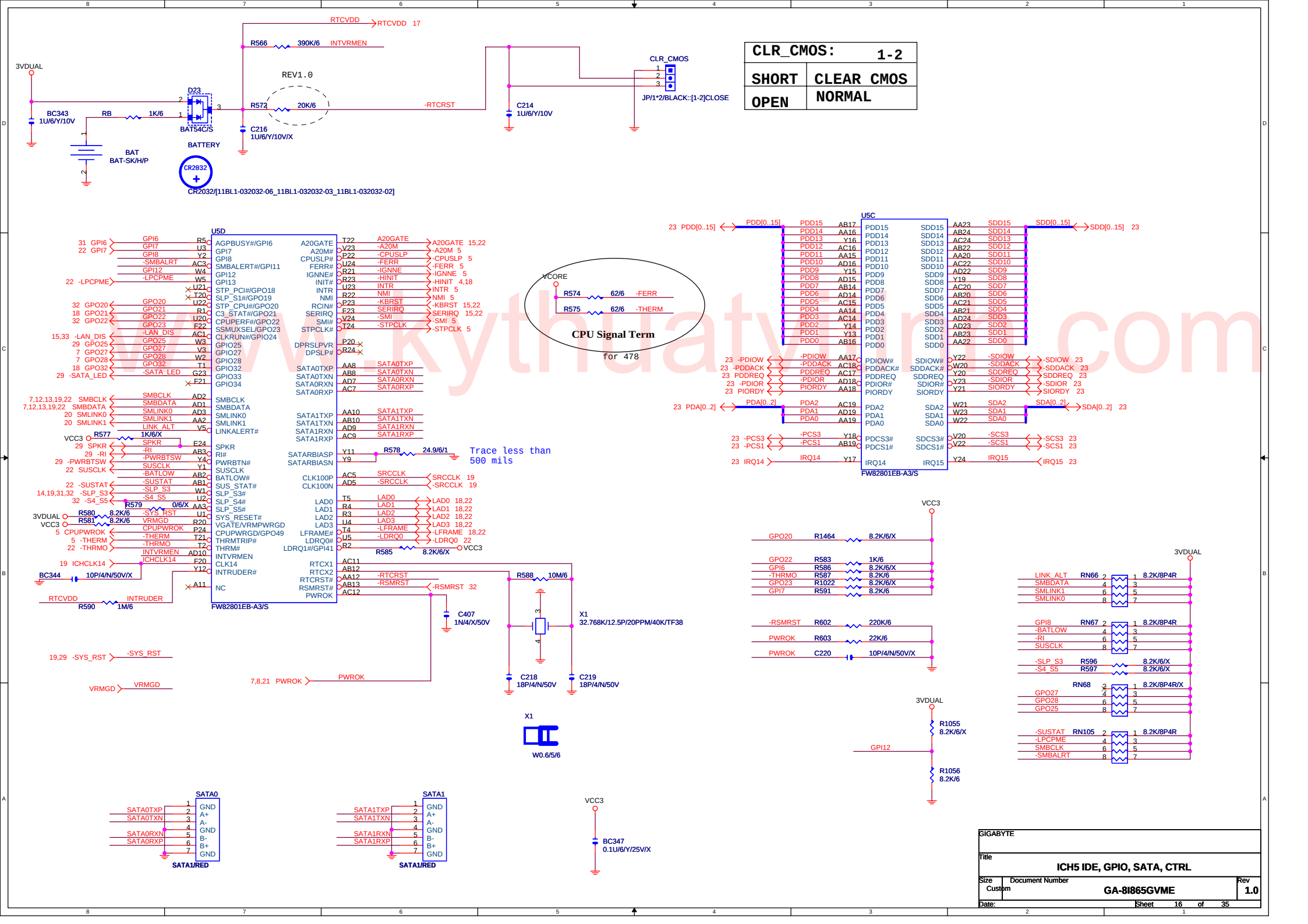
EC79
1000U/D/6.3V/8C

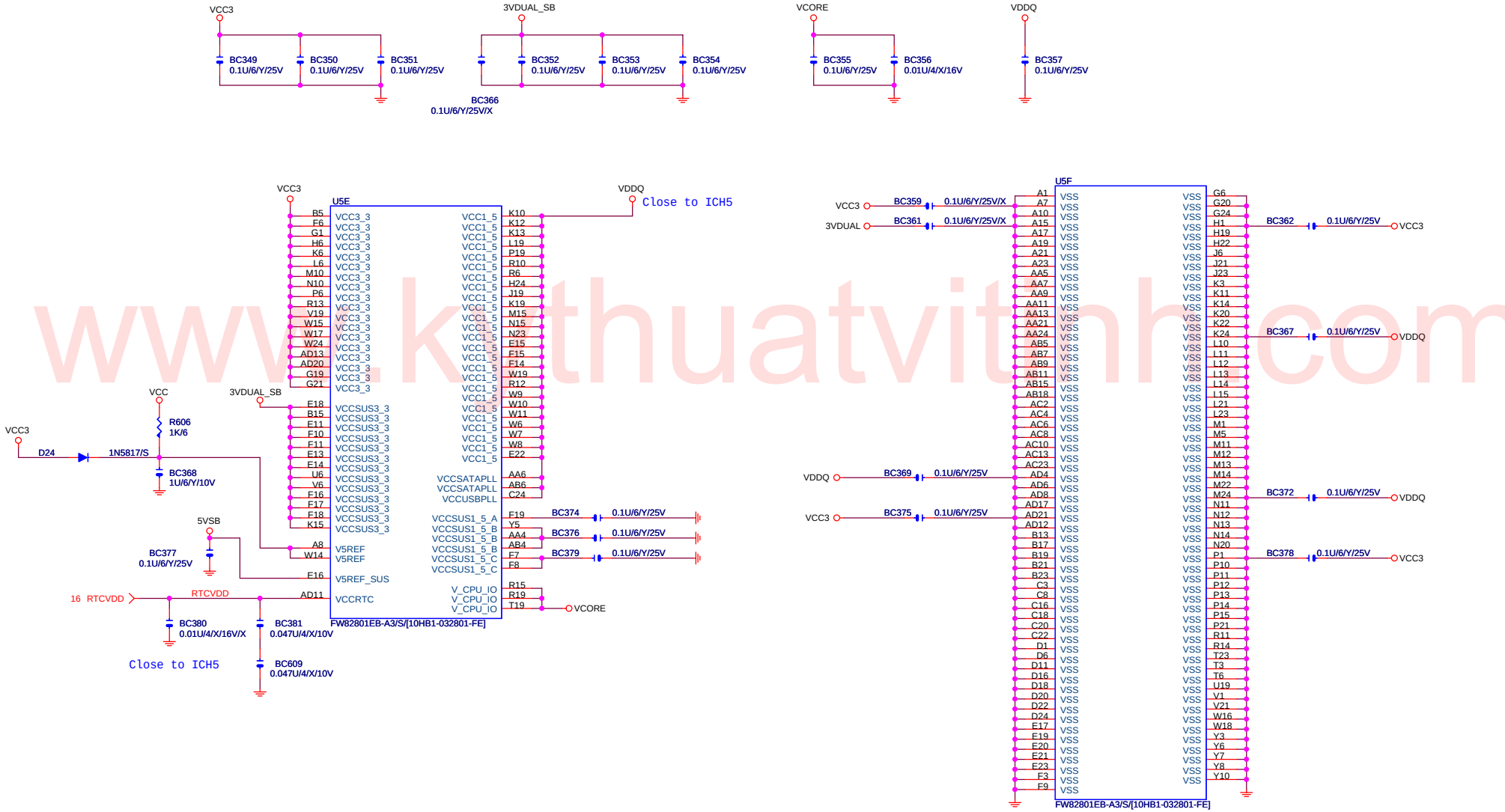
Place 1 at each pair of VDDQ pins
Place an additional for spread from A14 - A33

GIGABYTE		
Title: AGU		
Size: Custom	Document Number: GA-8I865GVME	Rev: 1.0
Date: Thursday, June 23, 2005	Sheet 14 of 35	

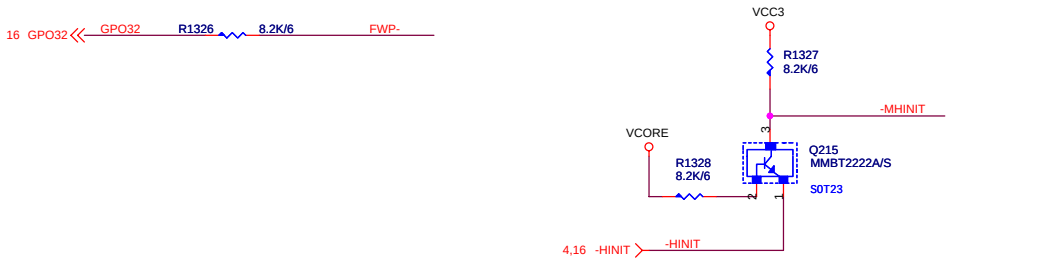


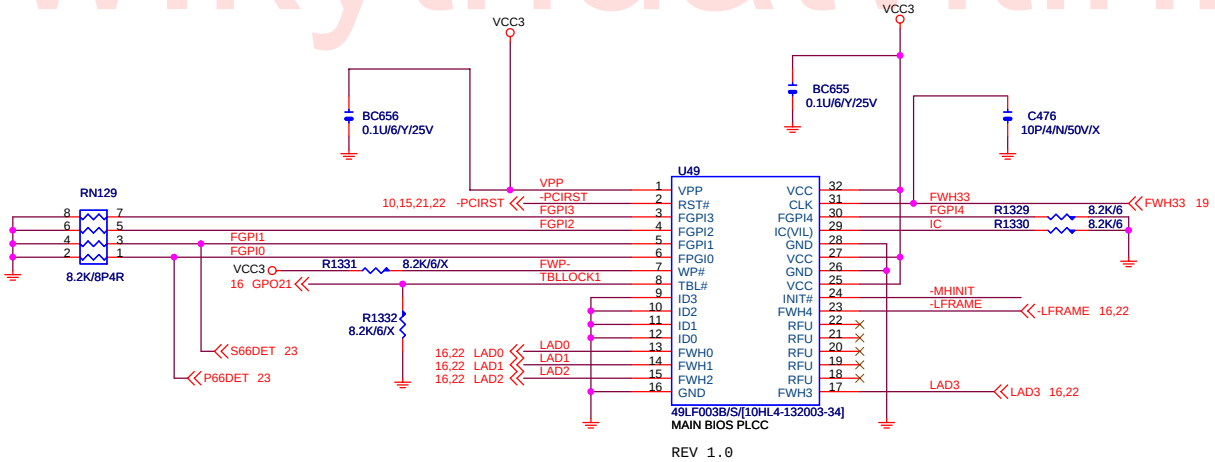
GIGABYTE		
Title	ICH5 PCI, USB, HUB, LAN	
Size B	Document Number GA-8I865GVME	Rev 1.0
Date:	Sheet 15 of 35	


CLR_CMOS: 1-2
SHORT CLEAR CMOS
OPEN NORMAL
REV1.0
3VDUAL
BC343 1U/6/Y/10V
RB 1K/6
D23 BAT54C/S
BATTERY
BAT BAT-SK/H/P
CR2032
CR2032/[11BL1-032032-06_11BL1-032032-03_11BL1-032032-02]
R566 390K/6 INTVRMEN
RTCVDD RTCVDD 17
R572 20K/6 -RTCRST
C216 1U/6/Y/10V/X
C214 1U/6/Y/10V
CLR_CMOS
JP/1*2/BLACK::[1-2]CLOSE
U5D
FW82801EB-A3/S
U5C
FW82801EB-A3/S
CPU Signal Term
for 478
VCORE
R574 62/6 -FERR
R575 62/6 -THERM
R577 1K/6/X
R578 24.9/6/1
Trace less than 500 mils
R579 0/6/X
R580 8.2K/6
R581 8.2K/6
R590 1M/6
R585 8.2K/6/X
R588 10M/6
X1 32.768K/12.5P/20PPM/40K/TF38
C407 1N/4/X/50V
C218 18P/4/N/50V
C219 18P/4/N/50V
BC344 10P/4/N/50V/X
X1 W0.6/5/6
R1055 8.2K/6/X
R1056 8.2K/6
BC347 0.1U/6/Y/25V/X
SATA0
SATA1
SATA1/RED
SATA1/RED
GIGABYTE
Title
ICH5 IDE, GPIO, SATA, CTRL
Size Custom
Document Number GA-8I865GVME
Rev 1.0
Date:
Sheet 16 of 35



GIGABYTE		
Title	ICH5 VCC, GND	
Size B	Document Number GA-8I865GVME	Rev 1.0
Date:	Sheet 17 of 35	

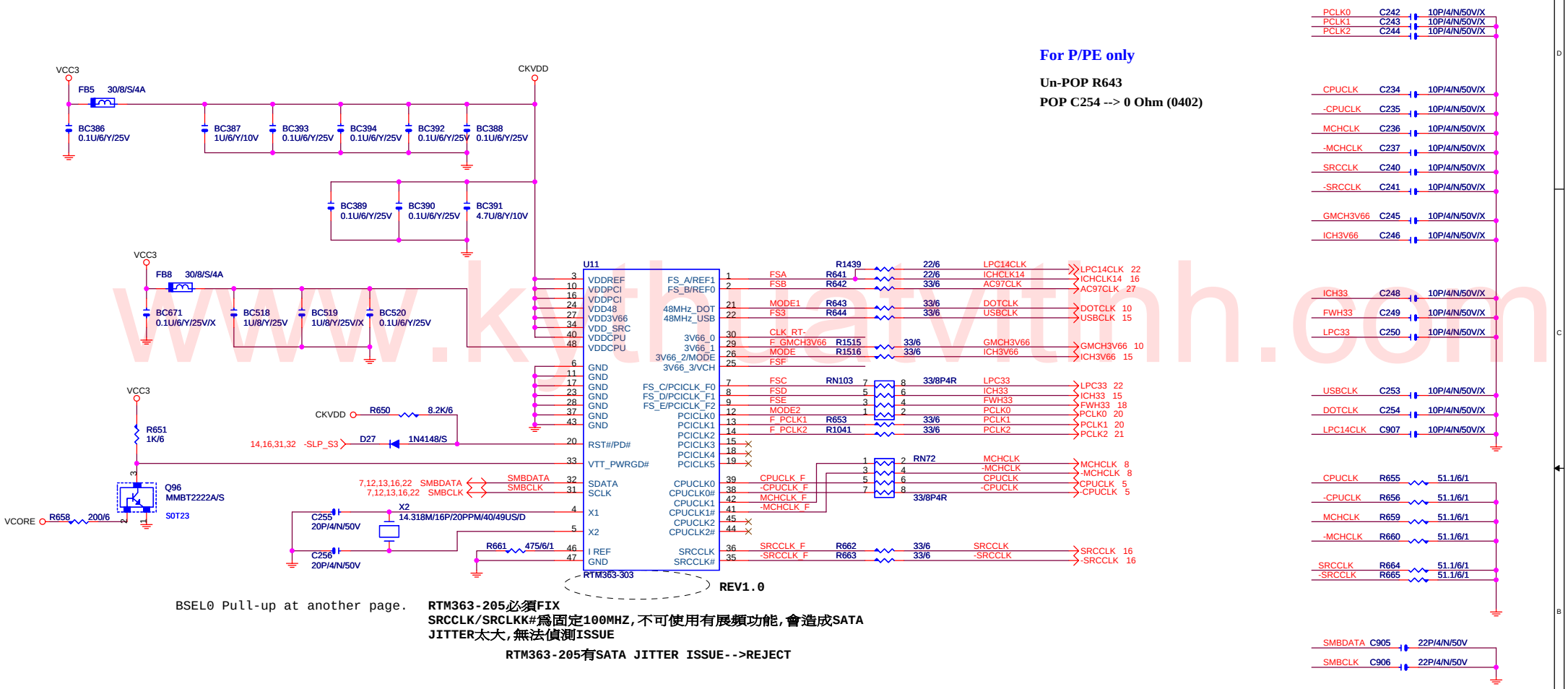




REV 1.0

ADD WINBOUD FWH SEC. SOURCE

GIGABYTE		
Title: FWH		
Size: B	Document Number: GA-8I865GVME	Rev: 1.0
Date: Thursday, June 23, 2005	Sheet 18 of 35	



For P/PE only

Un-POP R643

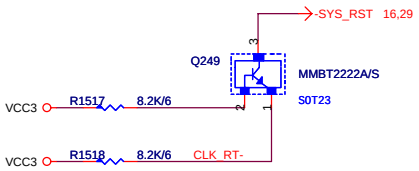
POP C254 --> 0 Ohm (0402)

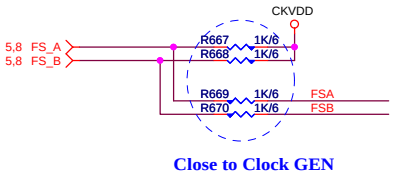
BSEL0 Pull-up at another page.

RTM363-205必須FIX
SRCCLK/SRCLKK#爲固定100MHZ,不可使用有展頻功能,會造成SATA JITTER太大,無法偵測ISSUE

RTM363-205有SATA JITTER ISSUE-->REJECT

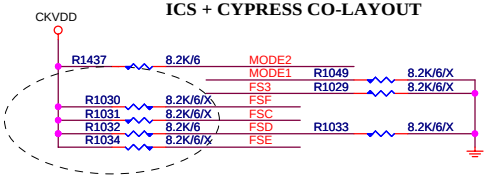
REV1.0





Close to Clock GEN

ICS + CYPRESS CO-LAYOUT



REV1.0 **Close to Clock GEN**

ICS952603/RTM363-205

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

For Pin 20 PD#
MODE

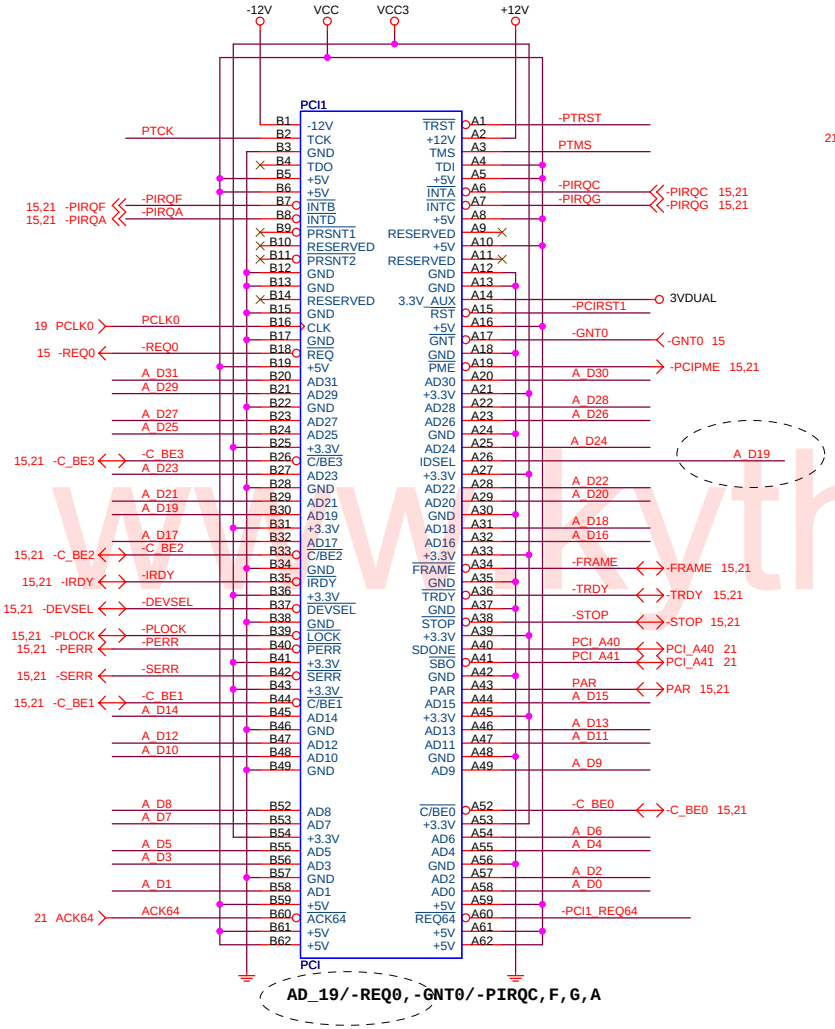
GIGABYTE

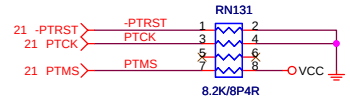
Title: **CLOCK GENERATOR**

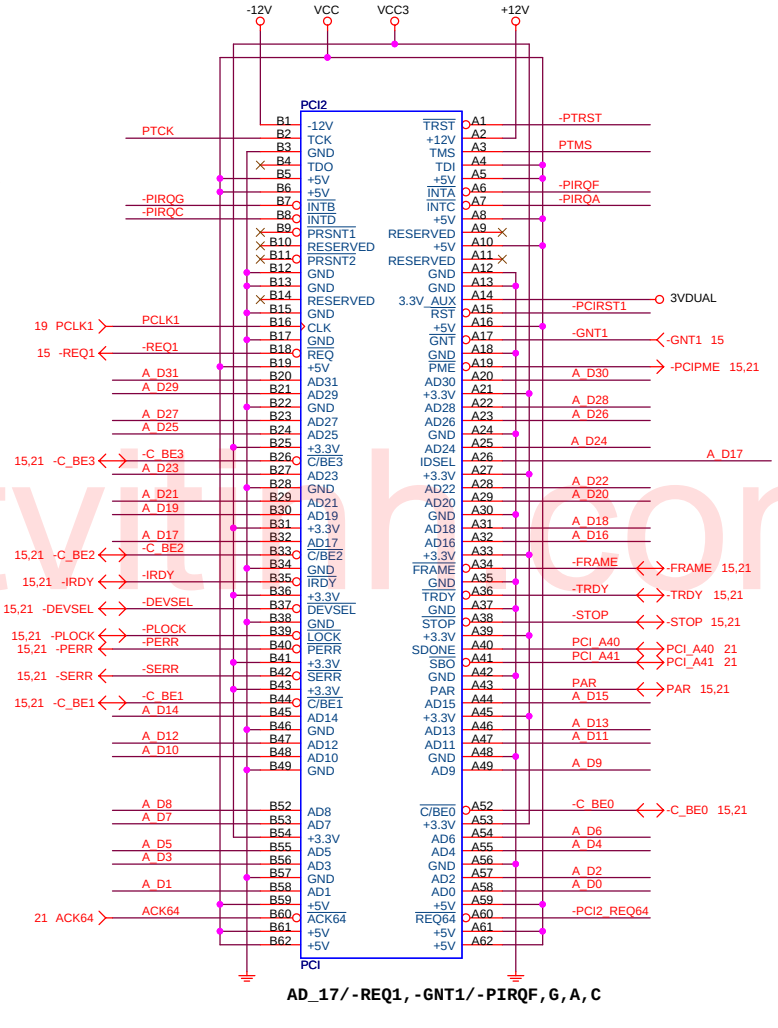
Size: Custom | Document Number: **GA-8I865GVME** | Rev: **1.0**

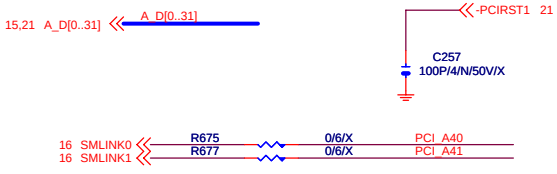
Date: Thursday, June 23, 2005 | Sheet 19 of 35

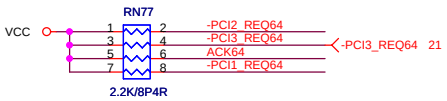
MODIFY PCI SHORT ISSUE(10/05)

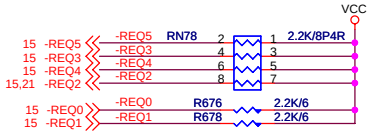


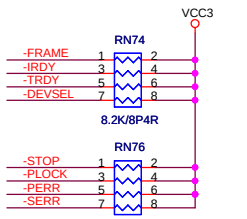


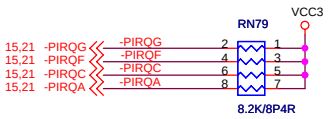


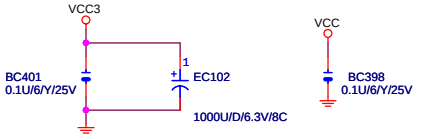




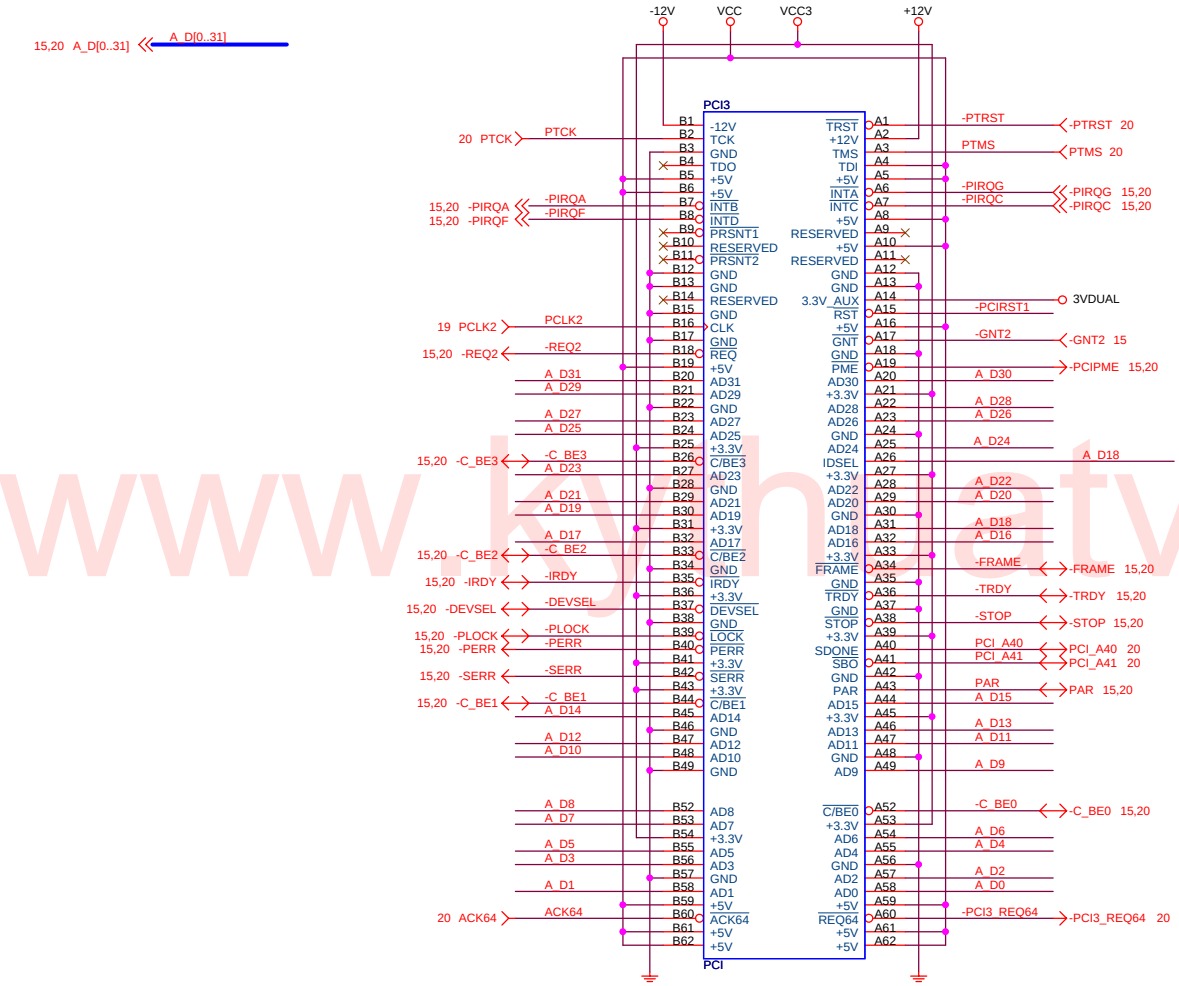




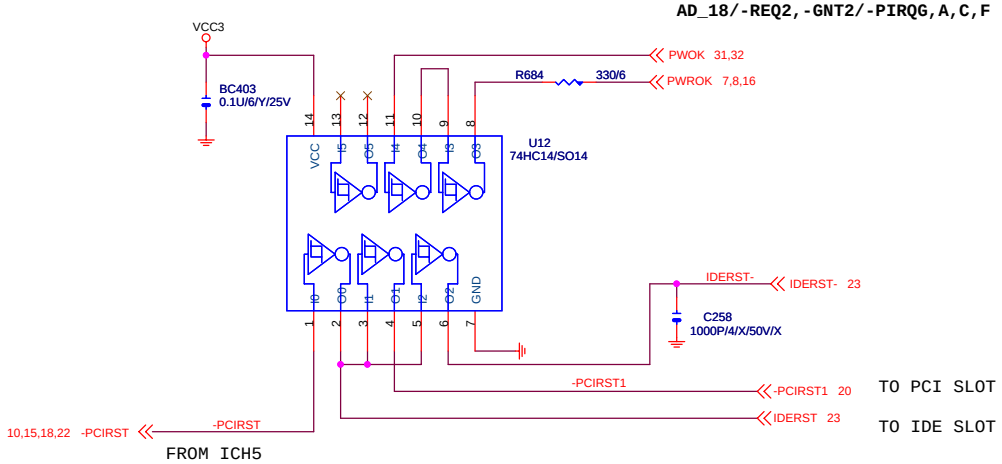




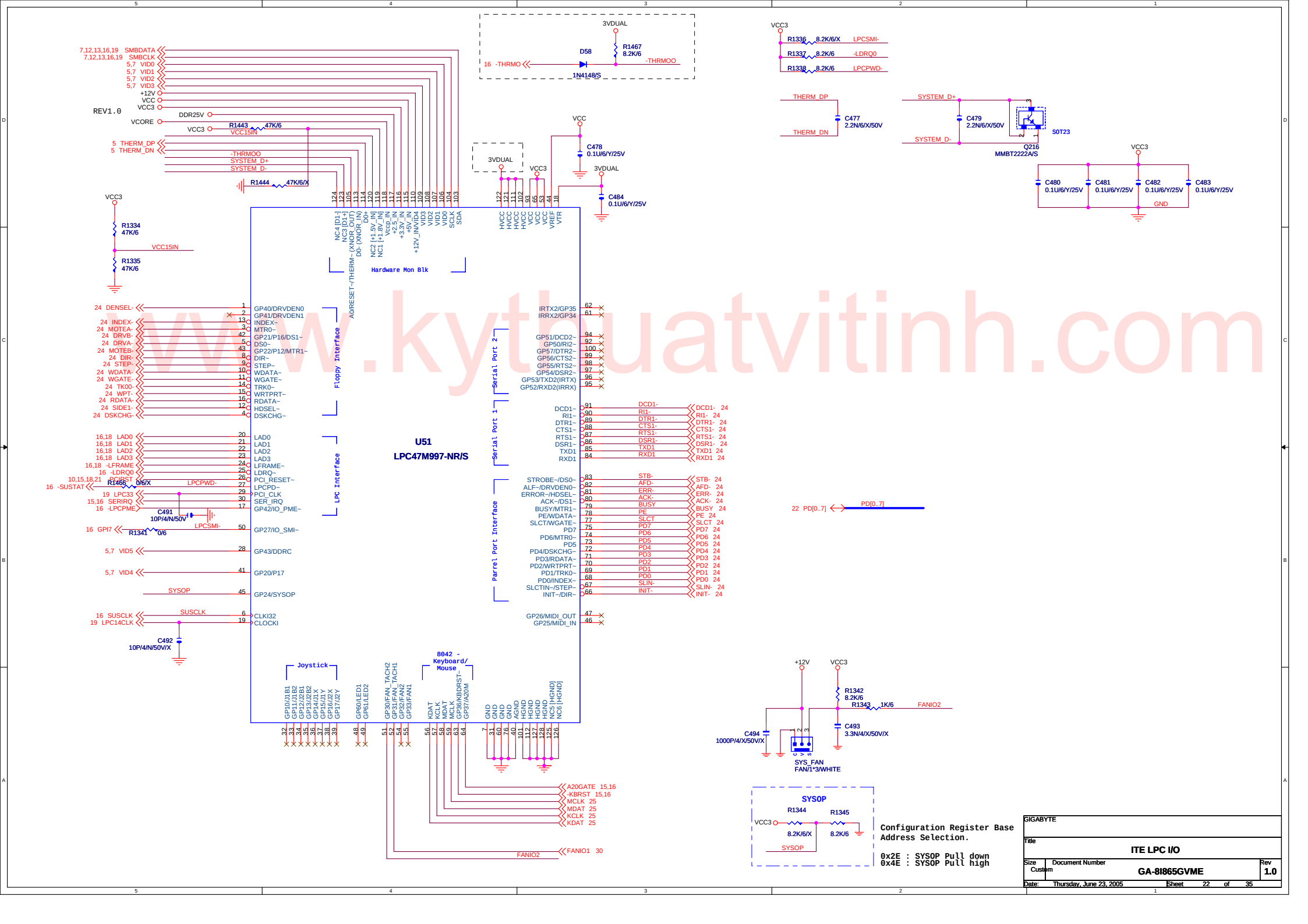
GIGABYTE		
Title	PCI SLOT 1/2	
Size B	Document Number GA-8I865GVME	Rev 1.0
Date: Thursday, June 23, 2005	Sheet 20 of 35	

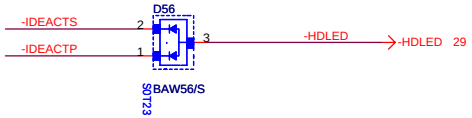


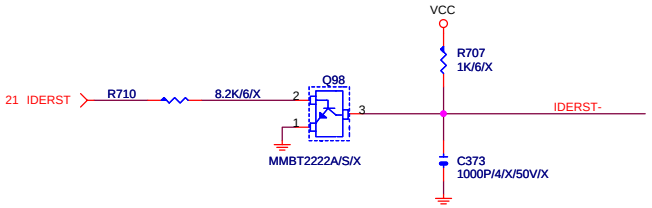
AD_18/-REQ2,-GNT2/-PIRQG,A,C,F

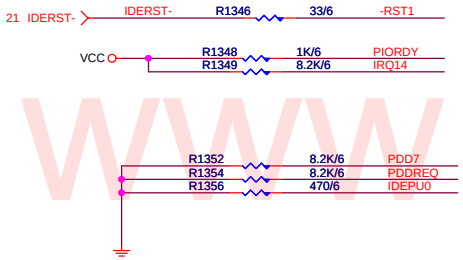


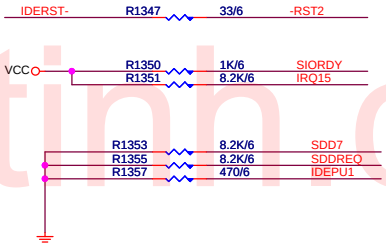
GIGABYTE		
Title	PCI SLOT 3	
Size B	Document Number GA-8I865GVME	Rev 1.0
Date: Thursday, June 23, 2005	Sheet 21 of 35	

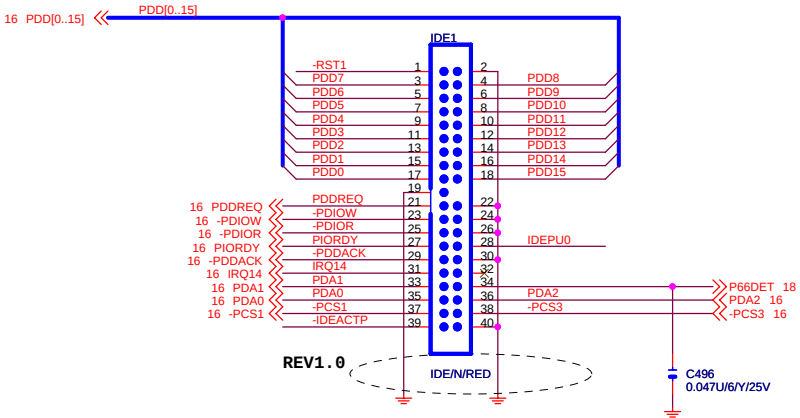




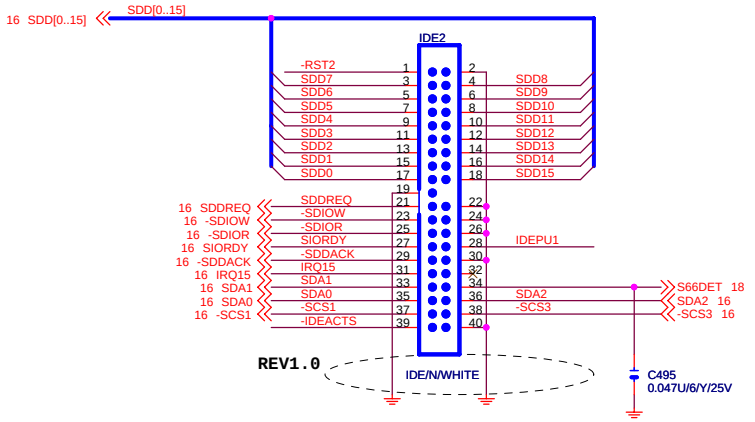








BIOS:CABLE DETECT AND DEVICE DETECT



GIGABYTE		
Title	IDE CONNECTOR	
Size B	Document Number GA-8I865GVME	Rev 1.0
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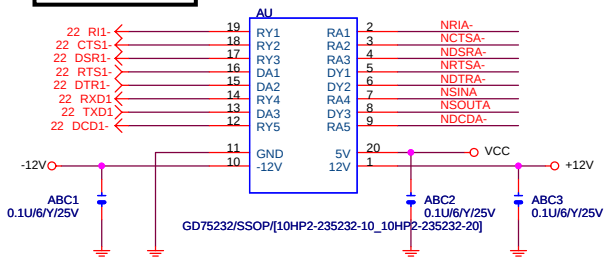
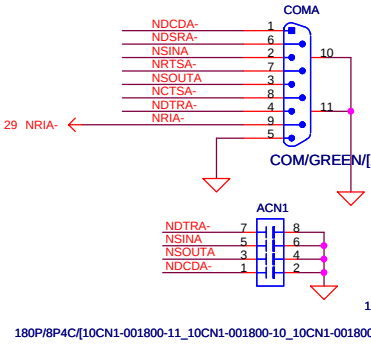
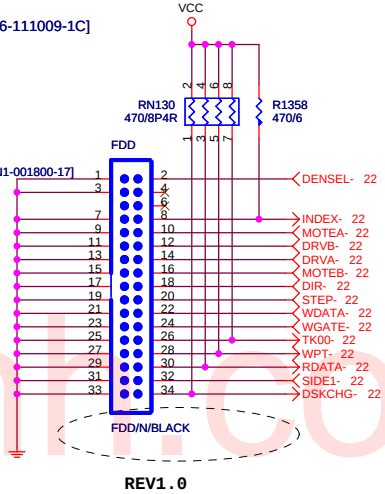
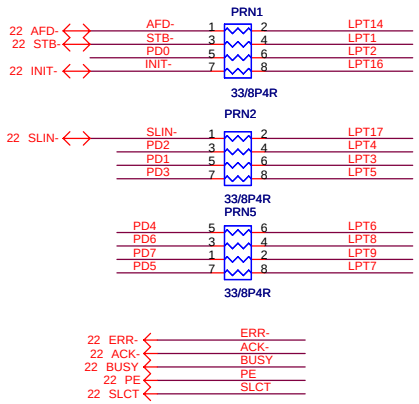
模組化線路

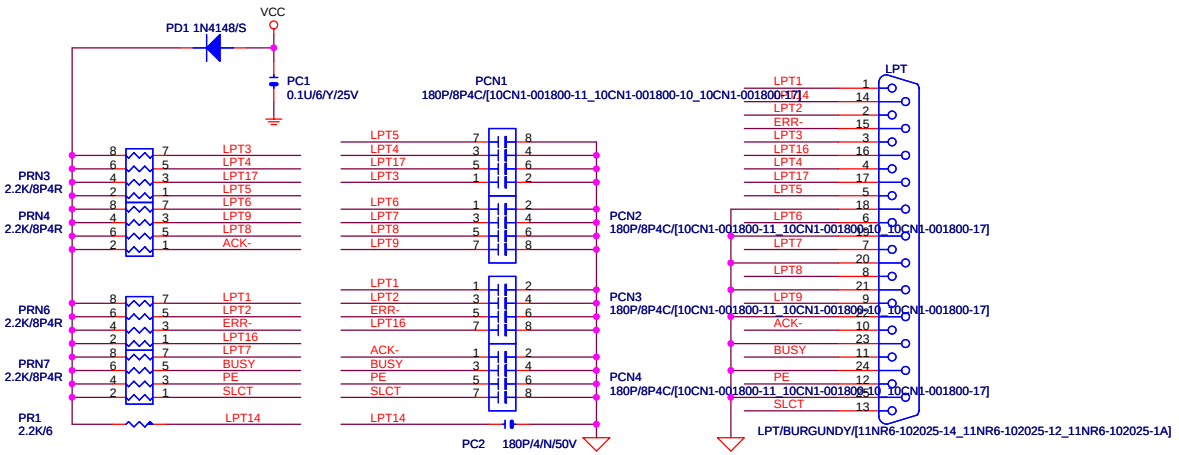






REV1.0





GIGABYTE		
Title	COM & LPT PORT &FLOOPY	
Size B	Document Number GA-8I865GVME	Rev 1.0
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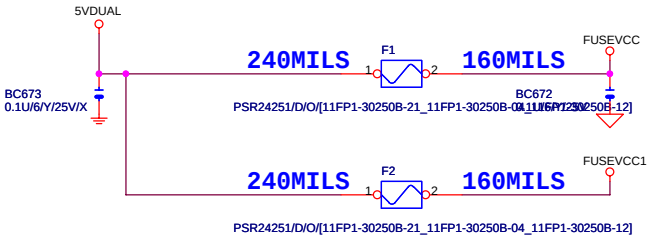
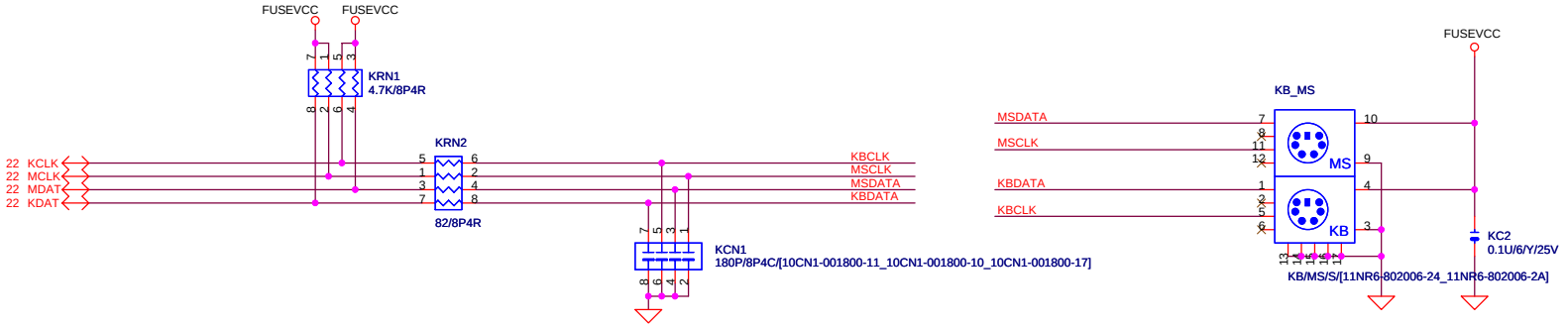
FUSEVCC,GAMEVCC





GIGABYTE		
Title: KB & PS2 MOUSE & IR		
Size: B	Document Number: GA-8I865GVME	Rev: 1.0
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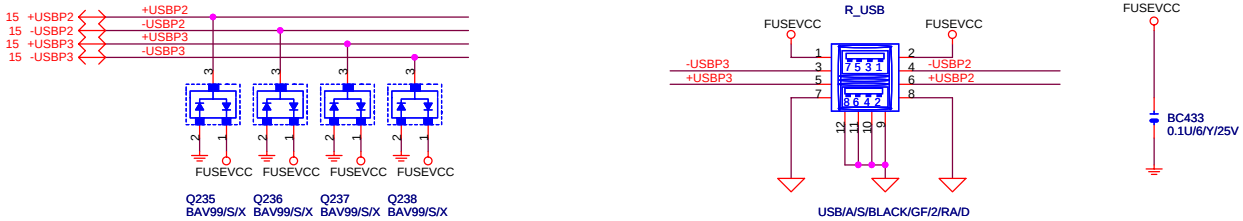
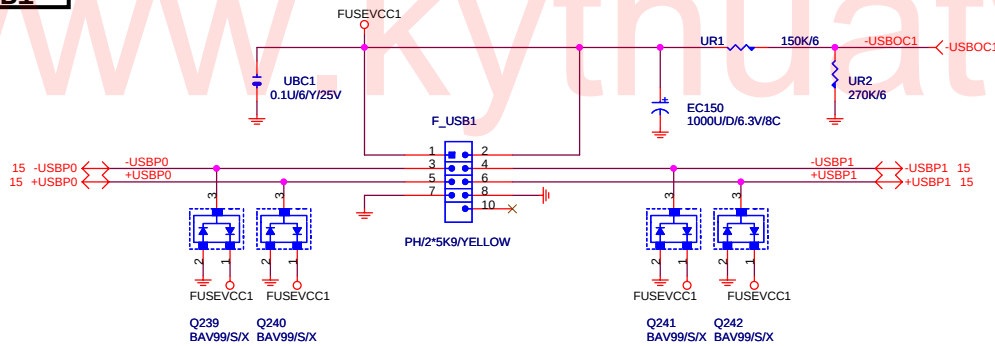
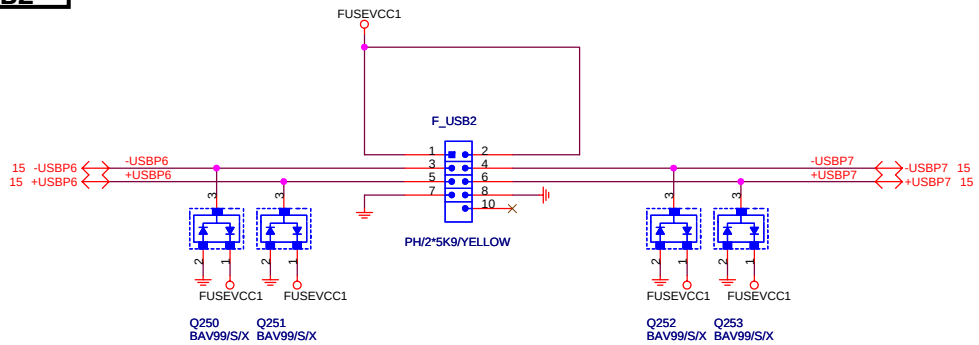
REAR USB



FRONT SIDE USB1



FRONT SIDE USB2



GIGABYTE		
Title	ICH USB PORT	
Size B	Document Number GA-8I865GVME	Rev 1.0
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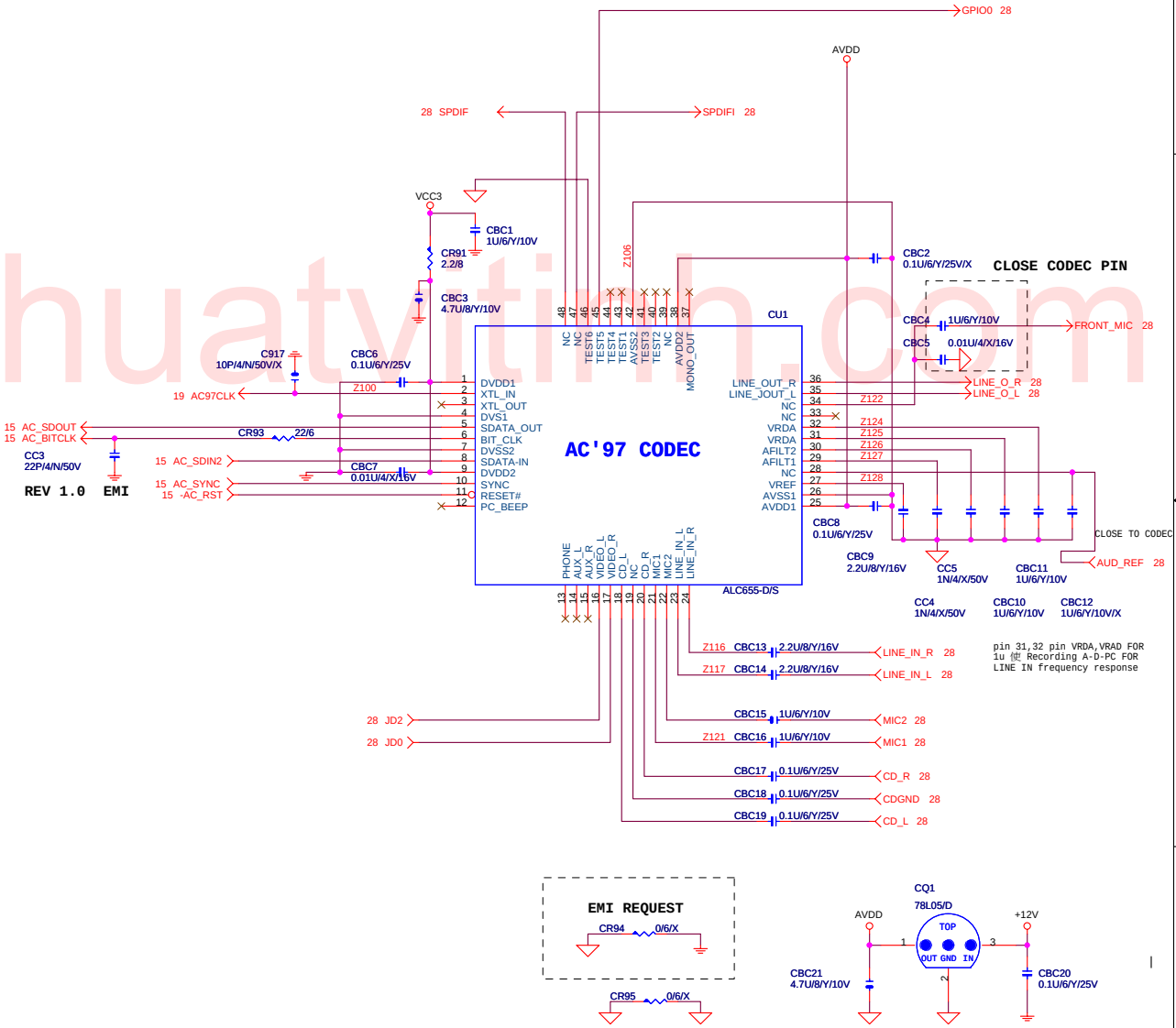

GIGABYTE		
Title	AUDIO (ALC655)	
Size: Custom	Document Number: GA-8I865GVME	Rev: 1.0
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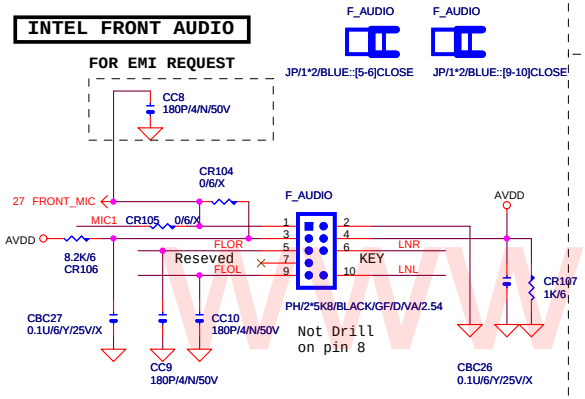
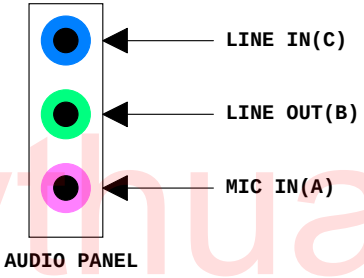
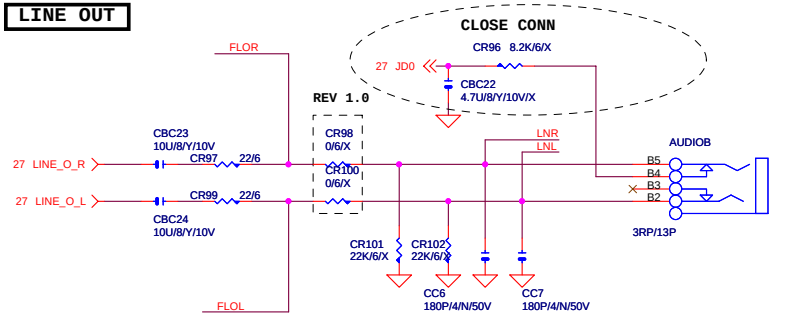
INTEL FRONT AUDIO

FOR EMI REQUEST

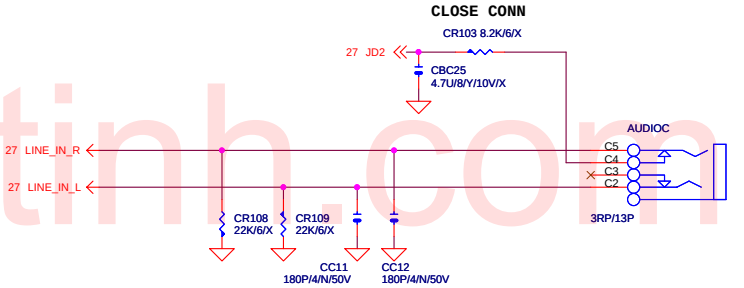




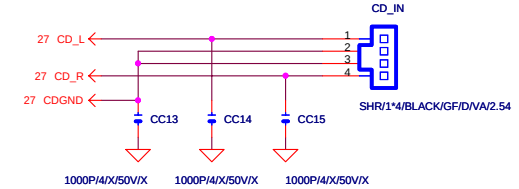
LINE OUT



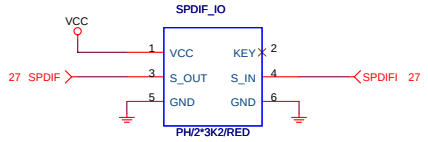
LINE-IN



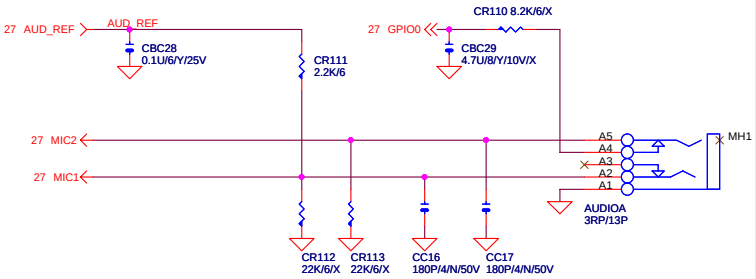
CD IN



SPDIF_IO



MIC



GIGABYTE

Title	AUDIO OUTPUT	
Size: Custom	Document Number: GA-8I865GVME	Rev: 1.0
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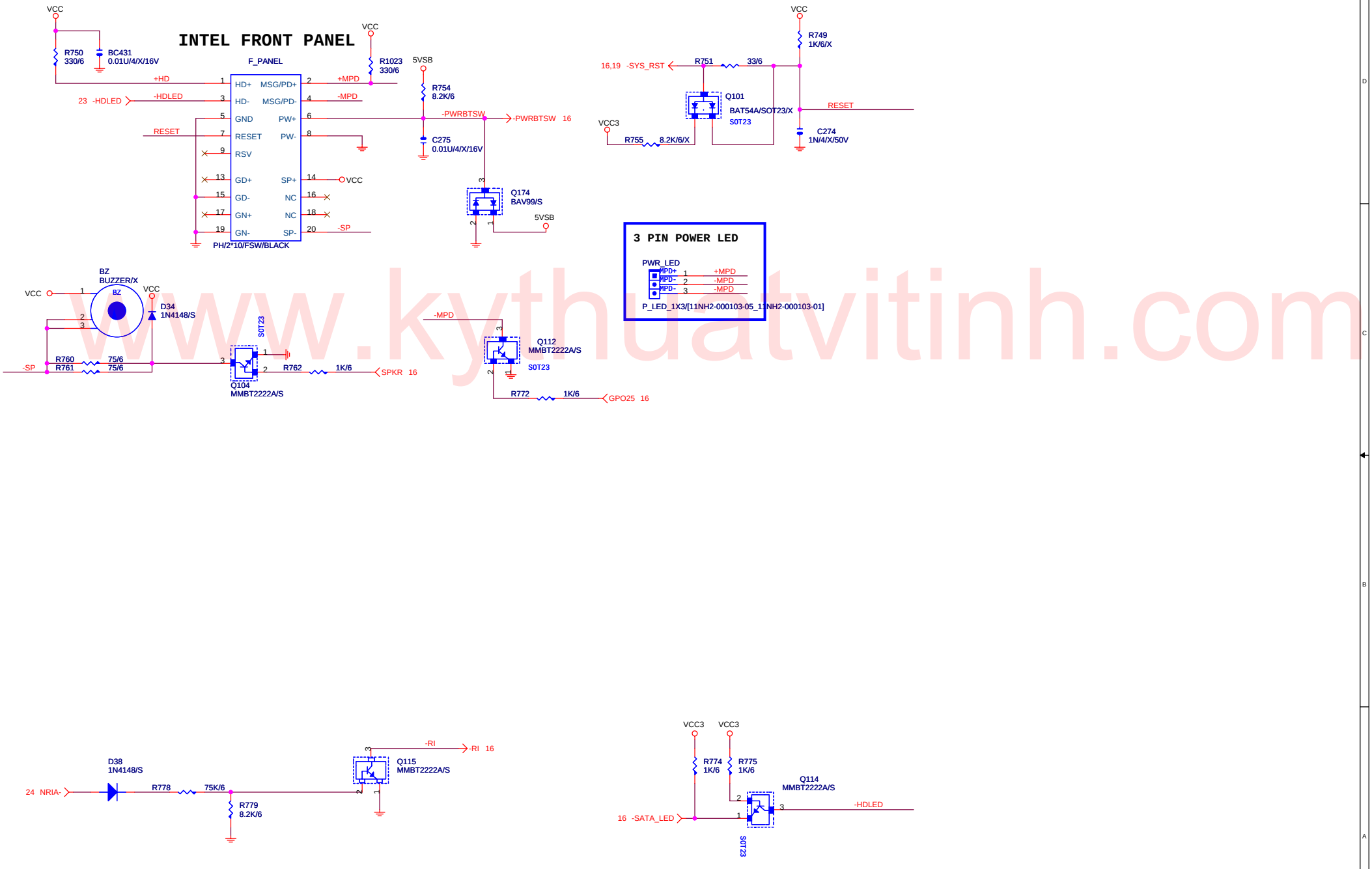

GIGABYTE		
Title	PANEL & STR LED & RI	
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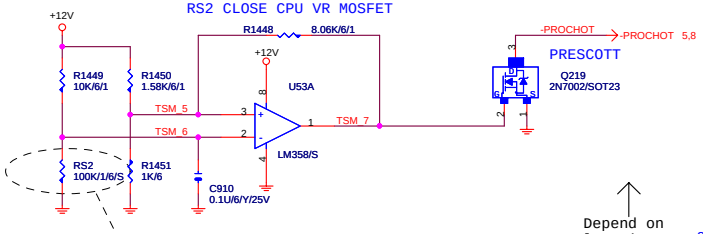
PROCESSOR HOT

U-ATX PROCESSOR HOT NO POP

RS2 CLOSE CPU VR MOSFET



Plase at PH3 copper

ThermalTake FAN Power Consumption: 0.82A

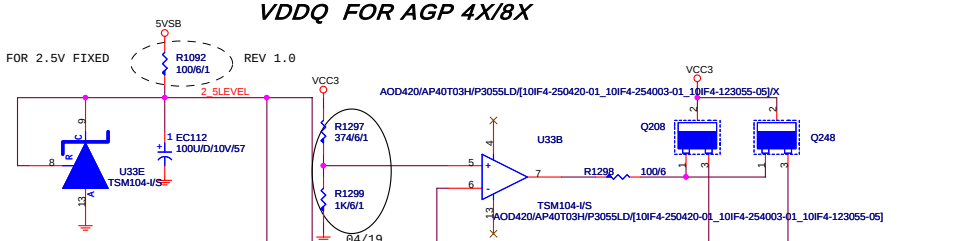
Intel FAN Power Consumption Spec: 1.1A

Depend on location of RS2

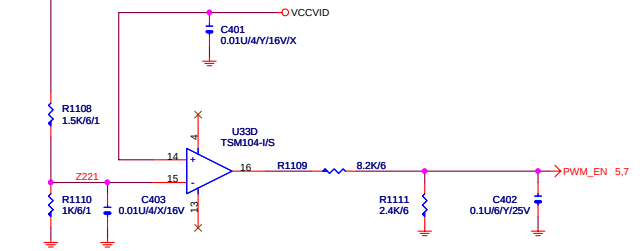
asserted at 130 degree (RS2=720 ohm)

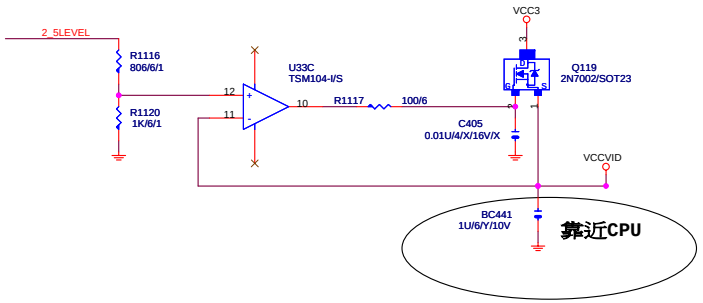
deasserted at 115 degree (RS2=1270 ohm)

VDDQ FOR AGP 4X/8X



CPU_FAN PIN3,4 CO-LAYOUT





VTT_GMCH=1.4V~1.0V

for 478

Title	POWER,CPU_FAN,PROCHOT	
Size	Document Number GA-8I865GVME	Rev 1.0
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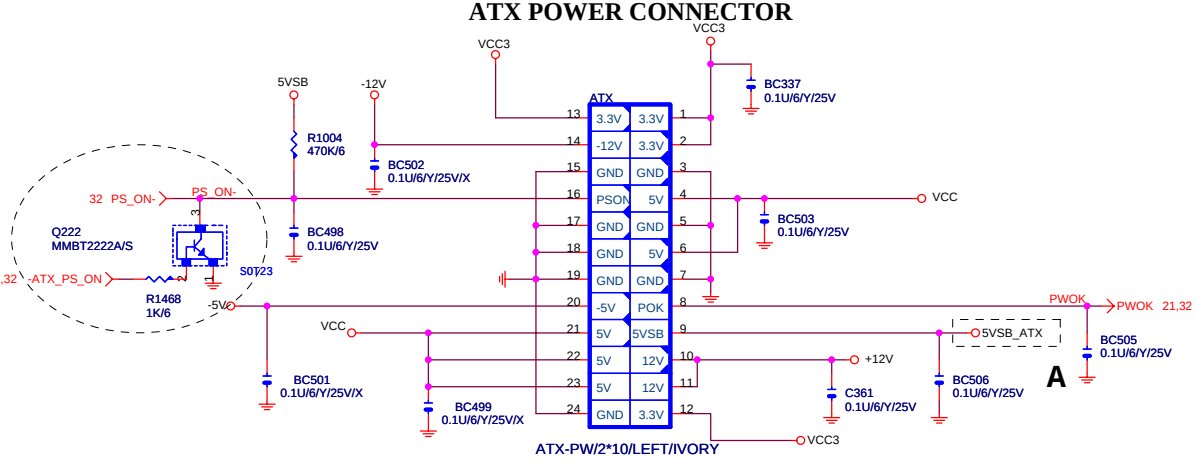
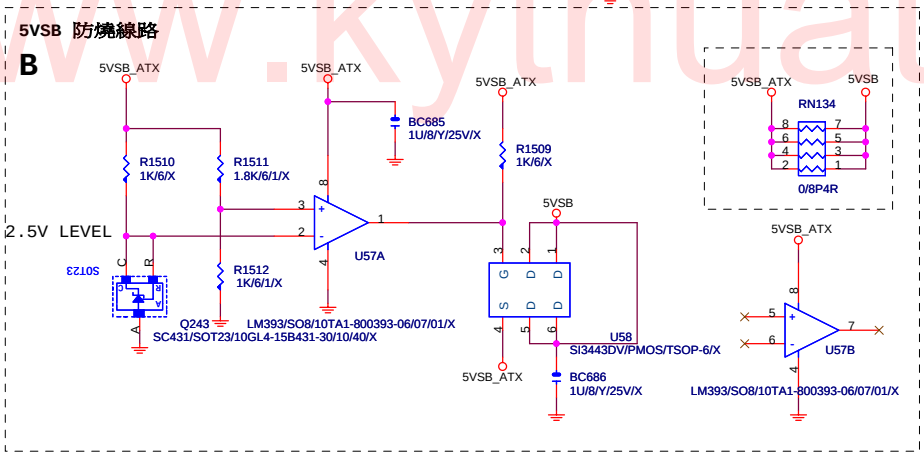
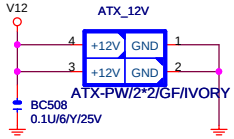
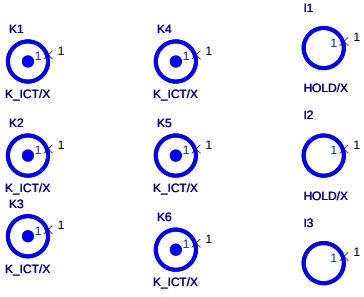
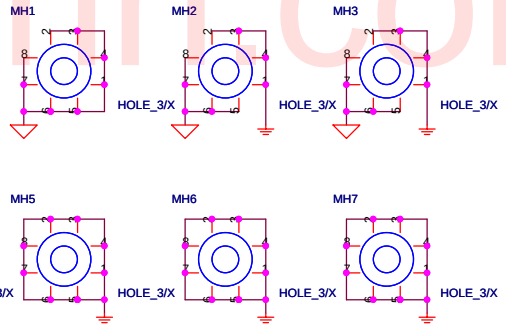
ATX POWER CONNECTOR





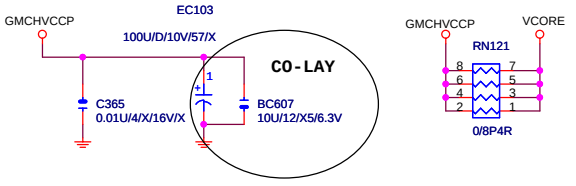






(08/12) HOLE_3-2

for 478



GIGABYTE		
Title	Misc. PWR & ATX CONN.	
Size B	Document Number GA-8I865GVME	Rev 1.0
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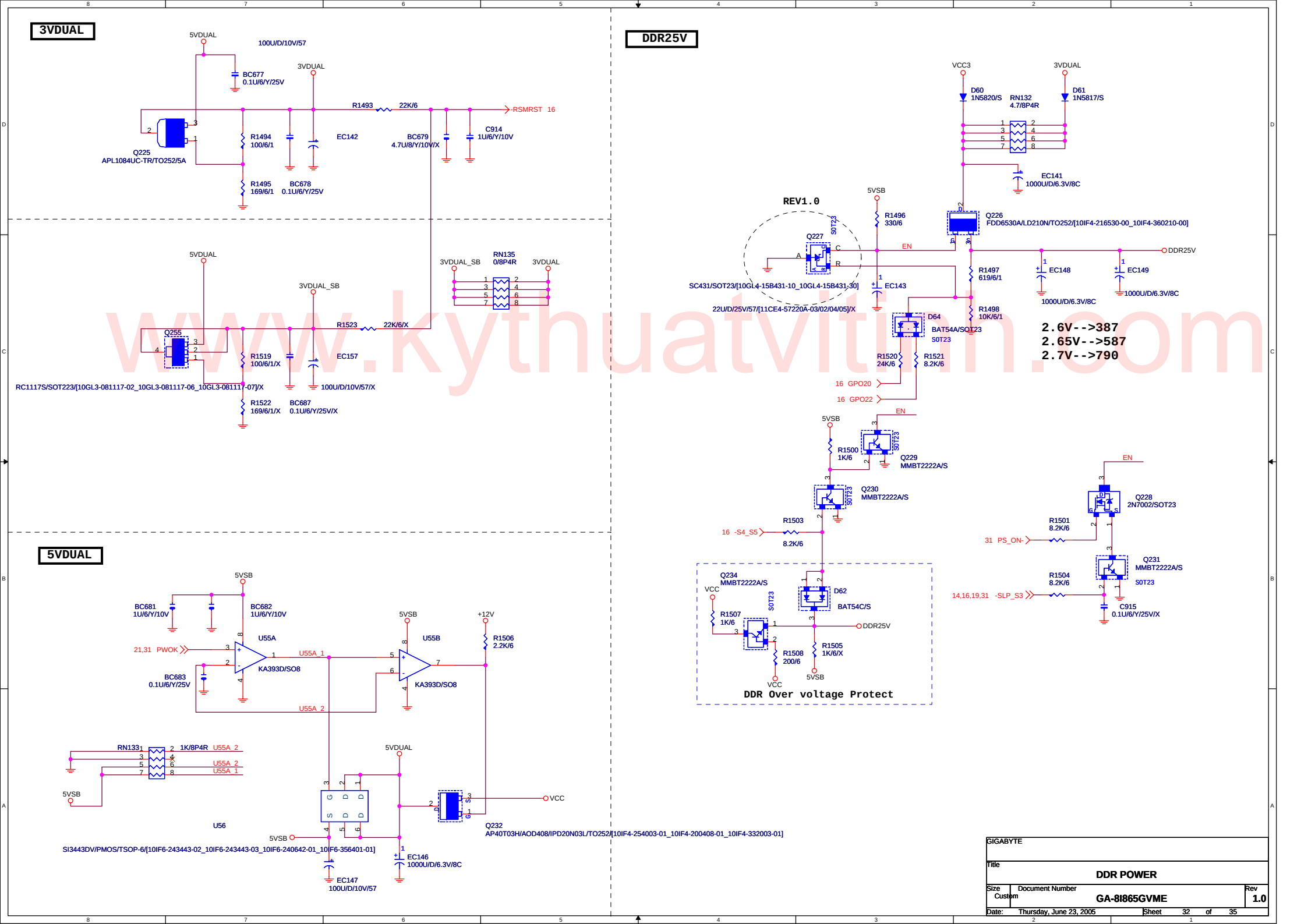

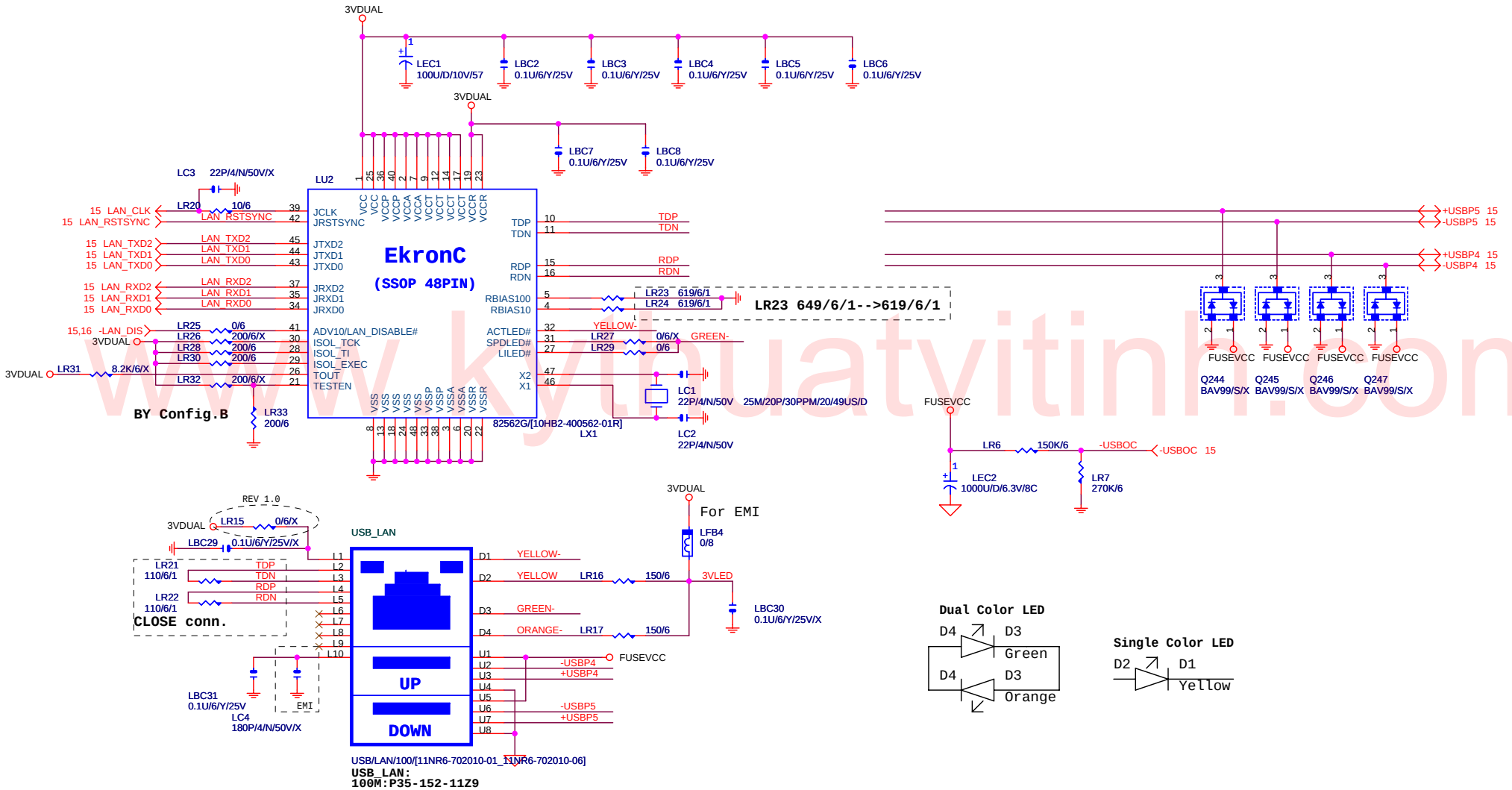

GIGABYTE		
Title: INTEL 82562G		
Size: B	Document Number: GA-8I865GVME	Rev: 1.0
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GA-8I865GVME

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	
TI 1394	21	F	PCICLK1394	-REQ4	-GNT4	
LAN (Marvell)	25	E	LANCLK33	-REQ5	-GNT5	

GIGABYTE

Title: PCI ROUNT LIST

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GIGABYTE 8I865GVME 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, -CASPME.
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
GPO23	NA	PULL 8.2K TO VCC3
GPO24	O	INTEL LAN ENABLE/DISABLE.
GPO25	O	FRONT PANEL -MPD.
GPO27	O	FRONT PANEL +MPD.
GPO28	O	GREEN LED
GPO32	O	BIOS WRITE PROTECT.
GPO33	O	SATA LED.
GPO34	I	CLEAR PASSWORD.

GIGABYTE

Title: GPIO LIST

Size: Custom | Document Number: GA-8I865GVME | Rev: 1.0

Date: Thursday, June 23, 2005 | Sheet 35 of 35