Model Name: 8I945GMF

Revision 1.0

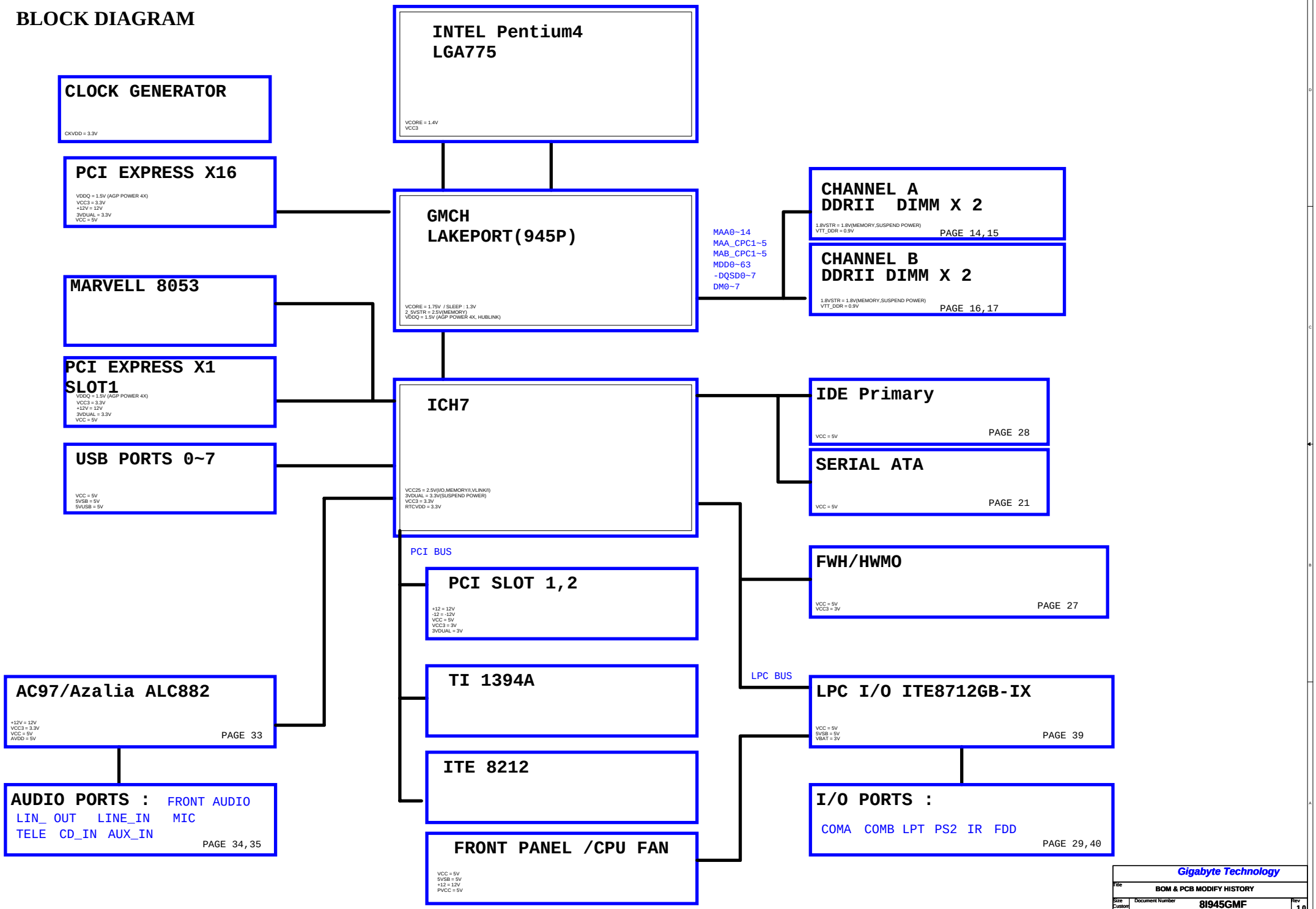
SHEET	TITLE
01	COVER SHEET
02	BLOCK DIAGRAM
03	BOM & PCB MODIFY HISTORY
04	P4_LGA775_A
05	P4_LGA775_B
06	P4_LGA775_C
07	P4_LGA775_D,E,F,G
08	GMCH-LAKEPORT_HOST
09	GMCH-LAKEPORT_DDRII
10	GMCH-LAKEPORT_PCI E, DMI
11	GMCH-LAKEPORT_INT VGA
12	GMCH-LAKEPORT_GND
13	GMCH-LAKEPORT_PWR
14	DDRII CHANNEL A 1,2
15	DDRII CHANNEL B 1,2
16	DDRII TERMINATION
17	PCI EXPRESS*16 SLOT
18	ICH7 PCI, USB, DMI, LAN
19	ICH7 IDE, GPIO, SATA, CTRL
20	ICH7 VCC, GND
21	GB/CK410M CLOCK.
22	PCI SLOT 1,2,PCIE*1
23	IDE/FLOPPY
24	ITE 8712 GBIX
25	COM_LPT
26	BIOS,CI,HWM,KB/MS
27	ALC882

SHEET	TITLE
28	REAR AUDIO JACK
29	TI TSB43AB23 1394
30	MARVELL 88E8053
31	VCORE PWM_ISL6556
32	DISCRETE POWER
33	ATX, OTHERS POWER
34	FRONT PANEL

Gigabyte Technology

Title	Cover Sheet	
Size: Custom	Document Number: 8I945GMF	Rev: 1.0
Date: Friday, March 25, 2005	Sheet 1 of 34	

BLOCK DIAGRAM



Gigabyte Technology			
Title	BOM & PCB MODIFY HISTORY		
Size: Custom	Document Number: 8I945GMF		Rev: 1.0
Date: Friday, March 25, 2005	Sheet 2 of 34		

Model Name: 8I945GMF

Version: 1.0

Component value change history

2005/03/25

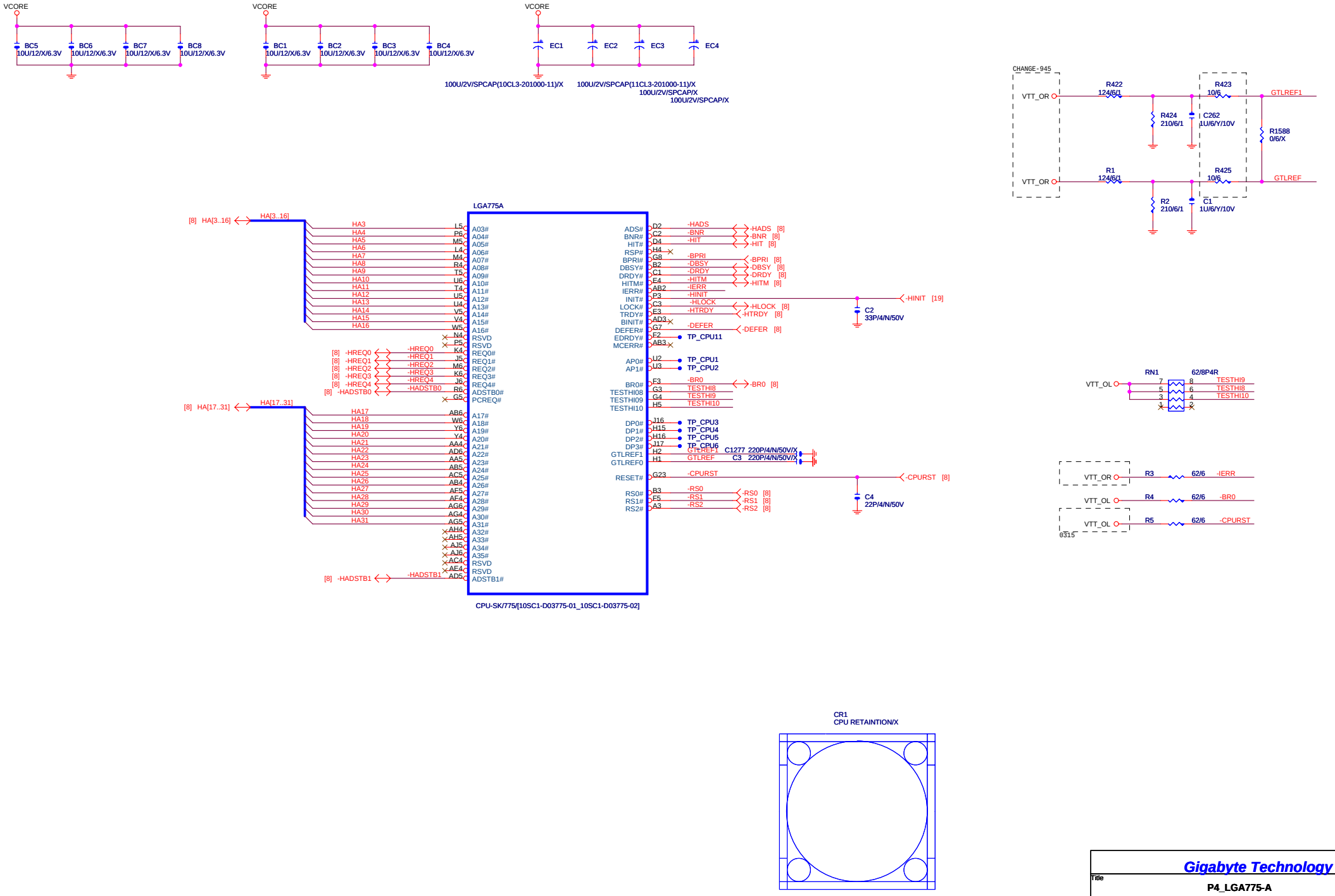
Data	Change Item	Reason
2005/03/02	945P+ICH7	NEW BOM
2005/03/18	REV 1.0 :9M8I945GMF-00-10A	1.945G/A2+ICH7R/A1
2005/03/25	REV 1.0 :9M8I945GMF-00-10A P-BOM	1.945G/A2+ICH7/A1
		2.包材

Circuit or PCB layout change for next version

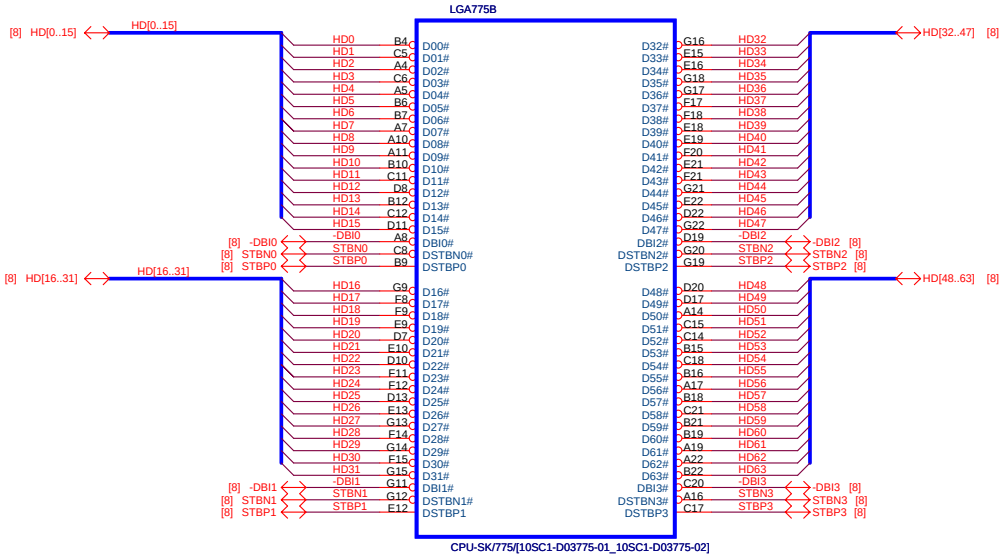
DATE	Change Item	Reason

Gigabyte Technology

Title	BOM & PCB MODIFY HISTORY		
Size: Custom	Document Number: 8I945GMF		Rev: 1.0
Date: Friday, March 25, 2005	Sheet 3 of 34		



Gigabyte Technology		
Title: P4_LGA775-A		
Size: Custom	Document Number: 8I945GMF	Rev: 1.0
Date: Friday, March 25, 2005	Sheet 4 of 34	



Gigabyte Technology		
Title: P4_LGA775-C		
Size: Custom	Document Number: 8I945GMF	Rev: 1.0
Date: Friday, March 25, 2005	Sheet 5 of 34	

Note:

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

VCCA:120~220mA

VTT_GMCH — L1 10UH/0806/120mA/S/[10LI2-12100A-02_10LI2-12100A-03]

C8 1U/6/Y/10V — BC9 4.7U/8/Y/10V/X — R16 0/SHT/X

C9 1U/6/Y/10V — BC10 4.7U/8/Y/10V/X

L2 10UH/0806/120mA/S/[10LI2-12100A-02_10LI2-12100A-03]

VCCA — VSSA — VCOREPLL

Trace width doesn't less than 12 Mil

VCOREPLL:100mA

As close as possible to CPU socket

-STPCLK — C10 33P/4/N/50V

R6 62/6/X — VTT_GMCH — TESTHI0

C7 0.1U/6/Y/25V

VCC3 — R10 249/6/1 — Q1 2N7002/S — SOT23 — TESTHI0 — [8] GTL_DET

R1568 110/6/1 — R1569 61.9/6/1

support p4 extreme:1.5V

Place outside of CPU socket

VTT_OL — R7 60.4/6/1 COMP5; R8 60.4/6/1 COMP4; R9 60.4/6/1 COMP2; R11 60.4/6/1 COMP3; R13 60.4/6/1 COMP0; R14 60.4/6/1 COMP1 — C5 0.1U/6/Y/25V

VTT_OR — R1547 60.4/6/1 COMP6; R1548 60.4/6/1 COMP7 — C1278 0.1U/6/Y/25V

VTT_OR — R17 130/6 -PROCHOT

VTT_GMCH — RN2 470/8P4R: FSBSEL0, FSBSEL2, FSBSEL1

R18 62/6 TESTHI2_7

R19 62/6 -THRMTRIP

R20 62/6 -FERR

Locate at ICH7 Side

VTT_OL — R21 62/6/X RSVD_G6; R22 100/6 CPUPWROK — C11 1N/4/X/50V

VTT_OR — R27 680/6 VTT_PWRGD

VTT_OL — RN3 62/8P4R: TESTHI12, TESTHI11, TESTHI1, TESTHI13

VTT_OR — RN4 680/8P4R: VID5, VID4, VID2, VID0; R29 680/6 VID1; R30 680/6 VID3 — C13 0.1U/6/Y/25V

R32 62/6 -FORCEPR

RN5 62/8P4R: -BPM1, -BPM0, -BPM5, -BPM4

RN6 62/8P4R: -BPM2, -BPM3, TDI, TMS — C14 0.1U/6/Y/25V

R35 62/6 TDO

R36 62/6 -TRST

R37 62/6 TCK

LGA775C

[19] -SMI, -A20M, -FERR, INTR, NMI, -IGNNE, -STPCLK

VCCA, VSSA, VCOREPLL

[31] VID[0..5] — VID0, VID1, VID2, VID3, VID4, VID5

R426 62/6 — [21] CPUCLK, [21] -CPUCLK — F28, G28

[19] -SKTOCC — AE8

[24,26] CPU_TEMP — [24] THERMDC — AL1, AK1

0318: BC20 1N/4/X/50V/X — C12 1N/4/X/50V/X

0302-UP: TP_CPU10 — R1589 62/6/X

VCC_SENSE — BC173 10U/12/X/6.3V/X — VSS_SENSE

TP_CPU12, TP_CPU13 — AN3, AN4

VCC_SENSE — AN5; VSS_SENSE — AN6

F29, F6

R427 62/6 MSID1 — V1; R428 62/6 MSID0 — W1

N5, AE6

SMI#, A20M#, FERR#/PBE#, LINT0, LINT1, IGNNE#, STPCLK#

VCCA, VSSA, RSVD, VCCIOPLL

VID0, VID1, VID2, VID3, VID4, VID5, VID6, VID7, VID_SELECT

BCLK0, BCLK1, SKTOCC#

THERMDA, THERMDC

VCC_SENSE, VSS_SENSE, RSVD, RSVD

VTT_PKGSENSE, IMPSEL

MSID1, MSID0, RSVD, RSVD

TESTHI00 F26 TESTHI0; TESTHI01 W3 TESTHI1; TESTHI11 P1 TESTHI11; TESTHI12 W2 TESTHI12

TESTHI02 F25; TESTHI03 G25; TESTHI04 G27; TESTHI05 G26; TESTHII06 G24; TESTHI07 F24 TESTHI2_7

RSVD AK6 -FORCEPR — [34] -FORCEPR

RSVD G6 RSVD_G6

SLP# L2 TESTHI13; RSVD AH2; PWRGOOD N1 CPUPWROK — [19] CPUPWROK

PROCHOT# AL2 -PROCHOT — [34] -PROCHOT

THERMTRIP# M2 -THRMTRIP — [19] -THRMTRIP

COMP0 A13 COMP0; COMP1 T1 COMP1; COMP2 G2 COMP2; COMP3 R1 COMP3; COMP4 J2 COMP4; COMP5 T2 COMP5; COMP6 V3 COMP6; COMP7 AE3 COMP7

RSVD C9; RSVD G10; RSVD D16; RSVD A20

N/C F23 TP_CPU9; N/C F23 TP_CPU8; N/C E7 TP_CPU7

CS_GTLREF E24 — [8] MCH_GTLREF

GTLREF_SEL H29 — [8] GTL_DET

N/C J3

BOOTSELECT Y1; LL_ID0 V2; LL_ID1 AA2

CPU-SK/775/[10SC1-D03775-01_10SC1-D03775-02]

LGA775D

TCK AE1, TDI AD1, TDO AE1, TMS AC1, -TRST AG1

-BPM0 AJ2, -BPM1 AJ1, -BPM2 AD2, -BPM3 AG2, -BPM4 AF2, -BPM5 AG3

[19,21,34] -SYS_RST — -SYS_RST AC2

DBR#

AK3, AJ3 — ITPCLK0, ITPCLK1

FSBSEL0 G29, FSBSEL1 H30, FSBSEL2 G30 — BSEL0, BSEL1, BSEL2

TCK, TDI, TDO, TMS, TRST#

BPM0#, BPM1#, BPM2#, BPM3#, BPM4#, BPM5#

VTT_GMCH

VTT A29, VTT B25, VTT B29, VTT B30, VTT C29, VTT A26, VTT B27, VTT C28, VTT A25, VTT A28, VTT A27, VTT C30, VTT A30, VTT C25, VTT C26, VTT C27, VTT B26, VTT D27, VTT D28, VTT D25, VTT D26, VTT B28, VTT D29, VTT D30

VTTPWRGD AM6 VTT_PWRGD — VTT_PWRGD [31,32]

VTT_OUT AA1 — VTT_OR

VTT_OUT J1 — VTT_OL

VTT_SEL F27 — R38 1K/6/X — VCC3

CPU-SK/775/[10SC1-D03775-01_10SC1-D03775-02]

[21] FSBSEL0 — FSBSEL0 R39 8.2K/6 BSEL0 — BSEL0 [11]

[21] FSBSEL1 — FSBSEL1 R40 8.2K/6 BSEL1 — BSEL1 [11]

[21] FSBSEL2 — FSBSEL2 R41 8.2K/6 BSEL2 — BSEL2 [11]

945 Design Guide rev1.5 spec.
VCCA=120~220mA
公板爲125mA

10LI2-12100A-03=INDUCTOR 10uH 300mA TAI-TECH
10LI2-12100A-02=INDUCTOR 10uH 155mA TAIYO
10LI2-12100A-01=INDUCTOR 10uH 120mA TDK

限用兩種

CPU

FSA	FSB	NA		
FSBSEL0	FSBSEL1	FSBSEL3	Clock	
1	0	1	100MHz	X
1	0	0	133MHz	
1	1	0	166MHz	RATIO
0	1	0	200MHz	2.66/3.33
0	0	0	266MHz	2.00/2.5

Gigabyte Technology

Title: P4_LGA775-B

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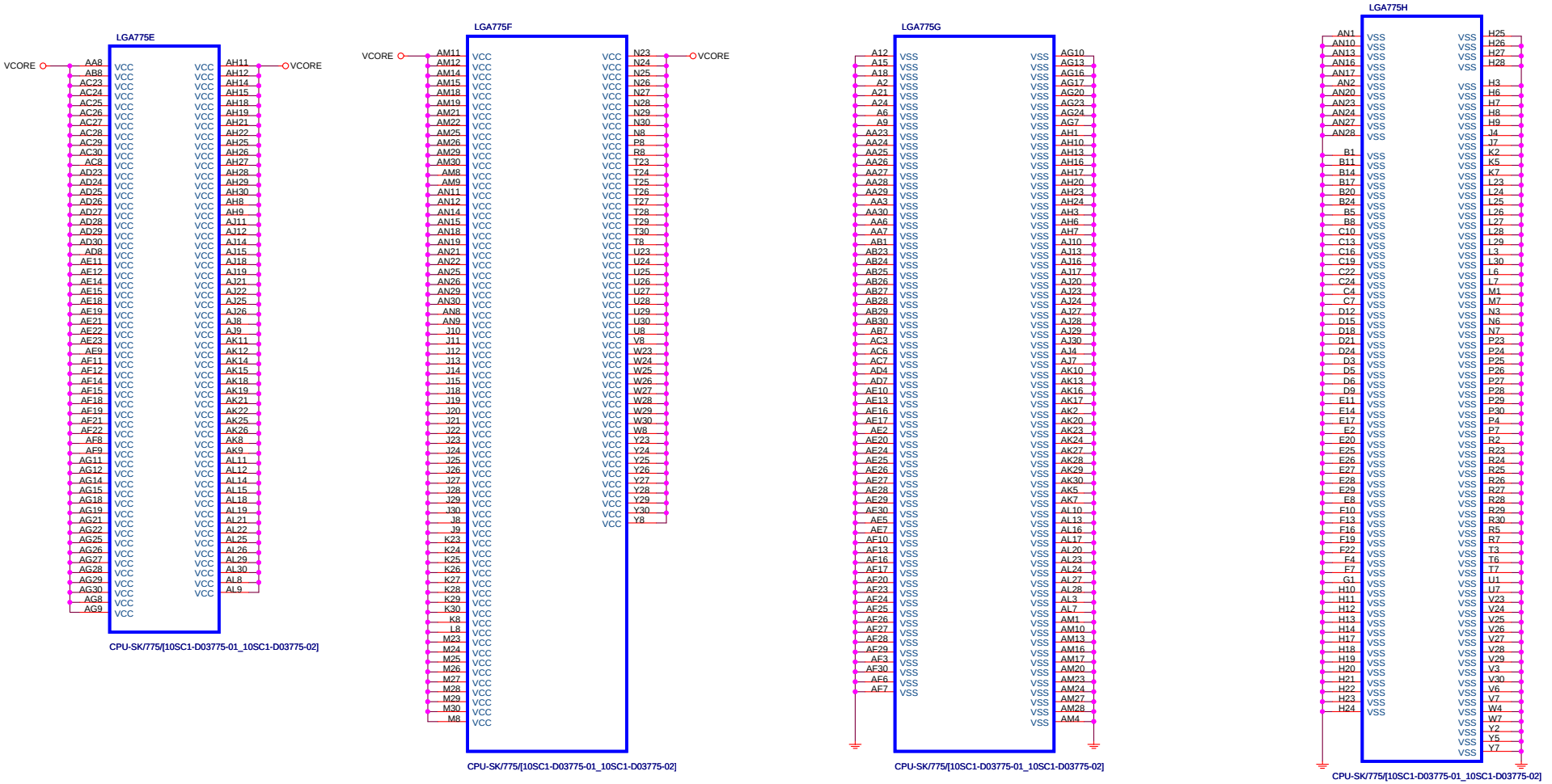
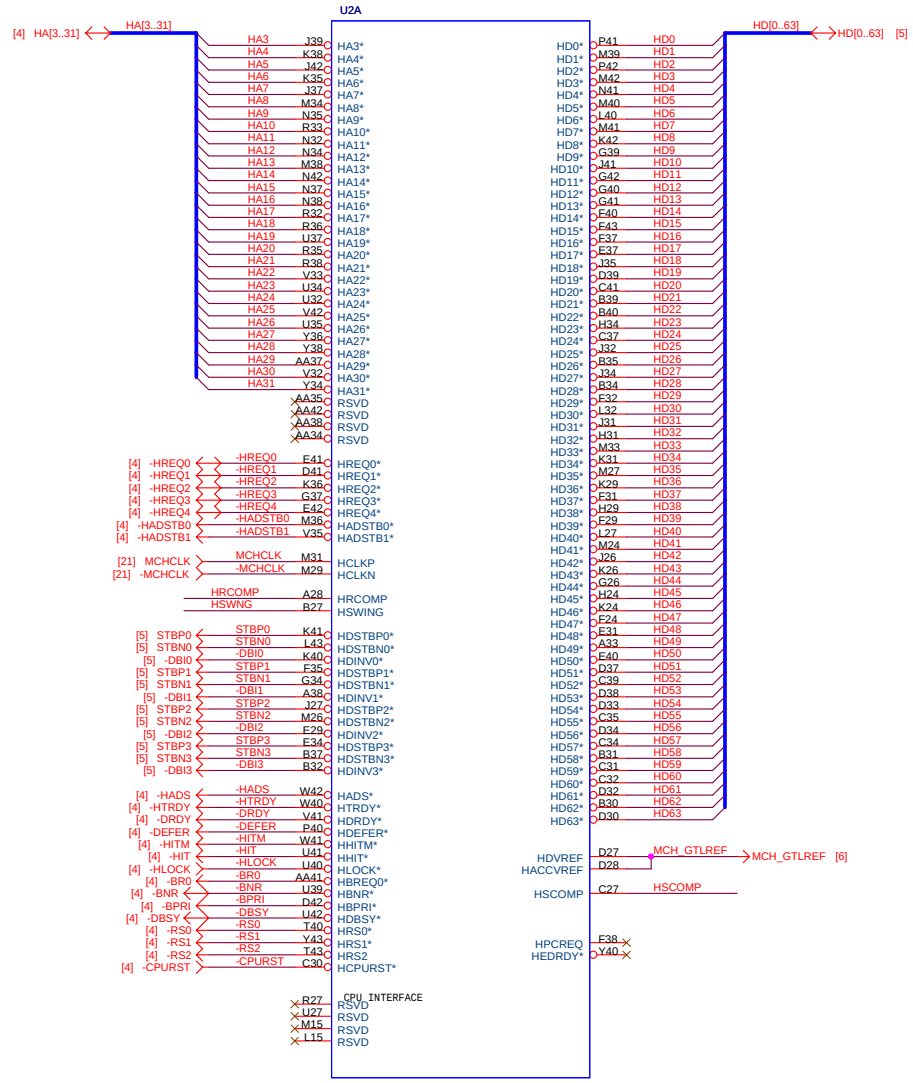
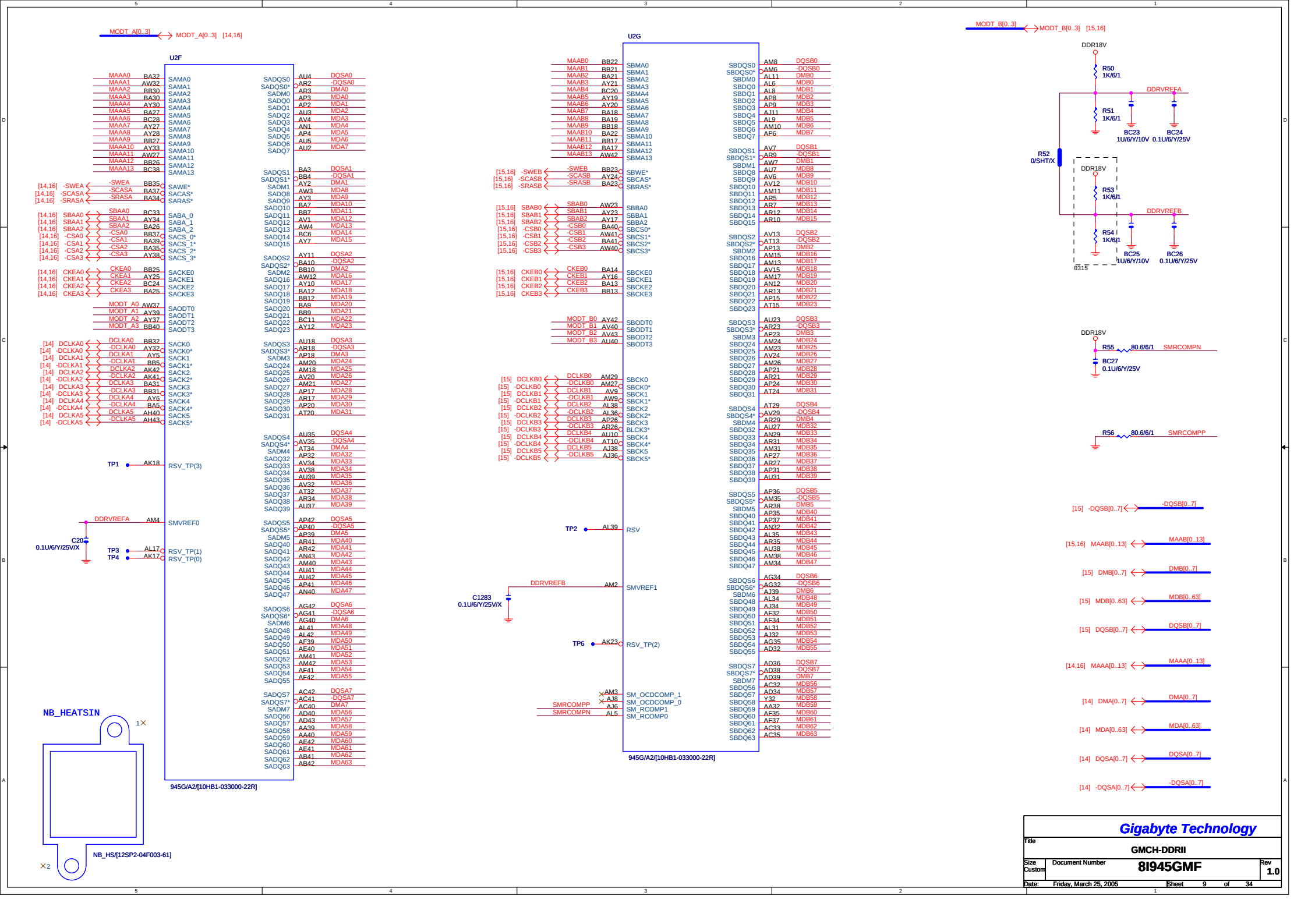
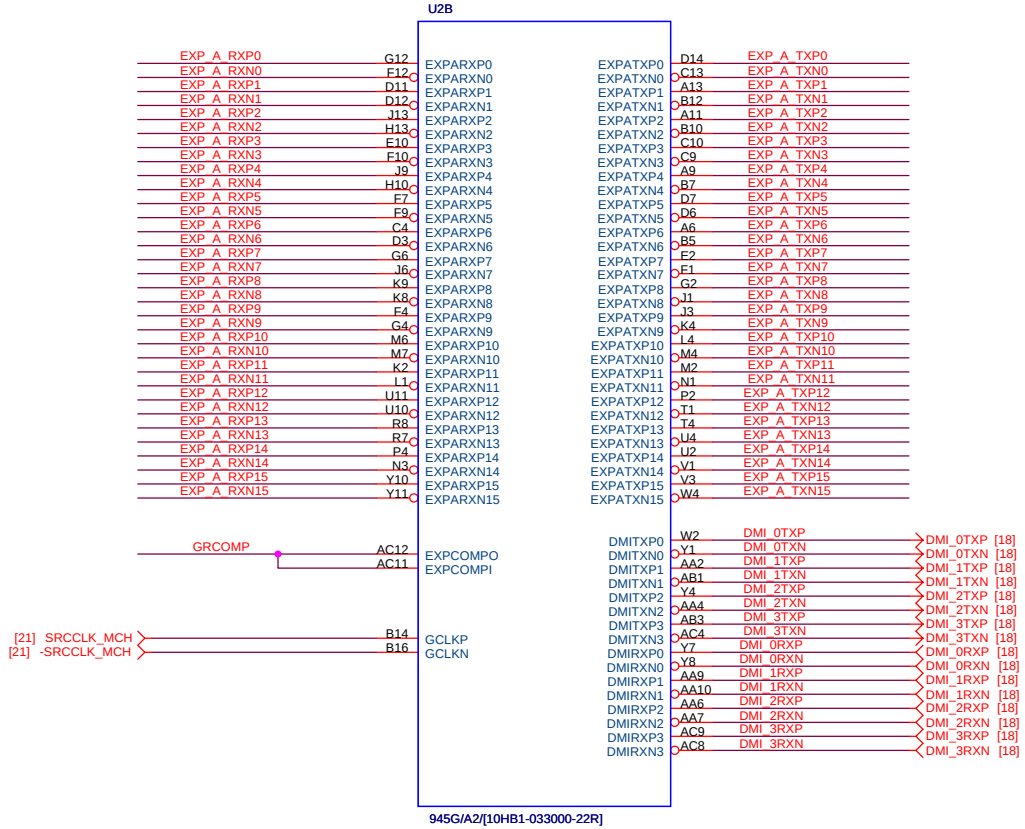


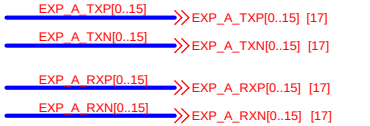
Gigabyte Technology		
Title: P4_LGA775-D		
Size: Custom	Document Number: 8I945GMF	Rev: 1.0
Date: Friday, March 25, 2005	Sheet 7 of 34	

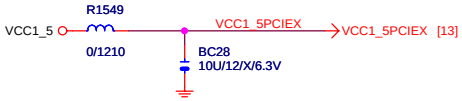


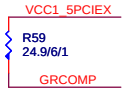
Gigabyte Technology		
Title: GMCH-HOST		
Size: Custom	Document Number: 8I945GMF	Rev: 1.0
Date: Friday, March 25, 2005	Sheet 8 of 34	


MODT_A[0..3]
MODT_A[0..3] [14,16]
U2F
MAAA0 BA32
MAAA1 AW32
MAAA2 BB30
MAAA3 BA30
MAAA4 AY30
MAAA5 BA27
MAAA6 BC28
MAAA7 AY27
MAAA8 AY28
MAAA9 BB27
MAAA10 AY33
MAAA11 AW27
MAAA12 BB26
MAAA13 BC38
SAMA0
SAMA1
SAMA2
SAMA3
SAMA4
SAMA5
SAMA6
SAMA7
SAMA8
SAMA9
SAMA10
SAMA11
SAMA12
SAMA13
[14,16] -SWEA
[14,16] -SCASA
[14,16] -SRASA
-SWEA BB35
-SCASA BA37
-SRASA BA34
SAWE*
SACAS*
SARAS*
SBAA0 BC33
SBAA1 AY34
SBAA2 BA26
-CSA0 BB37
-CSA1 BA39
-CSA2 BA35
-CSA3 AY38
SABA_0
SABA_1
SABA_2
SACS_0*
SACS_1*
SACS_2*
SACS_3*
[14,16] CKEA0 BB25
[14,16] CKEA1 AY25
[14,16] CKEA2 BC24
[14,16] CKEA3 BA25
SACKE0
SACKE1
SACKE2
SACKE3
MODT_A0 AW37
MODT_A1 AY39
MODT_A2 AY37
MODT_A3 BB40
SAODT0
SAODT1
SAODT2
SAODT3
[14] DCLKA0 BB32
[14] -DCLKA0 AY32
[14] DCLKA1 AY5
[14] -DCLKA1 BB5
[14] DCLKA2 AK42
[14] -DCLKA2 AK41
[14] DCLKA3 BA31
[14] -DCLKA3 BB31
[14] DCLKA4 AY6
[14] -DCLKA4 BA5
[14] DCLKA5 AH40
[14] -DCLKA5 AH43
SACK0
SACK0*
SACK1
SACK1*
SACK2
SACK2*
SACK3
SACK3*
SACK4
SACK4*
SACK5
SACK5*
TP1 AK18 RSV_TP(3)
DDRVREFA AM4 SMVREF0
C20 0.1U/6Y/25V/X
TP3 AL17 RSV_TP(1)
TP4 AK17 RSV_TP(0)
SADQS0 AU4 DQSA0
SADQS0* AR2 -DQSA0
SADM0 AR3 DMA0
SADQ0 AP3 MDA0
SADQ1 AP2 MDA1
SADQ2 AU3 MDA2
SADQ3 AV4 MDA3
SADQ4 AN1 MDA4
SADQ5 AP4 MDA5
SADQ6 AU5 MDA6
SADQ7 AU2 MDA7
SADQS1 BA3 DQSA1
SADQS1* BB4 -DQSA1
SADM1 AY2 DMA1
SADQ8 AW3 MDA8
SADQ9 AY3 MDA9
SADQ10 BA7 MDA10
SADQ11 B87 MDA11
SADQ12 AV1 MDA12
SADQ13 AW4 MDA13
SADQ14 BC6 MDA14
SADQ15 AY7 MDA15
SADQS2 AY11 DQSA2
SADQS2* BA10 -DQSA2
SADM2 BB10 DMA2
SADQ16 AW12 MDA16
SADQ17 AY10 MDA17
SADQ18 BA12 MDA18
SADQ19 BB12 MDA19
SADQ20 BA9 MDA20
SADQ21 BB9 MDA21
SADQ22 BC11 MDA22
SADQ23 AY12 MDA23
SADQS3 AU18 DQSA3
SADQS3* AR18 -DQSA3
SADM3 AP18 DMA3
SADQ24 AM20 MDA24
SADQ25 AM18 MDA25
SADQ26 AV20 MDA26
SADQ27 AM21 MDA27
SADQ28 AP17 MDA28
SADQ29 AR17 MDA29
SADQ30 AP20 MDA30
SADQ31 AT20 MDA31
SADQS4 AU35 DQSA4
SADQS4* AV35 -DQSA4
SADM4 AT34 DMA4
SADQ32 AP32 MDA32
SADQ33 AV34 MDA33
SADQ34 AV38 MDA34
SADQ35 AU39 MDA35
SADQ36 AV32 MDA36
SADQ37 AT32 MDA37
SADQ38 AR34 MDA38
SADQ39 AU37 MDA39
SADQS5 AP42 DQSA5
SADQS5* AP40 -DQSA5
SADM5 AP39 DMA5
SADQ40 AR41 MDA40
SADQ41 AR42 MDA41
SADQ42 AN43 MDA42
SADQ43 AM40 MDA43
SADQ44 AU41 MDA44
SADQ45 AU42 MDA45
SADQ46 AP41 MDA46
SADQ47 AN40 MDA47
SADQS6 AG42 DQSA6
SADQS6* AG41 -DQSA6
SADM6 AG40 DMA6
SADQ48 AL41 MDA48
SADQ49 AL42 MDA49
SADQ50 AF39 MDA50
SADQ51 AE40 MDA51
SADQ52 AM41 MDA52
SADQ53 AM42 MDA53
SADQ54 AF41 MDA54
SADQ55 AF42 MDA55
SADQS7 AC42 DQSA7
SADQS7* AC41 -DQSA7
SADM7 AC40 DMA7
SADQ56 AD40 MDA56
SADQ57 AD43 MDA57
SADQ58 AA39 MDA58
SADQ59 AA40 MDA59
SADQ60 AE42 MDA60
SADQ61 AE41 MDA61
SADQ62 AB41 MDA62
SADQ63 AB42 MDA63
945G/A2/[10HB1-033000-22R]
NB_HEATSIN
1
2
NB_HS/[12SP2-04F003-61]
U2G
MAAB0 BB22
MAAB1 BB21
MAAB2 BA21
MAAB3 AY21
MAAB4 BC20
MAAB5 AY19
MAAB6 AY20
MAAB7 BA18
MAAB8 BA19
MAAB9 BB18
MAAB10 BA22
MAAB11 BB17
MAAB12 BA17
MAAB13 AW42
SBMA0
SBMA1
SBMA2
SBMA3
SBMA4
SBMA5
SBMA6
SBMA7
SBMA8
SBMA9
SBMA10
SBMA11
SBMA12
SBMA13
[15,16] -SWEB BB23
[15,16] -SCASB AY24
[15,16] -SRASB BA23
SBWE*
SBCAS*
SBRAS*
[15,16] SBAB0 AW23
[15,16] SBAB1 AY23
[15,16] SBAB2 AY17
[15,16] -CSB0 BA40
[15,16] -CSB1 AW41
[15,16] -CSB2 BA41
[15,16] -CSB3 AW40
SBBA0
SBBA1
SBBA2
SBCS0*
SBCS1*
SBCS2*
SBCS3*
[15,16] CKEB0 BA14
[15,16] CKEB1 AY16
[15,16] CKEB2 BA13
[15,16] CKEB3 BB13
SBCKE0
SBCKE1
SBCKE2
SBCKE3
MODT_B0 AY42
MODT_B1 AV40
MODT_B2 AV43
MODT_B3 AU40
SBODT0
SBODT1
SBODT2
SBODT3
[15] DCLKB0 AM29
[15] -DCLKB0 AM27
[15] DCLKB1 AV9
[15] -DCLKB1 AW9
[15] DCLKB2 AL38
[15] -DCLKB2 AL36
[15] DCLKB3 AP26
[15] -DCLKB3 AR26
[15] DCLKB4 AU10
[15] -DCLKB4 AT10
[15] DCLKB5 AJ38
[15] -DCLKB5 AJ36
SBCK0
SBCK0*
SBCK1
SBCK1*
SBCK2
SBCK2*
SBCK3
BLCK3*
SBCK4
SBCK4*
SBCK5
SBCK5*
TP2 AL39 RSV
C1283 0.1U/6Y/25V/X
DDRVREFB AM2 SMVREF1
TP6 AK23 RSV_TP(2)
AM3 SM_OCDCOMP_1
AJ8 SM_OCDCOMP_0
SMRCOMPP AJ6 SM_RCOMP1
SMRCOMPN AL5 SM_RCOMP0
SBDQS0 AM8 DQSB0
SBDQS0* AM6 -DQSB0
SBDM0 AL11 DMB0
SBDQ0 AL6 MDB0
SBDQ1 AL8 MDB1
SBDQ2 AP8 MDB2
SBDQ3 AP9 MDB3
SBDQ4 AJ11 MDB4
SBDQ5 AL9 MDB5
SBDQ6 AM10 MDB6
SBDQ7 AP6 MDB7
SBDQS1 AV7 DQSB1
SBDQS1* AR9 -DQSB1
SBDM1 AW7 DMB1
SBDQ8 AU7 MDB8
SBDQ9 AV6 MDB9
SBDQ10 AV12 MDB10
SBDQ11 AM11 MDB11
SBDQ12 AR5 MDB12
SBDQ13 AR7 MDB13
SBDQ14 AR12 MDB14
SBDQ15 AR10 MDB15
SBDQS2 AV13 DQSB2
SBDQS2* AT13 -DQSB2
SBDM2 AP13 DMB2
SBDQ16 AM15 MDB16
SBDQ17 AM13 MDB17
SBDQ18 AV15 MDB18
SBDQ19 AM17 MDB19
SBDQ20 AN12 MDB20
SBDQ21 AR13 MDB21
SBDQ22 AP15 MDB22
SBDQ23 AT15 MDB23
SBDQS3 AU23 DQSB3
SBDQS3* AR23 -DQSB3
SBDM3 AP23 DMB3
SBDQ24 AM24 MDB24
SBDQ25 AM23 MDB25
SBDQ26 AV24 MDB26
SBDQ27 AM26 MDB27
SBDQ28 AP21 MDB28
SBDQ29 AR21 MDB29
SBDQ30 AP24 MDB30
SBDQ31 AT24 MDB31
SBDQS4 AT29 DQSB4
SBDQS4* AV29 -DQSB4
SBDM4 AR29 DMB4
SBDQ32 AU27 MDB32
SBDQ33 AN29 MDB33
SBDQ34 AR31 MDB34
SBDQ35 AM31 MDB35
SBDQ36 AP27 MDB36
SBDQ37 AR27 MDB37
SBDQ38 AP31 MDB38
SBDQ39 AU31 MDB39
SBDQS5 AP36 DQSB5
SBDQS5* AM35 -DQSB5
SBDM5 AR38 DMB5
SBDQ40 AP35 MDB40
SBDQ41 AP37 MDB41
SBDQ42 AN32 MDB42
SBDQ43 AL35 MDB43
SBDQ44 AR35 MDB44
SBDQ45 AU38 MDB45
SBDQ46 AM38 MDB46
SBDQ47 AM34 MDB47
SBDQS6 AG34 DQSB6
SBDQS6* AG32 -DQSB6
SBDM6 AJ39 DMB6
SBDQ48 AL34 MDB48
SBDQ49 AJ34 MDB49
SBDQ50 AF32 MDB50
SBDQ51 AF34 MDB51
SBDQ52 AL31 MDB52
SBDQ53 AJ32 MDB53
SBDQ54 AG35 MDB54
SBDQ55 AD32 MDB55
SBDQS7 AD36 DQSB7
SBDQS7* AD38 -DQSB7
SBDM7 AD39 DMB7
SBDQ56 AC32 MDB56
SBDQ57 AD34 MDB57
SBDQ58 Y32 MDB58
SBDQ59 AA32 MDB59
SBDQ60 AF35 MDB60
SBDQ61 AF37 MDB61
SBDQ62 AC33 MDB62
SBDQ63 AC35 MDB63
945G/A2/[10HB1-033000-22R]
MODT_B[0..3]
MODT_B[0..3] [15,16]
DDR18V
R50 1K/6/1
DDRVREFA
R51 1K/6/1
BC23 1U/6/Y/10V
BC24 0.1U/6/Y/25V
R52 0/SHT/X
DDR18V
R53 1K/6/1
DDRVREFB
R54 1K/6/1
BC25 1U/6/Y/10V
BC26 0.1U/6/Y/25V
0315
DDR18V
R55 80.6/6/1 SMRCOMPN
BC27 0.1U/6/Y/25V
R56 80.6/6/1 SMRCOMPP
[15] -DQSB[0..7] -DQSB[0..7]
[15,16] MAAB[0..13] MAAB[0..13]
[15] DMB[0..7] DMB[0..7]
[15] MDB[0..63] MDB[0..63]
[15] DQSB[0..7] DQSB[0..7]
[14,16] MAAA[0..13] MAAA[0..13]
[14] DMA[0..7] DMA[0..7]
[14] MDA[0..63] MDA[0..63]
[14] DQSA[0..7] DQSA[0..7]
[14] -DQSA[0..7] -DQSA[0..7]
Gigabyte Technology
Title
GMCH-DDRII
Size Custom
Document Number
8I945GMF
Rev 1.0
Date: Friday, March 25, 2005
Sheet 9 of 34

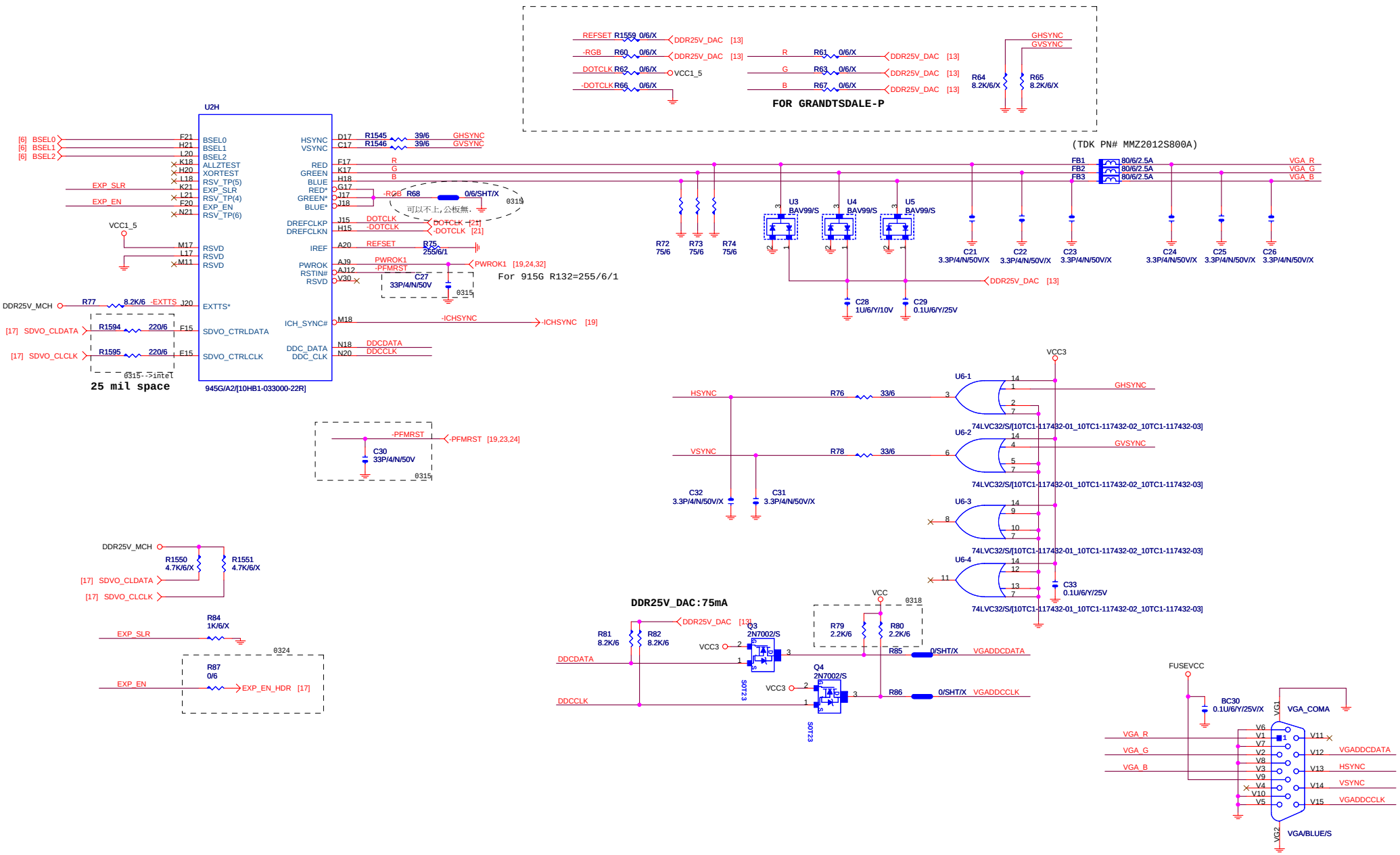




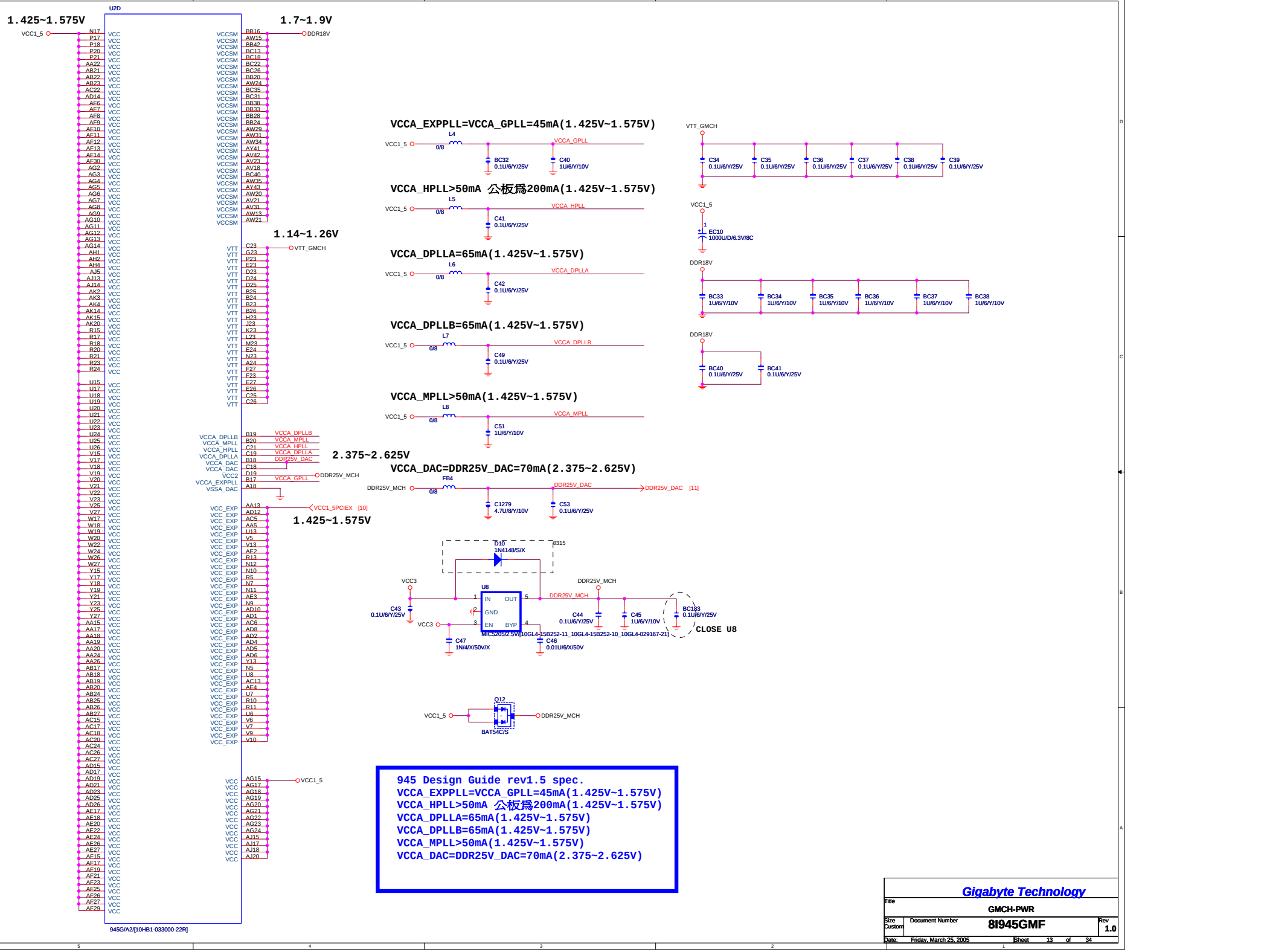


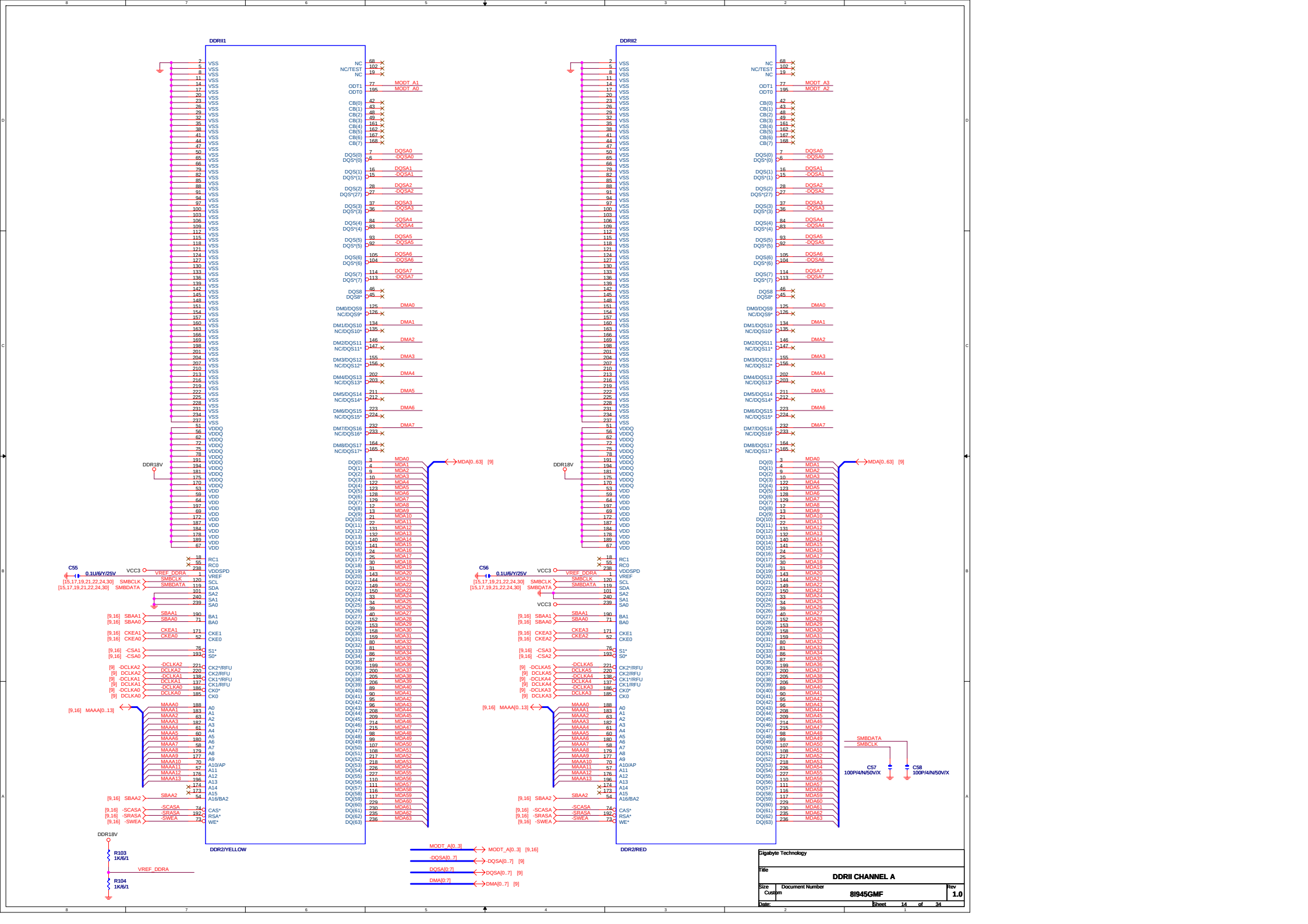


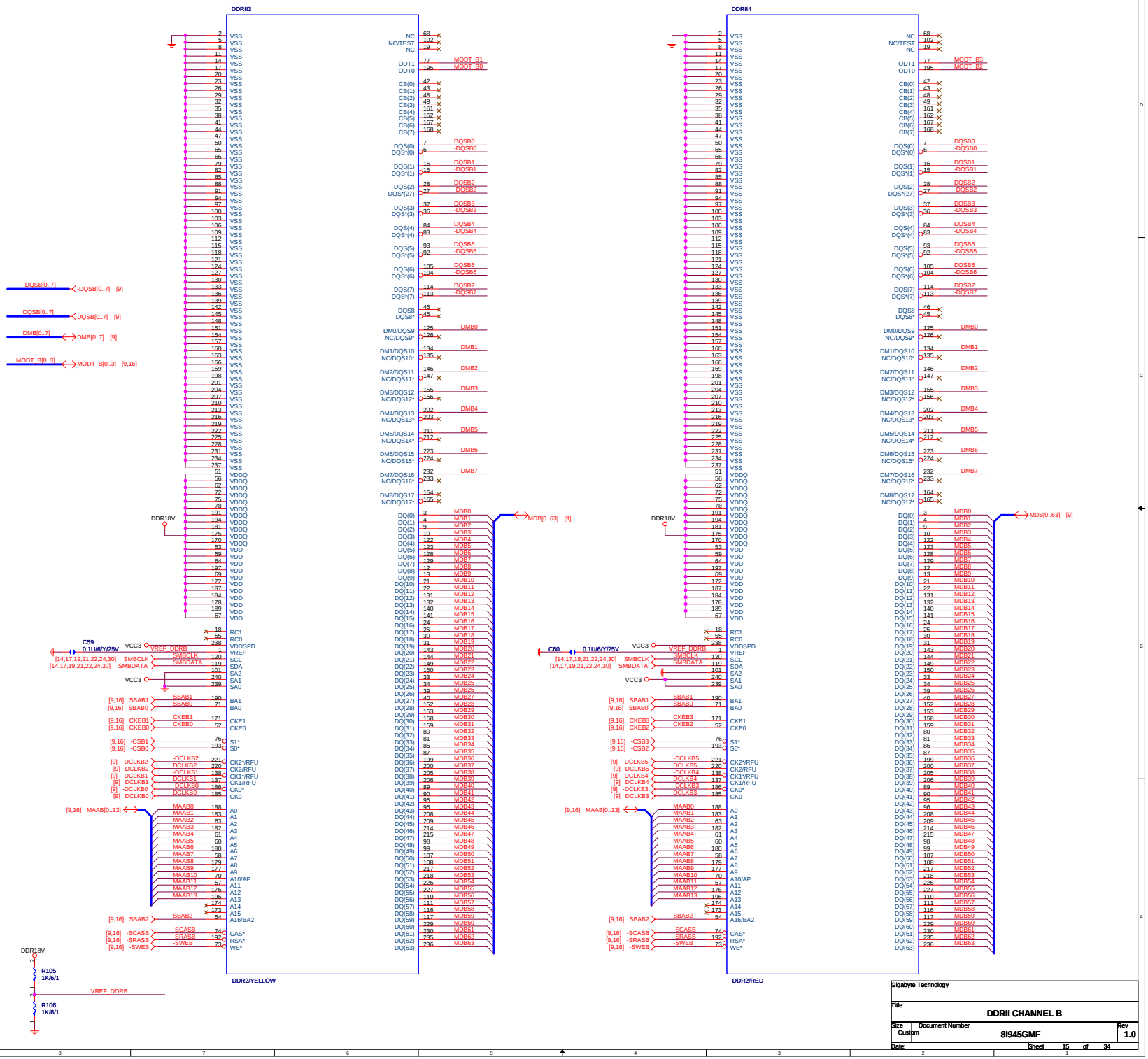
Gigabyte Technology			
Title: GMCH-PCI E & DMI			
Size: Custom	Document Number: 8I945GMF		Rev: 1.0
Date: Friday, March 25, 2005	Sheet 10 of 34		


FOR GRANDTSDALE-P
(TDK PN# MMZ2012S800A)
U2H
945G/A2/[10HB1-033000-22R]
25 mil space
For 915G R132=255/6/1
DDR25V_DAC:75mA
74LVC32/S/[10TC1-117432-01_10TC1-117432-02_10TC1-117432-03]
VGA_COMA
VGA/BLUE/S
Gigabyte Technology
GMCH-INTERNAL VGA
8I945GMF
1.0
Friday, March 25, 2005
Sheet 11 of 34

Gigabyte Technology		
Title	GMCH-GND	
Size: Custom	Document Number: 8I945GMF	Rev: 1.0
Date: Friday, March 25, 2005	Sheet 12 of 34	


U2D
1.425~1.575V
VCC1_5
1.7~1.9V
DDR18V
1.14~1.26V
VTT_GMCH
2.375~2.625V
DDR25V_MCH
1.425~1.575V
VCC1_5PCIEX [10]
VCCA_EXPPLL=VCCA_GPLL=45mA(1.425V~1.575V)
VCCA_HPLL>50mA 公板爲200mA(1.425V~1.575V)
VCCA_DPLLA=65mA(1.425V~1.575V)
VCCA_DPLLB=65mA(1.425V~1.575V)
VCCA_MPLL>50mA(1.425V~1.575V)
VCCA_DAC=DDR25V_DAC=70mA(2.375~2.625V)
L4
L5
L6
L7
L8
FB4
D10
1N4148/S/X
U8
MIC5205/2.5V/10GL4-15B252-11_10GL4-15B252-10_10GL4-029167-21
CLOSE U8
Q12
BAT54C/S
945G/A2/[10HB1-033000-22R]
945 Design Guide rev1.5 spec.
VCCA_EXPPLL=VCCA_GPLL=45mA(1.425V~1.575V)
VCCA_HPLL>50mA 公板爲200mA(1.425V~1.575V)
VCCA_DPLLA=65mA(1.425V~1.575V)
VCCA_DPLLB=65mA(1.425V~1.575V)
VCCA_MPLL>50mA(1.425V~1.575V)
VCCA_DAC=DDR25V_DAC=70mA(2.375~2.625V)
Gigabyte Technology
Title
GMCH-PWR
Size
Custom
Document Number
8I945GMF
Rev
1.0
Date: Friday, March 25, 2005
Sheet 13 of 34

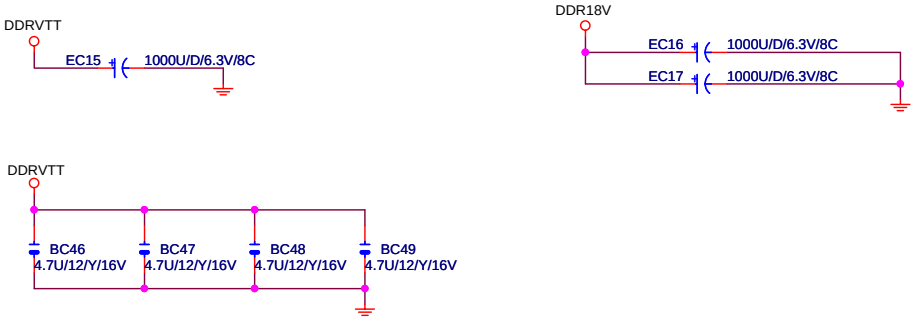

DDRII1
DDRII2
DDR18V
VREF_DDRA
R103 1K/6/1
R104 1K/6/1
C55 0.1U/6/Y/25V
C56 0.1U/6/Y/25V
C57 100P/4/N/50V/X
C58 100P/4/N/50V/X
SMBDATA
SMBCLK
MDA[0..63] [9]
MODT_A[0..3]
-DQSA[0..7]
DQSA[0..7]
DMA[0..7]
DDR2/YELLOW
DDR2/RED
Gigabyte Technology
DDRII CHANNEL A
8I945GMF
1.0
Sheet 14 of 34



Gigabyte Technology		
Title: DDRII CHANNEL B		
Size: Custom	Document Number: 81945GMF	Rev: 1.0
Date:	Sheet 15 of 34	

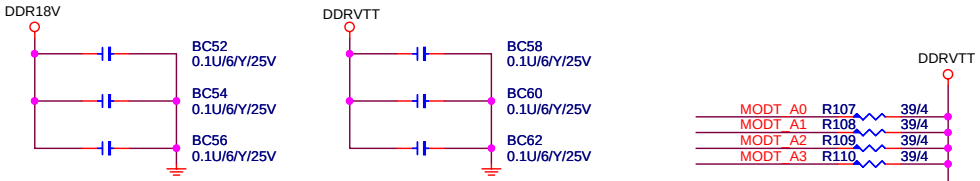
DDR TERMINATION CHANNEL A

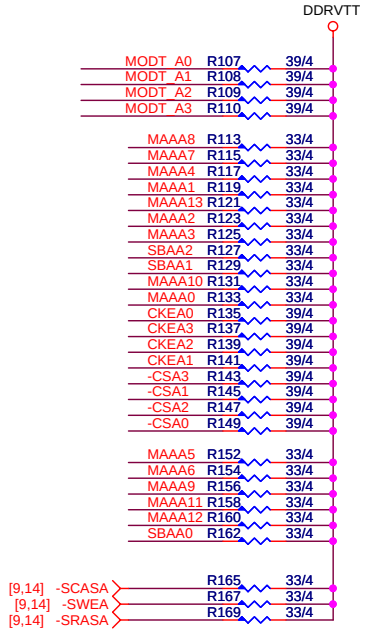
DDRVTT Decouple



DDR18V Decouple

DDRVTT Decouple

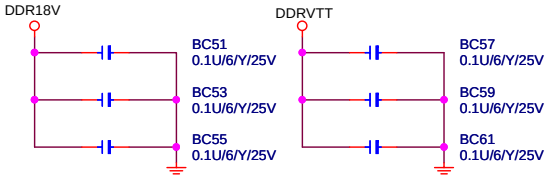


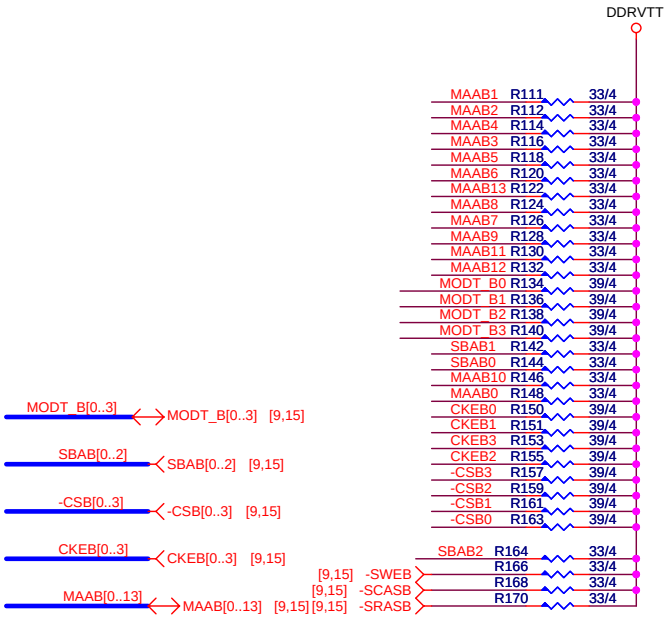


DDR TERMINATION CHANNEL B

DDR18V Decouple

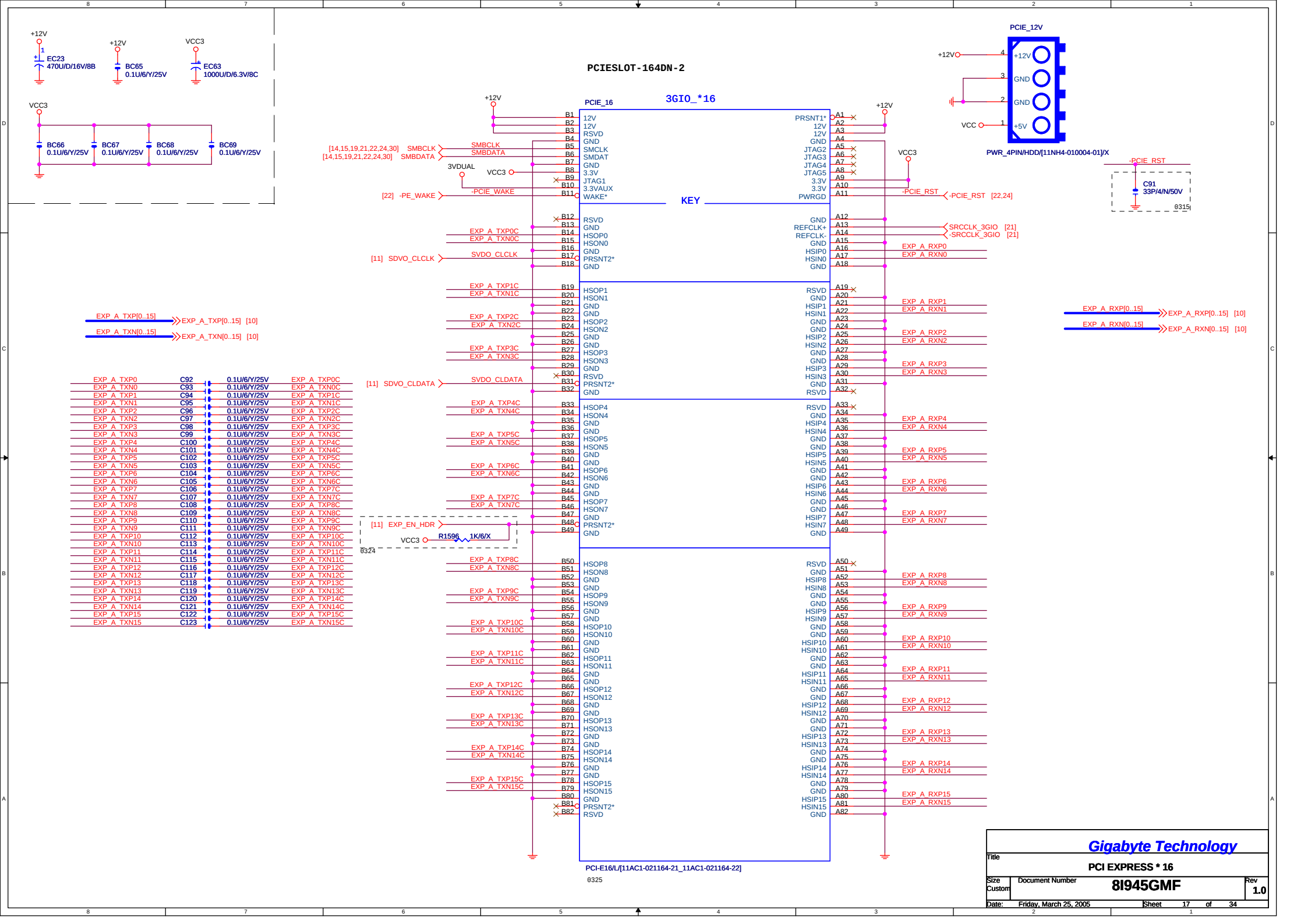
DDRVTT Decouple

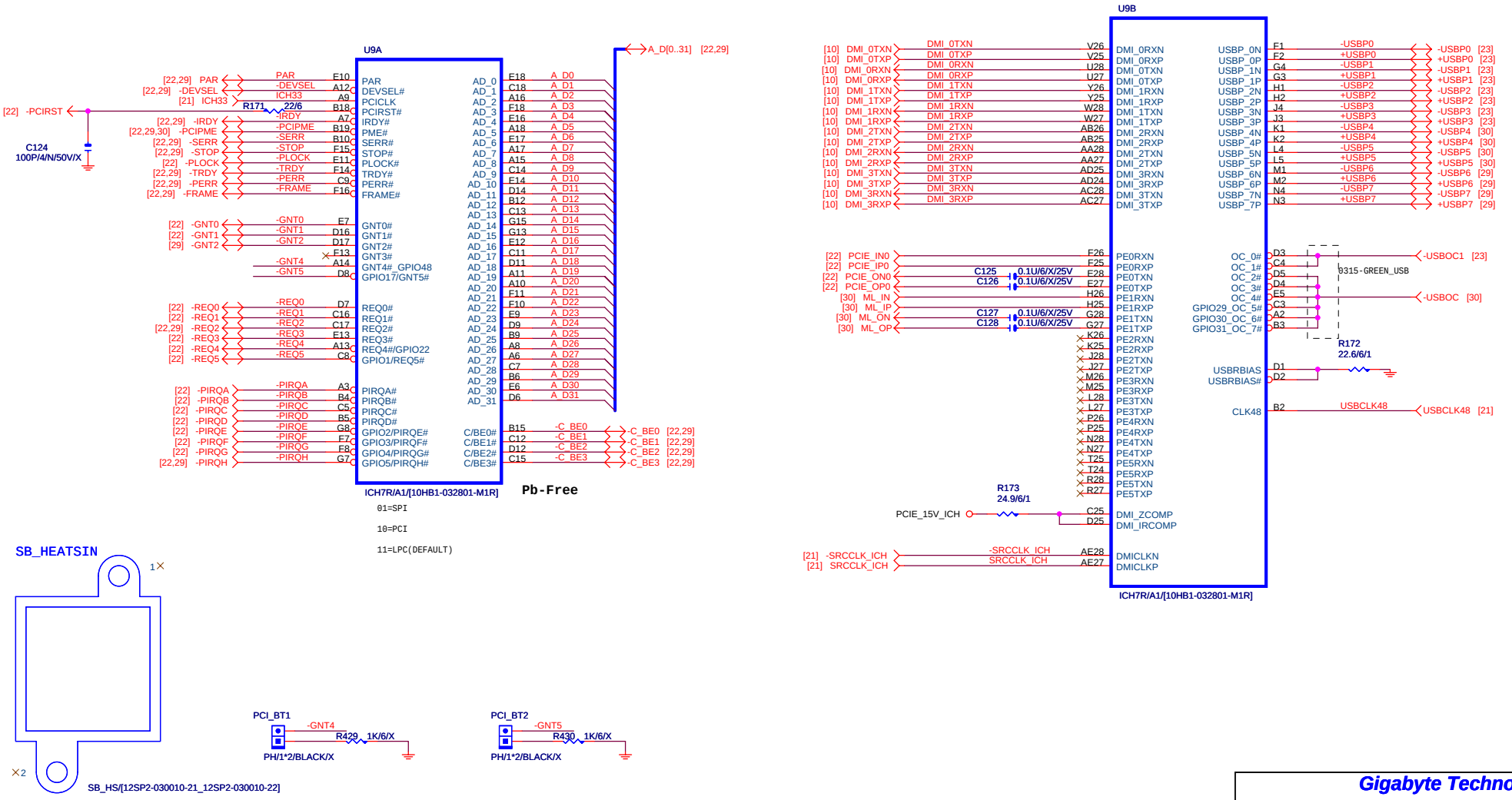




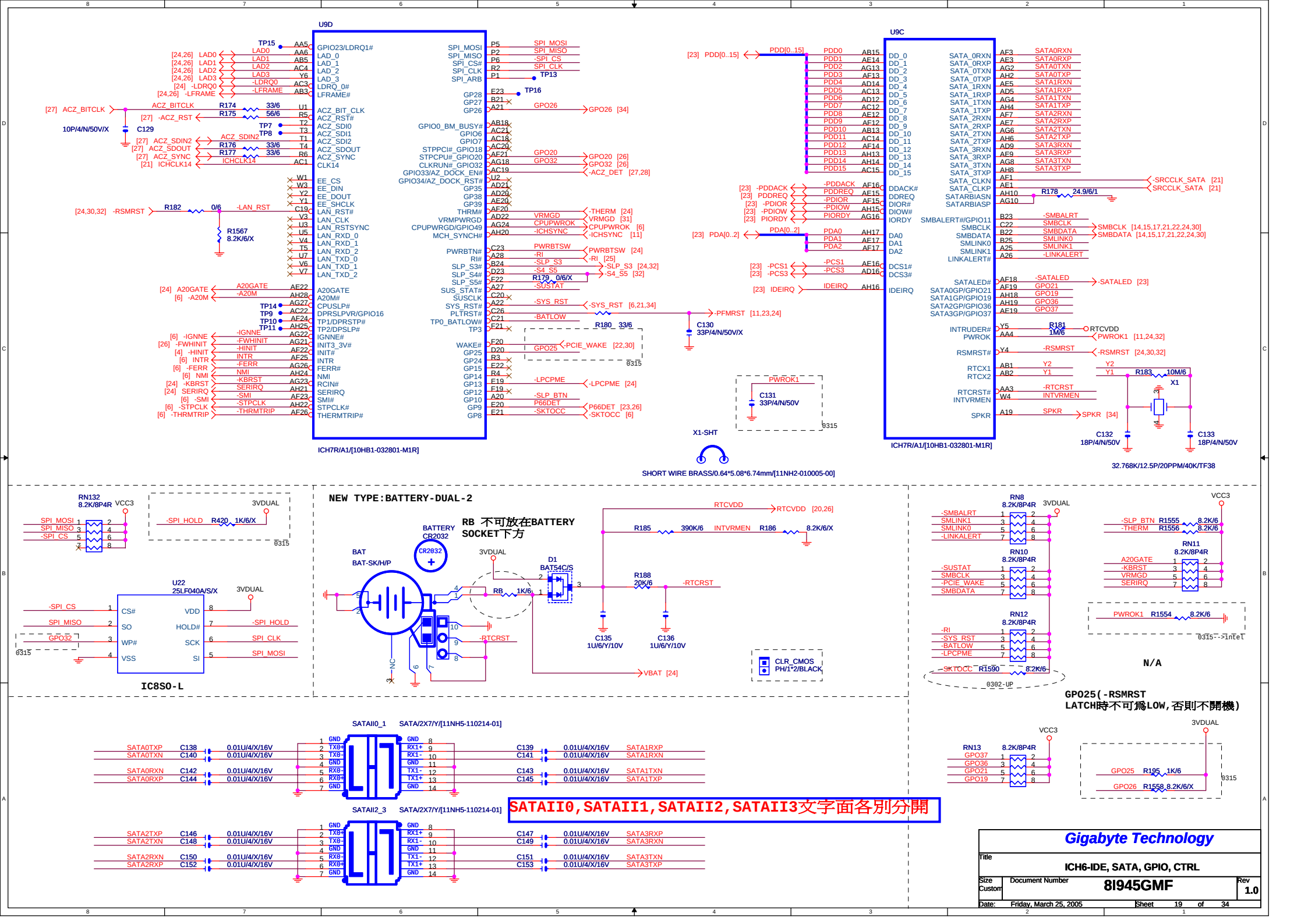
Gigabyte Technology

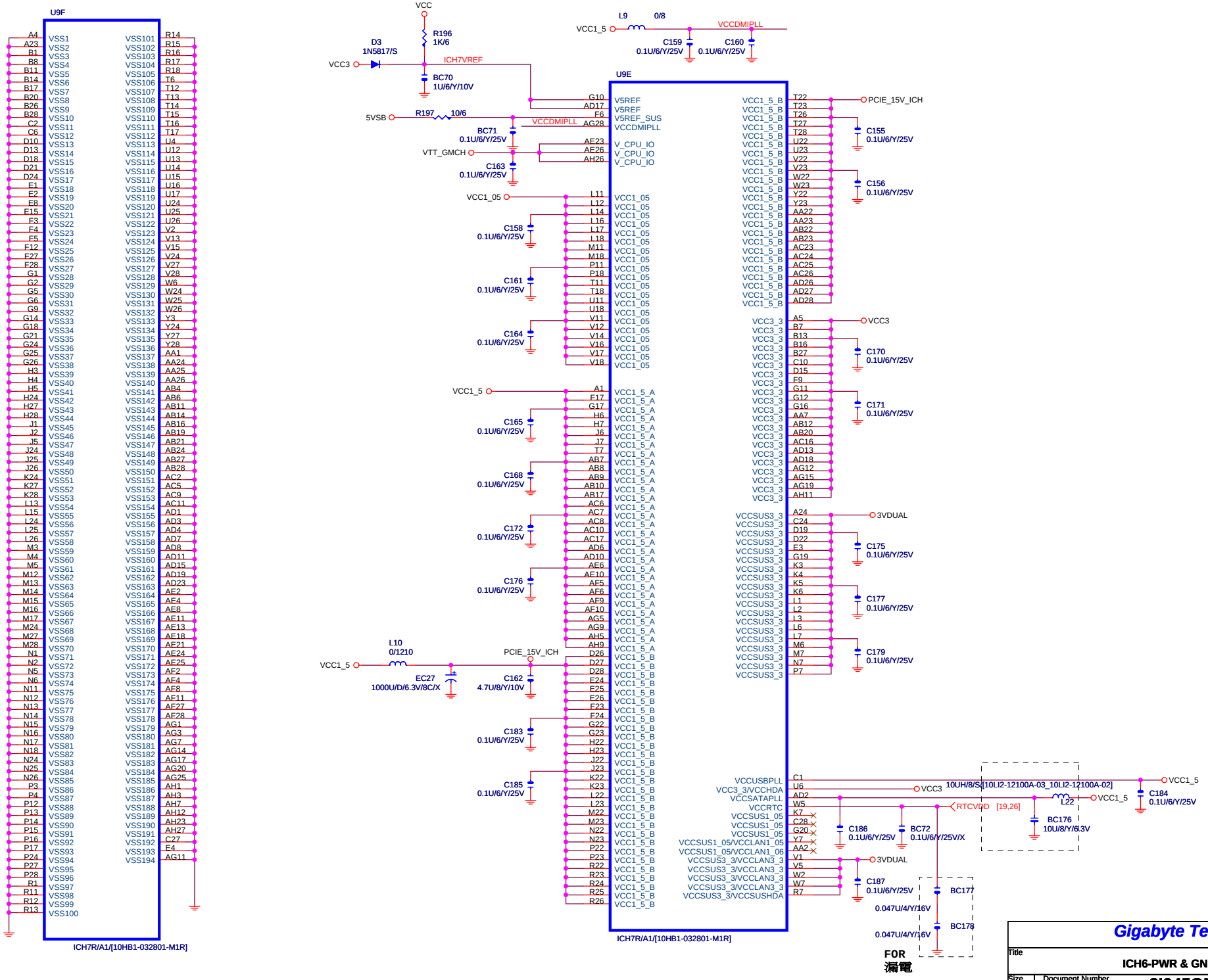
Title	DDRII TERMINATOR		
Size: Custom	Document Number: 8I945GMF		Rev: 1.0
Date: Friday, March 25, 2005	Sheet 16 of 34		

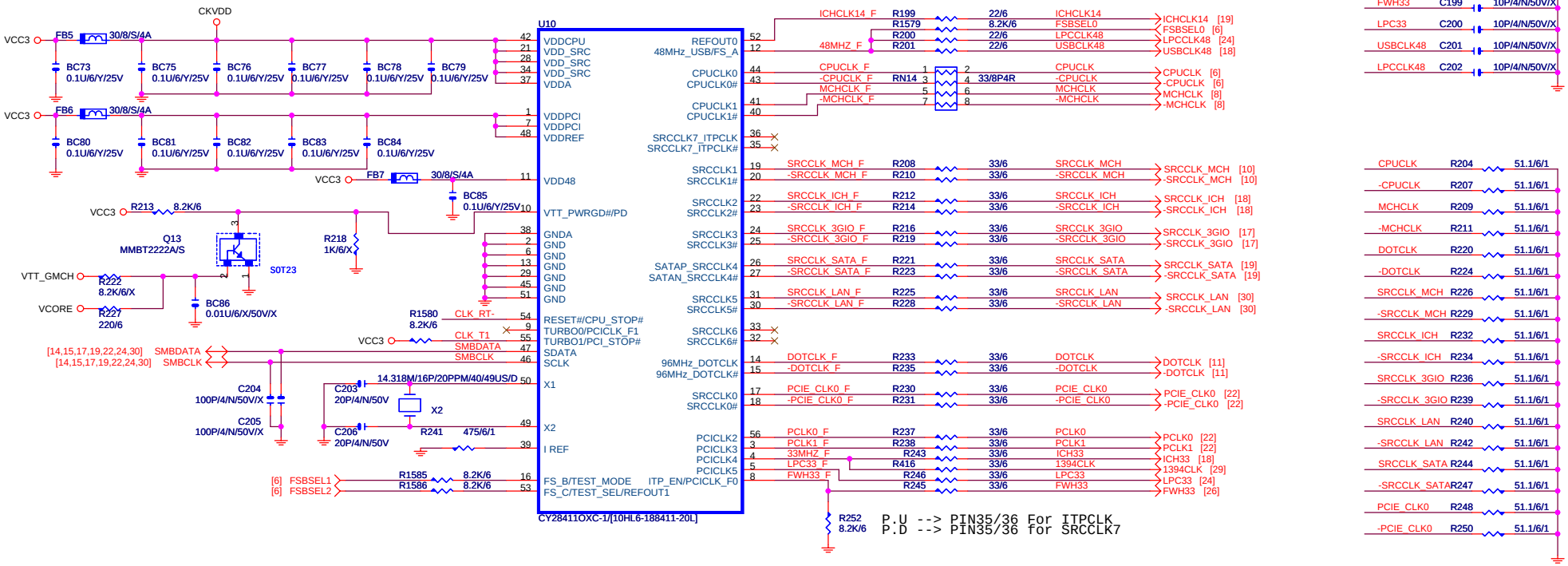

PCIESLOT-164DN-2
3GIO_*16
PCIE_16
KEY
PCIE_12V
PWR_4PIN/HDD/[11NH4-010004-01]/X
+12V
VCC3
3VDUAL
EC23 470U/D/16V/8B
BC65 0.1U/6/Y/25V
EC63 1000U/D/6.3V/8C
BC66 0.1U/6/Y/25V
BC67 0.1U/6/Y/25V
BC68 0.1U/6/Y/25V
BC69 0.1U/6/Y/25V
C91 33P/4/N/50V
R1596 1K/6/X
SMBCLK
SMBDATA
-PCIE_WAKE
-PCIE_RST
SVDO_CLCLK
SVDO_CLDATA
EXP_EN_HDR
SRCCLK_3GIO
-SRCCLK_3GIO
EXP_A_TXP[0..15]
EXP_A_TXN[0..15]
EXP_A_RXP[0..15]
EXP_A_RXN[0..15]
PCI-E16/L/[11AC1-021164-21_11AC1-021164-22]
Gigabyte Technology
PCI EXPRESS * 16
8I945GMF
Rev 1.0
Friday, March 25, 2005
Sheet 17 of 34



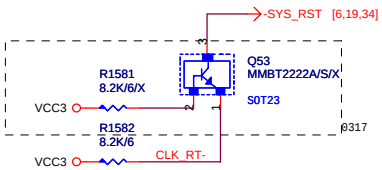
Gigabyte Technology			
Title	ICH6-PCI, DMI, LAN, USB		
Size B	Document Number 8I945GMF		Rev 1.0
Date: Friday, March 25, 2005	Sheet 18 of 34		


U9D
ICH7R/A1/[10HB1-032801-M1R]
U9C
ICH7R/A1/[10HB1-032801-M1R]
SHORT WIRE BRASS/0.64*5.08*6.74mm/[11NH2-010005-00]
32.768K/12.5P/20PPM/40K/TF38
NEW TYPE:BATTERY-DUAL-2
RB 不可放在BATTERY SOCKET下方
IC8S0-L
N/A
GPO25(-RSMRST LATCH時不可爲LOW,否則不開機)
SATAII0_1 SATA/2X7/Y/[11NH5-110214-01]
SATAII2_3 SATA/2X7/Y/[11NH5-110214-01]
SATAII0,SATAII1,SATAII2,SATAII3文字面各別分開
Gigabyte Technology
Title
ICH6-IDE, SATA, GPIO, CTRL
Size Custom
Document Number 8I945GMF
Rev 1.0
Date: Friday, March 25, 2005
Sheet 19 of 34


U9F
ICH7R/A1/[10HB1-032801-M1R]
U9E
ICH7R/A1/[10HB1-032801-M1R]
VCC
D3
1N5817/S
R196
1K/6
BC70
1U/6/Y/10V
ICH7VREF
L9
0/8
VCCDMIPLL
C159
0.1U/6/Y/25V
C160
0.1U/6/Y/25V
5VSB
R197
10/6
BC71
0.1U/6/Y/25V
VTT_GMCH
C163
0.1U/6/Y/25V
C158
0.1U/6/Y/25V
C161
0.1U/6/Y/25V
C164
0.1U/6/Y/25V
C165
0.1U/6/Y/25V
C168
0.1U/6/Y/25V
C172
0.1U/6/Y/25V
C176
0.1U/6/Y/25V
C183
0.1U/6/Y/25V
C185
0.1U/6/Y/25V
L10
0/1210
EC27
1000U/D/6.3V/8C/X
C162
4.7U/8/Y/10V
PCIE_15V_ICH
C155
0.1U/6/Y/25V
C156
0.1U/6/Y/25V
C170
0.1U/6/Y/25V
C171
0.1U/6/Y/25V
C175
0.1U/6/Y/25V
C177
0.1U/6/Y/25V
C179
0.1U/6/Y/25V
3VDUAL
C186
0.1U/6/Y/25V
BC72
0.1U/6/Y/25V/X
C187
0.1U/6/Y/25V
BC177
0.047U/4/Y/16V
BC178
0.047U/4/Y/16V
RTCVDD [19,26]
BC176
10U/8/Y/6.3V
L22
10UH/8/S/[10LI2-12100A-03_10LI2-12100A-02]
C184
0.1U/6/Y/25V
FOR
漏電
Gigabyte Technology
Title
ICH6-PWR & GND
Size
B
Document Number
8I945GMF
Rev
1.0
Date: Friday, March 25, 2005
Sheet 20 of 34



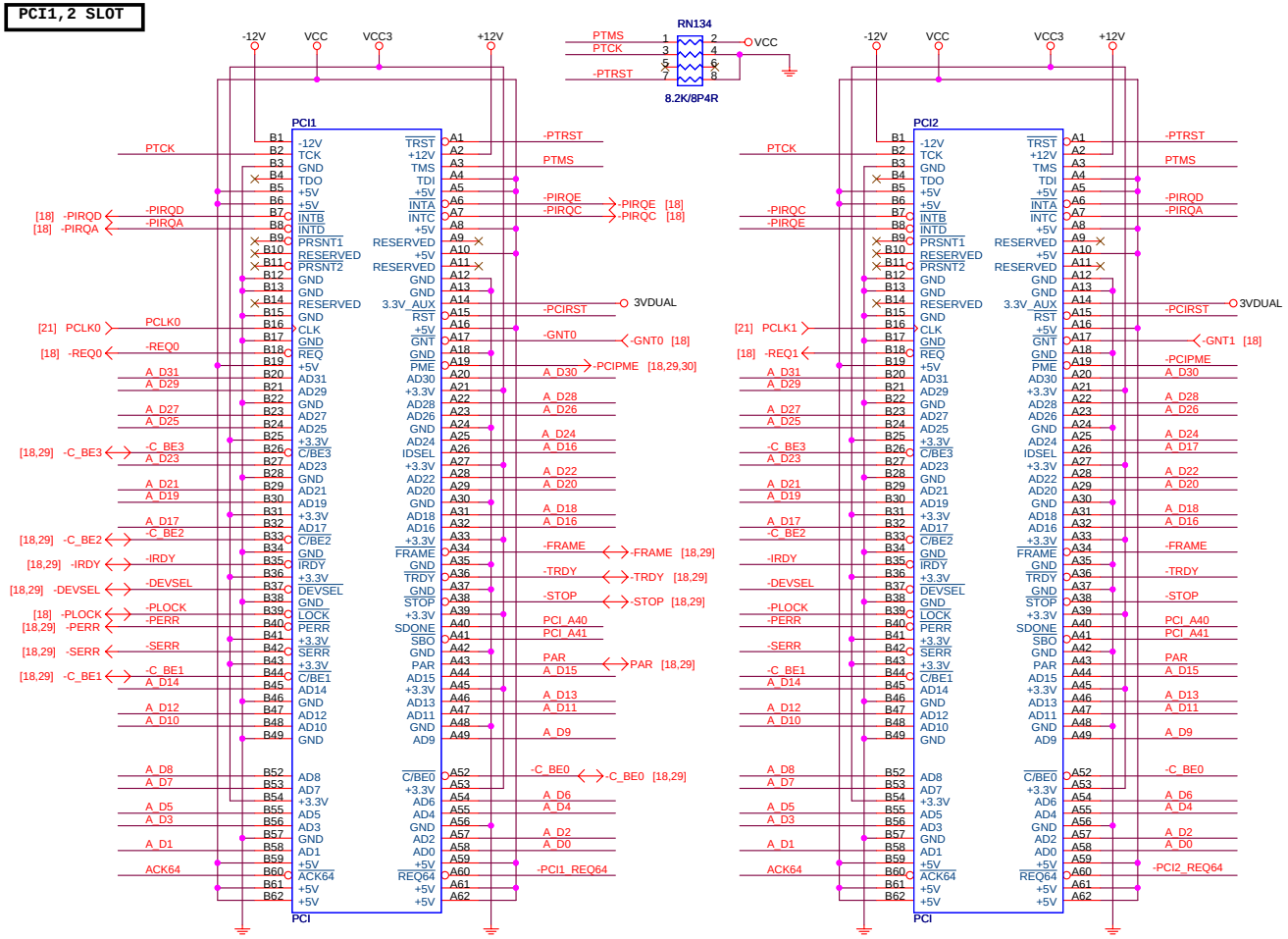
CY28411OXC-1無RESET,不可上Q53,否則CPU_STOP#產生,造成CPURST- DELAY 200ms(spec>1ms)



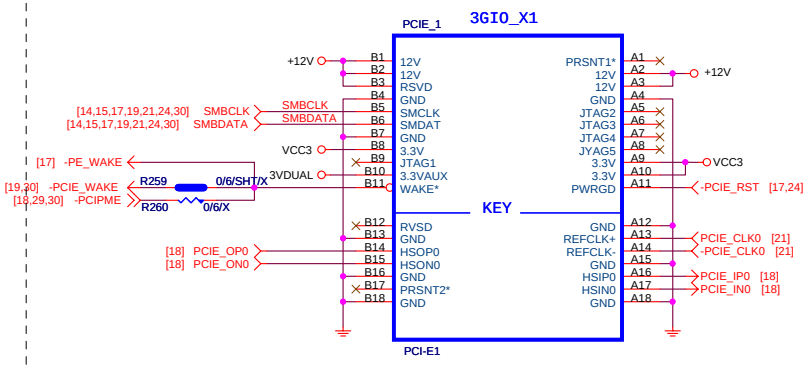
FOR CLOCK GEN RST

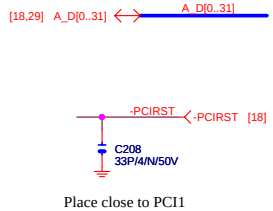
Gigabyte Technology			
Title: CK410M			
Size: Custom	Document Number: 8I945GMF		Rev: 1.0
Date: Friday, March 25, 2005	Sheet 21 of 34		

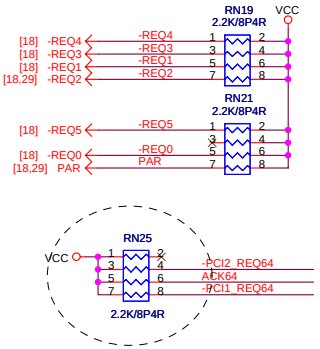
PCI1,2 SLOT

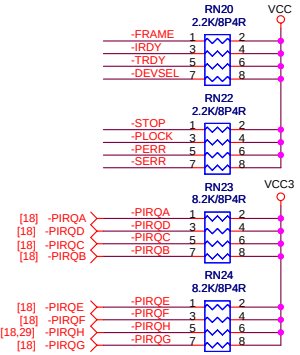


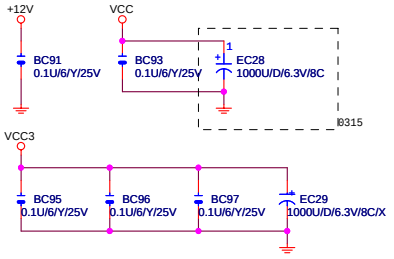
PCIE*1





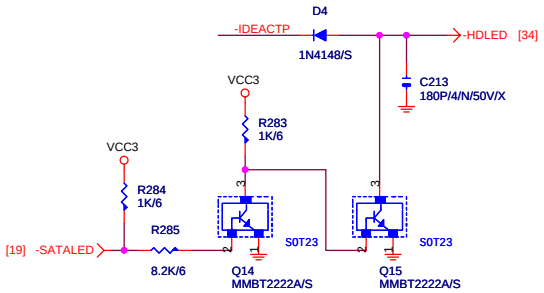




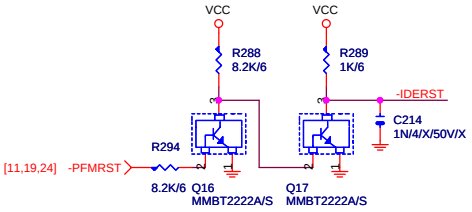


Gigabyte Technology			
Title: PCI SLOT 1, 2/PCIEX1			
Size: Custom	Document Number: 8I945GMF		Rev: 1.0
Date: Friday, March 25, 2005	Sheet 22 of 34		

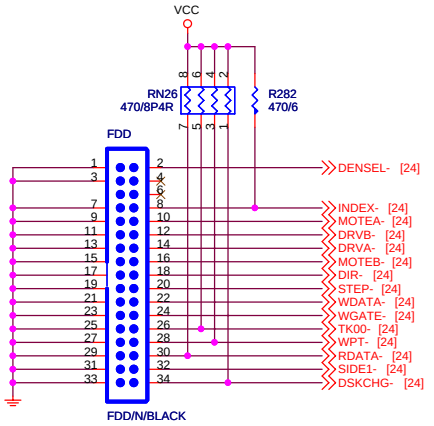
IDE/SATA LED



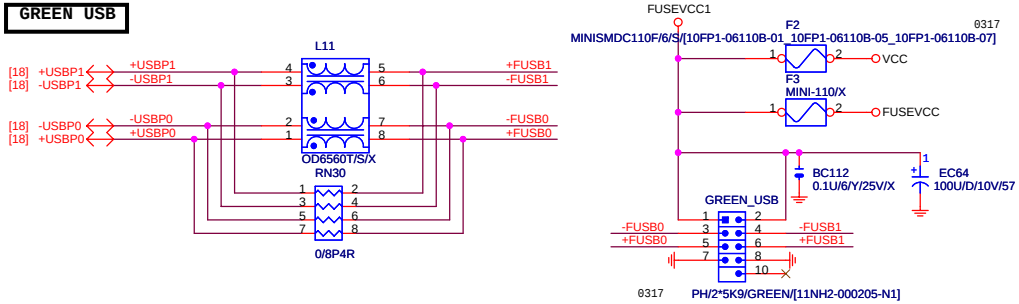
IDE RESET



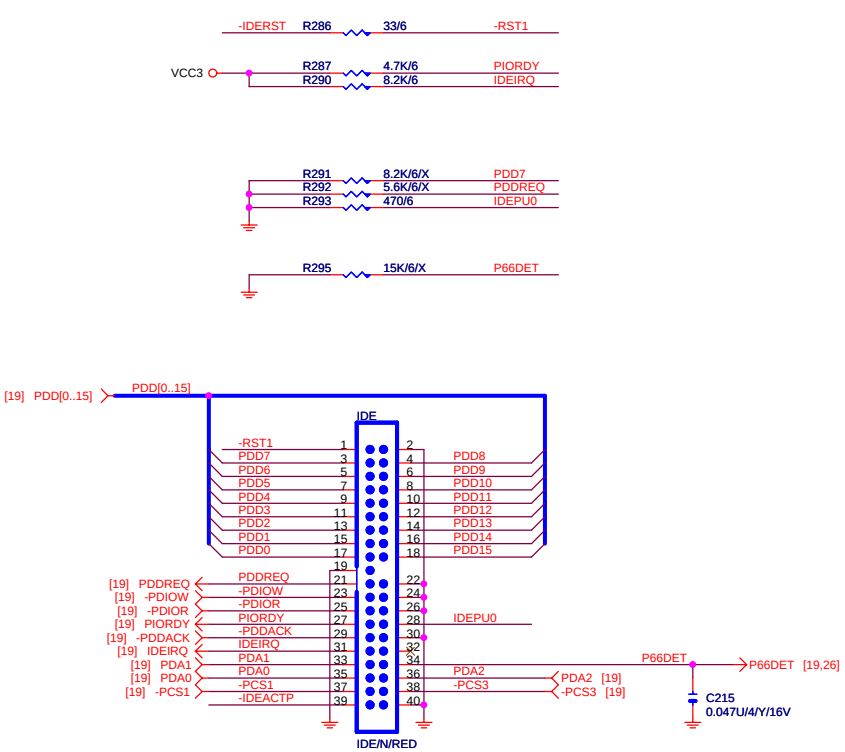
FLOPPY



GREEN USB

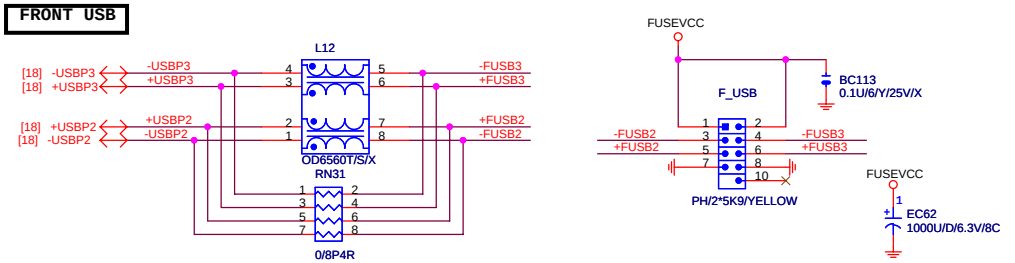


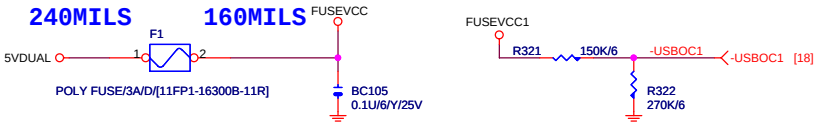
IDE



Close to connector

FRONT USB





Gigabyte Technology		
Title: IDE,FDD,F_USB		
Size: B	Document Number: 8I945GMF	Rev: 1.0
Date: Friday, March 25, 2005	Sheet 23 of 34	

RTS2- ==LOW CPU FAN 50%
==HIGH 100%

DEFAULT 50%

VCC R1561 8.2K/6 DTR2-
R1562 8.2K/6/X RTS2-
R1587 680/6
0302-UP

SOUT2		
	1	VID pins threshold voltage select: Vih / Vil : 2.0 / 0.8V
	0	VID pins threshold voltage select: Vih / Vil : 0.8 / 0.4V

R347 680/6/X DTR2-
R348 680/6 TXD2

1.2V or 3.3V tolerance select.
1.2V OUTPUT 接 VTT_GMCH
3.3V OUTPUT 接3.3V
LPCPD#=VIDVCC

[25] DCD1- [25] RI1- [25] CTS1- [25] DTR1- [25] RTS1- [25] DSR1- [25] TXD1 [25] RXD1 [25] DCD2- [25] RI2- [25] CTS2-

PD[0..7] PD[0..7] [25]

STB- AFD- ERR- INIT- SLIN- ACK-
STB- [25] AFD- [25] ERR- [25] INIT- [25] SLIN- [25] ACK- [25]

VCC3 R345 8.2K/6/X -THERM -THERM [19]
VCC R346 8.2K/6/X PWOK

U15

CTS2# RI2# DCD2# SIN1 SOUT1 DSR1# RTS1# DTR1# CTS1# RI1# DCD1# GNDD PD7 PD6 PD5 PD4 PD3 PD2 PD1 PD0 STB# AFD# ERR# INIT# SLIN# ACK#
31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6

[25] DTR2- [25] RTS2- [25] DSR2-
DTR2# RTS2# DSR2#
VCC
[25] TXD2 TXD2
[25] RXD2 RXD2
SOUT2 SIN2
[34] FANIO1 FAN_TAC1
[34] FANPWM1 FAN_CTL1
[34] FANIO2 FAN_TAC2/GP52
[34] FANPWM2 FAN_CTL2/GP51
FAN_TAC3/GP37
[34] FANPWM3 FAN_CTL3/GP36
[31] IO_VID5 WTI#/GP35
[31] IO_VID4 VID4/GP34
GNDD
[31] IO_VID3 VID3/GP33
[31] IO_VID2 VID2/GP32
[31] IO_VID1 VID1/GP31
[31] IO_VID0 VID0/GP30
JSBB2/GP27 JSBB1/GP26 JSBCY/GP25 JSBCX/GP24 JSAB2/GP23 JSAB1/GP22 JSACY/GP21 JSACX/GP20 MIDI_OUT/GP17 MIDI_IN/GP16
RESETCON#/CIRTX/GP15
PCIRST1#/SCRRST/GP14
PWROK1/SCRFET#/GP13
PCIRST2#/SCRIO/GP12
PCIRST3#/SCRCLK/GP11
VCC
LPCPD#
LRESET#
LDRQ#

BUSY PE SLCT VCC VIN0 VIN1 VIN2 VIN3 VIN4 VIN5 VIN6 VIN7 VREF TMPIN1 TMPIN2 TMPIN3 GNDA RSMRST#/CIRRX/GP55 PCIRST4#/SCRPRES#/GP10 MCLK MDAT KCLK KDAT SCLK/GP40 PWROK2/SDAT/GP41 RING#/GP53 PSON#/GP42 PANSWH#/GP43 GNDD PME#/GP54 PWRON#/GP44 PSIN/GP45 IRRX/GP46 VBAT COPEN# VCCH IRTX/GP47 DSKCHG#
5 4 3 2 1 128 127 126 125 124 123 122 121 120 119 118 117 116 115 114 113 112 111 110 109 108 107 106 105 104 103 102 101 100 99 98 97 96

BUSY [25] PE [25] SLCT [25]
VCC
VIN0 [26] VIN1 [26] VIN2 [26] PWOK [33] VIN4 [26]
R1563 8.2K/6 VCC
VREF [26] SYS_TEMP [26] PWM_TEMP [26] CPU_TEMP [6,26]
R350 22/6 -RSMRST [19,30,32]
MCLK [26] MDAT [26] KCLK [26] KDAT [26]
R1564 8.2K/6 VCC3
-THERM
-PWRBTSW [34]
-LPCPME [19]
-SLP_S3 [19,32] BEEP- [34] VBAT [19] -CASEOPEN [26]
5VSB
DUTY_CONTROL [34] DSKCHG- [23]

IT8712GB/IX4/[10HP2-118712-53]

PWOK
C228 1N/4/X/50V/X
BC117 0.01U/4/X/16V/X
R349 0/6/SHT/X THERMDC [6]
5VSB
R352 8.2K/6
-PSON [33]
PWRBTSW [19]
0315
C229 1U/6/Y/10V
R359 8.2K/6
3VDUAL
BC118 1U/6/Y/10V
BC119 0.047U/4/Y/16V

R353 8.2K/6
VCC
[34] -RST_BTN
ITE_PWROK
VTT_GMCH R358 0/6/X -LPCPD
[11,19,23] -PFMRST -PFMRST
[19] -LDRQ0 -LDRQ0
VCC
R1565 8.2K/6
VCC3

SERIRQ LFRAME LAD0 LAD1 LAD2 LAD3 KRST# GA20 PCICLK CLKRUN#/GP50 CLKIN GNDD DENSEL# MTRA# MTRB# DRVA# DRVB# WDATA# DIR# STEP# HDSEL# WGATE# RDATA# TRK0# INDEX# WPT#
70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95

[19] SERIRQ
[19,26] -LFRAME
LAD0 LAD1 LAD2 LAD3
[19,26] LAD[0..3] LAD[0..3]
[19] -KBRST
[19] A20GATE
[21] LPC33
[21] LPCCLK48

WPT- [23] INDEX- [23] TK00- [23] RDATA- [23] WGATE- [23] SIDE1- [23] STEP- [23] DIR- [23] WDATA- [23] DRVB- [23] DRVA- [23] MOTEB- [23] MOTEA- [23] DENSEL- [23]

C230 10P/4/N/50V/X

-PFMRST -PFMRST [11,19,23]
BC121 100P/6/N/50V/X

-LPCPD R363 8.2K/6 VCC3
ITE_PWROK R364 8.2K/6 VCC3

RESET DRIVE

PFMRST
-PFMRST2
C1280 180P/4/N/50V/X
3VDUAL
ITE_PWROK
BC120 0.1U/6/Y/25V
PWROK1 [11,19,32]
C1281 100P/4/N/50V/X
U16 74HC14/SO14
VCC I5 O5 I4 O4 I3 O3
14 13 12 11 10 9 8
I0 O0 I1 O1 I2 O2 GND
1 2 3 4 5 6 7
-PFMRST
PFMRST
PFMRST
-PFMRST1 [26,29,30]
-PCIE_RST [17,22]
BC122 1U/6/Y/10V/X

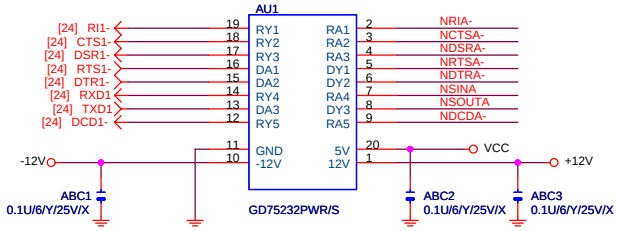
有問題

INFO_LINK
VCC
[14,15,17,19,21,22,30] SMBCLK SMBCLK SMBDATA SMBDATA [14,15,17,19,21,22,30]
PH/2*3K6/X

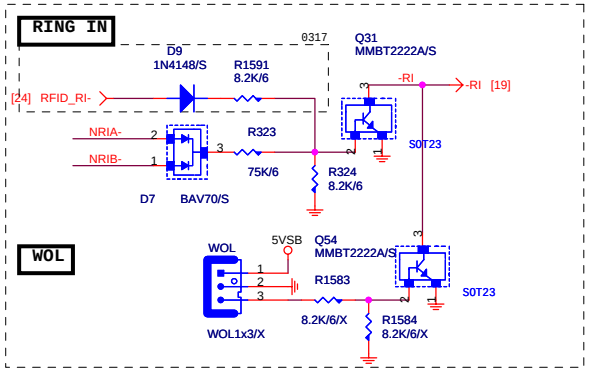
5VDUAL
RF_ID
TXD2 RXD2 RFID_RI- [25]
BC179 0.1U/6/Y/25V/X
PH/2*3K5/[11NH2-000203-13_11NH2-000203-11]
0317

Gigabyte Technology			
Title: ITE 8712 LPC IO			
Size: B	Document Number: 8I945GMF		Rev: 1.0
Date: Friday, March 25, 2005	Sheet 24 of 34		

COMA

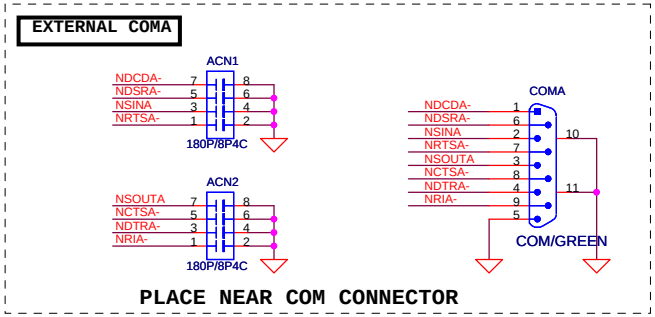


RING IN

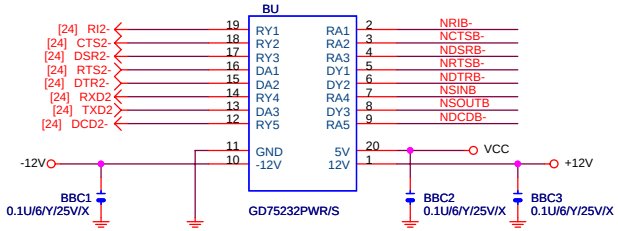


WOL

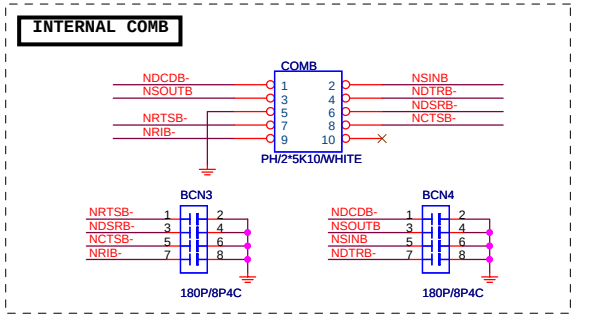
EXTERNAL COMA



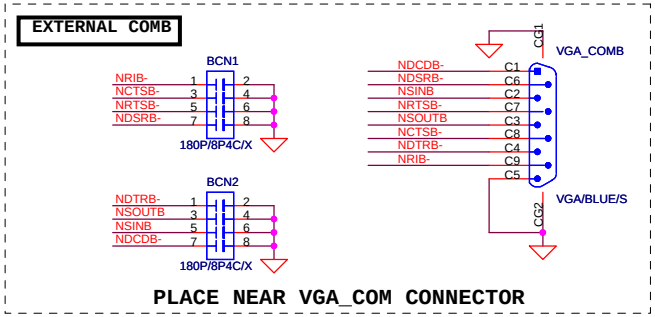
COMB



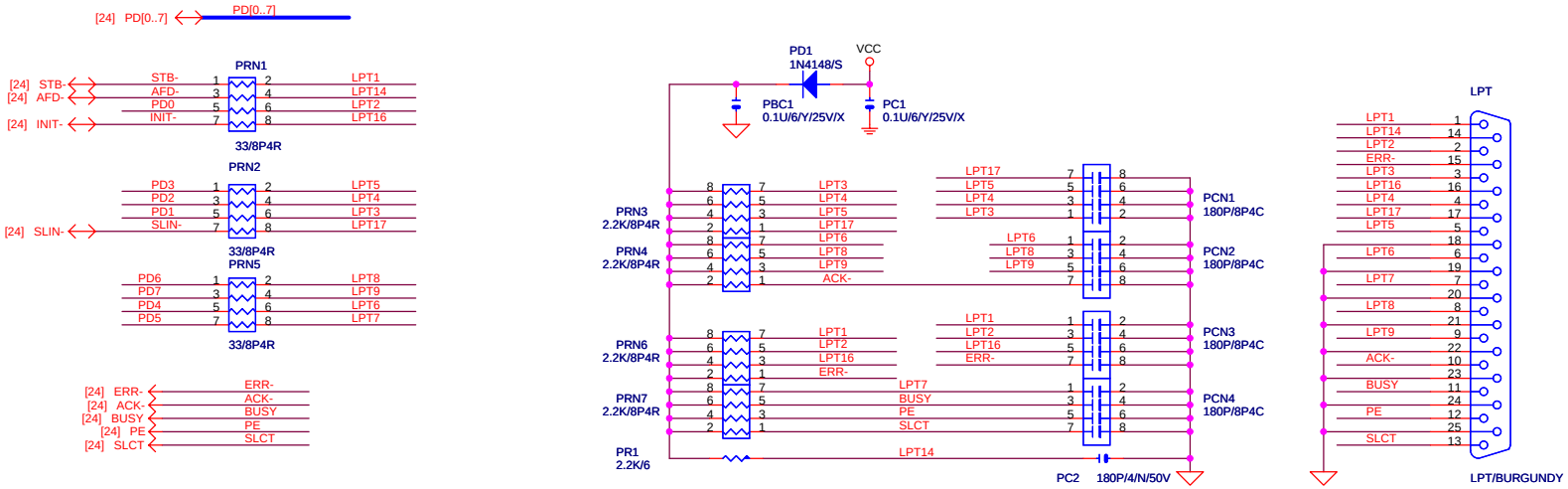
INTERNAL COMB



EXTERNAL COMB



LPT PORT



Gigabyte Technology		
Title: COM & LPT PORT		
Size: B	Document Number: 8I945GMF	Rev: 1.0
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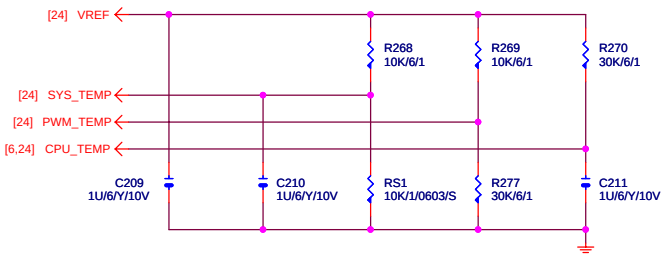
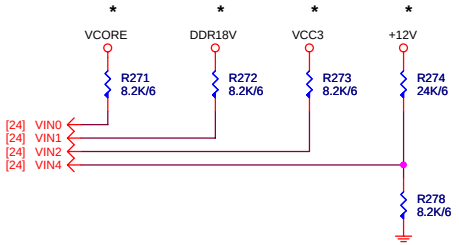
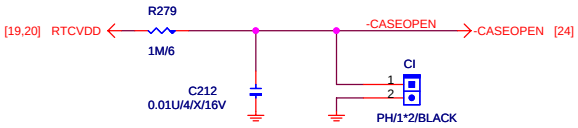
TEMP H/W MONITOR



VOLTAGE-- H/W MONITOR

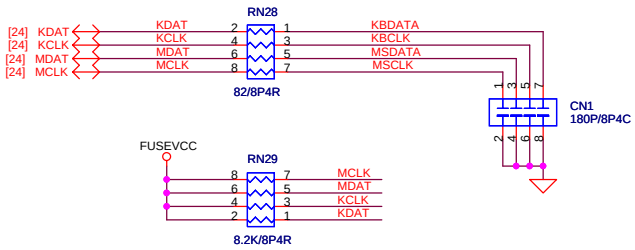


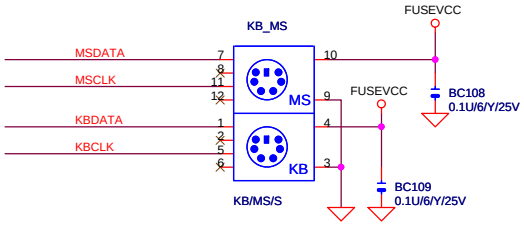
CASE OPEN



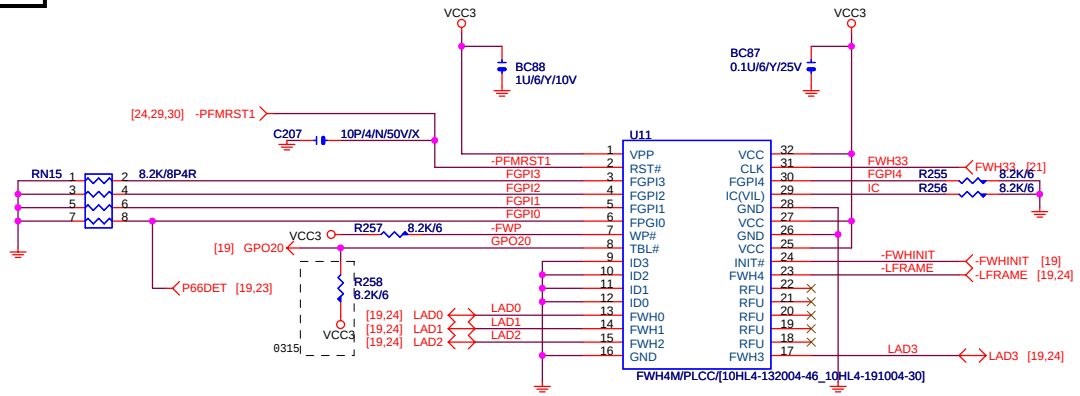
Case Open Circuits

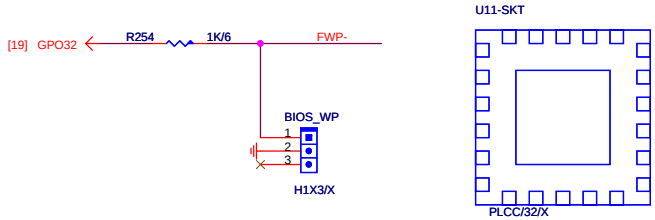
KB/MS





FWM BIOS





Gigabyte Technology

Title	BIOS/HW-MONITOR/CI/KB/MS	
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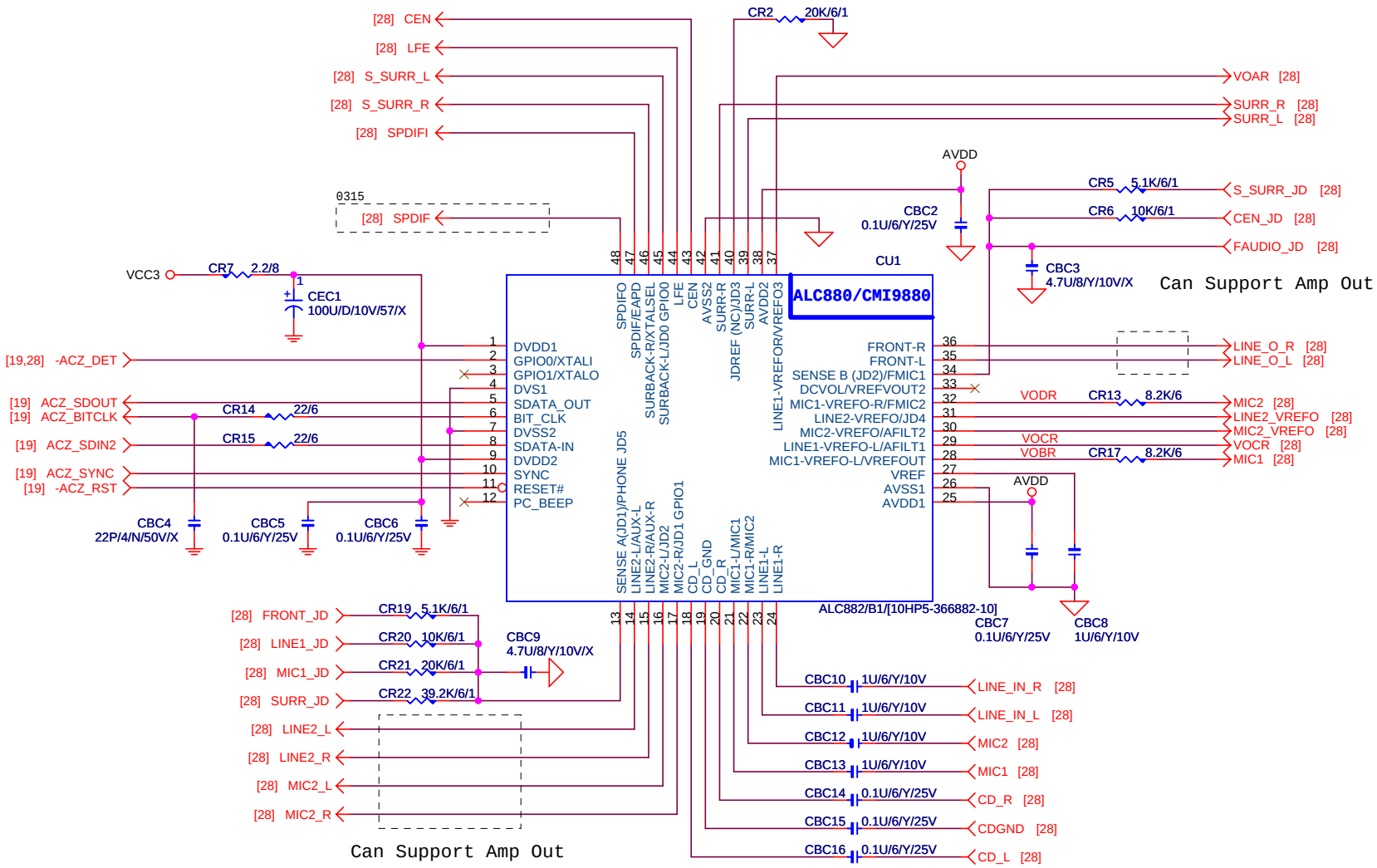
AZALIA CODEC



Gigabyte Technology

Title	AC97 ALC658	
Size: Custom	Document Number: 8I945GMF	Rev: 1.0
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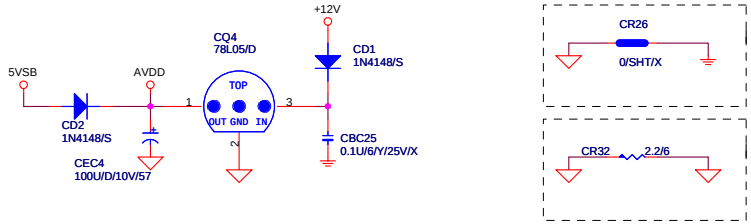
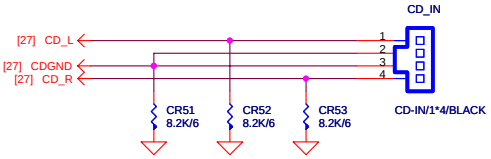
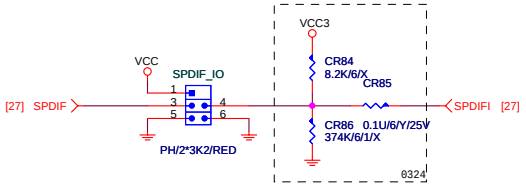
CODEC POWER/EMI PAD



CD IN

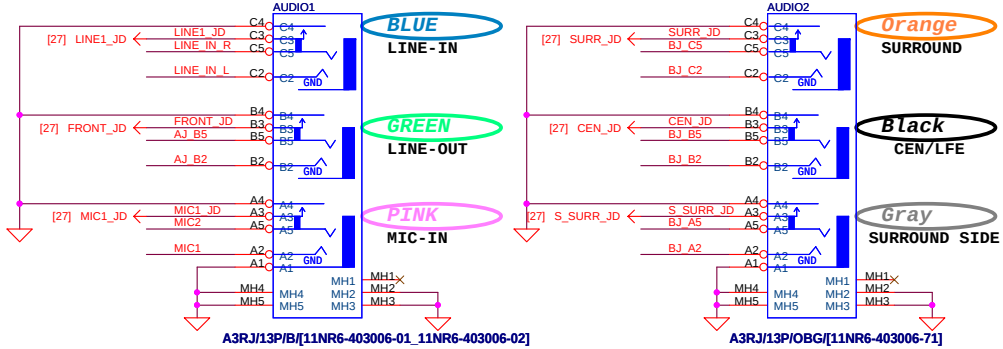


SPDIF

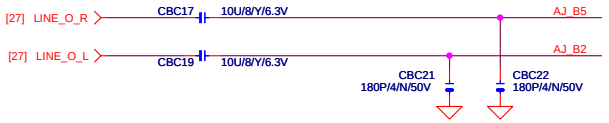


AZALIA JACK

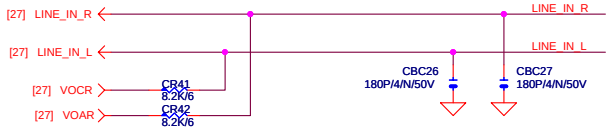
NEW TYPE:IBM_AUDIO-13P-1



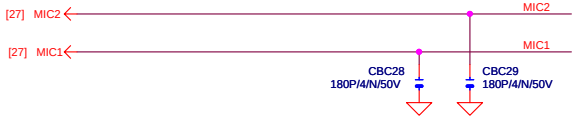
LINE-OUT



LINE-IN



MIC-IN

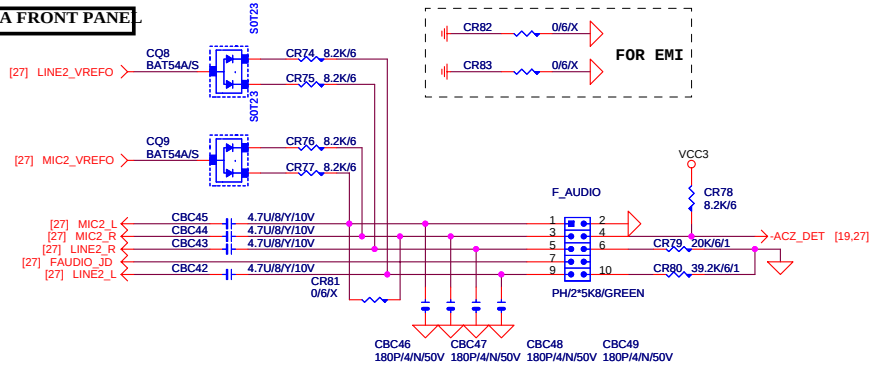


SURROUND

CEN/LFE

SURR BACK

AZALIA FRONT PANEL



Gigabyte Technology

Title	AUDIO JACK	
Size: Custom	Document Number: 8I945GMF	Rev: 1.0
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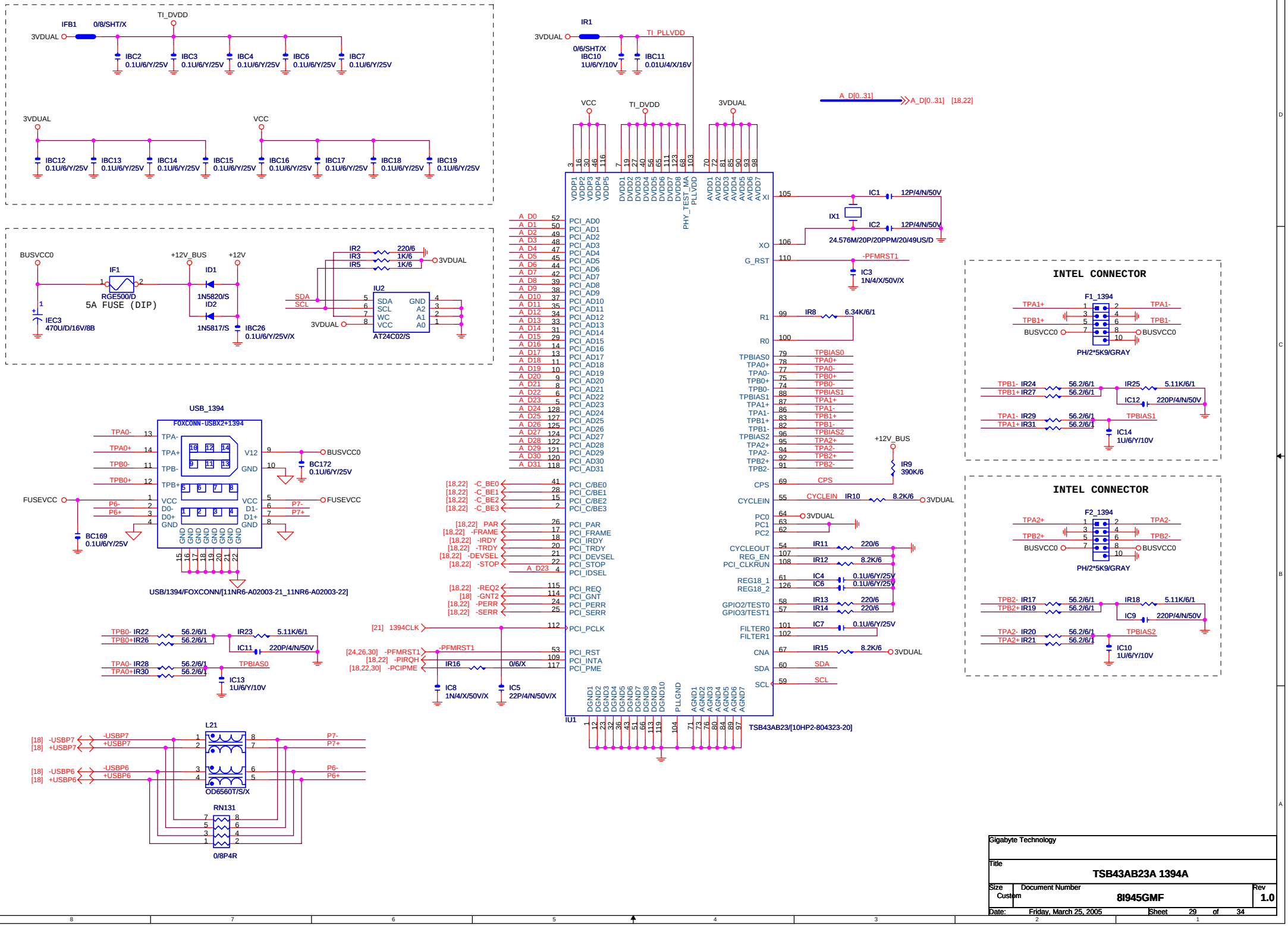

Gigabyte Technology		
Title	TSB43AB23A 1394A	
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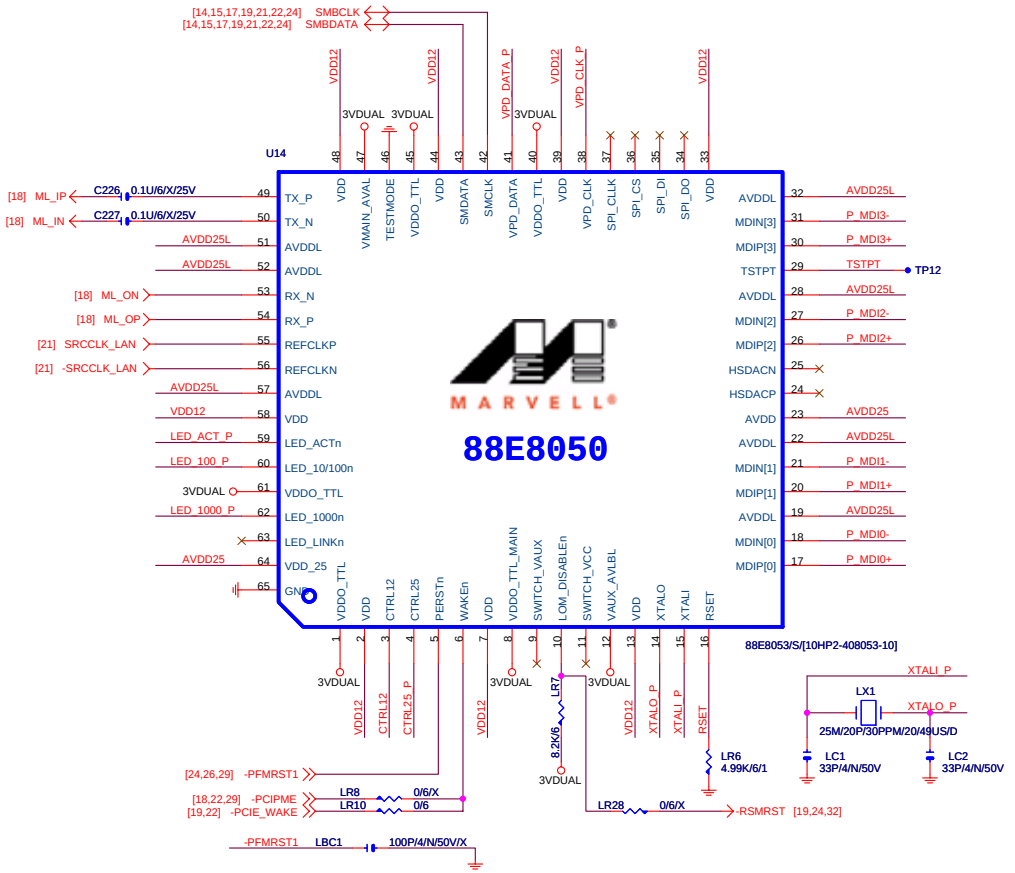
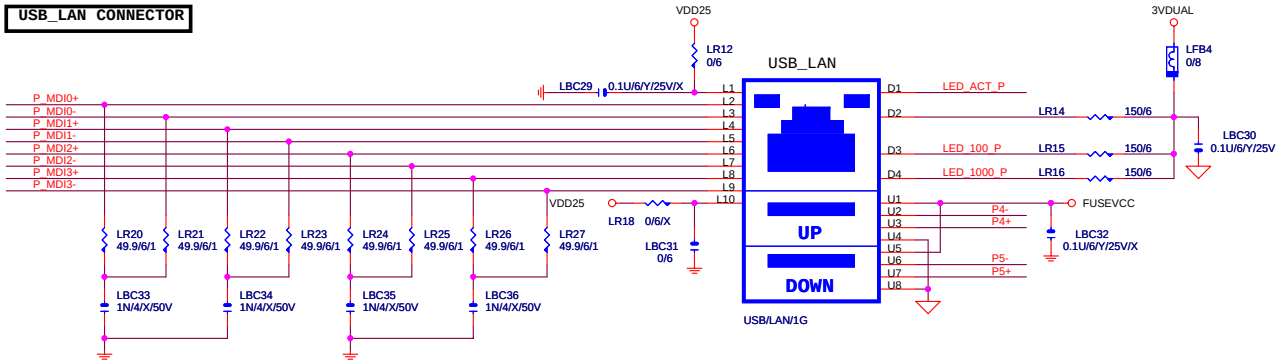
PCIE-1G LAN

 # Layout Check 注意事項

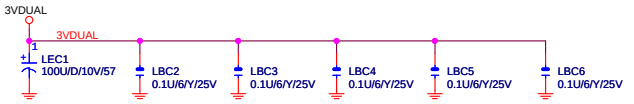
1. LU1 PIN65 需下內層GND,打 12 VIA
2. 3VDUAL , VCC3 , VDD15_L , AVDD25_L
至少走20mil寬,並且電容擺設每兩pin至少放一顆Bypass Cap.
3. X'TAL 25MHz 兩訊號線,TRACE 愈短愈好,線寬12mil
4. MDI正負0~3,TRACE 8:7:8 , 每對之間保持 40mil



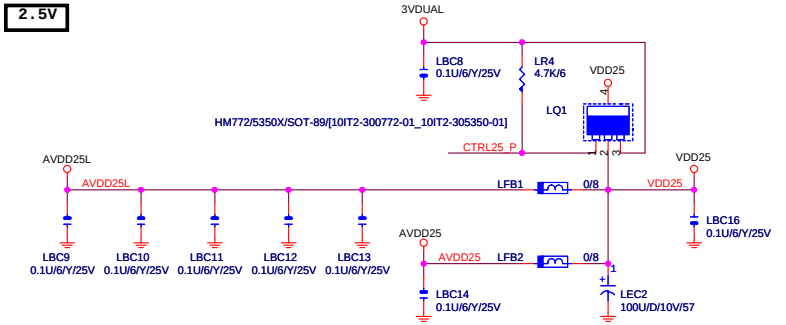
USB_LAN CONNECTOR



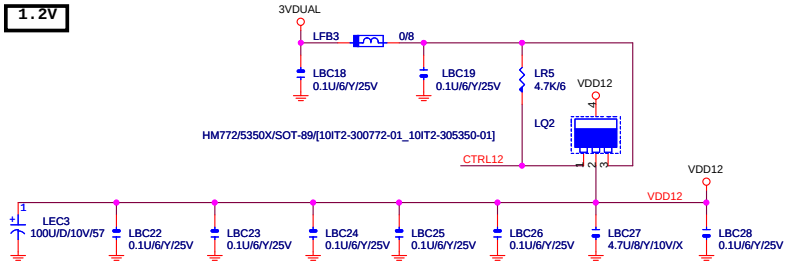
3VDUAL



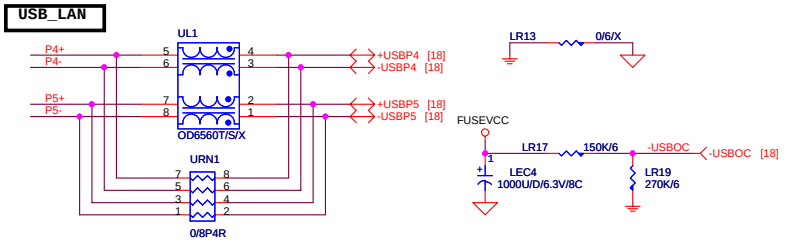
2.5V



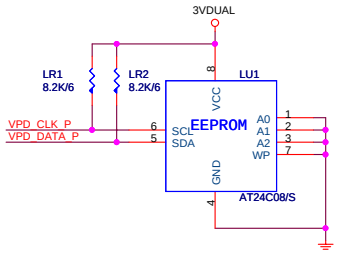
1.2V



USB_LAN



EEPROM



Gigabyte Technology		
Title: MARVELL 88E8001		
Size: Custom	Document Number: 8I945GMF	Rev: 1.0
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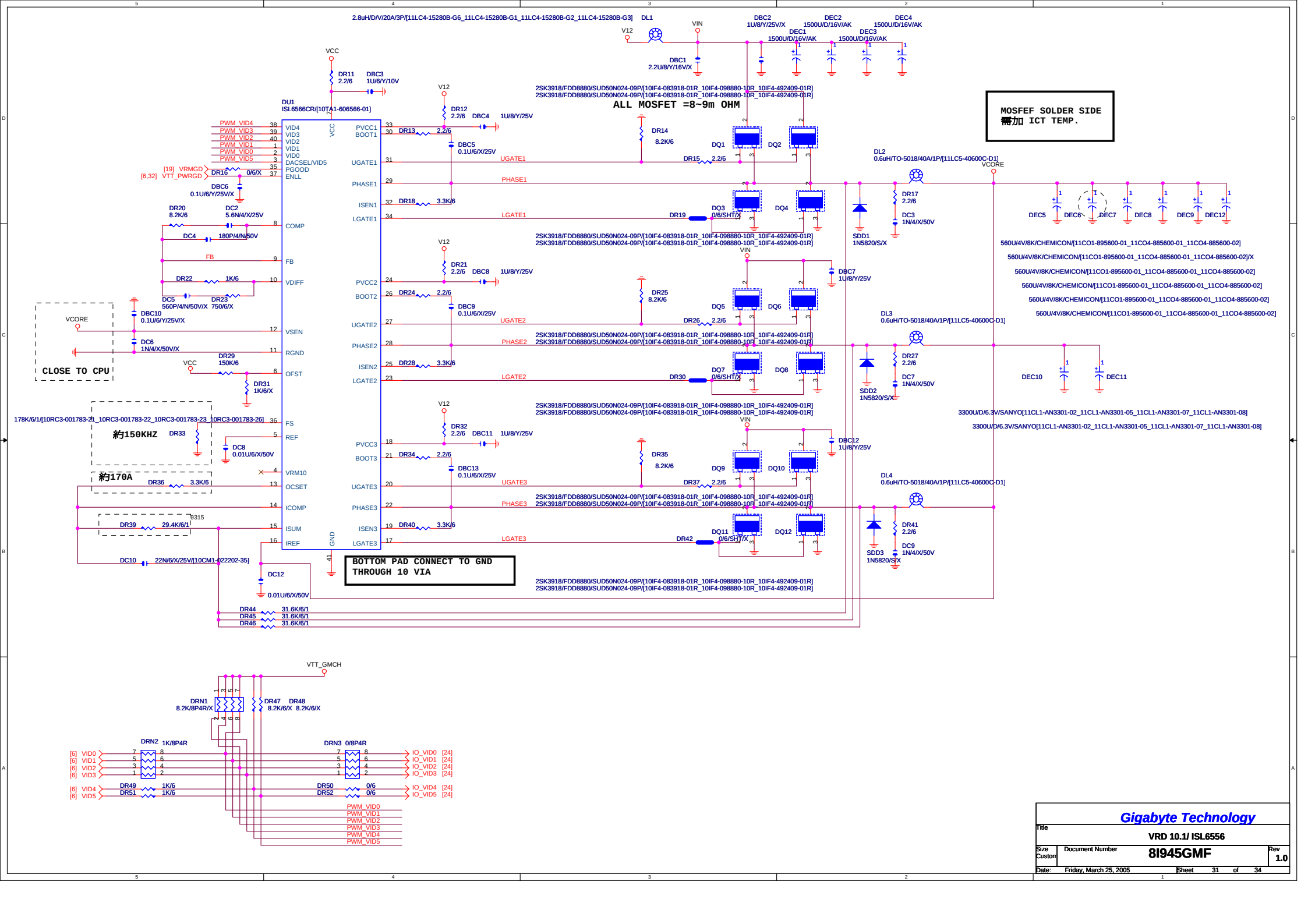
2.8uH/D/V/20A/3P/[11LC4-15280B-G6_11LC4-15280B-G1_11LC4-15280B-G2_11LC4-15280B-G3] DL1
ALL MOSFET =8~9m OHM
MOSFEF SOLDER SIDE
需加 ICT TEMP.
DU1
ISL6566CR/[10TA1-606566-01]
CLOSE TO CPU
BOTTOM PAD CONNECT TO GND
THROUGH 10 VIA
約150KHZ
約170A
DRN1 8.2K/8P4R/X
DRN2 1K/8P4R
DRN3 0/8P4R
Gigabyte Technology
VRD 10.1/ ISL6556
8I945GMF
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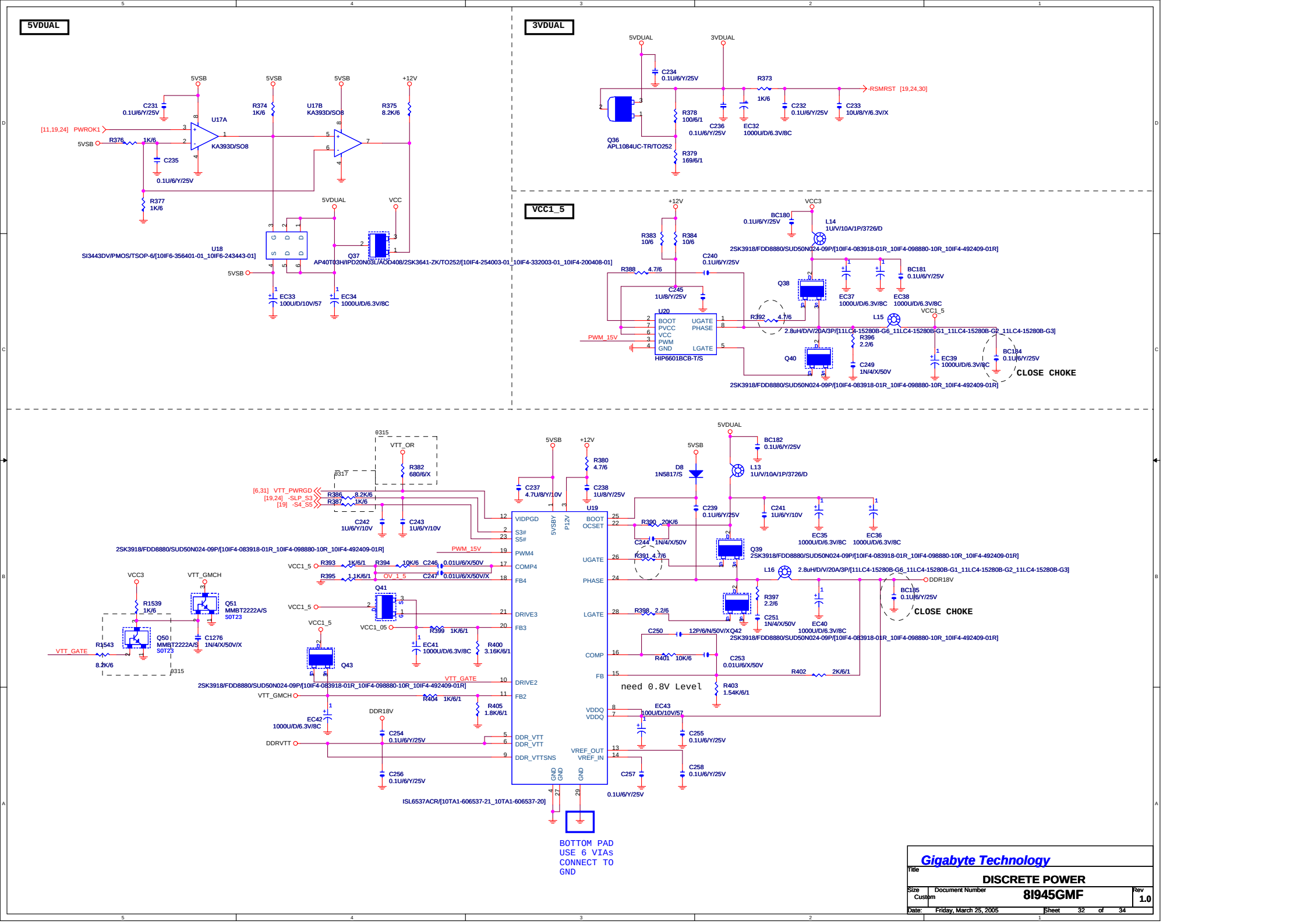
5VDUAL
3VDUAL
VCC1_5
U17A
U17B
KA393D/SO8
U18
SI3443DV/PMOS/TSOP-6/[10IF6-356401-01_10IF6-243443-01]
Q37
AP40T03H/IPD20N03L/AOD408/2SK3641-ZK/TO252/[10IF4-254003-01_10IF4-332003-01_10IF4-200408-01]
Q36
APL1084UC-TR/TO252
U20
HIP6601BCB-T/S
2SK3918/FDD8880/SUD50N024-09P/[10IF4-083918-01R_10IF4-098880-10R_10IF4-492409-01R]
2.8uH/D/V/20A/3P/[11LC4-15280B-G6_11LC4-15280B-G1_11LC4-15280B-G2_11LC4-15280B-G3]
CLOSE CHOKE
U19
ISL6537ACR/[10TA1-606537-21_10TA1-606537-20]
need 0.8V Level
BOTTOM PAD
USE 6 VIAs
CONNECT TO
GND
Gigabyte Technology
DISCRETE POWER
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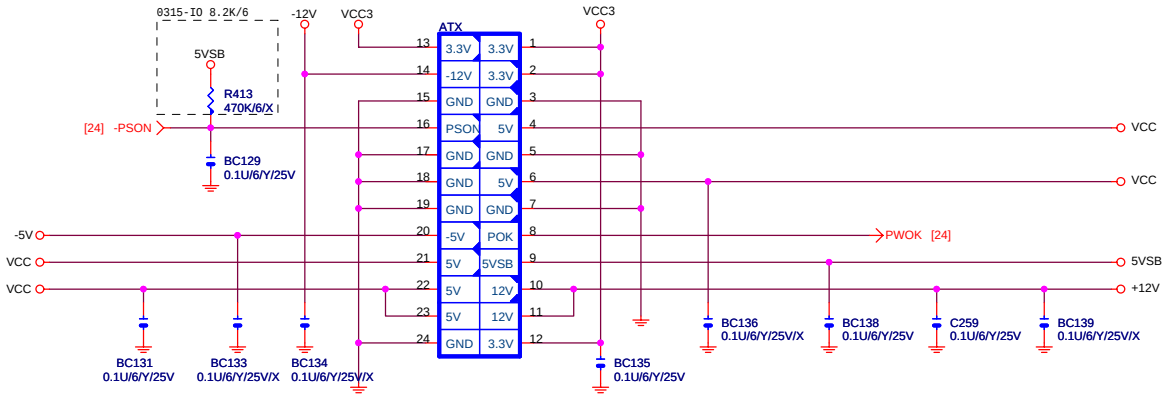
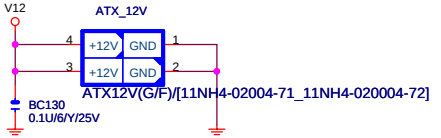
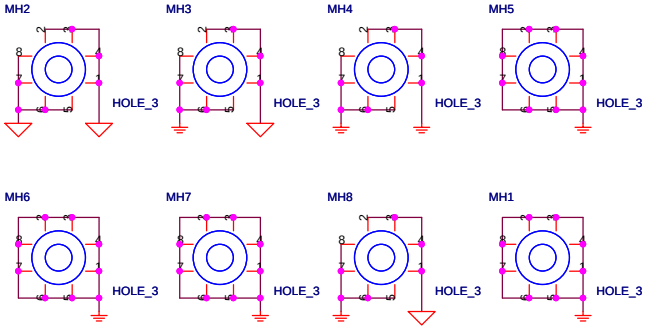
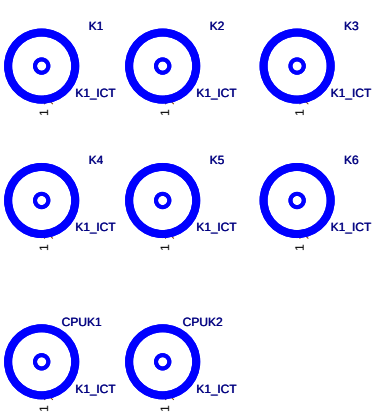
ATX POWER CONNECTOR

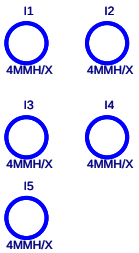




HOLE_3-2--->有鉛







Gigabyte Technology		
Title: ATX POWER CONNECTOR		
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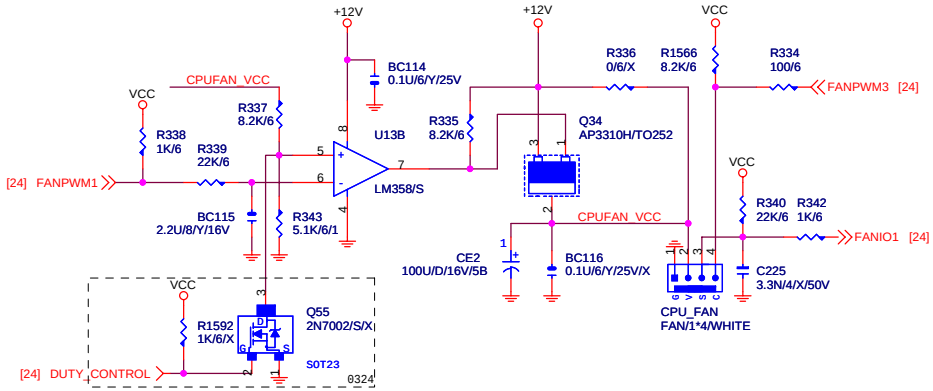
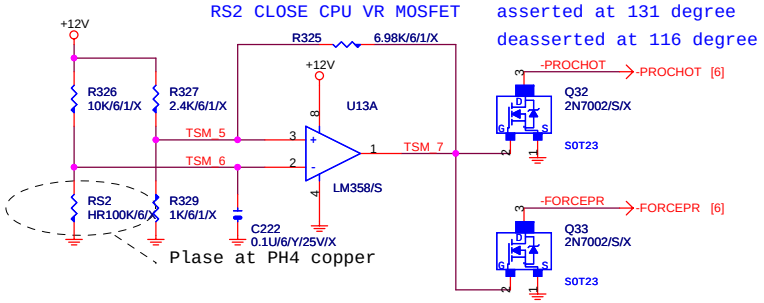
CPU SMART FAN

SMART FAN

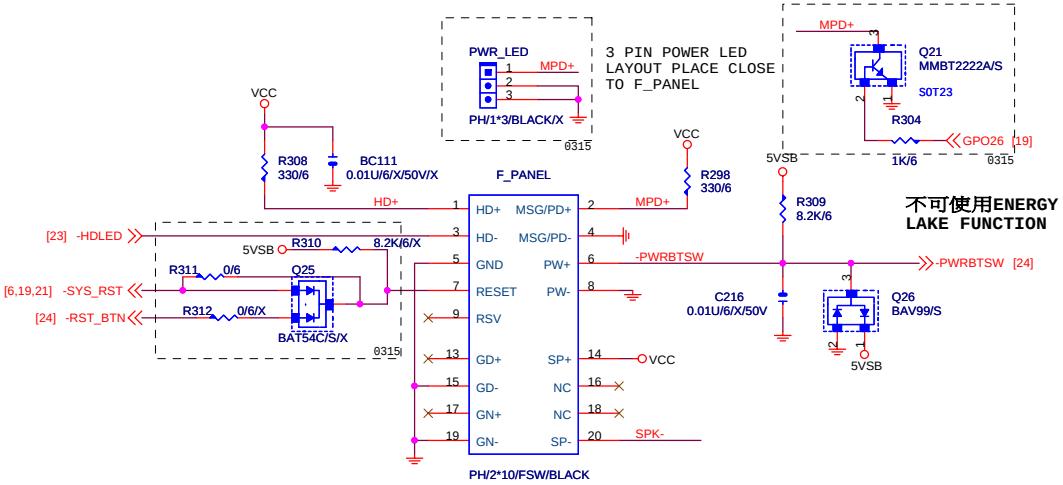


PROCESSOR HOT



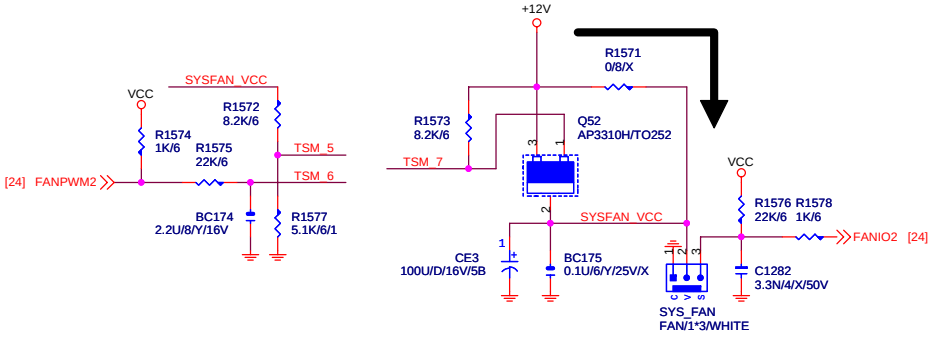
INTEL FRONT PANEL

MPD-:(GPIO25--VCCSUS3+HI+HI+DEFINED(C3/C4/S/1/S3/S/4/S5))-->INTEL

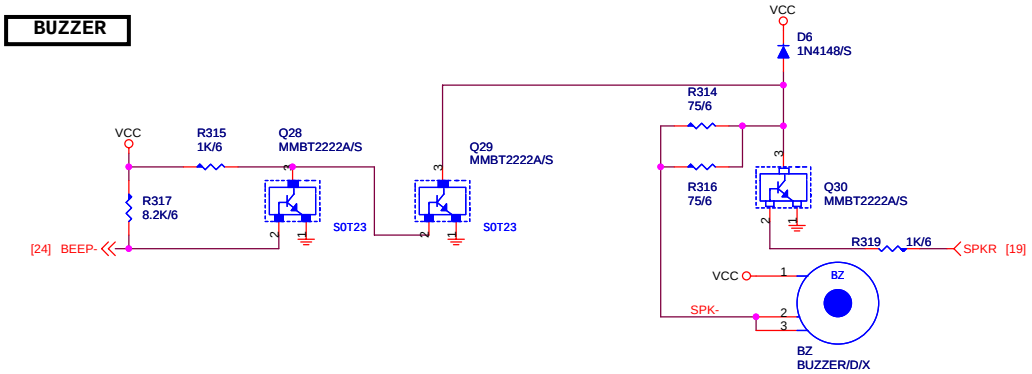


SYS_FAN

SMART FAN



BUZZER



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Title: FRONT PANEL		
Size: Custom	Document Number: 8I945GMF	Rev: 1.0
Date: Friday, March 25, 2005	Sheet 34 of 34	