Model Name:GA-G31M-S2C

Revision 1.11

SHEET	TITLE
01	COVER SHEET
02	BLOCK DIAGRAM
03	BOM & PCB MODIFY HISTORY
04	P4_LGA775_A
05	P4_LGA775_B,D
06	P4_LGA775_C
07	P4_LGA775_E,F,G,H
08	G31_HOST
09	G31_DDRII
10	G31_PCI E, DMI
11	G31_VGA
12	G31_GND
13	G31_PWR
14	PCI EXPRESS*16 SLOT
15	DDRII CHANNEL A
16	DDRII CHANNEL B
17	DDRII TERMINATION
18	ICH7 PCI, USB, DMI, LAN
19	ICH7 IDE, GPIO, SATA, CTRL
20	ICH7 VCC, GND
21	CK505 CLOCK.
22	PCI SLOT 1,2,PCIE*1
23	IDE/FLOPPY
24	ITE 8718 GB/HX
25	COM_LPT
26	CI,HWM,KB/MS,DUALBIOS
27	ALC662

SHEET	TITLE
28	REAR AUDIO JACK
29	DISCRETE POWER
30	VCORE PWM_ISL6312
31	ATX, OTHERS POWER
32	FRONT PANEL
33	REALTEK RTL8111C/8102E

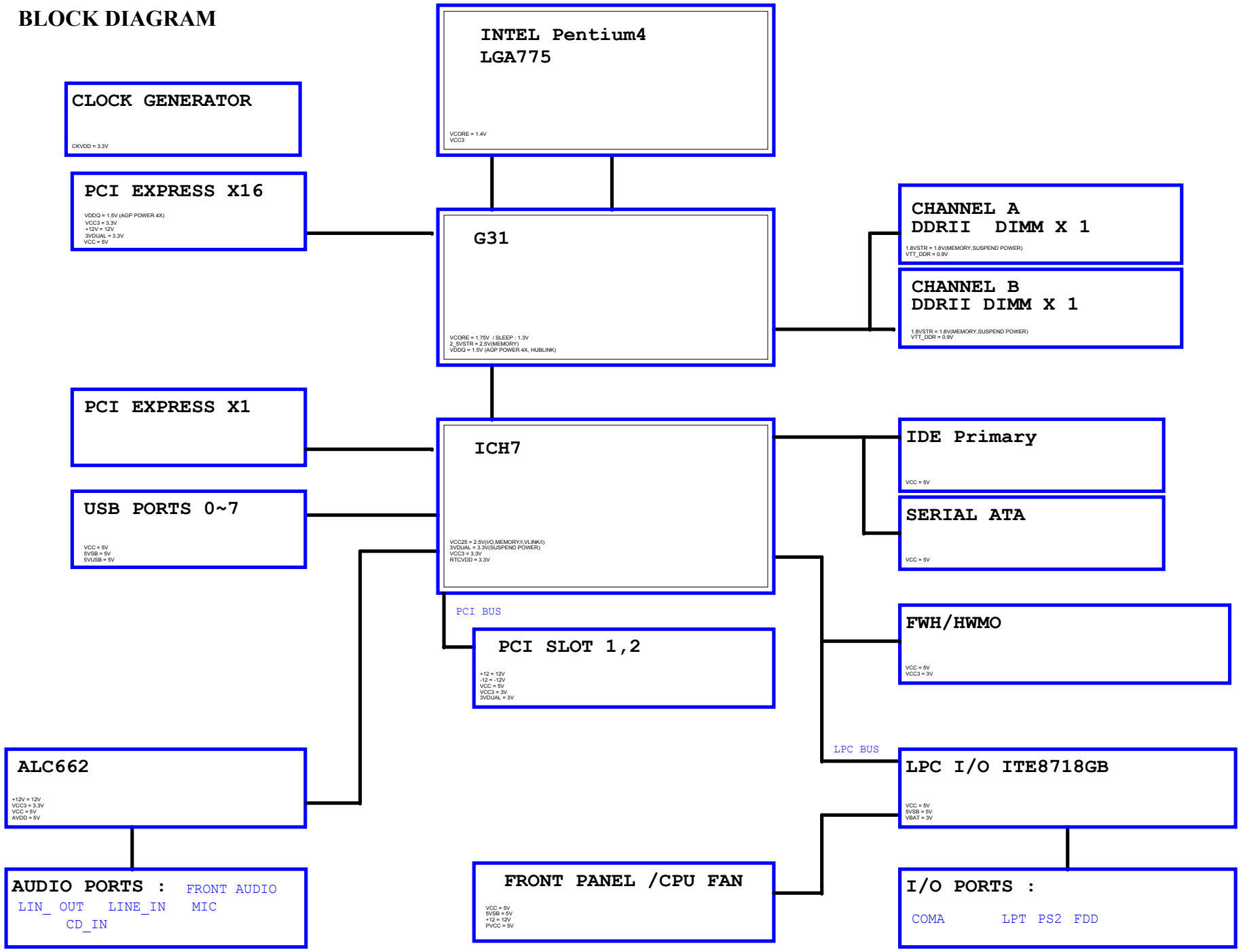
Gigabyte Technology

Title: Cover Sheet

Size: Custom | Document Number: GA-G31M-S2C | Rev: 1.11

Date: Thursday, July 17, 2008 | Sheet 1 of 33

BLOCK DIAGRAM



Gigabyte Technology		
Title: BOM & PCB MODIFY HISTORY		
Size: Custom	Document Number: GA-G31M-S2C	Rev: 1.11
Date: Thursday, July 17, 2008	Sheet 2 of 33	

Model Name:GA-G31M-S2C

Version: 1.11

Component value change history

2008/07/18

Data	Change Item	Reason
2007/08/03		EBOM:9MG31MS2L-00-10B
2007/08/15	R1.02:VIN 470UX3(FP)+RTL8111C OC GPIO65	PBOM:9MG31MS2L-00-10C
2007/08/28	ADD GP65 CONTROL ISOLATEB FOR O.C	FPBOM:9MG31MS2L-00-10D
2007/09/10	CHANGE RTL8111C O.C VERSION	PBOM:9MG31MS2L-00-10E
2007/08/28	FIX POWER SEQUENCE ISSUE	PBOM:9MG31MS2L-00-10F
2007/12/05	CHANGE SATA CONNECTOR	PBOM:9MG31MS2L-00-10G
2007/12/07	R1.03 CHANGE PWN RT9214+G31(A2)	EBOM:9MG31MS2L-00-10H
2008/04/24	R1.1 DES LITE DESIGN	
	VCORE 0.5UH CHOKE05U-30A-1PQ-2	EBOM:9MG31MS2L-00-11A
2008/05/07	R1.1 PVT	PBOM:9MG31MS2L-00-11A
2008/06/09	R2.02 ADD DUAL BIOS+RCA SPDIF	
2008/06/17	ADD CO-LAYOUT E-CAP	EBOM:9MG31MS2L-00-20A
2008/07/14	FIX DUAL BIOS ISSUE.LAN LED FAIL.	
2008/07/17	R2.02 -->R1.11 RENAME	
2008/07/18	R1.11 PVT	PBOM:9MG31MS2C-00-11C

Circuit or PCB layout change for next version

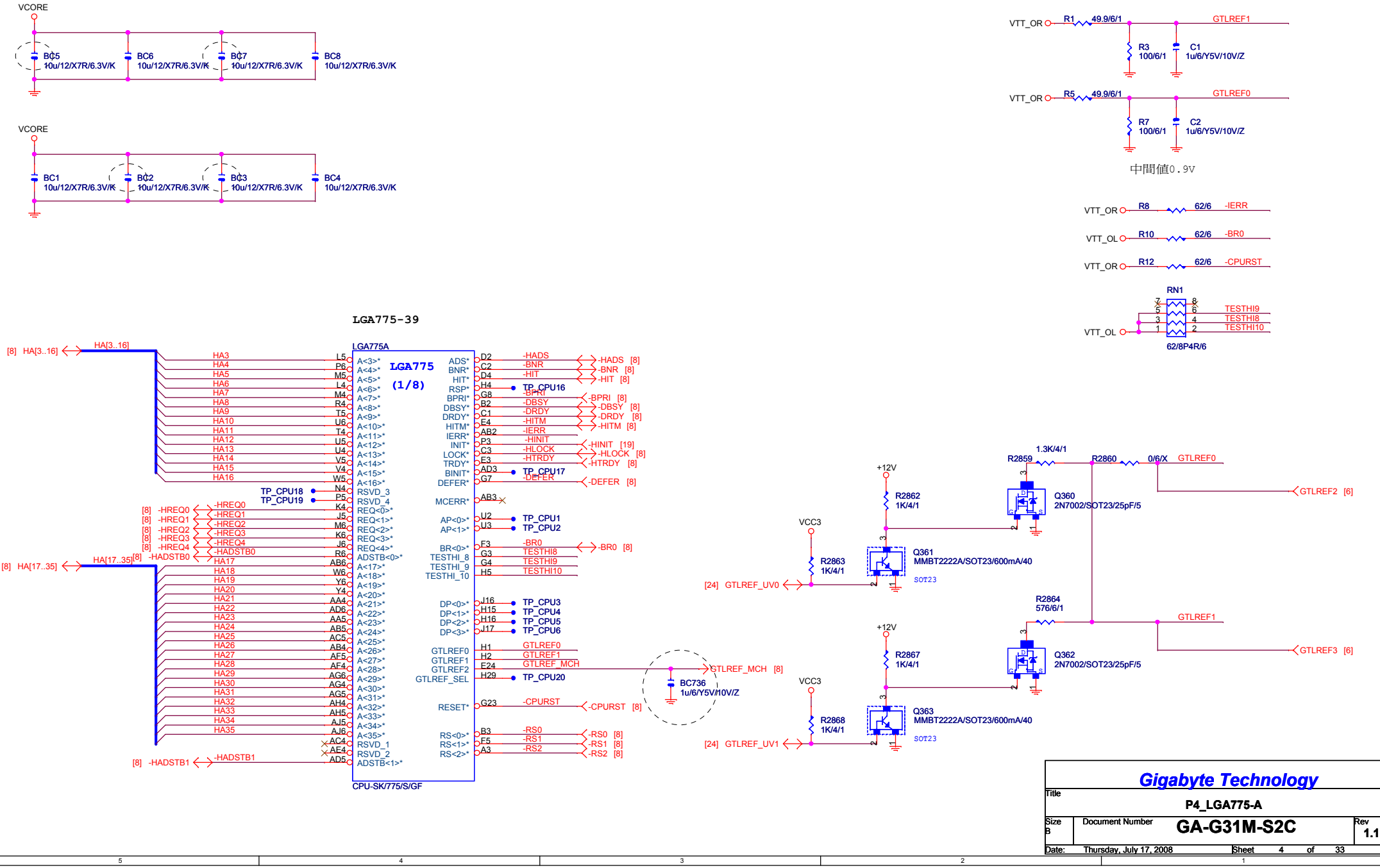
DATE	Change Item	Reason

Gigabyte Technology

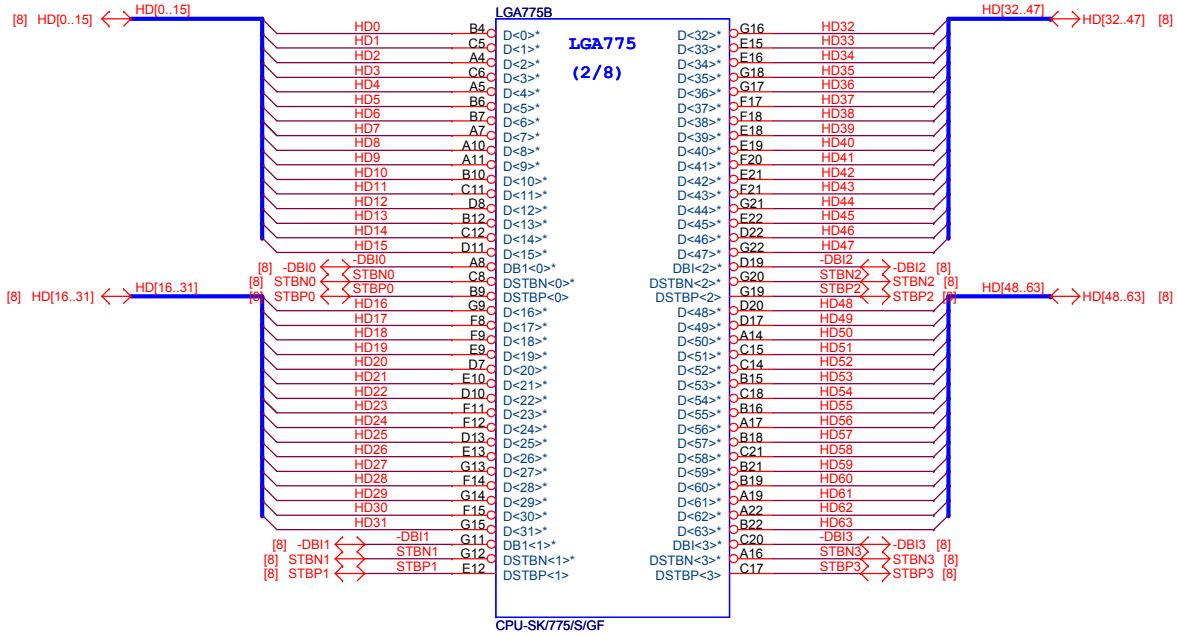
Title: BOM & PCB MODIFY HISTORY

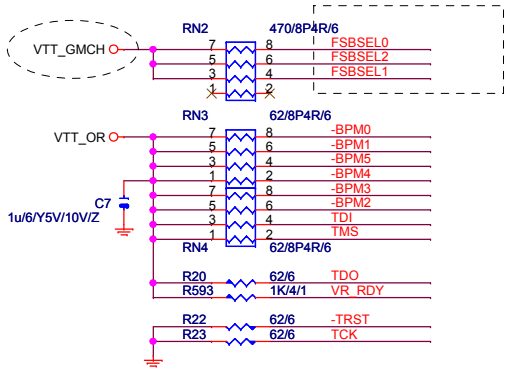
Size: Custom | Document Number: GA-G31M-S2C | Rev: 1.11

Date: Friday, July 18, 2008 | Sheet 3 of 33

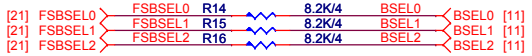


Gigabyte Technology		
Title: P4_LGA775-A		
Size: B	Document Number: GA-G31M-S2C	Rev: 1.11
Date: Thursday, July 17, 2008	Sheet 4 of 33	





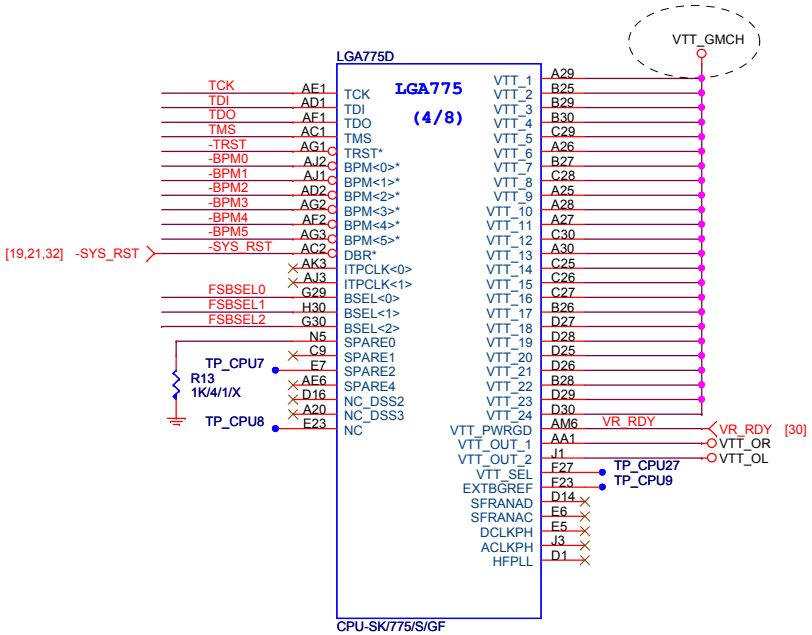
TO CLK GEN

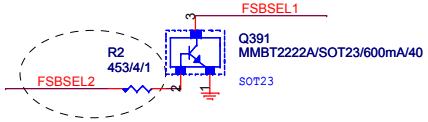


TO NB

CPU

NA	FSB	FSA		
FSBSEL3	FSBSEL1	FSBSEL0	Clock	
1	0	1	100MHz	X
0	0	1	133MHz	
0	1	1	166MHz	
0	1	0	200MHz	
0	0	0	266MHz	





FIX FSB1600 LATCH FAIL

Gigabyte Technology			
Title	P4_LGA775-B,D		
Size B	Document Number GA-G31M-S2C		Rev 1.11
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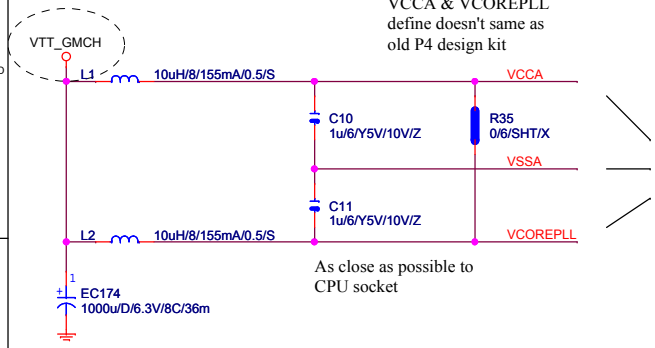
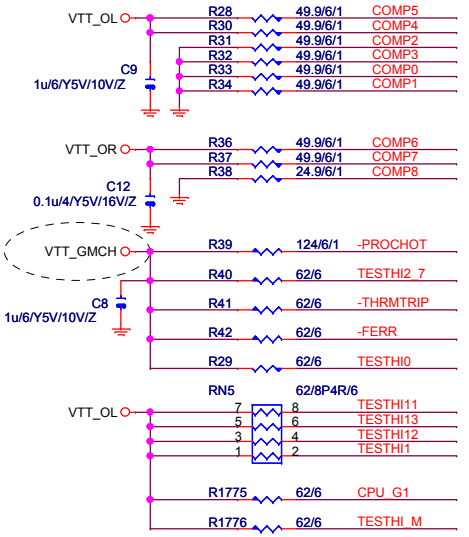
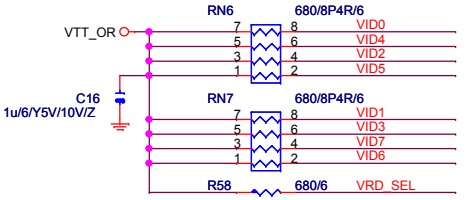
Note:

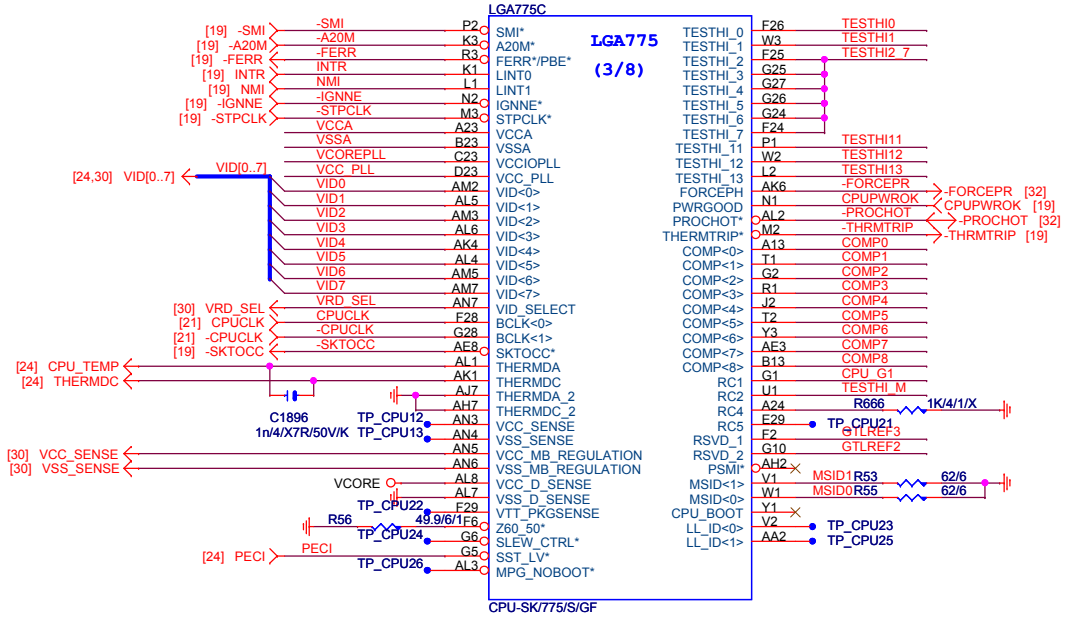
VCCA & VCOREPLL define doesn't same as old P4 design kit

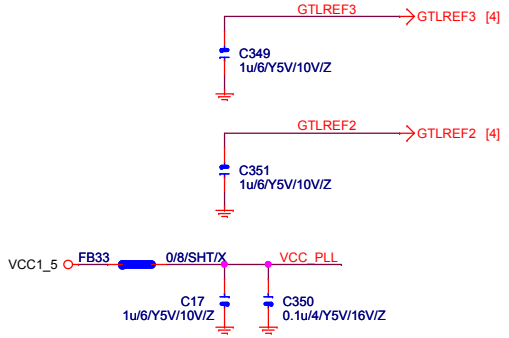


Place outside of CPU socket



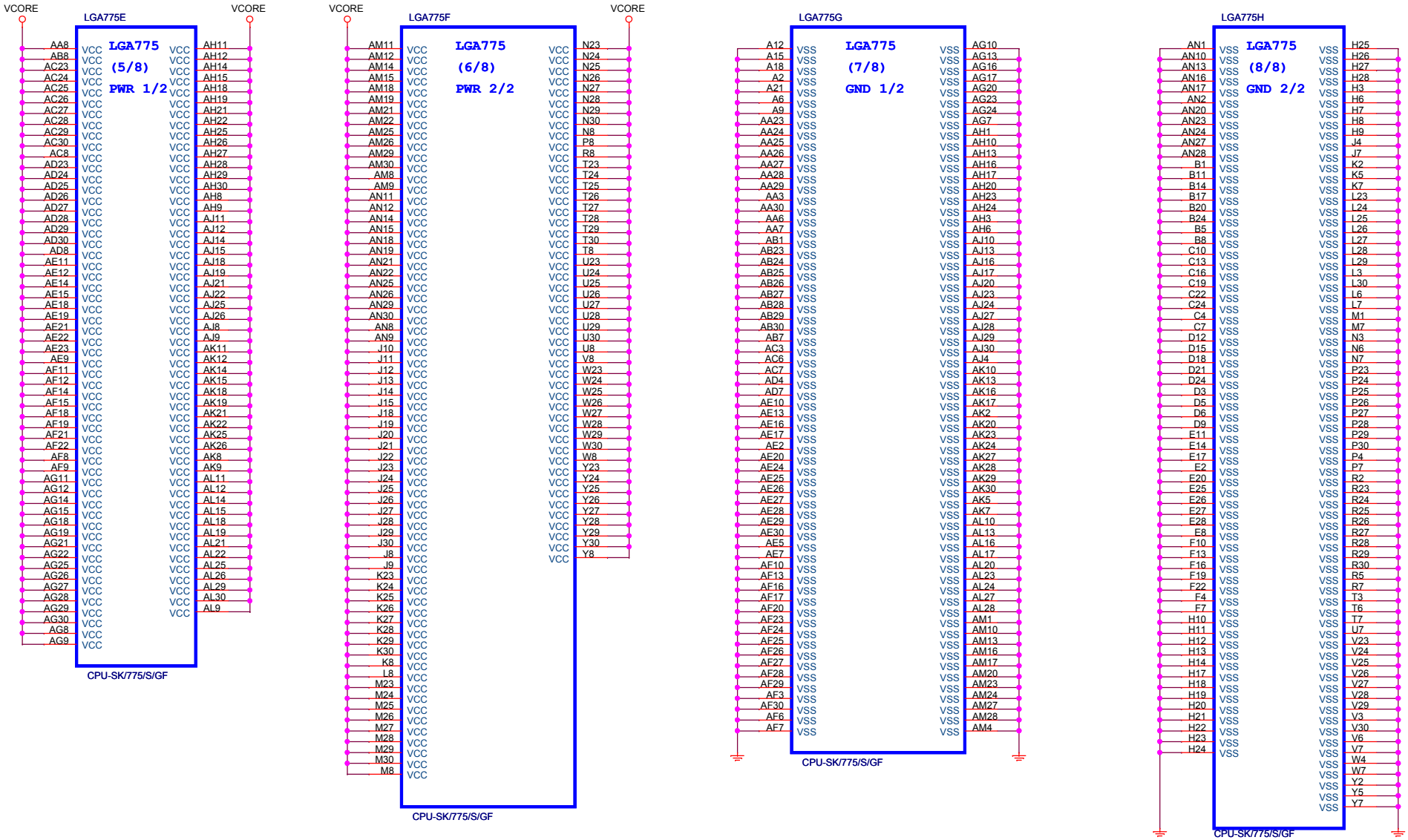




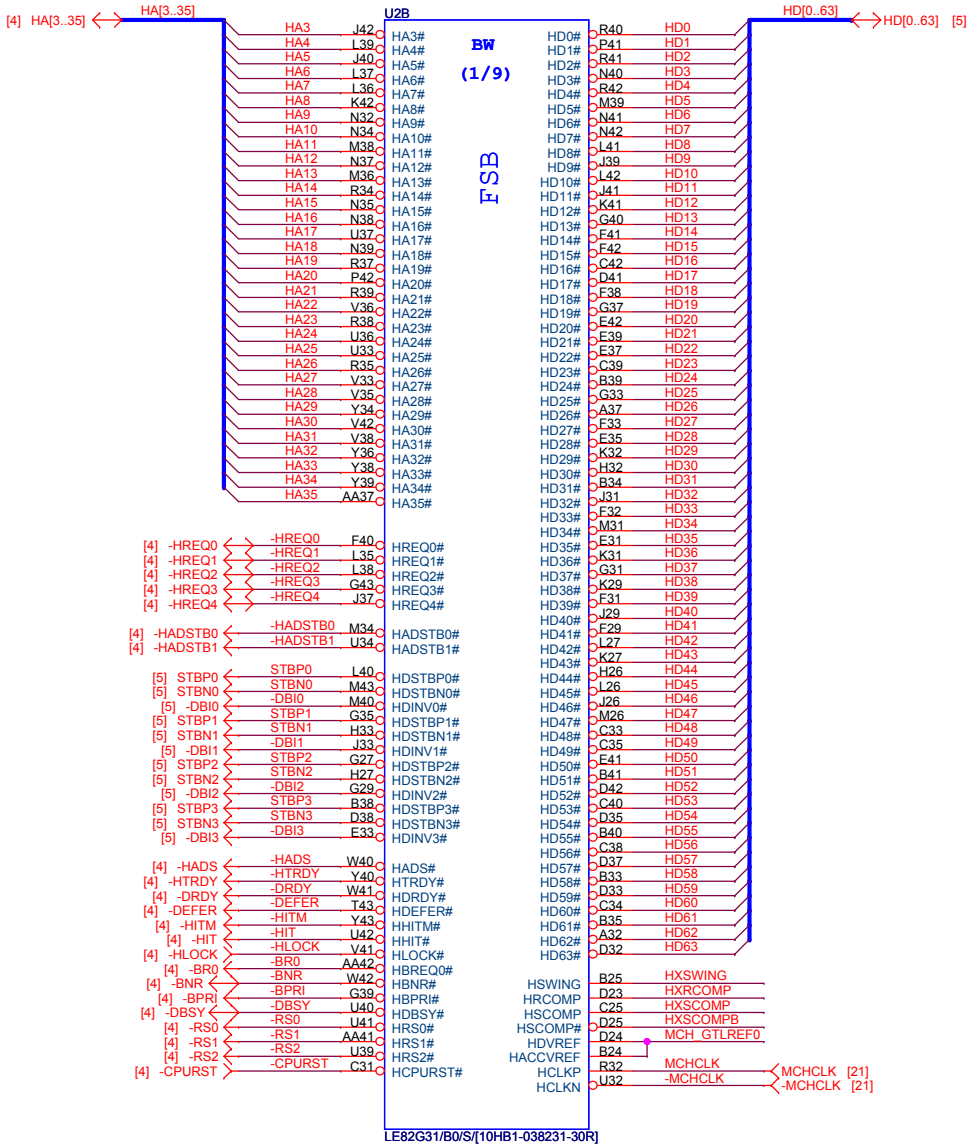


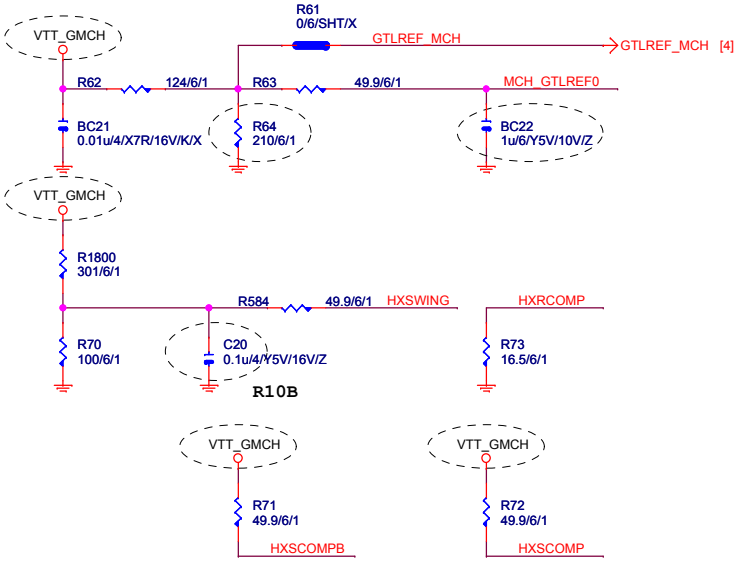
PECI:Platform Environment Control Interface

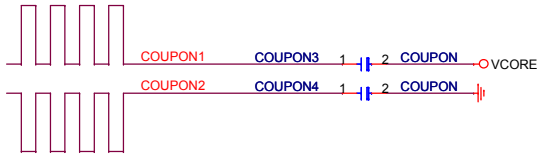
Gigabyte Technology		
Title: P4_LGA775-C		
Size: B	Document Number: GA-G31M-S2C	Rev: 1.11
Date: Thursday, July 17, 2008	Sheet 6 of 33	



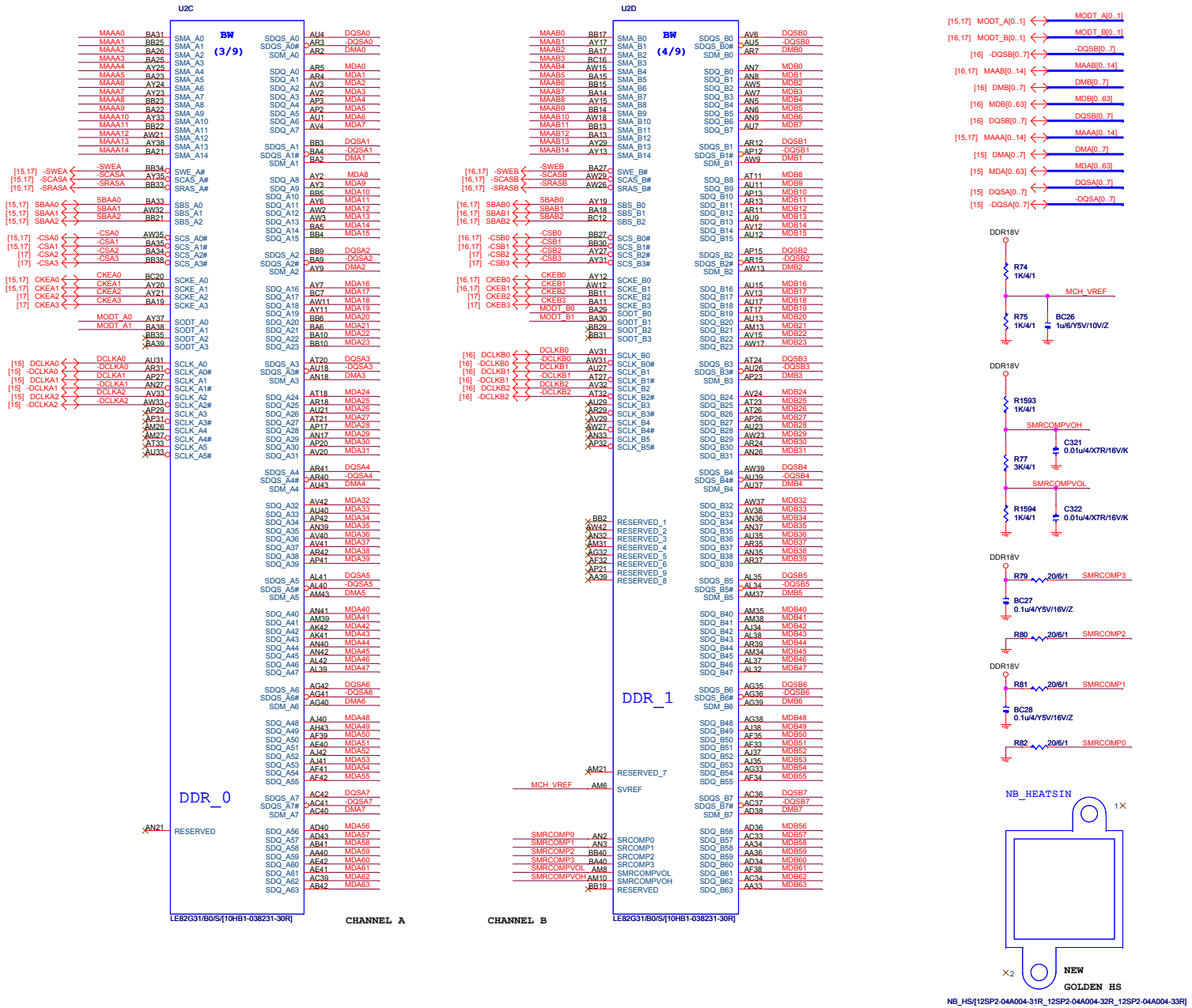
Gigabyte Technology			
Title: P4_LGA775-E,F,G,H			
Size: B	Document Number: GA-G31M-S2C		Rev: 1.11
Date: Thursday, July 17, 2008		Sheet 7 of 33	



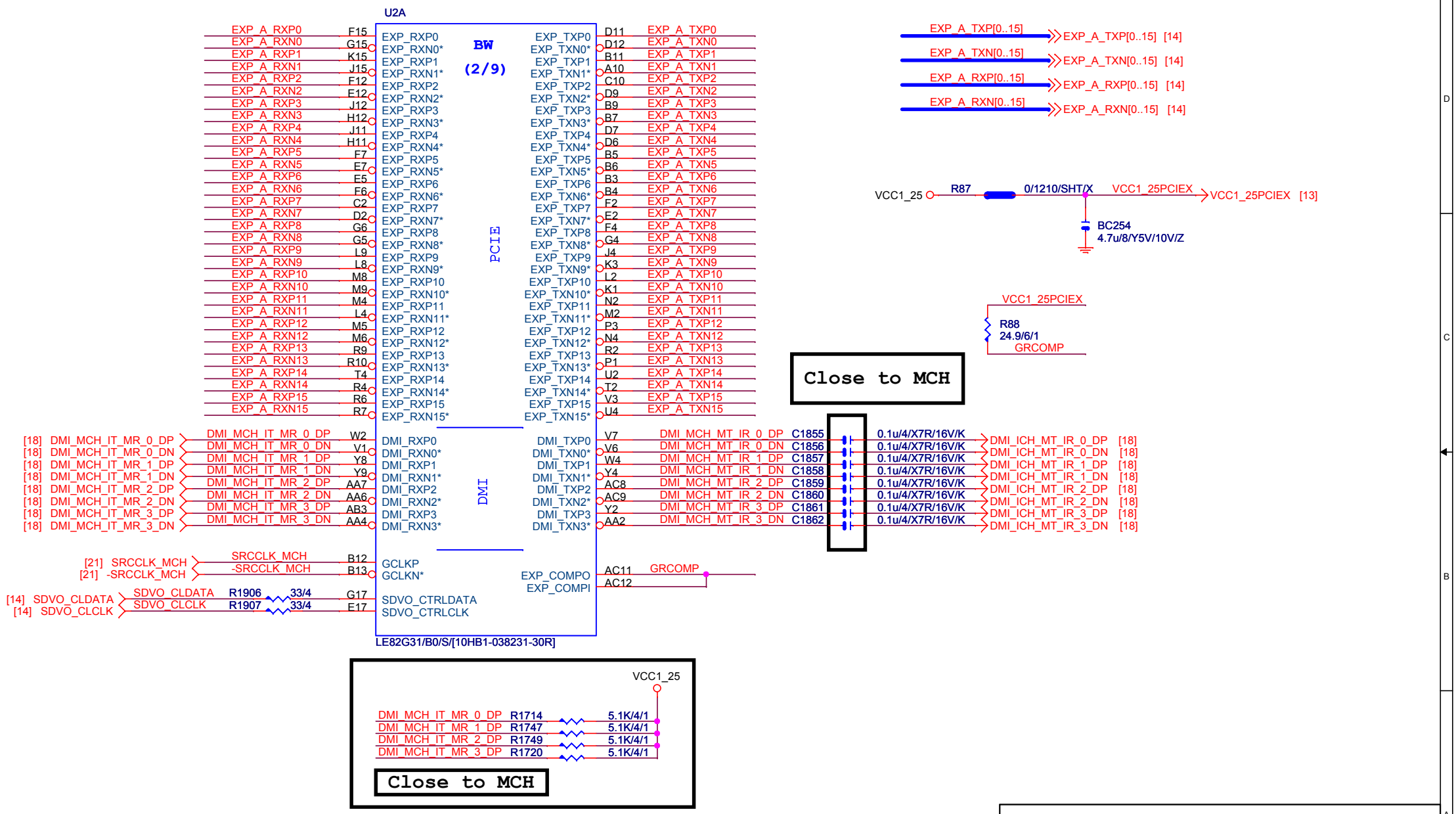




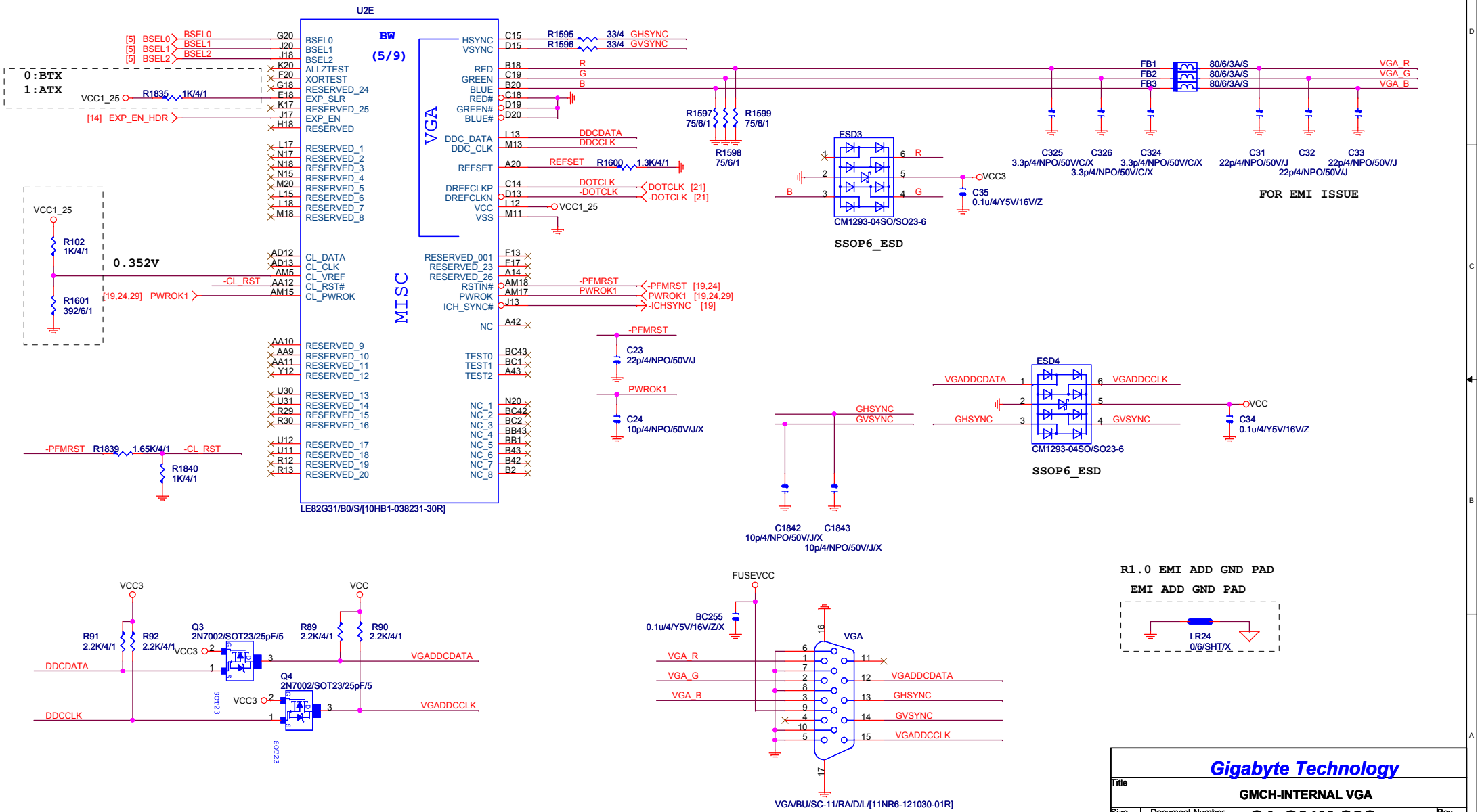
Gigabyte Technology		
Title: GMCH-HOST		
Size: B	Document Number: GA-G31M-S2C	Rev: 1.11
Date: Thursday, July 17, 2008	Sheet 8 of 33	



Gigabyte Technology			
Title: GMCH-DDRII			
Size: Custom	Document Number: GA-G31M-S2C		Rev: 1.11
Date: Thursday, July 17, 2008		Sheet 9 of 33	

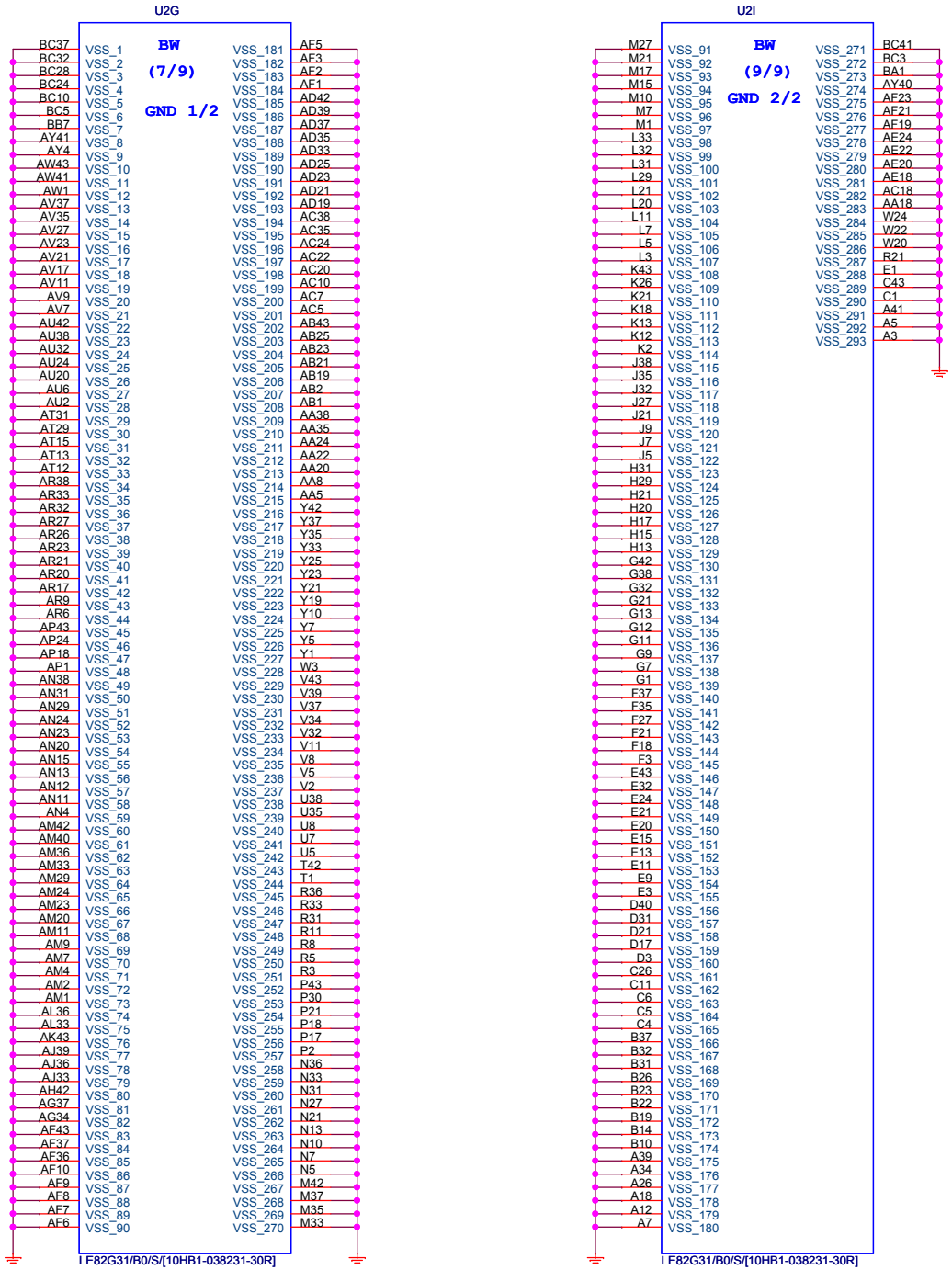


Gigabyte Technology		
Title: GMCH-PCI E & DMI		
Size: Custom	Document Number: GA-G31M-S2C	Rev: 1.11
Date: Thursday, July 17, 2008	Sheet 10 of 33	



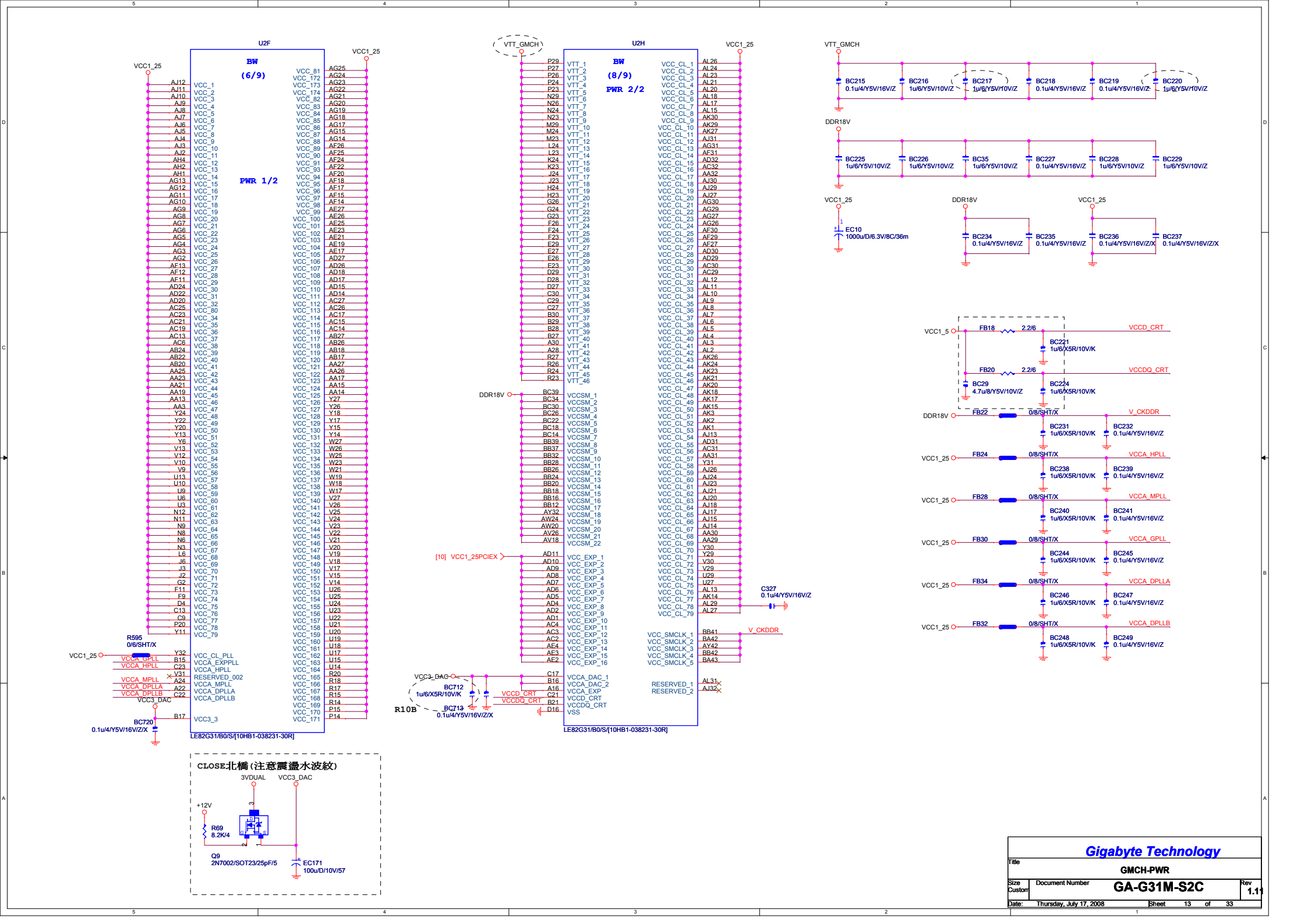
Gigabyte Technology

Title	GMCH-INTERNAL VGA	
Size B	Document Number GA-G31M-S2C	Rev 1.11
Date: Thursday, July 17, 2008	Sheet 11 of 33	



Gigabyte Technology

Title	GMCH-GND		
Size: Custom	Document Number: GA-G31M-S2C		Rev: 1.11
Date: Thursday, July 17, 2008	Sheet 12 of 33		


U2F
BW
(6/9)
PWR 1/2
VCC1_25
LE82G31/B0/S/[10HB1-038231-30R]
R595
0/6/SHT/X
BC720
0.1u/4/Y5V/16V/Z/X
VCC3_DAC
CLOSE北橋(注意震盪水波紋)
3VDUAL
+12V
R69
8.2K/4
Q9
2N7002/SOT23/25pF/5
EC171
100u/D/10V/57
U2H
BW
(8/9)
PWR 2/2
VTT_GMCH
DDR18V
[10] VCC1_25PCIEX
BC712
1u/6/X5R/10V/K
BC713
0.1u/4/Y5V/16V/Z/X
R10B
C327
0.1u/4/Y5V/16V/Z
V_CKDDR
BC215
0.1u/4/Y5V/16V/Z
BC216
1u/6/Y5V/10V/Z
BC217
1u/6/Y5V/10V/Z
BC218
0.1u/4/Y5V/16V/Z
BC219
0.1u/4/Y5V/16V/Z
BC220
1u/6/Y5V/10V/Z
BC225
1u/6/Y5V/10V/Z
BC226
1u/6/Y5V/10V/Z
BC35
1u/6/Y5V/10V/Z
BC227
0.1u/4/Y5V/16V/Z
BC228
1u/6/Y5V/10V/Z
BC229
1u/6/Y5V/10V/Z
EC10
1000u/D/6.3V/8C/36m
BC234
0.1u/4/Y5V/16V/Z
BC235
0.1u/4/Y5V/16V/Z
BC236
0.1u/4/Y5V/16V/Z/X
BC237
0.1u/4/Y5V/16V/Z/X
VCC1_5
FB18
2.2/6
VCCD_CRT
BC221
1u/6/X5R/10V/K
FB20
VCCDQ_CRT
BC29
4.7u/8/Y5V/10V/Z
BC224
1u/6/X5R/10V/K
FB22
0/8/SHT/X
V_CKDDR
BC231
1u/6/X5R/10V/K
BC232
0.1u/4/Y5V/16V/Z
FB24
VCCA_HPLL
BC238
1u/6/X5R/10V/K
BC239
0.1u/4/Y5V/16V/Z
FB28
VCCA_MPLL
BC240
1u/6/X5R/10V/K
BC241
0.1u/4/Y5V/16V/Z
FB30
VCCA_GPLL
BC244
1u/6/X5R/10V/K
BC245
0.1u/4/Y5V/16V/Z
FB34
VCCA_DPLLA
BC246
1u/6/X5R/10V/K
BC247
0.1u/4/Y5V/16V/Z
FB32
VCCA_DPLLB
BC248
1u/6/X5R/10V/K
BC249
0.1u/4/Y5V/16V/Z
Gigabyte Technology
Title
GMCH-PWR
Size
Custom
Document Number
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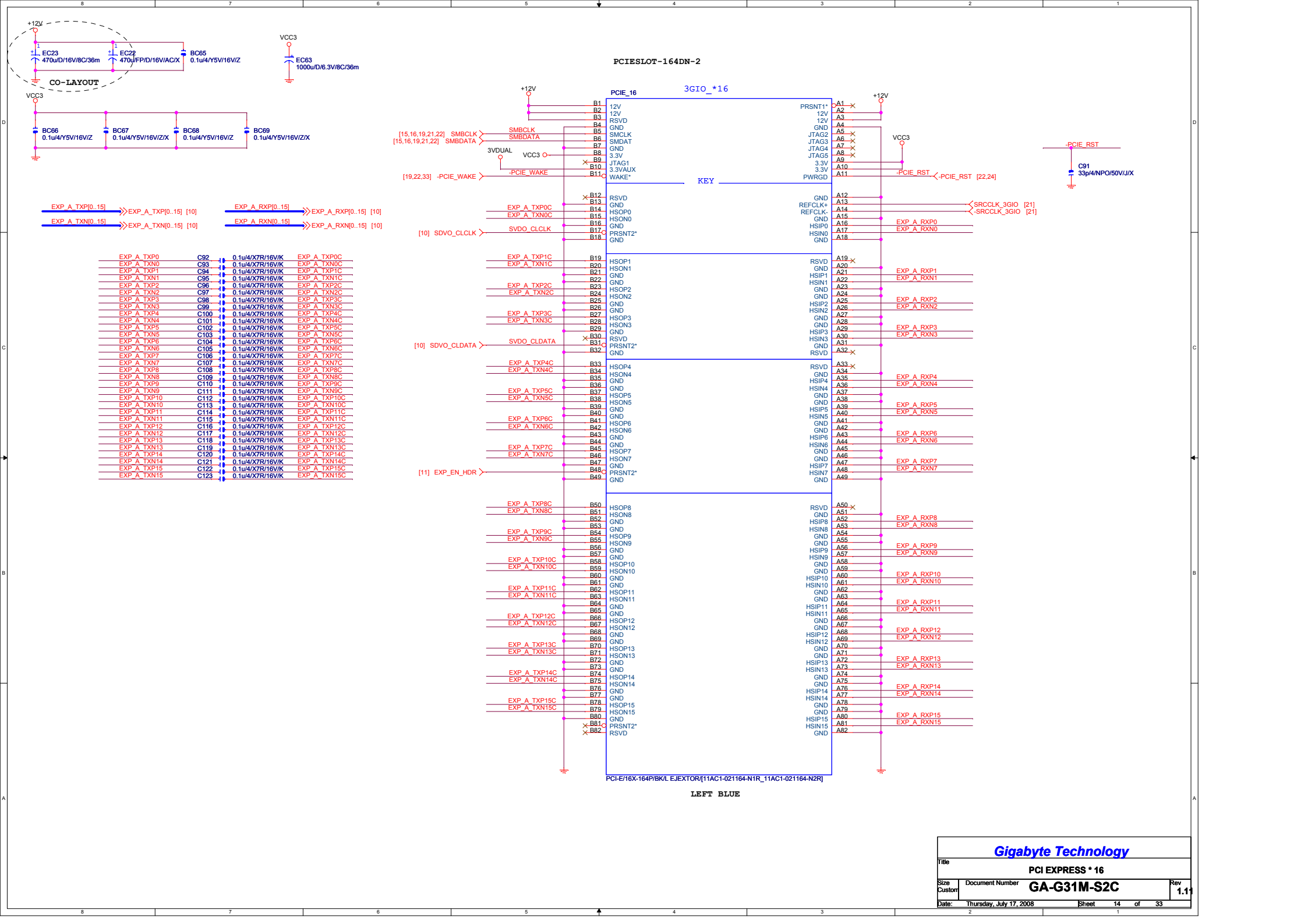
+12V
EC23 470u/D/16V/8C/36m
EC22 470u/FP/D/16V/AC/X
BC65 0.1u/4/Y5V/16V/Z
CO-LAYOUT
VCC3
EC63 1000u/D/6.3V/8C/36m
BC66 0.1u/4/Y5V/16V/Z
BC67 0.1u/4/Y5V/16V/Z/X
BC68 0.1u/4/Y5V/16V/Z
BC69 0.1u/4/Y5V/16V/Z/X
PCIESLOT-164DN-2
3GIO_*16
PCIE_16
KEY
3VDUAL
-PCIE_WAKE
-PCIE_RST
C91 33p/4/NPO/50V/J/X
EXP_A_TXP[0..15] EXP_A_TXP[0..15] [10]
EXP_A_TXN[0..15] EXP_A_TXN[0..15] [10]
EXP_A_RXP[0..15] EXP_A_RXP[0..15] [10]
EXP_A_RXN[0..15] EXP_A_RXN[0..15] [10]
SMBCLK
SMBDATA
SVDO_CLCLK
SVDO_CLDATA
EXP_EN_HDR
SRCCLK_3GIO [21]
SRCCLK_3GIO [21]
PCI-E/16X-164P/BK/L EJEXTOR/[11AC1-021164-N1R_11AC1-021164-N2R]
LEFT BLUE
Gigabyte Technology
PCI EXPRESS * 16
GA-G31M-S2C
Rev 1.11
Thursday, July 17, 2008
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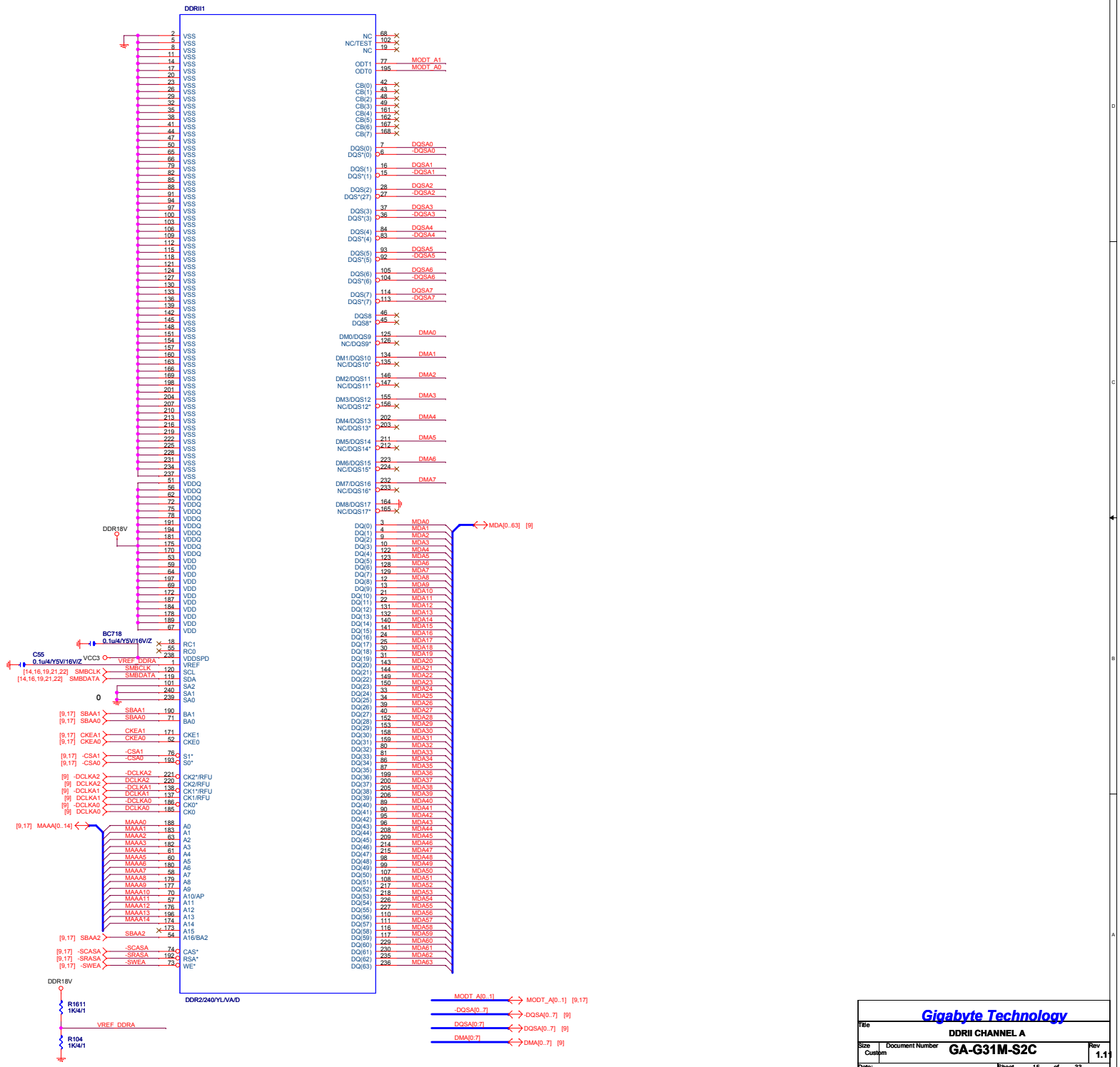

Gigabyte Technology			
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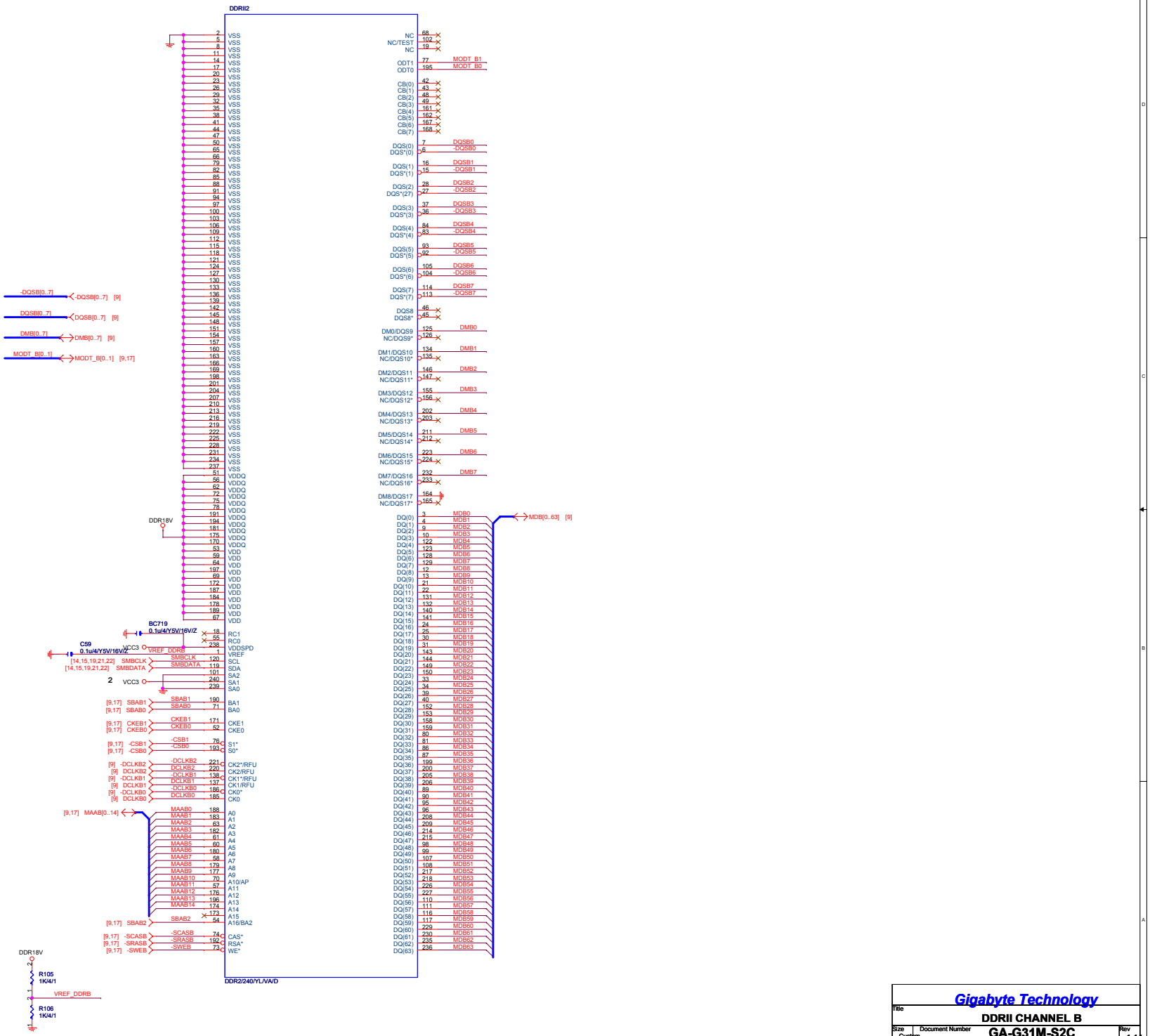
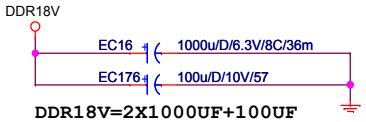
Size: Custom	Document Number: GA-G31M-S2C		Rev: 1.11
Date:		Sheet 15 of 33	

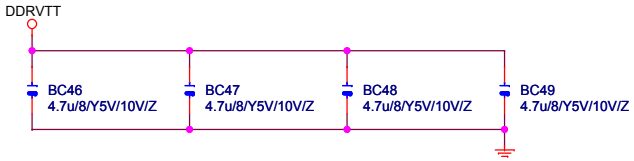


Gigabyte Technology		
Title	DDRII CHANNEL B	
Size: Custom	Document Number: GA-G31M-S2C	Rev: 1.11
Date:	Sheet 16 of 33	

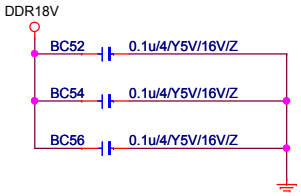
DDR TERMINATION CHANNEL A

DDRVTT Decouple

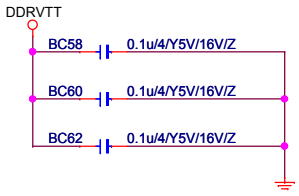


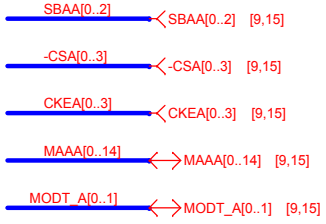


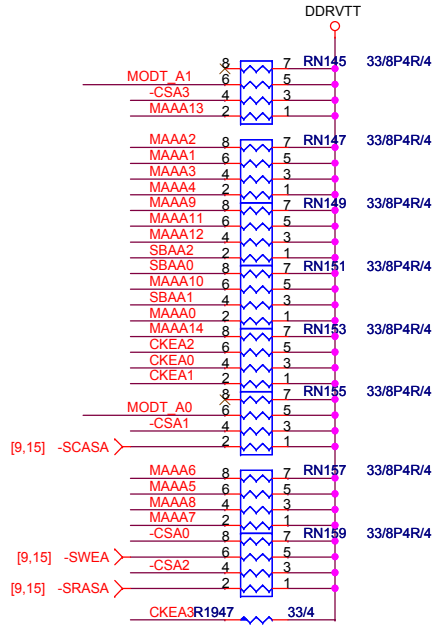
DDR18V Decouple



DDRVTT Decouple

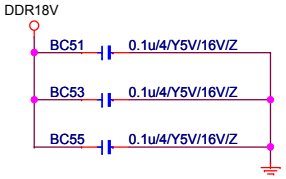




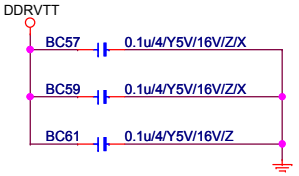


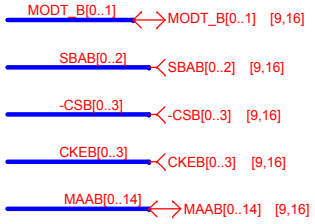
DDR TERMINATION CHANNEL B

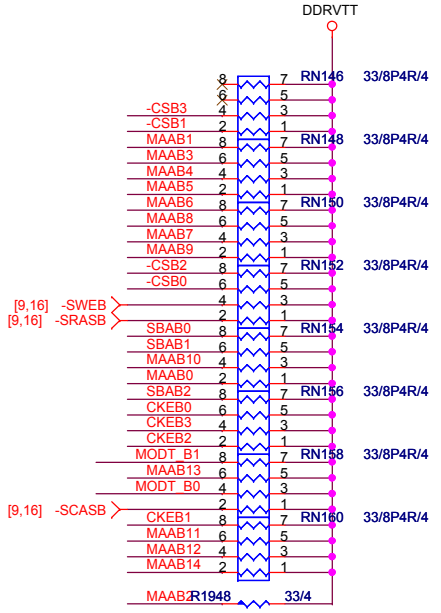
DDR18V Decouple



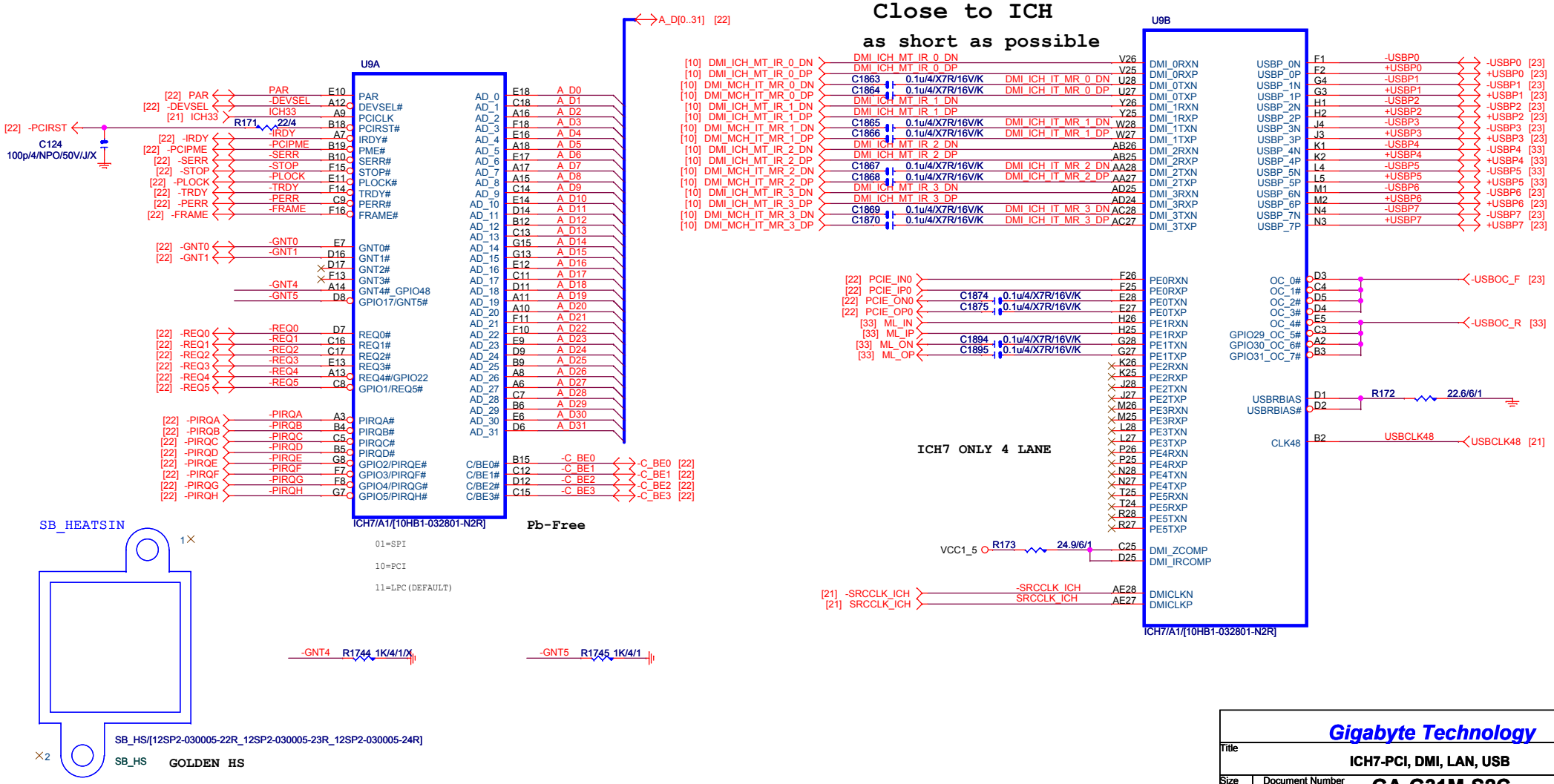
DDRVTT Decouple







Gigabyte Technology			
Title: DDRII TERMINATOR			
Size: Custom	Document Number: GA-G31M-S2C		Rev: 1.11
Date: Thursday, July 17, 2008		Sheet 17 of 33	


Close to ICH
as short as possible
U9A
U9B
A_D[0..31] [22]
[22] -PCIRST
C124
100p/4/NPO/50V/J/X
R171 22/4
PAR
-DEVSEL
ICH33
-IRDY
-PCIPME
-SERR
-STOP
-PLOCK
-TRDY
-PERR
-FRAME
-GNT0
-GNT1
-GNT4
-GNT5
-REQ0
-REQ1
-REQ2
-REQ3
-REQ4
-REQ5
-PIRQA
-PIRQB
-PIRQC
-PIRQD
-PIRQE
-PIRQF
-PIRQG
-PIRQH
PAR
DEVSEL#
PCICLK
PCIRST#
IRDY#
PME#
SERR#
STOP#
PLOCK#
TRDY#
PERR#
FRAME#
GNT0#
GNT1#
GNT2#
GNT3#
GNT4#_GPIO48
GPIO17/GNT5#
REQ0#
REQ1#
REQ2#
REQ3#
REQ4#/GPIO22
GPIO1/REQ5#
PIRQA#
PIRQB#
PIRQC#
PIRQD#
GPIO2/PIRQE#
GPIO3/PIRQF#
GPIO4/PIRQG#
GPIO5/PIRQH#
AD_0
AD_1
AD_2
AD_3
AD_4
AD_5
AD_6
AD_7
AD_8
AD_9
AD_10
AD_11
AD_12
AD_13
AD_14
AD_15
AD_16
AD_17
AD_18
AD_19
AD_20
AD_21
AD_22
AD_23
AD_24
AD_25
AD_26
AD_27
AD_28
AD_29
AD_30
AD_31
A_D0
A_D1
A_D2
A_D3
A_D4
A_D5
A_D6
A_D7
A_D8
A_D9
A_D10
A_D11
A_D12
A_D13
A_D14
A_D15
A_D16
A_D17
A_D18
A_D19
A_D20
A_D21
A_D22
A_D23
A_D24
A_D25
A_D26
A_D27
A_D28
A_D29
A_D30
A_D31
C/BE0#
C/BE1#
C/BE2#
C/BE3#
-C_BE0
-C_BE1
-C_BE2
-C_BE3
-C_BE0 [22]
-C_BE1 [22]
-C_BE2 [22]
-C_BE3 [22]
ICH7/A1/[10HB1-032801-N2R]
Pb-Free
01=SPI
10=PCI
11=LPC(DEFAULT)
-GNT4 R1744 1K/4/1/X
-GNT5 R1745 1K/4/1
SB_HEATSIN
SB_HS/[12SP2-030005-22R_12SP2-030005-23R_12SP2-030005-24R]
SB_HS
GOLDEN HS
DMI_ICH_MT_IR_0_DN
DMI_ICH_MT_IR_0_DP
DMI_MCH_IT_MR_0_DN
DMI_MCH_IT_MR_0_DP
DMI_ICH_MT_IR_1_DN
DMI_ICH_MT_IR_1_DP
DMI_MCH_IT_MR_1_DN
DMI_MCH_IT_MR_1_DP
DMI_ICH_MT_IR_2_DN
DMI_ICH_MT_IR_2_DP
DMI_MCH_IT_MR_2_DN
DMI_MCH_IT_MR_2_DP
DMI_ICH_MT_IR_3_DN
DMI_ICH_MT_IR_3_DP
DMI_MCH_IT_MR_3_DN
DMI_MCH_IT_MR_3_DP
C1863 0.1u/4/X7R/16V/K
C1864 0.1u/4/X7R/16V/K
C1865 0.1u/4/X7R/16V/K
C1866 0.1u/4/X7R/16V/K
C1867 0.1u/4/X7R/16V/K
C1868 0.1u/4/X7R/16V/K
C1869 0.1u/4/X7R/16V/K
C1870 0.1u/4/X7R/16V/K
DMI_ICH_IT_MR_0_DN
DMI_ICH_IT_MR_0_DP
DMI_ICH_IT_MR_1_DN
DMI_ICH_IT_MR_1_DP
DMI_ICH_IT_MR_2_DN
DMI_ICH_IT_MR_2_DP
DMI_ICH_IT_MR_3_DN
DMI_ICH_IT_MR_3_DP
V26
V25
U28
U27
Y26
Y25
W28
W27
AB26
AB25
AA28
AA27
AD25
AD24
AC28
AC27
DMI_0RXN
DMI_0RXP
DMI_0TXN
DMI_0TXP
DMI_1RXN
DMI_1RXP
DMI_1TXN
DMI_1TXP
DMI_2RXN
DMI_2RXP
DMI_2TXN
DMI_2TXP
DMI_3RXN
DMI_3RXP
DMI_3TXN
DMI_3TXP
PCIE_IN0
PCIE_IP0
PCIE_ON0
PCIE_OP0
ML_IN
ML_IP
ML_ON
ML_OP
C1874 0.1u/4/X7R/16V/K
C1875 0.1u/4/X7R/16V/K
C1894 0.1u/4/X7R/16V/K
C1895 0.1u/4/X7R/16V/K
F26
F25
E28
E27
H26
H25
G28
G27
PE0RXN
PE0RXP
PE0TXN
PE0TXP
PE1RXN
PE1RXP
PE1TXN
PE1TXP
K26
K25
J28
J27
M26
M25
L28
L27
P26
P25
N28
N27
T25
T24
R28
R27
PE2RXN
PE2RXP
PE2TXN
PE2TXP
PE3RXN
PE3RXP
PE3TXN
PE3TXP
PE4RXN
PE4RXP
PE4TXN
PE4TXP
PE5RXN
PE5RXP
PE5TXN
PE5TXP
ICH7 ONLY 4 LANE
VCC1_5
R173 24.9/6/1
C25
D25
DMI_ZCOMP
DMI_IRCOMP
[21] -SRCCLK_ICH
[21] SRCCLK_ICH
-SRCCLK_ICH
SRCCLK_ICH
AE28
AE27
DMICLKN
DMICLKP
USBP_0N
USBP_0P
USBP_1N
USBP_1P
USBP_2N
USBP_2P
USBP_3N
USBP_3P
USBP_4N
USBP_4P
USBP_5N
USBP_5P
USBP_6N
USBP_6P
USBP_7N
USBP_7P
F1
F2
G4
G3
H1
H2
J4
J3
K1
K2
L4
L5
M1
M2
N4
N3
-USBP0
+USBP0
-USBP1
+USBP1
-USBP2
+USBP2
-USBP3
+USBP3
-USBP4
+USBP4
-USBP5
+USBP5
-USBP6
+USBP6
-USBP7
+USBP7
-USBP0 [23]
+USBP0 [23]
-USBP1 [23]
+USBP1 [23]
-USBP2 [23]
+USBP2 [23]
-USBP3 [23]
+USBP3 [23]
-USBP4 [33]
+USBP4 [33]
-USBP5 [33]
+USBP5 [33]
-USBP6 [23]
+USBP6 [23]
-USBP7 [23]
+USBP7 [23]
OC_0#
OC_1#
OC_2#
OC_3#
OC_4#
GPIO29_OC_5#
GPIO30_OC_6#
GPIO31_OC_7#
D3
C4
D5
D4
E5
C3
A2
B3
-USBOC_F [23]
-USBOC_R [33]
USBRBIAS
USBRBIAS#
R172 22.6/6/1
D1
D2
CLK48
B2
USBCLK48
USBCLK48 [21]
Gigabyte Technology
Title
ICH7-PCI, DMI, LAN, USB
Size B
Document Number
GA-G31M-S2C
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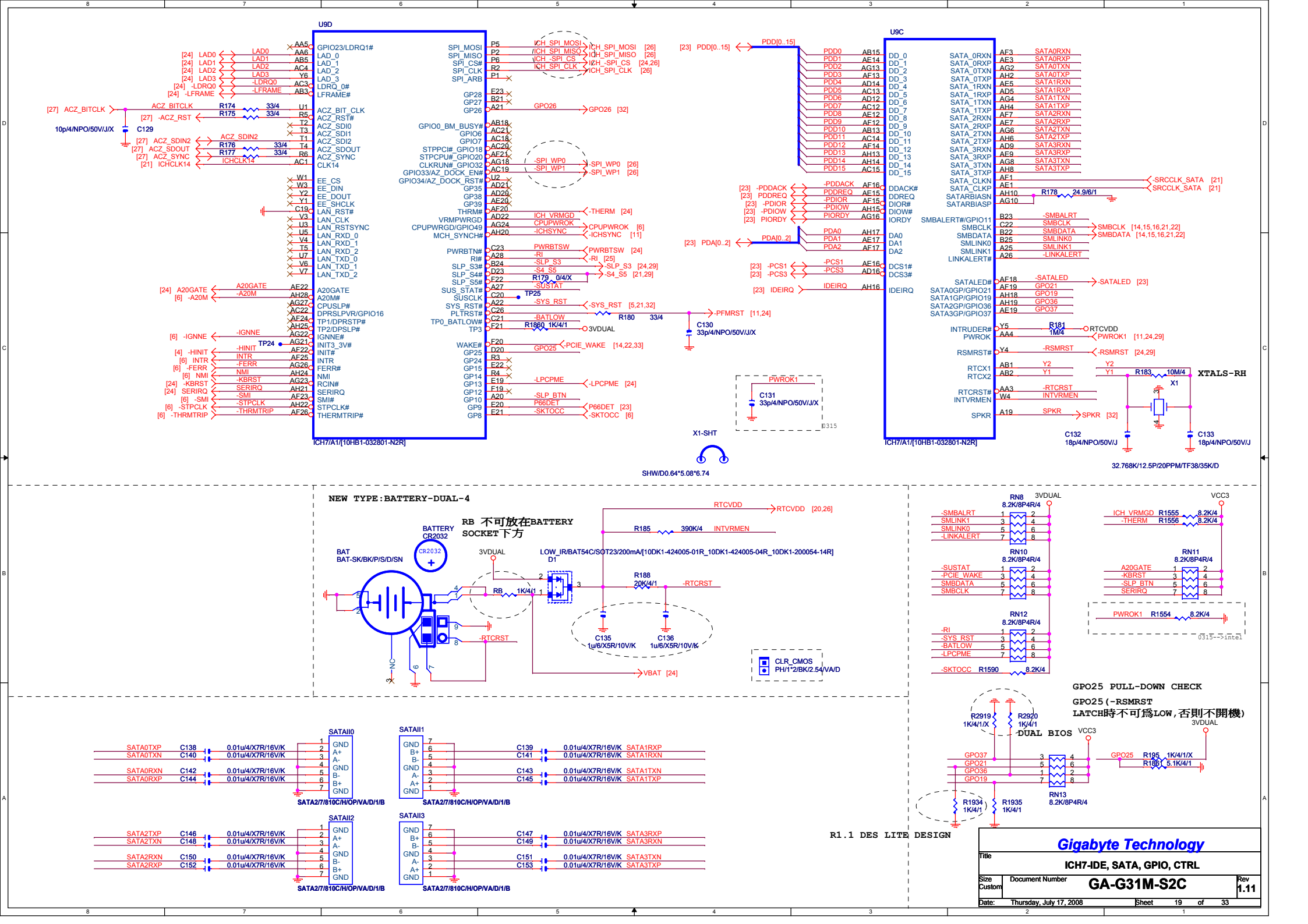
Sheet 18 of 33


U9D
ICH7/A1/[10HB1-032801-N2R]
U9C
ICH7/A1/[10HB1-032801-N2R]
GPIO23/LDRQ1#
LAD_0
LAD_1
LAD_2
LAD_3
LDRQ_0#
LFRAME#
ACZ_BIT_CLK
ACZ_RST#
ACZ_SDI0
ACZ_SDI1
ACZ_SDI2
ACZ_SDOUT
ACZ_SYNC
CLK14
EE_CS
EE_DIN
EE_DOUT
EE_SHCLK
LAN_RST#
LAN_CLK
LAN_RSTSYNC
LAN_RXD_0
LAN_RXD_1
LAN_RXD_2
LAN_TXD_0
LAN_TXD_1
LAN_TXD_2
A20GATE
A20M#
CPUSLP#
DPRSLPVR/GPIO16
TP1/DPRSTP#
TP2/DPSLP#
IGNNE#
INIT3_3V#
INIT#
INTR
FERR#
NMI
RCIN#
SERIRQ
SMI#
STPCLK#
THERMTRIP#
SPI_MOSI
SPI_MISO
SPI_CS#
SPI_CLK
SPI_ARB
GPIO0_BM_BUSY#
GPIO6
GPIO7
STPPCI#_GPIO18
STPCPU#_GPIO20
CLKRUN#_GPIO32
GPIO33/AZ_DOCK_EN#
GPIO34/AZ_DOCK_RST#
THRM#
VRMPWRGD
CPUPWRGD/GPIO49
MCH_SYNCH#
PWRBTN#
RI#
SLP_S3#
SLP_S4#
SLP_S5#
SUS_STAT#
SUSCLK
SYS_RST#
PLTRST#
TP0_BATLOW#
TP3
WAKE#
PDD0
PDD1
PDD2
PDD3
PDD4
PDD5
PDD6
PDD7
PDD8
PDD9
PDD10
PDD11
PDD12
PDD13
PDD14
PDD15
DDACK#
DDREQ
DIOR#
DIOW#
IORDY
PDA0
PDA1
PDA2
PCS1#
PCS3#
IDEIRQ
SATA_0RXN
SATA_0RXP
SATA_0TXN
SATA_0TXP
SATA_1RXN
SATA_1RXP
SATA_1TXN
SATA_1TXP
SATA_2RXN
SATA_2RXP
SATA_2TXN
SATA_2TXP
SATA_3RXN
SATA_3RXP
SATA_3TXN
SATA_3TXP
SATA_CLKN
SATA_CLKP
SATARBIASN
SATARBIASP
SMBALERT#/GPIO11
SMBCLK
SMBDATA
SMLINK0
SMLINK1
LINKALERT#
SATALED#
SATA0GP/GPIO21
SATA1GP/GPIO19
SATA2GP/GPIO36
SATA3GP/GPIO37
INTRUDER#
PWROK
RSMRST#
RTCX1
RTCX2
RTCRST#
INTVRMEN
SPKR
R180 33/4
C130 33p/4/NPO/50V/J/X
PWROK1
C131 33p/4/NPO/50V/J/X
X1-SHT
SHW/D0.64*5.08*6.74
R178 24.9/6/1
R179 0/4/X
R1860 1K/4/1
R181 1M/4
R183 10M/4
X1
XTALS-RH
C132 18p/4/NPO/50V/J
C133 18p/4/NPO/50V/J
32.768K/12.5P/20PPM/TF38/35K/D
NEW TYPE:BATTERY-DUAL-4
BATTERY CR2032
RB 不可放在BATTERY SOCKET下方
BAT
BAT-SK/BK/P/S/D/SN
3VDUAL
LOW_IR/BAT54C/SOT23/200mA/[10DK1-424005-01R_10DK1-424005-04R_10DK1-200054-14R]
D1
R185 390K/4
R188 20K/4/1
RB 1K/4/1
C135 1u/6/X5R/10V/K
C136 1u/6/X5R/10V/K
CLR_CMOS
PH/1*2/BK/2.54/VA/D
RN8 8.2K/8P4R/4
RN10 8.2K/8P4R/4
RN11 8.2K/8P4R/4
RN12 8.2K/8P4R/4
RN13 8.2K/8P4R/4
VCC3
GPO25 PULL-DOWN CHECK
GPO25(-RSMRST
LATCH時不可爲LOW,否則不開機)
DUAL BIOS
R2919 1K/4/1/X
R2920 1K/4/1
R1934 1K/4/1
R1935 1K/4/1
R195 1K/4/1/X
R196 5.1K/4/1
SATAII0
SATAII1
SATAII2
SATAII3
SATA2/7/810C/H/OP/VA/D/1/B
R1.1 DES LITE DESIGN
Gigabyte Technology
ICH7-IDE, SATA, GPIO, CTRL
GA-G31M-S2C
Rev 1.11
Thursday, July 17, 2008
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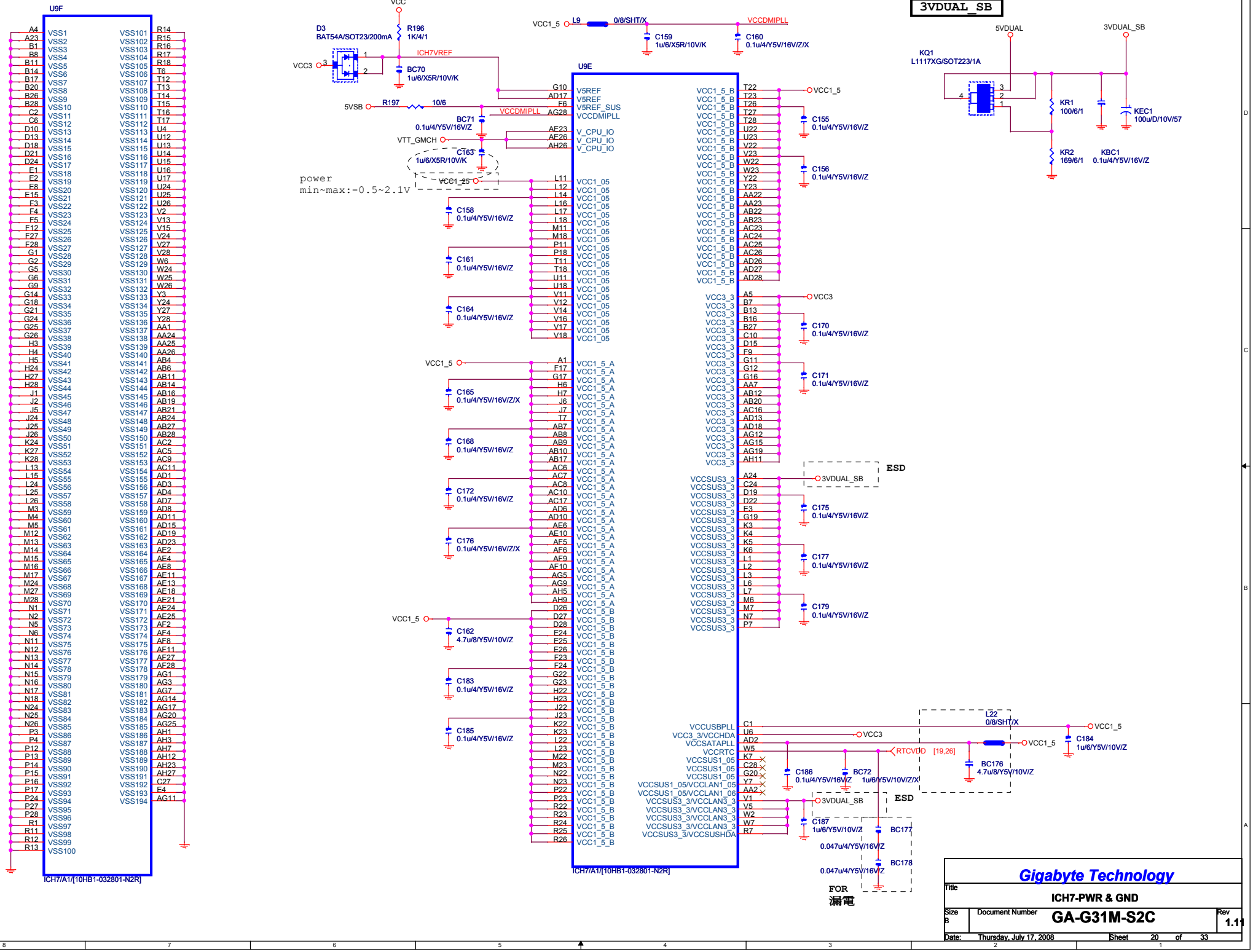
U9F
ICH7/A1/[10HB1-032801-N2R]
U9E
ICH7/A1/[10HB1-032801-N2R]
3VDUAL_SB
power
min~max:-0.5~2.1V
ESD
FOR
漏電
Gigabyte Technology
ICH7-PWR & GND
GA-G31M-S2C
Rev 1.11
Thursday, July 17, 2008
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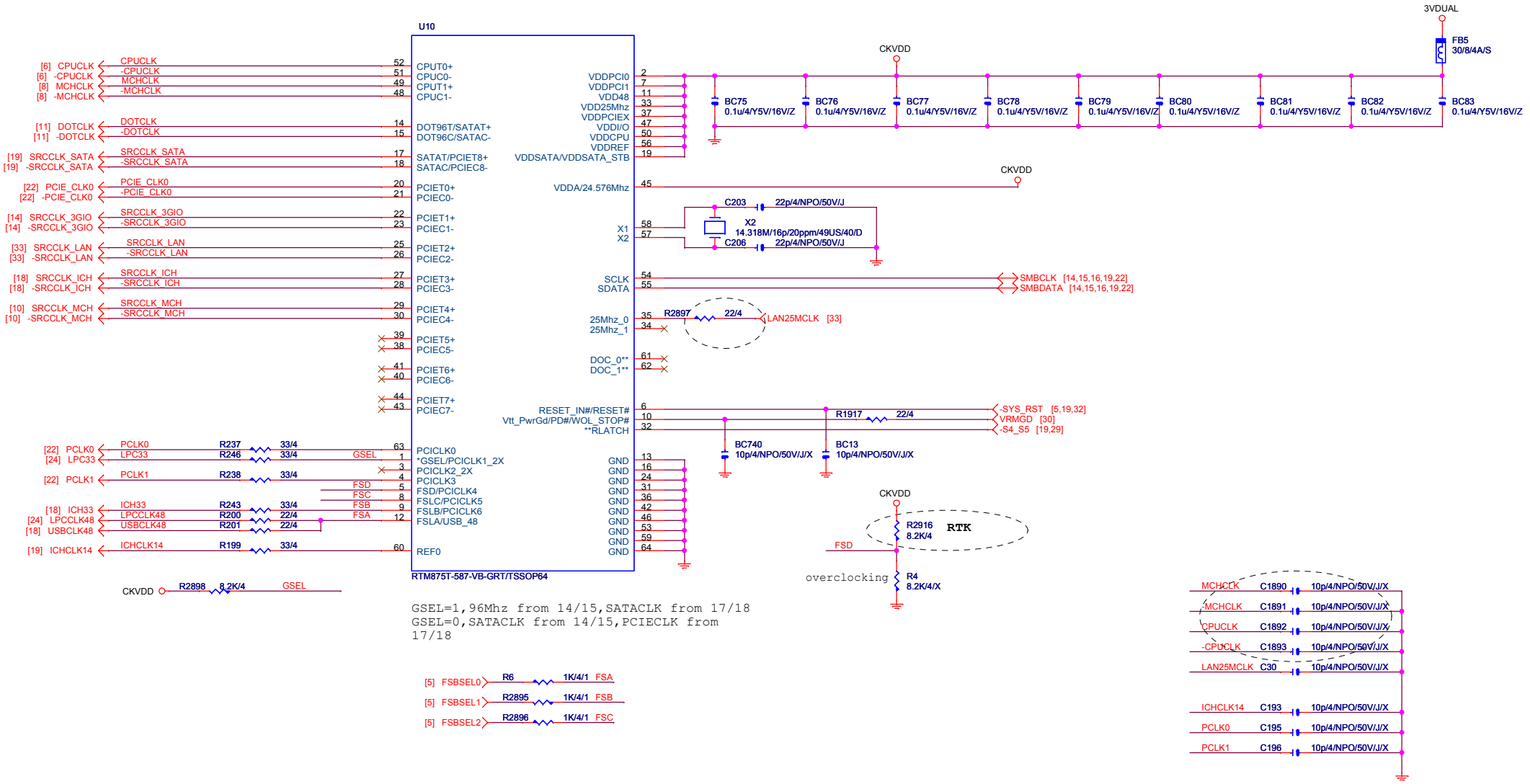
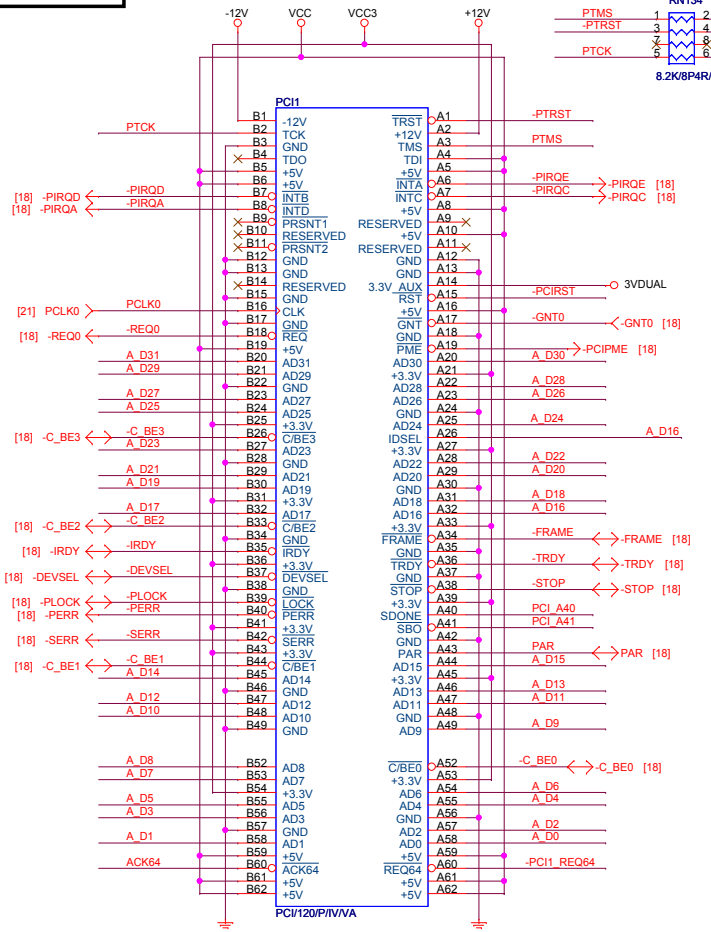
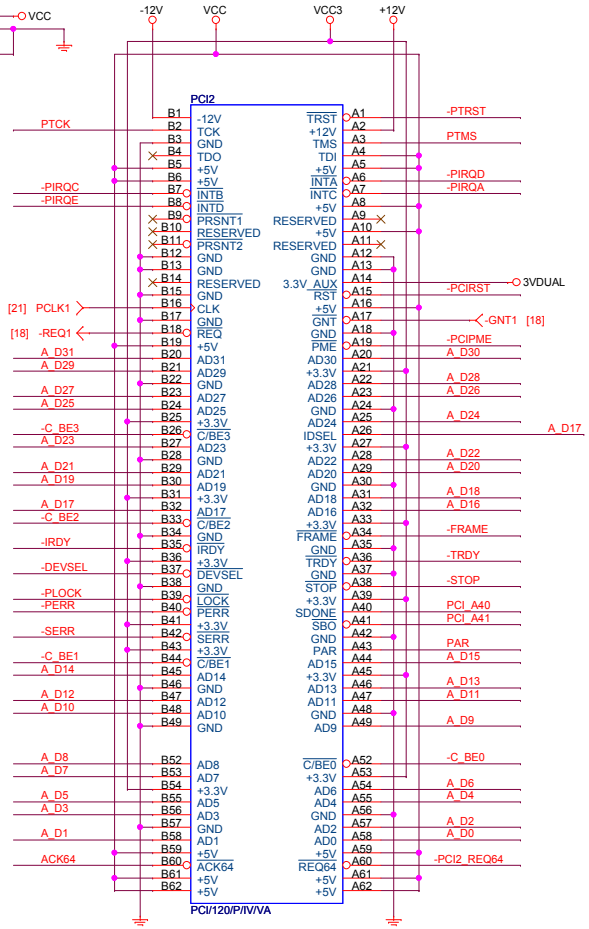
CLK GEN CK505



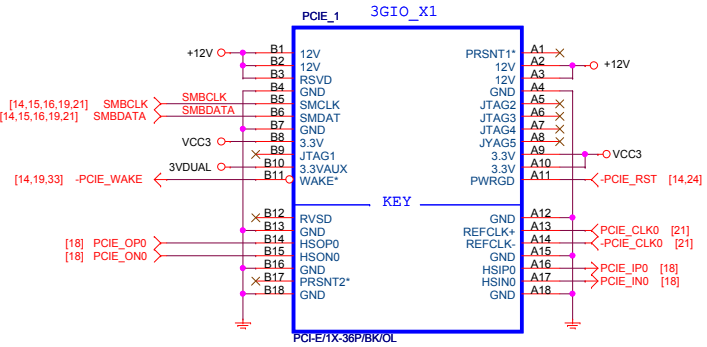
Gigabyte Technology		
Title: CK505 CLK GEN		
Size: Custom	Document Number: GA-G31M-S2C	Rev: 1.11
Date: Thursday, July 17, 2008	Sheet 21 of 33	

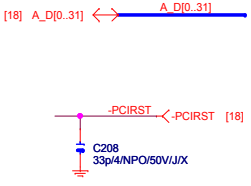
PCI1,2 SLOT

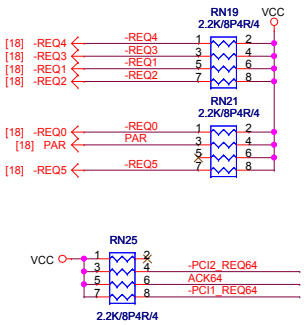


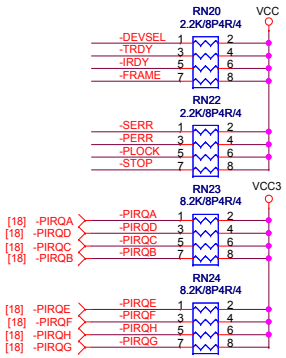


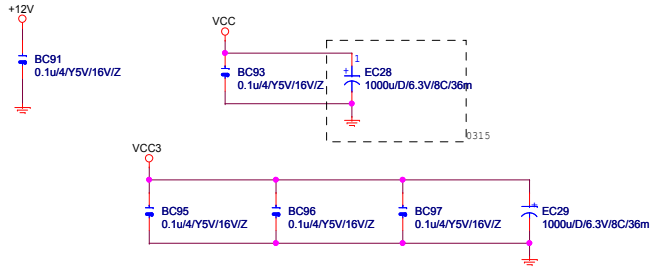
PCIE*1







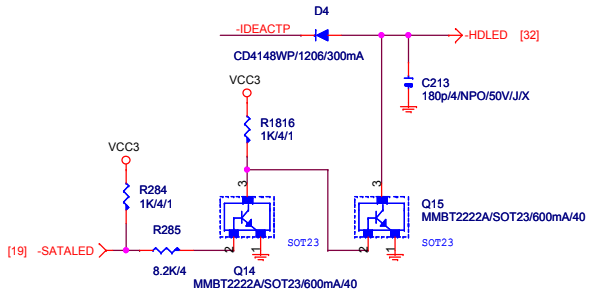




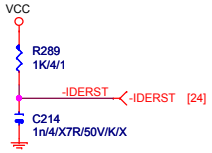
[14,15,16,19,21] SMBCLK → PCI_A40
[14,15,16,19,21] SMBDATA → PCI_A41

Gigabyte Technology	
Title	PCI SLOT 1, 2/PCIEX1
Size: Custom	Document Number: GA-G31M-S2C
Rev: 1.11	
Date: Thursday, July 17, 2008	Sheet 22 of 33

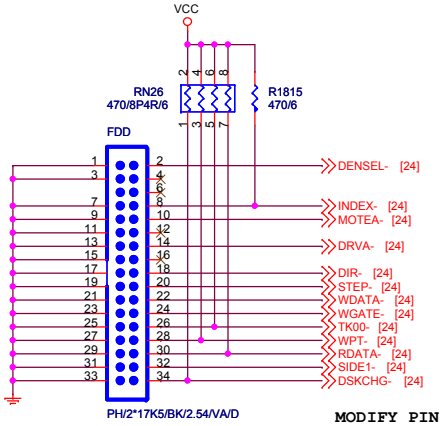
IDE/SATA LED



IDE RESET

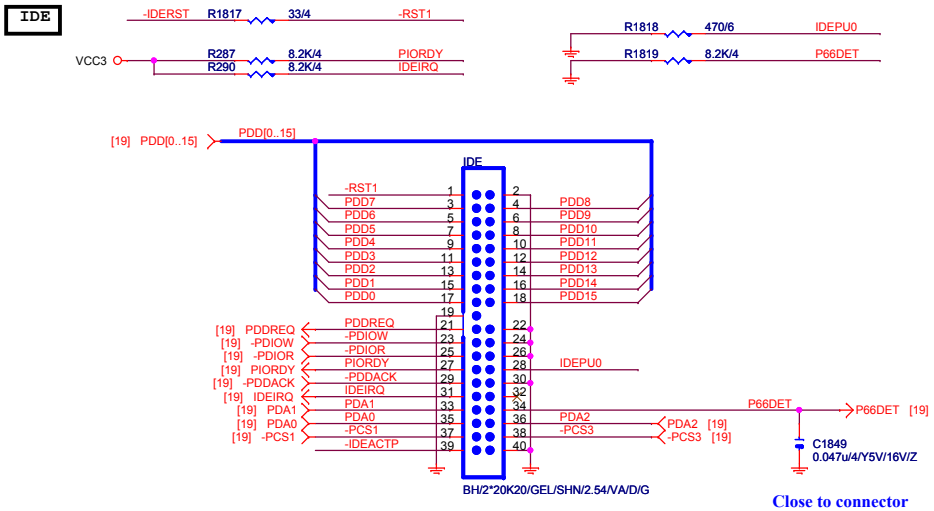


FLOPPY



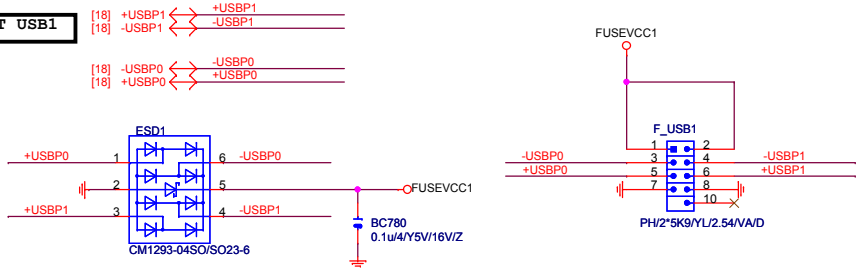
MODIFY PIN HEADER

IDE



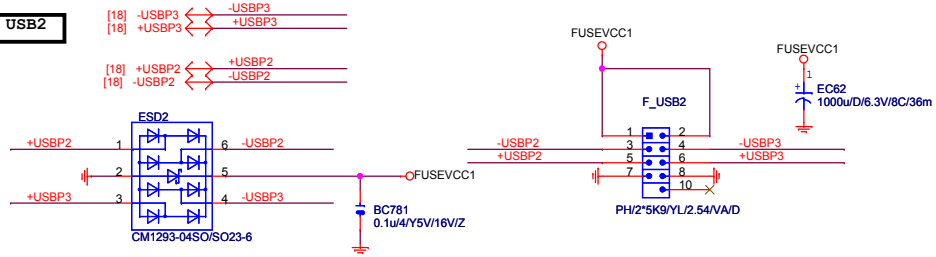
Close to connector

FRONT USB1

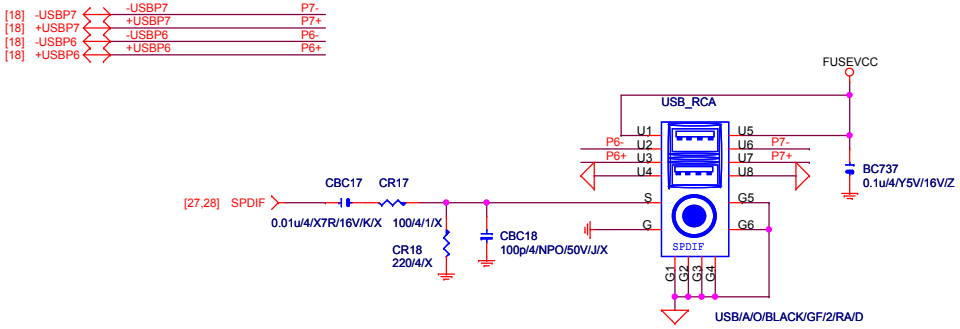


SSOP6_ESD

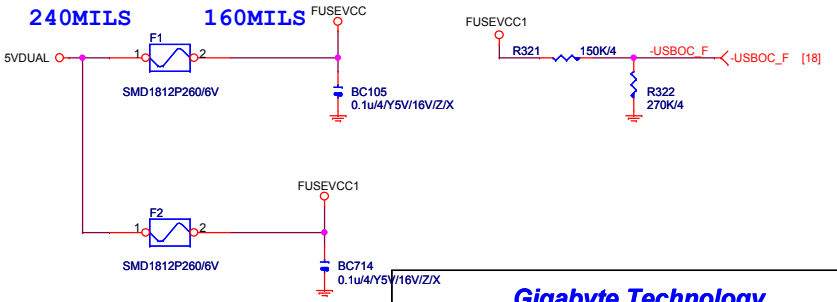
FRONT USB2



SSOP6_ESD



POP USBX2



Gigabyte Technology

Title	IDE,FDD,F_USB,USB_RCA	
Size: B	Document Number: GA-G31M-S2C	Rev: 1.11
Date: Thursday, July 17, 2008	Sheet 23 of 33	

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

DEFAULT 50%

0302-UP

IT8712F/[IT8718F]

IT8718F-S/HX(GB)/S

JP7 : HIGH DUAL BIOS ENABLE
LOW DUAL BIOS DISABLE

Pop to disable Dual BIOS

Dual BIOS:
GB logo :Pin 61 (GP15/CSA)
GB logo :Pin 59 (GP17/CSB)

Pin 59 Dual BIOS ,Power On Strapping:
H ==>Dual BIOS function Enable
L ==>Dual BIOS function Disable

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

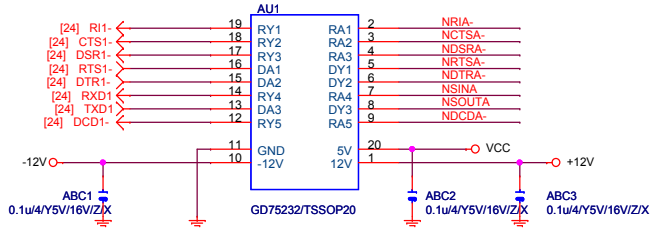
Gigabyte Technology

Title: **ITE 8712/18 LPC IO**

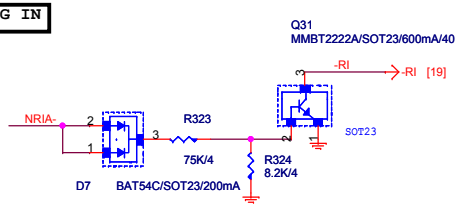
Size: B | Document Number: **GA-G31M-S2C** | Rev: **1.11**

Date: Thursday, July 17, 2008 | Sheet 24 of 33

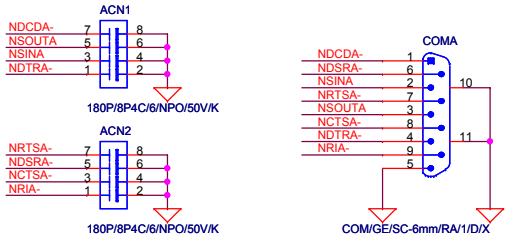
COMA



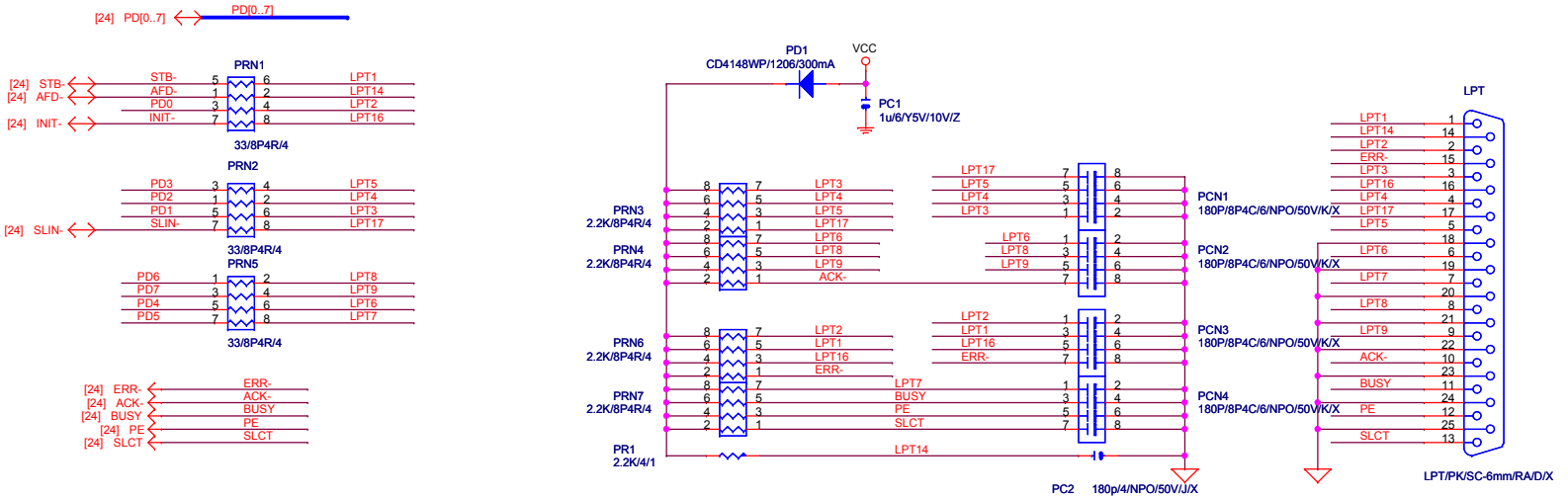
RING IN



EXTERNAL COMA

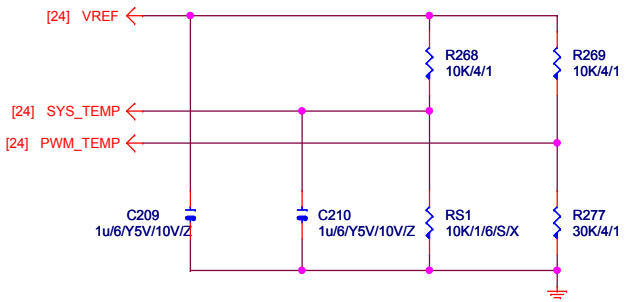


LPT PORT

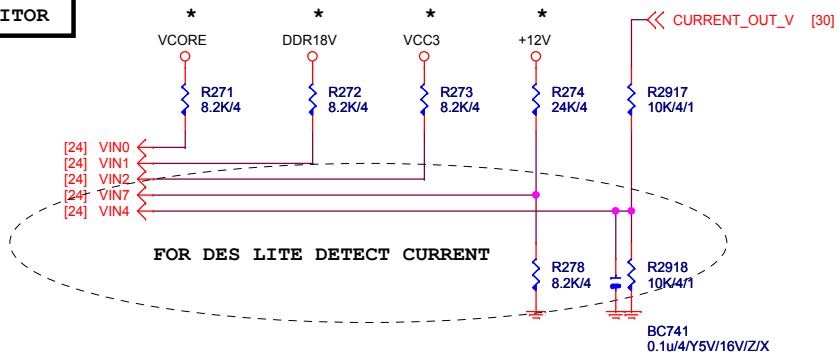


Gigabyte Technology		
Title: COM & LPT PORT		
Size: B	Document Number: GA-G31M-S2C	Rev: 1.11
Date: Thursday, July 17, 2008	Sheet 25 of 33	

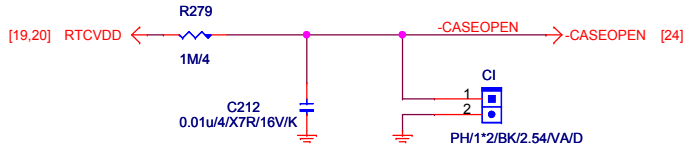
TEMP H/W MONITOR



VOLTAGE-- H/W MONITOR

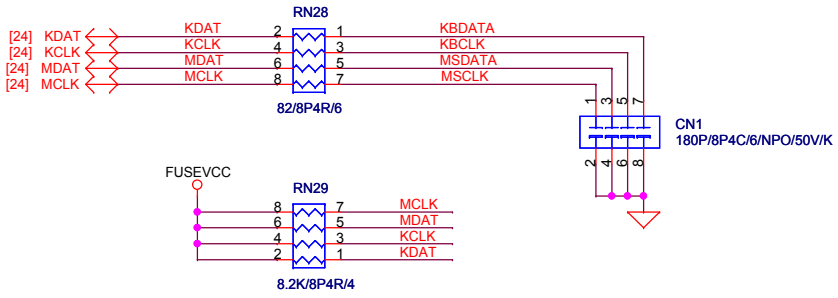


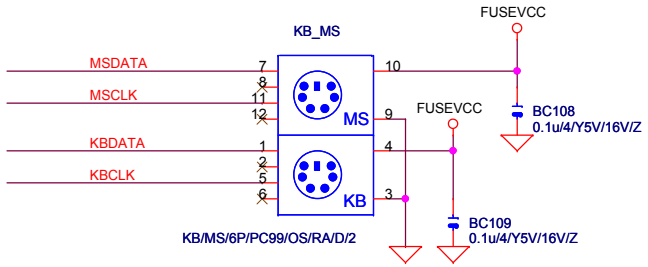
CASE OPEN



Case Open Circuits

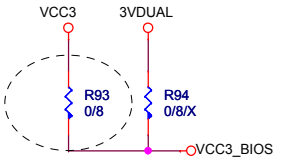
KB/MS

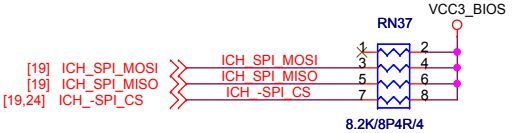


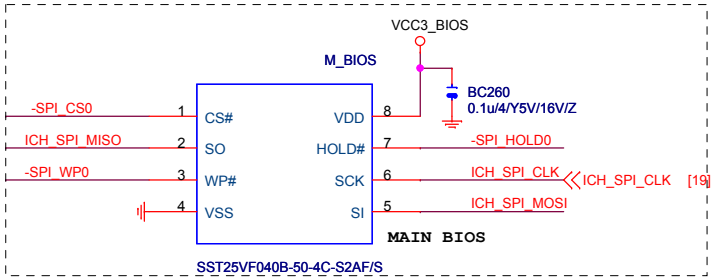


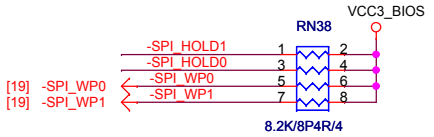
DUAL BIOS

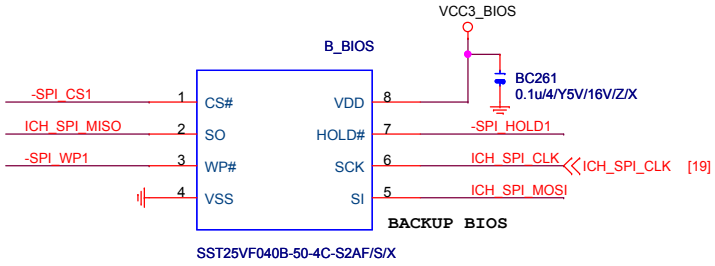
SINGLE BIOS











Gigabyte Technology		
Title: HW-MONITOR/CI/KB/MS/BIOS		
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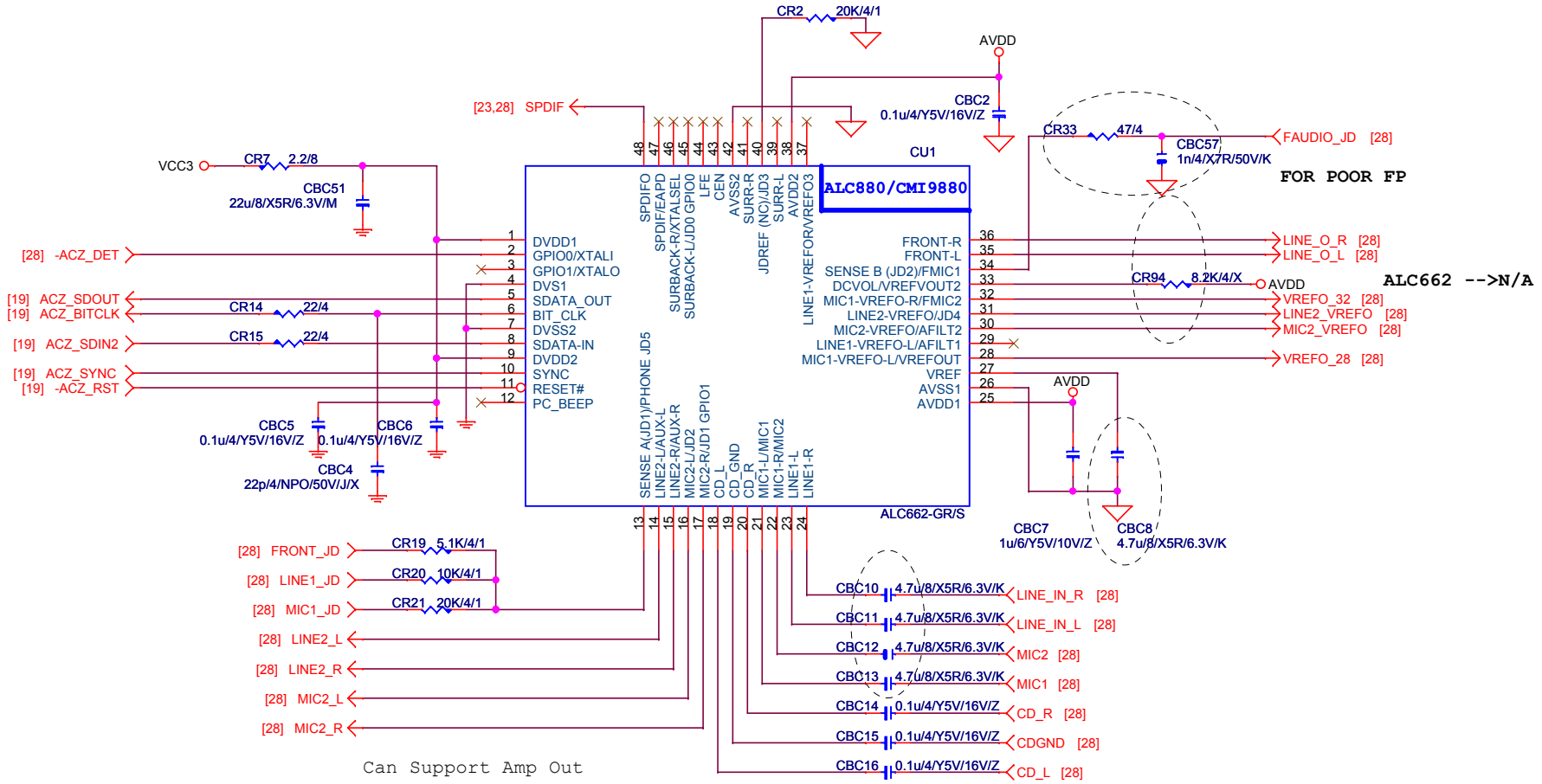
AZALIA CODEC



Gigabyte Technology		
Title: AZALIA ALC883		
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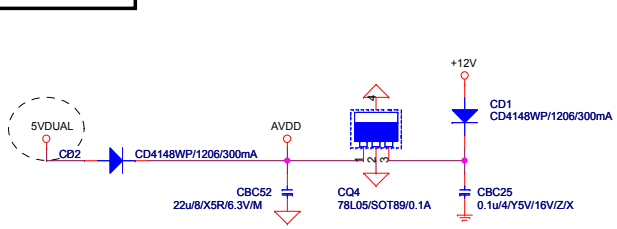
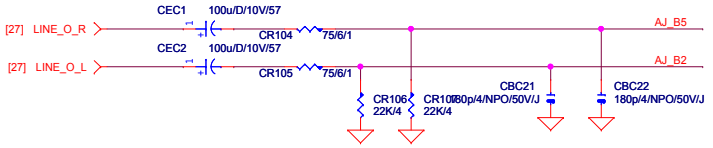
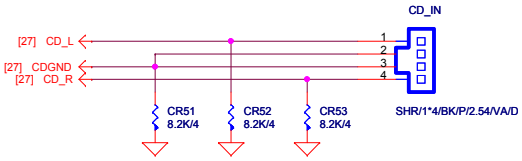
CODEC POWER/EMI PAD



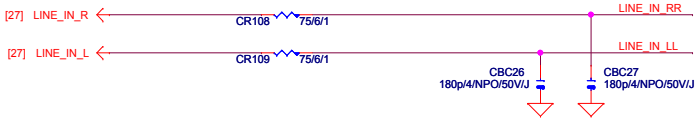
LINE-OUT



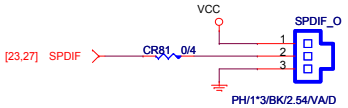
CD IN



LINE-IN

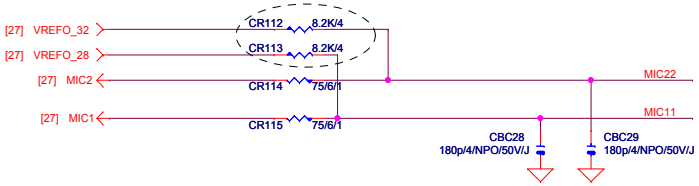


SPDIF IN

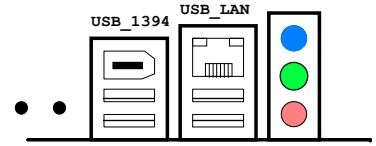


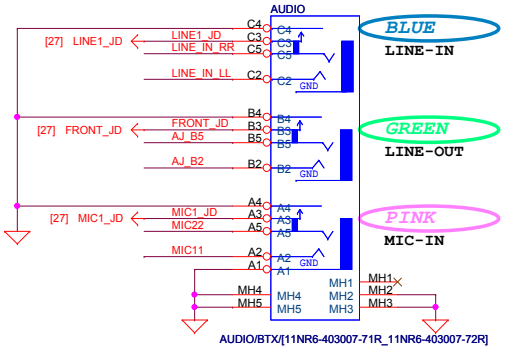
PIN HEADER

MIC-IN

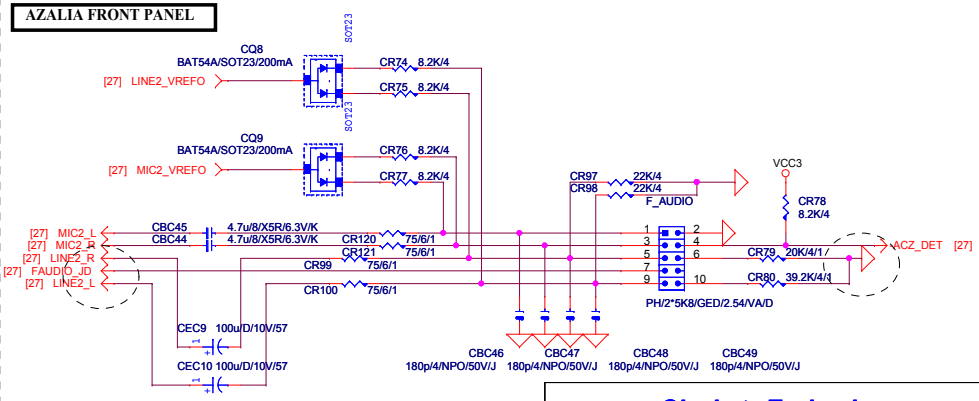


AZALIA JACK





AZALIA FRONT PANEL



Gigabyte Technology

Title: AUDIO JACK

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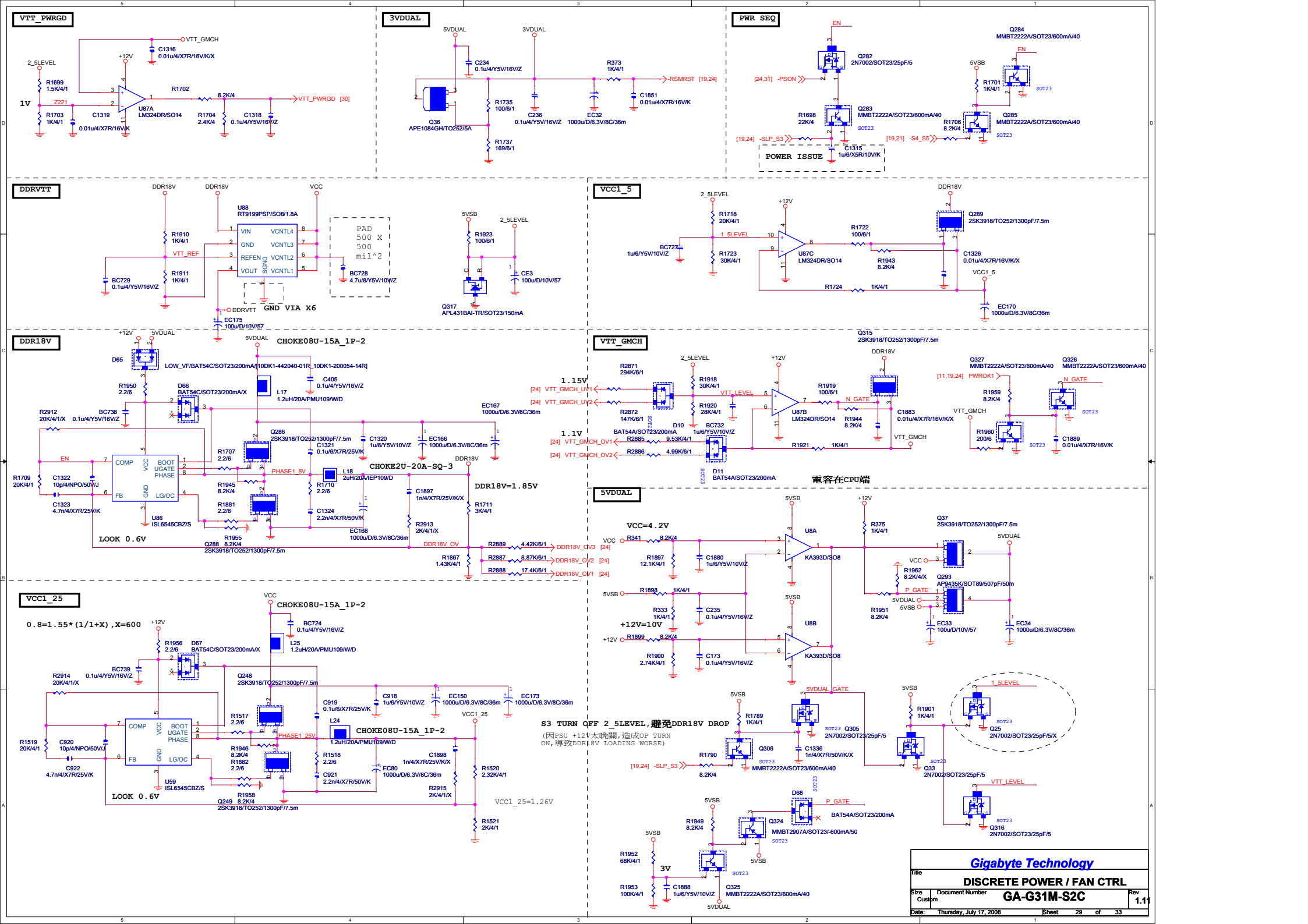
VTT_PWRGD
3VDUAL
PWR SEQ
DDRVTT
VCC1_5
DDR18V
VTT_GMCH
VCC1_25
5VDUAL
POWER ISSUE
S3 TURN OFF 2_5LEVEL,避免DDR18V DROP
(因PSU +12V太晚關,造成OP TURN ON,導致DDR18V LOADING WORSE)
電容在CPU端
LOOK 0.6V
GND VIA X6
CHOKE08U-15A_1P-2
CHOKE2U-20A-SQ-3
DDR18V=1.85V
VCC=4.2V
+12V=10V
0.8=1.55*(1/1+X),X=600
VCC1_25=1.26V
Gigabyte Technology
DISCRETE POWER / FAN CTRL
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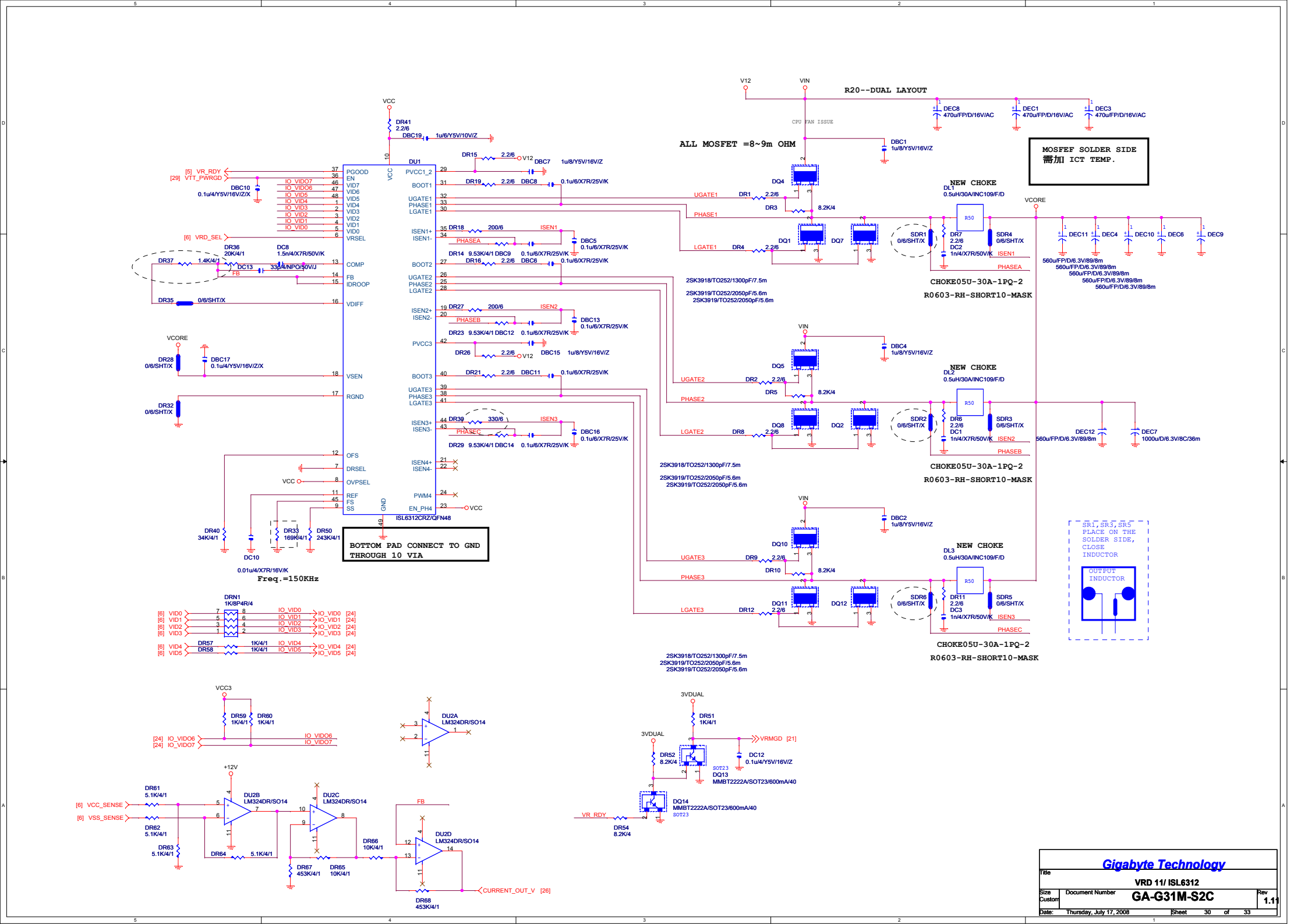
R20--DUAL LAYOUT
ALL MOSFET =8~9m OHM
MOSFEF SOLDER SIDE
需加 ICT TEMP.
CPU FAN ISSUE
NEW CHOKE
DL1
0.5uH/30A/INC109/F/D
CHOKE05U-30A-1PQ-2
R0603-RH-SHORT10-MASK
2SK3918/TO252/1300pF/7.5m
2SK3919/TO252/2050pF/5.6m
2SK3919/TO252/2050pF/5.6m
ISL6312CRZ/QFN48
BOTTOM PAD CONNECT TO GND
THROUGH 10 VIA
Freq.=150KHz
SR1,SR3,SR5
PLACE ON THE
SOLDER SIDE,
CLOSE
INDUCTOR
OUTPUT
INDUCTOR
Gigabyte Technology
VRD 11/ ISL6312
GA-G31M-S2C
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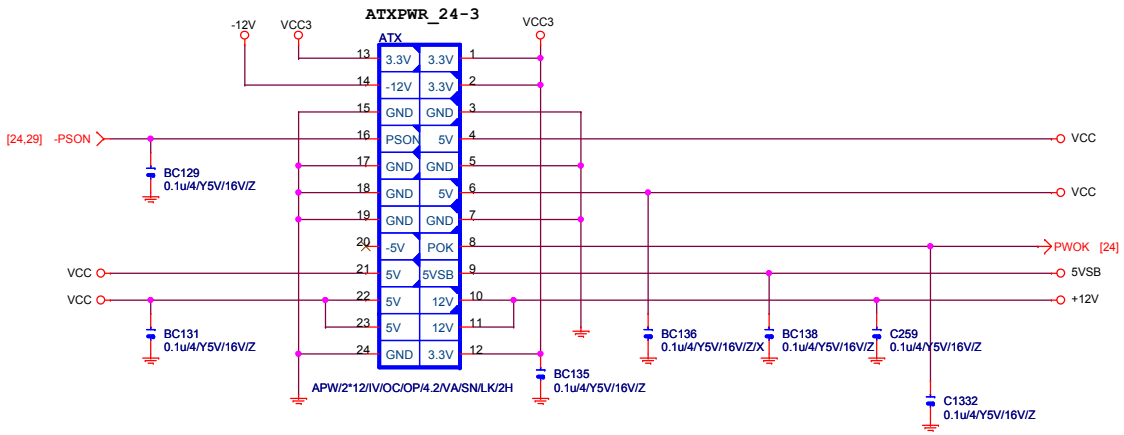
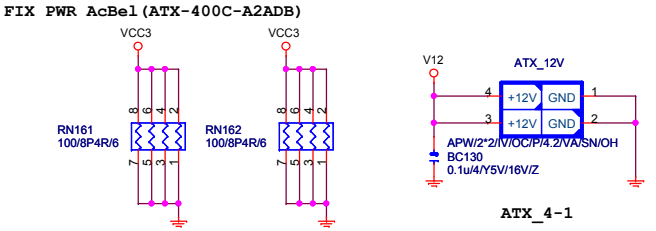
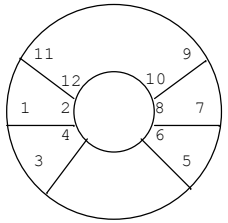
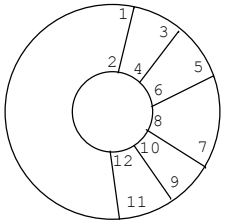
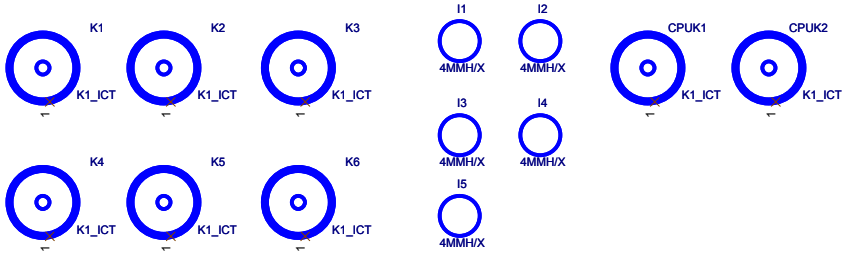
ATX POWER CONNECTOR

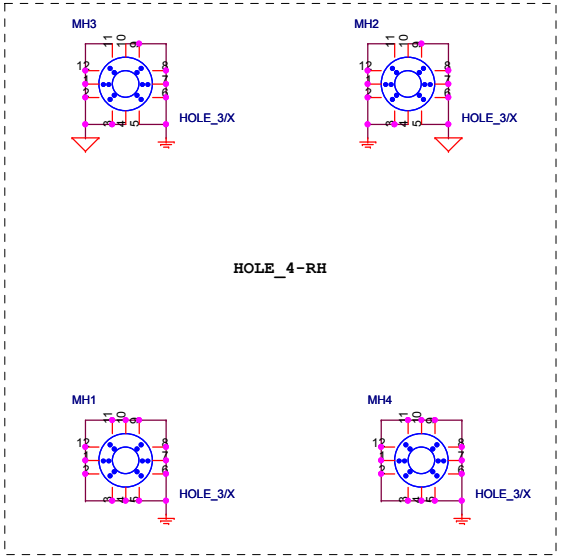


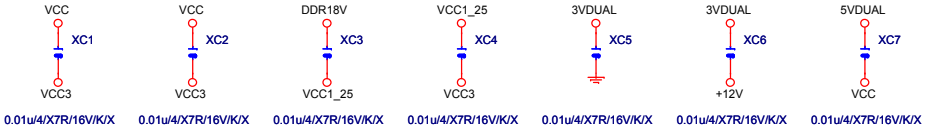












Gigabyte Technology			
Title: ATX POWER CONNECTOR			
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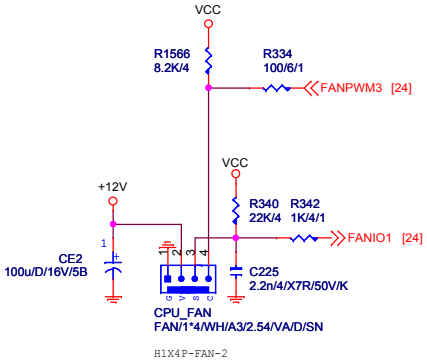
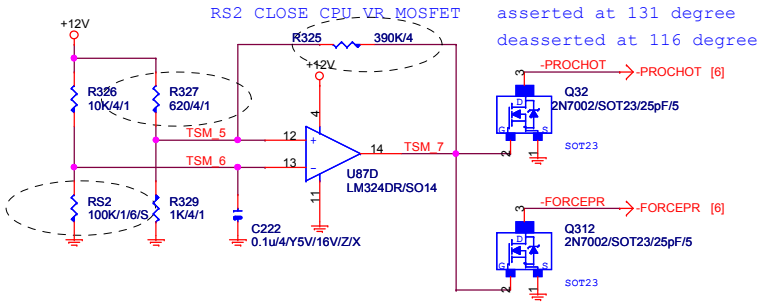
CPU SMART FAN

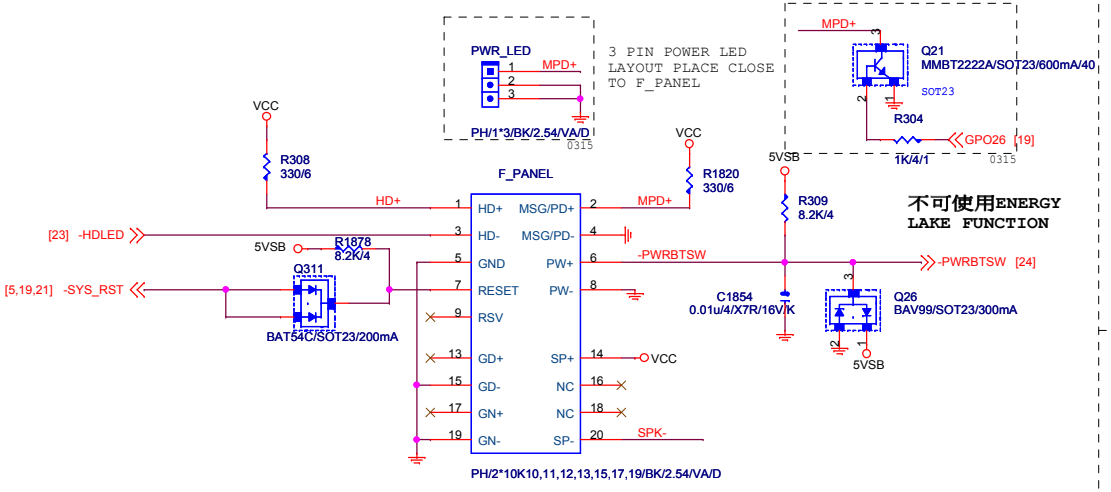
SMART FAN



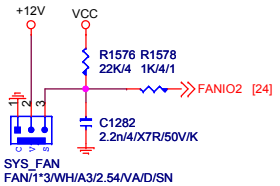
PROCESSOR HOT



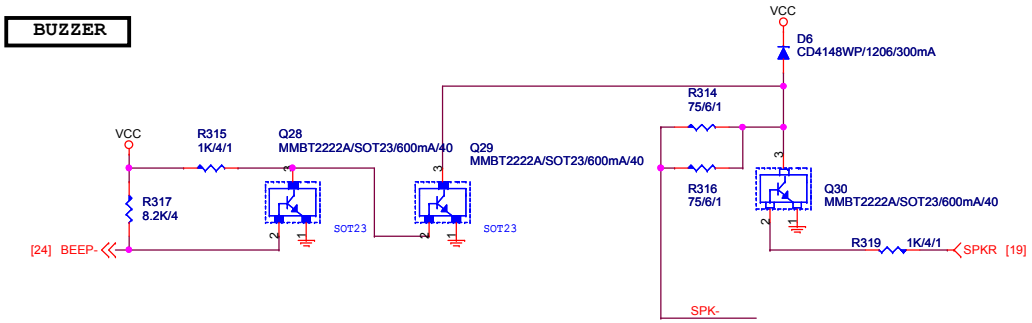
INTEL FRONT PANEL



SYS_FAN



BUZZER



Gigabyte Technology

Title: FRONT PANEL

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PCIE-1G LAN

RTL8111C

3VDUAL VDD15

LR23 1/6/X LR36 1/6/X LR26 1/6

LR33:0/6 DISABLE SWICHING REG

LBC61 0.1u/4/Y5V/16V/Z/X LBC62 22u/8/X5R/6.3V/M/X

LED_ACT_TXRX
LED_LINK100
LED_LINK1000
LAN_GPIO

[21] LAN25MCLK

LR16 2.49K/4/1

LR16:
RTL8101E-->2K/4/1
RTL8111C/8102E-->2.49K/4/1

LR20 22/4 LAN_DSM [24]

FOR DSM MODE
(DEEP SLUMBER MODE)

Dual Color LED
D4 D3 Green
D4 D3 Orange

Single Color LED
D2 D1 Yellow

LU1

RTL8102E-VBP-GR/QFN64

LC9 0.01u/4/X7R/16V/K/X
FOR EMI

LR10 100/4/1/X LR17 1K/4/1 LR18 15K/4/1 ISOLATEB [24]

VCC3

P35-152-19W9

YELLOW ORANGE (+,-) GREEN (-,+)

[14,19,22] -PCIE_WAKE
[24] -PFMRST1
[18] ML_OP
[18] ML_ON
[21] SRCCLK_LAN
[21] -SRCCLK_LAN
[18] ML_IP
[18] ML_IN

LC3 0.1u/4/X7R/16V/K
LC4 0.1u/4/X7R/16V/K

CLOSE LAN CHIP

LED_GREEN LED_LINK100

-PFMRST1 LBC34 100p/4/NPO/50V/J/X

3VDUAL
LEC7 100u/D/10V/57
LBC35 0.1u/4/Y5V/16V/Z/X
LBC36 0.1u/4/Y5V/16V/Z/X
LBC51 0.1u/4/Y5V/16V/Z

CTRL15 LFB9 0/8 VDD15
LBC44 0.1u/4/Y5V/16V/Z
LBC45 0.1u/4/Y5V/16V/Z
LBC46 0.1u/4/Y5V/16V/Z
LBC47 0.1u/4/Y5V/16V/Z
LBC48 0.1u/4/Y5V/16V/Z
LBC50 0.1u/4/Y5V/16V/Z
VDD15 LFB8 0/8/X AVDD18
LBC49 4.7u/8/Y5V/10V/Z/X

3VDUAL AVDD33
LFB6 0/8/SHT/X
LBC53 0.1u/4/Y5V/16V/Z

LL1/LFB10 CO-LAYOUT CLOSE

LFB10 0/8
CHOKE4U7-500MA
LL1 4.7uH/1A/[10LC3-5A470B-01R]/X
CTRL18

LR32 CLOSE LBC63/64
LR32 0/6/SHT/X
FB12
LL1/LBC64/LBC63
CLOSE LU1 PIN1
LBC63 0.1u/4/Y5V/16V/Z
LBC64 22u/8/X5R/6.3V/M/X

RTL8102E LFB11-->X

AVDD18 LFB7 0/8 LFB11 0/8/X VDD18
LBC54 0.1u/4/Y5V/16V/Z
LBC55 0.1u/4/Y5V/16V/Z
LBC56 0.1u/4/Y5V/16V/Z
LBC57 0.1u/4/Y5V/16V/Z
LBC59 1u/6/Y5V/10V/Z
LBC58 4.7u/8/Y5V/10V/Z

FOR 93C56 OR BIOS DETECT
RTL8102E -->X

3VDUAL LR35 8.2K/4/X
LU2
EECS EESK EEDI_AUX EEDO
CS SK DI DO VCC DC ORG GND
AT93C46-10SU-2.7/S/X
LBC60 0.1u/4/Y5V/16V/Z/X
LR19 3.6K/4 3VDUAL

USB_LAN CONNECTOR

RTL8101E:LR38/LC5/LR43/LC6-->O
RTL8102E:LC5/LC6-->O
RTL8111C:LC6-->O

RTL8101E :L1+L10-->AVDD18+0.1U(BIOS DISABLE MDI-X FUNCTION)

1G :USB+LAN/1G/GO,Y/OS/RA/D/1
100M:USB+LAN/100/GO,Y/OS/RA/D/1

RTL8102E -->X

AVDD18 LR38 1/6/X LC5 0.1u/4/Y5V/16V/Z
AVDD18 LR43 1/6/X LC6 0.1u/4/Y5V/16V/Z

LR39 49.9/6/1/X LR40 49.9/6/1/X LR41 49.9/6/1/X LR42 49.9/6/1/X
LC7 0.01u/4/X7R/16V/K/X
LC8 0.01u/4/X7R/16V/K/X

CLOSE LAN CHIP

1G:LC6=0.01u/4/X7R/16V/K
100M:LC6=0.1u/4/Y5V/16V/Z

USB_LAN
UP
DOWN

LED_ACT_TXRX
LED_GREEN
LED_LINK1000
P4-
P4+
P5-
P5+

LR13 150/6
LR14 150/6/X
LR15 150/6

3VDUAL
LFB4 0/6/SHT/X
LBC33 0.1u/6/Y5V/25V/Z/X
FUSEVCC
LBC26 0.1u/6/Y5V/25V/Z/X

USB_LAN

EMI
LR28
0/6/SHT/X

FUSEVCC
LR6 150K/4
-USBOC_R [18]
LEC2 1000u/D/6.3V/8C/36m
LR7 270K/4

P4+ +USBP4 [18]
P4- -USBP4 [18]
P5+ +USBP5 [18]
P5- -USBP5 [18]

Gigabyte Technology

Title: REALTEK RTL8111C/8101E

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