

Model Name : GA-G31M-S2C

Revision 1.1

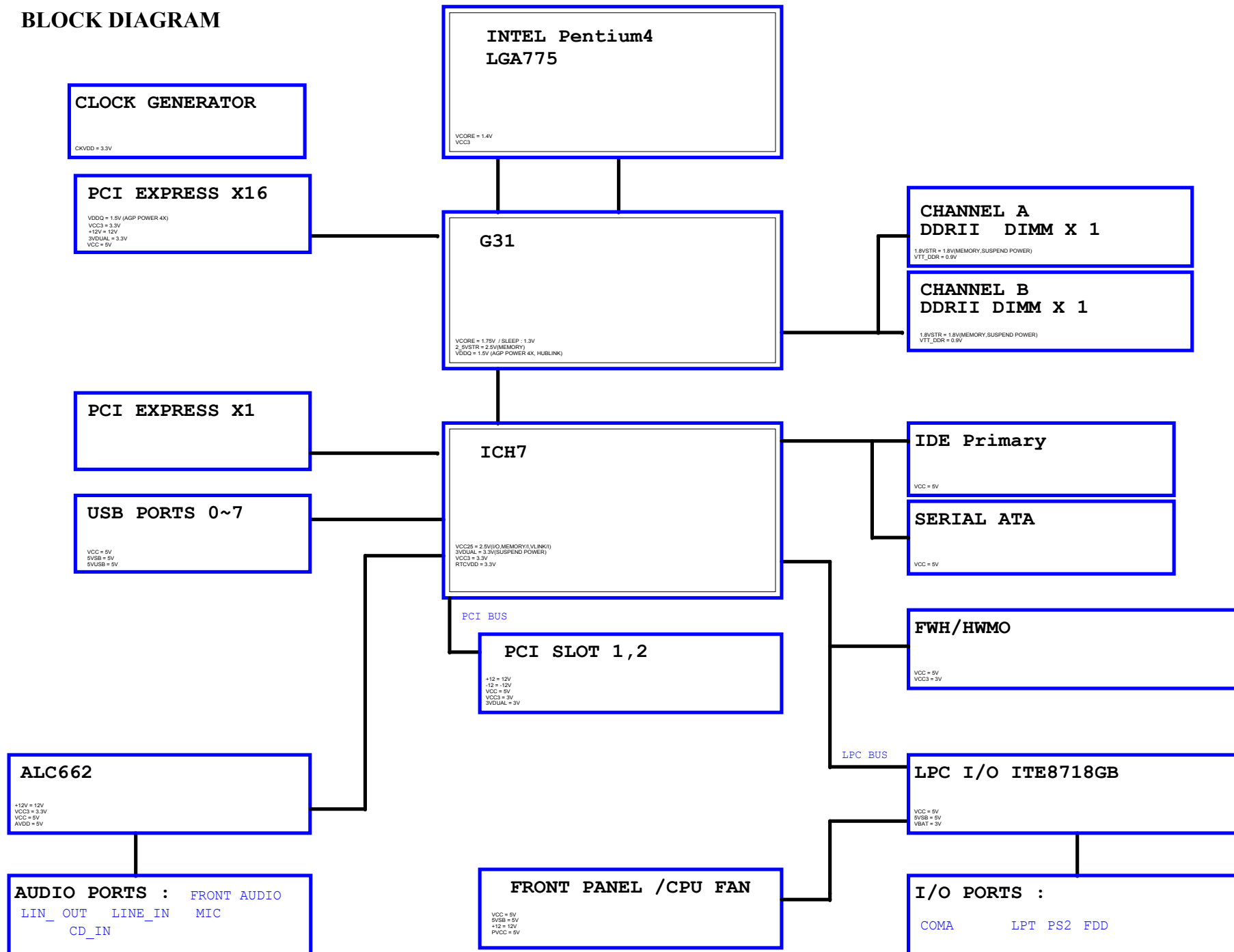
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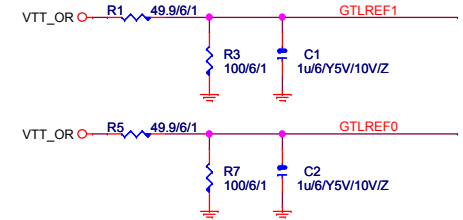
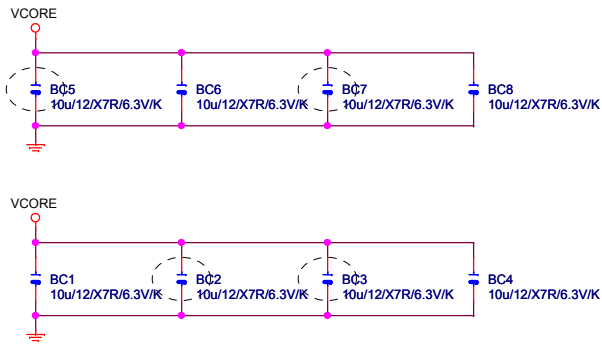
SHEET TITLE

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/GX
25	COM LPT
26	CI, HWM, KB/MS, BIOS
27	ALC662

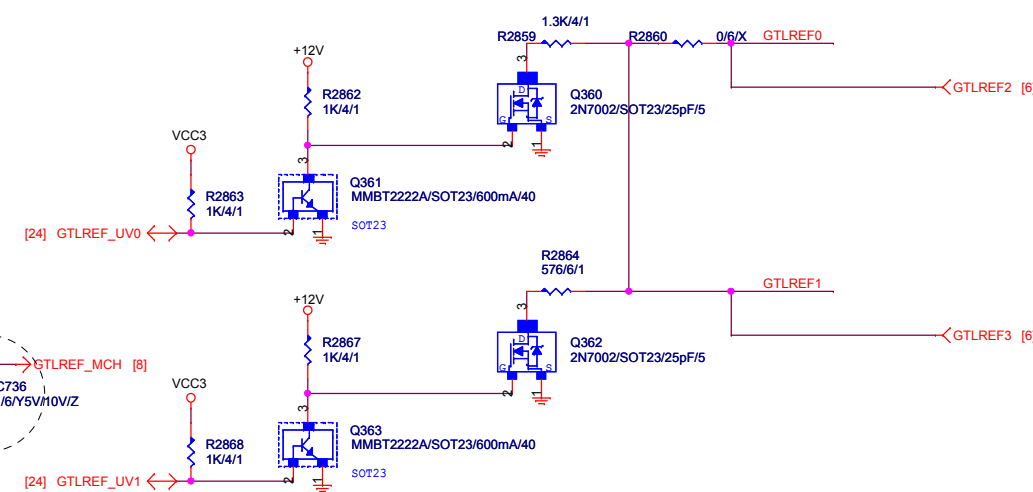
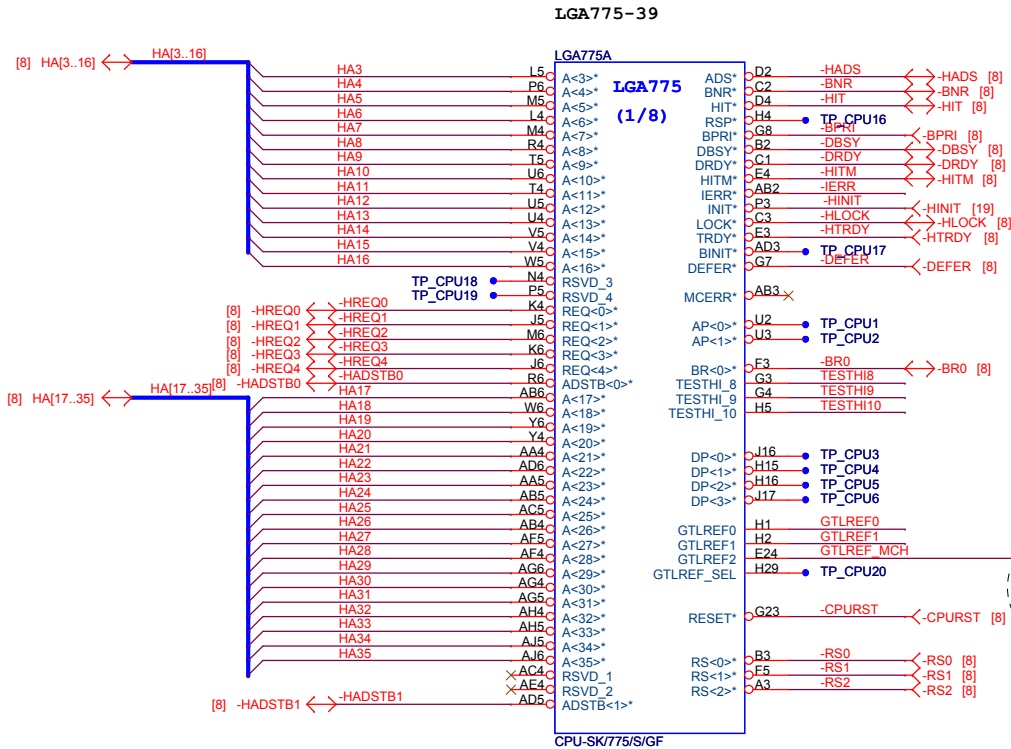
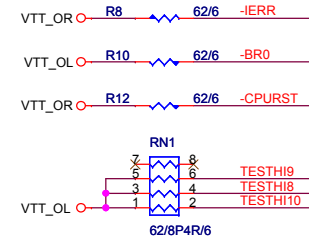
28	REAR AUDIO JACK
29	DISCRETE POWER
30	VCORE PWM ISL6312
31	ATX, OTHERS POWER
32	FRONT PANEL
33	REALTEK RTL8111C/8101E

BLOCK DIAGRAM

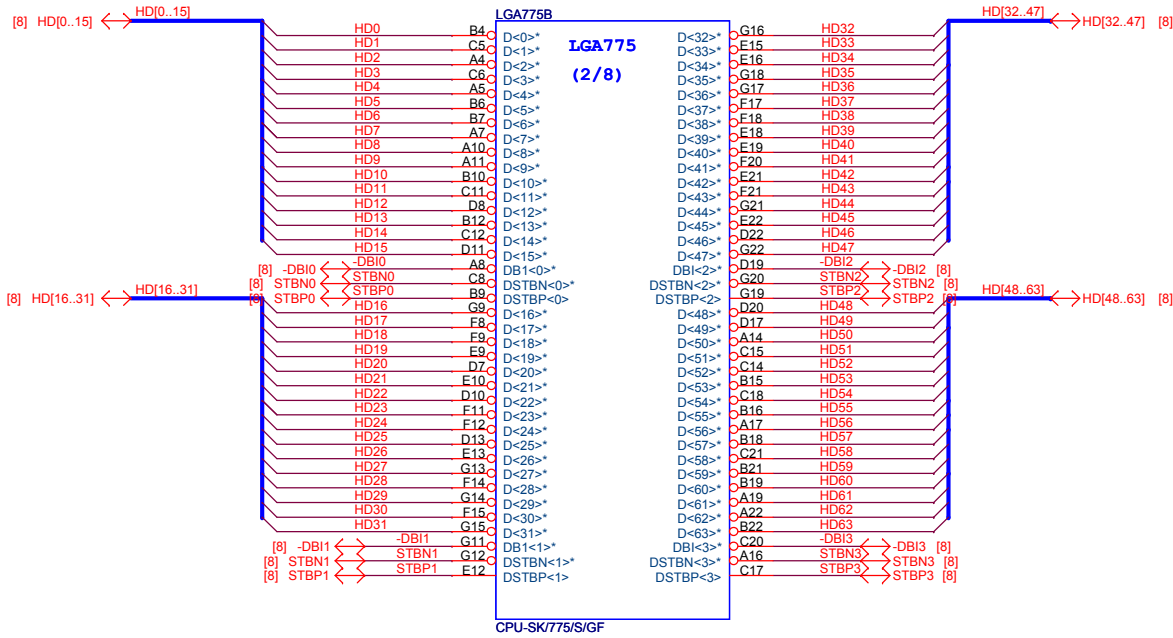




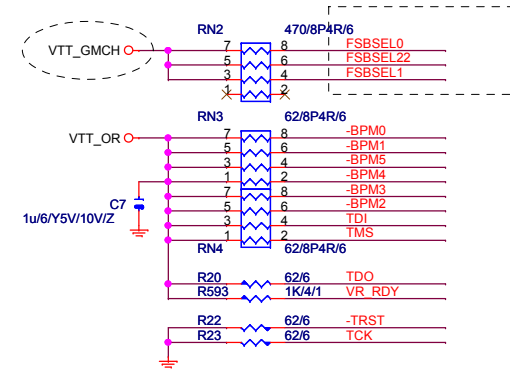
中間値0.9V



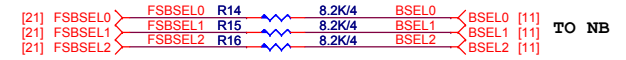
Gigabyte Technology		
Title P4_LGA775-A		
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CPU-SK775/S/GF



TO CLK GEN

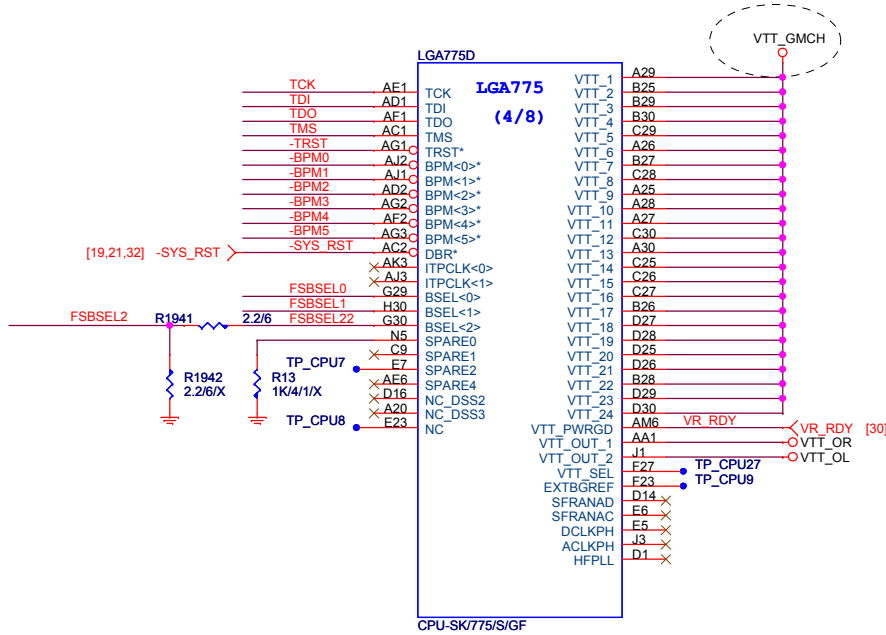


TO NB

CPU

NA	FSB	FSA	Clock
FSBSEL3	FSBSEL1	FSBSEL0	Clock
1	0	1	100MHz
0	0	1	1.33MHz
0	1	1	1.66MHz
0	1	0	2.00MHz
0	0	0	2.66MHz

X

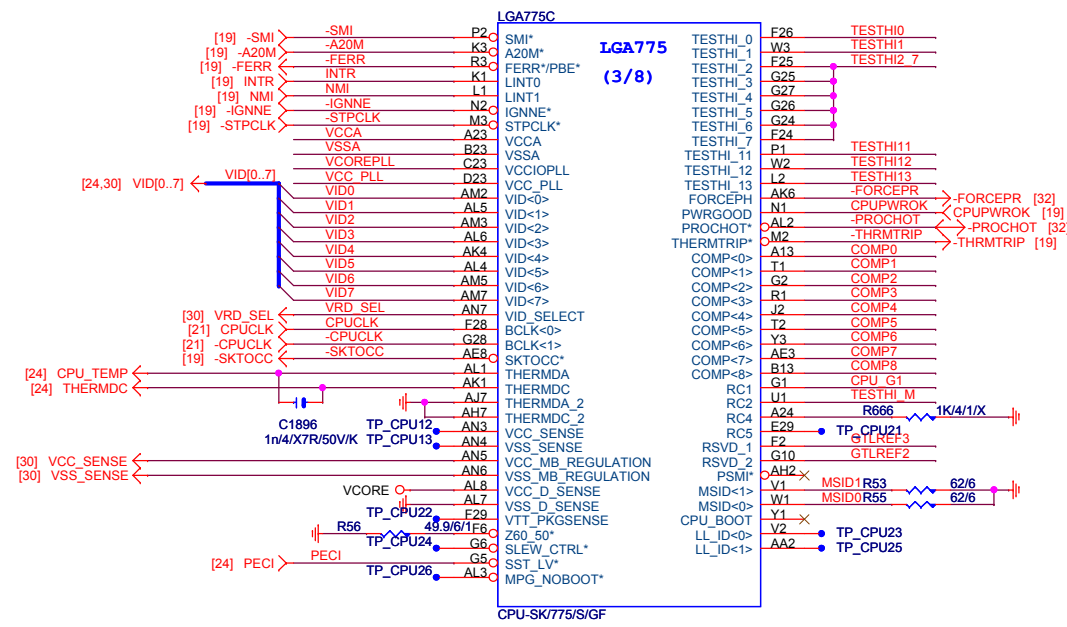
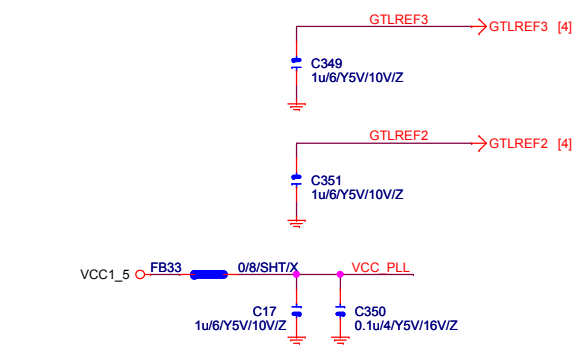
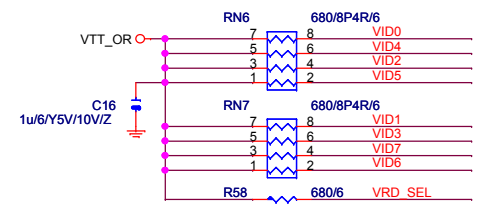
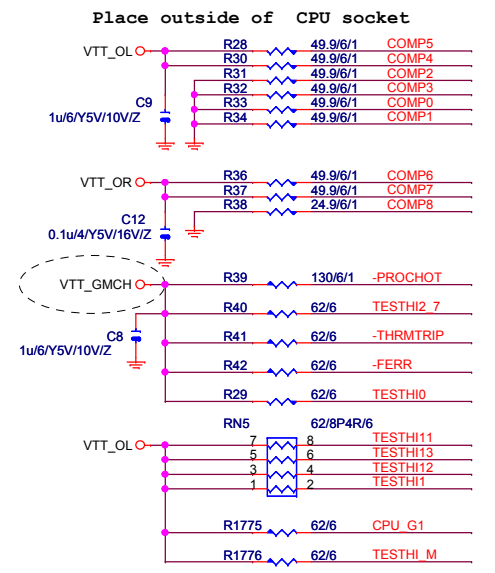
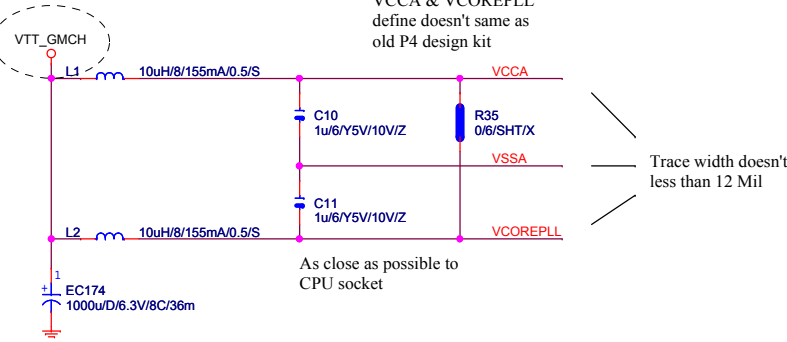


CPU-SK775/S/GF

Gigabyte Technology

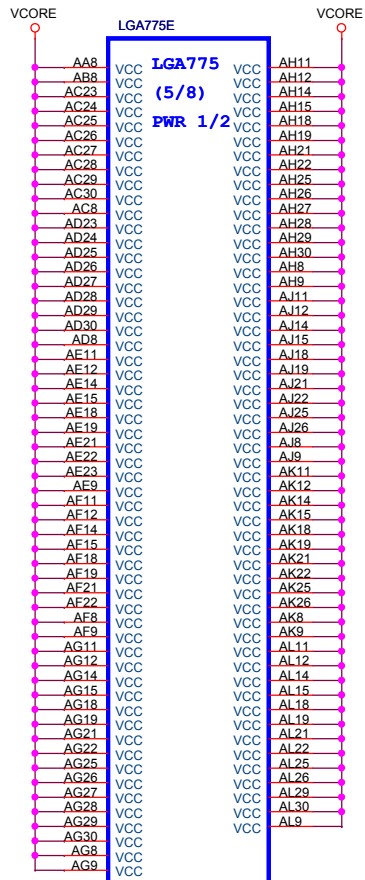
Title			P4_LGA775-B,D	
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Note:
VCCA & VCOREPLL
define doesn't same as
old P4 design kit

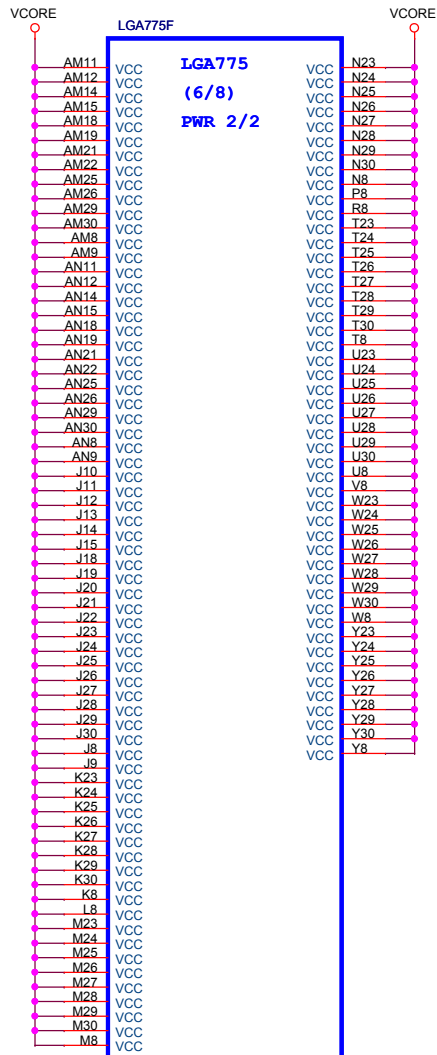


Gigabyte Technology		
P4_LGA775-C		
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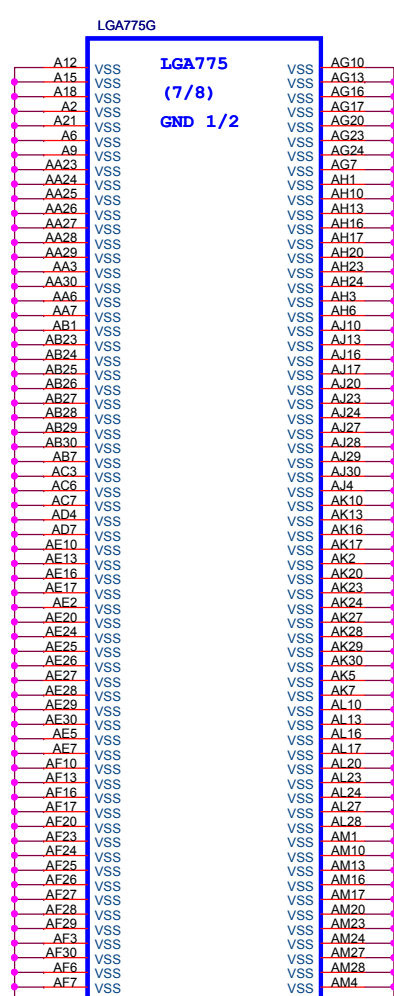
PECI: Platform Environment Control Interface



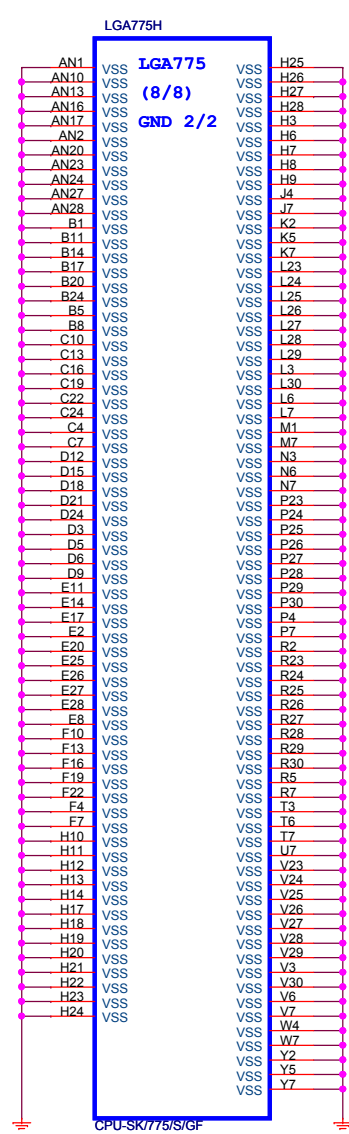
CPU-SK/775/S/GF



CPU-SK/775/S/GF



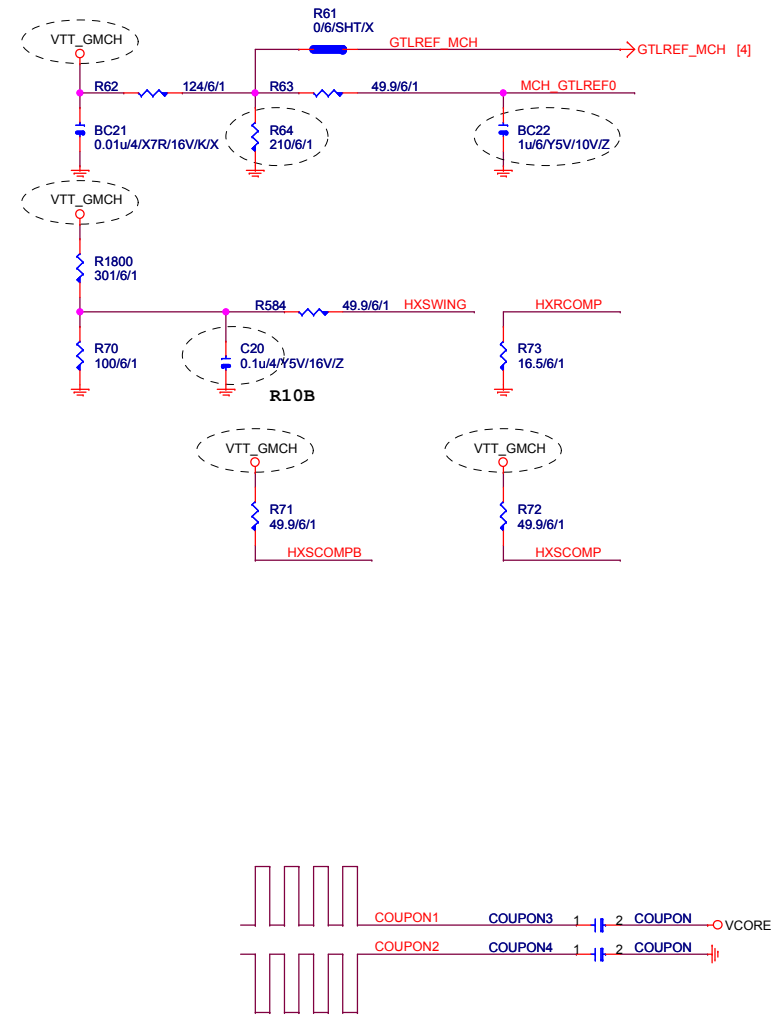
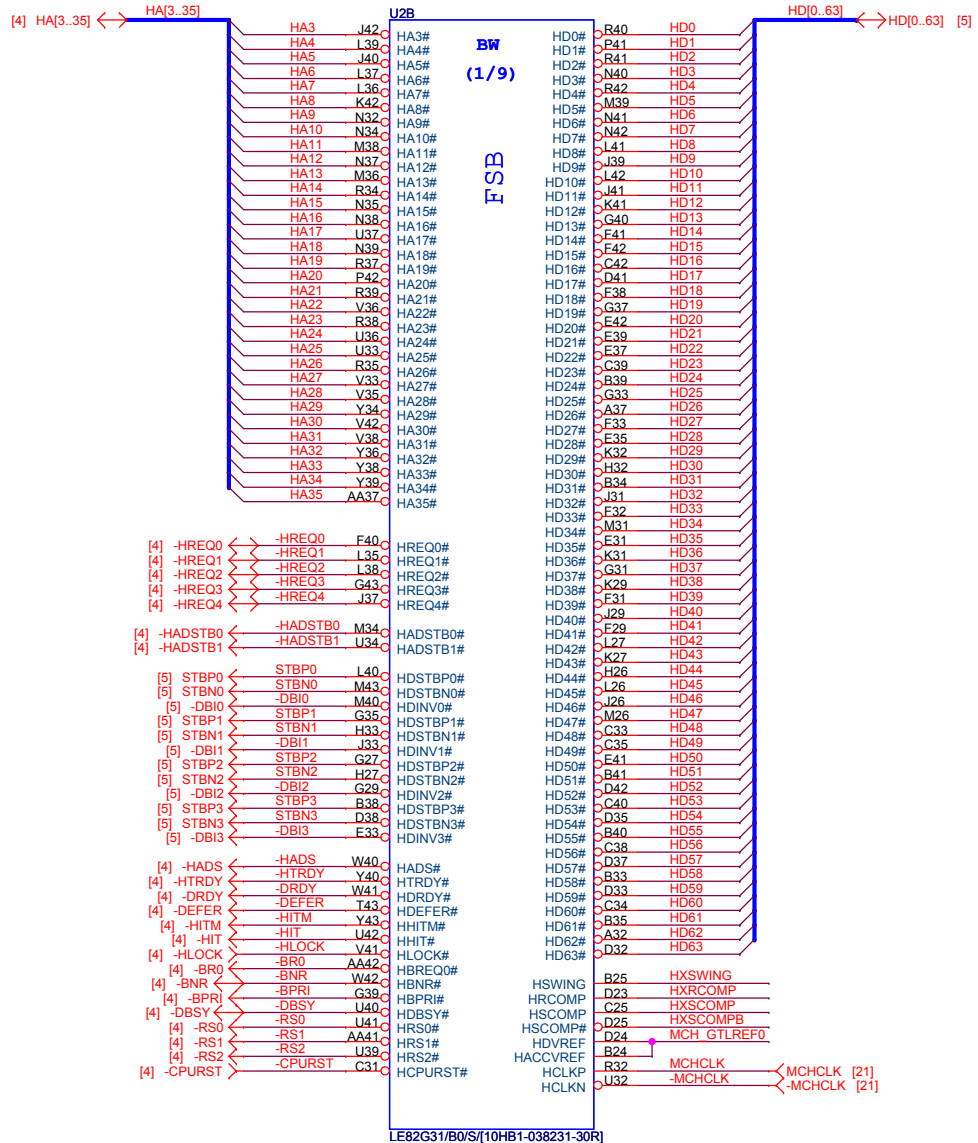
CPU-SK/775/S/GF



CPU-SK/775/S/GF

Gigabyte Technology

Title			P4_LGA775-E,F,G,H		
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Gigabyte Technology		
Title		
GMCH-HOST		
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LE82G31/B0/S/[10HB1-038231-30R]
CPU INTERFACE

U2C

Pin list for U2C (3/9) including SMA, SDQ, SCS, SCKE, MODT, DCLK, AR, and SDQ pins with their corresponding component values.

LE82G31B0S[10HB1-038231-30R]

CHANNEL A

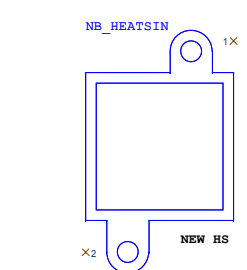
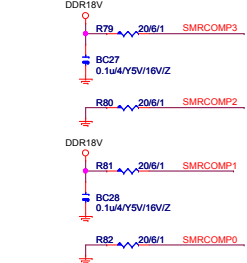
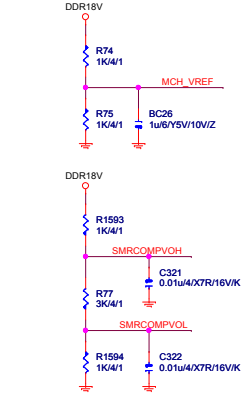
U2D

Pin list for U2D (4/9) including SMA, SDQ, SCS, SCKE, MODT, DCLK, AR, and SDQ pins with their corresponding component values.

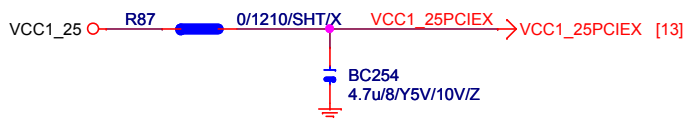
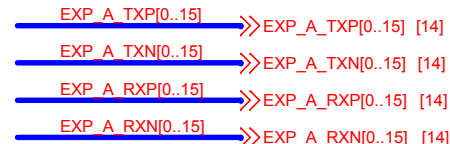
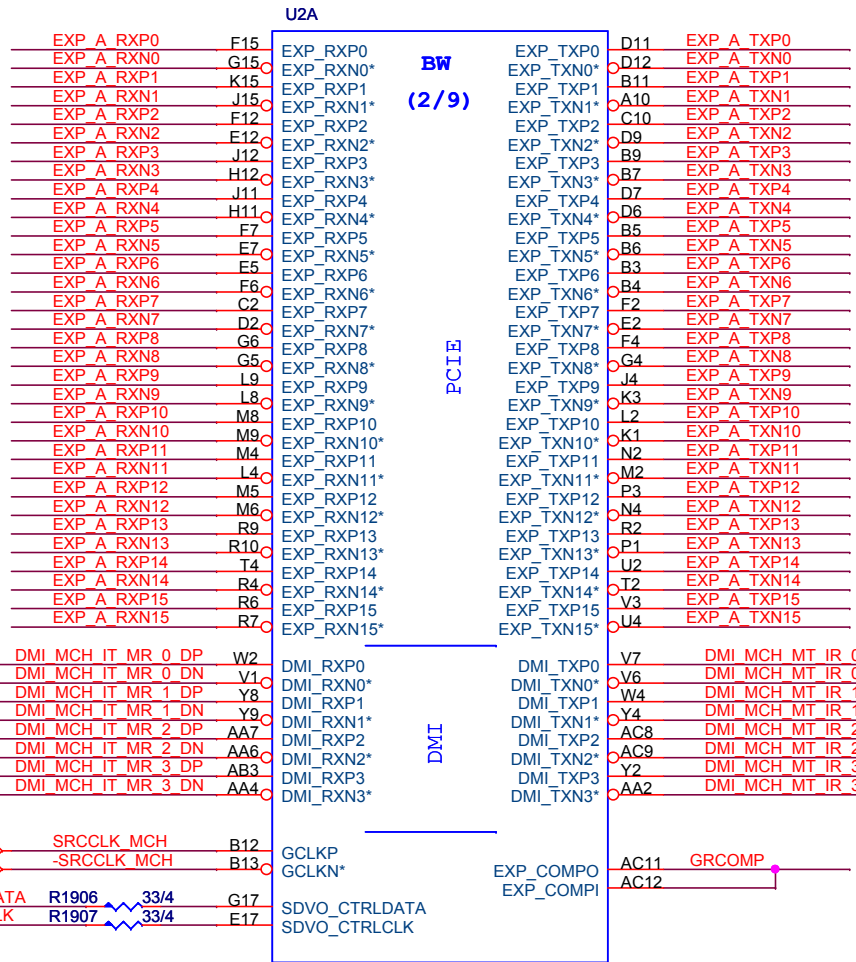
LE82G31B0S[10HB1-038231-30R]

CHANNEL B

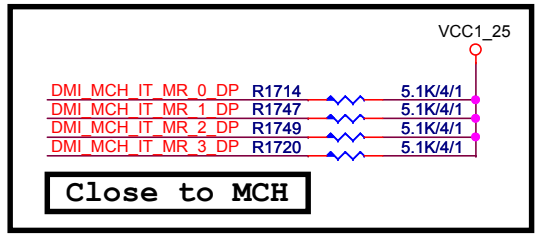
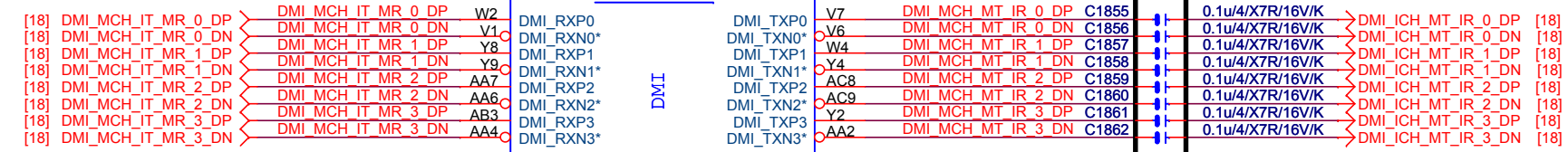
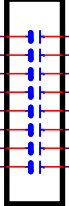
Pin list for U2C (15.17) including SWEA, SCASA, SRASA, SBA, CS, CKE, MODT, DCLK, and reserved pins.



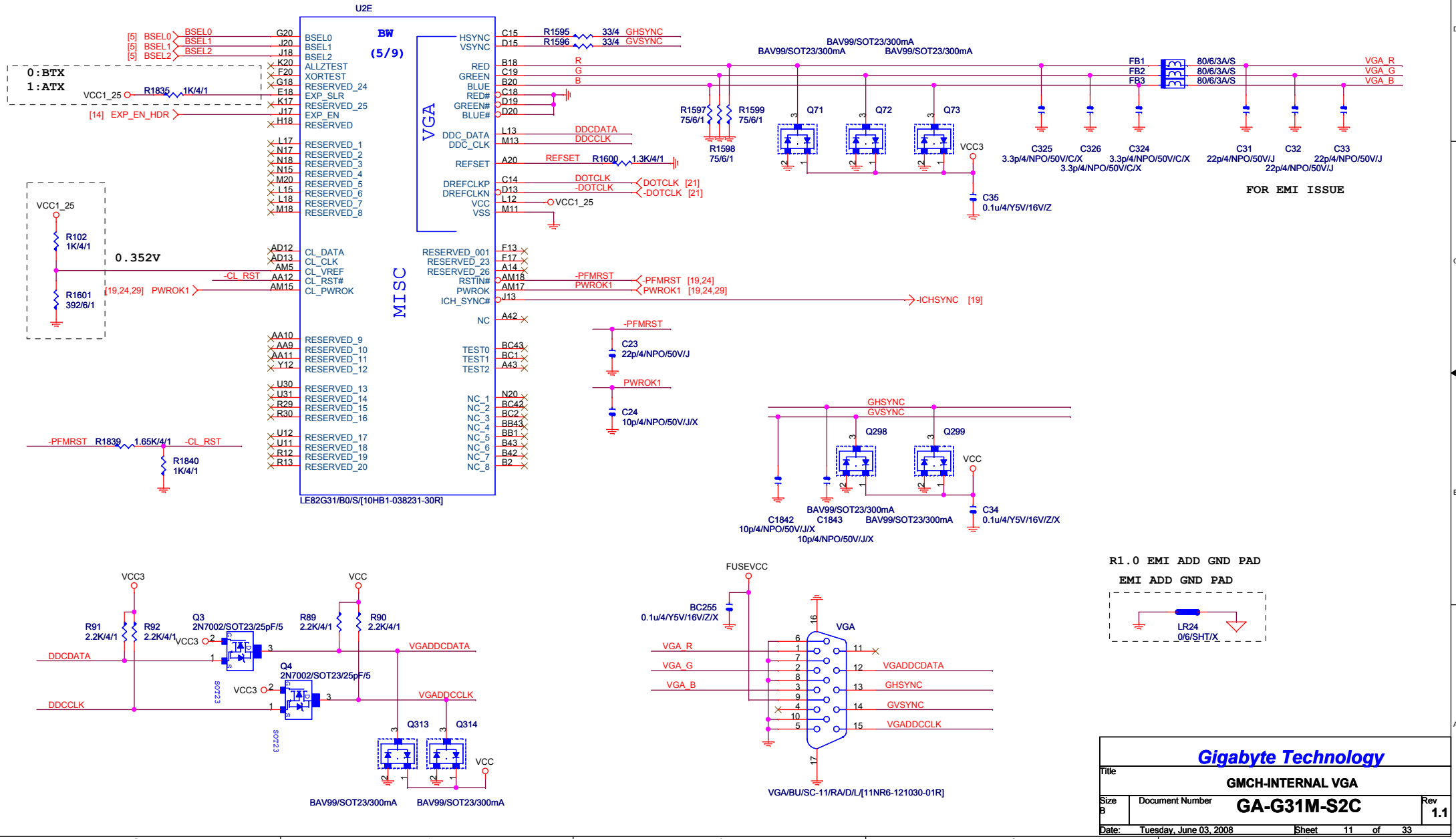
NB_HEATSINK[12SP2-04F004-82R_12SP2-04F004-83R_12SP2-04F004-84R]



Close to MCH

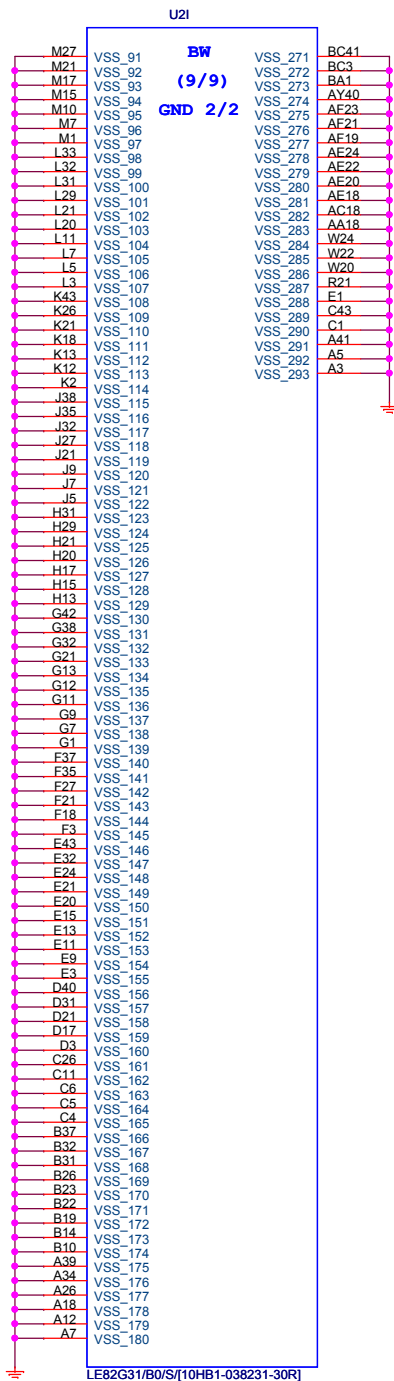
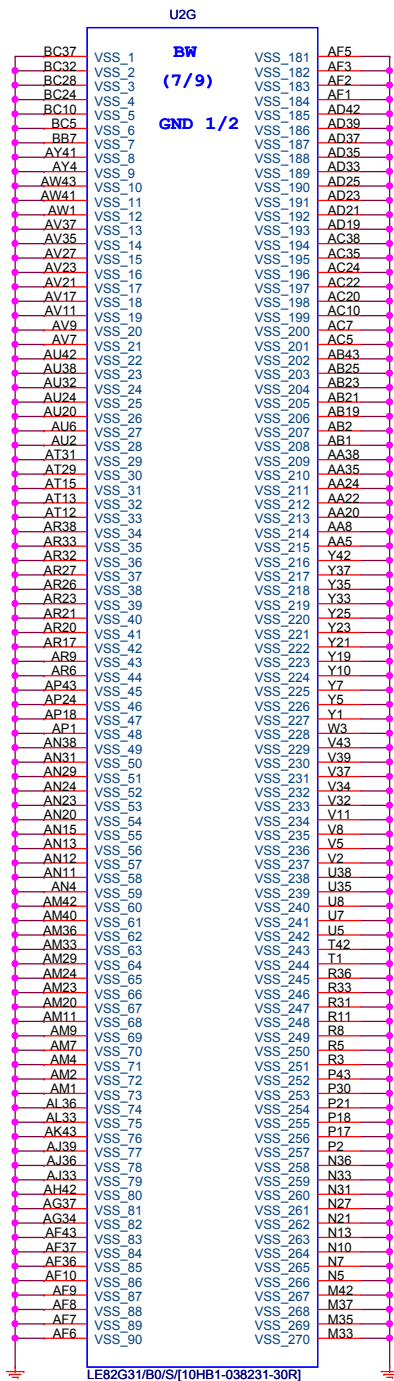


Gigabyte Technology			
Title GMCH-PCI E & DMI			
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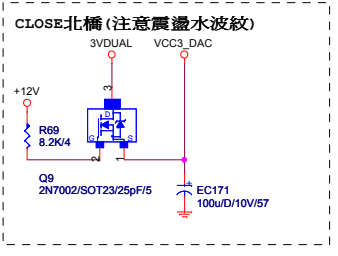
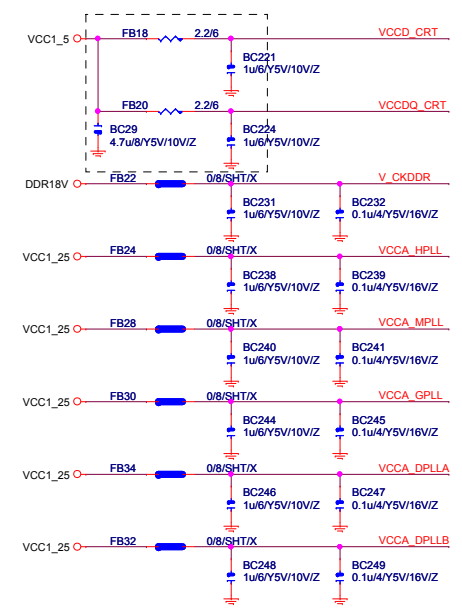
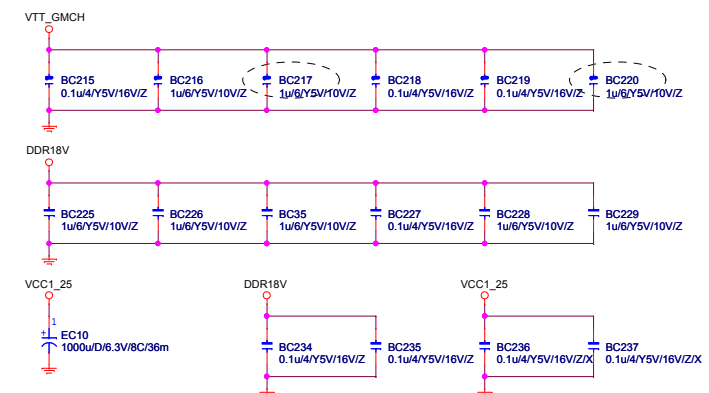
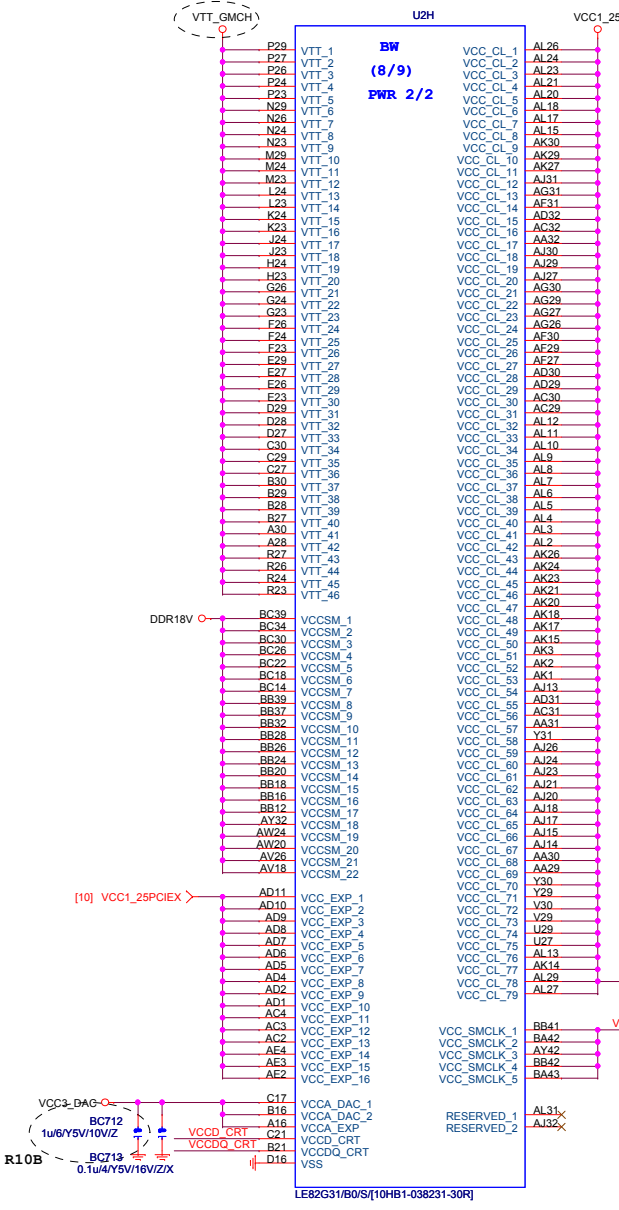
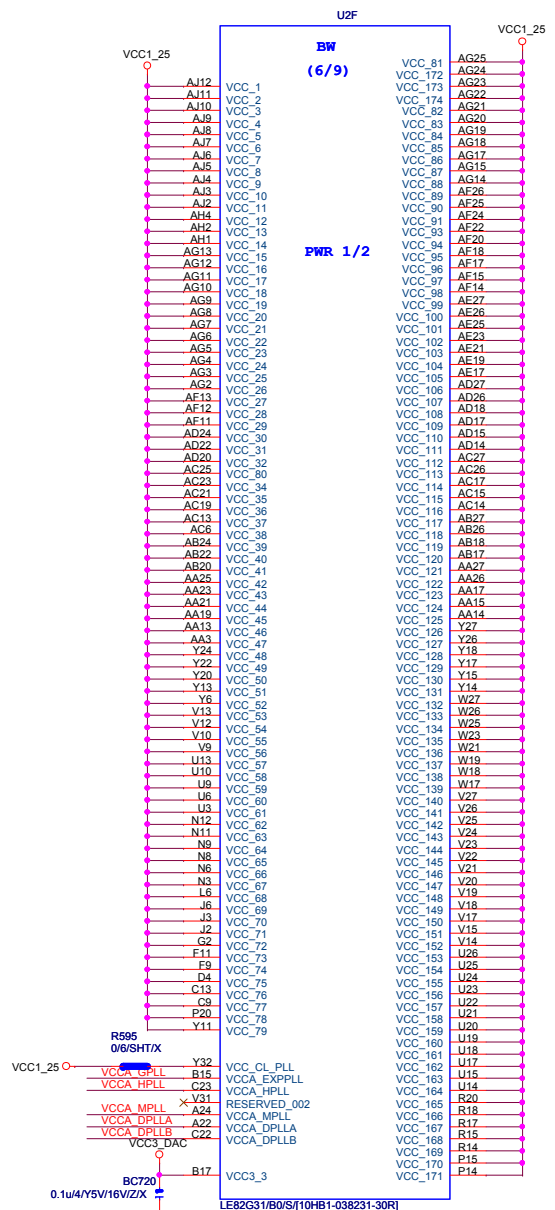
R1.0 EMI ADD GND PAD
EMI ADD GND PAD

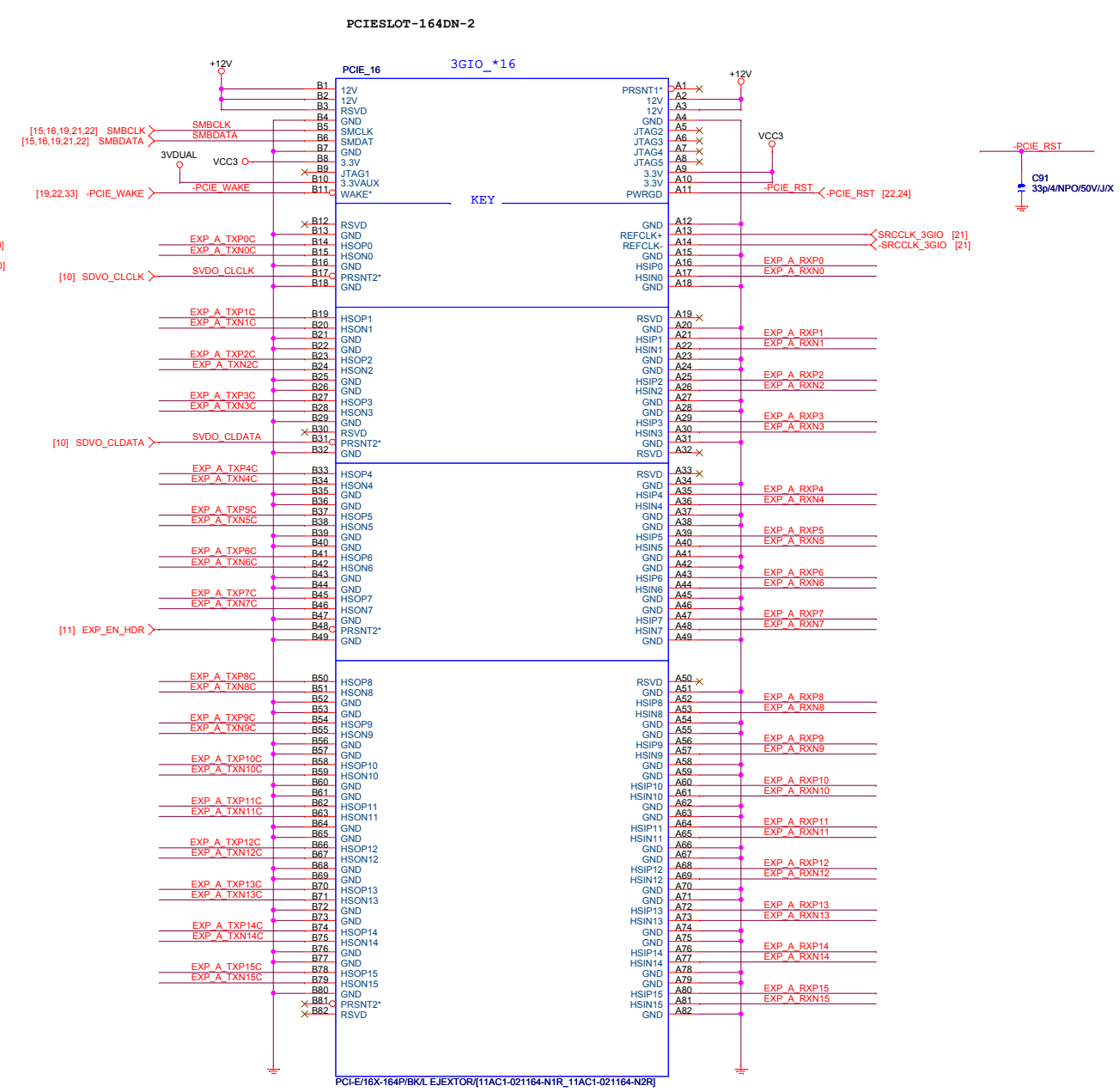
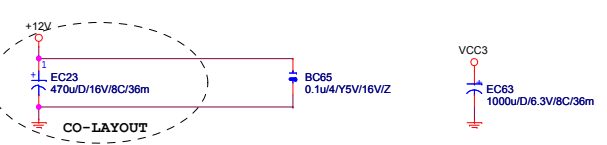
Gigabyte Technology		
Title GMCH-INTERNAL VGA		
Size B	Document Number GA-G31M-S2C	Rev 1.1
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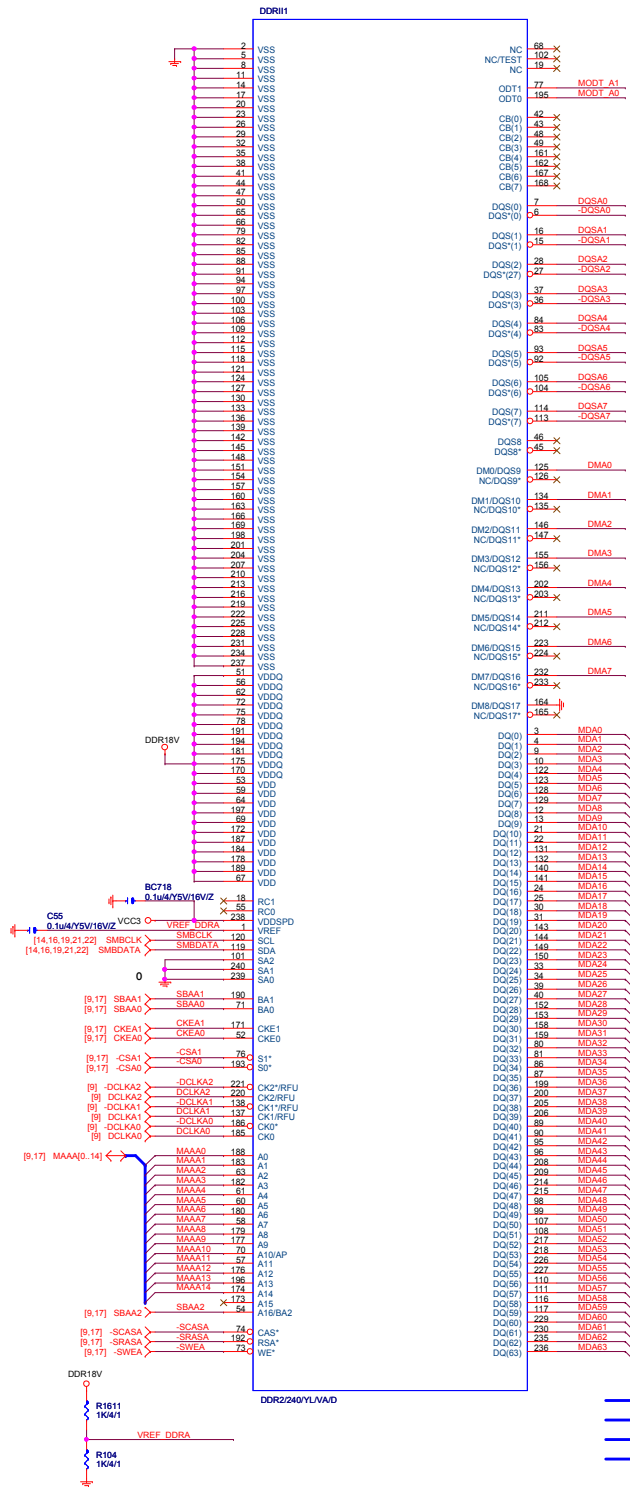
Gigabyte Technology

Title			
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Size	Document Number	Rev	
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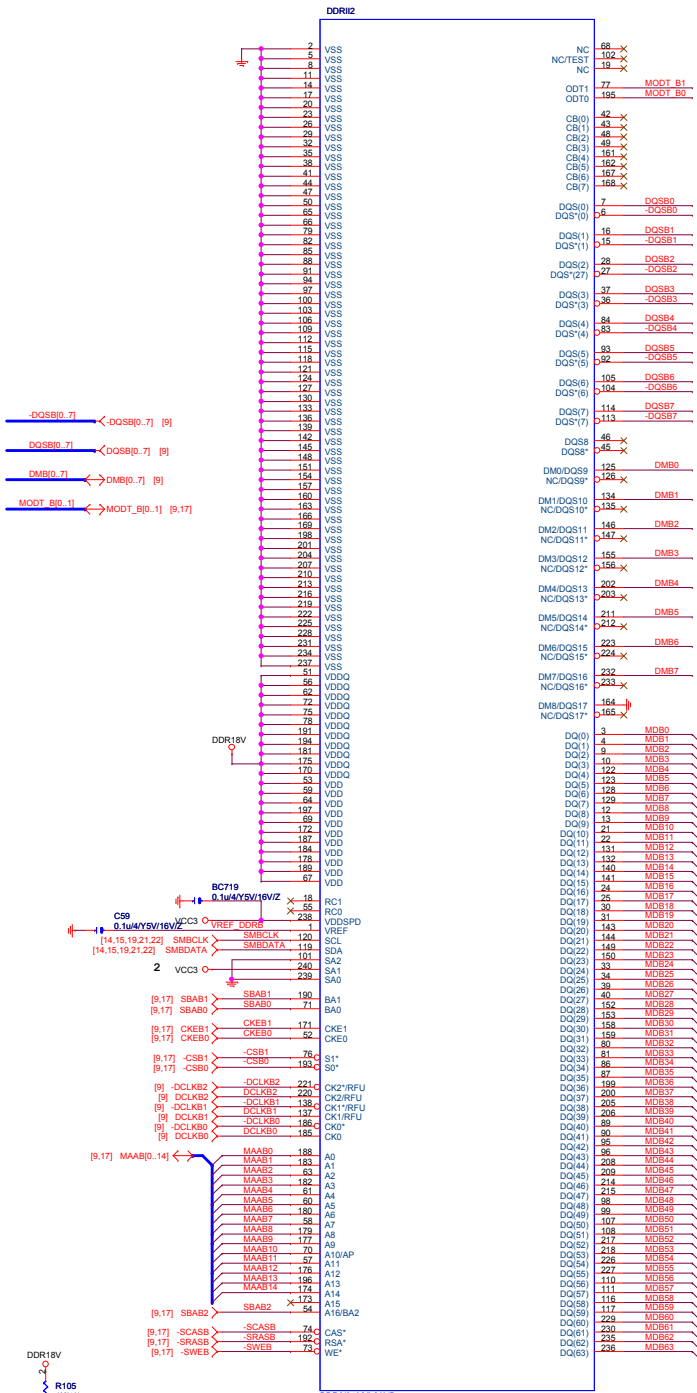


EXP A TXP0	C92	0.1u4/X7R/16V/K	EXP A TXP0C
EXP A TXN0	C93	0.1u4/X7R/16V/K	EXP A TXN0C
EXP A TXP1	C94	0.1u4/X7R/16V/K	EXP A TXP1C
EXP A TXN1	C95	0.1u4/X7R/16V/K	EXP A TXN1C
EXP A TXP2	C96	0.1u4/X7R/16V/K	EXP A TXP2C
EXP A TXN2	C97	0.1u4/X7R/16V/K	EXP A TXN2C
EXP A TXP3	C98	0.1u4/X7R/16V/K	EXP A TXP3C
EXP A TXN3	C99	0.1u4/X7R/16V/K	EXP A TXN3C
EXP A TXP4	C100	0.1u4/X7R/16V/K	EXP A TXP4C
EXP A TXN4	C101	0.1u4/X7R/16V/K	EXP A TXN4C
EXP A TXP5	C102	0.1u4/X7R/16V/K	EXP A TXP5C
EXP A TXN5	C103	0.1u4/X7R/16V/K	EXP A TXN5C
EXP A TXP6	C104	0.1u4/X7R/16V/K	EXP A TXP6C
EXP A TXN6	C105	0.1u4/X7R/16V/K	EXP A TXN6C
EXP A TXP7	C106	0.1u4/X7R/16V/K	EXP A TXP7C
EXP A TXN7	C107	0.1u4/X7R/16V/K	EXP A TXN7C
EXP A TXP8	C108	0.1u4/X7R/16V/K	EXP A TXP8C
EXP A TXN8	C109	0.1u4/X7R/16V/K	EXP A TXN8C
EXP A TXP9	C110	0.1u4/X7R/16V/K	EXP A TXP9C
EXP A TXN9	C111	0.1u4/X7R/16V/K	EXP A TXN9C
EXP A TXP10	C112	0.1u4/X7R/16V/K	EXP A TXP10C
EXP A TXN10	C113	0.1u4/X7R/16V/K	EXP A TXN10C
EXP A TXP11	C114	0.1u4/X7R/16V/K	EXP A TXP11C
EXP A TXN11	C115	0.1u4/X7R/16V/K	EXP A TXN11C
EXP A TXP12	C116	0.1u4/X7R/16V/K	EXP A TXP12C
EXP A TXN12	C117	0.1u4/X7R/16V/K	EXP A TXN12C
EXP A TXP13	C118	0.1u4/X7R/16V/K	EXP A TXP13C
EXP A TXN13	C119	0.1u4/X7R/16V/K	EXP A TXN13C
EXP A TXP14	C120	0.1u4/X7R/16V/K	EXP A TXP14C
EXP A TXN14	C121	0.1u4/X7R/16V/K	EXP A TXN14C
EXP A TXP15	C122	0.1u4/X7R/16V/K	EXP A TXP15C
EXP A TXN15	C123	0.1u4/X7R/16V/K	EXP A TXN15C



Gigabyte Technology

File: DDR1 CHANNEL A	
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68	NC	X
102	NC/TEST	X
15	NC	X
77	MODT_B1	
165	MODT_B0	
ODT1		
ODT0		
42	CB(0)	X
43	CB(1)	X
46	CB(2)	X
49	CB(3)	X
161	CB(4)	X
162	CB(5)	X
167	CB(6)	X
168	CB(7)	X
7	DQS(0)	
5	DQS(0)	
16	DQS(1)	
15	DQS(1)	
28	DQS(2)	
27	DQS(2)	
37	DQS(3)	
36	DQS(3)	
84	DQS(4)	
83	DQS(4)	
93	DQS(5)	
92	DQS(5)	
105	DQS(6)	
104	DQS(6)	
114	DQS(7)	
113	DQS(7)	
46	DQS8	X
45	DQS8	X
126	DM0/DQS9	
128	NC/DQS9	X
134	DM1/DQS10	
135	NC/DQS10	X
146	DM2/DQS11	
147	NC/DQS11	X
155	DM3/DQS12	
156	NC/DQS12	X
202	DM4/DQS13	
203	NC/DQS13	X
211	DM5/DQS14	
212	NC/DQS14	X
223	DM6/DQS15	
224	NC/DQS15	X
232	DM7/DQS16	
233	NC/DQS16	X
164	DM8/DQS17	
165	NC/DQS17	X
3	MD(0)	
4	MD(1)	
5	MD(2)	
10	MD(3)	
122	MD(4)	
123	MD(5)	
128	MD(6)	
129	MD(7)	
12	MD(8)	
13	MD(9)	
21	MD(10)	
22	MD(11)	
131	MD(12)	
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40	MD(27)	
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193	MD(29)	
168	MD(30)	
169	MD(31)	
80	MD(32)	
81	MD(33)	
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87	MD(35)	
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107	MD(50)	
108	MD(51)	
217	MD(52)	
218	MD(53)	
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110	MD(56)	
111	MD(57)	
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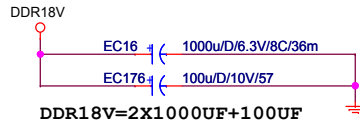
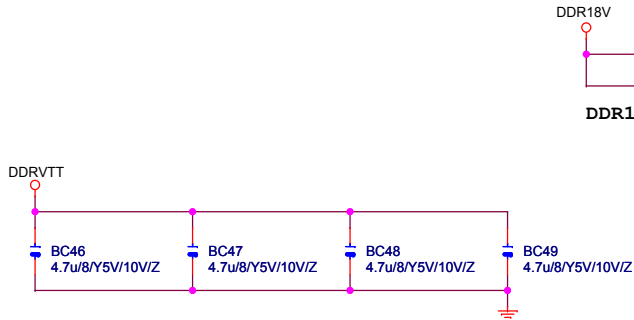


Gigabyte Technology

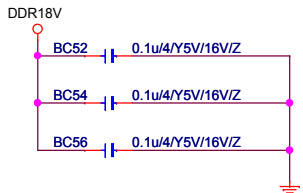
File	DDR2 CHANNEL B		Rev
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Custom			
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DDR TERMINATION CHANNEL A

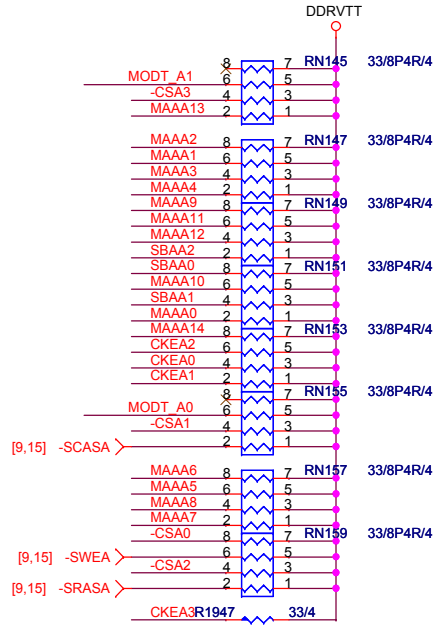
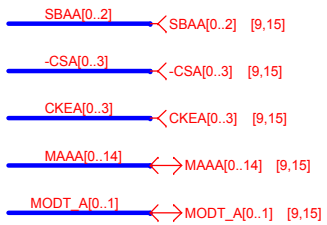
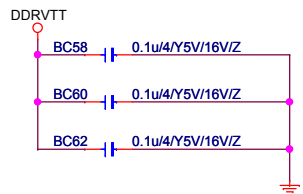
DDRVTT Decouple



DDR18V Decouple

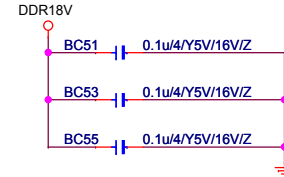


DDRVTT Decouple

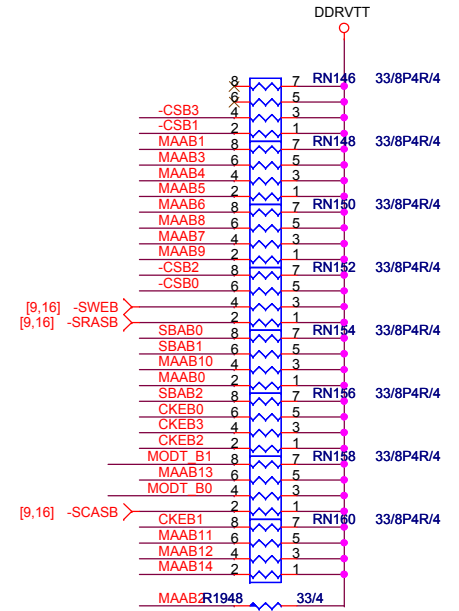
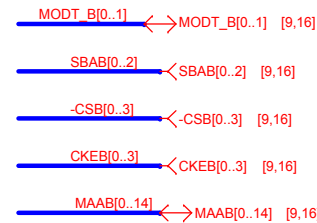
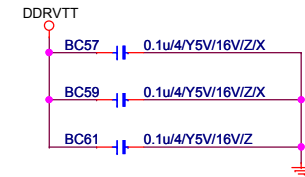


DDR TERMINATION CHANNEL B

DDR18V Decouple

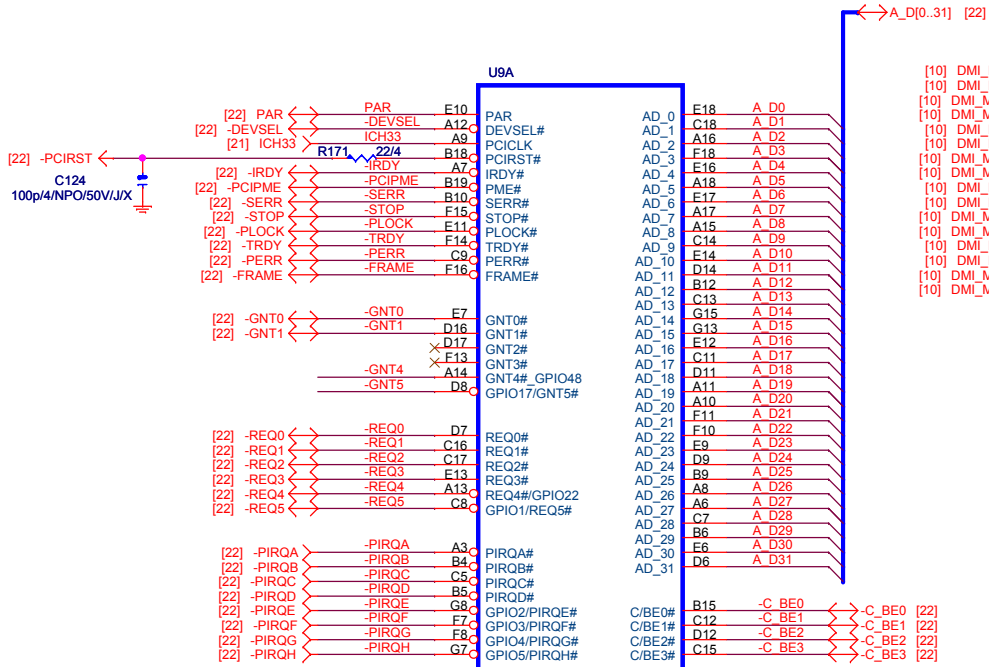


DDRVTT Decouple

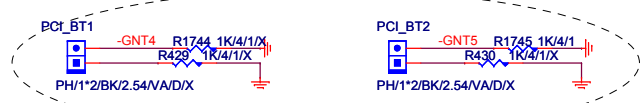
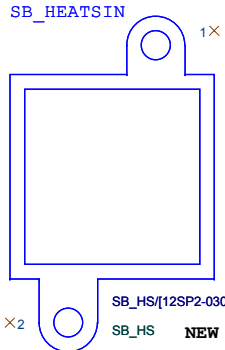
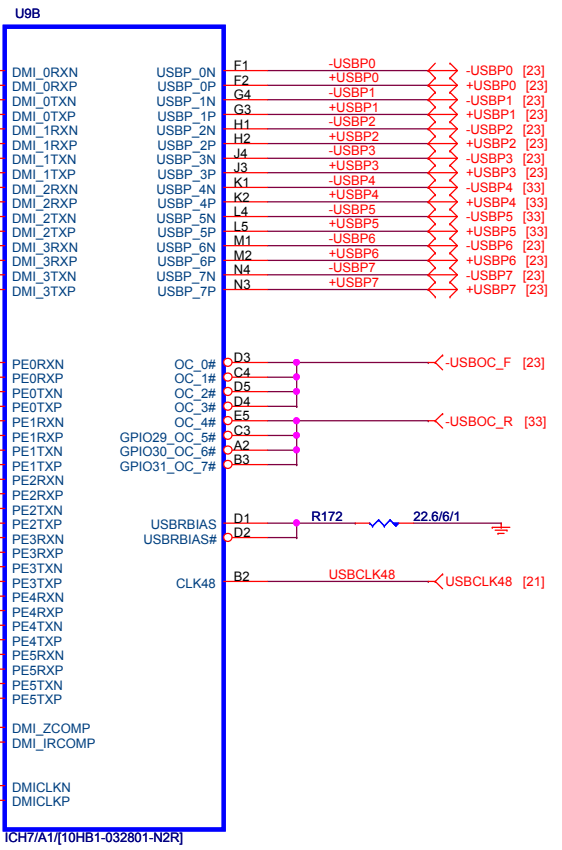
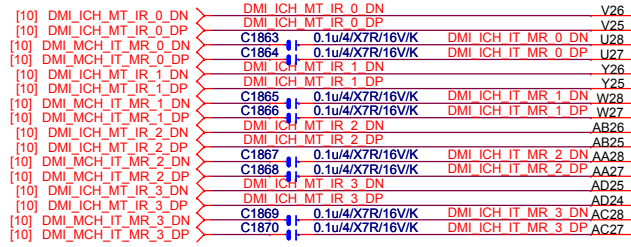


Gigabyte Technology

Title		
DDRII TERMINATOR		
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Close to ICH
as short as possible

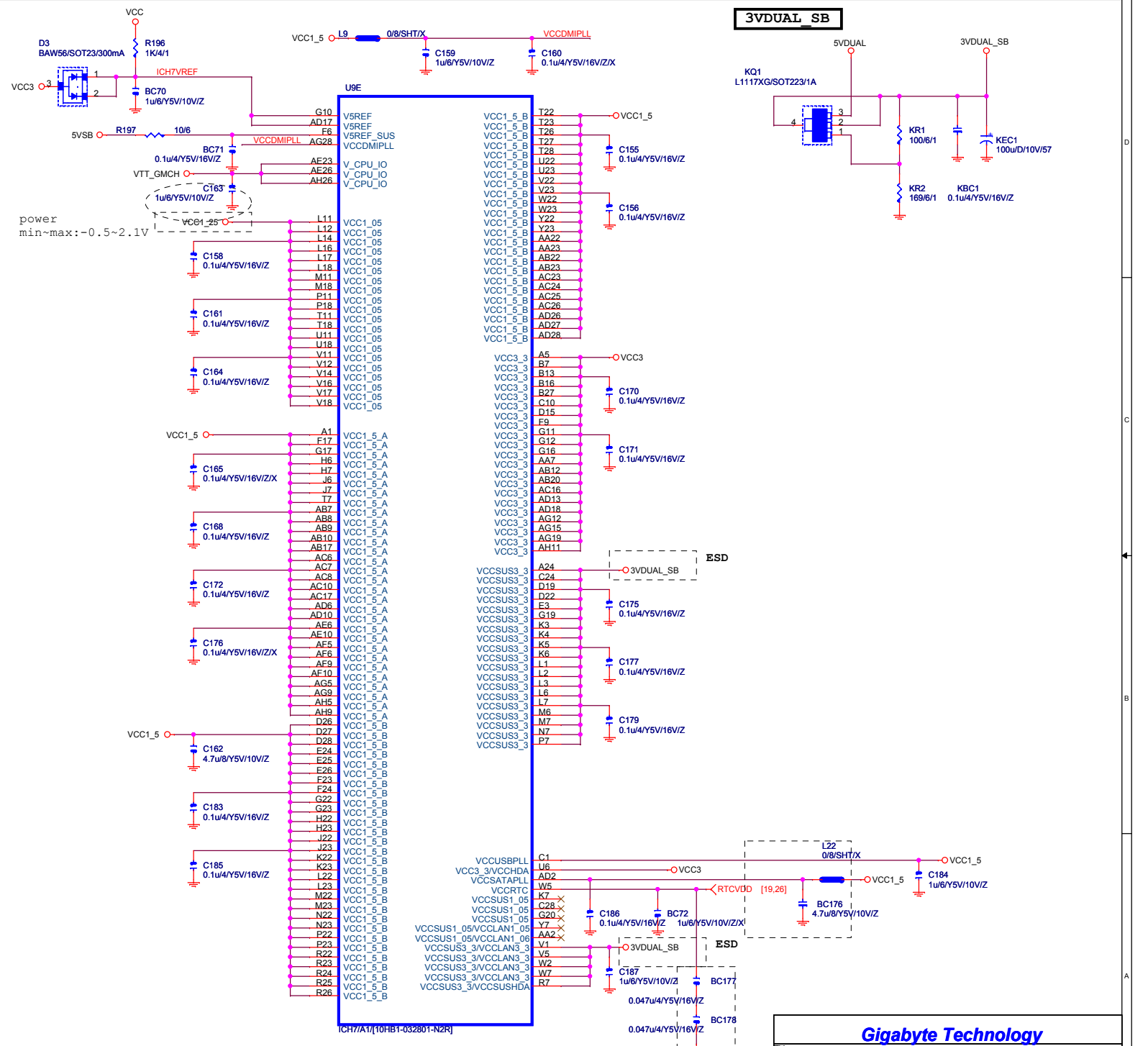


SB_HS[12SP2-030005-11R_12SP2-030005-12R_12SP2-030005-13R_12SP2-030005-14R]

SB_HS NEW SB_HS 對邊

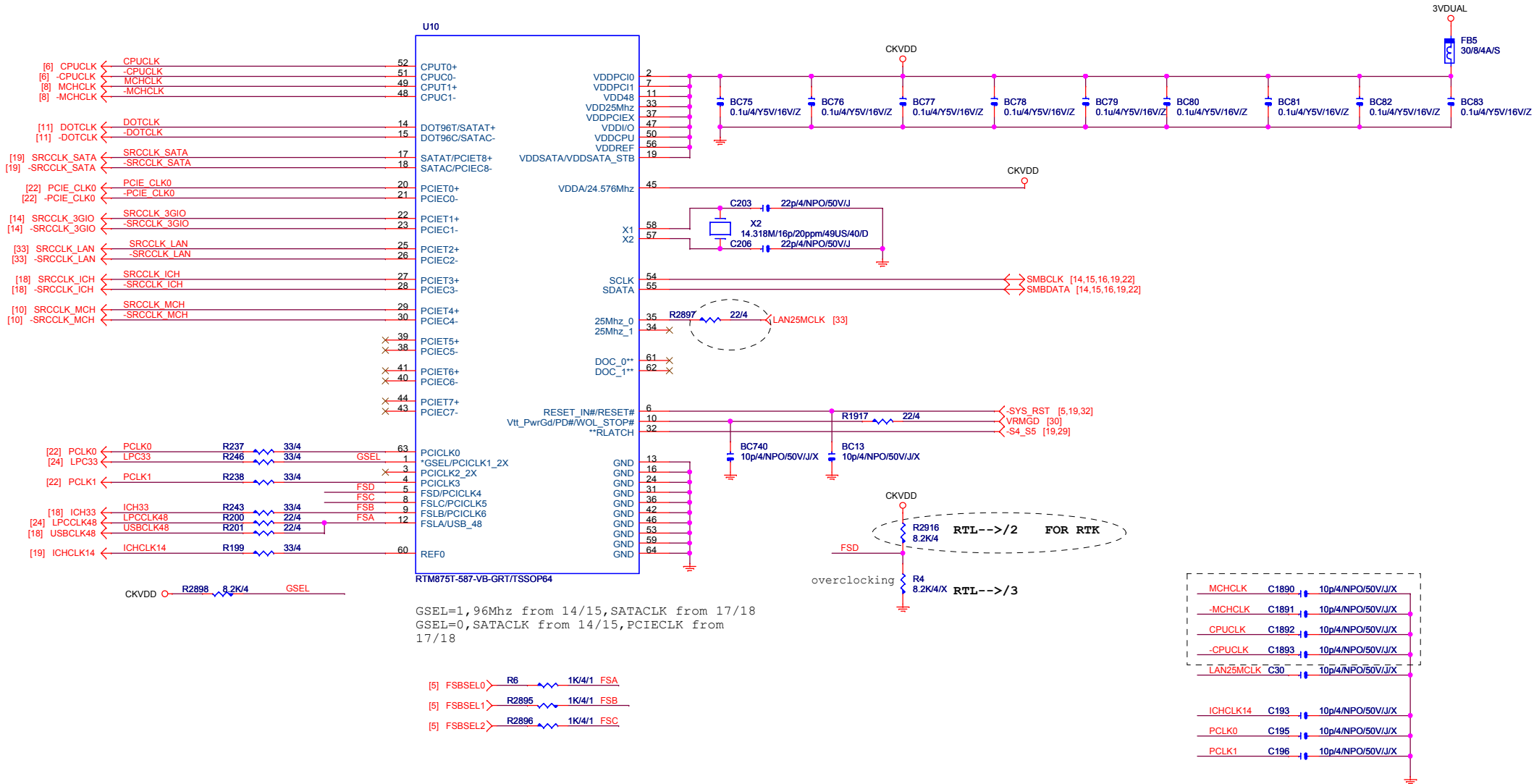
Gigabyte Technology		
ICH7-PCI, DMI, LAN, USB		
Size	Document Number	Rev
3	GA-G31M-S2C	1.1
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U9F		
A4	VSS1	VSS101
A23	VSS2	VSS102
B1	VSS3	VSS103
B8	VSS4	VSS104
B11	VSS5	VSS105
B14	VSS6	VSS106
B17	VSS7	VSS107
B20	VSS8	VSS108
B26	VSS9	VSS109
B28	VSS10	VSS110
C2	VSS11	VSS111
D6	VSS12	VSS112
D10	VSS13	VSS113
D13	VSS14	VSS114
D18	VSS15	VSS115
D21	VSS16	VSS116
D24	VSS17	VSS117
E1	VSS18	VSS118
E2	VSS19	VSS119
E8	VSS20	VSS120
E15	VSS21	VSS121
F3	VSS22	VSS122
F4	VSS23	VSS123
F5	VSS24	VSS124
F2	VSS25	VSS125
F27	VSS26	VSS126
F28	VSS27	VSS127
G1	VSS28	VSS128
G2	VSS29	VSS129
G5	VSS30	VSS130
G6	VSS31	VSS131
G9	VSS32	VSS132
G14	VSS33	VSS133
G18	VSS34	VSS134
G21	VSS35	VSS135
G24	VSS36	VSS136
G25	VSS37	VSS137
G26	VSS38	VSS138
H3	VSS39	VSS139
H4	VSS40	VSS140
H24	VSS41	VSS141
H27	VSS42	VSS142
H28	VSS43	VSS143
H28	VSS44	VSS144
J1	VSS45	VSS145
J5	VSS46	VSS146
J24	VSS47	VSS147
J25	VSS48	VSS148
J25	VSS49	VSS149
J26	VSS50	VSS150
K24	VSS51	VSS151
K27	VSS52	VSS152
K28	VSS53	VSS153
L13	VSS54	VSS154
L15	VSS55	VSS155
L24	VSS56	VSS156
L25	VSS57	VSS157
L26	VSS58	VSS158
M3	VSS59	VSS159
M4	VSS60	VSS160
M5	VSS61	VSS161
M12	VSS62	VSS162
M13	VSS63	VSS163
M14	VSS64	VSS164
M15	VSS65	VSS165
M16	VSS66	VSS166
M17	VSS67	VSS167
M24	VSS68	VSS168
M27	VSS69	VSS169
M28	VSS70	VSS170
N1	VSS71	VSS171
N2	VSS72	VSS172
N6	VSS73	VSS173
N11	VSS74	VSS174
N12	VSS75	VSS175
N13	VSS76	VSS176
N14	VSS77	VSS177
N15	VSS78	VSS178
N16	VSS79	VSS179
N17	VSS80	VSS180
N18	VSS81	VSS181
N24	VSS82	VSS182
N25	VSS83	VSS183
N26	VSS84	VSS184
P3	VSS85	VSS185
P4	VSS86	VSS186
P12	VSS87	VSS187
P13	VSS88	VSS188
P13	VSS89	VSS189
P14	VSS90	VSS190
P15	VSS91	VSS191
P16	VSS92	VSS192
P17	VSS93	VSS193
P24	VSS94	VSS194
P27	VSS95	
P28	VSS96	
R1	VSS97	
R11	VSS98	
R12	VSS99	
R13	VSS100	

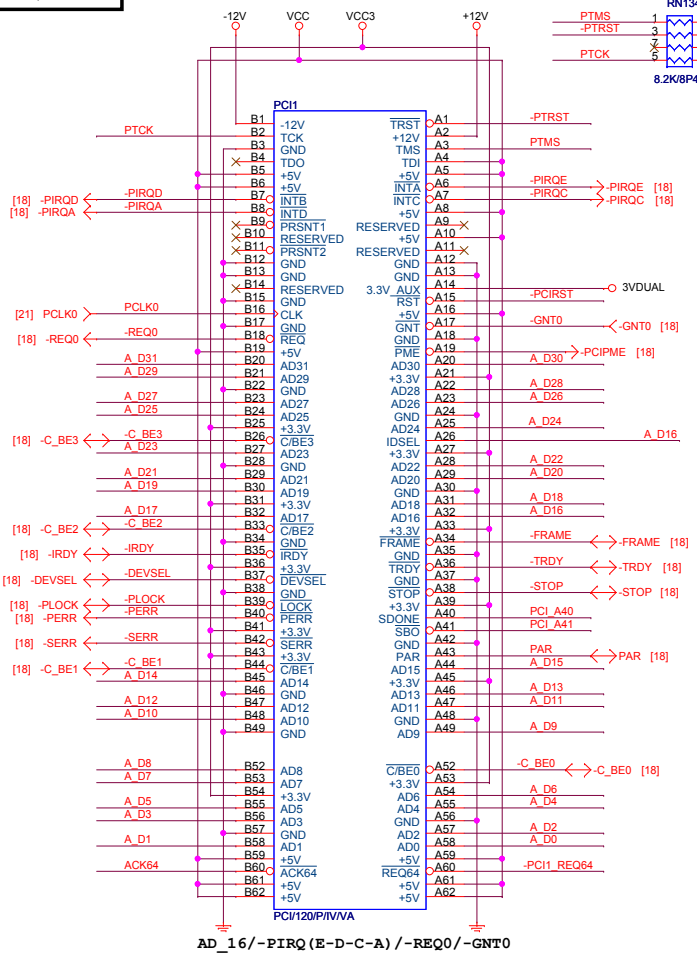


Gigabyte Technology

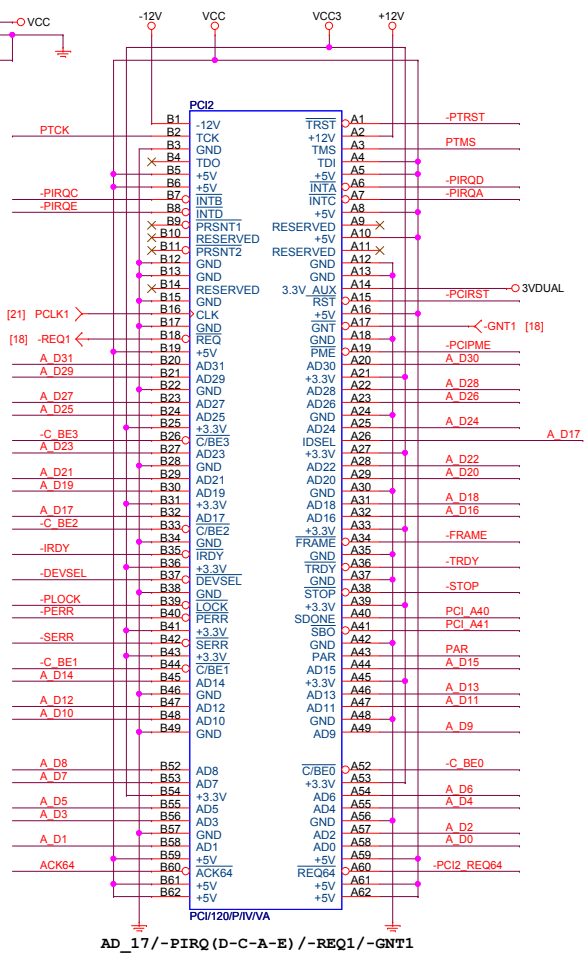
Title		ICH7-PWR & GND	
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PCI1, 2 SLOT

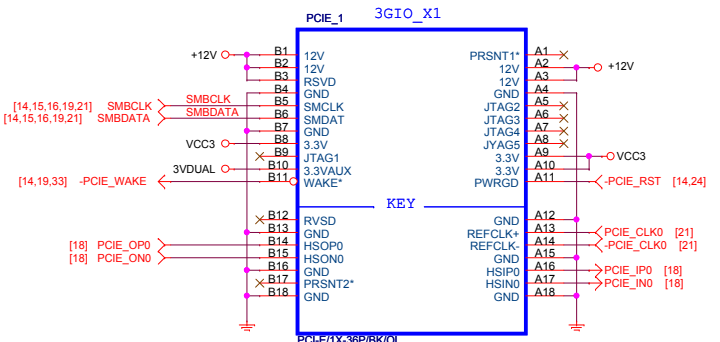


AD_16/-PIRQ (E-D-C-A) /-REQ0/-GNT0



AD_17/-PIRQ (D-C-A-E) /-REQ1/-GNT1

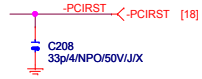
PCIEX1



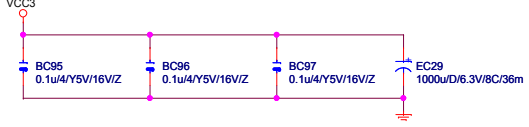
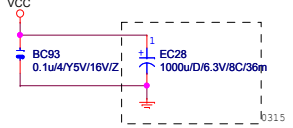
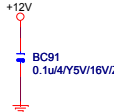
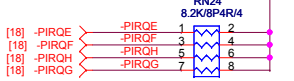
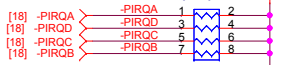
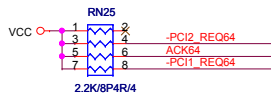
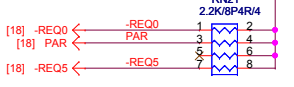
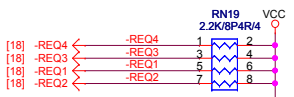
PCIEX1 3GIO_X1

PCIEX1X-36P/BK/OL

[18] A_D[0..31] ↔ A_D[0..31]



Place close to PC11

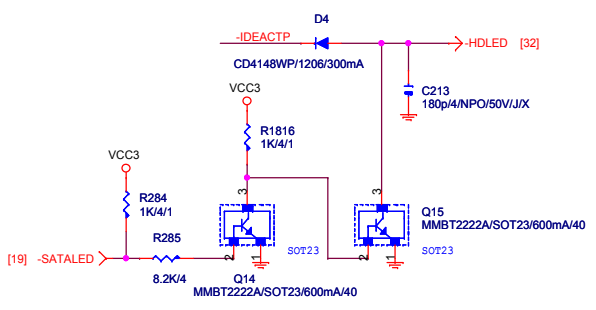


Gigabyte Technology

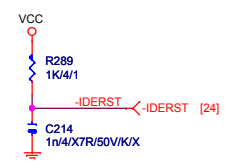
PCI SLOT 1, 2/PCIEX1
GA-G31M-S2C

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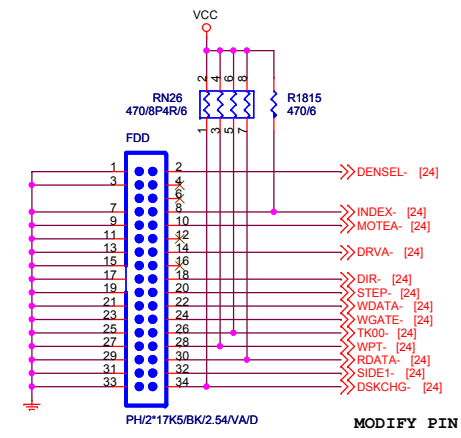
IDE/SATA LED



IDE RESET

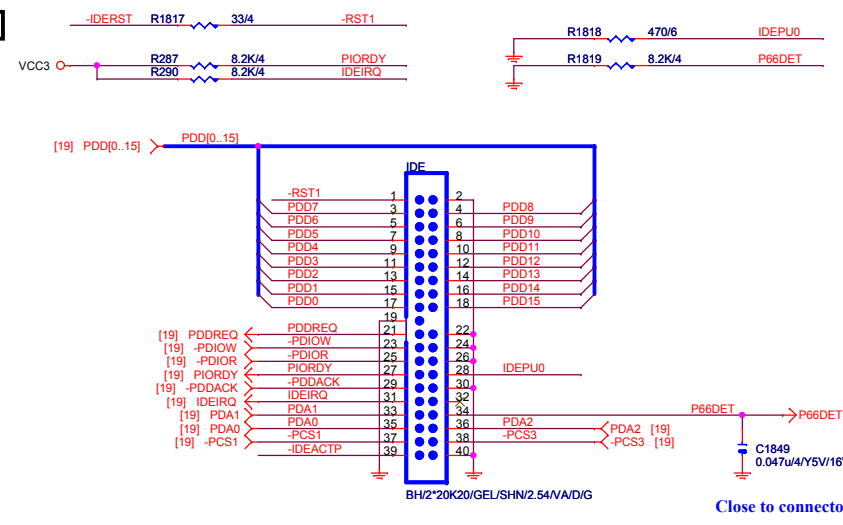


FLOPPY



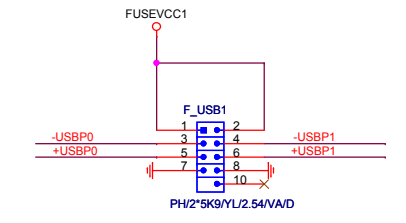
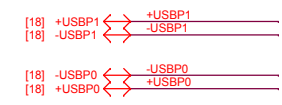
MODIFY PIN HEADER

IDE

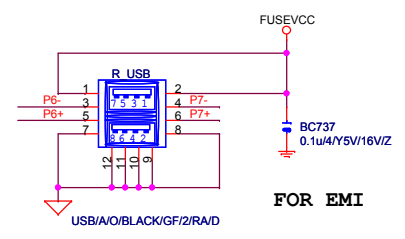
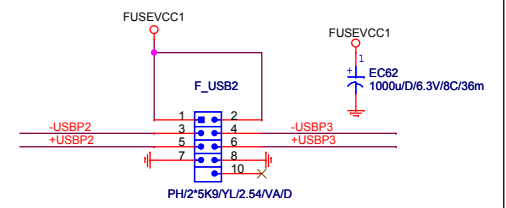
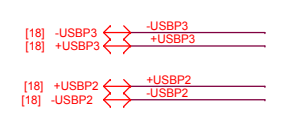


Close to connector

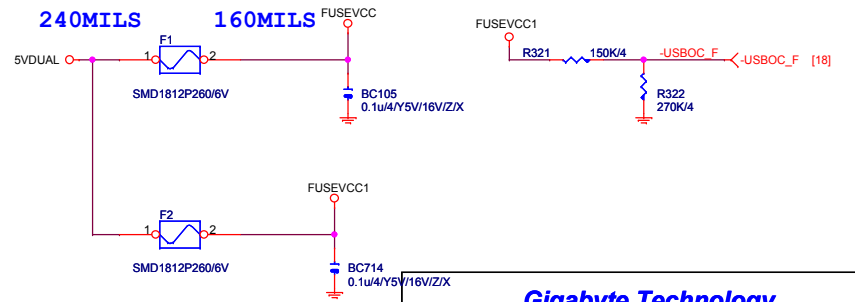
FRONT USB1



FRONT USB2



FOR EMI

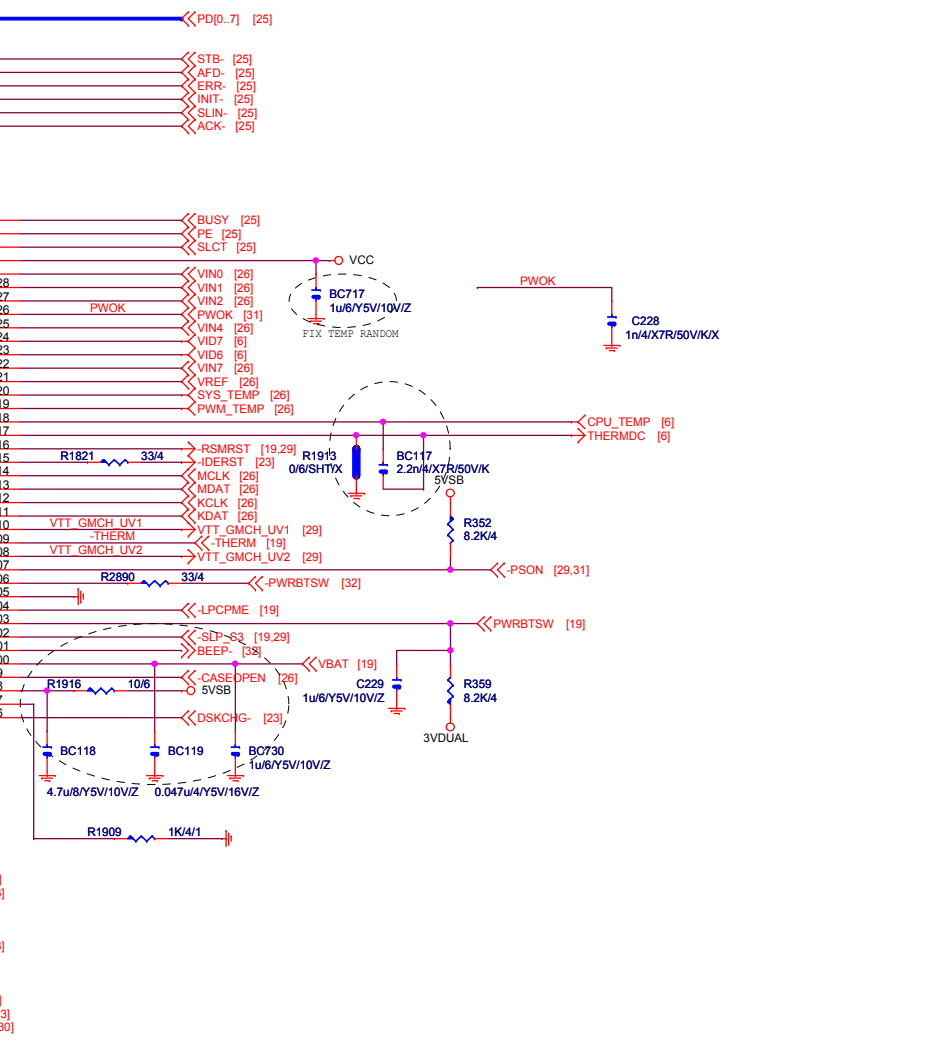
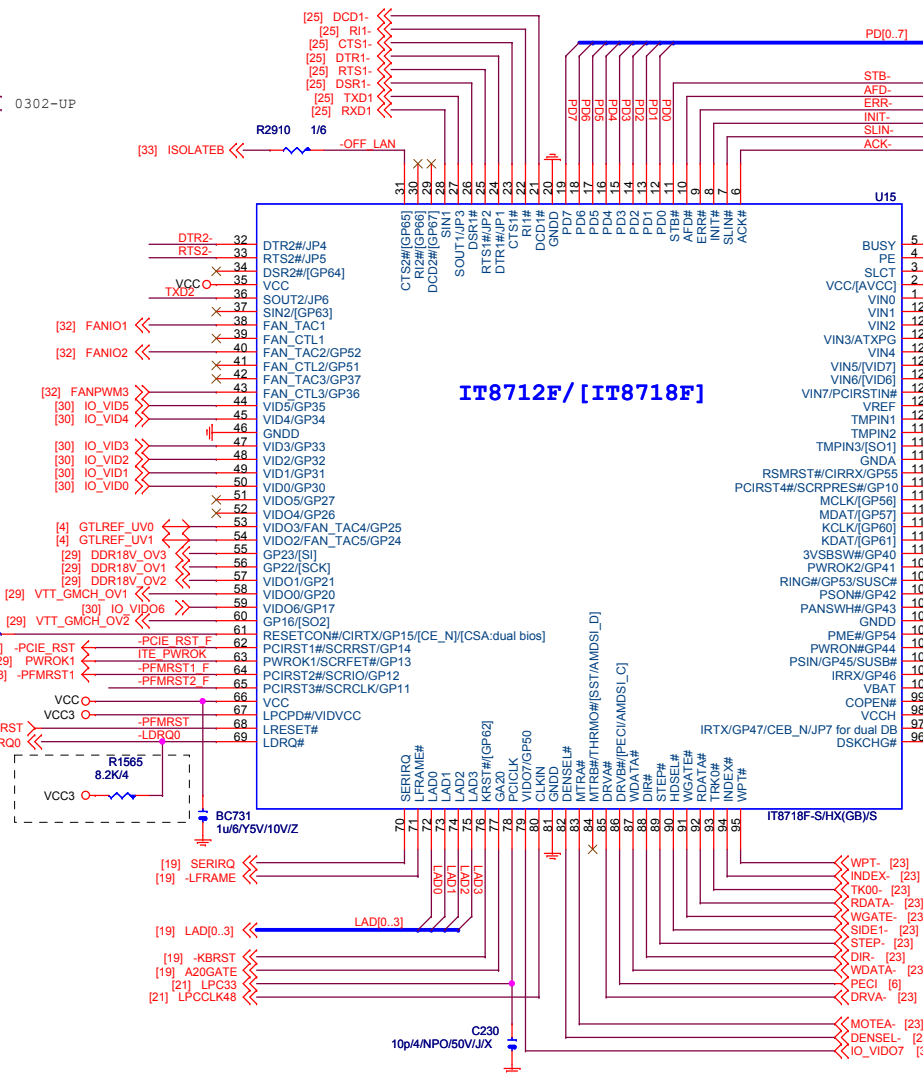
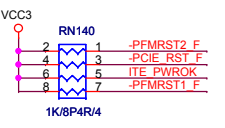
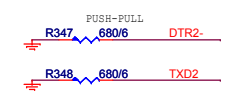
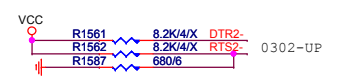


Gigabyte Technology

Title			IDE,FDD,F_USB		
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RTS2- ==LOW CPU FAN 50%
 ==HIGH 100%

DEFAULT 50%

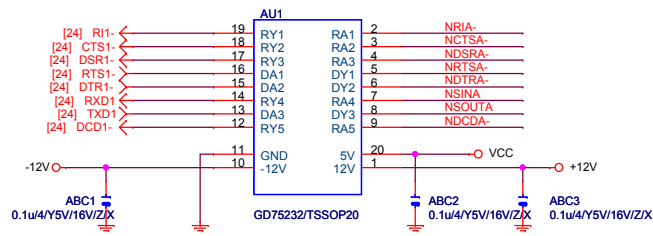


Dual BIOS:
 GB logo :Pin 61 (GP15/CSA)
 GB logo :Pin 59 (GP17/CSB)
 Pin 59 Dual BIOS ,Power On Strapping:
 H ==>Dual BIOS function Enable
 L ==>Dual BIOS function Disable

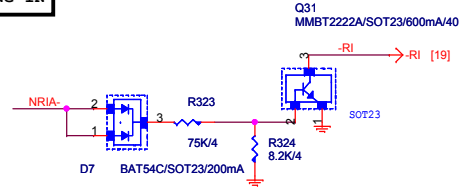
1.2V or 3.3V tolerance select.
 1.2V OUTPUT 接 VTT_GMCH
 3.3V OUTPUT 接 3.3V
 LPCPD#=#VIDVCC

Gigabyte Technology		
ITE 8712/18 LPC IO		
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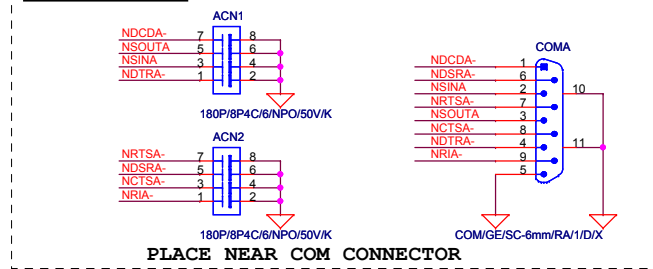
COMA



RING IN

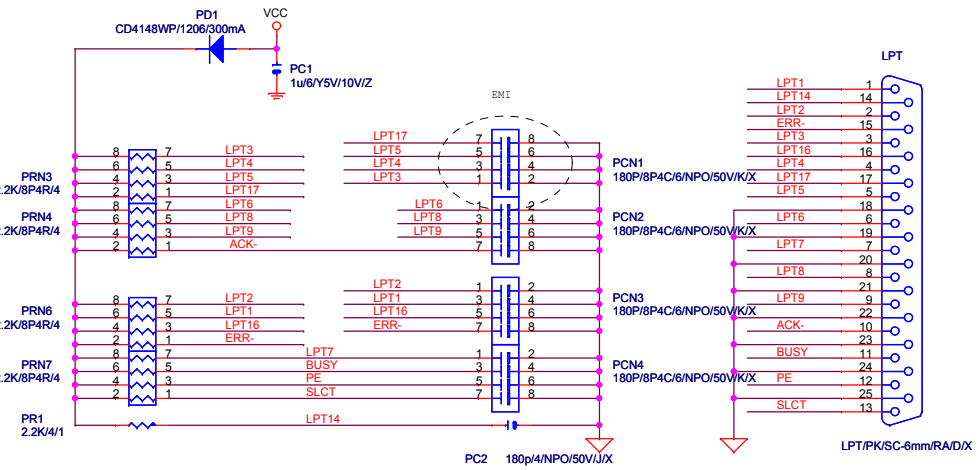
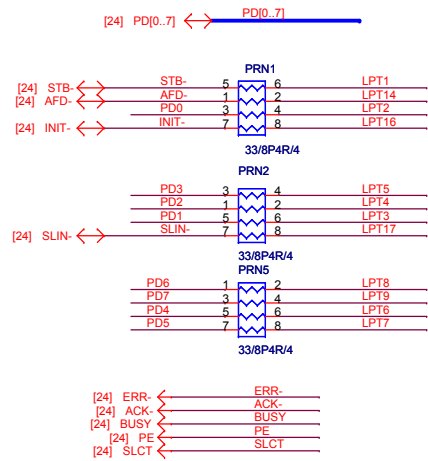


EXTERNAL COMA

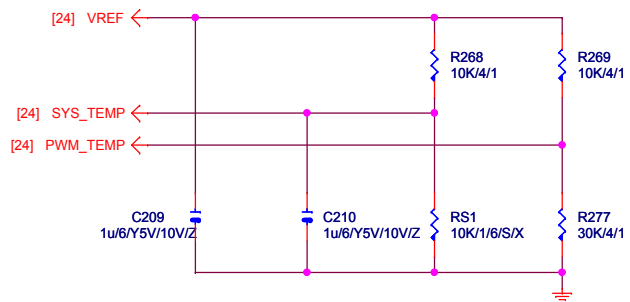


PLACE NEAR COM CONNECTOR

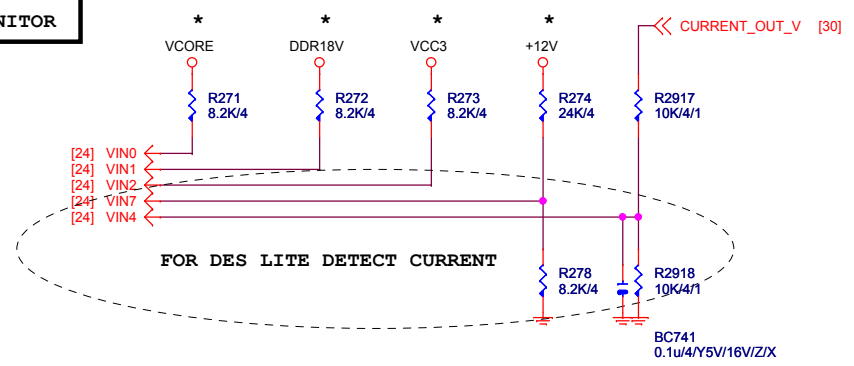
LPT PORT



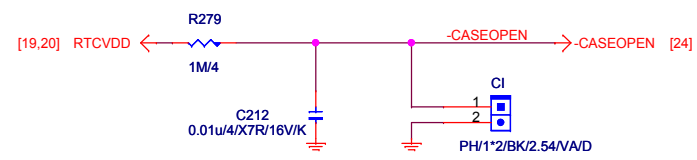
TEMP H/W MONITOR



VOLTAGE-- H/W MONITOR

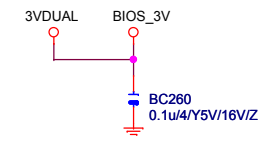


CASE OPEN

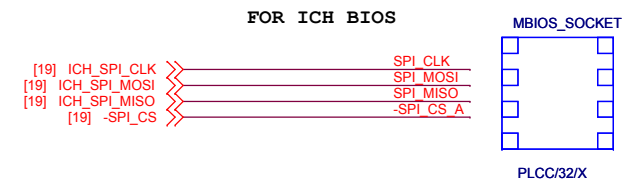
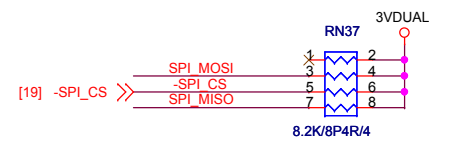
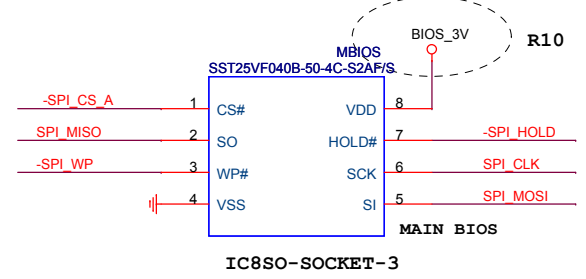
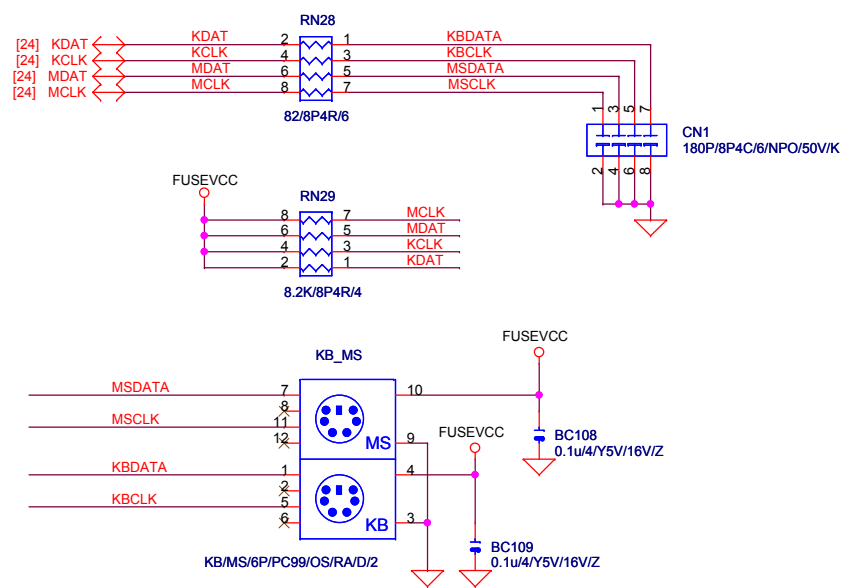


Case Open Circuits

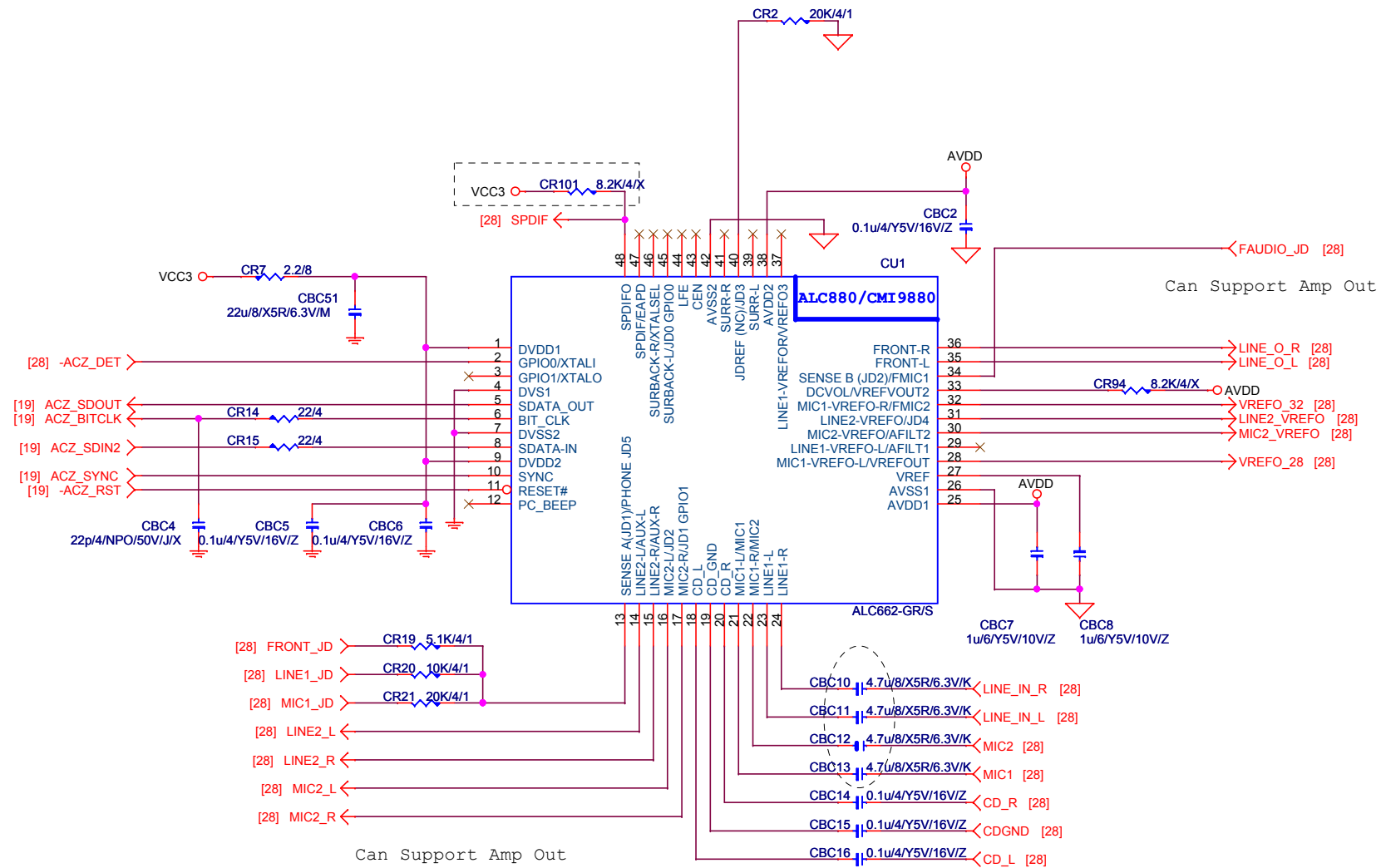
DUAL BIOS



KB/MS

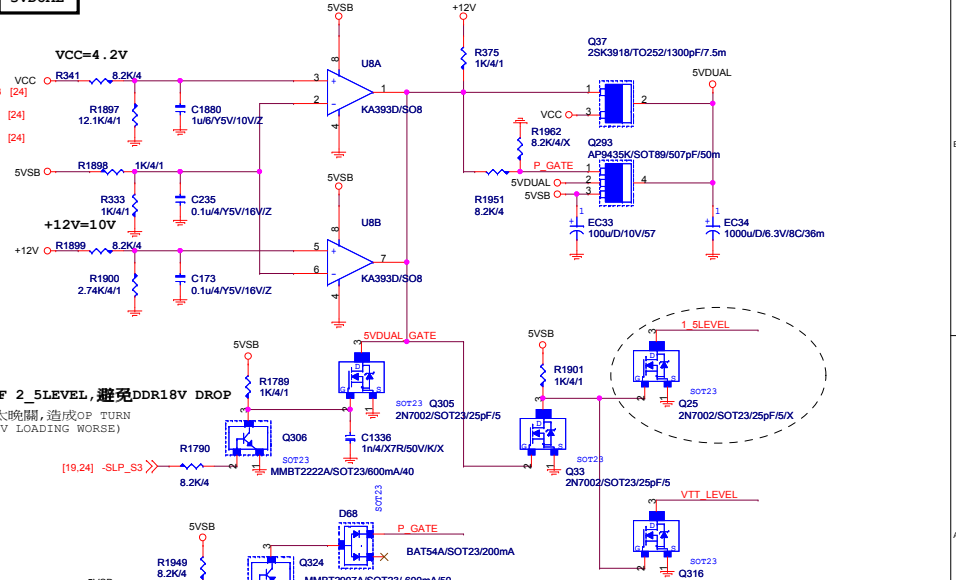
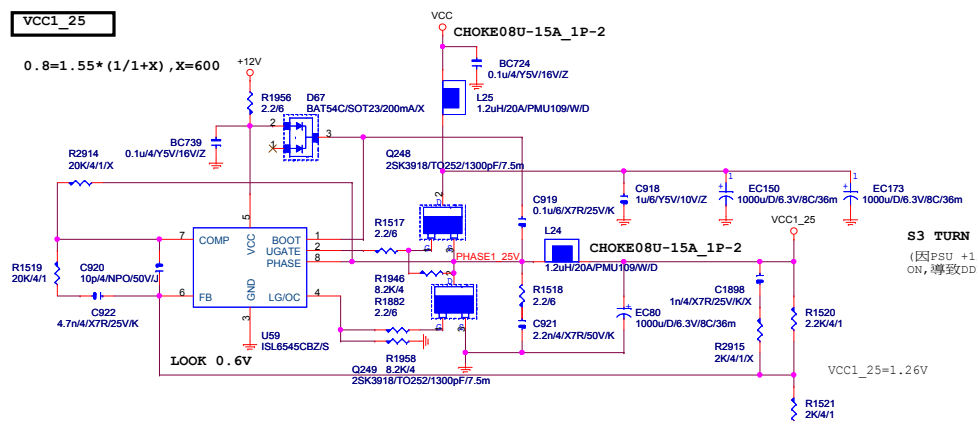
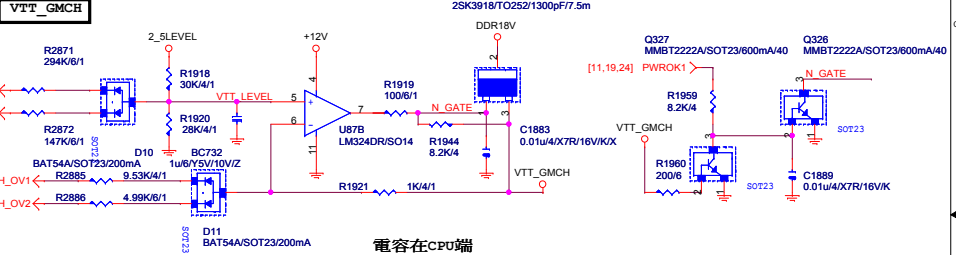
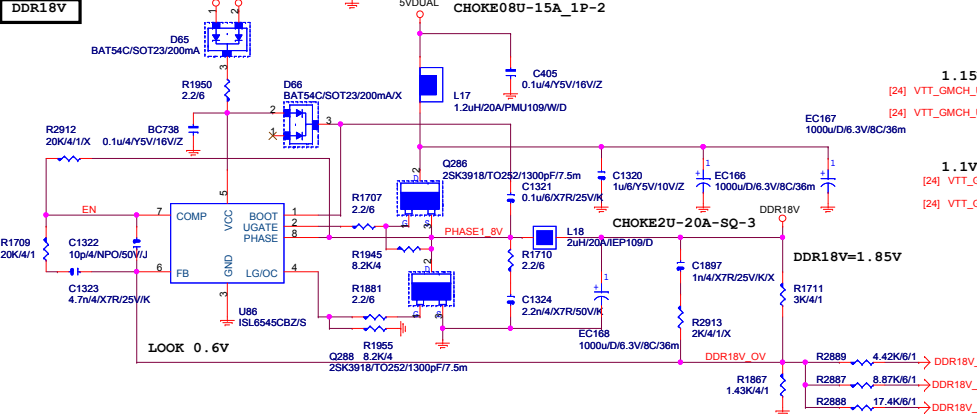
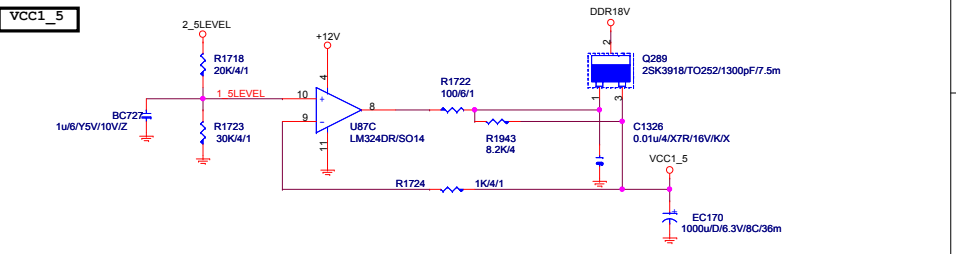
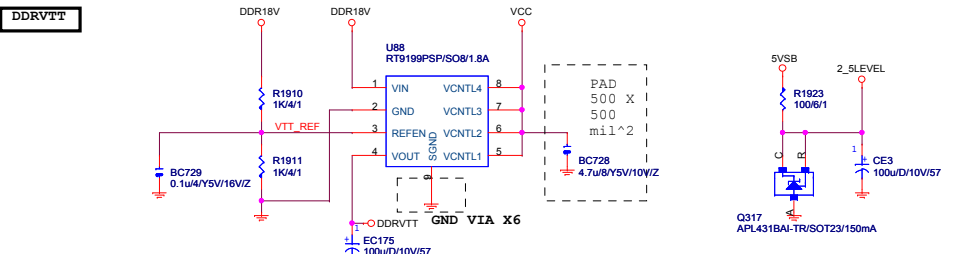
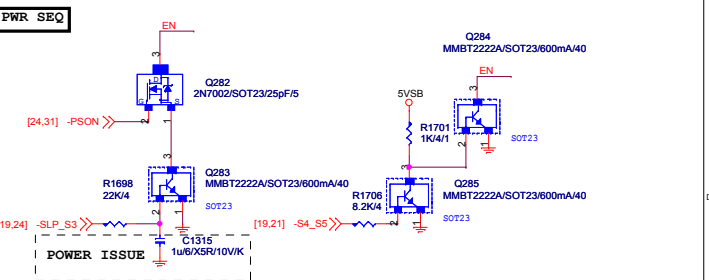
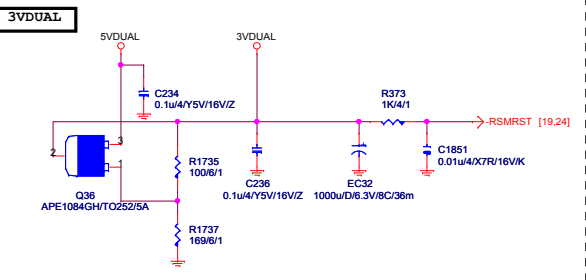
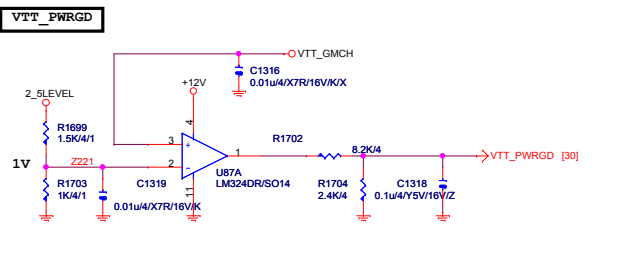


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HW-MONITOR/CI/KB/MS/BIOS			
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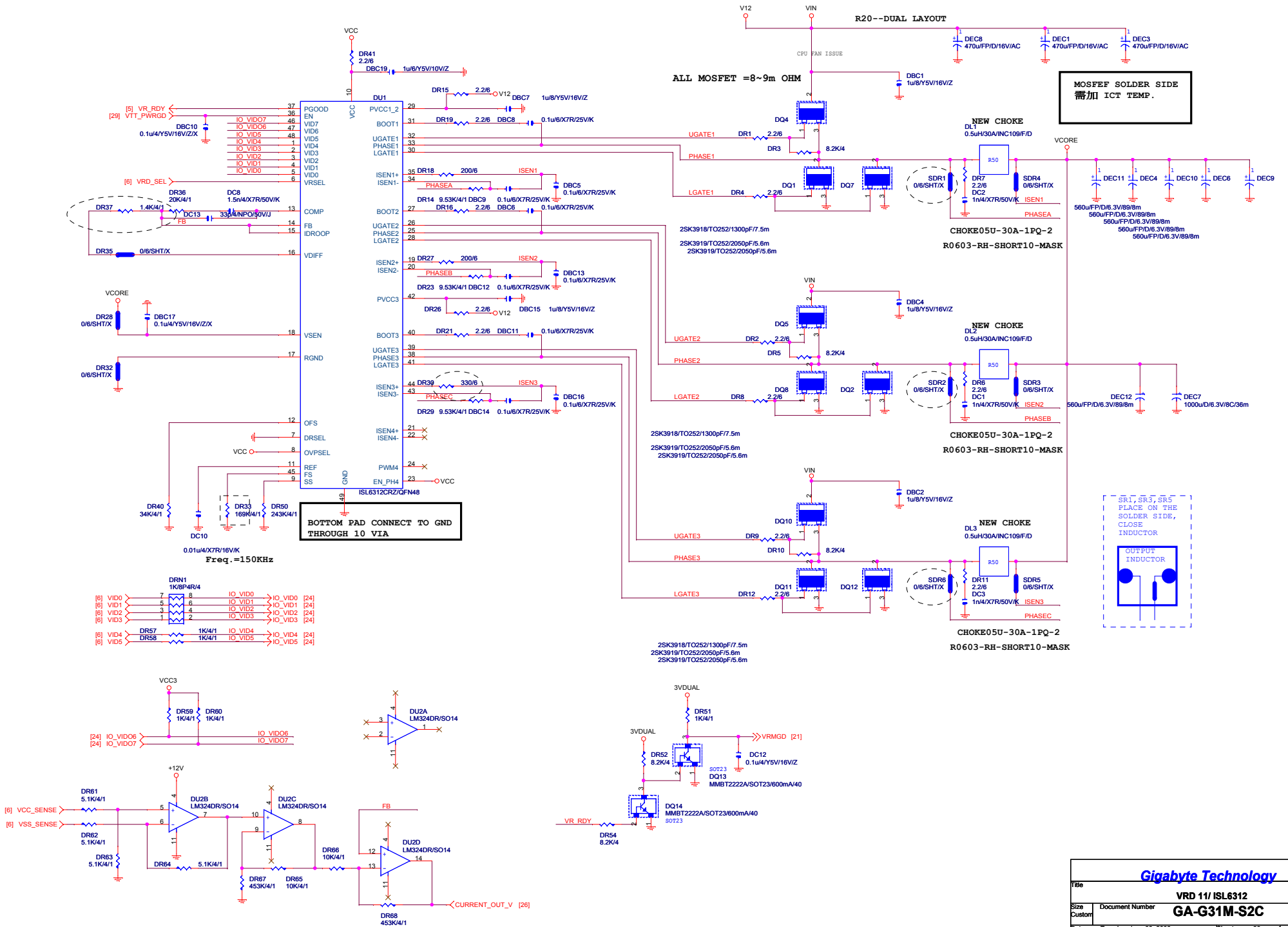
Gigabyte Technology

Title		
AZALIA ALC662		
Size Custom	Document Number	Rev
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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



[5] VR_RDY
[29] VTT_PWRGD

[6] VRD_SEL

VCORE

DR32 0/6/SHT/X

VCC

DR40 34K/4/1

DRN1 1K/8P4R/4

[6] VCC_SENSE
[6] VSS_SENSE

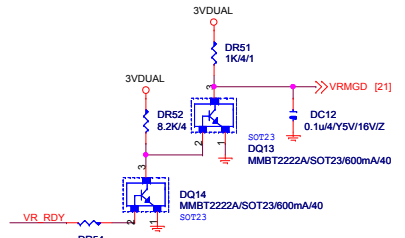
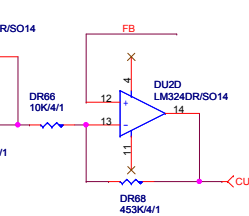
[24] IO_VID06
[24] IO_VID07

DR61 5.1K/4/1

DR67 453K/4/1

BOTTOM PAD CONNECT TO GND THROUGH 1.0 VIA

0.01u/4X7R/16V/K
Freq.=150KHz



ALL MOSFET = 8~9m OHM

**MOSFET SOLDER SIDE
需加 ICT TEMP.**

2SK3918/TO252/1300pF/7.5m
2SK3919/TO252/2050pF/5.6m
2SK3919/TO252/2050pF/5.6m

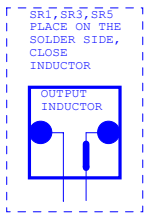
2SK3918/TO252/1300pF/7.5m
2SK3919/TO252/2050pF/5.6m
2SK3919/TO252/2050pF/5.6m

2SK3918/TO252/1300pF/7.5m
2SK3919/TO252/2050pF/5.6m
2SK3919/TO252/2050pF/5.6m

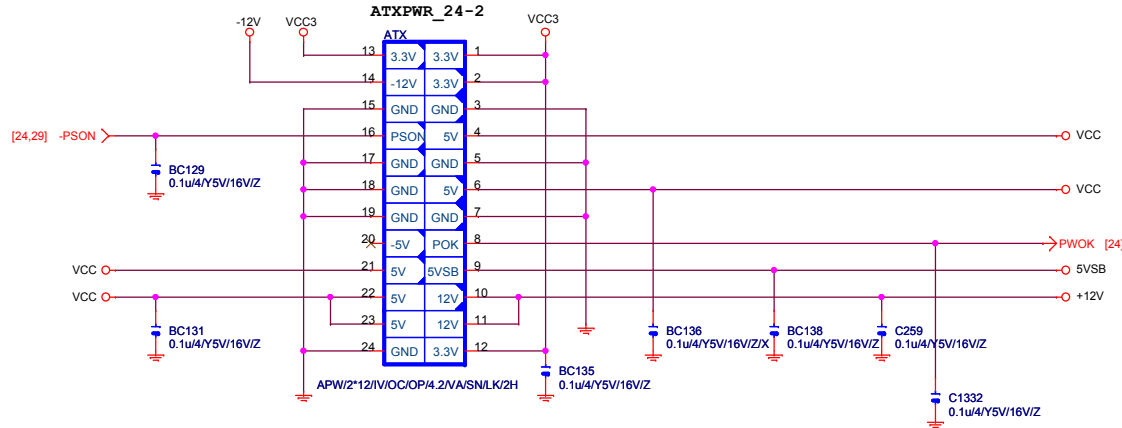
CHOKE05U-30A-1PQ-2
R0603-RH-SHORT10-MASK

CHOKE05U-30A-1PQ-2
R0603-RH-SHORT10-MASK

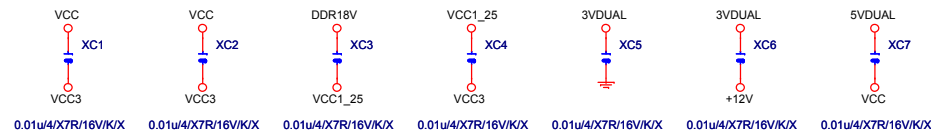
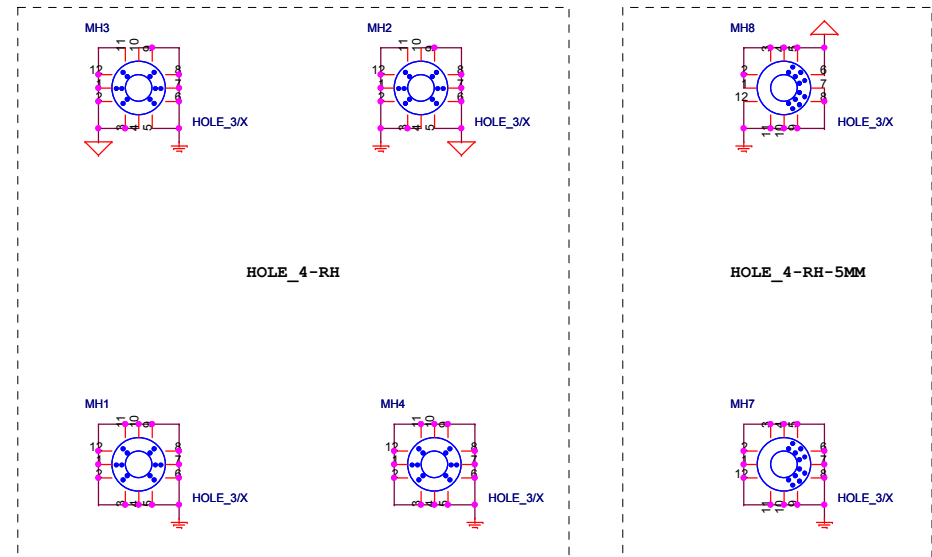
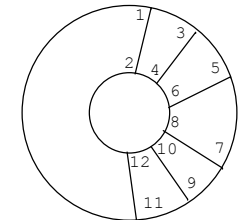
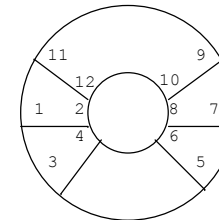
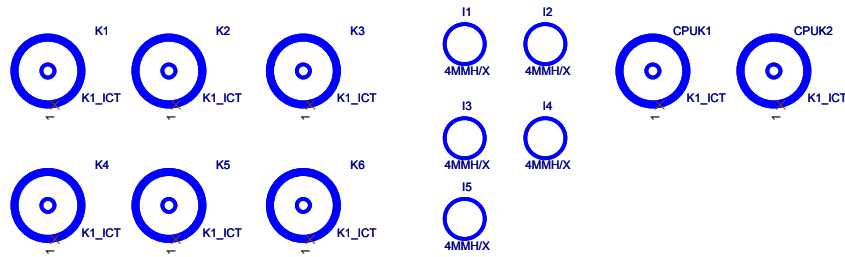
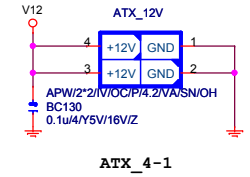
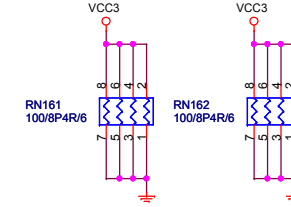
CHOKE05U-30A-1PQ-2
R0603-RH-SHORT10-MASK



ATX POWER CONNECTOR



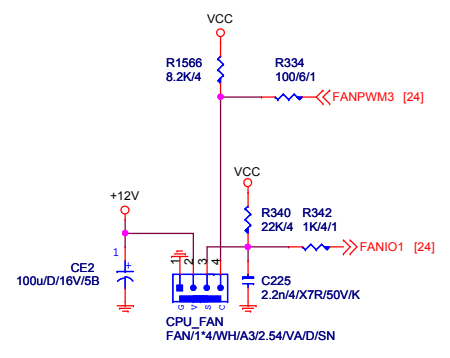
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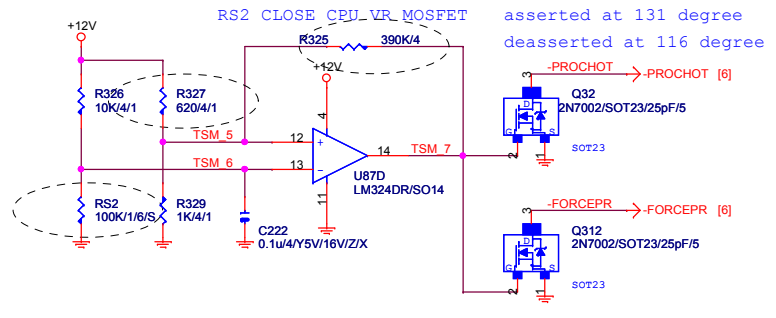
Gigabyte Technology

Title		ATX POWER CONNECTOR	
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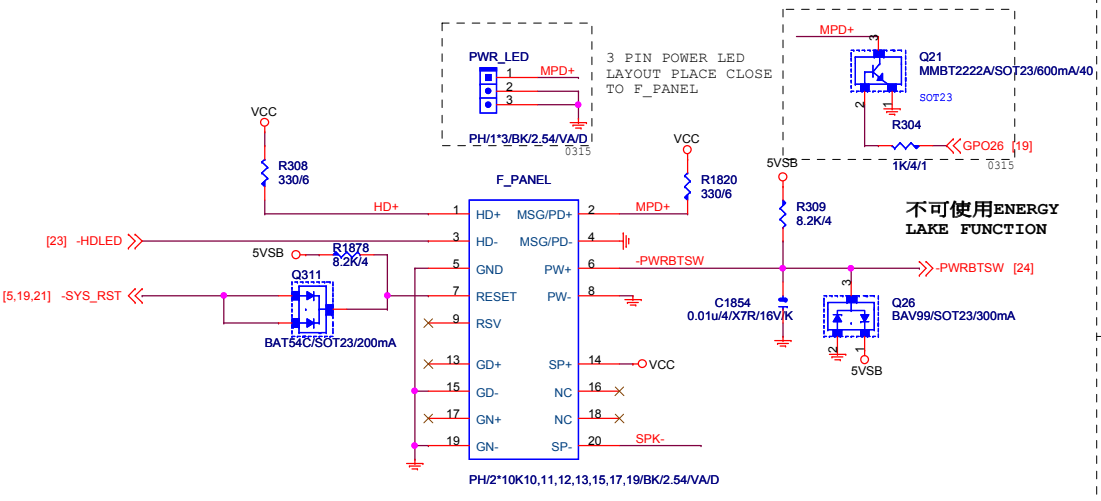
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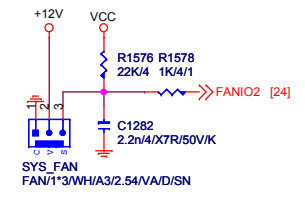
PROCESSOR HOT



INTEL FRONT PANEL



SYS_FAN



BUZZER

