

Model Name : GA-G41M-ES2L

Revision 1.4

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	G41 HOST
09	G41 DDRII
10	G41 PCI E, DMI
11	G41 VGA
12	G41 GND
13	G41 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	ALC888B-VD2

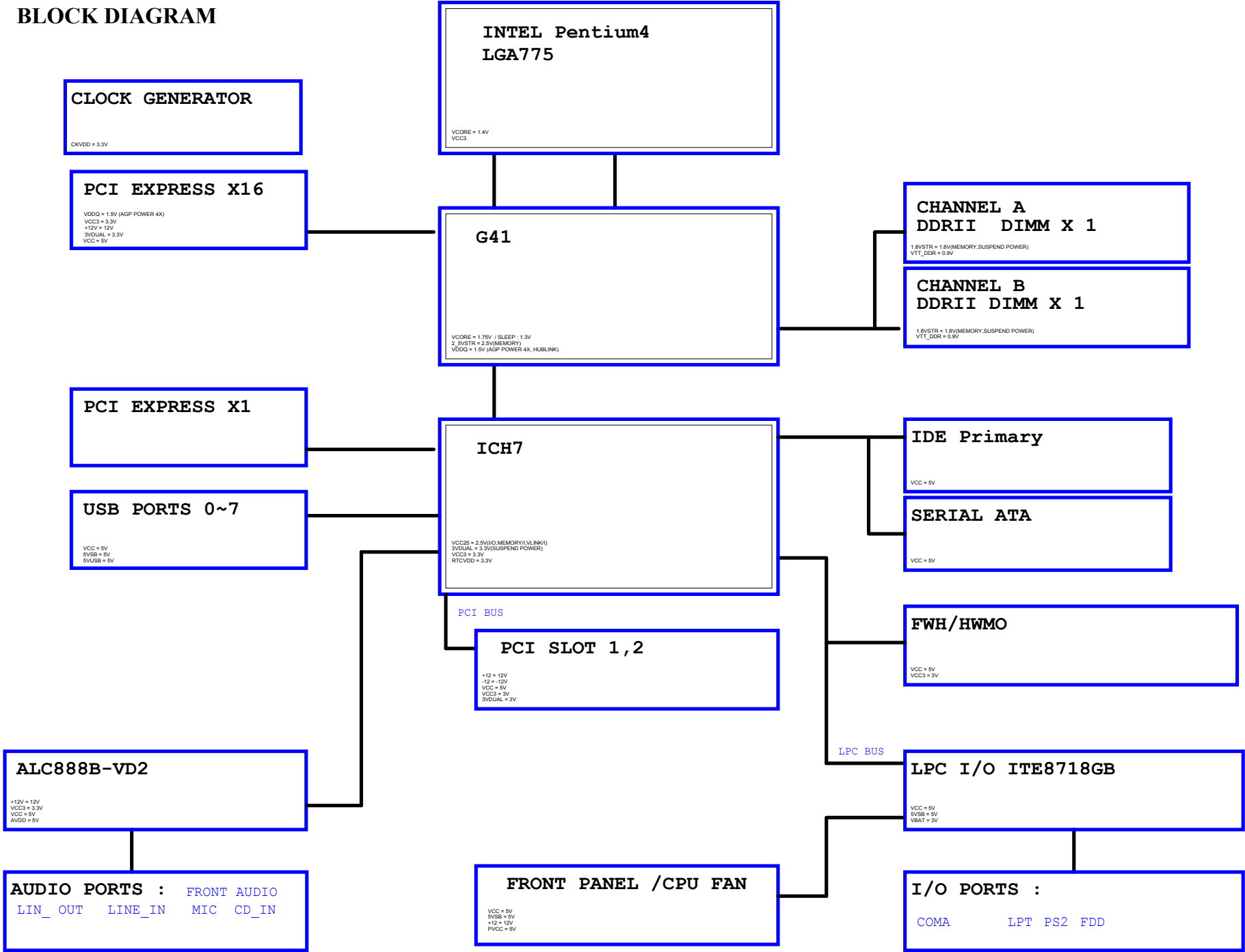
SHEET

TITLE

28	REAR AUDIO JACK
29	DISCRETE POWER
30	VCORE PWM ISL6312
31	ATX, OTHERS POWER
32	FRONT PANEL
33	REALTEK RTL8111E

<b>Gigabyte Technology</b>			
Title Cover Sheet			
Size Custom	Document Number <b>GA-G41M-ES2L</b>		Rev <b>1.4</b>
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BLOCK DIAGRAM

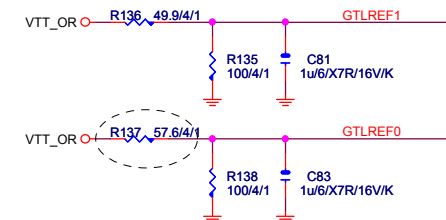
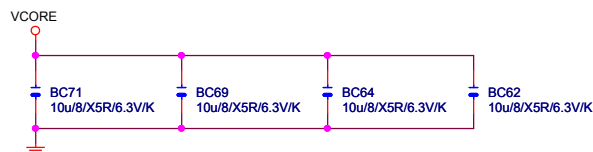
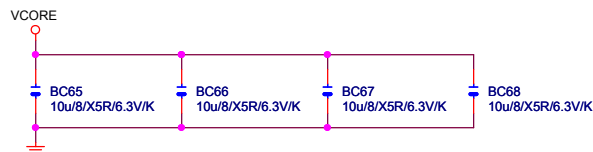


**Version: 1.4**

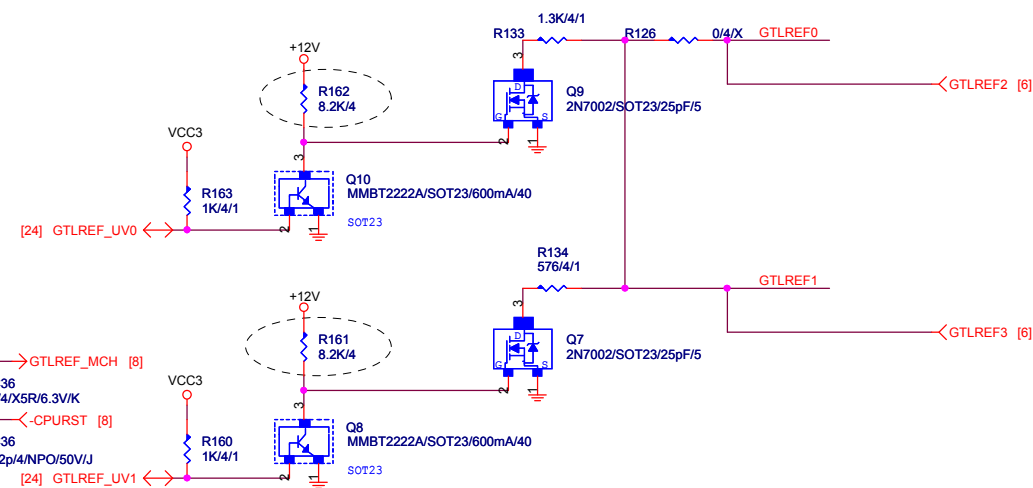
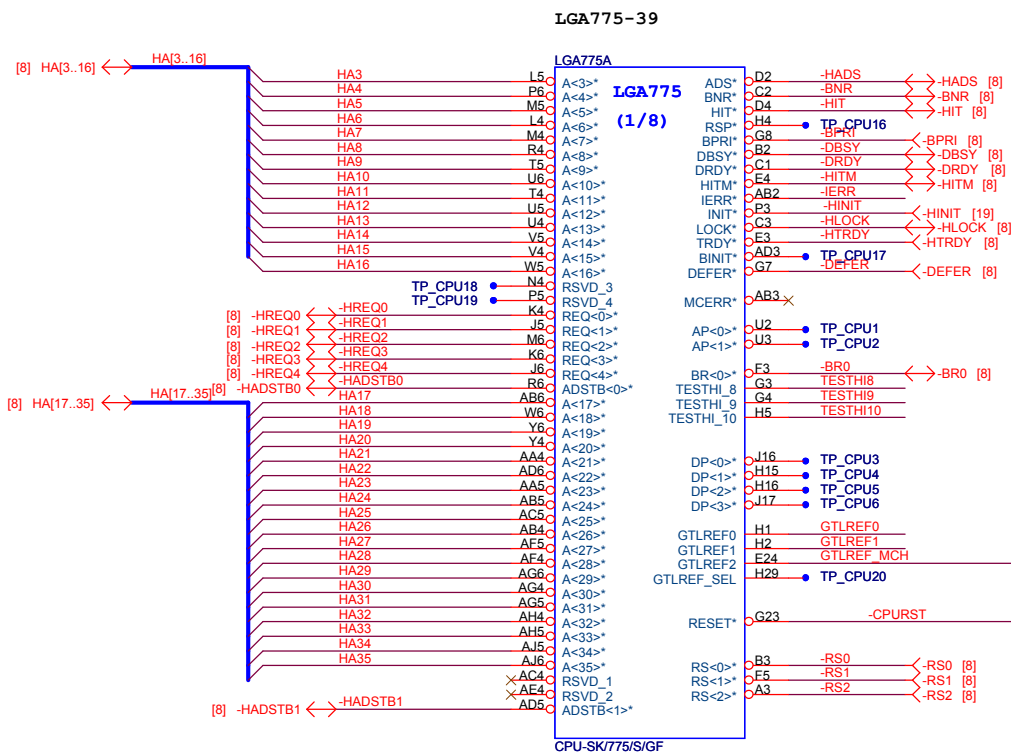
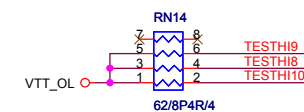
## 2010/06/23


[illegible][illegible]

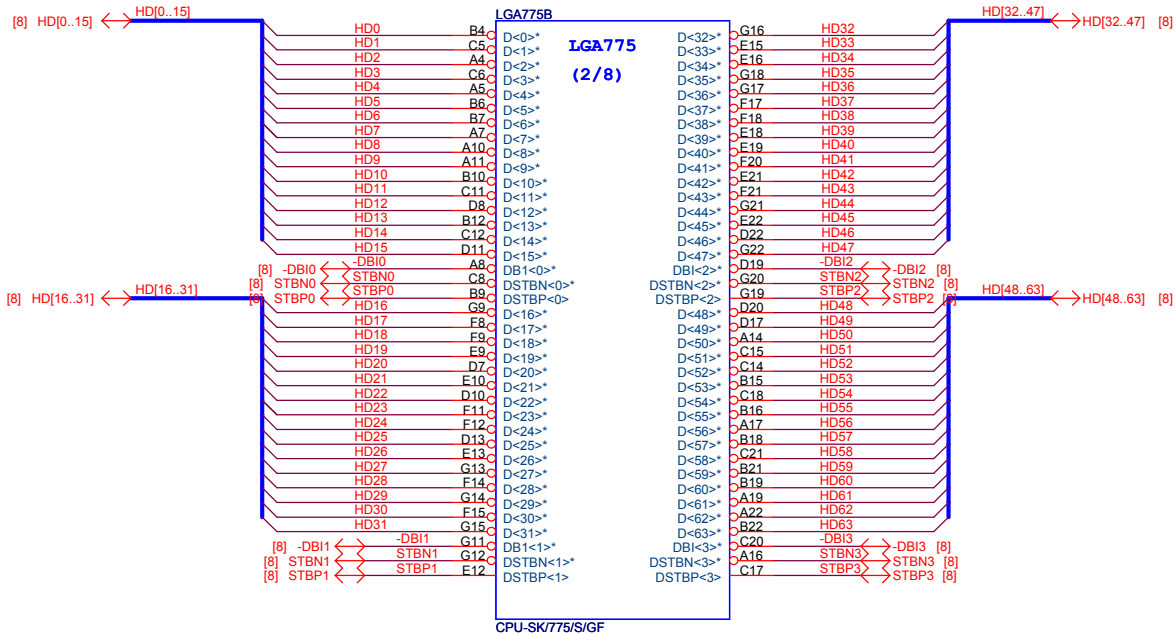
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<b>BOM &amp; PCB MODIFY HISTORY</b>			
Size Custom	Document Number <b>GA-G41M-ES2L</b>		Rev <b>1.4</b>
Date:	Wednesday, June 23, 2010	Sheet	3 of 33



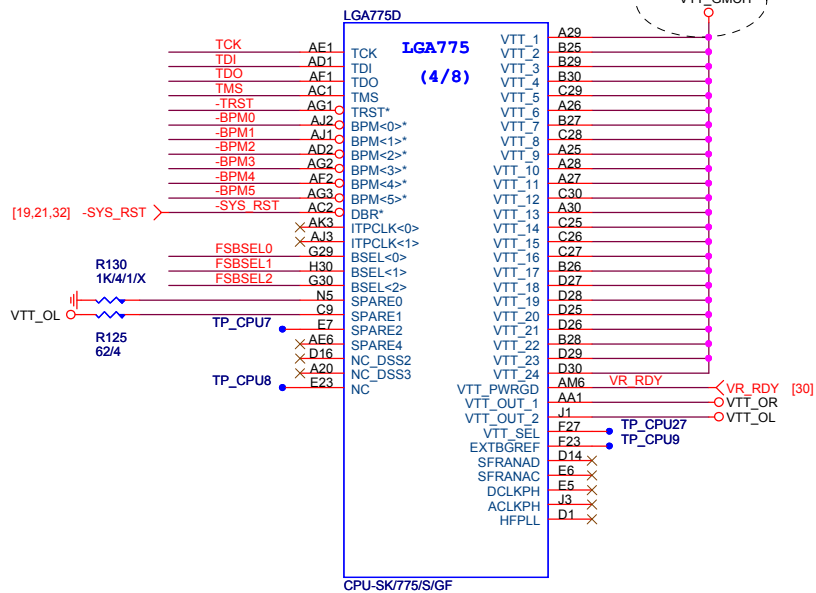
中間値0.9V



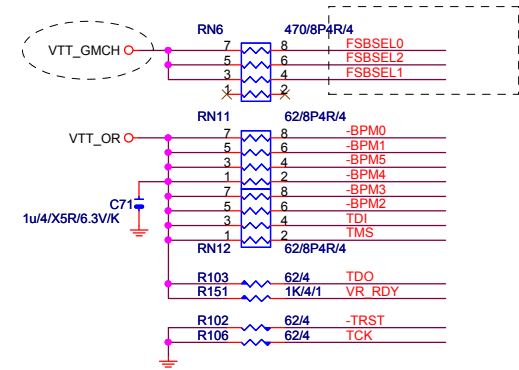
			
Title			
P4_LGA775-A			
Size	Document Number	Rev	
	GA-G41M-ES2L	1.4	
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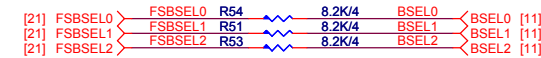
CPU-SK/775/S/GF



CPU-SK/775/S/GF



TO CLK GEN

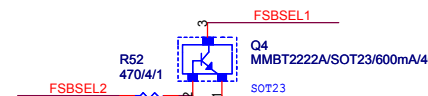


TO NB

## CPU

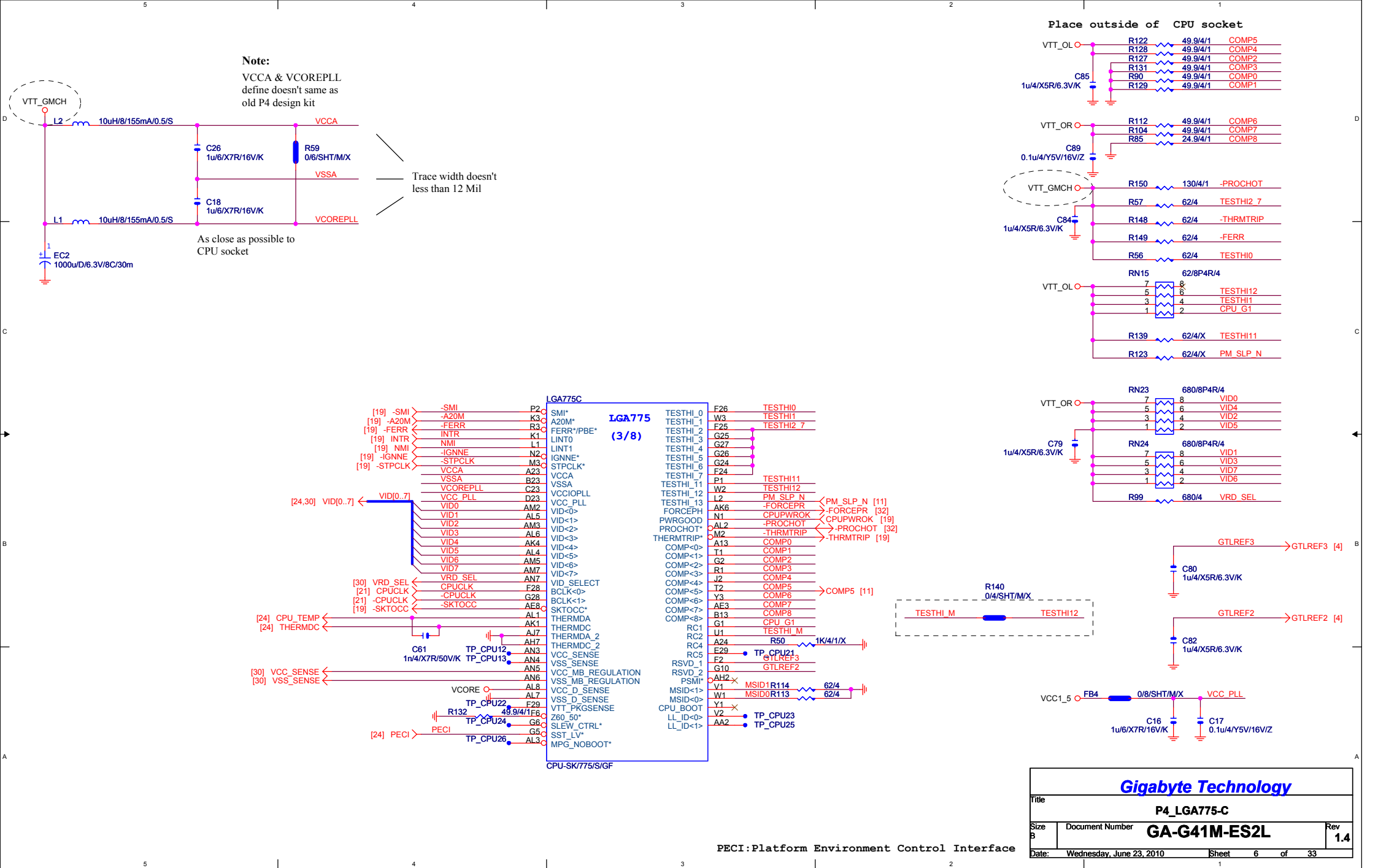
NA	FSB	FSA	
FSBSEL3	FSBSEL1	FSBSEL0	Clock
1	0	1	100MHz
0	0	1	133MHz
0	1	1	166MHz
0	1	0	200MHz
0	0	0	266MHz

X

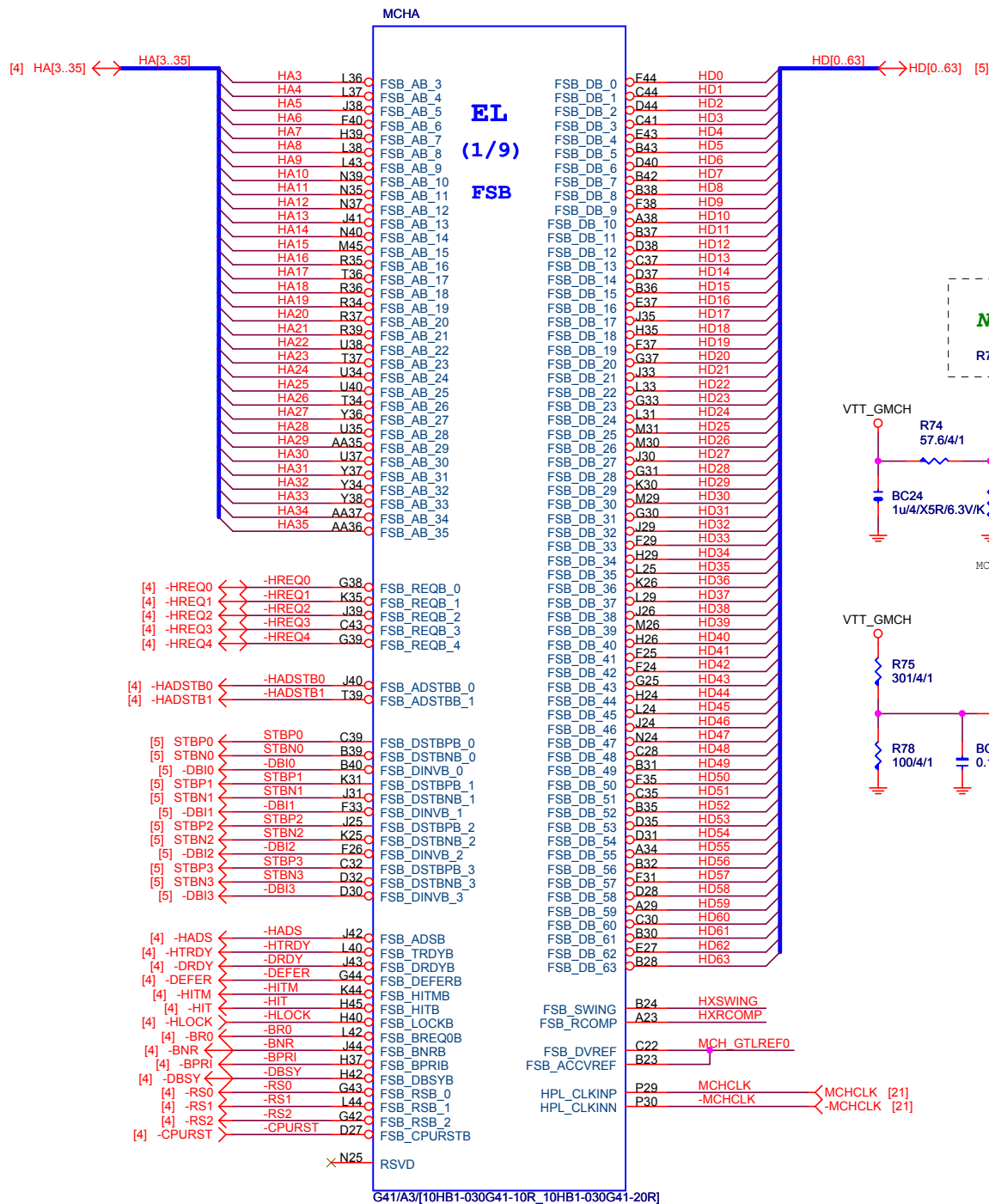


FIX FSB1600 LATCH FAIL

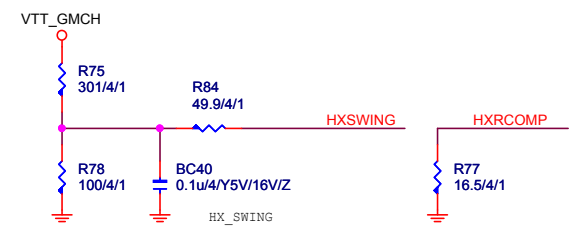
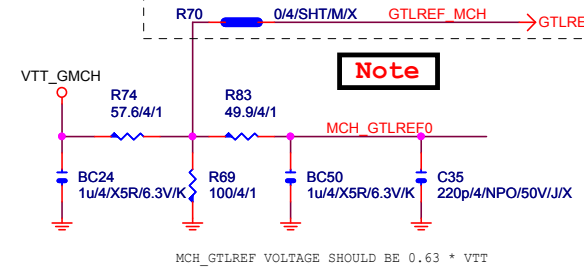
Gigabyte Technology			
Title			
P4_LGA775-B,D			
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Not used for CoreTM2 Duo and Wolfdale





## MCHB

EXP\_A\_RXP0 F6  
EXP\_A\_RXN0 G7  
EXP\_A\_RXP1 H6  
EXP\_A\_RXN1 G4  
EXP\_A\_RXP2 J6  
EXP\_A\_RXN2 J7  
EXP\_A\_RXP3 L6

PEG\_RXP\_0  
PEG\_RXN\_0  
PEG\_RXP\_1  
PEG\_RXN\_1  
PEG\_RXP\_2  
PEG\_RXN\_2  
PEG\_RXP\_3(HB\_HPD)

HDMI  
/DVI  
(B)

(HBTX2)PEG\_TXP\_0  
(HBTX2#)PEG\_TXN\_0  
(HBTX1)PEG\_TXP\_1  
(HBTX1#)PEG\_TXN\_1  
(HBTX0)PEG\_TXP\_2  
(HBTX0#)PEG\_TXN\_2  
(HBTXC)PEG\_TXP\_3  
(HBTXC#)PEG\_TXN\_3

C11 EXP\_A\_TXP0  
B11 EXP\_A\_TXN0  
A10 EXP\_A\_TXP1  
B9 EXP\_A\_TXN1  
C9 EXP\_A\_TXP2  
D8 EXP\_A\_TXN2  
B8 EXP\_A\_TXP3  
C7 EXP\_A\_TXN3

EXP\_A\_TXP[0..15] >>> EXP\_A\_TXP[0..15] [14]

EXP\_A\_TXN[0..15] >>> EXP\_A\_TXN[0..15] [14]

EXP\_A\_RXP[0..15] >>> EXP\_A\_RXP[0..15] [14]

EXP\_A\_RXN[0..15] >>> EXP\_A\_RXN[0..15] [14]

EXP\_A\_RXN3 L7  
EXP\_A\_RXP4 N9  
EXP\_A\_RXN4 N10  
EXP\_A\_RXP5 N7  
EXP\_A\_RXN5 N6  
EXP\_A\_RXP6 R7  
EXP\_A\_RXN6 R6  
EXP\_A\_RXP7 R9

PEG\_RXN\_3  
PEG\_RXP\_4  
PEG\_RXN\_4  
PEG\_RXP\_5  
PEG\_RXN\_5  
PEG\_RXP\_6  
PEG\_RXN\_6  
PEG\_RXP\_7(HC\_HPD)

HDMI  
/DVI  
(C)

(HCTX2)PEG\_TXP\_4  
(HCTX2#)PEG\_TXN\_4  
(HCTX1)PEG\_TXP\_5  
(HCTX1#)PEG\_TXN\_5  
(HCTX0)PEG\_TXP\_6  
(HCTX0#)PEG\_TXN\_6  
(HCTXC)PEG\_TXP\_7  
(HCTXC#)PEG\_TXN\_7

B7 EXP\_A\_TXP4  
B6 EXP\_A\_TXN4  
B3 EXP\_A\_TXP5  
B4 EXP\_A\_TXN5  
D2 EXP\_A\_TXP6  
C2 EXP\_A\_TXN6  
H2 EXP\_A\_TXP7  
G2 EXP\_A\_TXN7

EXP\_A\_RXN7 R10  
EXP\_A\_RXP8 U10  
EXP\_A\_RXN8 U9  
EXP\_A\_RXP9 U6  
EXP\_A\_RXN9 U7  
EXP\_A\_RXP10 AA9  
EXP\_A\_RXN10 AA10  
EXP\_A\_RXP11 R4  
EXP\_A\_RXN11 P4  
EXP\_A\_RXP12 AA7  
EXP\_A\_RXN12 AA6  
EXP\_A\_RXP13 AB10  
EXP\_A\_RXN13 AB9  
EXP\_A\_RXP14 AB3  
EXP\_A\_RXN14 AA2  
EXP\_A\_RXP15 AD10  
EXP\_A\_RXN15 AD11

PEG\_RXN\_7  
PEG\_RXP\_8  
PEG\_RXN\_8  
PEG\_RXP\_9  
PEG\_RXN\_9  
PEG\_RXP\_10  
PEG\_RXN\_10  
PEG\_RXP\_11  
PEG\_RXN\_11  
PEG\_RXP\_12  
PEG\_RXN\_12  
PEG\_RXP\_13  
PEG\_RXN\_13  
PEG\_RXP\_14  
PEG\_RXN\_14  
PEG\_RXP\_15  
PEG\_RXN\_15

EL  
(2/9)

PCIE

PEG\_TXP\_8  
PEG\_TXN\_8  
PEG\_TXP\_9  
PEG\_TXN\_9  
PEG\_TXP\_10  
PEG\_TXN\_10  
PEG\_TXP\_11  
PEG\_TXN\_11  
PEG\_TXP\_12  
PEG\_TXN\_12  
PEG\_TXP\_13  
PEG\_TXN\_13  
PEG\_TXP\_14  
PEG\_TXN\_14  
PEG\_TXP\_15  
PEG\_TXN\_15

J2 EXP\_A\_TXP8  
K2 EXP\_A\_TXN8  
K1 EXP\_A\_TXP9  
L2 EXP\_A\_TXN9  
P2 EXP\_A\_TXP10  
M2 EXP\_A\_TXN10  
T2 EXP\_A\_TXP11  
R1 EXP\_A\_TXN11  
U2 EXP\_A\_TXP12  
V2 EXP\_A\_TXN12  
W4 EXP\_A\_TXP13  
V3 EXP\_A\_TXN13  
AA4 EXP\_A\_TXP14  
Y4 EXP\_A\_TXN14  
AC1 EXP\_A\_TXP15  
AB2 EXP\_A\_TXN15

Close to MCH

[18] DMI\_MCH\_IT\_MR\_0\_DP >>> DMI\_MCH\_IT\_MR\_0\_DP AD7  
[18] DMI\_MCH\_IT\_MR\_0\_DN >>> DMI\_MCH\_IT\_MR\_0\_DN AD8  
[18] DMI\_MCH\_IT\_MR\_1\_DP >>> DMI\_MCH\_IT\_MR\_1\_DP AE9  
[18] DMI\_MCH\_IT\_MR\_1\_DN >>> DMI\_MCH\_IT\_MR\_1\_DN AE10  
[18] DMI\_MCH\_IT\_MR\_2\_DP >>> DMI\_MCH\_IT\_MR\_2\_DP AE6  
[18] DMI\_MCH\_IT\_MR\_2\_DN >>> DMI\_MCH\_IT\_MR\_2\_DN AE7  
[18] DMI\_MCH\_IT\_MR\_3\_DP >>> DMI\_MCH\_IT\_MR\_3\_DP AF9  
[18] DMI\_MCH\_IT\_MR\_3\_DN >>> DMI\_MCH\_IT\_MR\_3\_DN AF8

DMI\_RXP\_0  
DMI\_RXN\_0  
DMI\_RXP\_1  
DMI\_RXN\_1  
DMI\_RXP\_2  
DMI\_RXN\_2  
DMI\_RXP\_3  
DMI\_RXN\_3

DMI

DMI\_TXP\_0  
DMI\_TXN\_0  
DMI\_TXP\_1  
DMI\_TXN\_1  
DMI\_TXP\_2  
DMI\_TXN\_2  
DMI\_TXP\_3  
DMI\_TXN\_3

AC2 DMI\_MCH\_MT\_IR\_0\_DP C50  
AD2 DMI\_MCH\_MT\_IR\_0\_DN C52  
AD4 DMI\_MCH\_MT\_IR\_1\_DP C51  
AE4 DMI\_MCH\_MT\_IR\_1\_DN C53  
AE2 DMI\_MCH\_MT\_IR\_2\_DP C54  
AE2 DMI\_MCH\_MT\_IR\_2\_DN C57  
AF4 DMI\_MCH\_MT\_IR\_3\_DP C55  
AG4 DMI\_MCH\_MT\_IR\_3\_DN C58

0.1u/4/X7R/16V/K >>> DMI\_ICH\_MT\_IR\_0\_DP [18]  
0.1u/4/X7R/16V/K >>> DMI\_ICH\_MT\_IR\_0\_DN [18]  
0.1u/4/X7R/16V/K >>> DMI\_ICH\_MT\_IR\_1\_DP [18]  
0.1u/4/X7R/16V/K >>> DMI\_ICH\_MT\_IR\_1\_DN [18]  
0.1u/4/X7R/16V/K >>> DMI\_ICH\_MT\_IR\_2\_DP [18]  
0.1u/4/X7R/16V/K >>> DMI\_ICH\_MT\_IR\_2\_DN [18]  
0.1u/4/X7R/16V/K >>> DMI\_ICH\_MT\_IR\_3\_DP [18]  
0.1u/4/X7R/16V/K >>> DMI\_ICH\_MT\_IR\_3\_DN [18]

[21] SRCCLK\_MCH >>> SRCCLK\_MCH D9  
[21] -SRCCLK\_MCH >>> -SRCCLK\_MCH E9

EXP\_CLKP  
EXP\_CLKN  
SDVO\_CTRLDATA  
SDVO\_CTRLCLK

EXP\_RCOMP  
EXP\_COMPI  
EXP\_ICOMP

Y7  
Y8  
Y6

GRCOMP >>> VCC1\_1  
R93  
49.9/4/1

[14] SDVO\_CTRL\_DATA <<< SDVO\_CTRL\_DATA J13  
[14] SDVO\_CTRL\_CLK <<< SDVO\_CTRL\_CLK G13

PORTB

AB13  
AD13

EXP\_RBIAS

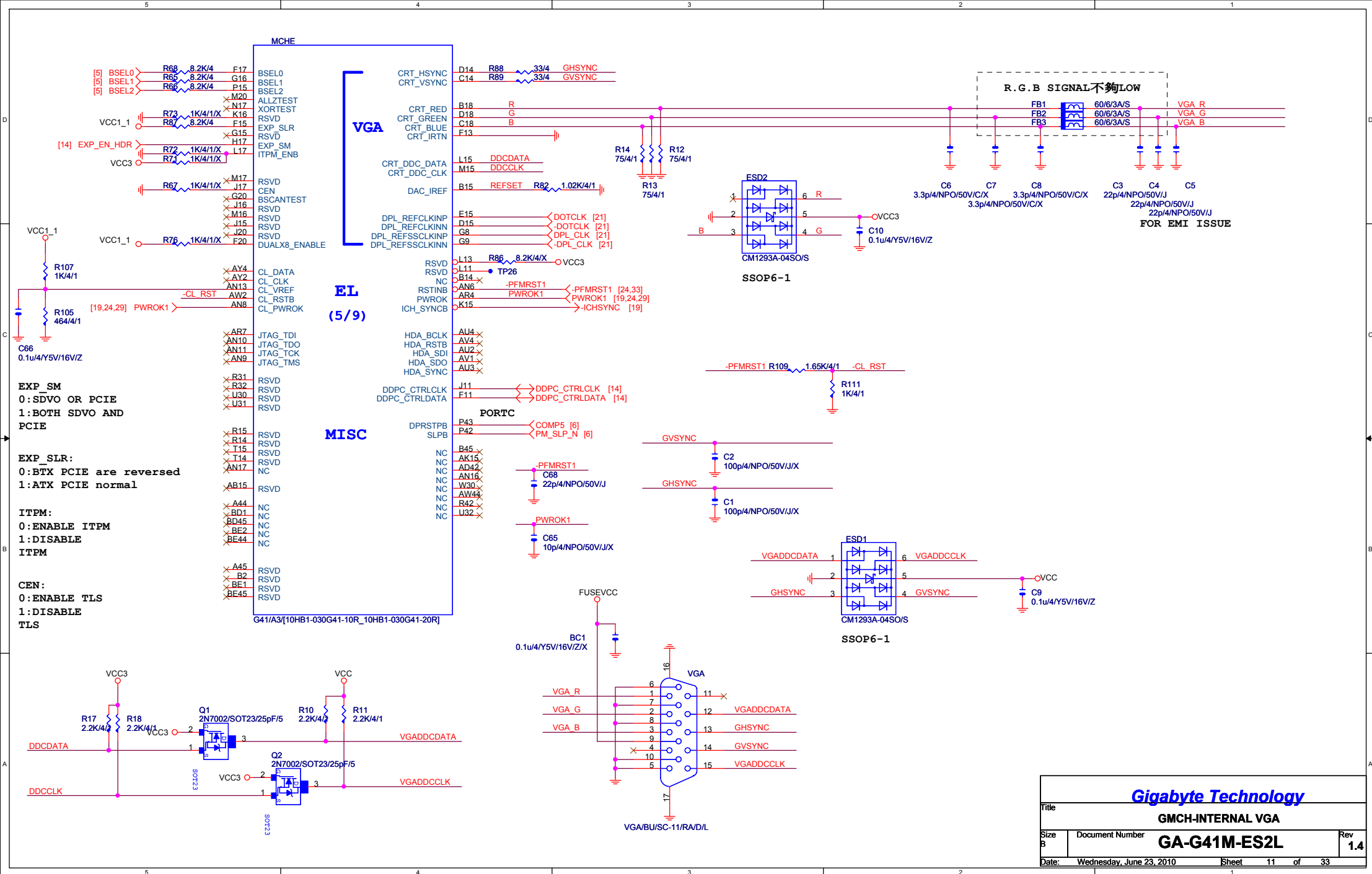
AG1

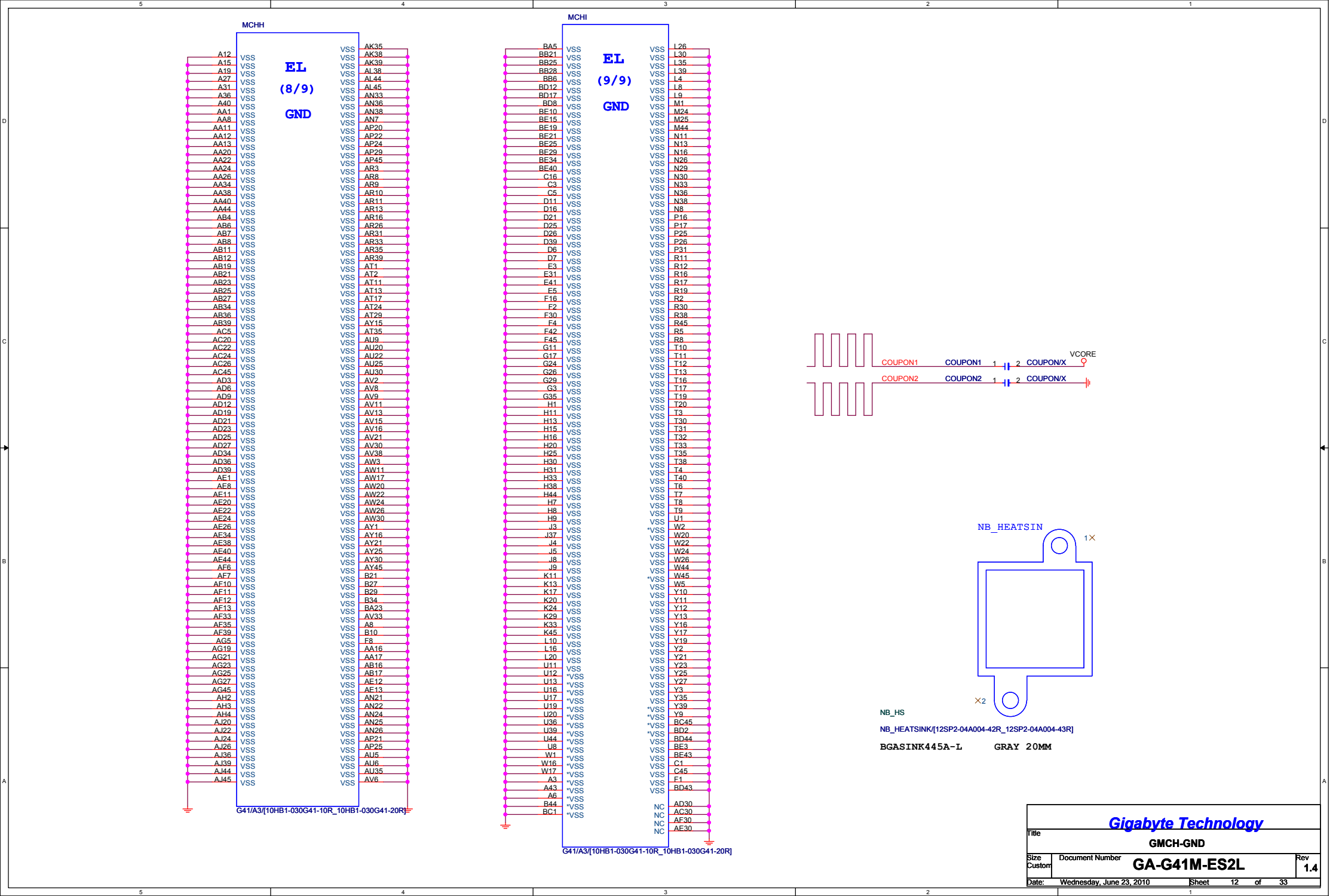
GRBIAS >>> GND  
R96  
750/4/1

G41/A3(10HB1-030G41-10R\_10HB1-030G41-20R)

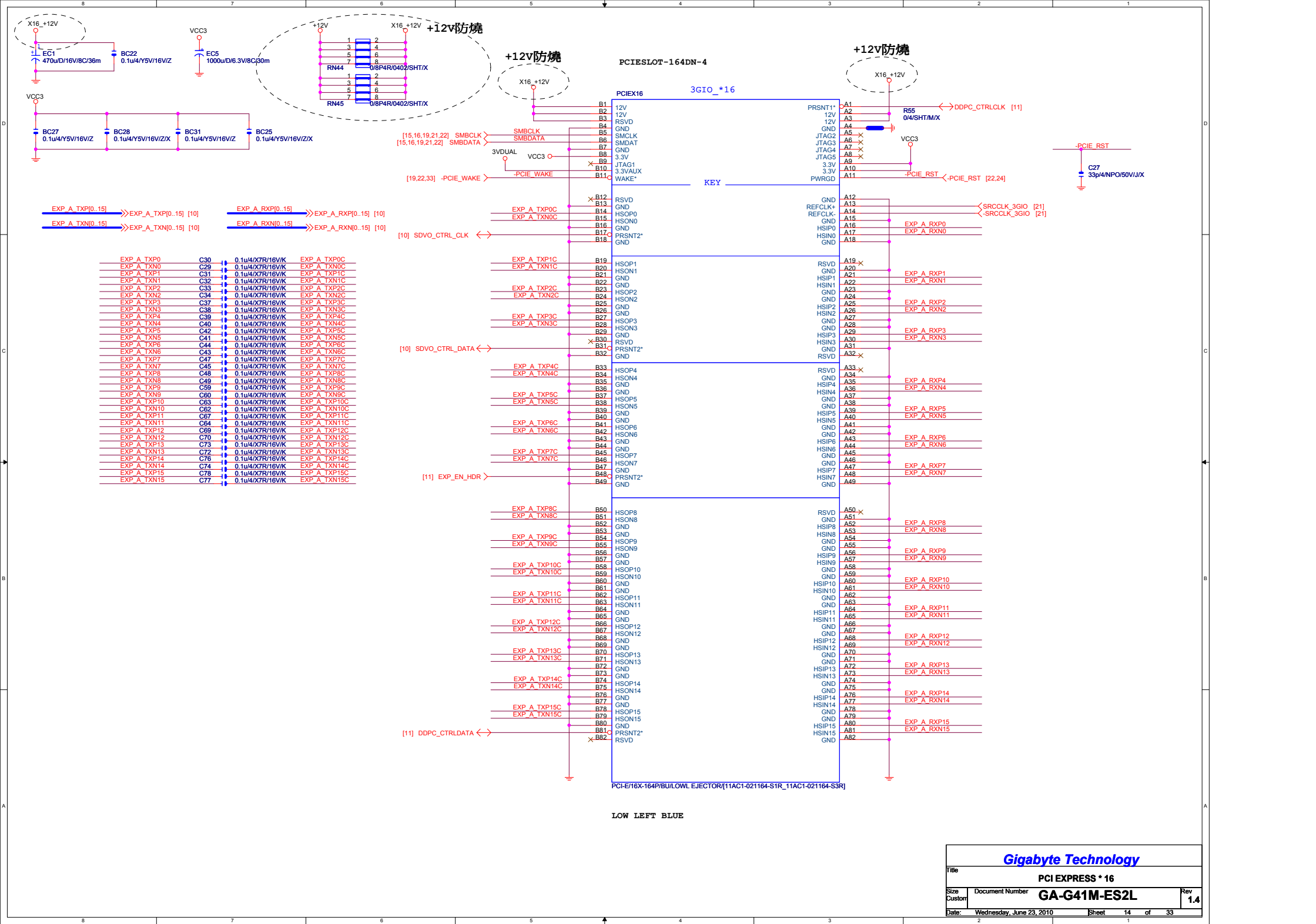
Gigabyte Technology

Title		
GMCH-PCI E & DMI		
Size	Document Number	Rev
Custom	GA-G41M-ES2L	1.4
Date:	Wednesday, June 23, 2010	Sheet 10 of 33

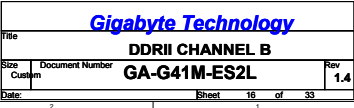




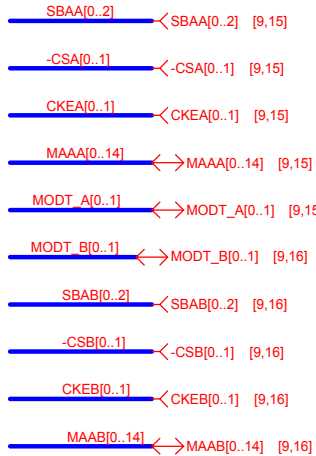
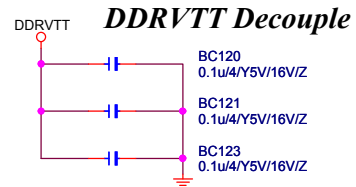
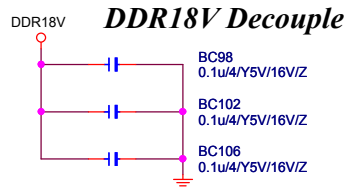
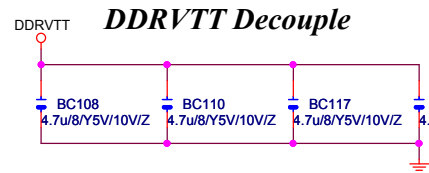
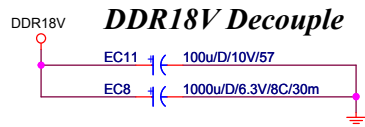




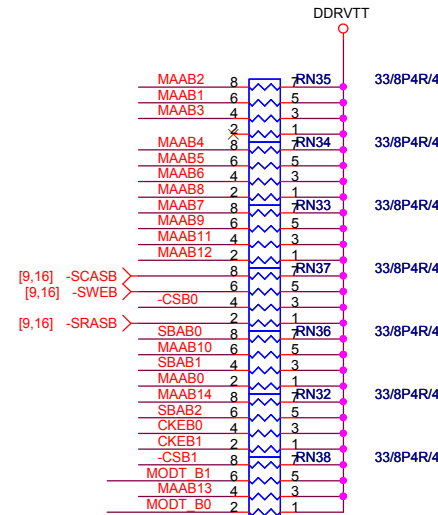
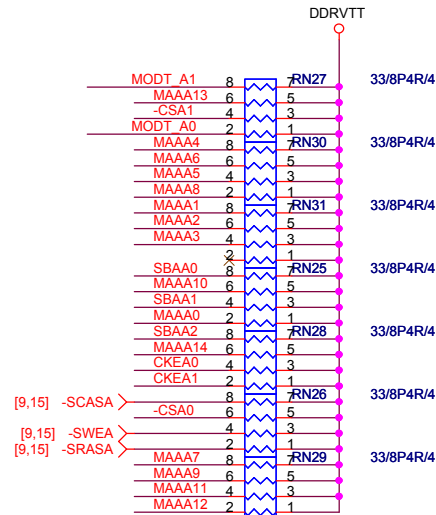
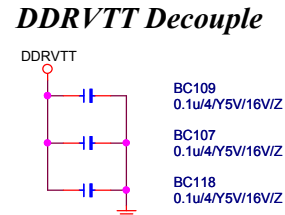
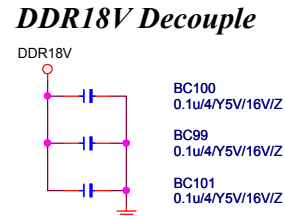




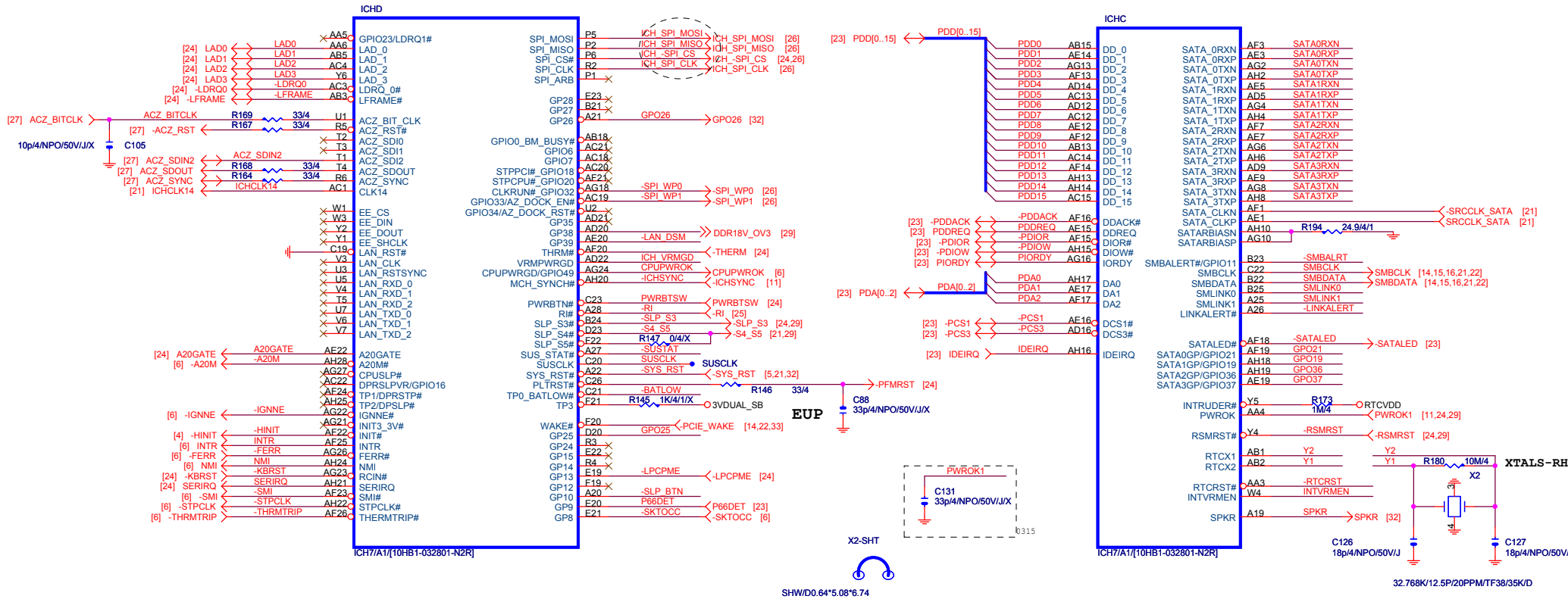
# DDR TERMINATION CHANNEL A



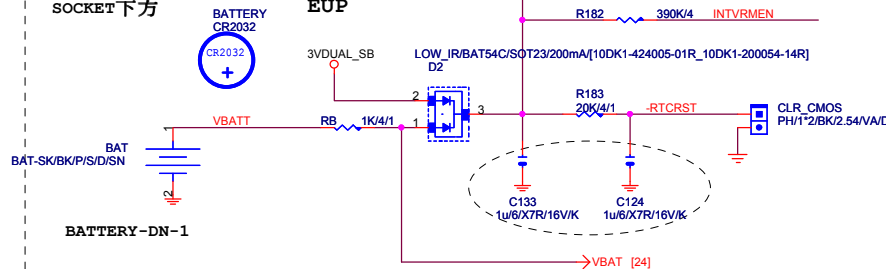
# DDR TERMINATION CHANNEL B



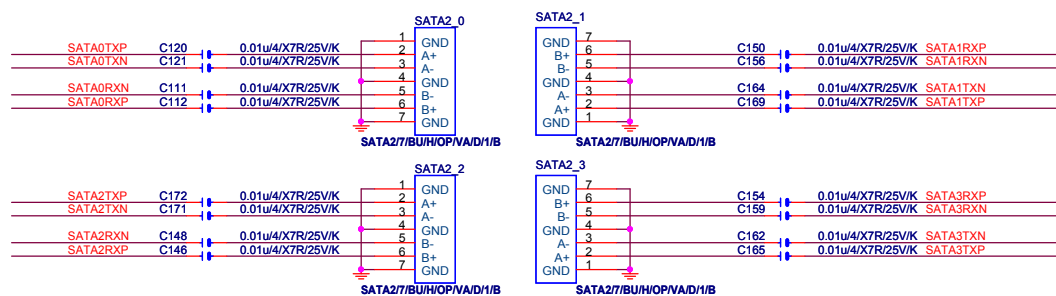




NEW TYPE: BATTERY-DUAL-4  
RB 不可放在BATTERY  
SOCKET下方



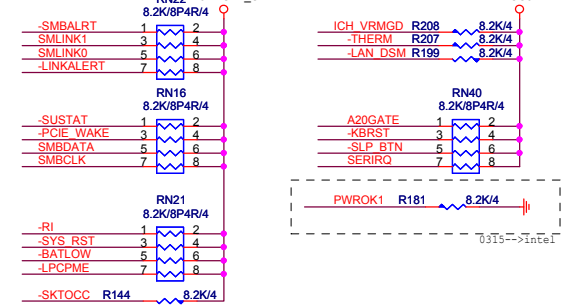
H1X7-SATA2-HS-MASK



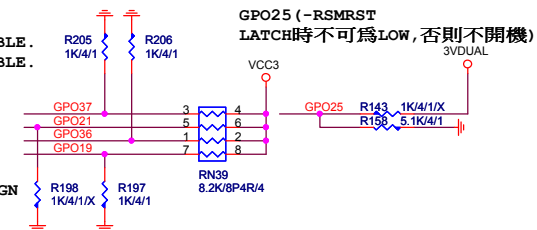
GPO37 LOW OLD DDR18V OC, TABLE.  
HI PATCH DDR18V OC, TABLE.

R1.1 EUP DESIGN  
GPIO21 [H1]

EUP



GPO25 PULL-DOWN CHECK  
GPO25 (-RSMRST)  
LATCH時不可為LOW, 否則不開機)

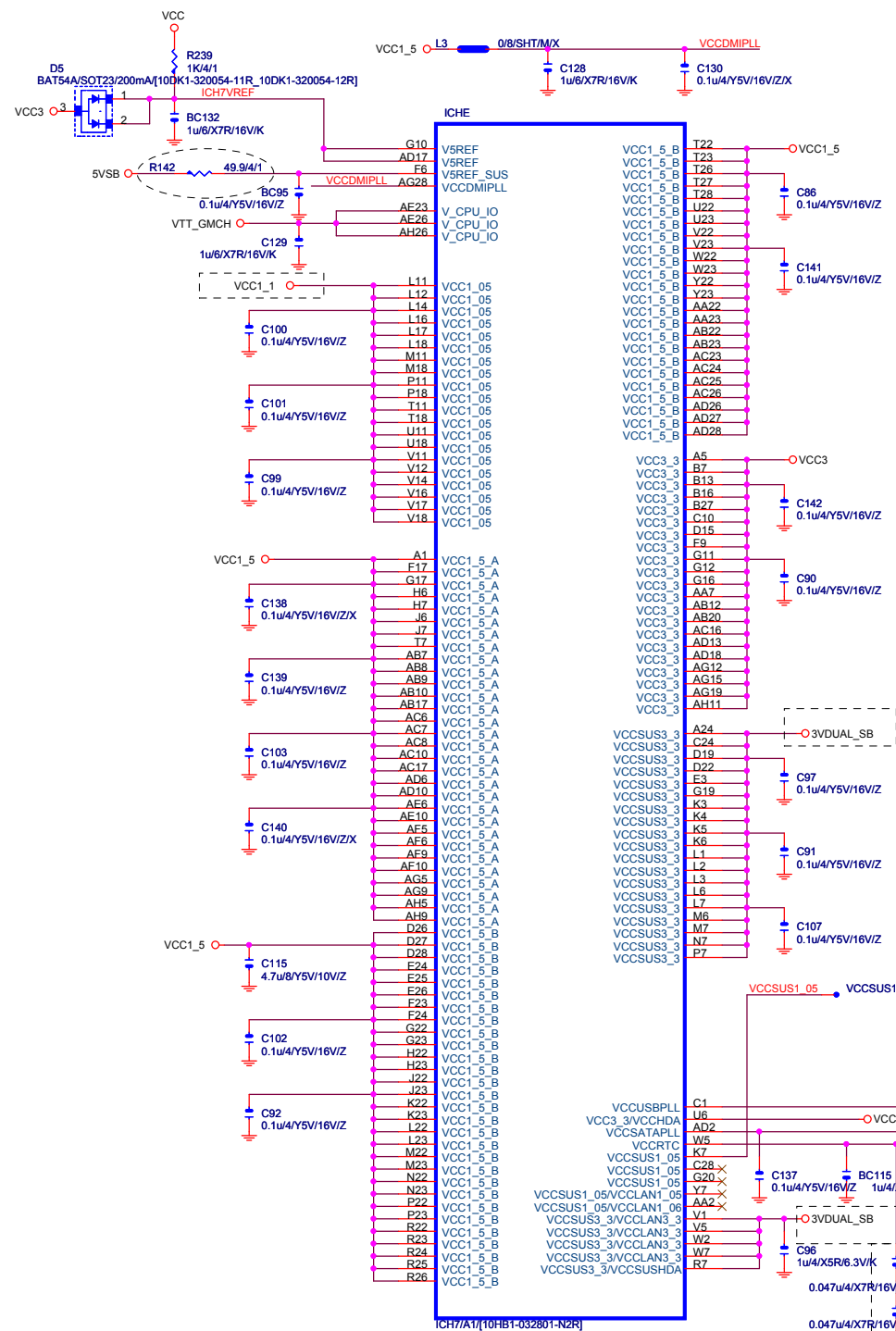


Gigabyte Technology

Title			IC7-IDE, SATA, GPIO, CTRL		
Size	Document Number	GA-G41M-ES2L			Rev
Custom					1.4
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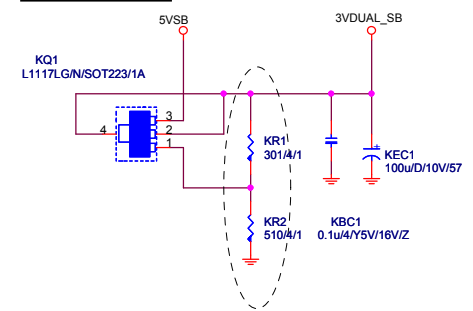
ICHF			
A4	VSS1	VSS101	R14
A23	VSS2	VSS102	R15
B1	VSS3	VSS103	R16
B8	VSS4	VSS104	R17
B11	VSS5	VSS105	R18
B14	VSS6	VSS106	T8
B17	VSS7	VSS107	T12
B20	VSS8	VSS108	T13
B26	VSS9	VSS109	T14
B28	VSS10	VSS110	T15
C2	VSS11	VSS111	T16
C6	VSS12	VSS112	T17
D10	VSS13	VSS113	U4
D13	VSS14	VSS114	U12
D18	VSS15	VSS115	U13
D21	VSS16	VSS116	U14
D24	VSS17	VSS117	U15
E1	VSS18	VSS118	U16
E2	VSS19	VSS119	U17
E8	VSS20	VSS120	U25
E15	VSS21	VSS121	U26
F3	VSS22	VSS122	U2
F4	VSS23	VSS123	V1
F5	VSS24	VSS124	V13
F12	VSS25	VSS125	V15
F27	VSS26	VSS126	V27
F28	VSS27	VSS127	V28
G1	VSS28	VSS128	W6
G2	VSS29	VSS129	W24
G5	VSS30	VSS130	W25
G6	VSS31	VSS131	W26
G9	VSS32	VSS132	Y3
G14	VSS33	VSS133	Y24
G18	VSS34	VSS134	Y27
G21	VSS35	VSS135	Y28
G24	VSS36	VSS136	AA1
G25	VSS37	VSS137	AA24
G26	VSS38	VSS138	AA25
H3	VSS39	VSS139	AA26
H4	VSS40	VSS140	AB4
H24	VSS41	VSS141	AB6
H27	VSS43	VSS143	AB11
H28	VSS44	VSS144	AB14
J1	VSS45	VSS145	AB16
J2	VSS46	VSS146	AB19
J5	VSS47	VSS147	AB21
J24	VSS48	VSS148	AB24
J25	VSS49	VSS149	AB27
J26	VSS50	VSS150	AB28
K24	VSS51	VSS151	AC2
K27	VSS52	VSS152	AC5
K28	VSS53	VSS153	AC9
L13	VSS54	VSS154	AC11
L15	VSS55	VSS155	AD1
L24	VSS56	VSS156	AD3
L25	VSS57	VSS157	AD4
L26	VSS58	VSS158	AD7
M3	VSS59	VSS159	AD8
M4	VSS60	VSS160	AD11
M5	VSS61	VSS161	AD15
M12	VSS62	VSS162	AD19
M13	VSS63	VSS163	AD23
M14	VSS64	VSS164	AE2
M15	VSS65	VSS165	AE4
M16	VSS66	VSS166	AE8
M17	VSS67	VSS167	AE11
M24	VSS68	VSS168	AE13
M27	VSS69	VSS169	AE18
M28	VSS70	VSS170	AE21
N1	VSS71	VSS171	AE24
N2	VSS72	VSS172	AE2
N5	VSS73	VSS173	AF4
N6	VSS74	VSS174	AF8
N11	VSS75	VSS175	AF11
N12	VSS76	VSS176	AG3
N13	VSS77	VSS177	AG7
N14	VSS78	VSS178	AG14
N15	VSS79	VSS179	AG17
N16	VSS80	VSS180	AG20
N17	VSS81	VSS181	AG24
N18	VSS82	VSS182	AH1
N24	VSS83	VSS183	AH3
N25	VSS84	VSS184	AH7
N26	VSS85	VSS185	AH12
P3	VSS86	VSS186	AH23
P4	VSS87	VSS187	AH27
P12	VSS88	VSS188	E4
P13	VSS89	VSS189	AG11
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		

ICH7/A1/[10HB1-032801-N2R]



ICH7/A1/[10HB1-032801-N2R]

### 3VDUAL\_SB EUP



ESD

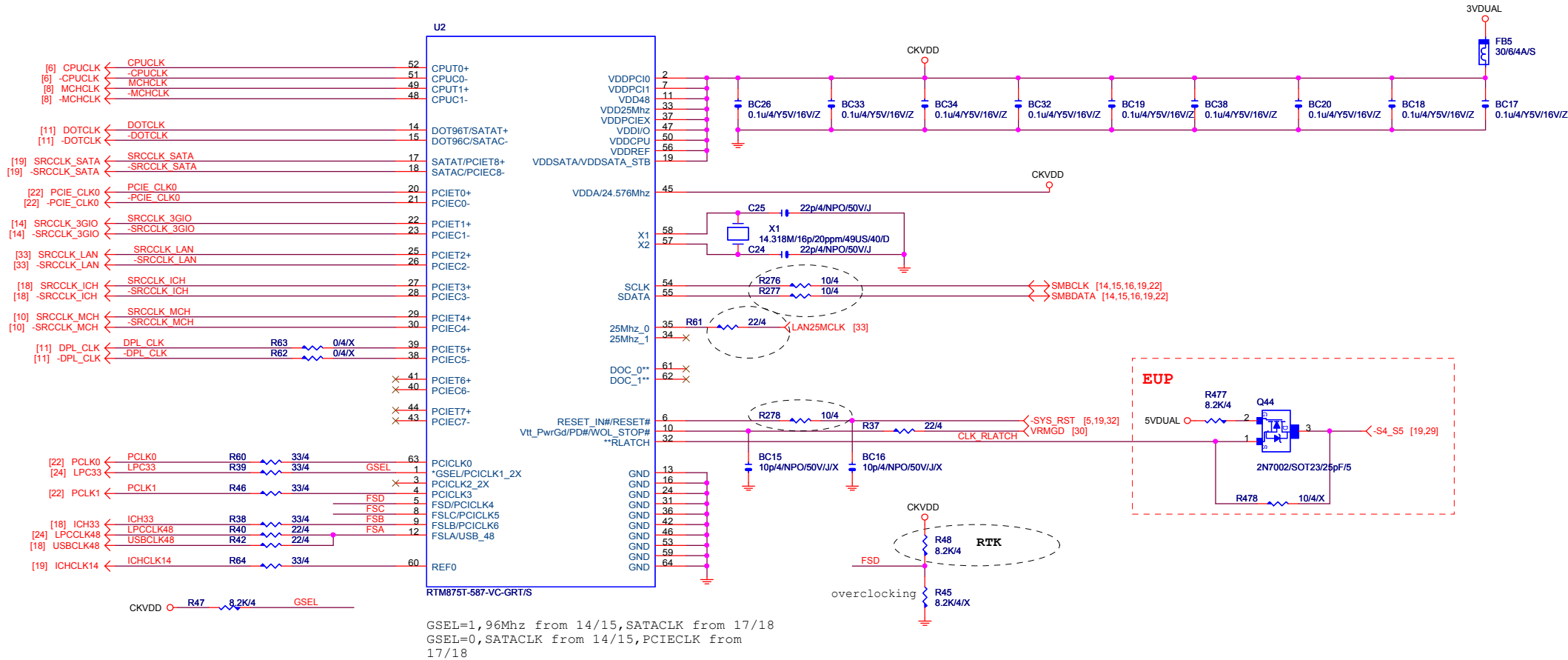
FOR RMA

ESD

FOR 漏電

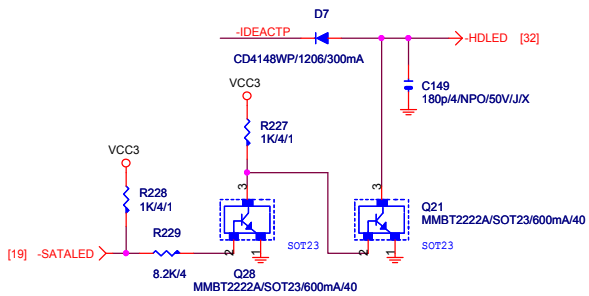
Gigabyte Technology

Title			ICH7-PWR & GND
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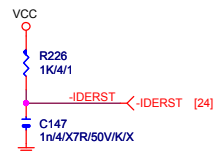




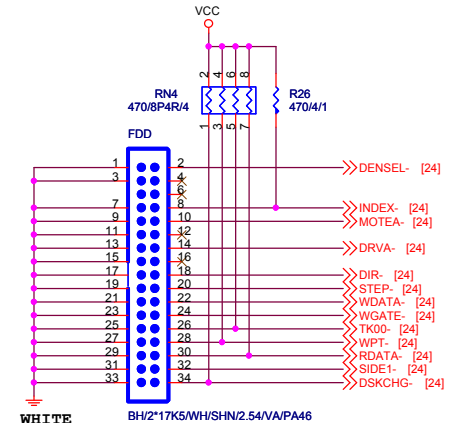
# IDE/SATA LED



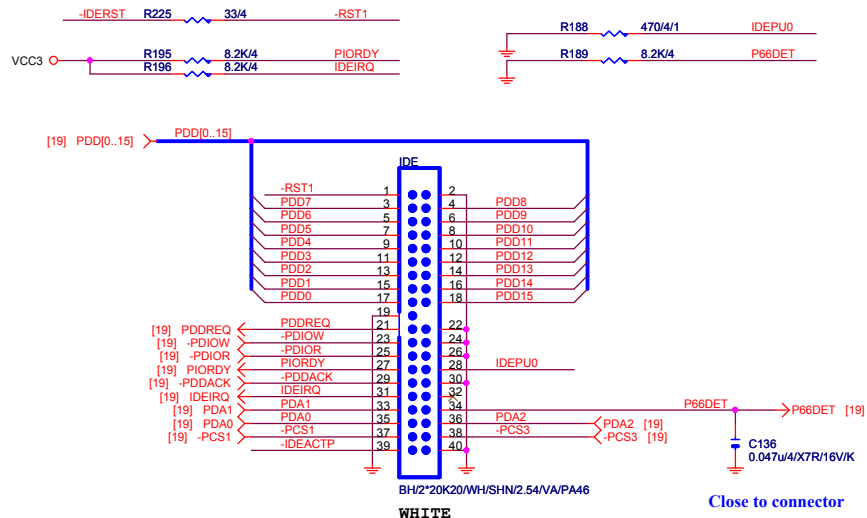
# IDE RESET



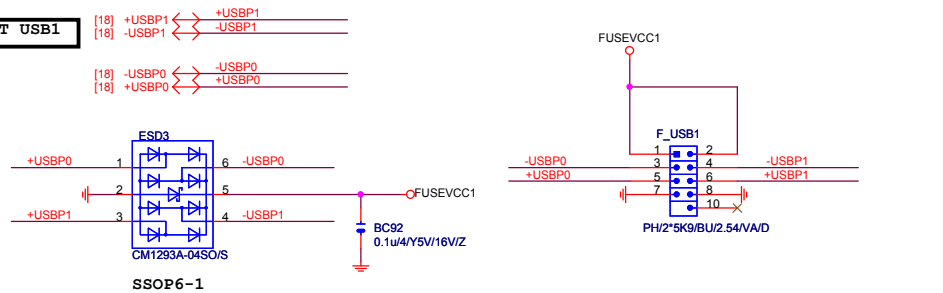
# FLOPPY



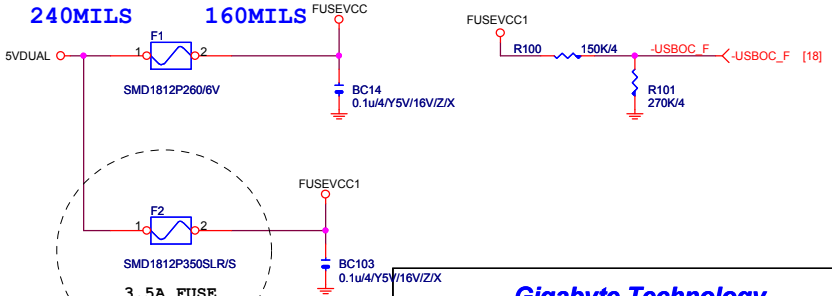
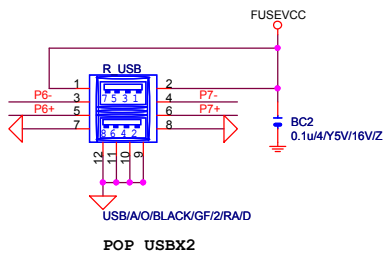
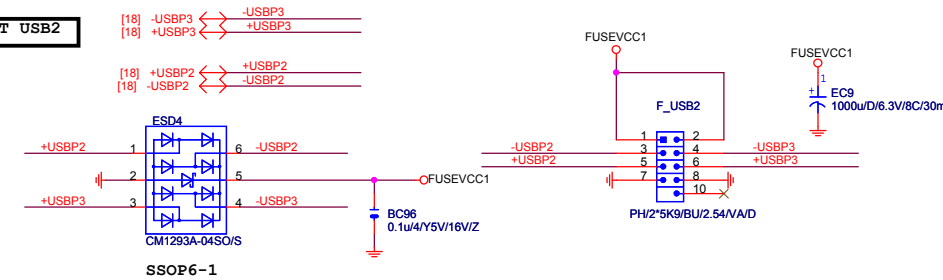
# IDE



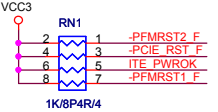
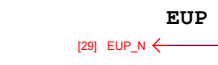
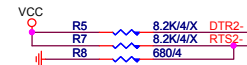
# FRONT USB1



# FRONT USB2

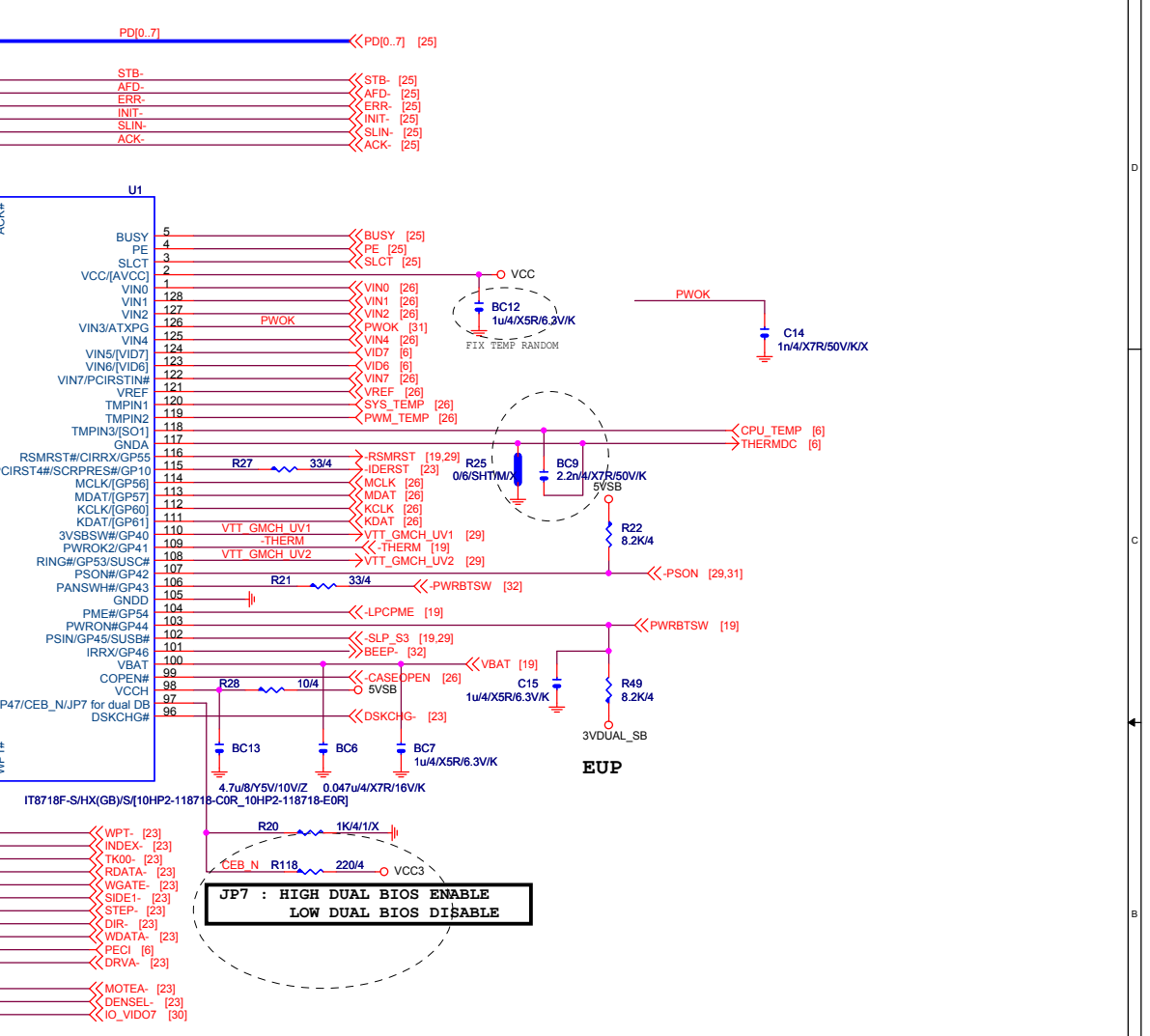
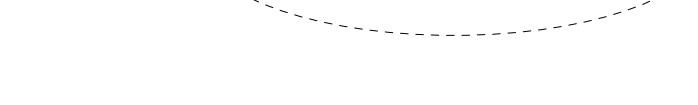
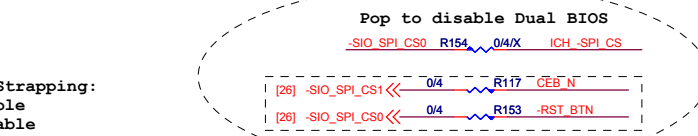
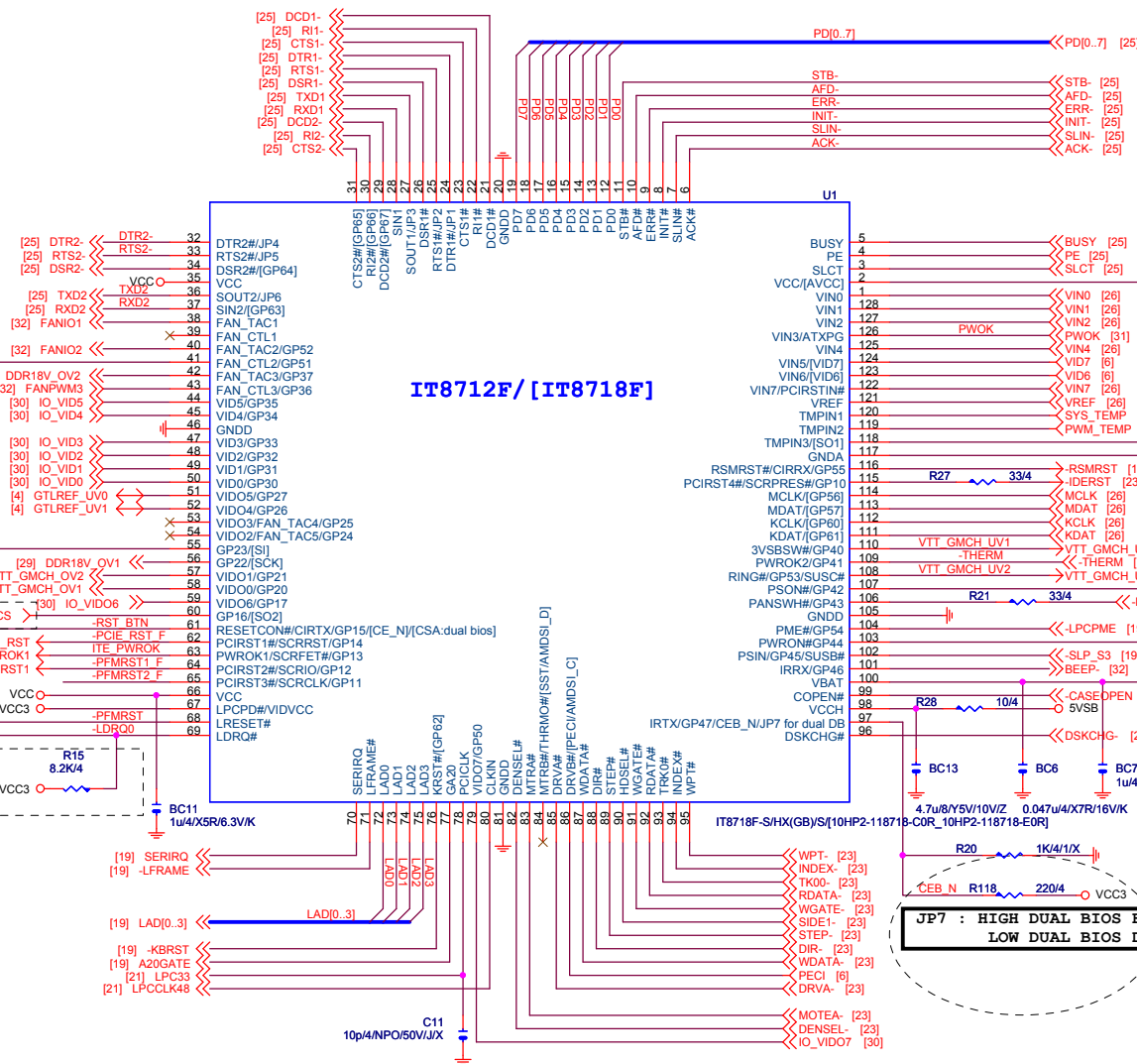


RTS2- ==LOW CPU FAN 50%  
==HIGH 100%  
**DEFAULT 50%**



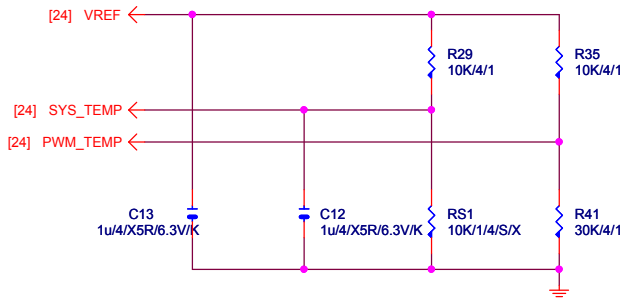
Dual BIOS:  
GB logo :Pin 61 (GP15/CSA)  
GB logo :Pin 59 (GP17/CSB)  
Pin 59 Dual BIOS ,Power On Strapping:  
H ==>Dual BIOS function Enable  
L ==>Dual BIOS function Disable

1.2V or 3.3V tolerance select.  
1.2V OUTPUT 接 VTT\_GMCH  
3.3V OUTPUT 接 3.3V  
LPCPD# =VIDVCC

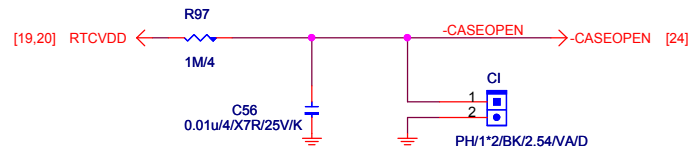




## TEMP H/W MONITOR

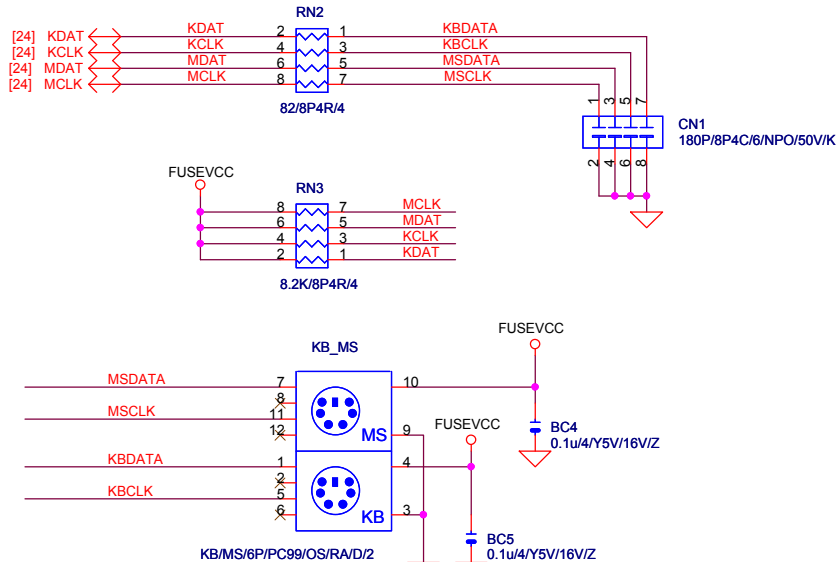


## CASE OPEN

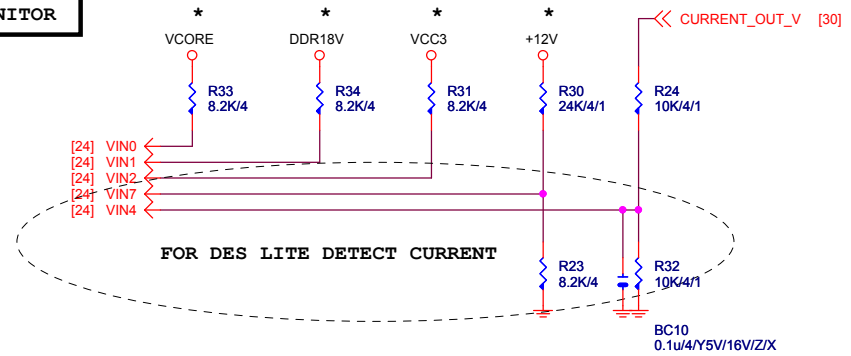


Case Open Circuits

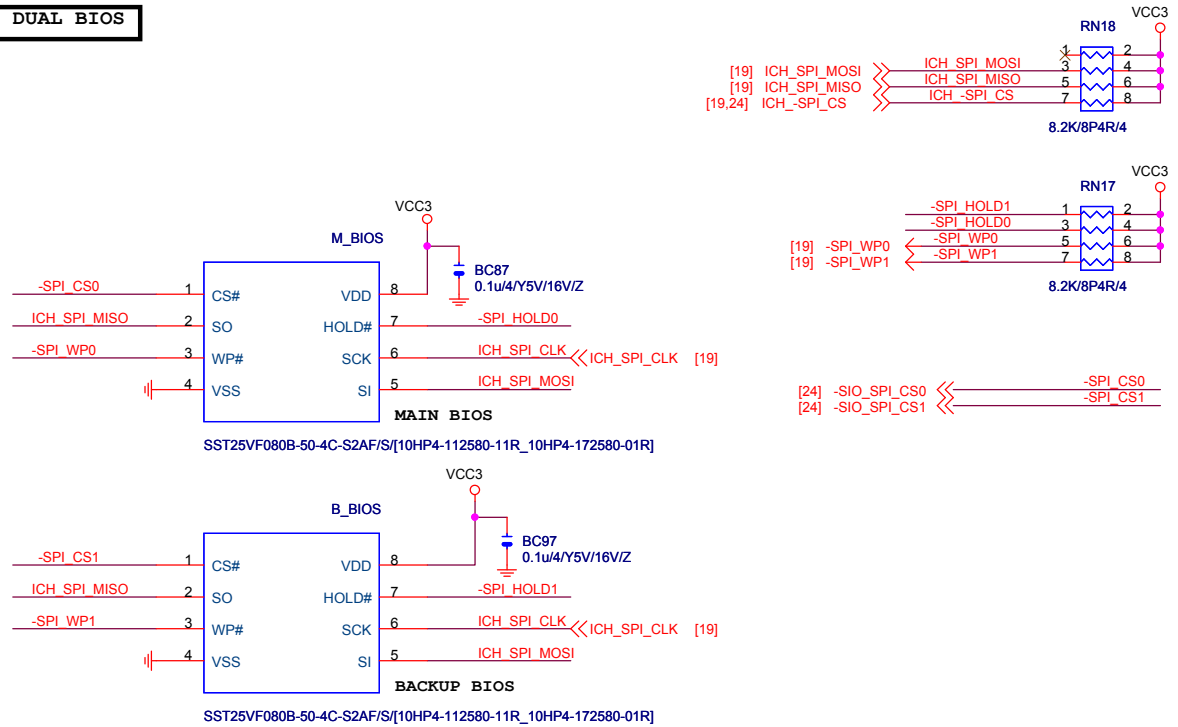
## KB/MS



## VOLTAGE-- H/W MONITOR

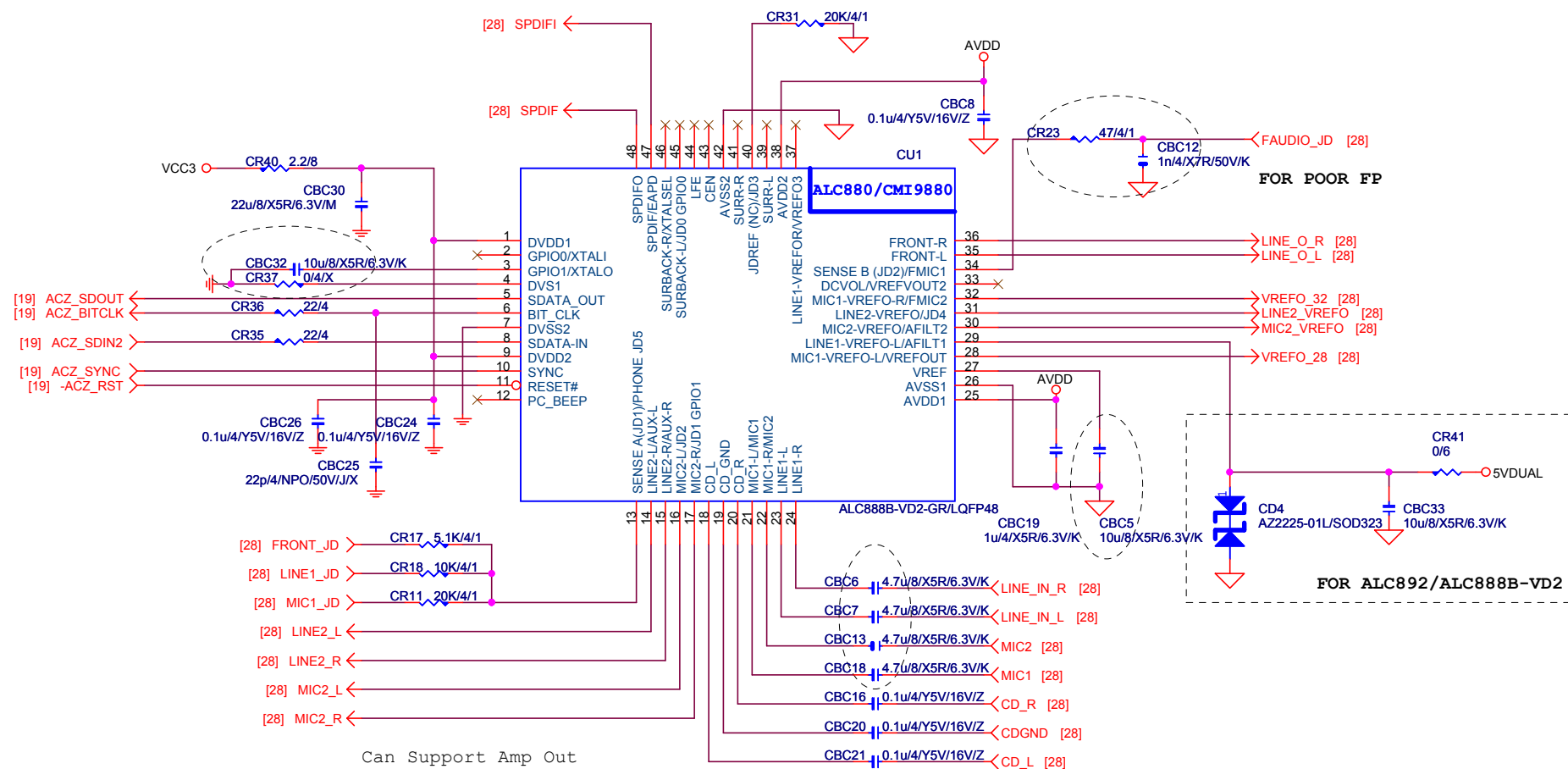


## DUAL BIOS



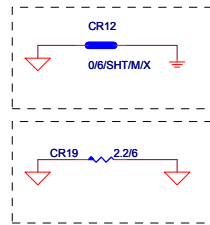
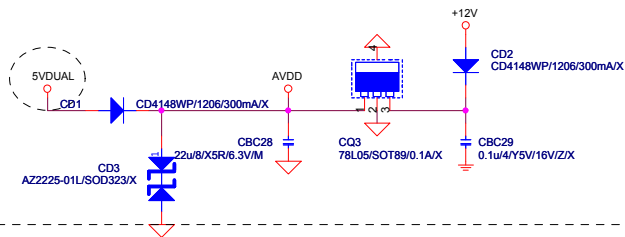
**Gigabyte Technology**

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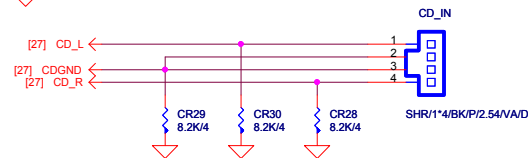
**Gigabyte Technology**

Title					Rev 1.4
AZALIA ALC888B-VD2					
Size Custom	Document Number				1.4
	GA-G41M-ES2L				
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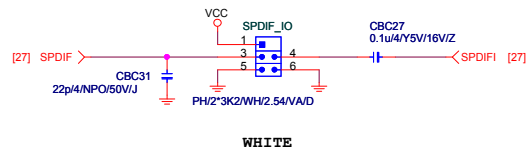
## CODEC POWER/EMI PAD



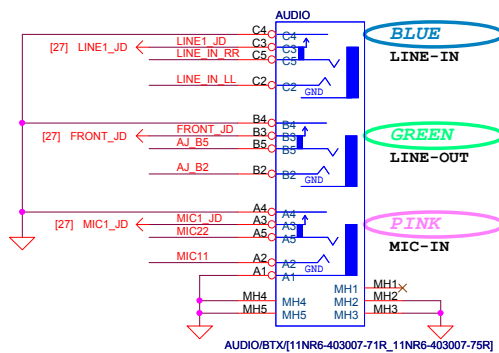
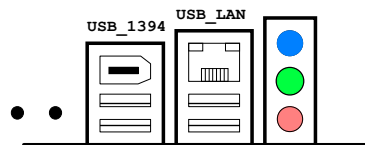
## CD IN



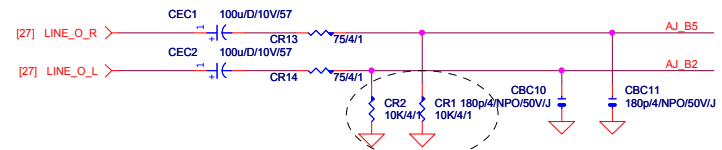
## SPDIF IN



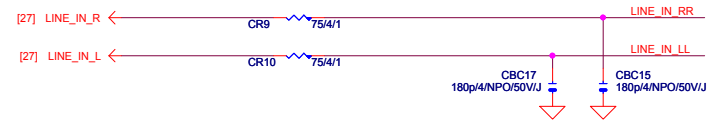
## AZALIA JACK



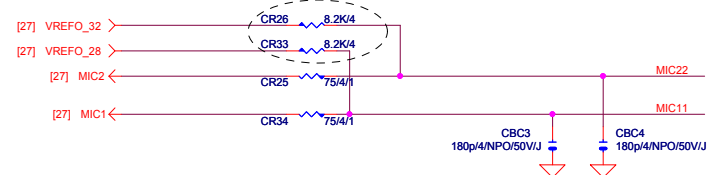
## LINE-OUT



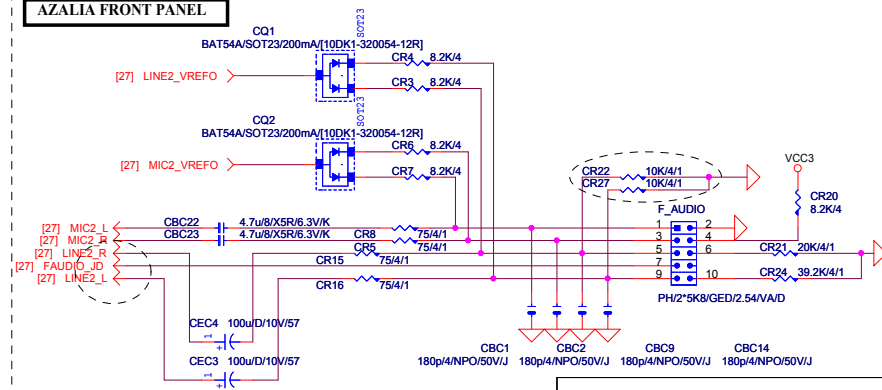
## LINE-IN



## MIC-IN

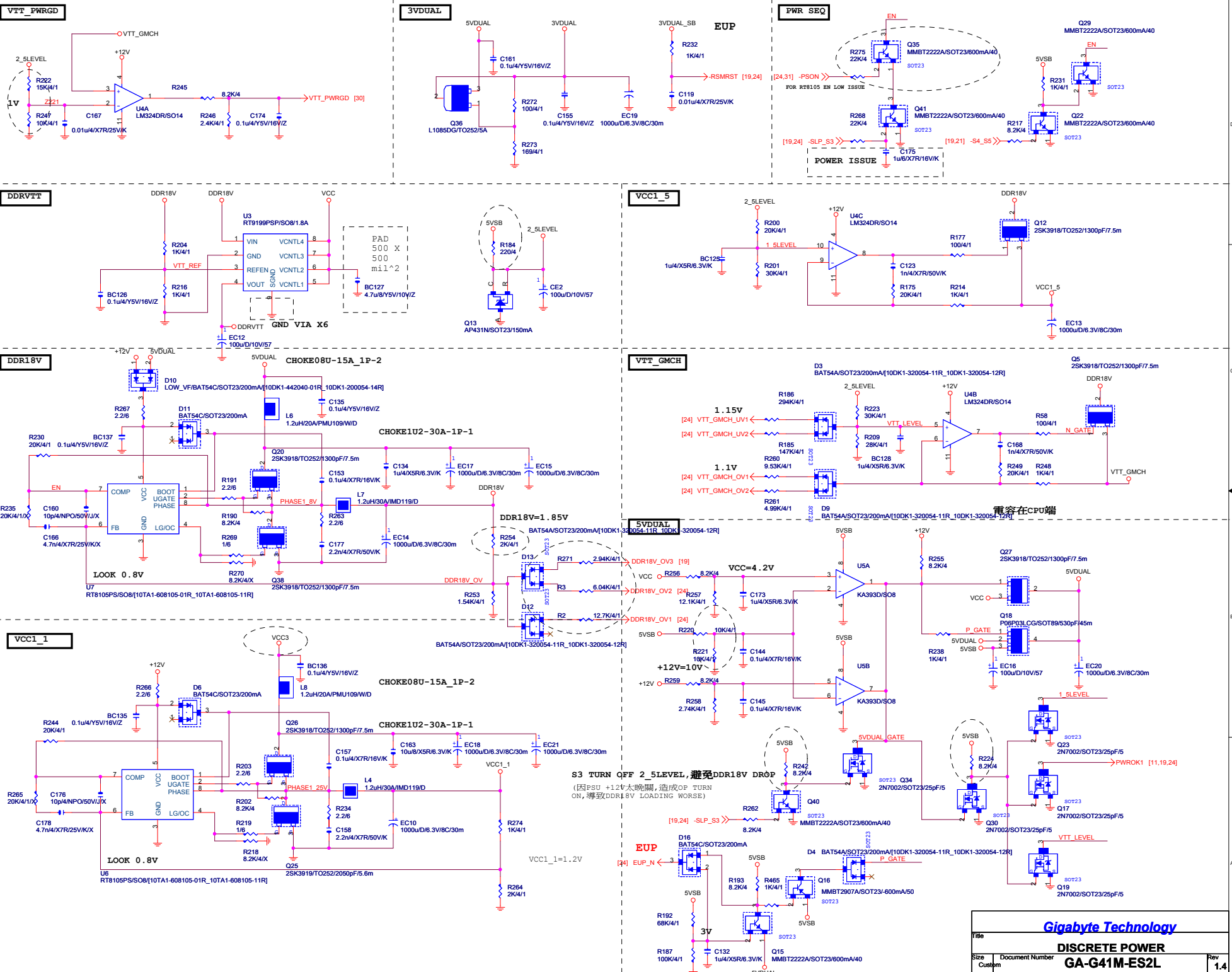


## AZALIA FRONT PANEL



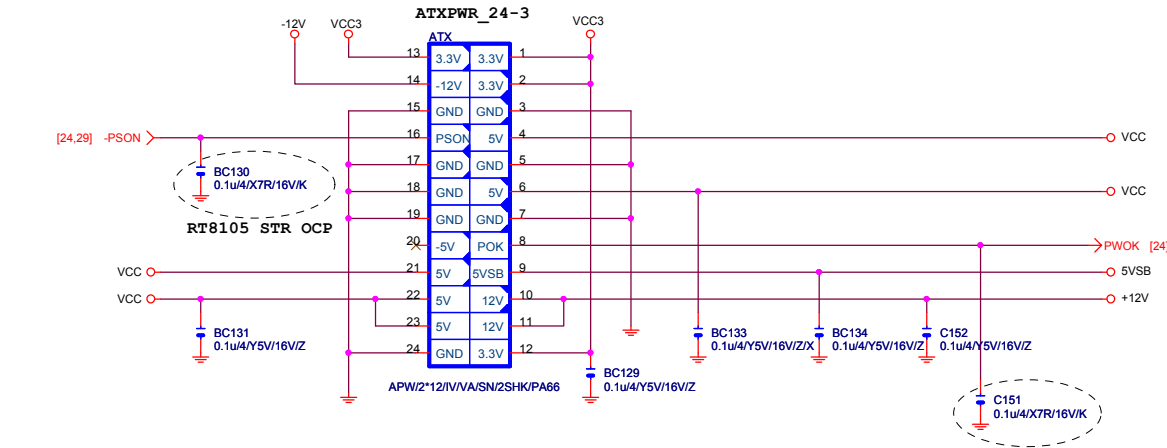
Gigabyte Technology

Title			
AUDIO JACK			
Size Custom	Document Number	GA-G41M-ES2L	Rev 1.4
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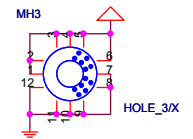
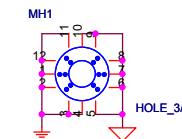
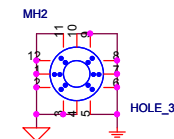
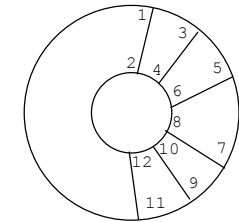
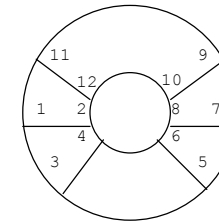
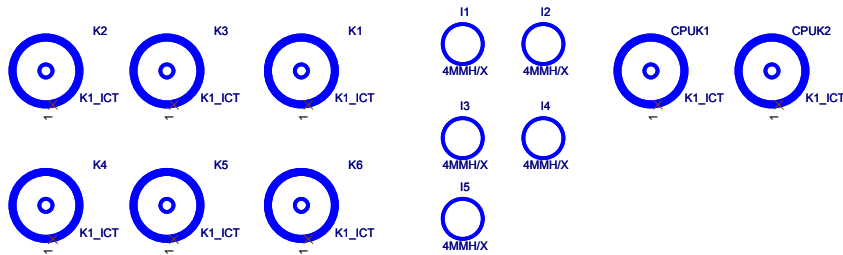
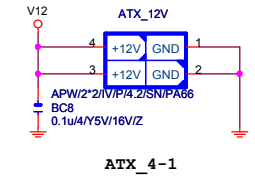
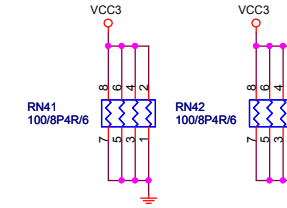




# ATX POWER CONNECTOR

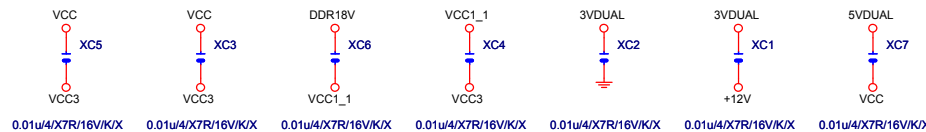
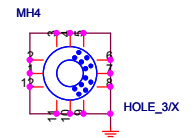
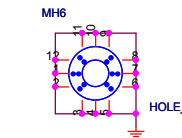
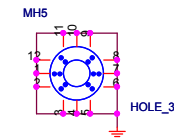


## FIX PWR AcBel (ATX-400C-A2ADB)



HOLE\_4-RH-1

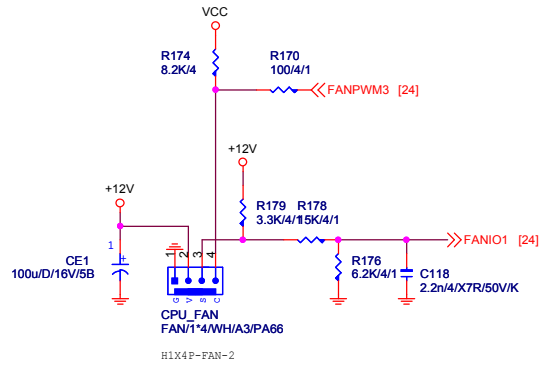
HOLE\_4-RH-5MM-1



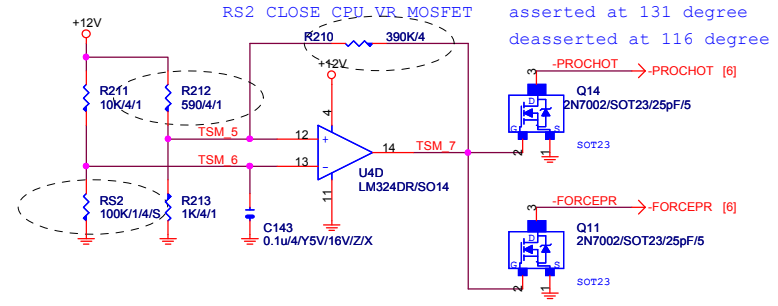
**Gigabyte Technology**

Title		
ATX POWER CONNECTOR		
Size B	Document Number	Rev
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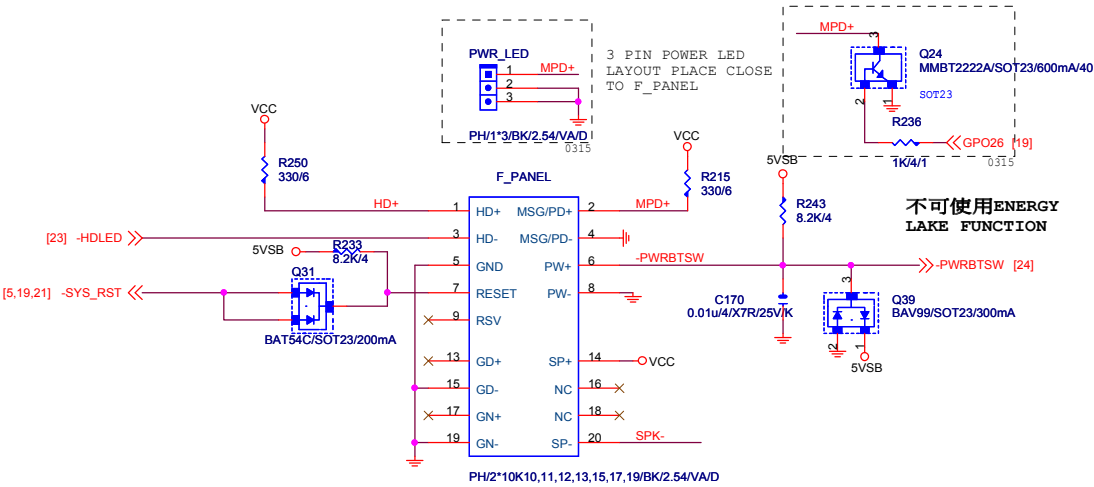
# CPU SMART FAN SMART FAN



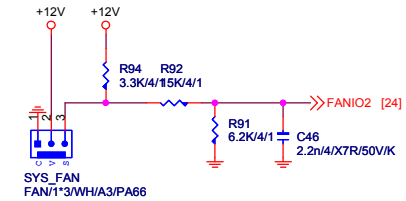
# PROCESSOR HOT



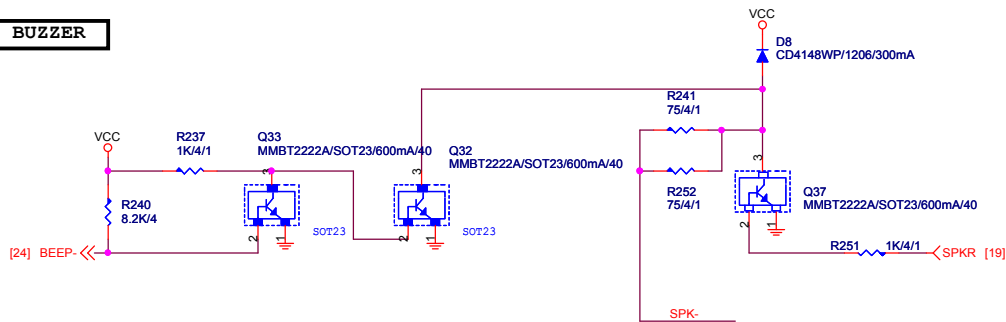
# INTEL FRONT PANEL



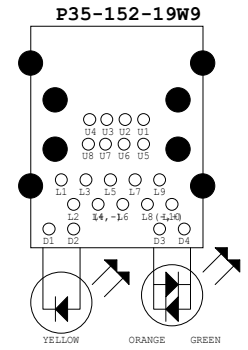
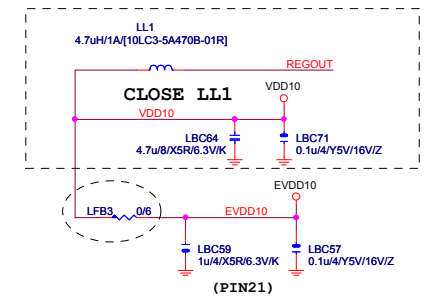
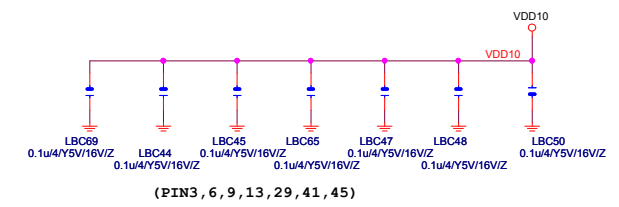
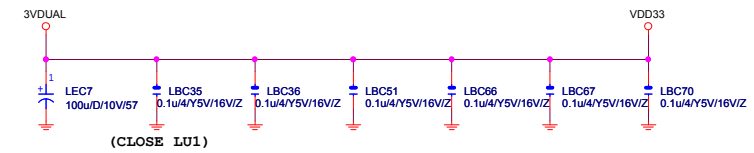
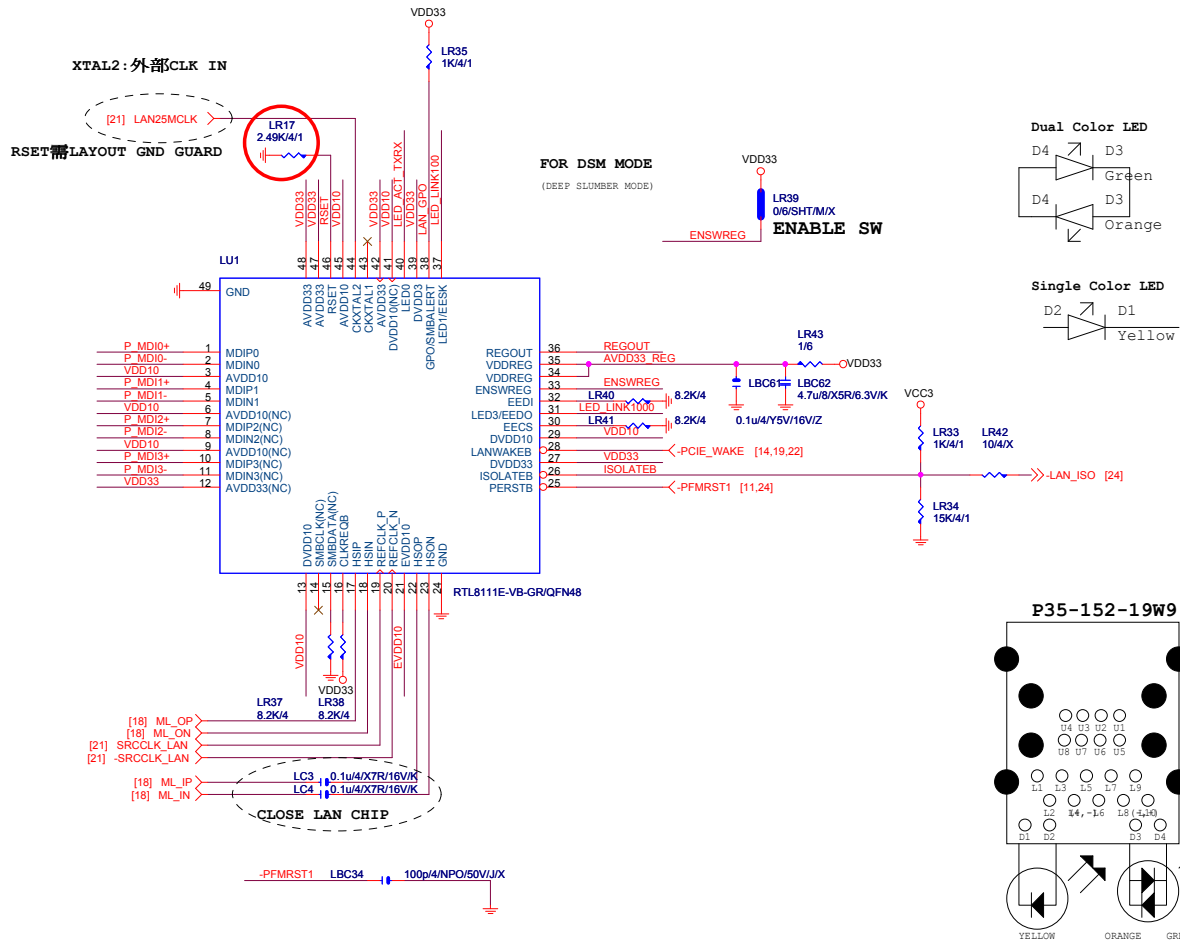
# SYS\_FAN



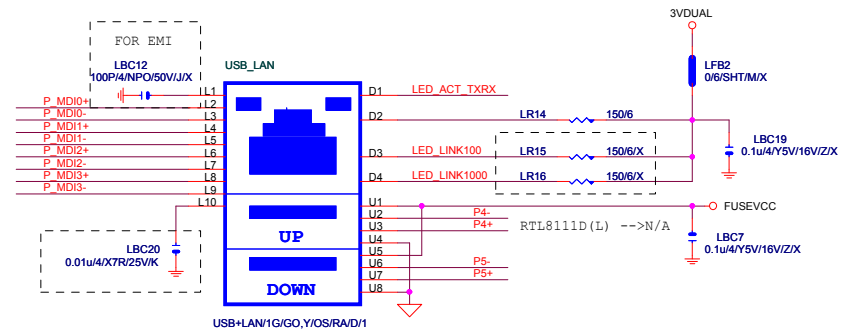
# BUZZER



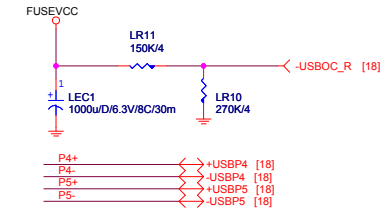
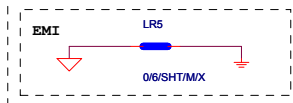
PCIE-1G LAN



USB LAN CONNECTOR



USB LAN



Gigabyte Technology			
Title			
REALTEK RTL8111D/RTL8102E			
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