

Model Name:GA-P31-ES3G Revision 1.1

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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	P31_HOST
09	P31_DDRII
10	P31_PCI E, DMI
11	P31_VGA
12	P31_GND
13	P31_PWR
14	PCI EXPRESS*16 SLOT
15	DDRII CHANNEL A
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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,DUAL BIOS
27	ALC888

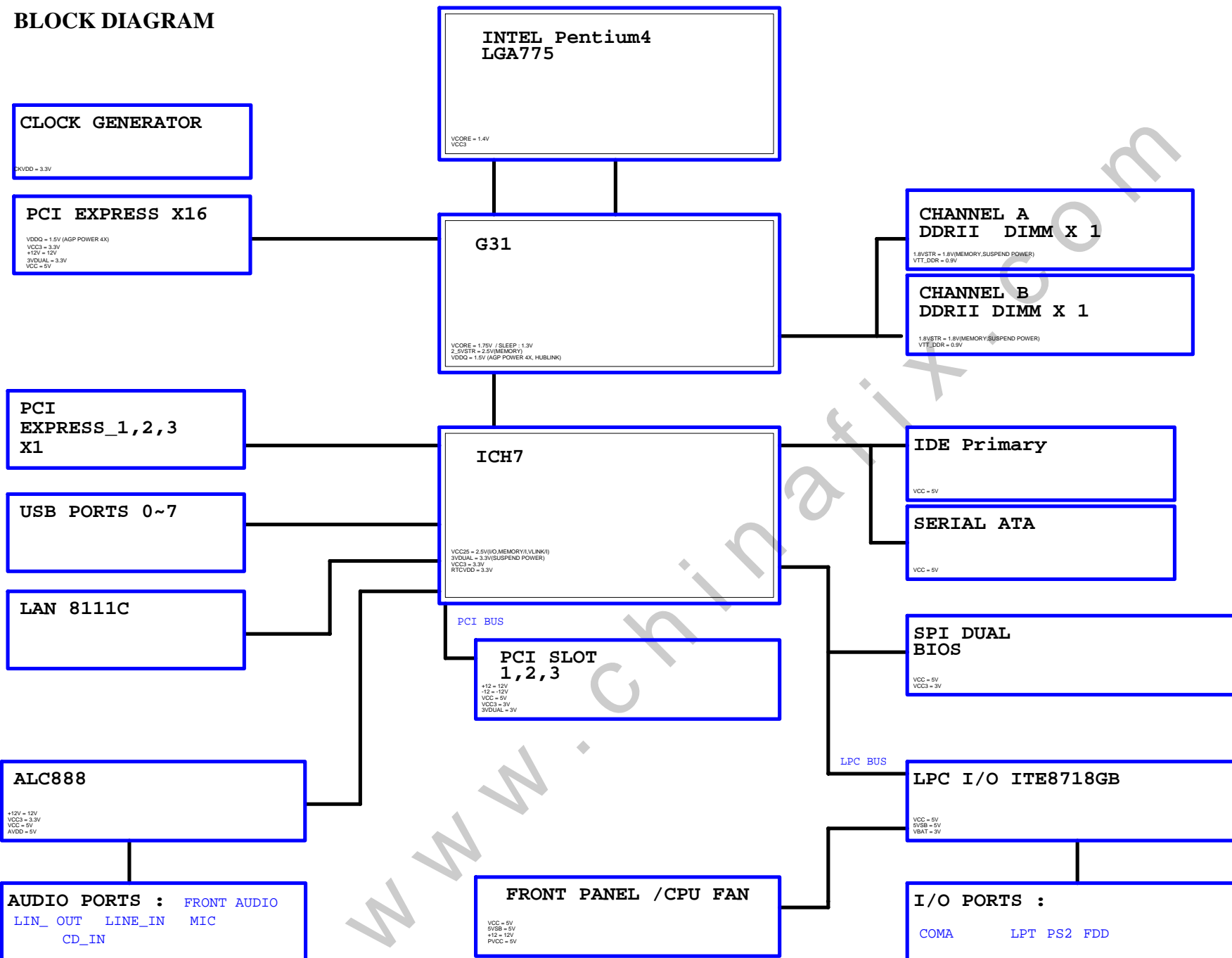
SHEET TITLE

28	REAR AUDIO JACK
29	DISCRETE POWER
30	VCORE PWM_ISL6312
31	ATX, OTHERS POWER
32	FRONT PANEL
33	REALTEK RTL8111C
34	PCI SLOT3,PCIE*2,3



Gigabyte Technology		
Cover Sheet		
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BLOCK DIAGRAM



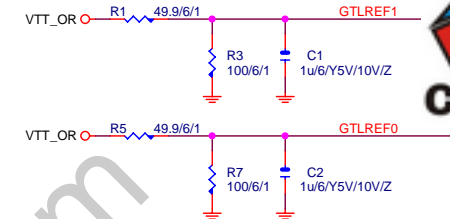
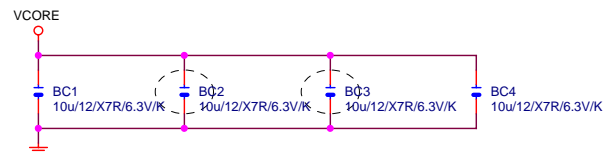
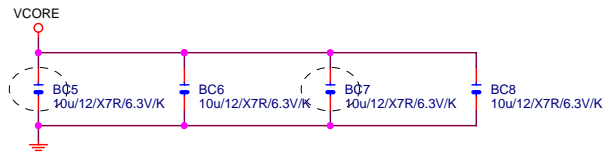
Version: 1.1

2007/08/02

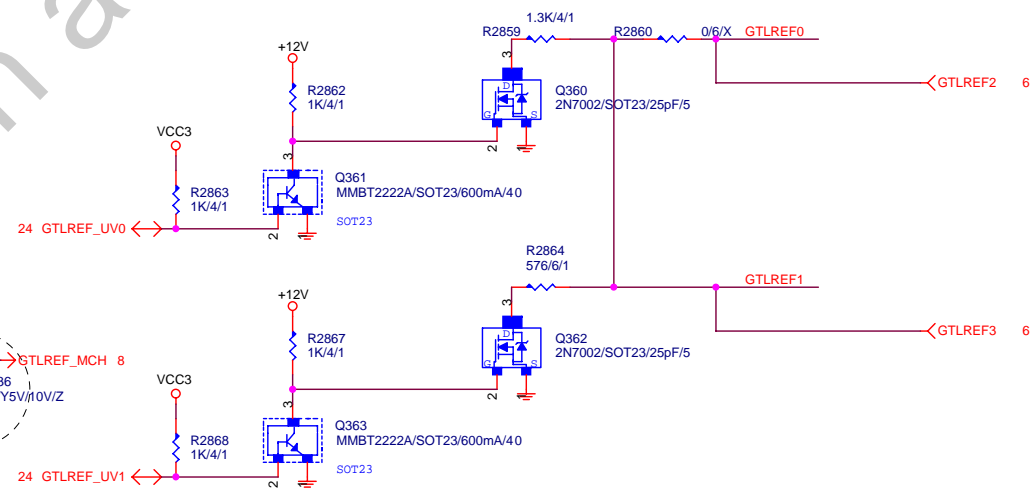
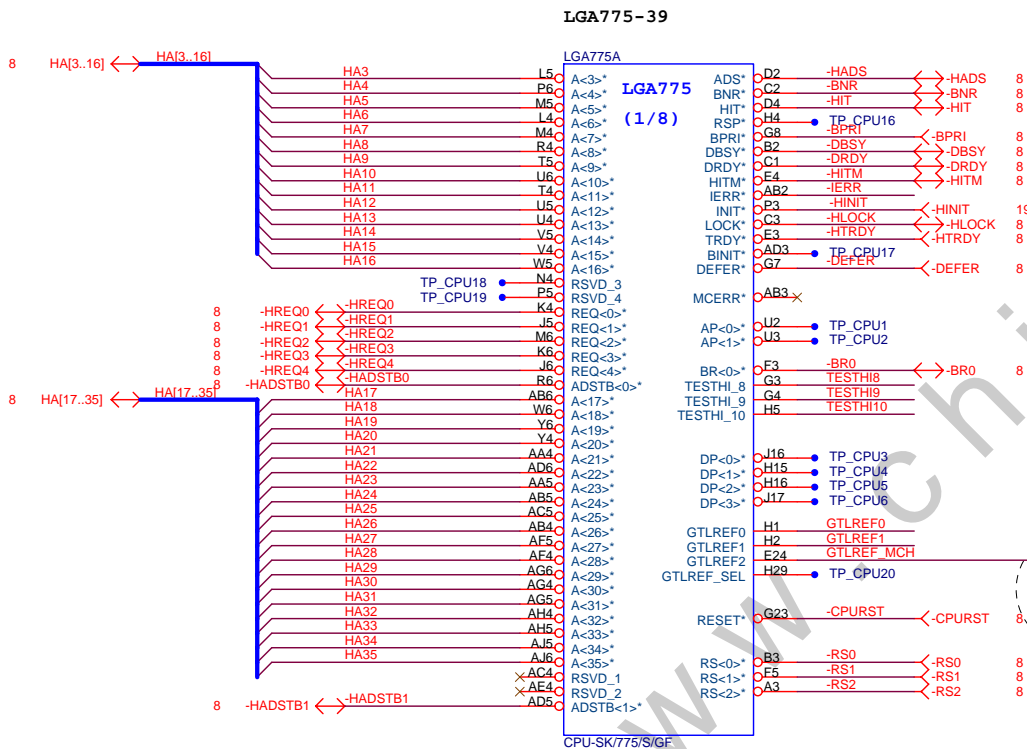
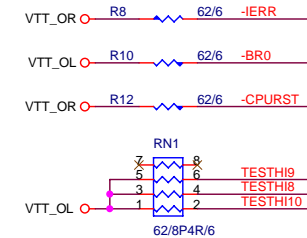
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Circuit or PCB layout change
for next version

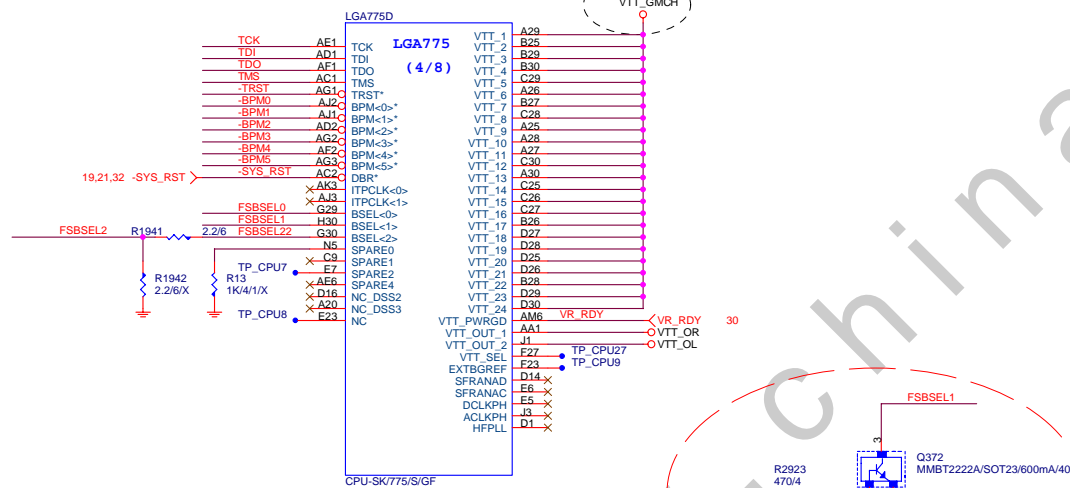
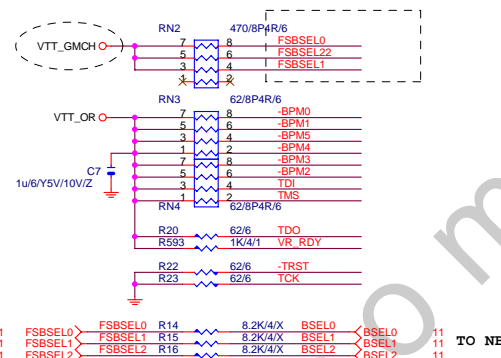
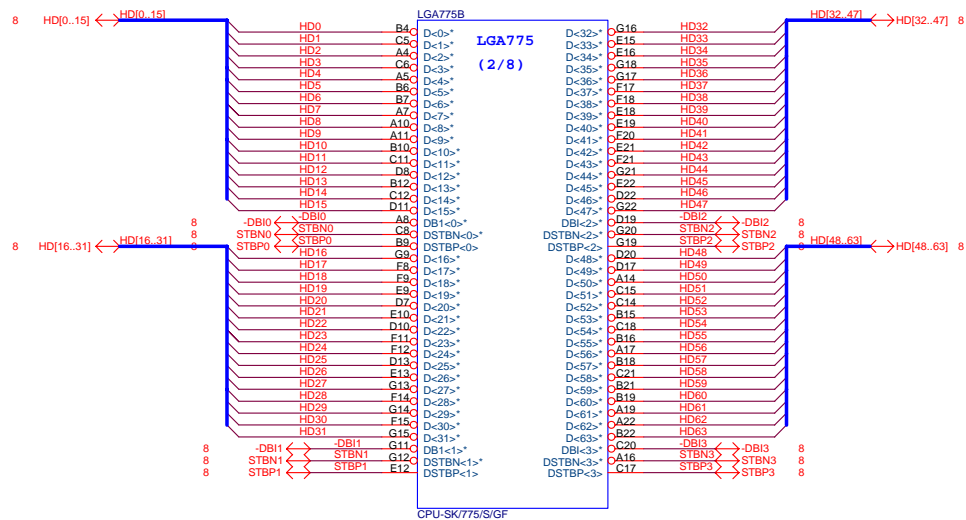
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中間値0.9V

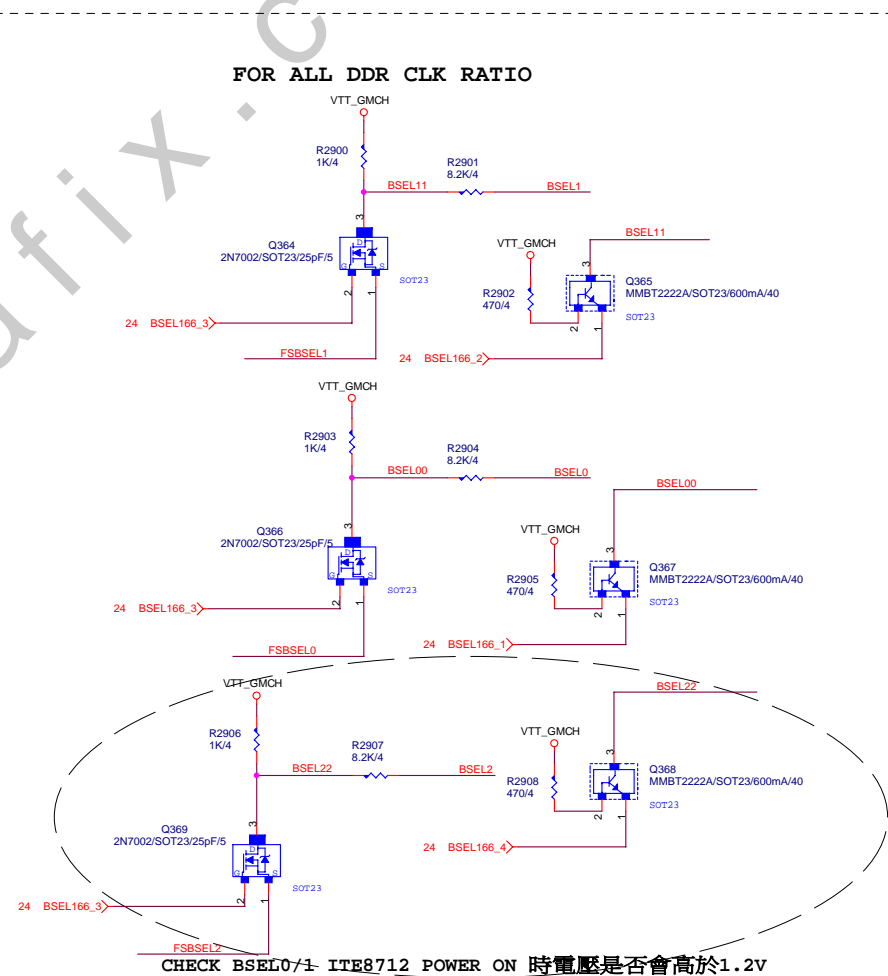


Gigabyte Technology			
Title			
P4_LGA775-A			
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FORCE 400MHz CPU TO
333MHz

	FSA	FSB	FSC		
	FSBSEL0	FSBSEL1	FSBSEL2	Clock	
?	1	0	1	100MHz	
?	1	0	0	133MHz	3/4
G31	0	1	0	200MHz	2/2.66/3.33/4
G31	0	0	0	266MHz	2/2.5/3/4
G31	0	0	1	333MHz	2/2.4
	0	1	1	400MHz	



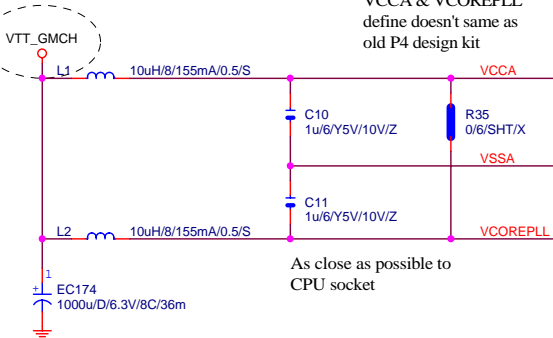
Gigabyte Technology

P4_LGA775-B,D

Size Custom	Document Number GA-P31-ES3G
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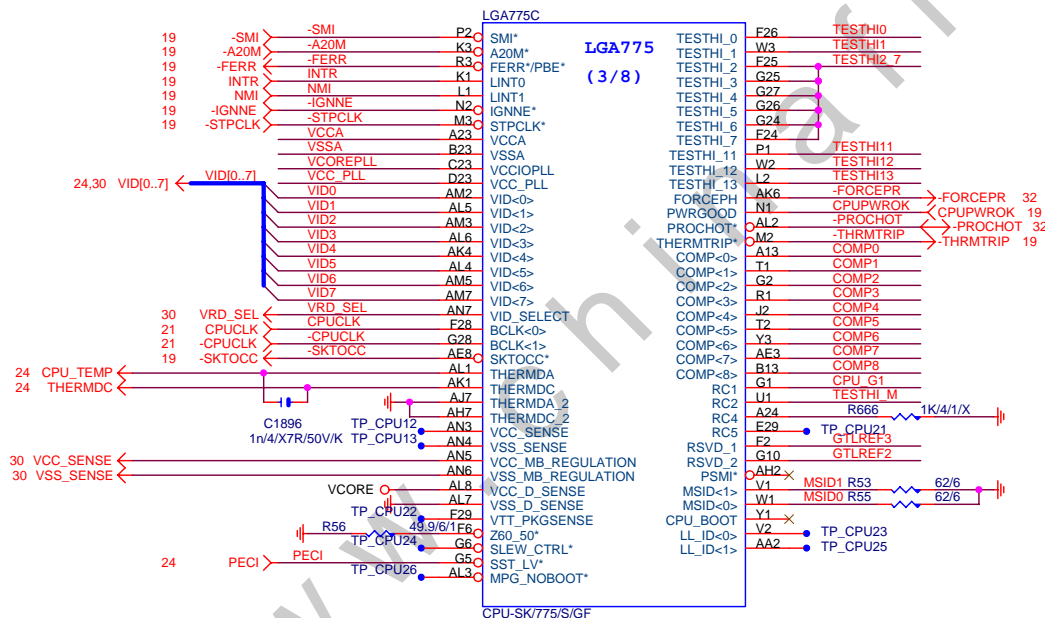
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Note:
VCCA & VCOREPLL
define doesn't same as
old P4 design kit

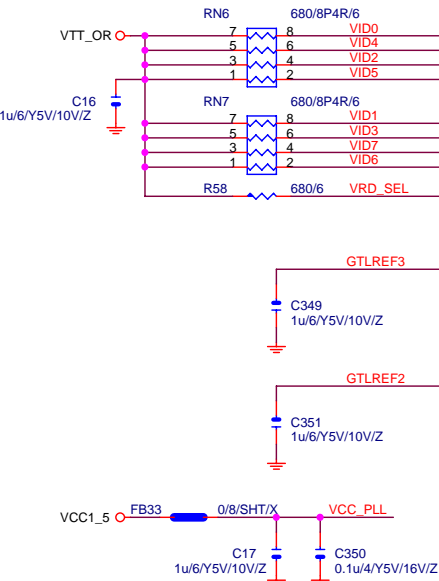
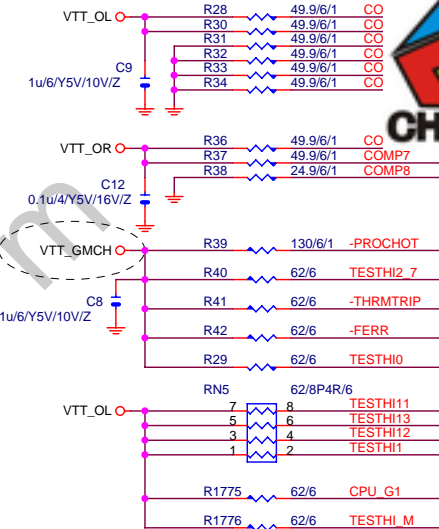


Trace width doesn't
less than 12 Mil

As close as possible to
CPU socket



Place outside of CPU socket

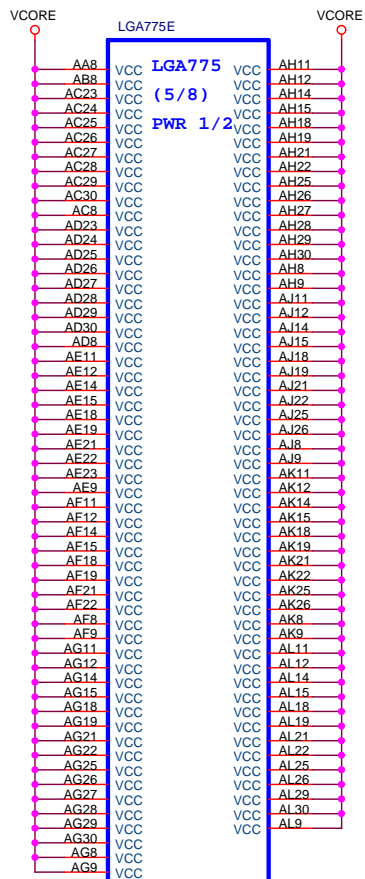


Gigabyte Technology

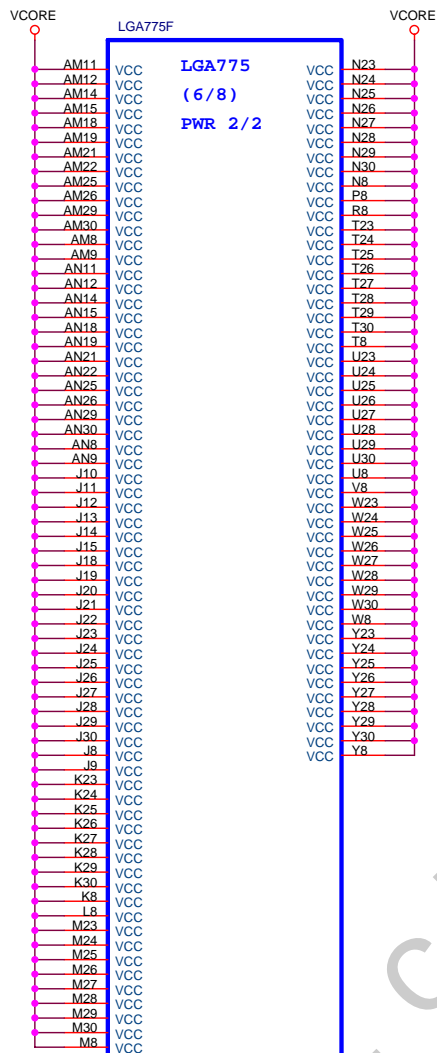
P4_LGA775-C

Title	P4_LGA775-C		
Size	Document Number	GA-P31-ES3G	
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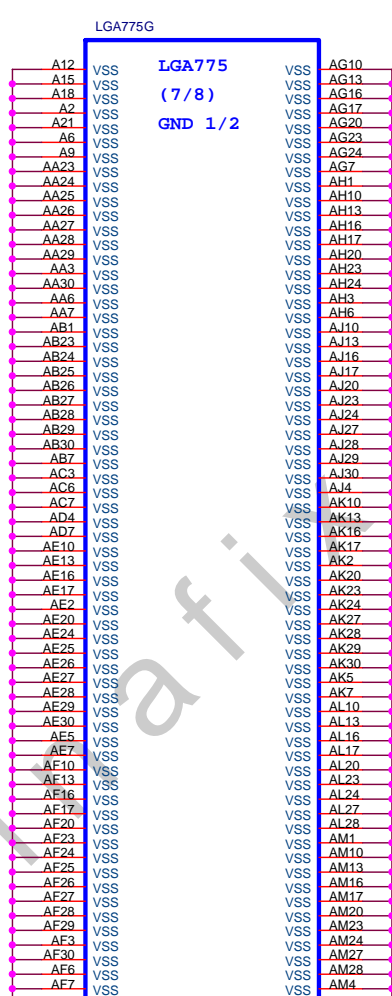
PECI: Platform Environment Control Interface



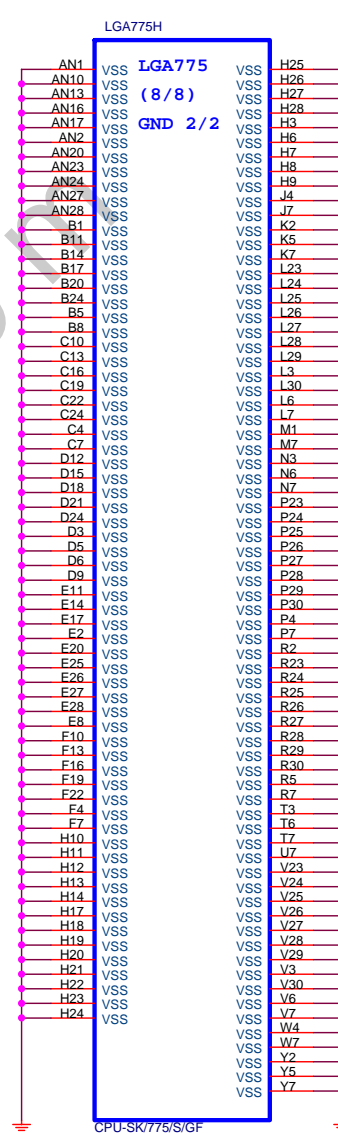
CPU-SK/775/S/GF



CPU-SK/775/S/GF



CPU-SK/775/S/GF

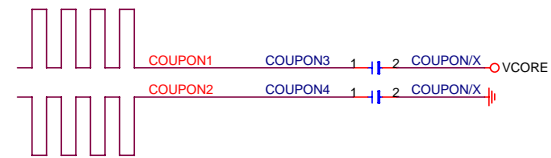


CPU-SK/775/S/GF

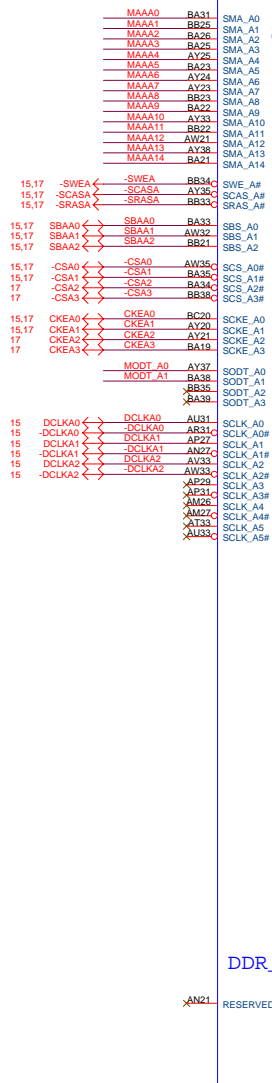


Gigabyte Technology

Title		P4_LGA775-E,F,G,H	
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U2C



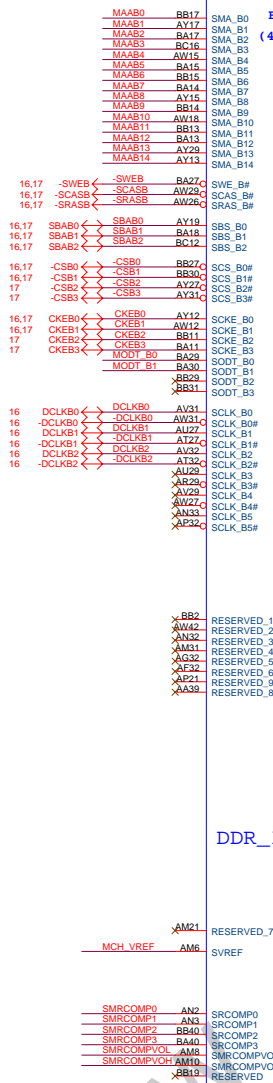
DDR_0

AN21	RESERVED
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LE82P31-SLAHX/BGA1226/10HB1-038231-40R] CHANNEL A

CHANNEL A

U2D

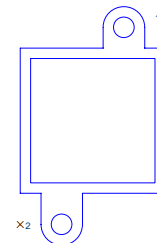
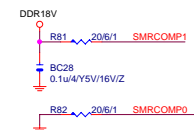
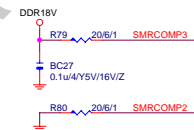
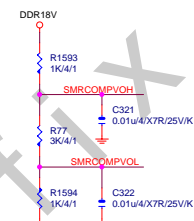
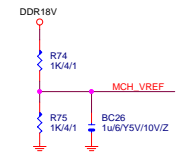
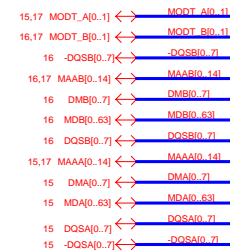


DDR_1

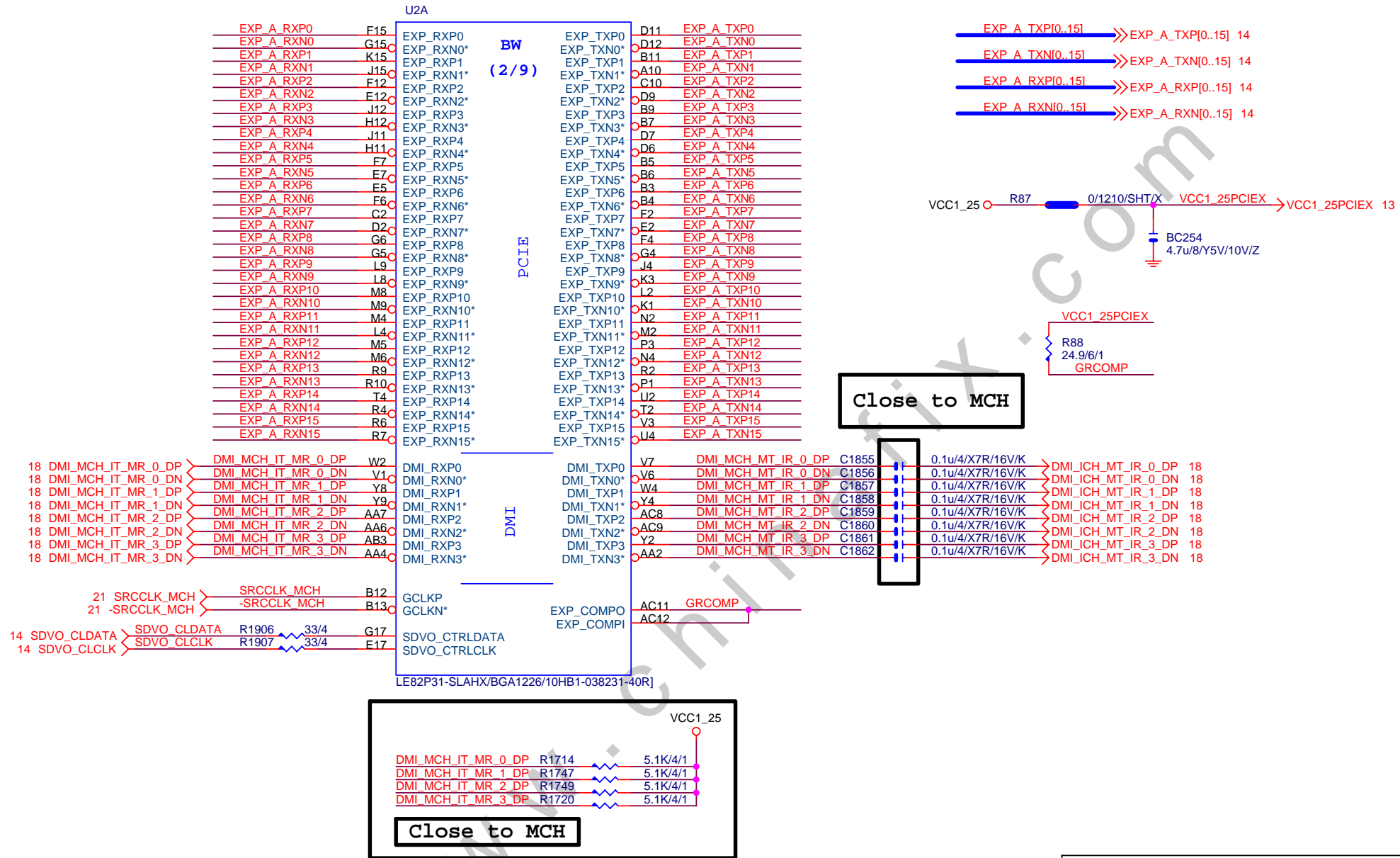
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CHANNEL B [E82P31-SLAHX/BGA1226/10HB1-038231-40R]

LE82P31-SLAHX/BGA1226/10HB1-038231-40R]

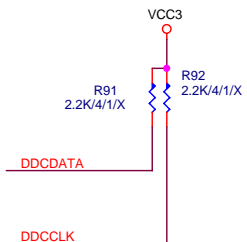
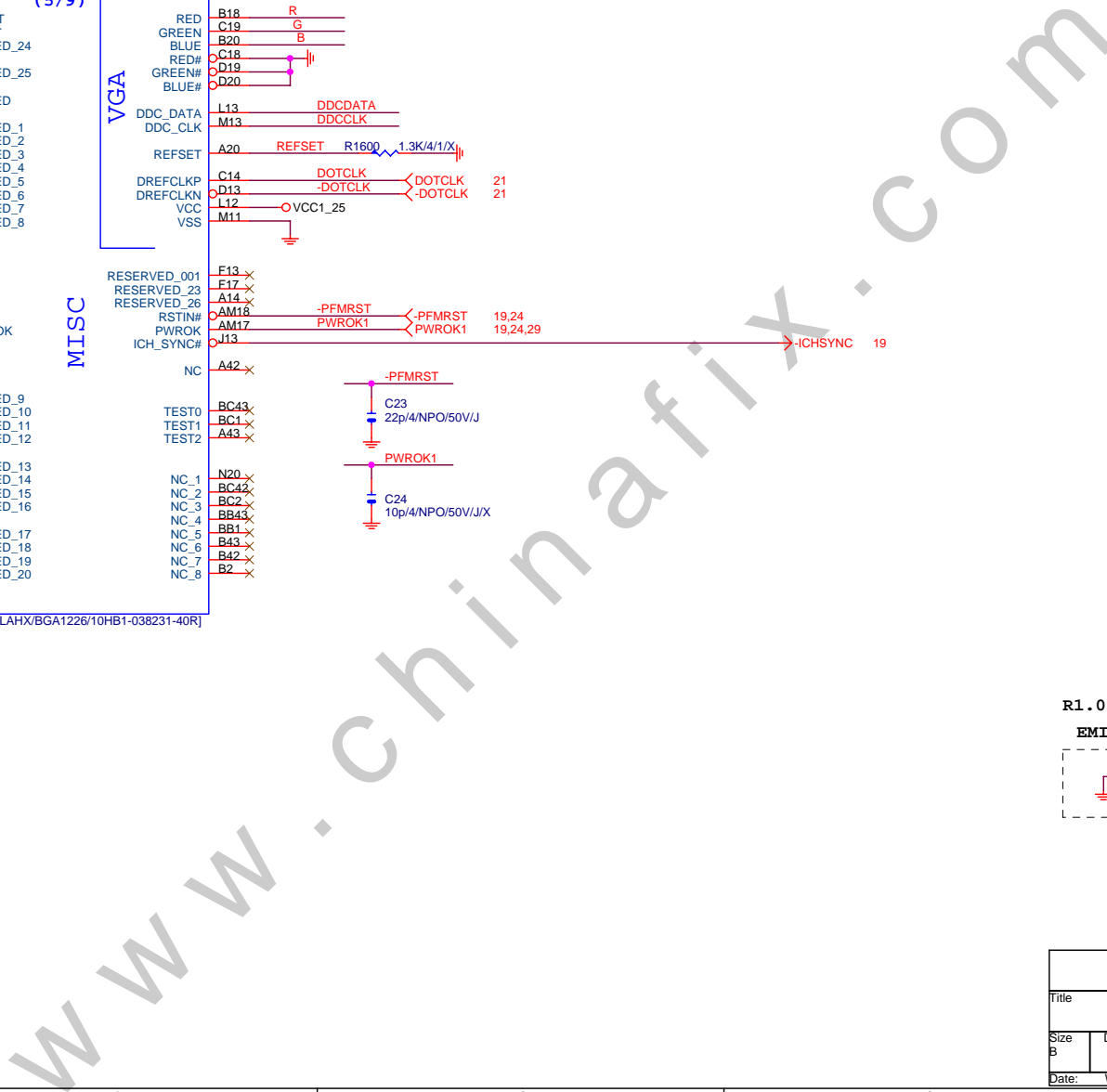


NB_HS/[12SP2-04F004-H1R_12SP2-04F004-H2R_12SP2-04F004-H3R



Gigabyte Technology

Title			
GMCH-PCI E & DMI			
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U2G			
BC37	VSS_1	BW	VSS_181
BC32	VSS_2	(7/9)	VSS_182
BC28	VSS_3		VSS_183
BC24	VSS_4		VSS_184
BC10	VSS_5		VSS_185
BC5	VSS_6	GND 1/2	VSS_186
BB7	VSS_7		VSS_187
AY41	VSS_8		VSS_188
AY4	VSS_9		VSS_189
AW43	VSS_10		VSS_190
AW41	VSS_11		VSS_191
AV37	VSS_12		VSS_192
AV35	VSS_13		VSS_193
AV27	VSS_14		VSS_194
AV23	VSS_15		VSS_195
AV21	VSS_16		VSS_196
AV17	VSS_17		VSS_197
AV11	VSS_18		VSS_198
AV9	VSS_19		VSS_199
AV7	VSS_20		VSS_200
AU42	VSS_21		VSS_201
AU38	VSS_22		VSS_202
AU32	VSS_23		VSS_203
AU24	VSS_24		VSS_204
AU20	VSS_25		VSS_205
AU16	VSS_26		VSS_206
AU2	VSS_27		VSS_207
AT31	VSS_28		VSS_208
AT29	VSS_29		VSS_209
AT15	VSS_30		VSS_210
AT13	VSS_31		VSS_211
AT12	VSS_32		VSS_212
AR38	VSS_33		VSS_213
AR33	VSS_34		VSS_214
AR32	VSS_35		VSS_215
AR27	VSS_36		VSS_216
AR26	VSS_37		VSS_217
AR23	VSS_38		VSS_218
AR21	VSS_39		VSS_219
AR20	VSS_40		VSS_220
AR17	VSS_41		VSS_221
AR9	VSS_42		VSS_222
AR6	VSS_43		VSS_223
AP43	VSS_44		VSS_224
AP24	VSS_45		VSS_225
AP18	VSS_46		VSS_226
AP1	VSS_47		VSS_227
AN38	VSS_48		VSS_228
AN31	VSS_49		VSS_229
AN29	VSS_50		VSS_230
AN24	VSS_51		VSS_231
AN23	VSS_52		VSS_232
AN20	VSS_53		VSS_233
AN15	VSS_54		VSS_234
AN13	VSS_55		VSS_235
AN12	VSS_56		VSS_236
AN11	VSS_57		VSS_237
AN4	VSS_58		VSS_238
AM42	VSS_59		VSS_239
AM40	VSS_60		VSS_240
AM36	VSS_61		VSS_241
AM33	VSS_62		VSS_242
AM29	VSS_63		VSS_243
AM24	VSS_64		VSS_244
AM23	VSS_65		VSS_245
AM20	VSS_66		VSS_246
AM11	VSS_67		VSS_247
AM9	VSS_68		VSS_248
AM7	VSS_69		VSS_249
AM4	VSS_70		VSS_250
AM2	VSS_71		VSS_251
AM1	VSS_72		VSS_252
AL36	VSS_73		VSS_253
AL33	VSS_74		VSS_254
AK43	VSS_75		VSS_255
AJ39	VSS_76		VSS_256
AJ36	VSS_77		VSS_257
AJ33	VSS_78		VSS_258
AH42	VSS_79		VSS_259
AG37	VSS_80		VSS_260
AG34	VSS_81		VSS_261
AF43	VSS_82		VSS_262
AF37	VSS_83		VSS_263
AF36	VSS_84		VSS_264
AF10	VSS_85		VSS_265
AF9	VSS_86		VSS_266
AF8	VSS_87		VSS_267
AF7	VSS_88		VSS_268
AF6	VSS_89		VSS_269
	VSS_90		VSS_270

LE82P31-SLAHX/BGA1226/10HB1-038231-40R

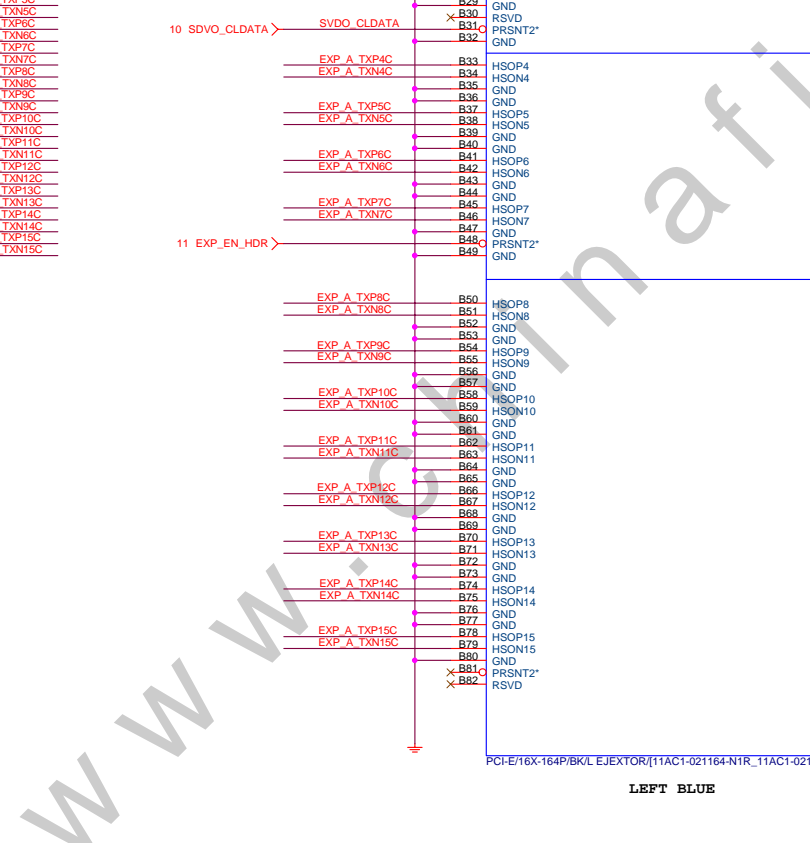
U2I			
M27	VSS_91	BW	VSS_271
M21	VSS_92	(9/9)	VSS_272
M17	VSS_93		VSS_273
M15	VSS_94		VSS_274
M10	VSS_95	GND 2/2	VSS_275
M7	VSS_96		VSS_276
M1	VSS_97		VSS_277
L33	VSS_98		VSS_278
L32	VSS_99		VSS_279
L31	VSS_100		VSS_280
L29	VSS_101		VSS_281
L21	VSS_102		VSS_282
L20	VSS_103		VSS_283
L11	VSS_104		VSS_284
L7	VSS_105		VSS_285
L5	VSS_106		VSS_286
L3	VSS_107		VSS_287
K43	VSS_108		VSS_288
K26	VSS_109		VSS_289
K21	VSS_110		VSS_290
K18	VSS_111		VSS_291
K13	VSS_112		VSS_292
K12	VSS_113		VSS_293
K2	VSS_114		
J38	VSS_115		
J35	VSS_116		
J32	VSS_117		
J27	VSS_118		
J21	VSS_119		
J9	VSS_120		
J7	VSS_121		
J5	VSS_122		
H31	VSS_123		
H29	VSS_124		
H21	VSS_125		
H20	VSS_126		
H17	VSS_127		
H15	VSS_128		
H13	VSS_129		
G42	VSS_130		
G38	VSS_131		
G32	VSS_132		
G21	VSS_133		
G13	VSS_134		
G12	VSS_135		
G11	VSS_136		
G9	VSS_137		
G7	VSS_138		
G1	VSS_139		
F37	VSS_140		
F35	VSS_141		
F27	VSS_142		
F21	VSS_143		
F18	VSS_144		
F3	VSS_145		
E43	VSS_146		
E32	VSS_147		
E24	VSS_148		
E21	VSS_149		
E20	VSS_150		
E15	VSS_151		
E13	VSS_152		
E11	VSS_153		
E9	VSS_154		
E3	VSS_155		
D40	VSS_156		
D31	VSS_157		
D21	VSS_158		
D17	VSS_159		
D3	VSS_160		
C26	VSS_161		
C11	VSS_162		
C6	VSS_163		
C5	VSS_164		
C4	VSS_165		
B37	VSS_166		
B32	VSS_167		
B31	VSS_168		
B26	VSS_169		
B23	VSS_170		
B22	VSS_171		
B19	VSS_172		
B14	VSS_173		
B10	VSS_174		
A39	VSS_175		
A34	VSS_176		
A26	VSS_177		
A18	VSS_178		
A12	VSS_179		
A7	VSS_180		

LE82P31-SLAHX/BGA1226/10HB1-038231-40R

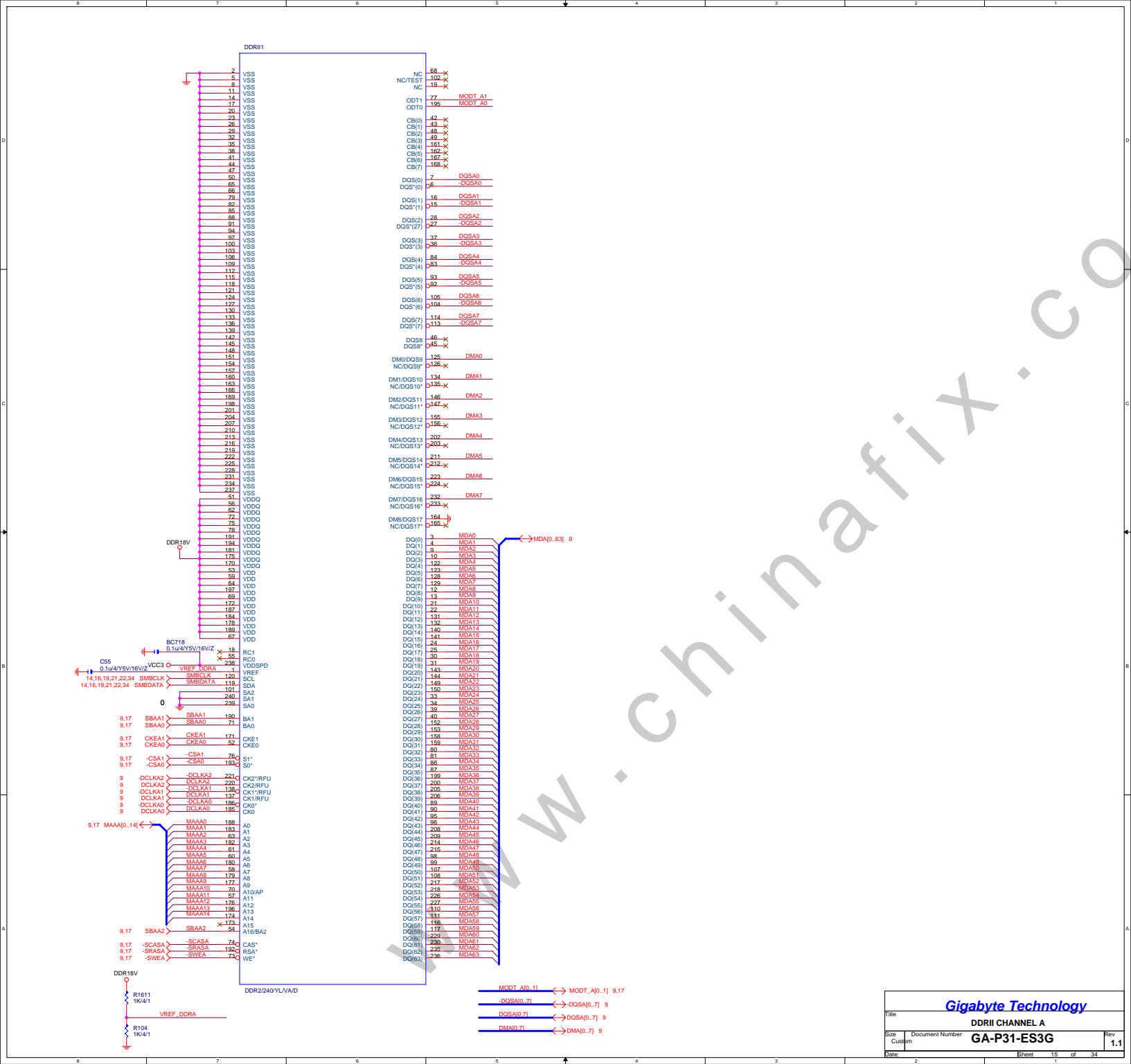
Gigabyte Technology

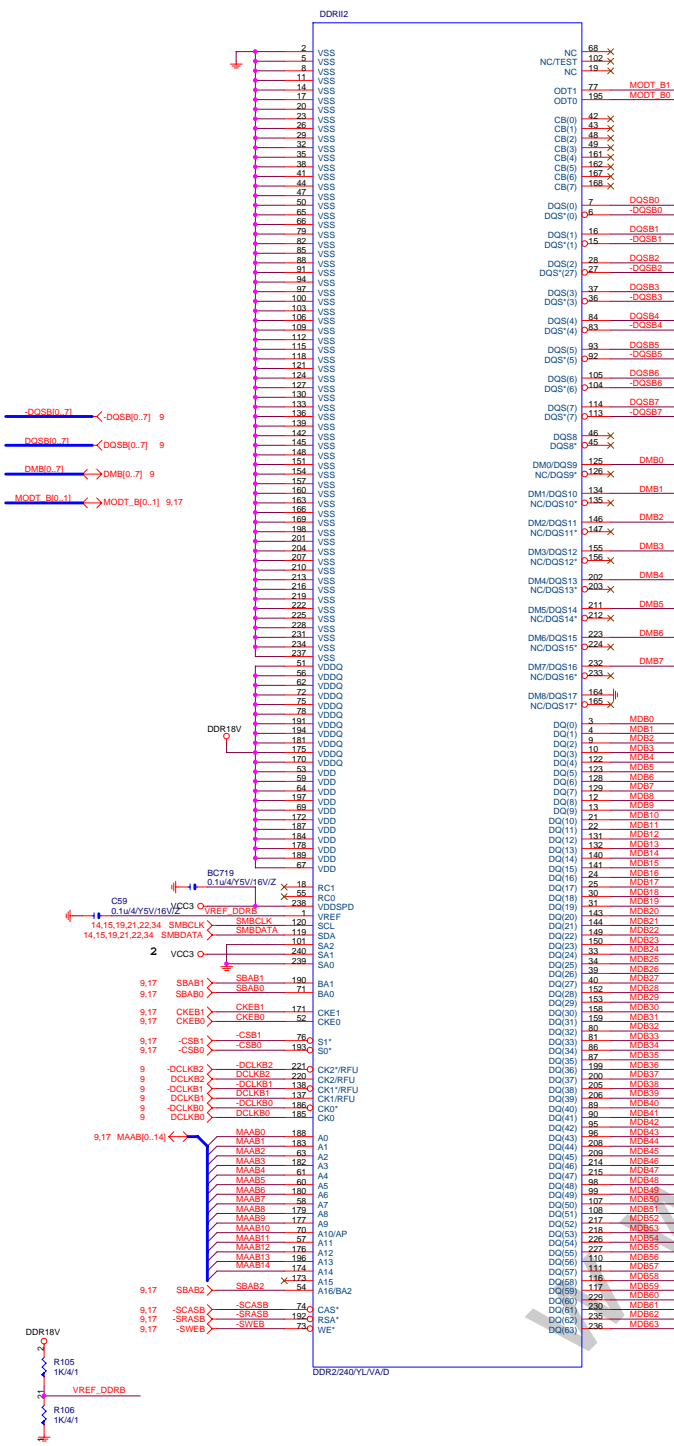
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Size	Document Number	GA-P31-ES3G	
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Title				PCI EXPRESS * 16			
Size	Document Number	GA-P31-ES3G				Rev	1
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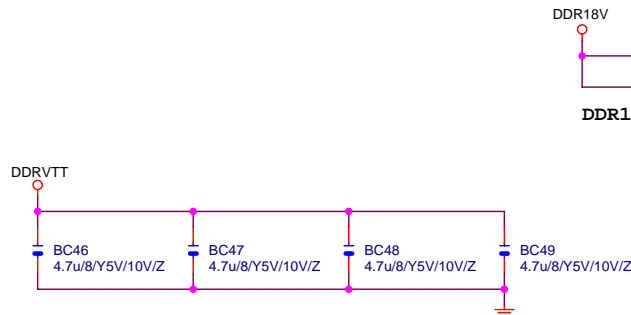




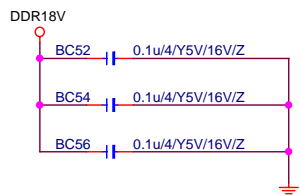
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DDR TERMINATION CHANNEL A

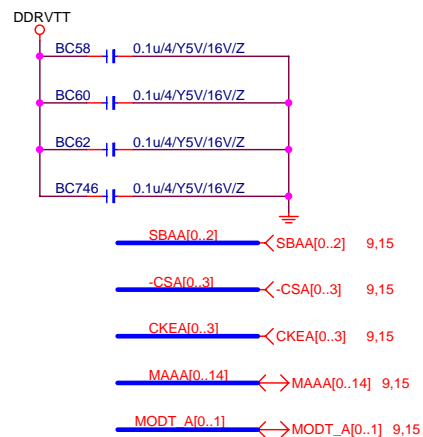
DDRVTT Decouple



DDR18V Decouple

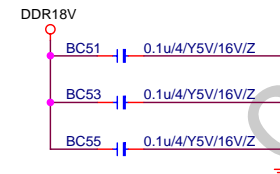


DDRVTT Decouple

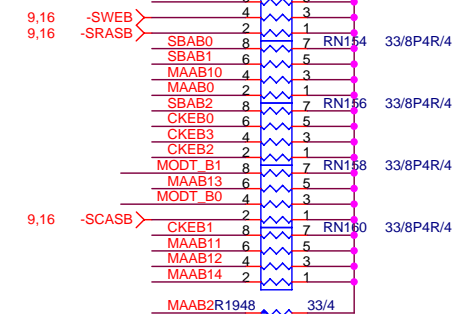
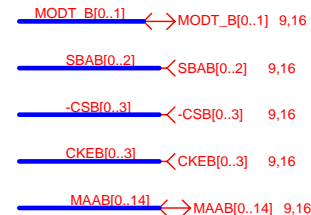
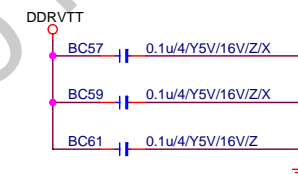


DDR TERMINATION CHANNEL B

DDR18V Decouple

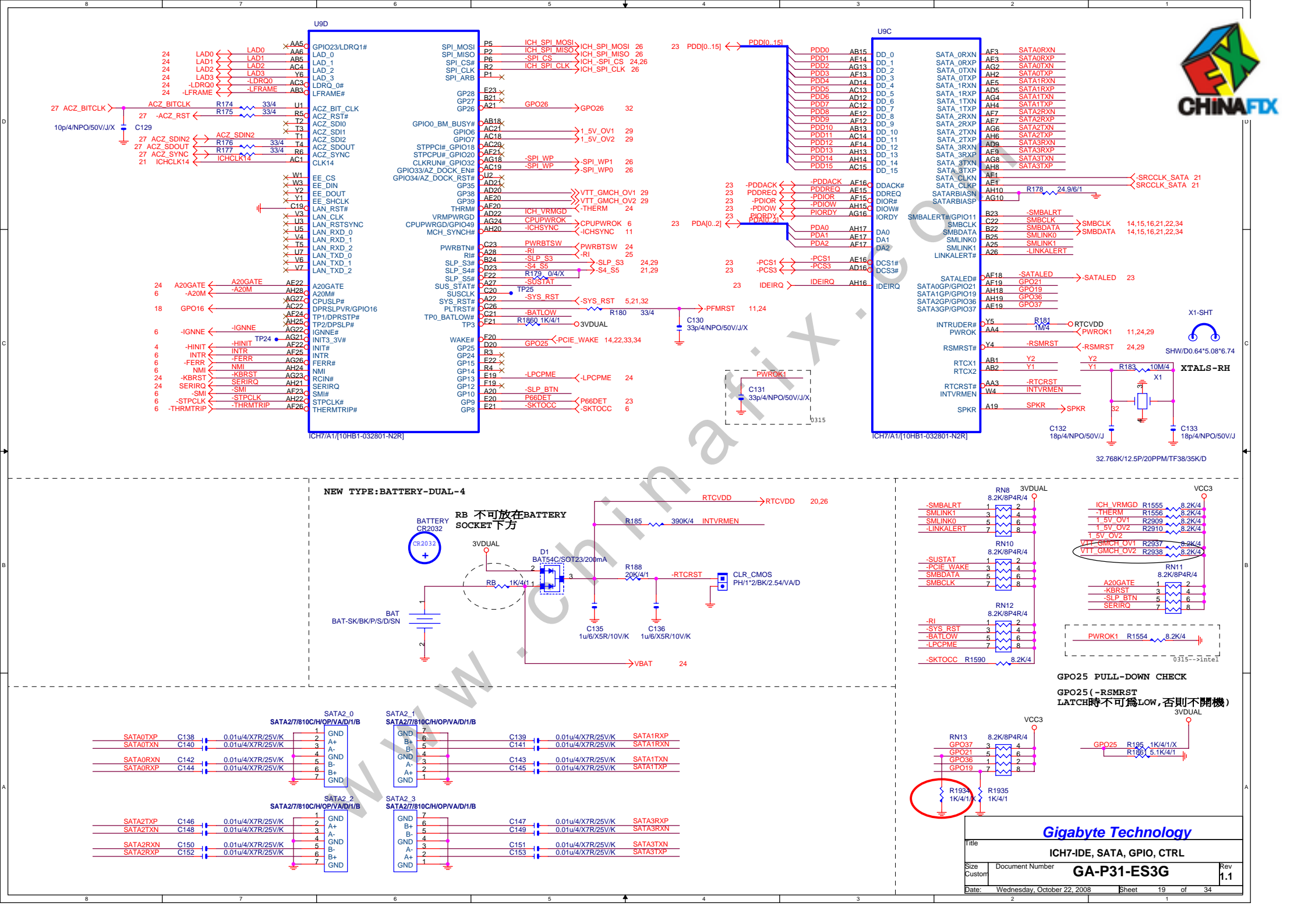


DDRVTT Decouple



Gigabyte Technology

Title			DDRII TERMINATOR
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[illegible]

The schematic diagram illustrates the ICH7/A1 (10Hb1-032801-N2R) chip and its connections to various components. The chip is shown with its pins and internal connections, including the BATTERY-DUAL-4 section. The diagram includes a detailed view of the BATTERY-DUAL-4 section, showing the connection of the battery to the chip and the power management ICs. The Gigabyte Technology logo is visible in the bottom right corner.

NEW TYPE: BATTERY-DUAL-4

RB 不可放在 BATTERY SOCKET 下方

GPO25 PULL-DOWN CHECK

GPO25 (-RSMRST LATCH時不可為LOW, 否則不開機)

Gigabyte Technology

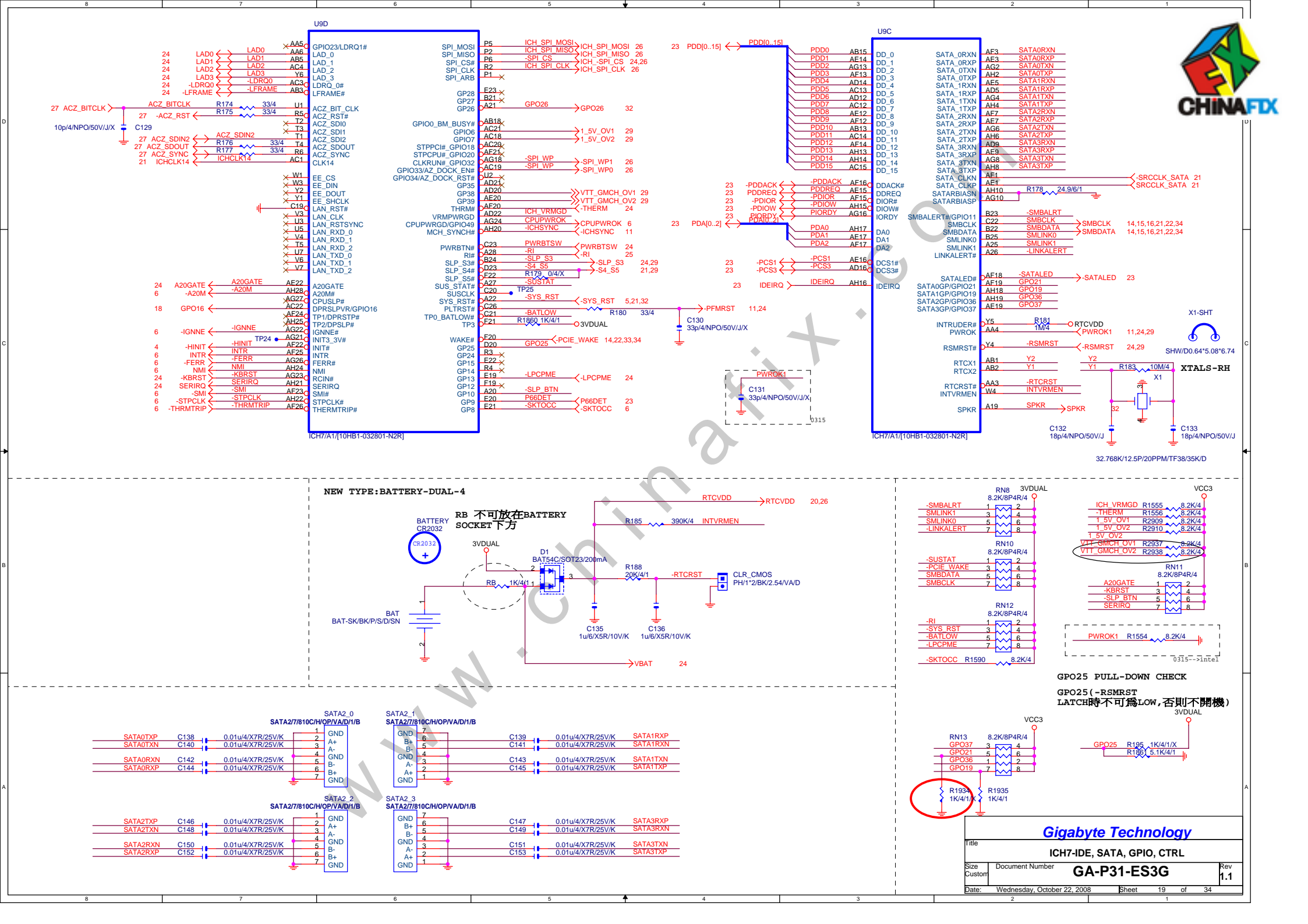
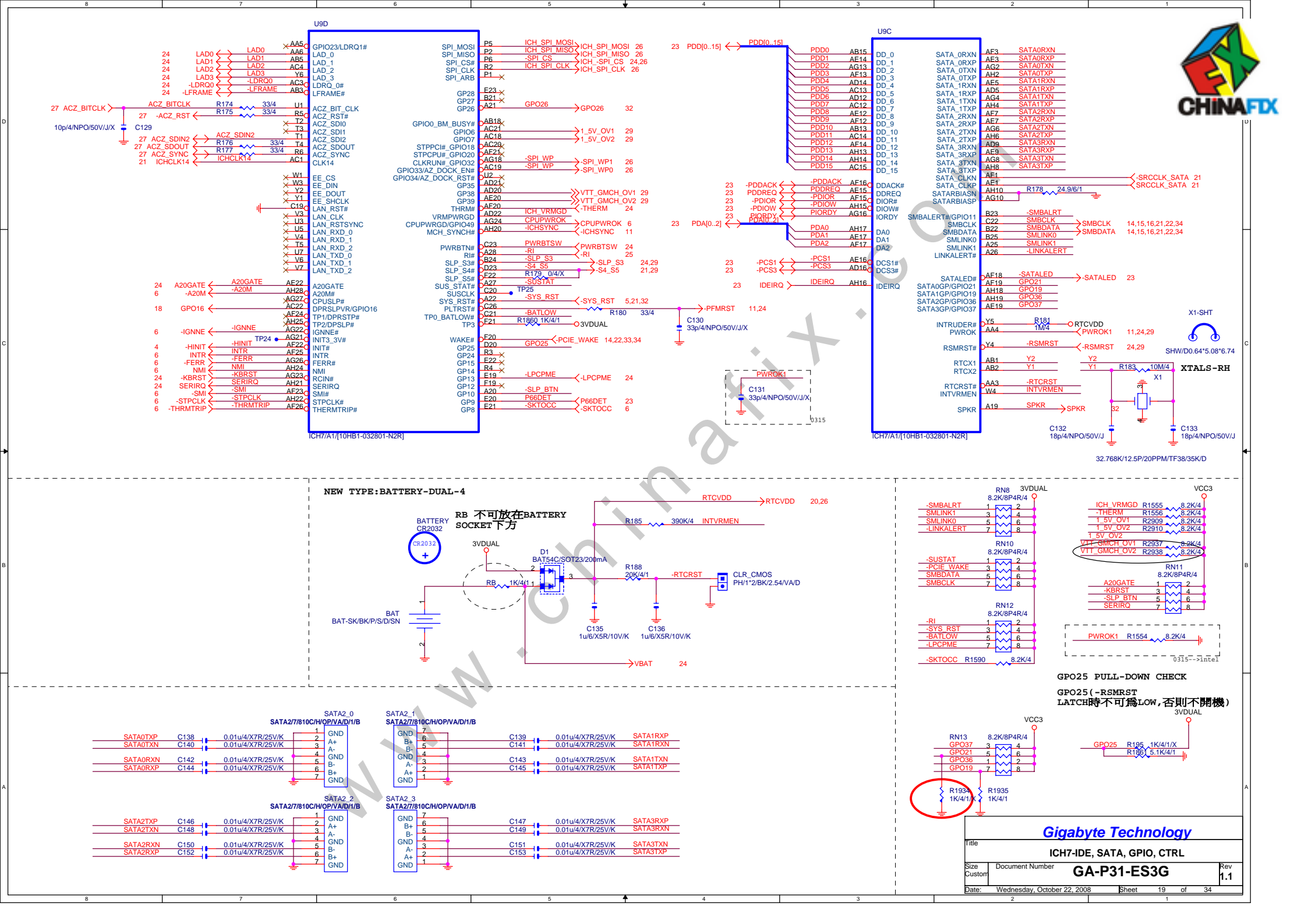
ICH7-IDE, SATA, GPIO, CTRL

GA-P31-ES3G

Rev 1.1

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[illegible]

The schematic diagram illustrates the ICH7/A1 (10Hb1-032801-N2R) chip and its connections to various components. The chip is shown with its pins and internal connections, including the BATTERY-DUAL-4 section. The diagram includes a detailed view of the BATTERY-DUAL-4 section, showing the connection of the battery to the chip and the power management ICs. The Gigabyte Technology logo is visible in the bottom right corner.

NEW TYPE: BATTERY-DUAL-4

RB 不可放在 BATTERY SOCKET 下方

GPO25 PULL-DOWN CHECK

GPO25 (-RSMRST LATCH時不可為LOW, 否則不開機)

Gigabyte Technology

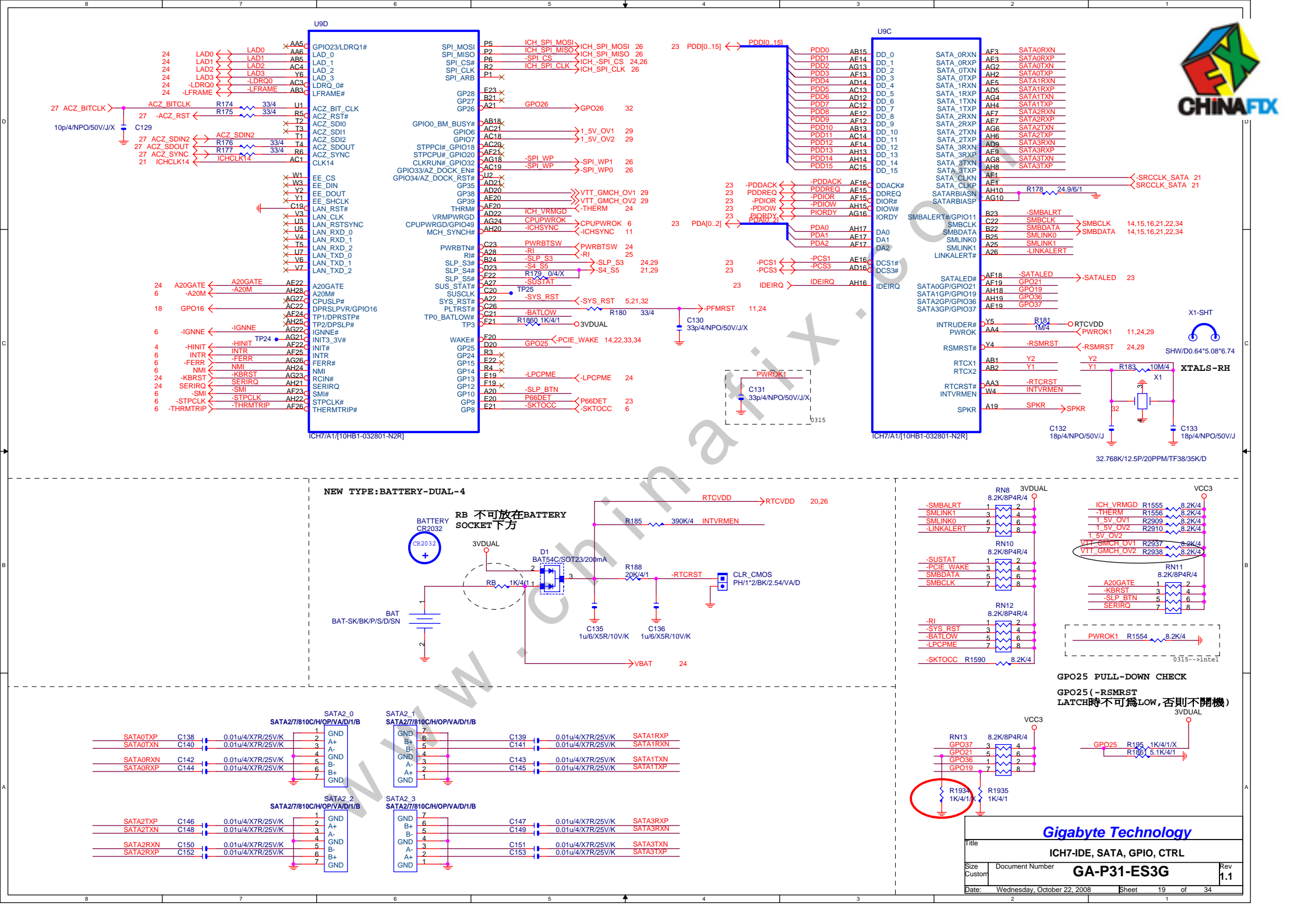
ICH7-IDE, SATA, GPIO, CTRL

GA-P31-ES3G

Rev 1.1

Date: Wednesday, October 22, 2008

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The schematic diagram illustrates the ICH7/A1 (10Hb1-032801-N2R) chip and its connections to various components. The chip is shown with its pins and internal connections, including the BATTERY-DUAL-4 section. The diagram includes a detailed view of the BATTERY-DUAL-4 section, showing the connection of the battery to the chip and the power management ICs. The Gigabyte Technology logo is visible in the bottom right corner.

NEW TYPE: BATTERY-DUAL-4

RB 不可放在 BATTERY SOCKET 下方

GPO25 PULL-DOWN CHECK

GPO25 (-RSMRST LATCH時不可為LOW, 否則不開機)

Gigabyte Technology

ICH7-IDE, SATA, GPIO, CTRL

GA-P31-ES3G

Rev 1.1

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[illegible]

The schematic diagram illustrates the ICH7/A1 (10Hb1-032801-N2R) chip and its connections to various components. The chip is shown with its pins and internal connections, including the BATTERY-DUAL-4 section. The diagram includes a detailed view of the BATTERY-DUAL-4 section, showing the connection of the battery to the chip and the power management ICs. The Gigabyte Technology logo is visible in the bottom right corner.

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Gigabyte Technology

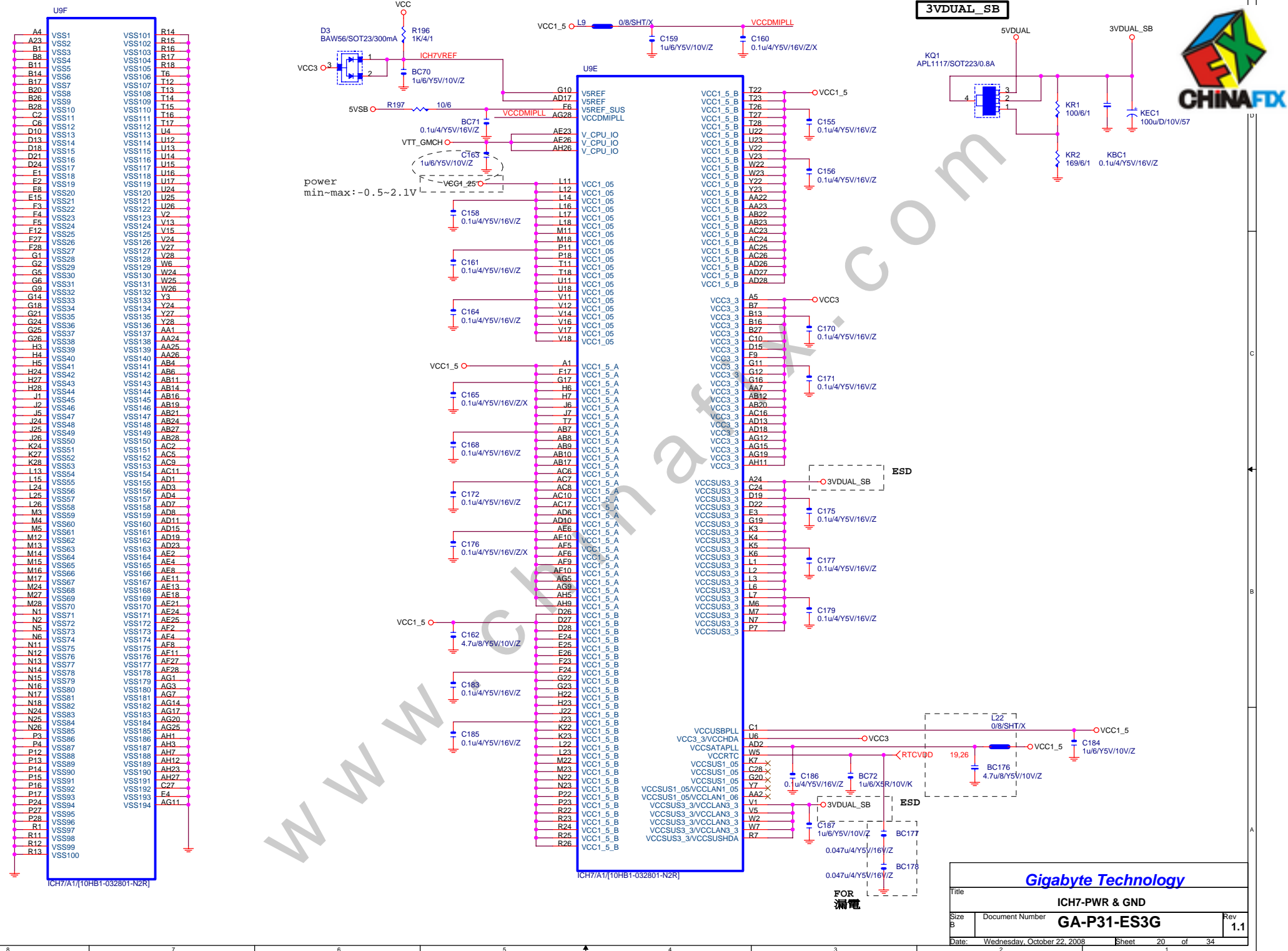
ICH7-IDE, SATA, GPIO, CTRL

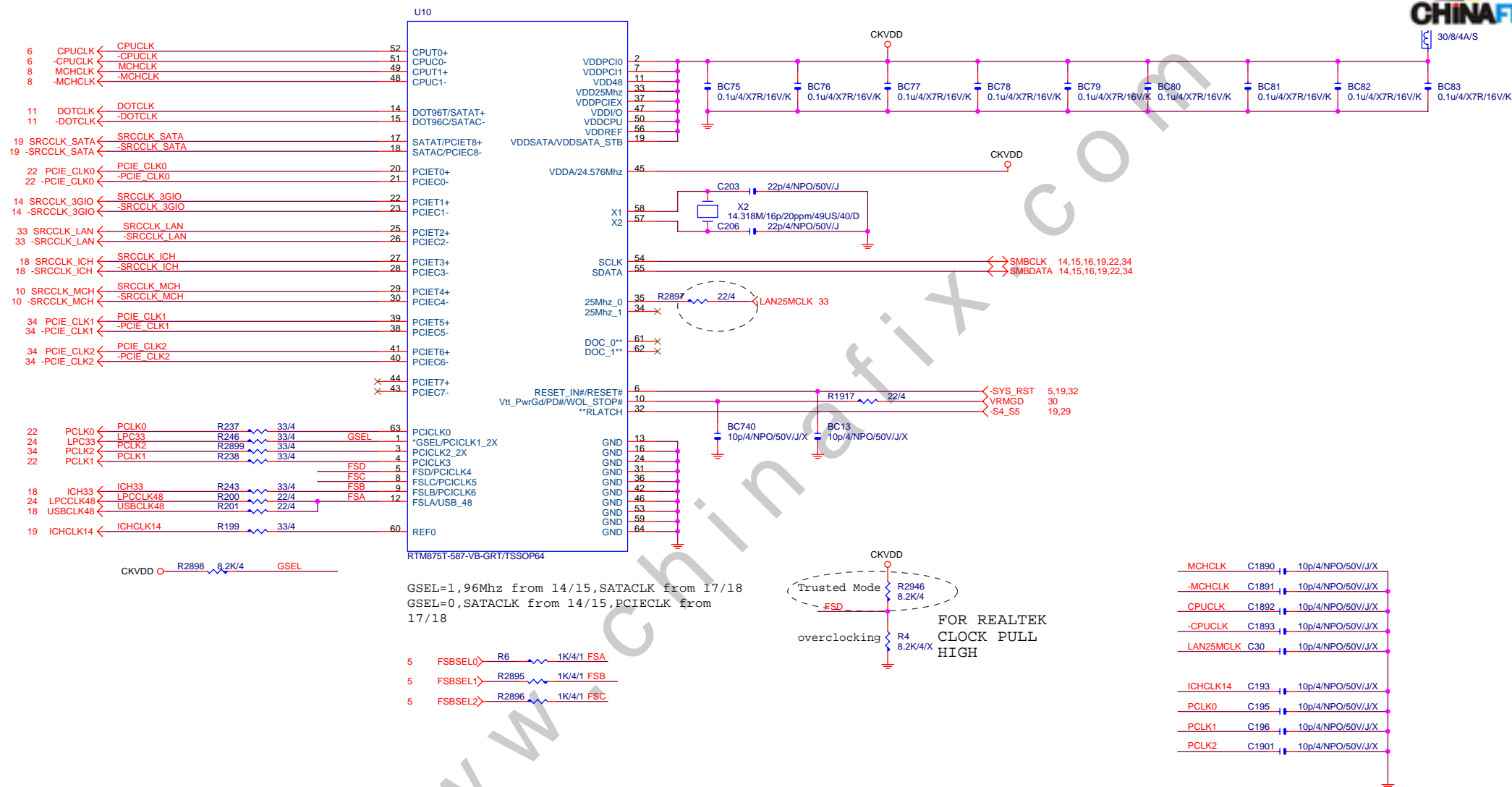
GA-P31-ES3G

Rev 1.1

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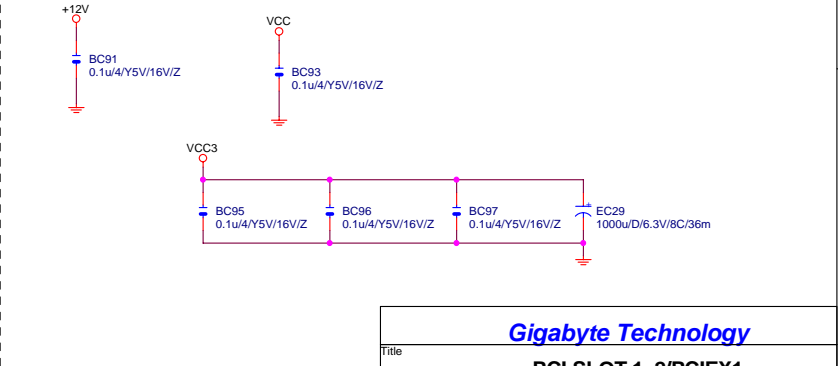
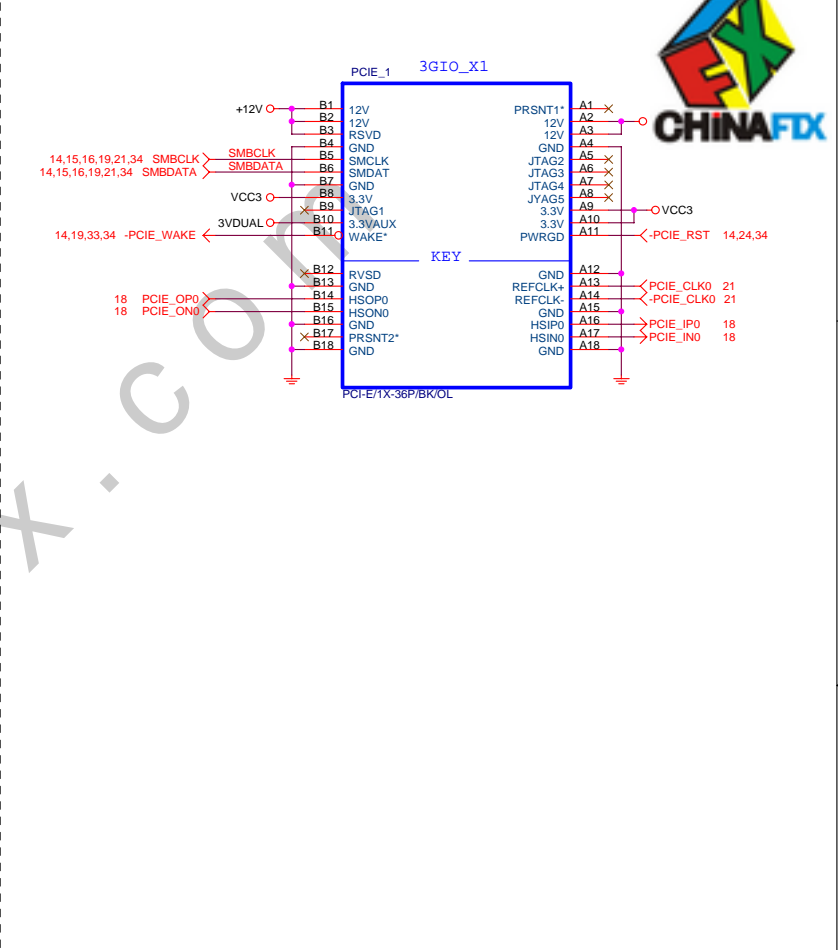




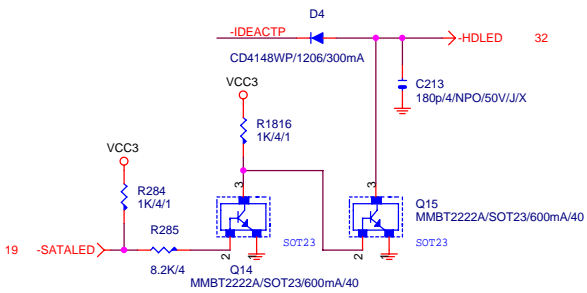
Gigabyte Technology

Title			
CK505 CLK GEN			
Size			
Custom			
Document Number			
GA-P31-ES3G			
Date:			
Wednesday, October 22, 2008			
Sheet			
21 of 34			
Rev			
1.1			

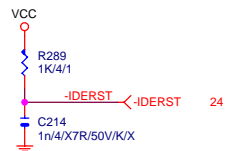
PCIE*1



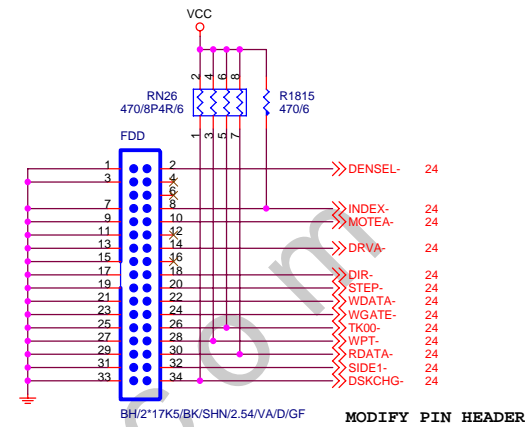
IDE/SATA LED



IDE RESET

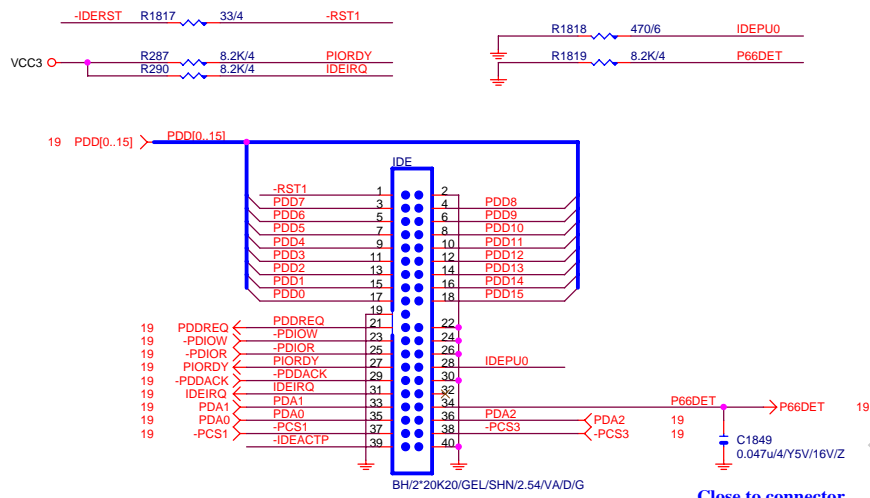


FLOPPY



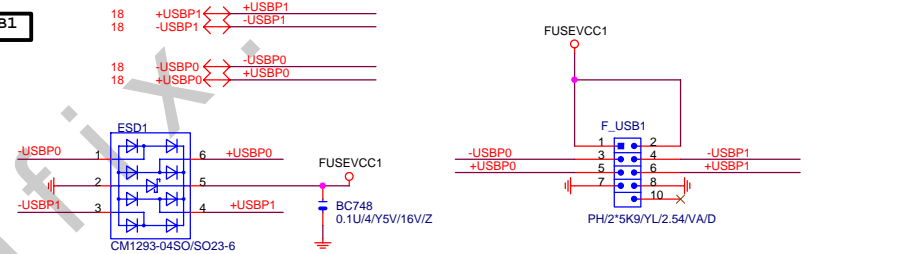
MODIFY PIN HEADER

IDE

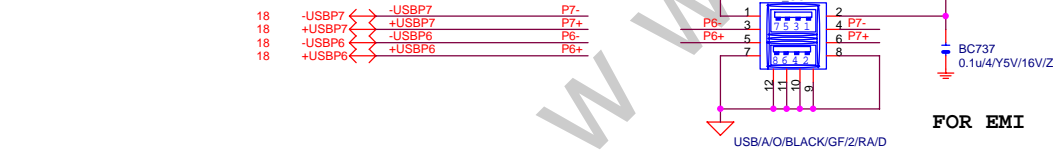
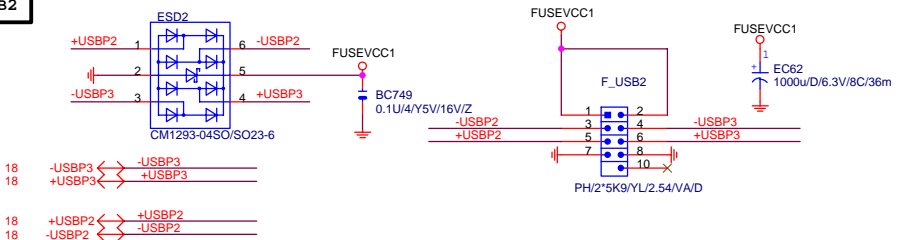


Close to connector

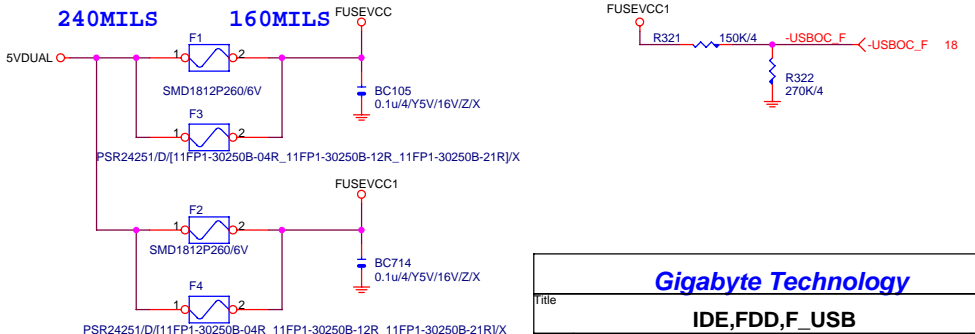
FRONT USB1



FRONT USB2

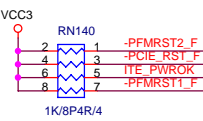
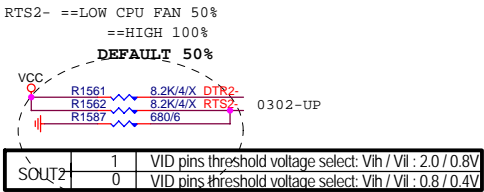


FOR EMI



Gigabyte Technology

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IDE,FDD,F_USB			
GA-P31-ES3G			
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1.2V or 3.3V tolerance select.
1.2V OUTPUT 接 VTT_GMCH
3.3V OUTPUT 接 3.3V
LPCPD#=VIDVCC

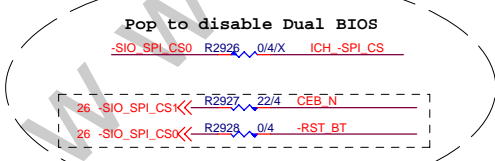
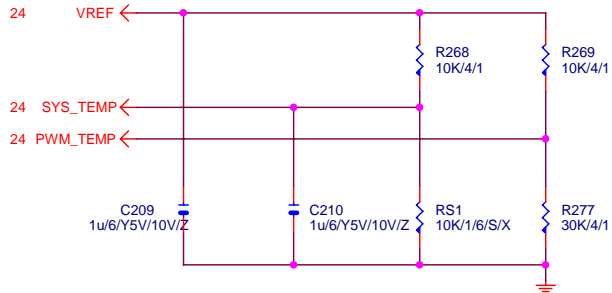


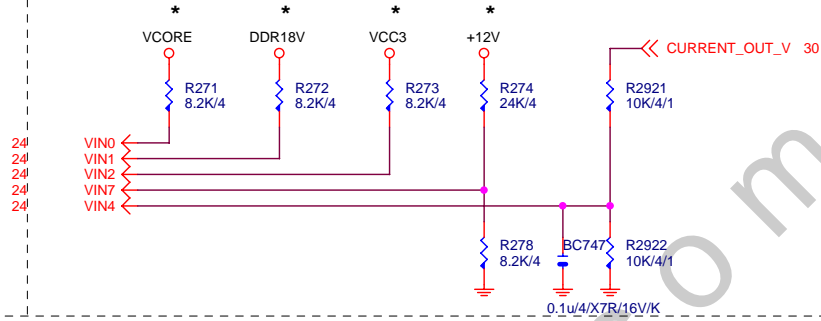
Diagram of the RN163 component (8.2K/8P4R/4) showing its 8 pins and connections:

- Pin 1: 5VSB
- Pin 2: BSEL166_3
- Pin 3: BSEL166_2
- Pin 4: BSEL166_4
- Pin 5: BSEL166_1
- Pin 6: BSEL166_3
- Pin 7: BSEL166_2
- Pin 8: BSEL166_4

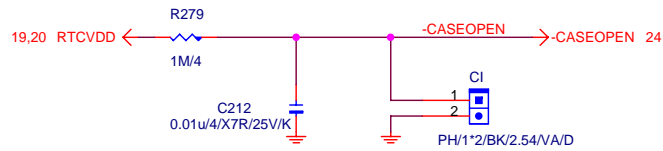
TEMP H/W MONITOR



VOLTAGE-- H/W MONITOR

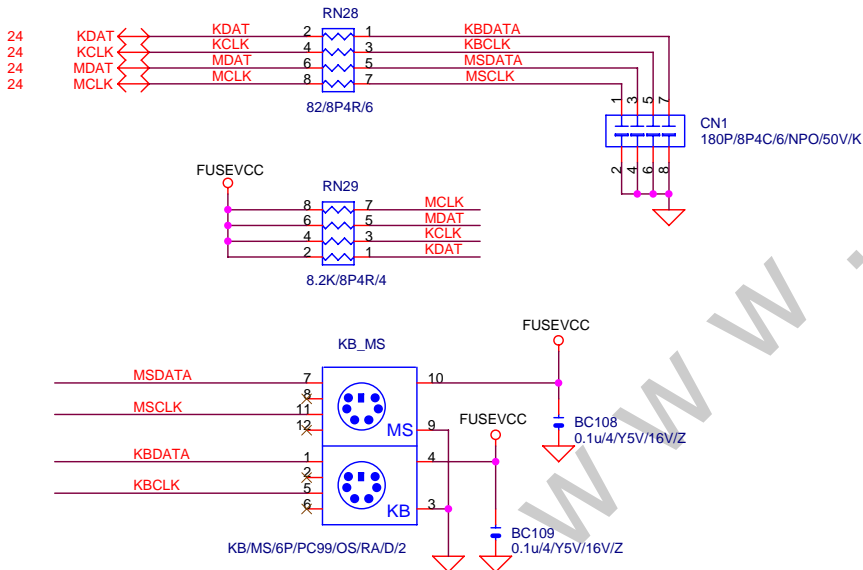


CASE OPEN

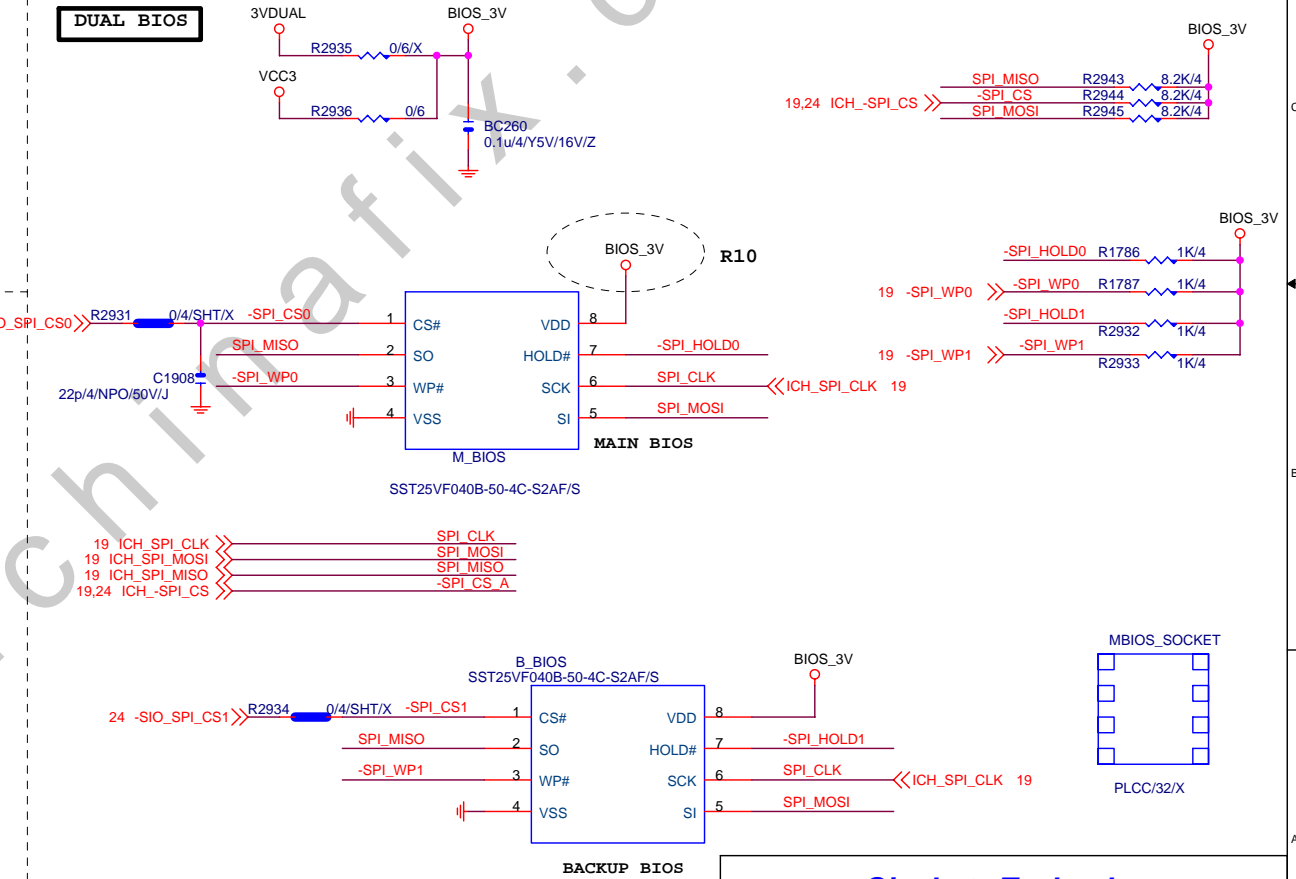


Case Open Circuits

KB/MS

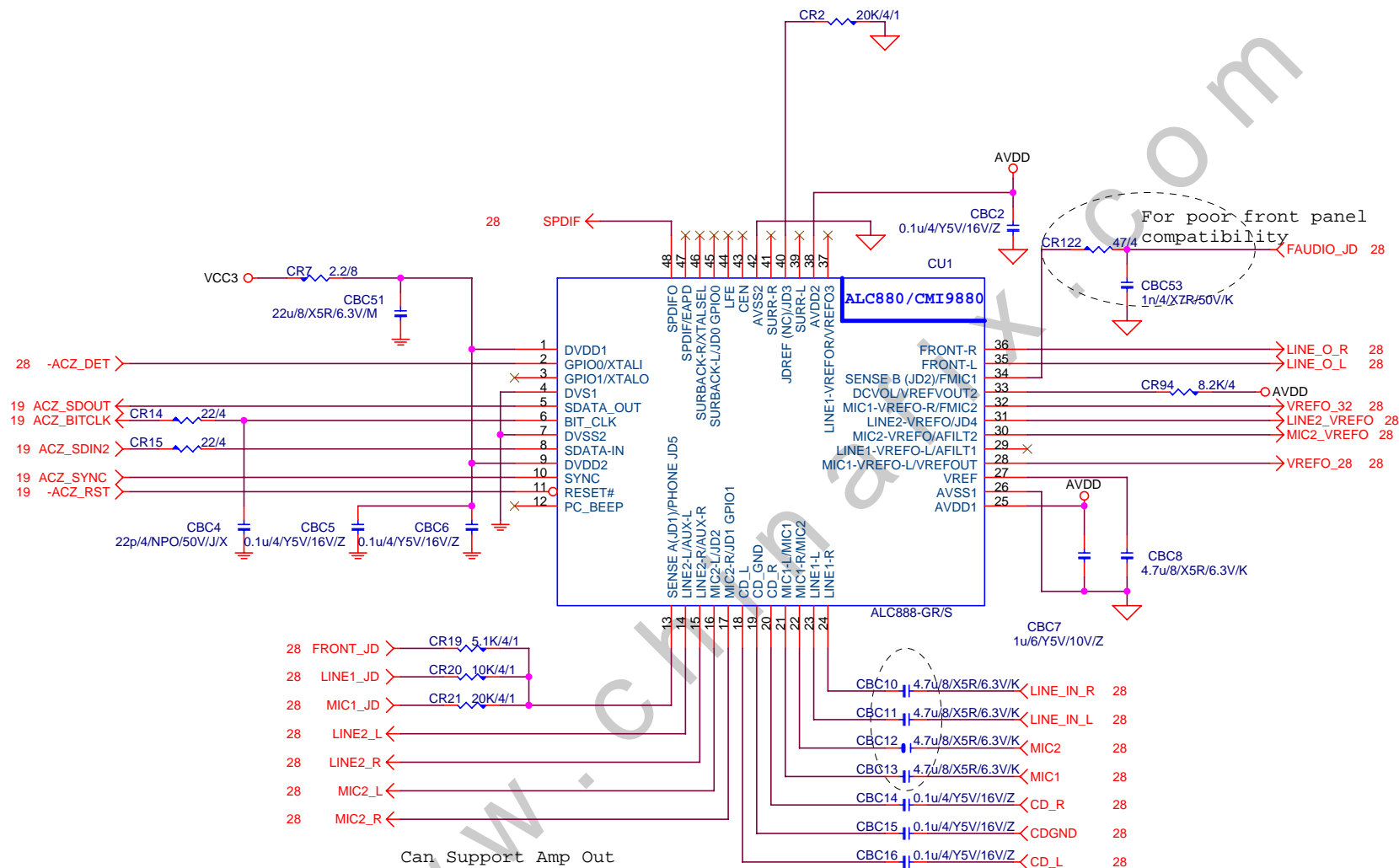


DUAL BIOS



Gigabyte Technology

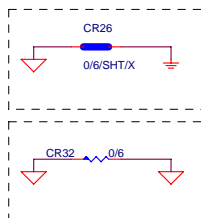
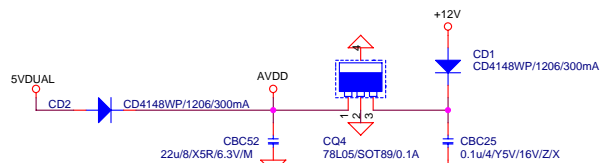
Title			HW-MONITOR/CI/KB/MS/BIOS	
Size	Document Number	GA-P31-ES3G		Rev
Custom				1.1
Date:	Wednesday, October 22, 2008	Sheet	26	of 34



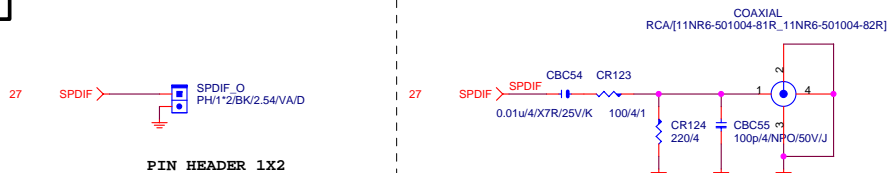
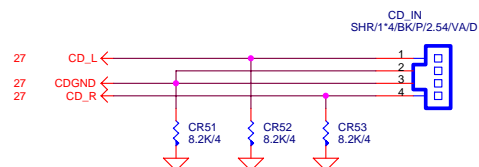
Gigabyte Technology

Title		
AZALIA ALC888		
Size	Document Number	Rev
Custom	GA-P31-ES3G	1.1
Date:	Wednesday, October 22, 2008	Sheet 27 of 34

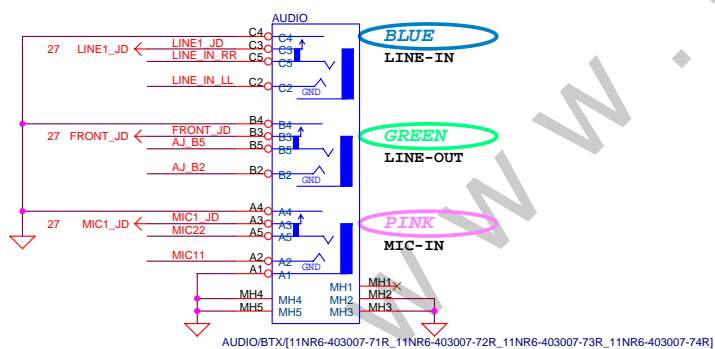
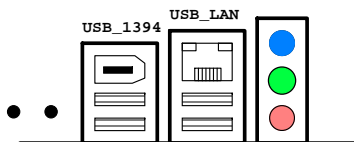
CD IN



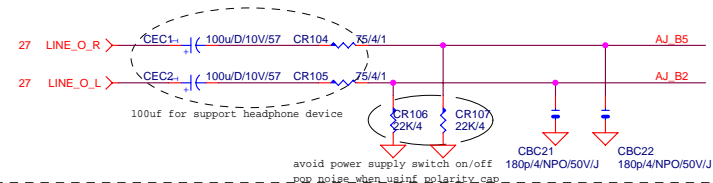
SPDIF



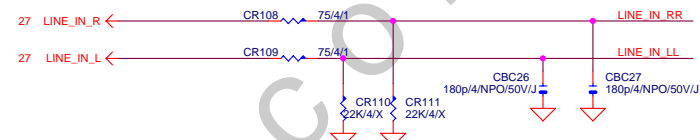
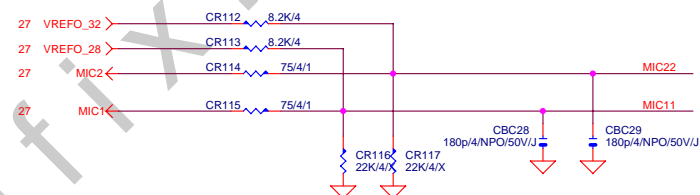
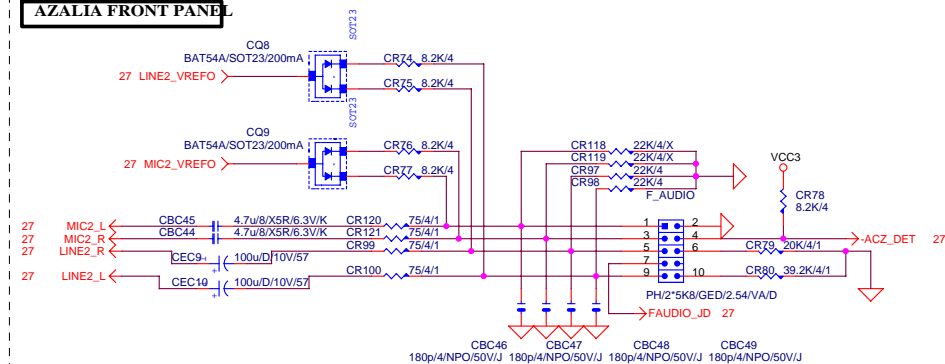
AZALIA JACK



LINE-OUT

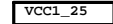
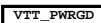


LINE-IN

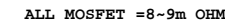
**MIC-IN****AZALIA FRONT PANEL**

Gigabyte Technology

Title			
AUDIO JACK			
Size	Document Number		Rev
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Title			
DISCRETE POWER / FAN CTRL			
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NEW CHOKE


R0603-RH-SHORT10-MASK

NEW CHOKE

R0603-RH-SHORT10-MASK

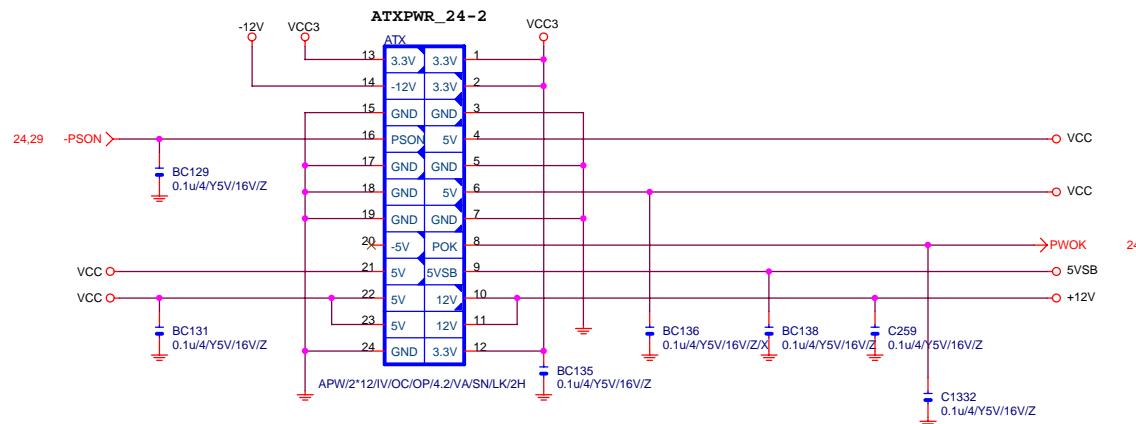
R0603-RH-SHORT10-MASK

SR1,SR3,SR5
PLACE ON THE
SOLDER SIDE,
CLOSE
INDUCTOR
OUTPUT
INDUCTOR

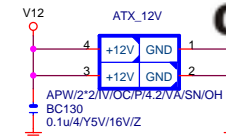
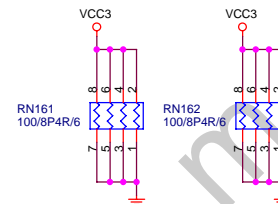


Title			
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Size	Document Number		Rev
Custom	GA-P31-ES3G		1.1
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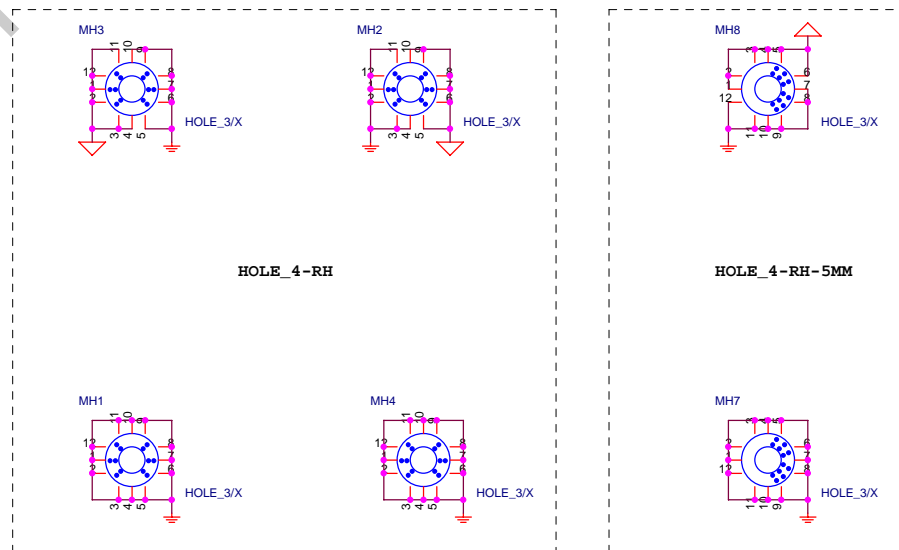
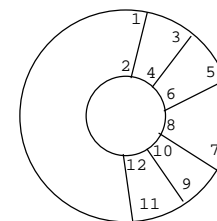
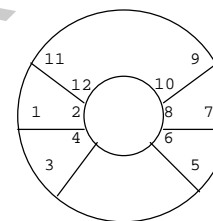
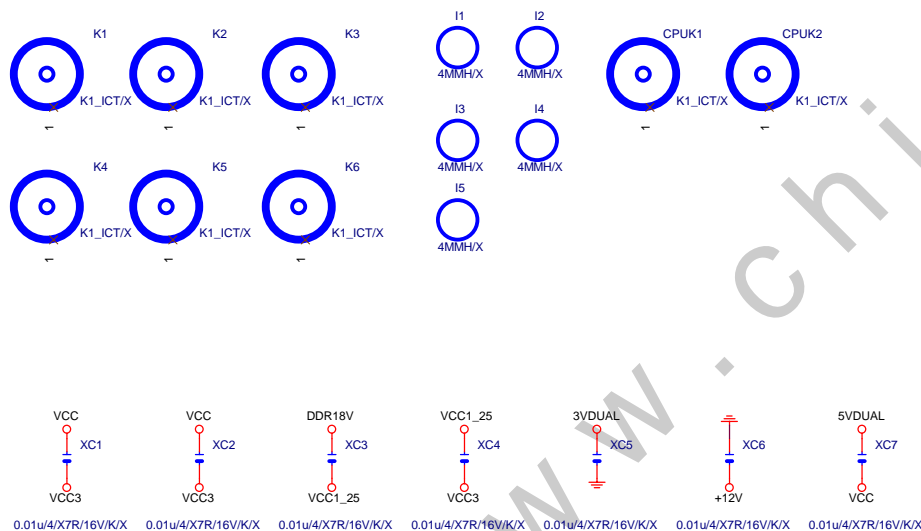
ATX POWER CONNECTOR



FIX PWR AcBel(ATX-400C-A2ADB)



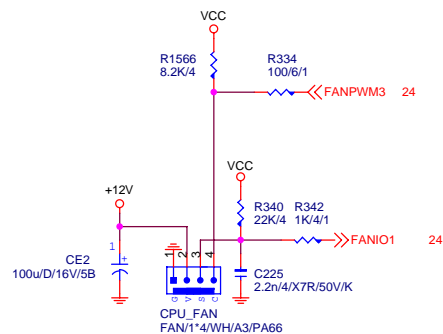
ATX_4-1



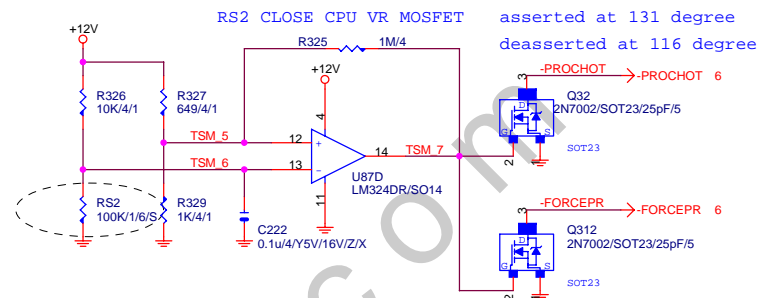
Gigabyte Technology

Title		
ATX POWER CONNECTOR		
GA-P31-ES3G		
Size	Document Number	Rev
B		1.1
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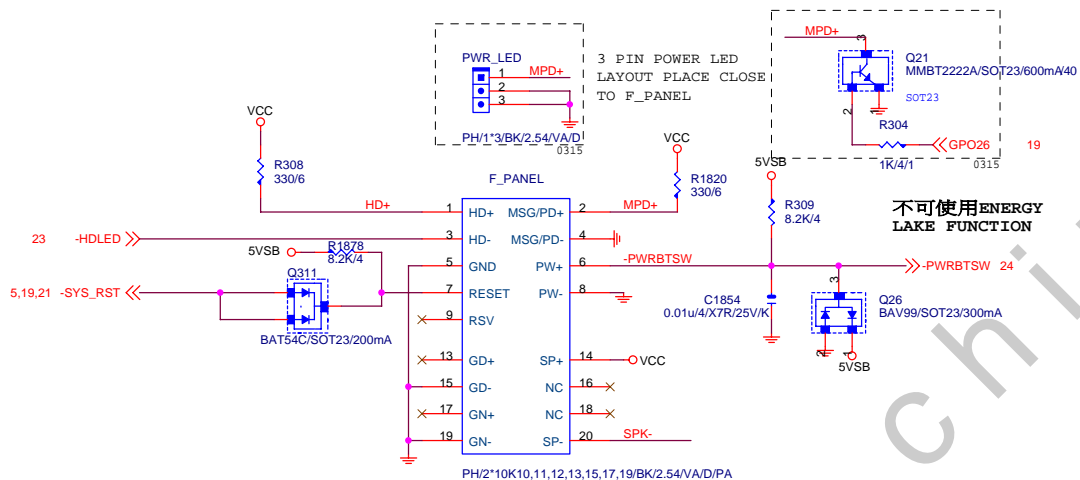
CPU SMART FAN SMART FAN



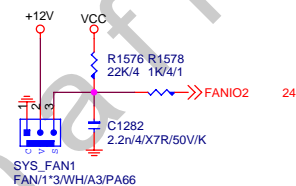
PROCESSOR HOT



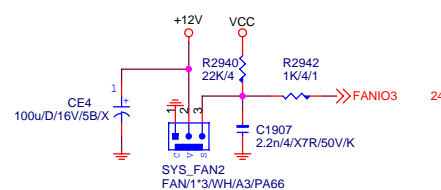
INTEL FRONT PANEL



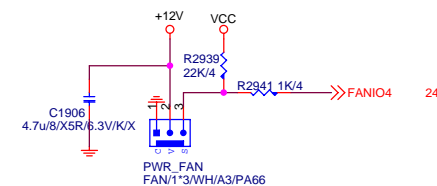
SYS_FAN1



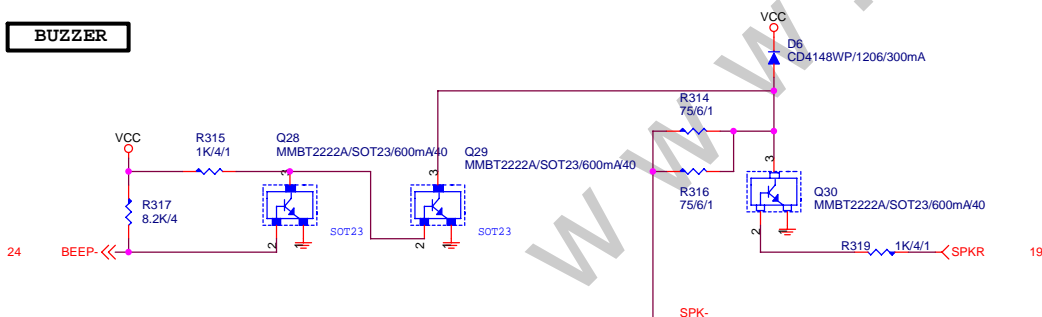
SYS_FAN2



PWR_FAN



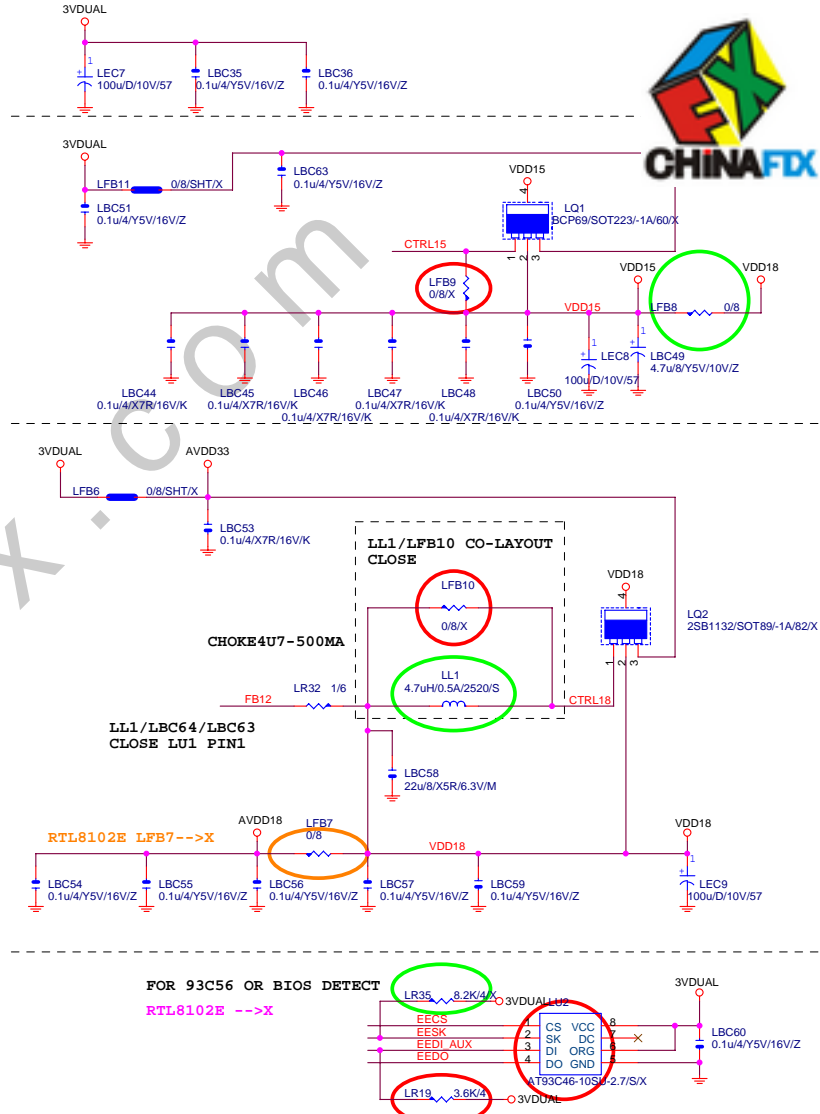
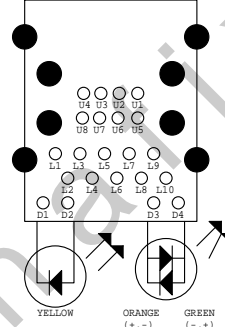
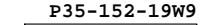
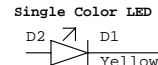
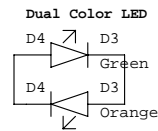
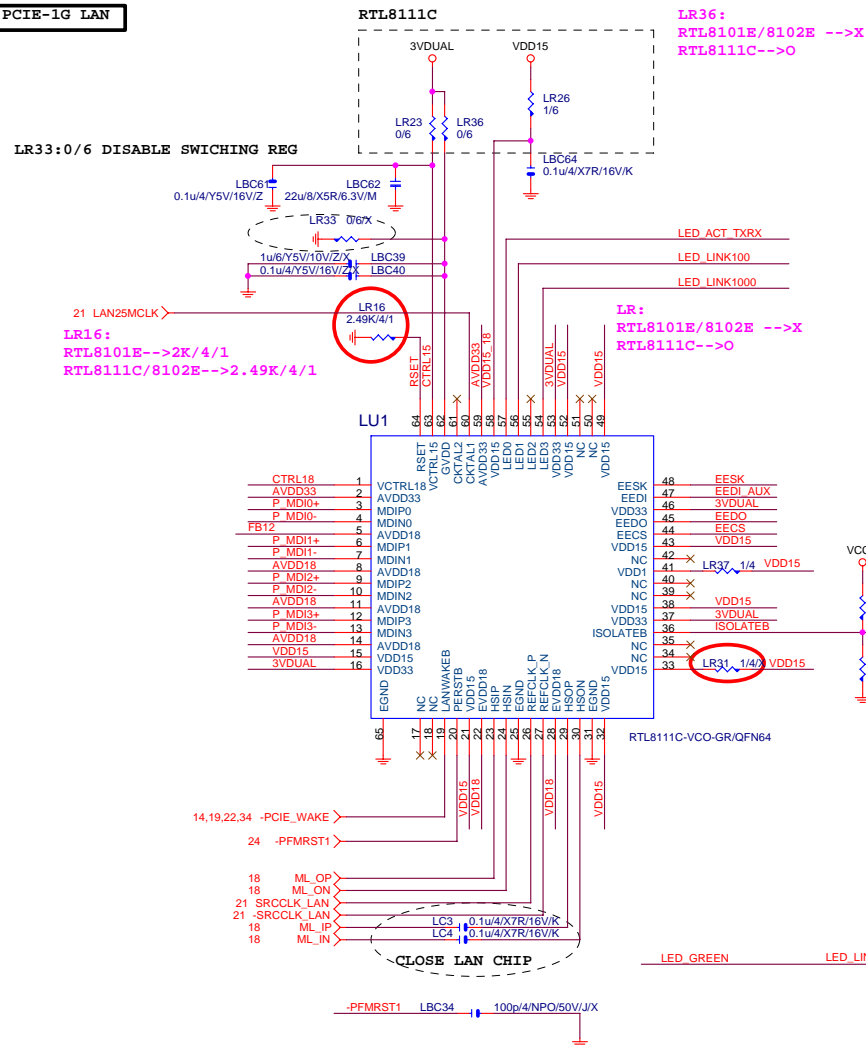
BUZZER



Gigabyte Technology

Title		
FRONT PANEL / FAN CTRL		
GA-P31-ES3G		
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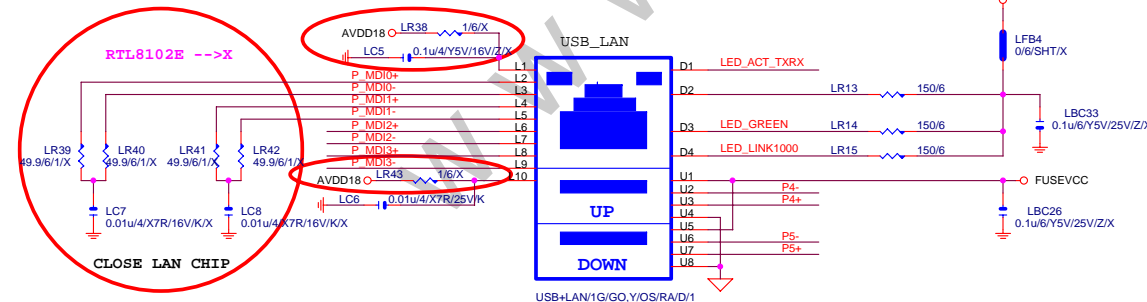
PCIE-1G LAN



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
```



USB_LAN

