

Model Name:GA-P31-ES3G Revision 1.1

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	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
16	DDRII CHANNEL B
17	DDRII TERMINATION
18	ICH7 PCI, USB, DMI, LAN
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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

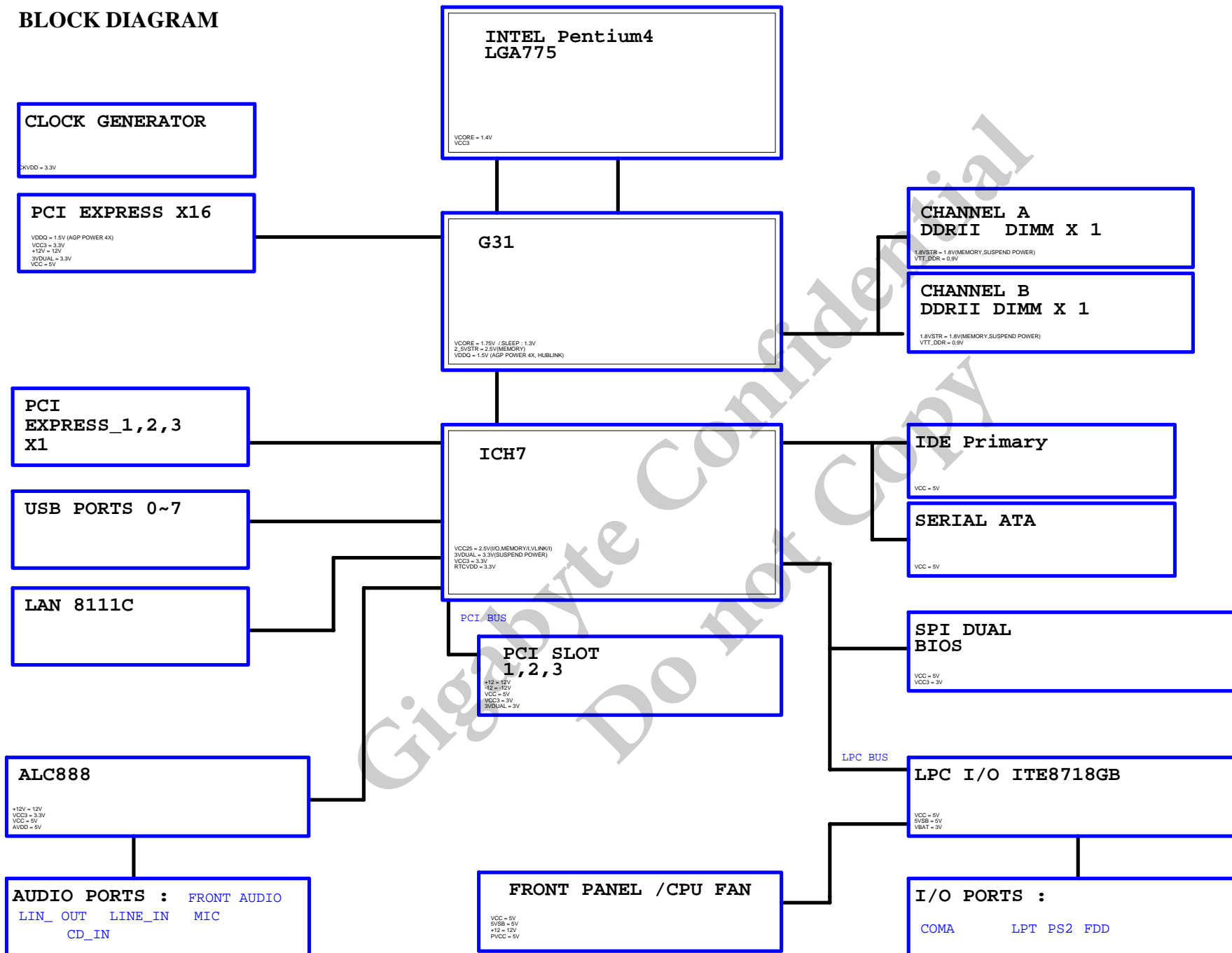
28	REAR AUDIO JACK
29	DISCRETE POWER
30	VCORE PWM_ISL6312
31	ATX, OTHERS POWER
32	FRONT PANEL
33	REALTEK RTL8111C
34	PCI SLOT3,PCIE*2,3

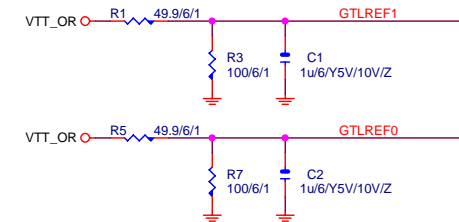
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Cover Sheet

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BLOCK DIAGRAM

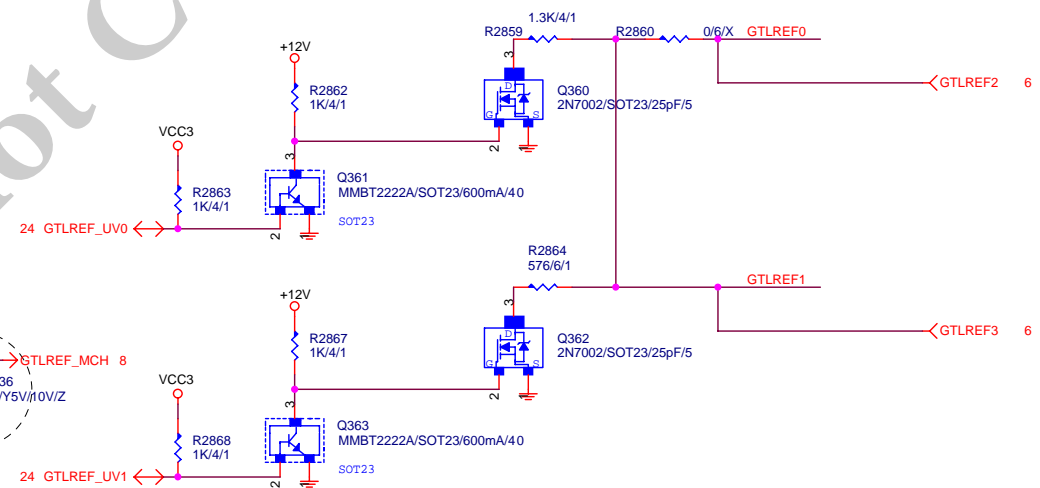
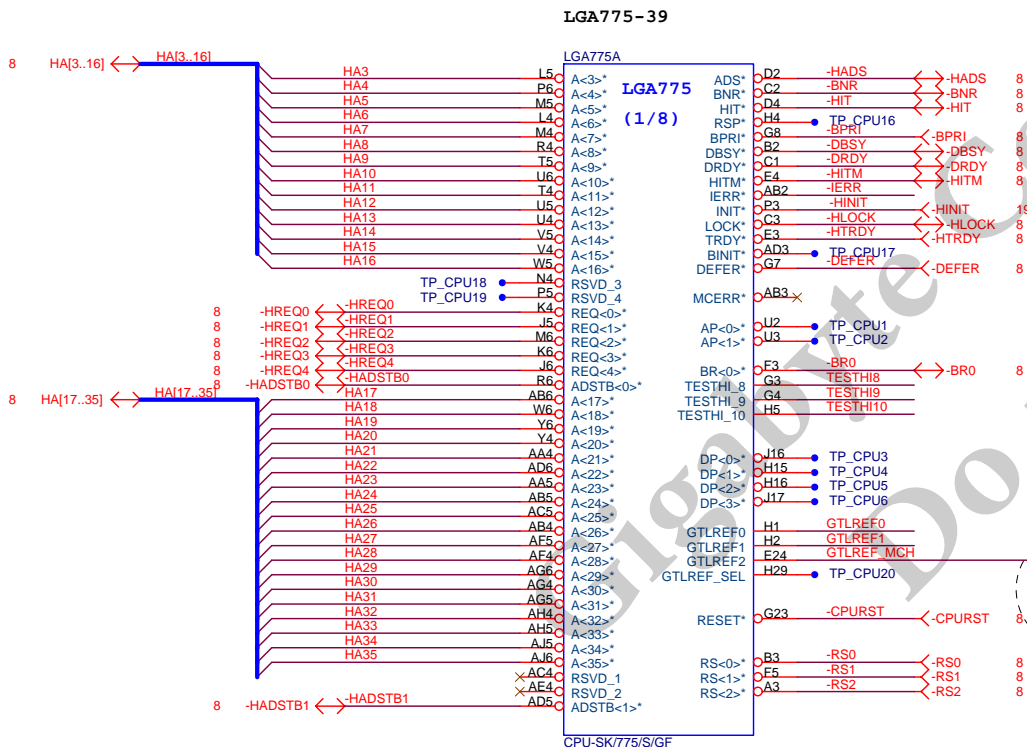


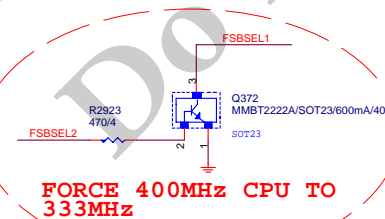
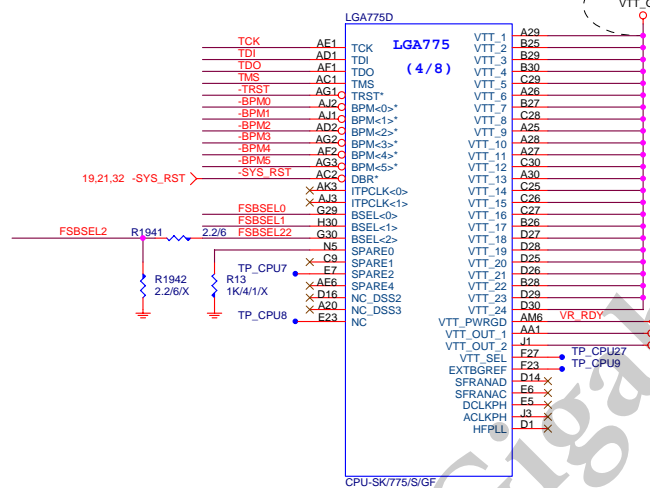
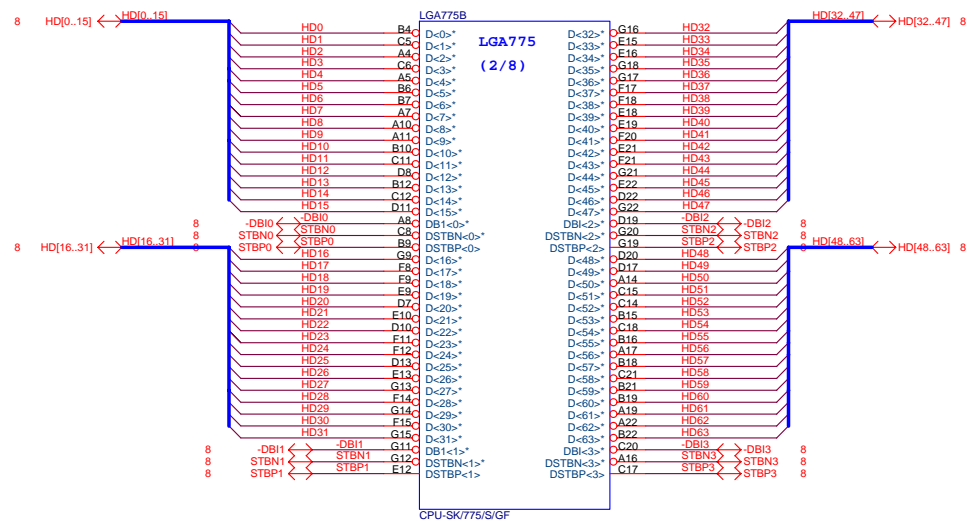


VTT_OR R8 62/6 -IERR

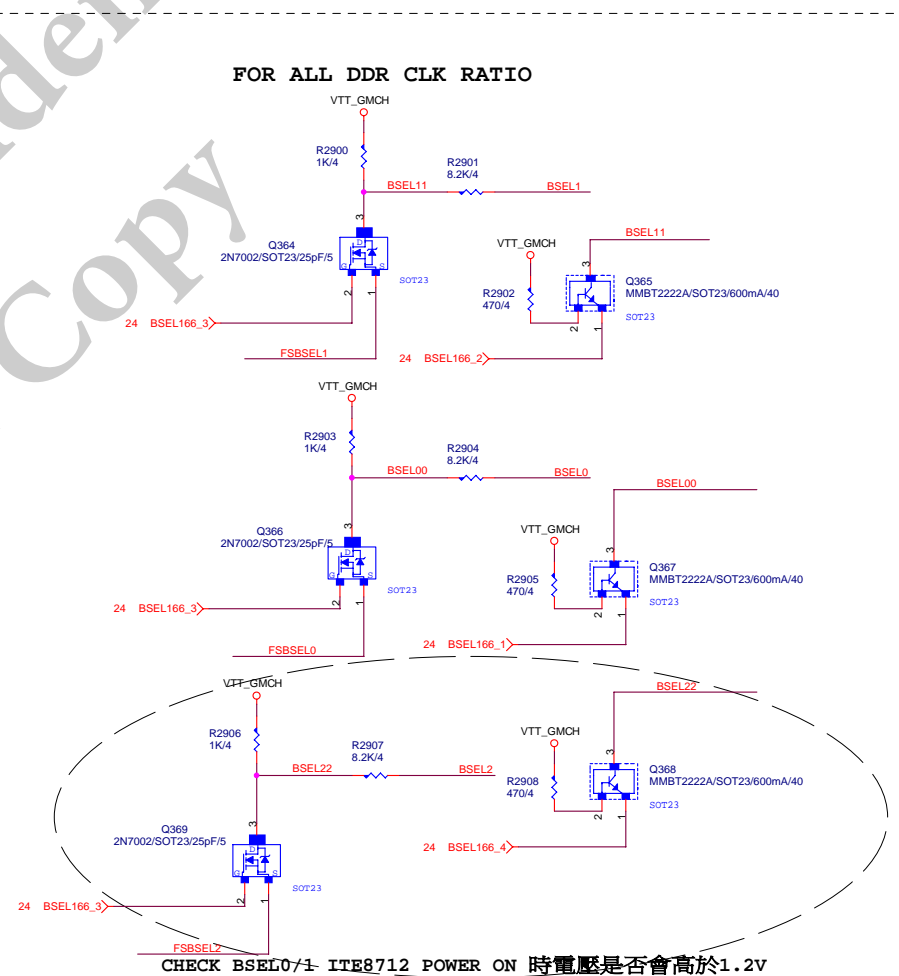
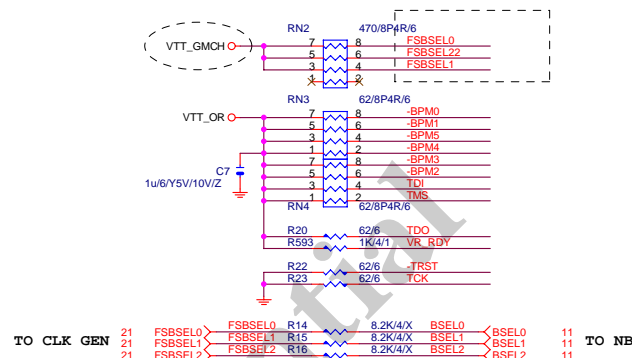
VTT_OL R10 62/6 -BR0

VTT_OR R12 62/6 -CPURST



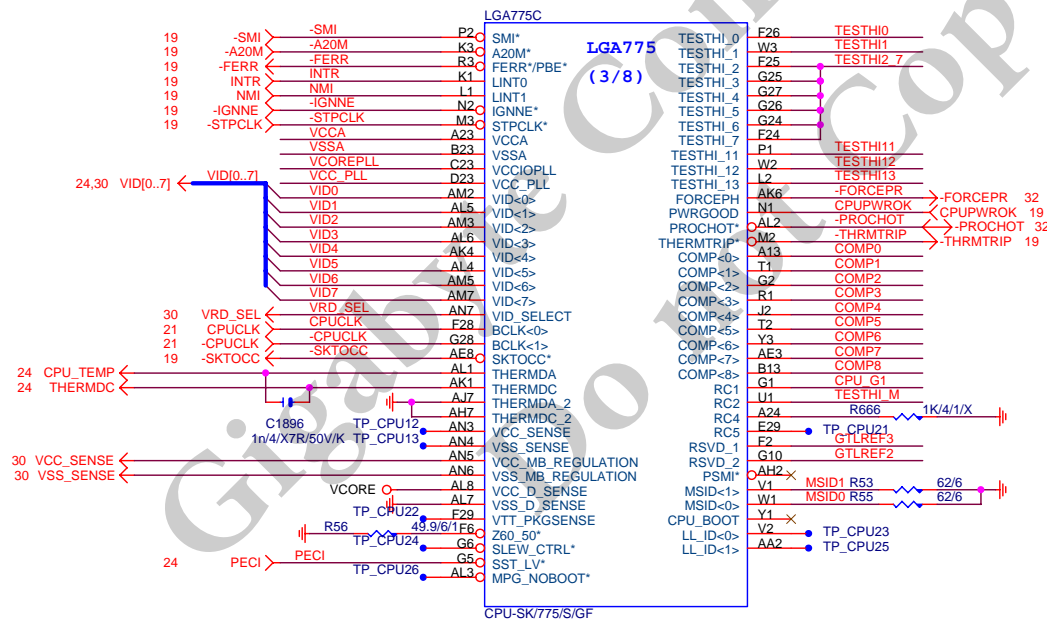
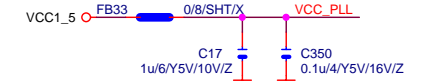


	FSA	FSB	FSC		
	FSBSEL0	FSBSEL1	FSBSEL2	Clock	
?	1	0	1	100MHz	
?	1	0	0	133MHz	3/4
G31	0	1	0	200MHz	2/2.66/3.33/4
G31	0	0	0	266MHz	2/2.5/3/4
G31	0	0	1	333MHz	2/2.4
	0	1	1	400MHz	



Trace width doesn't
less than 12 Mil

As close as possible to
CPU socket



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P4_LGA775-C

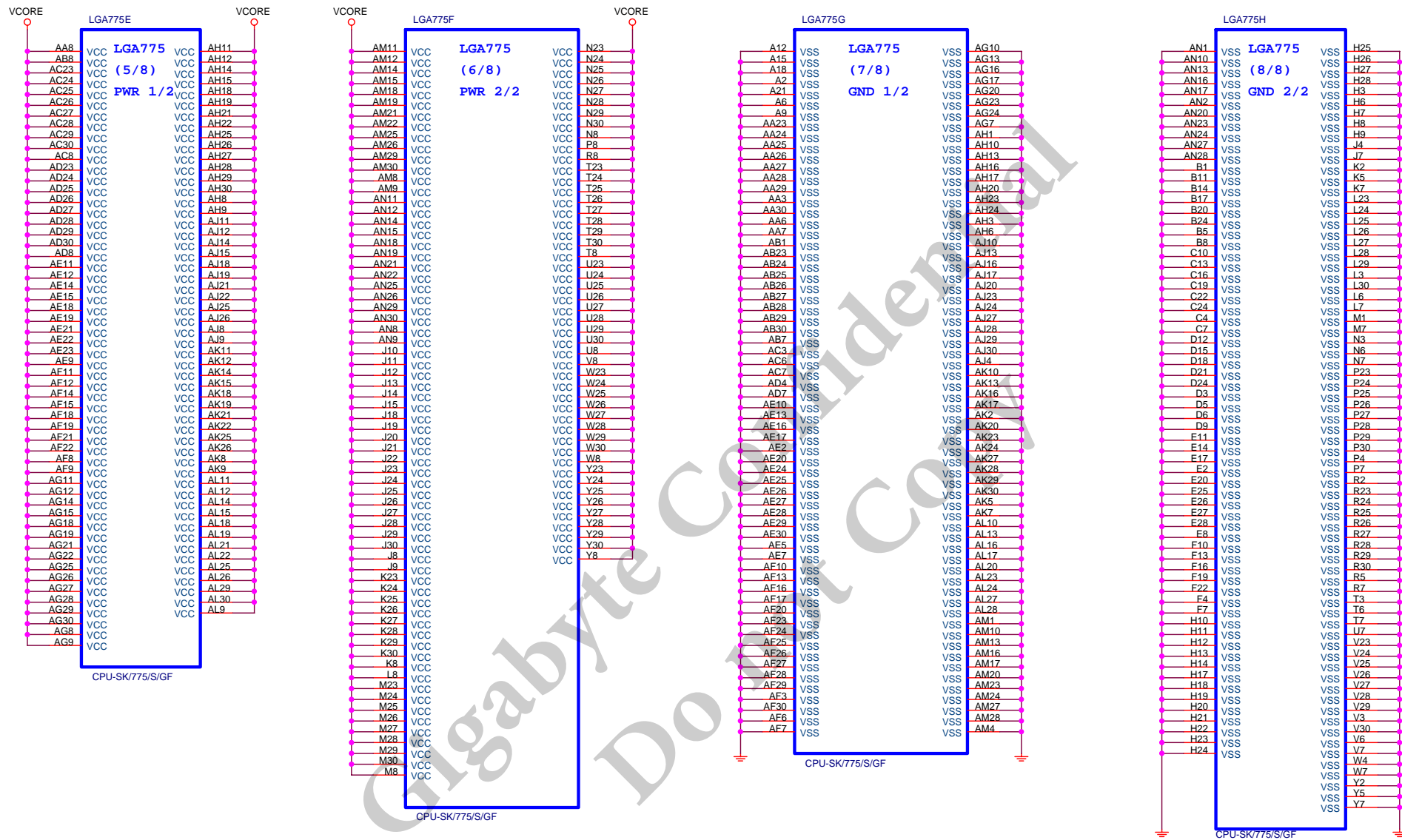
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GA-P31-ES3G

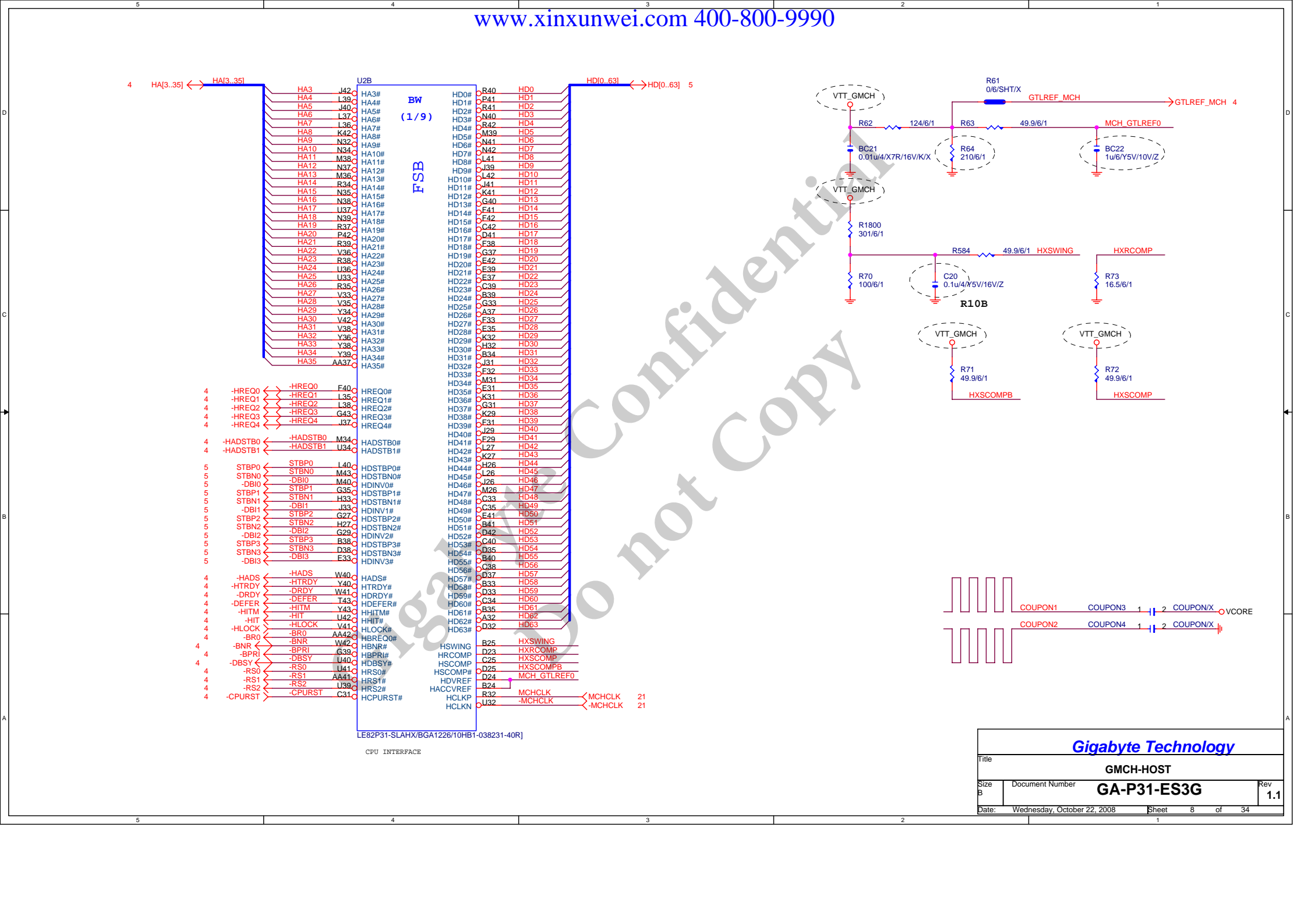
1.1

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1			

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U2C

BW
(3/9)

DDR_0

RESERVED

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

U2D

BW
(4/9)

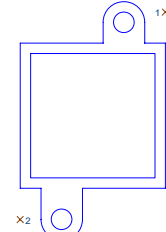
DDR_1

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

15,17 MODT_A[0..1] <- MODT_A0..11
 16,17 MODT_B[0..1] <- MODT_B0..11
 16 -DQS8[0..7] <- DQS8[0..7]
 16,17 MAA8[0..14] <- MAA8[0..14]
 16 DMB[0..7] <- DMB[0..7]
 16 MDB[0..63] <- MDB[0..63]
 16 DQS8[0..7] <- DQS8[0..7]
 15,17 MAA[0..14] <- MAA[0..14]
 16 DMA[0..7] <- DMA[0..7]
 15 MD4[0..63] <- MD4[0..63]
 15 DQSA[0..7] <- DQSA[0..7]
 15 -DQSA[0..7] <- -DQSA[0..7]

DDR18V
 R74 1K/4/1
 R75 1K/4/1
 C321 1u6/5V/10VZ
 C322 1u6/5V/10VZ
 R77 3K/4/1
 R78 1K/4/1
 C323 0.01u4/4X7R/25V/K
 C324 0.01u4/4X7R/25V/K
 R79 206/1
 BC27 0.1u4/5V/16V/Z
 R80 206/1
 R81 206/1
 BC28 0.1u4/5V/16V/Z
 R82 206/1

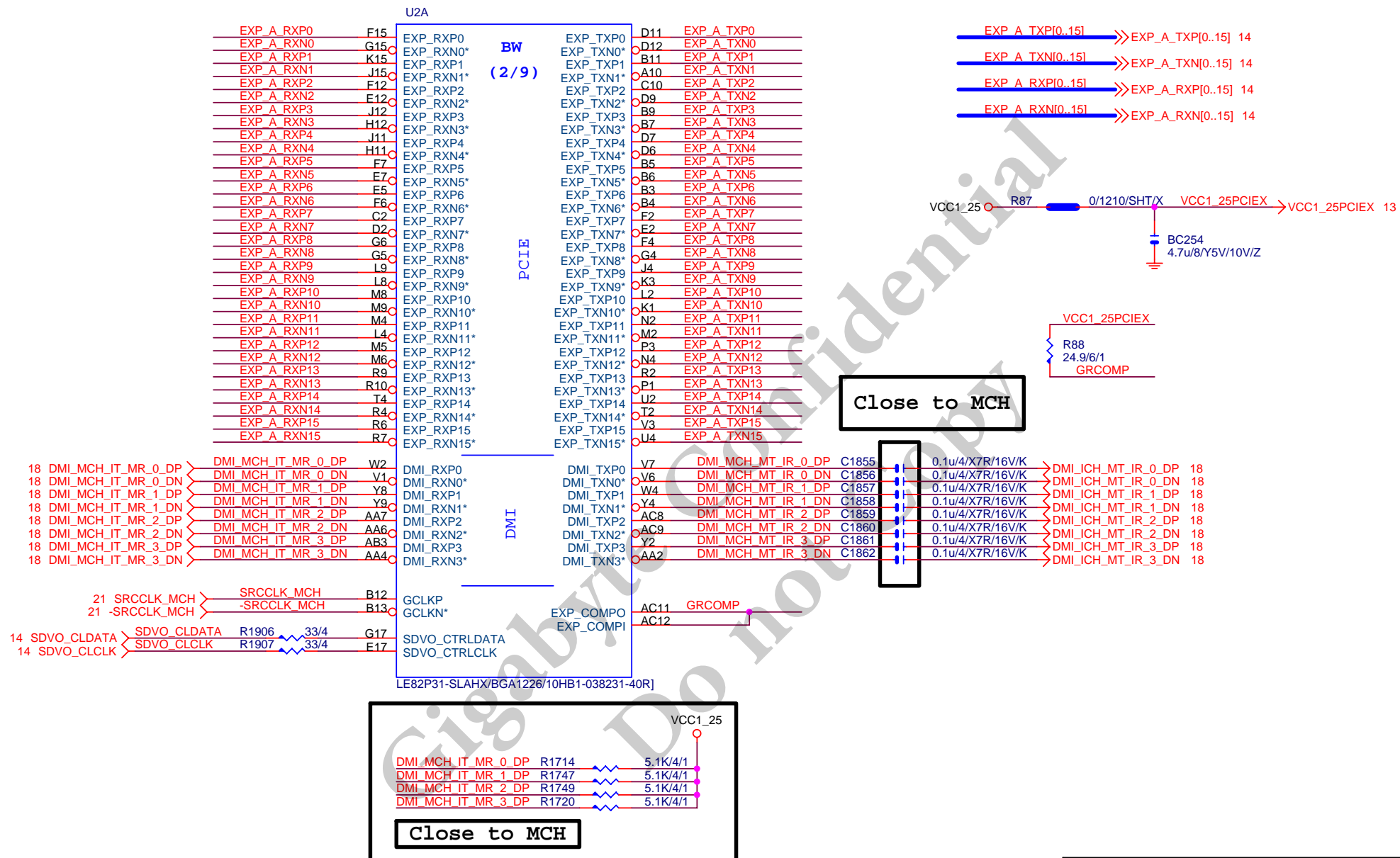
DDR18V
 R79 206/1
 BC27 0.1u4/5V/16V/Z
 R80 206/1
 R81 206/1
 BC28 0.1u4/5V/16V/Z
 R82 206/1



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

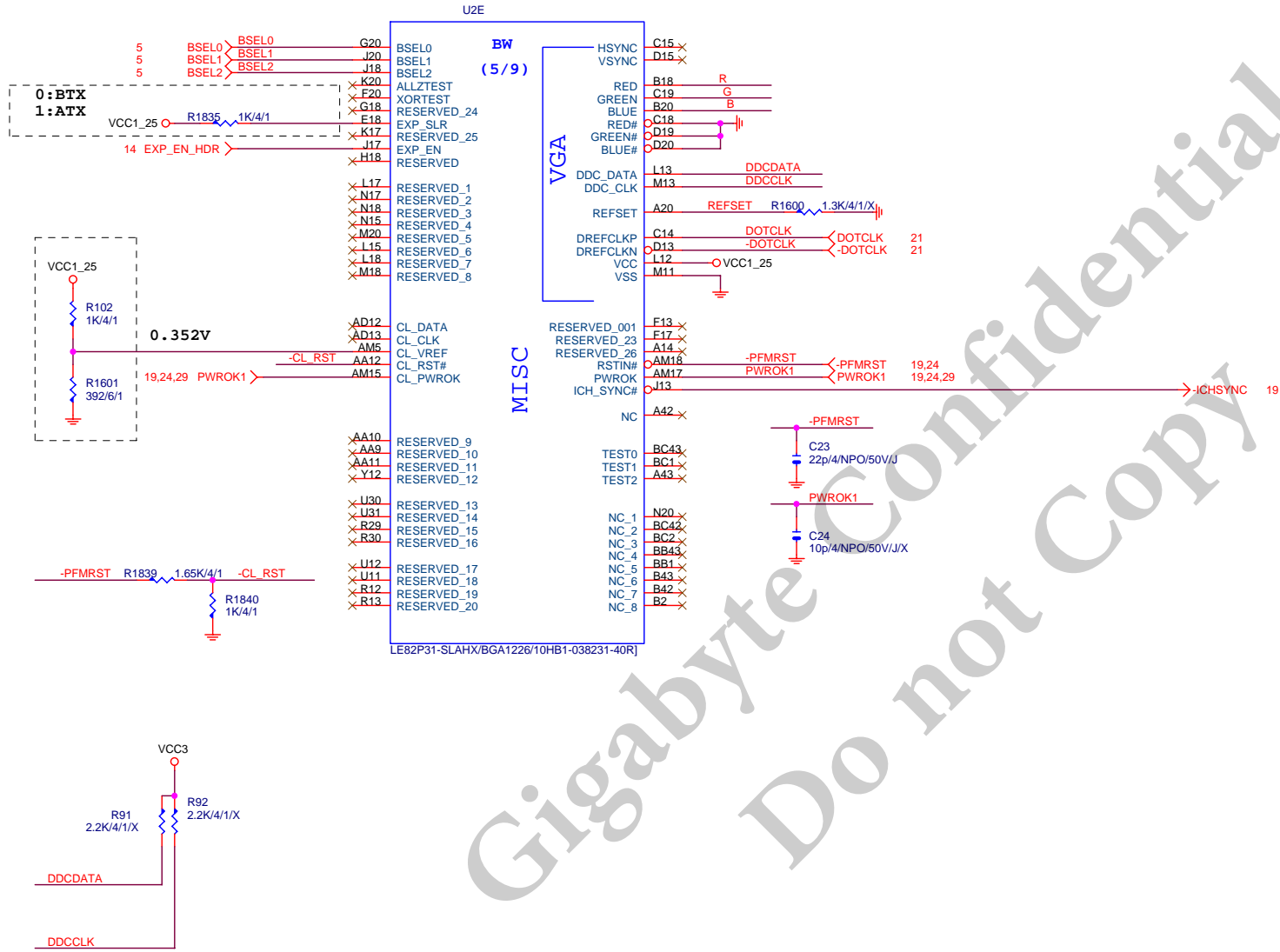
Gigabyte Technology

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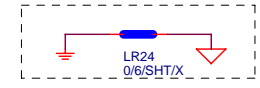
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Title			
GMCH-PCI E & DMI			
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R1.0 EMI ADD GND PAD

EMI ADD GND PAD



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GMCH-INTERNAL VGA			
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U2G

BC37	VSS_1	BW	VSS_181	AF5
BC32	VSS_2	(7/9)	VSS_182	AF3
BC28	VSS_3		VSS_183	AF2
BC24	VSS_4		VSS_184	AF1
BC10	VSS_5		VSS_185	AD42
BC5	VSS_6	GND 1/2	VSS_186	AD39
BB7	VSS_7		VSS_187	AD37
AY41	VSS_8		VSS_188	AD35
AY4	VSS_9		VSS_189	AD33
AW43	VSS_10		VSS_190	AD25
AW41	VSS_11		VSS_191	AD23
AW1	VSS_12		VSS_192	AD21
AV37	VSS_13		VSS_193	AD19
AV35	VSS_14		VSS_194	AC38
AV27	VSS_15		VSS_195	AC35
AV23	VSS_16		VSS_196	AC24
AV21	VSS_17		VSS_197	AC22
AV17	VSS_18		VSS_198	AC20
AV11	VSS_19		VSS_199	AC10
AV9	VSS_20		VSS_200	AC7
AV7	VSS_21		VSS_201	AC5
AU42	VSS_22		VSS_202	AB43
AU38	VSS_23		VSS_203	AB25
AU32	VSS_24		VSS_204	AB23
AU24	VSS_25		VSS_205	AB21
AU20	VSS_26		VSS_206	AB19
AU16	VSS_27		VSS_207	AB2
AU2	VSS_28		VSS_208	AB1
AT31	VSS_29		VSS_209	AA38
AT29	VSS_30		VSS_210	AA35
AT15	VSS_31		VSS_211	AA24
AT13	VSS_32		VSS_212	AA22
AT12	VSS_33		VSS_213	AA20
AR38	VSS_34		VSS_214	AA8
AR33	VSS_35		VSS_215	Y42
AR32	VSS_36		VSS_216	Y37
AR27	VSS_37		VSS_217	Y35
AR26	VSS_38		VSS_218	Y33
AR23	VSS_39		VSS_219	Y25
AR21	VSS_40		VSS_220	Y23
AR20	VSS_41		VSS_221	Y21
AR17	VSS_42		VSS_222	Y19
AR9	VSS_43		VSS_223	Y10
AR6	VSS_44		VSS_224	Y7
AP43	VSS_45		VSS_225	Y5
AP24	VSS_46		VSS_226	Y1
AP18	VSS_47		VSS_227	W3
AP1	VSS_48		VSS_228	V43
AN38	VSS_49		VSS_229	V39
AN31	VSS_50		VSS_230	V37
AN29	VSS_51		VSS_231	V34
AN24	VSS_52		VSS_232	V32
AN23	VSS_53		VSS_233	V11
AN20	VSS_54		VSS_234	V8
AN15	VSS_55		VSS_235	V5
AN13	VSS_56		VSS_236	V2
AN12	VSS_57		VSS_237	U38
AN11	VSS_58		VSS_238	U35
AN4	VSS_59		VSS_239	U8
AM42	VSS_60		VSS_240	U7
AM40	VSS_61		VSS_241	U5
AM36	VSS_62		VSS_242	T42
AM33	VSS_63		VSS_243	T1
AM29	VSS_64		VSS_244	R36
AM24	VSS_65		VSS_245	R33
AM23	VSS_66		VSS_246	R31
AM20	VSS_67		VSS_247	R11
AM11	VSS_68		VSS_248	R8
AM9	VSS_69		VSS_249	R5
AM7	VSS_70		VSS_250	R3
AM4	VSS_71		VSS_251	P43
AM2	VSS_72		VSS_252	P30
AM1	VSS_73		VSS_253	P21
AL36	VSS_74		VSS_254	P18
AL33	VSS_75		VSS_255	P17
AK43	VSS_76		VSS_256	P2
AJ39	VSS_77		VSS_257	N36
AJ36	VSS_78		VSS_258	N33
AJ33	VSS_79		VSS_259	N31
AH42	VSS_80		VSS_260	N27
AG37	VSS_81		VSS_261	N21
AG34	VSS_82		VSS_262	N13
AF43	VSS_83		VSS_263	N10
AF37	VSS_84		VSS_264	N7
AF36	VSS_85		VSS_265	N5
AF10	VSS_86		VSS_266	M42
AF9	VSS_87		VSS_267	M37
AF8	VSS_88		VSS_268	M35
AF7	VSS_89		VSS_269	M33
AF6	VSS_90		VSS_270	

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

M27	VSS_91	BW	VSS_271	BC41
M21	VSS_92	(9/9)	VSS_272	BC3
M17	VSS_93		VSS_273	BA1
M15	VSS_94		VSS_274	AY40
M10	VSS_95	GND 2/2	VSS_275	AF23
M7	VSS_96		VSS_276	AF21
M1	VSS_97		VSS_277	AF19
L33	VSS_98		VSS_278	AE24
L32	VSS_99		VSS_279	AE22
L31	VSS_100		VSS_280	AE20
L29	VSS_101		VSS_281	AE18
L21	VSS_102		VSS_282	AC18
L20	VSS_103		VSS_283	AA18
L11	VSS_104		VSS_284	W24
L7	VSS_105		VSS_285	W22
L5	VSS_106		VSS_286	W20
L3	VSS_107		VSS_287	R21
K43	VSS_108		VSS_288	E1
K26	VSS_109		VSS_289	C43
K21	VSS_110		VSS_290	C1
K18	VSS_111		VSS_291	A41
K13	VSS_112		VSS_292	A5
K12	VSS_113		VSS_293	A3
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]

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Title

GMCH-GND

Size
Custom

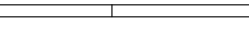
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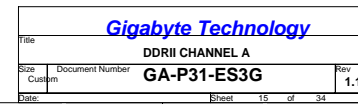
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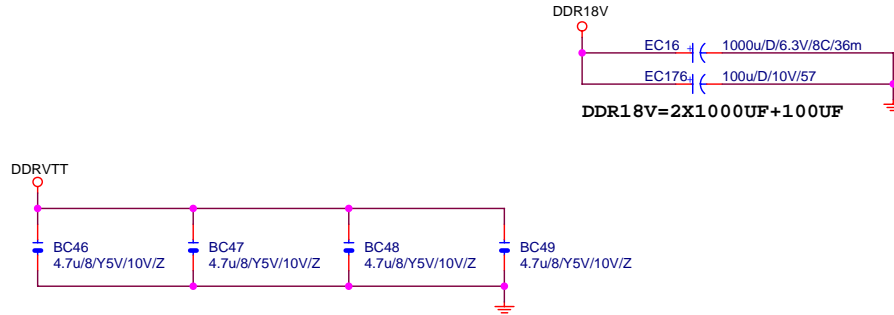
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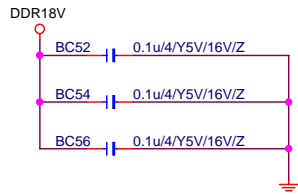


DDR TERMINATION CHANNEL A

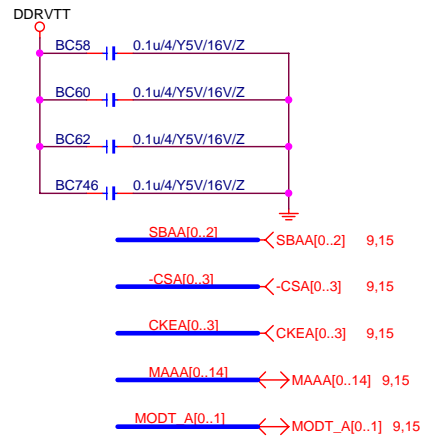
DDRVTT Decouple



DDR18V Decouple

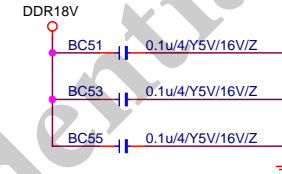


DDRVTT Decouple

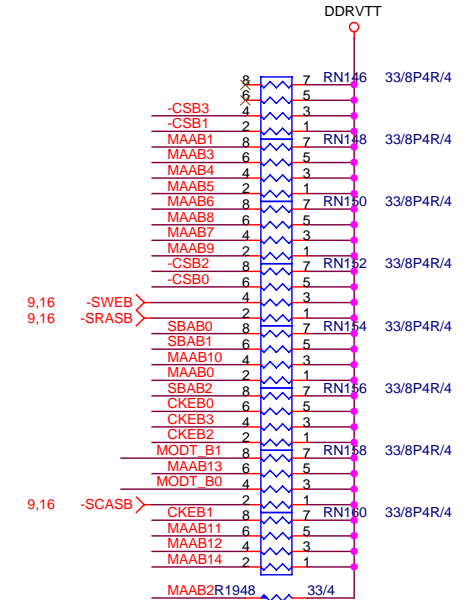
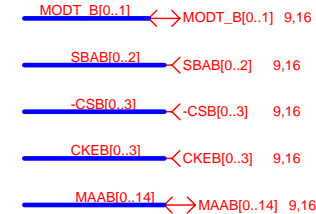
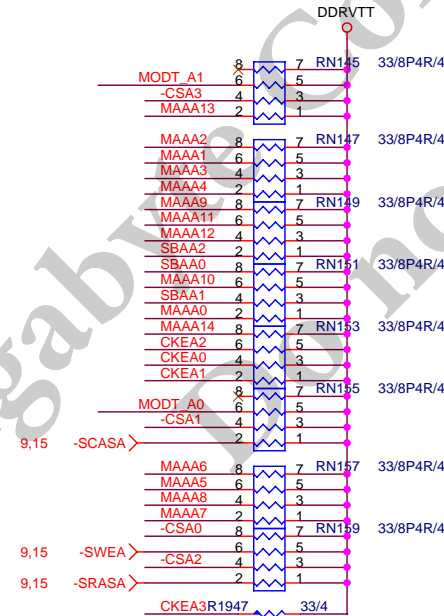
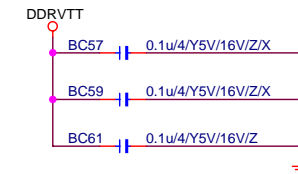


DDR TERMINATION CHANNEL B

DDR18V Decouple

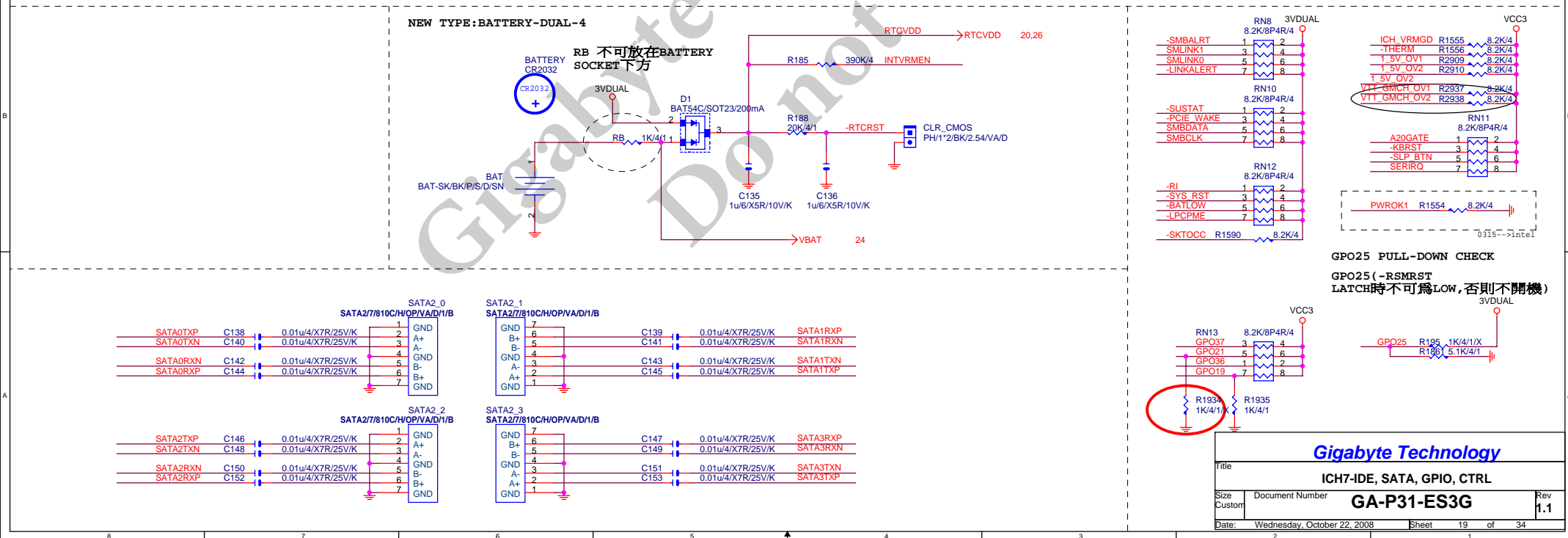
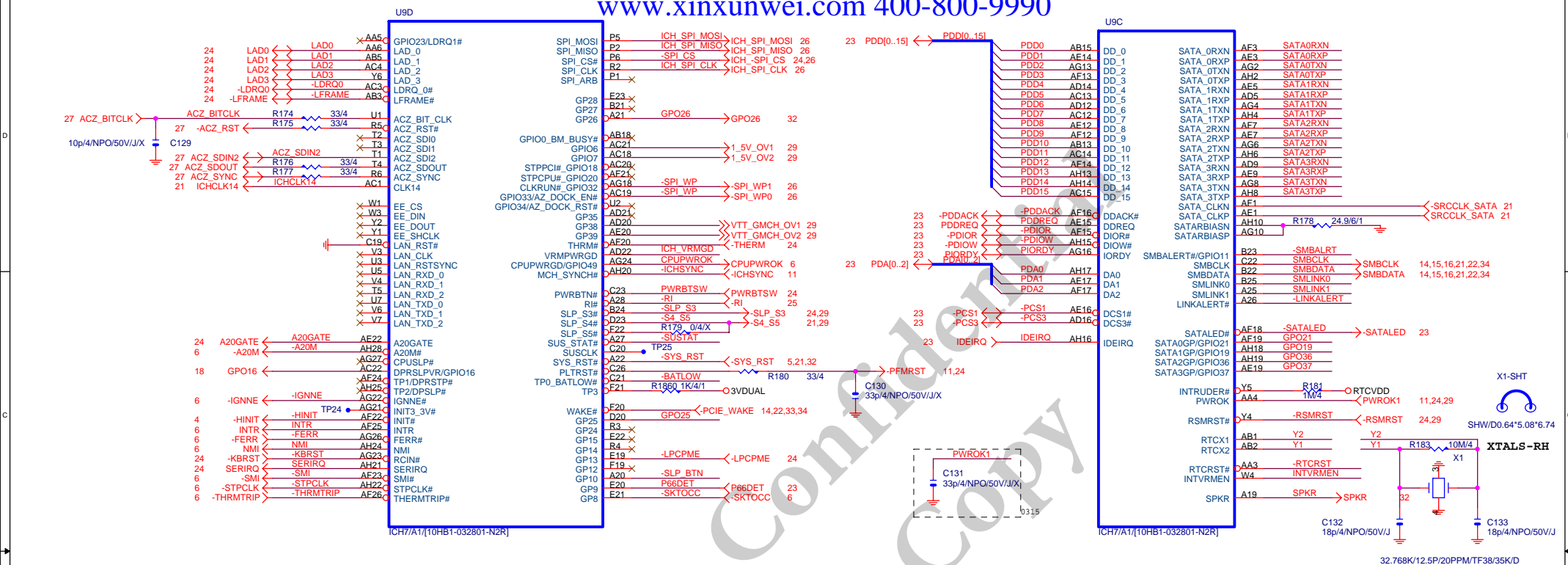


DDRVTT Decouple



Gigabyte Technology

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DDRII TERMINATOR		
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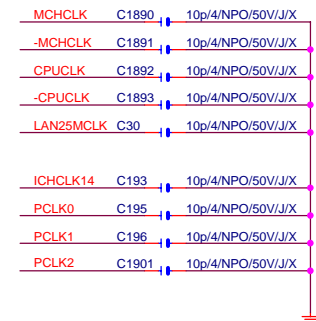




ICH7-PWR & GND

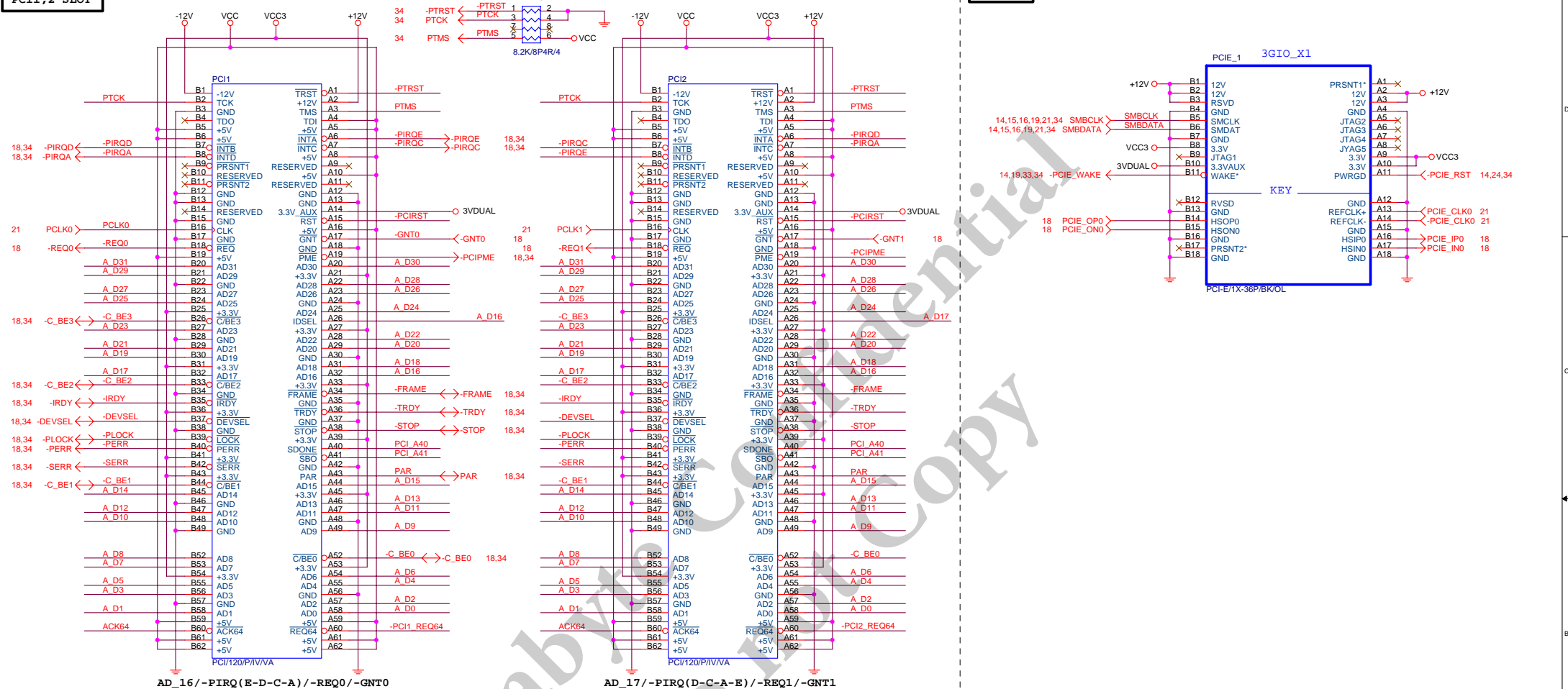
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PCI1,2 SLOT

PCI1*1



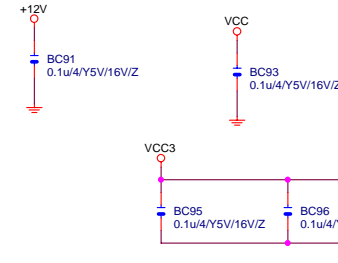
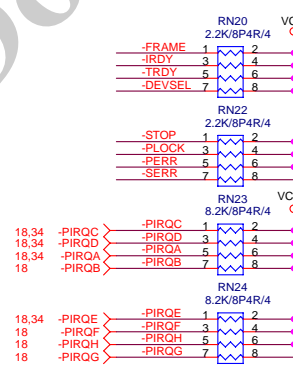
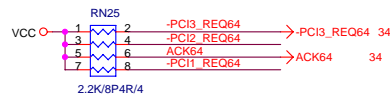
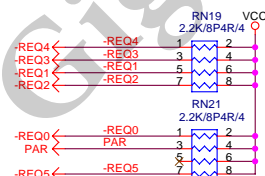
18,34 A_D[0..31] ↔ A_D[0..31]

-PCIRST ↔ -PCIRST 18,34

Place close to PCI1

14,15,16,19,21,34 SMBCLK ↔ PCI_A40

14,15,16,19,21,34 SMBDATA ↔ PCI_A41

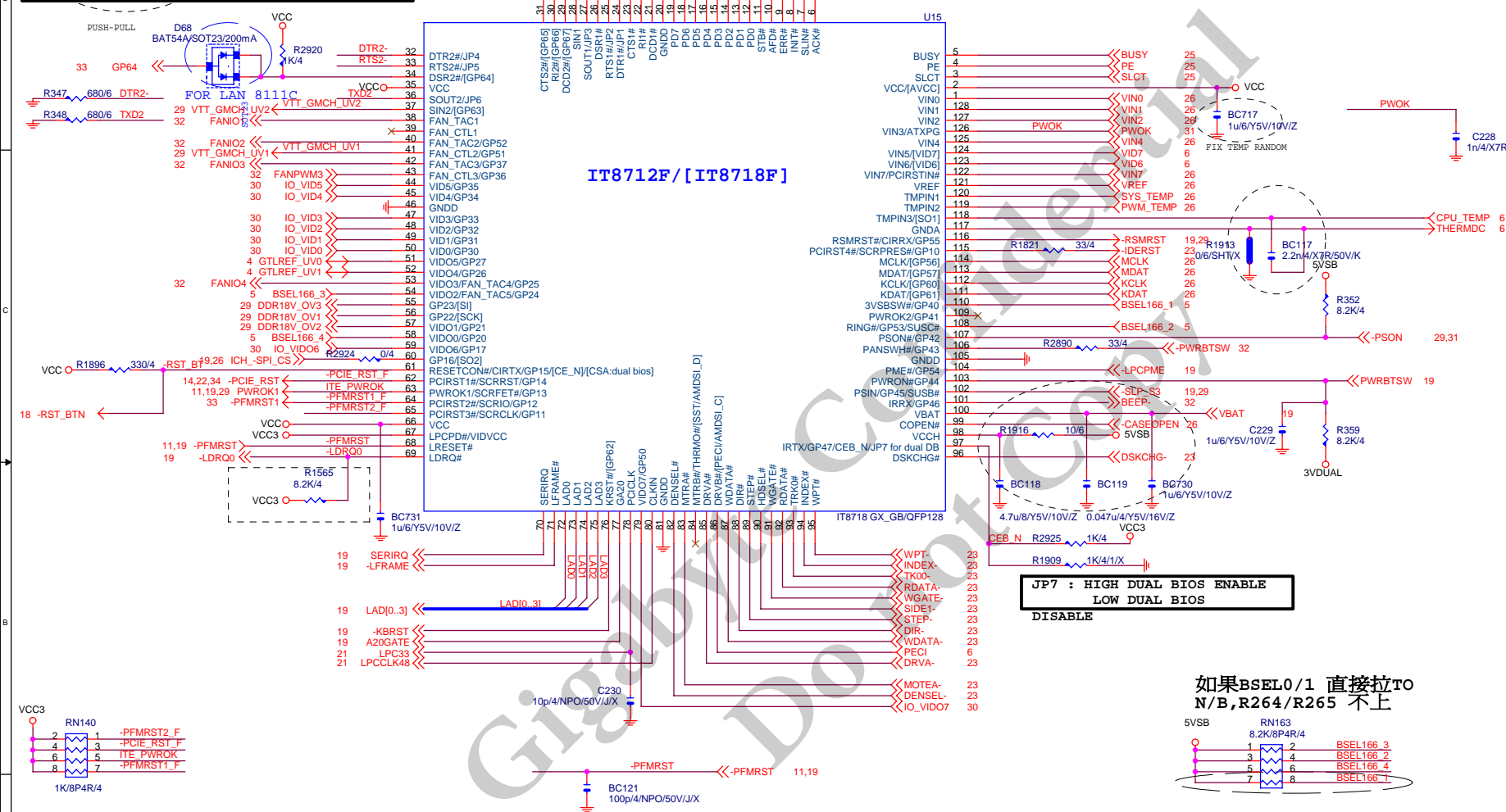
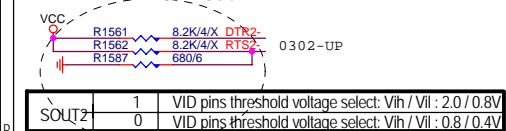


Gigabyte Technology			
Title			
PCI SLOT 1, 2/PCIEX1			
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RTS2- ==LOW CPU FAN 50%

==HIGH 100%

DEFAULT 50%



Pop to disable Dual BIOS

-SIO_SPI_CS0 R2926 0/4/X ICH_-SPI_CS

26 -SIO_SPI_CS0 R2927 22/4 CEB_N

26 -SIO_SPI_CS0 R2928 0/4 -RST_BT

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

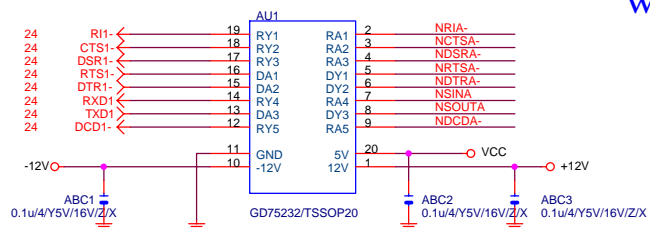
3.3V OUTPUT 接3.3V

LPCPD#VIDVCC

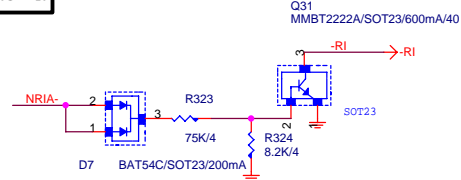
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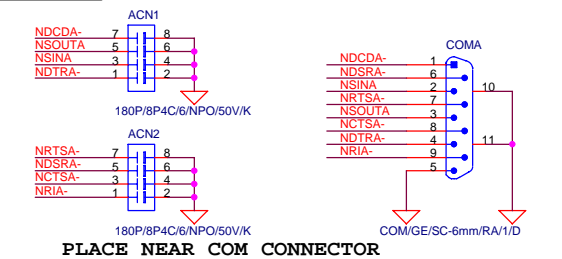
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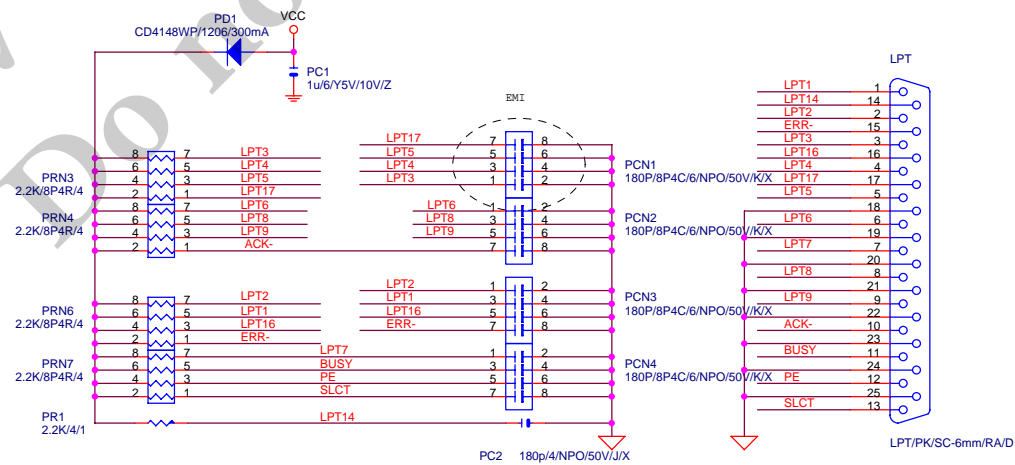
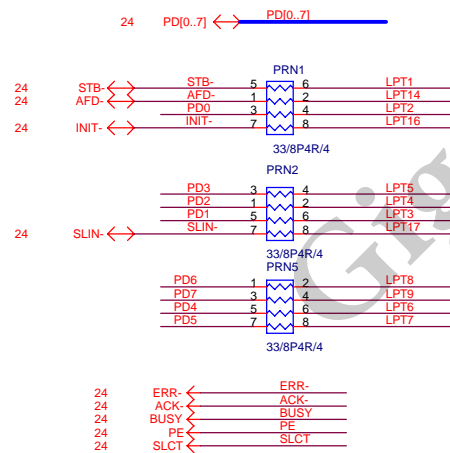
RING IN



EXTERNAL COMA



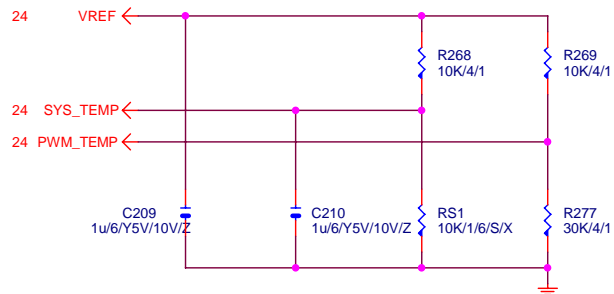
LPT PORT



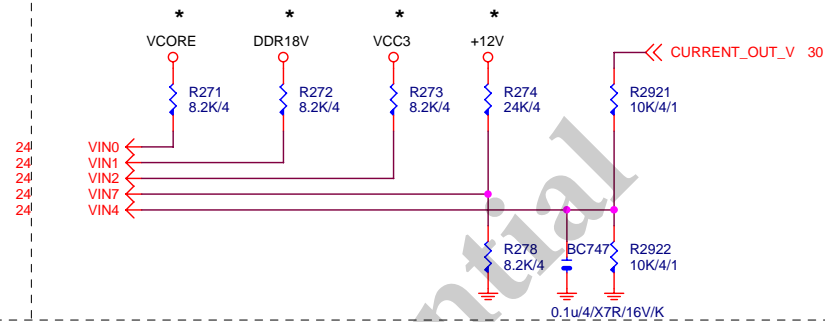
Gigabyte Technology

COM & LPT PORT		
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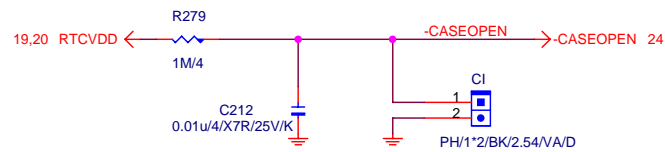
TEMP H/W MONITOR



VOLTAGE-- H/W MONITOR

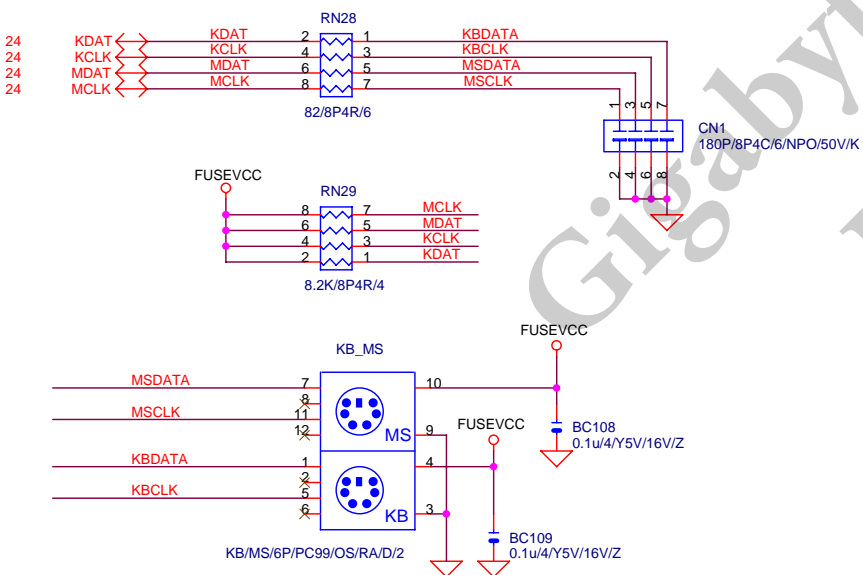


CASE OPEN

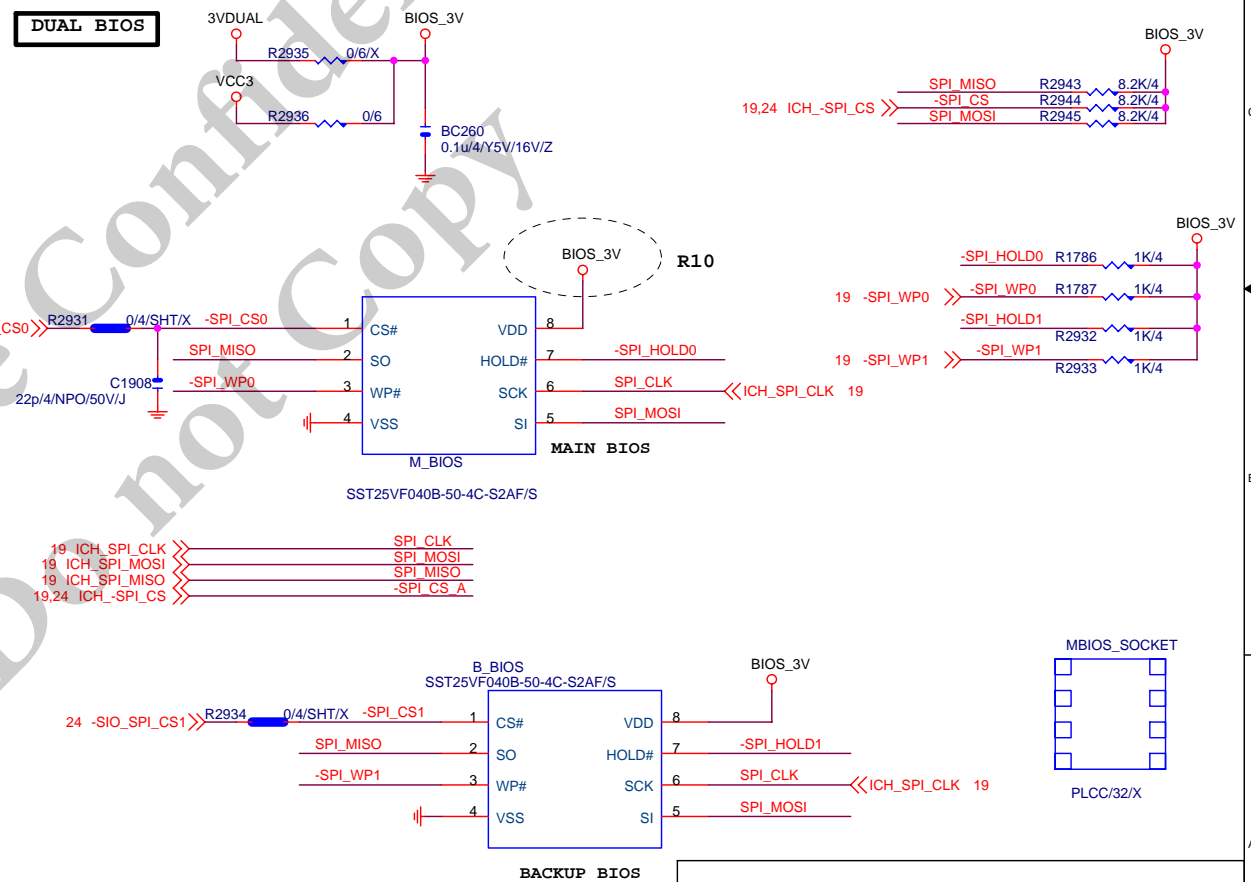


Case Open Circuits

KB/MS



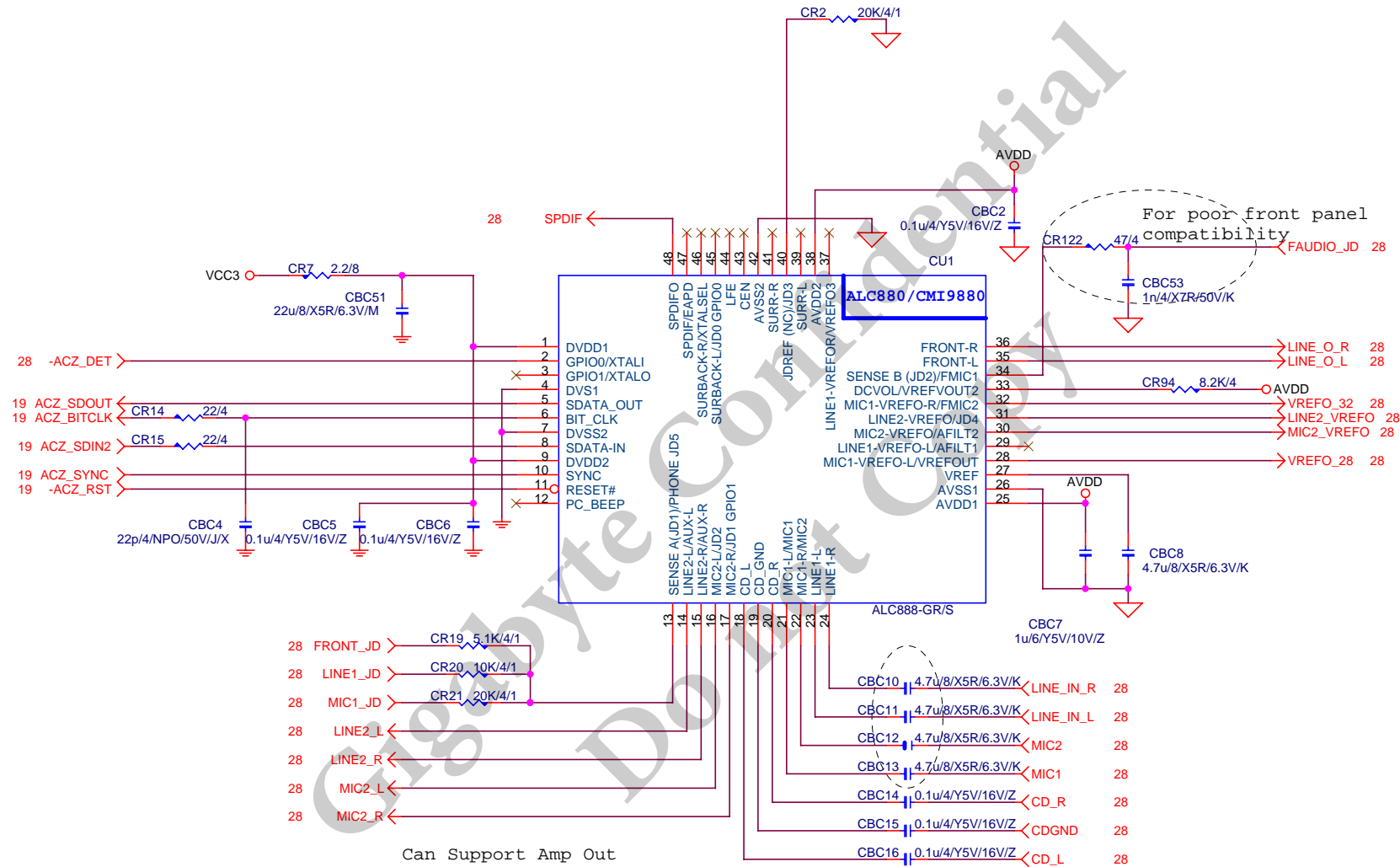
DUAL BIOS



Gigabyte Technology

Title			
HW-MONITOR/CI/KB/MS/BIOS			
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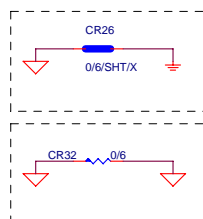
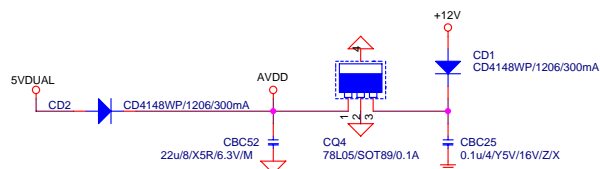
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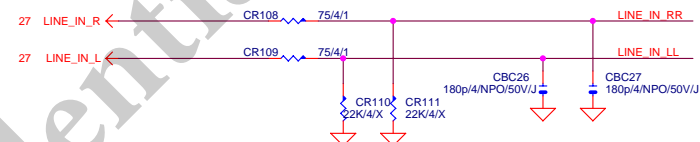
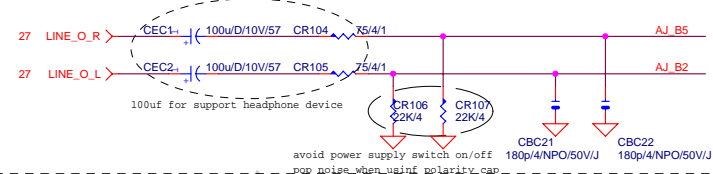
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Title		
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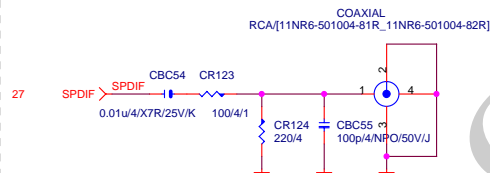
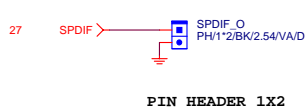
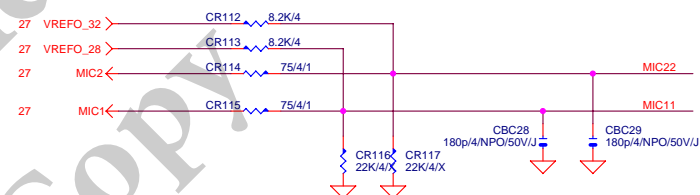
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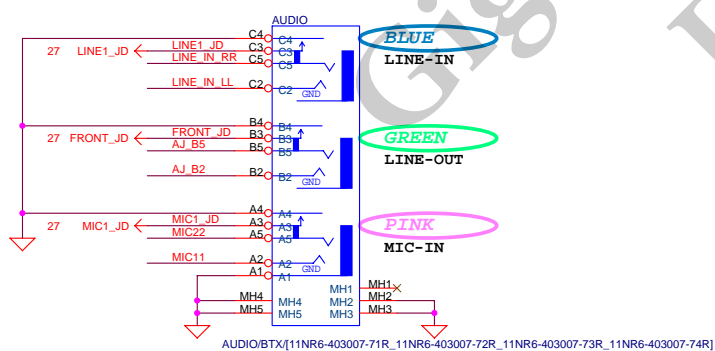
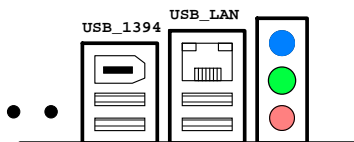
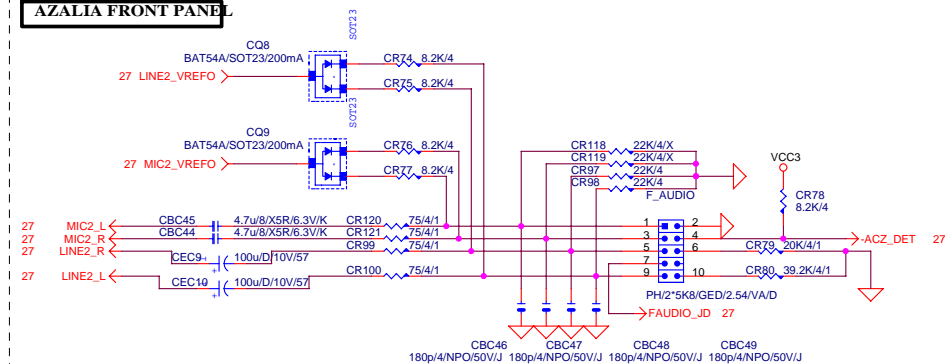
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SPDIF

**MIC-IN**

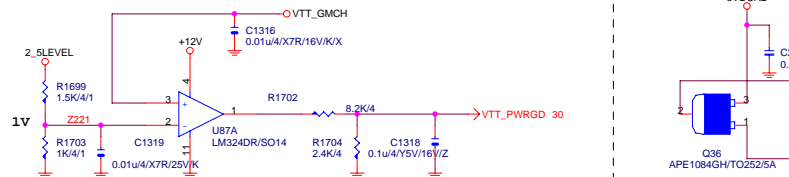
AZALIA JACK

**AZALIA FRONT PANEL**

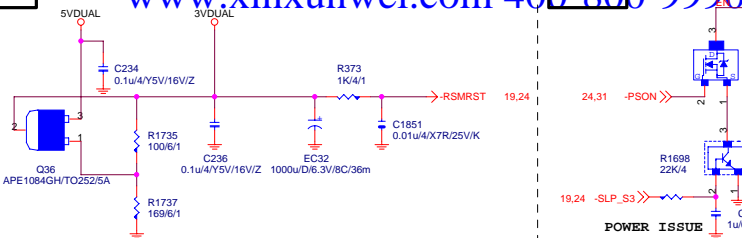
Gigabyte Technology

Title			
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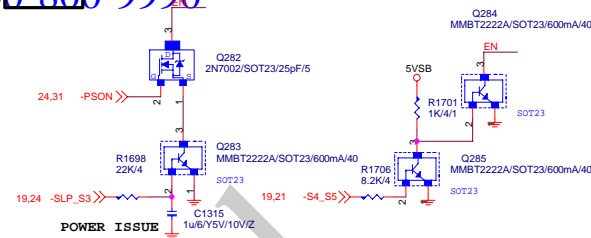
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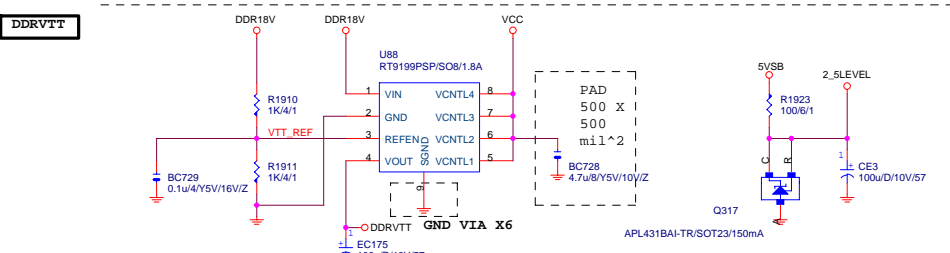
3VDUAL



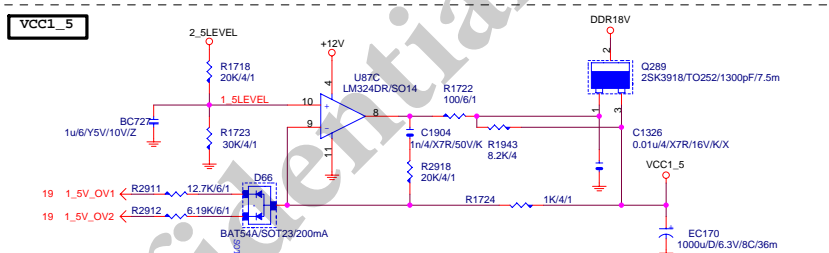
PWR_ISSUE



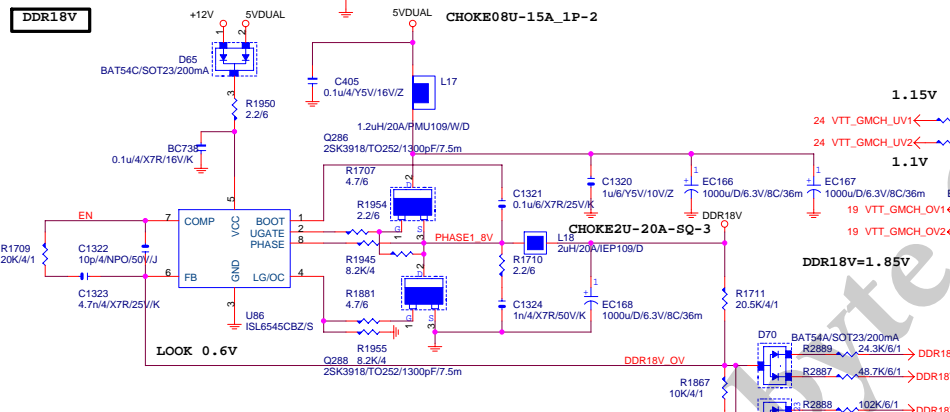
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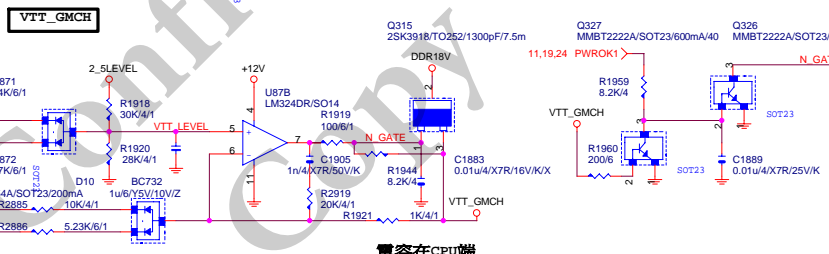
VCC1_5



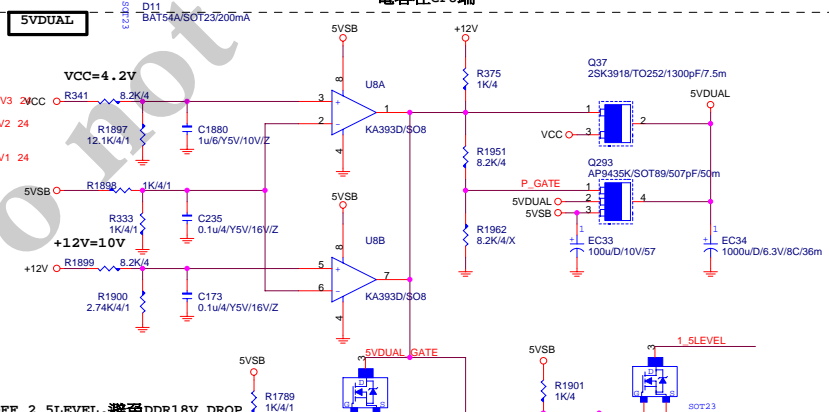
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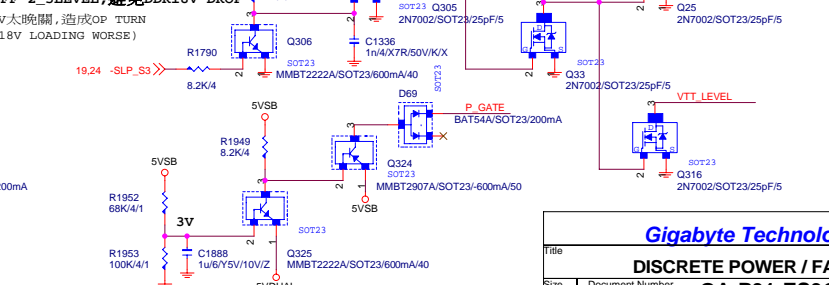
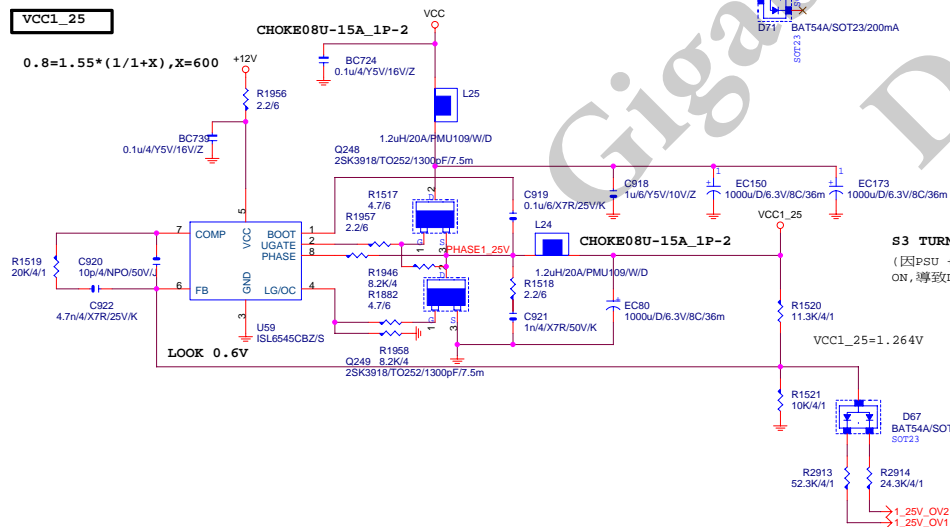
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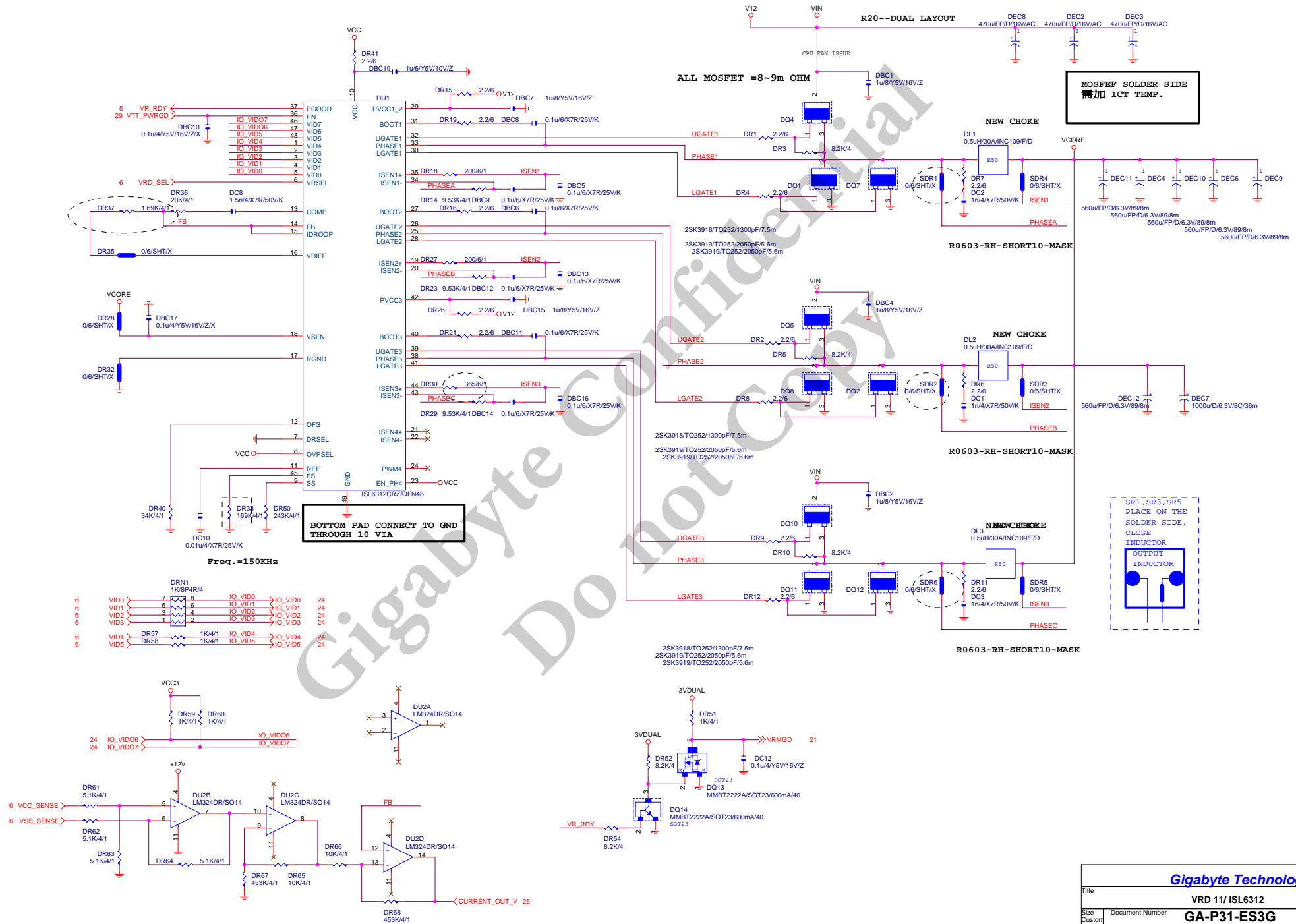


5VDUAL

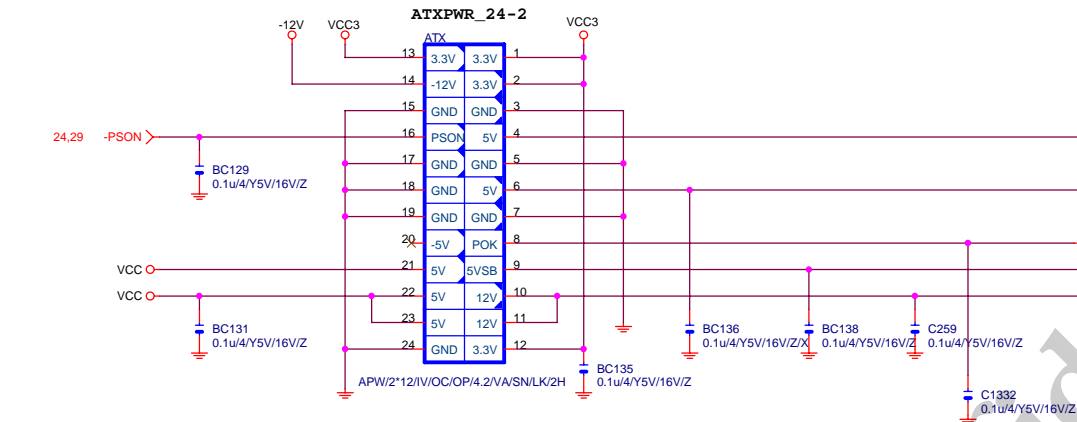


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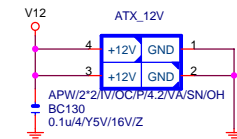
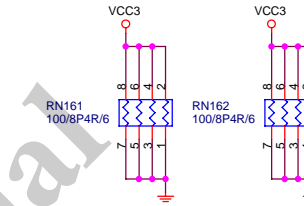




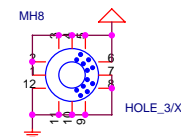
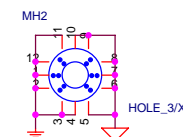
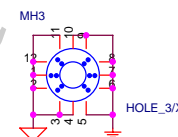
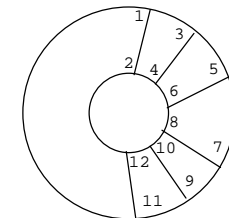
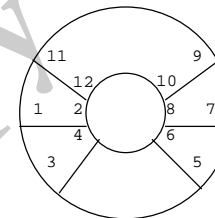
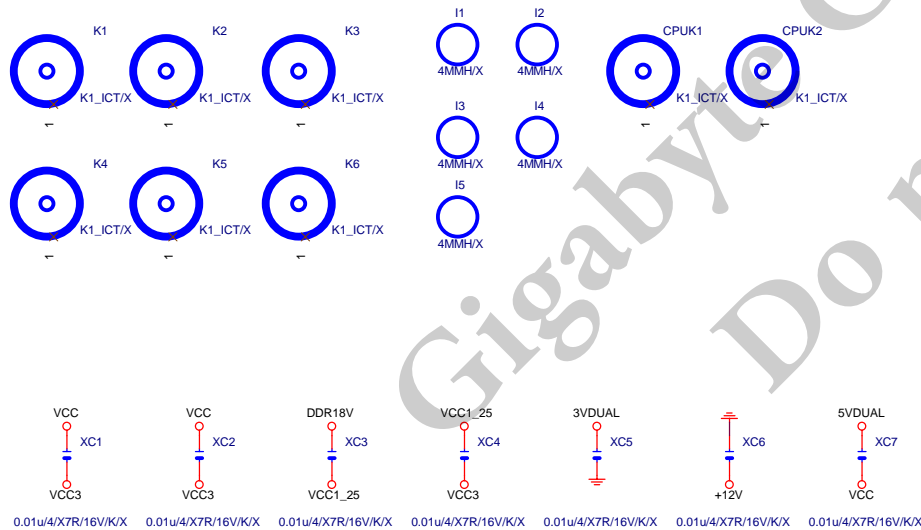
ATX POWER CONNECTOR



FIX PWR AcBel(ATX-400C-A2ADB)

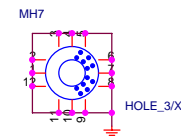
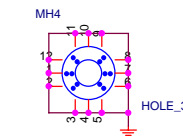
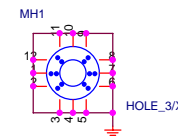


ATX_4-1



HOLE_4-RH

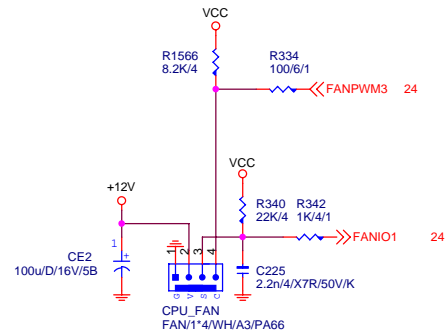
HOLE_4-RH-5MM



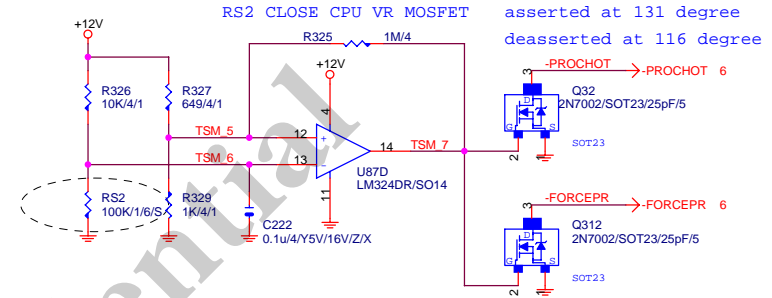
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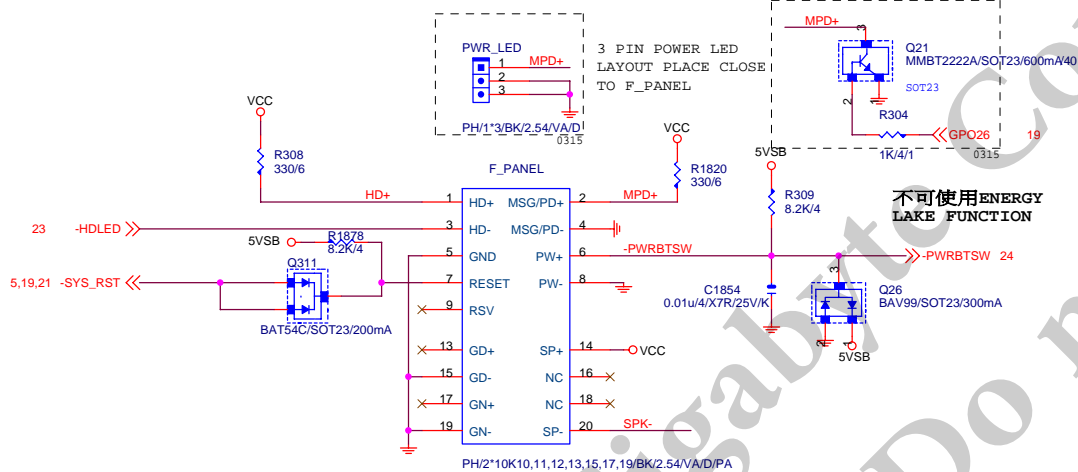
CPU SMART FAN SMART FAN



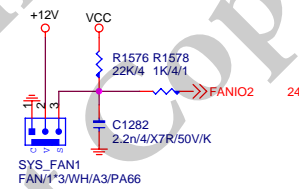
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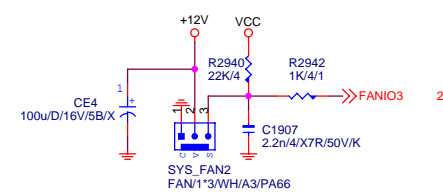
INTEL FRONT PANEL



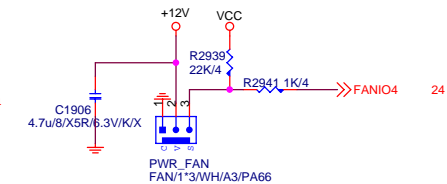
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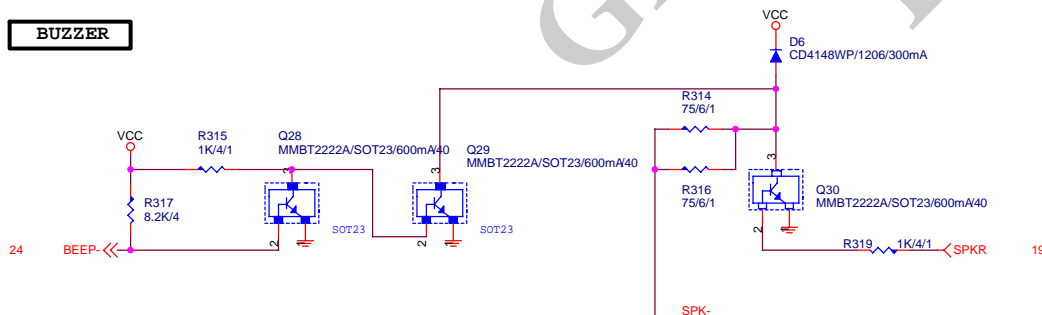
SYS_FAN2



PWR_FAN



BUZZER



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FRONT PANEL / FAN CTRL		
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