

# Model Name: GA-TG965MP-RH-GW

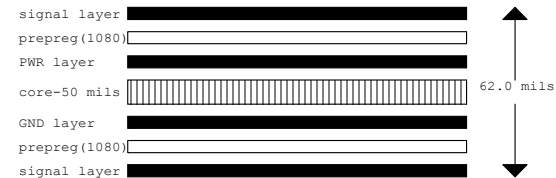
SHEET TITLE Revision 2.1

01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	TABLE LIST
05	LGA775_A
06	LGA775_B/D
07	LGA775_C
08	LGA775_E/F/G/H
09	GMCH-BROADWATER_HOST
10	GMCH-BROADWATER_DDRII
11	GMCH-BROADWATER_PCI E / DMI
12	GMCH-BROADWATER_VGA
13	GMCH-BROADWATER_GND
14	GMCH-BROADWATER_PWR
15	DDRII-CHANNEL A 1,2
16	DDRII-CHANNEL B 1,2
17	DDRII-TERMINATION
18	PCI EXPRESS*16 SLOT
19	ICH8-PCI / DMI / LAN / USB
20	ICH8-GPIO / CTRL
21	ICH8-SATA / FAN PWM
22	ICH8-PWR / GND
23	CLOCK GEN
24	PCI EXPRESS*1 / PCI SLOT 1,2
25	ITE8718F
26	COM / LPT / SYS_FAN / CPU_FAN
27	BIOS / CI / HW MONITOR / KB / MS

SHEET TITLE

28	CODEC ALC888
29	AUDIO JACK
30	PWM FAN5032MPX
31	DISCRETE POWER
32	ATX POWER CONNECTOR
33	JMICRON JMB368
34	VT6308P 1394
35	RTL8101E_8111B ,REAR USB2
36	FP / F_USB / USB PWR / FDD / BZ

Broadwater chipset impedance:50Ω+/-15%  
with 4mils trace width



**Gigabyte Technology**

Title		
Cover Sheet		
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**Model Name: TG965MP-RH-GW**

**Version: 2.1**

**Component value change history**

2006/03/14

Data	Change Item	Reason
20060503 0.1 BOM	EVT BOM	
20060522 0.2 BOM	DVT BOM	
20060808 10A BOM	DVT BOM FOR new ver chipset (965G C2)	
11A BOM	PCB UPDATE FINE TUNE VRHOT	
11B BOM	add CBC32 CBC33 CBC36 CBC37 CBC40 CBC41 for EMI	
20070212 21A BOM	Add GTLREF PATCH schematic for D0 CPU PWM SOLUTION Fine Tune	
	change 62/6 to 62/4	
	change GTLREF 分壓電阻 to 0402 SIZE	
	Remove TPM and EX BIOS and FM function	
20070404 21B BOM	Adjust VCORE CAP.location	
20070515 21B BOM	GB1 BOM 轉GW BOM (add 包材) 12BC2-295648-00R 12A10-000042-11R 12BA5-003240-00R 12LC1-CROHS1-00R 12LC1-CROHS2-01R 12LB6-CROHS-00R	PM request

**Circuit or PCB layout change for next version**

DATE	Change Item	Reason
R0.1	EVT	
R0.2	DVT support AFSC	
20060728 R1.0	PCB footprint new GBT rule External BIOS	
20060929 R1.1	change F_Panel 文字面	
20061207 R2.0	change LAN S.B JM368 U89 change 5VDUAL & 3VDUAL	
20070212 R2.1	ADD GTLREF PATCH SC ADD china ROHS logo	

# BLOCK DIAGRAM

INTEL Pentium4  
LGA775 VRM11  
2005A

CLOCK GENERATOR

PCI EXPRESS X16

GMCH BROADWATER  
965G

CHANNEL A  
DDRII DIMM X 2

CHANNEL B  
DDRII DIMM X 2

PCI EXPRESS X1

ICH8 DH

SPI BIOS

USB PORTS 0~9

SERIAL ATA II X6

INTEL 82566DC GB PHY

JM20330 1S1P

PCI SLOT 1,2

AZALIA ALC888

LPC I/O ITE8718 EX

AUDIO PORTS : FRONT AUDIO  
LIN\_OUT LINE\_IN MIC CD\_IN  
SURR SURR BACK CEN/LFE

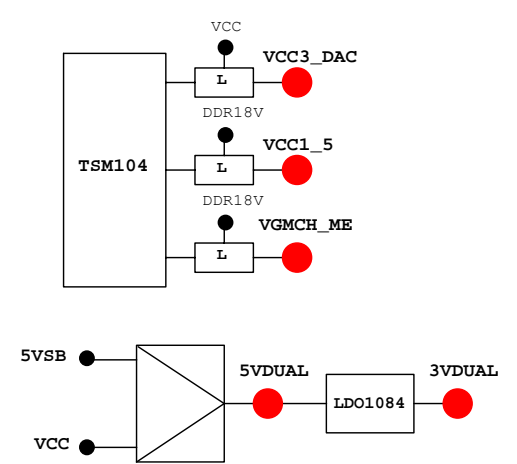
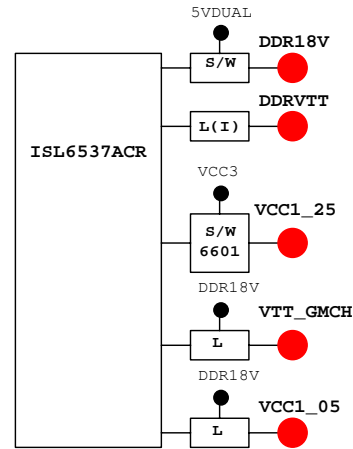
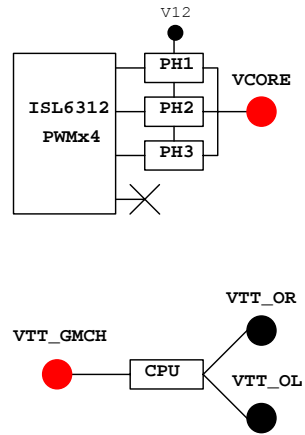
FRONT PANEL /CPU FAN

I/O PORTS :  
COMA COMB LPT KB/PS2 FDD

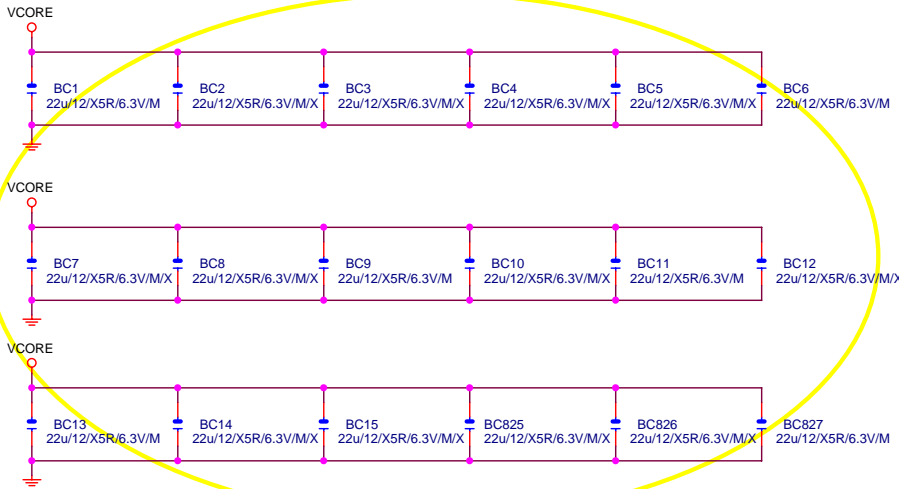
ICH8 GPIO LIST TABLE

PIN NAME	PWR WELL	AFTER/ FLTRST	USAGE	NOTE
GP0	MAIN	IN	-ACZ_DET	P/U 8.2K VCC3
GP1/TACH1	MAIN	IN	N/A	P/U 8.2K VCC3
GP2/PIRQE#	MAIN	IN	-PIRQE	P/U 8.2K VCC3
GP3/PIRQF#	MAIN	IN	-PIRQF	P/U 8.2K VCC3
GP4/PIRQG#	MAIN	IN	-PIRQG	P/U 8.2K VCC3
GP5/PIRQH#	MAIN	IN	-PIRQH	P/U 8.2K VCC3
GP6/TACH2	MAIN	IN	N/A	P/U 8.2K VCC3
GP7/TACH3	MAIN	IN	N/A	P/U 8.2K VCC3
GP8	STBY	IN	GPIO8	P/U 8.2K 3VDUAL
GP9	STBY	OUT	WOL_ONLY	P/D 100K GND
GP10	STBY	OUT	GPIO10	P/U 8.2K 3VDUAL
GP11/SMBALERT#	STBY	OUT	-SMBALRT	P/U 8.2K 3VDUAL
GP12	STBY	IN	MB_ID3	P/U 8.2K 3VDUAL
GP13	STBY	IN	-LPCPME	P/U 8.2K 3VDUAL
GP14	STBY	IN	GPIO14	P/U 8.2K 3VDUAL
GP15	STBY	OUT	GPIO15(TP)	N/A
GP16	MAIN	IN	MB_ID1	P/U 8.2K VCC3
GP17/TACH0	MAIN	IN	N/A(OPT-ITE)	P/U 8.2K VCC3
GP18	MAIN	IN	MB_ID2	P/U 8.2K VCC3
GP19	MAIN	IN	GPIO19	P/U 8.2K VCC3
GP20	MAIN	OUT	GPIO20	N/A
GP21	MAIN	IN	GPIO21	P/U 8.2K VCC3
GP22	MAIN	IN	GPIO22	P/U 8.2K VCC3
GP23	MAIN	OUT	-LDRQ1	P/U 8.2K VCC3
GP24	STBY	OUT	GPIO24(TP)	N/A
GP25	STBY	IN	MB_ID4	P/U 8.2K 3VDUAL
GP26/S4_STATE#	STBY	OUT	GPIO26	P/U 8.2K 3VDUAL
GP27	STBY	LOW	GPIO27	ENERGY-LAKE LED:GREEN
GP28	STBY	LOW	GPIO28	ENERGY-LAKE LED:YEL
GP29/OC5#	STBY	IN	-USBOC_F	P/U FUSEVCC1
GP30/OC6#	STBY	IN	-USBOC_F	P/U FUSEVCC1
GP31/OC7#	STBY	IN	-USBOC_F	P/U FUSEVCC1
GP32	MAIN	IN	MB_ID0	P/U 8.2K VCC3
GP33	MAIN	IN	GPIO33	P/U 8.2K VCC3
GP34	MAIN	IN	GPIO34	P/U 8.2K VCC3
GP35	MAIN	IN	N/A(TP)	N/A
GP36	MAIN	IN	GPIO36	P/U 8.2K VCC3
GP37	MAIN	IN	GPIO37	P/U 8.2K VCC3
GP38	MAIN	IN	GPIO38	P/U 8.2K VCC3
GP39	MAIN	IN	GPIO39	P/D 8.2K GND
GP48	MAIN	IN	GPIO48	P/U 8.2K VCC3
GP49	MAIN	IN	CPUPWROK	P/U 100 VTT_OL

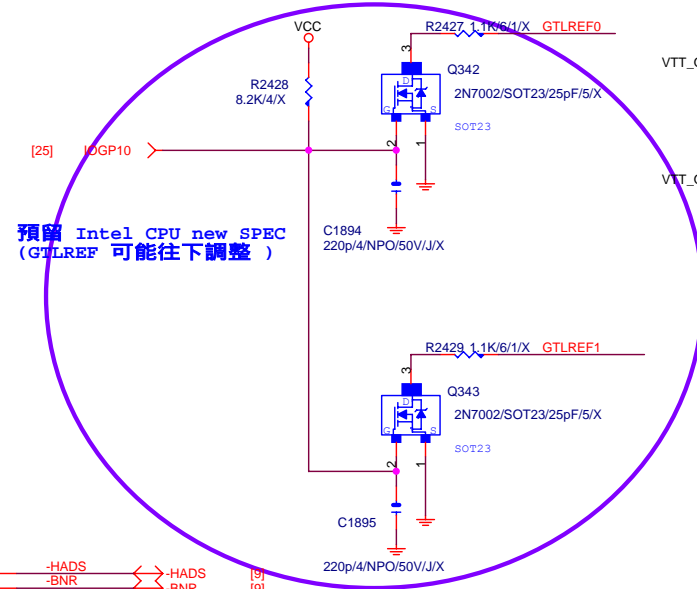
VCORE:3 PHASE PWM--ISL6312



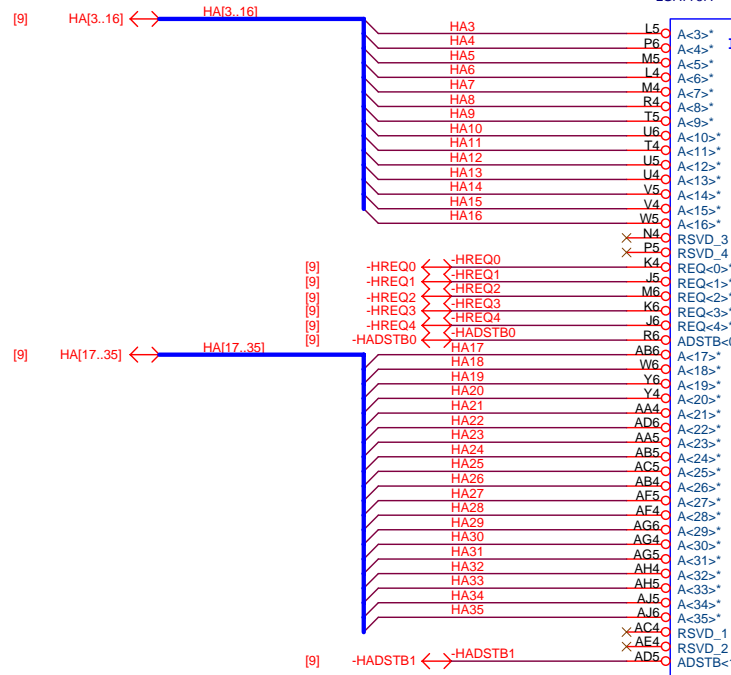
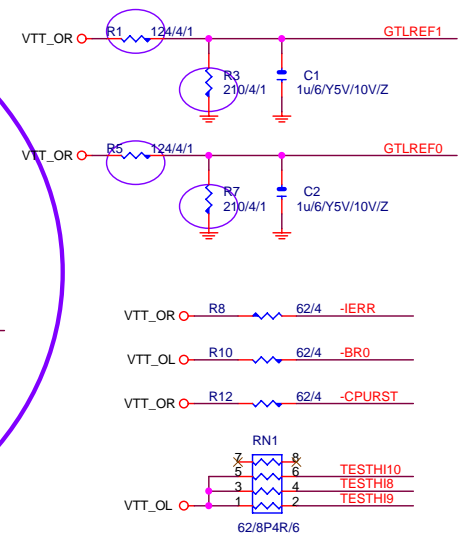
Gigabyte Technology			
Title			
TABLE LIST			
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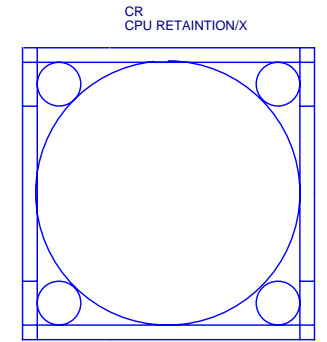
LGA775-D: FOOTPRINT



預留 Intel CPU new SPEC  
(GTLREF 可能往下調整)

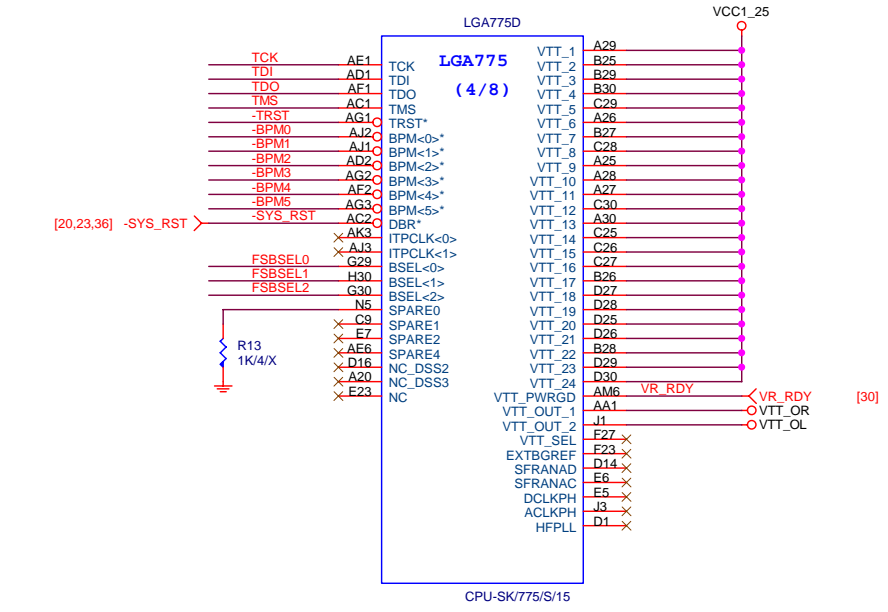
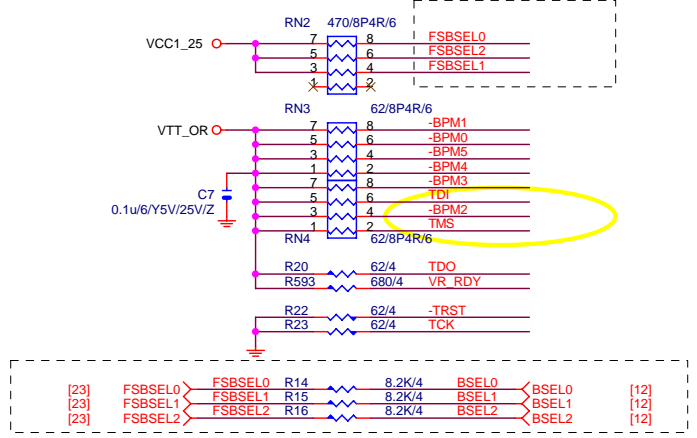
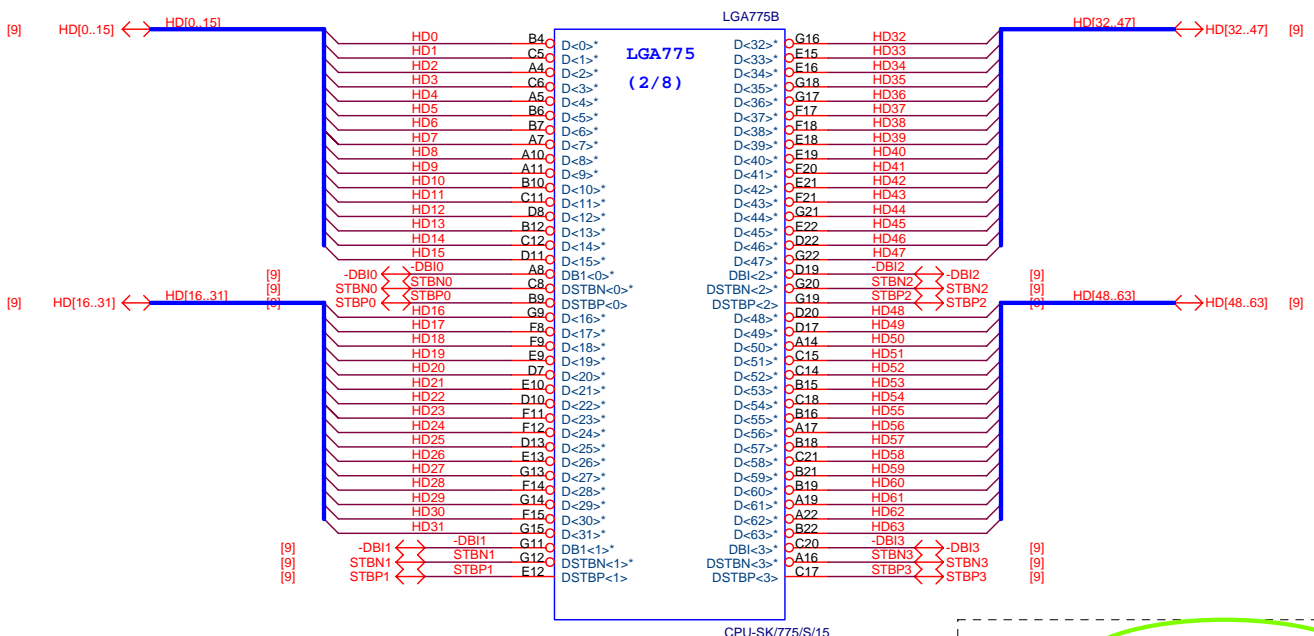


LGA775A		LGA775 (1/8)		CPU-SK775/S/15	
HA3	L5	A<3>*	ADS*	D2	-HADS
HA4	P6	A<4>*	BNR*	C2	-BNR
HA5	M5	A<5>*	HIT*	D4	-HIT
HA6	L4	A<6>*	RSP*	H4	
HA7	M4	A<7>*	BPRI*	G8	-BPRI
HA8	R4	A<8>*	DBSY*	G2	-DBSY
HA9	T5	A<9>*	DRDY*	C1	-DRDY
HA10	U6	A<10>*	HITM*	E4	-HITM
HA11	T4	A<11>*	IERR*	AB2	-IERR
HA12	U5	A<12>*	INIT*	P3	-HINIT
HA13	U4	A<13>*	LOCK*	C3	-HLOCK
HA14	V5	A<14>*	TRDY*	E3	-HTRDY
HA15	V4	A<15>*	BNIT*	AD3	
HA16	W5	A<16>*	DEFER*	G7	-DEFER
	N4	RSVD_3	MCERR*	AB3	
	E5	RSVD_4	AP<0>*	U2	
	K4	REQ<0>*	AP<1>*	U3	
	J5	REQ<1>*	BR<0>*	E3	-BR0
	M6	REQ<2>*	TESTH_8	G3	TESTH8
	K6	REQ<3>*	TESTH_9	G4	TESTH9
	J6	REQ<4>*	TESTH_10	H5	TESTH10
	R6	ADSTB<0>*	DP<0>*	H16	
	AB6	HA17	DP<1>*	H15	
	W6	HA18	DP<2>*	H16	
	Y6	HA19	DP<3>*	H17	
	Y4	HA20	GTLREF0	H1	GTLREF0
	AA4	HA21	GTLREF1	H2	GTLREF1
	AD6	HA22	GTLREF2	E24	GTLREF_MCH
	AA5	HA23	GTLREF_SEL	H29	
	AB5	HA24	RESET*	G23	-CPURST
	AC5	HA25	RS<0>*	B3	-RS0
	AB4	HA26	RS<1>*	E5	-RS1
	AE4	HA27	RS<2>*	A3	-RS2
	AE5	HA28			
	AG6	HA29			
	AG4	HA30			
	AG5	HA31			
	AH4	HA32			
	AH5	HA33			
	AJ5	HA34			
	AJ6	HA35			
	AC4				
	AE4				
	AD5				



HOST 4X SIGNAL:W/S=4/14 to Dx#,DBIx#;W/S=4/25 to Strobe  
 HOST 2X SIGNAL:W/S=4/14 to HAx#,REQx#;W/S=4/17 to Strobe  
 HOST 1X SIGNAL:W/S=4/14

<b>Gigabyte Technology</b>		
Title <b>LGA775-A</b>		
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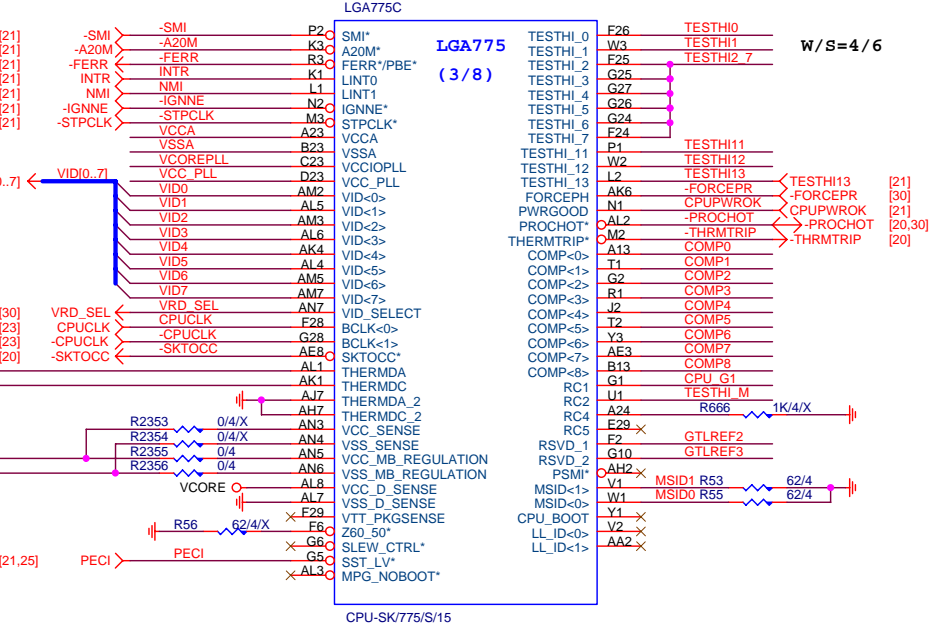
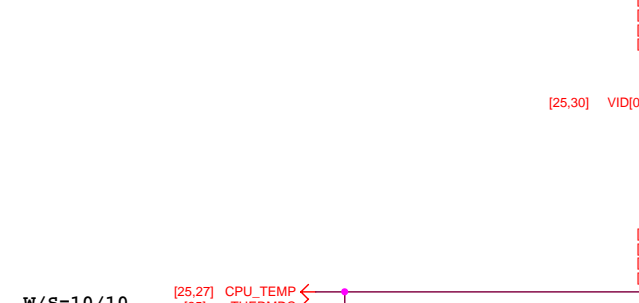
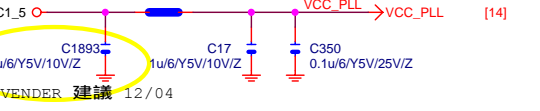
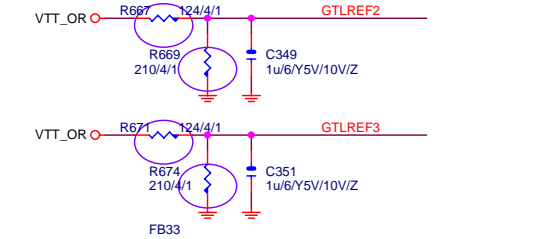
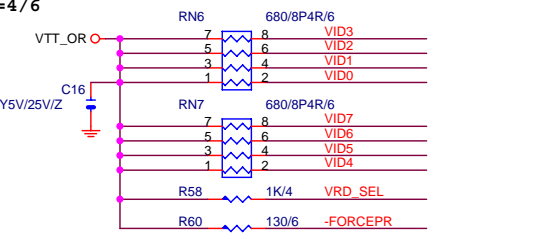
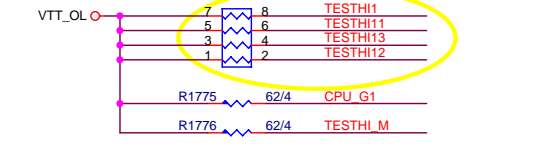
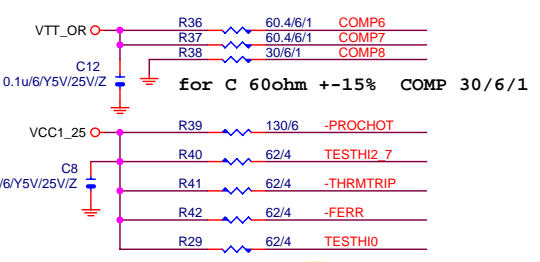
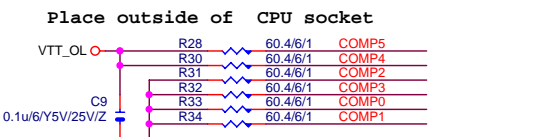
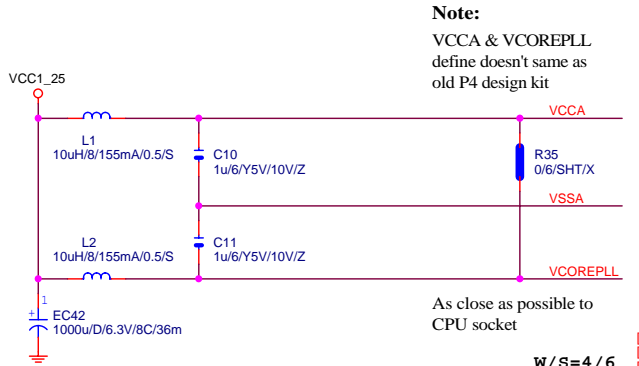


**FOR ALL DDR CLK RATIO**

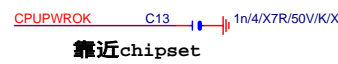
**CHECK BSEL0/1 ITE8712 POWER ON 時電壓是否會高於1.2V**

**CPU**

FSA	FSB	NA	FSBSEL0	FSBSEL1	FSBSEL2	Clock	
			1	0	1	100MHz	
			1	0	0	133MHz	3/4
			1	1	0	166MHz	# POWER ON
			0	1	0	200MHz	2/2.66/3.33/4
			0	0	0	266MHz	2/2.5/3
							400/533
							400/533/667/800
							533/667/800

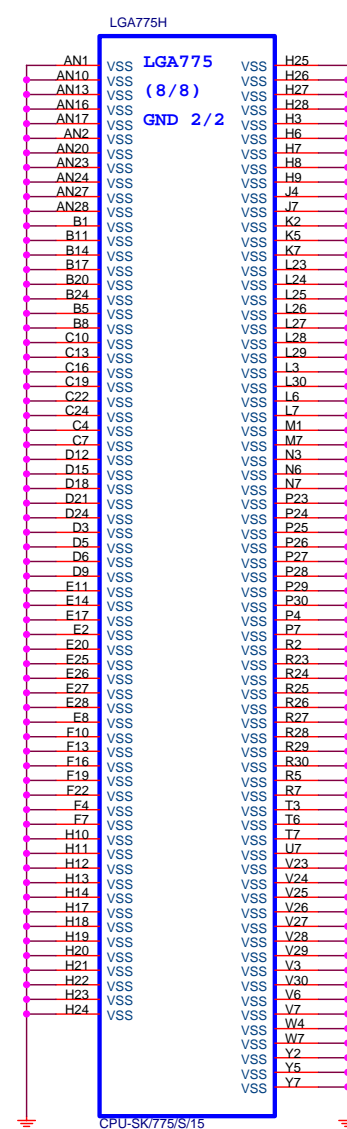
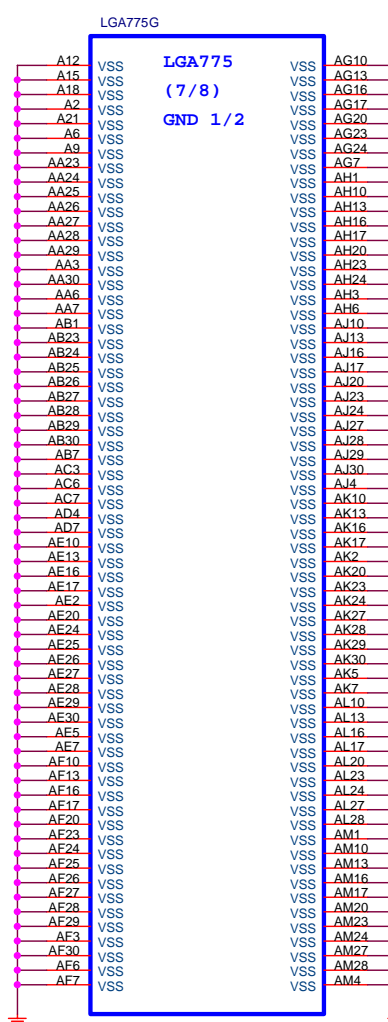
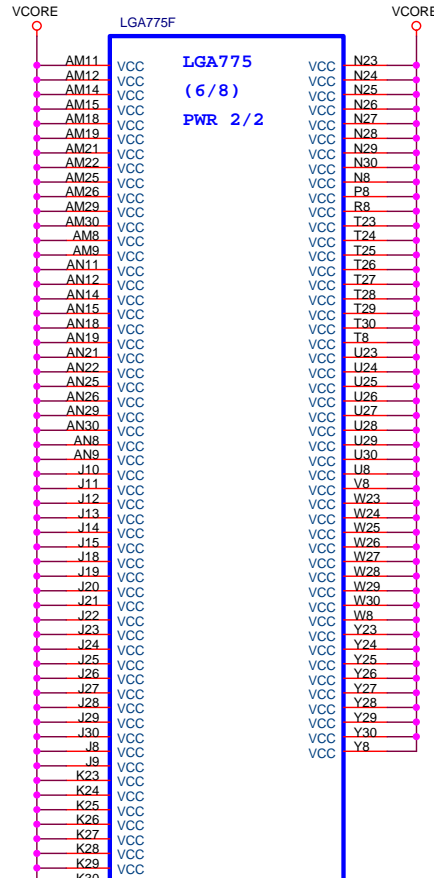
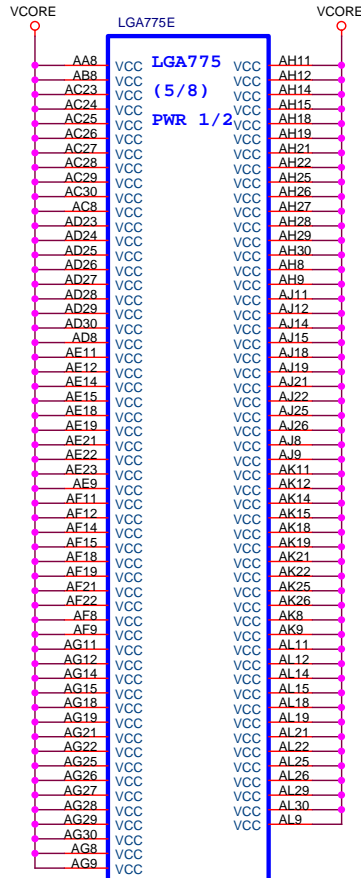


COMP[8]: W/S=15/7-->LS; W/S=15/14-->HS  
 COMP[7..0]: W/S=10/7-->LS; W/S=10/14-->HS

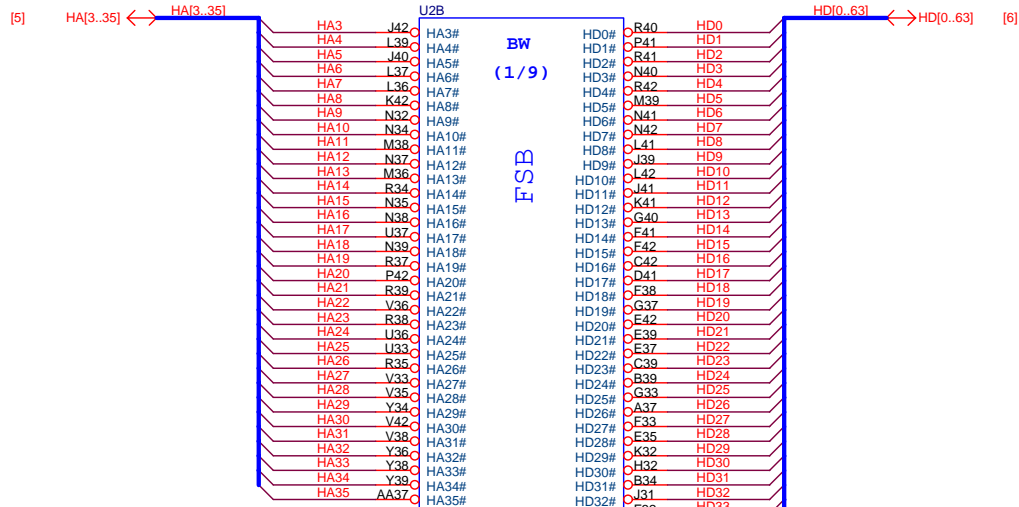


PECCI: Platform Environment Control Interface

<b>Gigabyte Technology</b>		
<b>LGA775-C</b>		
Title	LGA775-C	
Size B	Document Number	Rev
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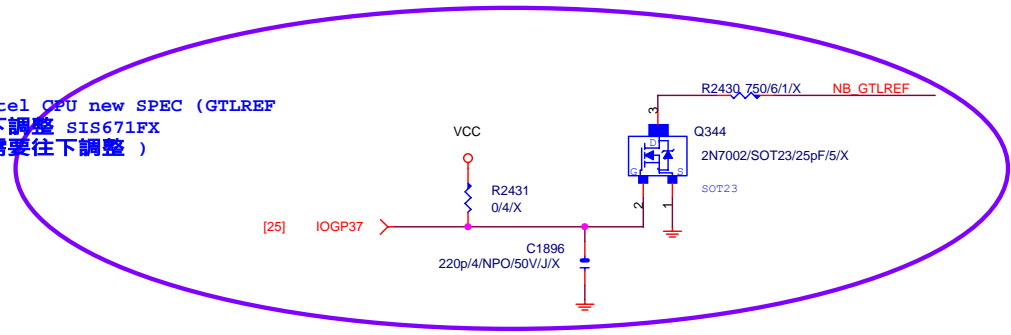
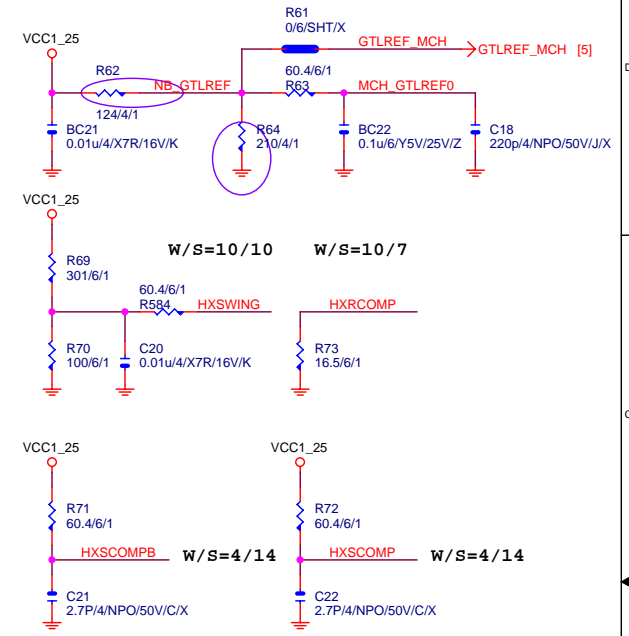






LE82G965-C2/BGA1226[10HB1-030082-40R]  
CPU INTERFACE

預留 Intel CPU new SPEC (GTLREF  
可能往下調整 SIS671FX  
也可能需要往下調整)



<b>Gigabyte Technology</b>		
Title <b>GMCH-BROADWATER_HOST</b>		
Size B	Document Number <b>GA-TG965MP-RH-GW</b>	Rev <b>2.1</b>
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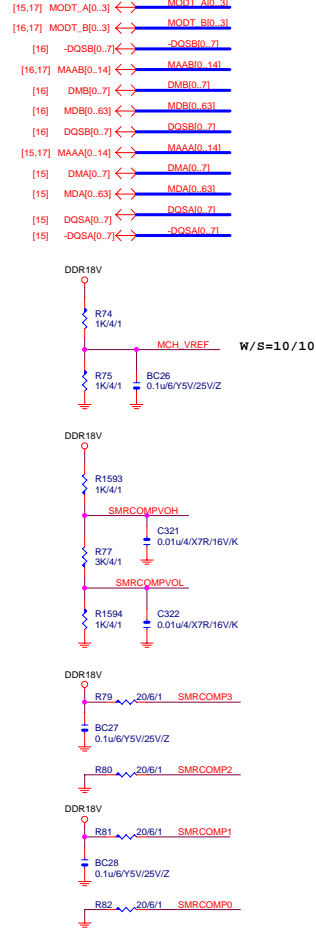
U2C

Pin list for U2C showing connections for SMA, SDO, SDQ, SDP, SDQS, SDM, SWE, SCAS, SRAS, SBA, SCS, SCK, SODT, DCLK, AR, AU, AV, AP, AW, AX, AY, AZ, BA, BB, BC, BD, BE, BF, BG, BH, BI, BJ, BK, BL, BM, BN, BO, BP, BQ, BR, BS, BT, BU, BV, BW, BX, BY, BZ, CA, CB, CC, CD, CE, CF, CG, CH, CI, CJ, CK, CL, CM, CN, CO, CP, CQ, CR, CS, CT, CU, CV, CW, CX, CY, CZ, DA, DB, DC, DD, DE, DF, DG, DH, DI, DJ, DK, DL, DM, DN, DO, DP, DQ, DR, DS, DT, DU, DV, DW, DX, DY, DZ, EA, EB, EC, ED, EE, EF, EG, EH, EI, EJ, EK, EL, EM, EN, EO, EP, EQ, ER, ES, ET, EU, EV, EW, EX, EY, EZ, FA, FB, FC, FD, FE, FF, FG, FH, FI, FJ, FK, FL, FM, FN, FO, FP, FQ, FR, FS, FT, FU, FV, FW, FX, FY, FZ, GA, GB, GC, GD, GE, GF, GG, GH, GI, GJ, GK, GL, GM, GN, GO, GP, GQ, GR, GS, GT, GU, GV, GW, GX, GY, GZ, HA, HB, HC, HD, HE, HF, HG, HH, HI, HJ, HK, HL, HM, HN, HO, HP, HQ, HR, HS, HT, HU, HV, HW, HX, HY, HZ, IA, IB, IC, ID, IE, IF, IG, IH, II, IJ, IK, IL, IM, IN, IO, IP, IQ, IR, IS, IT, IU, IV, IW, IX, IY, IZ, JA, JB, JC, JD, JE, JF, JG, JH, JI, JJ, JK, JL, JM, JN, JO, JP, JQ, JR, JS, JT, JU, JV, JW, JX, JY, JZ, KA, KB, KC, KD, KE, KF, KG, KH, KI, KJ, KK, KL, KM, KN, KO, KP, KQ, KR, KS, KT, KU, KV, KW, KX, KY, KZ, LA, LB, LC, LD, LE, LF, LG, LH, LI, LJ, LK, LL, LM, LN, LO, LP, LQ, LR, LS, LT, LU, LV, LW, LX, LY, LZ, MA, MB, MC, MD, ME, MF, MG, MH, MI, MJ, MK, ML, MM, MN, MO, MP, MQ, MR, MS, MT, MU, MV, MW, MX, MY, MZ, NA, NB, NC, ND, NE, NF, NG, NH, NI, NJ, NK, NL, NM, NO, NP, NQ, NR, NS, NT, NU, NV, NW, NX, NY, NZ, OA, OB, OC, OD, OE, OF, OG, OH, OI, OJ, OK, OL, OM, ON, OO, OP, OQ, OR, OS, OT, OU, OV, OW, OX, OY, OZ, PA, PB, PC, PD, PE, PF, PG, PH, PI, PJ, PK, PL, PM, PN, PO, PP, PQ, PR, PS, PT, PU, PV, PW, PX, PY, PZ, QA, QB, QC, QD, QE, QF, QG, QH, QI, QJ, QK, QL, QM, QN, QO, QP, QQ, QR, QS, QT, QU, QV, QW, QX, QY, QZ, RA, RB, RC, RD, RE, RF, RG, RH, RI, RJ, RK, RL, RM, RN, RO, RP, RQ, RR, RS, RT, RU, RV, RW, RX, RY, RZ, SA, SB, SC, SD, SE, SF, SG, SH, SI, SJ, SK, SL, SM, SN, SO, SP, SQ, SR, SS, ST, SU, SV, SW, SX, SY, SZ, TA, TB, TC, TD, TE, TF, TG, TH, TI, TJ, TK, TL, TM, TN, TO, TP, TQ, TR, TS, TT, TU, TV, TW, TX, TY, TZ, UA, UB, UC, UD, UE, UF, UG, UH, UI, UJ, UK, UL, UM, UN, UO, UP, UQ, UR, US, UT, UY, UZ, VA, VB, VC, VD, VE, VF, VG, VH, VI, VJ, VK, VL, VM, VN, VO, VP, VQ, VR, VS, VT, VU, VV, VW, VX, VY, VZ, WA, WB, WC, WD, WE, WF, WG, WH, WI, WJ, WK, WL, WM, WN, WO, WP, WQ, WR, WS, WT, WU, WV, WW, WX, WY, WZ, XA, XB, XC, XD, XE, XF, XG, XH, XI, XJ, XK, XL, XM, XN, XO, XP, XQ, XR, XS, XT, XU, XV, XW, XX, XY, XZ, YA, YB, YC, YD, YE, YF, YG, YH, YI, YJ, YK, YL, YM, YN, YO, YP, YQ, YR, YS, YT, YU, YV, YW, YX, YY, YZ, ZA, ZB, ZC, ZD, ZE, ZF, ZG, ZH, ZI, ZJ, ZK, ZL, ZM, ZN, ZO, ZP, ZQ, ZR, ZS, ZT, ZU, ZV, ZW, ZX, ZY, ZZ.

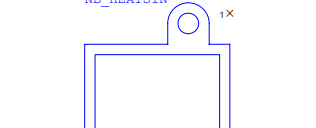
U2D

Pin list for U2D showing connections for SMA, SDO, SDQ, SDP, SDQS, SDM, SWE, SCAS, SRAS, SBA, SCS, SCK, SODT, DCLK, AR, AU, AV, AP, AW, AX, AY, AZ, BA, BB, BC, BD, BE, BF, BG, BH, BI, BJ, BK, BL, BM, BN, BO, BP, BQ, BR, BS, BT, BU, BV, BW, BX, BY, BZ, CA, CB, CC, CD, CE, CF, CG, CH, CI, CJ, CK, CL, CM, CN, CO, CP, CQ, CR, CS, CT, CU, CV, CW, CX, CY, CZ, DA, DB, DC, DD, DE, DF, DG, DH, DI, DJ, DK, DL, DM, DN, DO, DP, DQ, DR, DS, DT, DU, DV, DW, DX, DY, DZ, EA, EB, EC, ED, EE, EF, EG, EH, EI, EJ, EK, EL, EM, EN, EO, EP, EQ, ER, ES, ET, EU, EV, EW, EX, EY, EZ, FA, FB, FC, FD, FE, FF, FG, FH, FI, FJ, FK, FL, FM, FN, FO, FP, FQ, FR, FS, FT, FU, FV, FW, FX, FY, FZ, GA, GB, GC, GD, GE, GF, GG, GH, GI, GJ, GK, GL, GM, GN, GO, GP, GQ, GR, GS, GT, GU, GV, GW, GX, GY, GZ, HA, HB, HC, HD, HE, HF, HG, HH, HI, HJ, HK, HL, HM, HN, HO, HP, HQ, HR, HS, HT, HU, HV, HW, HX, HY, HZ, IA, IB, IC, ID, IE, IF, IG, IH, II, IJ, IK, IL, IM, IN, IO, IP, IQ, IR, IS, IT, IU, IV, IW, IX, IY, IZ, JA, JB, JC, JD, JE, JF, JG, JH, JI, JJ, JK, JL, JM, JN, JO, JP, JQ, JR, JS, JT, JU, JV, JW, JX, JY, JZ, KA, KB, KC, KD, KE, KF, KG, KH, KI, KJ, KK, KL, KM, KN, KO, KP, KQ, KR, KS, KT, KU, KV, KW, KX, KY, KZ, LA, LB, LC, LD, LE, LF, LG, LH, LI, LJ, LK, LL, LM, LN, LO, LP, LQ, LR, LS, LT, LU, LV, LW, LX, LY, LZ, MA, MB, MC, MD, ME, MF, MG, MH, MI, MJ, MK, ML, MM, MN, MO, MP, MQ, MR, MS, MT, MU, MV, MW, MX, MY, MZ, NA, NB, NC, ND, NE, NF, NG, NH, NI, NJ, NK, NL, NM, NO, NP, NQ, NR, NS, NT, NU, NV, NW, NX, NY, NZ, OA, OB, OC, OD, OE, OF, OG, OH, OI, OJ, OK, OL, OM, ON, OO, OP, OQ, OR, OS, OT, OU, OV, OW, OX, OY, OZ, PA, PB, PC, PD, PE, PF, PG, PH, PI, PJ, PK, PL, PM, PN, PO, PP, PQ, PR, PS, PT, PU, PV, PW, PX, PY, PZ, QA, QB, QC, QD, QE, QF, QG, QH, QI, QJ, QK, QL, QM, QN, QO, QP, QQ, QR, QS, QT, QU, QV, QW, QX, QY, QZ, RA, RB, RC, RD, RE, RF, RG, RH, RI, RJ, RK, RL, RM, RN, RO, RP, RQ, RR, RS, RT, RU, RV, RW, RX, RY, RZ, SA, SB, SC, SD, SE, SF, SG, SH, SI, SJ, SK, SL, SM, SN, SO, SP, SQ, SR, SS, ST, SU, SV, SW, SX, SY, SZ, TA, TB, TC, TD, TE, TF, TG, TH, TI, TJ, TK, TL, TM, TN, TO, TP, TQ, TR, TS, TT, TU, TV, TW, TX, TY, TZ, UA, UB, UC, UD, UE, UF, UG, UH, UI, UJ, UK, UL, UM, UN, UO, UP, UQ, UR, US, UT, UY, UZ, VA, VB, VC, VD, VE, VF, VG, VH, VI, VJ, VK, VL, VM, VN, VO, VP, VQ, VR, VS, VT, VU, VV, VW, VX, VY, VZ, WA, WB, WC, WD, WE, WF, WG, WH, WI, WJ, WK, WL, WM, WN, WO, WP, WQ, WR, WS, WT, WU, WV, WW, WX, WY, WZ, XA, XB, XC, XD, XE, XF, XG, XH, XI, XJ, XK, XL, XM, XN, XO, XP, XQ, XR, XS, XT, XU, XV, XW, XX, XY, XZ, YA, YB, YC, YD, YE, YF, YG, YH, YI, YJ, YK, YL, YM, YN, YO, YP, YQ, YR, YS, YT, YU, YV, YW, YX, YY, YZ, ZA, ZB, ZC, ZD, ZE, ZF, ZG, ZH, ZI, ZJ, ZK, ZL, ZM, ZN, ZO, ZP, ZQ, ZR, ZS, ZT, ZU, ZV, ZW, ZX, ZY, ZZ.

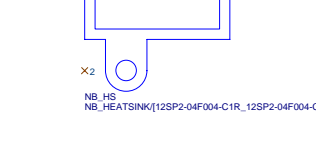
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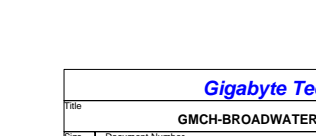
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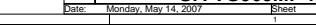
Channel A and Channel B



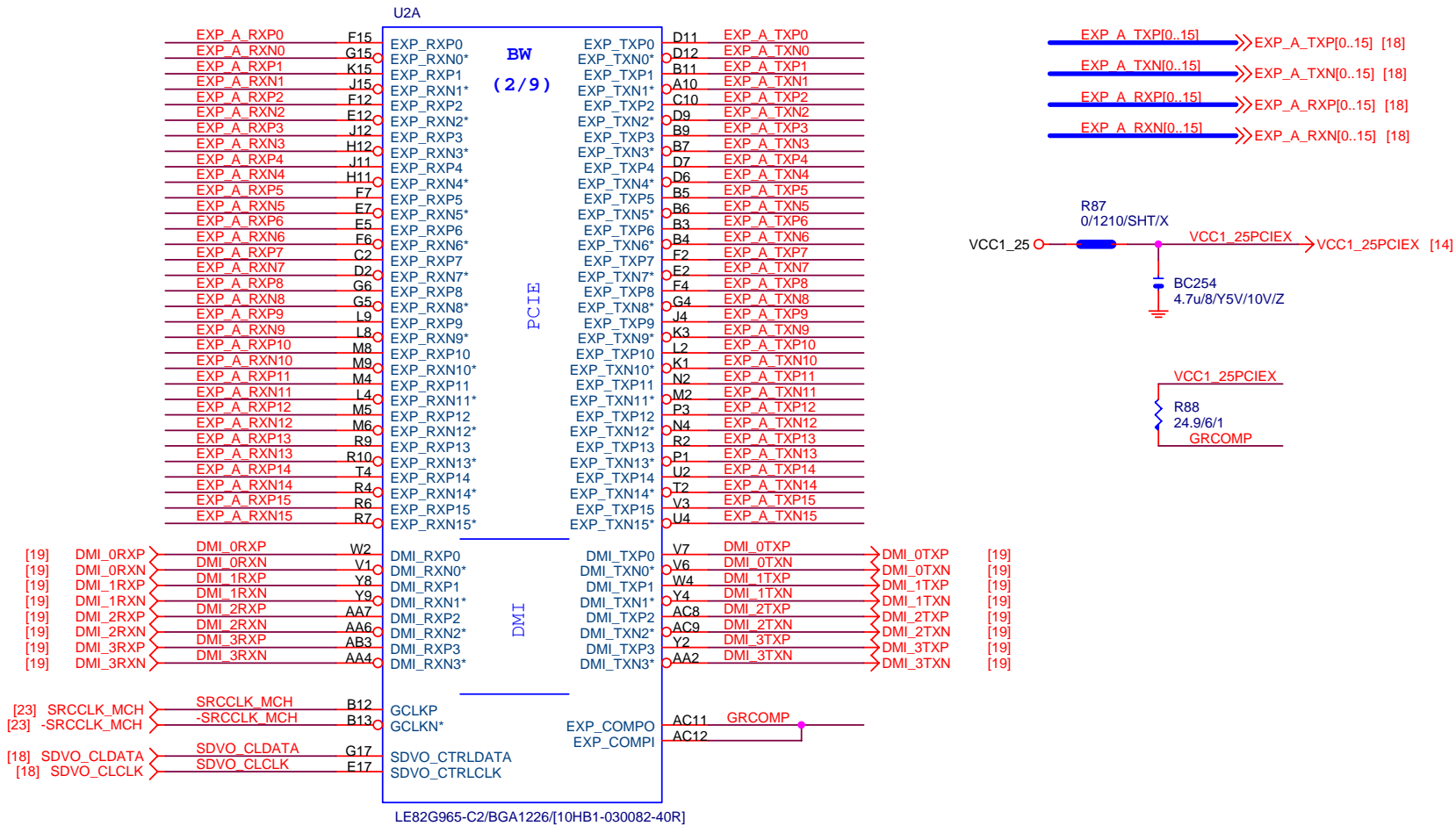
Channel A and Channel B



Channel A and Channel B

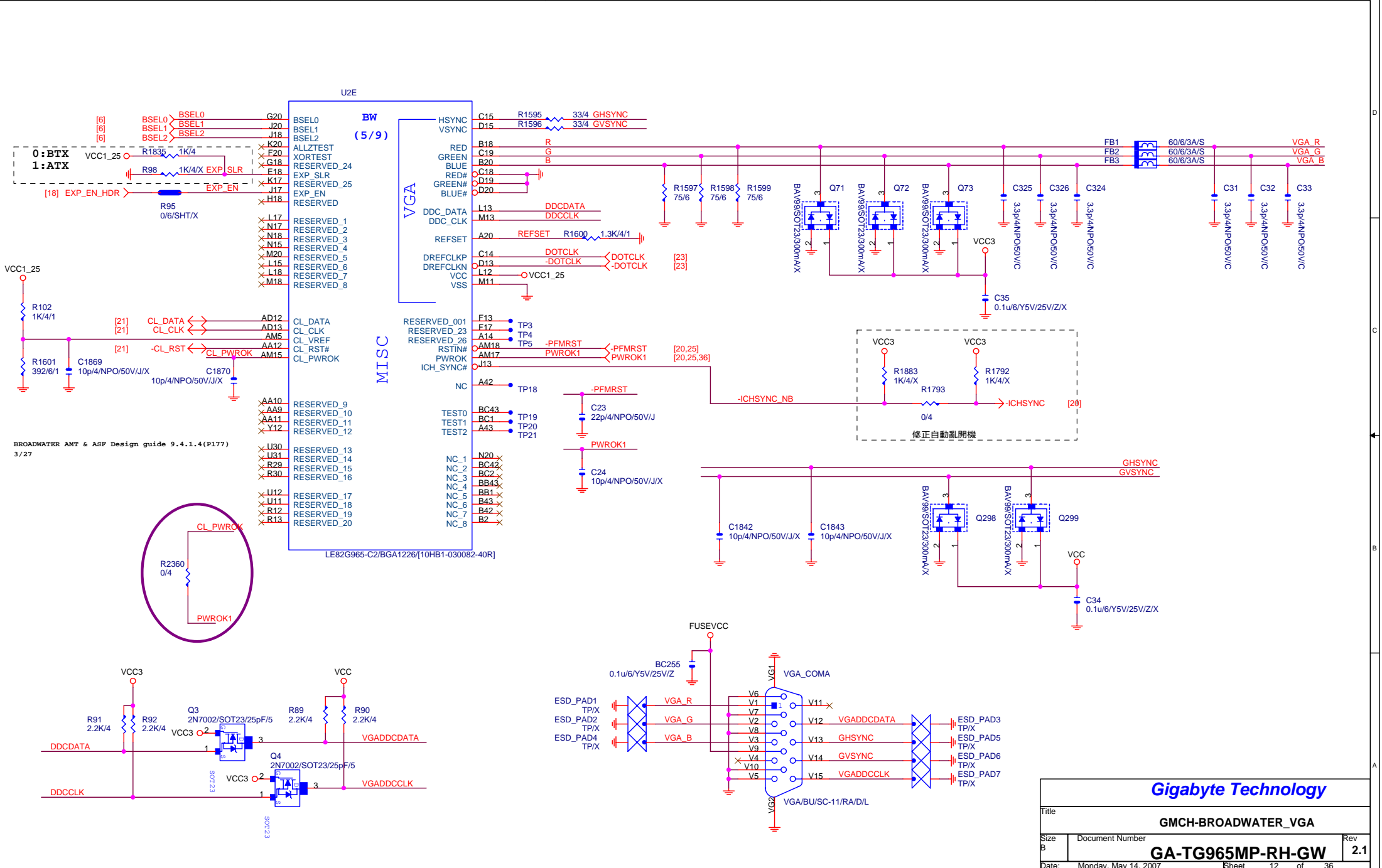


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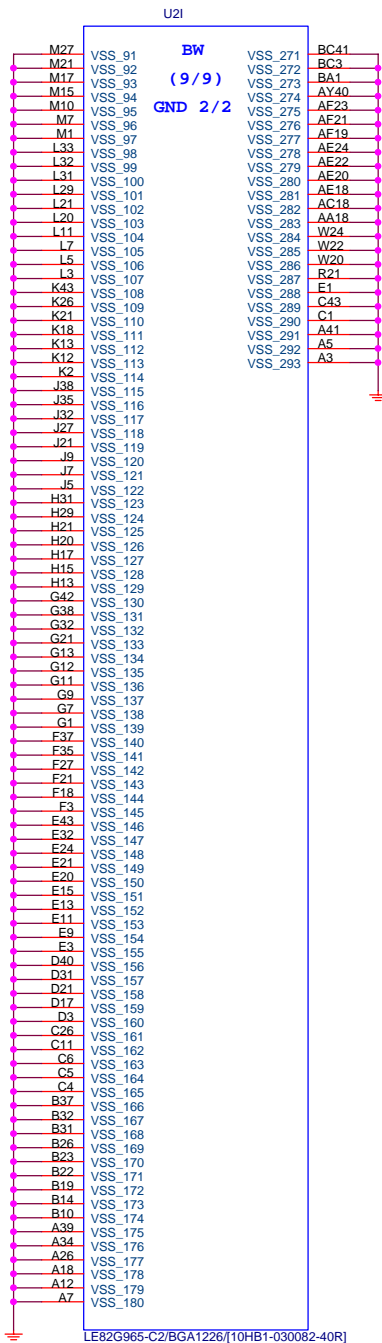
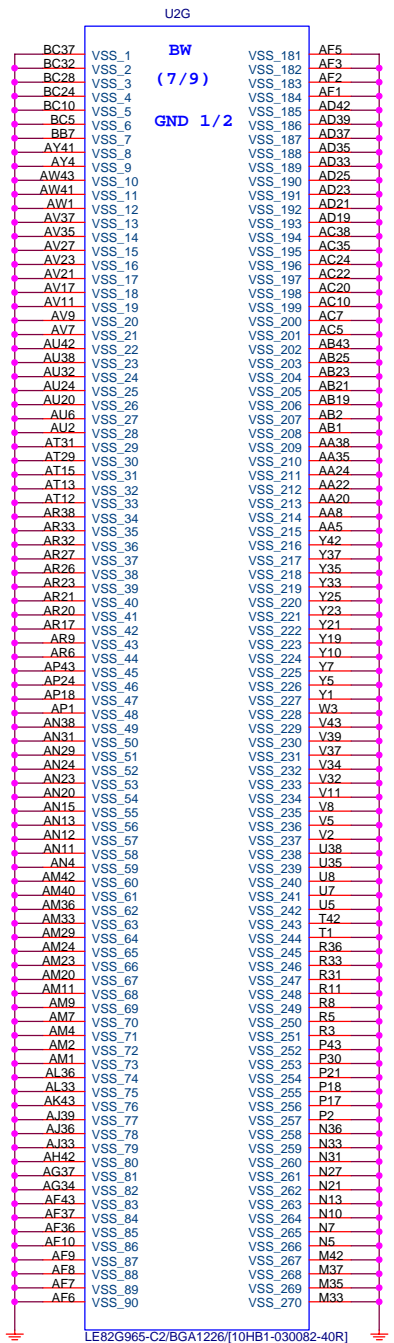
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Size	Document Number	Rev	
Custom	<b>GA-TG965MP-RH-GW</b>	<b>2.1</b>	
Date:	Monday, May 14, 2007	Sheet	11 of 36



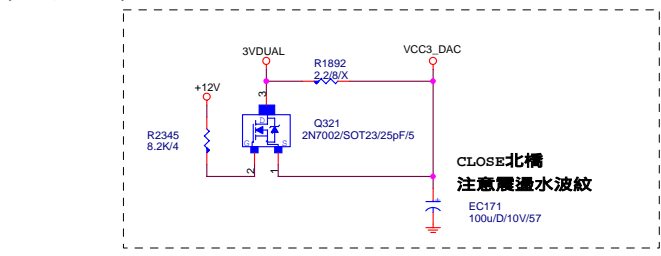
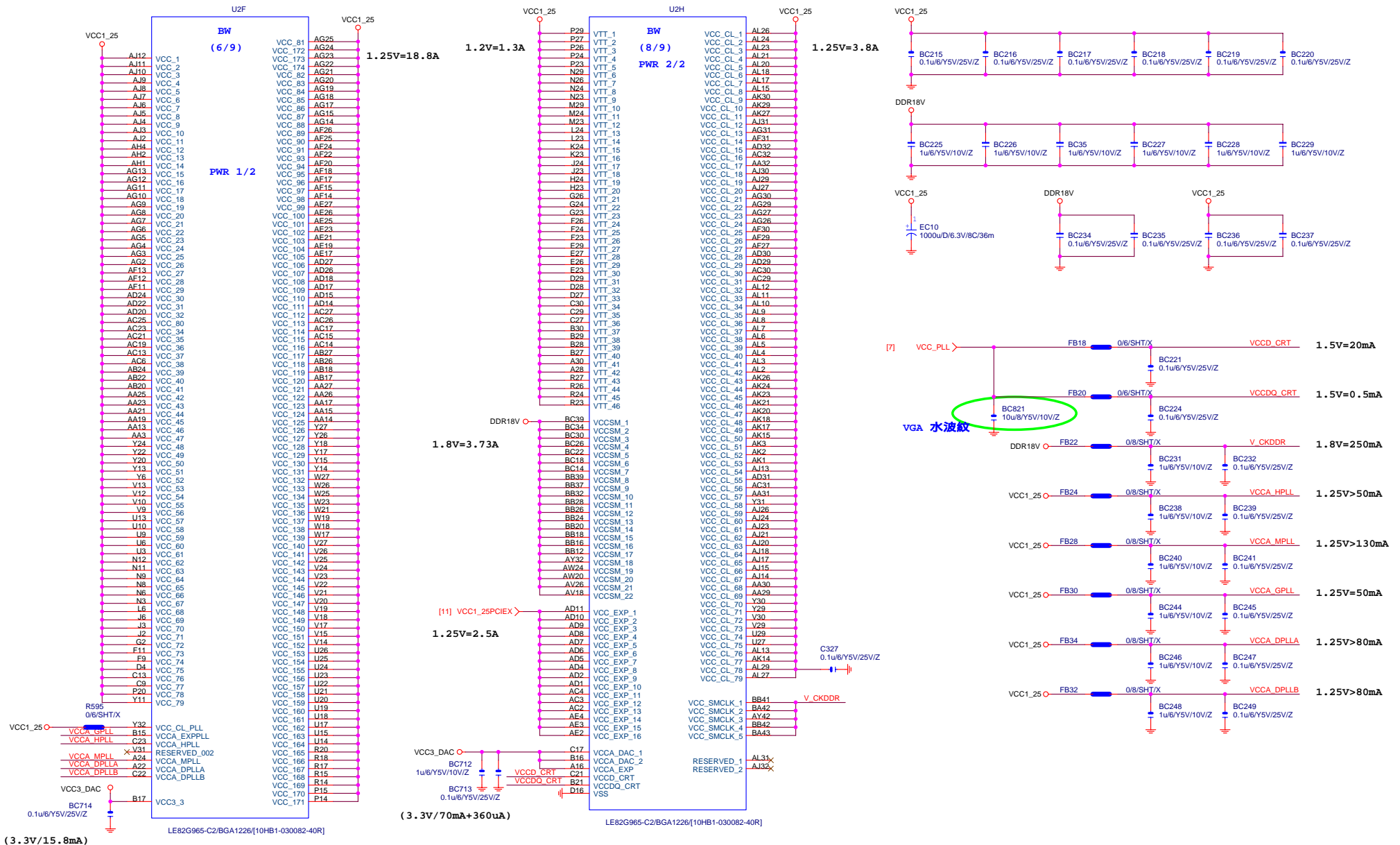
BROADWATER AMT & ASF Design guide 9.4.1.4(P177)  
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<b>Gigabyte Technology</b>		
Title <b>GMCH-BROADWATER_VGA</b>		
Size B	Document Number <b>GA-TG965MP-RH-GW</b>	Rev <b>2.1</b>
Date	Monday, May 14, 2007	Sheet 12 of 36

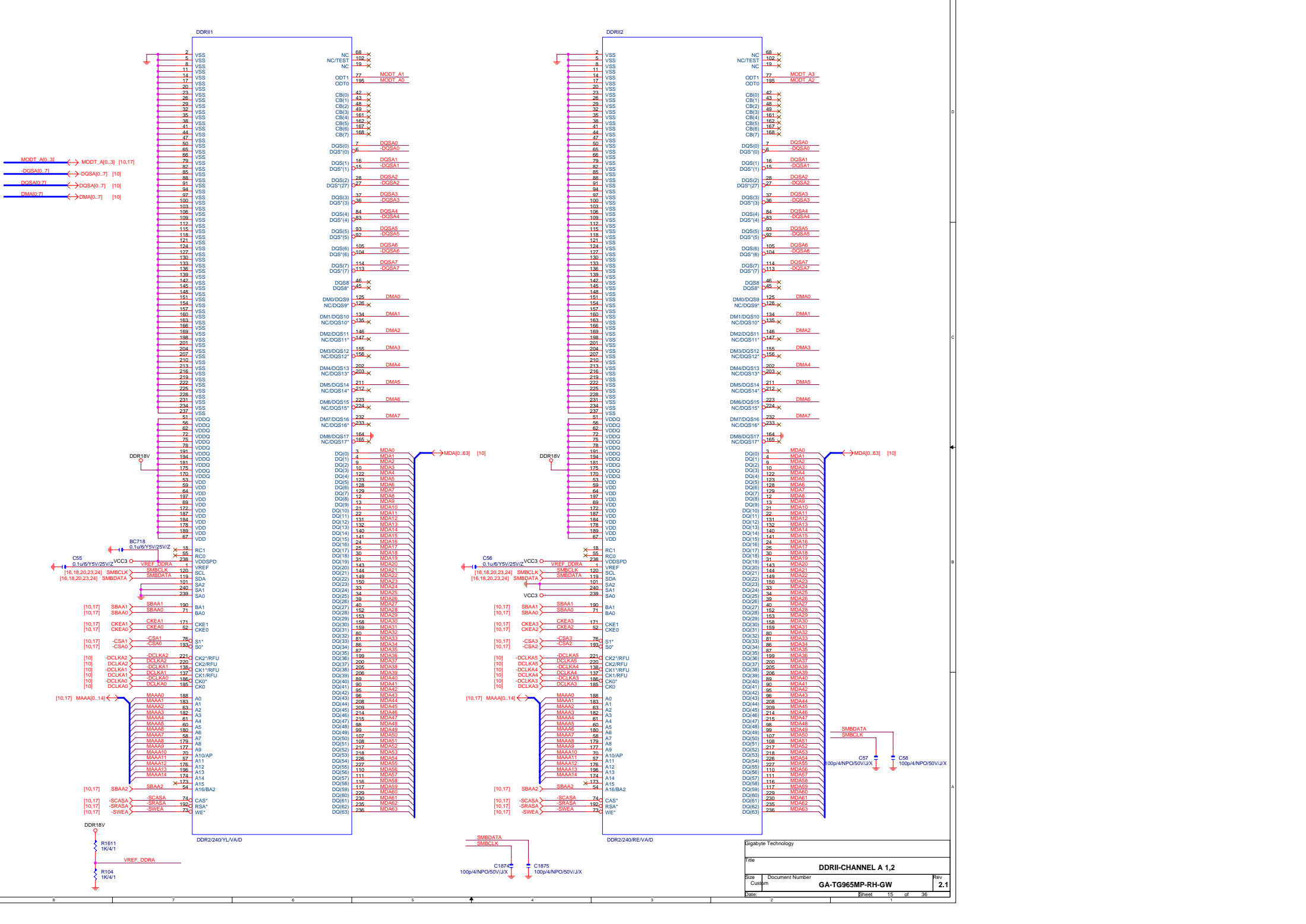


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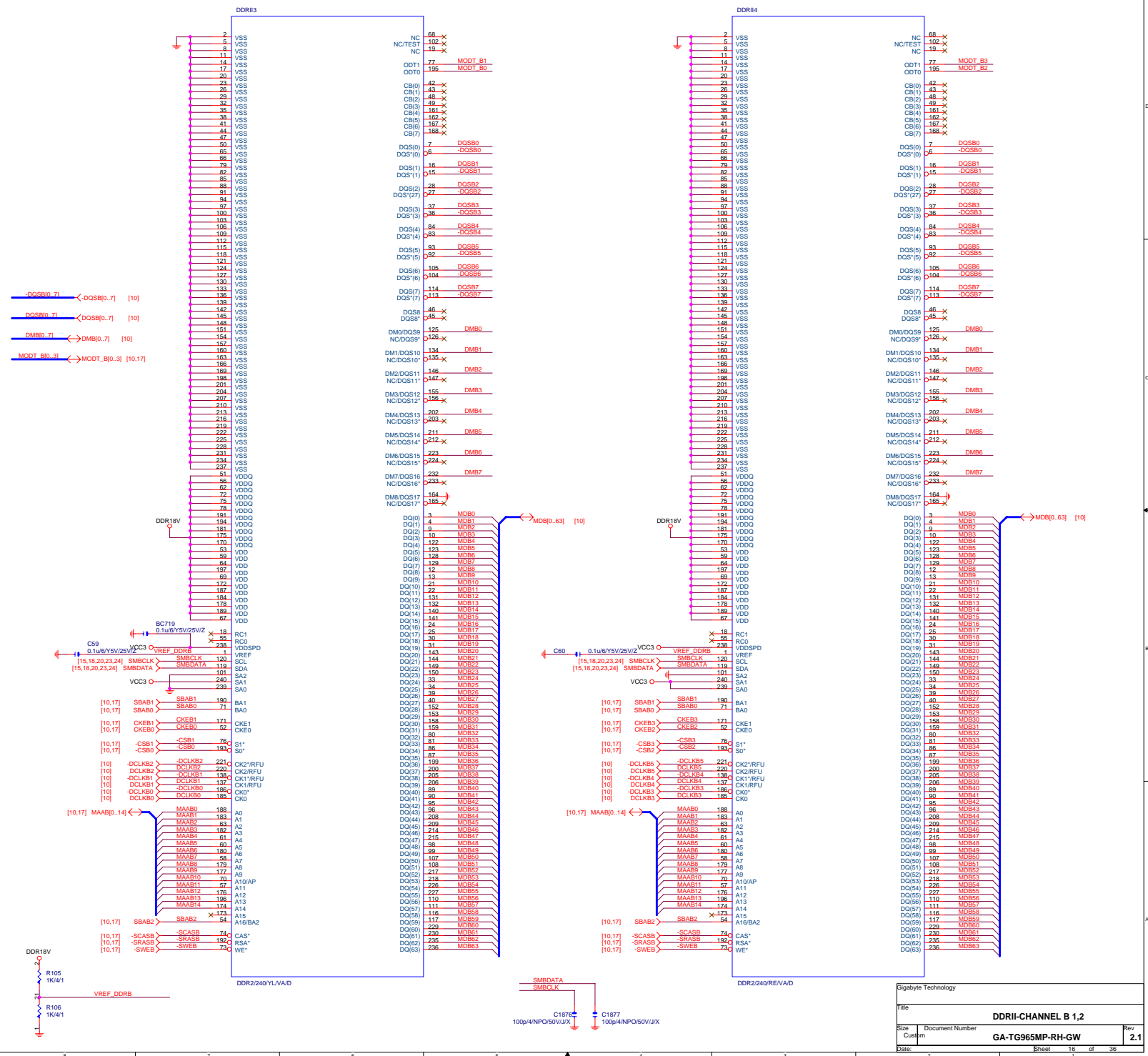


MODT\_A0\_31 ↔ MODT\_A0\_31 [10,17]  
-DQSA0\_71 ↔ DQSA0\_71 [10]  
DQSA0\_71 ↔ DQSA0\_71 [10]  
DMA0\_71 ↔ DMA0\_71 [10]

MDA0\_63 ↔ MDA0\_63 [10]

SMBDATA  
SMBCLK  
C57  
C58  
100p4/NPO/50V/JX

Sigabyte Technology  
Title: DDRII-CHANNEL A, 1,2  
Size: 2.1  
Customer: GA-T965MP-RH-GW  
Date: Sheet 15 of 36



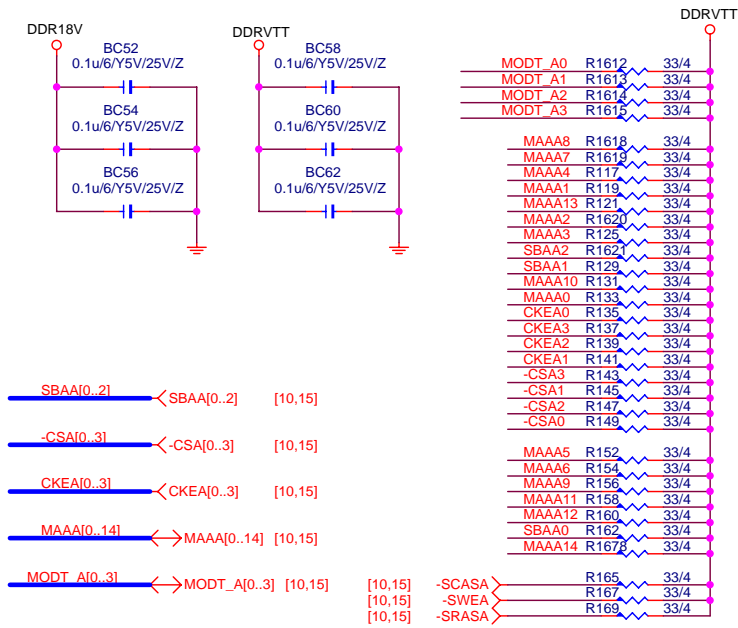
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Size	Document Number
Customer	GA-TG965MP-RH-GW
Date	Rev 2.1
	Sheet 16 of 36



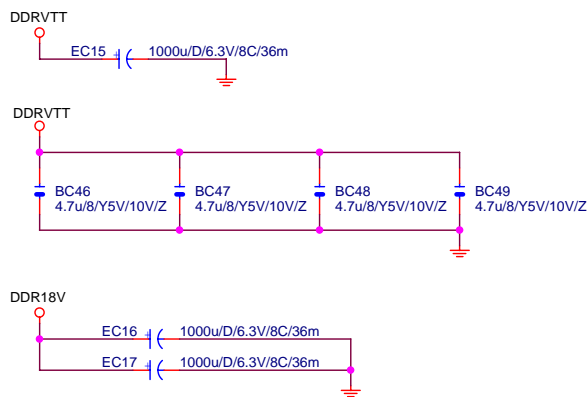
# DDR TERMINATION CHANNEL A

## DDR18V Decouple

## DDRVTT Decouple



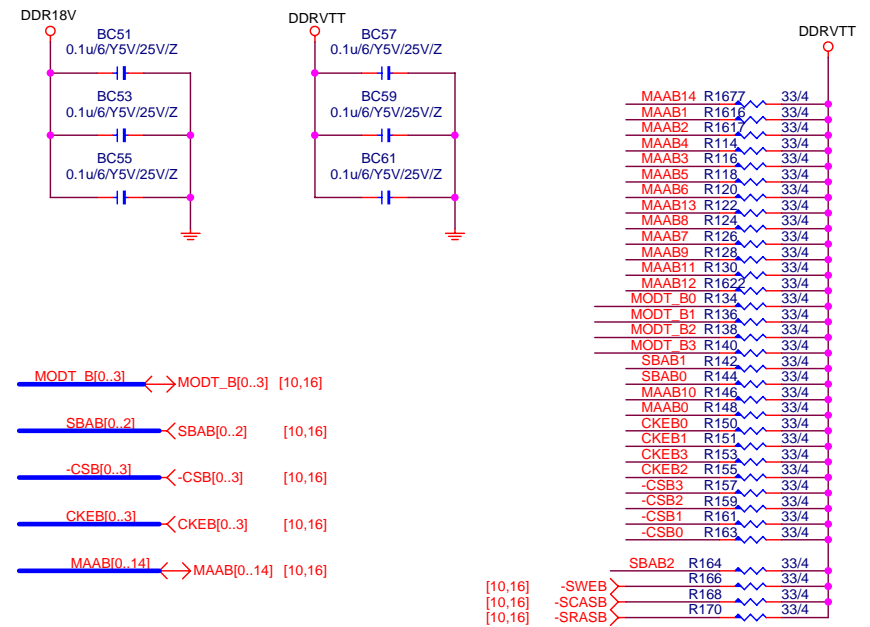
## DDRVTT Decouple



# DDR TERMINATION CHANNEL B

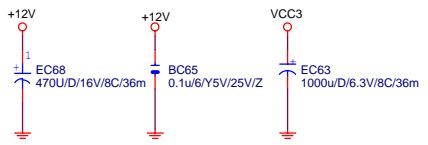
## DDR18V Decouple

## DDRVTT Decouple

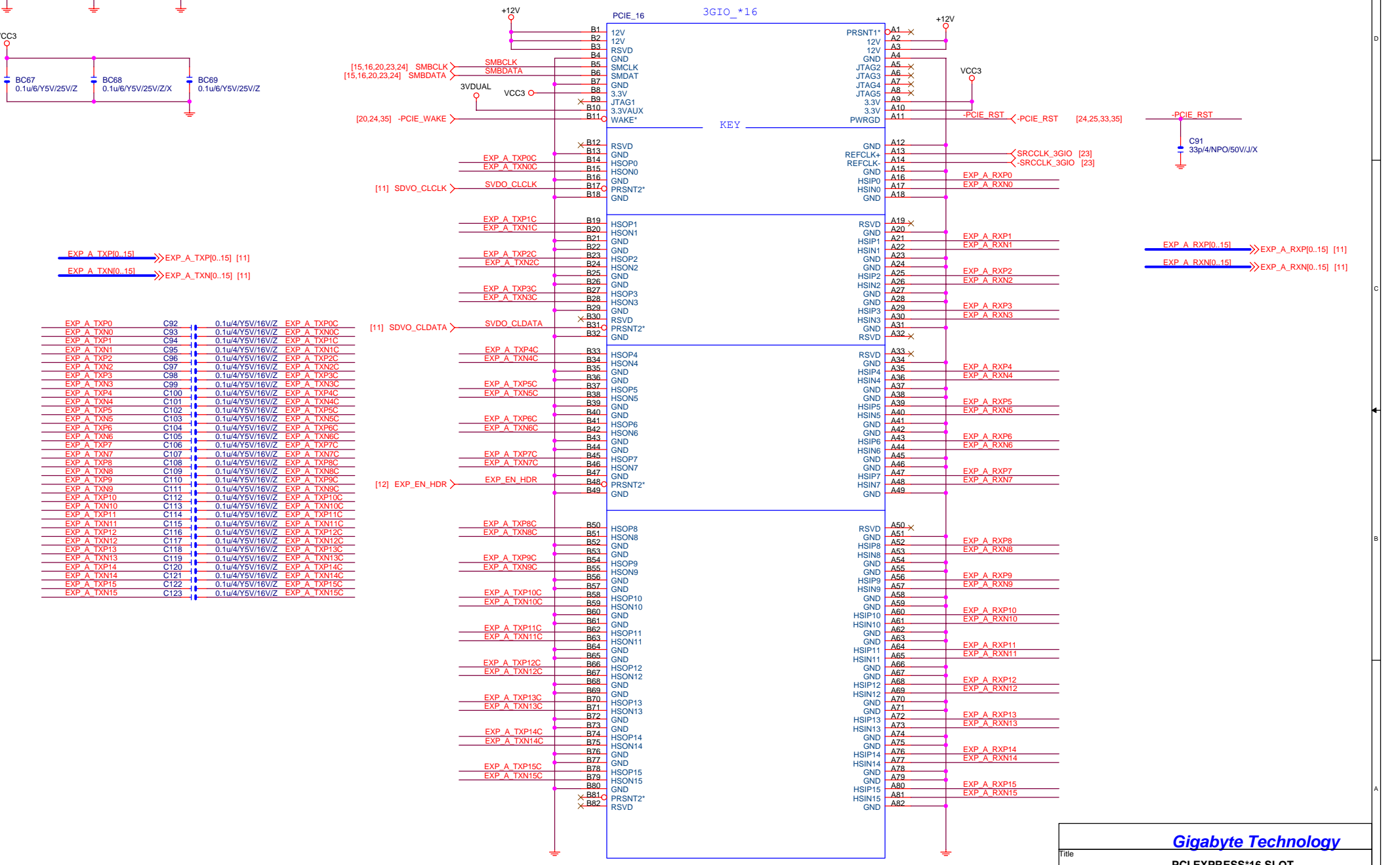


**Gigabyte Technology**

Title		
DDRII-TERMINATION		
Size	Document Number	Rev
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PCIESLOT-164DN-2



EXP\_A\_TXP[0..15] >>> EXP\_A\_TXP[0..15] [11]  
 EXP\_A\_TXN[0..15] >>> EXP\_A\_TXN[0..15] [11]

EXP_A_TXP0	C92	0.1u/4/Y/5V/16V/Z	EXP_A_TXP0C
EXP_A_TXN0	C93	0.1u/4/Y/5V/16V/Z	EXP_A_TXN0C
EXP_A_TXP1	C94	0.1u/4/Y/5V/16V/Z	EXP_A_TXP1C
EXP_A_TXN1	C95	0.1u/4/Y/5V/16V/Z	EXP_A_TXN1C
EXP_A_TXP2	C96	0.1u/4/Y/5V/16V/Z	EXP_A_TXP2C
EXP_A_TXN2	C97	0.1u/4/Y/5V/16V/Z	EXP_A_TXN2C
EXP_A_TXP3	C98	0.1u/4/Y/5V/16V/Z	EXP_A_TXP3C
EXP_A_TXN3	C99	0.1u/4/Y/5V/16V/Z	EXP_A_TXN3C
EXP_A_TXP4	C100	0.1u/4/Y/5V/16V/Z	EXP_A_TXP4C
EXP_A_TXN4	C101	0.1u/4/Y/5V/16V/Z	EXP_A_TXN4C
EXP_A_TXP5	C102	0.1u/4/Y/5V/16V/Z	EXP_A_TXP5C
EXP_A_TXN5	C103	0.1u/4/Y/5V/16V/Z	EXP_A_TXN5C
EXP_A_TXP6	C104	0.1u/4/Y/5V/16V/Z	EXP_A_TXP6C
EXP_A_TXN6	C105	0.1u/4/Y/5V/16V/Z	EXP_A_TXN6C
EXP_A_TXP7	C106	0.1u/4/Y/5V/16V/Z	EXP_A_TXP7C
EXP_A_TXN7	C107	0.1u/4/Y/5V/16V/Z	EXP_A_TXN7C
EXP_A_TXP8	C108	0.1u/4/Y/5V/16V/Z	EXP_A_TXP8C
EXP_A_TXN8	C109	0.1u/4/Y/5V/16V/Z	EXP_A_TXN8C
EXP_A_TXP9	C110	0.1u/4/Y/5V/16V/Z	EXP_A_TXP9C
EXP_A_TXN9	C111	0.1u/4/Y/5V/16V/Z	EXP_A_TXN9C
EXP_A_TXP10	C112	0.1u/4/Y/5V/16V/Z	EXP_A_TXP10C
EXP_A_TXN10	C113	0.1u/4/Y/5V/16V/Z	EXP_A_TXN10C
EXP_A_TXP11	C114	0.1u/4/Y/5V/16V/Z	EXP_A_TXP11C
EXP_A_TXN11	C115	0.1u/4/Y/5V/16V/Z	EXP_A_TXN11C
EXP_A_TXP12	C116	0.1u/4/Y/5V/16V/Z	EXP_A_TXP12C
EXP_A_TXN12	C117	0.1u/4/Y/5V/16V/Z	EXP_A_TXN12C
EXP_A_TXP13	C118	0.1u/4/Y/5V/16V/Z	EXP_A_TXP13C
EXP_A_TXN13	C119	0.1u/4/Y/5V/16V/Z	EXP_A_TXN13C
EXP_A_TXP14	C120	0.1u/4/Y/5V/16V/Z	EXP_A_TXP14C
EXP_A_TXN14	C121	0.1u/4/Y/5V/16V/Z	EXP_A_TXN14C
EXP_A_TXP15	C122	0.1u/4/Y/5V/16V/Z	EXP_A_TXP15C
EXP_A_TXN15	C123	0.1u/4/Y/5V/16V/Z	EXP_A_TXN15C

[15,16,20,23,24] SMBCLK  
 [15,16,20,23,24] SMBDATA

[11] SDVO\_CLKCLK >>> SVDO\_CLKCLK

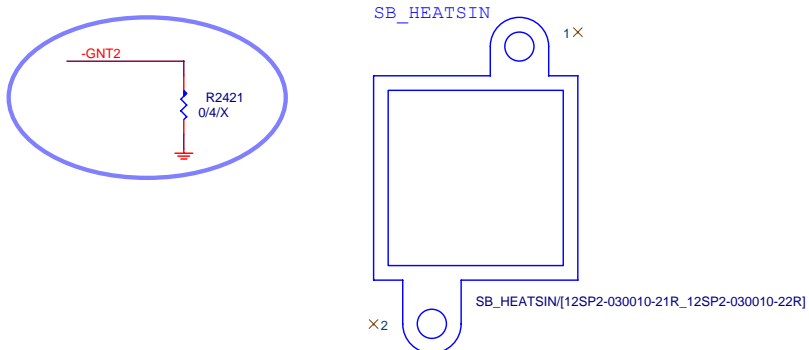
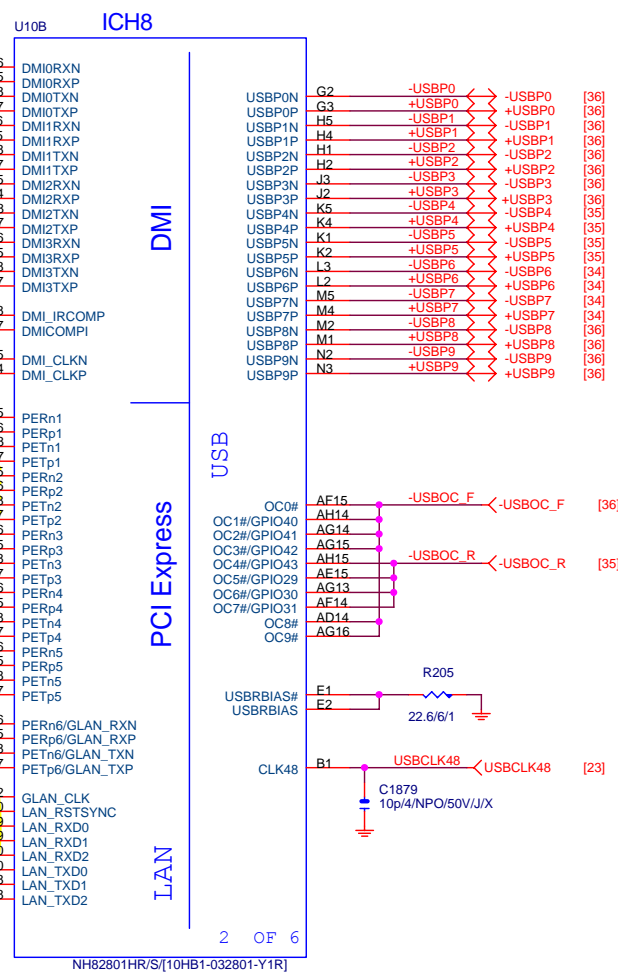
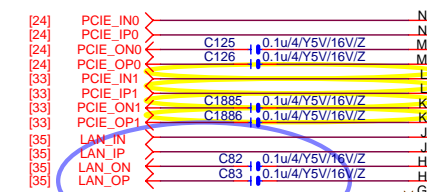
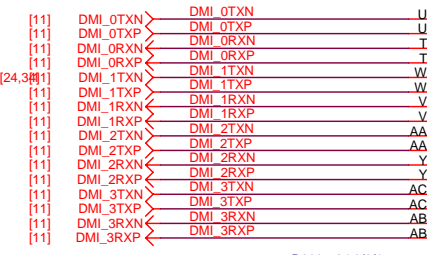
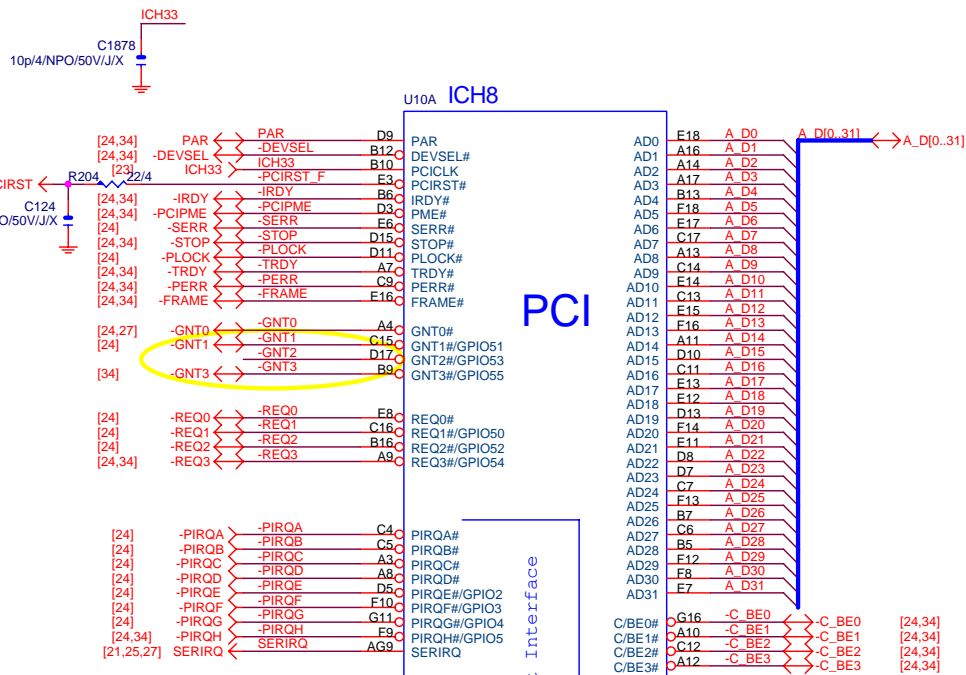
[11] SDVO\_CLDATA >>> SVDO\_CLDATA

[12] EXP\_EN\_HDR >>> EXP\_EN\_HDR

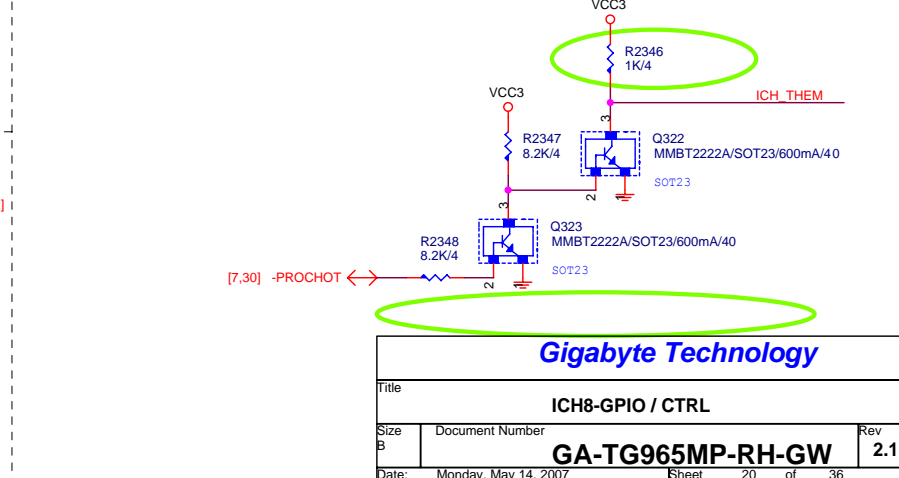
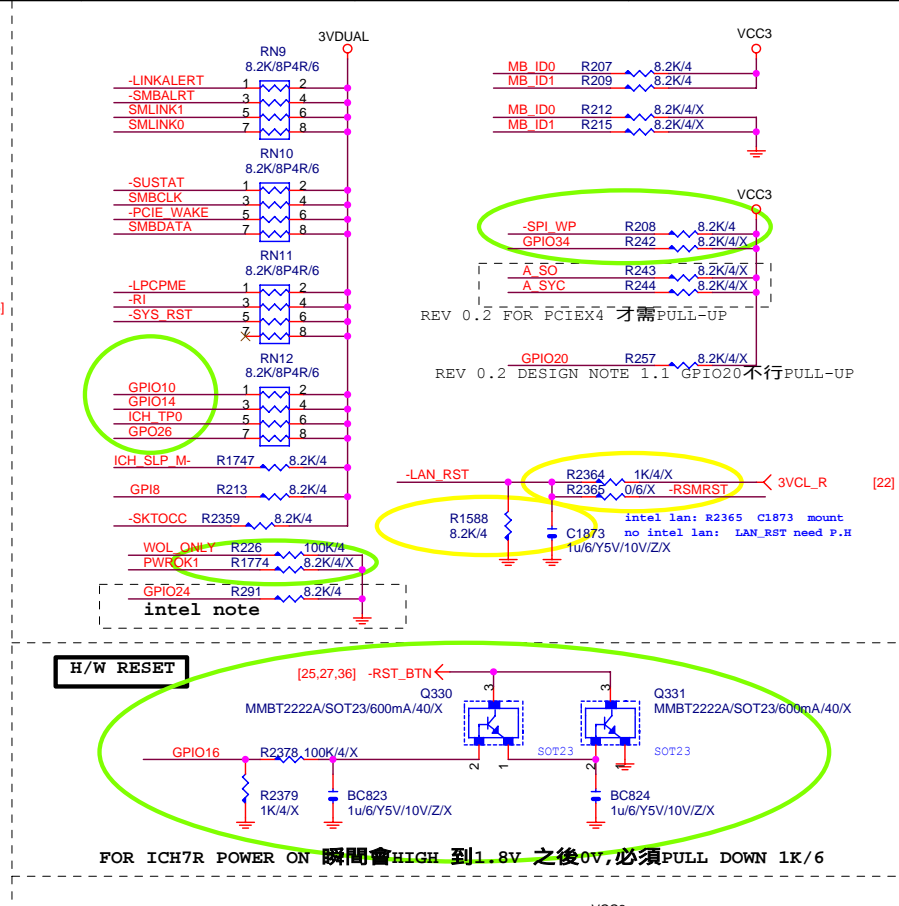
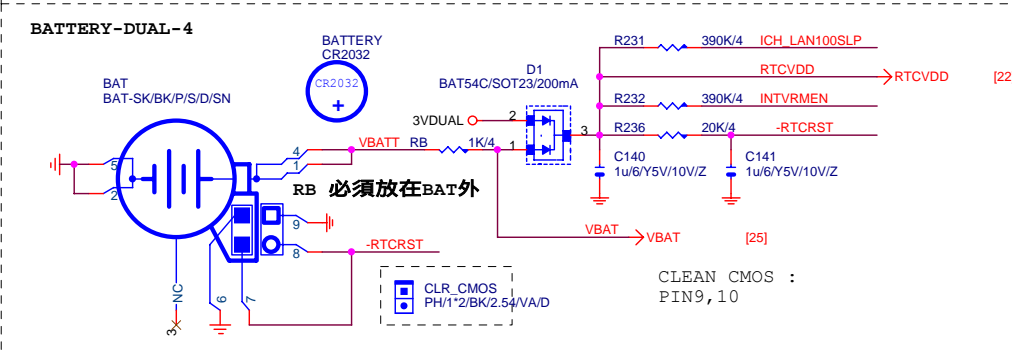
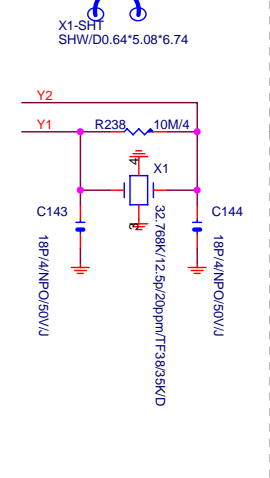
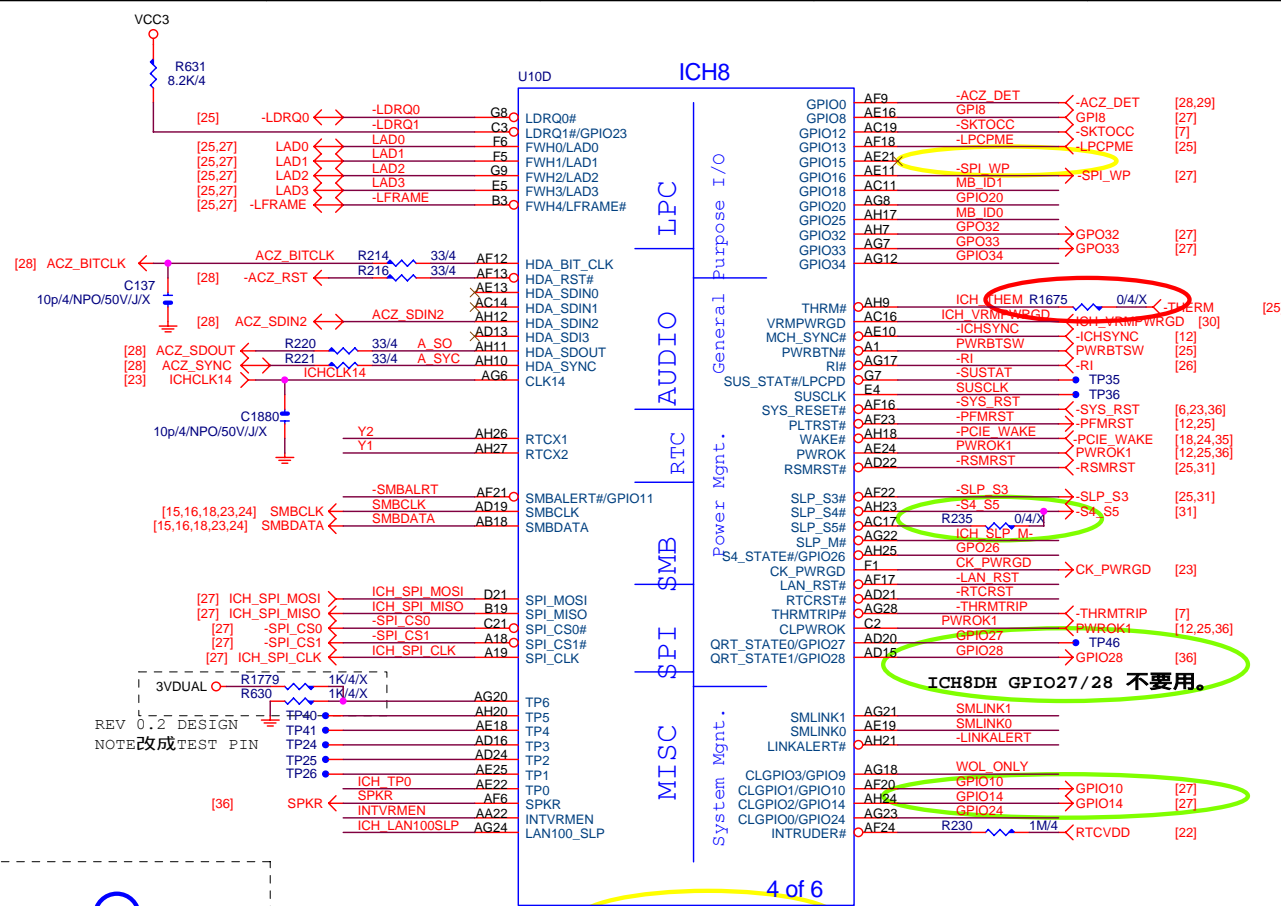
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**PCI EXPRESS\*16 SLOT**

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Size	Custom		2.1
<b>GA-TG965MP-RH-GW</b>			
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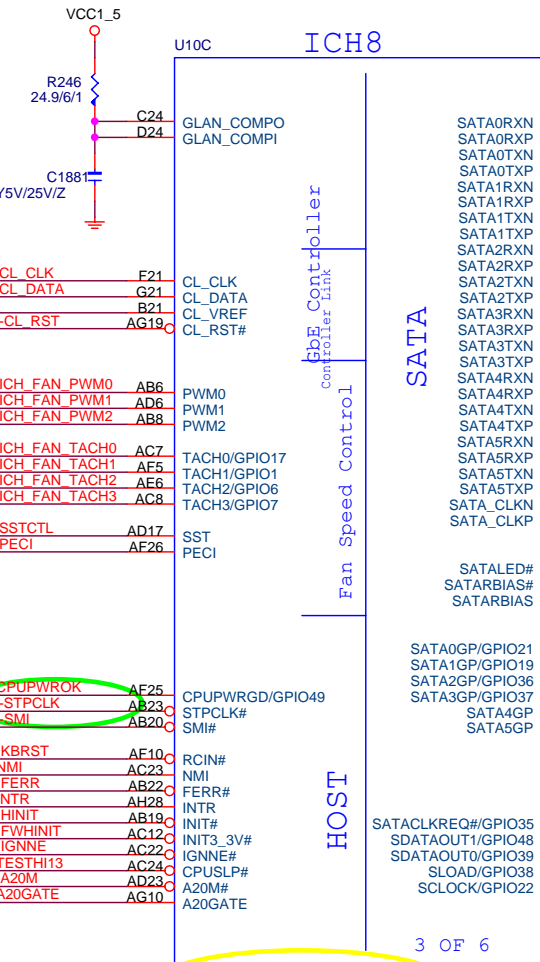
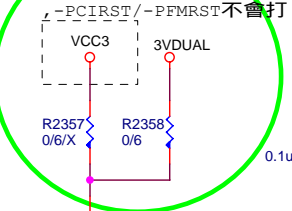
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Size B	Document Number <b>GA-TG965MP-RH-GW</b>	Rev <b>2.1</b>
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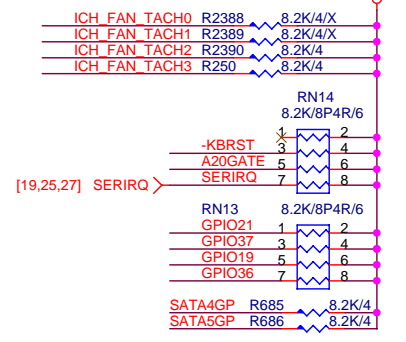
**Gigabyte Technology**

Title			ICH8-GPIO / CTRL
Size	Document Number	Rev	
B	GA-TG965MP-RH-GW	2.1	
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DEV 0.2 修改成VCC3, 否則造成不開機

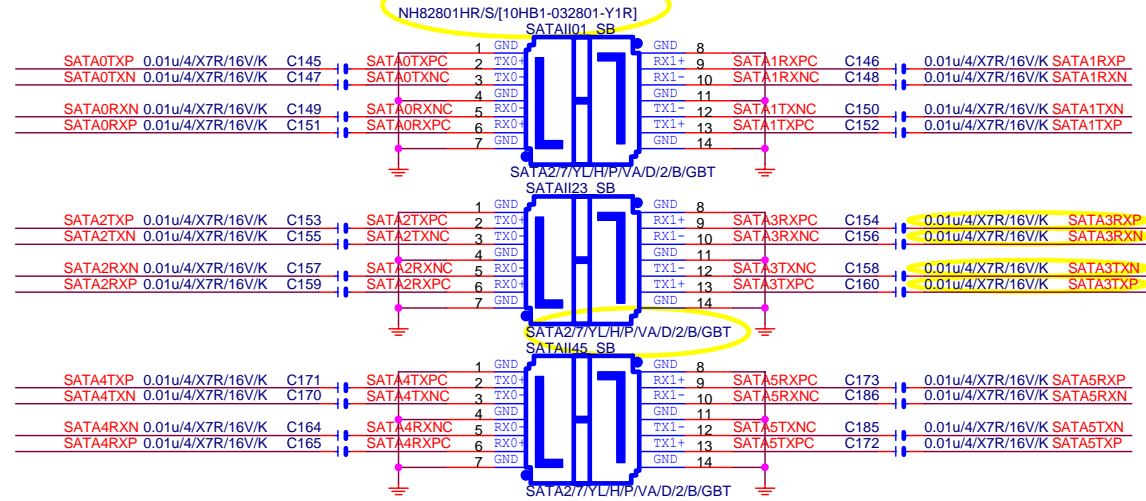


ICH8 FAN CTRL 沒用到的要 P.H



The ICH8 integrated GbE LAN test mode is activated any time the ICH8 GPIO39 signal is not at a low logic level.

Workaround  
Under investigation. Possible workaround is to use a weak pulldown resistor on GPIO39 to ensure signal is always low



**Gigabyte Technology**

Title: ICH8-SATA / FAN PWM

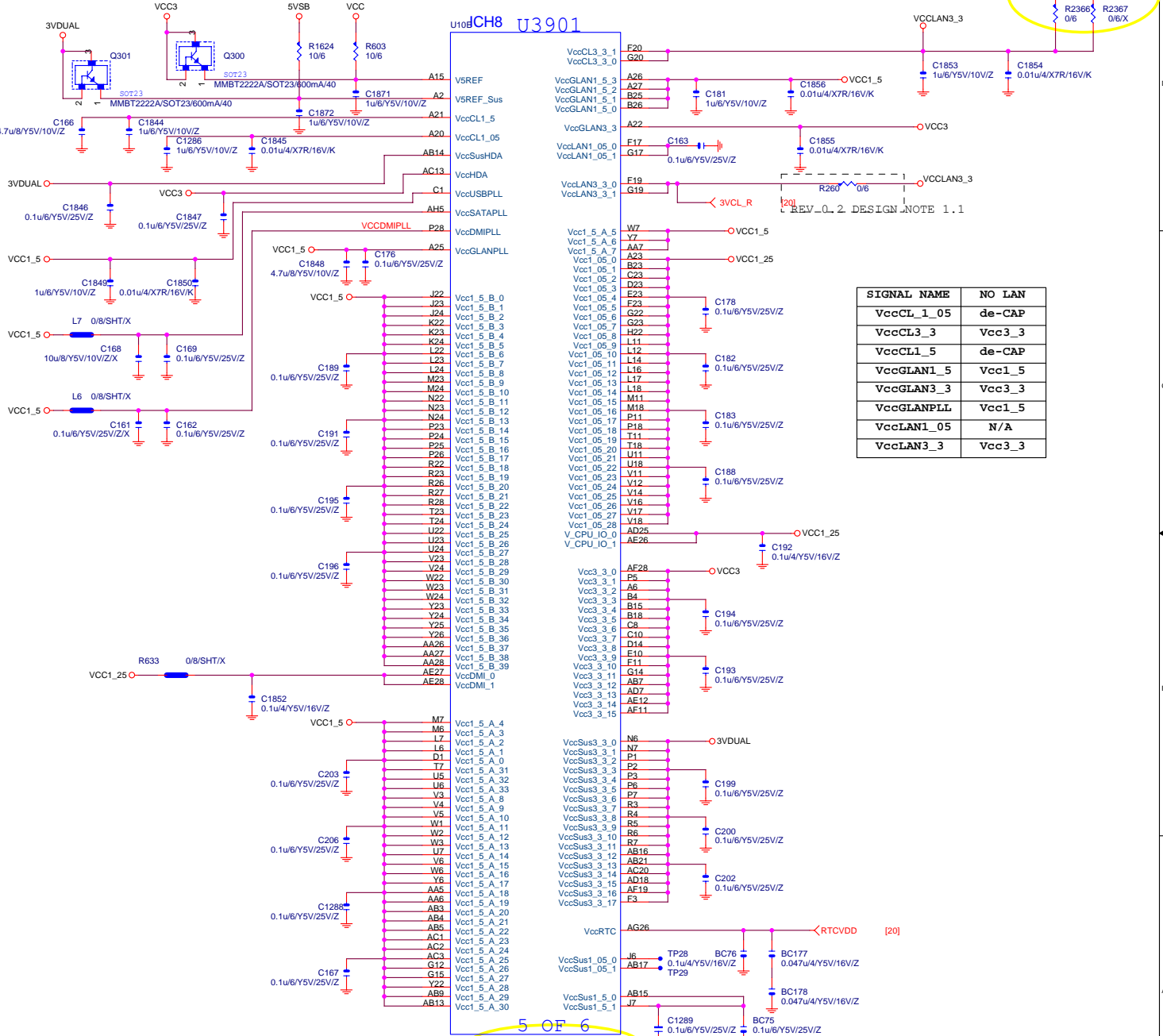
Size Custom: Document Number: GA-TG965MP-RH-GW Rev: 2.1

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U10fCH8	
R11	VSS_099
R12	VSS_100
R13	VSS_101
R14	VSS_102
R15	VSS_103
R16	VSS_104
R17	VSS_105
R18	VSS_106
T3	VSS_107
T4	VSS_108
T5	VSS_109
T6	VSS_110
T12	VSS_111
T13	VSS_112
T14	VSS_113
T15	VSS_114
T16	VSS_115
T17	VSS_116
T22	VSS_117
T25	VSS_118
T26	VSS_119
U1	VSS_120
U12	VSS_121
U13	VSS_122
U14	VSS_123
U15	VSS_124
U16	VSS_125
U17	VSS_126
U27	VSS_127
U28	VSS_128
V7	VSS_129
V13	VSS_130
V15	VSS_131
V22	VSS_132
V25	VSS_133
V26	VSS_134
V27	VSS_135
W27	VSS_136
W28	VSS_137
Y3	VSS_138
Y4	VSS_139
Y5	VSS_140
AA1	VSS_141
AA2	VSS_142
AA3	VSS_143
AA4	VSS_144
AA5	VSS_145
AA6	VSS_146
AA7	VSS_147
AA8	VSS_148
AA9	VSS_149
AA10	VSS_150
AA11	VSS_151
AA12	VSS_152
AA13	VSS_153
AA14	VSS_154
AA15	VSS_155
AA16	VSS_156
AA17	VSS_157
AA18	VSS_158
AA19	VSS_159
AA20	VSS_160
AA21	VSS_161
AA22	VSS_162
AA23	VSS_163
AA24	VSS_164
AA25	VSS_165
AA26	VSS_166
AA27	VSS_167
AA28	VSS_168
AA29	VSS_169
AA30	VSS_170
AA31	VSS_171
AA32	VSS_172
AA33	VSS_173
AA34	VSS_174
AA35	VSS_175
AA36	VSS_176
AA37	VSS_177
AA38	VSS_178
AA39	VSS_179
AA40	VSS_180
AA41	VSS_181
AH8	VSS_182
AP2	VSS_183
F4	VSS_184
B22	VSS_185
B22	VSS_186

6 OF 6

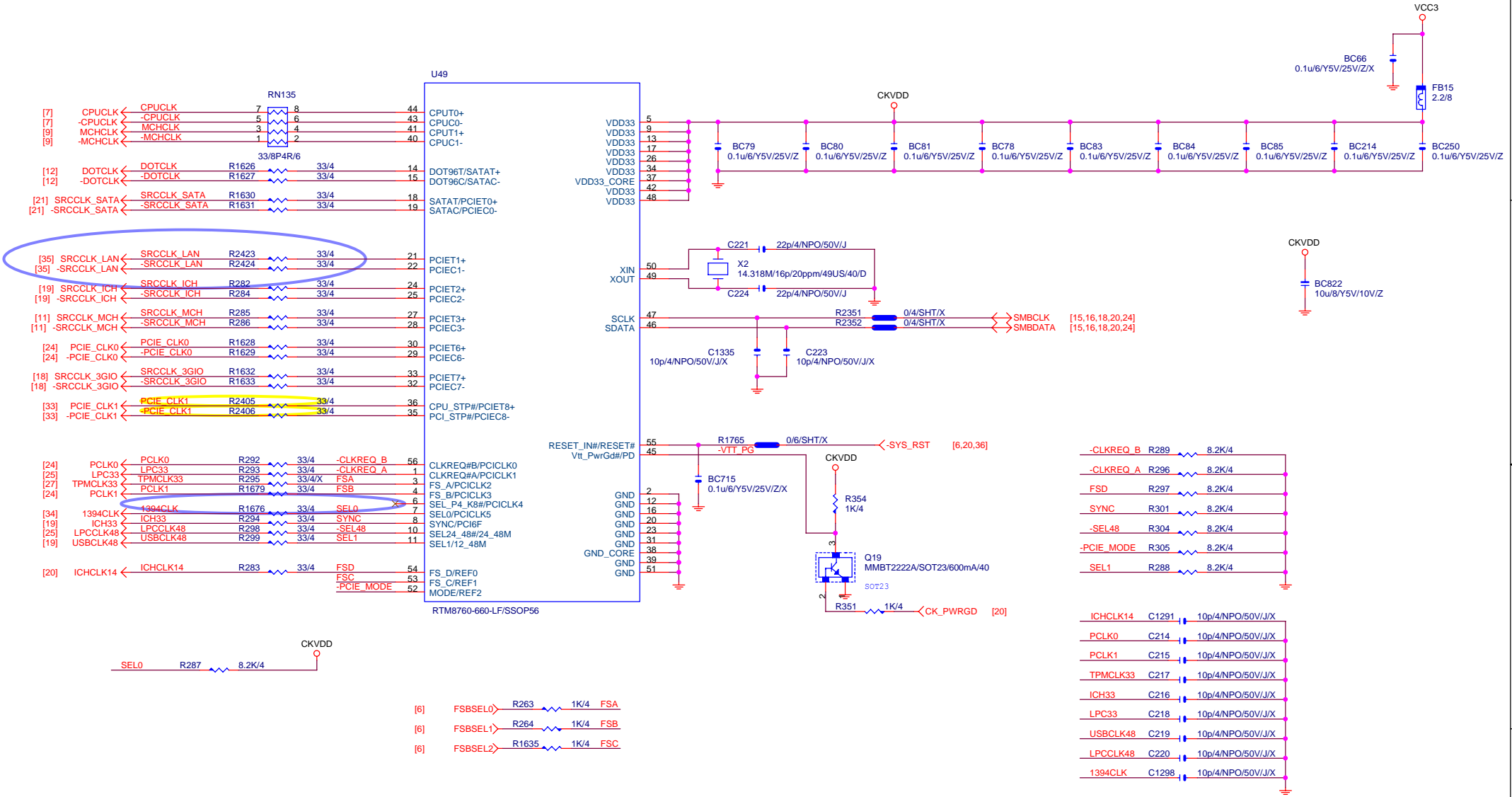
NH82801HR/S(10HB1-032801-Y1R)



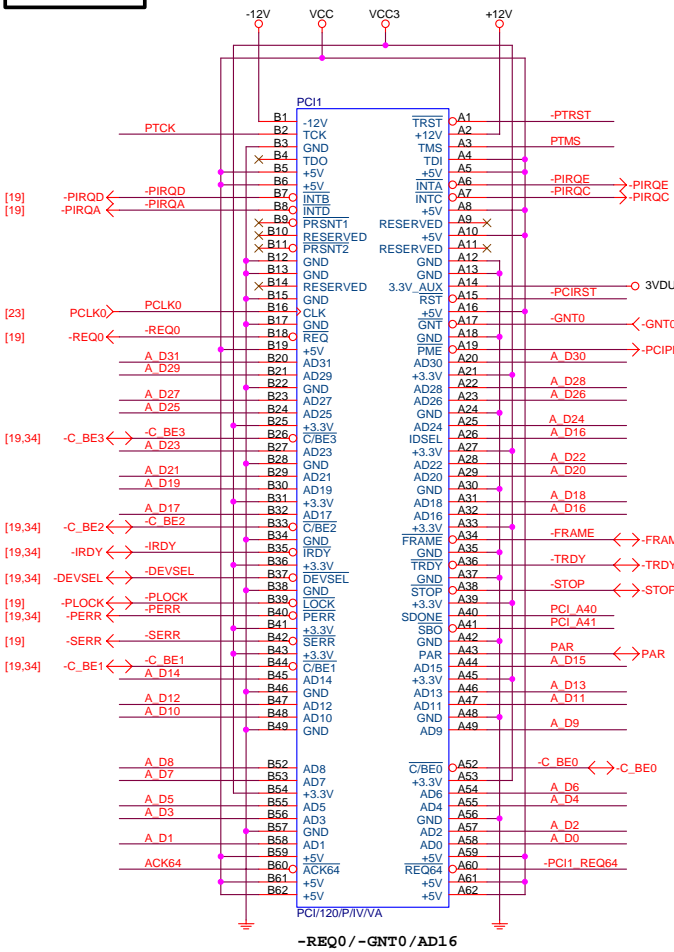
SIGNAL NAME	NO LAN
VccCL1_05	de-CAP
VccCL3_3	Vcc3_3
VccCL1_5	de-CAP
VccGLAN1_5	Vcc1_5
VccGLAN3_3	Vcc3_3
VccGLANPLL	Vcc1_5
VccLAN1_05	N/A
VccLAN3_3	Vcc3_3

5 OF 6  
NH82801HR/S(10HB1-032801-Y1R)

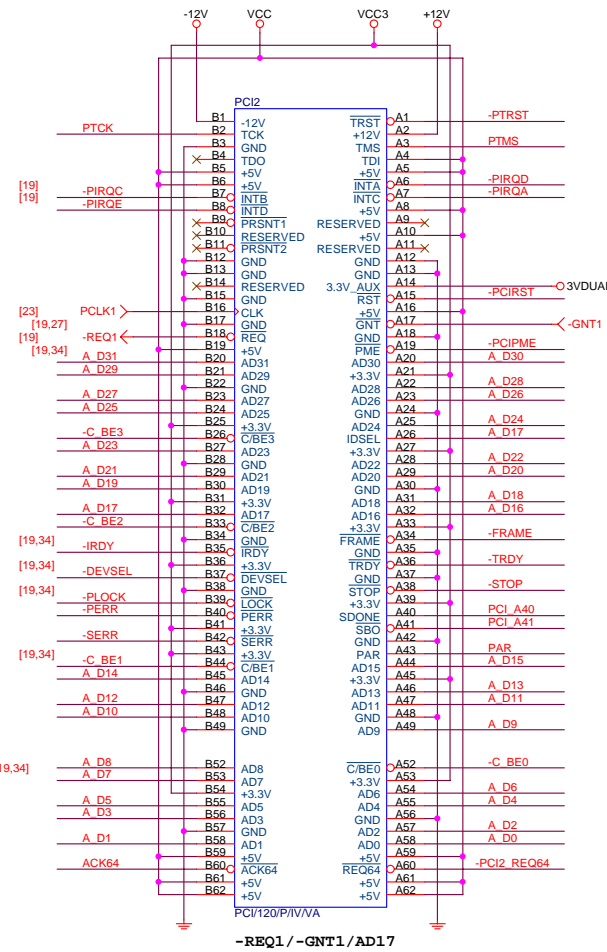




**PCI1, 2 SLOT**

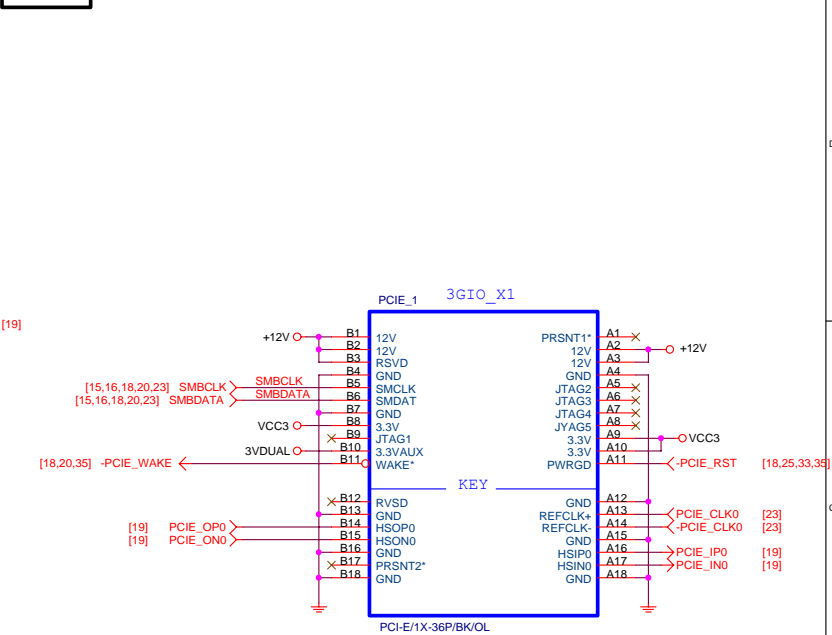


-REQ0 / -GNT0 / AD16

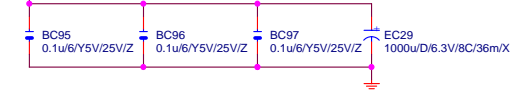
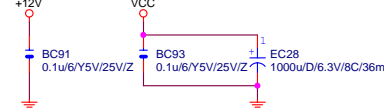
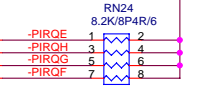
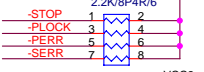


-REQ1 / -GNT1 / AD17

**PCIe\*1**



PCI-E/1X-36P/BK/OL

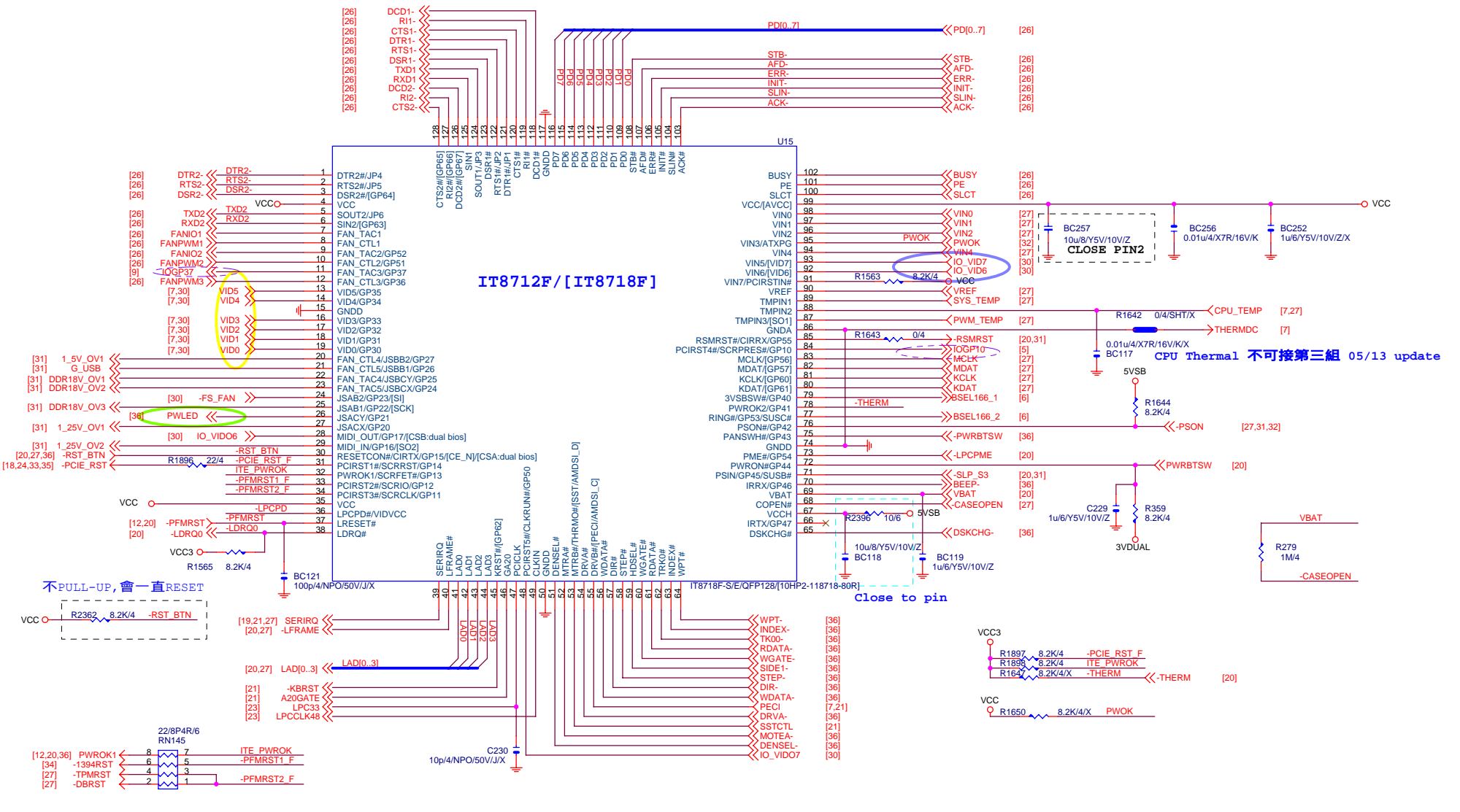


**Gigabyte Technology**

Title			<b>PCI EXPRESS*1/PCI SLOT 1,2</b>		
Size			Document Number		
Custort			<b>GA-TG965MP-RH-GW</b>		
Date:			Monday, May 14, 2007		
Sheet			24 of 36		
Rev			2.1		



**IT8718F LPC I/O**



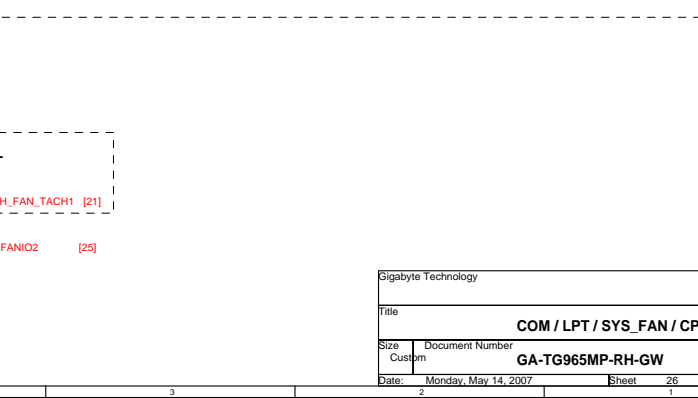
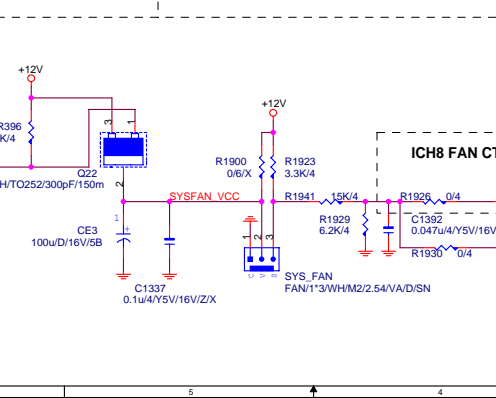
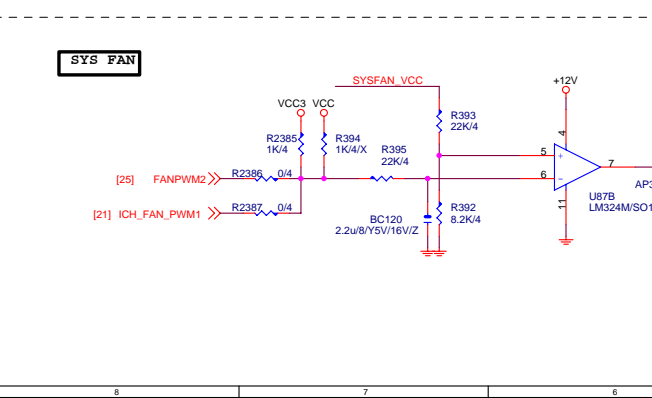
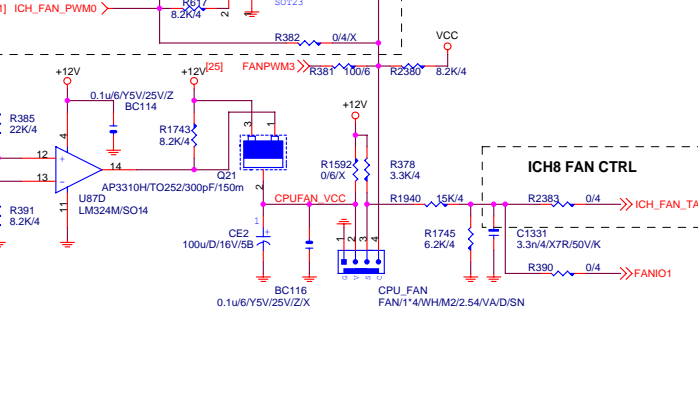
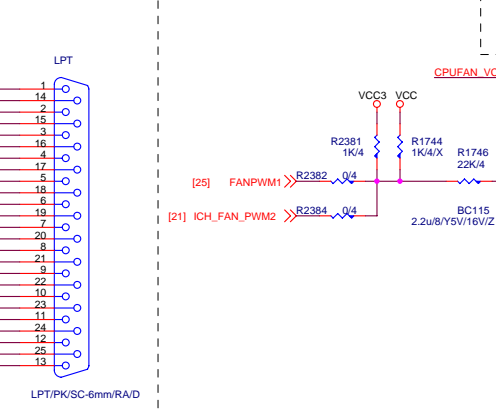
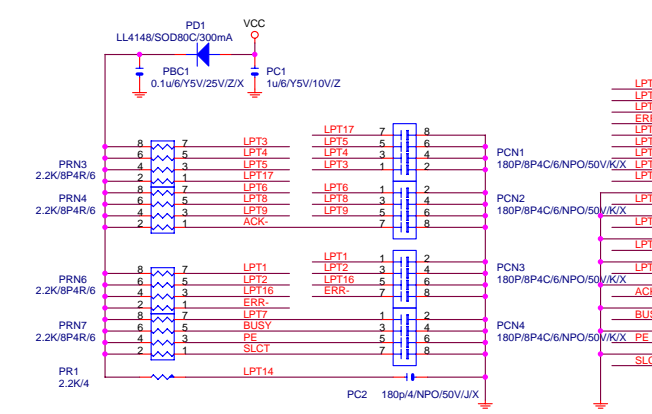
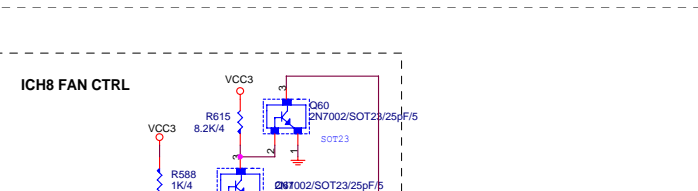
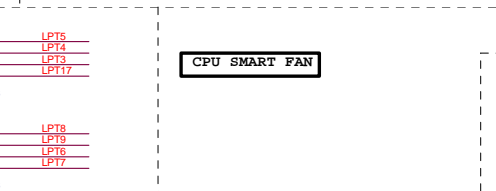
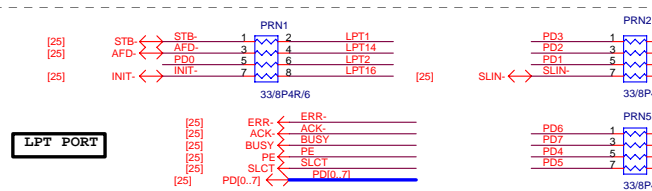
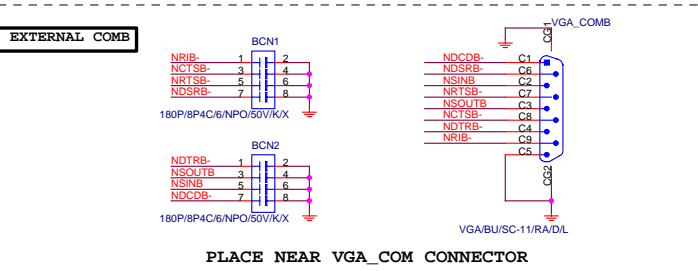
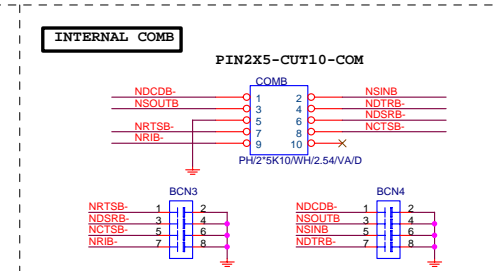
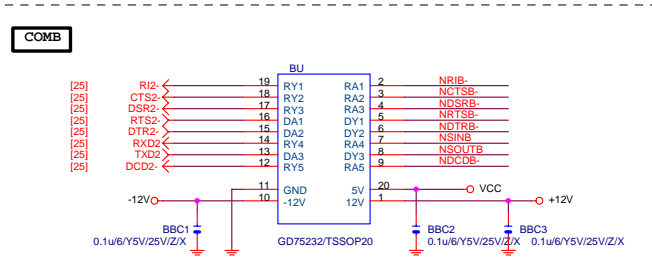
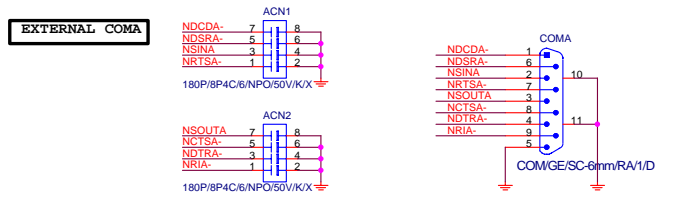
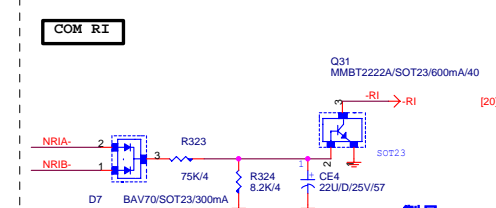
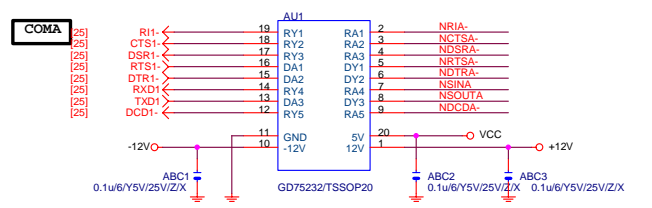
1.2V or 3.3V tolerance select.  
 1.2V OUTPUT 接 VT<sub>GMCH</sub>  
 3.3V OUTPUT 接 3.3V  
 LPCPD# = VIDVCC

SOUT2 1 VID pins threshold voltage select: V<sub>IH</sub> / V<sub>IL</sub> : 2.0 / 0.8V  
 0 VID pins threshold voltage select: V<sub>IH</sub> / V<sub>IL</sub> : 0.8 / 0.4V

RTS2- == LOW CPU FAN 50% (DEFAULT 50%)  
 == HIGH 100%

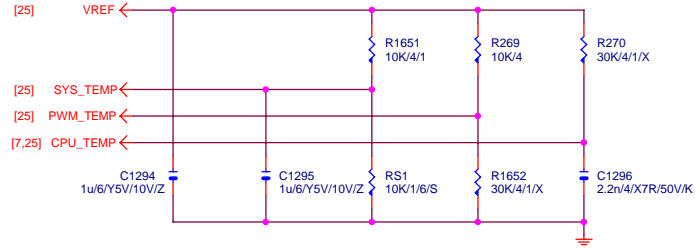
DTR2 P.D RST internal P.H  
 COM port buffer default P.H

Gigabyte Technology		
Title		
ITE8718F		
Size	Document Number	Rev
Custom	GA-TG965MP-RH-GW	2.1
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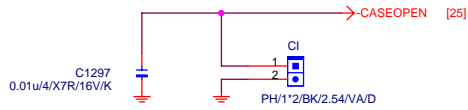


Gigabyte Technology			
Title			
COM / LPT / SYS_FAN / CPU_FAN			
Size	Document Number	Rev	
Custom	GA-TG965MP-RH-GW	2.1	
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**TEMP H/W MONITOR**

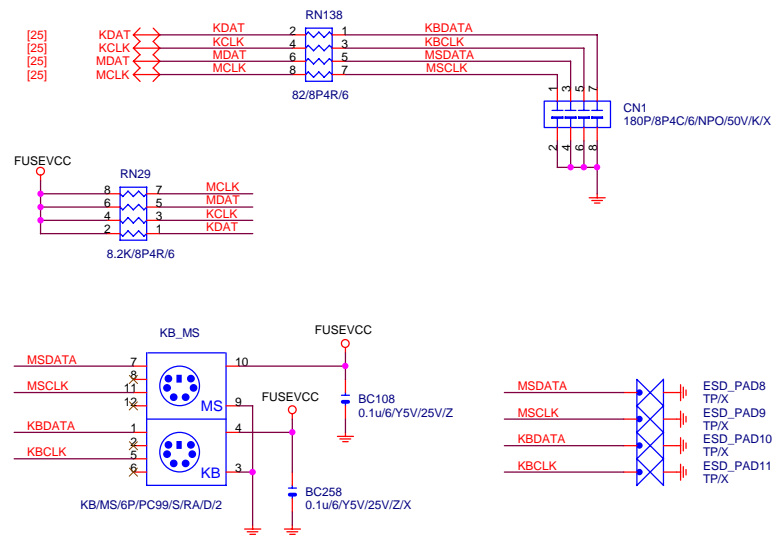


**CASE OPEN**

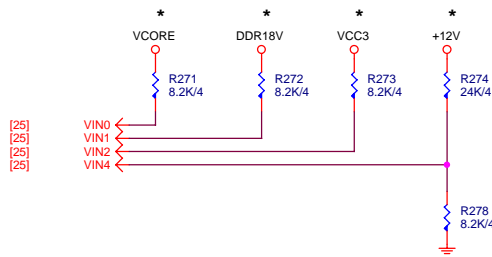


Case Open Circuits

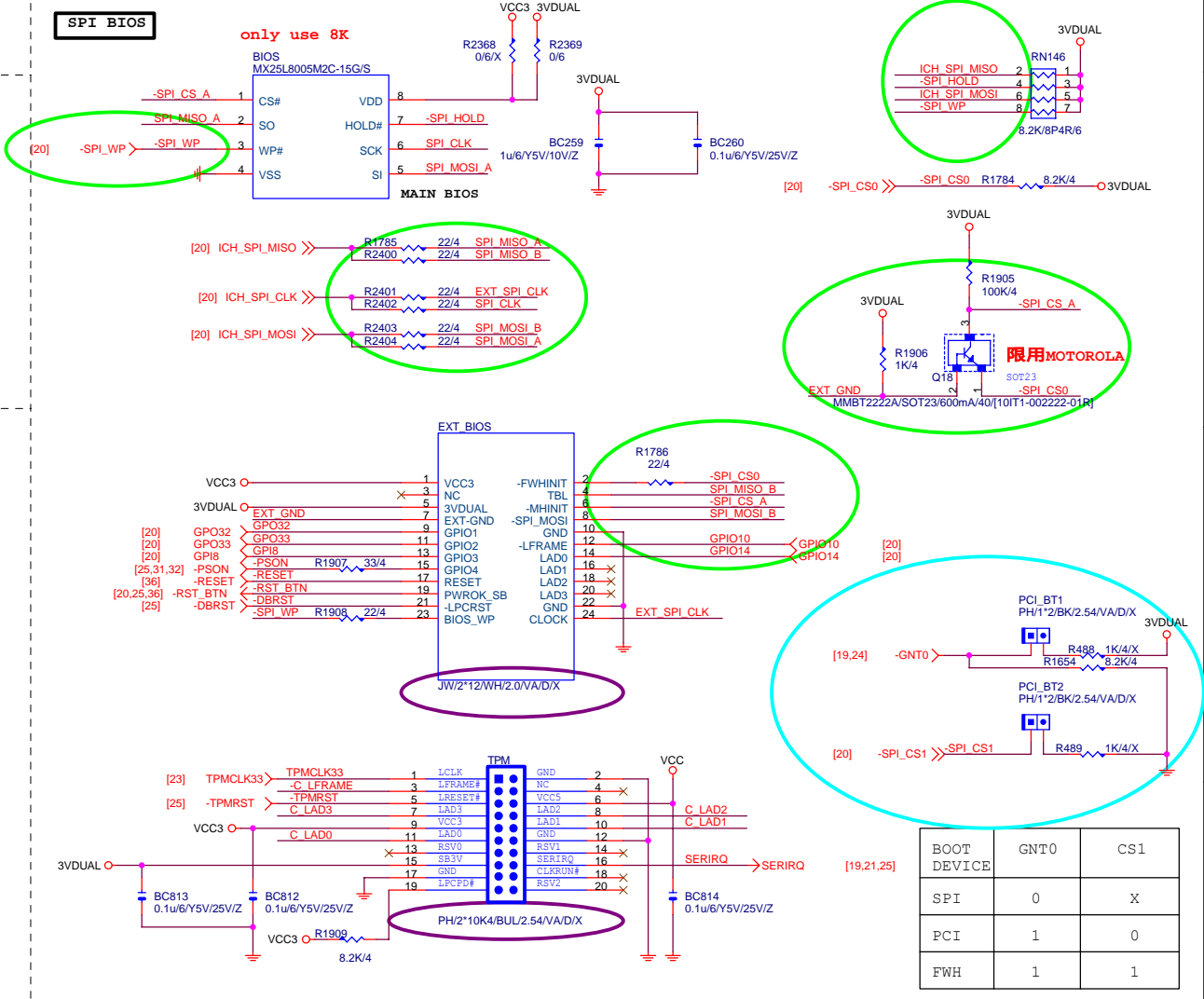
**KB/MS**



**VOLTAGE-- H/W MONITOR**

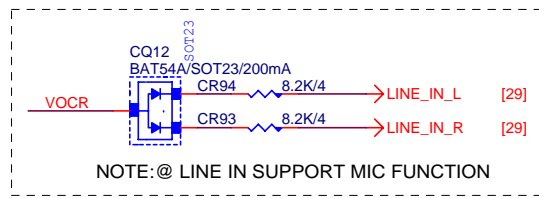
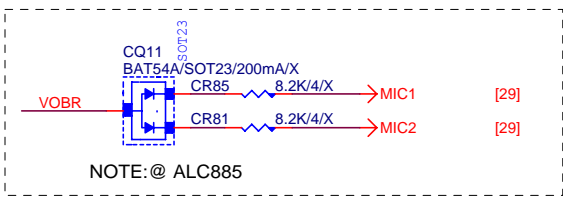
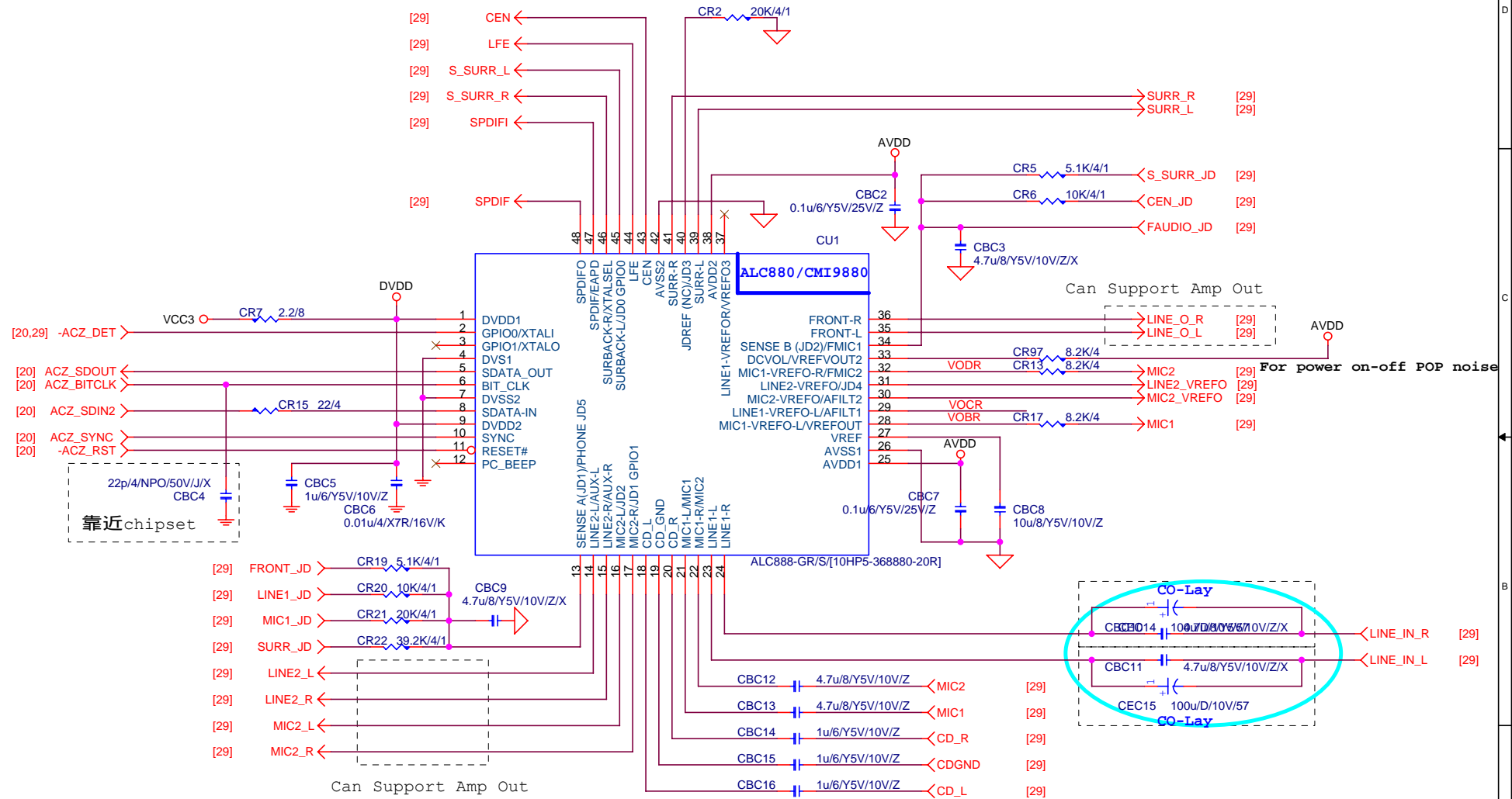


**SPI BIOS**



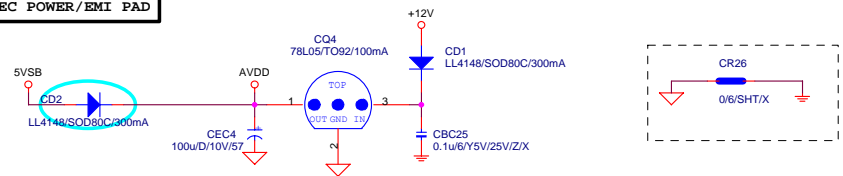
BOOT DEVICE	GNT0	CS1
SPI	0	X
PCI	1	0
FWH	1	1

**Gigabyte Technology**

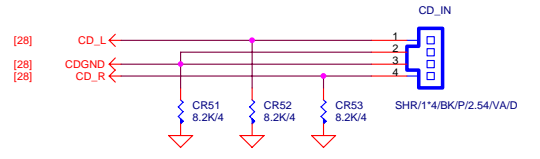


<b>Gigabyte Technology</b>		
<b>CODEC ALC888</b>		
Title	Document Number	Rev
	<b>GA-TG965MP-RH-GW</b>	<b>2.1</b>
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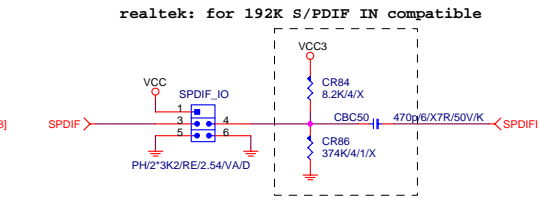
**CODEC POWER/EMI PAD**



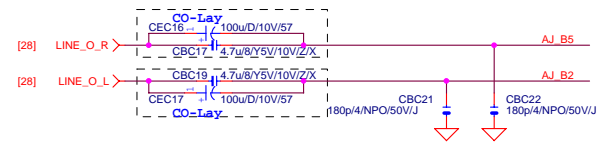
**CD IN**



**SPDIF**



**LINE-OUT**



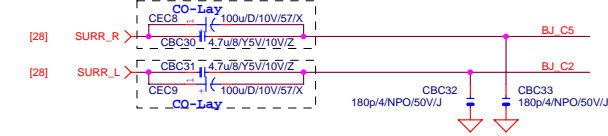
**LINE-IN**



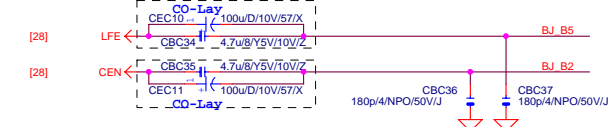
**MIC-IN**



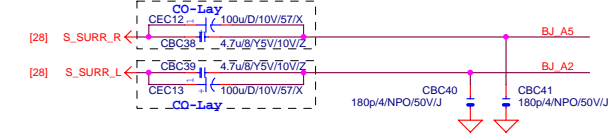
**SURROUND**



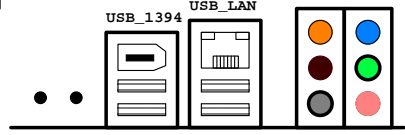
**CEN/LFE**



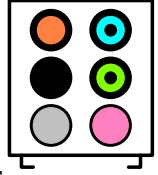
**SURR BACK**



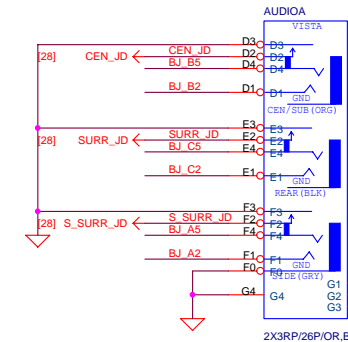
**AZALIA JACK**



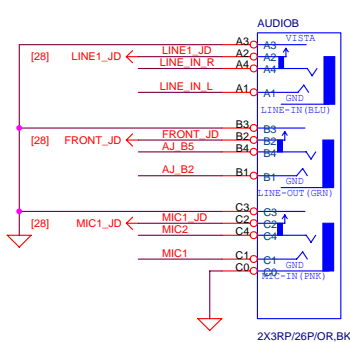
**BTX AZALIA CONNECTOR**



3RP/26P/OR,BK,GY,BU,GE,PK/RA/D/1/B  
VISTA規範: REAR-->BLK, CEN/SUB-->ORG

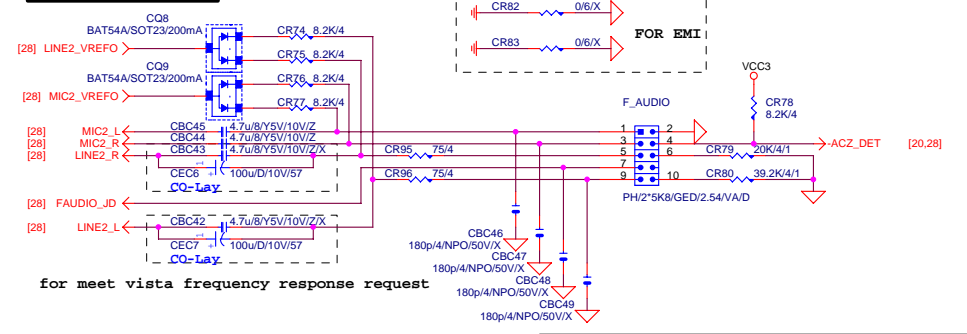


2X3RP/26P/OR,BK,GY,BU,GE,PK/RA



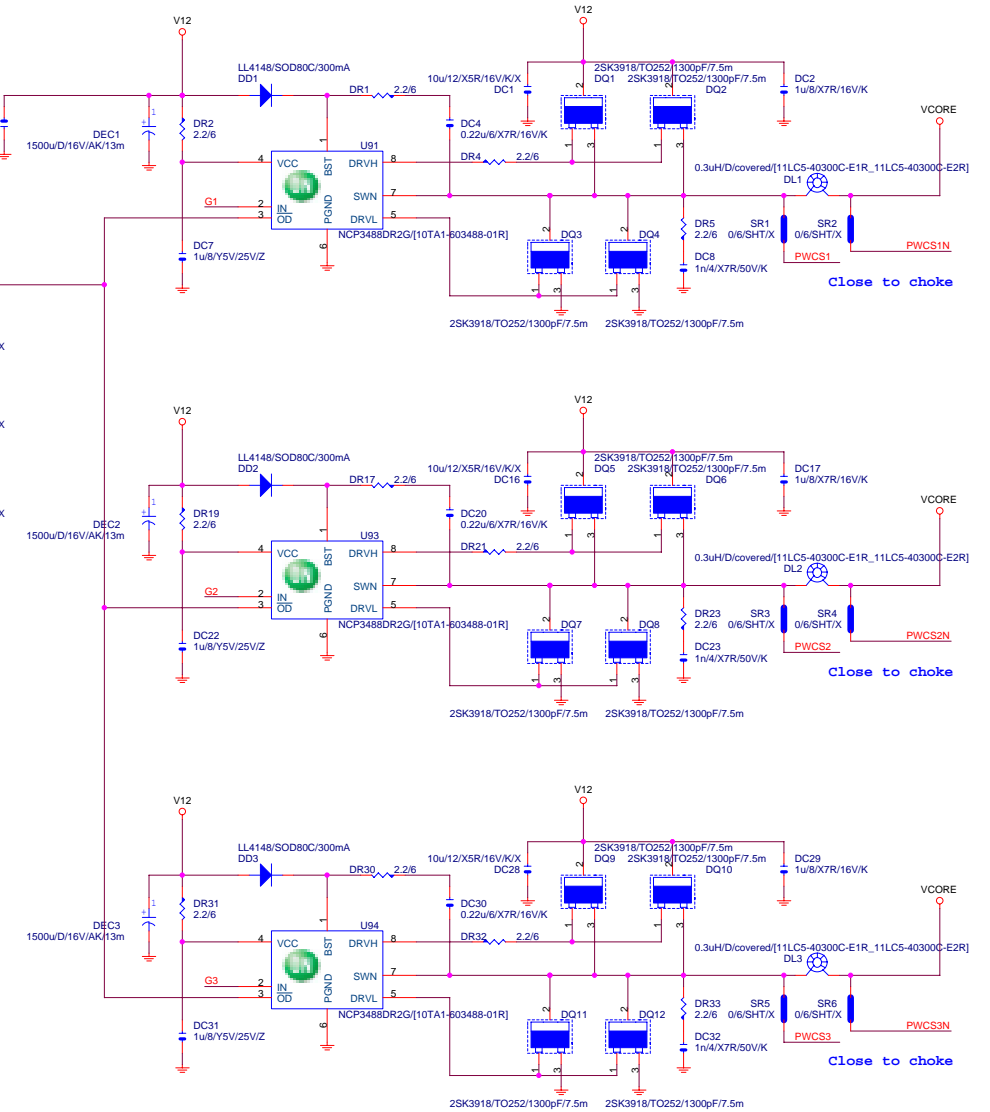
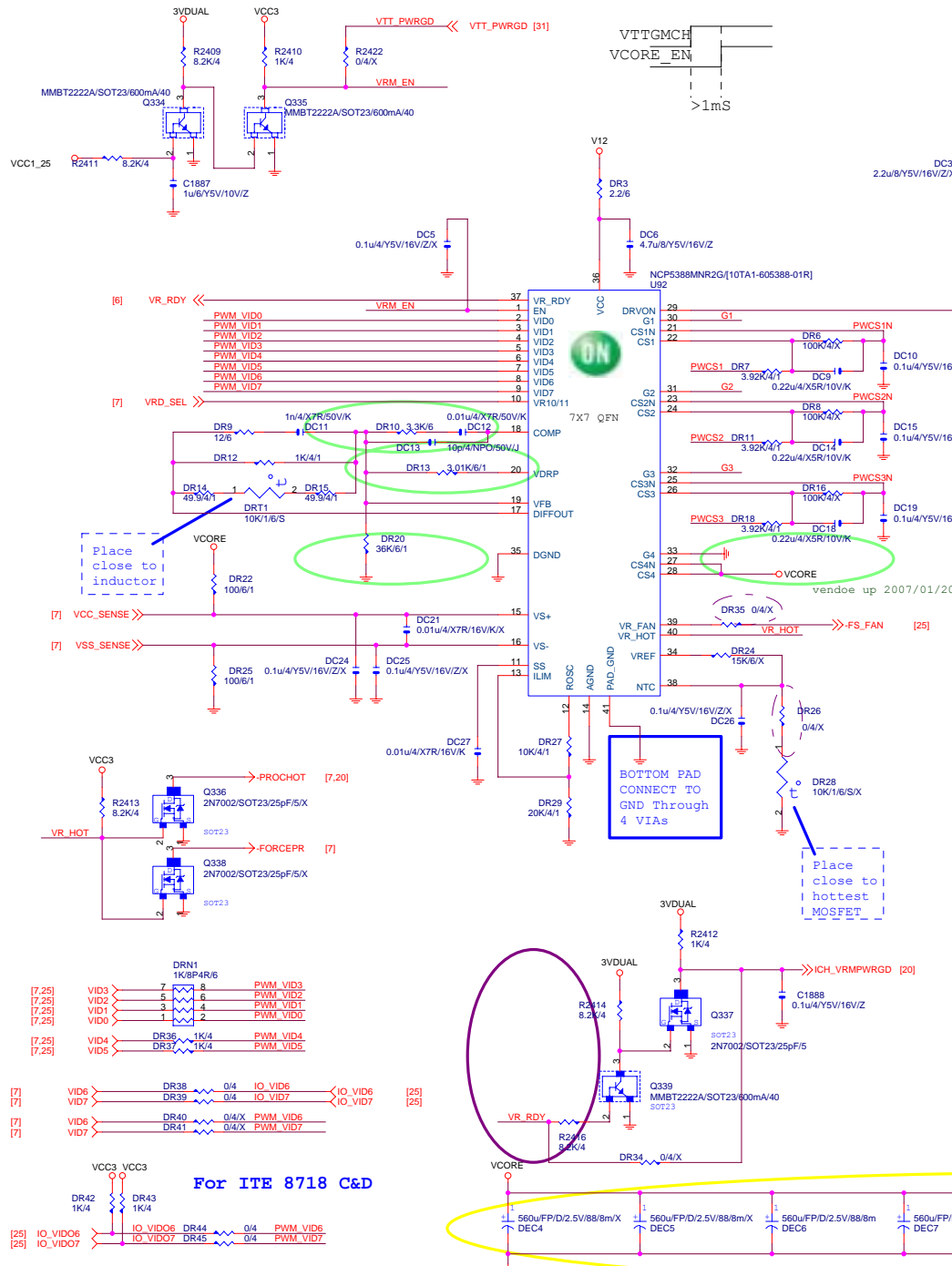
2X3RP/26P/OR,BK,GY,BU,GE,PK/RA

**AZALIA FRONT PANEL**

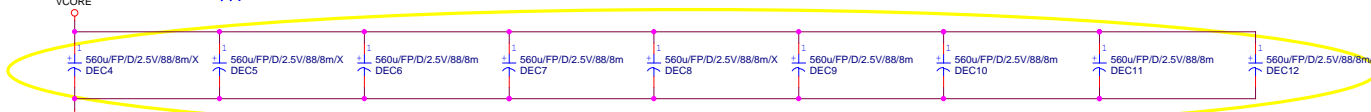


for meet vista frequency response request

<b>Gigabyte Technology</b>	
<b>AUDIO JACK</b>	
Title	Document Number
Size	Rev
Custom	2.1
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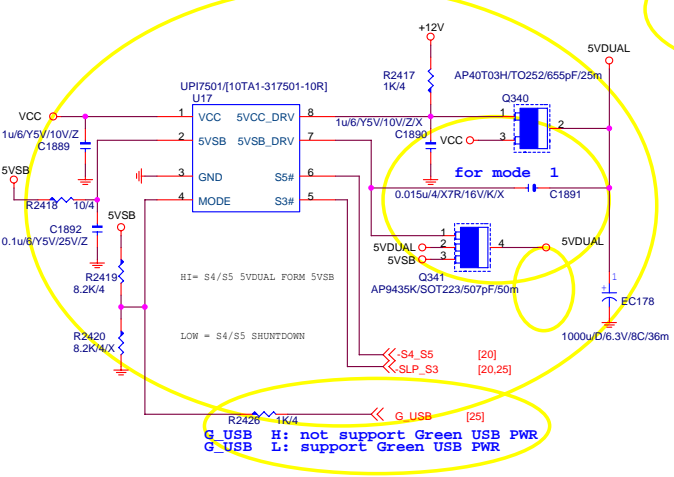


CHECK uF Value



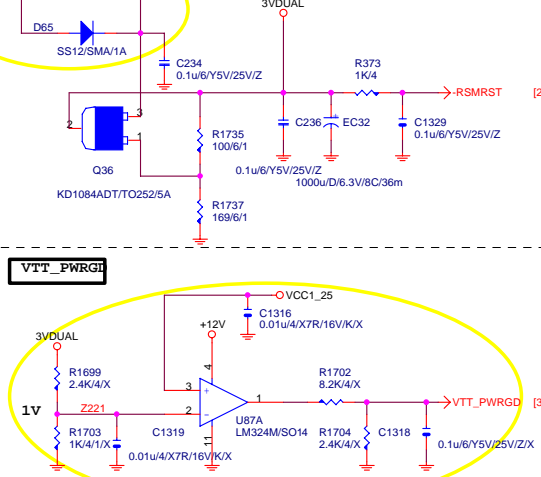
<b>Gigabyte Technology</b>			
Title <b>PWM FAN5032MPX</b>			
Size	Document Number	Rev	
Custom	<b>GA-TG965MP-RH-GW</b>	<b>2.1</b>	
Date:	Monday, May 14, 2007	Sheet	30 of 36

**5VDUAL**

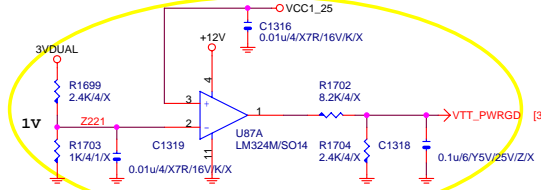


G\_USB H: not support Green USB PWR  
 G\_USB L: support Green USB PWR

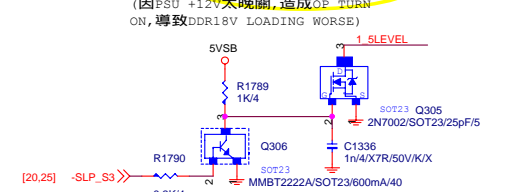
**3VDUAL**



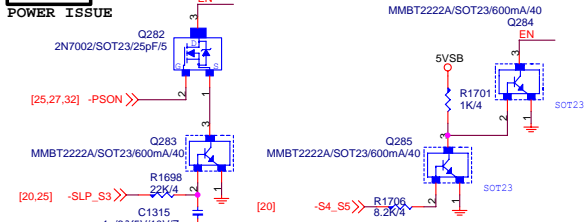
**VTT\_PWRG**



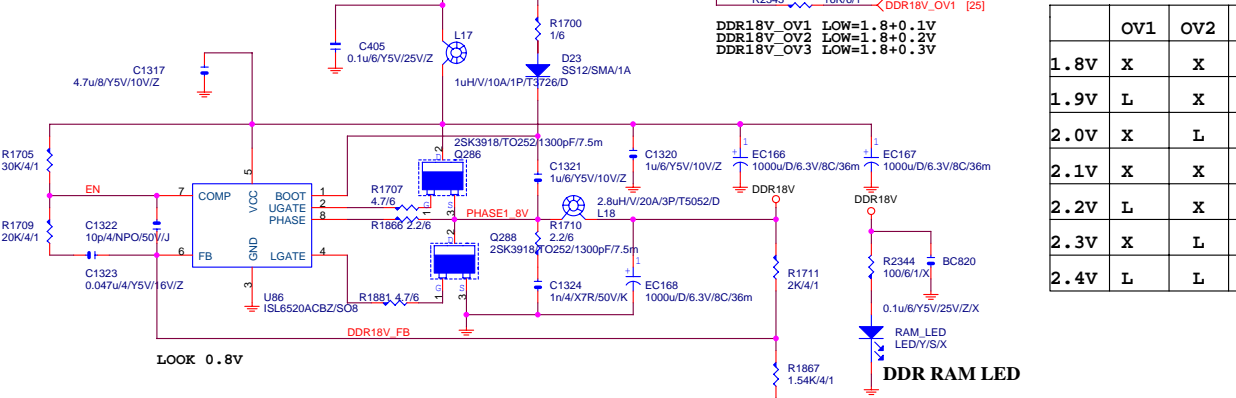
**S3 TURN OFF 1\_5LEVEL, 避免DDR18V DROP**  
 (因PSU +12V太晚開,造成OP TURN ON,導致DDR18V LOADING WORSE)



**PWR SEQ**



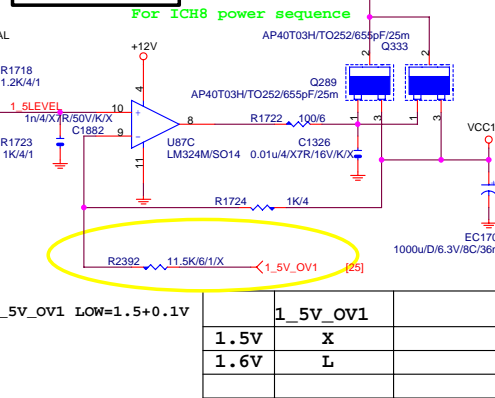
**DDR18V**



**MEMORY VOLTAGE**

	OV1	OV2	OV3
1.8V	X	X	X
1.9V	L	X	X
2.0V	X	L	X
2.1V	X	X	L
2.2V	L	X	L
2.3V	X	L	L
2.4V	L	L	L

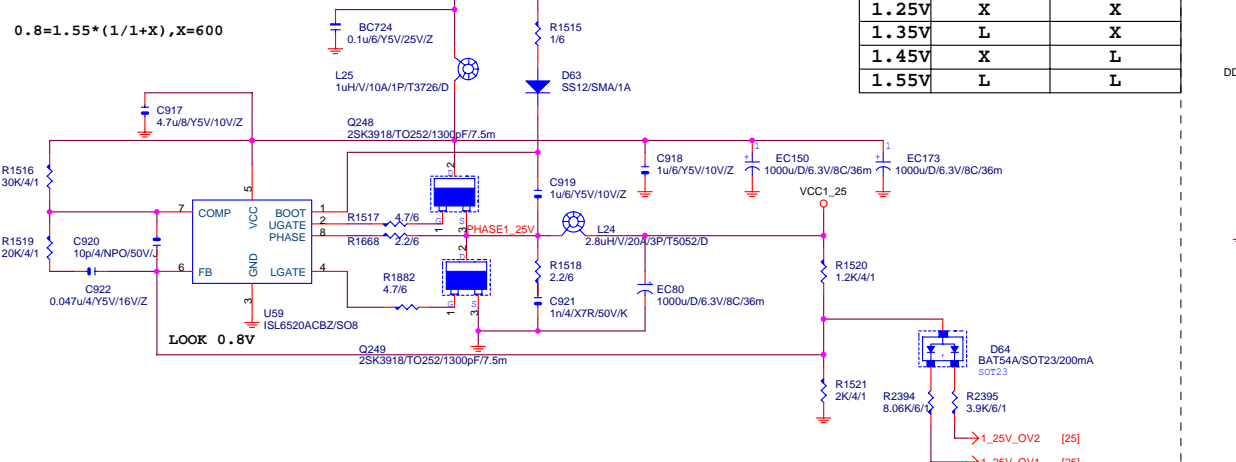
**VCC1\_5 2.2A**



For ICH8 power sequence

1_5V_OV1	1_5V_OV1
1.5V	X
1.6V	L

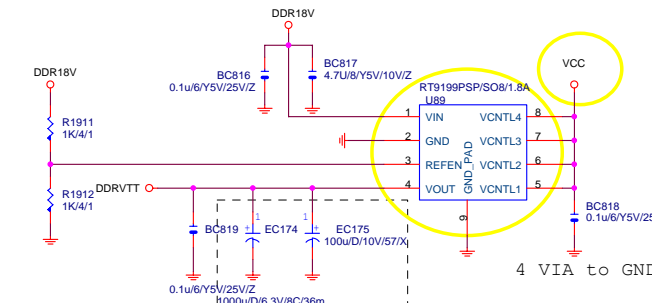
**VCC1\_25**



**1\_25V\_OV1 1\_25V\_OV2**

	1_25V_OV1	1_25V_OV2
1.25V	X	X
1.35V	L	X
1.45V	X	L
1.55V	L	L

**DDRVRT**



**Co-Lay**

**Gigabyte Technology**

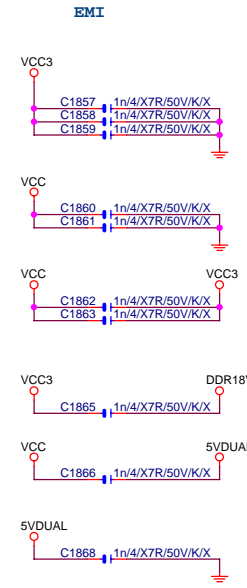
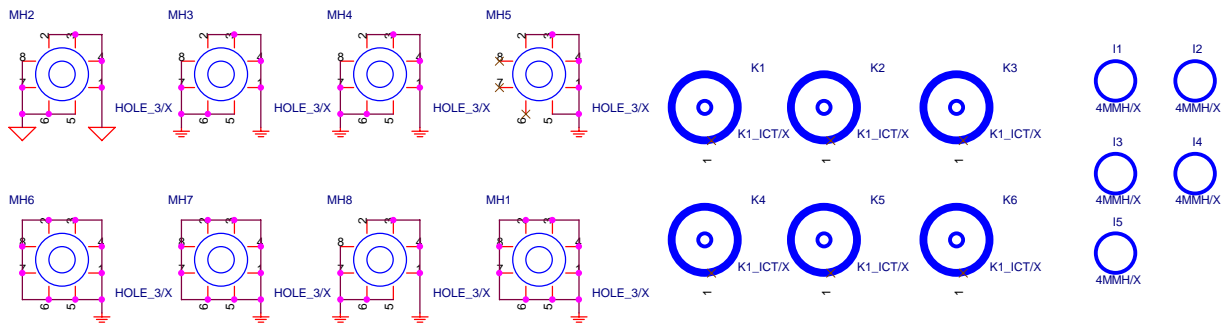
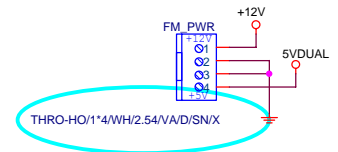
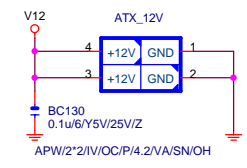
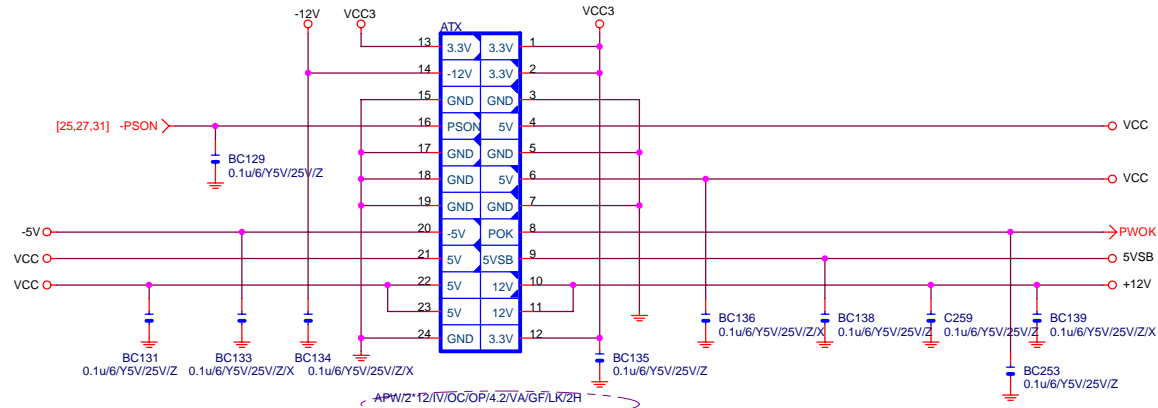
File: **DISCRETE POWER**

Size: **GA-TG965MP-RH-GW** Rev: **2.1**

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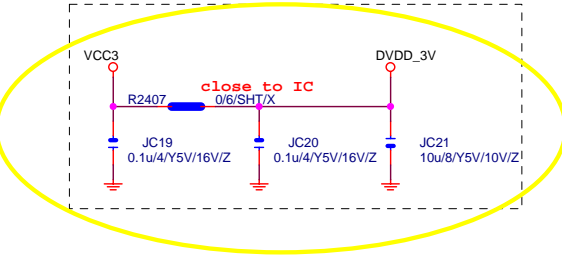
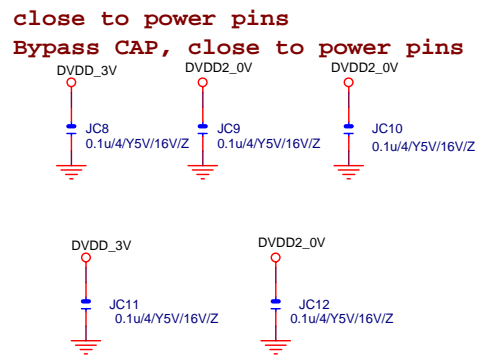
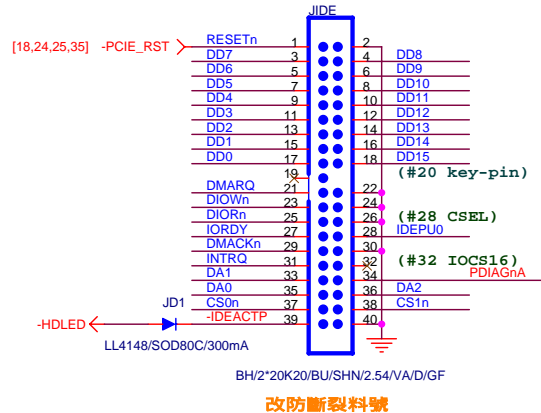
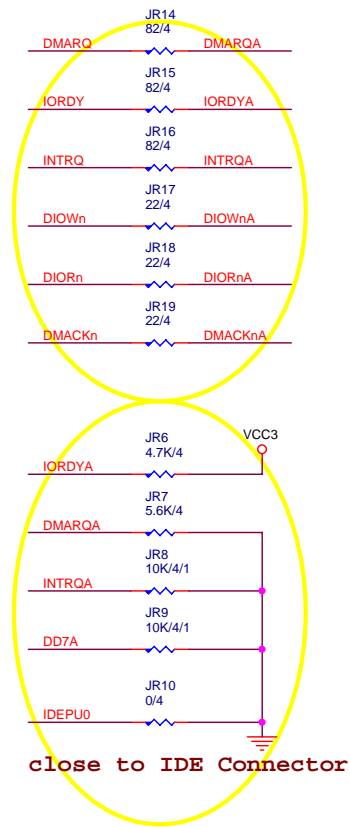
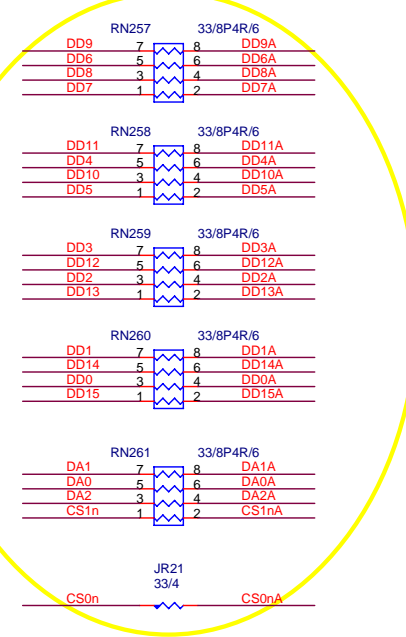
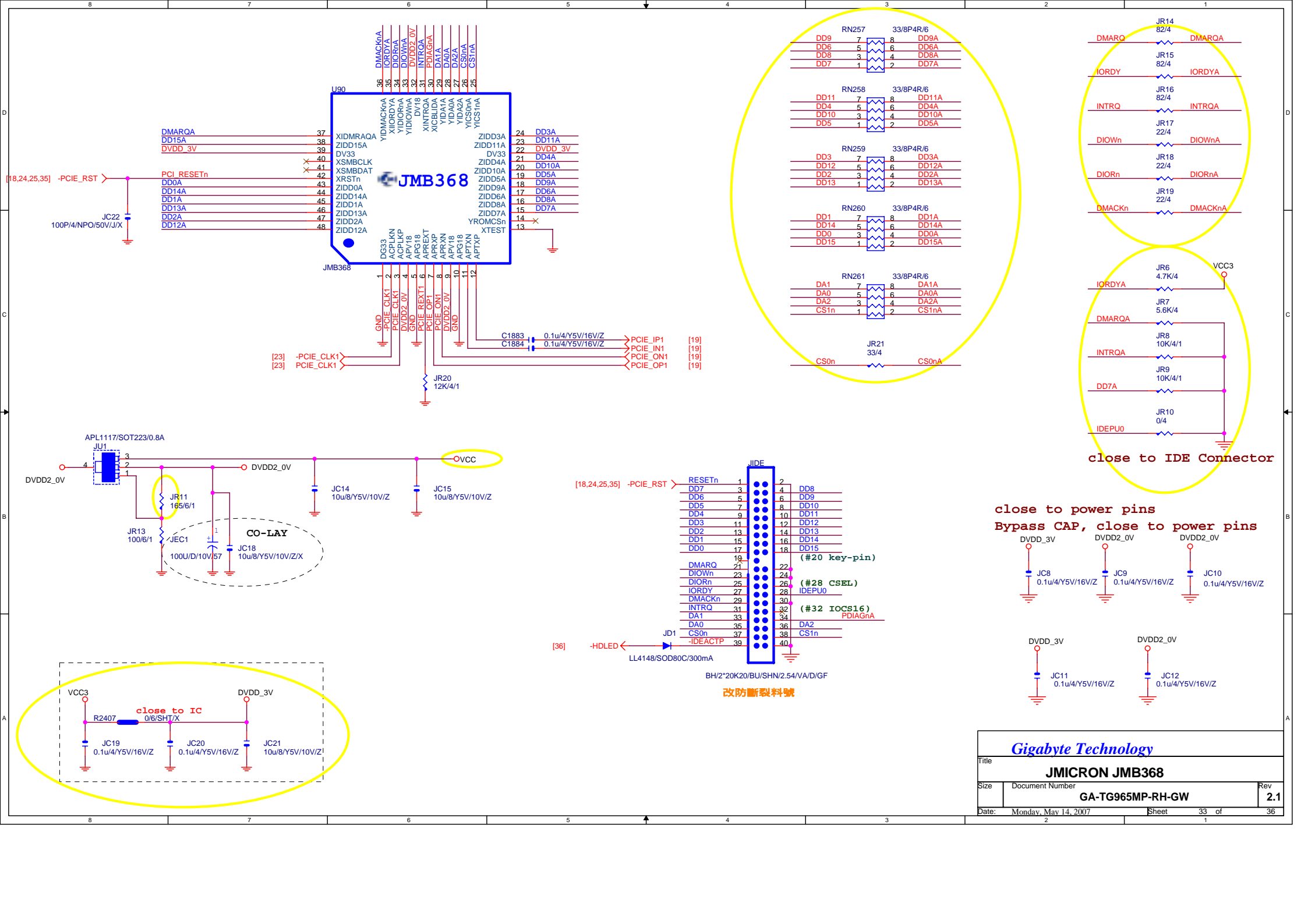


# ATX POWER CONNECTOR

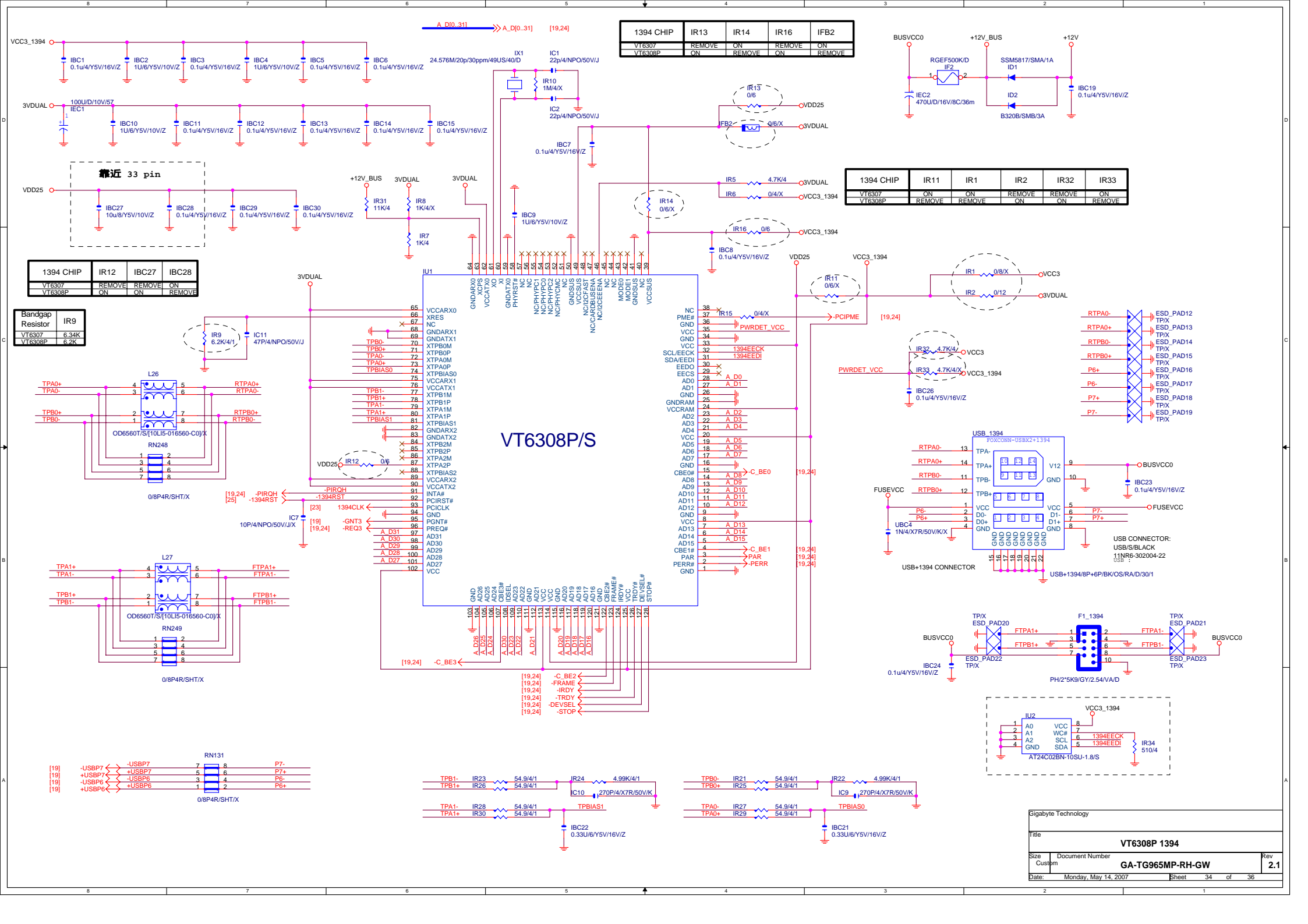


<b>Gigabyte Technology</b>			
<b>ATX POWER CONNECTOR</b>			
Title	Document Number		
Size	<b>GA-TG965MP-RH-GW</b>		Rev <b>2.1</b>
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<b>Gigabyte Technology</b>		
Title <b>JMICRON JMB368</b>		
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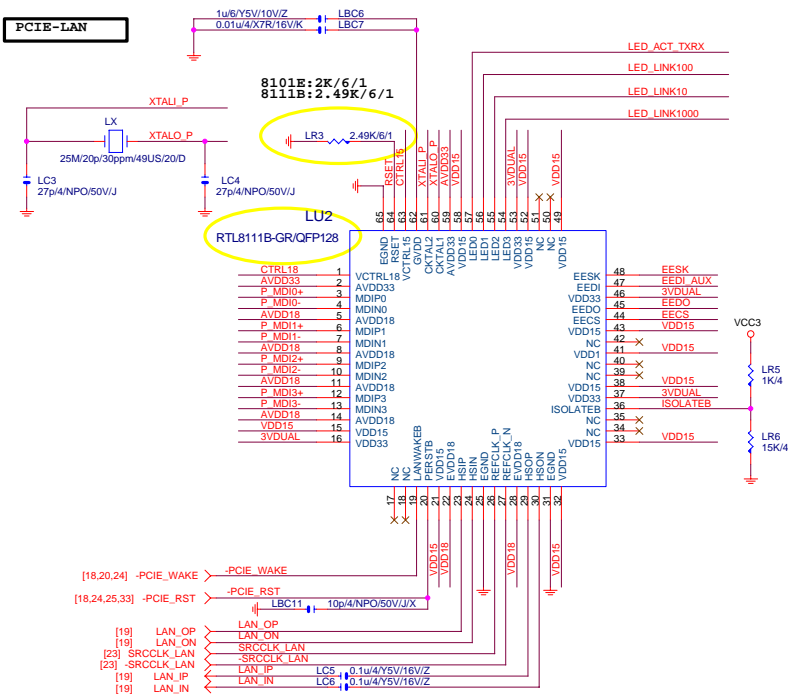
1394 CHIP	IR13	IR14	IR16	IFB2
VT6307	REMOVE	ON	REMOVE	ON
VT6308P	ON	REMOVE	ON	REMOVE

1394 CHIP	IR11	IR1	IR2	IR32	IR33
VT6307	ON	ON	REMOVE	REMOVE	ON
VT6308P	REMOVE	REMOVE	ON	ON	REMOVE

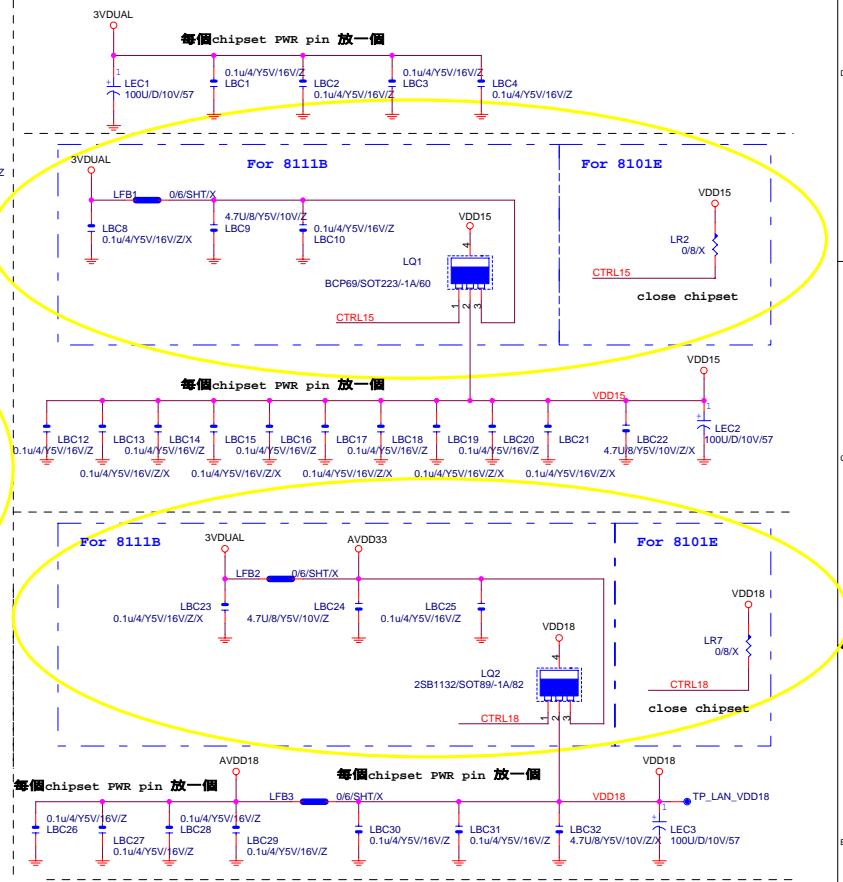
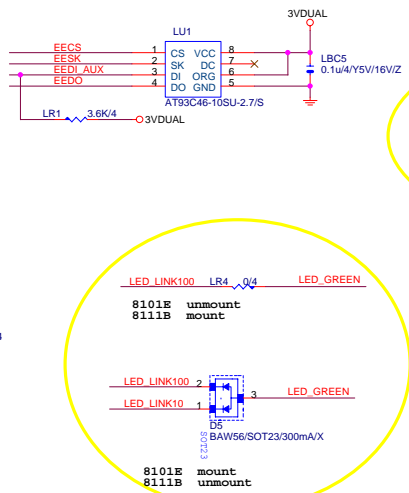
1394 CHIP	IR12	IBC27	IBC28
VT6307	REMOVE	REMOVE	ON
VT6308P	ON	ON	REMOVE

Bandgap Resistor	IR9
VT6307	6.34K
VT6308P	6.2K

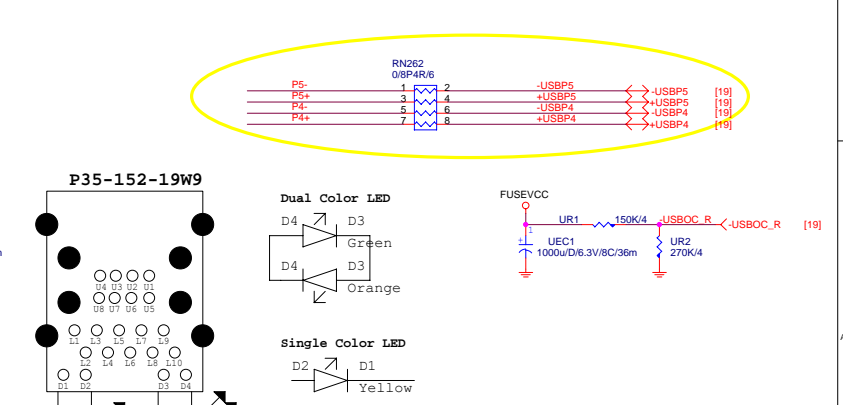
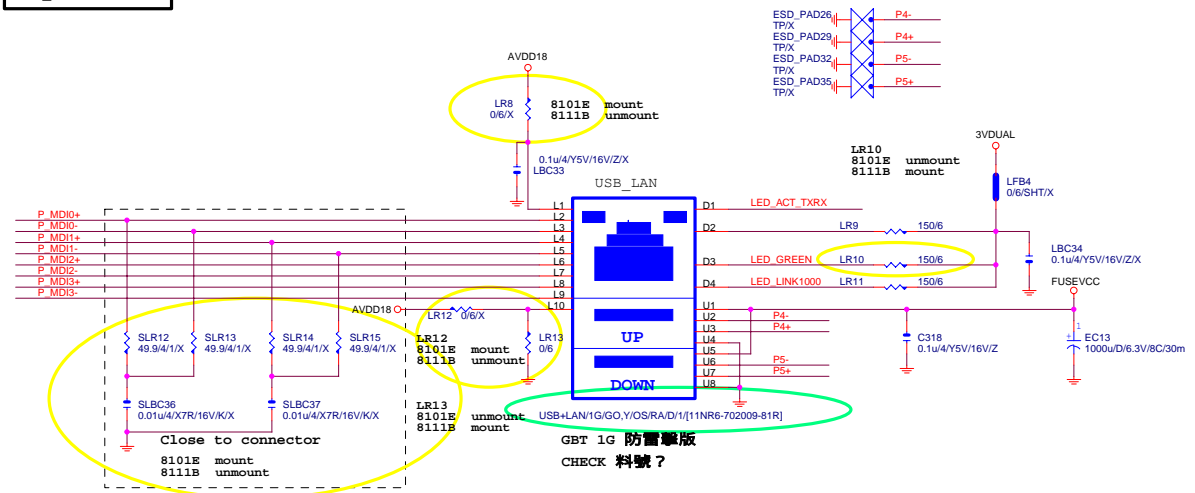
**PCIE-LAN**

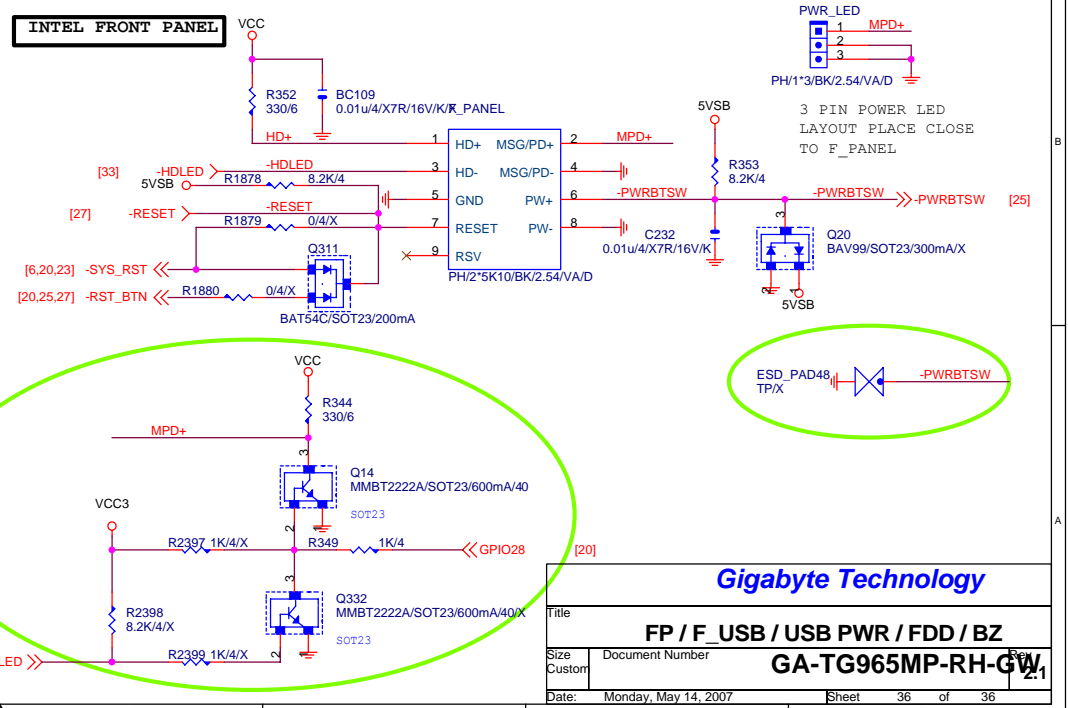
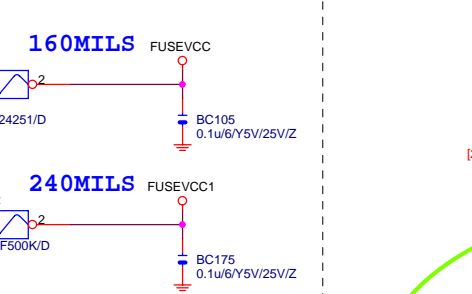
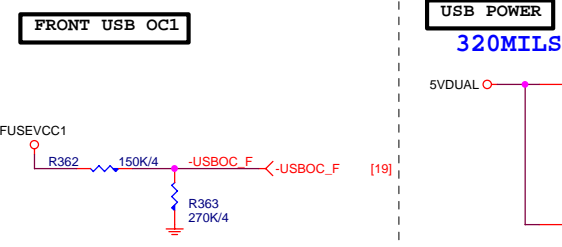
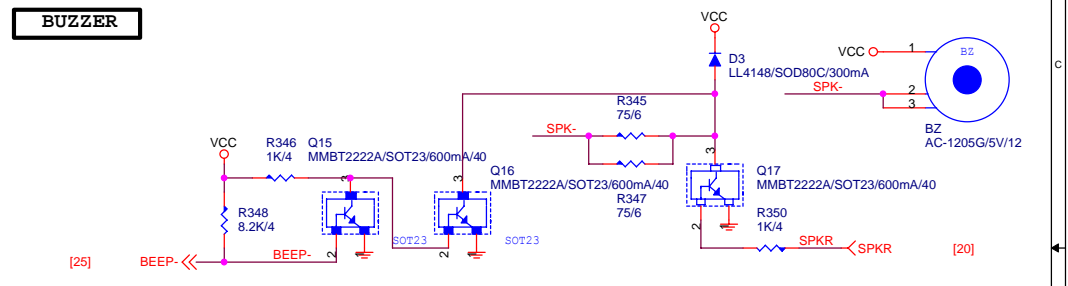
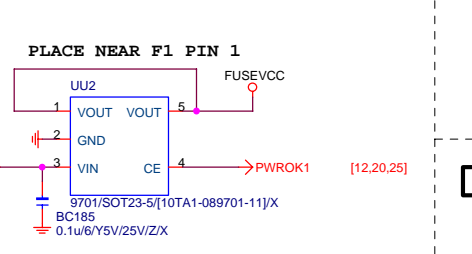
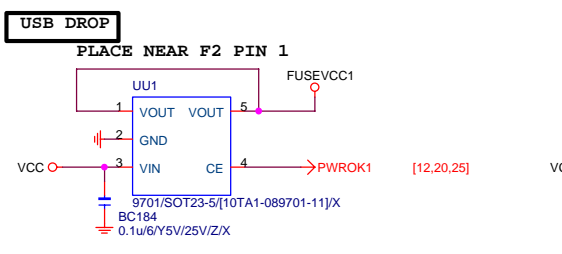
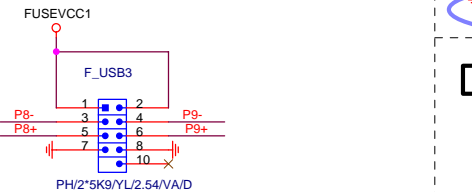
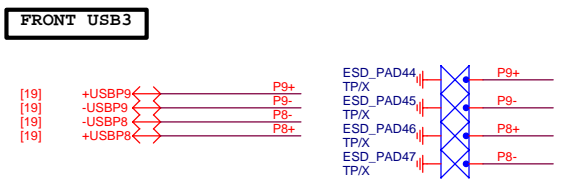
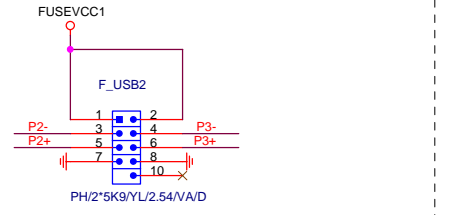
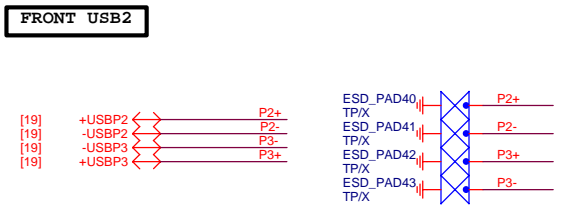
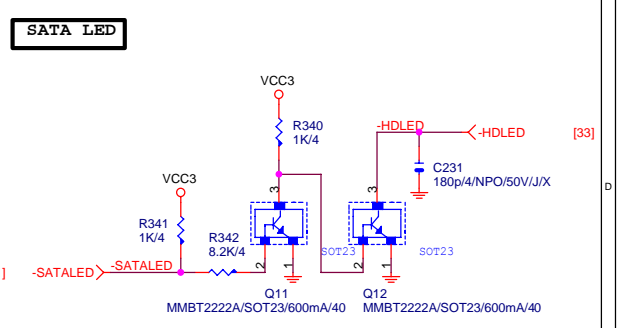
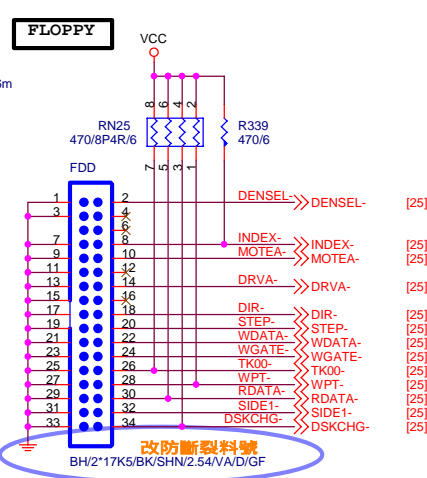
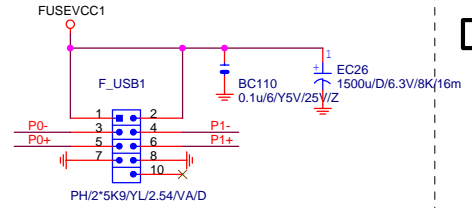
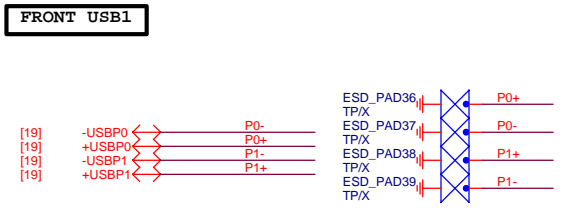


**REALTEK  
RTL8101E\_8111B CO-LAY**



**USB\_LAN CONNECTOR**





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