

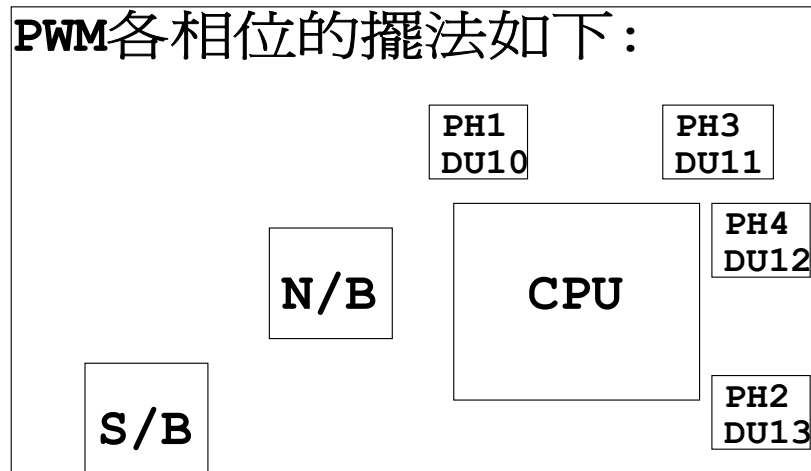
SHEET TITLE

01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	POWER MAP
05	P4 LGA775 A
06	P4 LGA775 B
07	P4 LGA775 C
08	P4 LGA775 D
09	GMCH-BEARLAKE HOST
10	GMCH-BEARLAKE DDRII
11	GMCH-BEARLAKE PCI E, DMI
12	GMCH-BEARLAKE INT VGA
13	GMCH-BEARLAKE GND
14	GMCH-BEARLAKE PWR
15	DDRII CHANNEL A 1,2
16	DDRII CHANNEL B 1,2
17	DDRII TERMINATION
18	PCI EXPRESS*16 SLOT
19	ICH9 PCI, USB, DMI, LAN
20	ICH9 GPIO, CTRL
21	ICH9 SATA, FAN PWM
22	ICH9 VCC, GND
23	CLOCK GEN CK505
24	PCI EXPRESS*1 ,PCI SLOT 1,2
25	ITE8718/GB,RESET DRIVE
26	COM,LPT
27	BIOS,CI,HWM,KB/MS

SHEET TITLE

28	AZALIA ALC889A
29	AUDIO JACK
30	VCORE PWM ISL6327
31	DISCRETE POWER
32	ATX POWER
33	JMicron JMB363
34	LAN REALTEK RTL8111B
35	FRONT PANEL,FUSB,FDD

PWM各相位的擺法如下:



Model Name: GA-EP43-DS3

Rev.1.03

Component value change history

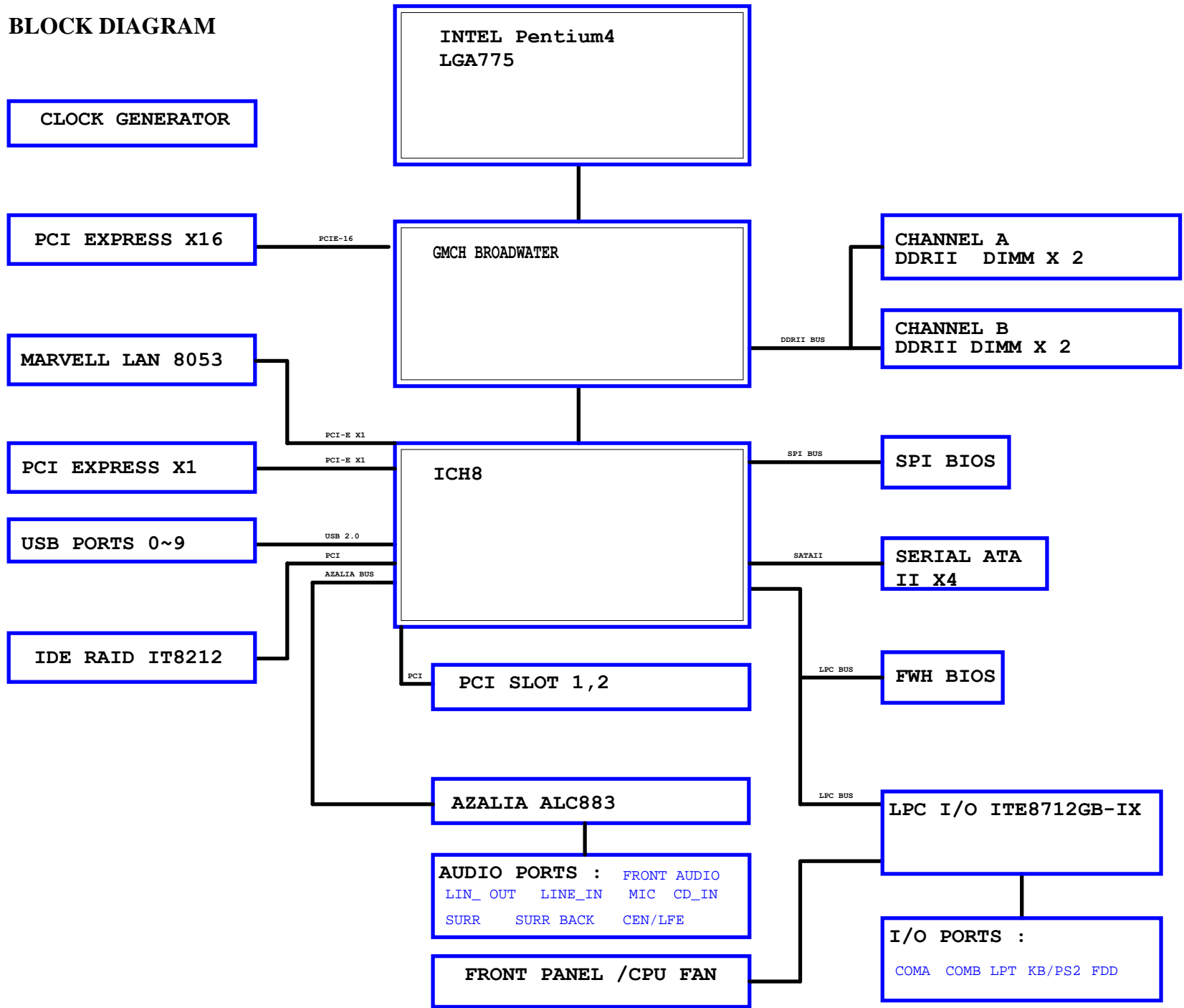
Data	Change Item	Reason
0.1	1. P43 CHIPSET	
	2. 2N7002 DII REMOVE	
	3. RTL8111C REV.B -- >REV.C	
	4. DES阻值調整	
0.2	1. ICH --> ICH10	
	2. ADD R355,R357 8.2K/4 FOR PCIEX4	
10A	1. 包材修改	
	2. REMOVE BC26 0.1u/4	
	3. REMOVE C132,C133 22P/4	
	4. ADD LBC6 100P/4	
	1. 文字面"PCIEX8" , "NB_HS"	
	3. "USB_1394_1" & " USB_1394_2" SWAP	
	4. ADD TPM -PCIRST TC6=33P/4	
	5. DR130 169K/4/1	
10B	1. LED_PWR MODUFY	
	2. "+12V_ISEN" --> "VCC_PLL1" SHORT PROTECT	
	3. PCB REV1.02	
10C	1. GPIO16 R56 1K/4 REMOVE	
	2. DR130 169K/4/1 --> 121K/4/1 (PWM=200KHz)	
	3. Q61,Q97,Q16,Q17加料10IF4-074860-01R	
10D	1. PCB REV1.02 --> REV1.03	
	2. 增加 CPU_FAN +12V POWER CE3=100uF	
	3. 增加 U15 upi6262 VCC Power (R620,R621,Q107)	
10E	1. U15 upi6262 change to "VCC" power	
10F	1. 包材修改	
	2. X1-SHT --> X2-SHT	
	3. USB_LAN替料移除11NR6-702009-92R	

Circuit or PCB layout change for next version

DATE	Change Item	Reason
0.1	0118 EVT RELEASE	
0.2	1. CPU FSB & DDR TRACE (請貼EP45-DS3R Rev1.01 Layout)	
	2. CONNECT IDE1 --> IDE	
	3. RCA_SPDIF --> R_SPDIF	
	4. UPDATE FOOTPRINT : H1X3FAN-1 , H1X4P-FAN-1 , PCIESLOT-164DN-3	
	5. 文字面 " DualBIOS"	
	6. - SLP_S3 CONTROL PWROK1 CIRCUIT (擺放位置同EP45-DS3R Rev1.01)	
	7. ADD LAN_DSM DETECT (擺放位置同EP45-DS3R Rev1.01)	
	8. ADD VCC_PLL1 RN33 & R396 (擺放位置同EP45-DS3R Rev1.01)	
	9. 預留DTR2- R13 P-DOWN (擺放位置同EP45-DS3R Rev1.01)	
	10. 預留C236 -CPURST Bypass (擺放位置同EP45-DS3R Rev1.01)	
	11. POWER PACK CHANGE TO Q-TDSON8-GDS-3	
	12. CI & PWR_LED擺放位置分開	
	13. ADD R534 FOR +12V SHORT PROTECT	
	14. ADD LBC47 FOR USB_LANPIN.L1	
	15. "VCC1_25V_UV1" & "DDR18V_UV1" 對調	
	16. ADD R548,Q106 FOR "FORCE 400MHz CPU TO 333MHz"	
	17. 文字面:EP43-DS3,EP43-DS3R,EP45-DS3A	
	18. 文字面"Ultra TPM"	
1.0	1. 文字面 "PCIEX16_2" --> "PCIEX4_1"	
	2. ADD TPM -PCIRST TC6=33P/4	
	3. "USB_1394_1" & " USB_1394_2" SWAP	
	4. DDR18V_OV1,DDR18V_OV2,DDR18V_OV3 & VTT_GMCH_UV1,VTT_GMCH_UV2 SWAP	
	5. DR172,DR173,DR174,DR175 PULL-UP POWER From "VCC" ' "+12V"	
	6. L4 的位置轉45度,文字面要改成和 L6 一樣	
	7. CLR_CMOS PIN1方向	
	8. BC50 移至C85的上方	1.03
	9. EC20 移除,改成 Q103	2. 增加 upi6262 VCC Power (R620,R621,Q107)
	10. ADD C273 FOR USB POWER	3. 增加 PWM_VID5 & 8268_VID5電阻 (R385)
1.01	1. ADD LL1 POWER NET "AVDD18"	4. DC27,LBC31 "C0603-RH" --> "C0402-2"
1.02	1. CPU_FAN , PWR_FAN 轉向180度	5. EP43-DS3,EP43-DS3R 文字面修改 --> "FSB1333" , "DDR1066"
	2. DU8 PIN17接GND	
	3. LED_PWR MODUFY	
	4. "+12V_ISEN" --> "VCC_PLL1" SHORT PROTECT	

Gigabyte Technology		
Title BOM & PCB MODIFY HISTORY		
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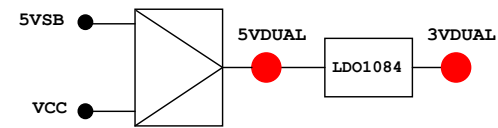
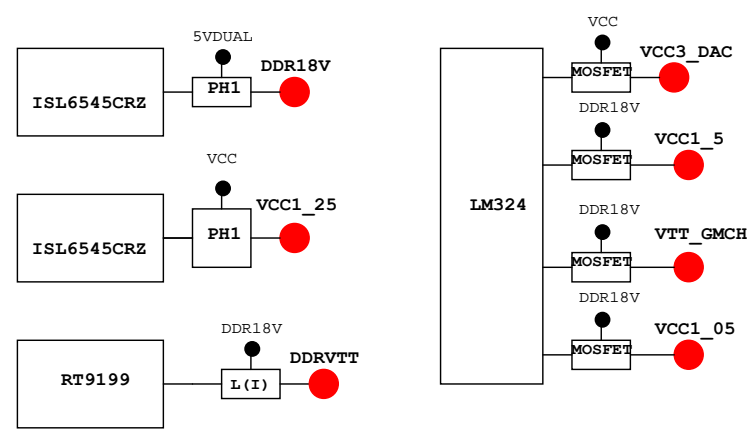
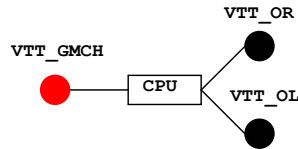
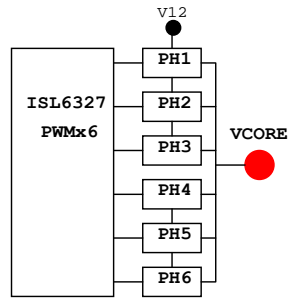
BLOCK DIAGRAM



ICH8 GPIO LIST TABLE

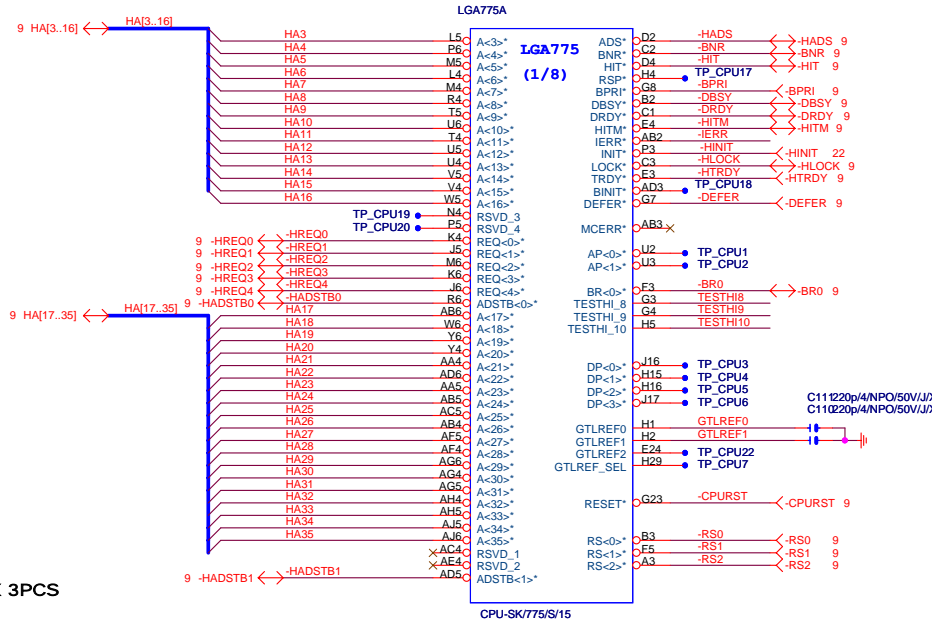
PIN NAME	PWR WELL	AFTER/ PLTRST	USAGE	NOTE
GP0	MAIN	IN	-ACZ_DET	P/U 8.2K VCC3
GP1/TACH1	MAIN	IN	ICH_FAN_TACH1	P/U 8.2K VCC3
GP2/PIRQE#	MAIN	IN	-PIRQE	P/U 8.2K VCC3
GP3/PIRQF#	MAIN	IN	-PIRQF	P/U 8.2K VCC3
GP4/PIRQG#	MAIN	IN	-PIRQG	P/U 8.2K VCC3
GP5/PIRQH#	MAIN	IN	-PIRQH	P/U 8.2K VCC3
GP6/TACH2	MAIN	IN	ICH_FAN_TACH2	P/U 8.2K VCC3
GP7/TACH3	MAIN	IN	ICH_FAN_TACH3	P/U 8.2K VCC3
GP8	STBY	IN	GPIO8 (DUALBIOS_INPUT)	P/U 8.2K 3VDUAL
GP9	STBY	OUT	WOL_ONLY	P/D 100K GND
GP10	STBY	IN	CLGPIO1	P/U 8.2K 3VDUAL
GP11/SMBALERT#	STBY	OUT	-SMBALRT	P/U 8.2K 3VDUAL
GP12	STBY	IN	MB_ID0	P/U 8.2K 3VDUAL
GP13	STBY	IN	-LPCPME	P/U 8.2K 3VDUAL
GP14	STBY	IN	CLGPIO2	P/U 8.2K 3VDUAL
GP15	STBY	OUT	LAN_DISABLE (STP_PCI-)	N/A
GP16	MAIN	OUT/LOW	RESET	N/A
GP17/TACH0	MAIN	IN	ICH_FAN_TACH0	P/U 8.2K VCC3
GP18	MAIN	OUT	MB_ID1	P/U 8.2K VCC3
GP19	MAIN	IN	SATA1GP	P/U 8.2K VCC3
GP20	MAIN	OUT	-SPI_WP0	P/U 1K 3VCL
GP21	MAIN	IN	SATA0GP	P/U 8.2K VCC3
GP22	MAIN	IN	SCLOCK	P/U 8.2K VCC3
GP23	MAIN	OUT	-LDRQ1	P/U 8.2K VCC3
GP24	STBY	OUT	CLGPIO0	P/U 8.2K 3VDUAL
GP25	STBY	IN	MB_ID2 (STP_CPU-)	P/U 8.2K 3VDUAL
GP26/S4_STATE#	STBY	OUT	S4_STATE#	P/U 8.2K 3VDUAL
GP27	STBY	OUT/LOW	GPIO27 (EL_STATE0)	P/U 8.2K 3VDUAL
GP28	STBY	OUT/LOW	PWR_LED (EL_STATE1)	N/A
GP29/OC5#	STBY	IN	-USBOC_R	P/U FUSEVCC
GP30/OC6#	STBY	IN	-USBOC_R	P/U FUSEVCC
GP31/OC7#	STBY	IN	-USBOC_R	P/U FUSEVCC
GP32	MAIN	OUT	DUAL_BIOS	P/U 100K+1M VCC3
GP33	MAIN	OUT	DUAL_BIOS	P/U 8.2K VCC3
GP34	MAIN	OUT/LOW	GPIO34/SMB_RST	N/A
GP35	MAIN	OUT	SATACLKREQ#	N/A
GP36	MAIN	IN	SATA2GP	P/U 8.2K VCC3
GP37	MAIN	IN	SATA3GP	P/U 8.2K VCC3
GP38	MAIN	IN	SLOAD	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:6 PHASE PWM--ISL6327CRZ

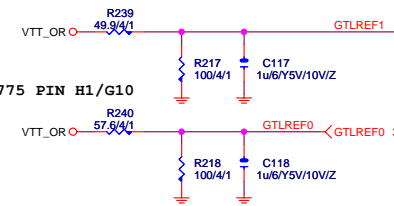


Gigabyte Technology			
Title			
TABLE LIST			
Size B	Document Number	Rev	
	GA-EP43-DS3	1.03	
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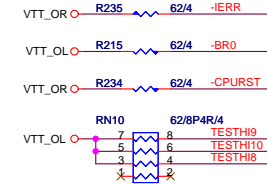
HA/REQ:50% 误差+-15% [4/11]
 ADSTB:50% 误差+-15% [4/14]



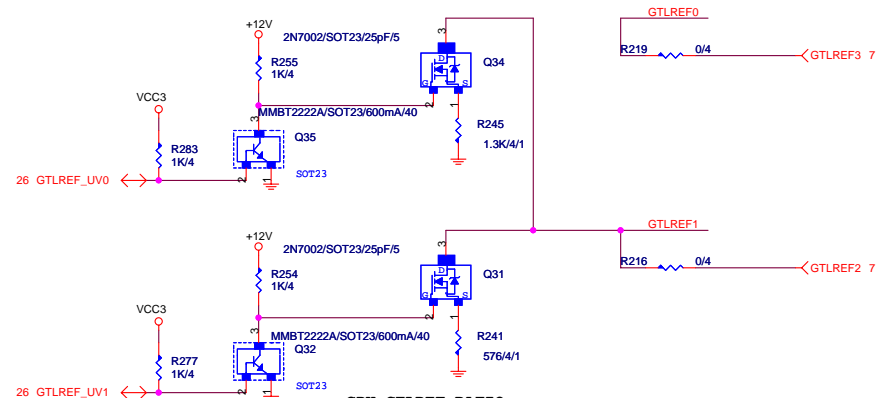
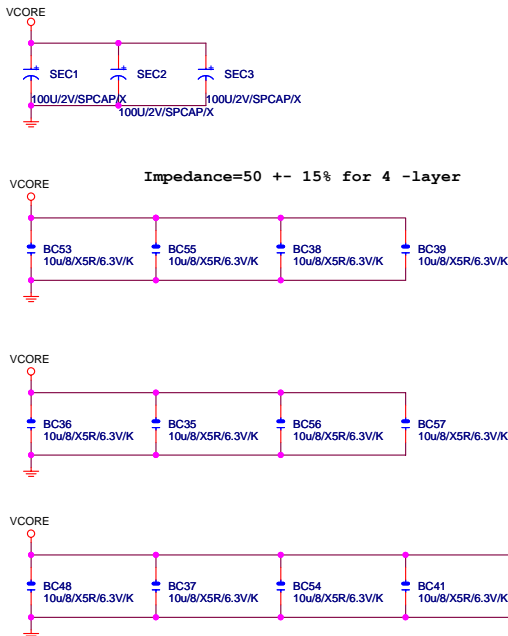
0.667 X VTT FOR LGA775 PIN H2/F2



0.635 X VTT FOR LGA775 PIN H1/G10

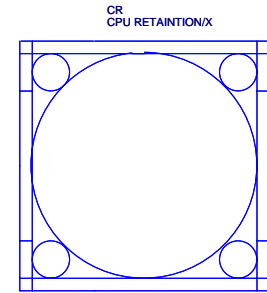


SP-CAP X 3PCS



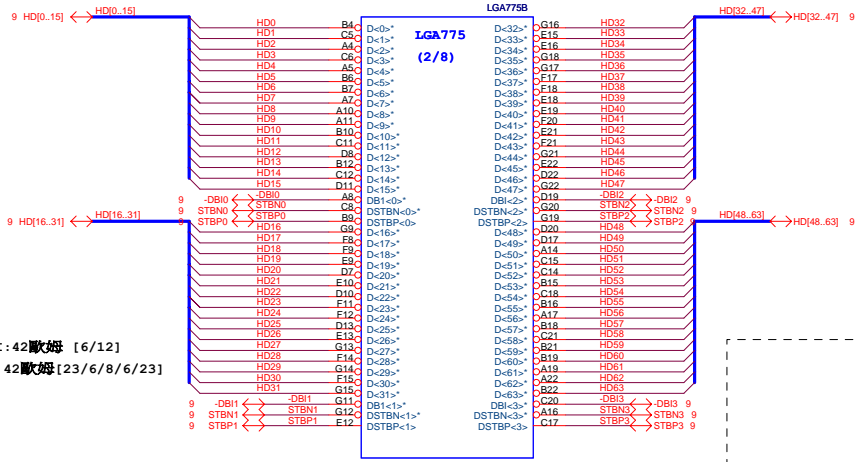
CPU GTLREF RATIO

GTLREF_UV0	GTLREF_UV1	Ratio Set
HIGH	HIGH	0.67
LOW	HIGH	0.65
HIGH	LOW	0.63
LOW	LOW	0.615

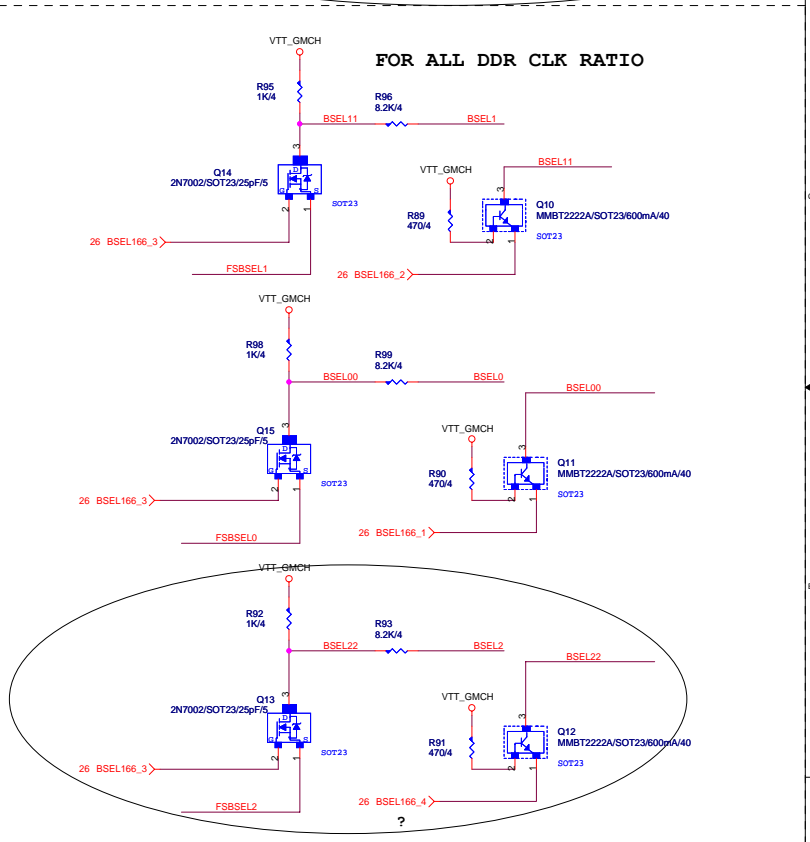
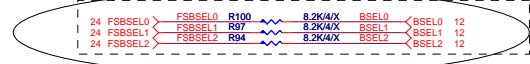
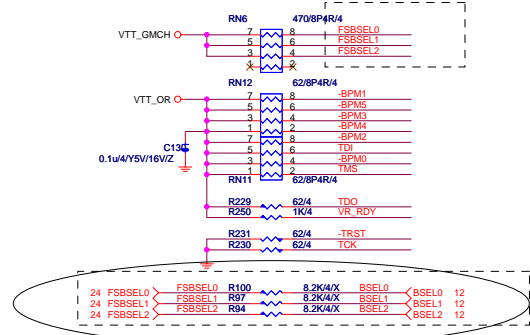
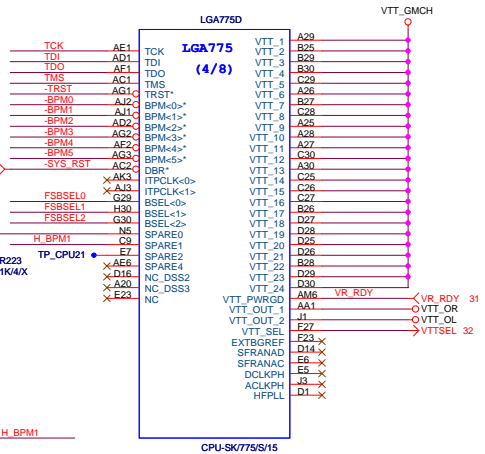


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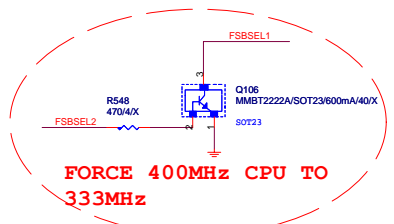
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P4_LGA775-A		
Size Custom	Document Number	Rev
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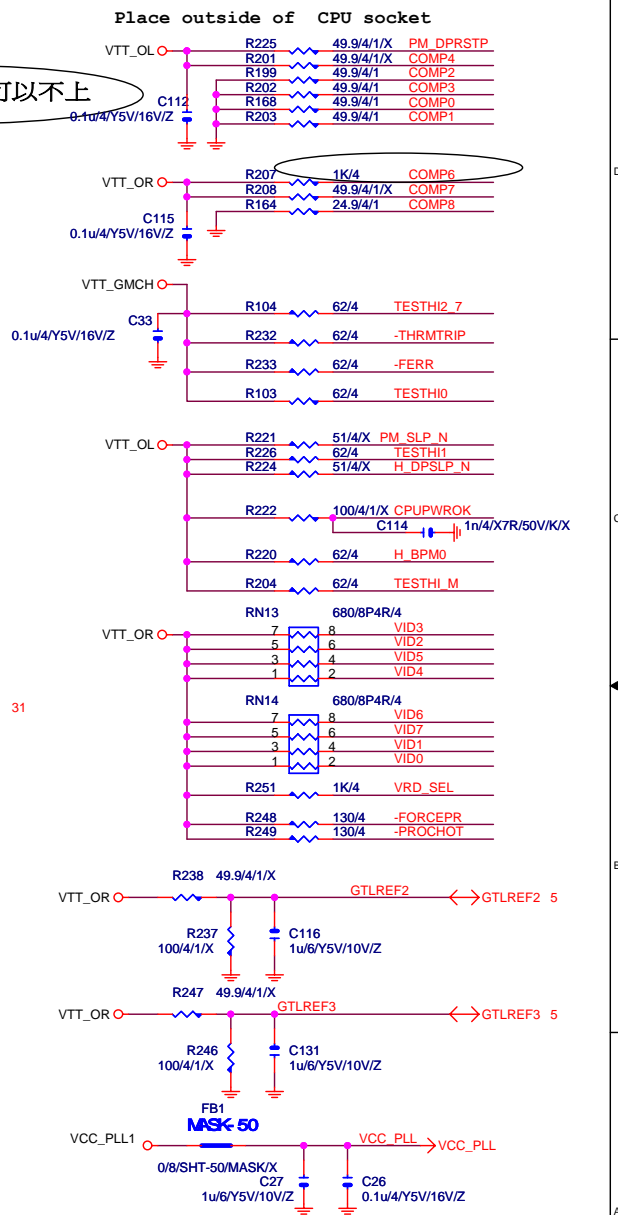
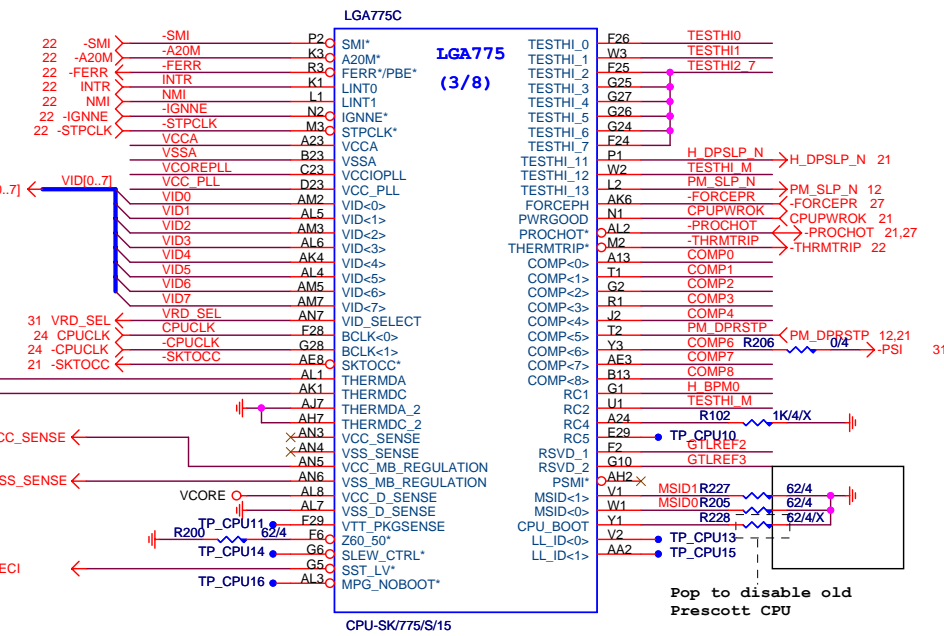
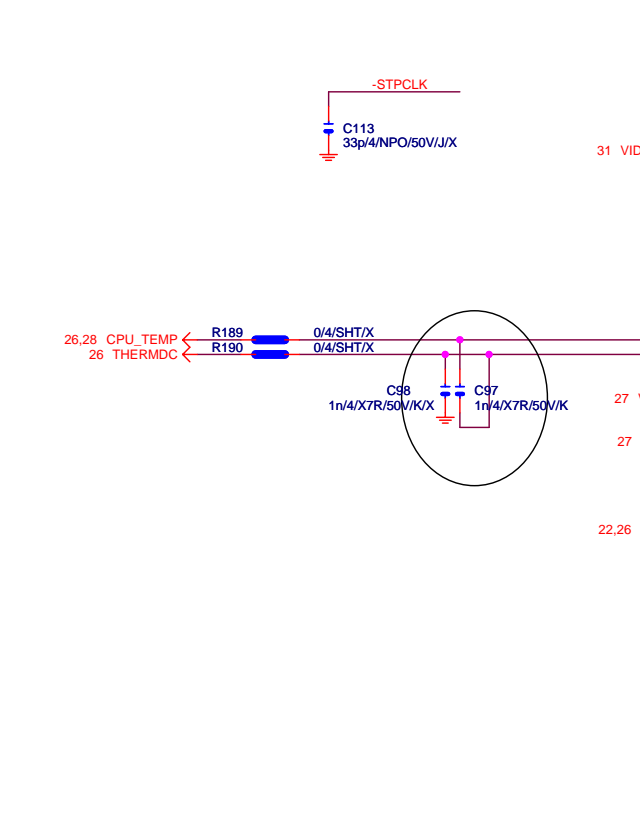
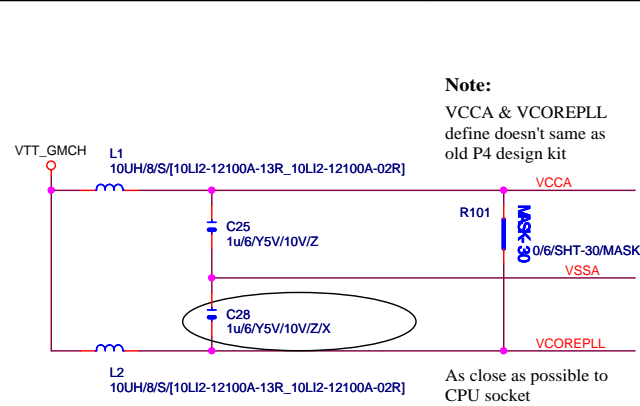
HD/DBI: 42 数据 [6/12]
 DSTBP: 42 数据 [23/6/8/6/23]



4X Length Guidelines for Quad core processors
 Signal Name ATX Layer Pin to Pin
 D[15:0]#, DBI0#, DSTBP0#, DSTBN0# Layer 1 2.2" - 2.7"
 D[31:16]#, DBI1#, DSTBP1#, DSTBN1# Layer 4 3.0" - 3.5"
 D[47:32]#, DBI2#, DSTBP2#, DSTBN2# Layer 4 3.6" - 4.3"
 D[63:48]#, DBI3#, DSTBP3#, DSTBN3# Layer 1 2.4" - 3.0"



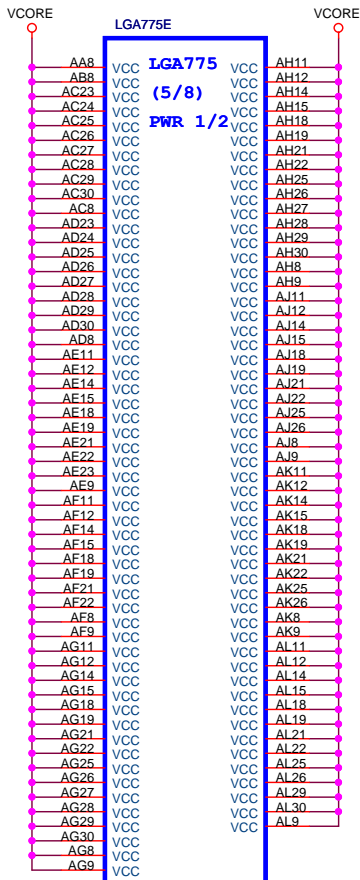
	FSA	FSB	FSC		
	FSBSEL0	FSBSEL1	FSBSEL2	Clock	
?	1	0	1	100MHz	
?	1	0	0	133MHz	3/4
G33	0	1	0	200MHz	2/2.66/3.33/4#
G33	0	0	0	266MHz	2/2.5/3/4~
G33	0	0	1	333MHz	2/2.4/3.2/4#
	0	1	1	400MHz	667/800/1066/1333



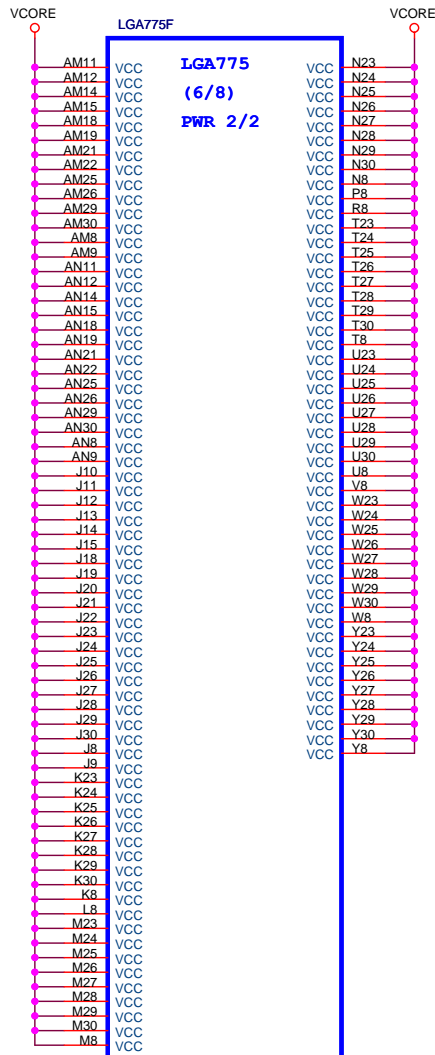
Gigabyte Technology		
P4_LGA775-C		
Title	P4_LGA775-C	
Size B	Document Number	GA-EP43-DS3
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PECI:Platform Environment Control Interface

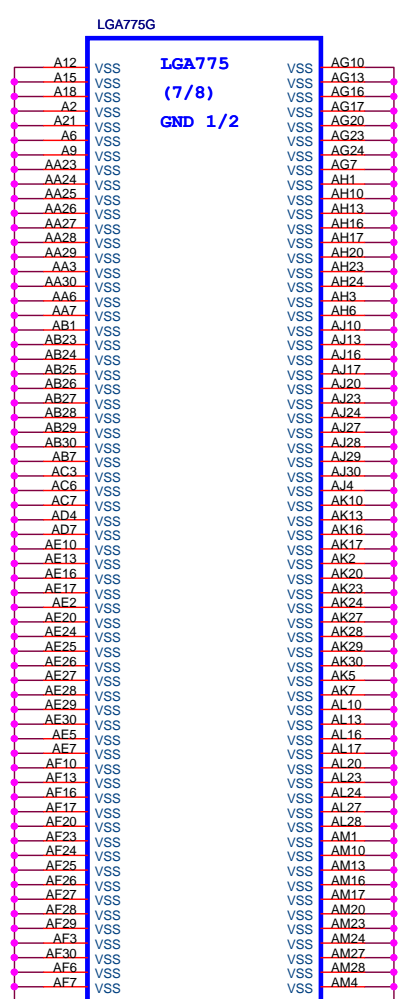
Rev 1.03



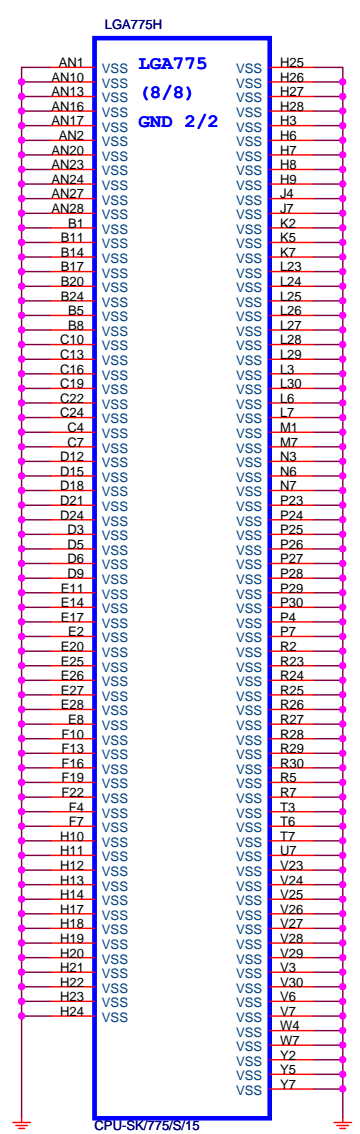
CPU-SK/775/S/15



CPU-SK/775/S/15



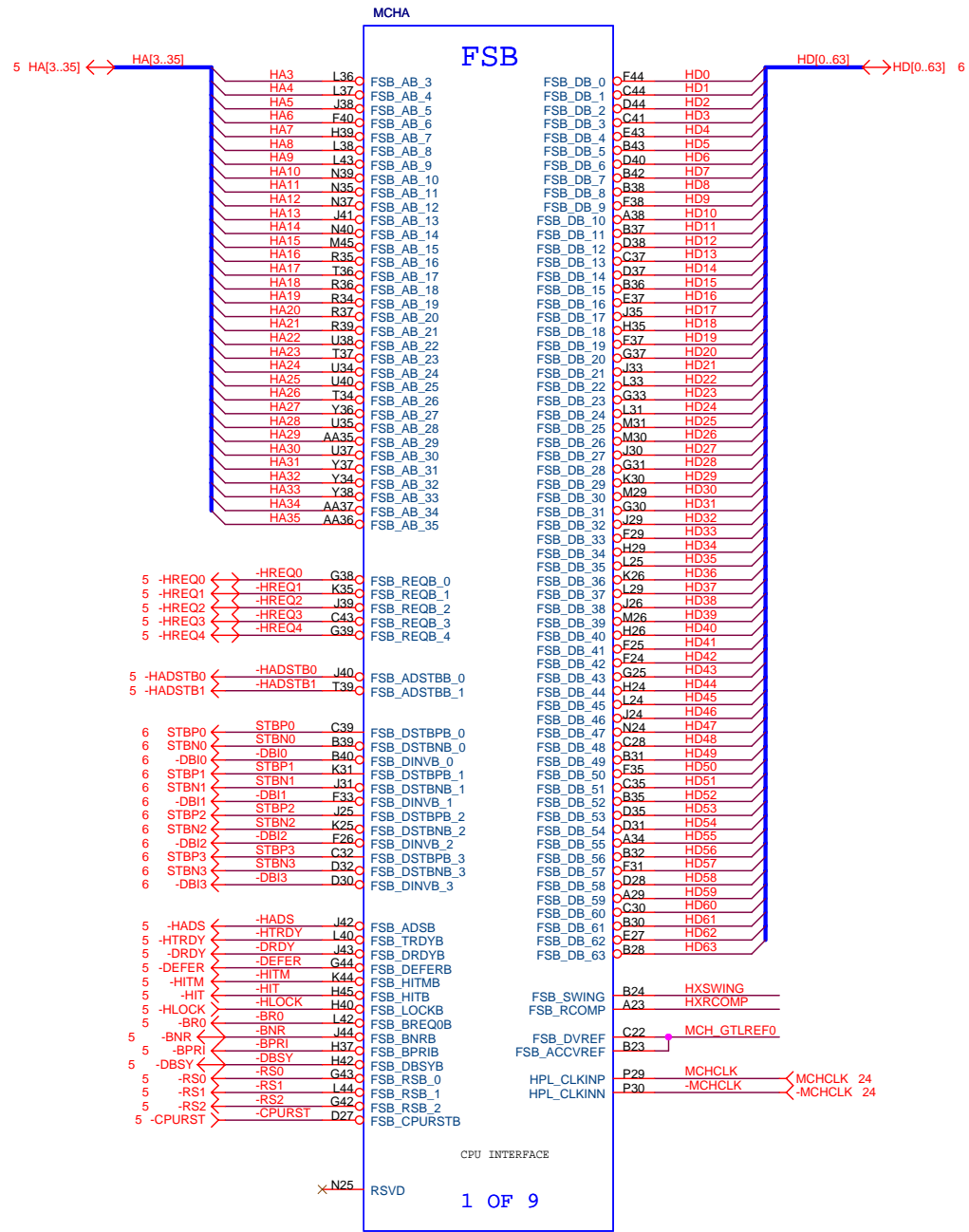
CPU-SK/775/S/15



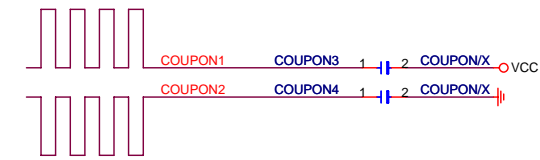
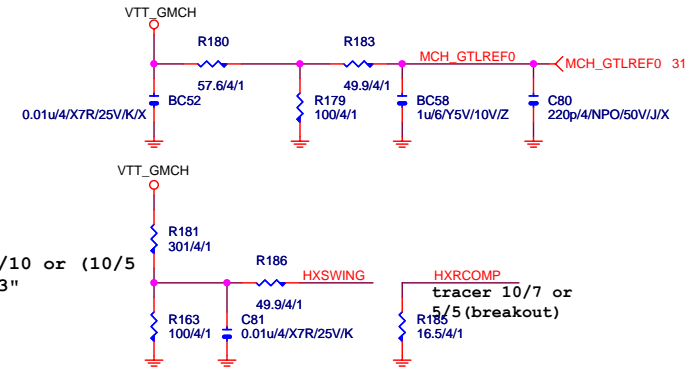
CPU-SK/775/S/15

Gigabyte Technology

Title			P4_LGA775-E,F,G,H	
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CPU INTERFACE
RSVD
1 OF 9
EAGLEAKE [10HB1-030043-10R]



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MCHC

MAAA0 BC41	DDR_A_MA_0	DDR_A_DQS_0
MAAA1 BC35	DDR_A_MA_1	DDR_A_DQS_0
MAAA2 BC32	DDR_A_MA_2	DDR_A_DM_0
MAAA3 BC32	DDR_A_MA_3	
MAAA4 BC32	DDR_A_MA_4	
MAAA5 BC31	DDR_A_MA_5	
MAAA6 BC31	DDR_A_MA_6	
MAAA7 BC31	DDR_A_MA_7	
MAAA8 BC31	DDR_A_MA_8	
MAAA9 BC30	DDR_A_MA_9	
MAAA10 BC30	DDR_A_MA_10	
MAAA11 BC30	DDR_A_MA_11	
MAAA12 BC30	DDR_A_MA_12	
MAAA13 BC28	DDR_A_MA_13	
MAAA14 BC28	DDR_A_MA_14	
DDR_A_WEB		
-SWEA AW42C	DDR_A_WEB	DDR_A_DQS_1
-SCASA AW42C	DDR_A_CASB	DDR_A_DQS_1
-SRASA AW42C	DDR_A_RASB	DDR_A_DM_1
DDR_A_BS_0		
SBA0 AV45	DDR_A_BS_0	
SBA1 AV44	DDR_A_BS_1	
SBA2 BC28	DDR_A_BS_2	
DDR_A_CS_0		
-CSA0 ALU3C	DDR_A_CS_0	
-CSA1 ARB0C	DDR_A_CS_1	
-CSA2 ALU4C	DDR_A_CS_2	
-CSA3 AM3C	DDR_A_CS_3	
DDR_A_CKE_0		
CKEA0 BB27	DDR_A_CKE_0	
CKEA1 BQ22	DDR_A_CKE_1	
CKEA2 BQ27	DDR_A_CKE_2	
CKEA3 AY26	DDR_A_CKE_3	
DDR_A_ODT_0		
MODT A0 AR42	DDR_A_ODT_0	
MODT A1 AM44	DDR_A_ODT_1	
MODT A2 AR44	DDR_A_ODT_2	
MODT A3 AL40	DDR_A_ODT_3	

DDR_A

AR22 DQS43	DDR_A_DQS_3
AT22 DMS3	DDR_A_DM_3
AW21 MDA24	DDR_A_DM_3
AY22 MDA25	DDR_A_DQ_24
AU24 MDA26	DDR_A_DQ_25
AV24 MDA27	DDR_A_DQ_26
AW21 MDA28	DDR_A_DQ_27
AT21 MDA29	DDR_A_DQ_28
AR24 MDA30	DDR_A_DQ_29
AU24 MDA31	DDR_A_DQ_30
AH43 DQS44	DDR_A_DQS_4
CAH42 DQS45	DDR_A_DQS_5
AK42 DMA4	DDR_A_DM_4
AL41 MDA32	DDR_A_DQ_32
AK43 MDA33	DDR_A_DQ_33
AG42 MDA34	DDR_A_DQ_34
AG44 MDA35	DDR_A_DQ_35
AL42 MDA36	DDR_A_DQ_36
AK44 MDA37	DDR_A_DQ_37
AH44 MDA38	DDR_A_DQ_38
AG41 MDA39	DDR_A_DQ_39
AD43 DQS45	DDR_A_DQS_5
CAE42 DQS45	DDR_A_DQS_5
AE45 DMS5	DDR_A_DM_5
AF43 MDA40	DDR_A_DQ_40
AF42 MDA41	DDR_A_DQ_41
AC44 MDA42	DDR_A_DQ_42
AC42 MDA43	DDR_A_DQ_43
AF40 MDA44	DDR_A_DQ_44
AF44 MDA45	DDR_A_DQ_45
AD44 MDA46	DDR_A_DQ_46
AC41 MDA47	DDR_A_DQ_47
Y43 DQS46	DDR_A_DQS_6
Y42 DQS46	DDR_A_DQS_6
AA45 DMA6	DDR_A_DM_6
AB43 MDA48	DDR_A_DQ_48
AA42 MDA49	DDR_A_DQ_49
AW42 MDA50	DDR_A_DQ_50
V41 MDA51	DDR_A_DQ_51
AB42 MDA52	DDR_A_DQ_52
AB44 MDA53	DDR_A_DQ_53
Y44 MDA54	DDR_A_DQ_54
Y40 MDA55	DDR_A_DQ_55
T44 DQS47	DDR_A_DQS_7
T43 DQS47	DDR_A_DQS_7
T42 DMA7	DDR_A_DM_7
V42 MDA56	DDR_A_DQ_56
U45 MDA57	DDR_A_DQ_57
R40 MDA58	DDR_A_DQ_58
P44 MDA59	DDR_A_DQ_59
V44 MDA60	DDR_A_DQ_60
V43 MDA61	DDR_A_DQ_61
R41 MDA62	DDR_A_DQ_62
R44 MDA63	DDR_A_DQ_63

MCH die to DIMM0/1 pin =6" max FOR channel A

3 OF 9

MCHD

MAA80 BD24	DDR_B_MA_0
MAA81 BD23	DDR_B_MA_1
MAA82 BD24	DDR_B_MA_2
MAA83 BD23	DDR_B_MA_3
MAA84 BD22	DDR_B_MA_4
MAA85 BD22	DDR_B_MA_5
MAA86 BD22	DDR_B_MA_6
MAA87 BD21	DDR_B_MA_7
MAA88 BD20	DDR_B_MA_8
MAA89 BD20	DDR_B_MA_9
MAA90 BD20	DDR_B_MA_10
MAA91 BD19	DDR_B_MA_11
MAA92 BD18	DDR_B_MA_12
MAA93 BD18	DDR_B_MA_13
MAA94 BA19	DDR_B_MA_14
DDR_B_DQS_0	
AW8 DQS80	DDR_B_DQS_0
AW9 DQS80	DDR_B_DQS_0
AY6 DM80	DDR_B_DM_0
DDR_B_DQ_0	
AV7 MDB0	DDR_B_DQ_0
AW4 MDB1	DDR_B_DQ_1
AB8 MDB2	DDR_B_DQ_2
AA9 MDB3	DDR_B_DQ_3
AL7 MDB4	DDR_B_DQ_4
AUR MDB5	DDR_B_DQ_5
AW7 MDB6	DDR_B_DQ_6
AY9 MDB7	DDR_B_DQ_7
DDR_B_DQS_1	
AT15 DQS81	DDR_B_DQS_1
AA15 DQS81	DDR_B_DQS_1
AR15 DMS1	DDR_B_DM_1
DDR_B_DQ_8	
AY13 MDB8	DDR_B_DQ_8
AE15 MDB9	DDR_B_DQ_9
AW15 MDB10	DDR_B_DQ_10
AT16 MDB11	DDR_B_DQ_11
AW13 MDB12	DDR_B_DQ_12
AW13 MDB13	DDR_B_DQ_13
AW16 MDB14	DDR_B_DQ_14
AU16 MDB15	DDR_B_DQ_15
DDR_B_BS_0	
SBA0 BD26	DDR_B_BS_0
SBAB1 BQ26	DDR_B_BS_1
SBAB2 BQ26	DDR_B_BS_2
SBAB3 BQ26	DDR_B_BS_3
DDR_B_CS_0	
-CSB0 BB35C	DDR_B_CS_0
-CSB1 BB36C	DDR_B_CS_1
-CSB2 BB37C	DDR_B_CS_2
-CSB3 BB38C	DDR_B_CS_3
DDR_B_CKE_0	
CKEB0 BC18	DDR_B_CKE_0
CKEB1 AY20	DDR_B_CKE_1
CKEB2 BE17	DDR_B_CKE_2
CKEB3 BE16	DDR_B_CKE_3
DDR_B_ODT_0	
MODT B0 BC37	DDR_B_ODT_0
MODT B1 BC38	DDR_B_ODT_1
MODT B2 BC38	DDR_B_ODT_2
MODT B3 BA42	DDR_B_ODT_3

16,17 -SWEB ← -SWEB AR36C
16,17 -SCASB ← -SCASB BC37C
16,17 -SRASB ← -SRASB BD35C

16,17 SBAB0 ← SBAB0 BD26
16,17 SBAB1 ← SBAB1 BQ26
16,17 SBAB2 ← SBAB2 BQ26

16,17 -CSB0 ← -CSB0 BB35C
16,17 -CSB1 ← -CSB1 BB36C
16,17 -CSB2 ← -CSB2 BB37C
16,17 -CSB3 ← -CSB3 BB38C

16,17 CKEB0 ← CKEB0 BC18
16,17 CKEB1 ← CKEB1 AY20
16,17 CKEB2 ← CKEB2 BE17
16,17 CKEB3 ← CKEB3 BE16

MODT B0 BC37
MODT B1 BC38
MODT B2 BC38
MODT B3 BA42

16 DCLKB0 ← DCLKB0 AY33
16 -DCLKB0 ← -DCLKB0 AW33
16 DCLKB1 ← DCLKB1 AV31
16 -DCLKB1 ← -DCLKB1 AW31
16 DCLKB2 ← DCLKB2 AV35C
16 -DCLKB2 ← -DCLKB2 AV35C
16 DCLKB3 ← DCLKB3 AT31
16 -DCLKB3 ← -DCLKB3 AT31
16 DCLKB4 ← DCLKB4 AP31
16 -DCLKB4 ← -DCLKB4 AP31
16 DCLKB5 ← DCLKB5 APSU
16 -DCLKB5 ← -DCLKB5 AV35C

TP25 ← AR43
TP26 ← BB40
TP24 ← AT44
TP26 ← AW40
TP26 ← AR6
TP27 ← BC24

DDR3_A_CSBI
DDR3_A_MA0
DDR3_A_WEB
DDR3_B_ODT3
DDR3_DRAM_PRR0K
DDR3_DRAMRSTB

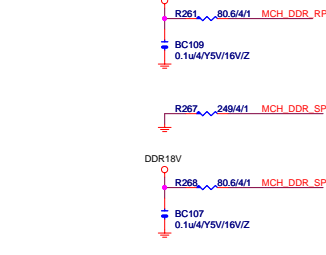
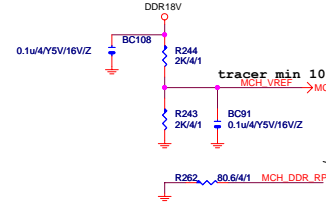
RSVD
RSVD
RSVD
RSVD

DDR_B

AL35 MDB40	DDR_B_DQ_40
AL36 MDB41	DDR_B_DQ_41
AK36 MDB42	DDR_B_DQ_42
AJ34 MDB43	DDR_B_DQ_43
AN39 MDB44	DDR_B_DQ_44
AN40 MDB45	DDR_B_DQ_45
AK37 MDB46	DDR_B_DQ_46
AL39 MDB47	DDR_B_DQ_47
AF37 DQS86	DDR_B_DQS_6
AF36 DQS86	DDR_B_DQS_6
AJ35 DMS6	DDR_B_DM_6
AJ38 MDB48	DDR_B_DQ_48
AJ37 MDB49	DDR_B_DQ_49
AF38 MDB50	DDR_B_DQ_50
AE37 MDB51	DDR_B_DQ_51
AK40 MDB52	DDR_B_DQ_52
AJ40 MDB53	DDR_B_DQ_53
AE34 MDB54	DDR_B_DQ_54
AE35 MDB55	DDR_B_DQ_55
AB35 DQS87	DDR_B_DQS_7
AD35 DQS87	DDR_B_DQS_7
AD37 DMS7	DDR_B_DM_7
AD40 MDB56	DDR_B_DQ_56
AD38 MDB57	DDR_B_DQ_57
AB40 MDB58	DDR_B_DQ_58
AA39 MDB59	DDR_B_DQ_59
AE36 MDB60	DDR_B_DQ_60
AE39 MDB61	DDR_B_DQ_61
AB37 MDB62	DDR_B_DQ_62
AB39 MDB63	DDR_B_DQ_63

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15,17 MODT_A[0..3] ← MODT A[0..3]
16,17 MODT_B[0..3] ← MODT B[0..3]
16 -DQS8[0..7] ← -DQS8[0..7]
16,17 MAA8[0..14] ← MAA8[0..14]
16 DM8[0..7] ← DM8[0..7]
16 MDB[0..63] ← MDB[0..63]
16 DQS8[0..7] ← DQS8[0..7]
15,17 MAA[0..14] ← MAA[0..14]
15 DMA[0..7] ← DMA[0..7]
15 MDA[0..63] ← MDA[0..63]
15 DQS[0..7] ← DQS[0..7]
15 -DQS[0..7] ← -DQS[0..7]



TP25 ← AR43
TP26 ← BB40
TP24 ← AT44
TP26 ← AW40
TP26 ← AR6
TP27 ← BC24

DDR3_A_CSBI
DDR3_A_MA0
DDR3_A_WEB
DDR3_B_ODT3
DDR3_DRAM_PRR0K
DDR3_DRAMRSTB

RSVD
RSVD
RSVD
RSVD



NB_HEATSINK[12SP2-040007-41R_12SP2-040007-42R_12SP2-040007-43R_12SP2-040007-44R]

Gigabyte Technology

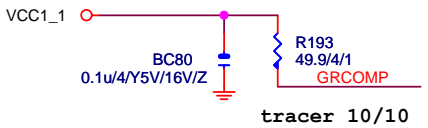
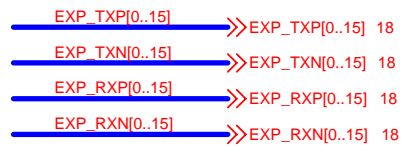
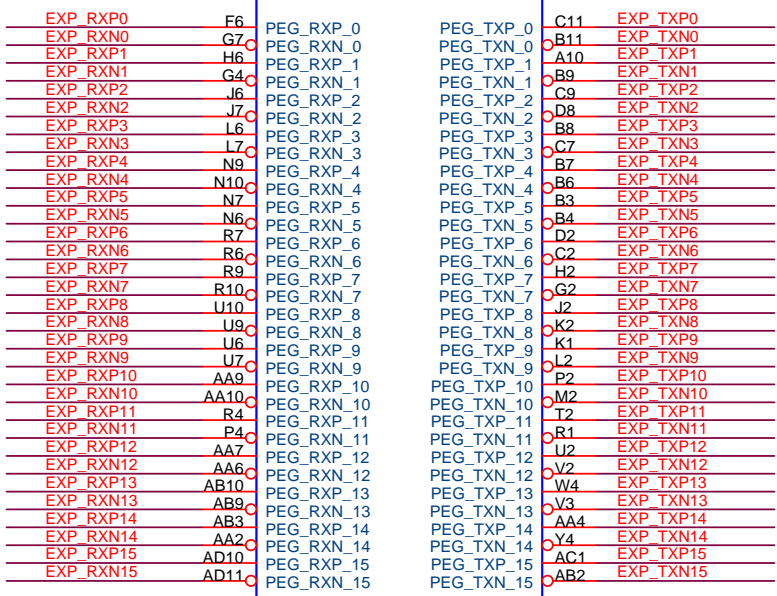
Title: GMCH-DDRII

Size: Document Number GA-EP43-DS3 Rev 1.03

Date: Thursday, April 24, 2008 Sheet 10 of 38

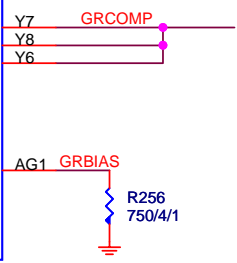
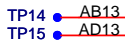
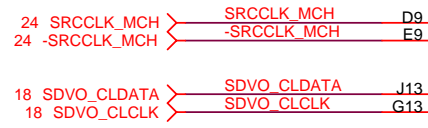
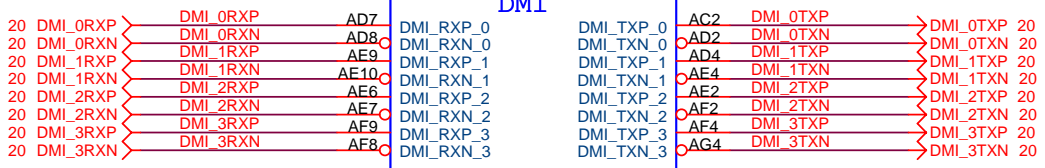
PCIEX16:16/5/5/5/16(breakout min 8/4/5/4/8)

Impedance=85 +/- 17.5%



DMI:12/4/8/4/12

Impedance=95 +/- 17.5%



EAGLEAKE [10HB1-030043-10R]

Gigabyte Technology		
GMCH-PCI E & DMI		
Size Custom	Document Number	GA-EP43-DS3
Date:	Wednesday, April 23, 2008	Rev 1.03
Sheet	11	of 38

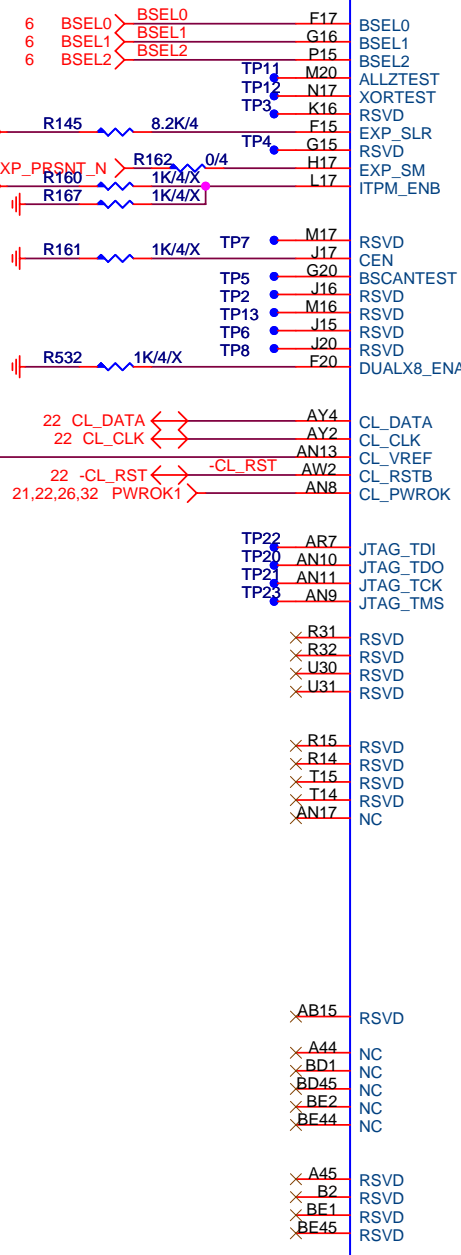
EXP_SM
 0:SDVO OR PCIE
 1:BOTH SDVO AND PCIE

EXP_SLR:
 0:BTX PCIE are reversed
 1:ATX PCIE normal

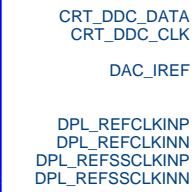
ITPM:
 0:Enable ITPM
 1:Disable ITPM

CEN:
 0:Disable TLS
 1:Enable TLS

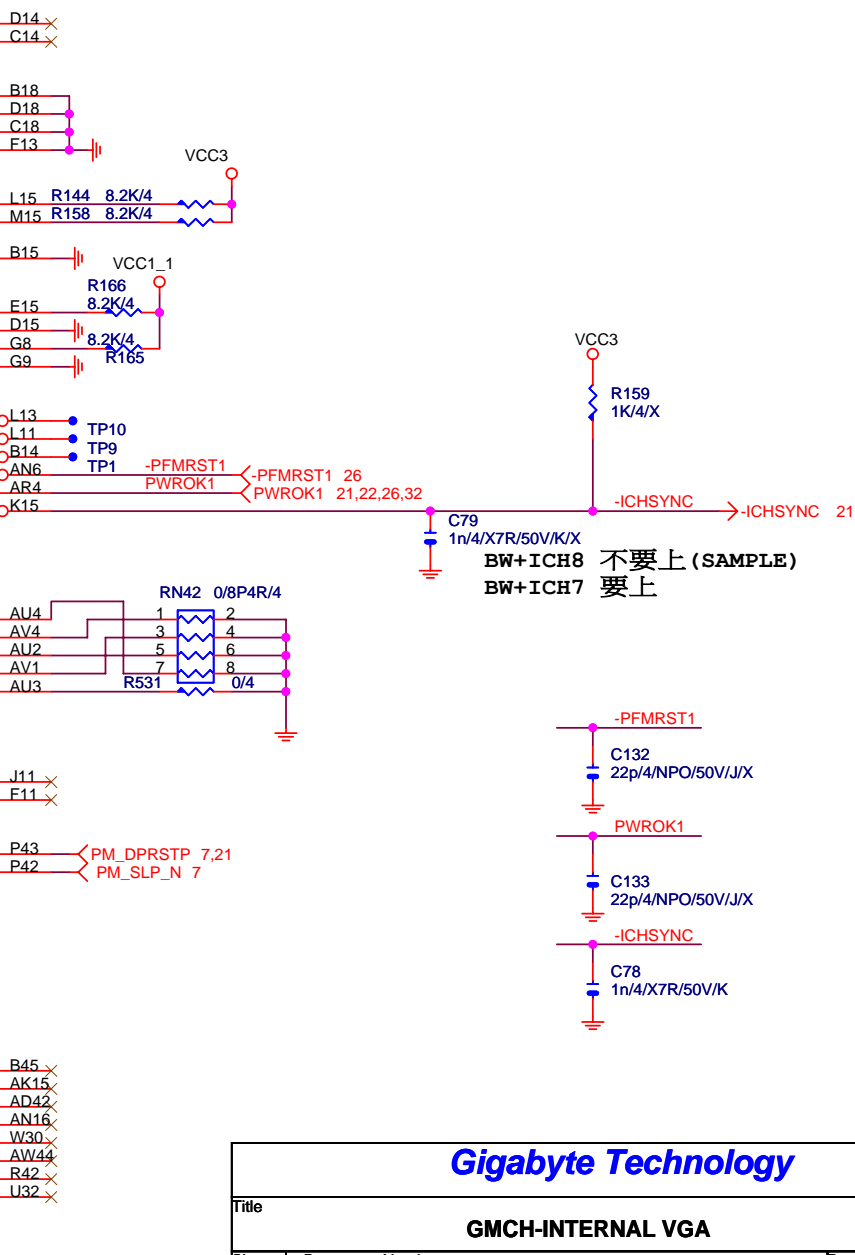
VCC1_1
 R265 1K/4/1
 R264 464/4/1
 CL_VREF: 4/10
 0.349V



VGA

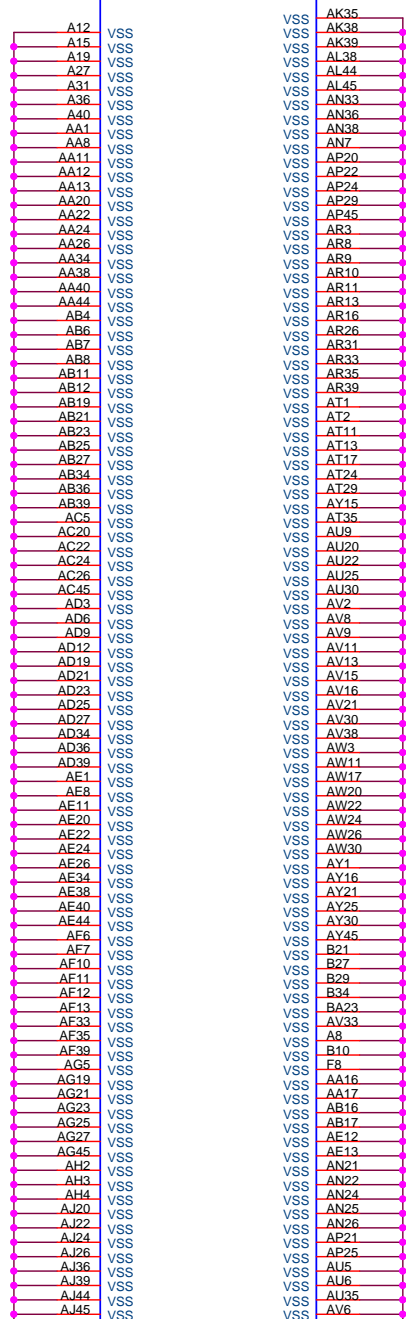


MISC



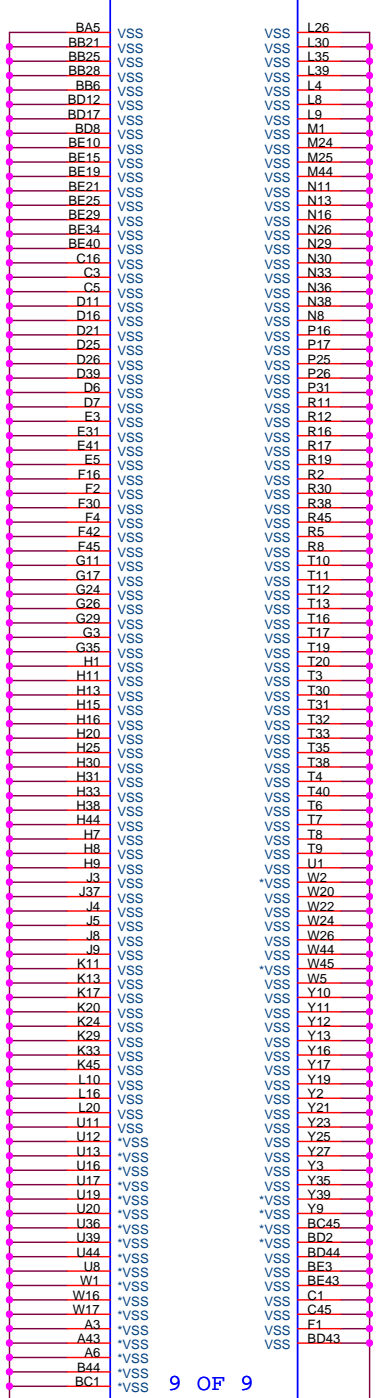
Gigabyte Technology

Title		
GMCH-INTERNAL VGA		
Size	Document Number	Rev
Custom	GA-EP43-DS3	1.03
Date:	Wednesday, April 23, 2008	Sheet 12 of 38



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EAGLEAKE [10HB1-030043-10R]



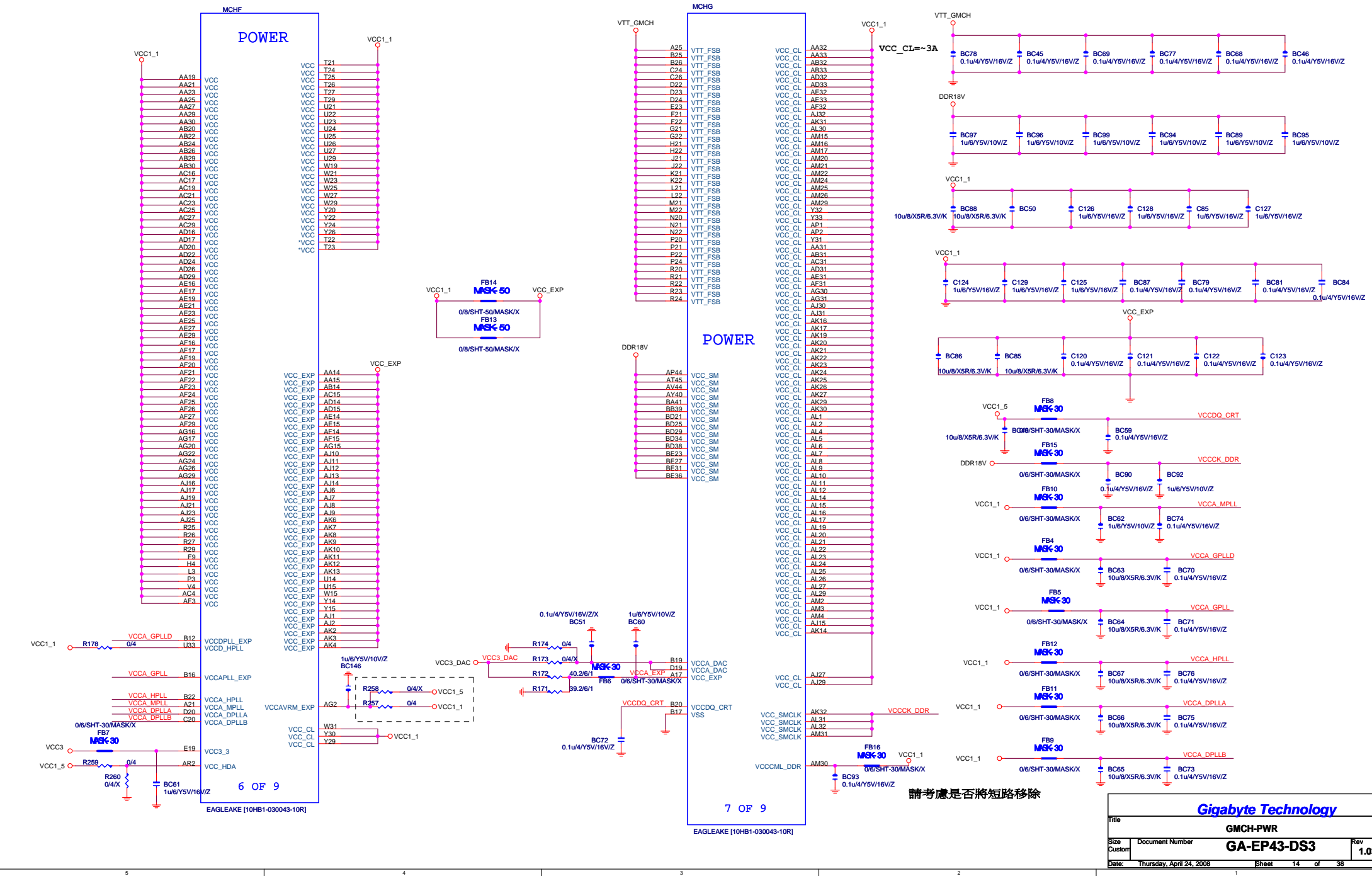
9 OF 9

EAGLEAKE [10HB1-030043-10R]



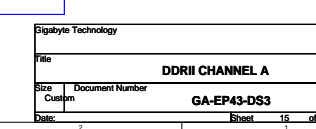
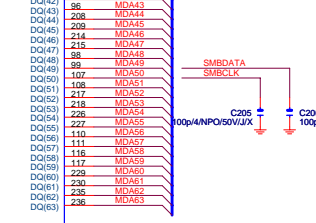
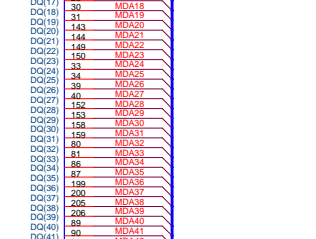
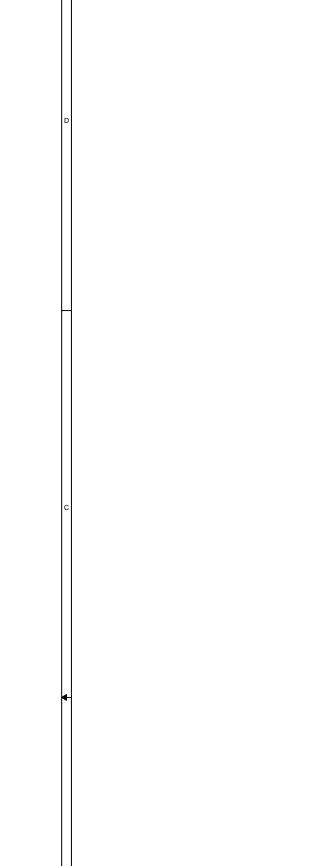
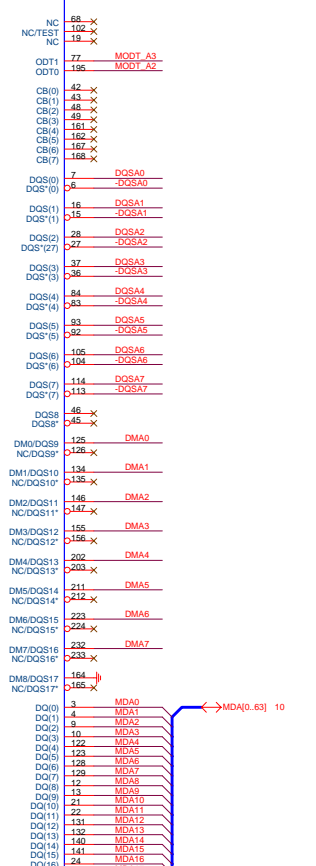
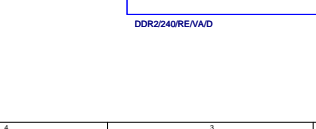
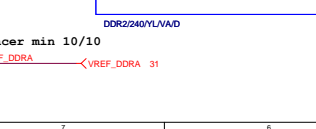
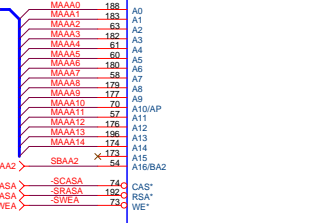
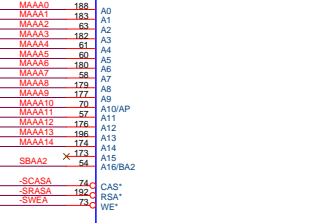
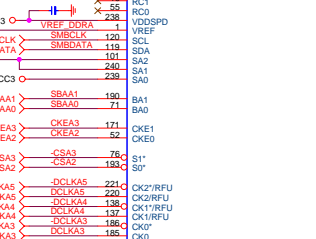
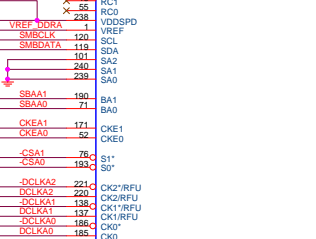
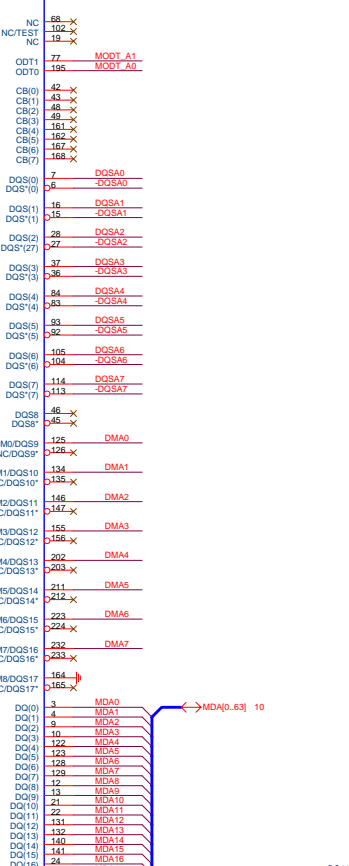
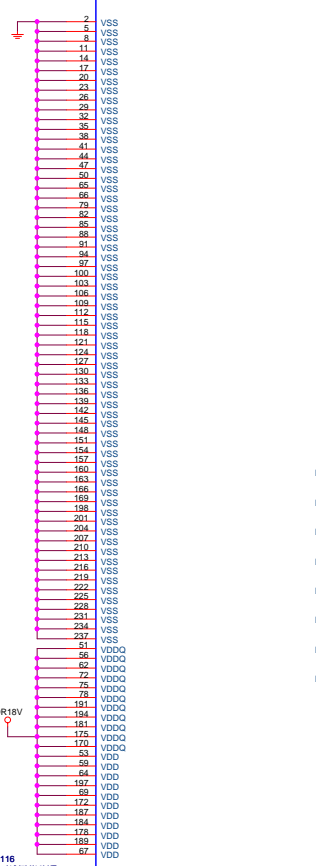
Gigabyte Technology

Title		
GMCH-GND		
Size	Document Number	Rev
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DDR2_1

DDR2_2

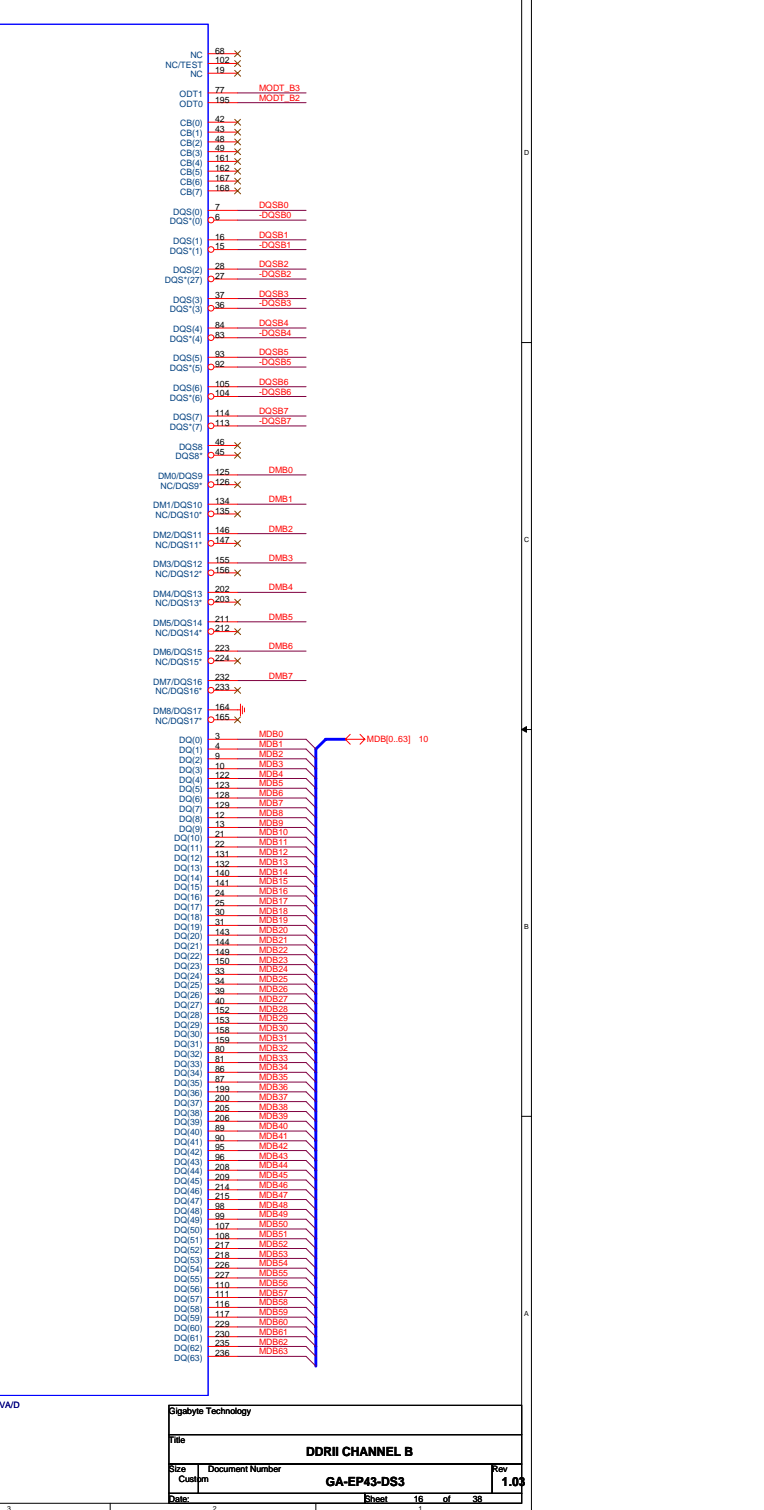
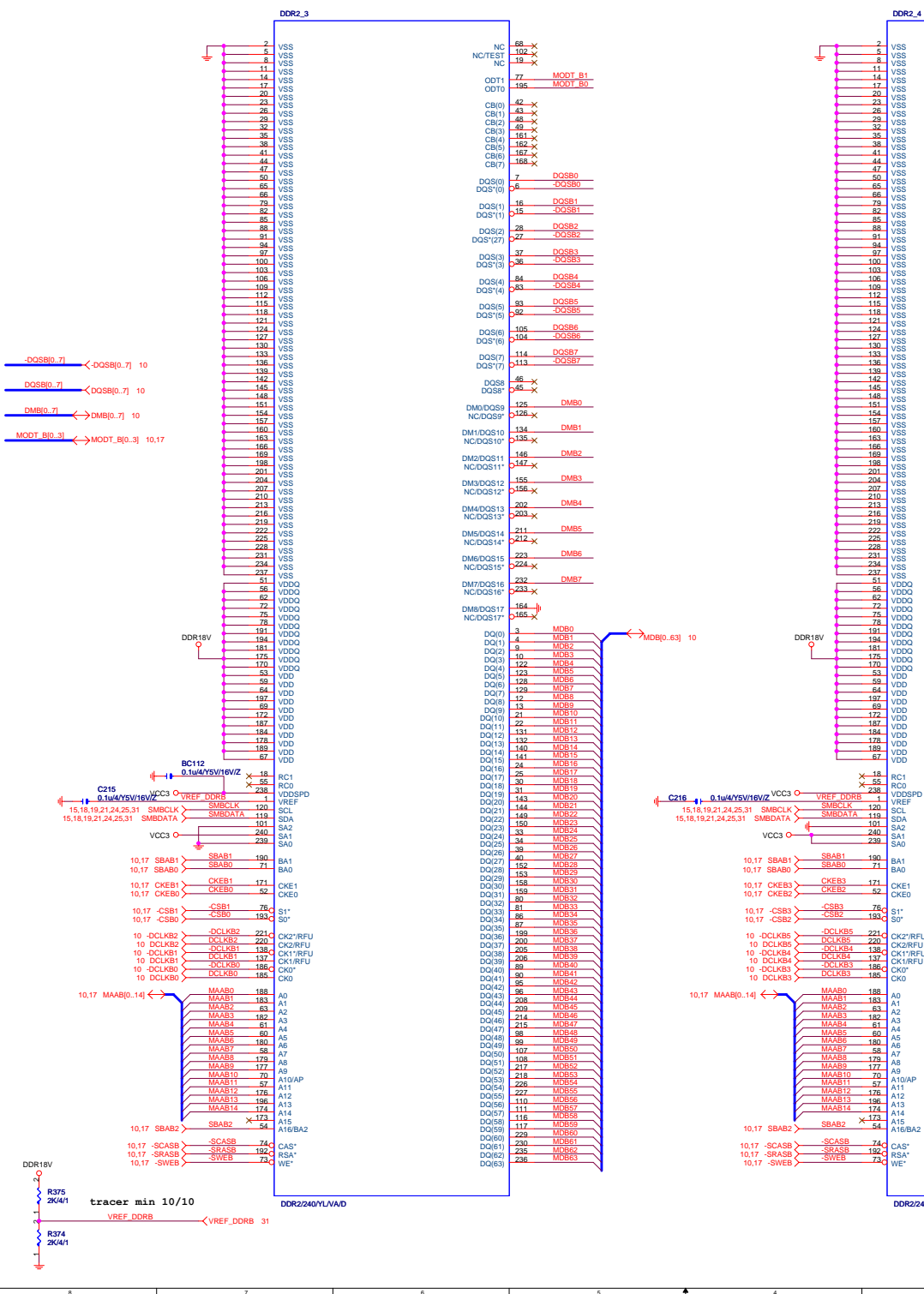


Eqalyte Technology

DDR1 CHANNEL A

File	Document Number	Rev
Custom	GA-EP43-DS3	1.03

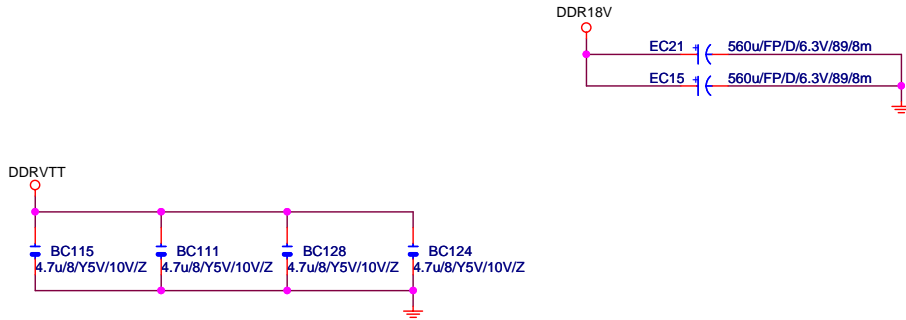
Date: _____ Sheet: 15 of 38



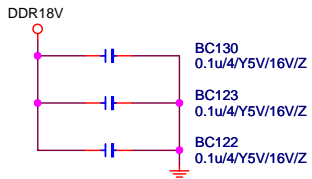
Egalyte Technology	
File: DDRII CHANNEL B	
Size: Custom	Document Number: GA-EP43-DS3
Date: 2/23/2011	Rev: 1.03
Sheet: 16 of 38	

DDR TERMINATION CHANNEL A

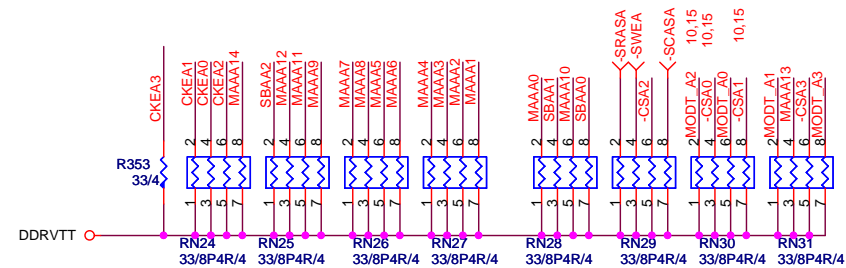
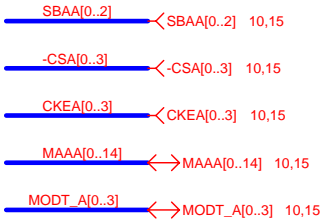
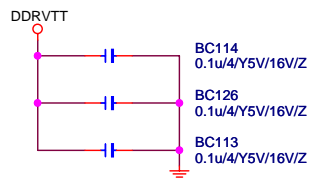
DDRVTT Decouple



DDR18V Decouple

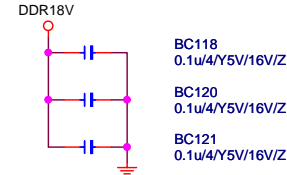


DDRVTT Decouple

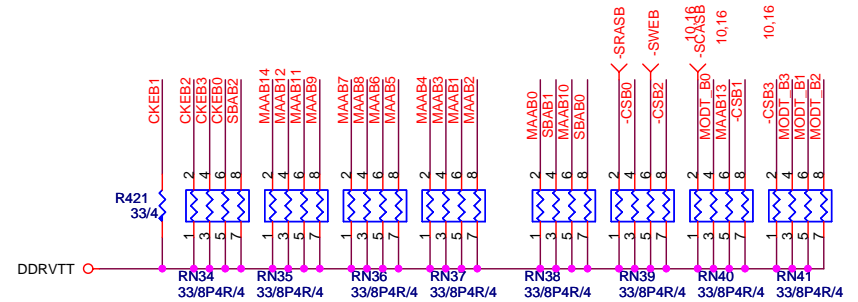
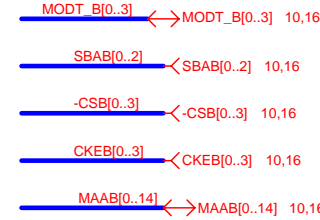
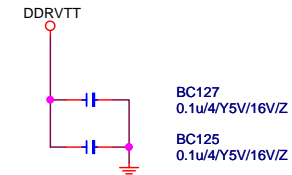


DDR TERMINATION CHANNEL B

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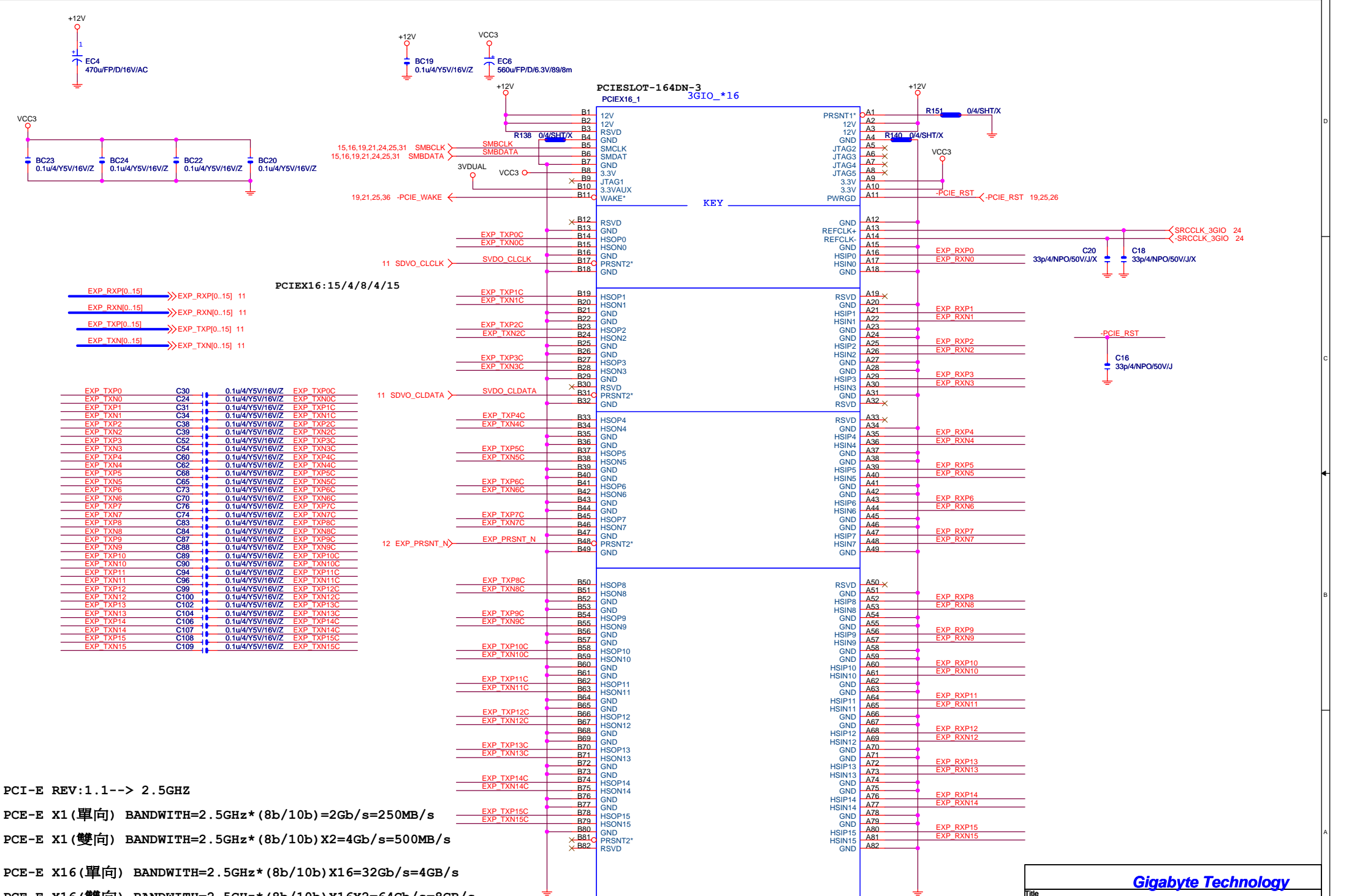


DDRVTT Decouple



Gigabyte Technology

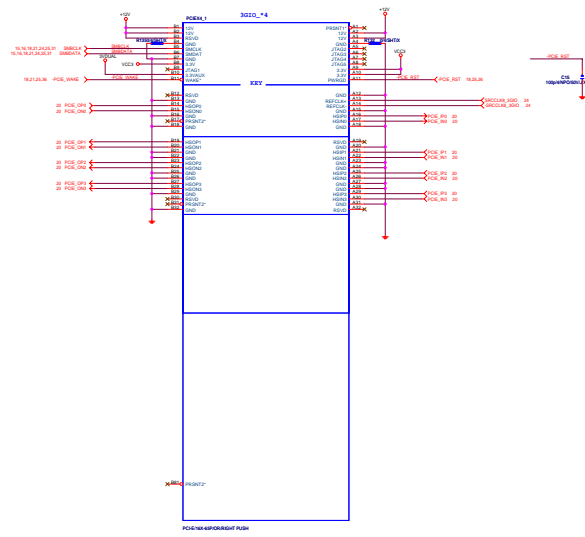
Title		DDRII TERMINATOR	
Size Custom	Document Number	GA-EP43-DS3	
Date:	Wednesday, April 23, 2008	Sheet	17 of 38
			Rev 1.03

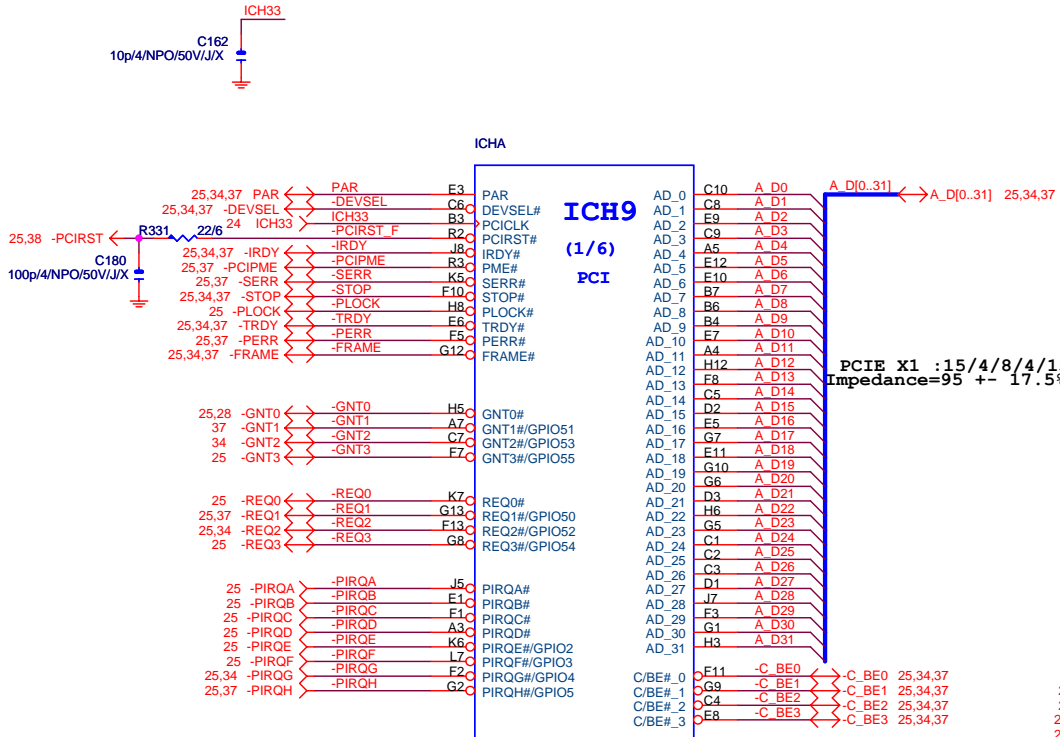


PCI-E REV:1.1--> 2.5GHZ
PCE-E X1 (單向) BANDWITH=2.5GHz*(8b/10b)=2Gb/s=250MB/s
PCE-E X1 (雙向) BANDWITH=2.5GHz*(8b/10b)X2=4Gb/s=500MB/s
PCE-E X16 (單向) BANDWITH=2.5GHz*(8b/10b)X16=32Gb/s=4GB/s
PCE-E X16 (雙向) BANDWITH=2.5GHz*(8b/10b)X16X2=64Gb/s=8GB/s
PCI-E REV:2.0--> 5GHZ

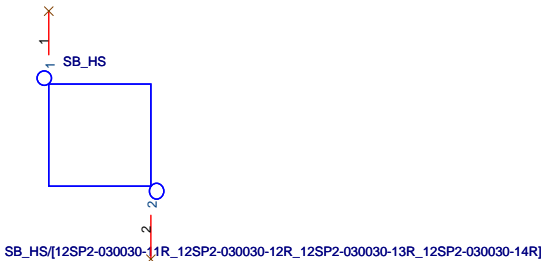
Gigabyte Technology			
PCI EXPRESS * 16			
Size Custom	Document Number	GA-EP43-DS3	
Date:	Wednesday, April 23, 2008	Sheet	18 of 38
		Rev	1.03

PCI-E/16X-164P/BU/R EJEXTOR

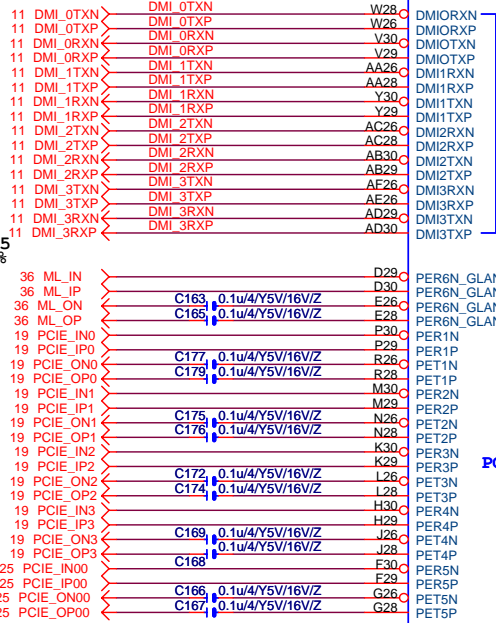




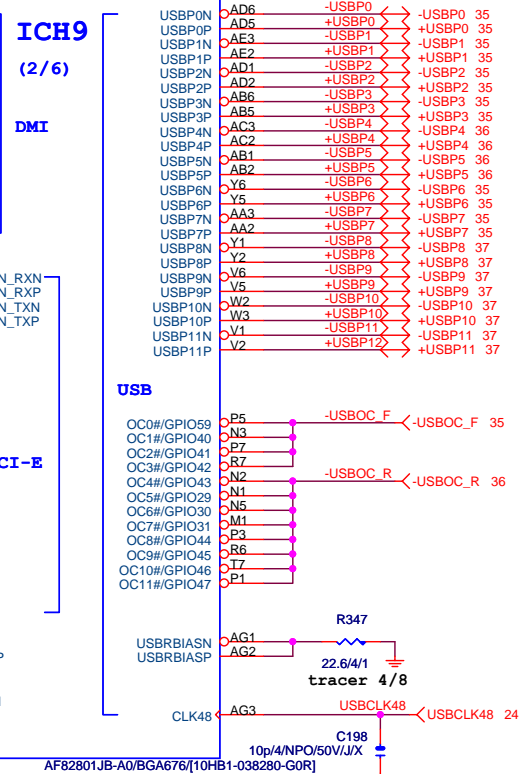
AF82801JB-A0/BGA676/[10HB1-038280-G0R]



DMI:12/4/8/4/12
Impedance=95 +- 17.5%



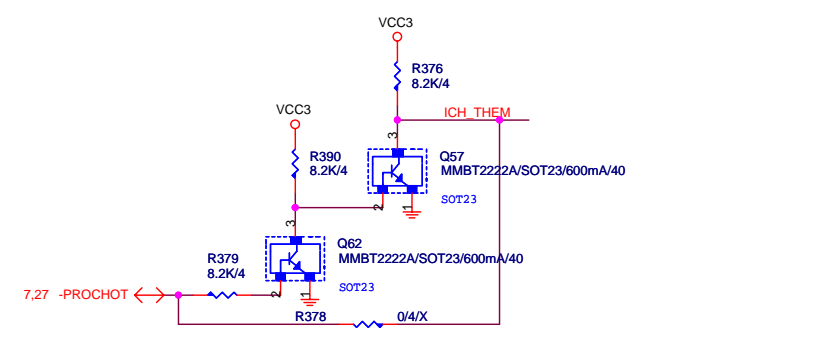
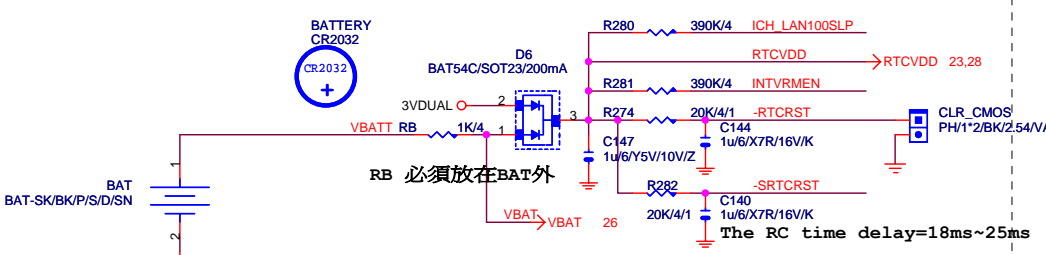
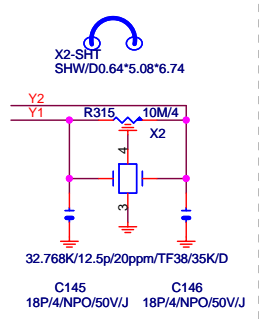
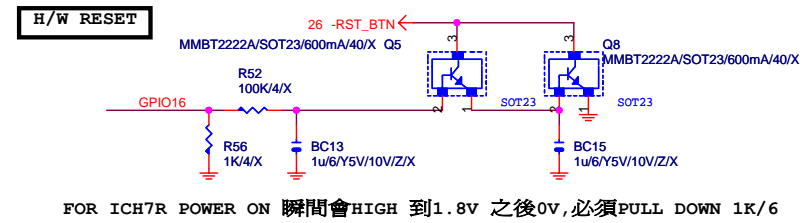
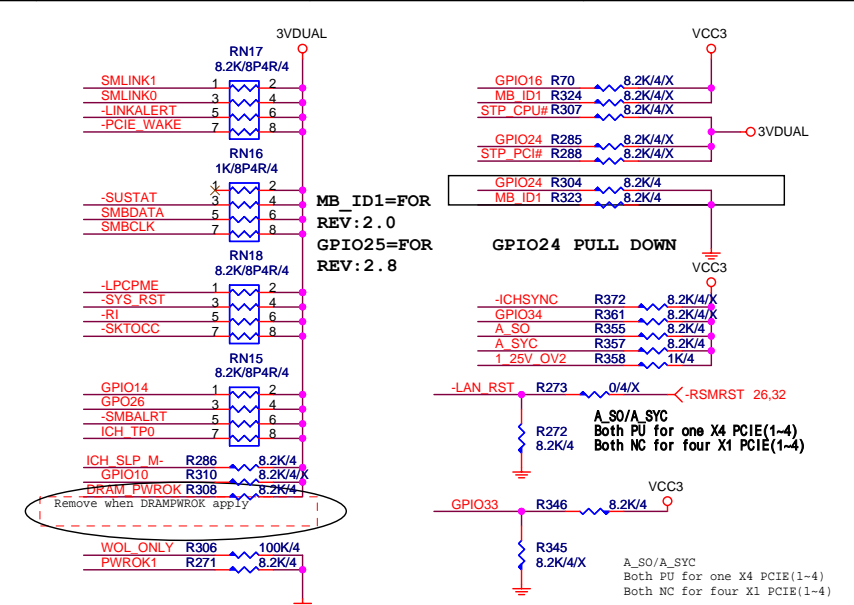
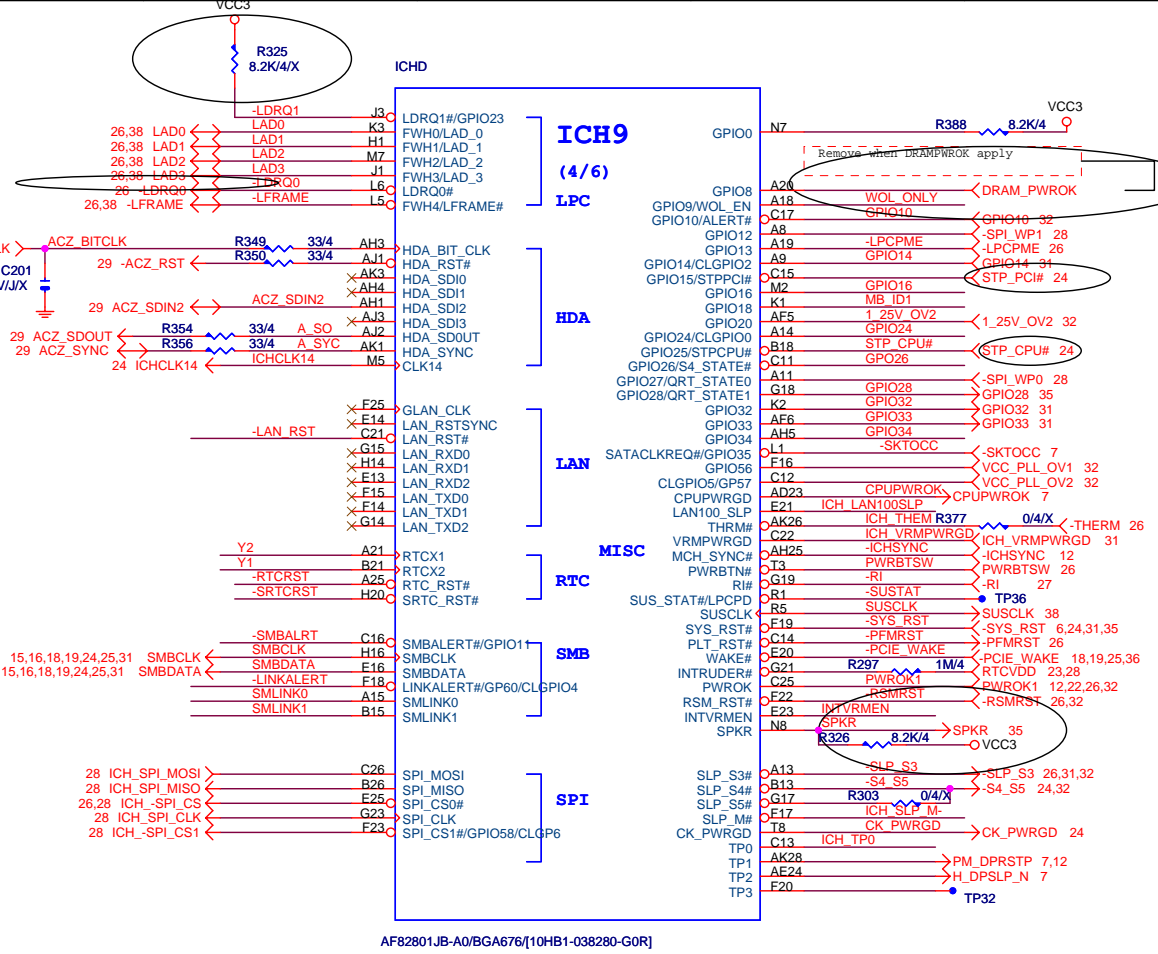
ICHB
USB:15/4.5/7.5/4.5/15
Impedance=90+- 15%



AF82801JB-A0/BGA676/[10HB1-038280-G0R]

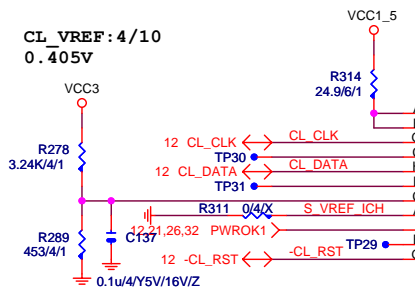
Gigabyte Technology

Title			
ICH9-PCI, DMI, LAN, USB			
Size	Document Number	GA-EP43-DS3	
		Rev	1.03
Date: Wednesday, April 23, 2008		Sheet	20 of 38



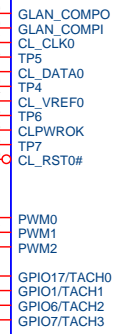
Gigabyte Technology			
ICH9 GPIO, CTRL			
Title	Document Number GA-EP43-DS3		
Size B	Rev	1.03	
Date: Friday, May 09, 2008	Sheet	21	of 38

CL_VREF:4/10
0.405V



ICH9

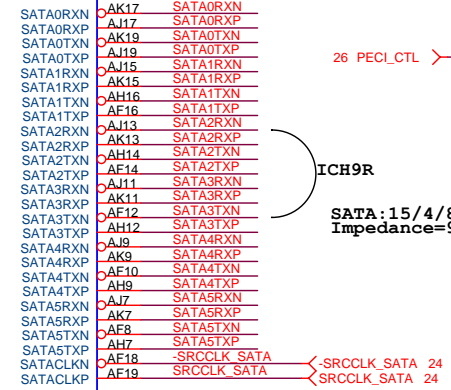
ICH9
(3/6)



SATA

HOST

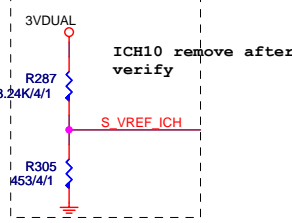
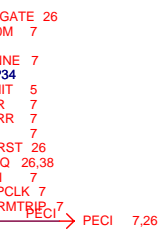
AF82801JB-A0/BGA676/[10HB1-038280-GOR]



ICH9R

SATA:15/4/8/4/15
Impedance=95 +/- 17.5%

SATALED#
SATABIASN
SATABIASP
SATALED 35
SATABIASN=4MIL

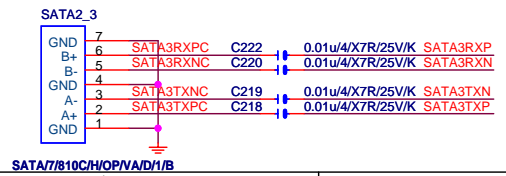
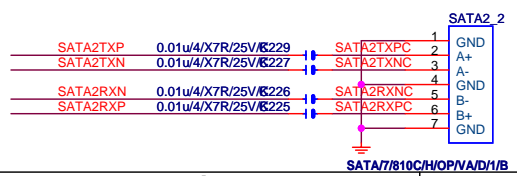
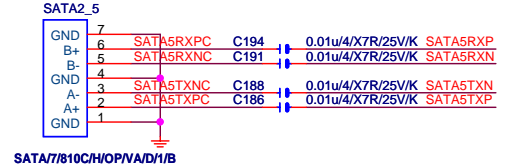
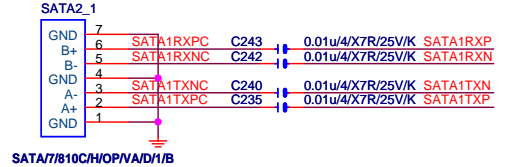
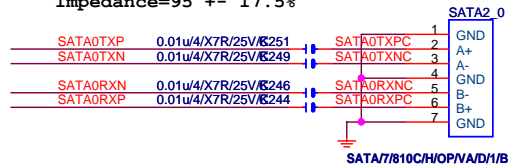


The ICH8 integrated GbE LAN test mode is activated any time the ICH8 GPIO39 signal is not at a low logic level.
Workaround Under investigation. Possible workaround is to use a weak pulldown resistor on GPIO39 to ensure signal is always low

GPIO49/DMI Termination Voltage
:LOW FOR DESKTOP

GPIO48 : Lo For Media BIOS
Hi For Disty BIOS

SATA:15/4/8/4/15
Impedance=95 +/- 17.5%



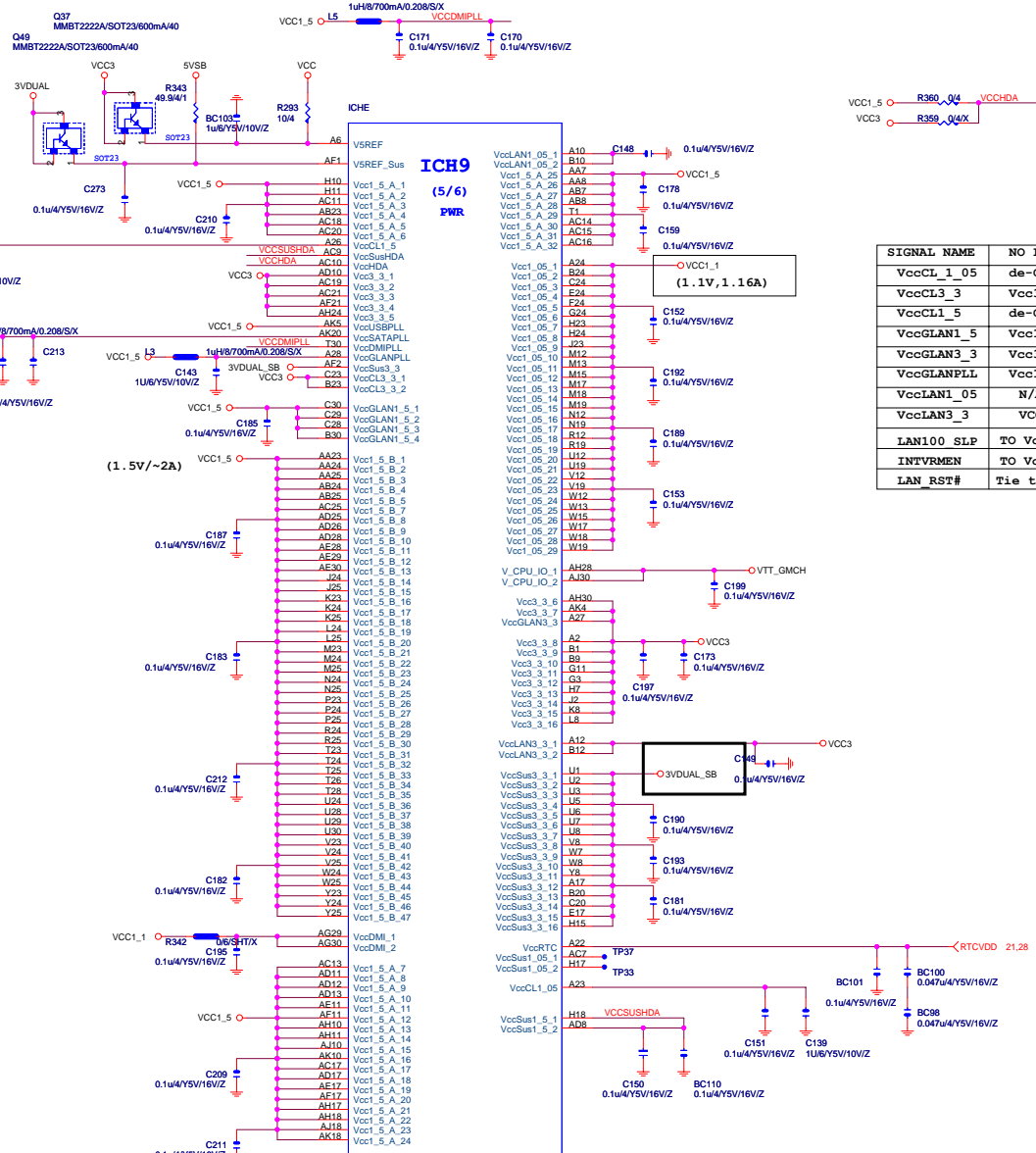
Gigabyte Technology

Title		ICH9- SATA, FAN CTRL	
Size	Document Number	GA-EP43-DS3	
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Date:	Wednesday, April 23, 2008	Sheet	22 of 38

ICH9

G30	VSS_100	VSS_099	H13
G29	VSS_101	VSS_098	H2
G25	VSS_102	VSS_097	H22
G16	VSS_103	VSS_096	H22
F9	VSS_104	VSS_095	H25
F6	VSS_105	VSS_094	H26
F28	VSS_106	VSS_093	H28
F28	VSS_107	VSS_092	H9
F21	VSS_108	VSS_091	J29
F12	VSS_109	VSS_090	J30
E30	VSS_110	VSS_089	J6
E29	VSS_111	VSS_088	K26
E22	VSS_112	VSS_087	K28
E18	VSS_113	VSS_086	L2
E18	VSS_114	VSS_085	L23
D28	VSS_115	VSS_084	L30
B8	VSS_116	VSS_083	M16
B8	VSS_117	VSS_082	M14
B28	VSS_118	VSS_081	M26
B22	VSS_119	VSS_080	M28
B25	VSS_120	VSS_079	M28
B2	VSS_121	VSS_078	M8
B2	VSS_122	VSS_077	M8
B19	VSS_123	VSS_076	M13
B17	VSS_124	VSS_075	M15
B14	VSS_125	VSS_074	M17
B11	VSS_126	VSS_073	M16
AK8	VSS_127	VSS_072	M17
AK30	VSS_128	VSS_071	M18
AK29	VSS_129	VSS_070	N23
AK2	VSS_130	VSS_069	N29
AK16	VSS_131	VSS_068	N30
AK14	VSS_132	VSS_067	P12
AK12	VSS_133	VSS_066	P13
A18	VSS_134	VSS_065	P14
A15	VSS_135	VSS_064	P15
A16	VSS_136	VSS_063	P16
A123	VSS_137	VSS_062	P17
A10	VSS_138	VSS_061	P18
A16	VSS_139	VSS_060	P19
A14	VSS_140	VSS_059	P2
A12	VSS_141	VSS_058	P26
AH8	VSS_142	VSS_057	P28
AH6	VSS_143	VSS_056	P6
AH0	VSS_144	VSS_055	R13
AH2	VSS_145	VSS_054	R14
AH19	VSS_146	VSS_053	R15
AH15	VSS_147	VSS_052	R16
AH13	VSS_148	VSS_051	R17
AG28	VSS_149	VSS_050	R18
AF9	VSS_150	VSS_049	R23
AF7	VSS_151	VSS_048	R29
AF29	VSS_152	VSS_047	R30
AF25	VSS_153	VSS_046	R8
AF23	VSS_154	VSS_045	T12
AF20	VSS_155	VSS_044	T13
AF15	VSS_156	VSS_043	T14
AF13	VSS_157	VSS_042	T15
AE9	VSS_158	VSS_041	T16
AE8	VSS_159	VSS_040	T17
AE6	VSS_160	VSS_039	T18
AE5	VSS_161	VSS_038	T19
AE25	VSS_162	VSS_037	T2
AE19	VSS_163	VSS_036	T29
AE18	VSS_164	VSS_035	U13
AE16	VSS_165	VSS_034	U14
AE15	VSS_166	VSS_033	U14
AE13	VSS_167	VSS_032	U16
AE10	VSS_168	VSS_031	U16
AE12	VSS_169	VSS_030	U17
AE1	VSS_170	VSS_029	U23
AD7	VSS_171	VSS_028	V13
AD9	VSS_172	VSS_027	V13
AD3	VSS_173	VSS_026	V14
AD19	VSS_174	VSS_025	V16
AD22	VSS_175	VSS_024	V16
AD18	VSS_176	VSS_023	V17
AD15	VSS_177	VSS_022	V18
AD16	VSS_178	VSS_021	V26
AD14	VSS_179	VSS_020	V29
AD14	VSS_180	VSS_019	V3
AC8	VSS_181	VSS_018	V7
AC6	VSS_182	VSS_017	W1
AC5	VSS_183	VSS_016	W14
AC30	VSS_184	VSS_015	W18
AC29	VSS_185	VSS_014	W3
AC24	VSS_186	VSS_013	W29
AC12	VSS_187	VSS_012	W30
AC1	VSS_188	VSS_011	W5
AB3	VSS_189	VSS_010	W6
AB28	VSS_190	VSS_009	Y2
AB26	VSS_191	VSS_008	Y28
AA6	VSS_192	VSS_007	Y3
AA5	VSS_193	VSS_006	AA30
AA5	VSS_194	VSS_005	AA29
AK27	VSS_194	VSS_004	AA1
AH29	VSS_195	VSS_003	AA30
AJ4	VSS_196	VSS_002	A1
AF3	VSS_197	VSS_001	A1
B27	VSS_198		

AF82801JB-A0/BGA676(10H81-038280-GOR)



SIGNAL NAME	NO LAN
VccCL_1_05	de-CAP
VccCL_3_3	Vcc3_3
VccCL1_5	Vcc3_5
VccCL1_5	de-CAP
VccGLAN1_5	Vcc1_5
VccGLAN3_3	Vcc3_3
VccGLANPLL	Vcc1_5
VccLAN1_05	N/A
VccLAN3_3	VCC3_3
LAN100_SLP	TO VccRTC
INTVRMEN	TO VccRTC
LAN_RST#	Tie to Vss

CLK GEN CK505

50歐姆: [18/4/10/4/18]

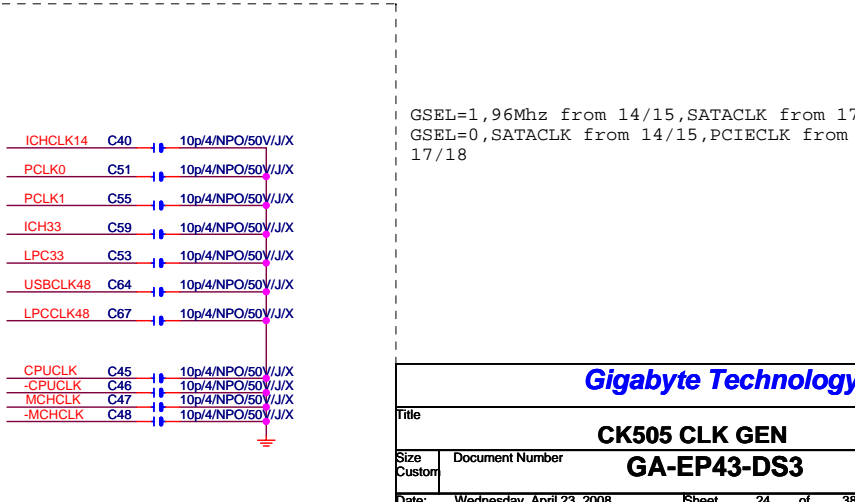
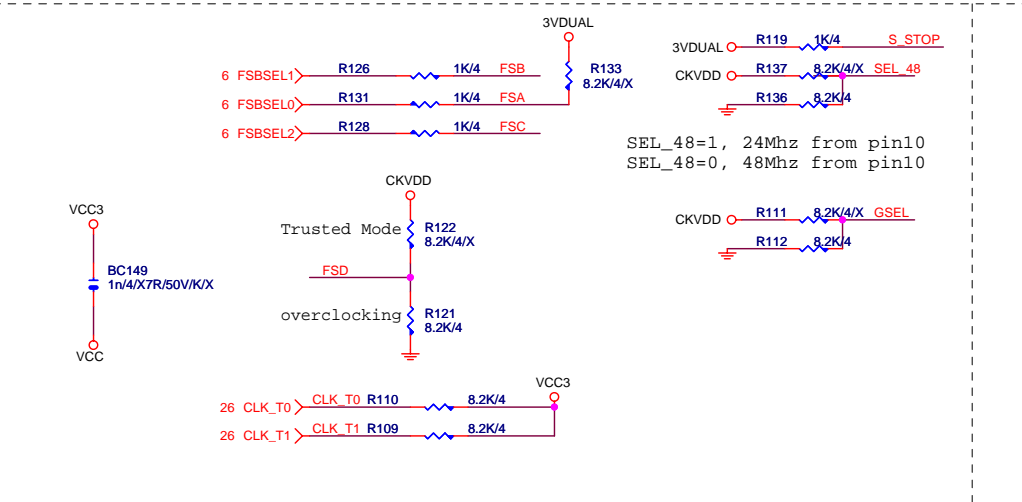
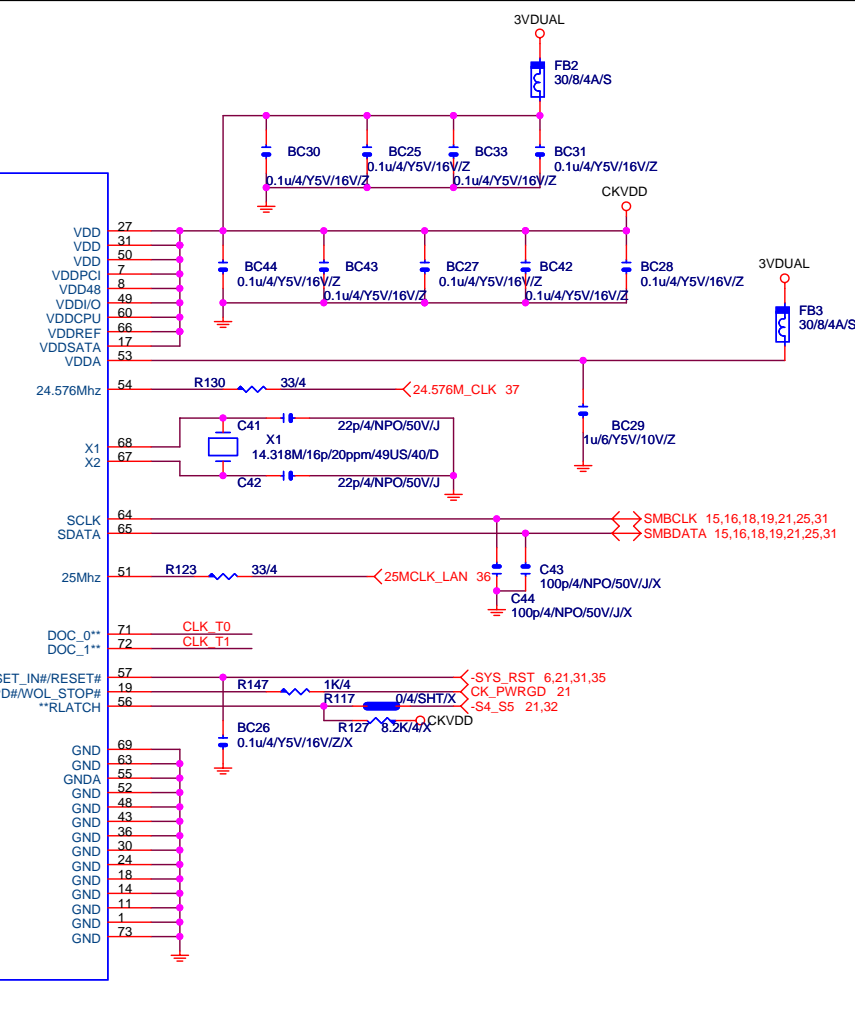
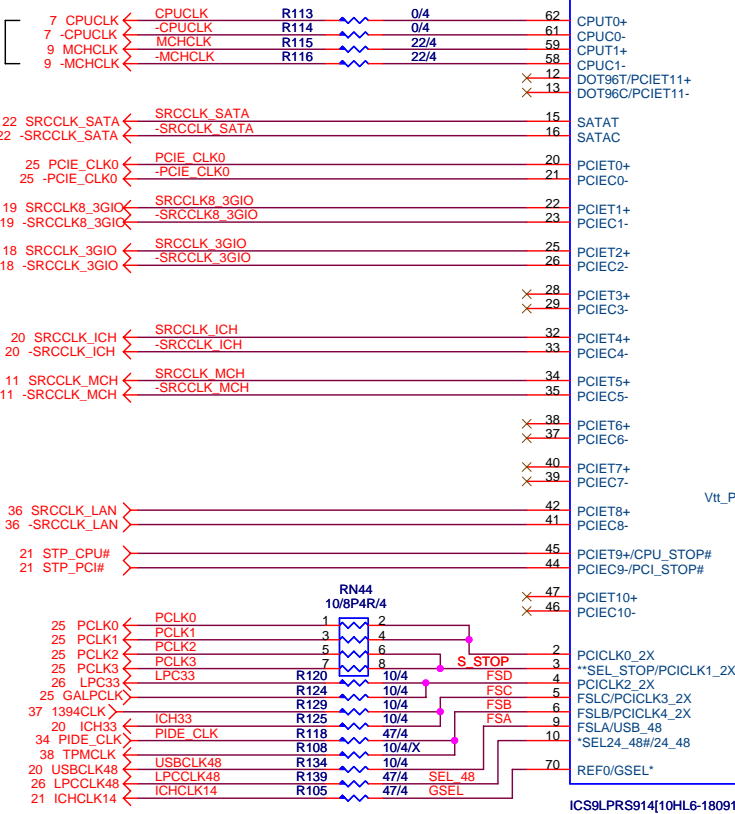
50歐姆: [18/4/10/4/18]

50歐姆: [18/4/10/4/18]

50歐姆: [4/10]

50歐姆: [4/10]

50歐姆: [4/10]



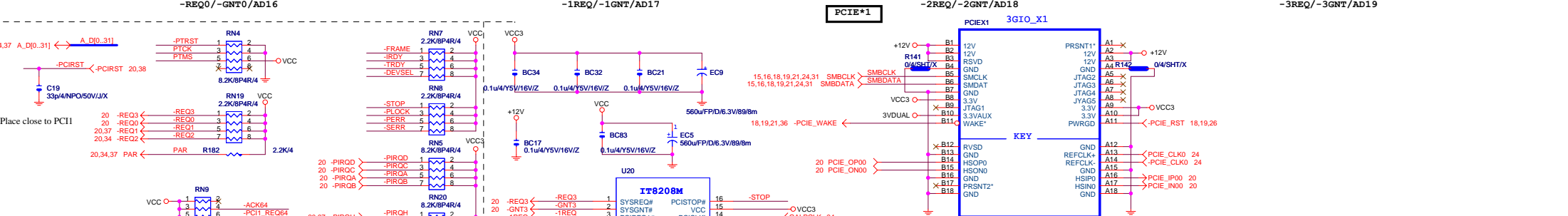
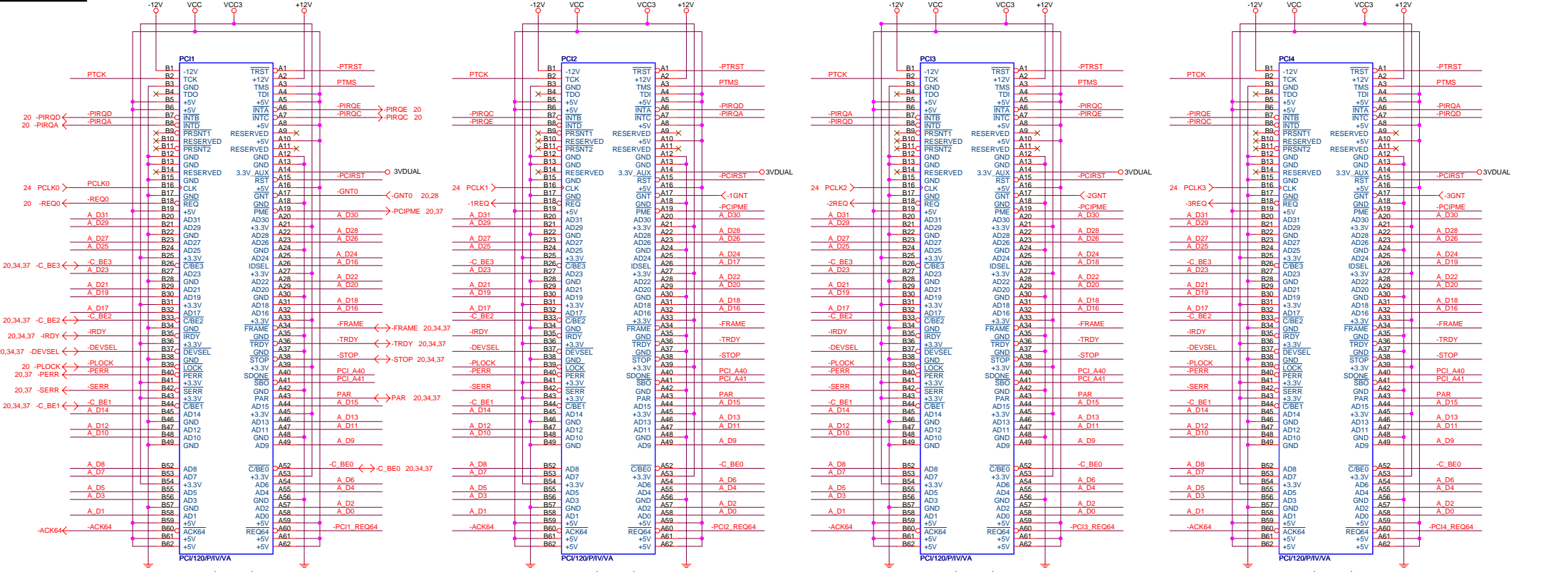
GSEL=1,96Mhz from 14/15,SATACLK from 17/18
GSEL=0,SATACLK from 14/15,PCIECLK from 17/18

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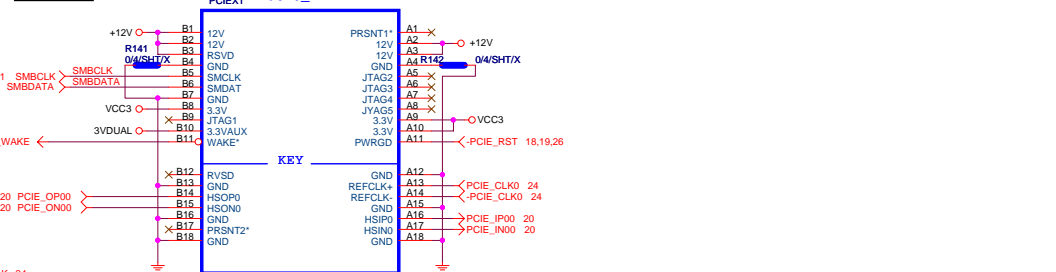
CK505 CLK GEN
GA-EP43-DS3

Title		Rev	
CK505 CLK GEN		1.03	
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PCI1,2 SLOT



PCIE*1

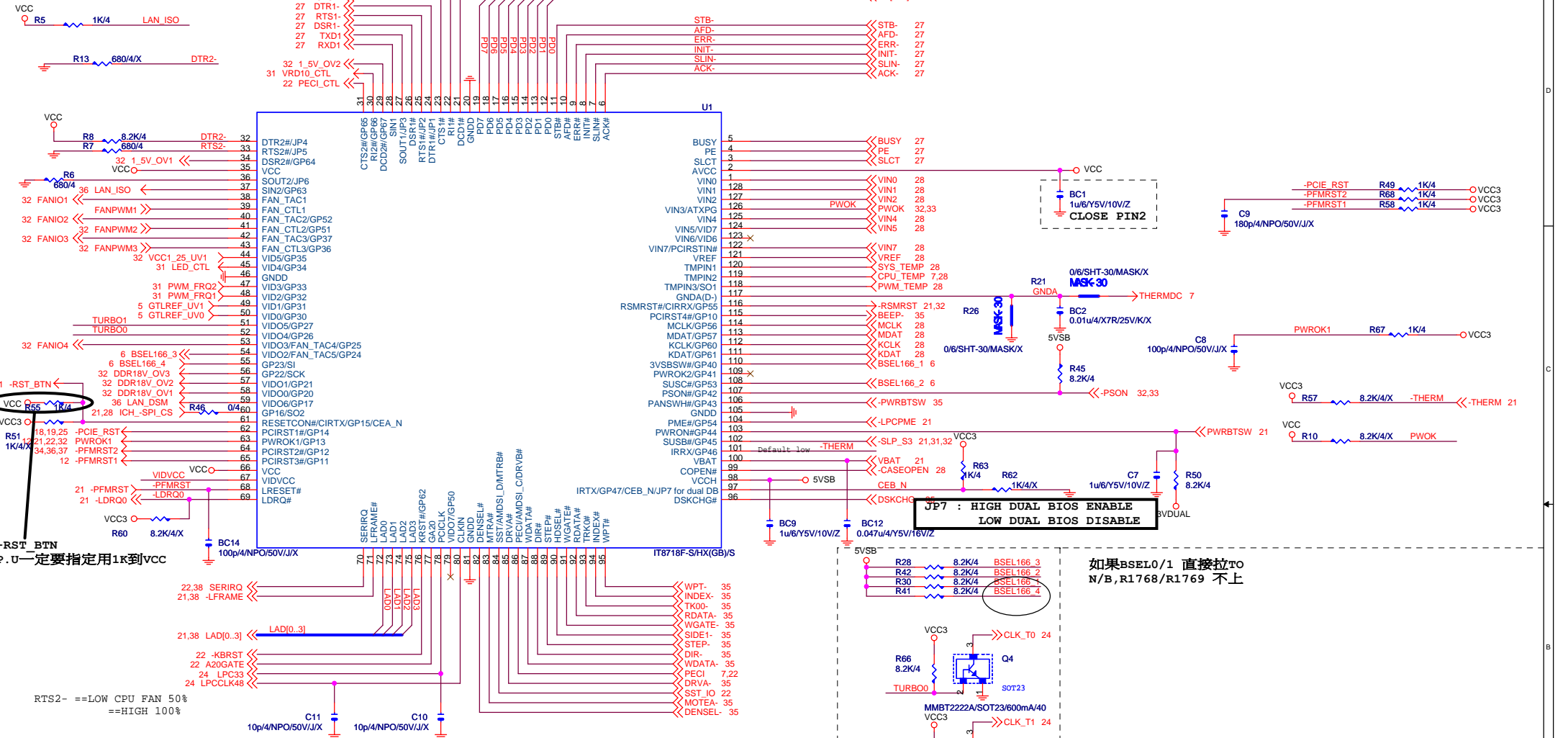


Gigabyte Technology

PCI SLOT 1, 2/PCIE1

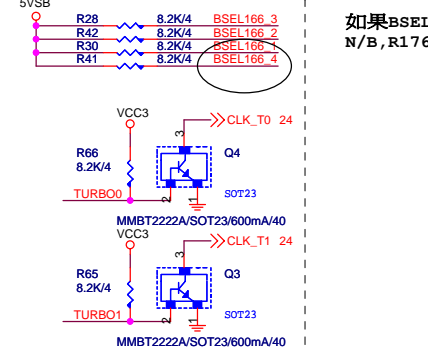
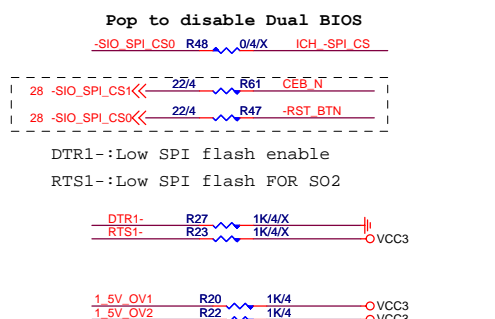
Title	Document Number		Rev
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Customer			
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IT8712F LPC I/O

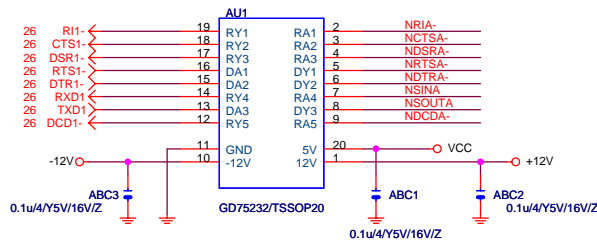


SOUT2	1	VID pins threshold voltage select: Vih / Vil : 2.0 / 0.8V
	0	VID pins threshold voltage select: Vih / Vil : 0.8 / 0.4V

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

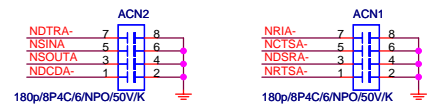
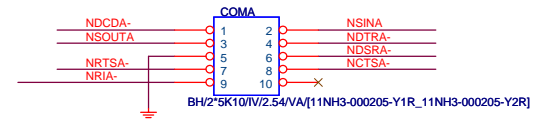
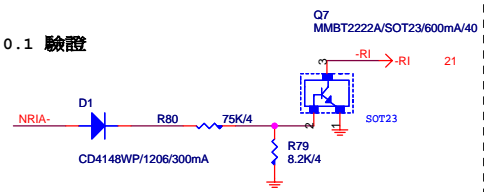


COMA

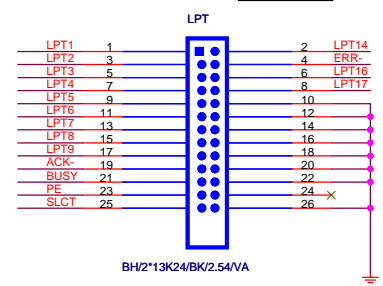
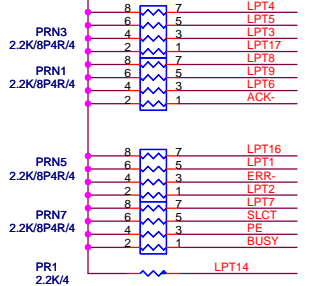
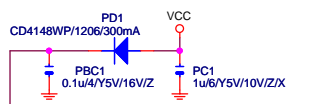
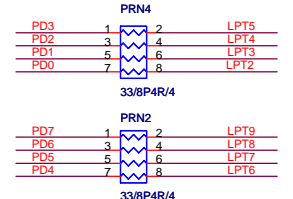
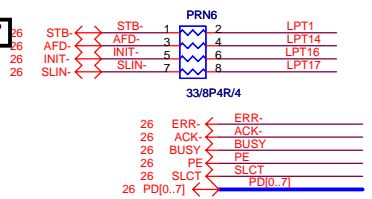


COM RI

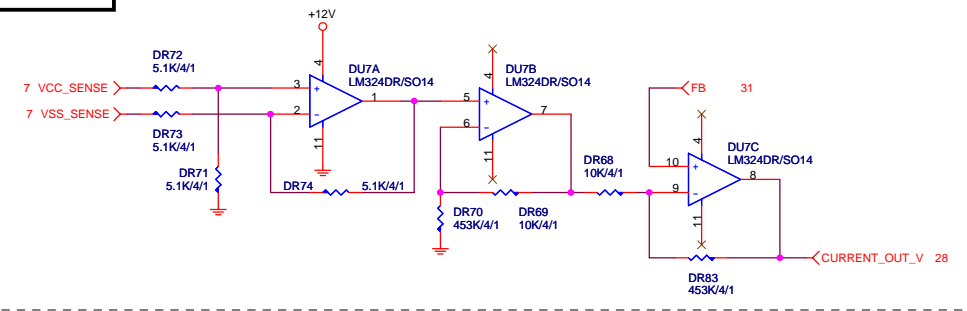
REV:0.1 驗證



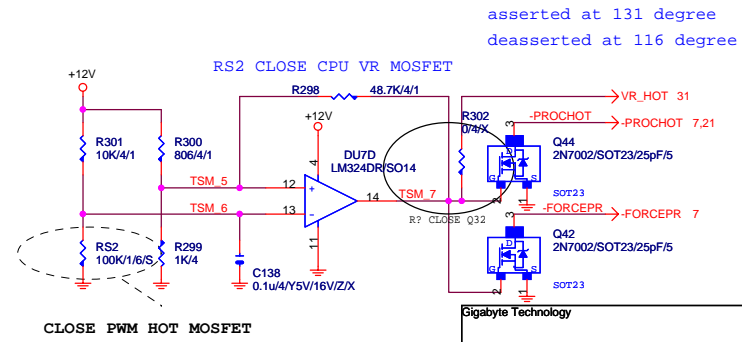
LPT PORT



DYNAMIC CURRENT OC

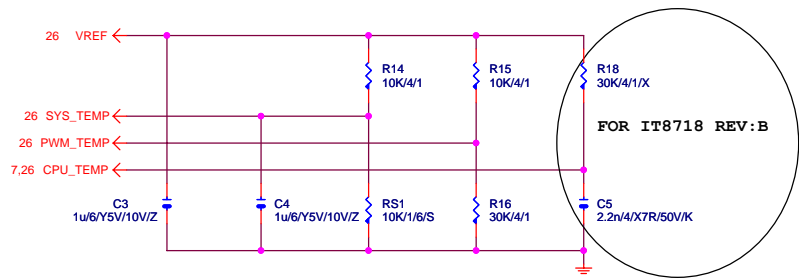


-PROHOT

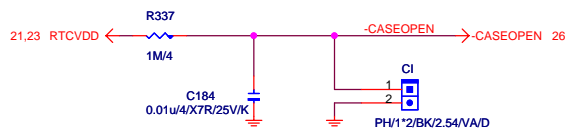


Gigabyte Technology			
Title			
COM & LPT PORT			
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TEMP H/W MONITOR

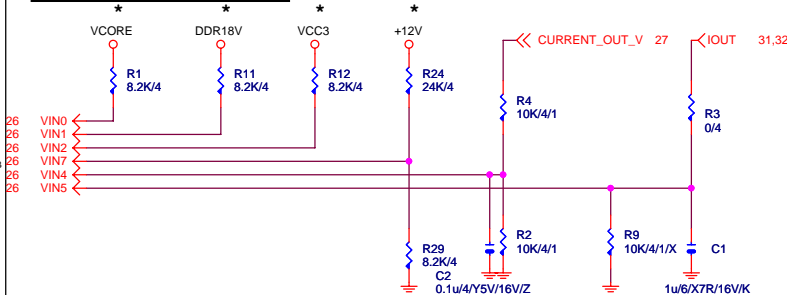


CASE OPEN

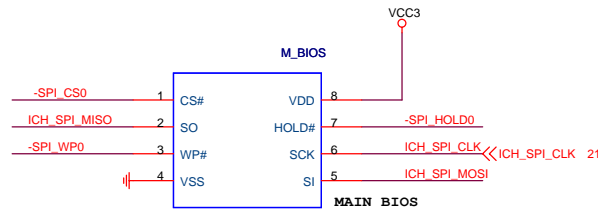
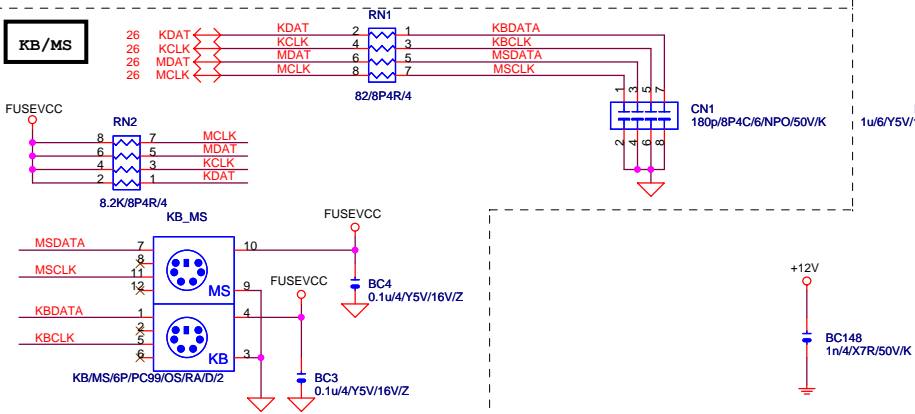


Case Open Circuits

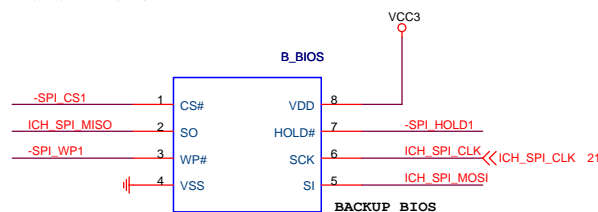
VOLTAGE-- H/W MONITOR



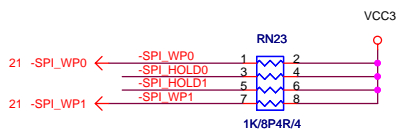
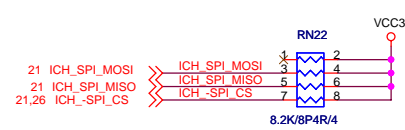
KB/MS



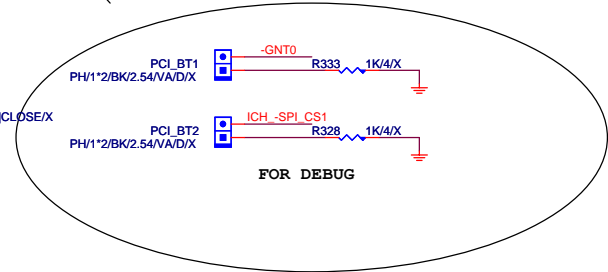
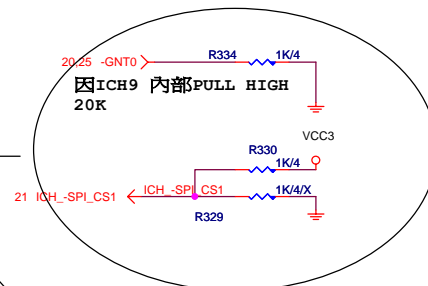
SST25VF080B-50-4C-S2AF/S(10HP4-112580-11R_10HP4-172580-01R_10HP4-152580-11R] MXIC (4K) / SST (4K)



SST25VF080B-50-4C-S2AF/S(10HP4-112580-11R_10HP4-172580-01R_10HP4-152580-11R] MXIC (4K) / SST (4K)

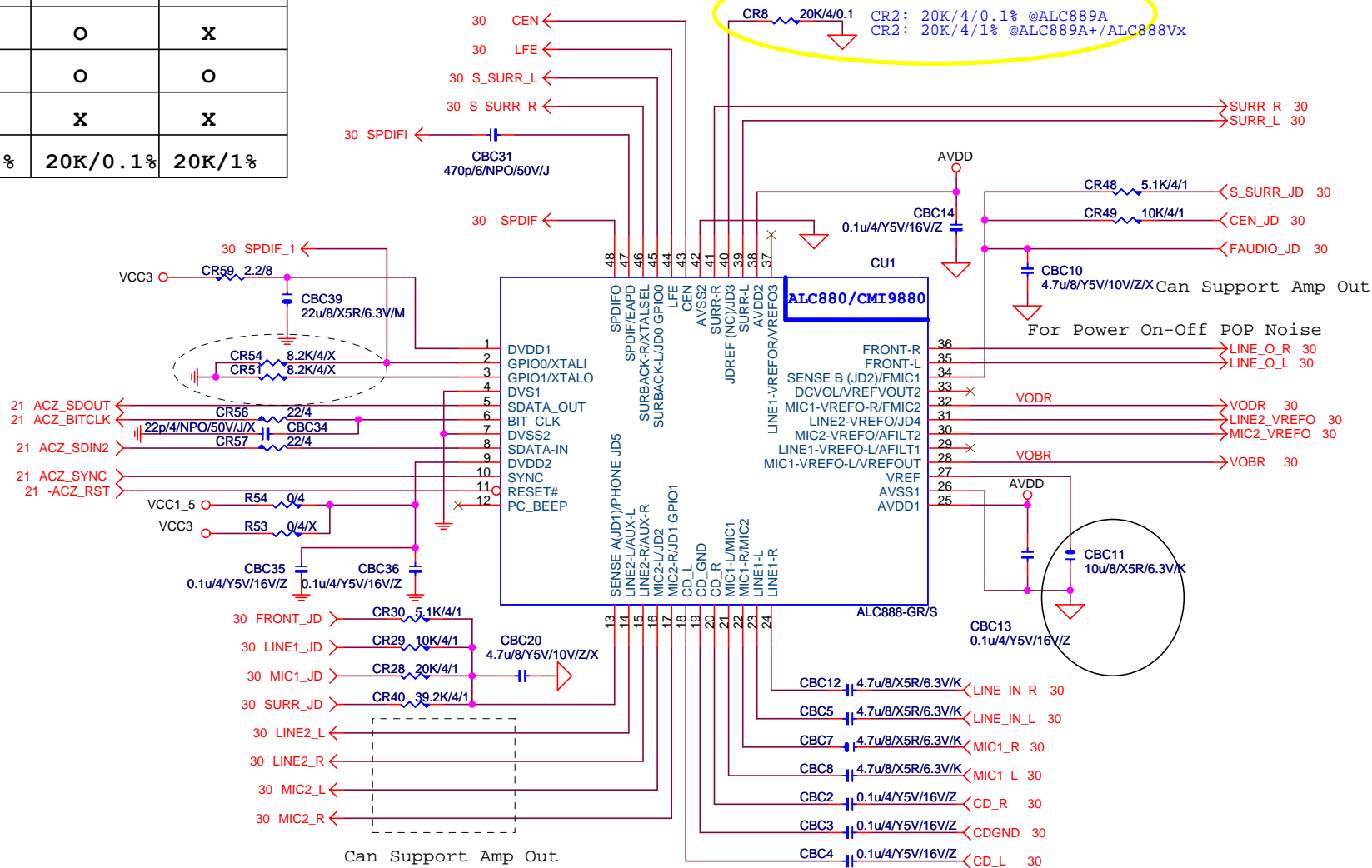


BOOT DEVICE	GNT0	CS1
SPI	0	1
PCI	1	0
FWH	1	1



Gigabyte Technology

	ALC889A+	ALC889A	ALC888Vx
CR107	X	O	X
CR108	X	O	X
CR109	X	O	O
CR110	O	X	X
CR2	20K/1%	20K/0.1%	20K/1%

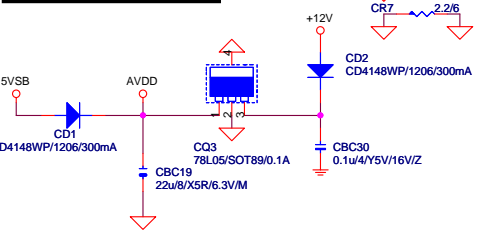


- 21 ACZ_SDOUT <
- 21 ACZ_SYNC >
- 21 -ACZ_RST >
- 21 ACZ_BITCLK <
- 21 ACZ_SDIN2 <

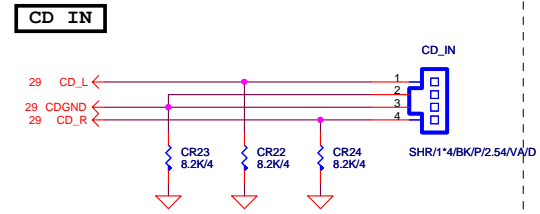
Gigabyte Technology

Title		
ALC889A		
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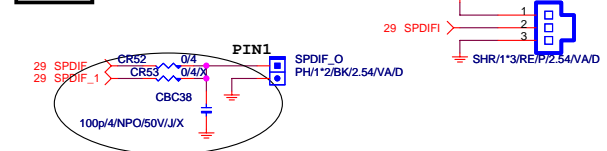
CODEC POWER/EMI PAD



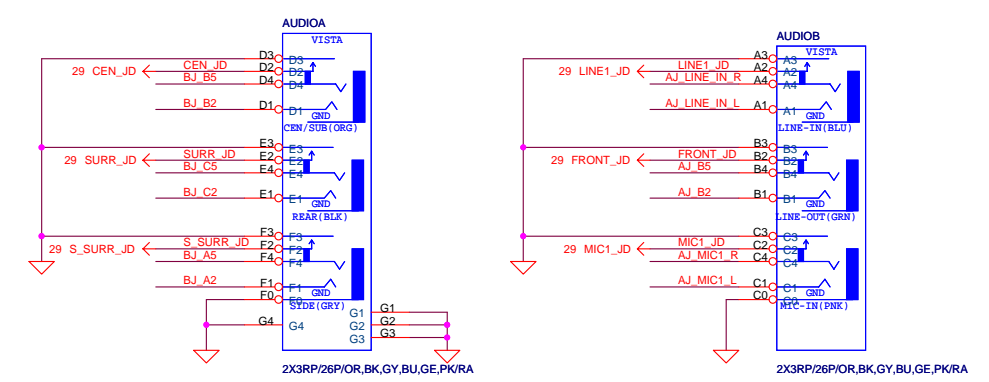
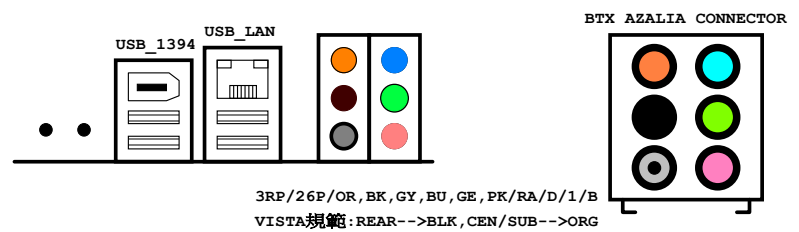
CO-LAYOUT



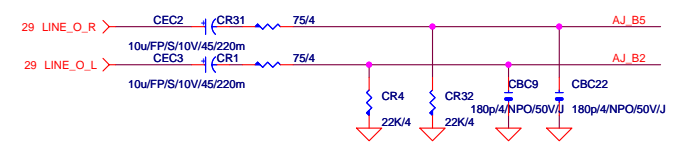
SPDIF



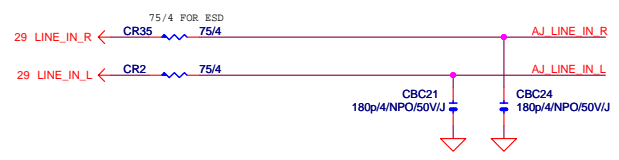
AZALIA JACK



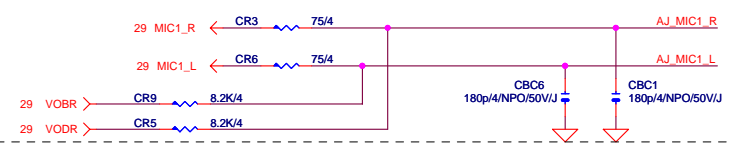
LINE-OUT



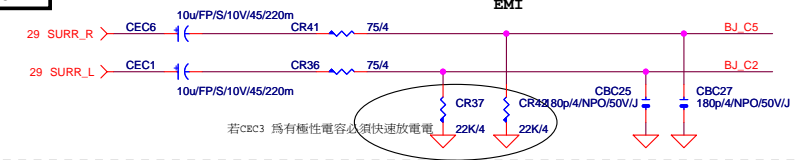
LINE-IN



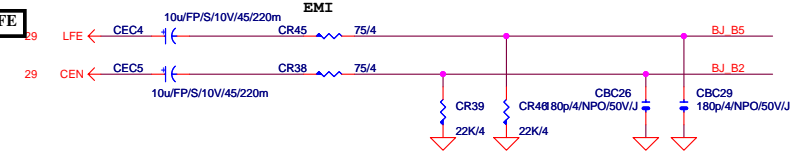
MIC-IN



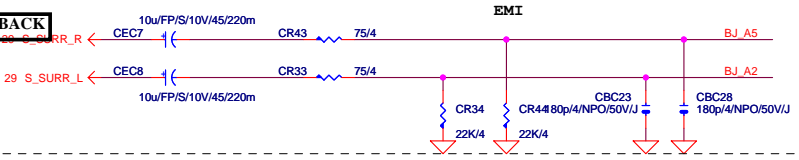
SURROUND



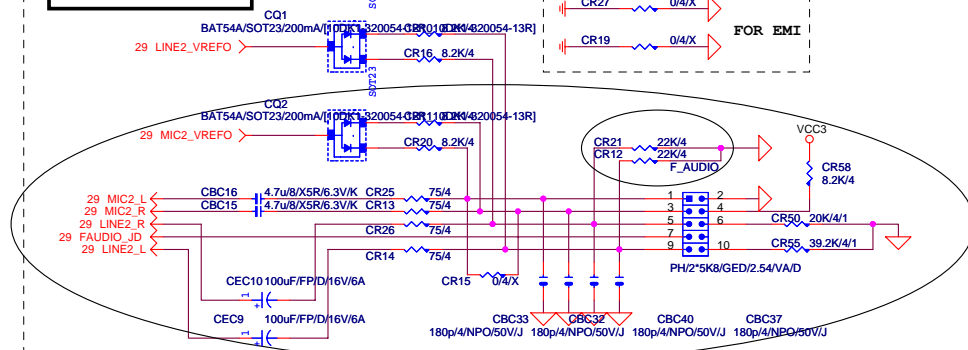
CEN/LFE



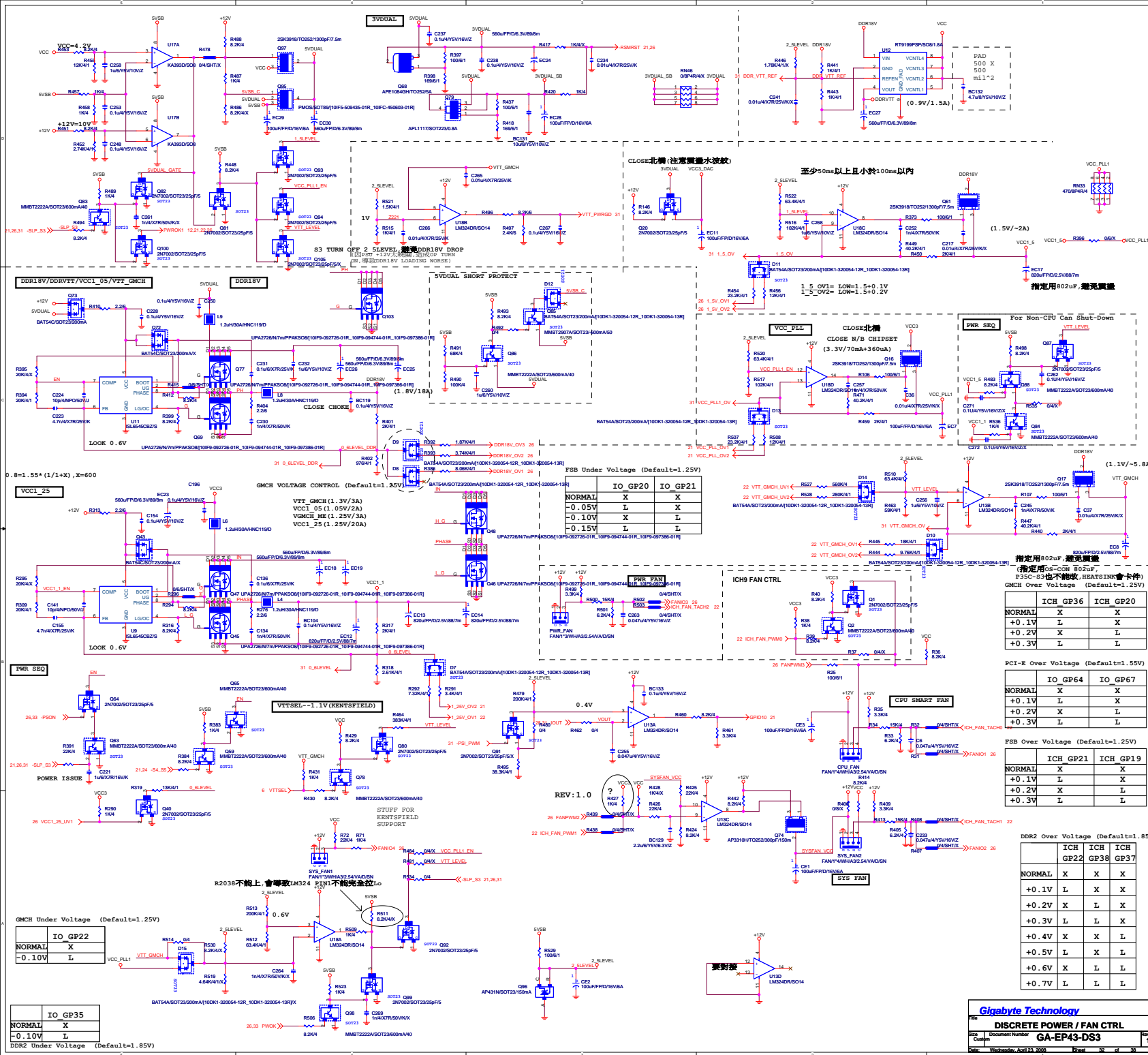
SURR BACK



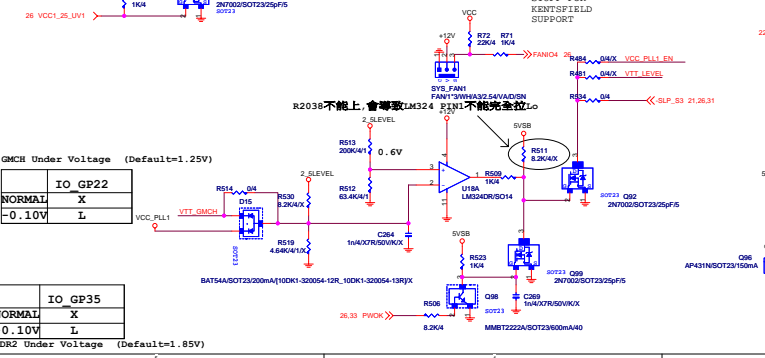
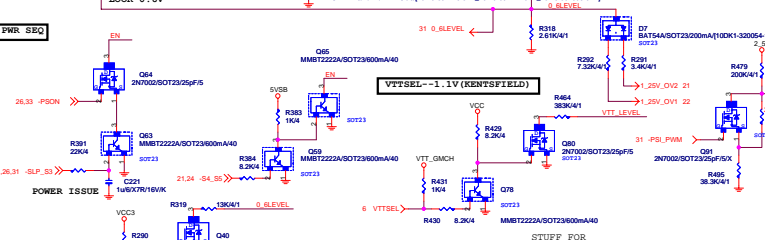
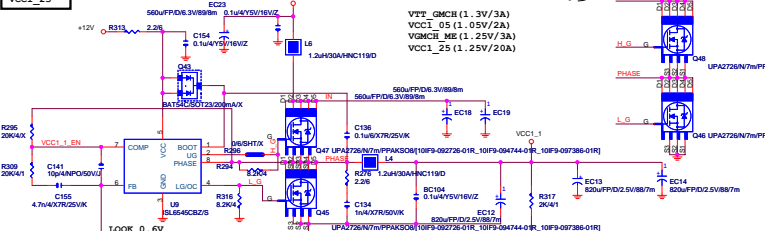
AZALIA FRONT PANEL



Gigabyte Technology		
Title	AUDIO JACK	
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0.8=1.55*(1/1*X), X=600



IO GP20

	IO GP20	IO GP21
NORMAL	X	X
-0.05V	L	X
-0.10V	X	L
-0.15V	L	L

IO GP36

	IO GP36	IO GP20
NORMAL	X	X
+0.1V	L	X
+0.2V	X	L
+0.3V	L	L

IO GP22

	IO GP22	IO GP36	IO GP37
NORMAL	X	X	X
+0.1V	L	X	X
+0.2V	X	L	X
+0.3V	L	L	X
+0.4V	X	X	L
+0.5V	L	X	L
+0.6V	X	L	L
+0.7V	L	L	L

IO GP21

	IO GP21
NORMAL	X
-0.05V	L
-0.10V	X
-0.15V	L

IO GP37

	IO GP37
NORMAL	X
+0.1V	L
+0.2V	X
+0.3V	L

IO GP35

	IO GP35
NORMAL	X
-0.10V	L

IO GP22

	IO GP22	IO GP36	IO GP20
NORMAL	X	X	X
+0.1V	L	X	X
+0.2V	X	L	X
+0.3V	L	L	X
+0.4V	X	X	L
+0.5V	L	X	L
+0.6V	X	L	L
+0.7V	L	L	L

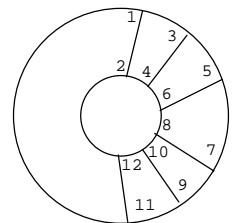
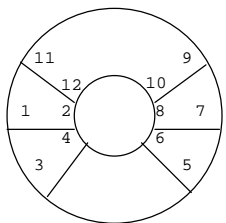
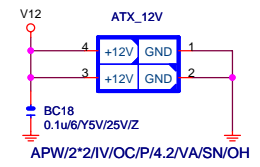
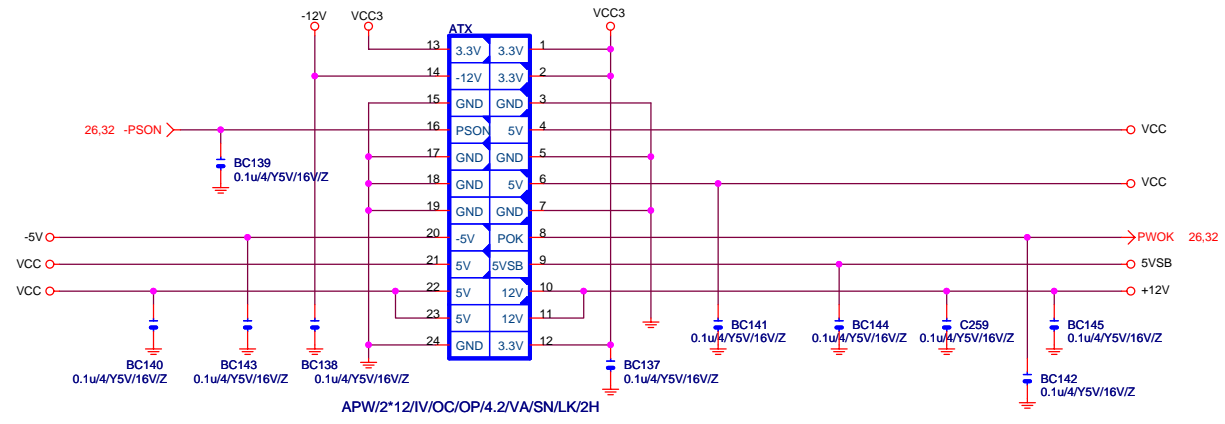
IO GP20

	IO GP20
NORMAL	X
+0.1V	L
+0.2V	X
+0.3V	L

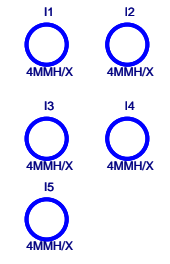
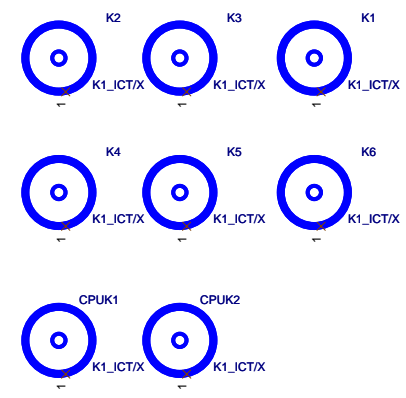
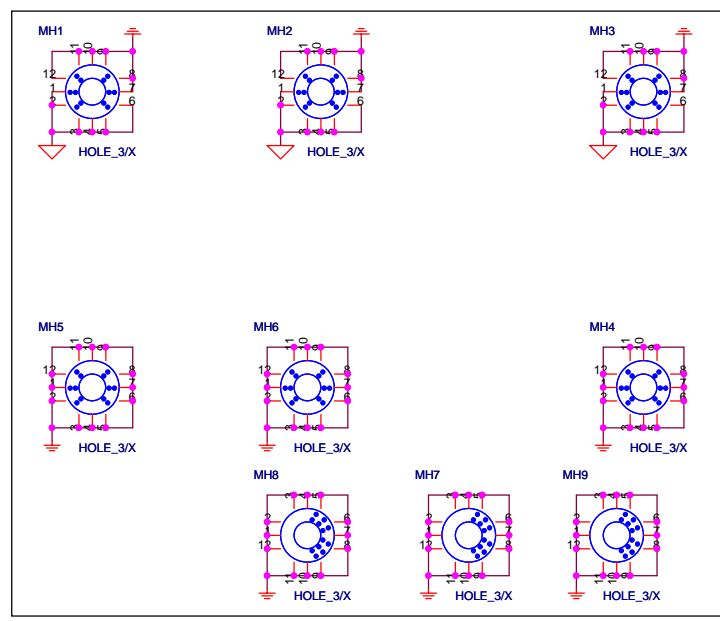
IO GP36

	IO GP36	IO GP20
NORMAL	X	X
+0.1V	L	X
+0.2V	X	L
+0.3V	L	L

ATX POWER CONNECTOR

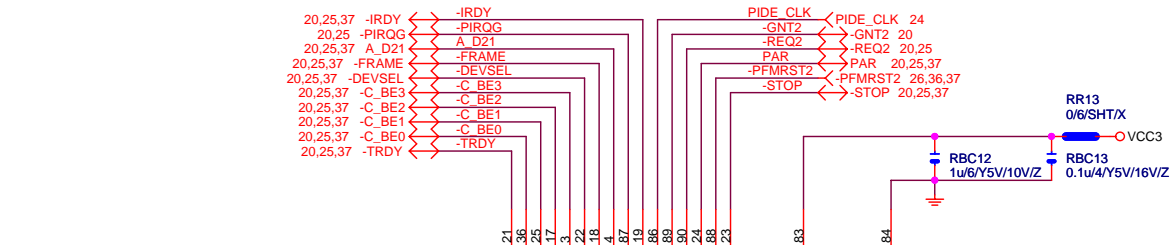


螺絲孔位置圖 (注意Footprint不同)

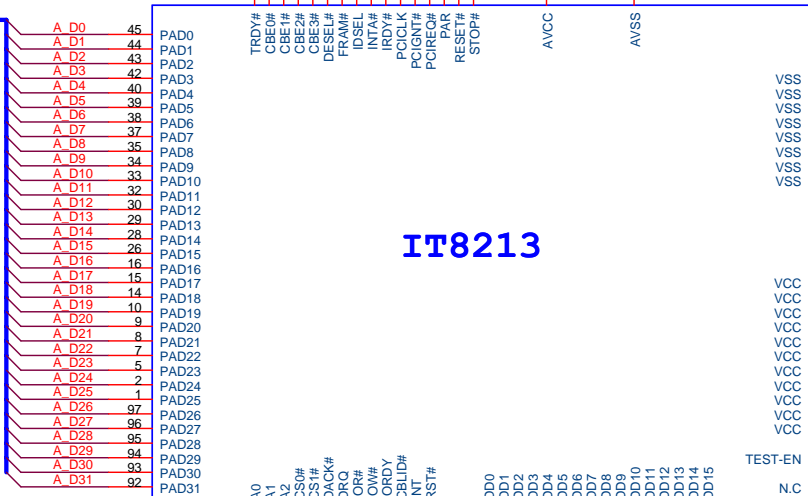


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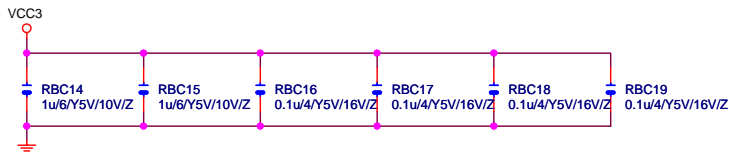
Title			ATX POWER CONNECTOR		
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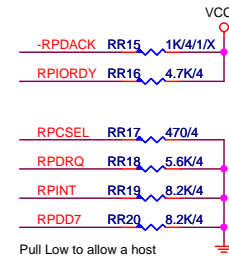
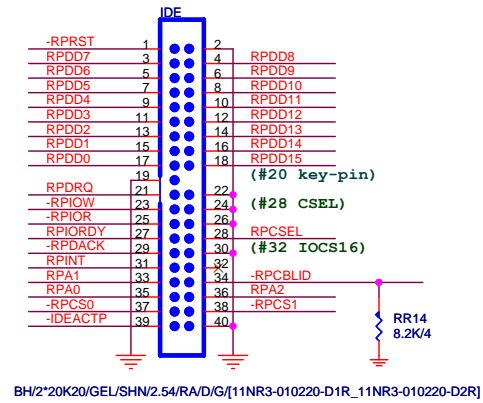
20,25,37 A_D[0..31] ↔ A_D[0..31]



IT8213

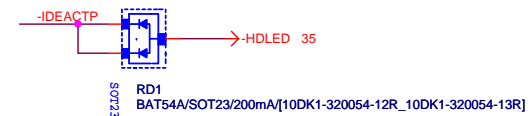


IDE Connector



Pull Low to allow a host to recognize the absence of a device at Power-Up

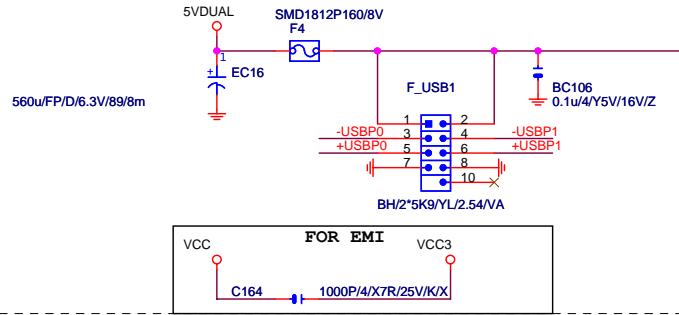
Active LED



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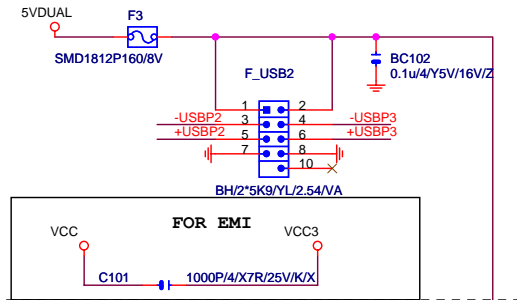
FRONT USB1

20 +USBP0 <-> +USBP0
 20 -USBP0 <-> -USBP0
 20 +USBP1 <-> +USBP1
 20 -USBP1 <-> -USBP1

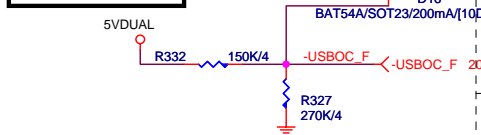
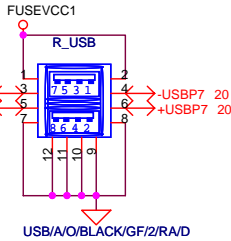


FRONT USB2

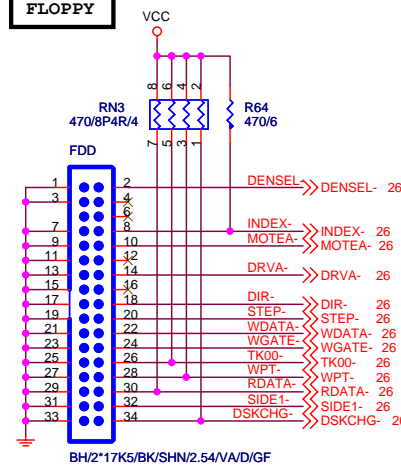
20 +USBP2 <-> +USBP2
 20 -USBP2 <-> -USBP2
 20 +USBP3 <-> +USBP3
 20 -USBP3 <-> -USBP3



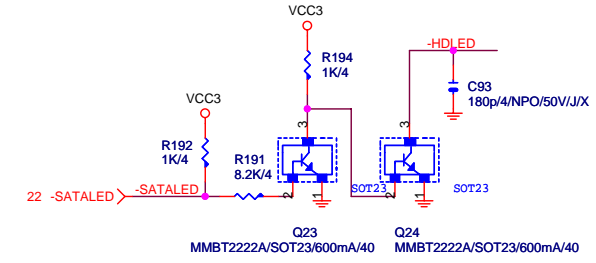
FRONT USB OC



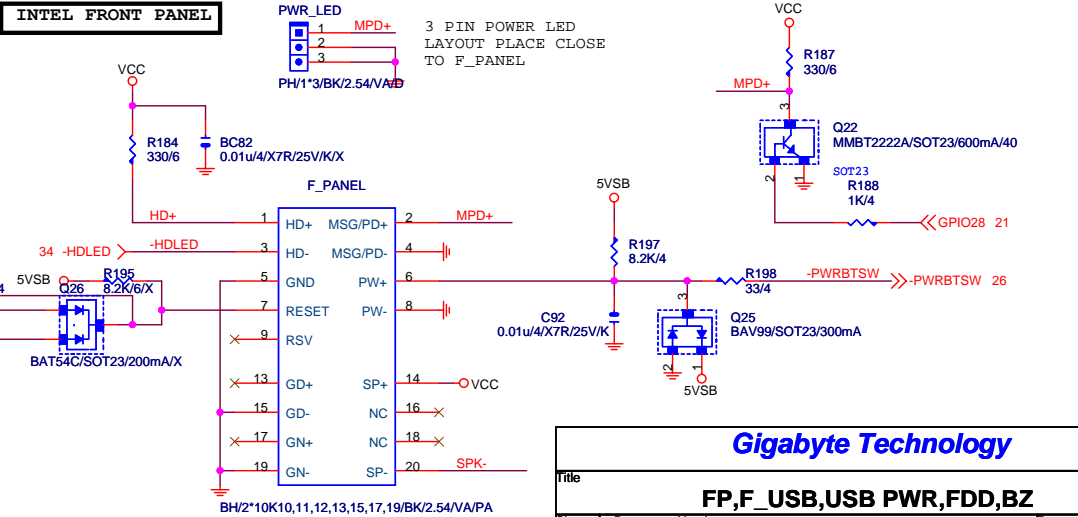
FLOPPY



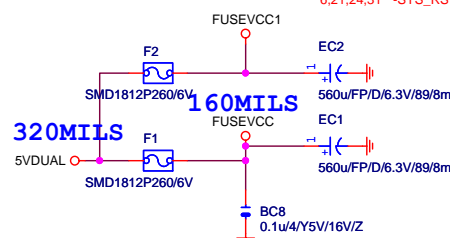
SATA LED



INTEL FRONT PANEL

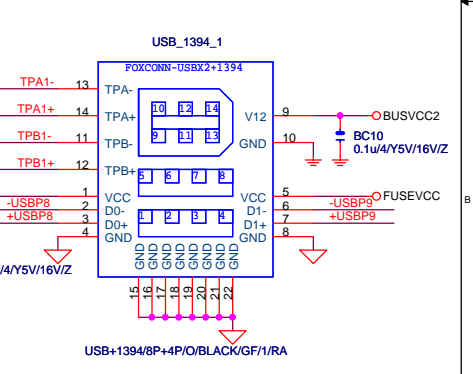
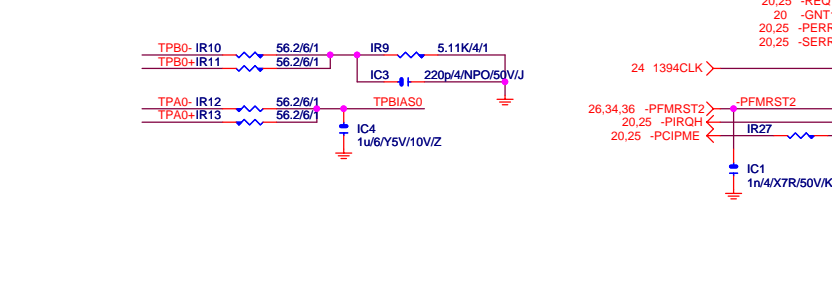
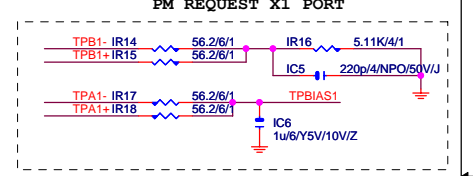
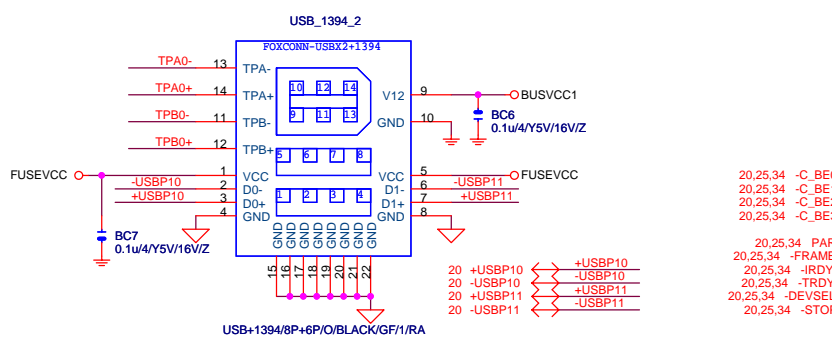
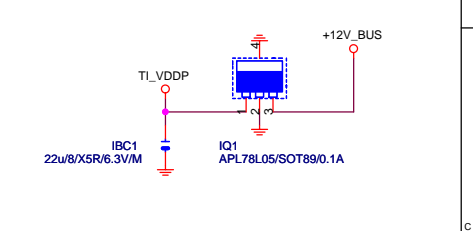
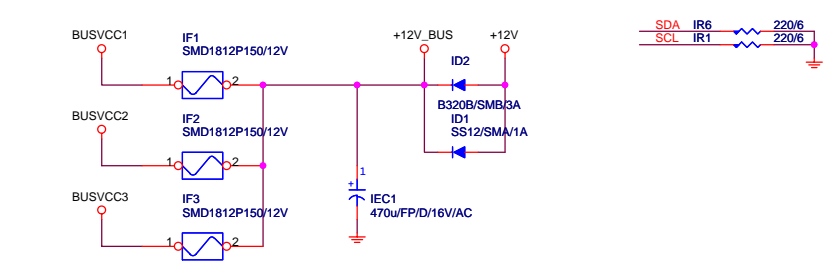
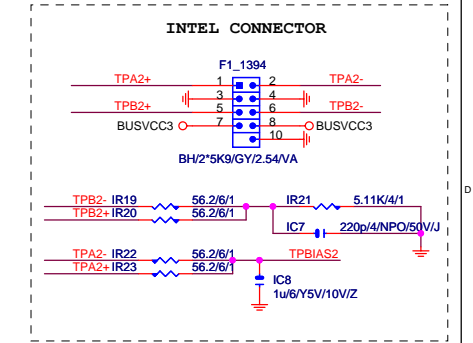
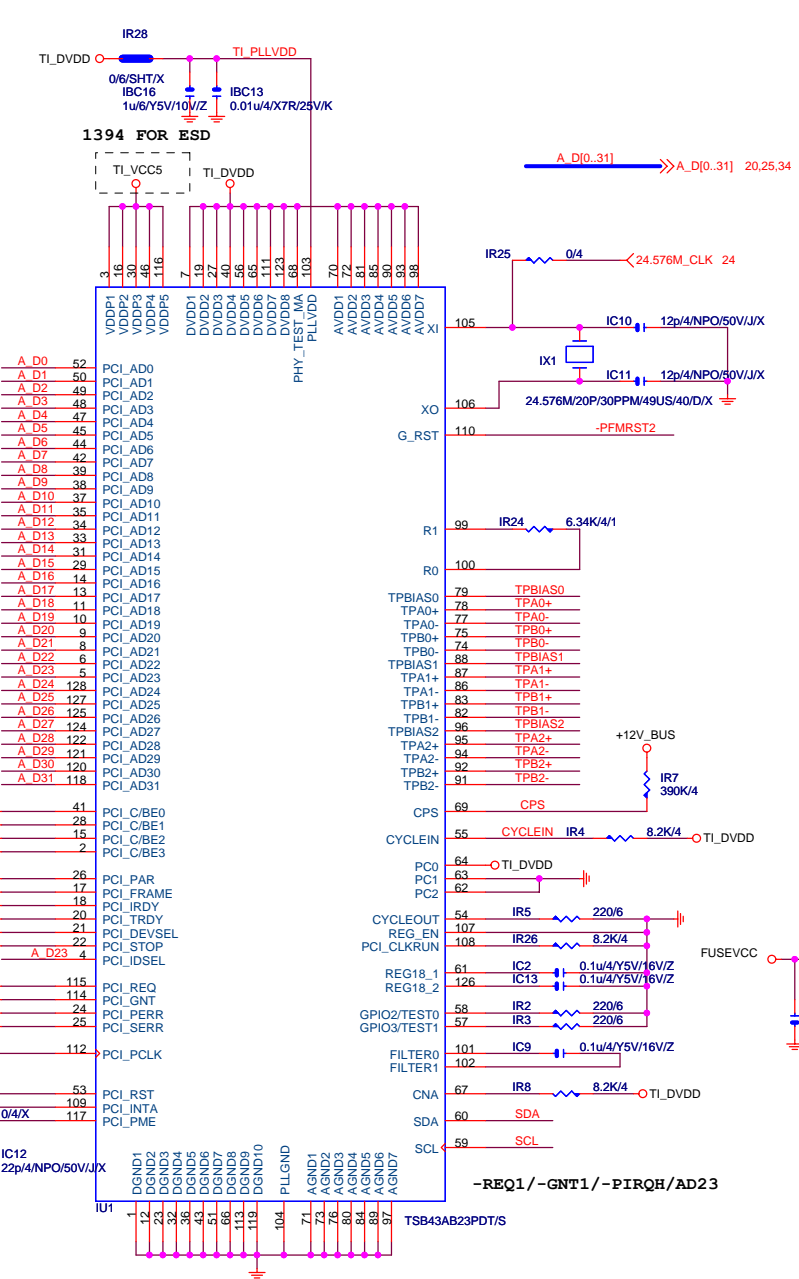
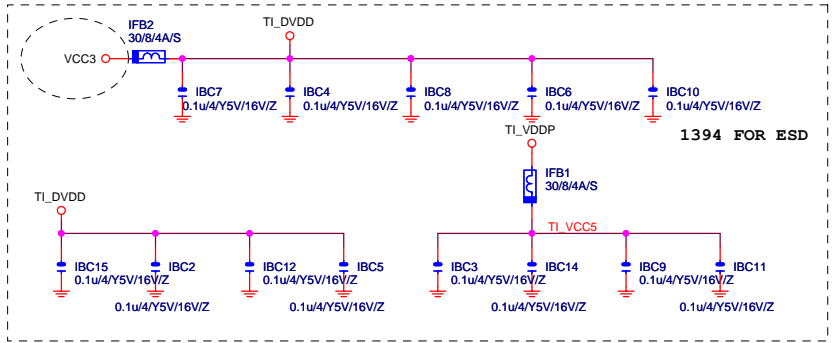


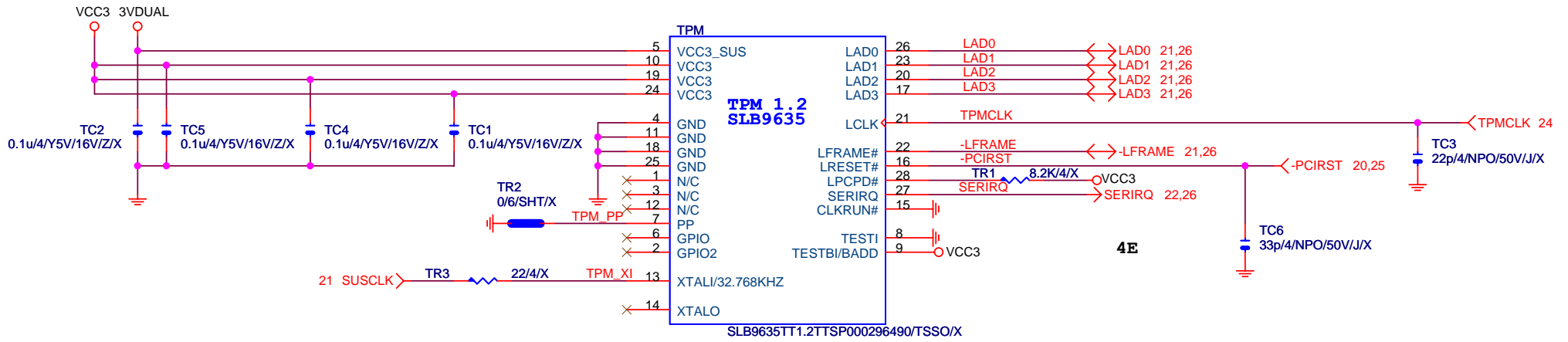
USB POWER



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