

# Model Name: GA-X99-GAMING 5P

Rev 1.0

SHEET TITLE

01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04-06	CPU LGA2011-DDR
07	CPU LGA2011-CTRL
08	CPU LGA2011-PCIE DMI
09-10	CPU LGA2011-PWR
11	PCH SATA
12	PCH GPIO AUDIO
13	PCH DMI USB PCIE
14-15	PCH PWR GND
16-17	DDR III CHANNEL A/B
18-19	DDR III CHANNEL C/D
20	PCI EXPRESS X16 SLOT 2
21	PCI EXPRESS X16 SLOT 1
22	PCI EXPRESSX16 X8 SWITCH
23	PCI EXPRESS X8 SLOT 2
24	PCI EXPRESS X8 SLOT 1
25	PCI EXPRESS X1
26	ITE 8620 SIO
27	DUAL BIOS
28-29	VCORE IR3580+3553
30	DDR CH A/B & CH C/D IR3553
31	VPP25 CH A/B & CH C/D IR3553
32	DDR CH A/B & VPP25 IR3570A
33	DDR CH C/D & VPP25 IR3570A
34	VCC1 05 WBG RT8120

SHEET TITLE

35-36	DISCRETE POWER
37	ATX power
38	HWM ,FAN CTRL , EC FAN CTRL
39	PCIE CLK BUFFER
40	CPU CLK BUFFER
41	IT8791 EC
42	IT8951
43	M2 SLOT
44	M2 WIFI SLOT
45-47	Creative Sound3Di & AMP
48	LAN Bigfoot E2201
49	LAN & AUDIO Connector
50-51	HUB & POWER (A)
52	R USB30/R USB Connector
53	PS2/USB & HS
54	F USB30 & F USB20
55	Front Panel
56	Sound Level
57	PCH GPIO LIST
58	POSITION

Gigabyte Technology

Title			
Cover Sheet			
Size	Document Number	GA-X99-GAMING 5P	
Custom		Rev	1.0
Date:	Friday, January 16, 2015	Sheet	1 of 62

# GA-X99-Gaming 5

## Component value change history

Data	Change Item	Reason
2014/05/09	9MX99GME5-00-01A	
2014/05/09 0.2	1. Add LAN LAR1 For isolate pull high 2. Remove WR28,WR68, Add WR67=240/4/1 3. LED_CON1,LED_CON2 改黑色料號 : 11NH5-040102-61R 4. NRF_PCH2改1.54K/4/1 , ECR8改100K/4/1 5. R114 --> 5.36K/4/1 , R115 --> 7.68K/4/1	
2014/07/02 0.21	1. MAAR1,MBAR1523/4/1 --> 1.02K/4/1 , MAAL1.MBAL1 150nH --> 0.3uH 2. MIC 噪音偵測不上 3. Message LED (PCIE SLOT * DDR SLOT led) 不上 4. SLOT / DDR 配色料號修改 5. 確認ME_POWER要上時,NC144也要上 6. WIFI天線:12AC2-000001-31R	
2014/05/09 0.3	1. USB_LAN 改成 紅色 connect	
2014/07/21 1.0A	1. REMOVE DAJF1 2. REMOVE IT_PH pin header 3. REMOVE BIOS_PH , M_BIOS SOCKET 4. Add NR305=1K/4/1,NR190=1K/4/1 , REMOVE NR202=8.2K/4	
2014/07/24 1.0B	1. R_USB 指定 : 11NR6-304016-62R 2. Remove CKFB8 , 改上 CKFB7=30/4/4A/S 3. MAR6 0/4 --> 2.2/4	
2014/08/04 1.0C	1. Remove ECR9,ECBR10=8.2K/4	
2014/08/25 1.0D	1. Remove M2 GPIO73 pull-up NR57=8.2K/4 2. NR97 1M/4 --> 10M/4 , BAT放電後, 開機延遲問題	
2014/11/13 2.0		
2.0A	1. MAU40,MBU40 改2PHASE "IR3570A-C-2+1[10TA1-603570-ANR]"	
	2. PCH_HS/[12SP2-PTX995-31R]	
	3. 發行ITE8792_B firmware	
2.0B	1. LGA2084 : 10SC1-J02084-01R --> 10SC1-J02083-11R	
	2. 11SM1-520288-32R 改上 11SM1-520288-61R , 11SM1-520288-52R 改上 11SM1-520288-71R	
2015-01-15 10A	1. X99-GAMING 5 Rev2.0 --> X99-GAMING 5P Rev1.0	

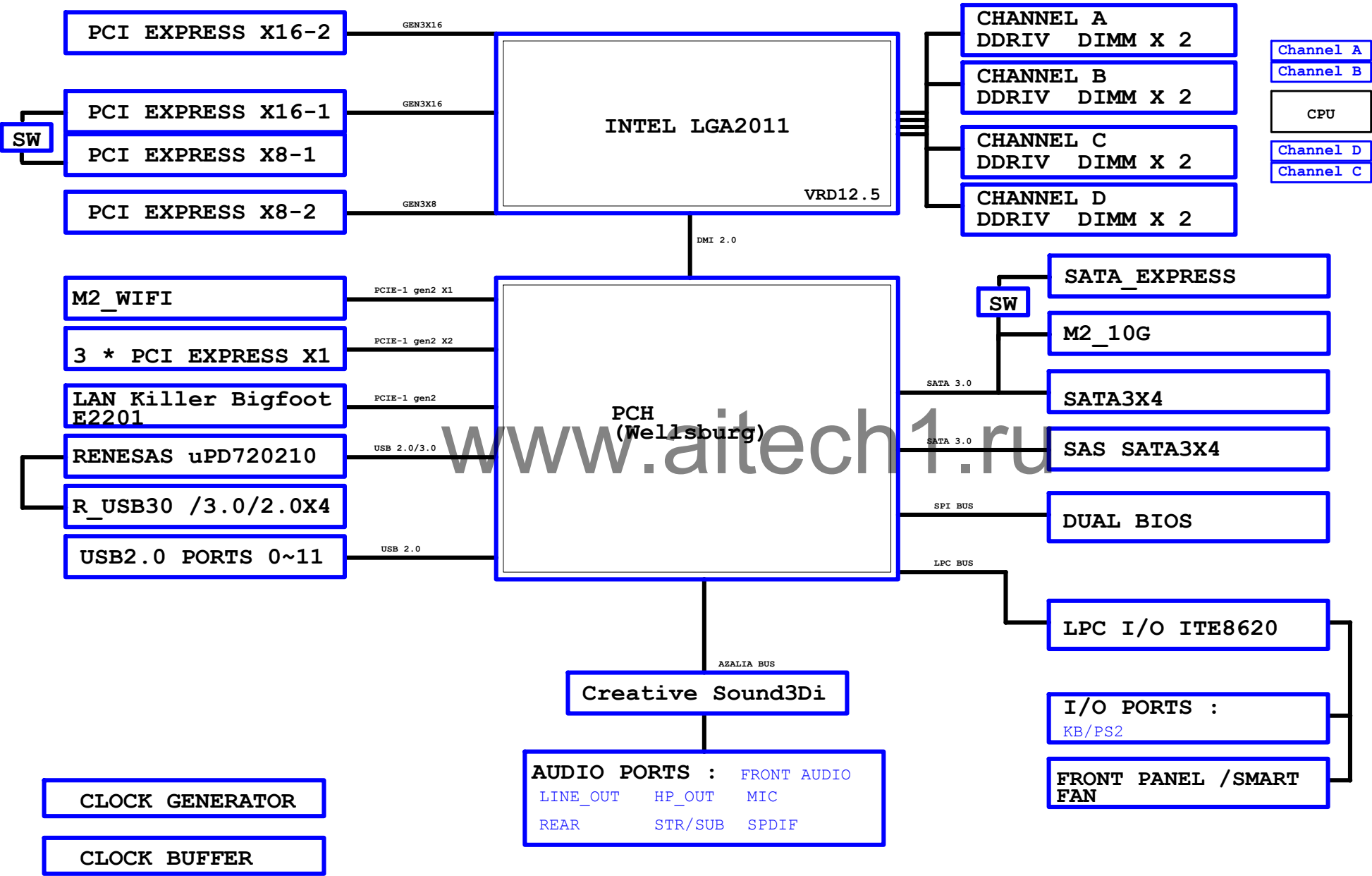
## Circuit or PCB layout change

DATE	Change Item	Reason
2014-05-09 0.1	X99-GAMING 5 Rev0.1	
2014-05-09 0.2	1. Add LAN LAR1 For isolate pull high 2. PCH pin.T35 改 3vdual 3. DDR SPD SWAP 4. Add "ECBR34","ECBR35","ECD2","OR80" 5. DAL1,DA_DL1-DF_DL1,MAAL1, MBAL change to"FB_10X8MM-SS" 6. SATA3_4_5 change to SATA_EXPRESS 7. ATX4P change to "ATX4P_USB30-B" 8. SL_MIC1,SL_MIC2改放背板,需離DIP 5mm 9. Add CQ33(靠近LED_CON1) , CQ34(靠近LED_CON2) 10. Add N_ME_PWROK control 11. Add Message power control 12. M2/SATA_EXPRESS SWITCH 置中 13. 原SATA3_6_7 , SATA3_8_9 改成 sSATA3_0_1 , sSATA3_2_3 (文字面請一併修改) 14. FBIO5_LED請移至後窗的位置 15. RS_SYS 移至 SYS_FAN2 右下方 16. Add VPP_25V_A & VPP_25V_B 防漏電 17. LGA2011 改名為LGA2011-R3 18. ECR81,82,,131,133 net change to "3VDUAL" 19. Add CR191~CR193,CBC100 for AUDIO +12V/-12V option 20. Update Footprint"ANTENNA_HOLD-4" 21. Update Footprint"IC8-ATRC-1" 22. AUDIO mute changt position	
2014-07-01 0.21	1. Add "N_ME_PWROK" control 2. M2 WIFI update FOOTPRINT 改 2 顆 3. DDR DQS 改走T型 4. DDR4_1~8文字面修改 , sSATA3 文字面修改 5. Add EC_GP44 for DUAL_BIOS+ ME_PWROK control 6. LGA2011-R3 --> LGA2011-3 7. IT8951 的PIN7 & PIN8留測試點方便debug 8. Modify IR3556 FAULT control circuit 9. Remove "BAT" to PCIE8_2 右邊 10. Add SATA/SATA EXPRESS/M2 change to 0 OHM SHORT PAD 11. Add EC power diable control in S3 MODE 12. CPU 外框移除	
2014-07-03 0.3	1. ALL 0 ohm --> short pad 2. REMOVE SL_MIC2 3. Add ECBD1 4. SATA EXPRESS文字移除	1. DDR4每個channel 各新增了8組DQS差動訊號/ECC訊號 2. ADD CR190 10M/4 3. NX2 update footprint "XTALS-RH-N" 4. CREATIVE ADD EXTERNAL +1.2VD LDO
2014-07-21 1.0	1. Add "ECR35" for VCC3 detect 2. BIOS_PH mask 3. IT_PH,IT1_PH,ITB_PH,ITB_PH2 --> R0603-RH 4. Add N_GPIO53 pull-down "NR305" 5. Add ECR150 For IT8792 ERP Function 6. NNR10 change to short pad	1. X99-GAMING 5 Rev2.0 --> X99-GAMING 5P Rev1.0

- DDR4 SLOT NAME CHANGE "DDR4\_1\_1A-DDR4\_8\_2D
- PCIE SLOT NAME CHANGE "PCIE\_1~PCIE\_7
- LED NAME CHANGE "PE2\_LED~PE4\_LED"
- ECR142,ECR143 short pad change to "R0402-2"
- NR292,NR293,WR60,WR61,WR63,WR65 change to "R0402-2"

Gigabyte Technology	
Title BOM & PCB MODIFY HISTORY	
Size Custom	Document Number GA-X99-GAMING 5P 1.0
Date: Friday, January 16, 2015	Sheet 2 of 62

BLOCK DIAGRAM







## CHANNEL A

LGA2084F		HASWELL_E_EDS	
M_DA0	BU7	DDR0_DQ_0	BY6 M_DQSA0
M_DA1	BT6	DDR0_DQ_1	BV6 M_-DQSA0
M_DA2	CA8	DDR0_DQ_2	
M_DA3	CB8	DDR0_DQ_3	BV12 M_DQSA1
M_DA4	BT8	DDR0_DQ_4	BW11 M_-DQSA1
M_DA5	BU9	DDR0_DQ_5	
M_DA6	CA7	DDR0_DQ_6	CH10 M_DQSA2
M_DA7	CB6	DDR0_DQ_7	CG11 M_-DQSA2
M_DA8	BT12	DDR0_DQ_8	
M_DA9	BU11	DDR0_DQ_9	CK14 M_DQSA3
M_DA10	BW13	DDR0_DQ_10	CJ13 M_-DQSA3
M_DA11	BY14	DDR0_DQ_11	
M_DA12	BT14	DDR0_DQ_12	CK30 M_DQSA4
M_DA13	BU15	DDR0_DQ_13	CM30 M_-DQSA4
M_DA14	CA11	DDR0_DQ_14	
M_DA15	BY12	DDR0_DQ_15	CD30 M_DQSA5
M_DA16	CE9	DDR0_DQ_16	CF30 M_-DQSA5
M_DA17	CF8	DDR0_DQ_17	
M_DA18	CK10	DDR0_DQ_18	CC37 M_DQSA6
M_DA19	CI11	DDR0_DQ_19	CE37 M_-DQSA6
M_DA20	CD10	DDR0_DQ_20	
M_DA21	CE11	DDR0_DQ_21	CJ37 M_DQSA7
M_DA22	CK8	DDR0_DQ_22	CI37 M_-DQSA7
M_DA23	CJ8	DDR0_DQ_23	
M_DA24	CE13	DDR0_DQ_24	CV10 M_DQSA8
M_DA25	CG15	DDR0_DQ_25	CT10 M_-DQSA8
M_DA26	CM14	DDR0_DQ_26	
M_DA27	CH14	DDR0_DQ_27	BV8 M_DQSA9
M_DA28	CC13	DDR0_DQ_28	BW9 M_-DQSA9
M_DA29	CD14	DDR0_DQ_29	
M_DA30	CM12	DDR0_DQ_30	BU13 M_DQSA10
M_DA31	CI13	DDR0_DQ_31	BY14 M_-DQSA10
M_DA32	CK28	DDR0_DQ_32	
M_DA33	CH28	DDR0_DQ_33	CG9 M_DQSA11
M_DA34	CK32	DDR0_DQ_34	CH8 M_-DQSA11
M_DA35	CH32	DDR0_DQ_35	
M_DA36	CI27	DDR0_DQ_36	CG13 M_DQSA12
M_DA37	CJ27	DDR0_DQ_37	CE14 M_-DQSA12
M_DA38	CI31	DDR0_DQ_38	
M_DA39	CJ31	DDR0_DQ_39	CI29 M_DQSA13
M_DA40	CD28	DDR0_DQ_40	CJ29 M_-DQSA13
M_DA41	CB28	DDR0_DQ_41	
M_DA42	CD32	DDR0_DQ_42	CE29 M_DQSA14
M_DA43	CB27	DDR0_DQ_43	CC29 M_-DQSA14
M_DA44	CE27	DDR0_DQ_44	
M_DA45	CC27	DDR0_DQ_45	CE38 M_DQSA15
M_DA46	CE31	DDR0_DQ_46	CD36 M_-DQSA15
M_DA47	CC31	DDR0_DQ_47	
M_DA48	CE35	DDR0_DQ_48	CM36 M_DQSA16
M_DA49	CC35	DDR0_DQ_49	CK36 M_-DQSA16
M_DA50	CE38	DDR0_DQ_50	
M_DA51	CC39	DDR0_DQ_51	CU9 M_DQSA17
M_DA52	CF34	DDR0_DQ_52	CW9 M_-DQSA17
M_DA53	CD34	DDR0_DQ_53	
M_DA54	CF38	DDR0_DQ_54	
M_DA55	CD38	DDR0_DQ_55	
M_DA56	CI35	DDR0_DQ_56	
M_DA57	CJ35	DDR0_DQ_57	
M_DA58	CI39	DDR0_DQ_58	
M_DA59	CJ39	DDR0_DQ_59	
M_DA60	CM34	DDR0_DQ_60	
M_DA61	CK34	DDR0_DQ_61	
M_DA62	CM38	DDR0_DQ_62	
M_DA63	CK38	DDR0_DQ_63	
M_AECC0	CT8	DDR0_ECC_0	
M_AECC1	CY8	DDR0_ECC_1	
M_AECC2	CW11	DDR0_ECC_2	
M_AECC3	CU11	DDR0_ECC_3	
M_AECC4	CP8	DDR0_ECC_4	
M_AECC5	CN9	DDR0_ECC_5	
M_AECC6	CB10	DDR0_ECC_6	
M_AECC7	CR11	DDR0_ECC_7	

6 OF 19

## CHANNEL B

LGA2084G		HASWELL_E_EDS	
M_DB0	BV4	DDR1_DQ_0	BY4 M_DQSB0
M_DB1	BU1	DDR1_DQ_1	BW3 M_-DQSB0
M_DB2	CA3	DDR1_DQ_2	
M_DB3	CB4	DDR1_DQ_3	CJ5 M_DQSB1
M_DB4	BT4	DDR1_DQ_4	CH6 M_-DQSB1
M_DB5	BT2	DDR1_DQ_5	
M_DB6	CA1	DDR1_DQ_6	CT4 M_DQSB2
M_DB7	BY2	DDR1_DQ_7	CV4 M_-DQSB2
M_DB8	CE3	DDR1_DQ_8	
M_DB9	CF4	DDR1_DQ_9	DB10 M_DQSB3
M_DB10	CL5	DDR1_DQ_10	DC9 M_-DQSB3
M_DB11	CM4	DDR1_DQ_11	
M_DB12	CE5	DDR1_DQ_12	CT30 M_DQSB4
M_DB13	CF6	DDR1_DQ_13	CV30 M_-DQSB4
M_DB14	CK6	DDR1_DQ_14	
M_DB15	CL3	DDR1_DQ_15	DD32 M_DQSB5
M_DB16	CR3	DDR1_DQ_16	DB32 M_-DQSB5
M_DB17	CV2	DDR1_DQ_17	
M_DB18	CT6	DDR1_DQ_18	CR37 M_DQSB6
M_DB19	CB6	DDR1_DQ_19	DC9 M_-DQSB6
M_DB20	CR1	DDR1_DQ_20	
M_DB21	CP2	DDR1_DQ_21	DB38 M_DQSB7
M_DB22	CU5	DDR1_DQ_22	DA37 M_-DQSB7
M_DB23	CR5	DDR1_DQ_23	
M_DB24	DA7	DDR1_DQ_24	DB14 M_DQSB8
M_DB25	DB8	DDR1_DQ_25	DA13 M_-DQSB8
M_DB26	DE11	DDR1_DQ_26	
M_DB27	DC11	DDR1_DQ_27	BV2 M_DQSB9
M_DB28	DA5	DDR1_DQ_28	BW1 M_-DQSB9
M_DB29	CE6	DDR1_DQ_29	
M_DB30	DE9	DDR1_DQ_30	CH4 M_DQSB10
M_DB31	DE10	DDR1_DQ_31	CG3 M_-DQSB10
M_DB32	CT28	DDR1_DQ_32	
M_DB33	CP28	DDR1_DQ_33	CW3 M_DQSB11
M_DB34	CT32	DDR1_DQ_34	CU3 M_-DQSB11
M_DB35	CP32	DDR1_DQ_35	
M_DB36	CU27	DDR1_DQ_36	DC7 M_DQSB12
M_DB37	CR27	DDR1_DQ_37	DB8 M_-DQSB12
M_DB38	CU31	DDR1_DQ_38	
M_DB39	CR31	DDR1_DQ_39	CU29 M_DQSB13
M_DB40	DA29	DDR1_DQ_40	CR29 M_-DQSB13
M_DB41	DB30	DDR1_DQ_41	
M_DB42	DC33	DDR1_DQ_42	DA31 M_DQSB14
M_DB43	DE34	DDR1_DQ_43	CY32 M_-DQSB14
M_DB44	DB28	DDR1_DQ_44	
M_DB45	CY28	DDR1_DQ_45	CV36 M_DQSB15
M_DB46	DA33	DDR1_DQ_46	CT36 M_-DQSB15
M_DB47	DE33	DDR1_DQ_47	
M_DB48	CU35	DDR1_DQ_48	DB36 M_DQSB16
M_DB49	CR35	DDR1_DQ_49	DE37 M_-DQSB16
M_DB50	CU39	DDR1_DQ_50	
M_DB51	CR39	DDR1_DQ_51	CW13 M_DQSB17
M_DB52	CV34	DDR1_DQ_52	CY14 M_-DQSB17
M_DB53	CT34	DDR1_DQ_53	
M_DB54	CV38	DDR1_DQ_54	
M_DB55	CT39	DDR1_DQ_55	
M_DB56	DC37	DDR1_DQ_56	
M_DB57	DE36	DDR1_DQ_57	
M_DB58	DC39	DDR1_DQ_58	
M_DB59	DA39	DDR1_DQ_59	
M_DB60	DC35	DDR1_DQ_60	
M_DB61	DE36	DDR1_DQ_61	
M_DB62	DE38	DDR1_DQ_62	
M_DB63	DE39	DDR1_DQ_63	
M_BECC0	CU13	DDR1_ECC_0	
M_BECC1	CV14	DDR1_ECC_1	
M_BECC2	DD14	DDR1_ECC_2	
M_BECC3	DE14	DDR1_ECC_3	
M_BECC4	CR13	DDR1_ECC_4	
M_BECC5	CT14	DDR1_ECC_5	
M_BECC6	DC13	DDR1_ECC_6	
M_BECC7	DE13	DDR1_ECC_7	

7 OF 19

[16] M\_DA[0..63] ↔ M\_DA[0..63]

[16] M\_DQSA[0..17] ↔ M\_DQSA[0..17]

[16] M\_-DQSA[0..17] ↔ M\_-DQSA[0..17]

[16] M\_AECC[0..7] ↔ M\_AECC[0..7]

[17] M\_DB[0..63] ↔ M\_DB[0..63]

[17] M\_DQSB[0..17] ↔ M\_DQSB[0..17]

[17] M\_-DQSB[0..17] ↔ M\_-DQSB[0..17]

[17] M\_BECC[0..7] ↔ M\_BECC[0..7]

Gigabyte Technology

Title		
CPU LGA2011-A		
Size	Document Number	Rev
Custom	GA-X99-GAMING 5P	1.0
Date:	Friday, January 16, 2015	Sheet 5 of 62

## CHANNEL C

LGA2084H HASMELL_E_EDS			
M DC0	AD38	DDR2_DQ_0	DDR2_QQS_DP_0
M DC1	AA37	DDR2_DQ_1	DDR2_QQS_DN_0
M DC2	R37	DDR2_DQ_2	
M DC3	Y38	DDR2_DQ_3	DDR2_QQS_DP_1
M DC4	AE37	DDR2_DQ_4	DDR2_QQS_DN_1
M DC5	AC38	DDR2_DQ_5	
M DC6	T38	DDR2_DQ_6	DDR2_QQS_DP_2
M DC7	U37	DDR2_DQ_7	DDR2_QQS_DN_2
M DC8	V34	DDR2_DQ_8	
M DC9	U33	DDR2_DQ_9	DDR2_QQS_DP_3
M DC10	V30	DDR2_DQ_10	DDR2_QQS_DN_3
M DC11	T30	DDR2_DQ_11	
M DC12	U35	DDR2_DQ_12	DDR2_QQS_DP_4
M DC13	R35	DDR2_DQ_13	DDR2_QQS_DN_4
M DC14	T32	DDR2_DQ_14	
M DC15	W31	DDR2_DQ_15	DDR2_QQS_DP_5
M DC16	AD34	DDR2_DQ_16	DDR2_QQS_DN_5
M DC17	AB34	DDR2_DQ_17	
M DC18	AD30	DDR2_DQ_18	DDR2_QQS_DP_6
M DC19	AB30	DDR2_DQ_19	DDR2_QQS_DN_6
M DC20	AC35	DDR2_DQ_20	
M DC21	AA35	DDR2_DQ_21	DDR2_QQS_DP_7
M DC22	AE31	DDR2_DQ_22	DDR2_QQS_DN_7
M DC23	AC31	DDR2_DQ_23	
M DC24	U27	DDR2_DQ_24	DDR2_QQS_DP_8
M DC25	R27	DDR2_DQ_25	DDR2_QQS_DN_8
M DC26	U23	DDR2_DQ_26	
M DC27	R23	DDR2_DQ_27	DDR2_QQS_DP_9
M DC28	V28	DDR2_DQ_28	DDR2_QQS_DN_9
M DC29	T28	DDR2_DQ_29	
M DC30	V24	DDR2_DQ_30	DDR2_QQS_DP_10
M DC31	T24	DDR2_DQ_31	DDR2_QQS_DN_10
M DC32	N8	DDR2_DQ_32	
M DC33	K8	DDR2_DQ_33	DDR2_QQS_DP_11
M DC34	R7	DDR2_DQ_34	DDR2_QQS_DN_11
M DC35	P6	DDR2_DQ_35	
M DC36	J8	DDR2_DQ_36	DDR2_QQS_DP_12
M DC37	L9	DDR2_DQ_37	DDR2_QQS_DN_12
M DC38	K6	DDR2_DQ_38	
M DC39	M6	DDR2_DQ_39	DDR2_QQS_DP_13
M DC40	U8	DDR2_DQ_40	DDR2_QQS_DN_13
M DC41	W11	DDR2_DQ_41	
M DC42	AA11	DDR2_DQ_42	DDR2_QQS_DP_14
M DC43	AB8	DDR2_DQ_43	DDR2_QQS_DN_14
M DC44	T10	DDR2_DQ_44	
M DC45	U11	DDR2_DQ_45	DDR2_QQS_DP_15
M DC46	AA9	DDR2_DQ_46	DDR2_QQS_DN_15
M DC47	Y8	DDR2_DQ_47	
M DC48	AE11	DDR2_DQ_48	DDR2_QQS_DP_16
M DC49	AE12	DDR2_DQ_49	DDR2_QQS_DN_16
M DC50	AK12	DDR2_DQ_50	
M DC51	AL13	DDR2_DQ_51	DDR2_QQS_DP_17
M DC52	AG15	DDR2_DQ_52	DDR2_QQS_DN_17
M DC53	AE14	DDR2_DQ_53	
M DC54	AK14	DDR2_DQ_54	
M DC55	AL15	DDR2_DQ_55	
M DC56	AG9	DDR2_DQ_56	
M DC57	AG7	DDR2_DQ_57	
M DC58	AK10	DDR2_DQ_58	
M DC59	AL9	DDR2_DQ_59	
M DC60	AE7	DDR2_DQ_60	
M DC61	AE9	DDR2_DQ_61	
M DC62	AK8	DDR2_DQ_62	
M DC63	AL7	DDR2_DQ_63	
M CECC0	AC27	DDR2_ECC_0	
M CECC1	AA27	DDR2_ECC_1	
M CECC2	AC23	DDR2_ECC_2	
M CECC3	AA23	DDR2_ECC_3	
M CECC4	AD28	DDR2_ECC_4	
M CECC5	AB28	DDR2_ECC_5	
M CECC6	AD24	DDR2_ECC_6	
M CECC7	AB24	DDR2_ECC_7	

8 OF 19

[18] M\_DC[0..63] ↔ M\_DC[0..63]

[18] M\_DQSC[0..17] ↔ M\_DQSC[0..17]

[18] M\_-DQSC[0..17] ↔ M\_-DQSC[0..17]

[18] M\_CECC[0..7] ↔ M\_CECC[0..7]

## CHANNEL D

LGA2084I HASMELL_E_EDS			
M DD0	D38	DDR3_DQ_0	DDR3_QQS_DP_0
M DD1	B38	DDR3_DQ_1	DDR3_QQS_DN_0
M DD2	L37	DDR3_DQ_2	
M DD3	M38	DDR3_DQ_3	DDR3_QQS_DP_1
M DD4	C39	DDR3_DQ_4	DDR3_QQS_DN_1
M DD5	A39	DDR3_DQ_5	
M DD6	G37	DDR3_DQ_6	DDR3_QQS_DP_2
M DD7	K38	DDR3_DQ_7	DDR3_QQS_DN_2
M DD8	A35	DDR3_DQ_8	
M DD9	B34	DDR3_DQ_9	DDR3_QQS_DP_3
M DD10	G31	DDR3_DQ_10	DDR3_QQS_DN_3
M DD11	E31	DDR3_DQ_11	
M DD12	F34	DDR3_DQ_12	DDR3_QQS_DP_4
M DD13	E35	DDR3_DQ_13	DDR3_QQS_DN_4
M DD14	D32	DDR3_DQ_14	
M DD15	E33	DDR3_DQ_15	DDR3_QQS_DP_5
M DD16	K34	DDR3_DQ_16	DDR3_QQS_DN_5
M DD17	M34	DDR3_DQ_17	
M DD18	K30	DDR3_DQ_18	DDR3_QQS_DP_6
M DD19	M30	DDR3_DQ_19	DDR3_QQS_DN_6
M DD20	J35	DDR3_DQ_20	
M DD21	L35	DDR3_DQ_21	DDR3_QQS_DP_7
M DD22	L31	DDR3_DQ_22	DDR3_QQS_DN_7
M DD23	N31	DDR3_DQ_23	
M DD24	F28	DDR3_DQ_24	DDR3_QQS_DP_8
M DD25	E27	DDR3_DQ_25	DDR3_QQS_DN_8
M DD26	F24	DDR3_DQ_26	
M DD27	E23	DDR3_DQ_27	DDR3_QQS_DP_9
M DD28	G29	DDR3_DQ_28	DDR3_QQS_DN_9
M DD29	F29	DDR3_DQ_29	
M DD30	C25	DDR3_DQ_30	DDR3_QQS_DP_10
M DD31	B24	DDR3_DQ_31	DDR3_QQS_DN_10
M DD32	K4	DDR3_DQ_32	
M DD33	H4	DDR3_DQ_33	DDR3_QQS_DP_11
M DD34	J1	DDR3_DQ_34	DDR3_QQS_DN_11
M DD35	L1	DDR3_DQ_35	
M DD36	P4	DDR3_DQ_36	DDR3_QQS_DP_12
M DD37	N3	DDR3_DQ_37	DDR3_QQS_DN_12
M DD38	K2	DDR3_DQ_38	
M DD39	R3	DDR3_DQ_39	DDR3_QQS_DP_13
M DD40	E9	DDR3_DQ_40	DDR3_QQS_DN_13
M DD41	F8	DDR3_DQ_41	
M DD42	E5	DDR3_DQ_42	DDR3_QQS_DP_14
M DD43	F6	DDR3_DQ_43	DDR3_QQS_DN_14
M DD44	C9	DDR3_DQ_44	
M DD45	A9	DDR3_DQ_45	DDR3_QQS_DP_15
M DD46	D6	DDR3_DQ_46	DDR3_QQS_DN_15
M DD47	G7	DDR3_DQ_47	
M DD48	AG1	DDR3_DQ_48	DDR3_QQS_DP_16
M DD49	AG1	DDR3_DQ_49	DDR3_QQS_DN_16
M DD50	AL3	DDR3_DQ_50	
M DD51	AL5	DDR3_DQ_51	DDR3_QQS_DP_17
M DD52	AG5	DDR3_DQ_52	DDR3_QQS_DN_17
M DD53	AE3	DDR3_DQ_53	
M DD54	AJ3	DDR3_DQ_54	
M DD55	AL1	DDR3_DQ_55	
M DD56	V4	DDR3_DQ_56	
M DD57	W3	DDR3_DQ_57	
M DD58	AC5	DDR3_DQ_58	
M DD59	AE5	DDR3_DQ_59	
M DD60	U5	DDR3_DQ_60	
M DD61	V6	DDR3_DQ_61	
M DD62	AC3	DDR3_DQ_62	
M DD63	AB6	DDR3_DQ_63	
M DECC0	L27	DDR3_ECC_0	
M DECC1	J27	DDR3_ECC_1	
M DECC2	L23	DDR3_ECC_2	
M DECC3	J23	DDR3_ECC_3	
M DECC4	K28	DDR3_ECC_4	
M DECC5	M28	DDR3_ECC_5	
M DECC6	M24	DDR3_ECC_6	
M DECC7	K24	DDR3_ECC_7	

9 OF 19

[19] M\_DD[0..63] ↔ M\_DD[0..63]

[19] M\_DQSD[0..17] ↔ M\_DQSD[0..17]

[19] M\_-DQSD[0..17] ↔ M\_-DQSD[0..17]

[19] M\_DECC[0..7] ↔ M\_DECC[0..7]

## Gigabyte Technology

Title			CPU LGA2011-A		
Size			Document Number		
Custom			GA-X99-GAMING 5P		
Date:			Friday, January 16, 2015		
			Sheet 6 of 62		
			Rev 1.0		



LGA2084E HASWELL_E_DS	
BJ54	QPI0_DRX_DP_0
BG54	QPI0_DRX_DN_0
BF54	QPI0_DRX_DP_1
BF54	QPI0_DRX_DN_1
BE53	QPI0_DRX_DP_2
BG53	QPI0_DRX_DN_2
BE53	QPI0_DRX_DP_3
BG53	QPI0_DRX_DN_3
BF56	QPI0_DRX_DP_4
BF56	QPI0_DRX_DN_4
BF54	QPI0_DRX_DP_5
BF54	QPI0_DRX_DN_5
BF50	QPI0_DRX_DP_6
BH50	QPI0_DRX_DN_6
BD58	QPI0_DRX_DP_7
BF58	QPI0_DRX_DN_7
BE57	QPI0_DRX_DP_8
BG57	QPI0_DRX_DN_8
BM56	QPI0_DRX_DP_9
BF56	QPI0_DRX_DN_9
BL56	QPI0_DRX_DP_10
BL56	QPI0_DRX_DN_10
BM54	QPI0_DRX_DP_11
BF54	QPI0_DRX_DN_11
BL53	QPI0_DRX_DP_12
BF53	QPI0_DRX_DN_12
BM52	QPI0_DRX_DP_13
BF52	QPI0_DRX_DN_13
BN51	QPI0_DRX_DP_14
BF51	QPI0_DRX_DN_14
BM50	QPI0_DRX_DP_15
BF50	QPI0_DRX_DN_15
BN49	QPI0_DRX_DP_16
BF49	QPI0_DRX_DN_16
BG49	QPI0_DRX_DP_17
BF49	QPI0_DRX_DN_17
BM48	QPI0_DRX_DP_18
BF48	QPI0_DRX_DN_18
BN47	QPI0_DRX_DP_19
BF47	QPI0_DRX_DN_19
CK44	QPI1_DRX_DP_0
CM44	QPI1_DRX_DN_0
CL46	QPI1_DRX_DP_1
CM46	QPI1_DRX_DN_1
CK46	QPI1_DRX_DP_2
CM46	QPI1_DRX_DN_2
CL47	QPI1_DRX_DP_3
CM47	QPI1_DRX_DN_3
CK48	QPI1_DRX_DP_4
CM48	QPI1_DRX_DN_4
CL48	QPI1_DRX_DP_5
CM48	QPI1_DRX_DN_5
CK50	QPI1_DRX_DP_6
CM50	QPI1_DRX_DN_6
CL51	QPI1_DRX_DP_7
CM51	QPI1_DRX_DN_7
CT53	QPI1_DRX_DP_8
CM53	QPI1_DRX_DN_8
CT54	QPI1_DRX_DP_9
CM54	QPI1_DRX_DN_9
CT56	QPI1_DRX_DP_10
CM56	QPI1_DRX_DN_10
CT56	QPI1_DRX_DP_11
CM56	QPI1_DRX_DN_11
CT58	QPI1_DRX_DP_12
CM58	QPI1_DRX_DN_12
CT57	QPI1_DRX_DP_13
CM57	QPI1_DRX_DN_13
CT58	QPI1_DRX_DP_14
CM58	QPI1_DRX_DN_14
CK56	QPI1_DRX_DP_15
CM56	QPI1_DRX_DN_15
CL55	QPI1_DRX_DP_16
CM55	QPI1_DRX_DN_16
CD54	QPI1_DRX_DP_17
CF54	QPI1_DRX_DN_17
CD56	QPI1_DRX_DP_18
CF56	QPI1_DRX_DN_18
CD56	QPI1_DRX_DP_19
CF56	QPI1_DRX_DN_19

LGA2084B HASWELL_E_DS	
PA_EXP_A_RXP0	N55
PA_EXP_A_RXN0	L55
PA_EXP_A_RXP1	V54
PA_EXP_A_RXN1	T54
PA_EXP_A_RXP2	V56
PA_EXP_A_RXN2	T56
PA_EXP_A_RXP3	V55
PA_EXP_A_RXN3	U55
PA_EXP_A_RXP4	A54
PA_EXP_A_RXN4	A54
PA_EXP_A_RXP5	A56
PA_EXP_A_RXN5	A56
PA_EXP_A_RXP6	A55
PA_EXP_A_RXN6	A55
PA_EXP_A_RXP7	A58
PA_EXP_A_RXN7	A57
PA_EXP_A_RXP8	A56
PA_EXP_A_RXN8	A56
PA_EXP_A_RXP9	A58
PA_EXP_A_RXN9	A58
PA_EXP_A_RXP10	A57
PA_EXP_A_RXN10	A57
PA_EXP_A_RXP11	A57
PA_EXP_A_RXN11	A57
PA_EXP_A_RXP12	A58
PA_EXP_A_RXN12	A58
PA_EXP_A_RXP13	A56
PA_EXP_A_RXN13	A56
PA_EXP_A_RXP14	A57
PA_EXP_A_RXN14	A56
PA_EXP_A_RXP15	B56
PA_EXP_A_RXN15	A56

LGA2084C HASWELL_E_DS	
PA_EXP_A_TXP0	AR49
PA_EXP_A_TXN0	AN49
PA_EXP_A_TXP1	AM50
PA_EXP_A_TXN1	AN50
PA_EXP_A_TXP2	AR51
PA_EXP_A_TXN2	AN51
PA_EXP_A_TXP3	AR52
PA_EXP_A_TXN3	AN52
PA_EXP_A_TXP4	AJ53
PA_EXP_A_TXN4	AN53
PA_EXP_A_TXP5	AK54
PA_EXP_A_TXN5	AN54
PA_EXP_A_TXP6	AR53
PA_EXP_A_TXN6	AN53
PA_EXP_A_TXP7	AT54
PA_EXP_A_TXN7	AN54
PA_EXP_A_TXP8	AV52
PA_EXP_A_TXN8	AN52
PA_EXP_A_TXP9	AR53
PA_EXP_A_TXN9	AN53
PA_EXP_A_TXP10	BH54
PA_EXP_A_TXN10	AN50
PA_EXP_A_TXP11	BA51
PA_EXP_A_TXN11	AN51
PA_EXP_A_TXP12	AV50
PA_EXP_A_TXN12	AN50
PA_EXP_A_TXP13	BA49
PA_EXP_A_TXN13	AN49
PA_EXP_A_TXP14	AY48
PA_EXP_A_TXN14	AN48
PA_EXP_A_TXP15	BA47
PA_EXP_A_TXN15	AN47

LGA2084C HASWELL_E_DS	
PE3A_RX_DP_0	K50
PE3A_TX_DP_0	H50
PE3A_RX_DP_1	L51
PE3A_TX_DP_1	J51
PE3A_RX_DP_2	U47
PE3A_TX_DP_2	R47
PE3A_RX_DP_3	T48
PE3A_TX_DP_3	P48
PE3A_RX_DP_4	T52
PE3A_TX_DP_4	P52
PE3A_RX_DP_5	U51
PE3A_TX_DP_5	R51
PE3A_RX_DP_6	T50
PE3A_TX_DP_6	P50
PE3A_RX_DP_7	U49
PE3A_TX_DP_7	R49
PE3A_RX_DP_8	T46
PE3A_TX_DP_8	P46
PE3A_RX_DP_9	U45
PE3A_TX_DP_9	R45
PE3A_RX_DP_10	AC47
PE3A_TX_DP_10	AC47
PE3A_RX_DP_11	AC46
PE3A_TX_DP_11	AC46
PE3A_RX_DP_12	AC45
PE3A_TX_DP_12	AC45
PE3A_RX_DP_13	AC44
PE3A_TX_DP_13	AC44
PE3A_RX_DP_14	AC43
PE3A_TX_DP_14	AC43
PE3A_RX_DP_15	P44
PE3A_TX_DP_15	T44

PA\_EXP\_A\_RXP0\_15 >>> PA\_EXP\_A\_RXP0\_15 [20]  
 PA\_EXP\_A\_RXN0\_15 >>> PA\_EXP\_A\_RXN0\_15 [20]  
 PA\_EXP\_A\_TXP0\_15 >>> PA\_EXP\_A\_TXP0\_15 [20]  
 PA\_EXP\_A\_TXN0\_15 >>> PA\_EXP\_A\_TXN0\_15 [20]

LGA2084A HASWELL_E_DS	
PE1A_RX_DP_0	E51
PE1A_TX_DP_0	CS1
PE1A_RX_DP_1	B52
PE1A_TX_DP_1	CS1
PE1A_RX_DP_2	F54
PE1A_TX_DP_2	D54
PE1A_RX_DP_3	G55
PE1A_TX_DP_3	E55
PE1B_RX_DP_4	L53
PE1B_TX_DP_4	J53
PE1B_RX_DP_5	M54
PE1B_TX_DP_5	K54
PE1B_RX_DP_6	L57
PE1B_TX_DP_6	J57
PE1B_RX_DP_7	M56
PE1B_TX_DP_7	K56

LGA2084D HASWELL_E_DS	
DM1_RX_DP_0	E45
DM1_TX_DP_0	C45
DM1_RX_DP_1	D44
DM1_TX_DP_1	B44
DM1_RX_DP_2	E43
DM1_TX_DP_2	C43
DM1_RX_DP_3	D42
DM1_TX_DP_3	B42
DM1_RX_DP_4	E45
DM1_TX_DP_4	C45
DM1_RX_DP_5	E46
DM1_TX_DP_5	C46
DM1_RX_DP_6	E47
DM1_TX_DP_6	C47
DM1_RX_DP_7	E48
DM1_TX_DP_7	C48

PB\_EXP\_B\_RXP0\_7 >>> PB\_EXP\_B\_RXP0\_7 [22]  
 PB\_EXP\_B\_RXN0\_7 >>> PB\_EXP\_B\_RXN0\_7 [22]  
 PB\_EXP\_B\_TXP0\_7 >>> PB\_EXP\_B\_TXP0\_7 [22]  
 PB\_EXP\_B\_TXN0\_7 >>> PB\_EXP\_B\_TXN0\_7 [22]

PCIEX16:18/5/7/5/18(breakout min 10/4/4/4/10) 外層  
 Impedance=85 +- 17.5%  
 PCIEX16:20/5/6/5/20(breakout min 10/4/4/4/10) 內層  
 Impedance=85 +- 12%

DMI:12/4/4/12(breakout min 10/4/4/4/10) 外層  
 Impedance=85 +- 15%  
 DMI:12/4/4/12(breakout min 10/4/4/4/10) 內層  
 Impedance=85 +- 15%





LGA2084P

HASWELL\_E\_EDS

CB56	VSS	AY12
CB54	VSS	CB52
CB4	VSS	CB50
CB6	VSS	CB48
CB4	VSS	CB46
CB49	VSS	CB44
CC47	VSS	CB42
CC45	VSS	CB40
CC43	VSS	CB38
CC33	VSS	CB36
CC11	VSS	CB34
CC9	VSS	CB30
CC7	VSS	CB14
CC5	VSS	CB12
CC3	VSS	CB10
BB58	VSS	CB2
BB50	VSS	CA57
AY44	VSS	CA55
AY16	VSS	CA41
AY14	VSS	CA39
CG45	VSS	CA37
CG43	VSS	CA35
CG39	VSS	CA33
CG37	VSS	CA31
CG35	VSS	CA29
CG33	VSS	CA27
CG31	VSS	CA25
CG29	VSS	CA23
CG27	VSS	CA21
CG7	VSS	CA19
CG5	VSS	CA17
CF32	VSS	CA15
CF28	VSS	CA13
CF12	VSS	CA5
CF10	VSS	BY58
CE45	VSS	BY32
CE43	VSS	BY28
CE33	VSS	BY10
CE15	VSS	BY8
CE7	VSS	BW49
CD40	VSS	BW17
CD12	VSS	BW15
BB46	VSS	BW7
BB42	VSS	BW5
BU10	VSS	BV16
BU51	VSS	BK50
BU47	VSS	BK48
BU45	VSS	BK46
BU5	VSS	BK42
BU3	VSS	BJ57
BT56	VSS	BJ55
BT54	VSS	BH58
BT52	VSS	BG47
BT50	VSS	BG45
BT48	VSS	BG17
BT46	VSS	BG15
BT42	VSS	BG13
BT16	VSS	BG11
BT10	VSS	BG9
BR57	VSS	BG7
BR55	VSS	BG5
BR53	VSS	AC3
BR15	VSS	BF42
BR13	VSS	BF16
BR11	VSS	BF14
BR9	VSS	BF12
BR7	VSS	BF10
BR5	VSS	BF8
BR3	VSS	BF6
BR1	VSS	BF4
RP58	VSS	BF2
RP14	VSS	BE17
RP12	VSS	BE49
BP8	VSS	BD56
BP6	VSS	BD54
BP4	VSS	BD52
BN67	VSS	BC57
BN43	VSS	BC55
BL57	VSS	BC53
BL49	VSS	BC51
BL45	VSS	BC49
BK54	VSS	BC47
BK52	VSS	BC45

16 OF 19

LGA2084Q

HASWELL\_E\_EDS

AW7	VSS	AT46
AW5	VSS	AT44
AW3	VSS	AP58
AV56	VSS	AP44
AV54	VSS	AP42
AV42	VSS	AV58
AU53	VSS	AN55
AU51	VSS	AN15
AU49	VSS	AN13
AU47	VSS	AN9
AU45	VSS	AN7
AT52	VSS	AN5
AT50	VSS	AN3
AT48	VSS	AN1
AF38	VSS	AM56
AF36	VSS	AM16
AF34	VSS	AM14
AF32	VSS	AM12
AF30	VSS	AM10
AF28	VSS	AM8
AF26	VSS	AM6
AF24	VSS	AM4
AF22	VSS	AM2
AF20	VSS	AL53
AF18	VSS	AL51
AF16	VSS	AL49
AF10	VSS	AL47
AF8	VSS	AL45
AF6	VSS	AL43
AF4	VSS	AL11
AF2	VSS	AK52
AF53	VSS	AK50
AF51	VSS	AK48
AF49	VSS	AK46
AF47	VSS	AK44
AF45	VSS	AK42
AF41	VSS	AK16
AF39	VSS	AK6
AF35	VSS	AK4
AF33	VSS	AJ17
AF29	VSS	AJ11
AF27	VSS	AH58
AF23	VSS	AH14
AF19	VSS	AH6
AF15	VSS	AH2
AF13	VSS	AG57
AD57	VSS	AG41
AD50	VSS	AG33
AD48	VSS	AG31
AD46	VSS	AG25
AD44	VSS	AG21
AD42	VSS	AG19
AD40	VSS	AG17
AD36	VSS	AG13
AD12	VSS	AG11
AD8	VSS	AF56
AD6	VSS	AF54
AD4	VSS	AF40
AC29	VSS	AB36
AC11	VSS	AB12
AC3	VSS	AA55
AC7	VSS	AA39
AB42	VSS	AA31
AB40	VSS	AA29
A47	VSS	AA25
A45	VSS	AA7
A43	VSS	AA3
A23	VSS	A51
A7	VSS	A49
A5	VSS	A41
AW17	VSS	AW39
AW15	VSS	A37
AW13	VSS	AW55
AW11	VSS	AW9

17 OF 19

LGA2084R

HASWELL\_E\_EDS

DA27	VSS	DA3
DA9	VSS	CY52
DB40	VSS	CY50
DB34	VSS	CY48
DB12	VSS	CY46
DB6	VSS	CY44
DA65	VSS	CY42
AN57	VSS	CY38
DA51	VSS	CY36
DA49	VSS	CY34
DA47	VSS	CY12
DA45	VSS	CY10
DA43	VSS	CY8
DA41	VSS	CY4
AN3	VSS	CY2
P24	VSS	CW57
P10	VSS	CW55
N49	VSS	CW53
N47	VSS	CW39
N45	VSS	CW37
DF52	VSS	CW35
DF50	VSS	CW33
DF48	VSS	CW31
DF46	VSS	CW29
DF44	VSS	CW27
DF42	VSS	CW15
DF40	VSS	CW7
DE12	VSS	CW5
DE9	VSS	CW1
DE35	VSS	CW58
DE15	VSS	CW54
DE7	VSS	CW40
DD40	VSS	CW32
DD38	VSS	CW28
DD34	VSS	CW12
DD12	VSS	CW6
DD10	VSS	CW3
DD6	VSS	CW1
DC55	VSS	CU33
DC53	VSS	CU15
DC5	VSS	CU7
DB58	VSS	CU1
N53	VSS	CT40
N51	VSS	CT12
CR49	VSS	CT2
CR47	VSS	CM28
CR45	VSS	CM10
CR41	VSS	CM8
CR33	VSS	CM6
CR29	VSS	CM5
CR7	VSS	CU11
CP56	VSS	CU9
CP50	VSS	CU7
AG19	VSS	CK54
AG17	VSS	CK52
AG13	VSS	CK40
CP42	VSS	CK12
CP38	VSS	CK4
CP36	VSS	CJ51
CP34	VSS	CJ49
CP30	VSS	CJ47
CP14	VSS	CJ45
CP12	VSS	CJ43
CP4	VSS	CJ41
CN67	VSS	CJ33
CN65	VSS	CJ15
CN53	VSS	CJ7
CN39	VSS	CJ3
CN37	VSS	CH56
CN35	VSS	CH54
CN33	VSS	CH52
CN31	VSS	CH50
CN29	VSS	CH48
CN27	VSS	CH46
CN13	VSS	CH44
CN11	VSS	CH42
CN7	VSS	CH40
CN5	VSS	CH38
CN3	VSS	CH36
CM54	VSS	CH34
CM52	VSS	CH30
CM40	VSS	CH12
CM32	VSS	CG53

18 OF 19

LGA2084S

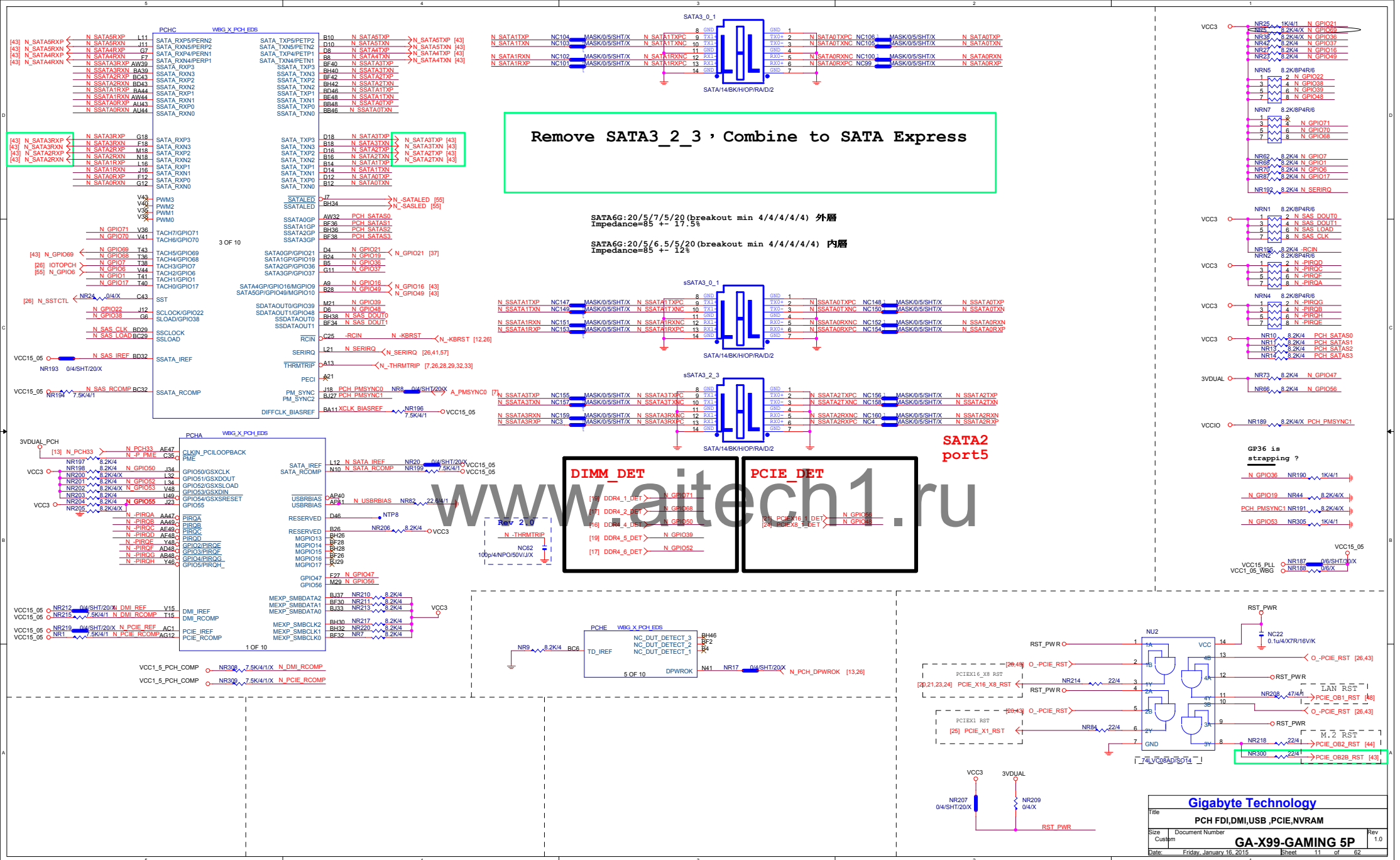
HASWELL\_E\_EDS

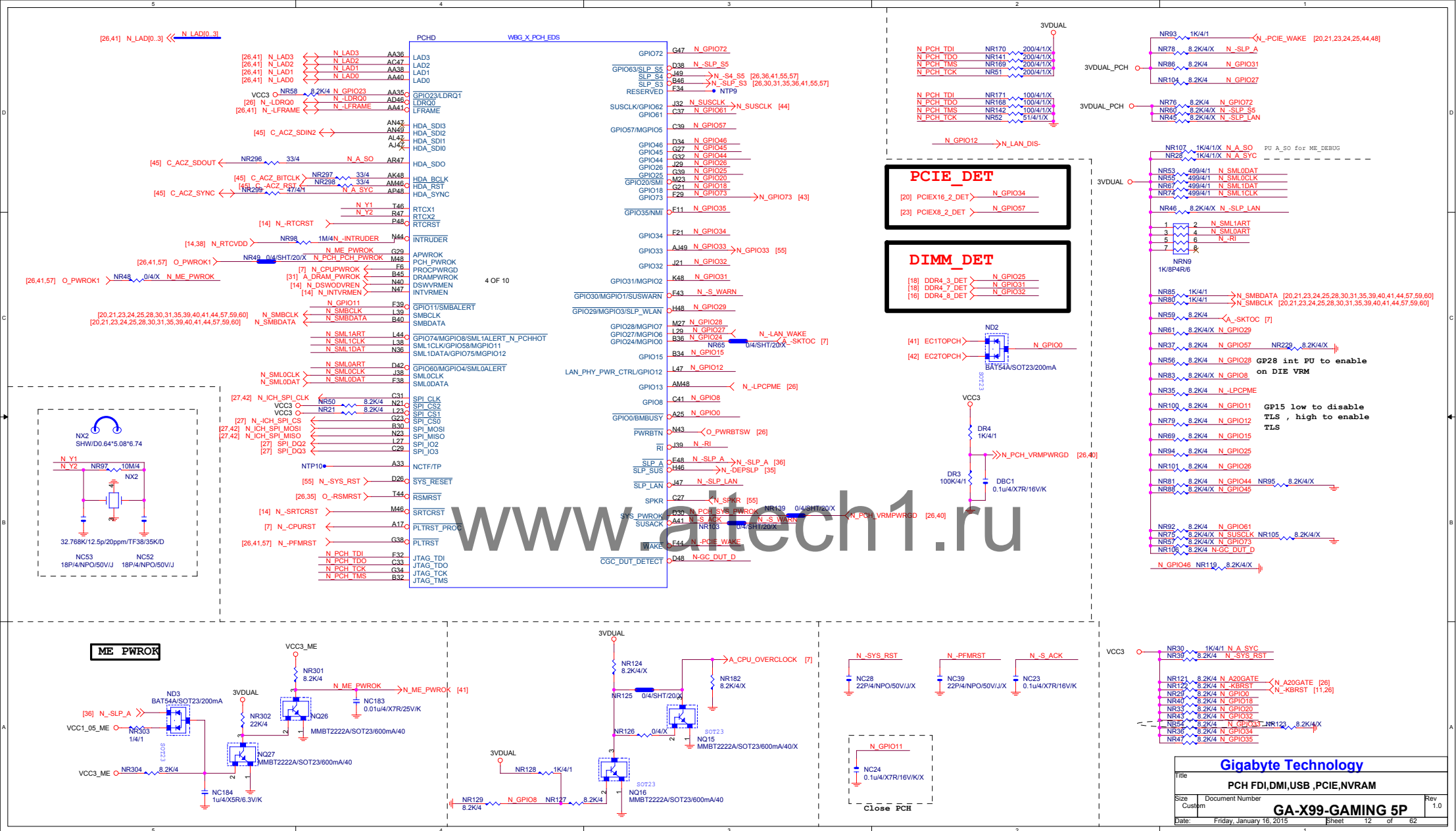
Y56	VSS	W47
Y42	VSS	W45
Y36	VSS	W43
Y34	VSS	W39
Y32	VSS	W35
Y30	VSS	W33
Y28	VSS	W27
Y26	VSS	W23
Y24	VSS	W7
Y12	VSS	W52
Y4	VSS	W50
W53	VSS	W48
W51	VSS	W46
W49	VSS	W44
W42	VSS	W36
M36	VSS	W12
M10	VSS	W10
M2	VSS	U43
L41	VSS	U41
L39	VSS	U39
L29	VSS	U29
L5	VSS	U7
K40	VSS	U3
K36	VSS	T42
K10	VSS	T36
J55	VSS	T8
J37	VSS	T6
J31	VSS	T4
J29	VSS	R55
J25	VSS	R39
J7	VSS	R31
J5	VSS	R29
J3	VSS	R25
H54	VSS	R11
H40	VSS	R9
H36	VSS	R5
H34	VSS	P56
H32	VSS	P54
H30	VSS	P40
H28	VSS	P38
H26	VSS	P34
H24	VSS	P32
H8	VSS	P30
H6	VSS	P28
G7	VSS	P26
G63	VSS	N43
G61	VSS	N39
G49	VSS	N37
G47	VSS	N35
G45	VSS	N33
G41	VSS	N29
G39	VSS	N27
G35	VSS	N23
G33	VSS	N5
G27	VSS	M52
G23	VSS	M50
G9	VSS	M48
G5	VSS	M46
G1	VSS	M44
F50	VSS	F30
F48	VSS	F4
F44	VSS	F2
F42	VSS	E41
F36	VSS	E39
F32	VSS	E3
D4	VSS	E1
C55	VSS	D40
C33	VSS	D36
B36	VSS	D24
B10	VSS	D10
B6	VSS	C5
AY8	VSS	B52
AY6	VSS	B40
AY4	VSS	AY10
AY2	VSS	AW57

19 OF 19

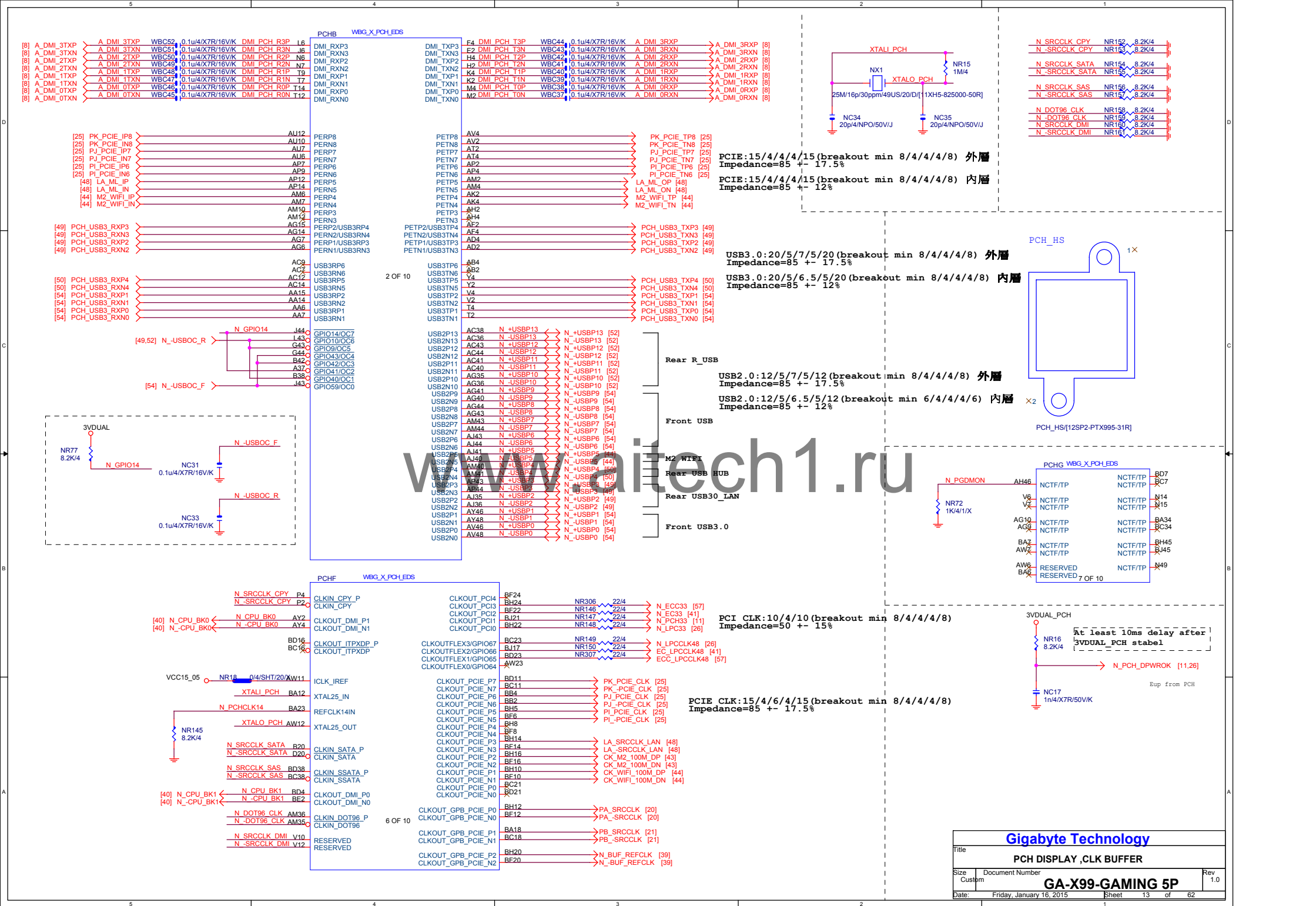
Gigabyte Technology

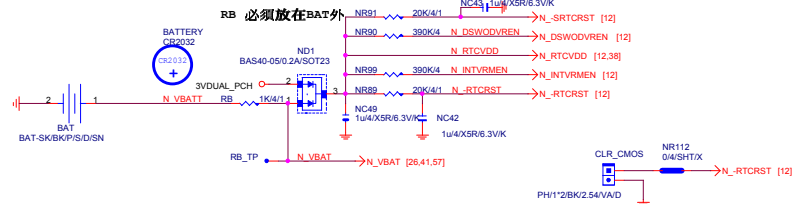
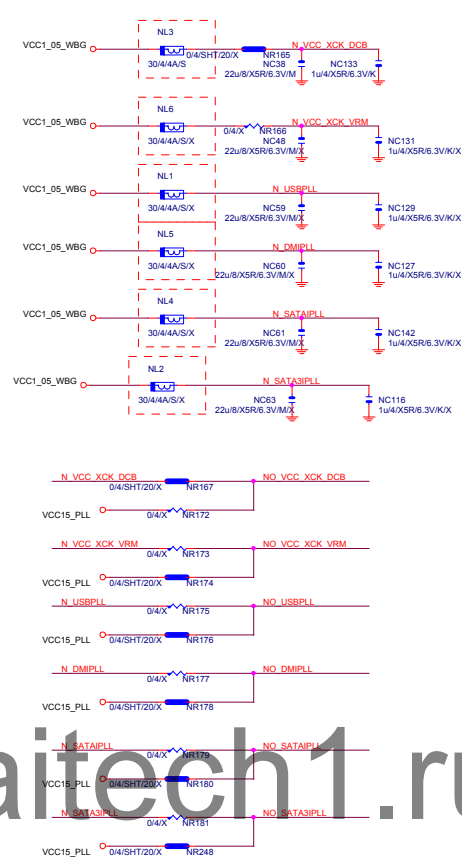
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Size	Document Number	GA-X99-GAMING 5P <sup>1.0</sup>	
Custom			
Date:	Friday, January 16, 2015	Sheet	10 of 62











PCHI	WBG_X_PCH_EDS	
AT41	VSS	BC39
AT44	VSS	BC44
AT48	VSS	BC47
AT6	VSS	BC49
AT9	VSS	BD12
AU1	VSS	BD14
AU14	VSS	BD18
AU3	VSS	BD20
AU35	VSS	BD25
AU36	VSS	BD27
AU38	VSS	BD30
AU40	VSS	BD34
AU41	VSS	BD36
AU49	VSS	BD39
AU9	VSS	BD41
AV18	VSS	BD44
AV20	VSS	BD6
AV21	VSS	BD9
AV23	VSS	BF18
AV25	VSS	BF4
AV30	VSS	BF44
AW1	VSS	BF46
AW16	VSS	BF48
AW18	VSS	BG11
AW21	VSS	BG13
AW27	VSS	BG15
AW29	VSS	BG17
AW3	VSS	BG19
AW38	VSS	BG21
AW43	VSS	BG23
AW47	VSS	BG25
AW49	VSS	BG27
B22	VSS	BG29
BA1	VSS	BG31
BA14	VSS	BG33
BA16	VSS	BG35
BA20	VSS	BG37
BA21	VSS	BG39
BA25	VSS	BG41
BA27	VSS	BG43
BA29	VSS	BG7
BA3	VSS	BG9
BA30	VSS	BH18
BA32	VSS	BH4
BA36	VSS	BJ11
BA38	VSS	BJ13
BA41	VSS	BJ15
BA43	VSS	BJ17
BA47	VSS	BJ23
BA49	VSS	BJ25
BA9	VSS	BJ31
BC12	VSS	BJ35
BC27	VSS	BJ39
BC3	VSS	BJ41
AJ3	VSS	BJ43
AJ31	VSS	BJ7
AJ38	VSS	BJ9
AJ6	VSS	C11
AJ7	VSS	C13
AJ9	VSS	C15
AK12	VSS	C17
AK15	VSS	C19
AK35	VSS	AM38
AK38	VSS	AM9
AK41	VSS	AN1
AK44	VSS	AN3
AK46	VSS	AP10
AK6	VSS	AP15
AK9	VSS	AP31
AL1	VSS	AP35
AL3	VSS	AP38
AL49	VSS	AP46
AM14	VSS	AP6
AM15	VSS	AR1
AM18	VSS	AR3
AM19	VSS	AR49
AM21	VSS	AT12
AM27	VSS	AT15
AM29	VSS	AT35
AM31	VSS	AT38
AM32	VSS	AJ27

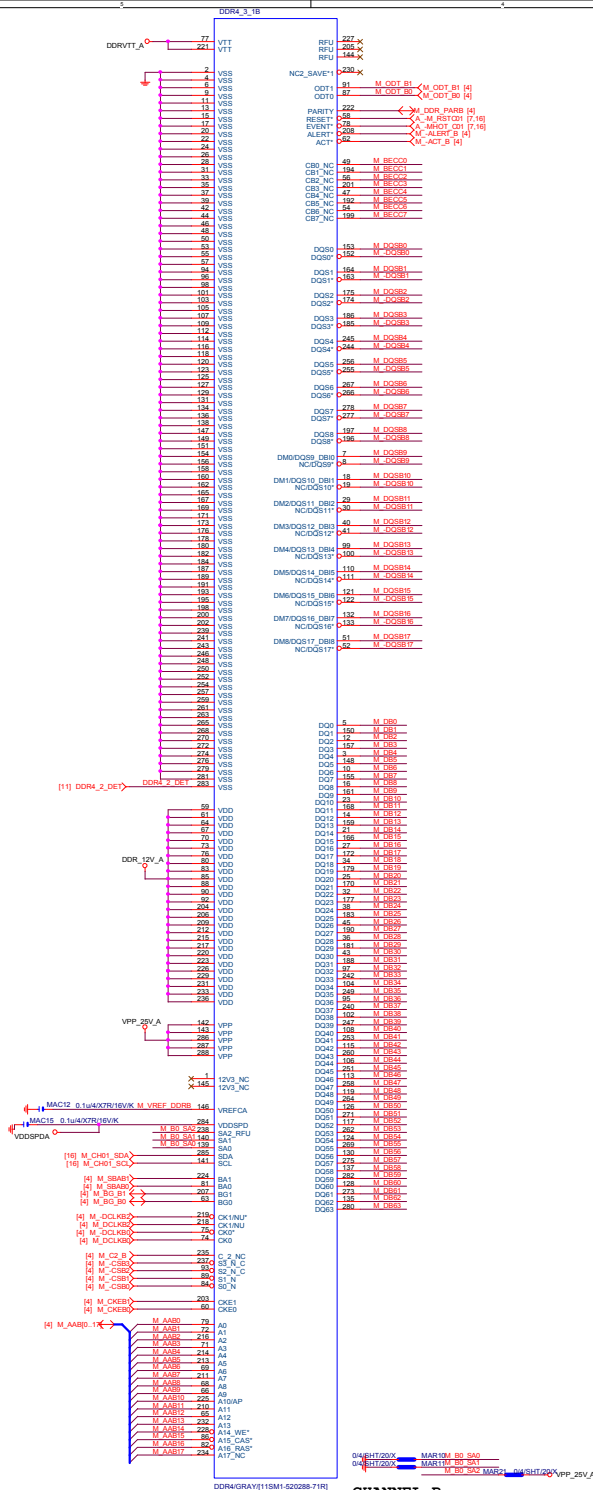
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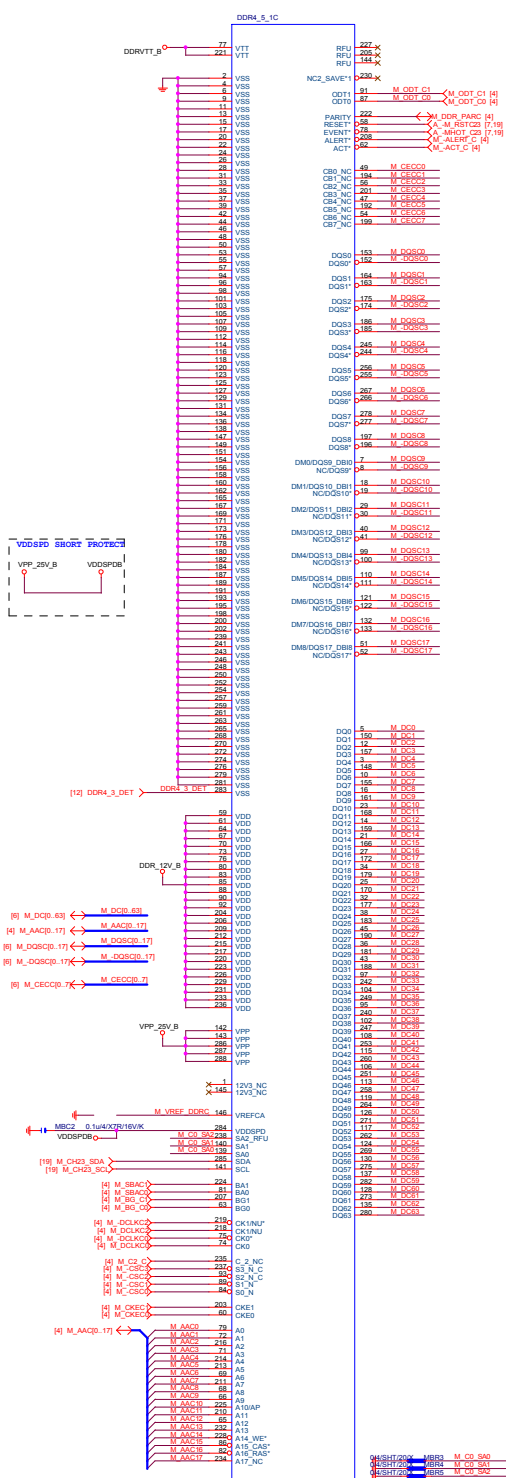
PCHJ	WBG_X_PCH_EDS	
AA1	VSS	A11
AA10	VSS	A15
AA3	VSS	A19
AA43	VSS	A23
AA44	VSS	A27
AB46	VSS	A29
AC10	VSS	A31
AC3	VSS	A35
AC49	VSS	A39
AC6	VSS	A43
AD18	VSS	C21
AD19	VSS	C23
AD21	VSS	C7
AD23	VSS	C9
AD24	VSS	D22
AD26	VSS	D24
AD27	VSS	D28
AD29	VSS	D32
AD31	VSS	D36
AD32	VSS	D40
AE1	VSS	D44
AE12	VSS	F14
AE15	VSS	F16
AE3	VSS	F20
AE35	VSS	F23
AE38	VSS	F25
AE41	VSS	F30
AE44	VSS	F36
AE6	VSS	F41
AE9	VSS	F46
AF46	VSS	F9
AG1	VSS	G16
AG3	VSS	G3
AG47	VSS	G49
AG49	VSS	J1
AH48	VSS	J14
AJ1	VSS	J20
AJ10	VSS	J3
AJ12	VSS	J30
AJ19	VSS	J38
AJ21	VSS	J41
AJ23	VSS	J9
AJ24	VSS	K46
AJ26	VSS	L1
L3	VSS	Y12
L49	VSS	Y15
L7	VSS	Y38
M20	VSS	Y41
M25	VSS	Y44
M30	VSS	Y6
M32	VSS	W9
N1	VSS	U3
N3	VSS	U47
N32	VSS	V14
P12	VSS	V46
P15	VSS	W1
P35	VSS	W18
P38	VSS	W19
P41	VSS	W23
P44	VSS	W24
P46	VSS	W26
P6	VSS	W27
P9	VSS	W3
R1	VSS	W31
R3	VSS	W32
R49	VSS	W47
T10	VSS	W49
AJ47	VSS	T48
A4	VSS	T6
A45	VSS	G1
A46	VSS	BH2
A48	VSS	BH48
A5	VSS	BH49
A7	VSS	BJ2
B2	VSS	BJ4
B48	VSS	BJ46
B49	VSS	BJ48
BC1	VSS	BJ5
BE1	VSS	D1
BE49	VSS	D2
BF1	VSS	D49
BF49	VSS	E1
BH1	VSS	E49

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Title			
PCH PWR ,GND			
Size	Document Number	Rev	
Custom	GA-X99-GAMING 5P	1.0	
Date:	Friday, January 16, 2015	Sheet	15 of 62



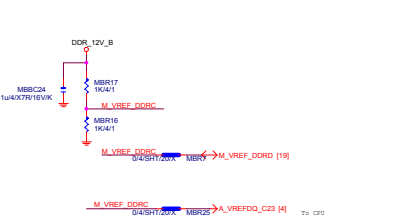




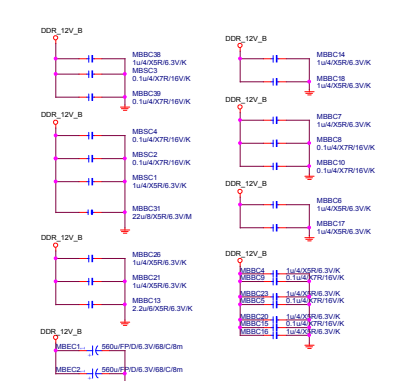
CHANNEL C  
SA2:0=000



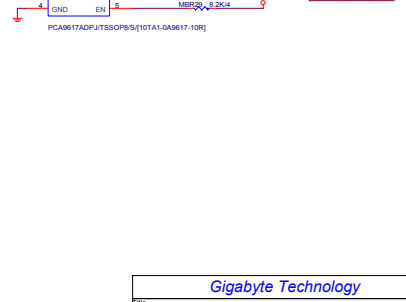
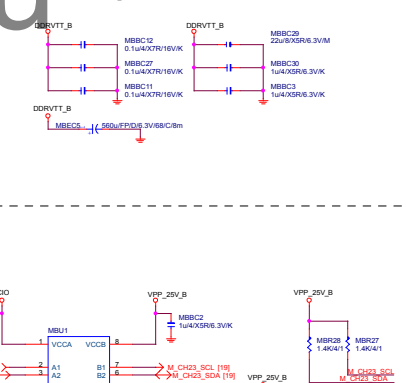
CHANNEL C  
SA2:0=001



### DDR12V Decouple

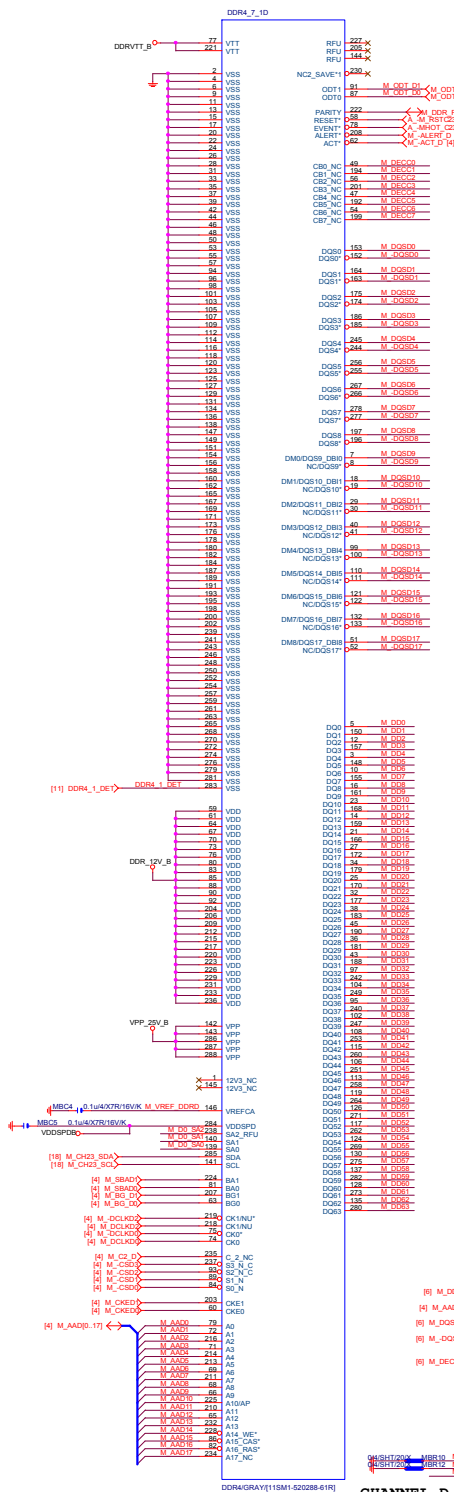


### DDRVTT Decouple



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DDRIII CHANNEL C/D			
Rev	Document Number	Rev	
1.0	GA-X99-GAMING SP	1.0	

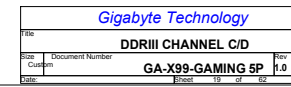
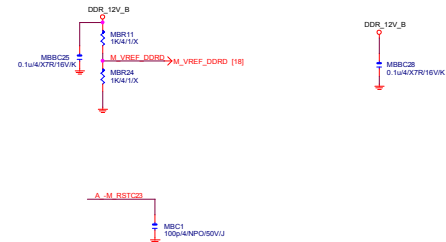




CHANNEL D  
SA2:0=100



CHANNEL D  
SA2:0=101

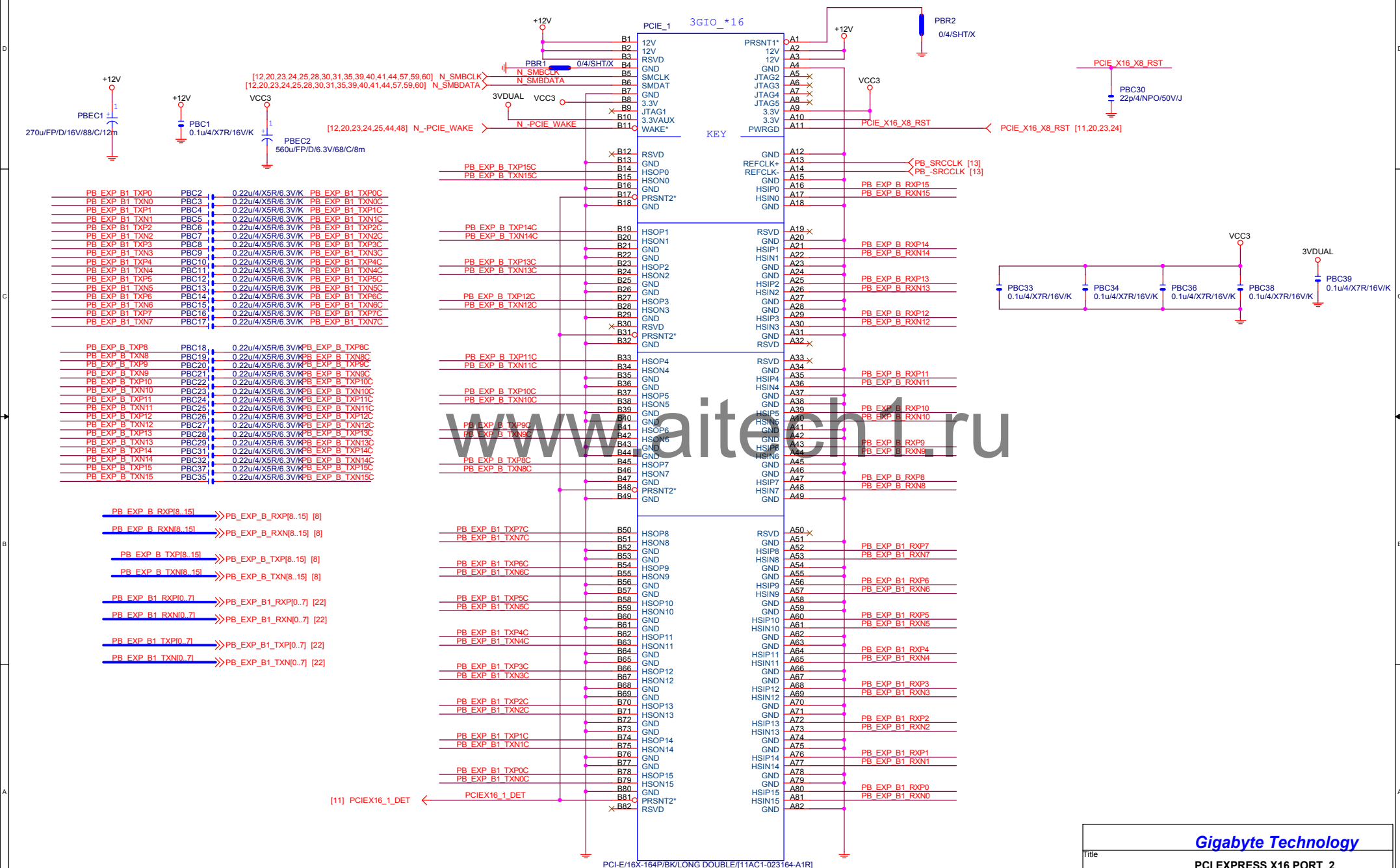


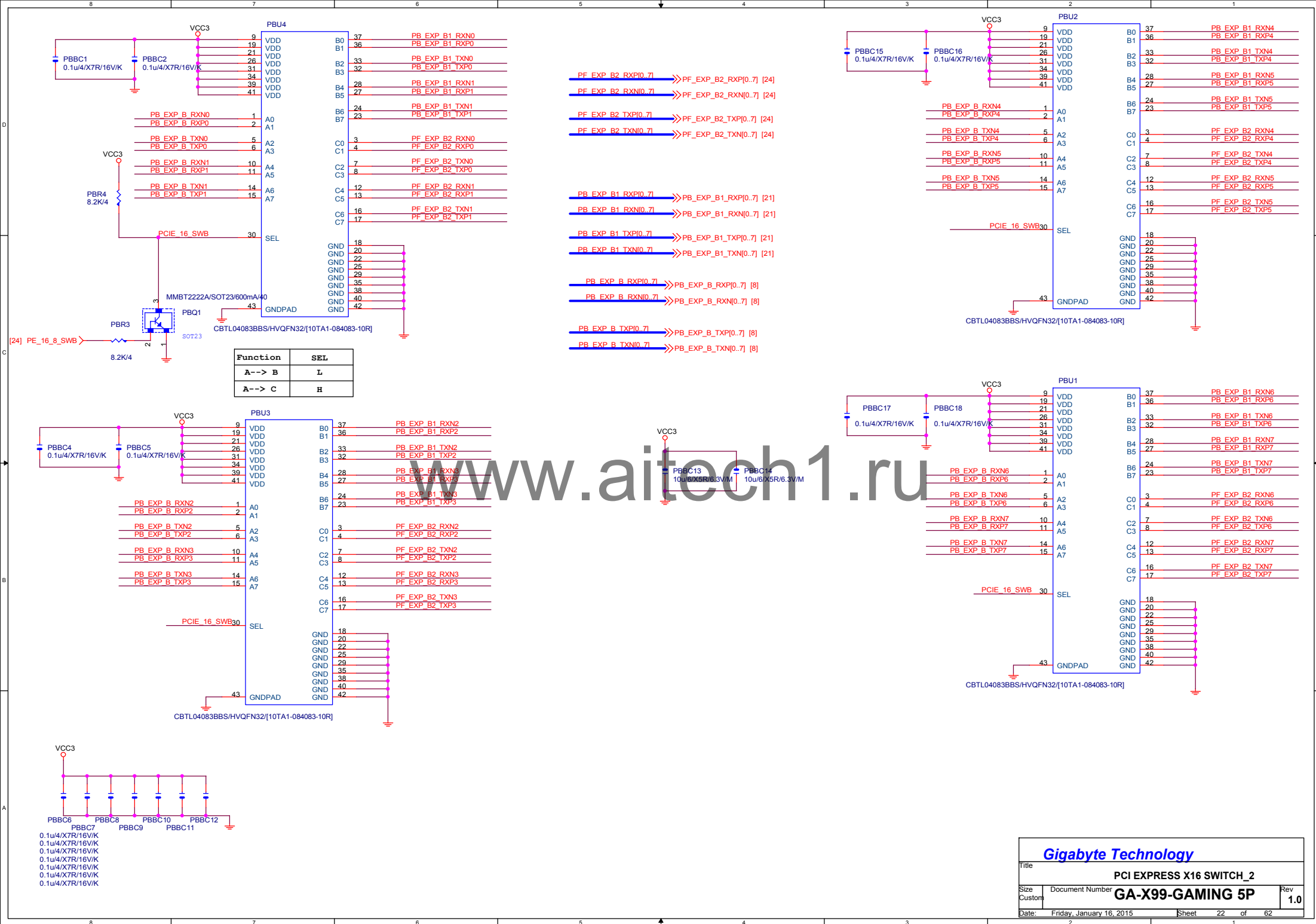
## PCIE\_2 3GIO\_\*16

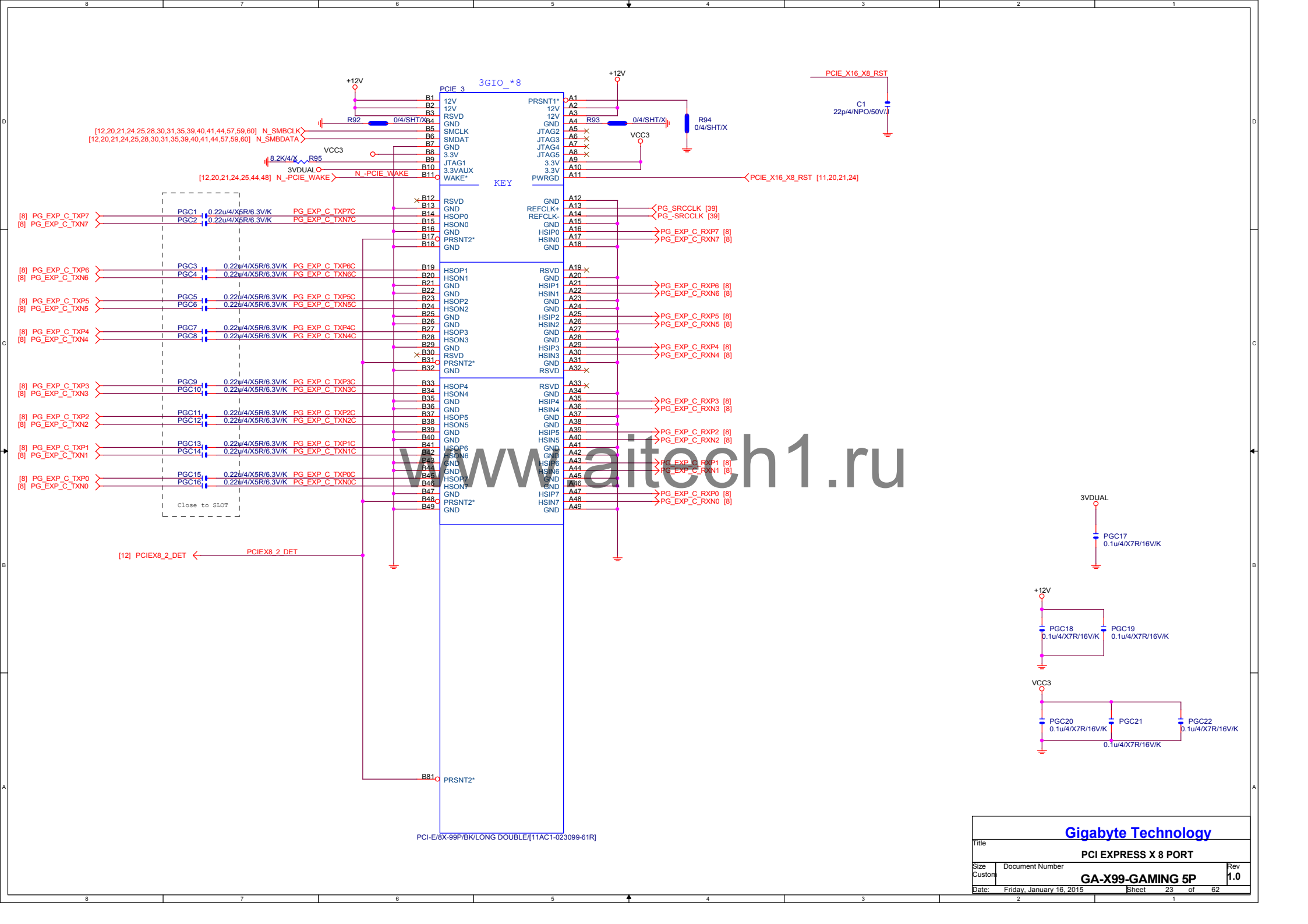


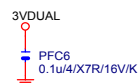
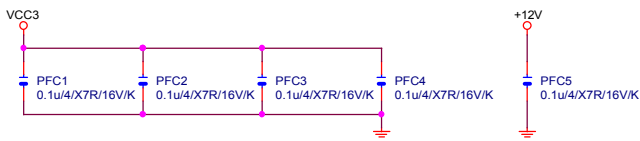


## PCIESLOT-164DN-2









[12,20,21,23,25,28,30,31,35,39,40,41,44,57,59,60] N\_SMBCLK  
[12,20,21,23,25,28,30,31,35,39,40,41,44,57,59,60] N\_SMBDATA

[12,20,21,23,25,44,48] N\_-PCIE\_WAKE

PF\_EXP\_B2\_TXP0\_7I >> PF\_EXP\_B2\_TXP[0..7] [22]

PF\_EXP\_B2\_TXN0\_7I >> PF\_EXP\_B2\_TXN[0..7] [22]

PF_EXP_B2_TXP0	PFC7	0.22u/4/X5R/6.3V/K	PF_EXP_B2_TXP0C
PF_EXP_B2_TXN0	PFC8	0.22u/4/X5R/6.3V/K	PF_EXP_B2_TXN0C
PF_EXP_B2_TXP1	PFC9	0.22u/4/X5R/6.3V/K	PF_EXP_B2_TXP1C
PF_EXP_B2_TXN1	PFC10	0.22u/4/X5R/6.3V/K	PF_EXP_B2_TXN1C
PF_EXP_B2_TXP2	PFC11	0.22u/4/X5R/6.3V/K	PF_EXP_B2_TXP2C
PF_EXP_B2_TXN2	PFC12	0.22u/4/X5R/6.3V/K	PF_EXP_B2_TXN2C
PF_EXP_B2_TXP3	PFC13	0.22u/4/X5R/6.3V/K	PF_EXP_B2_TXP3C
PF_EXP_B2_TXN3	PFC14	0.22u/4/X5R/6.3V/K	PF_EXP_B2_TXN3C
PF_EXP_B2_TXP4	PFC15	0.22u/4/X5R/6.3V/K	PF_EXP_B2_TXP4C
PF_EXP_B2_TXN4	PFC16	0.22u/4/X5R/6.3V/K	PF_EXP_B2_TXN4C
PF_EXP_B2_TXP5	PFC17	0.22u/4/X5R/6.3V/K	PF_EXP_B2_TXP5C
PF_EXP_B2_TXN5	PFC18	0.22u/4/X5R/6.3V/K	PF_EXP_B2_TXN5C
PF_EXP_B2_TXP6	PFC19	0.22u/4/X5R/6.3V/K	PF_EXP_B2_TXP6C
PF_EXP_B2_TXN6	PFC20	0.22u/4/X5R/6.3V/K	PF_EXP_B2_TXN6C
PF_EXP_B2_TXP7	PFC21	0.22u/4/X5R/6.3V/K	PF_EXP_B2_TXP7C
PF_EXP_B2_TXN7	PFC22	0.22u/4/X5R/6.3V/K	PF_EXP_B2_TXN7C

[11] PCIE\_X8\_1\_DET

[22] PE\_16\_8\_SWB

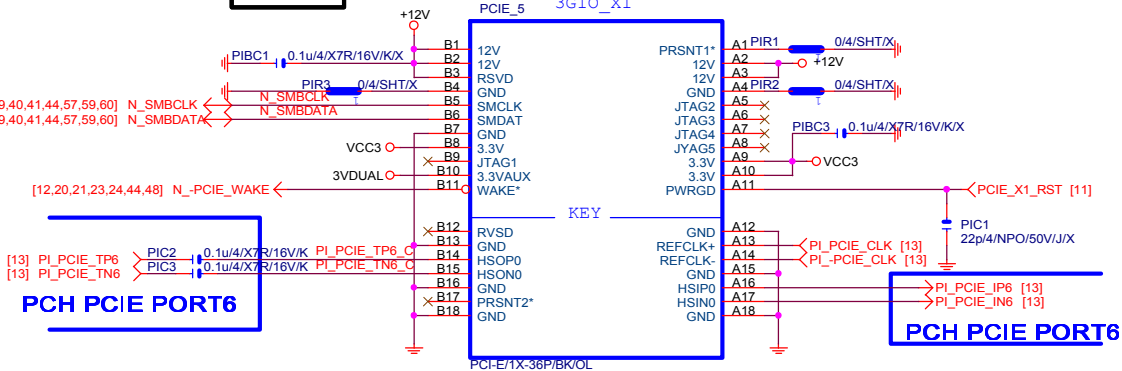
SEC\_2x8\_B [26]

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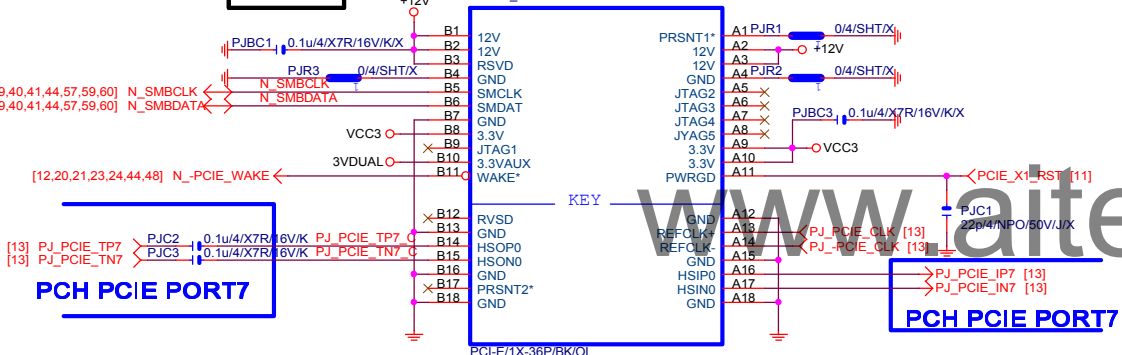
Gigabyte Technology			
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PCI EXPRESS X8_2			
Size	Document Number	GA-X99-GAMING 5P	
Custom		Rev	1.0
Date:	Friday, January 16, 2015	Sheet	24 of 62

# PCIEX1 SLOT

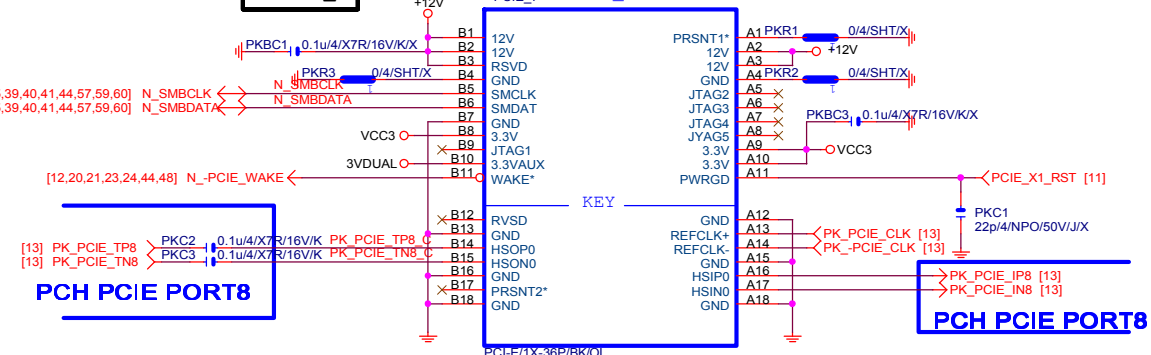
## PCIEX1\_1



## PCIEX1\_2



## PCIEX1\_3



Gigabyte Technology

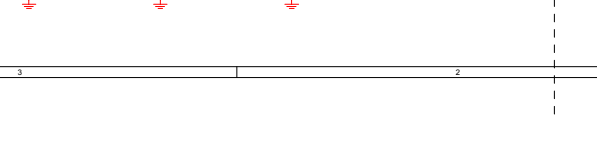
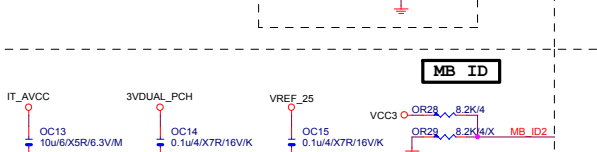
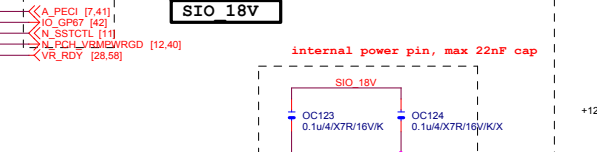
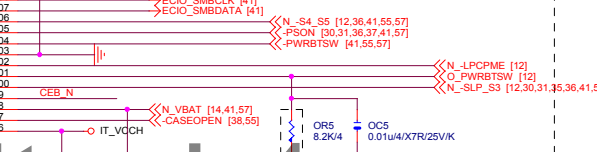
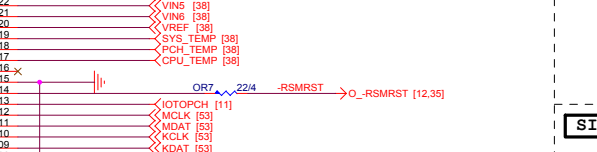
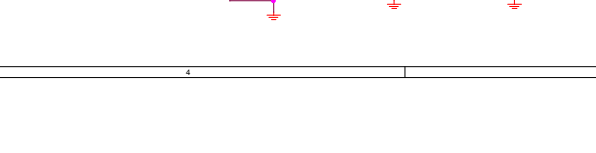
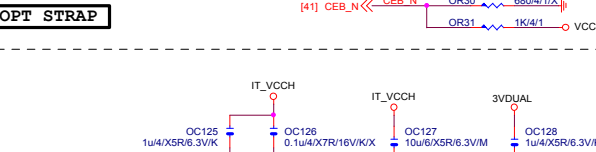
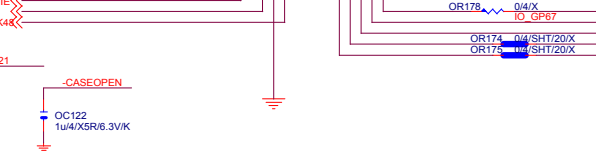
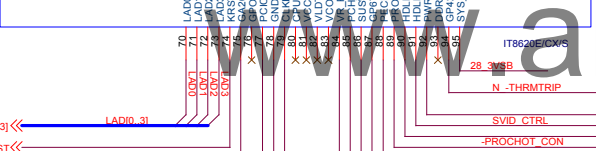
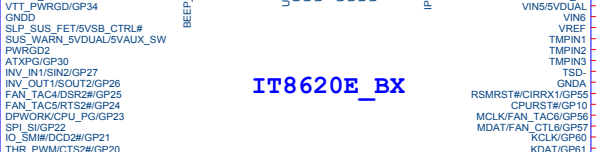
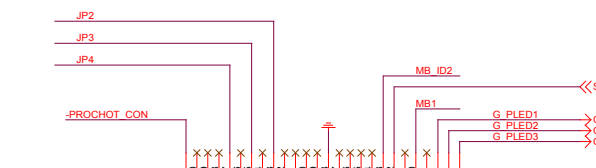
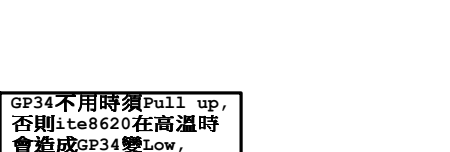
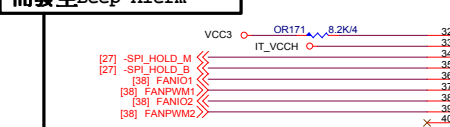
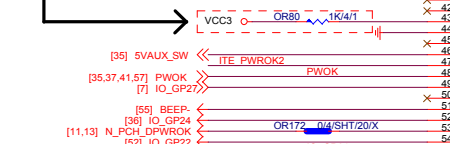
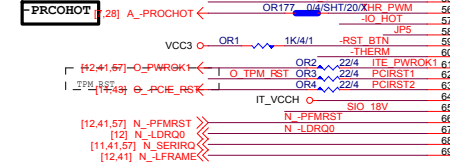
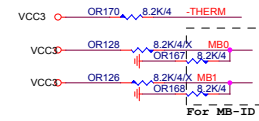
Title			PCIEX1 1,2,3
Size			Custom
Document Number			GA-X99-GAMING 5P
Date:			Friday, January 16, 2015
Sheet			25 of 62
Rev			1.0

## SIO IT8620

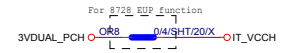
GP34不用時須Pull up,  
否則ite8620在高溫時  
會造成GP34變Low,  
而發生Beep Alarm

## SIO CAP

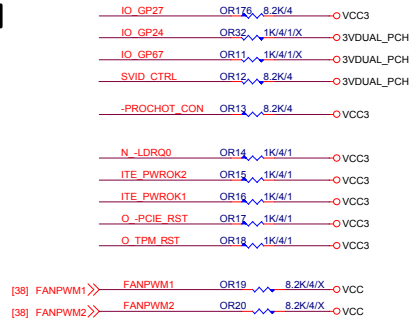
## DUAL BIOS OPT STRAP



## PWR SHT

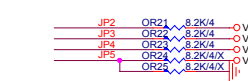


## SIO PU



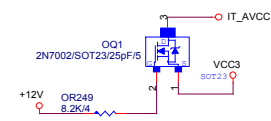
## SIO STRAP

H61M-S2 1.1 JP6 stuff  
pull down



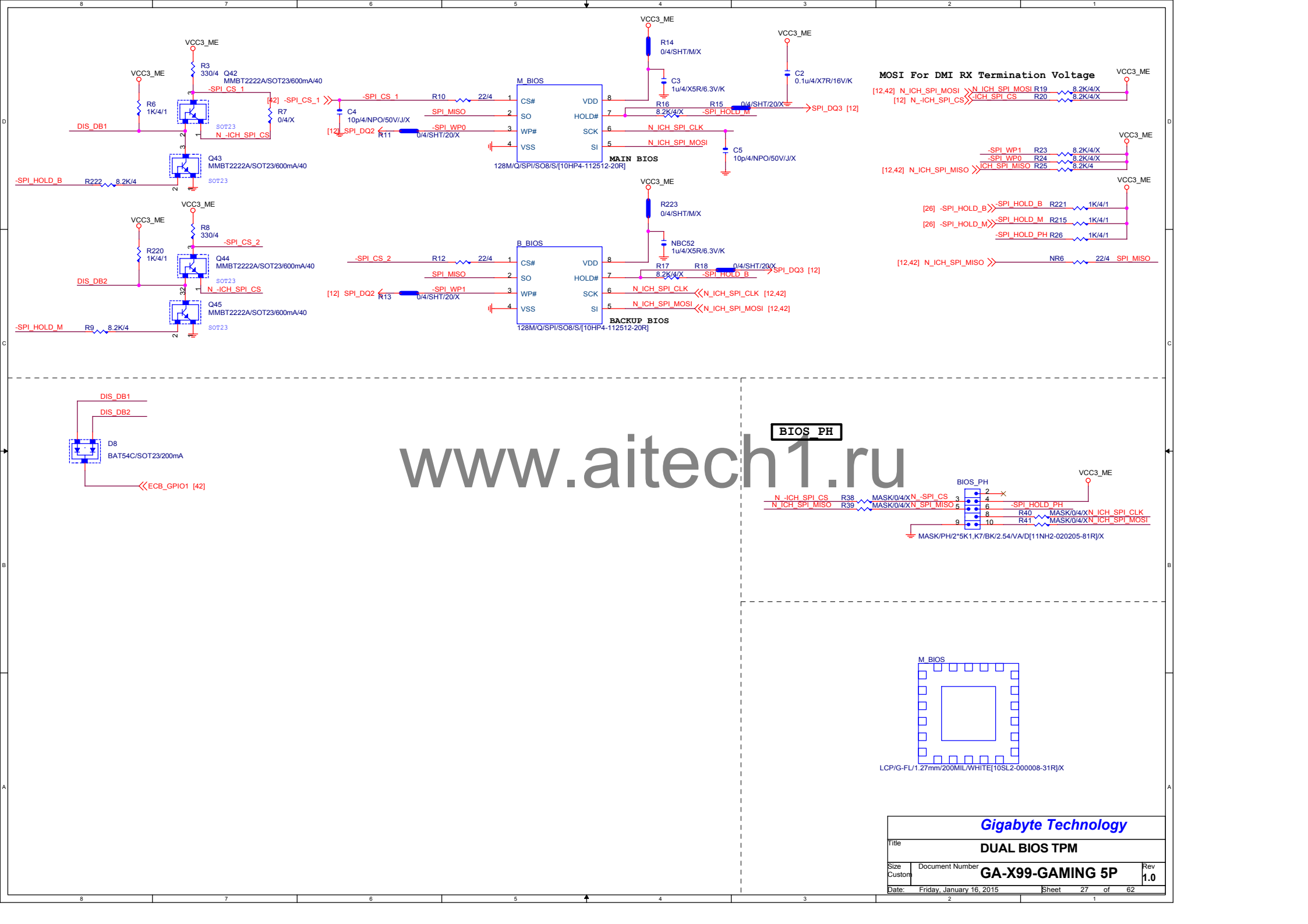
EUP control by PCH  
3VDUAL - OR26 100k/1 28\_3VSB  
JP3--- High SPI-Flash Disable  
Low SPI-Flash Enable

## Power leakage



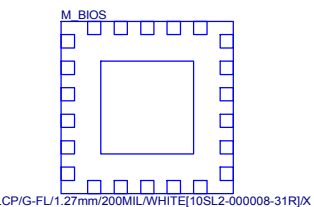
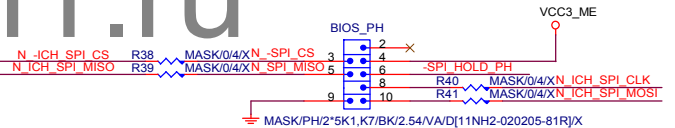
## MB ID

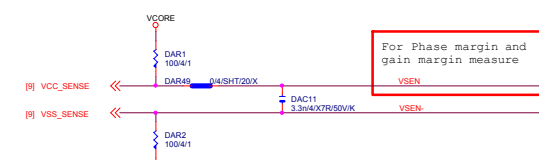
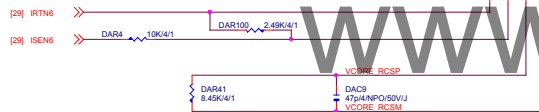
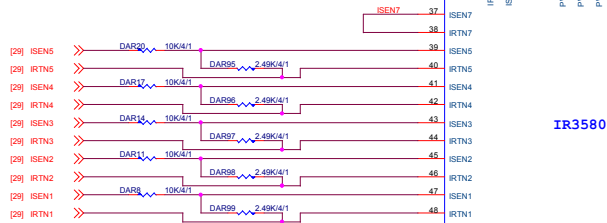
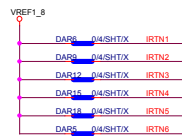
Gigabyte Technology			
PCH GPIO, CTRL, AUDIO			
File	Document Number	GA-X99-GAMING 5P	Rev 1.0
Date: Friday, January 16, 2015	Sheet 26	of 62	



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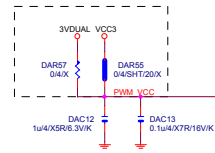
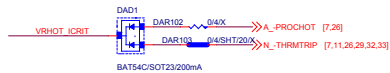
BIOS PH





[26,58] VR\_RDY << VR\_RDY

~PROBOT



IR3580

IR3580-6+0\_B[10TA1-603580-05R]

VR\_RDY

VR\_RDY

VR\_RDY

VR\_RDY

VR\_RDY

VR\_RDY

VR\_RDY

VR\_RDY

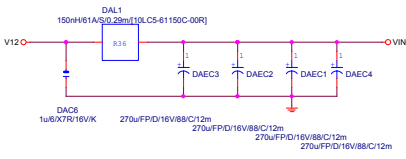
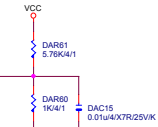
VR\_RDY

VR\_RDY

VR\_RDY

VR\_RDY

VR\_RDY



Debug Only

Remove PinHeader in modify PBOM

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DAUP1 PH13BK2.54V/A/D/X

DAUP1 PH13BK2.54V/A/D/X

DAUP1 PH13BK2.54V/A/D/X

DAUP1 PH13BK2.54V/A/D/X

DAUP1 PH13BK2.54V/A/D/X

DAUP1 PH13BK2.54V/A/D/X

DAUP1 PH13BK2.54V/A/D/X

DAUP1 PH13BK2.54V/A/D/X

DAUP1 PH13BK2.54V/A/D/X

DAUP1 PH13BK2.54V/A/D/X

DAUP1 PH13BK2.54V/A/D/X

DAUP1 PH13BK2.54V/A/D/X

DAUP1 PH13BK2.54V/A/D/X

DAUP1 PH13BK2.54V/A/D/X

DAUP1 PH13BK2.54V/A/D/X

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DAUP1 PH13BK2.54V/A/D/X

DAUP1 PH13BK2.54V/A/D/X

DAUP1 PH13BK2.54V/A/D/X

DAUP1 PH13BK2.54V/A/D/X

DAUP1 PH13BK2.54V/A/D/X

DAUP1 PH13BK2.54V/A/D/X

DAUP1 PH13BK2.54V/A/D/X

DAUP1 PH13BK2.54V/A/D/X

Addr: 70h

Addr: 70h

Addr: 70h

Addr: 70h

Addr: 70h

Addr: 70h

Addr: 70h

Addr: 70h

Addr: 70h

Addr: 70h

Addr: 70h

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GIGABYTE™

IR 3563A

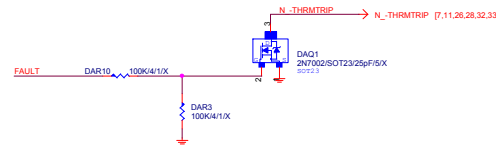
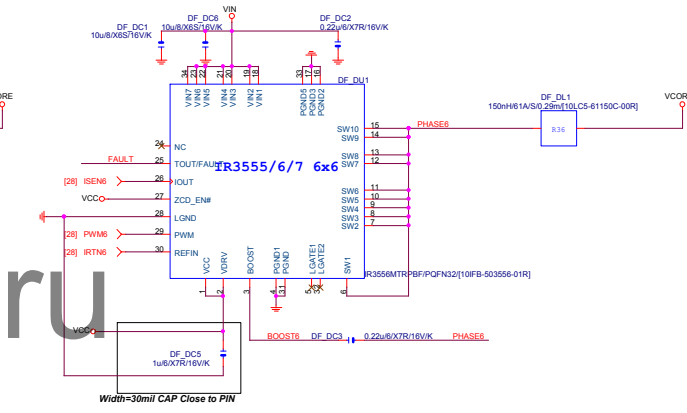
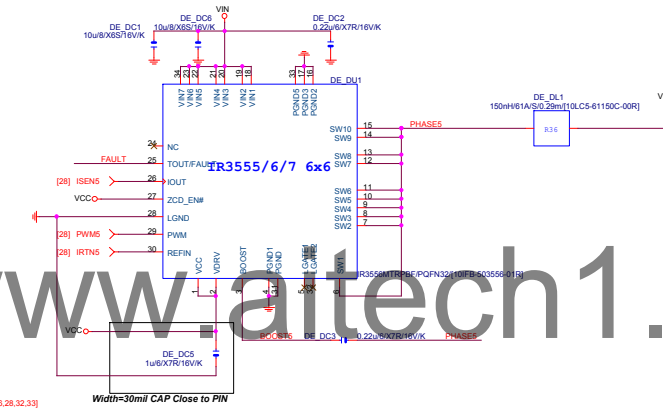
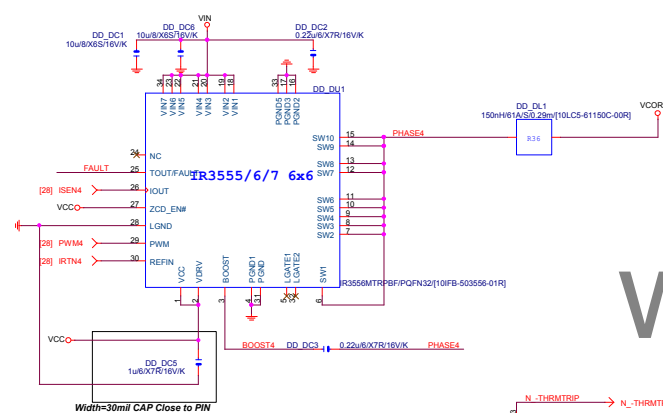
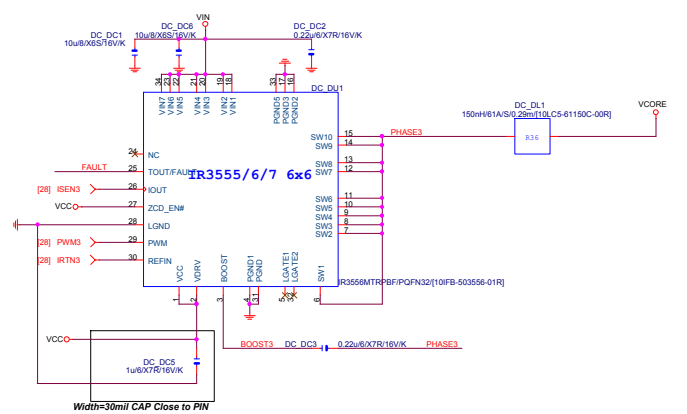
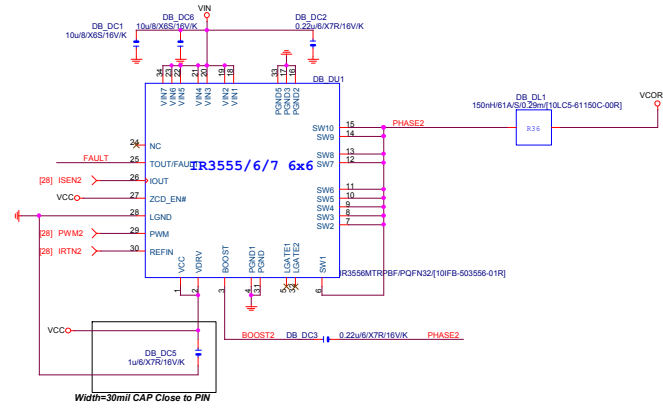
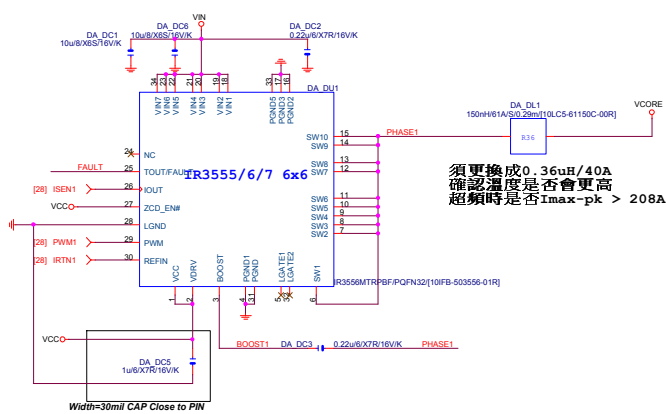
GA-X99-GAMING 5P

GA-X99-GAMING 5P

GA-X99-GAMING 5P

GA-X99-GAMING 5P





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Close to Vcore  
output inductor

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should be routed as  
differential pair,  
7mil width, 8mil  
spacing

For power sequence require

POWER ISSUE  
[12,20,31,35,36,41,55,57] N\_SLP\_S3>>MAR78 22K/4  
0.1u4/X7R/16V/K

Close to Vcore  
output inductor

should be routed as  
differential pair,  
7mil width, 8mil  
spacing

For power sequence require

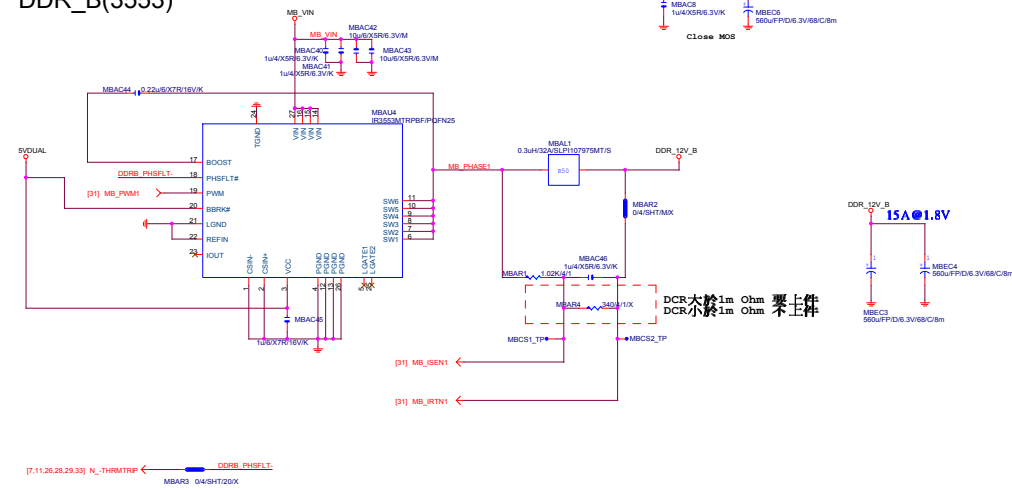
POWER ISSUE  
MBC39  
2.2u/6/XSR/6.3V/K

**GIGABYTE**

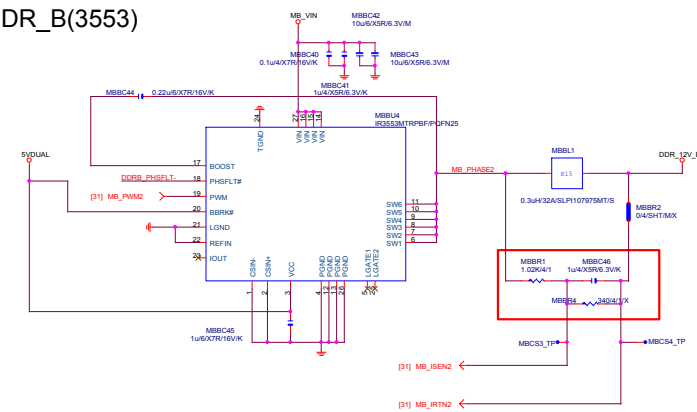
DDR A& CPU\_VTT POWER IR3570

GA-X99-GAMING 5P  
Rev 1.0  
Date: Friday, January 16, 2015

## DDR\_B(3553)



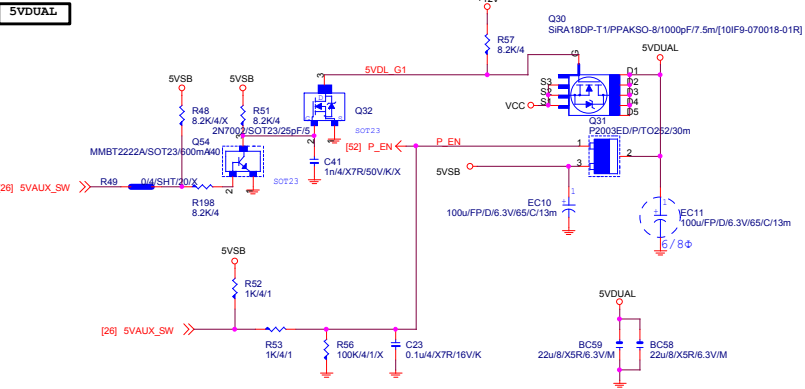
## DDR\_B(3553)



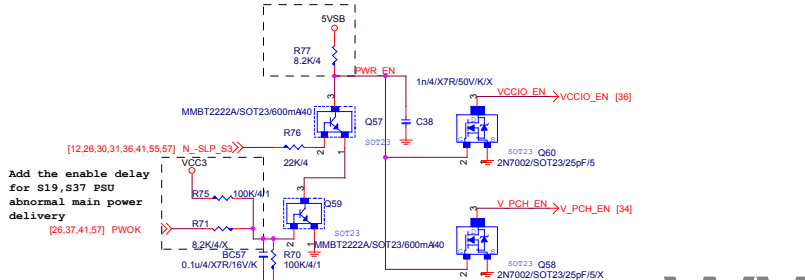
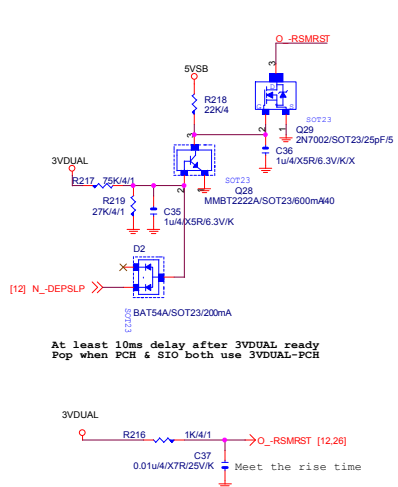
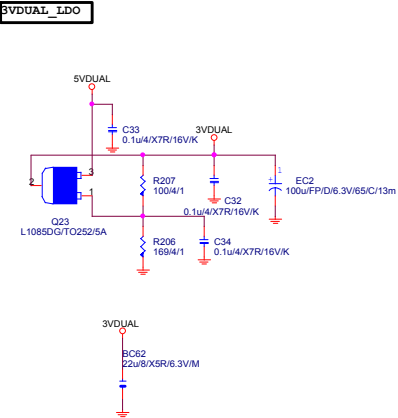




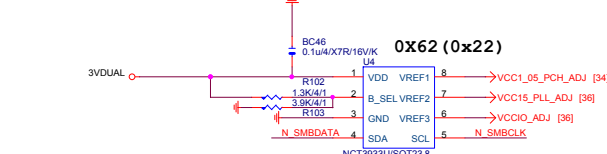
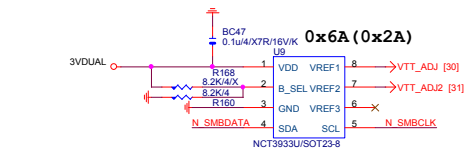
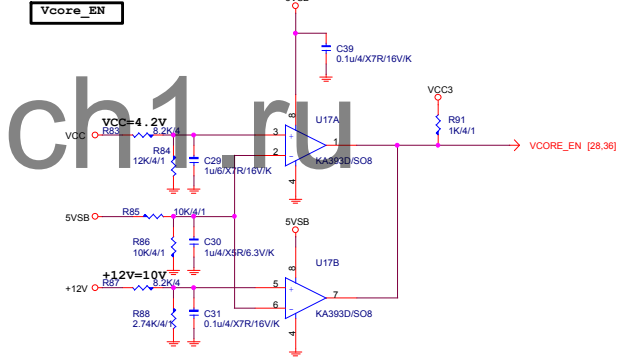
5VDUAL



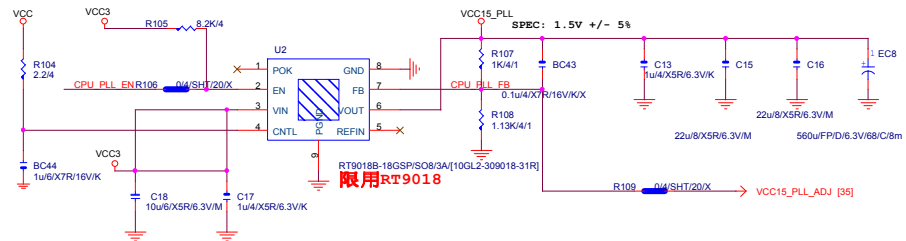
3VDUAL\_IDO



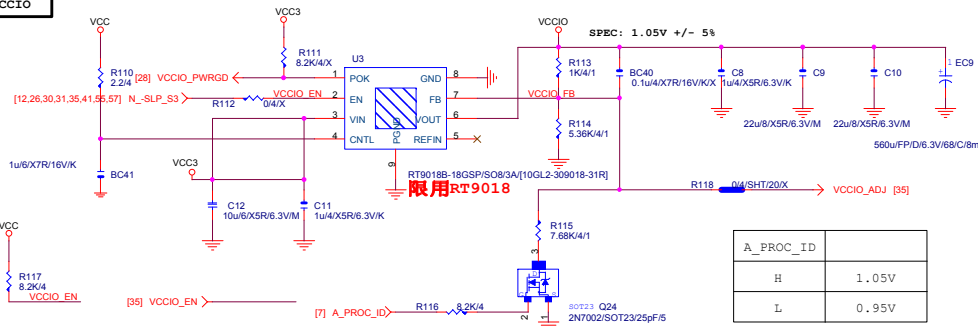
Vcore\_EN



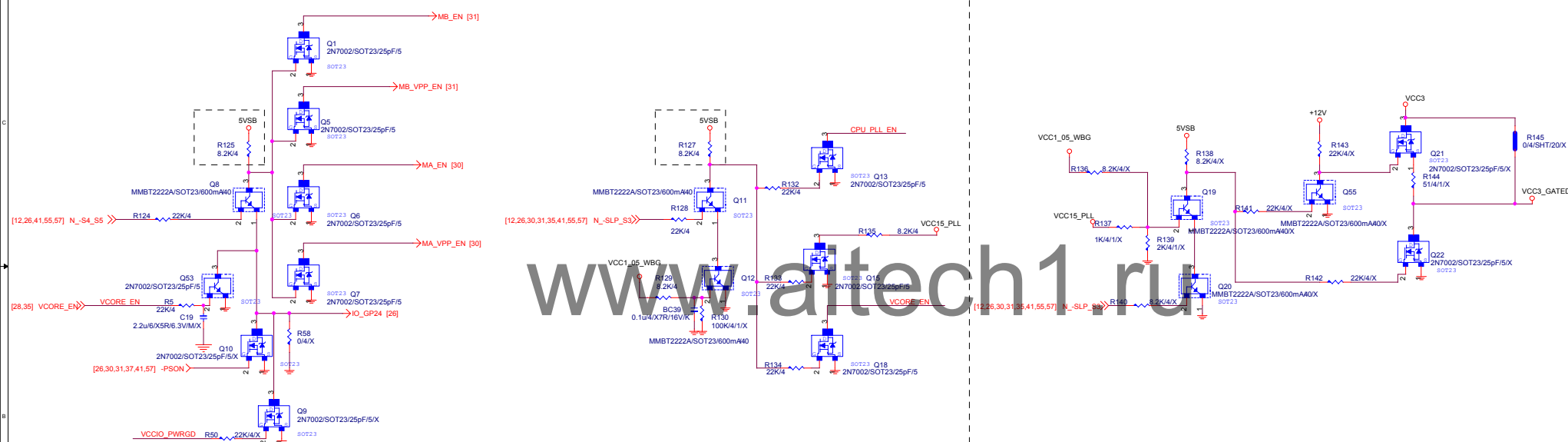
## VCC15\_PLL



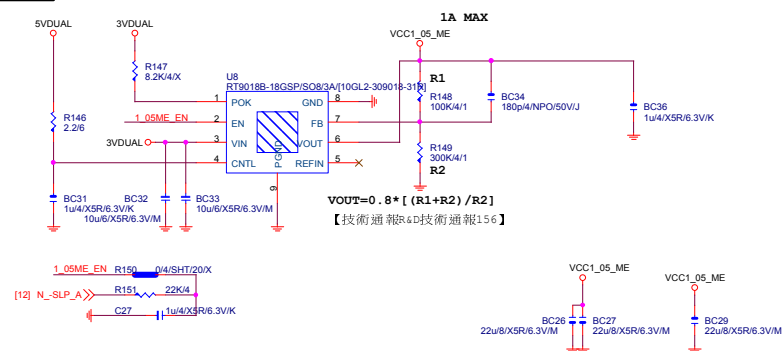
## VCCIO



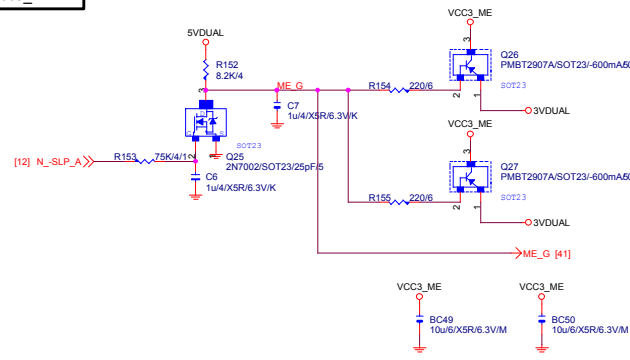
A_PROC_ID	
H	1.05V
L	0.95V



## VCC1 05 ME

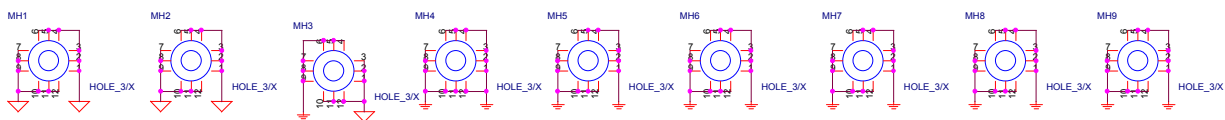
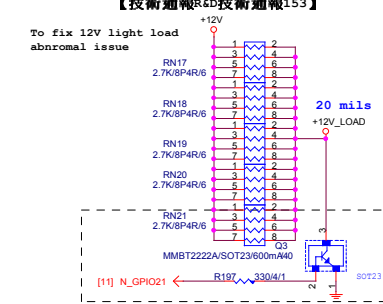
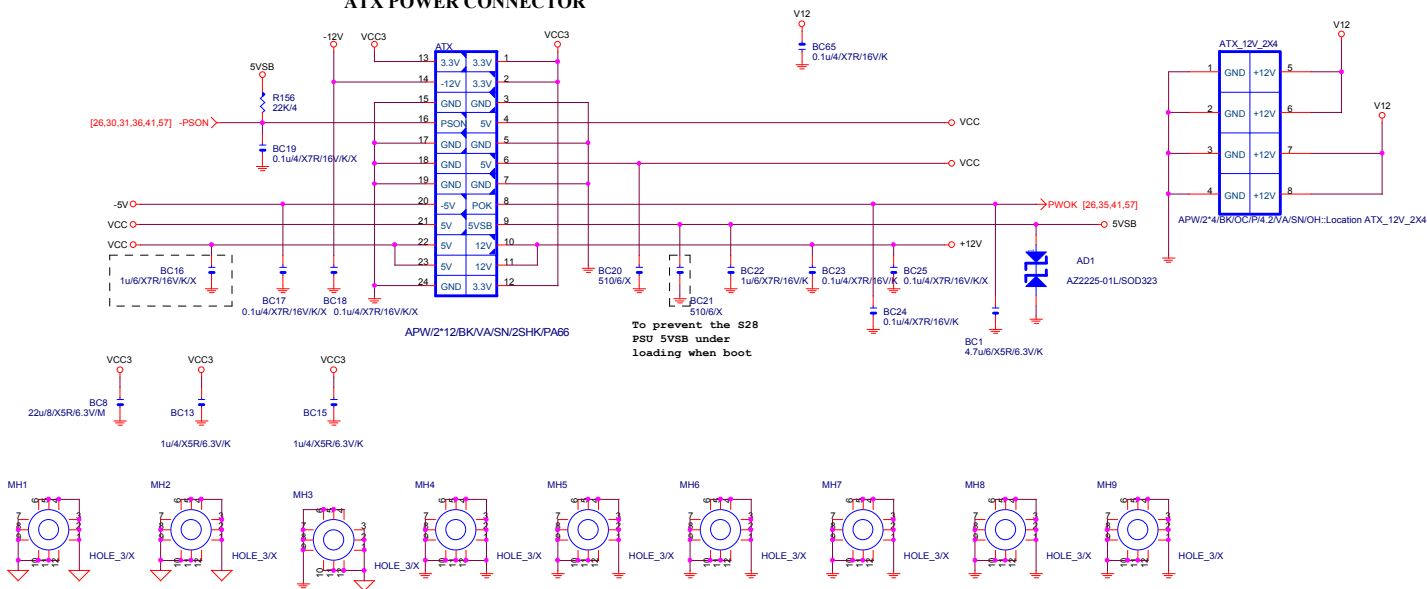


## VCC3 ME

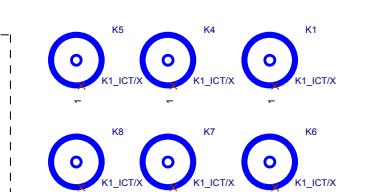
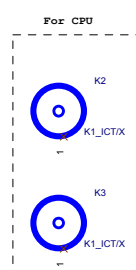
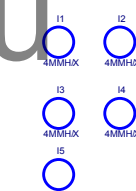
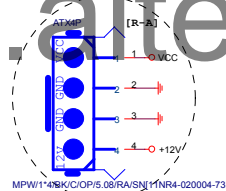




# ATX POWER CONNECTOR

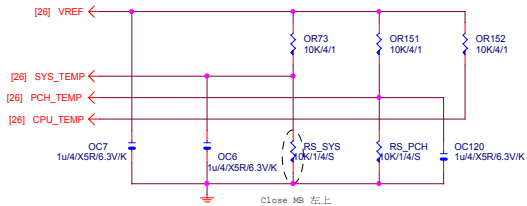


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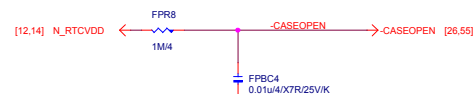


INPUT				OUTPUT	
PR	CL	CLOCK	DATA	Q	-Q
L	H	X	X	H	L
H	L	X	X	L	H
L	L	X	X	H	H
H	H	Rising	T	H	L
H	H	Rising	L	L	H
H	H	L	X	No Change	
H	H	H	X	No Change	
H	H	Falling	X	No Change	

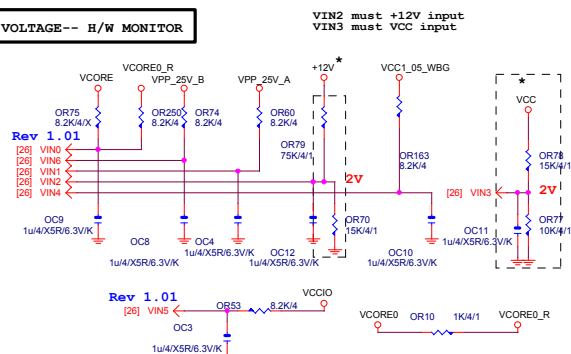
## TEMP H/W MONITOR



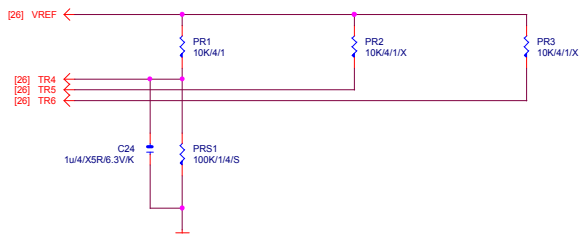
## CASE OPEN



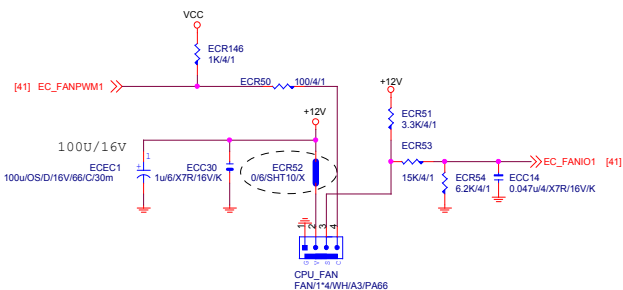
## VOLTAGE-- H/W MONITOR



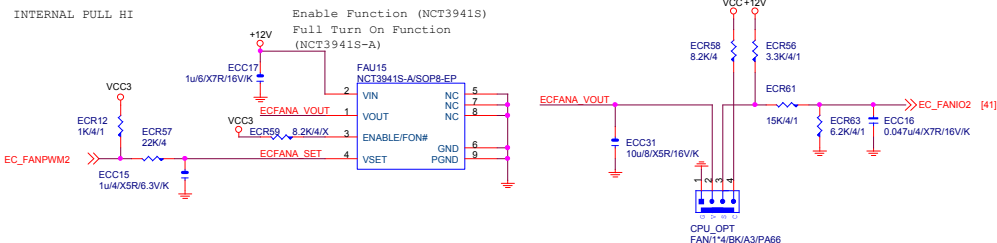
## 8620 PROCHOT



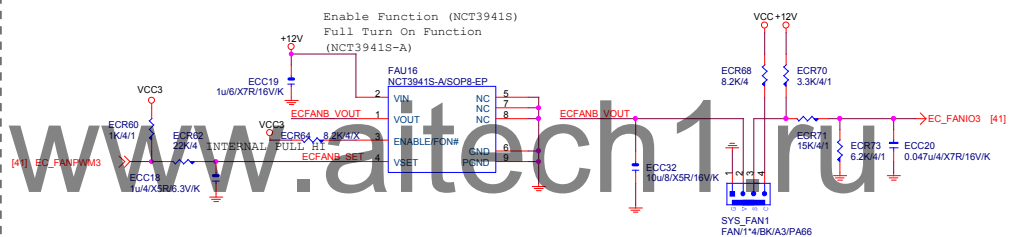
## CPU SMART FAN



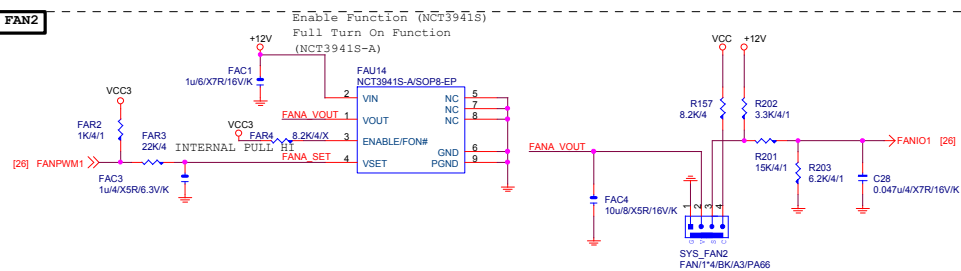
## CPUOPT FAN



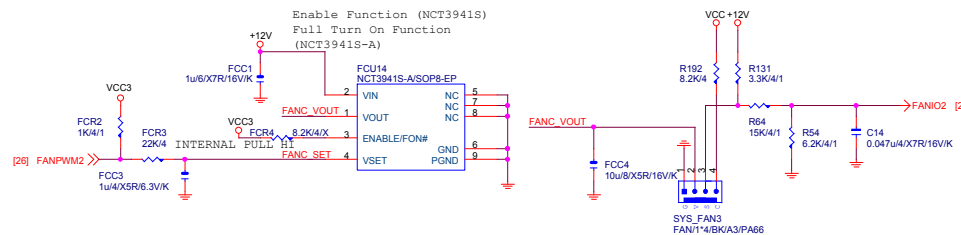
## SYS FAN1



## SYS FAN2

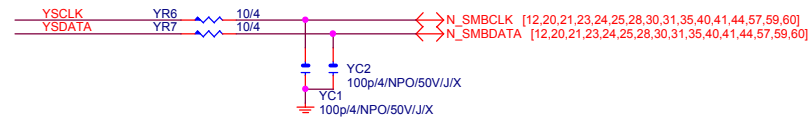
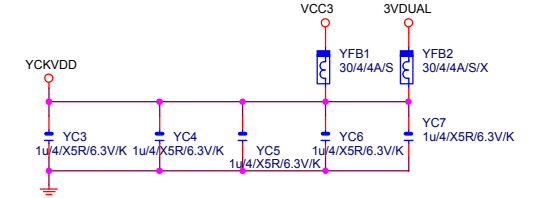
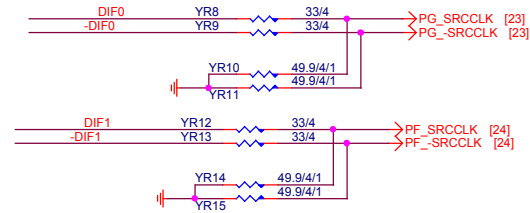
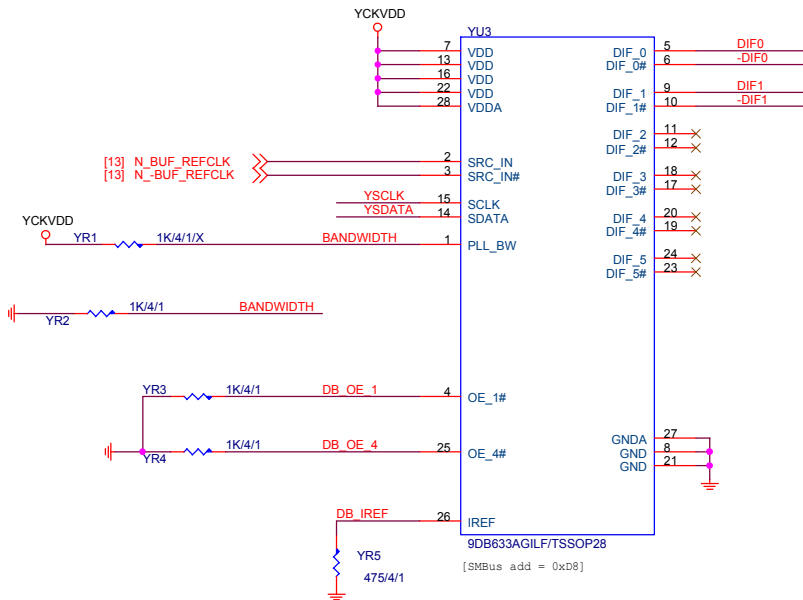


## SYS FAN3



Gigabyte Technology

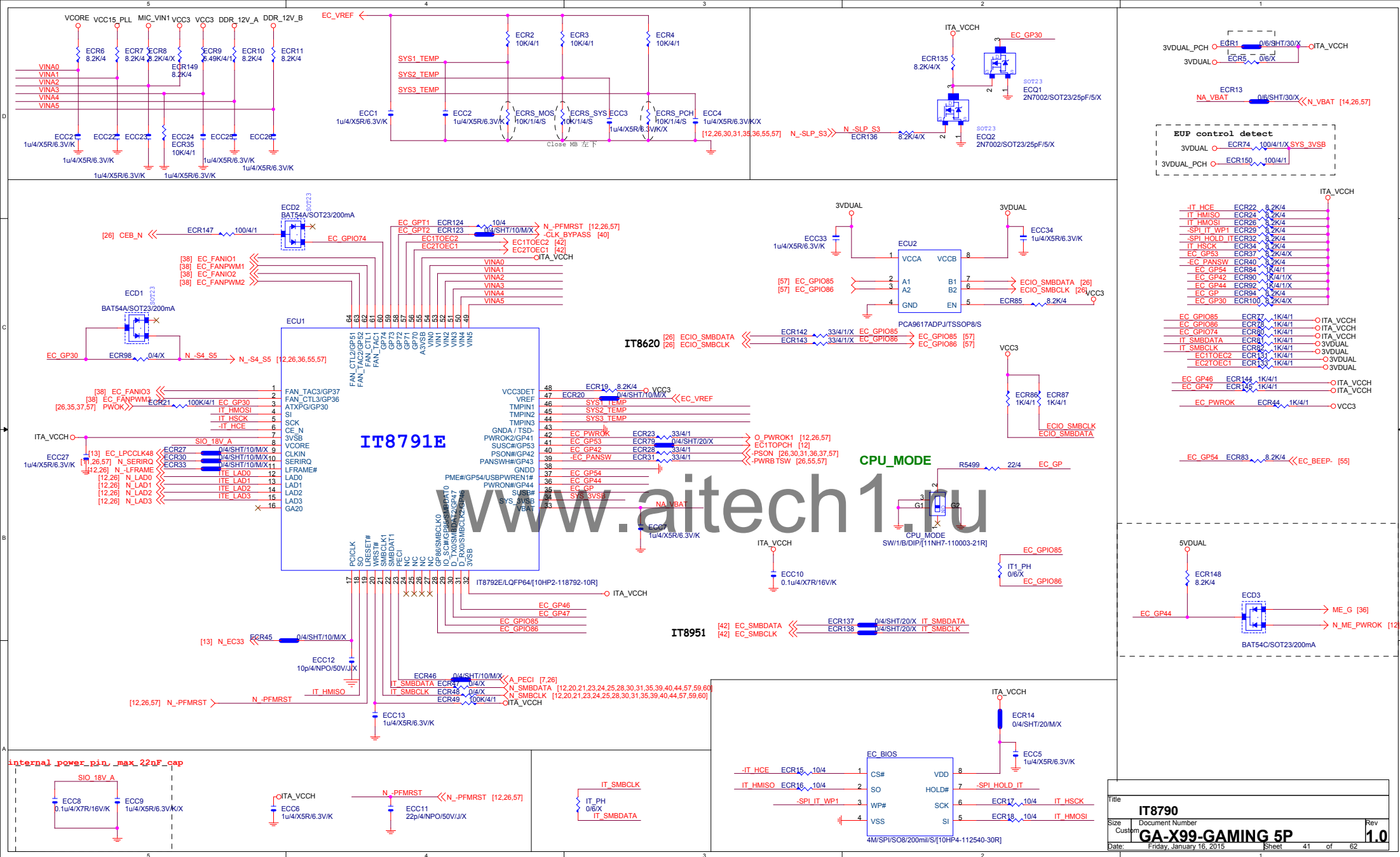
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Size	Document Number	GA-X99-GAMING 5P.0
Date	Friday, January 16, 2015	Sheet 38 of 62

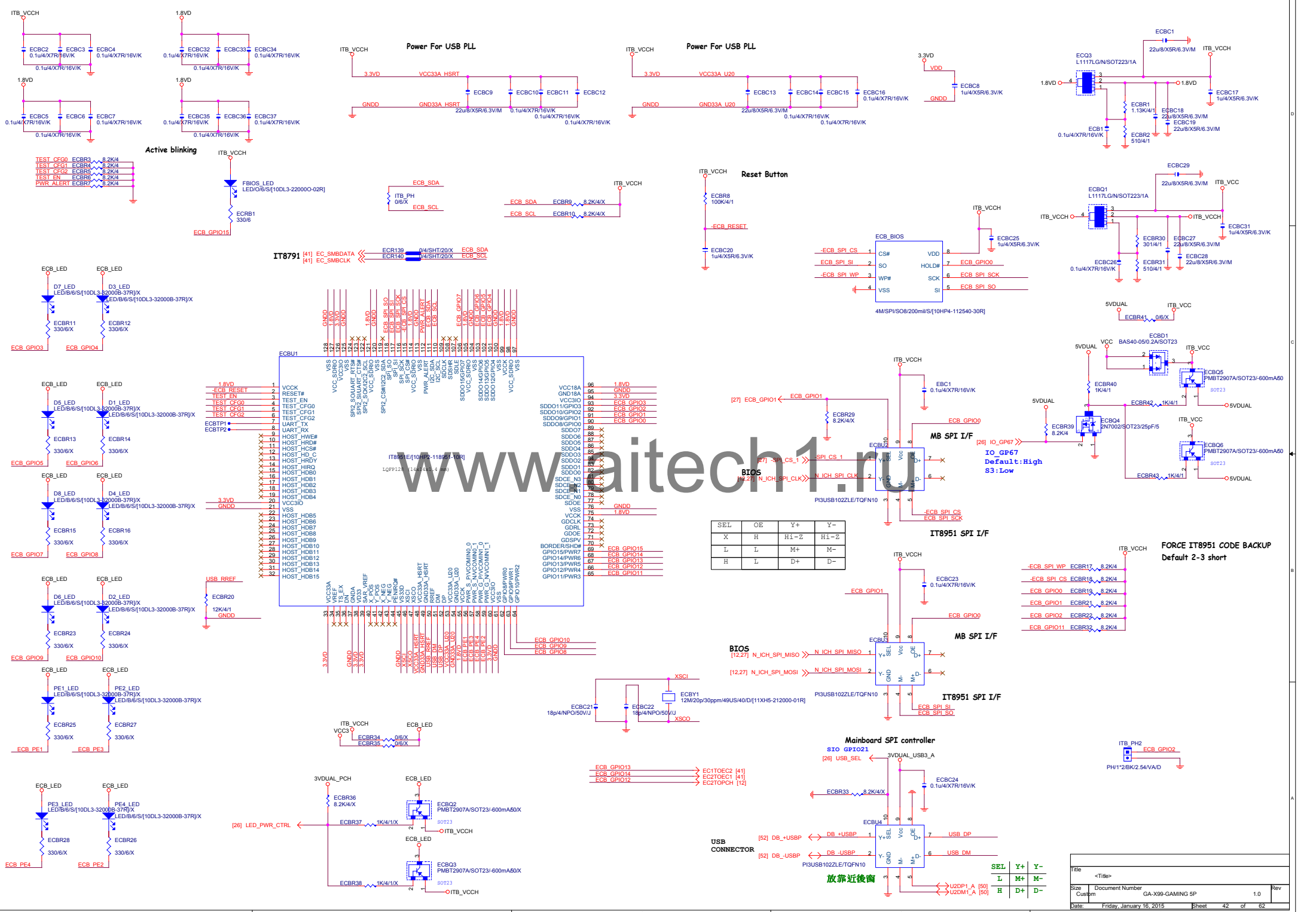


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GIGABYTE™			
Title			
REFCLK			
Size	Document Number		Rev
Custom	GA-X99-GAMING 5P		1.0
Date:	Friday, January 16, 2015	Sheet	39 of 62

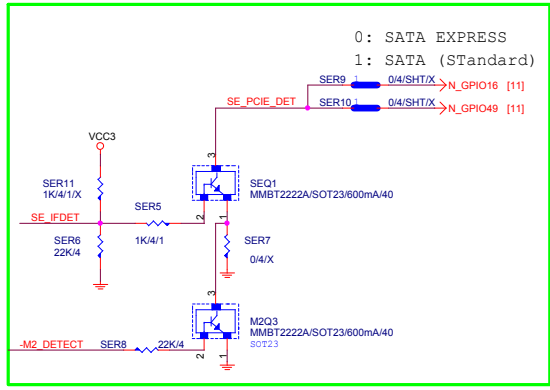
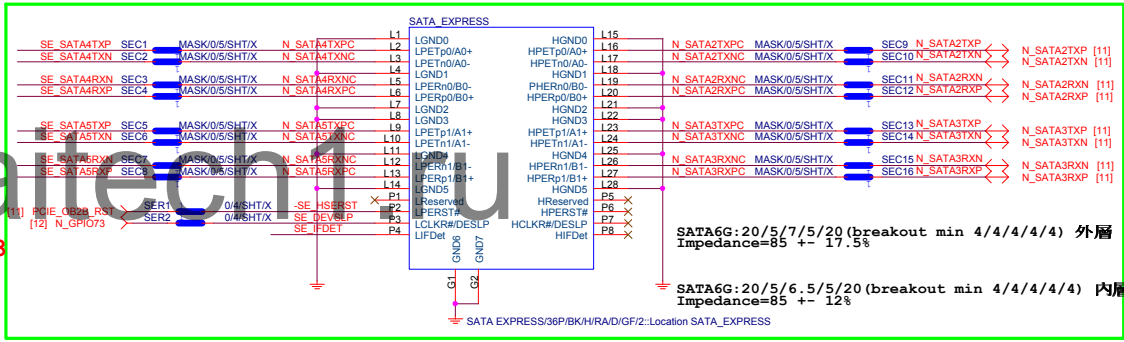
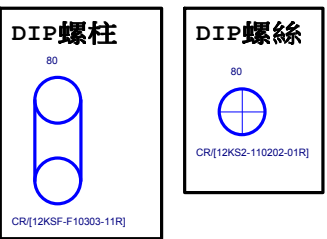
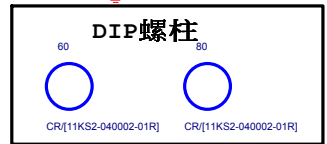
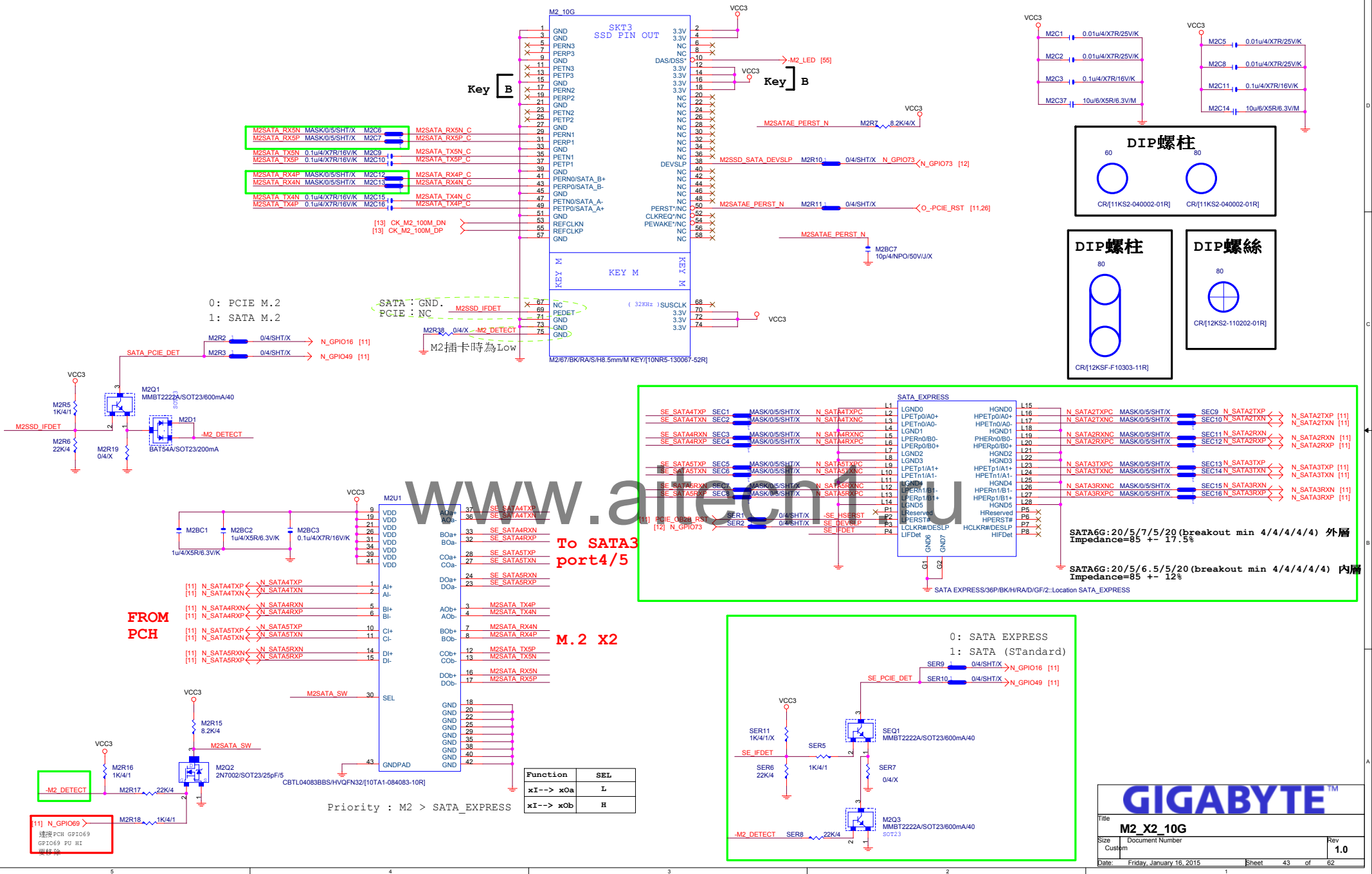






SEL	OE	Y+	Y-
X	H	H1-Z	H1-Z
L	L	M+	M-
H	L	D+	D-

Title	<Title>
Size	Document Number
Custom	GA-X99-GAMING 5P
Date:	Friday, January 16, 2015
Sheet	42 of 62



Title

M2\_X2\_10G

Size

Custom

Date

Friday, January 16, 2015

Sheet

43

of

62

Rev

1.0

Function	SEL
xI--> x0a	L
xI--> x0b	H

Priority : M2 > SATA\_EXPRESS



請選擇適用的USBport :  
SOC/UD7/UD5/G1/G7 : USB4  
;UD3/G5:USB6

PCIE:15/4/4/4/15(breakout min 8/4/4/4/8) 外層  
Impedance=85 +- 17.5%

PCIE:15/4/4/4/15(breakout min 8/4/4/4/8) 內層  
Impedance=85 +- 12%

WIFI use PCIE port4 in X99

DIP螺絲

30



CR[12KS2-110202-01R]

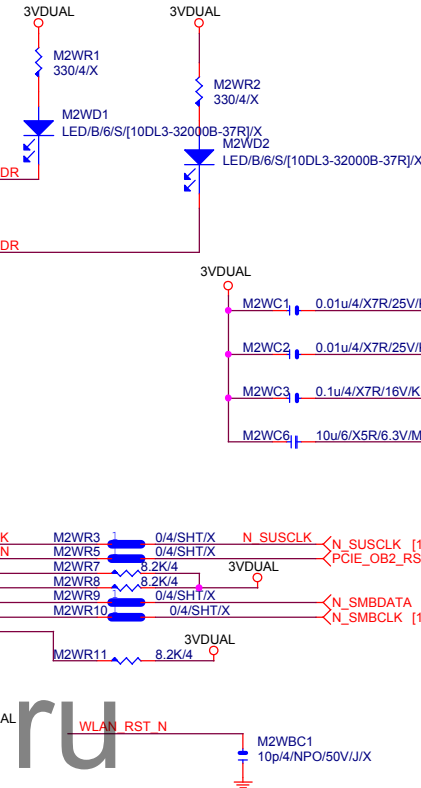
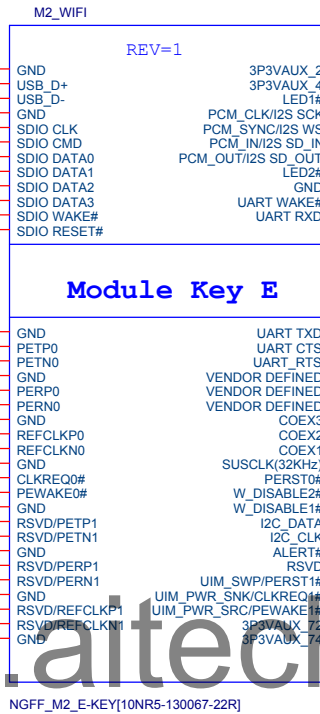
SMD螺柱

30



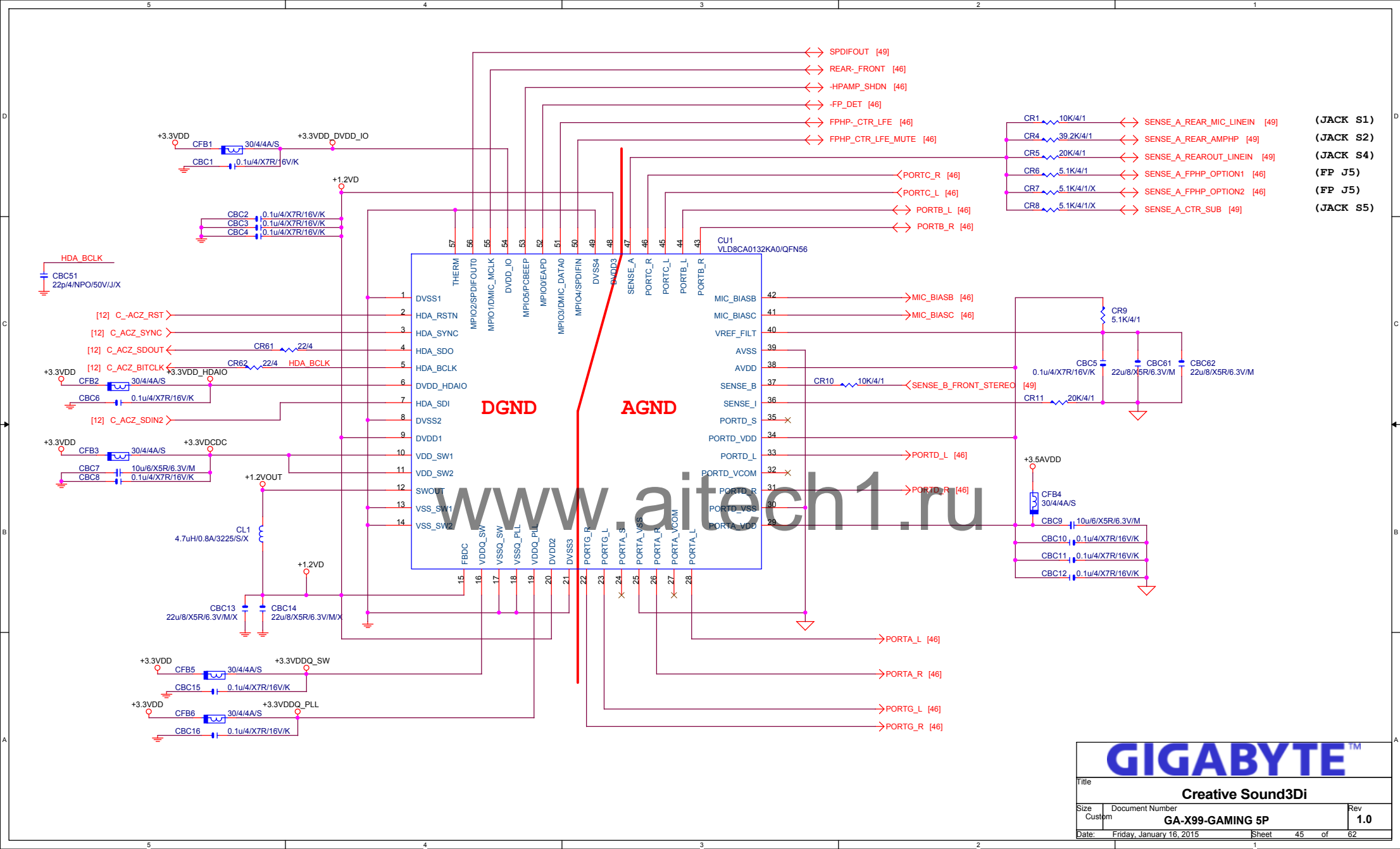
CR[10KS2-040109-01R]  
should be SMD level


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Title M2_WIFI		
Size B	Document Number	Rev 1.0
Date:	Friday, January 16, 2015	Sheet 44 of 62

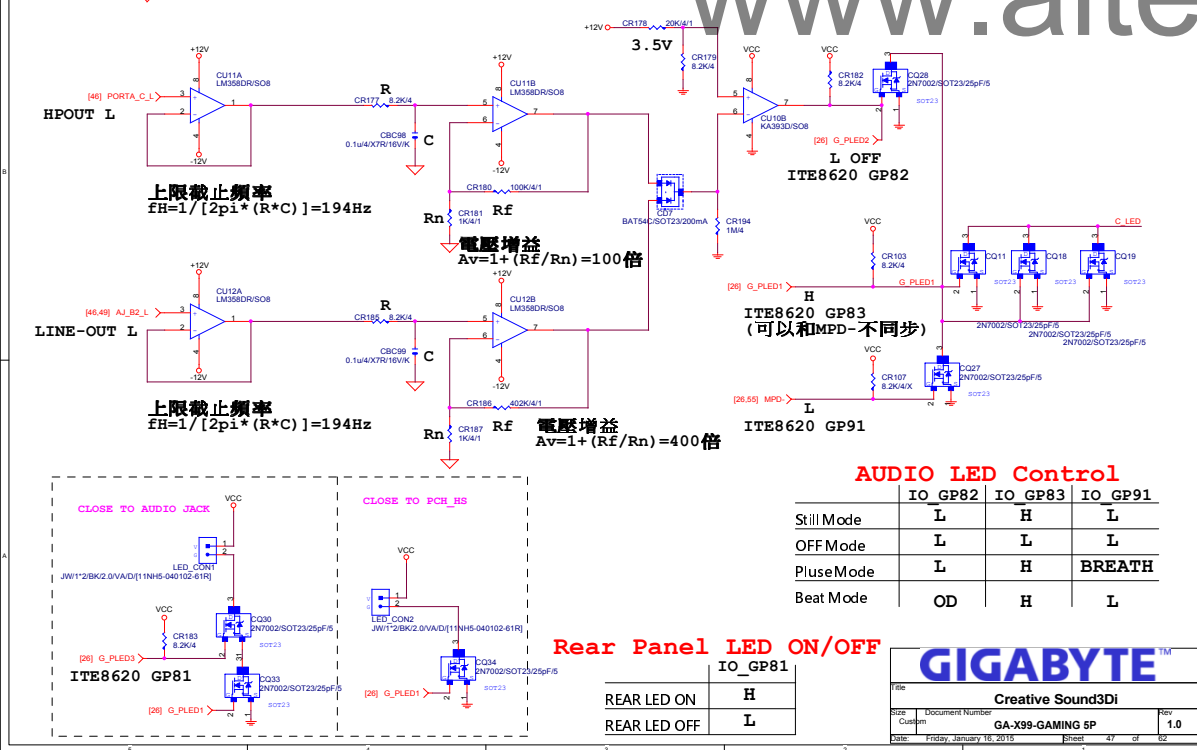
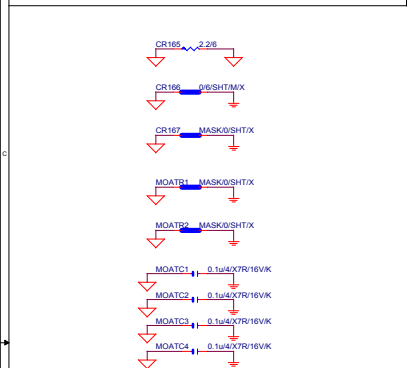
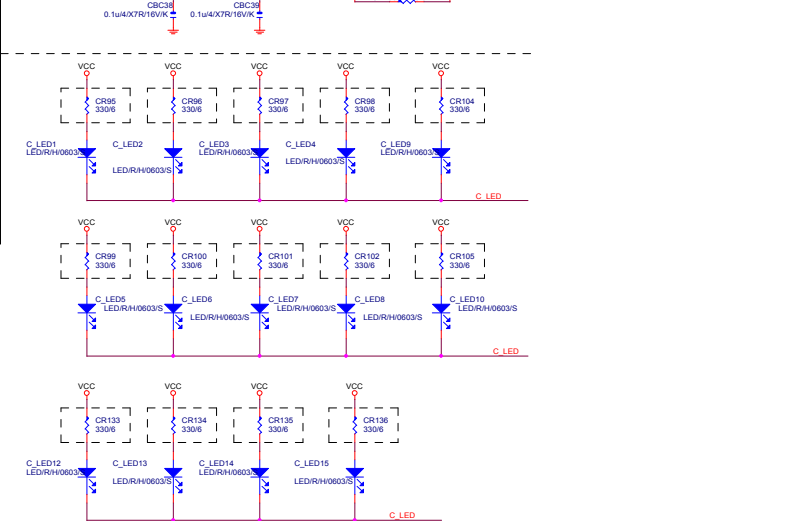




**Creative Sound3Di**

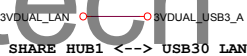
Size Custom	Document Number <b>GA-X99-GAMING 5P</b>	Rev <b>1.0</b>
Date: Friday, January 16, 2015	Sheet 45 of 62	





	IO_GP82	IO_GP83	IO_GP91
Still Mode	L	H	L
OFF Mode	L	L	L
Pluse Mode	L	H	BREATH
Beat Mode	OD	H	L

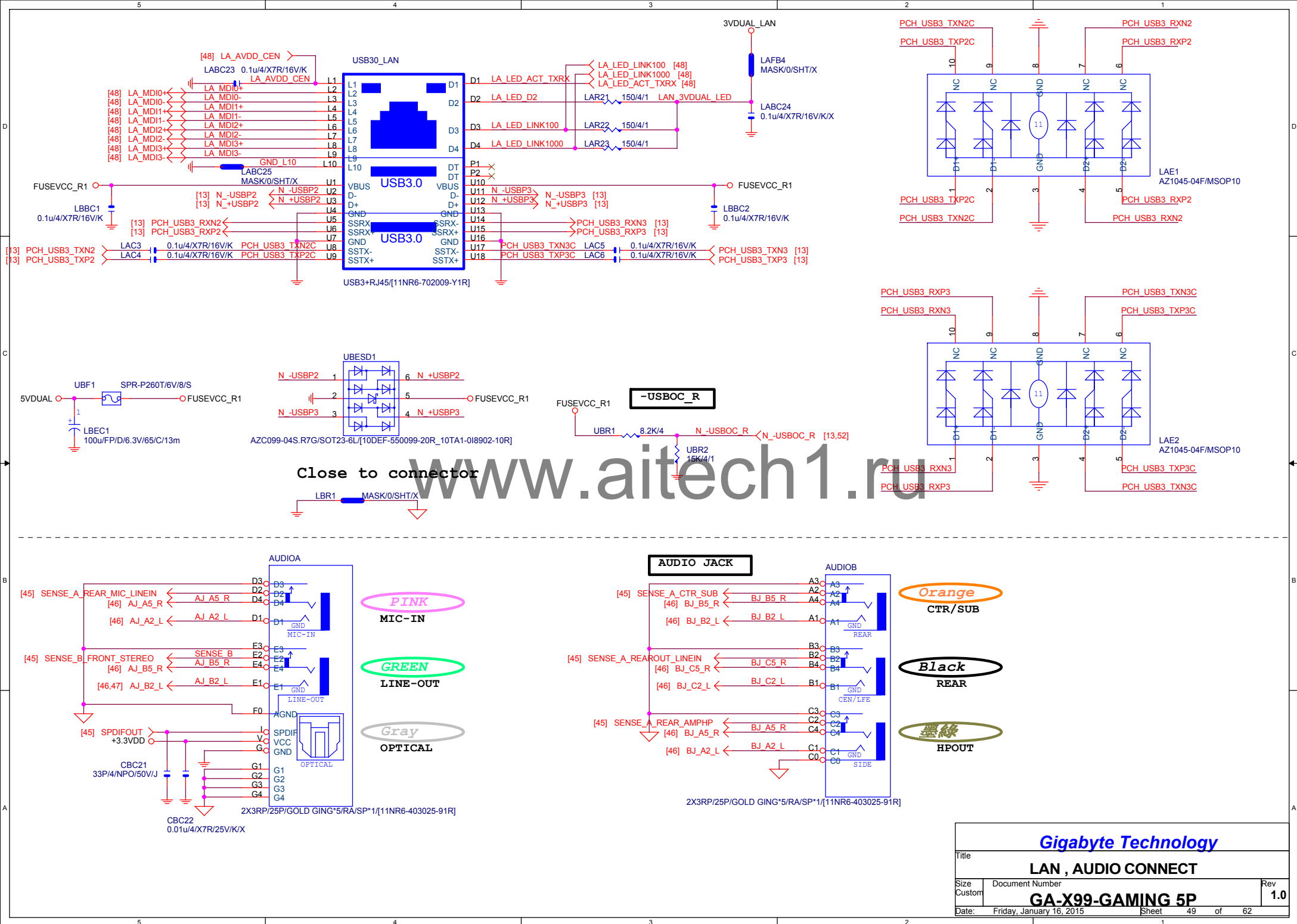
	IO_GP81
REAR LED ON	H
REAR LED OFF	L

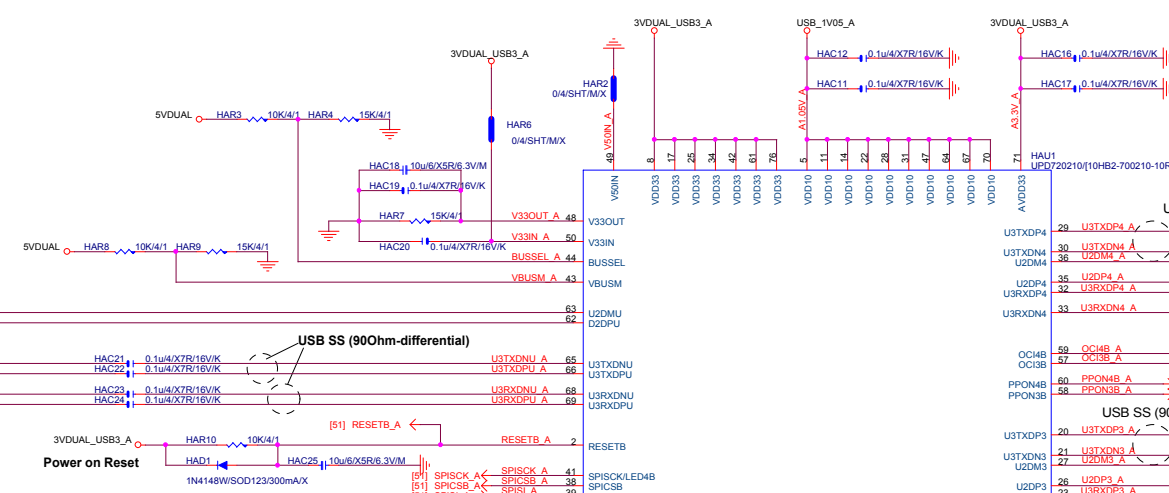
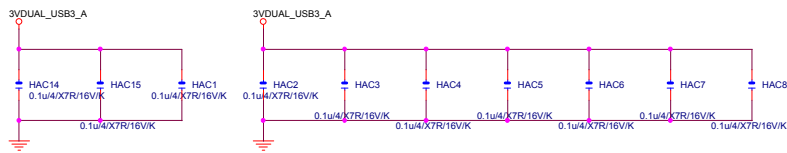


```
NEW DESIGN ONLY FOR INTERNAL SWR
AR8151: LAR3 (O) , LAR5 (X)
AR8161: LAR5 (O) , LAR3/LAR4 (X)
```



	AR8151	AR8161
AVDD33	N/A	3.3V
VDD33	3.3V	3.3V
AVDDH	2.7V	2.7V
AVDDL/DVDDL	1.1V	1.1V
VDDCT	1.7V	





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**PCH USB PORT4**

[13] N\_-USBP4  
[13] N\_+USBP4

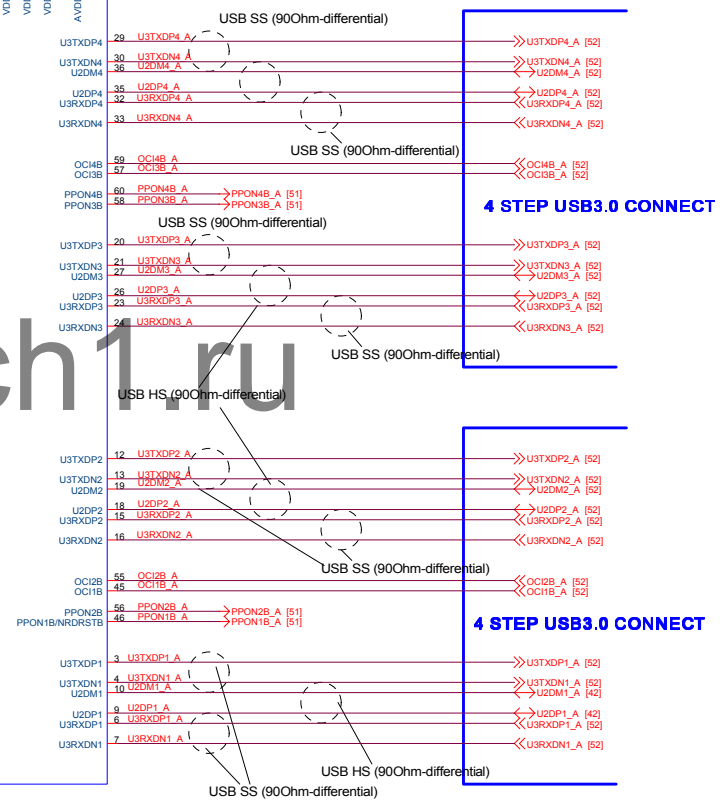
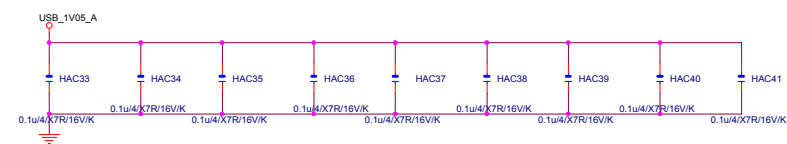
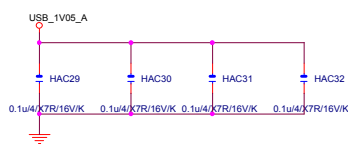
[13] PCH\_USB3\_RXN4  
[13] PCH\_USB3\_RXP4

[13] PCH\_USB3\_TXN4  
[13] PCH\_USB3\_TXP4

**Power on Reset**

Put close to U1  
Do check with crystal vendor  
if the value of C31, C32 and  
R31 are all appropriate.

Put close to U1  
Short and broad connection to GND  
Don't split R32 into multiple  
resistors.

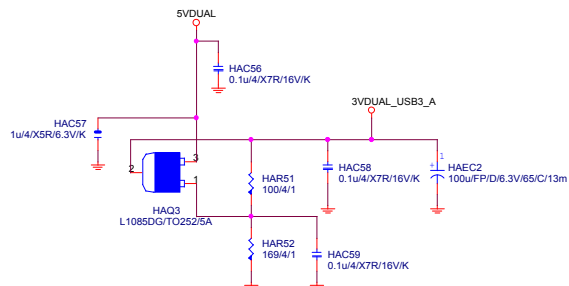


**Gigabyte Technology**

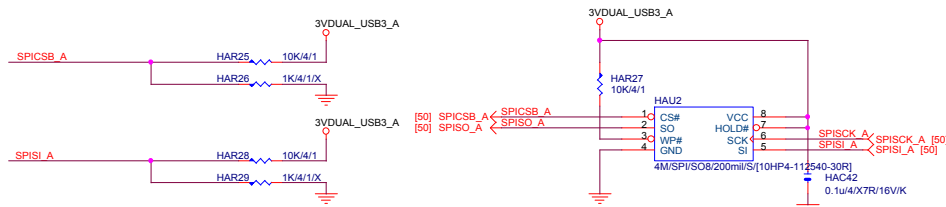
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Size	Document Number	GA-X99-GAMING 5P	
C		Rev 1.0	
Date:	Friday, January 16, 2015	Sheet	50 of 62



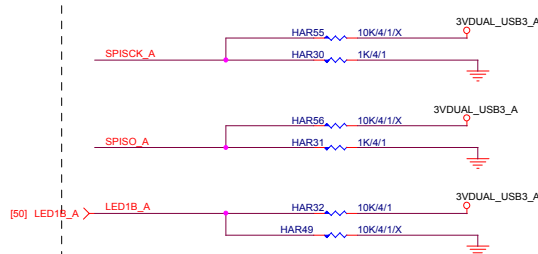
# 3VDUAL\_USB\_1



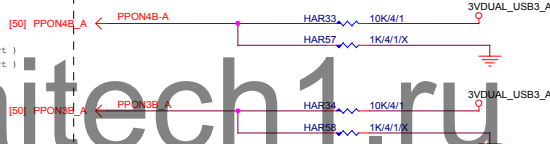
## # External SPI ROM ; SPI ROM attached mode



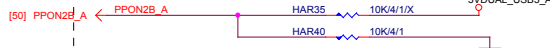
## # Battery Charging



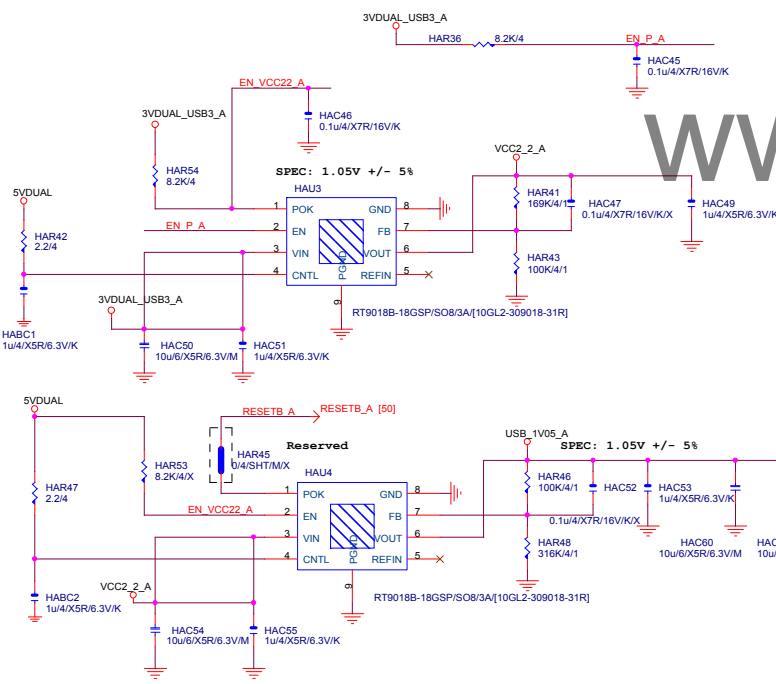
## # Number of Ports ; 4Ports mode



## # VBUS Power Control ; Individual mode

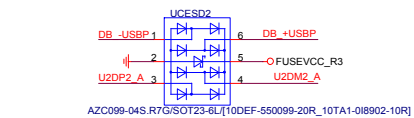
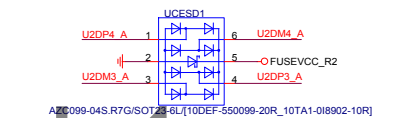
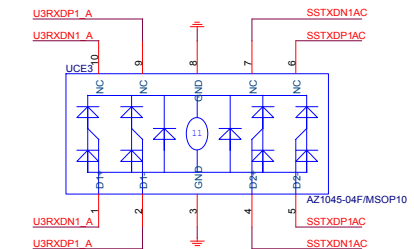
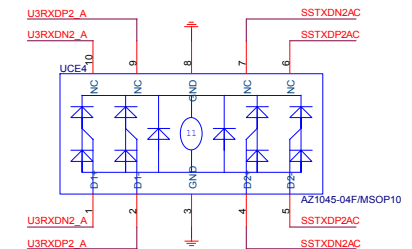
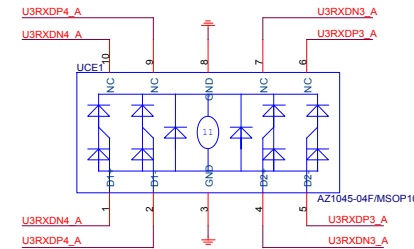
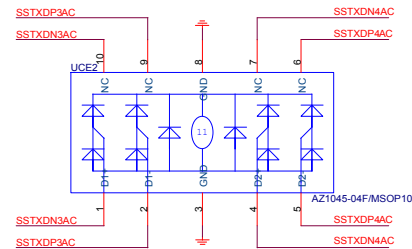
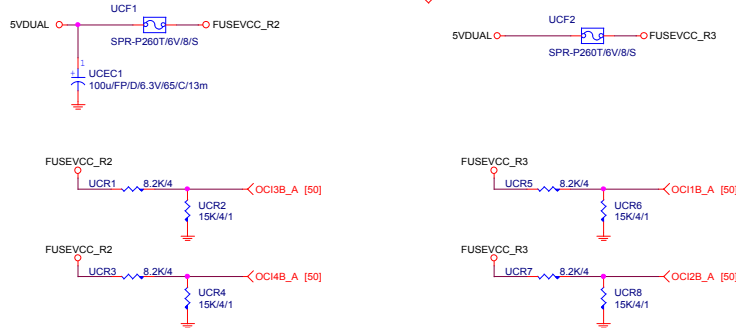
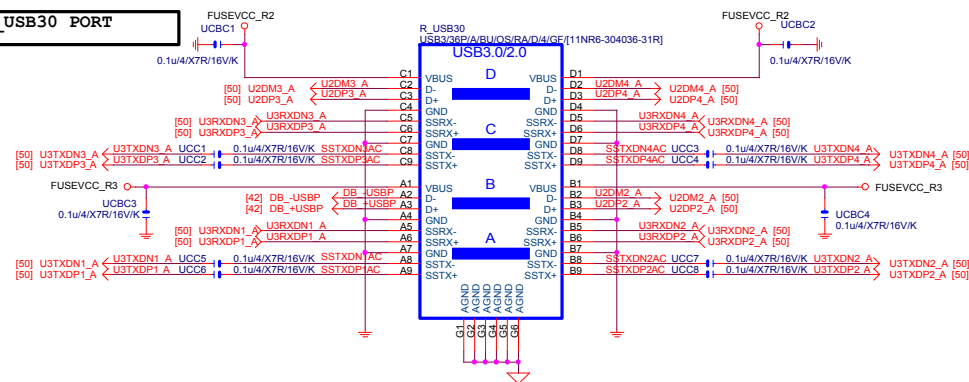


## # PPON1B Pin Function ; Port1 PPONB mode



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# R\_USB30 PORT

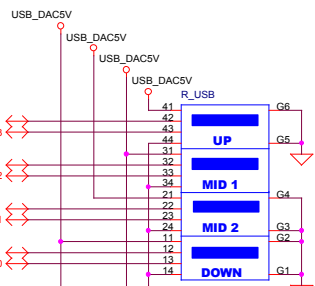


Close to connector

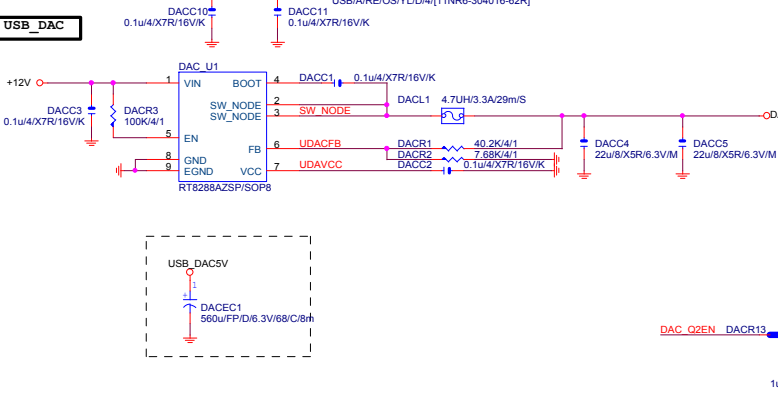
Close to connector

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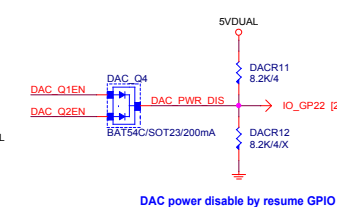
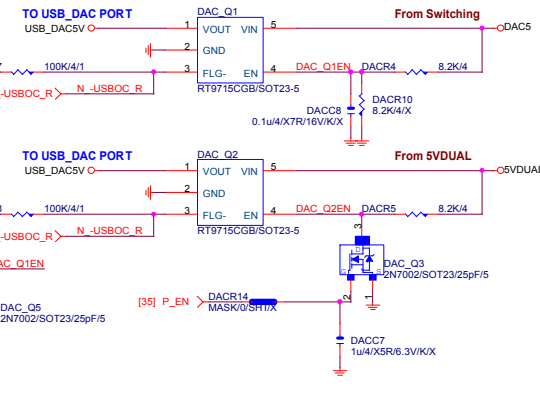
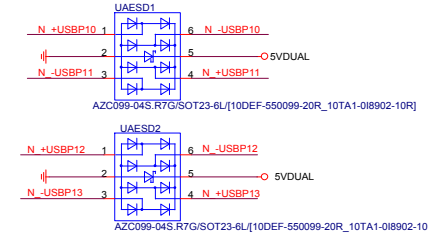
## R\_USB



## USB\_DAC

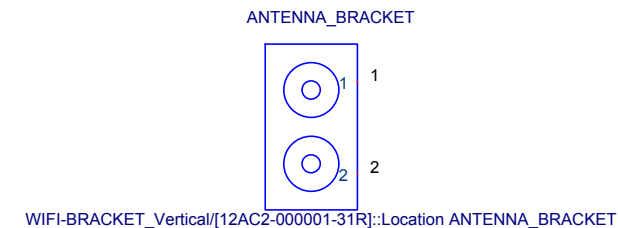
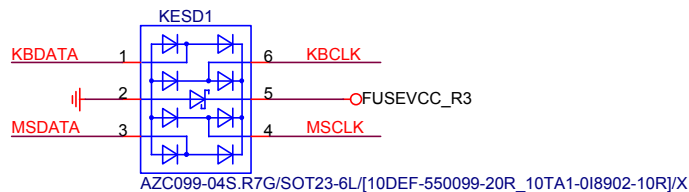
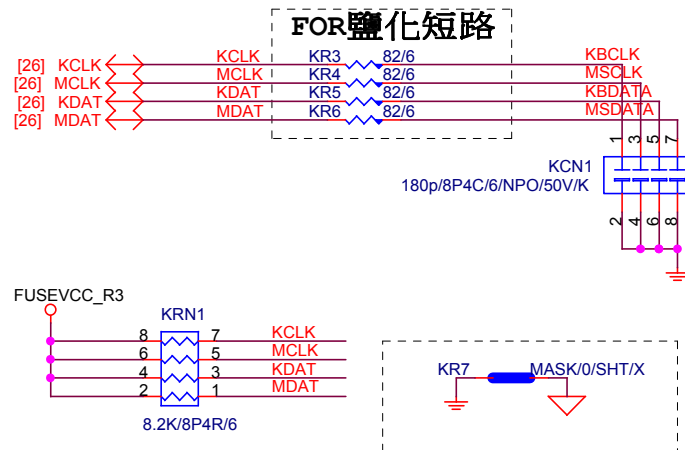
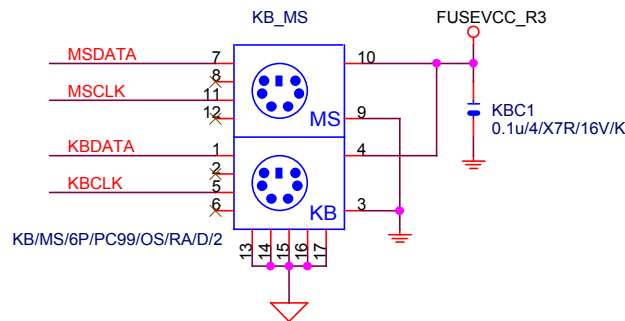


## USB20 ESD PROTECT



DAC power disable by resume GPIO

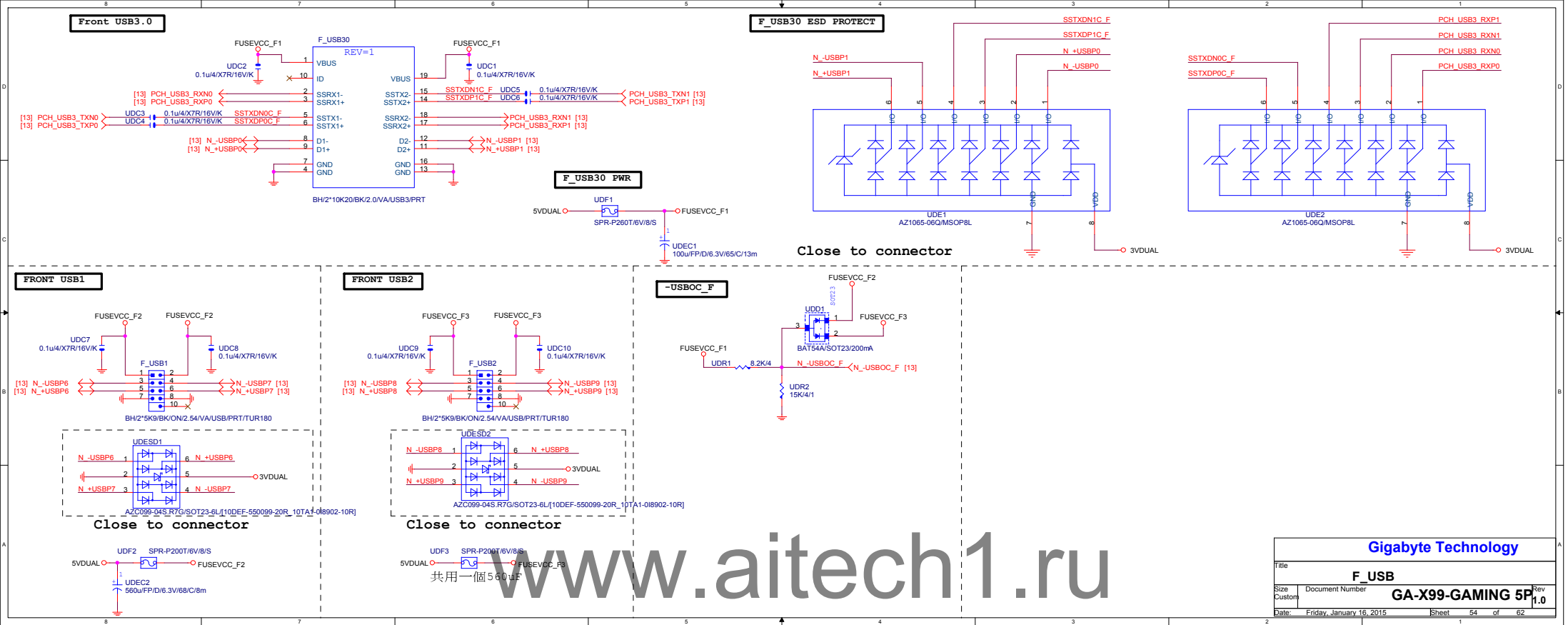
Gigabyte Technology			
Title	R_USB30 , R_USB3		
Size	Document Number	Rev	
Custom	GA-X99-GAMING 5P	1.0	
Date	Friday, January 16, 2015	Sheet	52 of 62



www.aitech1.ru

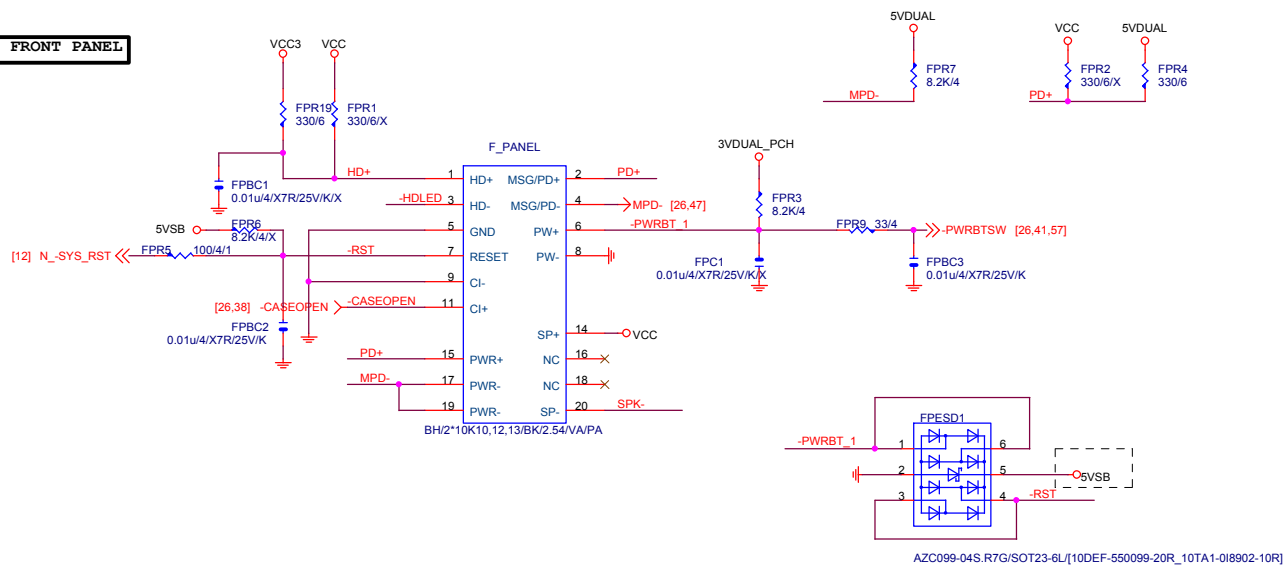
Gigabyte Technology

Title			USB DAC-UP , PS2 ,WIFI		
Size	Document Number		Rev		
Custom			GA-X99-GAMING 5P		1.0
Date:	Friday, January 16, 2015		Sheet	53	of 62

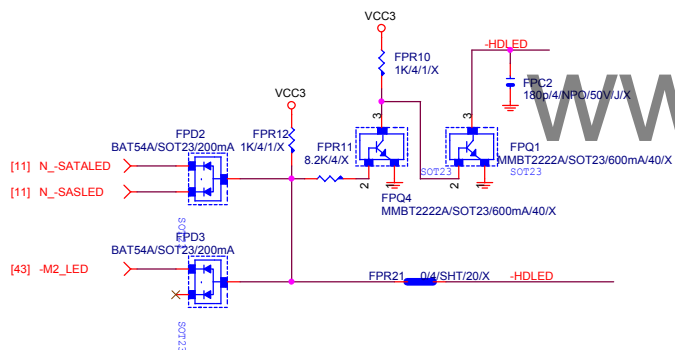


Gigabyte Technology			
F_USB			
Title	Document Number	GA-X99-GAMING 5P	
Size	Custom	Rev	1.0
Date:	Friday, January 16, 2015	Sheet	54 of 62

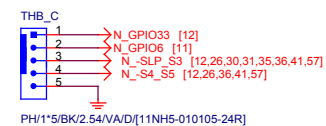
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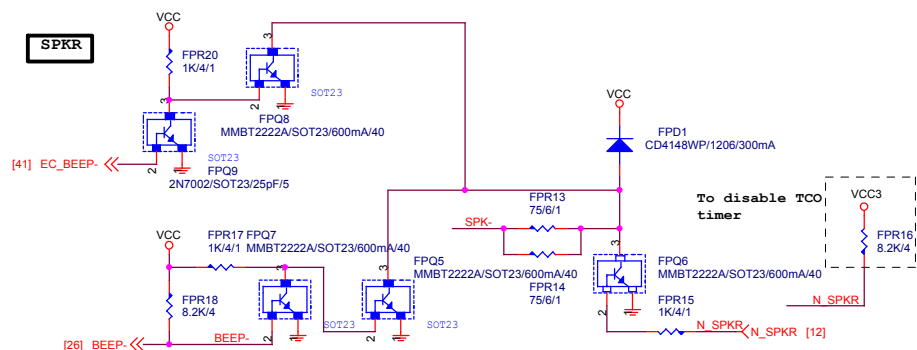
# SATA LED



# Thunderbolt



# SPKR



**Gigabyte Technology**

Title: **FP,F\_USB,USB PWR,BZ**

Size: Custom

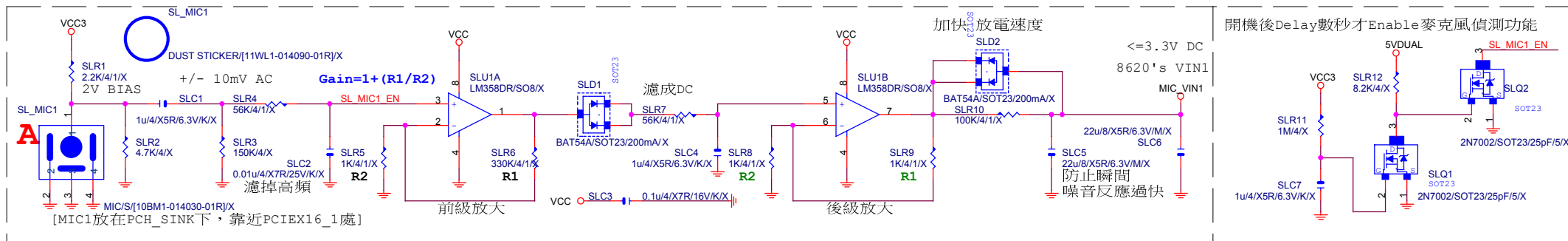
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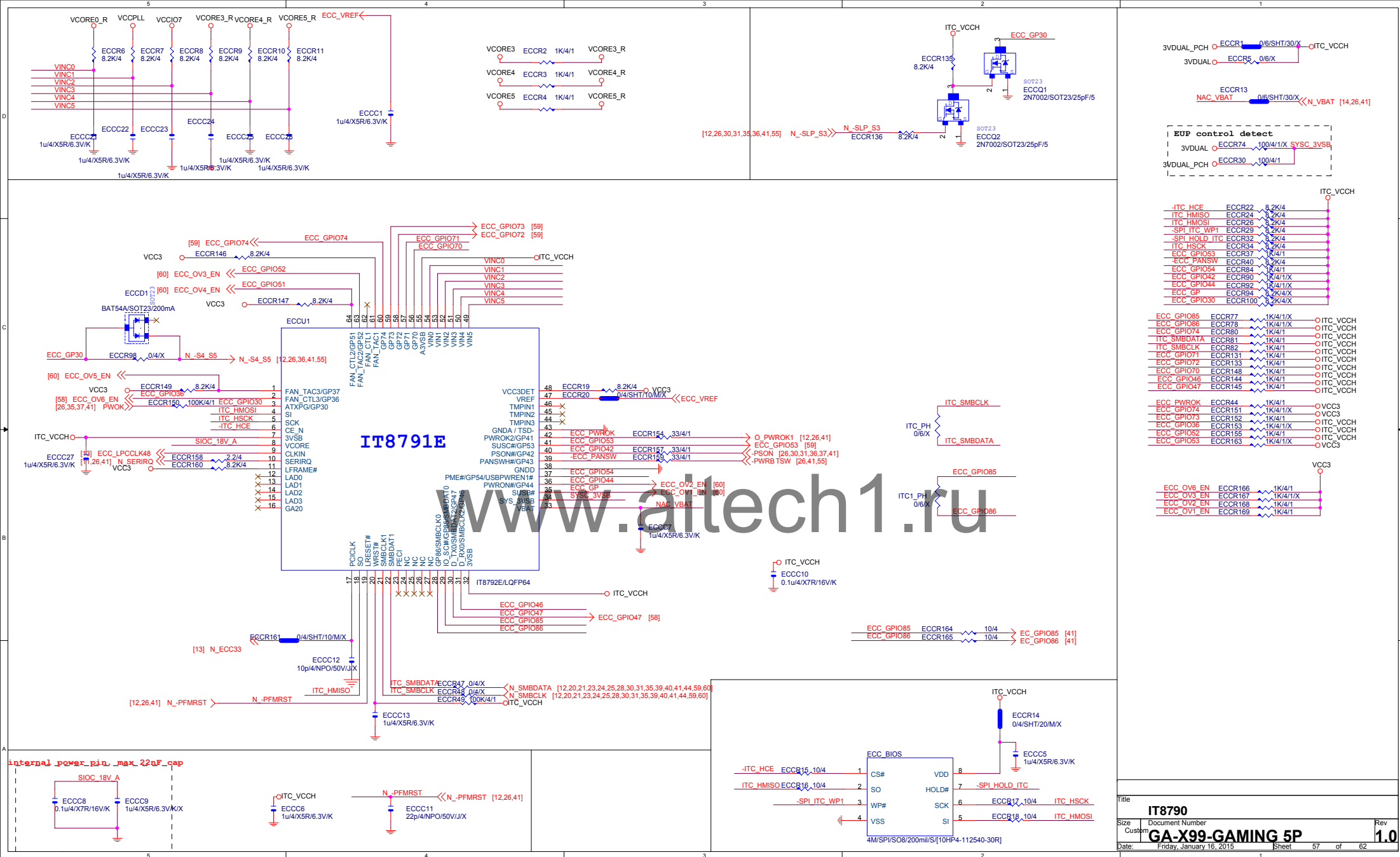
Date: Friday, January 16, 2015

Sheet: 55 of 62

1.0

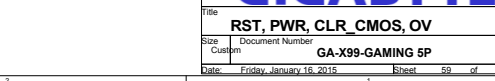
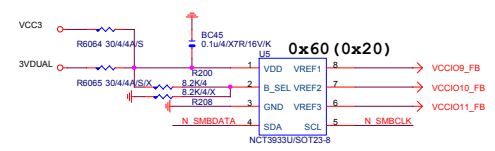
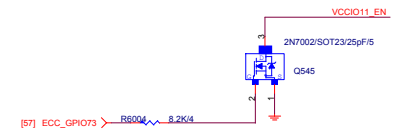
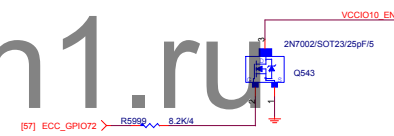
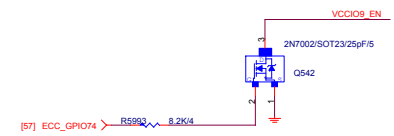
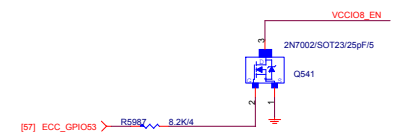
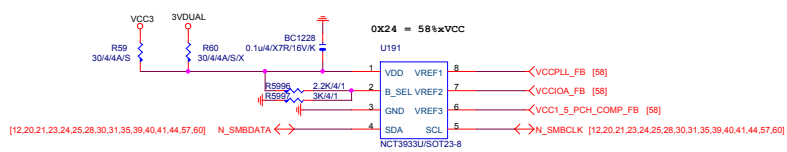
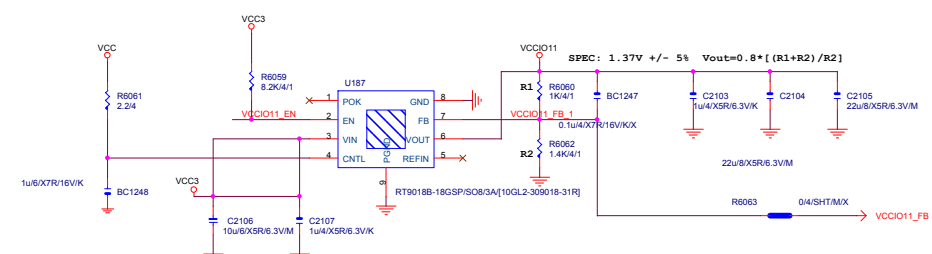
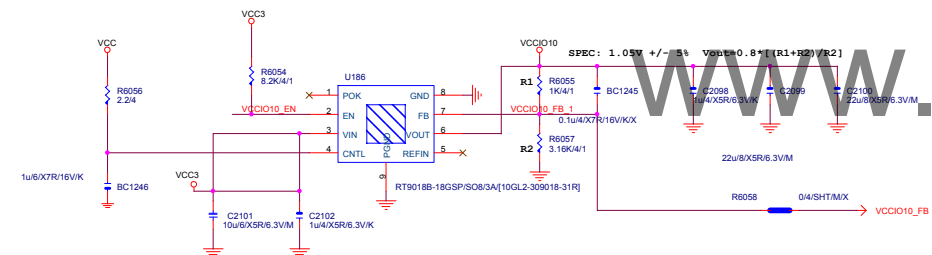
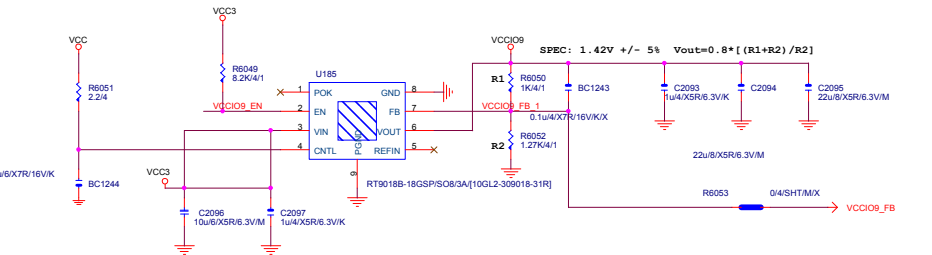
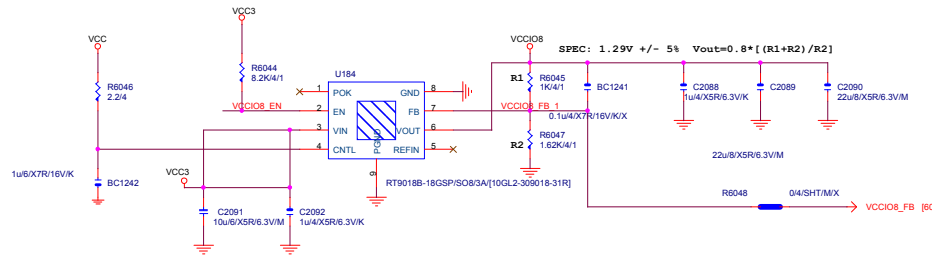
## Sound Level (dB-->DC Level)



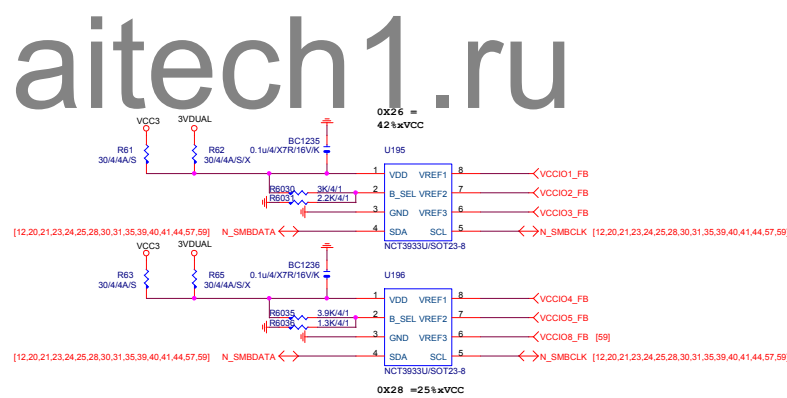
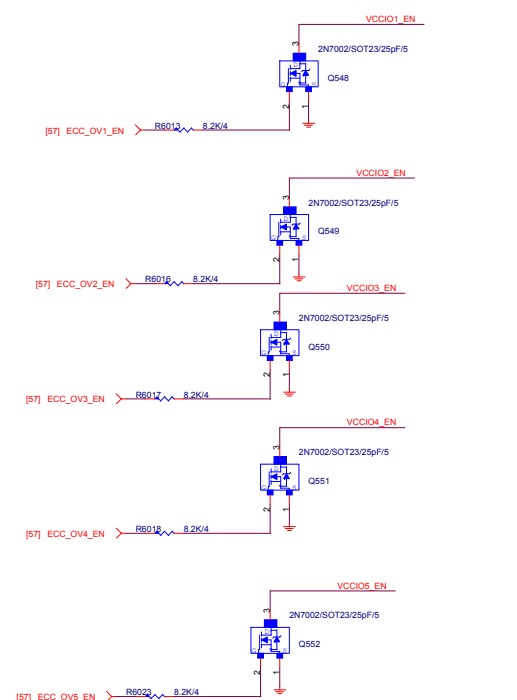








Title		RST, PWR, CLR_CMOS, OV	
Size		Document Number: GA-X99-GAMING 5P	
Date		Friday, January 16, 2015	
Sheet		59 of 62	



# PCH GPIO

PIN NAME	POWER WELL	USAGE	AFTER PLTRST	S3/S5	NOTES
GP[0]	VCC3	-ICH_PSI	IN		8.2K P/U TO VCC3
GP[1]	VCC3	SPARE	IN		8.2K P/U TO VCC3
GP[2]	VCC3	-PIRQE	IN		8.2K P/U TO VCC3
GP[3]	VCC3	-PIRQF	IN		8.2K P/U TO VCC3
GP[4]	VCC3	-PIRQG	IN		8.2K P/U TO VCC3
GP[5]	VCC3	-PIRQH	IN		8.2K P/U TO VCC3
GP[6]	VCC3	GPIO6	IN		8.2K P/U TO VCC3
GP[7]	VCC3	GPIO7	IN		8.2K P/U TO VCC3
GP[8]	3VDUAL	GPIO8	OUT		8.2K P/U TO 3VDUAL
GP[9]	3VDUAL	-USBOC5	IN		USB OVER-CURRENT
GP[10]	3VDUAL	-USBOC6	IN		USB OVER-CURRENT
GP[11]	3VDUAL	GPIO11	IN		8.2K P/U TO 3VDUAL
GP[12]	3VDUAL	GPIO12	OUT		8.2K P/U TO 3VDUAL
GP[13]	3VDUAL	-LPCPME	IN		8.2K P/U TO 3VDUAL
GP[14]	3VDUAL	GPIO14	IN		8.2K P/U TO 3VDUAL
GP[15]	3VDUAL	SPARE	OUT		8.2K P/U TO 3VDUAL (N/A)
GP[16]	VCC3	SPARE	IN		8.2K P/U TO VCC3
GP[17]	VCC3	SPARE	IN		8.2K P/U TO VCC3
GP[18]	VCC3	-SPI_WP0	OUT		8.2K P/U TO VCC3
GP[19]	VCC3	SPARE	OUT		8.2K P/U TO VCC3
GP[20]	VCC3	-SPI_WP1	OUT		8.2K P/U TO VCC3
GP[21]	VCC3	SPARE	IN		8.2K P/U TO VCC3
GP[22]	VCC3	SPARE	IN		1K P/U TO VCC3
GP[23]	VCC3	SPARE	IN		8.2K P/U TO VCC3
GP[24]	3VDUAL	-SKTOC	IN		8.2K P/U TO 3VDUAL (N/A)
GP[25]	3VDUAL	GPIO25	OUT		8.2K P/U TO 3VDUAL
GP[26]	3VDUAL	SPARE	OUT		8.2K P/U TO 3VDUAL
GP[27]	3VDUAL_PCH	SPARE	OUT		8.2K P/U TO 3VDUAL_PCH
GP[28]	3VDUAL	GPIO28	OUT		8.2K P/U TO 3VDUAL
GP[29]	3VDUAL	SPARE	OUT		8.2K P/U TO 3VDUAL (N/A)
GP[30]	3VDUAL	-S_WARN	OUT		CONNECT TO -S_ACK
GP[31]	3VDUAL_PCH	SPARE	IN		8.2K P/U TO 3VDUAL_PCH (N/A)
GP[32]	VCC3	SPARE	OUT		8.2K P/U TO VCC3
GP[33]	VCC3	SPARE	OUT		8.2K P/U TO VCC3
GP[34]	VCC3	SPARE	IN		8.2K P/U TO VCC3
GP[35]	VCC3	-ACZ_DET	OUT		8.2K P/U TO VCC3
GP[36]	VCC3	SPARE	IN		8.2K P/U TO VCC3 (N/A)
GP[37]	VCC3	SPARE	IN		8.2K P/U TO VCC3
GP[38]	VCC3	SPARE	IN		1K P/U TO VCC3

PIN NAME	POWER WELL	USAGE	AFTER PLTRST	S3/S5	NOTES
GP[39]	VCC3	SPARE	IN		1K P/U TO VCC3
GP[40]	3VDUAL	-USBOC1	IN		USB OVER-CURRENT
GP[41]	3VDUAL	-USBOC2	IN		USB OVER-CURRENT
GP[42]	3VDUAL	-USBOC3	IN		USB OVER-CURRENT
GP[43]	3VDUAL	-USBOC4	IN		USB OVER-CURRENT
GP[44]	3VDUAL	SPARE	IN		1K P/U TO 3VDUAL
GP[45]	3VDUAL	SPARE	IN		1K P/U TO 3VDUAL
GP[46]	3VDUAL	SPARE	IN		1K P/U TO 3VDUAL
GP[47]	3VDUAL	SPARE	IN		1K P/U TO 3VDUAL
GP[48]	VCC3	SPARE	IN		1K P/U TO VCC3
GP[49]	VCC3	SPARE	IN		8.2K P/U TO VCC3
GP[50]	VCC3	-REQ1	OUT		8.2K P/U TO VCC3
GP[51]	VCC3	-GNT1	OUT		1K P/U TO VCC3
GP[52]	VCC3	-REQ2	OUT		8.2K P/U TO VCC3
GP[53]	VCC3	-GNT2	IN		8.2K P/U TO VCC3 (N/A)
GP[54]	VCC3	-REQ3	IN		8.2K P/U TO VCC3
GP[55]	VCC3	-GNT3	IN		8.2K P/U TO VCC3 (N/A)
GP[56]	3VDUAL	SPARE	IN		8.2K P/U TO 3VDUAL
GP[57]	3VDUAL	SPARE	IN		8.2K P/U TO 3VDUAL
GP[58]	3VDUAL	SML1CLK	OUT		8.2K P/U TO 3VDUAL
GP[59]	3VDUAL	-USBOC0	IN		USB OVER-CURRENT
GP[60]	3VDUAL	SML0ART	OUT		1K P/U TO 3VDUAL
GP[61]	3VDUAL	SPARE	OUT		8.2K P/U TO 3VDUAL
GP[62]	3VDUAL	SUSCLK	OUT		8.2K P/U TO 3VDUAL (N/A)
GP[63]	3VDUAL	-SLP_S5	OUT		8.2K P/U TO 3VDUAL (N/A)
GP[64]	VCC3	SPARE	OUT		8.2K P/U TO VCC3
GP[65]	VCC3	SPARE	OUT		8.2K P/U TO VCC3
GP[66]	VCC3	SPARE	OUT		8.2K P/U TO VCC3
GP[67]	VCC3	SPARE	OUT		8.2K P/U TO VCC3
GP[68]	VCC3	SPARE	OUT		8.2K P/U TO VCC3
GP[69]	VCC3	SPARE	OUT		8.2K P/U TO VCC3
GP[70]	VCC3	SPARE	OUT		8.2K P/U TO VCC3
GP[71]	VCC3	SPARE	OUT		8.2K P/U TO VCC3
GP[72]	3VDUAL	SPARE	OUT		8.2K P/U TO 3VDUAL
GP[73]	3VDUAL	SPARE	OUT		8.2K P/U TO 3VDUAL
GP[74]	3VDUAL	SML1ART	OUT		1K P/U TO 3VDUAL
GP[75]	3VDUAL	SML1DAT	IN/OUT		8.2K P/U TO 3VDUAL

Gigabyte Technology			
Title			
PCH GPIO LIST			
Size	Document Number	Rev	
Custom	GA-X99-GAMING 5P	1.0	
Date:	Friday, January 16, 2015	Sheet	61 of 62

