

Model Name: GA-X99-GAMING 5P

Rev 1.0

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12	PCH GPIO AUDIO
13	PCH DMI USB PCIE
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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. NRN10 change to short pad	1. X99-GAMING 5 Rev2.0 --> X99-GAMING 5P Rev1.0

- 7. DDR4 SLOT NAME CHANGE "DDR4_1_1A-DDR4_8_2D
- 8. PCIE SLOT NAME CHANGE "PCIE_1~PCIE_7
- 9. LED NAME CHANGE "PE2_LED~PE4_LED"
- 10. ECR142,ECR143 short pad change to "R0402-2"
- 11. NR292,NR293,WR60,WR61,WR63,WR65 change to "R0402-2"

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TitleBOM & PCB MODIFY HISTORY

Size Custom

Document Number

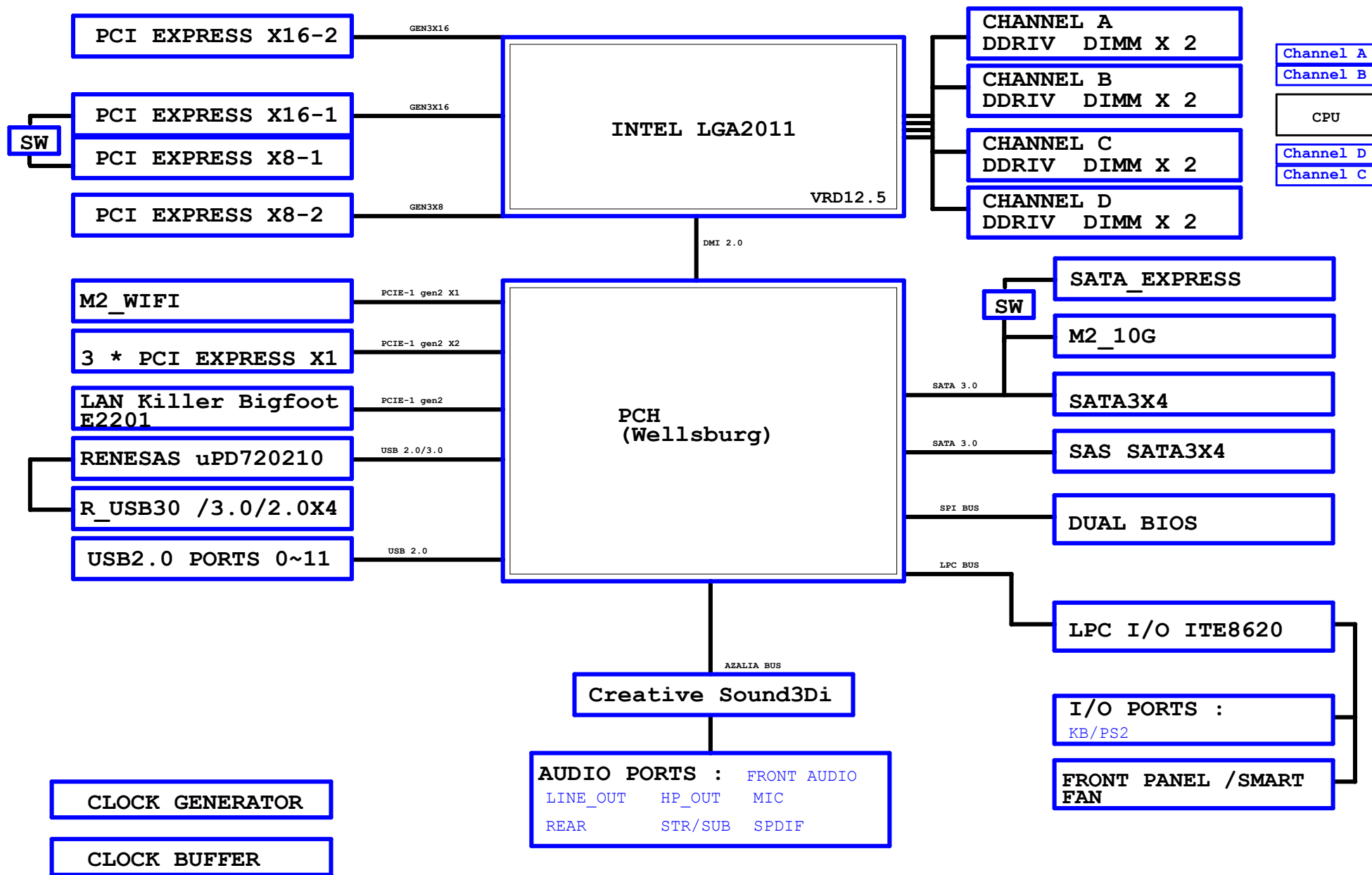
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BLOCK DIAGRAM



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	CB32	DDR0_DQ_43	CC29 M_-DQSA14
M DA44	CE27	DDR0_DQ_44	
M DA45	CC27	DDR0_DQ_45	CF36 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	CI9 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	

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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	CI5	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	CI3	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	CU37 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	CI6	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	DD8 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	DD36 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	DB36	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	

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[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]

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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	

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[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	J39	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	AG3	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	

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[19] M_DD[0..63] ↔ M_DD[0..63]

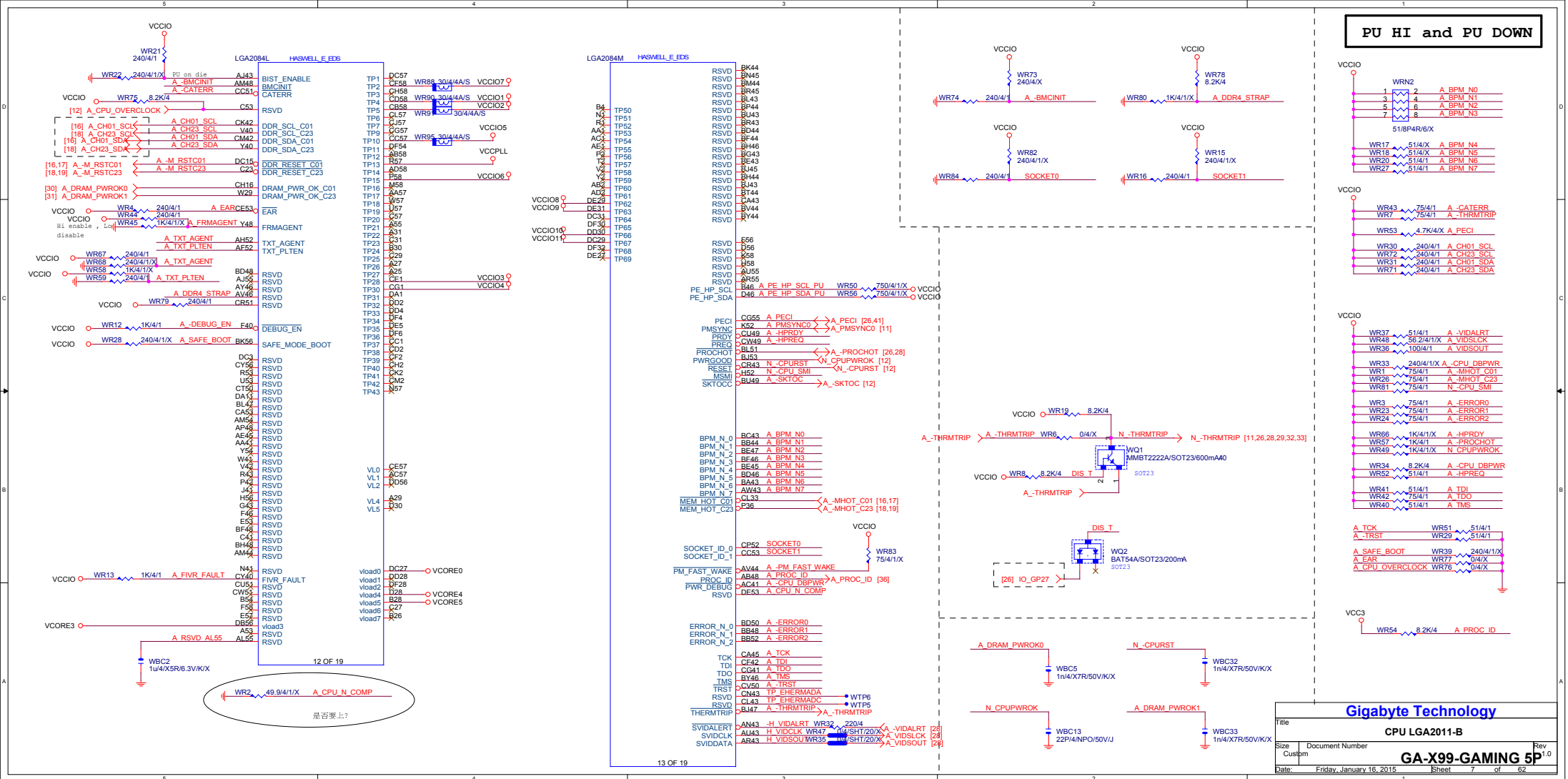
[19] M_DQSD[0..17] ↔ M_DQSD[0..17]

[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_EDS	
BJ54 QPI0_DRX_DP_0	DE55 RSVD
BG54 QPI0_DRX_DN_0	DD54 RSVD
BF54 QPI0_DRX_DP_1	DA57 RSVD
BF54 QPI0_DRX_DN_1	C158 RSVD
BE53 QPI0_DRX_DP_2	BA46 RSVD
BO53 QPI0_DRX_DN_2	BA58 RSVD
BE55 QPI0_DRX_DP_3	QPI0_CLKRX_DP
BO55 QPI0_DRX_DN_3	QPI0_CLKRX_DN
BF56 QPI0_DRX_DP_4	QPI0_CLKTX_DP
BF56 QPI0_DRX_DN_4	QPI0_CLKTX_DN
BF54 QPI0_DRX_DP_5	QPI0_DTX_DP_0
BH54 QPI0_DRX_DN_5	QPI0_DTX_DN_0
BF50 QPI0_DRX_DP_6	QPI0_DTX_DP_1
BH50 QPI0_DRX_DN_6	QPI0_DTX_DN_1
BO58 QPI0_DRX_DP_7	QPI0_DTX_DP_2
BF58 QPI0_DRX_DN_7	QPI0_DTX_DN_2
BE57 QPI0_DRX_DP_8	QPI0_DTX_DP_3
BO57 QPI0_DRX_DN_8	QPI0_DTX_DN_3
BM56 QPI0_DRX_DP_9	QPI0_DTX_DP_4
BP56 QPI0_DRX_DN_9	QPI0_DTX_DN_4
BL56 QPI0_DRX_DP_10	QPI0_DTX_DP_5
BN56 QPI0_DRX_DN_10	QPI0_DTX_DN_5
BM54 QPI0_DRX_DP_11	QPI0_DTX_DP_6
BN54 QPI0_DRX_DN_11	QPI0_DTX_DN_6
BL53 QPI0_DRX_DP_12	QPI0_DTX_DP_7
BN53 QPI0_DRX_DN_12	QPI0_DTX_DN_7
BM52 QPI0_DRX_DP_13	QPI0_DTX_DP_8
BN52 QPI0_DRX_DN_13	QPI0_DTX_DN_8
BN51 QPI0_DRX_DP_14	QPI0_DTX_DP_9
BR51 QPI0_DRX_DN_14	QPI0_DTX_DN_9
BM50 QPI0_DRX_DP_15	QPI0_DTX_DP_10
BR50 QPI0_DRX_DN_15	QPI0_DTX_DN_10
BN49 QPI0_DRX_DP_16	QPI0_DTX_DP_11
BR49 QPI0_DRX_DN_16	QPI0_DTX_DN_11
BG49 QPI0_DRX_DP_17	QPI0_DTX_DP_12
BR49 QPI0_DRX_DN_17	QPI0_DTX_DN_12
BM48 QPI0_DRX_DP_18	QPI0_DTX_DP_13
BR48 QPI0_DRX_DN_18	QPI0_DTX_DN_13
BN47 QPI0_DRX_DP_19	QPI0_DTX_DP_14
BR47 QPI0_DRX_DN_19	QPI0_DTX_DN_14
CK44 QPI1_DRX_DP_0	QPI0_DTX_DP_15
CM44 QPI1_DRX_DN_0	QPI0_DTX_DN_15
CL46 QPI1_DRX_DP_1	QPI0_DTX_DP_16
CM46 QPI1_DRX_DN_1	QPI0_DTX_DN_16
CK46 QPI1_DRX_DP_2	QPI0_DTX_DP_17
CM46 QPI1_DRX_DN_2	QPI0_DTX_DN_17
CL47 QPI1_DRX_DP_3	QPI0_DTX_DP_18
CM47 QPI1_DRX_DN_3	QPI0_DTX_DN_18
CK48 QPI1_DRX_DP_4	QPI0_DTX_DP_19
CM48 QPI1_DRX_DN_4	QPI0_DTX_DN_19
CL49 QPI1_DRX_DP_5	QPI1_DTX_DP_0
CM49 QPI1_DRX_DN_5	QPI1_DTX_DN_0
CK50 QPI1_DRX_DP_6	QPI1_DTX_DP_1
CM50 QPI1_DRX_DN_6	QPI1_DTX_DN_1
CL51 QPI1_DRX_DP_7	QPI1_DTX_DP_2
CM51 QPI1_DRX_DN_7	QPI1_DTX_DN_2
CT53 QPI1_DRX_DP_8	QPI1_DTX_DP_3
CM53 QPI1_DRX_DN_8	QPI1_DTX_DN_3
CT54 QPI1_DRX_DP_9	QPI1_DTX_DP_4
CM54 QPI1_DRX_DN_9	QPI1_DTX_DN_4
CT56 QPI1_DRX_DP_10	QPI1_DTX_DP_5
CM56 QPI1_DRX_DN_10	QPI1_DTX_DN_5
CT58 QPI1_DRX_DP_11	QPI1_DTX_DP_6
CM58 QPI1_DRX_DN_11	QPI1_DTX_DN_6
CT59 QPI1_DRX_DP_12	QPI1_DTX_DP_7
CM59 QPI1_DRX_DN_12	QPI1_DTX_DN_7
CT61 QPI1_DRX_DP_13	QPI1_DTX_DP_8
CM61 QPI1_DRX_DN_13	QPI1_DTX_DN_8
CT68 QPI1_DRX_DP_14	QPI1_DTX_DP_9
CM68 QPI1_DRX_DN_14	QPI1_DTX_DN_9
CK66 QPI1_DRX_DP_15	QPI1_DTX_DP_10
CM66 QPI1_DRX_DN_15	QPI1_DTX_DN_10
CL65 QPI1_DRX_DP_16	QPI1_DTX_DP_11
CM65 QPI1_DRX_DN_16	QPI1_DTX_DN_11
CT64 QPI1_DRX_DP_17	QPI1_DTX_DP_12
CM64 QPI1_DRX_DN_17	QPI1_DTX_DN_12
CT66 QPI1_DRX_DP_18	QPI1_DTX_DP_13
CM66 QPI1_DRX_DN_18	QPI1_DTX_DN_13
CT68 QPI1_DRX_DP_19	QPI1_DTX_DP_14
CM68 QPI1_DRX_DN_19	QPI1_DTX_DN_14
DE51 QPI1_DRX_DP_15	QPI1_DTX_DP_15
CE51 QPI1_DRX_DN_15	QPI1_DTX_DN_15
DB52 QPI1_DTX_DP_16	QPI1_DTX_DP_16
CB52 QPI1_DTX_DN_16	QPI1_DTX_DN_16
CT48 QPI1_DTX_DP_17	QPI1_DTX_DP_17
CB48 QPI1_DTX_DN_17	QPI1_DTX_DN_17
CT46 QPI1_DTX_DP_18	QPI1_DTX_DP_18
CB46 QPI1_DTX_DN_18	QPI1_DTX_DN_18
CT44 QPI1_DTX_DP_19	QPI1_DTX_DP_19
CB44 QPI1_DTX_DN_19	QPI1_DTX_DN_19

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LGA2084B HASWELL_E_EDS	
PA_EXP_A_RXP0_N55	PE2A_RX_DP_0
PA_EXP_A_RXN0_L55	PE2A_RX_DN_0
PA_EXP_A_RXP1_V54	PE2A_RX_DP_1
PA_EXP_A_RXN1_T54	PE2A_RX_DN_1
PA_EXP_A_RXP2_V56	PE2A_RX_DP_2
PA_EXP_A_RXN2_T56	PE2A_RX_DN_2
PA_EXP_A_RXP3_V55	PE2A_RX_DP_3
PA_EXP_A_RXN3_U55	PE2A_RX_DN_3
PA_EXP_A_RXP4_A554	PE2B_RX_DP_4
PA_EXP_A_RXN4_A554	PE2B_RX_DN_4
PA_EXP_A_RXP5_A556	PE2B_RX_DP_5
PA_EXP_A_RXN5_A556	PE2B_RX_DN_5
PA_EXP_A_RXP6_A555	PE2B_RX_DP_6
PA_EXP_A_RXN6_A555	PE2B_RX_DN_6
PA_EXP_A_RXP7_A558	PE2B_RX_DP_7
PA_EXP_A_RXN7_A557	PE2B_RX_DN_7
PA_EXP_A_RXP8_AK56	PE2C_RX_DP_8
PA_EXP_A_RXN8_AK56	PE2C_RX_DN_8
PA_EXP_A_RXP9_AK58	PE2C_RX_DP_9
PA_EXP_A_RXN9_AK58	PE2C_RX_DN_9
PA_EXP_A_RXP10_AL57	PE2C_RX_DP_10
PA_EXP_A_RXN10_AL57	PE2C_RX_DN_10
PA_EXP_A_RXP11_AU57	PE2C_RX_DP_11
PA_EXP_A_RXN11_AU57	PE2C_RX_DN_11
PA_EXP_A_RXP12_AV58	PE2D_RX_DP_12
PA_EXP_A_RXN12_AT58	PE2D_RX_DN_12
PA_EXP_A_RXP13_AT56	PE2D_RX_DP_13
PA_EXP_A_RXN13_AK56	PE2D_RX_DN_13
PA_EXP_A_RXP14_BA57	PE2D_RX_DP_14
PA_EXP_A_RXN14_AK56	PE2D_RX_DN_14
PA_EXP_A_RXP15_B556	PE2D_RX_DP_15
PA_EXP_A_RXN15_A556	PE2D_RX_DN_15

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_EDS

[23] PG_EXP_C_RXP0	E51	PE1A_RX_DP_0	PE1A_TX_DP_0	K42	PG_EXP_C_TXP0 [23]
[23] PG_EXP_C_RXN0	C51	PE1A_RX_DN_0	PE1A_TX_DN_0	H42	PG_EXP_C_TXN0 [23]
[23] PG_EXP_C_RXP1	F52	PE1A_RX_DP_1	PE1A_TX_DP_1	L43	PG_EXP_C_TXP1 [23]
[23] PG_EXP_C_RXN1	D52	PE1A_RX_DN_1	PE1A_TX_DN_1	J43	PG_EXP_C_TXN1 [23]
[23] PG_EXP_C_RXP2	F54	PE1A_RX_DP_2	PE1A_TX_DP_2	K44	PG_EXP_C_TXP2 [23]
[23] PG_EXP_C_RXN2	D54	PE1A_RX_DN_2	PE1A_TX_DN_2	J44	PG_EXP_C_TXN2 [23]
[23] PG_EXP_C_RXP3	G55	PE1A_RX_DP_3	PE1A_TX_DP_3	L45	PG_EXP_C_TXP3 [23]
[23] PG_EXP_C_RXN3	E55	PE1A_RX_DN_3	PE1A_TX_DN_3	J45	PG_EXP_C_TXN3 [23]
[23] PG_EXP_C_RXP4	L53	PE1B_RX_DP_4	PE1B_TX_DP_4	K46	PG_EXP_C_TXP4 [23]
[23] PG_EXP_C_RXN4	J53	PE1B_RX_DN_4	PE1B_TX_DN_4	H46	PG_EXP_C_TXN4 [23]
[23] PG_EXP_C_RXP5	M54	PE1B_RX_DP_5	PE1B_TX_DP_5	L47	PG_EXP_C_TXP5 [23]
[23] PG_EXP_C_RXN5	K54	PE1B_RX_DN_5	PE1B_TX_DN_5	J47	PG_EXP_C_TXN5 [23]
[23] PG_EXP_C_RXP6	L57	PE1B_RX_DP_6	PE1B_TX_DP_6	K48	PG_EXP_C_TXP6 [23]
[23] PG_EXP_C_RXN6	J57	PE1B_RX_DN_6	PE1B_TX_DN_6	H48	PG_EXP_C_TXN6 [23]
[23] PG_EXP_C_RXP7	M56	PE1B_RX_DP_7	PE1B_TX_DP_7	L49	PG_EXP_C_TXP7 [23]
[23] PG_EXP_C_RXN7	K56	PE1B_RX_DN_7	PE1B_TX_DN_7	J49	PG_EXP_C_TXN7 [23]

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LGA2084D HASWELL_E_EDS

[13] A_DMI_0TXP < A_DMI_0TXP	E45	DMI1_TX_DP_0	DMI1_RX_DP_0	D50	A_DMI_0RXP < A_DMI_0RXP [13]
[13] A_DMI_0TXN < A_DMI_0TXN	C45	DMI1_TX_DN_0	DMI1_RX_DN_0	B50	A_DMI_0RXN < A_DMI_0RXN [13]
[13] A_DMI_1TXP < A_DMI_1TXP	D44	DMI1_TX_DP_1	DMI1_RX_DP_1	E49	A_DMI_1RXP < A_DMI_1RXP [13]
[13] A_DMI_1TXN < A_DMI_1TXN	B44	DMI1_TX_DN_1	DMI1_RX_DN_1	C49	A_DMI_1RXN < A_DMI_1RXN [13]
[13] A_DMI_2TXP < A_DMI_2TXP	E43	DMI1_TX_DP_2	DMI1_RX_DP_2	D48	A_DMI_2RXP < A_DMI_2RXP [13]
[13] A_DMI_2TXN < A_DMI_2TXN	C43	DMI1_TX_DN_2	DMI1_RX_DN_2	B48	A_DMI_2RXN < A_DMI_2RXN [13]
[13] A_DMI_3TXP < A_DMI_3TXP	D42	DMI1_TX_DP_3	DMI1_RX_DP_3	E47	A_DMI_3RXP < A_DMI_3RXP [13]
[13] A_DMI_3TXN < A_DMI_3TXN	B42	DMI1_TX_DN_3	DMI1_RX_DN_3	C47	A_DMI_3RXN < A_DMI_3RXN [13]
			BCLK0_DN	CM1	N_CPU_BCLK0 [40]
			BCLK1_DN	CL41	N_CPU_BCLK0 [40]
			BCLK1_DP	AW45	N_CPU_BCLK1 [40]
			BCLK1_DP	BA45	N_CPU_BCLK1 [40]

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%

LGA2084C HASWELL_E_EDS	
PE3A_RX_DP_0	PE3A_TX_DP_0
PE3A_RX_DN_0	PE3A_TX_DN_0
PE3A_RX_DP_1	PE3A_TX_DP_1
PE3A_RX_DN_1	PE3A_TX_DN_1
PE3A_RX_DP_2	PE3A_TX_DP_2
PE3A_RX_DN_2	PE3A_TX_DN_2
PE3A_RX_DP_3	PE3A_TX_DP_3
PE3A_RX_DN_3	PE3A_TX_DN_3
PE3B_RX_DP_4	PE3B_TX_DP_4
PE3B_RX_DN_4	PE3B_TX_DN_4
PE3B_RX_DP_5	PE3B_TX_DP_5
PE3B_RX_DN_5	PE3B_TX_DN_5
PE3B_RX_DP_6	PE3B_TX_DP_6
PE3B_RX_DN_6	PE3B_TX_DN_6
PE3B_RX_DP_7	PE3B_TX_DP_7
PE3B_RX_DN_7	PE3B_TX_DN_7
PE3C_RX_DP_8	PE3C_TX_DP_8
PE3C_RX_DN_8	PE3C_TX_DN_8
PE3C_RX_DP_9	PE3C_TX_DP_9
PE3C_RX_DN_9	PE3C_TX_DN_9
PE3C_RX_DP_10	PE3C_TX_DP_10
PE3C_RX_DN_10	PE3C_TX_DN_10
PE3C_RX_DP_11	PE3C_TX_DP_11
PE3C_RX_DN_11	PE3C_TX_DN_11
PE3D_RX_DP_12	PE3D_TX_DP_12
PE3D_RX_DN_12	PE3D_TX_DN_12
PE3D_RX_DP_13	PE3D_TX_DP_13
PE3D_RX_DN_13	PE3D_TX_DN_13
PE3D_RX_DP_14	PE3D_TX_DP_14
PE3D_RX_DN_14	PE3D_TX_DN_14
PE3D_RX_DP_15	PE3D_TX_DP_15
PE3D_RX_DN_15	PE3D_TX_DN_15

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

LGA2084P

HASWELL_E_EDS

CB56	VSS	AY12
CB54	VSS	CB52
CB4	VSS	CB50
CB6	VSS	CB48
CB4	VSS	CB46
CC49	VSS	CB44
CC47	VSS	CB42
CC45	VSS	CB40
CC43	VSS	CB38
CC33	VSS	CB36
CC11	VSS	CB34
CC9	VSS	CB30
CC7	VSS	CB12
CC3	VSS	CB10
BB58	VSS	CB2
BB50	VSS	CA57
AY44	VSS	CA55
AY16	VSS	CA41
AY14	VSS	CA37
CG45	VSS	CA35
CG43	VSS	CA33
CG39	VSS	CA31
CG37	VSS	CA29
CG35	VSS	CA27
CG33	VSS	CA25
CG31	VSS	CA23
CG29	VSS	CA21
CG27	VSS	CA19
CG7	VSS	CA17
CG5	VSS	CA15
CF32	VSS	CA13
CF28	VSS	CA5
CF12	VSS	BY58
CF10	VSS	BY32
CE45	VSS	BY28
CE43	VSS	BY10
CE33	VSS	BY8
CE15	VSS	BW49
CE7	VSS	BW17
CD40	VSS	BW15
CD12	VSS	BW7
BB46	VSS	BW5
BB42	VSS	BV16
BV10	VSS	BK50
BU51	VSS	BK48
BU47	VSS	BK46
BU45	VSS	BK42
BU5	VSS	BU3
BT56	VSS	BU57
BT54	VSS	BU55
BT52	VSS	BU53
BT50	VSS	BT48
BT48	VSS	BT46
BT42	VSS	BT40
BT16	VSS	BT10
BR57	VSS	BR55
BR53	VSS	BR51
BR15	VSS	BR13
BR11	VSS	BR9
BR7	VSS	BR5
BR3	VSS	BR1
RP58	VSS	RP14
RP12	VSS	RP8
BP6	VSS	BP4
BN67	VSS	BN43
BL57	VSS	BL49
BL45	VSS	BL54
BK52	VSS	BK52

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LGA2084Q

HASWELL_E_EDS

AW7	VSS	AT46
AW5	VSS	AT44
AW3	VSS	AP58
AV54	VSS	AP44
AV42	VSS	AP42
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
AF43	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
AD52	VSS	AG55
AD50	VSS	AG43
AD48	VSS	AG37
AD46	VSS	AG31
AD44	VSS	AG25
AD42	VSS	AG21
AD40	VSS	AG19
AD36	VSS	AG17
AD12	VSS	AG13
AD10	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	AW37
AW13	VSS	AW55
AW11	VSS	AW9

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LGA2084R

HASWELL_E_EDS

DA27	VSS	DA3
DA9	VSS	DA3
DB40	VSS	CY52
DB34	VSS	CY50
DB12	VSS	CY48
DB6	VSS	CY46
DA55	VSS	CY44
DA53	VSS	CY42
DA51	VSS	CY38
DA49	VSS	CY36
DA47	VSS	CY34
DA45	VSS	CY30
DA43	VSS	CY12
DA41	VSS	CY10
DA35	VSS	CY8
P24	VSS	CY4
P10	VSS	CY2
N49	VSS	CW57
N47	VSS	CW55
N45	VSS	CW53
DF52	VSS	CW39
DF50	VSS	CW37
DF48	VSS	CW35
DF46	VSS	CW33
DF44	VSS	CW31
DF42	VSS	CW29
DF40	VSS	CW27
DF12	VSS	CW15
DF8	VSS	CW7
DE35	VSS	CW5
DE15	VSS	CW1
DE7	VSS	CV58
DD40	VSS	CV54
DD38	VSS	CV40
DD34	VSS	CV32
DD12	VSS	CV28
DD10	VSS	CV12
DD6	VSS	CV6
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
CR9	VSS	CL15
CR7	VSS	CL11
CP56	VSS	CL9
CP50	VSS	CL7
CP48	VSS	CK54
CP46	VSS	CK52
CP44	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
CN55	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

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LGA2084S

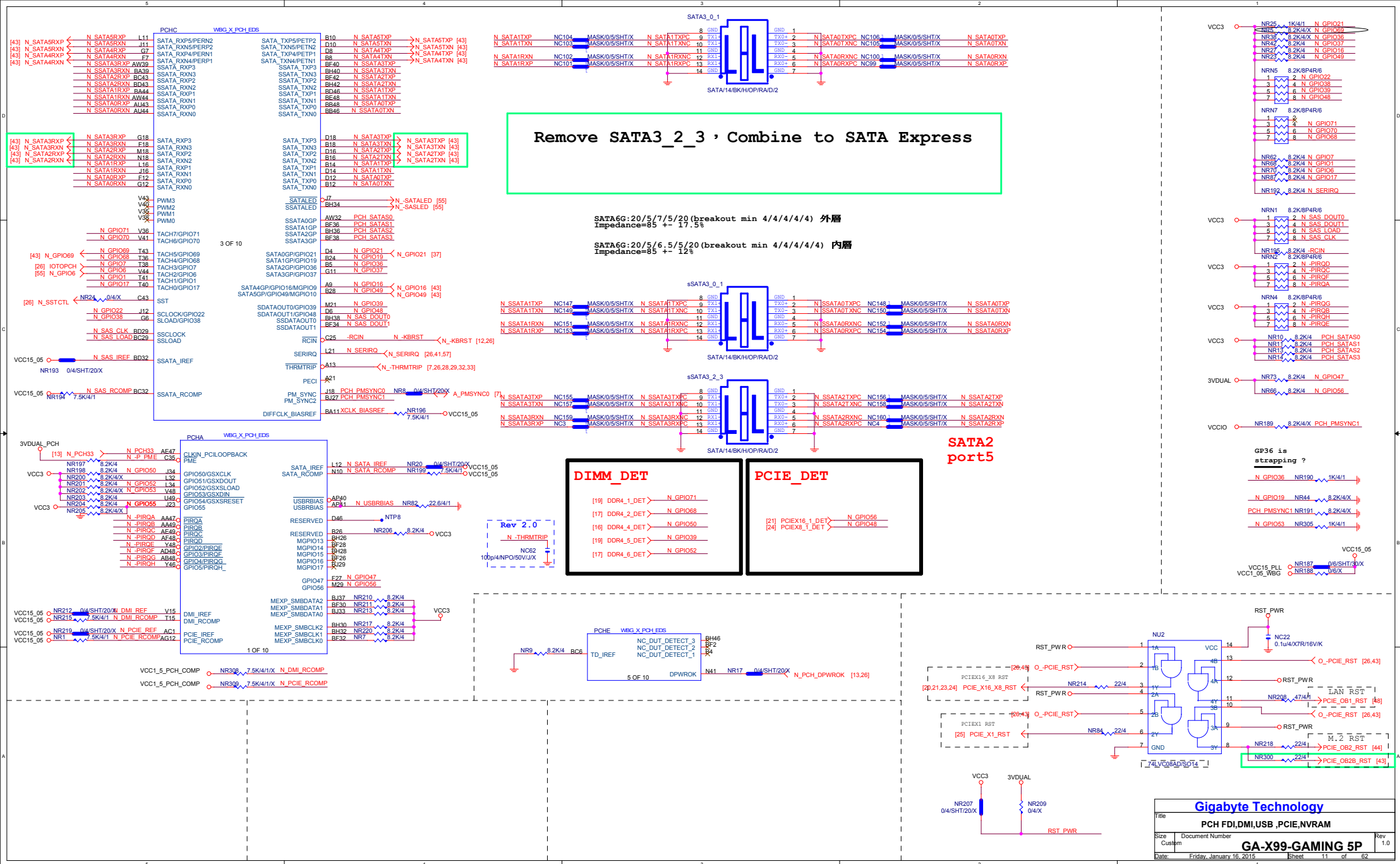
HASWELL_E_EDS

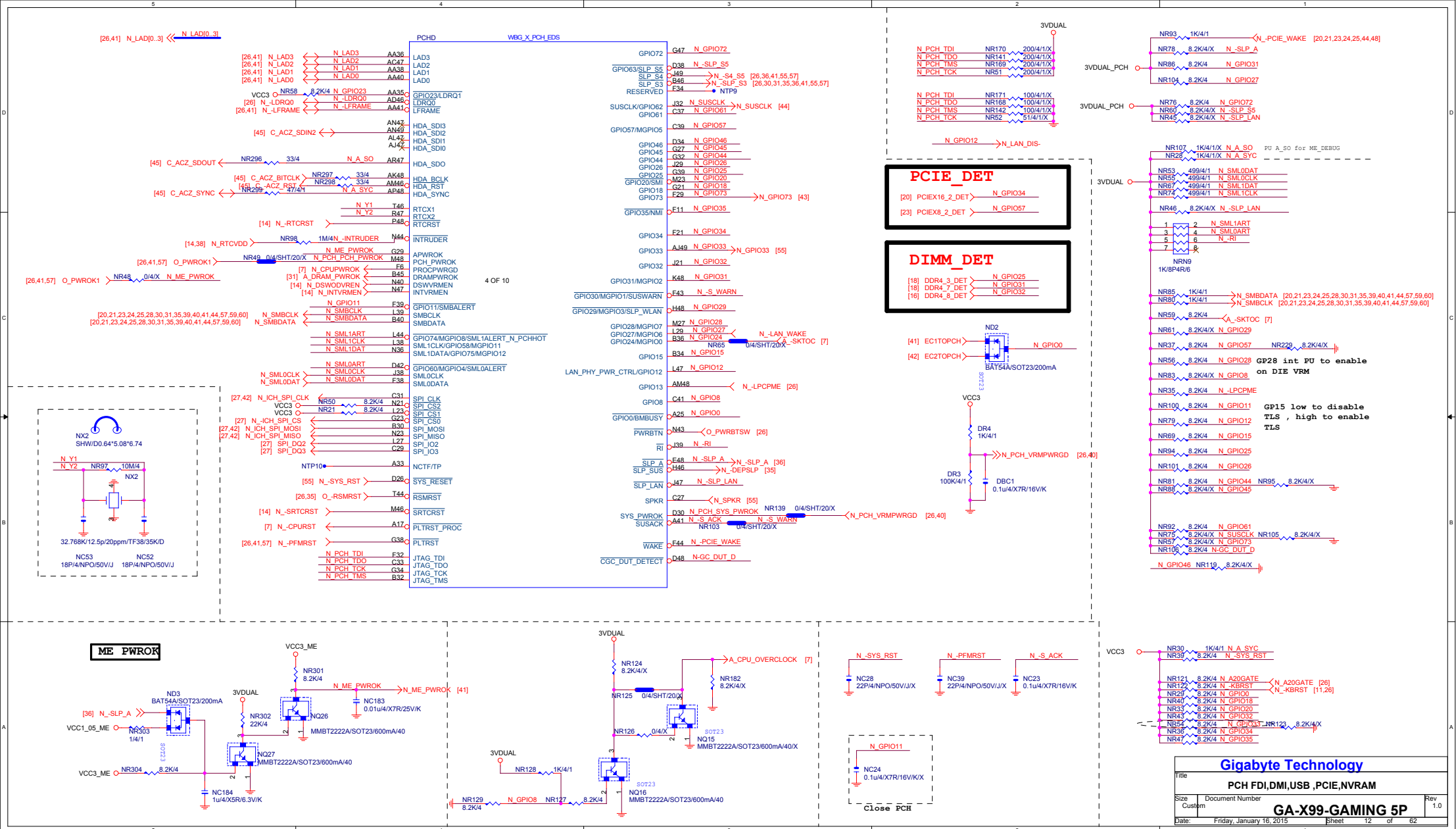
Y56	VSS	W47
Y42	VSS	W45
Y36	VSS	W43
Y34	VSS	W39
Y32	VSS	W35
Y30	VSS	W33
Y28	VSS	W27
Y24	VSS	W23
Y22	VSS	W17
Y20	VSS	W15
Y12	VSS	W12
Y4	VSS	W10
W53	VSS	W48
W51	VSS	W46
W49	VSS	W44
W42	VSS	W42
W36	VSS	W36
M36	VSS	W32
M10	VSS	W30
M2	VSS	W28
L41	VSS	W26
L39	VSS	W24
L29	VSS	W22
L5	VSS	W20
K40	VSS	W18
K36	VSS	W16
K10	VSS	W14
J65	VSS	W12
J37	VSS	W10
J31	VSS	W8
J29	VSS	W6
J25	VSS	W4
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

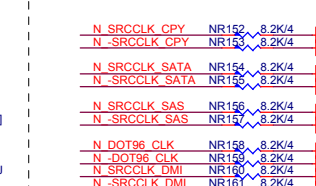
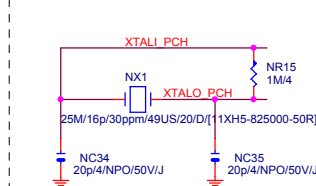
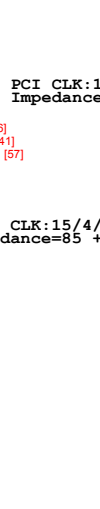
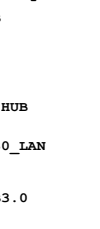
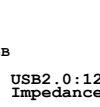
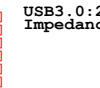
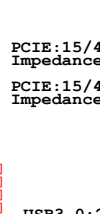
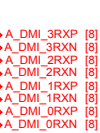
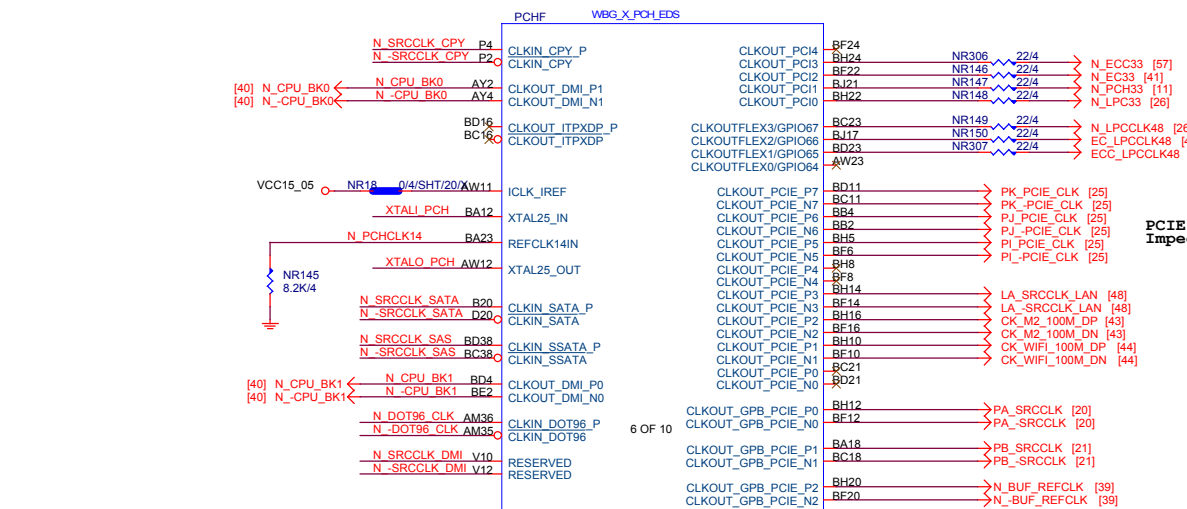
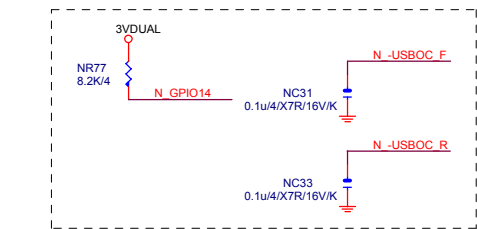
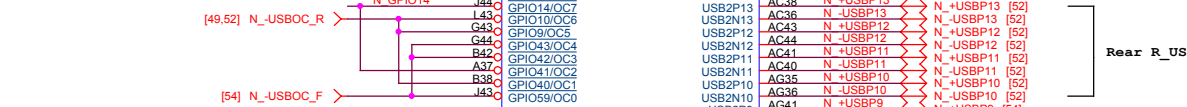
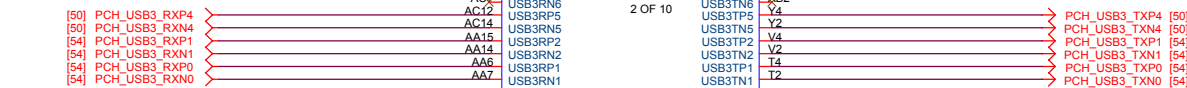
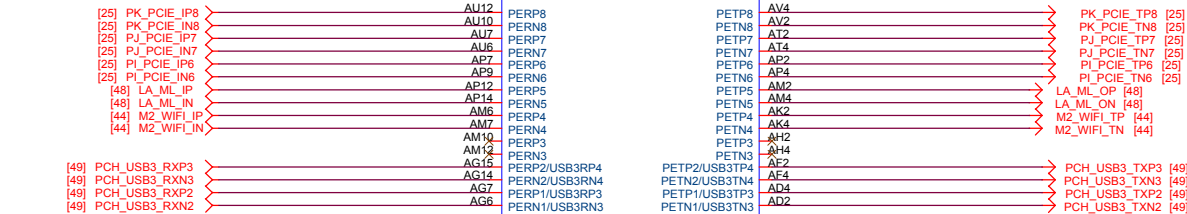
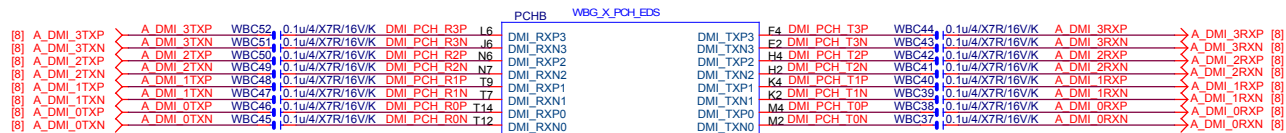
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Gigabyte Technology

Title		CPU LGA2011-C	
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Custom			
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PCIE:15/4/4/4/15(breakout min 8/4/4/4/8) 外層
Impedance=85 +- 17.5%

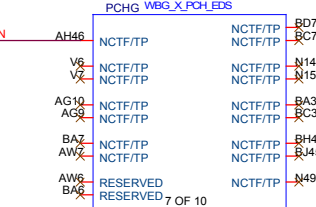
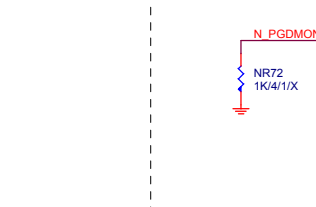
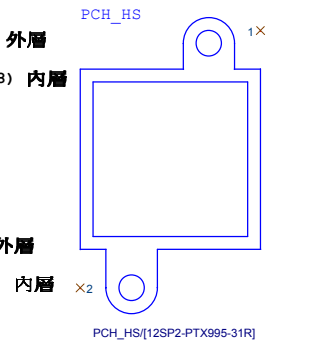
PCIE:15/4/4/4/15(breakout min 8/4/4/4/8) 內層
Impedance=85 +- 12%

USB3.0:20/5/7/5/20(breakout min 8/4/4/4/8) 外層
Impedance=85 +- 17.5%

USB3.0:20/5/6/5/5/20(breakout min 8/4/4/4/8) 內層
Impedance=85 +- 12%

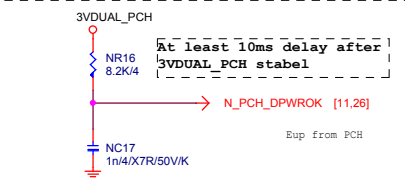
USB2.0:12/5/7/5/12(breakout min 8/4/4/4/8) 外層
Impedance=85 +- 17.5%

USB2.0:12/5/6/5/5/12(breakout min 6/4/4/4/6) 內層
Impedance=85 +- 12%

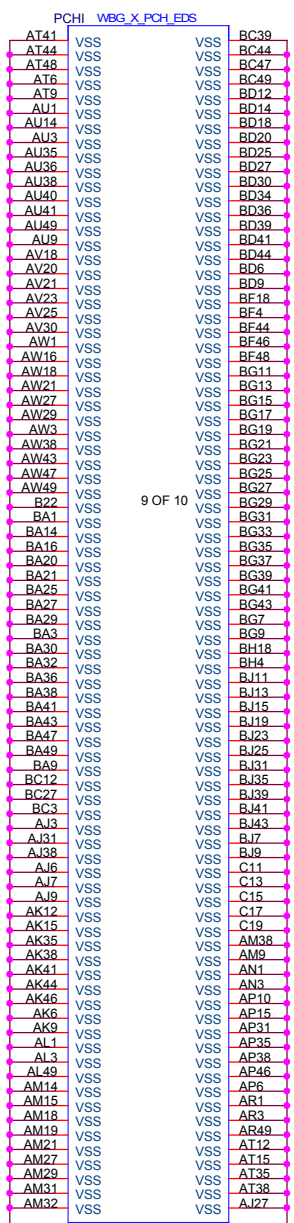


PCI CLK:10/4/10(breakout min 8/4/4/4/8)
Impedance=50 +- 15%

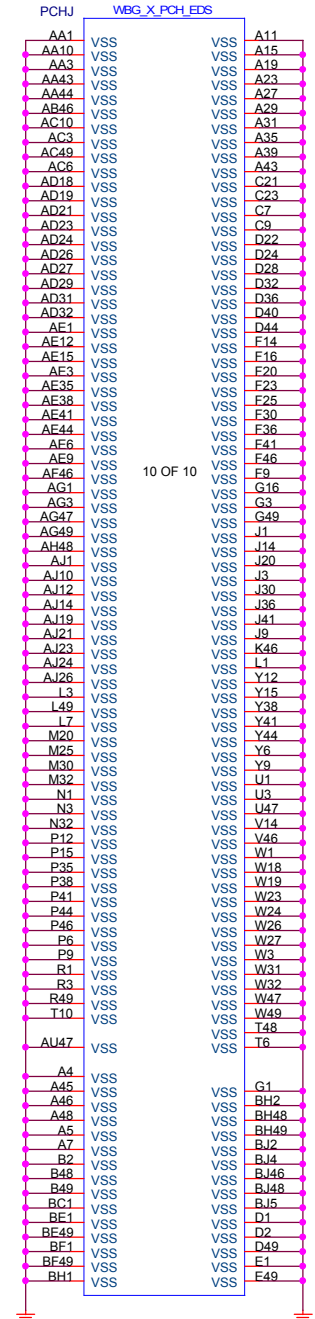
PCIE CLK:15/4/6/4/15(breakout min 8/4/4/4/8)
Impedance=85 +- 17.5%



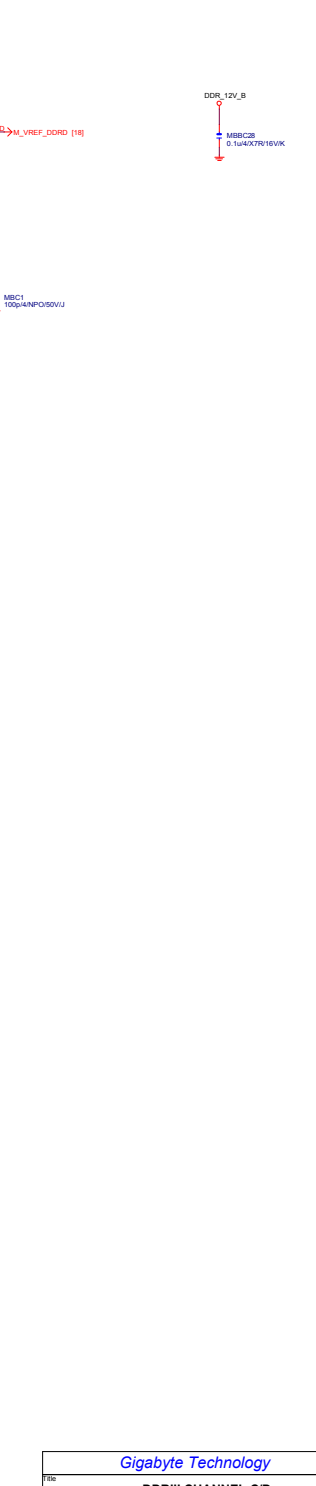
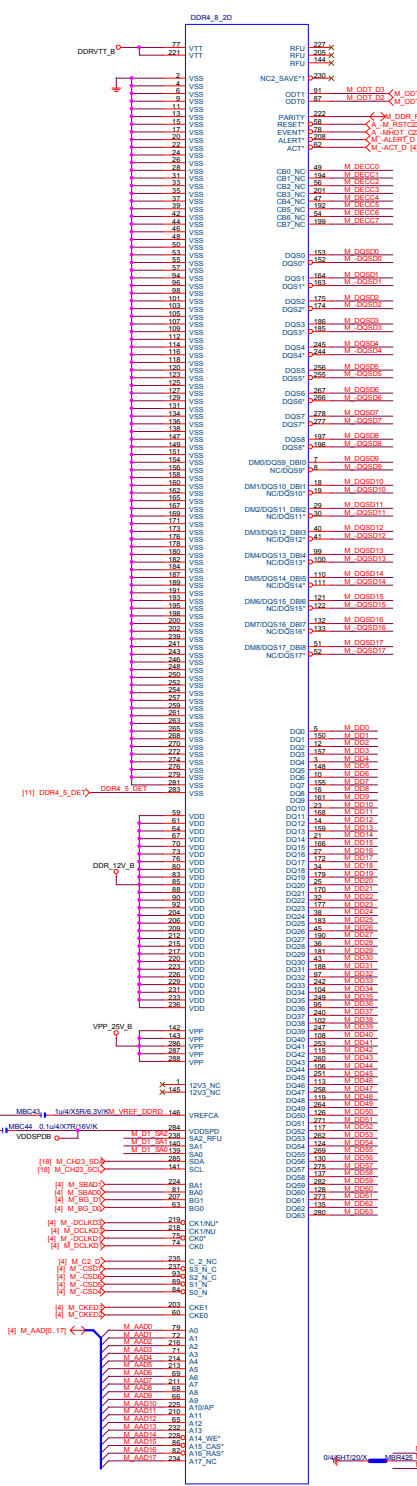
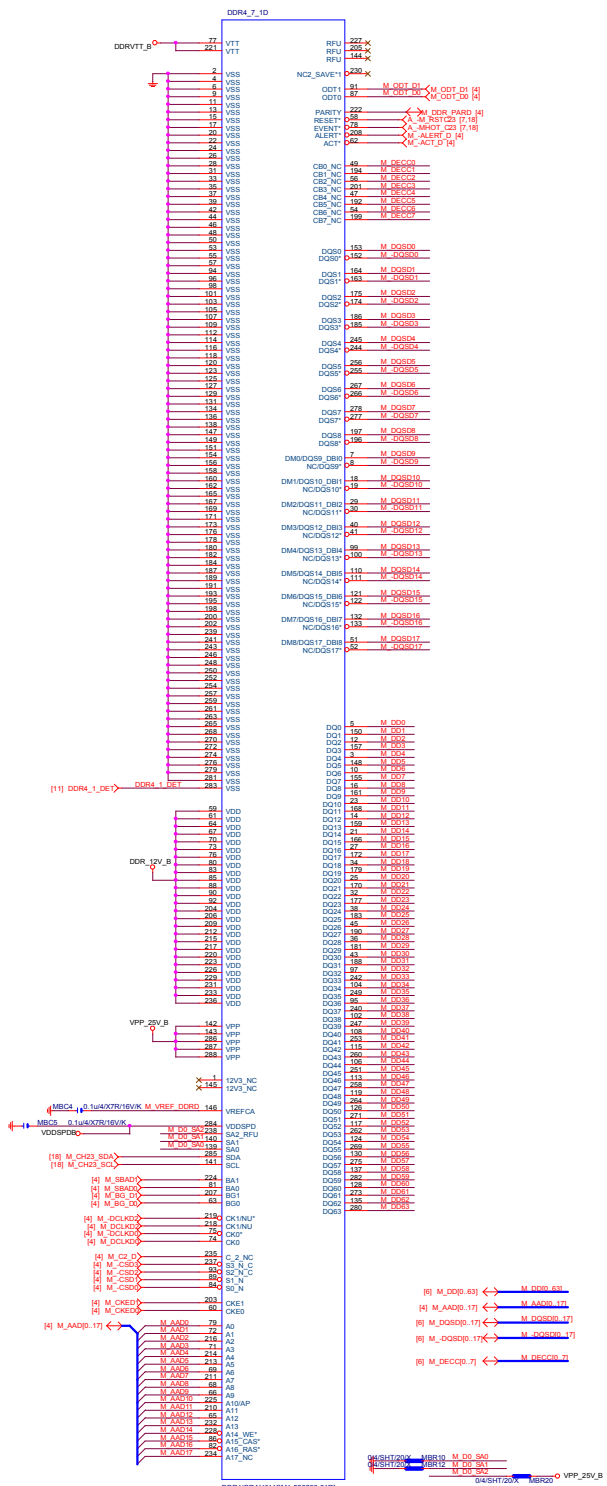
Gigabyte Technology			
Title			
PCH DISPLAY ,CLK BUFFER			
Size	Document Number	Rev	
Custom		1.0	
Date:	Friday, January 16, 2015	Sheet	13 of 62



L1117LG/N/SOT223/1A



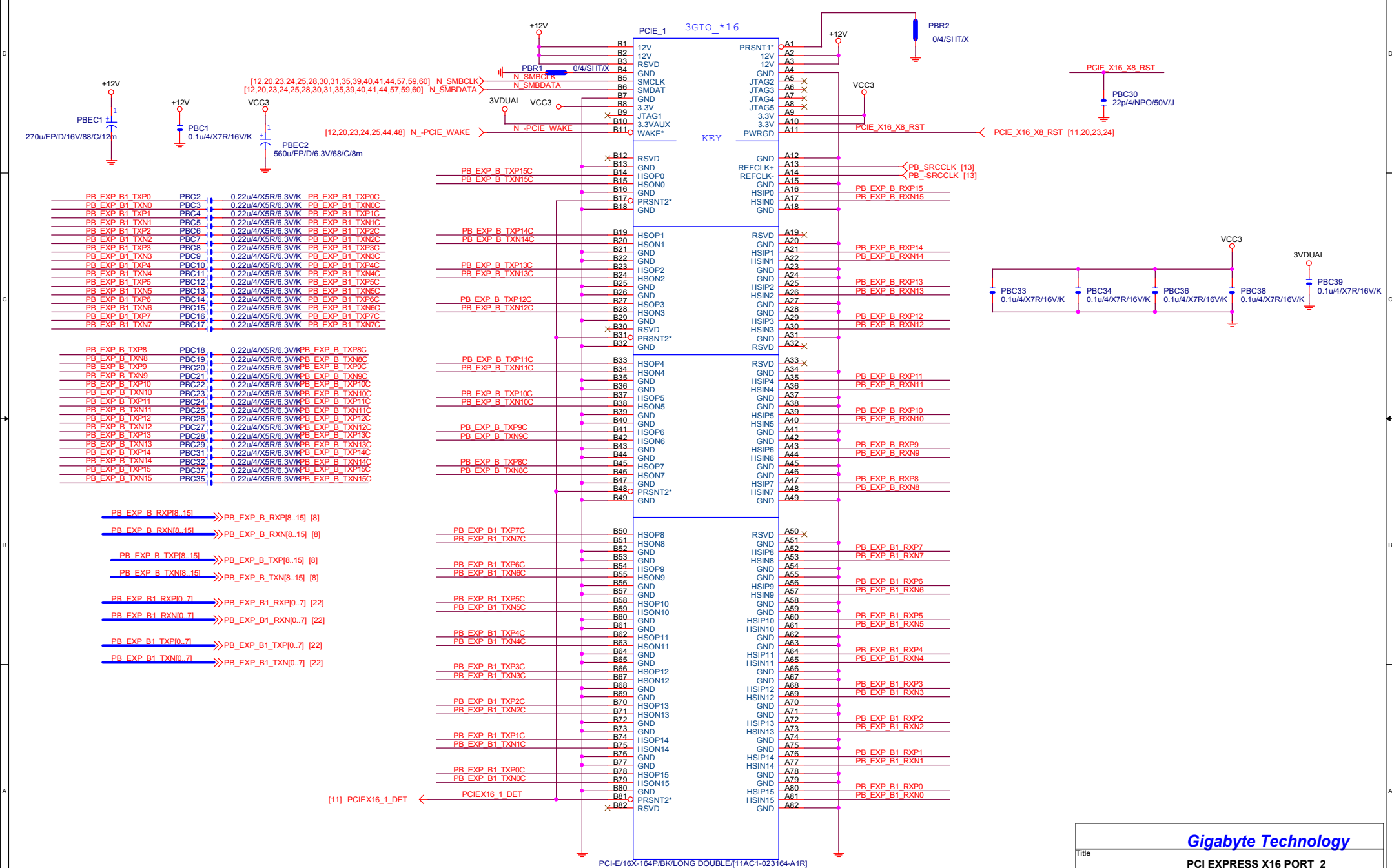
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Size	Document Number		Rev
Custom	GA-X99-GAMING 5P		1.0
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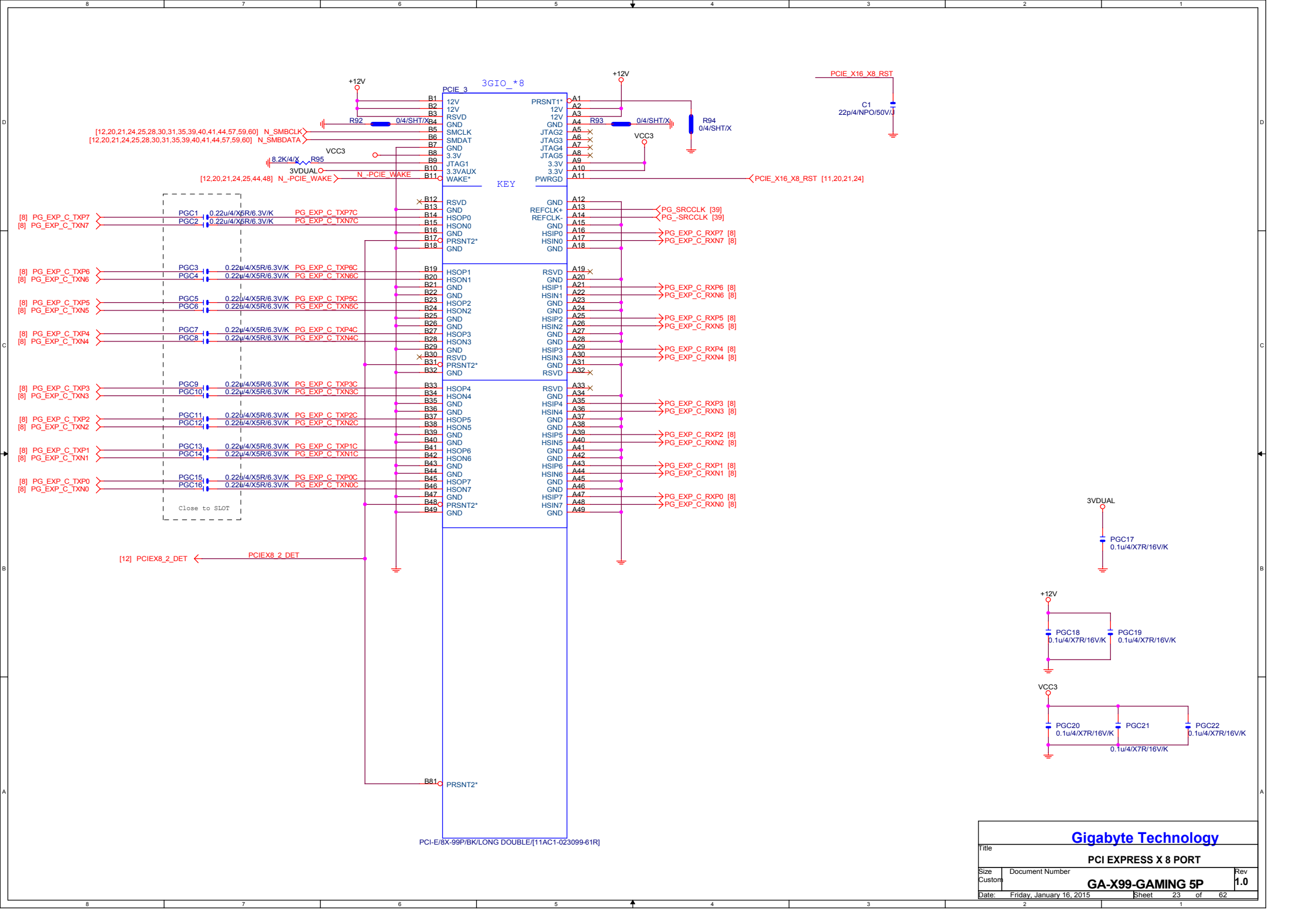


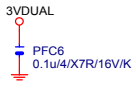
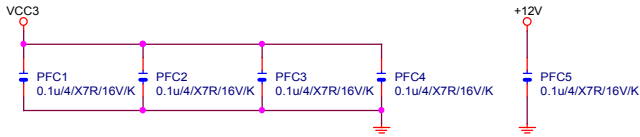
PCIE_2 3GIO_*16



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_TXP[0..7] >> PF_EXP_B2_TXP[0..7] [22]
PF_EXP_B2_TXN[0..7] >> PF_EXP_B2_TXN[0..7] [22]

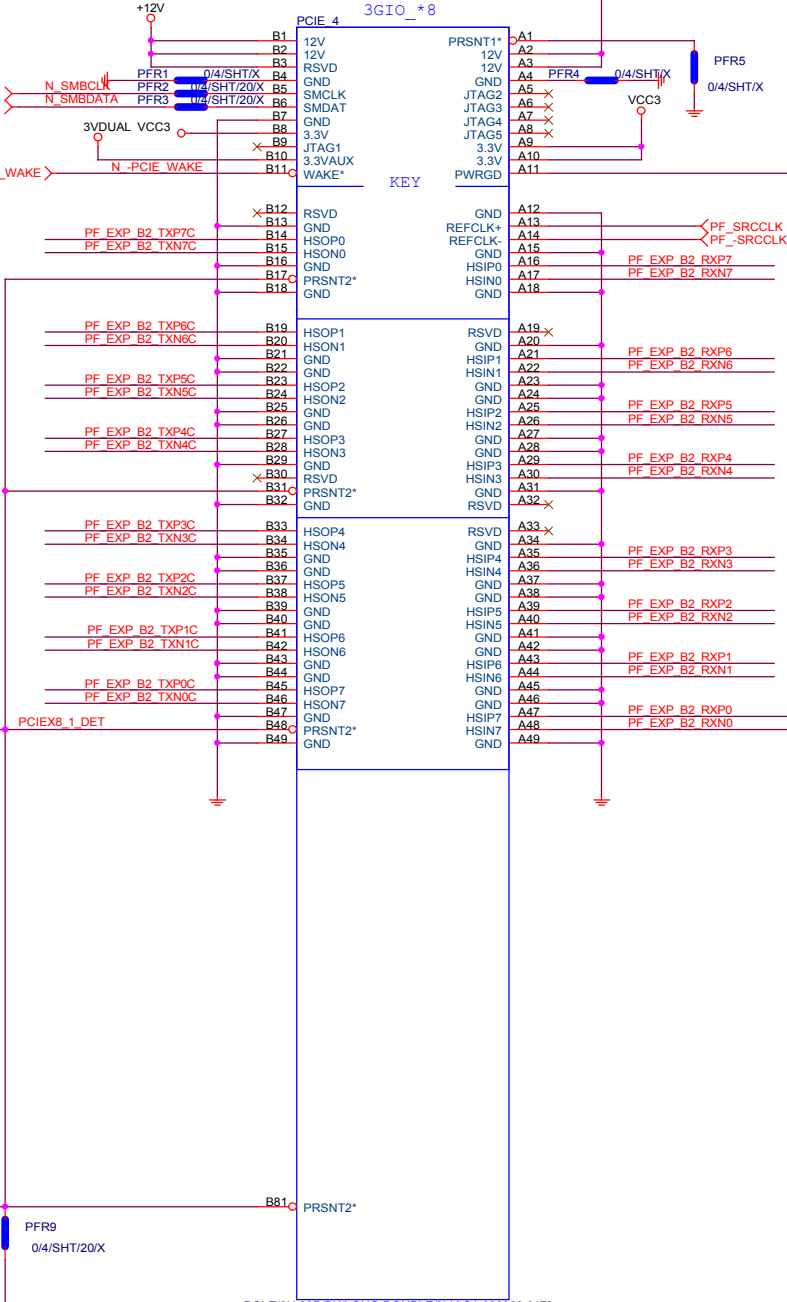
PF_EXP_B2_TXP0	PFC7	0.22u/4/X5R/6.3V/K	PF_EXP_B2_TXP0C
PF_EXP_B2_TXN0	PFC8	0.22u/4/X5R/6.3V/K	PF_EXP_B2_TXN0C
PF_EXP_B2_TXP1	PFC9	0.22u/4/X5R/6.3V/K	PF_EXP_B2_TXP1C
PF_EXP_B2_TXN1	PFC10	0.22u/4/X5R/6.3V/K	PF_EXP_B2_TXN1C
PF_EXP_B2_TXP2	PFC11	0.22u/4/X5R/6.3V/K	PF_EXP_B2_TXP2C
PF_EXP_B2_TXN2	PFC12	0.22u/4/X5R/6.3V/K	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]



PCIE_X16_X8_RST < PCIE_X16_X8_RST [11,20,21,23]



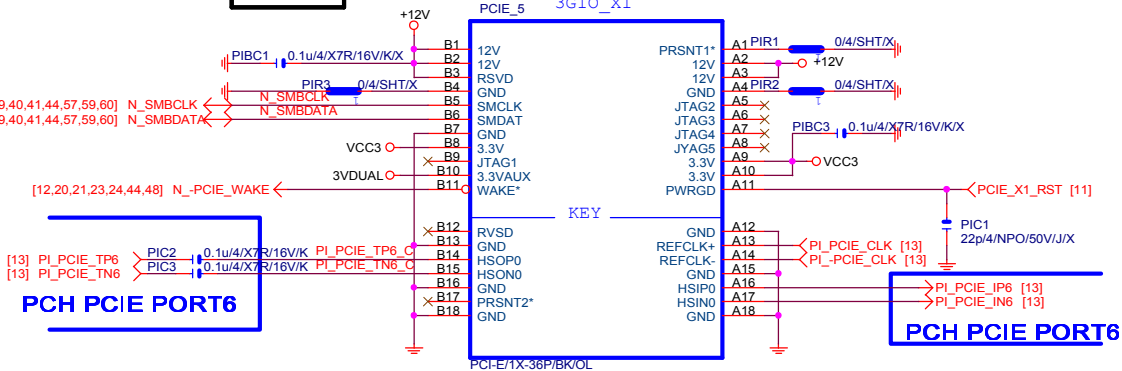
PF_EXP_B2_RXP[0..7] >> PF_EXP_B2_RXP[0..7] [22]
PF_EXP_B2_RXN[0..7] >> PF_EXP_B2_RXN[0..7] [22]

Gigabyte Technology

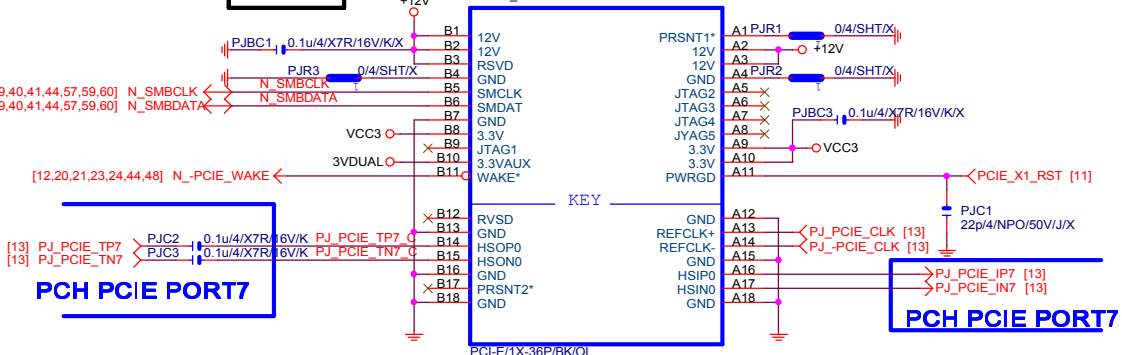
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Size	Document Number	GA-X99-GAMING 5P	Rev 1.0
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PCIEX1 SLOT

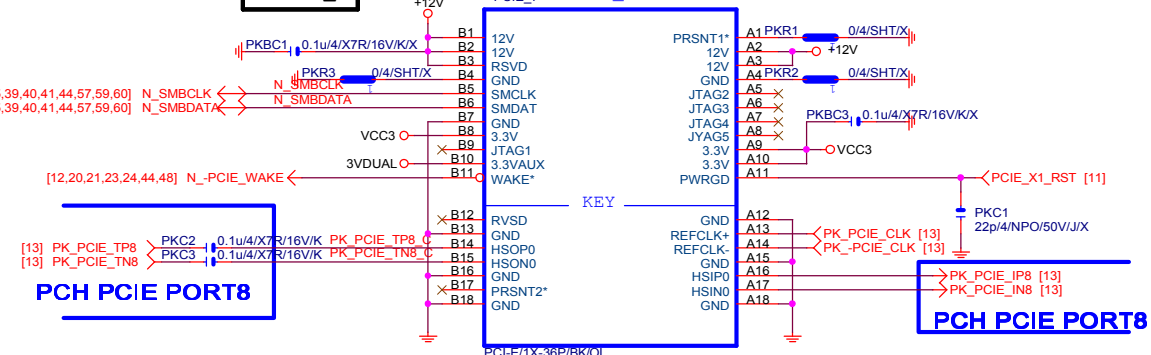
PCIEX1_1



PCIEX1_2



PCIEX1_3



Gigabyte Technology

Title			PCIEX1 1,2,3
Size			Custom
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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

PRCHOT

SIO CAP

DUAL BIOS OPT STRAP

IT8620E_BX

SIO 18V

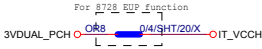
MB ID

PWR SHT

SIO PU

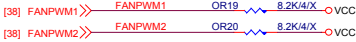
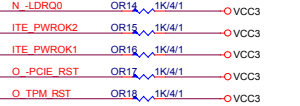
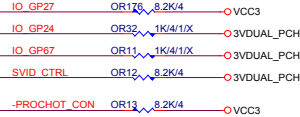
SIO STRAP

Power leakage

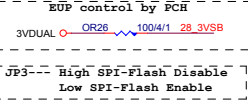
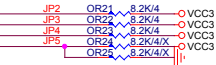


For 8728 EUP function

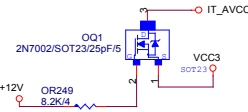
3VDUAL_PCH OR8 P4/SHT20/X OIT_VCCH



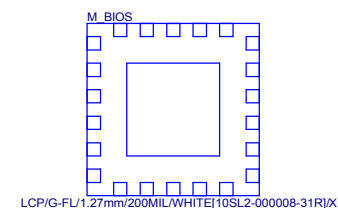
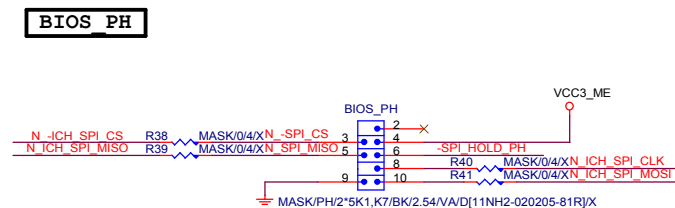
H61M-S2 1.1 JP6 stuff pull down

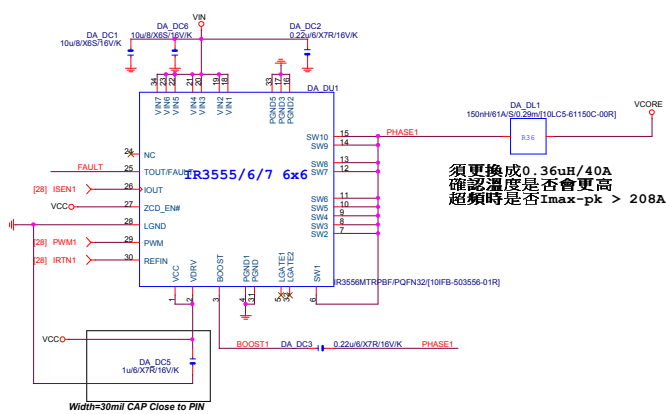


JP3--- High SPI-Flash Disable Low SPI-Flash Enable

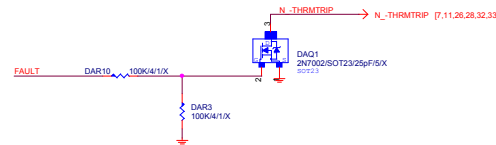
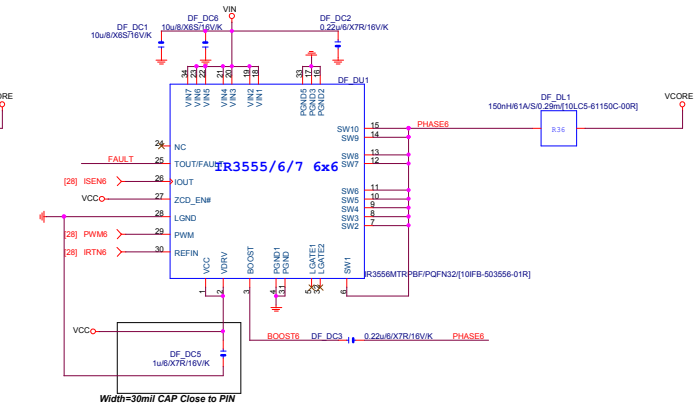
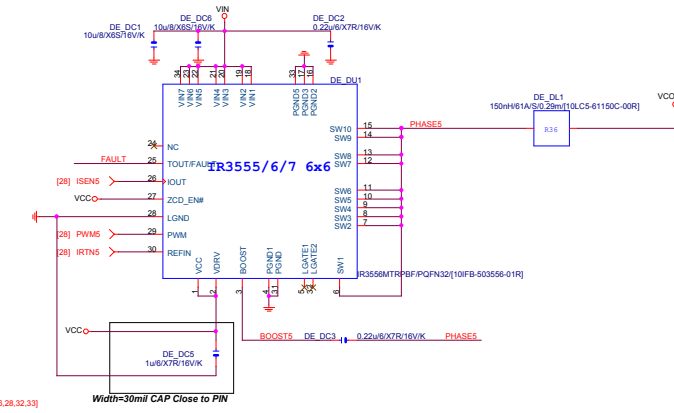
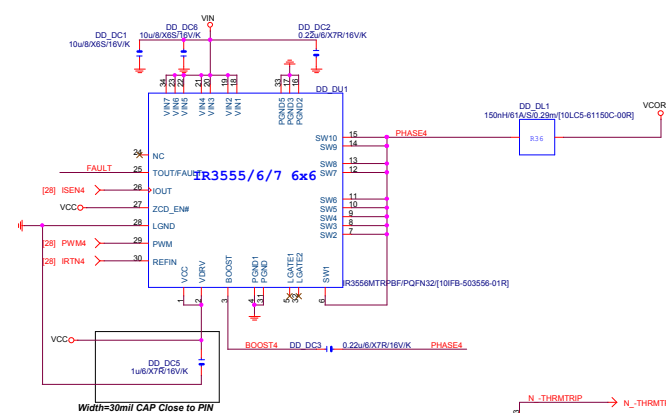
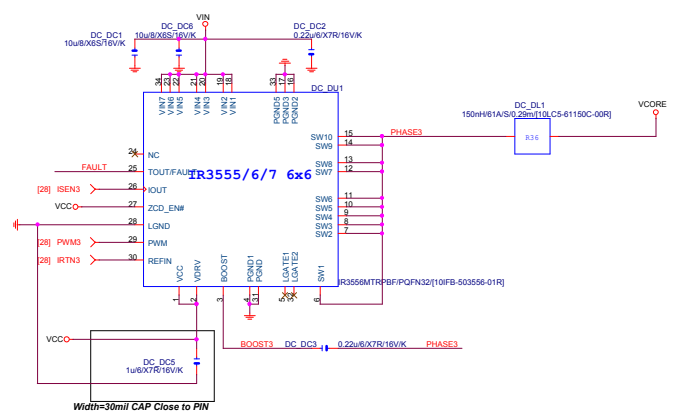
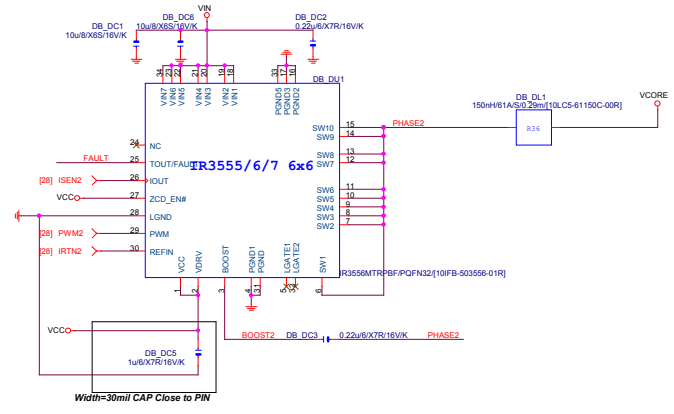


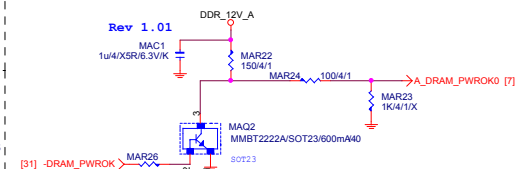
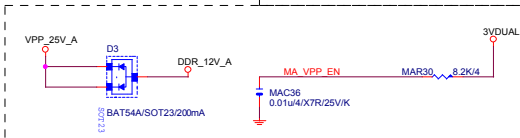
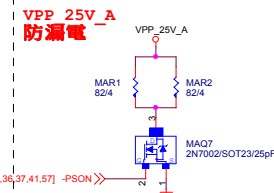
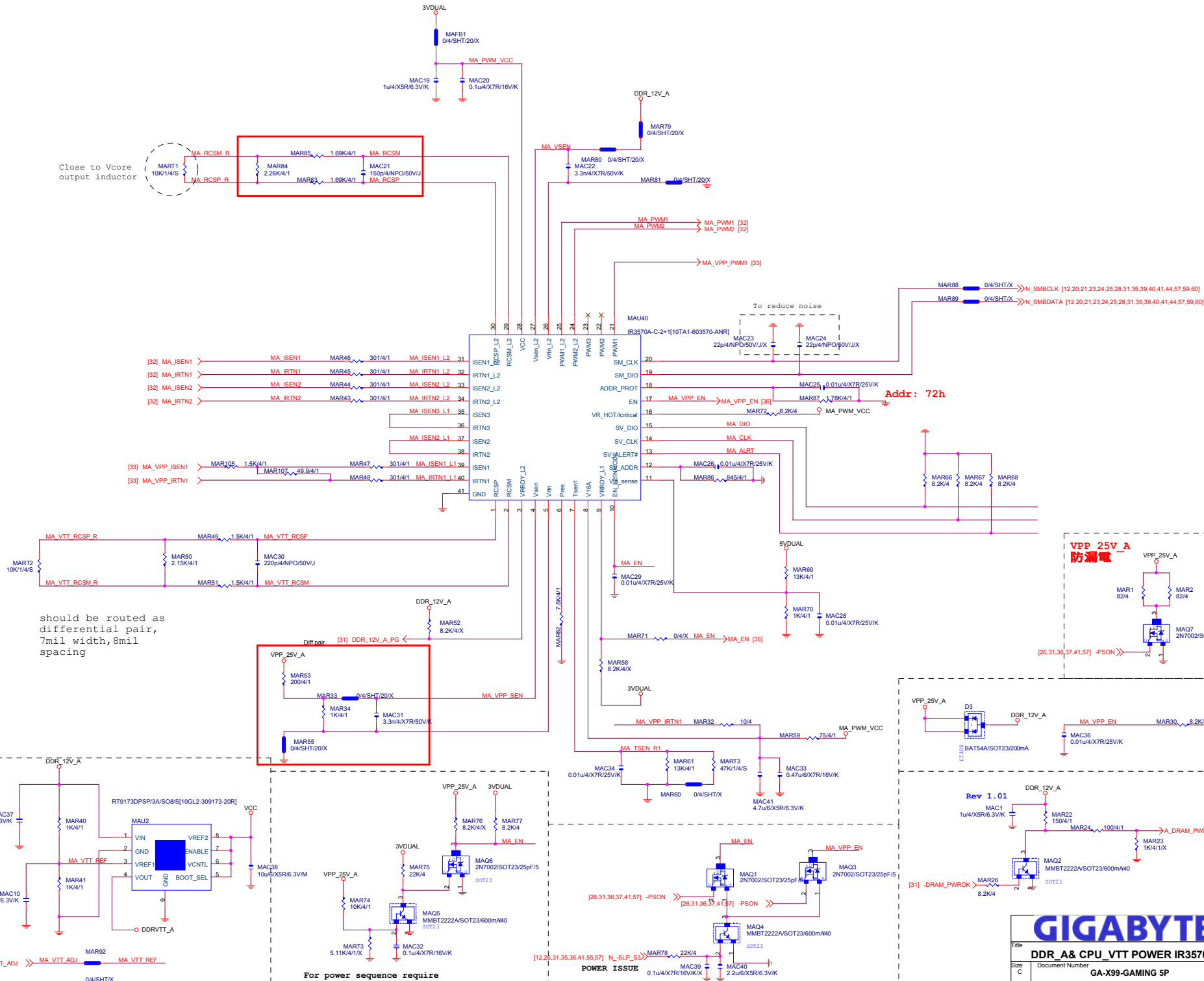
Gigabyte Technology			
PCH GPIO , CTRL , AUDIO			
File	Document Number	GA-X99-GAMING 5P	Rev 1.0
Size	Custom		
Date:	Friday, January 16, 2015	Sheet 26	of 62





須更換成0.36uH/40A
確認溫度是否會更高
超頻時是否imax-pk > 208A





Close to Vcore
output inductor

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

For power sequence require

POWER ISSUE

GIGABYTE

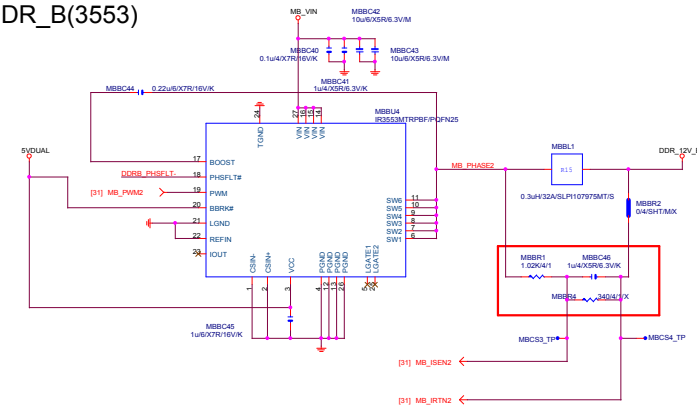
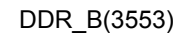
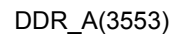
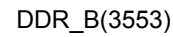
Title **DDR_A& CPU_VTT POWER IR3570**

Size C Document Number

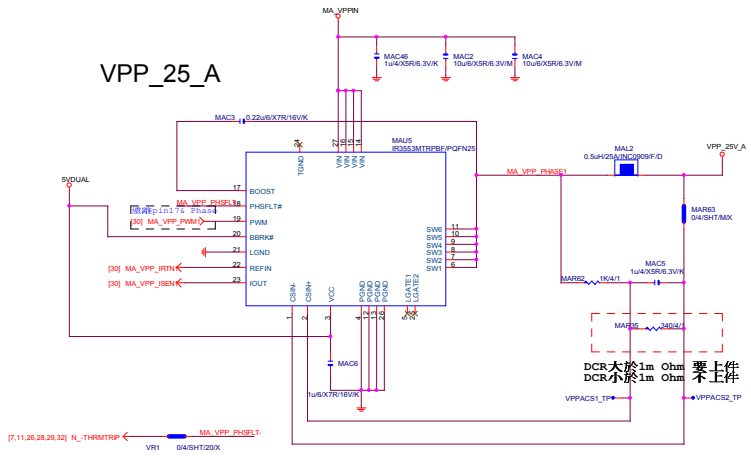
GA-X99-GAMING 5P

Rev 1.0

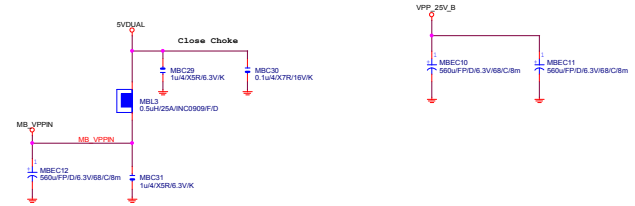
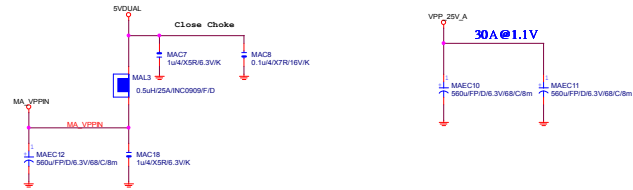
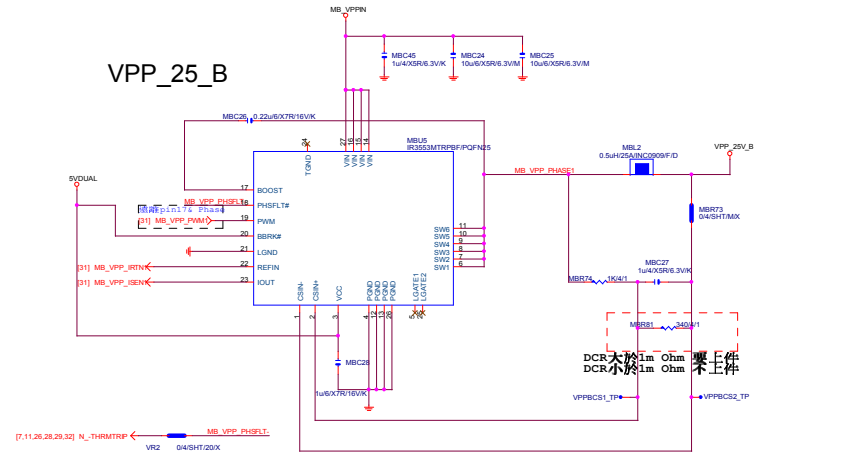
Date: Friday, January 16, 2015 Sheet 31 of 62

DDR_B
DDR_B(3553)

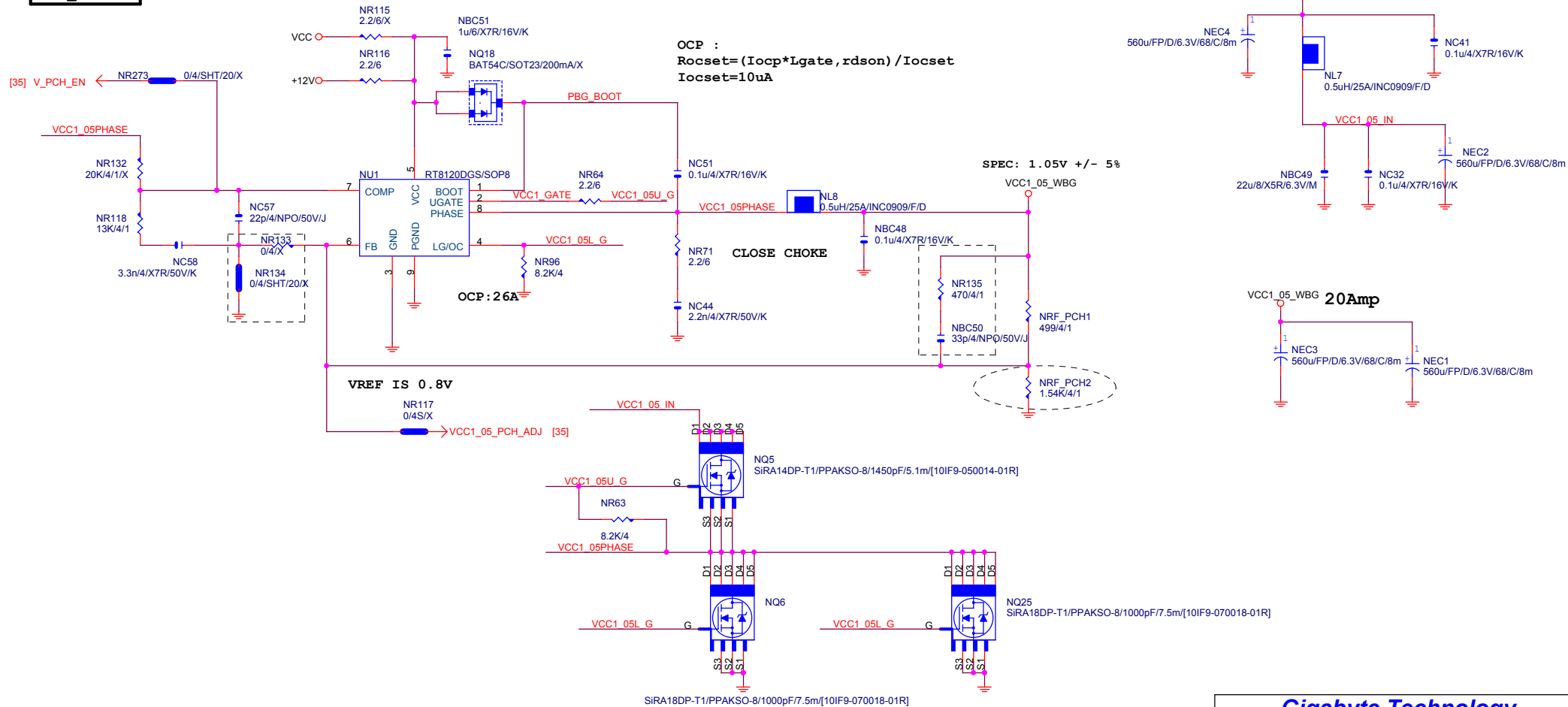
VPP_25_A



VPP_25_B

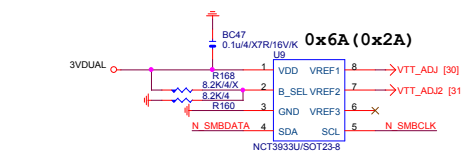
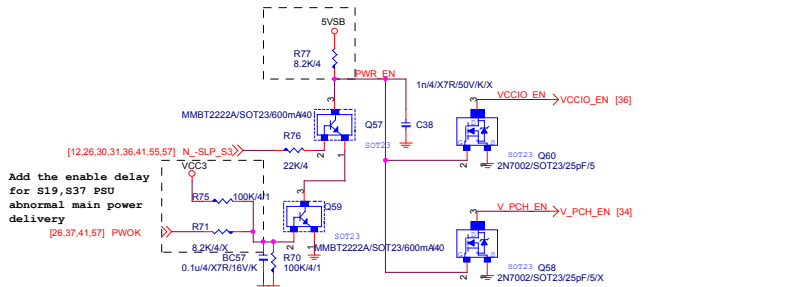
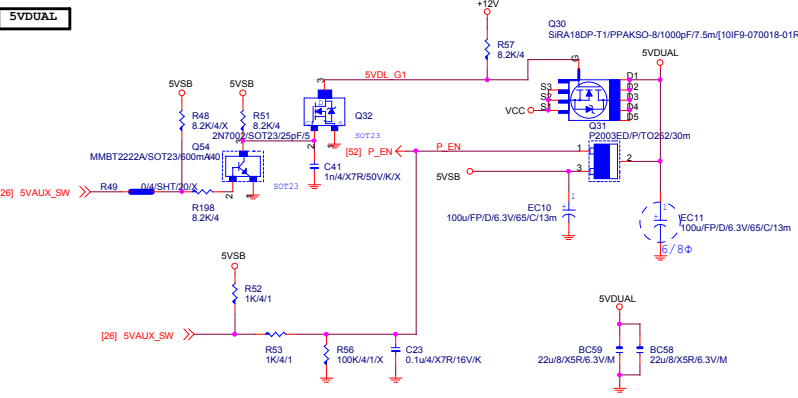


PBG_1.1V



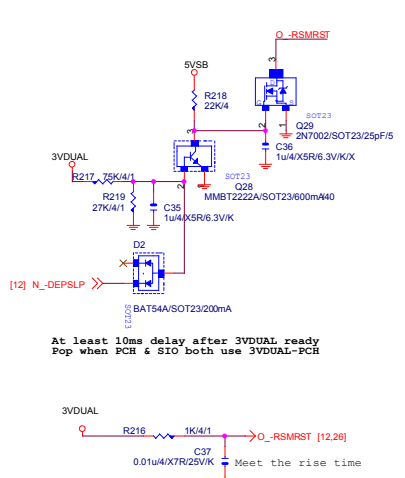
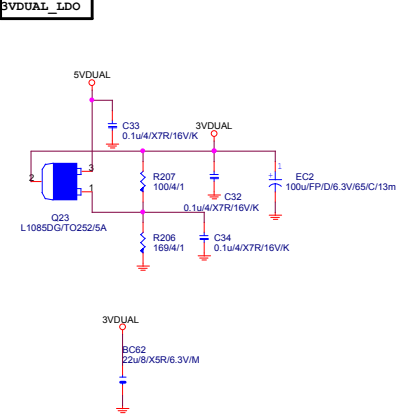
Gigabyte Technology			
Title		ISL6545 PCH	
Size	Document Number	Rev	
Custom		1.0	
Date:		Friday, January 16, 2015	
		Sheet 34 of 62	

5VDUAL

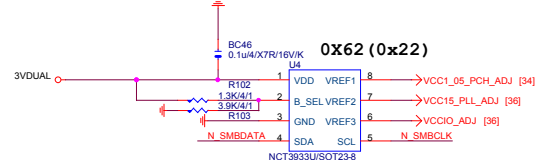
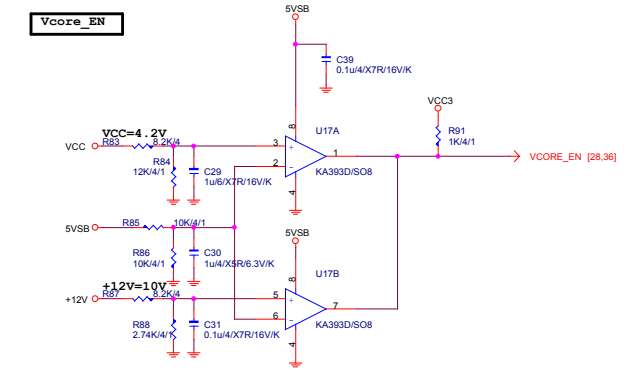


N_SMBCLK [12,20,21,23,24,25,28,30,31,39,40,41,44,57,59,60]
N_SMBDATA [12,20,21,23,24,25,28,30,31,39,40,41,44,57,59,60]

3VDUAL_IDO

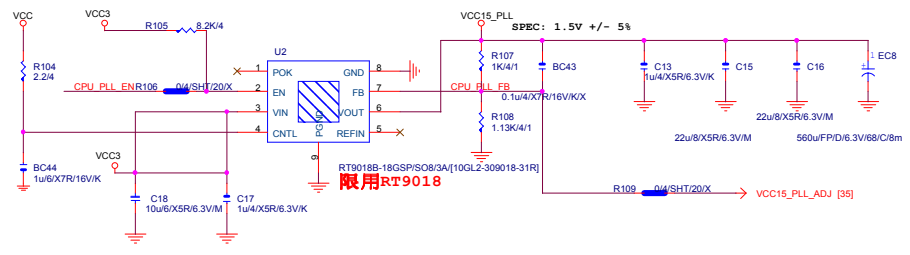


Vcore_EN

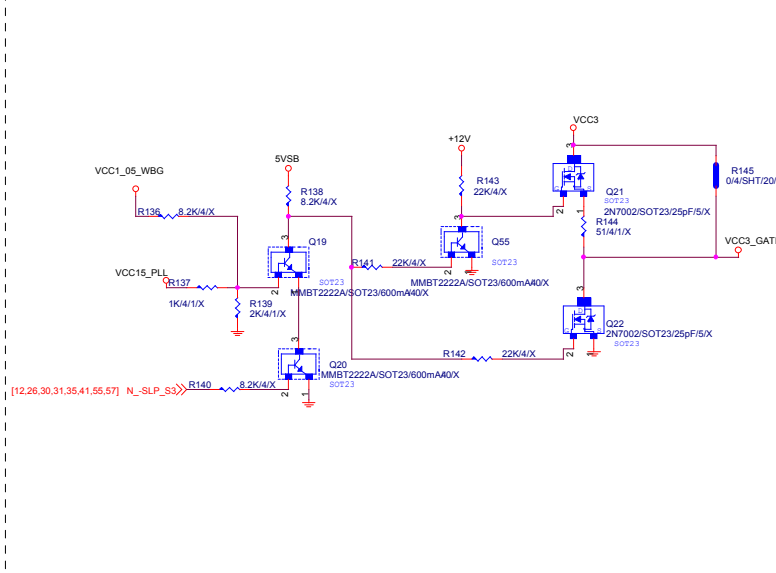
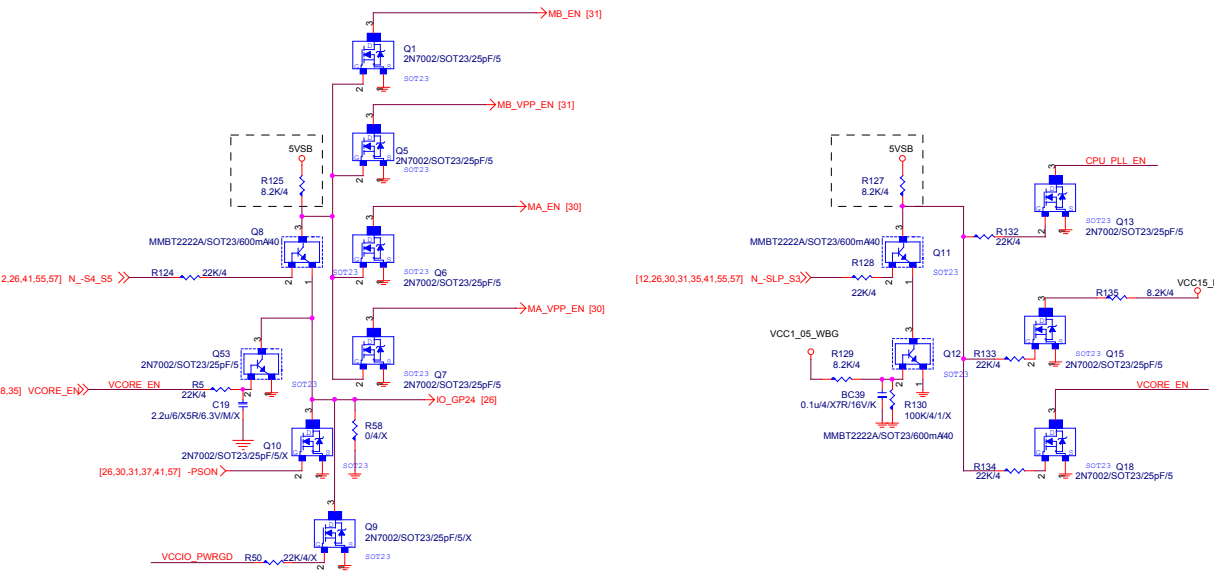
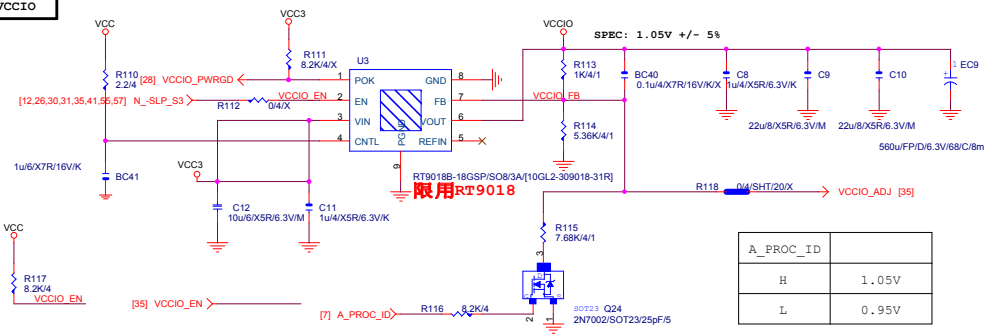


Gigabyte Technology			
Title			
DISCRETE POWER			
Size C	Document Number	GA-X99-GAMING 5P	Rev 1.0
Date: Friday, January 16, 2015	Sheet 35	of 62	

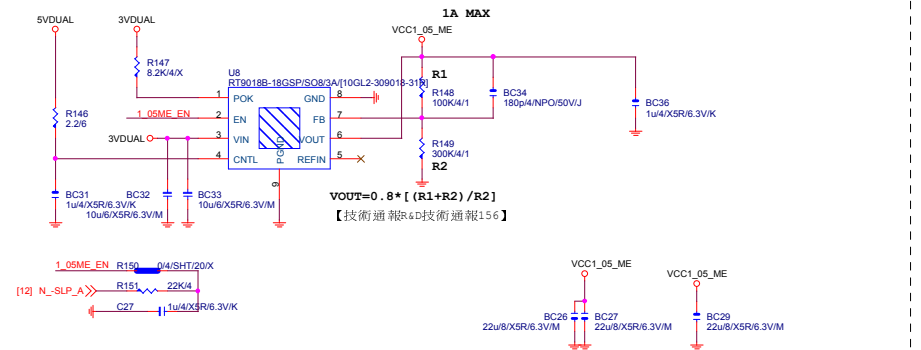
VCC15_PLL



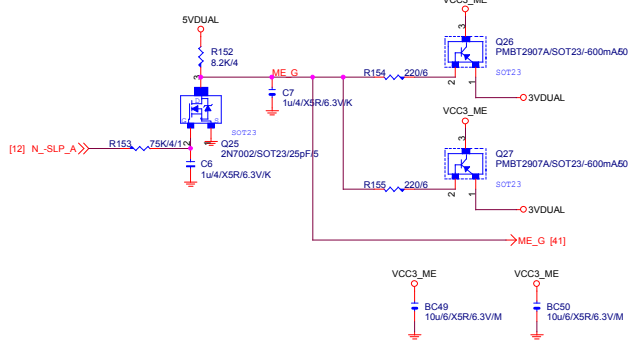
VCCIO



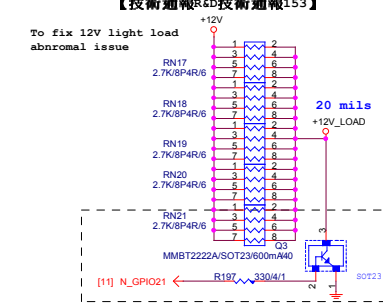
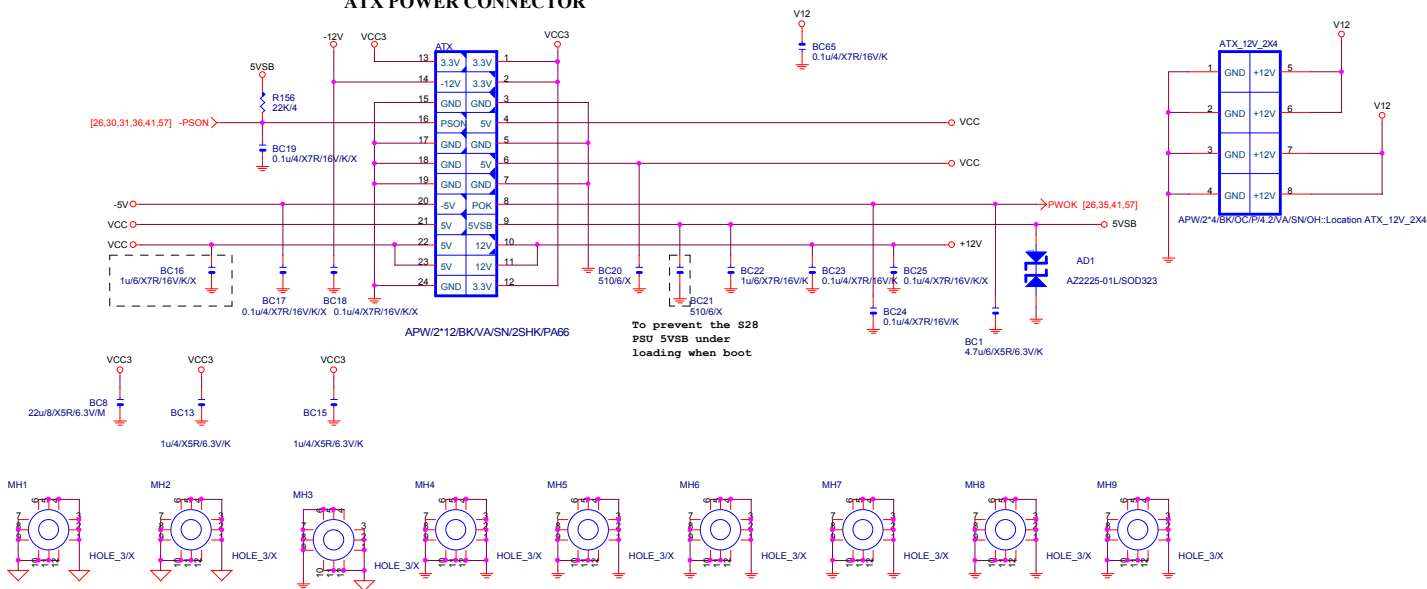
VCC1_05_ME



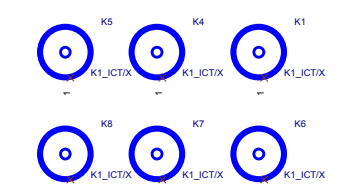
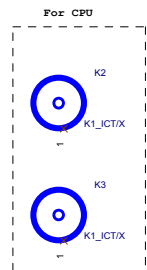
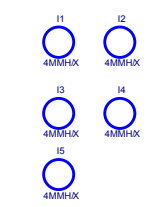
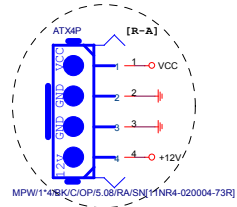
VCC3_ME



ATX POWER CONNECTOR

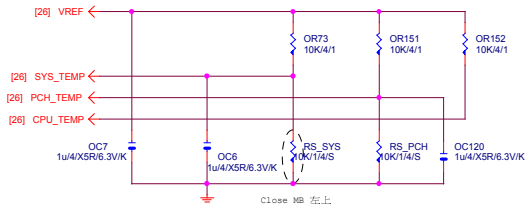


OVER CLOCKING

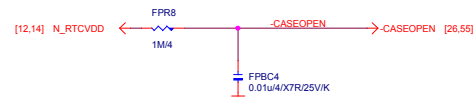


INPUT				OUTPUT	
PR	CL	CLOCK	DATA	Q	-Q
L	H	X	X	H	L
H	L	X	X	L	H
L	L	X	X	H	H
H	H	Rising	T	H	L
H	H	Rising	L	L	H
H	H	L	X	No Change	
H	T	H	T	No Change	
H	H	Falling	X	No Change	

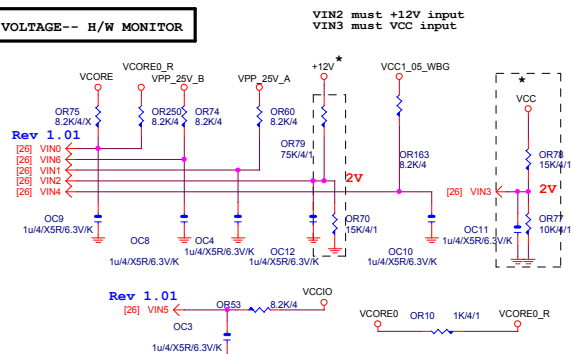
TEMP H/W MONITOR



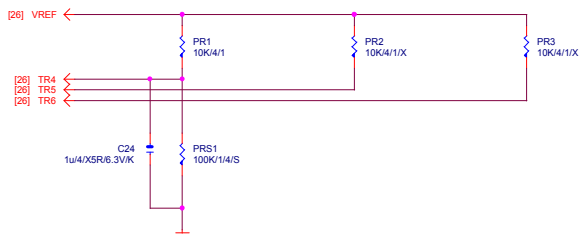
CASE OPEN



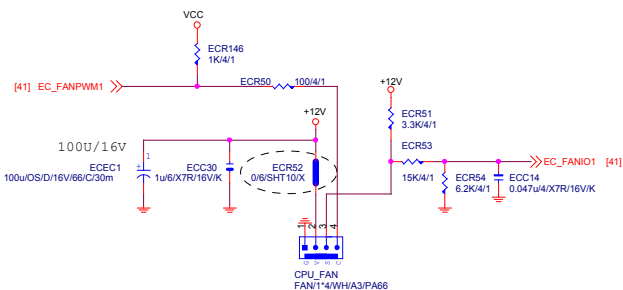
VOLTAGE-- H/W MONITOR



8620 PROCHOT

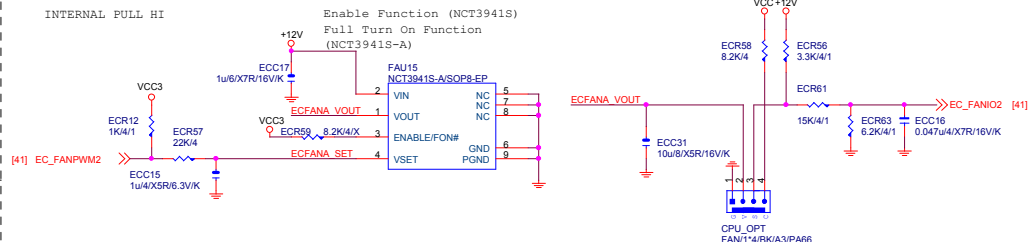


CPU SMART FAN

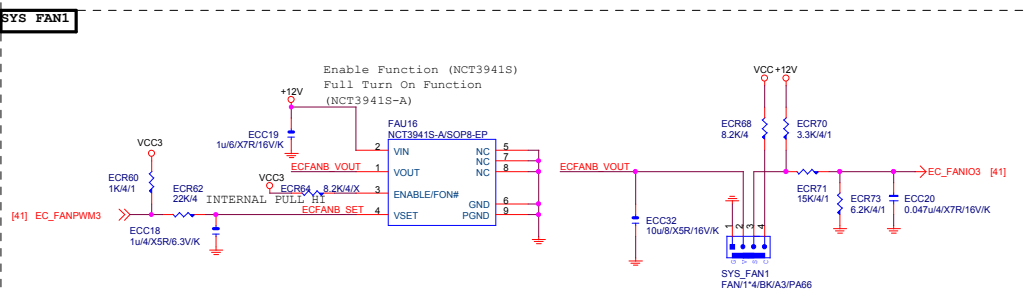


CPUOPT FAN

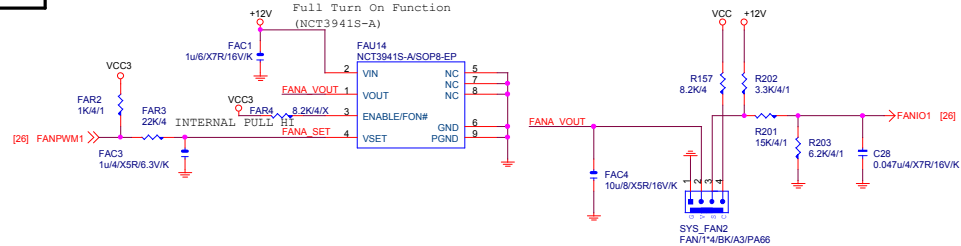
INTERNAL PULL HI



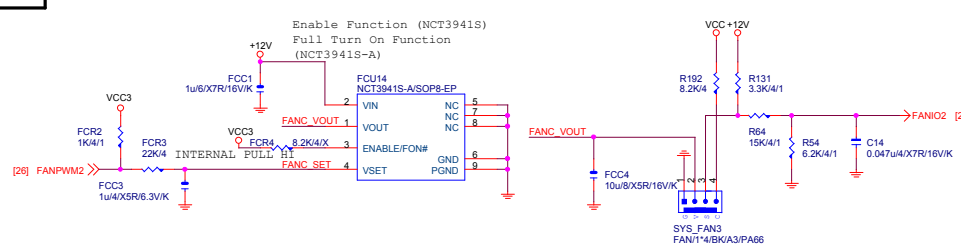
SYS FAN1



SYS FAN2

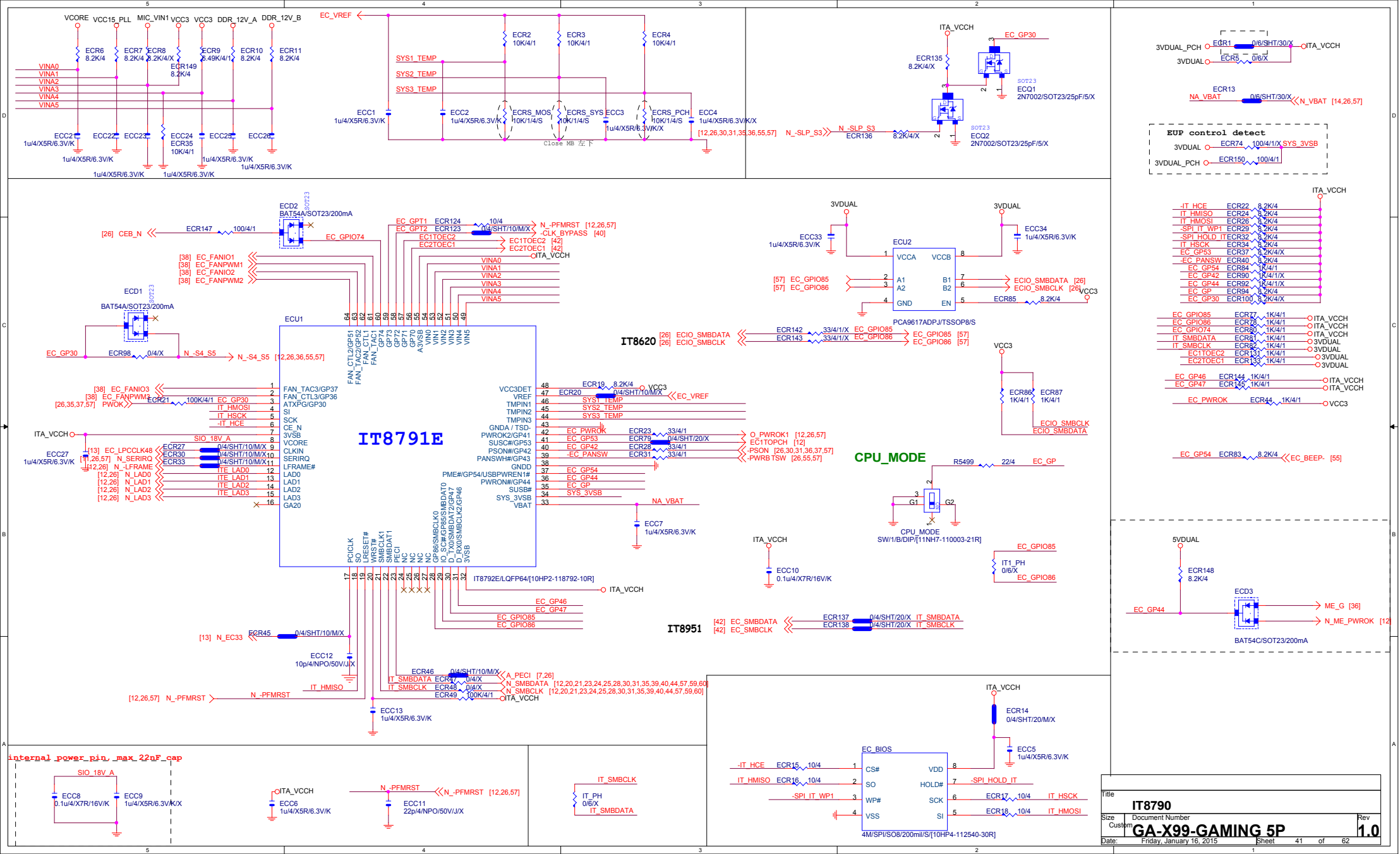


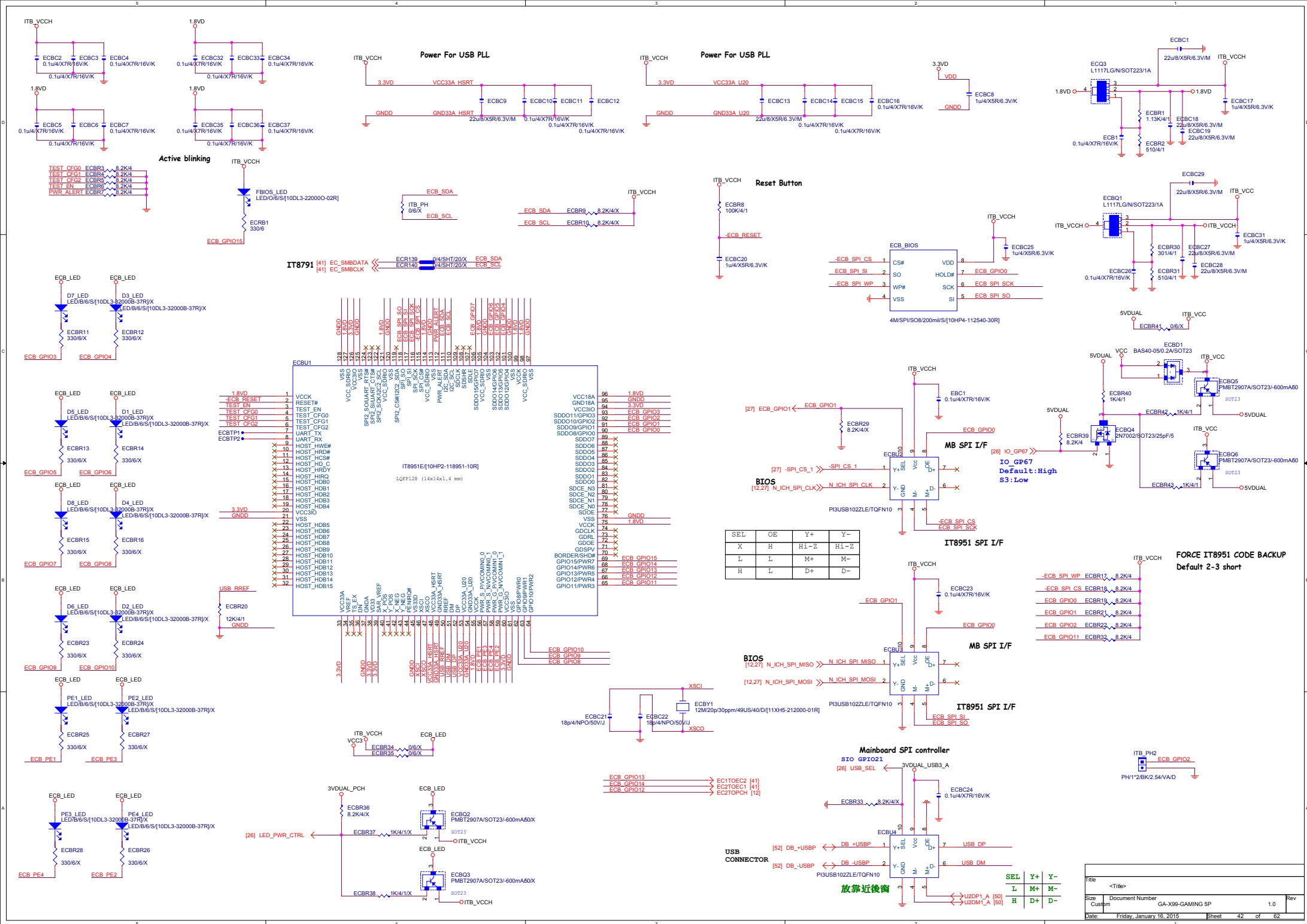
SYS FAN3

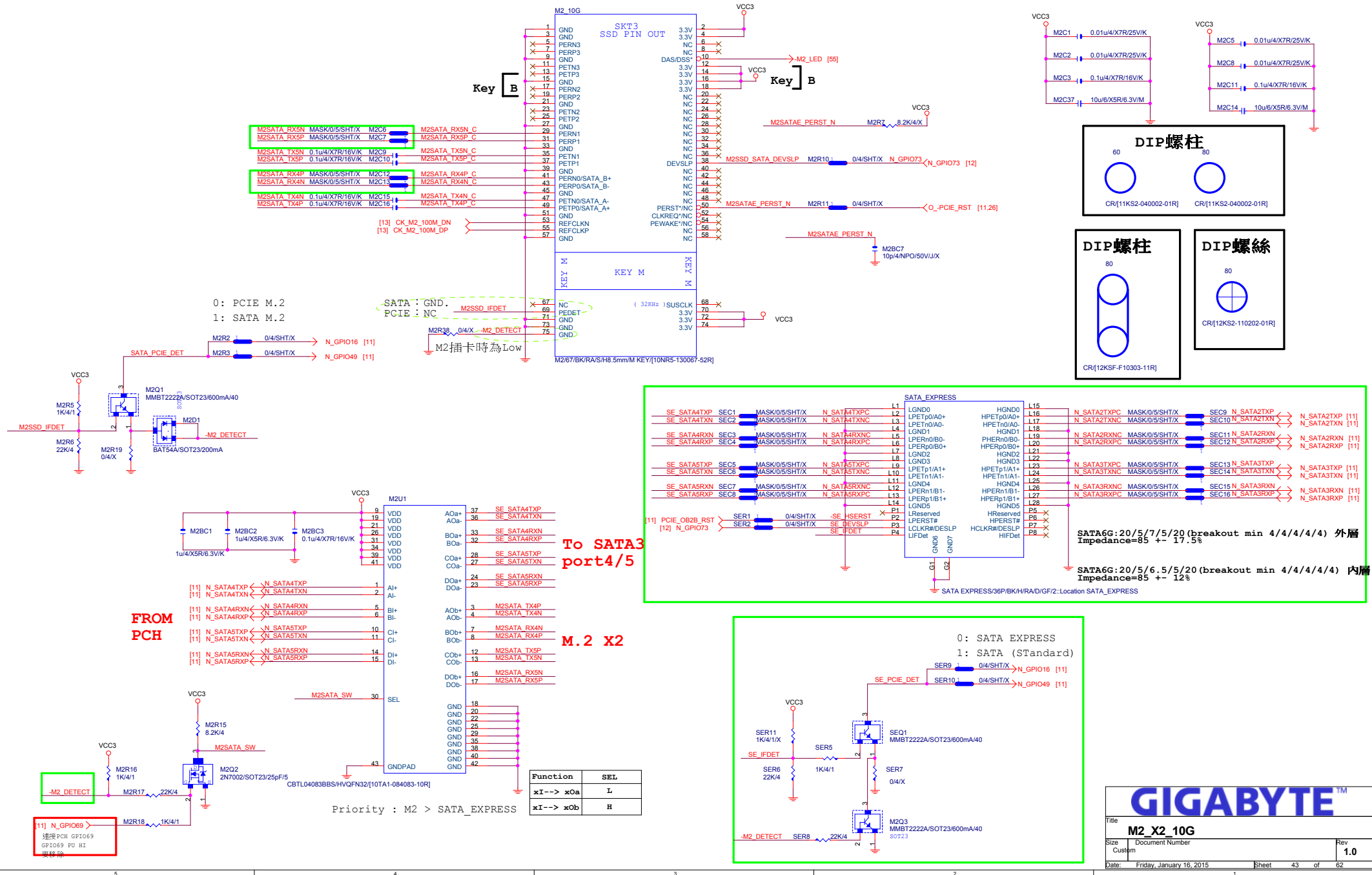


Gigabyte Technology

Title		HWM,FAN CTRL
Size	Customer	GA-X99-GAMING 5P.0
Date	Friday, January 16, 2015	Sheet 38 of 62







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



CR[12KS2-110202-01R]

SMD螺柱



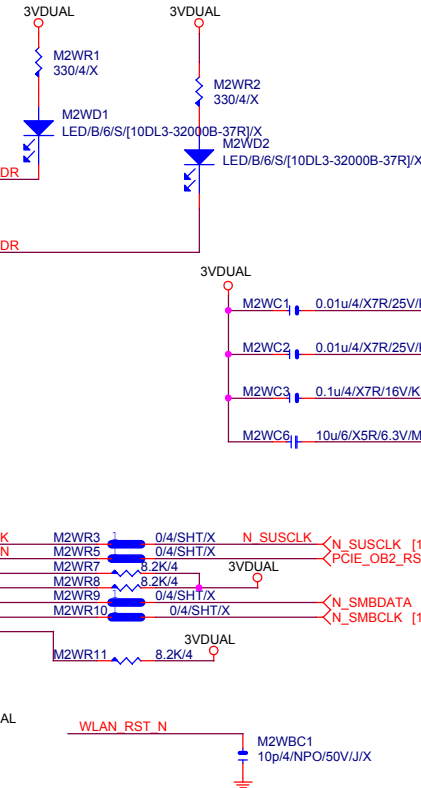
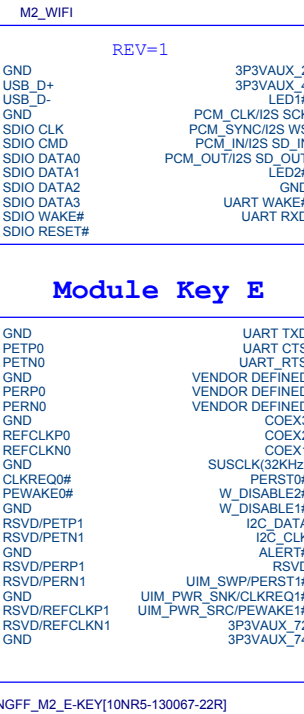
CR[10KS2-040109-01R]
should be SMD level

[13] N_+USBP5
[13] N_-USBP5

[13] M2_WIFI_IP
[13] M2_WIFI_IN

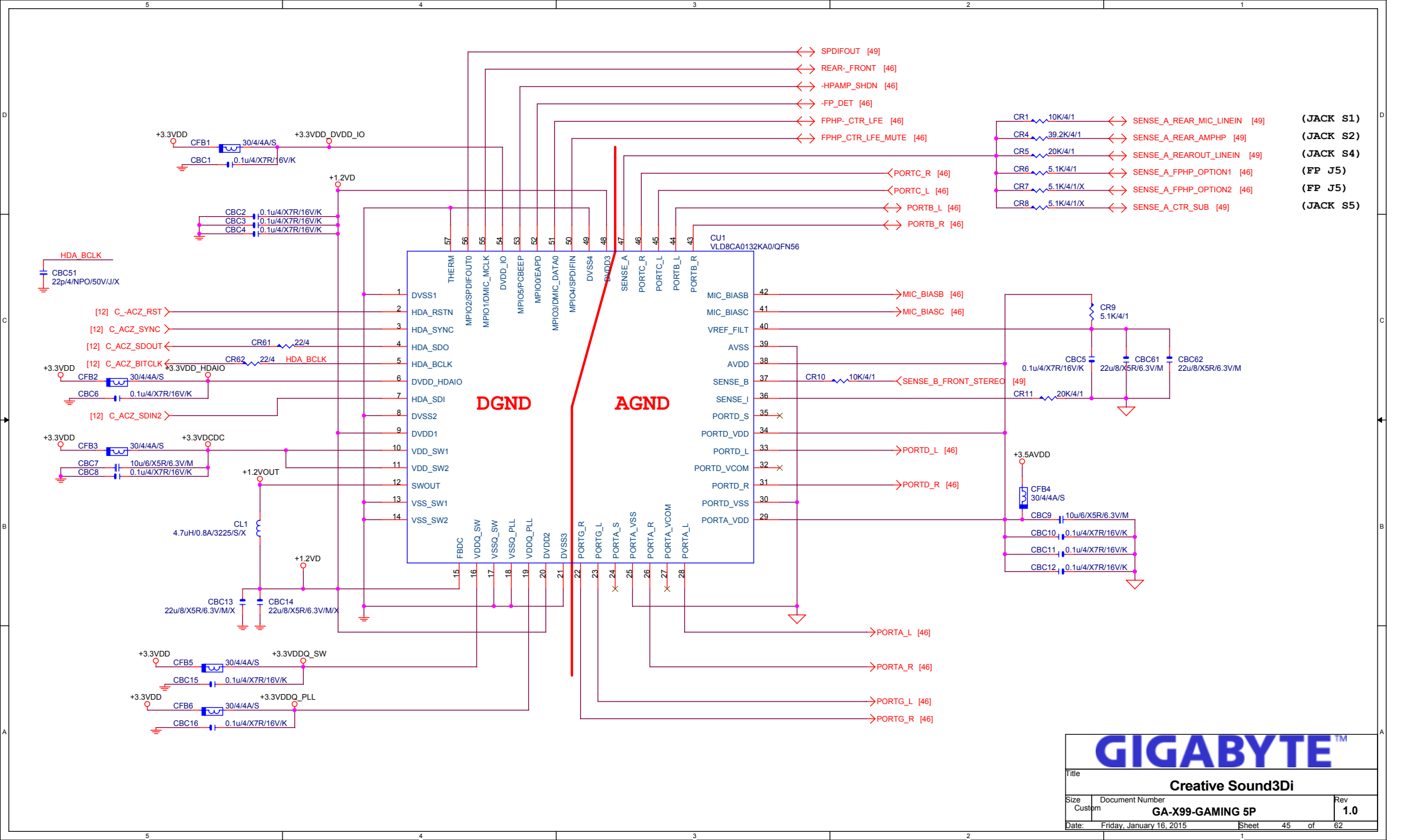
[13] CK_WIFI_100M_DP
[13] CK_WIFI_100M_DN

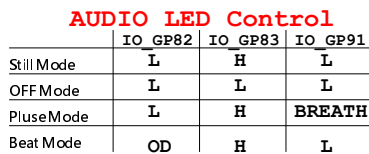
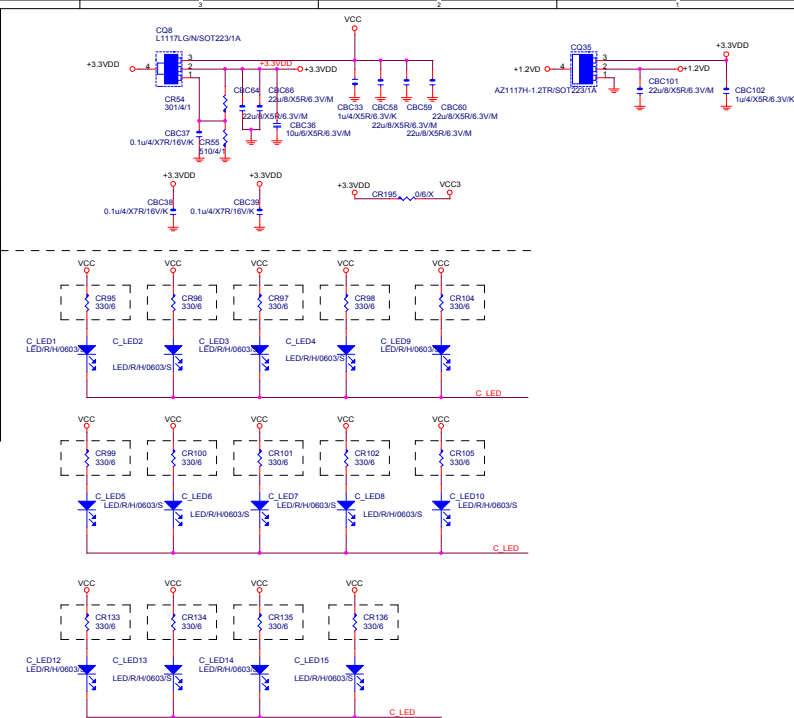
[12,20,21,23,24,25,48] N_-PCIE_WAKE



GIGABYTE™

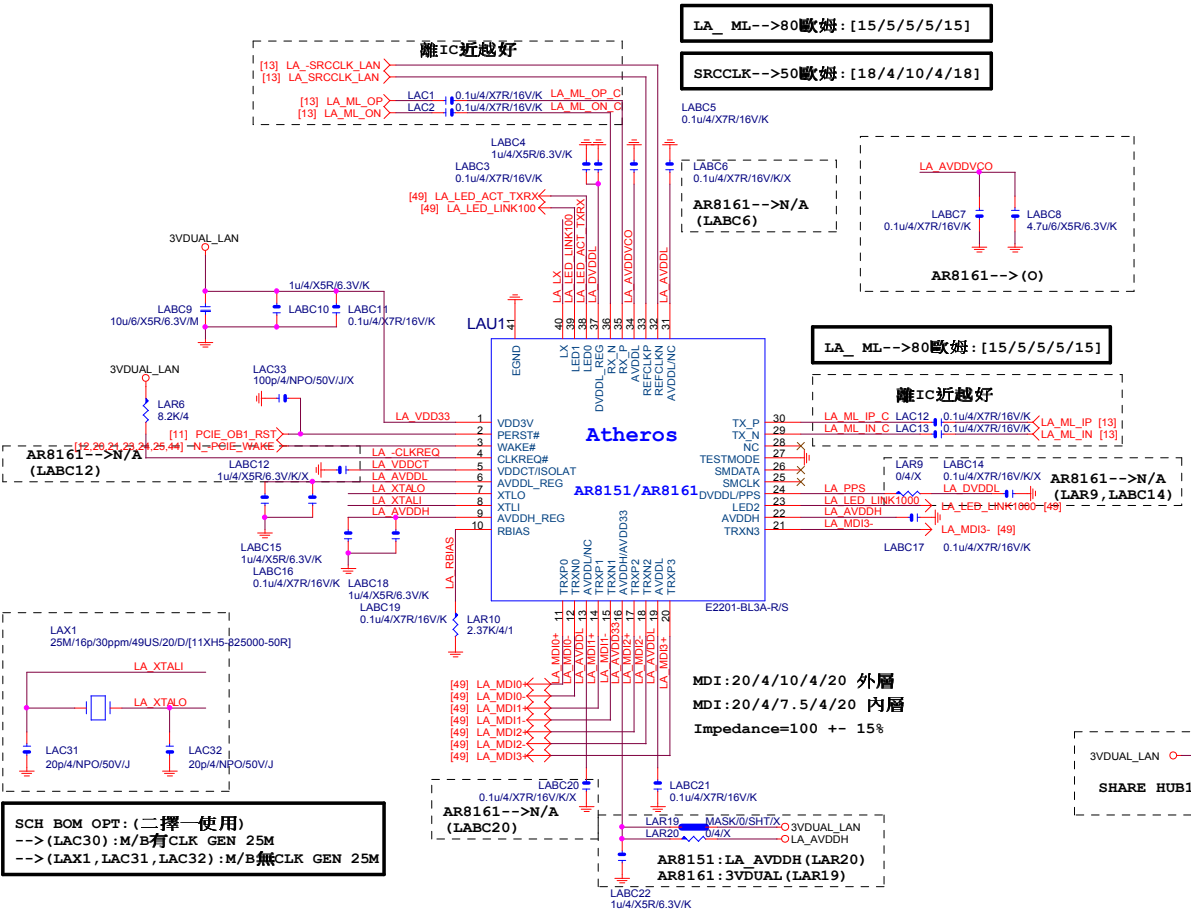
Title M2_WIFI		
Size B	Document Number	Rev 1.0
Date:	Friday, January 16, 2015	Sheet 44 of 62





File	Creative Sound3Di	
	Size	Document Number
	Custom	GA-X99-GAMING 5P

LAN:AR8151/AR8161



SCH BOM OPT: (二擇一使用)
--> (LAC30): M/B有CLK GEN 25M
--> (LAX1, LAC31, LAC32): M/B無CLK GEN 25M

LA_ ML-->80歐姆: [15/5/5/5/15]

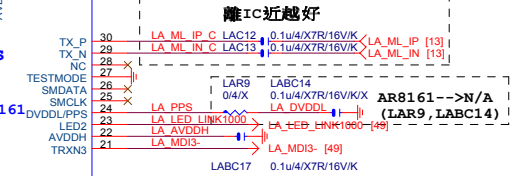
SRCLK-->50歐姆: [18/4/10/4/18]

LABC5
0.1u4/X7R/16V/K

LABC6
0.1u4/X7R/16V/K/X

AR8161-->N/A
(LABC6)

LA_ ML-->80歐姆: [15/5/5/5/15]



MDI:20/4/10/4/20 外層
MDI:20/4/7.5/4/20 內層
Impedance=100 +- 15%

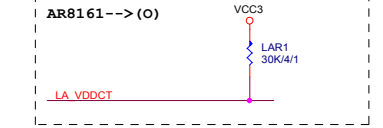
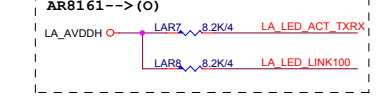
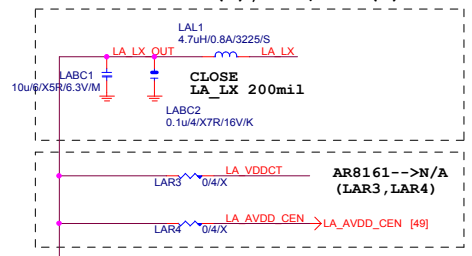
AR8161-->N/A
(LABC20)

AR8151: LA AVDDH (LAR20)
AR8161: 3VDUAL (LAR19)

3VDUAL_LAN 3VDUAL_USB3_A
SHARE HUB1 <--> USB30_LAN

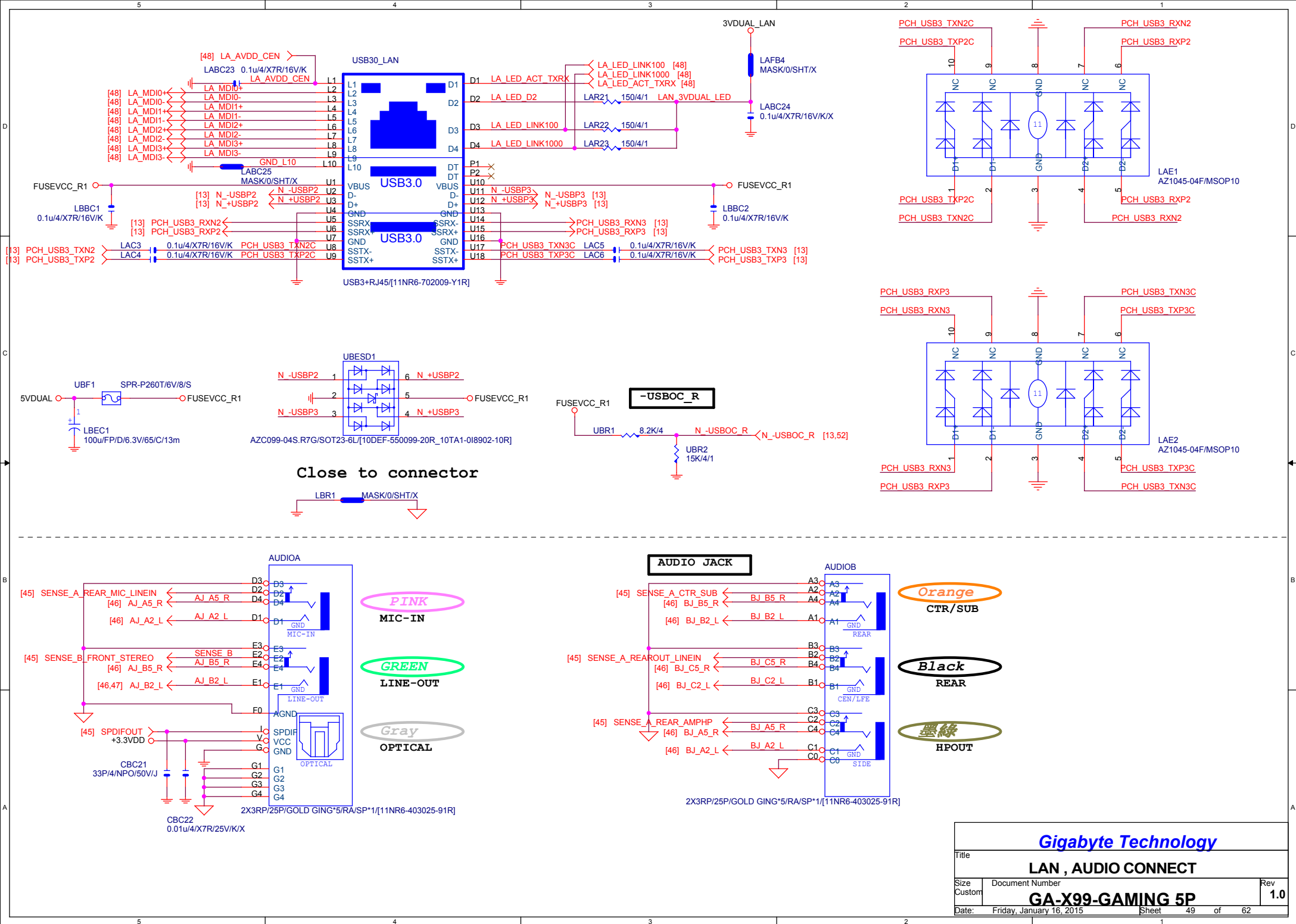
LAN POWER

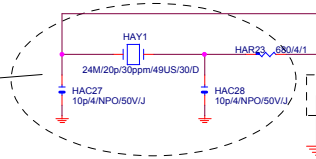
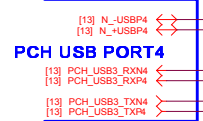
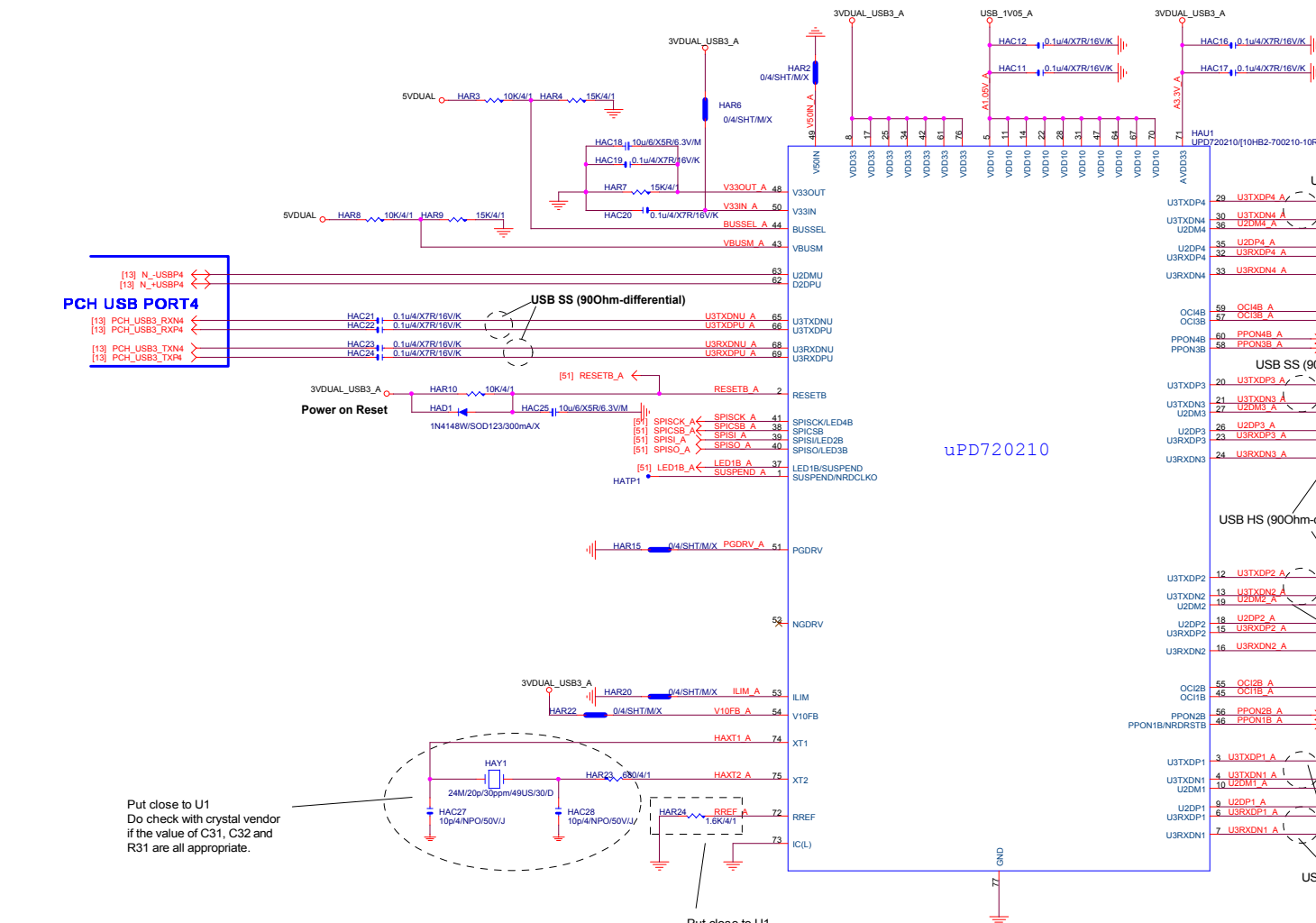
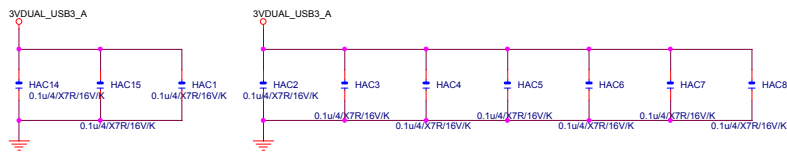
NEW DESIGN ONLY FOR INTERNAL SWR
AR8151: LAR3 (O), LAR5 (X)
AR8161: LAR5 (O), LAR3/LAR4 (X)



Power domain chart

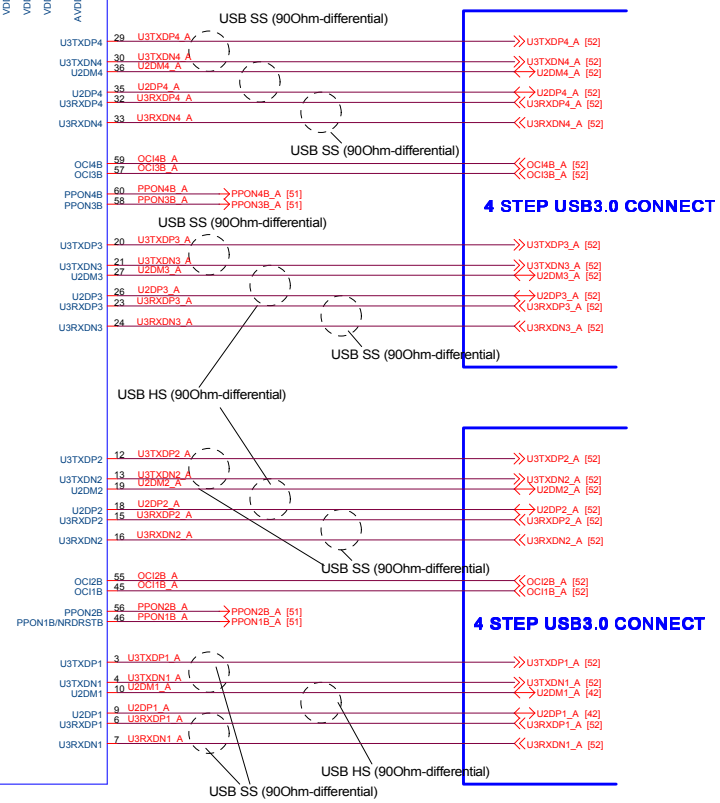
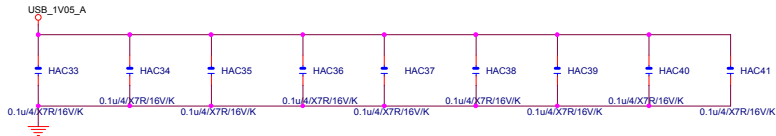
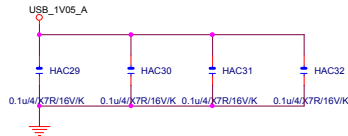
	AR8151	AR8161
AVDD33	N/A	3.3V
VDD33	3.3V	3.3V
AVDDH	2.7V	2.7V
AVDDL/DVDDL	1.1V	1.1V
VDDCT	1.7V	





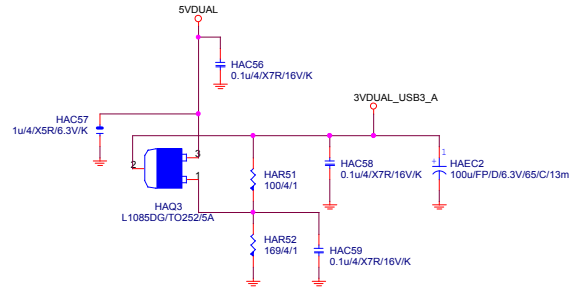
Put close to U1
Do check with crystal vendor
if the value of C31, C32 and
R31 are all appropriate.

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

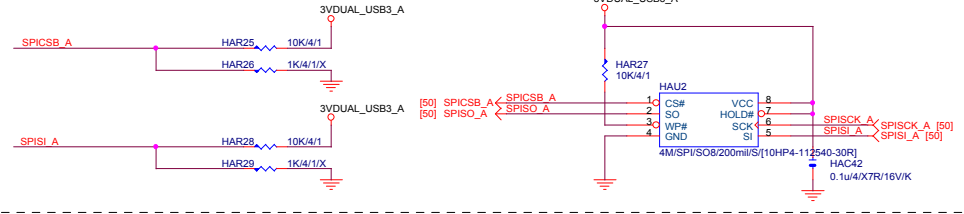


Gigabyte Technology			
Title		D720210	
Size	Document Number	GA-X99-GAMING 5P	
C		Rev 1.0	
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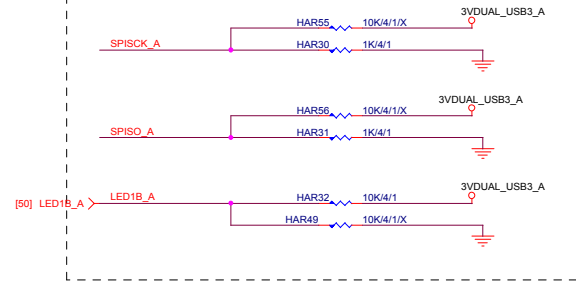
3VDUAL_USB_1



External SPI ROM ; SPI ROM attached mode

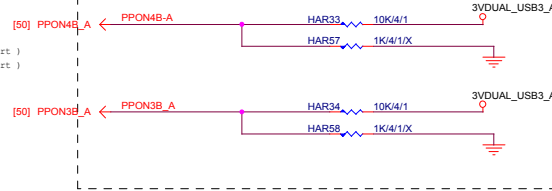


Battery Charging

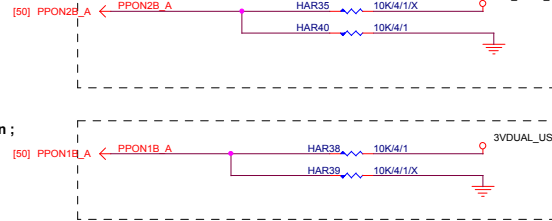


Number of Ports ; 4Ports mode

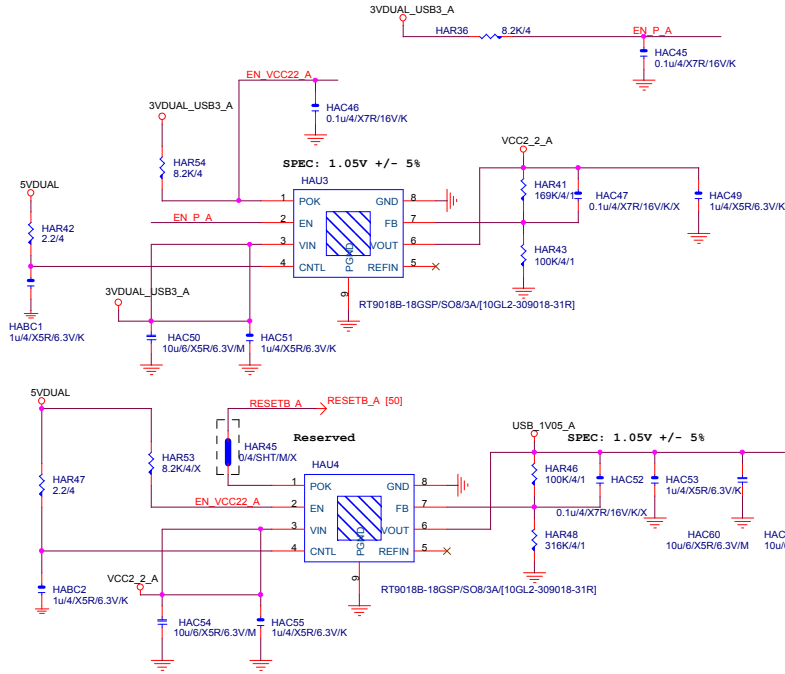
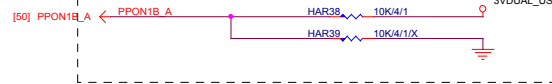
PPON3B / PPON4B : H / H (4 port)
PPON3B / PPON4B : L / L (2 port)



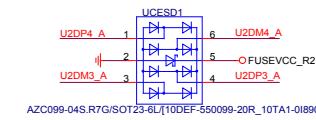
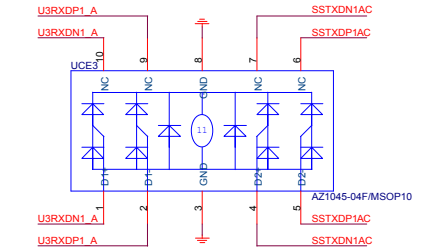
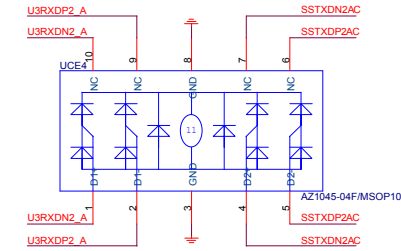
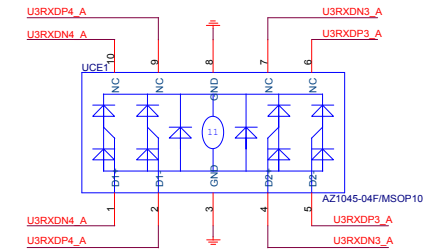
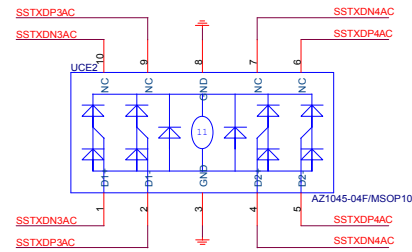
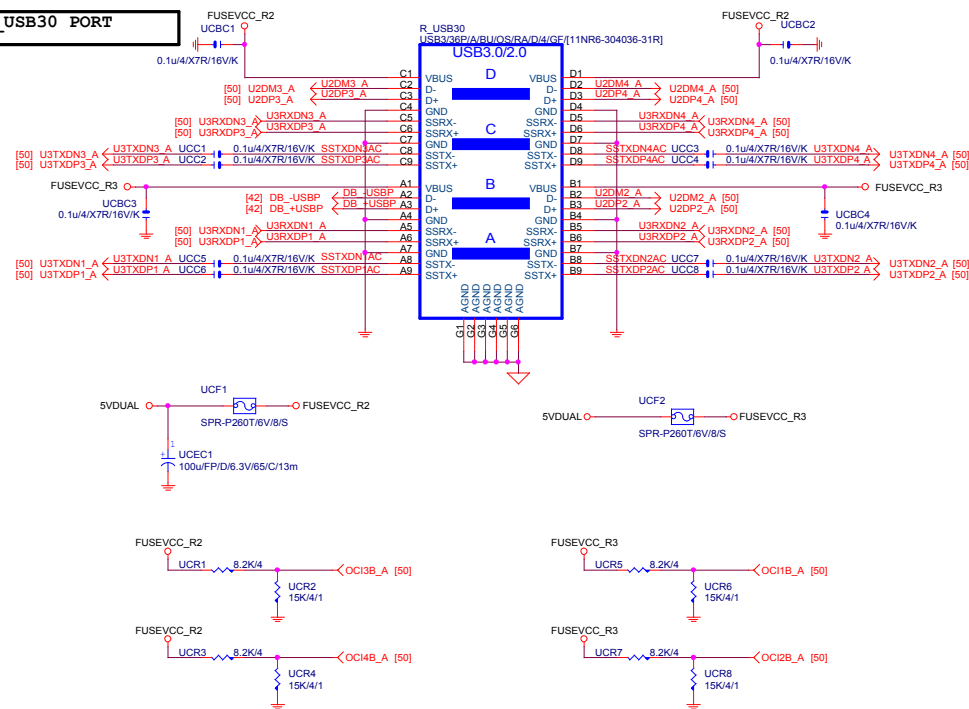
#5 VBUS Power Control ; Individual mode



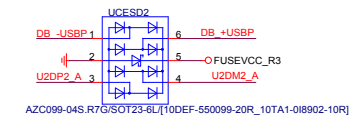
PPON1B Pin Function ; Port1 PPONB mode



R_USB30 PORT

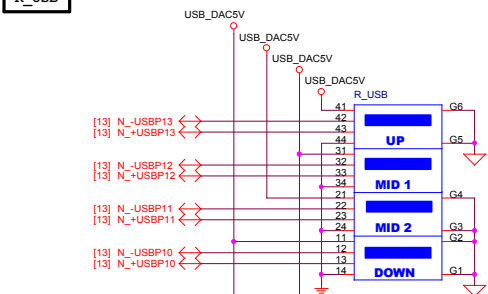


Close to connector

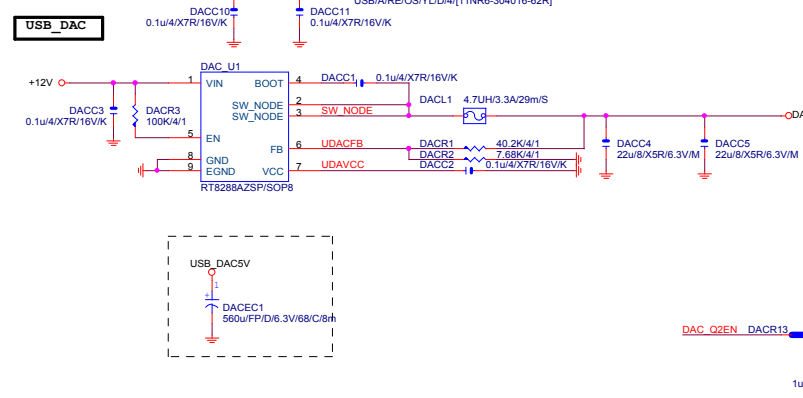


Close to connector

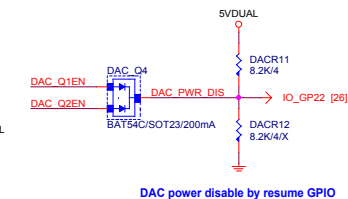
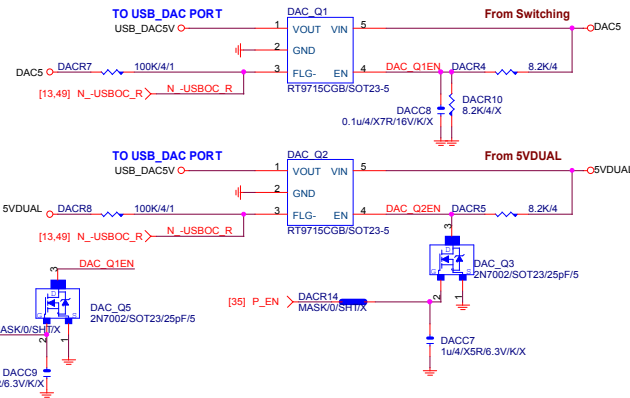
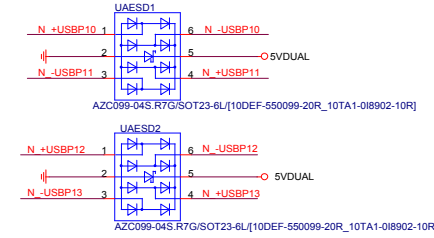
R_USB

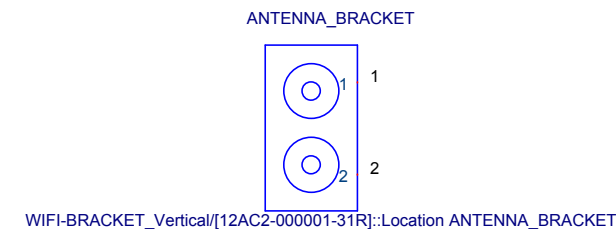
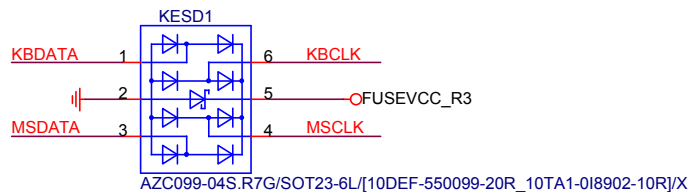
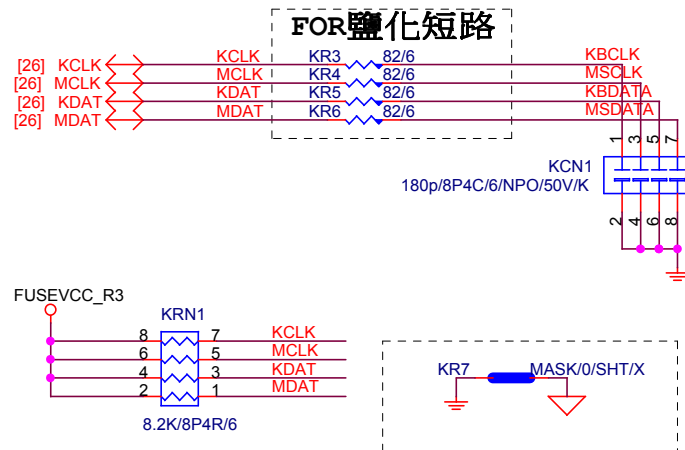
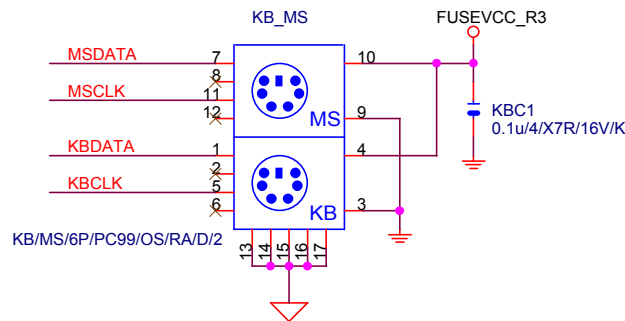


USB_DAC



USB20 ESD PROTECT

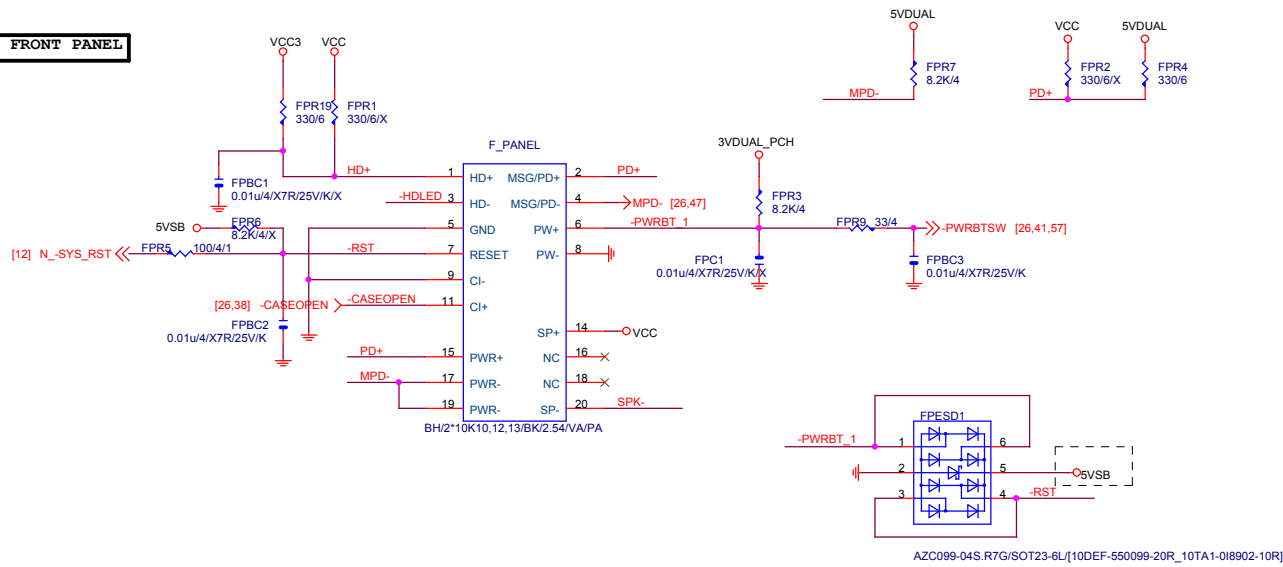




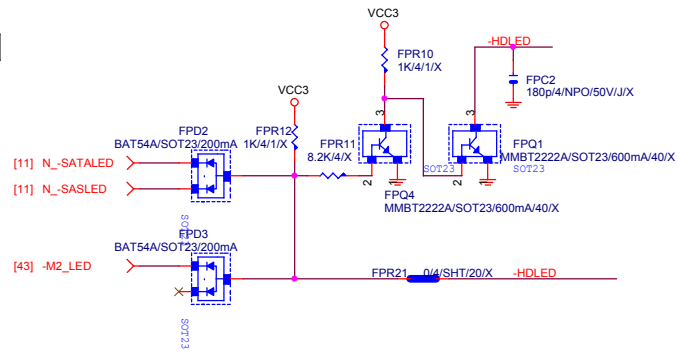
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USB DAC-UP , PS2 ,WIFI		
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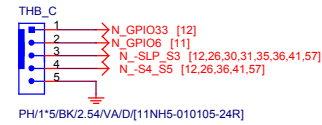
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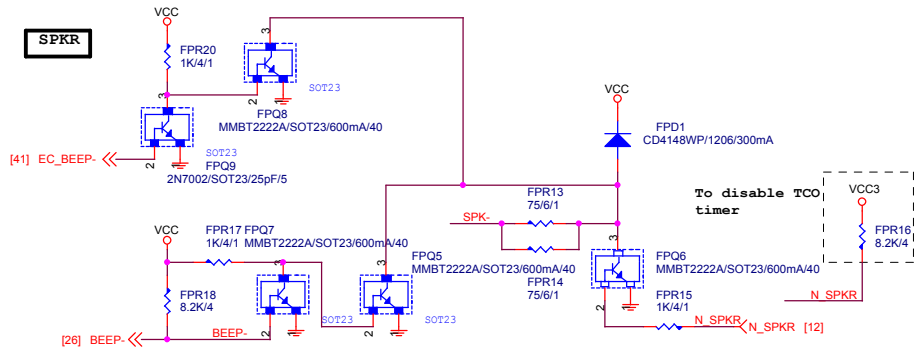
SATA LED



Thunderbolt



SPKR

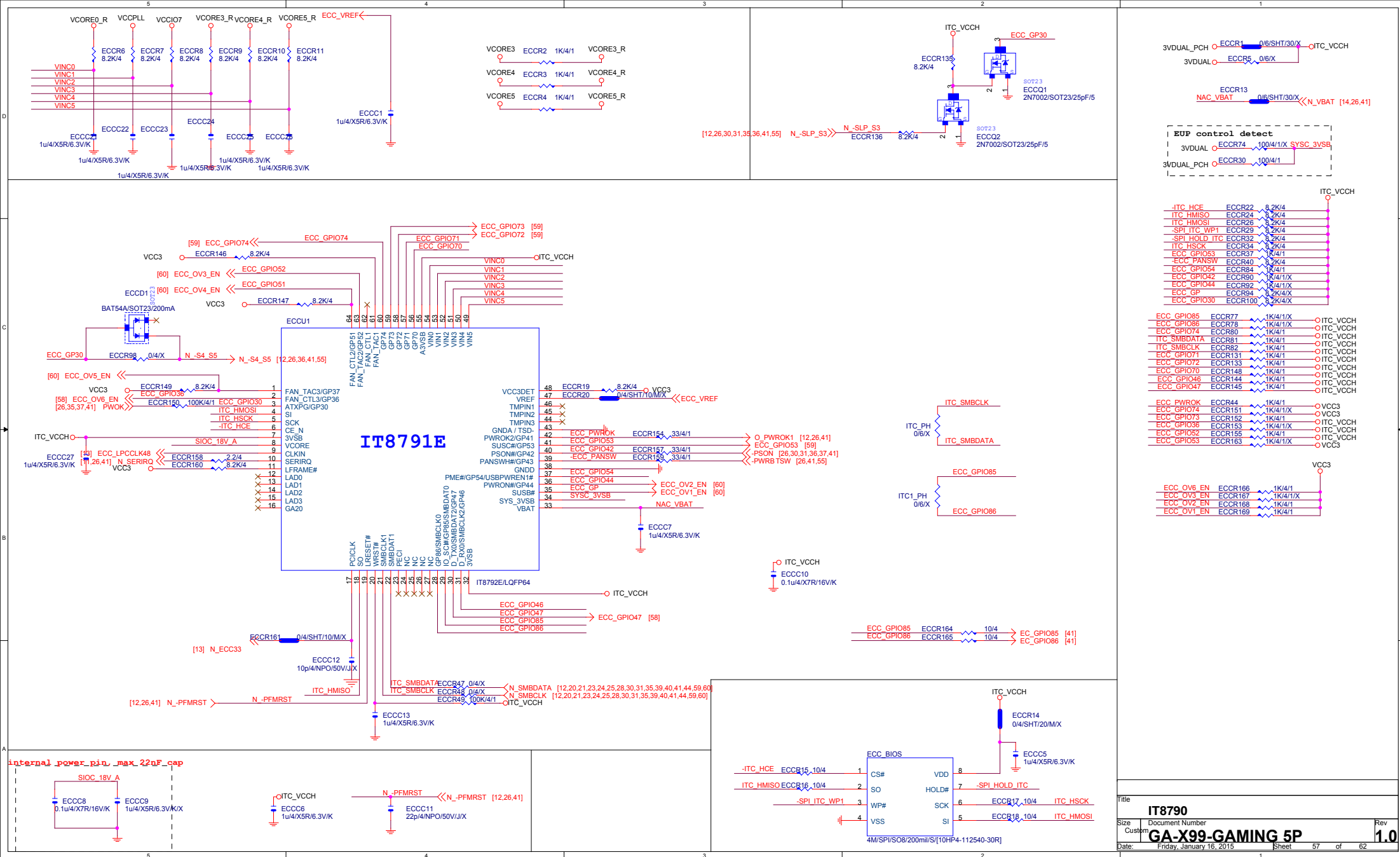


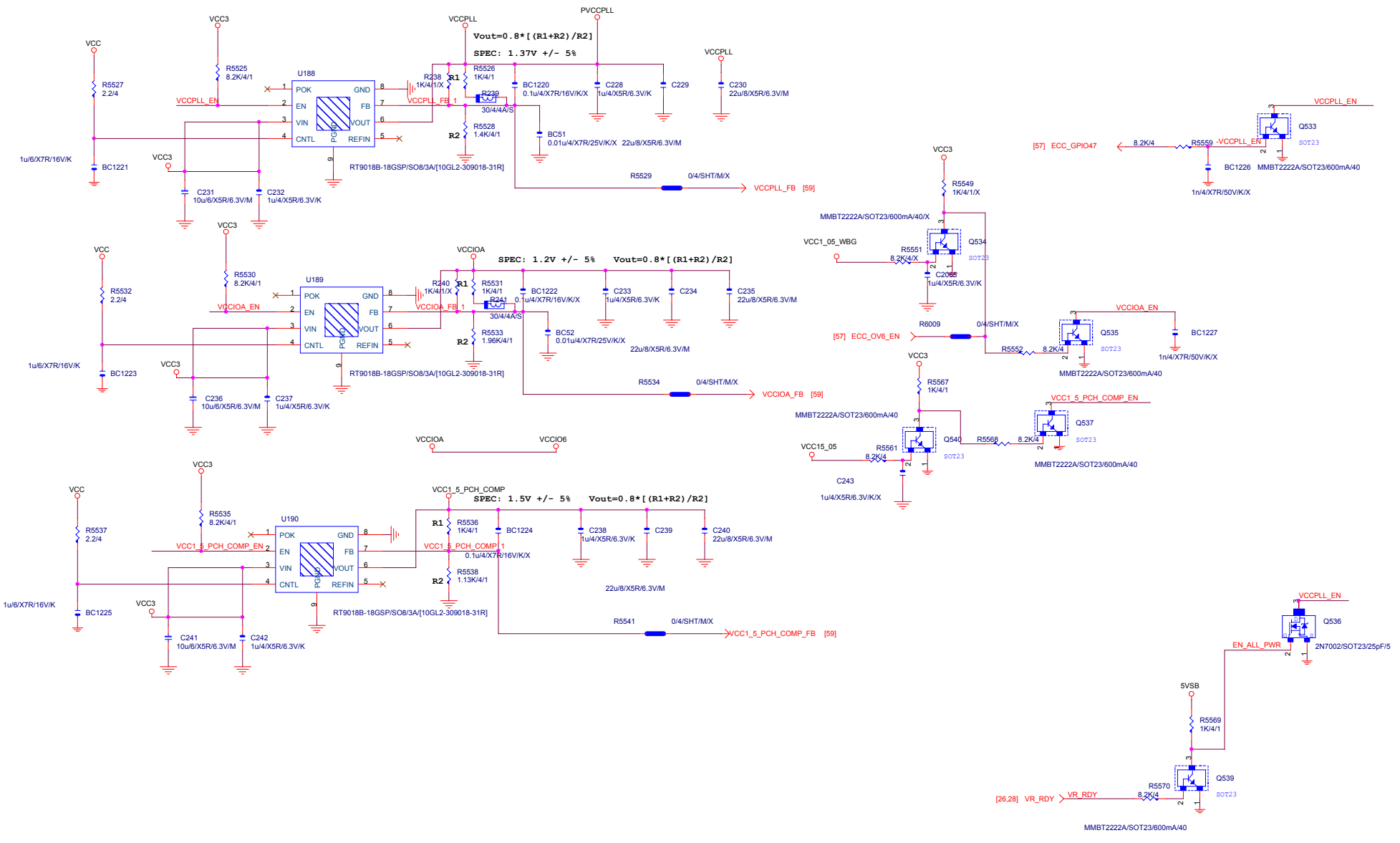
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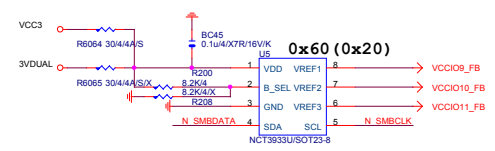
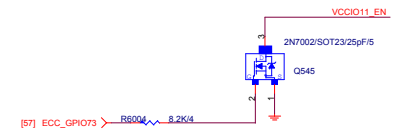
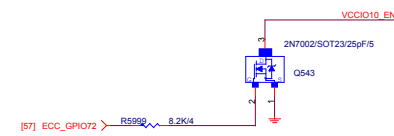
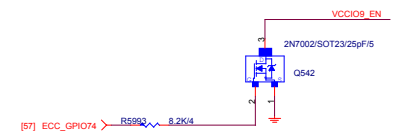
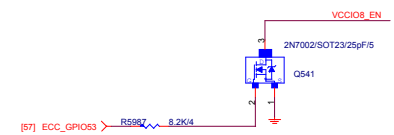
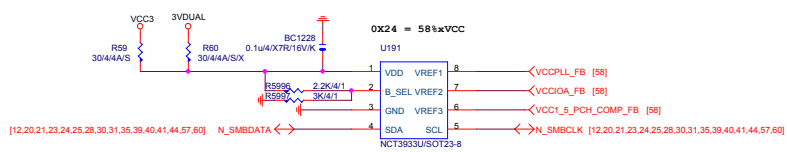
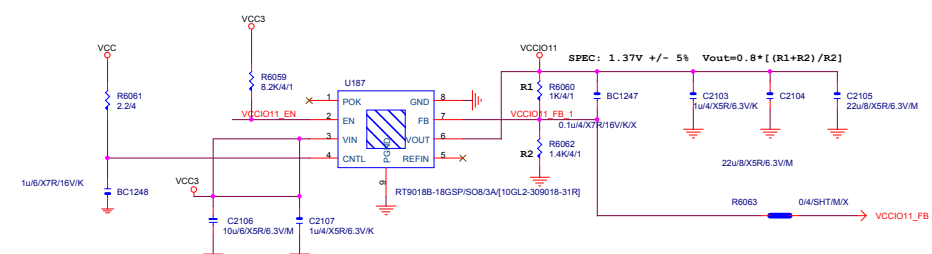
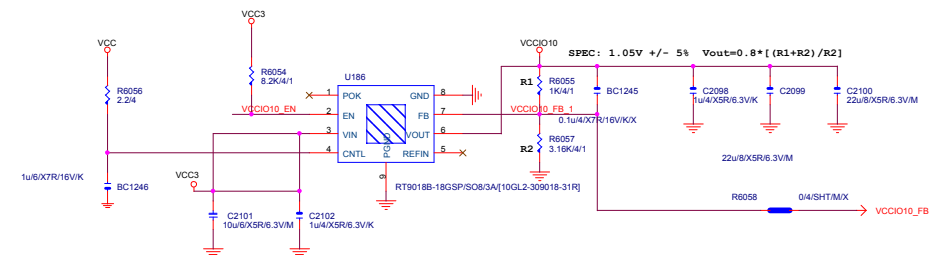
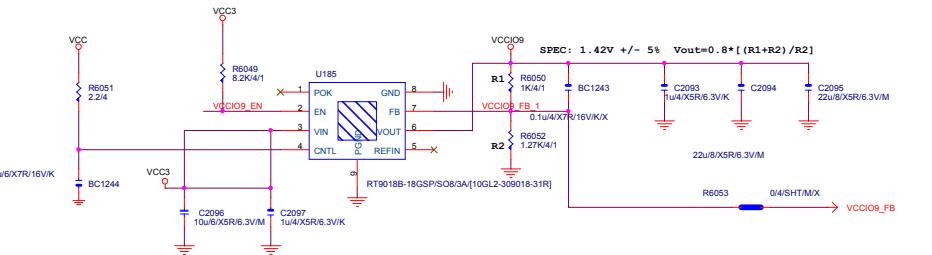
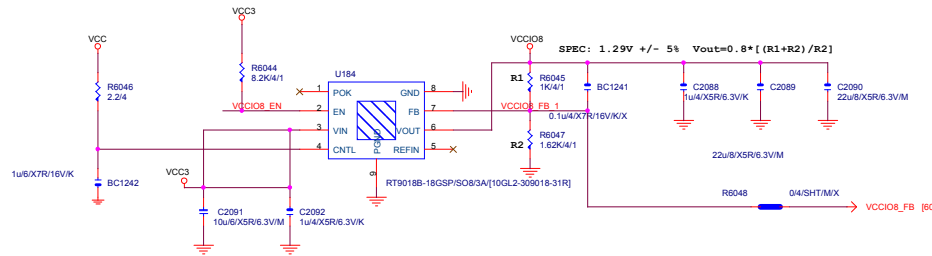


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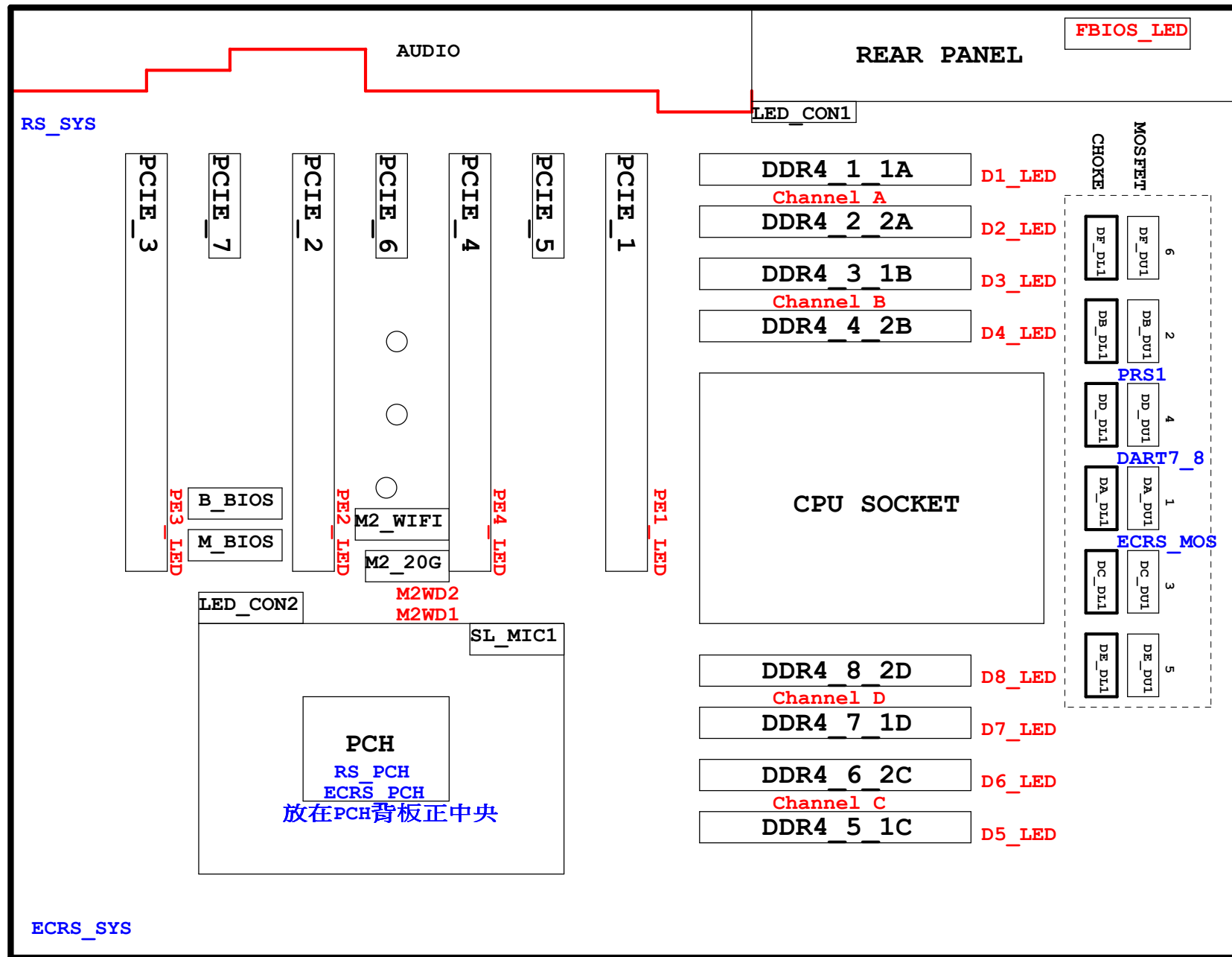


PCH GPIO

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

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