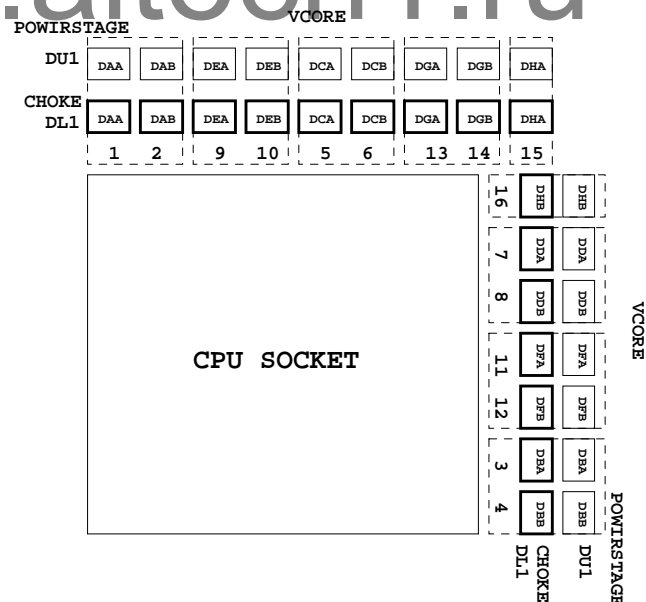


01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	CPU_LGA1155-A
05	CPU_LGA1155-B
06	CPU_LGA1155-C
07	DDR III CHANNEL A
08	DDR III CHANNEL B
09	PCH_FDI,DMI,USB,PCIE
10	PCH_DP,CLK BUFFER
11	PCH_HOST,SATA,PCI
12	PCH_GPIO,CTRL,AUDIO
13	PCH_PWR,GND
14	DVI / HDMI SWITCH
15	DP / HDMI
16	PCI EXPRESS*16 SLOT
17	PCI EXPRESS*8 SLOT
18	PCI EXPRESS*4 SLOT
19	PCI EXPRESS*16/*8/*4 SWITCH
20	PCI EXPRESS*1 SLOTS X3
21	ITE 8892
22	PCI SLOT 1
23	VT6308P 1394
24	Dual BIOS , TPM
25	ALC898
26	REAR AUDIO JACK
27	AMPLIFIER
28	IR3563B PWM
29	IR3553-VCORE
30	IR3553-VCORE
31	IR3570_DDR PWM
32	IR3598-DDR
33	DISCRETE POWER I
34	DISCRETE POWER II

35	I/O ITE8728
36	F_PANEL , F_USB , PHOT
37	USB3.0 , PS2 , COMA
38	ATX POWER, CLOCK GEN
39	RST, PWR, CLR_CMOS
40	INTEL I210
41	INTEL I217
42	Marvell 9230(F)
43	RENESAS USB3 HUB-1
44	RENESAS USB3 HUB-1
45	RENESAS USB3 HUB-2
46	RENESAS USB3 HUB-2
47	F_USB3
48	IT8790
49	FAN CTRL
50	TABLE LIST



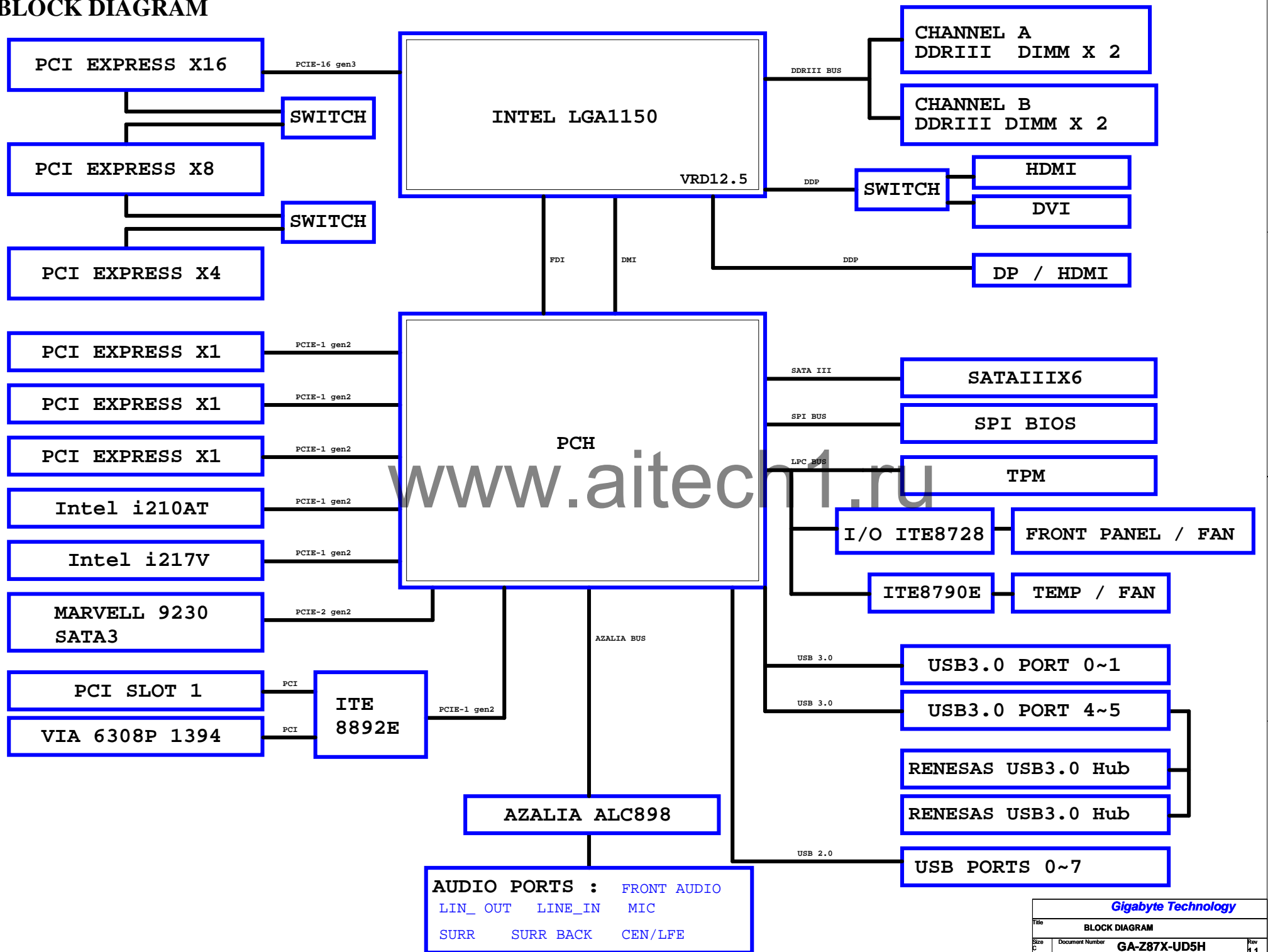
### Component value change history

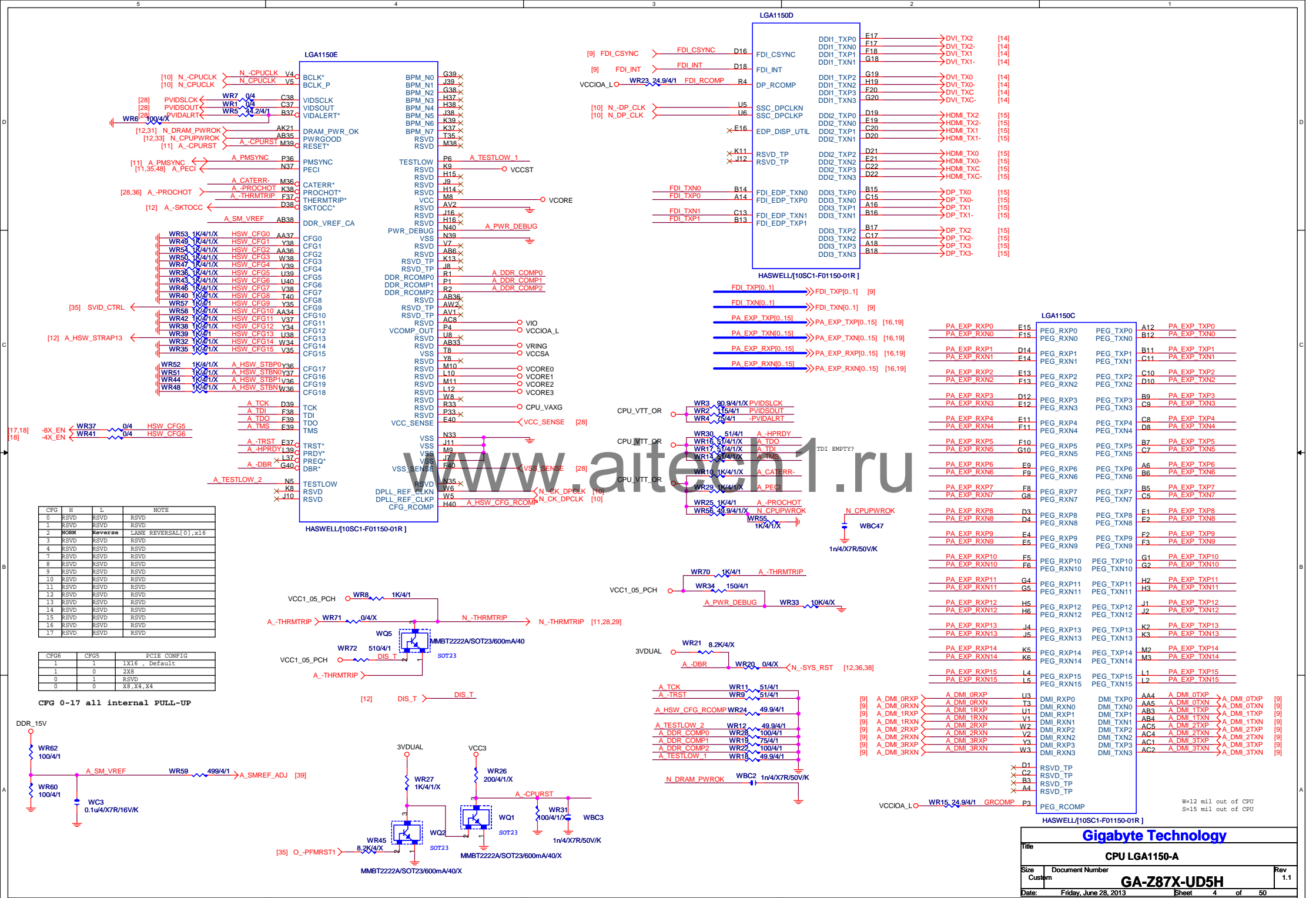
Data	Change Item	Reason
2012/11/28	SWRST75SH-00-01 ROM	First Release
	SWRST75SH-00-02 ROM	
2013/01/03	UI->SM74VCL008R/50723-5/8,Add CHM2C,CHM2I,CHM301	
	VIO->VCOKEB(VIM5) , VCOBE->VCOBE0B(VIM0), Add PM4 6.0,RI14->39.2K/4/1,BCT1->4.7U/6/35K/6.3V/IE	
	CT003,HC46,HC45->324K,HC48->100K,HA03,HA04->RST910B,1808R/808/1A/110G12-30918-13R_10G12-305103	
	-01A_10G12-303730-01A,HCN41->169K,HCN43->100K,HCN46->2.2K/5/6/36V,HCN47,HCN48->RST910B	
	1808R/808/1A/110G12-30918-13R_10G12-305103-01R_10G12-303730-01R,RI14->6.2K,RI45->6.2K/4/1,BCT1->4.7U,Footerpin change to C0402-ZP84->RNE249,Add HX250,HCN55,HAU2->215V50M163R100V,Add C0400/10TAL-	
	60370-AGE1,HAH4,HCN46->32.4K,Addr->72N,HAH40->1.78K,DAH1->4.02K,DAH40->4.02K,DAH44->3.4K,DAH1	
	Footerpin change to CH0K055-R50M,Add CS ZPIN for GC-SP1,Del Net M,-EP1,Net M,-EP1,PMO,PCN AM212P	
	HCN55->HCN59,Add R312V2->2.2SLEVLN,HCN52->2.2SLEVLN,HCN53->100U/0D/6/3.3V/66/30M,BCT1-	
	->100U/0D/6/3.3V/66/30M,DAHC4,DAHC5->100U/0D/6/18V/66/30M,DAHC2,DAHC1-	
	->100U/0D/6/3.3V/66/30M,HCN43,HCN41->100U/0D/6/3.3V/66/30M,HCN5 -	
	->100U/0D/6/3.3V/66/30M,CHC7,CHC8,CHC9,CHC10,CHC8,CHC9,CHC10->100U/0D/6/3.3V/66/30M,CHC3,CHC4,CHC1,CHC2-	
	->100U/0D/6/3.3V/66/30M,DAHC4,DAHC5,DAHC1->100U/0D/6/3.3V/66/30M,UBEC1->100U/0D/6/3.3V/66/30M,UBEC1-	
	->100U/0D/6/3.3V/66/30M,HBHC1->100U/0D/6/3.3V/66/30M,ICS->100U/0D/6/3.3V/66/30M,CHC1,CHC1 in,out	
	Change_M_R105,R_R105 Change toL280V,F_PANEL Footprint change to HX210PANEL-3_F,USB1 change to normal	
	USEB2_0,F_USB30_2 change to W0.07 ofp charger,UAHS change to USEVCC3,F0RVEVC4-F_USB1 change to	
	BR/25C/SK/CM/2.5A/VA/C2B/9P7/TUR180,HCDD1 change to FAULT_A,FAULT_B,RENAME	
	CHM2C,CHM2I,VCC3A level change to D5,M0,0K45 change	
	3YDUAL_PCH,HQ14 2PIN add H95 to	
	DS_MEA,SMBF_ADD and VCC1_05_PCH,OV change to F_USB30_2	
	change to V-A BH 2+10K0R/TUR180/PINRE-	
	[11N3]-02010-CIR),LMD,Add RI136,RI20,add OCT139,OCT13	
	R_HB11,HB12->V,HAH46->100K,HAH48-	
	->316K,HCN46->100K,HCN48->316K,DAH83 change to 3.09KZ,DAH87 change to 2.37KZ,DAH102 change to	
	3.09KZ,3.09K change to 3.01K DAH83 change to 3.01KZ,DAH102 change to 3.01KZ,Net M,-EYE,ST	
	HR144->6.2K add MCK1 in,Net M_DRAM_PWSKE add MCK4 in,Net M,-PPHRT2 add GRH28 33pF,LAC2-	
	->100p/10M/50V/12-MC2->1n/4/KTR/50V/1E,MBC47->1n/4/KTR/50V,K,wap pin HCCE1 HCCE2 CHASED1,del	
	GR4,GR6,change to MCLM,MCAT,add H11,HB2,add M6 MCLM,MCAT,add L1P1,add LAMB3,add	
	IT_PW,HCN41,HCN42,LAC2->1n/4/KTR/16V/K,REP Issue	
	LH15->4K,add U31,SWI remane to R105_SW	
	LAC23,LAC13,LAC11,MCN41,MAC6,MCN50 down size to 060	
	MS59->49M,HB72->510,NH67->1E,W870->1E,SWAP USB01	
	MCN23,MCN25,MCN28,MCN31,MCN36,MCN39,MCN42,MCN30->1E,SW Match D_0B5 change to 1.3K,D_0B4 change to 1uF,	
	MCN50,00-02A ROM	
2013/01/28	R44 change to 0 Ohm-x,DAH114_15,DAH173_4,DAH173_7,DAH173_10,HAH23-x,HAH28,HCN29-x,HCN28,	
	,RIK173 change to SHORT PAD,101 PIN1 add LAC13),Q11 PIN1 add BCT30,addGFF19,FPG,FPG,add Del RC_0P54	
	HCN43,HCN30,add CHM4,CHM5,add CHM2,CHM3,add CHM4,CHM5,Del Net RC_0P55,RC_0P	
	HB126-x,FOOTPRINT->HX210PANEL-NEM,Add HRT5,HB76 to 2 0 GP27,HAH_NCC3->X,HAH2,HCN2 to 0Ohm,Add CH171_P	
	DVI,HEAT-SMITHON,CP,HEAT to CPU,add DVID_05P,05P,add CHM2,CHM3,add CHM4,CHM5,Del HX2,HAH5->420,MAH7	
	HB23->1E,HAH02CCL1/GT272-6->AEC099-04S/GT273-610,GP1 and H_YDOP_ALERT to change,Add DAK1,PW_FSM->113	
	Swap H03,HB15,HB20, HUI,HB2,HB3->NXP,HB18,HB20,HB62->10M,HB32-x, HB1,HB25,HB3	
	PCR_HS->HEAT,MCN_HSI,MCN_HS2->120P2-PTE875-01A_120P2-PTE875-02M,MC2,HCN1->3.74K/12.5p/700M/TP26/35K	
	,Q04,Q05,Q09,Q07->MMBT2222A/GT273/600MA/40/10171-00222-11R),R105_SW,>SW/1.6/D39/11387-11003-11R	
	SWRST75SH-00-03A ROM	
2013/02/21	Add Net AMP_C0C0E-61R1,Add Beadphone circuit,Add QP44,Add RCK1,CM3,CM17,CM4,CM2,HB32,add HB16,	
	LGA155->12K0C-0P001-01R,MCN_HSI,MCN_HS2->120P2-PTE875-02M,add 11DCL1-02070-41R,all B	
	PCR->HB08287/8,CP256-x,CP320,Add MVD,Del PFG5,PFG14,Del M08 Circuit,CH171,SE,HP27,HB8 USB 2.0 from RC	
	CHM21,CHM31->49.5K,CHM45,CHM55-x,CHANGE SEL1 to cont-01 CT11_X,HB8,HB22,HB26,HB61-x,Add MCK1,MCN2,MCN	
	R124,Q102,R127,Q33,GRM2-x,F_PANEL->11N31-00010-F1R,ROM_SW,>SW,-->11N87-11003-21R,CPU_FAN->FAN/1/4/40/A	
	SWRST75SH-00-04A ROM	
2013/03/14	Modify Diagram,Q25 to PCH GP1022,Q25-x,VCCIOA1-1-VY0A,VCOBE->VCOBE0B,INC->VYA,Add CHM415,CHM15,CHM41	
	HAH13,HAQ1,HAQ2,HAH21,HCN13,HCQ1,HCQ2,HCN21,HCN41->Add OH83,OH81,OH80,OH85,OH84,OH85,OH86,HAH46,HAH48,HAH47	
	Add Q1 HB11,HB14,HB15,HB16,HB17,HB17,Add NQ8_X,HB17H	
	HAH015,HAH02,HAH03,HB015,HB020,HB030-x,R1Q1,RI20,RIQ4,RIQ4->PPAF,Add DAK104,DAK105,DAK106,DAK107	
	add Q12,R12,R13,R14,C38,add DAD1 USB3 Hub Impified circuit,USEB2->USEB4,CHM3->CHM5,LUI->MG121TV,	
	Change Net PCH_USB3_1-<<<PCH_USB3_0,PCH_USB3_2->>>PCH_USB3_1,PCH_USB3_3->>>PCH_USB3_2,4_PCH_USB3_4-><<<PCH_USB3_3	
	Audio POP GP102 change to UI GP177,THERM change to UI GP277,THERM XE2->HXT-HM02,HCN1->33.7K/4/1,RCN83->33.7K/4/1,RCN83 fr	
	HCN1 USB3_2 changePCN2->108P2-118790-20R,Swap HCNH01,HCN83,HCN84,HCN82,HB1->AHM142/GP484,HB8-	
	Swap HCN82,Add HCN84 to RC_GP47,Add HB32,HB23,HB8,OC12B,R->FAULT_B,OC11B,R->FAULT_A,Del HCK31,HCN82D,1	
	NET N-X-FEY,REFCLK->N-X-FEY,REFCLK	
	SWRST75SH-00-05B ROM	
2013/04/01	Rename VIO->VYDIO,Change File F_USB30_1-<<<F_USB30_2,F	
	PANEL->11N31-00010-K1R,ATH1_12V_2E4->APW/24/HK	
	Add NCT4,DAH2 to M,-THEMRY1,PW_R106,R-R106-MX1E 128B,HCN83,HCN85,HCN81->33.7K/4/1,RCN83->33.7K/4/1,RCN83	
	RIU3 Footprint->IC18-R106,Del RI25,NEXT PREPLAT->Add RCK1,BCC22,BCC23,BCC24,BCC25,BCC26,BCC27,Rename	
	Diagram Add PDI,DAH83,DAH87,DAH102->1.4K,C8-x,LPJ1->X,IT_PW-x,UP070210 power RST018a2 solution	
	SWRST75SH-00-06C ROM	
2013/04/11	DAH83->2.7KZ,DAH87->3.4KZ,DAH102->3.4KZ,DAFI1-x	

[illegible]

DATE	Change Item	Reason
2012/11/23	REV0.1 GA-287X-UD5H 0.1 gerber out	
2013/01/02	REV0.2 GA-287X-UD5H 0.2 gerber out	
2013/01/23	REV0.21 GA-287X-UD5H 0.21 gerber out	
2013/02/19	REV0.3 GA-287X-UD5H 0.3 gerber out HDMI/DVI layout,DOR to 287 OC Rev9.01	
2013/03/13	REV1.0 GA-287X-UD5H 1.0 gerber out DOR to 287 OC Rev9.03 , F_USB30.1 From PCH	
2013/03/29	REV1.01 GA-287X-UD5H 1.01 gerber out PCH to USB3 dom 200m1,VIO->VID,F_USB30_1c->F_USB30_2,Add WCC21,WCC22,WCC23,WCC24,WCC25,WCC26,WCC27	
2013/04/10	REV1.02 GA-287X-UD5H 1.02 gerber out 改文字庫	
2013/06/28	REV1.1 GA-287X-UD5H 1.1 gerber out HDMI Footprint->HDMI-3	

# BLOCK DIAGRAM

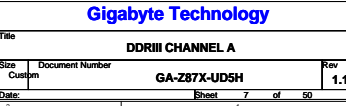


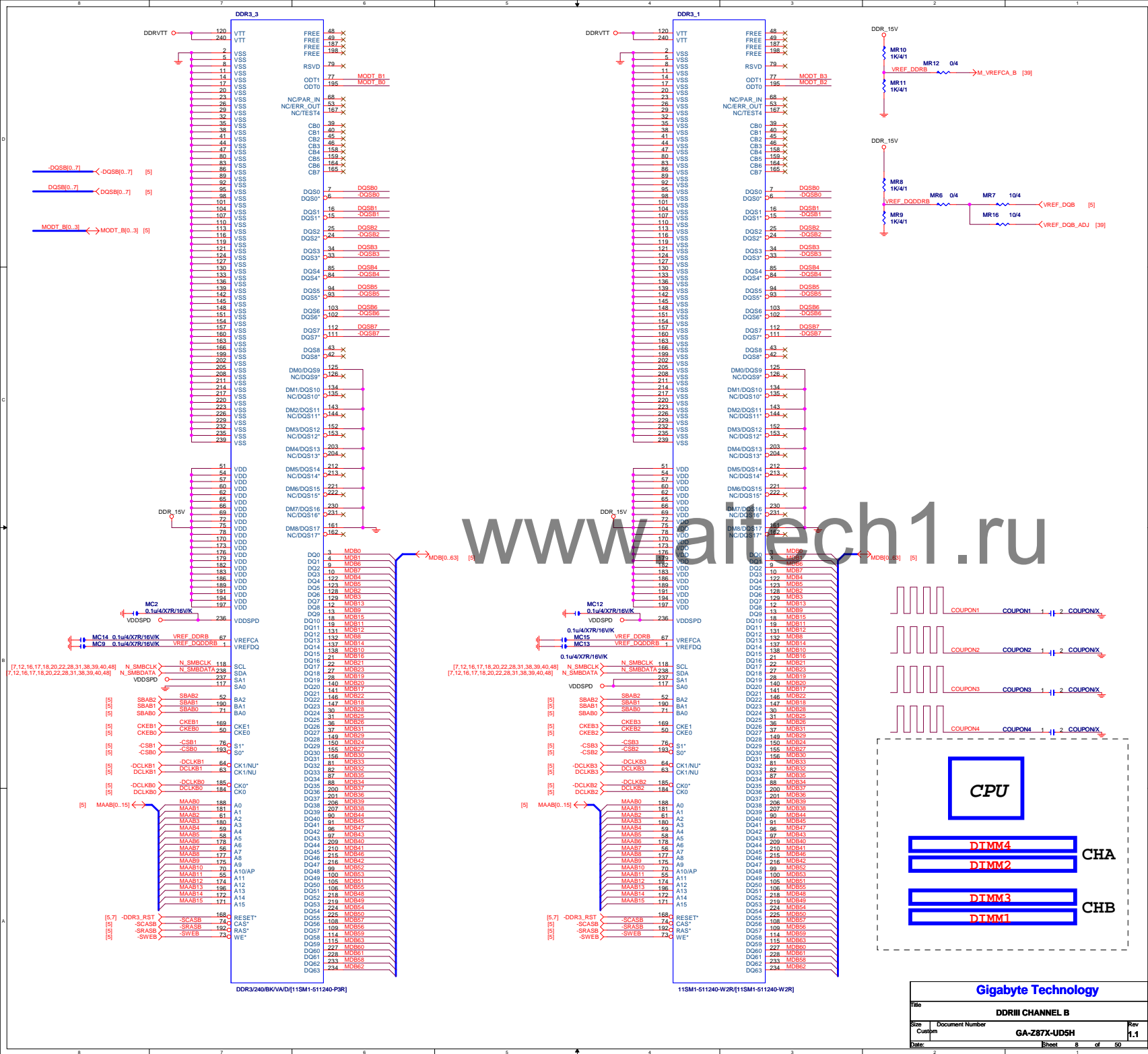


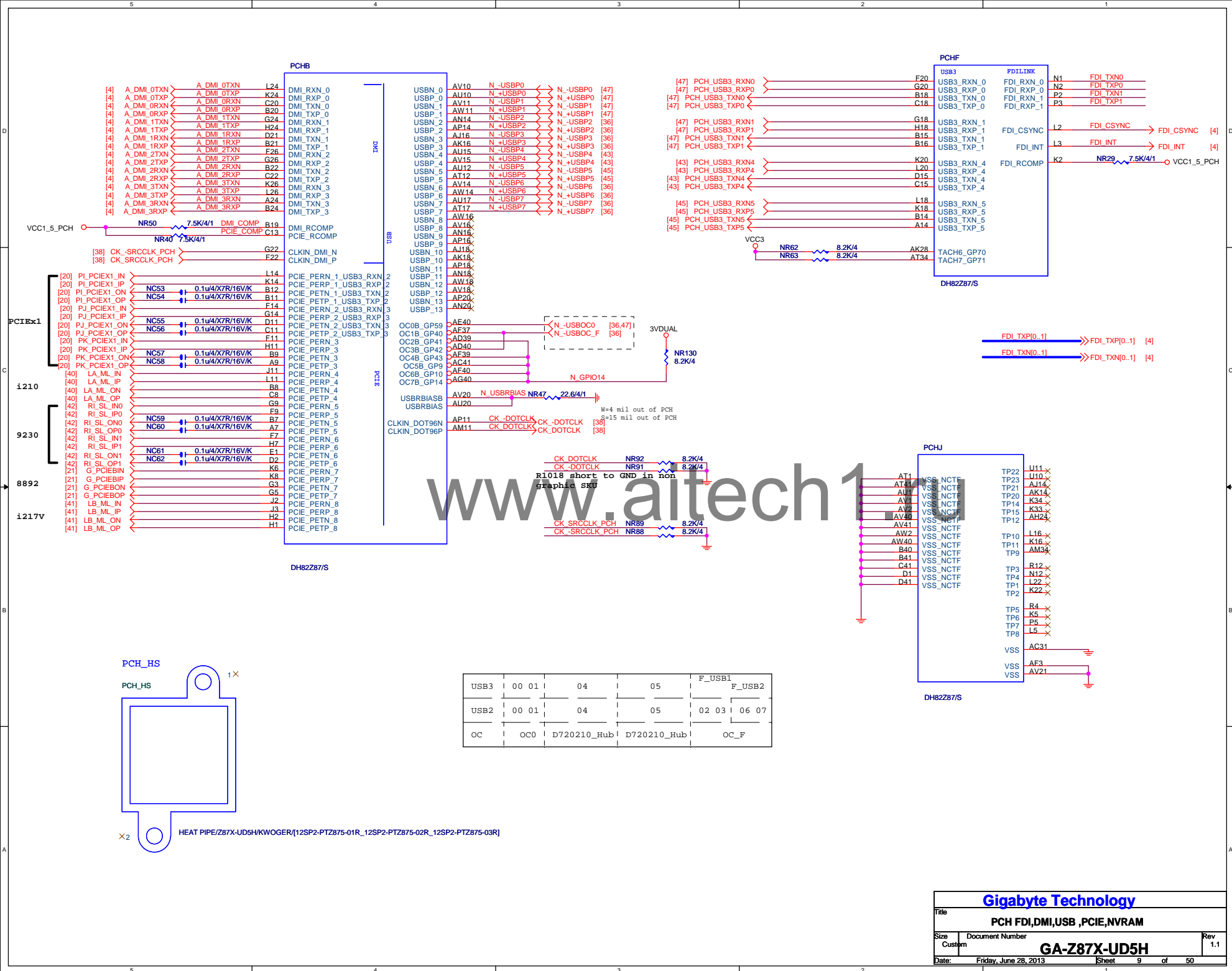


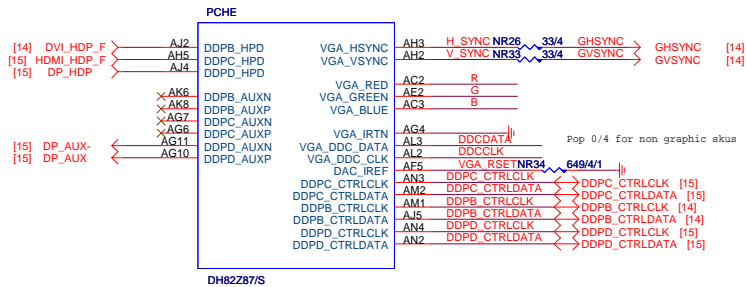
LGA1150A			
MAAA0	AU13	DDR0_MA0	DDR0_DQ0
MAAA1	AV16	DDR0_MA1	DDR0_DQ1
MAAA2	AU16	DDR0_MA2	DDR0_DQ2
MAAA3	AW17	DDR0_MA3	DDR0_DQ3
MAAA4	AU17	DDR0_MA4	DDR0_DQ4
MAAA5	AW18	DDR0_MA5	DDR0_DQ5
MAAA6	AV17	DDR0_MA6	DDR0_DQ6
MAAA7	AW18	DDR0_MA7	DDR0_DQ7
MAAA8	AU18	DDR0_MA8	DDR0_DQ8
MAAA9	AT19	DDR0_MA9	DDR0_DQ9
MAAA10	AW11	DDR0_MA10	DDR0_DQ10
MAAA11	AV19	DDR0_MA11	DDR0_DQ11
MAAA12	AU19	DDR0_MA12	DDR0_DQ12
MAAA13	AY10	DDR0_MA13	DDR0_DQ13
MAAA14	AT20	DDR0_MA14	DDR0_DQ14
MAAA15	AU21	DDR0_MA15	DDR0_DQ15
MODT_A0	AW10	DDR0_ODT0	DDR0_DQ16
MODT_A1	AY8	DDR0_ODT1	DDR0_DQ17
MODT_A2	AW9	DDR0_ODT2	DDR0_DQ18
MODT_A3	AU8	DDR0_ODT3	DDR0_DQ19
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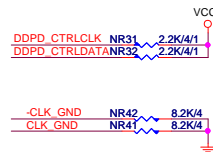




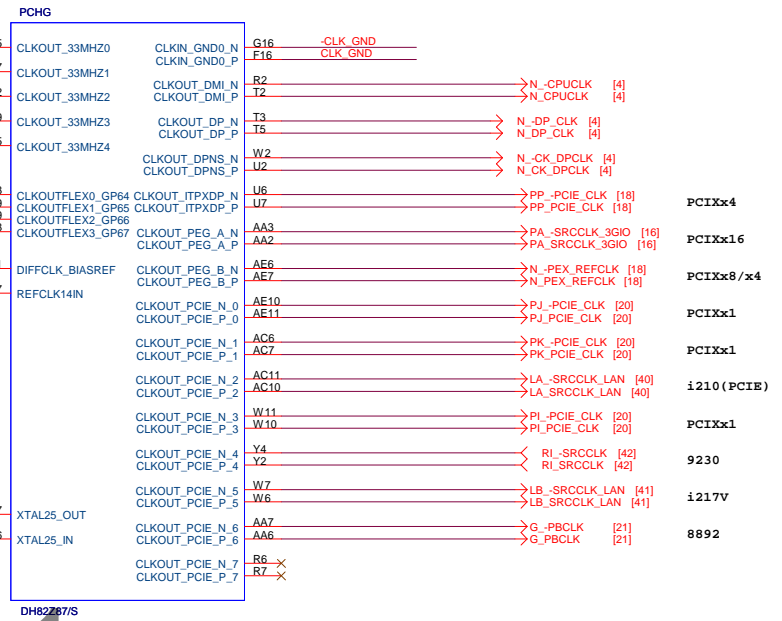
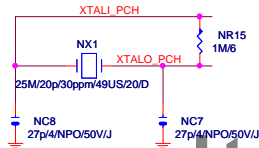




DDP B : DVI / HDMI  
DDP C : HDMI  
DDP D : DP



Flex1,3 :  
27/14/24/48/25MHZ



PCIXx4

PCIXx16

PCIXx8/x4

PCIXx1

PCIXx1

i210 (PCIE)

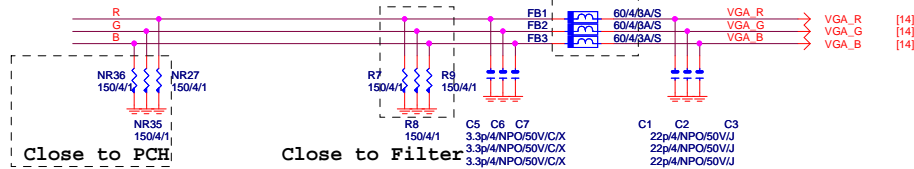
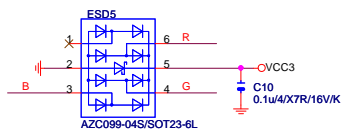
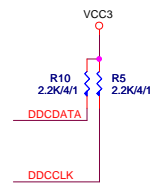
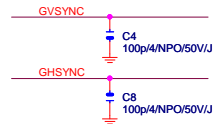
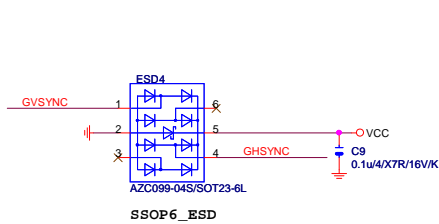
PCIXx1

9230

i217V

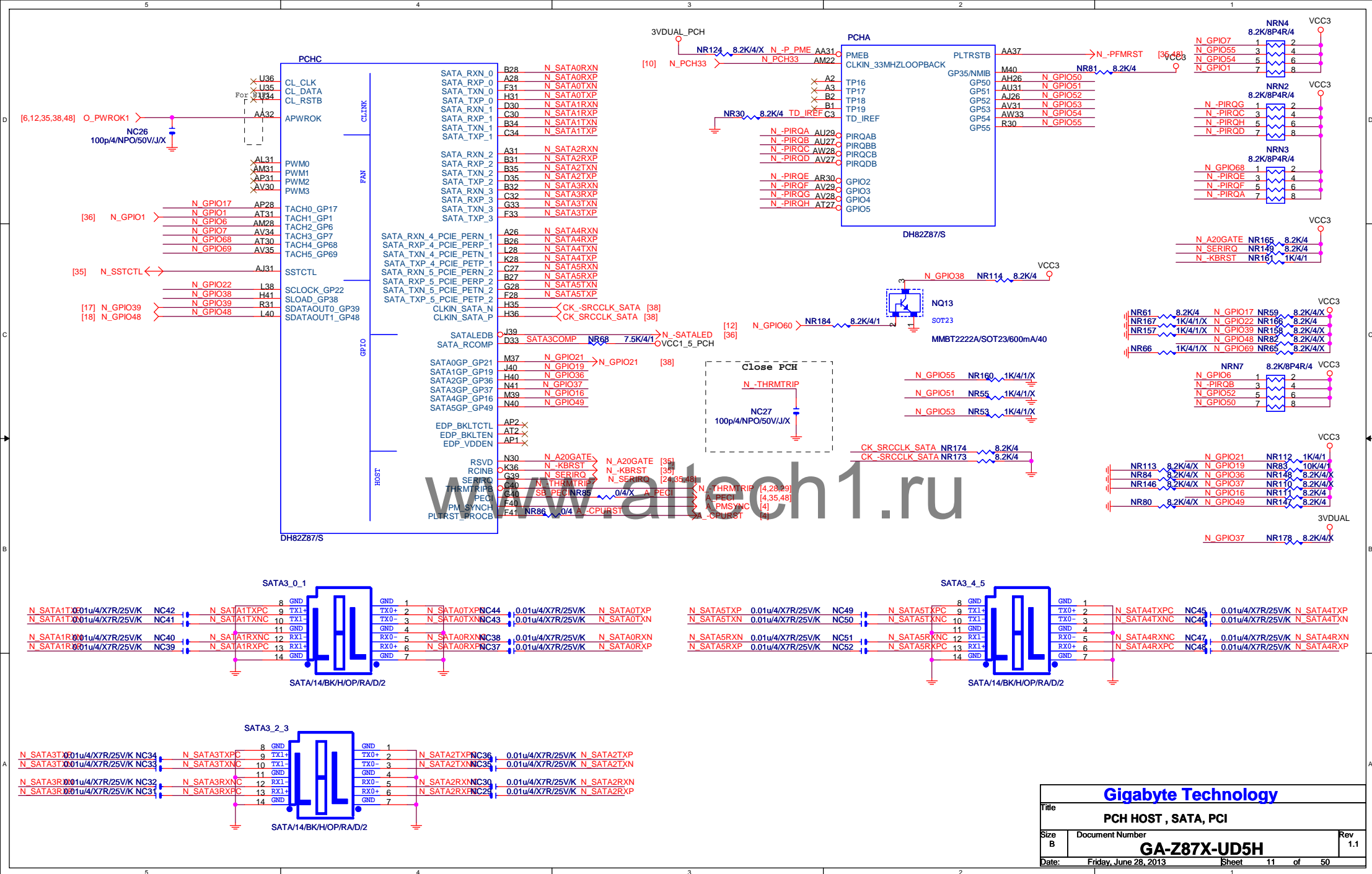
8892

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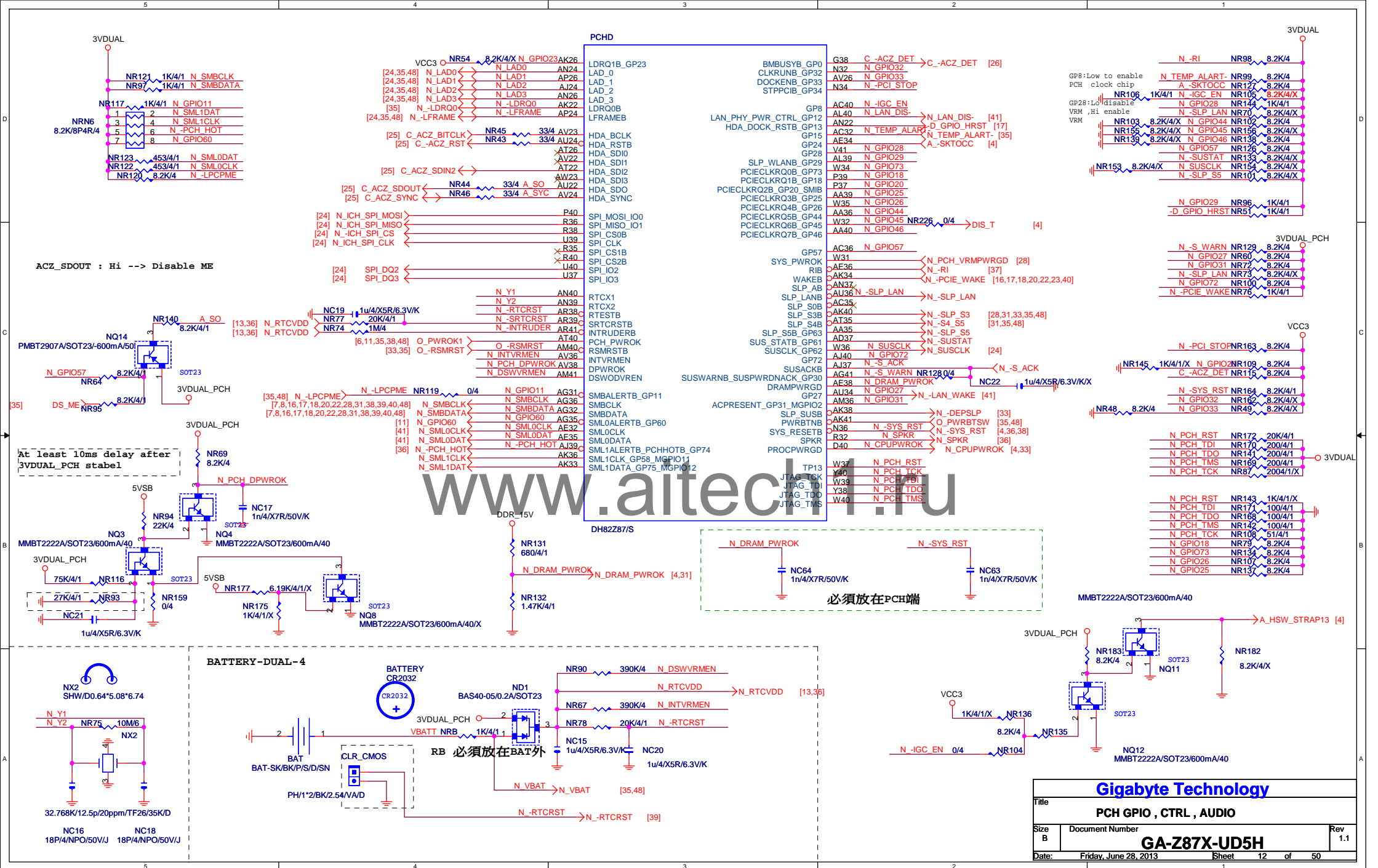


Gigabyte Technology			
Title			
PCH DISPLAY ,CLK BUFFER			
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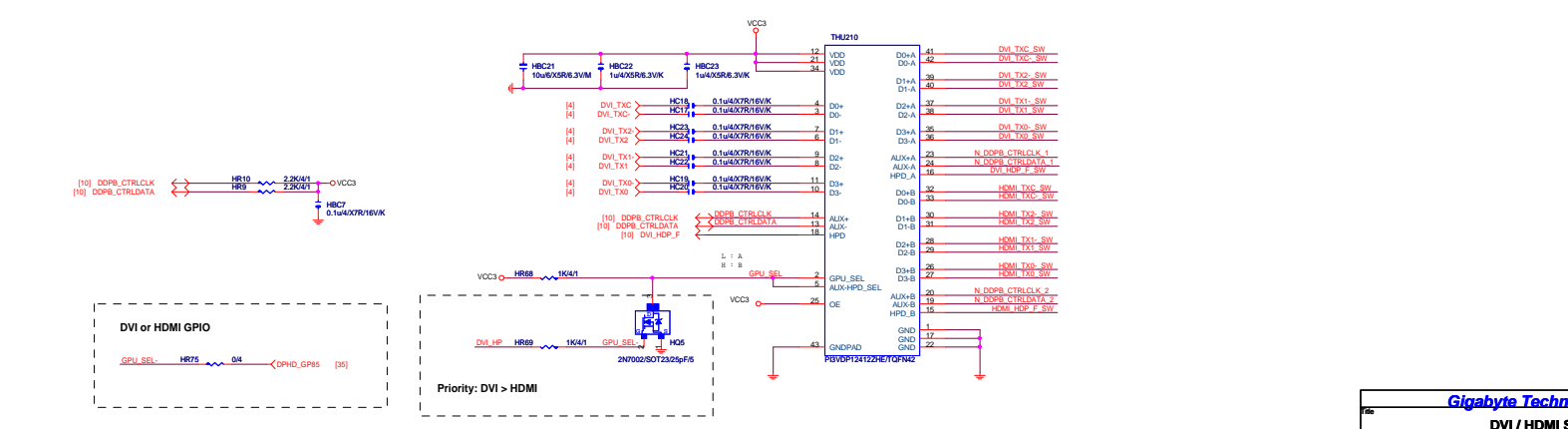
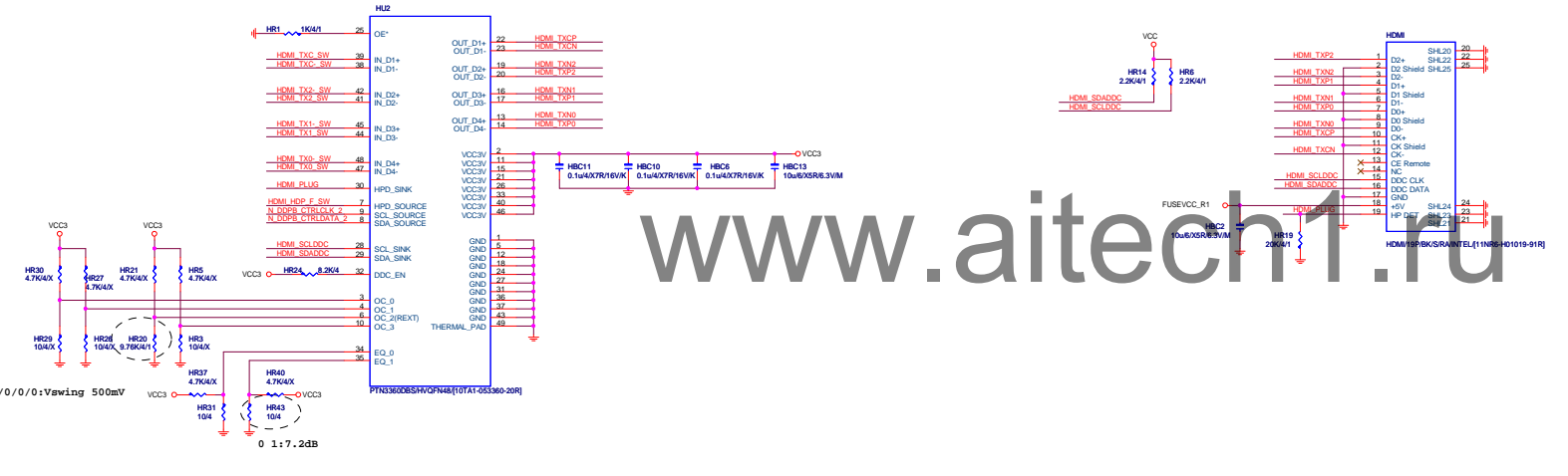
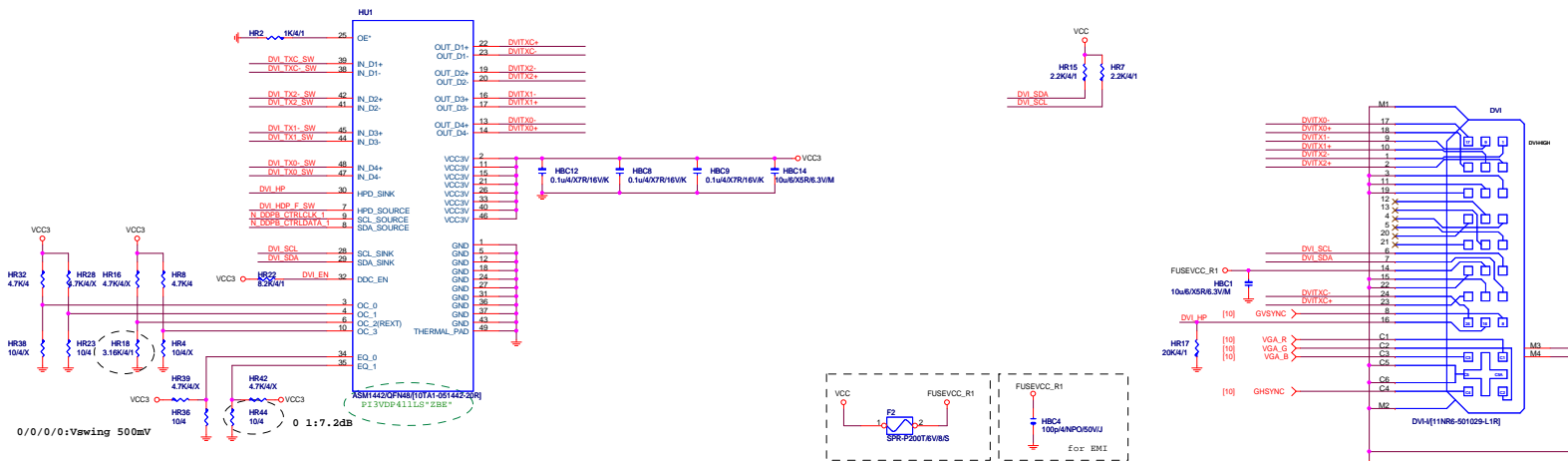














+12 protect  
short-wire test

PCIE16:16/5/5/16

PA\_EXP\_RXP0[.15] >> PA\_EXP\_RXP0[.15] [4,19]  
PA\_EXP\_RXN0[.15] >> PA\_EXP\_RXN0[.15] [4,19]  
PA\_EXP\_TXP0[.15] >> PA\_EXP\_TXP0[.15] [4,19]  
PA\_EXP\_TXN0[.15] >> PA\_EXP\_TXN0[.15] [4,19]

PA_EXP_TXP0	PAC5	0.22u/4/X5R6.3V/K	PA_EXP_TXP0 C
PA_EXP_TXN0	PAC4	0.22u/4/X5R6.3V/K	PA_EXP_TXN0 C
PA_EXP_TXP1	PAC6	0.22u/4/X5R6.3V/K	PA_EXP_TXP1 C
PA_EXP_TXN1	PAC7	0.22u/4/X5R6.3V/K	PA_EXP_TXN1 C
PA_EXP_TXP2	PAC8	0.22u/4/X5R6.3V/K	PA_EXP_TXP2 C
PA_EXP_TXN2	PAC9	0.22u/4/X5R6.3V/K	PA_EXP_TXN2 C
PA_EXP_TXP3	PAC10	0.22u/4/X5R6.3V/K	PA_EXP_TXP3 C
PA_EXP_TXN3	PAC11	0.22u/4/X5R6.3V/K	PA_EXP_TXN3 C
PA_EXP_TXP4	PAC12	0.22u/4/X5R6.3V/K	PA_EXP_TXP4 C
PA_EXP_TXN4	PAC13	0.22u/4/X5R6.3V/K	PA_EXP_TXN4 C
PA_EXP_TXP5	PAC14	0.22u/4/X5R6.3V/K	PA_EXP_TXP5 C
PA_EXP_TXN5	PAC15	0.22u/4/X5R6.3V/K	PA_EXP_TXN5 C
PA_EXP_TXP6	PAC16	0.22u/4/X5R6.3V/K	PA_EXP_TXP6 C
PA_EXP_TXN6	PAC17	0.22u/4/X5R6.3V/K	PA_EXP_TXN6 C
PA_EXP_TXP7	PAC18	0.22u/4/X5R6.3V/K	PA_EXP_TXP7 C
PA_EXP_TXN7	PAC19	0.22u/4/X5R6.3V/K	PA_EXP_TXN7 C
PA_EXP_SW_TXP8	PAC21	0.22u/4/X5R6.3V/K	PA_EXP_SW_TXP8 C
PA_EXP_SW_TXN8	PAC20	0.22u/4/X5R6.3V/K	PA_EXP_SW_TXN8 C
PA_EXP_SW_TXP9	PAC22	0.22u/4/X5R6.3V/K	PA_EXP_SW_TXP9 C
PA_EXP_SW_TXN9	PAC23	0.22u/4/X5R6.3V/K	PA_EXP_SW_TXN9 C
PA_EXP_SW_TXP10	PAC24	0.22u/4/X5R6.3V/K	PA_EXP_SW_TXP10 C
PA_EXP_SW_TXN10	PAC25	0.22u/4/X5R6.3V/K	PA_EXP_SW_TXN10 C
PA_EXP_SW_TXP11	PAC26	0.22u/4/X5R6.3V/K	PA_EXP_SW_TXP11 C
PA_EXP_SW_TXN11	PAC27	0.22u/4/X5R6.3V/K	PA_EXP_SW_TXN11 C
PA_EXP_SW_TXP12	PAC28	0.22u/4/X5R6.3V/K	PA_EXP_SW_TXP12 C
PA_EXP_SW_TXN12	PAC29	0.22u/4/X5R6.3V/K	PA_EXP_SW_TXN12 C
PA_EXP_SW_TXP13	PAC30	0.22u/4/X5R6.3V/K	PA_EXP_SW_TXP13 C
PA_EXP_SW_TXN13	PAC31	0.22u/4/X5R6.3V/K	PA_EXP_SW_TXN13 C
PA_EXP_SW_TXP14	PAC32	0.22u/4/X5R6.3V/K	PA_EXP_SW_TXP14 C
PA_EXP_SW_TXN14	PAC33	0.22u/4/X5R6.3V/K	PA_EXP_SW_TXN14 C
PA_EXP_SW_TXP15	PAC34	0.22u/4/X5R6.3V/K	PA_EXP_SW_TXP15 C
PA_EXP_SW_TXN15	PAC35	0.22u/4/X5R6.3V/K	PA_EXP_SW_TXN15 C

PA\_EXP\_SW\_RXP8[.15] >> PA\_EXP\_SW\_RXP8[.15] [19]  
PA\_EXP\_SW\_RXN8[.15] >> PA\_EXP\_SW\_RXN8[.15] [19]  
PA\_EXP\_SW\_TXP8[.15] >> PA\_EXP\_SW\_TXP8[.15] [19]  
PA\_EXP\_SW\_TXN8[.15] >> PA\_EXP\_SW\_TXN8[.15] [19]

PCI-E REV:1.1--> 2.5GHZ

PCE-E X1(單向) BANDWIDTH=2.5GHz\*(8b/10b)=2Gb/s=250MB/s

PCE-E X1(雙向) BANDWIDTH=2.5GHz\*(8b/10b)X2=4Gb/s=500MB/s

PCE-E X16(單向) BANDWIDTH=2.5GHz\*(8b/10b)X16=32Gb/s=4GB/s

PCE-E X16(雙向) BANDWIDTH=2.5GHz\*(8b/10b)X16X2=64Gb/s=8GB/s

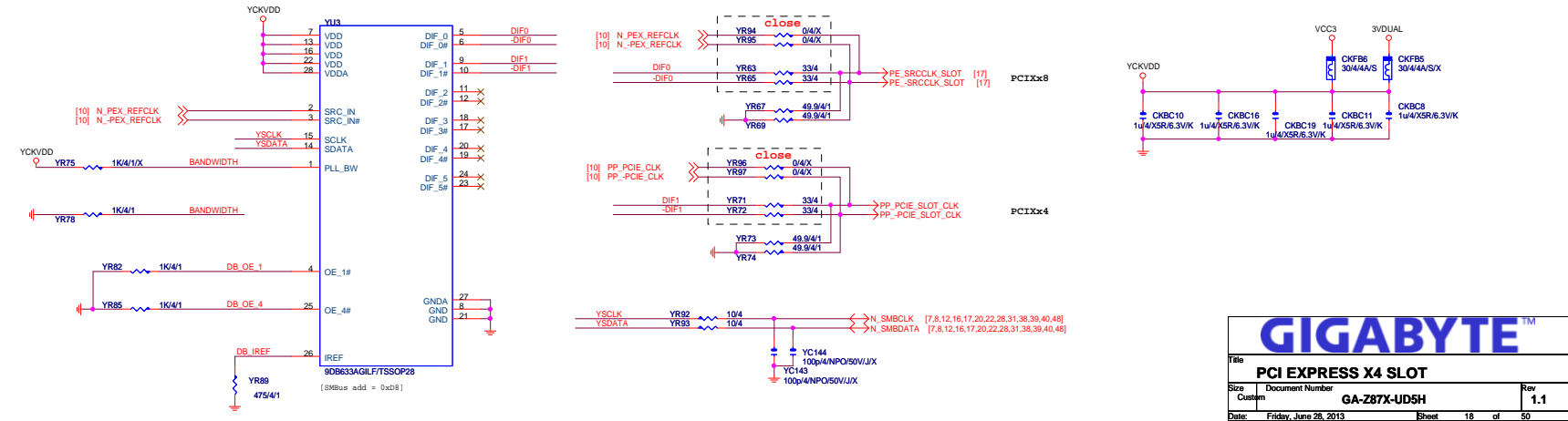
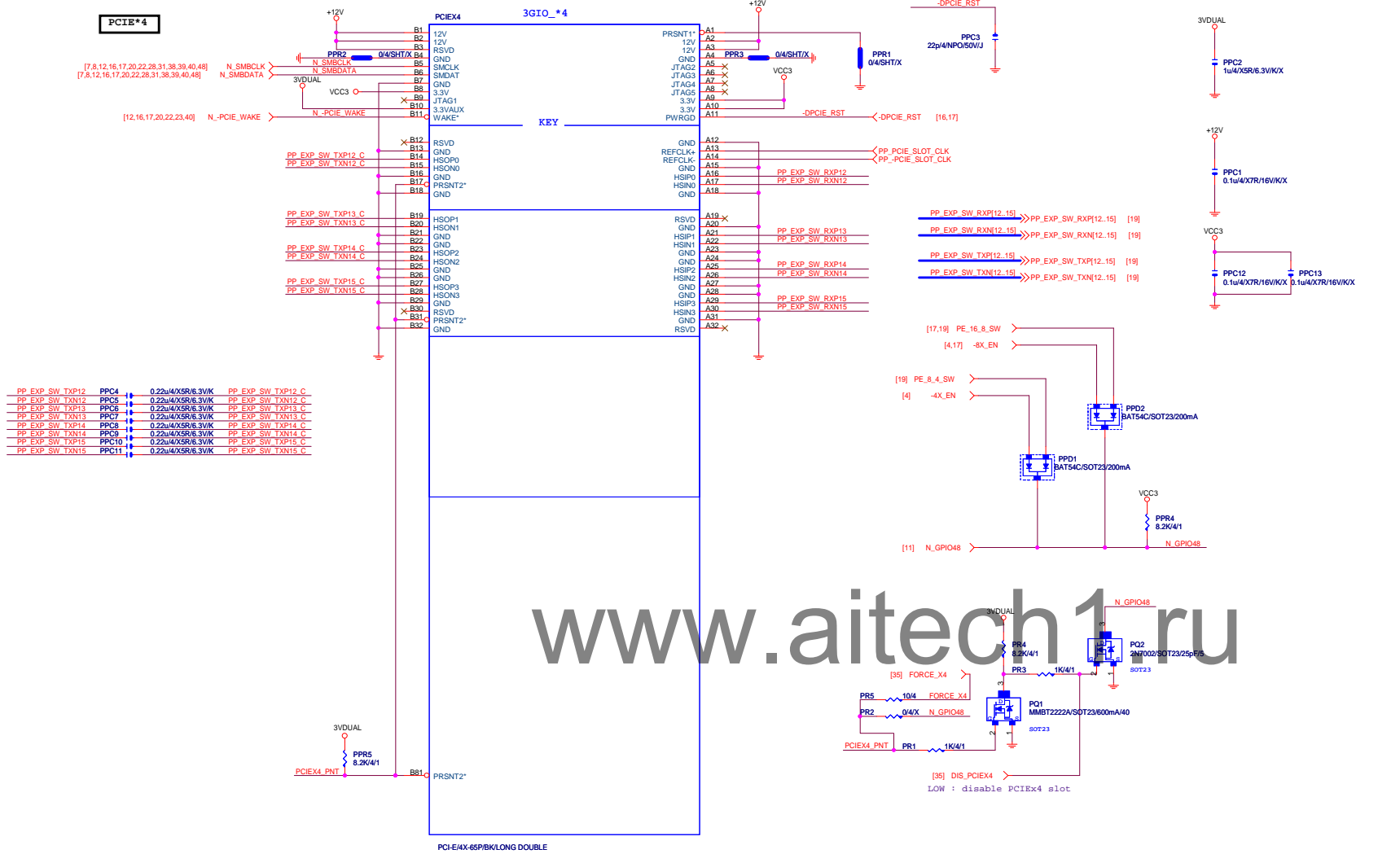
PCI-E REV:2.0--> 5GHZ

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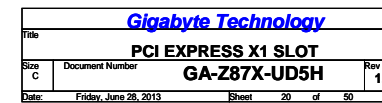
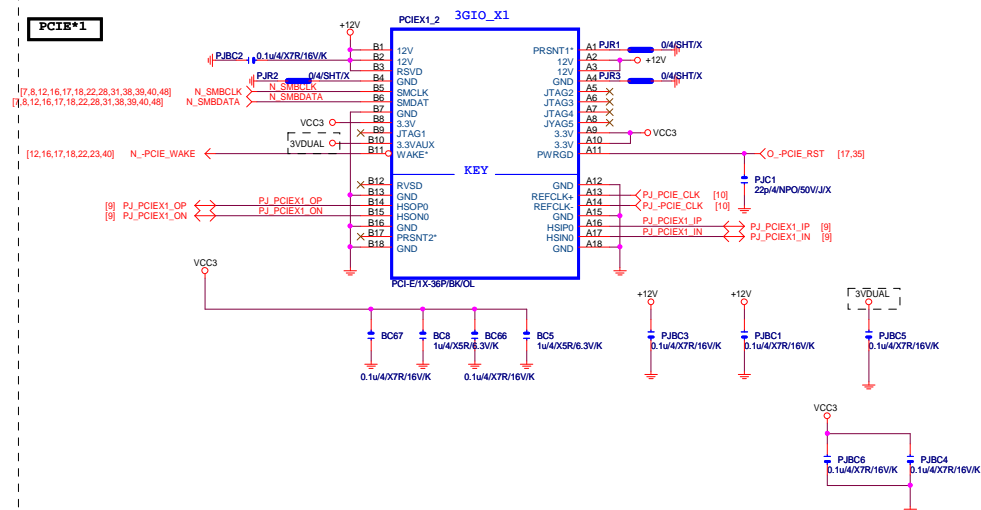
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PCI EXPRESS * 16			
Size	Document Number		Rev
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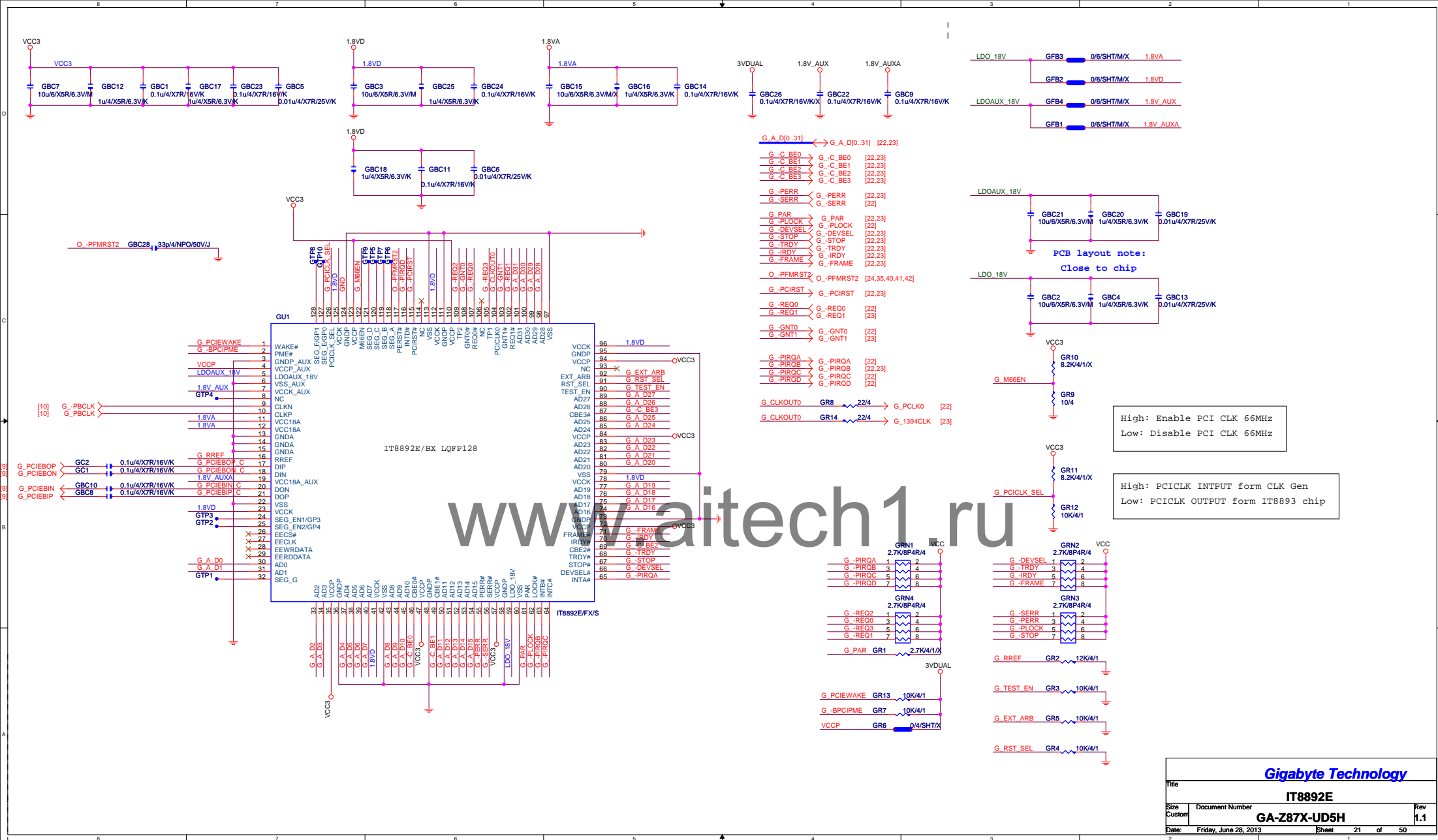




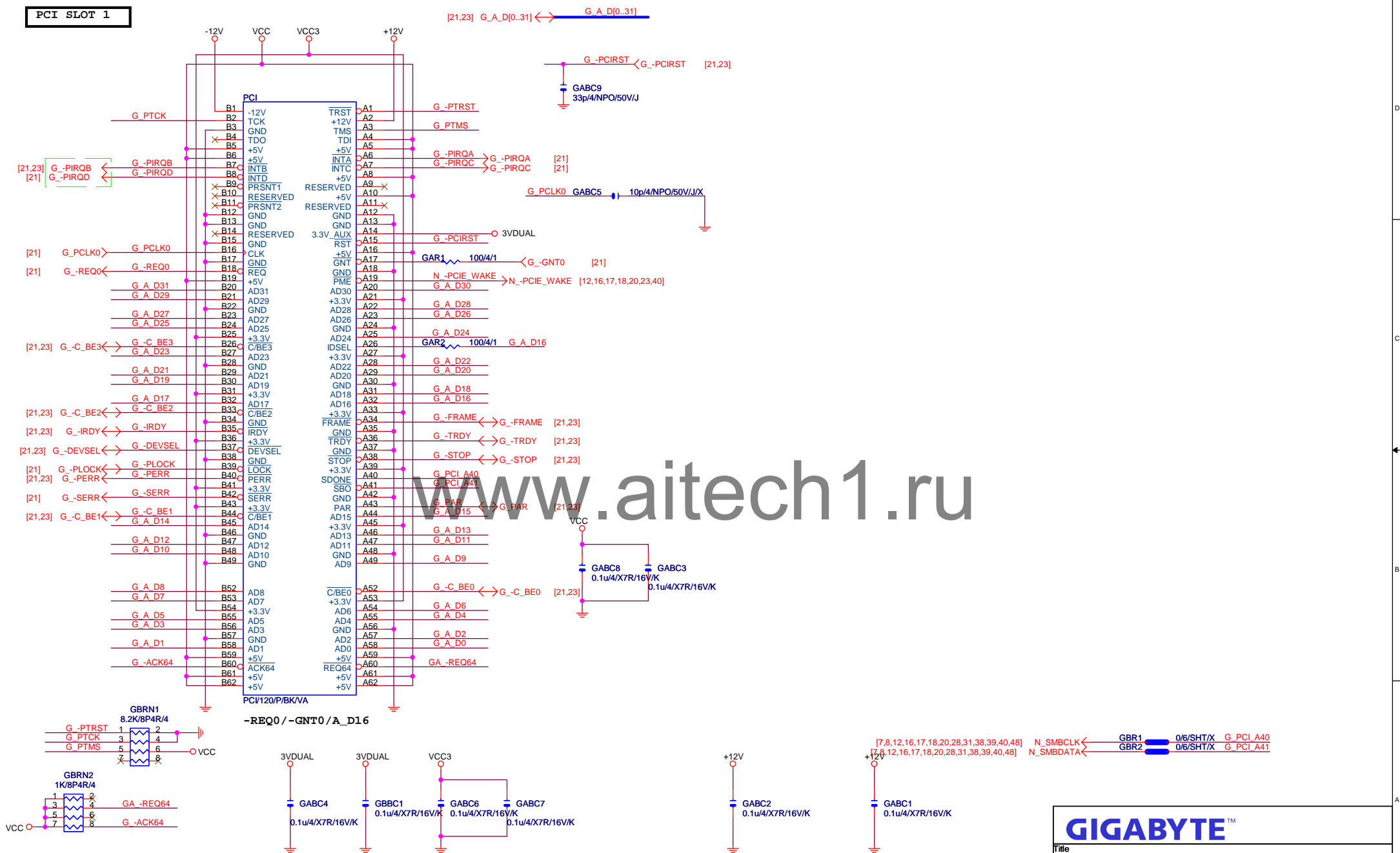




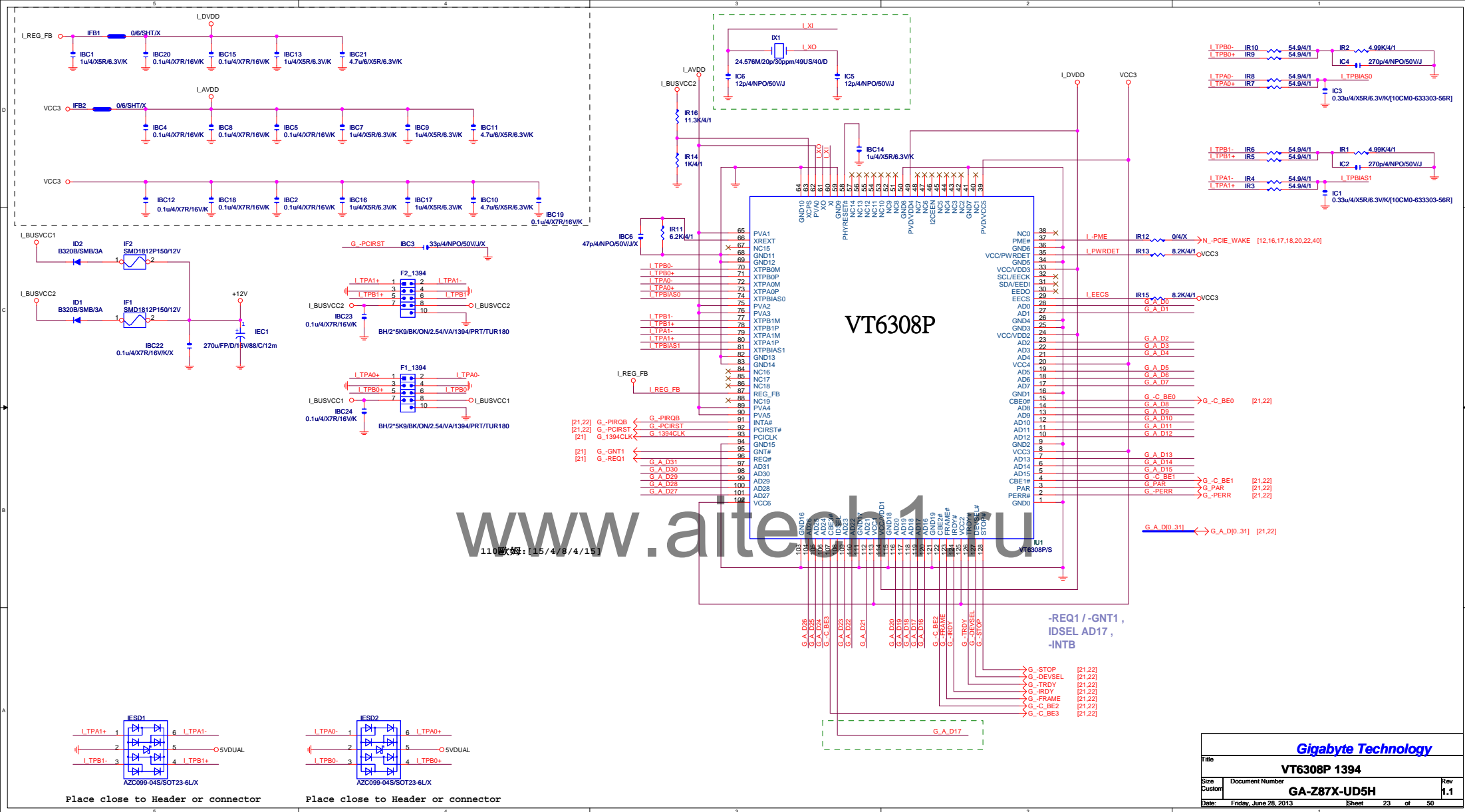


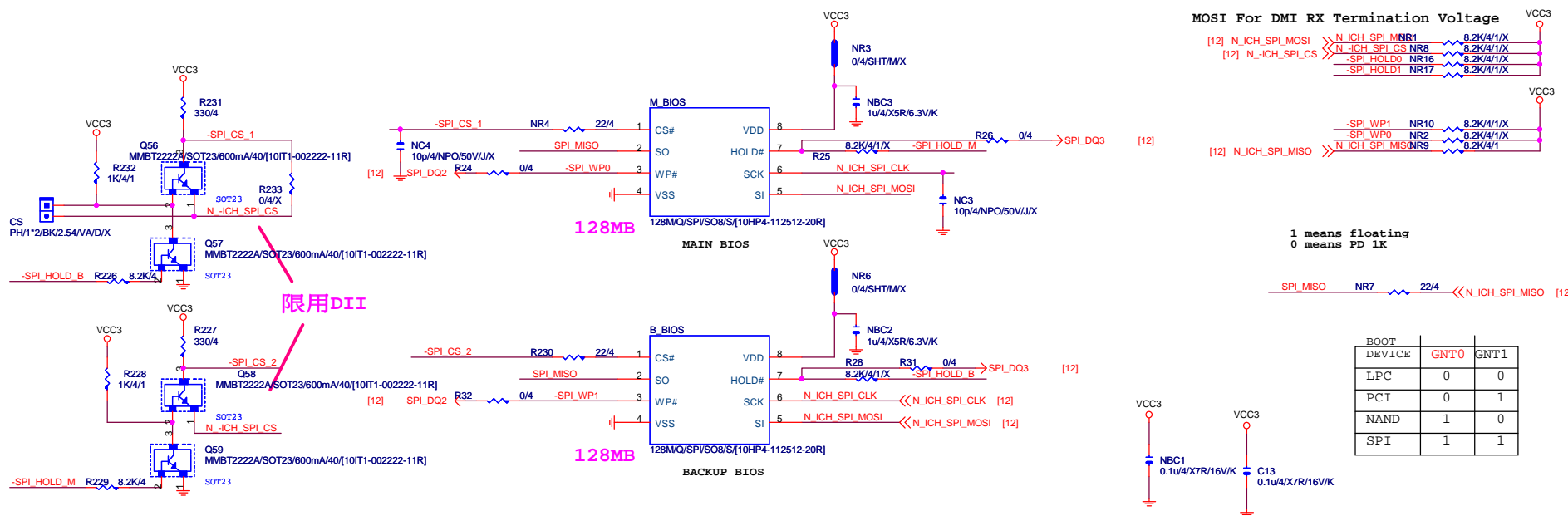


# PCI SLOT 1

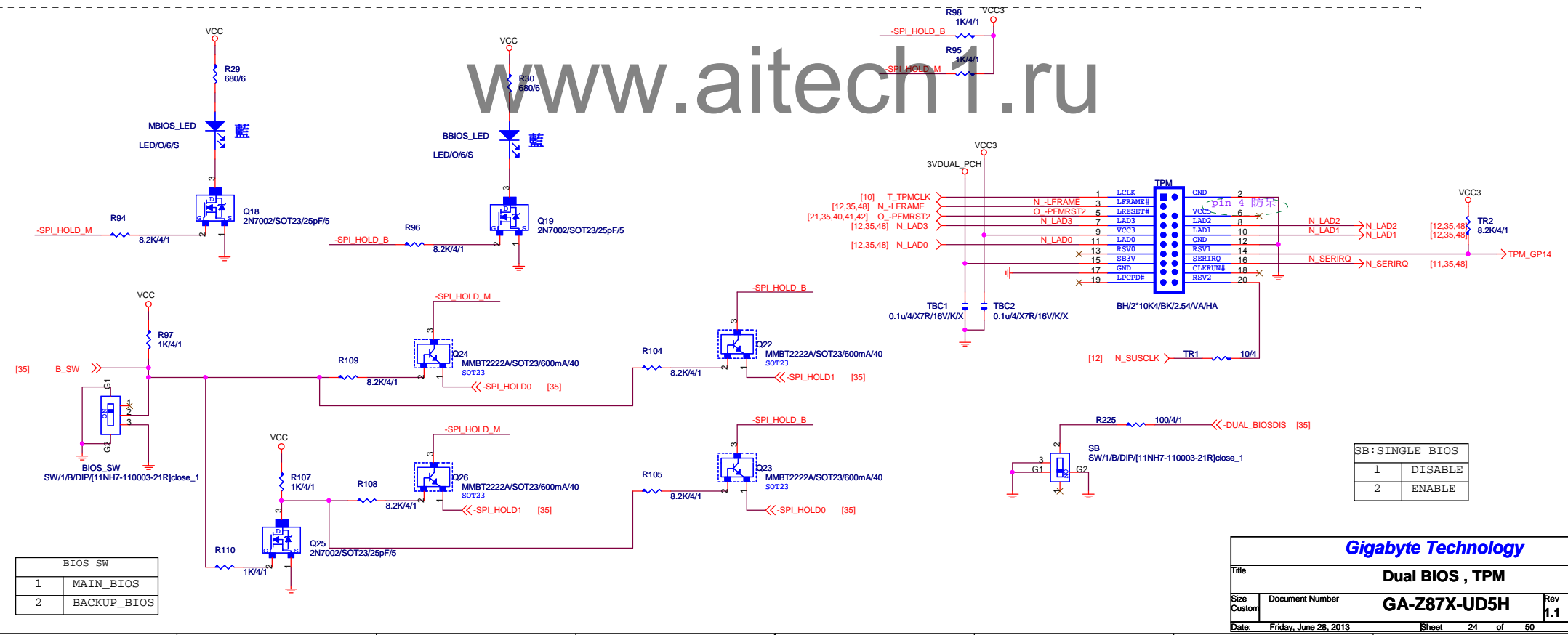


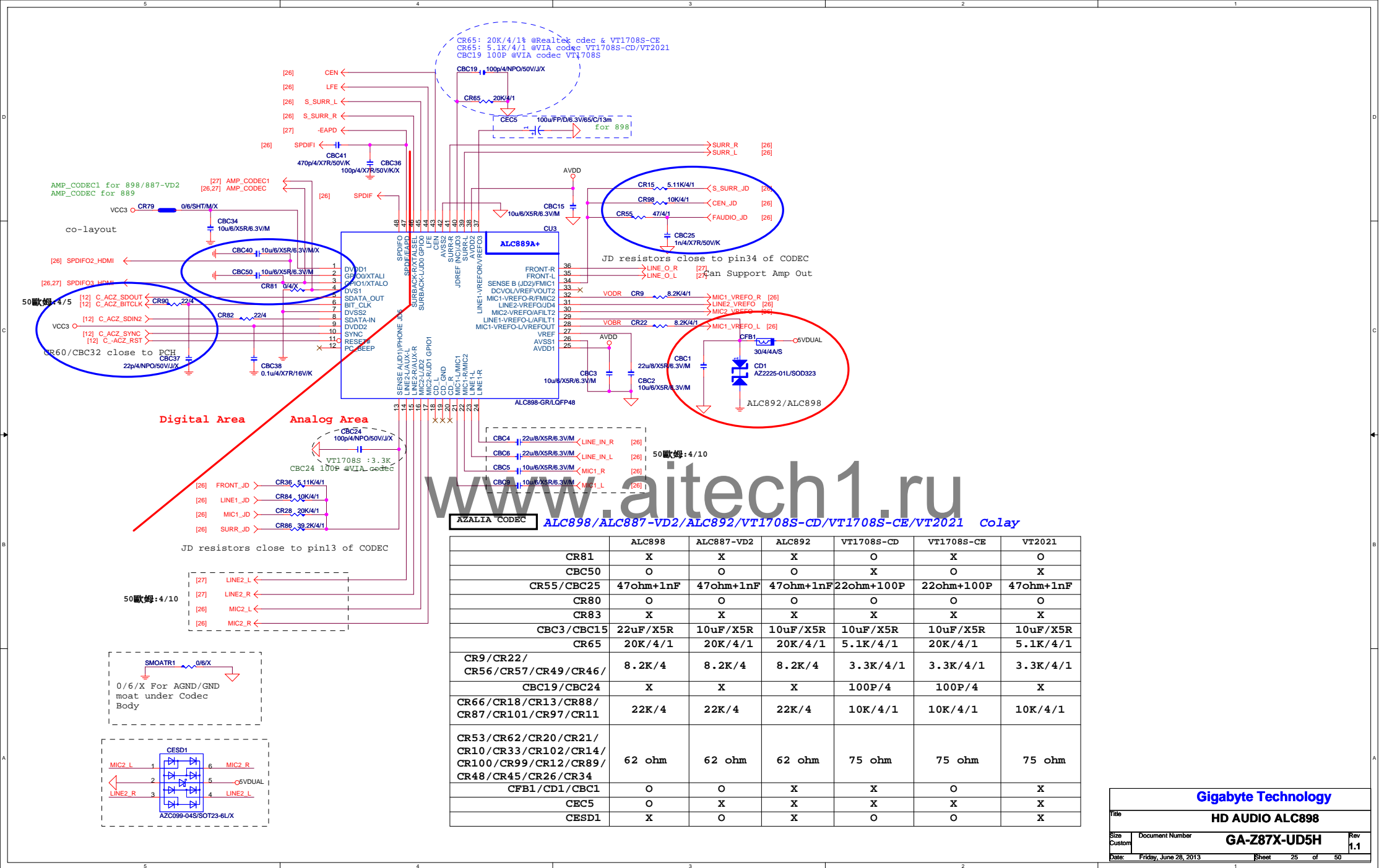
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Title			
<b>PCI SLOT 1&amp;2</b>			
Size	Document Number		Rev
Custom	<b>GA-Z87X-UD5H</b>		<b>1.1</b>
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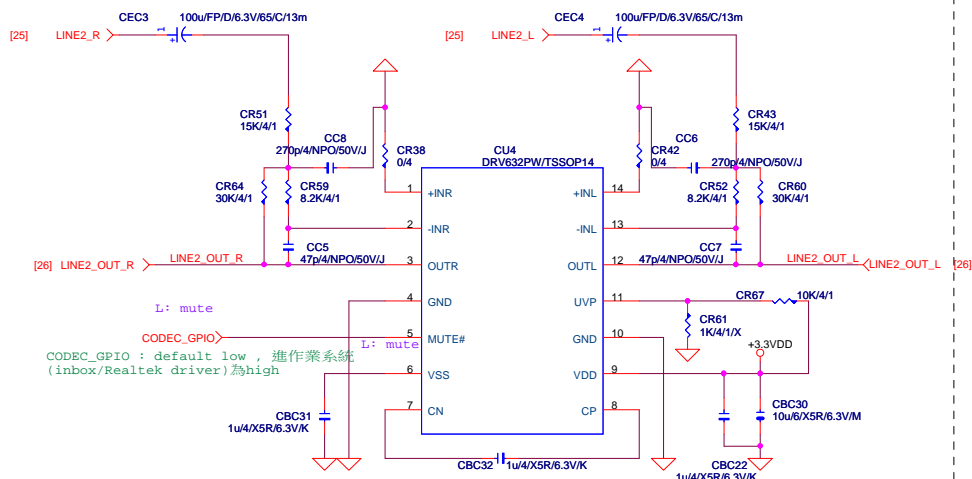




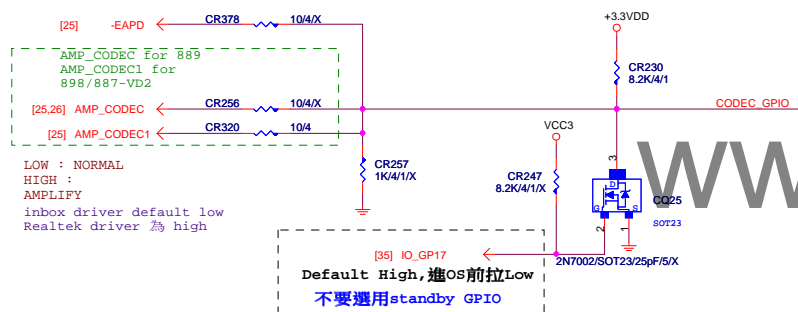




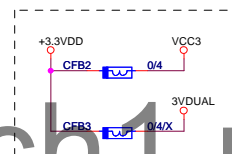
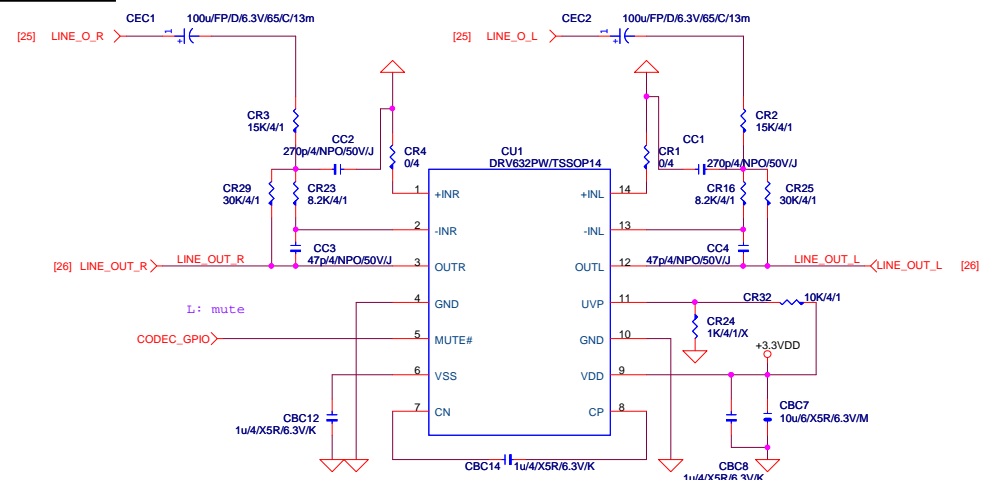
**HEADPHONE**



**HEADPHONE**



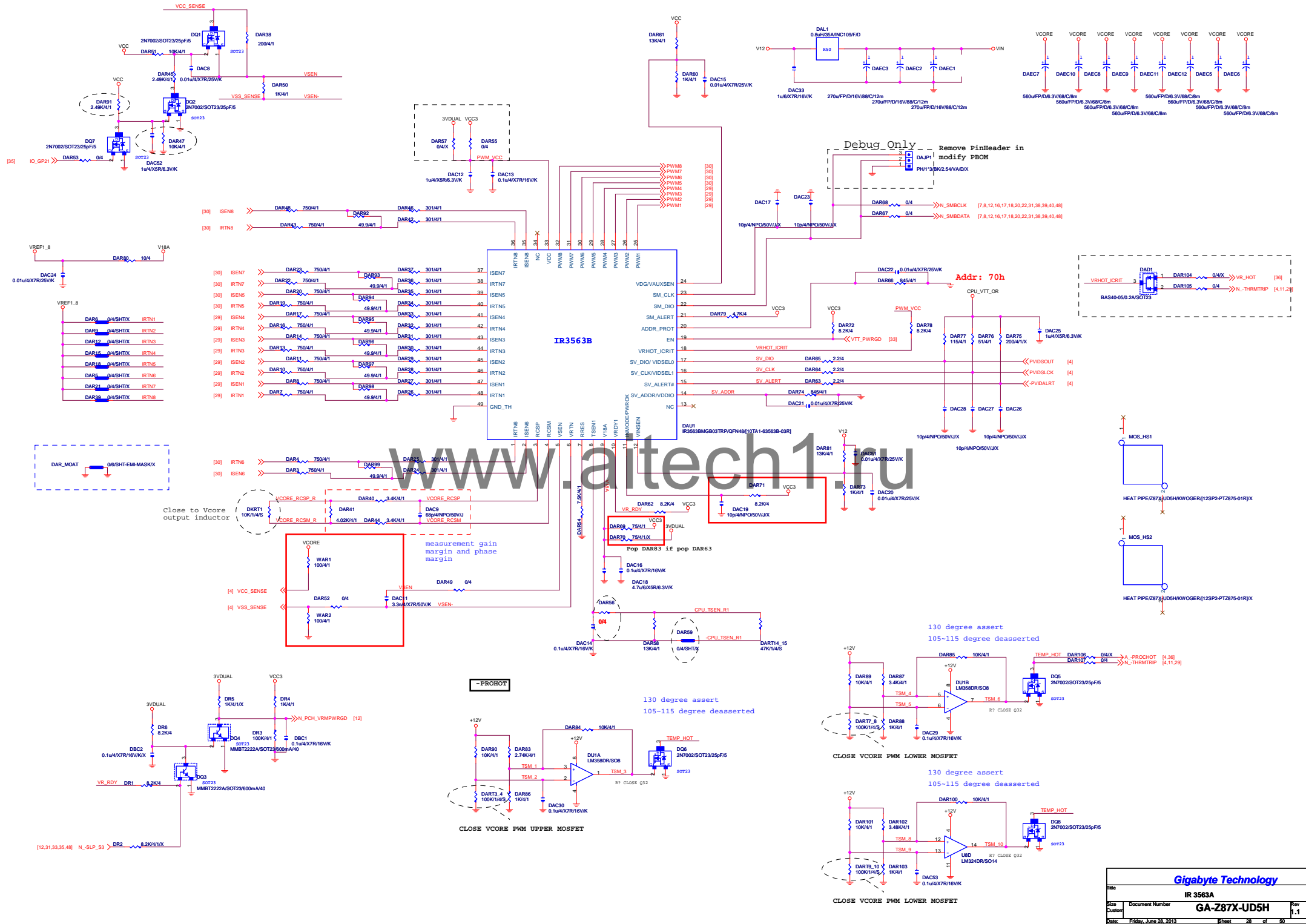
LINE-OUT



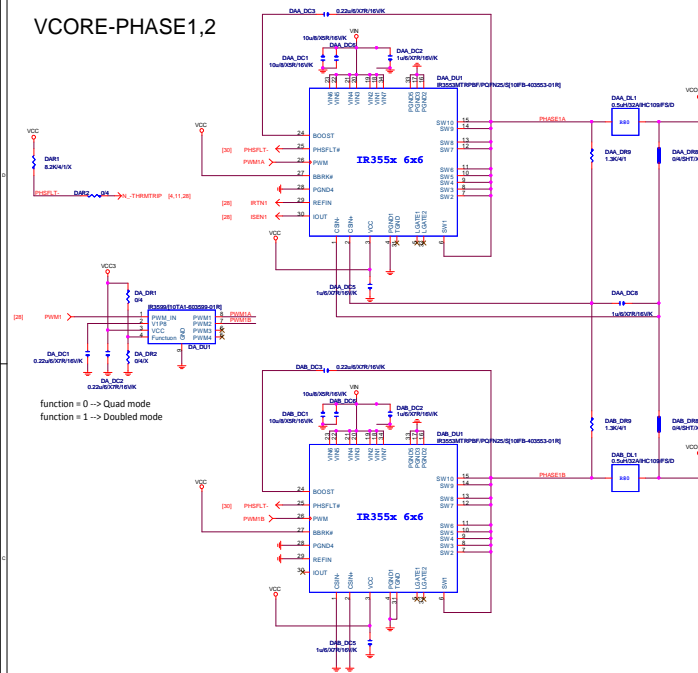
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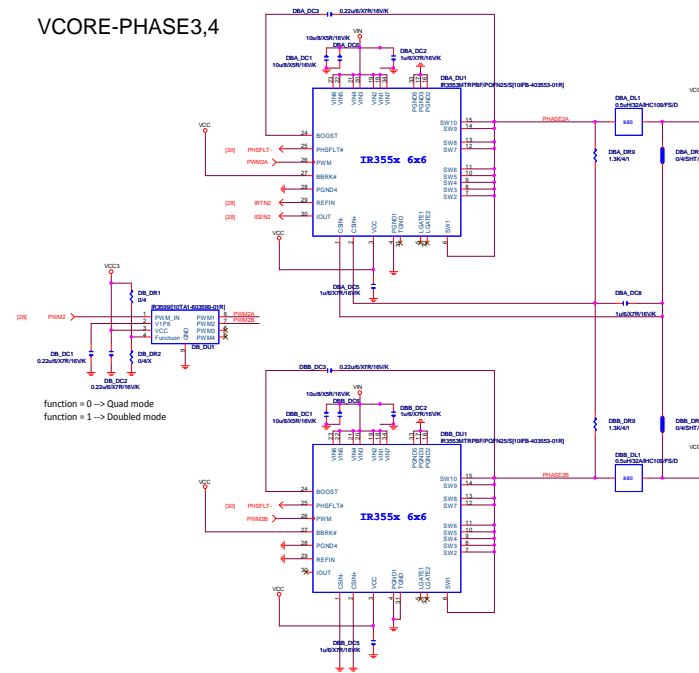
Title			
8-CH DAC & Anti-Pop / Mute			
Size	Document Number		Rev
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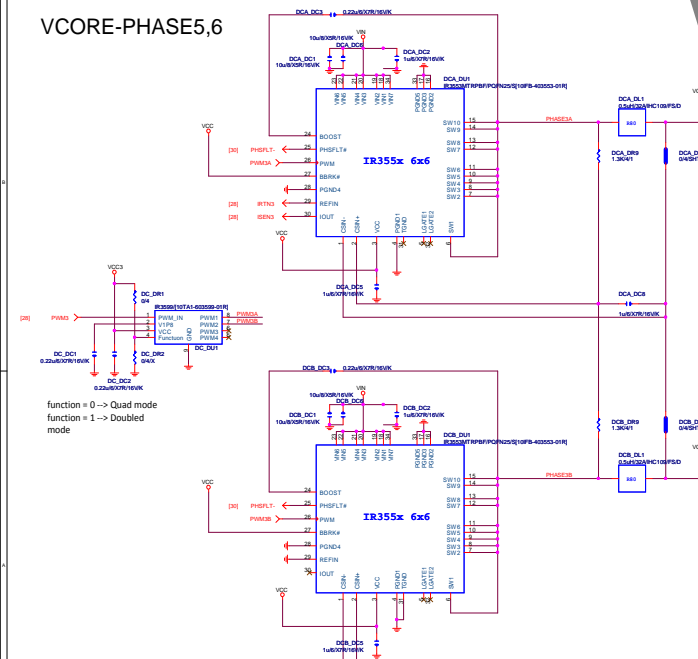
VCORE-PHASE1,2



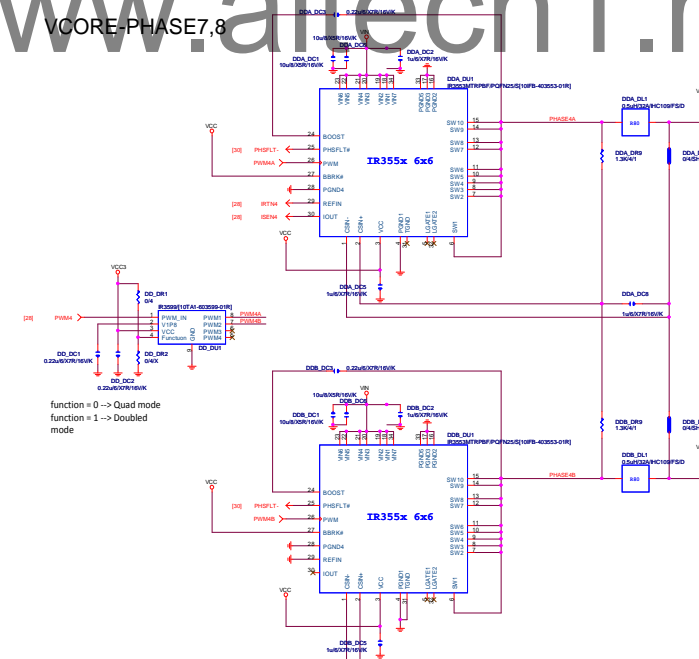
VCORE-PHASE3,4



VCORE-PHASE5,6

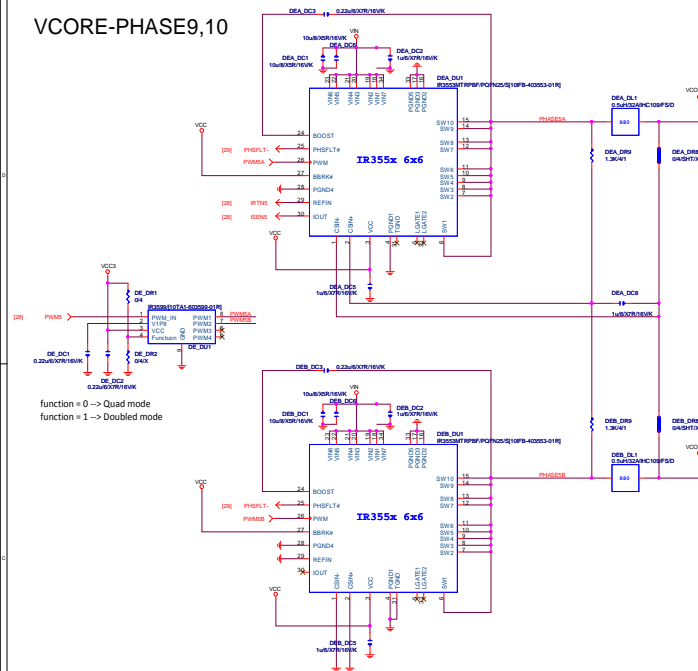


VCORE-PHASE7,8

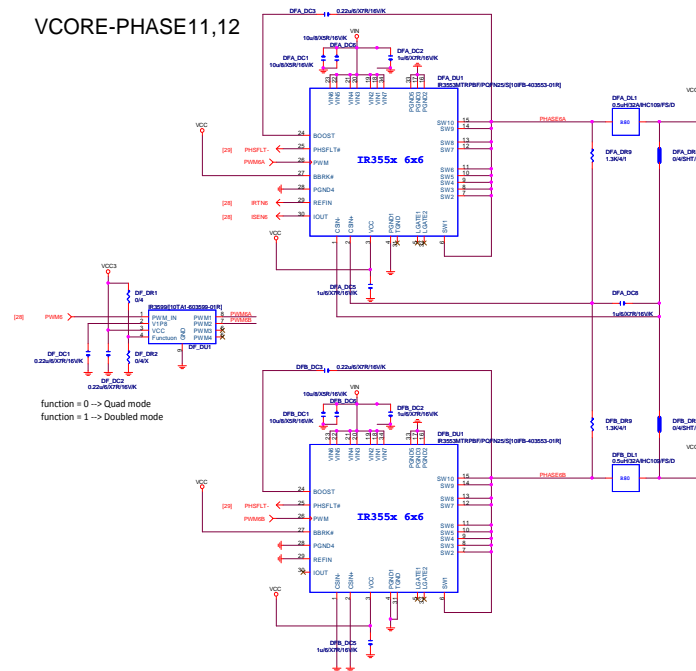


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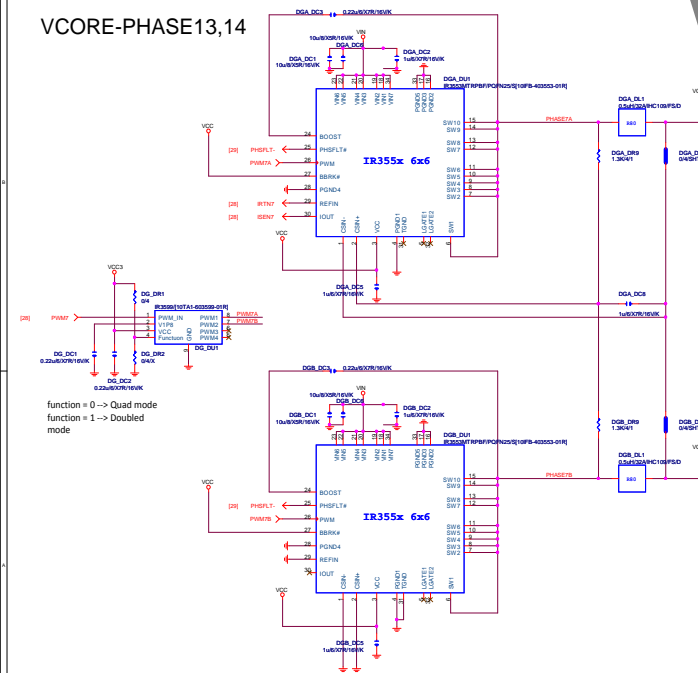
VCORE-PHASE9,10



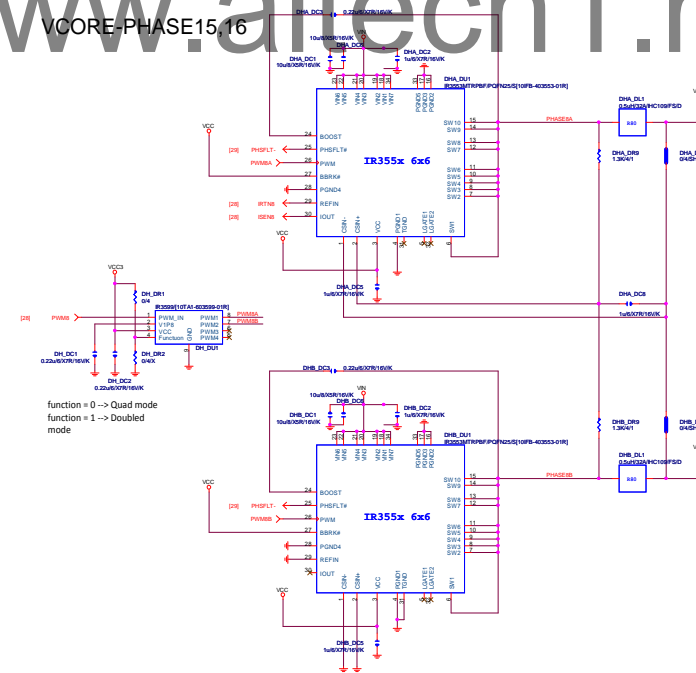
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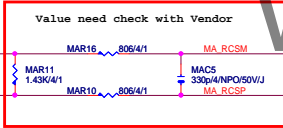
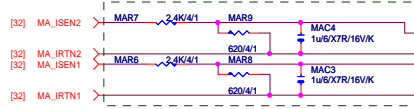
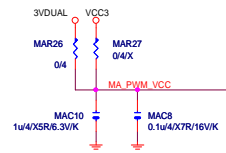
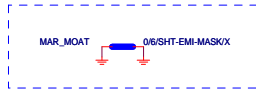
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VCORE-PHASE15,16



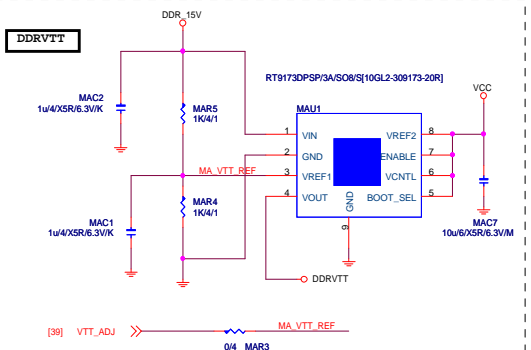
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Close to DDR output inductor

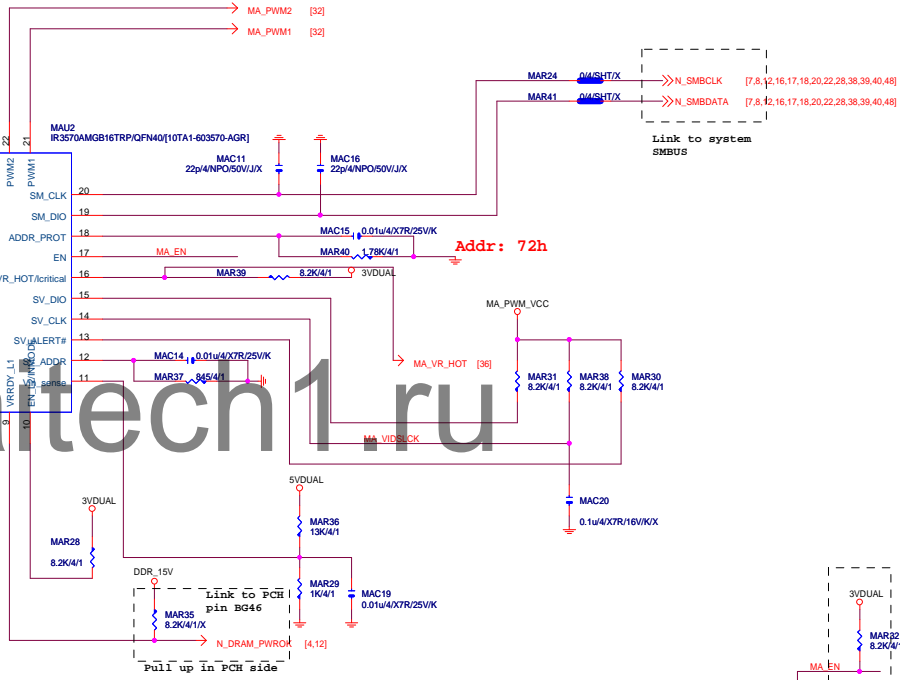
should be routed as differential pair, 7mil width, 8mil spacing

[39] DDR15V\_ADJ1 >> MA\_ISEN >> MA\_VSEN



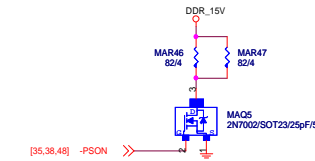
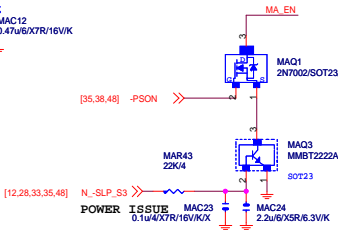
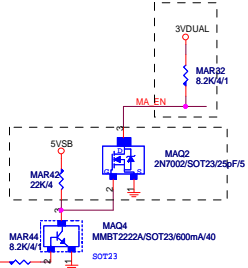
[39] VTT\_ADJ >> MA\_VTT\_REF >> MA3

IR3570



Addr: 72h

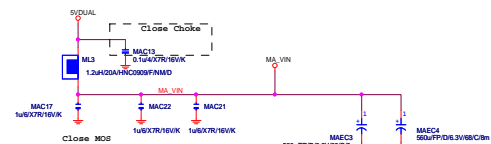
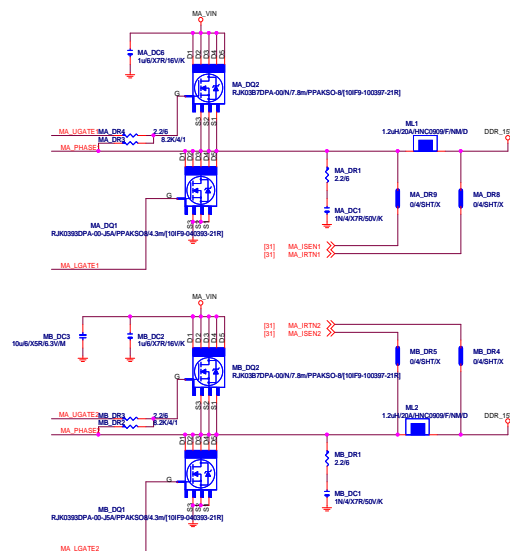
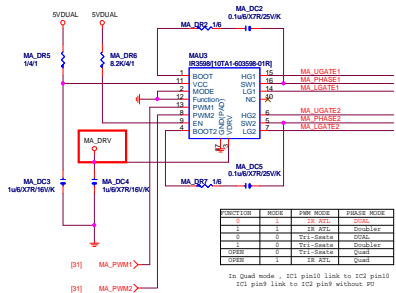
Link to PCH pin BG46  
N\_DRAM\_PWROK  
Pull up in PCH side



GIGABYTE™

DDR POWER IR3570		
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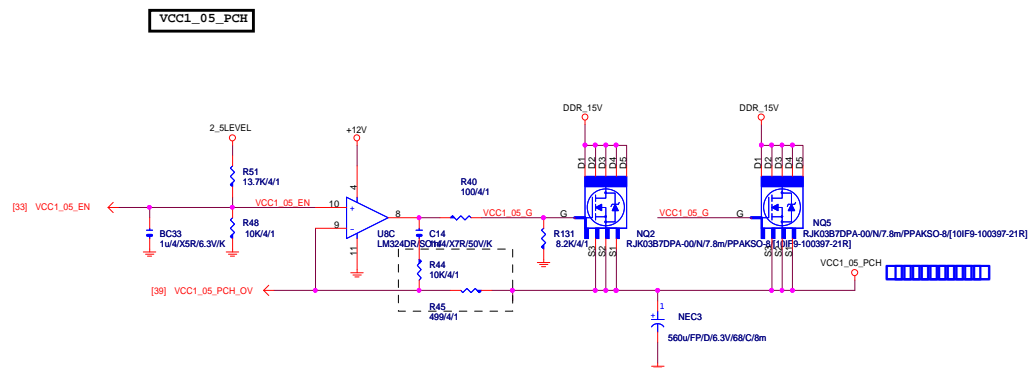
DDR\_15V



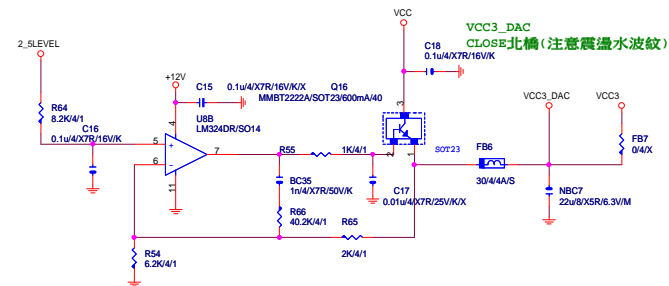
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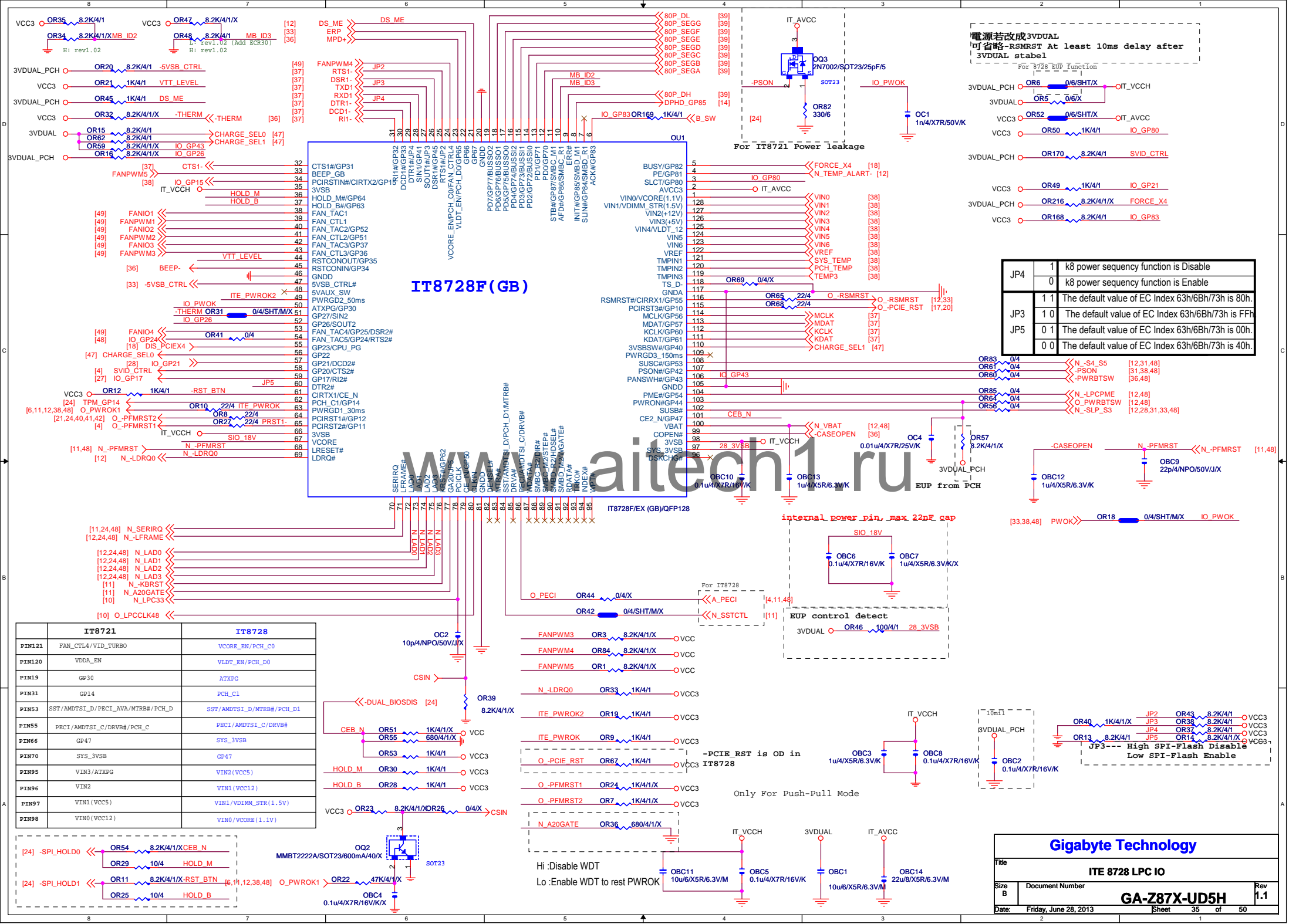




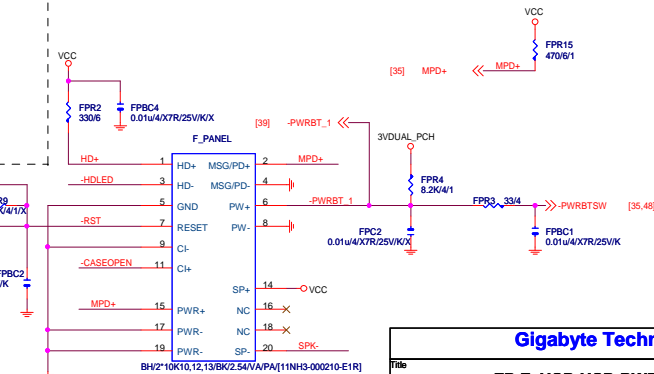
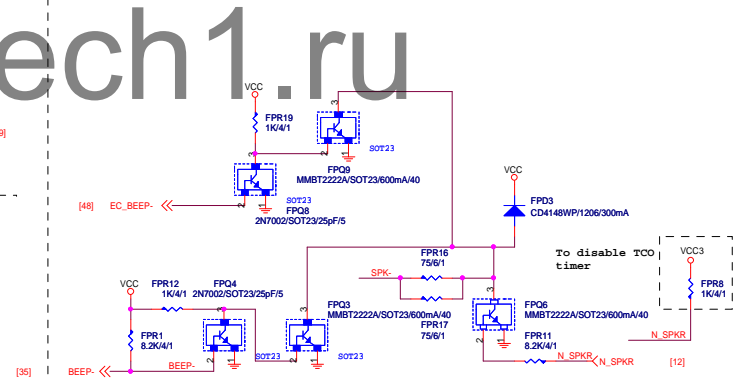
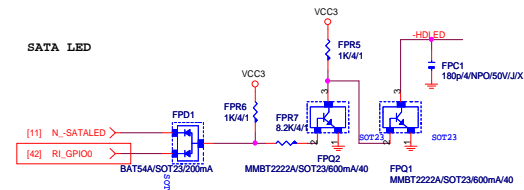
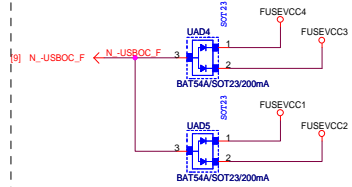
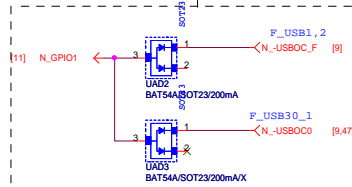
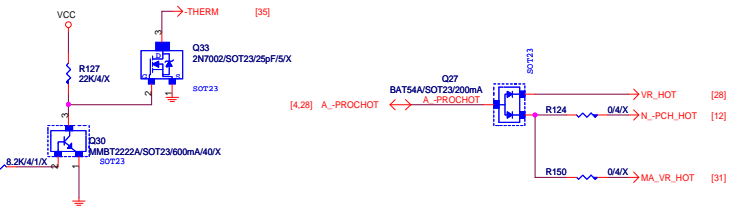
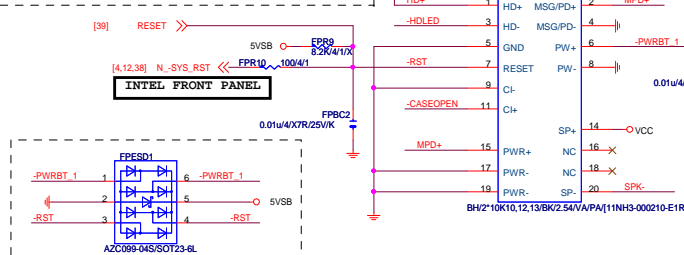
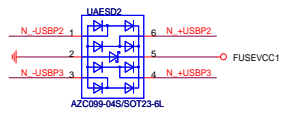
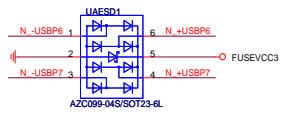
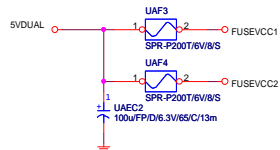
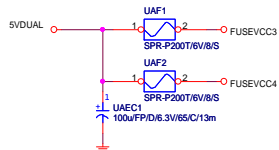
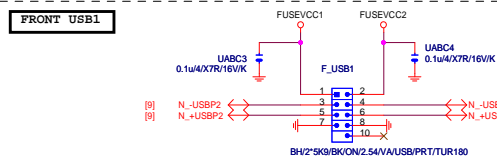
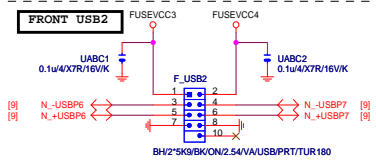
**VCC3\_DAC**  
(3.3V/70mA+360uA)



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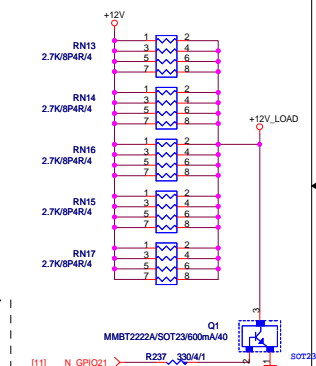
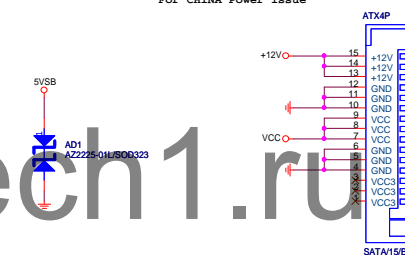
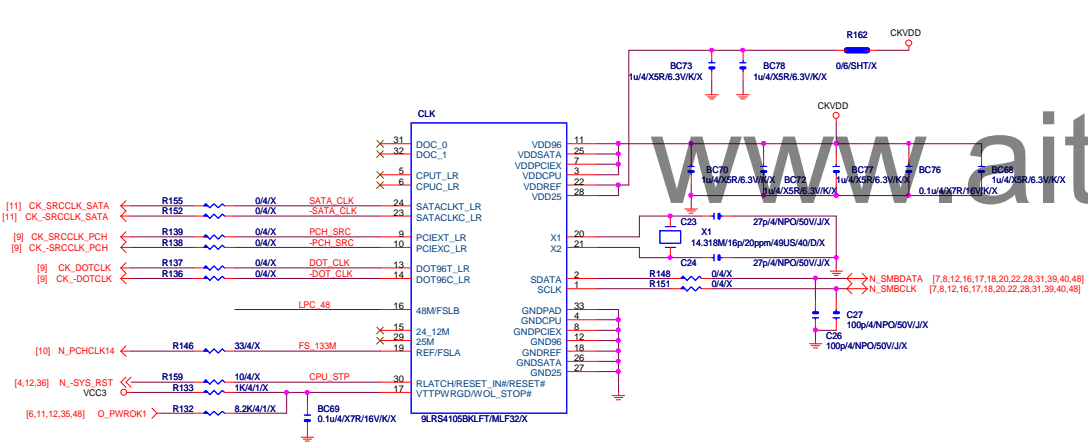
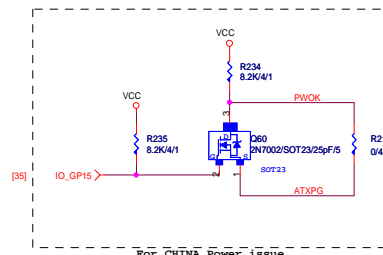
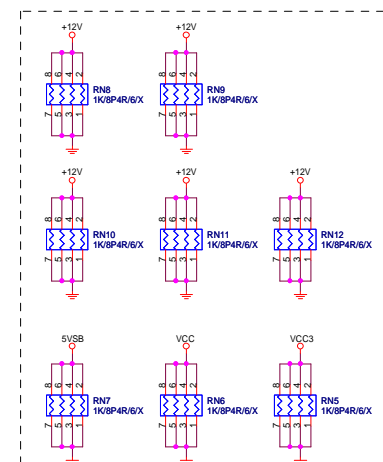
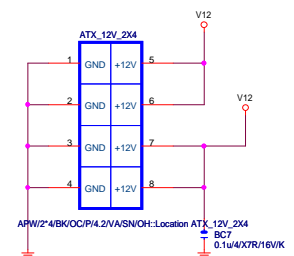
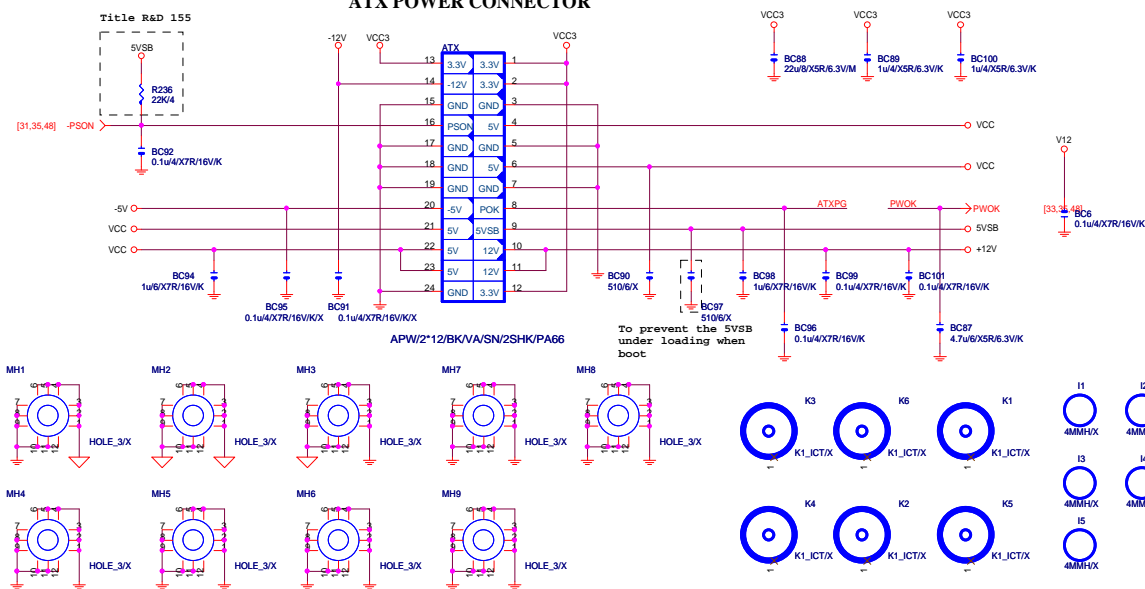
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Gigabyte Technology			
FP,F_USB,USB PWR,FDD,BZ			
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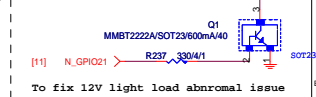
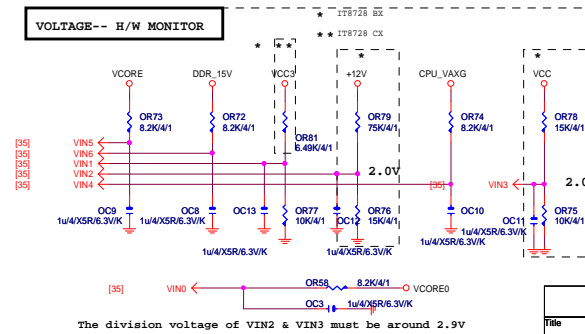
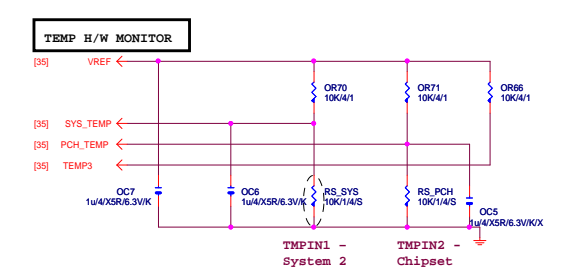
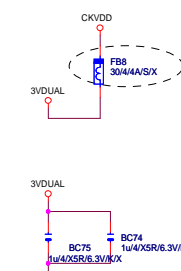
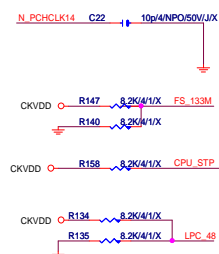
## ATX POWER CONNECTOR

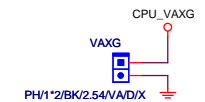
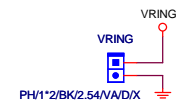
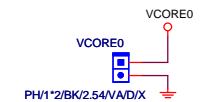
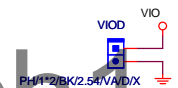
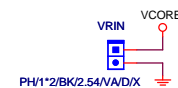
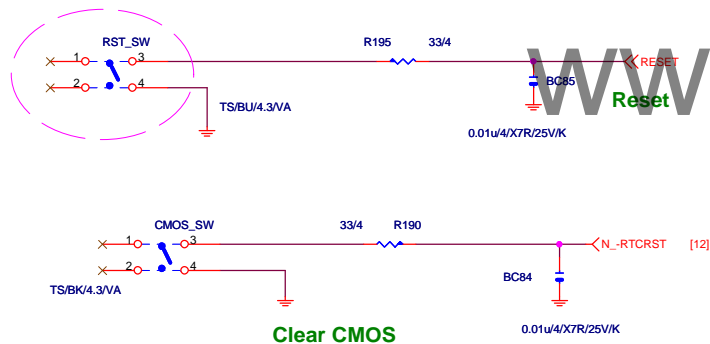
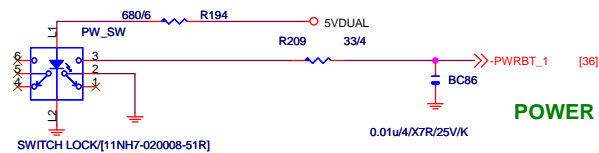
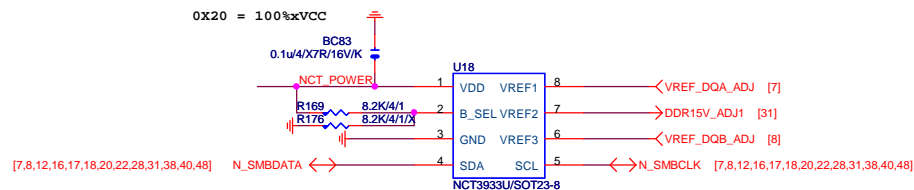
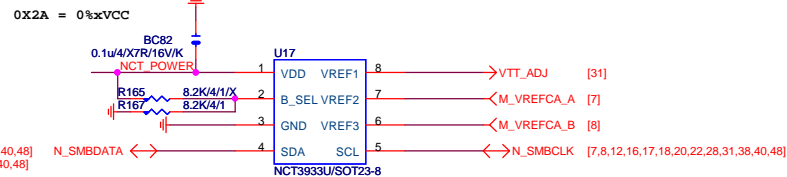
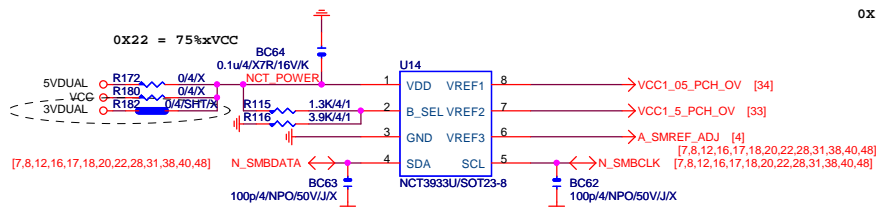


CLK GEN CK505

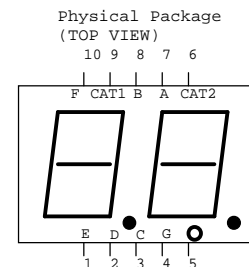
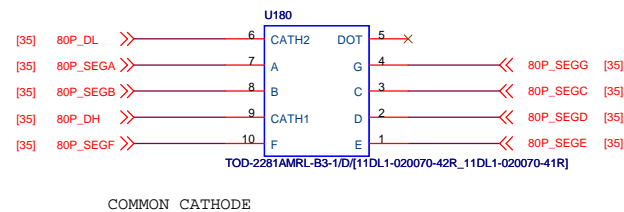
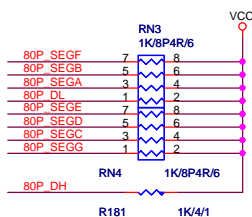
### CPU Frequency Selection

FSLB	FSLA	CPU
0	0	100M <Default>
0	1	133M
1	0	200M
1	1	166M



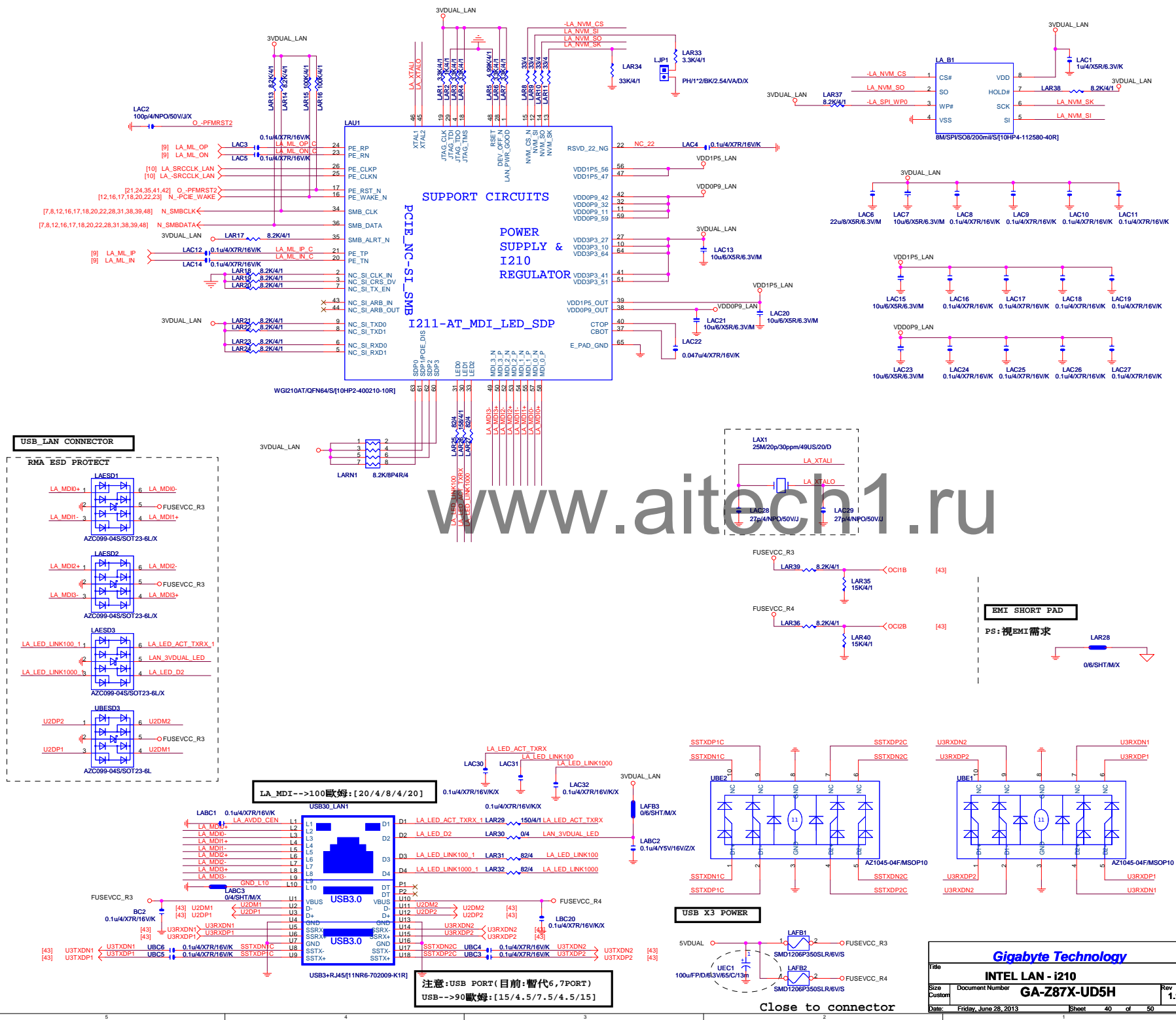


80 PORT

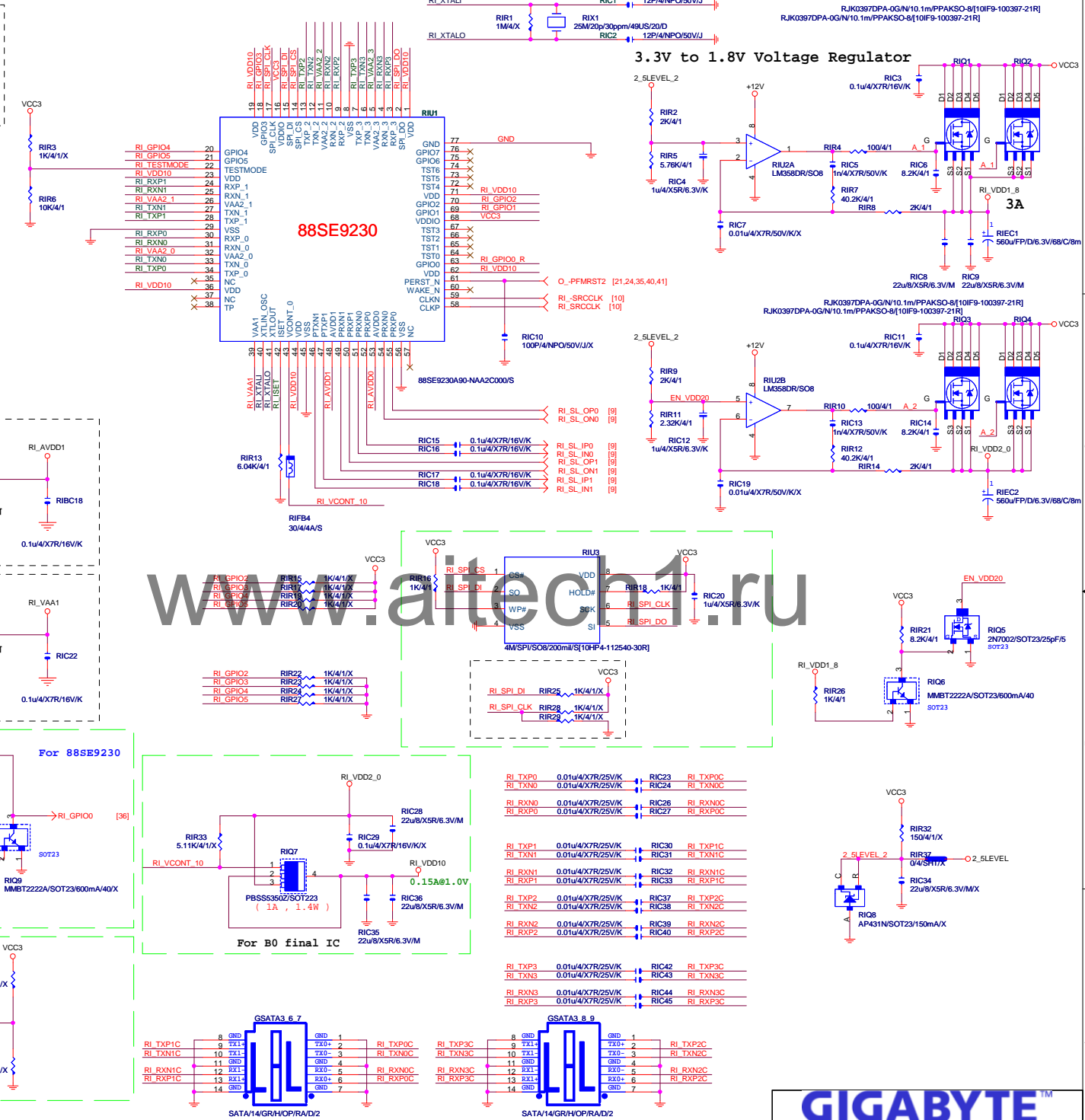


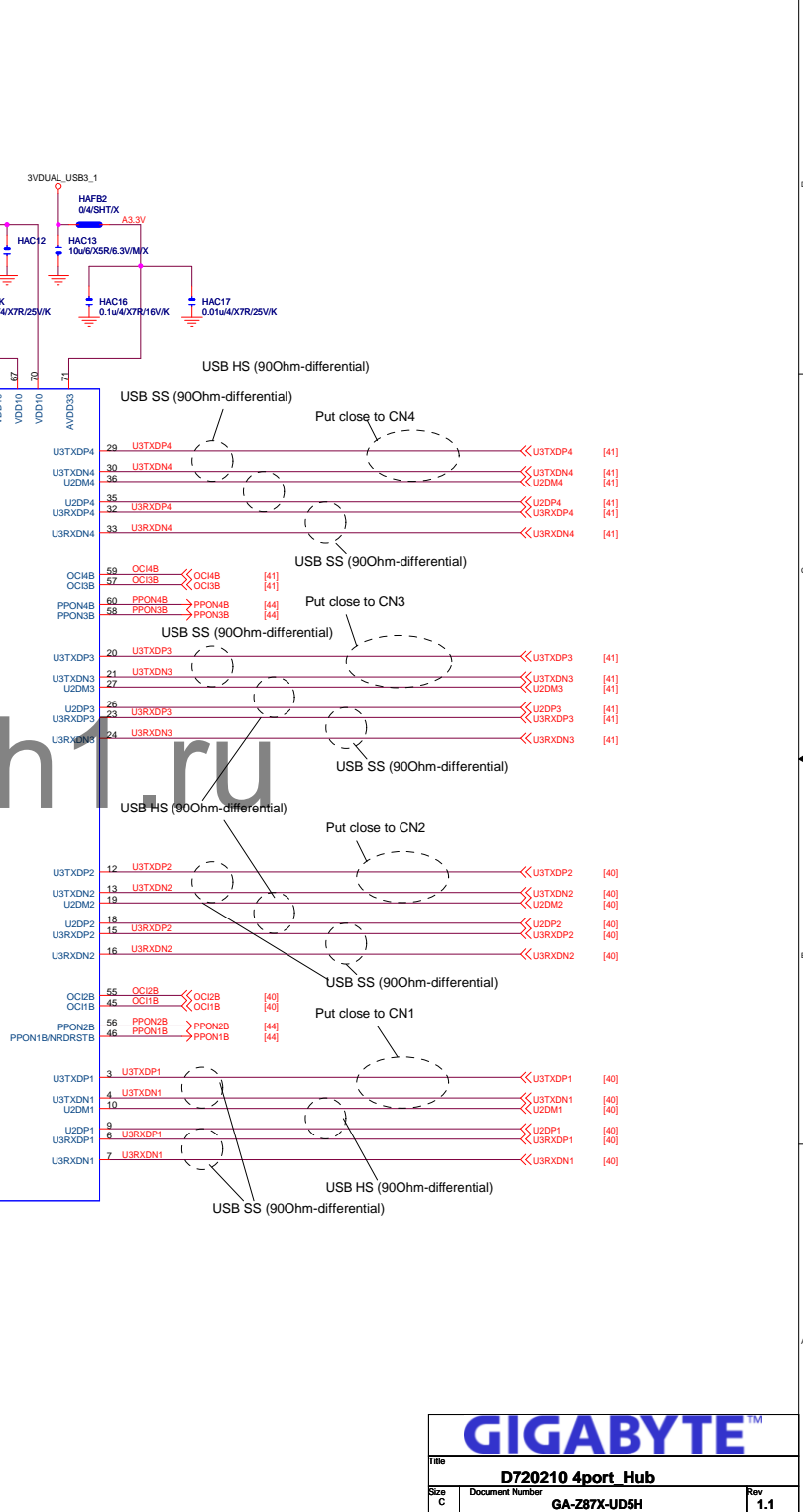
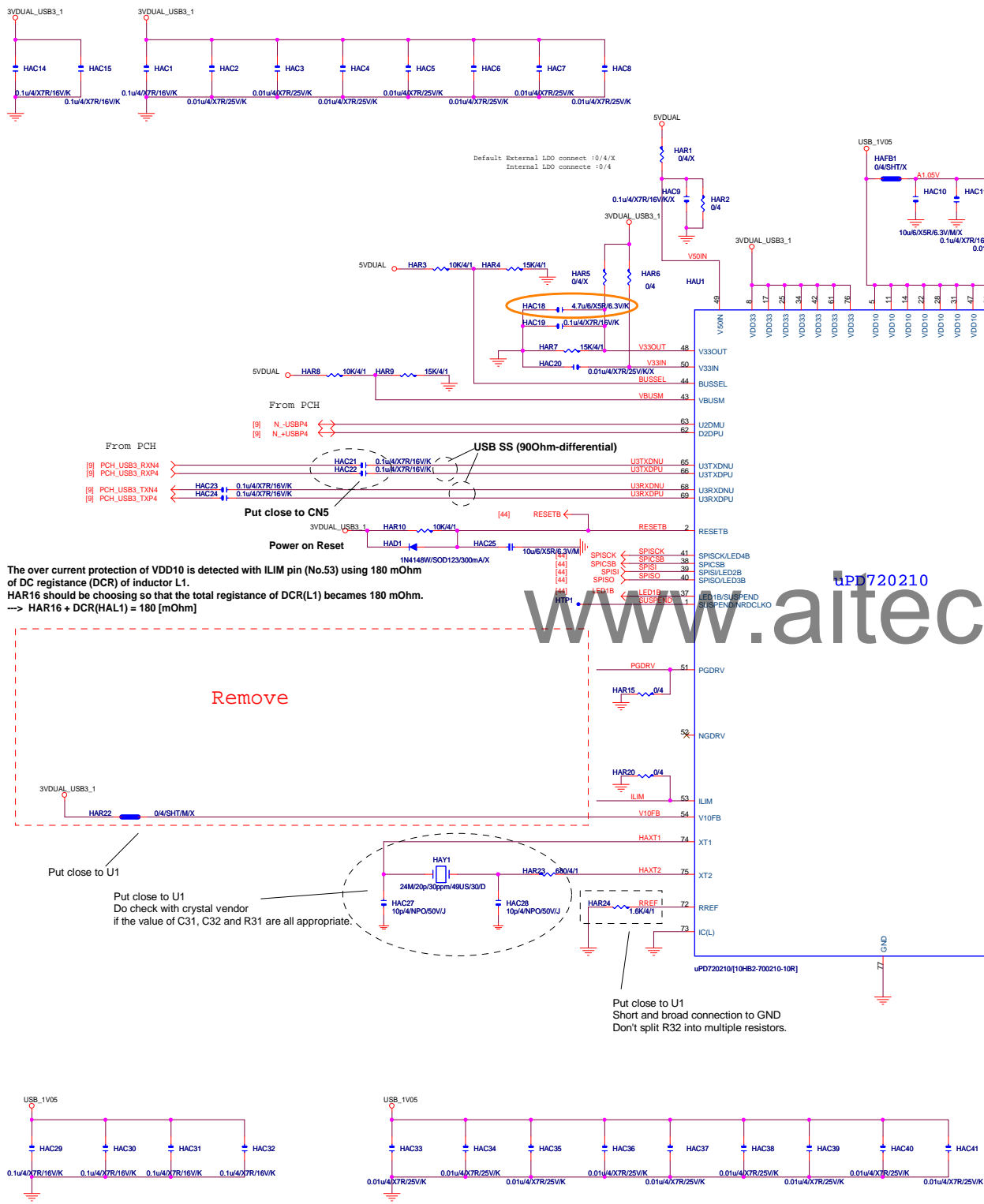


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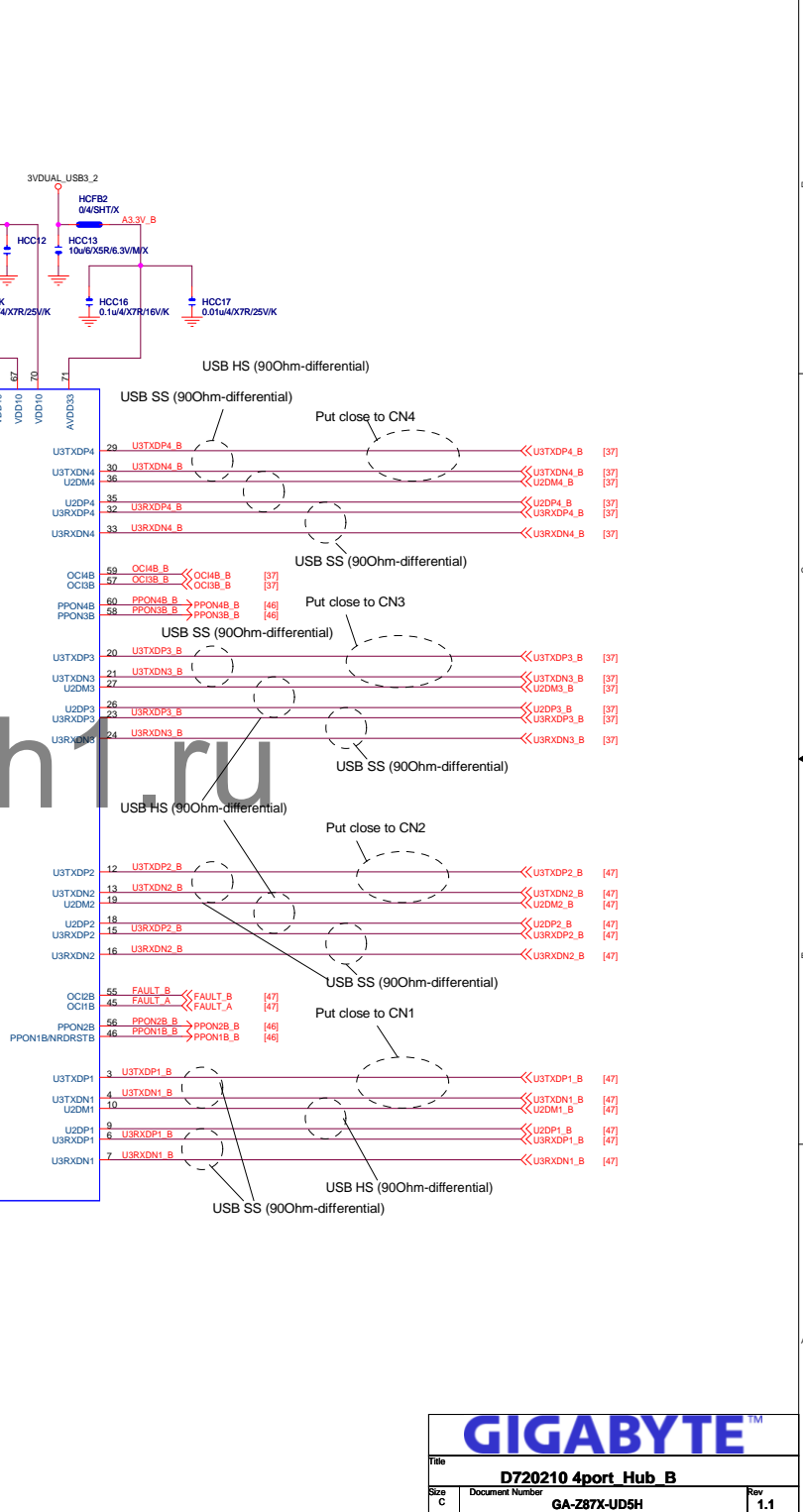
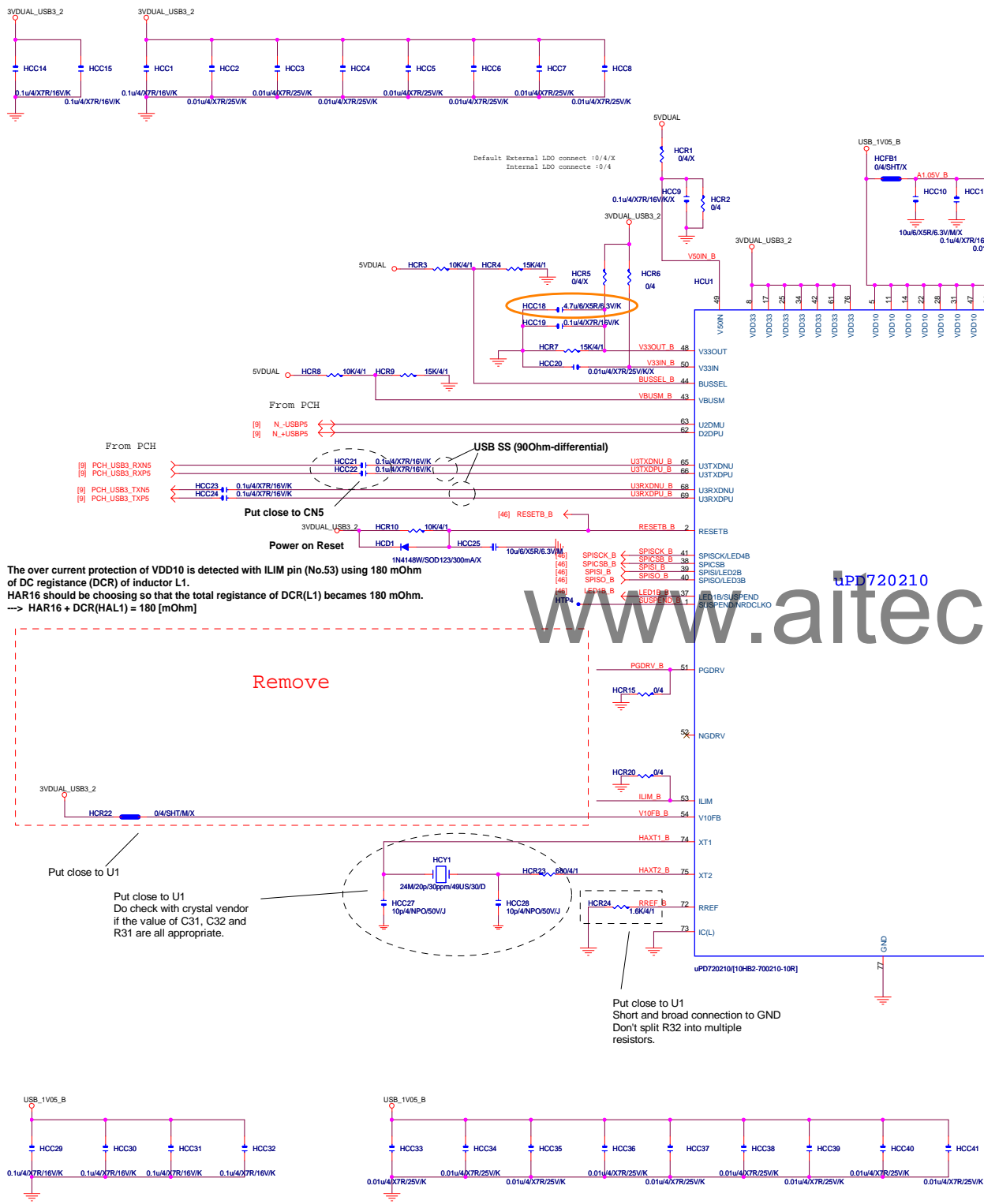


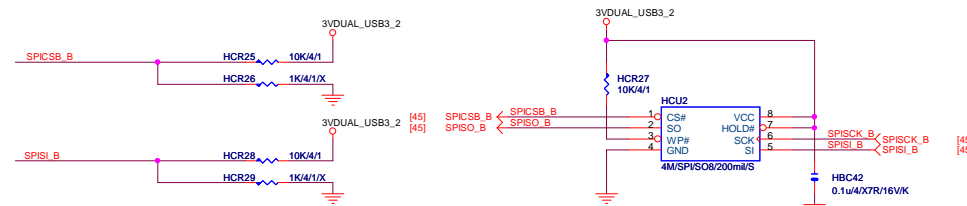
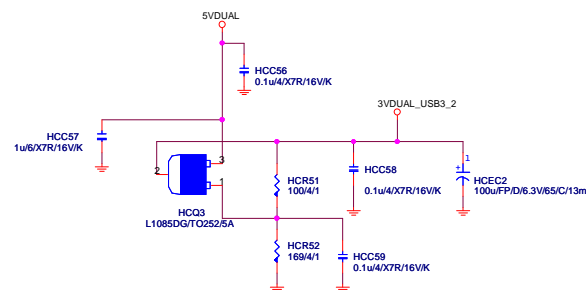






The schematic diagram illustrates the 3VDUAL\_USB circuit. It features a 5VDUAL input connected to a network of capacitors (HAC56, HAC57, HAC58, HAC59) and resistors (HAR51, HAR52). A central component is the HAQ3 L1085DG/T0252/5A converter, which is connected to the input and output lines. The output of the converter is connected to the 3VDUAL\_USB3\_1 output. A HAEC2 capacitor is also connected to the output line. The circuit is designed to provide a stable 3V output from a 5V input.



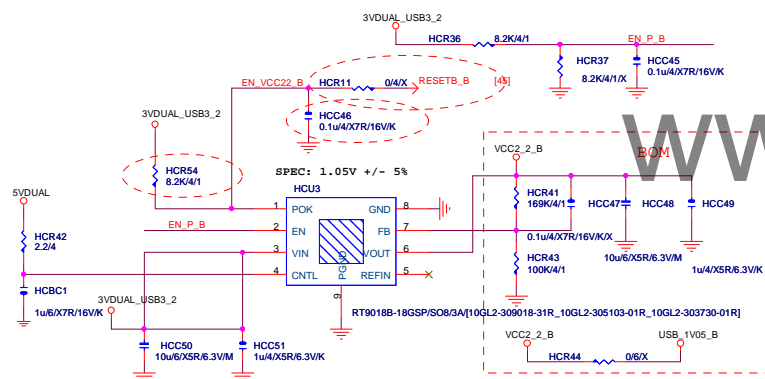
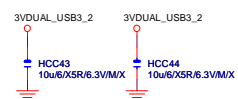


The image displays three circuit diagrams, each showing a signal line connected to a 3V supply and ground through two resistors. The signal lines are labeled SPI0CK\_B, SPI0CS\_B, and LED1B\_B. The resistors are labeled HCR55, HCR30, HCR56, HCR31, HCR32, and HCR49. The 3V supply is labeled 3VDUAL\_USB3\_2. The ground is labeled GND.

**Diagram 1 (Top):** Shows the connection for SPI0CK\_B. The signal line is connected to a 3V supply through a resistor labeled HCR55 (10K/4/1/X) and to ground through a resistor labeled HCR30 (1K/4/1).

**Diagram 2 (Middle):** Shows the connection for SPI0CS\_B. The signal line is connected to a 3V supply through a resistor labeled HCR56 (10K/4/1/X) and to ground through a resistor labeled HCR31 (1K/4/1).

**Diagram 3 (Bottom):** Shows the connection for LED1B\_B. The signal line is connected to a 3V supply through a resistor labeled HCR32 (10K/4/1) and to ground through a resistor labeled HCR49 (10K/4/1/X).



The schematic diagram illustrates the USB3.0 interface for the P9300 module. It features two USB3.0 ports, each with 4 ports and 2 ports. The top port is connected to PPN04B\_B, and the bottom port is connected to PPN03B\_B. Both ports are connected to a 3V0V\_USB3\_2 supply. The top port is also connected to HCR33 (10K4/1) and HCR57 (1K4/1/X). The bottom port is connected to HCR34 (10K4/1) and HCR58 (1K4/1/X).

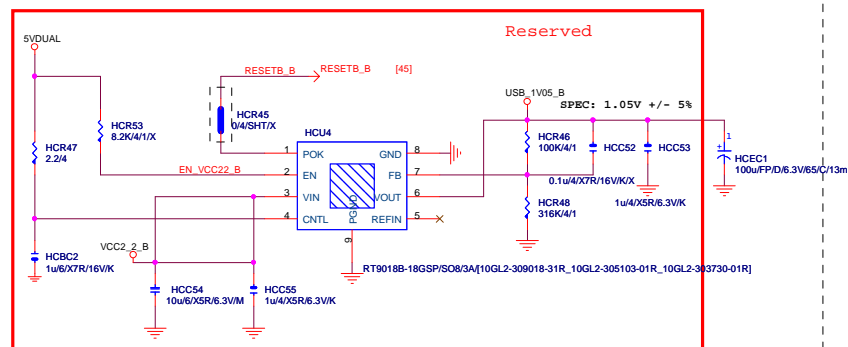
[45] PPON2B\_B

3VDUAL\_USB3\_2

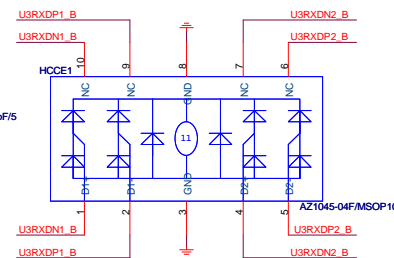
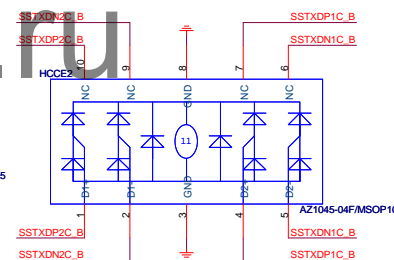
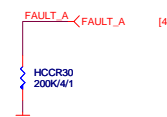
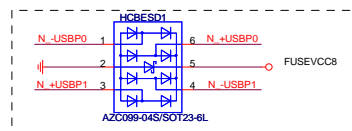
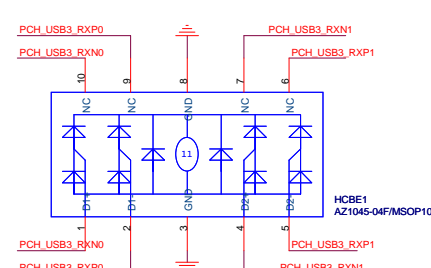
HCR35 10K/4/1/X

HCR40 10K/4/1

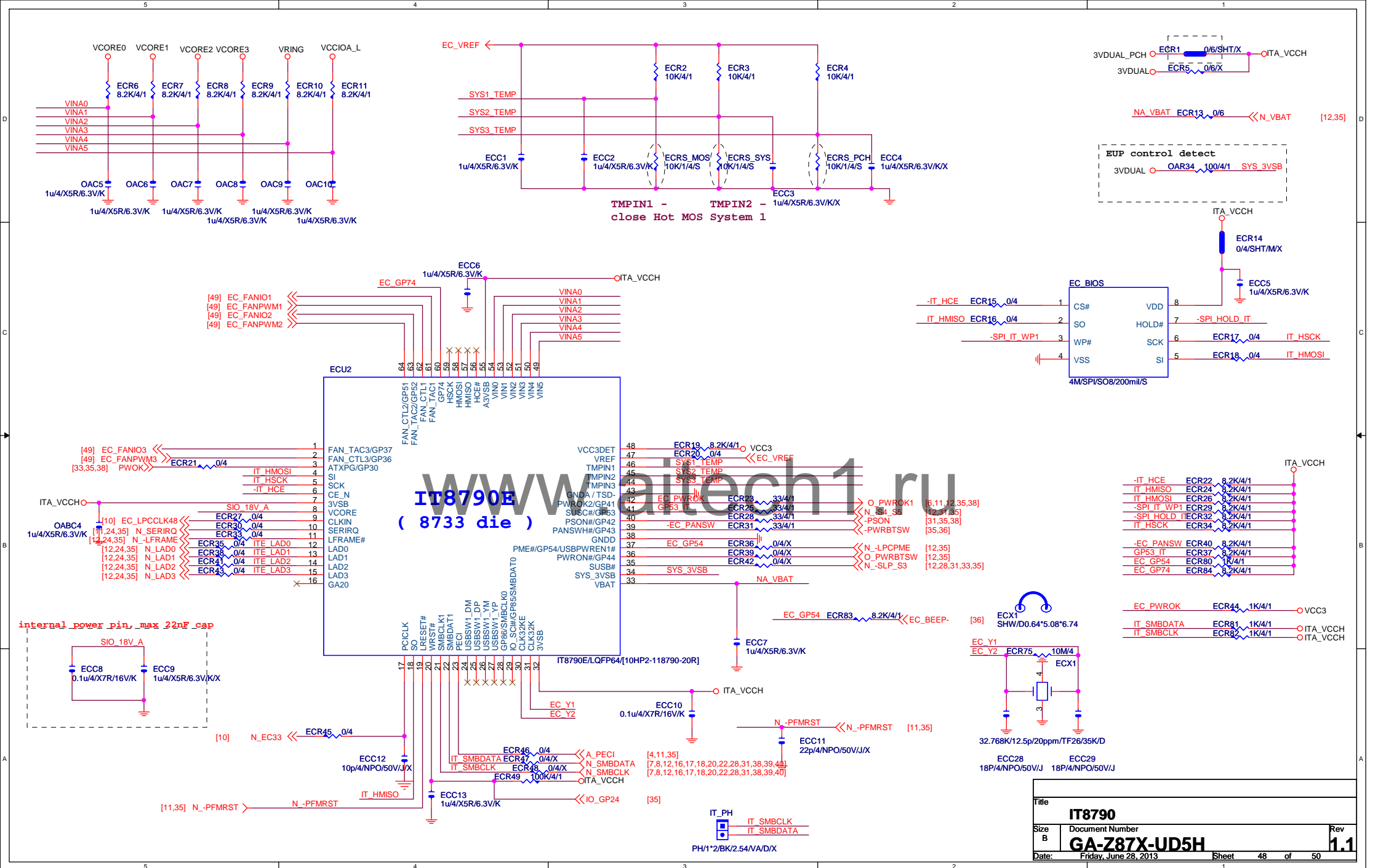
Diagram showing the connection of HCR38 and HCR39. HCR38 is connected to 3VDUAL\_US1 through a 10K/4/1 resistor. HCR39 is connected to ground through a 10K/4/1/X resistor. The output of HCR38 is labeled PPON1B\_B.







	S0	S3/S4/S5
CHARGE_SEL0	1	0
CHARGE_SEL1	1	0





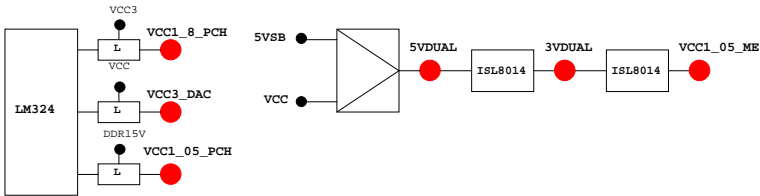
PCH GPIO LIST TABLE

PIN NAME	PWR	Default	USAGE	NOTE
GP0	MAIN	H-Z	GPI -PECI_REQ	N/A
GP1/TACH1	MAIN	GPI	ICH_FAN_TACH1	N/A
GP2/PIRQE#	MAIN	GPI	-PIRQE	P/U 8.2K VCC3
GP3/PIRQF#	MAIN	GPI	-PIRQF	P/U 8.2K VCC3
GP4/PIRQG#	MAIN	GPI	-PIRQG	P/U 8.2K VCC3
GP5/PIRQH#	MAIN	GPI	-PIRQH	P/U 8.2K VCC3
GP6/TACH2	MAIN	GPI	ICH_FAN_TACH2	N/A
GP7/TACH3	MAIN	GPI	ICH_FAN_TACH3	N/A
GP8	STBY	H	GPO GPIO8	P/U 8.2K 3VDUAL
GP9/OC5#	STBY	NATIVE	OC5#	N/A
GP10/OC6#	STBY	NATIVE	OC6#	N/A
GP11/SMBALERT#	STBY	NATIVE	-SMBALERT	P/U 8.2K 3VDUAL
GP12	STBY	L	GPI LAN_PHY_PWR_CTRL	P/U 8.2K 3VDUAL
GP13	STBY	L	GPI GPIO13	P/U 8.2K 3VDUAL
GP14/OC7#	STBY	NATIVE	OC7#	N/A
GP15	STBY	L	GPO GPIO15	N/A
GP16	MAIN	GPI	-SKTOCC	P/U 8.2K VCC3
GP17/TACH0	MAIN	GPI	ICH_FAN_TACH0	N/A
GP18	MAIN	NATIVE	MB_ID0	P/D 8.2K GND
GP19	MAIN	GPI	-LAN1_ISO	P/U 8.2K VCC3
GP20	MAIN	NATIVE	LED_CTL	P/U 1K VCC3
GP21	MAIN	GPI	VCC18_PCH_OV2	P/U 8.2K VCC3
GP22	MAIN	H-Z	GPI VCORE_OV3	P/U 8.2K VCC3
GP23	MAIN	NATIVE	-LDRQ1	P/U 8.2K VCC3
GP24	STBY	L	GPO TLS	P/U 8.2K 3VDUAL
GP25	STBY	NATIVE	-CPU_STOP	P/U 8.2K 3VDUAL
GP26	STBY	NATIVE	-AC2_DET	P/U 8.2K 3VDUAL
GP27	STBY	H	GPO GPIO27	P/U 8.2K 3VDUAL
GP28	STBY	H	GPO GPIO28	P/U 8.2K 3VDUAL
GP29	STBY	L	GPI GPIO29	N/A
GP30	STBY	H-Z	GPI S_PWR_ACK	P/U 100K 3VDUAL
GP31	STBY	H-Z	GPI N/A(Reverse)	P/U 8.2K VCC3
GP32	MAIN	H	GPO MB_ID1	P/D 8.2K GND
GP33	MAIN	H	GPO LOAD-LINE	P/U 1K VCC3
GP34	MAIN	H-Z	GPI -PCI_STOP	P/U 8.2K VCC3
GP35	MAIN	L	GPO GPIO35	P/U 8.2K VCC3
GP36	MAIN	GPI	-LAN1_DSM	P/U 8.2K VCC3
GP37	MAIN	GPI	N/A	P/U 8.2K VCC3
GP38	MAIN	H-Z	GPI VCORE_OV2	P/U 8.2K VCC3
GP39	MAIN	H-Z	GPI -LAN_DSM	P/U 8.2K VCC3
GP40	STBY	NATIVE	OC1#	N/A
GP41	STBY	NATIVE	OC2#	N/A
GP42	STBY	NATIVE	OC3#	N/A
GP43	STBY	NATIVE	OC4#	N/A
GP44	STBY	L	NATIVE N/A	P/U 8.2K 3VDUAL
GP45	STBY	NATIVE	-LPCPME	P/U 8.2K 3VDUAL
GP46	STBY	L	NATIVE PWR_LED	P/U 8.2K 3VDUAL
GP47	STBY	NATIVE	PSI_LED	P/U 8.2K 3VDUAL
GP48	MAIN	H-Z	IN EN_PWM	P/U 8.2K VCC3
GP49	MAIN	H-Z	IN VCC18_OV1	P/U 8.2K VCC3
GP50	MAIN	NATIVE	-REQ1	P/U 2.2K VCC
GP51	MAIN	H	NATIVE -GNT1	N/A
GP52	MAIN	NATIVE	-REQ2	P/U 2.2K VCC
GP53	MAIN	H	NATIVE -GNT2	N/A
GP54	MAIN	NATIVE	-REQ3	P/U 2.2K VCC
GP55	MAIN	H	NATIVE -GNT3	N/A
GP56	STBY	NATIVE	N/A(Reverse)	P/U 8.2K 3VDUAL
GP57	STBY	H-Z	IN VCORE_OV1	P/U 8.2K 3VDUAL
GP58	STBY	H-Z	NATIVE F_USB_OC	P/U 8.2K 3VDUAL
GP59	STBY	NATIVE	USB_OC0#	N/A
GP60	STBY	H-Z	NATIVE N/A(Reverse)	P/U 8.2K 3VDUAL
GP61	STBY	L	NATIVE -SUSTAT	N/A
GP62	STBY	L	NATIVE SUSCLK	N/A
GP63	STBY	L	NATIVE GPIO63	N/A
GP64	MAIN	L	NATIVE CLKOUTFLEX0	N/A
GP65	MAIN	L	NATIVE CLKOUTFLEX1	N/A
GP66	MAIN	L	NATIVE CLKOUTFLEX2	N/A
GP67	MAIN	L	NATIVE CLKOUTFLEX3	N/A
GP72	STBY	H-Z	NATIVE VCORE_OV4	P/U 8.2K 3VDUAL
GP73	STBY	NATIVE	1_05V_OV1	P/U 8.2K 3VDUAL
GP74	STBY	H-Z	NATIVE 1_05V_OV2	P/U 8.2K 3VDUAL
GP75	STBY	H-Z	NATIVE N/A(Reverse)	P/U 8.2K 3VDUAL

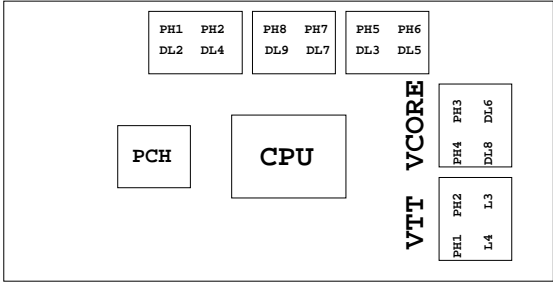
Super I/O ITE8720 GPIO Table

PIN NAME	USAGE	NOTE
SVC/PECI_RQT/GP14	-PECI_REQ	
PWROK1/GP13	PWROK1/ITE_PWROK	
KRST#/GP62	-KRST	
SO/GP50	-ICH_SPI_CS	
IRTX/GP47/CE2_N/JP7	CEB_N	
GP46/IRRX	-LAN2_DSM	
PSION#/GP42	-PSON	
PWROK2#/GP41	PECI_CTL	
PCIRST3#/GP10/VDIMM_STR_EN	-PCIE_RST	
RSMRST#CIRRX1/GP55	-RSMRST	
PME#/GP54	-LPCPME	
PD5/GP75/BUSS00	N/A	

PIN NAME	USAGE	NOTE
FAN_TAC2/GP52	FANIO2	
FAN_TAC3/GP37	FANIO3	
VIDO3/FAN_TAC4/GP25/DSR2#	FANIO4	
FAN_CTL2/GP51	FANPWM2	
FAN_CTL3/GP36	FANPWM3	
VID4/GP34	BEEP-	
VID3/GP33	TURBO1	
VID2/GP32	TURBO0	
VCORE_GOOD/VID6/GP63	CPUT_LED1_C	
VID5/GP35	CPUT_LED2_C	
VID1/GP31	CPUT_LED3_C	
VID0/GP30	-LAN1_DSM	NBT_LED1_C
SLCT/GP80	CPU_LED1_C	
PE/GP81	CPU_LED2_C	
BUSY/GP82	CPU_LED3_C	
PD3/GP73/BUSS11	SB_LED1_C	
PD4/GP74/BUSS12	SB_LED2_C	
VCORE_EN/VID7/GP64	IT_GP64	SB_LED3_C
PD0/GP70	NB_LED1_C	
PD1/GP71	NB_LED2_C	
PD2/GP72/BUSS10	NB_LED3_C	
GP22/SEN	LOW_PWR_1	
VID05/GP27/SEN2	LOW_PWR_2	
PCIRST2#/GP11	-PFMRST1	
PCIRST1#/GP12	-PFMRST2	
3VSB5W#/GP40	CSI_F0	BSEL166_1
SUSCH#/GP53	CSI_F1	BSEL166_2
GP23/SI	BSEL166_3/CsisBSL	
VID00/GP20/CTS2#	CPUT_LED1_C	BSEL166_4
GP65/VDDA_EN/GB_01	MB_ID2	
PD6/GP76/BUSS01	MB_ID3	
PD7/GP77/BUSS02	MB_ID4	
AFD#/GP86/SMBC_R	W_PIN	FST_2X8
INIT#/GP85/SMBD_M	SEC_2x8	GTLREF_AD2
ACK#/GP83	DDR_LED1_C	
VID01/GP21/DCD2#	DDR_LED2_C	
STB#/GP87/SMBC_M	DDR_LED3_C	
PWRON#GP44	VCORE_OV1	
PANSWH#/GP43	PWRBTSW	
KDAT/GP61	-PWRBTSW	
KCLK/GP60	KDAT	
MDAT/GP57	KCLK	
MACL/GP56	MDAT	
GP66/VLDT_EN/GB_02	NBT_LED1_C	MCLK
SVD/PCIRSTIN#/CIRTX/GP15	PWM2_CR	
KDAT/GP61	PWM2_CR	
GP67/CPU_PG/GB_03	EN_LOADLINE	IT_GP67/-EN_PWM2
SLIN#/GP84/SMBD_R	-EN_PWM2	
PSI_L/FAN_CLT15/CIRRX2/GP16	-THERM	
VIDO4/GP26/SOUT2	DDR18V_PH2_EN	
VIDO2/FAN_TAC5/GP24/DSR2#	DDR18V_LED	
VIDO6/GP17/RI2#	1_1V_PH_EN	
VIDO7/JP6/DTR2#	JP6	
PD5/GP75/BUSS00	SB_LED3_C	



PWM各相位的擺法如下：



BIOS超電壓對應表：

線路圖名稱	BIOS選項
Vcore	CPU Vcore
CPU_VTT	CPU Termination
CPU_VAXG	CPU Graphic Core
VCC1_8_PCH	CPU PLL
VCC1_05_PCH	PCH core
3VDUAL	3VDUAL
DDR15V	DRAM voltage
DDRVTT	DRAM Terminatio
VREF_CA_AVREF_CA_B	DRAM Address Ref
VREF_DQ_AVREF_DQ_B	DRAM Data Ref

散熱模組料號：

8IBP：  
1.12SP2-01A001-Y1R/Y2R  
2.12SP2-01A001-Z1R/Z2R  
(HIBRID模組)包材階

	3 pin FAN control	4 pin FAN control	FAN speed	Controller
CPU FAN	FANPWM1	FANPWM3	FANIO1	IT8720
	ICH_FAN_PWM2	ICH_FAN_PWM0	ICH_FAN_TACH0	PCH
SYS FAN	FANPWM2	N/A	FANIO2	IT8720
	ICH_FAN_PWM1	N/A	ICH_FAN_TACH1	PCH
PWR FAN	N/A	N/A	FANIO3	IT8720
			ICH_FAN_TACH2	PCH

Gigabyte Technology			
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