

SHEET

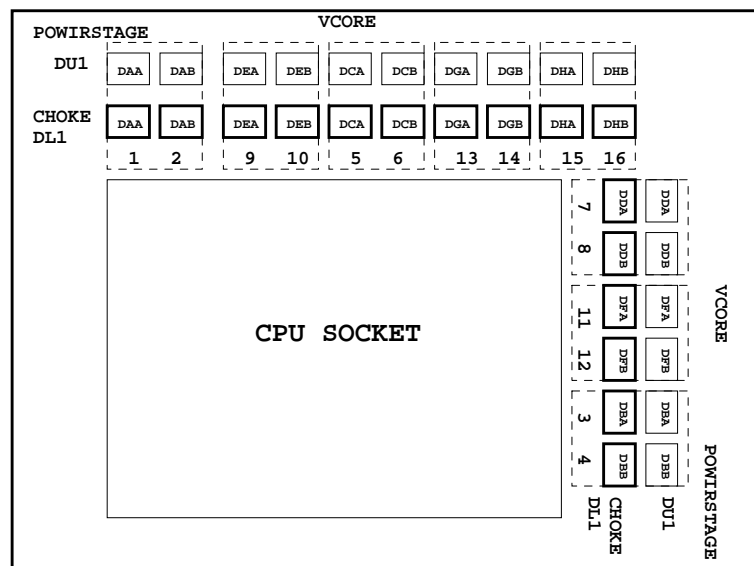
TITLE

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

SHEET

TITLE

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



Gigabyte Technology

Title		
Cover Sheet		
Size	Document Number	Rev
Custom	GA-Z87X-UD5H	1.01
Date: Thursday, March 21, 2013		
Sheet 1 of 50		

GA-Z87X-UD5H
Component value change history

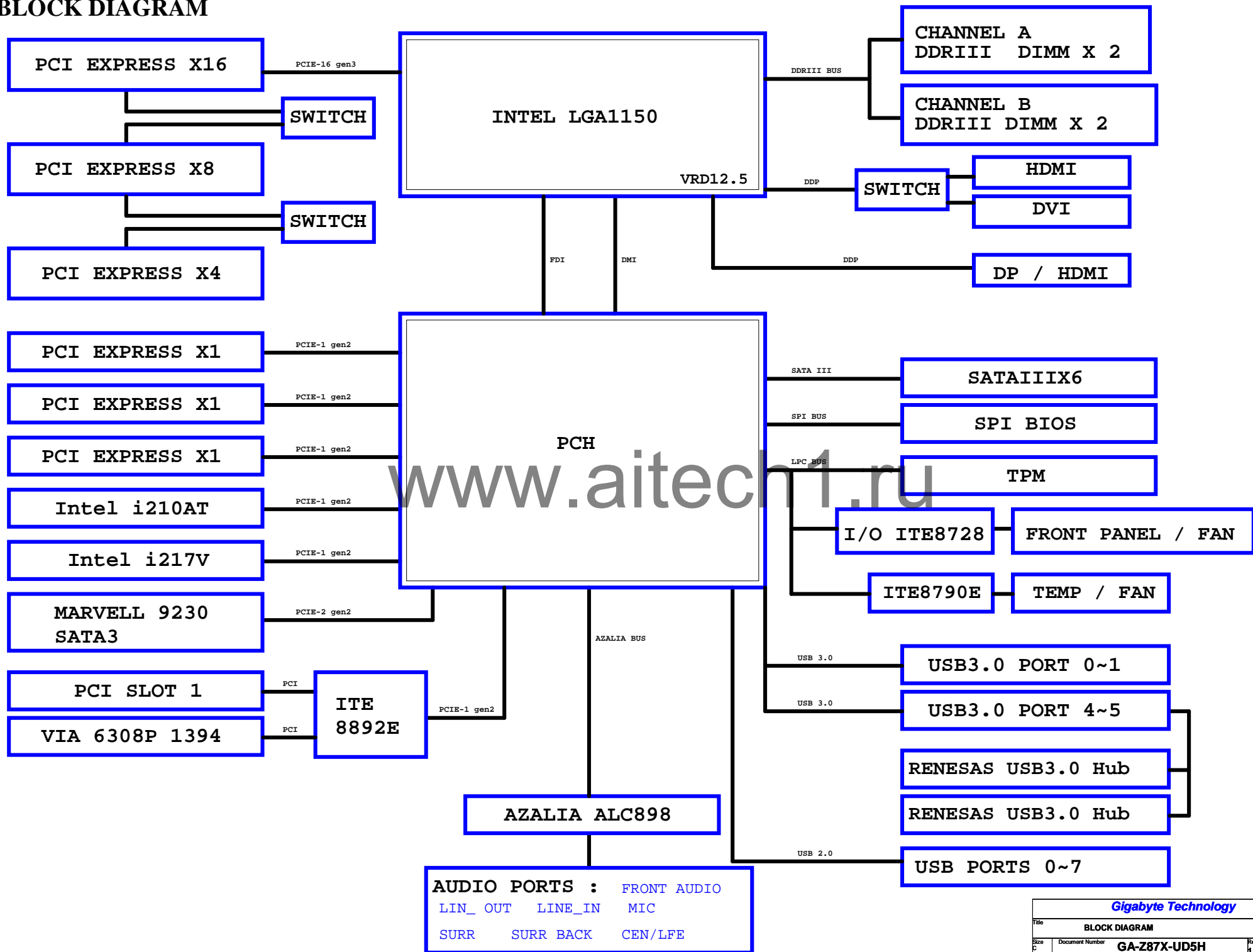
Data	Change Item	Reason
2012/11/28	9M68TXUSH-00-01 BOM	First Release
	9M68TXUSH-00-02 BOM	
2013/01/03	UL->BNT4LVC1008/SOT23-5/X,Add CHAC2,CHAC3,CHASD1 VIO->VCCORE(V2N5) , VCCORE->VCCORE0(V2N0),Add PB4 0/6, Footprint C0603-RH,R145->8.2K/4/1/X ,CPB1->R0402-2, HAR43->100K,HAR46->324K,HAR48->100K,HAU4->RT9098B-10GSP/S08/3A/(10GL2-309018-31R_10GL2-305103-01R_10GL2-303730-01R)HCR41->169K,HCR43->100K,HCR46->324K,HCR48->100K,HCU3,HCU4->RT9018B- 18GSP/S08/3A/(10GL2-309018-31R_10GL2-305103-01R_10GL2-303730-01R),R144->8.2K,R145->8.2K/4/1,BC71-> >1uF,Footprin Change to C0402-2PFB4->HR249,ADD NR250, 603570-AGE],HAR46,HCR46->32.4K,Addr->72h,HAR40->1.78E,DAR41 ->4.02K,DAR40 ->3.4K,DAR44 ->3.4K,DAL1 Footprint change to CHOKOUS-R50M,Add CS 2PIN for OC-SPI,Del Net N_-SPI_WP1,N_-SPI_WP0,PCH AN21PIN HCR55->HCR59,Add R1R27 2.5LWVEL->2.5LWVEL,HBC4->100u/OS/D/6.3V/66/30m,BC1-> >100u/OS/D/6.3V/66/30m,UAMC4,UAMC5->100u/OS/D/16V/66/30m,HARC2,HARC1-> >100u/OS/D/6.3V/66/30m,HCB2C,HCB21->100u/OS/D/6.3V/66/30m,CBC5 -> >100u/OS/D/6.3V/66/30m,CBC7,CBC6,CBC10,CBC8,CBC9,CBC11->100u/OS/D/6.3V/66/30m,CBC3,CBC4,CBC1,CBC2-> >100u/OS/D/6.3V/66/30m,UAMC4,UAMC5,UAC1->100u/OS/D/6.3V/66/30m,UEC1->100u/OS/D/6.3V/66/30m,UEC1-> >100u/OS/D/6.3V/66/30m,HBBEC1->100u/OS/D/6.3V/66/30m,BCS->100u/OS/D/6.3V/66/30m,CBAU1,CBAU1 in,out Change_M_RIOS_B_RIOS Change to128MB,F_PANEL Footprint change to H2X10PANEL-3,F_USB1change to normal USB2.0_F_USB30_2 change to NO/OFF chapter,UADS change to BU/2*SK9/BE/ON/2.54/VA/USB/PRT/TUR180,HCCDD1 change to CHAC1,CHBC1,VCCSA_LEVEL change to DE_ME,OR45 change DE_ME,A_SHEEP_ADJ and VCC1_05_PCH_OV change,F_USB30_2 change to V-A BR 2*10K20/BE/TUR180/PINRR/ [11MH3-020210-CLR],LED,Add R1R36,R1Q9,add OC13R_B,OC14R_B,NR32->X,HAR46->100K,HAR48-> >316K,HCR46->100K,HCR48->316K,DAR83 change to 3.09K,DAR87 change to 2.375K,DAR102 change to 3.09KQ,3.09K change to 3.01K DAB83 change to 3.01KQ,DAR102 change to 3.01KQ,NetIM_-SYS_RST NR164->8.2K add NC63 ln,NetIM_DRAM_PPROK add NC64 ln,NetIO_-PFB8ST2 add GBC28 33pf,LBC2-> >100p/4/WFO/50V/J,MBC2->1n/4/X7R/50V/K,MBC47->1n/4/X7R/50V/K,wap pin HCC1 HCC2 CHASD1,del OR64,OR68,change to MCLE,MDAT,add RN1,RN2,add Net MCLE,MSDATA,add L7P1,add LAR33,add IT_PH,BCR81,BCR82,LAC22->0.047u/4/X7R/16V/K,ERP issue,LR15->X,add YU3,GW4 rename to RIOS_SW HCR23,HAC18,HCC18,HAC18,HAC50,HCC50 down size to 0603NR59->499,NR72->S10,NR8->1K,NR70->1K,SWAP USB3_1 HCR23,HCR25,HCR28,HCR31,HCR36,HCR39,HCR42,HCR30->X,OC Match D* DB9 change to 1.3K,D* PCB change to 9M68TXUSH-00-02A BOM	
2013/01/28	R44 change to 0 Ohm->X,DART14.15,DART3.4,DART7.8,DART9.10,HAR29->X,HAR28,HCR29->X,HCR28, ,R1R27 change to SHORT PAD,LQ1 PIN1 add LBC33,Q11 ,add HCR83,HCR80,add HCR84,HCR85,add CHAQ1,CHAQ2,CBQ1,CBQ2 circuit,HCR84,HCR85,Del Net BC_GP85,B NR136->X,FOOTPRINT->H2X10PANEL-NEW,Add HR75,HR76 to I/O GP27,HAC9,HCC9->X,HAR2,HCR2 to 0Ohm,Add OR1 DVI,HDMI->SWITCH,D_P,HDMI to CPU,add DPHD_GP85 GP10,addSH_GP27 NR19,HAC4,HAC3->1uF,HAR9,HAR8->620,HAR7,HAR6->2.4K NR25->1K,AS0992CIL/SOT23-6->AS099-046/SOT23-6L,G1 GP81 and N_TEMP_ALARM to change,Add DAR1,PW_SW- Swap H03,HSD1,HSD2, HUI,HU2,HU3->HXF,HR18,HR20,HR40->10K,HR32->X, HSD1,HSD2,HSD3 PCH_HS->HEAT,MOS_H51,MOS_H52->128P2-PTE875-01R_128P2-PTE875-02R,NX2,BCX1->32.768K/12.5p/20ppm/TF24/ ,Q56,Q56,Q57->MMHT2222A/SOT23/600mA/40/(101TI-02222-11R),BIOS_SW,SB->SW/1/R/DIP/[11NH7-110003- 9M68TXUSH-00-03A BOM	
2013/02/21	Add Net AMP_CODEC,AMP_CODEC1,ADD Headphone circuit,add GP84,ADD HCR12,OR63,OR17,OR4,OR2,HR32,Add HR6,H88 LQ41150->128K-0F0001-61R,MOS_H51,MOS_H52,PCH_HS,Del 128P2-PTE875-02R, U180->Add 11DL1-020070-41R,A PCH->R0828287/S,CR256->X,CR320,Add MPD+,Del FPQ5,FPB4,Del NQ8 Circuit,OR171,SH_GP27,HUB USB 2.0 fro CHAK1,CHBR1->49.9K,CHAS5,CHBR5->X,CHANGE_SELX to control CTL1_X,H88,HR32,HR26,HR61->X,Add HBC1,HBC2 R126,Q10,R127,Q33,OR32->X,F_PANEL->11NH3-000210-F1R,BIOS_SW,SB,->11NH7-110003-21R,CPU_FAN->FAN/1*4/30W/A3/PA66 9M68TXUSH-00-10A BOM	
2013/03/14	Modify Diagram,CQ25 to PCH GPIO22,CQ25->X,VCCIOA_L->VIOA,VCCORE->VCCORE0,IMC->VGA,Add CHAR15,CHBR15,C HAR13,HAQ1,HAQ2,HAR21,HCR13,HQ1,HQ2,HCR21->X,Add OR83,OR61,OR60,OR85,OR64,OR56,Add MAQ5,MAR46,HAR Add Q1 HR13,HR14,HR15,HR16,HR17,R237,Add NQ8/X,NR177/X,NR175/X,CR247->X,Add HAR11,HCR11,Add NR178 LARS02,LARS02,LARS03,LARS01,LARS02,LARS03->X,R1Q1,R1Q2,R1Q3,R1Q4->PPAP,Add DAR104,DAR105,DAR106,DAR107 Add Q12,R12,R13,R14,C38,Add DAD1 USB3 Hub implifie Rename Net PCH_USB3.1->>PCH_USB3.0,PCH_USB3.2->>PCH_USB3.1,PCH_USB3.3->>PCH_USB3.4,PCH_USB3.4->>PCH_USB3.5 Audio POP GPIO change to IO GP17,THERM change to IO GP27,Rename NX2-SHT->NX2,BCX1-SHT->BCX1,KB_USB HCU1 USB3.2 changeHCU2->108P2-118790-20R,Swap HCBRE01,HCBRE2,HCBRE3,HCBRE4,HCBRE02,HUI->ASML442/QP848, Swap HCBRE2,Add HCBRE4 to RC_GP74,ADD HR32,HR23,HR8,OC12R_B->FAULT_B,OC11B_B->FAULT_A,Del HCCR31,HCCR2, NET N_-PEX_REFCLK-> N_-PEX_REFCLK 9M68TXUSH-00-10B BOM	
2013/04/01	Rename VIO->VIO0,Change name F_USB30.1->>F_USB30.2,F_PANEL->11NH3-000210-E1R,ATX_12V_24->APW/2*4/B Add NC27,DAR2 to N_-THERMTRIP,PW_BIOS,B_BIOS->MXIC R103 Footprint->IC8-BIOS,Del R125,NET PHIFLTP-,Add HCU21,HCC22,HCC23,HCC34,HCC25,HCC26,HCC27,Rename Diagram Add PDI,DAR83,DAR87,DAR102->1.4K,C8->X,L7P1->X,IT_PH->X,UFO720210 power RT9018x2 solution 9M68TXUSH-00-10C BOM	
2013/04/10	DAR83->2.748K,DAR87->3.4KQ,DAR102->3.4KQ,DAJPI->X	

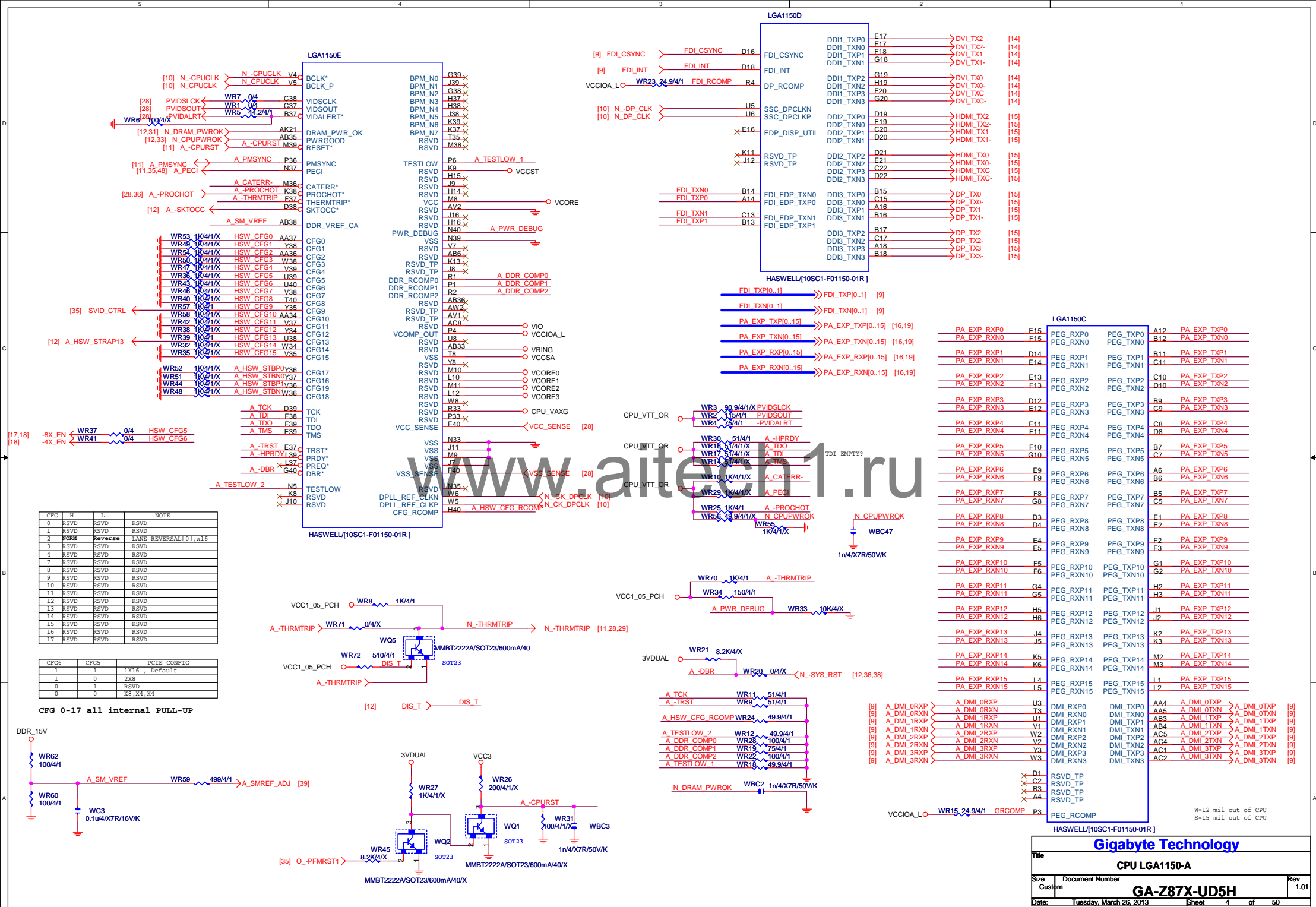
Circuit or PCB layout change

DATE	Change Item	Reason
2012/11/23	REV0.1 GA-Z87X-UD5H 0.1 gerber out	
2013/01/02	REV0.2 GA-Z87X-UD5H 0.2 gerber out	
2013/01/23	REV0.21 GA-Z87X-UD5H 0.21 gerber out	
2013/02/19	REV0.3 GA-Z87X-UD5H 0.3 gerber out HDMI/DVI layout,DOR to S87 OC Rev9.01	
2013/03/13	REV1.0 GA-Z87X-UD5H 1.0 gerber out DOR to S87 OC Rev9.03 , F_USB30.1 From PCH	
2013/03/29	REV1.01 GA-Z87X-UD5H 1.01 gerber out VIO->VIO0,F_USB30.1->>F_USB30.2,Add HCC21,HCC22,HCC23,HCC34,HCC25,HCC26,HCC27	

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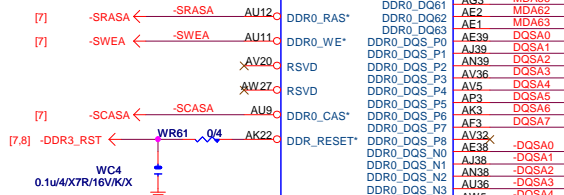
BLOCK DIAGRAM





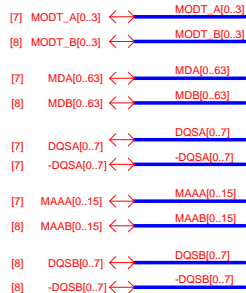
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MAAA0	AU13	DDR0_MA0	DDR0_DQ0	AD38	MDA0				
MAAA1	AV16	DDR0_MA1	DDR0_DQ1	AD39	MDA1				
MAAA2	AU16	DDR0_MA2	DDR0_DQ2	AF38	MDA2				
MAAA3	AW17	DDR0_MA3	DDR0_DQ3	AF39	MDA3				
MAAA4	AU17	DDR0_MA4	DDR0_DQ4	AD37	MDA4				
MAAA5	AW18	DDR0_MA5	DDR0_DQ5	AD40	MDA5				
MAAA6	AV17	DDR0_MA6	DDR0_DQ6	AF37	MDA6				
MAAA7	AW18	DDR0_MA7	DDR0_DQ7	AF40	MDA7				
MAAA8	AU18	DDR0_MA8	DDR0_DQ8	AH40	MDA9				
MAAA9	AT19	DDR0_MA9	DDR0_DQ9	AH39	MDA13				
MAAA10	AW11	DDR0_MA10	DDR0_DQ10	AK38	MDA10				
MAAA11	AV19	DDR0_MA11	DDR0_DQ11	AK39	MDA11				
MAAA12	AU19	DDR0_MA12	DDR0_DQ12	AH37	MDA12				
MAAA13	AY10	DDR0_MA13	DDR0_DQ13	AH38	MDA8				
MAAA14	AT20	DDR0_MA14	DDR0_DQ14	AK37	MDA14				
MAAA15	AU21	DDR0_MA15	DDR0_DQ15	AK40	MDA15				
MODT_A0	AW10	DDR0_ODT0	DDR0_DQ16	AM40	MDA17				
MODT_A1	AY8	DDR0_ODT1	DDR0_DQ17	AM39	MDA21				
MODT_A2	AW9	DDR0_ODT2	DDR0_DQ18	AP38	MDA18				
MODT_A3	AU8	DDR0_ODT3	DDR0_DQ19	AP39	MDA19				
			DDR0_DQ20	AM37	MDA20				
			DDR0_DQ21	AM38	MDA16				
			DDR0_DQ22	AP37	MDA22				
			DDR0_DQ23	AP40	MDA23				
			DDR0_ECC0	AV37	MDA25				
			DDR0_ECC1	AV32	MDA29				
			DDR0_ECC2	AU35	MDA26				
			DDR0_ECC3	AV35	MDA27				
			DDR0_ECC4	AT37	MDA28				
			DDR0_ECC5	MDA24					
			DDR0_ECC6	AU37	MDA30				
			DDR0_ECC7	AT35	MDA31				
				AW35	MDA33				
				AY6	MDA37				
				AU6	MDA34				
				AU4	MDA35				
				AW6	MDA36				
				AV6	MDA32				
				AW4	MDA38				
				AR1	MDA39				
				AR4	MDA41				
				AN3	MDA42				
				AN4	MDA43				
				AR2	MDA44				
				AR3	MDA40				
				AN2	MDA46				
				AN1	MDA47				
				AL1	MDA49				
				AL4	MDA53				
				AJ3	MDA50				
				AJ4	MDA51				
				AL2	MDA52				
				AL3	MDA48				
				AJ2	MDA54				
				AJ1	MDA55				
				AG1	MDA57				
				AG4	MDA61				
				AE3	MDA58				
				AE4	MDA59				
				AG2	MDA60				
				AG3	MDA56				
				AE2	MDA62				
				AE1	MDA63				
				AE39	DQSA0				
				AJ39	DQSA1				
				AN39	DQSA2				
				AV36	DQSA3				
				AV5	DQSA4				
				AP3	DQSA5				
				AK3	DQSA6				
				AF3	DQSA7				
				AV32	DQSA0				
				AE38	DQSA1				
				AJ38	DQSA2				
				AN38	DQSA3				
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				AW5	DQSA5				
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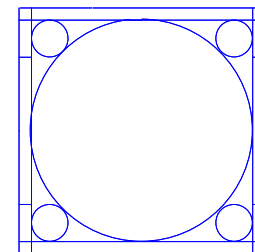


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MAAB0	AL19	DDR1_MA0	DDR1_DQ0	AE34	MDB0				
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MAAB2	AM22	DDR1_MA2	DDR1_DQ2	AG35	MDB2				
MAAB3	AM23	DDR1_MA3	DDR1_DQ3	AH35	MDB3				
MAAB4	AP23	DDR1_MA4	DDR1_DQ4	AD34	MDB4				
MAAB5	AL23	DDR1_MA5	DDR1_DQ5	AD35	MDB5				
MAAB6	AY24	DDR1_MA6	DDR1_DQ6	AG34	MDB6				
MAAB7	AV25	DDR1_MA7	DDR1_DQ7	AH34	MDB7				
MAAB8	AU25	DDR1_MA8	DDR1_DQ8	AL34	MDB8				
MAAB9	AW25	DDR1_MA9	DDR1_DQ9	AL35	MDB9				
MAAB10	AP18	DDR1_MA10	DDR1_DQ10	AK31	MDB10				
MAAB11	AY25	DDR1_MA11	DDR1_DQ11	AL31	MDB11				
MAAB12	AV26	DDR1_MA12	DDR1_DQ12	AK34	MDB12				
MAAB13	AR15	DDR1_MA13	DDR1_DQ13	AK35	MDB13				
MAAB14	AV27	DDR1_MA14	DDR1_DQ14	AK32	MDB14				
MAAB15	AY28	DDR1_MA15	DDR1_DQ15	AL32	MDB15				
			DDR1_DQ16	AN34	MDB17				
			DDR1_DQ17	AP34	MDB21				
			DDR1_DQ18	AN31	MDB19				
			DDR1_DQ19	AP31	MDB23				
			DDR1_DQ20	AN35	MDB20				
			DDR1_DQ21	AP35	MDB16				
			DDR1_DQ22	AN32	MDB18				
			DDR1_DQ23	AP32	MDB22				
			DDR1_DQ24	AM29	MDB25				
			DDR1_DQ25	AM28	MDB28				
			DDR1_DQ26	AR29	MDB27				
			DDR1_DQ27	AR28	MDB30				
			DDR1_DQ28	AL29	MDB24				
			DDR1_DQ29	AL28	MDB29				
			DDR1_DQ30	AP29	MDB26				
			DDR1_DQ31	AP28	MDB31				
			DDR1_DQ32	AR12	MDB32				
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			DDR1_DQ39	AR9	MDB45				
			DDR1_DQ40	AP9	MDB41				
			DDR1_DQ41	AR6	MDB47				
			DDR1_DQ42	AP6	MDB43				
			DDR1_DQ43	AR10	MDB44				
			DDR1_DQ44	AP10	MDB40				
			DDR1_DQ45	AR7	MDB46				
			DDR1_DQ46	AP7	MDB42				
			DDR1_DQ47	AM9	MDB52				
			DDR1_DQ48	AM9	MDB53				
			DDR1_DQ49	AL6	MDB50				
			DDR1_DQ50	AL7	MDB55				
			DDR1_DQ51	AM10	MDB48				
			DDR1_DQ52	AL10	MDB49				
			DDR1_DQ53	AM6	MDB54				
			DDR1_DQ54	AM7	MDB51				
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			DDR1_DQ57	AE7	MDB59				
			DDR1_DQ58	AE7	MDB63				
			DDR1_DQ59	AJ8	MDB66				
			DDR1_DQ60	AJ7	MDB57				
			DDR1_DQ61	AF6	MDB58				
			DDR1_DQ62	AF7	MDB62				
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			DDR1_DQ65	AP33	DQSB2				
			DDR1_DQ66	AN28	DQSB3				
			DDR1_DQ67	AN12	DQSB4				
			DDR1_DQ68	AP8	DQSB5				
			DDR1_DQ69	AL8	DQSB6				
			DDR1_DQ70	AG7	DQSB7				
			DDR1_DQ71	AN25					
			DDR1_DQ72	AF34	DQSB0				
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			DDR1_DQ74	AN33	DQSB2				
			DDR1_DQ75	AN29	DQSB3				
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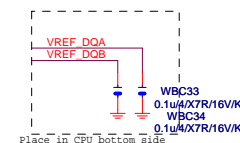
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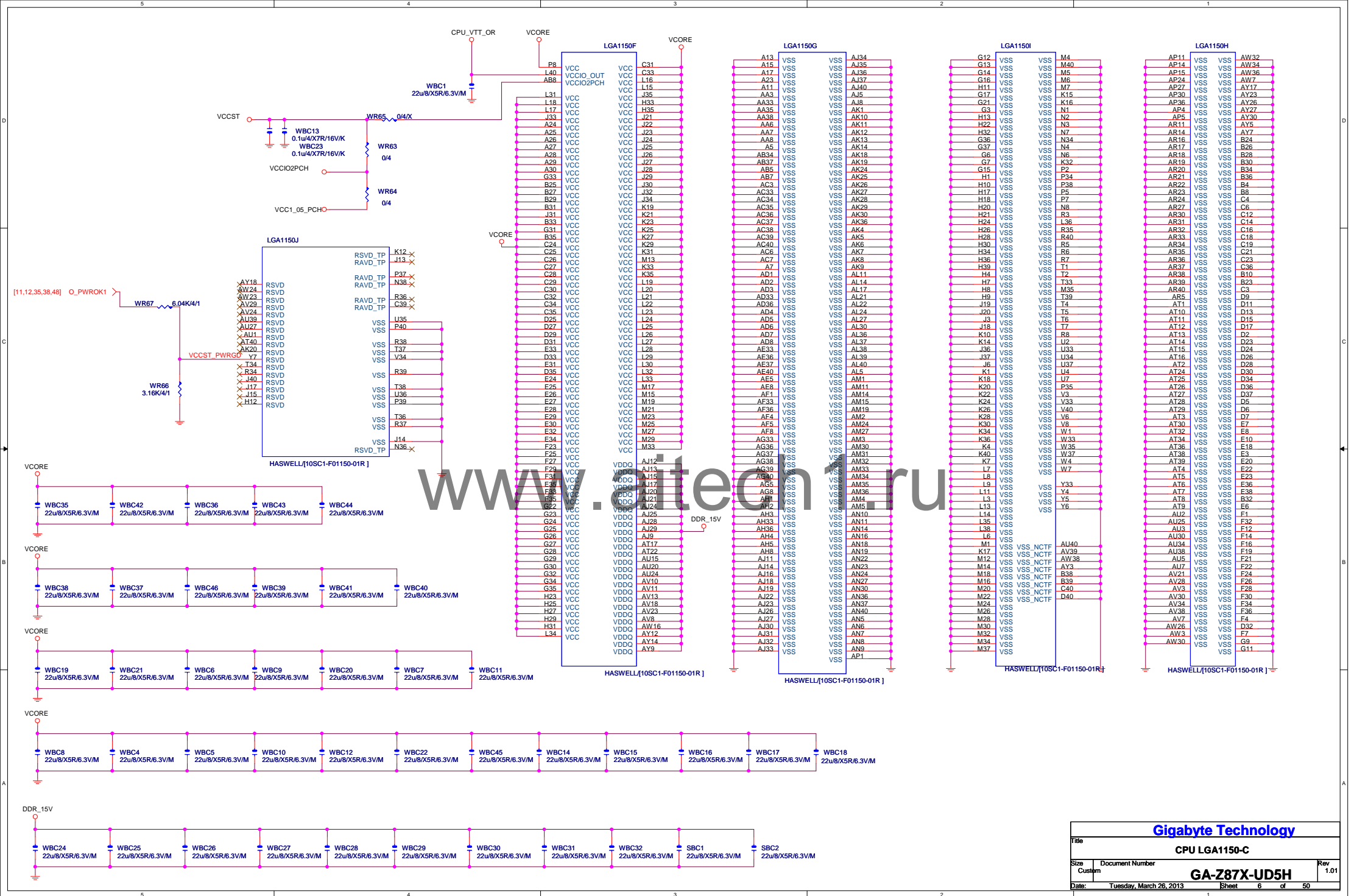


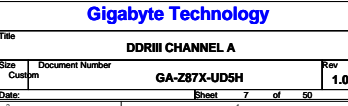
LGA1150
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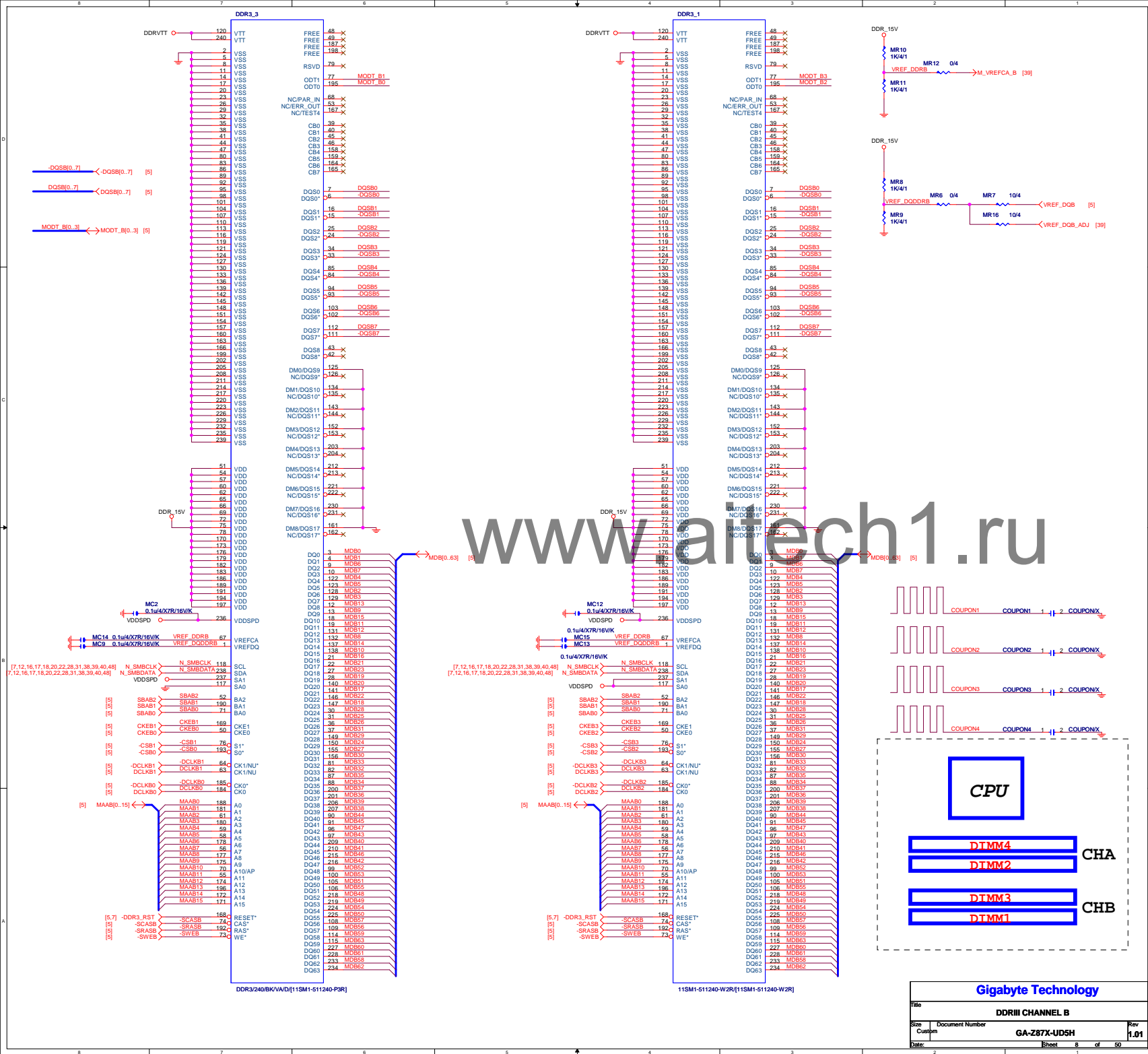


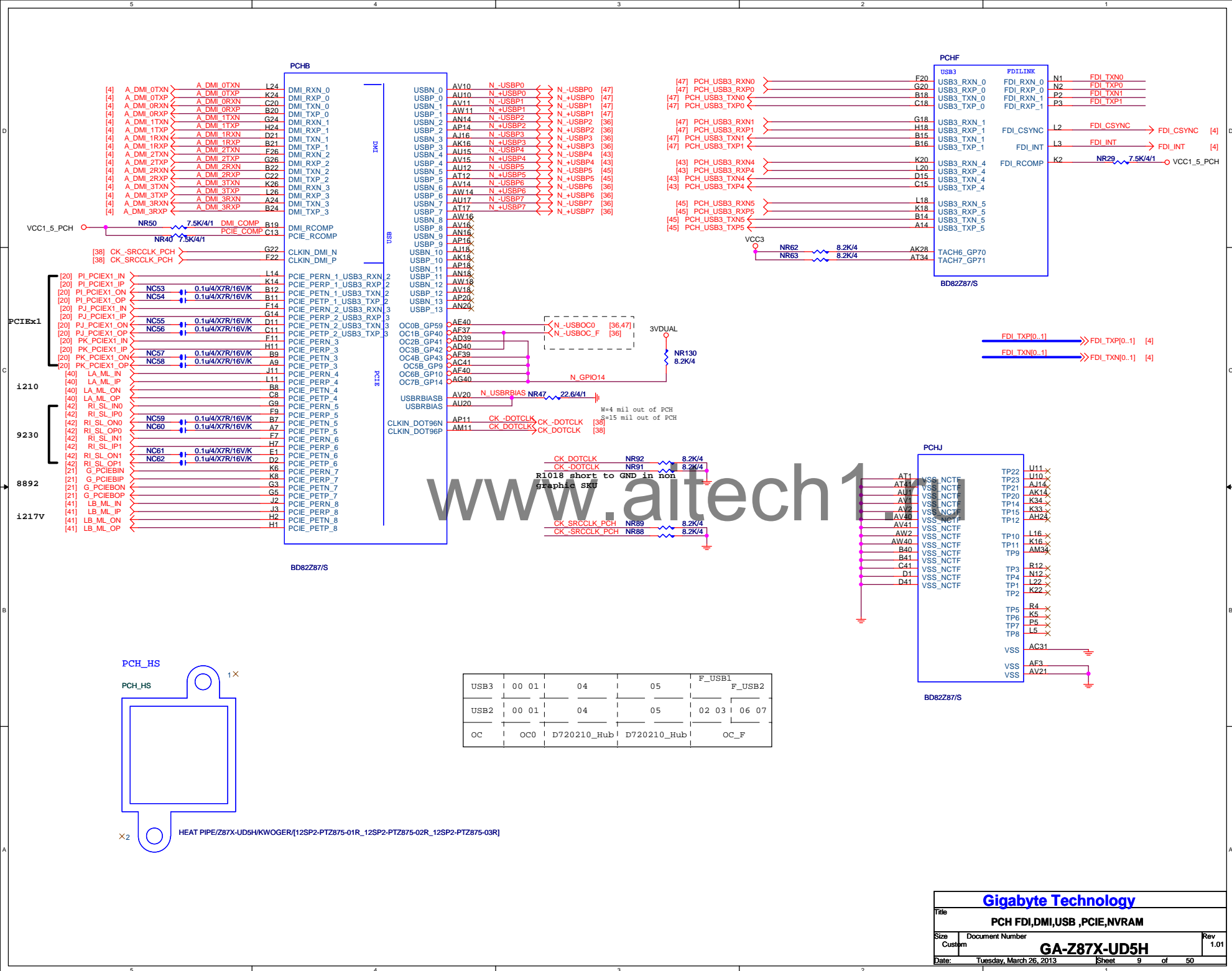
Need check the new CPU ME

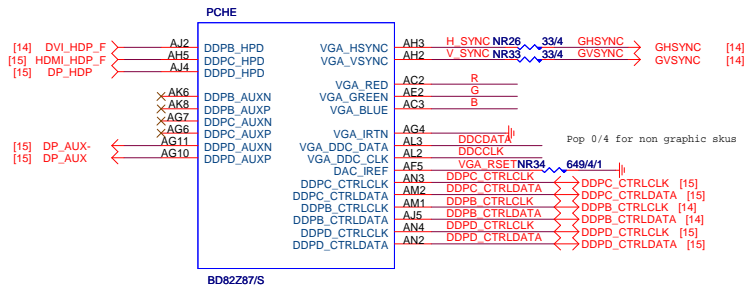




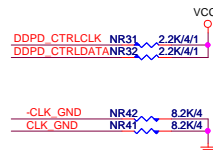




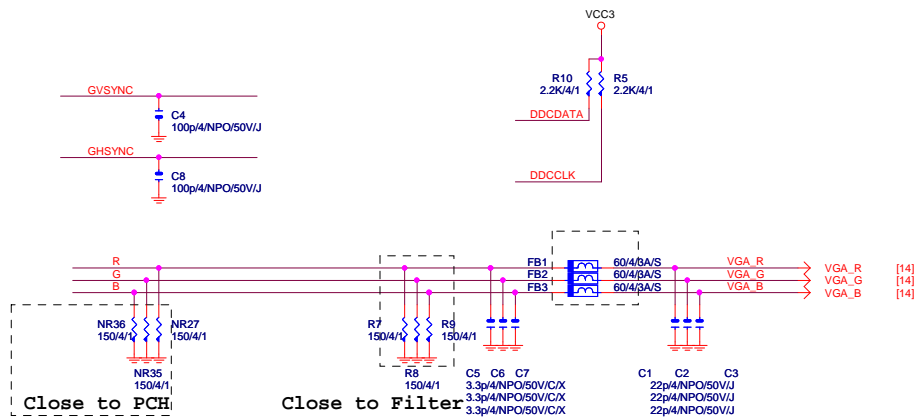
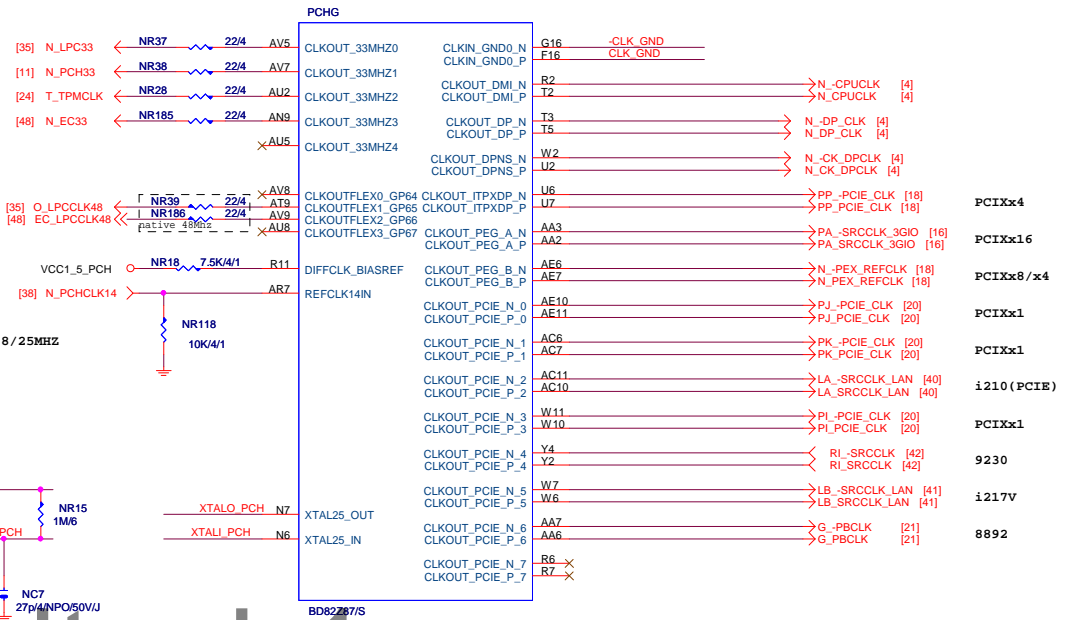
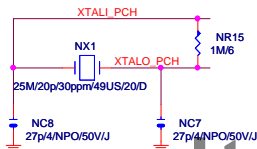


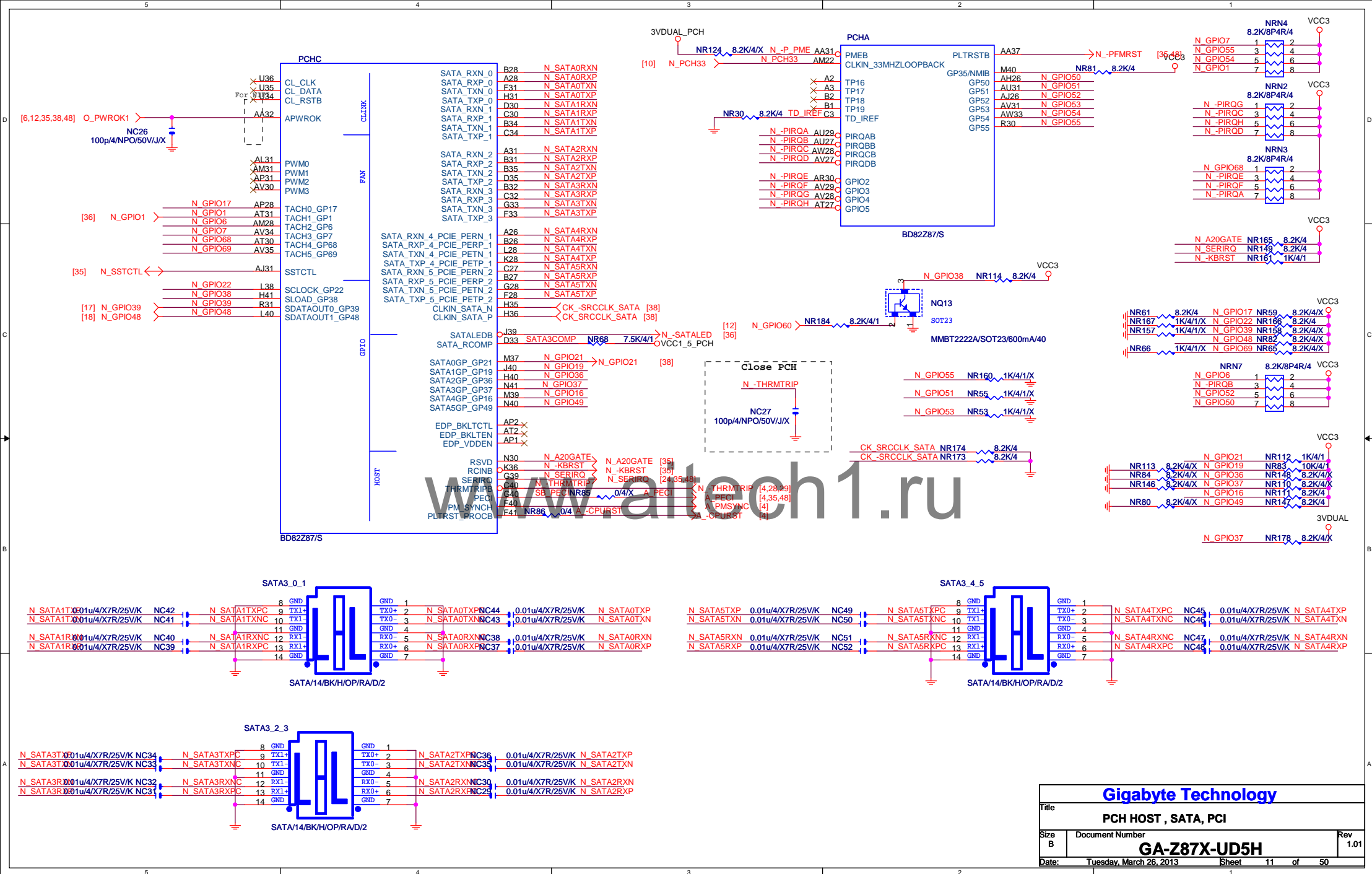


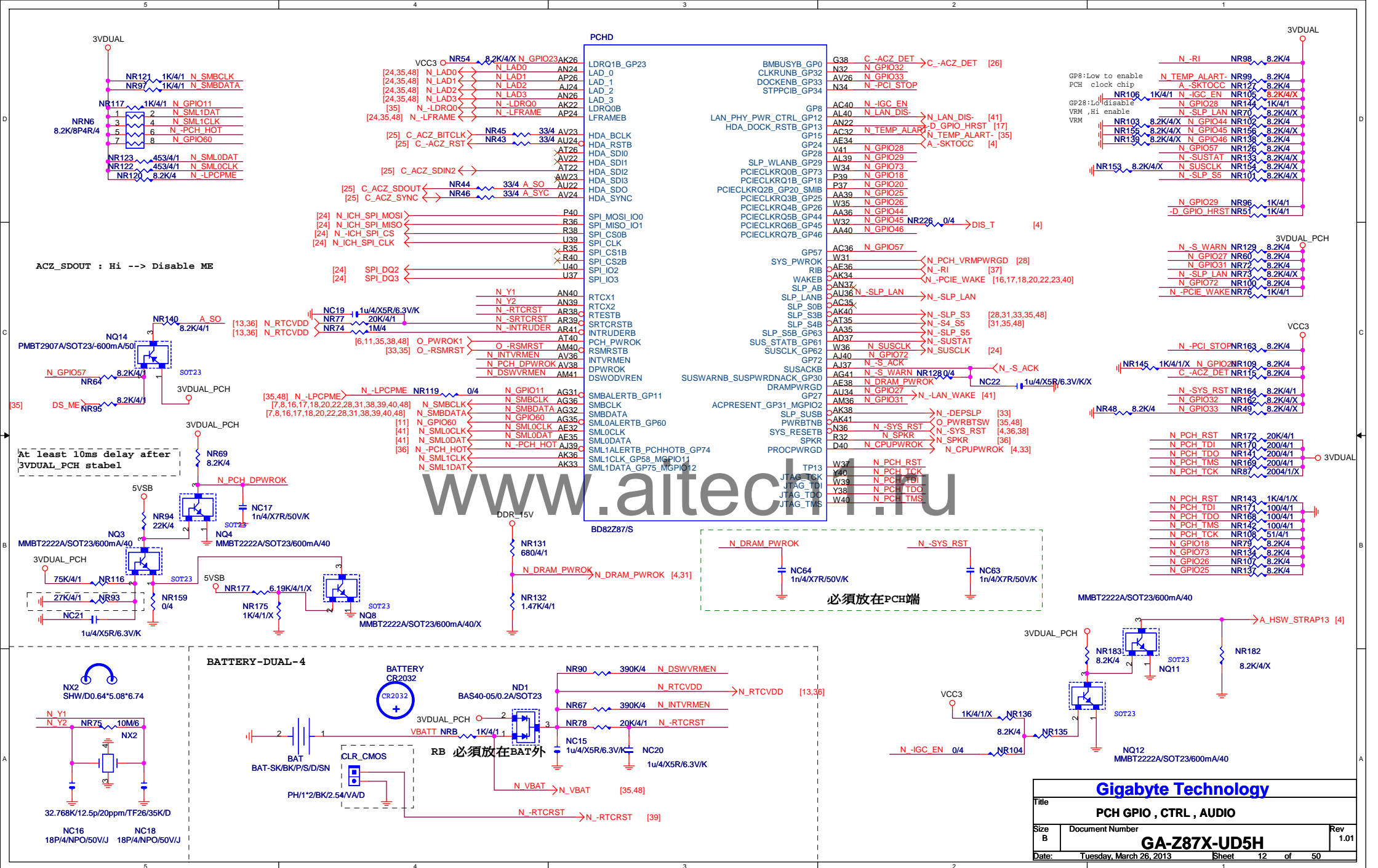
DDP B : DVI / HDMI
 DDP C : HDMI
 DDP D : DP

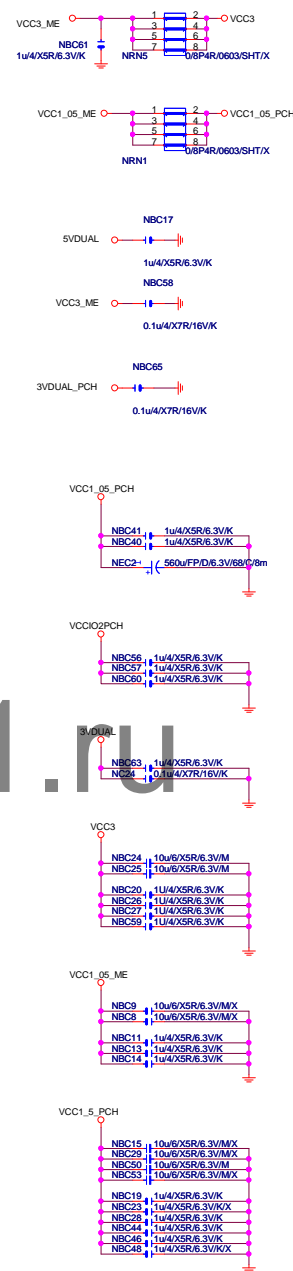


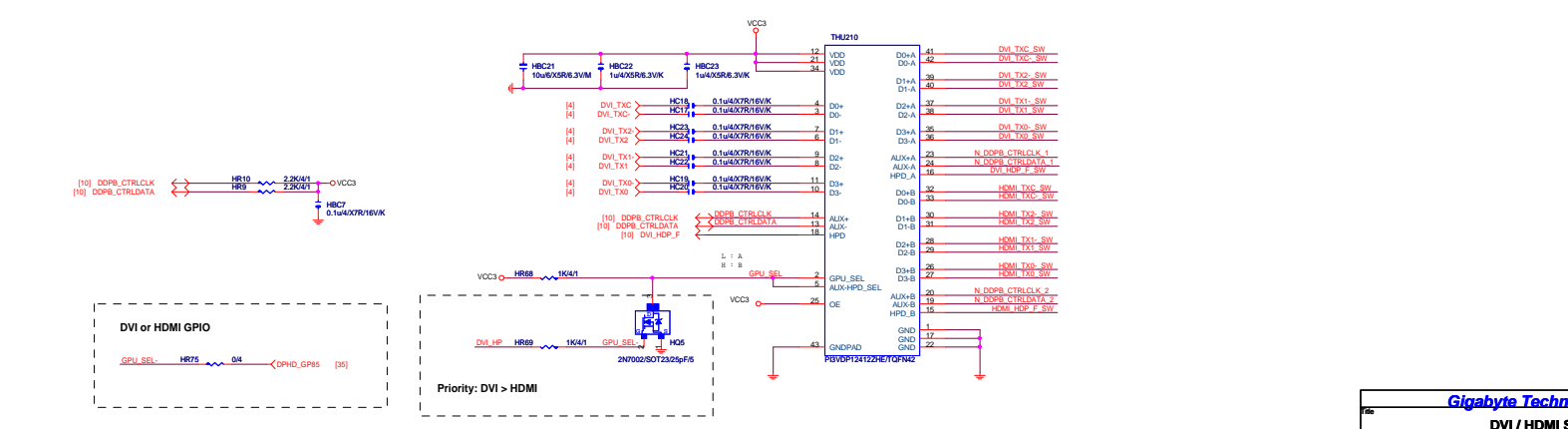
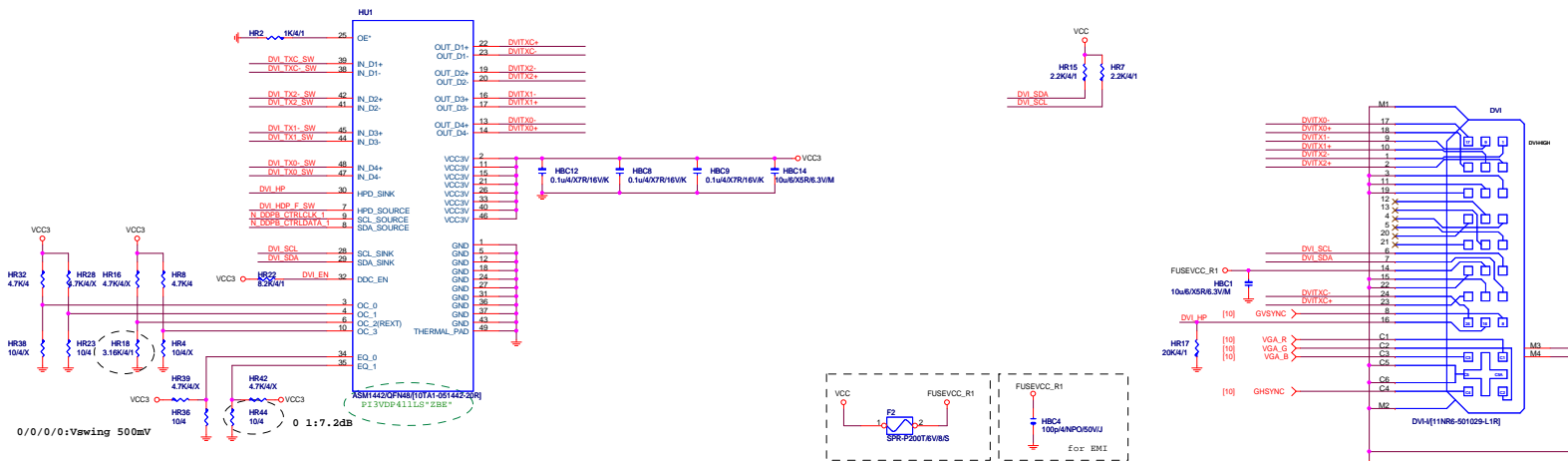
Flex1,3 :
 27/14/24/48/25MHZ

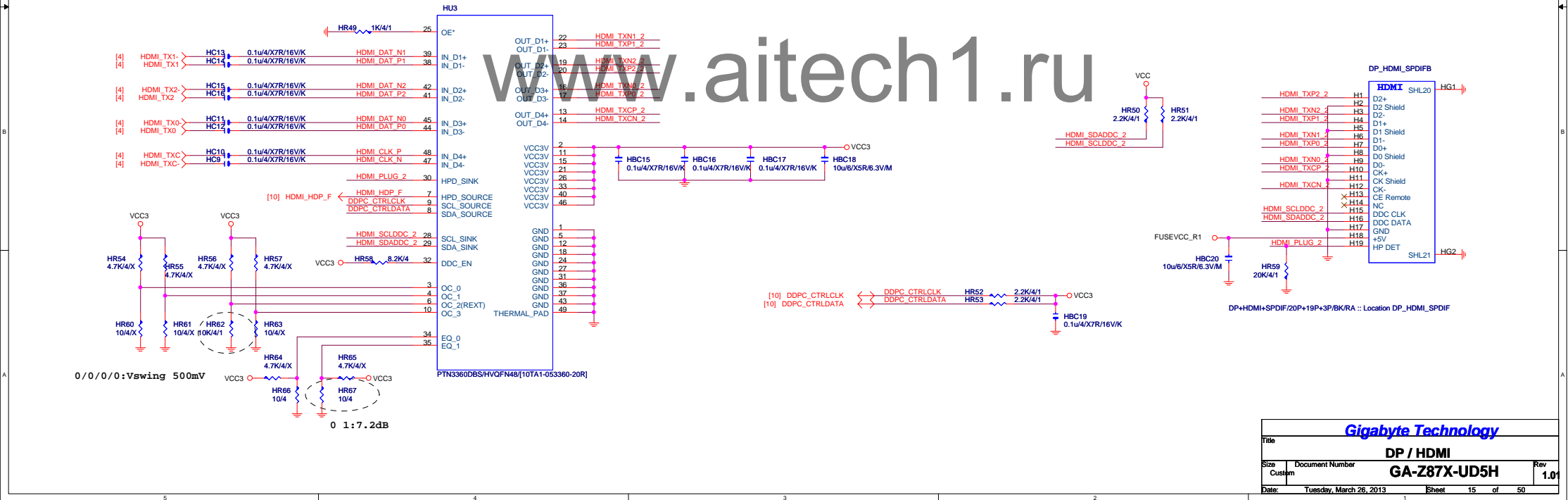
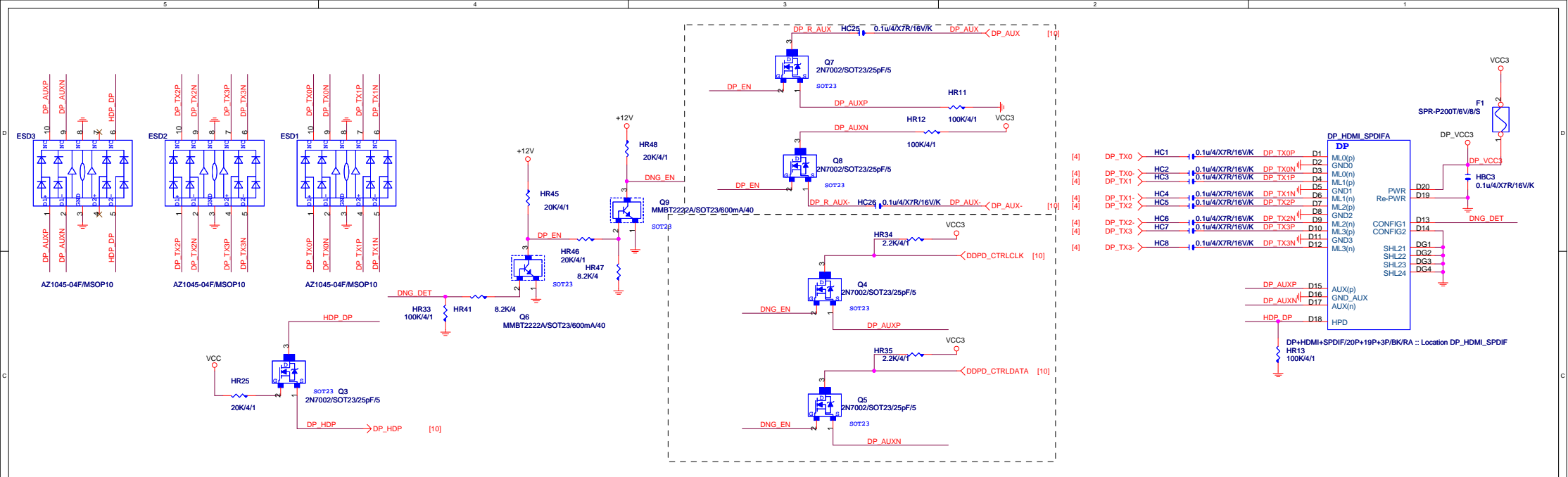


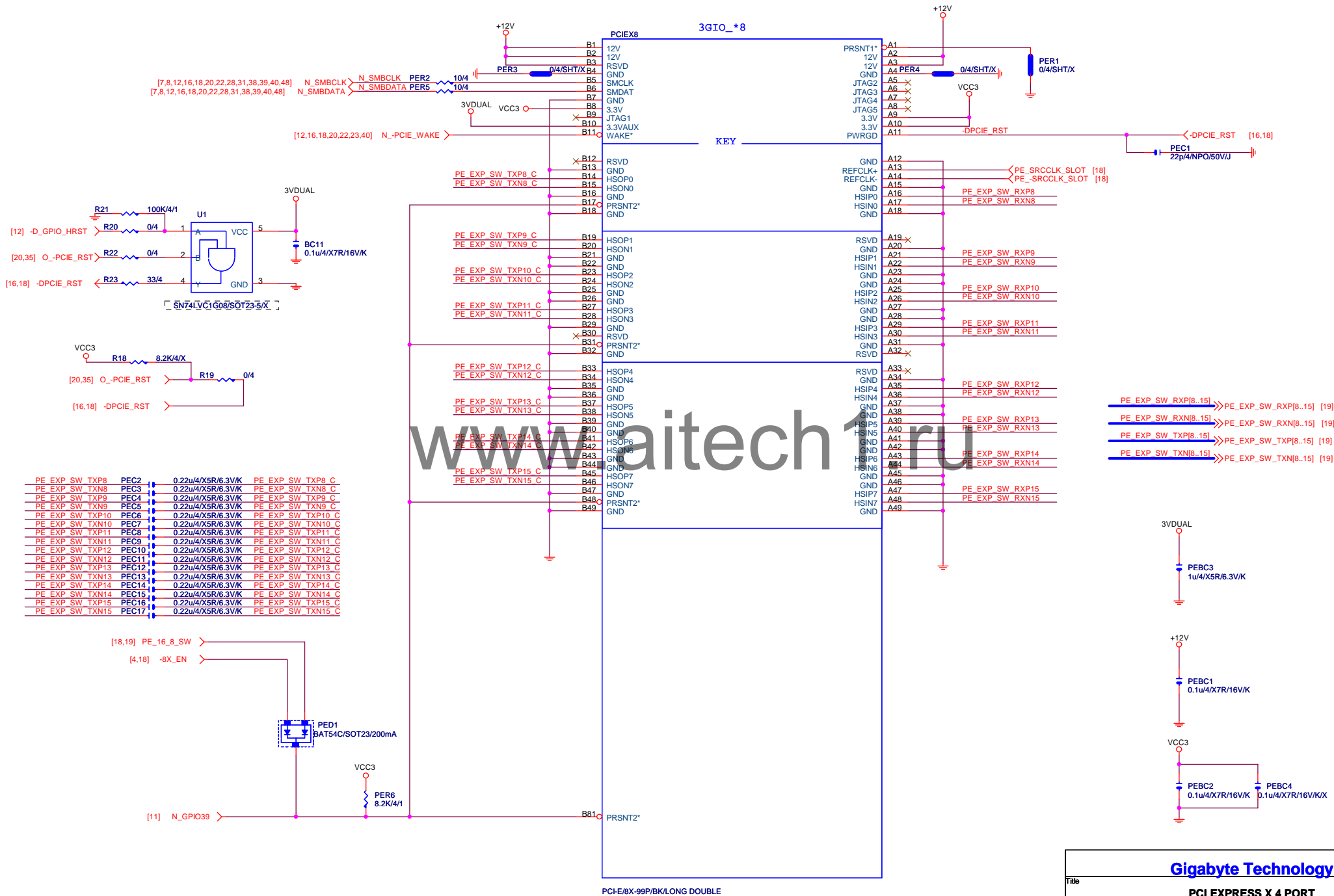


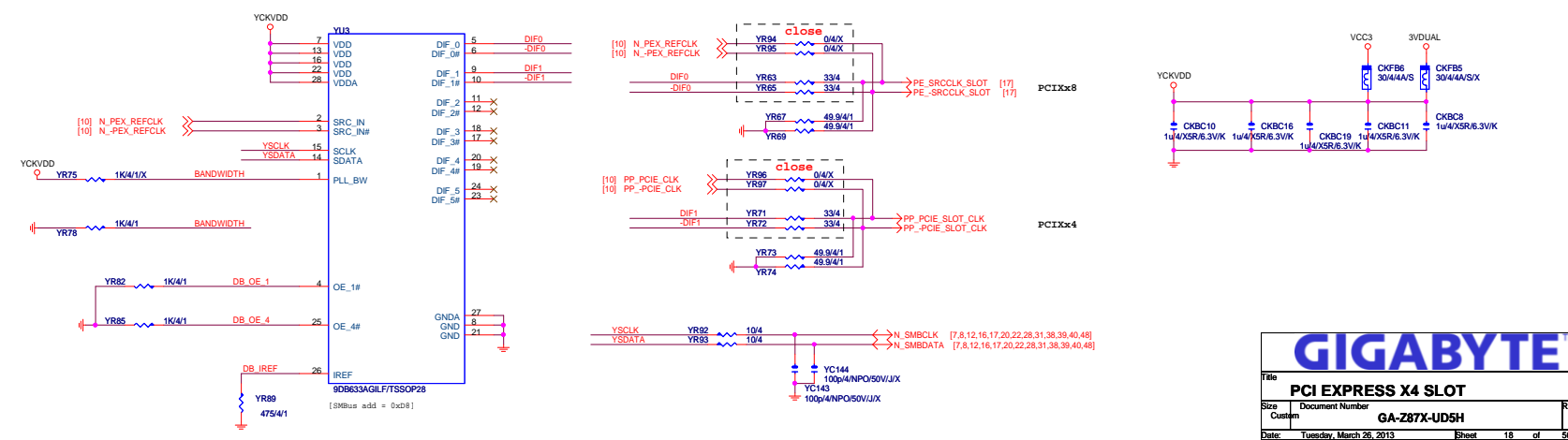
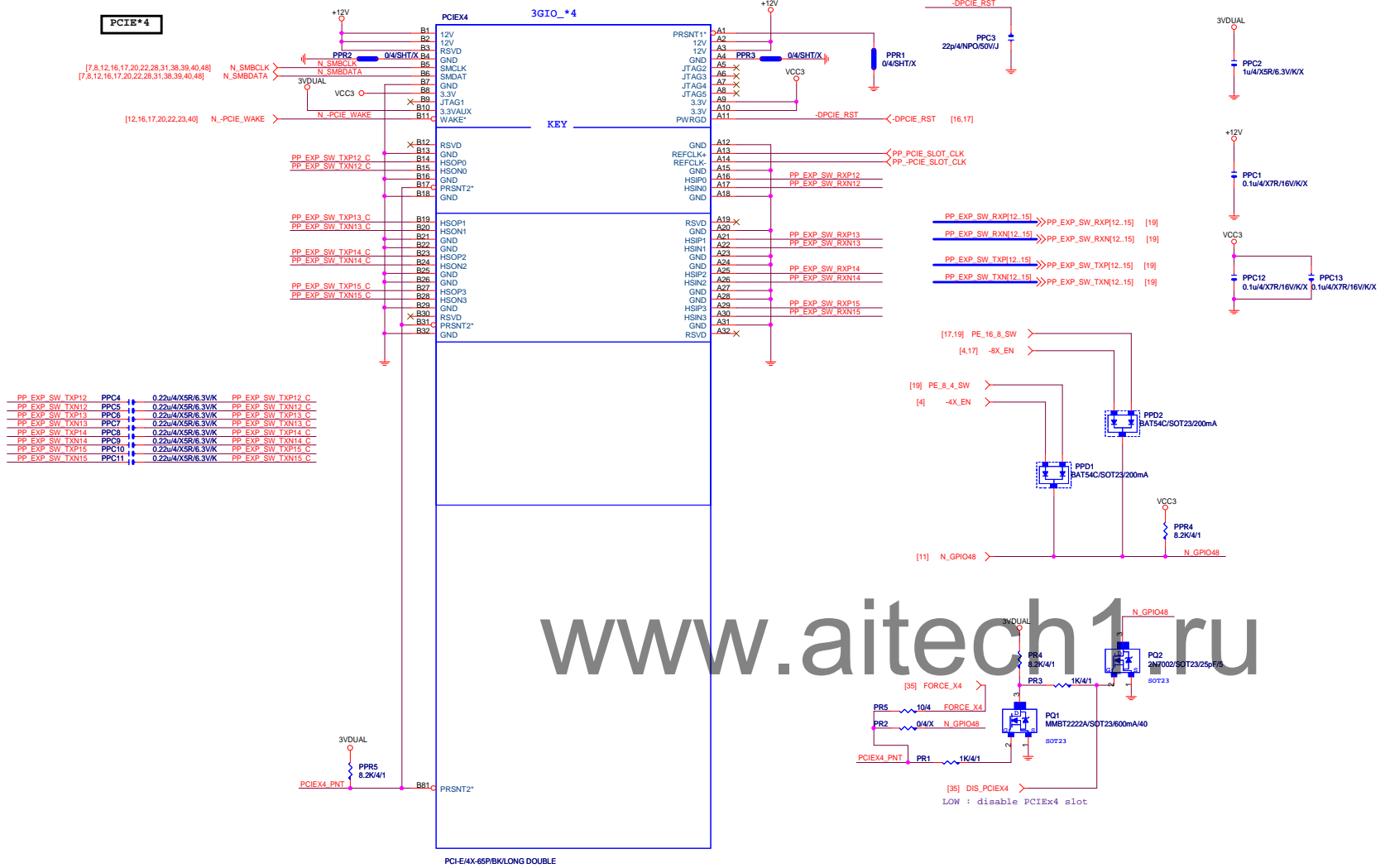


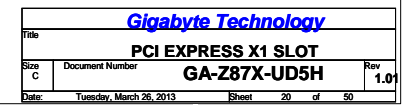
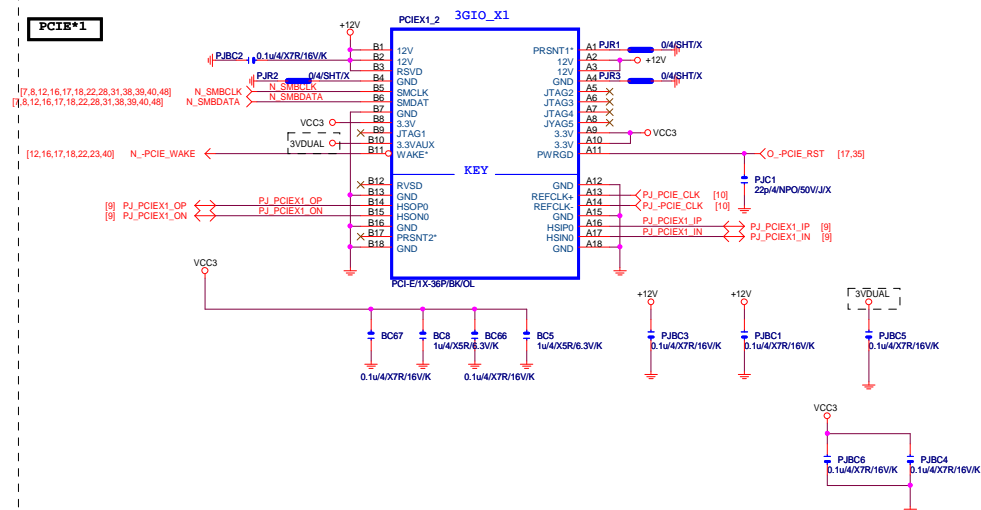


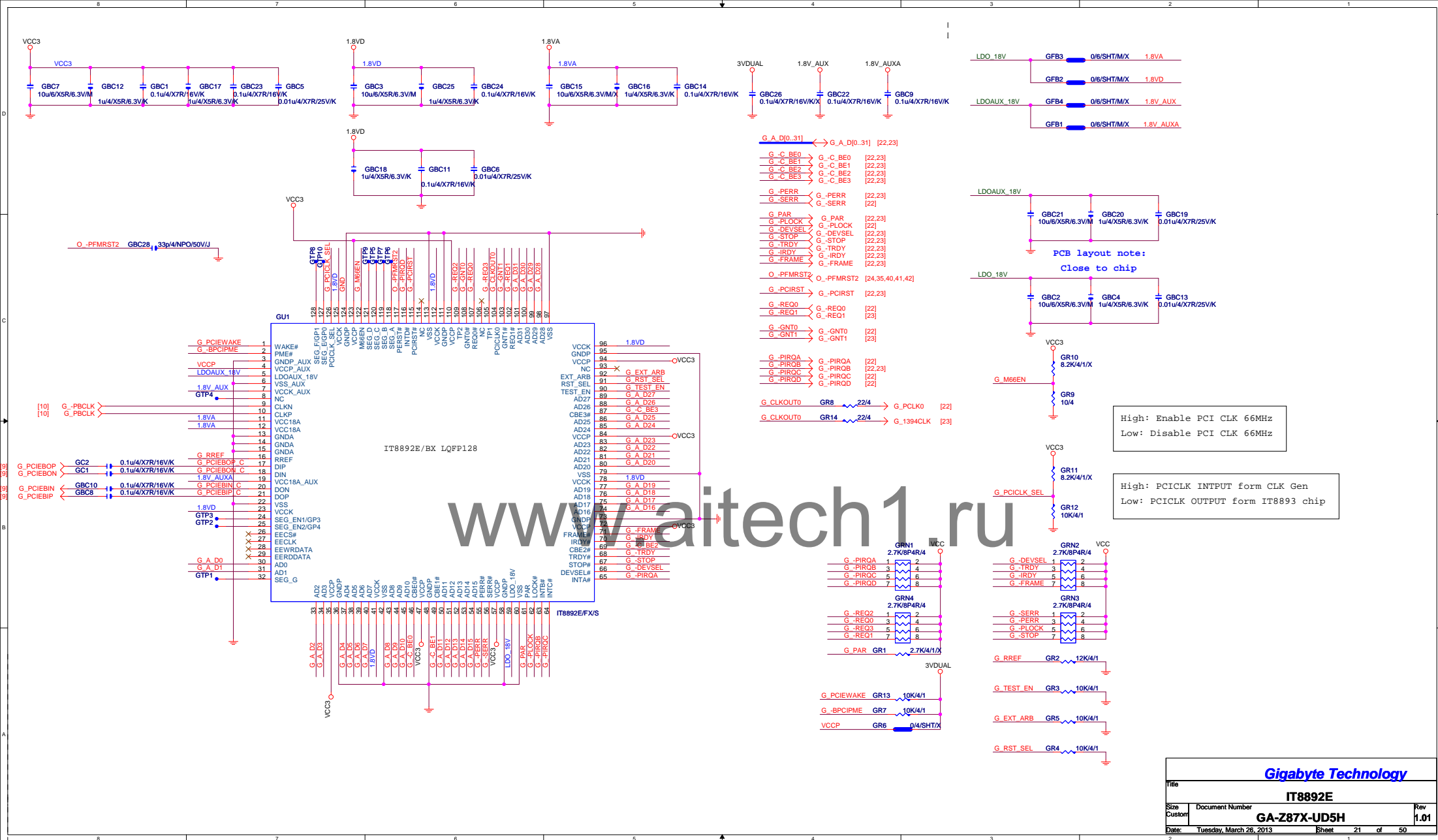




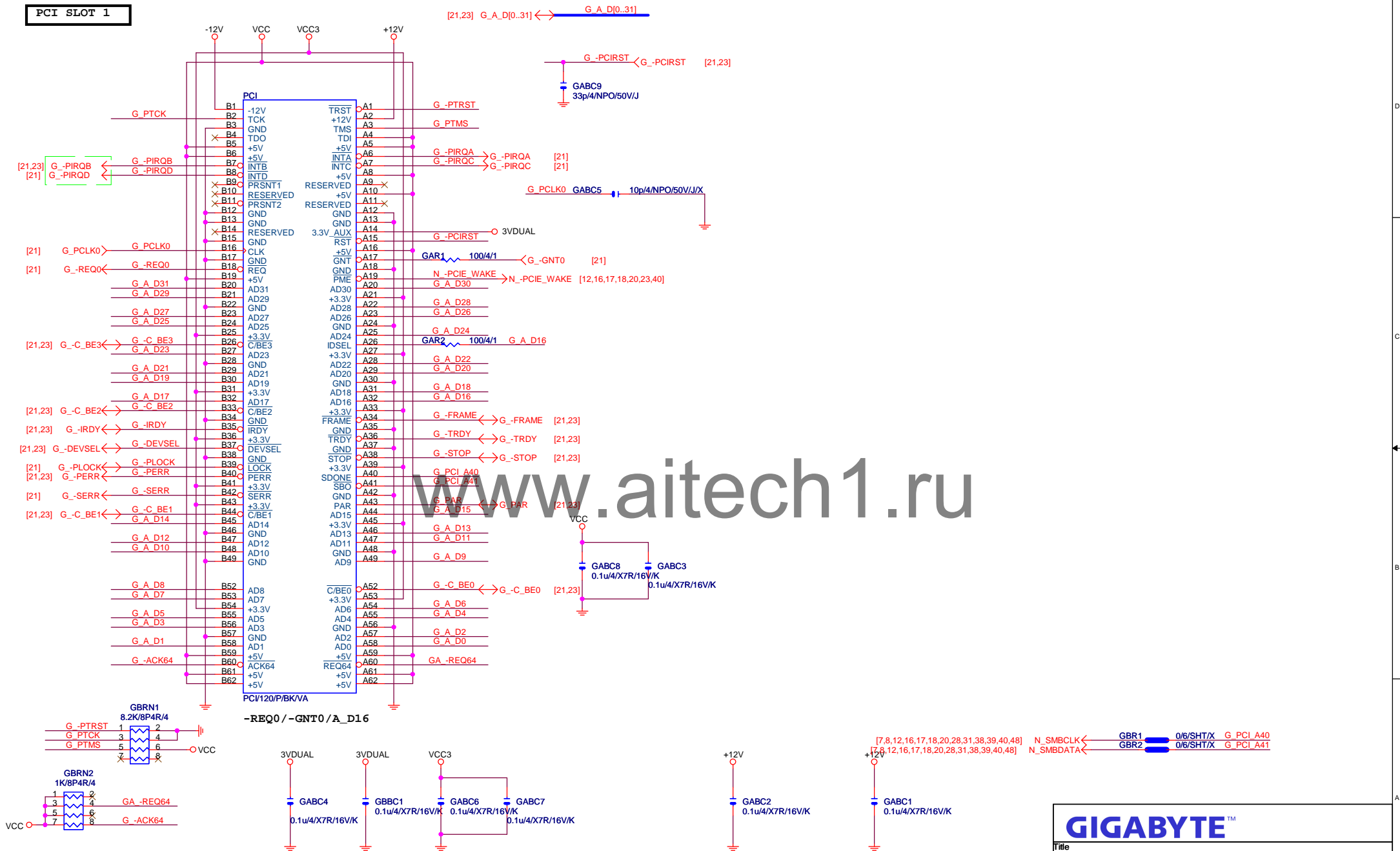


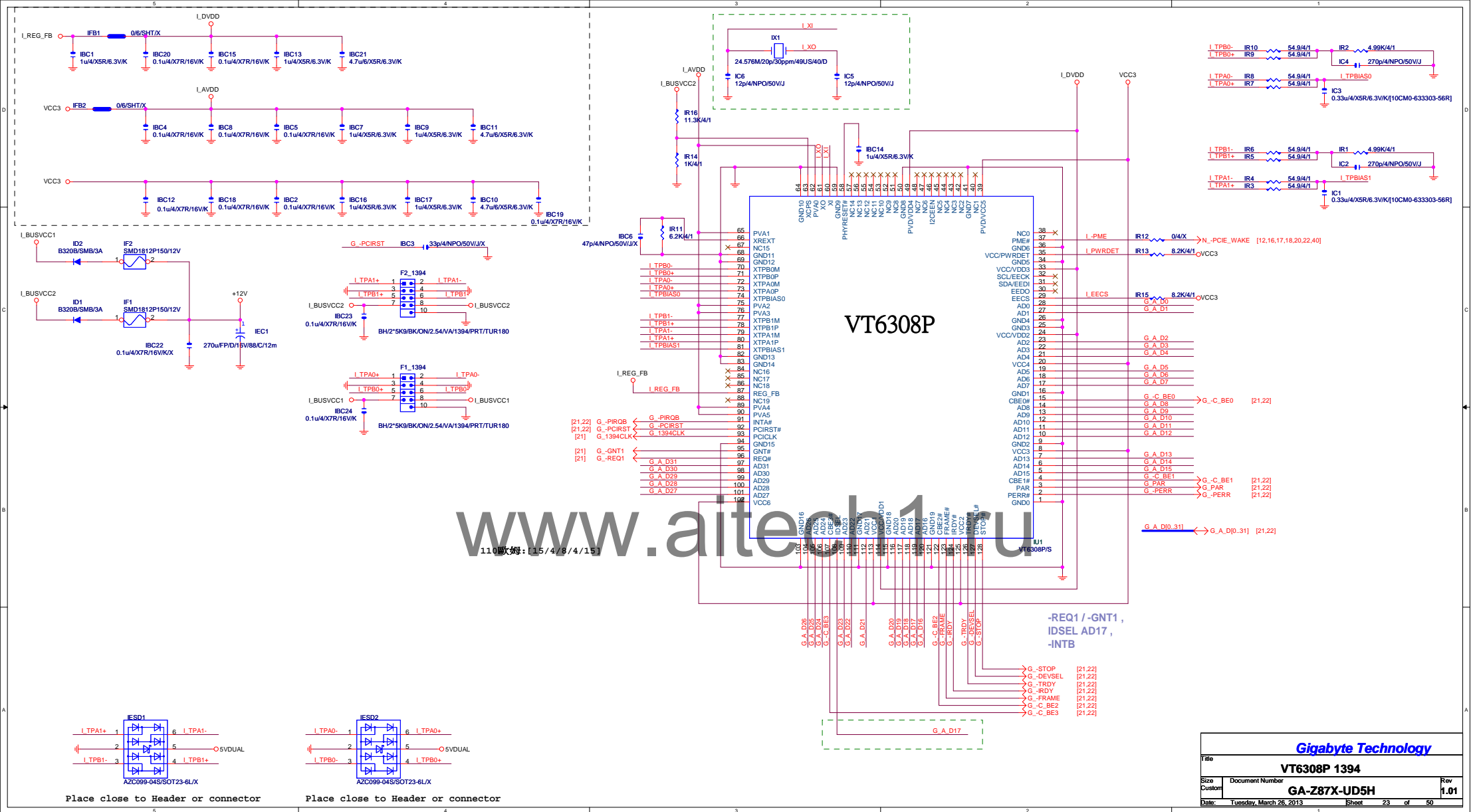


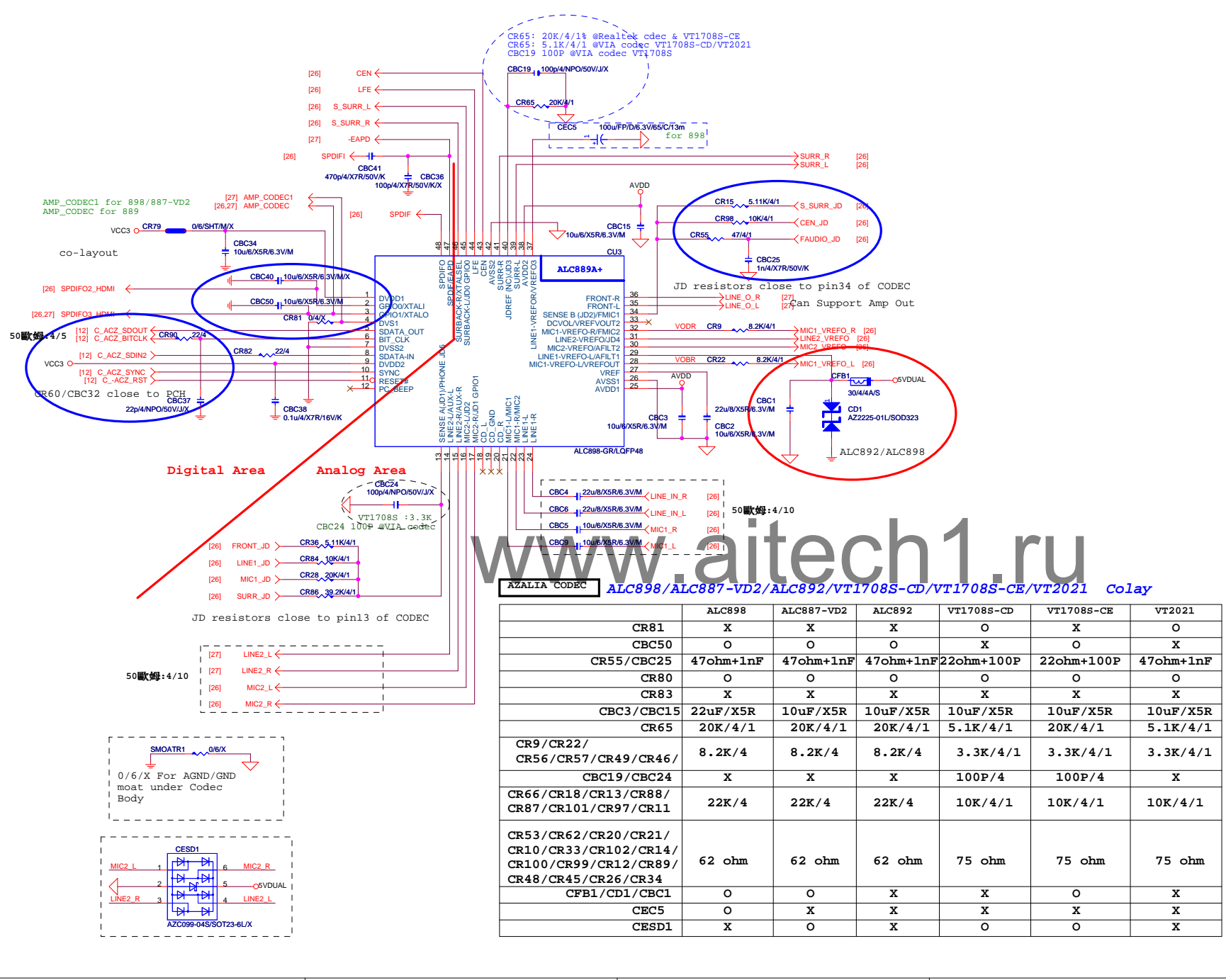




PCI SLOT 1

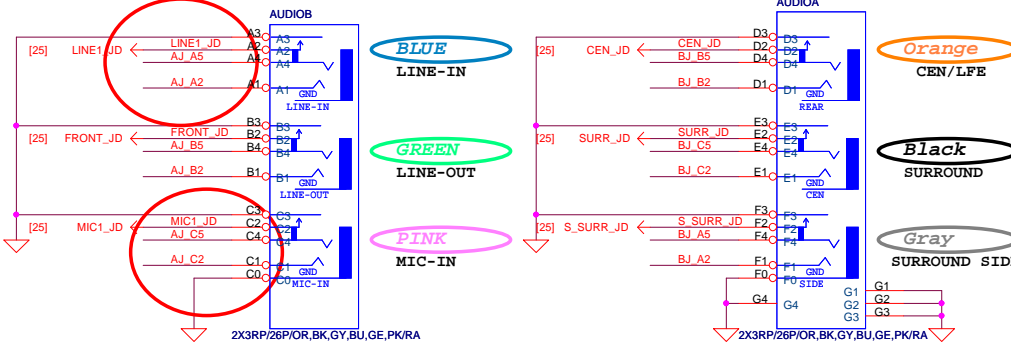
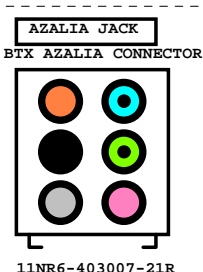
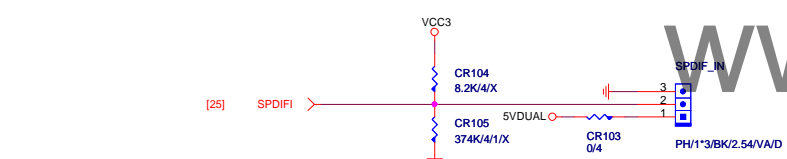
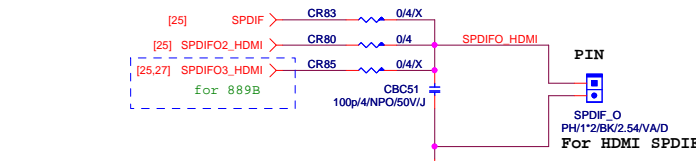
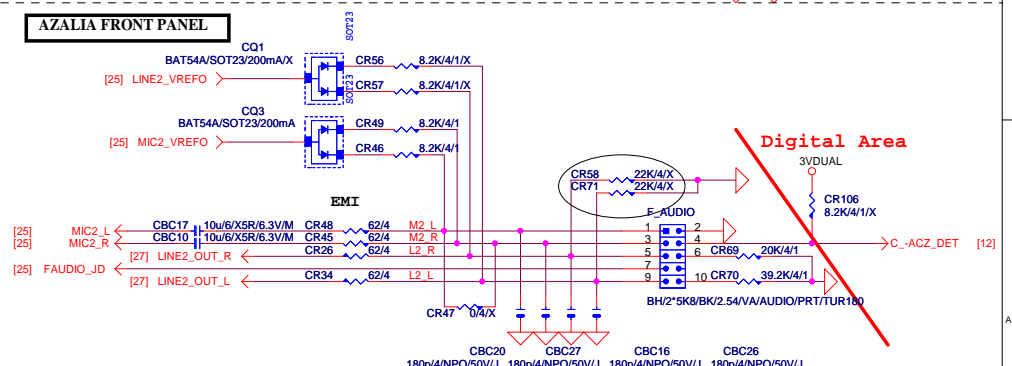
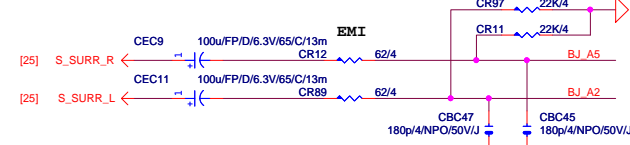
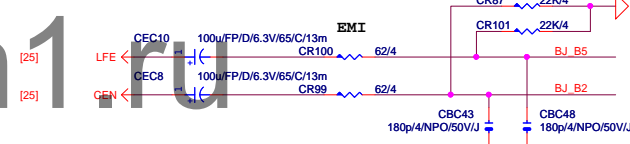
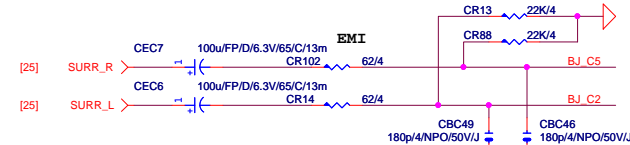
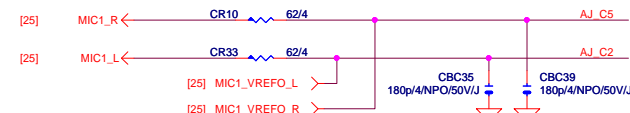
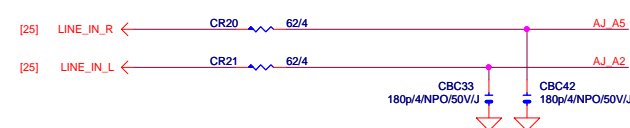
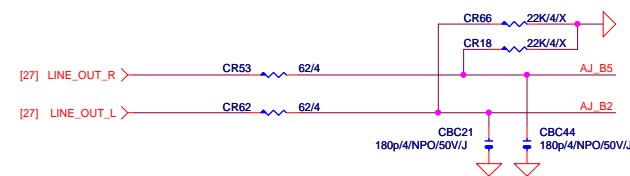
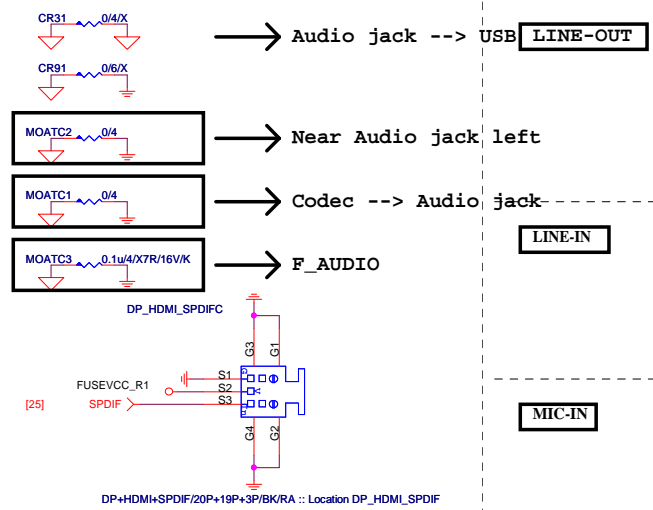






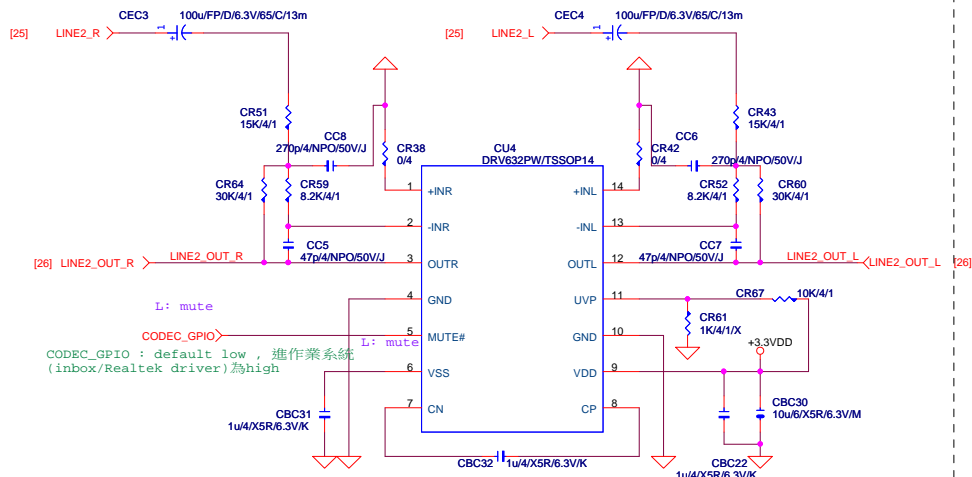
AZALIA CODEC ALC898/ALC887-VD2/ALC892/VT1708S-CD/VT1708S-CE/VT2021 Colay

	ALC898	ALC887-VD2	ALC892	VT1708S-CD	VT1708S-CE	VT2021
CR81	X	X	X	O	X	O
CBC50	O	O	O	X	O	X
CR55/CBC25	47ohm+1nF	47ohm+1nF	47ohm+1nF	22ohm+100P	22ohm+100P	47ohm+1nF
CR80	O	O	O	O	O	O
CR83	X	X	X	X	X	X
CBC3/CBC15	22uF/X5R	10uF/X5R	10uF/X5R	10uF/X5R	10uF/X5R	10uF/X5R
CR65	20K/4/1	20K/4/1	20K/4/1	5.1K/4/1	20K/4/1	5.1K/4/1
CR9/CR22/ CR56/CR57/CR49/CR46/	8.2K/4	8.2K/4	8.2K/4	3.3K/4/1	3.3K/4/1	3.3K/4/1
CBC19/CBC24	X	X	X	100P/4	100P/4	X
CR66/CR18/CR13/CR88/ CR87/CR101/CR97/CR11	22K/4	22K/4	22K/4	10K/4/1	10K/4/1	10K/4/1
CR53/CR62/CR20/CR21/ CR10/CR33/CR102/CR14/ CR100/CR99/CR12/CR89/ CR48/CR45/CR26/CR34	62 ohm	62 ohm	62 ohm	75 ohm	75 ohm	75 ohm
CFB1/CD1/CBC1	O	O	X	X	O	X
CEC5	O	X	X	X	X	X
CESD1	X	O	X	O	O	X

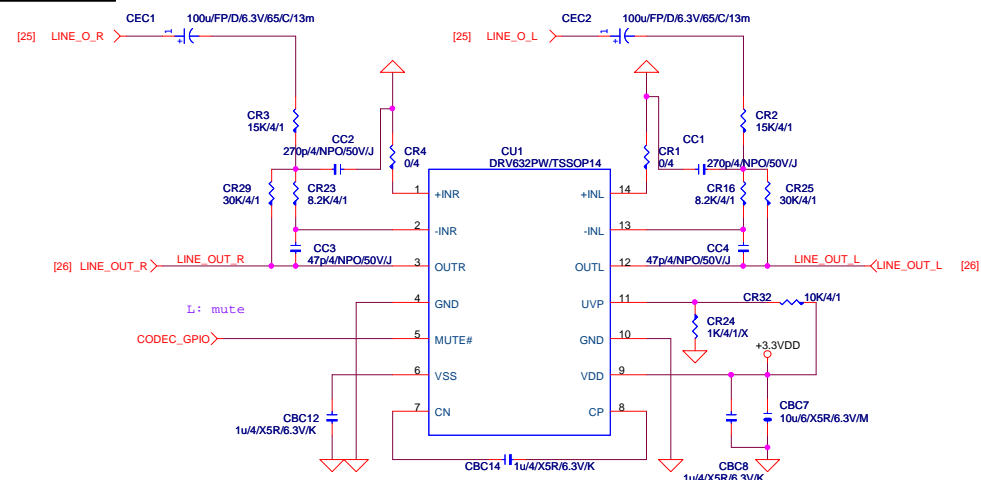


Gigabyte Technology			
Title			
AUDIO JACK			
GA-Z87X-UD5H			
Size	Document Number	Rev	1.01
Custom			
Date:	Tuesday, March 26, 2013	Sheet	26 of 50

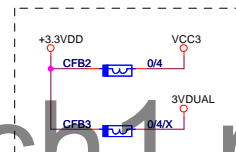
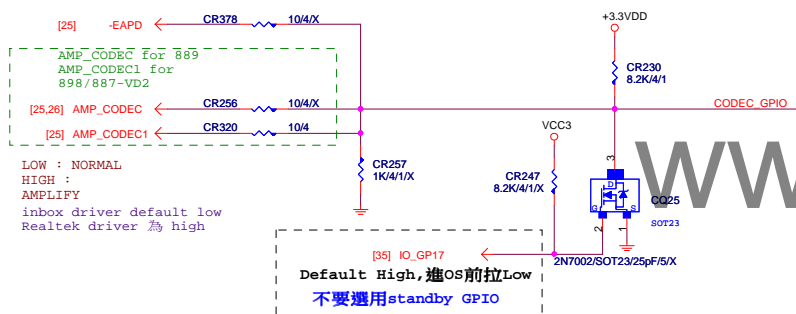
HEADPHONE



LINE-OUT

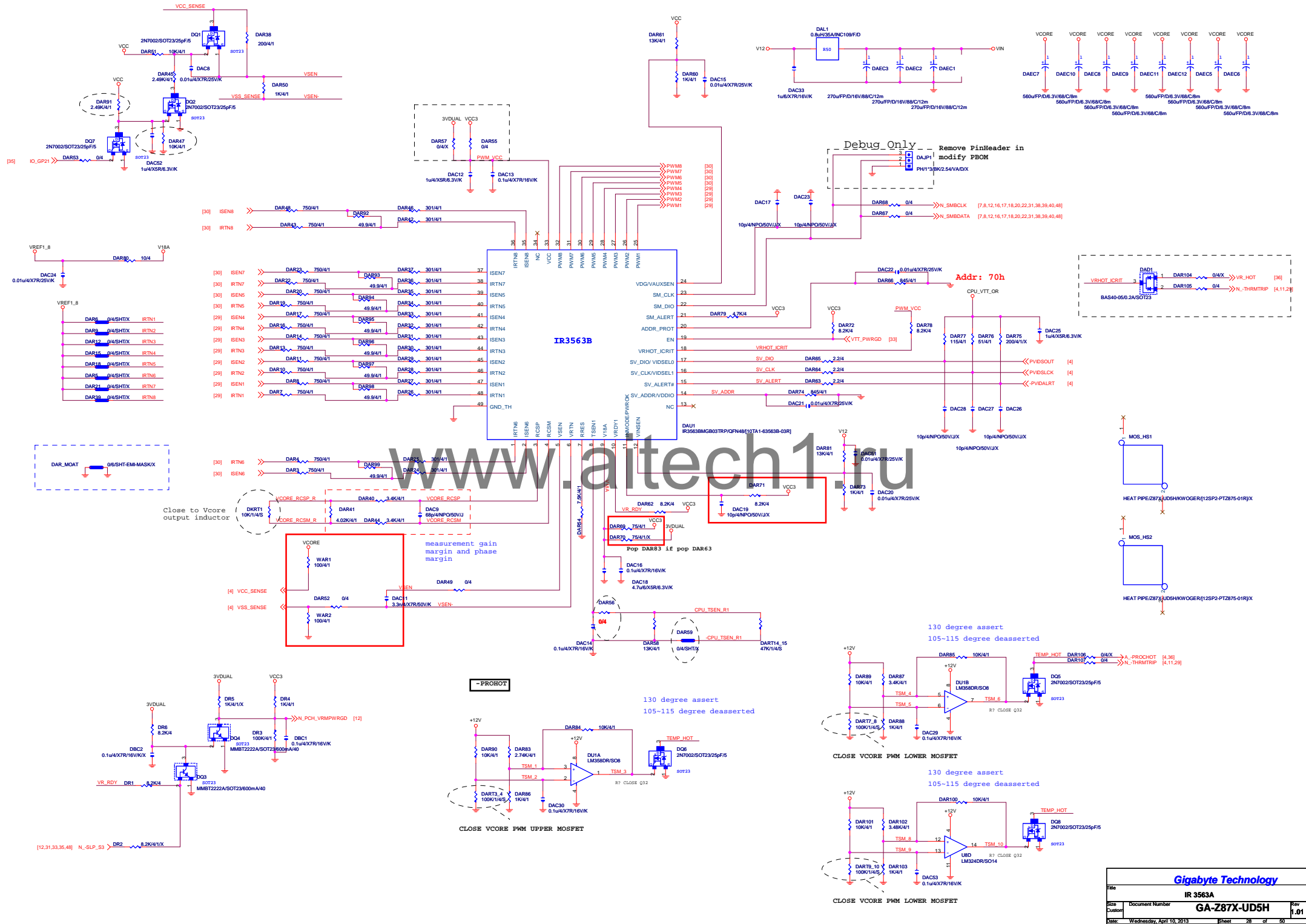


HEADPHONE

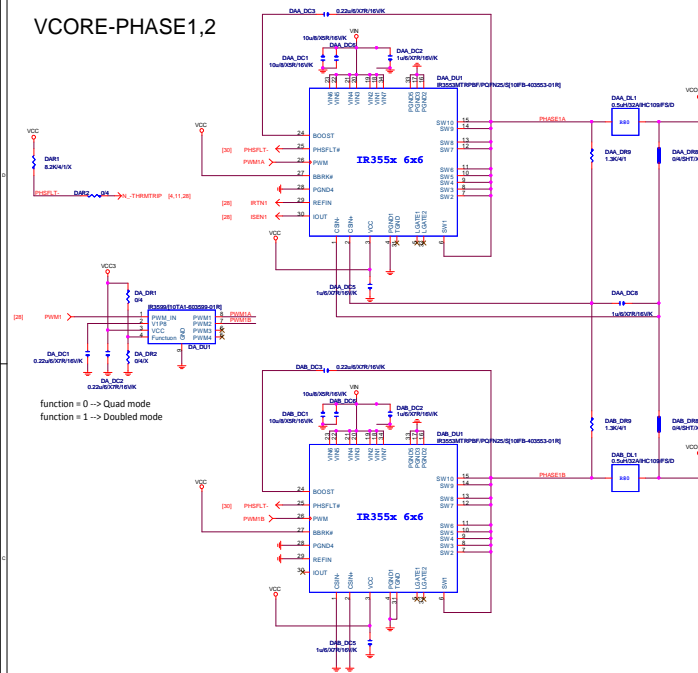


Gigabyte Technology

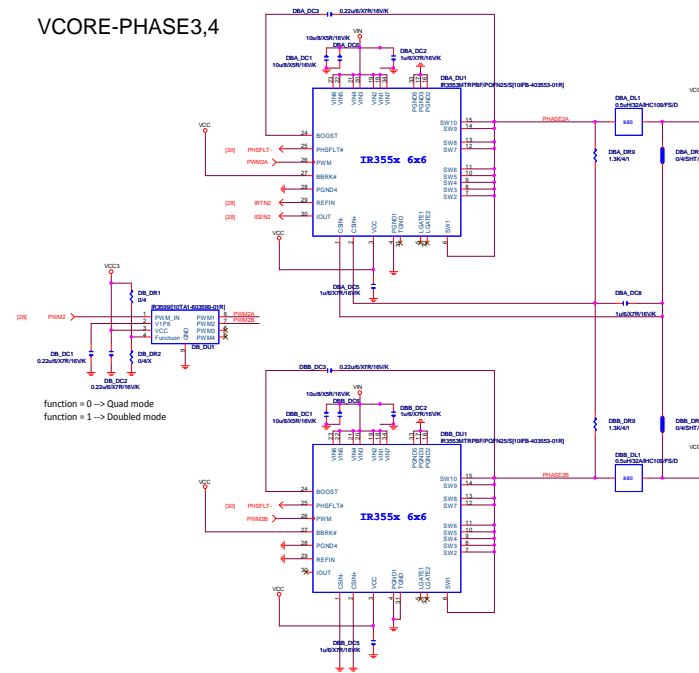
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8-CH DAC & Anti-Pop / Mute		
Size	Document Number	Rev
Custom	GA-Z87X-UD5H	1.01
Date:	Sheet	of
Tuesday, March 26, 2013	27	50



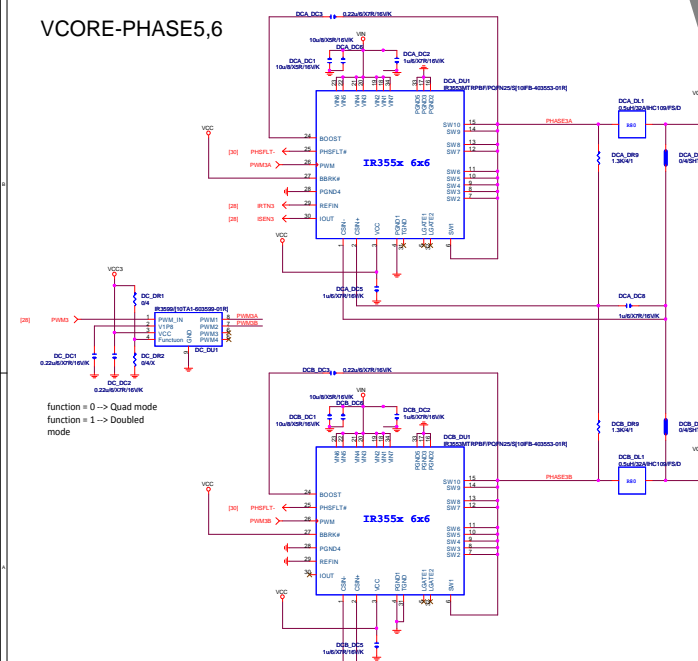
VCORE-PHASE1,2



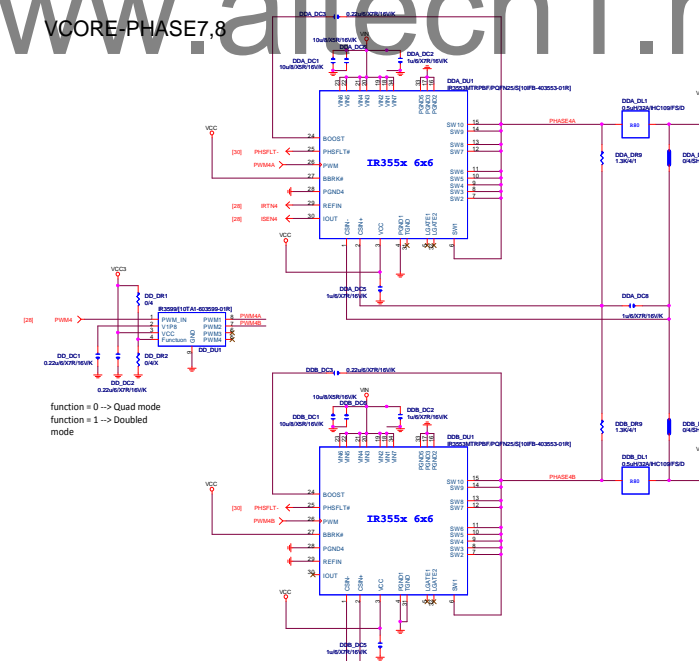
VCORE-PHASE3,4



VCORE-PHASE5,6

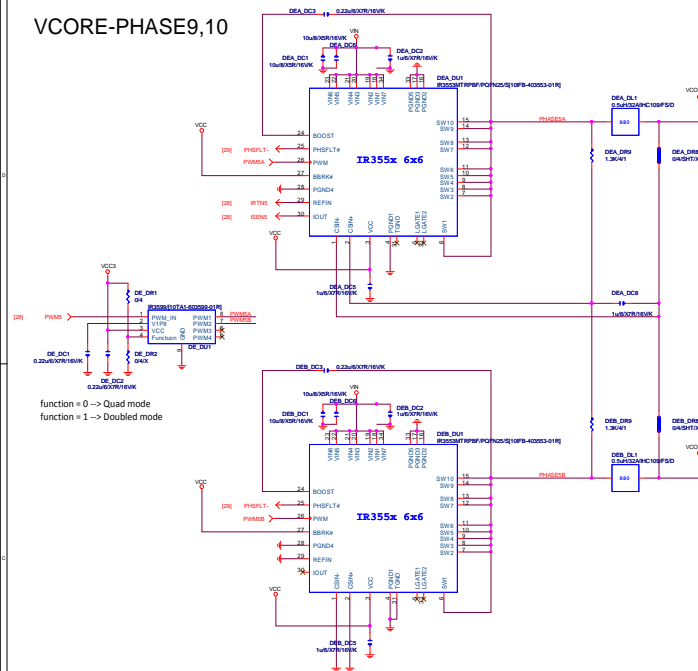


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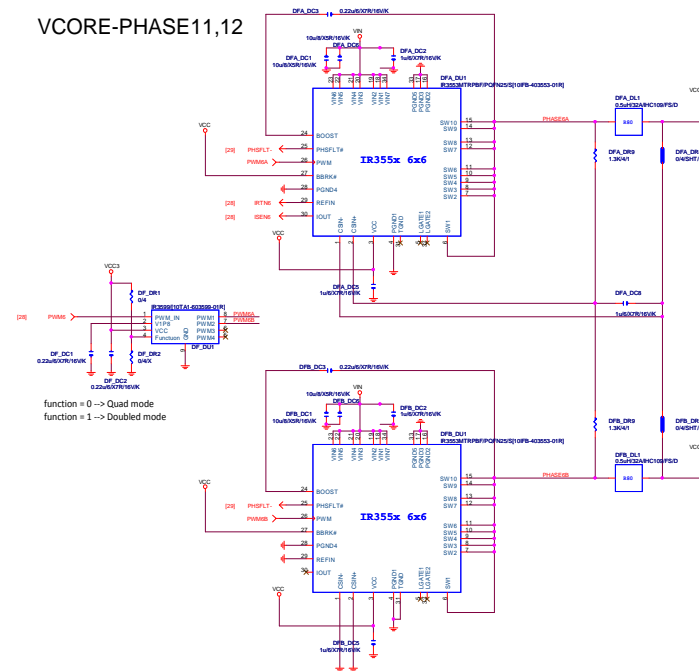


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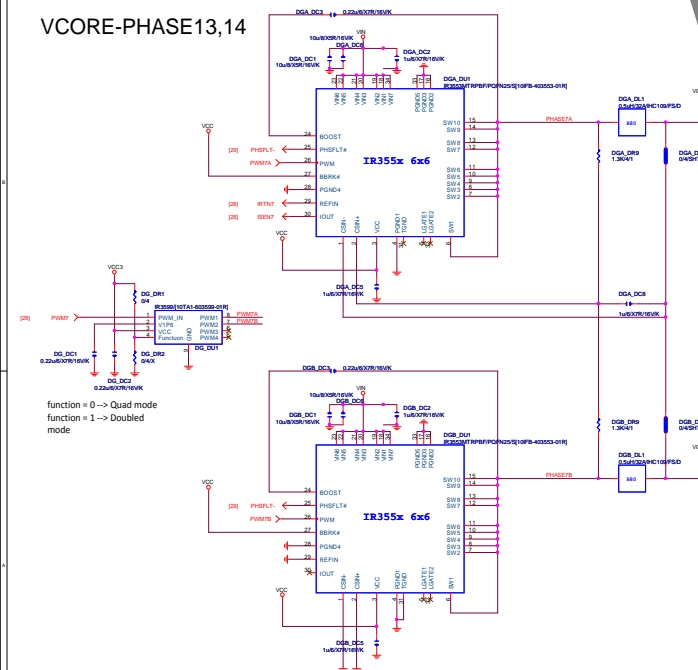
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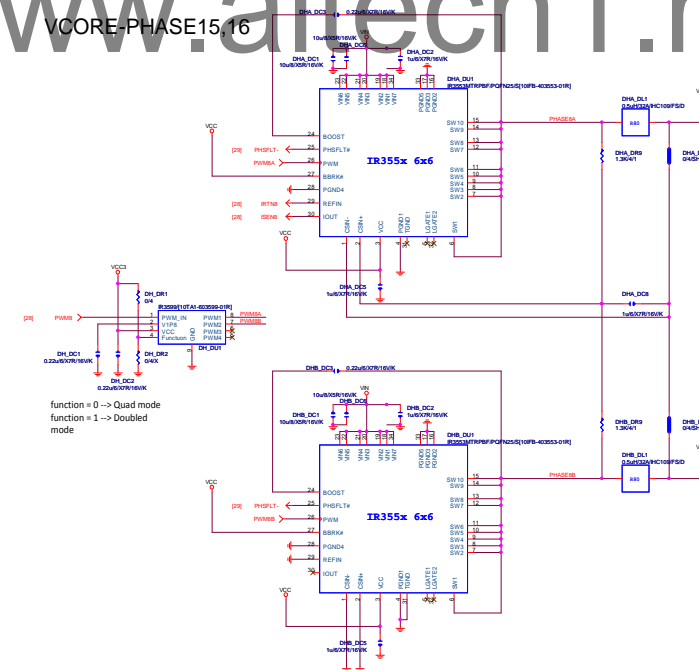
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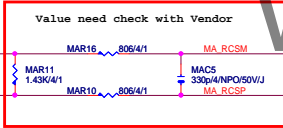
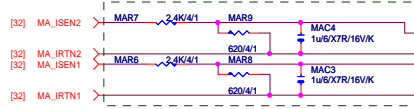
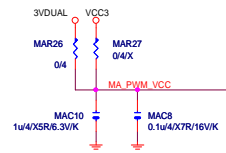
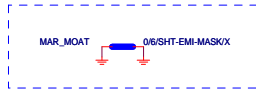
VCORE-PHASE13,14



VCORE-PHASE15,16



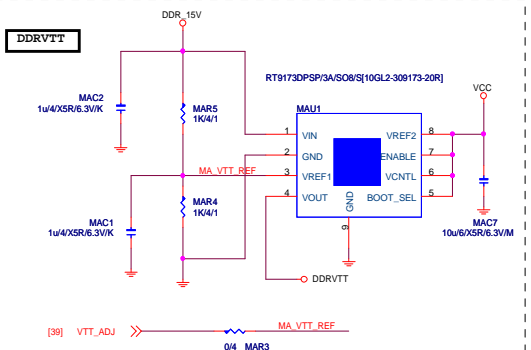
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Close to DDR output inductor

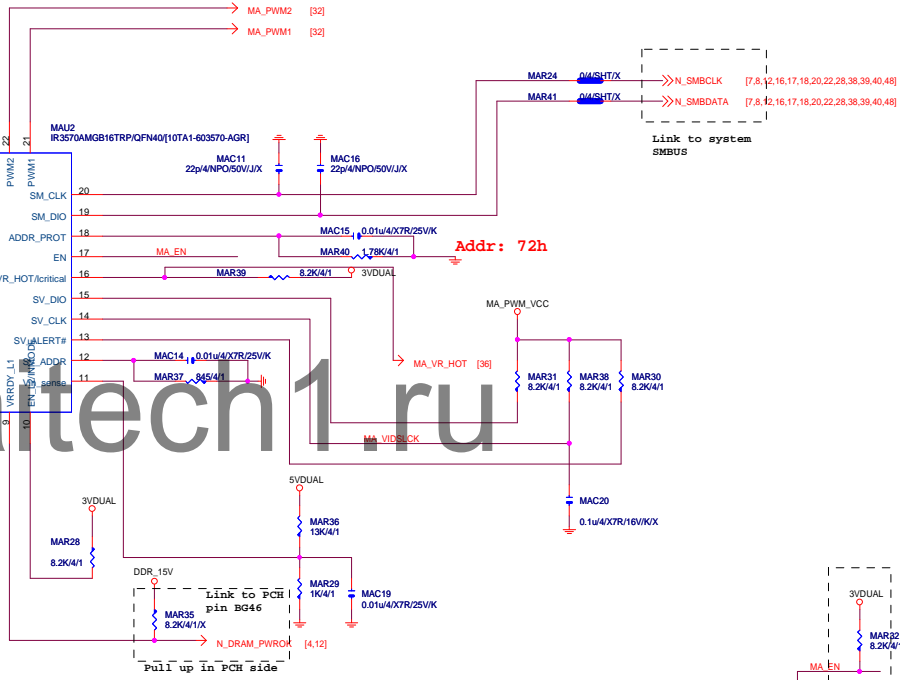
should be routed as differential pair, 7mil width, 8mil spacing

[39] DDR15V_ADJ1 >> MA_ISEN >> MA_VSEN



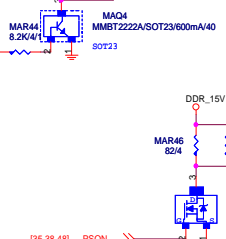
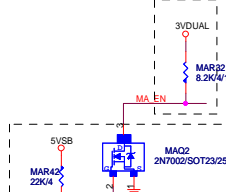
[39] VTT_ADJ >> MA_VTT_REF >> MA3

IR3570



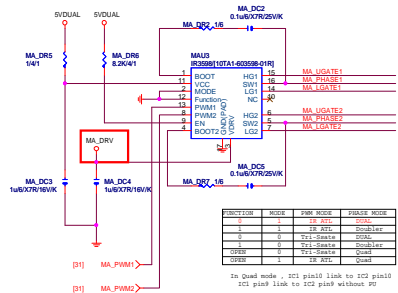
Addr: 72h

Link to PCH pin BG46
N_DRAM_PWROK
Pull up in PCH side



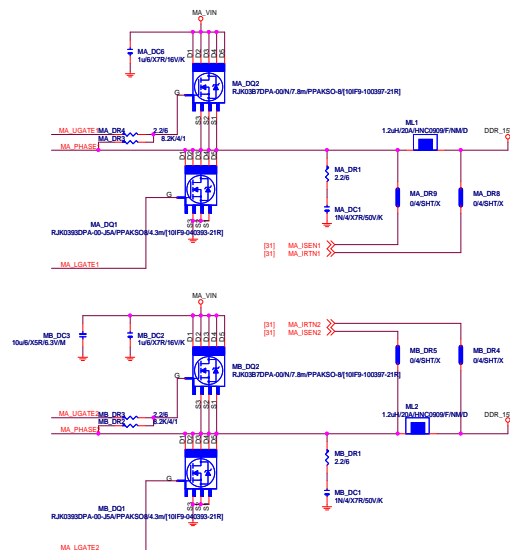
GIGABYTE™		
Title DDR POWER IR3570		
Size C	Document Number GA-Z87X-UD5H	Rev 1.01
Date	Tuesday, March 26, 2013	Sheet 31 of 50

DDR_15V

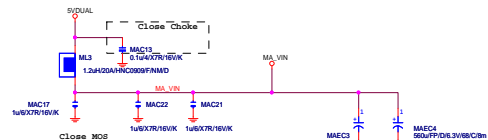


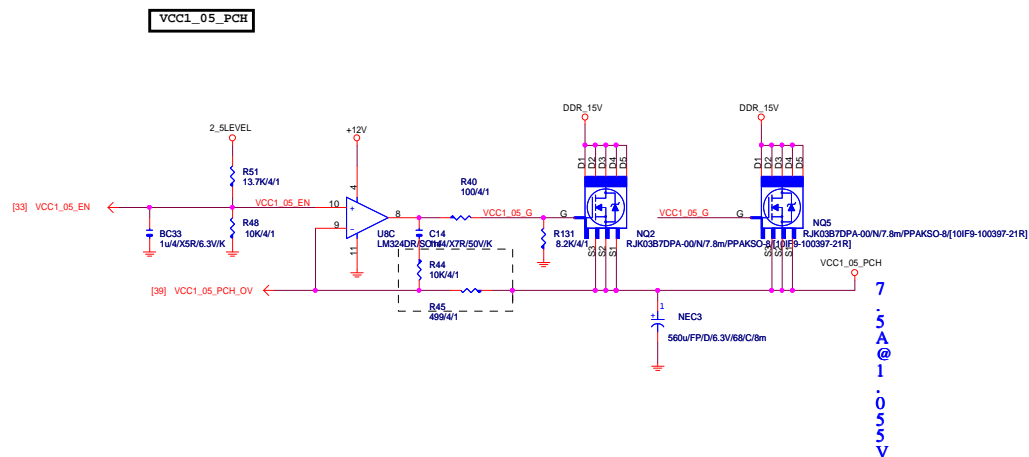
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1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9
10	10	10	10	10	10
11	11	11	11	11	11
12	12	12	12	12	12
13	13	13	13	13	13
14	14	14	14	14	14
15	15	15	15	15	15
16	16	16	16	16	16
17	17	17	17	17	17
18	18	18	18	18	18
19	19	19	19	19	19
20	20	20	20	20	20
21	21	21	21	21	21
22	22	22	22	22	22
23	23	23	23	23	23
24	24	24	24	24	24
25	25	25	25	25	25
26	26	26	26	26	26
27	27	27	27	27	27
28	28	28	28	28	28
29	29	29	29	29	29
30	30	30	30	30	30
31	31	31	31	31	31

In Quad mode, ICI pin10 link to ICI pin10
ICI pin10 link to ICI pin10 without 00

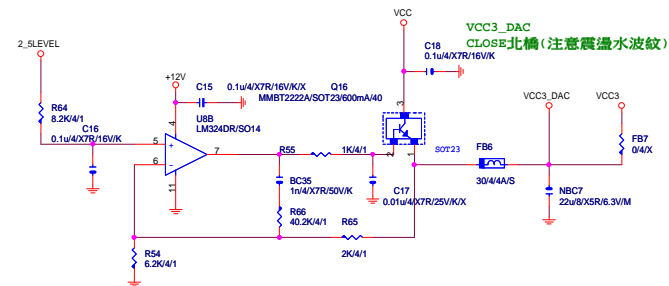


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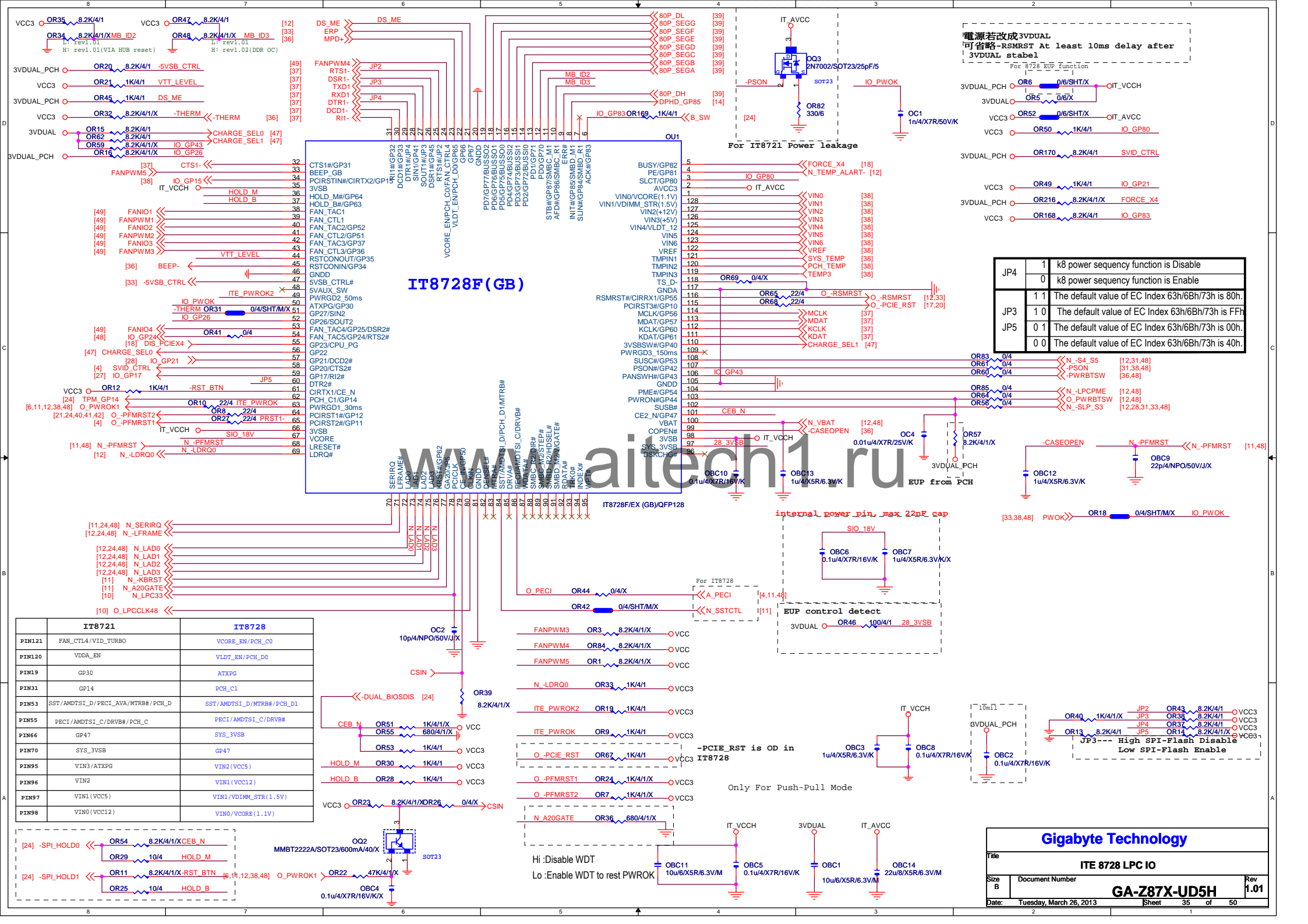


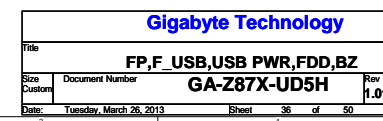


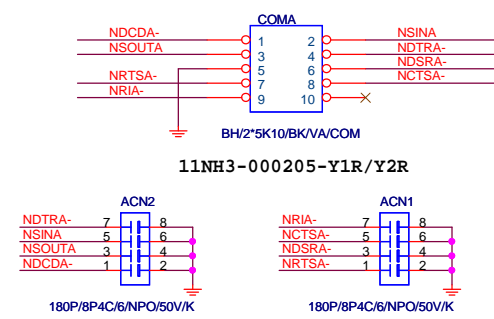
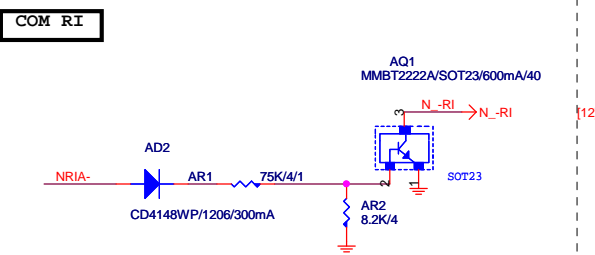
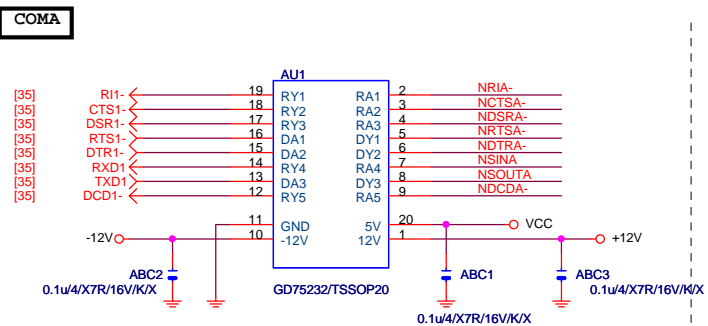
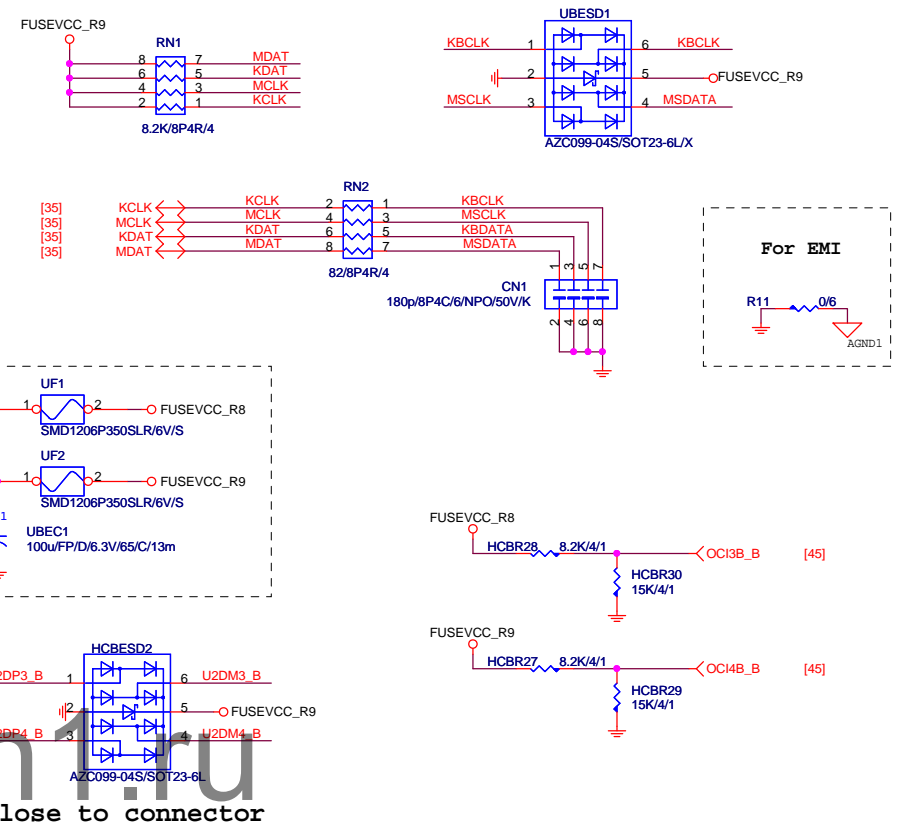
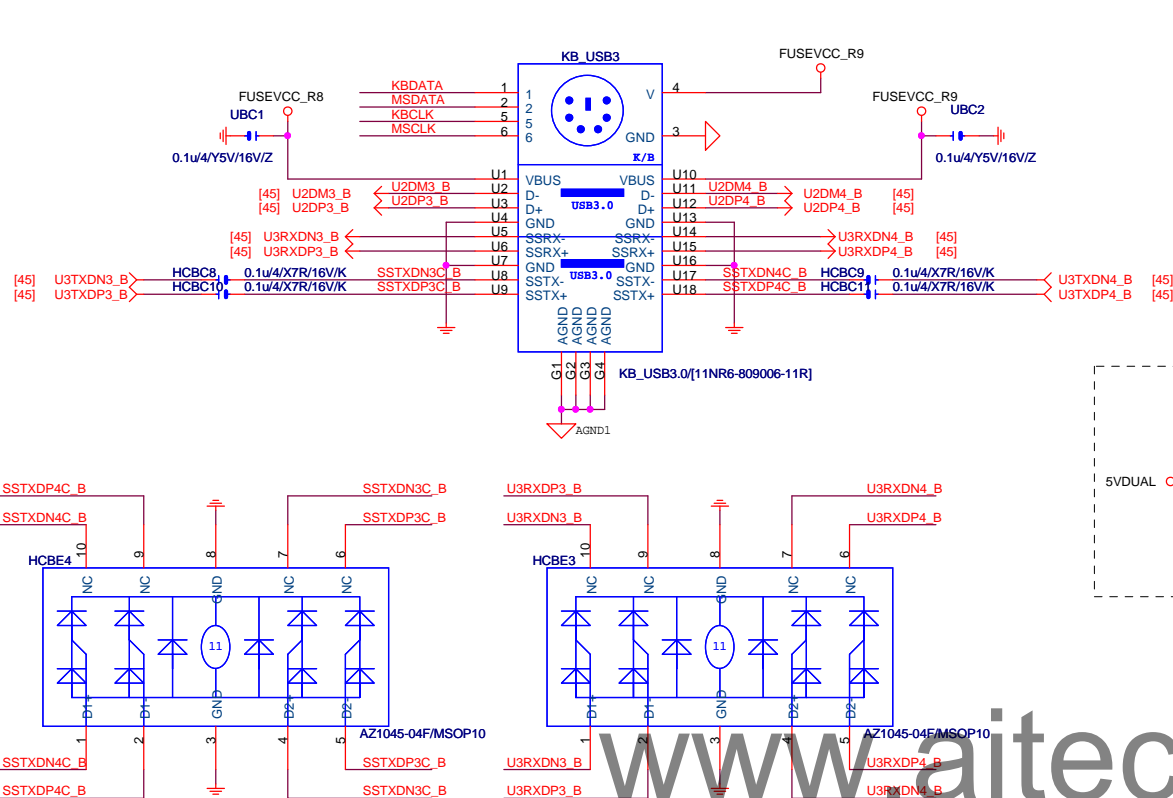
VCC3_DAC
(3.3V/70mA+360uA)



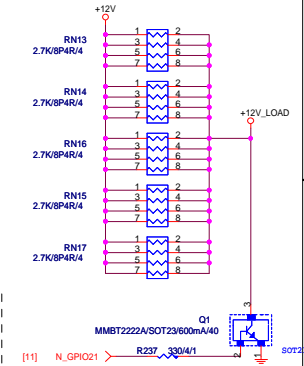
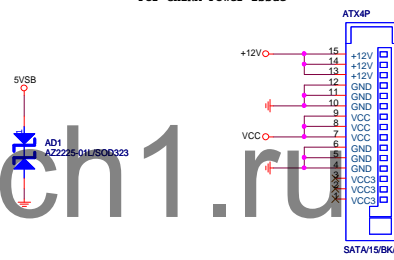
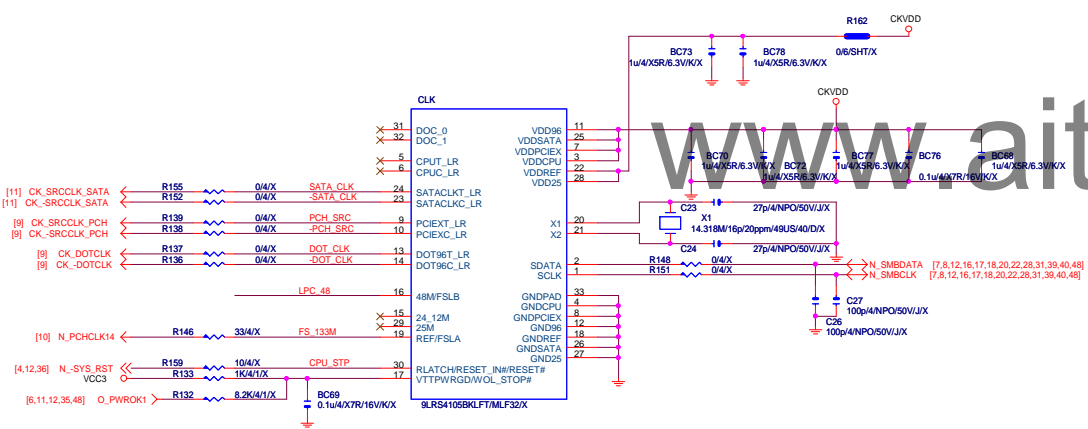
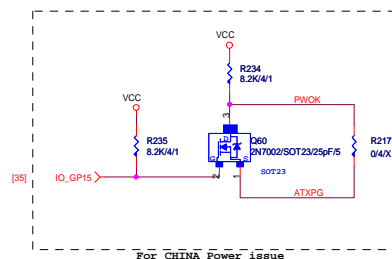
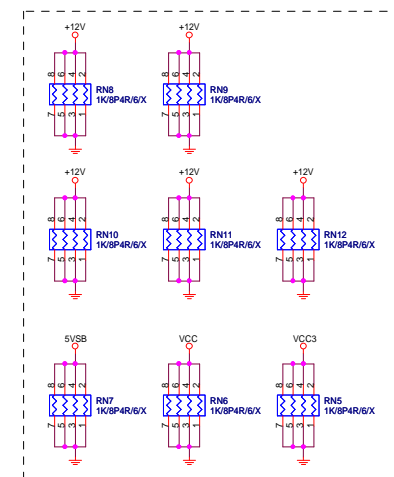
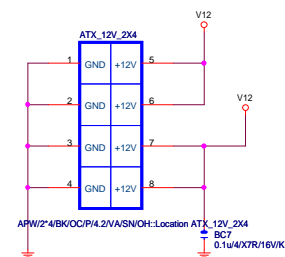
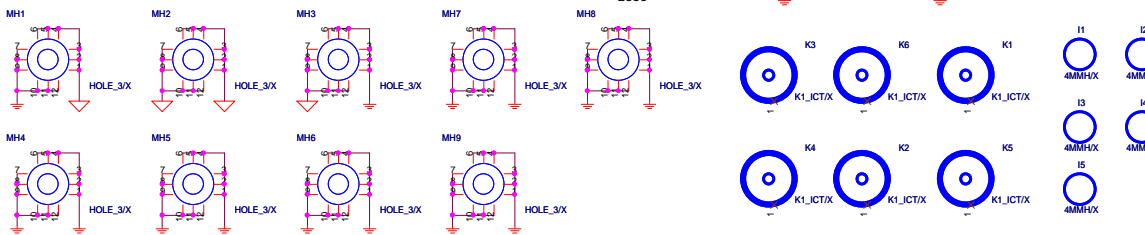
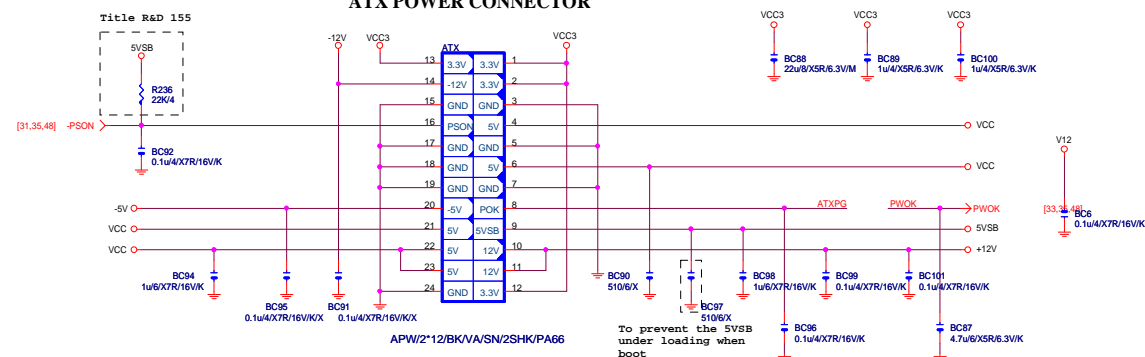
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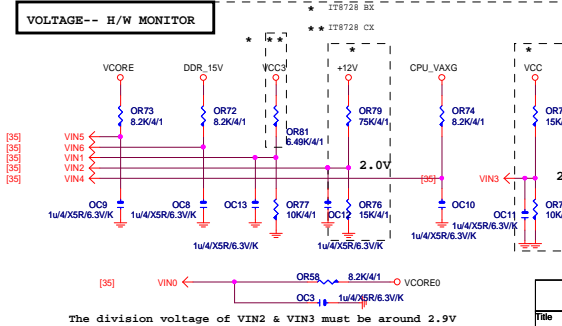
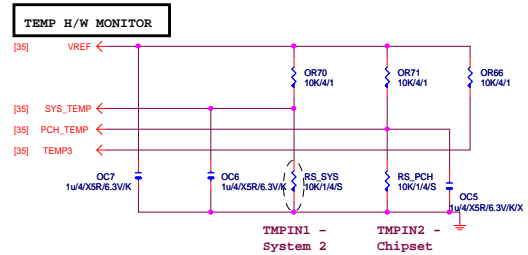
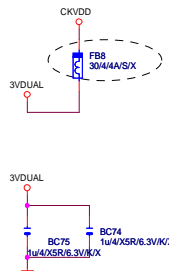
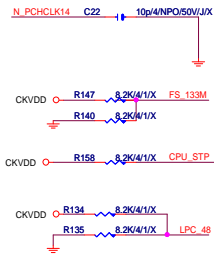


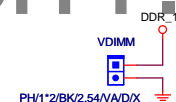
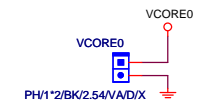
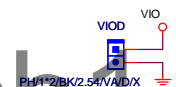
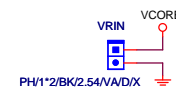
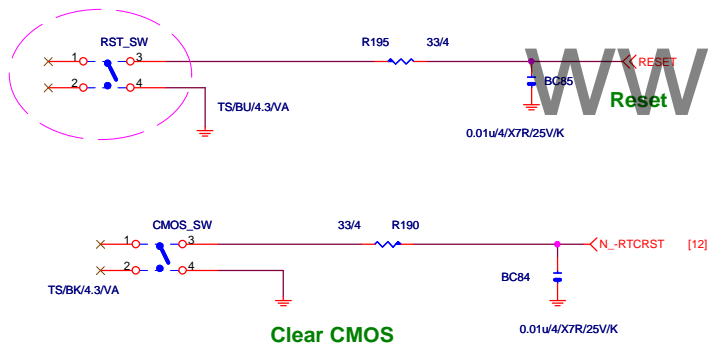
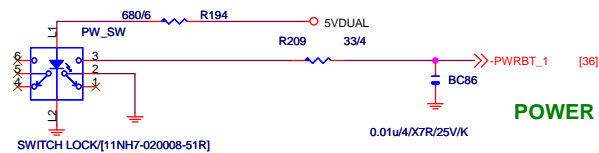
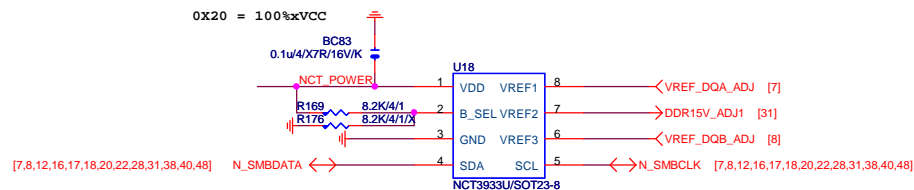
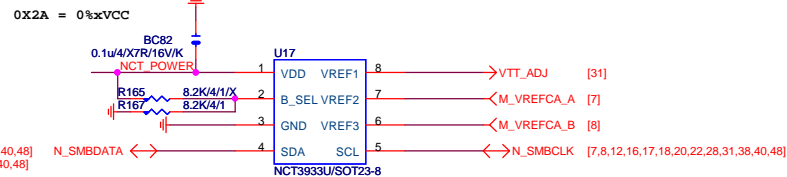
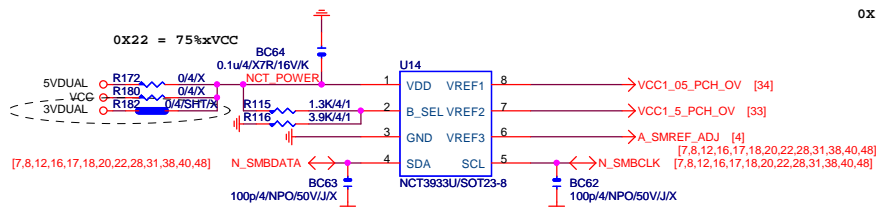
ATX POWER CONNECTOR



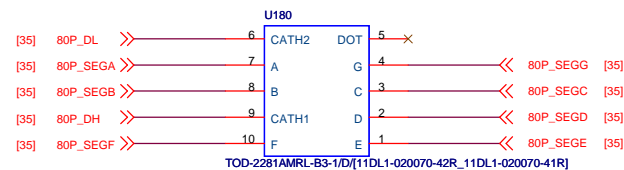
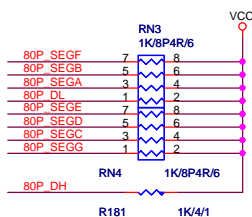
CPU Frequency Selection

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

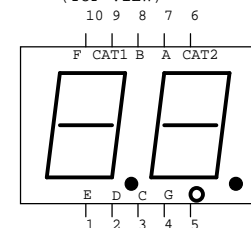


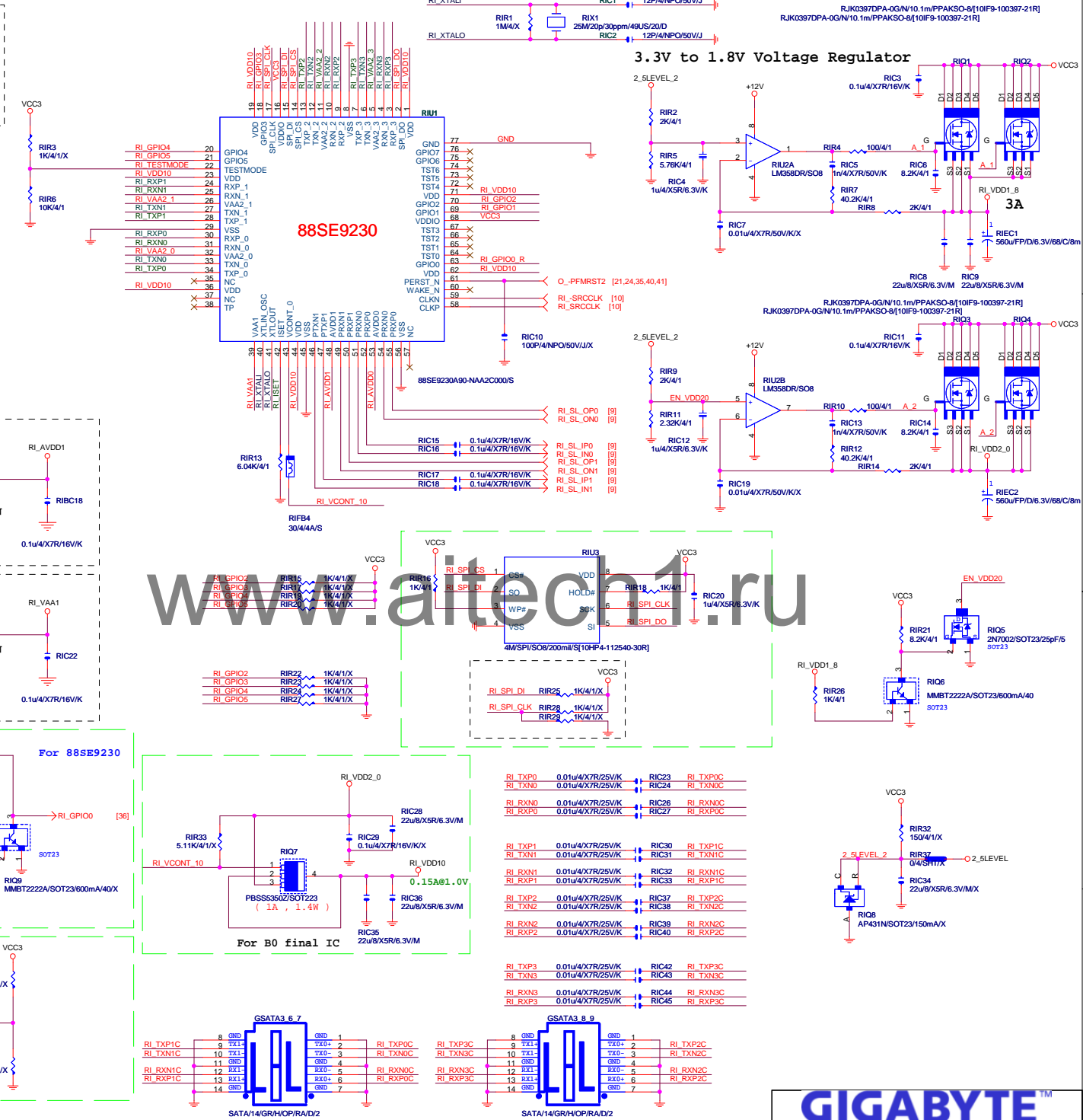


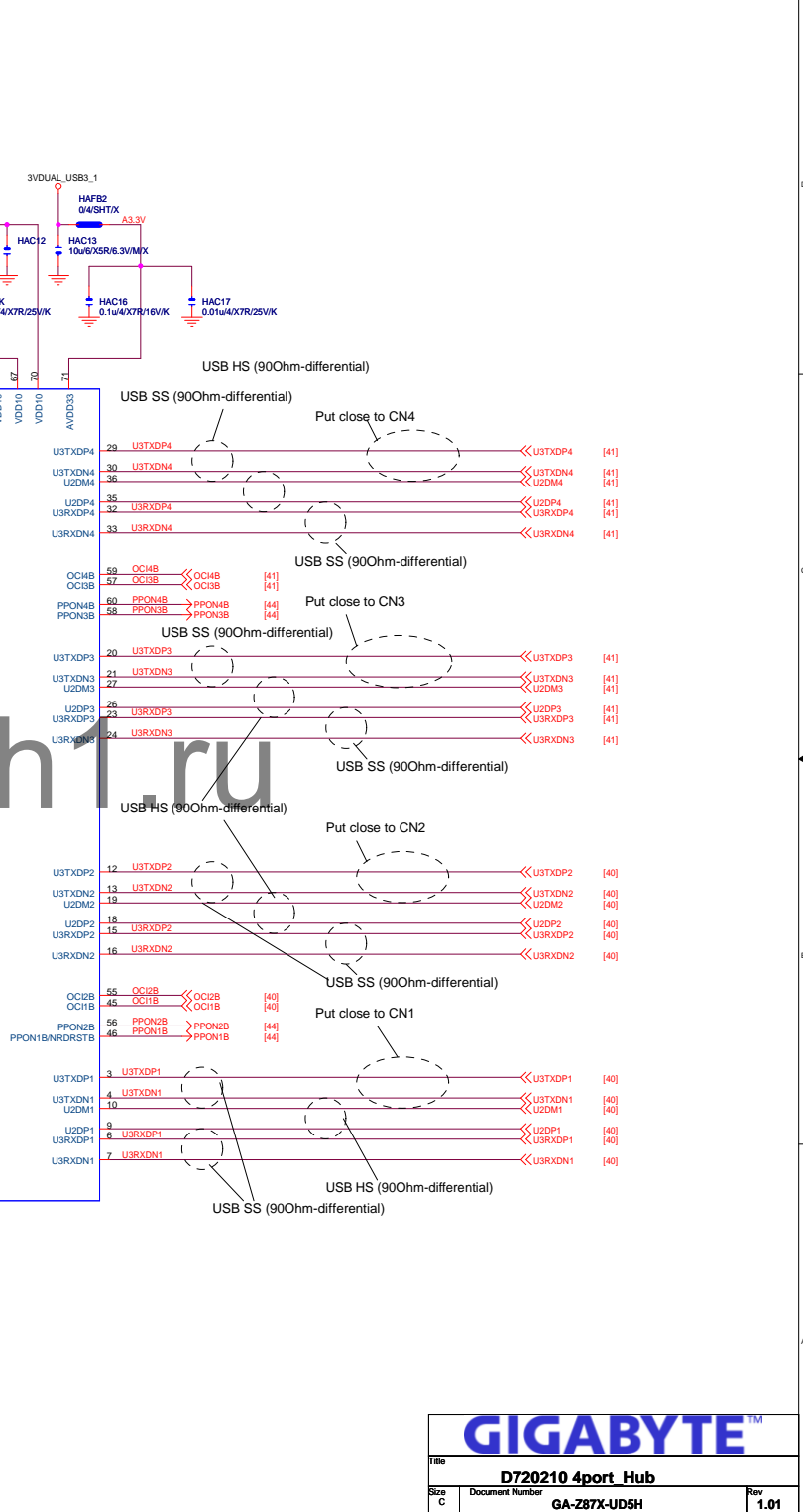
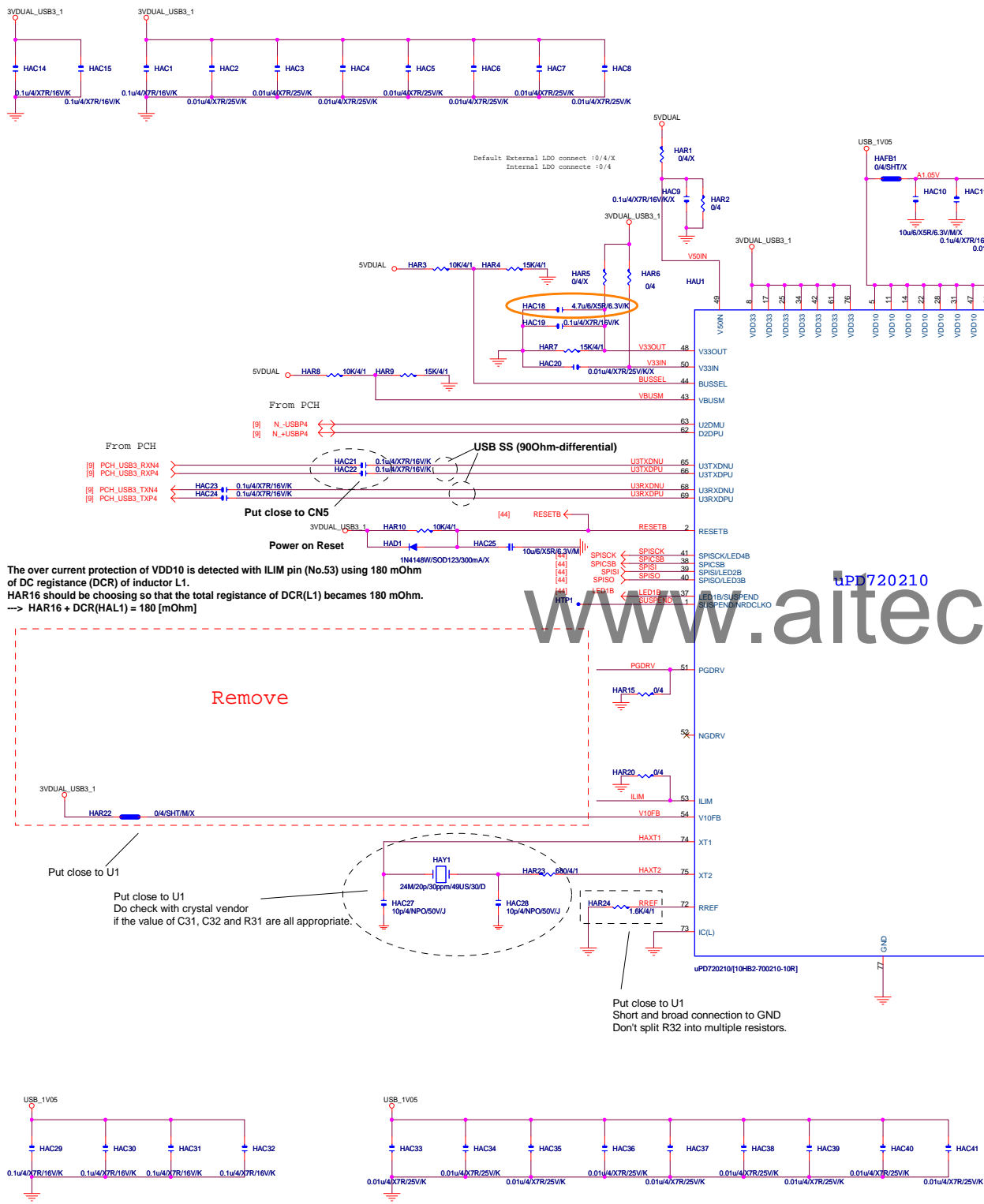
80 PORT



Physical Package
(TOP VIEW)







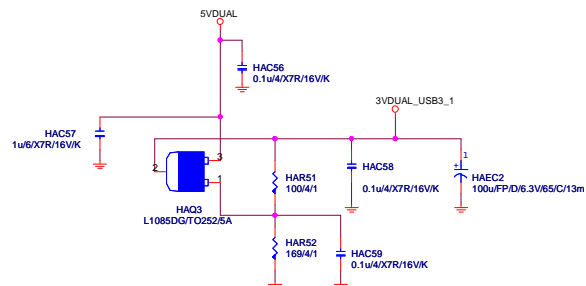
The over current protection of VDD10 is detected with ILIM pin (No.53) using 180 mOhm of DC resistance (DCR) of inductor L1.
HAR16 should be choosing so that the total resistance of DCR(L1) becomes 180 mOhm.
→ HAR16 + DCR(HAL1) = 180 [mOhm]

Remove

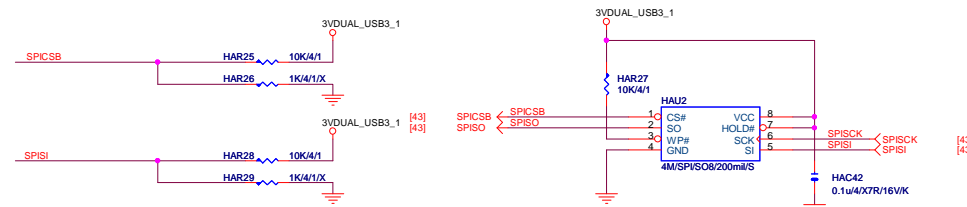
Put close to U1
Do check with crystal vendor
if the value of C31, C32 and R31 are all appropriate.

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

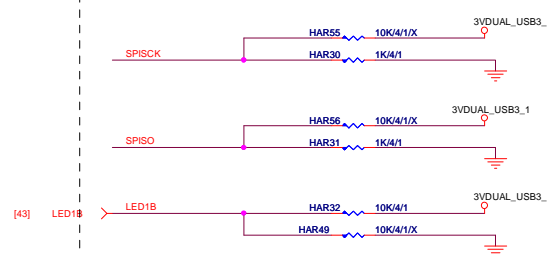
3VDUAL_USB



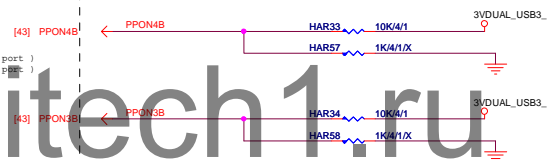
```
# External SPI ROM ; SPI ROM
attached mode
```



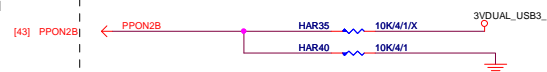
Battery Charging



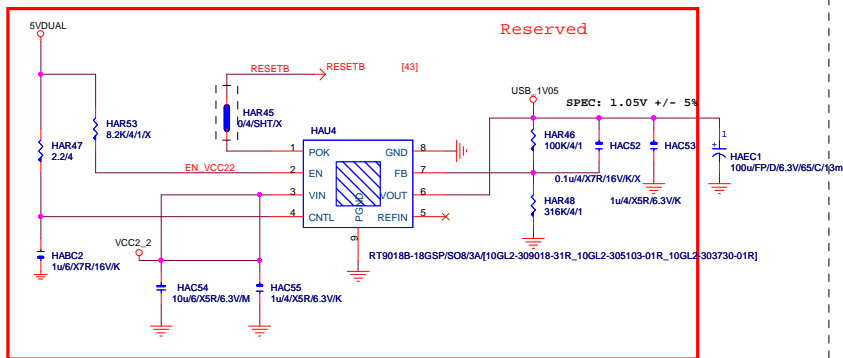
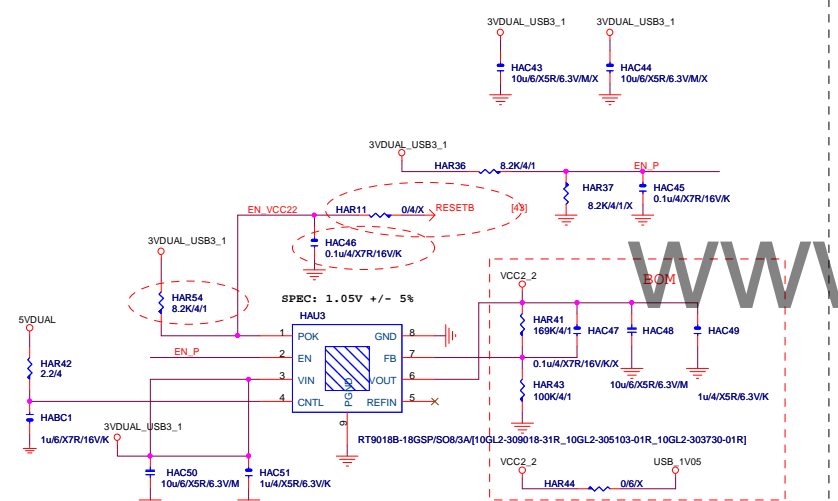
Number of Ports ; 4Ports
mode

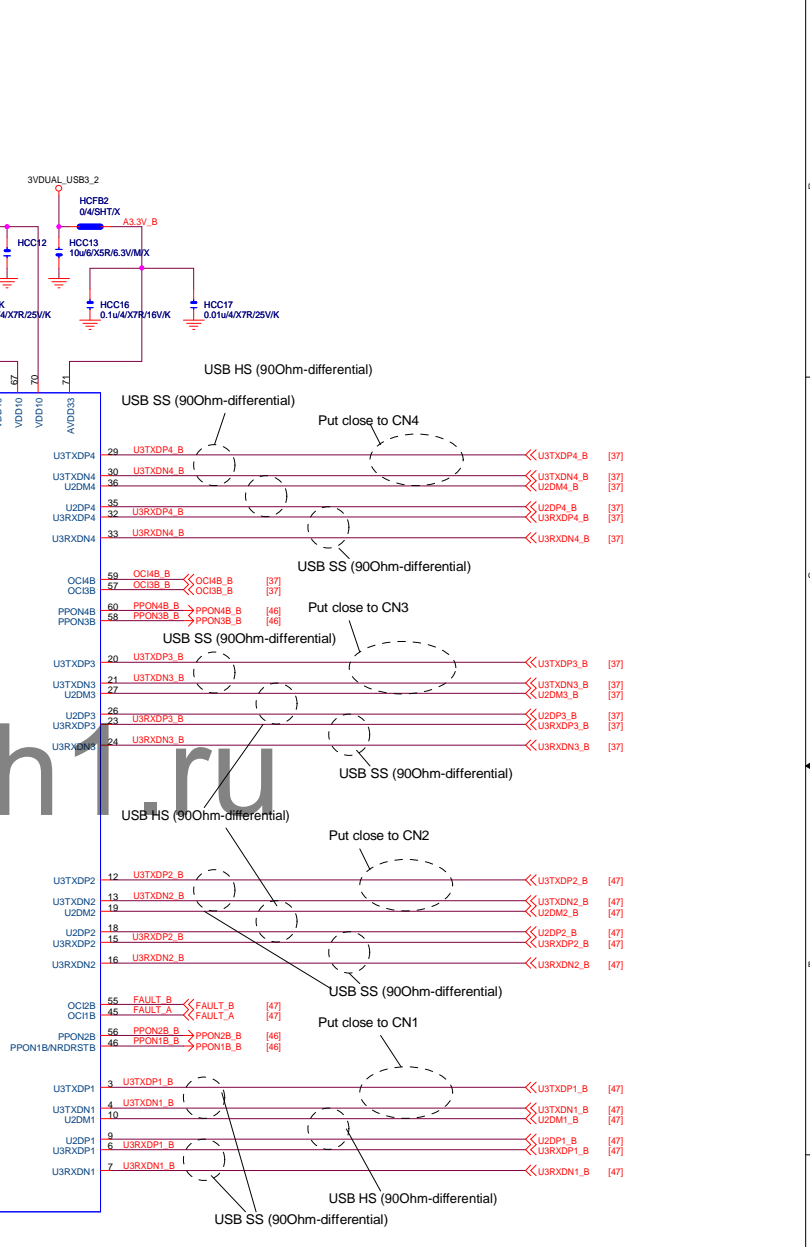
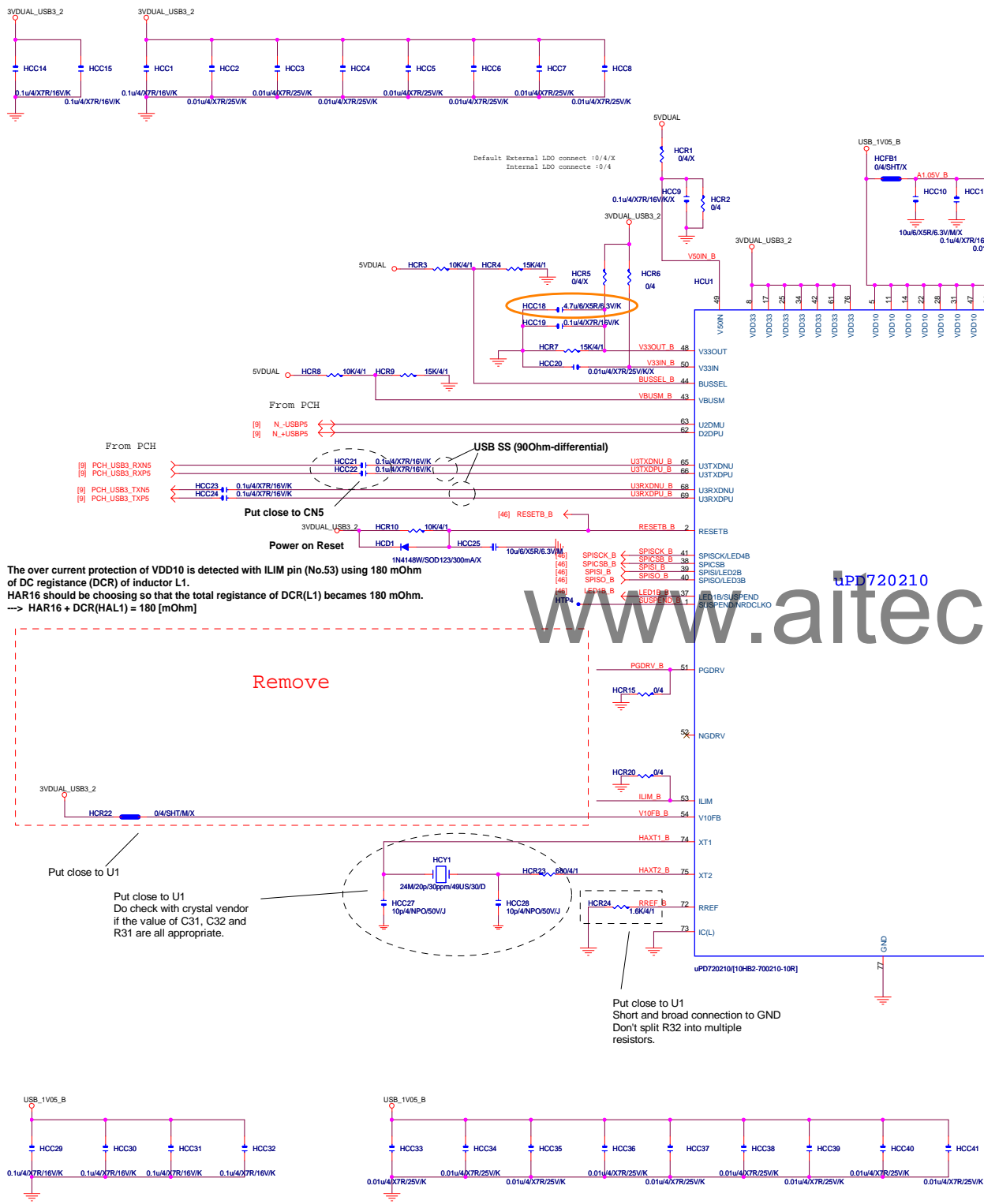


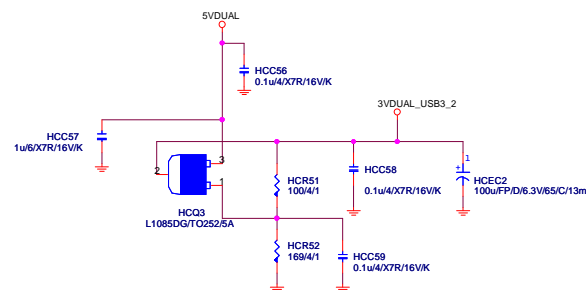
#5 VBUS Power Control : Individual mode



```
# PPON1B Pin Function ;
Port1 PPONB mode
```





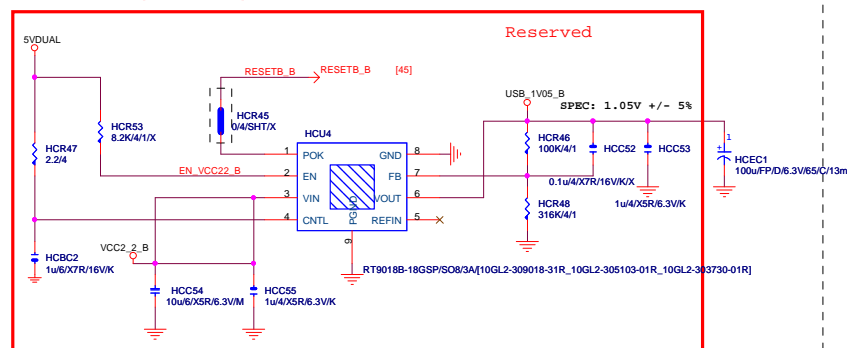
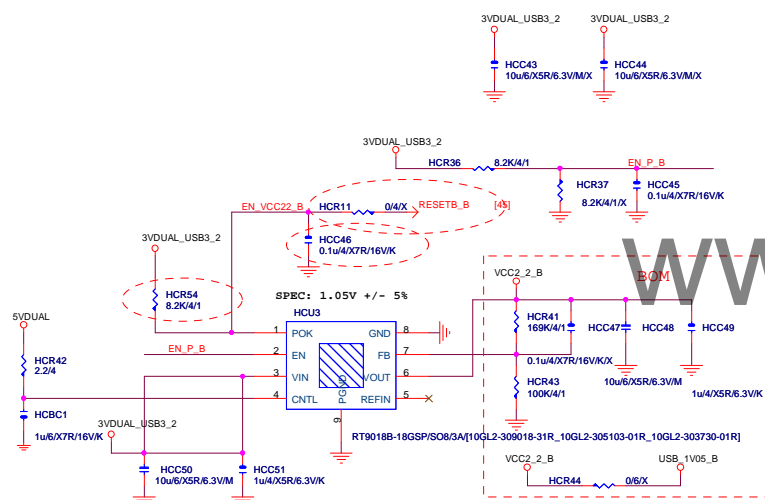
[illegible]

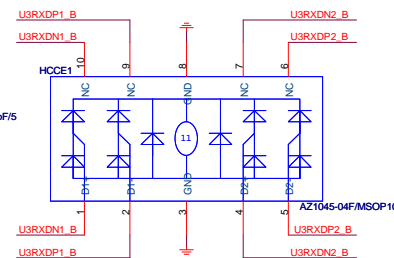
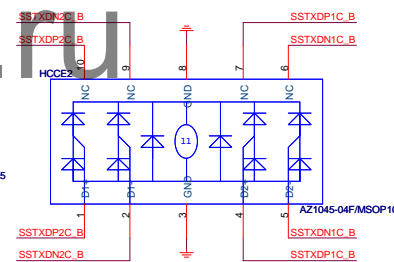
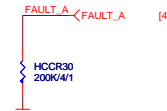
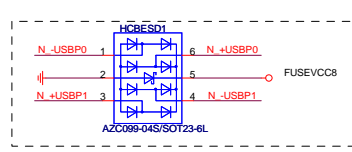
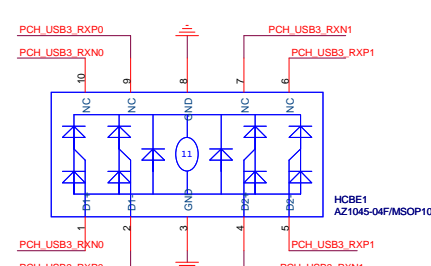
The diagrams illustrate the connection of SPI signals to the HCS300 pins:

- SPISCK_B:** Connected to HCR55 (10K/4/1/X) and HCR30 (1K/4/1) to 3V3.
- SPISO_B:** Connected to HCR56 (10K/4/1/X) and HCR31 (1K/4/1) to 3V3.
- LED1B_B:** Connected to HCR32 (10K/4/1) and HCR49 (10K/4/1/X) to 3V3.

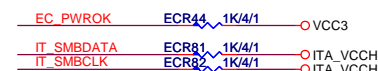
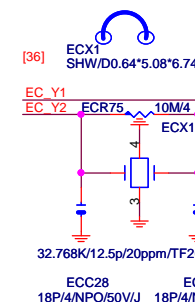
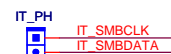
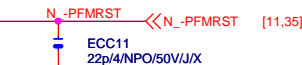
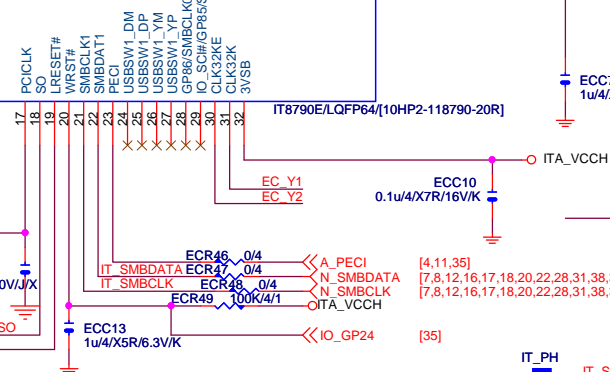
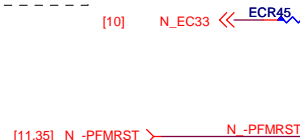
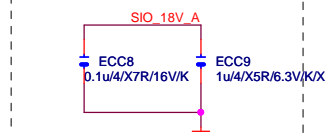
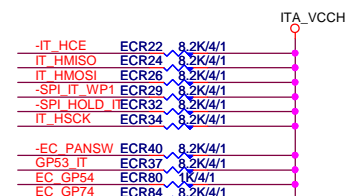
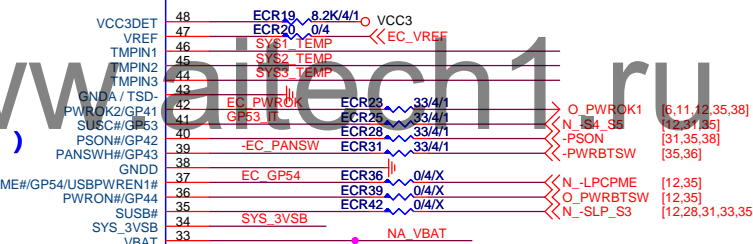
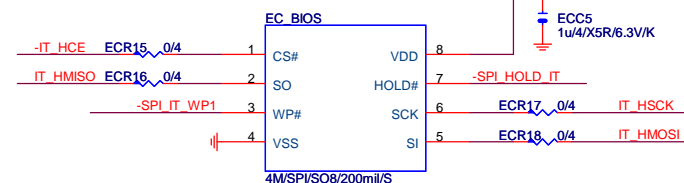
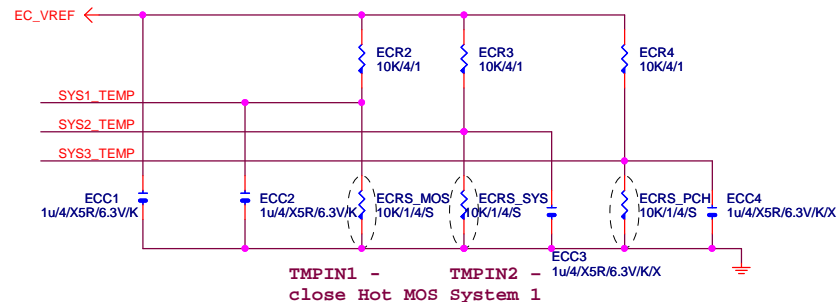
Figure 10: Schematic of the USB3.2 Gen1x1 PHY circuit. The circuit shows the connection of the PPN2B_B signal to the HCR35 and HCR40 pins, which are connected to the 3VDUAL_USB3_2 supply and ground through 10K/4/1 resistors.

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



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