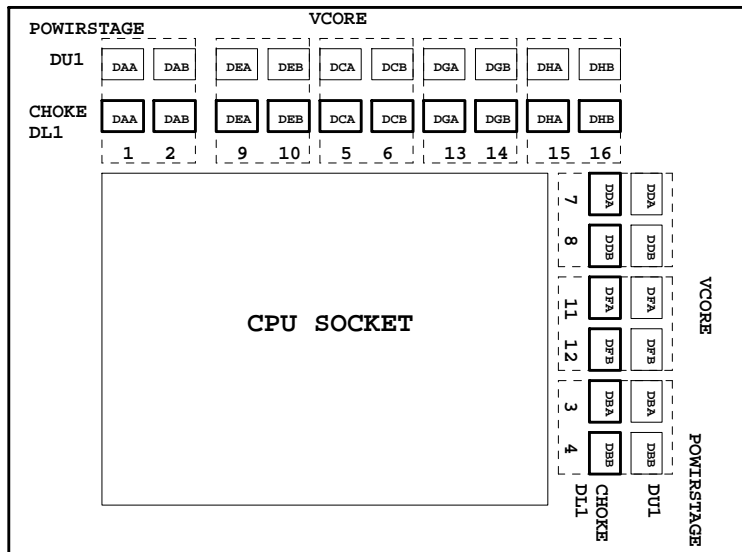
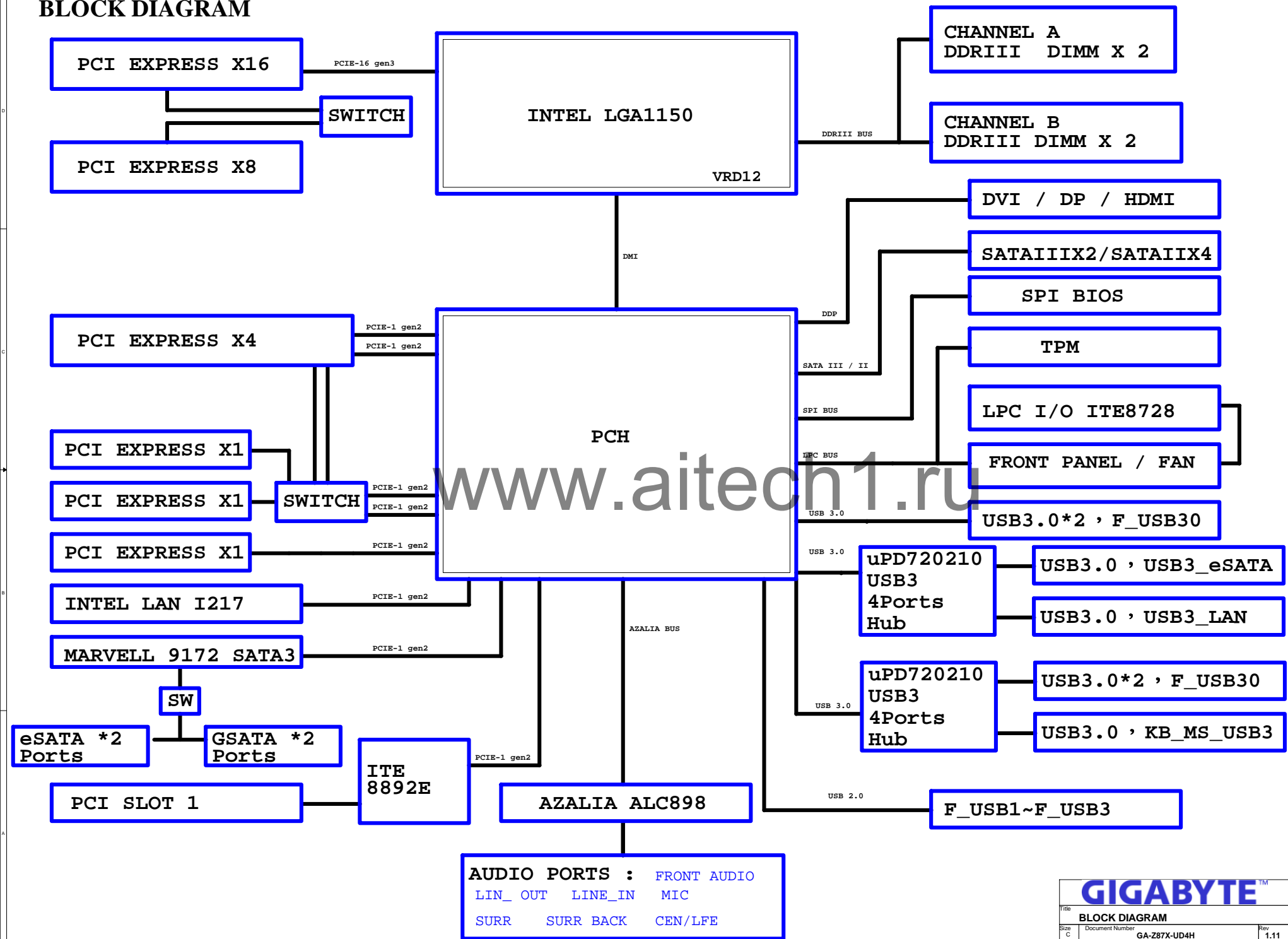


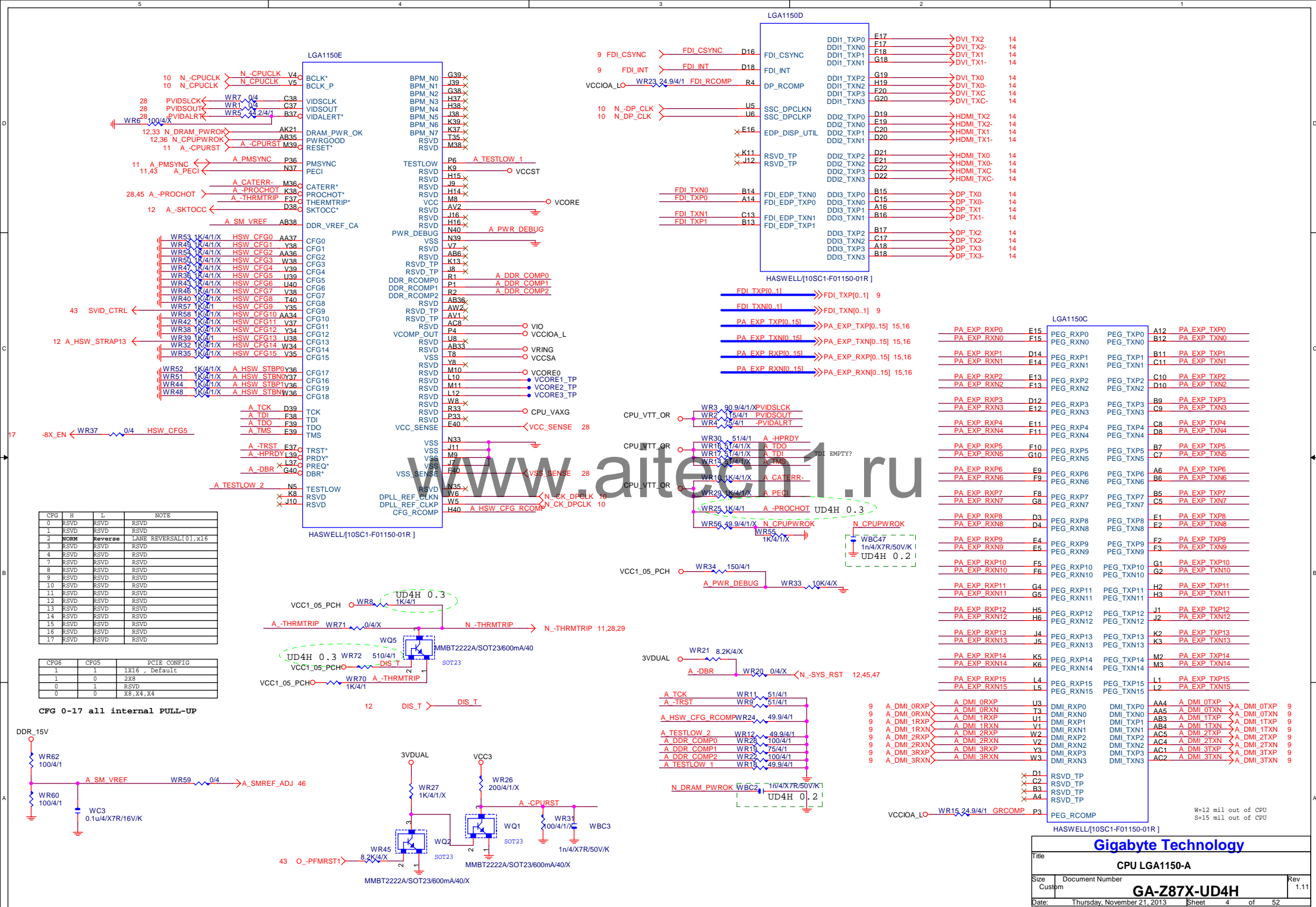
01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	CPU_LGA1150-A
05	CPU_LGA1150-B
06	CPU_LGA1150-C
07	DDR III CHANNEL A
08	DDR III CHANNEL B
09	PCH_FDI,DMI,USB,PCIE
10	PCH_DP,CLK BUFFER
11	PCH_HOST,SATA,PCI
12	PCH_GPIO,CTRL,AUDIO
13	PCH_PWR,GND
14	DP / DVI / HDMI
15	PCI EXPRESS*16/*8 SWITCH
16	PCI EXPRESS*16 SLOT
17	PCI EXPRESS*8 SLOT
18	PCI EXPRESS*4 SLOT
19	PCI EXPRESS*1 SLOTS X3
20	ITE 8892
21	PCI SLOT 1
22	SATA3 SWITCH
23	USB3_eSATA, KB_USB3
24	Marvell 9172
25	ALC898
26	REAR AUDIO JACK
27	Headphone Audio Amplifier
28	IR3563B PWM Controller
29	IR3553 Power Stage PH_01-04
30	IR3553 Power Stage PH_05-08
31	IR3553 Power Stage PH_09-12
32	IR3553 Power Stage PH_13-16
33	IR3570_DDR PWM Controller
34	IR3598-DDR Driver

35	DISCRETE POWER I
36	DISCRETE POWER II
37	INTEL LAN I217
38	uPD720210 USB3 4Ports Hub-1A
39	uPD720210 USB3 4Ports Hub-1B
40	F_USB 3.0 from PCH
41	F_USB 2.0
42	Dual BIOS
43	ITE8728 LPC I/O
44	FAN CTRL, H/W Monitor
45	F_PANEL , COM, PROCHOT#
46	Port80, O.V., Voltage Measure
47	ATX POWER, CLOCK GEN
48	TABLE LIST
49	uPD720210 USB3 4Ports Hub-2A
50	uPD720210 USB3 4Ports Hub-2b
51	VCC1_05_ME, VCC3_ME, 3VDUAL OV Protect

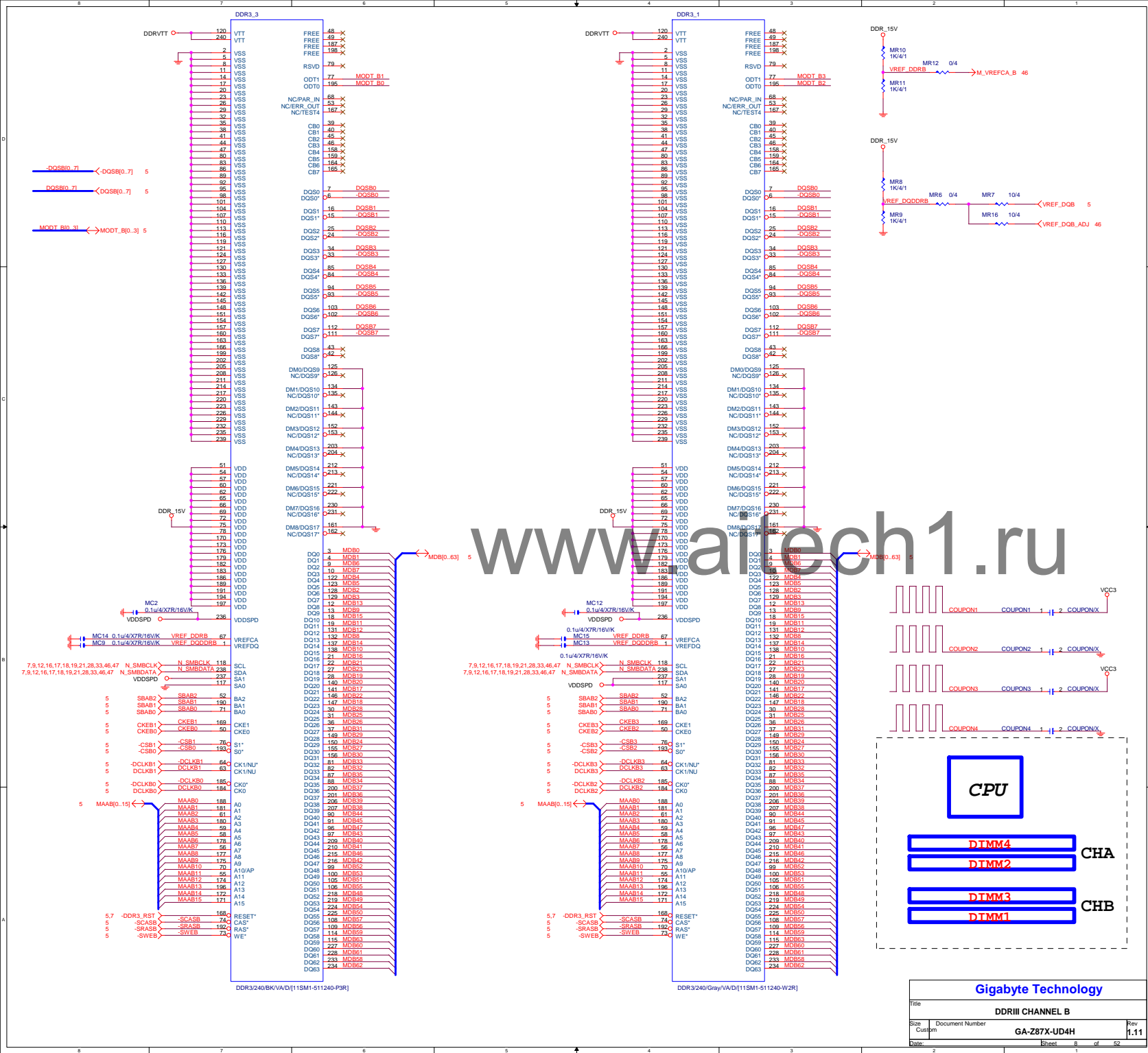


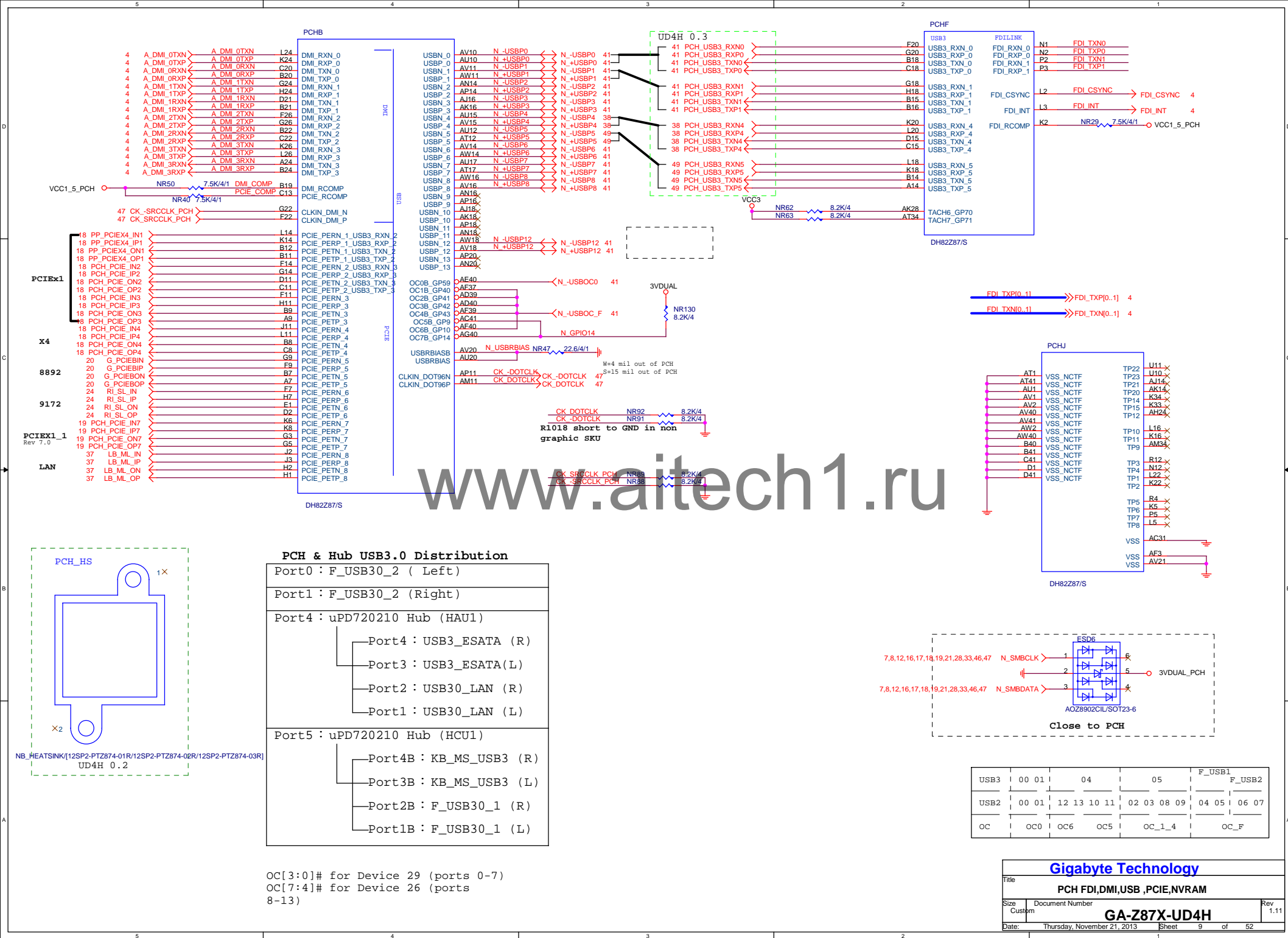
BLOCK DIAGRAM



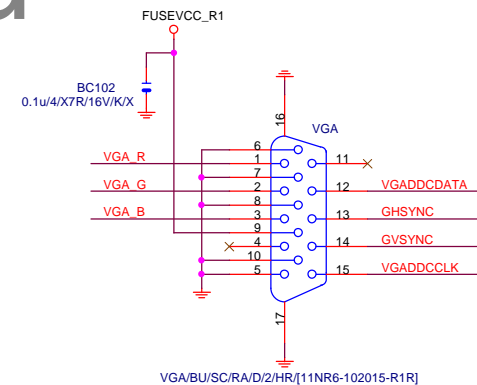
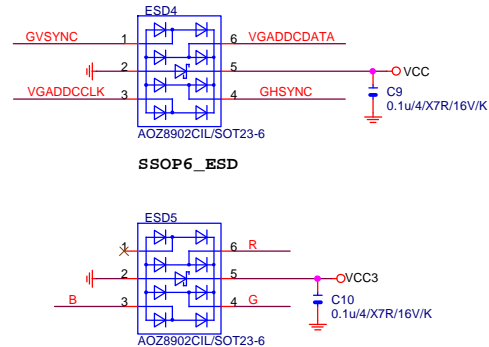
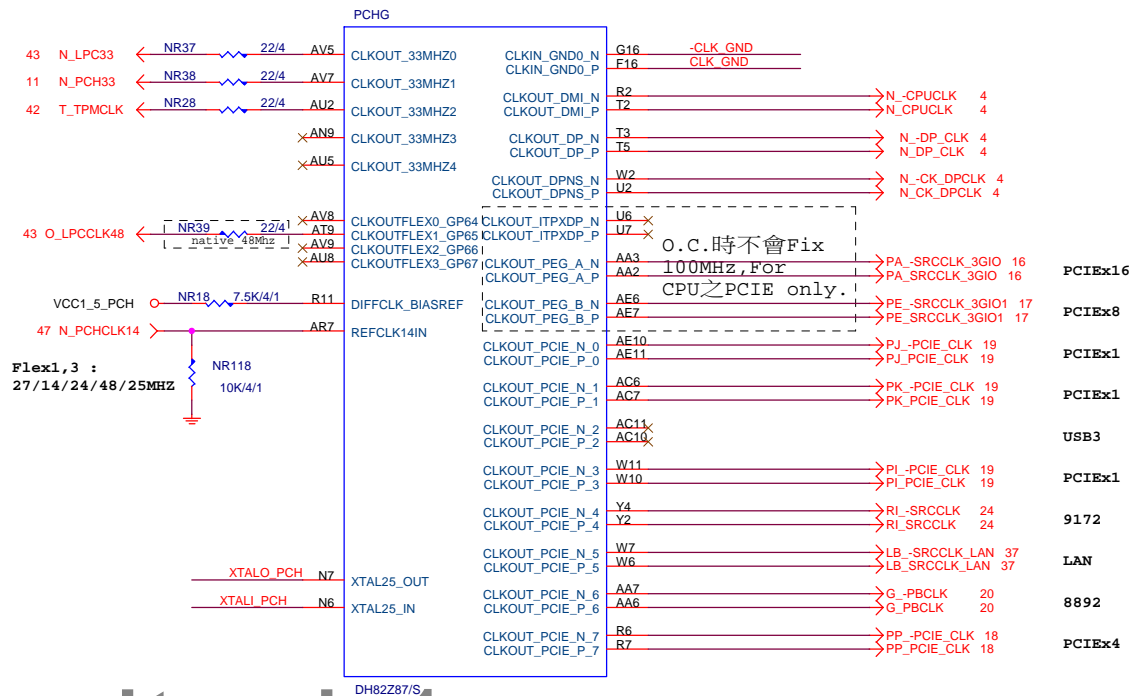
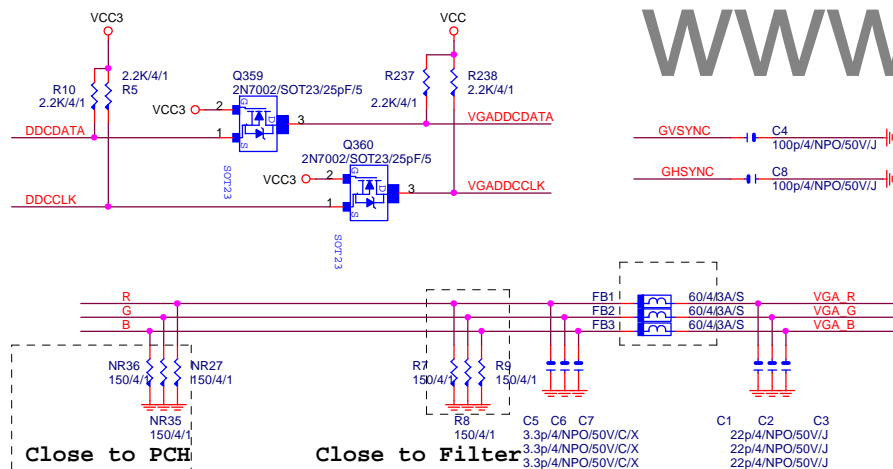
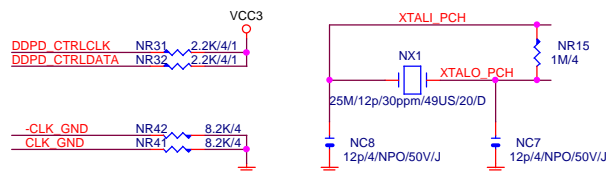
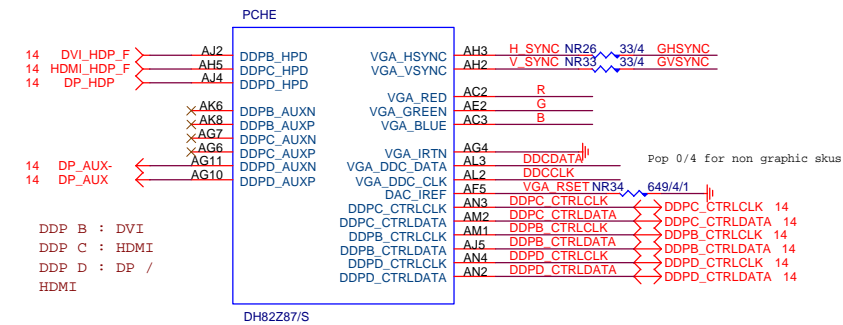


Title		DDRIII CHANNEL A		Rev
Size	Document Number	GA-Z87X-UD4H		1.
Date:		Sheet 7 of 52		



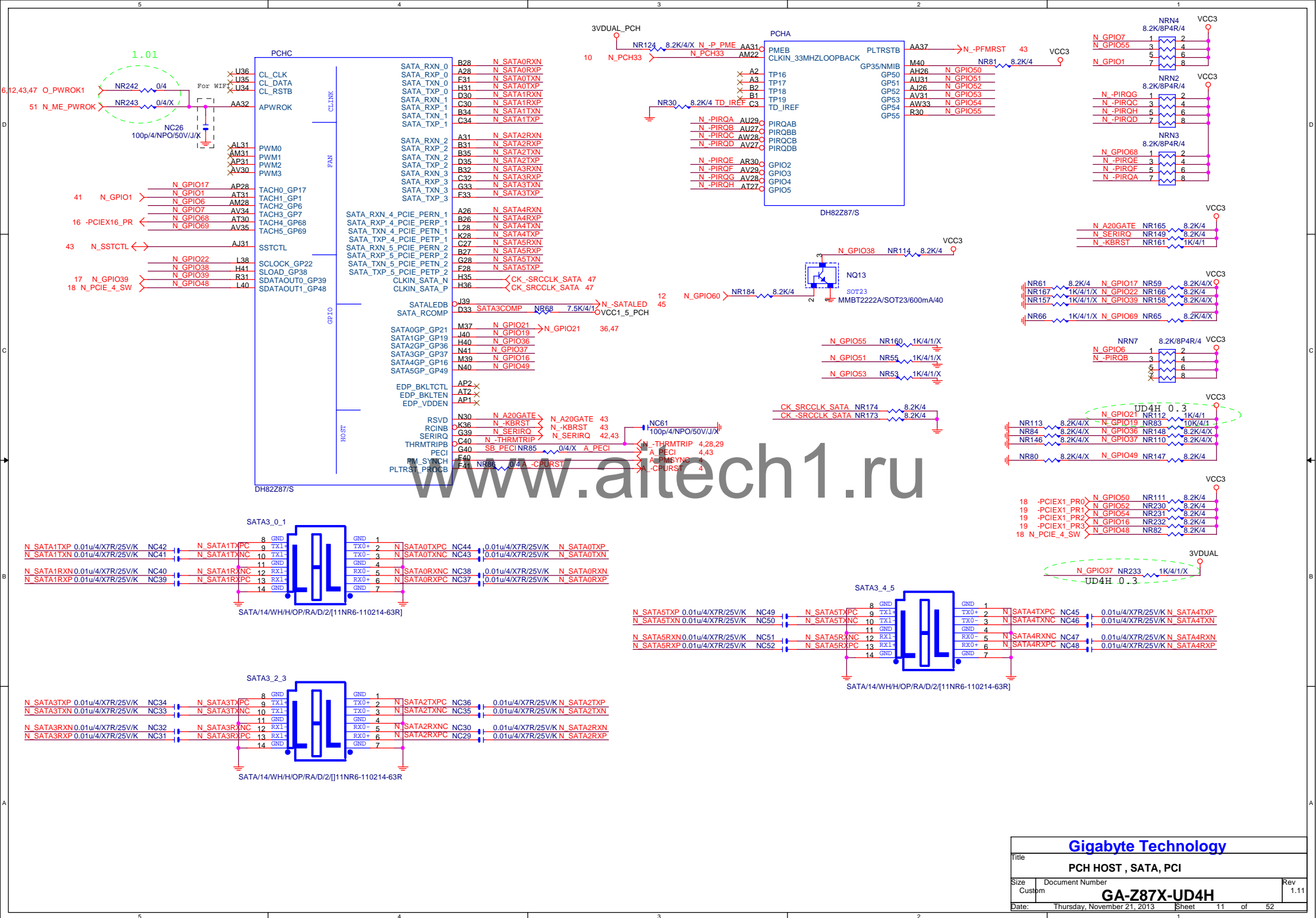


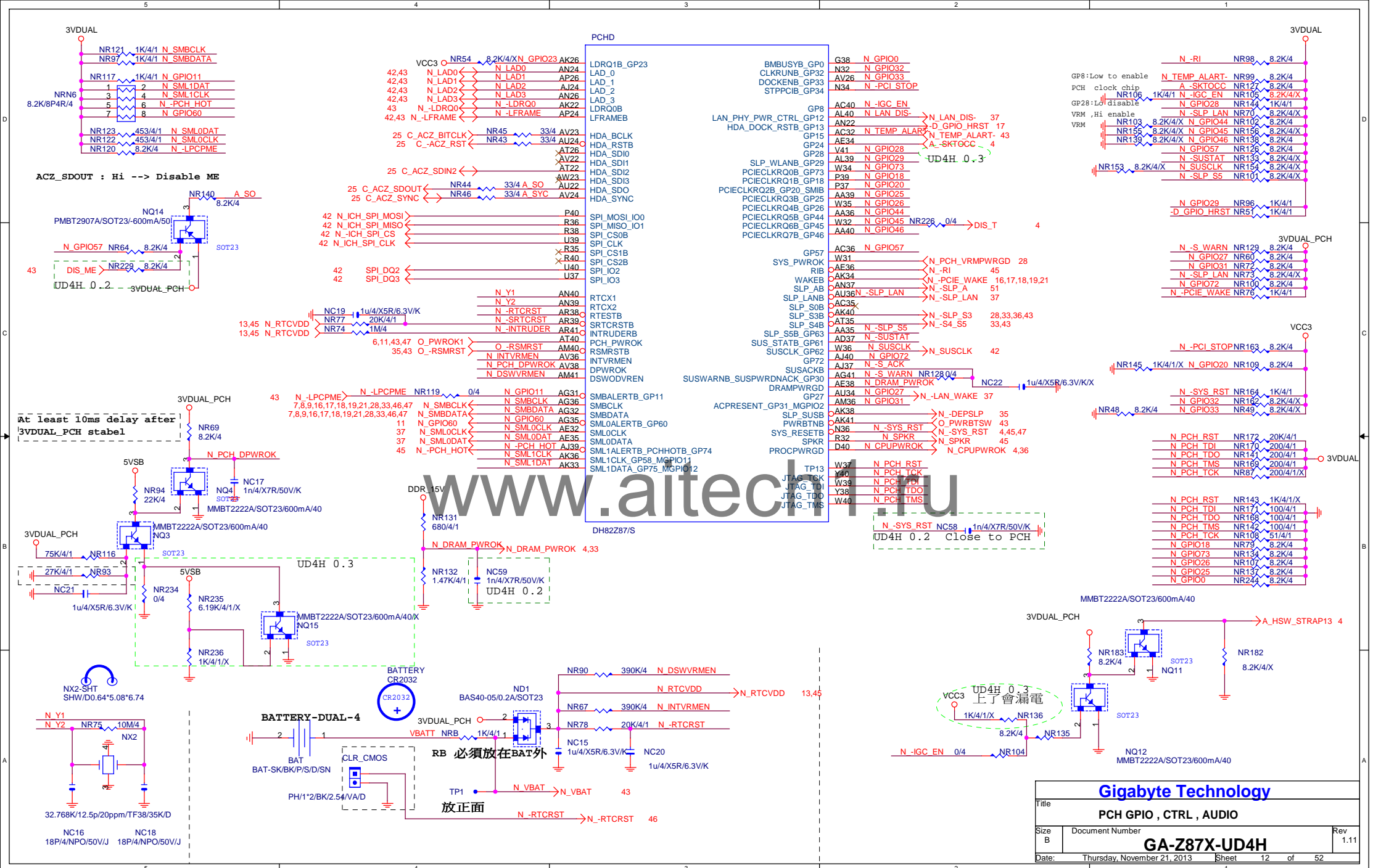
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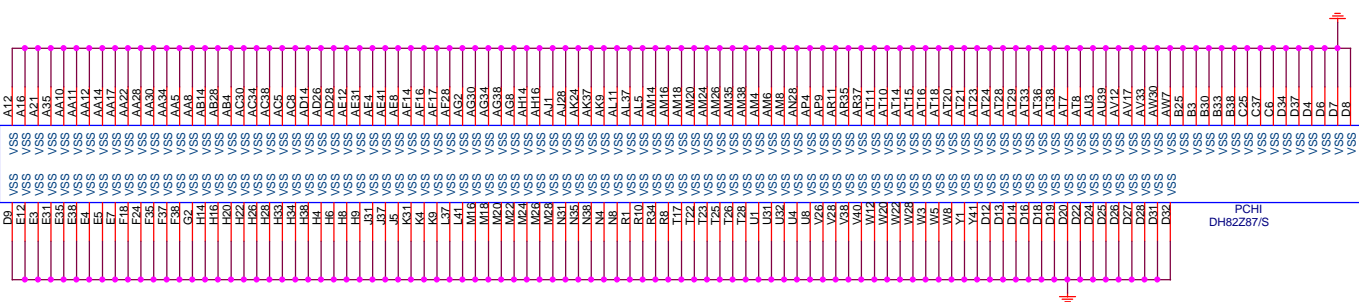
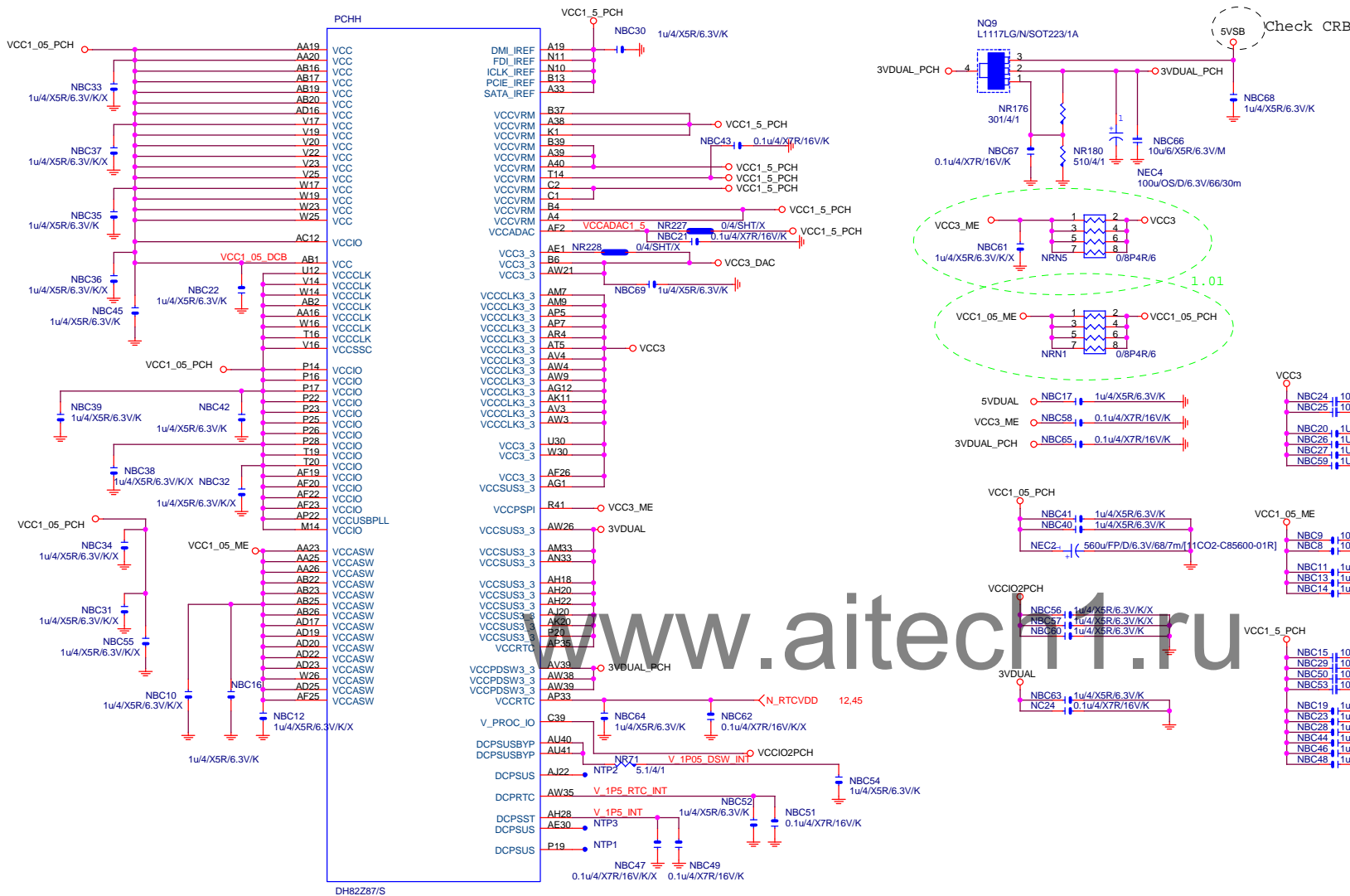


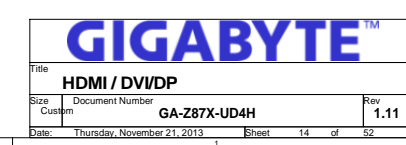
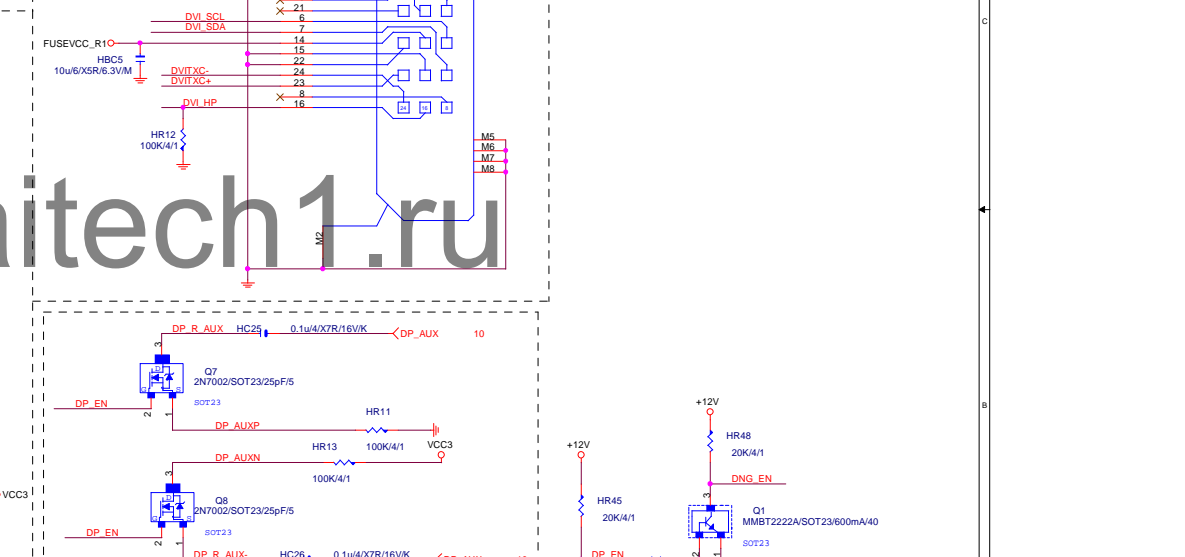
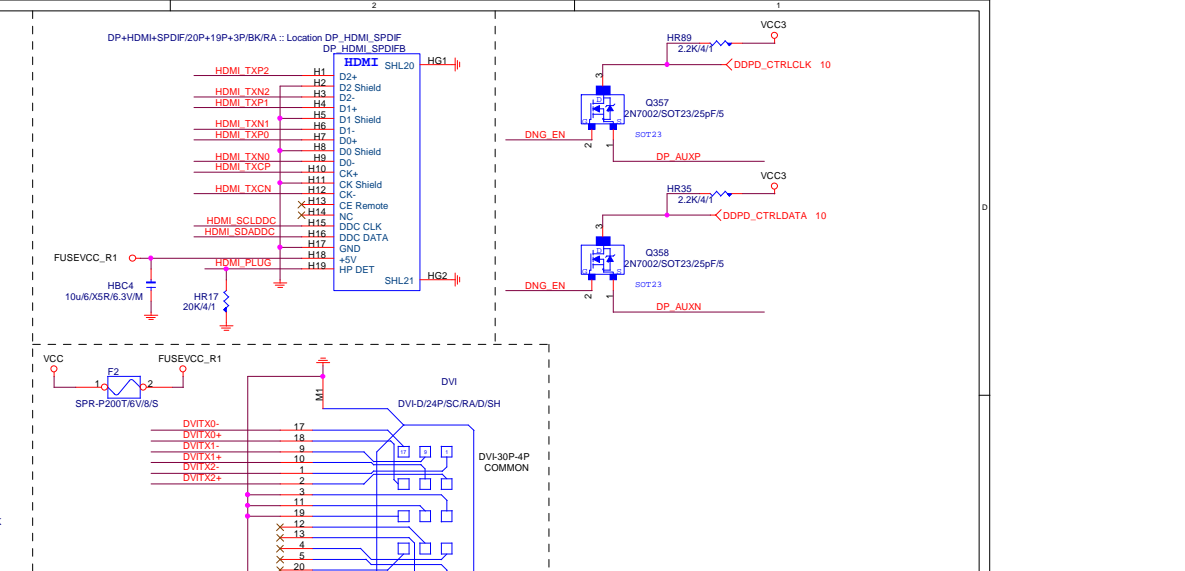
Gigabyte Technology

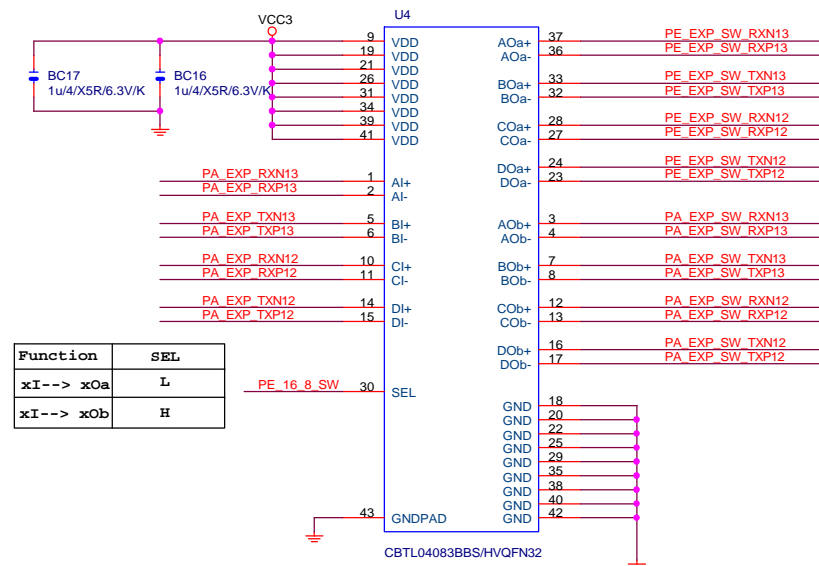
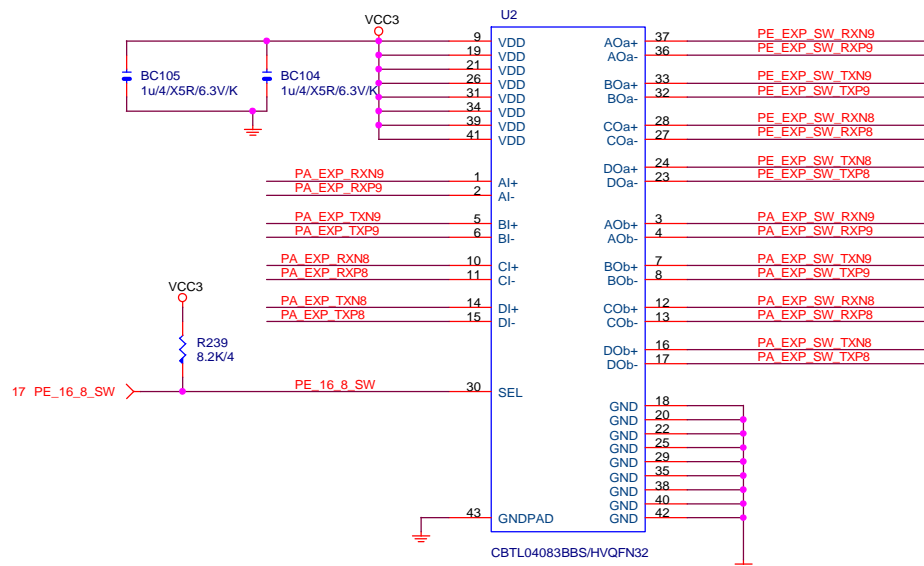
Title		
PCH DISPLAY ,CLK BUFFER		
Size	Document Number	Rev
Custom	GA-Z87X-UD4H	1.11
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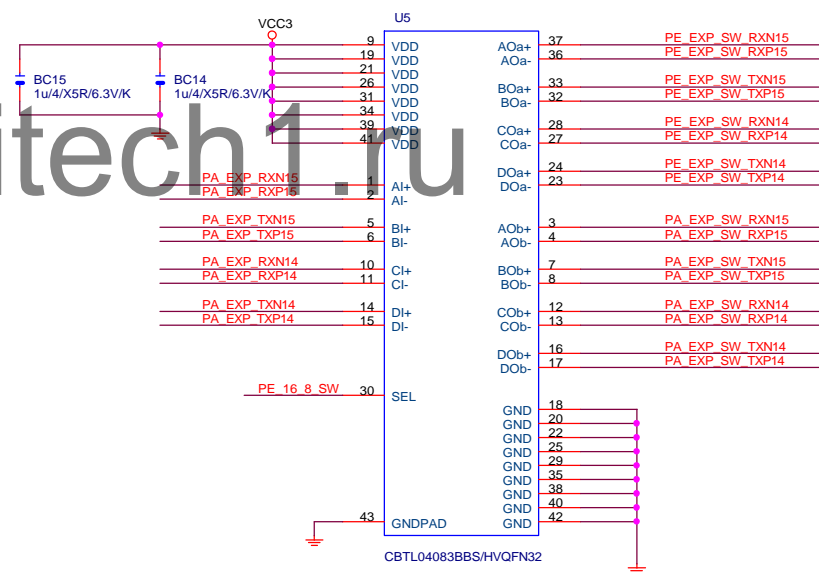
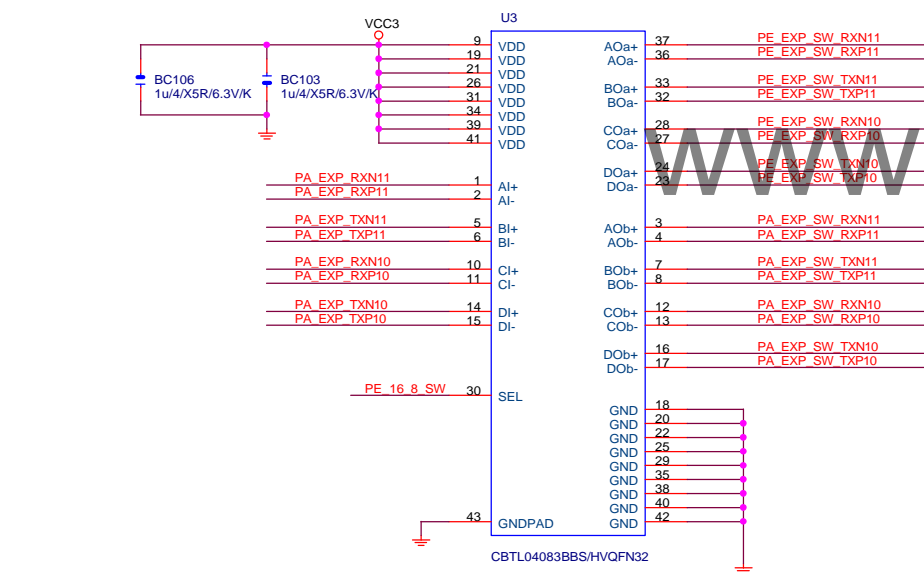




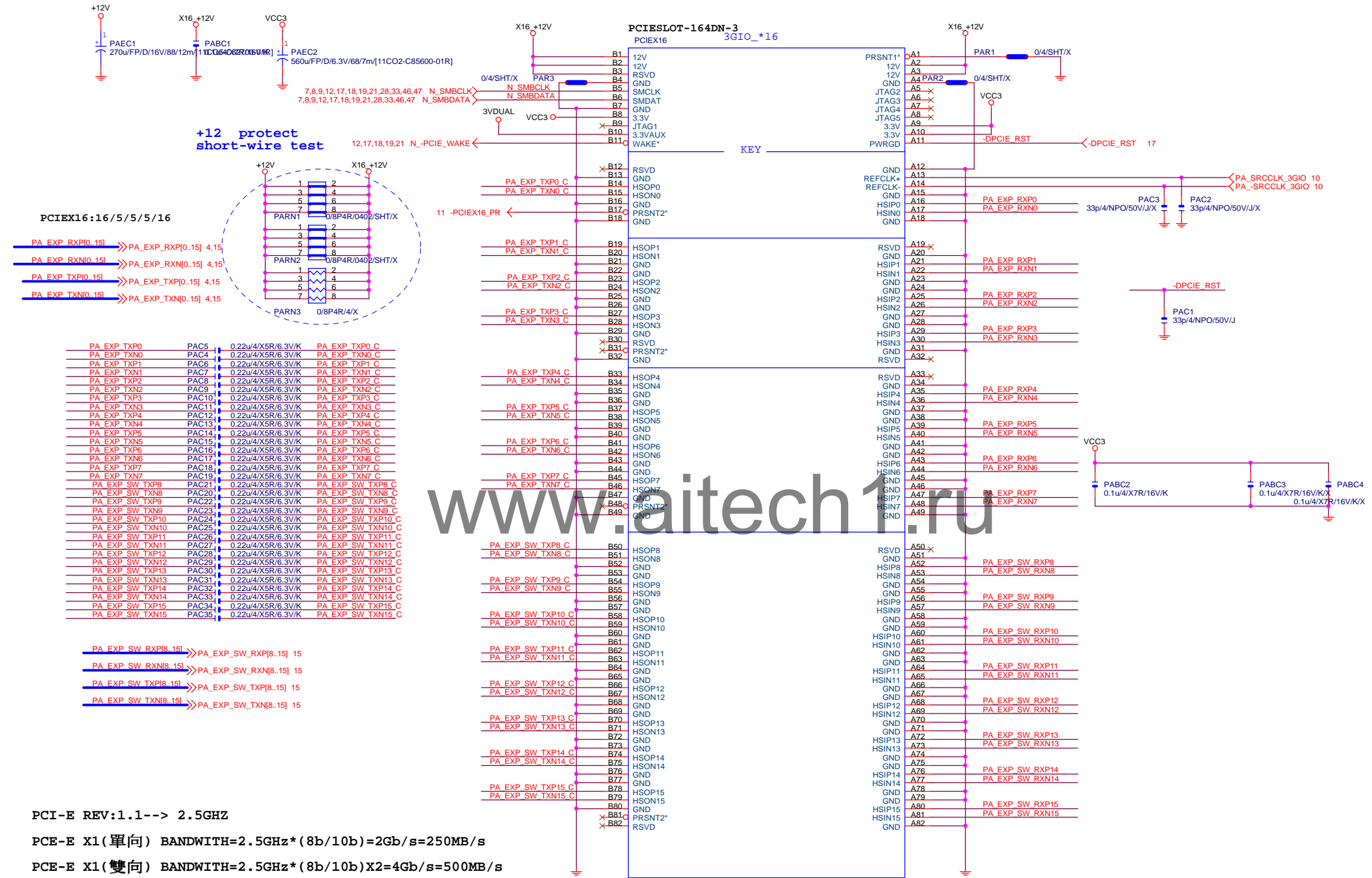




Function	SEL
xI--> xOa	L
xI--> xOb	H



PA_EXP_SW_RXP[8..15]	>>> PA_EXP_SW_RXP[8..15]	16	PE_EXP_SW_RXP[8..15]	>>> PE_EXP_SW_RXP[8..15]	17	PA_EXP_RXP[0..15]	>>> PA_EXP_RXP[0..15]	4,16
PA_EXP_SW_RXN[8..15]	>>> PA_EXP_SW_RXN[8..15]	16	PE_EXP_SW_RXN[8..15]	>>> PE_EXP_SW_RXN[8..15]	17	PA_EXP_RXN[0..15]	>>> PA_EXP_RXN[0..15]	4,16
PA_EXP_SW_TXP[8..15]	>>> PA_EXP_SW_TXP[8..15]	16	PE_EXP_SW_TXP[8..15]	>>> PE_EXP_SW_TXP[8..15]	17	PA_EXP_TXP[0..15]	>>> PA_EXP_TXP[0..15]	4,16
PA_EXP_SW_TXN[8..15]	>>> PA_EXP_SW_TXN[8..15]	16	PE_EXP_SW_TXN[8..15]	>>> PE_EXP_SW_TXN[8..15]	17	PA_EXP_TXN[0..15]	>>> PA_EXP_TXN[0..15]	4,16



PCI-E REV:1.1--> 2.5GHZ

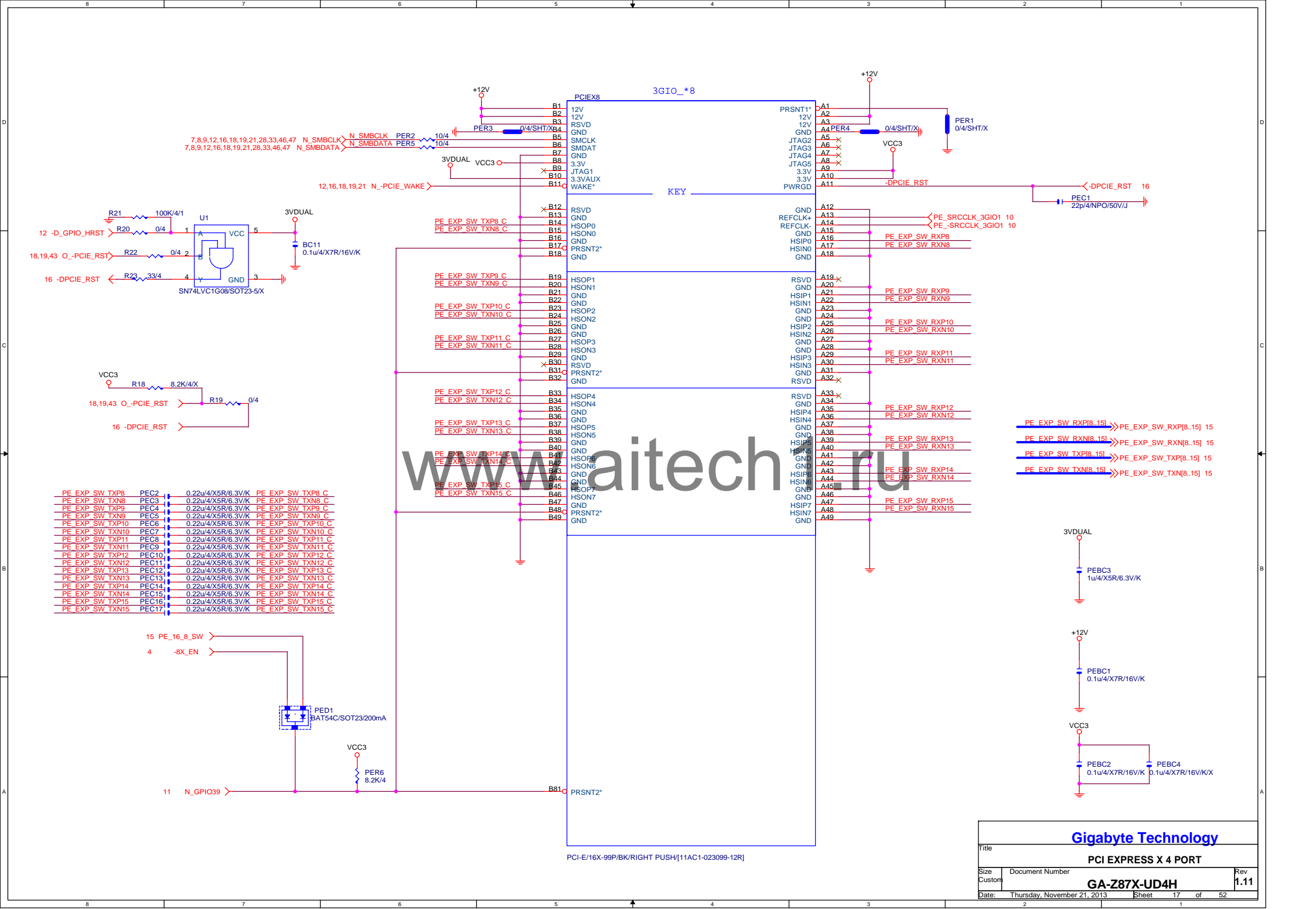
PCE-E X1(單向) BANDWITH=2.5GHz*(8b/10b)=2Gb/s=250MB/s

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

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

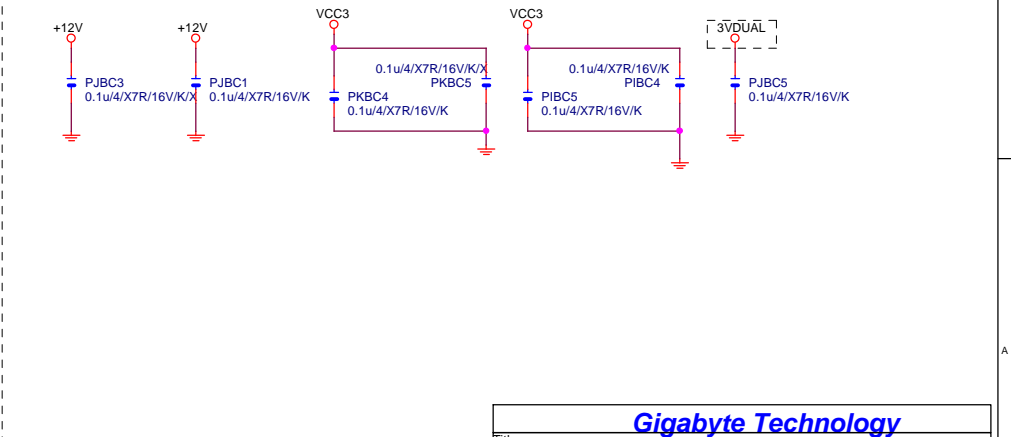
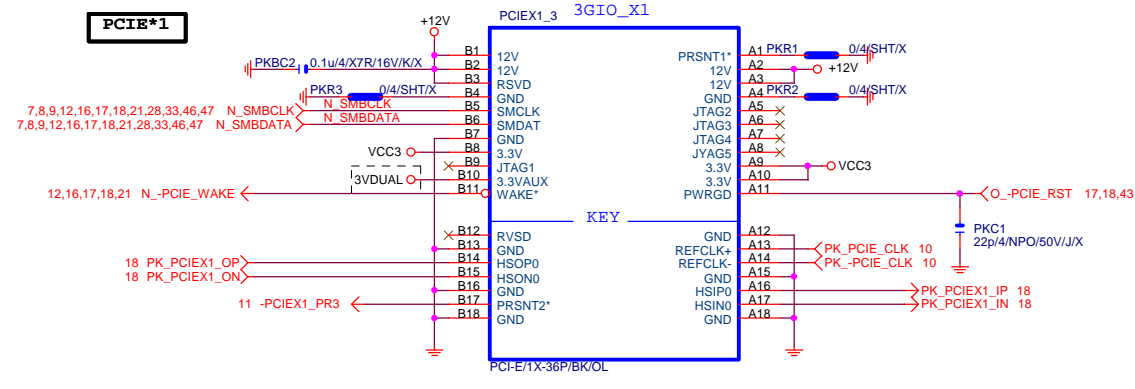
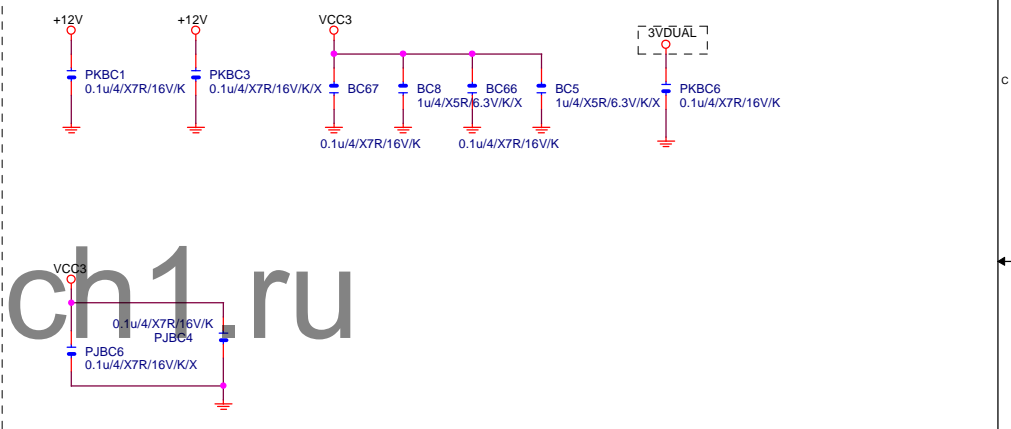
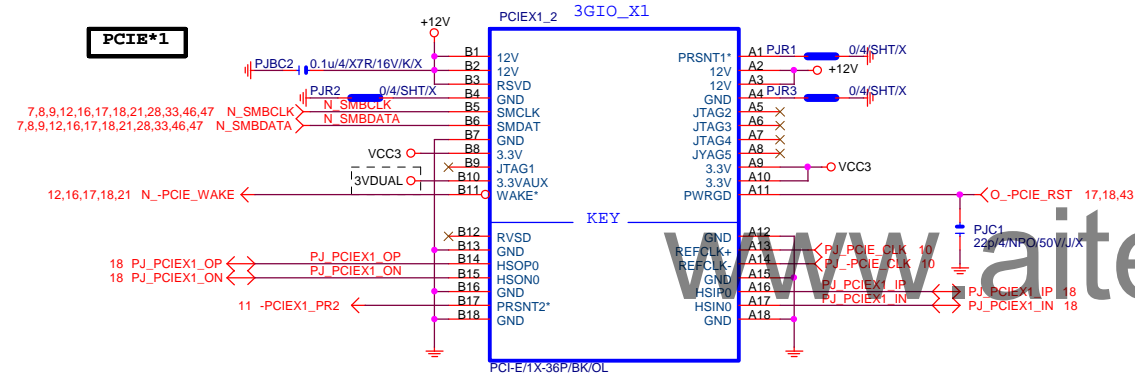
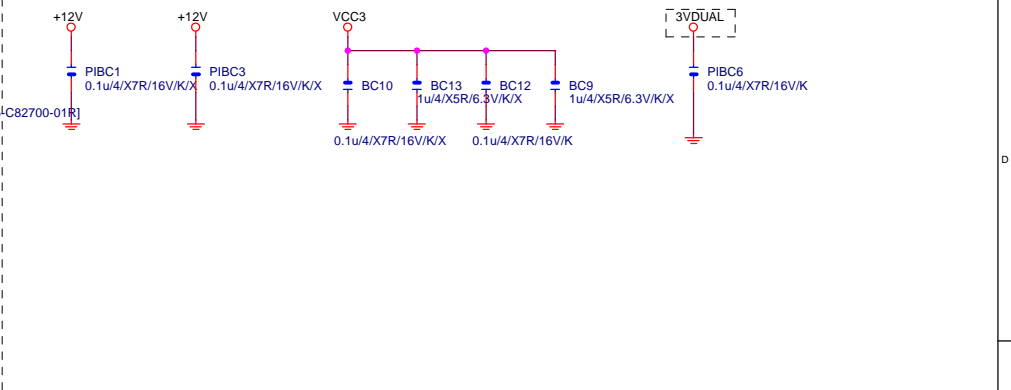
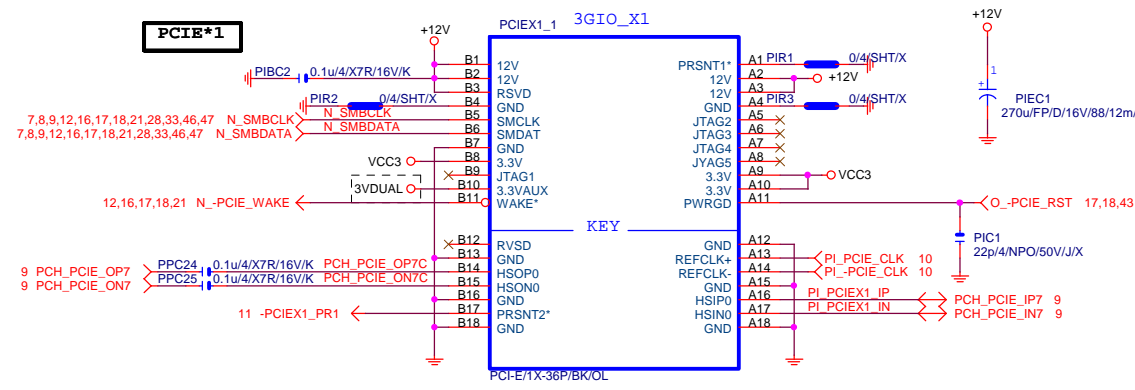
PCE-E X16(雙向) BANDWITH=2.5GHz*(8b/10b)X16X2=64Gb/s=8GB/s

PCI-E REV:2.0--> 5GHZ

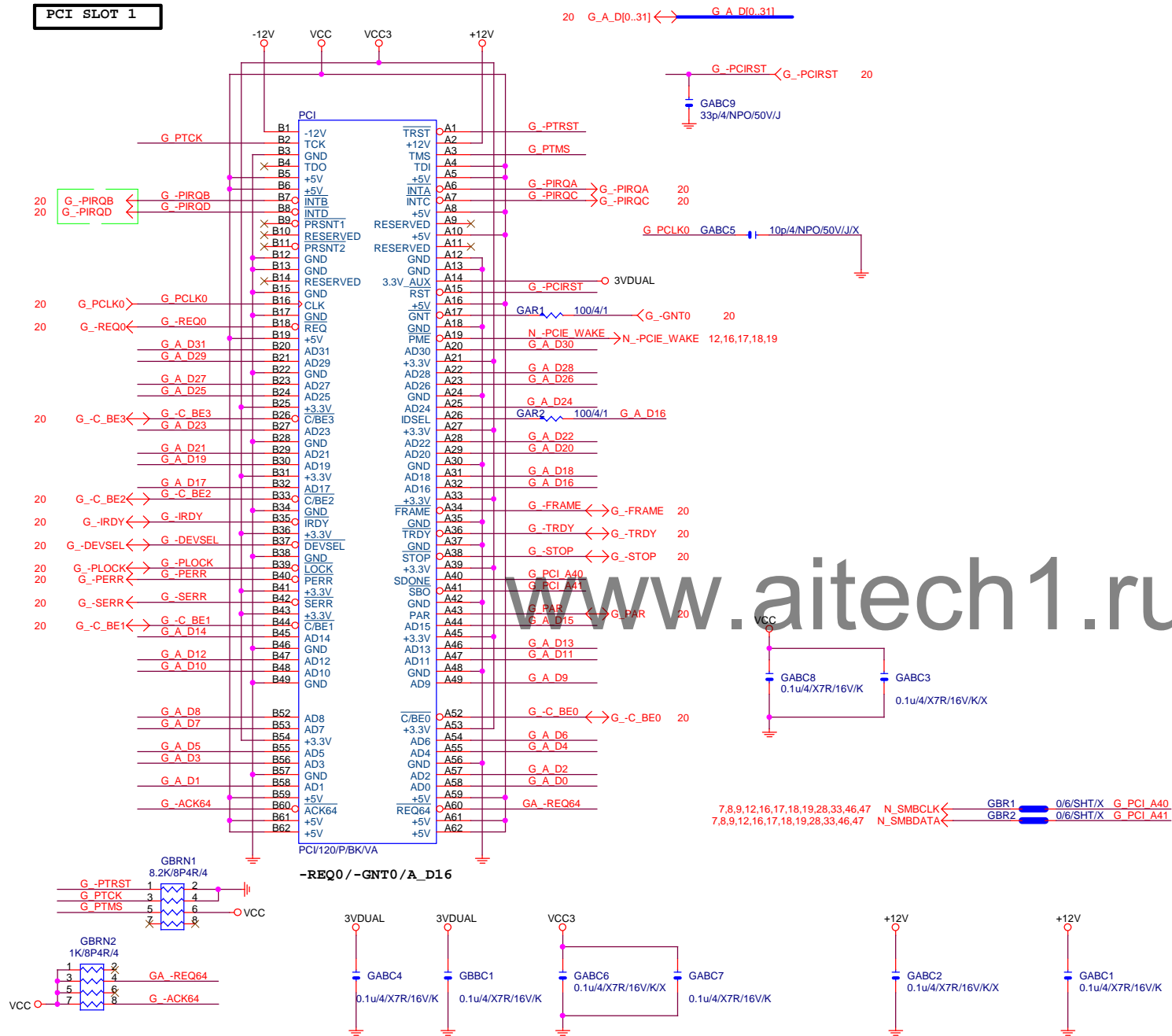


PCIE*4



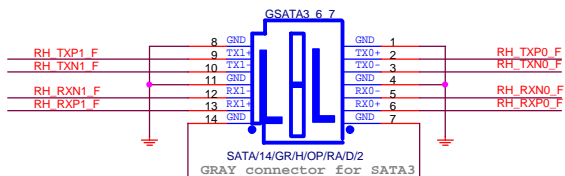


PCI SLOT 1

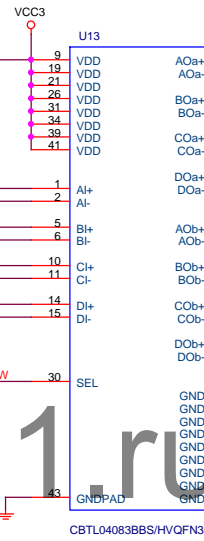
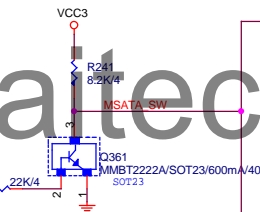
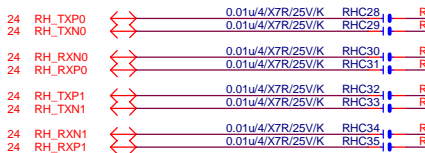


GIGABYTE™

Title PCI SLOT 1&2			
Size B	Document Number GA-Z87X-UD4H		Rev 1.11
Date:	Thursday, November 21, 2013	Sheet 21	of 52



90欧姆:[15/4.5/7.5/4.5/15]

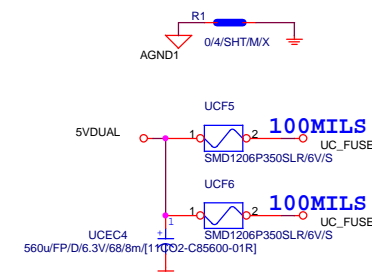
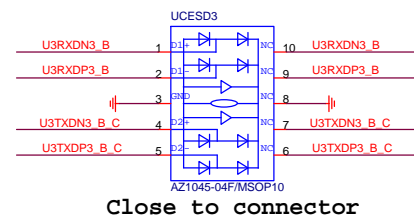
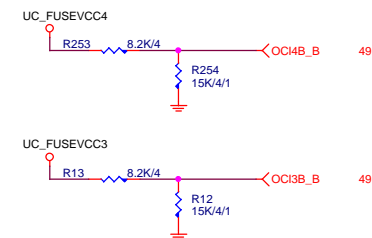
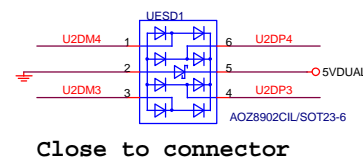
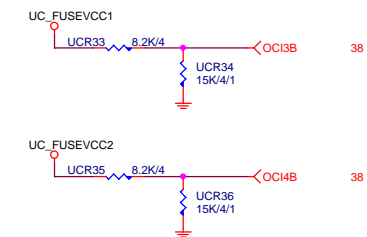


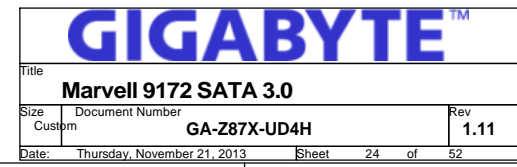
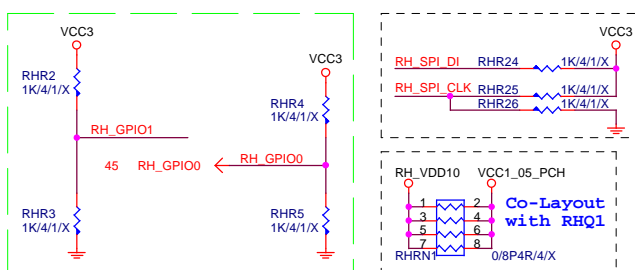
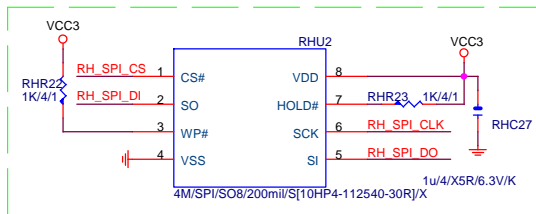
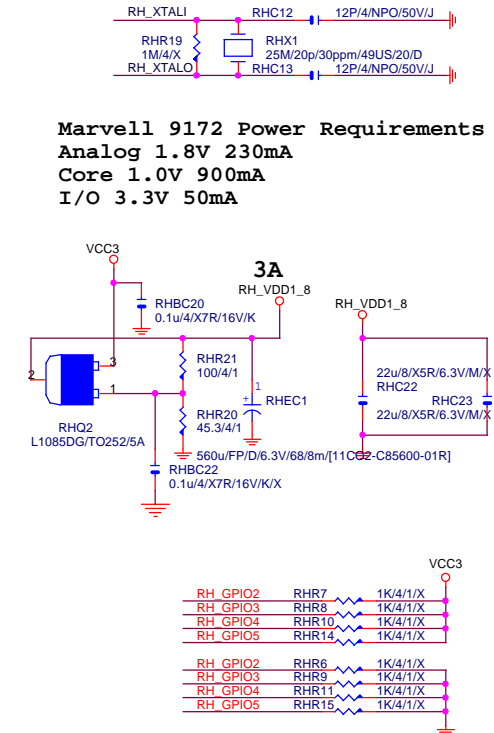
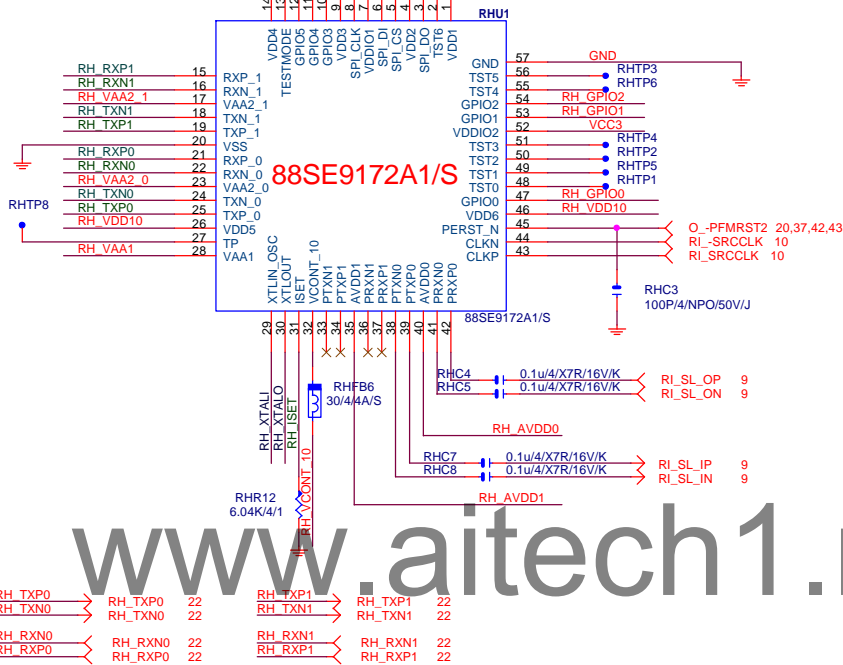
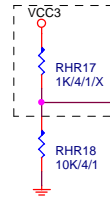
eSATA

Front
SATA

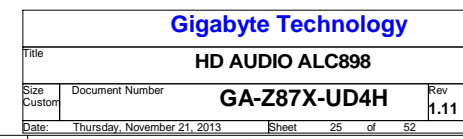
Function	SEL
xI--> xOa	L
xI--> xOb	H

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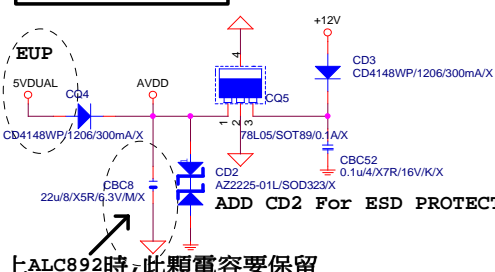




JD resistors close to pin34 of CODEC

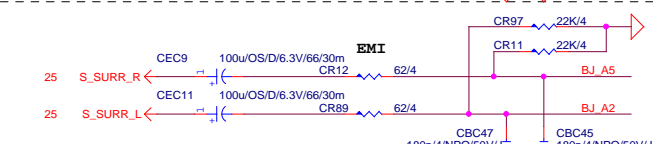
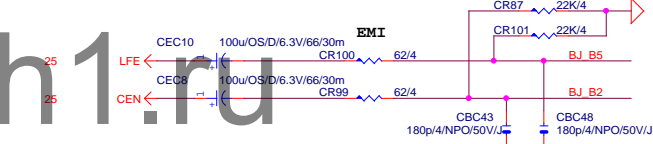
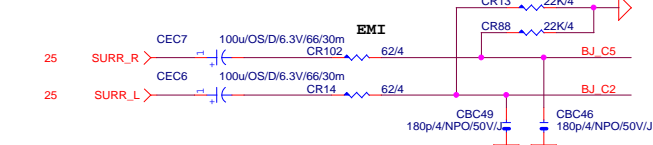
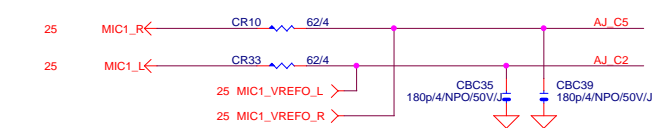
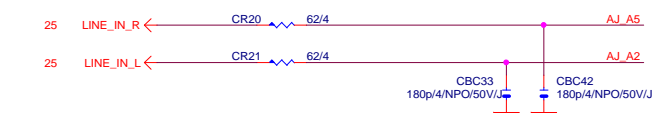
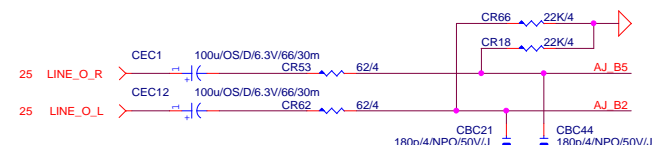
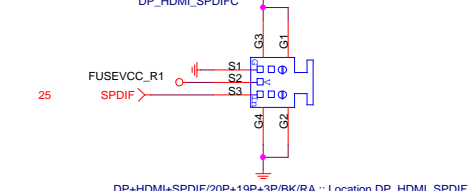
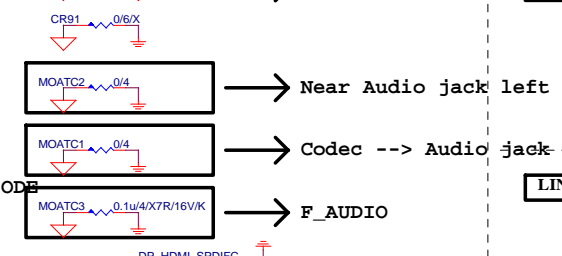


CODEC POWER/EMI PAD



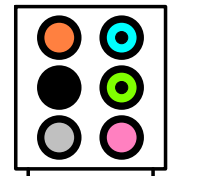
上ALC892時,此顆電容要保留

Audio jack --> USB LINE-OUT

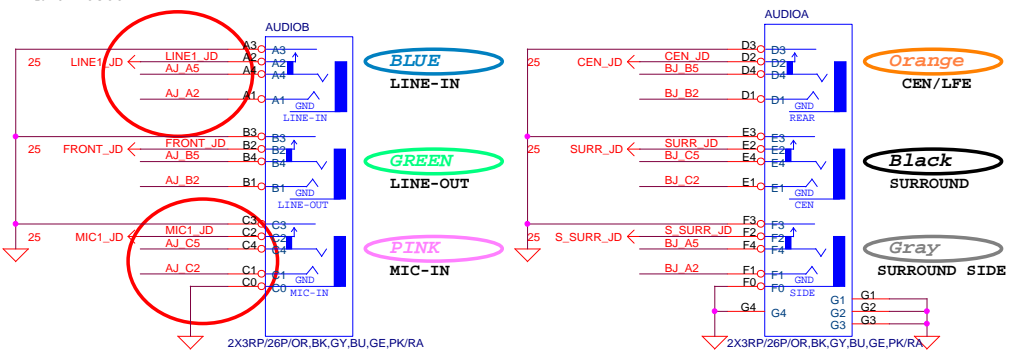


AZALIA JACK

BTX AZALIA CONNECTOR



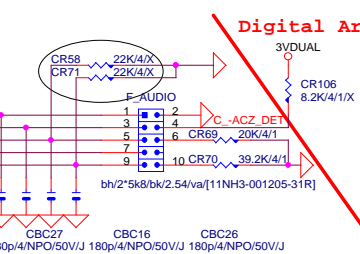
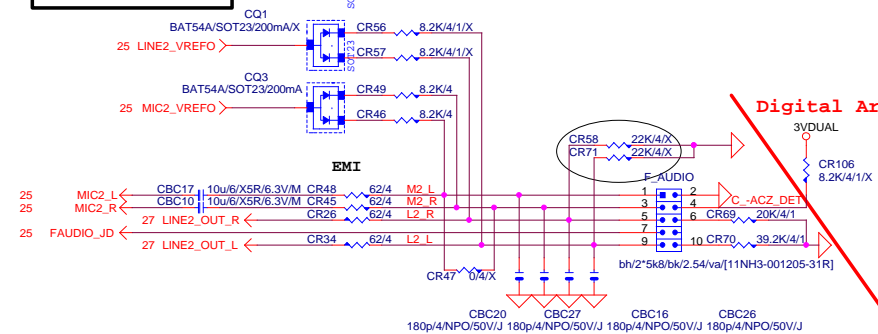
11NR6-403007-21R



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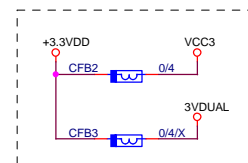
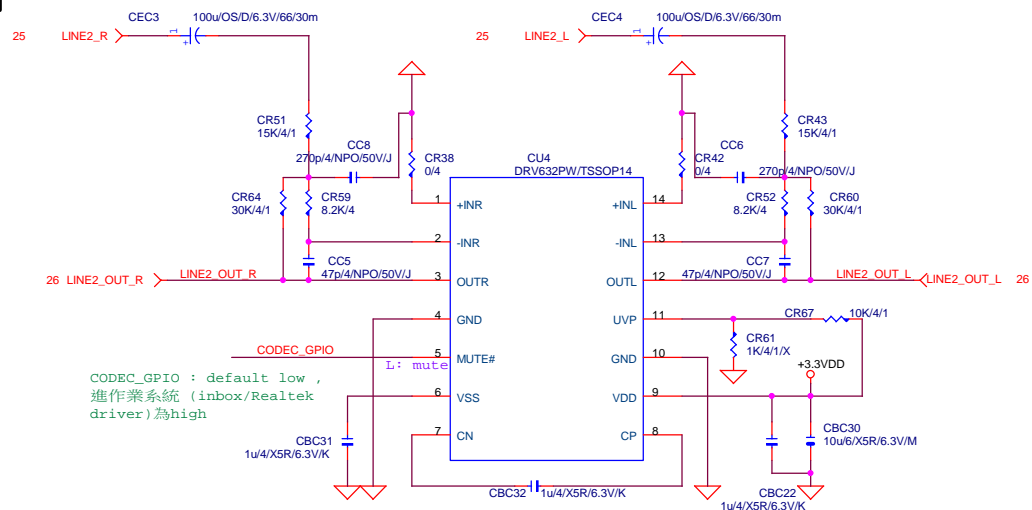
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AZALIA FRONT PANEL

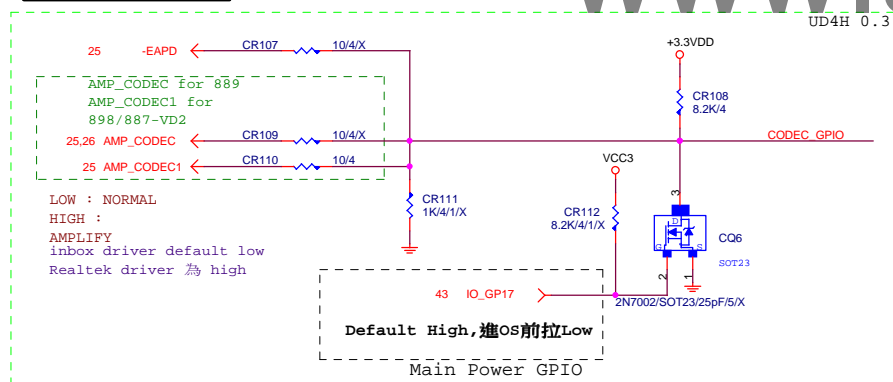


Gigabyte Technology			
Title			
AUDIO JACK			
Size			
Document Number			
GA-Z87X-UD4H			
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Rev			
1.11			

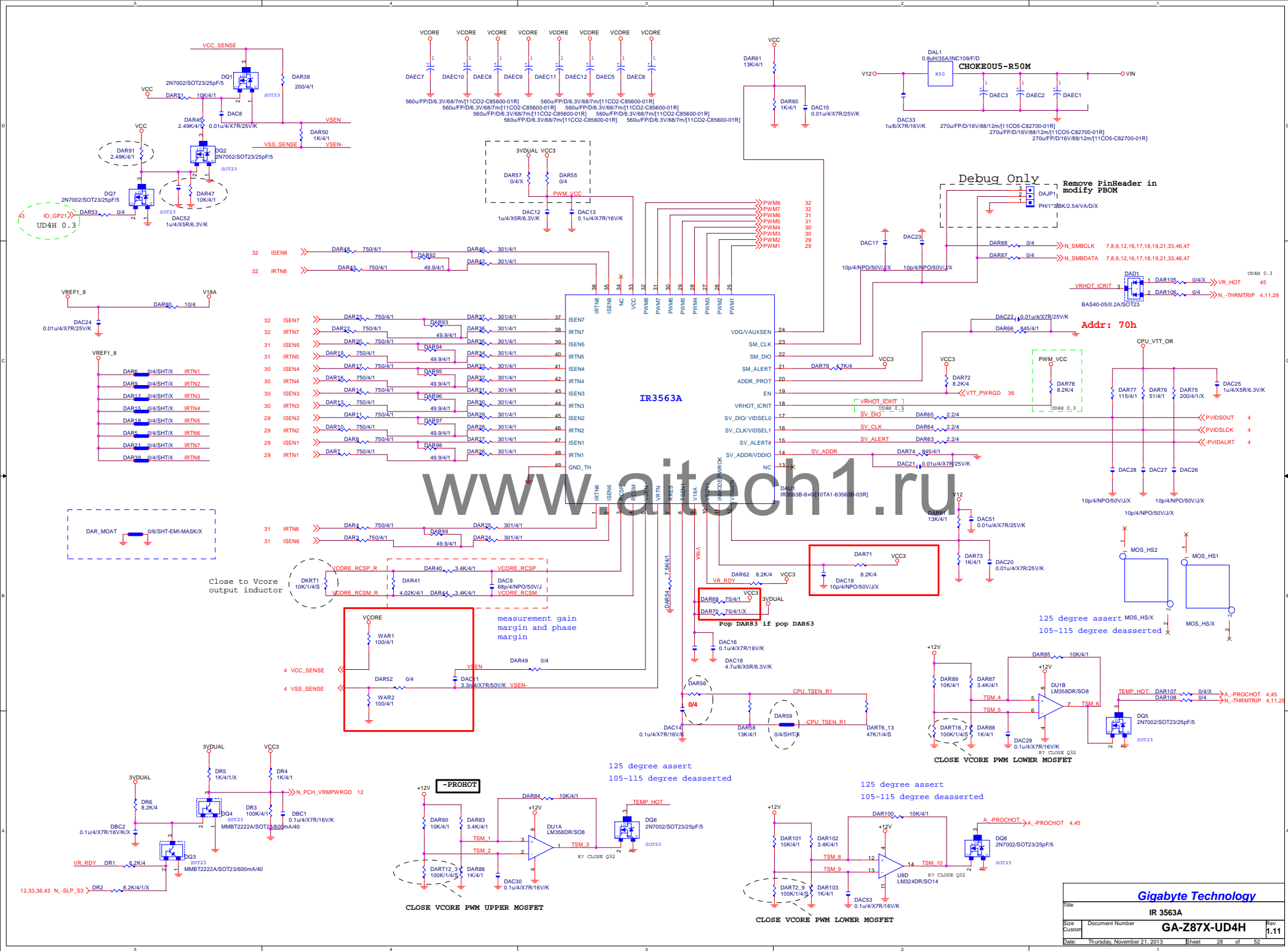
HEADPHONE



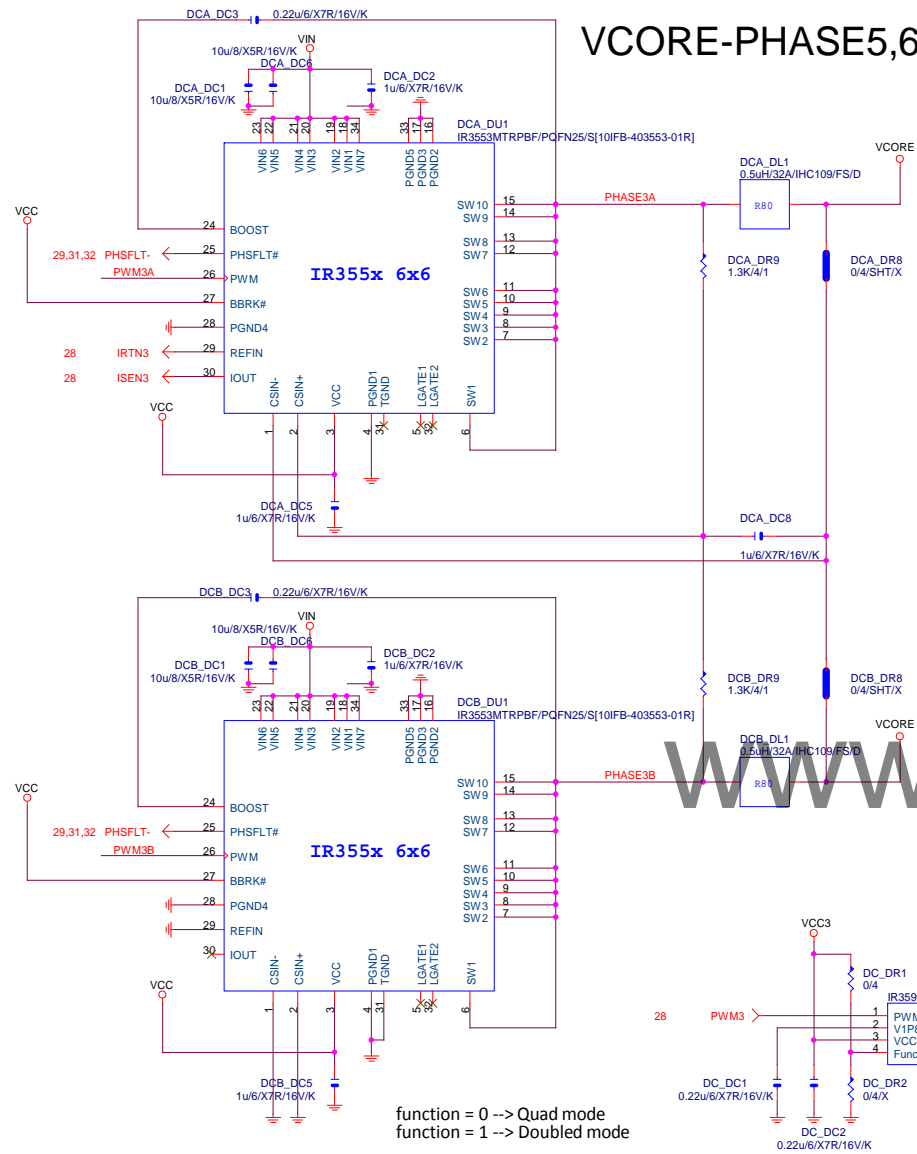
For Pop Noise



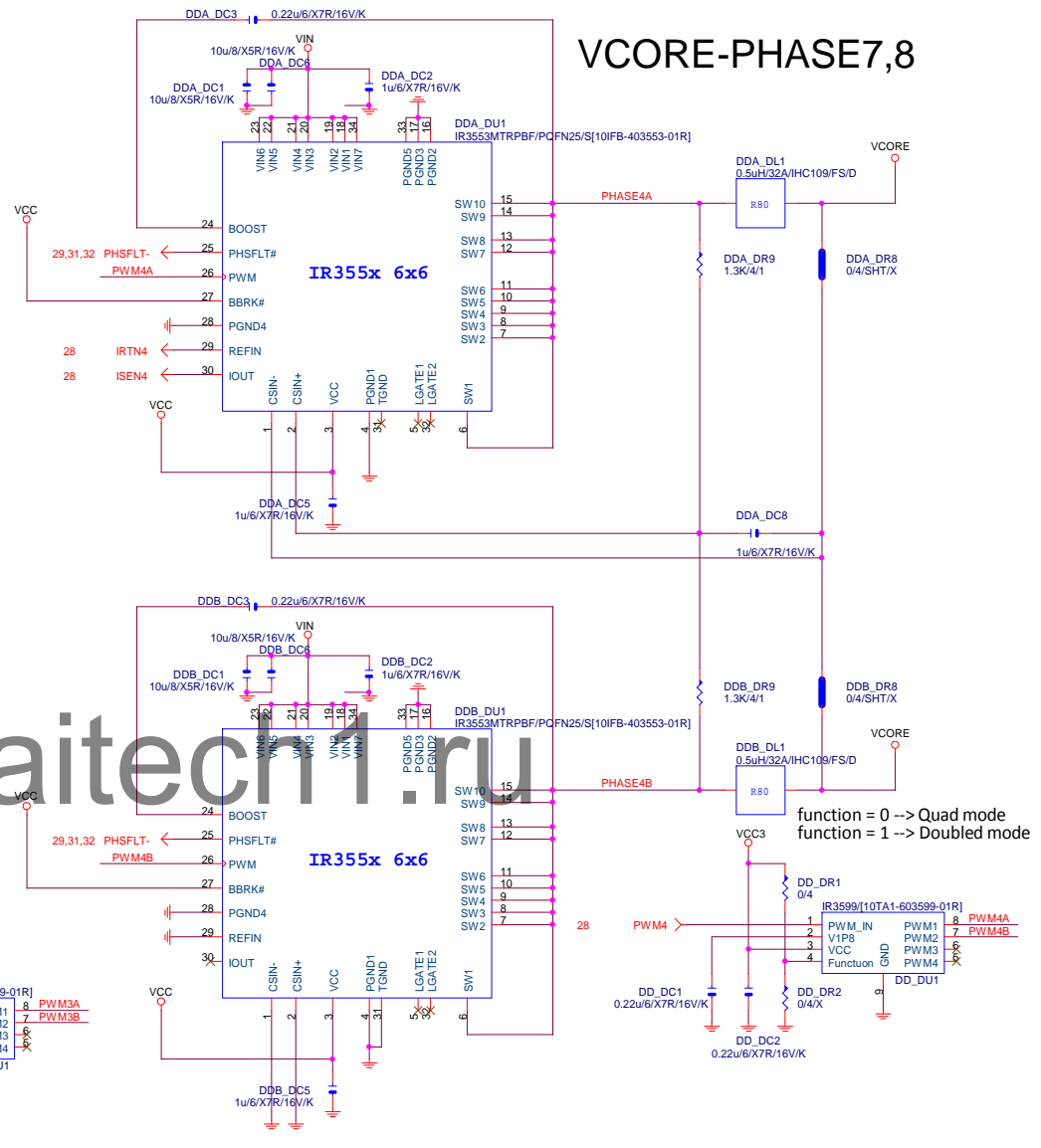
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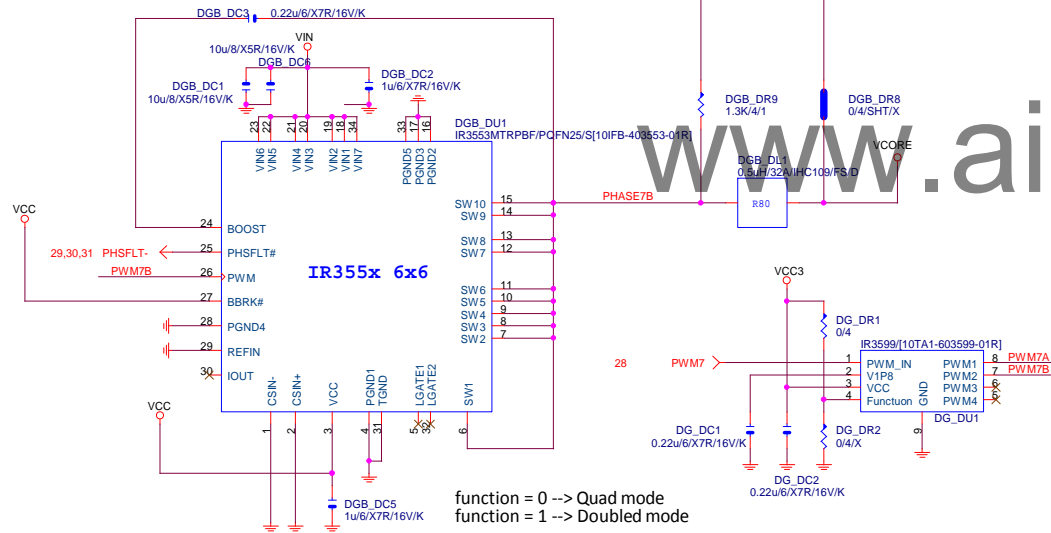
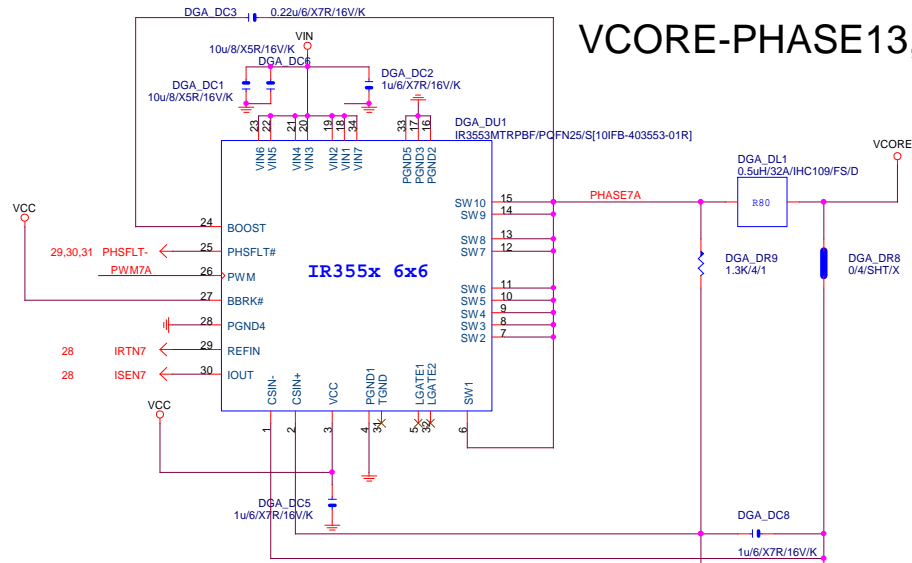
VCORE-PHASE5,6



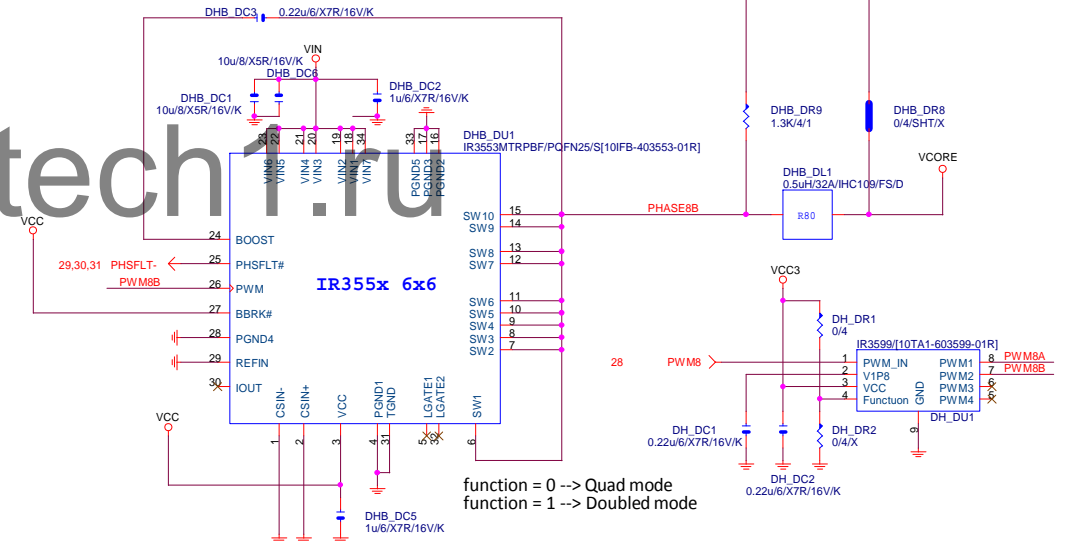
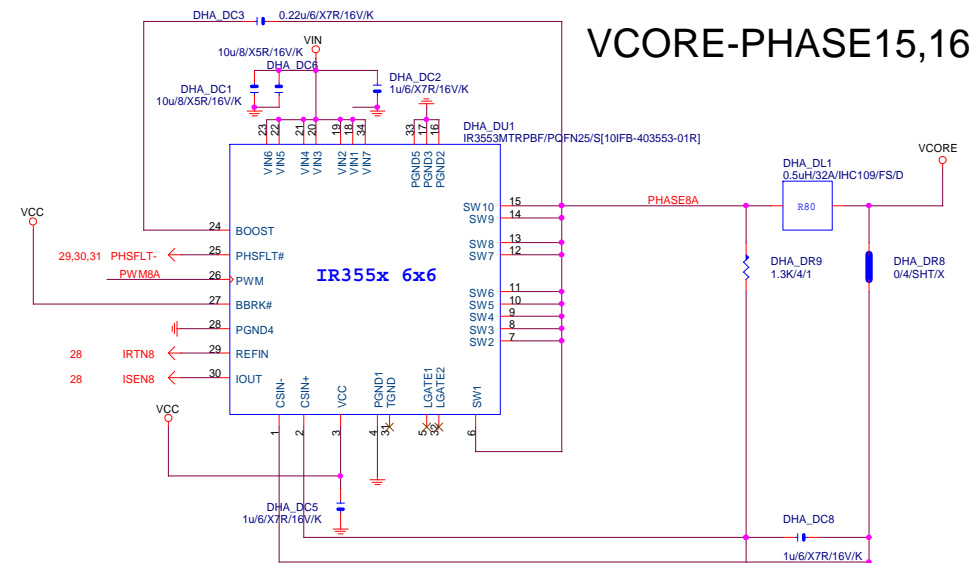
VCORE-PHASE7,8

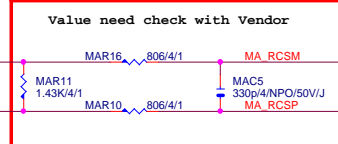
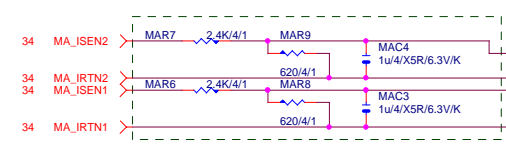
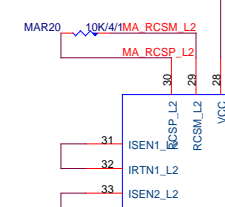
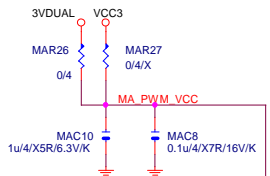
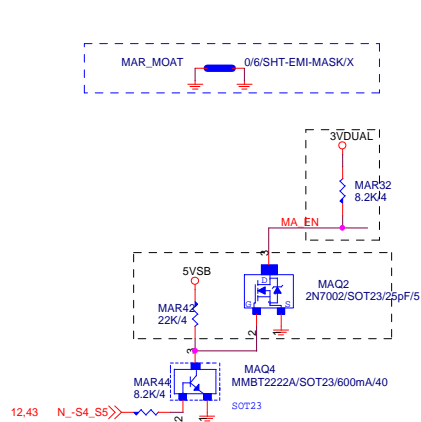


VCORE-PHASE13,14



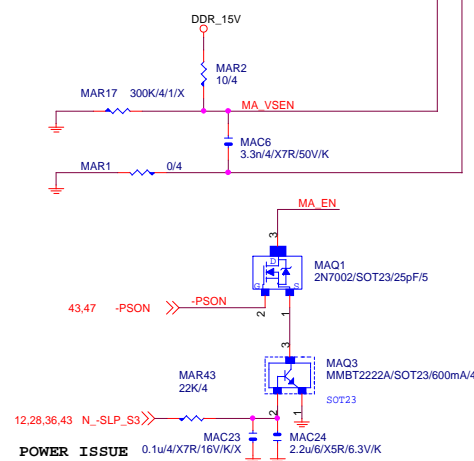
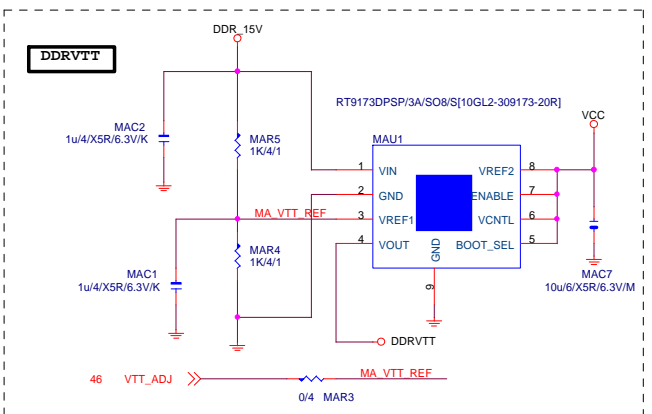
VCORE-PHASE15,16





Close to DDR
output
inductor

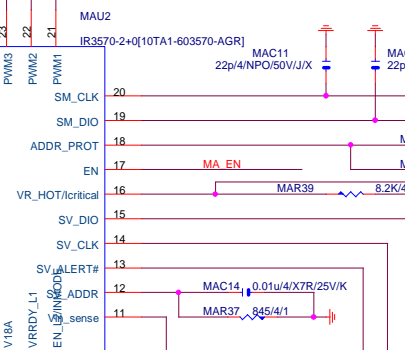
should be routed as
differential pair,
7mil width, 8mil
spacing



POWER ISSUE 0.1u/4/X7R/16V/K

IR3570

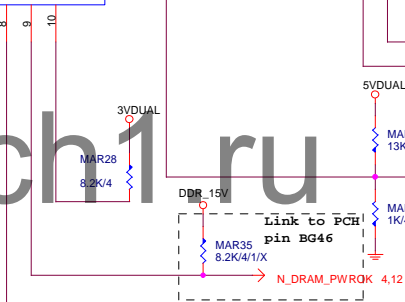
MA_PWM2 34
MA_PWM1 34



Link to system
SMBUS

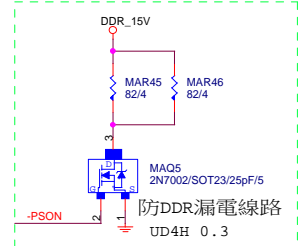
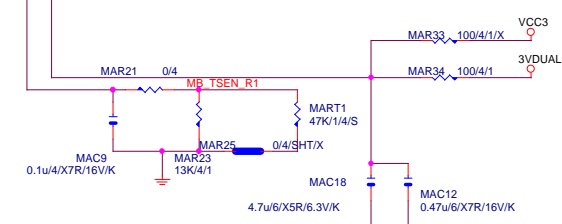
>>>N_SMBCLK 7,8,9,12,16,17,18,19,21,28,46,47
>>>N_SMBDATA 7,8,9,12,16,17,18,19,21,28,46,47

Addr: 72h



Link to PCH
pin BG46

Pull up in PCH side

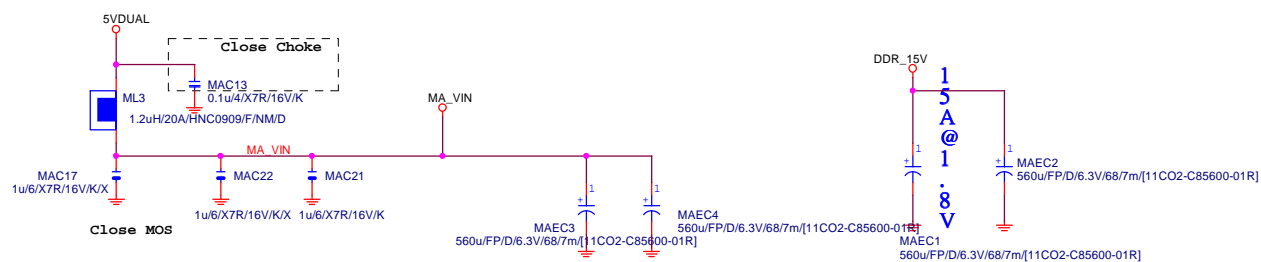
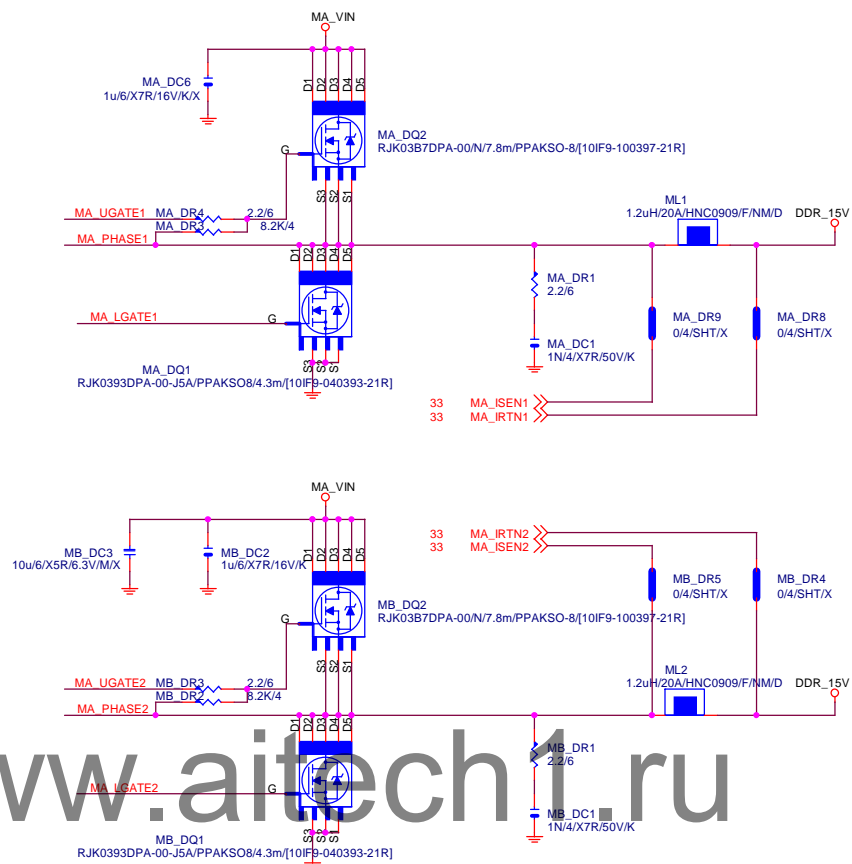
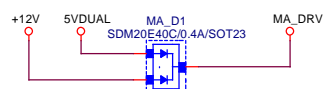
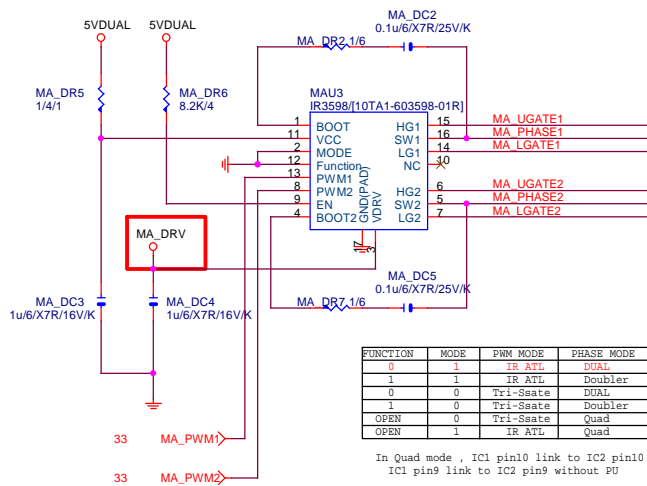


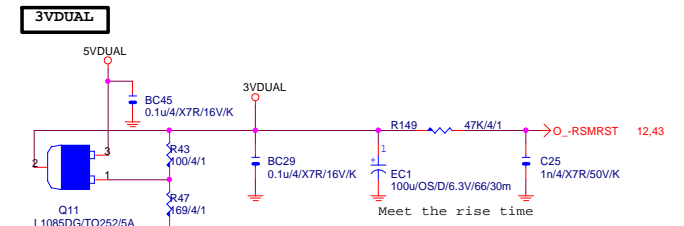
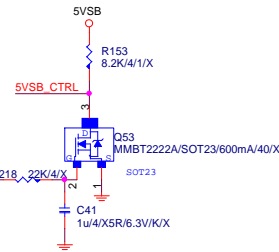
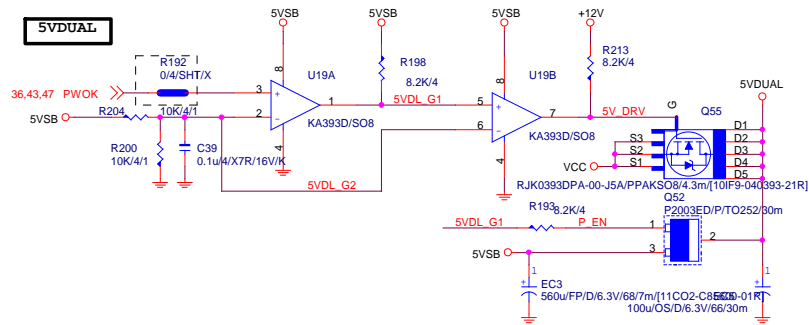
防DDR漏電線路
UD4H 0.3

GIGABYTE

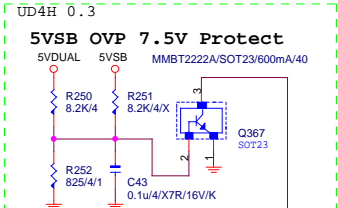
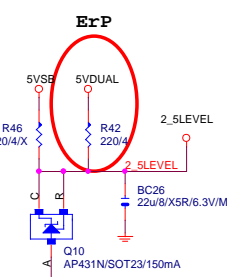
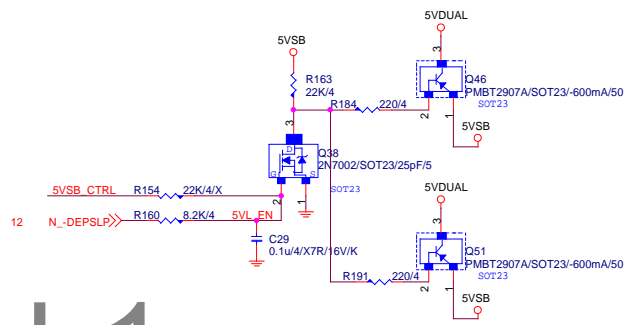
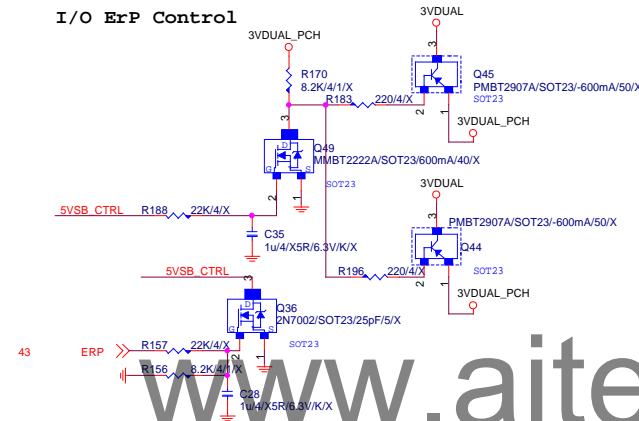
Title		
DDR POWER IR3570		
Size	Document Number	Rev
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DDR_15V

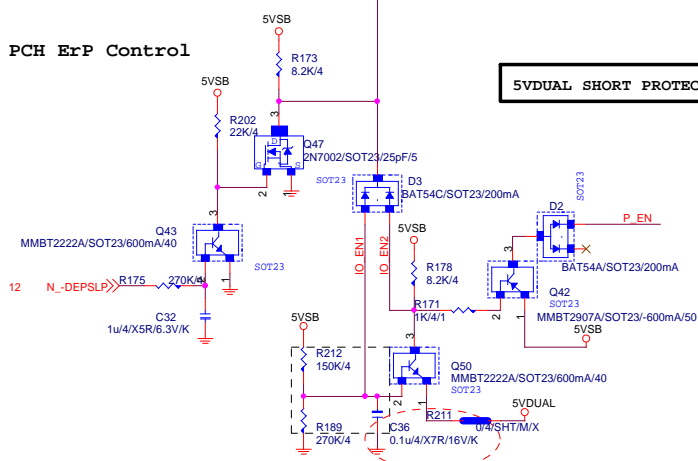




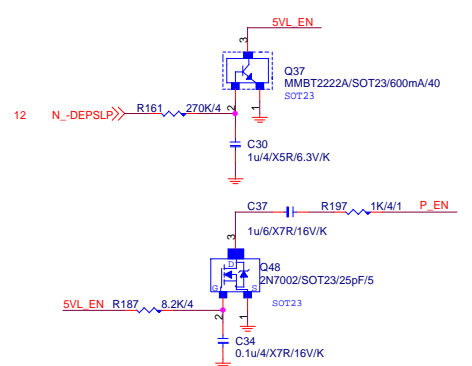
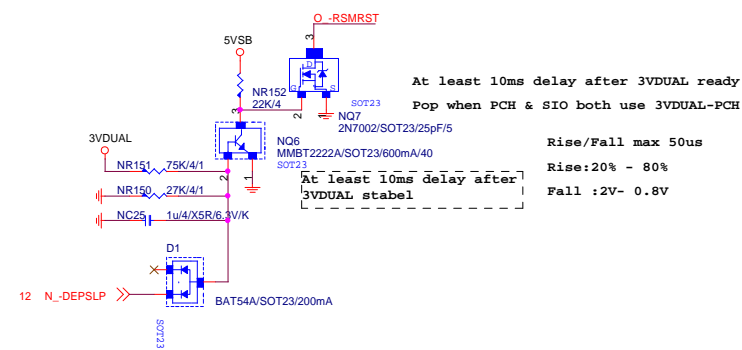
I/O ErP Control



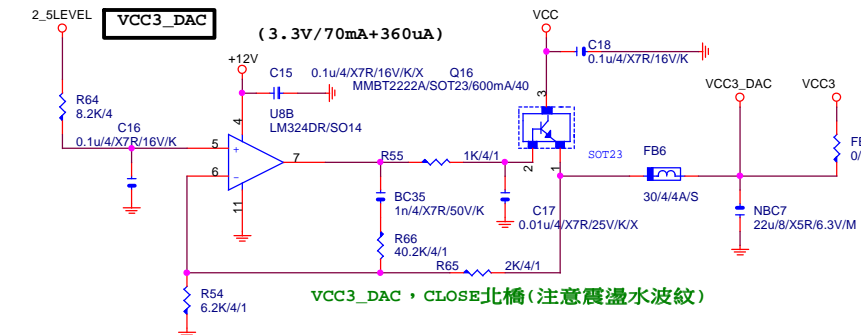
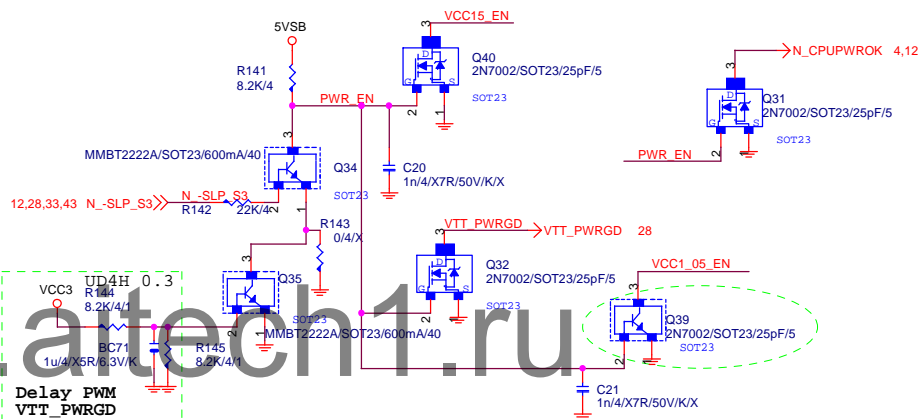
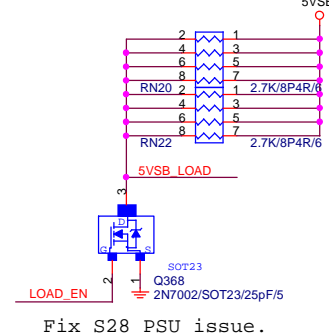
PCH ErP Control

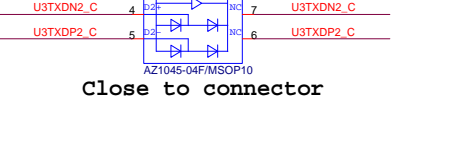
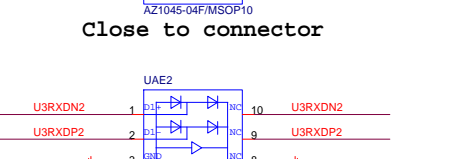
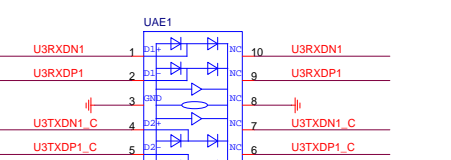
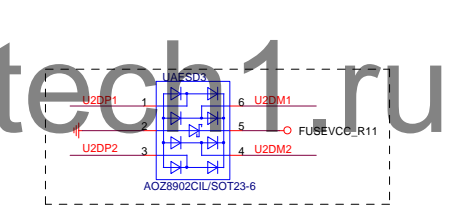
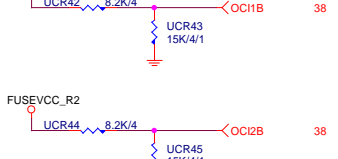
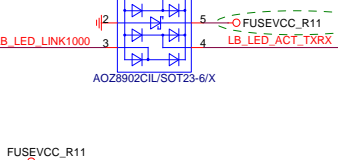
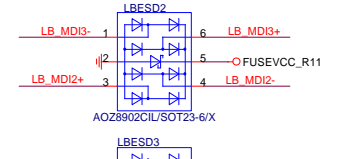
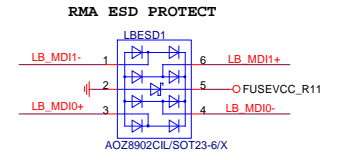
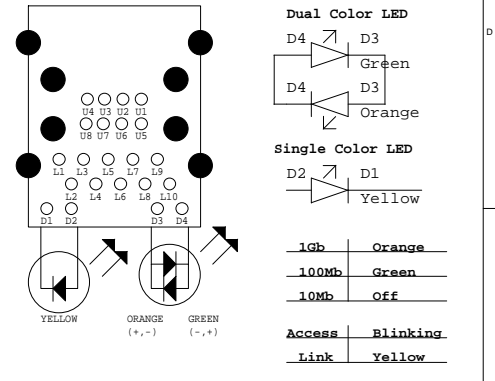
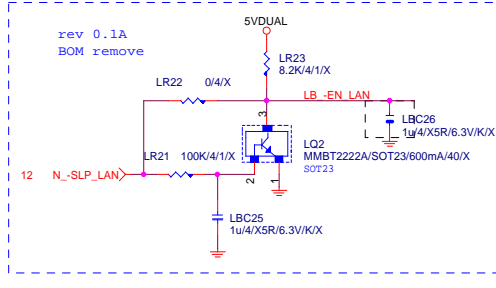
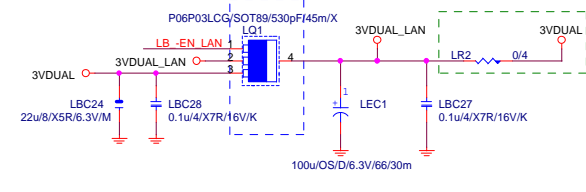
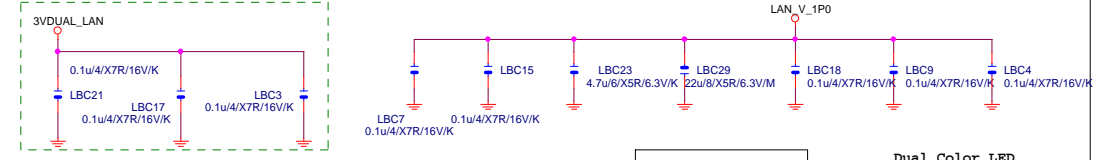
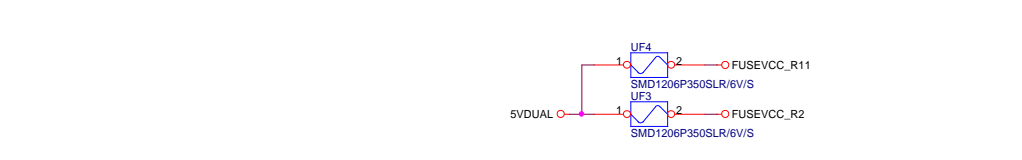
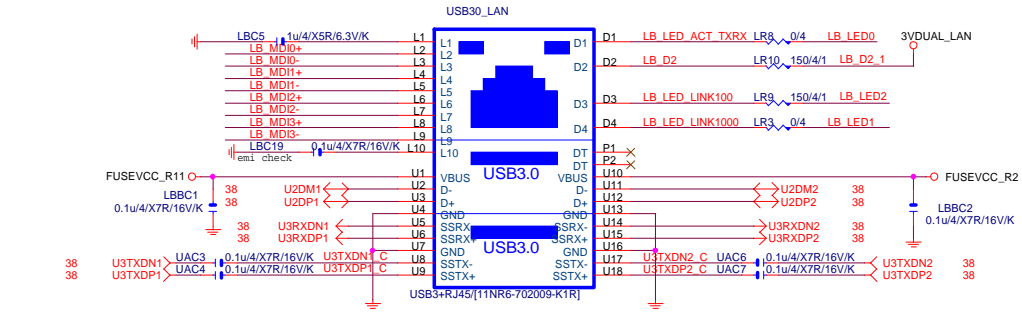
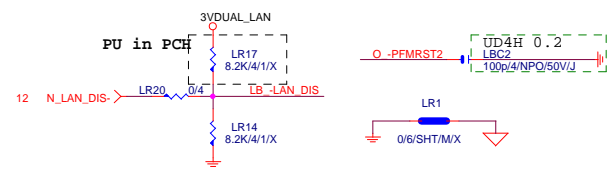
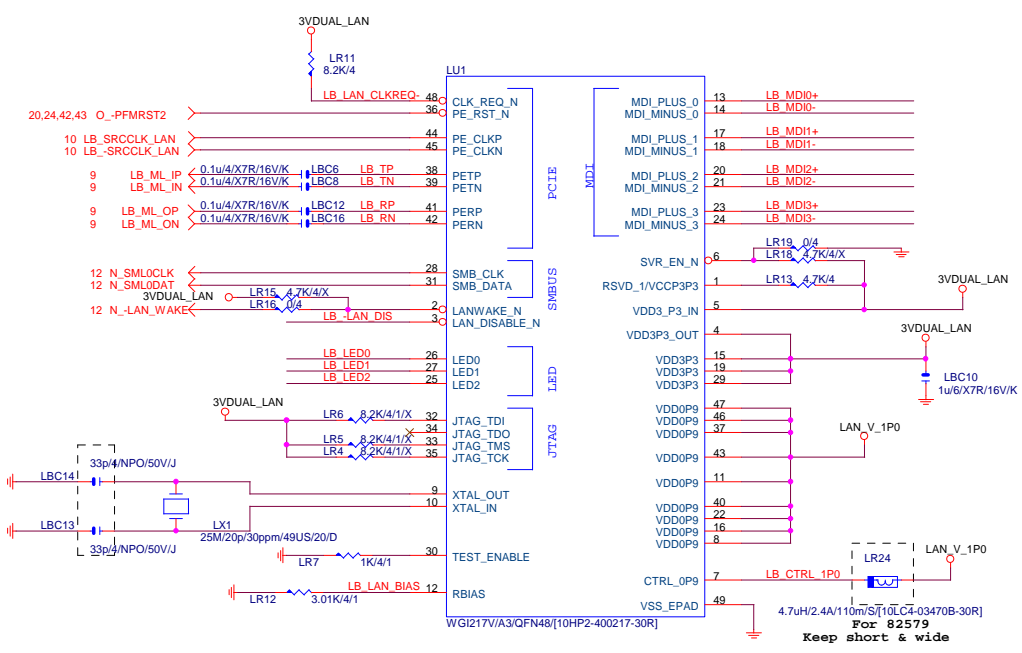


5VDUAL SHORT PROTECT

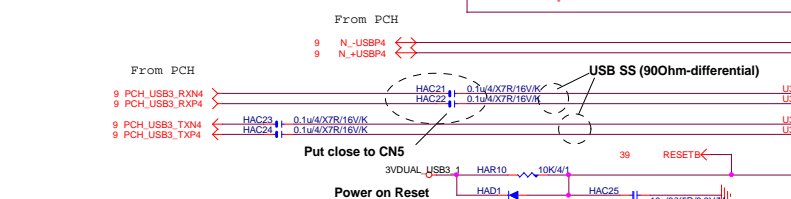
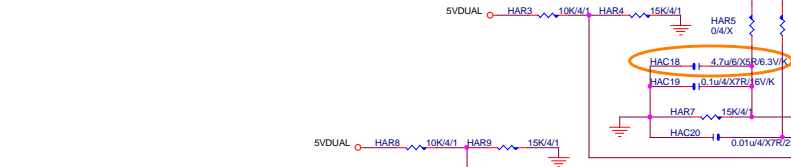
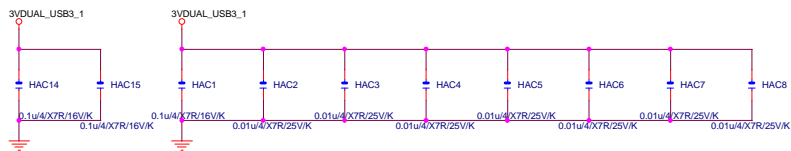


Gigabyte Technology			
Title	DISCRETE POWER 1		
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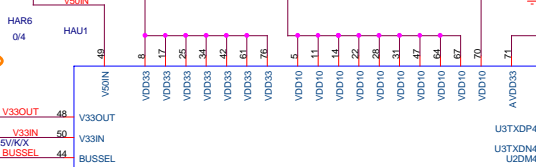
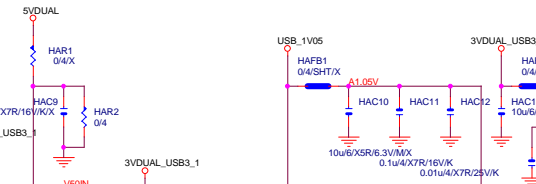
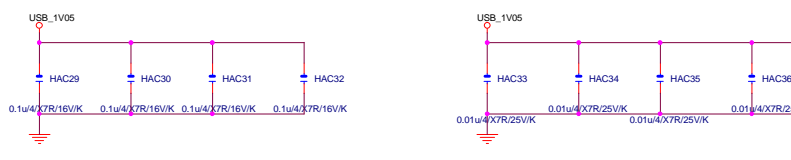
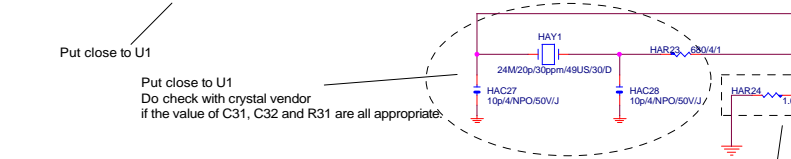




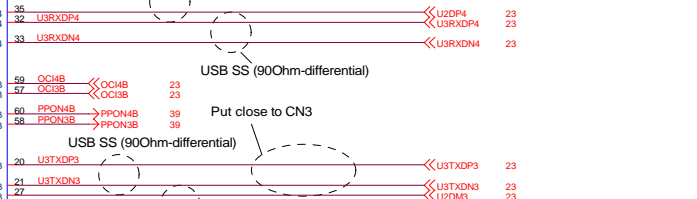
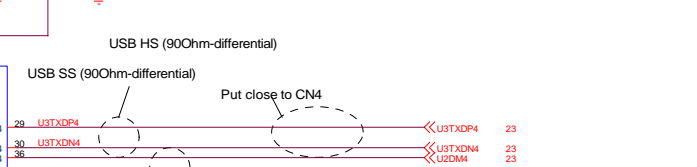
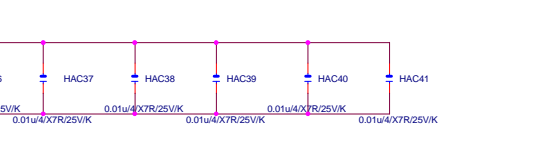
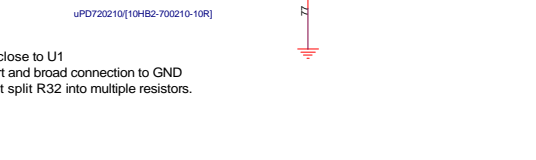
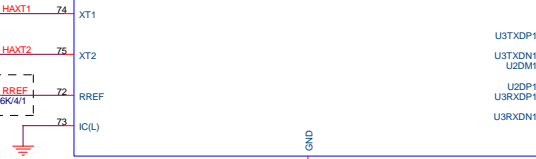
GIGABYTE™			
Title			
INTEL LAN i217V			
Size	Document Number	Rev	
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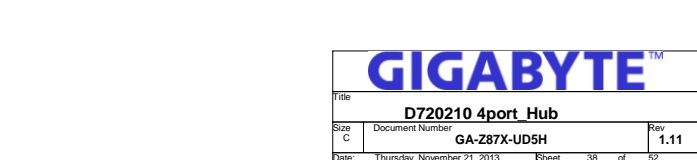
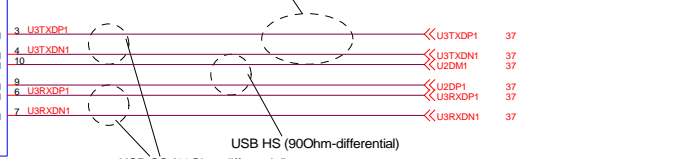
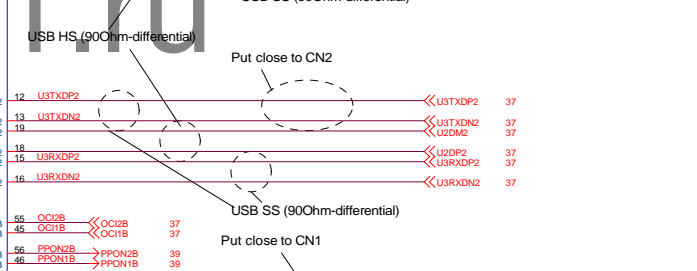
The over current protection of VDD10 is detected with ILIM pin (No.53) using 180 mOhm of DC resistance (DCR) of inductor L1.
 HAR16 should be choosing so that the total resistance of DCR(L1) becomes 180 mOhm.
 → HAR16 + DCR(HAL1) = 180 [mOhm]



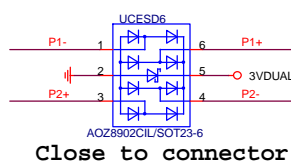
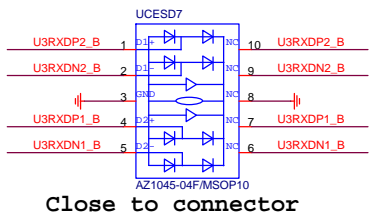
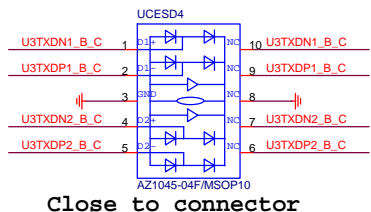
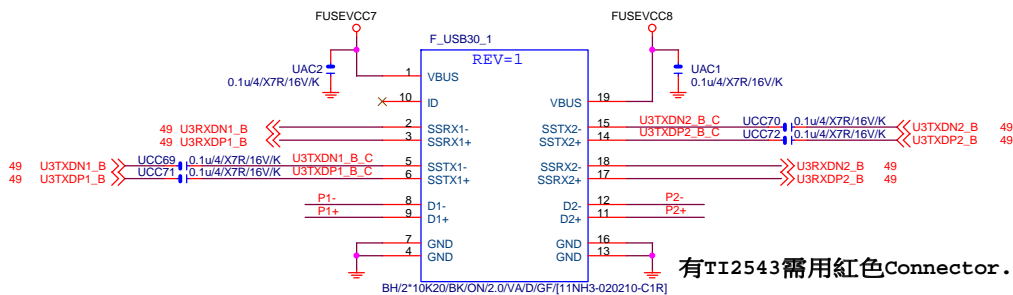
uP720210



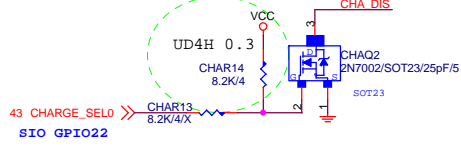
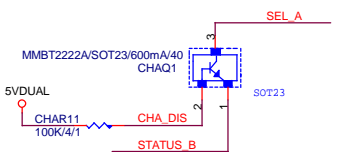
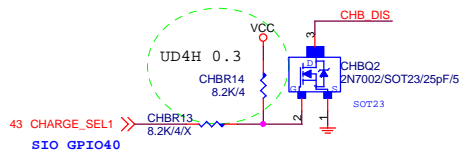
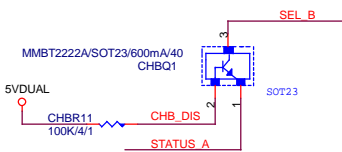
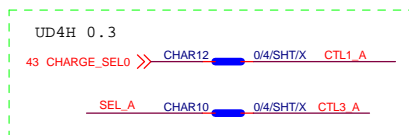
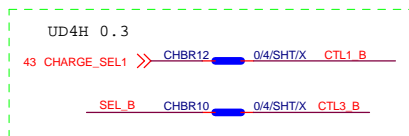
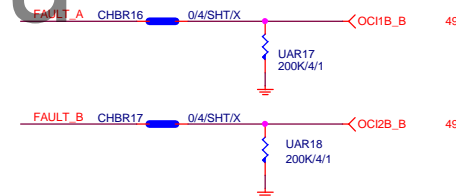
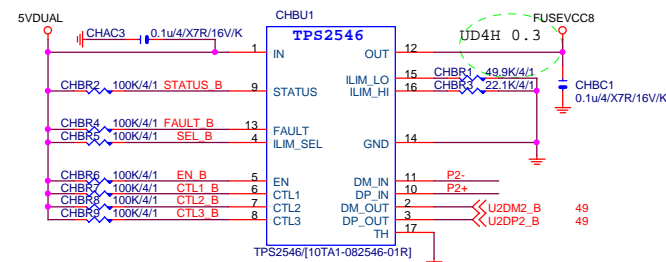
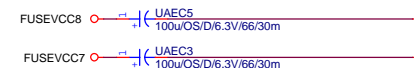
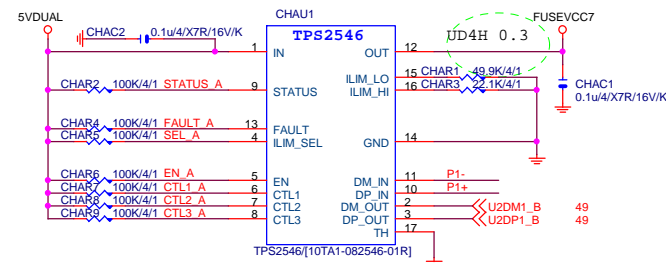
uP720210

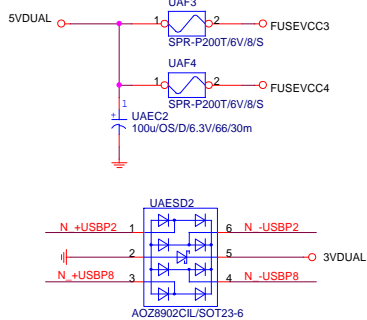
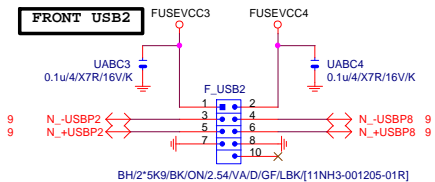
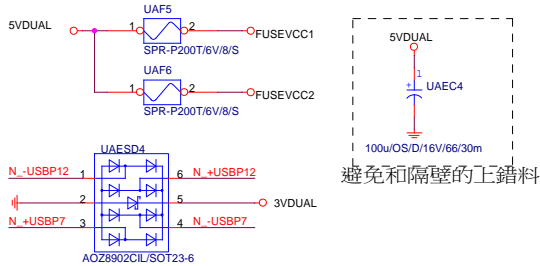
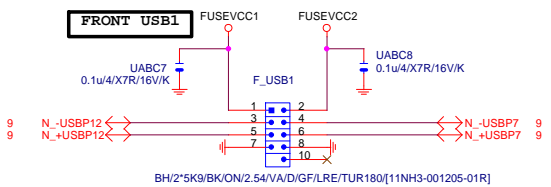


[illegible]

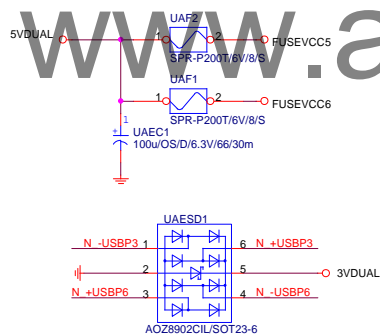
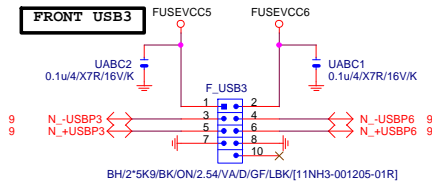
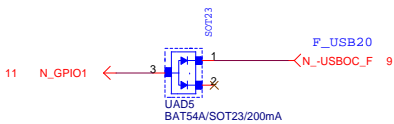


TI2543內建Fuse，移除UAFB1~2.

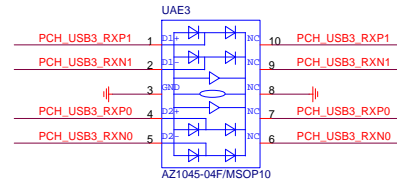
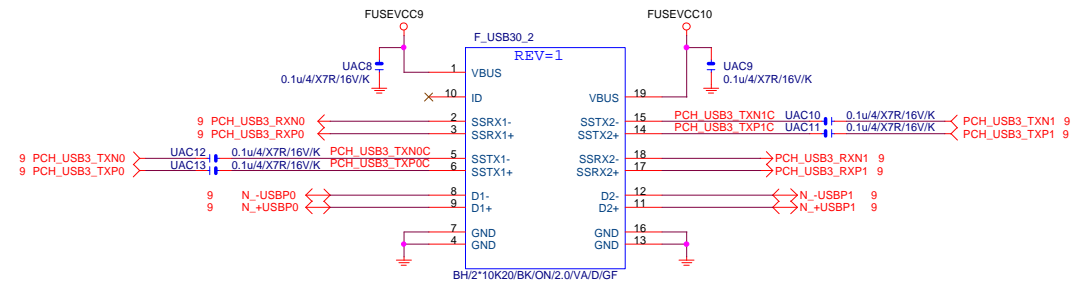
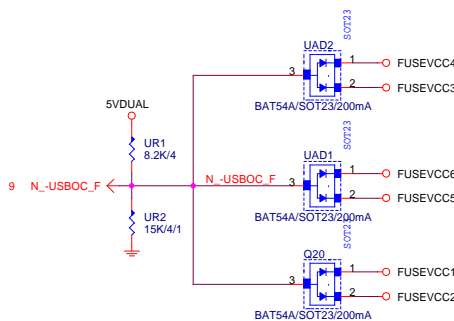




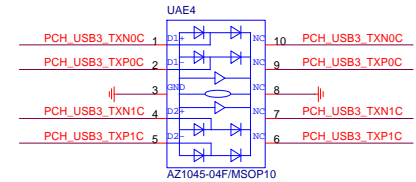
Close to connector



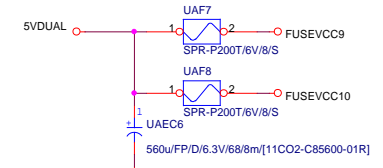
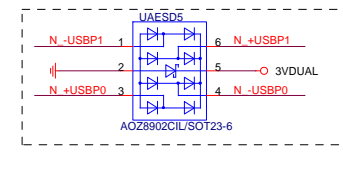
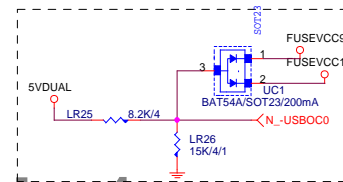
Close to connector



Close to connector

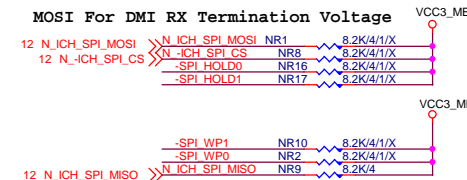
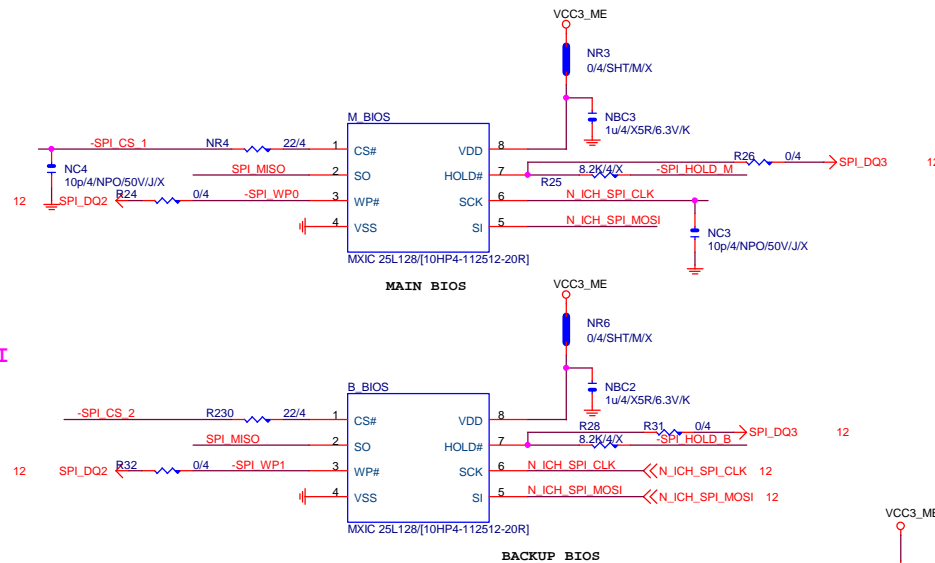
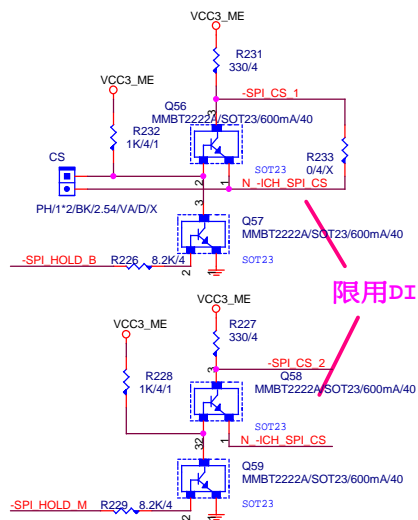


Close to connector



GIGABYTE

Title		
FRONT USB 2.0, F_USB30_2		
Size	Document Number	Rev
Custom	GA-Z87X-UD4H	1.11
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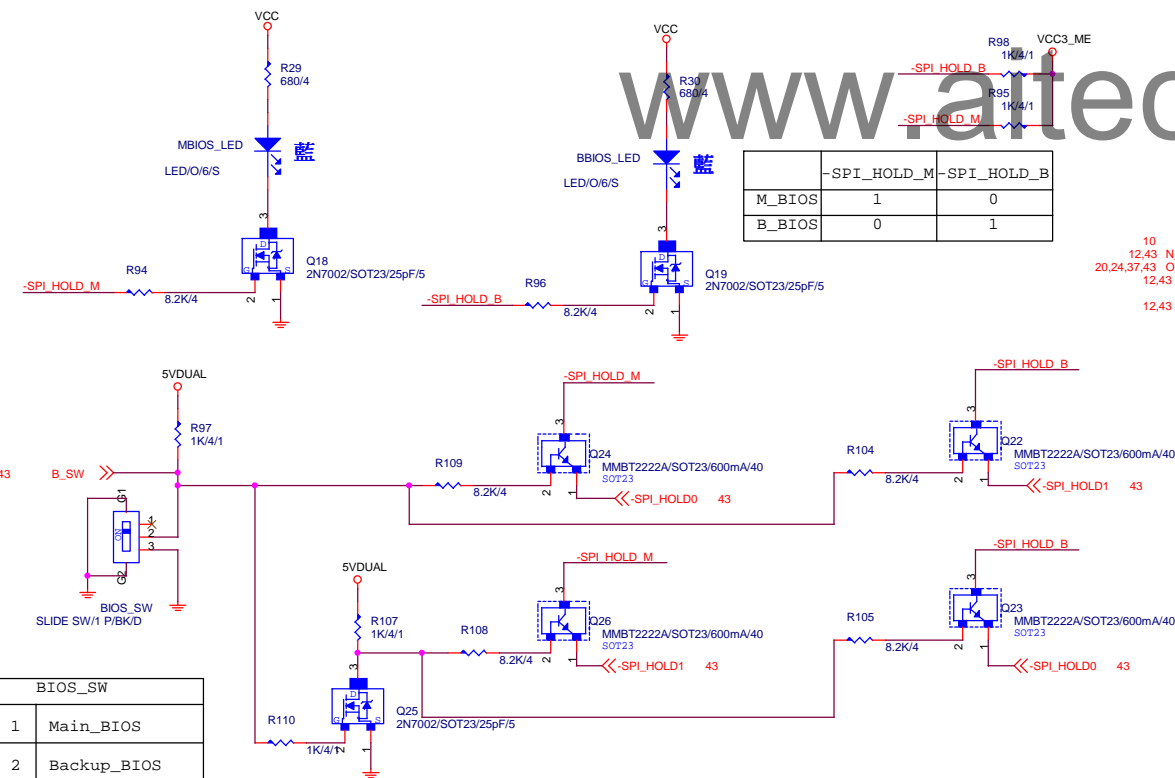


1 means floating
0 means PD 1K

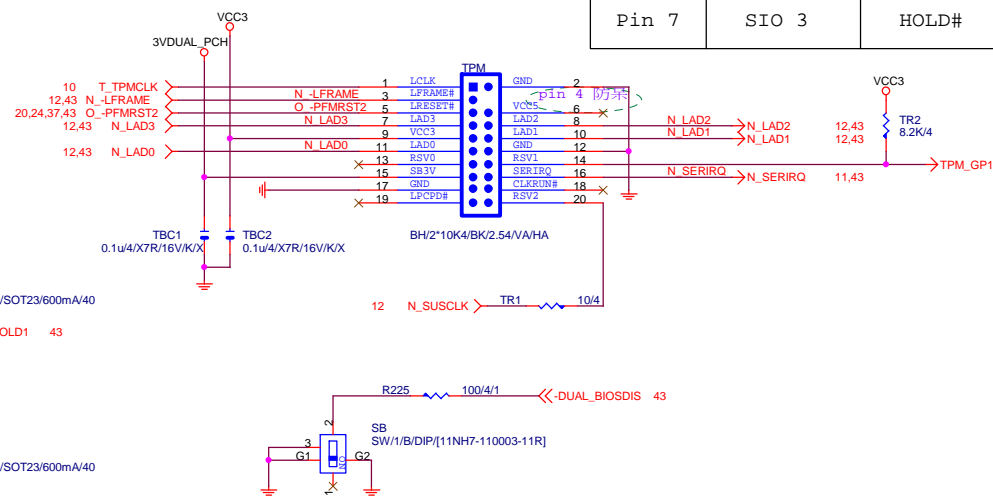


BOOT DEVICE	GNT0	GNT1
LPC	0	0
PCI	0	1
NAND	1	0
SPI	1	1

SPI ROM		
	Quad I/O	Traditional
Pin 2	SIO 1	S0
Pin 3	SIO 2	WP#
Pin 5	SIO 0	SI
Pin 7	SIO 3	HOLD#

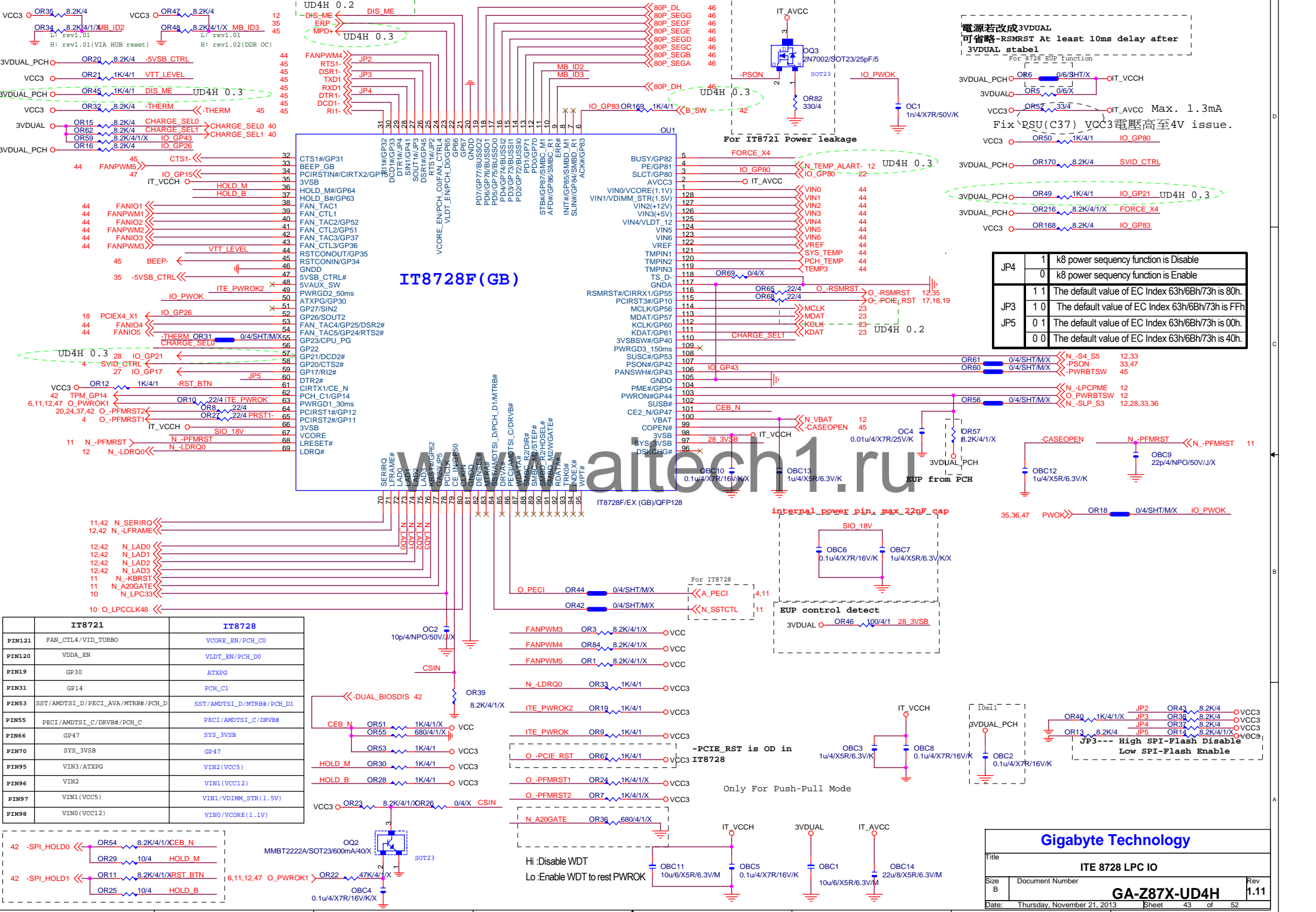


	-SPI_HOLD_M	-SPI_HOLD_F
M_BIOS	1	0
B_BIOS	0	1



Single BIOS	
1	Disable
2	Enable

<i>Gigabyte Technology</i>			
Dual BIOS			
Size Custom	Document Number	GA-Z87X-UD4H	Rev 1.1
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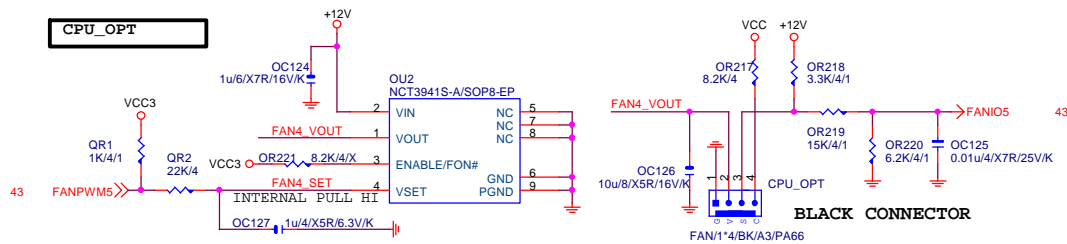


電源若改成3VDUAL
可省略-RSMRST At least 10ms delay after
3VDUAL stabel
For 8728 EUP Function
3VDUAL_PCH OR20 8.2K/4 -5VSB_CTRL
3VDUAL OR5 0.6/X
VCC3 OR5 33/4
VCC3 OR50 1K/4/1 IO GP80
Fix PSU(C37) VCC3電壓高至4V issue.

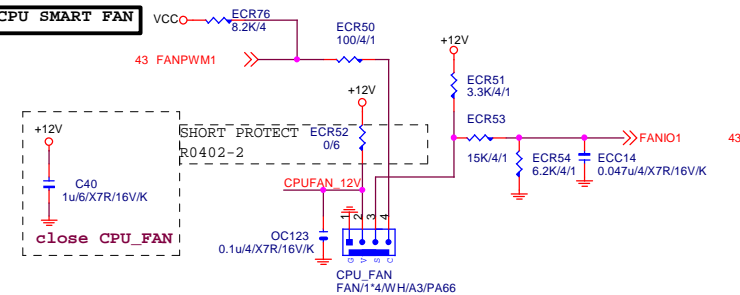
JP4	1	k8 power sequency function is Disable
	0	k8 power sequency function is Enable
JP3	1 1	The default value of EC Index 63h/6Bh/73h is 80h.
	1 0	The default value of EC Index 63h/6Bh/73h is FFh
JP5	0 1	The default value of EC Index 63h/6Bh/73h is 00h.
	0 0	The default value of EC Index 63h/6Bh/73h is 40h.

	IT8721	IT8728
PIN121	FAN_CTL4/VID_TURBO	VCORE_EN/PCH_C0
PIN120	VDDA_EN	VLDI_EN/PCH_D0
PIN19	GP30	ATXP_G
PIN31	GP14	PCH_C1
PIN53	SST/AMDTSI_D/PECI_AVA/MTRB#/PCH_D	SST/AMDTSI_D/MTRB#/PCH_D1
PIN55	PECI/AMDTSI_C/DRV##/PCH_C	PECI/AMDTSI_C/DRV#
PIN66	GP47	SYS_3VSB
PIN70	SYS_3VSB	GP47
PIN95	VIN3/ATXP_G	VIN2(VCC5)
PIN96	VIN2	VIN1(VCC12)
PIN97	VIN1(VCC5)	VIN1/VDIMM_STR(1.5V)
PIN98	VIN0(VCC12)	VIN0/VCORE(1.1V)

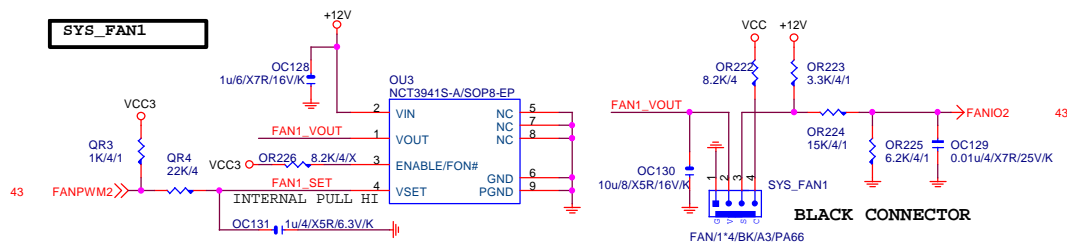
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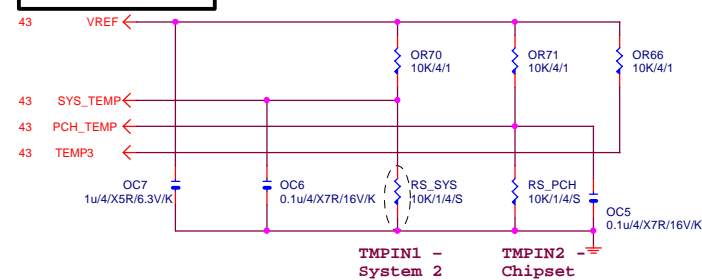
CPU SMART FAN



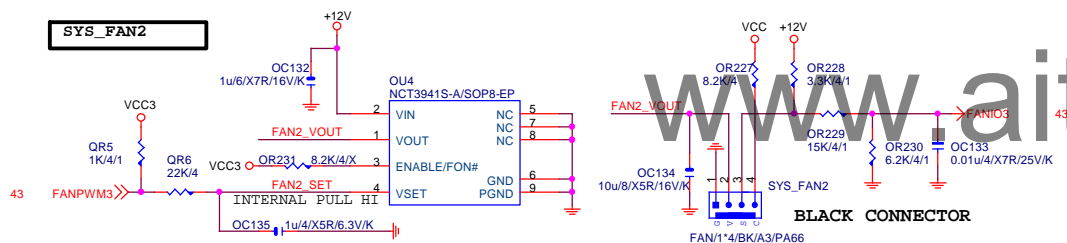
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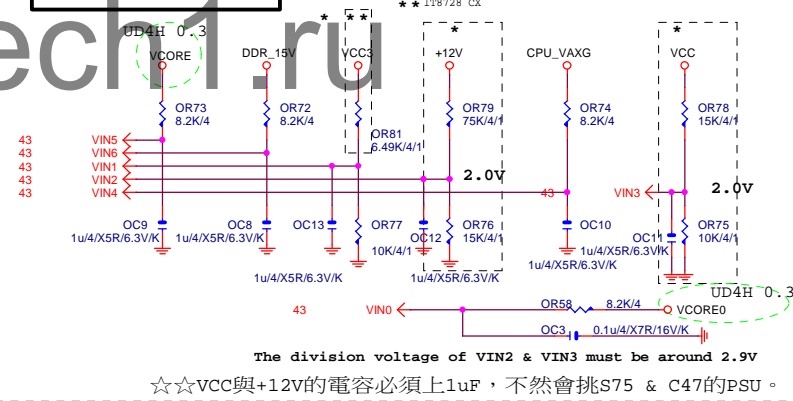
TEMP H/W MONITOR



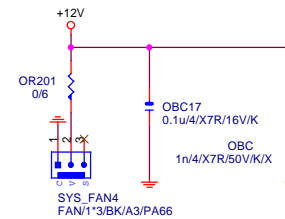
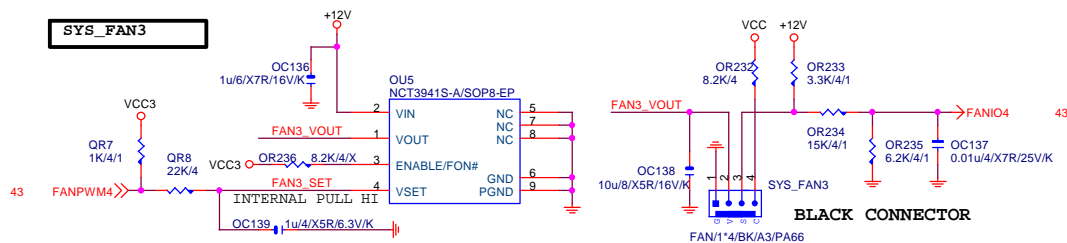
SYS_FAN2



VOLTAGE-- H/W MONITOR

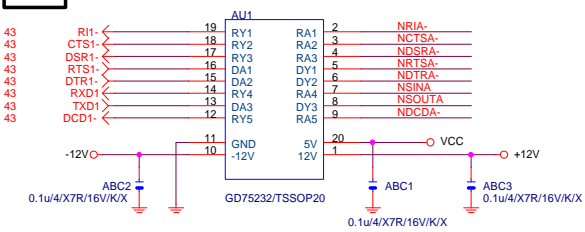


SYS_FAN3

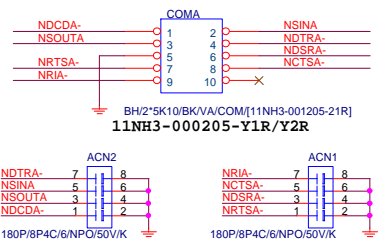
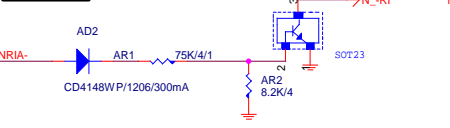


Gigabyte Technology			
Title			
HWM,KB/MS, FAN CTRL			
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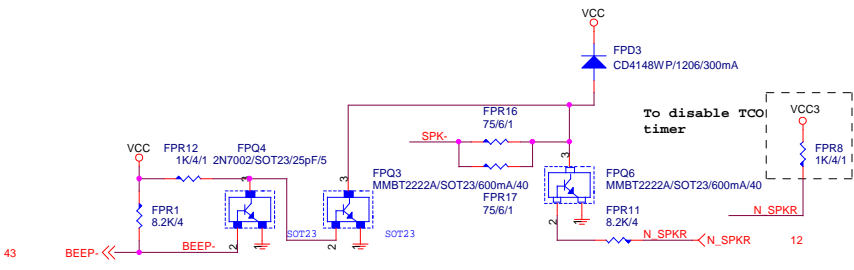
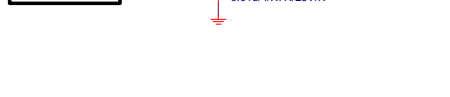
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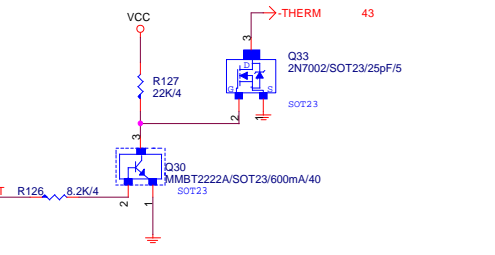
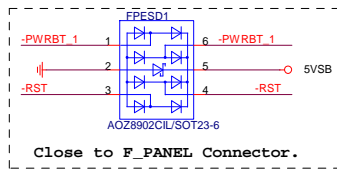
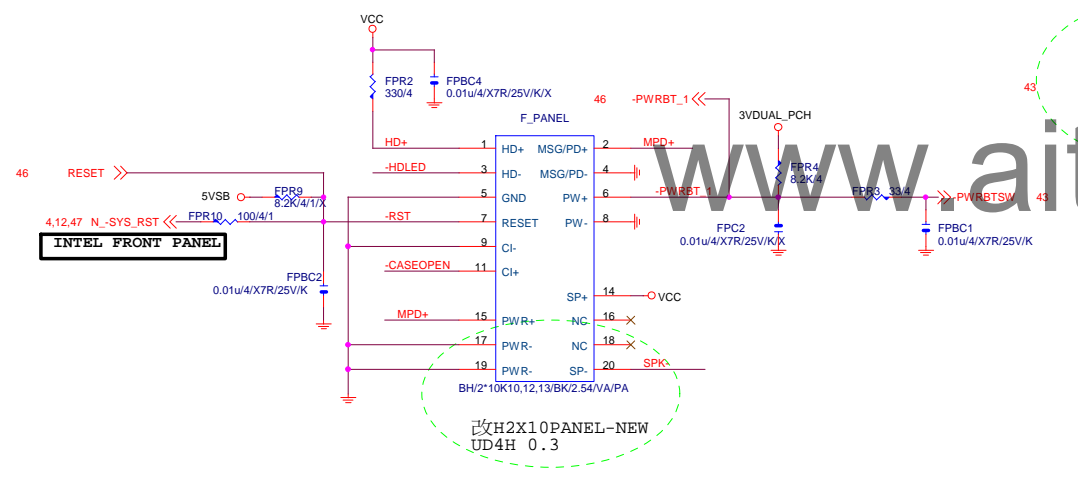
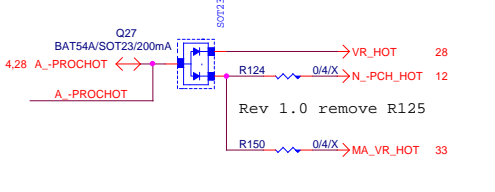
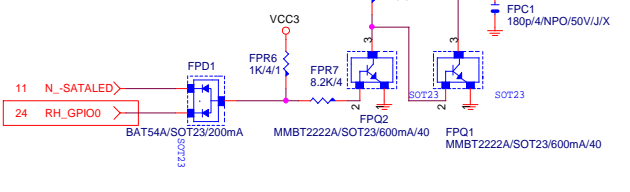
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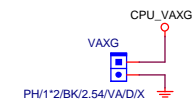
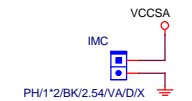
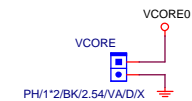
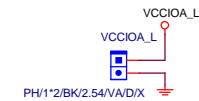
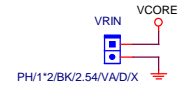
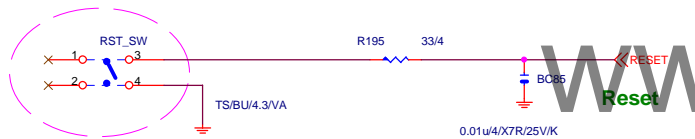
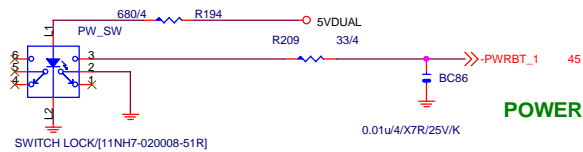
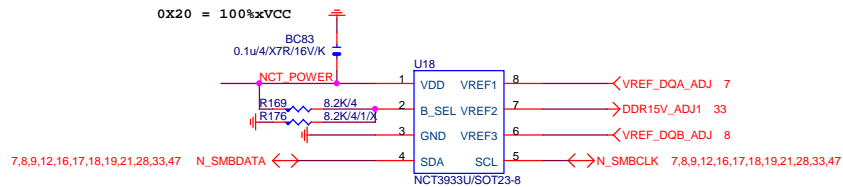
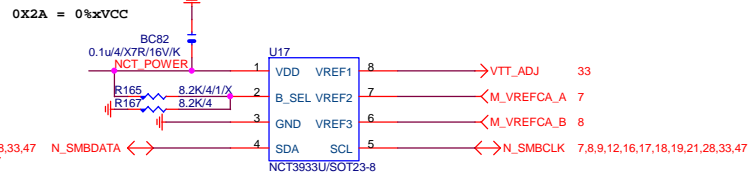
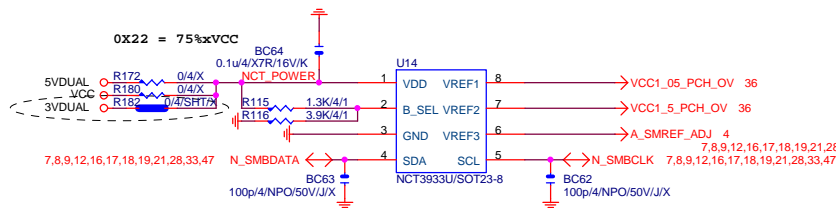


CASE OPEN

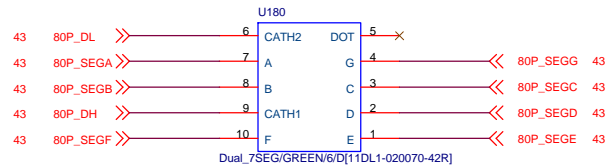
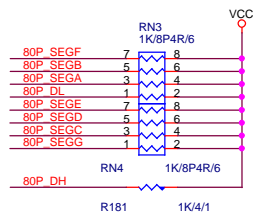


SATA LED



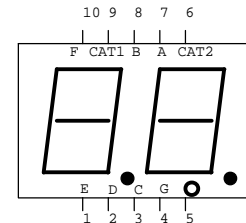


80 PORT



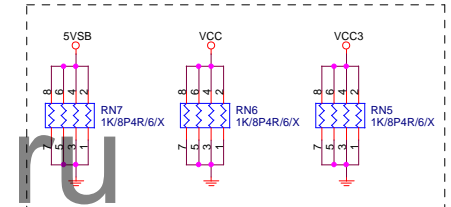
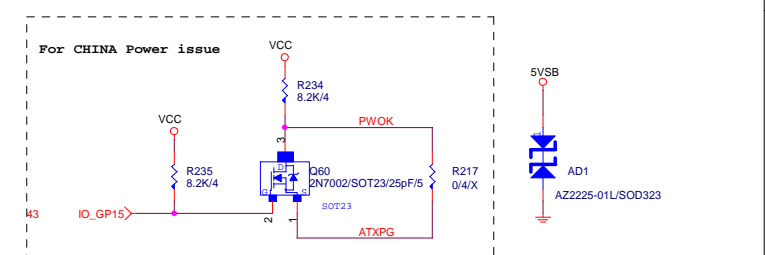
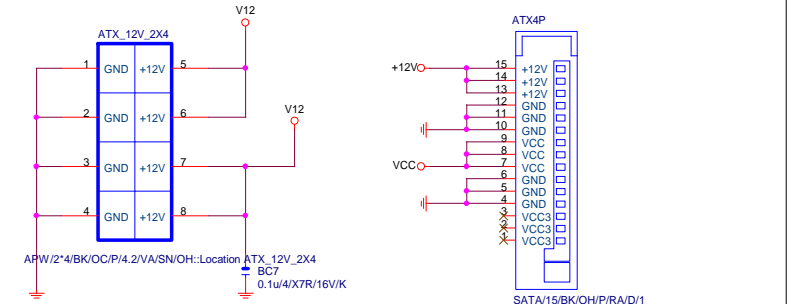
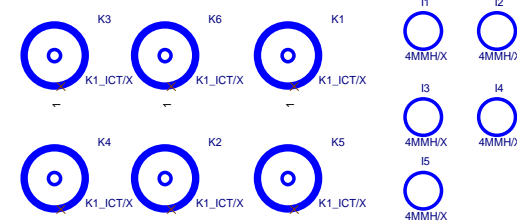
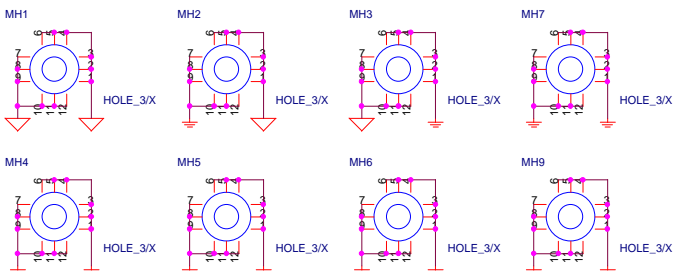
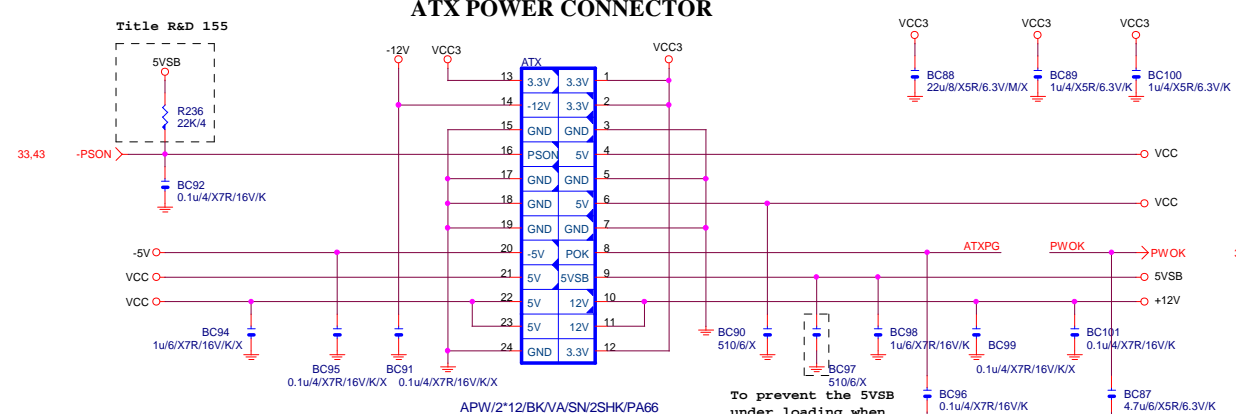
COMMON CATHODE

Physical Package (TOP VIEW)



GIGABYTE™		
Title		
RST, PWR, CLR_CMOS		
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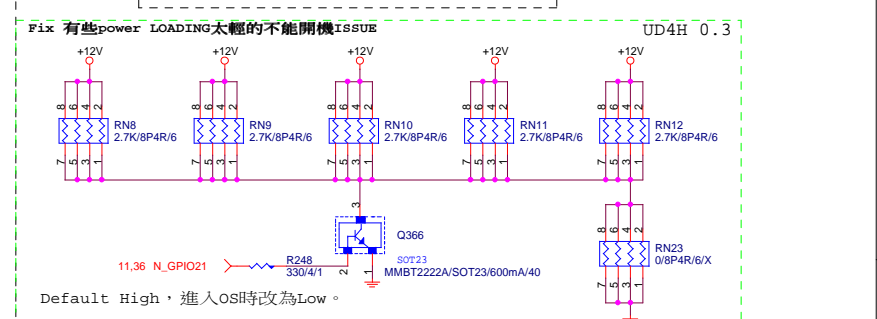
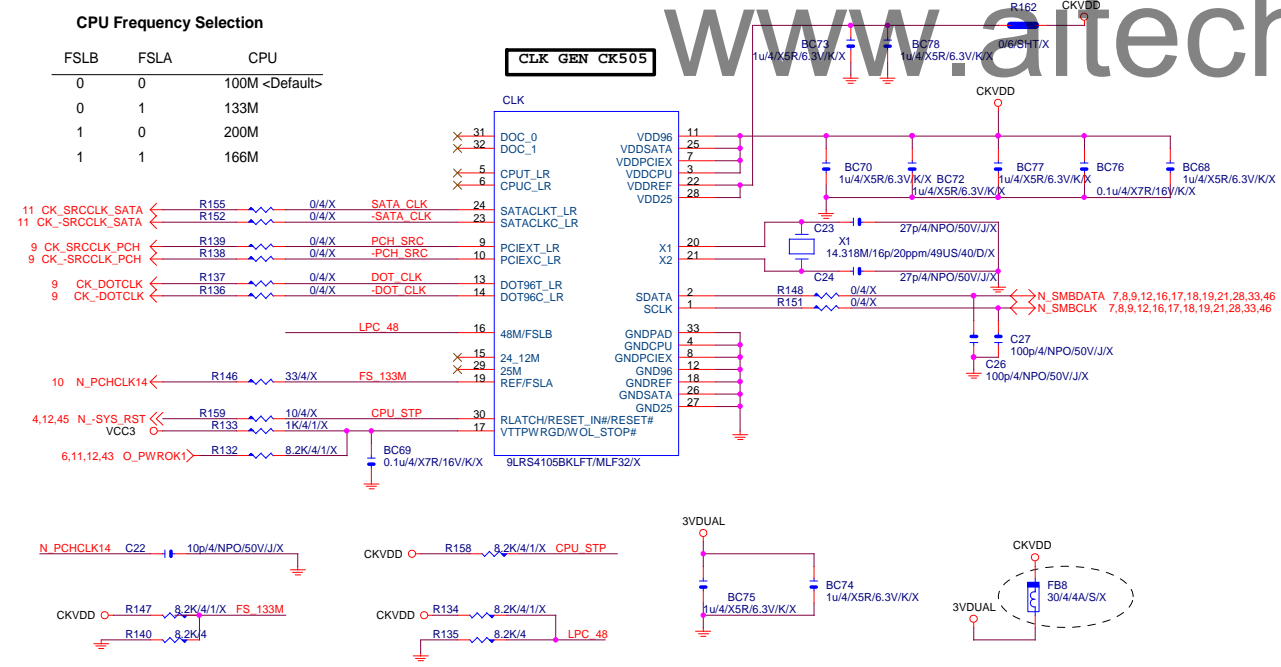
ATX POWER CONNECTOR



CPU Frequency Selection

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

CLK GEN CK505



Gigabyte Technology

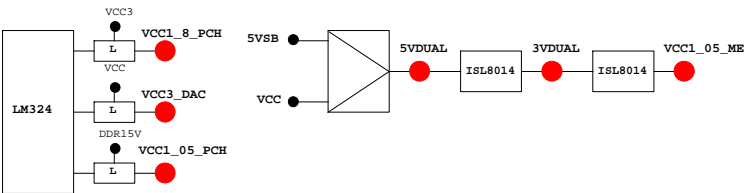
Title		
ATX POWER CONNECTOR		
Size	Document Number	Rev
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Date:	Thursday, November 21, 2013	Sheet 47 of 52

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 -SKT0CC	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_FCH_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 -ACZ_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

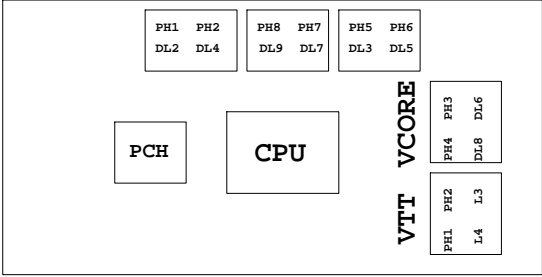
Super I/O ITE8720 GPIO Table

PIN NAME	USAGE	NOTE
SVC/PECI_RQT/GP14	-PECI_REQ	
PWROK1/GP13	PWROK1/ITE_PWROK	
KRST#/GP62	-KBRST	
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#CIRRXL/GP55	-RSMRST	
PME#/GP54	-LPCPME	
PD5/GP75/BUSSO0	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/BUSSI1	SB_LED1_C	
PD4/GP74/BUSSI2	SB_LED2_C	
VCORE_EN/VID7/GP64	IT_GP64	SB_LED3_C
PD0/GP70	NB_LED1_C	
PD1/GP71	NB_LED2_C	
PD2/GP72/BUSSI0	NB_LED3_C	
GP22/SCK	LOW_PWR_1	
VID05/GP27/SIN2	LOW_PWR_2	
PCIRST2#/GP11	-PWRST1	
PCIRST1#/GP12	-PWRST2	
3VSBSW#/GP40	CSI_F0	BSEL166_1
SUSC#/GP53	CSI_F1	BSEL166_2
GP23/SI	BSEL166_3/CSISBSL	
VIDO0/GP20/CTS2#	CPUT_LED1_C	BSEL166_4
GP65/VDDA_EN/GB_01	MB_ID2	
PD6/GP76/BUSSO1	MB_ID3	
PD7/GP77/BUSSO2	MB_ID4	
AFD#/GP86/SMBD_R	2X PIN	FST_2X8
INIT#/GP85/SMBD_M	SEC_2x8	GTLREF_AD2
ACK#/GP83	DDR_LED1_C	
VID01/GP21/DCD2#	DDR_LED2_C	
STB#/GP87/SMBD_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_CLT5/CIRRXL2/GP16	-THERM	
VID04/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/BUSSO0	SB_LED3_C	



PWM各相位的擺法如下：



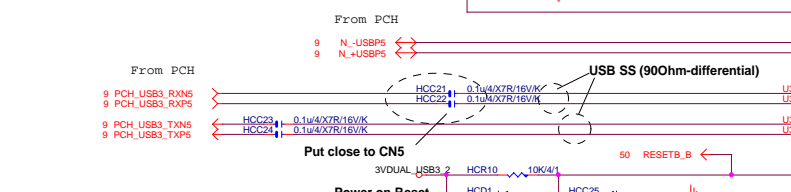
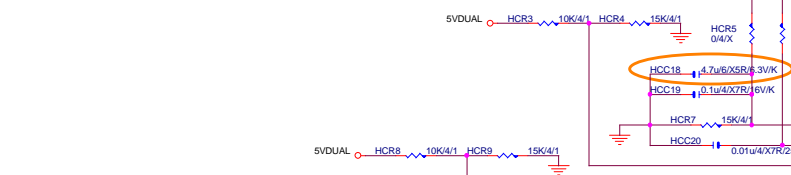
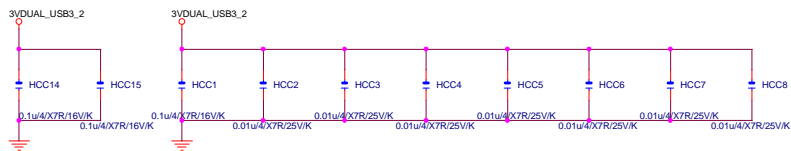
BIOS超電壓對應表：

散熱模組料號：

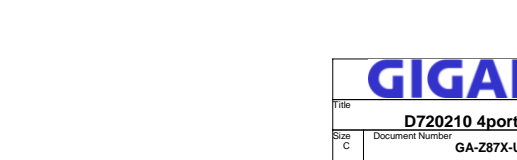
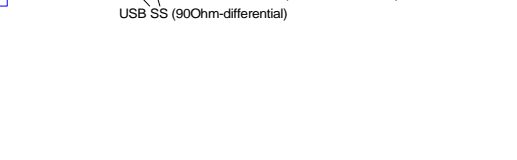
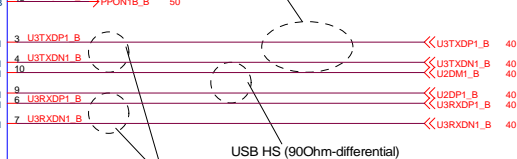
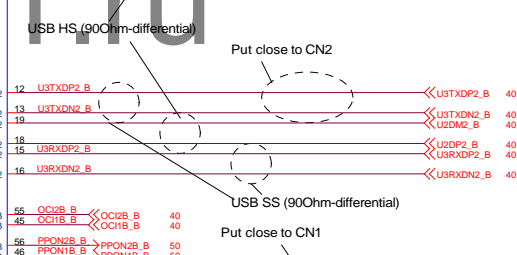
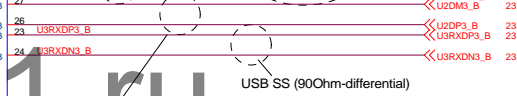
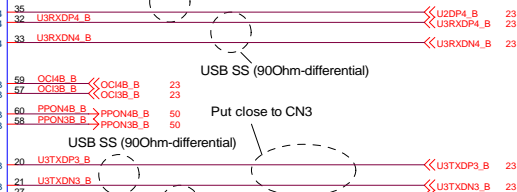
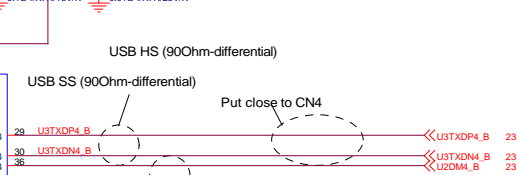
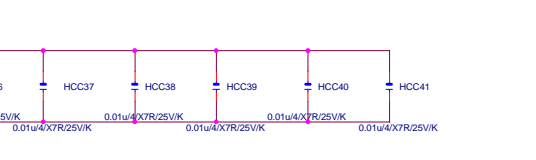
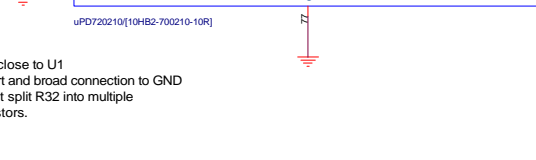
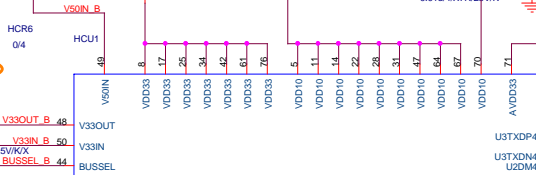
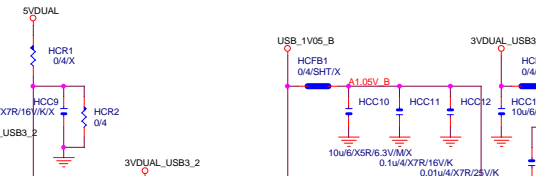
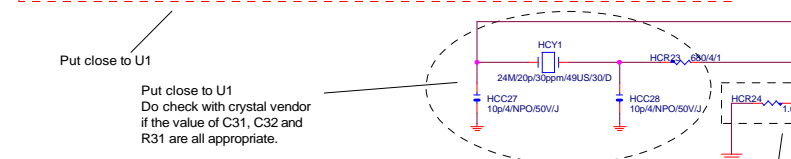
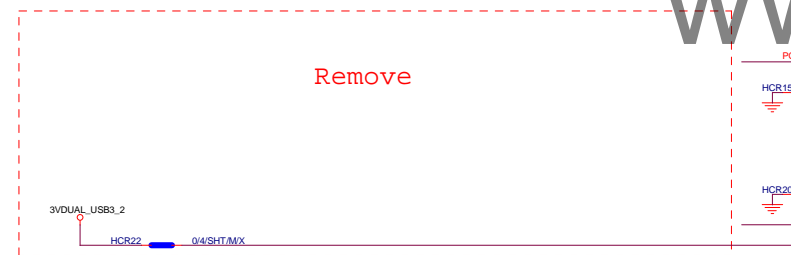
線路圖名稱	BIOS選項
Vcore	CPU Vcore
CPU_VTT	CPU Termination
CPU_VAXG	CPU Graphic Core
VCC1_8_PCH	CPU PLL
VCC1_05_PCH	PCH core
3VDUAL	3VDUAL
DDR15V	DRAM voltage
DDRVTT	DRAM Terminatio
VREF_CA_A/VREF_CA_B	DRAM Address Ref
VREF_DQ_A/VREF_DQ_B	DRAM Data Ref

	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

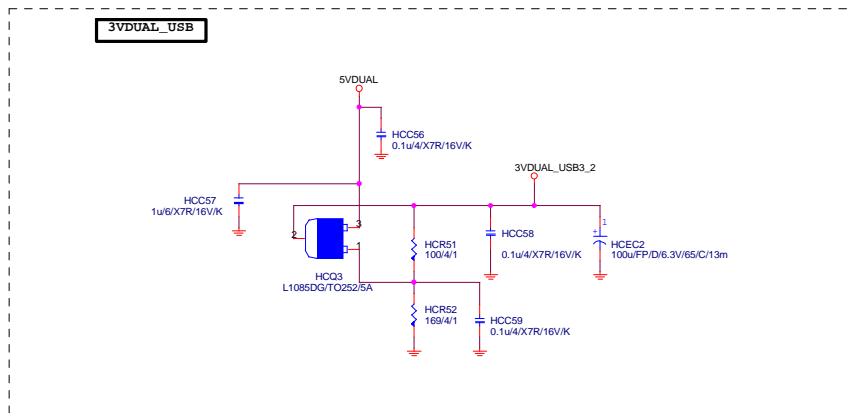
Gigabyte Technology			
Title	TABLE LIST		
Size C	Document Number	GA-Z87X-UD4H	Rev 1.11
Date:	Thursday, November 21, 2013	Sheet 48	of 52



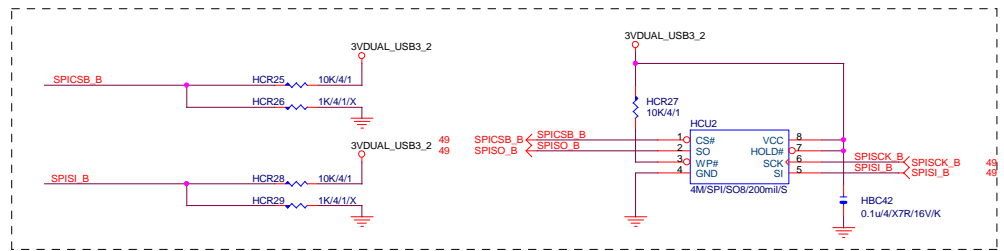
The over current protection of VDD10 is detected with ILIM pin (No.53) using 180 mOhm of DC resistance (DCR) of inductor L1.
HAR16 should be choosing so that the total resistance of DCR(L1) becomes 180 mOhm.
→ HAR16 + DCR(HAL1) = 180 [mOhm]



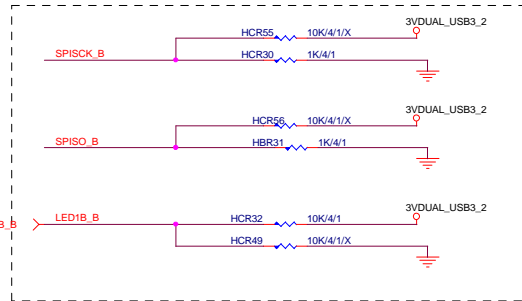
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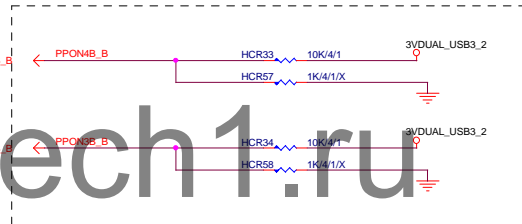
External SPI ROM ; SPI ROM attached mode



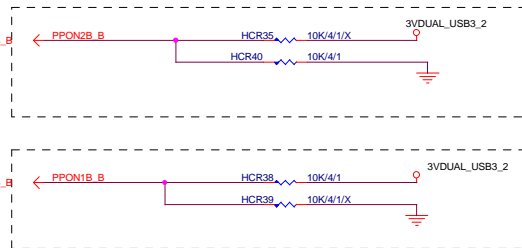
Battery Charging



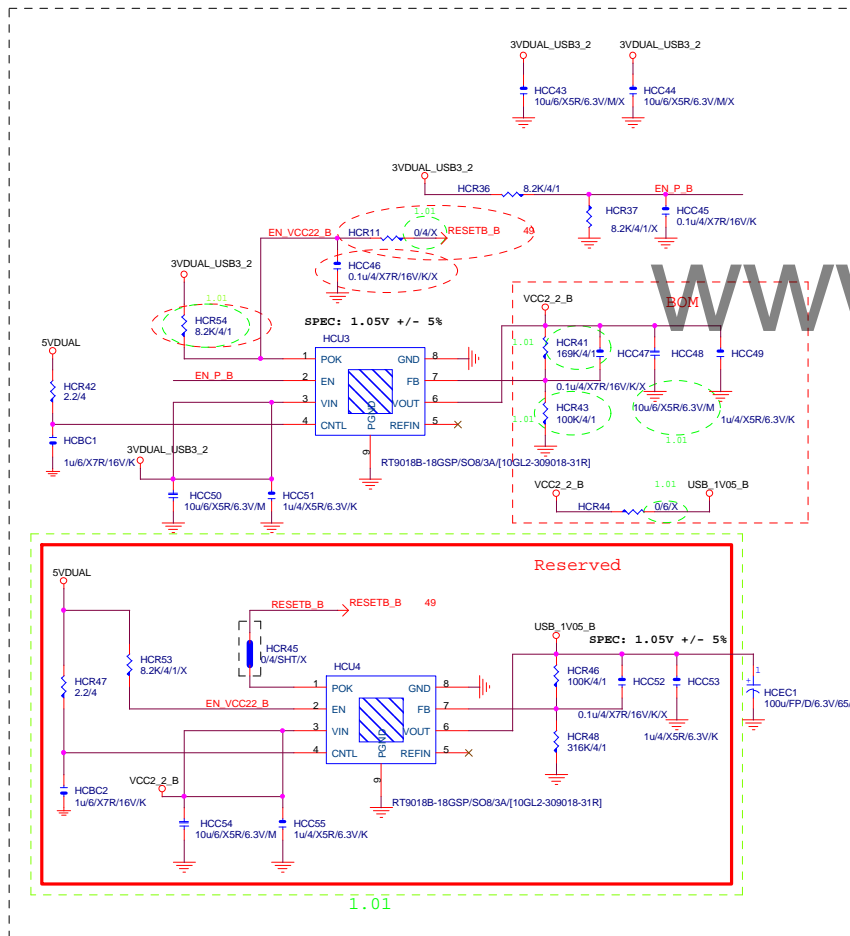
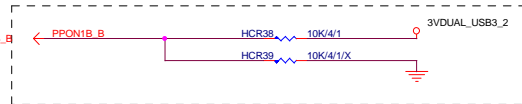
Number of Ports ; 4Ports mode

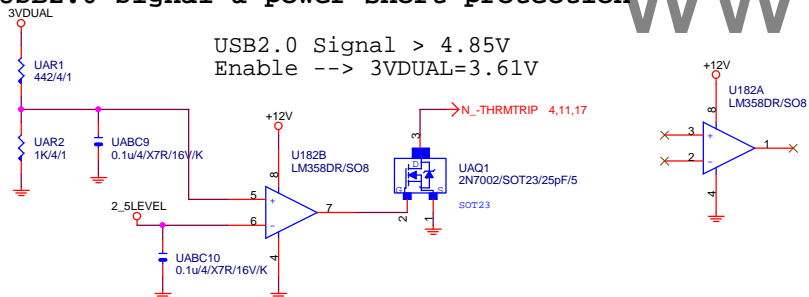
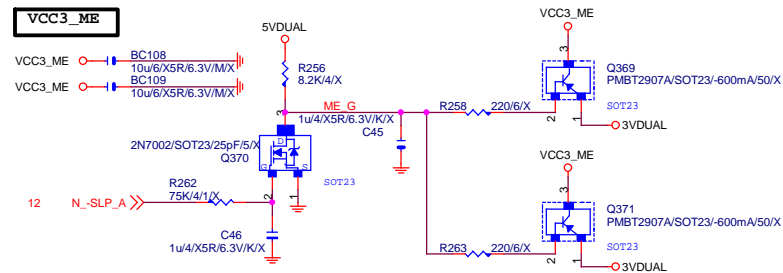


#5 VBUS Power Control ; Individual mode



PPON1B Pin Function ; Port1 PPONB mode





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1.01 remove

Revision 1.11

Component value change history

2013/09/16

[illegible]

Circuit or PCB layout change

[illegible]