

Model Name: GA-Z87X-OC

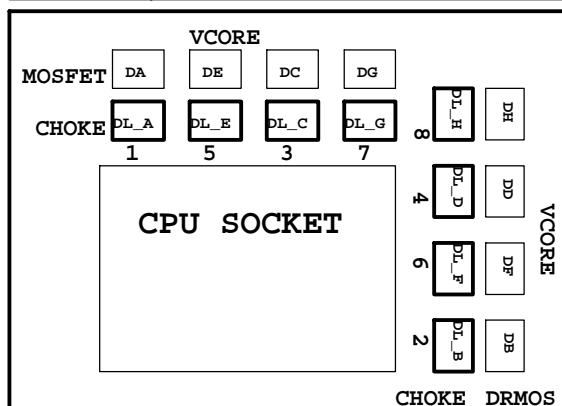
Rev 1.14

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,NVRAM
10	PCH_DP,CLK BUFFER
11	PCH_HOST,SATA,PCI
12	PCH_GPIO,CTRL,AUDIO
13	PCH_PWR,GND
14	PCH HDMI/DP
15	PCI EXPRESS*16 SLOT
16	PCI EXPRESS*8 SLOT
17	PCI EXPRESS*1 SLOTS X1
18	PCI EXPRESS X8 X4 SWITCH
19	PCI EXPRESS*4 SLOT (CPU)
20	PCI EXPRESS*4 SLOT (PCH)
21	ITE 8892
22	PCI SLOT 1&2
23	ALC892
24	REAR AUDIO JACK
25	Dual BIOS
26	IR3563A PWM
27	IR3550-VCORE

SHEET TITLE

28	IR3570-DDR PWM
29	IR3598-DDR POWER
30	5VDUAL, 3VDAUL, ERP
31	PCH1.05V, PCH1.5V, VCC3_DAC
32	I/O ITE8728
33	KB/USB3
34	F_PANEL , F_USB , PHOT
35	F_USB 2.0
36	F_USB 3.0
37	ATX POWER, CLOCK GEN
38	HWM, FAN CTRL
39	INTEL I217
40	Highly switch
41	RST, PWR, CLR_CMOS
42	IT 8790
43	FAN CTRL
44-45	RENESAS USB3.0 HUB_A
46-48	RENESAS USB3.0 HUB_B
49	TABLE LIST

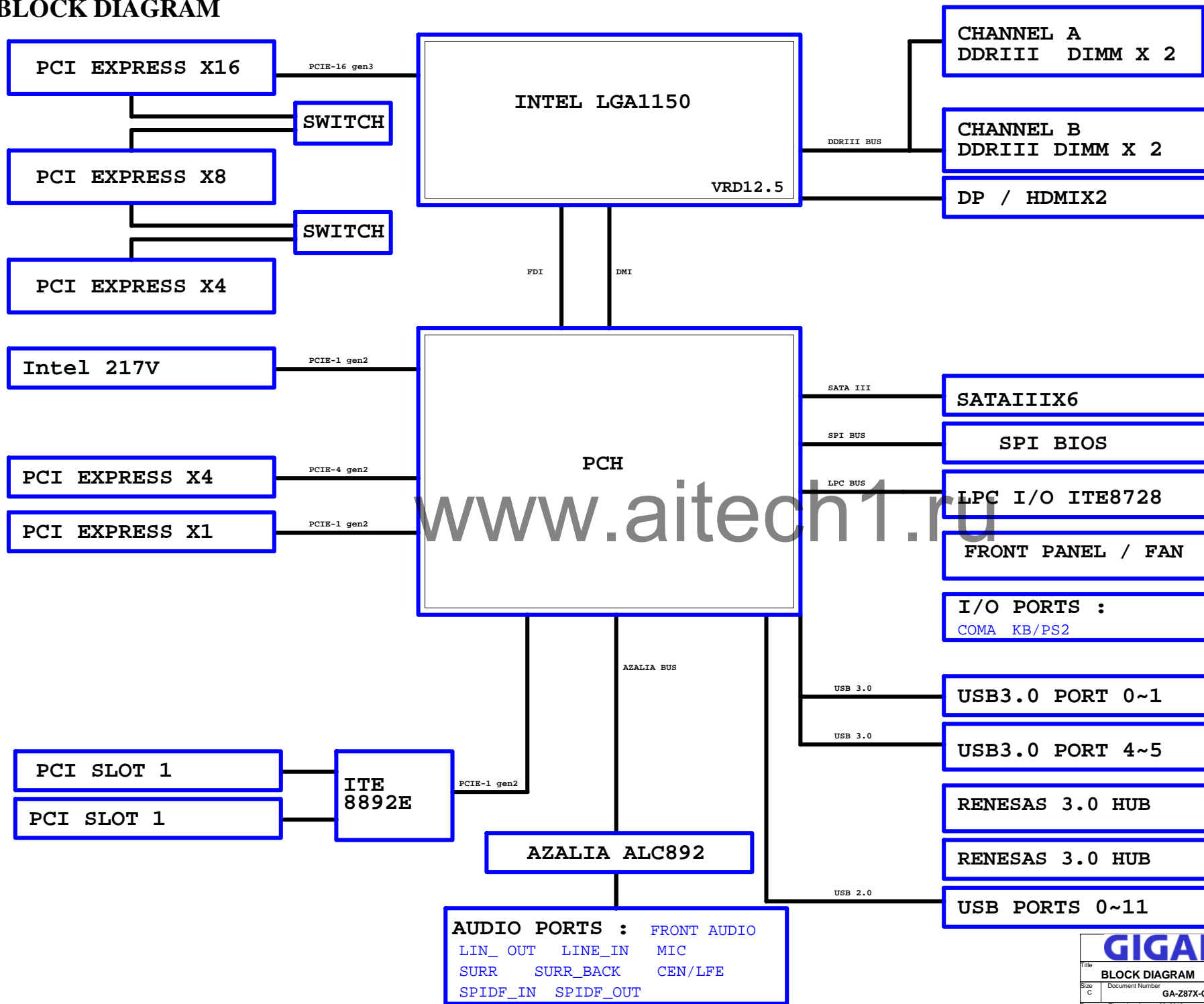


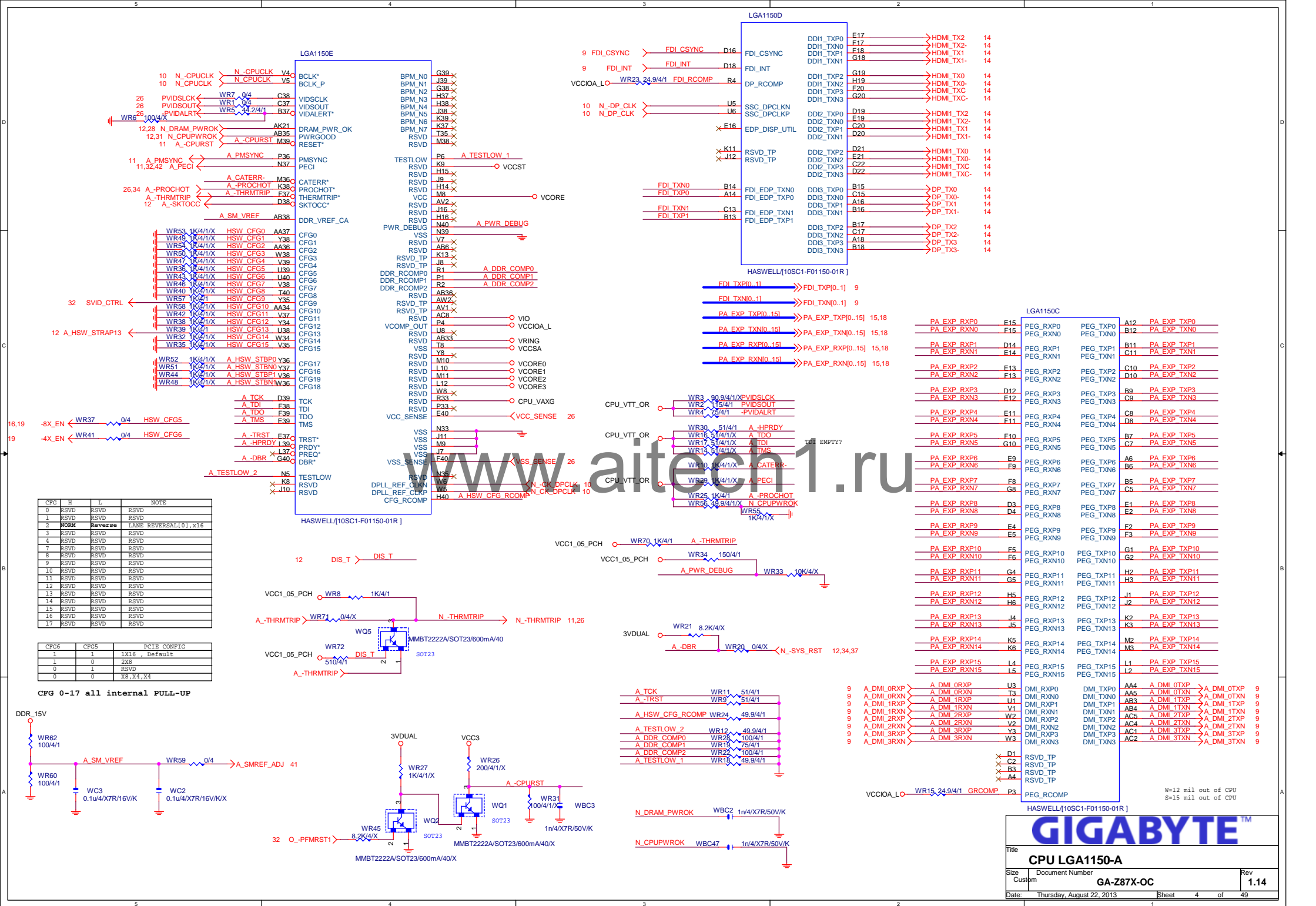
Component value change history

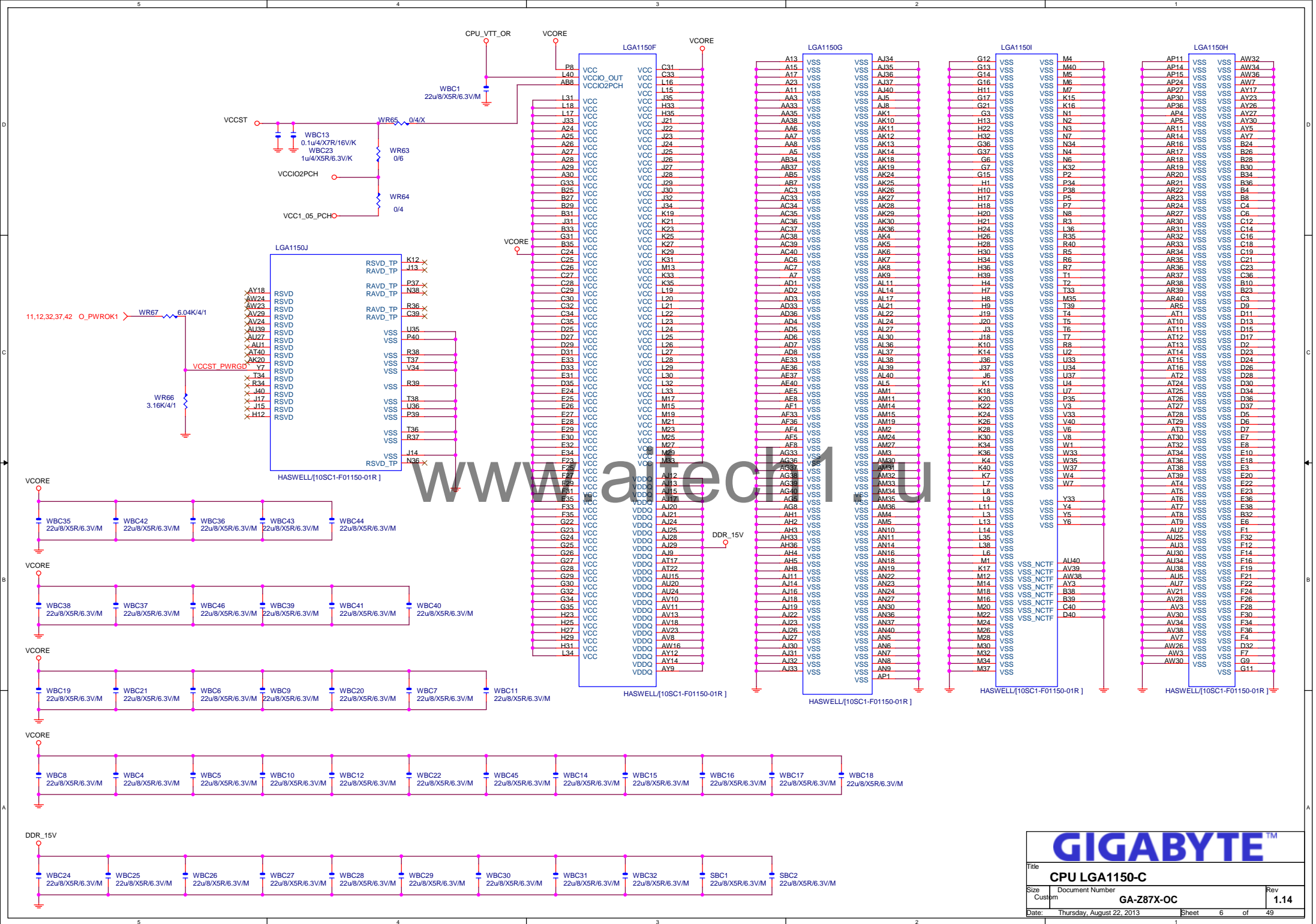
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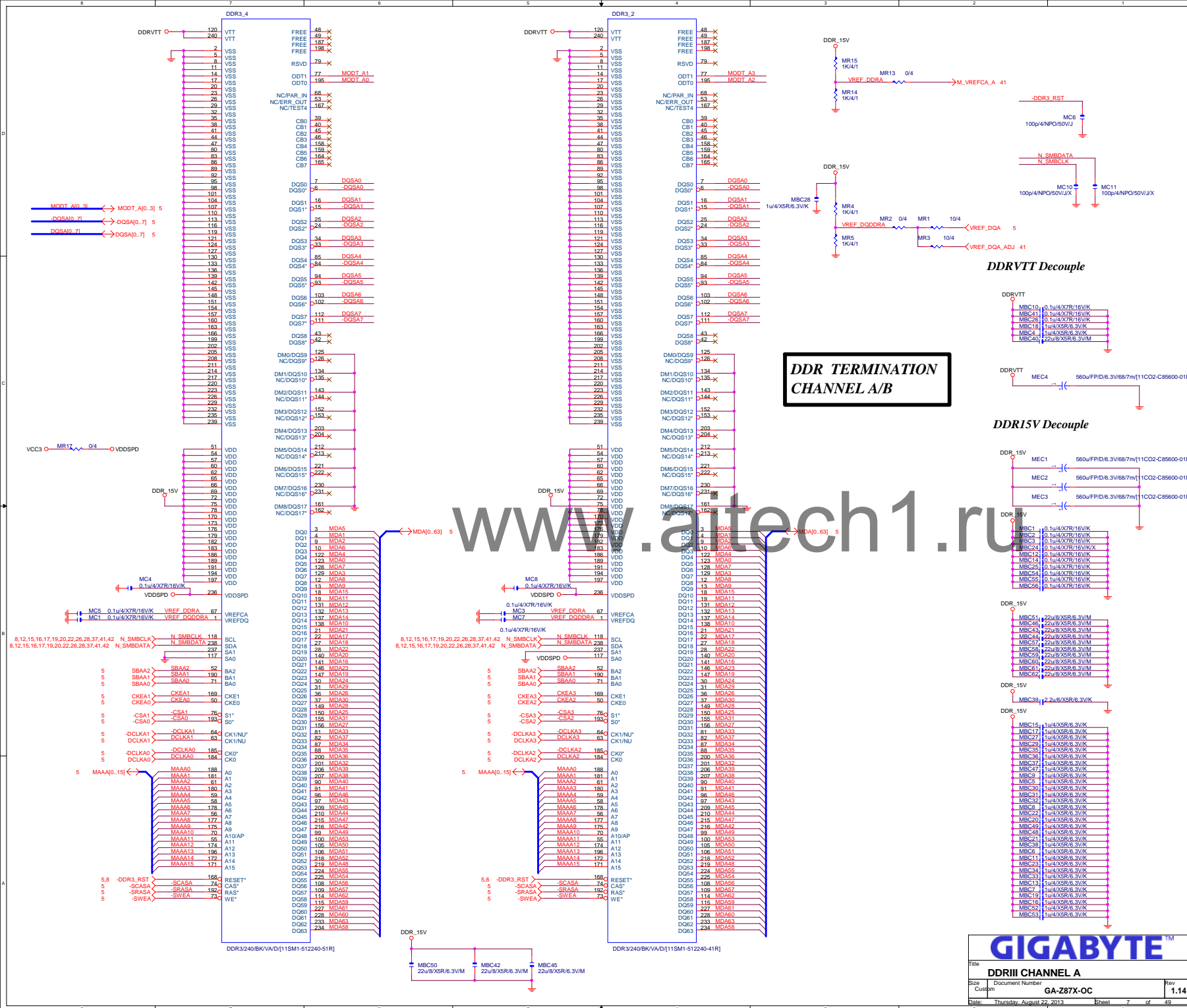
DATE	Change Item	Reason
2012/12/21	REV0.1 Z87X-OC 0.1 gerber out	
2013/02/18	0.2B modify SATA 線路	
2013/03/08	1.0B modify 8790 線路 1.0B modify FAN 線路	
2013/03/29	1.01B modify HUB 線路 1.01B modify PCIE_SW 線路 1.01B modify OTP 線路	
2012/04/12	1.02B modify 文字面	
2013/04/16	1.03B modify OC_IGNITION 線路	
2013/05/10	1.04 modify PCIE 線路	
2013/08/22	1.14 modify PCB 版本文字面	

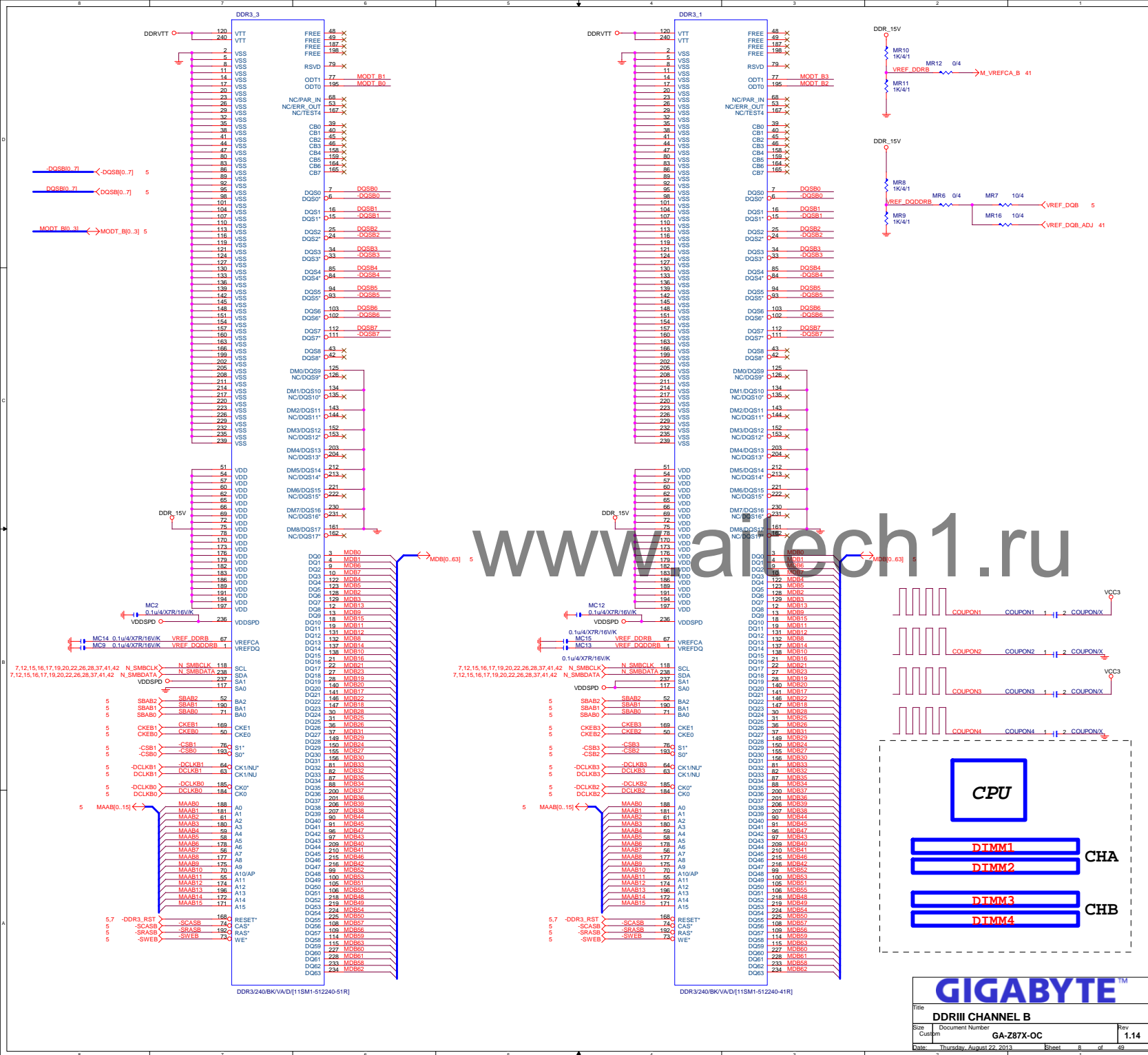
BLOCK DIAGRAM

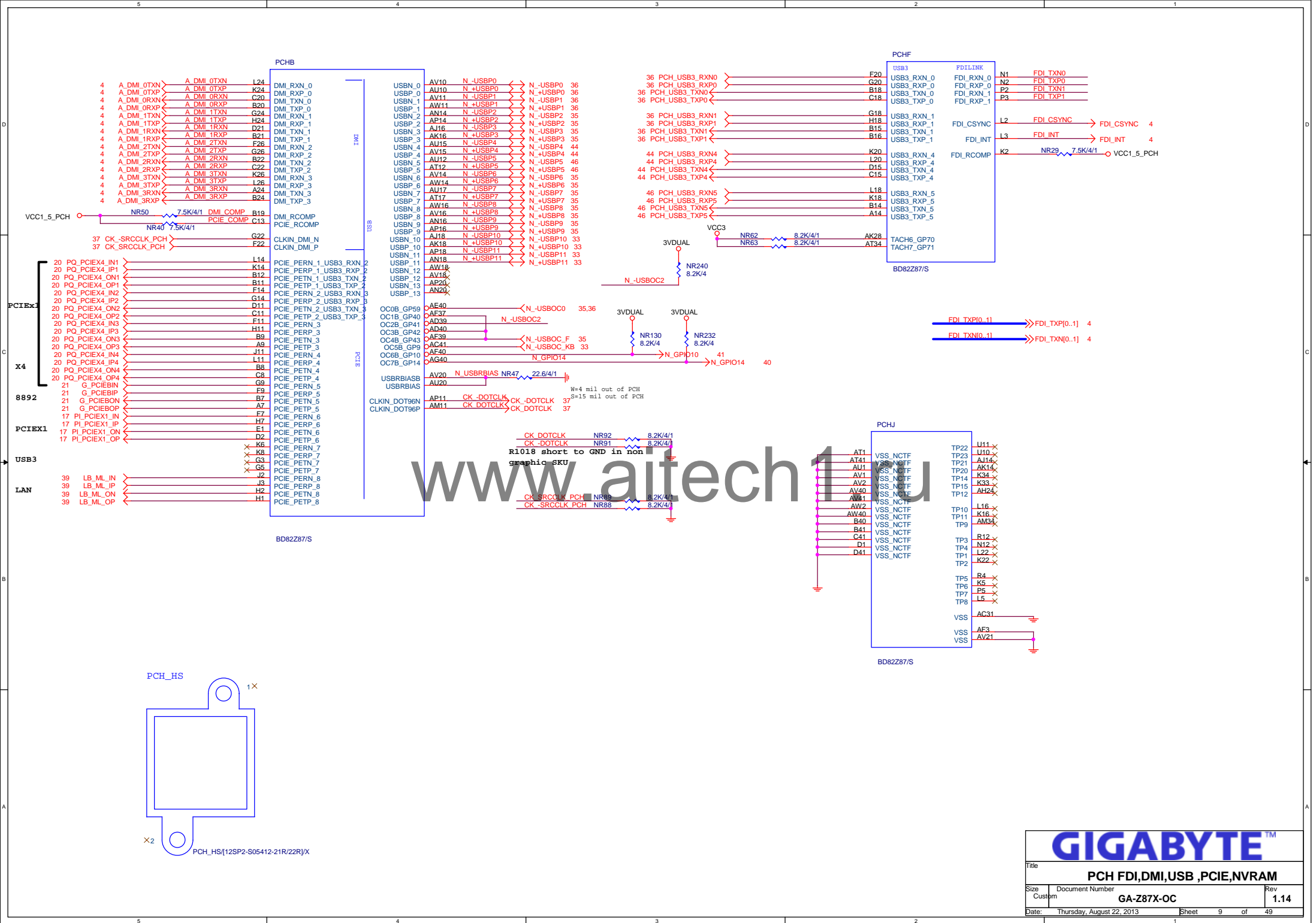


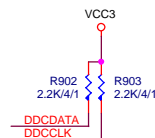


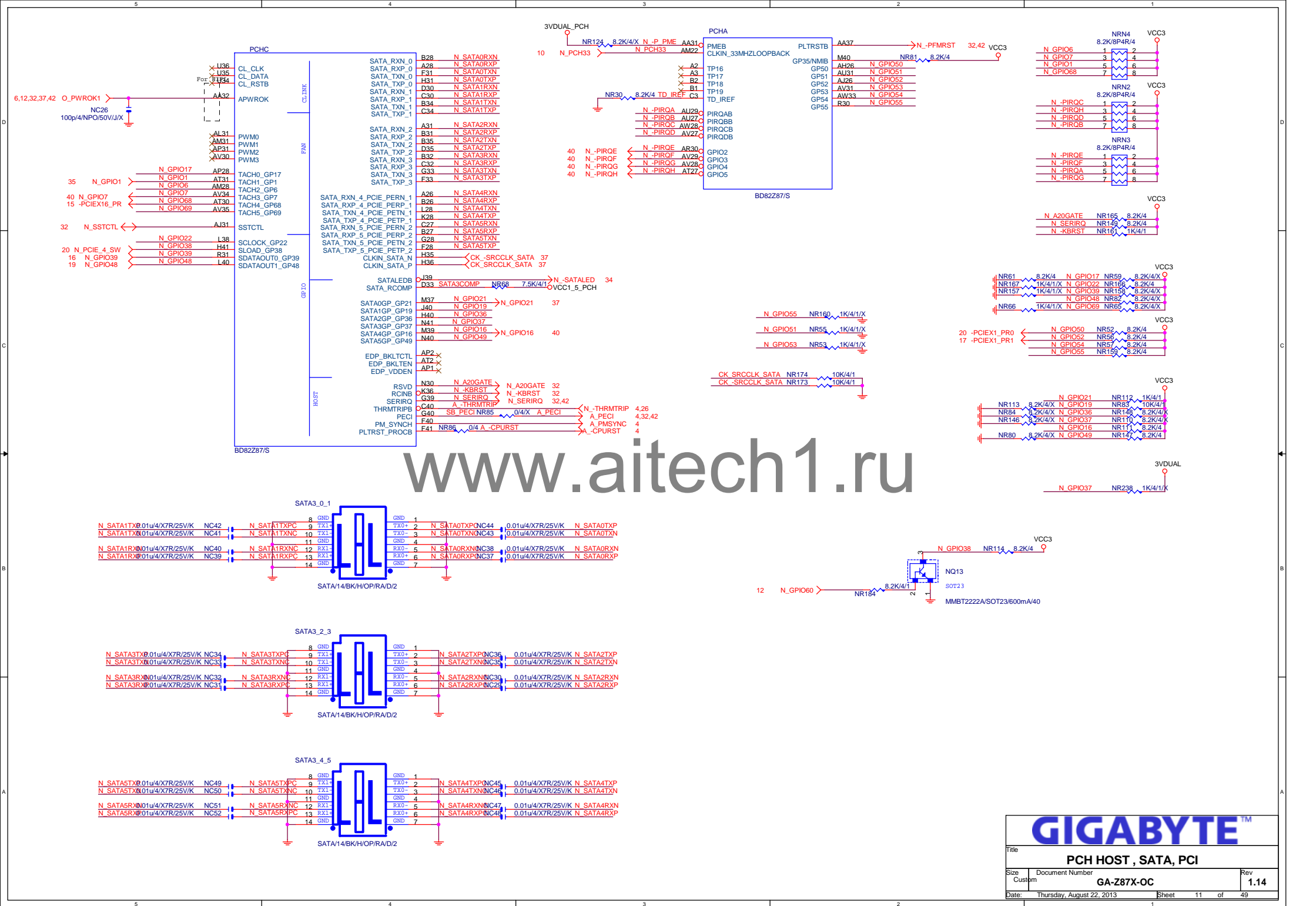




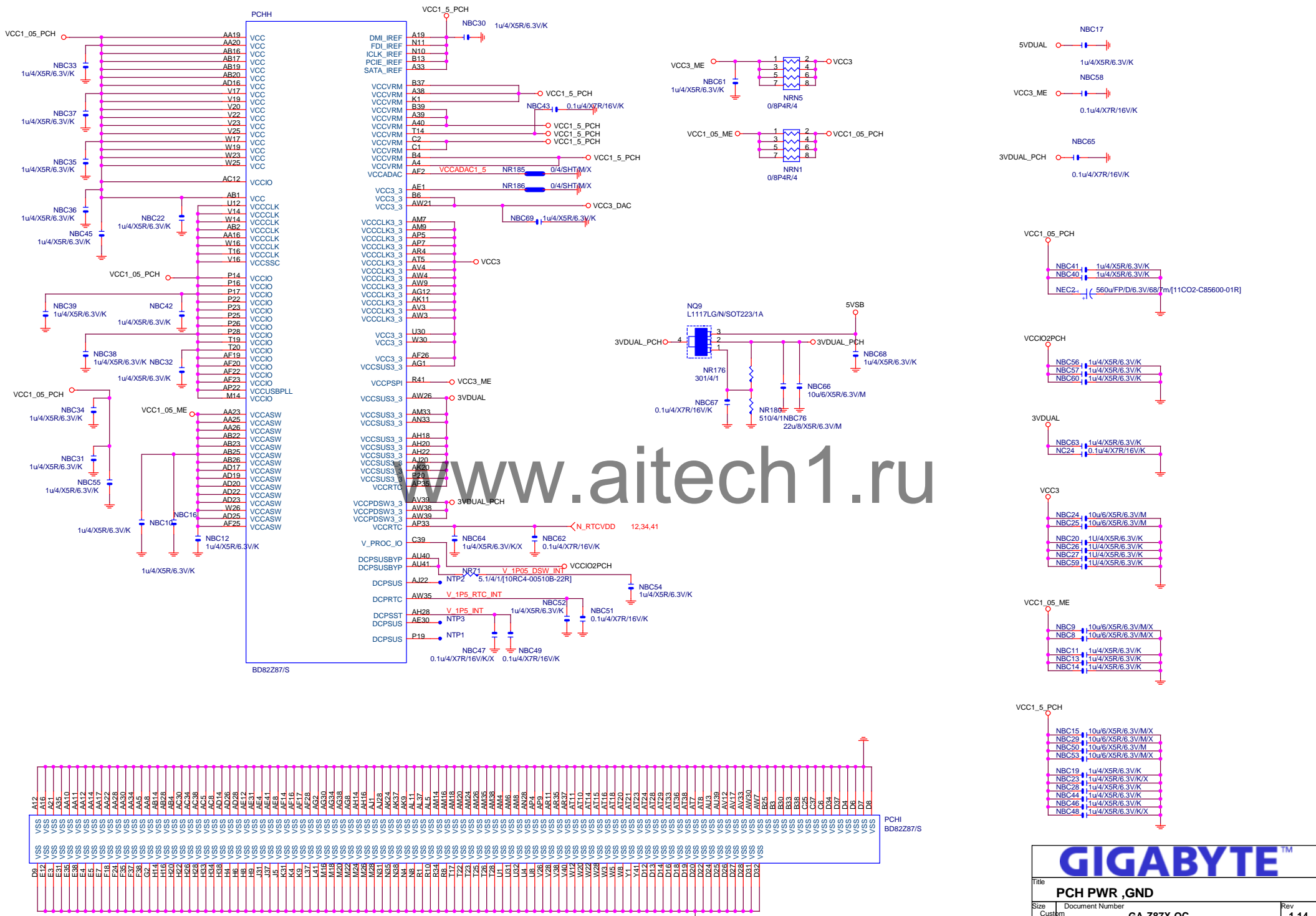


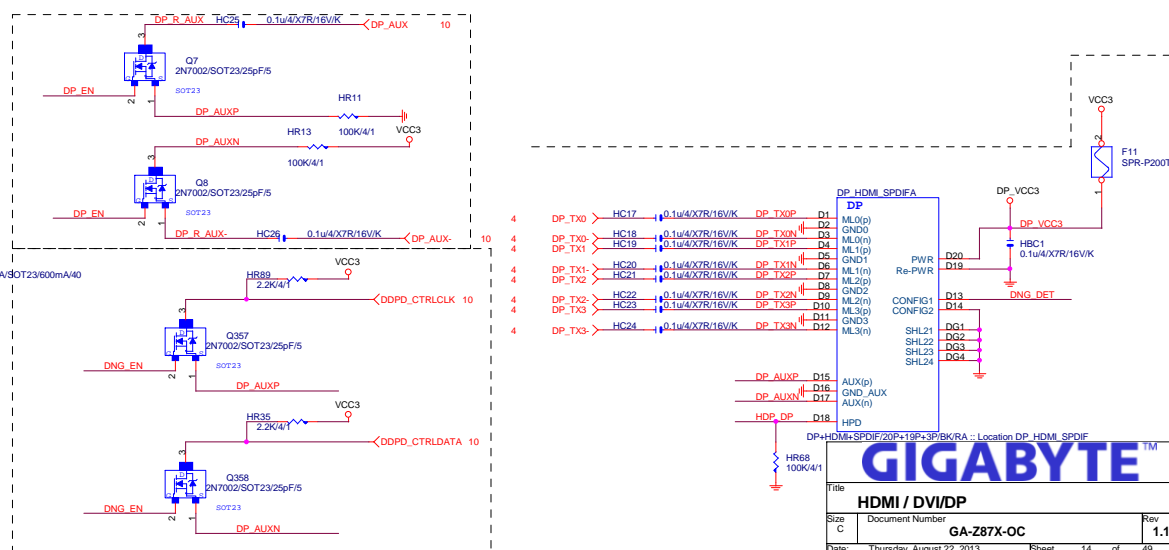
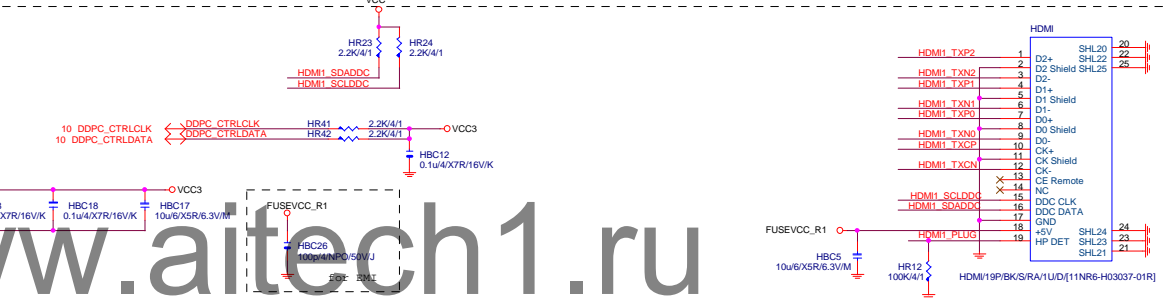
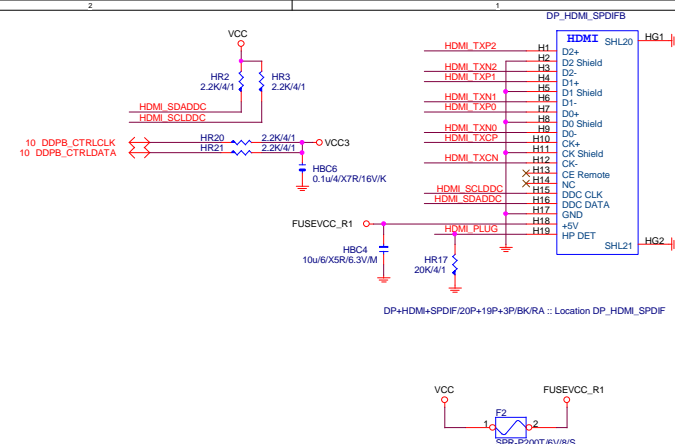




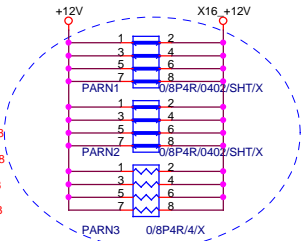








**+12 protect
short-wire test**



PAEXP16:16/5/5/16

PA EXP RXP0..15] >> PA_EXP_RXP[0..15] 4,18
PA EXP RXN0..15] >> PA_EXP_RXN[0..15] 4,18
PA EXP TXP0..15] >> PA_EXP_TXP[0..15] 4,18
PA EXP TXN0..15] >> PA_EXP_TXN[0..15] 4,18

PA EXP TXP0	PAC5	0.22u/4/X5R/6.3V/K	PA EXP TXP0 C
PA EXP TXN0	PAC4	0.22u/4/X5R/6.3V/K	PA EXP TXN0 C
PA EXP TXP1	PAC6	0.22u/4/X5R/6.3V/K	PA EXP TXP1 C
PA EXP TXN1	PAC7	0.22u/4/X5R/6.3V/K	PA EXP TXN1 C
PA EXP TXP2	PAC8	0.22u/4/X5R/6.3V/K	PA EXP TXP2 C
PA EXP TXN2	PAC9	0.22u/4/X5R/6.3V/K	PA EXP TXN2 C
PA EXP TXP3	PAC10	0.22u/4/X5R/6.3V/K	PA EXP TXP3 C
PA EXP TXN3	PAC11	0.22u/4/X5R/6.3V/K	PA EXP TXN3 C
PA EXP TXP4	PAC12	0.22u/4/X5R/6.3V/K	PA EXP TXP4 C
PA EXP TXN4	PAC13	0.22u/4/X5R/6.3V/K	PA EXP TXN4 C
PA EXP TXP5	PAC14	0.22u/4/X5R/6.3V/K	PA EXP TXP5 C
PA EXP TXN5	PAC15	0.22u/4/X5R/6.3V/K	PA EXP TXN5 C
PA EXP TXP6	PAC16	0.22u/4/X5R/6.3V/K	PA EXP TXP6 C
PA EXP TXN6	PAC17	0.22u/4/X5R/6.3V/K	PA EXP TXN6 C
PA EXP TXP7	PAC18	0.22u/4/X5R/6.3V/K	PA EXP TXP7 C
PA EXP TXN7	PAC19	0.22u/4/X5R/6.3V/K	PA EXP TXN7 C
PA EXP SW TXP8	PAC21	0.22u/4/X5R/6.3V/K	PA EXP SW TXP8 C
PA EXP SW TXN8	PAC20	0.22u/4/X5R/6.3V/K	PA EXP SW TXN8 C
PA EXP SW TXP9	PAC22	0.22u/4/X5R/6.3V/K	PA EXP SW TXP9 C
PA EXP SW TXN9	PAC23	0.22u/4/X5R/6.3V/K	PA EXP SW TXN9 C
PA EXP SW TXP10	PAC24	0.22u/4/X5R/6.3V/K	PA EXP SW TXP10 C
PA EXP SW TXN10	PAC25	0.22u/4/X5R/6.3V/K	PA EXP SW TXN10 C
PA EXP SW TXP11	PAC26	0.22u/4/X5R/6.3V/K	PA EXP SW TXP11 C
PA EXP SW TXN11	PAC27	0.22u/4/X5R/6.3V/K	PA EXP SW TXN11 C
PA EXP SW TXP12	PAC28	0.22u/4/X5R/6.3V/K	PA EXP SW TXP12 C
PA EXP SW TXN12	PAC29	0.22u/4/X5R/6.3V/K	PA EXP SW TXN12 C
PA EXP SW TXP13	PAC30	0.22u/4/X5R/6.3V/K	PA EXP SW TXP13 C
PA EXP SW TXN13	PAC31	0.22u/4/X5R/6.3V/K	PA EXP SW TXN13 C
PA EXP SW TXP14	PAC32	0.22u/4/X5R/6.3V/K	PA EXP SW TXP14 C
PA EXP SW TXN14	PAC33	0.22u/4/X5R/6.3V/K	PA EXP SW TXN14 C
PA EXP SW TXP15	PAC34	0.22u/4/X5R/6.3V/K	PA EXP SW TXP15 C
PA EXP SW TXN15	PAC35	0.22u/4/X5R/6.3V/K	PA EXP SW TXN15 C

PA EXP SW RXP[8..15] >> PA_EXP_SW_RXP[8..15] 18
PA EXP SW RXN[8..15] >> PA_EXP_SW_RXN[8..15] 18
PA EXP SW TXP[8..15] >> PA_EXP_SW_TXP[8..15] 18
PA EXP SW TXN[8..15] >> PA_EXP_SW_TXN[8..15] 18

PCI-E REV:1.1--> 2.5GHZ

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

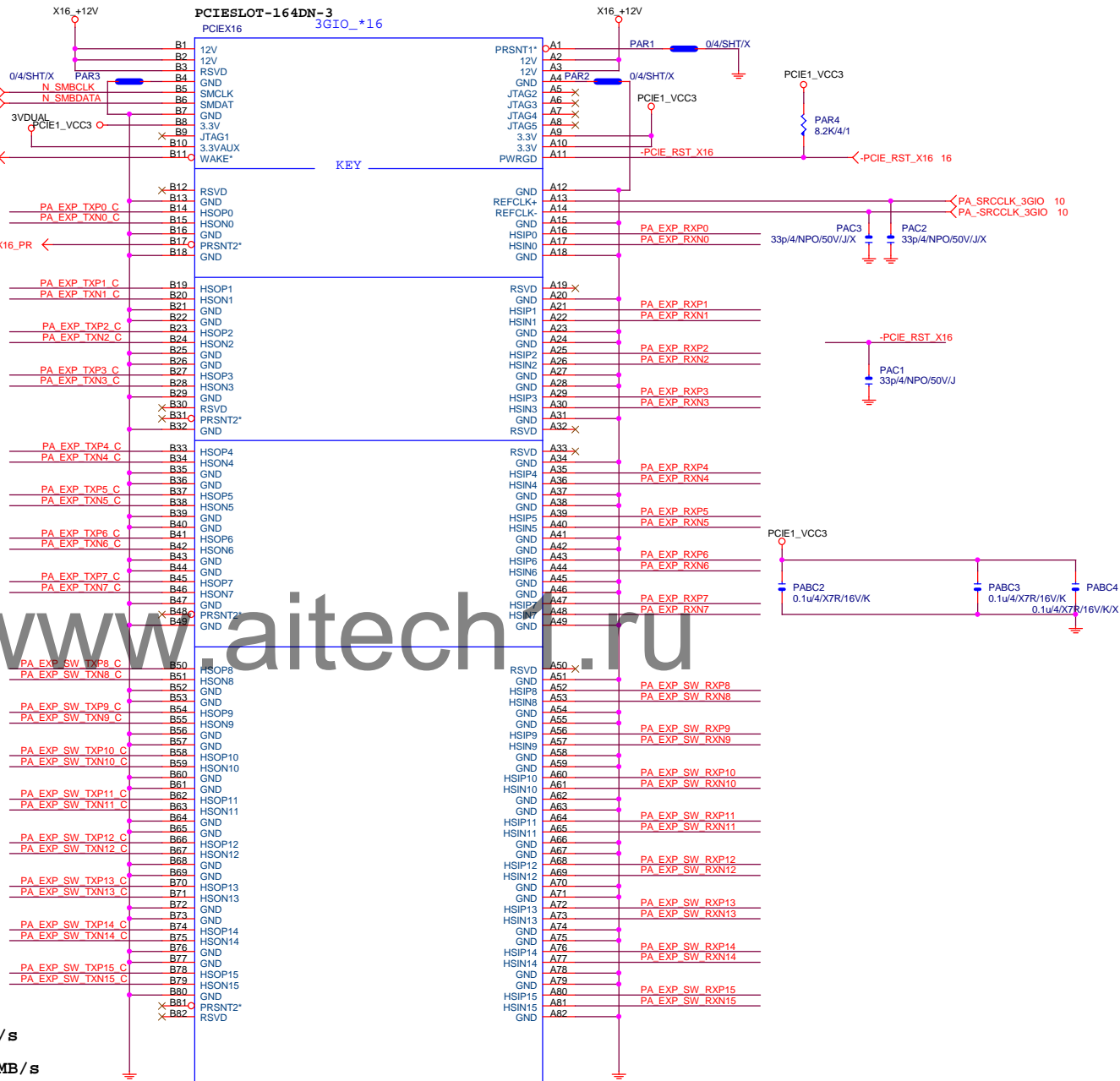
PCE-E X1(雙向) BANDWIDTH=2.5GHz*(8b/10b)X2=4Gb/s=500MB/s

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

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

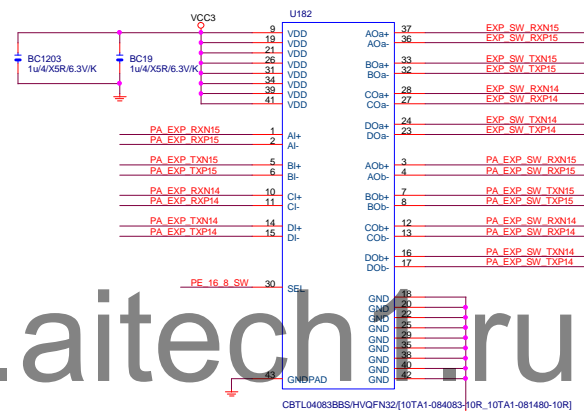
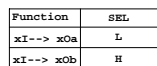
PCI-E REV:2.0--> 5GHZ

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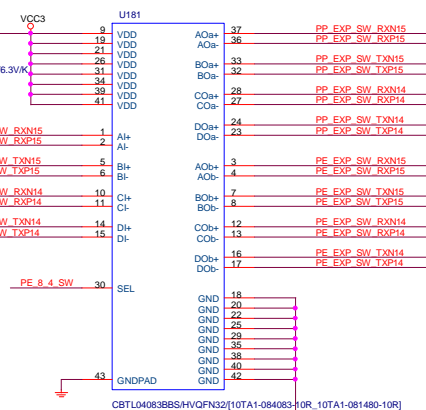
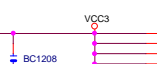


PCI-E/16X-164P/BK/RIGHT PUSH-[11AC1-023164-81R]

GIGABYTE™			
Title PCI EXPRESS * 16			
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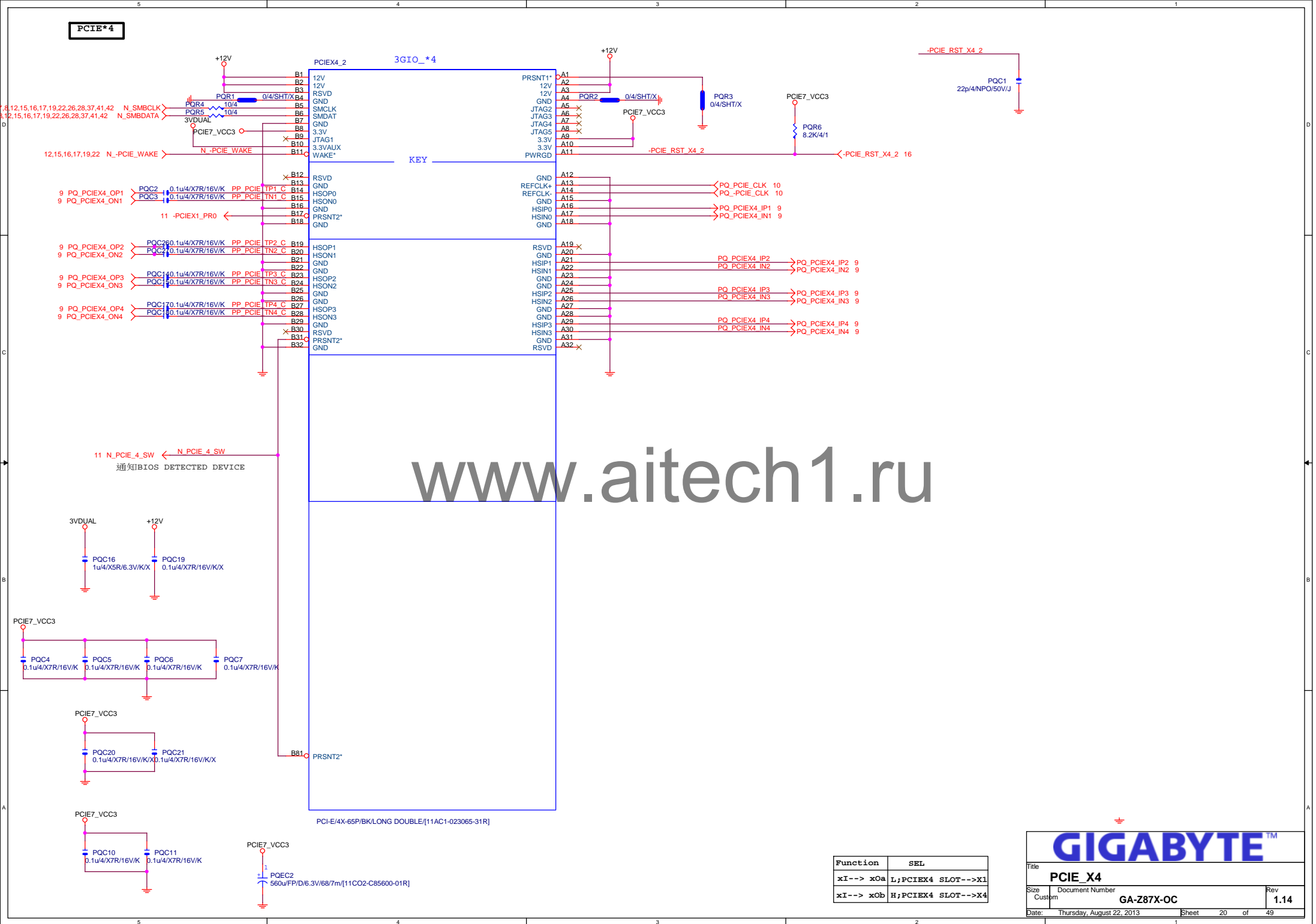
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PA EXP SW_RXIN[15]	>> PA_EXP_SW_RXIN[15]
PA EXP SW_TXIP[15]	>> PA_EXP_SW_TXIP[15]
PA EXP SW_TXIN[15]	>> PA_EXP_SW_TXIN[15]
PE EXP SW_RXIP[15]	>> PE_EXP_SW_RXIP[15]
PE EXP SW_RXIN[15]	>> PE_EXP_SW_RXIN[15]
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PE EXP SW_TXIN[15]	>> PE_EXP_SW_TXIN[15]

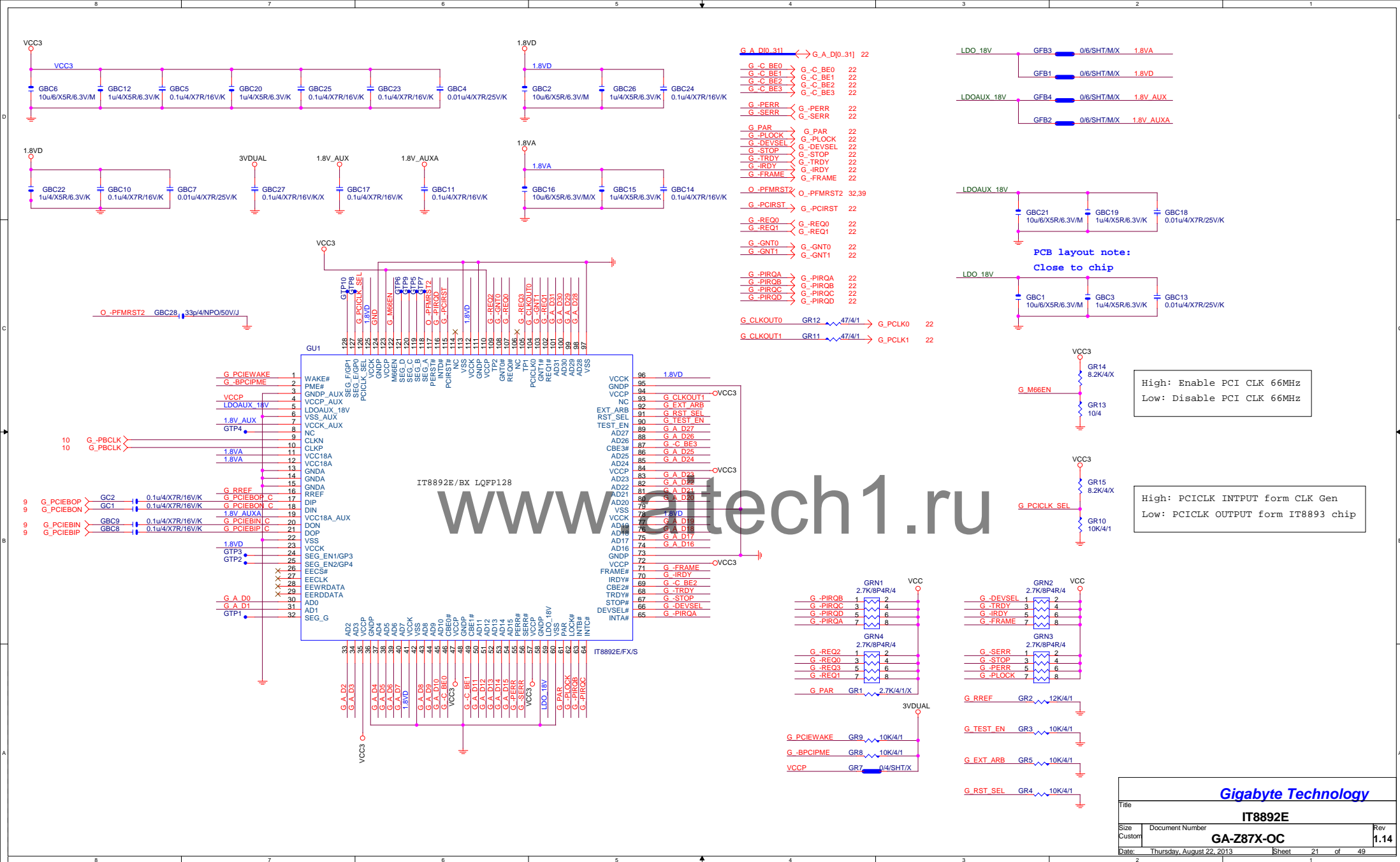


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PP_EXP_SW_RXP[12..15] >> PP_EXP_SW_RXP[12..15] 19
PP_EXP_SW_RXN[12..15] >> PP_EXP_SW_RXN[12..15] 19
PP_EXP_SW_TXP[12..15] >> PP_EXP_SW_TXP[12..15] 19
PP_EXP_SW_TXN[12..15] >> PP_EXP_SW_TXN[12..15] 19

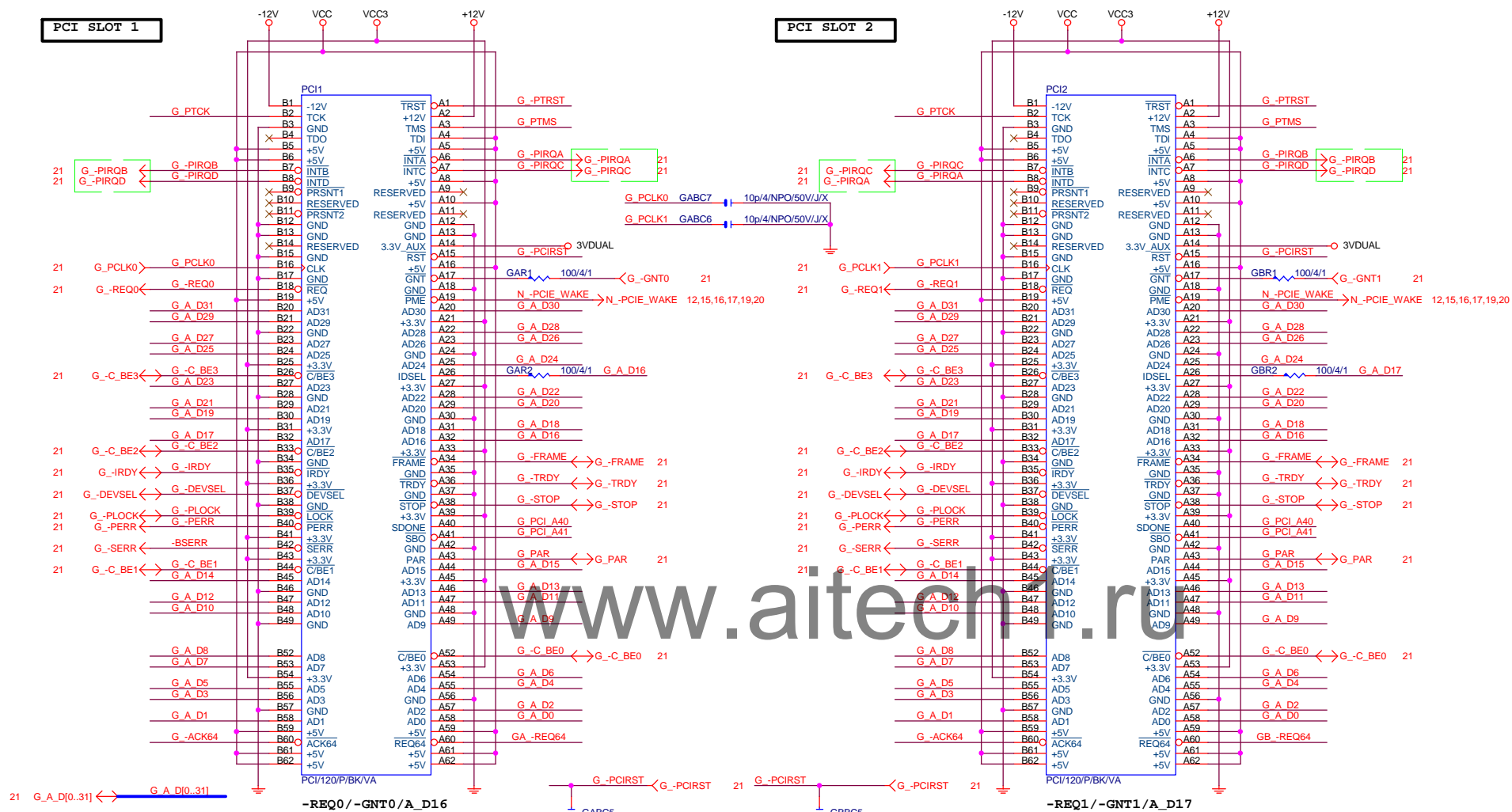
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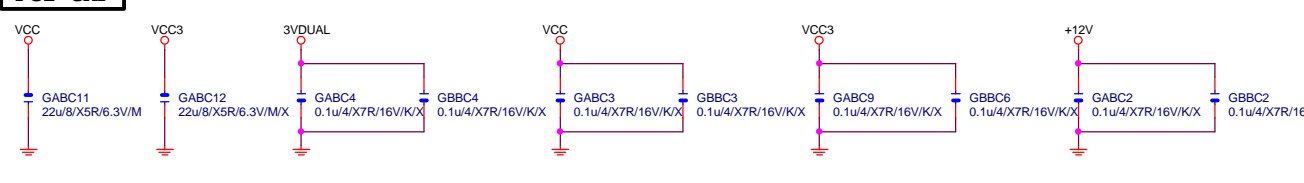
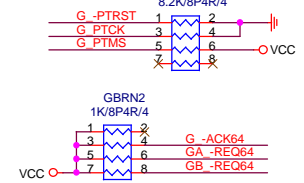
PCI SLOT 1

PCI SLOT 2



PCI PU

PCI CAP



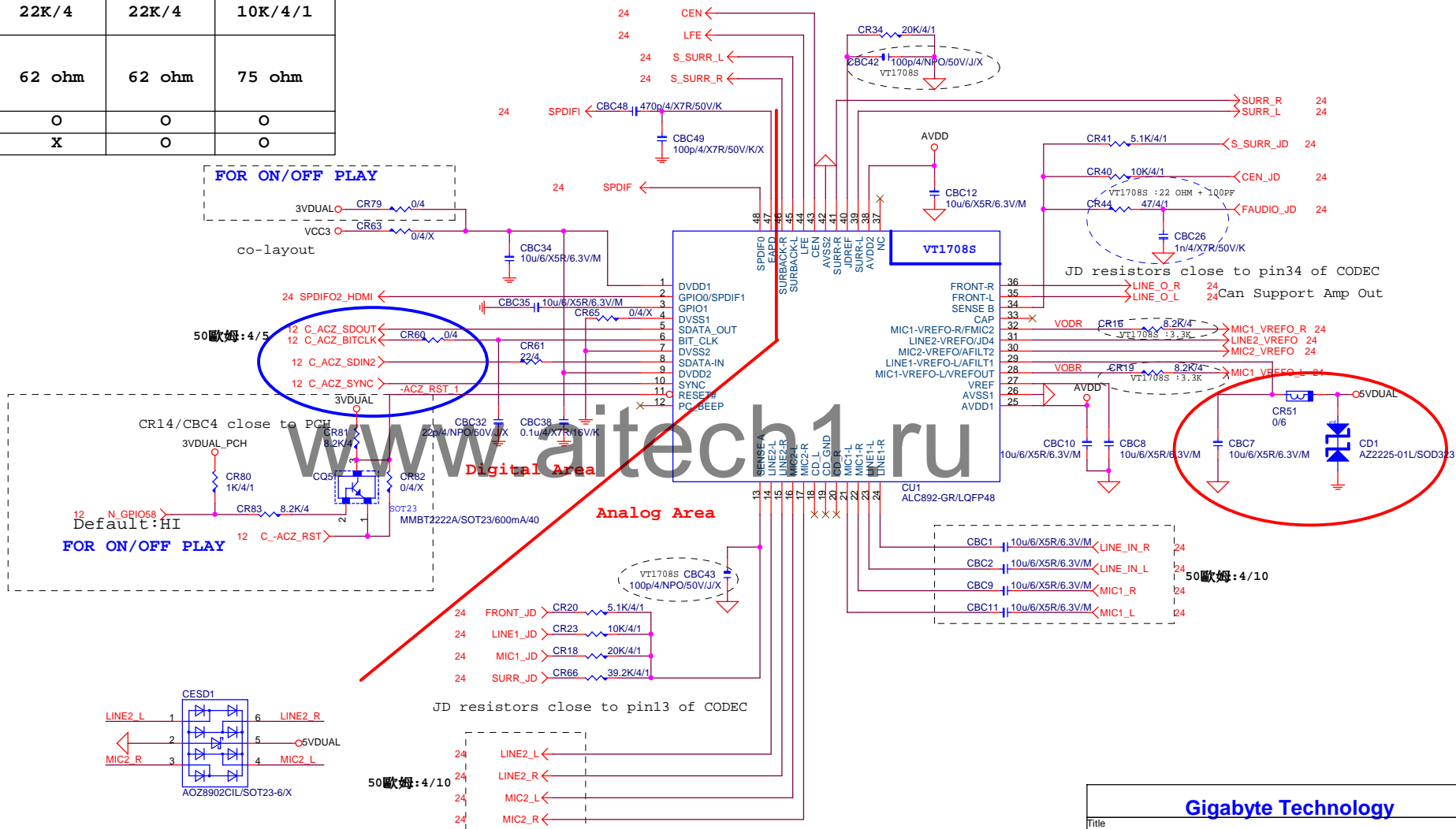
GIGABYTE™

PCI SLOT 1&2

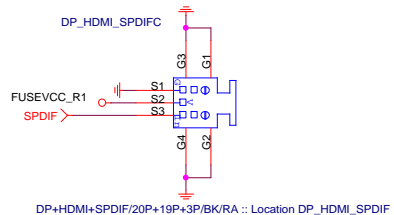
Size: Custom Document Number: **GA-Z87X-OC** Rev: **1.14**

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	ALC892	ALC887-VD2	VT1708S-CE
CR44/CBC26	47ohm+1nF	47ohm+1nF	22ohm+100P
CBC42/CBC43	X	X	100P/4
CR16/CR19 CR52/CR56/CR10/CR9	8.2K/4	8.2K/4	3.3K/4/1
CR6/CR7/CR58/CR54/ CR67/CR68/CR69/CR70	22K/4	22K/4	10K/4/1
CR5/CR8/CR1/CR14/ CR17/CR22/CR73/CR74/ CR13/CR11/CR57/CR53/ CR75/CR76	62 ohm	62 ohm	75 ohm
CR51/CD1/CBC7	O	O	O
CESD1	X	O	O

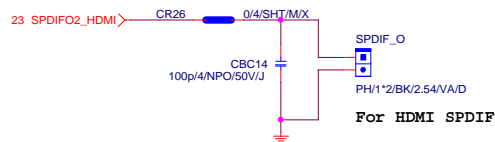


CR49 0/6/SHT/M/X → Close F_AUDIO
 CR50 0/6/SHT/M/X → Close Codec
 CR21 2.2/6 → Audio jack <--> USB_LAN
 CR24 0/6/X → Under Audio jack



DP+HDMI+SPDIF/20P+19P+3P/BK/RA :: Location DP_HDMI_SPDIF

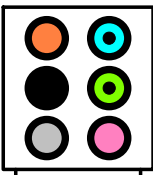
SPDIF_OUT



SPDIF_IN



AZALIA JACK

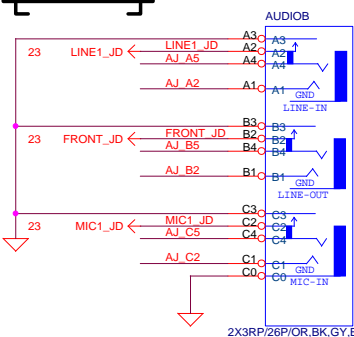


AZALIA JACK

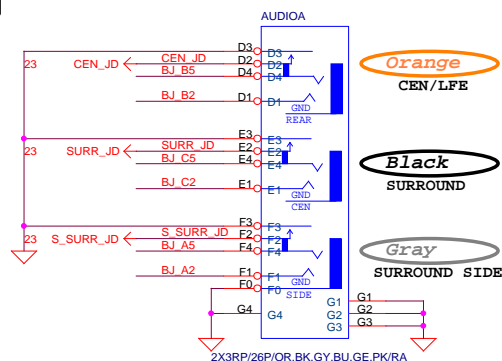
BLUE
LINE-IN

GREEN
LINE-OUT

PINK
MIC-IN



2X3RP/26P/OR,BK,GY,BU,GE,PK/RA

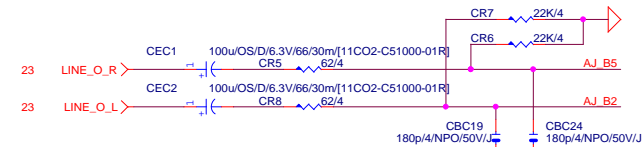


Orange
CEN/LFE

Black
SURROUND

Gray
SURROUND SIDE

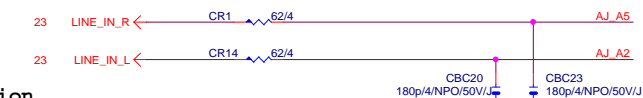
LINE-OUT



LINE-IN

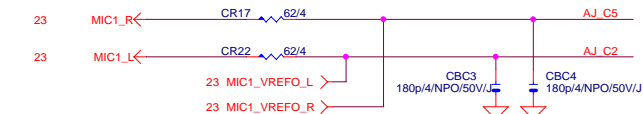
Verify MIC function
in LINE-in

Only reserved for ALC888

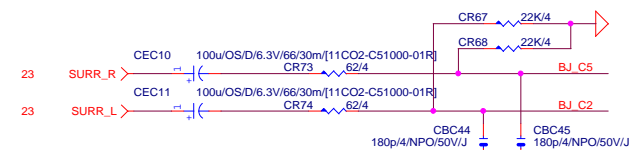


For 889A/888

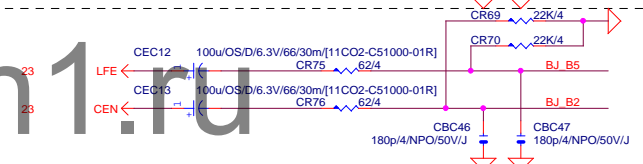
MIC-IN



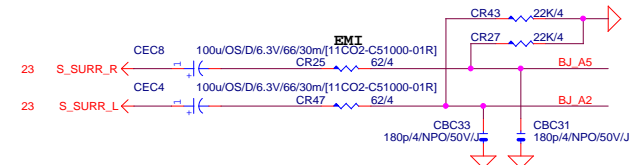
SURROUND



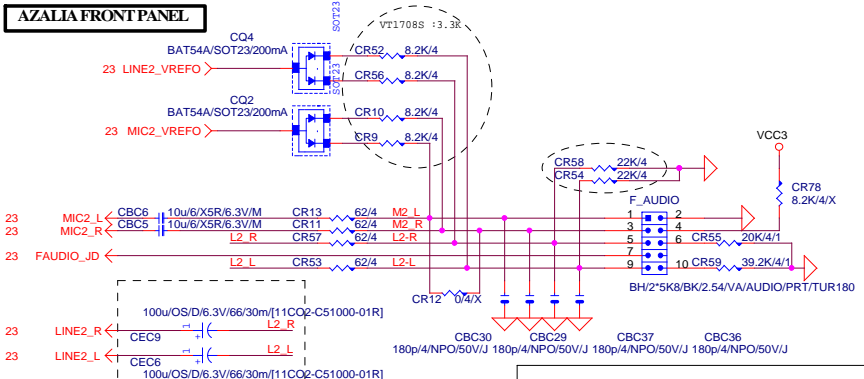
CEN/LFE



SURRBACK



AZALIA FRONT PANEL

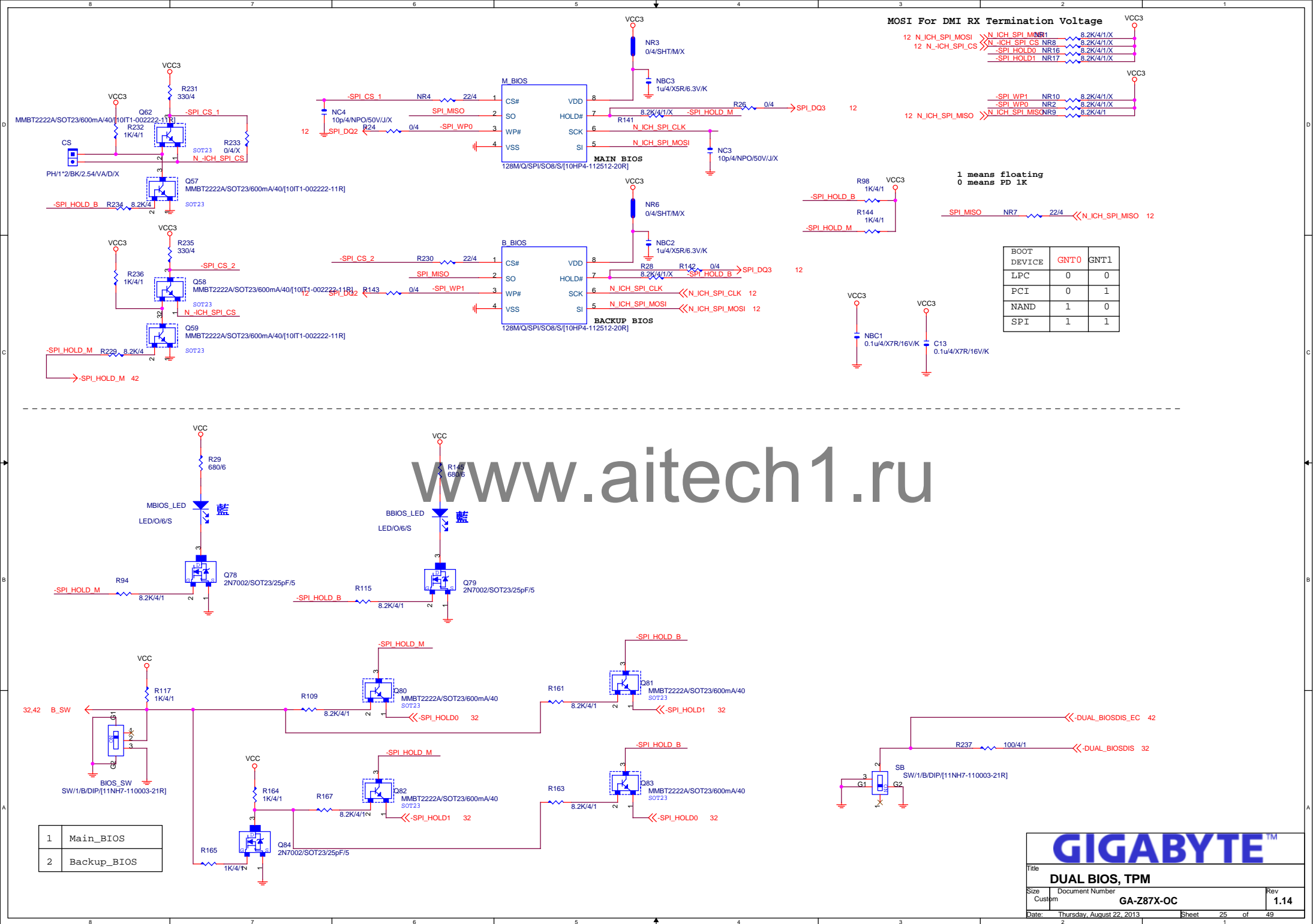


Gigabyte Technology

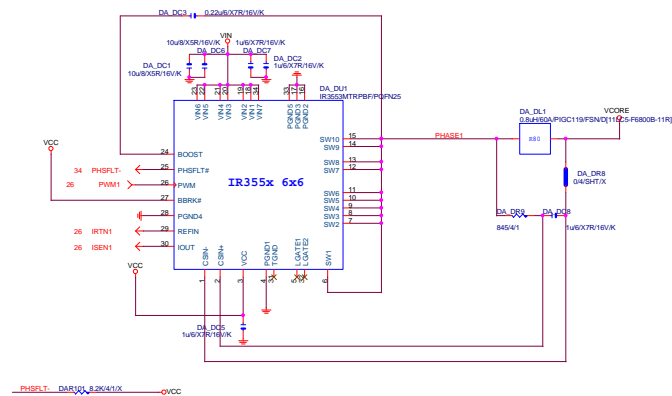
AUDIO JACK

GA-Z87X-OC

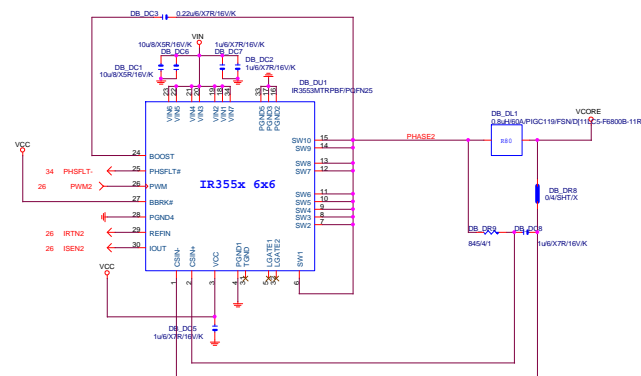
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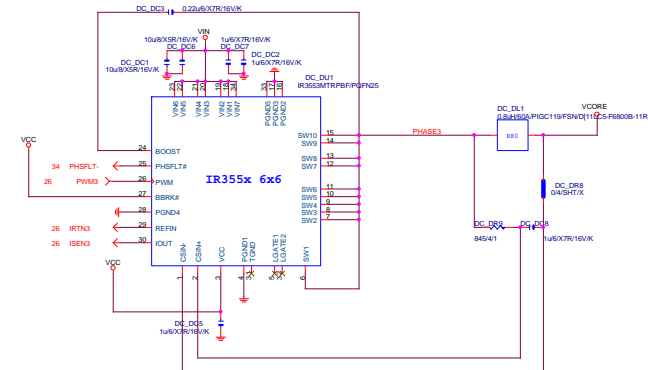
VCORE-PHASE1



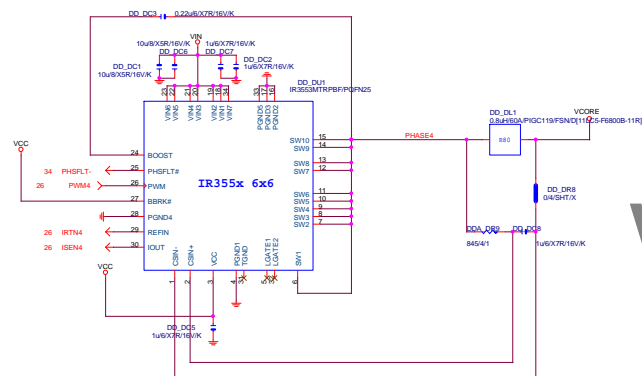
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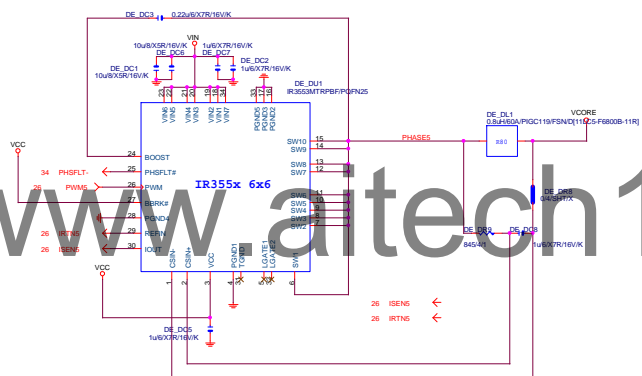
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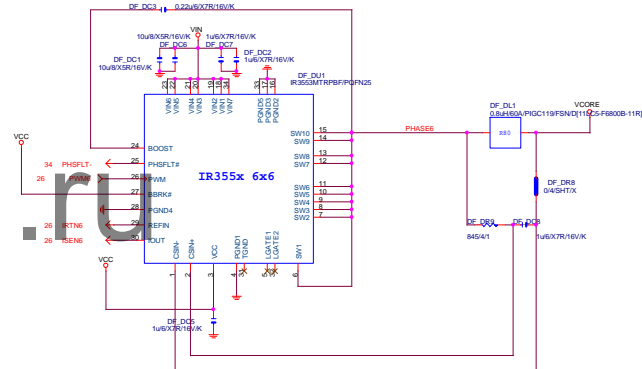
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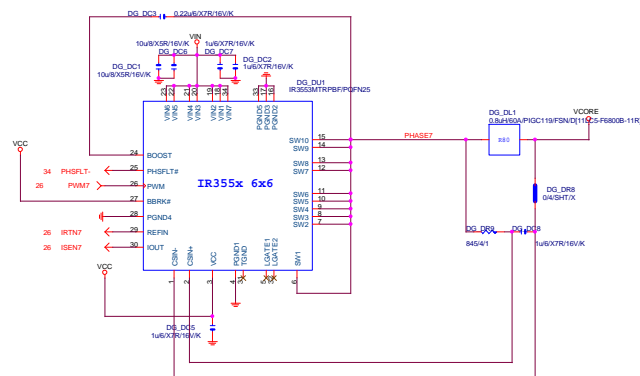
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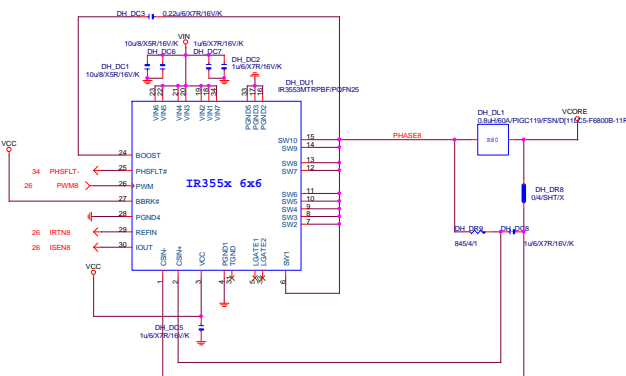
VCORE-PHASE6

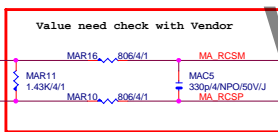
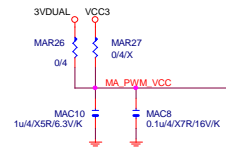
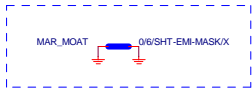


VCORE-PHASE7



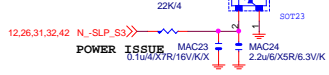
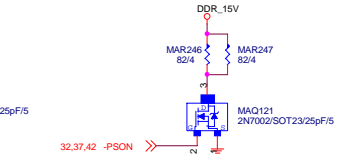
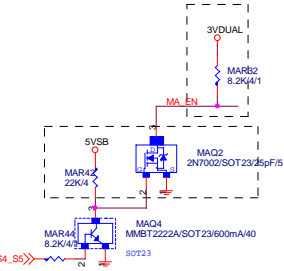
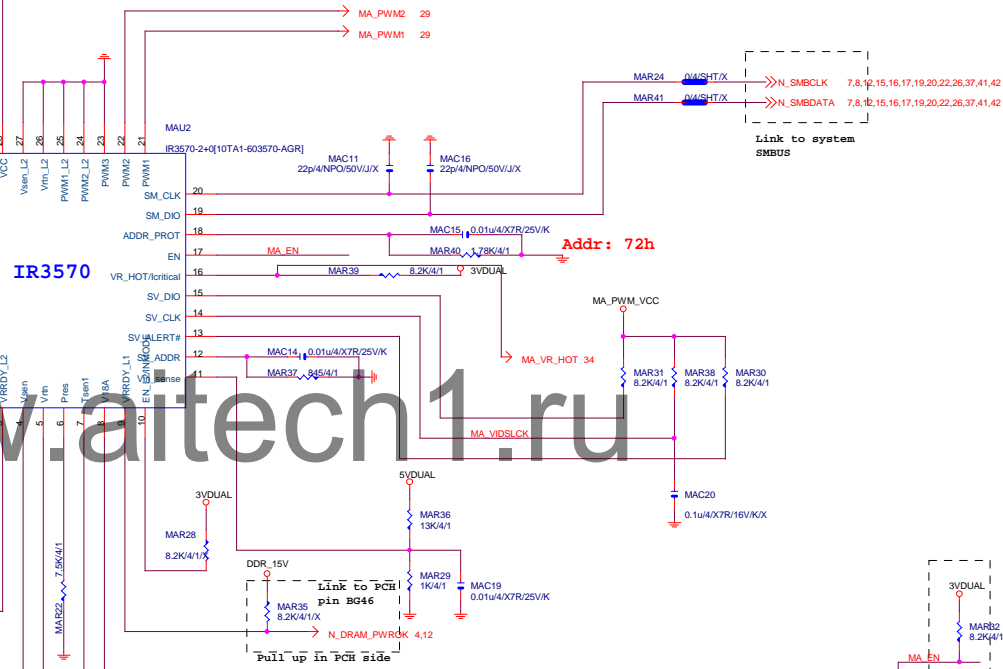
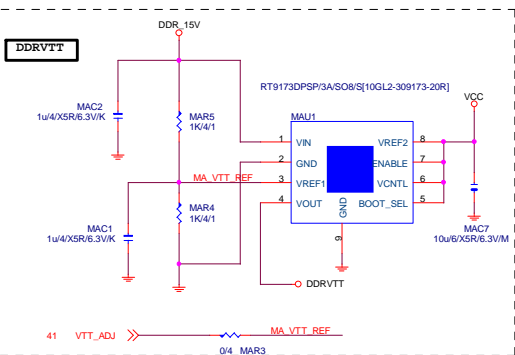
VCORE-PHASE8





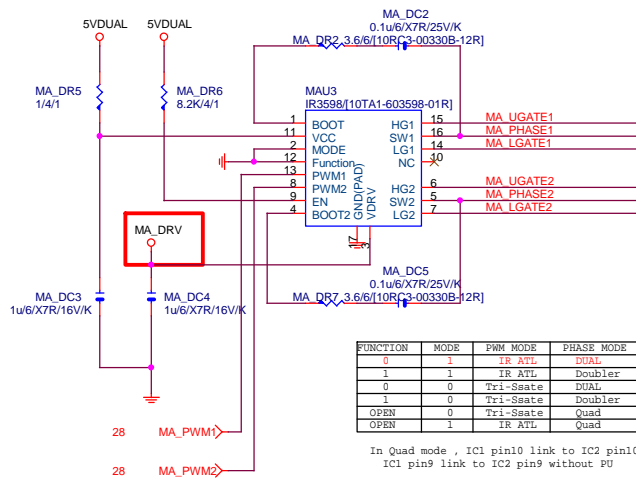
Close to DDR output inductor

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



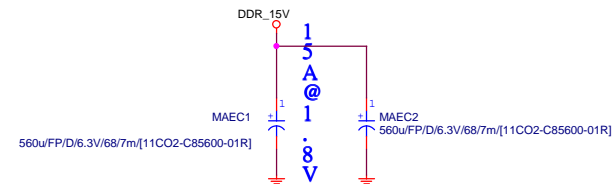
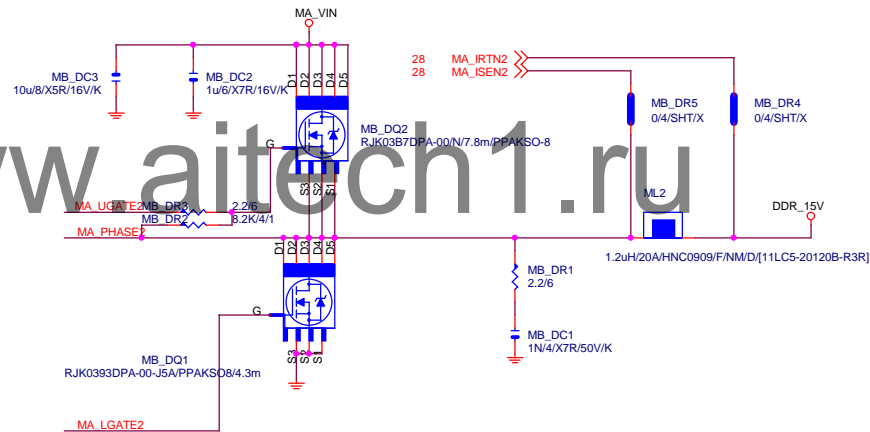
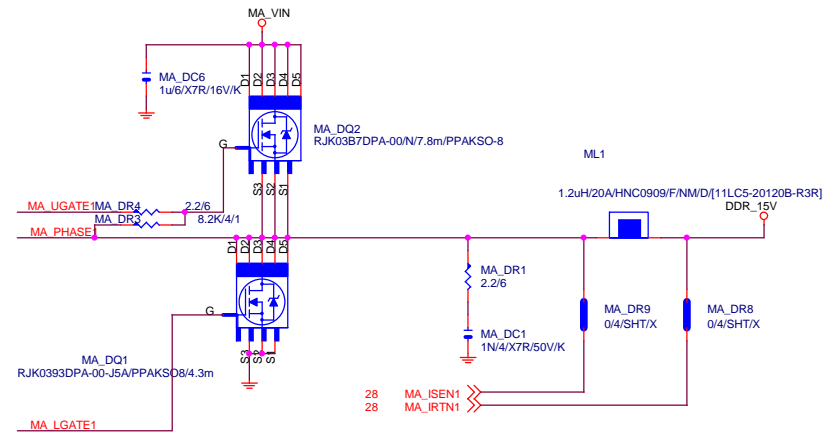
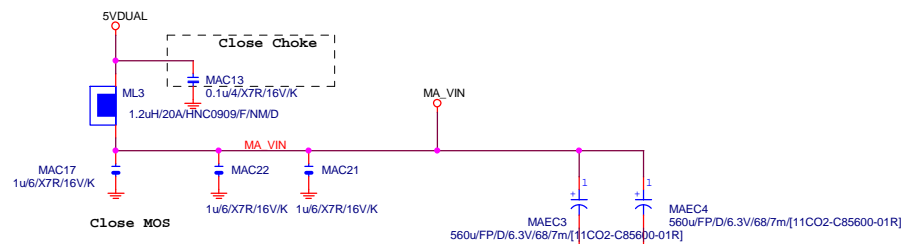
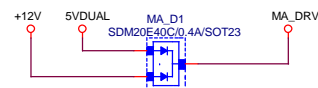
GIGABYTE™			
Title DDR POWER IR3570			
Size C	Document Number GA-Z87X-OC	Rev 1.14	
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DDR_15V

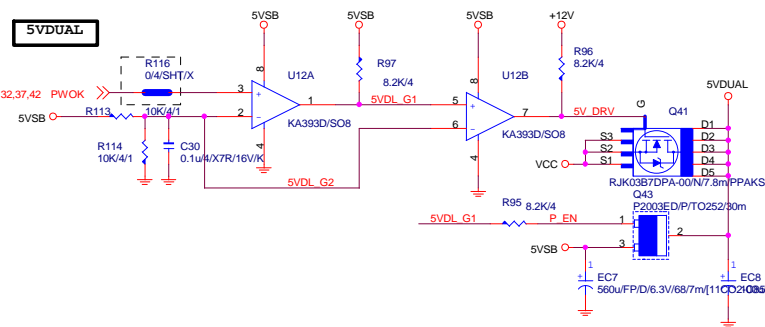


FUNCTION	MODE	PWM MODE	PHASE MODE
0	1	IR ATL	DUAL
1	1	IR ATL	Doubler
0	0	Tri-Ssate	DUAL
1	0	Tri-Ssate	Doubler
OPEN	0	Tri-Ssate	Quad
OPEN	1	IR ATL	Quad

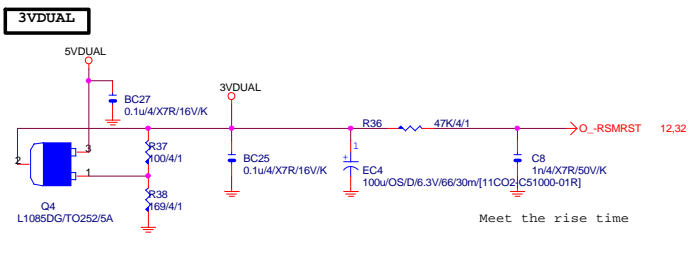
In Quad mode , IC1 pin10 link to IC2 pin10
IC1 pin9 link to IC2 pin9 without PU



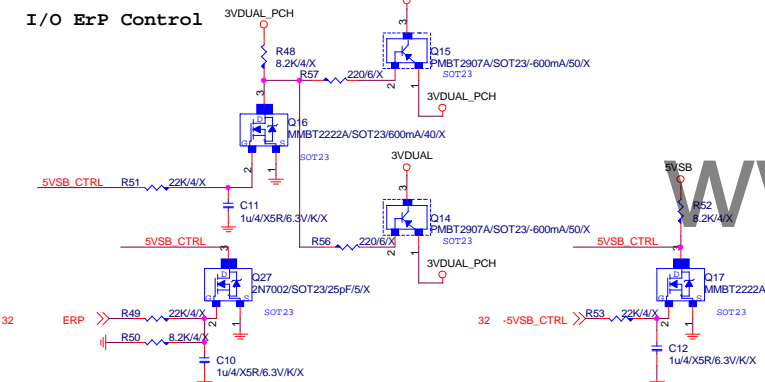
5VDUAL



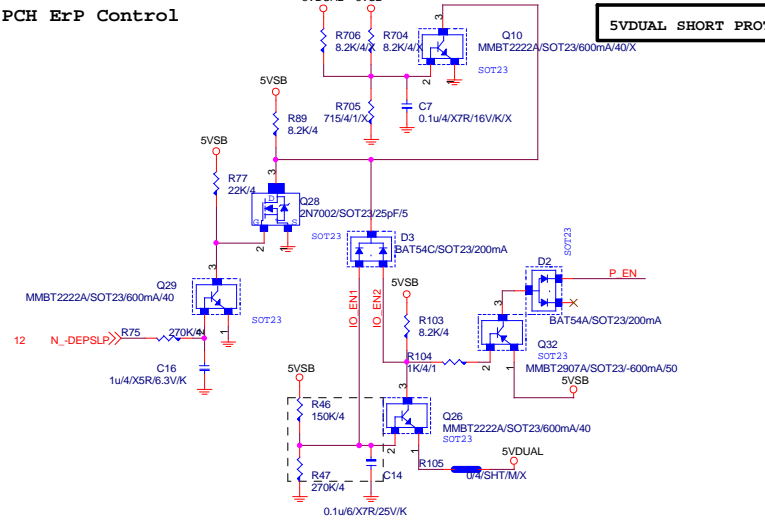
3VDUAL



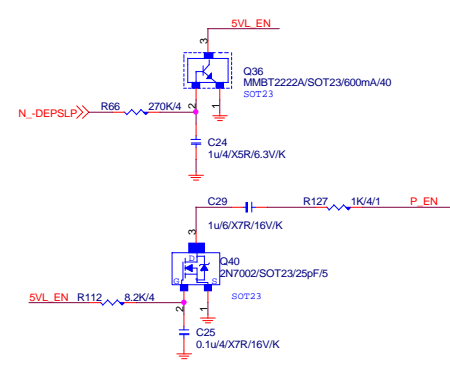
I/O ErP Control



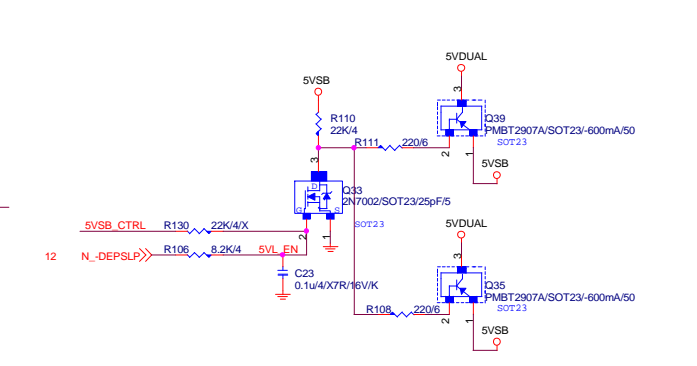
PCH ErP Control



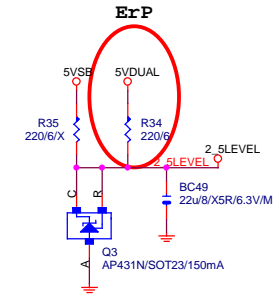
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At least 10ms delay after 3VDUAL stable

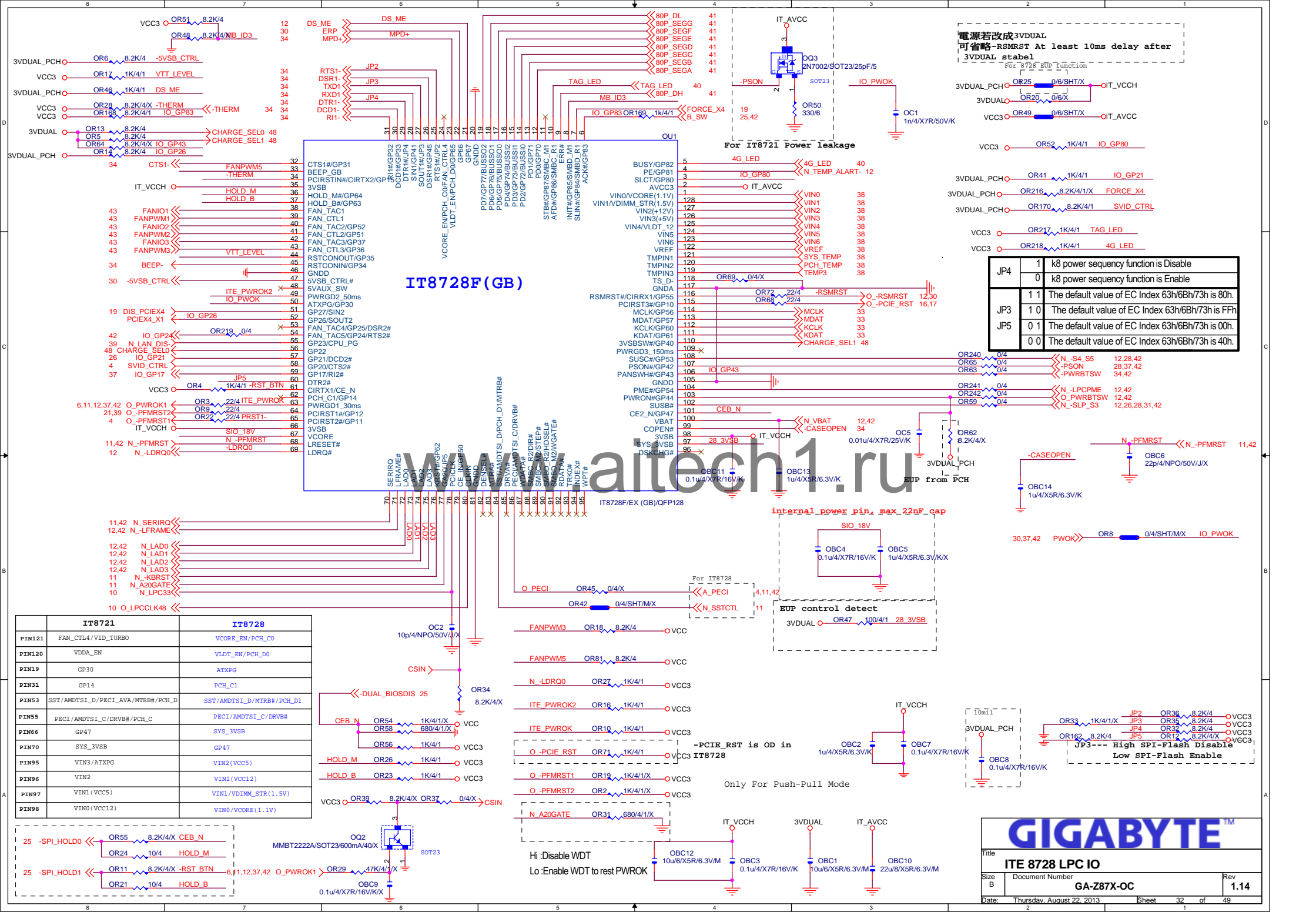


The schematic diagram illustrates the VCC1_05 power plane. It features a voltage regulator (U6C, LM324DR) powered by a +12V supply. The regulator's output (pin 8) provides VCC1_05_G, which is connected to the power pins of two DDR3 memory modules (NQ16 and NQ15). The modules are connected to a common ground (GND) and a common power supply (VCC1_05_PCH). The power supply is connected to a 560uF/6.3V/687mF capacitor (NEC3) and a 11CO2-C85600-01R1 capacitor. The ground plane is connected to a 41 VCC1_05_PCH_OV point. The diagram also shows a 2.5LEVEL signal line and a 10V signal line connected to the regulator's input (pin 10).

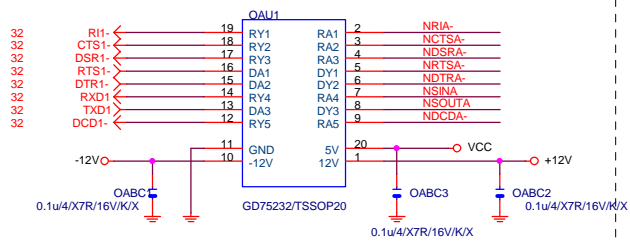


The schematic diagram illustrates the power regulation for the VCC1_5_PCH plane. It features a 2.5LEVEL input connected to a 5.23K/4% resistor (NR14) and a 2.5LEVEL node. A 12V input is connected to the non-inverting input of the LM324DR (U6A) voltage follower. The output of the regulator is connected to the PCH power plane. The circuit includes several passive components: resistors NR13 (8.2K/4%), NR11 (100/4%), NR12 (10K/4%), and R63 (499/4%); capacitors NBC6 (1uF/47R/16V/K), NBC5 (0.1uF/47R/16V/K/X), NBC4 (0.01uF/47R/25V/K/X), and NC5 (8.2K/4%). The output current is limited to 1.6A max. The diagram also shows the connection to the PCH power plane and the VCC1_5_PCH node.

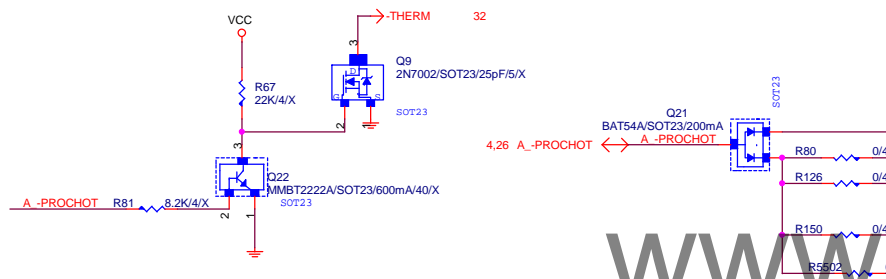
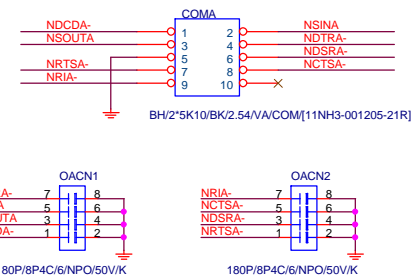
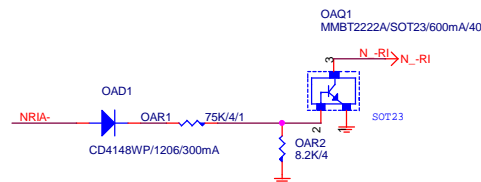
[illegible][illegible]



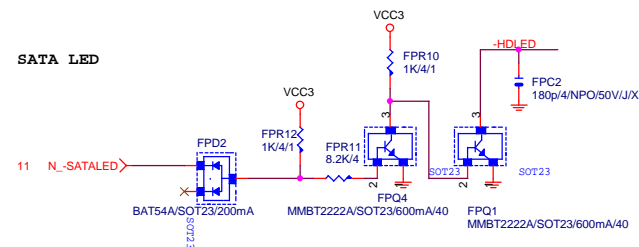
COMA



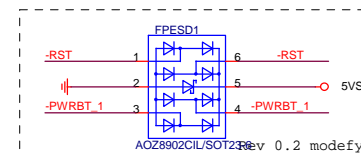
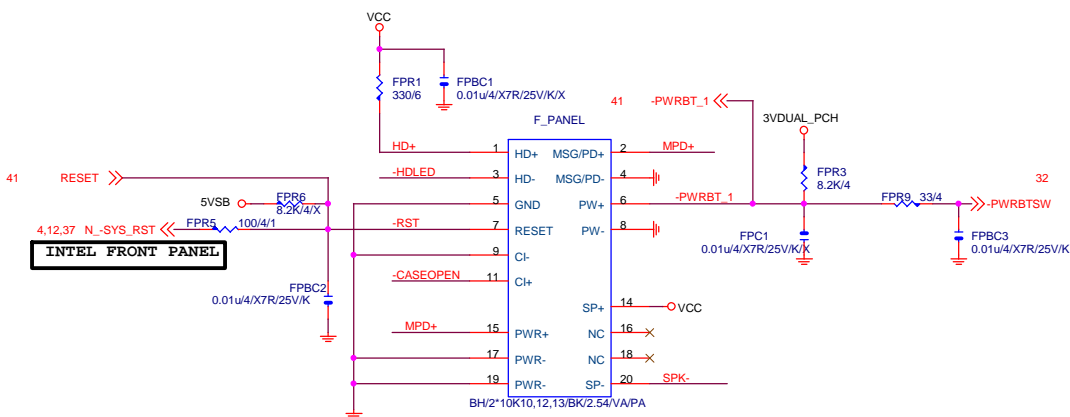
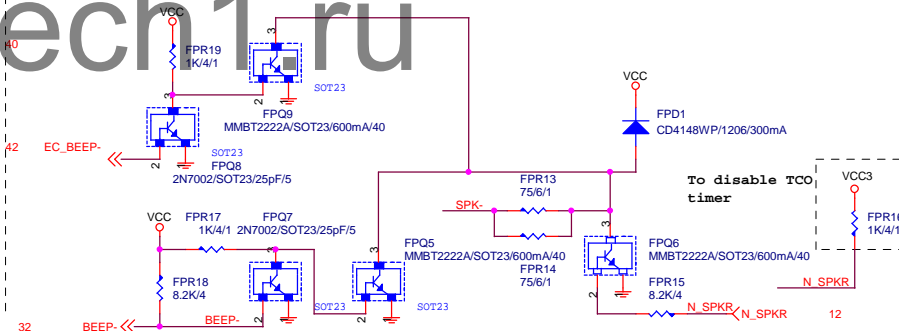
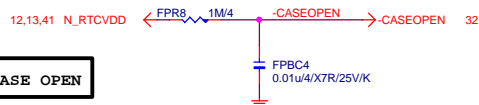
COM RI



SATA LED

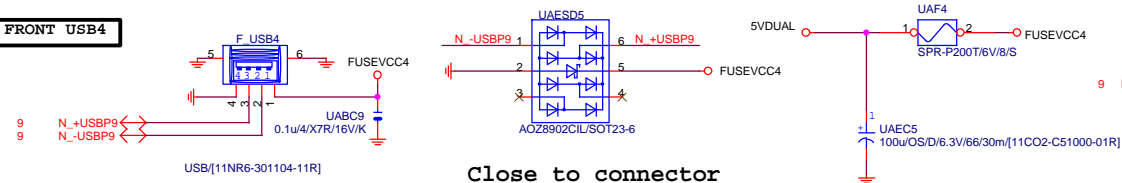


CASE OPEN

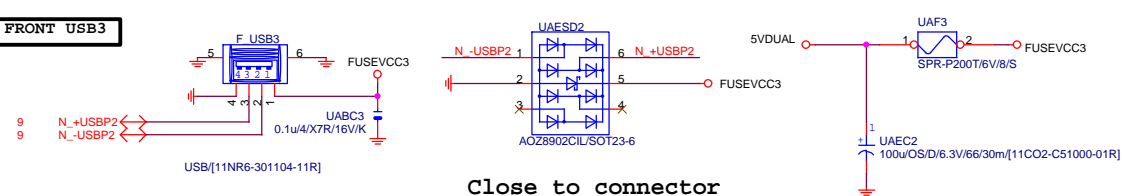


Close to connector

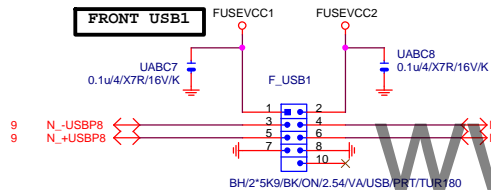
FRONT USB4



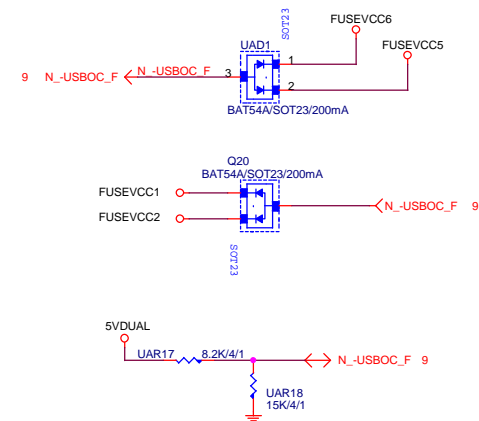
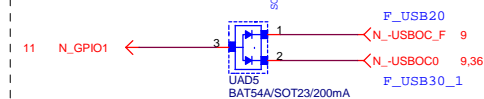
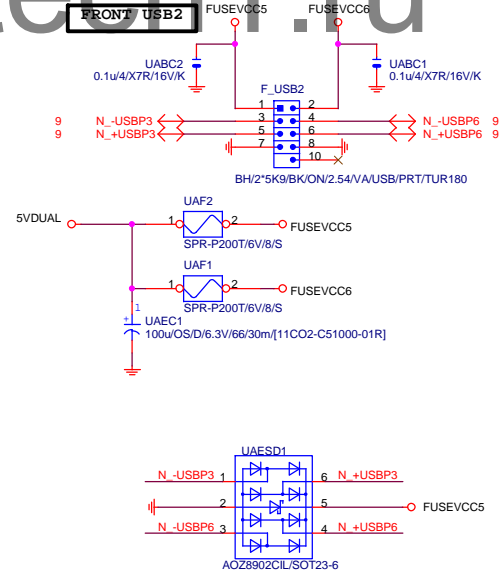
FRONT USB3



FRONT USB1

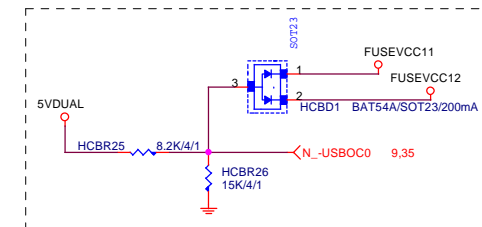
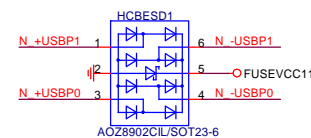
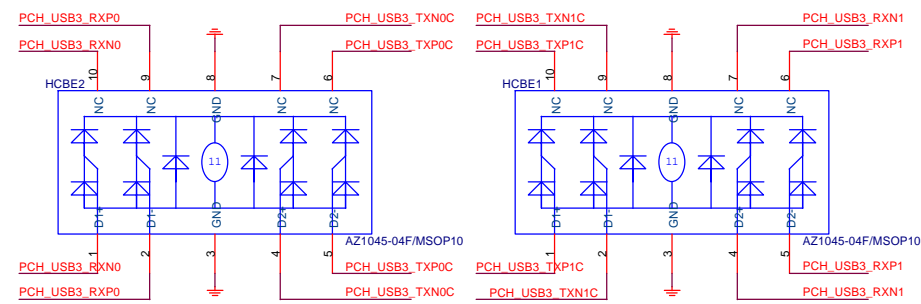


FRONT USB2



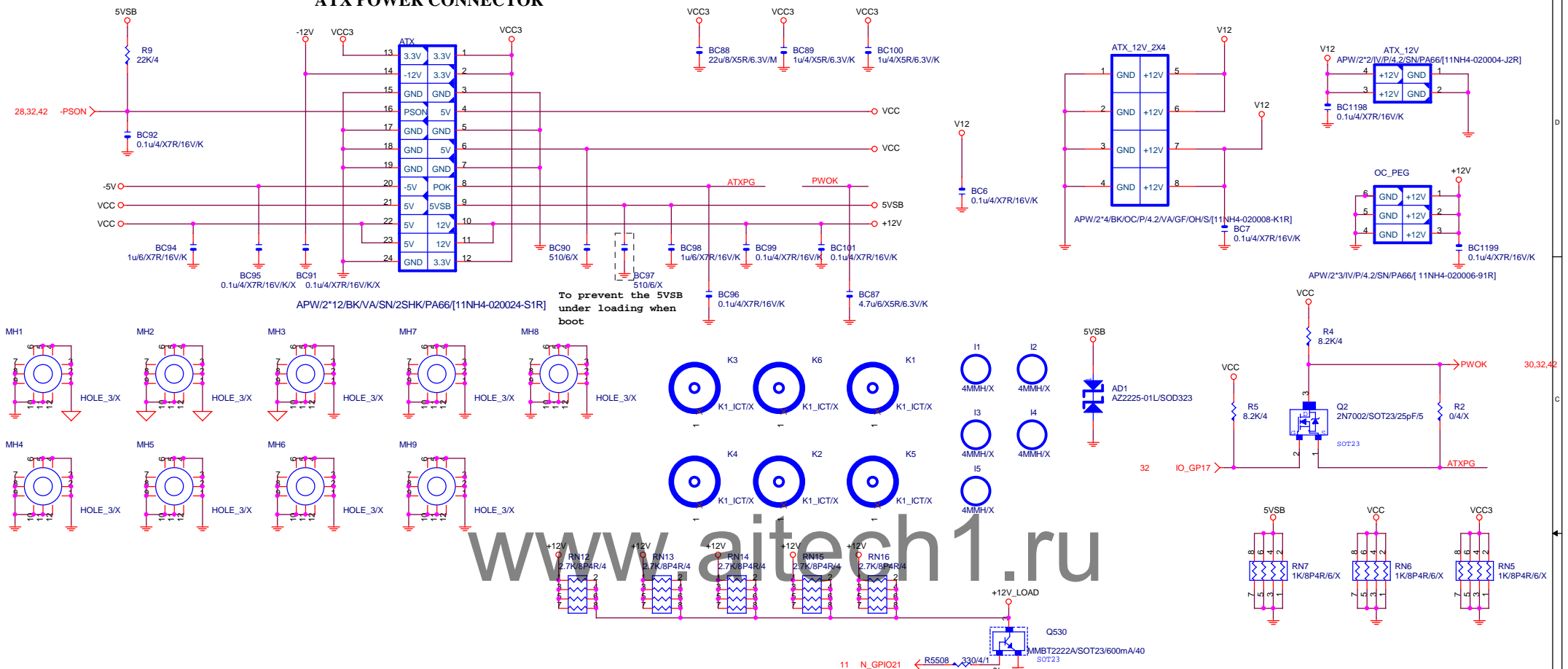
GIGABYTE™

Title FRONT USB 2.0		
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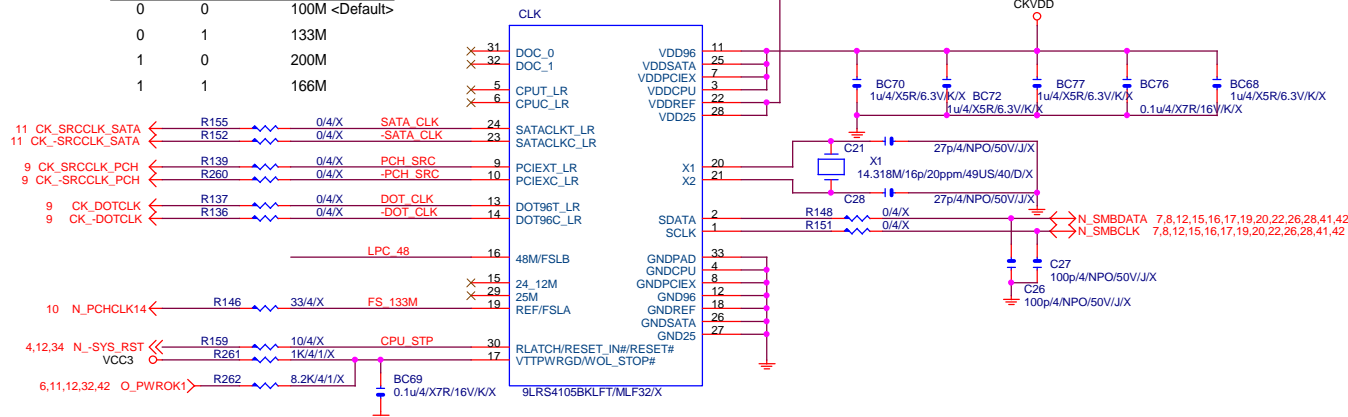
ATX POWER CONNECTOR



CLK GEN CK505

CPU Frequency Selection

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

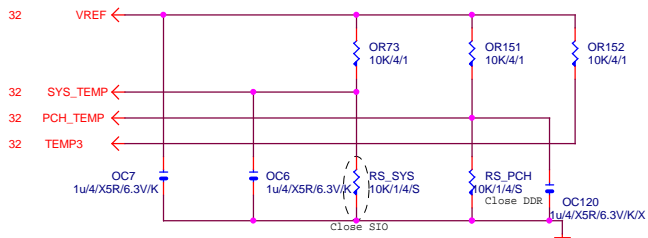


GIGABYTE™

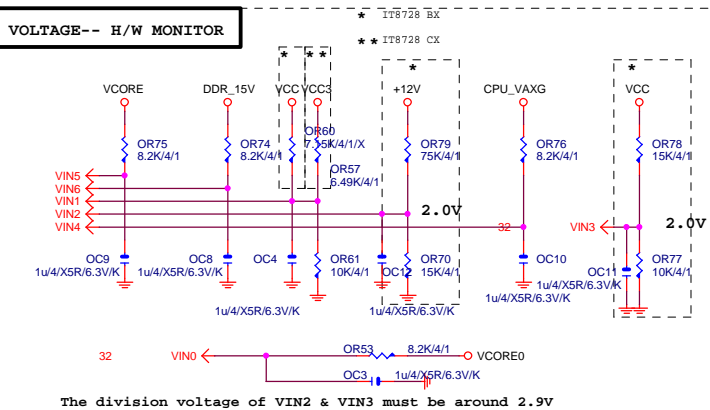
ATX POWER CONNECTOR, CLK GEN

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TEMP H/W MONITOR



VOLTAGE-- H/W MONITOR

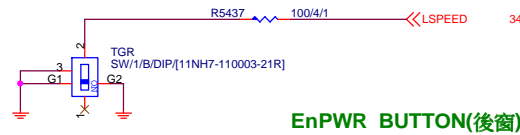


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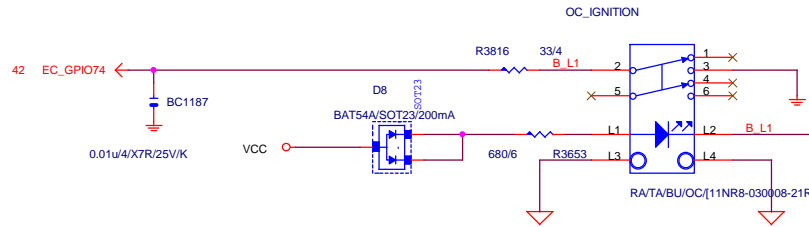
GIGABYTE™

Title			HWM, FAN CTRL	
Size	Custom	Document Number	GA-Z87X-OC	
Date:	Thursday, August 22, 2013	Sheet	38	of 49
Rev	1.14			

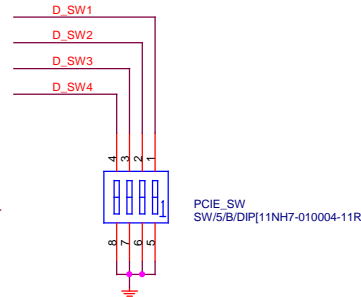
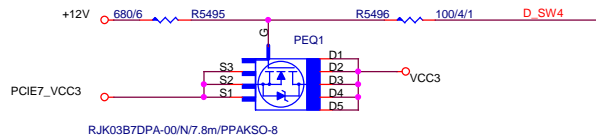
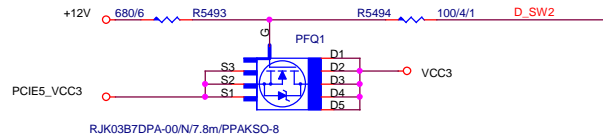
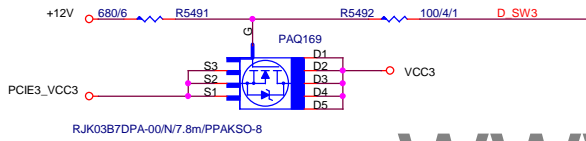
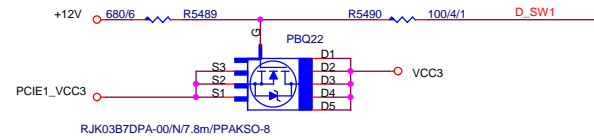
www.aitech1.ru



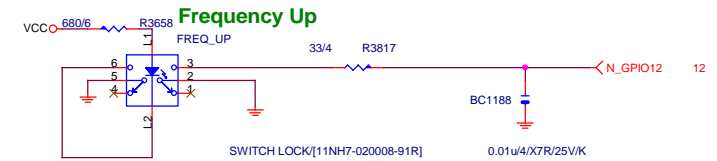
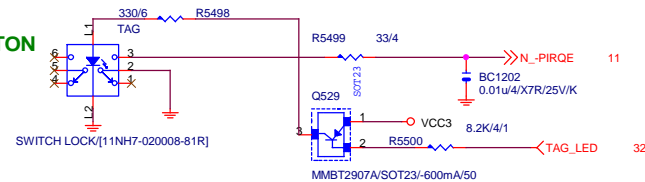
EnPWR BUTTON(後窗)



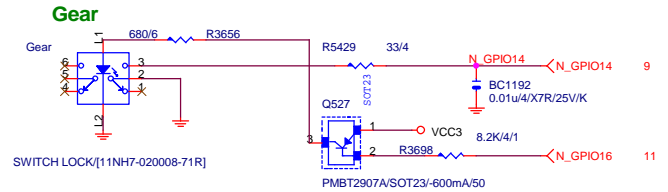
OC_IGNITION



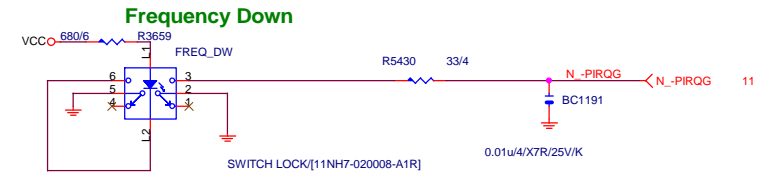
TAG BUTTON



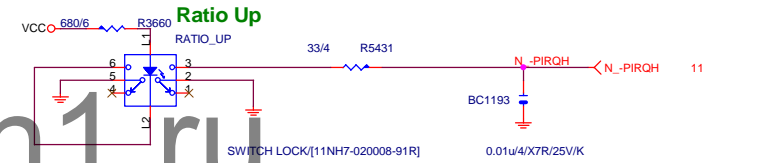
Frequency Up



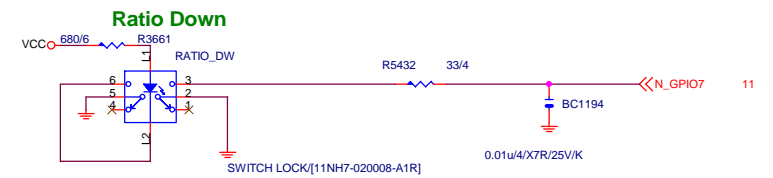
Gear



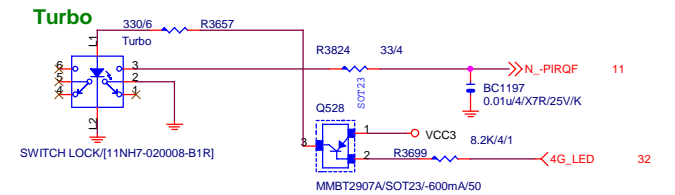
Frequency Down



Ratio Up

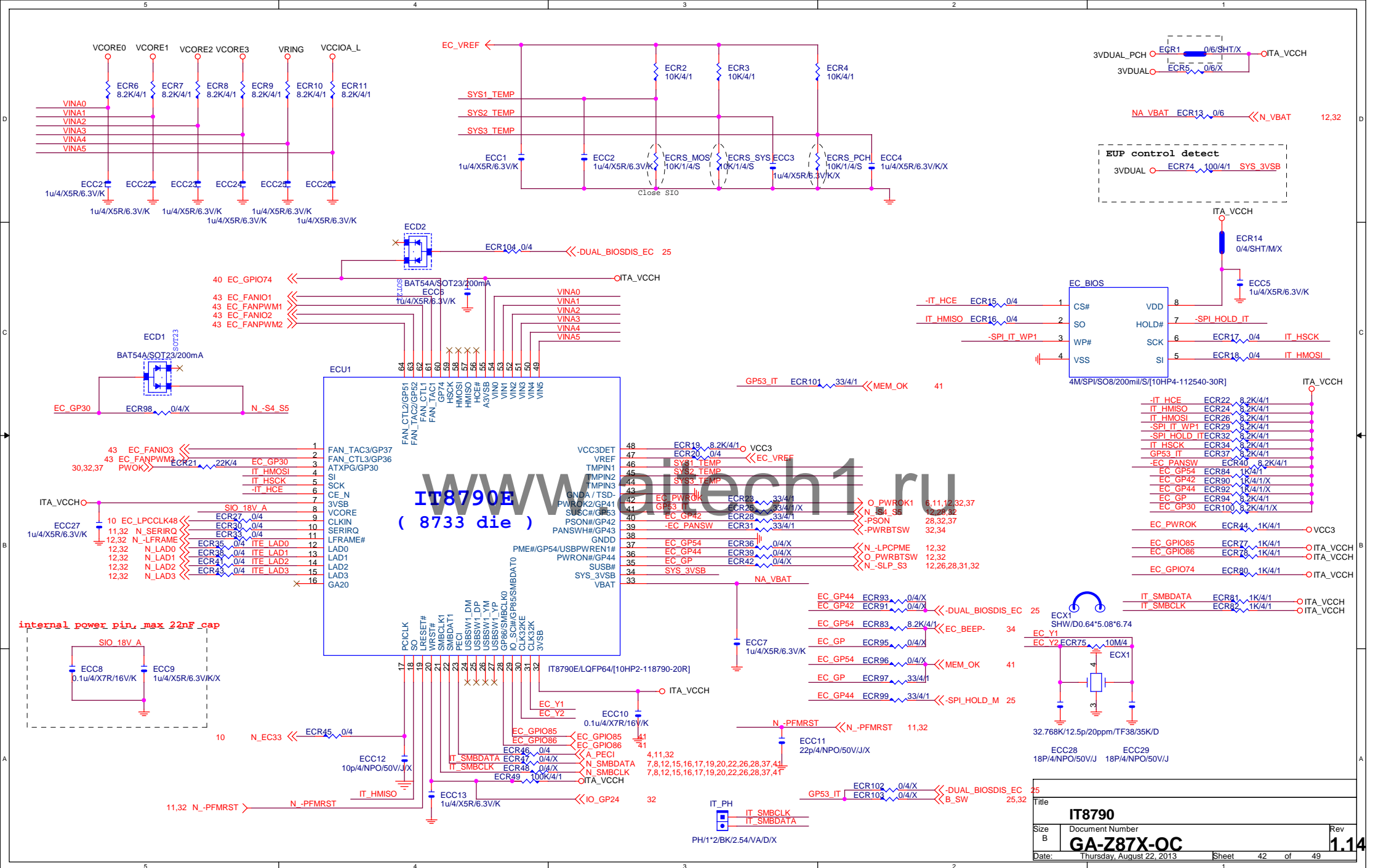


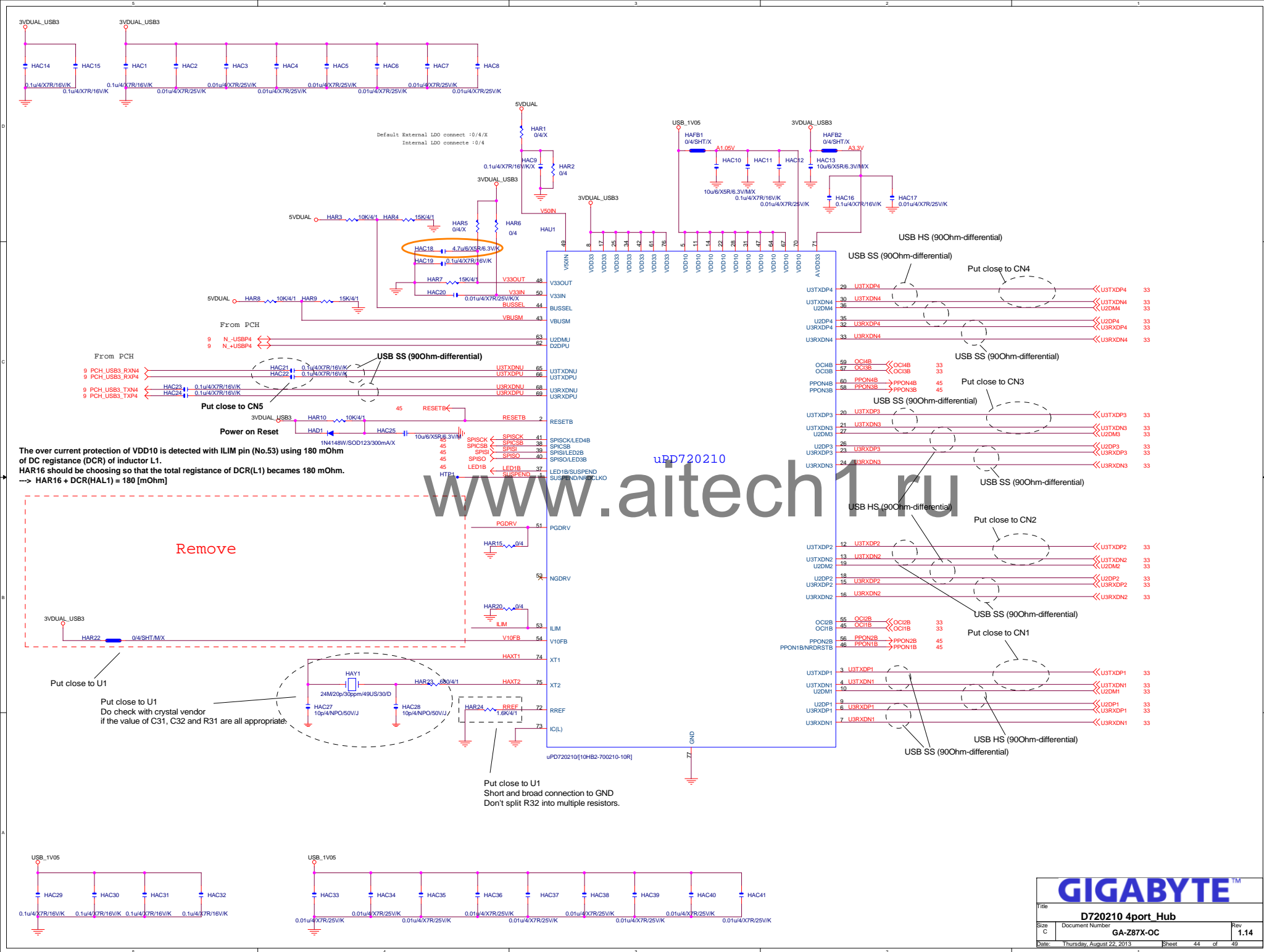
Ratio Down



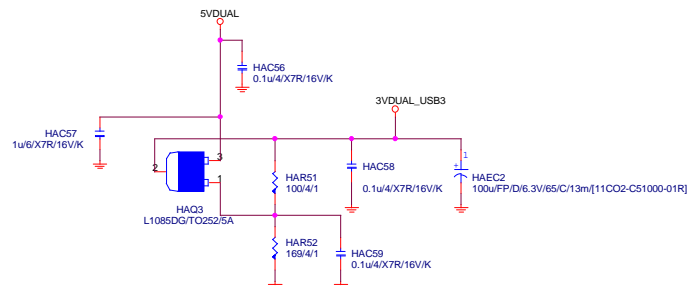
Turbo

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Title			
SWITCH			
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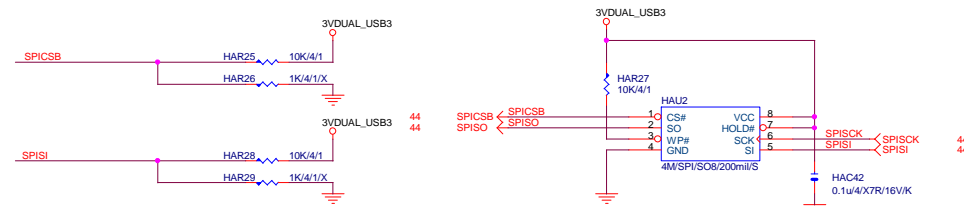




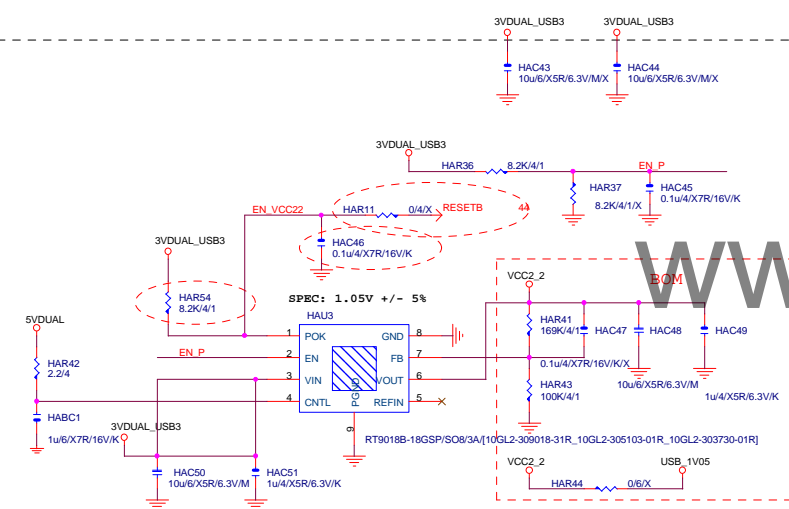
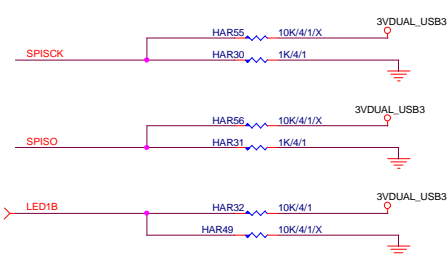
3VDUAL_USB



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

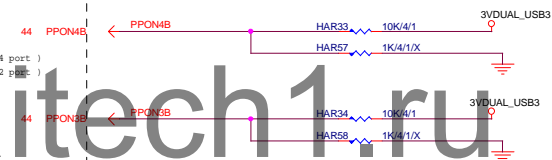


Battery Charging

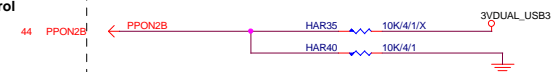


```
# Number of Ports ; 4Ports
mode
```

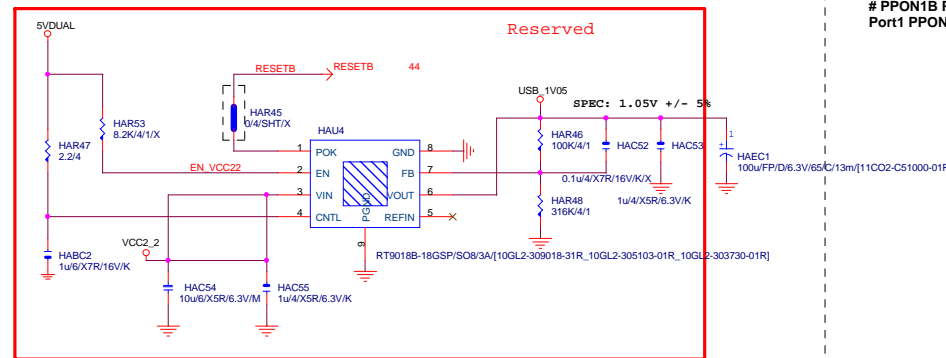
```
PPON3B / PPON4B : H / H ( 4 port )
PPON3B / PPON4B : L / L ( 2 port )
```

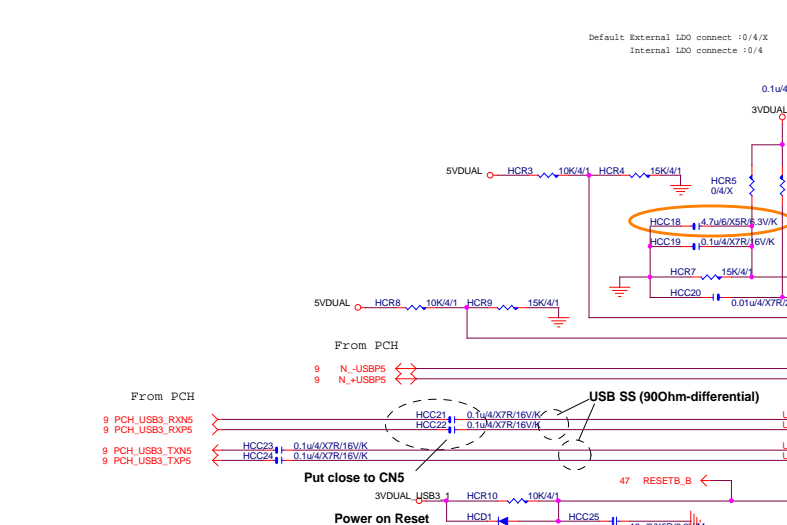
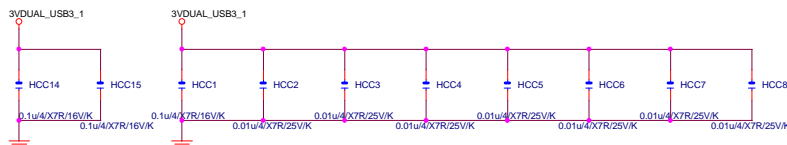


#5 VBUS Power Control ; Individual mode

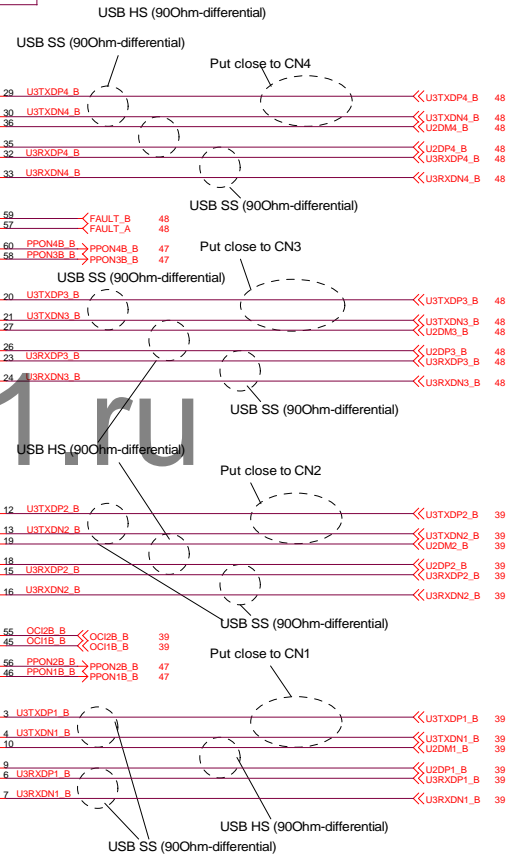
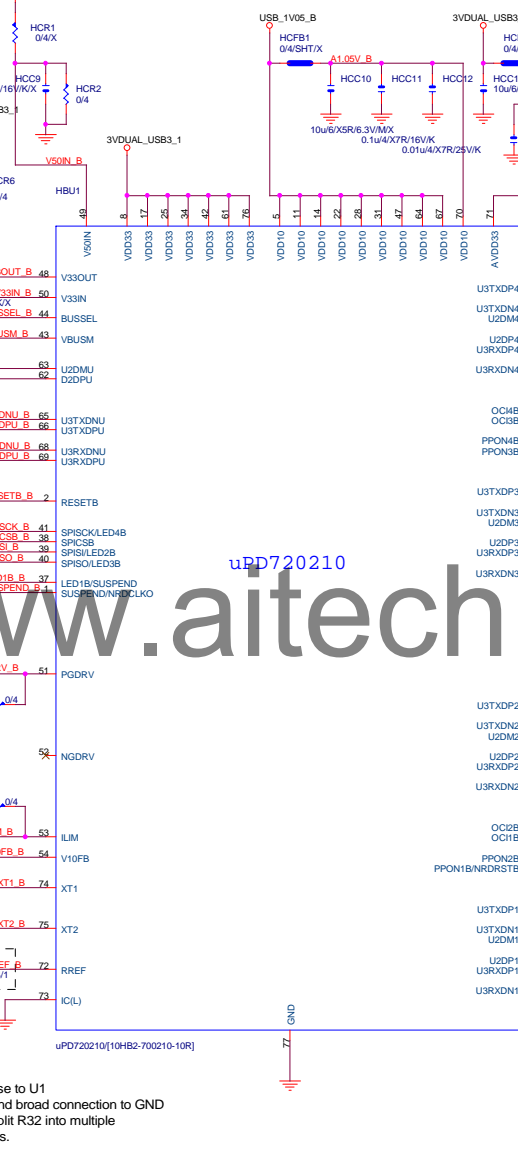
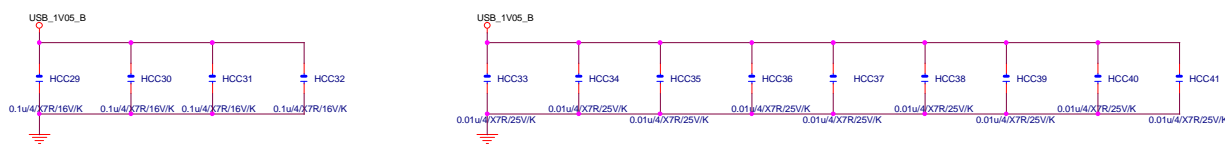
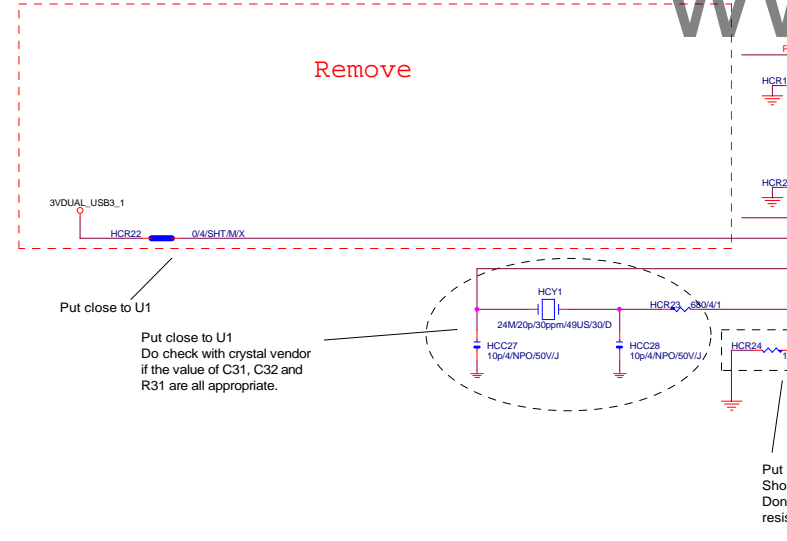


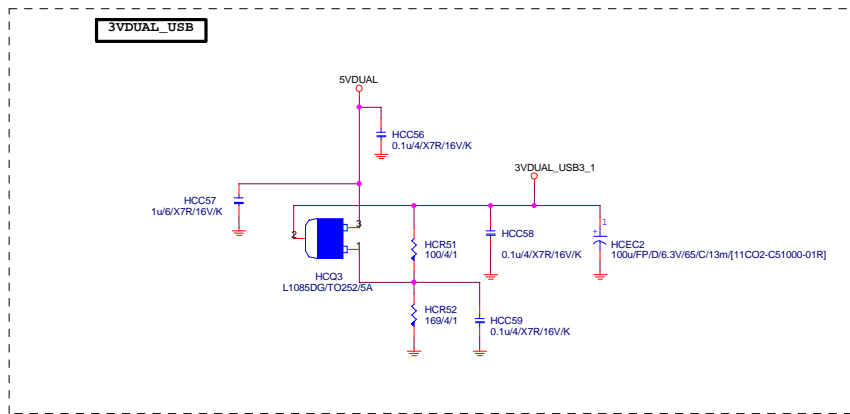
```
# PPON1B Pin Function ;
Port1 PPONB mode
```



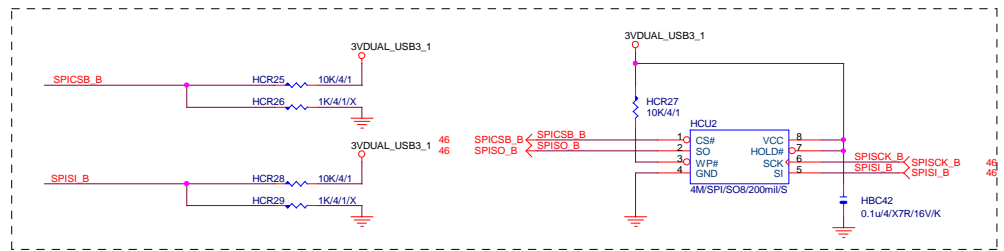


The over current protection of VDD10 is detected with ILIM pin (No.53) using 180 mOhm of DC resistance (DCR) of inductor L1.
HAR16 should be choosing so that the total resistance of DCR(L1) becomes 180 mOhm.
→ HAR16 + DCR(HAL1) = 180 [mOhm]

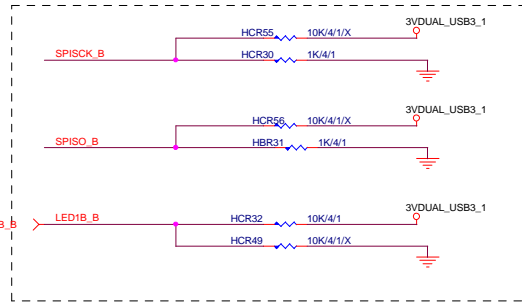




External SPI ROM ; SPI ROM attached mode

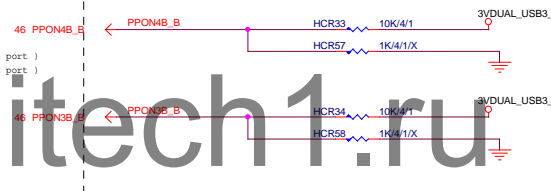


Battery Charging

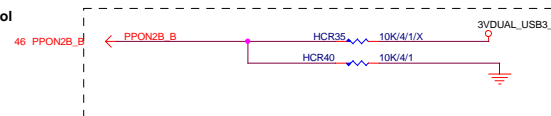


Number of Ports ; 4Ports mode

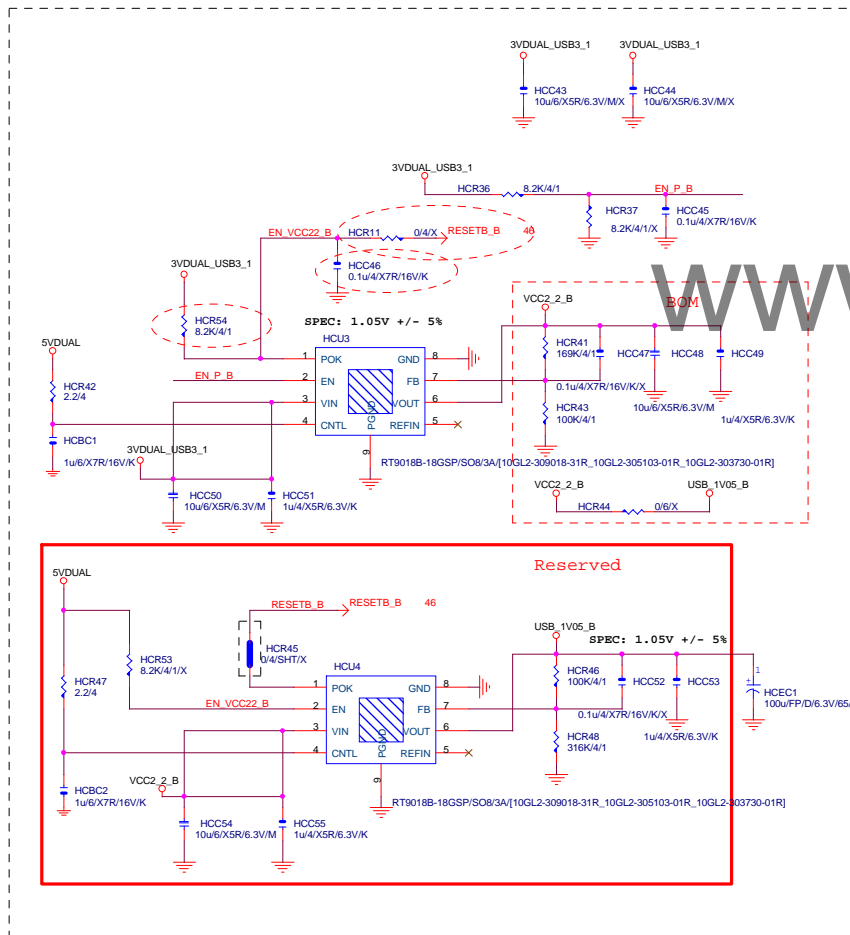
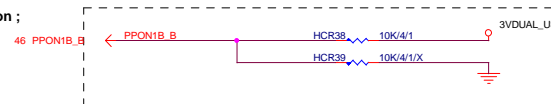
PPON3B / PPON4B : H / H (4 port)
PPON3B / PPON4B : L / L (2 port)

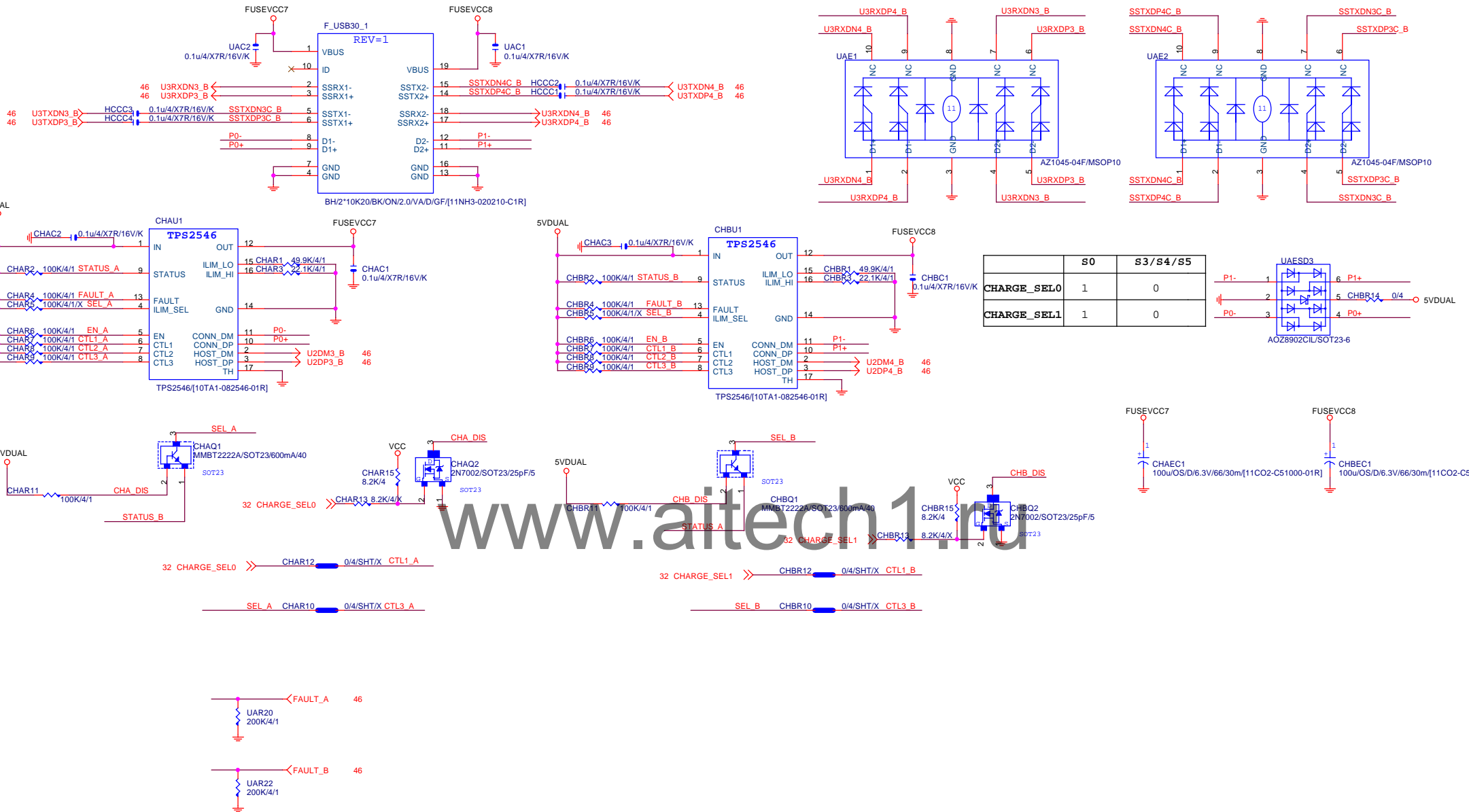


#5 VBUS Power Control ; Individual mode



PPON1B Pin Function ; Port1 PPONB mode





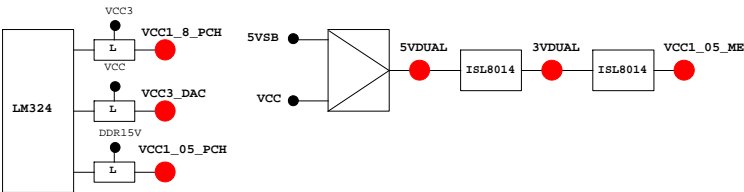
Title		
<Title>		
Size	Document Number	Rev
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PCH GPIO LIST TABLE					
PIN NAME	PWR	Default	USAGE	NOTE	
GP0	MAIN	H-Z	GPI -PECI_REQ	N/A	
GP1/TACH1	MAIN		GPI ICH_FAN_TACH1	N/A	
GP2/PIRQ#	MAIN		GPI -PIRQE	P/U 8.2K VCC3	
GP3/PIRQ#	MAIN		GPI -PIRQF	P/U 8.2K 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	

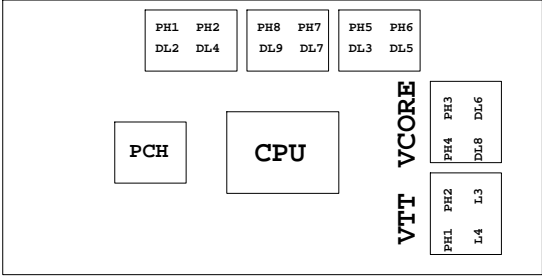
Super I/O ITE8720 GPIO Table

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	
VID00/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	
VID02/FAN_TAC5/GP24/DSR2#	DDR18V_LED	
VID06/GP17/RI2#	1_1V_PH_EN	
VID07/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™			
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