

Model Name: GA-Z87X-D3H

Rev 1.11

SHEET

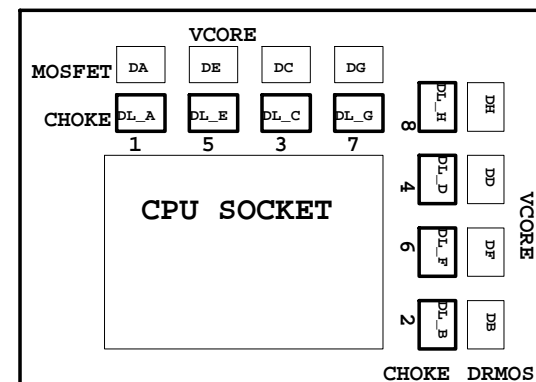
TITLE

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_RGB,CLK BUFFER
11	PCH_HOST,SATA,PCI
12	PCH_GPIO,CTRL,AUDIO
13	PCH_PWR,GND
14	PCI EXPRESS*16 SLOT
15	PCI EXPRESS X8 SLOT
16	PCI EXPRESS X16 SWITCH
17	PCIEX1*3 , PCIEX4 SLOT
18	I/O ITE8728
19	COM, -PROHOT, R_USB
20	Dual BIOS , TPM SLB9635TT
21	ALC892 CODEC
22	REAR AUDIO JACK
23	ITE8892 PCI BRIDGE
24	PCI SLOT
25	FUSB 3.0
26	NCP3933 OVER VOLTAGE
27	DISCRETE POWER

SHEET

TITLE

28	F_PANEL , F_USB2.0
29	ATX POWER, CLOCK GEN
30	HWM , KB/MS , FAN CTRL
31	LAN INTEL i217
32	DVI
33	HDMI , R_USB30
34	TABLE LIST
35	IR3563B_PWM
36	IR3550-VCORE
37	IR3570_DDR PWM
38	IR 3598-DDR
39	D720210 4port_Hub
40	D720210 4port_Hub POWER
41	D720210 4port_Hub_B
42	D720210 4port_Hub_B POWER



Gigabyte Technology

Cover Sheet			
Title	GA-Z87X-D3H		
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Custom			
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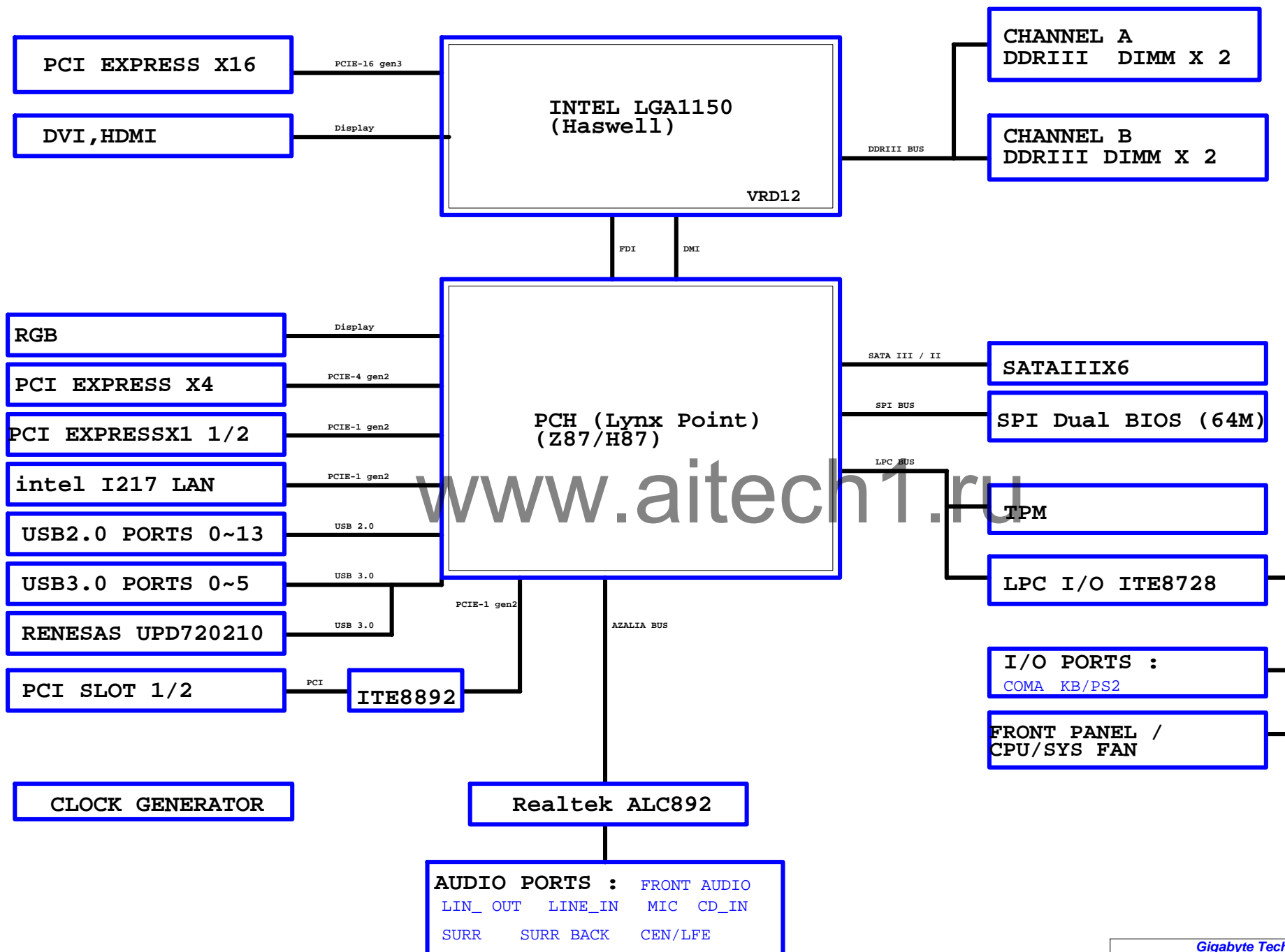
Component value change history

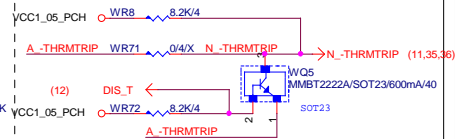
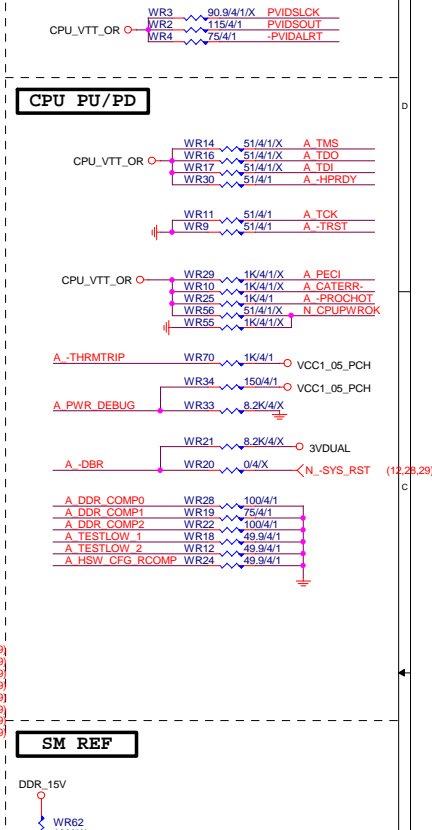
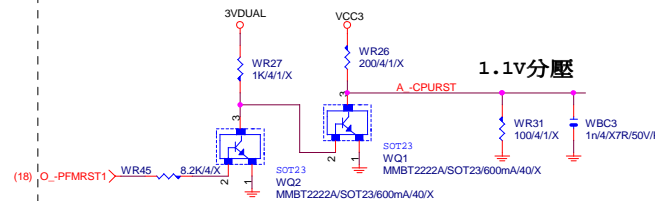
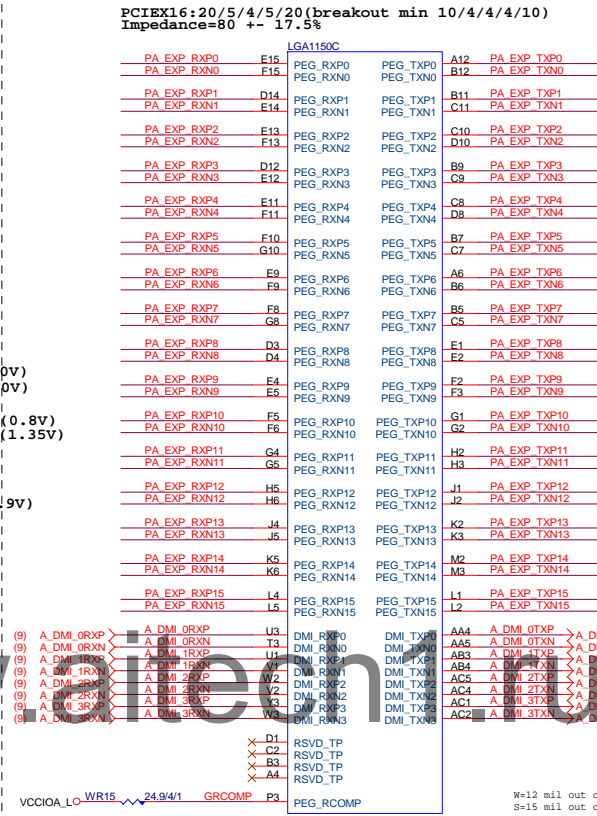
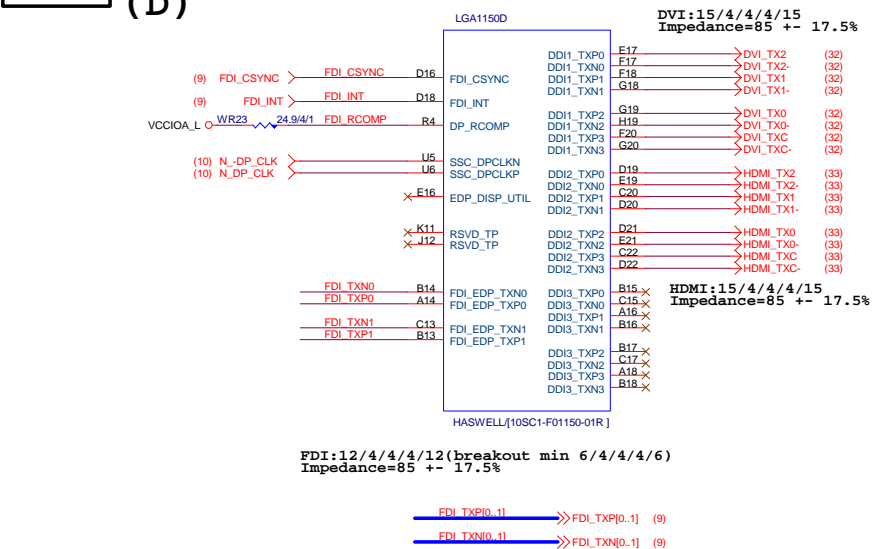
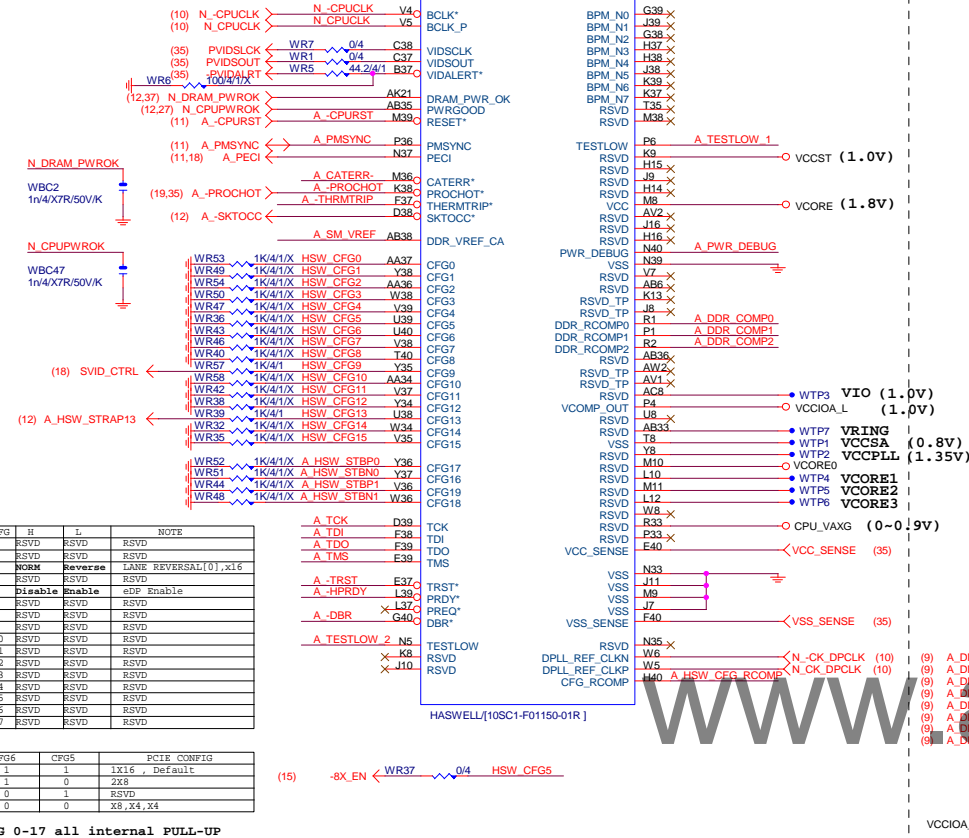
Data	Change Item	Reason
2013/04/01 9MZ87XD3H-00-10B	*** 更換 *** 新舊線路中,元件值不同;共 6 個***** HU2,'PTN3360DBS/HVQFN48/[10TA1-053360-20R]變更為'ASM1442/QFN48/[10TA1-051442-20R] HCR43,HAR43,'316K/4/1變更為'100K/4/1 HAR41,HCR41,'100K/4/1變更為'169K/4/1 HR29,'10K/4/1變更為'3.3K/4/1  *** 增加 *** 只在新線路中,不在舊線路中;共 30 個***** HCC53,HAC53,HCC55,HAC55,C205,'1u/4/X5R/6.3V/K HR22,'4.7K/4 R670,'0/4 HAC46,C50,C51,C52,C53,C54,'0.1u/4/X7R/16V/K HR28,HR30,'10/4 HCU4,HAU4,'RT9018B-18GSP/SO8/3A HCR47,HAR47,'2.2/4 HCR46,HAR46,'100K/4/1 HCC54,HAC54,'10u/6/X5R/6.3V/M HBCB2,HABC2,'1u/6/X7R/16V/K R671,'22K/4 HCR54,HAR54,'8.2K/4/1 HAR48,HCR48,'316K/4/1  *** 刪除 *** 只在舊線路中,不在新線路中;共 6 個***** HAR59,HAR60,'0/4 NR110,'8.2K/4 HCR44,HAR44,'0/6 DAJP1,'PH/1*3/BK/2.54/VA/D	
2013/04/03 9MZ87XD3H-00-10C	1. Add 5 pcs 2.7K/8P4R for +12V loading	
2013/05/15 9MZ87XD3H-00-10D	1. MOS_HS 12SP2-S08824-31R to 12SP2-S08824-61R	
2013/06/28 9MZ87XD3H-00-11A	1. PCH CHIP DH82Z87 C1 INTEL to CHIP DH82Z87 C2 INTEL	
2013/06/28 9MZ87XD3H-00-11B	1. Remove OR80	
2013/07/09 9MZ87XD3H-00-11C	1. Add C10,Q10,R705,R706 2. Remove CD1	
2013/09/23 9MZ87XD3H-00-11H	1. MR17,R676,R697,R700,R701,R702 0603 to 0402 2. MOS_HS1 12SP2-S06624-01R to 12SP2-S06624-11R	
2013/10/24 9MZ87XD3H-00-11I	1. NC7,NC8 27P to 10P 2. NX1 X'TAL HALF 25MHz TXC to X'TAL HALF 25 MHz FUJICOM	
2013/11/08 9MZ87XD3H-00-11J	1. NC7,NC8 10P to 12P	

Circuit or PCB layout change

DATE	Change Item	Reason
2012/11/23	1. Change from Z87-D3H-02.DSN	Rev 0.1
2013/01/11	1. Change from Z87X-D3H_R01_1224B.DSN 2. PCIe4 clock change to PCIe_5 3. PCIeX1_1 clock change to PCIe_3 4. PCIeX8 clock change to PEG_B 5. N_PCIE_4_SW change to N_GPIO48 6. -PCIEX1_PR3 change to N_GPIO22 7. Update Note 33,TI H/W charger	Rev 0.2
2013/03/28	1.Add net N_-SLP_A 2.CLR_CMOS文字面修改 3.所有的FAN 加0.1u/4,要非常靠近FAN connect pin 2	Rev 1.01
2013/06/26	1.只修改文字面版本 Rev 1.1(For PCH C2 chip)	Rev 1.1
2013/09/16	1.修改PCH Crystal 走線	Rev 1.11

# BLOCK DIAGRAM





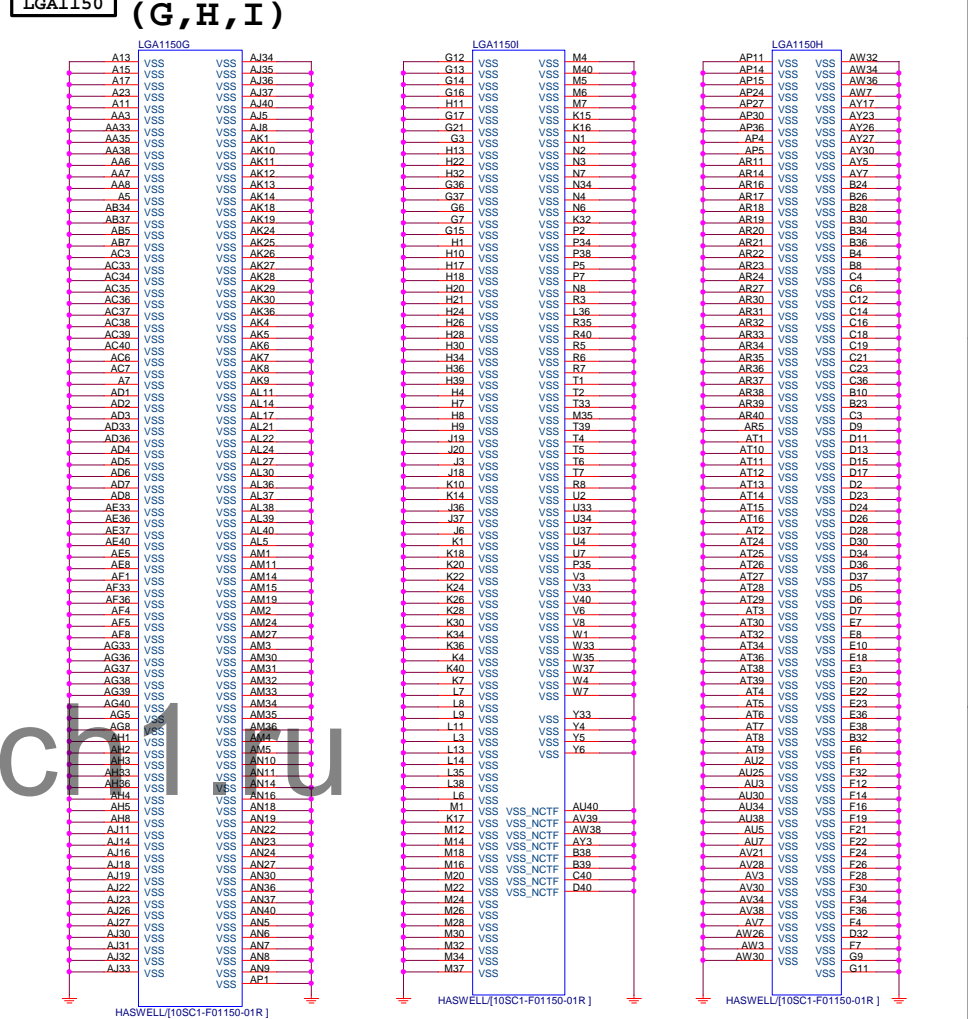


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	MAAA1	AV16	DDR0_MA1
	MAAA2	AU16	DDR0_MA2
	MAAA3	AW17	DDR0_MA3
	MAAA4	AU17	DDR0_MA4
	MAAA5	AW18	DDR0_MA5
	MAAA6	AV17	DDR0_MA6
	MAAA7	AT18	DDR0_MA7
	MAAA8	AU18	DDR0_MA8
	MAAA9	AT19	DDR0_MA9
	MAAA10	AW11	DDR0_MA10
	MAAA11	AV19	DDR0_MA11
	MAAA12	AU19	DDR0_MA12
	MAAA13	AY10	DDR0_MA13
	MAAA14	AT20	DDR0_MA14
	MAAA15	AU21	DDR0_MA15
	MODT_A0	AW10	DDR0_ODT0
	MODT_A1	AY8	DDR0_ODT1
	MODT_A2	AW9	DDR0_ODT2
	MODT_A3	AU8	DDR0_ODT3
		AW33	DDR0_ECC0
		AV33	DDR0_ECC1
		AU31	DDR0_ECC2
		AV31	DDR0_ECC3
		AT33	DDR0_ECC4
		AU33	DDR0_ECC5
		AT31	DDR0_ECC6
		AW31	DDR0_ECC7
		AW12	DDR0_BA0
		AV11	DDR0_BA1
		AT21	DDR0_BA2
		AW22	DDR0_CKE0
		AT23	DDR0_CKE1
		AU22	DDR0_CKE2
		AU23	DDR0_CKE3
		AW14	DDR0_CS_N0
		AV9	DDR0_CS_N1
		AU10	DDR0_CS_N2
		AW8	DDR0_CS_N3
		AY15	DDR0_CLK_P0
		AW16	DDR0_CLK_N0
		AW15	DDR0_CLK_P1
		AW15	DDR0_CLK_N1
		AW14	DDR0_CLK_P2
		AW14	DDR0_CLK_N2
		AW13	DDR0_CLK_P3
		AY13	DDR0_CLK_N3
		AW12	RSVD
			DDR0_RAS*
			DDR0_WE*
			RSVD
			RSVD
			RSVD
			DDR0_CAS*
			DDR_RESET
			DDR0_DOS_P0
			DDR0_DOS_P1
			DDR0_DOS_P2
			DDR0_DOS_P3
			DDR0_DOS_P4
			DDR0_DOS_P5
			DDR0_DOS_P6
			DDR0_DOS_P7
			DDR0_DOS_P8
			DDR0_DOS_N0
			DDR0_DOS_N1
			DDR0_DOS_N2
			DDR0_DOS_N3
			DDR0_DOS_N4
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			DDR0_DOS_N6
			DDR0_DOS_N7
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HASWELL[10SC1-F01150-01R]

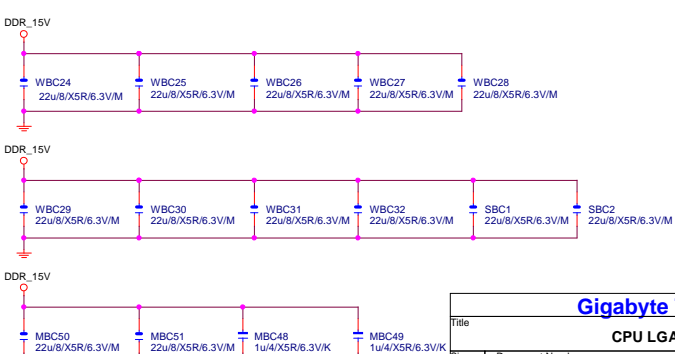
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	MAAB2	AM22	DDR1_MA2
	MAAB3	AM23	DDR1_MA3
	MAAB4	AP23	DDR1_MA4
	MAAB5	AL23	DDR1_MA5
	MAAB6	AY24	DDR1_MA6
	MAAB7	AV25	DDR1_MA7
	MAAB8	AU26	DDR1_MA8
	MAAB9	AW25	DDR1_MA9
	MAAB10	AP18	DDR1_MA10
	MAAB11	AL25	DDR1_MA11
	MAAB12	AV28	DDR1_MA12
	MAAB13	AR15	DDR1_MA13
	MAAB14	AV27	DDR1_MA14
	MAAB15	AY28	DDR1_MA15
	MODT_B0	AM17	DDR1_ODT0
	MODT_B1	AL16	DDR1_ODT1
	MODT_B2	AM16	DDR1_ODT2
	MODT_B3	AK15	DDR1_ODT3
		AM26	DDR1_ECC0
		AM25	DDR1_ECC1
		AP25	DDR1_ECC2
		AP26	DDR1_ECC3
		AL26	DDR1_ECC4
		AL25	DDR1_ECC5
		AR26	DDR1_ECC6
		AR25	DDR1_ECC7
		AK17	DDR1_BA0
		AL18	DDR1_BA1
		AW28	DDR1_BA2
		AW29	DDR1_CKE0
		AY29	DDR1_CKE1
		AU28	DDR1_CKE2
		AU29	DDR1_CKE3
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		AN15	DDR1_CS_N1
		AL17	DDR1_CS_N2
		AL15	DDR1_CS_N3
		AM12	DDR1_DQ0
		AM11	DDR1_DQ1
		AP9	DDR1_DQ2
		AP8	DDR1_DQ3
		AR10	DDR1_DQ4
		AR9	DDR1_DQ5
		AP10	DDR1_DQ6
		AR7	DDR1_DQ7
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		AM0	DDR1_DQ284
		AL0	DDR1_DQ285
		AM0	DDR1_DQ286
		AL0	DDR1_DQ287
		AM0	DDR1_DQ288
		AL0	DDR1_DQ289
		AM0	DDR1_DQ290
		AL0	DDR1_DQ291
		AM0	DDR1_DQ292
		AL0	DDR1_DQ293
		AM0	DDR1_DQ294
		AL0	DDR1_DQ295
		AM0	DDR1_DQ296
		AL0	DDR1_DQ297
		AM0	DDR1_DQ298
		AL0	DDR1_DQ299
		AM0	DDR1_DQ300
		AL0	DDR1_DQ301
		AM0	DDR1_DQ302
		AL0	DDR1_DQ303
		AM0	DDR1_DQ304
		AL0	DDR1_DQ305
		AM0	DDR1_DQ306
		AL0	DDR1_DQ307
		AM0	DDR1_DQ308
		AL0	DDR1_DQ309
		AM0	DDR1_DQ310
		AL0	DDR1_DQ311
		AM0	DDR1_DQ312
		AL0	DDR1_DQ313
		AM0	DDR1_DQ314
		AL0	DDR1_DQ315
		AM0	DDR1_DQ316
		AL0	DDR1_DQ317
		AM0	DDR1_DQ318
		AL0	DDR1_DQ319
		AM0	DDR1_DQ320
		AL0	DDR1_DQ321
		AM0	DDR1_DQ322
		AL0	DDR1_DQ323
		AM0	DDR1_DQ324
		AL0	DDR1_DQ325
		AM0	DDR1_DQ326
		AL0	DDR1_DQ327
		AM0	DDR1_DQ328
		AL0	DDR1_DQ329
		AM0	DDR1_DQ330
		AL0	DDR1_DQ331
		AM0	DDR1_DQ332
		AL0	DDR1_DQ333
		AM0	DDR1_DQ334
		AL0	DDR1_DQ335
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		AL0	DDR1_DQ353
		AM0	DDR1_DQ354
		AL0	DDR1_DQ355
		AM0	DDR1_DQ356
		AL0	DDR1_DQ357
		AM0	DDR1_DQ358
		AL0	DDR1_DQ359
		AM0	DDR1_DQ360
		AL0	DDR1

**LGA1150 (G,H,I)**



## DDR CAP

(X15)



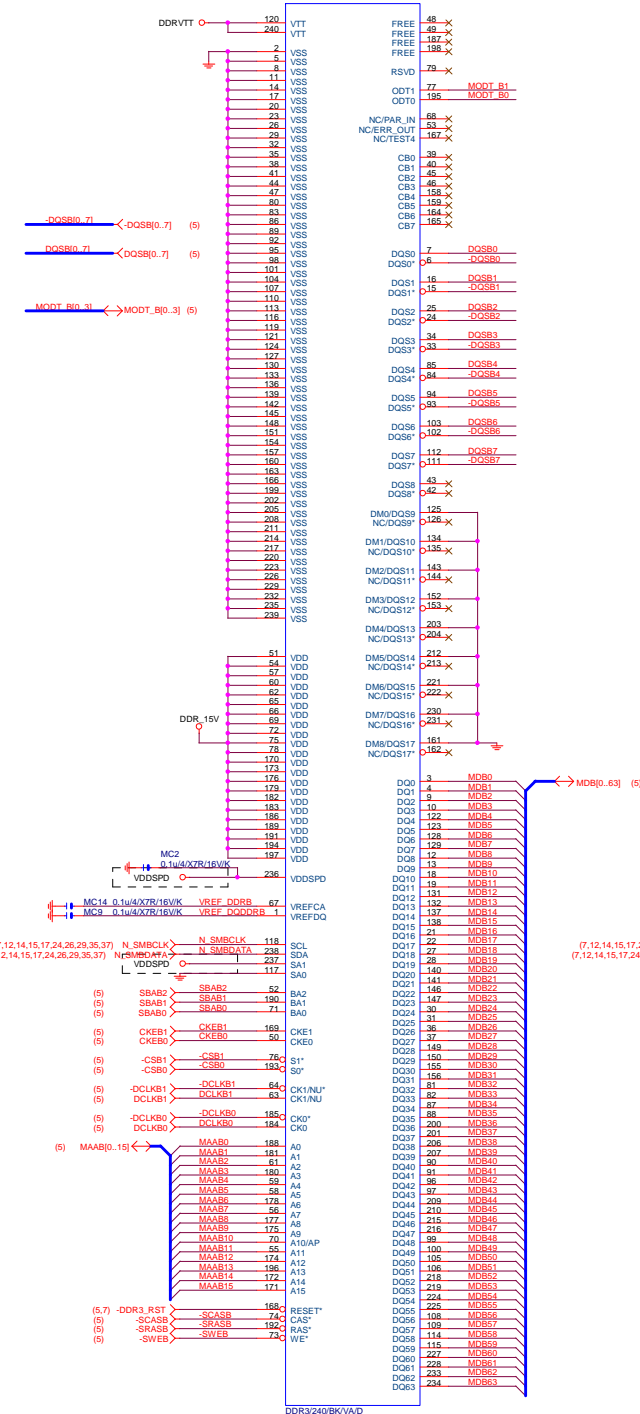
Title	CPU LGA1150-C
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Size Custom	Document Number <b>GA-Z87X-D3H</b>	Rev <b>1.1</b>
Date: Monday, December 09, 2013	Sheet 6 of 43	



DDR3

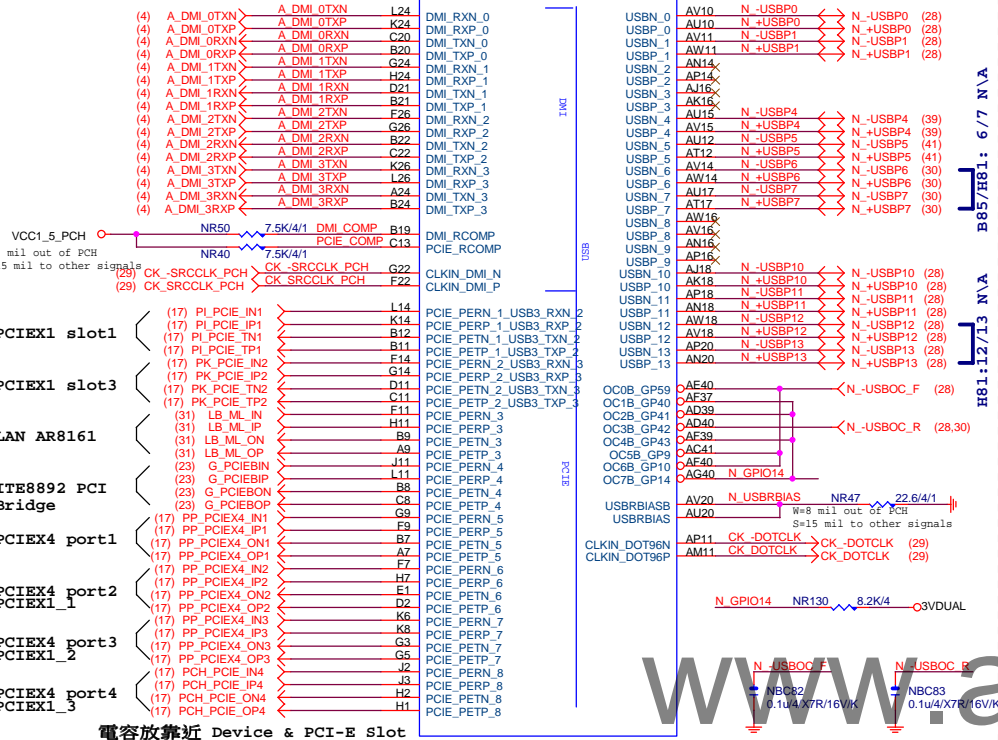
(B)



# PCH (B)

DMI:12/4/4/12(breakout min 8/4/4/4/8)  
Impedance=85 +- 17.5%

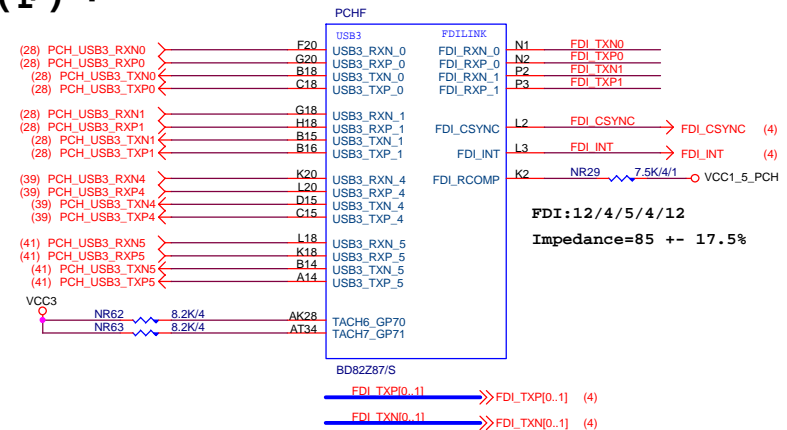
USB2.0 : 12/5/7/5/12 (breakout min 8/4/4/4/8)  
Impedance=85 +- 17.5%



PCIEX1:15/4/4/15 (breakout min 8/4/4/4/8)  
Impedance=85 +- 17.5%

# PCH (F)

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

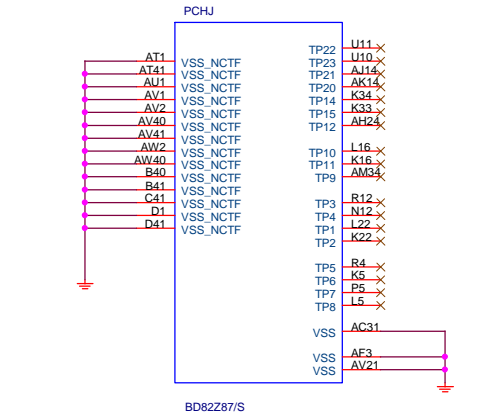


USB3.0:20/5/7/5/20 (breakout min 8/4/4/4/8) ; ONLY 3 VIAS  
Impedance=85 +- 17.5%  
Back Panel < 10000 MILS  
Front Panel < 6000 MILS

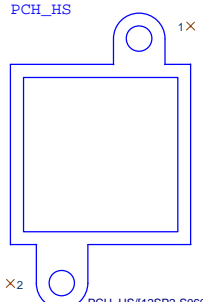
Mount for integrated clock Generation Mode

NR92 short to GND in non graphic SKU

# PCH (J)



# PCH H/S



# USB TABLE

OC[3:0]# for Device 29 (ports 0-7)  
OC[7:4]# for Device 26 (ports 8-13)

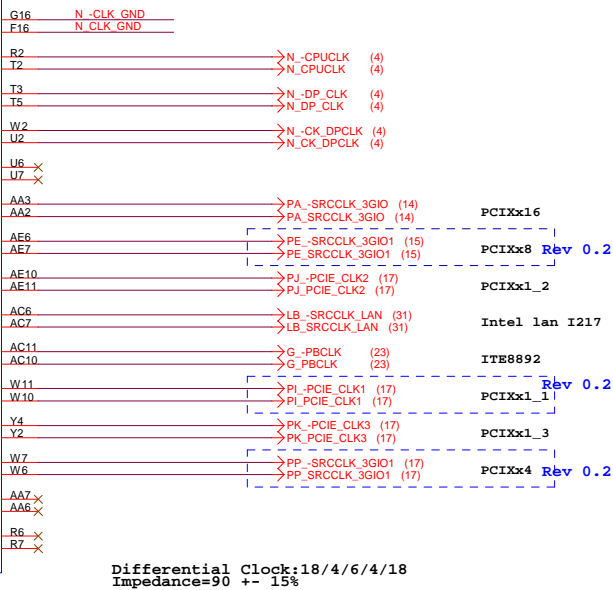
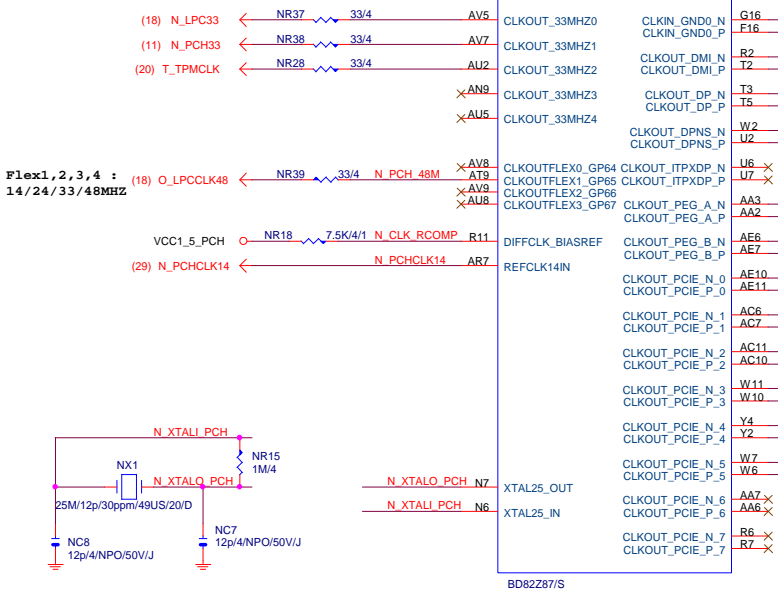
USB OC#	Configure
OC0#	USB0,1
OC1#	USB2,3
OC2#	USB4,5
OC3#	USB6,7
OC4#	USB8,9
OC5#	USB10,11
OC6#	USB12,13
OC7#	Not Use



PCHE

Pin	Function	Pin	Function
AJ2	DDPB_HPD	AH3	H SYNC
AH5	DDPC_HPD	AH2	V SYNC
AJ4	DDPD_HPD	NR26	33/4 N_GHSYNC
		NR33	33/4 N_GVSYNC
	VGA_RED	AC2	N_R
AK6	DDPB_AUXN	AE2	N_G
AK8	DDPB_AUXP	AC3	N_B
AG7	DDPC_AUXN		
AG6	DDPC_AUXP	AG4	N_DDCDATA
AG11	DDPD_AUXN	AL3	N_DDCCLK
AG10	DDPD_AUXP	AL2	N_DDCCLK
	VGA_IRTN	AF5	N_VGA_RSET NR34
	VGA_DDC_DATA		649/4/1
	VGA_DDC_CLK	AN3	N_DDPB_CTRLCLK (33)
	DAC_IREF	AM2	N_DDPB_CTRLCLK (33)
	DDPC_CTRLCLK	AM1	N_DDPB_CTRLCLK (33)
	DDPB_CTRLCLK	AJ5	N_DDPB_CTRLCLK (32)
	DDPB_CTRLDATA	AN4	N_DDPB_CTRLCLK (32)
	DDPD_CTRLCLK	AN2	N_DDPB_CTRLCLK (32)
	DDPD_CTRLDATA		

BD92287/S



Mount for integrated clock Generation Mode

**SSOP6\_ESD**

ESD4

VGA\_R 1 6 VGA\_B

VGA\_G 3 5

AOZ8902CIL/SOT23-6

VCC3

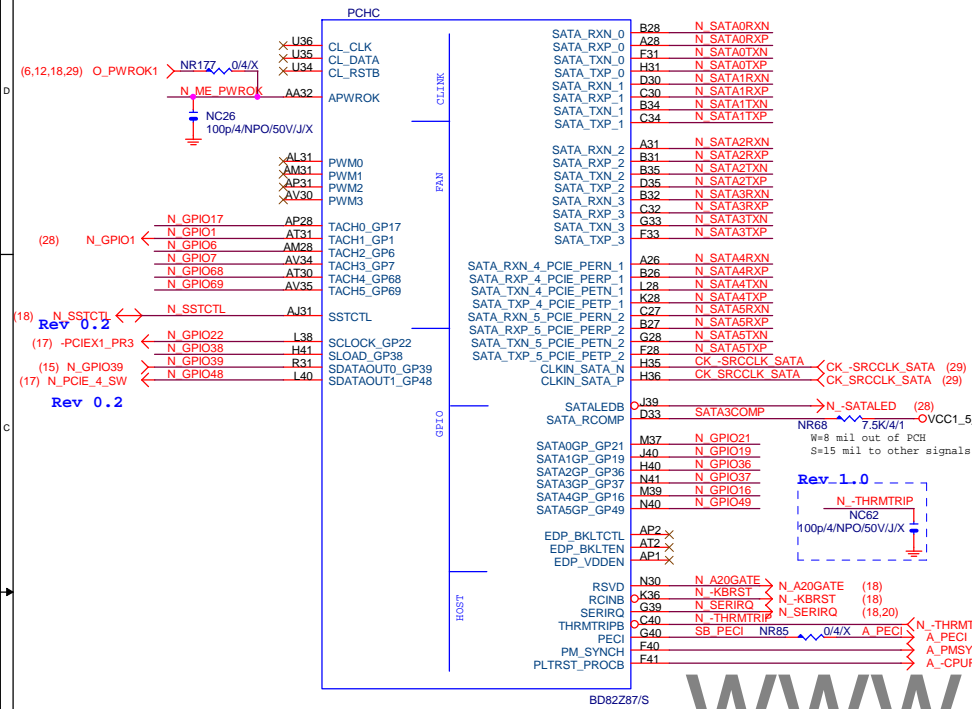
C40 0.1uF/4X7R/16V/K

**Close to PCH**

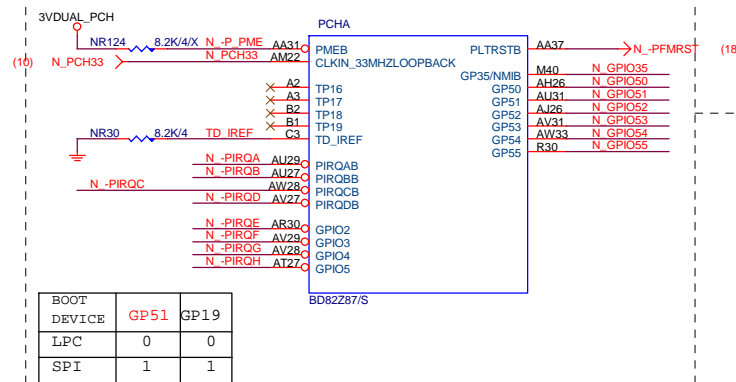
**Close to Filter**

(C)

SATA3 : 20/5/4/5/20 (breakout min 8/4/4/4/8)  
Impedance=85 +- 17.5%

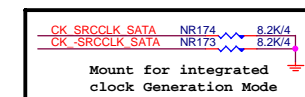


**PCH (A)**

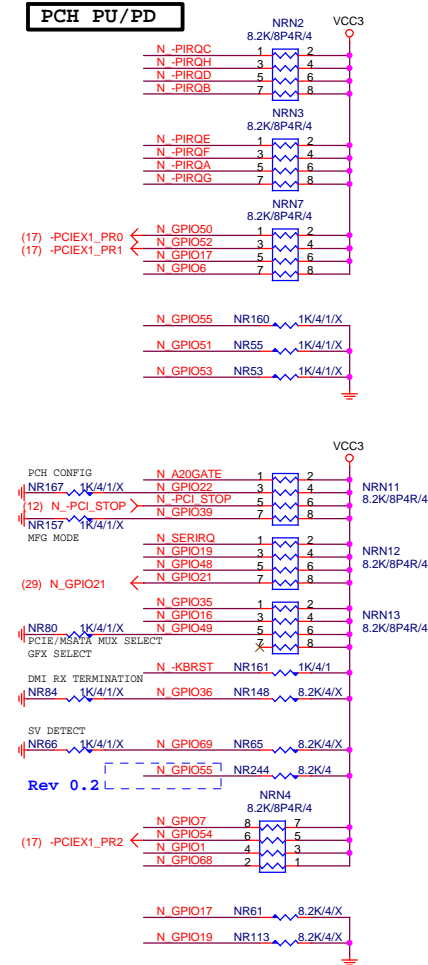


```
Default int pull up on GP51,  
Default SPI boot devices
```

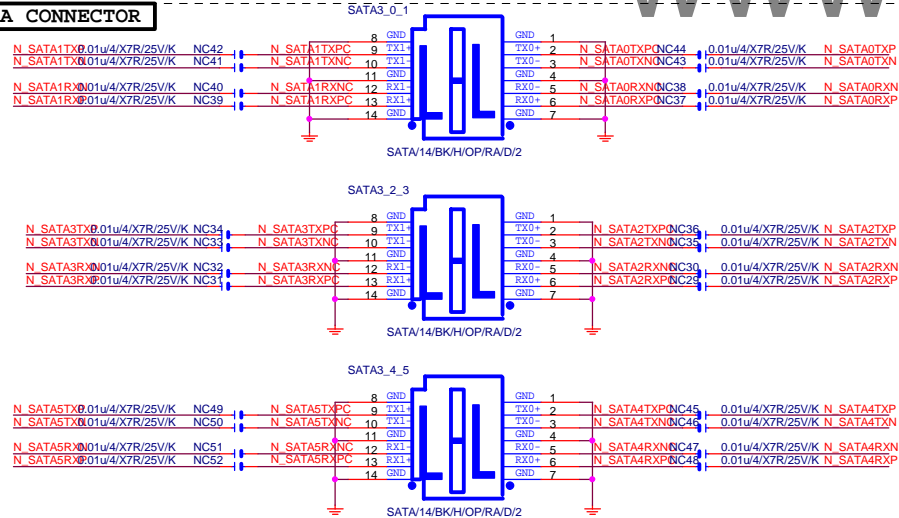
PCH CLK PD



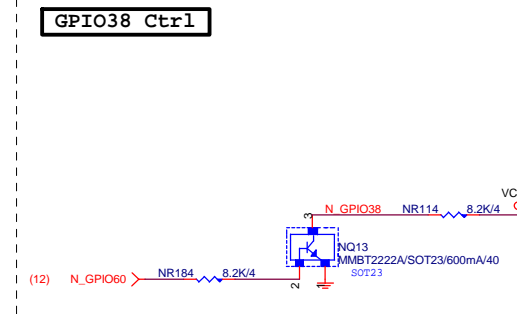
PCH PU/PD



## SATA CONNECTOR



GPIO38 Ctrl

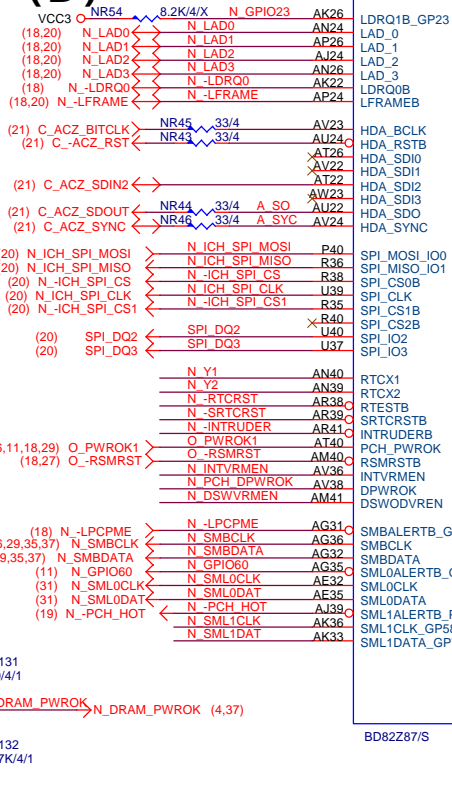


## Gigabyte Technology

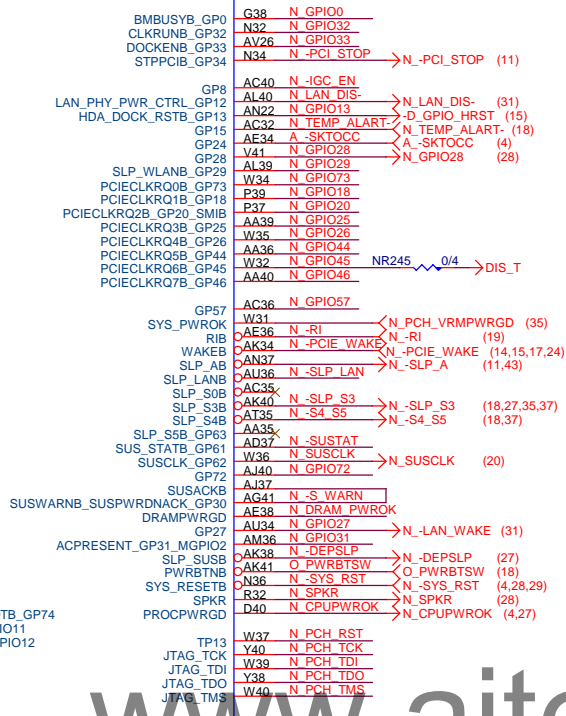
Title			
PCH HOST , SATA, PCI			
Size	Document Number	Rev	
Custom	GA-Z87X-D3H	1.11	
Date:	Monday, December 09, 2013	Sheet	11 of 43

## PCH

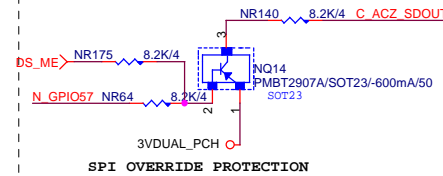
(D)



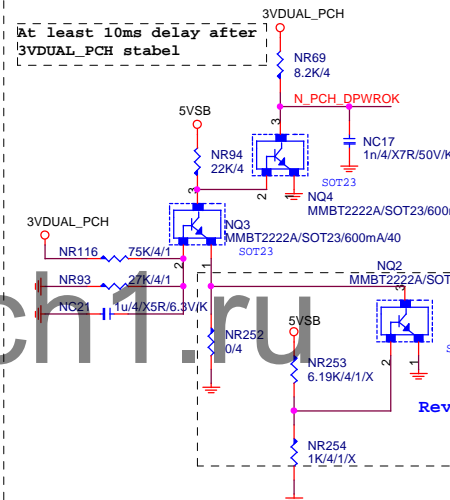
PCHD



## ACZ\_SDOUT

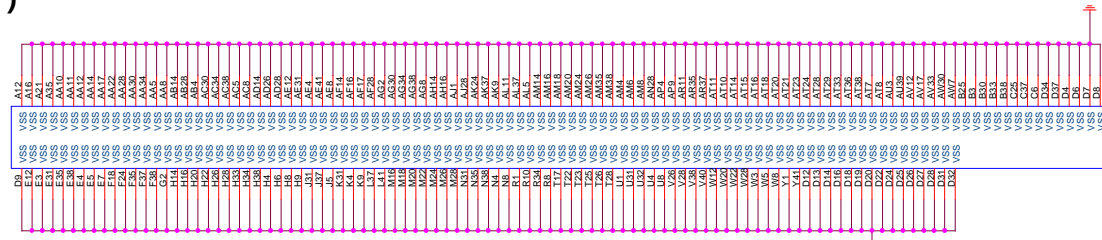


## PCH\_DPWROK

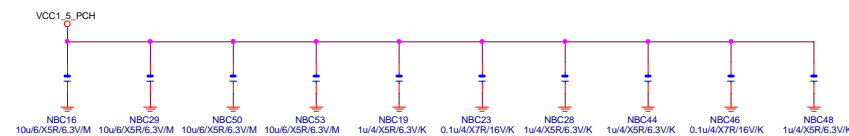




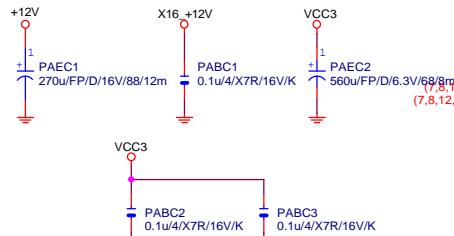
**PCH (I)**



SHT PWR

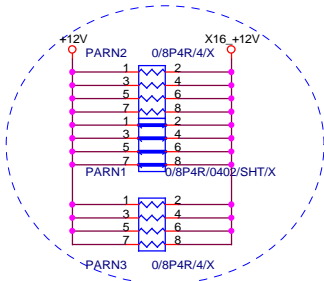


## PCIEX16 CAP



## PCIEX16 PROTECT SHT

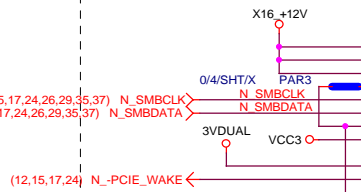
+12 protect short-wire test



## PCIEX16 AC CAP

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

## PCIEX16 SLOT



PA EXP TXP0 C	B12	RSVD
PA EXP TXN0 C	B13	GND
PA EXP TXP1 C	B14	HSOP0
PA EXP TXN1 C	B15	HSOP0
PA EXP TXP2 C	B16	GND
PA EXP TXN2 C	B17	PRSN2*
PA EXP TXP3 C	B18	GND
PA EXP TXN3 C	B19	HSOP1
PA EXP TXP4 C	B20	HSOP1
PA EXP TXN4 C	B21	GND
PA EXP TXP5 C	B22	GND
PA EXP TXN5 C	B23	HSOP2
PA EXP TXP6 C	B24	HSOP2
PA EXP TXN6 C	B25	GND
PA EXP TXP7 C	B26	GND
PA EXP TXN7 C	B27	HSOP3
PA EXP TXP8 C	B28	HSOP3
PA EXP TXN8 C	B29	GND
PA EXP TXP9 C	B30	GND
PA EXP TXN9 C	B31	RSVD
PA EXP TXP10 C	B32	PRSN2*
PA EXP TXN10 C	B33	GND
PA EXP TXP11 C	B34	HSOP4
PA EXP TXN11 C	B35	HSOP4
PA EXP TXP12 C	B36	GND
PA EXP TXN12 C	B37	GND
PA EXP TXP13 C	B38	HSOP5
PA EXP TXN13 C	B39	HSOP5
PA EXP TXP14 C	B40	GND
PA EXP TXN14 C	B41	GND
PA EXP TXP15 C	B42	HSOP6
PA EXP TXN15 C	B43	HSOP6
PA EXP TXP16 C	B44	GND
PA EXP TXN16 C	B45	GND
PA EXP TXP17 C	B46	HSOP7
PA EXP TXN17 C	B47	HSOP7
PA EXP TXP18 C	B48	GND
PA EXP TXN18 C	B49	PRSN2*

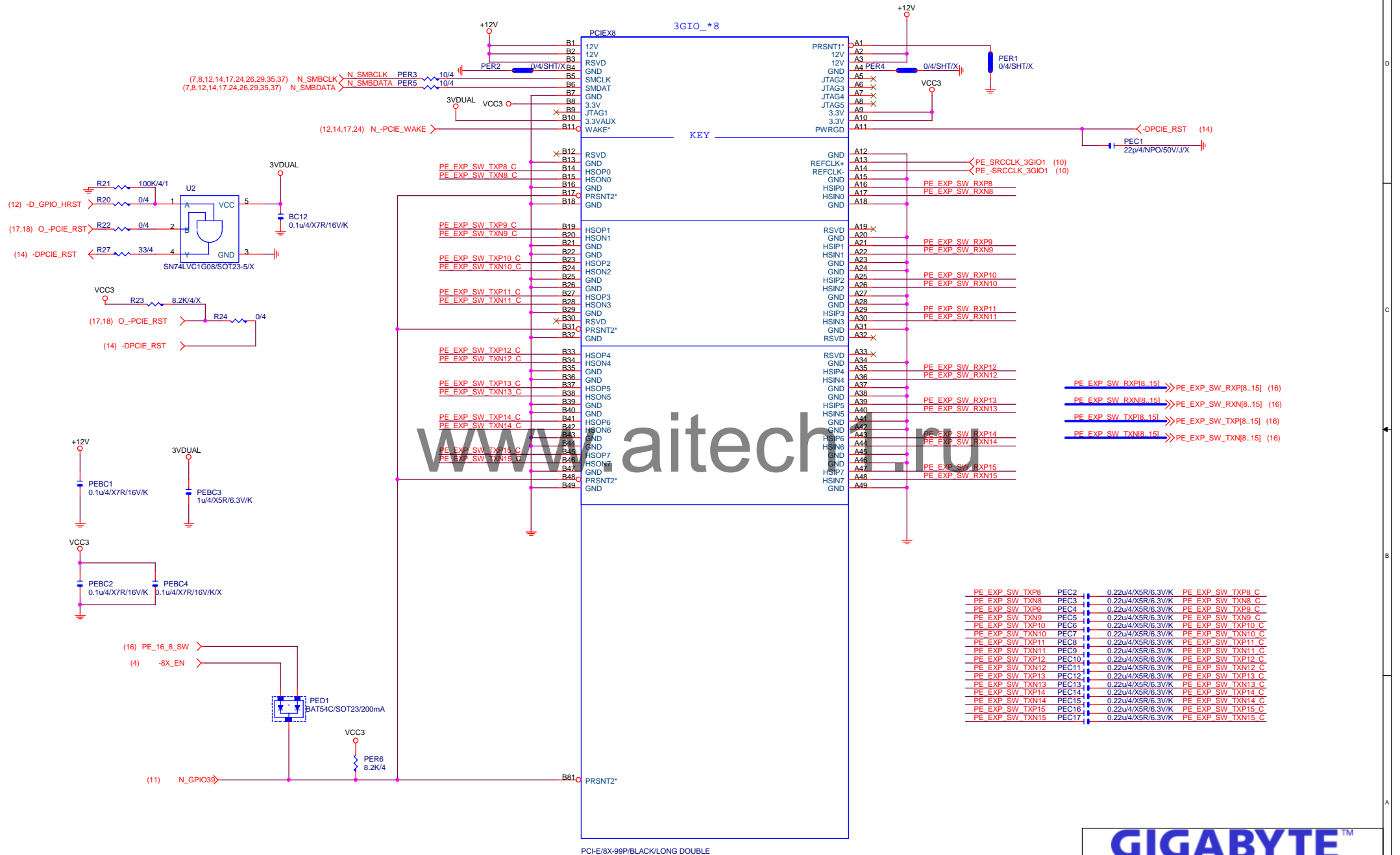
PA EXP SW TXP8 C	B50	HSOP8
PA EXP SW TXN8 C	B51	HSOP8
PA EXP SW TXP9 C	B52	GND
PA EXP SW TXN9 C	B53	GND
PA EXP SW TXP10 C	B54	HSOP9
PA EXP SW TXN10 C	B55	HSOP9
PA EXP SW TXP11 C	B56	GND
PA EXP SW TXN11 C	B57	GND
PA EXP SW TXP12 C	B58	GND
PA EXP SW TXN12 C	B59	HSOP10
PA EXP SW TXP13 C	B60	GND
PA EXP SW TXN13 C	B61	GND
PA EXP SW TXP14 C	B62	HSOP11
PA EXP SW TXN14 C	B63	HSOP11
PA EXP SW TXP15 C	B64	GND
PA EXP SW TXN15 C	B65	GND
PA EXP SW TXP16 C	B66	HSOP12
PA EXP SW TXN16 C	B67	HSOP12
PA EXP SW TXP17 C	B68	GND
PA EXP SW TXN17 C	B69	GND
PA EXP SW TXP18 C	B70	GND
PA EXP SW TXN18 C	B71	HSOP13
PA EXP SW TXP19 C	B72	GND
PA EXP SW TXN19 C	B73	GND
PA EXP SW TXP20 C	B74	HSOP14
PA EXP SW TXN20 C	B75	HSOP14
PA EXP SW TXP21 C	B76	GND
PA EXP SW TXN21 C	B77	GND
PA EXP SW TXP22 C	B78	HSOP15
PA EXP SW TXN22 C	B79	HSOP15
PA EXP SW TXP23 C	B80	GND
PA EXP SW TXN23 C	B81	PRSN2*
PA EXP SW TXP24 C	B82	RSVD

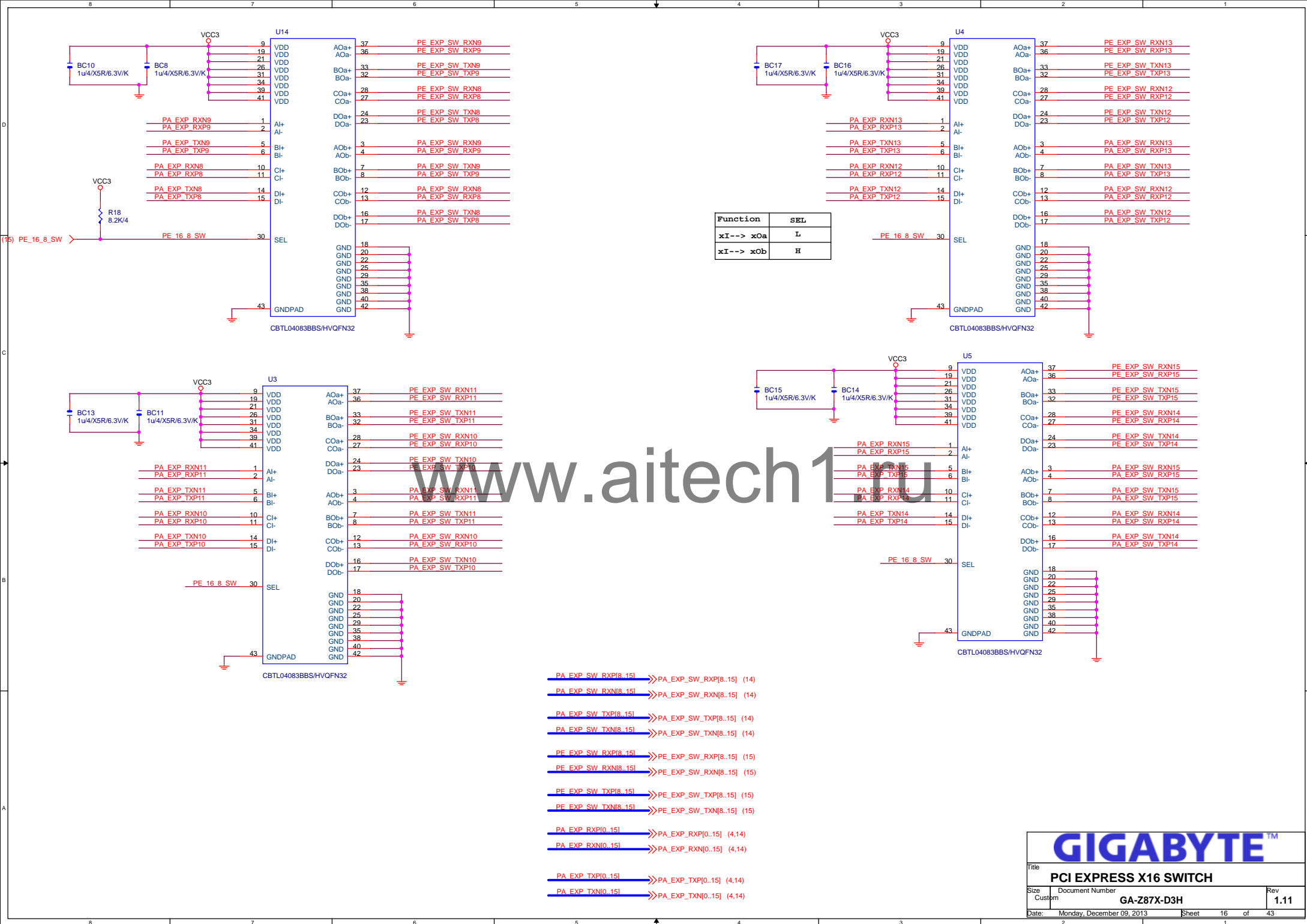
## PCIESLOT-164DN-Q



12V	B1	12V	A1	PAR1	0/4/SHT/X
12V	B2	12V	A2	PAR2	0/4/SHT/X
12V	B3	12V	A3	PAR3	0/4/SHT/X
RSVD	B4	12V	A4	PAR4	0/4/SHT/X
SMCLK	B5	GND	A5	VCC3	
SMDAT	B6	GND	A6	VCC3	
GND	B7	GND	A7	VCC3	
GND	B8	GND	A8	VCC3	
3.3V	B9	GND	A9	VCC3	
3.3VAUX	B10	GND	A10	VCC3	
WAKE*	B11	GND	A11	VCC3	
RSVD	B12	GND	A12	VCC3	
GND	B13	GND	A13	VCC3	
HSOP0	B14	GND	A14	VCC3	
HSOP0	B15	GND	A15	VCC3	
GND	B16	GND	A16	VCC3	
PRSN2*	B17	GND	A17	VCC3	
GND	B18	GND	A18	VCC3	
HSOP1	B19	GND	A19	VCC3	
HSOP1	B20	GND	A20	VCC3	
GND	B21	GND	A21	VCC3	
GND	B22	GND	A22	VCC3	
HSOP2	B23	GND	A23	VCC3	
HSOP2	B24	GND	A24	VCC3	
GND	B25	GND	A25	VCC3	
GND	B26	GND	A26	VCC3	
HSOP3	B27	GND	A27	VCC3	
HSOP3	B28	GND	A28	VCC3	
GND	B29	GND	A29	VCC3	
GND	B30	GND	A30	VCC3	
RSVD	B31	GND	A31	VCC3	
PRSN2*	B32	GND	A32	VCC3	
GND	B33	GND	A33	VCC3	
HSOP4	B34	GND	A34	VCC3	
HSOP4	B35	GND	A35	VCC3	
GND	B36	GND	A36	VCC3	
GND	B37	GND	A37	VCC3	
HSOP5	B38	GND	A38	VCC3	
HSOP5	B39	GND	A39	VCC3	
GND	B40	GND	A40	VCC3	
GND	B41	GND	A41	VCC3	
HSOP6	B42	GND	A42	VCC3	
HSOP6	B43	GND	A43	VCC3	
GND	B44	GND	A44	VCC3	
GND	B45	GND	A45	VCC3	
HSOP7	B46	GND	A46	VCC3	
HSOP7	B47	GND	A47	VCC3	
GND	B48	GND	A48	VCC3	
PRSN2*	B49	GND	A49	VCC3	
GND	B50	GND	A50	VCC3	
HSOP8	B51	GND	A51	VCC3	
HSOP8	B52	GND	A52	VCC3	
GND	B53	GND	A53	VCC3	
GND	B54	GND	A54	VCC3	
HSOP9	B55	GND	A55	VCC3	
HSOP9	B56	GND	A56	VCC3	
GND	B57	GND	A57	VCC3	
GND	B58	GND	A58	VCC3	
HSOP10	B59	GND	A59	VCC3	
HSOP10	B60	GND	A60	VCC3	
GND	B61	GND	A61	VCC3	
GND	B62	GND	A62	VCC3	
HSOP11	B63	GND	A63	VCC3	
HSOP11	B64	GND	A64	VCC3	
GND	B65	GND	A65	VCC3	
GND	B66	GND	A66	VCC3	
HSOP12	B67	GND	A67	VCC3	
HSOP12	B68	GND	A68	VCC3	
GND	B69	GND	A69	VCC3	
GND	B70	GND	A70	VCC3	
HSOP13	B71	GND	A71	VCC3	
HSOP13	B72	GND	A72	VCC3	
GND	B73	GND	A73	VCC3	
GND	B74	GND	A74	VCC3	
HSOP14	B75	GND	A75	VCC3	
HSOP14	B76	GND	A76	VCC3	
GND	B77	GND	A77	VCC3	
GND	B78	GND	A78	VCC3	
HSOP15	B79	GND	A79	VCC3	
HSOP15	B80	GND	A80	VCC3	
GND	B81	GND	A81	VCC3	
PRSN2*	B82	GND	A82	VCC3	
RSVD	B83	GND	A83	VCC3	

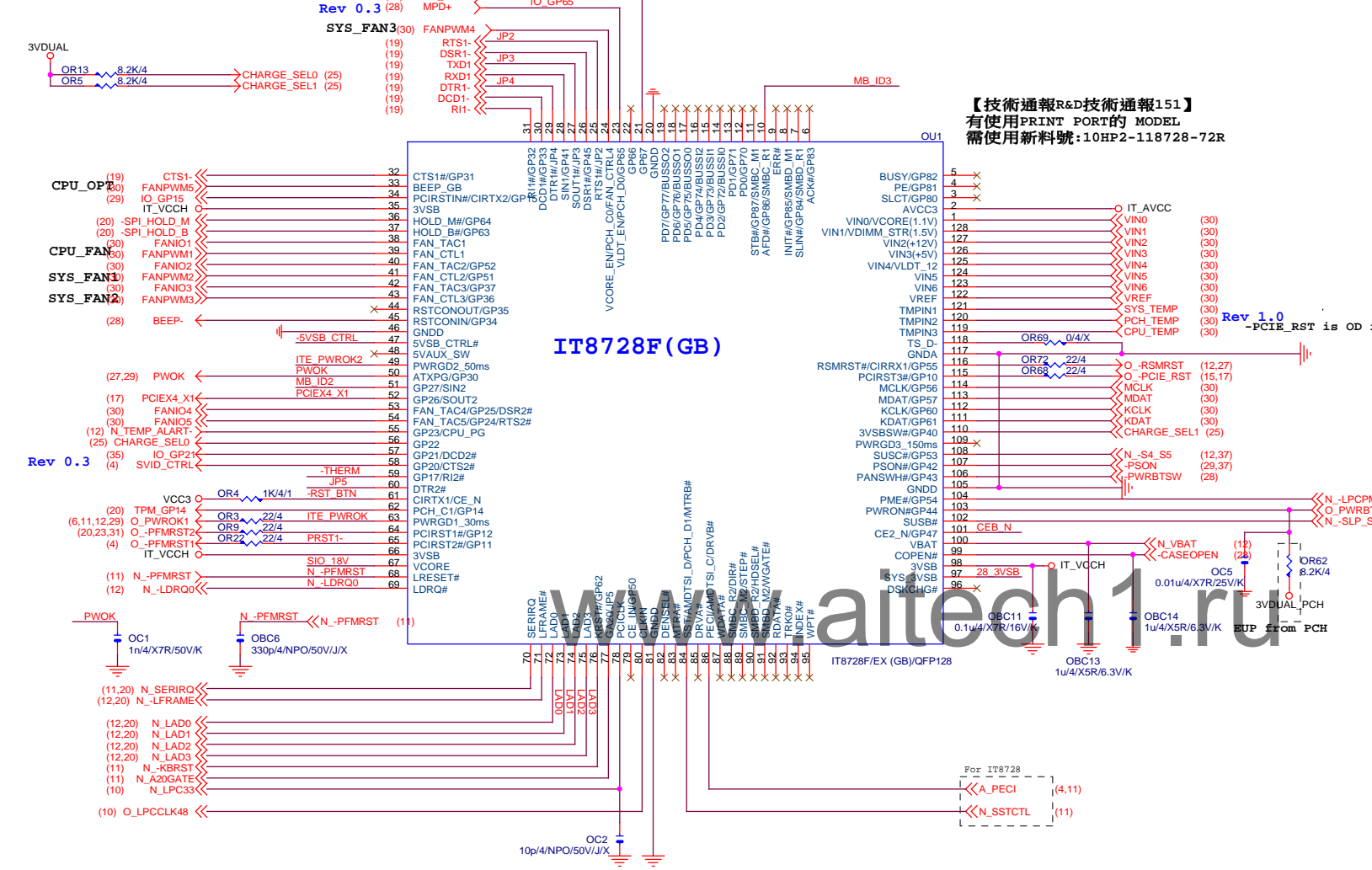
1	X16 +12V	PAR1	0/4/SHT/X
2			
3			
4	PAR2	0/4/SHT/X	
5	X		
6	X	VCC3	
7	X		
8	X		
9			
10		-DPCIE_RST	
11			
12			
13			
14			
15			
16		PA_EXP_RXP0	
17		PA_EXP_RXN0	
18			
19	X		
20			
21		PA_EXP_RXP1	
22		PA_EXP_RXN1	
23			
24			
25		PA_EXP_RXP2	
26		PA_EXP_RXN2	
27			
28			
29		PA_EXP_RXP3	
30		PA_EXP_RXN3	
31			
32	X		
33			
34	X		
35			
36		PA_EXP_RXP4	
37		PA_EXP_RXN4	
38			
39			
40		PA_EXP_RXP5	
41		PA_EXP_RXN5	
42			
43		PA_EXP_RXP6	
44		PA_EXP_RXN6	
45			
46			
47		PA_EXP_RXP7	
48		PA_EXP_RXN7	
49			
50	X		
51			
52		PA_EXP_SW_RXP8	
53		PA_EXP_SW_RXN8	
54			
55			
56		PA_EXP_SW_RXP9	
57		PA_EXP_SW_RXN9	
58			
59			
60		PA_EXP_SW_RXP10	
61		PA_EXP_SW_RXN10	
62			
63			
64		PA_EXP_SW_RXP11	
65		PA_EXP_SW_RXN11	
66			
67			
68		PA_EXP_SW_RXP12	
69		PA_EXP_SW_RXN12	
70			
71			
72		PA_EXP_SW_RXP13	
73		PA_EXP_SW_RXN13	
74			
75			
76		PA_EXP_SW_RXP14	
77		PA_EXP_SW_RXN14	
78			
79			
80		PA_EXP_SW_RXP15	
81		PA_EXP_SW_RXN15	
82			





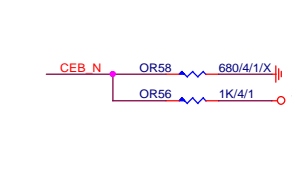


SIO IT8728F

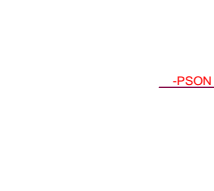


IT8728F NOTE	
IT8728	
PIN121	VCORE_EN/PCH_C0
PIN120	VLDT_EN/PCH_D0
PIN19	ATXP6
PIN31	PCH_C1
PIN53	SST/AMDTSI_D/MTRB#/PCH_D1
PIN55	PRCI/AMDTSI_C/DRVB#
PIN66	SYS_3VSB
PIN70	GP47
PIN95	VIN2(VCC5)
PIN96	VIN1(VCC12)
PIN97	VINI/VDIMM_STR(1.5V)
PIN98	VINO/VCORE(1.1V)/NC

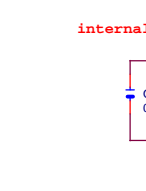
DUAL BIOS OPT STRAP



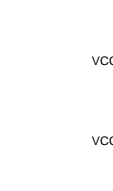
Power leakage



SIO\_18V



MB ID



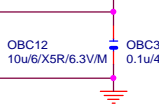
SIO CAP



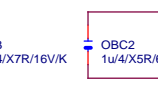
IT\_VCCH



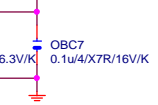
IT\_VCCH



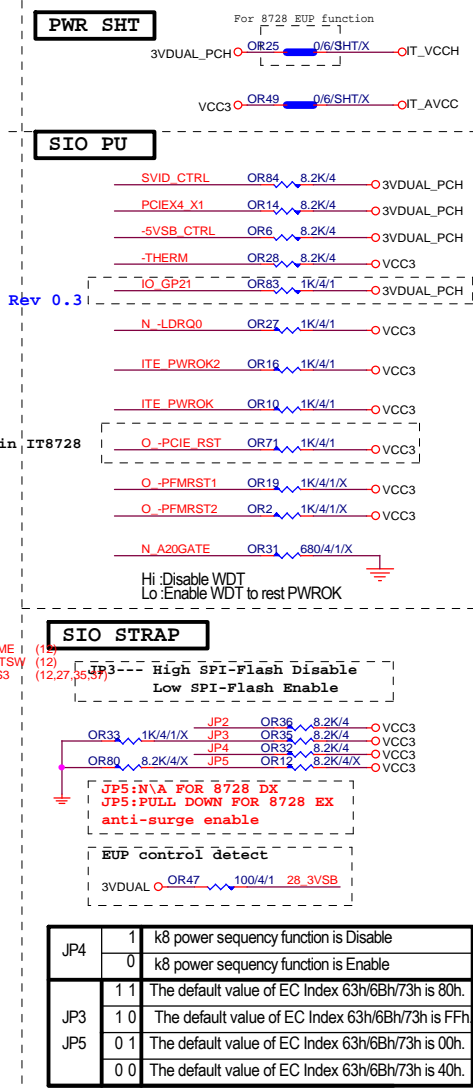
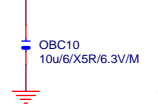
IT\_VCCH



IT\_AVCC



3VDUAL\_PCH



**Gigabyte Technology**

Title: ITE 8728 LPC IO

Size B Document Number: GA-Z87X-D3H Rev 1.11

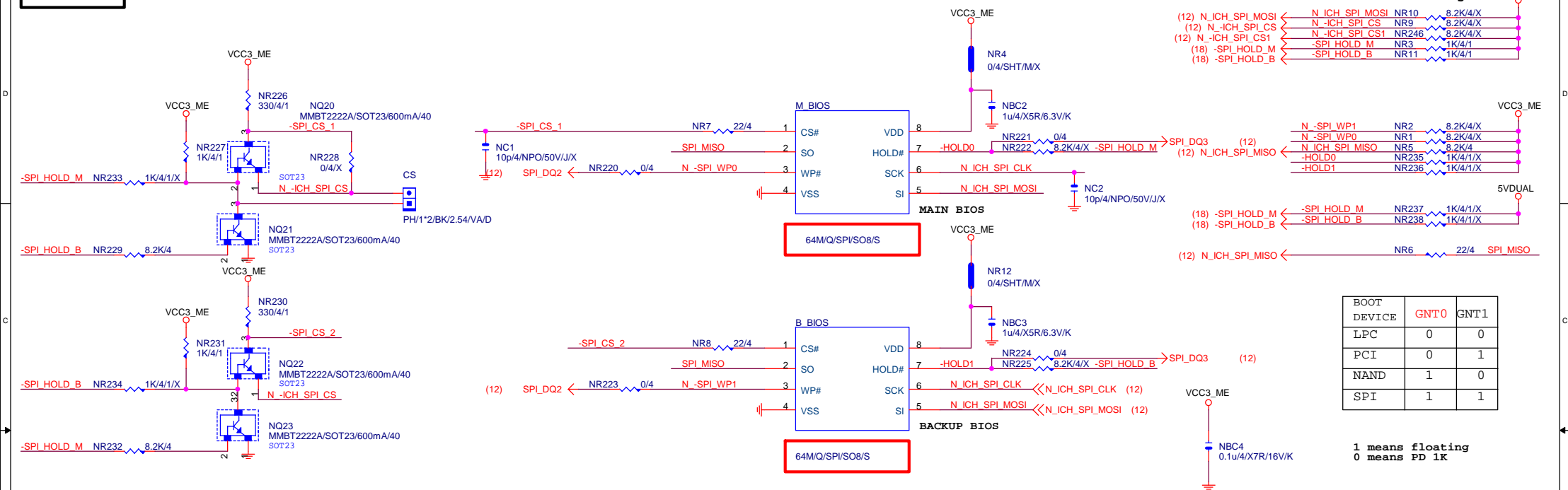
Date: Monday, December 09, 2013 Sheet 18 of 43

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

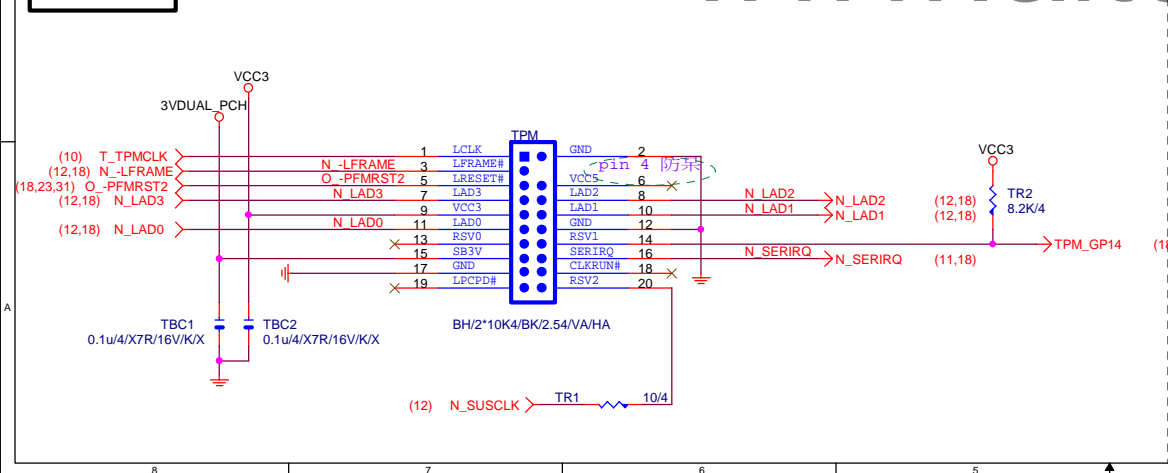




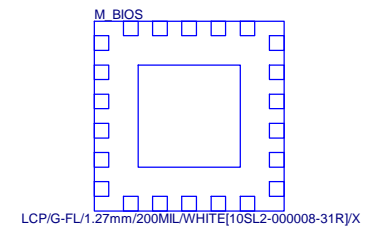
## DUAL BIOS



## TPM CONNECT



## BIOS Debug port

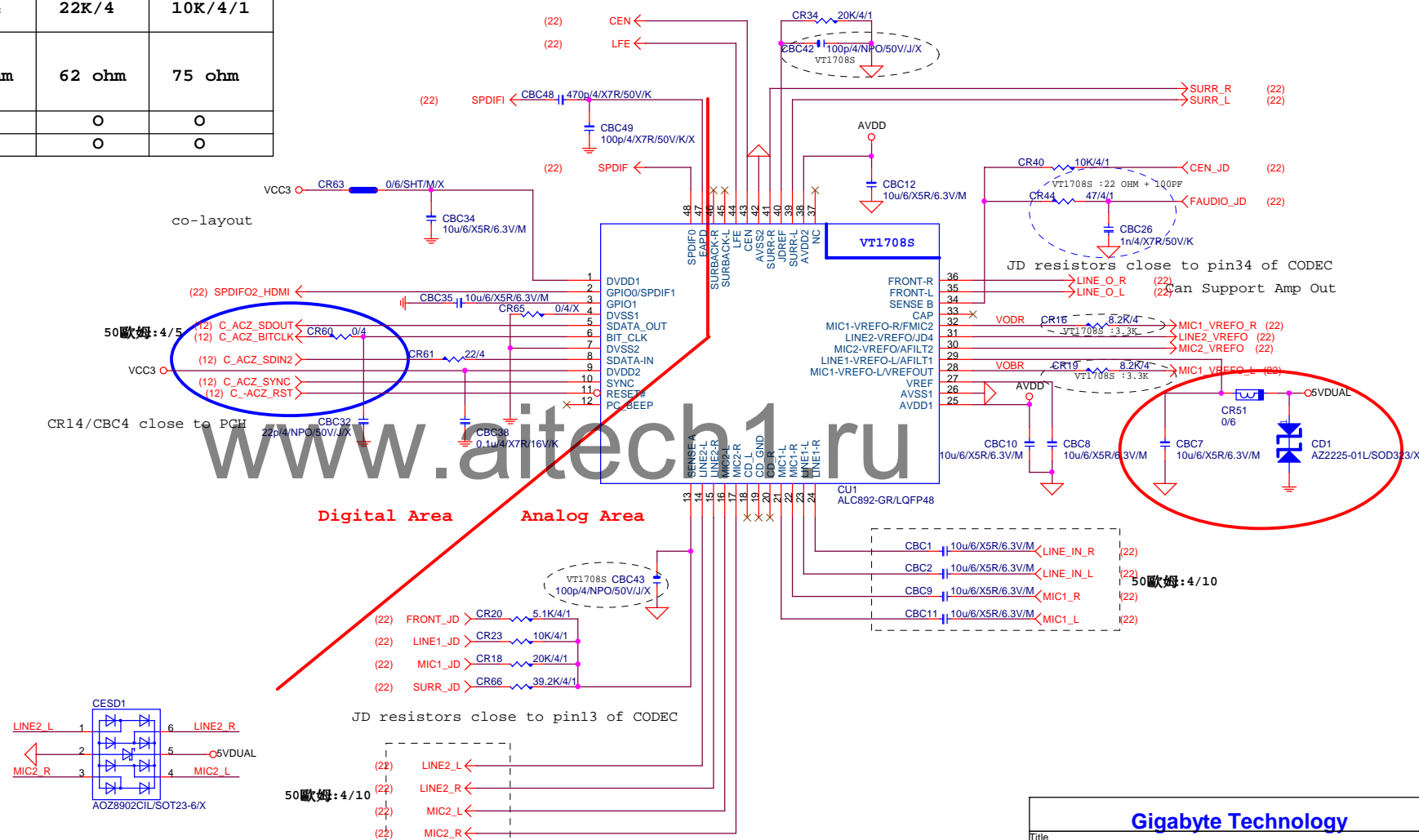


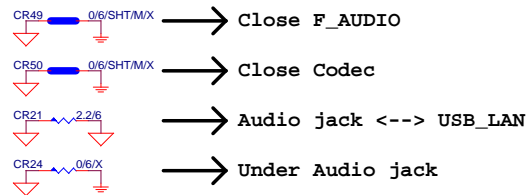
## Gigabyte Technology

Title		<b>BIOS</b>	
Size Custom	Document Number	<b>GA-Z87X-D3H</b>	Rev <b>1.11</b>
Date:	Monday, December 09, 2013	Sheet	20 of 43

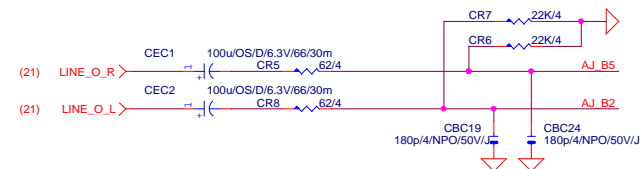


	ALC892	ALC887-VD2	VT1708S-CE
CR44/CBC26	47ohm+1nF	47ohm+1nF	22ohm+100P
CBC42/CBC43	X	X	100P/4
CR16/CR19 CR52/CR56/CR10/CR9	8.2K/4	8.2K/4	3.3K/4/1
CR6/CR7/CR58/CR54/ CR67/CR68/CR69/CR70	22K/4	22K/4	10K/4/1
CR5/CR8/CR1/CR14/ CR17/CR22/CR73/CR74/ CR13/CR11/CR57/CR53/ CR75/CR76	62 ohm	62 ohm	75 ohm
CR51/CD1/CBC7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



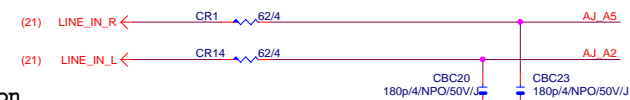


## LINE-OUT



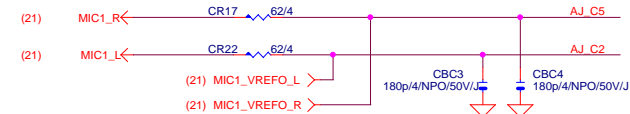
## LINE-IN

Verify MIC function in LINE-in

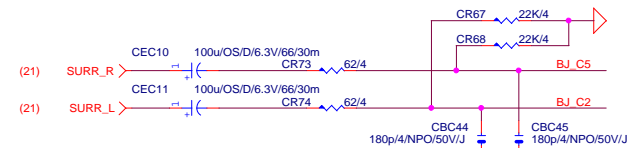


For 889A/888

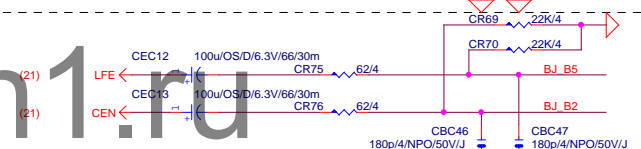
## MIC-IN



## SURROUND

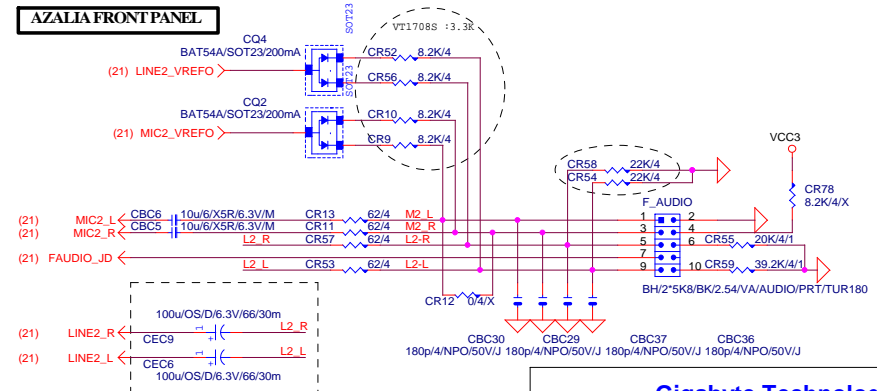


## CEN/LFE



## SURRBACK

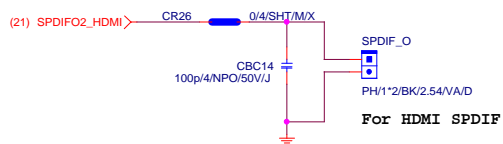
## AZALIA FRONT PANEL



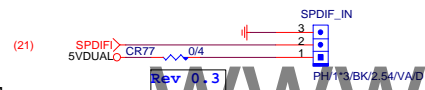
Gigabyte Technology

Title			
AUDIO JACK			
Size	Document Number	Rev	
Custom	GA-Z87X-D3H	1.11	
Date:	Monday, December 09, 2013	Sheet	22 of 43

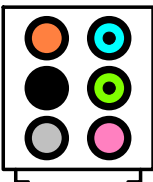
## SPDIF\_OUT



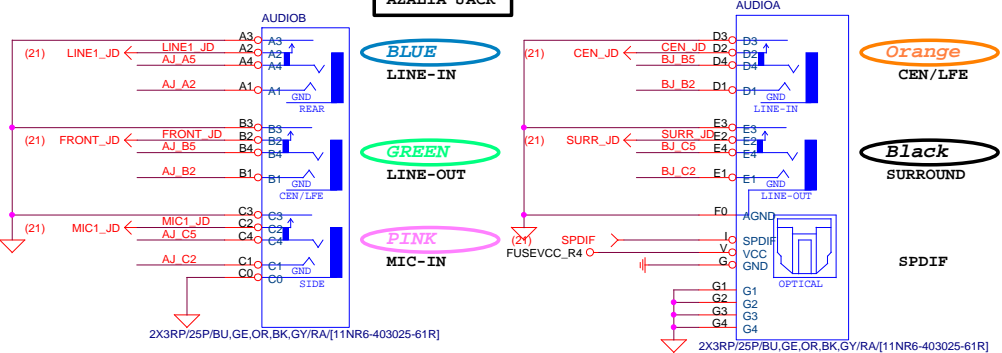
## SPDIF\_IN

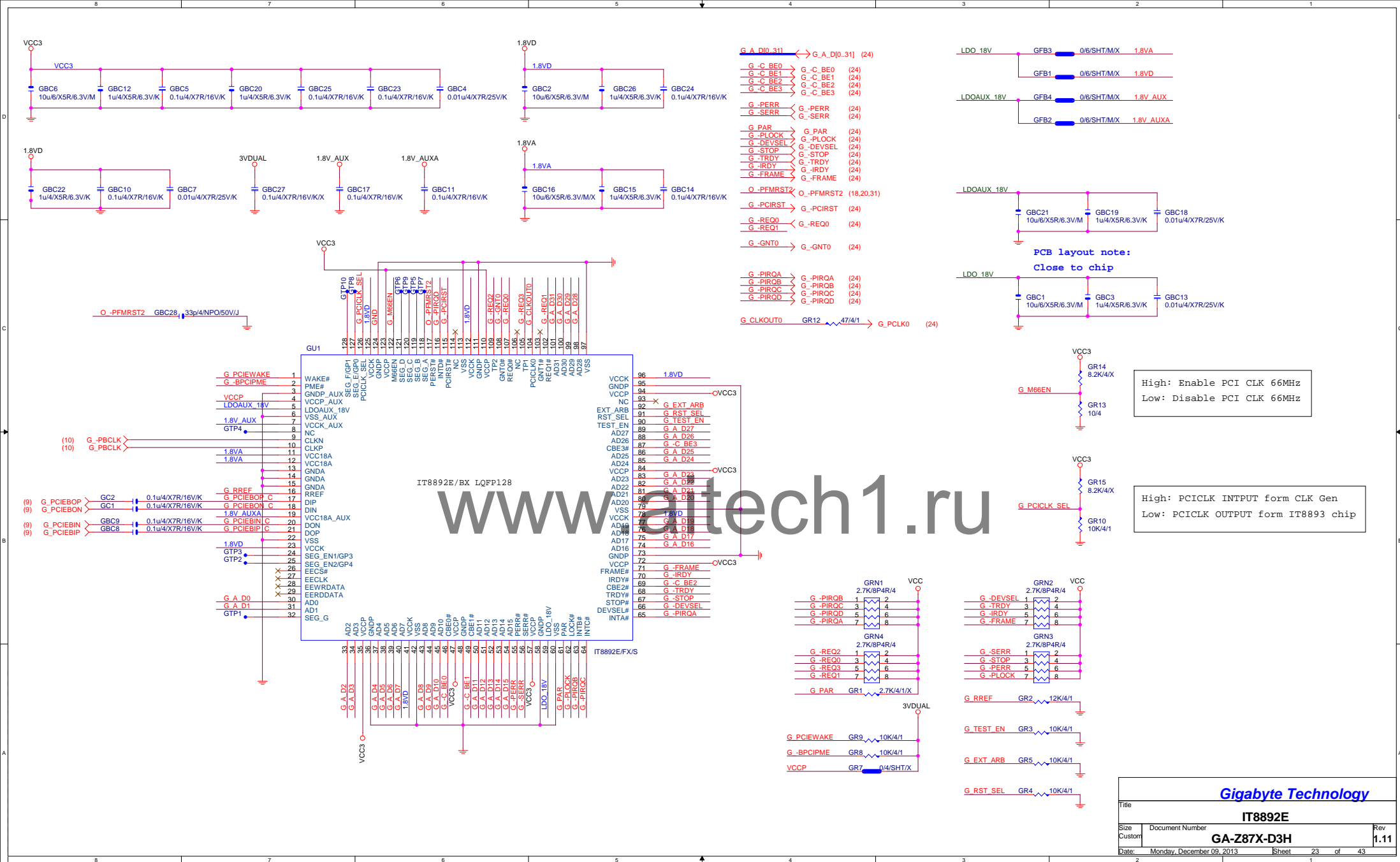


## AZALIA JACK

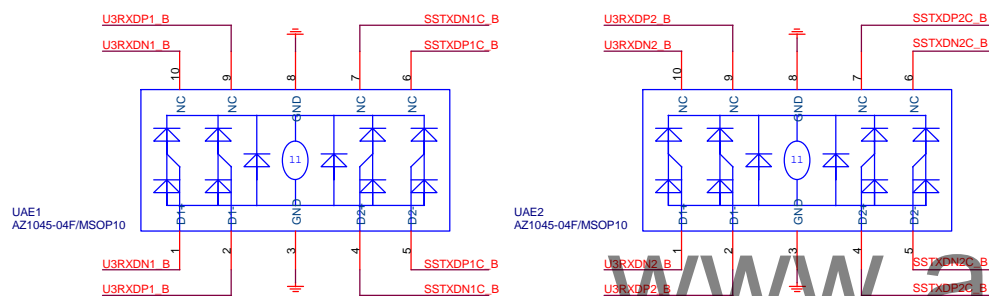
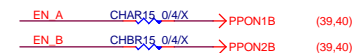
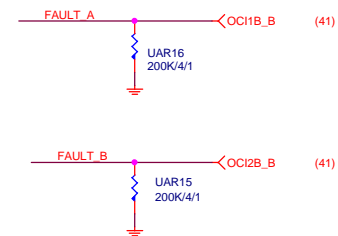


## AZALIA JACK

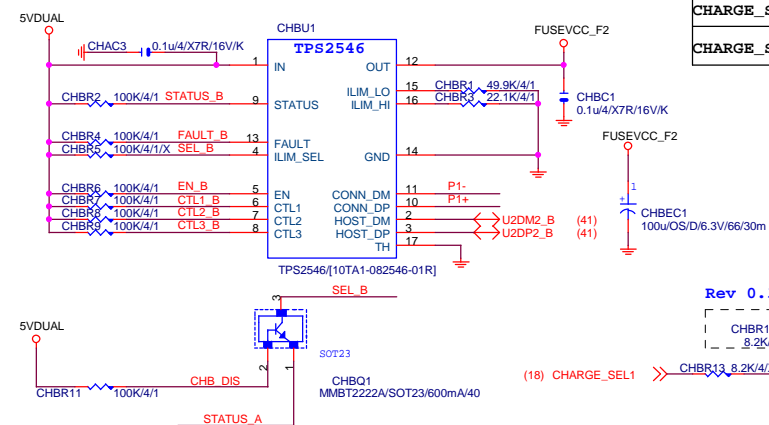
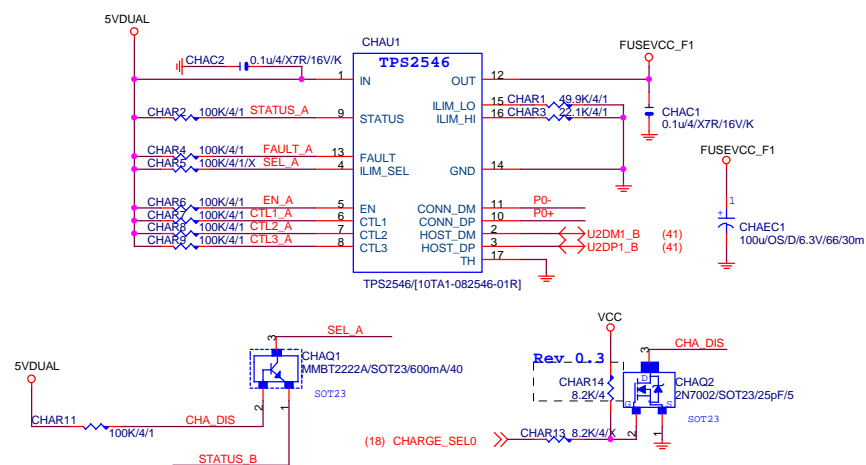




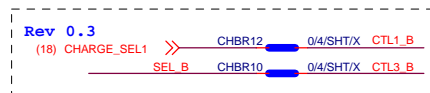
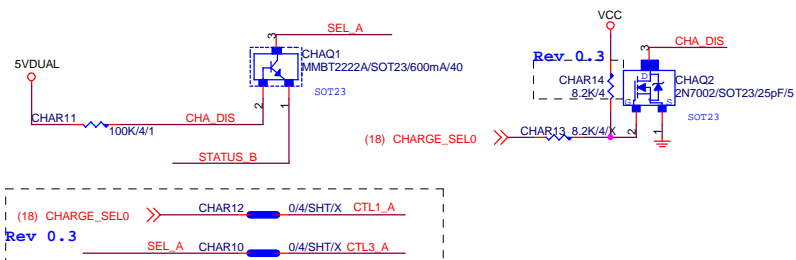
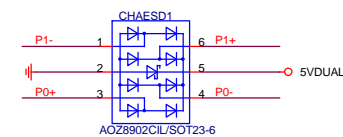




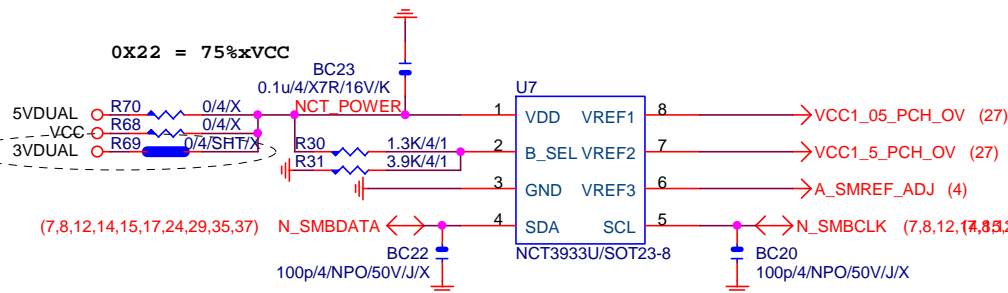
The diagram shows a 3-bit shift register (U3RSDP2C) and a 3-bit counter (U3RSDP2C). The counter outputs are connected to the shift register inputs. The shift register is configured to shift right (S=0). The counter is configured to count up (C=1). The shift register outputs are connected to the counter inputs, forming a feedback loop.



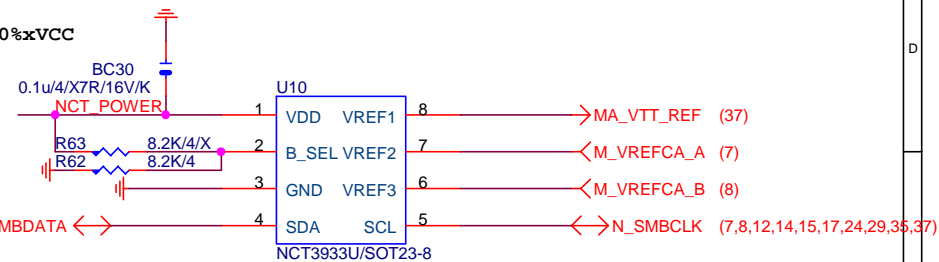
	S0	S3/S4/S5
CHARGE_SEL0	1	0
CHARGE_SEL1	1	0



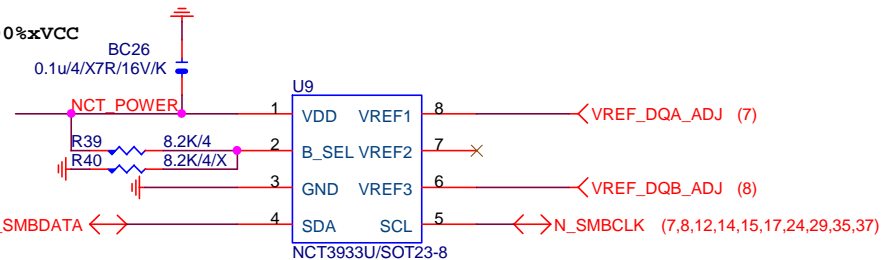
# OVER VOLTAGE



**0X2A = 0%xVCC**



**0X20 = 100%xVCC**



NCT3933	0X2A	0X20	0X22
VREF1	DDRVTT	VREF_DDRA_DQ	PCH Core
VREF2	VREF_DDRA_CA	N/A	VCC1_5_PCH
VREF3	VREF_DDRA_CA	VREF_DDRB_DQ	SMREF

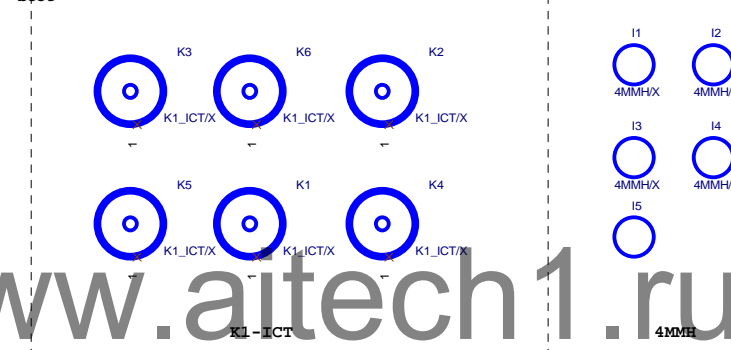
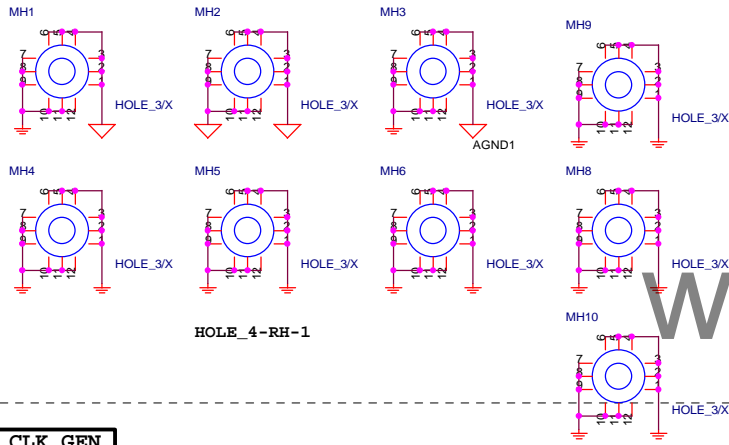
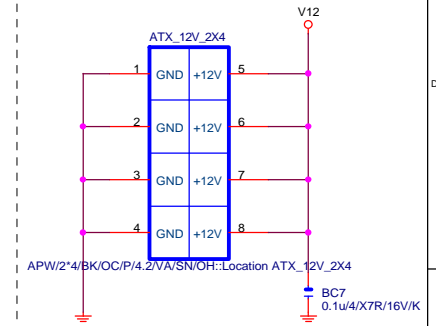
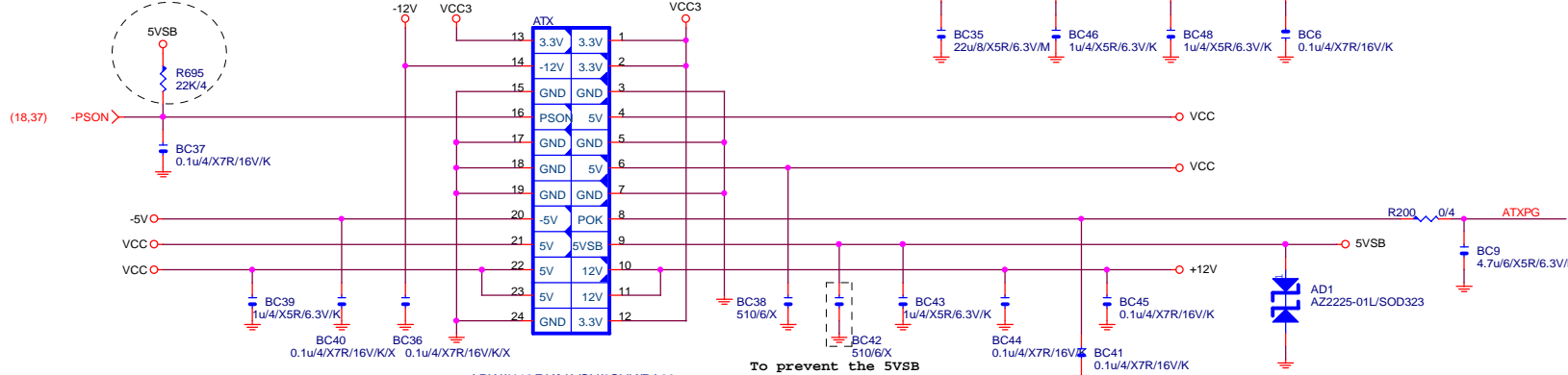
**Gigabyte Technology**

Title		
CPU CORE VR-2		
Size	Document Number	Rev
Custom	GA-Z87X-D3H	1.11
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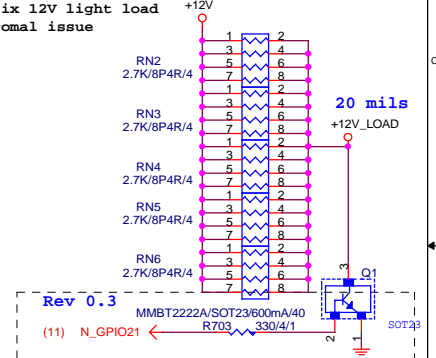








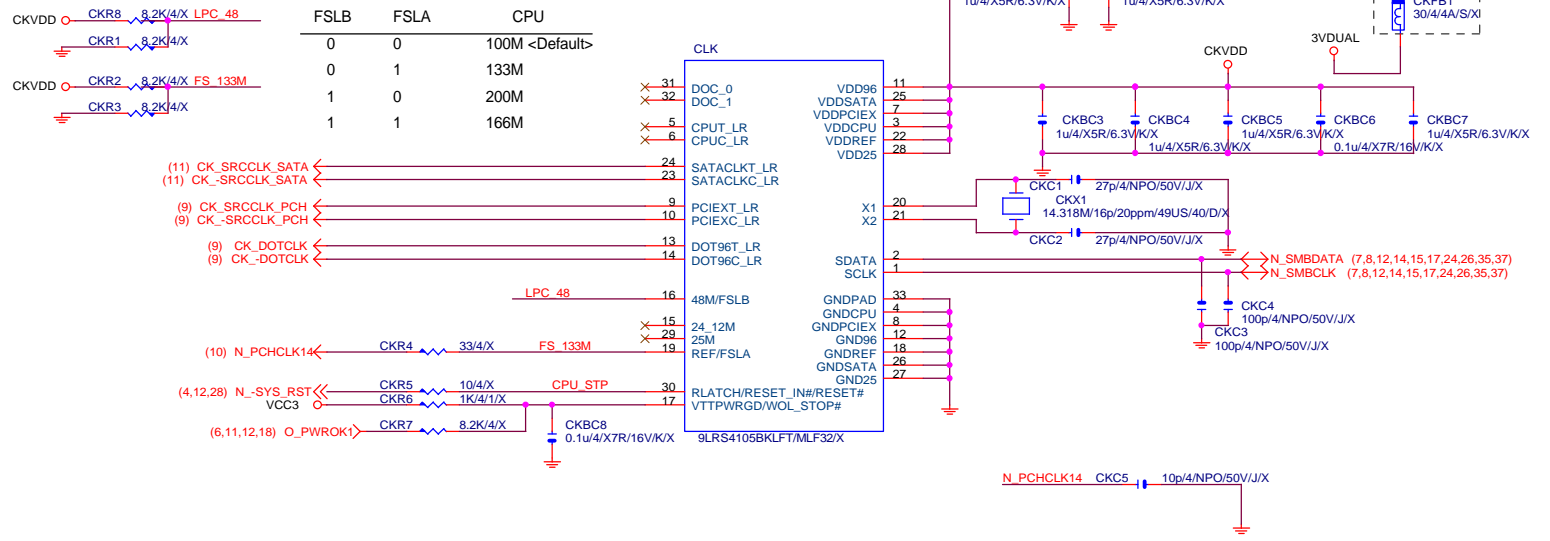
To fix 12V light load  
abnromal issue



## CLK GEN

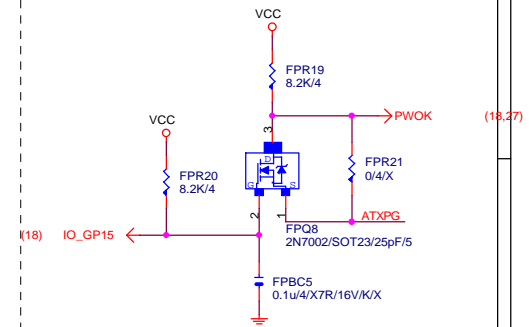
## CPU Frequency Selection

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



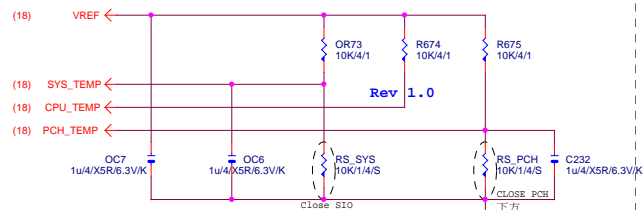
## PWOK PATCH

## 【技術通報R&amp;D技術通報154】

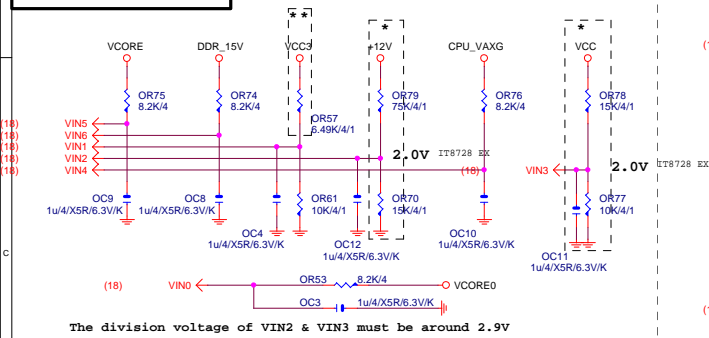


## Gigabyte Technology

## TEMP H/W MONITOR

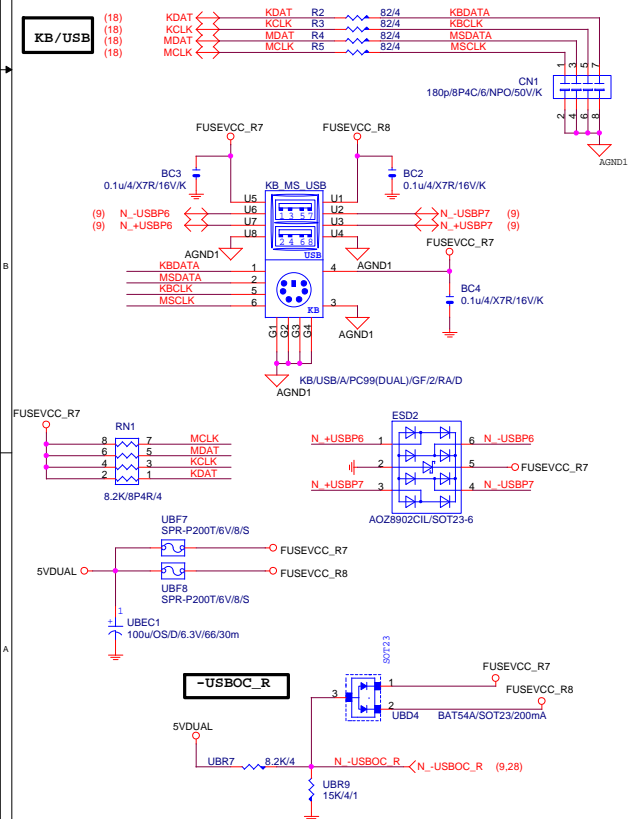


VOLTAGE-- H/W MONITOR

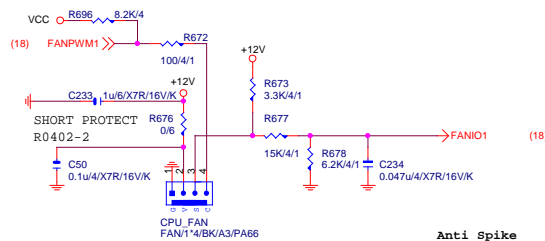


The division voltage of VIN2 & VIN3 must be around 2.9V

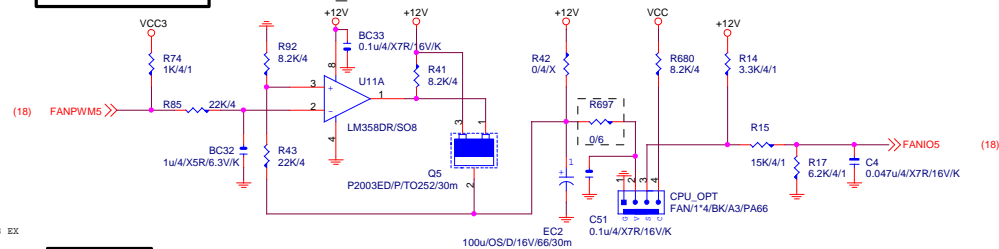
## KB/USB



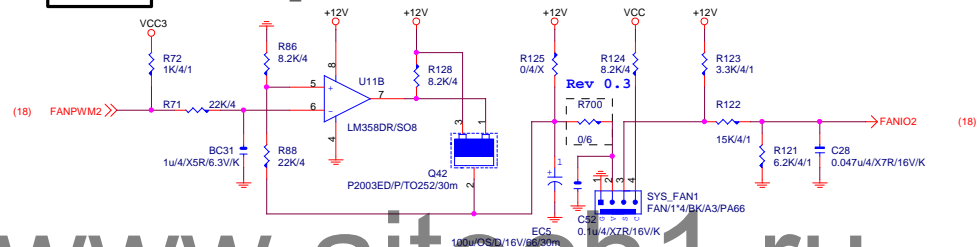
## CPU SMART FAN



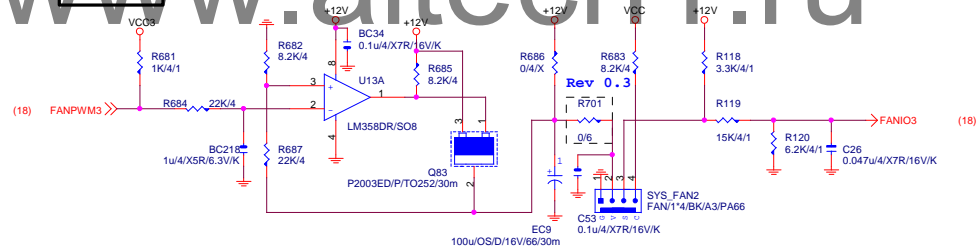
```
CPU OPT SMART FAN Linear CPU_OPT
```



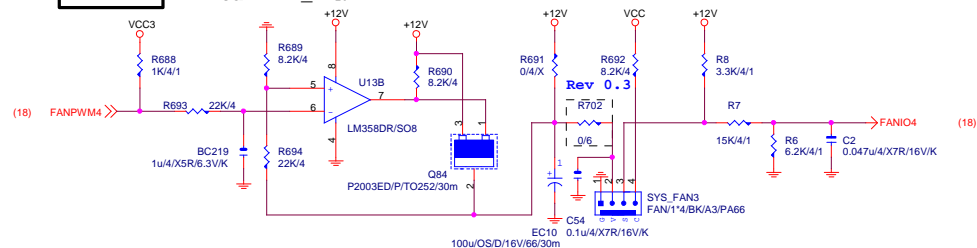
**SYS\_FAN\_1**      Linear   SYS\_FAN



**SYS\_FAN\_2** Linear SYS\_FAN



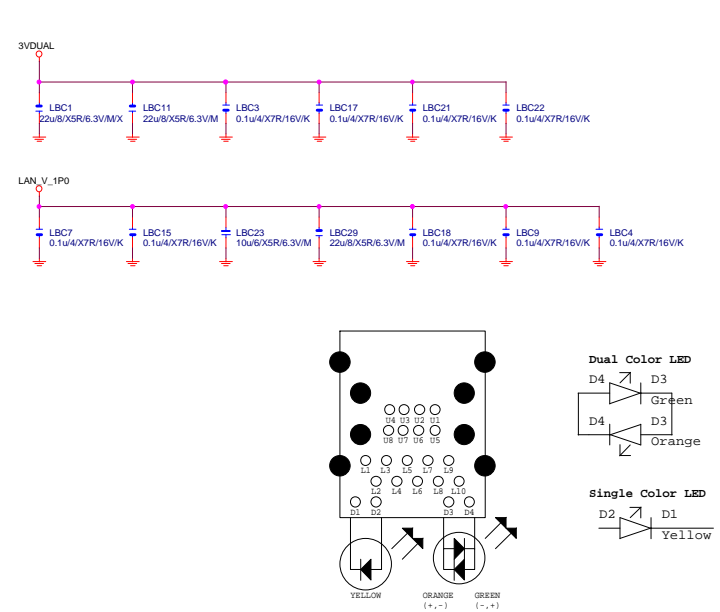
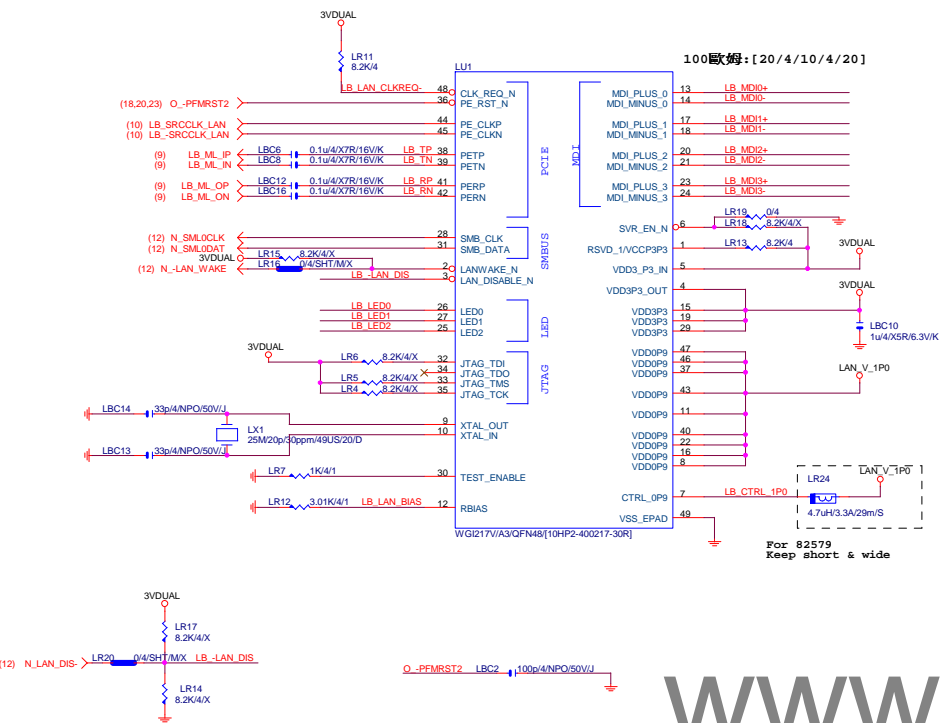
## SYS\_FAN\_3 Linear SYS\_FAN



## Gigabyte Technology

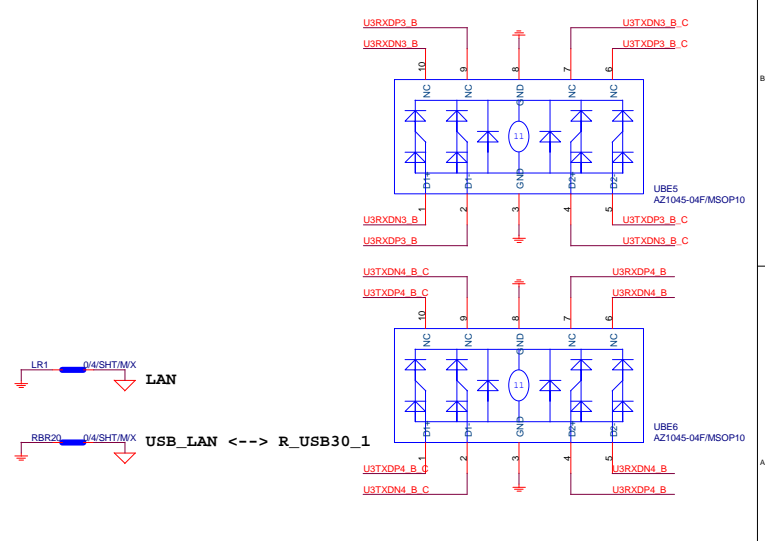
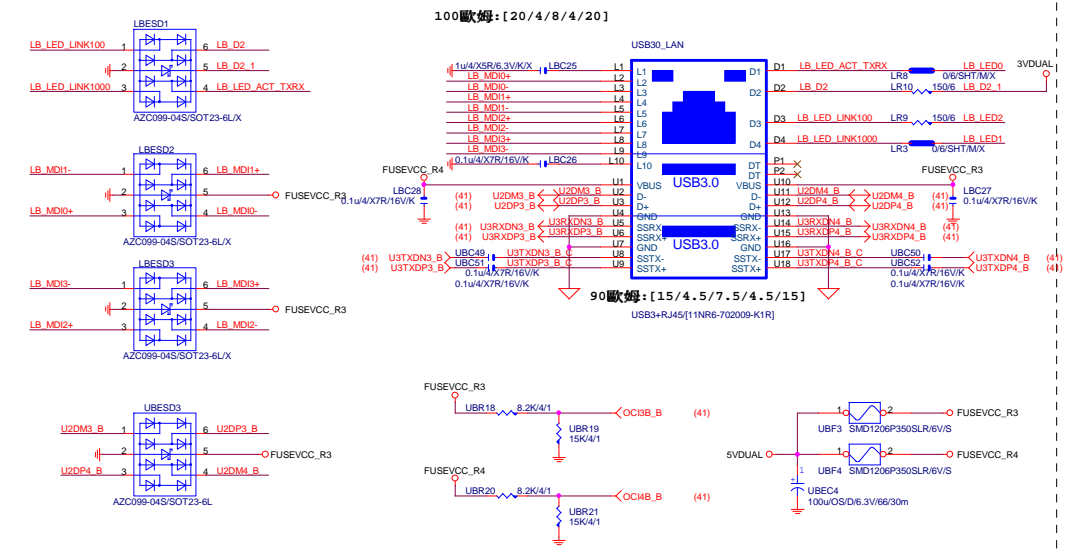
Title				HWM,KB/MS, FAN CTRL			
Size	Document Number			Rev			
Custom	GA-Z87X-D3H			1.1			
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# LAN: INTEL I217



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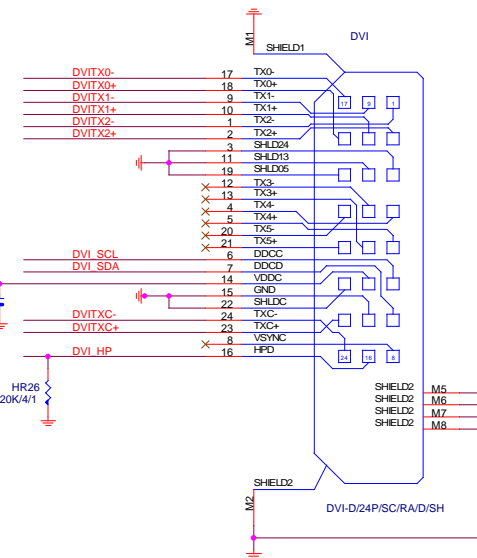
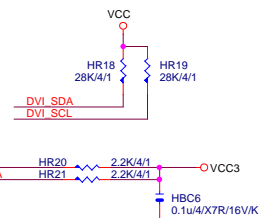
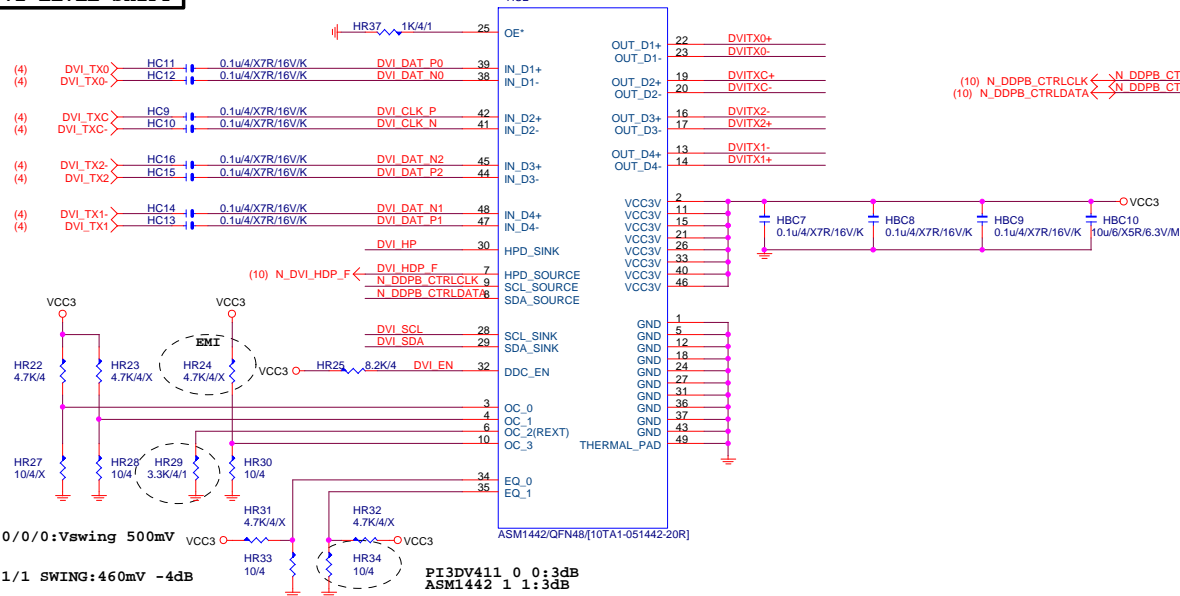
## USB30 LAN CONNECTOR



# DVI LEVEL SHIFT

DVI:15/4/4/4/15

Impedance=85 +- 17.5%



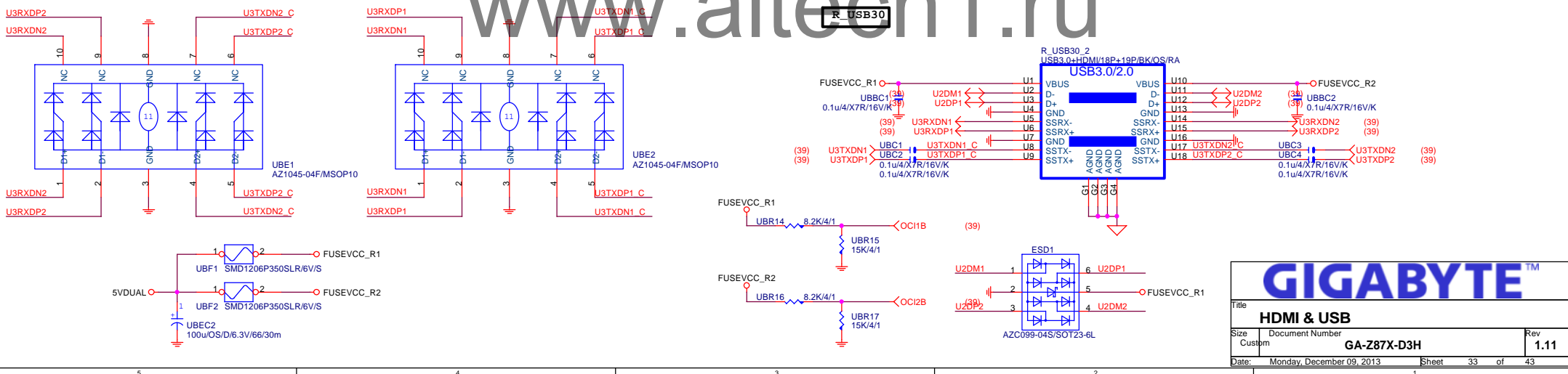
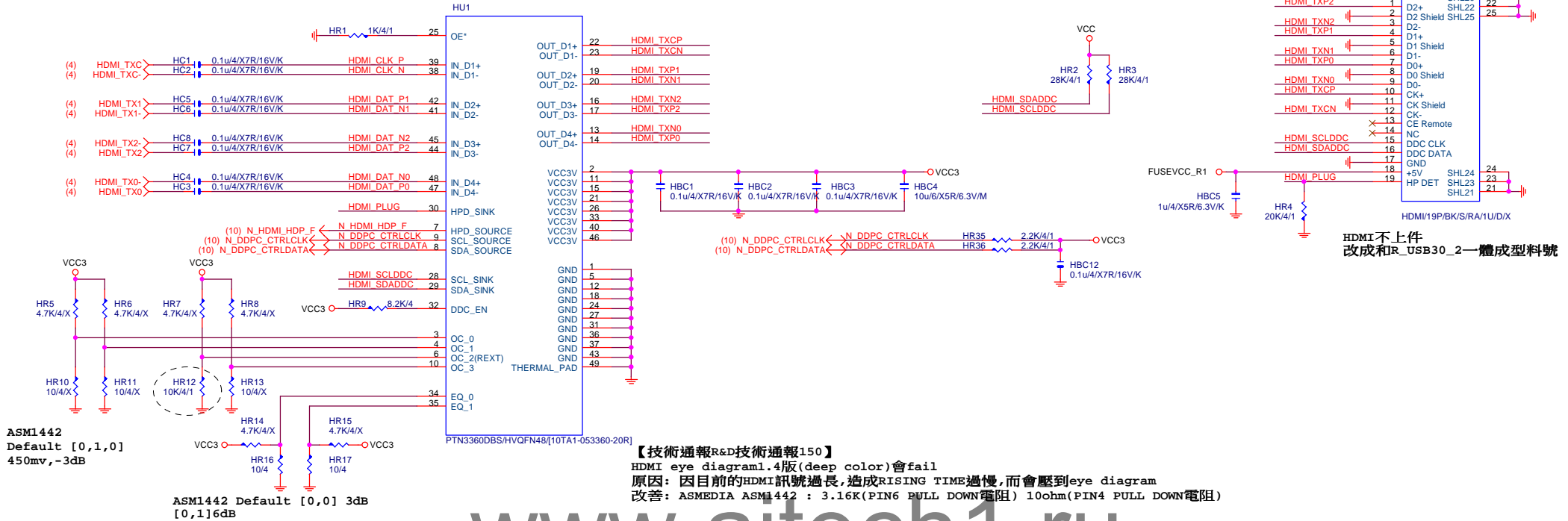
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Gigabyte Technology			
Title			
TI TSB43AB23 1394			
Size	Document Number	Rev	
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## HDMI LEVEL SHIFT

HDMI:15/4/4/4/15

Impedance=85 +- 17.5%

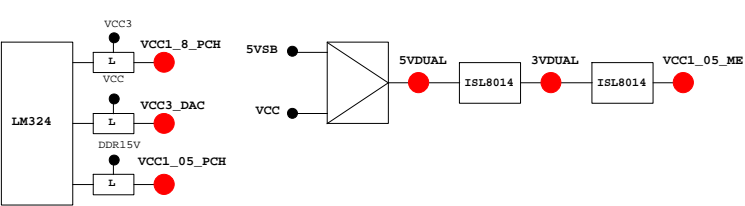


PCH GPIO LIST TABLE					
PIN NAME	PWR	Default	USAGE	NOTE	
GP0	MAIN	H-Z	GPI	GPIO0	N/A
GP1/TACH1	MAIN		GPI	GPIO1	N/A
GP2/PIRQE#	MAIN		GPI	-PIRQE	P/U 8.2K VCC3
GP3/PIRQF#	MAIN		GPI	-PIRQF	P/U 8.2K VCC3
GP4/PIRQG#	MAIN		GPI	-PIRQG	P/U 8.2K VCC3
GP5/PIRQH#	MAIN		GPI	-PIRQH	P/U 8.2K VCC3
GP6/TACH2	MAIN		GPI	PCIEX1 Detect	P/U 8.2K VCC3
GP7/TACH3	MAIN		GPI	GPIO7	P/U 8.2K VCC3
GP8	STBY	H	GPI	GPIO8	N/A
GP9/OC5#	STBY		NATIVE	USB OC5#	N/A
GP10/OC6#	STBY		NATIVE	USB OC6#	N/A
GP11/SMBALERT#	STBY		NATIVE	USB PWR protect	P/U 8.2K 3VDUAL
GP12	STBY	L	GPI	GPIO12	N/A
GP13	STBY	L	GPI	LPCPME#	P/U 8.2K 3VDUAL
GP14/OC7#	STBY		NATIVE	USB OC7#	N/A
GP15	STBY	L	GPI	GPIO15(TLS Enable)	P/U 8.2K 3VDUAL
GP16	MAIN		GPI	GPIO16	P/U 8.2K VCC3
GP17/TACH0	MAIN		GPI	GPIO17	P/U 8.2K VCC3
GP18	MAIN		GPI	Mobile Only	N/A
GP19	MAIN		GPI	GPIO19	P/U 8.2K VCC3
GP20	MAIN		GPI	GPIO20	P/U 8.2K VCC3
GP21	MAIN		GPI	GPIO21	P/U 8.2K VCC3
GP22	MAIN	H-Z	GPI	GPIO22	P/U 8.2K VCC3
GP23	MAIN		GPI	GPIO23	N/A
GP24	STBY	L	GPI	SKTOCC#	N/A
GP25	STBY			Mobile Only	N/A
GP26	STBY			Mobile Only	N/A
GP27	STBY	H	GPO	GPIO27	P/U 8.2K 3VDUAL
GP28	STBY	H	GPO	PWR LED	P/U 8.2K 3VDUAL
GP29	STBY	L	GPI	GPIO29	N/A
GP30	STBY	H-Z	GPI	Mobile Only	N/A
GP31	STBY	H-Z	GPI	Mobile Only	N/A
GP32	MAIN	H	GPO	N/A	N/A
GP33	MAIN	H	GPO	N/A	N/A
GP34	MAIN	H-Z	GPI	-PCI_STOP	P/U 8.2K VCC3
GP35	MAIN	L	GPO	-ACZ_DET	P/U 8.2K VCC3
GP36	MAIN		GPI	N/A	N/A
GP37	MAIN		GPI	N/A	N/A
GP38	MAIN	H-Z	GPI	PCIEX4 Detect	P/U 8.2K VCC3
GP39	MAIN	H-Z	GPI	GPIO39	P/U 8.2K VCC3
GP40	STBY		NATIVE	USB OC1#	N/A
GP41	STBY		NATIVE	USB OC2#	N/A
GP42	STBY		NATIVE	USB OC3#	N/A
GP43	STBY		NATIVE	USB OC4#	N/A
GP44	STBY	L	NATIVE	GPIO44	P/U 8.2K 3VDUAL
GP45	STBY		NATIVE	GPIO45	P/U 8.2K 3VDUAL
GP46	STBY	L	NATIVE	GPIO46	P/U 8.2K 3VDUAL
GP47	STBY			Mobile Only	N/A
GP48	MAIN	H-Z	IN	GPIO48	P/U 8.2K 3VDUAL
GP49	MAIN	H-Z	IN	GPIO49	P/U 8.2K 3VDUAL
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	Mobile Only	N/A
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			Mobile Only	N/A
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

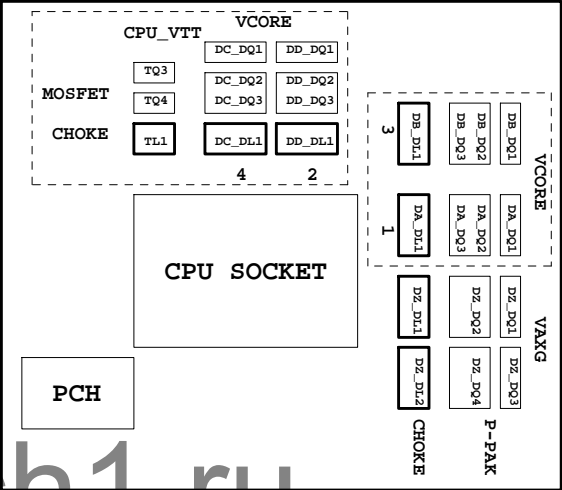
Super I/O ITE8720 GPIO Table

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	-PCI_E_RST	
RSMRST#CIRRXL/GP55	-RSMRST	
PME#/GP54	-LPCPME	
PD5/GP75/BUSS00	N/A	

PIN NAME	USAGE	NOTE
FAN_TAC2/GP52	FANIO2	
FAN_TAC3/GP37	FANIO3	
VIDO3/FAN_TAC4/GP25/DSR2#	FANIO4	
FAN_CTL2/GP51	FANPWM2	
FAN_CTL3/GP36	FANPWM3	
VID4/GP34	BEEP-	
VID3/GP33	TURBO1	
VID2/GP32	TURBO0	
VCORE_GOOD/VID6/GP63	CPUT_LED1_C	
VID5/GP35	CPUT_LED2_C	
VID1/GP31	CPUT_LED3_C	
VID0/GP30	-LAN1_DSM	NBT_LED1_C
SLCT/GP80	CPU_LED1_C	
PE/GP81	CPU_LED2_C	
BUSY/GP82	CPU_LED3_C	
PD3/GP73/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	
3VBSBW#/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/BUSS01	MB_ID3	
PD7/GP77/BUSS02	MB_ID4	
AFD#/GP86/SMBC_R	SEC_PIN	FST_2X8
INIT#/GP85/SMBD_M	SEC_2x8	GTLREF_AD2
ACK#/GP83	DDR_LED1_C	
VID01/GP21/DCD2#	DDR_LED2_C	
STB#/GP87/SMBC_M	DDR_LED3_C	
PWRON#/GP44	VCORE_OV1	
PANSWH#/GP43	PWRBTSW	
KDAT/GP61	-PWRBTSW	
KCLK/GP60	KDAT	
MDAT/GP57	KCLK	
MACL/GP56	MDAT	
GP66/VLDT_EN/GB_02	NBT_LED1_C	MCLK
SVD/PCIRSTIN#/CIRTX/GP15	PWM2_CR	
KDAT/GP61	PWM2_CR	
GP67/CPU_PG/GB_03	EN_LOADLINE	IT_GP67/-EN_PWM2
SLIN#/GP84/SMBD_R	-EN_PWM2	
PSI_L/FAN_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/BUSS00	SB_LED3_C	



PWM各相位的擺法如下：



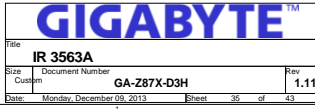
BIOS超電壓對應表：

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

散熱模組料號：

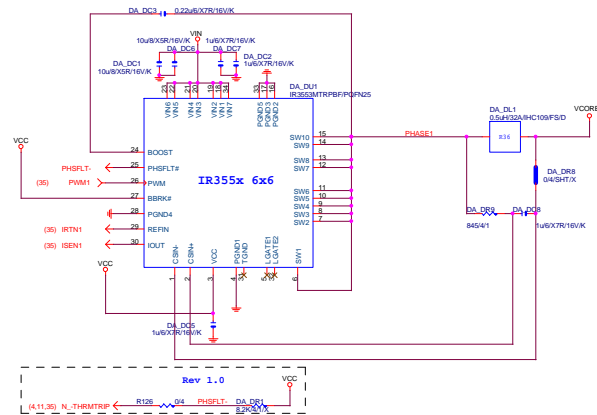
Z77-D3H :  
PCH :  
12SP2-S05511-01R/02R/03R  
MOSFET :  
12SP2-S08924-01R/02R/03R

	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

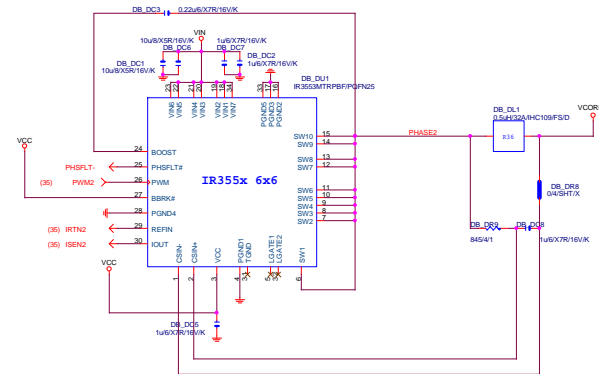




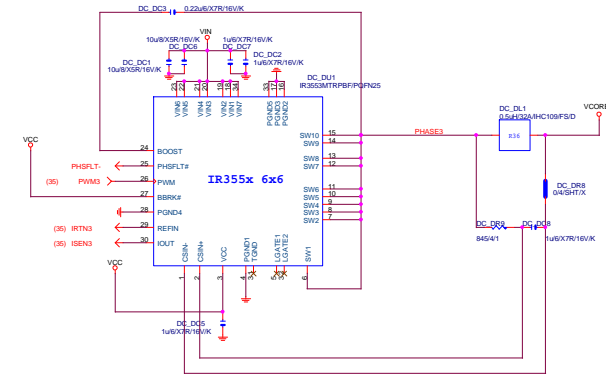
## VCORE-PHASE1



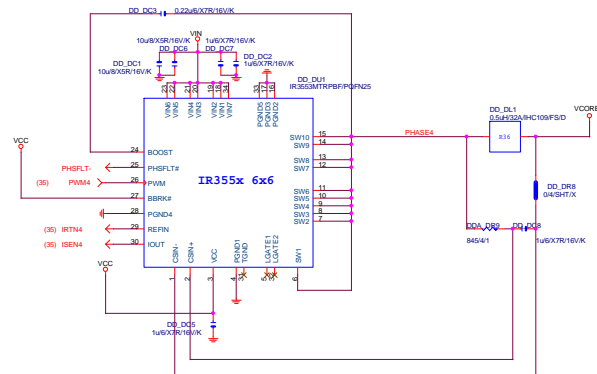
## VCORE-PHASE2



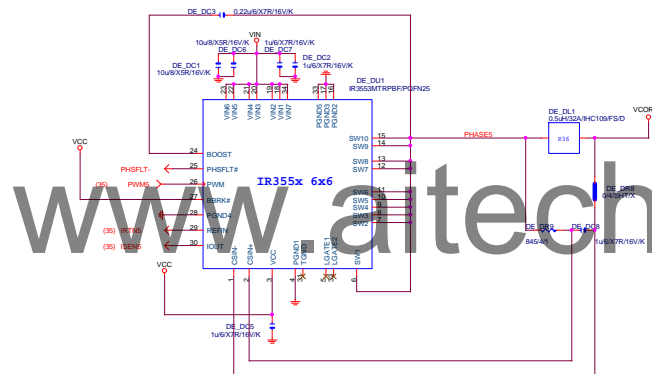
## VCORE-PHASE3



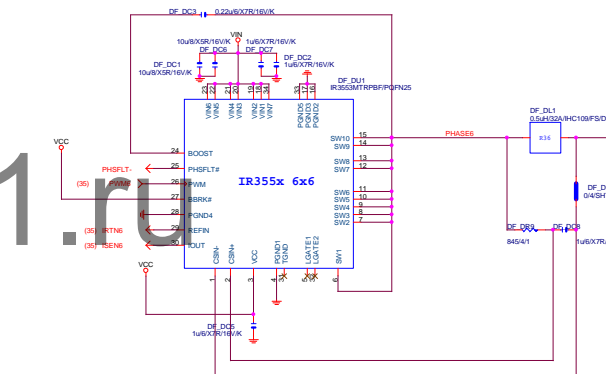
## VCORE-PHASE4



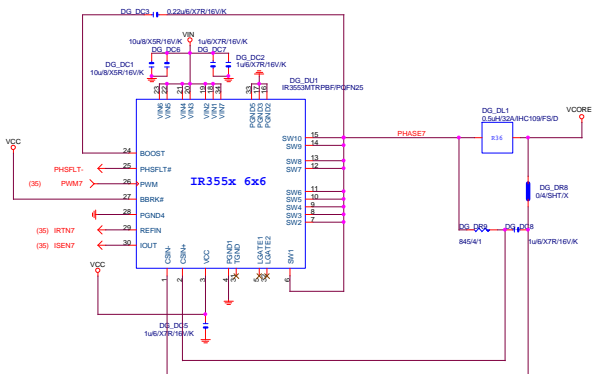
## VCORE-PHASE5



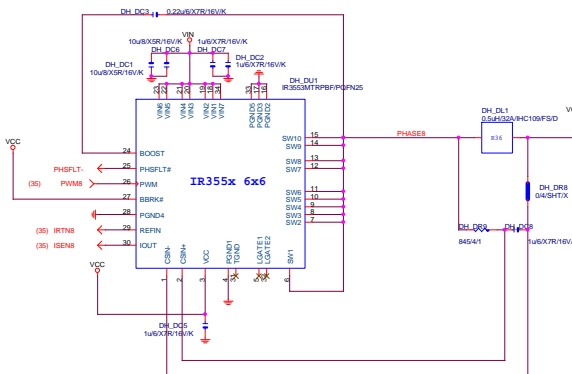
## VCORE-PHASE6



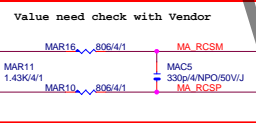
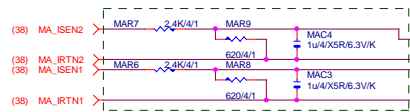
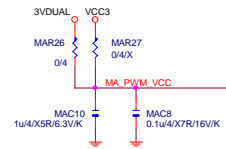
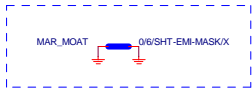
## VCORE-PHASE7



## VCORE-PHASE8

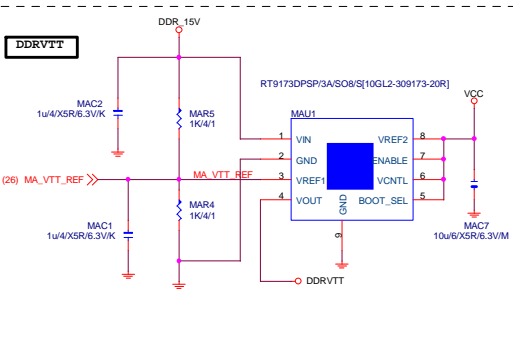






Close to DDR output inductor

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



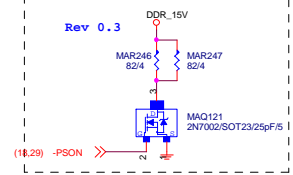
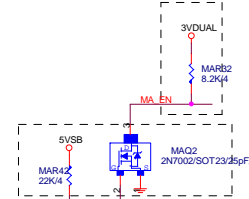
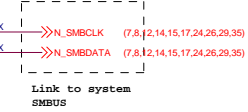
IR3570

MA\_PWM2 (38)  
MA\_PWM1 (38)

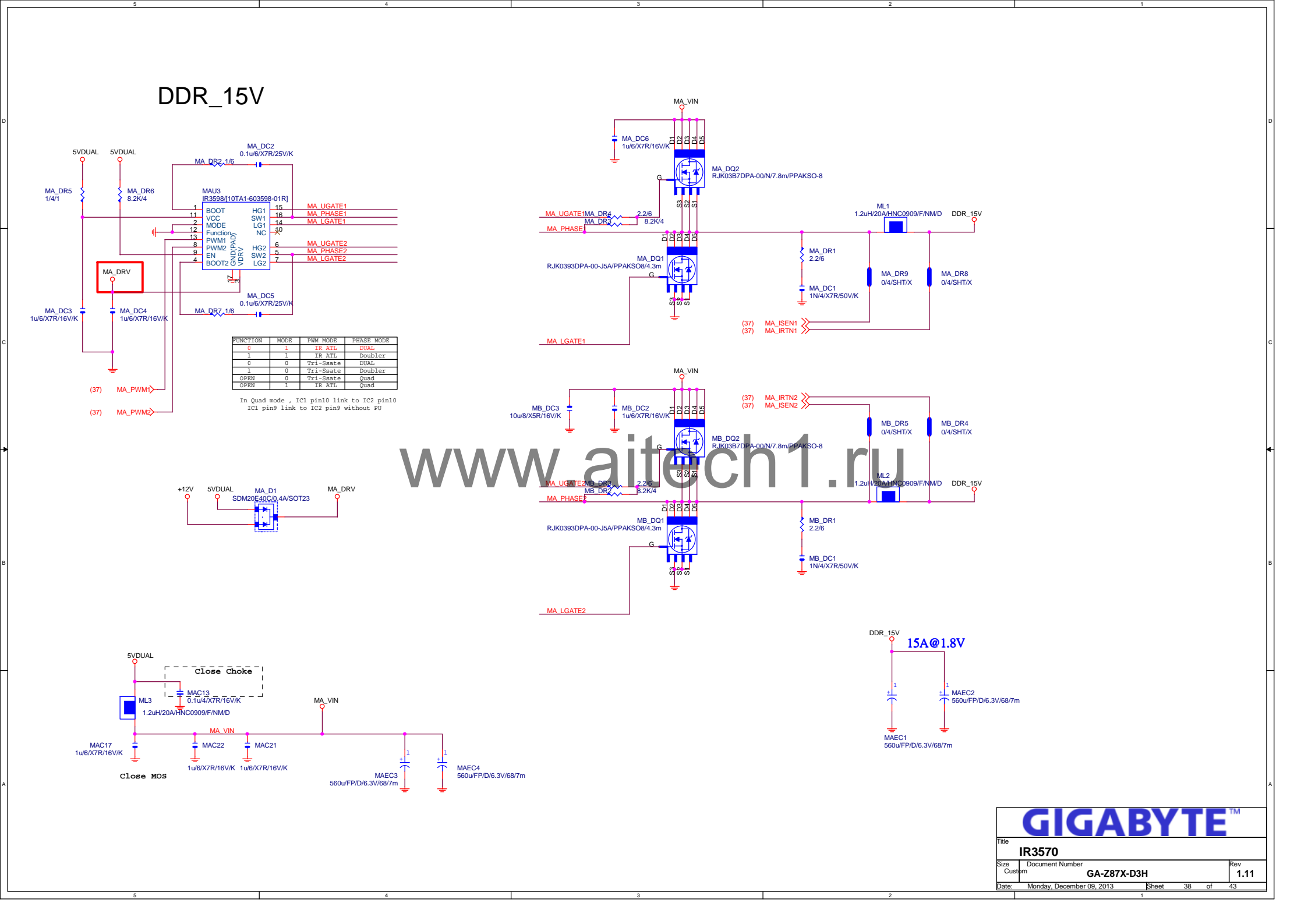
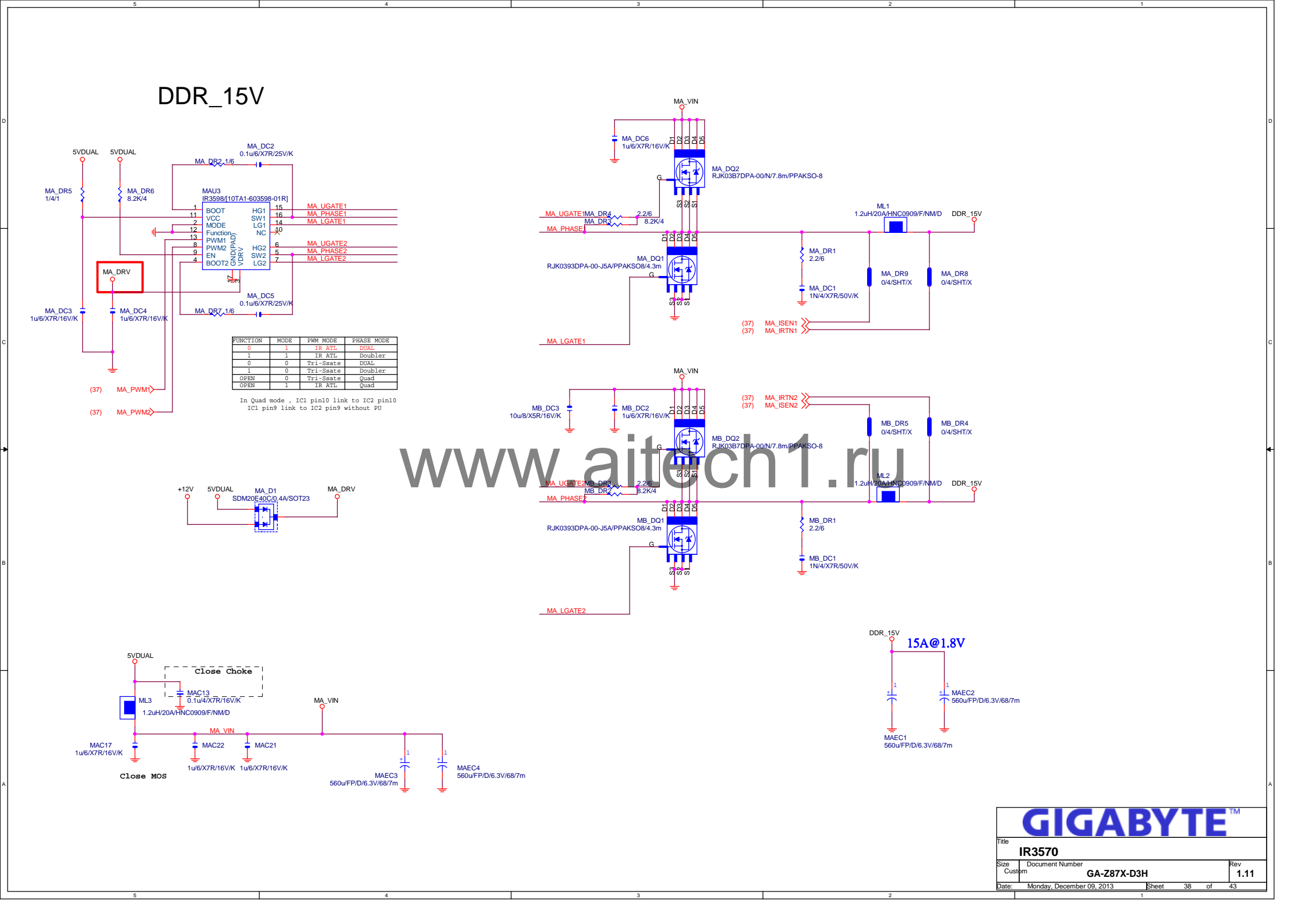
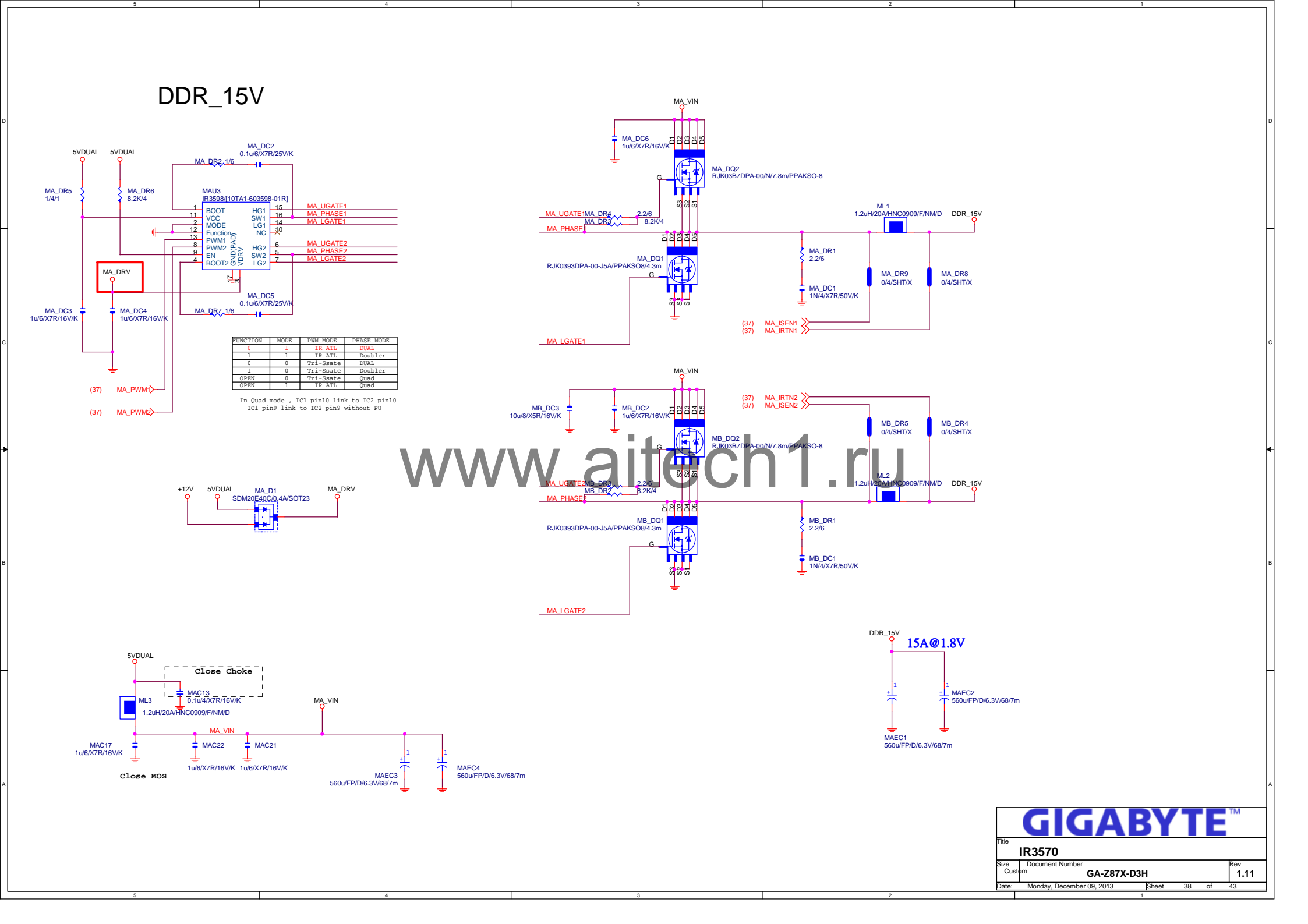
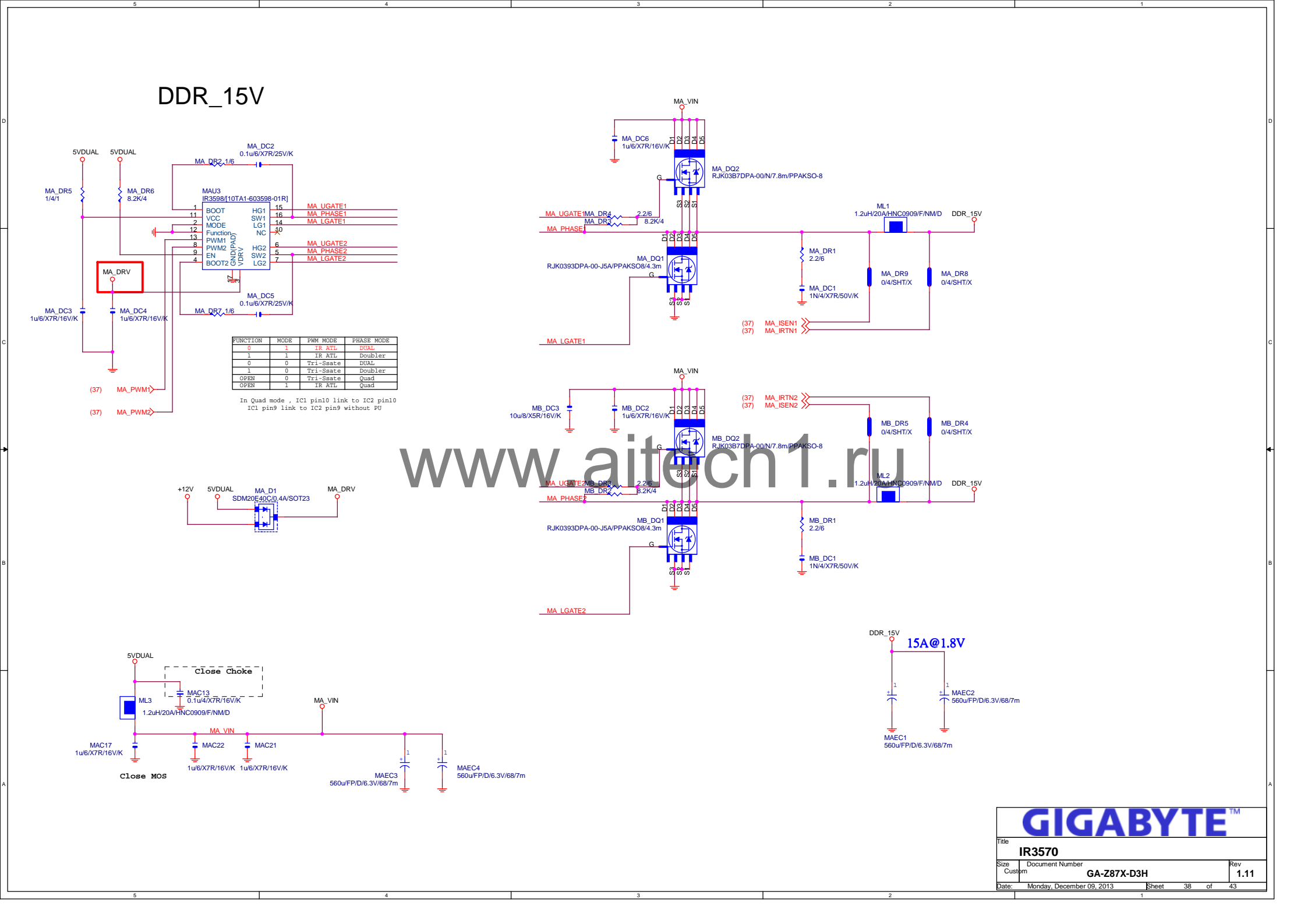
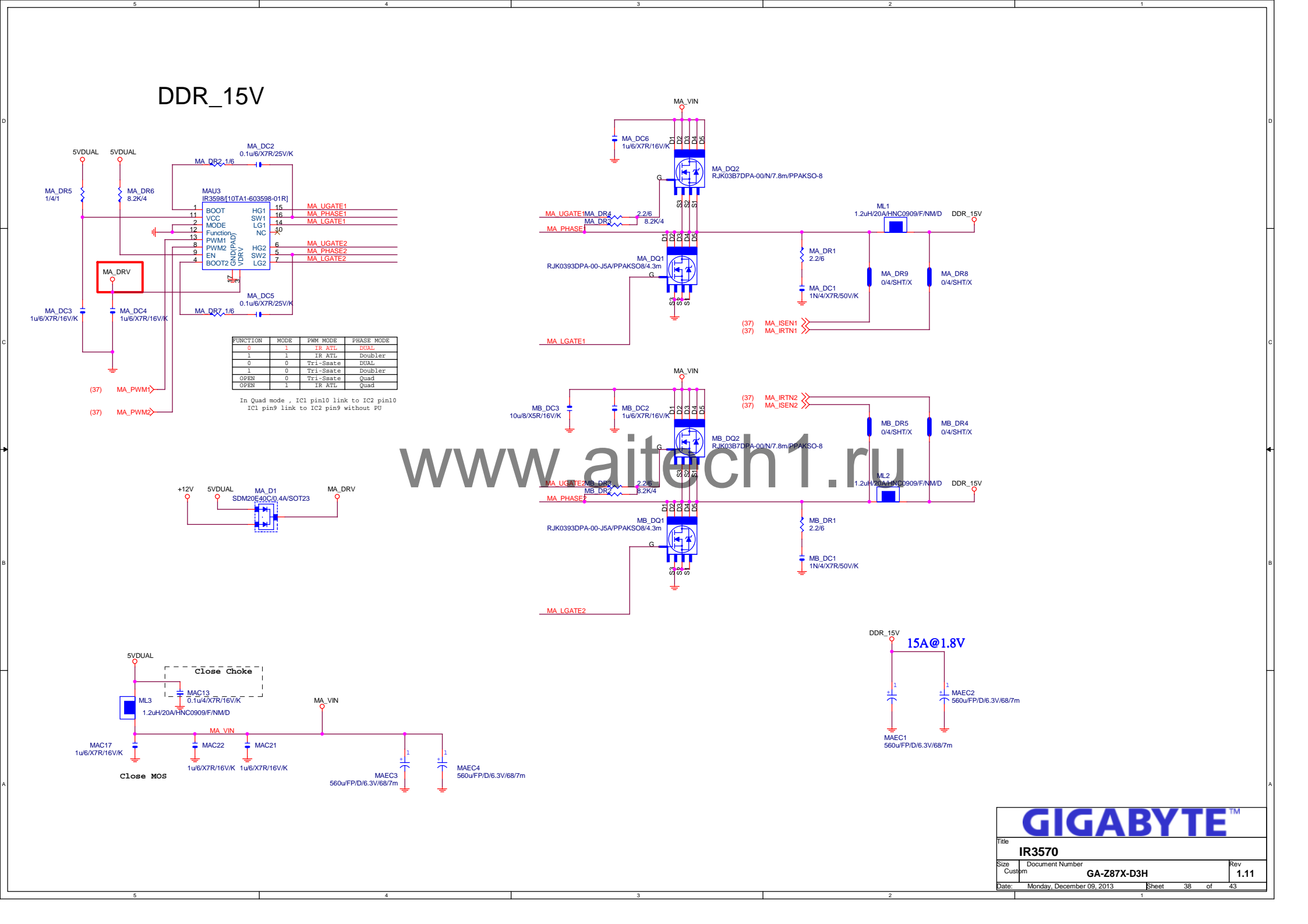
Addr: 74h

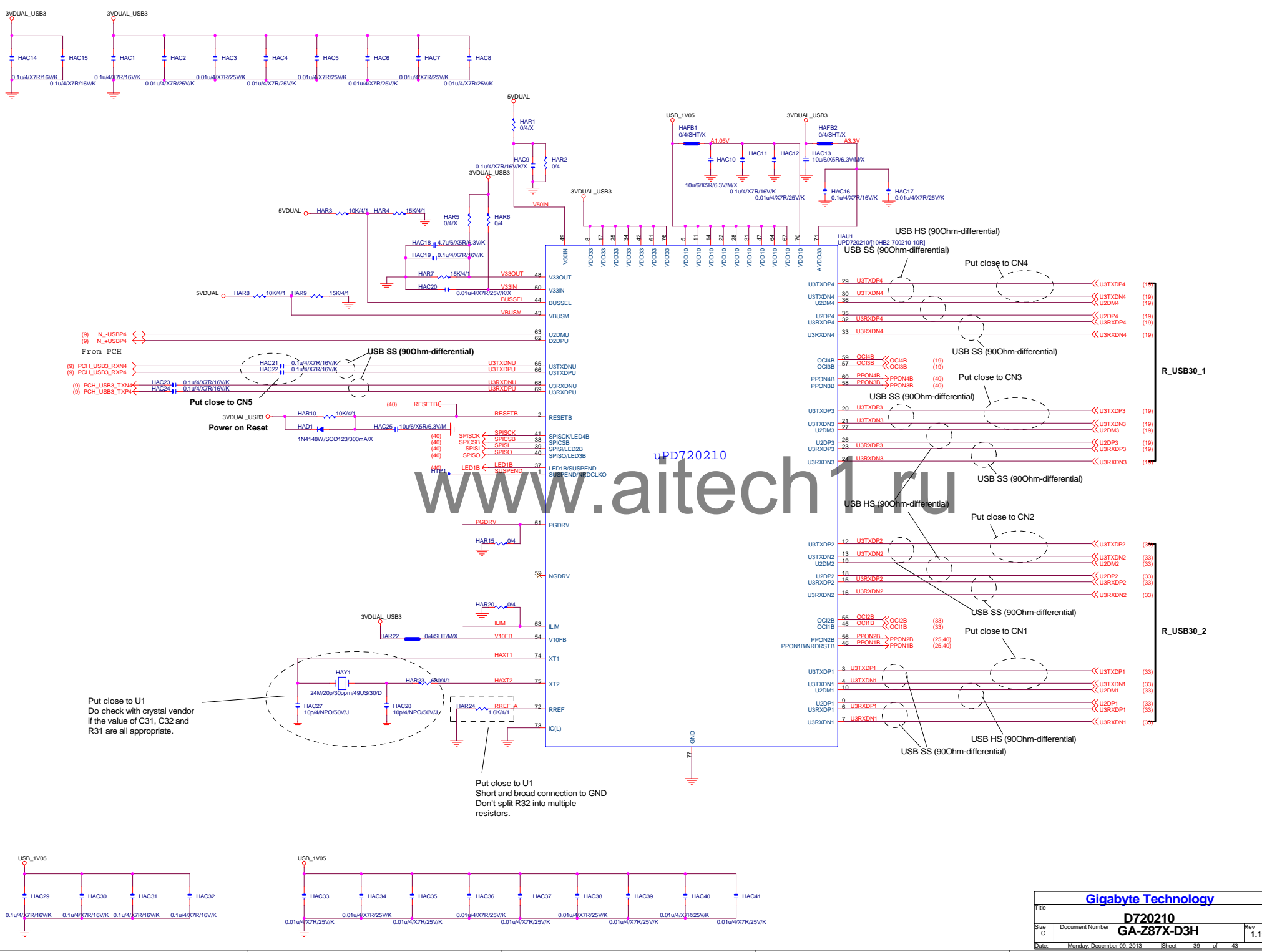
Link to PCH pin B046

Full up in PCH side

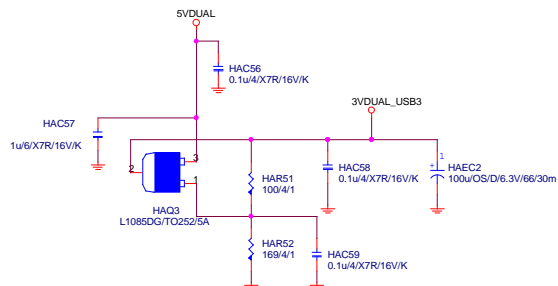


<b>GIGABYTE™</b>			
Title <b>DDR POWER IR3570</b>			
Size C	Document Number	Rev 1.11	
Date: Monday, December 09, 2013		Sheet	37 of 43

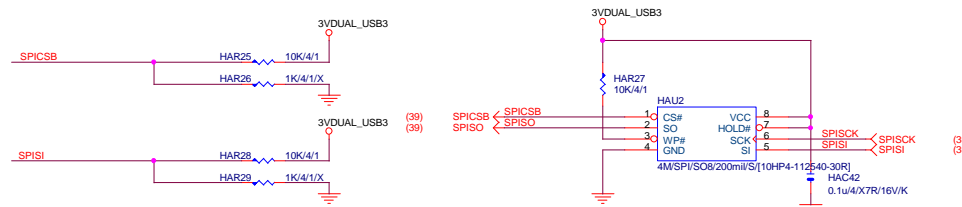
[illegible]



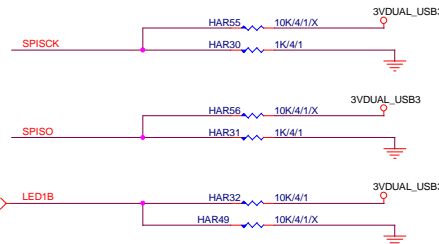
# 3VDUAL\_USB\_1



## # External SPI ROM ; SPI ROM attached mode

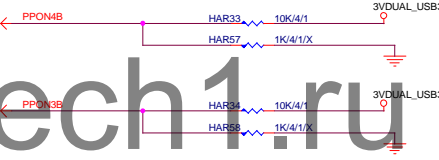


## # Battery Charging



## # Number of Ports ; 4Ports mode

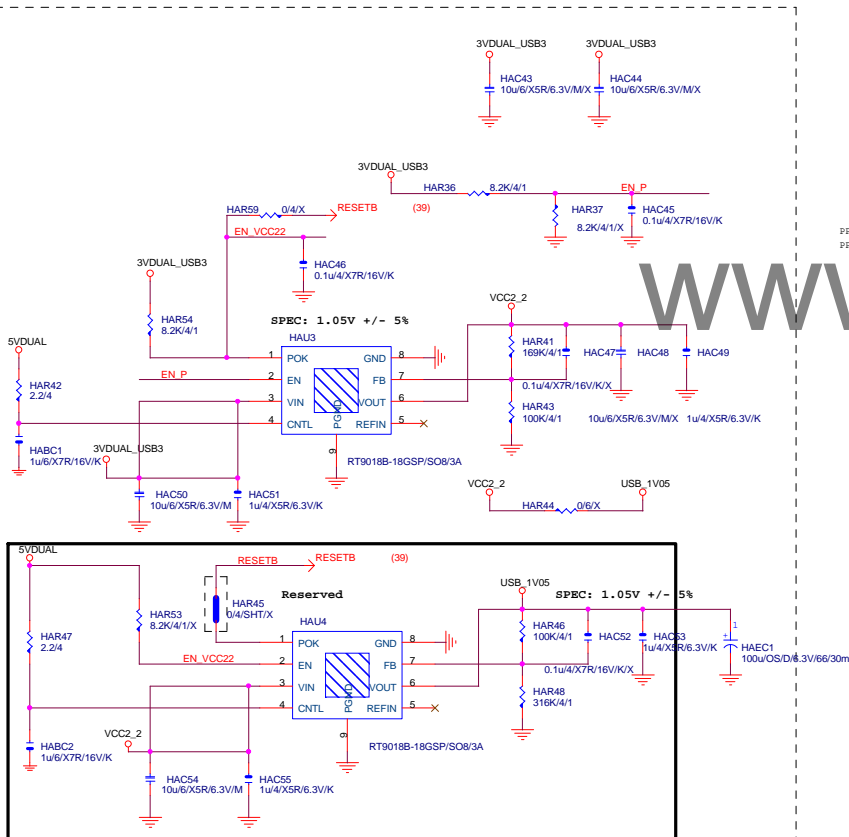
PPON3B / PPON4B : H / H ( 4 port )  
PPON3B / PPON4B : L / L ( 2 port )

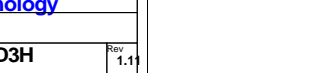
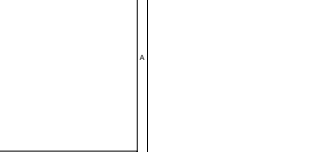
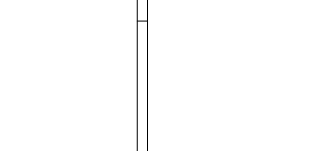
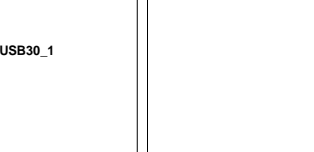
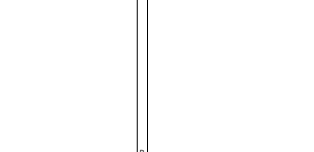
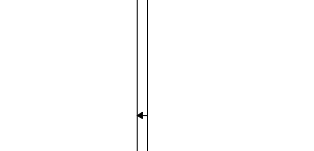
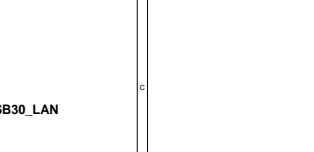
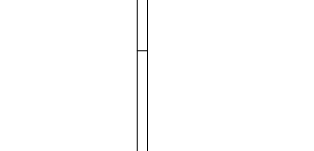
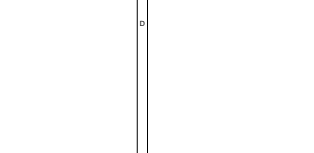
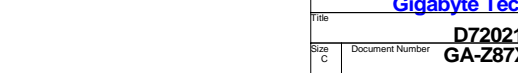
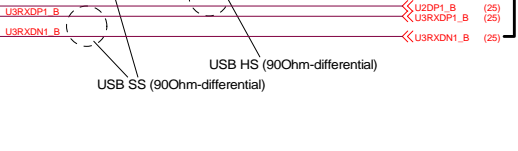
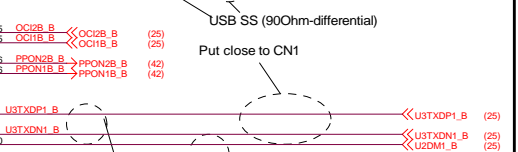
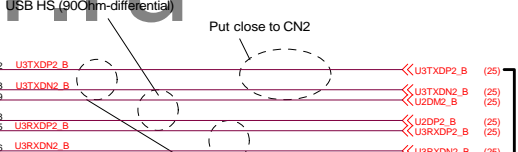
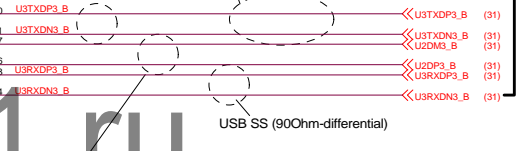
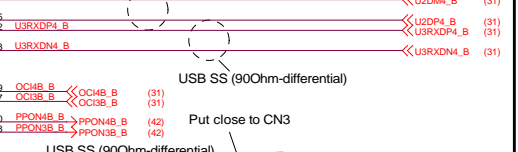
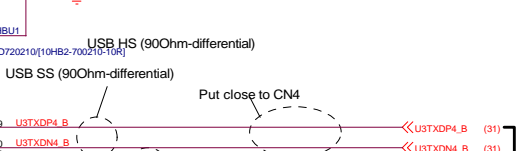
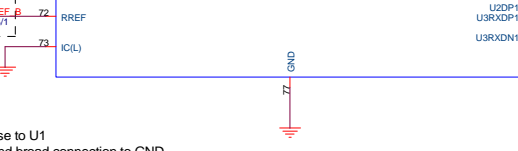
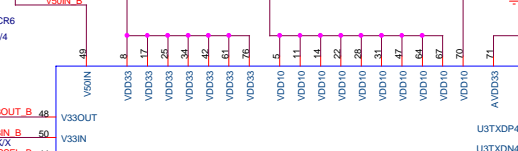
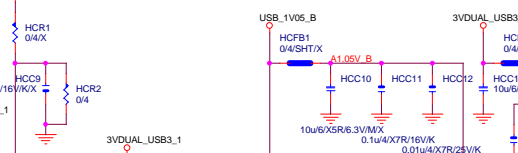
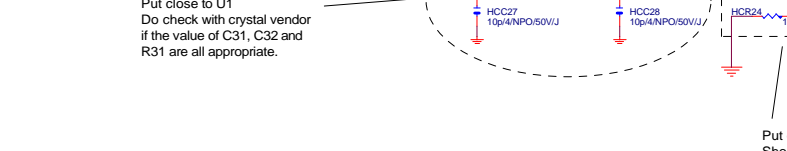
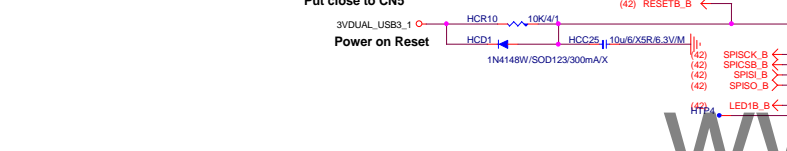
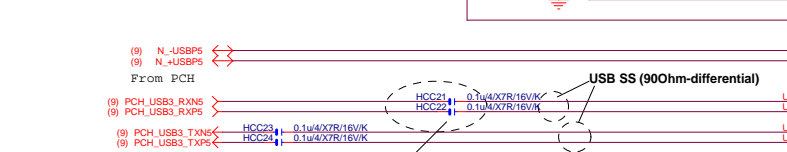
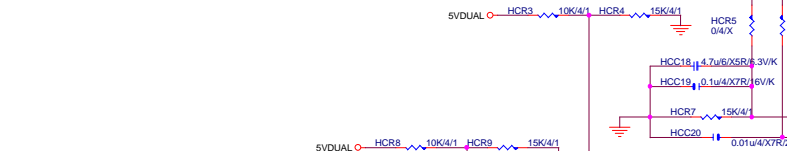
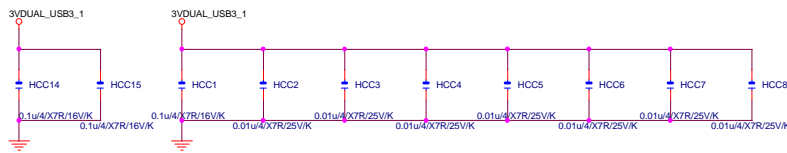


## #5 VBUS Power Control ; Individual mode



## # PPON1B Pin Function ; Port1 PPONB mode



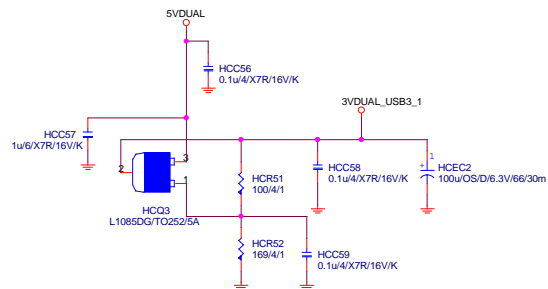


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Put close to U1  
Do check with crystal vendor  
if the value of C31, C32 and  
R31 are all appropriate.

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

Gigabyte Technology			
Title	D720210		
Size	Document Number	GA-Z87X-D3H	
C		Rev	1.11
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(41) PPON2B\_B

HCR35 10K/4/1/X 3VDUAL\_USB3\_1

HCR40 10K/4/1

ion ;

(41) PPN1B\_B ← PPN1B\_B

HCR38 10K/4/1

HCR39 10K/4/1/X

3VDUAL\_US

