

Model Name: GA-H87M-D3H

Revision 1.1

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 1,2
08	DDR III CHANNEL B 1,2
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	PCI EXPRESS*16 SLOT
15	PCI EXPRESS*4 SLOT
16	PCI SLOT1,2
17	ITE 8728 LPC IO
18	COM,KB_MS_USB,USB30_20
19	HWM,FAN CTRL,OV,-PROCHOT
20	DUAL BIOS
21	FP,FUSB,SPK,SATALED
22	Realtek ALC892-GR
23	REAR AUDIO JACK
24	REALTEK RTL8111F
25	DISCRETE POWER
26	ATX , CLOCK GEN, TPM
27	VCORE ISL95820_1

SHEET


TITLE

28	VCORE ISL95820_2
29	RT8120_DDR POWER
30	LPT, M3 POWER
31	DVI, HDMI
32	IT8892E

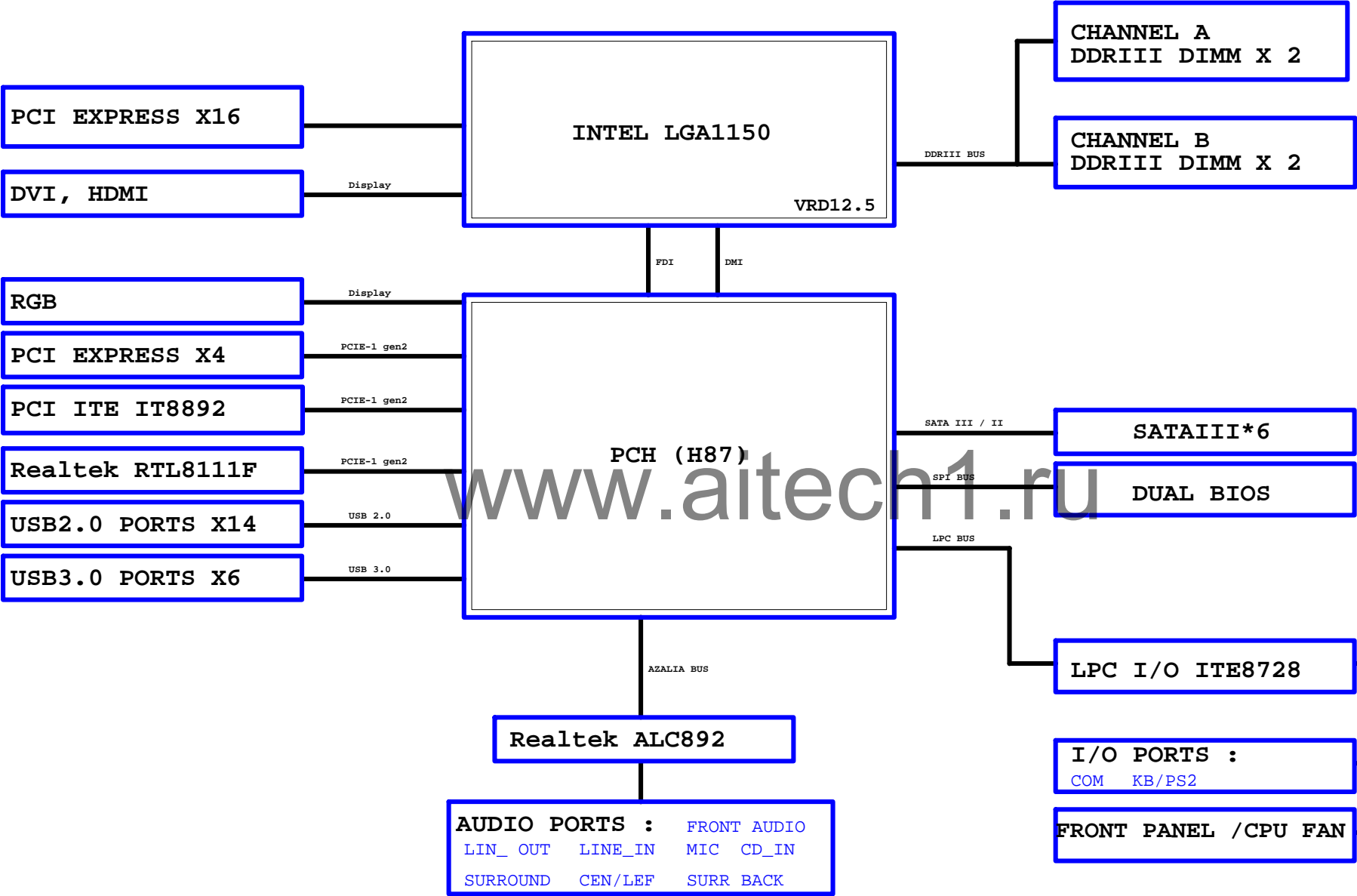
www.aitech1.ru

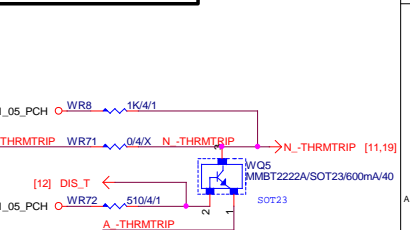
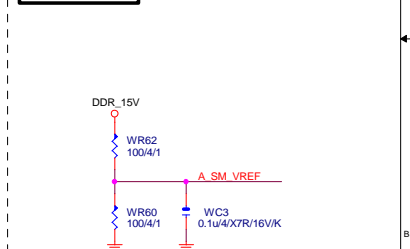
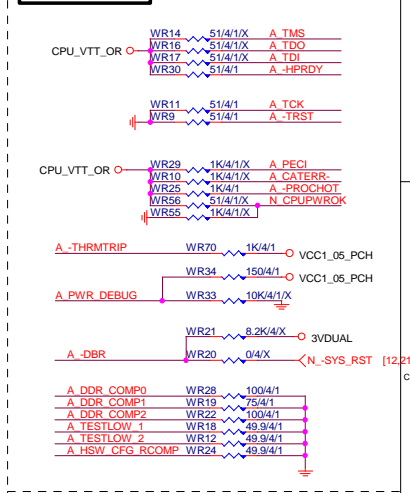
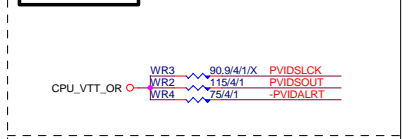
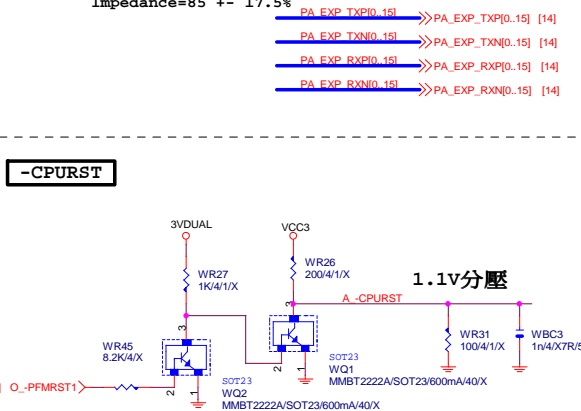
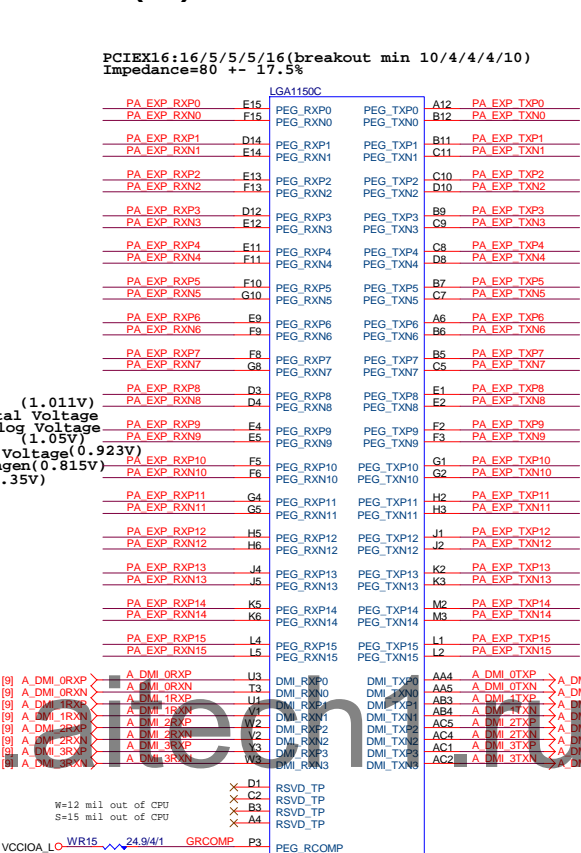
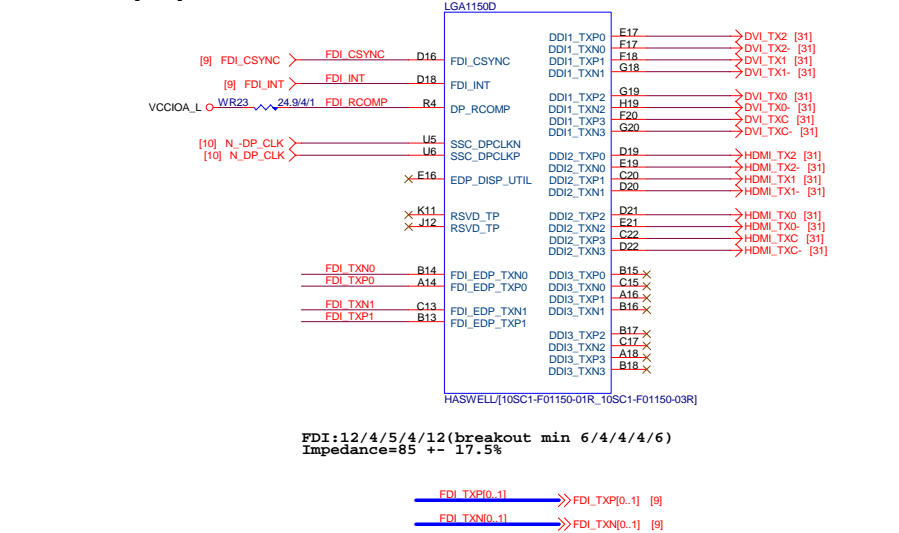
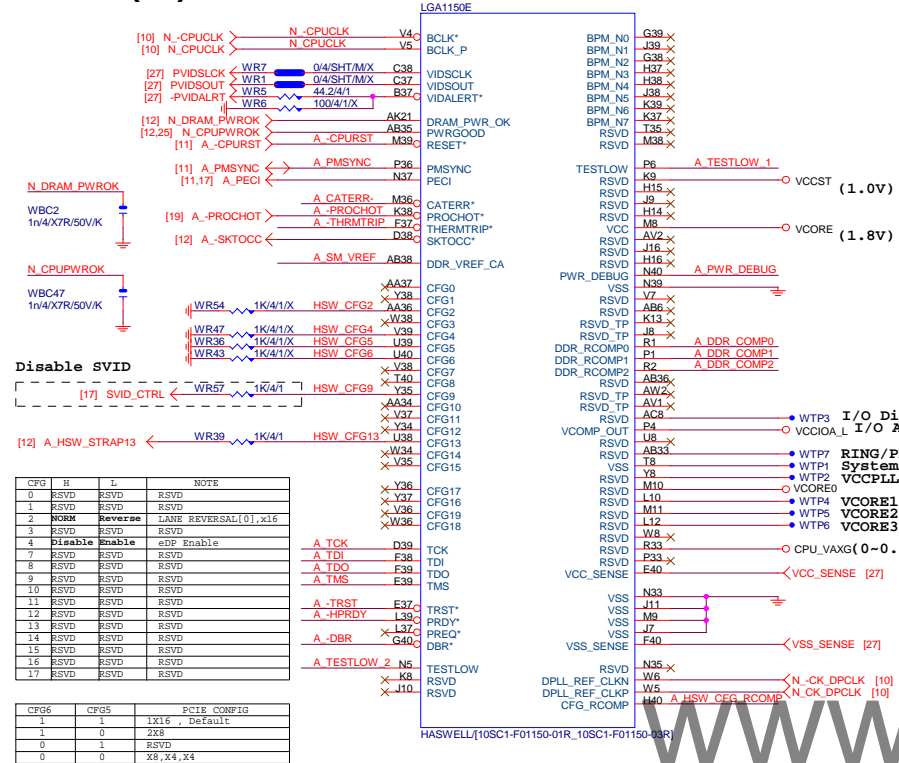
Gigabyte Technology

Title			Cover Sheet
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BOM & PCB MODIFY HISTORY			
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BLOCK DIAGRAM





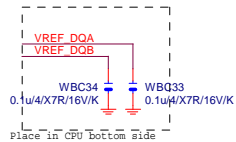
LGA1150 (A)

LGA1150A									
MAAA0	AU13	DDR0_MA0	DDR0_D00	AD38	MDA0				
MAAA1	AV16	DDR0_MA1	DDR0_D01	AD39	MDA1				
MAAA2	AU16	DDR0_MA2	DDR0_D02	AF38	MDA2				
MAAA3	AW17	DDR0_MA3	DDR0_D03	AF39	MDA3				
MAAA4	AU17	DDR0_MA4	DDR0_D04	AD37	MDA4				
MAAA5	AW18	DDR0_MA5	DDR0_D05	AD40	MDA5				
MAAA6	AV17	DDR0_MA6	DDR0_D06	AE37	MDA6				
MAAA7	AT18	DDR0_MA7	DDR0_D07	AF40	MDA7				
MAAA8	AU18	DDR0_MA8	DDR0_D08	AH40	MDA9				
MAAA9	AT19	DDR0_MA9	DDR0_D09	AH39	MDA10				
MAAA10	AW11	DDR0_MA10	DDR0_D10	AK38	MDA10				
MAAA11	AV19	DDR0_MA11	DDR0_D11	AK39	MDA11				
MAAA12	AU19	DDR0_MA12	DDR0_D12	AH37	MDA12				
MAAA13	AY10	DDR0_MA13	DDR0_D13	AH38	MDA13				
MAAA14	AT20	DDR0_MA14	DDR0_D14	AK37	MDA14				
MAAA15	AU21	DDR0_MA15	DDR0_D15	AK40	MDA15				
MODT_A0	AW10	DDR0_ODT0	DDR0_D16	AM40	MDA17				
MODT_A1	AY8	DDR0_ODT1	DDR0_D17	AM39	MDA21				
MODT_A2	AW9	DDR0_ODT2	DDR0_D18	AP38	MDA18				
MODT_A3	AU8	DDR0_ODT3	DDR0_D19	AP39	MDA19				
			DDR0_D20	AM37	MDA20				
			DDR0_D21	AM38	MDA16				
			DDR0_D22	AP37	MDA22				
			DDR0_D23	AP40	MDA23				
			DDR0_D24	AW37	MDA28				
			DDR0_D25	AU35	MDA26				
			DDR0_D26	AW35	MDA27				
			DDR0_D27	AT37	MDA28				
			DDR0_D28	AU37	MDA24				
			DDR0_D29	AT35	MDA30				
			DDR0_D30	AW35	MDA31				
			DDR0_D31	AY6	MDA33				
			DDR0_D32	AU6	MDA37				
			DDR0_D33	AW4	MDA34				
			DDR0_D34	AW6	MDA35				
			DDR0_D35	AW6	MDA36				
			DDR0_D36	AW4	MDA38				
			DDR0_D37	AW4	MDA39				
			DDR0_D38	AR1	MDA41				
			DDR0_D39	AR4	MDA45				
			DDR0_D40	AN3	MDA42				
			DDR0_D41	AN4	MDA43				
			DDR0_D42	AR2	MDA44				
			DDR0_D43	AR3	MDA40				
			DDR0_D44	AN2	MDA46				
			DDR0_D45	AN1	MDA47				
			DDR0_D46	AL1	MDA49				
			DDR0_D47	AL4	MDA53				
			DDR0_D48	AL4	MDA50				
			DDR0_D49	AJ4	MDA51				
			DDR0_D50	AL2	MDA52				
			DDR0_D51	AJ2	MDA48				
			DDR0_D52	AJ2	MDA54				
			DDR0_D53	AJ1	MDA55				
			DDR0_D54	AG1	MDA57				
			DDR0_D55	AG4	MDA61				
			DDR0_D56	AE3	MDA58				
			DDR0_D57	AE4	MDA59				
			DDR0_D58	AG2	MDA60				
			DDR0_D59	AG3	MDA56				
			DDR0_D60	AE2	MDA62				
			DDR0_D61	AE1	MDA63				
			DDR0_D62	AE39	DQSA0				
			DDR0_D63	AJ39	DQSA1				
			DDR0_D64	AN39	DQSA2				
			DDR0_D65	AV36	DQSA3				
			DDR0_D66	AV5	DQSA4				
			DDR0_D67	AP3	DQSA5				
			DDR0_D68	AK3	DQSA6				
			DDR0_D69	AF3	DQSA7				
			DDR0_D70	AV32	DQSA8				
			DDR0_D71	AE38	DQSA9				
			DDR0_D72	AJ38	DQSA1				
			DDR0_D73	AN38	DQSA2				
			DDR0_D74	AJ36	DQSA3				
			DDR0_D75	AW5	DQSA4				
			DDR0_D76	AP2	DQSA5				
			DDR0_D77	AK2	DQSA6				
			DDR0_D78	AF2	DQSA7				
			DDR0_D79	AJ32	DQSA8				
			DDR0_D80						

HASWELL[10SC1-F01150-01R_10SC1-F01150-03R]

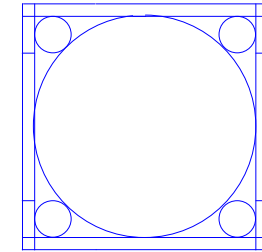
LGA1150 (B)

LGA1150B									
MAAB0	AL19	DDR1_MA0	AE34	MDB0					
MAAB1	AK23	DDR1_MA1	AE35	MDB1					
MAAB2	AM22	DDR1_MA2	AG35	MDB2					
MAAB3	AM23	DDR1_MA3	AH35	MDB3					
MAAB4	AP23	DDR1_MA4	AD34	MDB4					
MAAB5	AL23	DDR1_MA5	AD35	MDB5					
MAAB6	AY24	DDR1_MA6	AG34	MDB6					
MAAB7	AV25	DDR1_MA7	AH34	MDB7					
MAAB8	AU26	DDR1_MA8	AL34	MDB8					
MAAB9	AW25	DDR1_MA9	AL35	MDB9					
MAAB10	AP18	DDR1_MA10	AL31	MDB10					
MAAB11	AY25	DDR1_MA11	AL31	MDB11					
MAAB12	AV26	DDR1_MA12	AK34	MDB12					
MAAB13	AR15	DDR1_MA13	AK35	MDB13					
MAAB14	AV27	DDR1_MA14	AK32	MDB14					
MAAB15	AY28	DDR1_MA15	AL32	MDB15					
MODT_B0	AM17	DDR1_ODT0	AP34	MDB21					
MODT_B1	AL16	DDR1_ODT1	AN31	MDB19					
MODT_B2	AM16	DDR1_ODT2	AP31	MDB23					
MODT_B3	AK15	DDR1_ODT3	AP35	MDB20					
			AP35	MDB16					
			AN32	MDB18					
			AP32	MDB22					
			AM29	MDB25					
			AM28	MDB28					
			AR29	MDB27					
			AR28	MDB30					
			AL28	MDB24					
			AL28	MDB29					
			AP29	MDB26					
			AP28	MDB31					
			AP12	MDB32					
			AL12	MDB35					
			AR13	MDB36					
			AP13	MDB37					
			AM13	MDB38					
			AM12	MDB39					
			AR9	MDB45					
			AP9	MDB41					
			AR6	MDB47					
			AP6	MDB43					
			AR10	MDB44					
			AP10	MDB40					
			AR7	MDB46					
			AP7	MDB42					
			AM9	MDB52					
			AL9	MDB53					
			AL6	MDB50					
			AL7	MDB55					
			AM10	MDB48					
			AL10	MDB49					
			AM6	MDB54					
			AM7	MDB51					
			AH6	MDB61					
			AH7	MDB60					
			AE6	MDB59					
			AE7	MDB63					
			AJ6	MDB56					
			AJ7	MDB57					
			AF6	MDB58					
			AF7	MDB62					
			AF35	DQSB0					
			AL33	DQSB1					
			AN28	DQSB2					
			AN12	DQSB4					
			AP8	DQSB5					
			AL8	DQSB6					
			AG7	DQSB7					
			AN25	DQSB8					
			AK33	DQSB1					
			AN33	DQSB2					
			AN29	DQSB3					
			AN13	DQSB4					
			AR8	DQSB5					
			AM8	DQSB6					
			AG6	DQSB7					
			AN26	DQSB8					



HASWELL[10SC1-F01150-01R_10SC1-F01150-03R]

LGA1150 (CR)

CR
CPU RETAINTION/X

LGA1150_P



ILM_BP/1156/CSP/ILM_BP/1156/CSP/[12KRC-0F0001-52R_12KRC-0F0001-51R]

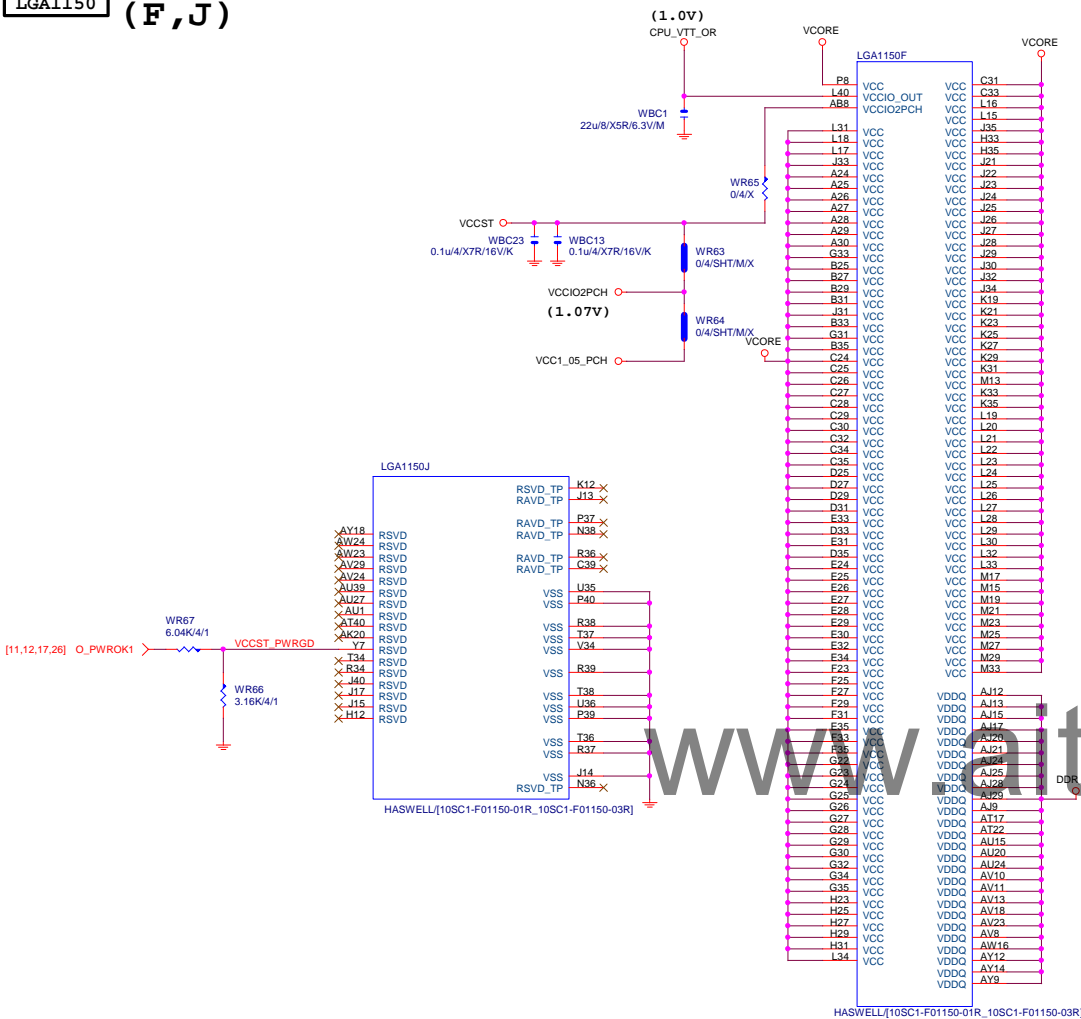
DDR BUS

[7] MODT_A[0..3]	MODT_A0..3
[8] MODT_B[0..3]	MODT_B0..3
[7] MDA[0..63]	MDA0..63
[8] MDB[0..63]	MDB0..63
[7] DQSA[0..7]	DQSA0..7
[7] DQSA[0..7]	DQSA0..7
[7] MAA[0..15]	MAA0..15
[8] MAB[0..15]	MAB0..15
[8] DQSB[0..7]	DQSB0..7
[8] DQSB[0..7]	DQSB0..7

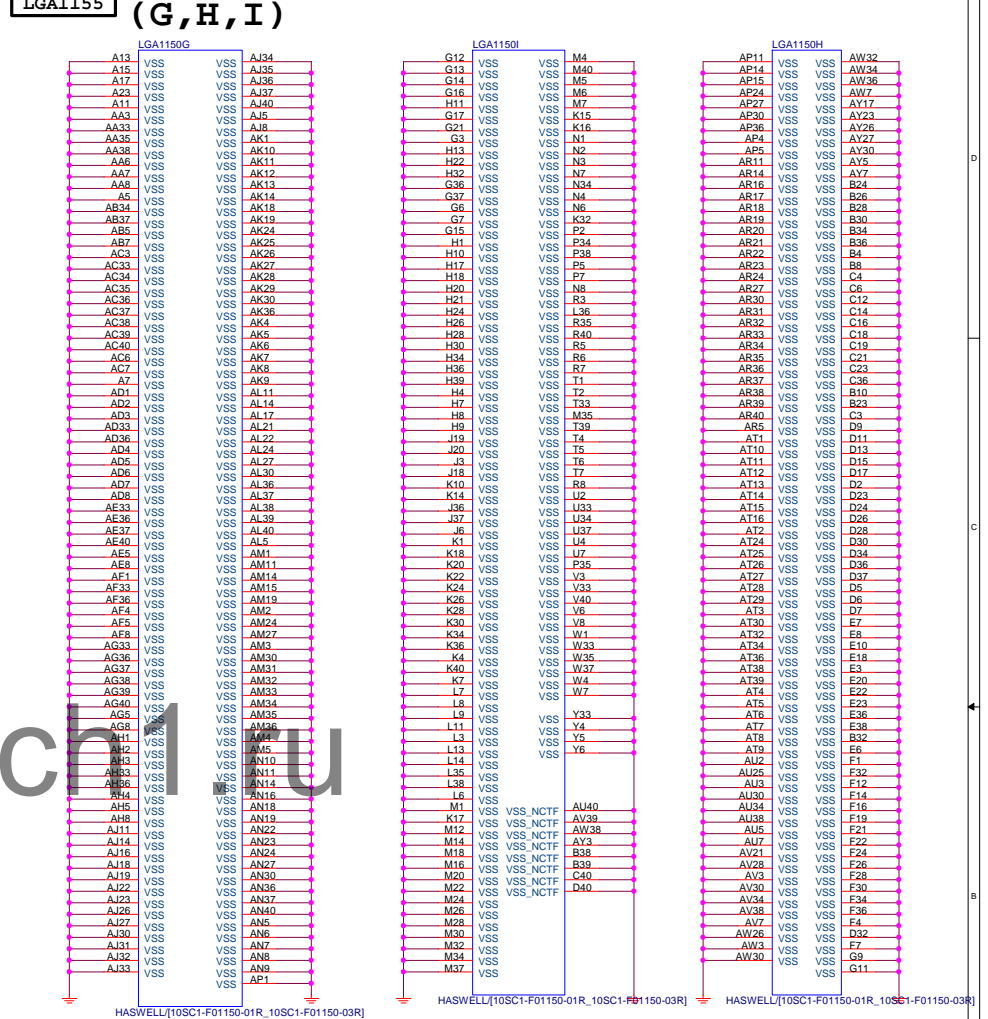
Gigabyte Technology

Title			
CPU LGA1150-B			
Size	Document Number	Rev	
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LGA1150 (F, J)

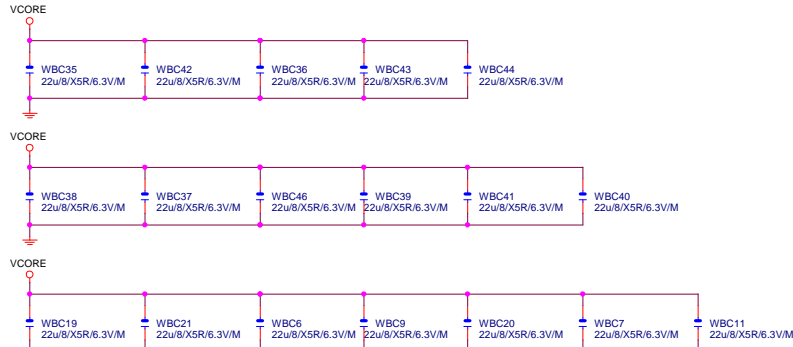


LGA1155 (G,H,I)



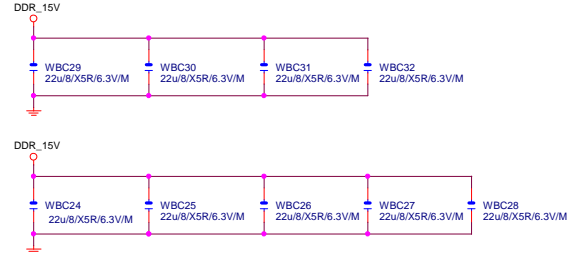
VCore CAP

(X18)



DDR CAP

(x9)

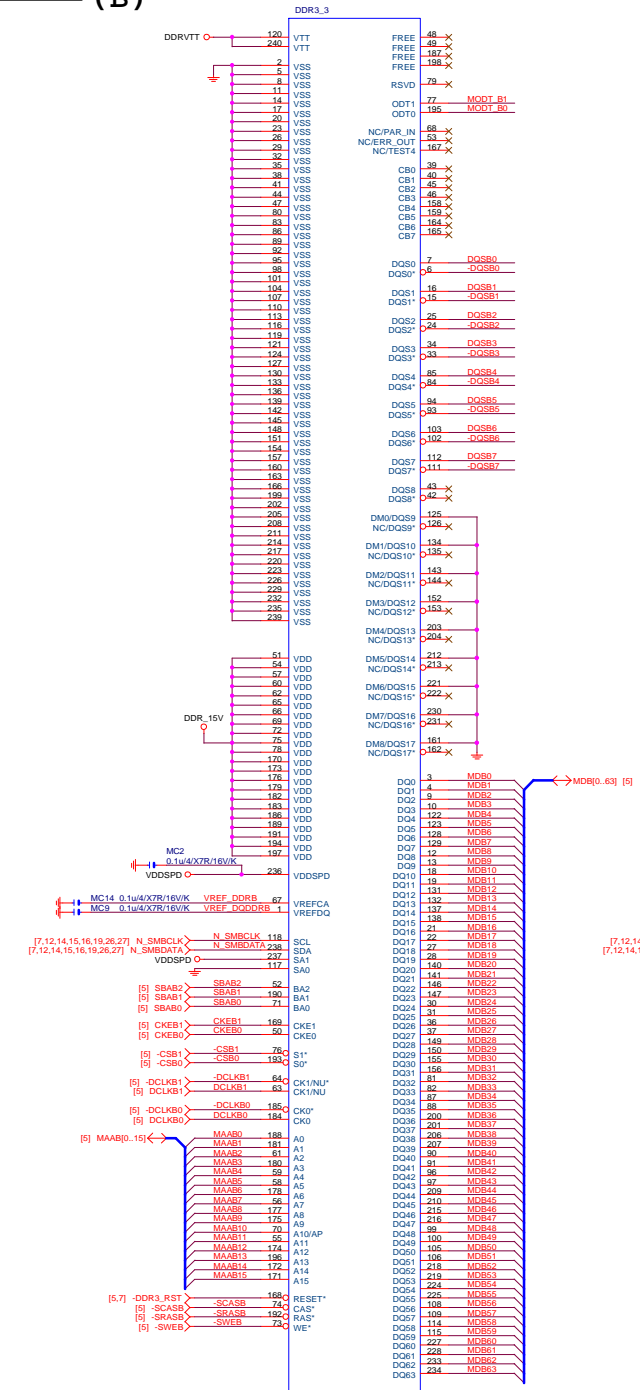


Gigabyte Technology

Title			
CPU LGA1150-C			
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DDR3

(B)



PCH

(B)

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

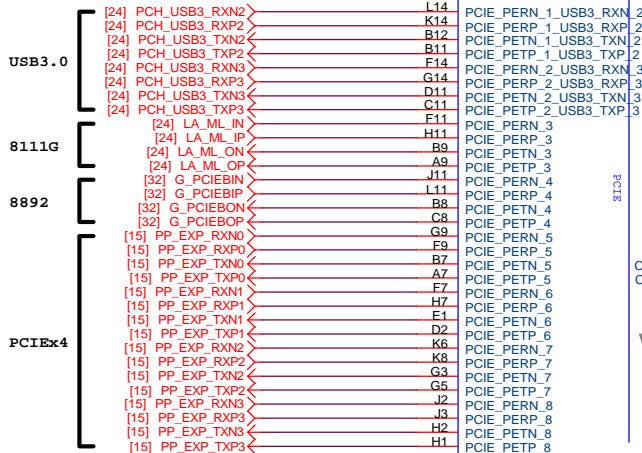
USB2.0 : 12/4.5/7.5/4.5/12 (breakout min 8/4/4/4/8)
Impedance=90 +- 17.5%

B85: Port 6/7 N/A
H81: Port 6/7/12/13 N/A

W=4 mil out of PCH
S=15 mil out of PCH

VCC1_5_PCH

[26] CK_SRCCLK_PCH CK_SRCCLK_PCH G22
[26] CK_SRCCLK_PCH CK_SRCCLK_PCH F22

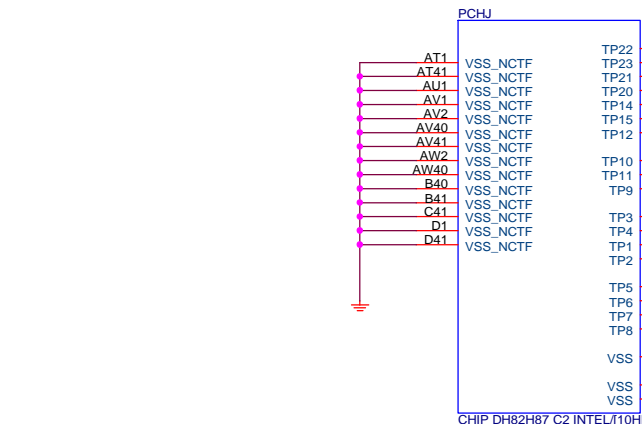


放靠近 Device & PCI-E Slot
Impedance=80 +- 17.5%

PCIE1:16/5/5/5/16 (breakout min 8/4/4/4/8)

PCH

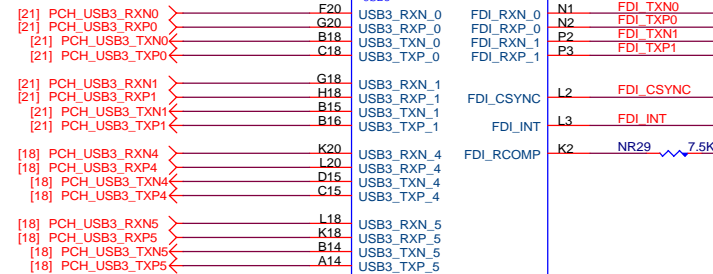
(J)



CHIP DH82H87 C2 INTEL(10HB1-030H87-20R)

PCH

(F)



VCC3

CHIP DH82H87 C2 INTEL(10HB1-030H87-20R)

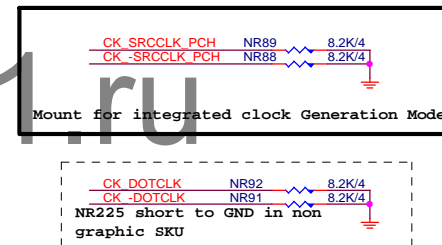
FDI_TXP0_11 >> FDI_TXP0[0..1] [4]

FDI_TXN0_11 >> FDI_TXN0[0..1] [4]

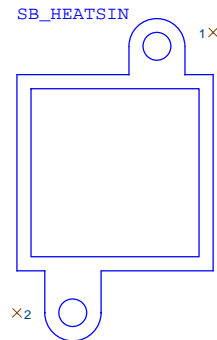
USB3.0:20/5/7/5/20 (breakout min 8/4/4/4/8) ; ONLY 3 VIAS

Impedance=85 +- 17.5%
Back Panel < 10000 MILS
Front Panel < 6000 MILS

PCH CLK PD



PCH H/S



PCH_HS
PCH_HS[12SP2-S04209-01R_12SP2-S04209-02R_12SP2-S04209-03R]

8 Series PCH Heatsink

USB TABLE

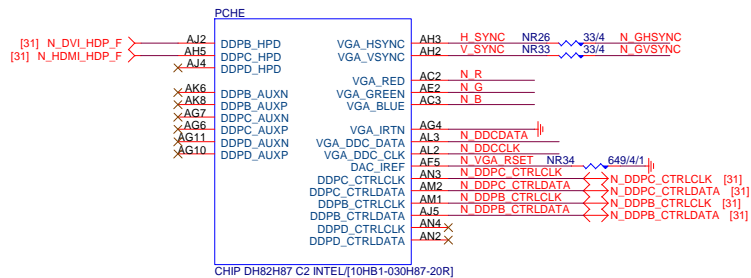
OC[3:0]# for Device 29 (ports 0-7)
OC[7:4]# for Device 26 (ports 8-13)

USB OC#	Configure
OC0#	F_USB30
OC1#	R_USB30
OC2#	USB30_LAN
OC3#	F_USB3
OC4#	F_USB2
OC5#	KB_MS_USB
OC6#	F_USB1
OC7#	Not Use

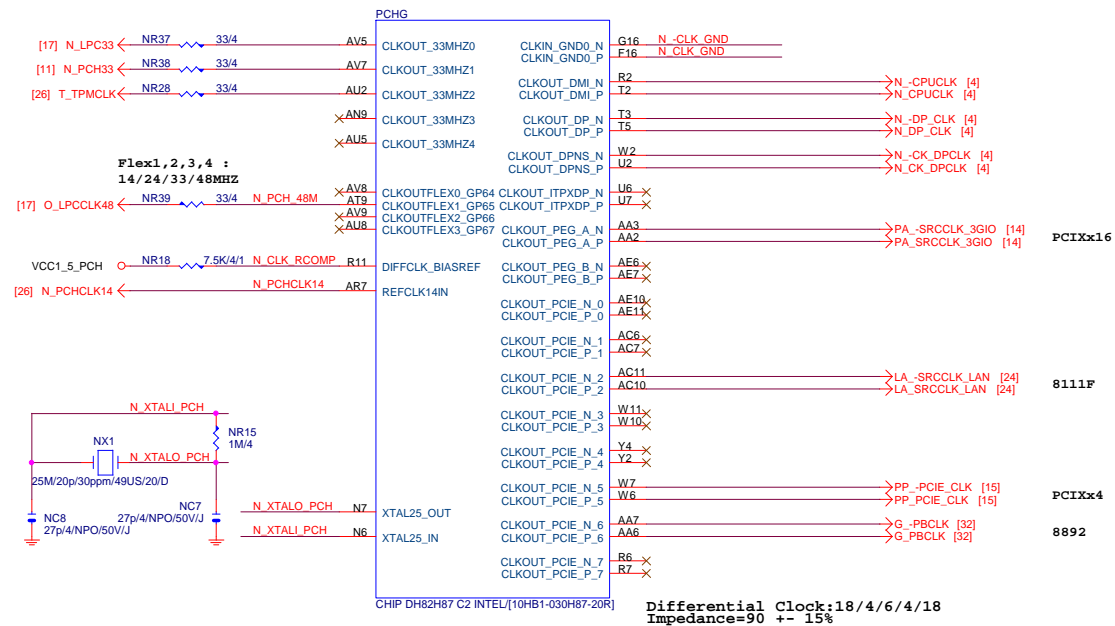
Gigabyte Technology

Title			PCH FDI,DMI,USB,PCIE,NVRAM	
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Custom				
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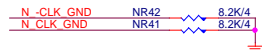
PCH (E)



PCH (G)



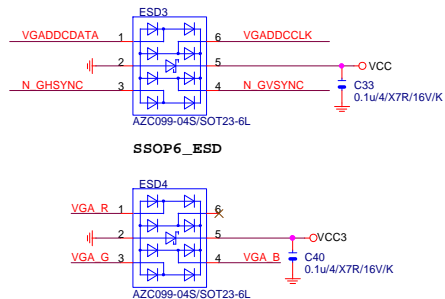
PCH CLK PD



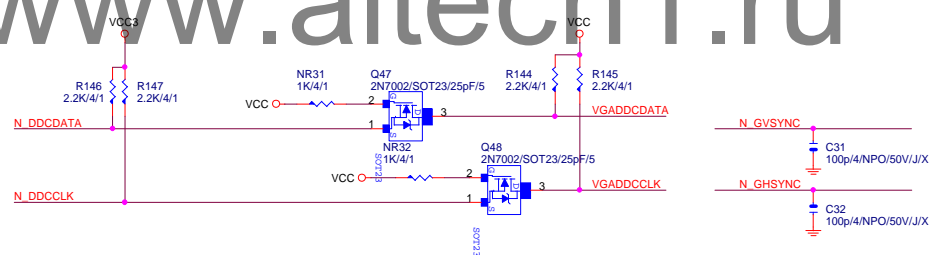
Mount for integrated clock Generation
Mode



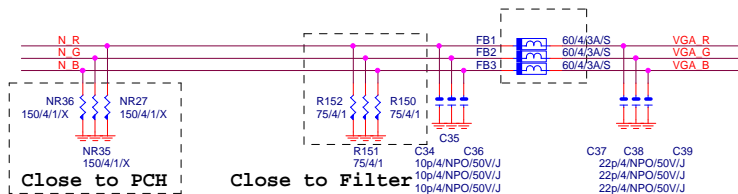
VGA ESD



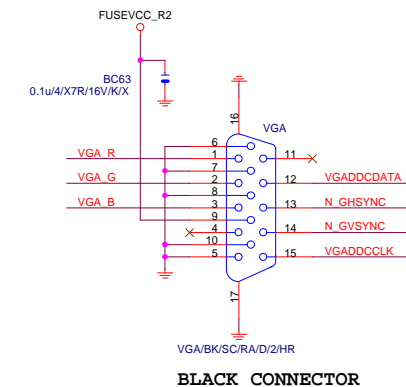
VGA DDC



VGA DDC



VGA CONNECTOR



Gigabyte Technology

PCH DISPLAY ,CLK BUFFER

GA-H87M-D3H

Size	
Custom	

Document Number	
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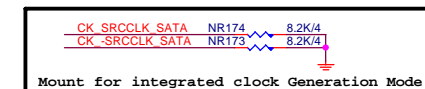
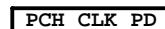
Rev	1.1
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Date: Monday, July 01, 2013

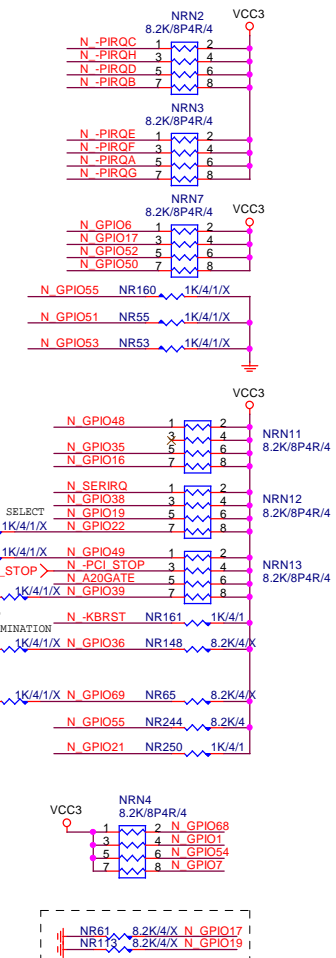
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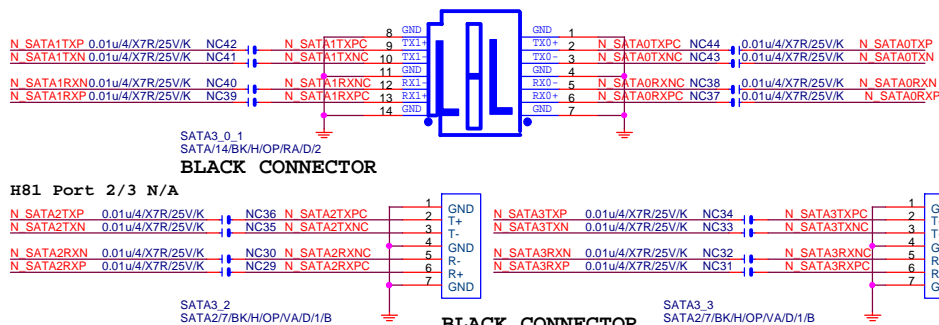
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Impedance=90 +- 17.5%
SATA2 : 15/7.5/4.5/7.5/15 (breakout min 8/4/4/4/8)
Impedance=90 +- 17.5%



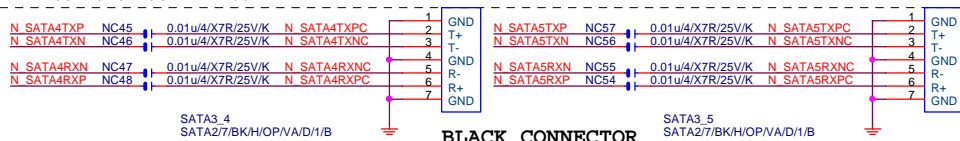
PCH	PU/PD
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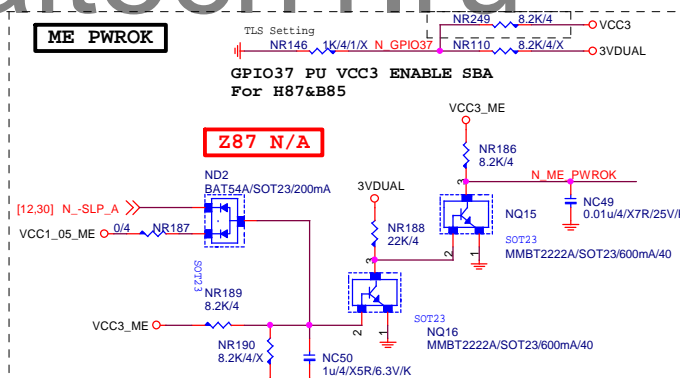
SATA CONNECTOR



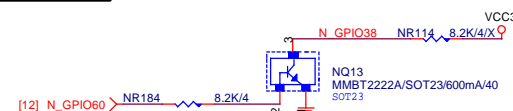
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** Z87/H87 Port 4&5 SATA3.0
** B85 Port 4&5 SATA2.0
```



ME PWROK



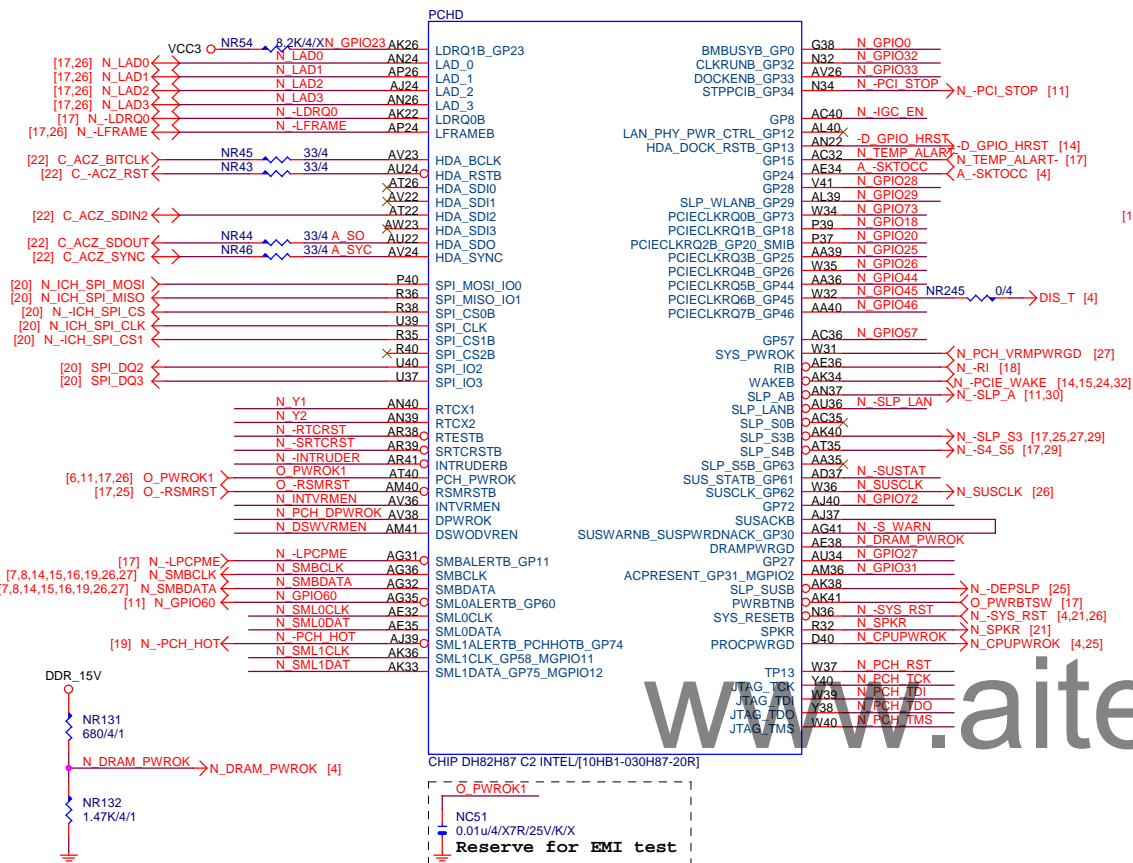
GPIO38 Ctrl



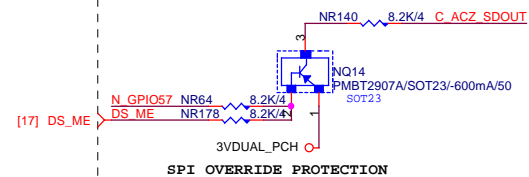
Gigabyte Technology

Title			
PCH HOST , SATA, PCI			
Size	Document Number	Rev	
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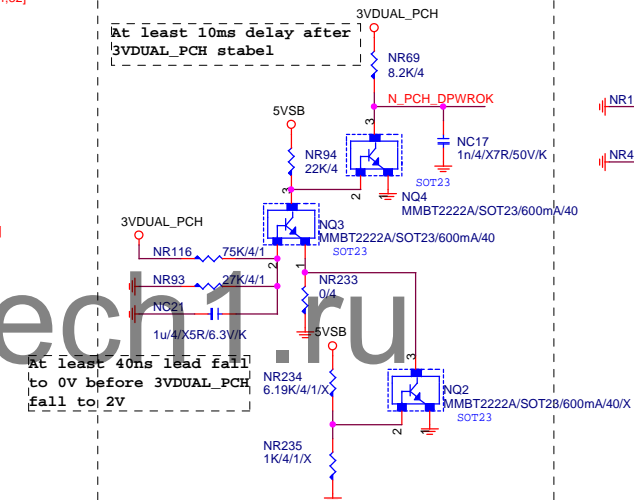
(D)



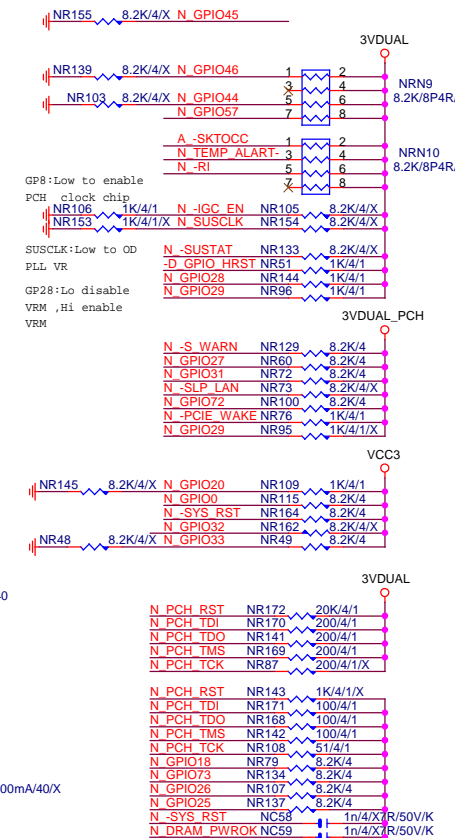
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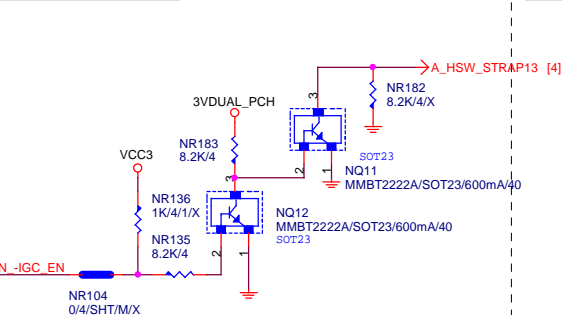
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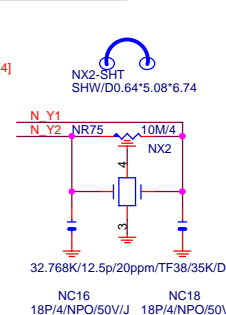
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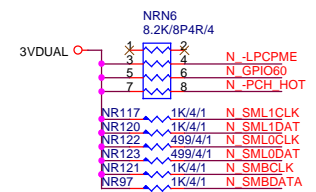
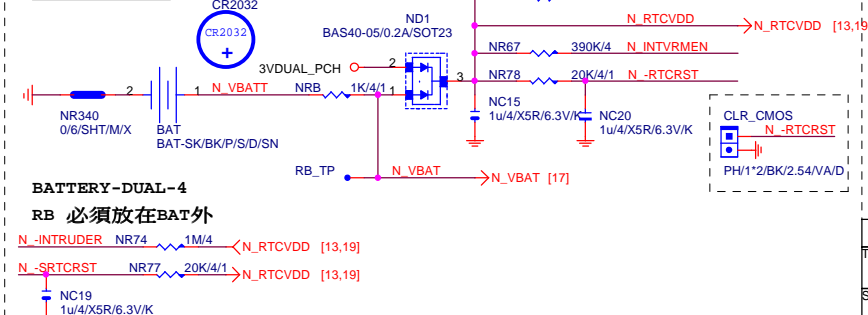
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32.768KHZ



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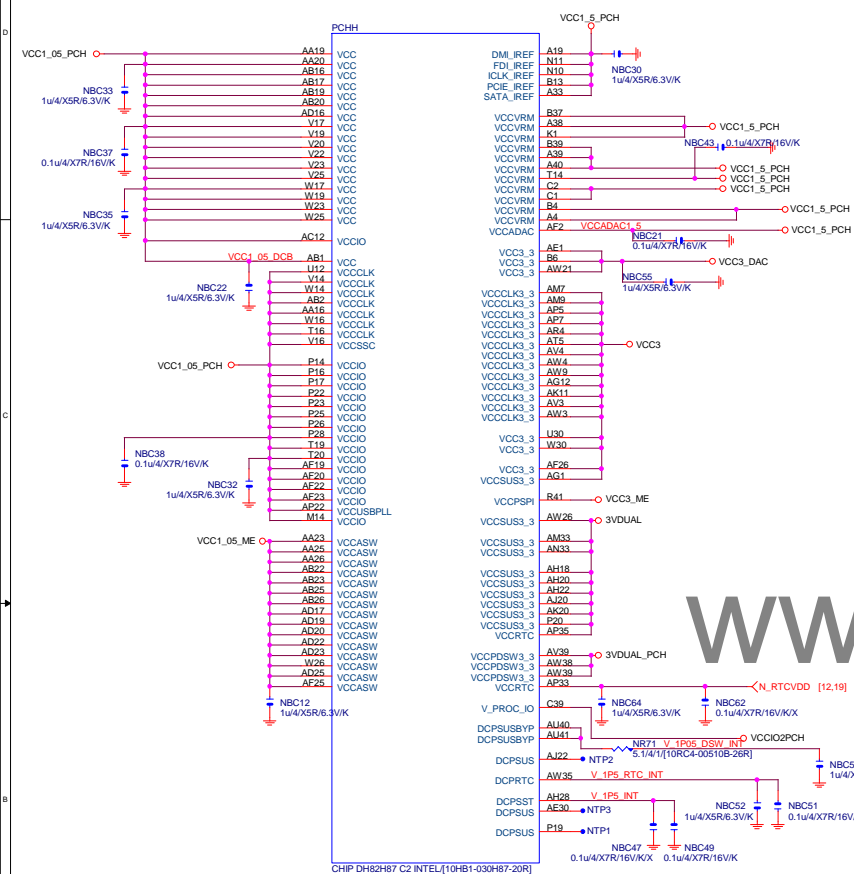
Gigabyte Technology

PCH GPIO , CTRL , AUDIO

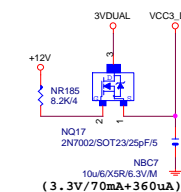
GA-H87M-D3H

1.1

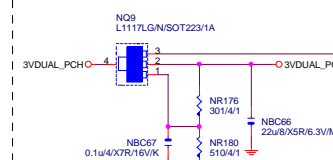
PCH (H)



VCC3_DAC

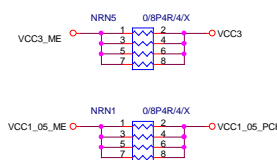


3VDUAL_PCH



SHT PWR

H87 N/A



CAP

(3.3V) (X6)

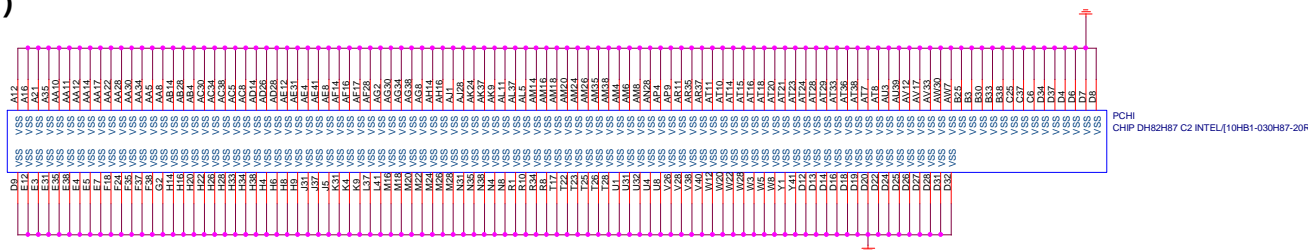
(1.05V) (x5)

(1.05V)(x6)

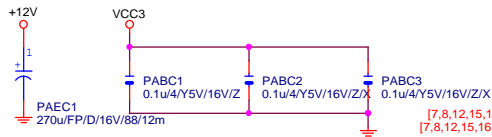
$$(1.05V)(x_2) - (3.3V)(x_2)$$

(1.05V) (x10)

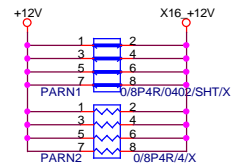
PCH (I)



PCIEX16 CAP



PCIEX16 PROTECT SHT

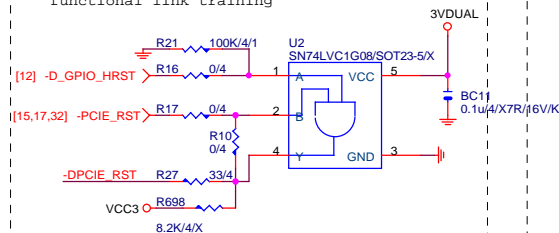


PCIEX16 AC CAP

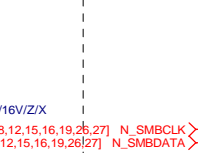
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PA EXP TXN0	PAC4	0.22u4/X5R/6.3V/K	PA EXP TXN0 C
PA EXP TXP1	PAC6	0.22u4/X5R/6.3V/K	PA EXP TXP1 C
PA EXP TXN1	PAC7	0.22u4/X5R/6.3V/K	PA EXP TXN1 C
PA EXP TXP2	PAC8	0.22u4/X5R/6.3V/K	PA EXP TXP2 C
PA EXP TXN2	PAC9	0.22u4/X5R/6.3V/K	PA EXP TXN2 C
PA EXP TXP3	PAC10	0.22u4/X5R/6.3V/K	PA EXP TXP3 C
PA EXP TXN3	PAC11	0.22u4/X5R/6.3V/K	PA EXP TXN3 C
PA EXP TXP4	PAC12	0.22u4/X5R/6.3V/K	PA EXP TXP4 C
PA EXP TXN4	PAC13	0.22u4/X5R/6.3V/K	PA EXP TXN4 C
PA EXP TXP5	PAC14	0.22u4/X5R/6.3V/K	PA EXP TXP5 C
PA EXP TXN5	PAC15	0.22u4/X5R/6.3V/K	PA EXP TXN5 C
PA EXP TXP6	PAC16	0.22u4/X5R/6.3V/K	PA EXP TXP6 C
PA EXP TXN6	PAC17	0.22u4/X5R/6.3V/K	PA EXP TXN6 C
PA EXP TXP7	PAC18	0.22u4/X5R/6.3V/K	PA EXP TXP7 C
PA EXP TXN7	PAC19	0.22u4/X5R/6.3V/K	PA EXP TXN7 C
PA EXP TXP8	PAC20	0.22u4/X5R/6.3V/K	PA EXP TXP8 C
PA EXP TXN8	PAC21	0.22u4/X5R/6.3V/K	PA EXP TXN8 C
PA EXP TXP9	PAC22	0.22u4/X5R/6.3V/K	PA EXP TXP9 C
PA EXP TXN9	PAC23	0.22u4/X5R/6.3V/K	PA EXP TXN9 C
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PA EXP TXP11	PAC26	0.22u4/X5R/6.3V/K	PA EXP TXP11 C
PA EXP TXN11	PAC27	0.22u4/X5R/6.3V/K	PA EXP TXN11 C
PA EXP TXP12	PAC28	0.22u4/X5R/6.3V/K	PA EXP TXP12 C
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PA EXP TXP13	PAC30	0.22u4/X5R/6.3V/K	PA EXP TXP13 C
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PA EXP TXP14	PAC32	0.22u4/X5R/6.3V/K	PA EXP TXP14 C
PA EXP TXN14	PAC33	0.22u4/X5R/6.3V/K	PA EXP TXN14 C
PA EXP TXP15	PAC34	0.22u4/X5R/6.3V/K	PA EXP TXP15 C
PA EXP TXN15	PAC35	0.22u4/X5R/6.3V/K	PA EXP TXN15 C

PA_EXP_RXP0[0..15] >>> PA_EXP_RXP0[0..15] [4]
PA_EXP_RXN0[0..15] >>> PA_EXP_RXN0[0..15] [4]
PA_EXP_TXP0[0..15] >>> PA_EXP_TXP0[0..15] [4]
PA_EXP_TXN0[0..15] >>> PA_EXP_TXN0[0..15] [4]

The auxiliary reset circuit is only required for PCIe Gen3 margining and functional link training



PCIEX16 SLOT



PCIEX16 PROTECT SHT

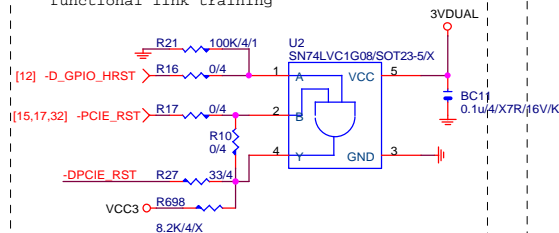


PCIEX16 AC CAP

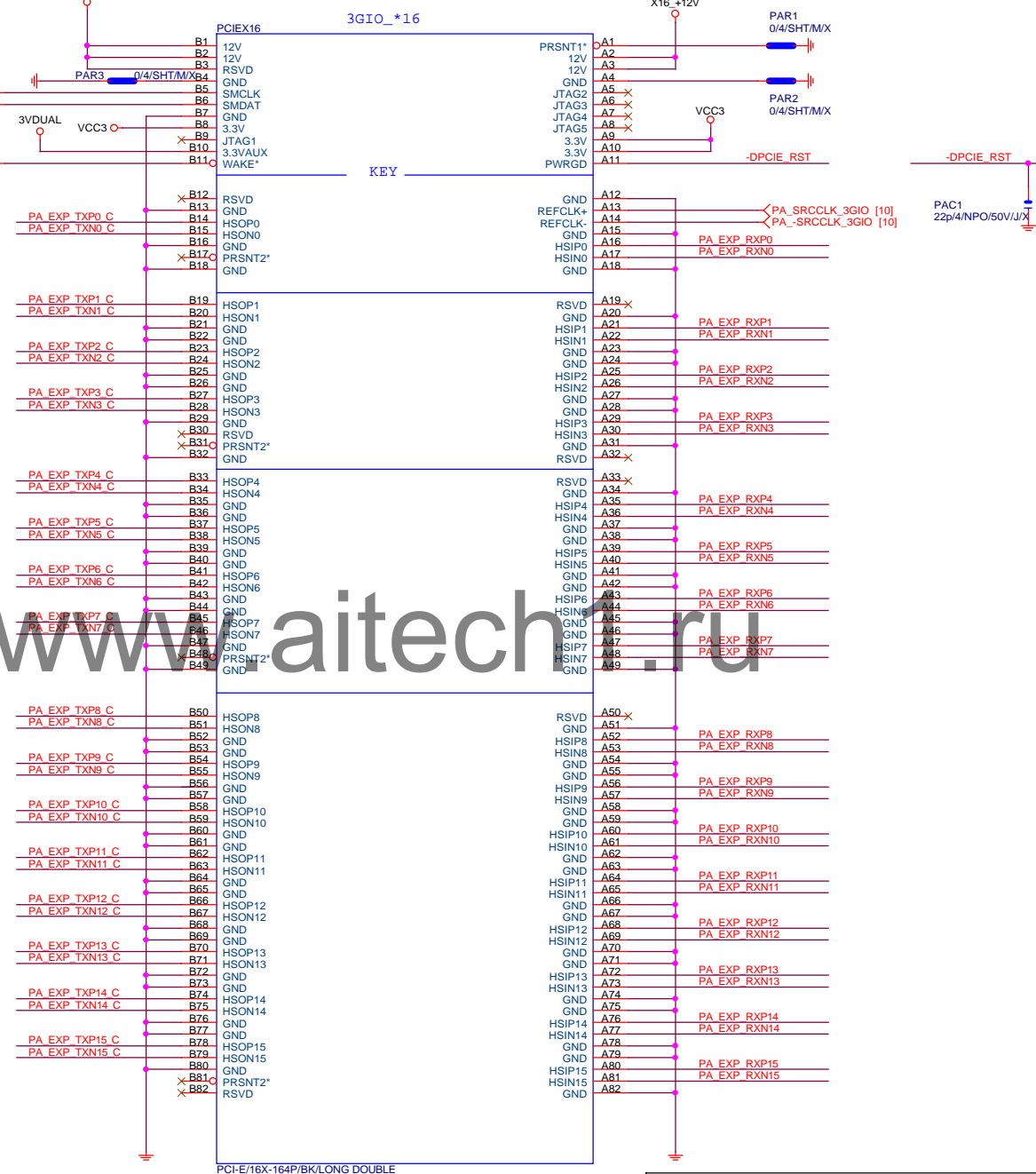
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PA EXP TXN0	PAC4	0.22u4/X5R/6.3V/K	PA EXP TXN0 C
PA EXP TXP1	PAC6	0.22u4/X5R/6.3V/K	PA EXP TXP1 C
PA EXP TXN1	PAC7	0.22u4/X5R/6.3V/K	PA EXP TXN1 C
PA EXP TXP2	PAC8	0.22u4/X5R/6.3V/K	PA EXP TXP2 C
PA EXP TXN2	PAC9	0.22u4/X5R/6.3V/K	PA EXP TXN2 C
PA EXP TXP3	PAC10	0.22u4/X5R/6.3V/K	PA EXP TXP3 C
PA EXP TXN3	PAC11	0.22u4/X5R/6.3V/K	PA EXP TXN3 C
PA EXP TXP4	PAC12	0.22u4/X5R/6.3V/K	PA EXP TXP4 C
PA EXP TXN4	PAC13	0.22u4/X5R/6.3V/K	PA EXP TXN4 C
PA EXP TXP5	PAC14	0.22u4/X5R/6.3V/K	PA EXP TXP5 C
PA EXP TXN5	PAC15	0.22u4/X5R/6.3V/K	PA EXP TXN5 C
PA EXP TXP6	PAC16	0.22u4/X5R/6.3V/K	PA EXP TXP6 C
PA EXP TXN6	PAC17	0.22u4/X5R/6.3V/K	PA EXP TXN6 C
PA EXP TXP7	PAC18	0.22u4/X5R/6.3V/K	PA EXP TXP7 C
PA EXP TXN7	PAC19	0.22u4/X5R/6.3V/K	PA EXP TXN7 C
PA EXP TXP8	PAC20	0.22u4/X5R/6.3V/K	PA EXP TXP8 C
PA EXP TXN8	PAC21	0.22u4/X5R/6.3V/K	PA EXP TXN8 C
PA EXP TXP9	PAC22	0.22u4/X5R/6.3V/K	PA EXP TXP9 C
PA EXP TXN9	PAC23	0.22u4/X5R/6.3V/K	PA EXP TXN9 C
PA EXP TXP10	PAC24	0.22u4/X5R/6.3V/K	PA EXP TXP10 C
PA EXP TXN10	PAC25	0.22u4/X5R/6.3V/K	PA EXP TXN10 C
PA EXP TXP11	PAC26	0.22u4/X5R/6.3V/K	PA EXP TXP11 C
PA EXP TXN11	PAC27	0.22u4/X5R/6.3V/K	PA EXP TXN11 C
PA EXP TXP12	PAC28	0.22u4/X5R/6.3V/K	PA EXP TXP12 C
PA EXP TXN12	PAC29	0.22u4/X5R/6.3V/K	PA EXP TXN12 C
PA EXP TXP13	PAC30	0.22u4/X5R/6.3V/K	PA EXP TXP13 C
PA EXP TXN13	PAC31	0.22u4/X5R/6.3V/K	PA EXP TXN13 C
PA EXP TXP14	PAC32	0.22u4/X5R/6.3V/K	PA EXP TXP14 C
PA EXP TXN14	PAC33	0.22u4/X5R/6.3V/K	PA EXP TXN14 C
PA EXP TXP15	PAC34	0.22u4/X5R/6.3V/K	PA EXP TXP15 C
PA EXP TXN15	PAC35	0.22u4/X5R/6.3V/K	PA EXP TXN15 C

PA_EXP_RXP0[0..15] >>> PA_EXP_RXP0[0..15] [4]
PA_EXP_RXN0[0..15] >>> PA_EXP_RXN0[0..15] [4]
PA_EXP_TXP0[0..15] >>> PA_EXP_TXP0[0..15] [4]
PA_EXP_TXN0[0..15] >>> PA_EXP_TXN0[0..15] [4]

The auxiliary reset circuit is only required for PCIe Gen3 margining and functional link training



PCIESLOT-164DN-P

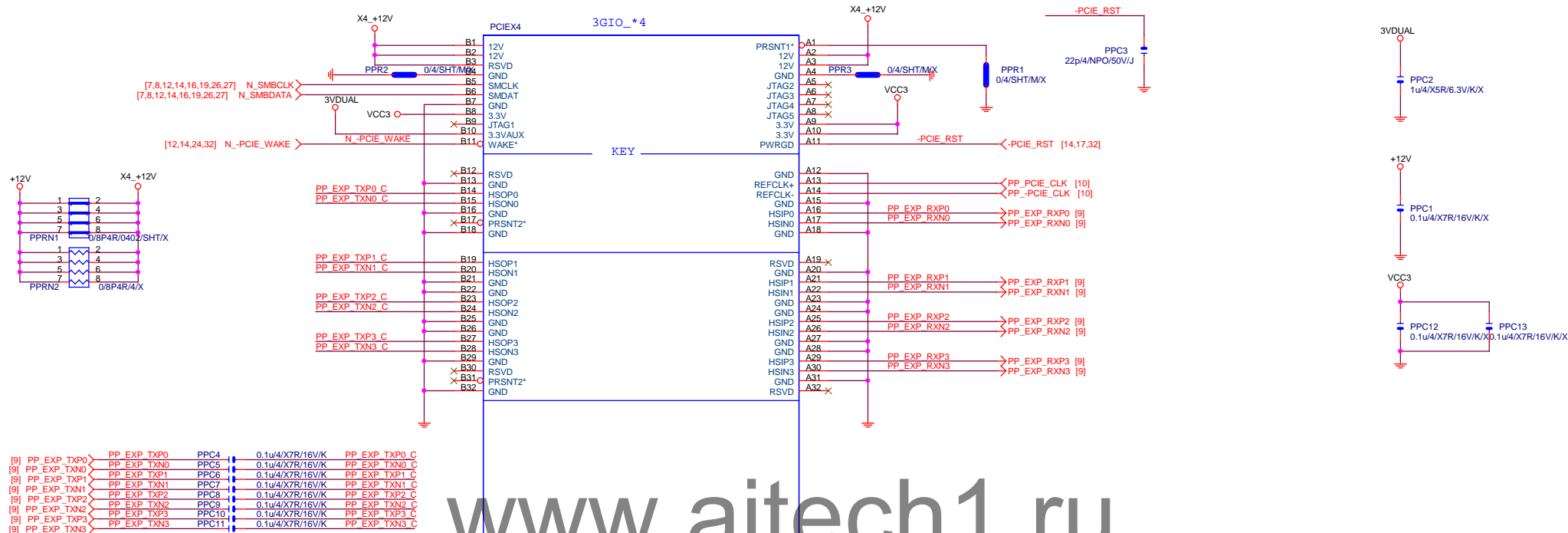


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Gigabyte Technology

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Size	Document Number	Rev
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Date: Monday, July 01, 2013		Sheet 14 of 32

PCIEX4 SLOT



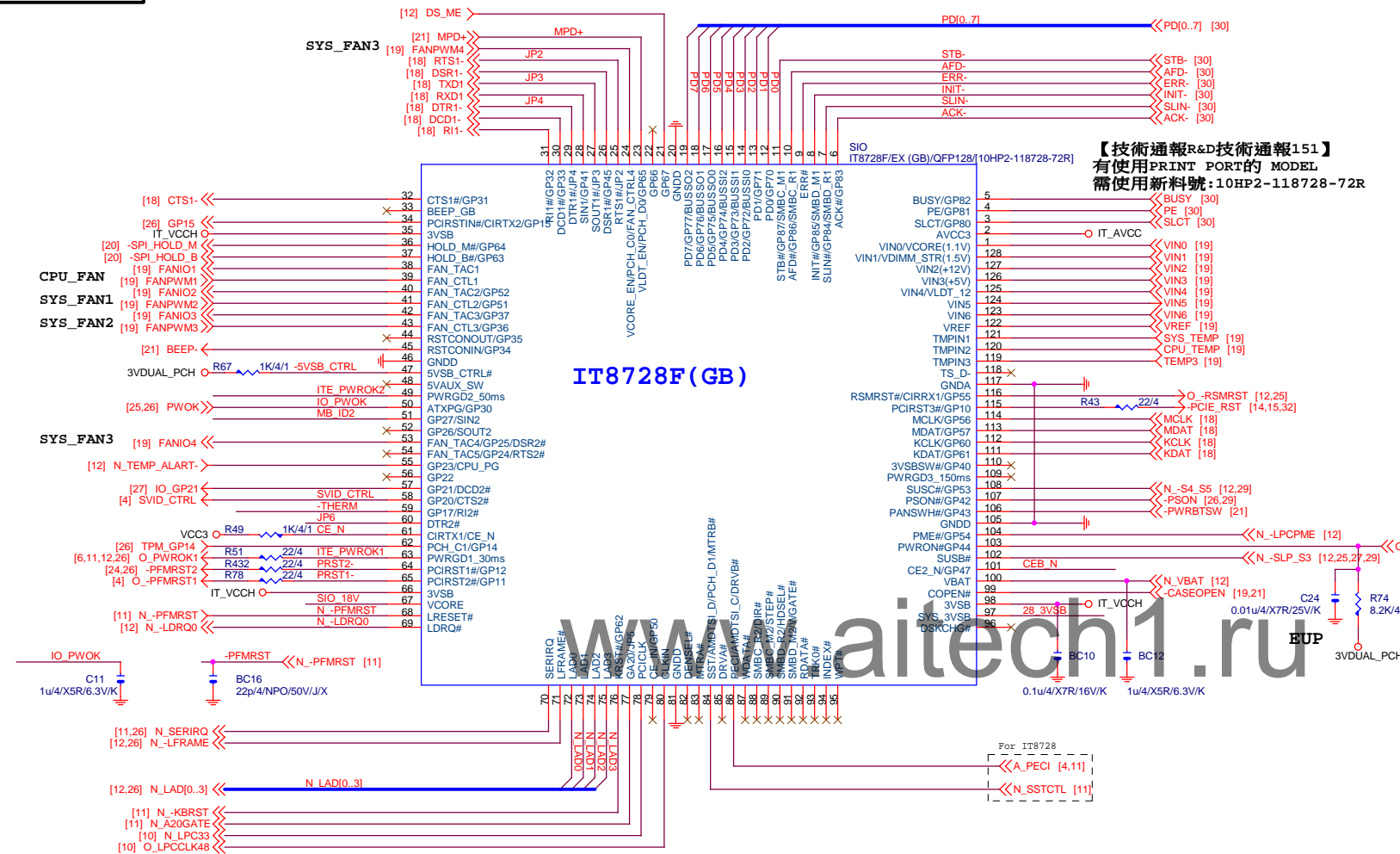
www.aitech1.ru

PCI-E/4X-65P/BK/LONG DOUBLE

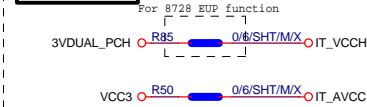
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Gigabyte Technology			
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Date:	Monday, July 01, 2013	Sheet	15 of 32

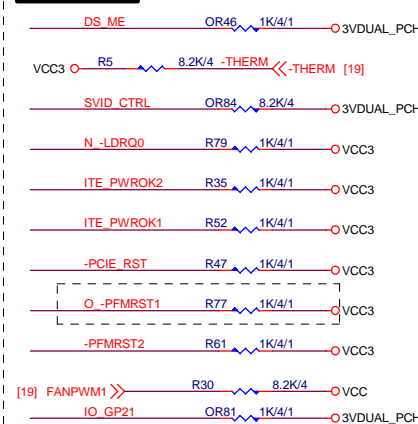
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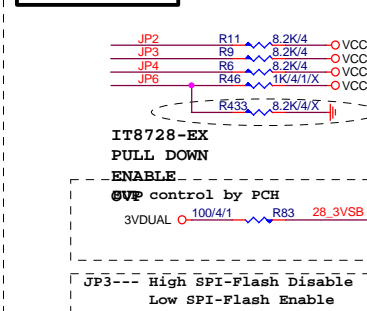
PWR SHT



SIO PU



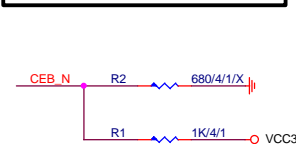
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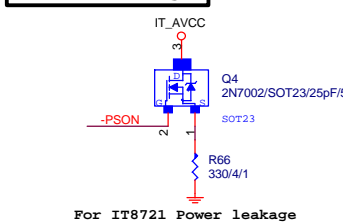
IT8728F NOTE

	IT8728
PIN121	VCORE_EN/PCH_C0
PIN120	VLDI_EN/PCH_D0
PIN19	ATXPG
PIN31	PCH_C1
PIN53	SST/AMDTSI_D/MTRB#/PCH_D1
PIN55	PECI/AMDTSI_C/DRV#
PIN66	SYS_3VSB
PIN70	GP47
PIN95	VIN2 (VCC5)
PIN96	VIN1 (VCC12)
PIN97	VIN1/VDIMM_STR(1.5V)
PIN98	VIN0/VCORE(1.1V)/NC

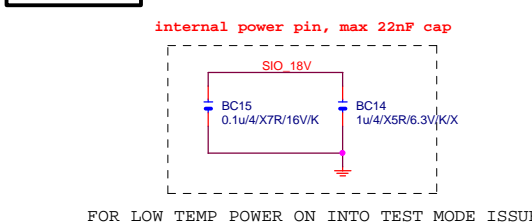
DUAL BIOS OPT STRAP



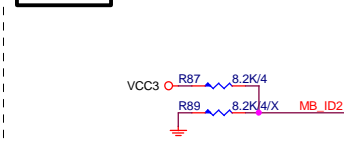
Power leakage



SIO_18V



MB ID

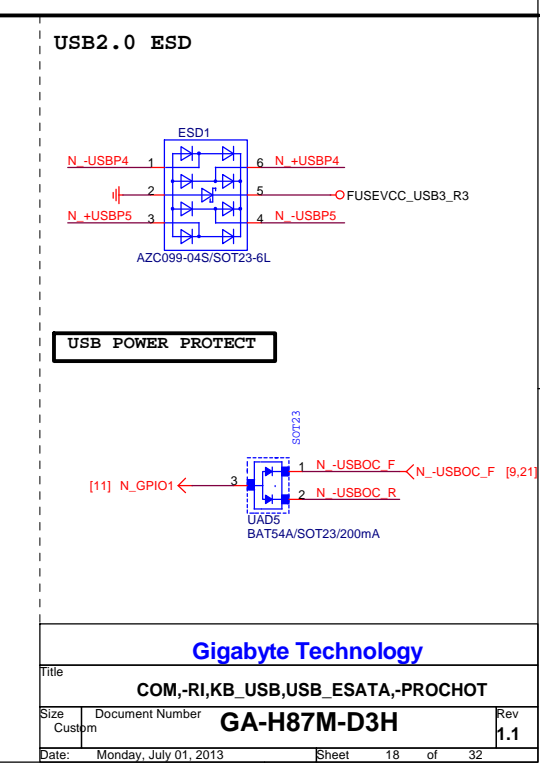
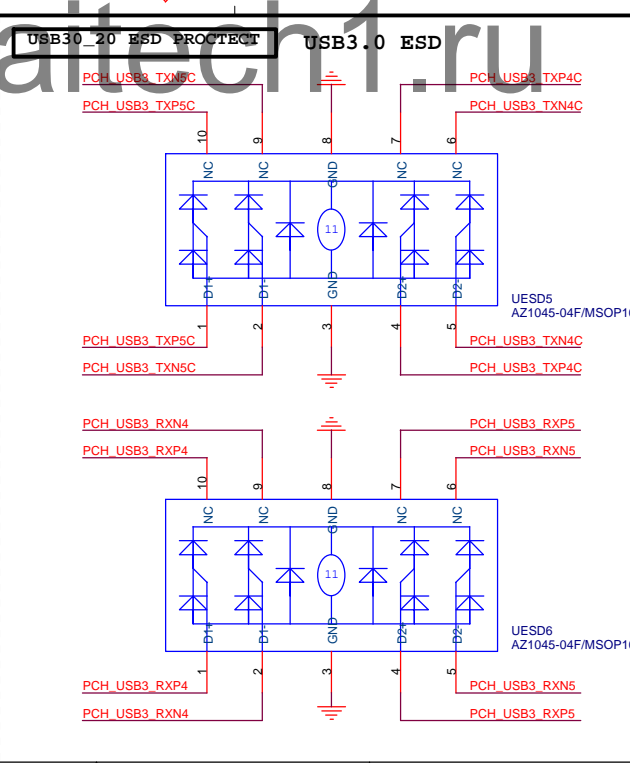
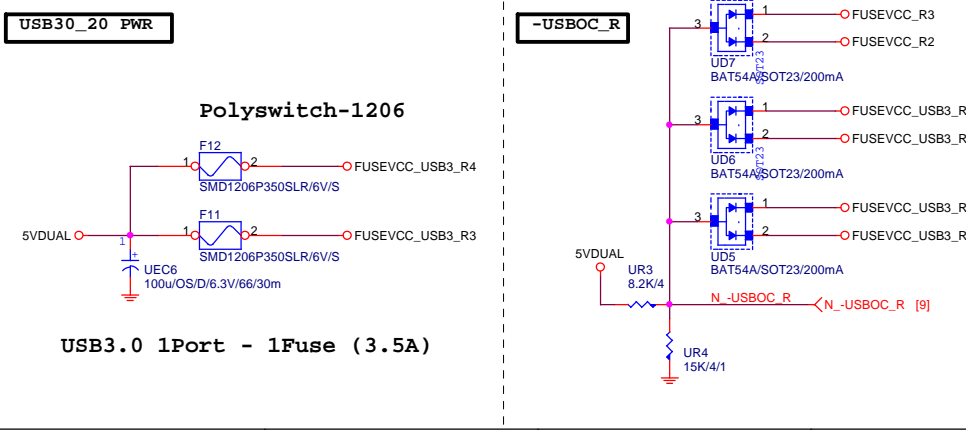
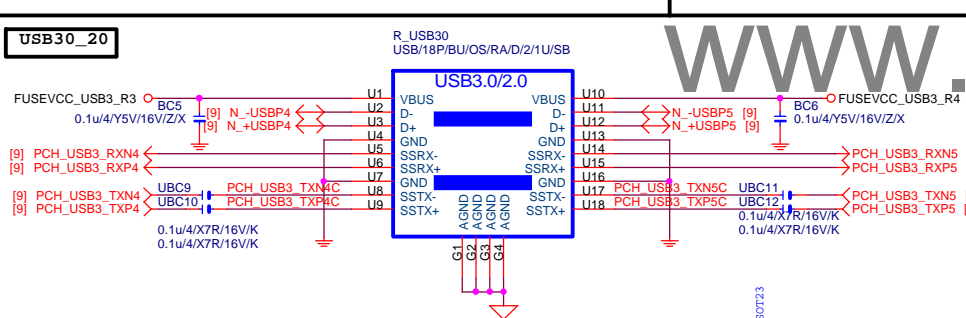
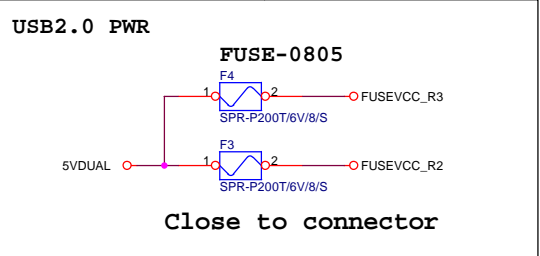
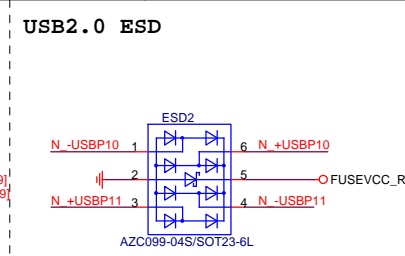
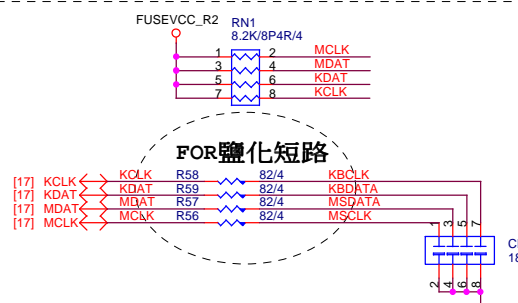
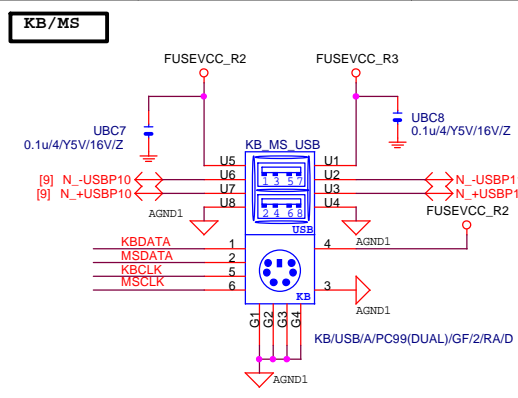
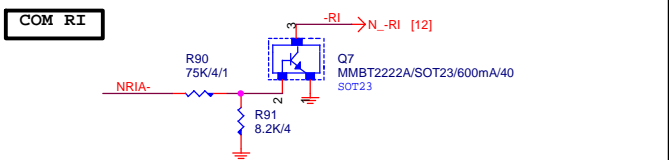
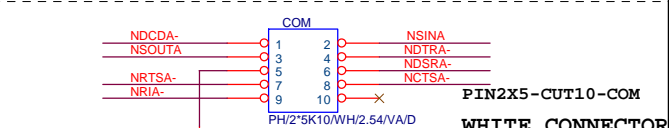
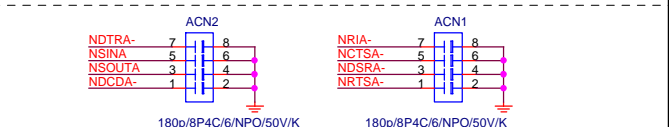
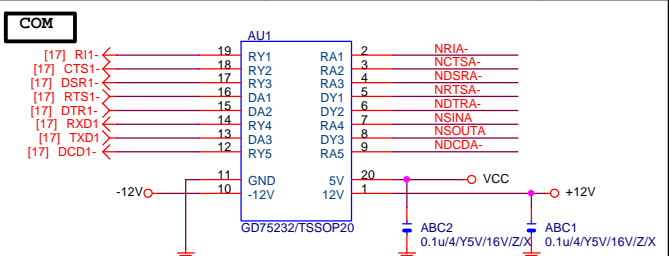


SIO CAP

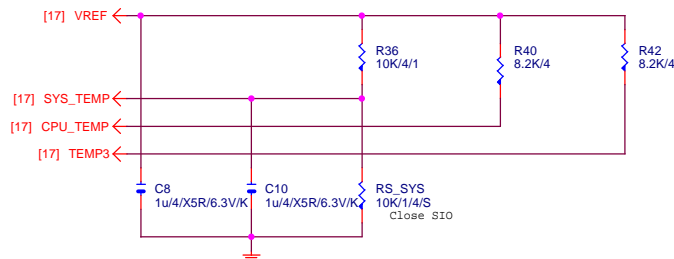


Gigabyte Technology

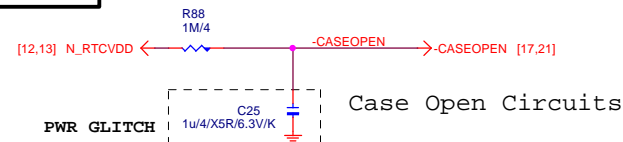
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Size	Document Number	GA-H87M-D3H	
Custom			Rev 1.1
Date:	Monday, July 01, 2013	Sheet	17 of 32



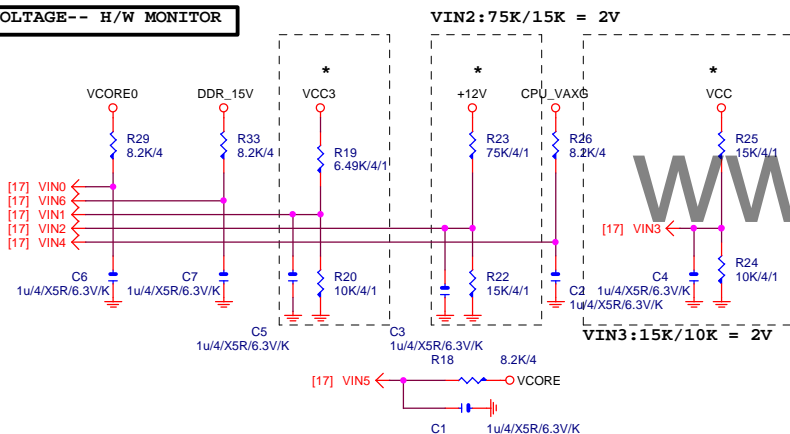
TEMP H/W MONITOR



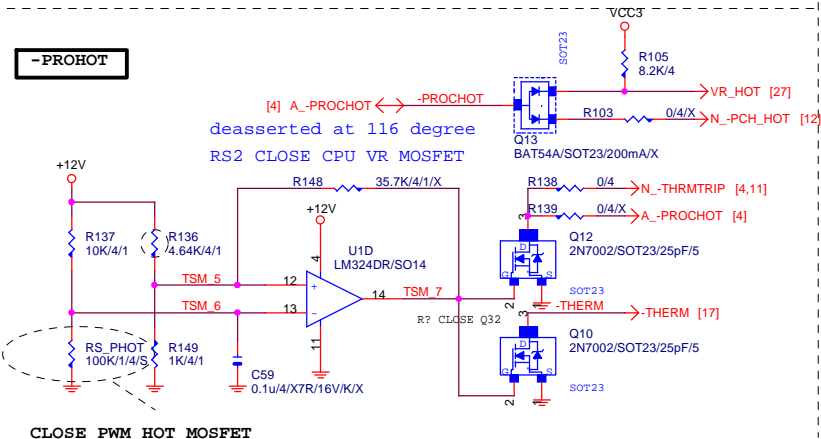
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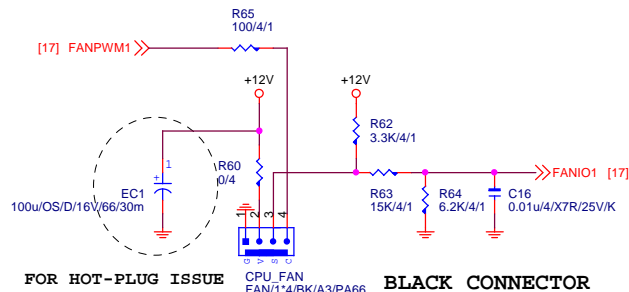
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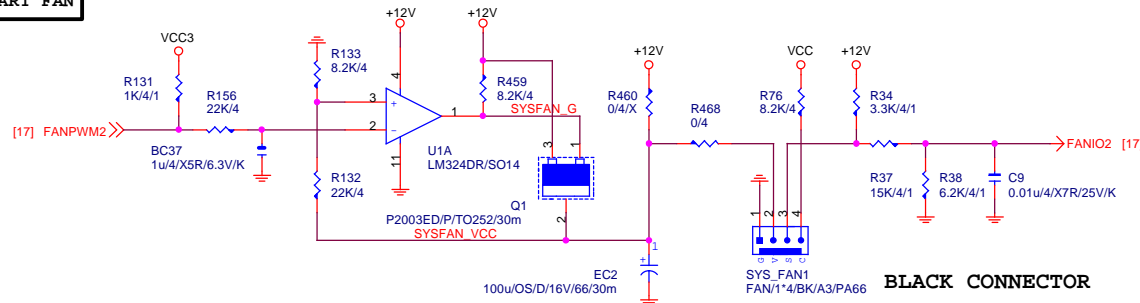
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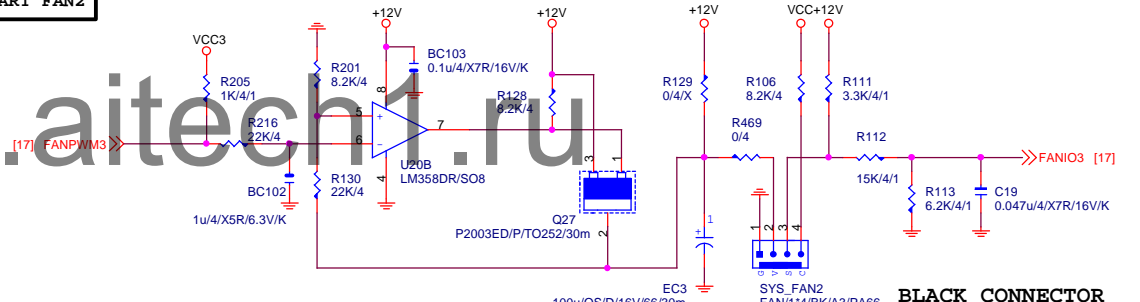
CPU SMART FAN



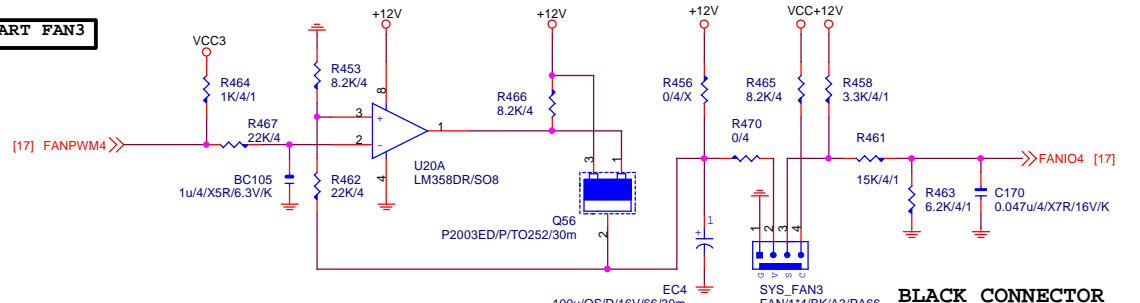
SYS SMART FAN



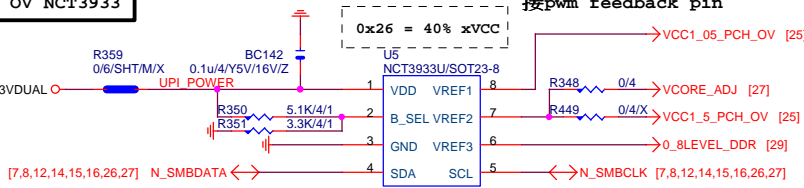
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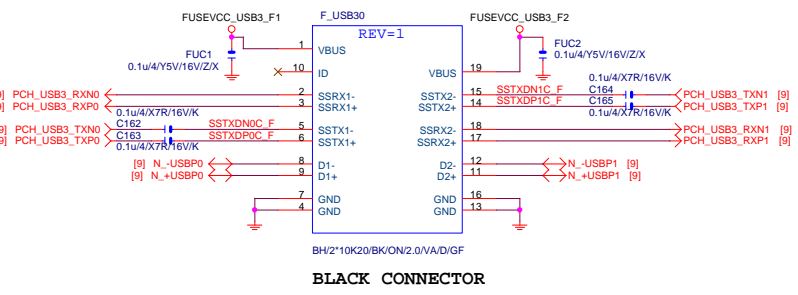
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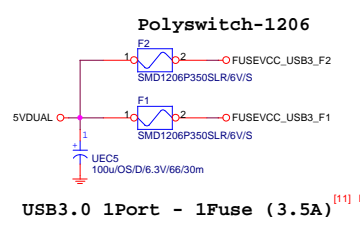
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Date:			
Monday, July 01, 2013			
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1.1			

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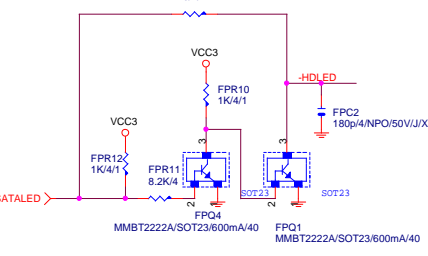
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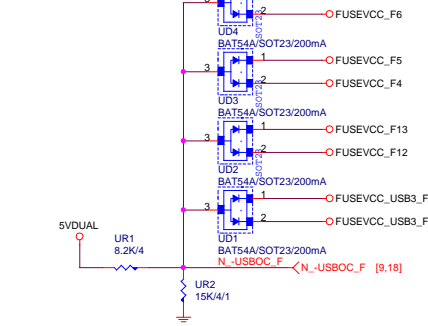
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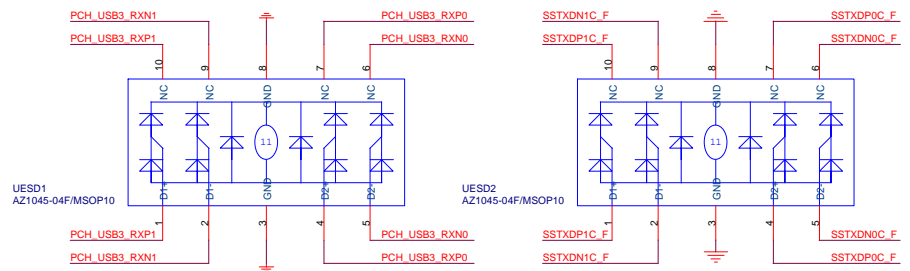
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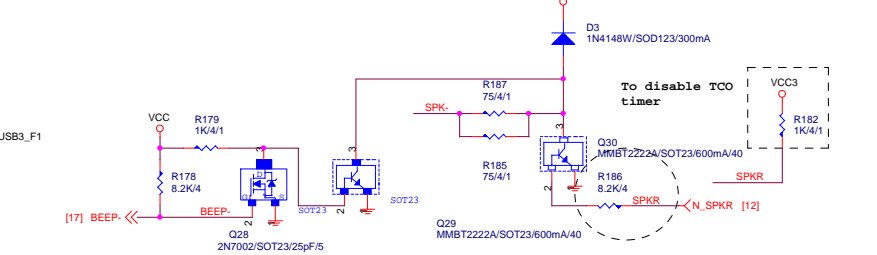
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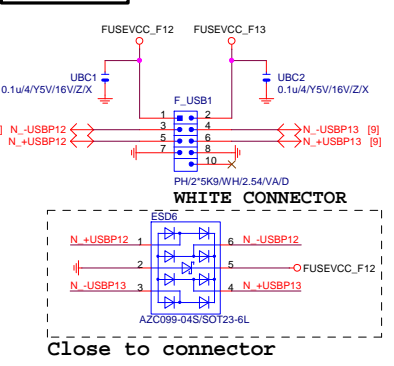
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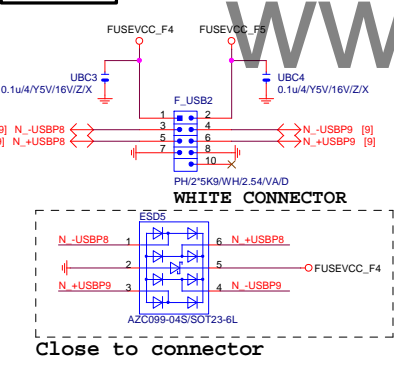
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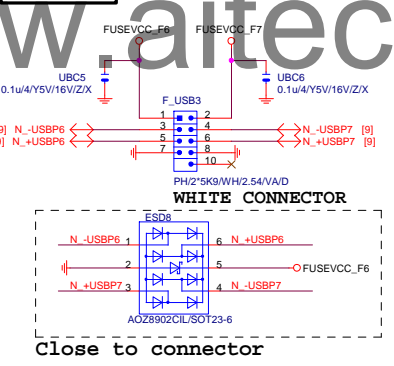
FRONT USB1



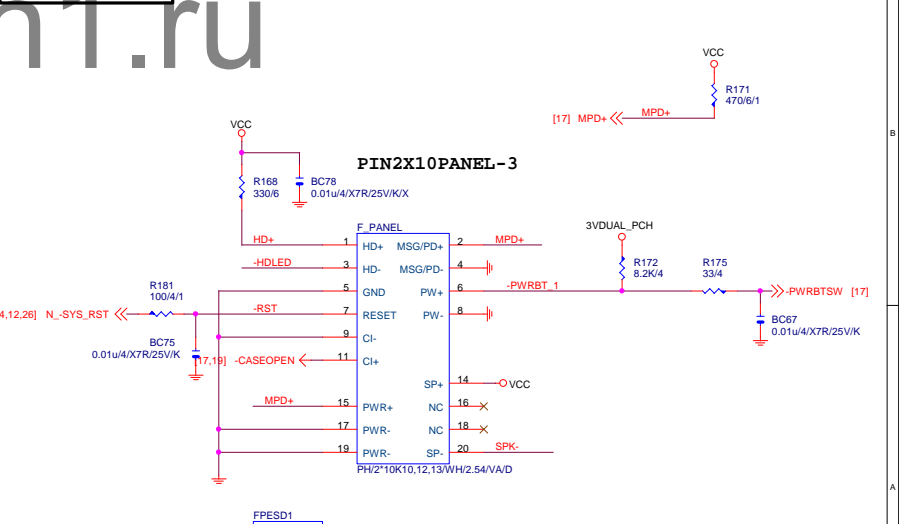
FRONT USB2



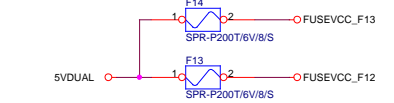
FRONT USB3



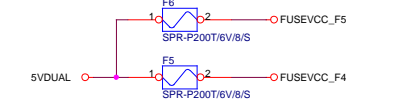
INTEL FRONT PANEL



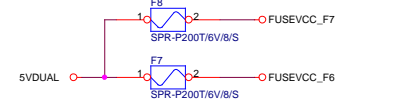
FUSE-0805



FUSE-0805



FUSE-0805

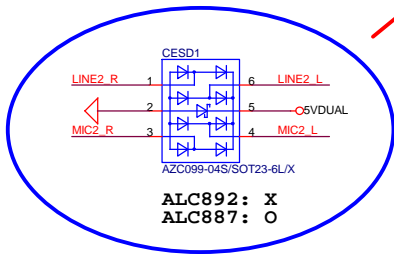


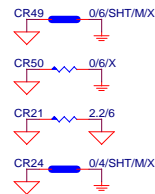
[23] CEN ←

[23] LFE ←

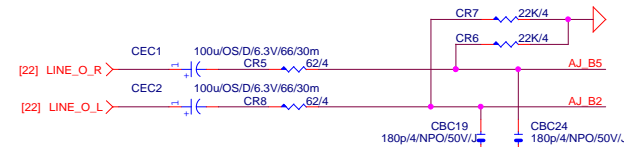
[23] S_SURR_L ←

[23] S_SURR_R ←





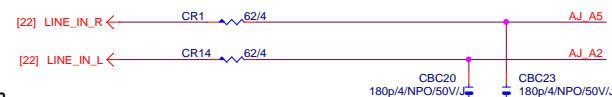
LINE-OUT



Only reserved for AIC888

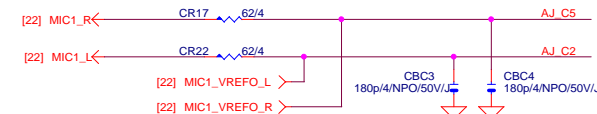
LINE-IN

Verify MIC function
in LINE-in

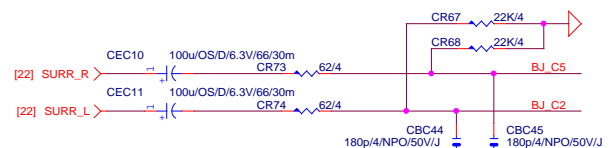


For 889A/888

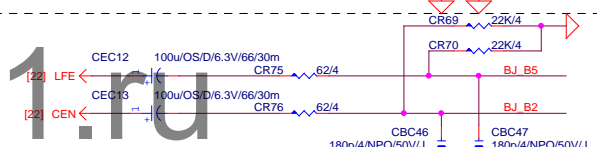
MIC-IN



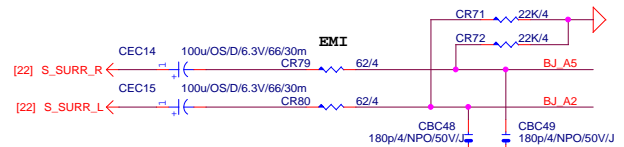
SURROUND



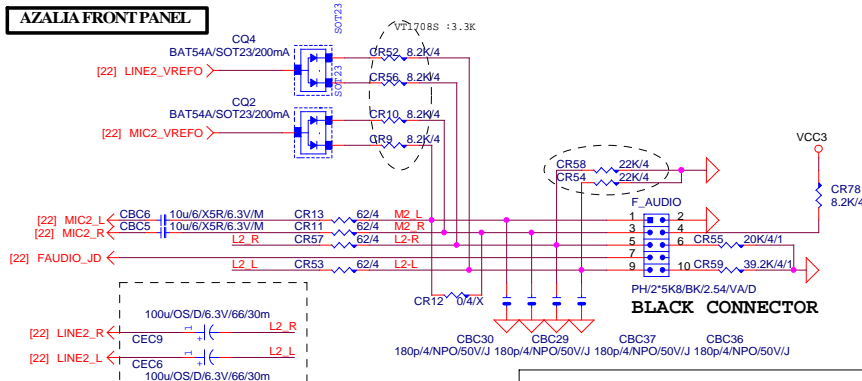
CEN/LFE



SURRBACK



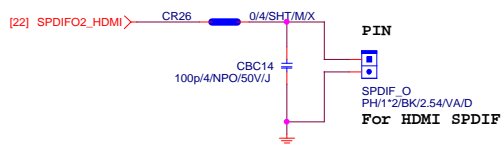
AZALIA FRONT PANEL



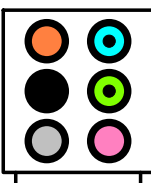
Gigabyte Technology

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AUDIO JACK		
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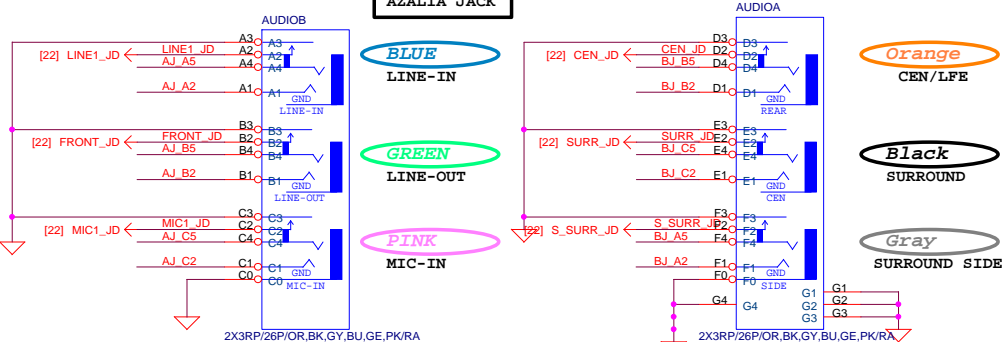
SPDIF_OUT

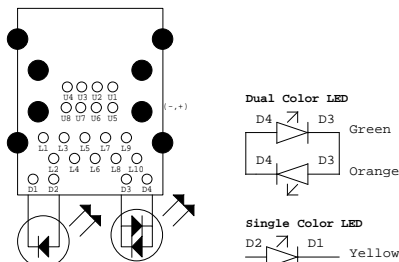
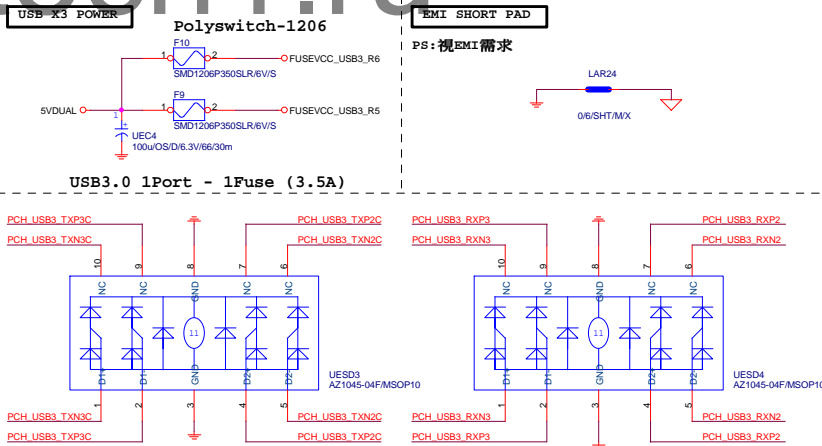
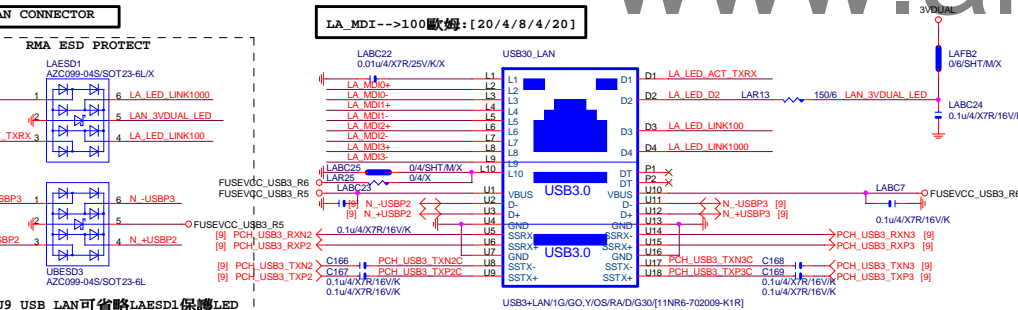
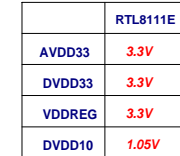
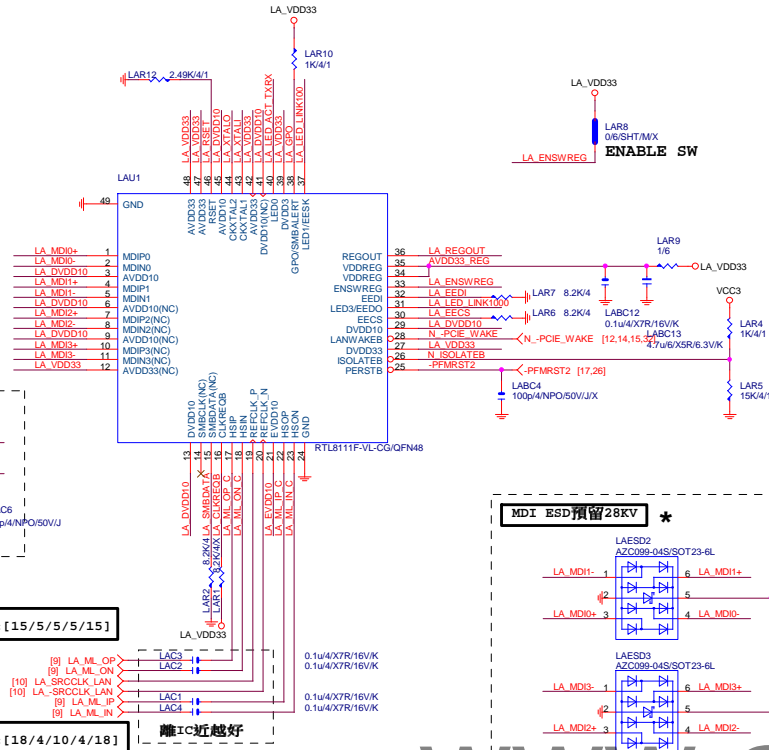


AZALIA JACK



AZALIA JACK





注意:USB PORT(目前:暫代6,7PORT)
USB-->90歐姆:[15/4.5/7.5/4.5/15]

BOM NOTICE

料號	規格	廠商
11NR6-702009-96R	1G LAN (12core)	UDE(RU9 ESD+)
[LED獨立走線,可省略外加AZC099料件LAESD1]		

1. 9KV ESD BOM:
USB_LAN (RU9):11NR6-702009-96R

2. 28KV ESD BOM:
USB_LAN (RU9):11NR6-702009-96R
LAESD2, LAESD3: 1件LAZC398-04S

Gigabyte Technology

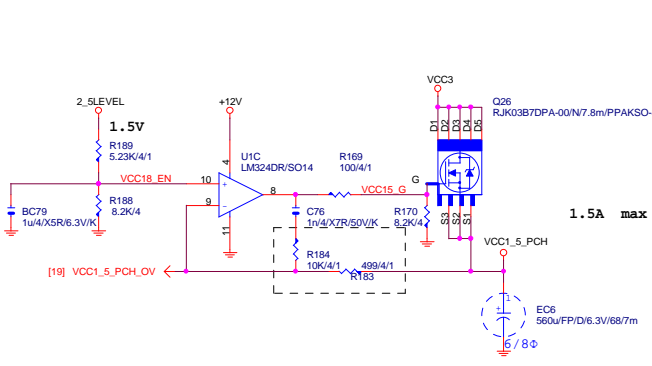
Realtek RTL8111G

GA-H87M-D3H

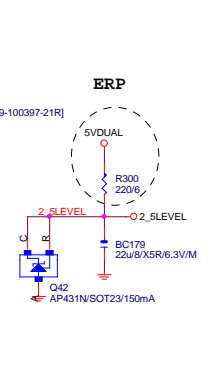
Rev	
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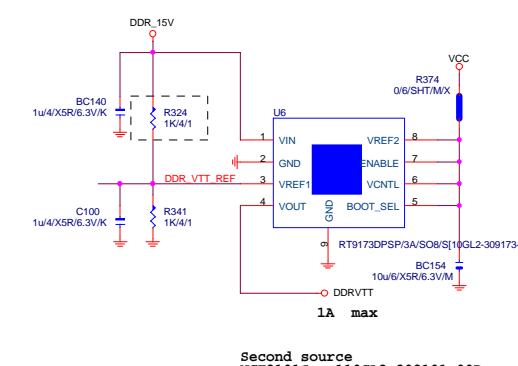
VCC1_8_PCH



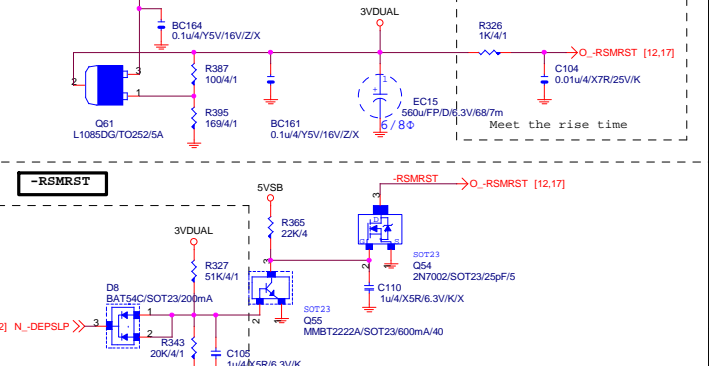
2_5LEVEL



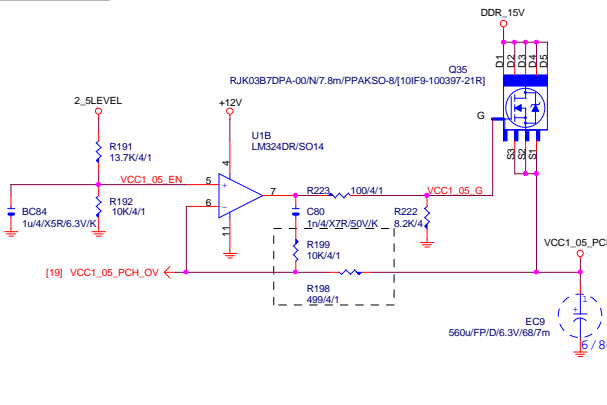
DDRVTT



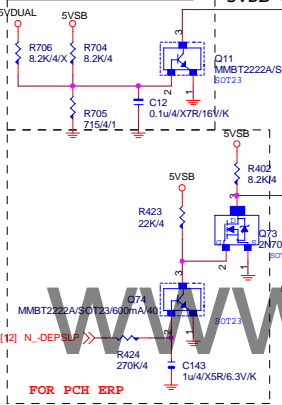
3VDUAL



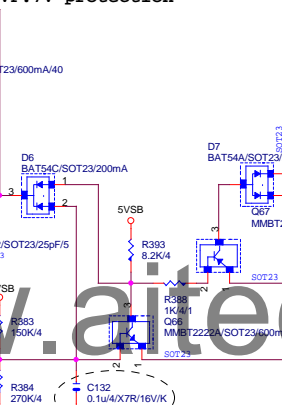
VCC1_05_PCH



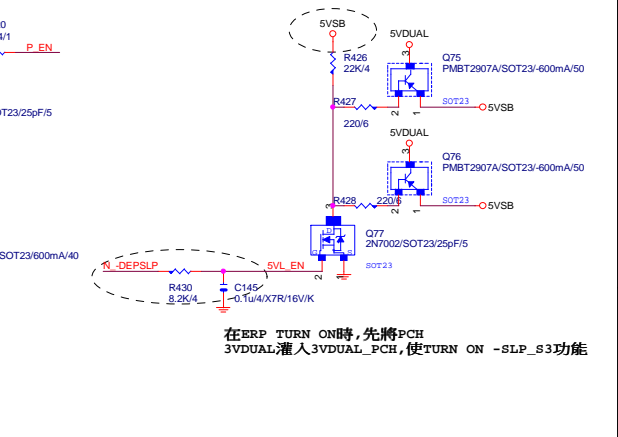
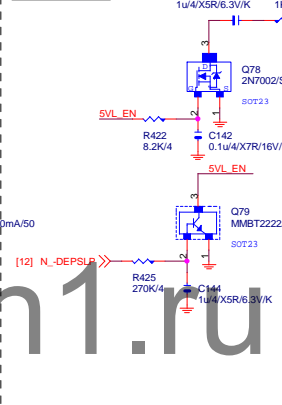
5VDUAL SHORT PROTECT



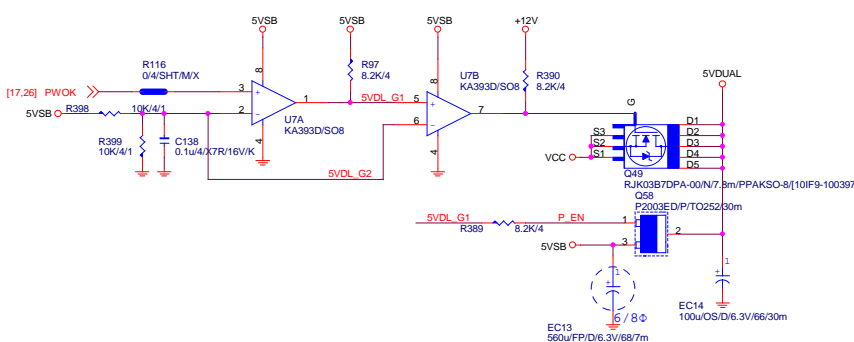
5VSB OVP:7V protection



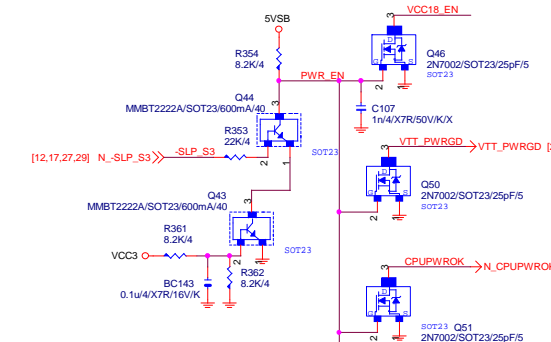
PCH ERP

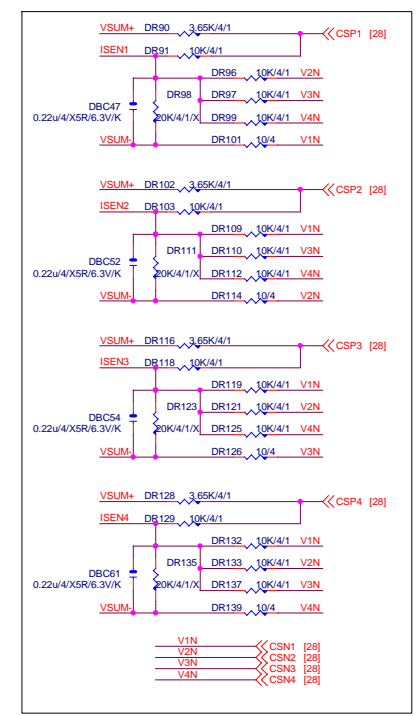
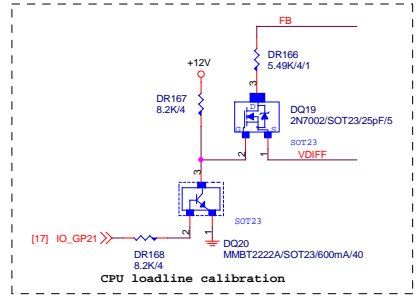
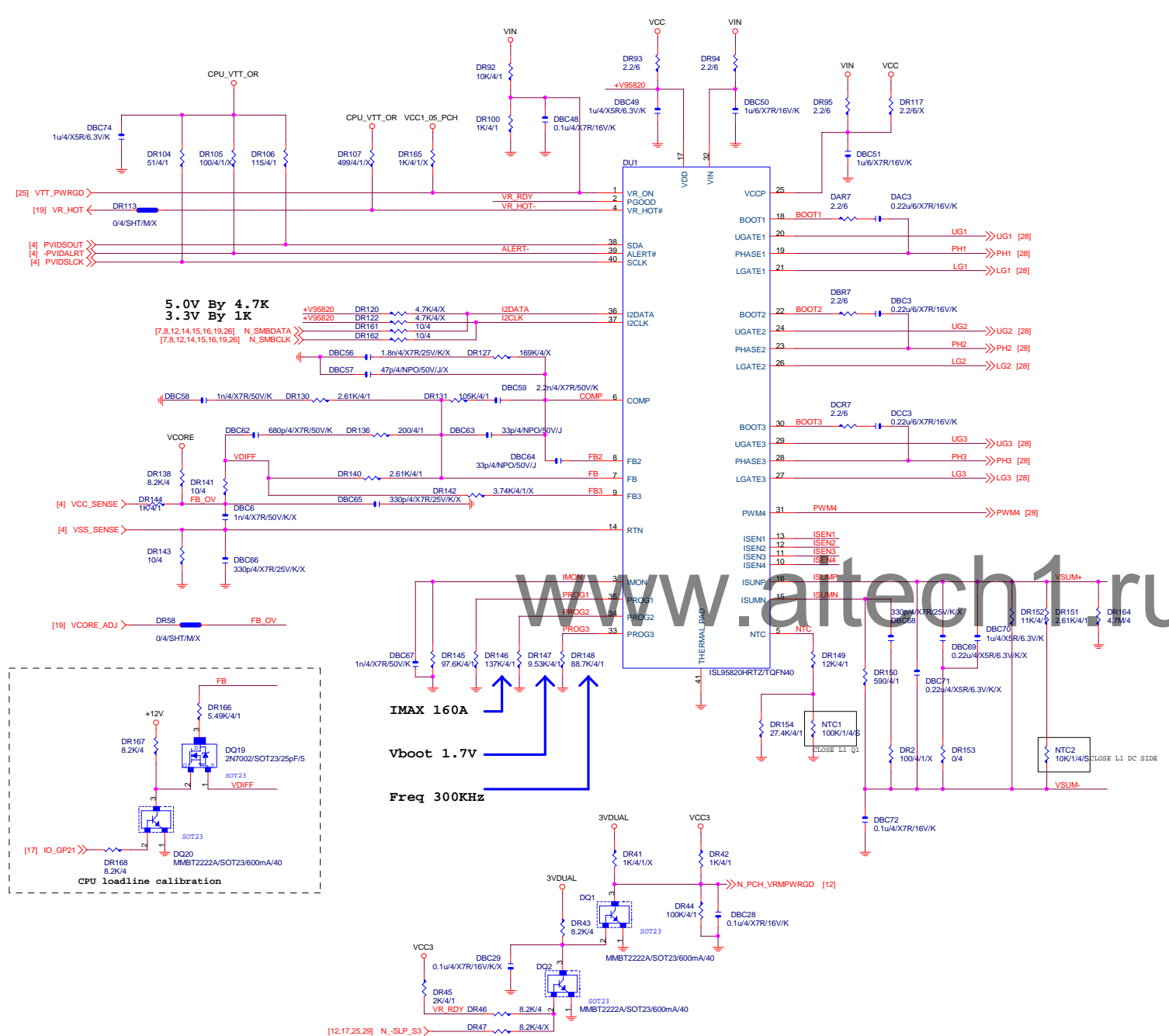


5VDUAL

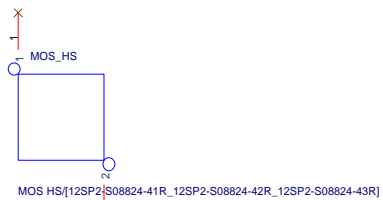
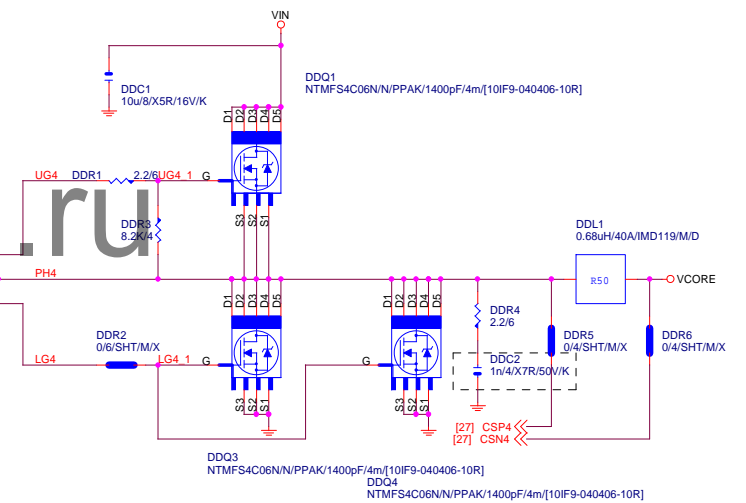
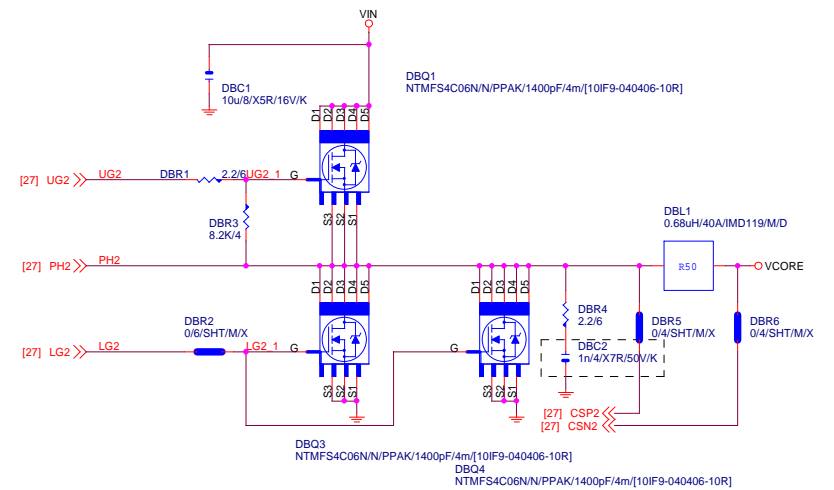
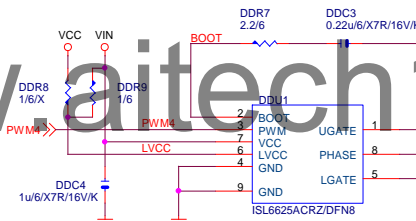
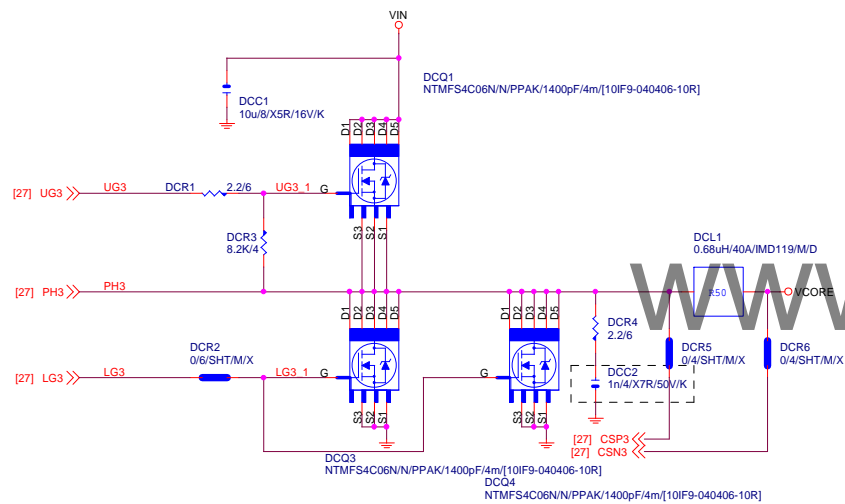
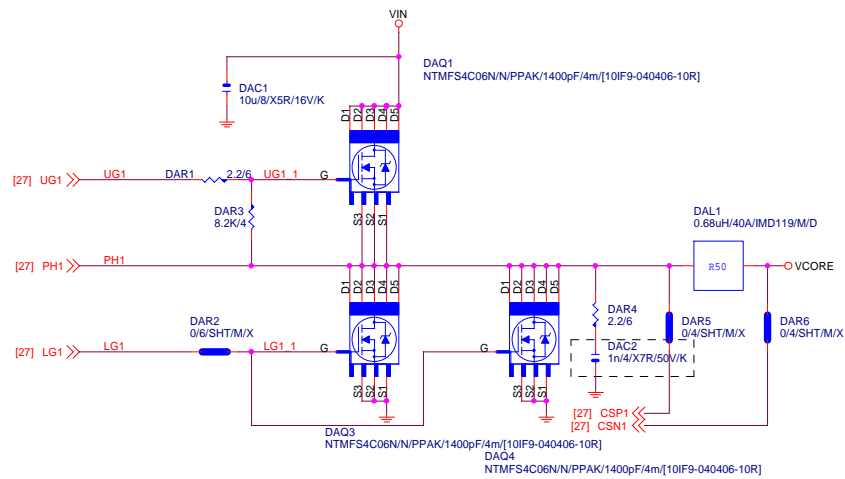


PWR SEQ

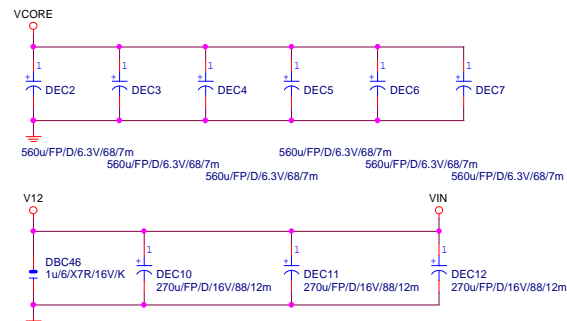




CLOSE PWR

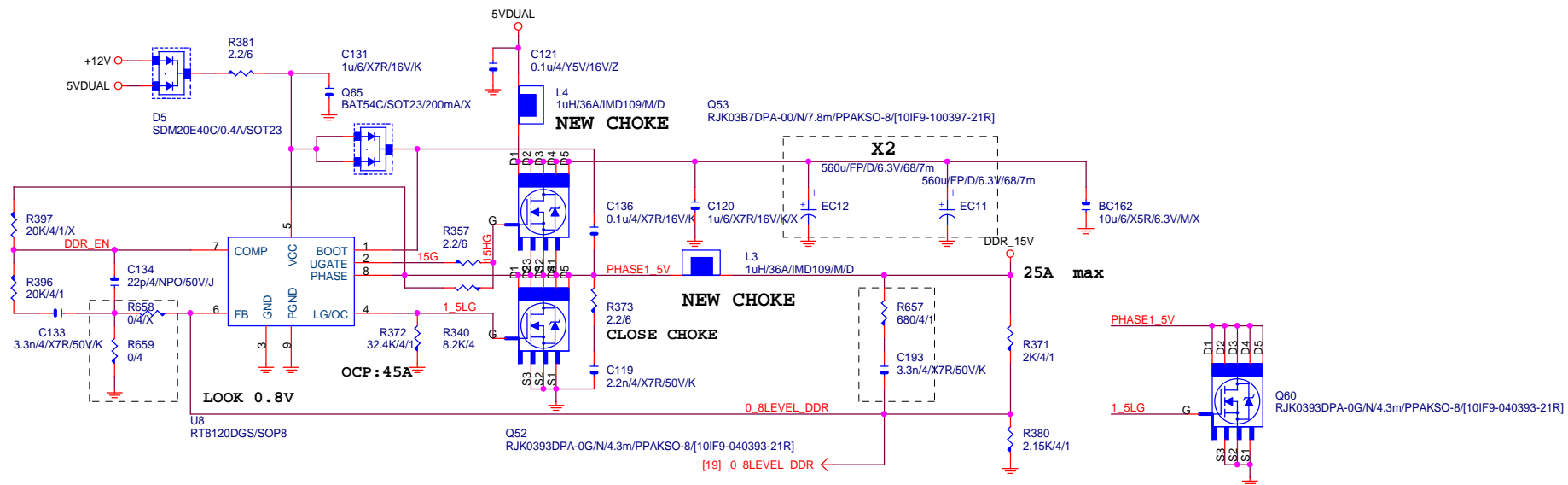


8 Series MOS Heatsink (Screw fix)

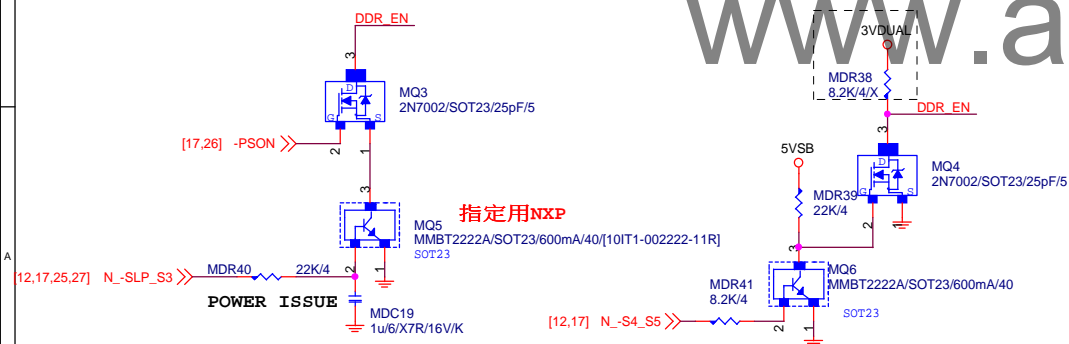


Gigabyte Technology			
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CPU CORE VR-2			
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DDR15V




PWR SEQ



VIN=5V,VOUT=1.5V,IOUT=25A,PHASE=1
IRMS=11.45A
560uF/P/D/6.3V/68/8m RIPPLE CURRENT=4.7A
Coefficient=1.7(85°C),1(105°C)

VIN Ripple current=4.7X1.7=7.99A(85°C)
-->故固態電容須2X7.99=15.98>11.45A

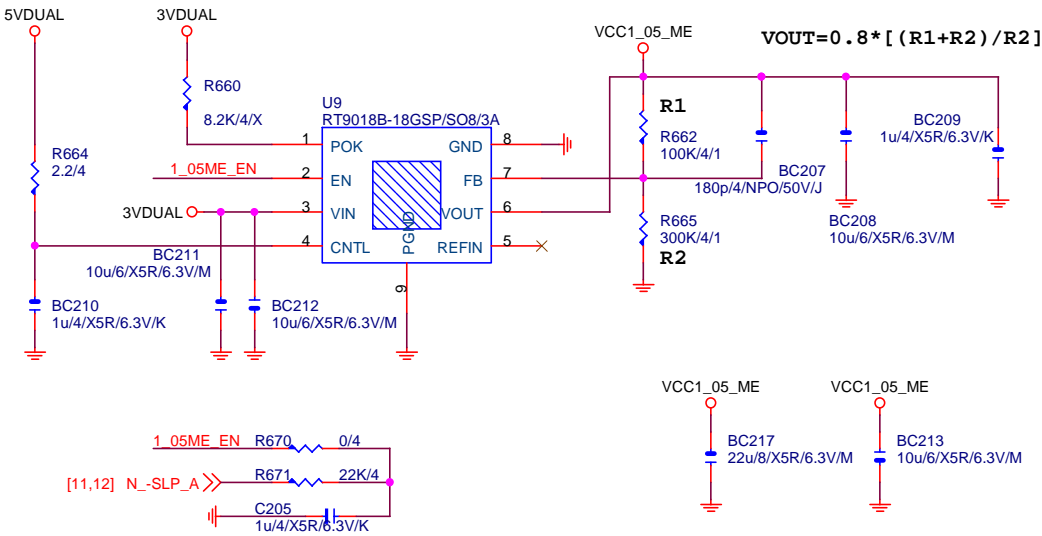
```
Rocset=(Iocp*Lgate,rdson)/Iocset
Rocset=(45A*6.7mOhm)/10uA = 30K
Iocset=10uA
```

<div style="text-align: center;">  </div>			
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DDR POWER			
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VCC1_05_ME

【技術通報R&D技術通報156】

(RICHTER), (NUVOTON), (EMC)做共用
PIN7分壓阻值須做修改為100K以上電阻值

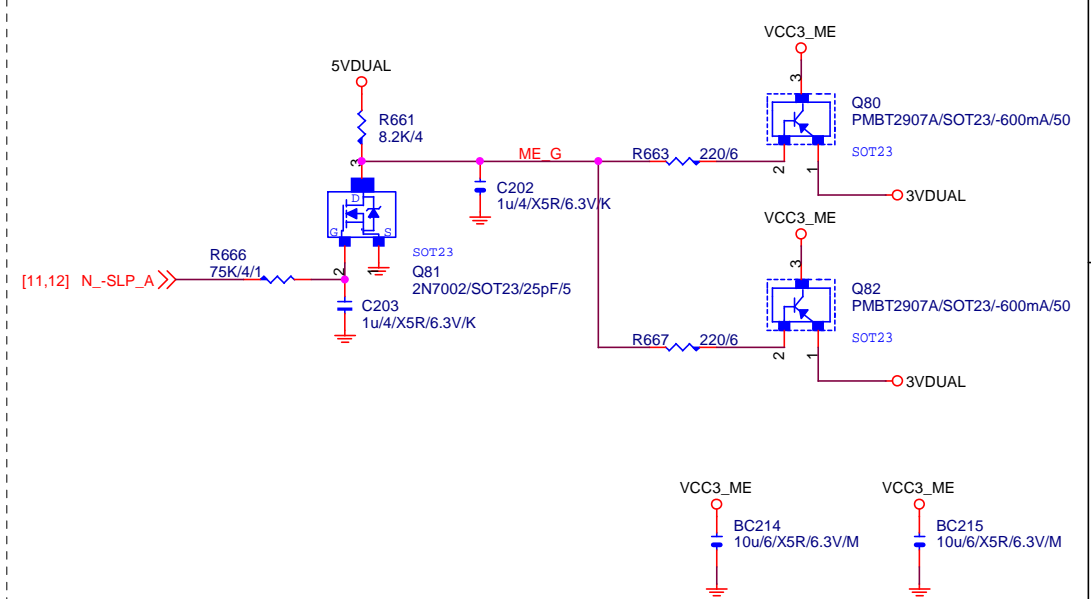


Second source

EM5103 - 10GL2-305103-01R

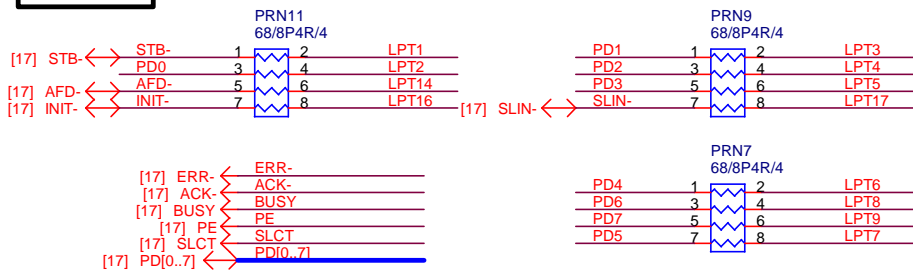
NCT3730S - 10GL2-303730-01R

VCC3_ME



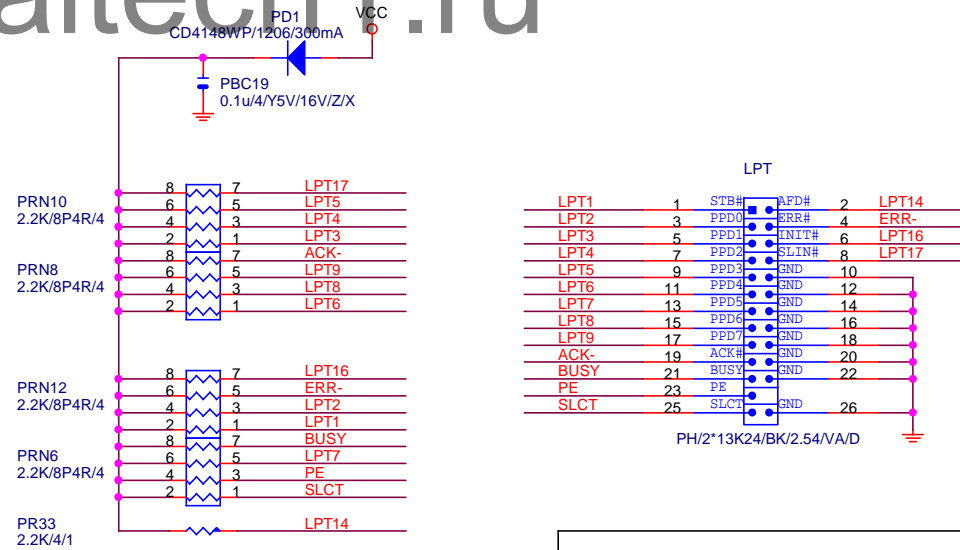
www.aitech1.ru

LPT PORT



【技術通報R&D技術通報151】

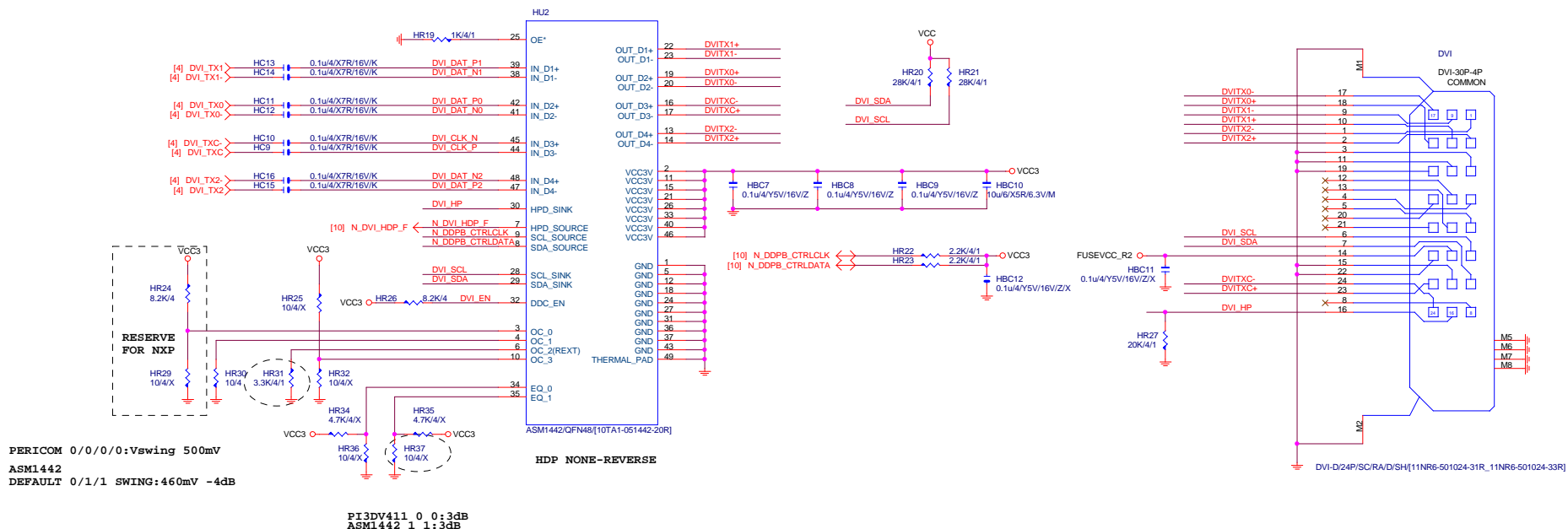
33ohm Change to 68ohm



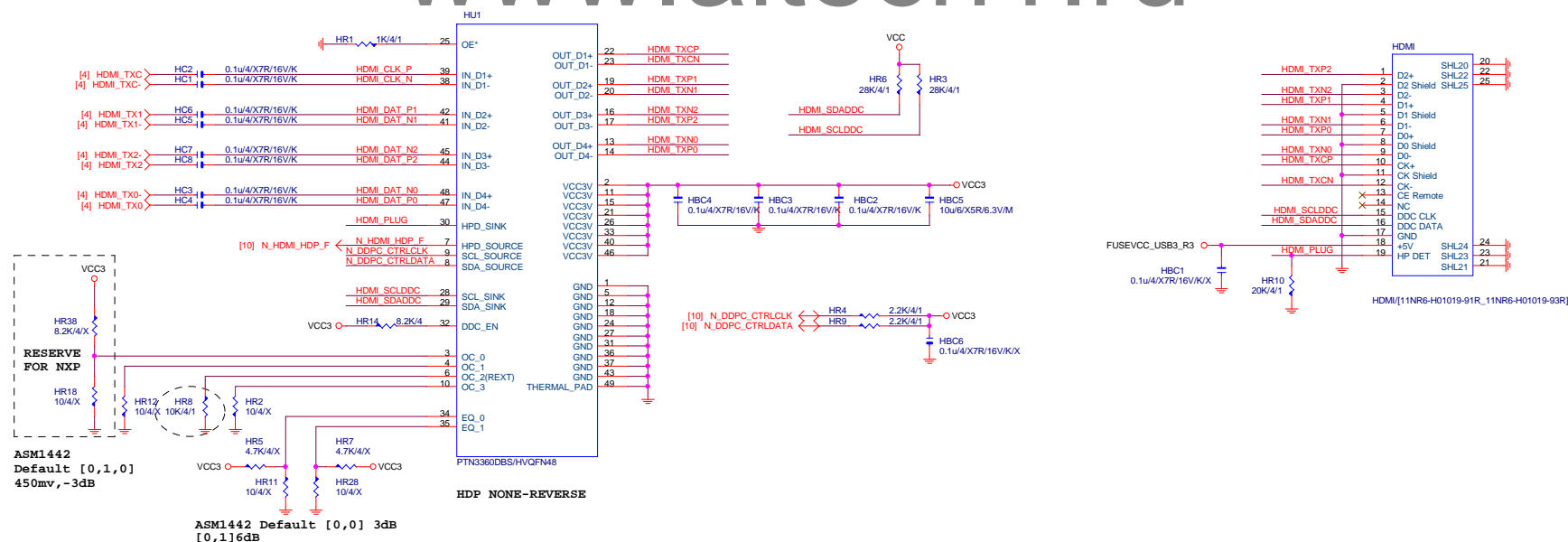
Gigabyte Technology

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LPT			
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DVI LEVEL SHIFT

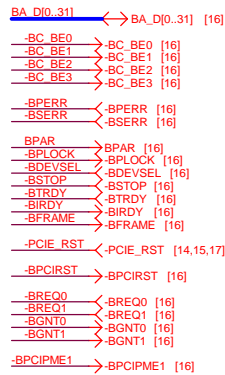


HDMI LEVEL SHIFT



PCIE TO PCI

PCI:5/4/5 Impedance=50 +- 15%

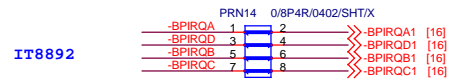
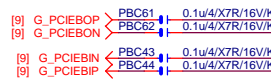
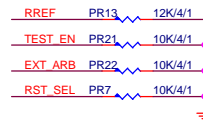
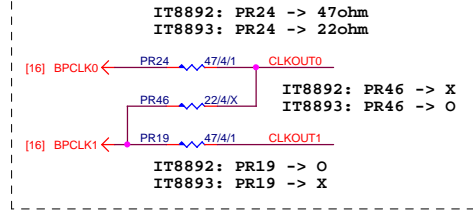


High: Enable PCI CLK 66MHz
Low: Disable PCI CLK 66MHz

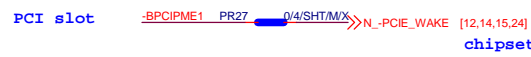


High: PCICLK INPUT form CLK Gen
Low: PCICLK OUTPUT form IT8893 chip

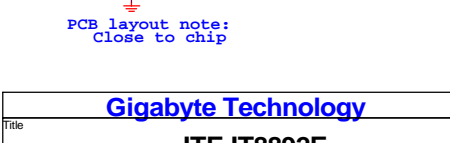
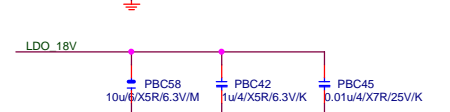
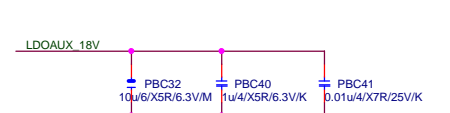
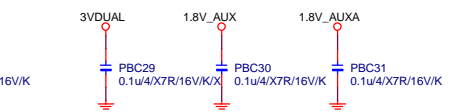
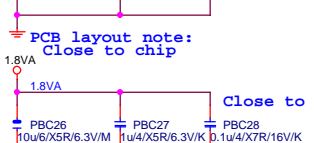
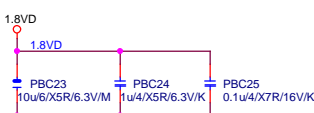
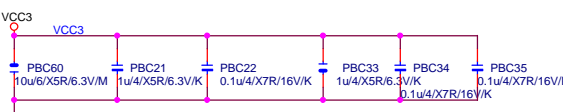
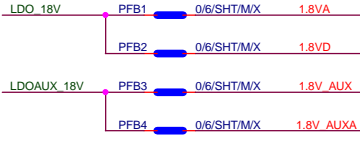
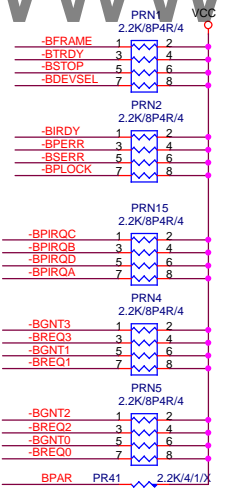
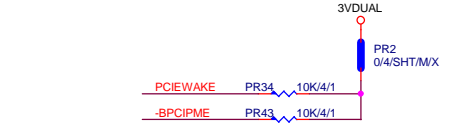
Co-Lay IT8893 (IT8893 CLKOUT1 N/A)



PCI slot



chipset side



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ITE IT8892E			
GA-H87M-D3H			
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