

Model Name: GA-H81-D3P

1.01

SHEET

TITLE

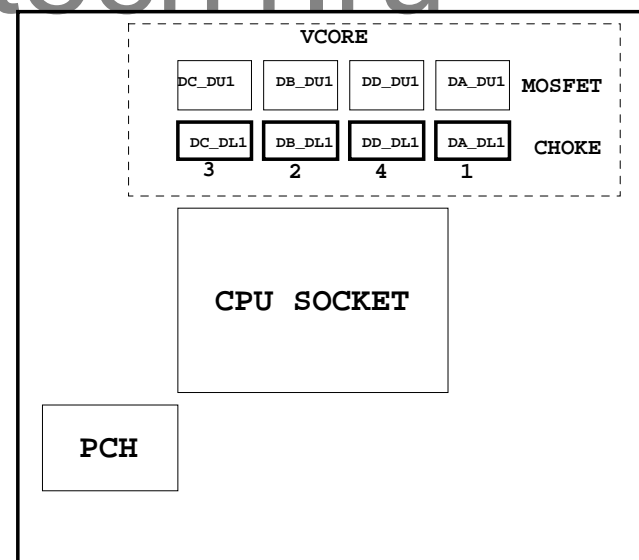
01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	CPU_LGA1150-A
05	CPU_LGA1150-B
06	CPU_LGA1150-C
07	DDR III CHANNEL A
08	DDR III CHANNEL B
09	PCH_FDI,DMI,USB,PCIE
10	PCH_RGB,CLK BUFFER
11	PCH_HOST,SATA,PCI
12	PCH_GPIO,CTRL,AUDIO
13	PCH_PWR,GND
14	PCI EXPRESS*16 SLOT
15	PCIEX1*1 , PCIEX4 SLOT
16	ITE8892 PCI BRIDGE
17	PCI SLOT 1~3
18	I/O ITE8620
19	COM, -PROHOT, R_USB
20	Dual BIOS / LPT
21	ALC887 CODEC
22	REAR AUDIO JACK
23	VCORE_ ISL95820_1
24	VCORE_ ISL95820_2
25	DDR15V
26	NCP3933 OVER VOLTAGE
27	DISCRETE POWER

SHEET

TITLE

28	F_PANEL , F_USB2.0/3.0
29	ATX POWER
30	HWM , KB/MS , FAN CTRL
31	Realtek 8111F-VL
32	PCI SLOT 4~5
33	TABLE LIST
34	
35	
36	
37	
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39	
40	

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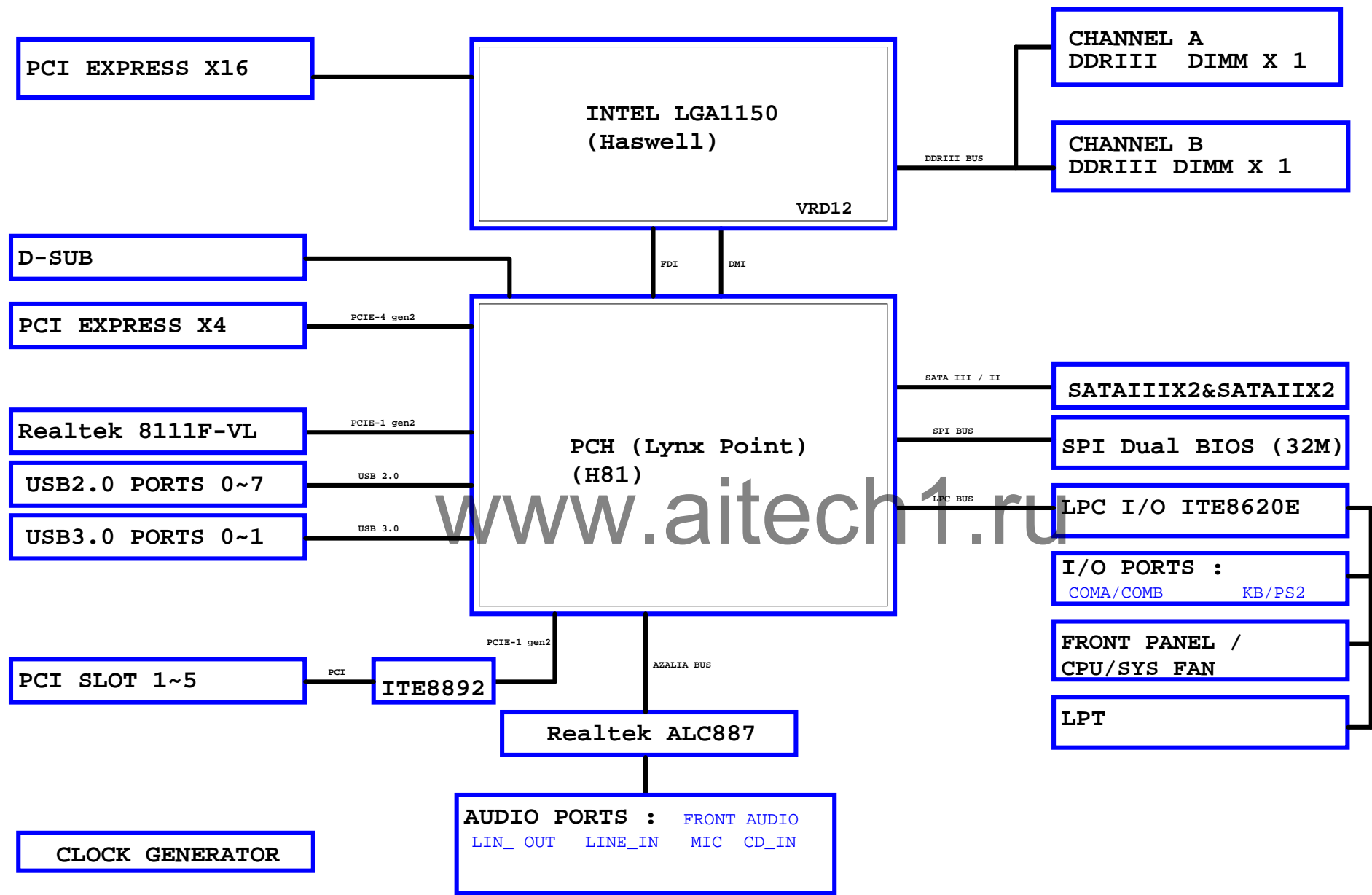
Gigabyte Technology

Title			
Cover Sheet			
Size	Document Number	Rev	
Custom	GA-H81-D3P	1.01	
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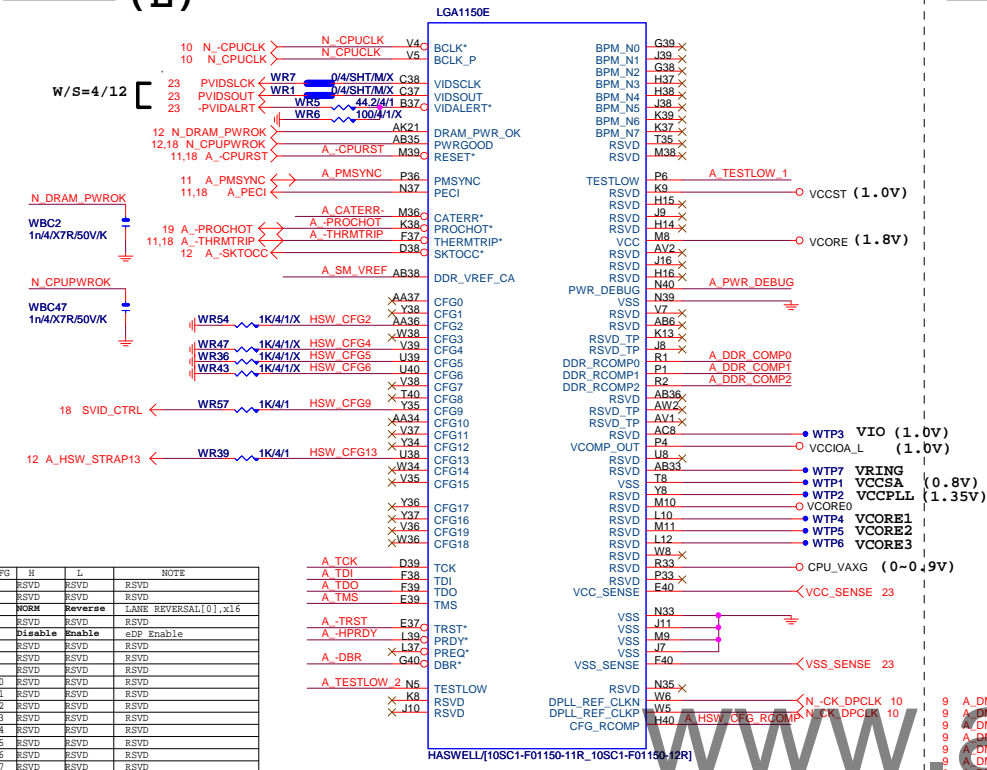
Component value change history

[illegible][illegible]

BLOCK DIAGRAM



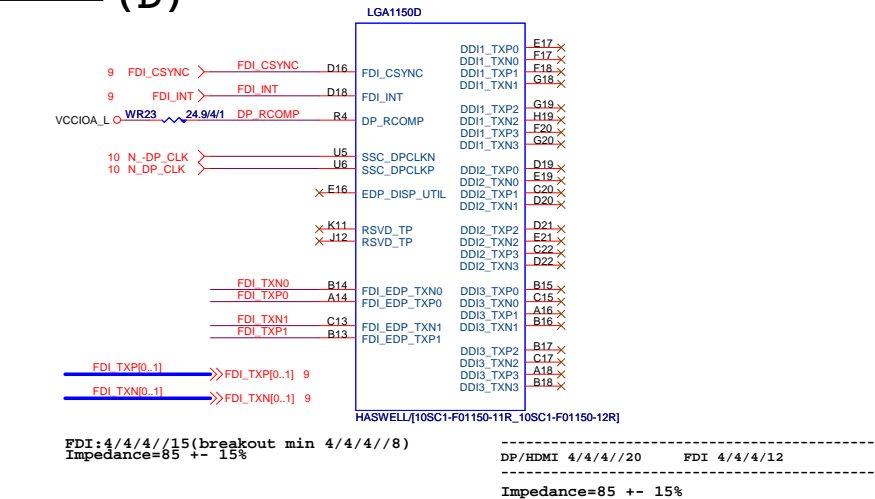
LGA1150 (E)



CFG#	H	L	NOTE
0	RSVD	RSVD	RSVD
1	RSVD	RSVD	RSVD
2	NORM	Reverse	LANE REVERSAL[0].x16
3	RSVD	RSVD	RSVD
4	Disable	Enable	eSP Enable
7	RSVD	RSVD	RSVD
8	RSVD	RSVD	RSVD
9	RSVD	RSVD	RSVD
10	RSVD	RSVD	RSVD
11	RSVD	RSVD	RSVD
12	RSVD	RSVD	RSVD
13	RSVD	RSVD	RSVD
14	RSVD	RSVD	RSVD
15	RSVD	RSVD	RSVD
16	RSVD	RSVD	RSVD
17	RSVD	RSVD	RSVD

CFG 0-17 all internal PULL-UP

LGA1150 (D)



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

DP/HDMI 4/4/4/20 FDI 4/4/4/12
Impedance=85 +- 15%

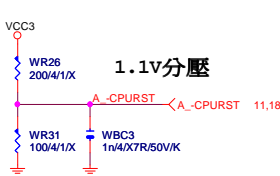
LGA1155 (C)



CPU PEG 5/5/5/20 Impedance=80 +- 15%

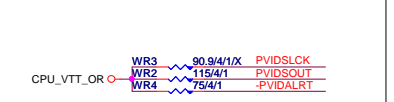
DMI 4/4/4/15 Impedance=85 +- 15%

-CPURST

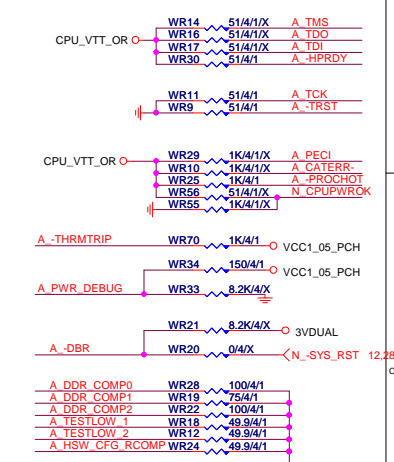


1.1V分壓

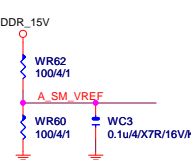
CPU SVID



CPU PU/PD



SM REF



THRMTRIP DISABLE FOR Z87 OVERCLOCK

Gigabyte Technology		
CPU LGA1150-A		
Size	Document Number	Rev
Custom	GA-H81-D3P	1.01
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LGA1150 (A)

LGA1150A									
		MAAA0	AU13	DDR0_MA0	DDR0_D00	AD38	MDA0		
		MAAA1	AU16	DDR0_MA1	DDR0_D01	AF39	MDA1		
		MAAA2	AU16	DDR0_MA2	DDR0_D02	AF38	MDA2		
		MAAA3	AU17	DDR0_MA3	DDR0_D03	AF39	MDA3		
		MAAA4	AU17	DDR0_MA4	DDR0_D04	AD37	MDA4		
		MAAA5	AU18	DDR0_MA5	DDR0_D05	AD40	MDA5		
		MAAA6	AU17	DDR0_MA6	DDR0_D06	AF37	MDA6		
		MAAA7	AU18	DDR0_MA7	DDR0_D07	AF40	MDA7		
		MAAA8	AU19	DDR0_MA8	DDR0_D08	AH40	MDA8		
		MAAA9	AU19	DDR0_MA9	DDR0_D09	AH39	MDA9		
		MAAA10	AW11	DDR0_MA10	DDR0_D10	AH38	MDA10		
		MAAA11	AU19	DDR0_MA11	DDR0_D11	AH39	MDA11		
		MAAA12	AU19	DDR0_MA12	DDR0_D12	AH38	MDA12		
		MAAA13	AU19	DDR0_MA13	DDR0_D13	AH38	MDA13		
		MAAA14	AW20	DDR0_MA14	DDR0_D14	AH37	MDA14		
		MAAA15	AT21	DDR0_MA15	DDR0_D15	AK40	MDA15		
				DDR0_D16	MDA16	MDA17			
		MODT_A0	AW10	DDR0_ODT0	AM38	MDA21			
		MODT_A1	AY8	DDR0_ODT1	AM39	MDA18			
			AW9	DDR0_ODT2	AP39	MDA19			
			AW8	DDR0_ODT3	AM38	MDA16			
				DDR0_D21	AP37	MDA22			
				DDR0_D22	AP37	MDA25			
			AW33	DDR0_ECC0	AV32	MDA29			
			AW33	DDR0_ECC1	AW37	MDA29			
			AW31	DDR0_ECC2	AV35	MDA26			
			AW31	DDR0_ECC3	AV35	MDA27			
			AW33	DDR0_ECC4	DD27	MDA28			
			AT33	DDR0_ECC5	DD28	MDA27			
			AT31	DDR0_ECC6	DD29	MDA30			
			AW31	DDR0_ECC7	DD30	MDA31			
				DDR0_D31	AW35	MDA33			
		SBAA0	AY12	DDR0_BA0	DD32	MDA33			
7		SBAA1	SBAT1	DDR0_BA1	DD33	MDA37			
7		SBAA2	AT21	DDR0_BA2	DD34	MDA34			
				DDR0_D35	AW6	MDA35			
				DDR0_CK0	AW6	MDA36			
		CKEA0	CKEA0	DDR0_CK0E	DD36	MDA32			
7		CKEA1	CKEA1	DDR0_CK1E	DD37	MDA38			
				DDR0_CK2E	DD38	MDA39			
				DDR0_CK3E	DD39	MDA41			
				DDR0_D40	AN1	MDA45			
		CSA0	CSA0	DDR0_CS_N0	DD41	MDA42			
7		CSA1	CSA1	DDR0_CS_N1	DD42	MDA43			
				DDR0_CS_N2	DD43	MDA44			
				DDR0_CS_N3	DD44	MDA45			
				DDR0_D45	AN2	MDA46			
				DDR0_CLK_P0	DD46	MDA47			
7		DLCKA0	DLCKA0	DDR0_CLK_N0	DD47	MDA49			
7		DLCKA1	DLCKA1	DDR0_CLK_P1	DD48	MDA49			
7		DLCKA2	DLCKA2	DDR0_CLK_N1	DD49	MDA50			

HASWELL/10SC1-F01150-11R_10SC1-F01150-12R]

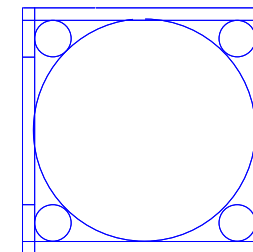
LGA1150 (B)

LGA150B					
MAA80	AL19	DDR1_MA0	DDR1_D00	AE34	MD80
MAA81	AK23	DDR1_MA1	DDR1_D01	AE35	MD81
MAA82	AM22	DDR1_MA2	DDR1_D02	AG35	MD82
MAA83	AM23	DDR1_MA3	DDR1_D03	AH35	MD83
MAA84	AP23	DDR1_MA4	DDR1_D04	AD34	MD84
MAA85	AL23	DDR1_MA4	DDR1_D04	AD35	MD85
MAA86	AY24	DDR1_MA5	DDR1_D05	AG34	MD86
MAA87	AZ24	DDR1_MA6	DDR1_D06	AH34	MD87
MAA88	AM24	DDR1_MA7	DDR1_D07	AL34	MD88
MAA89	AW25	DDR1_MA8	DDR1_D08	AL35	MD89
MAA810	AP18	DDR1_MA9	DDR1_D09	AK31	MD90
MAA811	AY25	DDR1_MA10	DDR1_D10	AL31	MD11
MAA812	AZ26	DDR1_MA11	DDR1_D011	AK34	MD12
MAA813	AR15	DDR1_MA12	DDR1_D012	AK35	MD13
MAA814	AV27	DDR1_MA13	DDR1_D013	AK32	MD14
MAA815	AZ27	DDR1_MA14	DDR1_D014	AL32	MD15
	AM28	DDR1_MA15	DDR1_D015	AN34	MD17
MODT B0	AM16	DDR1_ODT0	DDR1_D016	AP34	MD21
MODT B1	AL17	DDR1_ODT1	DDR1_D017	AN31	MD19
	AM16	DDR1_ODT1	DDR1_D018	AP31	MD20
	AK15	DDR1_ODT2	DDR1_D019	AN35	MD23
		DDR1_ODT3	DDR1_D020	AN35	MD20
			DDR1_D021	AN32	MD18
	AM25	DDR1_ECC0	DDR1_D022	AP32	MD22
	AM25	DDR1_ECC1	DDR1_D023	AM29	MD25
	AP25	DDR1_ECC2	DDR1_D024	AM28	MD28
	AM26	DDR1_ECC3	DDR1_D025	AR29	MD27
	AL26	DDR1_ECC4	DDR1_D026	AR28	MD30
	AR26	DDR1_ECC5	DDR1_D027	AL29	MD24
	AR25	DDR1_ECC6	DDR1_D028	AL28	MD29
	AR25	DDR1_ECC7	DDR1_D029	AP29	MD26
			DDR1_D030	AP28	MD29
SBA80	AK17	DDR1_BA0	DDR1_D031	AR12	MD33
SBA81	AL18	DDR1_BA1	DDR1_D032	AP12	MD33
SBA82	AW28	DDR1_BA2	DDR1_D033	AL13	MD35
			DDR1_D034	AL12	MD35
CKE80	AW29	DDR1_CKE0	DDR1_D038	AL13	MD36
CKE81	AY29	DDR1_CKE1	DDR1_D036	AP13	MD37
	AM29	DDR1_CKE2	DDR1_D037	AM13	MD38
	AM29	DDR1_CKE3	DDR1_D038	AM12	MD39
			DDR1_D039	AR9	MD45
CSB80	AP17	DDR1_CS_N0	DDR1_D040	AP9	MD41
CSB81	AN15	DDR1_CS_N1	DDR1_D041	AR6	MD47
	AN17	DDR1_CS_N2	DDR1_D042	AP6	MD48
	AL15	DDR1_CS_N3	DDR1_D043	AR10	MD44
			DDR1_D044	AP10	MD40
			DDR1_D045	AR7	MD46
			DDR1_D046	AP7	MD46
			DDR1_D047	AM9	MD52
DCLK80	AM20	DDR1_CLK_P0	DDR1_D048	AL9	MD53
DCLK81	AP21	DDR1_CLK_N0	DDR1_D049	AL6	MD50
DCLK81	AP22	DDR1_CLK_N1	DDR1_D051	AL7	MD55
	AN20	DDR1_CLK_P1	DDR1_D052	AM10	MD48
	AN21	DDR1_CLK_P2	DDR1_D053	AL10	MD49
	AP19	DDR1_CLK_P3	DDR1_D054	AM6	MD54
	AP20	DDR1_CLK_P4	DDR1_D055	AM7	MD51
		DDR1_CLK_P5	DDR1_D056	AH6	MD61
SCASB	AP16	DDR1_CAS*	DDR1_D057	AH7	MD60
	AL20	RSVD	DDR1_D058	A66	MD59
SRASB	AM18	DDR1_RAS*	DDR1_D060	A67	MD63
SWIEB	AK16	DDR1_WE*	DDR1_D061	AJ6	MD56
			DDR1_D062	AJ7	MD57
	AB39	DDR_VREF_D00	DDR1_D063	A66	MD58
	AB40	DDR_VREF_D01	DDR1_D064	A67	MD62
			DDR1_D065	AF35	QD30
			DDR1_D066	AL33	QD31
			DDR1_D067	AP33	QD32
			DDR1_D068	AN28	QD33
			DDR1_D069	AN12	QD34
			DDR1_D070	AP8	QD35
			DDR1_D071	AL8	QD36
			DDR1_D072	AG7	QD37
			DDR1_D073	AN25	QD38
			DDR1_D074	AF34	QD3

HASWELL/10SC1-F01150-11R_10SC1-F01150-12R

LGA1150 (CR)

LGA1150
ILM_BP/1156/CSP/12KRC-0F0001-52R_12KRC-0F0001-51R]



DDR BUS

7 MODT_A[0..1] ↔ MODT_A[0..1]

8 MODT_B[0..1] ↔ MODT_B[0..1]

7 MDA[0..63] ↔ MDA[0..63]

8 MDB[0..63] ↔ MDB[0..63]

7 DQSA[0..7] ↔ DQSA[0..7]

7 -DQSA[0..7] ↔ -DQSA[0..7]

7 MAAA[0..15] ↔ MAAA[0..15]

8 MAAB[0..15] ↔ MAAB[0..15]

8 DQSB[0..7] ↔ DQSB[0..7]

8 -DQSB[0..7] ↔ -DQSB[0..7]

(F, J)



(G,H,I)

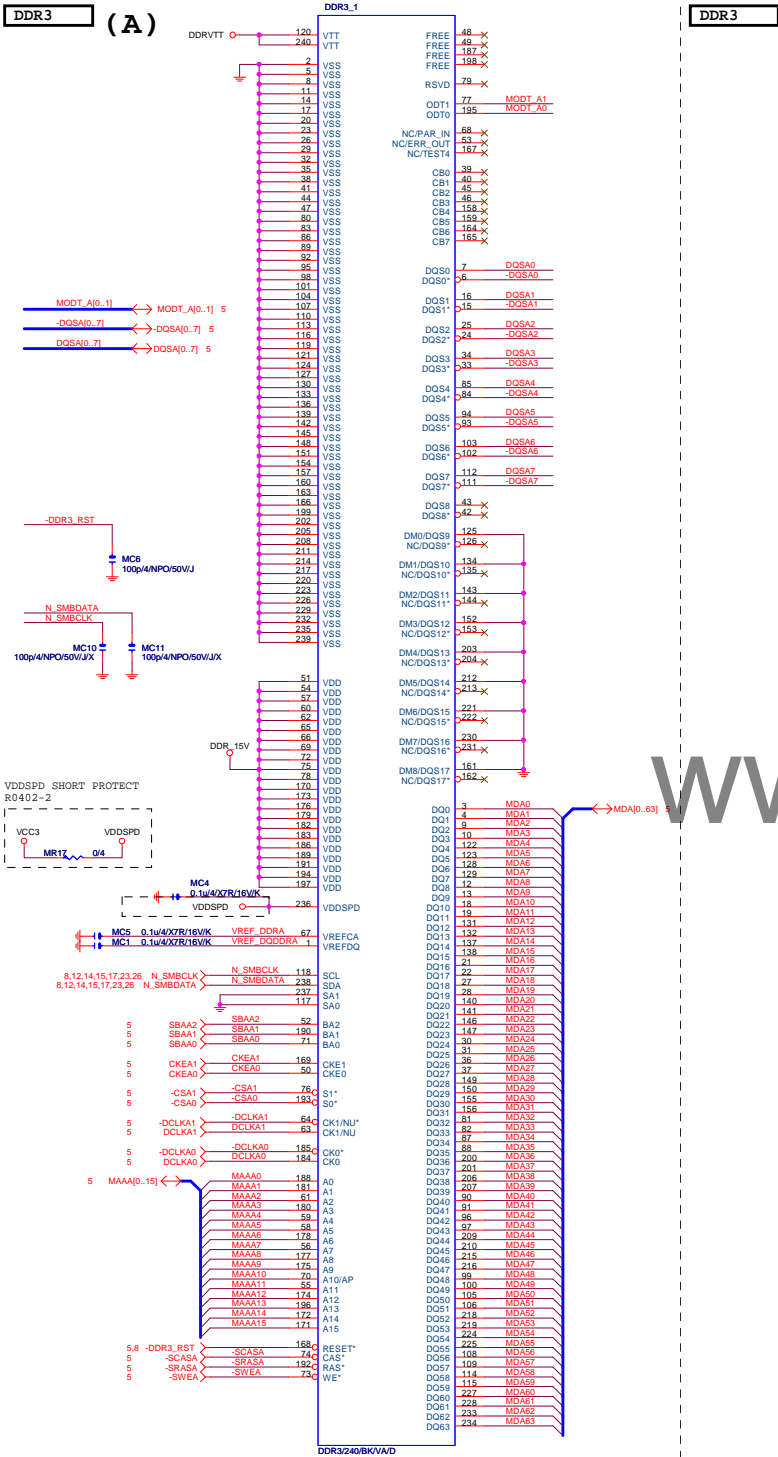


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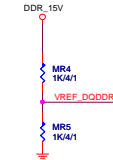
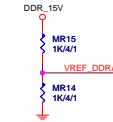


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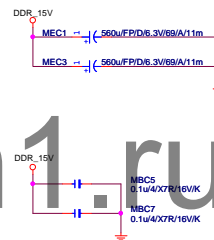


DDR3 VREF

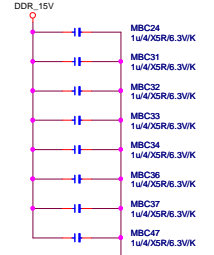
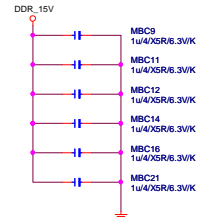
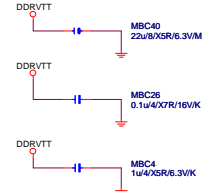


DDR TERMINATION CHANNEL A/B

DDR15V Decouple



DDRVTT Decouple

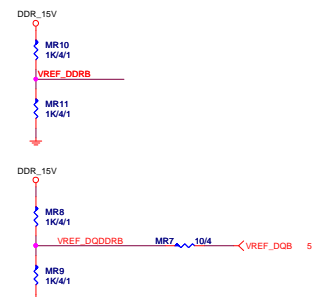
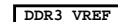
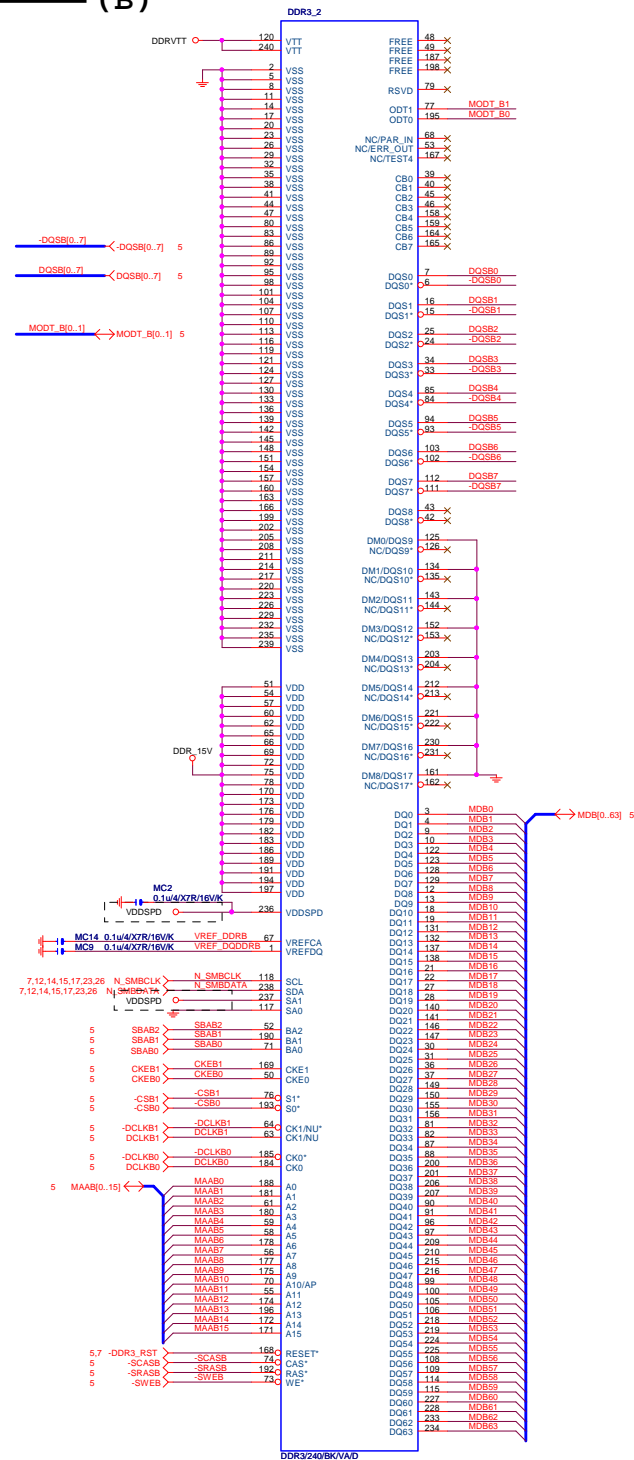


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File			DDR3 CHANNEL A	
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			Sheet	33



(B)



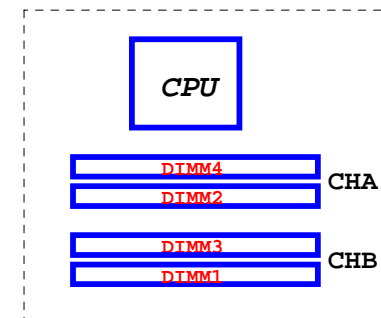
DDR3 1066,1333,1600MHZ BANDWIDTH

```
DDR3 1066MHZ
DDR3 clock=533MHZ
DDR3 single channel bandwidth=533x2x8Byte=8.5GB/s
DDR3 dual channel bandwidth=533x2x2x8Byte=17GB/s
```

```
| DDR3 1333MHZ
| DDR3 clock=667MHZ
| DDR3 single channel bandwidth=10.6GB/s
| DDR3 dual channel bandwidth=21GB/s
```

```
DDR3 1600MHZ
DDR3 clock=800MHZ
DDR3 single channel bandwidth=12.8GB/s
DDR3 dual channel bandwidth=25.6GB/s
```

COUPON

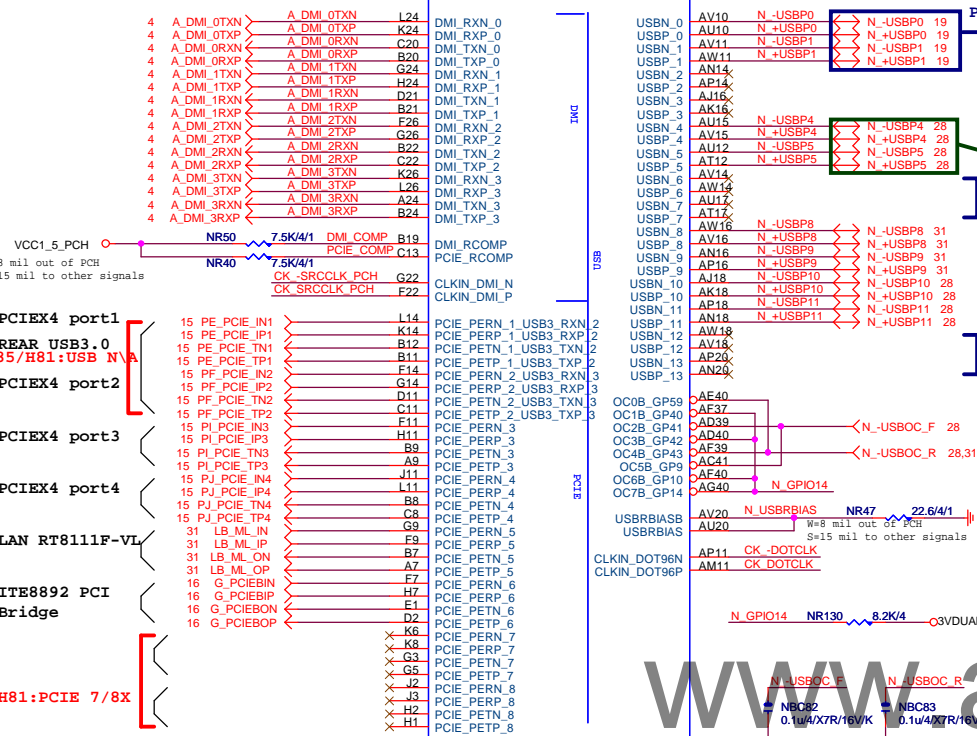


PCH

(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 +- 15%



放靠近 Device & PCI-E Slot

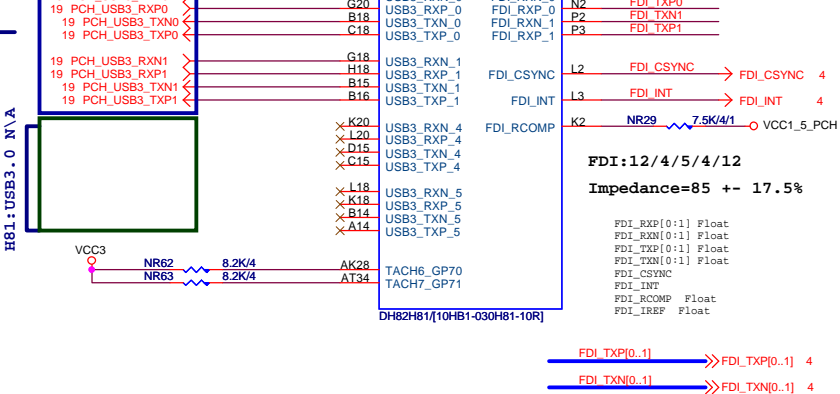
PCH PCIE ,DMI 4/4/4//15 Impedance=85 +- 15%

usb2.0 5/7/5//12
usb3.0 5/7/5//20

Impedance=85 +- 15%

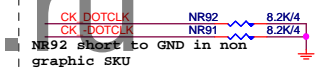
PCH

(F)



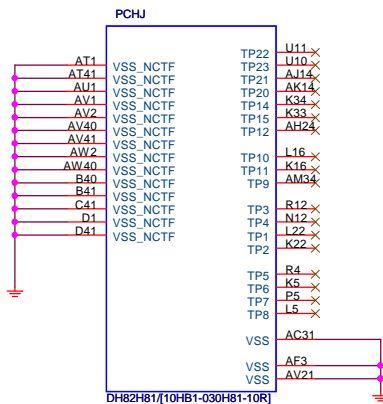
USB3.0:20/5/7/5/20 (breakout min 8/4/4/4/8) ; ONLY 3 VIAS
Impedance=85 +- 17.5%
Back Panel < 10000 MILS
Front Panel < 6000 MILS

Mount for integrated clock Generation Mode



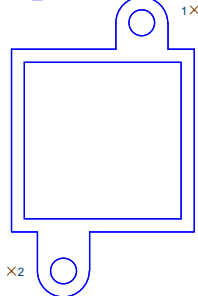
PCH

(J)



PCH H/S

SB_HEATSINK



PCH_HS
HEAT SINK/N-BG/GBT MK/Z87/KWOG/[12SP2-S04208-61R_12SP2-S04208-62R_12SP2-S04208-63R]

NEW H81 MODEL
Footprint: BGAHSINK-75;
3mm孔徑

USB TABLE

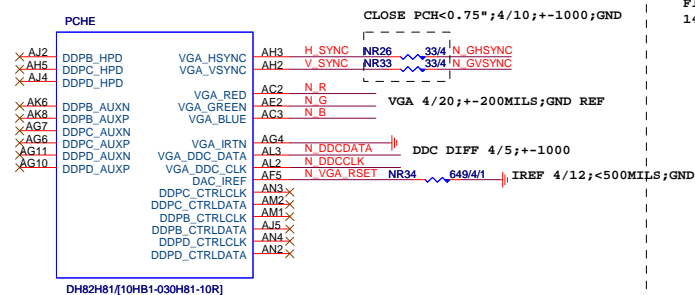
OC[3:0]# for Device 29 (ports 0-7)
OC[7:4]# for Device 26 (ports 8-13)

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

Gigabyte Technology

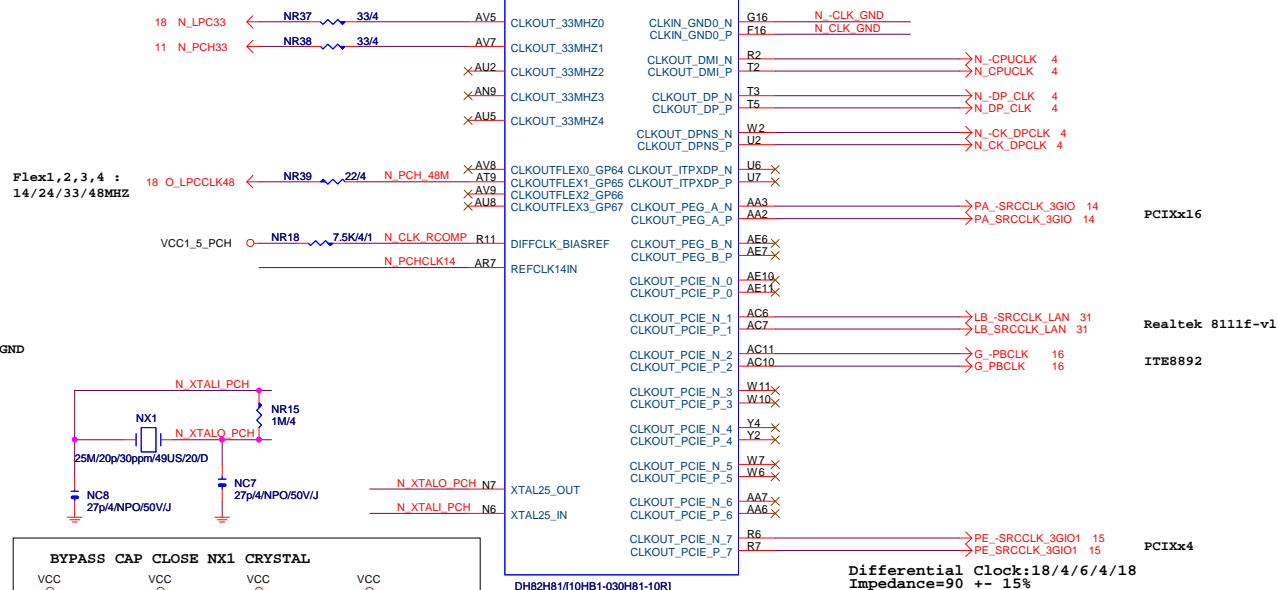
Title PCH FDI,DMI,USB ,PCIE		
Size Custom	Document Number GA-H81-D3P	Rev 1.01
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PCH (E)

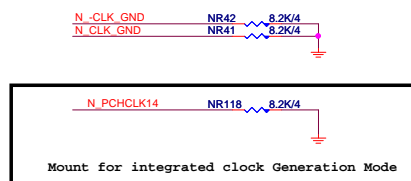


VGA_DISABLE
R,G,B NC OR GND
IRTN / IREF GND
VGA_HSYNC, VGA_VSYNC,DDC_CLK, DDC_DATA NC
POWER VCCADAC(AF2), VCCADACBG(AE1) GND

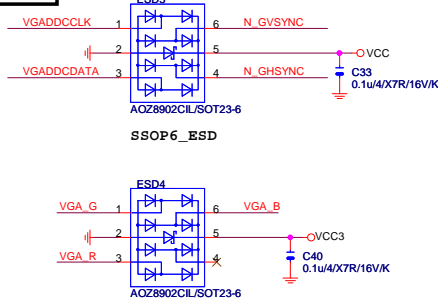
PCH (G)



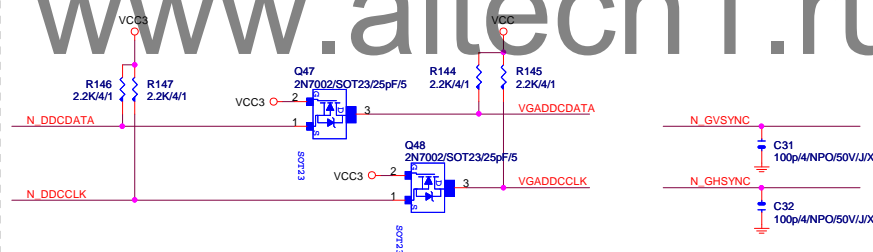
PCH CLK PD



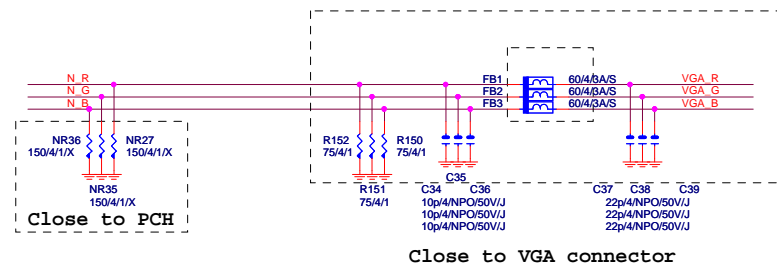
VGA ESD



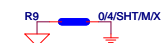
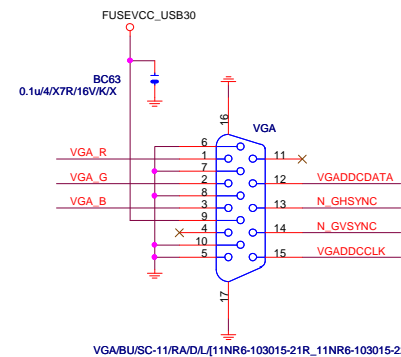
VGA DDC



VGA DDC



VGA CONNECTOR



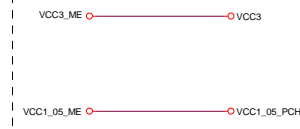
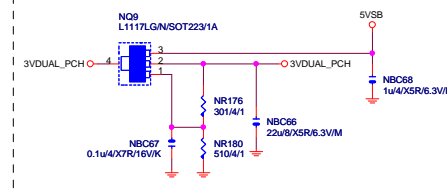
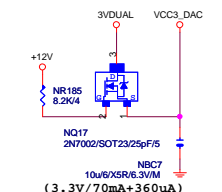
Gigabyte Technology

Title			
PCH DISPLAY ,CLK BUFFER			
Size	Document Number	Rev	
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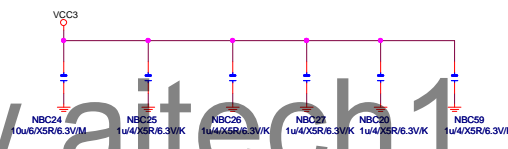
PCH (I)



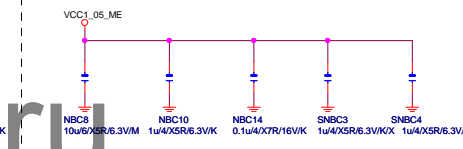
SHT PWR



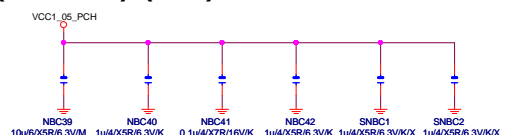
(3.3V) (X6)



(1.05V) (x5)



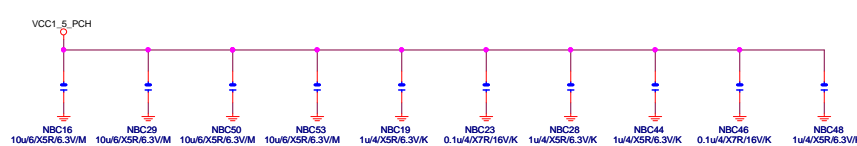
(1.05V) (X6)



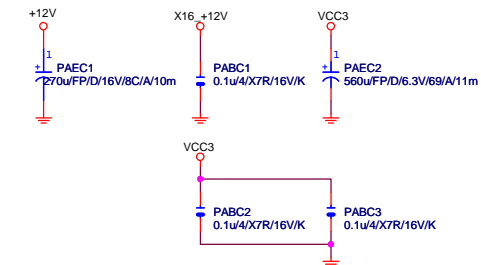
(1.05V)(x2) (3.3V) (x2)



(1.5V) (x10)

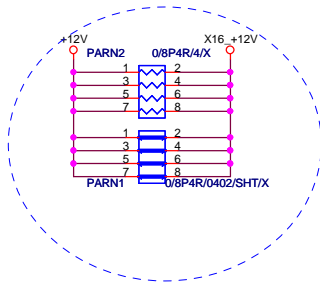


PCIEX16 CAP



PCIEX16 PROTECT SHT

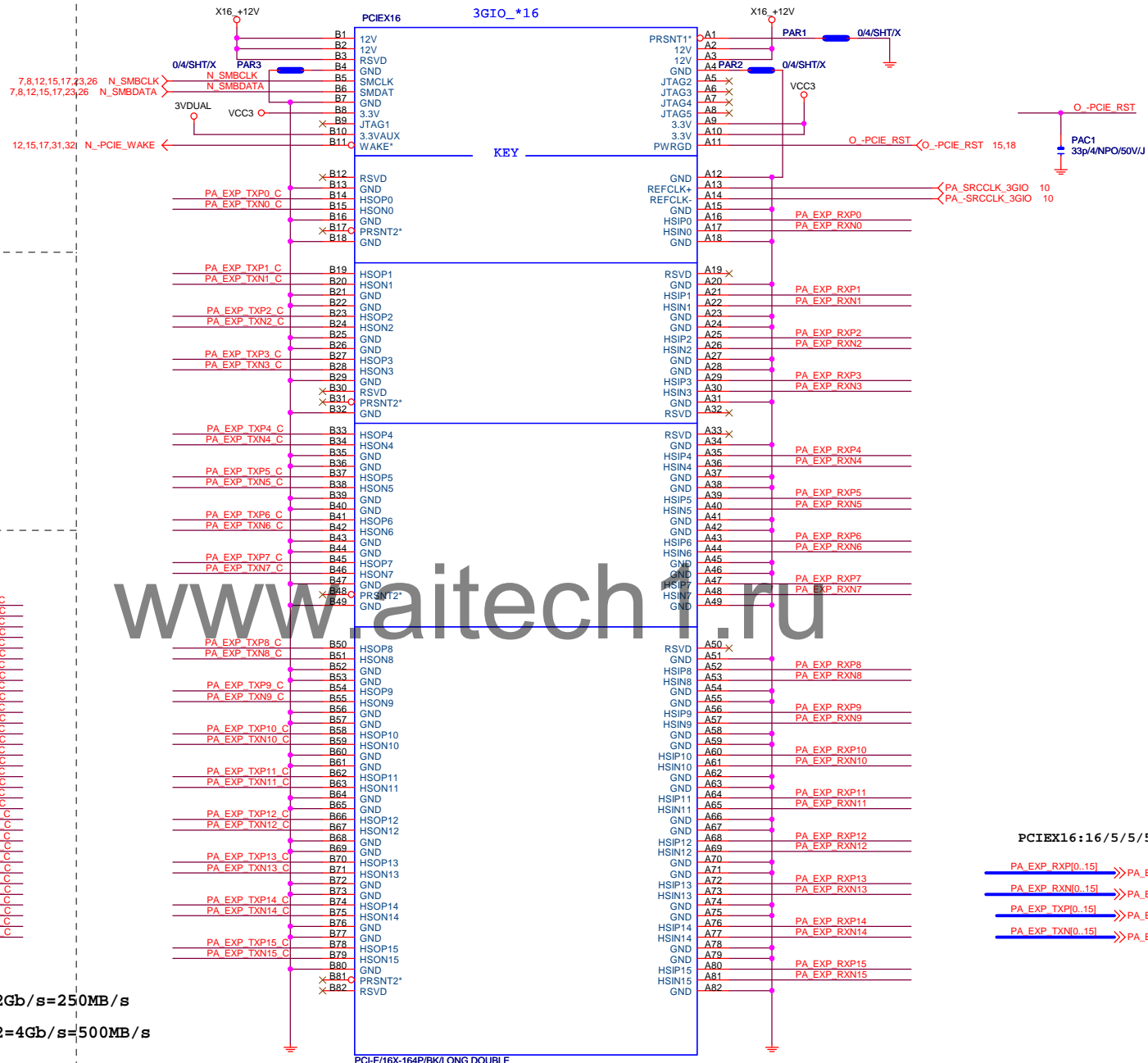
+12 protect
short-wire test



PCIEX16 AC CAP

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

PCIEX16 SLOT

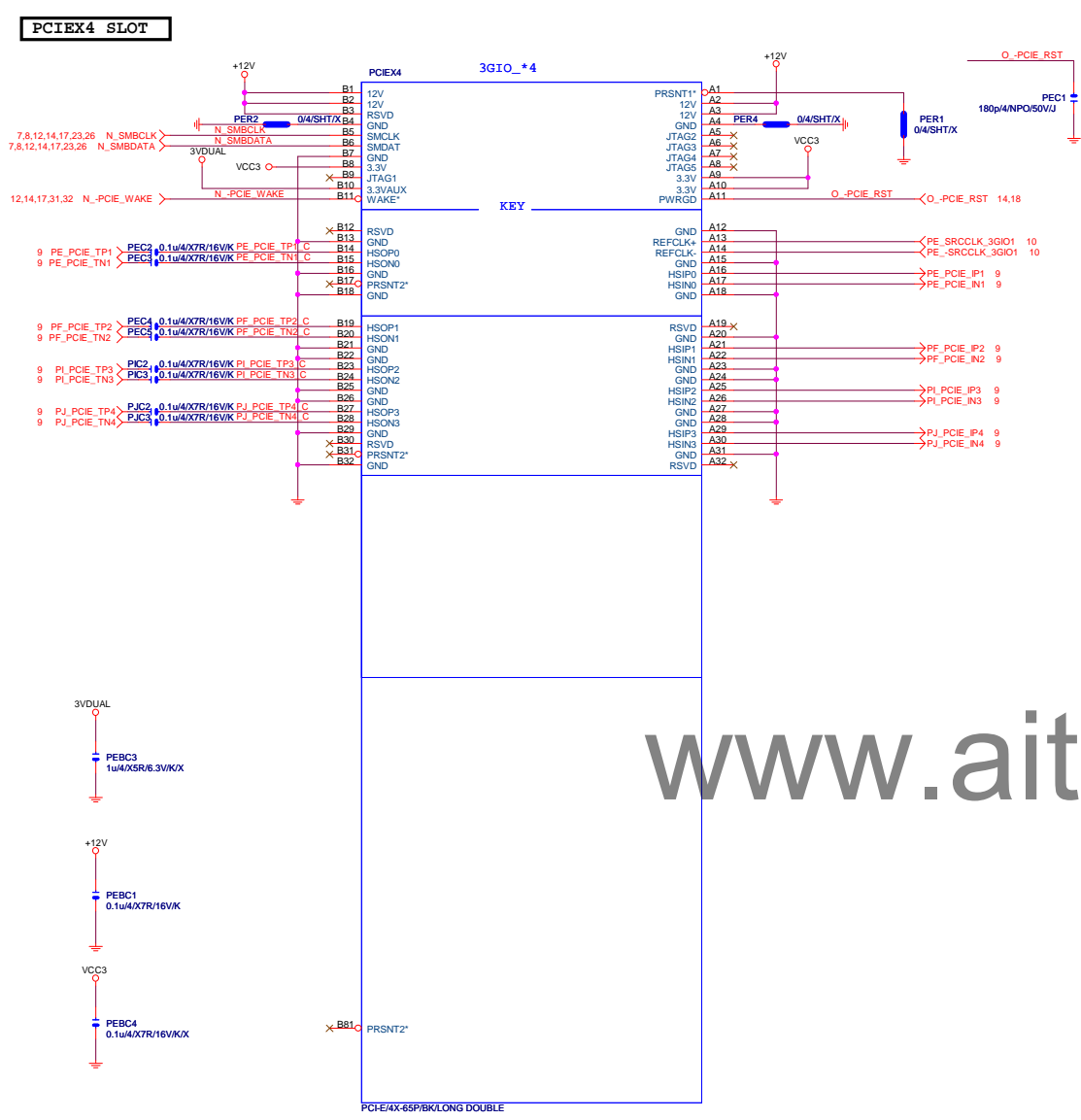


PCIEX16:16/5/5/5/16

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

Gigabyte Technology

PCI EXPRESS * 16			
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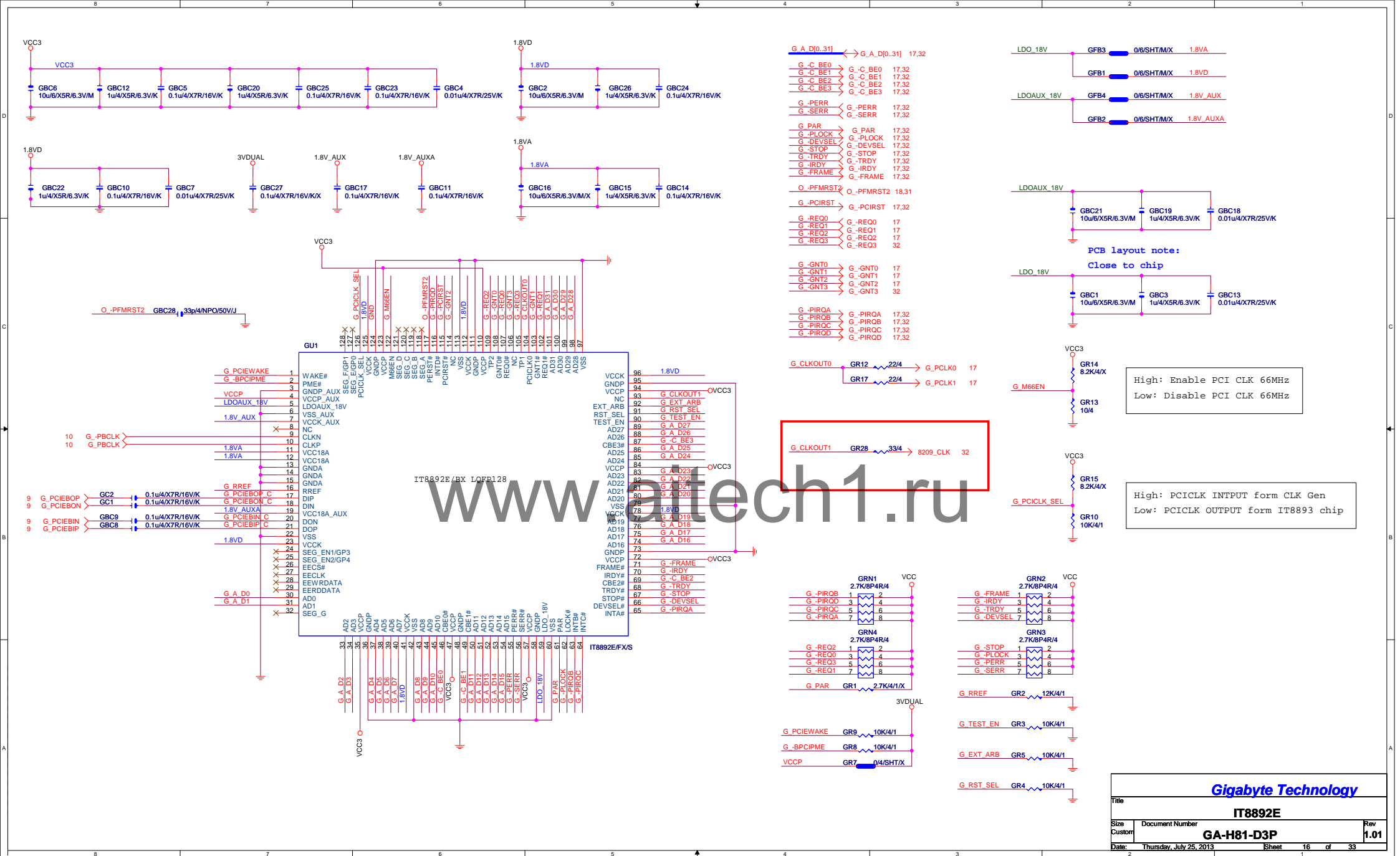
PCIEX1 SLOT

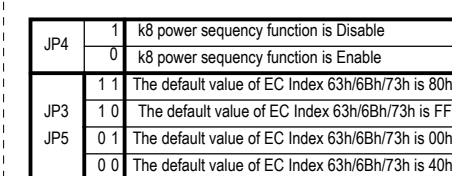
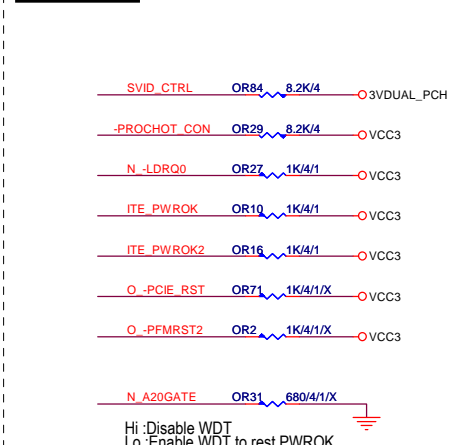
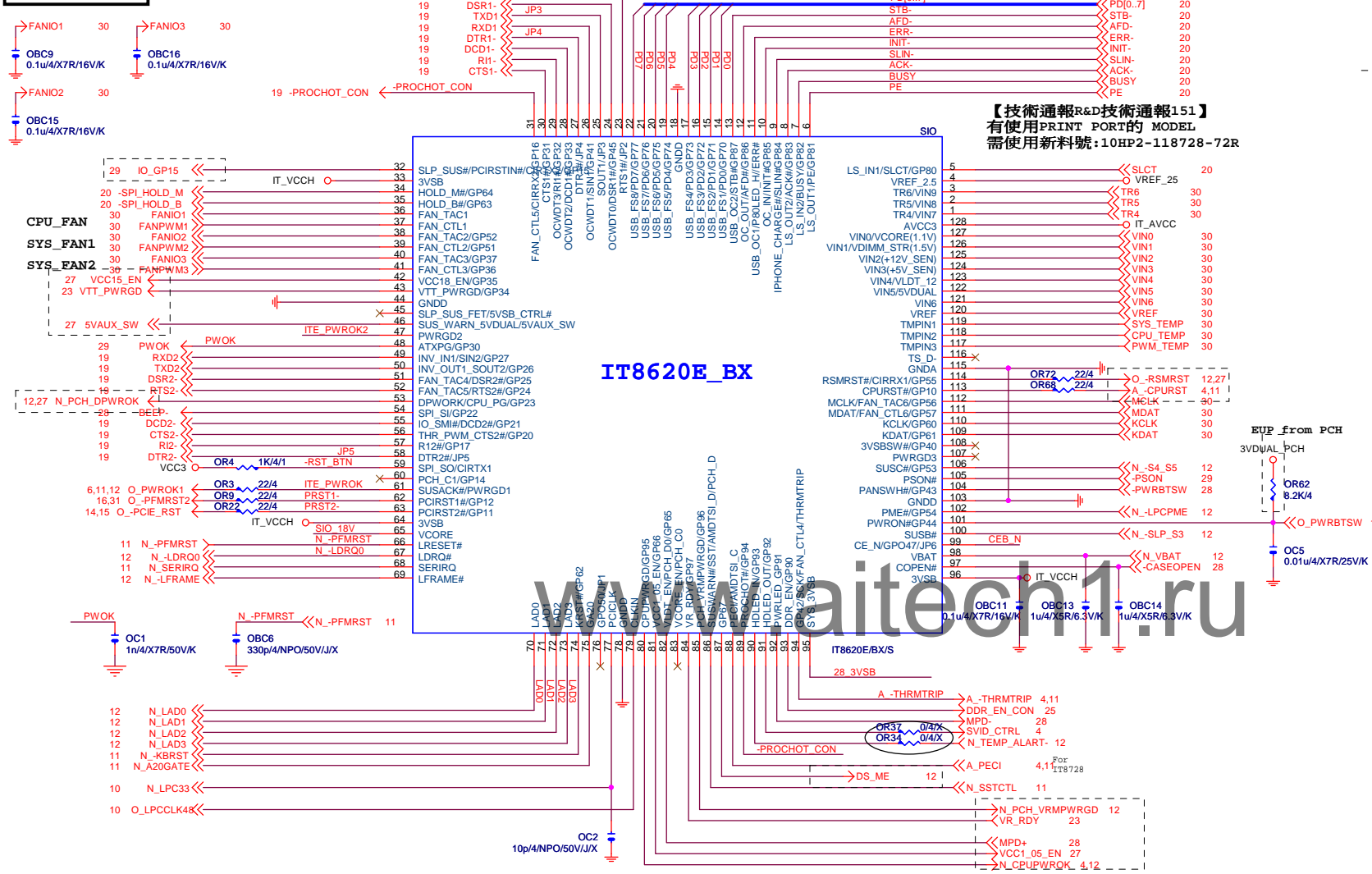
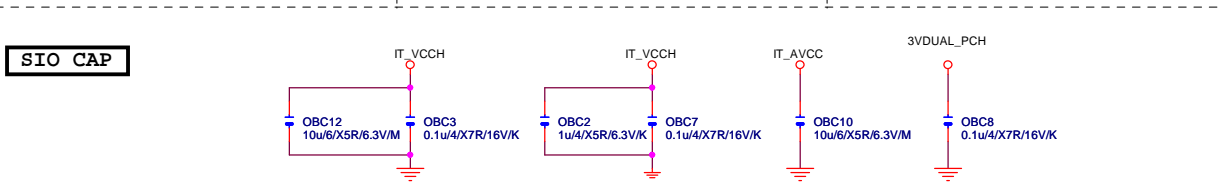
PCIEX1_1

PCIEX4/X1 SWITCH

	N_PCIE_4_SW (PCH_GPIO48)	PCIEX4_X1 (SIO_GPIO26)
P	H	H
C		
PCIEX4 No devices	H	H
PCIEX4 -> X1		
PCIEX4 Have devices		
PCIEX4 -> X4	L	L
PCIEX1_1/2 --> N/A		

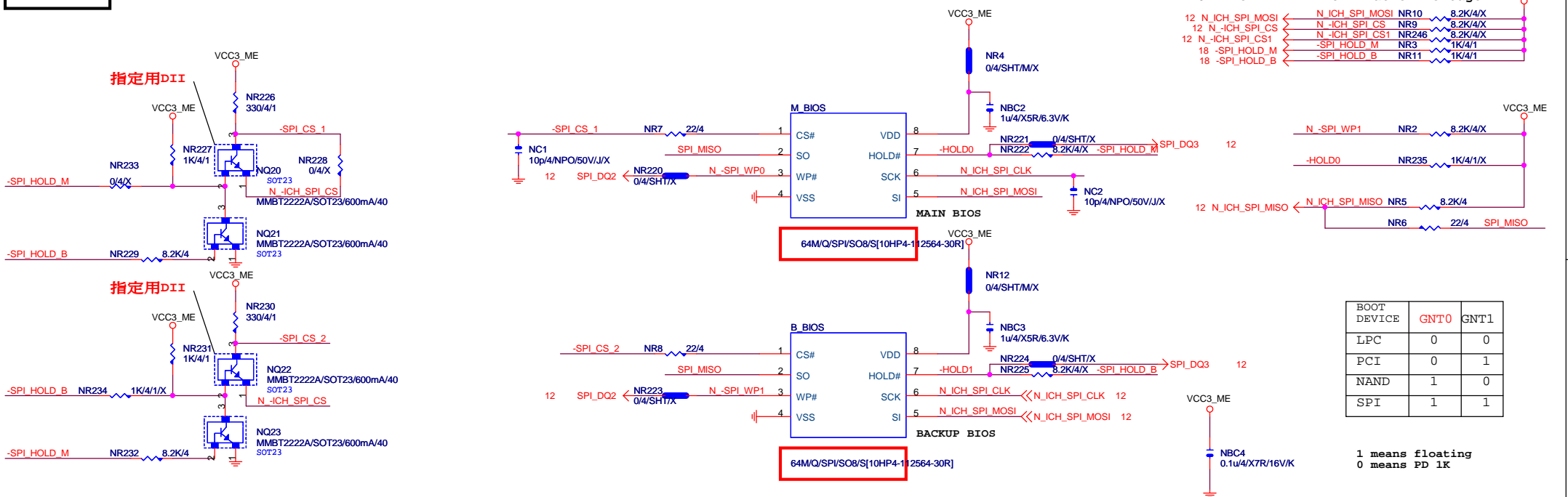
Function	SEL
xI--> x0a	L;PCIEX4 SLOT-->X1
xI--> x0b	H;PCIEX4 SLOT-->X4



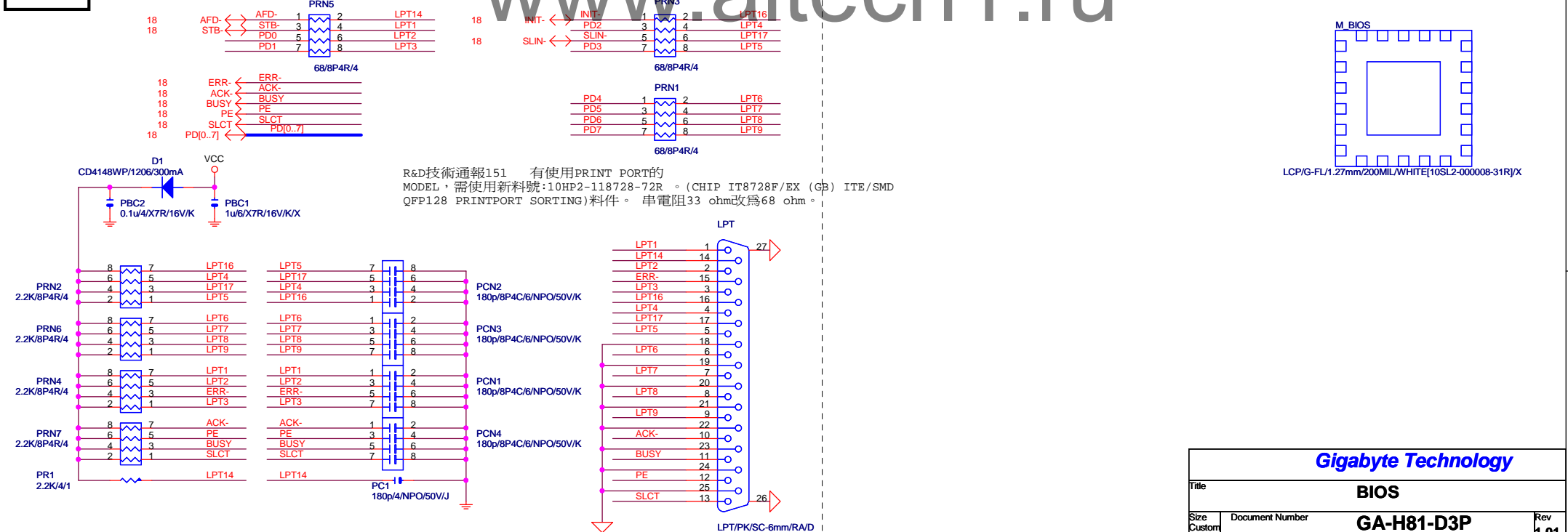
SIO_18V

Gigabyte Technology			
ITE 8728 LPC IO			
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DUAL BIOS

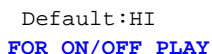


LPT PORT



FOR ON/OFF PLAY

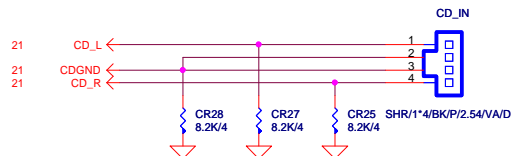
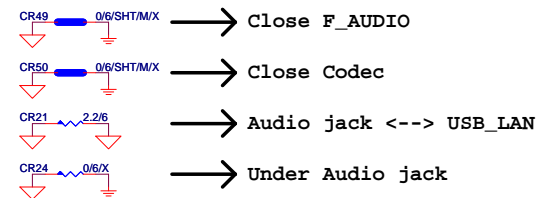
co-layout



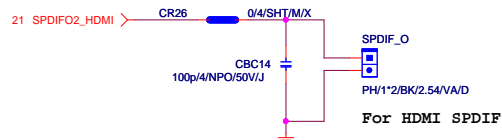
50歐姆:4/10

Gigabyte Technology

Title			
HD AUDIO ALC887			
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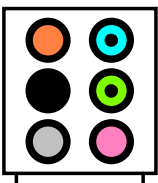


SPDIF_OUT

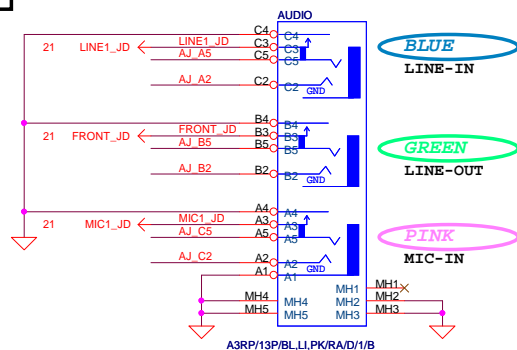


SPDIF_IN

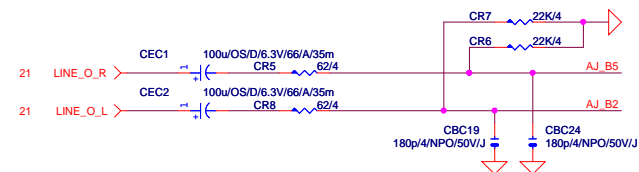
AZALIA JACK



AZALIA JACK



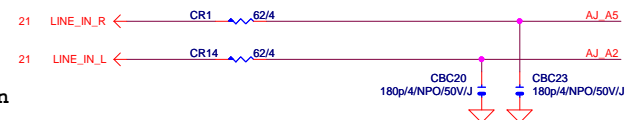
LINE-OUT



LINE-IN

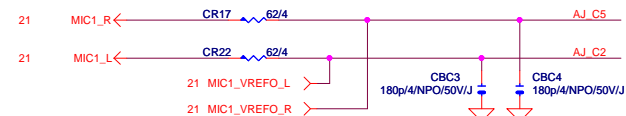
Verify MIC function
 in LINE-in

Only reserved for ALC888



For 889A/888

MIC-IN

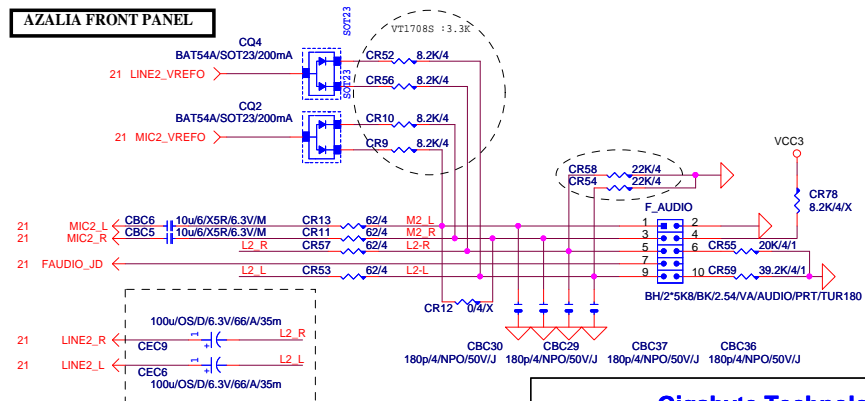


SURROUND

CEN/LFE

SURR BACK

AZALIA FRONT PANEL



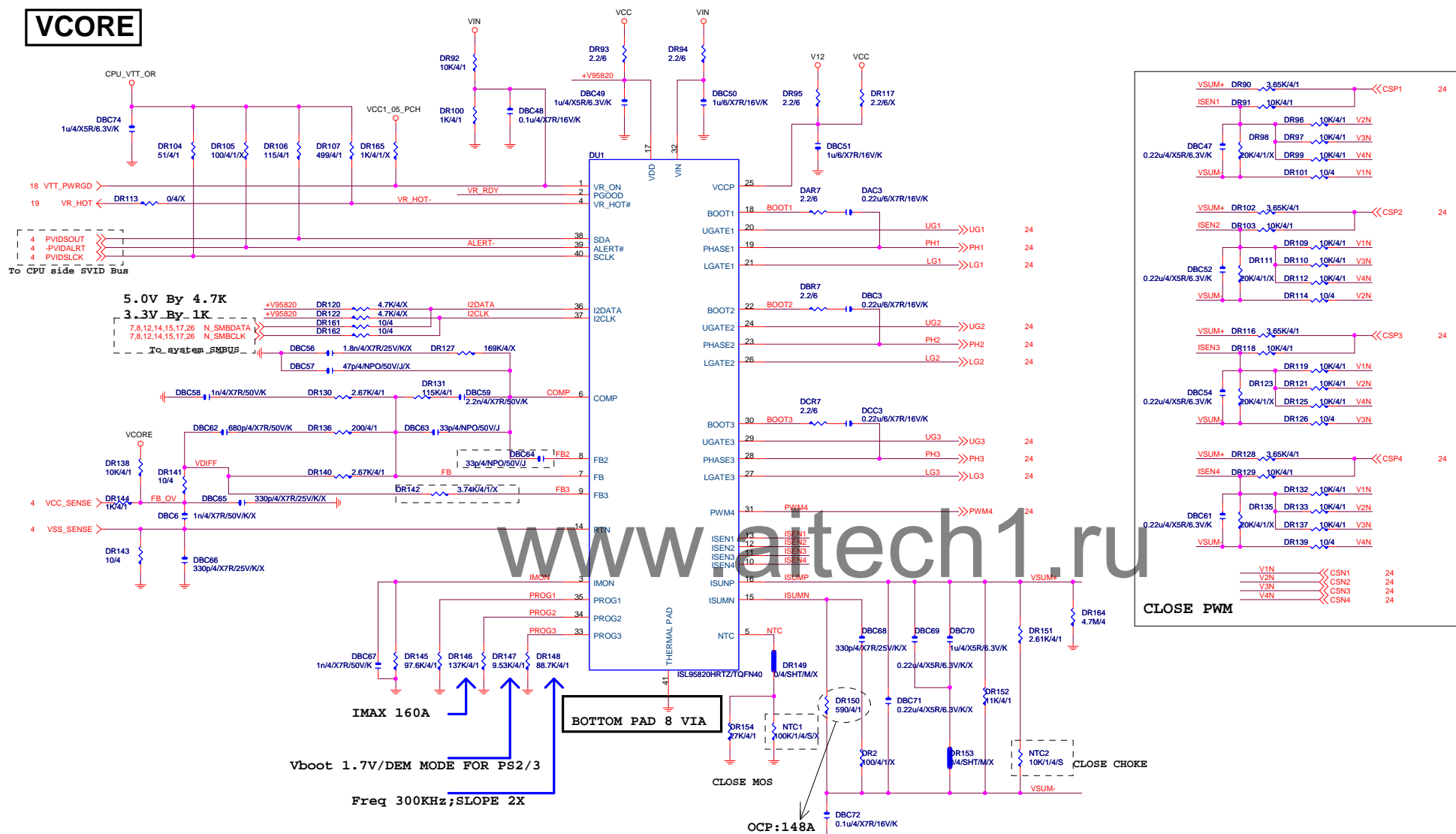
Gigabyte Technology

AUDIO JACK

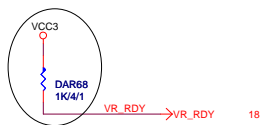
GA-H81-D3P

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VCORE



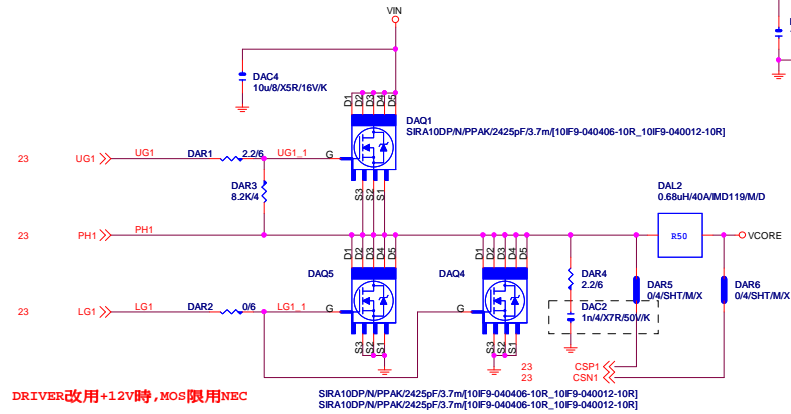
B85 SPEC X



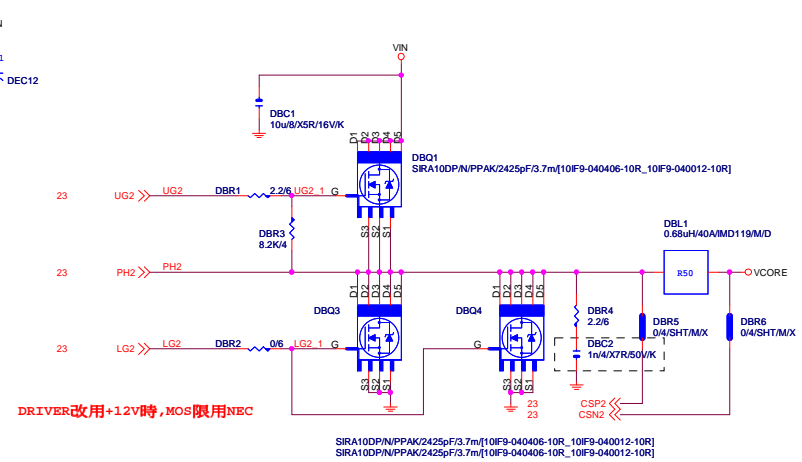
Gigabyte Technology			
Title VCORE_ ISL95820			
Size	Document Number	Rev	
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VCORE

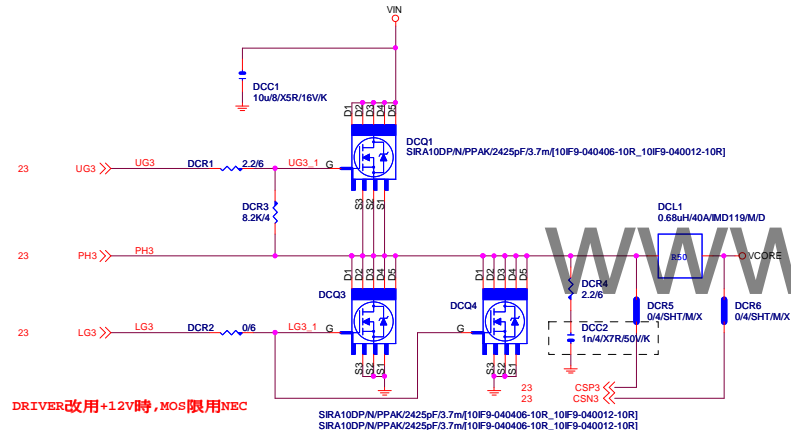
[1]



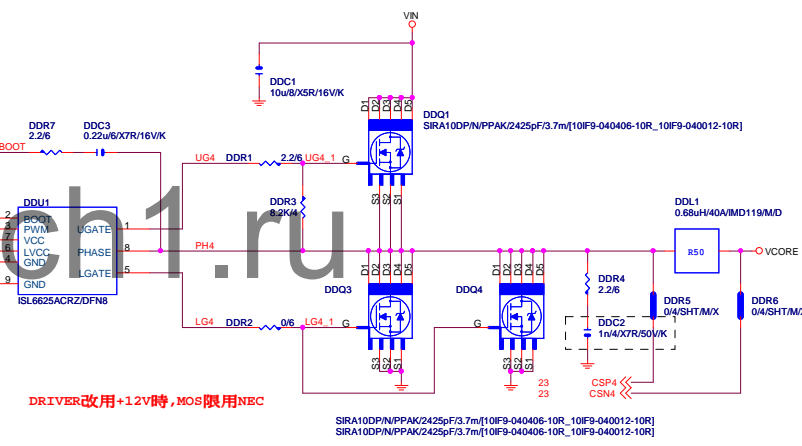
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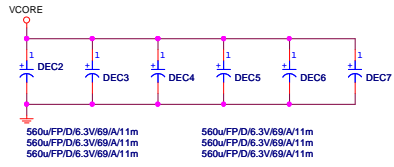
[3]



[4]



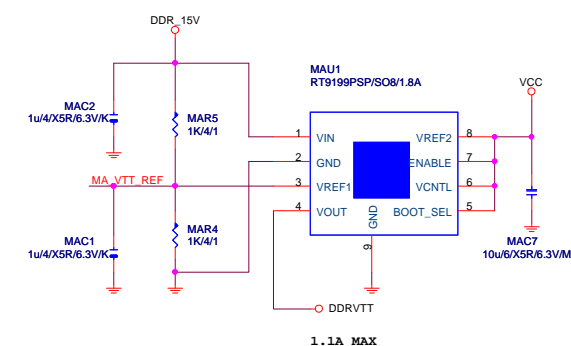
MOSFET HEATSINK



Gigabyte Technology			
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VCC3_ME

DDRVTT

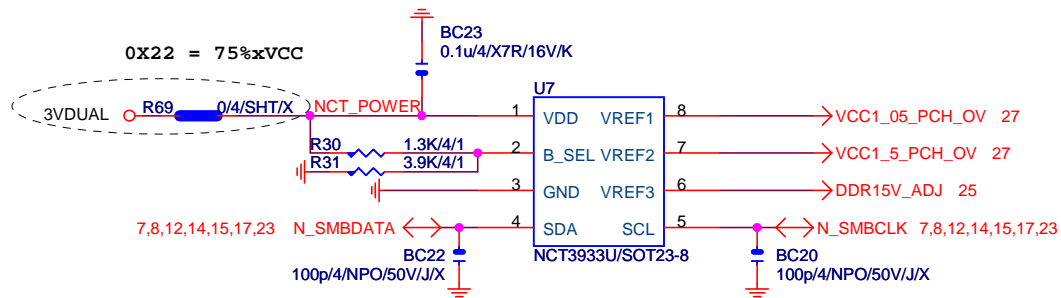


Remote sense	請從最重的負載端點拉回
IA_DR12	
2K/4I	
$.8 \cdot (1 + RS/RO) = V_{out}$	
$.8 \cdot [1 + 2K/(2.2K)] =$	
.527V	

GIGABYTE™

Title			
DDR15V / M3 POWER			
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OVER VOLTAGE

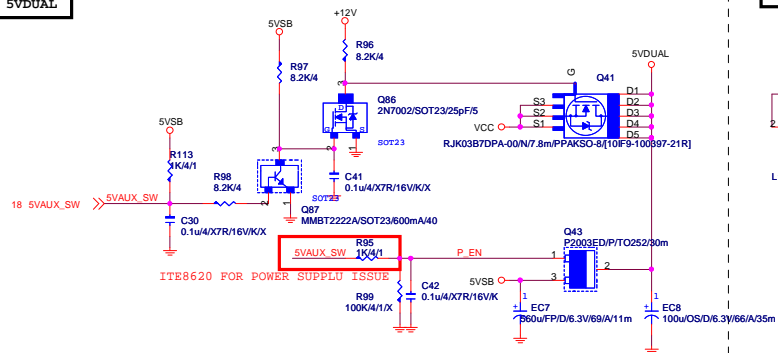


NCT3933	0X2A	0X20	0X22
VREF1	DDRVT	VREF_DDRA_DQ	PCH Core
VREF2	VREF_DDRA_CA	N/A	VCC1_5_PCH
VREF3	VREF_DDRA_CA	VREF_DDRB_DQ	SMREF

Gigabyte Technology

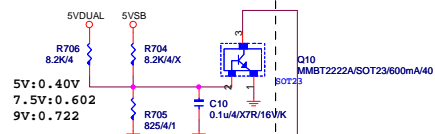
Title		
CPU CORE VR-2		
Size	Document Number	Rev
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5VDUAL



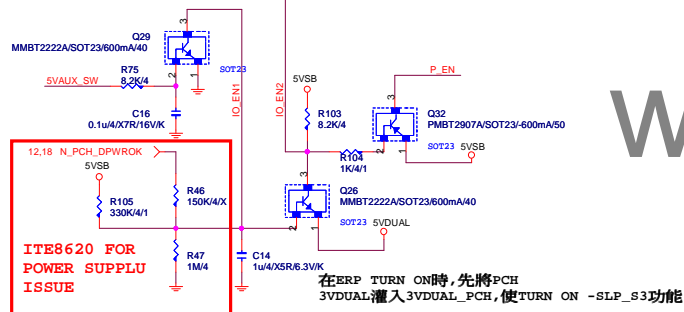
5VSB OVP:7.5V protection

NOTE 82:改5V DUAL,6V保護



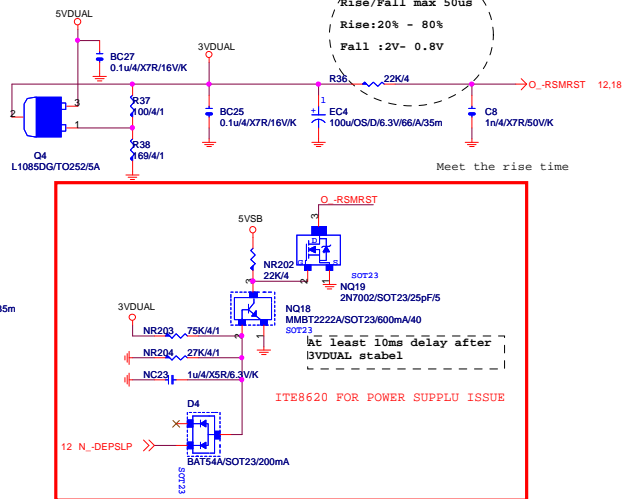
5VDUAL SHORT PROTECT

PCH ErP Control

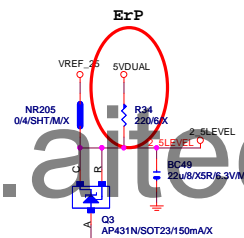


PCH ERP

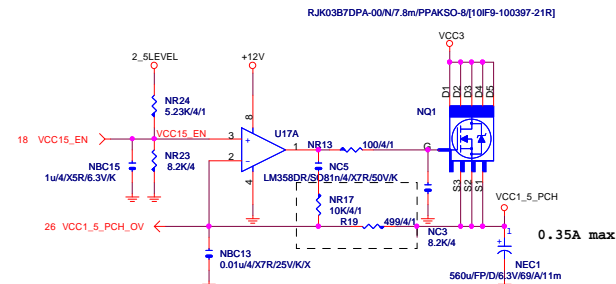
3VDUAL



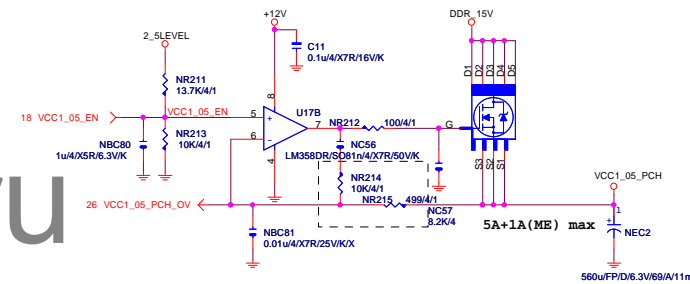
2_5LEVEL



VCC1_5_PCH



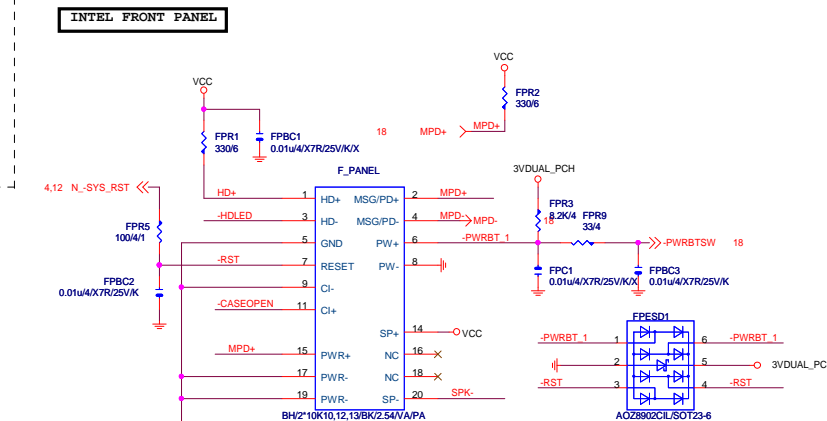
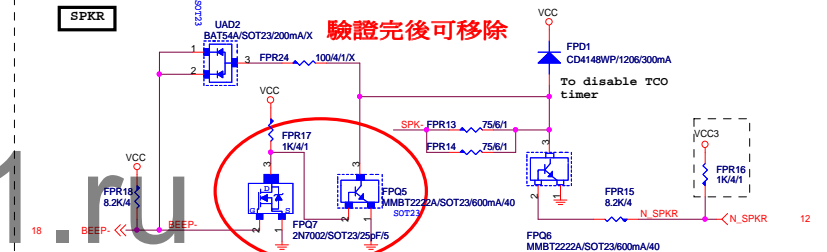
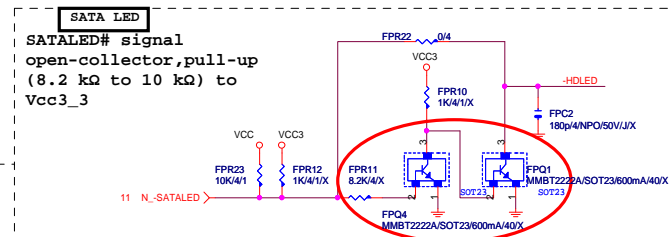
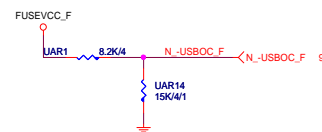
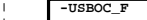
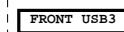
VCC1_05_PCH



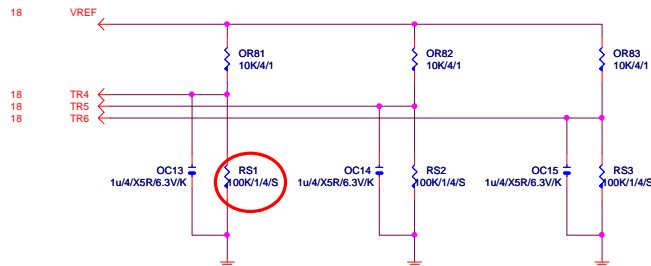
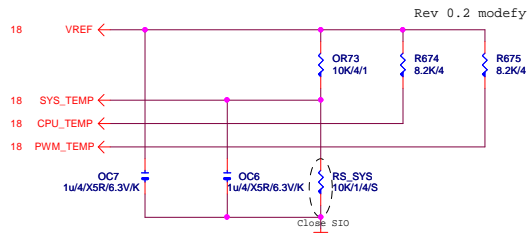
PWR SEQ

Gigabyte Technology

Title			DISCRETE POWER
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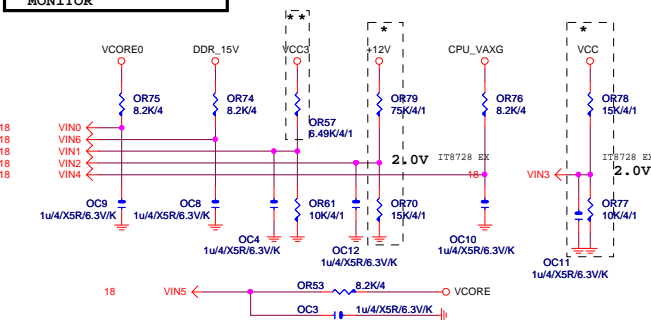


TEMP H/W MONITOR



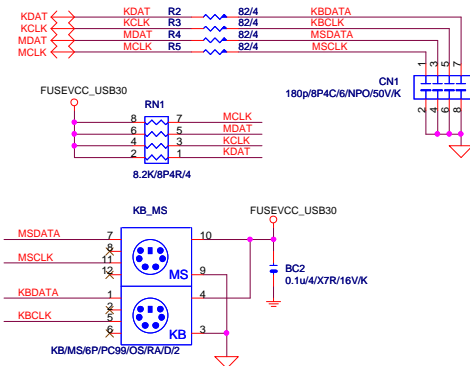
10K OR 100K ?
RS1 · RS2 · RS3 CLOSE CPU VR MOSFET

VOLTAGE-- H/W MONITOR

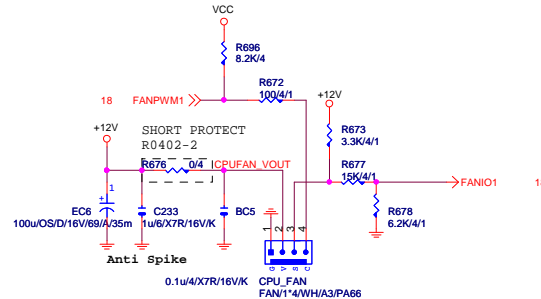


The division voltage of VIN2 & VIN3 must be around 2.9V

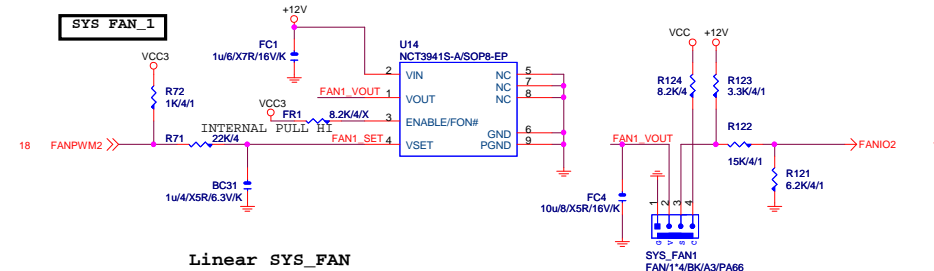
KB/USB



CPU SMART FAN

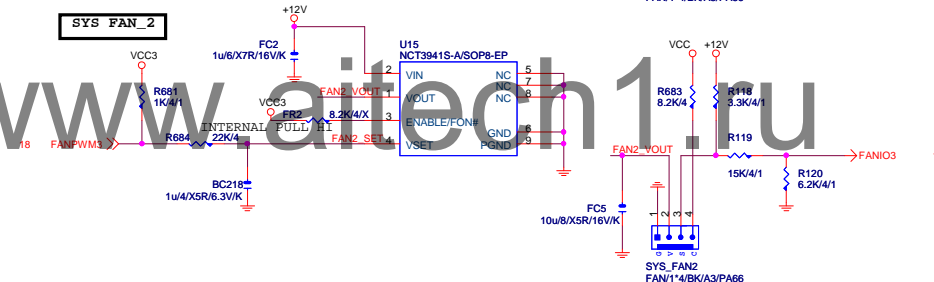


SYS_FAN_1

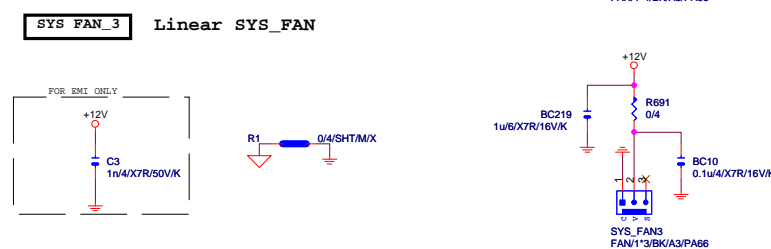


Linear SYS_FAN

SYS_FAN_2



SYS_FAN_3

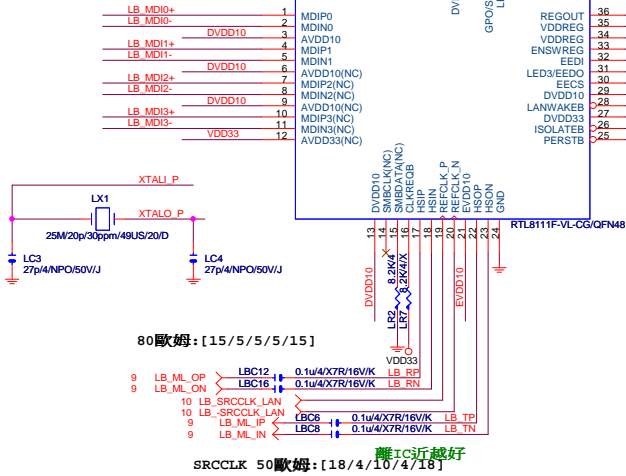


Gigabyte Technology

Title			HWM,KB/MS, FAN CTRL
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LAN:INTEL I217

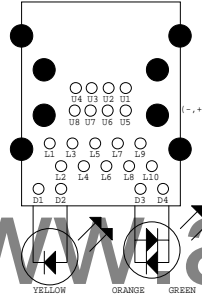
100歐姆:[20/4/8/4/20]



80歐姆:[15/5/5/5/15]

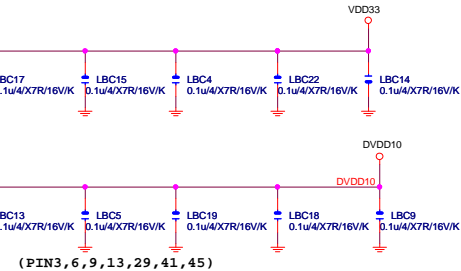
SRCLK 50歐姆:[18/4/10/4/18]

P35-152-19W9

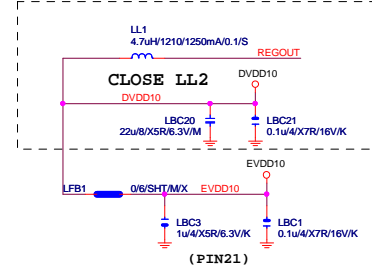


3VDUAL

(CLOSE LU1)



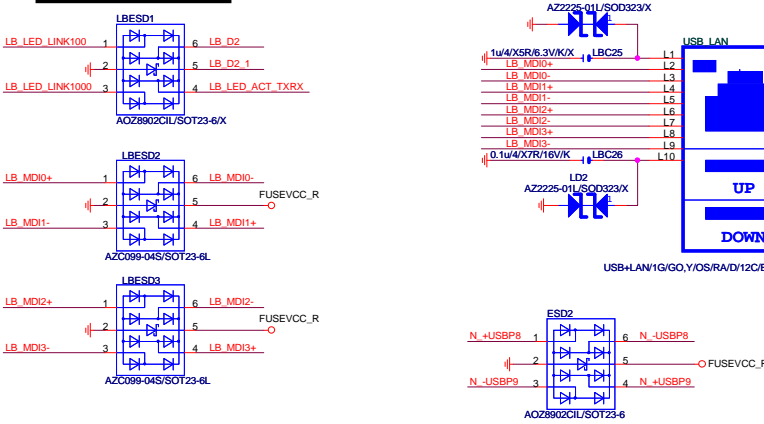
(PIN3,6,9,13,29,41,45)



(PIN21)

USB30_LAN CONNECTOR

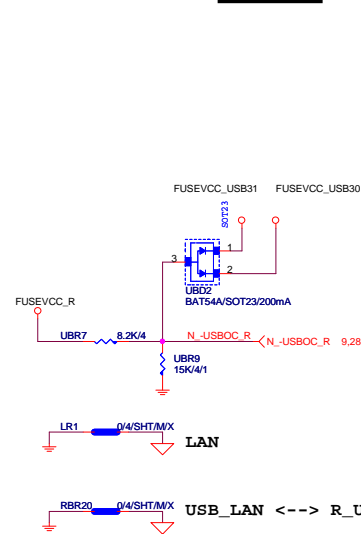
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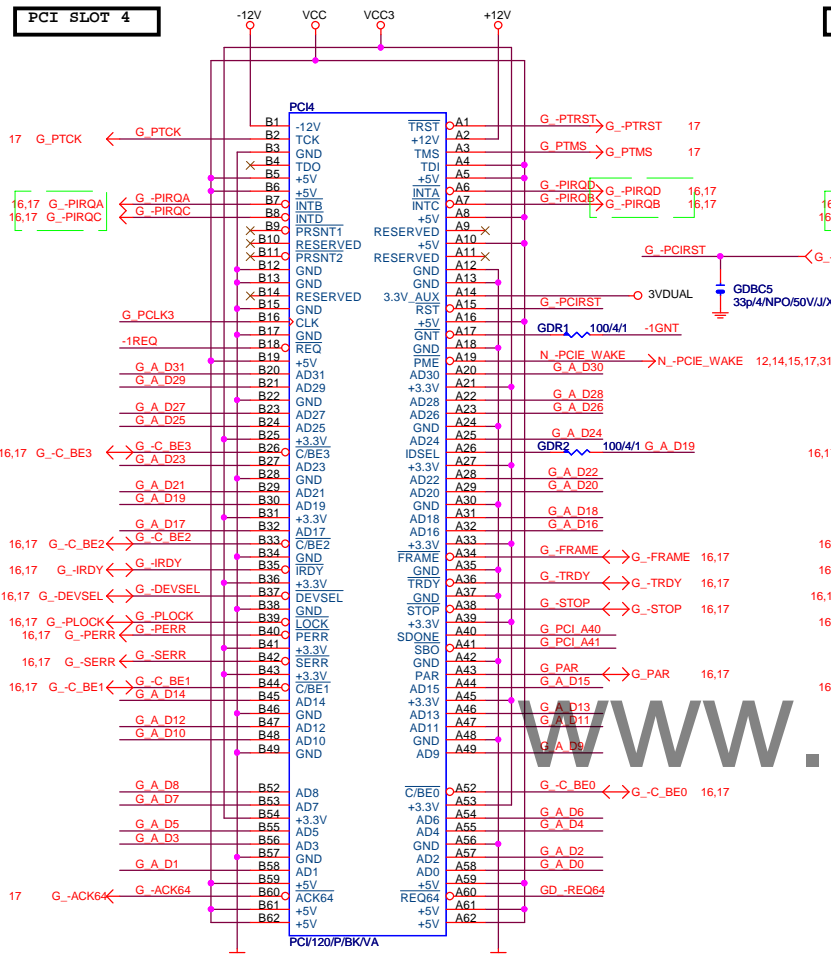
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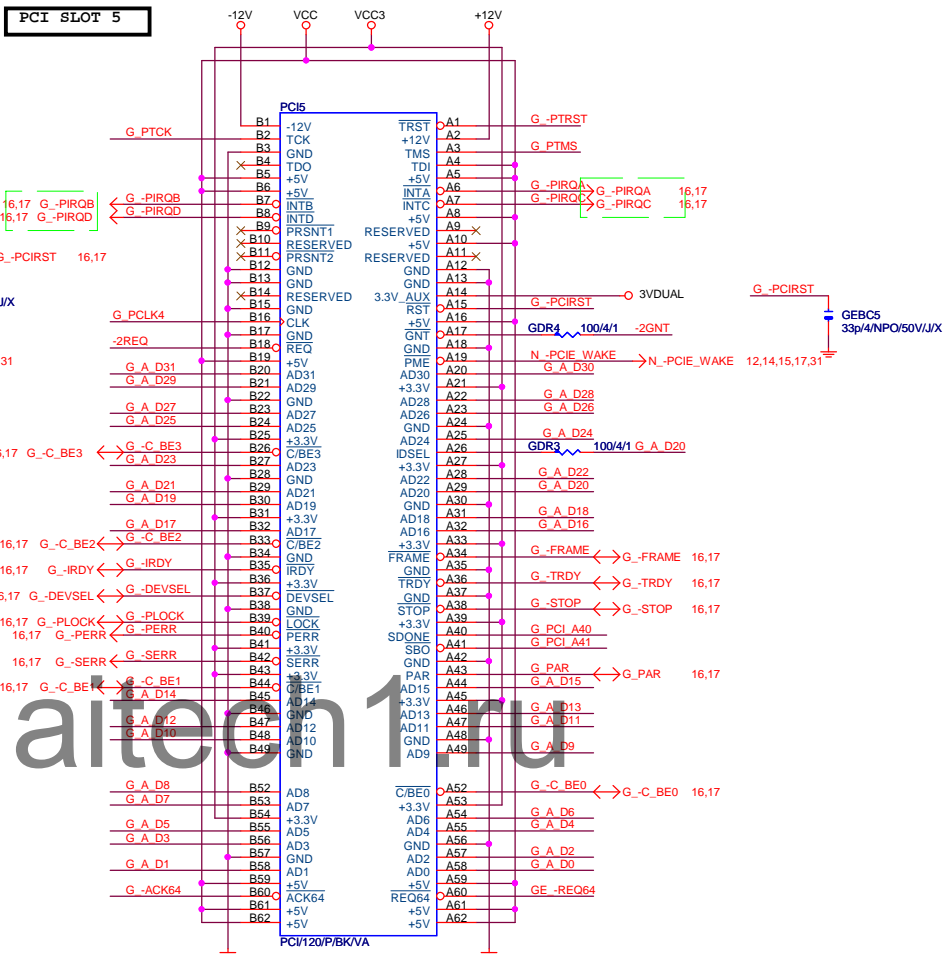
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Title			REALTEK 8111F-VL
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Custom		1.0	
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PCI SLOT 4



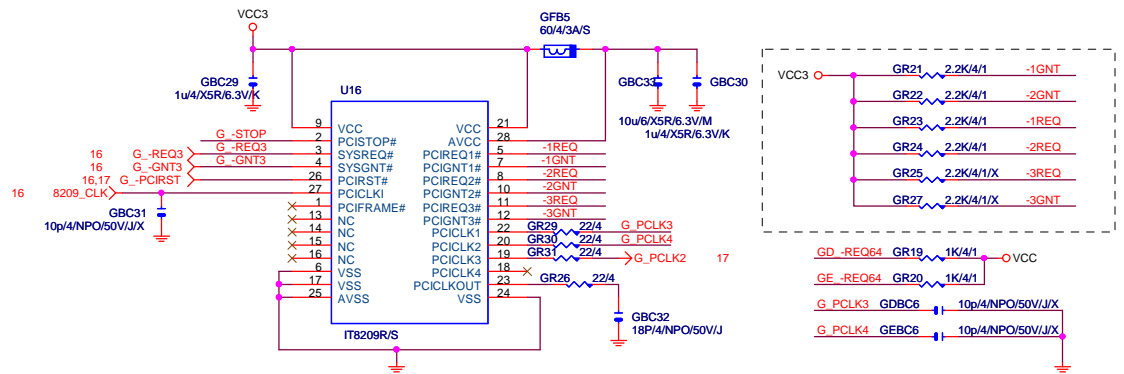
PCI SLOT 5



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-REQ3/-GNT3/A_D19

-REQ3/-GNT3/A_D19



ITE

Title

HDMI

Size Custom

Document Number

GA-H81-D3P

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Rev 1.01

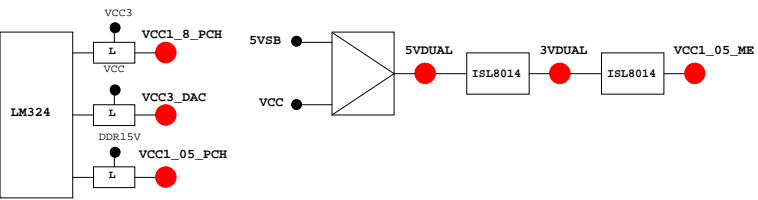
PCB GPIO LIST TABLE

PIN NAME	PWR	Default	USAGS	NOTE
GP0	MAIN	H-Z	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	MAIN	GPIO7	P/U 8.2K VCC3
GP8	STBY	H	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
GP13	STBY	L	GPI	LPCPME#
GP14/OC7#	STBY	NATIVE	USB OC7#	N/A
GP15	STBY	L	GPI	GPIO15(TL8 Enable)
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
GP23	MAIN	GPI	GPIO23	N/A
GP24	STBY	L	GPI	SKTOCC#
GP25	STBY		Mobile Only	N/A
GP26	STBY		Mobile Only	N/A
GP27	STBY	H	GPO	GPIO27
GP28	STBY	H	GPO	PWR LED
GP29	STBY	L	GPI	GPIO29
GP30	STBY	H-Z	GPI	Mobile Only
GP31	STBY	H-Z	GPI	Mobile Only
GP32	MAIN	H	GPO	N/A
GP33	MAIN	H	GPO	N/A
GP34	MAIN	H-Z	GPI	~PCI_STOP
GP35	MAIN	L	GPO	~ACZ_DET
GP36	MAIN	GPI	N/A	N/A
GP37	MAIN	GPI	N/A	N/A
GP38	MAIN	H-Z	GPI	PCIEX4 Detect
GP39	MAIN	H-Z	GPI	GPIO39
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
GP45	STBY	NATIVE	GPIO45	P/U 8.2K 3VDUAL
GP46	STBY	L	NATIVE	GPIO46
GP47	STBY		Mobile Only	N/A
GP48	MAIN	H-Z	IN	GPIO48
GP49	MAIN	H-Z	IN	GPIO49
GP50	MAIN	NATIVE	~REQ1	P/U 2.2K VCC
GP51	MAIN	H	NATIVE	~GNT1
GP52	MAIN	NATIVE	~REQ2	P/U 2.2K VCC
GP53	MAIN	H	NATIVE	~GNT2
GP54	MAIN	NATIVE	~REQ3	P/U 2.2K VCC
GP55	MAIN	H	NATIVE	~GNT3
GP56	STBY	NATIVE	Mobile Only	N/A
GP57	STBY	H-Z	IN	VCORE_OV1
GP58	STBY	H-Z	NATIVE	F_USB_OC
GP59	STBY	NATIVE	USB_OC0#	N/A
GP60	STBY	H-Z	NATIVE	N/A(Reverse)
GP61	STBY	L	NATIVE	~SUSTAT
GP62	STBY	L	NATIVE	SUSCLK
GP63	STBY	L	NATIVE	GPIO63
GP64	MAIN	L	NATIVE	CLKOUTFLEX0
GP65	MAIN	L	NATIVE	CLKOUTFLEX1
GP66	MAIN	L	NATIVE	CLKOUTFLEX2
GP67	MAIN	L	NATIVE	CLKOUTFLEX3
GP72	STBY	H-Z	NATIVE	VCORE_OV4
GP73	STBY		Mobile Only	N/A
GP74	STBY	H-Z	NATIVE	1_05V_OV2
GP75	STBY	H-Z	NATIVE	N/A(Reverse)

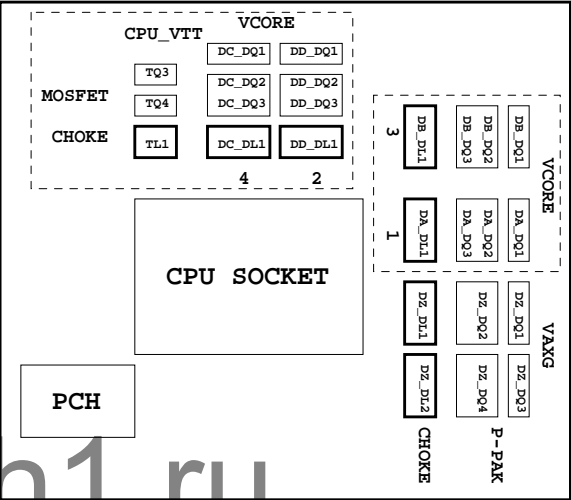
Super I/O ITE8720 GPIO Table

PIN NAME	USAGS	NOTE
SVC/PECI_RQT/GP14	-PECI_REQ	
PWROK1/GP13	PWROK1/ITE_PWROK	
KRST#/GP62	-KBRST	
SO/GP50	-ICH_SPI_CS	
IRTX/GP47/CE2_N/JP7	CEB_N	
GP46/IRRX	-LAN2_DSM	
PSION#/GP42	-PSON	
PWROK2#/GP41	PECI_CTL	
PCIRST3#/GP10/VDIMM_STR_EN	-PCIE_RST	
RSMRST#CIRRX1/GP55	-RSMRST	
PME#/GP54	-LPCPME	
PD5/GP75/BUSS00	N/A	

PIN NAME	USAGS	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/BUSS11	SB_LED1_C	
PD4/GP74/BUSS12	SB_LED2_C	
VCORE_EN/VID7/GP64	IT_GP64	SB_LED3_C
PD0/GP70	NB_LED1_C	
PD1/GP71	NB_LED2_C	
PD2/GP72/BUSS10	NB_LED3_C	
GP22/SEN	LOW_PWR_1	
VID05/GP27/SEN2	LOW_PWR_2	
PCIRST2#/GP11	-PFMRST1	
PCIRST1#/GP12	-PFMRST2	
3VSB5W#/GP40	CSI_F0	BSEL166_1
SUSCH#/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	2X PIN	FST_2X8
INIT#/GP85/SMBC_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/SMBC_R	-EN_PWM2	
PSI_L/FAN_CLT5/CIRRX2/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 Termination
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

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TABLE LIST			
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