

Model Name: GA-H87-HD3

1.1

SHEET

TITLE

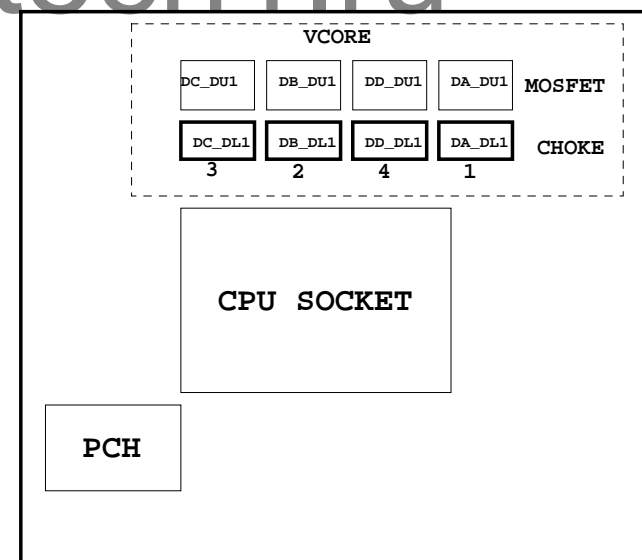
01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	CPU_LGA1150-A
05	CPU_LGA1150-B
06	CPU_LGA1150-C
07	DDR III CHANNEL A
08	DDR III CHANNEL B
09	PCH_FDI,DMI,USB,PCIE
10	PCH_RGB,CLK BUFFER
11	PCH_HOST,SATA,PCI
12	PCH_GPIO,CTRL,AUDIO
13	PCH_PWR,GND
14	PCI EXPRESS*16 SLOT
15	PCIEX1*2 , PCIEX4 SLOT
16	ITE8892 PCI BRIDGE
17	PCI SLOT 1&2
18	I/O ITE8728
19	COM, -PROHOT, R_USB
20	Dual BIOS / LPT
21	ALC892 CODEC
22	REAR AUDIO JACK
23	VCORE_ ISL95820_1
24	VCORE_ ISL95820_2
25	DDR15V / M3 POWER
26	NCP3933 OVER VOLTAGE
27	DISCRETE POWER

SHEET

TITLE

28	F_PANEL , F_USB2.0/3.0
29	ATX POWER, CLOCK GEN
30	HWM , KB/MS , FAN CTRL
31	Realtek 8111F-VL
32	DVI
33	HDMI
34	TABLE LIST
35	
36	
37	
38	
39	
40	

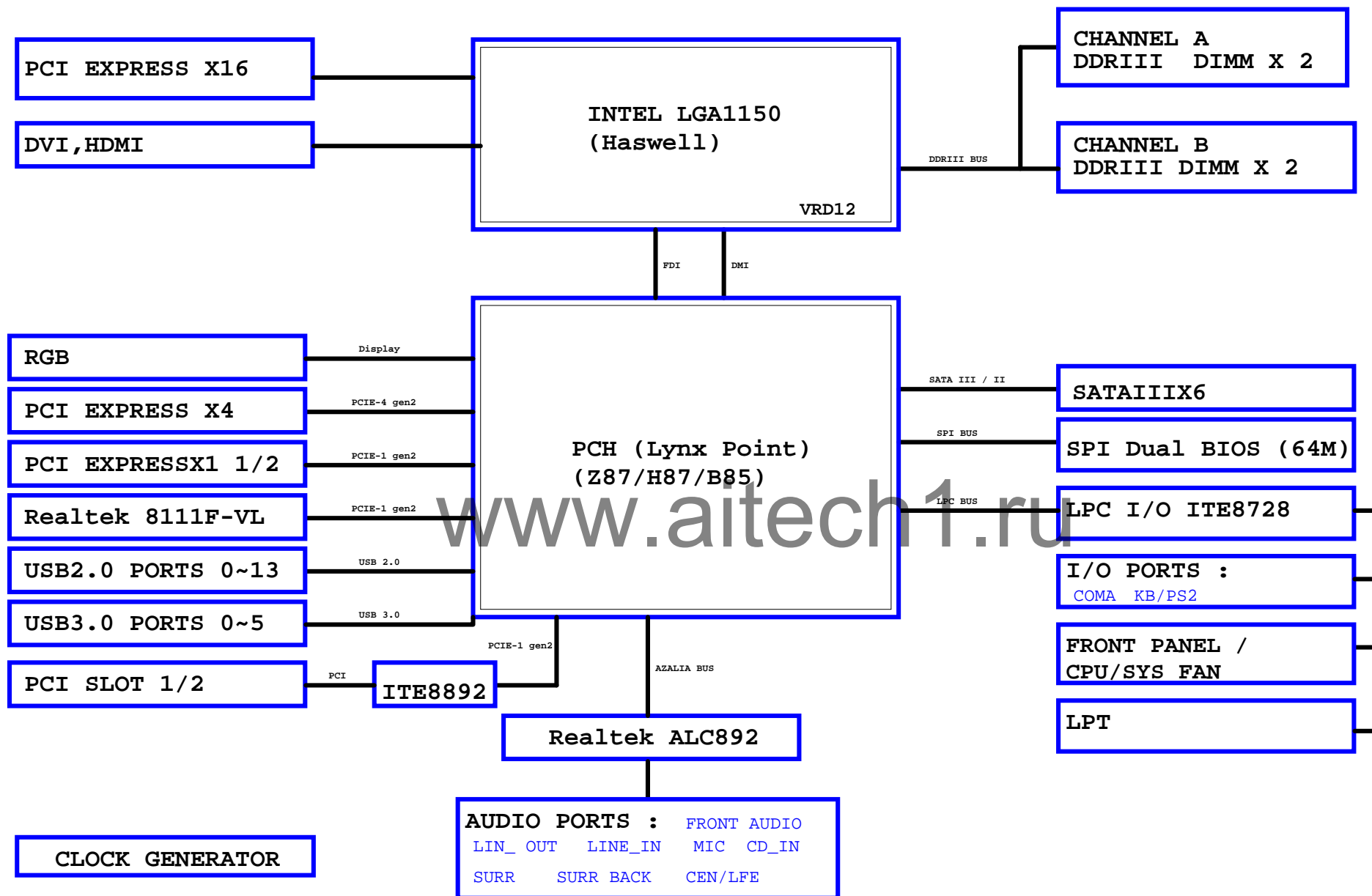
www.aitech1.ru

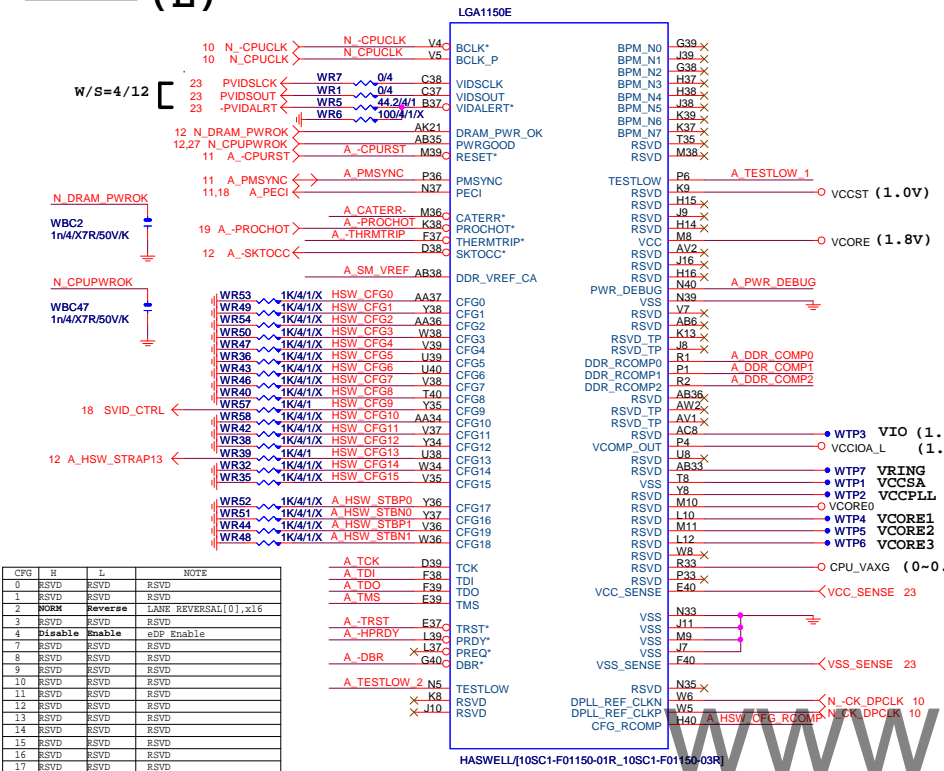


Component value change history

[illegible][illegible]

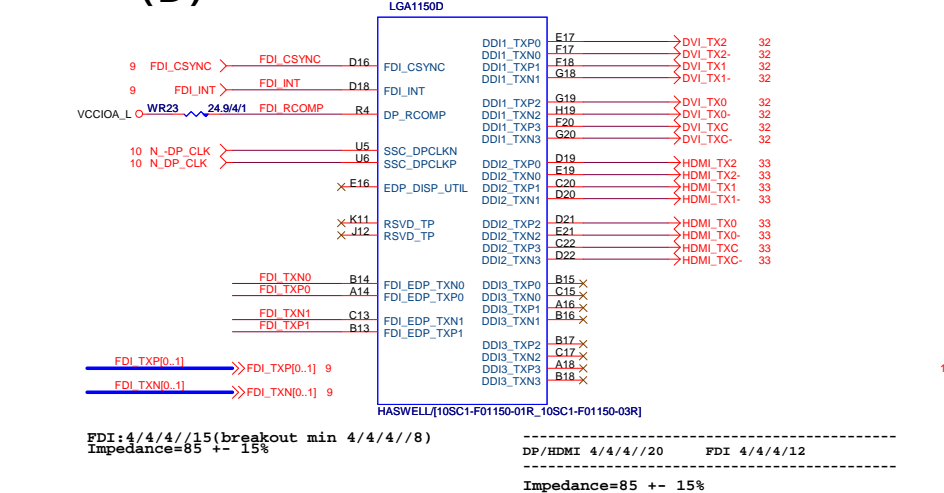
BLOCK DIAGRAM





CFG6	CFG5	PCIE CONFIG
1	1	1x16 , Default
1	0	2x8
0	1	RSVD
0	0	1x8, 1x4, 1x2

CFG 0-17 all internal PULL-UP



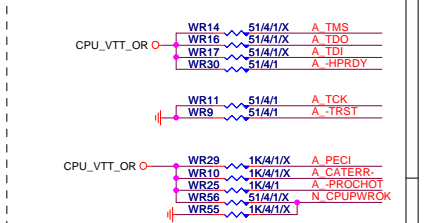
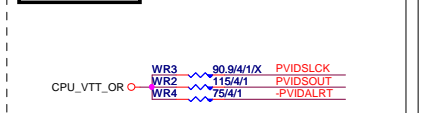
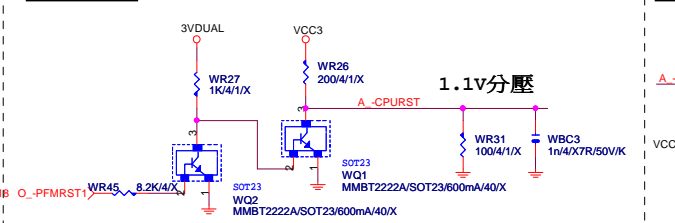
FDI:4/4/4//15(breakout min 4/4/4//8)
Impedance=85 +- 15%

DP/HDMT 4/4/4//20 EDT 4/4/4/12

Impedance=85 +- 15%



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

DMI 4/4/4//15 Impedance=85 \pm 15%

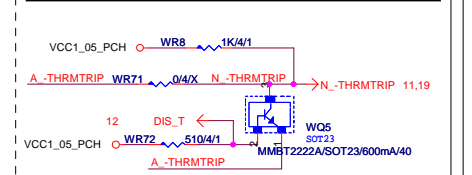
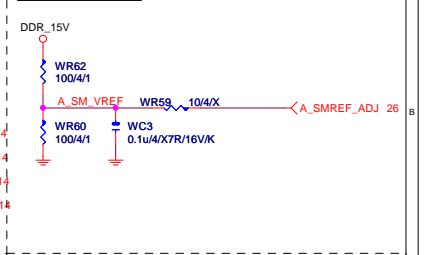
A -THRMTRIP WR70 1K/4/1

WR34 150/4/1 VCC1_05 RCH

WR21 8.2K/4/X 3V DUAL

A_DDR_COMP0	WR28	100/4/1
A_PDB_COMP1	WR19	75/4/1

A_TESTLOW_1	WR18	49.9/4/1
A_TESTLOW_2	WR12	40.0/4/4

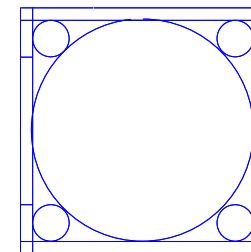


LGA1150A									
		MAAA0	AU13	DDR0_MA0	DDR0_D00	AD38	MDA0		
		MAAA1	AV16	DDR0_MA1	DDR0_D01	AD39	MDA1		
		MAAA2	AU16	DDR0_MA2	DDR0_D02	AF38	MDA2		
		MAAA3	AW17	DDR0_MA3	DDR0_D03	AF39	MDA3		
		MAAA4	AU17	DDR0_MA4	DDR0_D04	AD37	MDA4		
		MAAA5	AW18	DDR0_MA5	DDR0_D05	AD40	MDA5		
		MAAA6	AV17	DDR0_MA6	DDR0_D06	AF37	MDA6		
		MAAA7	AU18	DDR0_MA7	DDR0_D07	AF40	MDA7		
		MAAA8	AV19	DDR0_MA8	DDR0_D08	AD39	MDA13		
		MAAA9	AU18	DDR0_MA9	DDR0_D09	AD40	MDA9		
		MAAA10	AW11	DDR0_MA10	DDR0_D10	AD38	MDA11		
		MAAA11	AU19	DDR0_MA11	DDR0_D11	AD39	MDA12		
		MAAA12	AV19	DDR0_MA12	DDR0_D12	AD38	MDA8		
		MAAA13	AV19	DDR0_MA13	DDR0_D13	AD37	MDA14		
		MAAA14	AT20	DDR0_MA14	DDR0_D14	AK40	MDA15		
		MAAA15	AT21	DDR0_MA15	DDR0_D15	MDA17			
				DDR0_D16	AM38	MDA21			
		MODT_A0	AW10	DDR0_ODT0	DDR0_D17	AM39	MDA18		
		MODT_A1	AY8	DDR0_ODT1	DDR0_D18	AP39	MDA19		
		MODT_A2	AU9	DDR0_ODT2	DDR0_D19	AM37	MDA20		
		MODT_A3	AW8	DDR0_ODT3	DDR0_D20	AM38	MDA16		
					DDR0_D21	AP37	MDA22		
					DDR0_D22	AP37	MDA25		
			AW33	DDR0_ECC0	DDR0_D23	AV35	MDA29		
			AU31	DDR0_ECC1	DDR0_D24	AV37	MDA29		
			AV31	DDR0_ECC2	DDR0_D25	AV35	MDA26		
			AU33	DDR0_ECC3	DDR0_D26	AV37	MDA27		
			AT33	DDR0_ECC4	DDR0_D27	AV35	MDA27		
			AT31	DDR0_ECC5	DDR0_D28	AV37	MDA28		
			AW31	DDR0_ECC6	DDR0_D29	AT35	MDA30		
				DDR0_ECC7	DDR0_D30	AW35	MDA31		
		SBA0	AV12	DDR0_BA0	DDR0_D31	AY6	MDA33		
7		SBA01	SBA1	DDR0_BA1	DDR0_D32	AY6	MDA37		
7		SBA02	SBA2	DDR0_BA2	DDR0_D33	AY6	MDA37		
7				DDR0_BA2	DDR0_D34	AW4	MDA35		
7		CKE0	CKE0	DDR0_CK0	DDR0_D35	AW6	MDA36		
7		CKE1	CKE1	DDR0_CK1	DDR0_D36	AW4	MDA32		
7		CKE2	CKE2	DDR0_CK2	DDR0_D37	AW4	MDA38		
7		CKE3	CKE3	DDR0_CK3	DDR0_D38	AW4	MDA39		
7				DDR0_CK3	DDR0_D39	AN1	MDA41		
7		-CSA0	-CSA1	DDR0_CS_N0	DDR0_D40	AN4	MDA42		
7		-CSA1	AV9	DDR0_CS_N1	DDR0_D41	AN2	MDA43		
7		-CSA2	AW10	DDR0_CS_N2	DDR0_D42	AN4	MDA43		
7		-CSA3	-CSA3	DDR0_CS_N3	DDR0_D43	AN2	MDA44		
7				DDR0_CS_N3	DDR0_D44	AN2	MDA45		
7		DCLKA0	DCLKA0	DDR0_CLK_P0	DDR0_D45	AN2	MDA46		
7		-DCLKA0	-DCLKA0	DDR0_CLK_N0	DDR0_D46	AN1	MDA47		
7		DCLKA1	DCLKA1	DDR0_CLK_P1	DDR0_D47	AL1	MDA49		
7		-DCLKA1	-DCLKA1	DDR0_CLK_N1	DDR0_D48	AL3	MDA50		
7		DCLKA2	DCLKA2	DDR0_CLK_P2	DDR0_D49	AL1	MDA51		
7		-DCLKA2	-DCLKA2	DDR0_CLK_N2	DDR0_D50	AL2	MDA52		
7		DCLKA3	DCLKA3	DDR0_CLK_P3	DDR0_D51	AL2	MDA53		
7		-DCLKA3	-DCLKA3	DDR0_CLK_N3	DDR0_D52	AL2	MDA54		
				DDR0_CLK_N3	DDR0_D53	AL2	MDA54		
			AW12	RSVD	DDR0_D54	AL2	MDA55		
					DDR0_D55	AG1	MDA57		
					DDR0_D56	AG4	MDA61		
					DDR0_D57	AE3	MDA58		
					DDR0_D58	AE4	MDA59		
					DDR0_D59	AE2	MDA60		
					DDR0_D60	AE3	MDA56		
					DDR0_D61	AE3	MDA62		
7		-SRASA	-SRASA	DDR0_RAS*	DDR0_D62	AE1	MDA63		
7		-SWEA	-SWEA	DDR0_WE*	DDR0_D63	AE39	DSQA0		
					DDR0_D64	AN39	DSQA2		
					DDR0_D65	AV36	DSQA3		
			AW20	RSVD	DDR0_D66	AE3	DSQA4		
			AW27C	RSVD	DDR0_D67	AP3	DSQA5		
7		-SCASA	-SCASA	DDR0_CAS*	DDR0_D68	AP3	DSQA6		
					DDR0_D69	AE2	DSQA7		
7.8		-DDR3_RST	WR61 D4/SHT/MX	AK22C	DDR0_RESET*	AV32	DSQA0		
			WC4			AE38	DSQA1		
			0.1uA/XCTR/16V/KX			AN38	DSQA2		
						AN36	DSQA3		
						AW5	DSQA4		
						AE2	DSQA5		
						AE2	DSQA6		
						AE2	DSQA7		
						AK22C			

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

LGA1150B			
MAA80	AL19	DDR1_MA0	DDR1_D00
MAA81	AK23	DDR1_MA1	DDR1_D01
MAA82	AM22	DDR1_MA2	DDR1_D02
MAA83	AM23	DDR1_MA3	DDR1_D03
MAA84	AP23	DDR1_MA4	DDR1_D04
MAA85	AL19	DDR1_MA5	DDR1_D05
MAA86	AY24	DDR1_MA6	DDR1_D06
MAA87	AV25	DDR1_MA7	DDR1_D07
MAA88	AU26	DDR1_MA8	DDR1_D08
MAA89	AP18	DDR1_MA9	DDR1_D09
MAA90	AW25	DDR1_MA10	DDR1_D10
MAA91	AY15	DDR1_MA11	DDR1_D11
MAA92	AV26	DDR1_MA12	DDR1_D12
MAA93	AR25	DDR1_MA13	DDR1_D13
MAA94	AV27	DDR1_MA14	DDR1_D14
MAA95	AY28	DDR1_MA15	DDR1_D15
MODT_B0	AM17	DDR1_ODT0	DDR1_D16
MODT_B1	AM16	DDR1_ODT1	DDR1_D17
MODT_B2	AM16	DDR1_ODT2	DDR1_D18
MODT_B3	AK15	DDR1_ODT3	DDR1_D19
			DDR1_D20
			DDR1_D21
			DDR1_D22
	AM26	DDR1_ECC0	DDR1_D23
	AM25	DDR1_ECC1	DDR1_D24
	AP26	DDR1_ECC2	DDR1_D25
	AP26	DDR1_ECC3	DDR1_D26
	AR26	DDR1_ECC4	DDR1_D27
	AR25	DDR1_ECC5	DDR1_D28
	AR26	DDR1_ECC6	DDR1_D29
	AR25	DDR1_ECC7	DDR1_D30
SBA80	AK17	DDR1_BA0	DDR1_D31
SBA81	AL18	DDR1_BA1	DDR1_D32
SBA82	AW28	DDR1_BA2	DDR1_D33
			DDR1_D34
CKE80	AW29	DDR1_CKE0	DDR1_D35
CKE81	AY29	DDR1_CKE1	DDR1_D36
CKE82	AY29	DDR1_CKE2	DDR1_D37
CKE83	AU29	DDR1_CKE3	DDR1_D38
			DDR1_D39
CS80	AN17	DDR1_CS_0	DDR1_D40
CS81	AP15	DDR1_CS_N1	DDR1_D41
CS82	AN17	DDR1_CS_N2	DDR1_D42
CS83	AL15	DDR1_CS_N3	DDR1_D43
			DDR1_D44
			DDR1_D45
			DDR1_D46
			DDR1_D47
CLK80	AM20	DDR1_CLK_P0	DDR1_D48
CLK81	AM21	DDR1_CLK_N0	DDR1_D49
CLK82	AN17	DDR1_CLK_P1	DDR1_D50
CLK83	AP20	DDR1_CLK_N1	DDR1_D51
			DDR1_D52
CLK84	AN20	DDR1_CLK_P2	DDR1_D53
CLK85	AP21	DDR1_CLK_N2	DDR1_D54
CLK86	AP20	DDR1_CLK_P3	DDR1_D55
		DDR1_CLK_N3	DDR1_D56
SCASB	AP16	DDR1_CAS*	DDR1_D57
	AM18	DDR1_RAS*	DDR1_D58
SWEB	AK16	DDR1_WE*	DDR1_D59
			DDR1_D60
	AB39	DDR_VREF_DQ0	DDR1_D61
	AB40	DDR_VREF_DQ1	DDR1_D62
			DDR1_D63
			DDR1_D64
			DDR1_D65
			DDR1_D66
			DDR1_D67
			DDR1_D68
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			DDR1_D106
			DDR1_D107
			DDR1_D108
			DDR1_D109
			DDR1_D110
			DDR1_D111
			DDR1_D112
			DDR1_D113
			DDR1_D114
			DDR1_D115
			DDR1_D116
			DDR

HASWELL/10SC1-F01150-01R_10SC1-F01150-03R

LGA1150
ILM_BP/1156/CSP

DDR BUS

7 MODT_A[0..3] \longleftrightarrow MODT_A[0..3]
 8 MODT_B[0..3] \longleftrightarrow MODT_B[0..3]
 7 MDA[0..63] \longleftrightarrow MDA[0..63]
 8 MDB[0..63] \longleftrightarrow MDB[0..63]
 7 DQSA[0..7] \longleftrightarrow DQSA[0..7]
 7 -DQSA[0..7] \longleftrightarrow -DQSA[0..7]
 7 MAAB[0..15] \longleftrightarrow MAAB[0..15]
 8 MAAB[0..15] \longleftrightarrow MAAB[0..15]
 8 DQSB[0..7] \longleftrightarrow DQSB[0..7]
 8 -DQSB[0..7] \longleftrightarrow -DQSB[0..7]

(F, J)



(G,H,I)

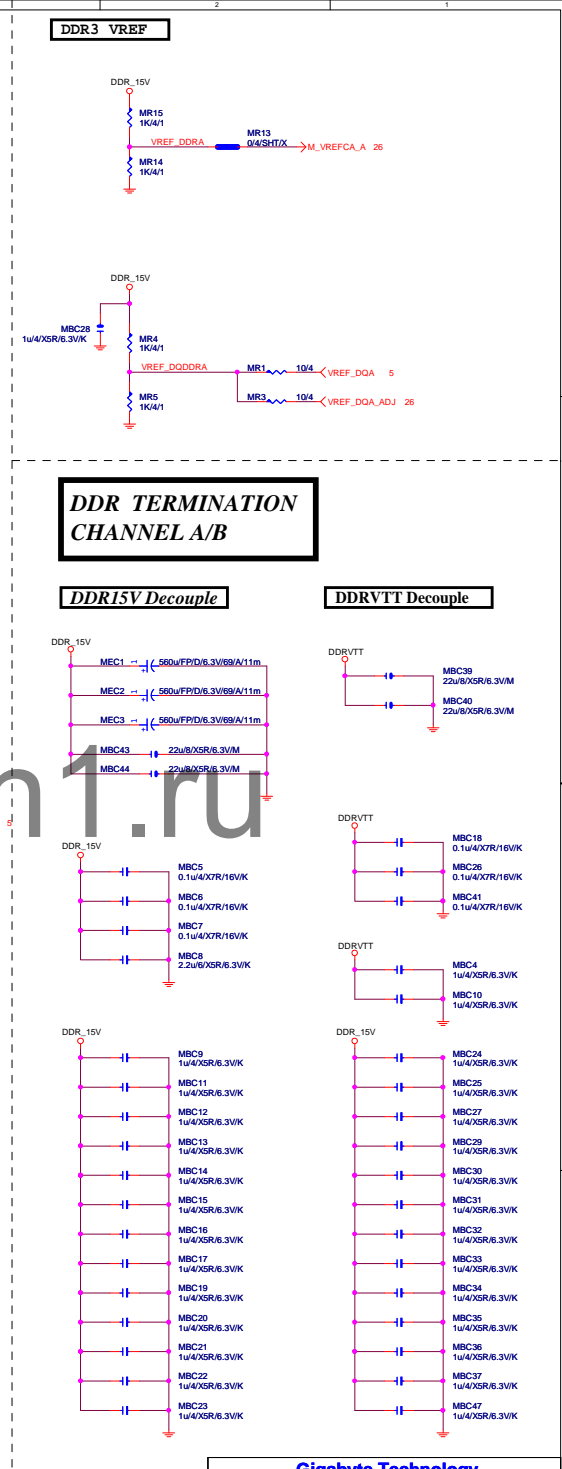


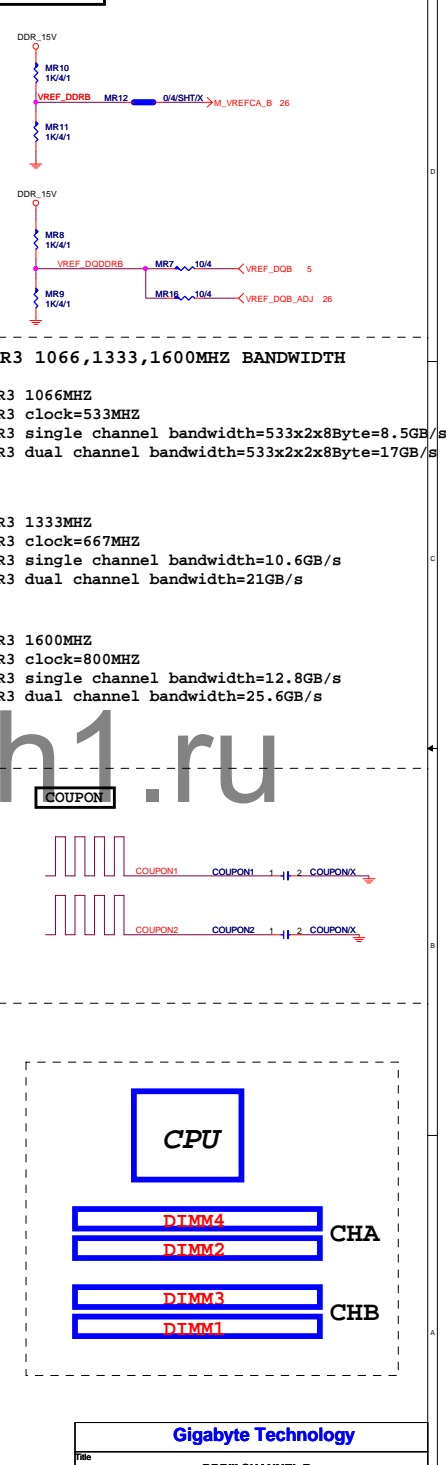
(X30)



(X15)

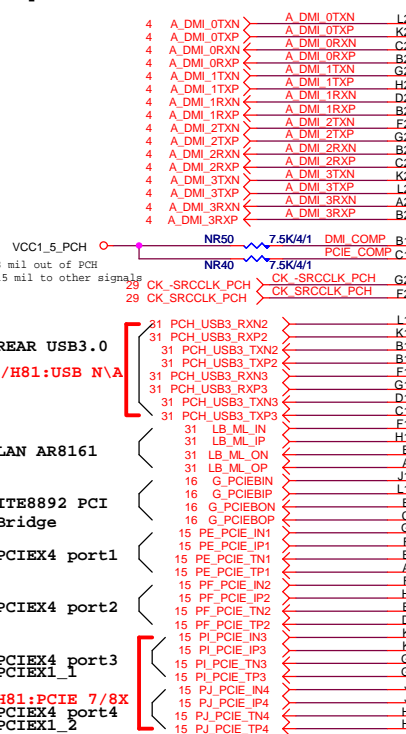






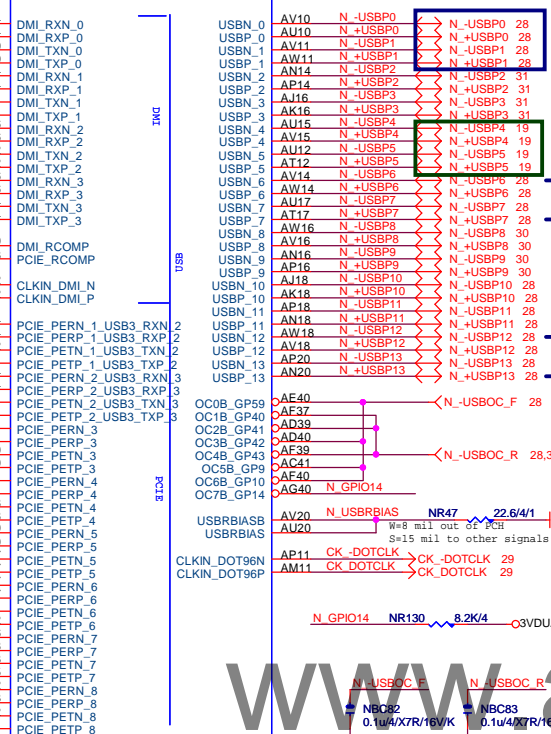
DMI:12/4/4/4/12(breakout min 8/4/4/4/8)
Impedance=85 +- 17.5%

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



放靠近 Device & PCI-E Slot

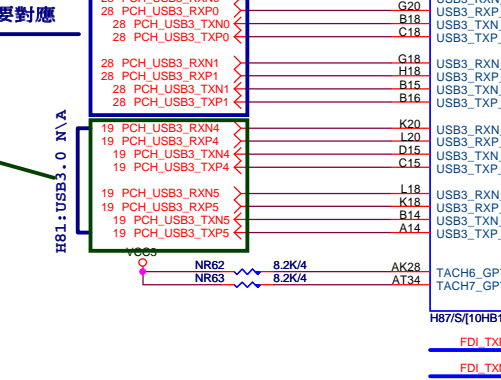
USB2.0 : 12/5/7/5/12 (breakout min 8/4/4/4/8)
PCHB Impedance=85 +/- 15%



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%

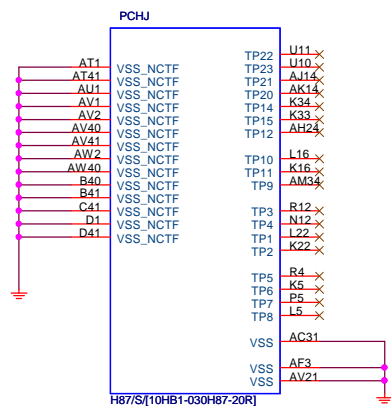
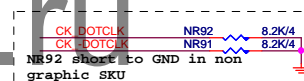
28 PCH_USB3_RXN0 >

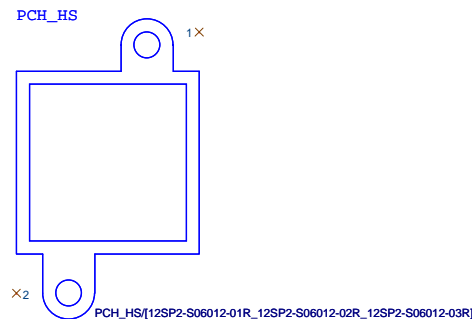


USB3.0:20/5/7/5/20 (breakout mir
8/4/4/4/8) ; ONLY 3 VIAS
Impedance=85 +- 17.5%
Back Panel < 10000 MILS
Front Panel < 6000 MILS



Mount for integrated clock Generation Mode





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

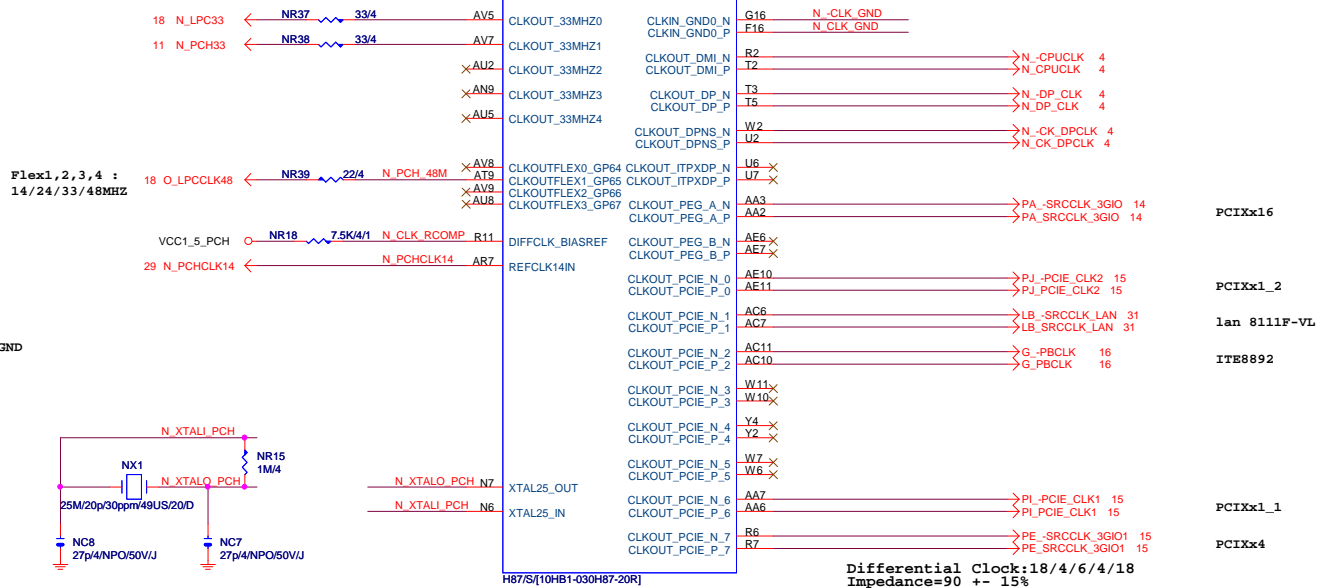
USB OC# Configure	
OC0#	USB0,1
OC1#	USB2,3
OC2#	USB4,5
OC3#	USB6,7
OC4#	USB8,9
OC5#	USB10,11
OC6#	USB12,13
OC7#	Not Use

Gigabyte Technology

Title				PCH FDI,DMI,USB ,PCIE			
Size	Custom	Document Number				Rev	
		GA-H87-HD3				1	
Date:	Wednesday, July 10, 2013			Sheet	9	of	34

[illegible]

Flex1,2,3,4 :
14/24/33/48MHZ



Mount for integrated clock Generation Mode

SSOP6_ESD

ESD4

VGA_R 1 6 VGA_B

2 5

VGA_G 3 4

AOZ8902C1L/SOT23-6

OVCC3

C40 0.1uH/X7R/16V/K

Close to PCH

Close to VGA connector

Title			
PCH DISPLAY ,CLK BUFFER			
Size	Document Number		Rev
Custom	GA-H87-HD3		1.1
Date:	Wednesday, July 10, 2013	Sheet	10 of 34

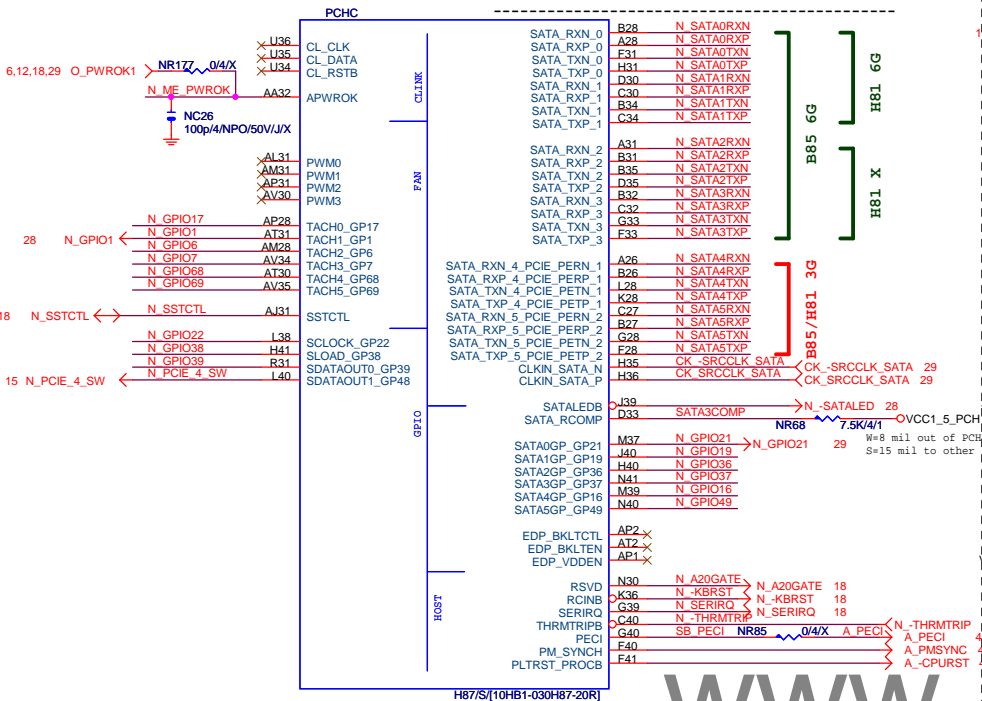
PCH (C)

SATA3 : 20/4/4/4/20 (breakout min 8/4/4/4/8)

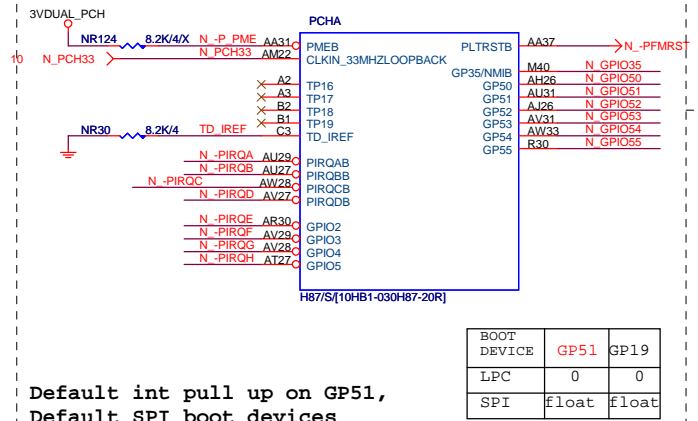
Impedance=85 +- 17.5%

SATA2 4/4/4//15

SATA3 4/4/4//20



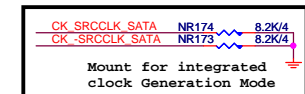
PCH (A)



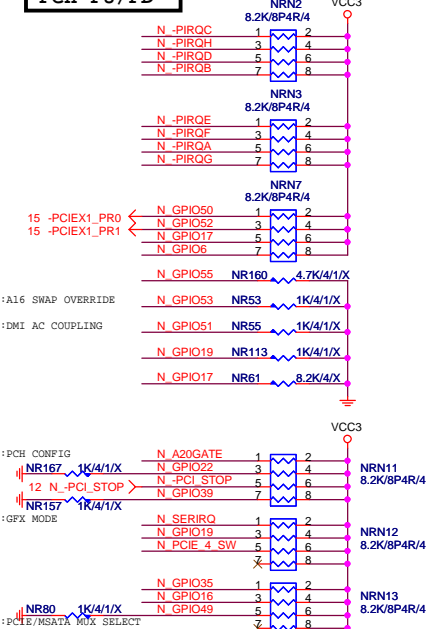
```
Default int pull up on GP51,
Default SPI boot devices
```

BOOT DEVICE	GP51	GP19
LPC	0	0
SPI	float	float

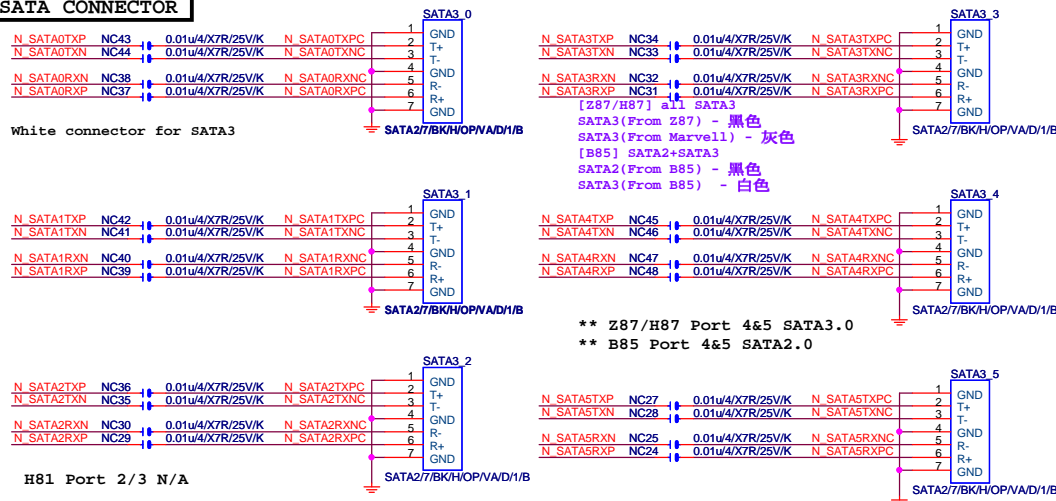
PCH CLK PD



PCH PU/PD



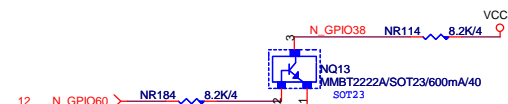
SATA CONNECTOR



GPIO38 Ctrl

MFG Mode

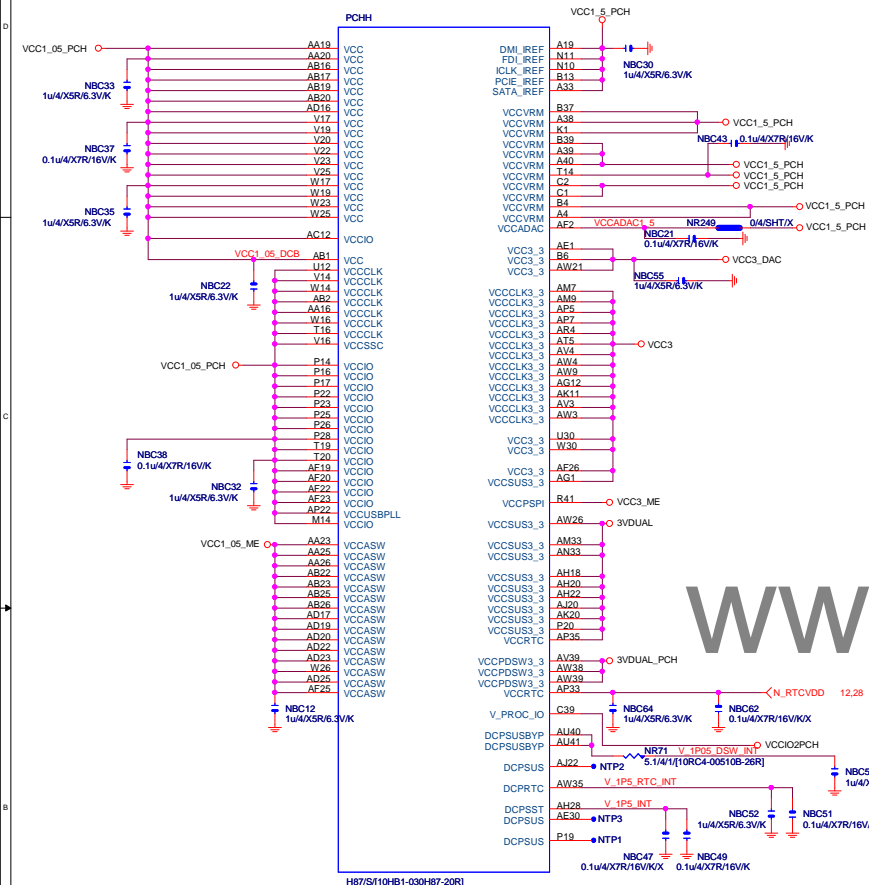
```
N_GPIO38 : Lo --> Enable
           Hi --> Disable
```



Gigabyte Technology

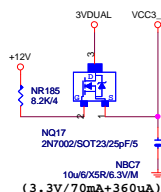
Title			
PCH HOST , SATA, PCI			
Size	Document Number		Rev
Custom	GA-H87-HD3		1.1
Date:	Wednesday, July 10, 2013	Sheet	11 of 34

PCH (H)

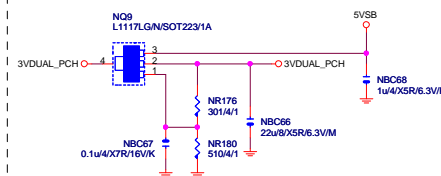


VCC3_DAC

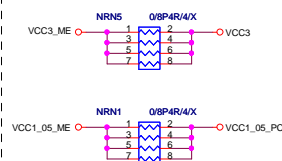
CLOSE北橋(注意震盪水波紋)



3VDUAL_PCH

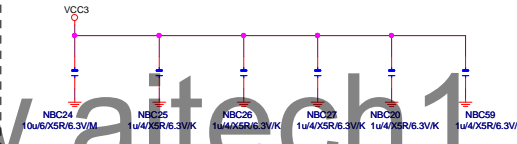


SHT_PWR

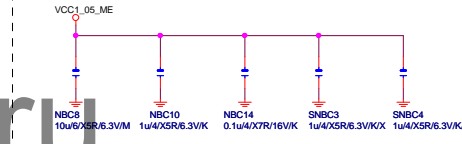


CAP

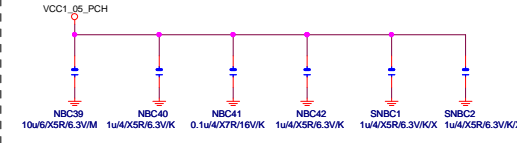
(3.3V) (X6)



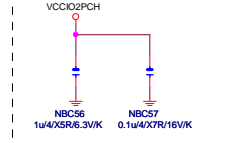
(1.05V) (X5)



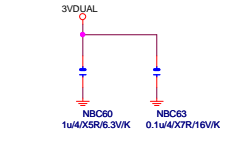
(1.05V) (X6)



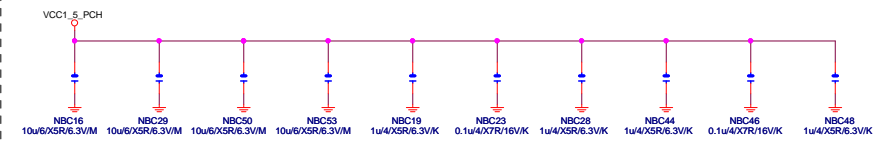
(1.05V) (X2)



(3.3V) (X2)



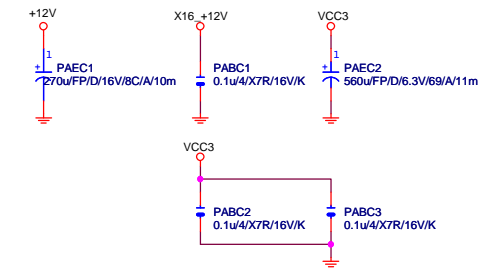
(1.5V) (X10)



PCH (I)

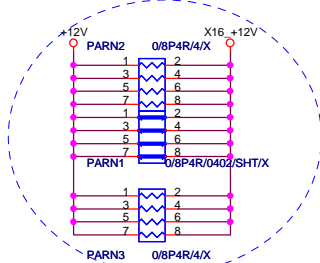


PCIEX16 CAP



PCIEX16 PROTECT SHT

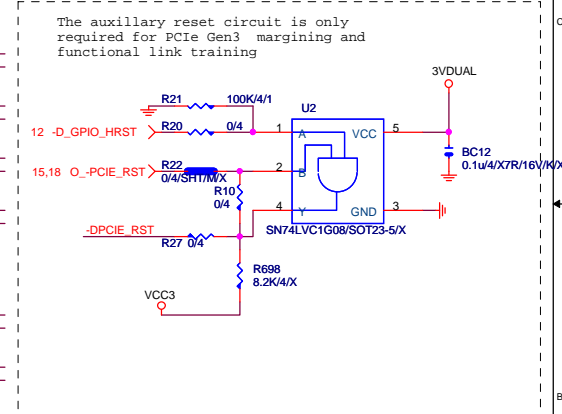
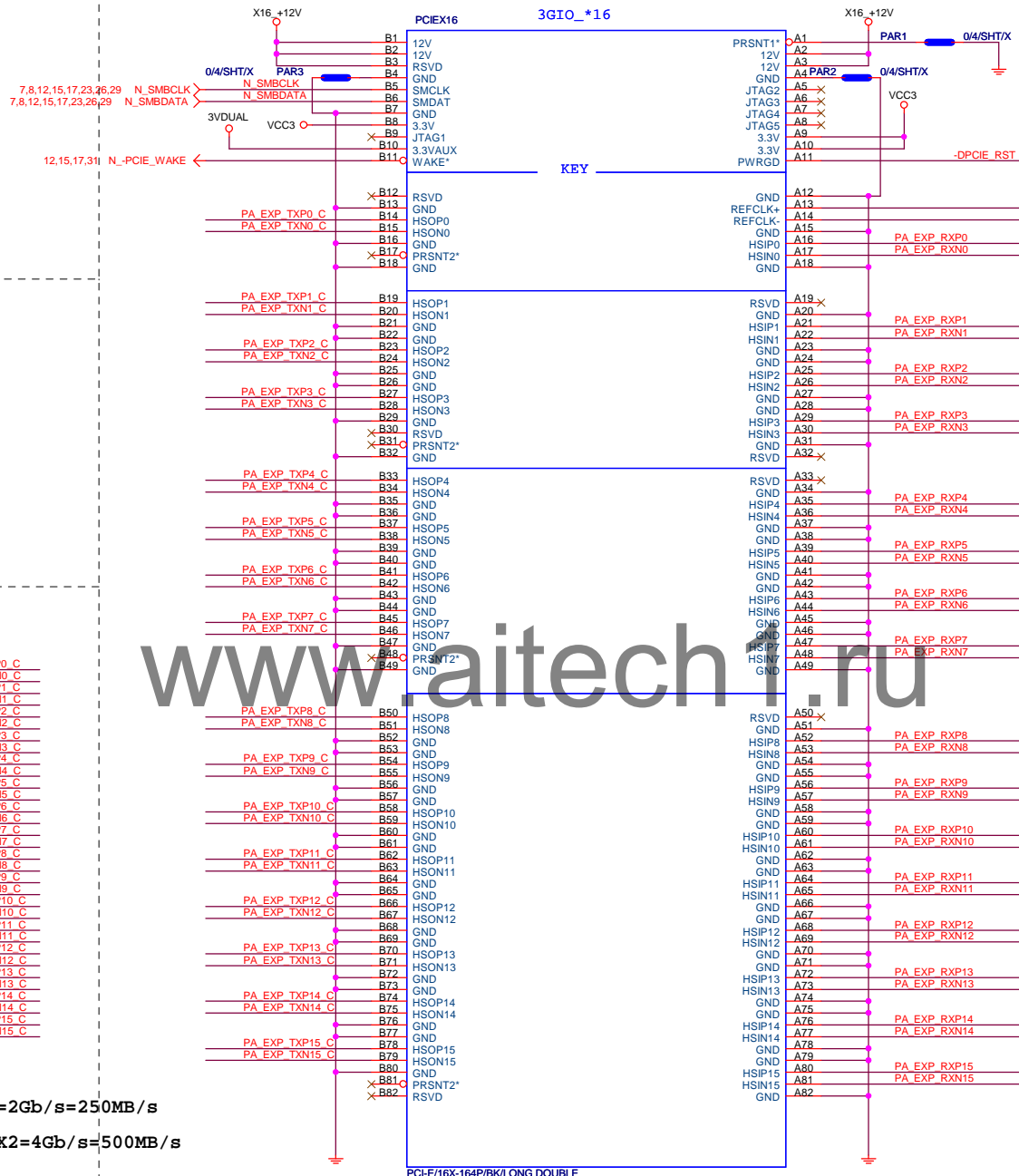
+12 protect short-wire test



PCIEX16 AC CAP

PA EXP TXP0 C	PAC5	0.22u4/X5R/6.3V/K	PA EXP TXP0 C
PA EXP TXN0 C	PAC4	0.22u4/X5R/6.3V/K	PA EXP TXN0 C
PA EXP TXP1 C	PAC6	0.22u4/X5R/6.3V/K	PA EXP TXP1 C
PA EXP TXN1 C	PAC7	0.22u4/X5R/6.3V/K	PA EXP TXN1 C
PA EXP TXP2 C	PAC8	0.22u4/X5R/6.3V/K	PA EXP TXP2 C
PA EXP TXN2 C	PAC9	0.22u4/X5R/6.3V/K	PA EXP TXN2 C
PA EXP TXP3 C	PAC10	0.22u4/X5R/6.3V/K	PA EXP TXP3 C
PA EXP TXN3 C	PAC11	0.22u4/X5R/6.3V/K	PA EXP TXN3 C
PA EXP TXP4 C	PAC12	0.22u4/X5R/6.3V/K	PA EXP TXP4 C
PA EXP TXN4 C	PAC13	0.22u4/X5R/6.3V/K	PA EXP TXN4 C
PA EXP TXP5 C	PAC14	0.22u4/X5R/6.3V/K	PA EXP TXP5 C
PA EXP TXN5 C	PAC15	0.22u4/X5R/6.3V/K	PA EXP TXN5 C
PA EXP TXP6 C	PAC16	0.22u4/X5R/6.3V/K	PA EXP TXP6 C
PA EXP TXN6 C	PAC17	0.22u4/X5R/6.3V/K	PA EXP TXN6 C
PA EXP TXP7 C	PAC19	0.22u4/X5R/6.3V/K	PA EXP TXP7 C
PA EXP TXN7 C	PAC18	0.22u4/X5R/6.3V/K	PA EXP TXN7 C
PA EXP TXP8 C	PAC20	0.22u4/X5R/6.3V/K	PA EXP TXP8 C
PA EXP TXN8 C	PAC21	0.22u4/X5R/6.3V/K	PA EXP TXN8 C
PA EXP TXP9 C	PAC22	0.22u4/X5R/6.3V/K	PA EXP TXP9 C
PA EXP TXN9 C	PAC23	0.22u4/X5R/6.3V/K	PA EXP TXN9 C
PA EXP TXP10 C	PAC24	0.22u4/X5R/6.3V/K	PA EXP TXP10 C
PA EXP TXN10 C	PAC25	0.22u4/X5R/6.3V/K	PA EXP TXN10 C
PA EXP TXP11 C	PAC26	0.22u4/X5R/6.3V/K	PA EXP TXP11 C
PA EXP TXN11 C	PAC27	0.22u4/X5R/6.3V/K	PA EXP TXN11 C
PA EXP TXP12 C	PAC28	0.22u4/X5R/6.3V/K	PA EXP TXP12 C
PA EXP TXN12 C	PAC29	0.22u4/X5R/6.3V/K	PA EXP TXN12 C
PA EXP TXP13 C	PAC30	0.22u4/X5R/6.3V/K	PA EXP TXP13 C
PA EXP TXN13 C	PAC31	0.22u4/X5R/6.3V/K	PA EXP TXN13 C
PA EXP TXP14 C	PAC32	0.22u4/X5R/6.3V/K	PA EXP TXP14 C
PA EXP TXN14 C	PAC33	0.22u4/X5R/6.3V/K	PA EXP TXN14 C
PA EXP TXP15 C	PAC34	0.22u4/X5R/6.3V/K	PA EXP TXP15 C
PA EXP TXN15 C	PAC35	0.22u4/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

PCI-E REV:1.1--> 2.5GHZ

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

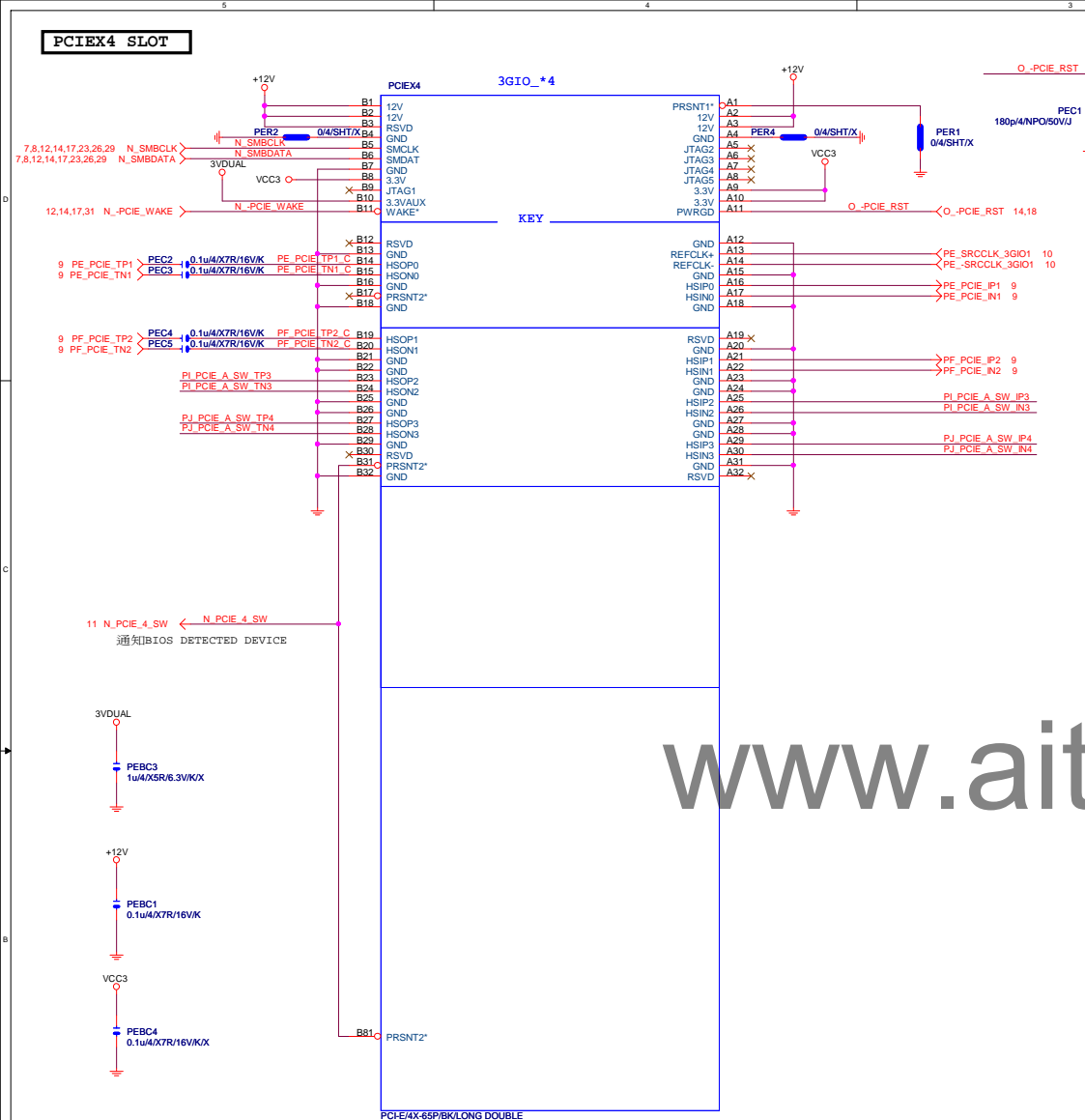
PCE-E X1(雙向) BANDWITH=2.5GHz*(8b/10b)X2=4Gb/s=500MB/s

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

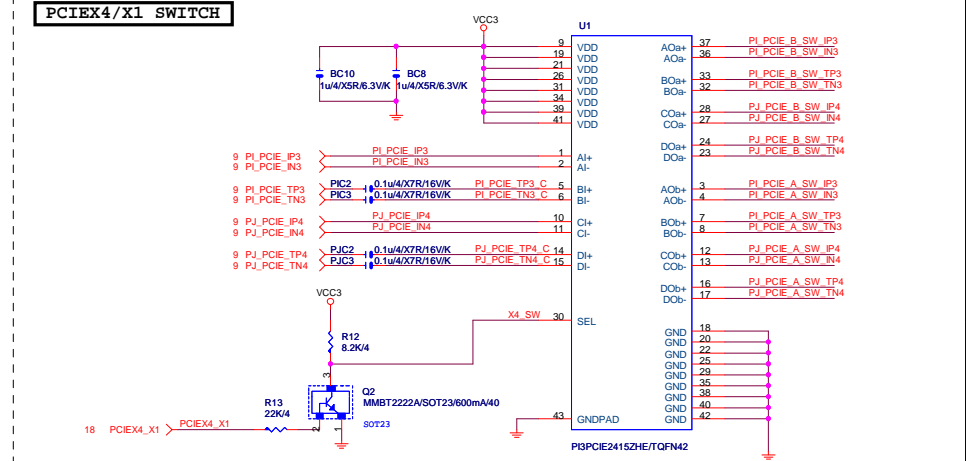
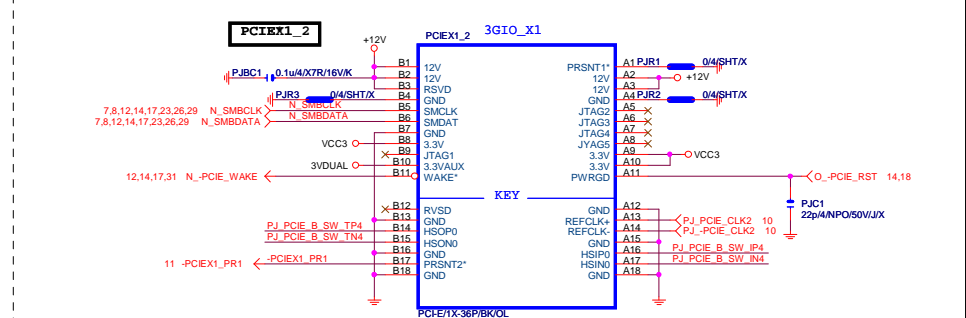
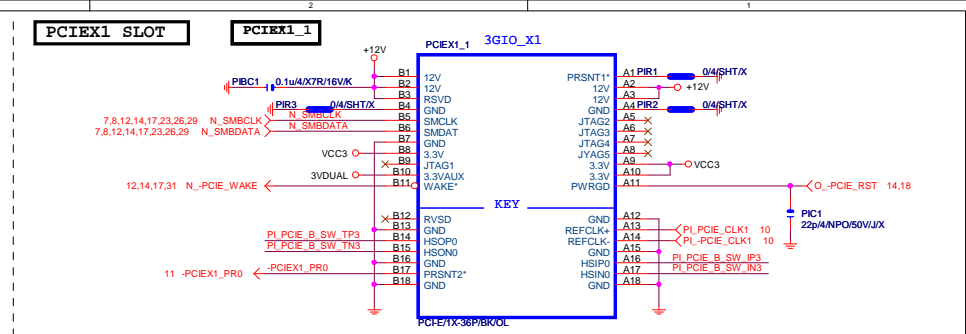
PCE-E X16(雙向) BANDWITH=2.5GHz*(8b/10b)X16X2=64Gb/s=8GB/s

PCI-E REV:2.0--> 5GHZ

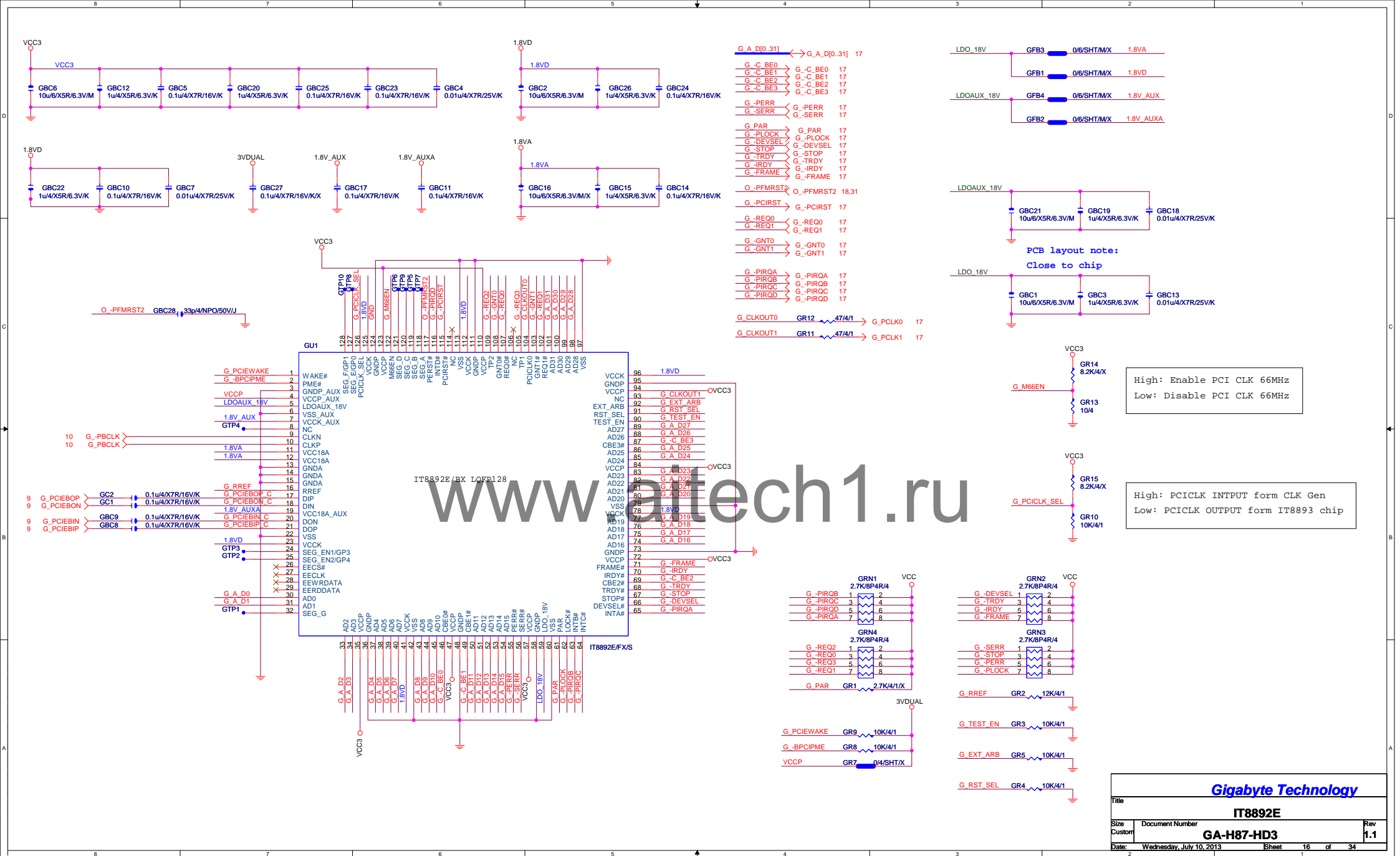
Gigabyte Technology		
PCI EXPRESS * 16		
Size Custom	Document Number	Rev
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	N_PCIE_4_SW (PCH GPIO48)	PCIEX4_X1 (SIO_GPIO26)
PCIEX4 No devices	H	H
PCIEX4 -> X1	H	H
PCIEX4 Have devices	L	L
PCIEX4 -> X4	L	L
PCIEX1_1/2 -> N/A		



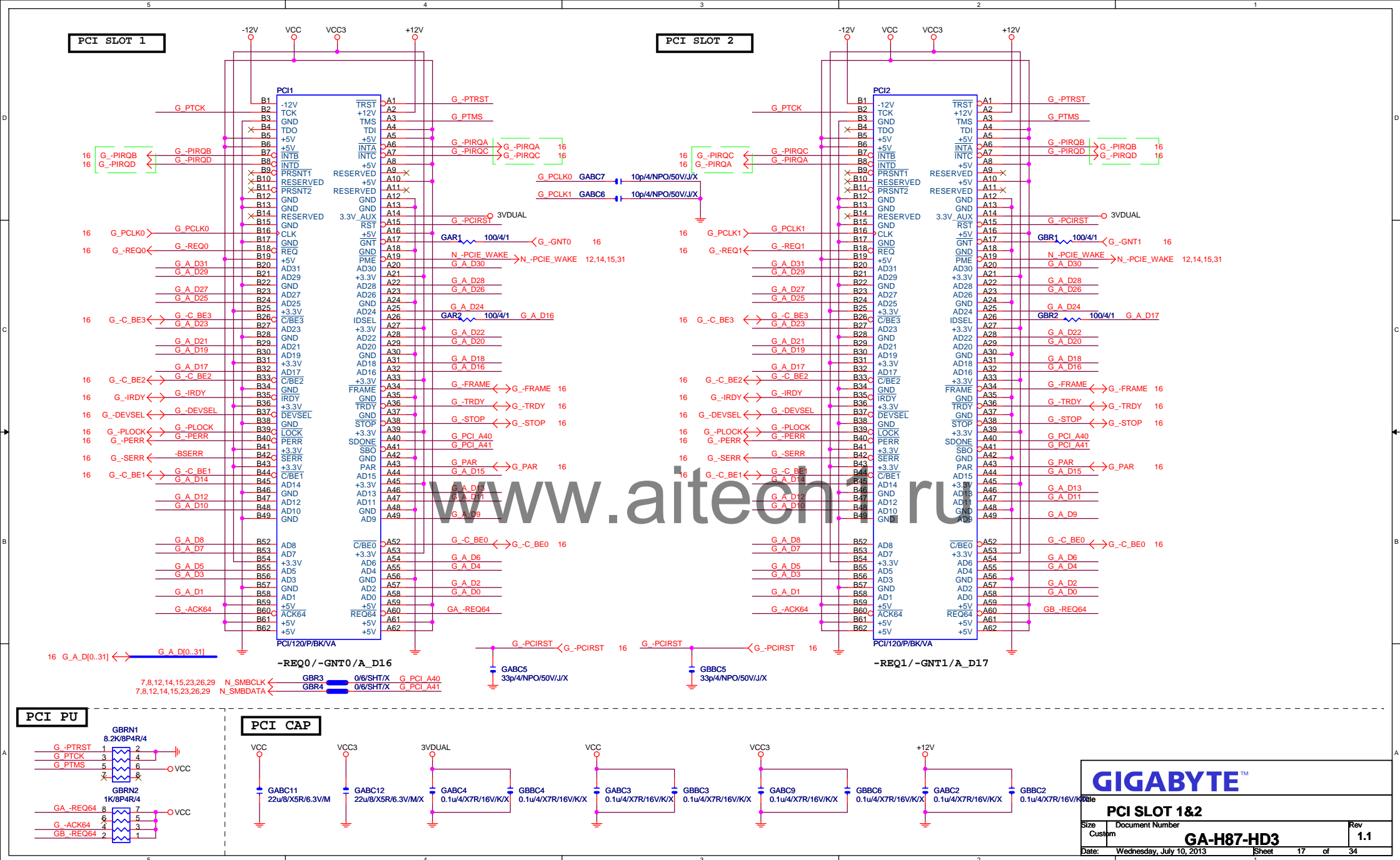
Function	SEL
xI--> x0A	L;PCIEX4 SLOT-->X1
xI--> x0B	H;PCIEX4 SLOT-->X4



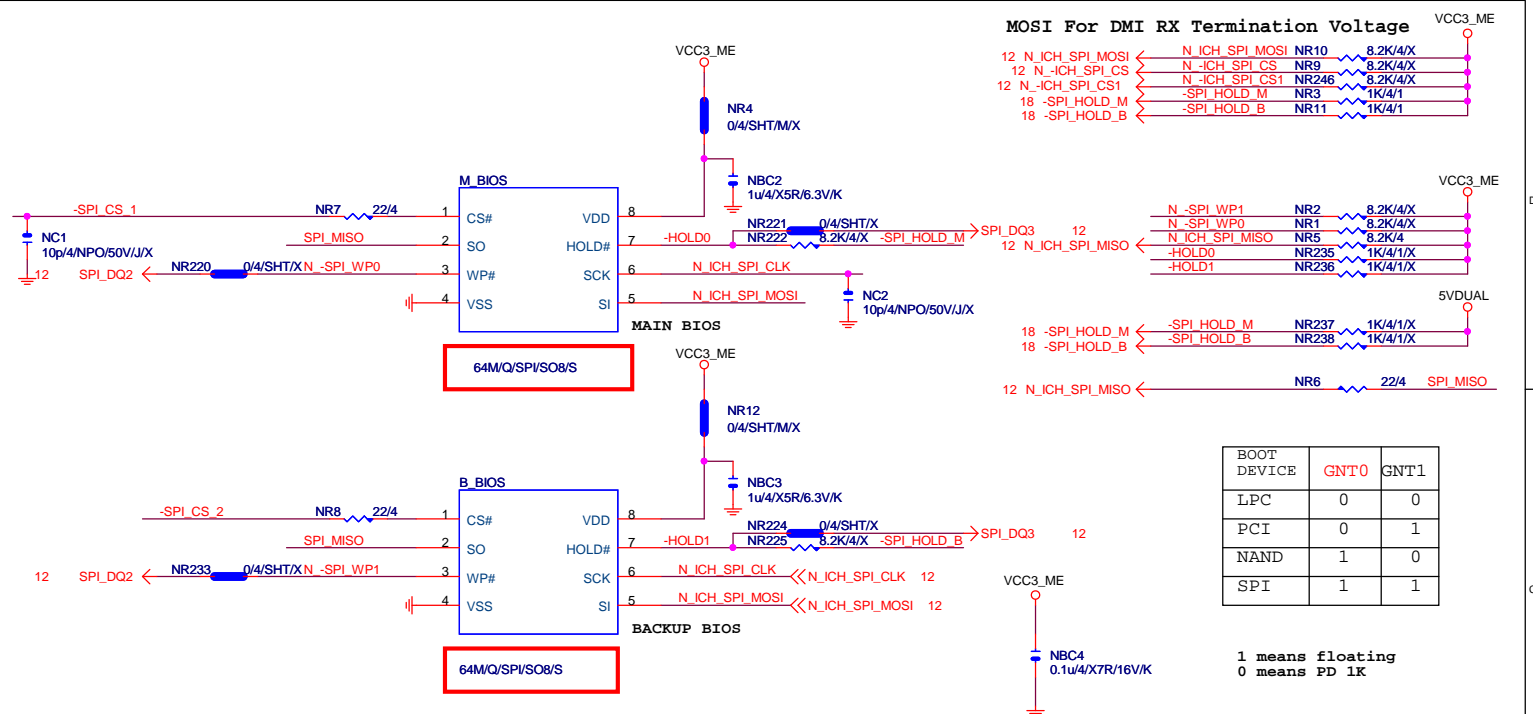
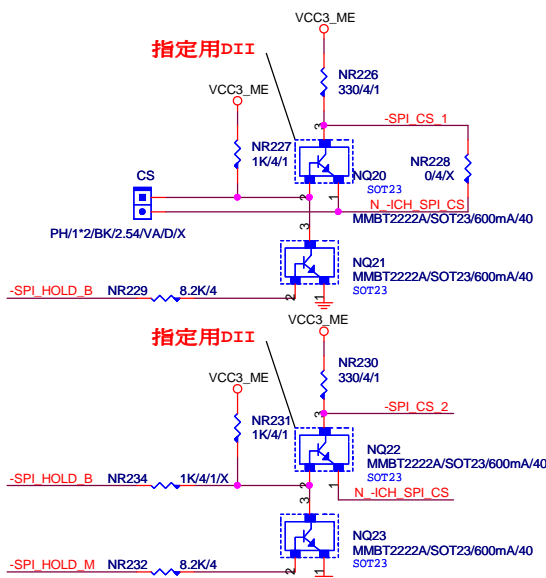
High: Enable PCI CLK 66MHz
Low: Disable PCI CLK 66MHz

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

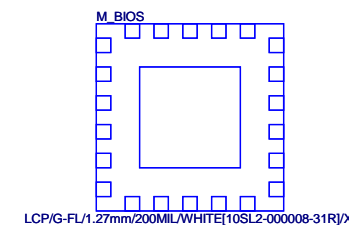
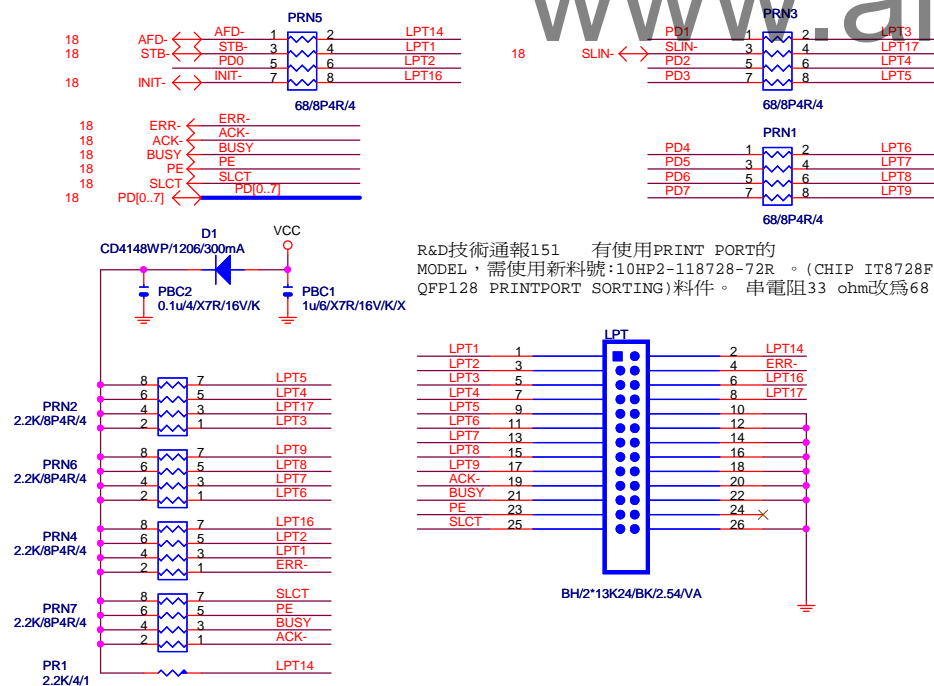
Gigabyte Technology		
Title		
IT8892E		
Size	Document Number	Rev
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Date:	Wednesday, July 10, 2013	Sheet 16 of 34



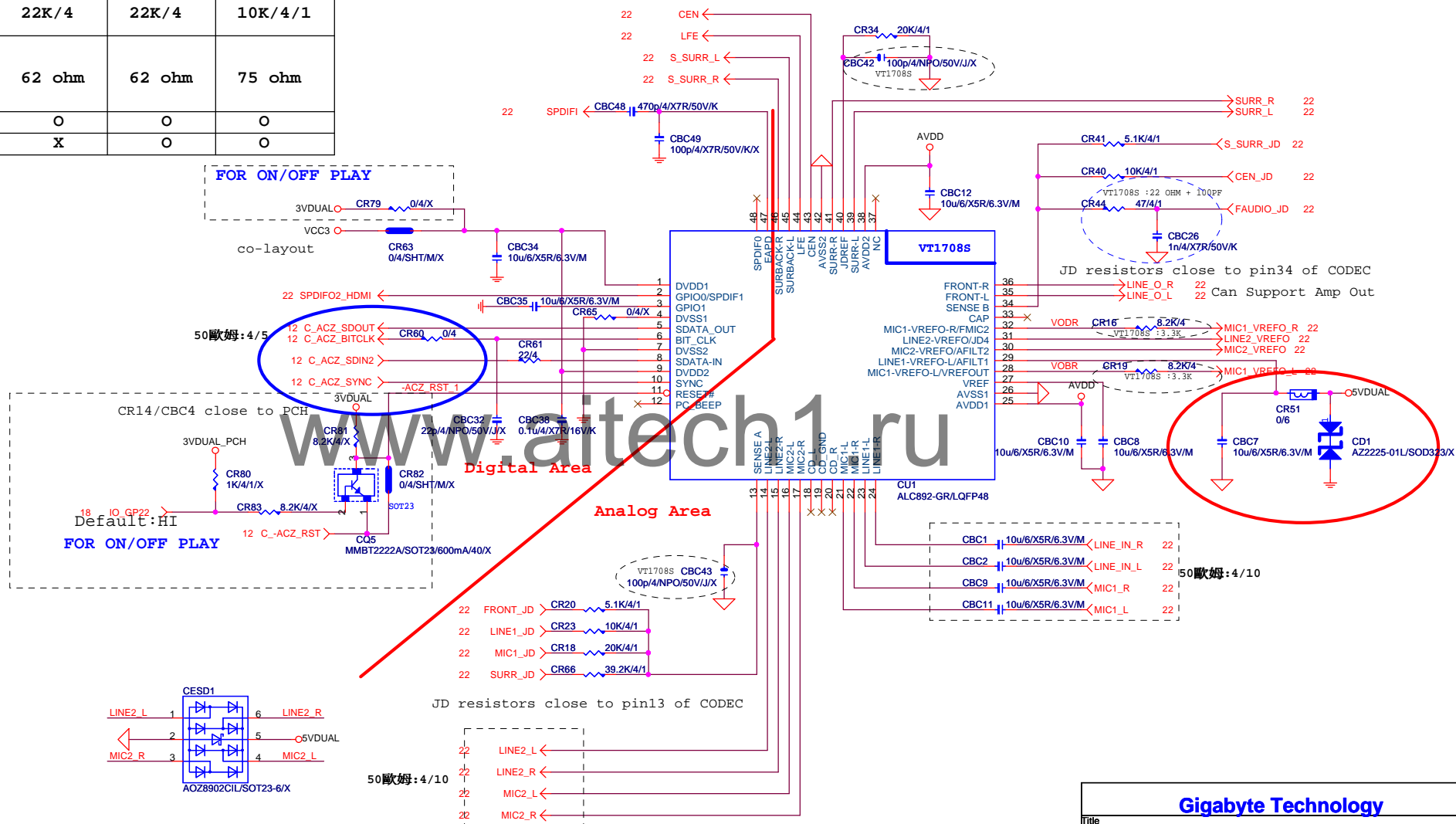
DUAL BIOS

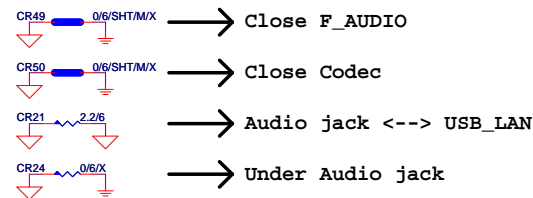


LPT PORT

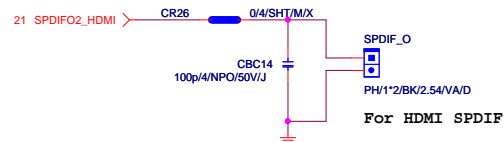


ALC892	ALC887-VD2	VT1708S-CE
47ohm+1nF	47ohm+1nF	22ohm+100P
X	X	100P/4
8.2K/4	8.2K/4	3.3K/4/1
22K/4	22K/4	10K/4/1
62 ohm	62 ohm	75 ohm
O	O	O
X	O	O

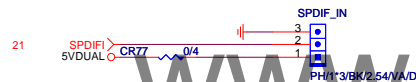




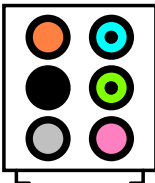
SPDIF_OUT



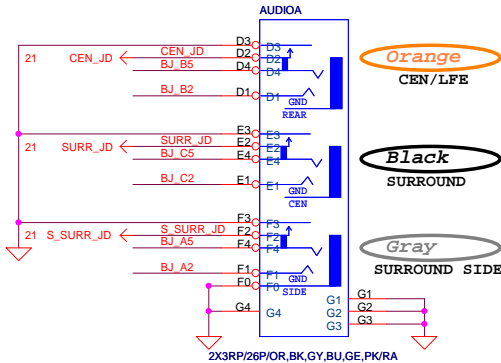
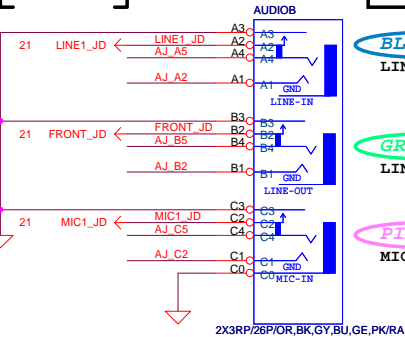
SPDIF_IN



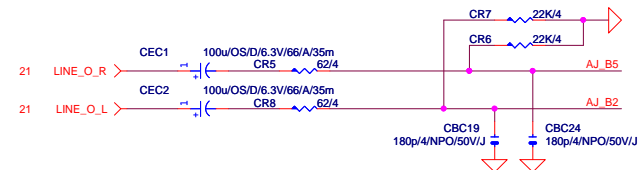
AZALIA JACK



AZALIA JACK



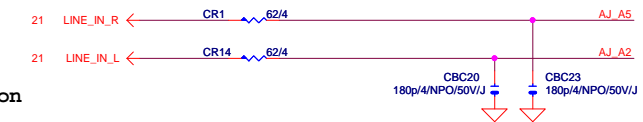
LINE-OUT



LINE-IN

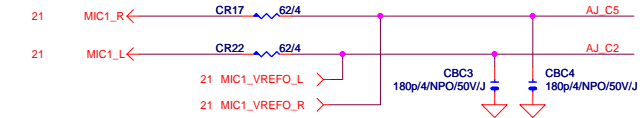
Verify MIC function in LINE-in

Only reserved for ALC888

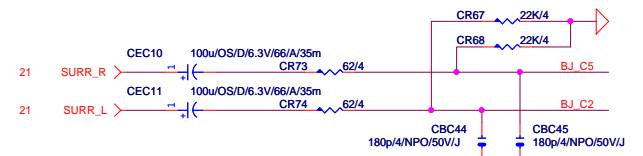


For 889A/888

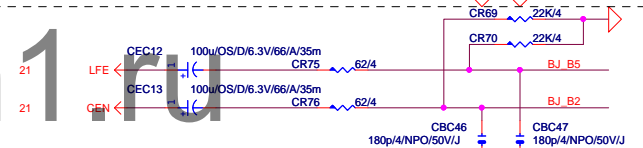
MIC-IN



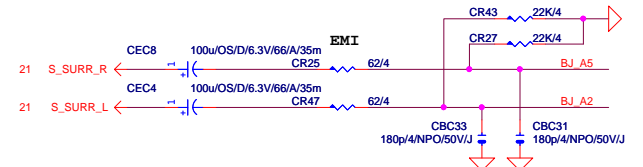
SURROUND



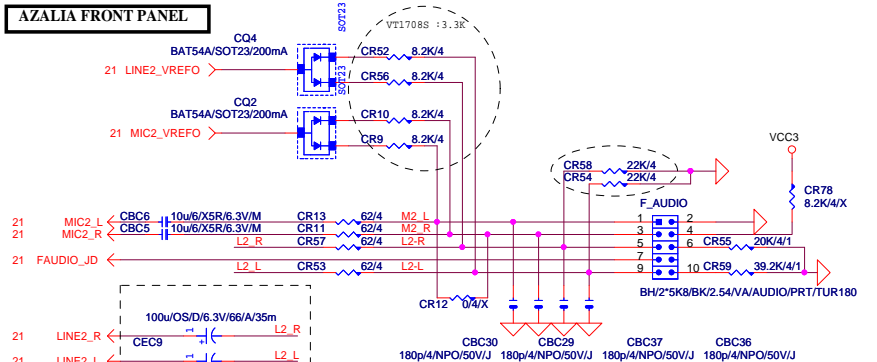
CEN/LFE



SURR BACK



AZALIA FRONT PANEL

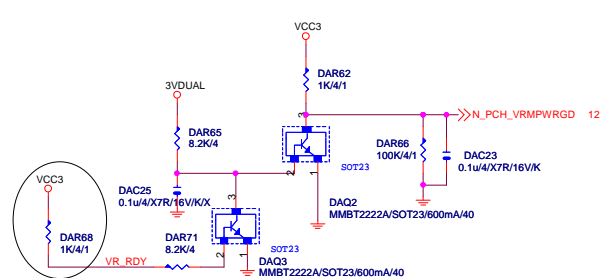
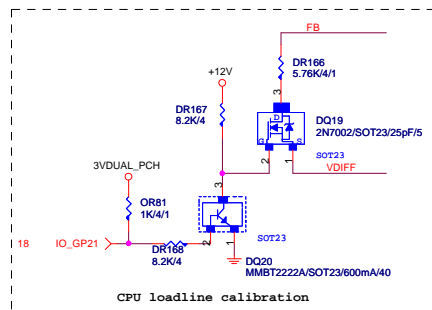
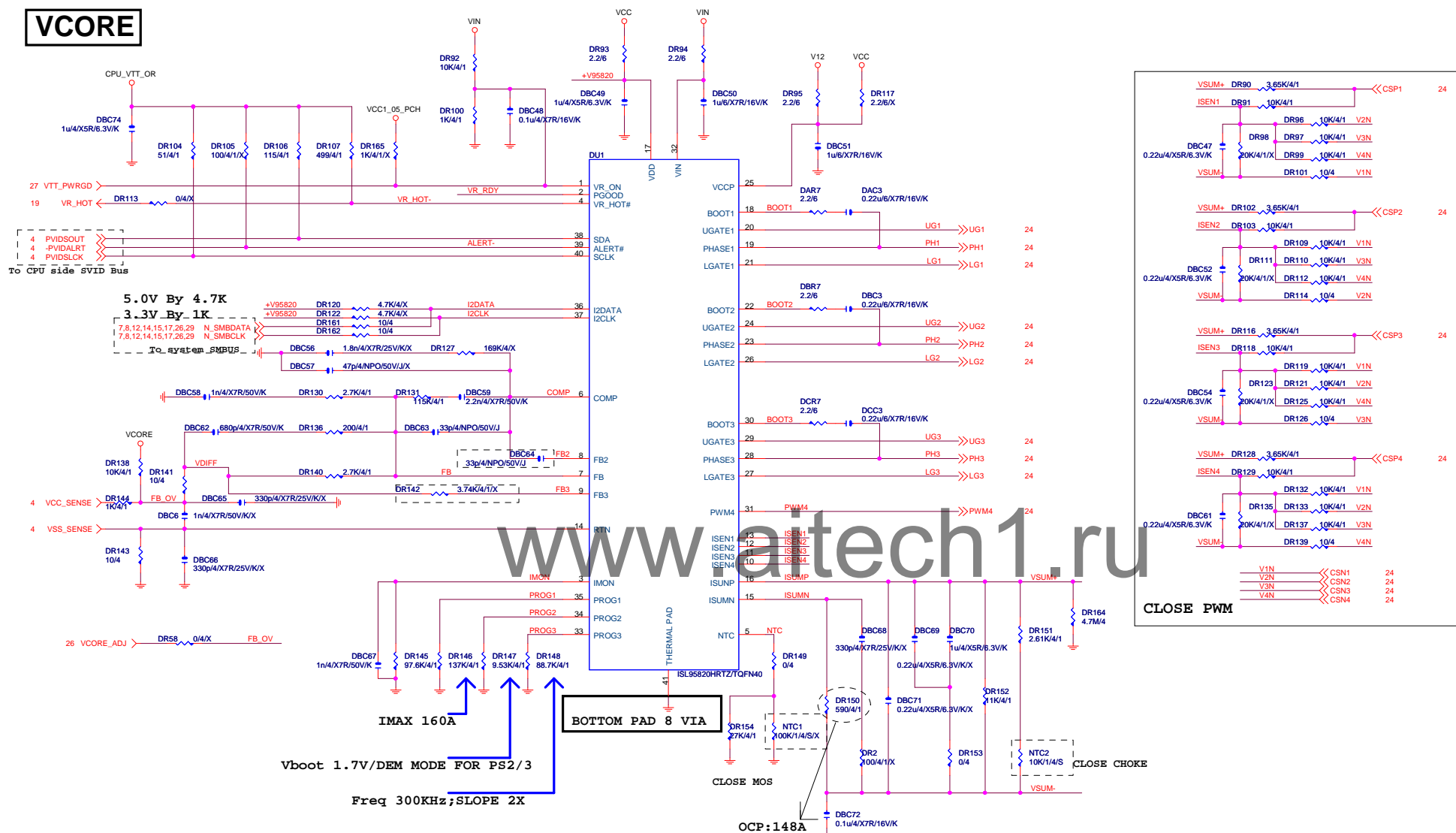


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AUDIO JACK

GA-H87-HD3

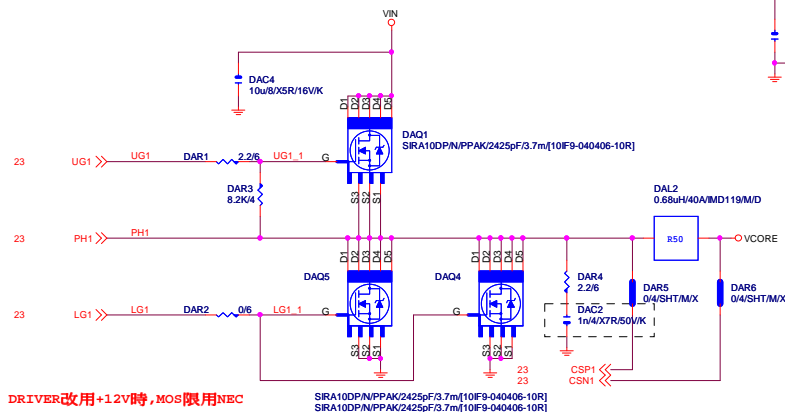
Title		Rev	
Size		1.1	
Custom			
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VCORE

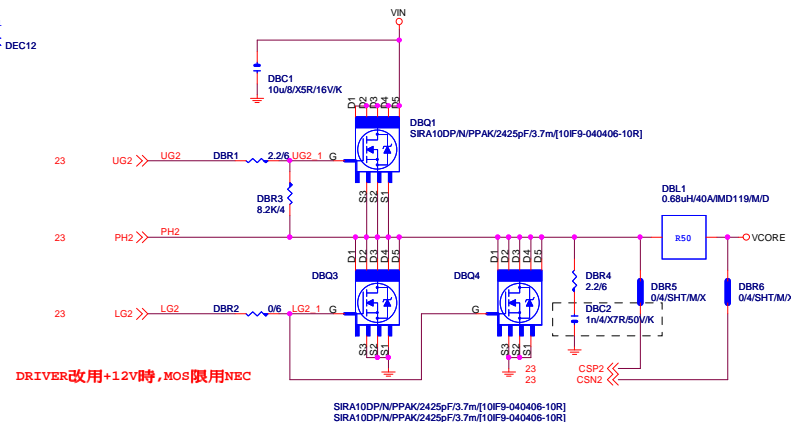
Gigabyte Technology				
Title VCORE_ ISL95820				
Size	Document Number			Rev
Custom	GA-H87-HD3			1
Date:	Wednesday, July 10, 2013	Sheet	23	of 34

VCORE

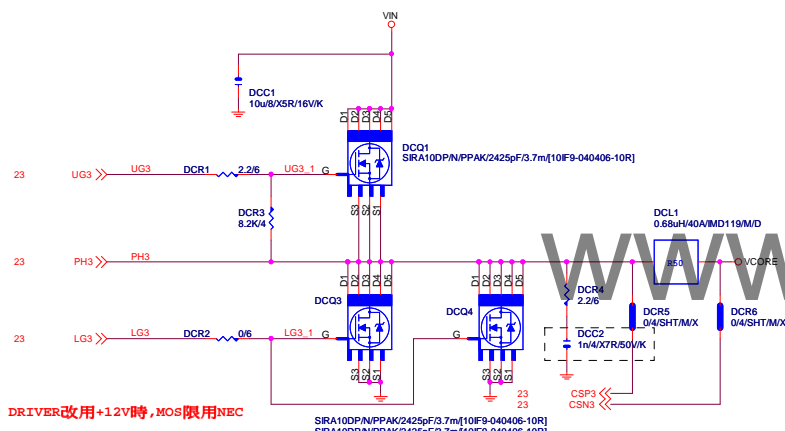
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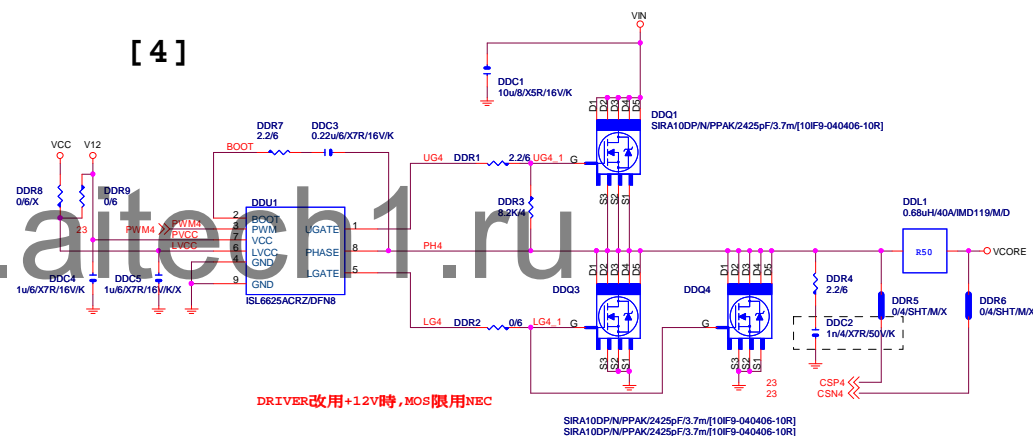
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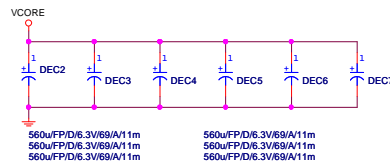
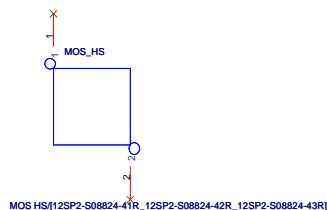
[3]



[4]



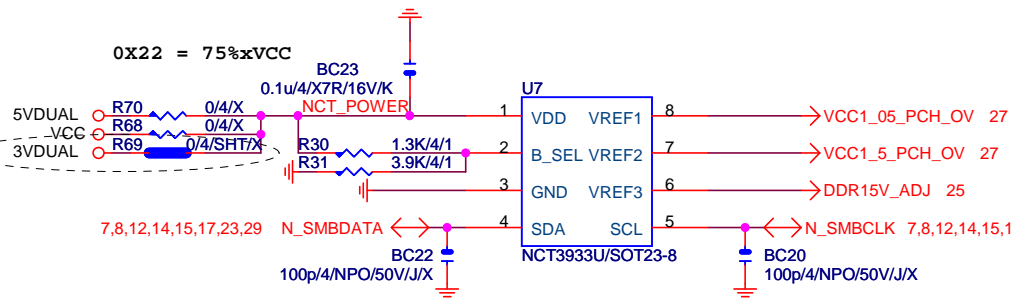
MOSFET HEATSINK



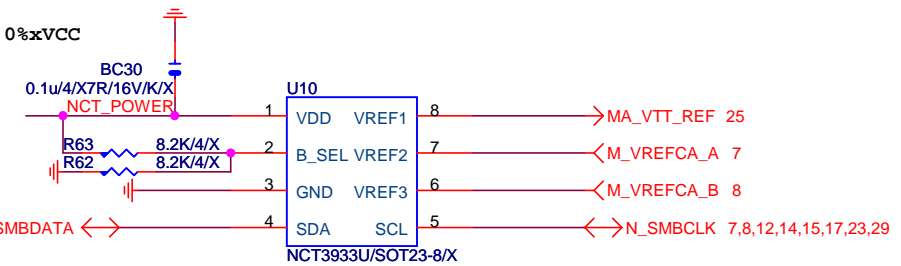
Gigabyte Technology

Title			ISL95820_2
Size			Document Number
Custom			GA-H87-HD3
Date			Wednesday, July 10, 2013
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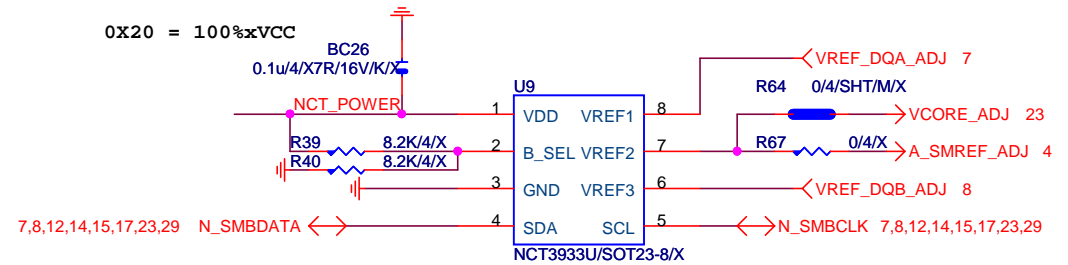
OVER VOLTAGE



0X2A = 0%xVCC



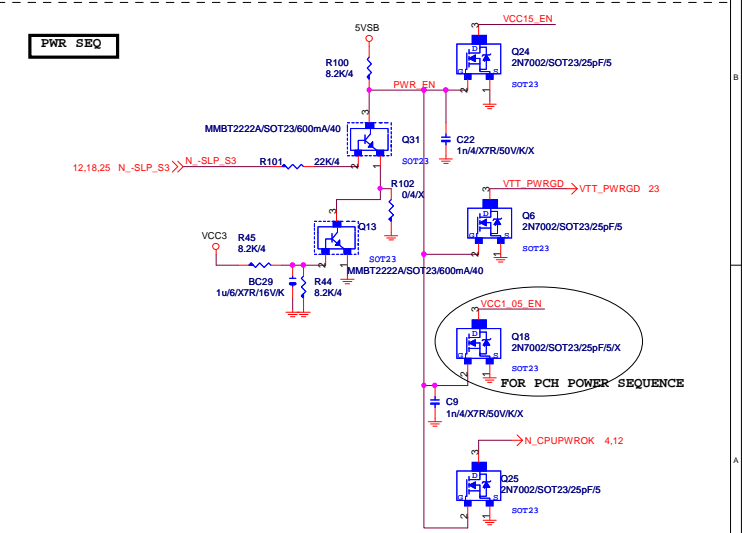
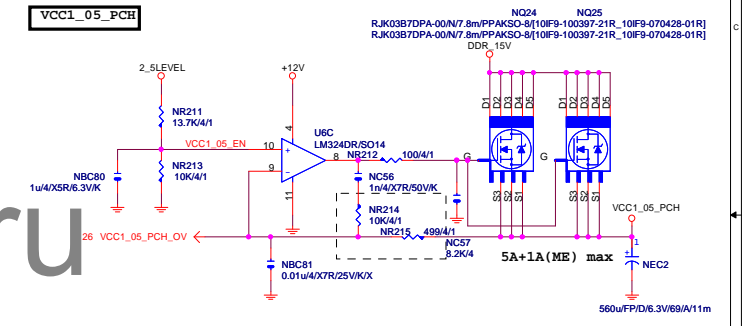
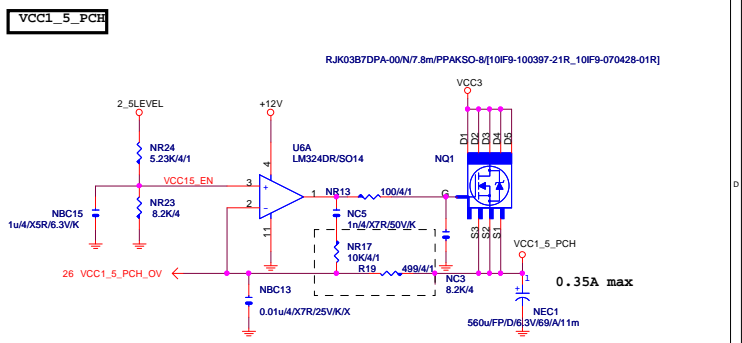
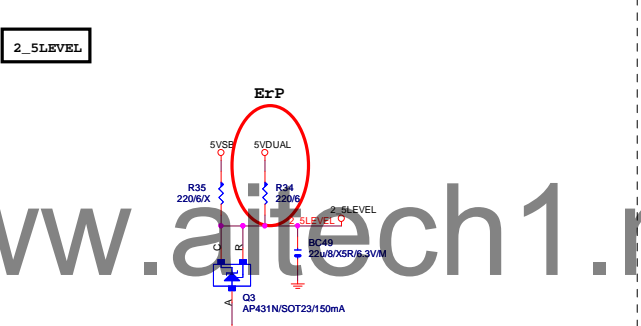
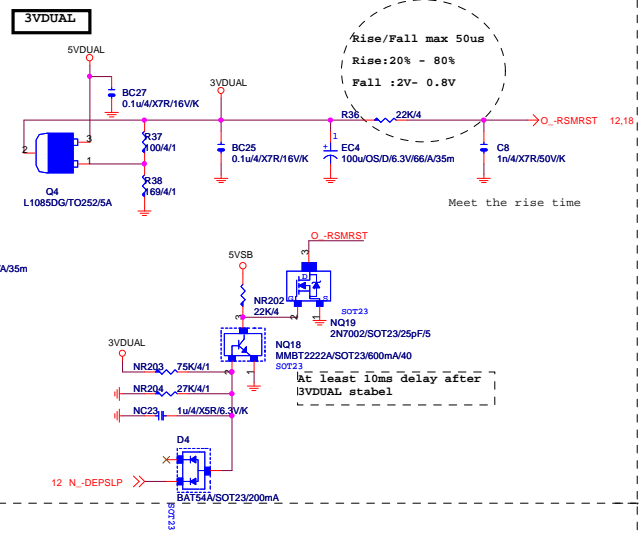
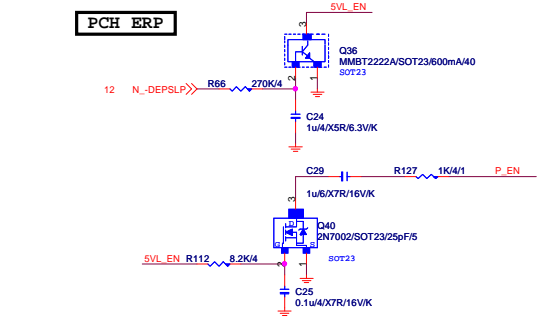
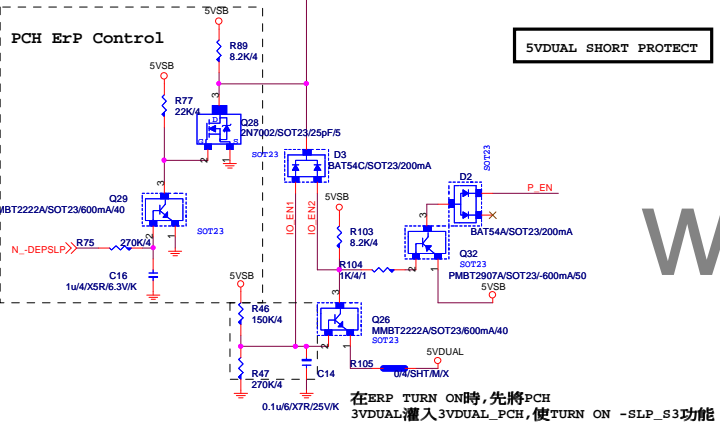
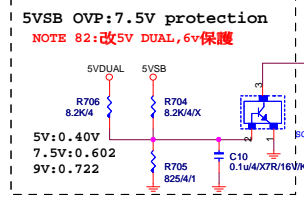
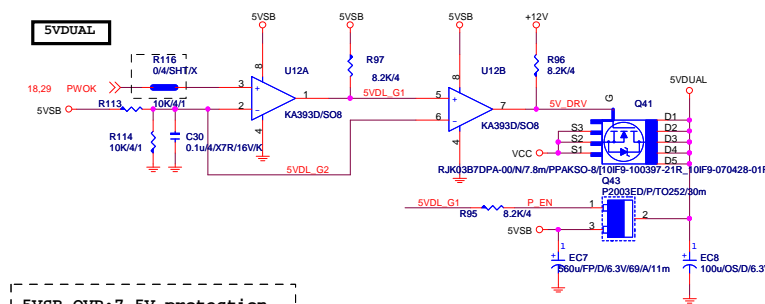
0X20 = 100%xVCC



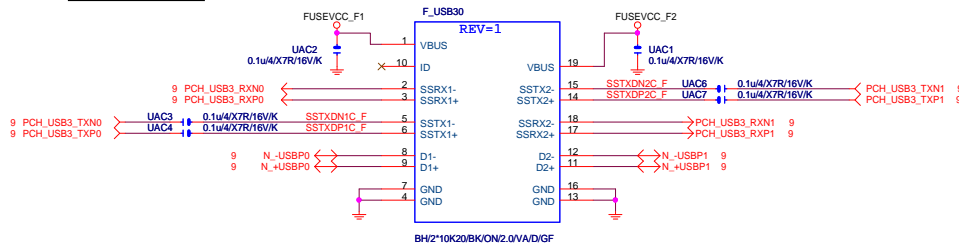
NCT3933	0X2A	0X20	0X22
VREF1	DDRVTT	VREF_DDRA_DQ	PCH Core
VREF2	VREF_DDRA_CA	N/A	VCC1_5_PCH
VREF3	VREF_DDRA_CA	VREF_DDRB_DQ	SMREF

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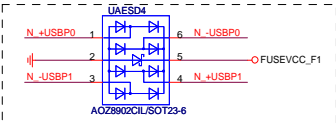
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CPU CORE VR-2		
Size	Document Number	Rev
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Front USB3.0

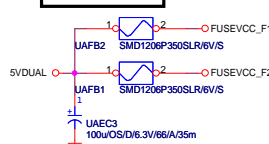


BLUE

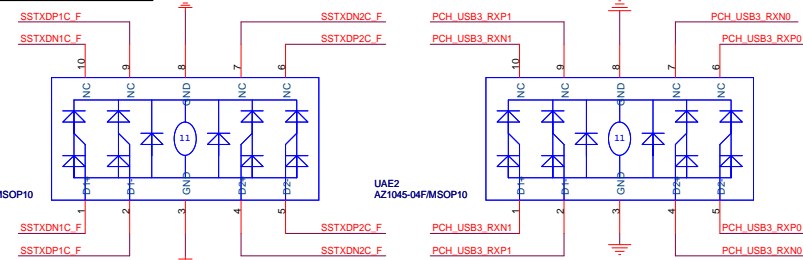


Close to connector

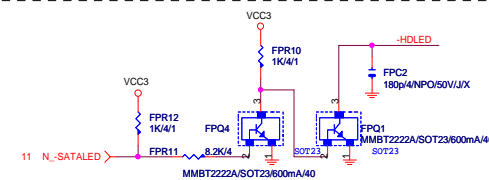
F_USB30 PWR



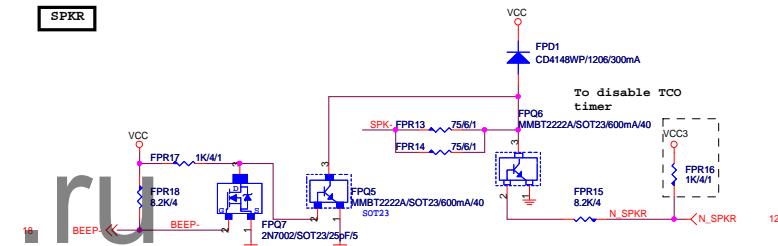
F_USB30 ESD PROTECT



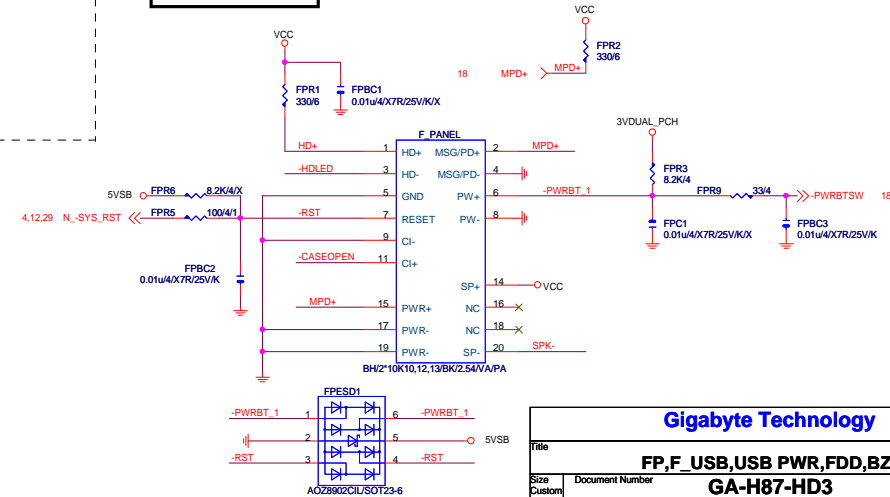
SATA LED



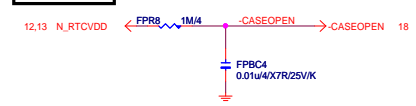
SPKR



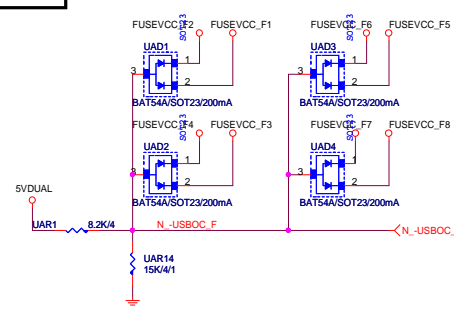
INTEL FRONT PANEL



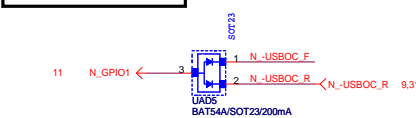
CASE OPEN



-USBOC_F



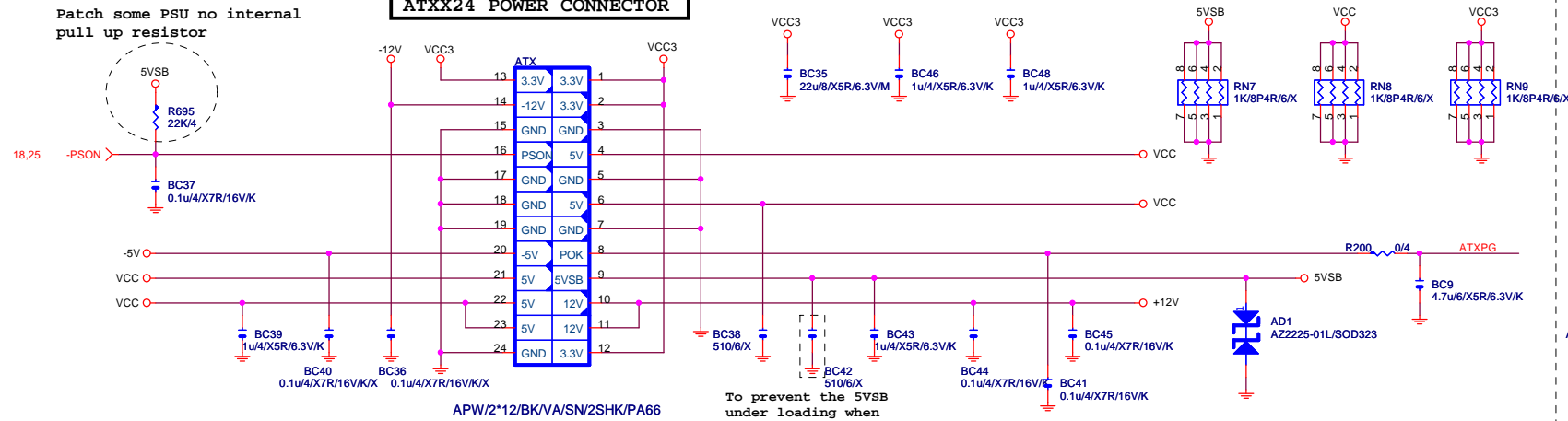
F_USB POWER PROTECT



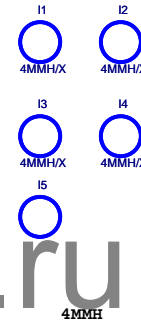
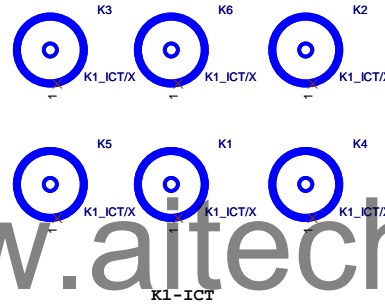
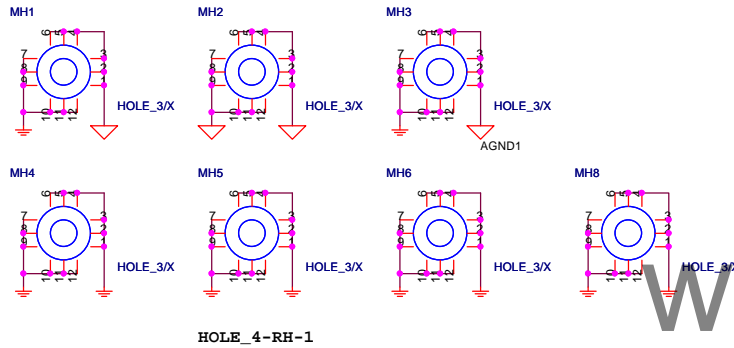
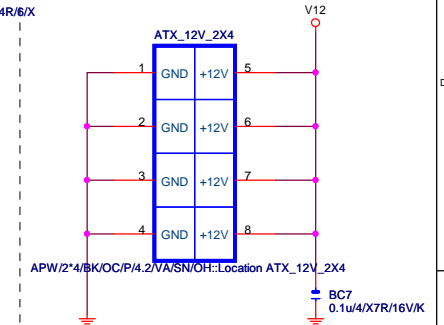
Gigabyte Technology			
Title		FP,F_USB,USB PWR,FDD,BZ	
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Patch some PSU no internal pull up resistor

ATXX24 POWER CONNECTOR

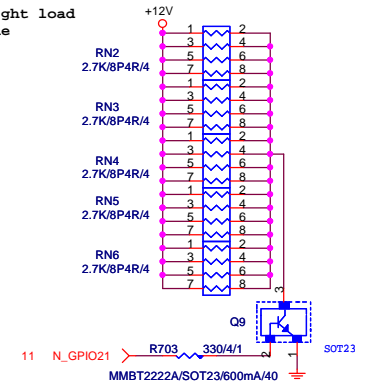


ATXX4 POWER CONNECTOR



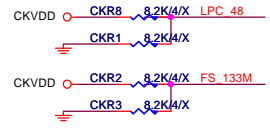
【技術通報R&D技術通報153】

To fix 12V light load abnormal issue

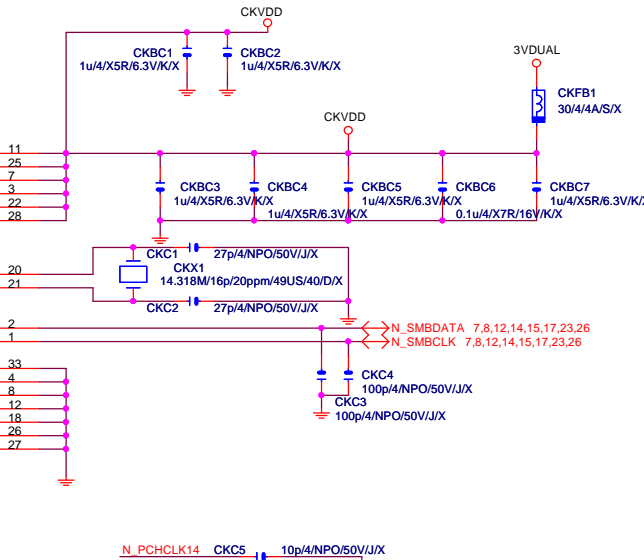
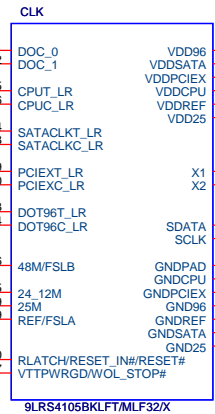
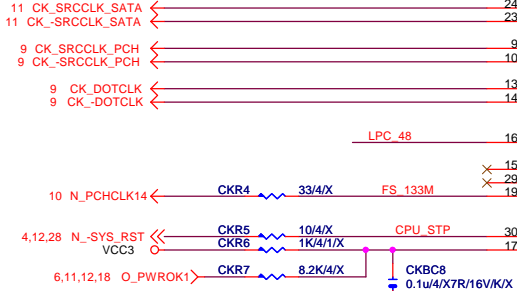


CLK GEN

CPU Frequency Selection

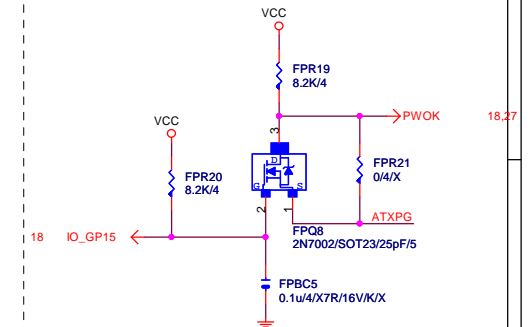


FSLB	FSLA	CPU
0	0	100M <Default>
0	1	133M
1	0	200M
1	1	166M



PWOK PATCH

【技術通報R&D技術通報154】



Gigabyte Technology

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Rev 0.2 modify

VREF

OR73 10K/4/1

R674 8.2K/4

R675 8.2K/4

R679 8.2K/4

OC6 1u4/5R/6.3V/K

OC7 1u4/5R/6.3V/K

RS_SYS 10K/1/4/S

RS_PWM 1u4/5R/6.3V/K

C232 1u4/5R/6.3V/K

VCORE_MOS

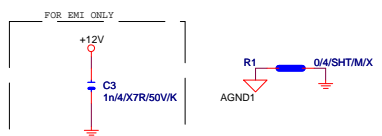
Close SIO

Close CPU

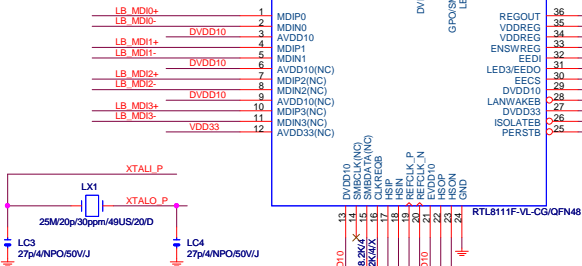
The division voltage of VIN2 & VIN3 must be around 2.9V

[illegible][illegible][illegible][illegible]

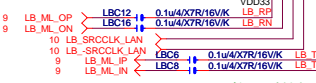
The schematic diagram shows the internal components of the FAN14 module. The central component is the NCT3941S-A/SOP8-EP (U16), a fan controller. It is connected to a +12V supply and ground. The fan is connected to the VOUT pin of the controller. The module also includes a pull-up resistor (R693) and a pull-down resistor (R692) for the FANPWM4 signal. The module is labeled 'SYS_FAN3' and 'FAN14/BK/A3/PA66'.



100歐姆:[20/4/8/4/20]

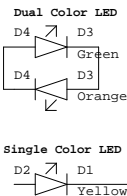
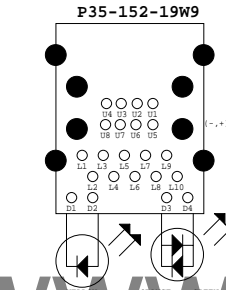


80歐姆:[15/5/5/5/15]



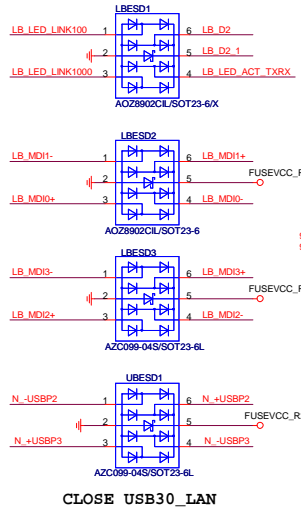
SRCCLK 50歐姆:[18/4/10/4/18]

離IC近越好

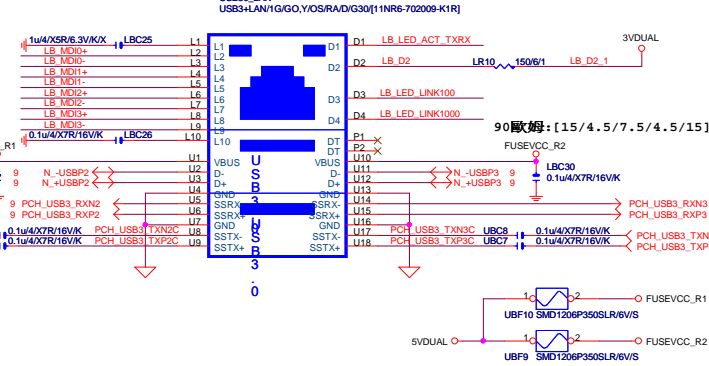
FOR DSM MODE
(DEEP SLEEP MODE)

USB30_LAN CONNECTOR

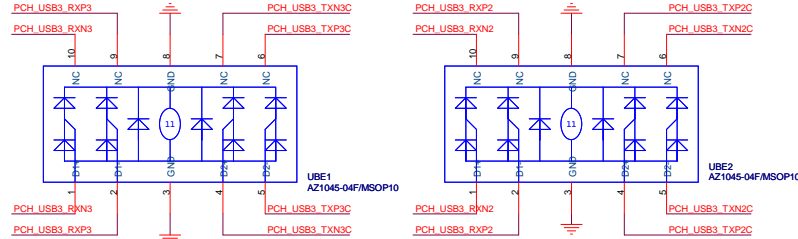
100歐姆:[20/4/8/4/20]



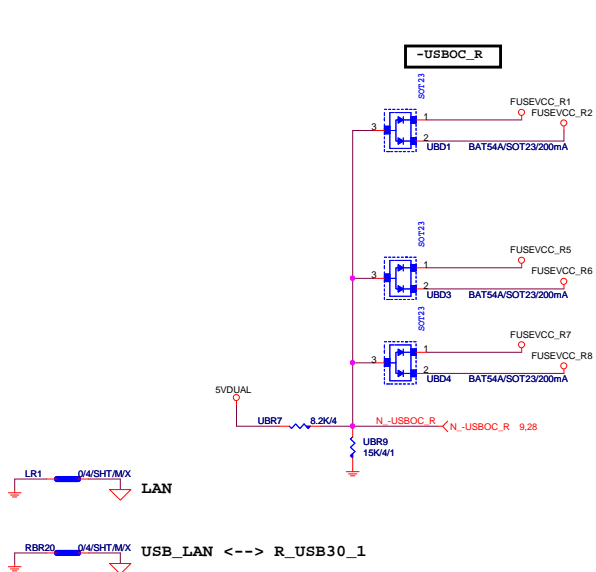
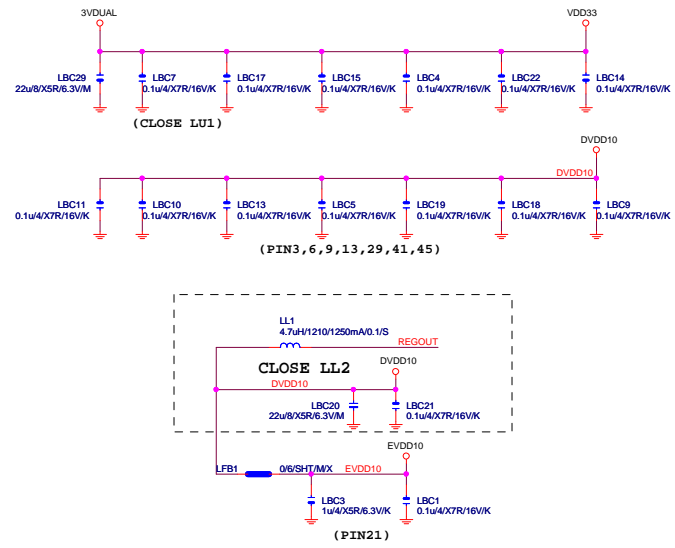
CLOSE USB30_LAN



CLOSE USB30_LAN

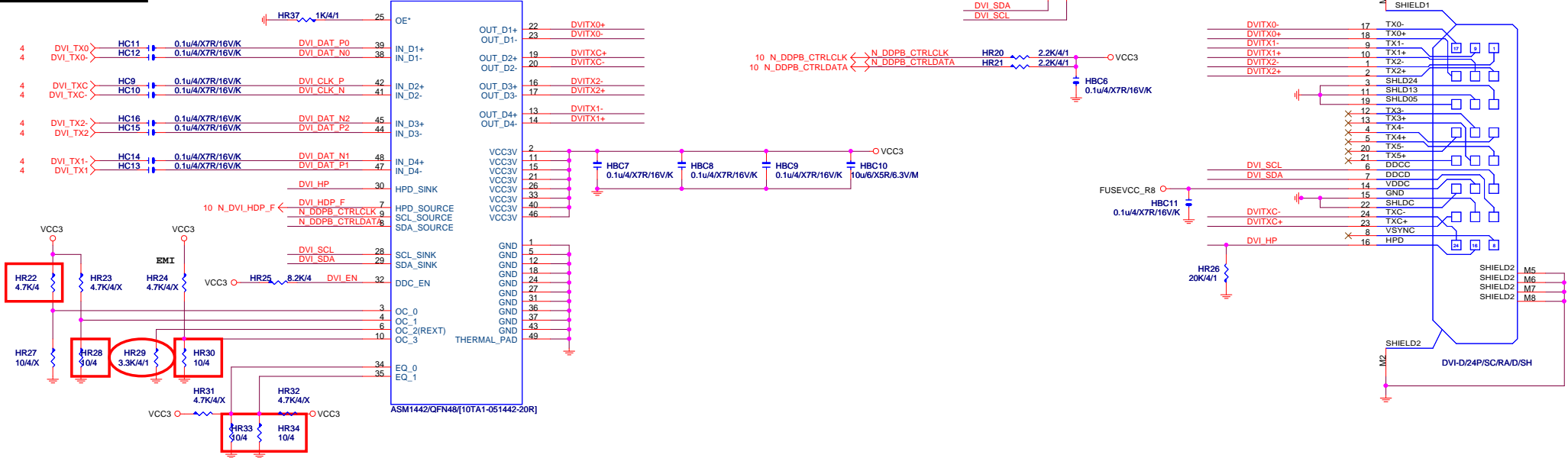


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DVI LEVEL SHIFT

DVI:20/4/6/4/20
Impedance=85 +- 17.5%



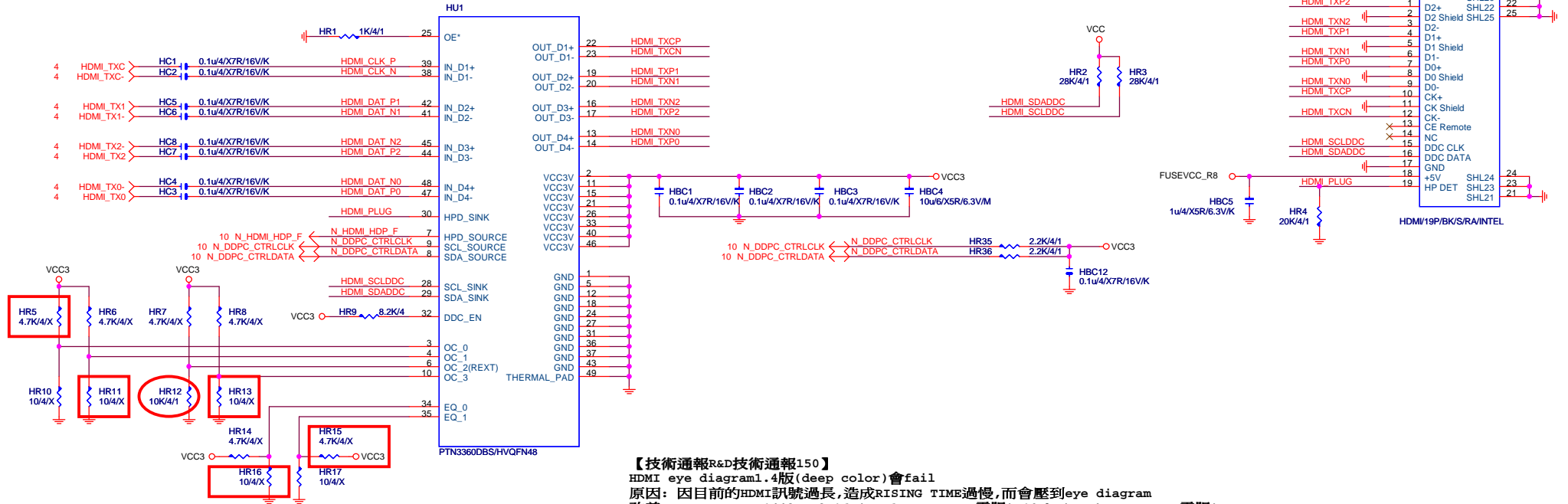
PTN3360:PIN 4/10/34/35 NC PIN,都不上值;只上HR29:10K
ASM1442:紅色框要上,HR29:3.3K

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HDMI LEVEL SHIFT

HDMI:20/4/6/4/20
Impedance=85 +- 17.5%



PTN3360:PIN 4/10/34/35 NC PIN,都不上值;只上HR12:10K
ASM1442:紅色框要上,HR12:3.16K

【技術通報R&D技術通報150】

HDMI eye diagram1.4版(deep color)會fail

原因: 因目前的HDMI訊號過長,造成RISING TIME過慢,而會壓到eye diagram

改善: ASMEDIA ASM1442 : 3.16K(PIN6 PULL DOWN電阻) 10ohm(PIN4 PULL DOWN電阻)

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