

Model Name: GA-P85-D3

1.0

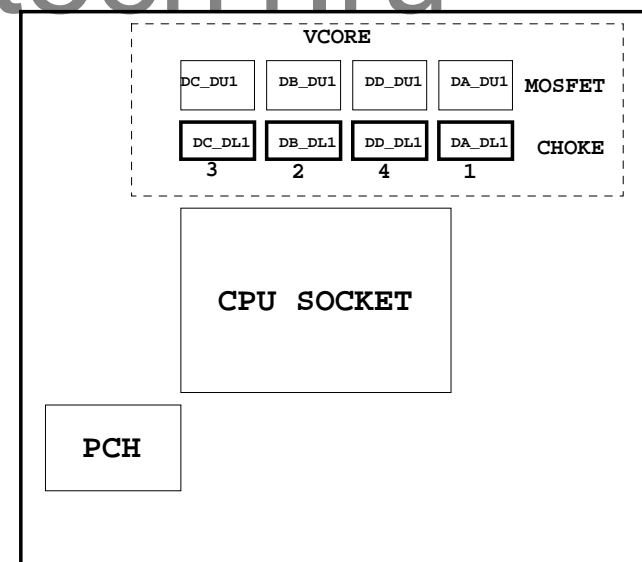
SHEET TITLE

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 1~4
18	I/O ITE8728
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 / 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	HDMI
33	TABLE LIST
34	
35	
36	
37	
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40	

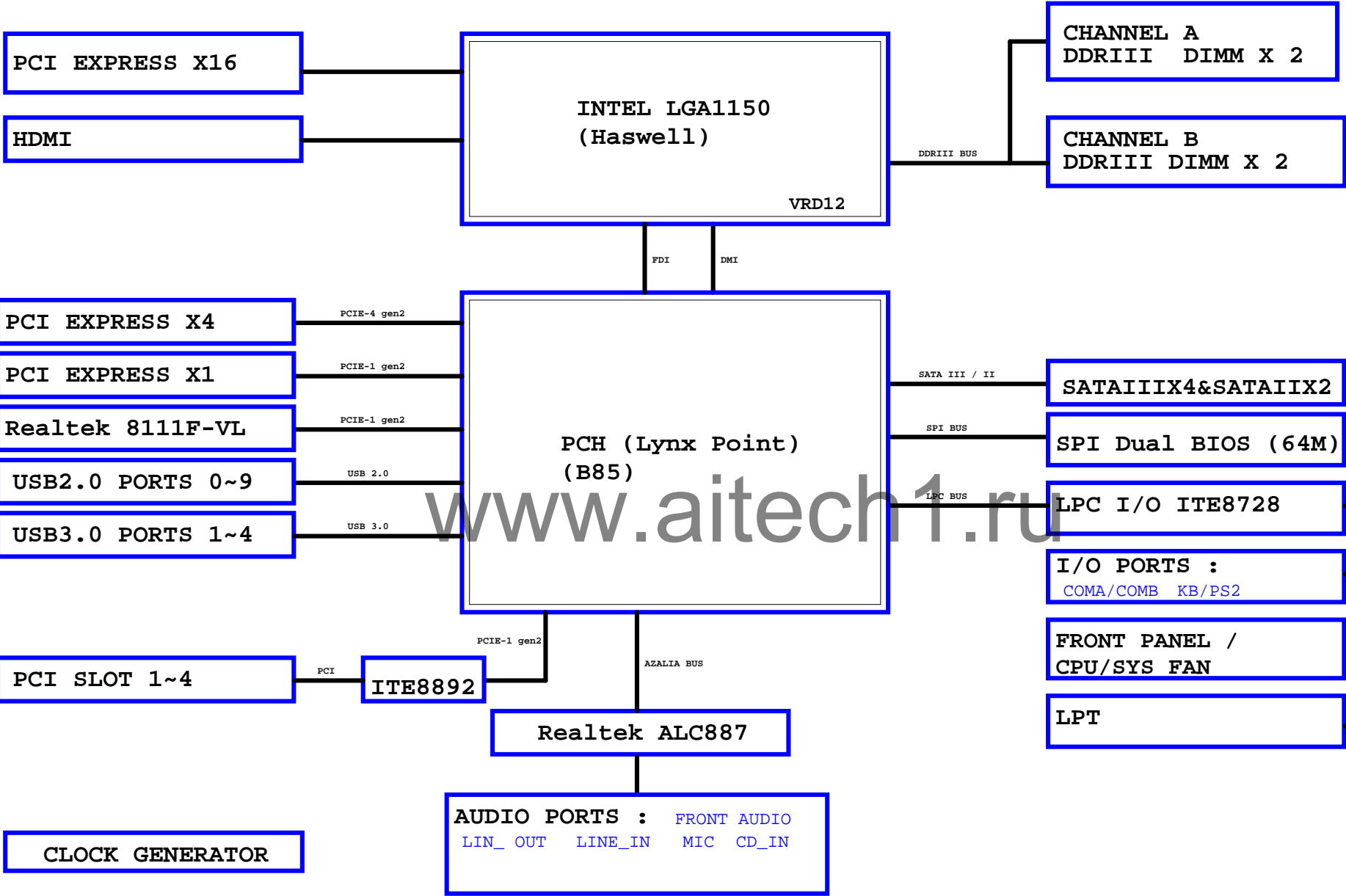
www.aitech1.ru



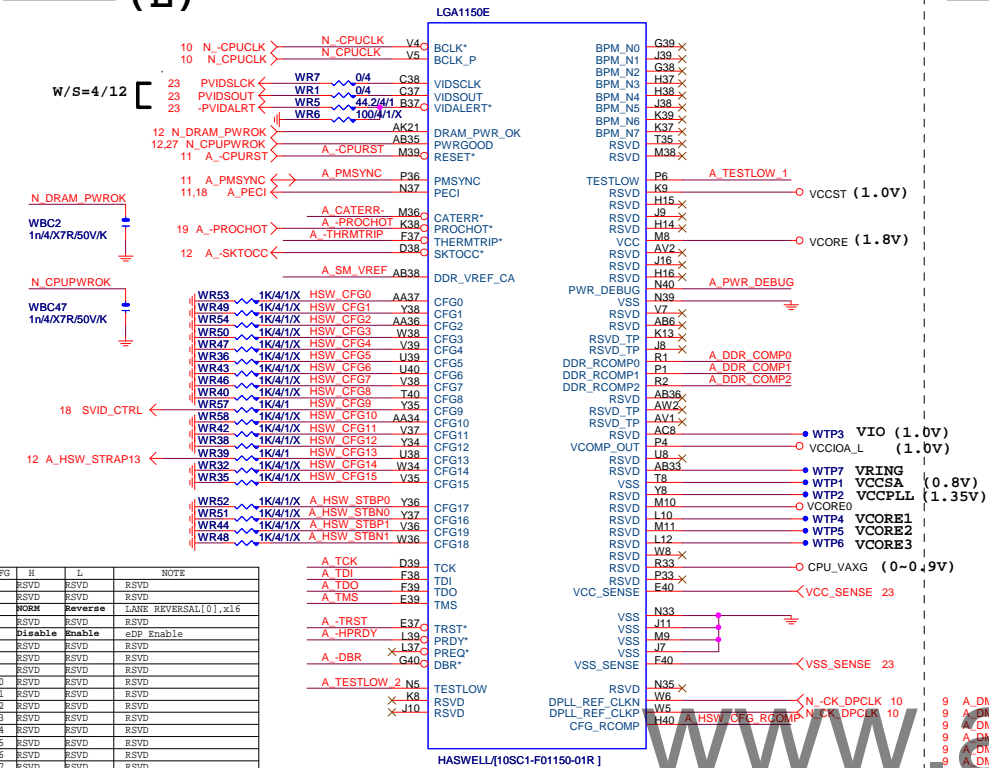
Component value change history

[illegible][illegible]

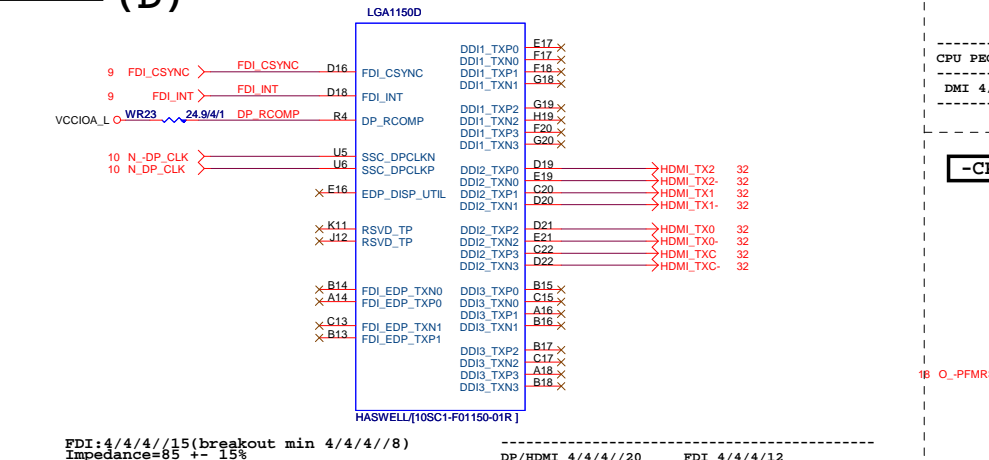
BLOCK DIAGRAM



LGA1150 (E)



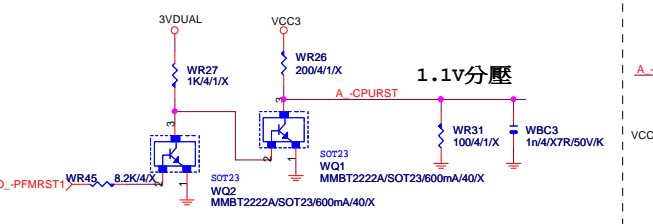
LGA1150 (D)



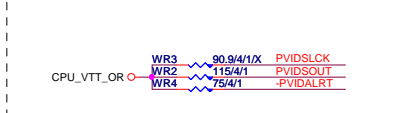
LGA1155 (C)



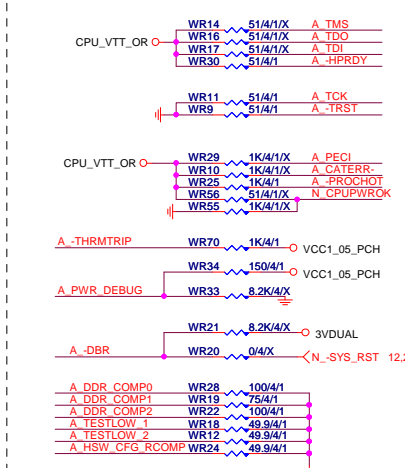
-CPURST



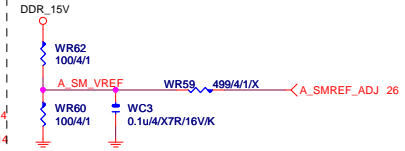
CPU SVID



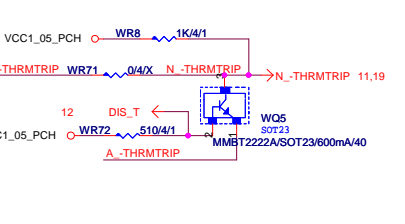
CPU PU/PD



SM REF



THRMTRIP DISABLE FOR Z87 OVERCLOCK



LGA1150 (A)

LGA1500A									
		MAAA0	AU13			DDR0_D00	AD38	MDA0	
		MAAA1	AV16			DDR0_D01	AD39	MDA1	
		MAAA2	AV16			DDR0_D02	AF38		
		MAAA3	AW18			DDR0_D03	AF39	MDA3	
		MAAA4	AU17			DDR0_D04	AD37	MDA4	
		MAAA5	AW18			DDR0_D05	AD40	MDA5	
		MAAA6	AV17			DDR0_D06	AF37	MDA6	
		MAAA7	AT18			DDR0_D07	AD40	MDA7	
		MAAA8	AV18			DDR0_D08	AF40	MDA9	
		MAAA9	AW19			DDR0_D09	AH39	MDA13	
		MAAA10	AT11			DDR0_D10	AK38	MDA10	
		MAAA11	AV19			DDR0_D11	AK39	MDA11	
		MAAA12	AW19			DDR0_D12	AK37	MDA12	
		MAAA13	AY10			DDR0_D13	AK38	MDA8	
		MAAA14	AT20			DDR0_D14	AK37	MDA14	
		MAAA15	AU21			DDR0_D15	AK40	MDA15	
						DDR0_D16	AM40		
		MODT A0	AW10			DDR0_D17	AP39	MDA21	
		MODT A1	AY8			DDR0_D18	AP38	MDA18	
		MODT A2	AU9			DDR0_D19	AP39	MDA19	
		MODT A3	AW8			DDR0_D20	AM39	MDA20	
						DDR0_D21	AP38	MDA16	
						DDR0_D22	AP37	MDA22	
			AW33			DDR0_D23	AP40	MDA23	
			AV33			DDR0_ECC0	AW37	MDA29	
			AV31			DDR0_ECC1	AW37	MDA29	
			AV31			DDR0_ECC2	AW35	MDA26	
			AV31			DDR0_ECC3	AT33	MDA27	
			AT33			DDR0_ECC4	AT37	MDA28	
			AT33			DDR0_ECC5	AW37	MDA24	
			AT31			DDR0_ECC6	AW35	MDA30	
			AW31			DDR0_ECC7	AW35	MDA31	
		SBA0	AV12			DDR0_BA0	AY6	MDA33	
7		SBA1	AT11			DDR0_BA1	AY8	MDA37	
7		SBA2	AY21			DDR0_BA2	AW4	MDA34	
						DDR0_BA2	AW4	MDA35	
		CKE0	AV22			DDR0_CK0	AN1	MDA36	
7		CKE1	AT23			DDR0_CK1	AN2	MDA32	
7		CKE2	CKE2			DDR0_CK2	AW4	MDA38	
7		CKE3	CKE3			DDR0_CK3	AN1	MDA39	
						DDR0_CK3	AN1	MDA40	
7		-CSA0	AU14			DDR0_CS_N0	AN2	MDA45	
7		-CSA1	AY9			DDR0_CS_N1	AN4	MDA43	
7		-CSA2	AU10			DDR0_CS_N2	AN2	MDA44	
7		-CSA3	AW8			DDR0_CS_N3	AN4	MDA40	
						DDR0_CS_N3	AN2	MDA46	
7		DCLKA0	AY15			DDR0_CLK_P0	AN1	MDA47	
7		-DCLKA0	AW15			DDR0_CLK_P0	AL1	MDA49	
7		DCLKA1	AY15			DDR0_CLK_P1	AL1	MDA49	
7		-DCLKA1	AW15			DDR0_CLK_P1	AL1	MDA50	
7		DCLKA2	AW14			DDR0_CLK_P2	AL4	MDA51	
7		-DCLKA2	AW13			DDR0_CLK_P2	AL3	MDA52	
7		DCLKA3	AY13			DDR0_CLK_P3	AL2	MDA54	
7		-DCLKA3	AY13			DDR0_CLK_P3	AL2	MDA55	
			AW12			RSVD	AG1	MDA57	
						DDR0_D056	AG1	MDA61	
						DDR0_D057	AG4	MDA58	
						DDR0_D058	AG3	MDA59	
						DDR0_D059	AG2	MDA60	
						DDR0_D060	AG3	MDA56	
						DDR0_D061	AG3	MDA62	
7		-SRASA	AU12C			DDR0_RAS*	AE1	MDA63	
7		-SWEA	AU11C			DDR0_WE*	AE1	MDA63	
			AW20C			RSVD	AE39	DO5A0	
			AW27C			RSVD	AE39	DO5A2	
						DDR0_D0S_P2	AV36	DO5A3	
						DDR0_D0S_P3	AE4	DO5A4	
						DDR0_D0S_P4	AE3	DO5A5	
7		-SCASA	AU9C			DDR0_CAS*	AE3	DO5A7	
						DDR0_D0S_P6	AE2		
7.8	-DDR3_RST	WR61	AK22C			DDR0_RST*	AV32	DO5A0	
		D4/SH/TMX				DDR0_D0S_P8	AE38	DO5A1	
		WC4				DDR0_D0S_P0	AE38	DO5A2	
		0.1uA/IXTR16/VK/XX				DDR0_D0S_N1	AE38	DO5A3	
						DDR0_D0S_N2	AE38	DO5A4	
						DDR0_D0S_N3	AE38	DO5A5	
						DDR0_D0S_N4	AE38	DO5A6	
						DDR0_D0S_N5	AE38	DO5A7	
						DDR0_D0S_N6	AE38	DO5A8	
						DDR0_D0S_N7	AE38	DO5A9	
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HASWELL/[10SC1-F01150-01R]

LGA1150 (B)

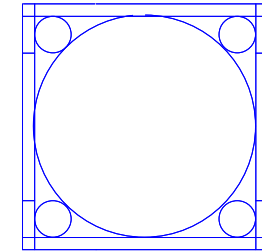
LGA150B

MAAB0	AL19	DDR1, MA0	DDR1, DQ0	AE34	MD80
MAAB1	AK23	DDR1, MA1	DDR1, DQ1	AE35	MD81
MAAB2	AM22	DDR1, MA2	DDR1, DQ2	AG35	MD82
MAAB3	AL23	DDR1, MA3	DDR1, DQ3	AH35	MD83
MAAB4	AM23	DDR1, MA4	DDR1, DQ4	AD34	MD84
MAAB5	AE23	DDR1, MA5	DDR1, DQ5	AD35	MD85
MAAB6	AY24	DDR1, MA6	DDR1, DQ6	AG34	MD86
MAAB7	AV25	DDR1, MA7	DDR1, DQ7	AH34	MD87
MAAB8	AL26	DDR1, MA8	DDR1, DQ8	AL34	MD88
MAAB9	AW25	DDR1, MA9	DDR1, DQ9	AK35	MD89
MAAB10	AP18	DDR1, MA10	DDR1, DQ10	AL31	MD810
MAAB11	AV26	DDR1, MA11	DDR1, DQ11	AK31	MD811
MAAB12	AE26	DDR1, MA12	DDR1, DQ12	AG34	MD812
MAAB13	AR15	DDR1, MA13	DDR1, DQ13	AL33	MD813
MAAB14	AY27	DDR1, MA14	DDR1, DQ14	AL32	MD814
MAAB15	AV28	DDR1, MA15	DDR1, DQ15	AL32	MD815
			DDR1, DQ16	AK34	MD817
MODT B0	AM17	DDR1, OD0T0	DDR1, DQ17	AP34	MD821
MODT B1	AL16	DDR1, OD10	DDR1, DQ18	AN31	MD819
MODT B2	AM16	DDR1, OD12	DDR1, DQ19	AP31	MD823
MODT B3	AK15	DDR1, OD13	DDR1, DQ20	AN35	MD820
			DDR1, DQ21	AN32	MD818
	AM26	DDR1, EC00	DDR1, DQ22	AP32	MD822
	AM25	DDR1, EC01	DDR1, DQ23	AP32	MD825
	AP25	DDR1, EC02	DDR1, DQ24	AM28	MD825
	AP26	DDR1, EC03	DDR1, DQ25	AE28	MD827
	AL26	DDR1, EC04	DDR1, DQ26	AR28	MD830
	AL26	DDR1, EC05	DDR1, DQ27	AL28	MD824
	AR26	DDR1, EC06	DDR1, DQ28	AL28	MD825
	AR25	DDR1, EC07	DDR1, DQ29	AP28	MD831
			DDR1, DQ30	AP28	MD831
			DDR1, DQ31	AR12	MD832
			DDR1, DQ32	AR12	MD833
			DDR1, DQ33	AL13	MD835
			DDR1, DQ34	AR13	MD836
			DDR1, DQ35	AM13	MD837
			DDR1, DQ36	AM12	MD838
			DDR1, DQ37	AR39	MD845
			DDR1, DQ40	AP9	MD841
			DDR1, DQ41	AP6	MD847
			DDR1, DQ42	AR6	MD848
			DDR1, DQ43	AR10	MD844
			DDR1, DQ44	AP10	MD846
			DDR1, DQ45	AR7	MD846
			DDR1, DQ46	AP7	MD842
			DDR1, DQ47	AM9	MD852
			DDR1, DQ48	AL9	MD853
			DDR1, DQ49	AL6	MD850
			DDR1, DQ50	AL7	MD851
			DDR1, DQ51	AM10	MD848
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			DDR1, DQ53	AM6	MD854
			DDR1, DQ54	AM7	MD851
			DDR1, DQ55	AH6	MD856
			DDR1, DQ56	AN7	MD860
			DDR1, DQ57	AE6	MD859
			DDR1, DQ58	AE7	MD863
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			DDR1, DQ60	A17	MD857
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			DDR1, DQ176	AN19	DS083
			DDR1, DQ177	AN12	DS084
			DDR1, DQ178	AR8	DS085
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			DDR1, DQ180	AG6	DS087
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			DDR1, DQ185	AN28	DS083
			DDR1, DQ186	AM12	DS084
			DDR1, DQ187	AP8	DS086
			DDR1, DQ188	AL8	DS086
			DDR1, DQ189	AG7	DS087
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			DDR1, DQ192	AN33	DS082
			DDR1, DQ193	AN19	DS083
			DDR1, DQ194	AN12	DS084
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			DDR1, DQ205	AL8	DS086
			DDR1, DQ206	AG7	DS087
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			DDR1, DQ208	AF34	DS081
			DDR1, DQ209	AN33	DS082
			DDR1, DQ210	AN19	DS083
			DDR1, DQ211	AN12	DS084
			DDR1, DQ212	AR8	DS085
			DDR1, DQ213	AM8	DS086
			DDR1, DQ214	AG6	DS087
			DDR1, DQ215	AN2X	DS080
			DDR1, DQ216	AF35	DS080
			DDR1, DQ217	AL33	DS082
			DDR1, DQ218	AP33	DS082
			DDR1, DQ219	AN28	DS083
			DDR1, DQ220	AM12	DS084
			DDR1, DQ221	AP8	DS086
			DDR1, DQ222	AL8	DS086
			DDR1, DQ223	AG7	DS087
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			DDR1, DQ225	AF34	DS081
			DDR1, DQ226	AN33	DS082
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			DDR1, DQ240	AN2X	DS080
			DDR1, DQ241	AF35	DS080
			DDR1, DQ242	AL33	DS082
			DDR1, DQ243	AP33	DS082
			DDR1, DQ244	AN28	DS083
			DDR1, DQ245	AM12	DS084
			DDR1, DQ246	AP8	DS086
			DDR1, DQ247	AL8	DS086
			DDR1, DQ248	AG7	DS087
			DDR1, DQ249	AN2X	DS080
			DDR1, DQ250	AF34	DS081
			DDR1, DQ251	AN33	DS082
			DDR1, DQ252	AN19	DS083
			DDR1, DQ253	AN12	DS084
			DDR1, DQ254	AR8	DS085
			DDR1, DQ255	AM8	DS086
			DDR1, DQ256	AG6	DS087
			DDR1, DQ257	AN2X	DS080
			DDR1, DQ258	AF35	DS080
			DDR1, DQ259	AL33	DS082
			DDR1, DQ260	AP33	DS082
			DDR1, DQ261	AN28	DS083
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			DDR1, DQ266	AN2X	DS080

HASWELL/[10SC1-F01150-01R]

LGA1150 (CR)

LGA1150
ILM_BP/1156/CSP

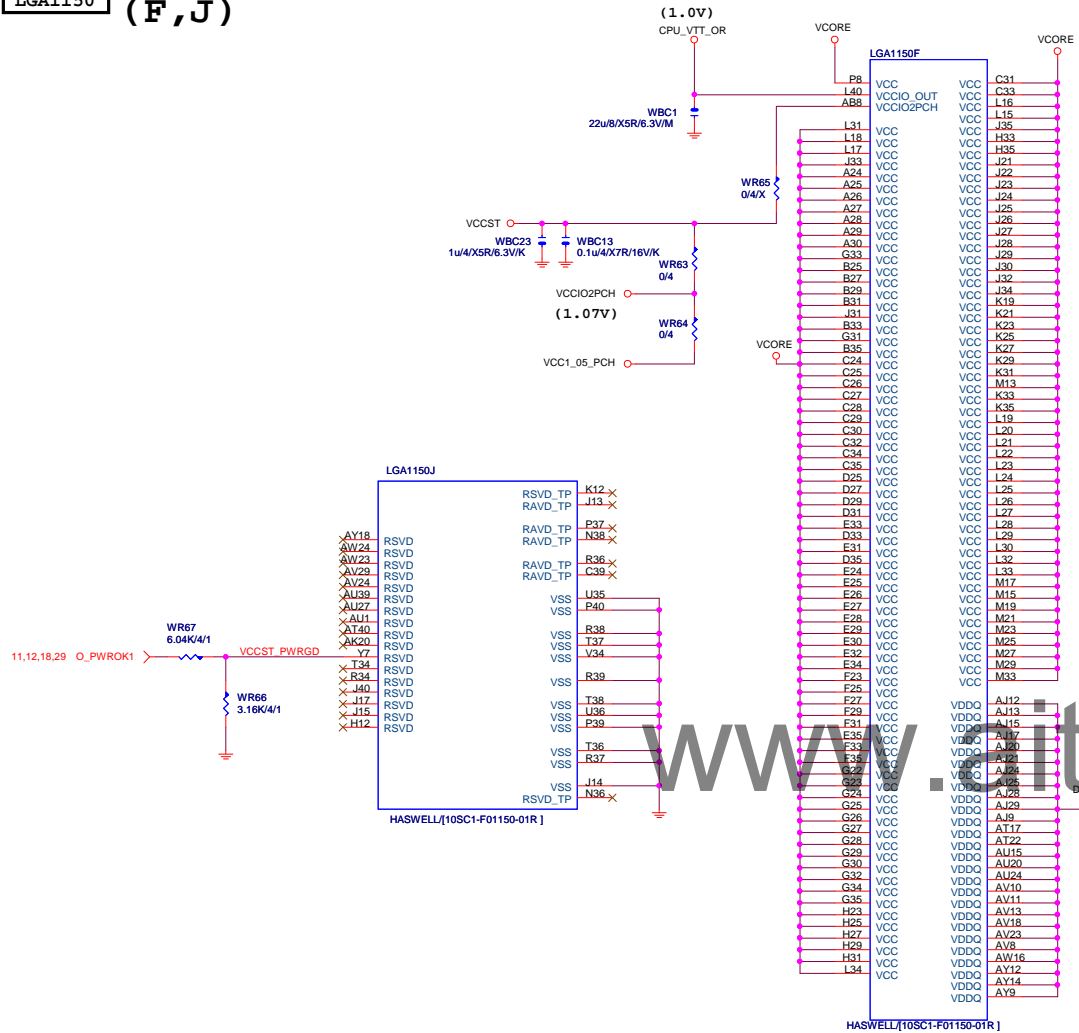


DDR BUS

Diagram illustrating recombination events between non-sister chromatids of homologous chromosomes. The chromosomes are labeled with gene names and genomic coordinates:

- 7 MODT_A[0..3] ↔ MODT_A[0..3]
- 8 MODT_B[0..3] ↔ MODT_B[0..3]
- 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]

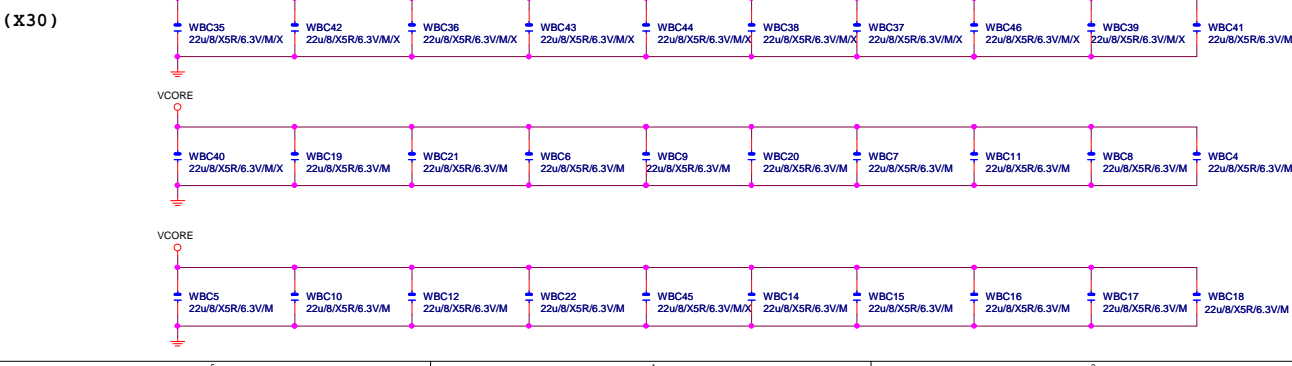
LGA1150 (F,J)



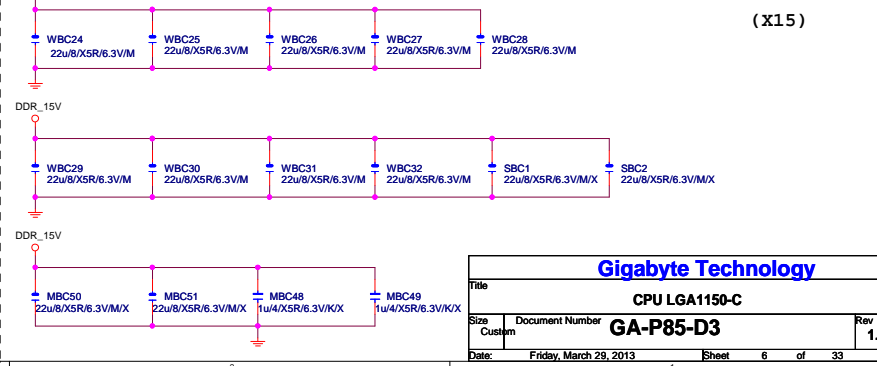
LGA1150 (G,H,I)



VCore CAP

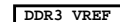
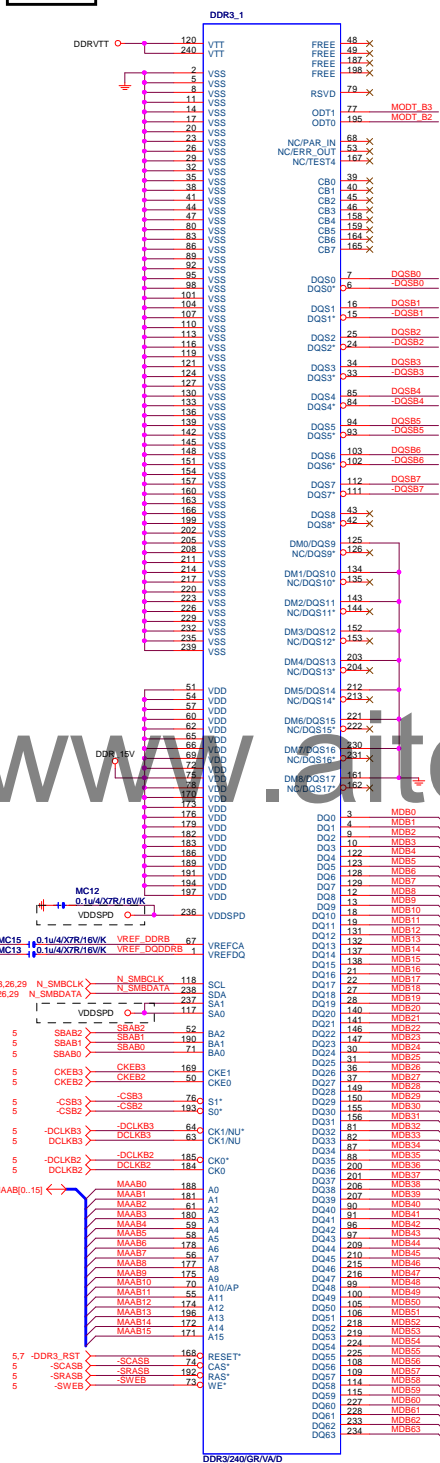
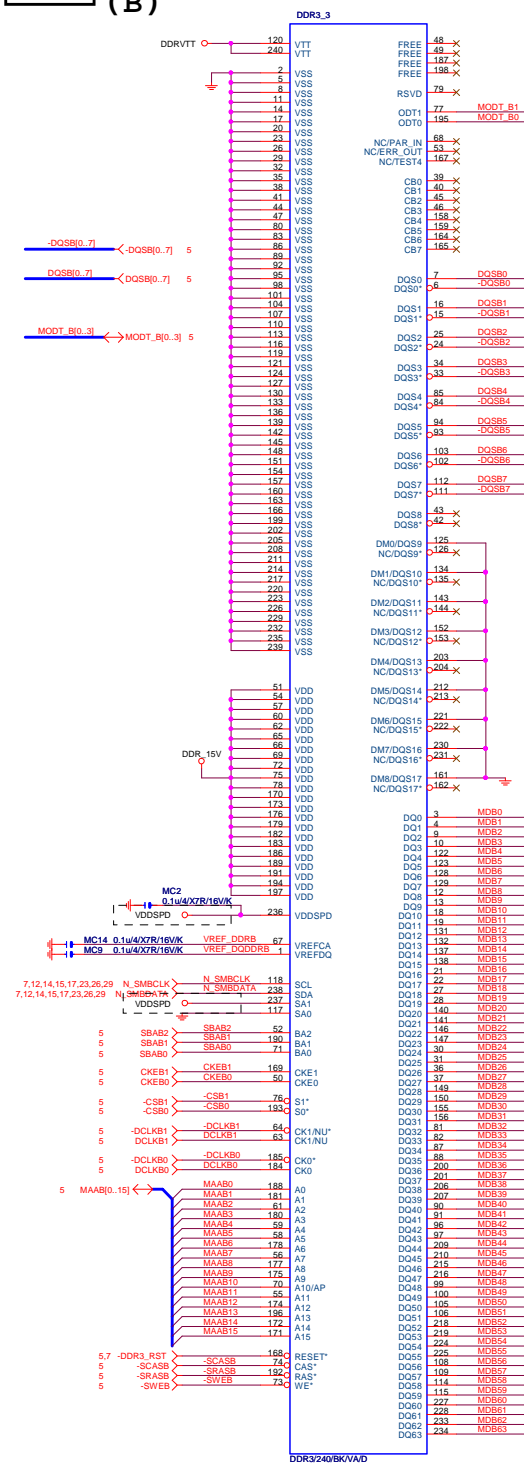


DDR CAP





(B)



```
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



CPU

Diagram illustrating the memory layout of a 4-rank server. The server has four DIMM slots labeled DIMM4, DIMM2, DIMM3, and DIMM1. The DIMM slots are organized into two channels, CHA and CHE.

CHA

CHE

Gigabyte Technology

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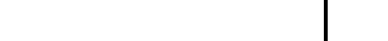
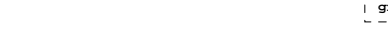
DMI:12/4/4/4/12(breakout min 8/4/4/4/8)
Impedance=85 +- 17.5%

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



放靠近 Device & PCI-E Slot

28 PCH_USB3_RXN0 >

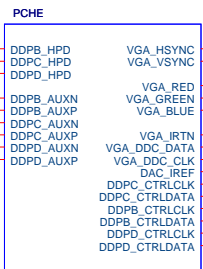
[illegible]

— **g**

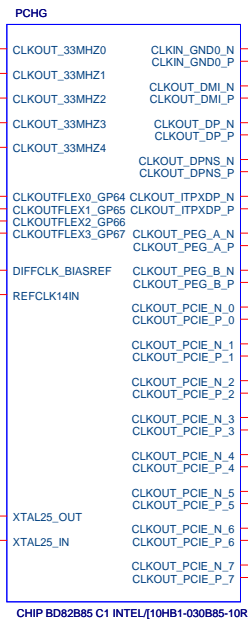
USB OC# Configure

PCH FDI,DMI,USB ,PCIE

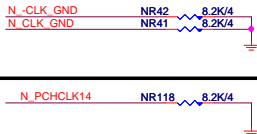
(E)



(G)



PCH	CLK	PD
-----	-----	----



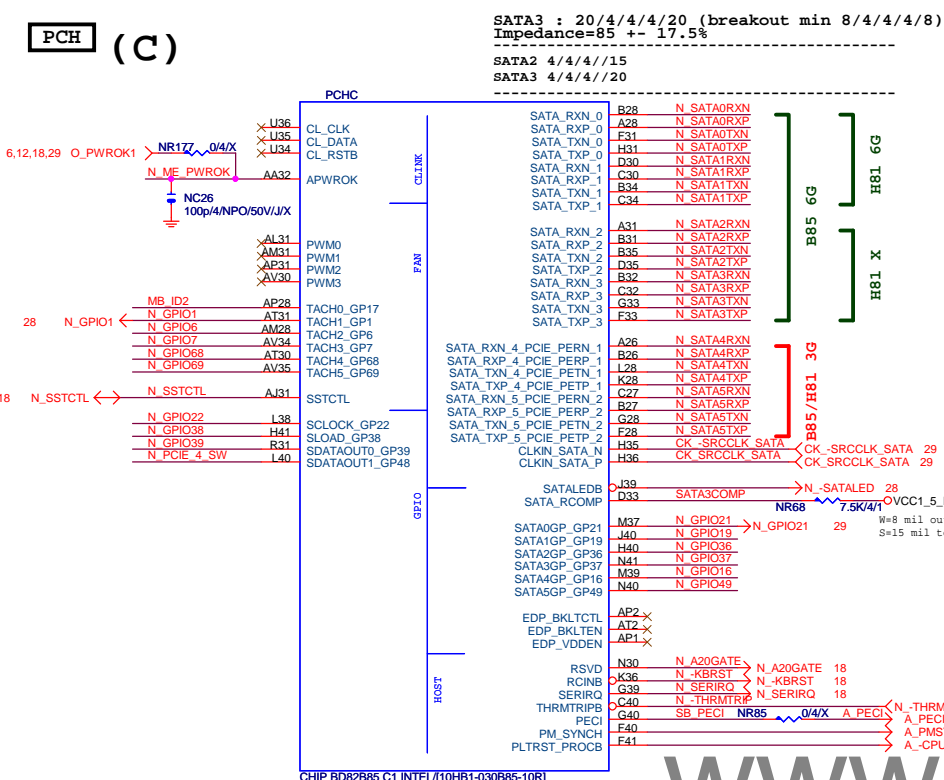
VGA DDC



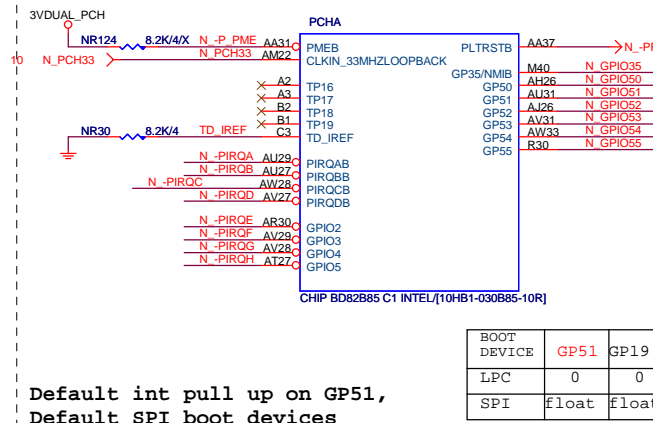
VGA DDC

VGA CONNECTOR

PCH (C)



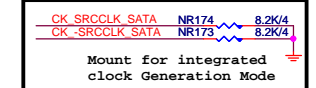
PCH (A)



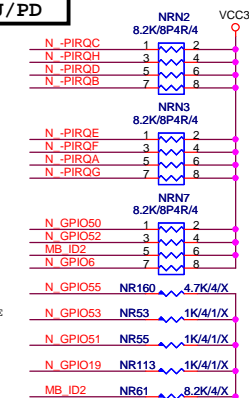
```
Default int pull up on GP51,
Default SPI boot devices
```

BOOT DEVICE	GP51	GP19
LPC	0	0
SPI	float	float

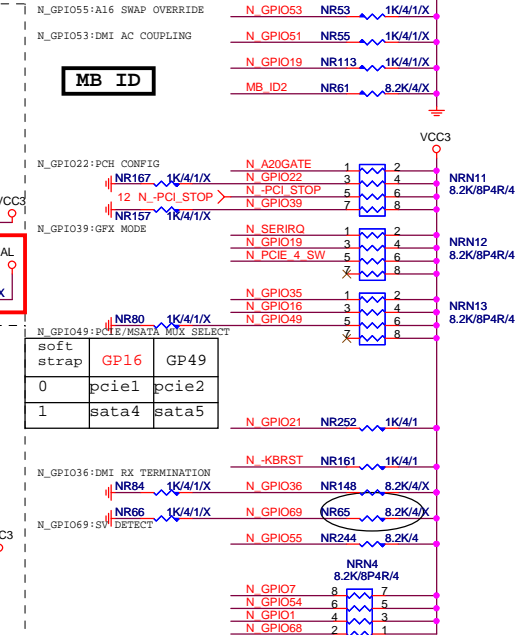
PCH CLK PD



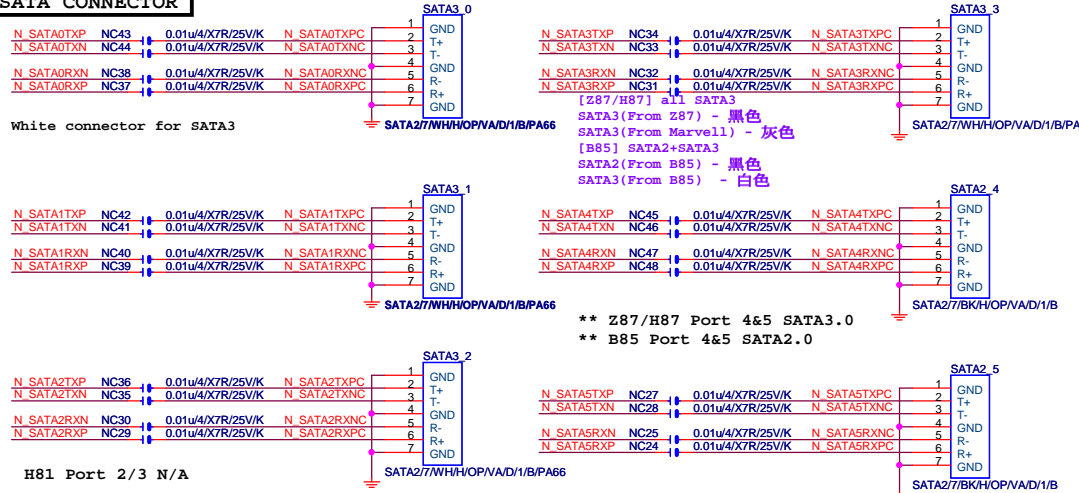
PCH PU/PD



MB ID



SATA CONNECTOR



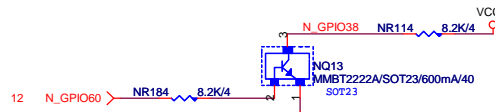
GPIO38 Ctrl

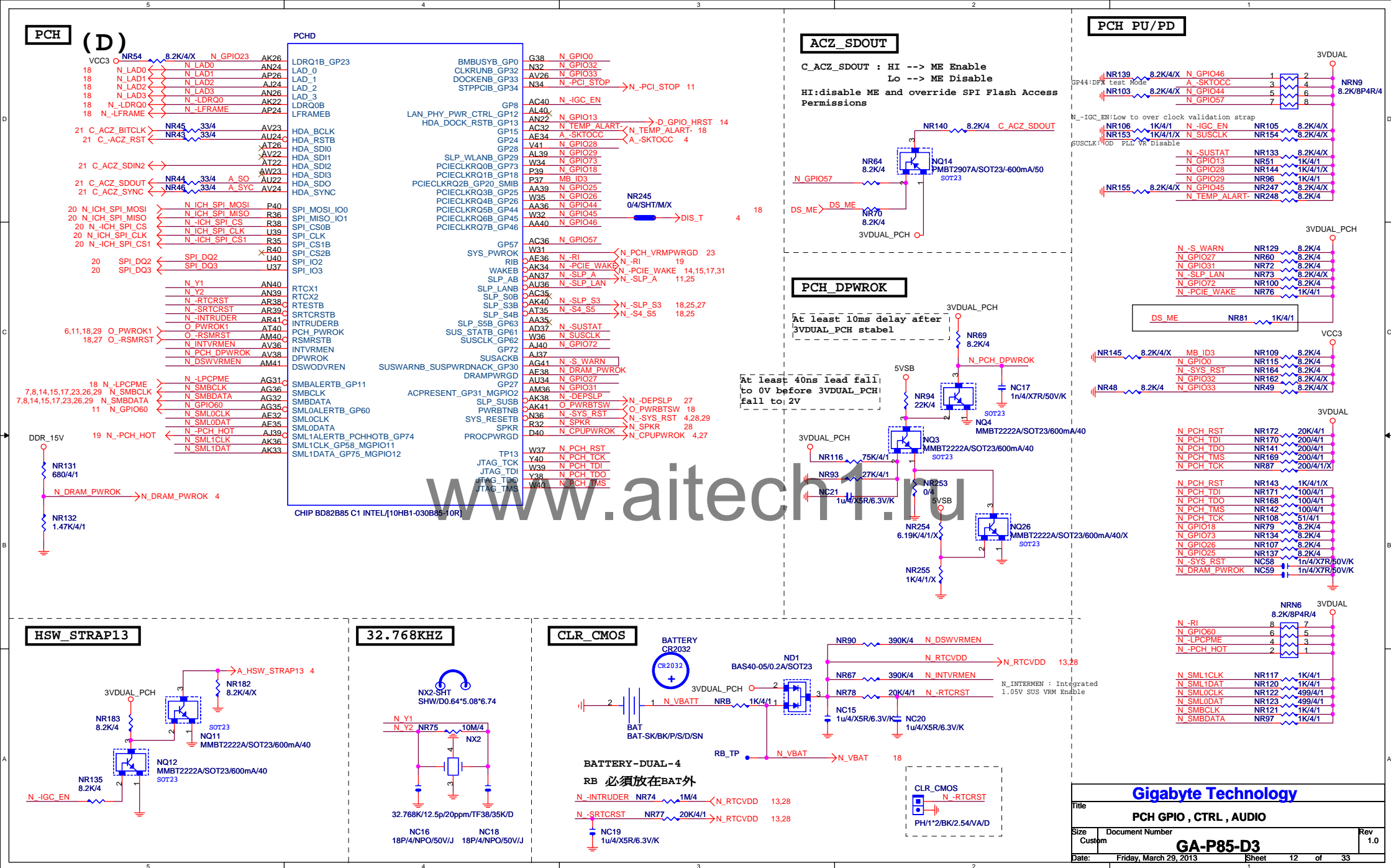
MFG Mode

```

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

```



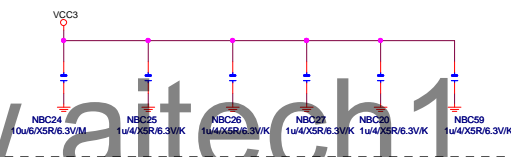


PCH (I)

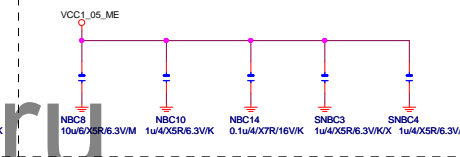


SHT PWR

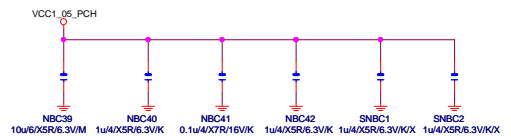
(3.3V) (X6)



(1.05V) (X5)



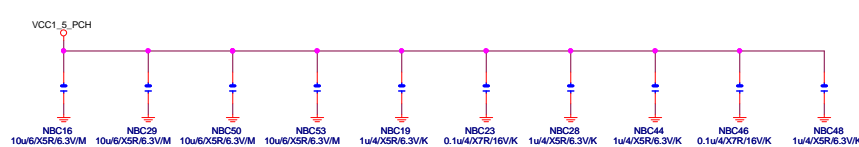
(1.05V) (X6)



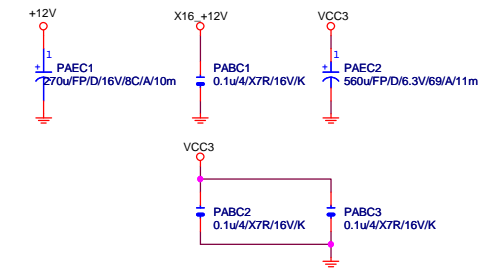
(1.05V)(x2) (3.3V) (x2)



(1.5V) (x10)

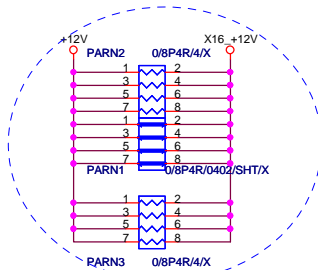


PCIEX16 CAP



PCIEX16 PROTECT SHT

+12 protect short-wire test



PCIEX16 AC CAP

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

PCI-E REV:1.1--> 2.5GHZ

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

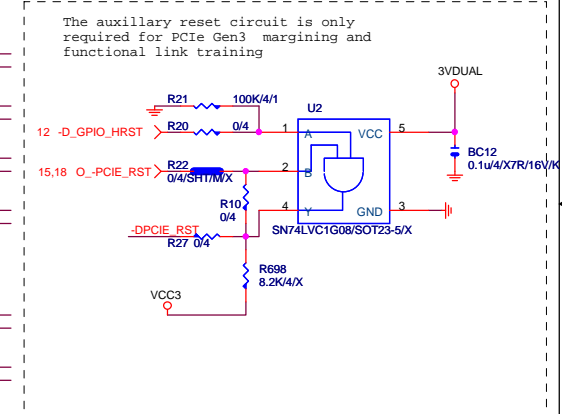
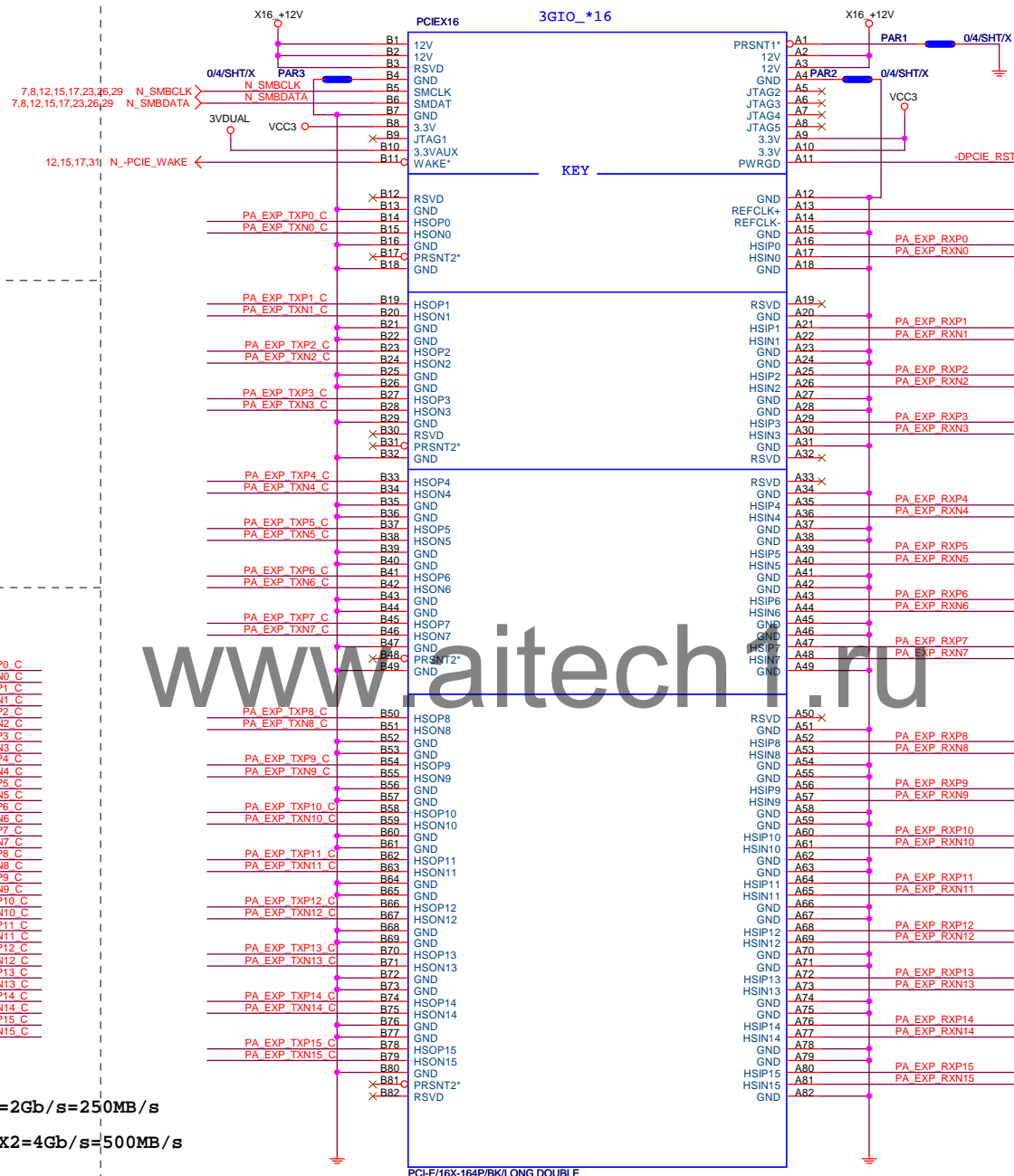
PCE-E X1(雙向) BANDWITH=2.5GHz*(8b/10b)X2=4Gb/s=500MB/s

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

PCIEX16 SLOT

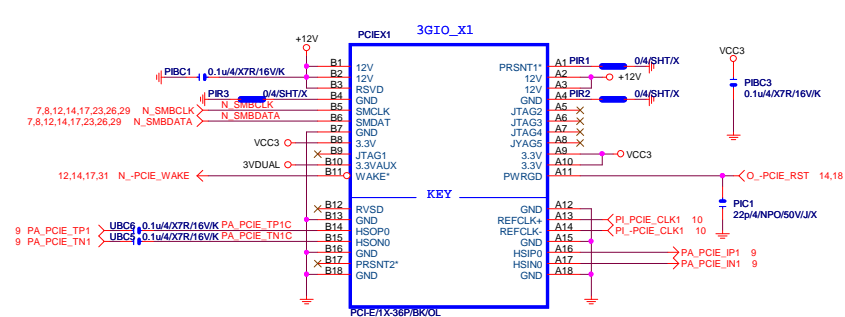


PCIEX16:16/5/5/5/16

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

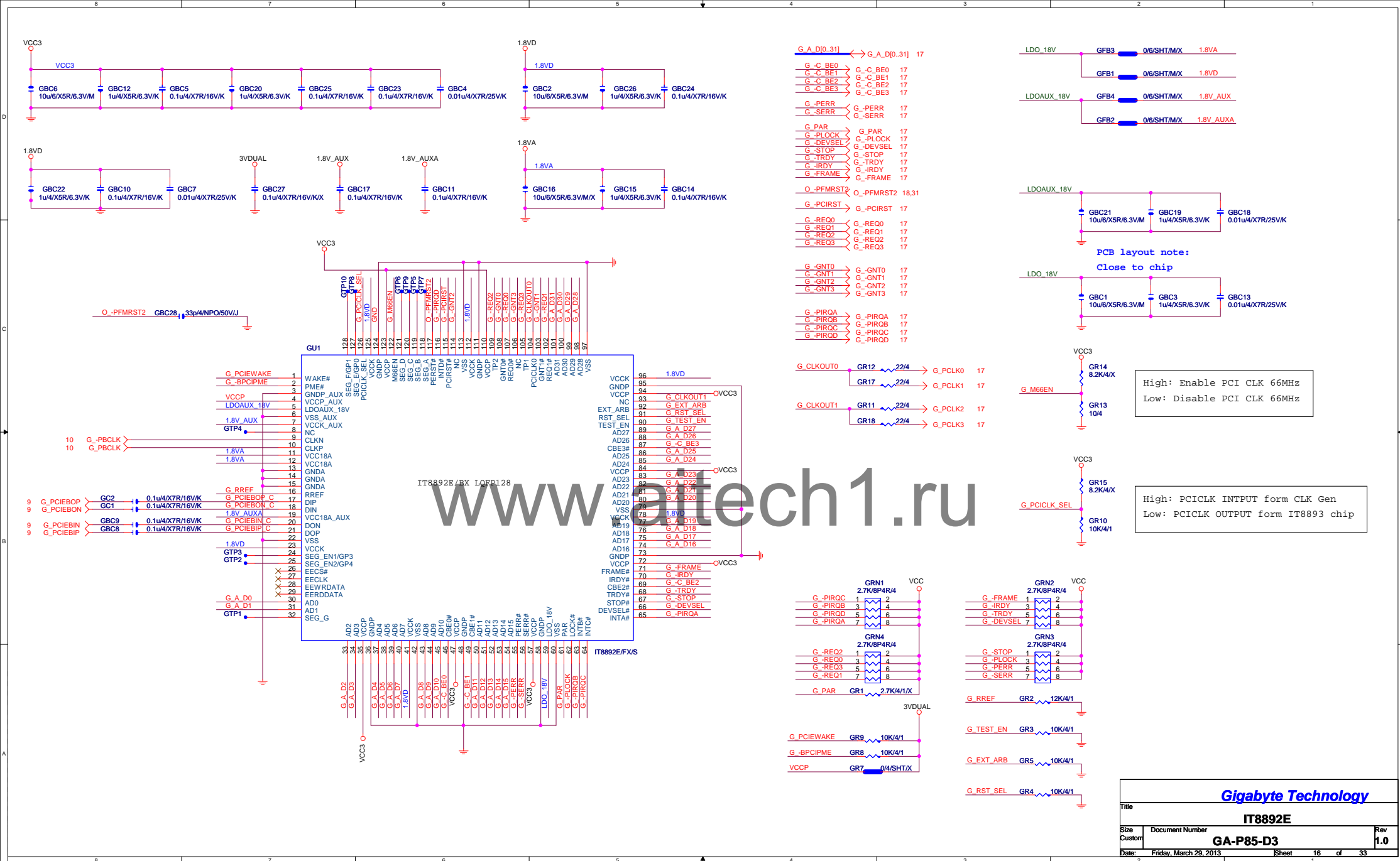
Gigabyte Technology			
Title			
PCI EXPRESS * 16			
Size	Document Number	Rev	
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PCIEX1_1



www.aitech1.ru

Function	SEL
xI--> xOa	L;PCIEX4 SLOT-->X
xI--> xOb	H;PCIEX4 SLOT-->X



IT8728F NOTE	
	IT8728
PIN121	VCORE_EN/PCH_C0
PIN120	VLD1_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

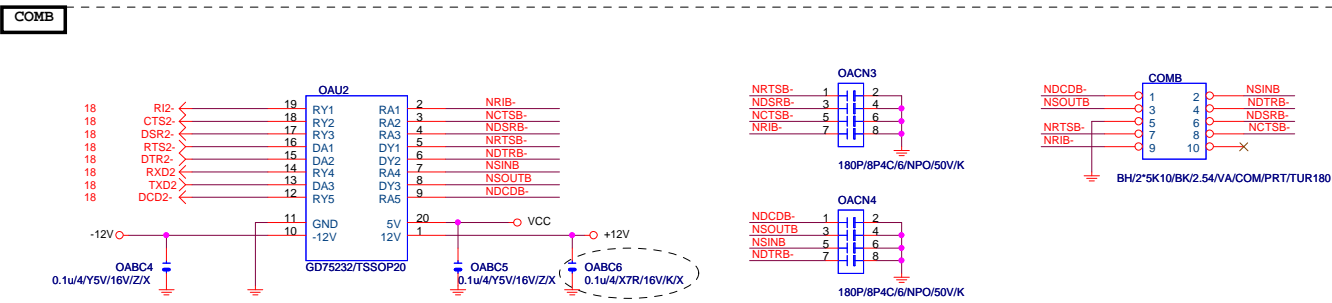
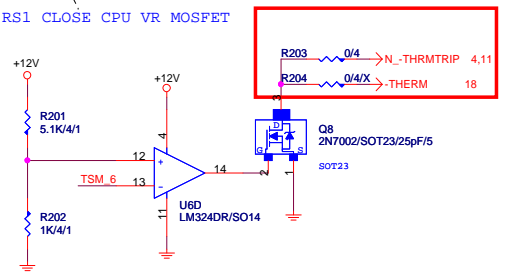
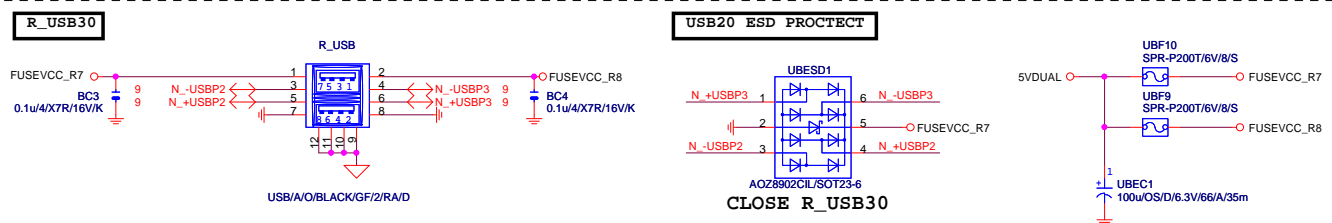
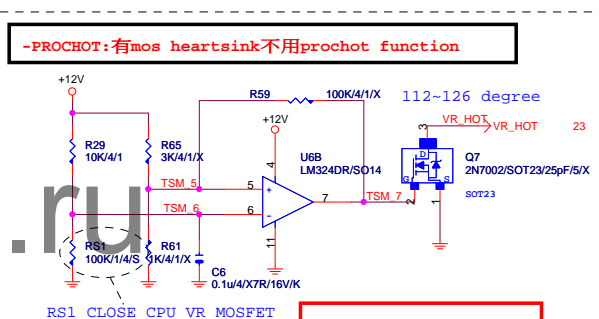
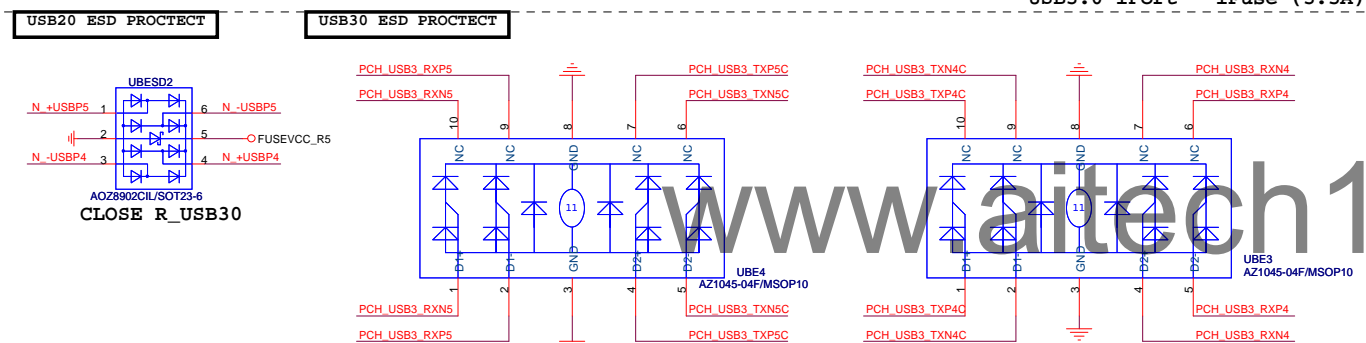
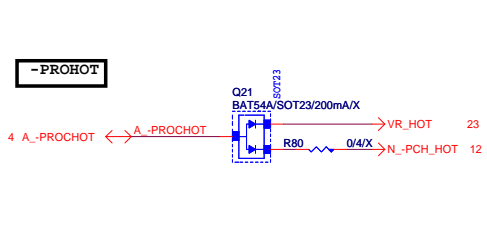
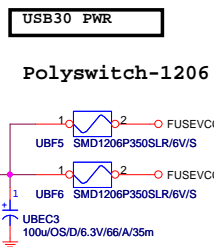
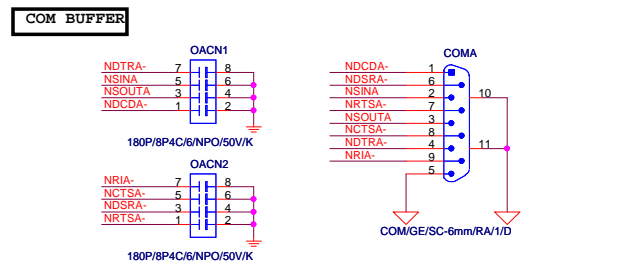
SIO_18V

SIO CAP

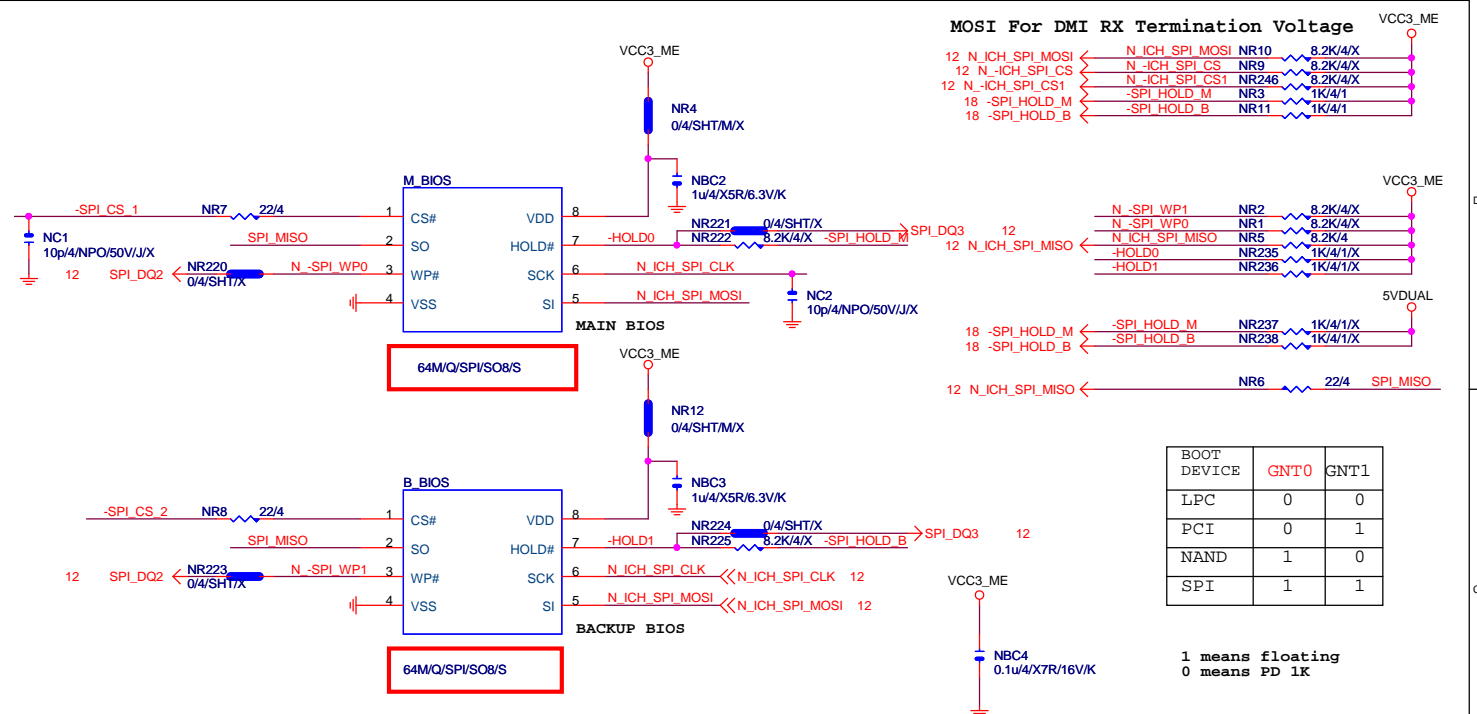
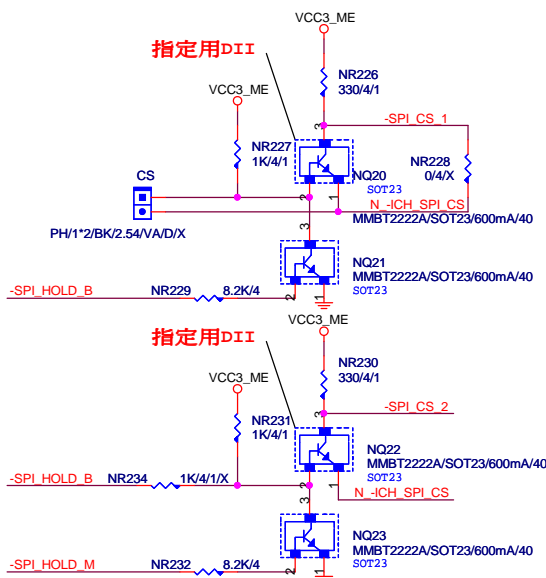
Gigabyte Technology

ITE 8728 LPC IO

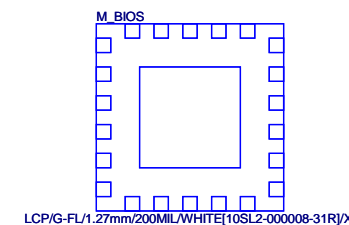
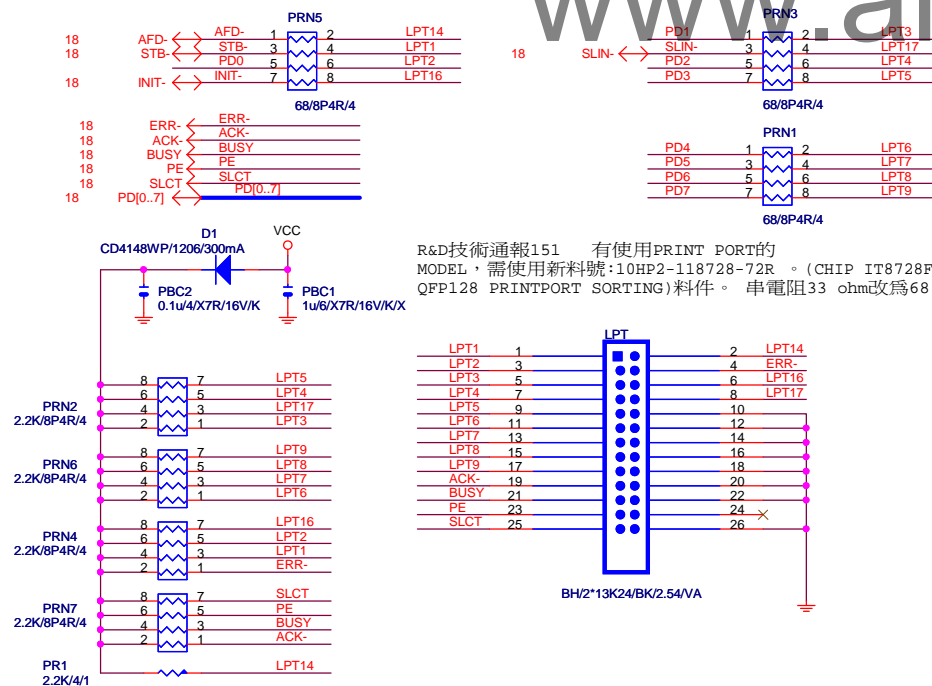
Gigabyte Technology			
Title			
ITE 8728 LPC IO			
Size B	Document Number		Rev
	GA-P85-D3		1.0
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DUAL BIOS



LPT PORT

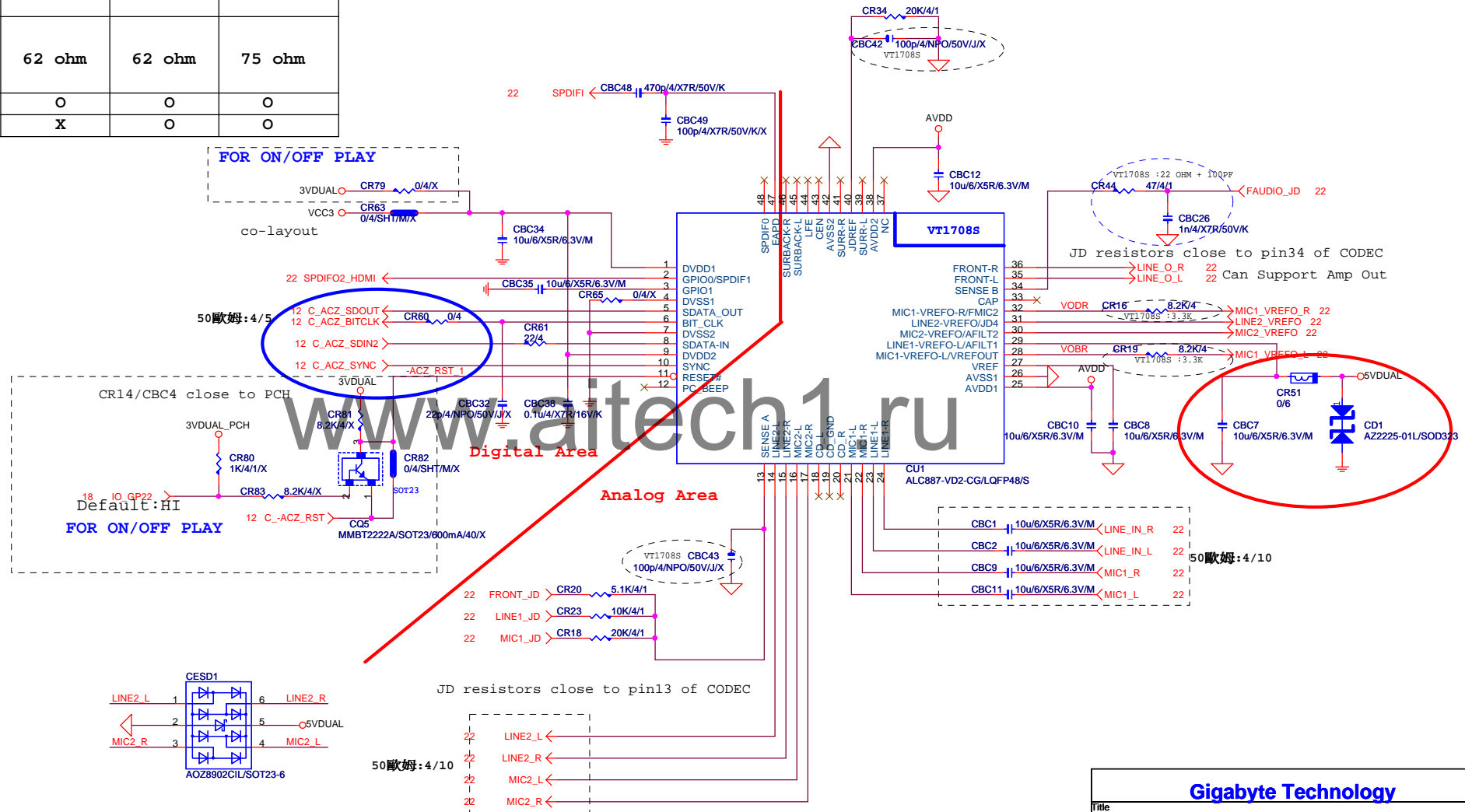


R&D技術通報151 有使用PRINT PORT的
MODEL, 需使用新料號: 10HP2-118728-72R。(CHIP IT8728F/EX (GB) ITE/SMD
QFP128 PRINTPORT SORTING) 料件。串電阻 33 ohm改為68 ohm。

Gigabyte Technology

Title		BIOS	
Size Custom	Document Number	GA-P85-D3	Rev 1.0
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	ALC892	ALC887-VD2	VT1708S-CE
CR44/CBC26	47ohm+1nF	47ohm+1nF	22ohm+100P
CBC42/CBC43	X	X	100P/4
CR16/CR19 CR52/CR56/CR10/CR9	8.2K/4	8.2K/4	3.3K/4/1
CR6/CR7/CR58/CR54/ CR67/CR68/CR69/CR70	22K/4	22K/4	10K/4/1
CR5/CR8/CR1/CR14/ CR17/CR22/CR73/CR74/ CR13/CR11/CR57/CR53/ CR75/CR76	62 ohm	62 ohm	75 ohm
CR51/CD1/CBC7	O	O	O
CESD1	X	O	O



Gigabyte Technology

Title

HD AUDIO ALC887

Size
Custom

Document Number

GA-P85-D3

Rev

1.0

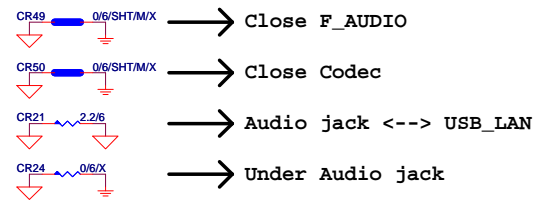
Date:

Friday, March 29, 2013

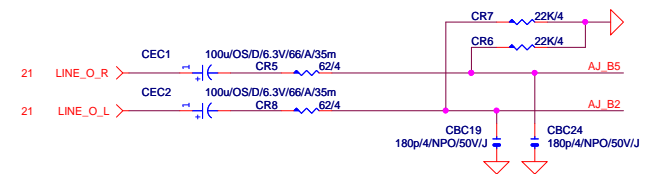
Sheet

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of 33



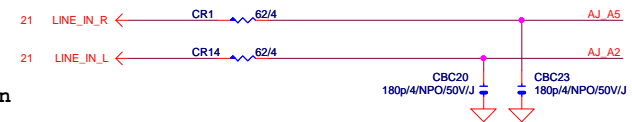
LINE-OUT



LINE-IN

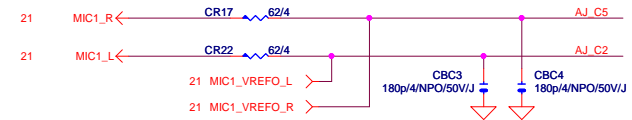
Verify MIC function
 in LINE-in

Only reserved for ALC888



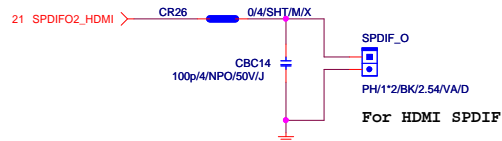
For 889A/888

MIC-IN

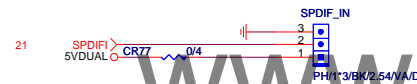


SURROUND

SPDIF_OUT



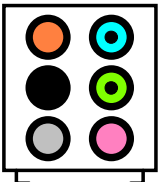
SPDIF_IN



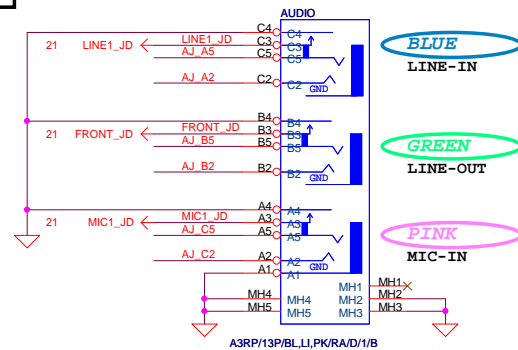
CEN/LFE

SURR BACK

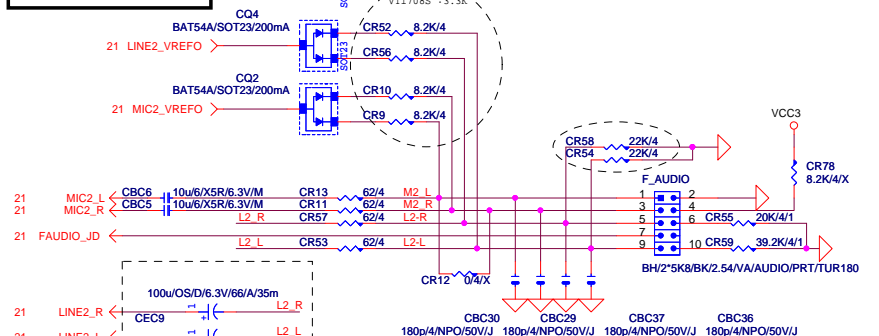
AZALIA JACK



AZALIA JACK



AZALIA FRONT PANEL

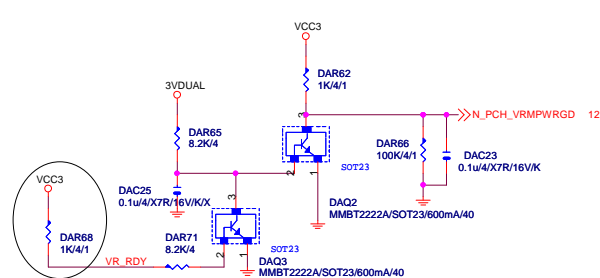
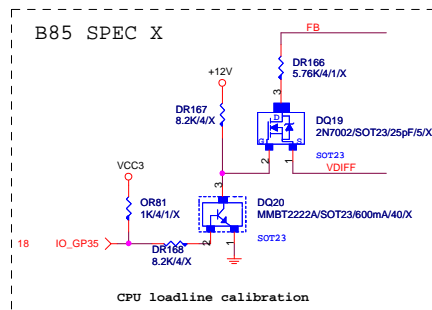
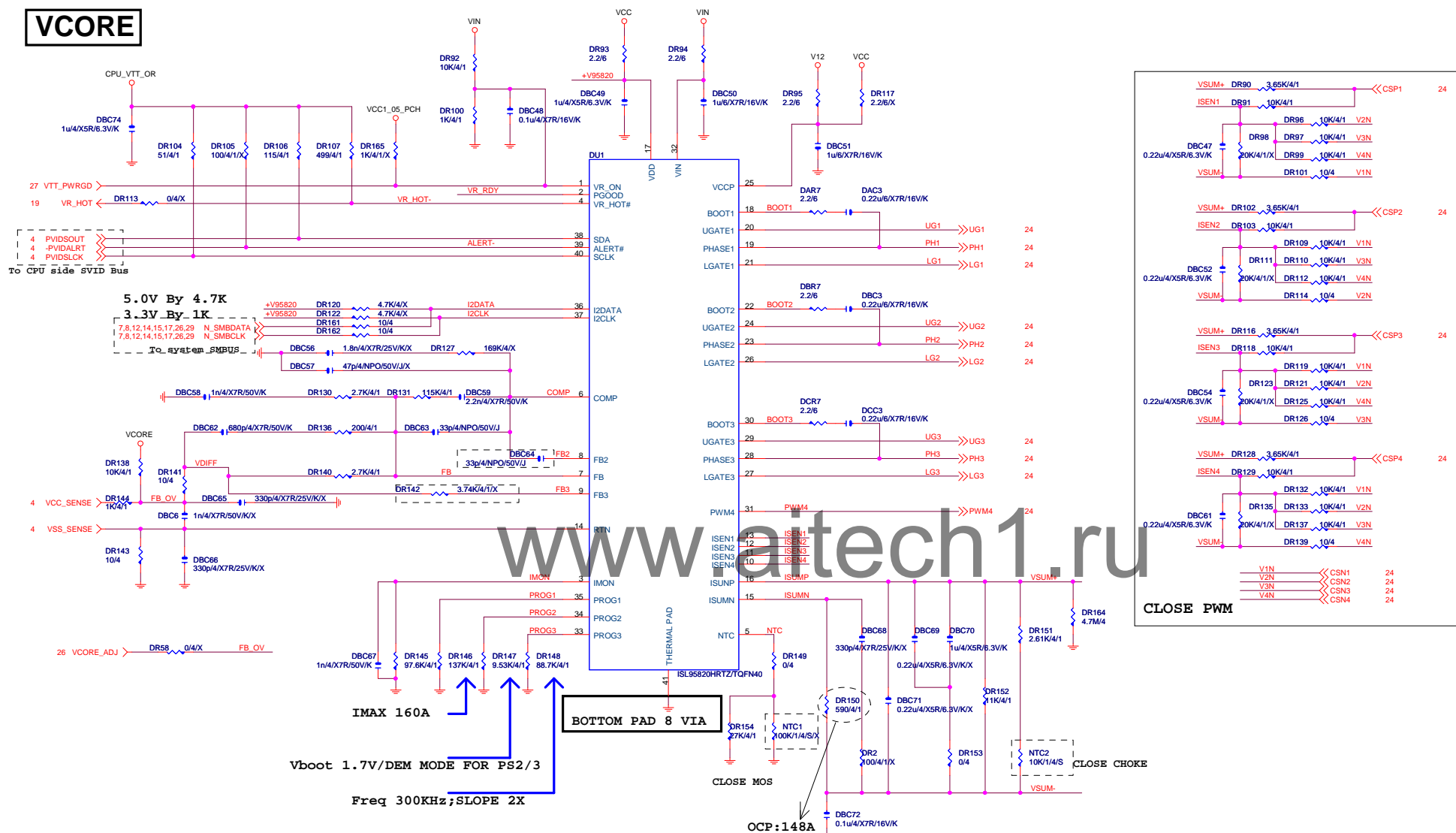


Gigabyte Technology

AUDIO JACK

GA-P85-D3

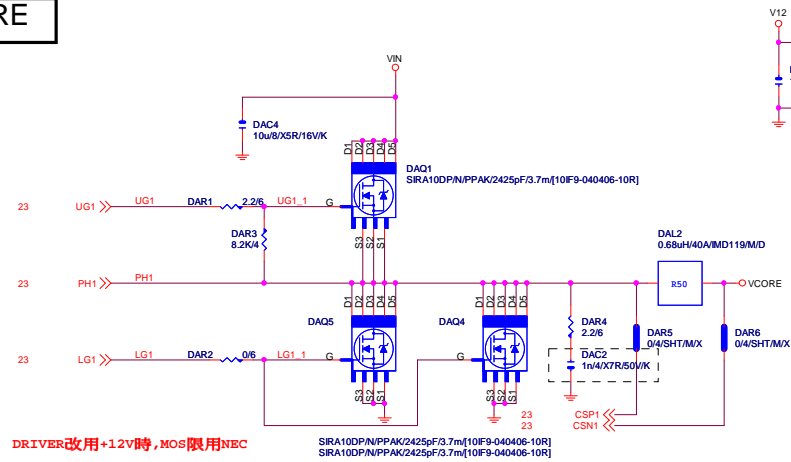
Title	Document Number	Rev
Size Custom	GA-P85-D3	1.0
Date: Friday, March 29, 2013	Sheet 22 of 33	

VCORE

Gigabyte Technology			
Title VCORE_ ISL95820			
Size	Document Number		Rev
Custom	GA-P85-D3		1
Date:	Friday, March 29, 2013	Sheet 23 of 33	

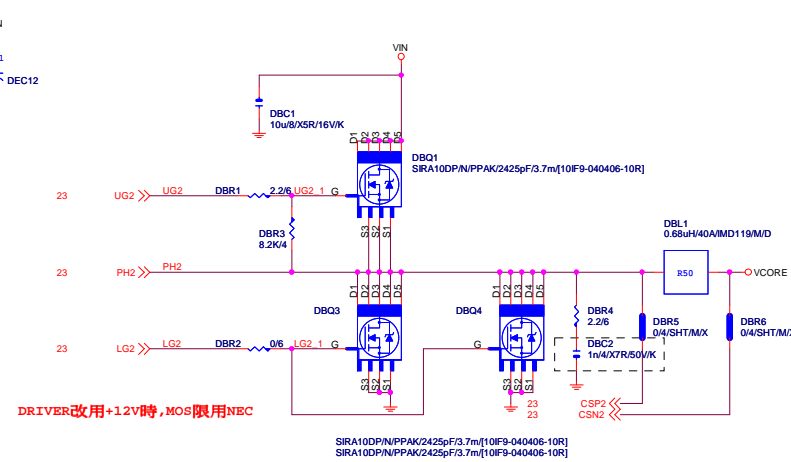
VCORE

[1]



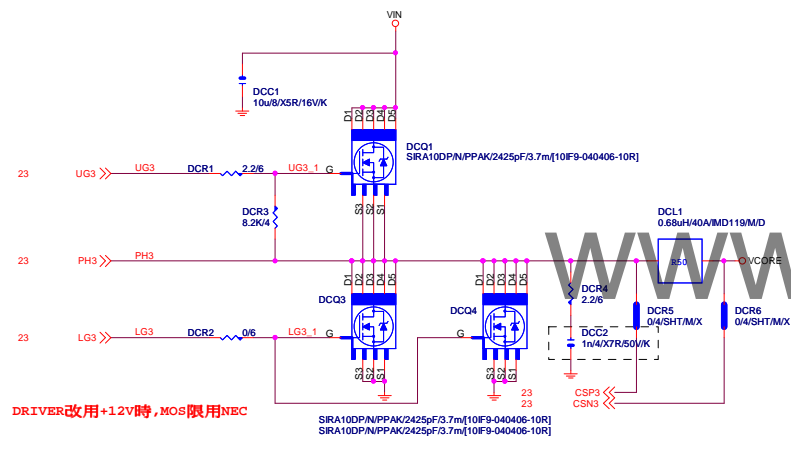
DRIVER改用+12V時,MOS限用NEC

[2]



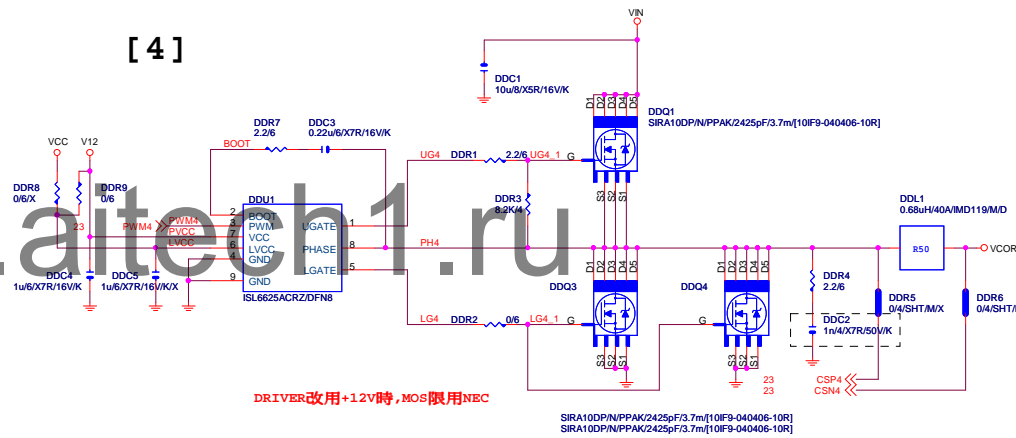
DRIVER改用+12V時,MOS限用NEC

[3]



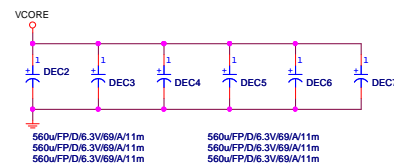
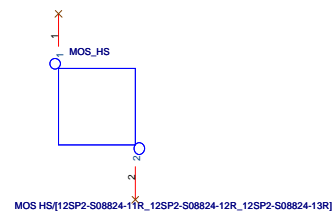
DRIVER改用+12V時,MOS限用NEC

[4]



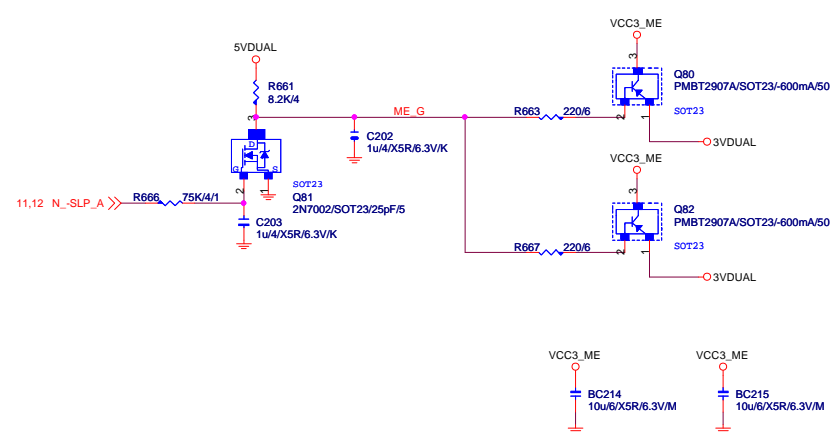
DRIVER改用+12V時,MOS限用NEC

MOSFET HEATSINK

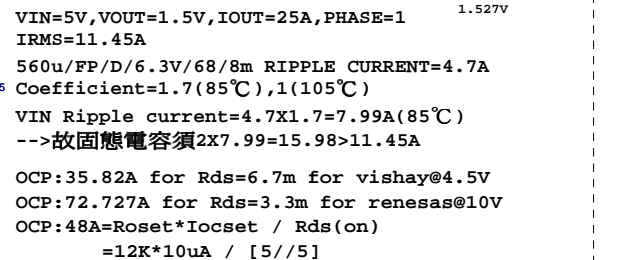


Gigabyte Technology			
Title	ISL95820_2		
Size	Document Number	GA-P85-D3	Rev 1.0
Date	Friday, March 29, 2013	Sheet 24 of 33	

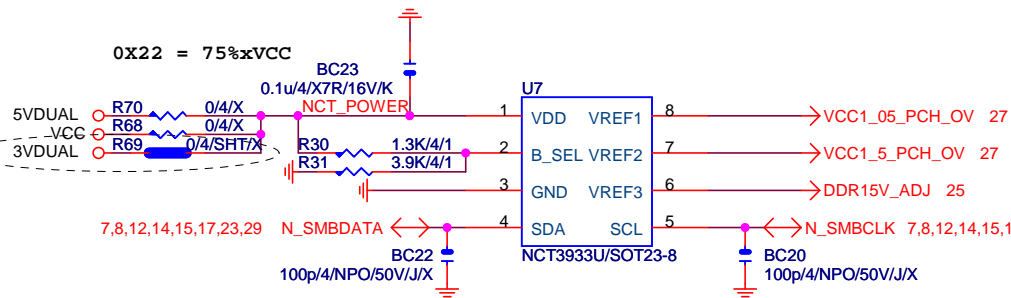
VCC3_ME



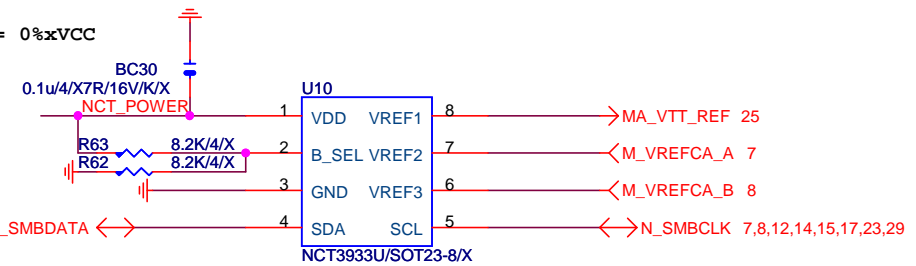
DDRVTT



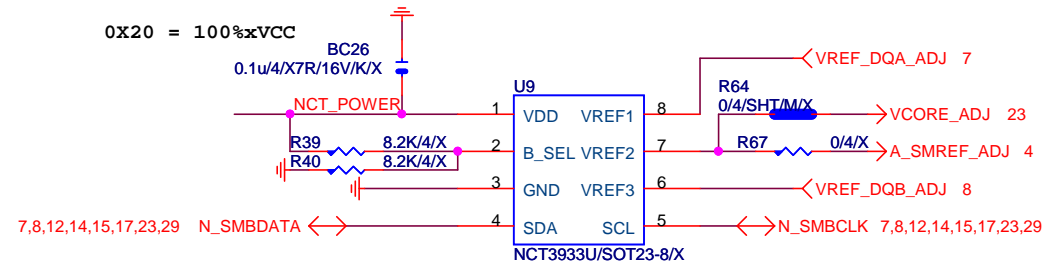
OVER VOLTAGE



0X2A = 0%xVCC



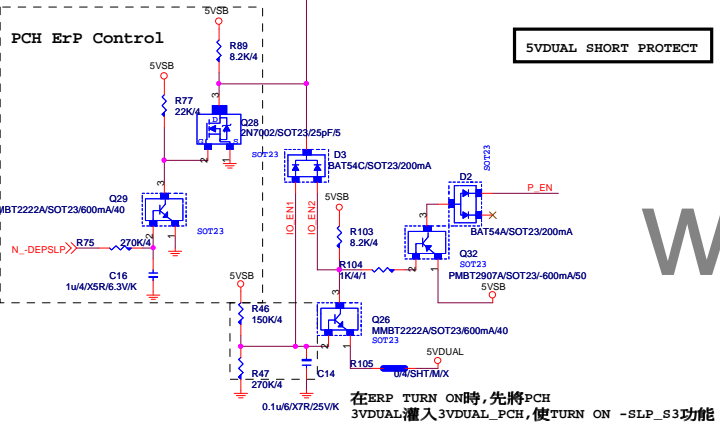
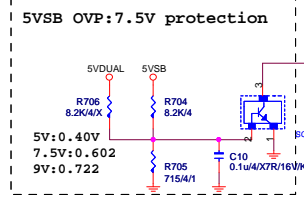
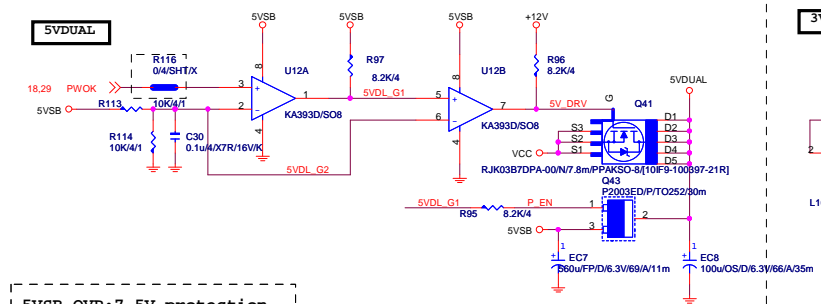
0X20 = 100%xVCC



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

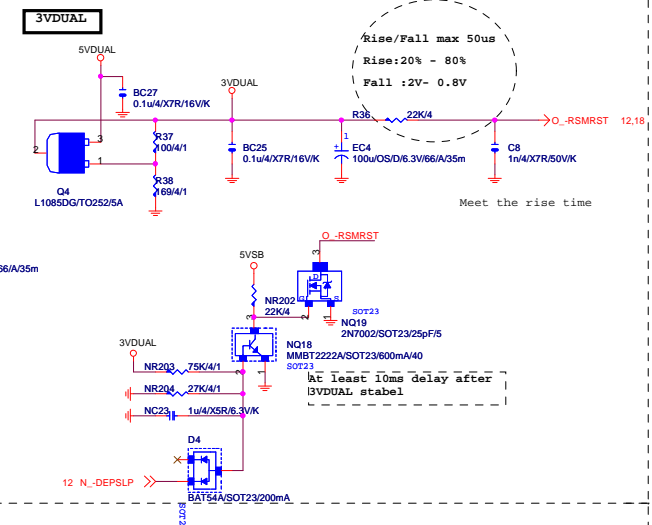
Gigabyte Technology

Title		
CPU CORE VR-2		
Size	Document Number	Rev
Custom	GA-P85-D3	1.0
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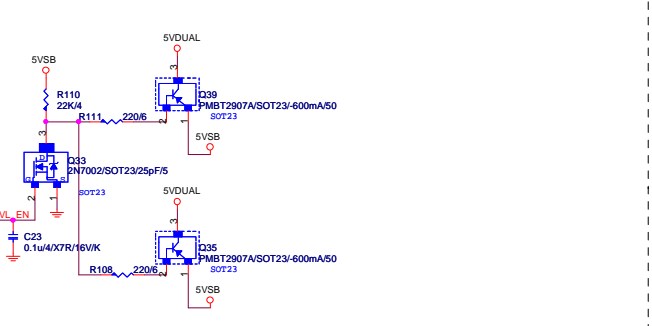
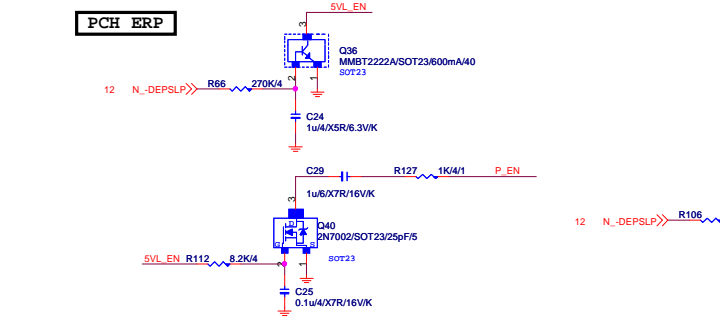
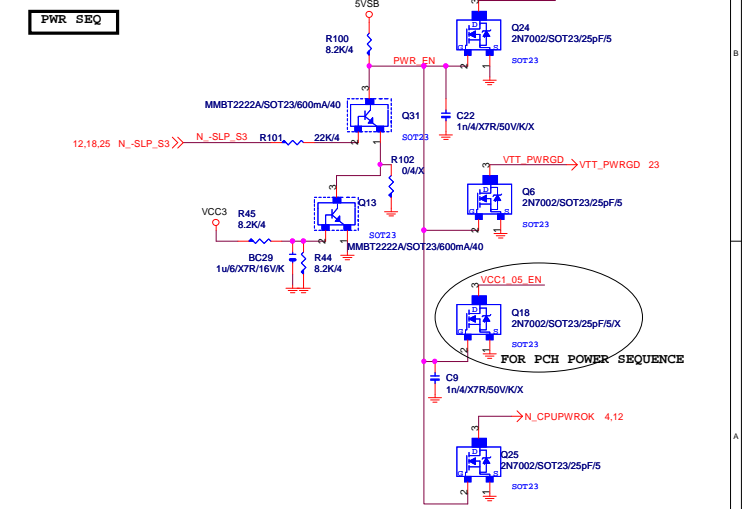
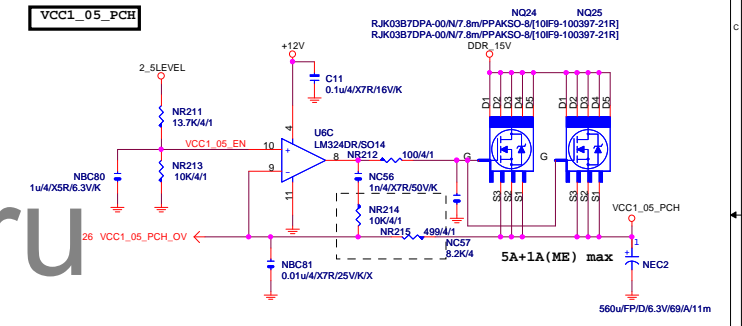
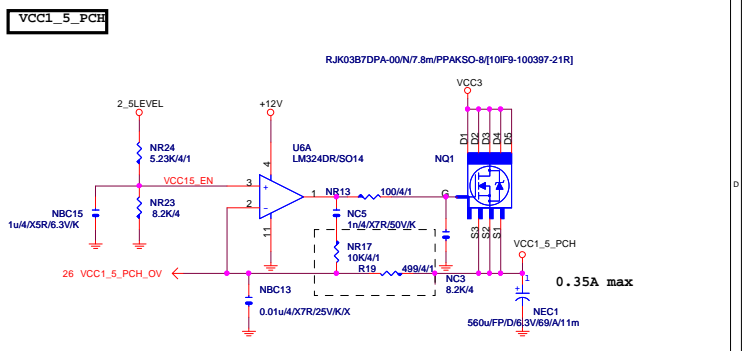


5VDUAL SHORT PROTECT

2_5LEVEL

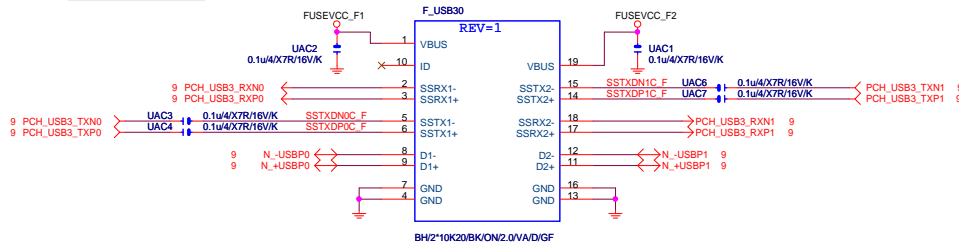


Rise/Fall max 50us
Rise: 20% - 80%
Fall: 2V - 0.8V

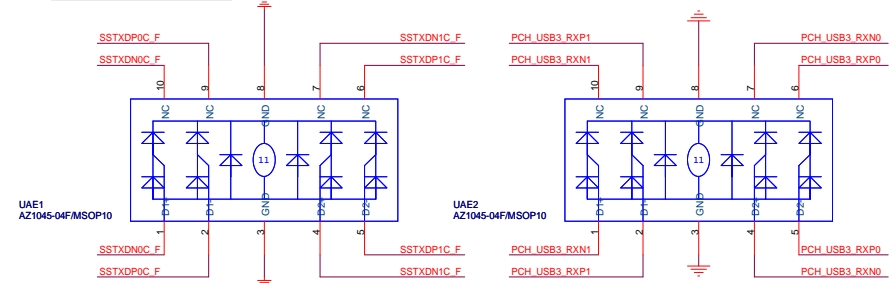


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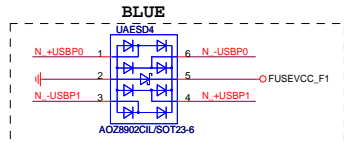
Front USB3.0



F_USB30 ESD PROTECT

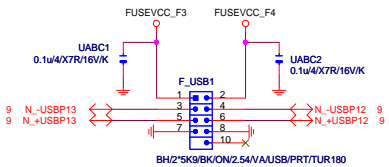


F_USB30 PWR



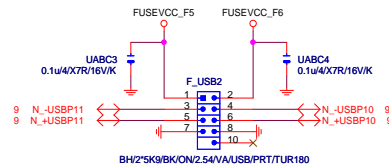
Close to connector

FRONT USB1



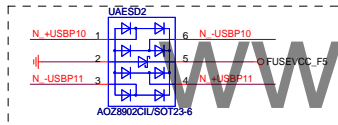
Close to connector

FRONT USB2

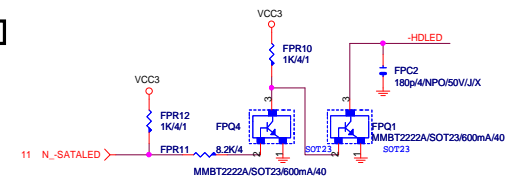


Close to connector

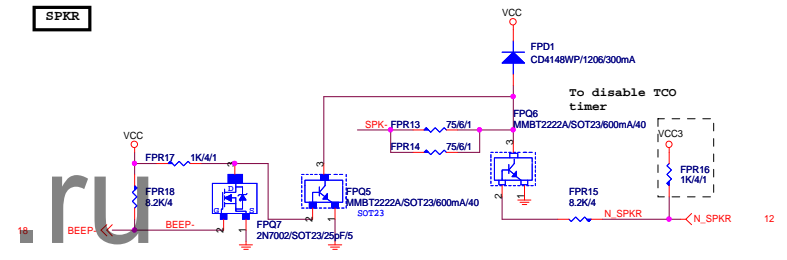
FRONT USB3



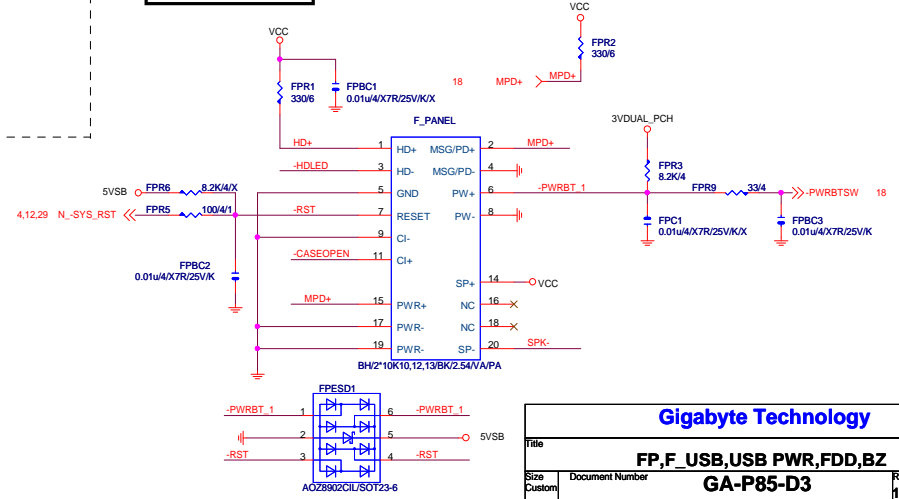
SATA LED



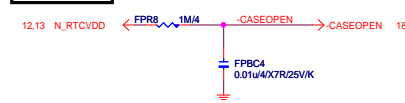
SPKR



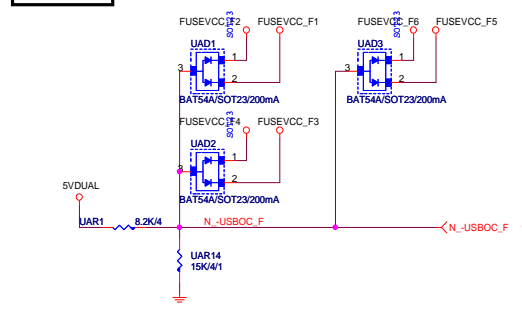
INTEL FRONT PANEL



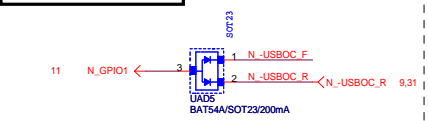
CASE OPEN



-USBOC_F



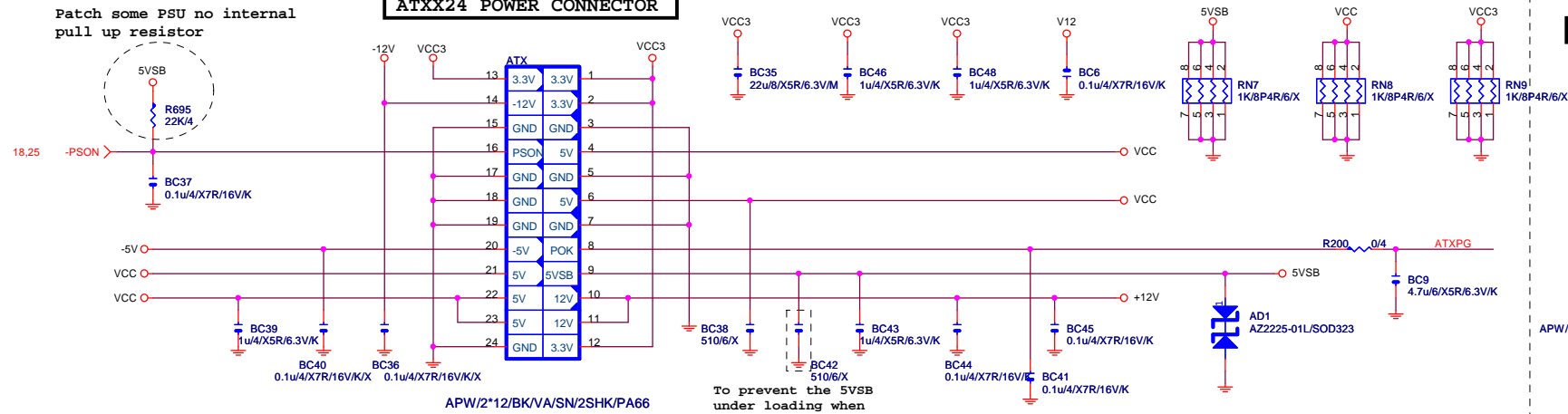
F_USB POWER PROTECT



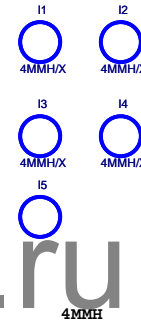
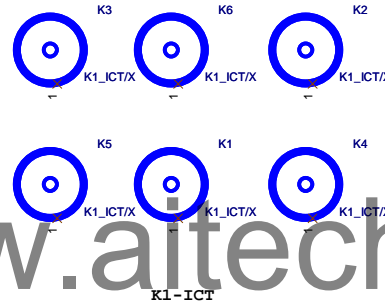
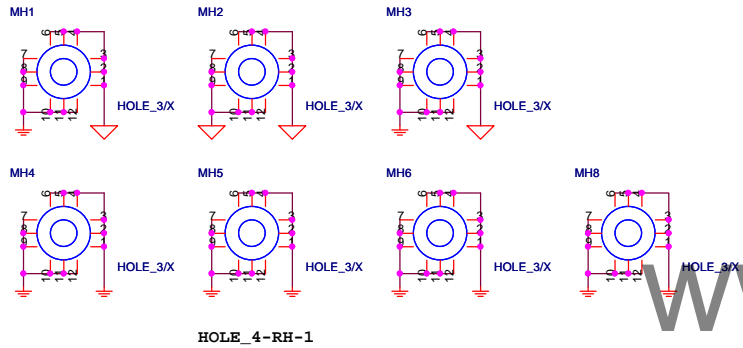
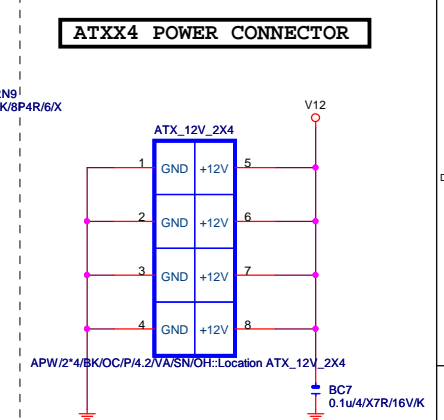
Gigabyte Technology			
FP,F_USB,USB PWR,FDD,BZ			
Size	Document Number	GA-P85-D3	
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Patch some PSU no internal pull up resistor

ATXX24 POWER CONNECTOR

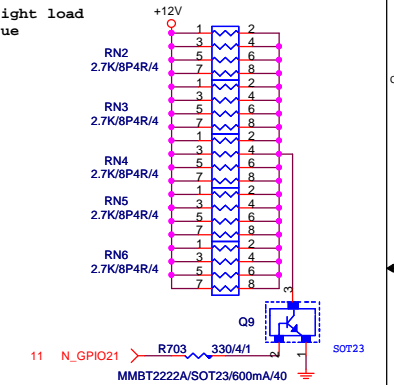


ATXX4 POWER CONNECTOR



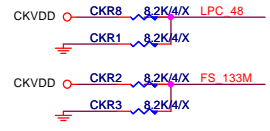
【技術通報R&D技術通報153】

To fix 12V light load abnormal issue

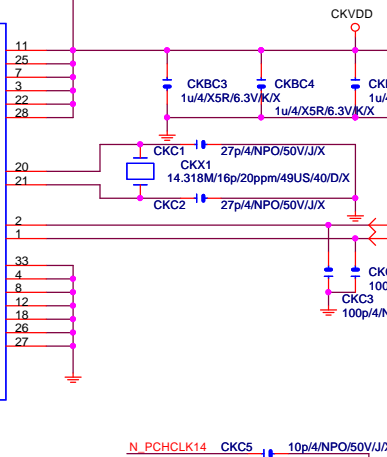
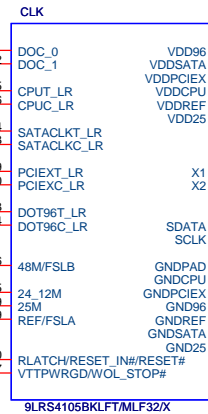
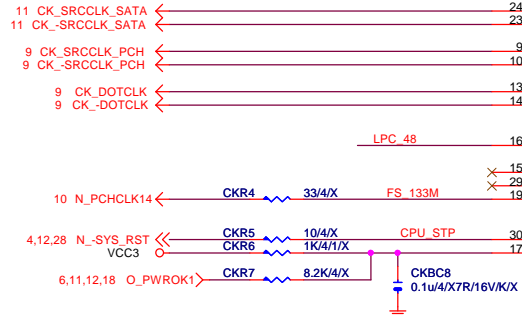


CLK GEN

CPU Frequency Selection

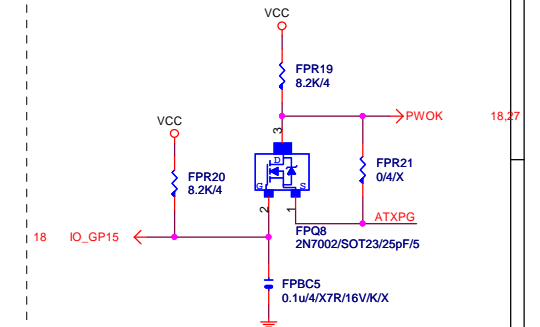


FSLB	FSLA	CPU
0	0	100M <Default>
0	1	133M
1	0	200M
1	1	166M



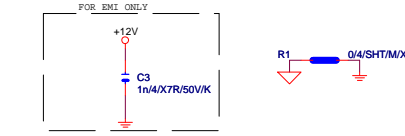
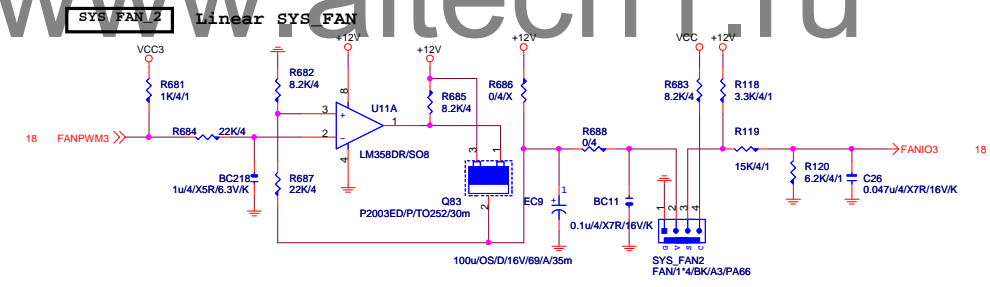
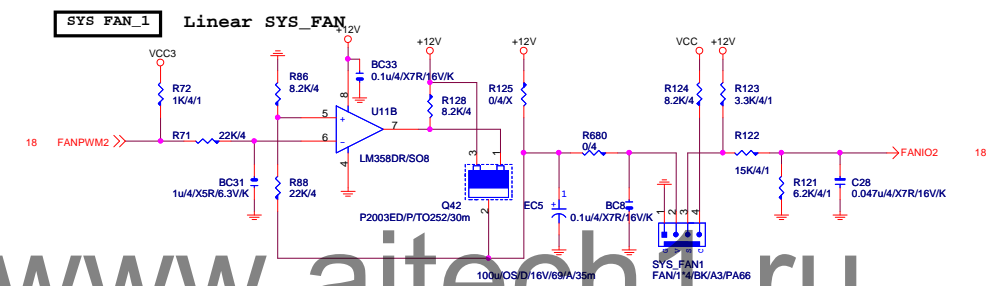
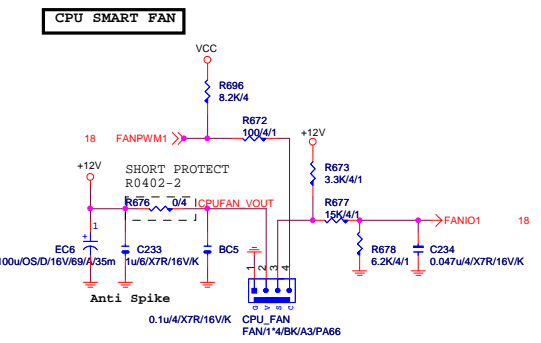
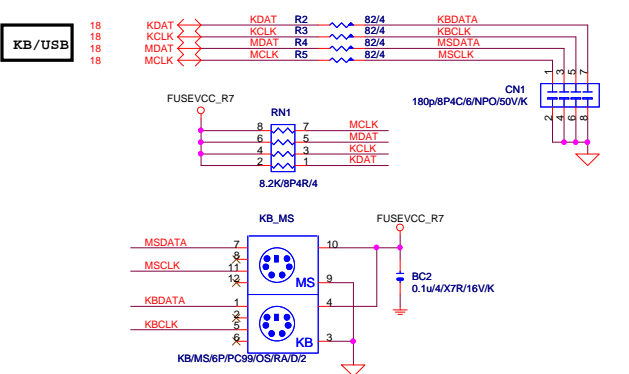
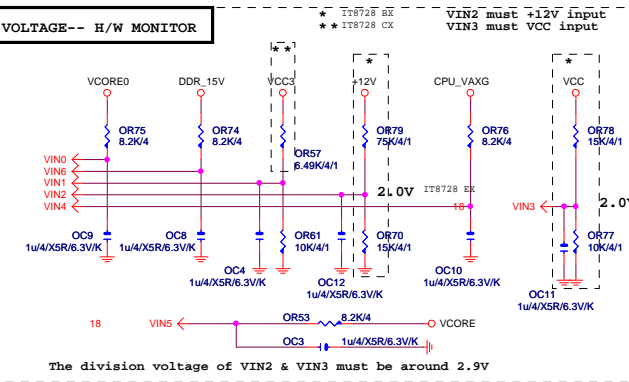
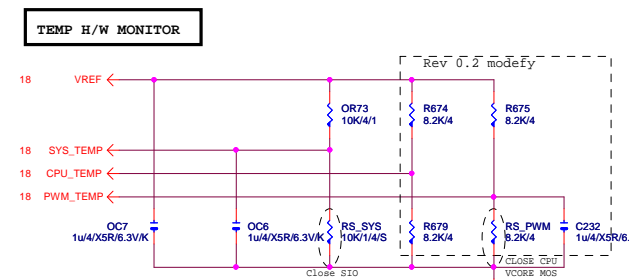
PWOK PATCH

【技術通報R&D技術通報154】



Gigabyte Technology

Title			ATX POWER CONNECTOR
Size	Document Number	GA-P85-D3	
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LAN:INTEL I217

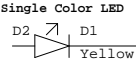
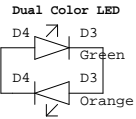
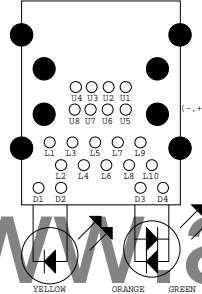
100歐姆:[20/4/8/4/20]

80歐姆:[15/5/5/5/15]

SRCLK 50歐姆:[18/4/10/4/18]

FOR DSM MODE
(DEEP SLEEP MODE)

P35-152-19W9

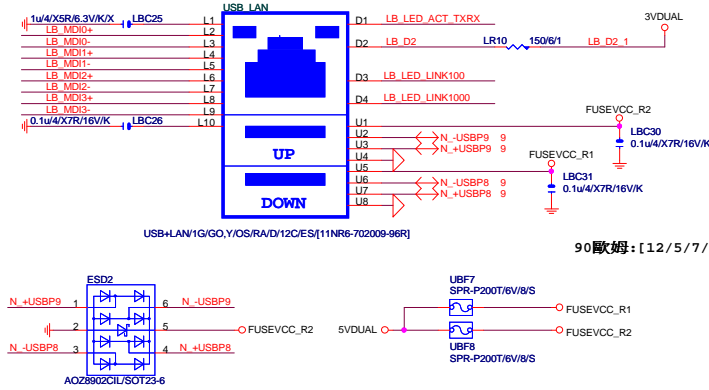


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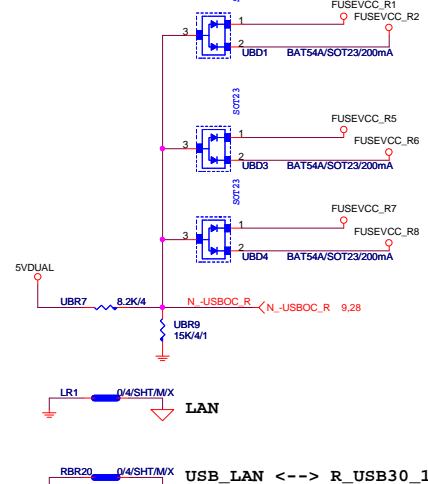
USB30_LAN CONNECTOR

100歐姆:[20/4/8/4/20]

90歐姆:[12/5/7/5/12]



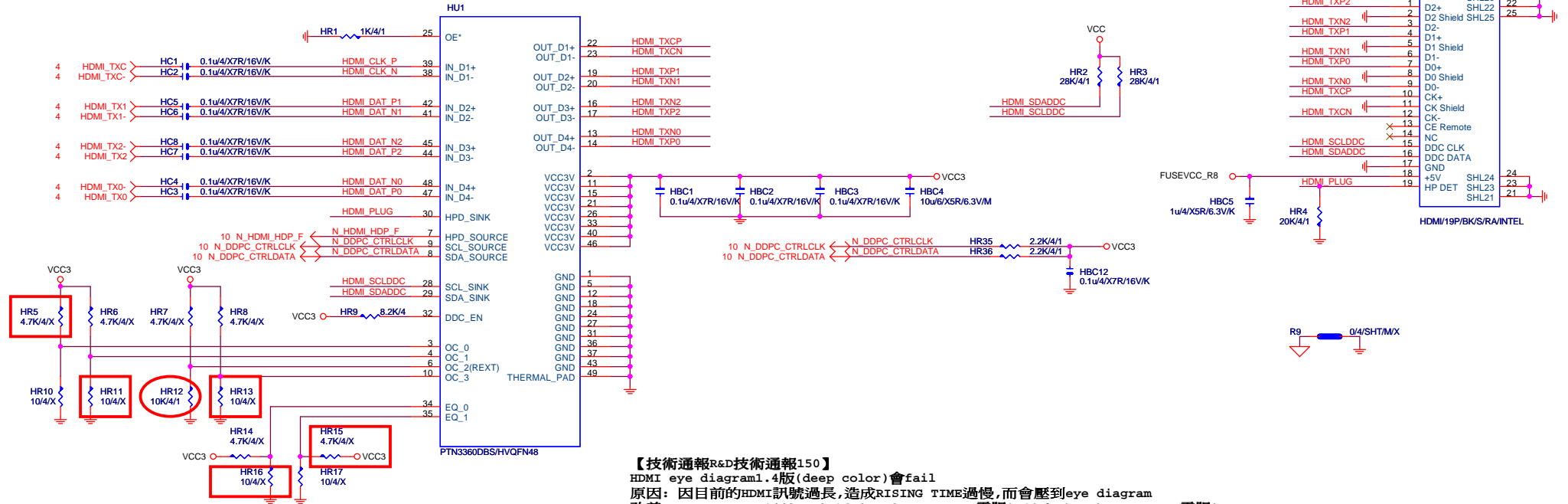
-USB0C_R



Gigabyte Technology			
Title	REALTEK 8111F-VL		
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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

GIGABYTE™			
Title HDMI			
Size Custom	Document Number GA-P85-D3		Rev 1.0
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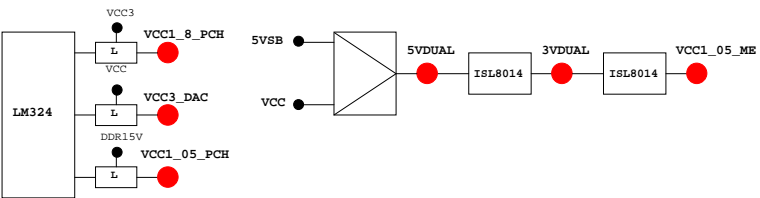
PCB GPIO LIST TABLE

PIN NAME	PWR	Default	USAGE	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	GPIO12	N/A
GP13	STBY	L	LPCPME#	P/U 8.2K 3VDUAL
GP14/OC7#	STBY	NATIVE	USB OC7#	N/A
GP15	STBY	L	GPIO15(TL8 Enable)	P/U 8.2K 3VDUAL
GP16	MAIN	GPI	GPIO16	P/U 8.2K VCC3
GP17/TACH0	MAIN	GPI	GPIO17	P/U 8.2K VCC3
GP18	MAIN	GPI	Mobile Only	N/A
GP19	MAIN	GPI	GPIO19	P/U 8.2K VCC3
GP20	MAIN	GPI	GPIO20	P/U 8.2K VCC3
GP21	MAIN	GPI	GPIO21	P/U 8.2K VCC3
GP22	MAIN	H-Z	GPIO22	P/U 8.2K VCC3
GP23	MAIN	GPI	GPIO23	N/A
GP24	STBY	L	SKTOCC#	N/A
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)

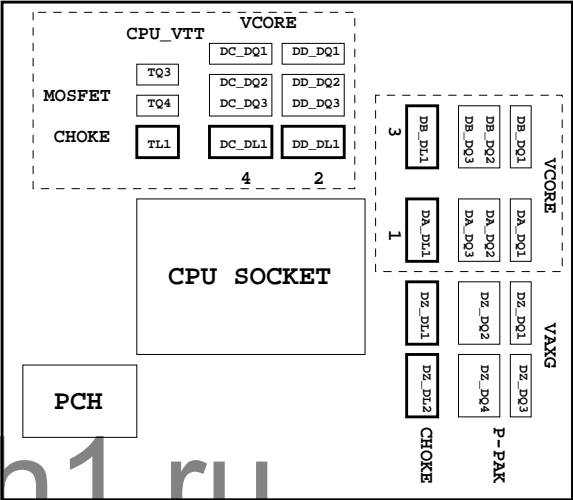
Super I/O ITE8720 GPIO Table

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

PIN NAME	USAGE	NOTE
FAN_TAC2/GP52	FANIO2	
FAN_TAC3/GP37	FANIO3	
VIDO3/FAN_TAC4/GP25/DSR2#	FANIO4	
FAN_CTL2/GP51	FANPWM2	
FAN_CTL3/GP36	FANPWM3	
VID4/GP34	BEEP-	
VID3/GP33	TURBO1	
VID2/GP32	TURBO0	
VCORE_GOOD/VID6/GP63	CPUT_LED1_C	
VID5/GP35	CPUT_LED2_C	
VID1/GP31	CPUT_LED3_C	
VID0/GP30	-LAN1_DSM	NBT_LED1_C
SLCT/GP80	CPU_LED1_C	
PE/GP81	CPU_LED2_C	
BUSY/GP82	CPU_LED3_C	
PD3/GP73/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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Title			
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