

Model Name: GA-Z87P-D3

1.0

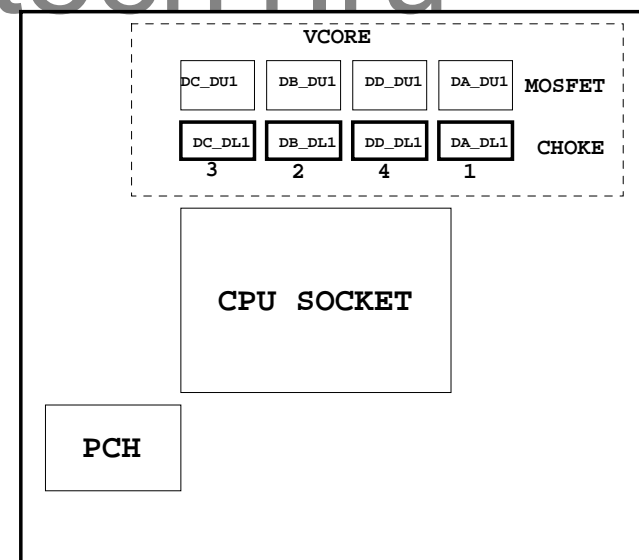
SHEET TITLE

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	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	
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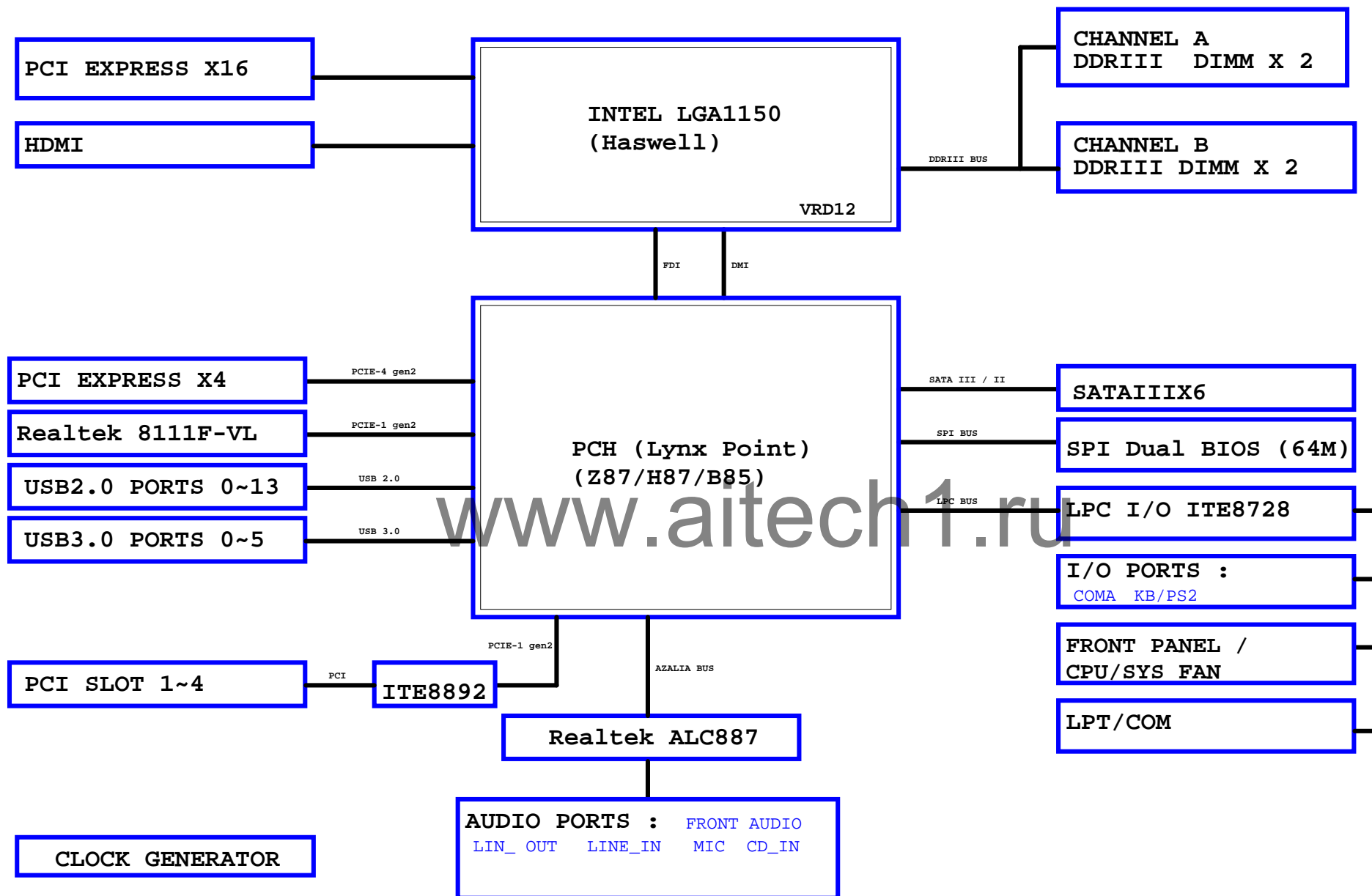
www.aitech1.ru

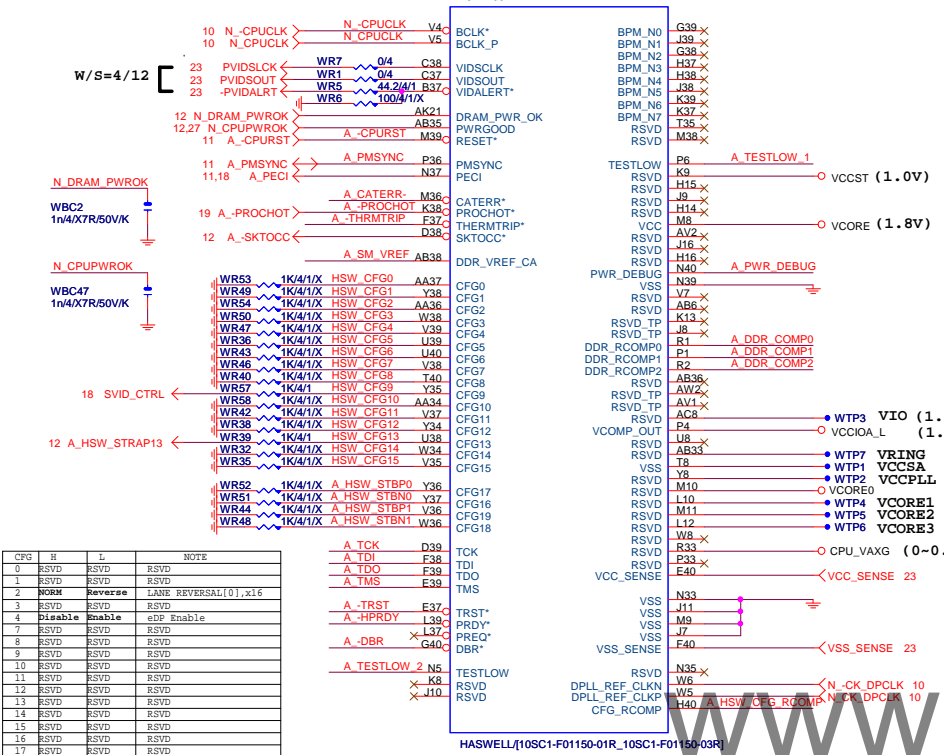


Component value change history

[illegible][illegible]

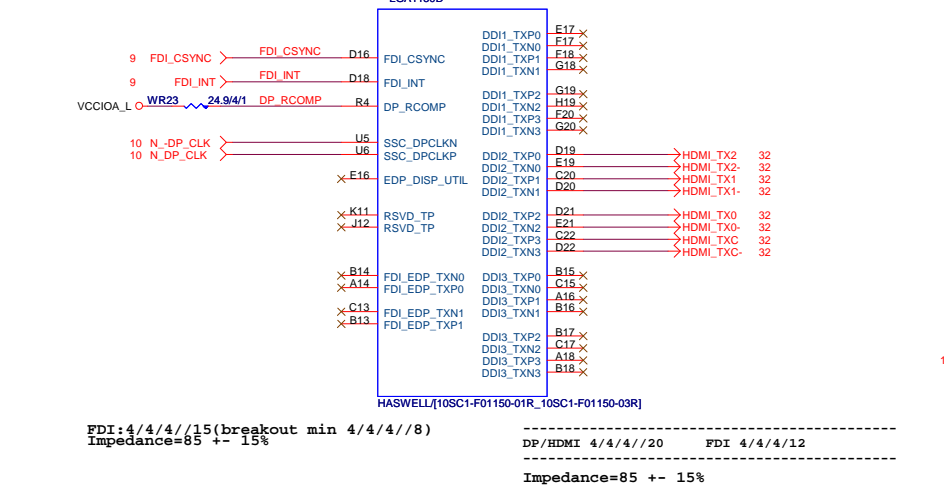
BLOCK DIAGRAM





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%

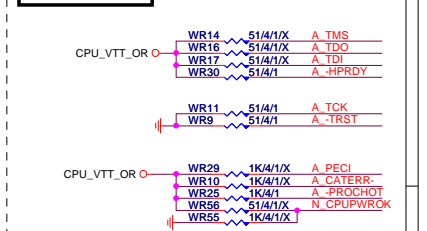
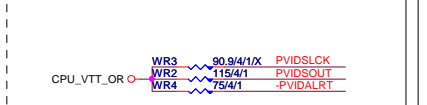
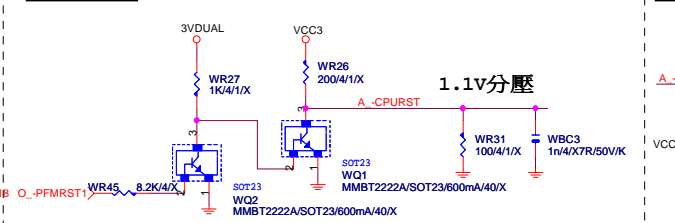
DP/HDMT 4/4/4//20 EDI 4/4/4/12

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 VCC1_05_PCH

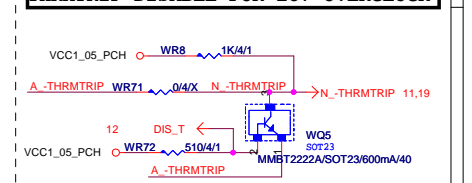
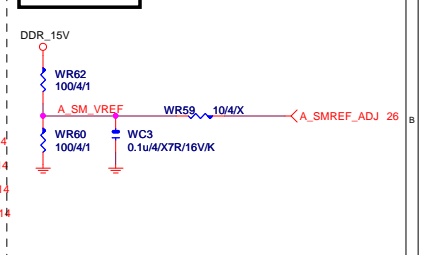
WR34 150/4/1 VCC1_05_PCH

WR21 8.2K4/X 3VDUAL



A DDR COMP0	WR28	100/4/1
A DDR COMP1	WR19	75/4/1
A DDR COMP2	WR22	100/4/1

A TESTLOW_1	WR18	49.9/4/1
A TESTLOW_2	WR12	49.9/4/1



(F, J)

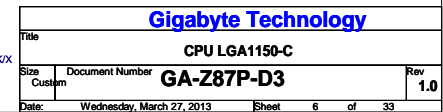


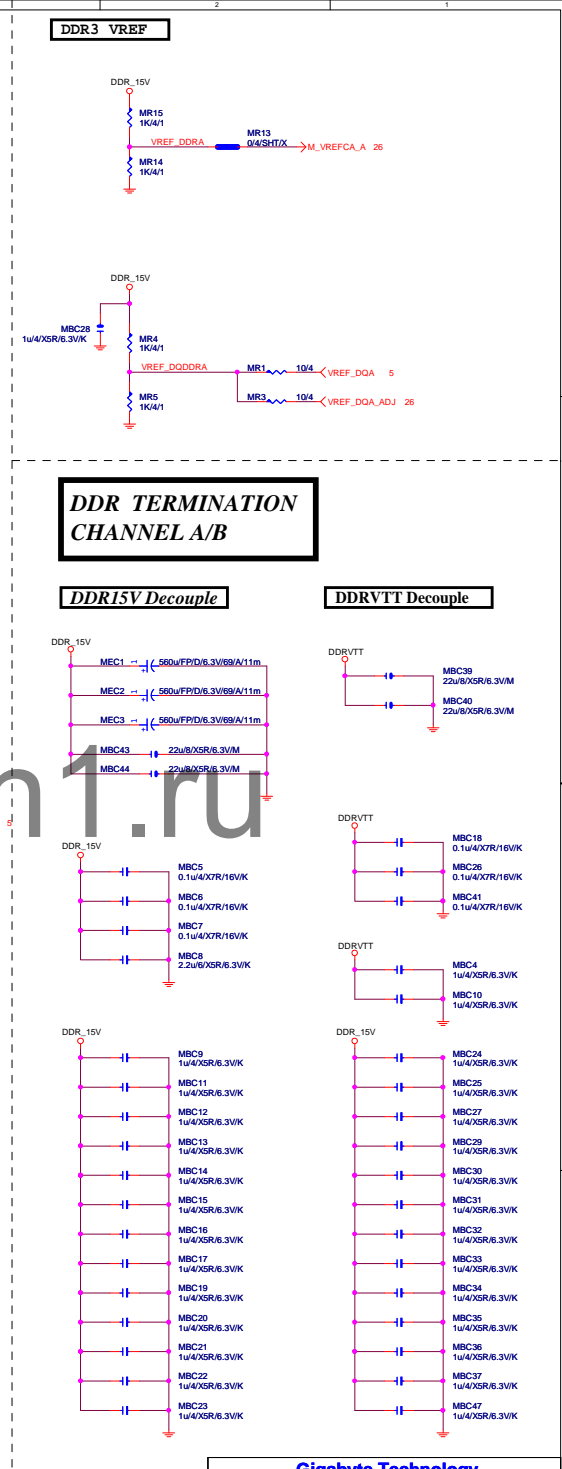
(G,H,I)



(X30)

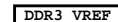
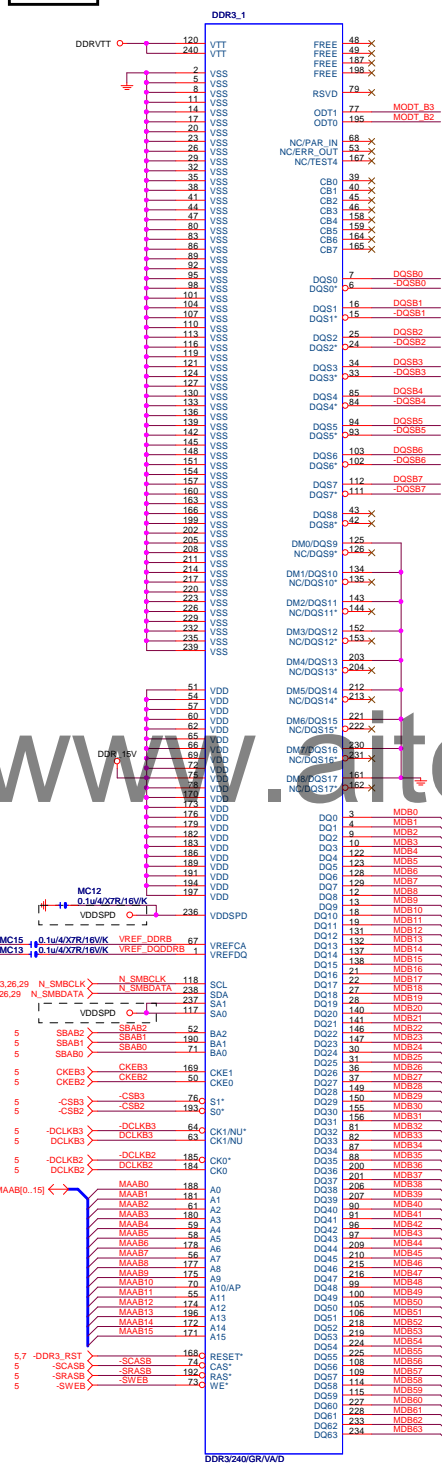
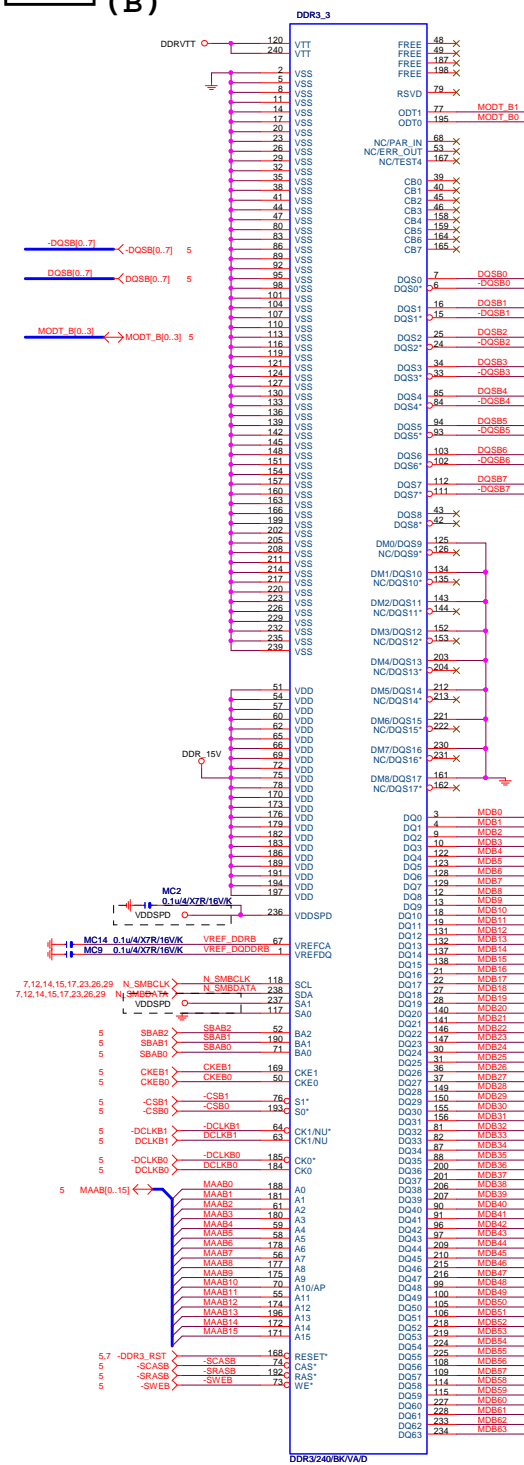
(X15)



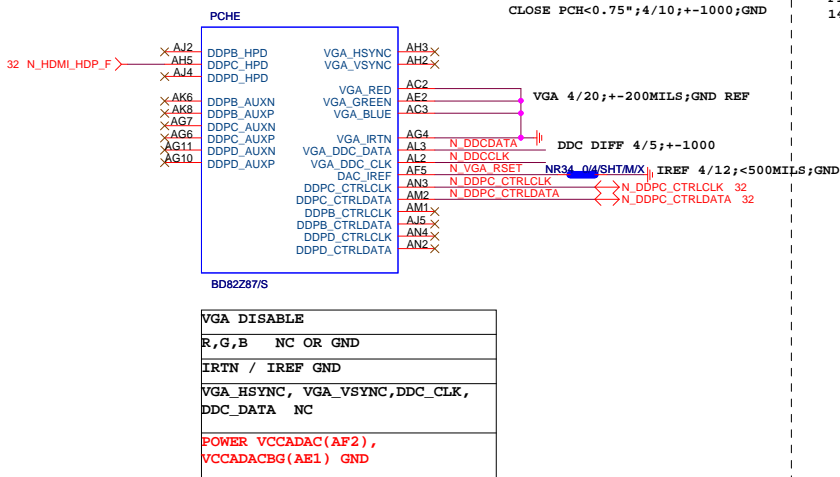




(B)

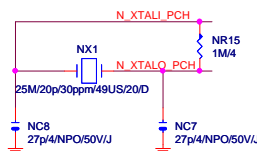


PCH (E)

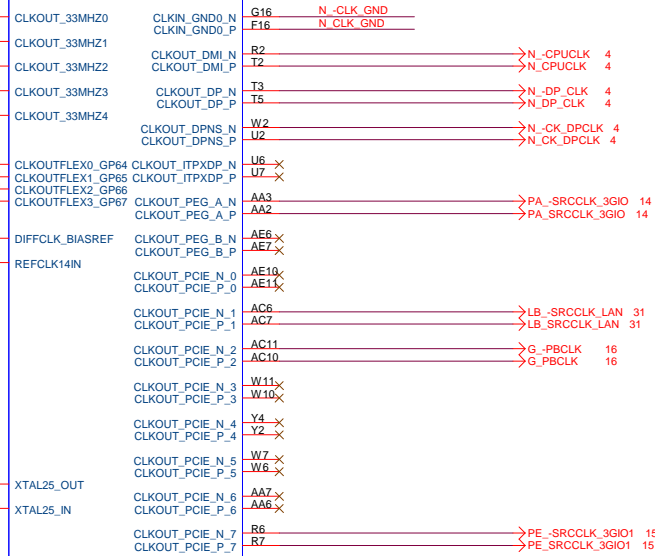


PCH (G)

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



PCHG



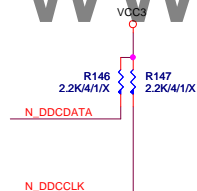
Differential Clock:18/4/6/4/18
Impedance=90 +- 15%

PCH CLK PD



Mount for integrated clock Generation Mode

VGA DDC



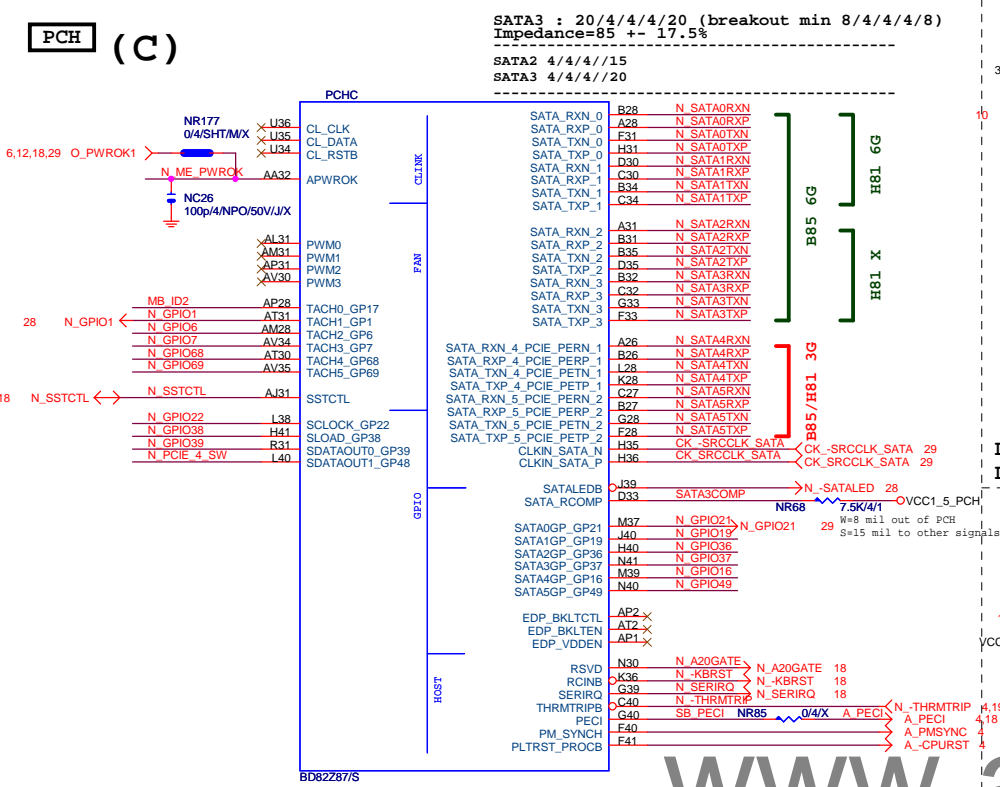
VGA DDC

VGA CONNECTOR

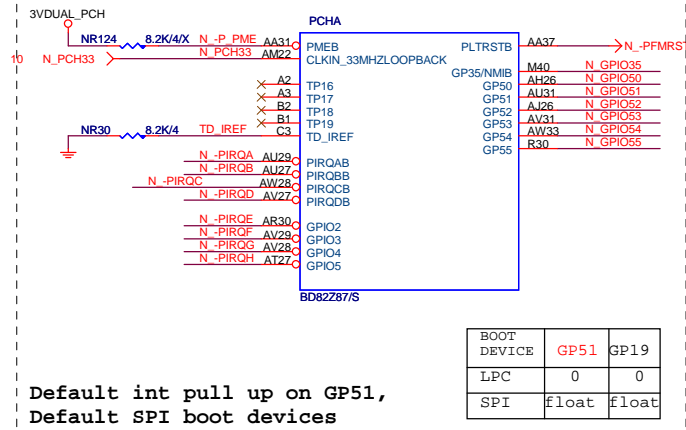
Gigabyte Technology

Title			
PCH DISPLAY ,CLK BUFFER			
Size	Document Number	Rev	
Custom	GA-Z87P-D3	1.0	
Date:	Thursday, March 28, 2013	Sheet	10 of 33

PCH (C)



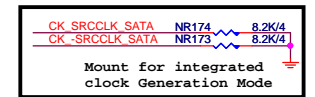
PCH (A)



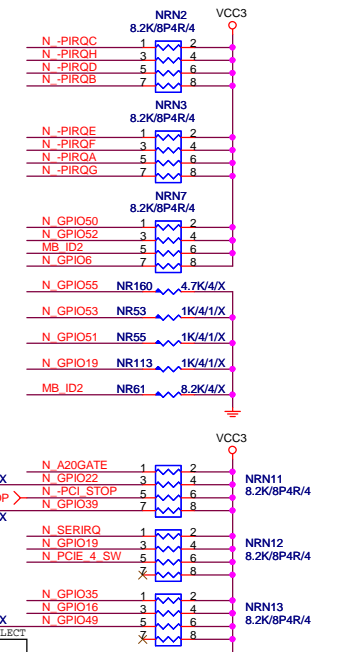
```
Default int pull up on GP51,  
Default SPI boot devices
```

BOOT DEVICE	GP51	GP19
LPC	0	0
SPI	float	float

PCH CLK PD



PCH PU/PD



MB ID

N_GPI055:A16 SWAP OVERRIDE

N_GPI053:DMI AC COUPLING

MB ID

N_GPI022:PCB CONFIG

N167 1K4/1X
12 N-PCI_STOP
N167 1K4/1X

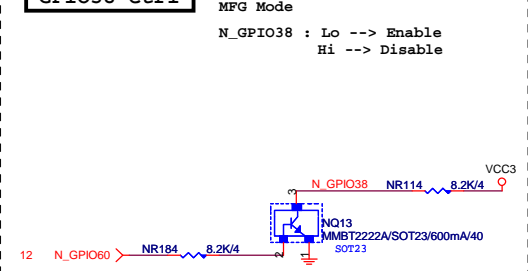
N_GPI039:GFX MODE

N180 1K4/1X

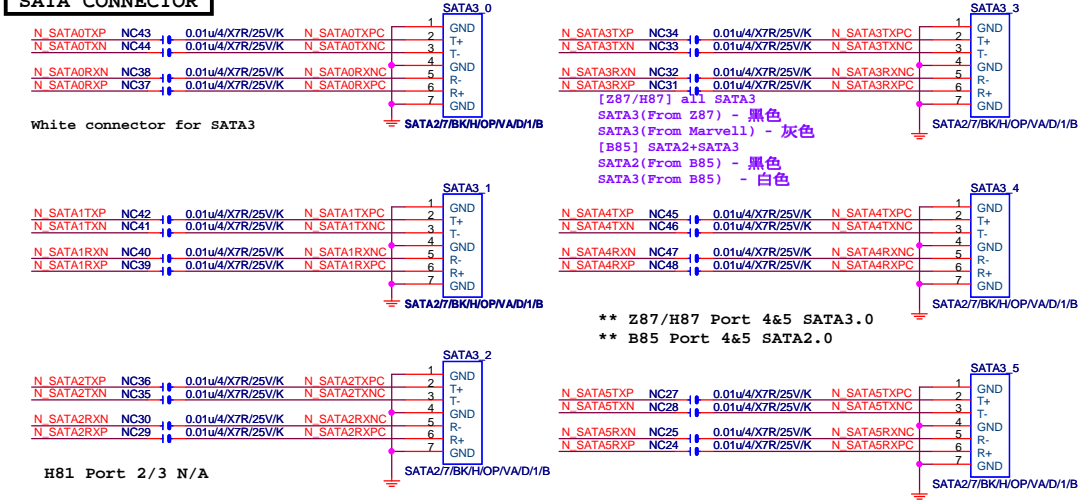
N_GPI049:PCIe/MSATA MIX SELECT

soft strap	GP16	GP49
0	pcie1	pcie2
1	sata4	sata5

GPIO38 Ctrl



SATA CONNECTOR

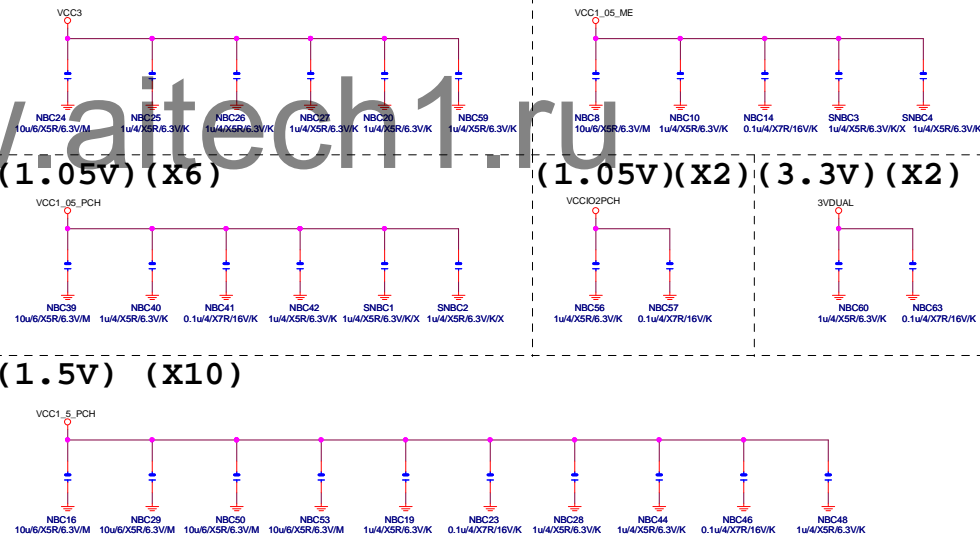


PCH (I)

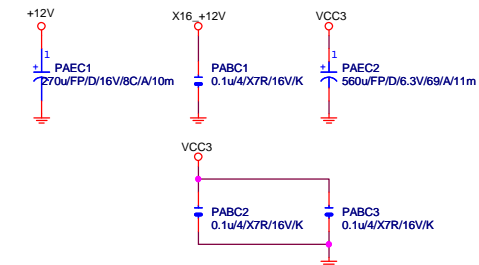


SHT PWR

(1.05V) (x5)

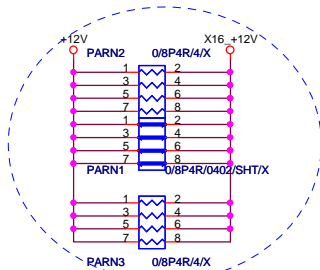


PCIEX16 CAP



PCIEX16	PROTECT	SHT
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```
+12 protect
short-wire test
```



PCIEX16 AC CAP

PA EXP TXP0	PAC5	0.22u4/X5R6.3V/K	PA EXP TXP0_C
PA EXP TXN0	PAC4	0.22u4/X5R6.3V/K	PA EXP TXN0_C
PA EXP TXP1	PAC7	0.22u4/X5R6.3V/K	PA EXP TXP1_C
PA EXP TXN1	PAC6	0.22u4/X5R6.3V/K	PA EXP TXN1_C
PA EXP TXP2	PAC9	0.22u4/X5R6.3V/K	PA EXP TXP2_C
PA EXP TXN2	PAC8	0.22u4/X5R6.3V/K	PA EXP TXN2_C
PA EXP TXP3	PAC10	0.22u4/X5R6.3V/K	PA EXP TXP3_C
PA EXP TXN3	PAC11	0.22u4/X5R6.3V/K	PA EXP TXN3_C
PA EXP TXP4	PAC12	0.22u4/X5R6.3V/K	PA EXP TXP4_C
PA EXP TXN4	PAC13	0.22u4/X5R6.3V/K	PA EXP TXN4_C
PA EXP TXP5	PAC14	0.22u4/X5R6.3V/K	PA EXP TXP5_C
PA EXP TXN5	PAC15	0.22u4/X5R6.3V/K	PA EXP TXN5_C
PA EXP TXP6	PAC16	0.22u4/X5R6.3V/K	PA EXP TXP6_C
PA EXP TXN6	PAC17	0.22u4/X5R6.3V/K	PA EXP TXN6_C
PA EXP TXP7	PAC18	0.22u4/X5R6.3V/K	PA EXP TXP7_C
PA EXP TXN7	PAC18	0.22u4/X5R6.3V/K	PA EXP TXN7_C
PA EXP TXP8	PAC20	0.22u4/X5R6.3V/K	PA EXP TXP8_C
PA EXP TXN8	PAC21	0.22u4/X5R6.3V/K	PA EXP TXN8_C
PA EXP TXP9	PAC22	0.22u4/X5R6.3V/K	PA EXP TXP9_C
PA EXP TXN9	PAC23	0.22u4/X5R6.3V/K	PA EXP TXN9_C
PA EXP TXP10	PAC24	0.22u4/X5R6.3V/K	PA EXP TXP10_C
PA EXP TXN10	PAC25	0.22u4/X5R6.3V/K	PA EXP TXN10_C
PA EXP TXP11	PAC26	0.22u4/X5R6.3V/K	PA EXP TXP11_C
PA EXP TXN11	PAC27	0.22u4/X5R6.3V/K	PA EXP TXN11_C
PA EXP TXP12	PAC28	0.22u4/X5R6.3V/K	PA EXP TXP12_C
PA EXP TXN12	PAC29	0.22u4/X5R6.3V/K	PA EXP TXN12_C
PA EXP TXP13	PAC30	0.22u4/X5R6.3V/K	PA EXP TXP13_C
PA EXP TXN13	PAC31	0.22u4/X5R6.3V/K	PA EXP TXN13_C
PA EXP TXP14	PAC32	0.22u4/X5R6.3V/K	PA EXP TXP14_C
PA EXP TXN14	PAC33	0.22u4/X5R6.3V/K	PA EXP TXN14_C
PA EXP TXP15	PAC34	0.22u4/X5R6.3V/K	PA EXP TXP15_C
PA EXP TXN15	PAC35	0.22u4/X5R6.3V/K	PA EXP TXN15_C

PCI-E REV:1.1--> 2.5GHZ

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

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

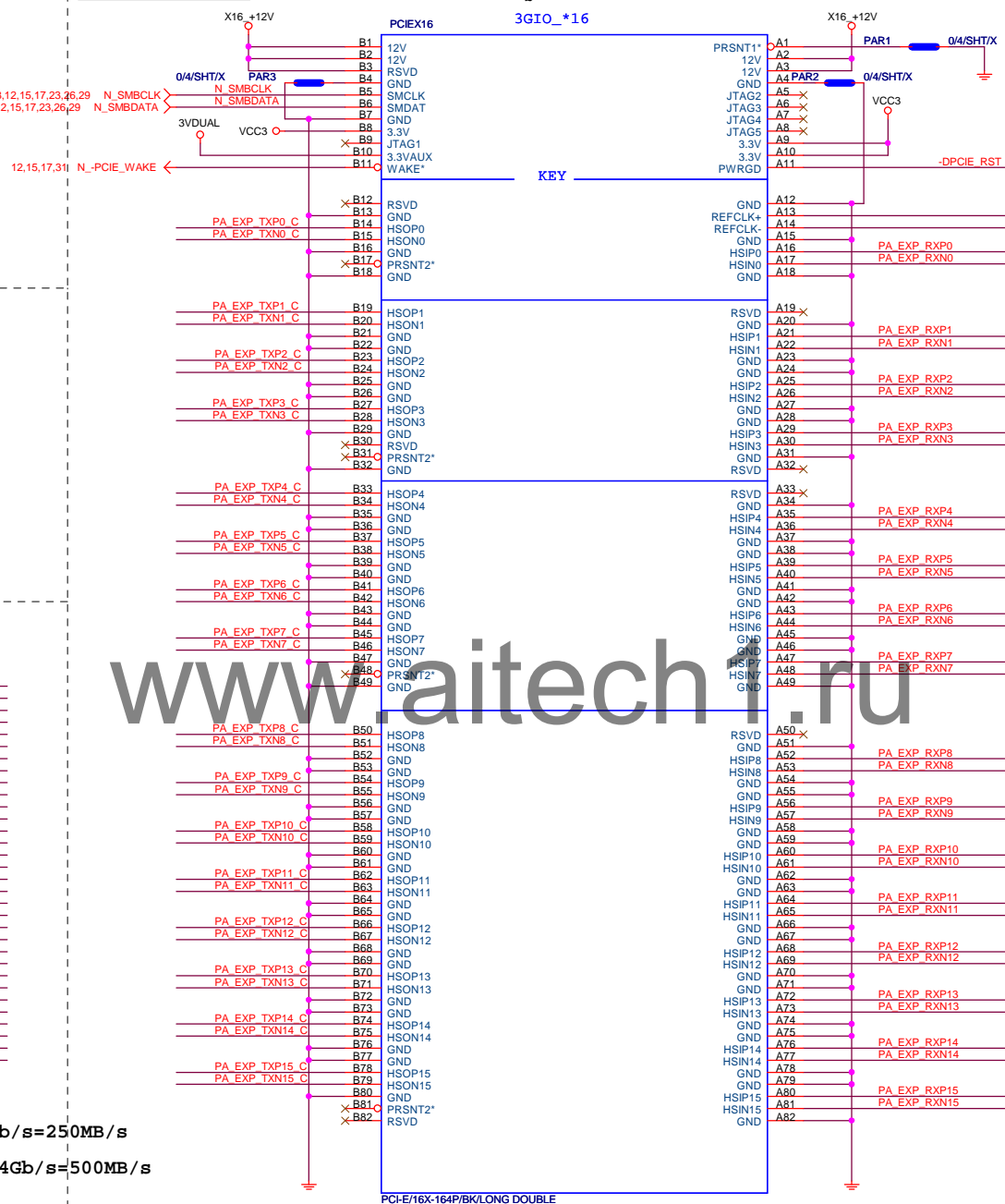
PCE-E X16 (單向) BANDWIDTH=2.5GHz*(8b/10b)X16=32Gb/s=4GB/s

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

PCI-E REV:2.0--> 5GHZ

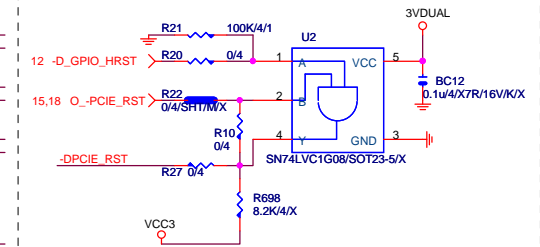
PCIEX16 SLOT

PCIESLOT-164DN-Q



PCI-E/16X-164P/BK/LONG DOUBLE

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

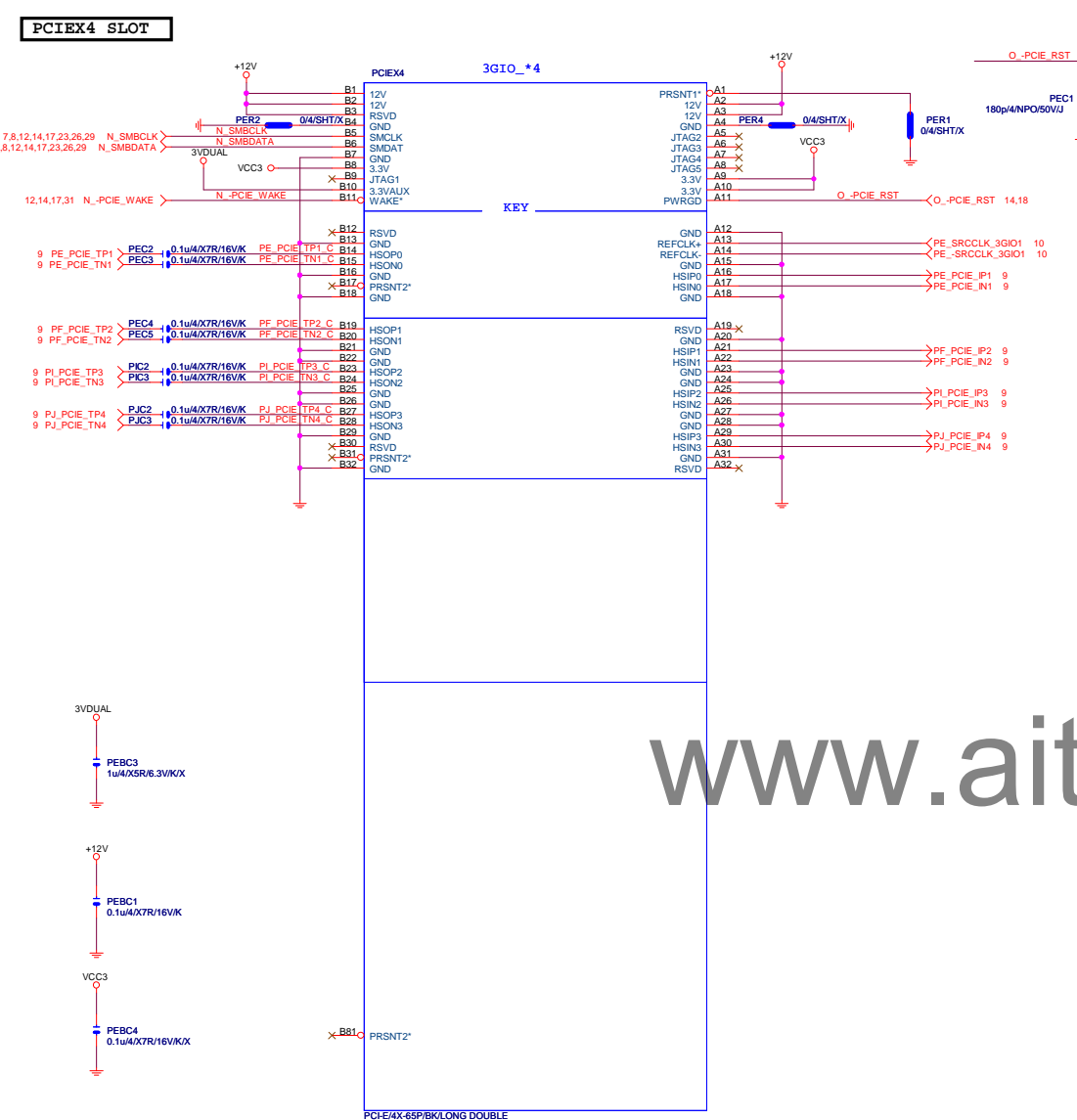


PCIEX16:16/5/5/5/16

```
PA_EXP_RXP[0..15] >> PA_EXP_RXP[0..15] 4
PA_EXP_RXN[0..15] >> PA_EXP_RXN[0..15] 4
PA_EXP_TXP[0..15] >> PA_EXP_TXP[0..15] 4
PA_EXP_TXN[0..15] >> PA_EXP_TXN[0..15] 4
```

Gigabyte Technology

Title			
PCI EXPRESS * 16			
Size Custom	Document Number	GA-Z87P-D3	Rev 1.0
Date:	Thursday, March 28, 2013	Sheet	14 of 33



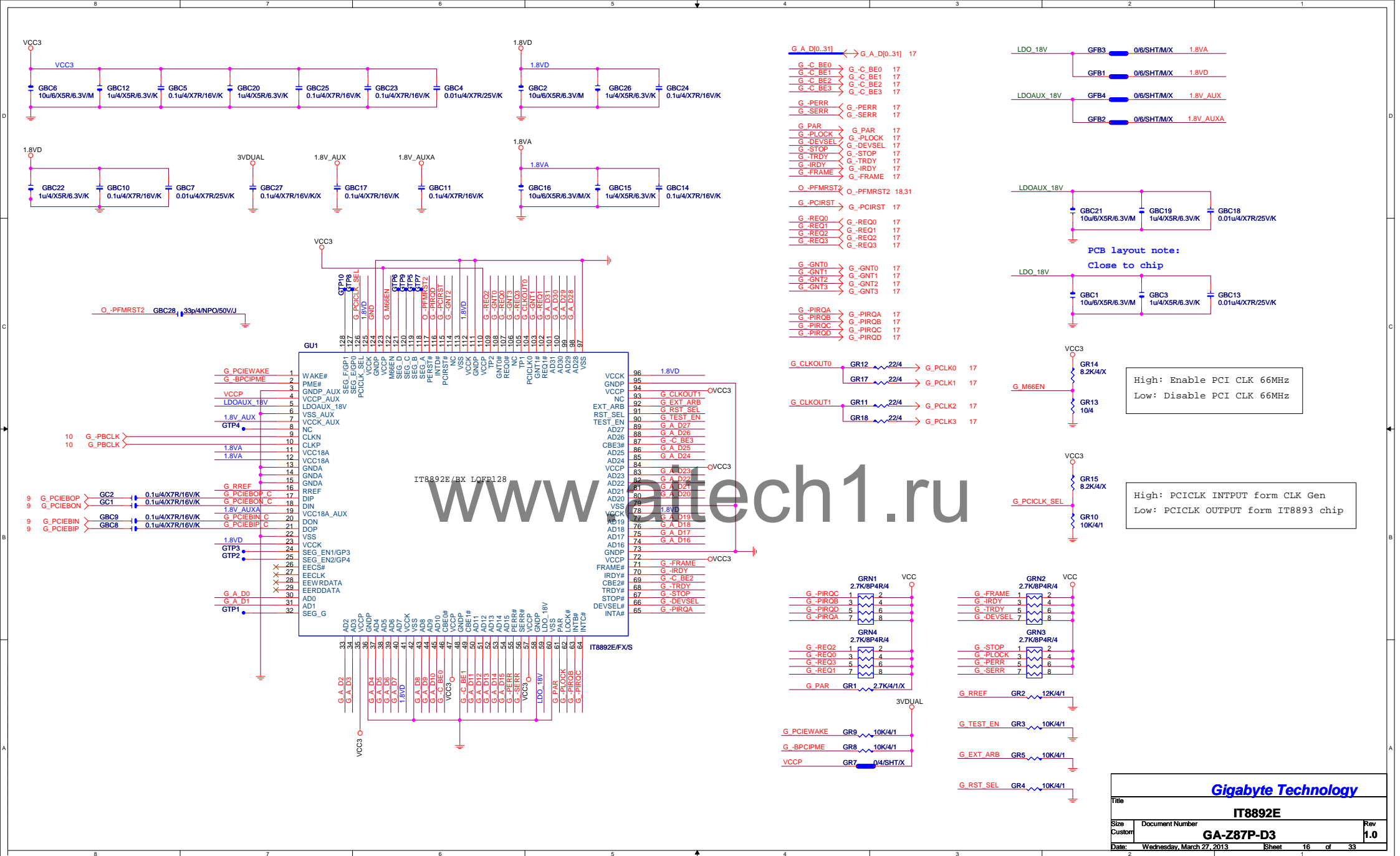
PCIEX1 SLOT

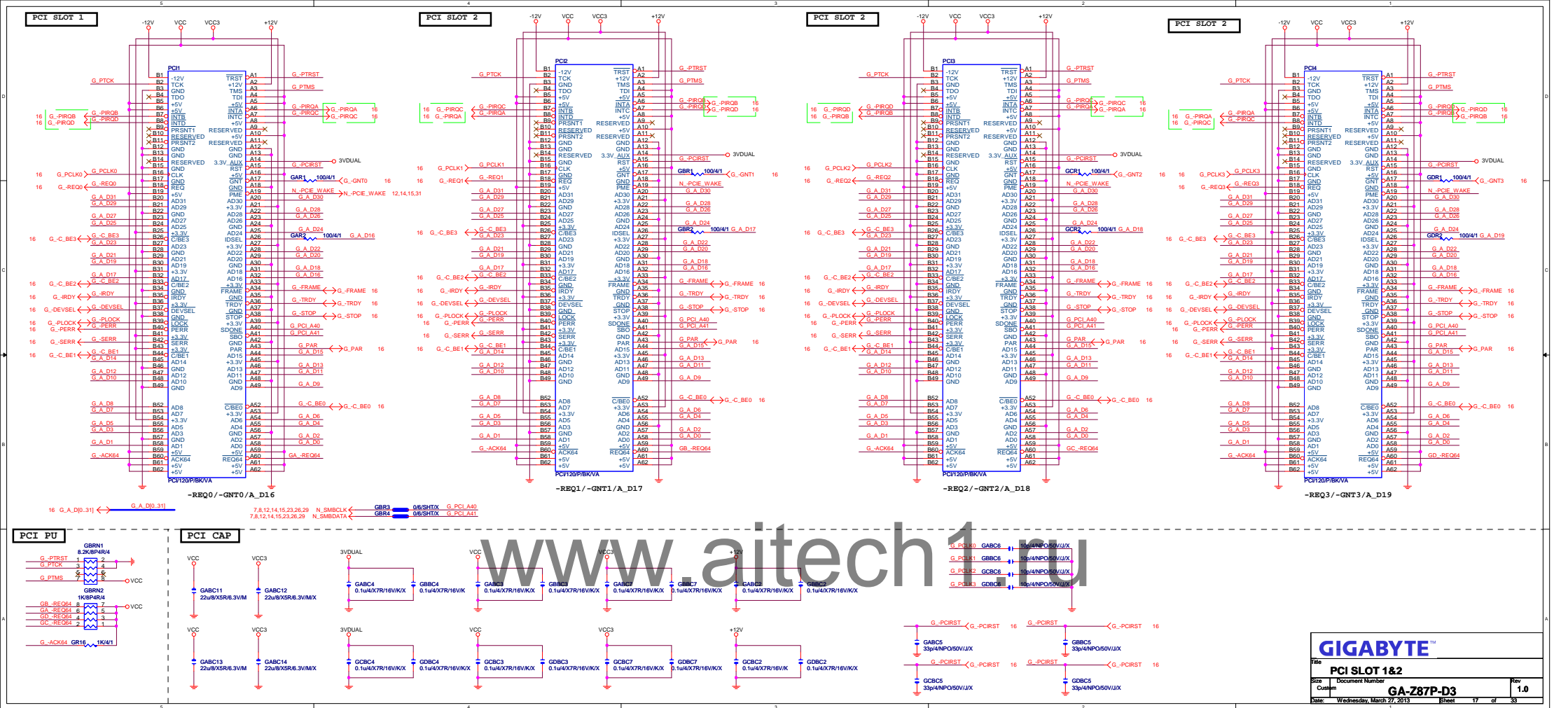
PCIEX1_1

PCIEX4/X1 SWITCH

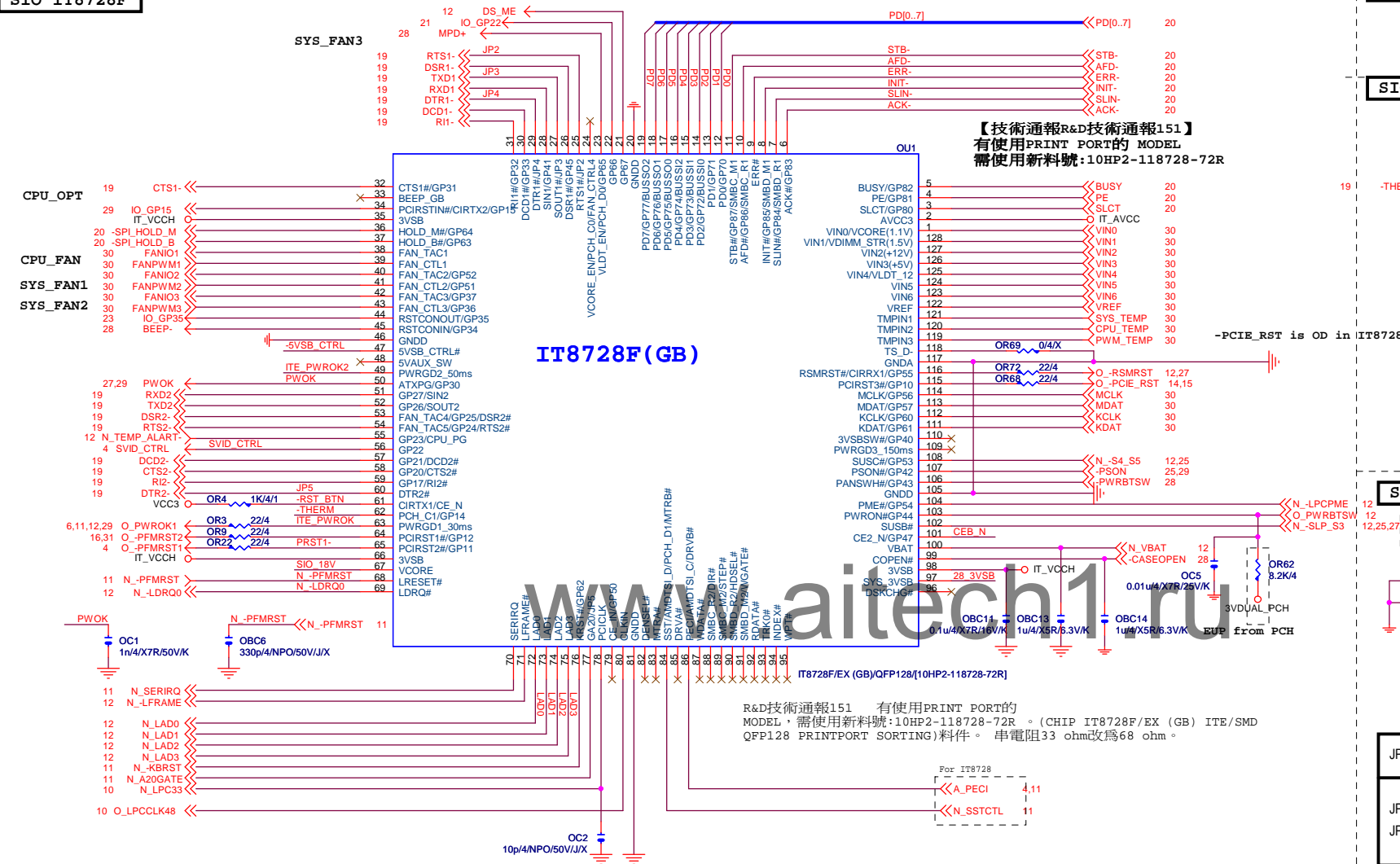
	N_PCIE_4_SW (PCH_GPIO48)	PCIEX4_X1 (SIO_GPIO26)
P	H	H
C		
PCIEX4 No devices	H	H
PCIEX4 -> X1		
PCIEX4 Have devices		
PCIEX4 -> X4	L	L
PCIEX1_1/2 --> N/A		

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

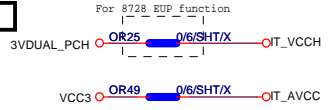




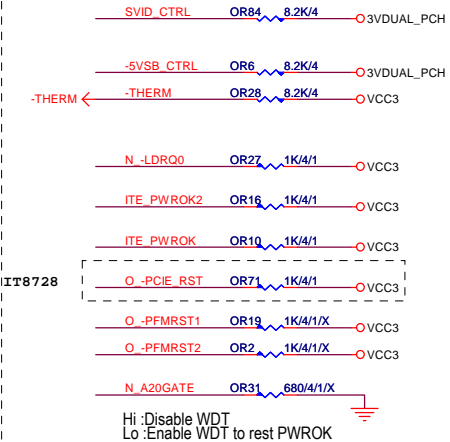
SIO IT8728F



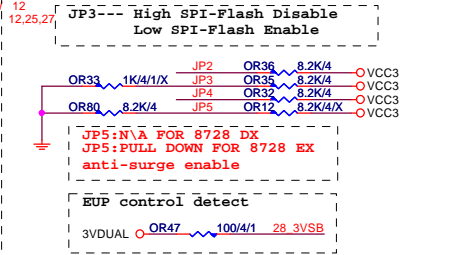
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1	1	1
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4	1	1
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9	1	1
10	1	1
11	1	1
12	1	1
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99	1	1
100	1	1



SIO	PU
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SIO STRAP

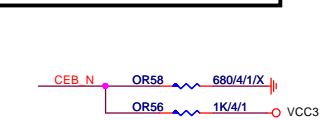


JP4	1	k8 power sequency function is Disable
	0	k8 power sequency function is Enable
JP3	1 1	The default value of EC Index 63h/6Bh/73h is 80h
	0 1	The default value of EC Index 63h/6Bh/73h is FFh
JP5	1 0	The default value of EC Index 63h/6Bh/73h is 00h
	0 0	The default value of EC Index 63h/6Bh/73h is 40h

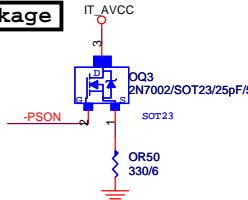
IT8728F NOTE

	IT8728
PIN121	VCORE_EN/PCH_C0
PIN120	VLDT_EN/PCH_D0
PIN19	ATXPG
PIN31	PCH_C1
PIN53	SST/AMDTSI_D/MTB8/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	VINO/VCORE(1.1V)/NC

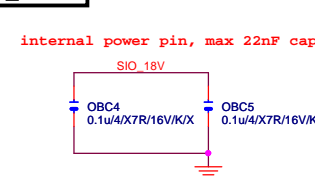
DUAL BIOS OPT STRAP



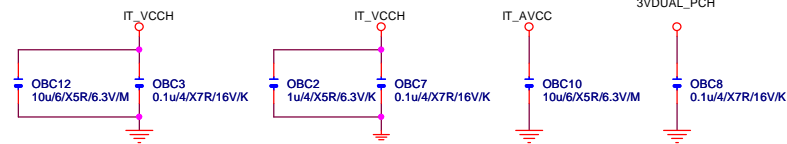
Power leakage



SIO_18V



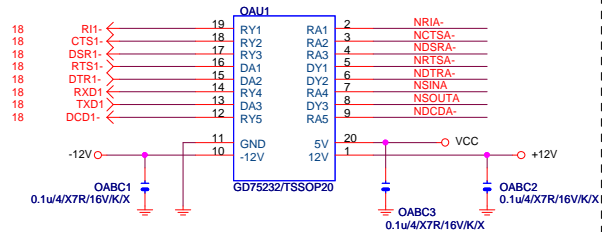
SIO CAP



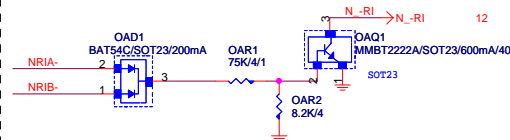
Gigabyte Technology

Title				ITE 8728 LPC IO			
Size B	Document Number						Rev 1.0
GA-Z87P-D3							
Date:	Wednesday, March 27, 2013			Sheet	18	of	33

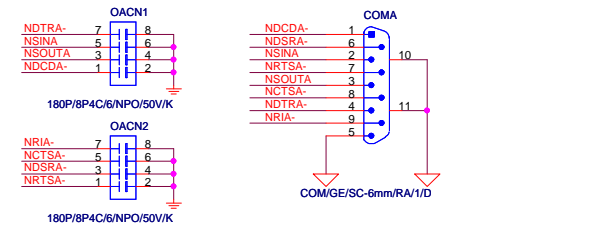
COMA



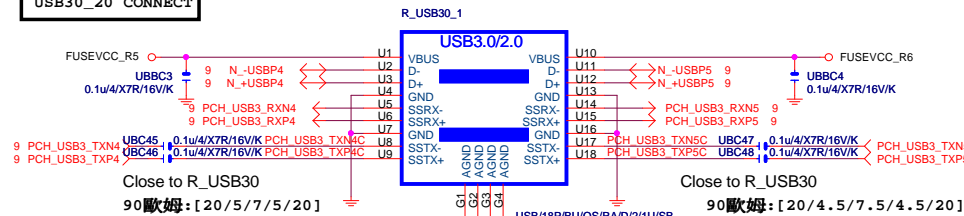
COM RI



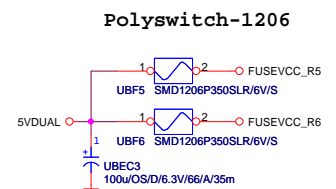
COM BUFFER



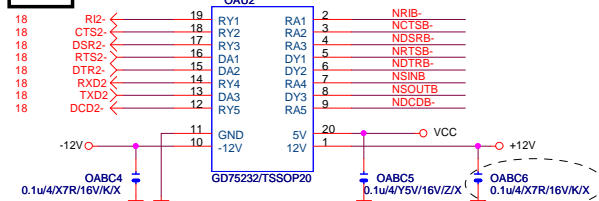
USB30_20 CONNECT



USB30 PWR

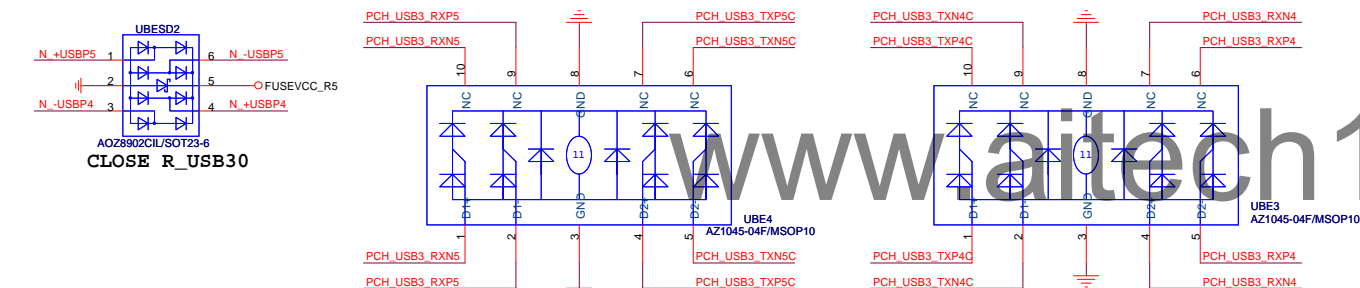


COMB

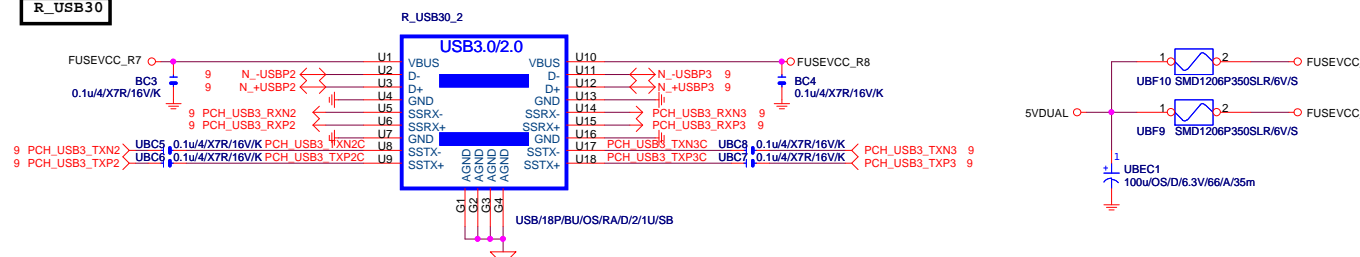


USB20 ESD PROTECT

USB30 ESD PROTECT

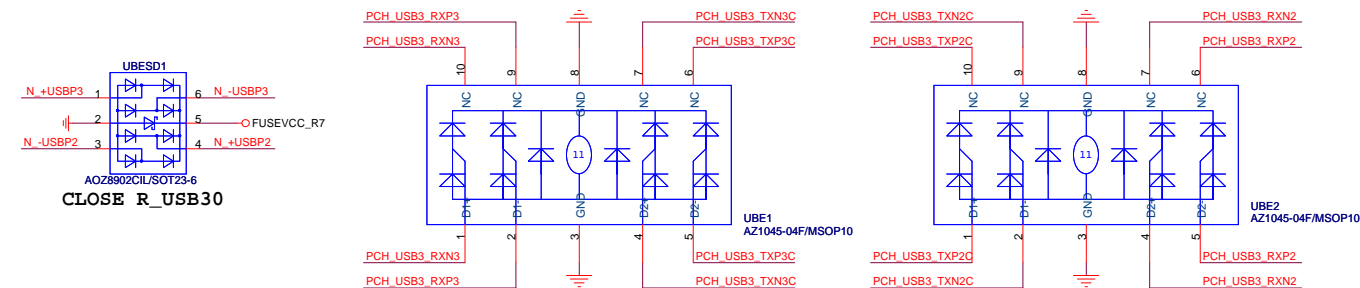


R_USB30

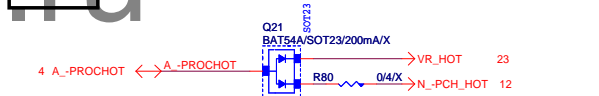


USB20 ESD PROTECT

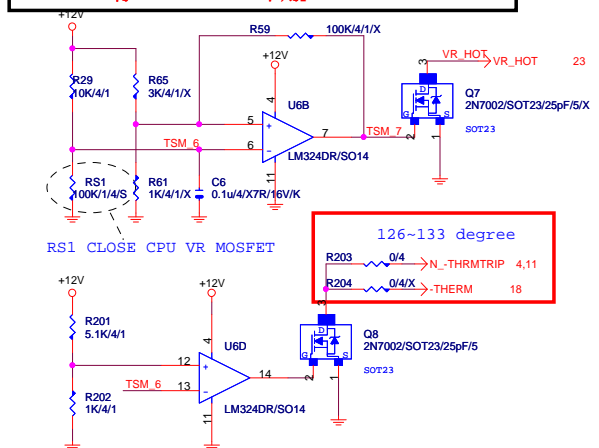
USB30 ESD PROTECT



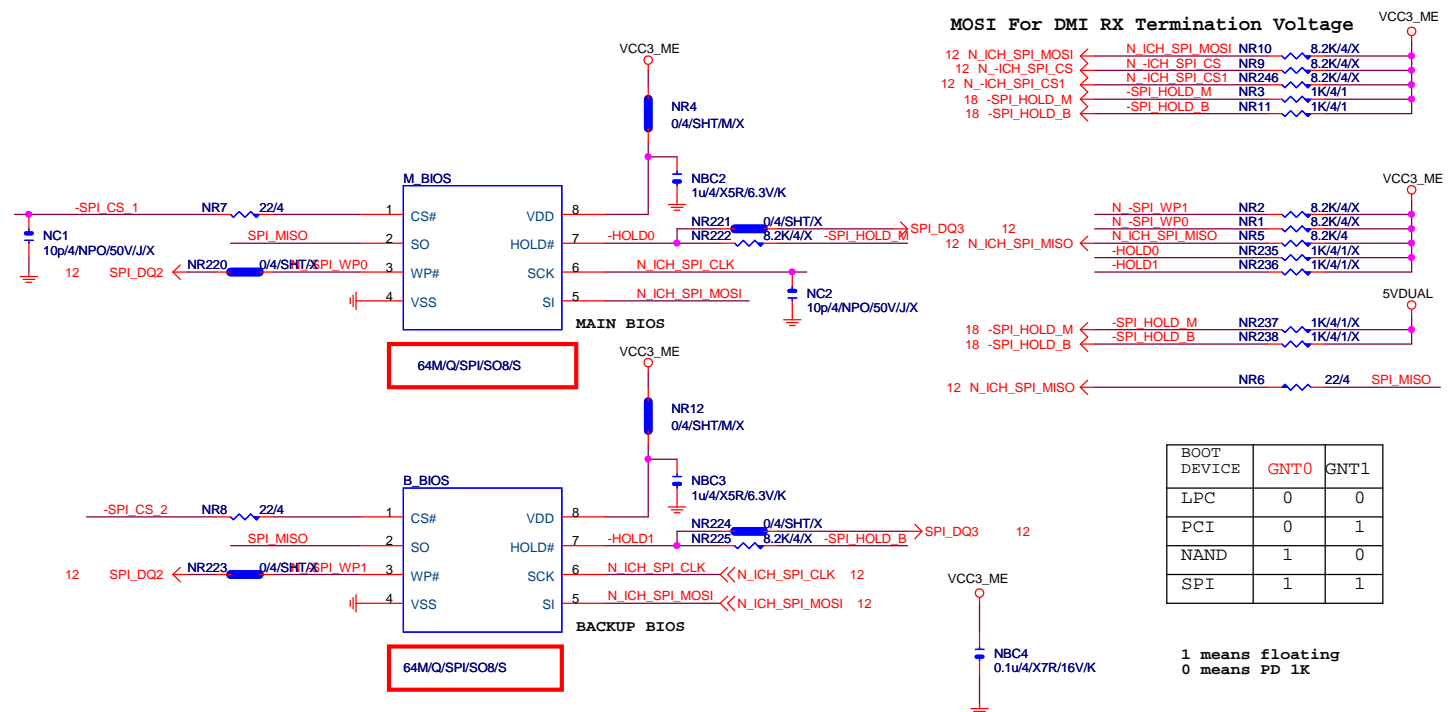
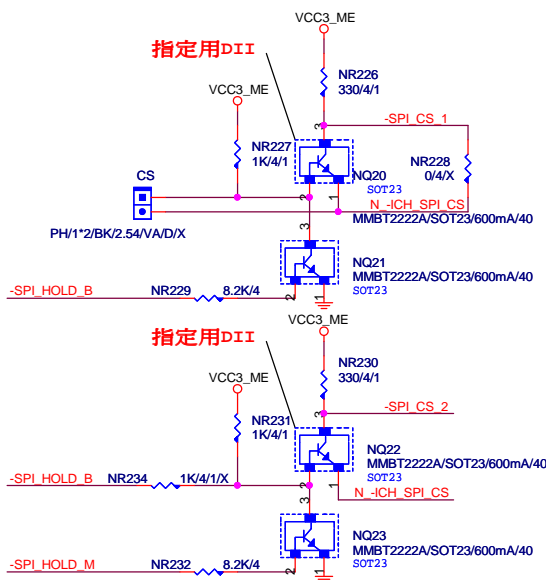
-PROHOT



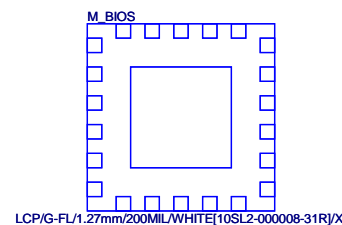
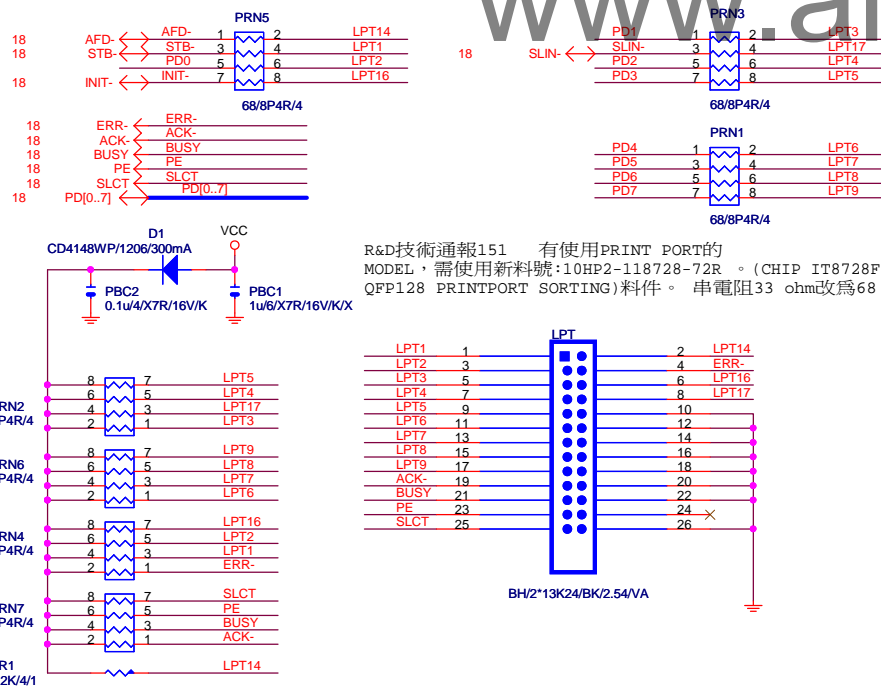
-PROCHOT:有mos heatsink不用prochot function



DUAL BIOS



LPT PORT

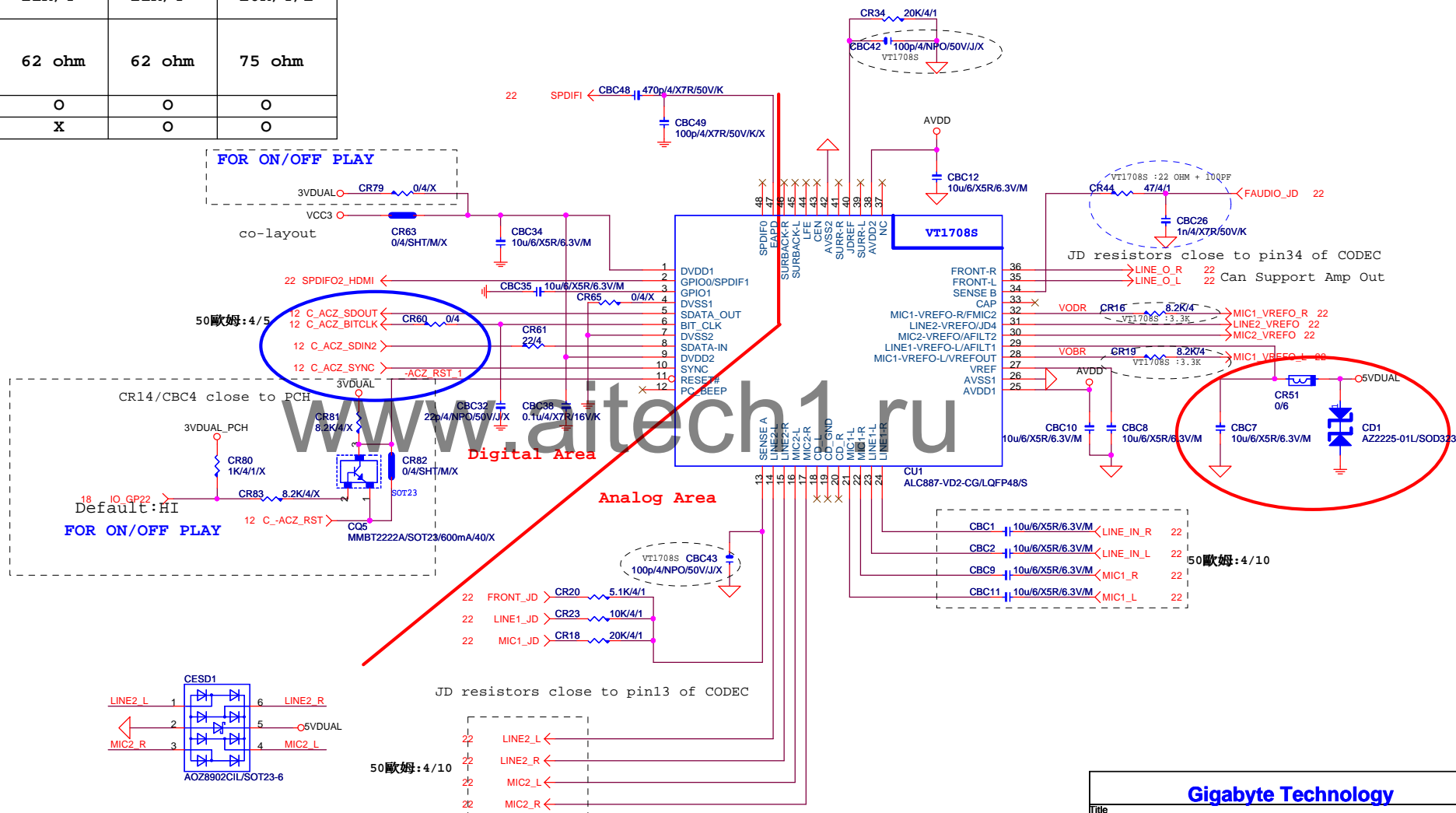


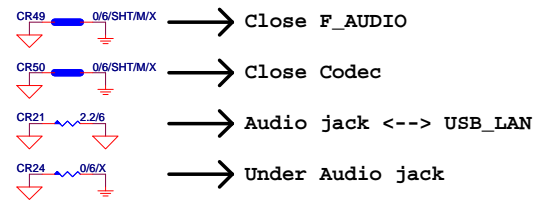
R&D技術通報151 有使用PRINT PORT的
MODEL, 需使用新料號:10HP2-118728-72R。(CHIP IT8728F/EX (GB) ITE/SMD
QFP128 PRINTPORT SORTING)料件。串電阻33 ohm改為68 ohm。

Gigabyte Technology

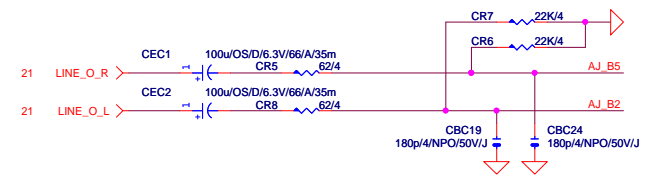
Title		BIOS	
Size Custom	Document Number	GA-Z87P-D3	Rev 1.0
Date:	Wednesday, March 27, 2013	Sheet 20	of 33

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





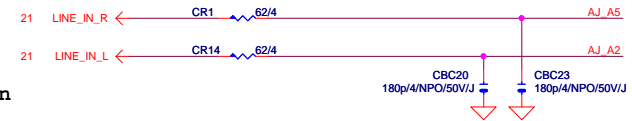
LINE-OUT



LINE-IN

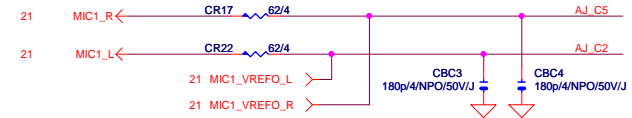
Verify MIC function
in LINE-in

Only reserved for ALC888



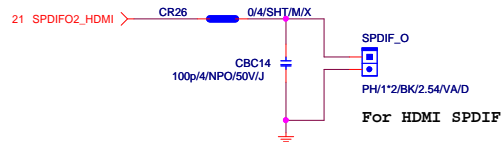
For 889A/888

MIC-IN

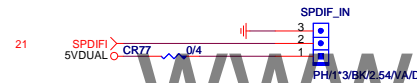


SURROUND

SPDIF_OUT



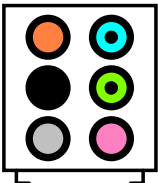
SPDIF_IN



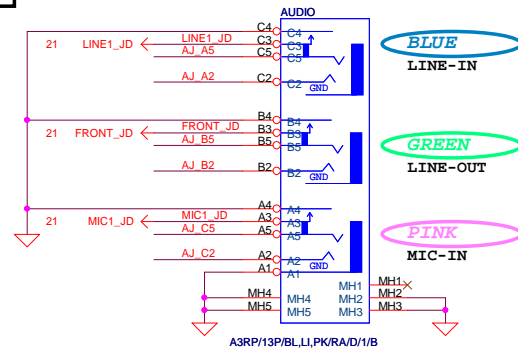
CEN/LFE

SURR BACK

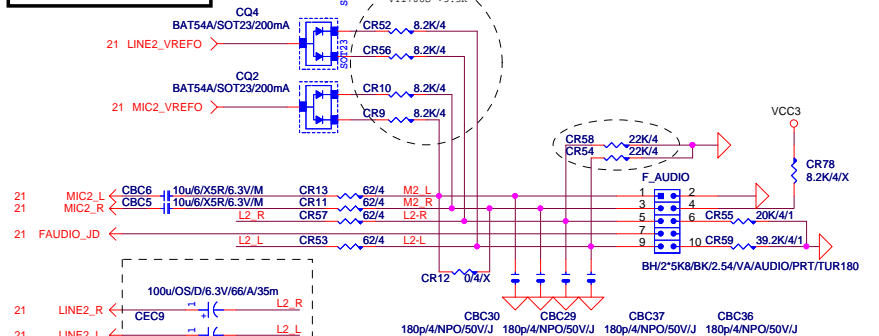
AZALIA JACK



AZALIA JACK



AZALIA FRONT PANEL



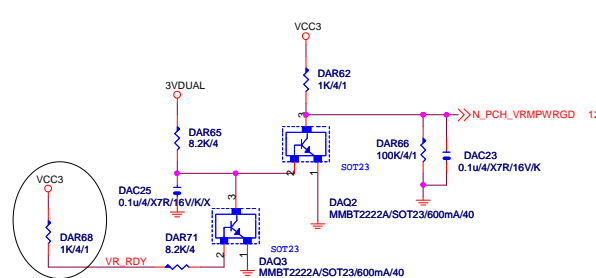
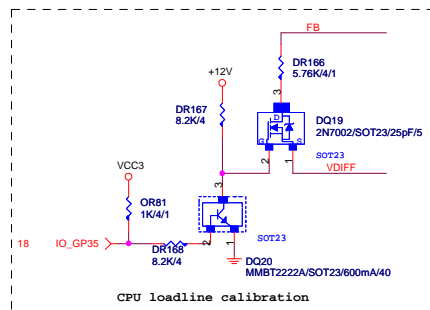
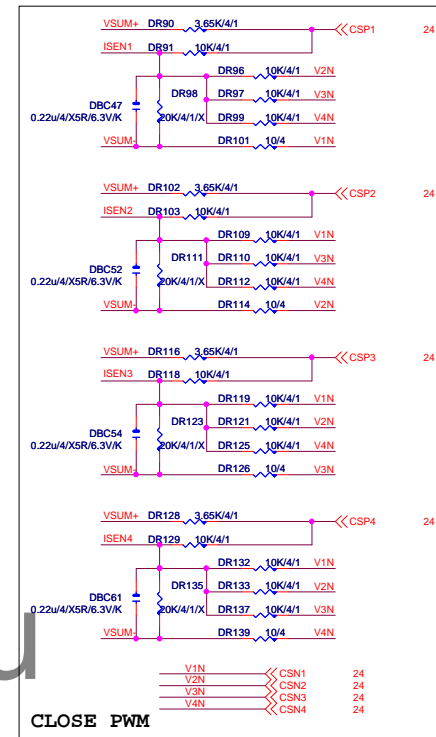
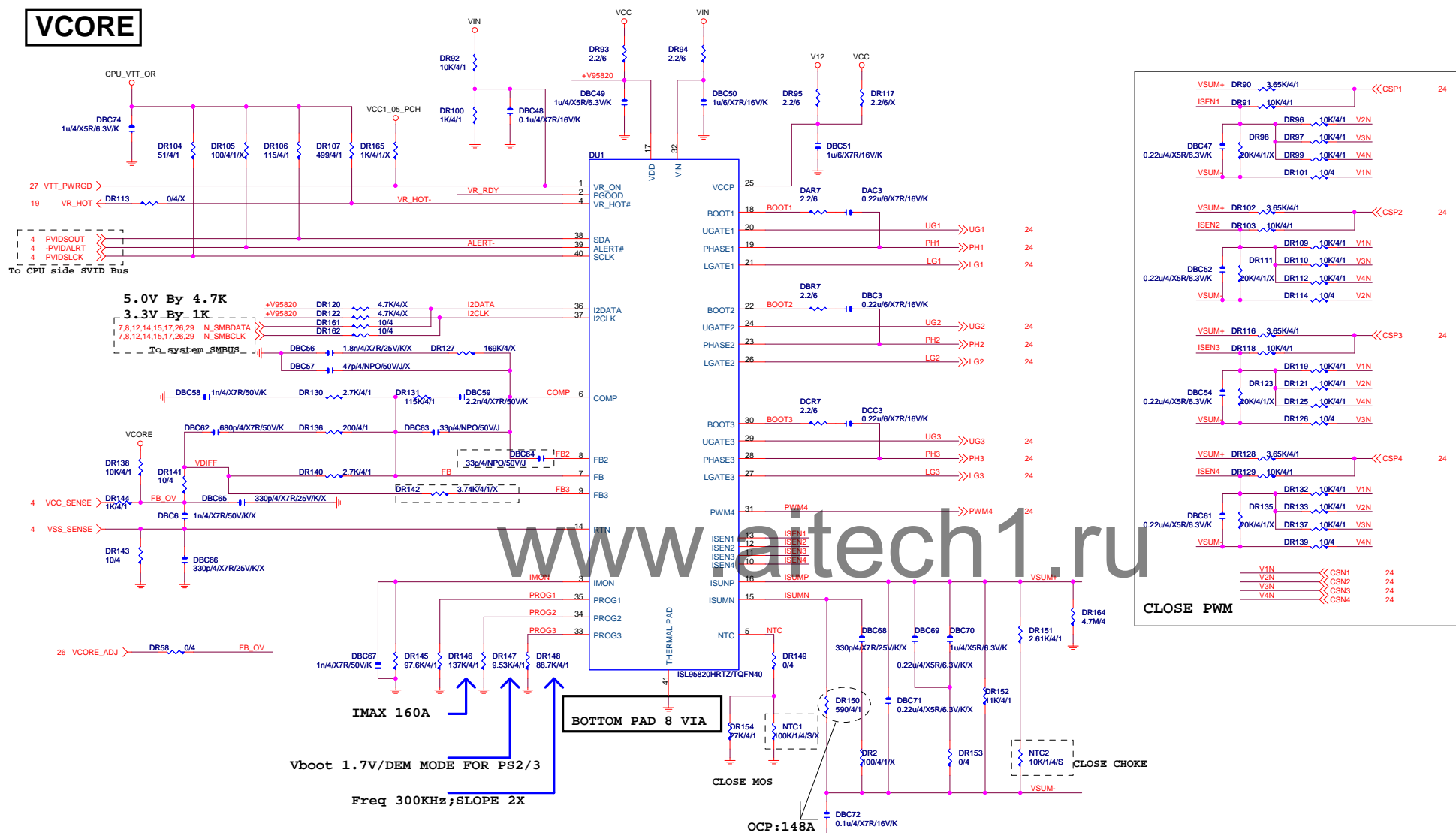
Gigabyte Technology

AUDIO JACK

GA-Z87P-D3

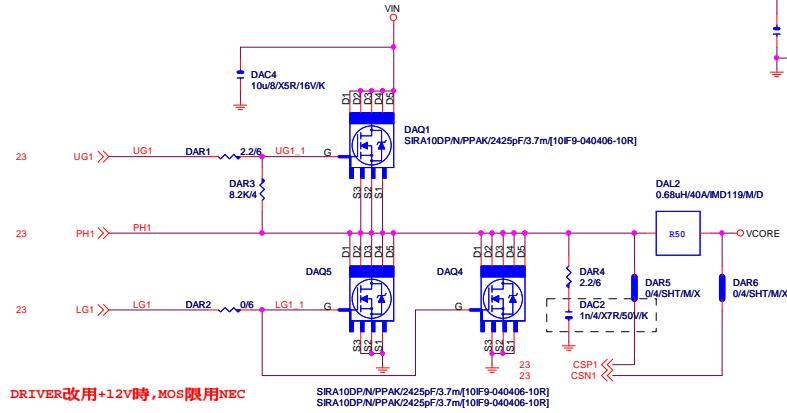
Rev 1.0

Date: Wednesday, March 27, 2013 Sheet 22 of 33

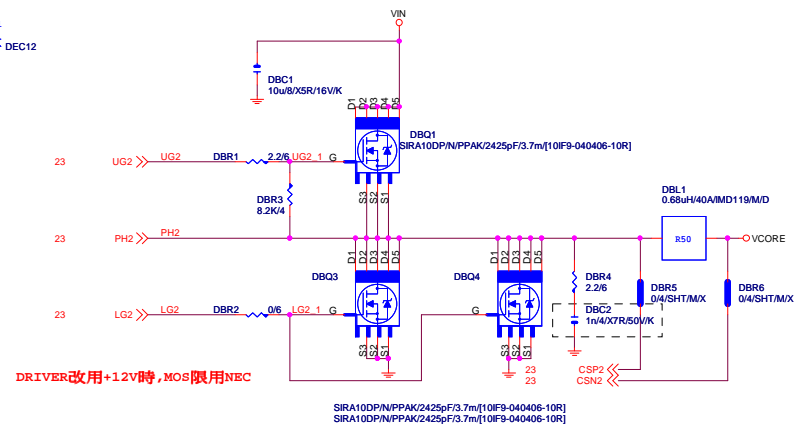
VCORE

VCORE

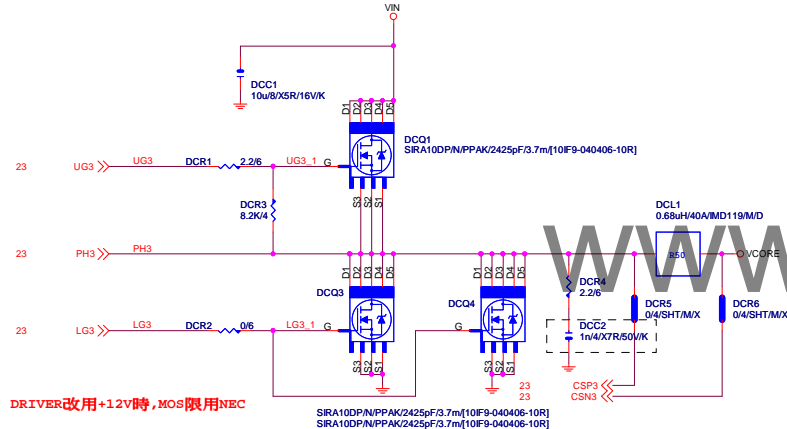
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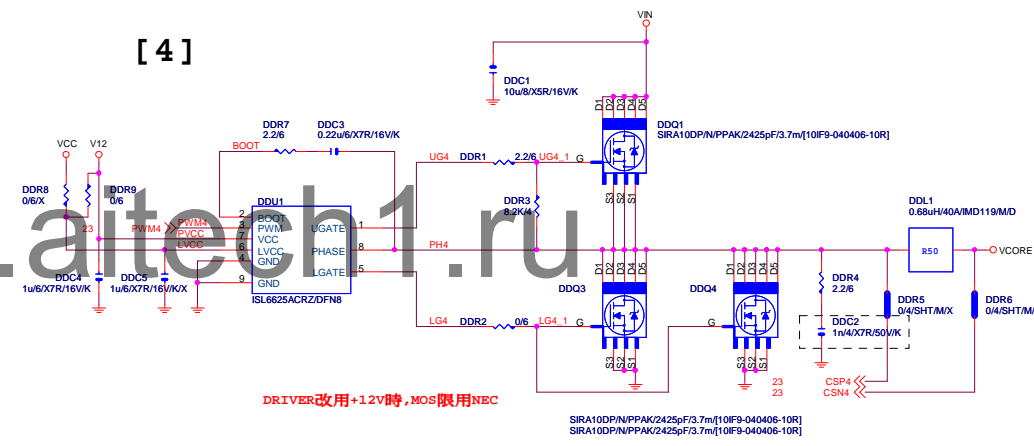
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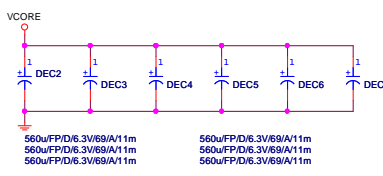
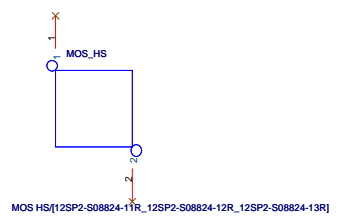
[3]



[4]

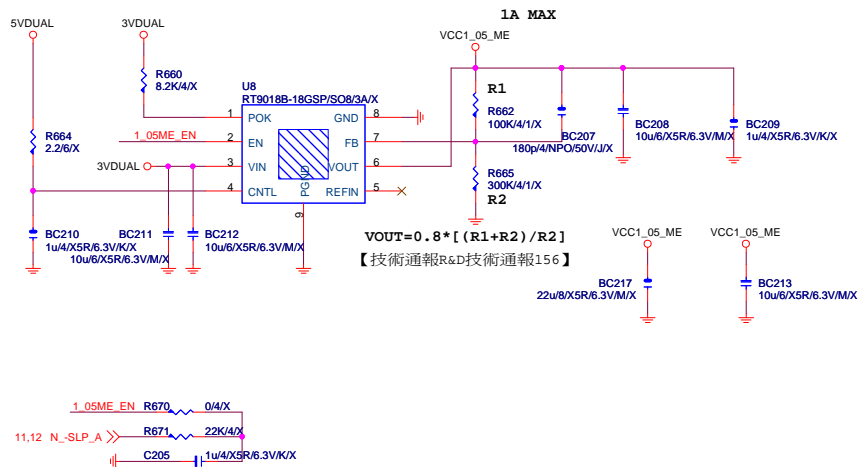


MOSFET HEATSINK

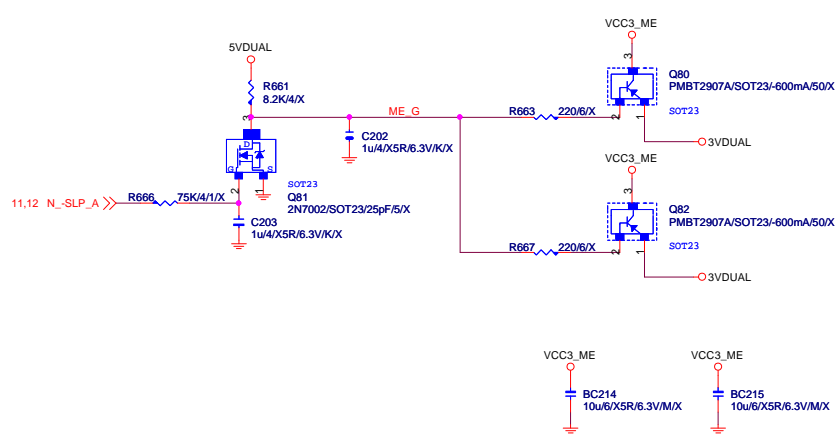


Gigabyte Technology			
Title		ISL95820_2	
Size		Document Number	
Custom		GA-Z87P-D3	
Date		Wednesday, March 27, 2013	
		Sheet 24 of 33	
		Rev 1.0	

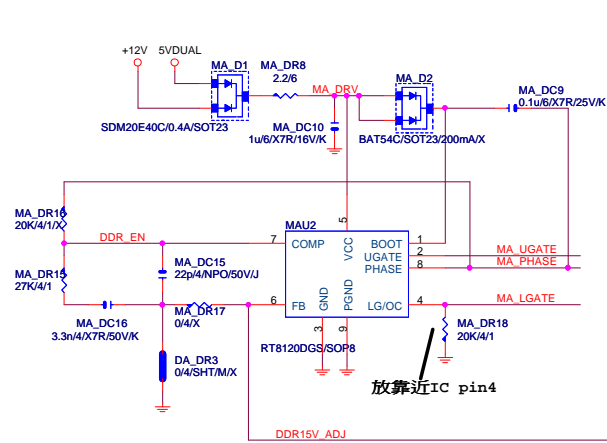
VCC1_05_ME



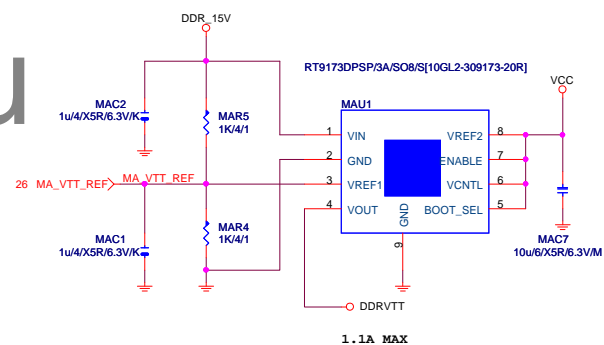
VCC3_ME



DDR_15V



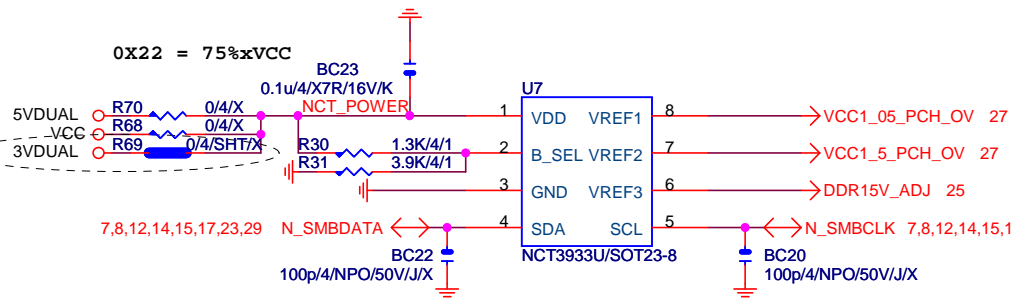
DDRVTT



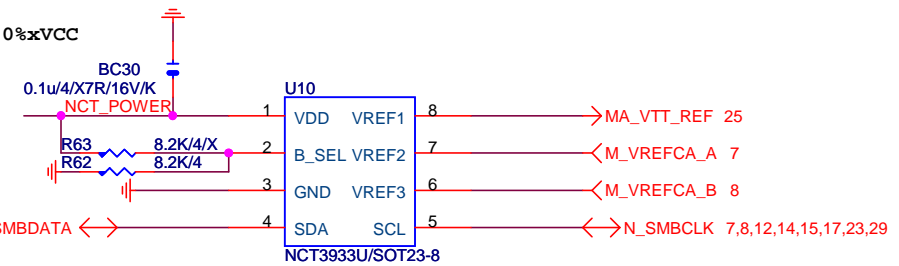
VIN=5V, VOUT=1.5V, IOUT=25A, PHASE=1
 IRMS=11.45A
 560u/FP/D/6.3V/68/8m RIPPLE CURRENT=4.7A
 Coefficient=1.7(85°C), 1(105°C)
 VIN Ripple current=4.7X1.7=7.99A(85°C)
 -->故固態電容須2X7.99=15.98>11.45A
 OCP:35.82A for Rds=6.7m for vishay@4.5V
 OCP:72.727A for Rds=3.3m for renesas@10V
 OCP:48A=Roset*Iocset / Rds(on)
 =12K*10uA / [5//5]

GIGABYTE™			
Title			
DDR15V / M3 POWER			
Size	Document Number	Rev	
Custom	GA-Z87P-D3	1.0	
Date:	Wednesday, March 27, 2013	Sheet	25 of 33

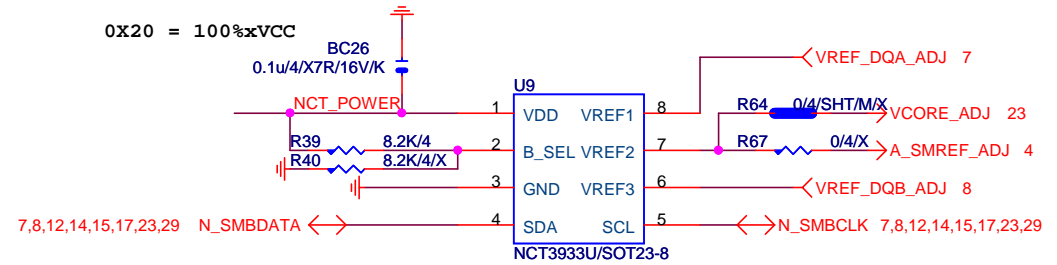
OVER VOLTAGE



0X2A = 0%xVCC



0X20 = 100%xVCC

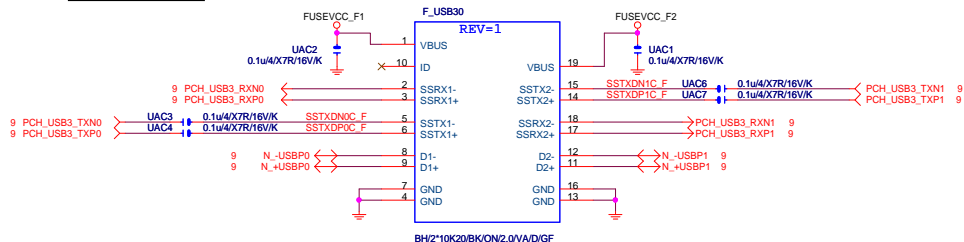


NCT3933	0X2A	0X20	0X22
VREF1	DDRVTT	VREF_DDRA_DQ	PCH Core
VREF2	VREF_DDRA_CA	N/A	VCC1_5_PCH
VREF3	VREF_DDRA_CA	VREF_DDRB_DQ	SMREF

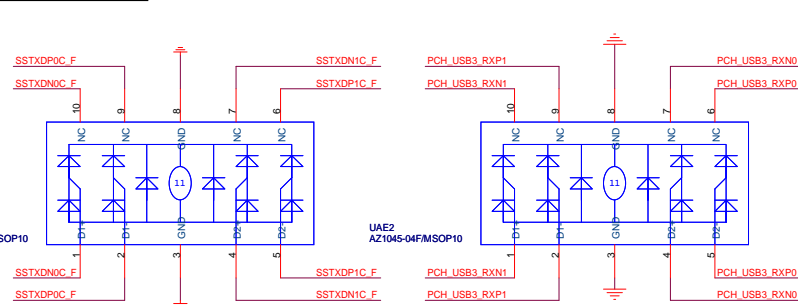
Gigabyte Technology

Title			CPU CORE VR-2
Size	Document Number	GA-Z87P-D3	
Custom			Rev 1.0
Date:	Thursday, March 28, 2013	Sheet	26 of 33

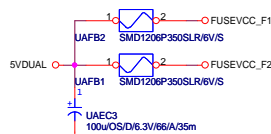
Front USB3.0



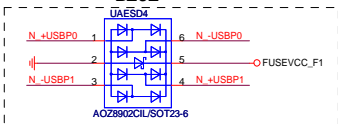
F_USB30 ESD PROTECT



F_USB30 PWR

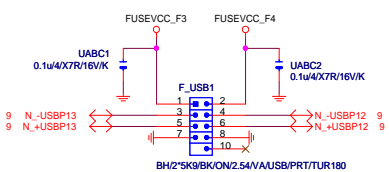


BLUE



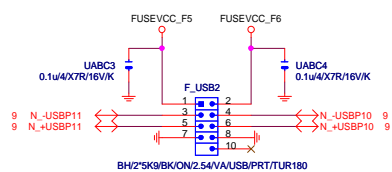
Close to connector

FRONT USB1



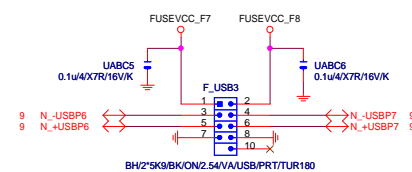
Close to connector

FRONT USB2

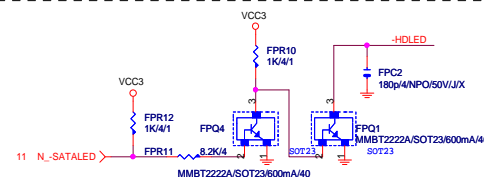


Close to connector

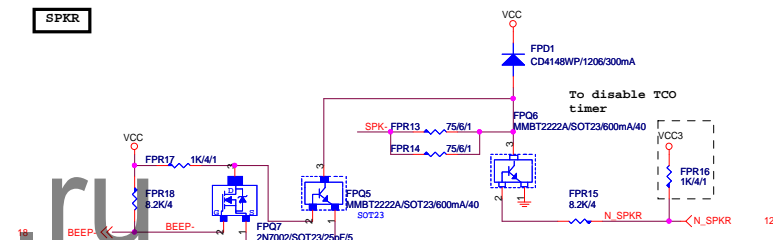
FRONT USB3



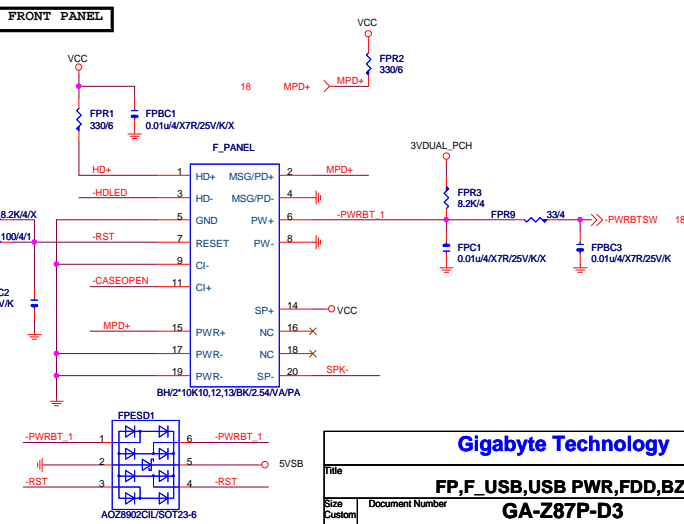
SATA LED



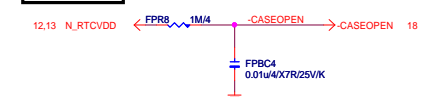
SPKR



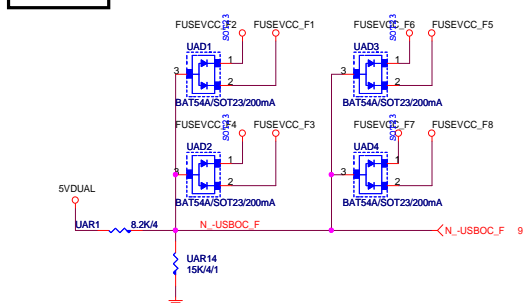
INTEL FRONT PANEL



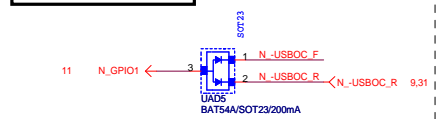
CASE OPEN



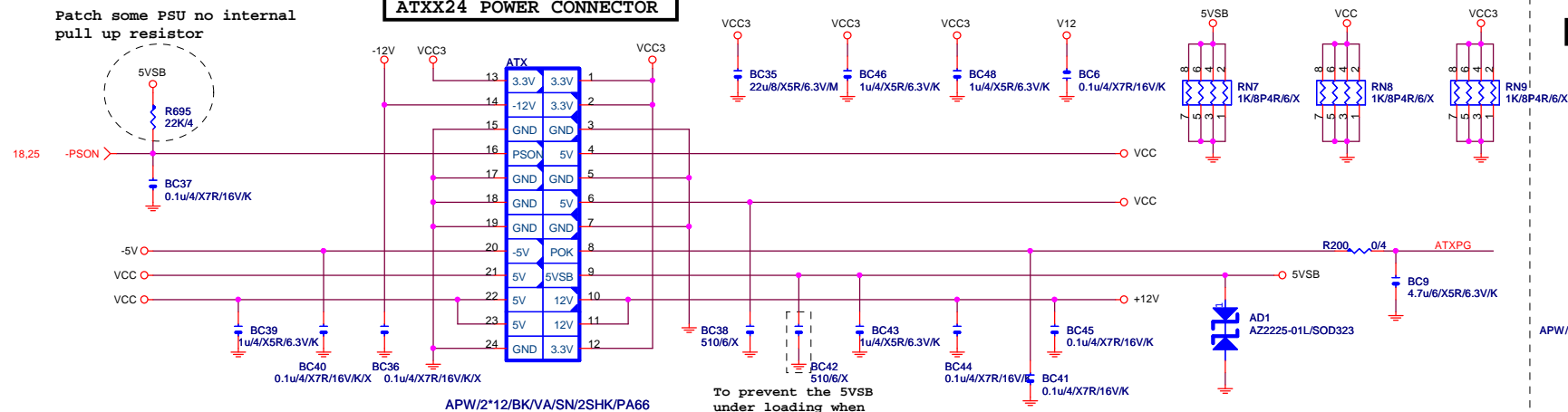
-USBOC_F



F_USB POWER PROTECT



Patch some PSU no internal
pull up resistor

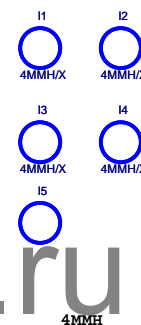
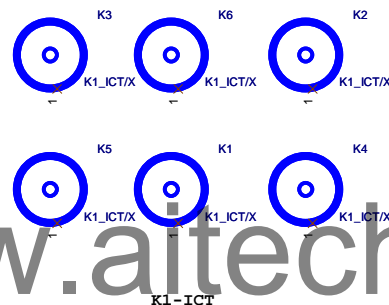
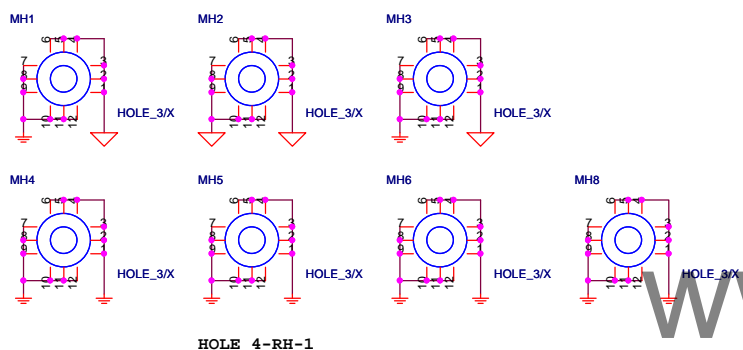


ATX_12V_2X4

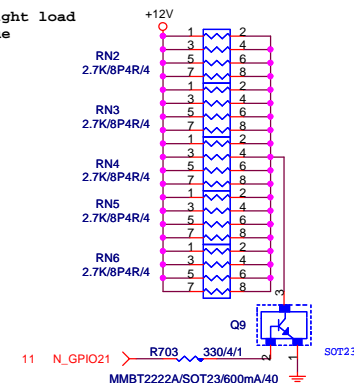
1	GND	+12V	5
2	GND	+12V	6
3	GND	+12V	7
4	GND	+12V	8

APW/I2*/4/BK/OC/P/4.2/VA/SN/OH:Location ATX_12V_2X4

BC7
0.1u4/X7R/16V

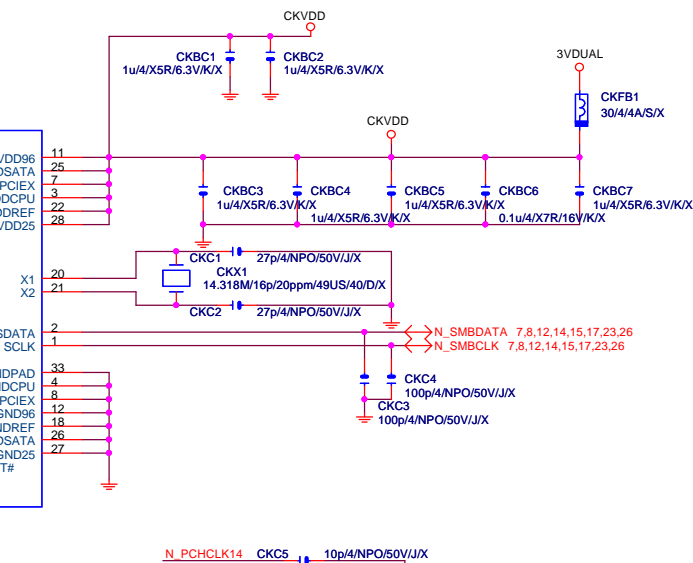
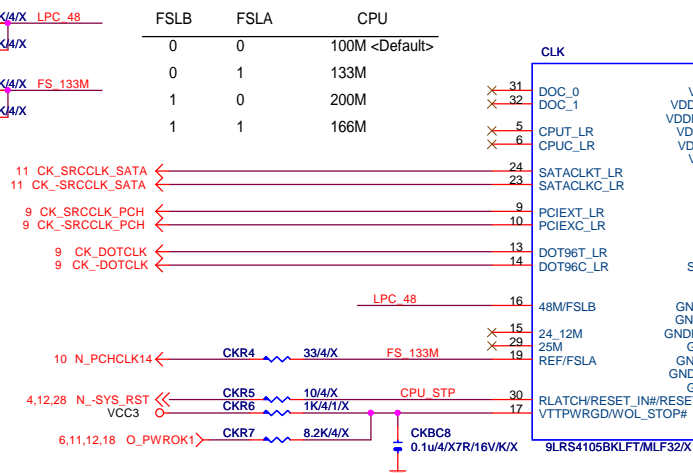


```
| To fix 12V light load
| abnormal issue
```

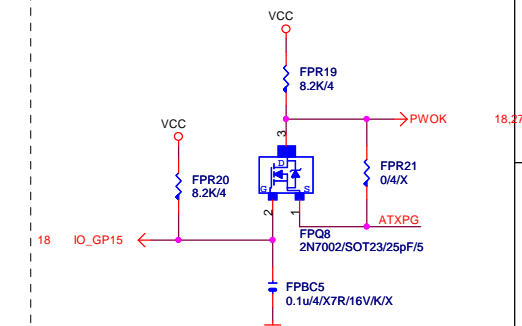


CPU Frequency Selection

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

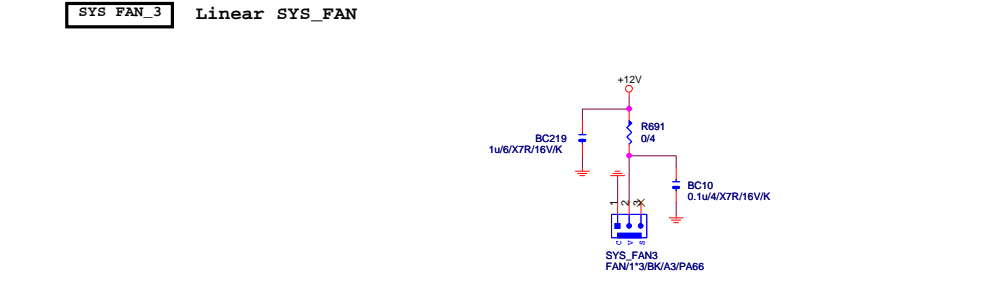
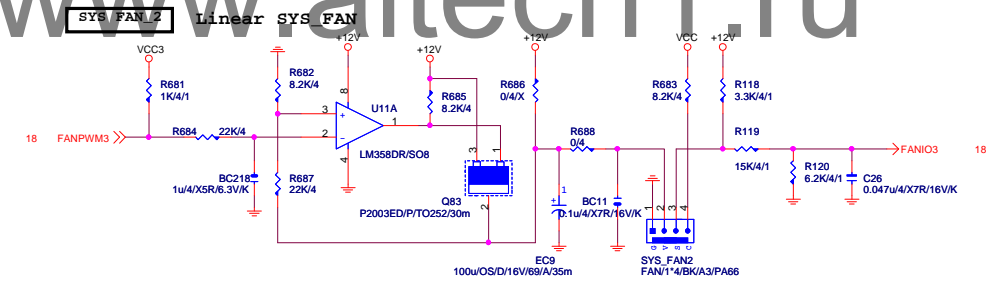
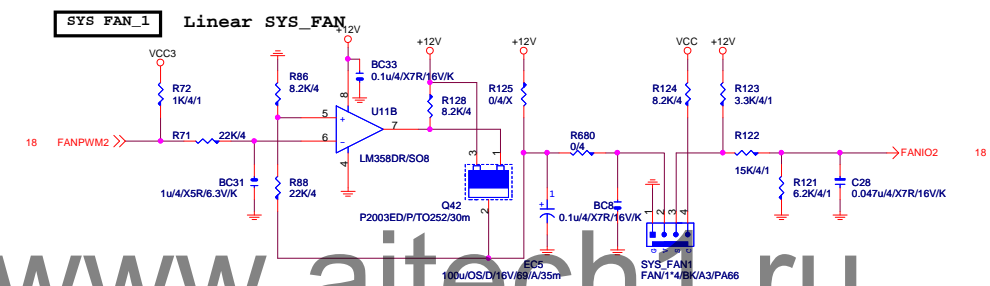
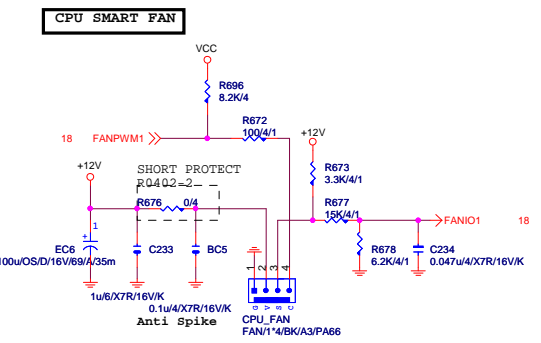
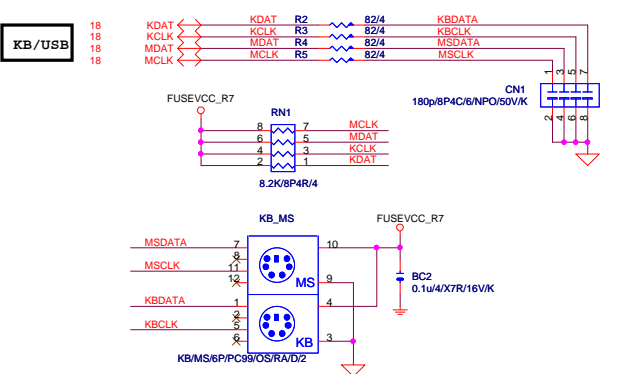
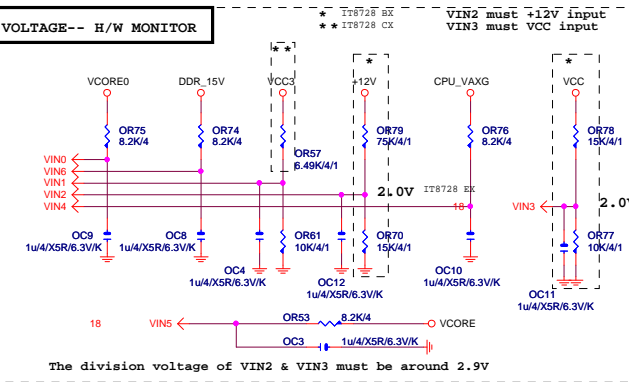
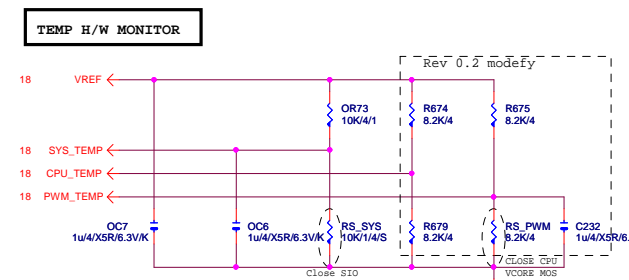


【技術通報R&D技術通報154】



Gigabyte Technology

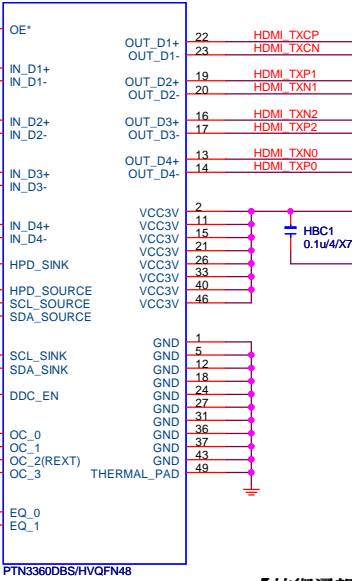
Title			
ATX POWER CONNECTOR			
Size Custom	Document Number	GA-Z87P-D3	Rev 1.0
Date:	Wednesday, March 27, 2013	Sheet	29 of 33



HDMI LEVEL SHIFT

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

HU1



ASM1442
Default [0,1,0]
450mv,-3dB

ASM1442 Default [0,0] 3dB
[0,1]6dB

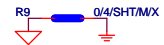
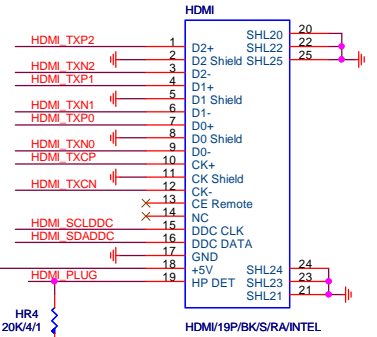
【技術通報R&D技術通報150】

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)

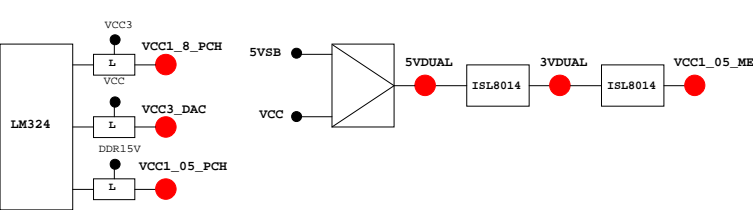
www.aitech1.ru



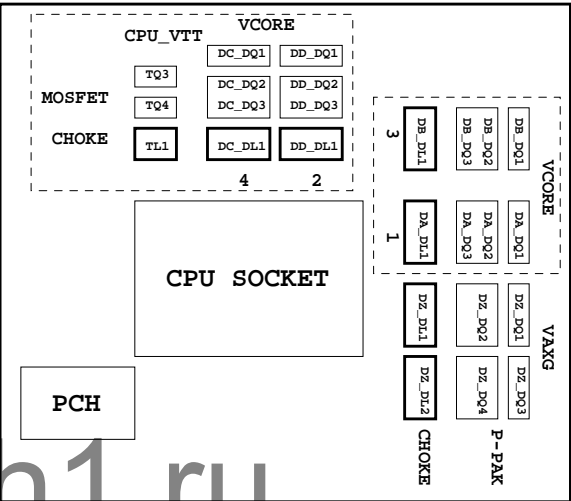
GIGABYTE™			
Title			
HDMI			
Size	Document Number	Rev	
Custom	GA-Z87P-D3	1.0	
Date:	Wednesday, March 27, 2013	Sheet	32 of 33

PIN NAME	PWR	AFTER PLUGST	Default	USAGE	NOTE
GP0	MAIN	H-Z	GPI	GPIO0	N/A
GP1/TACH1	MAIN		GPI	GPIO1	N/A
GP2/PIRQE#	MAIN		GPI	-PIRQE	P/U 8.2K VCC3
GP3/PIRQF#	MAIN		GPI	-PIRQF	P/U 8.2K VCC3
GP4/PIRQG#	MAIN		GPI	-PIRQG	P/U 8.2K VCC3
GP5/PIRQH#	MAIN		GPI	-PIRQH	P/U 8.2K VCC3
GP6/TACH2	MAIN		GPI	PCIEX1 Detect	P/U 8.2K VCC3
GP7/TACH3	MAIN		GPI	GPIO7	P/U 8.2K VCC3
GP8	STBY	H	GPI	GPIO8	N/A
GP9/OC5#	STBY		NATIVE	USB OC5#	N/A
GP10/OC6#	STBY		NATIVE	USB OC6#	N/A
GP11/SMBALERT#	STBY		NATIVE	USB PWR protect	P/U 8.2K 3VDUAL
GP12	STBY	L	GPI	GPIO12	N/A
GP13	STBY	L	GPI	LPCPME#	P/U 8.2K 3VDUAL
GP14/OC7#	STBY		NATIVE	USB OC7#	N/A
GP15	STBY	L	GPI	GPIO15(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	GPI	GPIO22	P/U 8.2K VCC3
GP23	MAIN		GPI	GPIO23	N/A
GP24	STBY	L	GPI	SKTOCC#	N/A
GP25	STBY			Mobile Only	N/A
GP26	STBY			Mobile Only	N/A
GP27	STBY	H	GPO	GPIO27	P/U 8.2K 3VDUAL
GP28	STBY	H	GPO	FWR LED	P/U 8.2K 3VDUAL
GP29	STBY	L	GPI	GPIO29	N/A
GP30	STBY	H-Z	GPI	Mobile Only	N/A
GP31	STBY	H-Z	GPI	Mobile Only	N/A
GP32	MAIN	H	GPO	N/A	N/A
GP33	MAIN	H	GPO	N/A	N/A
GP34	MAIN	H-Z	GPI	-PCI_STOP	P/U 8.2K VCC3
GP35	MAIN	L	GPO	-ACZ_DET	P/U 8.2K VCC3
GP36	MAIN		GPI	N/A	N/A
GP37	MAIN		GPI	N/A	N/A
GP38	MAIN	H-Z	GPI	PCIEX4 Detect	P/U 8.2K VCC3
GP39	MAIN	H-Z	GPI	GPIO39	P/U 8.2K VCC3
GP40	STBY		NATIVE	USB OC1#	N/A
GP41	STBY		NATIVE	USB OC2#	N/A
GP42	STBY		NATIVE	USB OC3#	N/A
GP43	STBY		NATIVE	USB OC4#	N/A
GP44	STBY	L	NATIVE	GPIO44	P/U 8.2K 3VDUAL
GP45	STBY		NATIVE	GPIO45	P/U 8.2K 3VDUAL
GP46	STBY	L	NATIVE	GPIO46	P/U 8.2K 3VDUAL
GP47	STBY			Mobile Only	N/A
GP48	MAIN	H-Z	IN	GPIO48	P/U 8.2K 3VDUAL
GP49	MAIN	H-Z	IN	GPIO49	P/U 8.2K 3VDUAL
GP50	MAIN		NATIVE	-REQ1	P/U 2.2K VCC
GP51	MAIN	H	NATIVE	-GNT1	N/A
GP52	MAIN		NATIVE	-REQ2	P/U 2.2K VCC
GP53	MAIN	H	NATIVE	-GNT2	N/A
GP54	MAIN		NATIVE	-REQ3	P/U 2.2K VCC
GP55	MAIN	H	NATIVE	-GNT3	N/A
GP56	STBY		NATIVE	Mobile Only	N/A
GP57	STBY	H-Z	IN	VCORE_OV1	P/U 8.2K 3VDUAL
GP58	STBY	H-Z	NATIVE	F_USB_OC	P/U 8.2K 3VDUAL
GP59	STBY		NATIVE	USB_OCO#	N/A
GP60	STBY	H-Z	NATIVE	N/A(Reverse)	P/U 8.2K 3VDUAL
GP61	STBY	L	NATIVE	-SUSTAT	N/A
GP62	STBY	L	NATIVE	SUSCLK	N/A
GP63	STBY	L	NATIVE	GPIO63	N/A
GP64	MAIN	L	NATIVE	CLKOUTFLEX0	N/A
GP65	MAIN	L	NATIVE	CLKOUTFLEX1	N/A
GP66	MAIN	L	NATIVE	CLKOUTFLEX2	N/A
GP67	MAIN	L	NATIVE	CLKOUTFLEX3	N/A
GP72	STBY	H-Z	NATIVE	VCORE_OV4	P/U 8.2K 3VDUAL
GP73	STBY			Mobile Only	N/A
GP74	STBY	H-Z	NATIVE	1_05V_OV2	P/U 8.2K 3VDUAL
GP75	STBY	H-Z	NATIVE	N/A(Reverse)	P/U 8.2K 3VDUAL

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#CIRRXX1/GP55	-RSMRST	
PME#/GP54	-LPCPME	
PD5/GP75/BUSS00	N/A	
PIN NAME	USAGE	NOTE
FAN_TAC2/GP52	FANIO2	
FAN_TAC3/GP37	FANIO3	
VIDO3/FAN_TAC4/GP25/DSR2#	FANIO4	
FAN_CTL2/GP51	FANPWM2	
FAN_CTL3/GP36	FANPWM3	
VID4/GP34	BEEP-	
VID3/GP33	TURBO1	
VID2/GP32	TURBO0	
VCORE_GOOD/VID6/GP63	CPUT_LED1_C	
VID5/GP35	CPUT_LED2_C	
VID1/GP31	CPUT_LED3_C	
VID0/GP30	-LAN1_DSM	NBT_LED1_C
SLCT/GP80	CPU_LED1_C	
PE/GP81	CPU_LED2_C	
BUSY/GP82	CPU_LED3_C	
PD3/GP73/BUSSI1	SB_LED1_C	
PD4/GP74/BUSSI2	SB_LED2_C	
VCORE_EN/VID7/GP64	IT_GP64	SB_LED3_C
PD0/GP70	NB_LED1_C	
PD1/GP71	NB_LED2_C	
PD2/GP72/BUSSI0	NB_LED3_C	
GP22/SCK	LOW_PWR_1	
VIDO5/GP27/SIN2	LOW_PWR_2	
PCIRST2#/GP11	-PFMRST1	
PCIRST1#/GP12	-PFMRST2	
3VSB5W#/GP40	CSI_F0	BSEL166_1
SUSC#/GP53	CSI_F1	BSEL166_2
GP23/SI	BSEL166_3/CSISBSL	
VIDO0/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/SMB_C_R	2X PIN	FST_2X8
INIT#/GP85/SMBD_M	SEC_2x8	GTLREF_AD2
ACK#/GP83	DDR_LED1_C	
VIDO1/GP21/DCD2#	DDR_LED2_C	
STB#/GP87/SMBC_M	DDR_LED3_C	
PWRON#GP44	VCORE_OV1	
PANSWH#/GP43	PWRBTSW	
KDAT/GP61	-PWRBTSW	
KCLK/GP60	KDAT	
MDAT/GP57	KCLK	
MACL/GP56	MDAT	
GP66/VLDT_EN/GB_02	NBT_LED1_C	MCLK
SVD/PCIRSTIN#/CIRTX/GP15	PWM2_CR	
KDAT/GP61	PWM2_CR	
GP67/CPU_PG/GB_03	EN_LOADLINE	IT_GP67/-EN_PWM2
SLIN#/GP84/SMBD_R	-EN_PWM2	
PSI_L/FAN_CLT5/CIRRXX2/GP16	-THERM	
VIDO4/GP26/SOUT2	DDR18V_PH2_EN	
VIDO2/FAN_TAC5/GP24/DSR2#	DDR18V_LED	
VIDO6/GP17/RI2#	1_1V_PH_EN	
VIDO7/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

	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

散熱模組料號：

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

Gigabyte Technology			
Title			
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