

# Model Name: GA-B75M-D2P

SHEET

TITLE

01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	CPU_LGA1155-A
05	CPU_LGA1155-B
06	CPU_LGA1155-C
07	DDR III CHANNEL A/B
08	PCH_FDI,DMI,USB,PCIE,NVRAM
09	PCH_DP,CLK BUFFER,DVI,RGB
10	PCH_HOST,SATA,PCI
11	PCH_GPIO,CTRL,AUDIO
12	PCH_PWR,GND
13	PCI EXPRESS*16 SLOT
14	PCI EXPRESS*1 X2 SLOT
15	ITE 8772 LPC IO
16	BIOS,KB_MS,USB30_20
17	HWM,FAN CTRL,OV,-PROCHOT
18	FP,FUSB,SATALED
19	Realtek ALC887-VD2
20	REAR AUDIO JACK
21	REALTEK RTL8111F-VL
22	DISCRETE POWER
23	ATX, COM&LPT
24	RT8120_DDR/CPU_VTT/VSA
25	VCORE ISL95836_1
26	VCORE ISL95836_2

<b>Gigabyte Technology</b>		
Title		
Cover Sheet		
Size Custom	Document Number <b>GA-B75M-D2P</b>	Rev <b>1.01</b>
Date: Monday, December 30, 2013	Sheet 1 of 26	

**Model Name: GA-B75M-D2P**

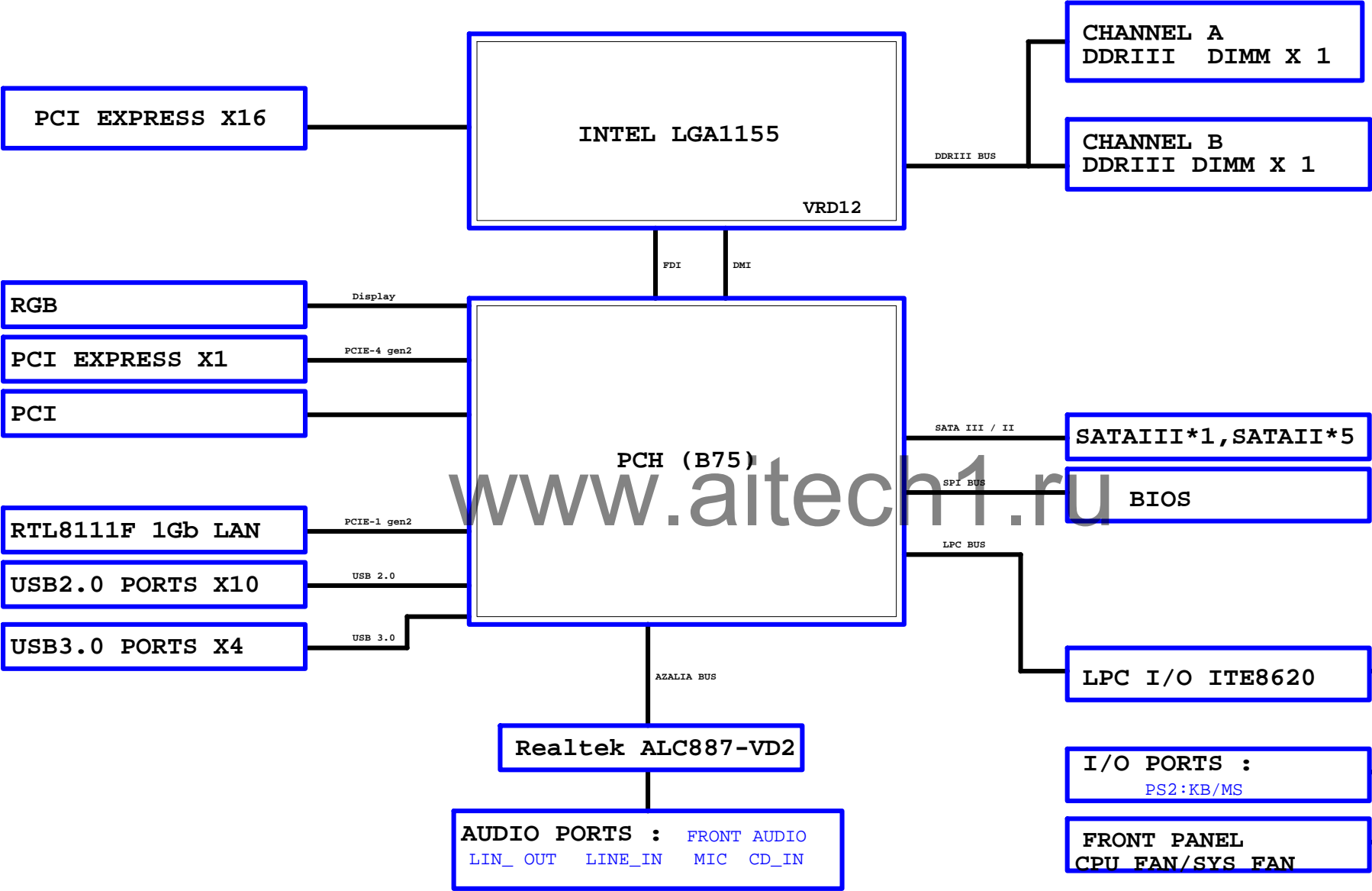
## Component value change history

[illegible]

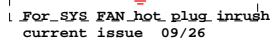
### Circuit or PCB layout change

[illegible]

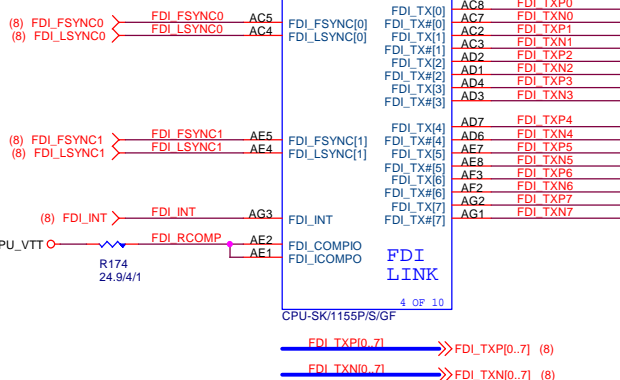
BLOCK DIAGRAM



(E)



(D)



(C)



DDR\_15V

R193  
100/4/1

SM\_VREF

R190  
100/4/1

C79  
0.1u4/X7R/16V/K

## Gigabyte Technology

Title				CPU LGA1155-A			
Size	Custom	Document Number				Rev	
		GA-B75M-D2P				1.0	
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(A)



1 OF 10

CPU-SK/1155P/S/GF

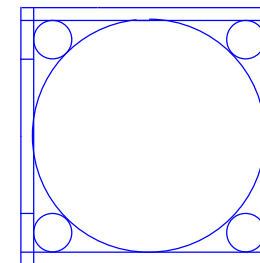
(B)



2 OF 10

CPU-SK/1155P/S/GF

(CR)

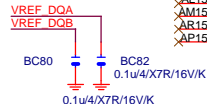
CR  
CPU RETAINTION/X

LGA1155\_P



ILM\_BP/1156/CSP/ILM\_BP/1156/CSP/[12KRC-0F0001-06R\_12KRC-0F0001-31R]

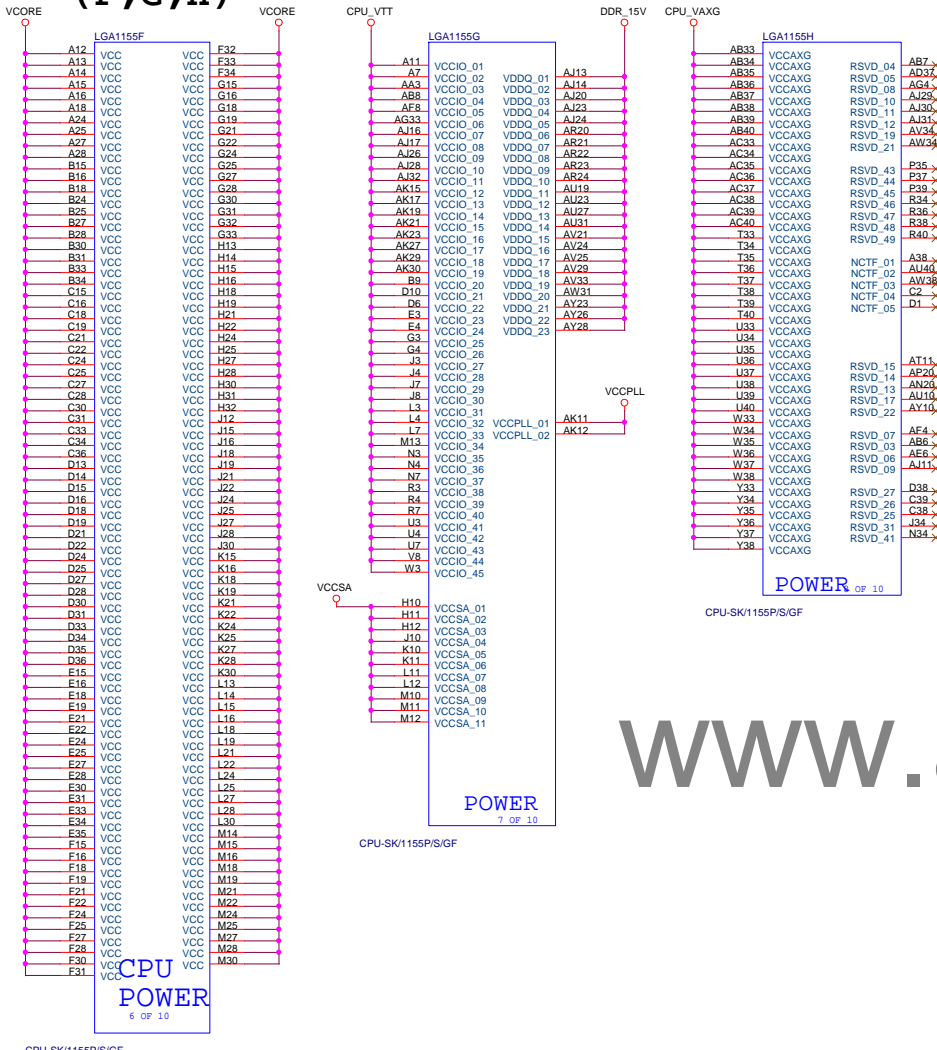
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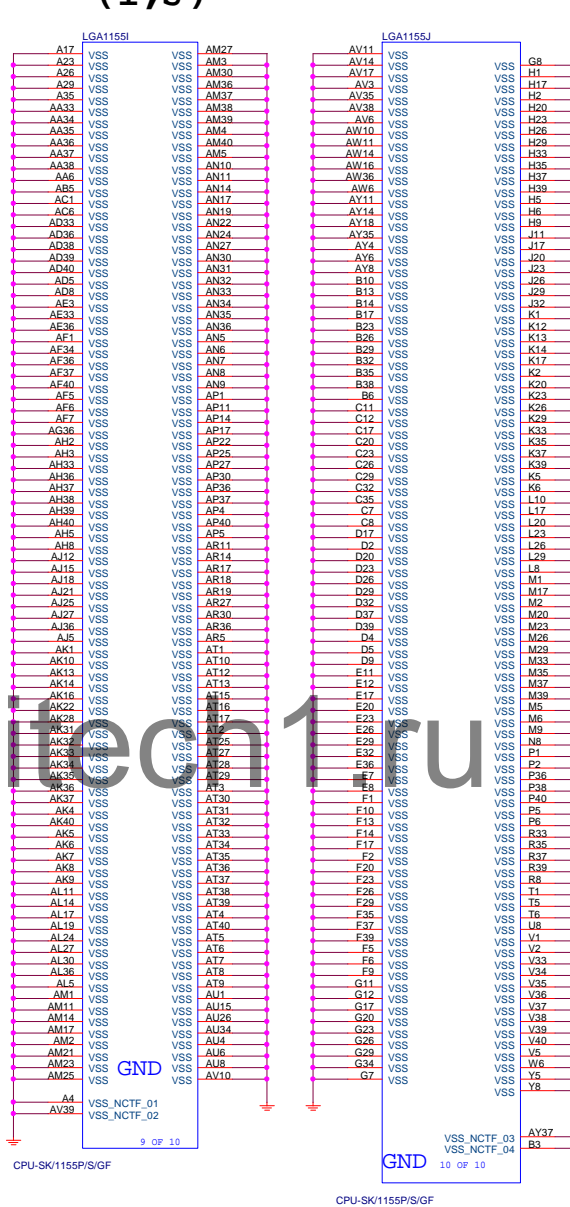
## Gigabyte Technology

<b>Gigabyte Technology</b>			
Title			
<b>CPU LGA1156-B</b>			
Size	Document Number	Rev	
Custom	<b>GA-B75M-D2P</b>	<b>1.0</b>	
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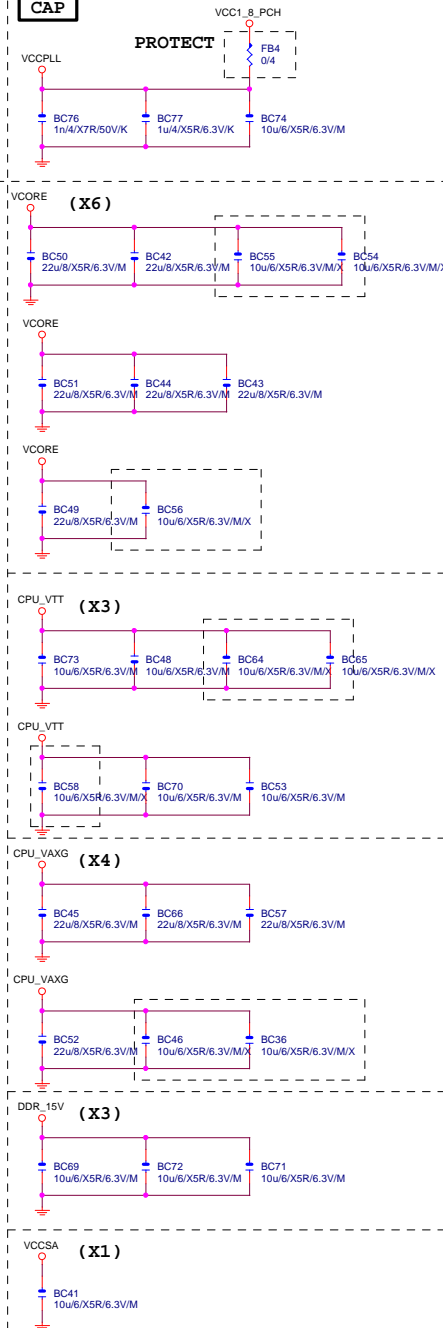
LGA1155 (F,G,H)



LGA1155 (I,J)



## CAP



## Gigabyte Technology

Title CPU I GA1156-C

Size	Document Number
Custom	GA-B75M-D2E

Date: Monday, December 30, 2013 Sheet

Rev  
1.0





**(B)**

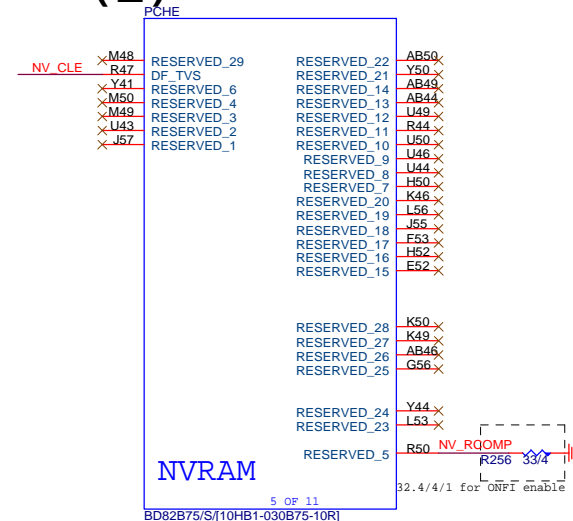


(G)



Schematic diagram of the CLK\_PCH signal path. It shows two signal lines, SRCCLK\_PCH (red) and -SRCCLK\_PCH (blue), passing through resistors R414 and R416 respectively. Both lines then connect to a common ground point through 8.2K/4 resistors. A dashed box below indicates that the -DOTCLK signal path (resistors R417 and R419) is shorted to GND in non-graphic SKUs.

(E)



USB OC#	Configure
OC0#	USB0,1(F_USB30)
OC1#	USB2,3(USB30_20)
OC2#	USB4,5(F_USB1)
OC3#	USB6,7(B75:N/A)
OC4#	USB8,9(F_USB2)
OC5#	USB10,11(USB_LAN)
OC6#	USB12,13(KB_USB)
OC7#	N/A

## Gigabyte Technology

Title	PCH FDI,DMI,USB ,PCIE,NVRAM
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Size	Document Number	Rev
Custom	<b>GA-B75M-D2P</b>	1.01

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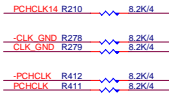
(F)



(F)



## PCH CLK PI



## VGA ESD



## JGA DDO



## VGA DDC



## VGA CONNECTOR



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PCH

(C)

B75 SATA3.0 ONLY PORT0  
B75 Not Support RAID

PCHC

For WIFI

CL\_CLK1  
CL\_DATA1  
CL\_RST1#

CLINK

SATA3

SATA2

SATA1

SATA0

SATA0TXN

SATA0TXP

SATA0RXN

SATA0RXP

SATA1RXN

SATA1RXP

SATA1TXN

SATA1TXP

SATA2RXN

SATA2RXP

SATA2TXN

SATA2TXP

SATA3RXN

SATA3RXP

SATA3TXN

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SATA4RXN

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SATA16RXN

SATA16RXP

SATA16TXN

SATA16TXP

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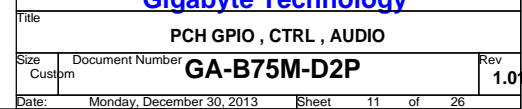
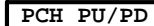
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SATA1RXP

SATA1TXN

SATA1TXP

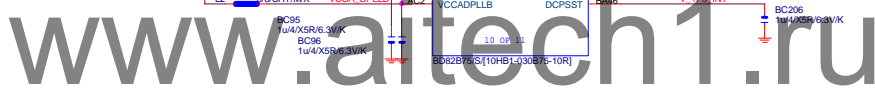
**(D)**



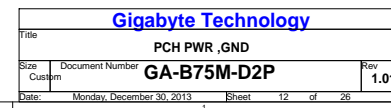
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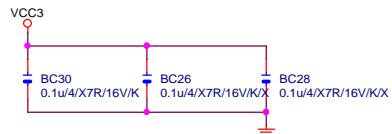
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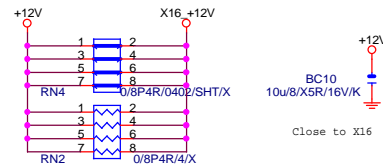
(J)



# PCIEX16 CAP



# PCIEX16 PROTECT SHT



# PCIEX16 AC CAP

EXP A TXP0	C32	0.22u/4/X5R/6.3V/K	EXP A TXP0C
EXP A TXN0	C30	0.22u/4/X5R/6.3V/K	EXP A TXN0C
EXP A TXP1	C35	0.22u/4/X5R/6.3V/K	EXP A TXP1C
EXP A TXN1	C37	0.22u/4/X5R/6.3V/K	EXP A TXN1C
EXP A TXP2	C39	0.22u/4/X5R/6.3V/K	EXP A TXP2C
EXP A TXN2	C41	0.22u/4/X5R/6.3V/K	EXP A TXN2C
EXP A TXP3	C43	0.22u/4/X5R/6.3V/K	EXP A TXP3C
EXP A TXN3	C45	0.22u/4/X5R/6.3V/K	EXP A TXN3C
EXP A TXP4	C46	0.22u/4/X5R/6.3V/K	EXP A TXP4C
EXP A TXN4	C49	0.22u/4/X5R/6.3V/K	EXP A TXN4C
EXP A TXP5	C50	0.22u/4/X5R/6.3V/K	EXP A TXP5C
EXP A TXN5	C51	0.22u/4/X5R/6.3V/K	EXP A TXN5C
EXP A TXP6	C52	0.22u/4/X5R/6.3V/K	EXP A TXP6C
EXP A TXN6	C54	0.22u/4/X5R/6.3V/K	EXP A TXN6C
EXP A TXP7	C57	0.22u/4/X5R/6.3V/K	EXP A TXP7C
EXP A TXN7	C58	0.22u/4/X5R/6.3V/K	EXP A TXN7C
EXP A TXP8	C60	0.22u/4/X5R/6.3V/K	EXP A TXP8C
EXP A TXN8	C61	0.22u/4/X5R/6.3V/K	EXP A TXN8C
EXP A TXP9	C62	0.22u/4/X5R/6.3V/K	EXP A TXP9C
EXP A TXN9	C63	0.22u/4/X5R/6.3V/K	EXP A TXN9C
EXP A TXP10	C64	0.22u/4/X5R/6.3V/K	EXP A TXP10C
EXP A TXN10	C65	0.22u/4/X5R/6.3V/K	EXP A TXN10C
EXP A TXP11	C66	0.22u/4/X5R/6.3V/K	EXP A TXP11C
EXP A TXN11	C67	0.22u/4/X5R/6.3V/K	EXP A TXN11C
EXP A TXP12	C68	0.22u/4/X5R/6.3V/K	EXP A TXP12C
EXP A TXN12	C70	0.22u/4/X5R/6.3V/K	EXP A TXN12C
EXP A TXP13	C72	0.22u/4/X5R/6.3V/K	EXP A TXP13C
EXP A TXN13	C73	0.22u/4/X5R/6.3V/K	EXP A TXN13C
EXP A TXP14	C74	0.22u/4/X5R/6.3V/K	EXP A TXP14C
EXP A TXN14	C75	0.22u/4/X5R/6.3V/K	EXP A TXN14C
EXP A TXP15	C77	0.22u/4/X5R/6.3V/K	EXP A TXP15C
EXP A TXN15	C78	0.22u/4/X5R/6.3V/K	EXP A TXN15C

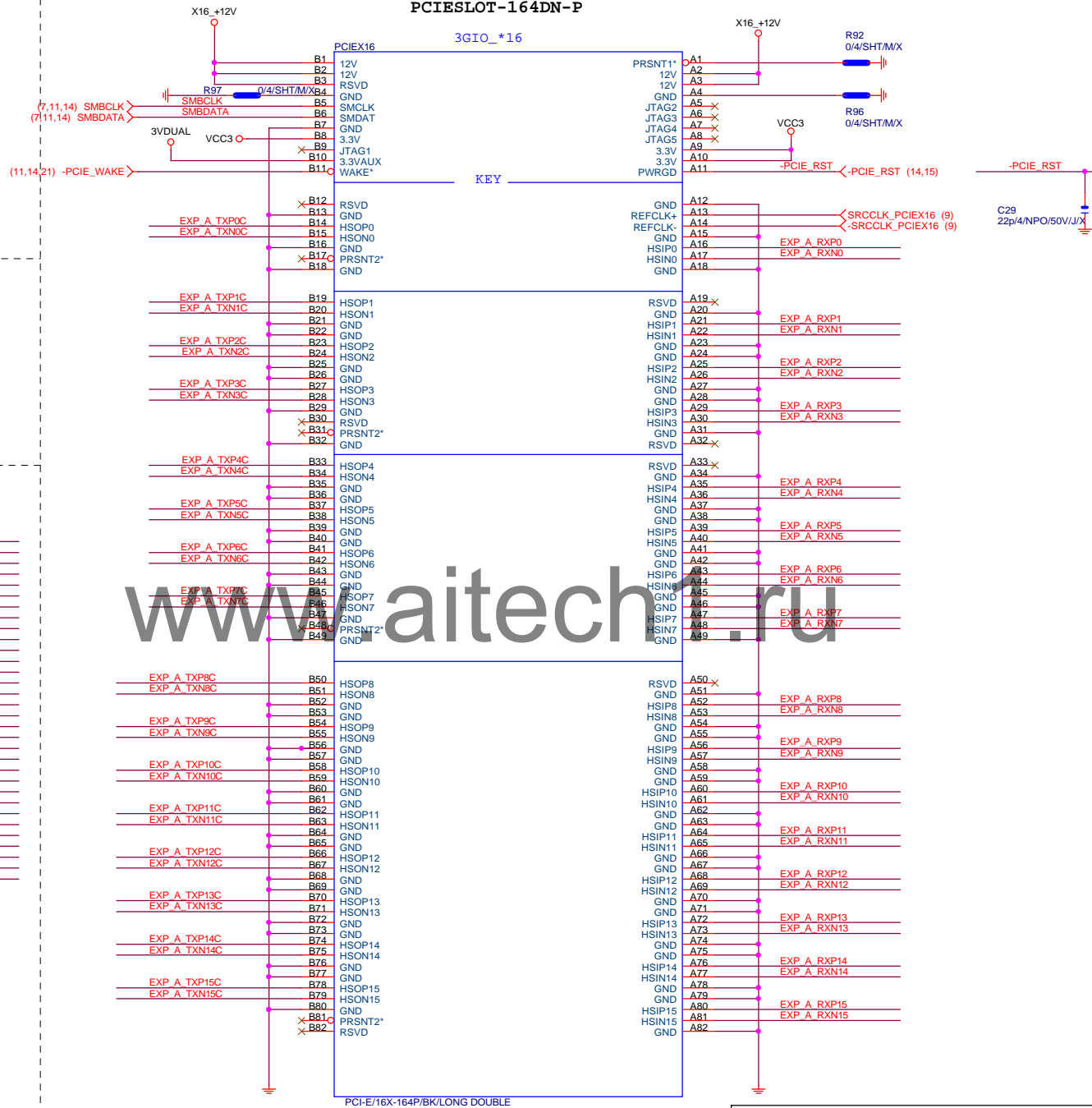
EXP A RXP0.15] >> EXP\_A\_RXP0.15] (4)

EXP A RXN0.15] >> EXP\_A\_RXN0.15] (4)

EXP A TXP0.15] >> EXP\_A\_TXP0.15] (4)

EXP A TXN0.15] >> EXP\_A\_TXN0.15] (4)

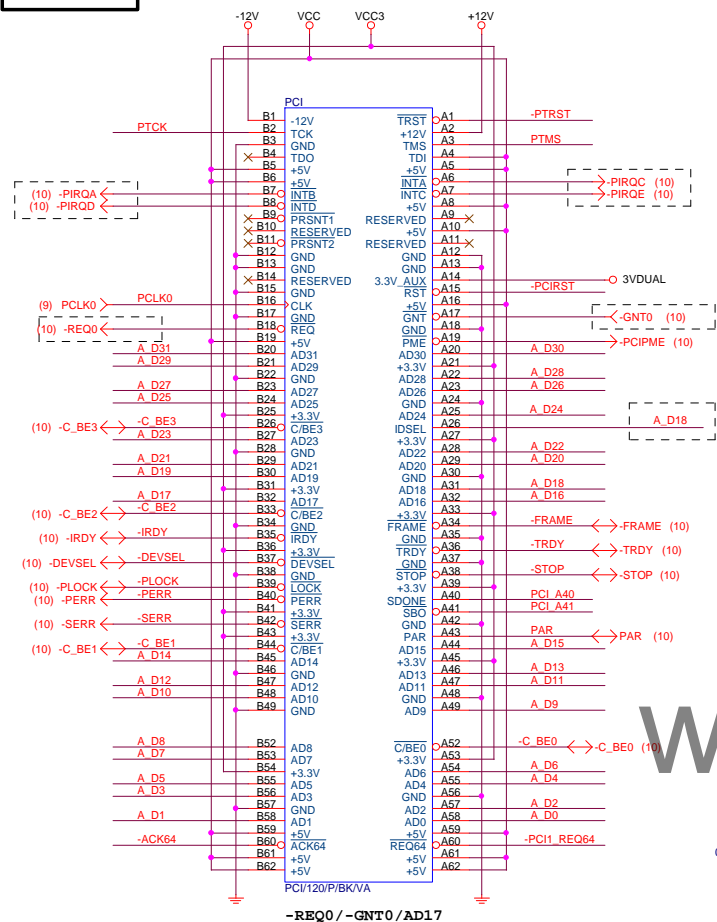
# PCIEX16 SLOT



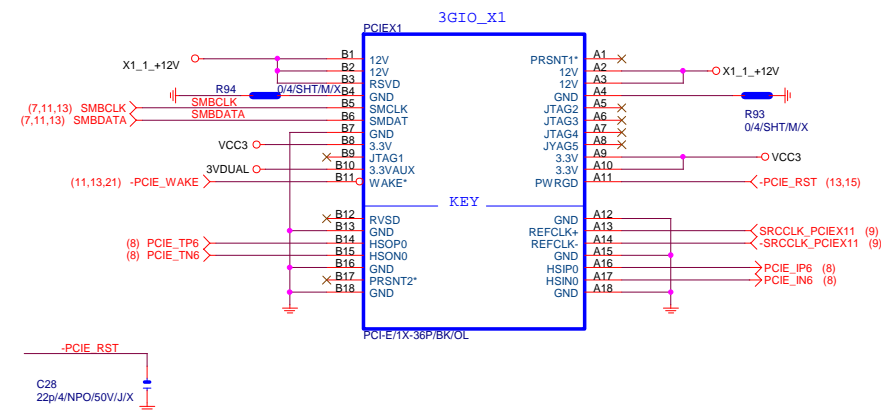
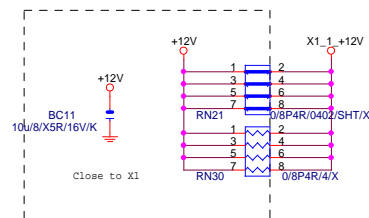
Gigabyte Technology

Title			PCI EXPRESS * 16	
Size			GA-B75M-D2P	
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## PCI SLOT



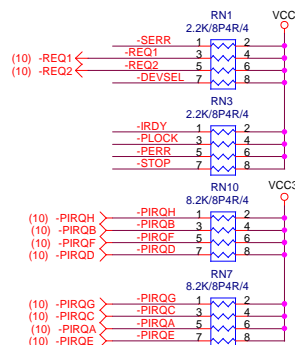
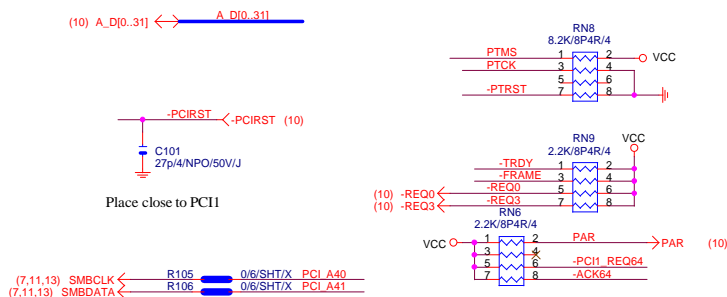
## PCIEX1 SLOT




## PCIEX1 CAP



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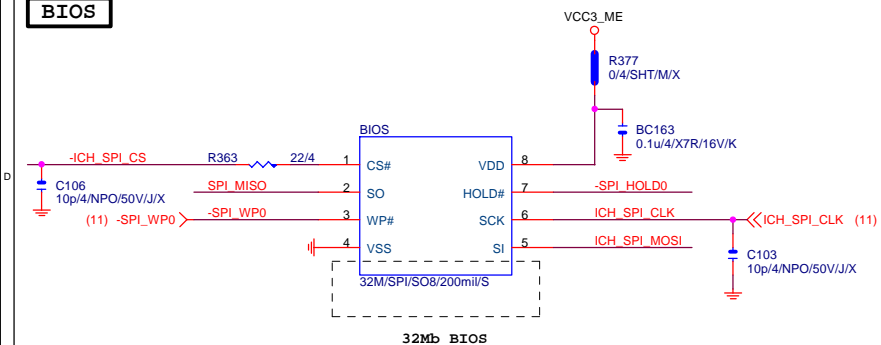


			
Title			
PCI EXPRESS X 1 PORT			
Size Custom	Document Number		Rev
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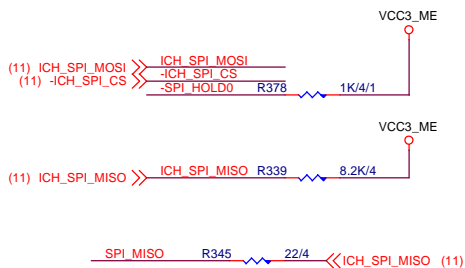
## BIOS



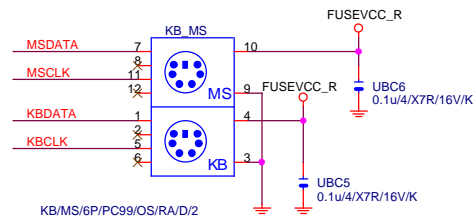
32Mb BIOS

BOOT DEVICE	GNT1	GNT0
LPC	0	0
PCI	0	1
SPI	1	1

1 means floating  
0 means PD 1K

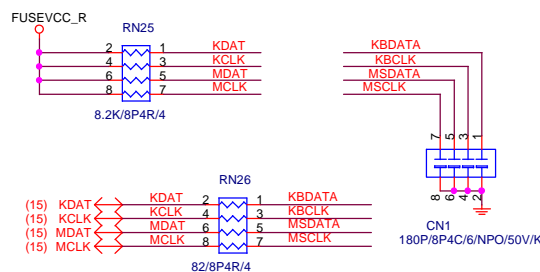


## KB/MS

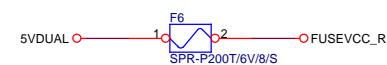


EMI

AGND

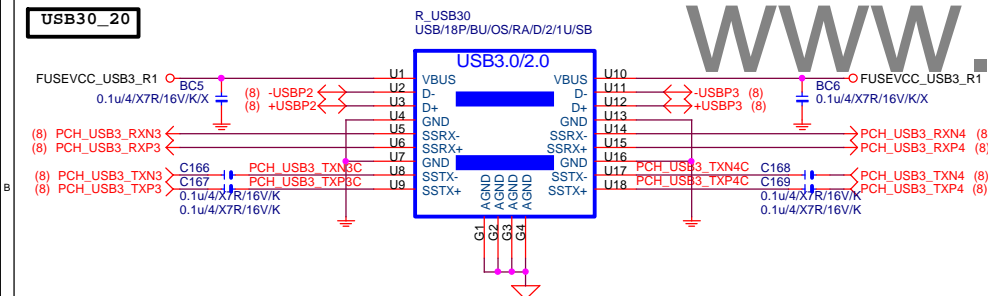


## USB2.0 PWR



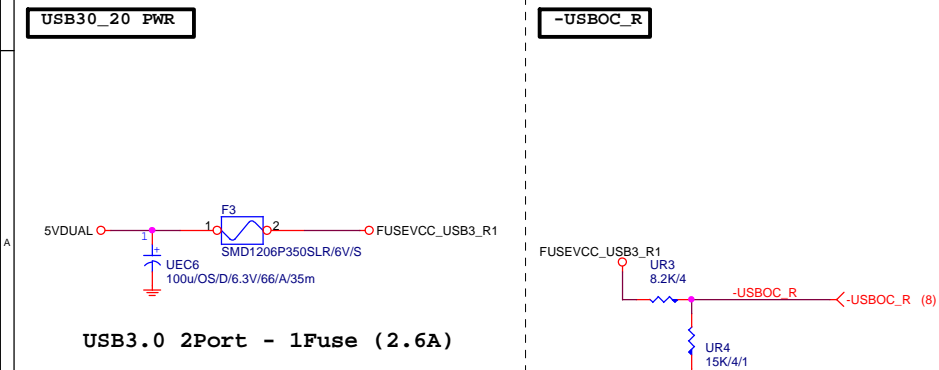
Close to connector

## USB30\_20

R\_USB30  
USB18P/BU/OS/RA/D/2/1U/SB

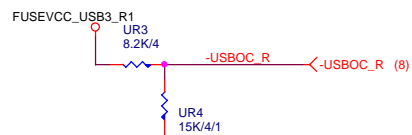
USB3.0/2.0

## USB30\_20 PWR



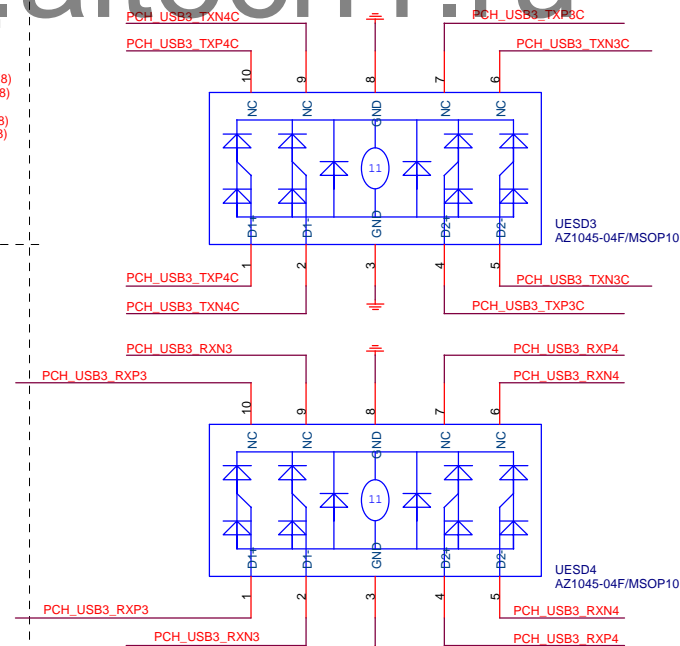
USB3.0 2Port - 1Fuse (2.6A)

## -USBOC\_R

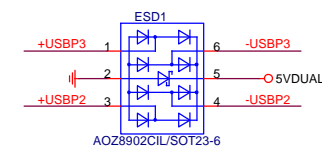


## USB30\_20 ESD PROTECT

## USB3.0 ESD



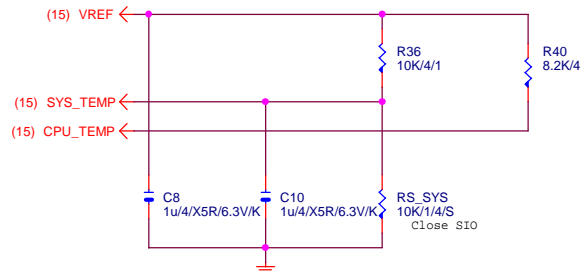
## USB2.0 ESD



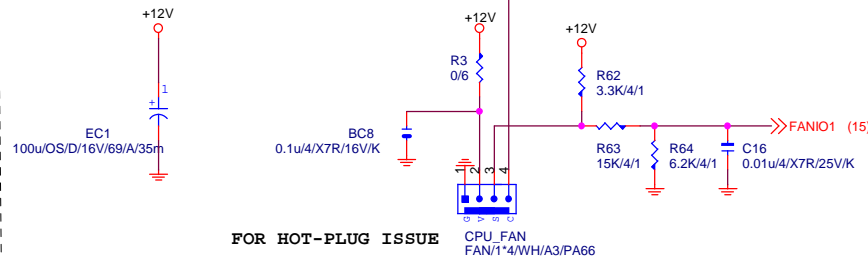
Gigabyte Technology

Title			
BIOS,KB_MS,USB30/20			
Size	Document Number	Rev	
Custom	GA-B75M-D2P	1.01	
Date:	Monday, December 30, 2013	Sheet	16 of 26

# TEMP H/W MONITOR

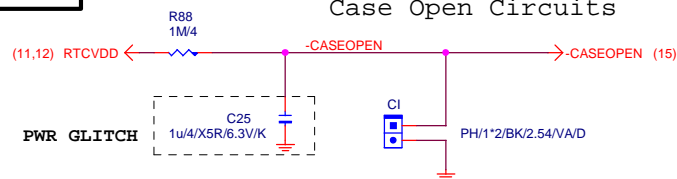


# CPU SMART FAN



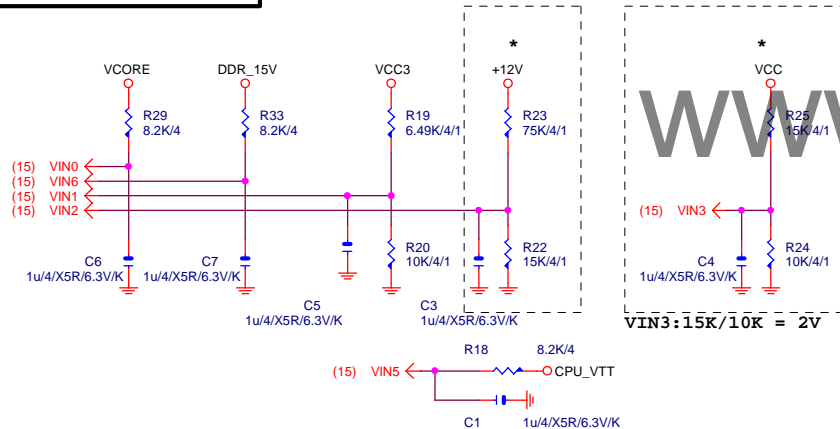
# CASE OPEN

## Case Open Circuits

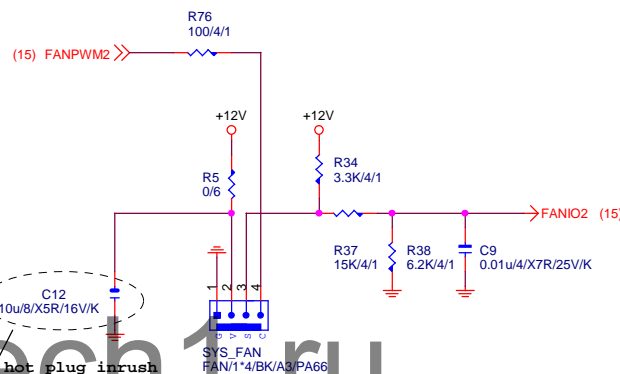


# VOLTAGE-- H/W MONITOR

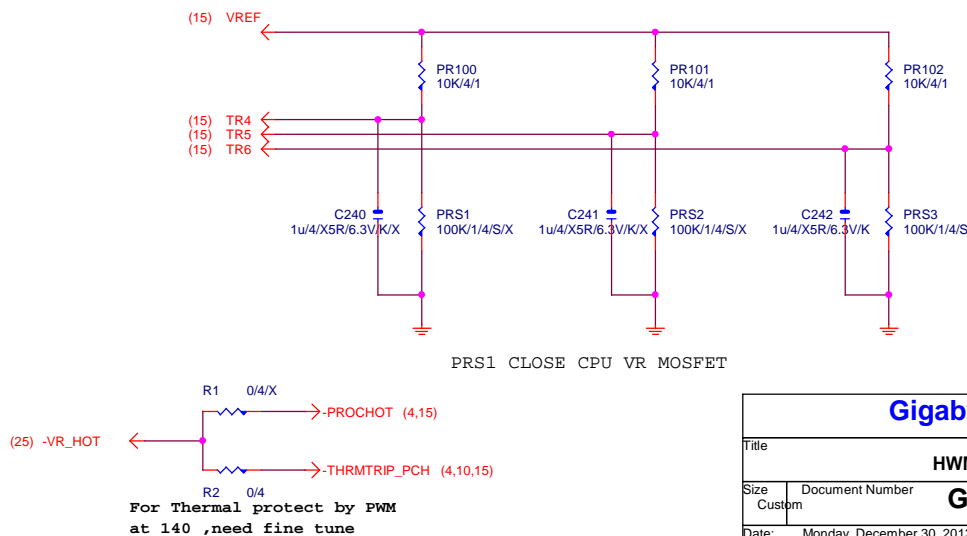
$$VIN2: 75K/15K = 2V$$



# SYS SMART FAN



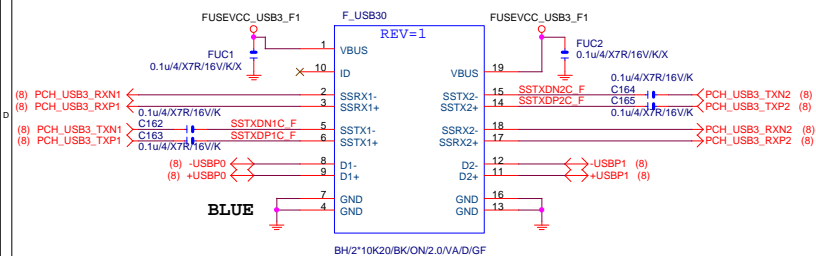
# -PROHOT



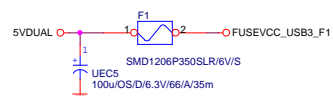
Gigabyte Technology

Title			
HWM,FAN CTRL,OV			
Size	Document Number	Rev	
Custom	GA-B75M-D2P	1.01	
Date:	Monday, December 30, 2013	Sheet	17 of 26

F\_USB30

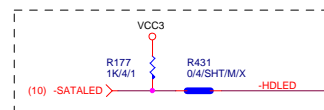


F_USB30 PWR	
-------------	--

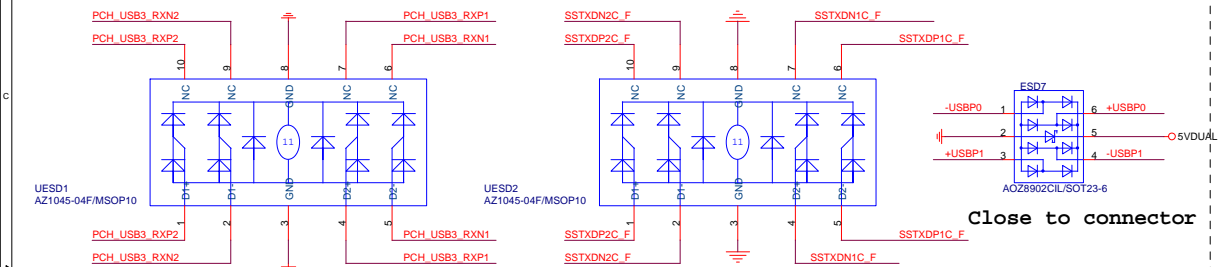


USB3.0 2Port - 1Fuse (2.6A)

SATA LED

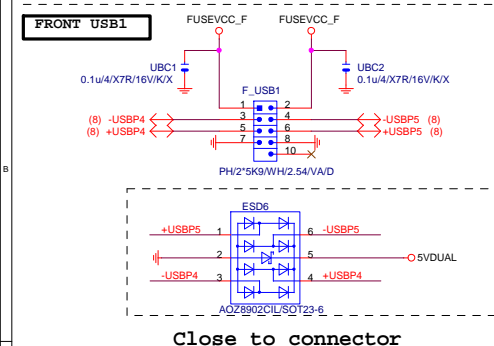


F\_USB30 ESD PROTECT

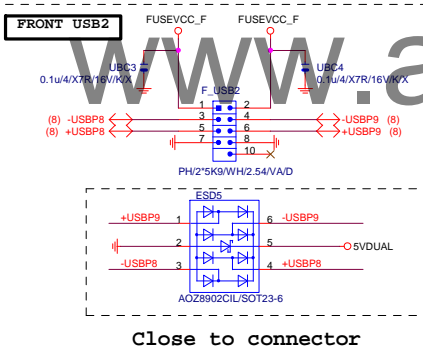


## SPKR

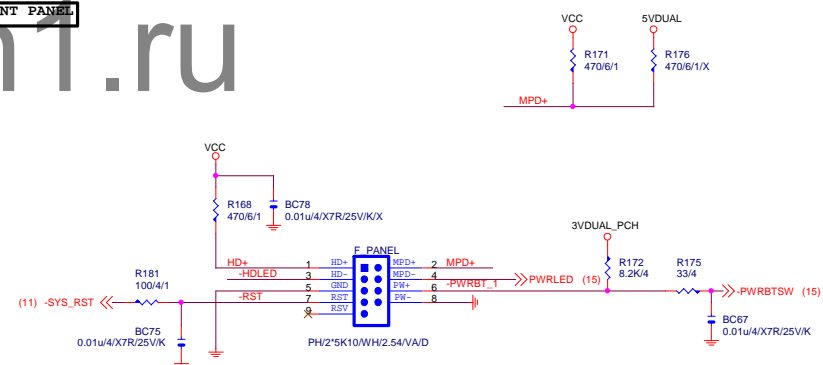
FRONT USB1



FRONT USB2

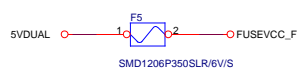


## INTEL FRONT PANEL

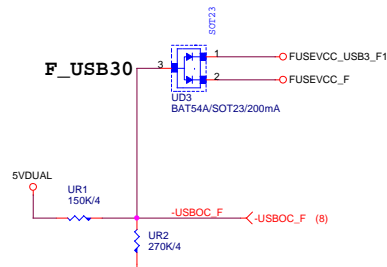


## FUSEVCC\_F

F\_USB1, F\_USB2 4-Port 2.6A

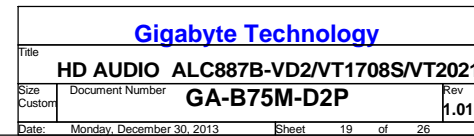


## -USB0C\_F

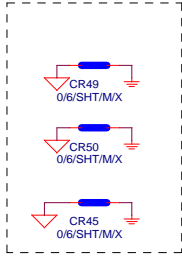
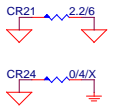
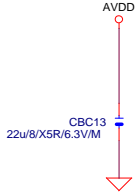


CR34: 20K/4/1% @Realtek cdec  
CR34: 5.1K/4/1 %@VIA cdec  
CBC39 100P @VIA codec

CR34 20K/4/1  
CBC42 100p/4/NPO/50V/J/X

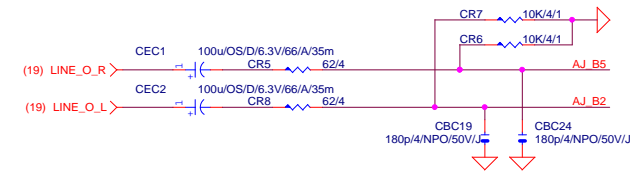


CODEC POWER/EMI PAD



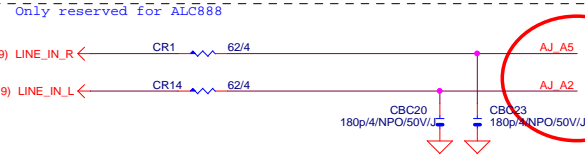
For EMI

LINE-OUT

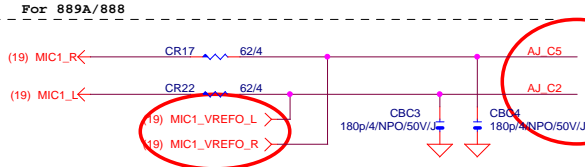


LINE-IN

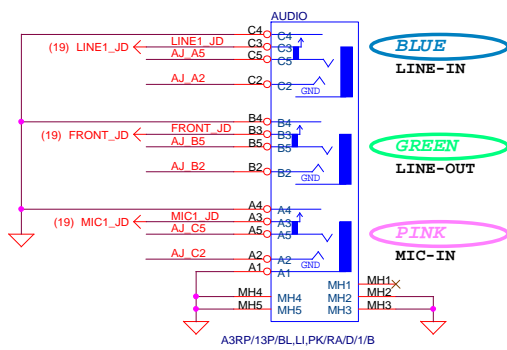
Verify MIC function in LINE-in



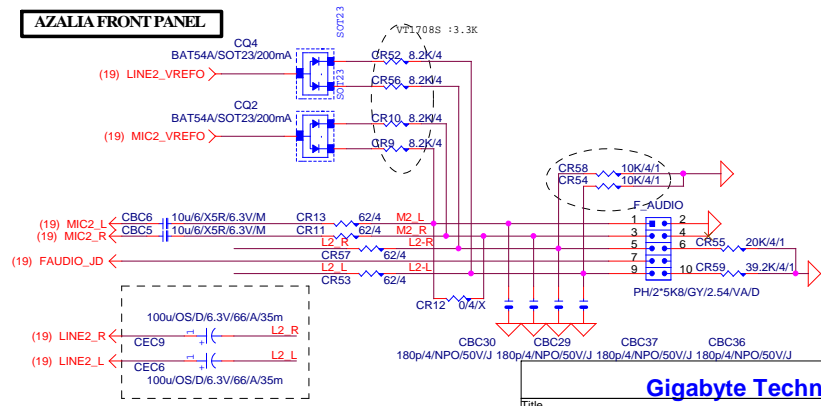
MIC-IN



SPDIF\_OUT



AZALIA FRONT PANEL



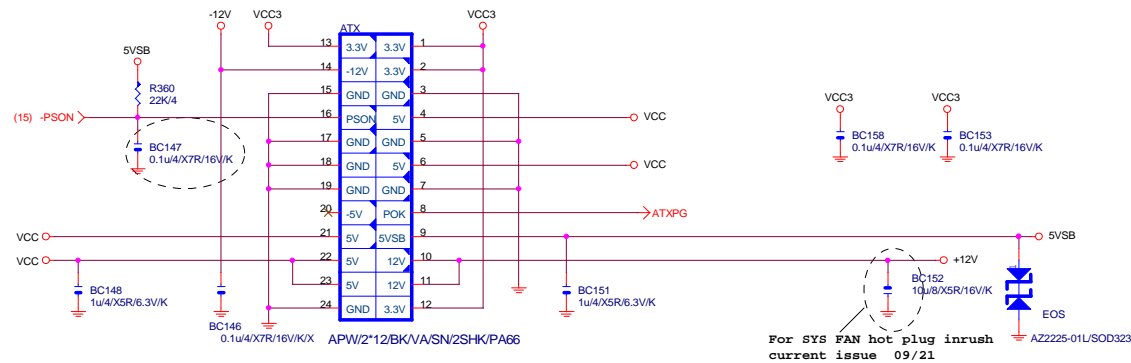
Gigabyte Technology			
Title			
AUDIO JACK			
Size			
Custom			
Date: Monday, December 30, 2013			
Sheet 20 of 26			
Rev 1.01			



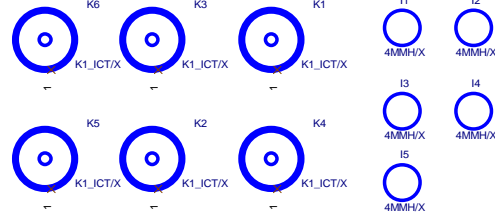
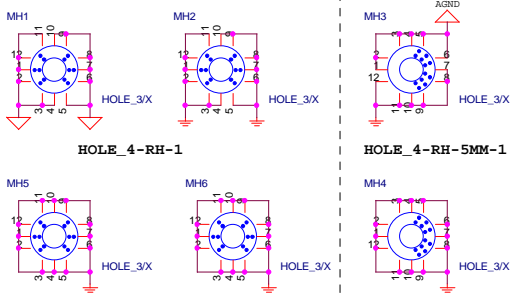
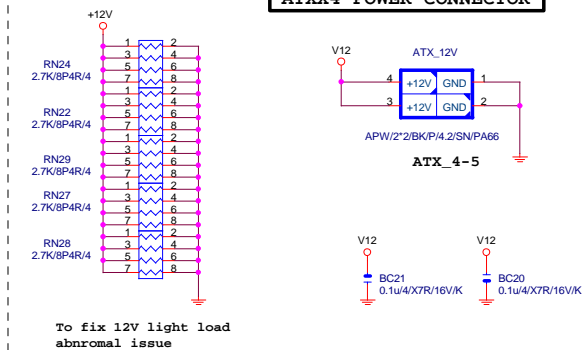




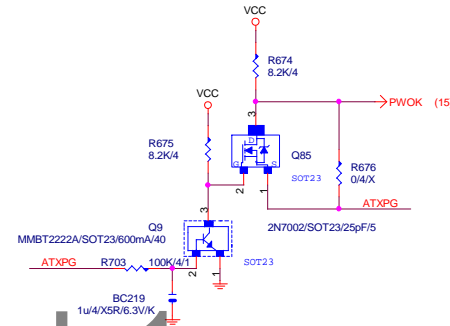
# ATXX24 POWER CONNECTOR



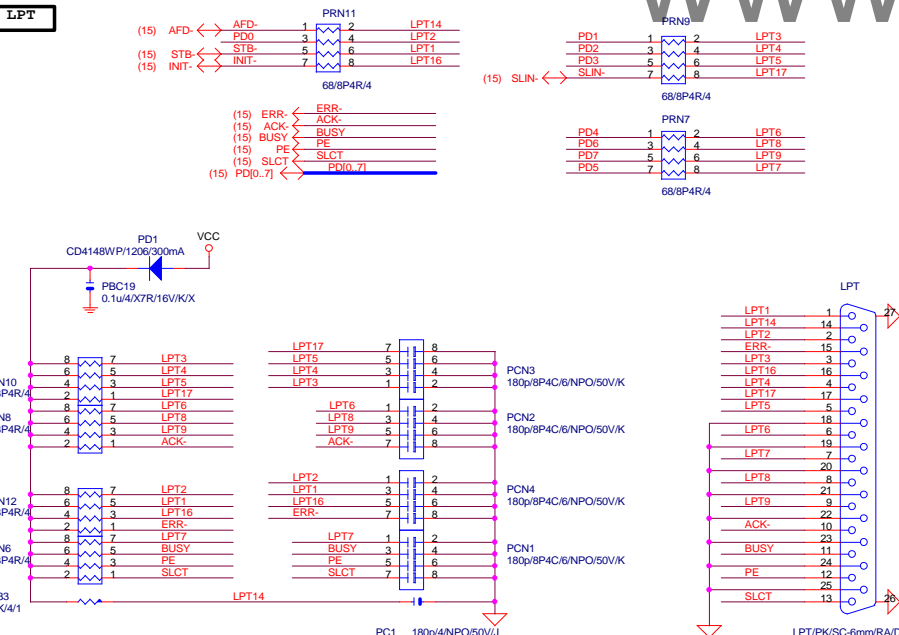
# ATXX4 POWER CONNECTOR



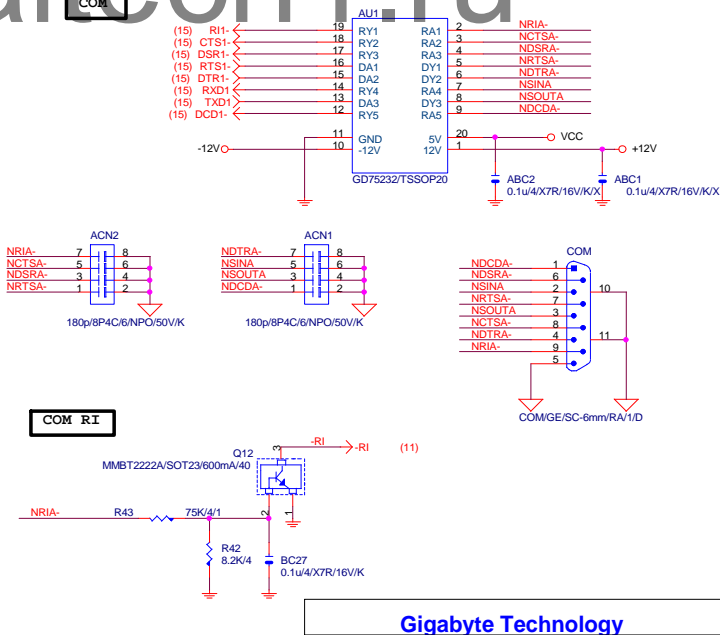
To prevent the 5VSB under loading when boot



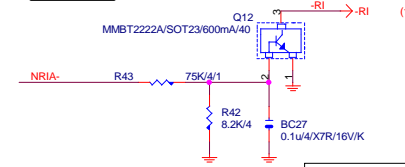
# LPT



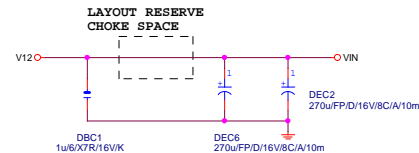
# COM



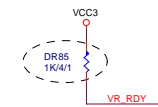
# COM RI







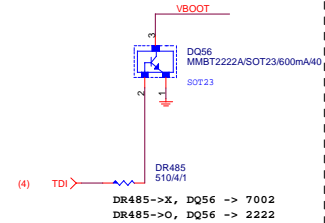
- |       |   |       |      |
|-------|---|-------|------|
| UG1   | → | UG1   | (26) |
| PH1   | → | PH1   | (26) |
| LG1   | → | LG1   | (26) |
| ISEN1 | → | ISEN1 | (26) |
|       |   |       |      |
| UG2   | → | UG2   | (26) |
| PH2   | → | PH2   | (26) |
| LG2   | → | LG2   | (26) |
| ISEN2 | → | ISEN2 | (26) |
|       |   |       |      |
| UGS   | → | UGS   | (26) |
| PHS   | → | PHS   | (26) |
| LGS   | → | LGS   | (26) |
|       |   |       |      |
| PWM3  | → | PWM3  | (26) |
| ISEN3 | → | ISEN3 | (26) |

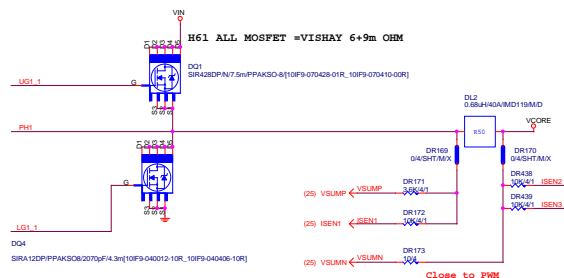


```

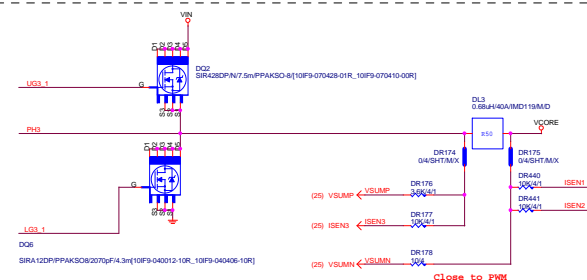
FOR RMA      Set VBOOT=GND  for Vboot=0V
              VBOOT=OPEN  for
              Vboot=1.1V

```

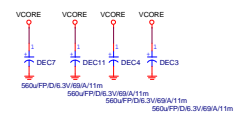
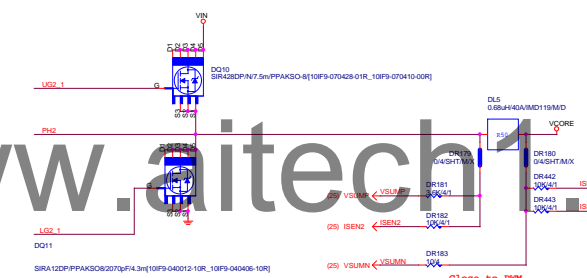




### PHASE 3



## PHASE 2



## VAYG

