

# Model Name: GA-B85M-PIO-SI Revision 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,NVRAM
10	PCH_DP,CLK BUFFER
11	PCH_HOST,SATA,PCI
12	PCH_GPIO,CTRL,AUDIO
13	PCH_PWR,GND
14	PCI EXPRESS*16 SLOT
15	PCI EXPRESS*4 SLOT
16	ITE 8620 LPC IO
17	COM,KB_MS_USB,USB30_20
18	HWM,FAN CTRL,OV,-PROCHOT
19	DUAL BIOS
20	FP,FUSB,SPK,SATALED
21	Realtek ALC887-VD2
22	REAR AUDIO JACK
23	REALTEK RTL8111G
24	DISCRETE POWER
25	ATX , CLOCK GEN
26	VCORE ISL95812_1
27	VCORE ISL95812_2

SHEET TITLE

28	RT8120_DDR POWER
29	DVI, HDMI(Pin Header)

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<b>Gigabyte Technology</b>		
Title		
Cover Sheet		
Size Custom	Document Number <b>GA-B85M-PIO-SI</b>	Rev <b>1.0</b>
Date: Thursday, February 12, 2015	Sheet 1	of 29

D

CD

C

B

A

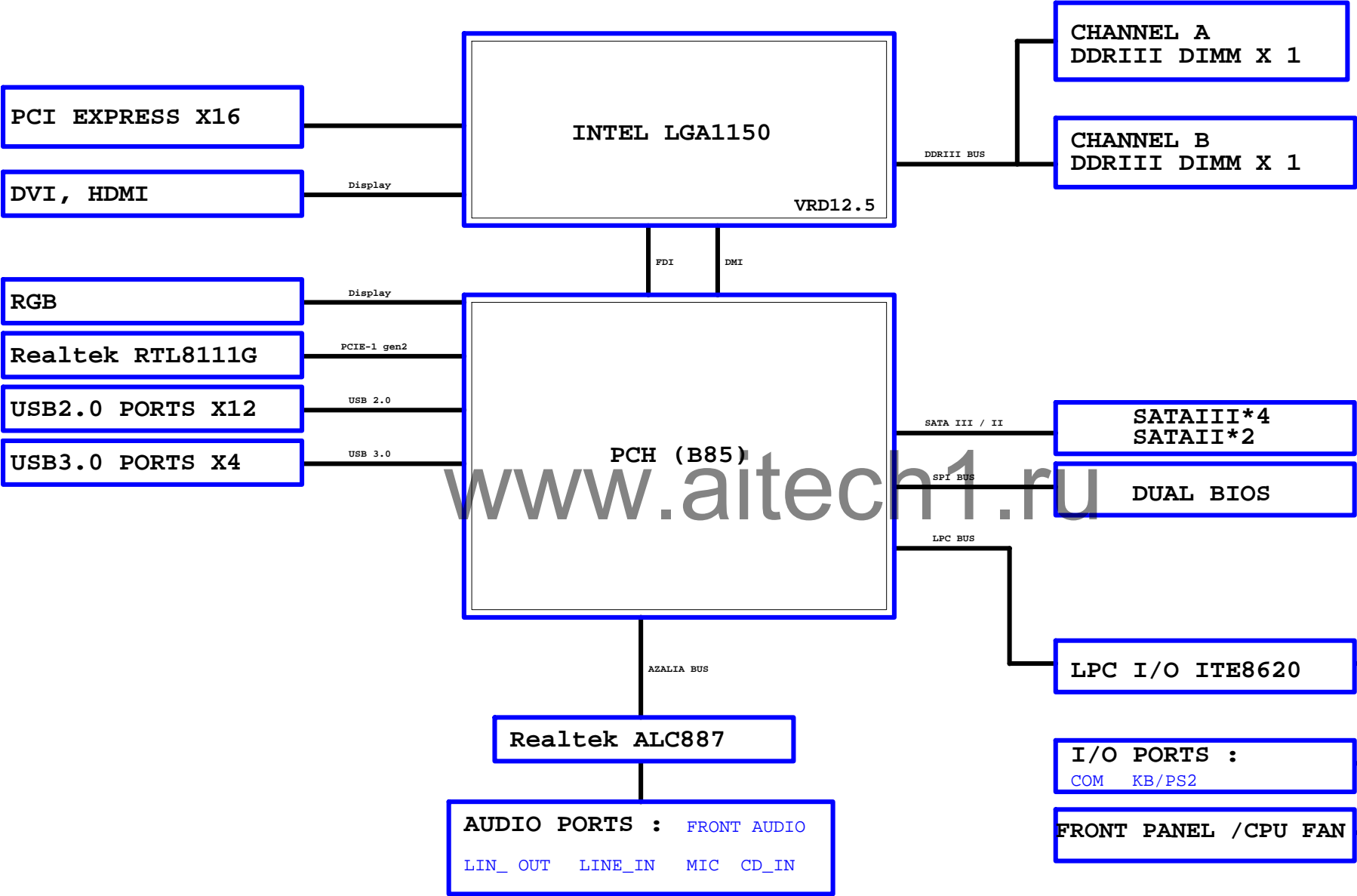
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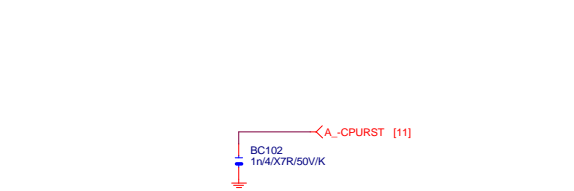
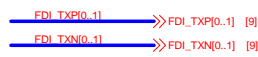
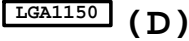
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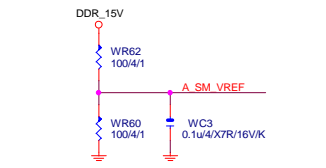
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BLOCK DIAGRAM





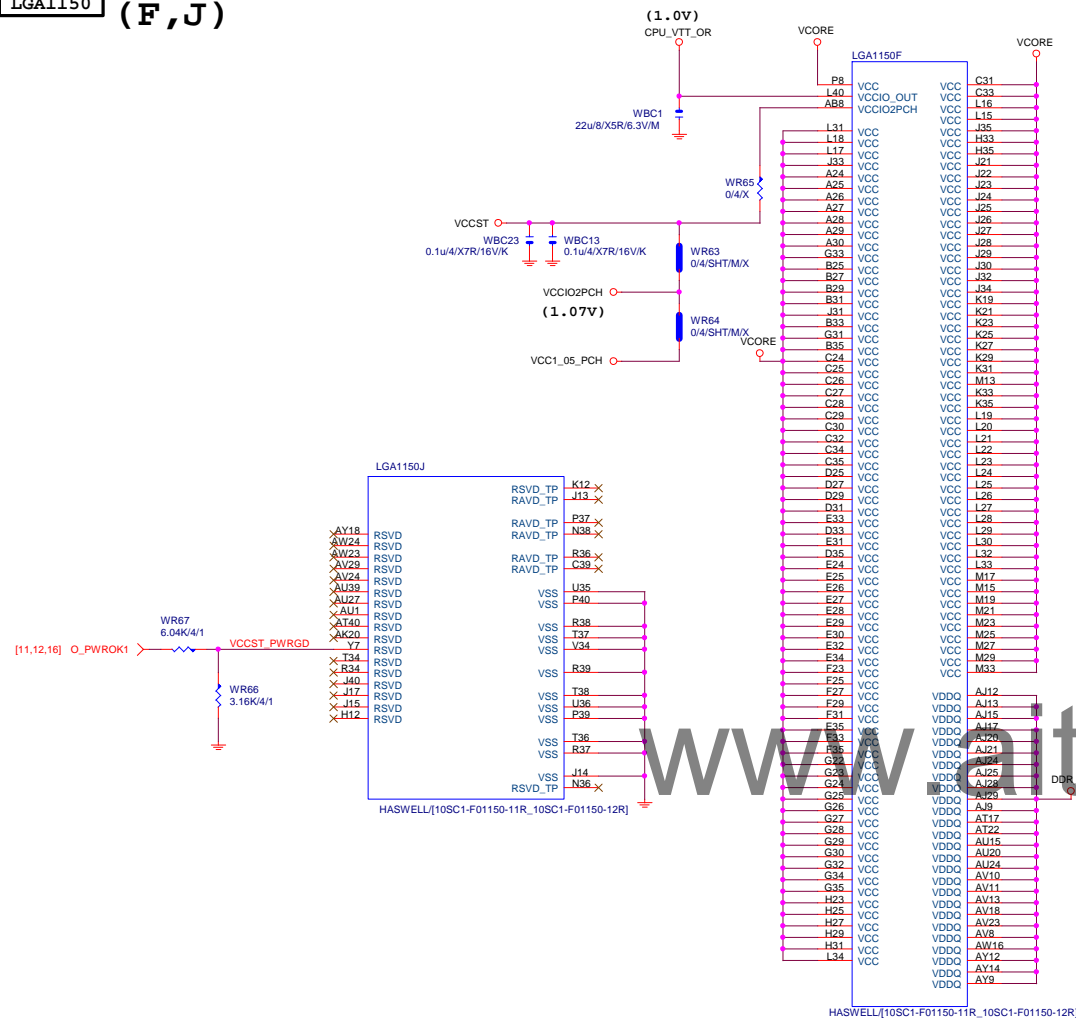
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## LGA1150 (A)

LGA1150A			
MAAA0	AU13	DDR0_MA0	DDR0_D00
MAAA1	AV16	DDR0_MA1	DDR0_D01
MAAA2	AU16	DDR0_MA2	DDR0_D02
MAAA3	AW17	DDR0_MA3	DDR0_D03
MAAA4	AU17	DDR0_MA4	DDR0_D04
MAAA5	AW18	DDR0_MA5	DDR0_D05
MAAA6	AV17	DDR0_MA6	DDR0_D06
MAAA7	AT18	DDR0_MA7	DDR0_D07
MAAA8	AU18	DDR0_MA8	DDR0_D08
MAAA9	AT19	DDR0_MA9	DDR0_D09
MAAA10	AW11	DDR0_MA10	DDR0_D10
MAAA11	AV19	DDR0_MA11	DDR0_D11
MAAA12	AU19	DDR0_MA12	DDR0_D12
MAAA13	AT20	DDR0_MA13	DDR0_D13
MAAA14	AT20	DDR0_MA14	DDR0_D14
MAAA15	AU21	DDR0_MA15	DDR0_D15
MODT_A0	AW10	DDR0_ODT0	DDR0_D16
MODT_A1	AV8	DDR0_ODT1	DDR0_D17
	AW9	DDR0_ODT2	DDR0_D18
	AW8	DDR0_ODT3	DDR0_D19
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**LGA1150 (F,J)**

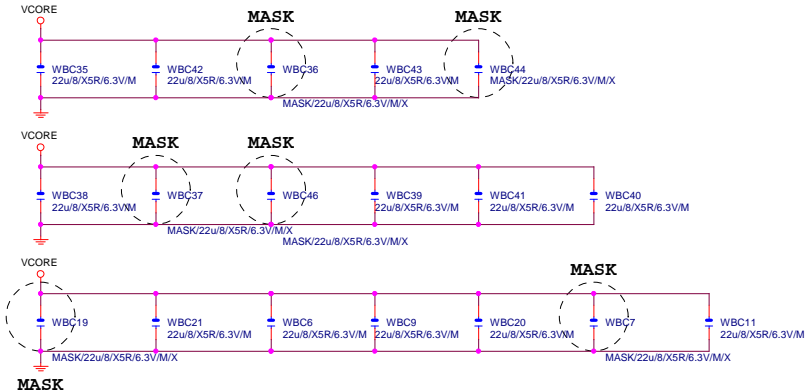


LGA1155 (G,H,I)



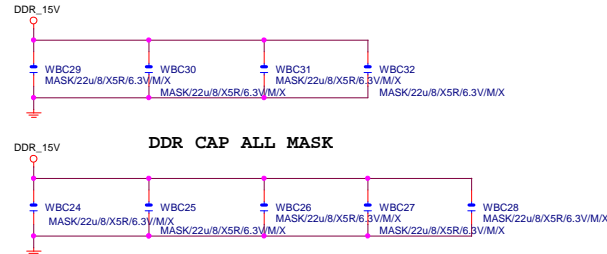
## VCore CAP

(x12)



DDR CAP

(X0)



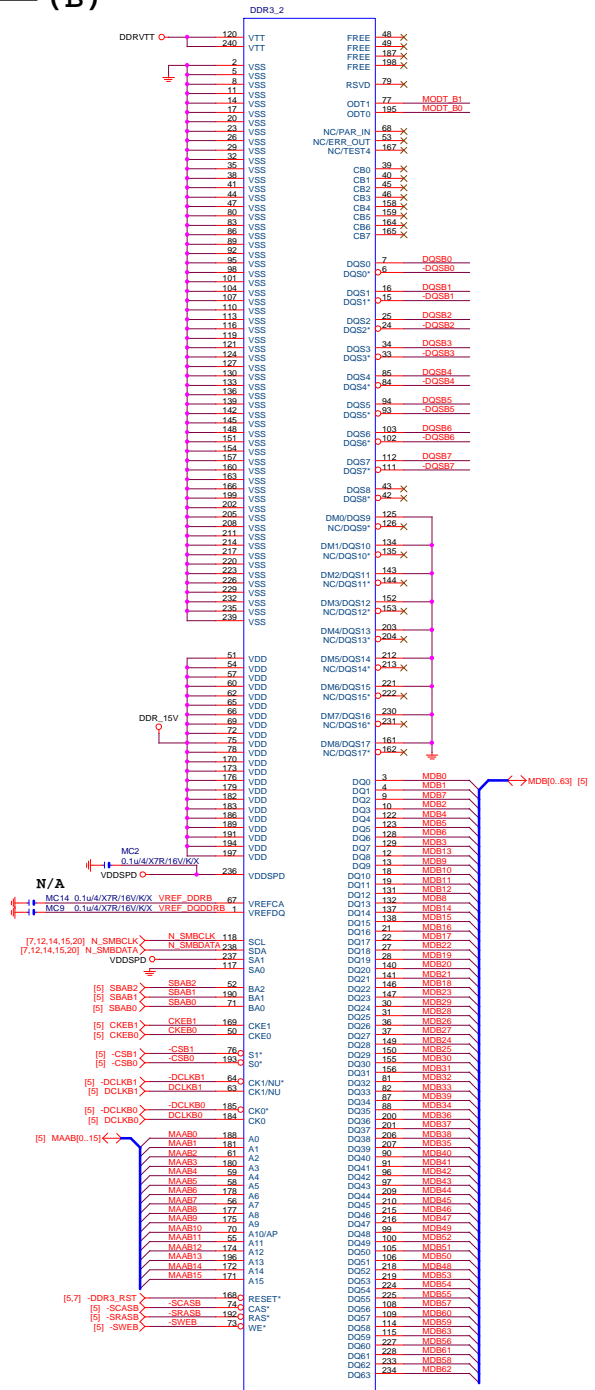
## Gigabyte Technology

Title				CPU LGA1150-C			
Size	Document Number					Rev	
Custom	GA-B85M-PIO-SI					1.0	
Date:	Thursday, February 12, 2015			Sheet	6	of	29

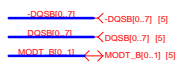


DDR3

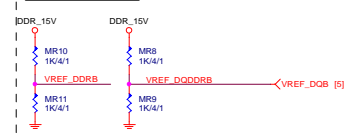
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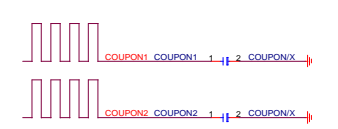
DDR3/240/BK/VA/D  
BLACK CONNECTOR



DDR3 VREF



COUPON



CPU

CHB  
CHB

www.aitech1.ru



PCH

(B)

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

USB2.0 : 12/4.5/7.5/4.5/12 (breakout min 8/4/4/4/8)  
Impedance=90 +- 17.5%

PCHB

B85: Port 6/7 N/A

H81: Port 6/7/12/13 N/A

W=4 mil out of PCH

S=15 mil out of PCH

VCC1\_5\_PCH NR50 7.5K/4/1 DMI\_COMP B19  
NR40 7.5K/4/1 PCIE\_COMP C13

CK -SRCCLK\_PCH G22  
CK SRCCLK\_PCH F22

PCIEx4 [15] PP\_EXP\_RXN0 > L14  
[15] PP\_EXP\_RXP0 > K14  
[15] PP\_EXP\_TXN0 > B12  
[15] PP\_EXP\_TXP0 > B11  
[15] PP\_EXP\_RXN1 > F14  
[15] PP\_EXP\_RXP1 > G14  
[15] PP\_EXP\_TXN1 > D11  
[15] PP\_EXP\_TXP1 > C11  
[15] PP\_EXP\_RXN2 > H11  
[15] PP\_EXP\_RXP2 > B9  
[15] PP\_EXP\_TXN2 > A9  
[15] PP\_EXP\_TXP2 > J11  
[15] PP\_EXP\_RXN3 > L11  
[15] PP\_EXP\_RXP3 > B8  
[15] PP\_EXP\_TXN3 > C8  
[15] PP\_EXP\_TXP3 > G9  
[23] LA\_ML\_IN > E9  
[23] LA\_ML\_IP > B7  
[23] LA\_ML\_ON > A7  
[23] LA\_ML\_OF > F7  
[23] LA\_ML\_OP > H7  
[23] LA\_ML\_OT > E1  
[23] LA\_ML\_OT > D2  
[23] LA\_ML\_OT > K6  
[23] LA\_ML\_OT > G3  
[23] LA\_ML\_OT > J5  
[23] LA\_ML\_OT > H2  
[23] LA\_ML\_OT > H1

8111G

H81:  
N/A

放靠近 Device &amp; PCI-E Slot

Impedance=80 +- 17.5%

PCIEX1:16/5/5/5/16 (breakout min 8/4/4/4/8)

PCH

(J)

PCHJ

AT1 VSS\_NCTF TP22 U11  
AT41 VSS\_NCTF TP23 U10  
AU1 VSS\_NCTF TP21 A14  
AV1 VSS\_NCTF TP20 AK14  
AV2 VSS\_NCTF TP14 K34  
AV40 VSS\_NCTF TP15 K33  
AV41 VSS\_NCTF TP12 AH2  
AW2 VSS\_NCTF TP10 L16  
AW40 VSS\_NCTF TP11 K16  
B40 VSS\_NCTF TP9 AM34  
B41 VSS\_NCTF TP3 R12  
C41 VSS\_NCTF TP4 N12  
D1 VSS\_NCTF TP1 L22  
D41 VSS\_NCTF TP2 K22  
TP5 R4  
TP6 K5  
TP7 P5  
TP8 L5  
VSS AC31  
VSS AF3  
VSS AV21

CHIP DH82B85 C2 INTEL[10HB1-030B85-20R]

PCH

(F)

[17] PCH\_USB3\_RXN0 > F20  
[17] PCH\_USB3\_RXP0 > G20  
[17] PCH\_USB3\_TXN0 > B18  
[17] PCH\_USB3\_TXP0 > C18  
[17] PCH\_USB3\_RXN1 > G18  
[17] PCH\_USB3\_RXP1 > H18  
[17] PCH\_USB3\_TXN1 > B16  
[17] PCH\_USB3\_TXP1 > B16  
[20] PCH\_USB3\_RXN4 > K20  
[20] PCH\_USB3\_RXP4 > L20  
[20] PCH\_USB3\_TXN4 > D15  
[20] PCH\_USB3\_TXP4 > C15  
[20] PCH\_USB3\_RXN5 > L18  
[20] PCH\_USB3\_RXP5 > K18  
[20] PCH\_USB3\_TXN5 > B14  
[20] PCH\_USB3\_TXP5 > A14

VCC3

NR62 8.2K/4/4 AK28

NR63 8.2K/4/4 AT34

H81: Port 6/7/12/13 N/A

PCH CLK PD

CK\_SRCCLK\_PCH NR89 8.2K/4  
CK -SRCCLK\_PCH NR88 8.2K/4

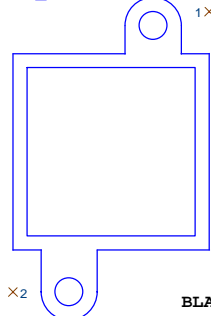
Mount for integrated clock Generation Mode

[10] N\_PCHCLK14  
CK\_DOTCLK NR14 8.2K/8P4R/4  
CK -DOTCLK

PCH H/S

LOW COST ICH7 HEATSINK

SB\_HEATSINK



X2

BLACK HS

PCH\_HS  
PCH\_HS[12SP2-030005-51R\_12SP2-030005-52R\_12SP2-030005-53R]

PCHF

USB3

FDILINK

N1 FDI\_TXN0

N2 FDI\_TXP0

P2 FDI\_TXN1

P3 FDI\_TXP1

FDI\_CSXNC

FDI\_INT

FDI\_RCOMP

NR29 7.5K/4/1

VCC1\_5\_PCH

USB3\_RXN\_0

USB3\_RXP\_0

USB3\_TXN\_0

USB3\_TXP\_0

USB3\_RXN\_1

USB3\_RXP\_1

USB3\_TXN\_1

USB3\_TXP\_1

USB3\_RXN\_4

USB3\_RXP\_4

USB3\_TXN\_4

USB3\_TXP\_4

USB3\_RXN\_5

USB3\_RXP\_5

USB3\_TXN\_5

USB3\_TXP\_5

TACH6\_GP70

TACH7\_GP71

CHIP DH82B85 C2 INTEL[10HB1-030B85-20R]

FDI\_TXP0\_11

FDI\_TXN0\_11

FDI\_TXP0\_11

FDI\_TXN0\_11

FDI\_TXP0\_11

FDI\_TXN0\_11

FDI\_TXP0\_11

FDI\_TXN0\_11

FDI\_TXP0\_11

FDI\_TXN0\_11

FDI\_TXP0\_11

FDI\_TXN0\_11

FDI\_TXP0\_11

FDI\_TXN0\_11

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FDI\_TXP0\_11

FDI\_TXN0\_11

FDI\_TXP0\_11

FDI\_TXN0\_11

FDI\_TXP0\_11

FDI\_TXN0\_11

FDI\_TXP0\_11

FDI\_TXN0\_11

USB TABLE

OC[3:0]# for Device 29 (ports 0-7)

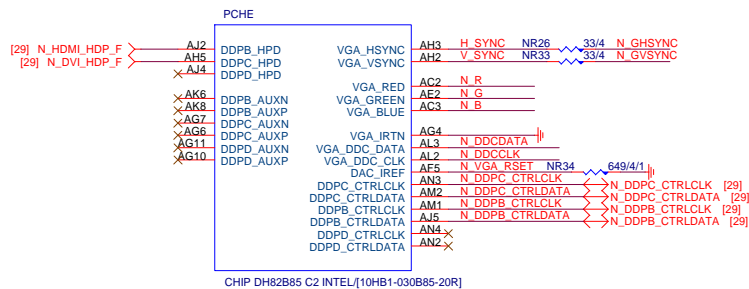
OC[7:4]# for Device 26 (ports 8-13)

USB OC#	Configure
OC0#	F_USB30
OC1#	USB_LAN
OC2#	R_USB30
OC3#	N/A
OC4#	F_USB1
OC5#	R_USB
OC6#	F_USB2
OC7#	Not Use

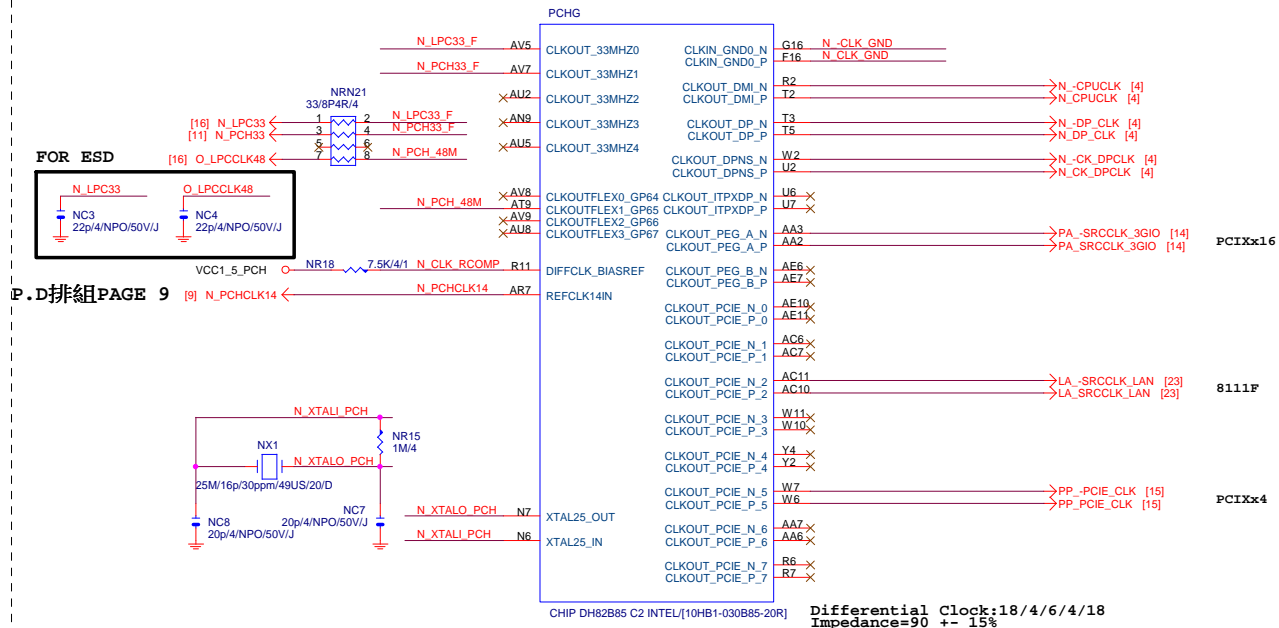
Gigabyte Technology

Title			PCH FDI,DMI,USB ,PCIE,NVRAM		
Size			Document Number		
Custom			GA-B85M-PIO-SI		
Date:			Thursday, February 12, 2015		
Sheet			9 of 29		
Rev			1.0		

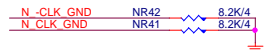
# PCH (E)



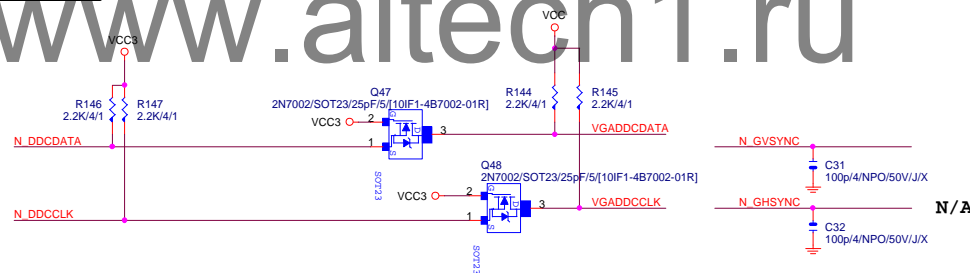
# PCH (G)



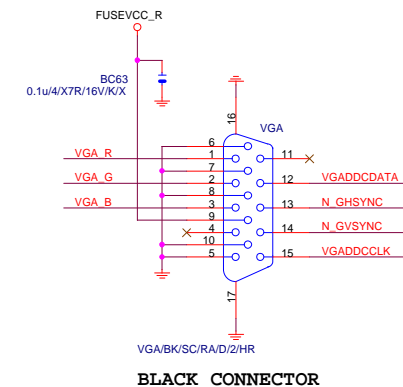
## PCH CLK PD



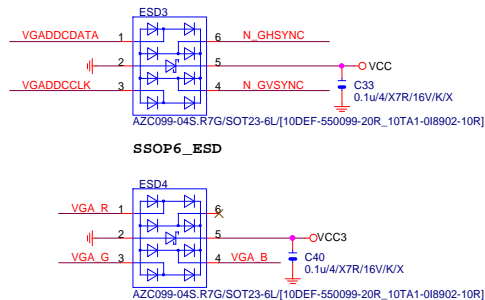
## VGA DDC



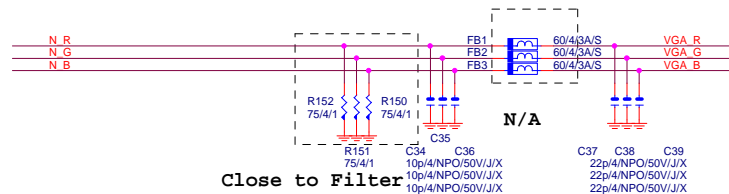
## VGA CONNECTOR



## VGA ESD



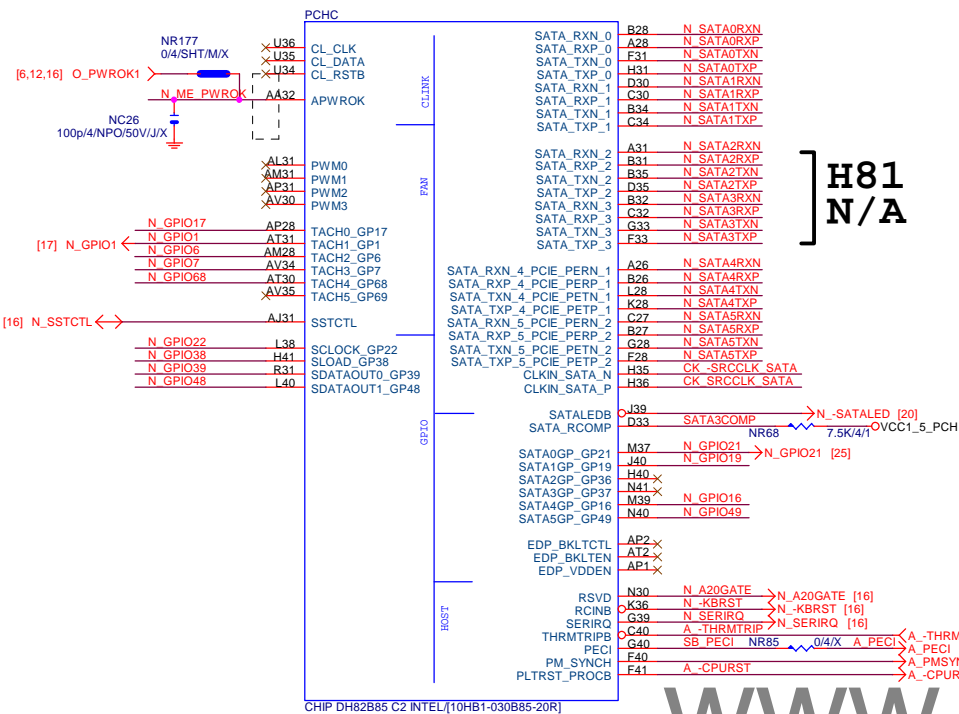
## VGA DDC



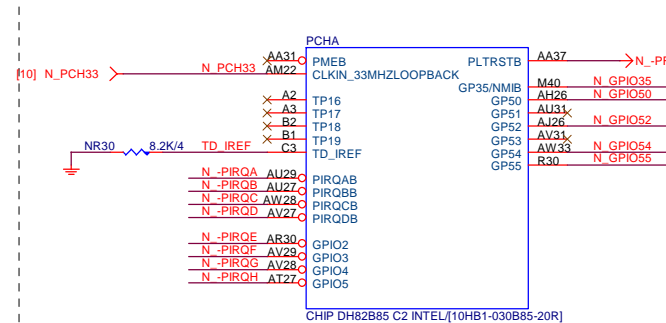
Gigabyte Technology		
PCH DISPLAY_CLK BUFFER		
GA-B85M-PIO-SI		
Size	Document Number	Rev
Custom		1.0
Date:	Thursday, February 12, 2015	Sheet 10 of 29

(C)

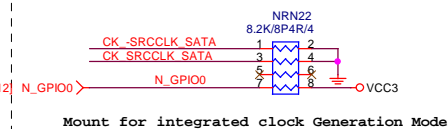
SATA3 : 20/7.5/4.5/7.5/20 (breakout min 8/4/4/4/8)  
Impedance=90 +- 17.5%  
SATA2 : 15/7.5/4.5/7.5/15 (breakout min 8/4/4/4/8)  
Impedance=90 +- 17.5%



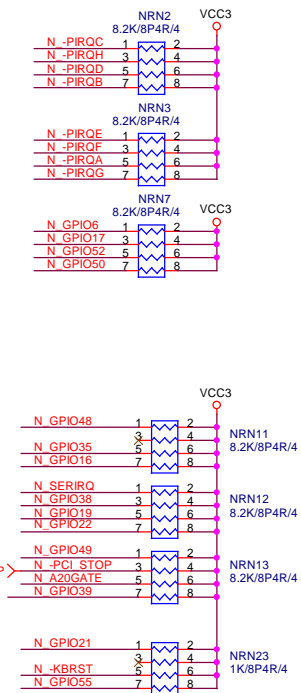
**PCH (A)**



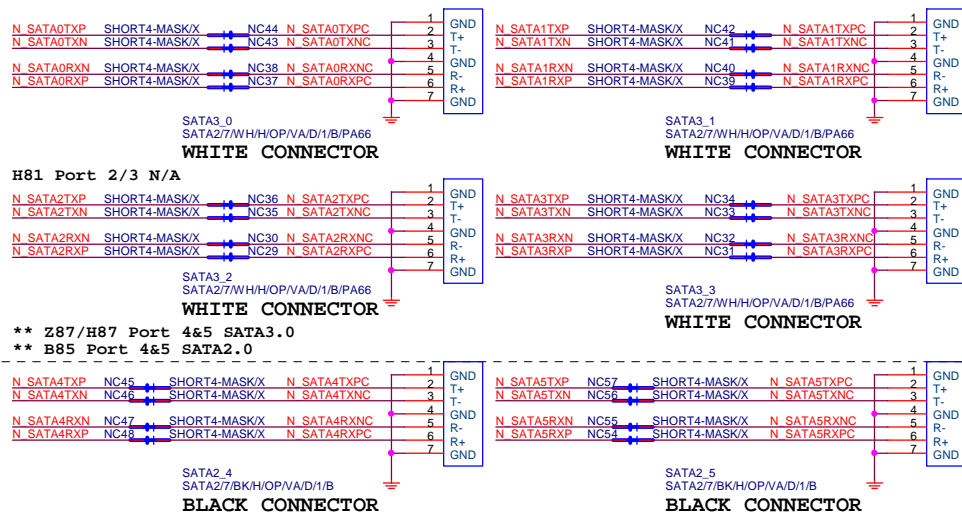
## PCH CLK PD



PCH	PU/PD
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16
17	17
18	18
19	19
20	20
21	21
22	22
23	23
24	24
25	25
26	26
27	27
28	28
29	29
30	30
31	31
32	32
33	33
34	34
35	35
36	36
37	37
38	38
39	39
40	40
41	41
42	42
43	43
44	44
45	45
46	46
47	47
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70	70
71	71
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73	73
74	74
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76	76
77	77
78	78
79	79
80	80
81	81
82	82
83	83
84	84
85	85
86	86
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93	93
94	94
95	95
96	96
97	97
98	98
99	99

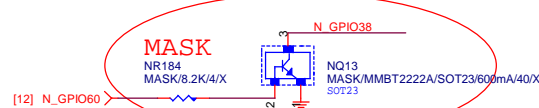


**SATA CONNECTOR** Remove SATA MLCC [Footprint: C0402-SHORT4-MASK]



GPIO38 Ctrl

N/A

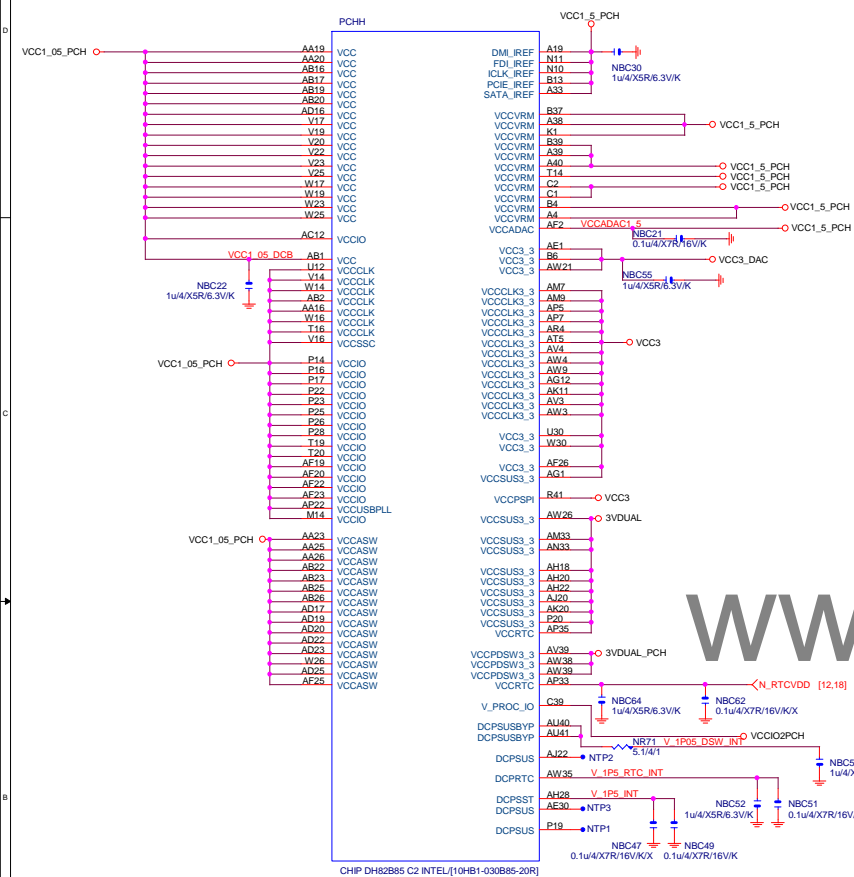


## Gigabyte Technology

Title				PCH HOST , SATA, PCI				Rev	
Size		Document Number		GA-B85M-PIO-SI				1.0	
Custom									
Date:		Thursday, February 12, 2015		Sheet		11		of 29	

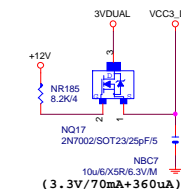


# PCH (H)

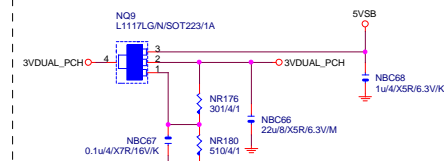


# VCC3\_DAC

CLOSE北橋(注意震盪水波紋)



# 3VDUAL\_PCH

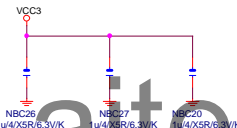


# SHT PWR



# CAP

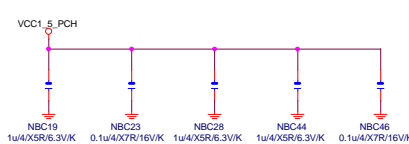
(3.3V)(X3)



(1.05V)(X2)(3.3V)(X2)



(1.5V)(X5)

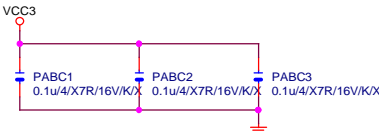


# PCH (I)

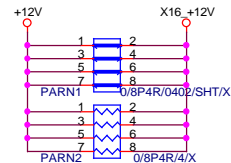


# PCIEX16 CAP

N/A



# PCIEX16 PROTECT SHT



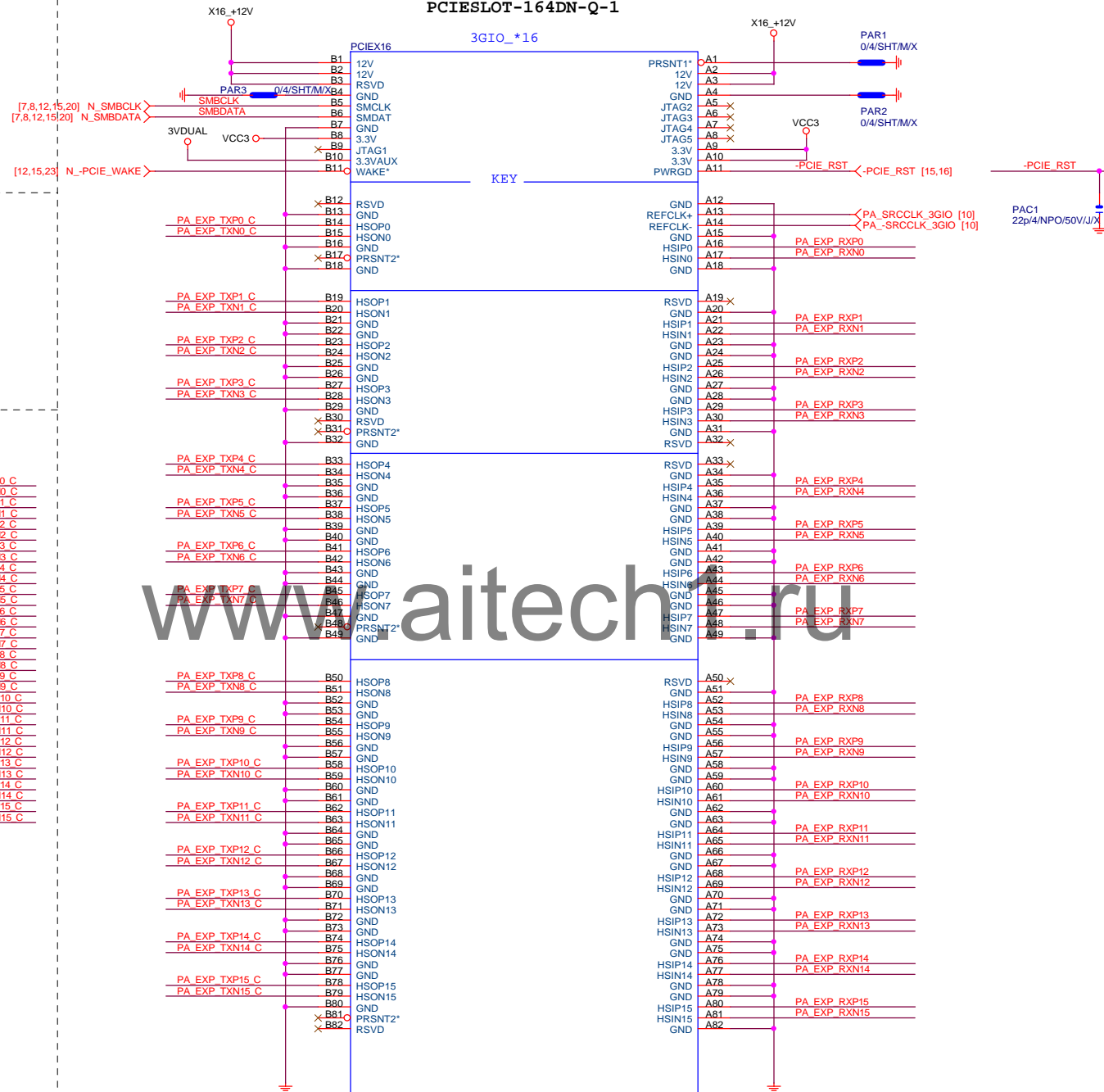
# PCIEX16 AC CAP

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

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]

# PCIEX16 SLOT

# PCIESLOT-164DN-Q-1



PCI-E/16X-164P/BK/OL/RA/GF

BLACK CONNECTOR

Gigabyte Technology

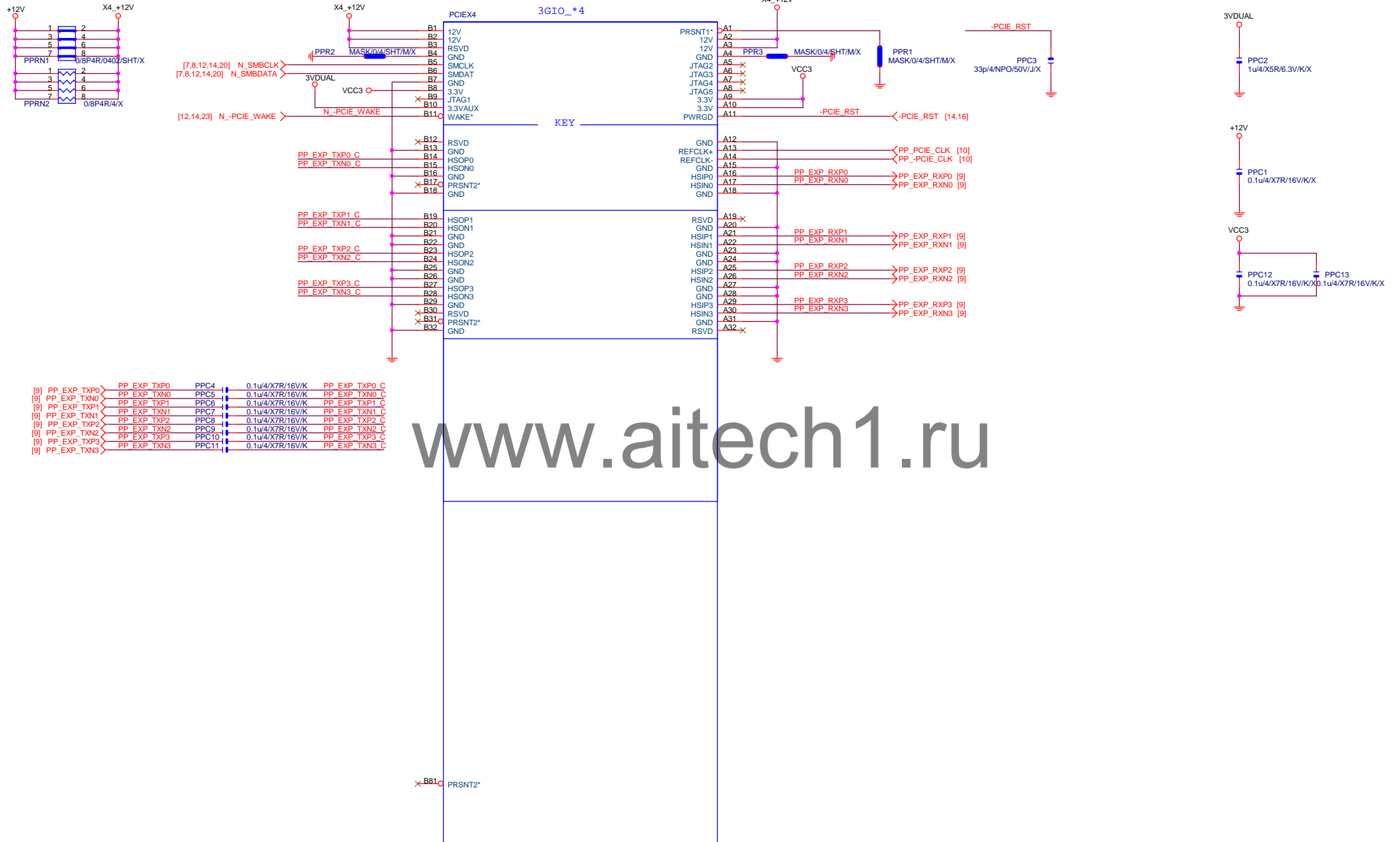
Title			PCI EXPRESS * 16		
Size			GA-B85M-PIO-SI		
Custom			Rev 1.0		
Date:			Thursday, February 12, 2015		
			Sheet 14 of 29		



# PCIEX4 SLOT

## PCIESLOT-64D-98D-P

3GIO\_\*4



PCI-E/4X-65P/BK/LONG DOUBLE

BLACK CONNECTOR

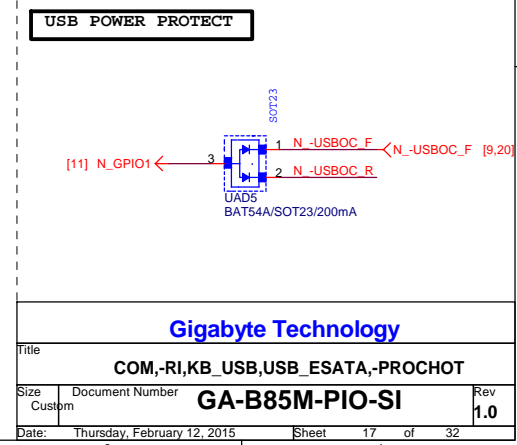
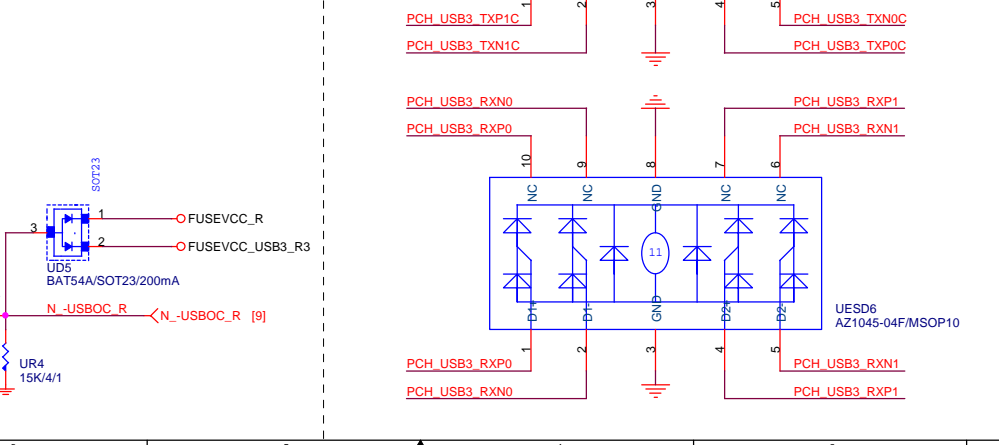
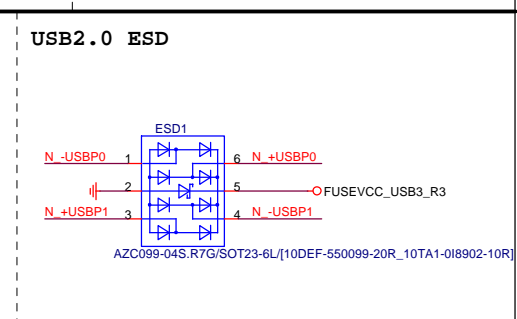
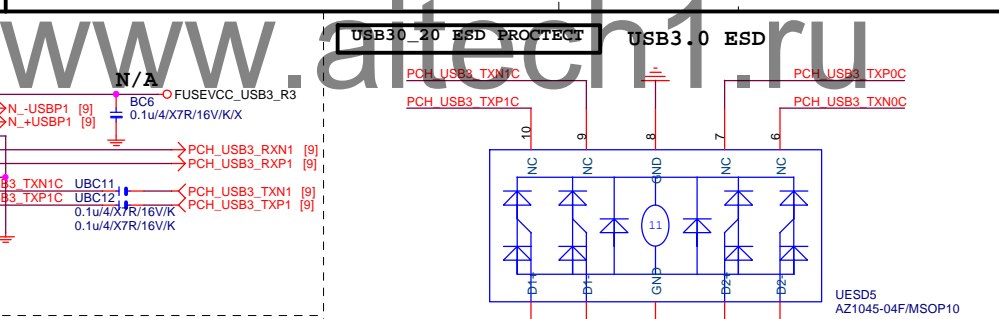
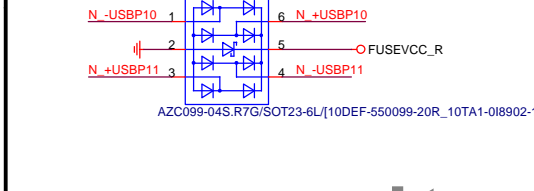
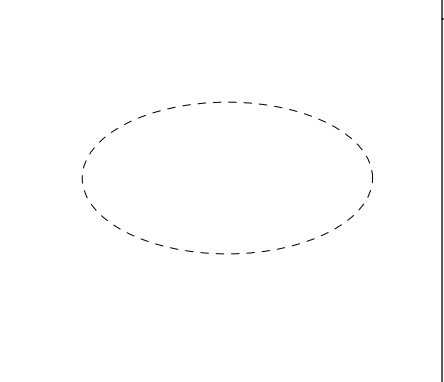
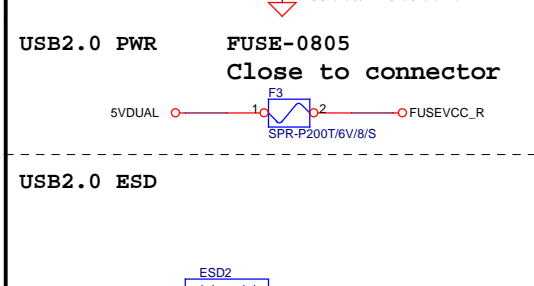
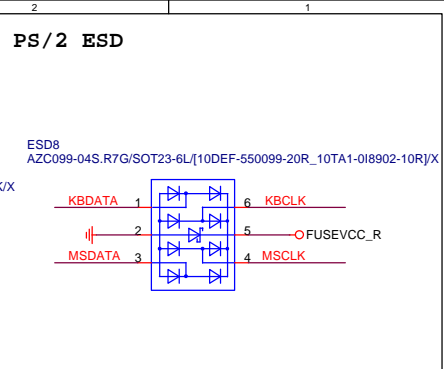
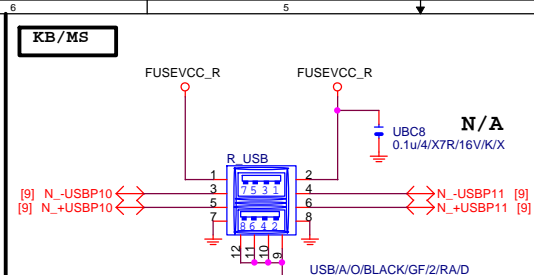
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Gigabyte Technology

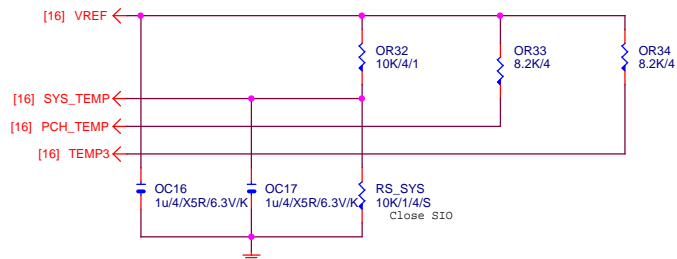
Title			
PCI EXPRESS X 1 PORT			
Size	Document Number	Rev	
Custom	GA-B85M-PIO-SI	1.0	
Date:	Thursday, February 12, 2015	Sheet	15 of 29



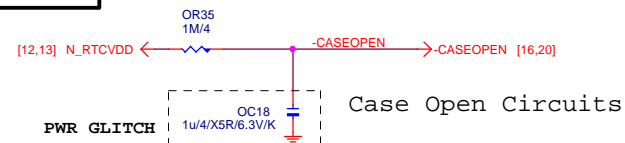




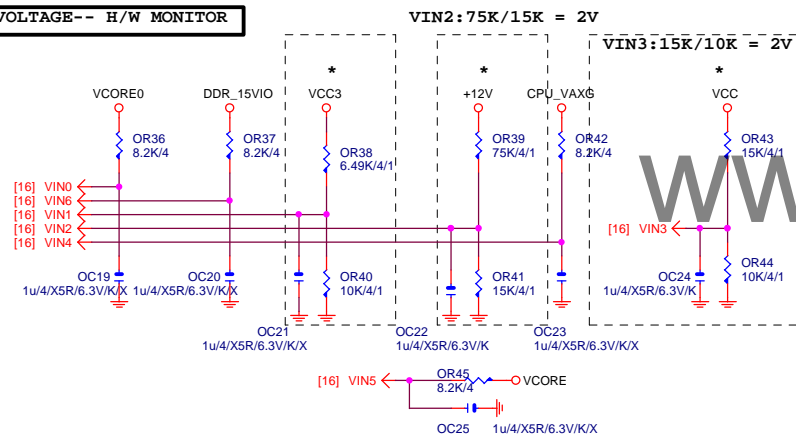
# TEMP H/W MONITOR



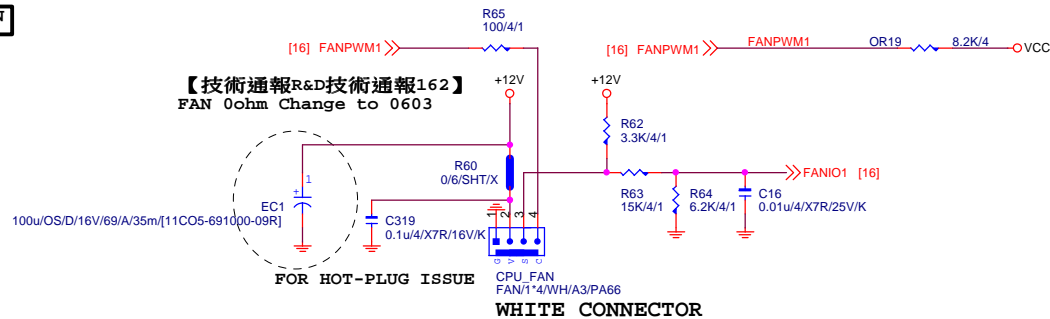
# CASE OPEN



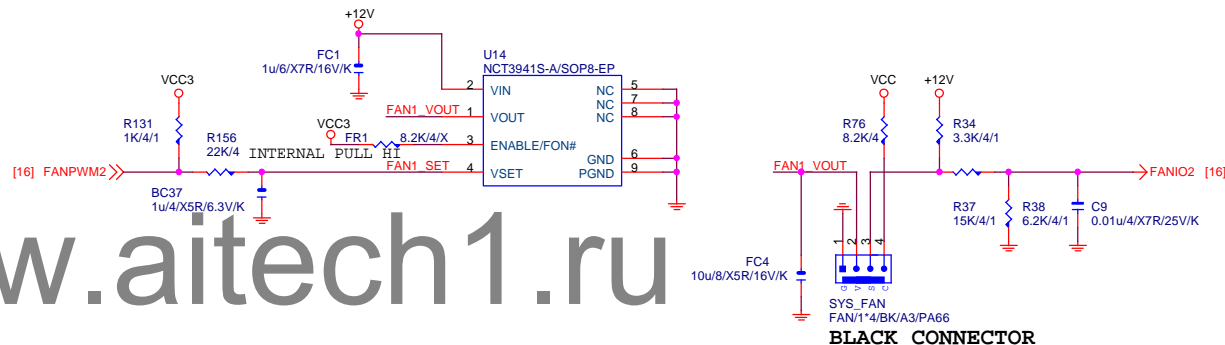
# VOLTAGE-- H/W MONITOR



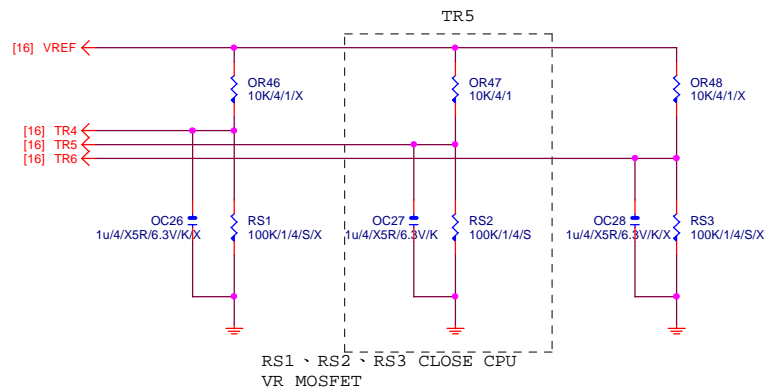
# CPU SMART FAN



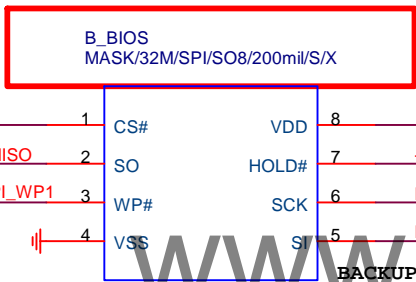
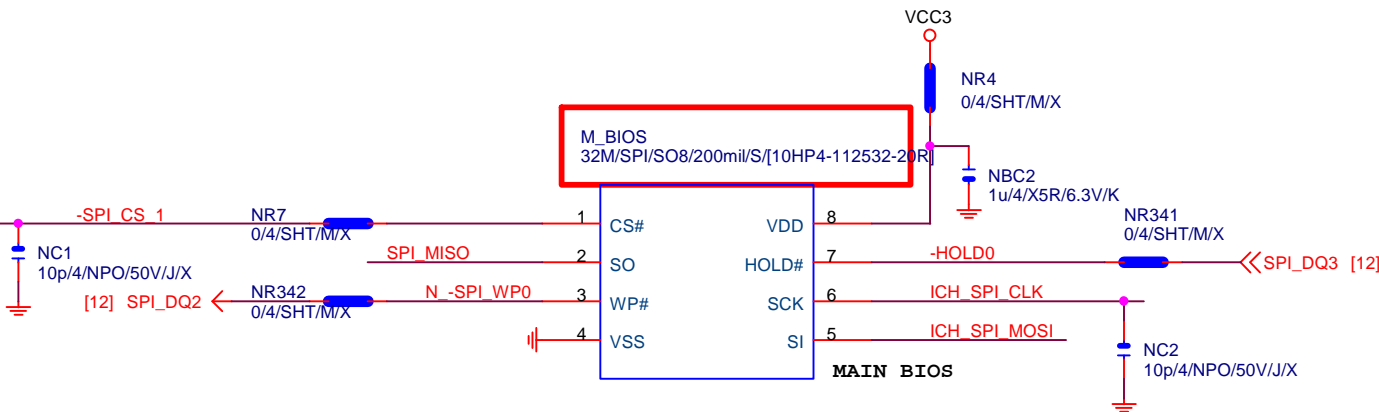
# SYS SMART FAN



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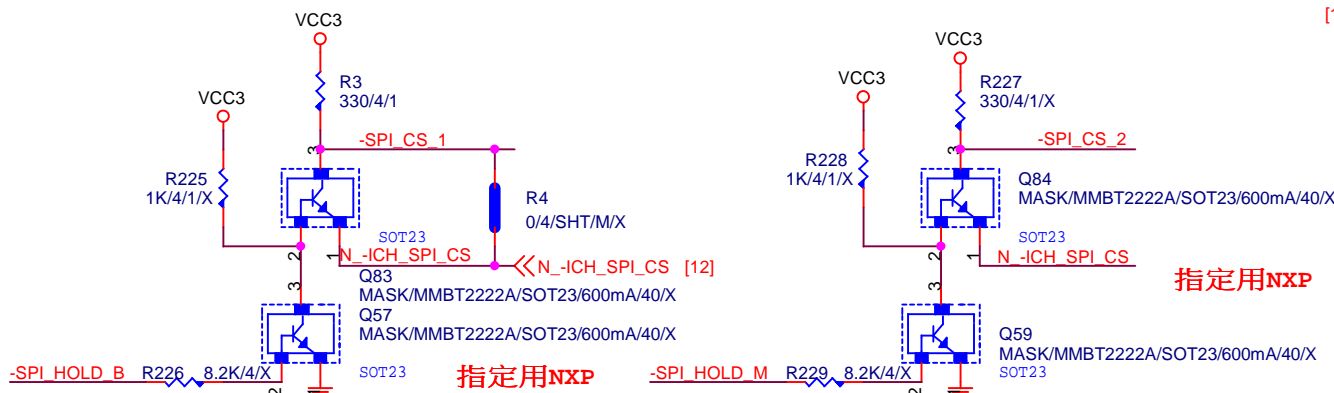
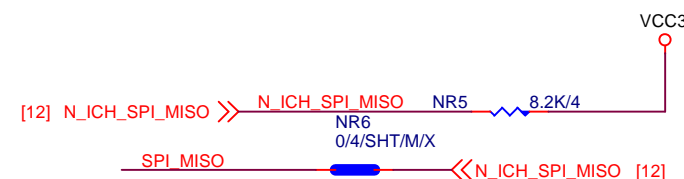
Gigabyte Technology			
Title		HWM,FAN CTRL,OV	
Size	Document Number	GA-B85M-PIO-SI	
Custom		Rev 1.0	
Date:	Thursday, February 12, 2015	Sheet	18 of 29



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

1 means floating  
0 means PD 1K

MOSI For DMI RX Termination Voltage



指定用NXP

Gigabyte Technology

DUAL BIOS

GA-B85M-PIO-SI

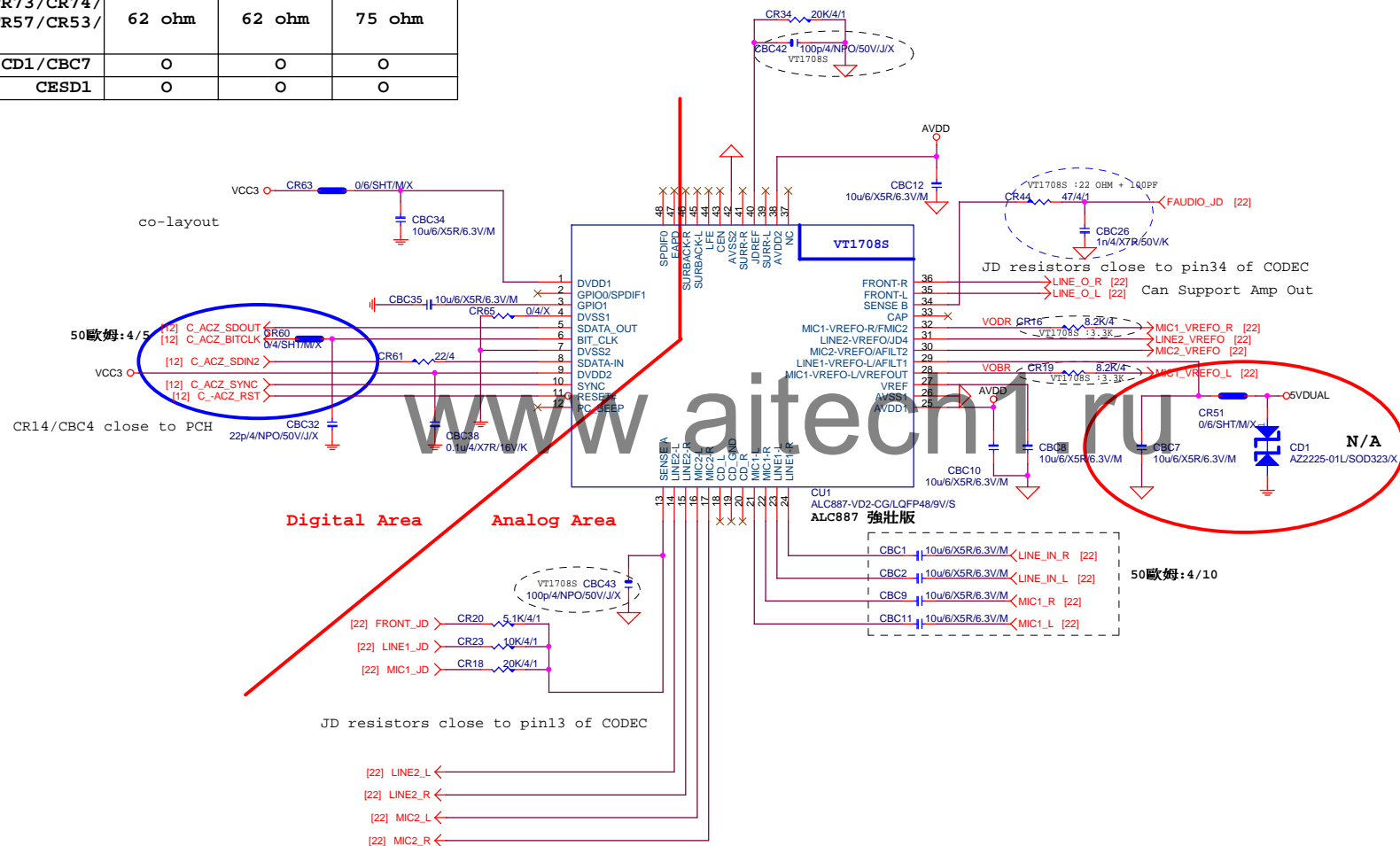
Rev 1.0

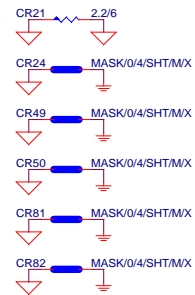
Title		
Size	Document Number	Rev
Custom		1.0
Date:	Thursday, February 12, 2015	Sheet 19 of 29



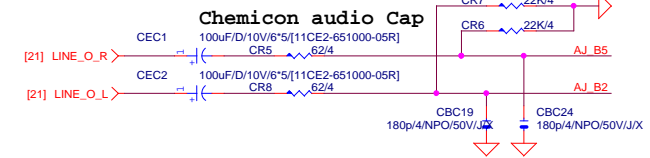
AZALIA CODEC ALC892/ALC887-VD2/VT1708-CE Colay

	ALC892	ALC887-VD2	VT1708S-CE
CR44/CBC26	47ohm+1nF	47ohm+1nF	22ohm+100P
CBC42/CBC43	X	X	100P/4
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	O	O	O





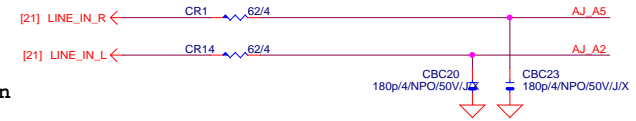
## LINE-OUT



## LINE-IN

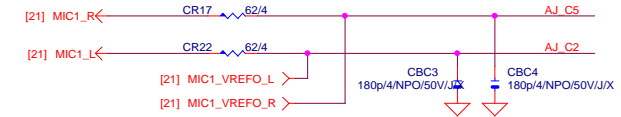
Verify MIC function  
in LINE-in

Only reserved for ALC888



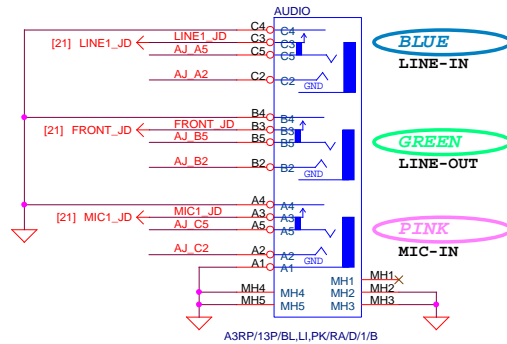
For 889A/888

## MIC-IN

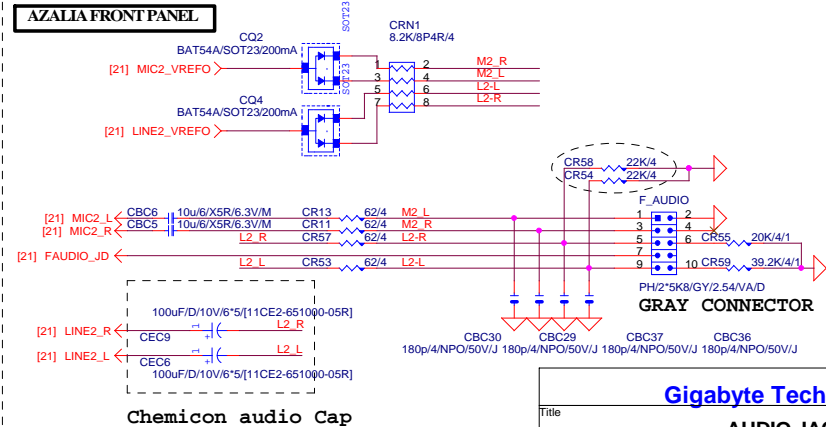


## SPDIF\_OUT

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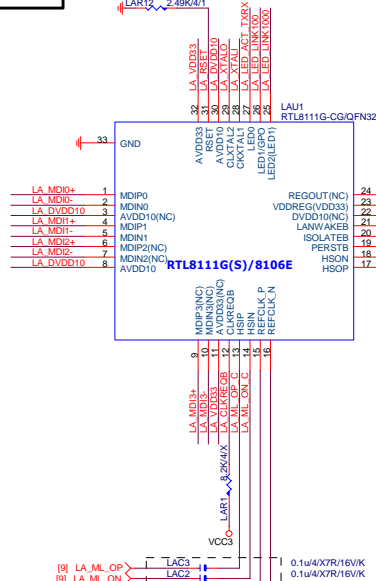
## AZALIA FRONT PANEL



Gigabyte Technology

Title			
AUDIO JACK			
Size	Document Number	GA-B85M-PIO-SI	
Custom			Rev 1.0
Date:	Thursday, February 12, 2015	Sheet	22 of 29

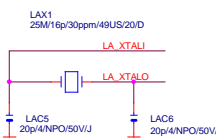
# LAN RTL8111G-CG



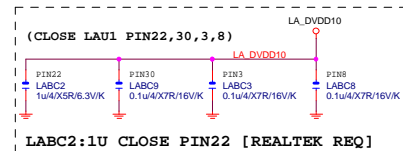
SRCCLK-->50歐姆:[18/4/10/4/18]

離IC近越好

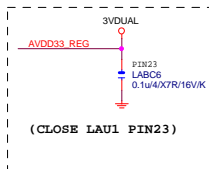
LA\_ML-->80歐姆:[15/5/5/15]



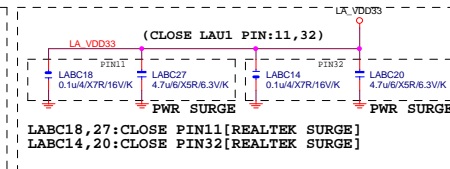
# LAN POWER



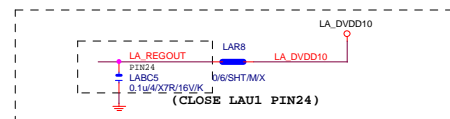
LABC2:1U CLOSE PIN22 [REALTEK REQ]



(CLOSE LAUI PIN23)



LABC18,27:CLOSE PIN11[REALTEK SURGE]  
LABC14,20:CLOSE PIN32[REALTEK SURGE]



NOTE:  
RT8106E:PIN3,11,22,24-->NC  
LABC2LABC3,LABC5,LABC18,LABC27-->N/A

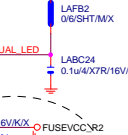
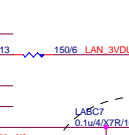
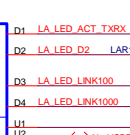
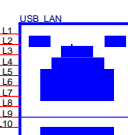
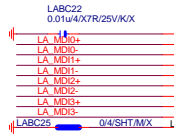
# BOM NOTICE \*

料號 規格 廠商  
11NR6-702009-96R 1G LAN (12core) UDE(RU9 ESD+)  
[LED獨立走線,可省略外加AZC099料件LAESD1]

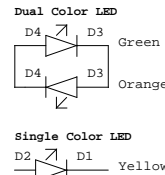
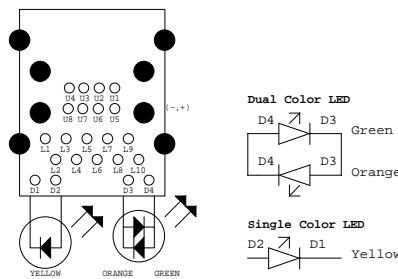
- 9KV ESD BOM:  
USB\_LAN (RU9):11NR6-702009-96R
- 28KV ESD BOM:  
USB\_LAN (RU9):11NR6-702009-96R  
LAESD2,LAESD3:上件AZC398-04S

# USB\_LAN CONNECTOR

LA\_MDI-->100歐姆:[20/4/8/4/20]



\*  
AZC099-04S,R7G/SOT23-6L[10DEF-550099-20R,10TA1-08902-10R]  
使用RU9 USB\_LAN可省略LAESD1保護LED



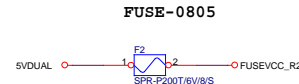
注意:USB PORT(目前:暫代6,7PORT)  
USB-->90歐姆:[15/4.5/7.5/4.5/15]

# BOM NOTICE \*

料號 規格 廠商  
11NR6-702009-96R 1G LAN (12core) UDE(RU9 ESD+)  
[LED獨立走線,可省略外加AZC099料件LAESD1]

- 9KV ESD BOM:  
USB\_LAN (RU9):11NR6-702009-96R
- 28KV ESD BOM:  
USB\_LAN (RU9):11NR6-702009-96R  
LAESD2,LAESD3:上件AZC398-04S

# USB\_X3 POWER



# EMI SHORT PAD

PS:視EMI需求



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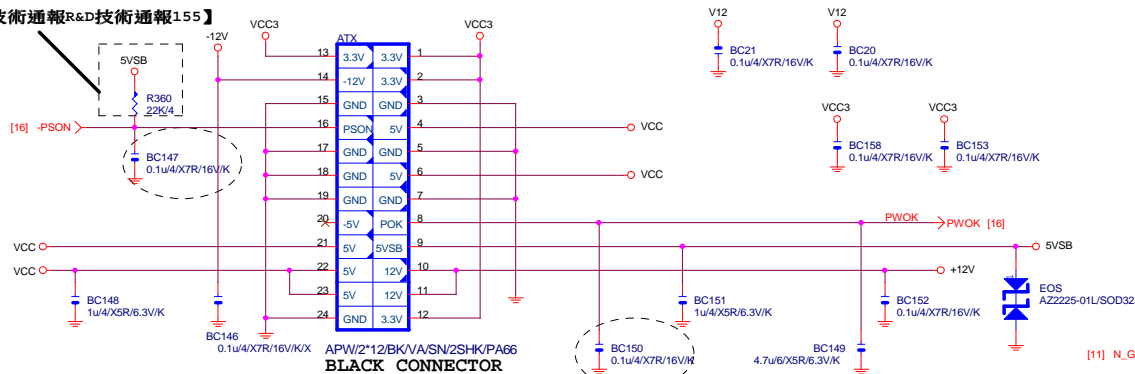
Title		Realtek RTL8111G	
Size		GA-B85M-PIO-SI	
Date		Thursday, February 12, 2015	
Sheet		23 of 29	
Rev		1.0	





# ATXX24 POWER CONNECTOR

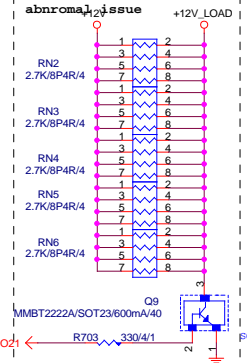
【技術通報R&D技術通報155】



BLACK CONNECTOR

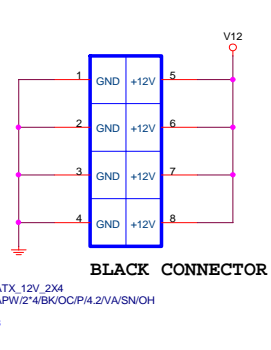
【技術通報R&D技術通報153】

To fix 12V light load abnormality issue

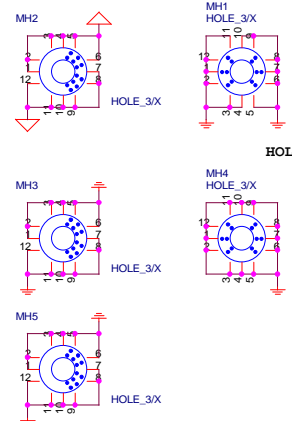


# ATXX4 POWER CONNECTOR

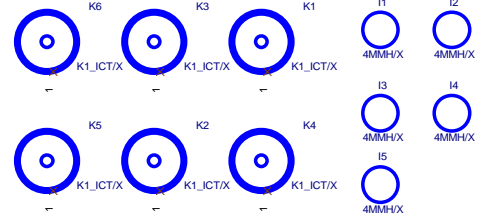
【技術通報R&D技術通報154】



BLACK CONNECTOR



HOLE\_4-RH-1



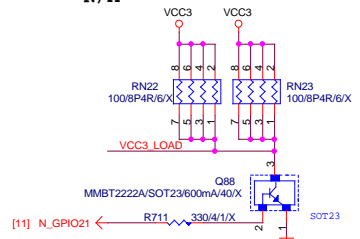
To prevent the 5VSB under loading when boot

TPM

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FIX PWR MINMUN LOAD

N/A



PWOK PATCH

【技術通報R&D技術通報154】

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ATX CONNECTOR

GA-B85M-PIO-SI

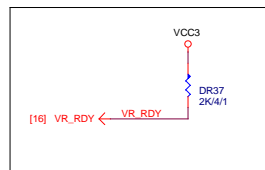
Rev 1.0

Date: Thursday, February 12, 2015 Sheet 25 of 29

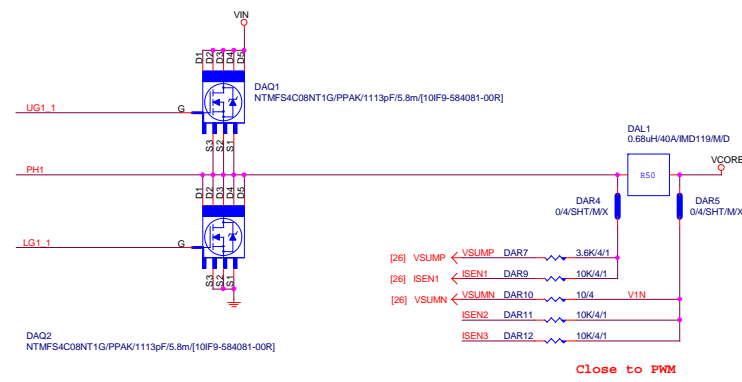
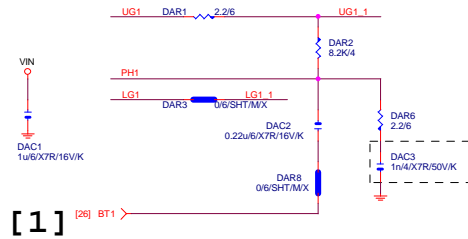
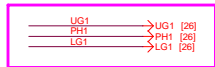
R_PROG1 (Kohm)	3-Phase Iccmax (A)
24.9	105
28.7	114
34.0	129
42.2	144

R_PROG2 (Kohm)	Fsw (KHz)	VBOOT
64.9	315	1.75
73.2	315	1.70
80.6	315	1.65
90.9	315	0

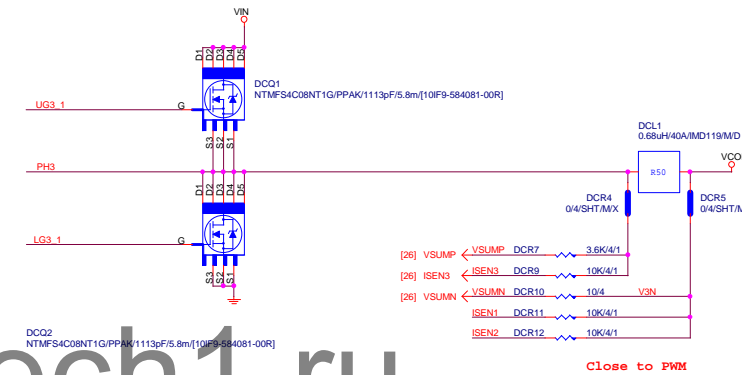
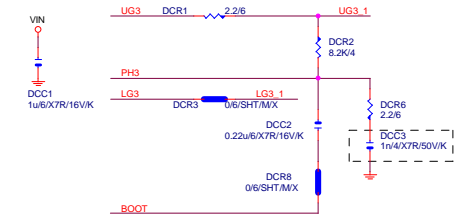
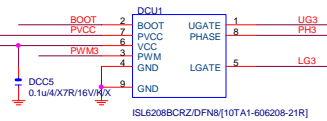
R_PROG3 (Kohm)	Fast Slew Rate (mV/us)
3.24	12
5.76	24
9.31	40
13.3	45



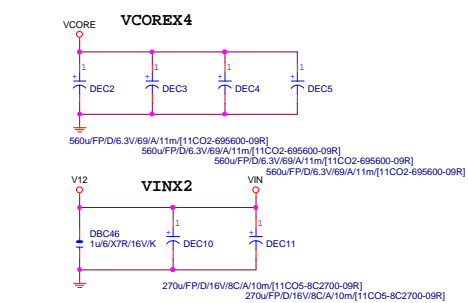
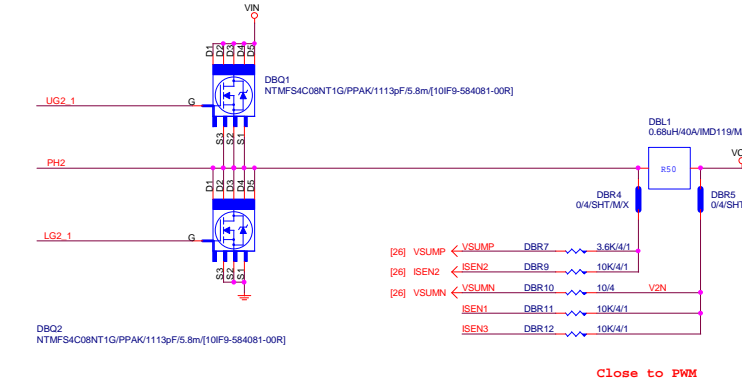
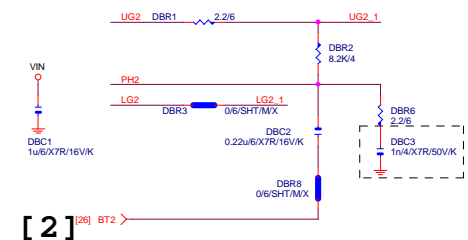
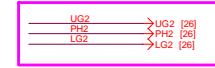
# PHASE 1



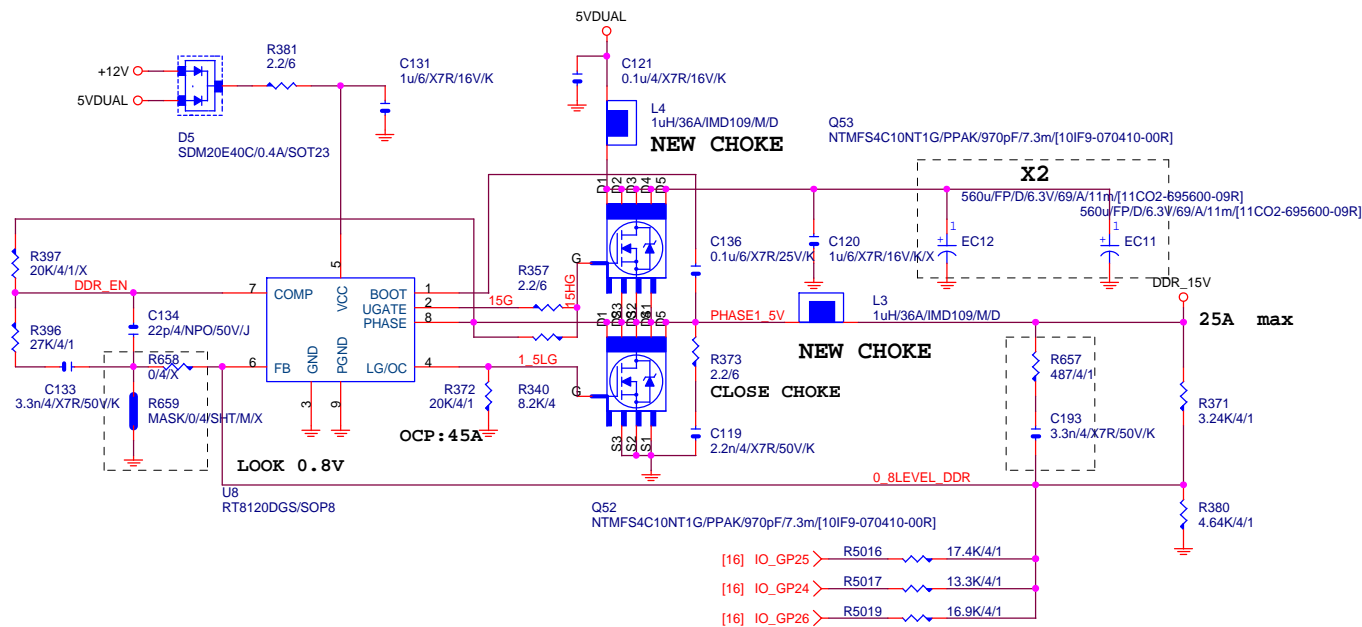
# PHASE 3



# PHASE 2



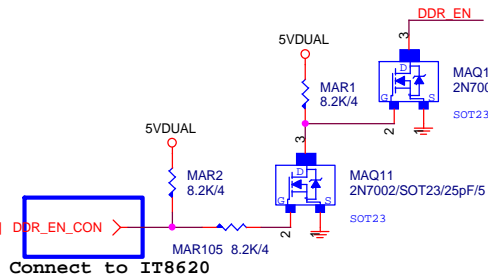
Gigabyte Technology			
CPU CORE VR-2			
Size	Document Number	GA-B85M-PIO-SI	
Custom		Rev 1.0	
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From DDR\_1.5V source  
10 mils trace to SIO

DDR\_1.5V DDR\_1.5VIO  
MR20 0/4/SHT/M/X

## 2014 RD Notes



	H	L	L	L
GP26	H	L	L	L
GP25	H	H	L	H
GP24	H	H	H	L
	1.35V	1.50V	1.65V	1.70V

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

Rocset=(Iocp\*Lgate,rdson)/Iocset

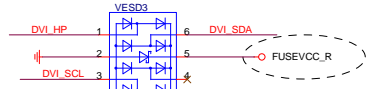
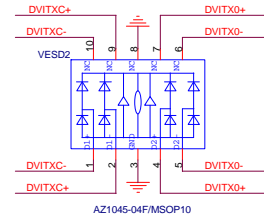
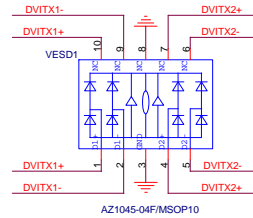
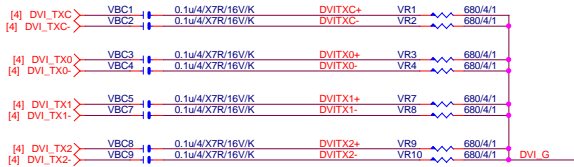
Rocset=(45A\*6.7mOhm)/10uA = 30K

Iocset=10uA

Gigabyte Technology

Title			
DDR POWER			
Size	Document Number	Rev	
Custom	GA-B85M-PIO-SI	1.0	
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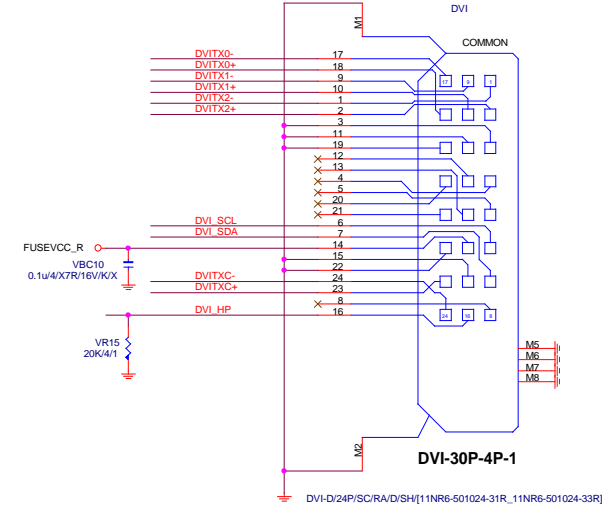
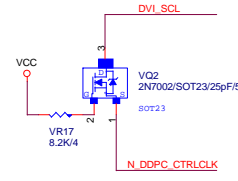
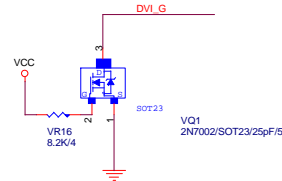
# DVI



Close to connector

Close to connector

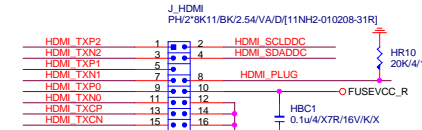
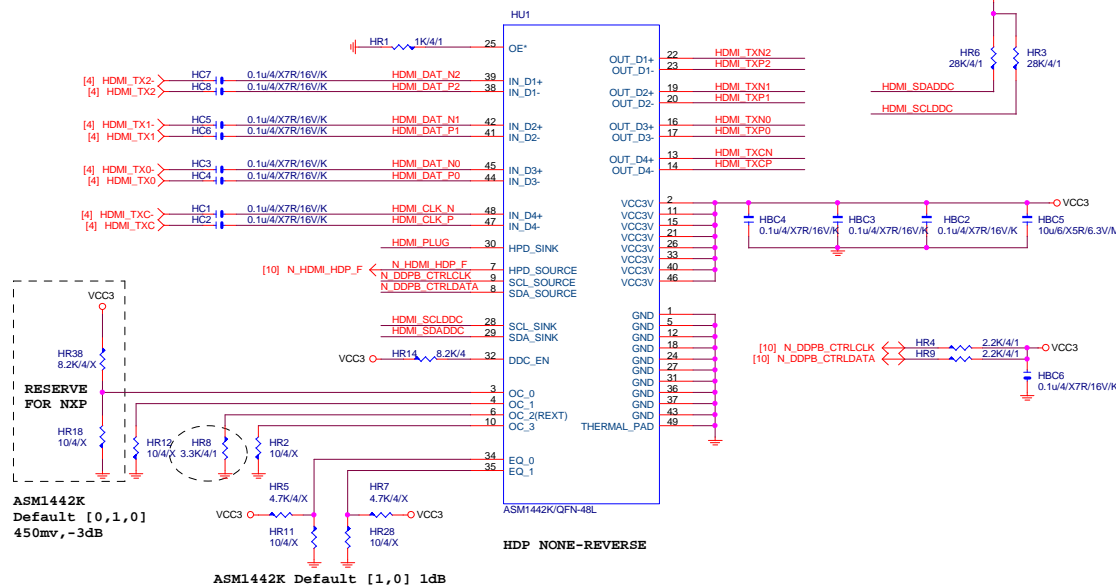
Close to connector



# HDMI LEVEL SHIFT

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用κ11料號，轉向就同κ6



Gigabyte Technology			
DVI			
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