

Model Name: GA-B85M-D3V

Revision 1.1

SHEET

TITLE

01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	CPU LGA1150-A
05	CPU LGA1150-B
06	CPU LGA1150-C
07	DDR III CHANNEL A
08	DDR III CHANNEL B
09	PCH FDI,DMI,USB,PCIE,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 X1 *2 SLOT
16	PCI SLOT
17	ITE 8620 LPC IO
18	COM,KB MS USB,USB30 20
19	HWM,FAN CTRL,OV,-PROCHOT
20	DUAL BIOS
21	FP,FUSB,SPK,SATALED
22	Realtek ALC887-VD2
23	REAR AUDIO JACK
24	REALTEK RTL8111F
25	DISCRETE POWER
26	ATX
27	VCORE ISL95820 1

SHEET

TITLE

28	VCORE ISL95820 2
29	RT8120 DDR POWER
30	LPT, M3 POWER
31	DVI
32	IT8892E

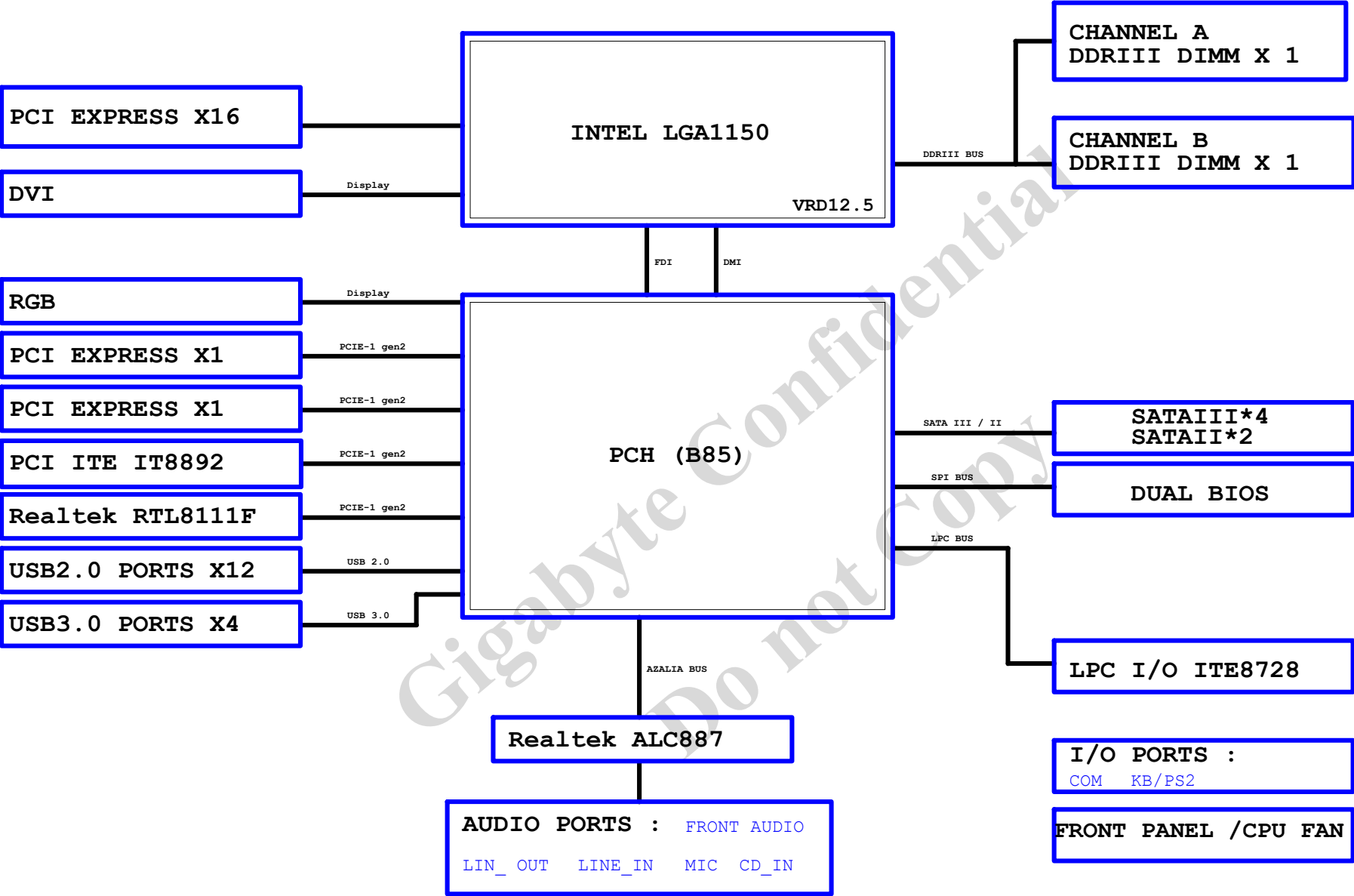
**Gigabyte Technology**

Cover Sheet		
Size Custom	Document Number <b>GA-B85M-D3V</b>	Rev <b>1.1</b>
Date: Wednesday, August 07, 2013	Sheet 1	of 32

2

[illegible][illegible][illegible]

BLOCK DIAGRAM



**(E)**



FDI:12/4/5/4/12 (breakout min 6/4/4/4/6)  
Impedance=85 +- 17.5%

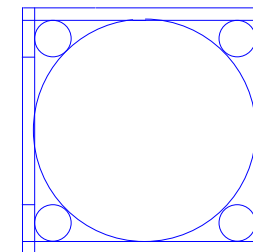
(C)

-CPURST

For IT8620 Ctrl

LGA1150A

LGA1150B

CR  
CPU RETENTION/X

LGA1150\_P



ILM\_BP/1156/CSP/LM\_BP/1156/CSP/[12KRC-0F0001-52R\_12KRC-0F0001-51R]

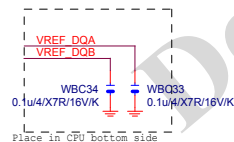
DDR BUS

MAAA0	AU13	DDR0_MA0	DDR0_D00	AD38	MDA0
MAAA1	AV16	DDR0_MA1	DDR0_D01	AD39	MDA1
MAAA2	AU16	DDR0_MA2	DDR0_D02	AF38	MDA2
MAAA3	AW17	DDR0_MA3	DDR0_D03	AF39	MDA3
MAAA4	AU17	DDR0_MA4	DDR0_D04	AD37	MDA4
MAAA5	AW18	DDR0_MA5	DDR0_D05	AD40	MDA5
MAAA6	AW17	DDR0_MA6	DDR0_D06	AE37	MDA6
MAAA7	AT18	DDR0_MA7	DDR0_D07	AF40	MDA7
MAAA8	AU18	DDR0_MA8	DDR0_D08	AH40	MDA9
MAAA9	AT19	DDR0_MA9	DDR0_D09	AH39	MDA10
MAAA10	AW11	DDR0_MA10	DDR0_D10	AK38	MDA10
MAAA11	AV19	DDR0_MA11	DDR0_D11	AK39	MDA11
MAAA12	AU19	DDR0_MA12	DDR0_D12	AH37	MDA12
MAAA13	AY10	DDR0_MA13	DDR0_D13	AH38	MDA12
MAAA14	AT20	DDR0_MA14	DDR0_D14	AK37	MDA14
MAAA15	AU21	DDR0_MA15	DDR0_D15	AK40	MDA15
			DDR0_D16	AM40	MDA17
MODT_A0	AW10	DDR0_ODT0	DDR0_D17	AM39	MDA21
MODT_A1	AY3	DDR0_ODT1	DDR0_D18	AP38	MDA18
	AW9	DDR0_ODT2	DDR0_D19	AP39	MDA19
	AW8	DDR0_ODT3	DDR0_D20	AM37	MDA20
			DDR0_D21	AM38	MDA16
			DDR0_D22	AP37	MDA22
			DDR0_D23	AP40	MDA23
			DDR0_D24	AV37	MDA25
			DDR0_D25	AW37	MDA29
			DDR0_D26	AU35	MDA26
			DDR0_D27	AV35	MDA27
			DDR0_D28	AT37	MDA28
			DDR0_D29	AU37	MDA24
			DDR0_D30	AT35	MDA30
			DDR0_D31	AW35	MDA31
			DDR0_D32	AY6	MDA33
			DDR0_D33	AU6	MDA37
			DDR0_D34	AV4	MDA34
			DDR0_D35	AU4	MDA35
			DDR0_D36	AW6	MDA36
			DDR0_D37	AW6	MDA32
			DDR0_D38	AW4	MDA38
			DDR0_D39	AY4	MDA39
			DDR0_D40	AR1	MDA41
			DDR0_D41	AR4	MDA45
			DDR0_D42	AN3	MDA42
			DDR0_D43	AN4	MDA43
			DDR0_D44	AR2	MDA44
			DDR0_D45	AR3	MDA40
			DDR0_D46	AN2	MDA46
			DDR0_D47	AN1	MDA47
			DDR0_D48	AL1	MDA49
			DDR0_D49	AL4	MDA53
			DDR0_D50	AJ3	MDA50
			DDR0_D51	AJ4	MDA51
			DDR0_D52	AL2	MDA52
			DDR0_D53	AJ2	MDA48
			DDR0_D54	AJ1	MDA55
			DDR0_D55	AG1	MDA57
			DDR0_D56	AG4	MDA61
			DDR0_D57	AE3	MDA58
			DDR0_D58	AE4	MDA59
			DDR0_D59	AG2	MDA60
			DDR0_D60	AG3	MDA56
			DDR0_D61	AE2	MDA62
			DDR0_D62	AE1	MDA63
			DDR0_D63	AE39	DQSA0
			DDR0_D64	AJ39	DQSA1
			DDR0_D65	AN39	DQSA2
			DDR0_D66	AV36	DQSA3
			DDR0_D67	AV5	DQSA4
			DDR0_D68	AP3	DQSA5
			DDR0_D69	AK3	DQSA6
			DDR0_D70	AF3	DQSA7
			DDR0_D71	AV32	DQSA0
			DDR0_D72	AE38	DQSA1
			DDR0_D73	AJ38	DQSA2
			DDR0_D74	AN38	DQSA3
			DDR0_D75	AJ36	DQSA4
			DDR0_D76	AW5	DQSA4
			DDR0_D77	AP2	DQSA5
			DDR0_D78	AK2	DQSA6
			DDR0_D79	AF2	DQSA7
			DDR0_D80	AU32	

HASWELL[10SC1-F01150-11R\_10SC1-F01150-12R]

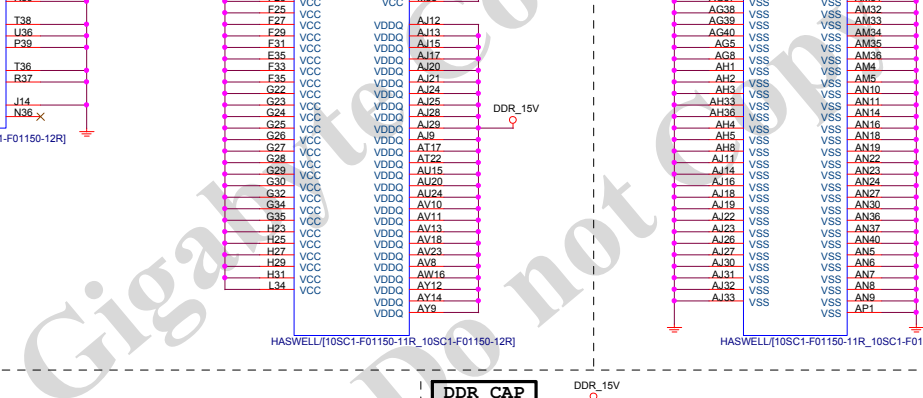
		LSAT1505			
	MAAB0	AL19	DDR1_MA0	DDR1_D00	AE34 MD80
	MAAB1	AK23	DDR1_MA1	DDR1_D01	AE35 MD81
	MAAB2	AM22	DDR1_MA2	DDR1_D02	AG35 MD82
	MAAB3	AM23	DDR1_MA3	DDR1_D03	AH35 MD83
	MAAB4	AP23	DDR1_MA4	DDR1_D04	AD34 MD84
	MAAB5	AL23	DDR1_MA5	DDR1_D05	AD35 MD85
	MAAB6	AY24	DDR1_MA6	DDR1_D06	AG34 MD86
	MAAB7	AV25	DDR1_MA7	DDR1_D07	AH34 MD87
	MAAB8	AU26	DDR1_MA8	DDR1_D08	AL34 MD88
	MAAB9	AW25	DDR1_MA9	DDR1_D09	AL35 MD89
	MAAB10	AP18	DDR1_MA10	DDR1_D10	AL31 MD810
	MAAB11	AY25	DDR1_MA11	DDR1_D11	AL32 MD811
	MAAB12	AV26	DDR1_MA12	DDR1_D12	AK34 MD812
	MAAB13	AR15	DDR1_MA13	DDR1_D13	AK35 MD813
	MAAB14	AV27	DDR1_MA14	DDR1_D14	AK32 MD814
	MAAB15	AY28	DDR1_MA15	DDR1_D15	AL32 MD815
	MODT_B0	AM17	DDR1_D00	DDR1_D16	AN34 MD821
	MODT_B1	AL16	DDR1_D01	DDR1_D17	AN31 MD819
		AM16	DDR1_D02	DDR1_D18	AP31 MD823
		AK15	DDR1_D03	DDR1_D19	AN35 MD820
			DDR1_D20	DDR1_D21	AP35 MD816
		AM26	DDR1_D22	DDR1_D22	AN32 MD818
		AM25	DDR1_D23	DDR1_D23	AP32 MD822
		AP25	DDR1_D24	DDR1_D24	AM29 MD825
		AP26	DDR1_D25	DDR1_D25	AM28 MD828
		AL26	DDR1_D26	DDR1_D26	AR29 MD827
		AL25	DDR1_D27	DDR1_D27	AR28 MD830
		AR26	DDR1_D28	DDR1_D28	AL28 MD824
		AR25	DDR1_D29	DDR1_D29	AL28 MD829
			DDR1_D30	DDR1_D30	AP29 MD826
		AK17	DDR1_D31	DDR1_D31	AP28 MD831
[8] SBAB0	SBAB0	AL18	DDR1_D32	DDR1_D32	AR12 MD832
[8] SBAB1	SBAB1	AL17	DDR1_D33	DDR1_D33	AL12 MD833
[8] SBAB2	SBAB2	AW28	DDR1_D34	DDR1_D34	AL13 MD834
			DDR1_D35	DDR1_D35	AL12 MD835
		AW29	DDR1_D36	DDR1_D36	AR13 MD836
		AY29	DDR1_D37	DDR1_D37	AP13 MD837
		AL28	DDR1_D38	DDR1_D38	AM13 MD838
		AL27	DDR1_D39	DDR1_D39	AM12 MD839
		AK21	DDR1_D40	DDR1_D40	AR9 MD845
		AM15	DDR1_D41	DDR1_D41	AP9 MD841
		AM17	DDR1_D42	DDR1_D42	AR6 MD847
		AL15	DDR1_D43	DDR1_D43	AP6 MD843
			DDR1_D44	DDR1_D44	AR10 MD844
			DDR1_D45	DDR1_D45	AP10 MD840
			DDR1_D46	DDR1_D46	AR7 MD846
			DDR1_D47	DDR1_D47	AP7 MD842
			DDR1_D48	DDR1_D48	AM9 MD852
			DDR1_D49	DDR1_D49	AL9 MD853
[8] DCLXB0	DCLXB0	AM20	DDR1_D50	DDR1_D50	AL6 MD860
[8] DCLXB1	DCLXB1	AP21	DDR1_D51	DDR1_D51	AL6 MD855
[8] DCLXB1	DCLXB1	AP22	DDR1_D52	DDR1_D52	AM10 MD848
		AM20	DDR1_D53	DDR1_D53	AL10 MD849
		AM21	DDR1_D54	DDR1_D54	AM6 MD854
		AP19	DDR1_D55	DDR1_D55	AM7 MD851
		AP20	DDR1_D56	DDR1_D56	AH6 MD861
			DDR1_D57	DDR1_D57	AH7 MD860
			DDR1_D58	DDR1_D58	AE6 MD859
[8] SCASB	SCASB	AP16C	DDR1_D59	DDR1_D59	AE7 MD863
		AL20	DDR1_D60	DDR1_D60	AJ6 MD856
[8] SRASB	SRASB	AM18C	DDR1_D61	DDR1_D61	AJ7 MD857
[8] SWEB	SWEB	AK16C	DDR1_D62	DDR1_D62	AG6 MD858
			DDR1_D63	DDR1_D63	AF7 MD862
			DDR1_D64	DDR1_D64	AF36 DQSB0
			DDR1_D65	DDR1_D65	AL33 DQSB1
			DDR1_D66	DDR1_D66	AP33 DQSB2
			DDR1_D67	DDR1_D67	AN28 DQSB3
			DDR1_D68	DDR1_D68	AN12 DQSB4
			DDR1_D69	DDR1_D69	AP8 DQSB5
			DDR1_D70	DDR1_D70	AL8 DQSB6
			DDR1_D71	DDR1_D71	AG7 DQSB7
			DDR1_D72	DDR1_D72	AN25 DQSB0
			DDR1_D73	DDR1_D73	AE34 DQSB0
			DDR1_D74	DDR1_D74	AK33 DQSB1
			DDR1_D75	DDR1_D75	AN33 DQSB2
			DDR1_D76	DDR1_D76	AN29 DQSB3
			DDR1_D77	DDR1_D77	AN13 DQSB4
			DDR1_D78	DDR1_D78	AR8 DQSB5
			DDR1_D79	DDR1_D79	AM8 DQSB6
			DDR1_D80	DDR1_D80	AG6 DQSB7
			DDR1_D81	DDR1_D81	AN26

HASWELL[10SC1-F01150-11R\_10SC1-F01150-12R]

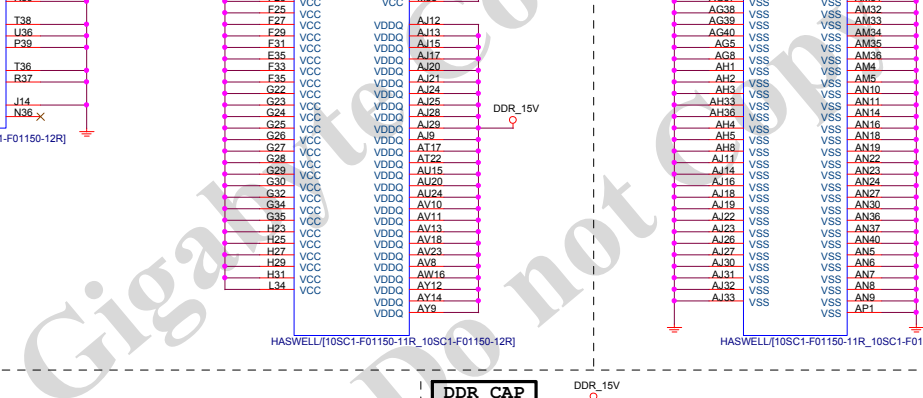


[7] MODT_A[0..1]	MODT_A0..1
[8] MODT_B[0..1]	MODT_B0..1
[7] MDA[0..63]	MDA0..63
[8] MDB[0..63]	MDB0..63
[7] DQSA[0..7]	DQSA0..7
[7] -DQSA[0..7]	-DQSA0..7
[7] MAA[0..15]	MAA0..15
[8] MAB[0..15]	MAB0..15
[8] DQSB[0..7]	DQSB0..7
[8] -DQSB[0..7]	-DQSB0..7

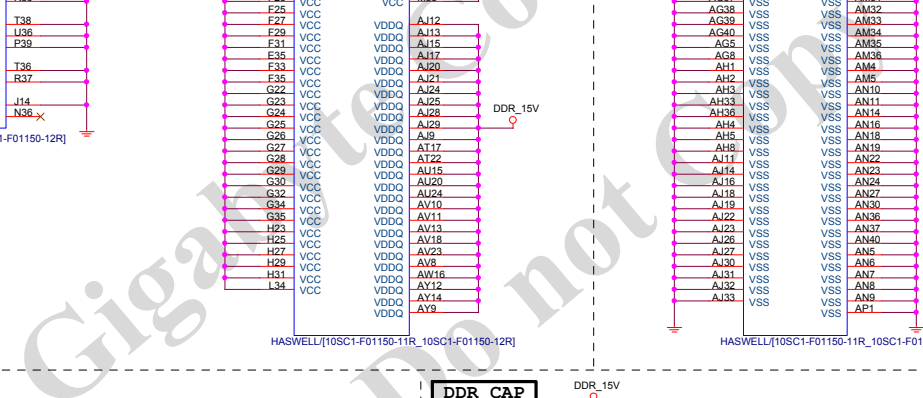
(F, J)



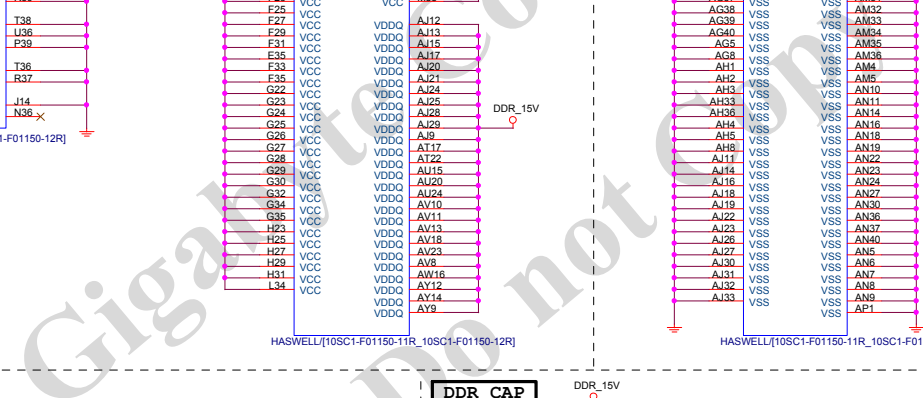
(G, H, I)



(X18)



(x9)



(A)



## BLACK CONNECTOR

MODT A[0..1] ↔ MODT A[0..1] [5]

$\text{DQSA}[0..7] \leftrightarrow \text{DQSA}[0..7] \quad [5]$

DQSA[0..7]  $\longleftrightarrow$  DQSA[0..7] [5]

#### DDR15V Decouple



DDR\_15V



## DDRVTT Decouple



## Gigabyte Technology

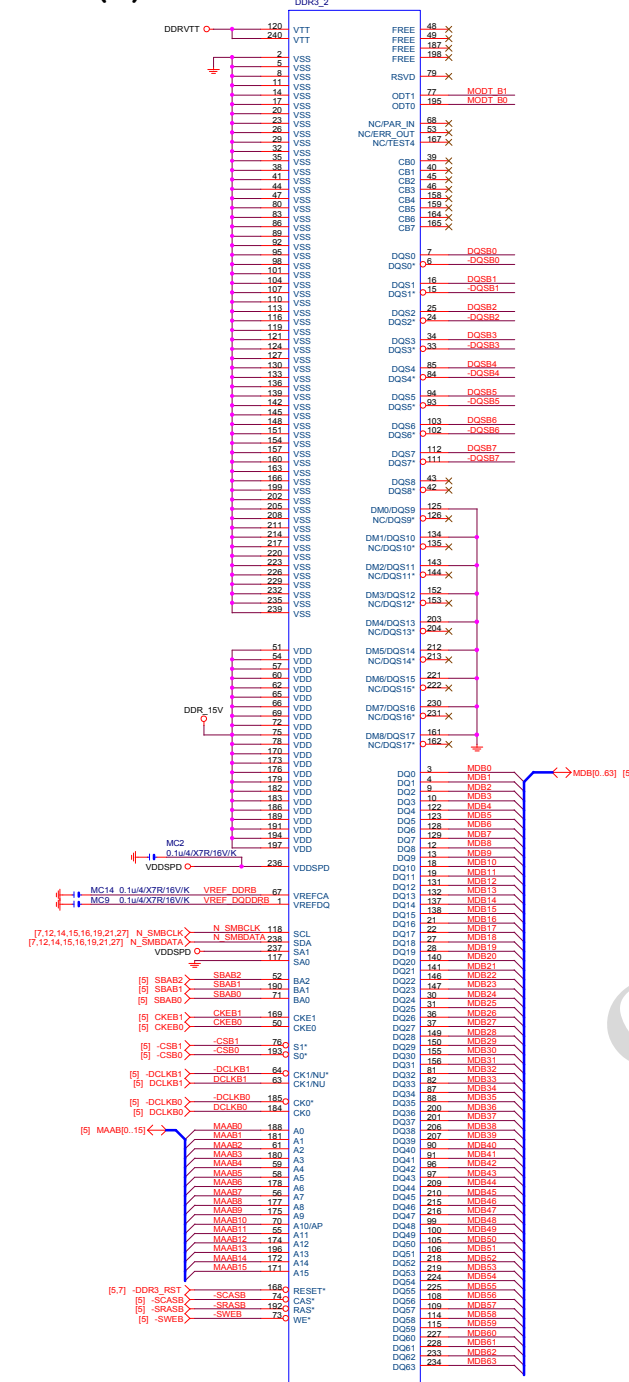
Title		DDRIII CHANNEL A
Size	Document Number	GA-B85M-D3V

Rev	1.1
-----	-----

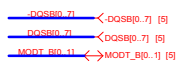


DDR3

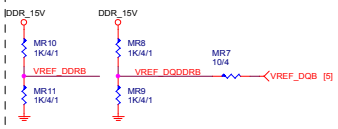
(B)



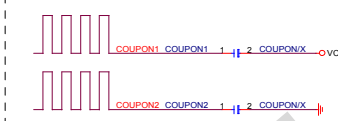
DDR3\_240/BK/A/D  
BLACK CONNECTOR



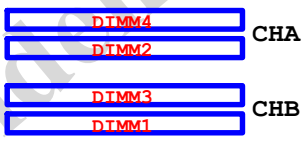
DDR3 VREF



COUPON



CPU

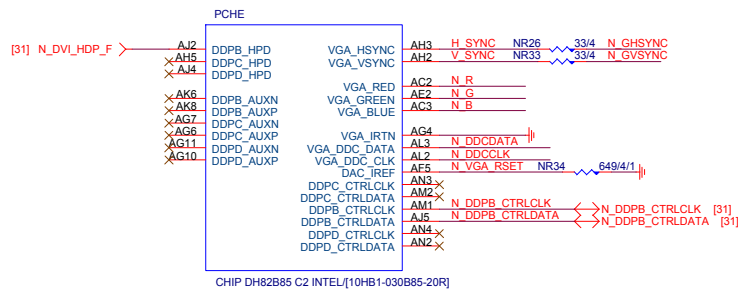






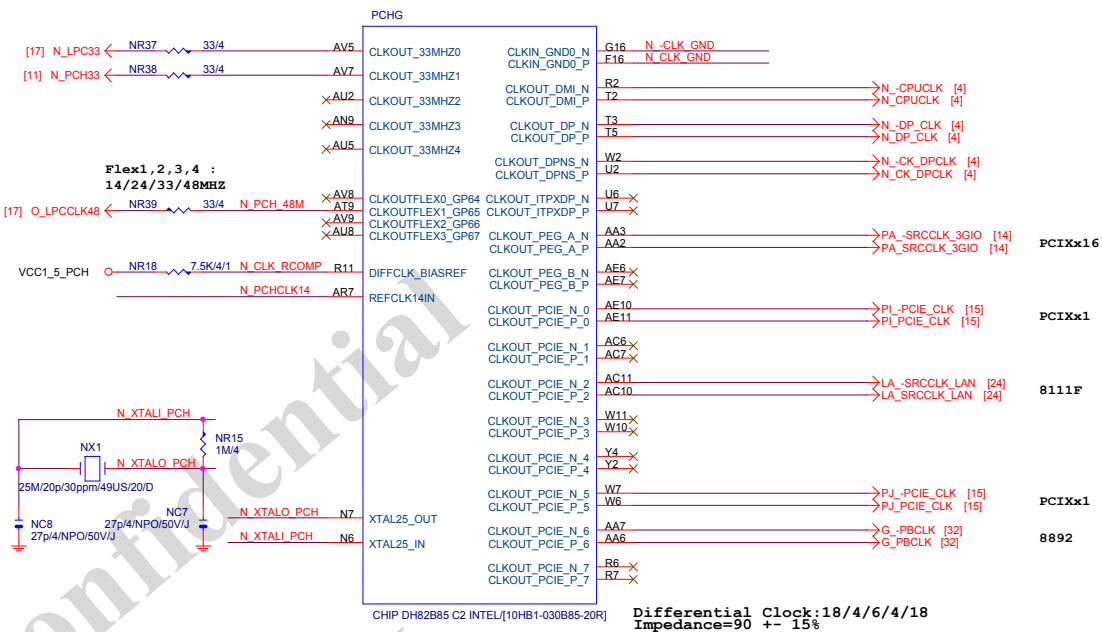
PCH

(E)

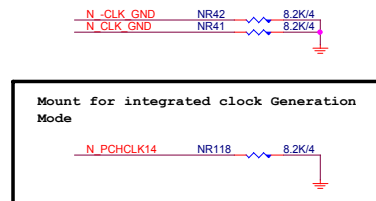


PCH

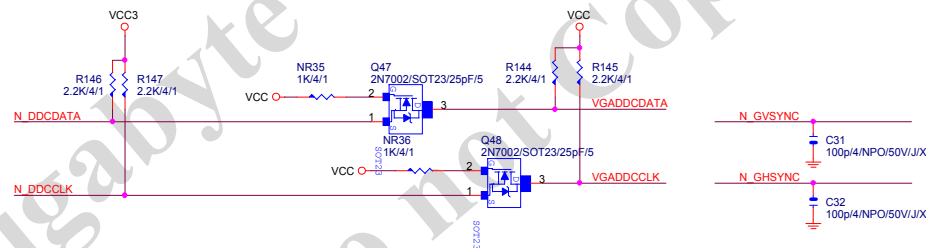
(G)



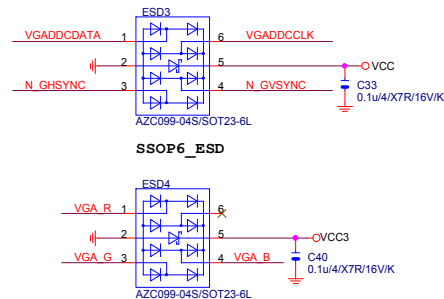
PCH CLK PD



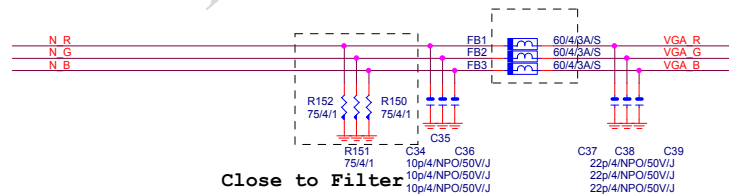
VGA DDC



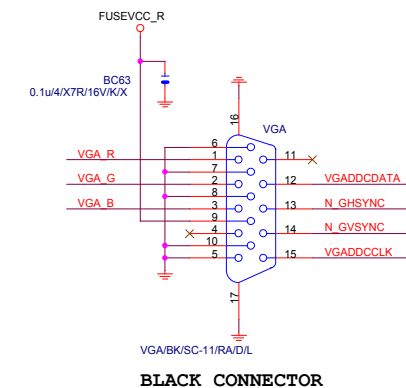
VGA ESD



VGA DDC



VGA CONNECTOR

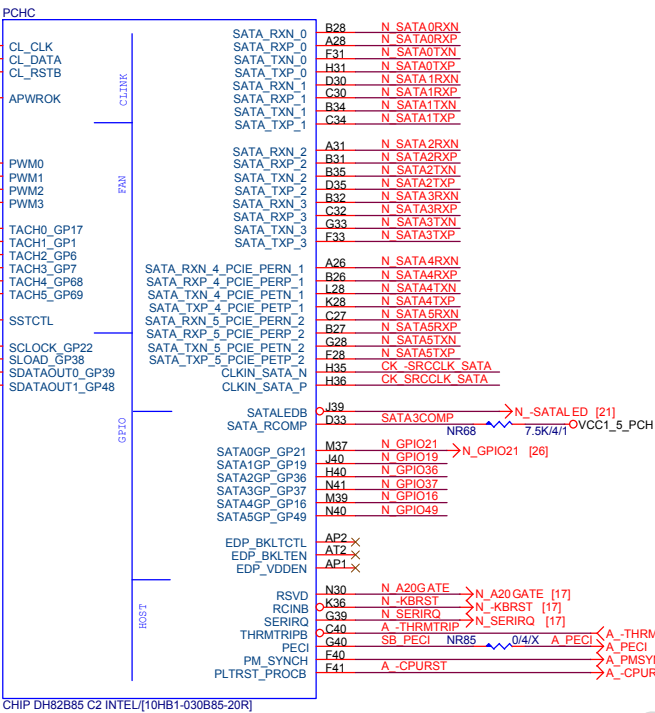


Gigabyte Technology

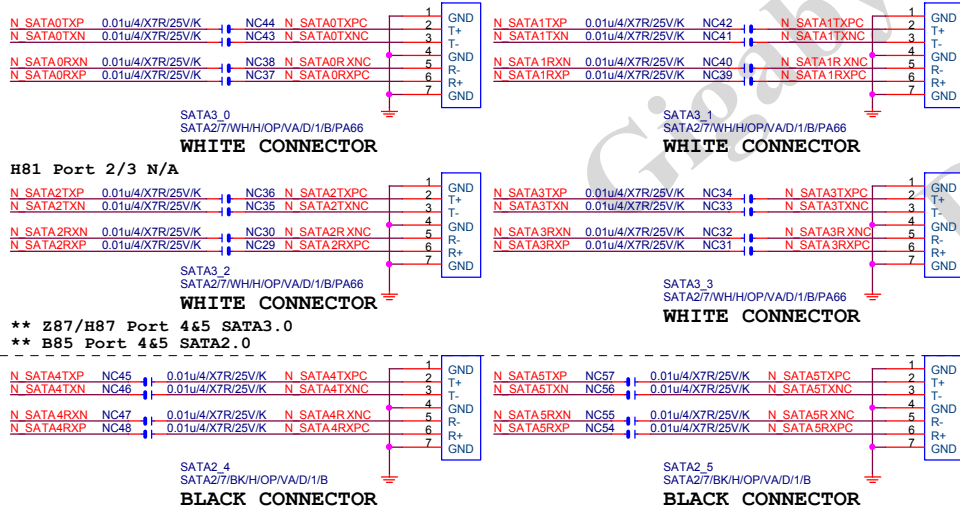
Title			PCH DISPLAY_CLK BUFFER		
Size			GA-B85M-D3V		
Date:			Wednesday, August 07, 2013		
Sheet			10 of 32		
Rev			1.1		

(C)

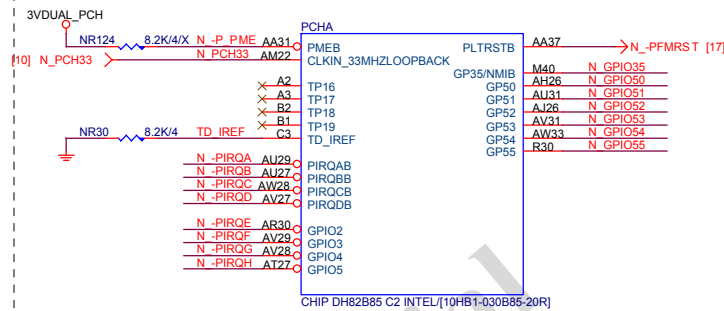
SATA3 : 20/7.5/4.5/7.5/20 (breakout min 8/4/4/4/8)  
Impedance=90 +- 17.5%  
SATA2 : 15/7.5/4.5/7.5/15 (breakout min 8/4/4/4/8)  
Impedance=90 +- 17.5%



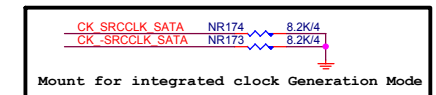
## SATA CONNECTOR



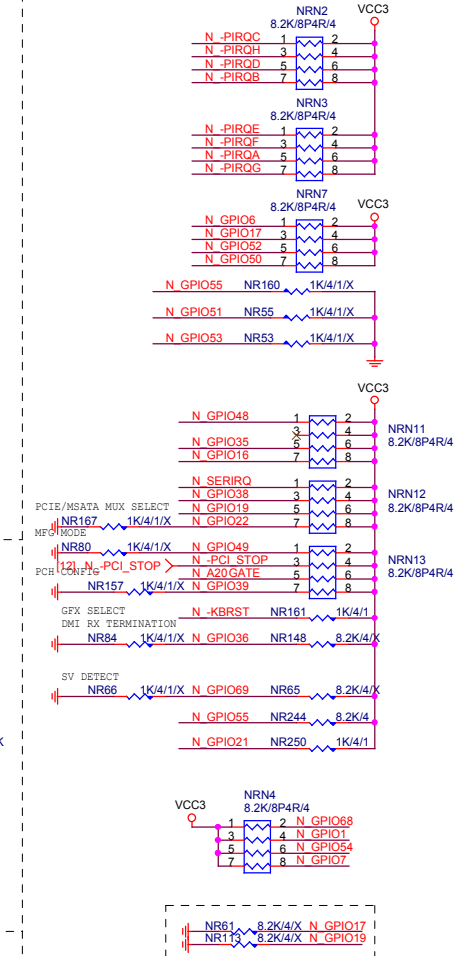
**(A)**



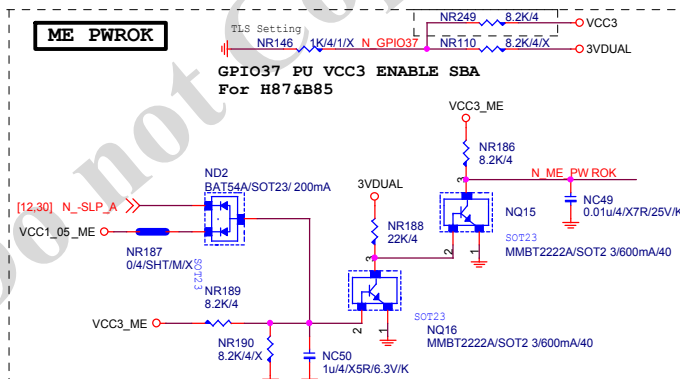
PCH	CLK	PD
-----	-----	----



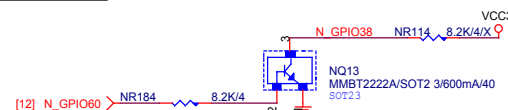
PCH	PU/PD
-----	-------



ME PWROK



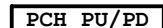
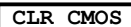
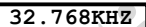
GPIO38 Ctrl



## Gigabyte Technology

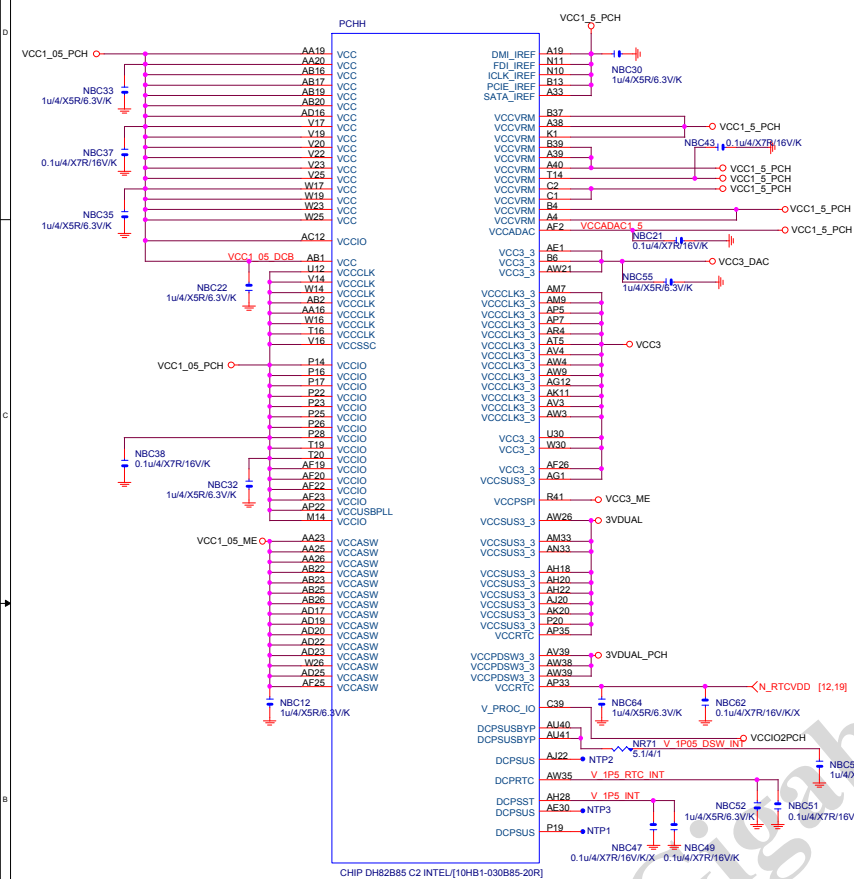
Title			
PCH HOST , SATA, PCI			
Size	Document Number		Rev
Custom	GA-B85M-D3V		1.1
Date:	Wednesday, August 07, 2013	Sheet	11 of 32

(D)

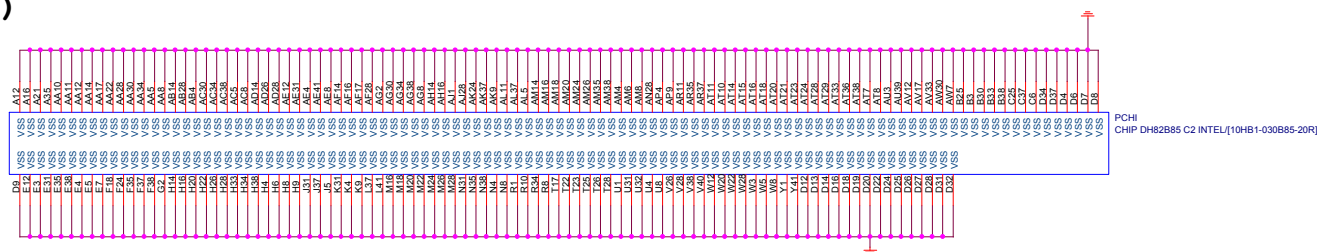


Title			
PCH GPIO , CTRL , AUDIO			
Size	Document Number		Rev
Custom	GA-B85M-D3V		1.1
Date:	Wednesday, August 07, 2013	Sheet	12 of 32

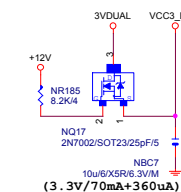
**PCH (H)**



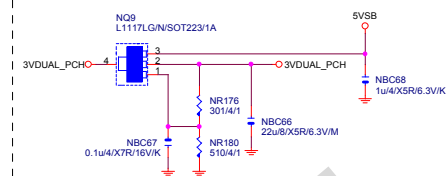
**PCH (I)**



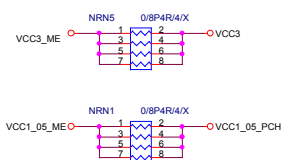
## VCC3 DAC



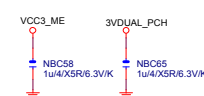
## 3VDUAL PCH



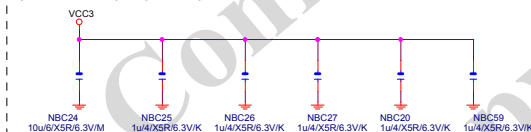
SHT PWR



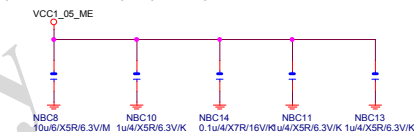
## CAP



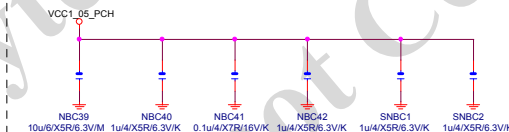
(3.3V) (X6)



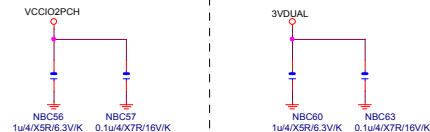
(1.05V) (x5)



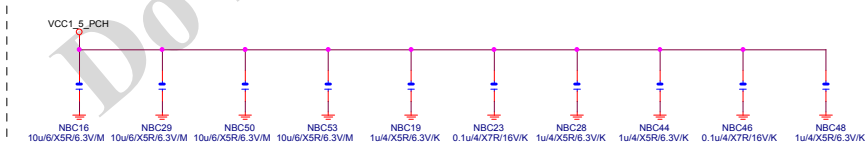
(1.05V) (x6)



▶ (1.05V)(x2) (3.3V) (x2)

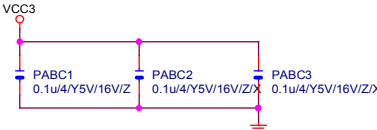


(1.05V) (x10)

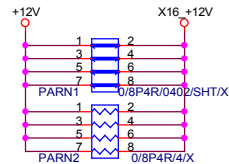




# PCIEX16 CAP



# PCIEX16 PROTECT SHT

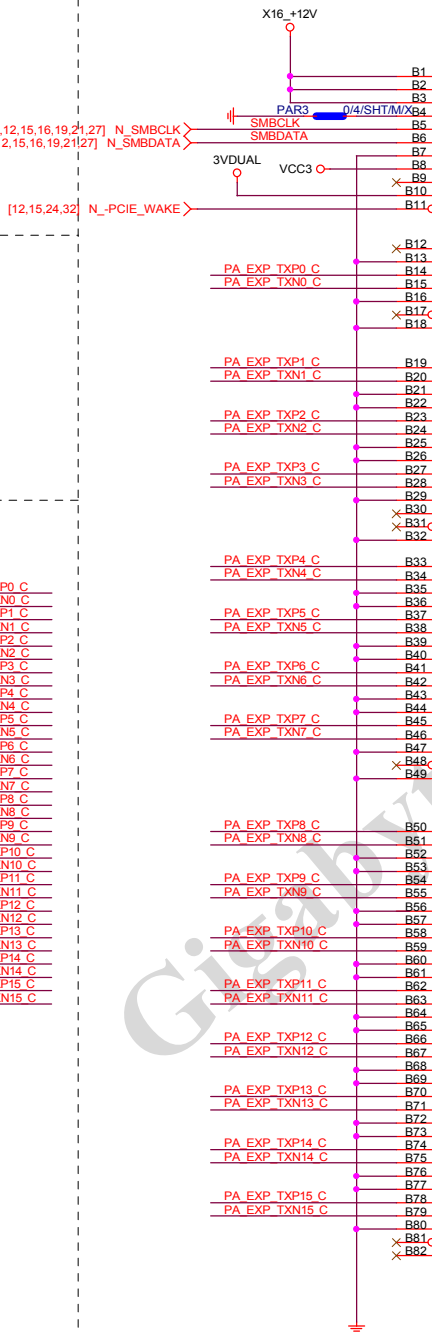


# PCIEX16 AC CAP

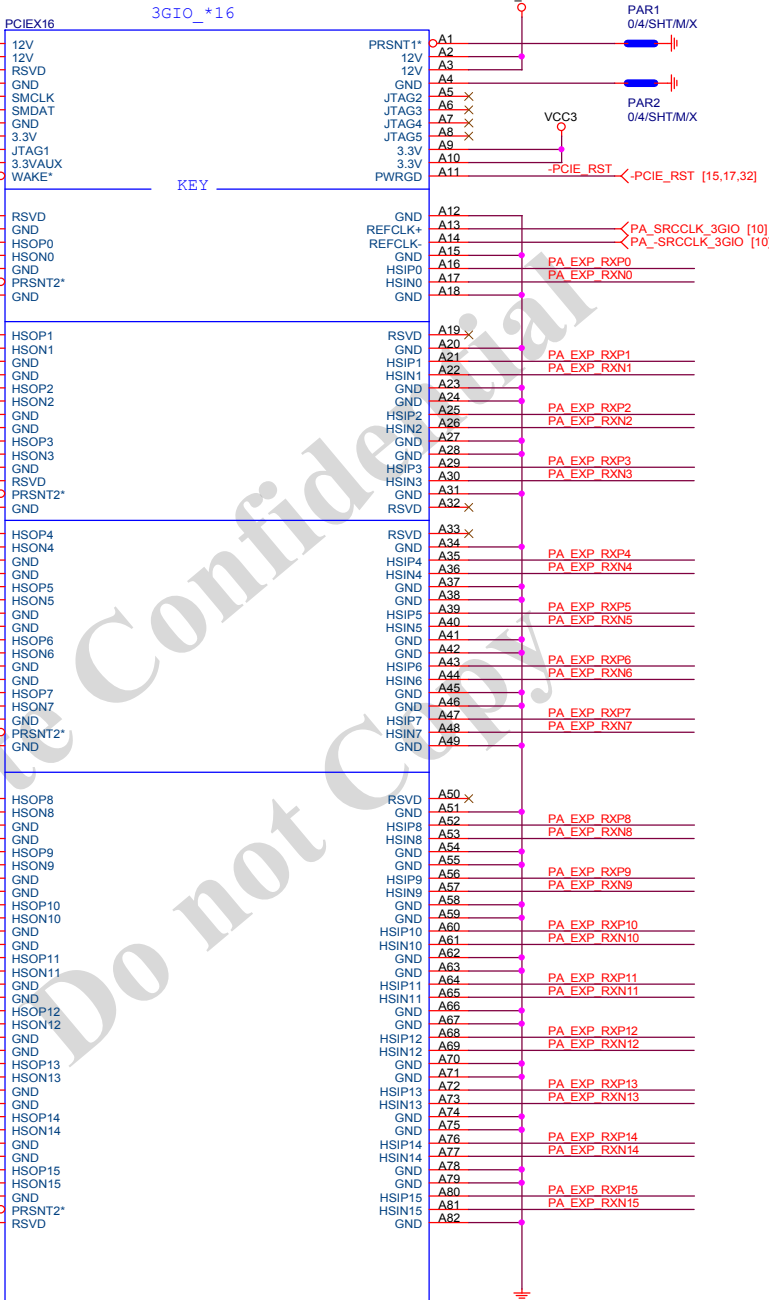
PA EXP TXP0	PAC5	0.22u4/X5R/6.3V/K	PA EXP TXP0 C
PA EXP TXN0	PAC4	0.22u4/X5R/6.3V/K	PA EXP TXN0 C
PA EXP TXP1	PAC6	0.22u4/X5R/6.3V/K	PA EXP TXP1 C
PA EXP TXN1	PAC7	0.22u4/X5R/6.3V/K	PA EXP TXN1 C
PA EXP TXP2	PAC8	0.22u4/X5R/6.3V/K	PA EXP TXP2 C
PA EXP TXN2	PAC9	0.22u4/X5R/6.3V/K	PA EXP TXN2 C
PA EXP 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	PAC19	0.22u4/X5R/6.3V/K	PA EXP TXP7 C
PA EXP TXN7	PAC18	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-P



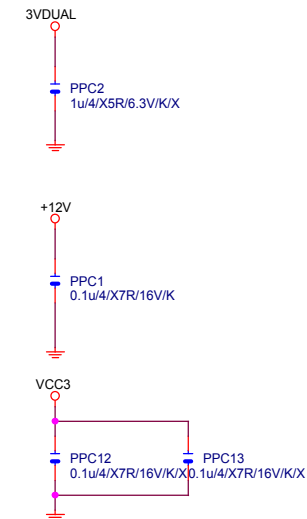
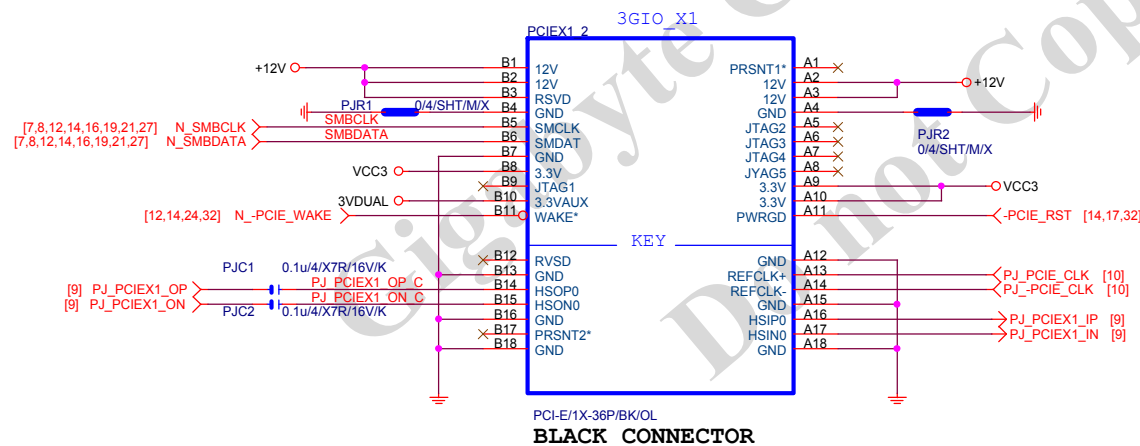
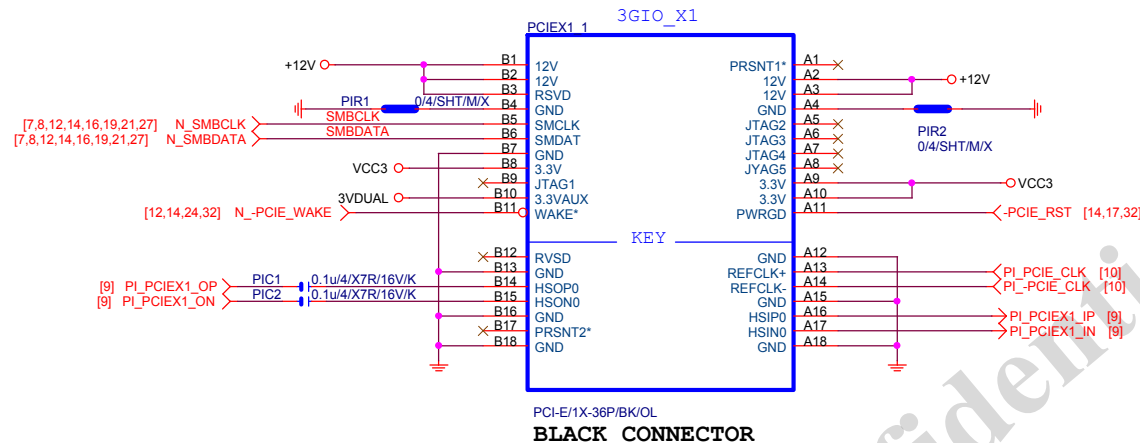
PCI-E/16X-164P/BK/LONG DOUBLE

BLACK CONNECTOR

Gigabyte Technology

Title			PCI EXPRESS * 16	
Size	Document Number	GA-B85M-D3V		Rev
Custom				1.1
Date:		Wednesday, August 07, 2013	Sheet	14 of 32

# PCIEX1 SLOT

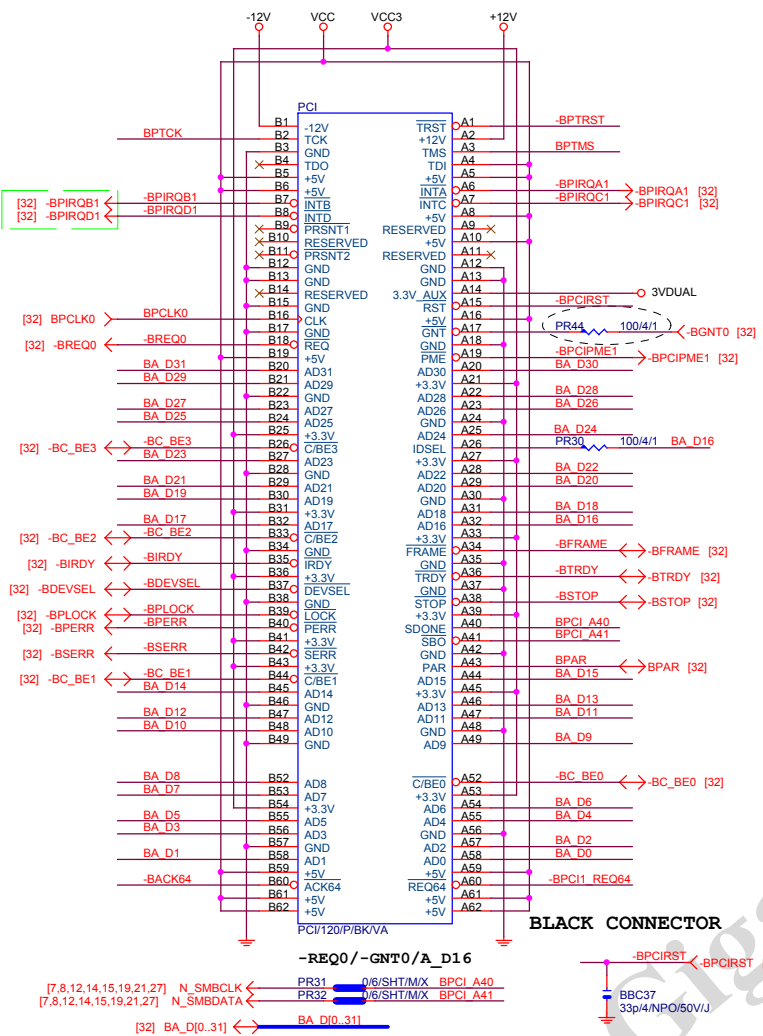


Gigabyte Technology

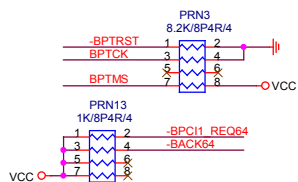
Title		PCI EXPRESS X 1 PORT	
Size	Document Number	GA-B85M-D3V	
Custom			Rev 1.1
Date:	Wednesday, August 07, 2013	Sheet 15	of 32



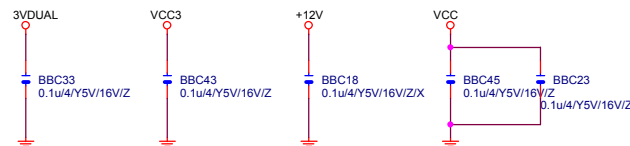
## PCI SLOT 1



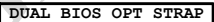
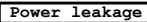
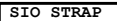
PCI	PU
-----	----



## PCI CAP

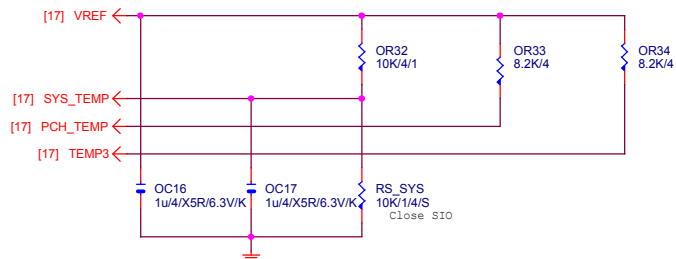


PWR	SHT
-----	-----

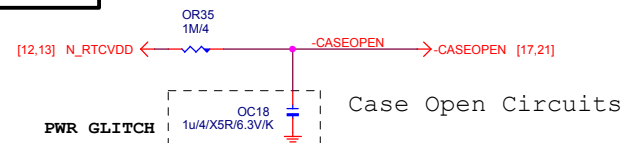




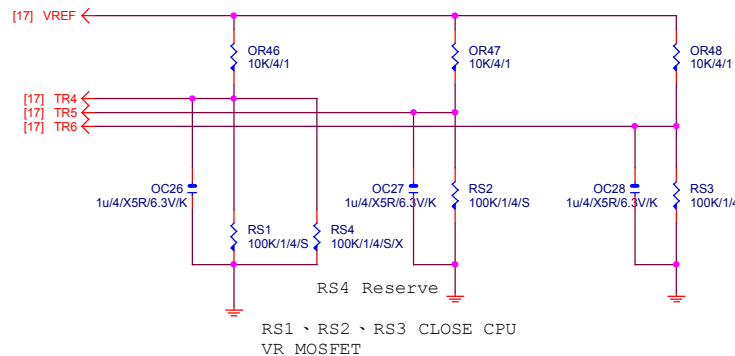
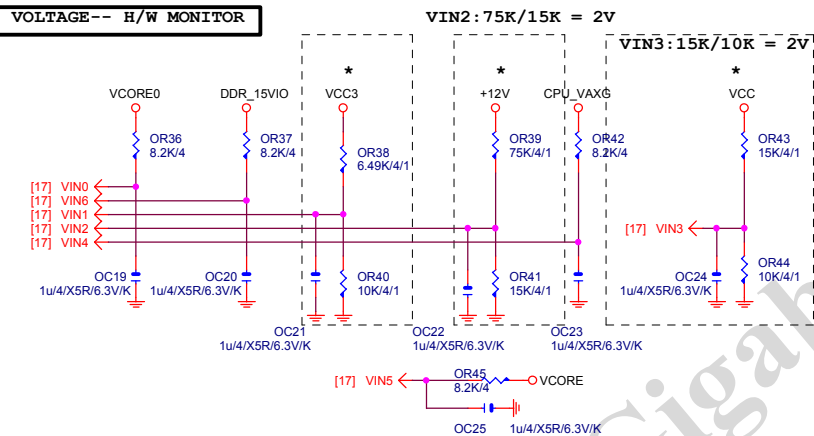
## TEMP H/W MONITOR



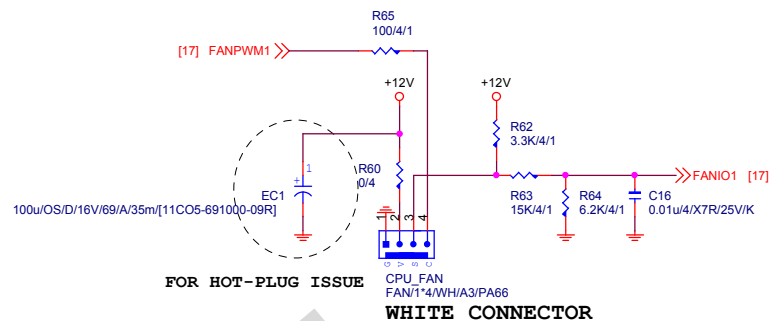
**CASE OPEN**



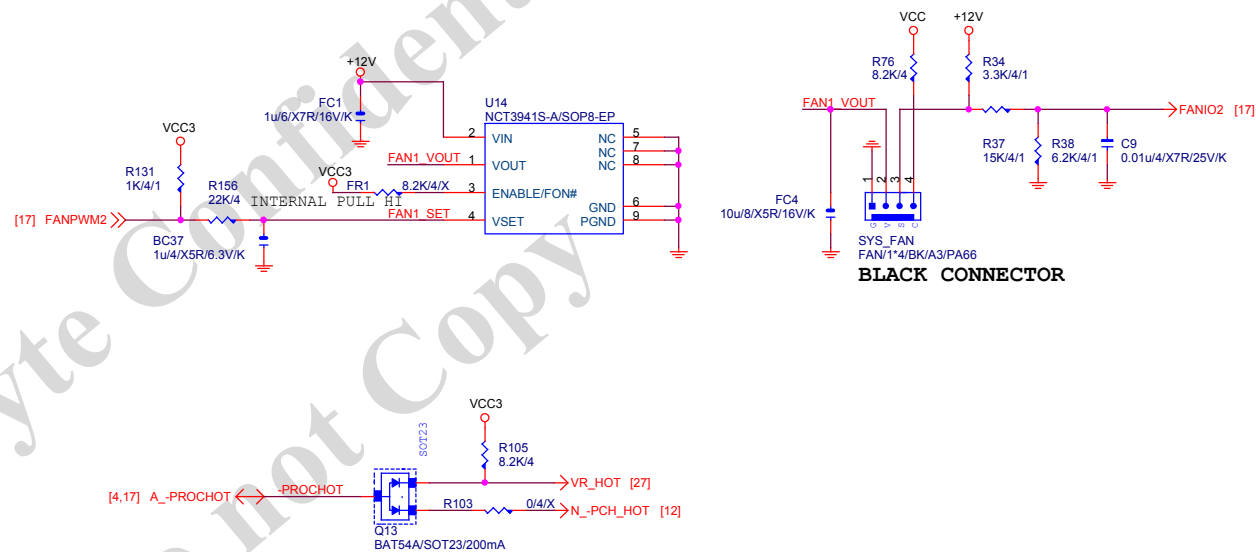
## VOLTAGE-- H/W MONITOR



## CPU SMART FAN

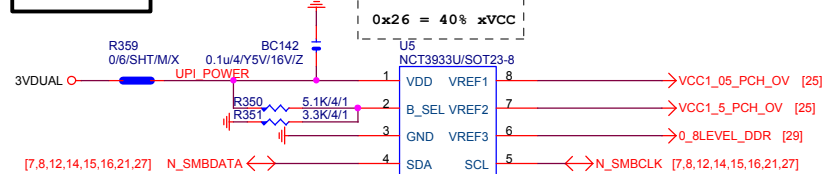


## SYS SMART FAN



接pwm feedback pin

OV NCT3933

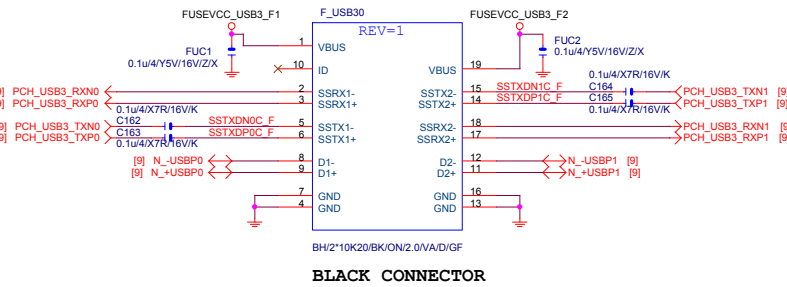


## Gigabyte Technology

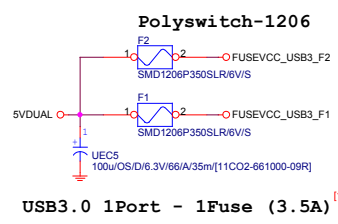
Title			
HWM,FAN CTRL,OV			
Size	Document Number		Rev
Custom	GA-B85M-D3V		1.1
Date:	Wednesday, August 07, 2013	Sheet	19 of 32



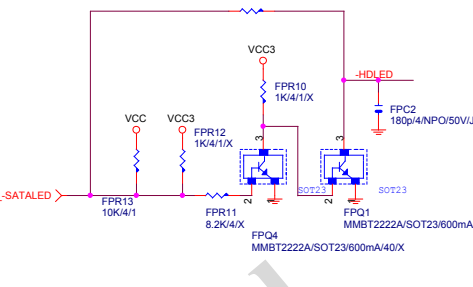
# F\_USB30



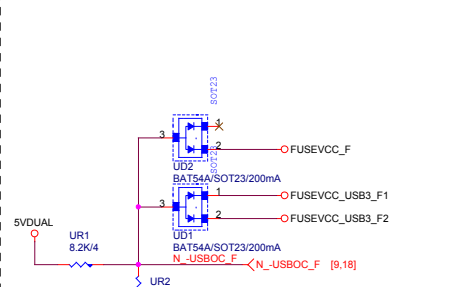
# F\_USB30 PWR



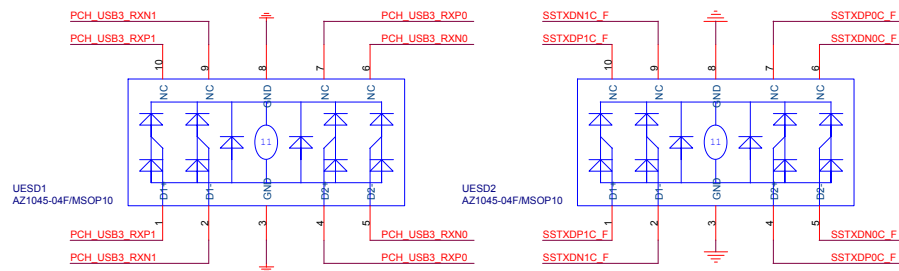
# SATA LED



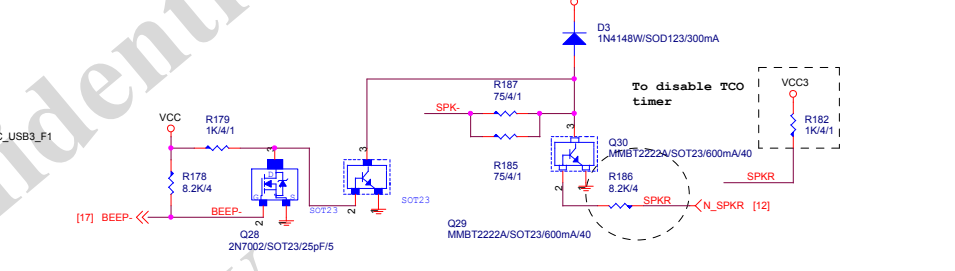
# -USBOC\_F



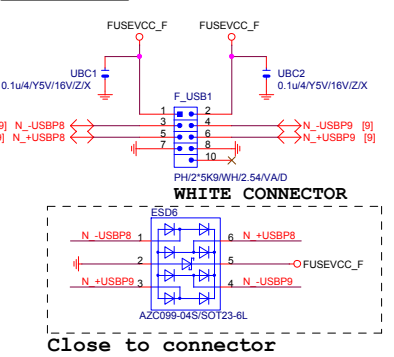
# F\_USB30 ESD PROTECT



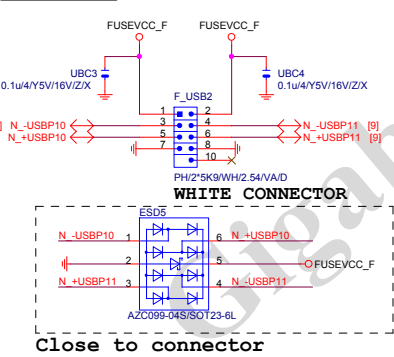
# SPKR



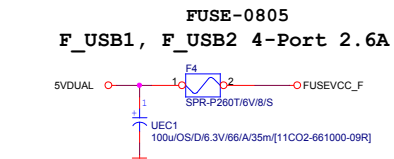
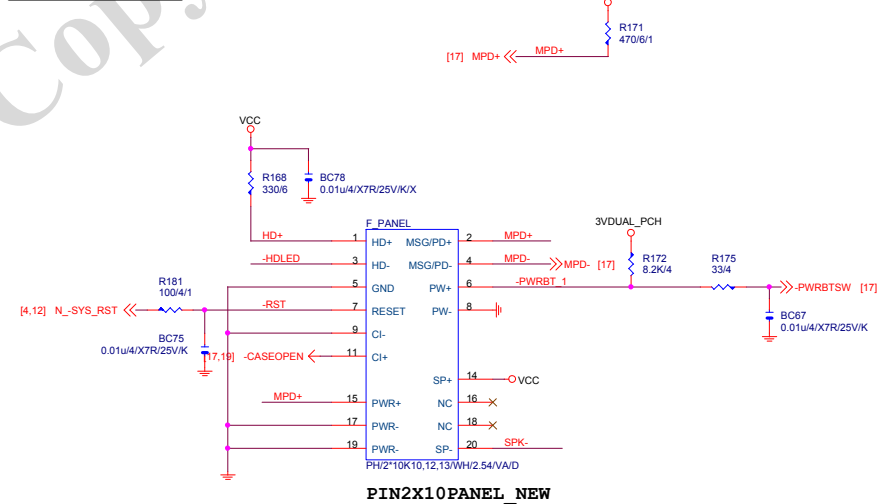
# FRONT USB1



# FRONT USB2



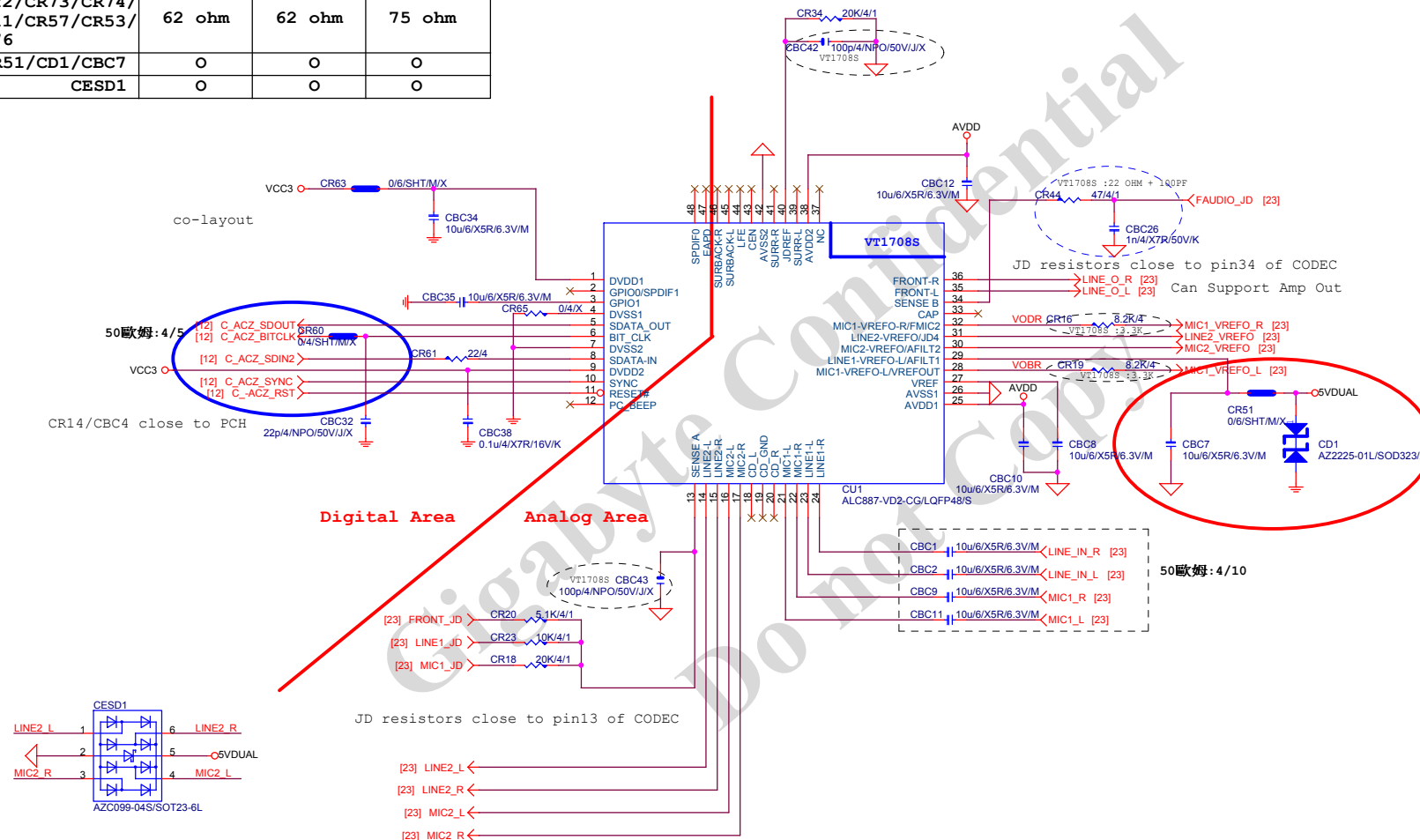
# INTEL FRONT PANEL



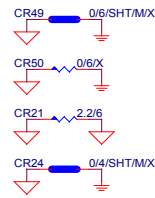
Gigabyte Technology			
FP,F_USB,USB PWR,SPKR,SATA LED			
GA-B85M-D3V			
Rev	1.1		
Date:	Wednesday, August 07, 2013	Sheet	21 of 32

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

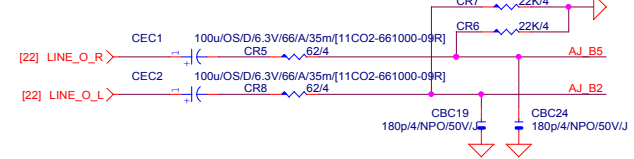
	ALC892	ALC887-VD2	VT1708S-CE
CR44/CBC26	47ohm+1nF	47ohm+1nF	22ohm+100P
CBC42/CBC43	X	X	100P/4
CR6/CR7/CR58/CR54/ CR67/CR68/CR69/CR70	22K/4	22K/4	10K/4/1
CR5/CR8/CR1/CR14/ CR17/CR22/CR73/CR74/ CR13/CR11/CR57/CR53/ CR75/CR76	62 ohm	62 ohm	75 ohm
CR51/CD1/CBC7	O	O	O
CESD1	O	O	O







## LINE-OUT



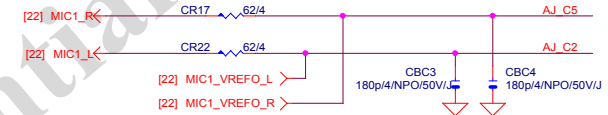
Only reserved for ALC888

## LINE-IN

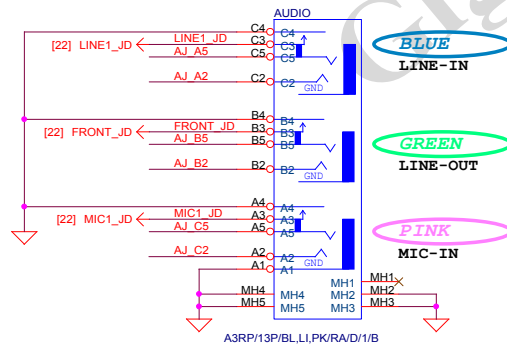
Verify MIC function  
in LINE-in

For 889A/888

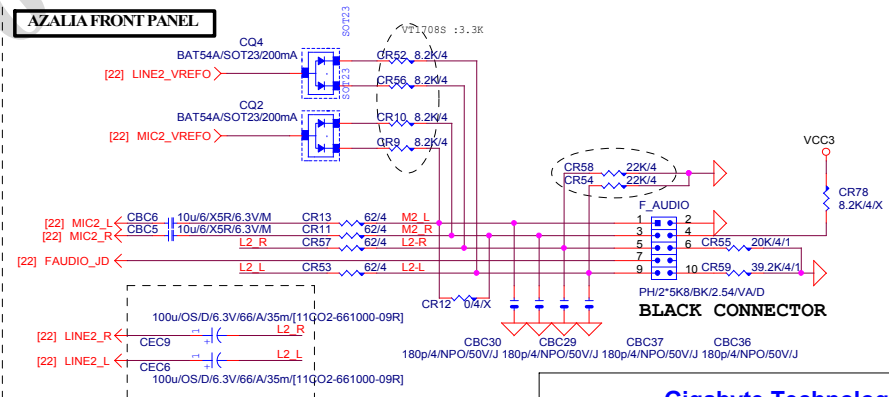
## MIC-IN



## SPDIF\_OUT

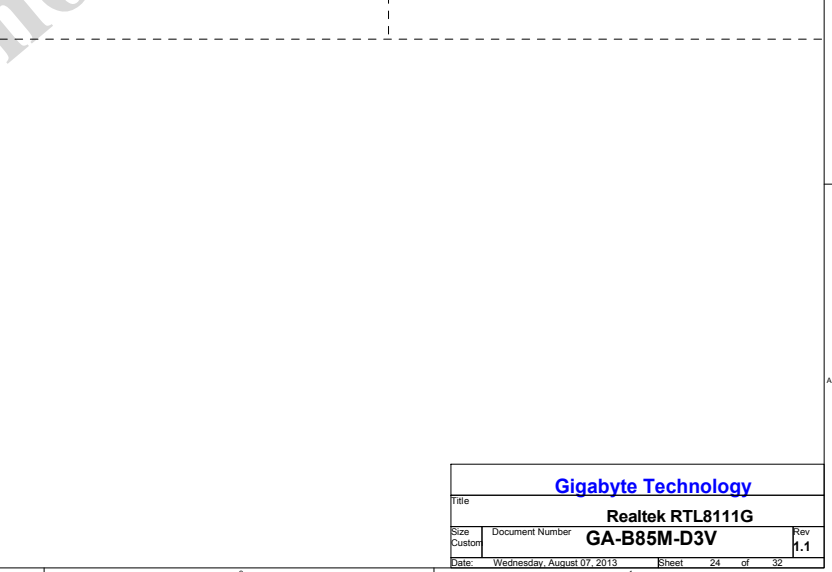
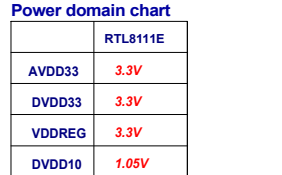
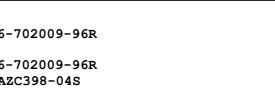
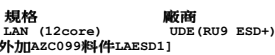


## AZALIA FRONT PANEL

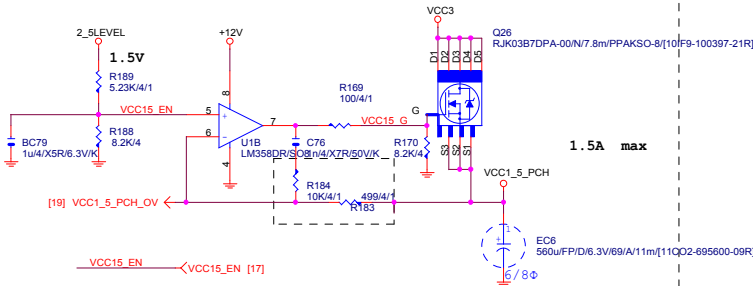


Gigabyte Technology

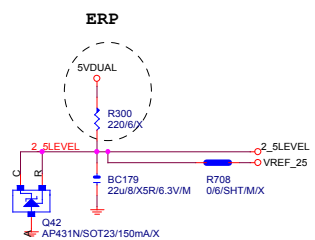
Title		
AUDIO JACK		
Size	Document Number	Rev
Custom	GA-B85M-D3V	1.1
Date:	Wednesday, August 07, 2013	Sheet 23 of 32



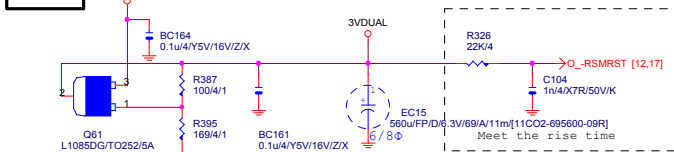
VCC1\_5\_PCH



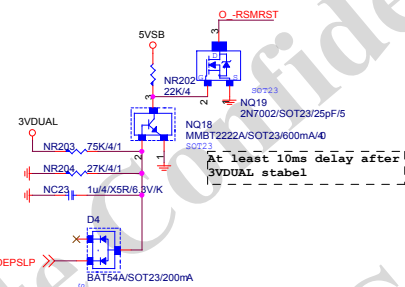
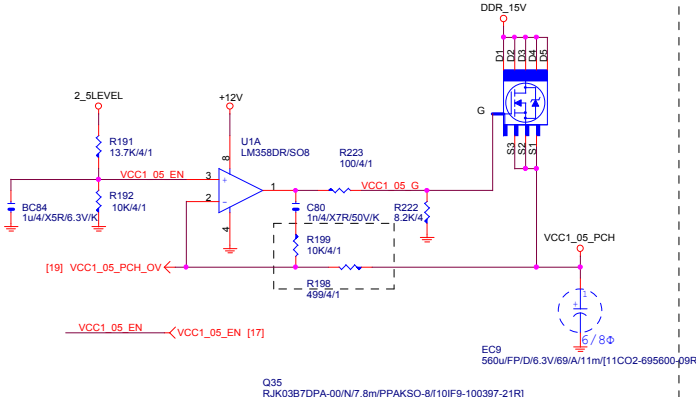
2\_5LEVEL



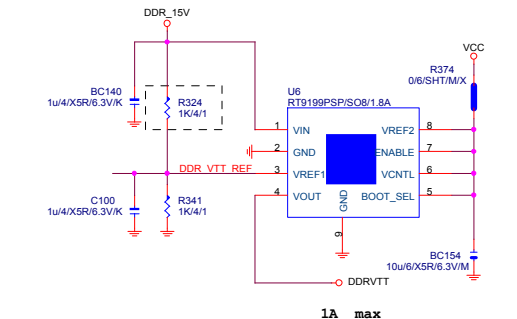
3VDUAL



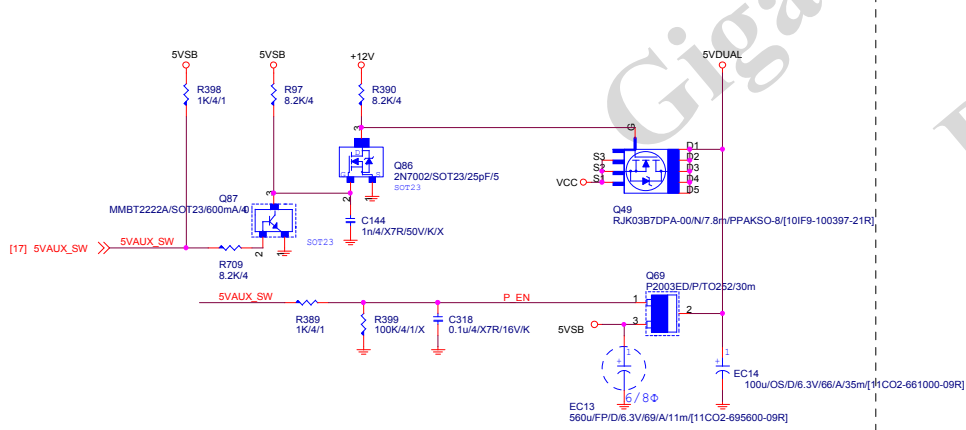
VCC1\_05\_PCH



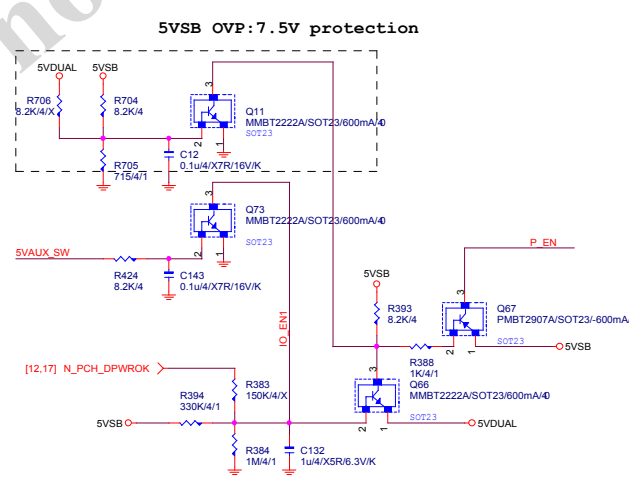
DDRVTT



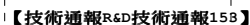
5VDUAL



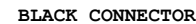
5VDUAL SHORT PROTECT



## 【技術通報R&amp;D技術通報155】



To fix 12V light load  
abnromal issue +12V

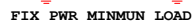


ATX\_12V\_2X4  
APW/2\*4/BK/OC/P/4.2/VA/SN/OH::Location ATX\_12V\_2X4



To prevent the 5VSB under loading when boot

## 【技術通報R&amp;D技術通報154】



## Gigabyte Technology

## ATX CONNECTOR

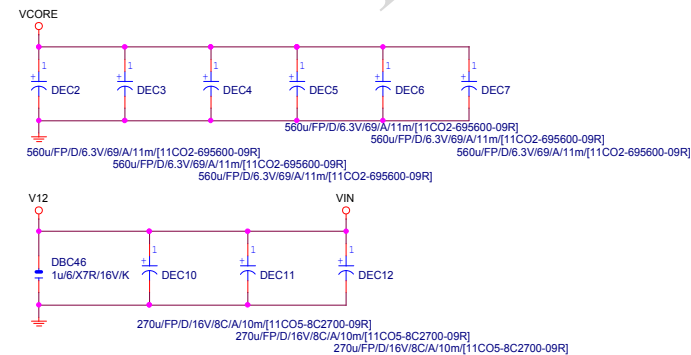
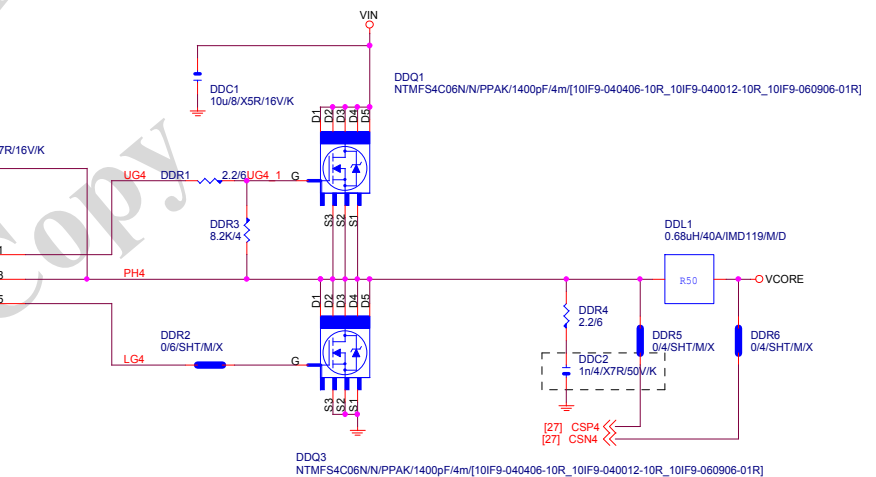
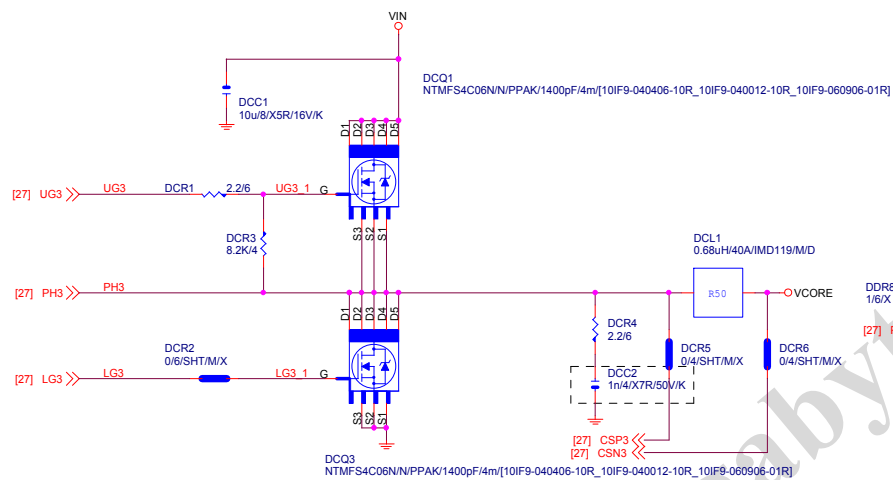
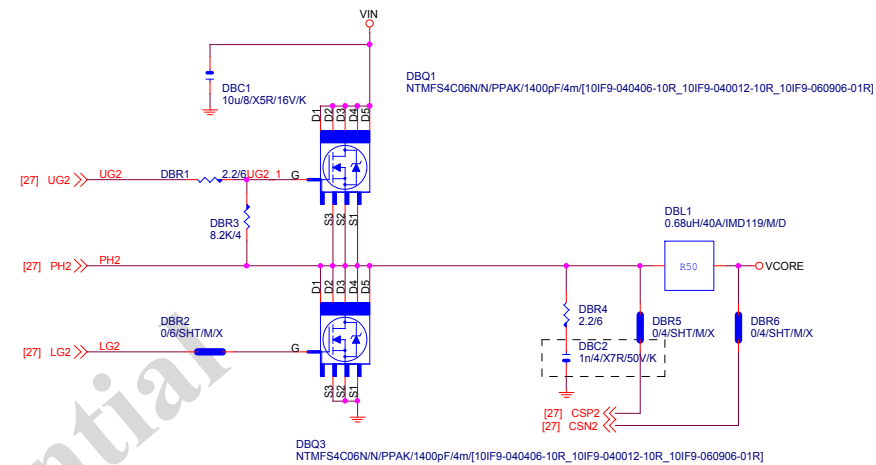
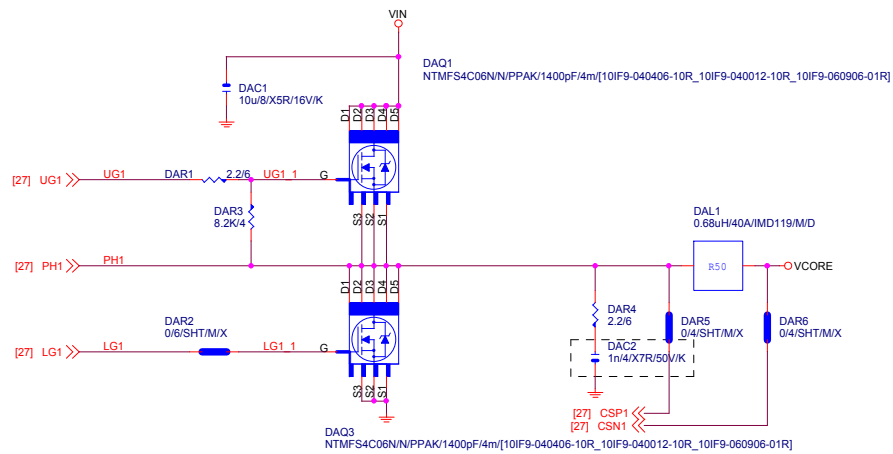
Size Custom	Document Number <b>GA-B85M-D3V</b>	Rev <b>1.1</b>
----------------	---------------------------------------	-------------------

07, 2013	Sheet	2
----------	-------	---

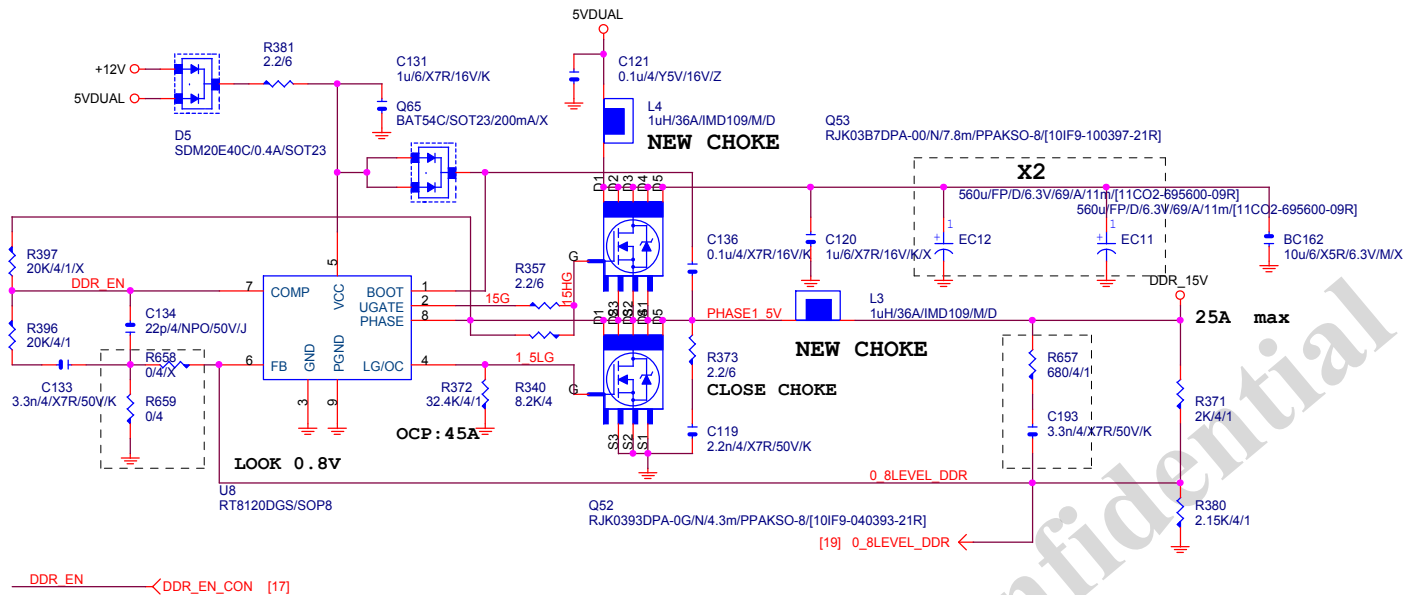
## 1.1

Date: Wednesday, August 07, 2013 Sheet 26 of 32





# DDR15V



From DDR 15V source  
10 mils trace to SIO

DDR\_15V

DDR\_15VIO

MR20 0/4/SHT/M/X

# PWR\_SEQ

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

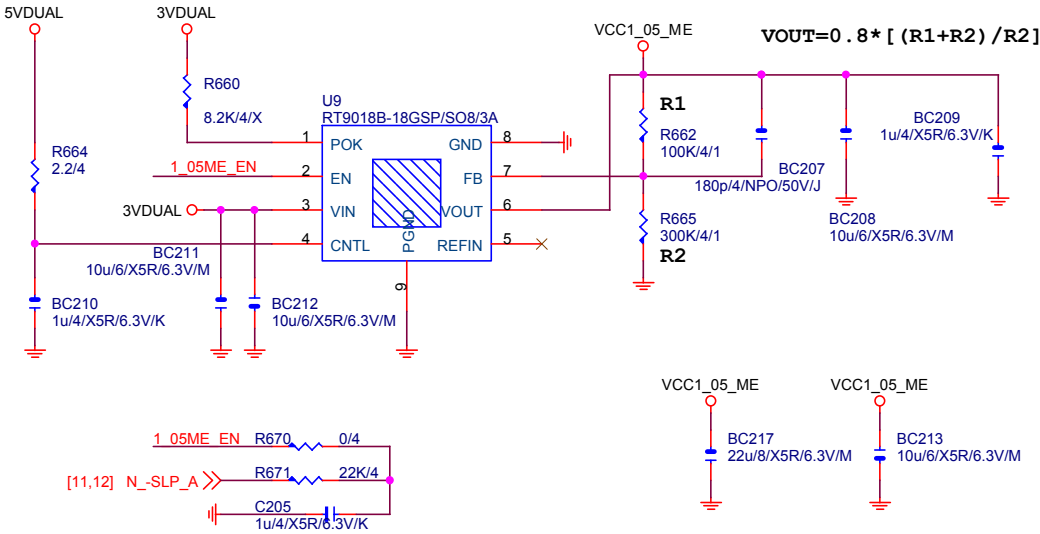
Title		
DDR POWER		
Size	Document Number	Rev
Custom	GA-B85M-D3V	1.1
Date:	Wednesday, August 07, 2013	Sheet 29 of 32



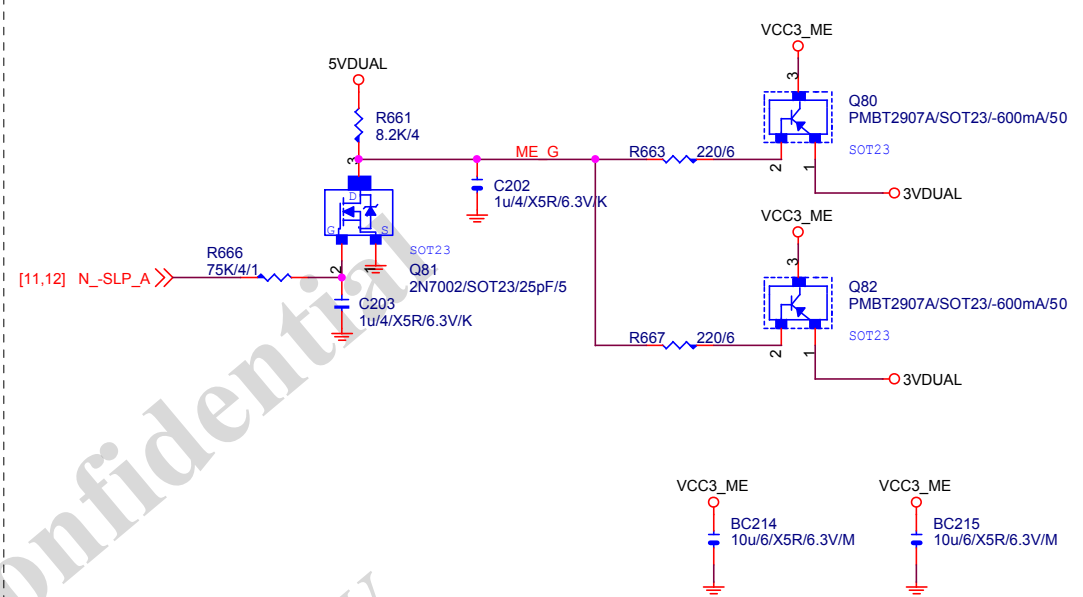
# VCC1\_05\_ME

## 【技術通報R&D技術通報156】

(RICHTER), (NUVOTON), (EMC) 做共用  
PIN7分壓阻值須做修改為100K以上電阻值



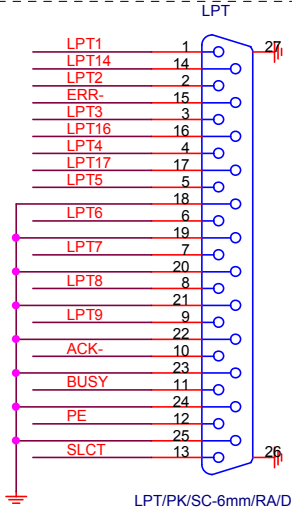
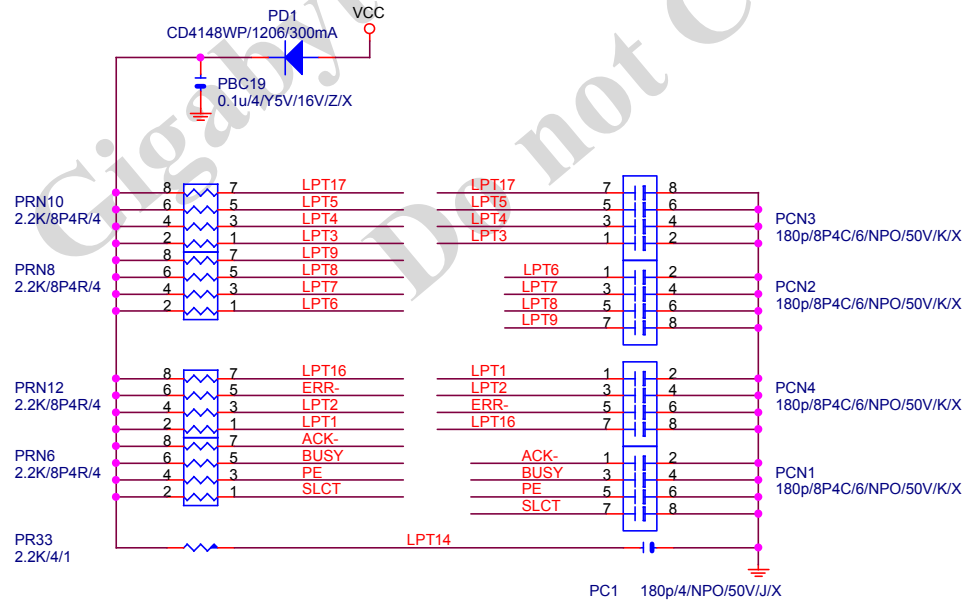
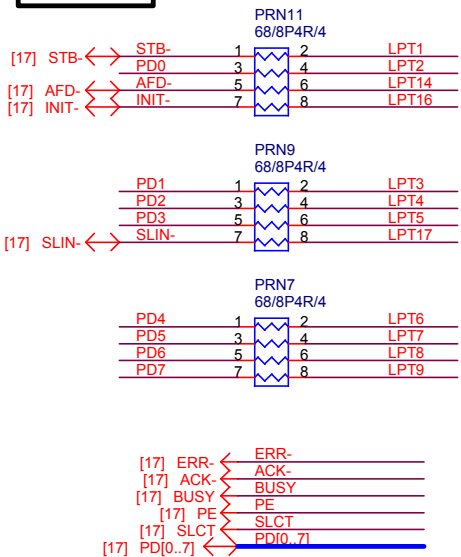
# VCC3\_ME



## 【技術通報R&D技術通報151】

33ohm Change to 68ohm

### LPT PORT



Gigabyte Technology

LPT

GA-B85M-D3V

Rev 1.1

Date: Wednesday, August 07, 2013 Sheet 30 of 32

# DVI LEVEL SHIFT

