

# Model Name: GA-B85M-HD3G

SHEET TITLE Revision 1.0

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 8728 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	INTEL I217
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, HDMI
32	IT8892E

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Cover Sheet			
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**Model Name:** GA-B85M-HD3G

Revision 1.0

## Circuit or PCB layout change

## Component value change history

2013/06/24

[illegible][illegible]

BLOCK DIAGRAM

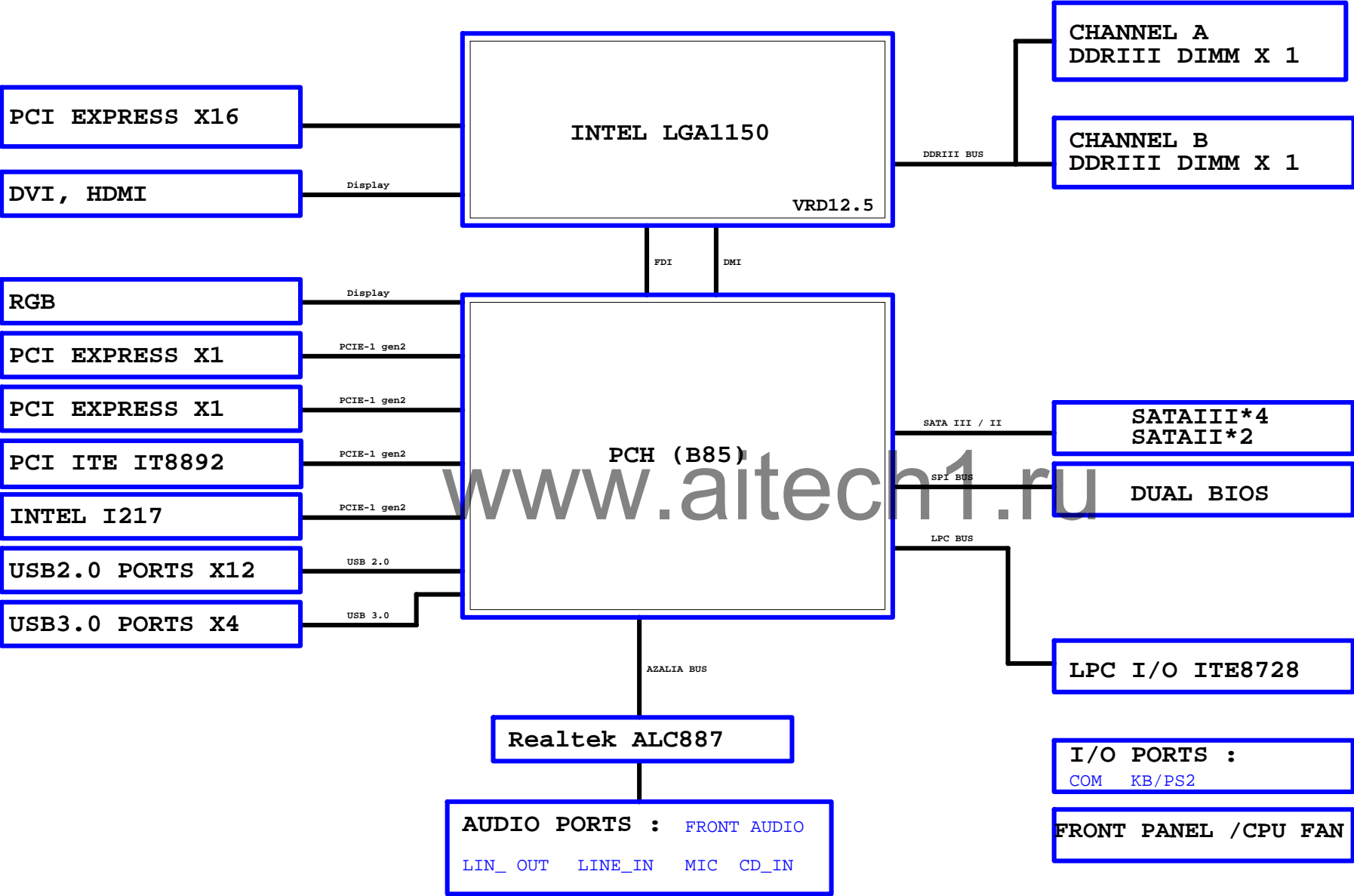


Figure 10-10: Pinmux and pin configuration for the Haswell PCH (continued)

[illegible]

PCIEX16:16/5/5/16(breakout min 10/4/4/4/10)									
Impedance=80 +- 17.5%									
LGAI1190C									
PA EXP RXP0	E15	PEG_RXP0	PEG_TXP0	A12	PA EXP TXP0				
PA EXP RXN0	F15	PEG_RXN0	PEG_TXN0	B12	PA EXP TXN0				
PA EXP RXP1	D14	PEG_RXP1	PEG_TXP1	B11	PA EXP TXP1				
PA EXP RXN1	E14	PEG_RXN1	PEG_TXN1	C11	PA EXP TXN1				
PA EXP RXP2	E13	PEG_RXP2	PEG_TXP2	C10	PA EXP TXP2				
PA EXP RXN2	F13	PEG_RXN2	PEG_TXN2	D10	PA EXP TXN2				
PA EXP RXP3	D12	PEG_RXP3	PEG_TXP3	B9	PA EXP TXP3				
PA EXP RXN3	E12	PEG_RXN3	PEG_TXN3	C9	PA EXP TXN3				
PA EXP RXP4	F11	PEG_RXP4	PEG_TXP4	C8	PA EXP TXP4				
PA EXP RXN4	E11	PEG_RXN4	PEG_TXN4	D8	PA EXP TXN4				
PA EXP RXP5	F10	PEG_RXP5	PEG_TXP5	B7	PA EXP TXP5				
PA EXP RXN5	G10	PEG_RXN5	PEG_TXN5	C7	PA EXP TXN5				
PA EXP RXP6	E9	PEG_RXP6	PEG_TXP6	A6	PA EXP TXP6				
PA EXP RXN6	F9	PEG_RXN6	PEG_TXN6	B6	PA EXP TXN6				
PA EXP RXP7	F8	PEG_RXP7	PEG_TXP7	B5	PA EXP TXP7				
PA EXP RXN7	G8	PEG_RXN7	PEG_TXN7	C5	PA EXP TXN7				
PA EXP RXP8	D3	PEG_RXP8	PEG_TXP8	E1	PA EXP TXP8				
PA EXP RXN8	D4	PEG_RXN8	PEG_TXN8	F2	PA EXP TXN8				
PA EXP RXP9	E4	PEG_RXP9	PEG_TXP9	F2	PA EXP TXP9				
PA EXP RXN9	E5	PEG_RXN9	PEG_TXN9	F3	PA EXP TXN9				
PA EXP RXP10	F5	PEG_RXP10	PEG_TXP10	G1	PA EXP TXP10				
PA EXP RXN10	F6	PEG_RXN10	PEG_TXN10	G2	PA EXP TXN10				
PA EXP RXP11	G4	PEG_RXP11	PEG_TXP11	H2	PA EXP TXP11				
PA EXP RXN11	G5	PEG_RXN11	PEG_TXN11	J1	PA EXP TXN11				
PA EXP RXP12	H5	PEG_RXP12	PEG_TXP12	J1	PA EXP TXP12				
PA EXP RXN12	H6	PEG_RXN12	PEG_TXN12	J2	PA EXP TXN12				
PA EXP RXP13	J4	PEG_RXP13	PEG_TXP13	K2	PA EXP TXP13				
PA EXP RXN13	J5	PEG_RXN13	PEG_TXN13	K3	PA EXP TXN13				
PA EXP RXP14	K5	PEG_RXP14	PEG_TXP14	M2	PA EXP TXP14				
PA EXP RXN14	K6	PEG_RXN14	PEG_TXN14	M3	PA EXP TXN14				
PA EXP RXP15	L4	PEG_RXP15	PEG_TXP15	L1	PA EXP TXP15				
PA EXP RXN15	L5	PEG_RXN15	PEG_TXN15	L2	PA EXP TXN15				
PA DMI ORXP	U3	DMI_RXP0	DMI_TXP0	AA4	PA DMI OTXP				
PA DMI ORXN	T3	DMI_RXN0	DMI_TXN0	AA5	PA DMI OTXN				
PA DMI RXP1	U1	DMI_RXP1	DMI_TXP1	AB3	PA DMI TXP1				
PA DMI RXN1	U2	DMI_RXN1	DMI_TXN1	AB4	PA DMI TXN1				
PA DMI RXP2	V2	DMI_RXP2	DMI_TXP2	AC5	PA DMI TXP2				
PA DMI RXN2	V2	DMI_RXN2	DMI_TXN2	AC4	PA DMI TXN2				
PA DMI RXP3	V3	DMI_RXP3	DMI_TXP3	AC1	PA DMI TXP3				
PA DMI RXN3	W3	DMI_RXN3	DMI_TXN3	AC2	PA DMI TXN3				
<div style="display: flex; justify-content: space-between;"> <div> <p>W=12 mil out of CPU</p> <p>S=15 mil out of CPU</p> </div> <div> <p>X1 D1</p> <p>X2 C2</p> <p>X3 B3</p> <p>X4 A4</p> </div> </div>									
<div style="display: flex; justify-content: space-between;"> <div> <p>VR15</p> <p>VR15</p> </div> <div> <p>GRCOMP</p> <p>P3</p> </div> <div> <p>RSVD_TP</p> <p>RSVD_TP</p> <p>RSVD_TP</p> <p>RSVD_TP</p> </div> </div>									

3V DUAL

WR27 1K4/1/X

VCC3

WR26 200k/4/1/X

1.1V分壓

A\_CPURST

WR31 100k/4/1/X

WBC3 1n4/X/7R/50V/V

O\_PFMRS1 WR45 8.2k/4/X

SOT23 WQ1 MMBT2222A/SOT23/600mA/40X

SOT23 WQ2 MMBT2222A/SOT23/600mA/40X

CPU\_VTT\_OR

WR3	90.9/4/1/X	PVIDSLCK
WR2	115/4/1	PVIDSOUT
WR4	75/4/1	-PVIDALRT

CPU\_VTT\_OR

WR14	51/4/1/X	A TMS
WR16	51/4/1/X	A TDO
WR17	51/4/1/X	A TDI

A\_PWR\_DEBUG WR33 10K/4/1/X

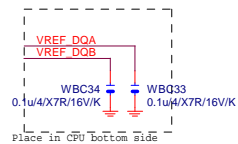
## LGA1150 (A)

LGA1150A		DDR0_MA0	DDR0_D00	AD38	MDA0
MAAA0	AU13	DDR0_MA1	DDR0_D01	AD39	MDA1
MAAA1	AV16	DDR0_MA2	DDR0_D02	AF38	MDA2
MAAA2	AU16	DDR0_MA3	DDR0_D03	AF39	MDA3
MAAA3	AW17	DDR0_MA4	DDR0_D04	AD37	MDA4
MAAA4	AW18	DDR0_MA5	DDR0_D05	AD40	MDA5
MAAA5	AW17	DDR0_MA6	DDR0_D06	AE37	MDA6
MAAA6	AT18	DDR0_MA7	DDR0_D07	AF40	MDA7
MAAA7	AU18	DDR0_MA8	DDR0_D08	AH40	MDA9
MAAA8	AT19	DDR0_MA9	DDR0_D09	AH39	MDA10
MAAA9	AW11	DDR0_MA10	DDR0_D10	AK38	MDA10
MAAA10	AW19	DDR0_MA11	DDR0_D11	AK39	MDA11
MAAA11	AU19	DDR0_MA12	DDR0_D12	AH37	MDA12
MAAA12	AY10	DDR0_MA13	DDR0_D13	AH38	MDA13
MAAA13	AT20	DDR0_MA14	DDR0_D14	AK37	MDA14
MAAA14	AU21	DDR0_MA15	DDR0_D15	AK40	MDA15
MAAA15			DDR0_D16	AM40	MDA17
MODT_A0	AW10	DDR0_ODT0	DDR0_D17	AM39	MDA21
MODT_A1	AY8	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	AW4	MDA38
			DDR0_D38	AY4	MDA39
			DDR0_D39	AR1	MDA41
			DDR0_D40	AR4	MDA45
			DDR0_D41	AN3	MDA42
			DDR0_D42	AN4	MDA43
			DDR0_D43	AR2	MDA44
			DDR0_D44	AR3	MDA40
			DDR0_D45	AN2	MDA46
			DDR0_D46	AN1	MDA47
			DDR0_D47	AL1	MDA49
			DDR0_D48	AL4	MDA53
			DDR0_D49	AL3	MDA50
			DDR0_D50	AJ4	MDA51
			DDR0_D51	AL2	MDA52
			DDR0_D52	AJ2	MDA48
			DDR0_D53	AJ2	MDA54
			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	
			DDR0_D72	AE38	DQSA0
			DDR0_D73	AJ38	DQSA1
			DDR0_D74	AN38	DQSA2
			DDR0_D75	AJ36	DQSA3
			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]

## LGA1150 (B)

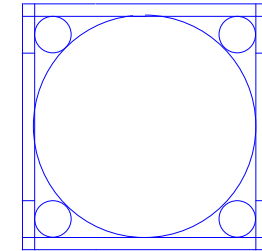
LGA1150B		DDR1_MA0	AE34	MD80
MAAB0	AL19	DDR1_MA1	AE35	MD81
MAAB1	AK23	DDR1_MA2	AG35	MD82
MAAB2	AM23	DDR1_MA3	AH35	MD83
MAAB3	AP23	DDR1_MA4	AD34	MD84
MAAB4	AL23	DDR1_MA5	AD35	MD85
MAAB5	AY24	DDR1_MA6	AG34	MD86
MAAB6	AY25	DDR1_MA7	AH34	MD87
MAAB7	AU26	DDR1_MA8	AL34	MD88
MAAB8	AW25	DDR1_MA9	AL35	MD89
MAAB9	AP18	DDR1_MA10	AL31	MD810
MAAB10	AY25	DDR1_MA11	AK31	MD811
MAAB11	AY26	DDR1_MA12	AK34	MD812
MAAB12	AR15	DDR1_MA13	AK35	MD813
MAAB13	AV27	DDR1_MA14	AK32	MD814
MAAB14	AY28	DDR1_MA15	AL32	MD815
MAAB15			AL34	MD817
MODT_B0	AM17	DDR1_ODT0	AP34	MD821
MODT_B1	AL16	DDR1_ODT1	AN31	MD819
	AM16	DDR1_ODT2	AP31	MD823
	AK15	DDR1_ODT3	AP35	MD820
			AP35	MD816
			AN32	MD818
			AP32	MD822
			AM29	MD825
			AM28	MD828
			AR29	MD827
			AR28	MD830
			AL28	MD824
			AL28	MD829
			AP29	MD826
			AP28	MD831
			AR12	MD832
			AL12	MD835
			AR13	MD836
			AP13	MD837
			AM13	MD838
			AM12	MD839
			AR9	MD845
			AP9	MD841
			AR6	MD847
			AP6	MD843
			AR10	MD844
			AP10	MD840
			AR7	MD846
			AP7	MD842
			AM9	MD852
			AL9	MD853
			AL6	MD850
			AL7	MD855
			AM10	MD848
			AL10	MD849
			AM6	MD854
			AM7	MD851
			AH6	MD861
			AH7	MD860
			AE6	MD859
			AE7	MD863
			AJ6	MD856
			AJ7	MD857
			AF6	MD858
			AF7	MD862
			AF35	DQSB0
			AL33	DQSB1
			AP33	DQSB2
			AN28	DQSB3
			AN12	DQSB4
			AP8	DQSB5
			AL8	DQSB6
			AG7	DQSB7
			AN25	
			AF34	DQSB0
			AK33	DQSB1
			AN33	DQSB2
			AN29	DQSB3
			AN13	DQSB4
			AR8	DQSB5
			AM8	DQSB6
			AG6	DQSB7
			AN26	



LGA1150B		DDR1_MA0	AE34	MD80
MAAB0	AL19	DDR1_MA1	AE35	MD81
MAAB1	AK23	DDR1_MA2	AG35	MD82
MAAB2	AM23	DDR1_MA3	AH35	MD83
MAAB3	AP23	DDR1_MA4	AD34	MD84
MAAB4	AL23	DDR1_MA5	AD35	MD85
MAAB5	AY24	DDR1_MA6	AG34	MD86
MAAB6	AY25	DDR1_MA7	AH34	MD87
MAAB7	AU26	DDR1_MA8	AL34	MD88
MAAB8	AW25	DDR1_MA9	AL35	MD89
MAAB9	AP18	DDR1_MA10	AL31	MD810
MAAB10	AY25	DDR1_MA11	AK31	MD811
MAAB11	AY26	DDR1_MA12	AK34	MD812
MAAB12	AR15	DDR1_MA13	AK35	MD813
MAAB13	AV27	DDR1_MA14	AK32	MD814
MAAB14	AY28	DDR1_MA15	AL32	MD815
MAAB15			AL34	MD817
MODT_B0	AM17	DDR1_ODT0	AP34	MD821
MODT_B1	AL16	DDR1_ODT1	AN31	MD819
	AM16	DDR1_ODT2	AP31	MD823
	AK15	DDR1_ODT3	AP35	MD820
			AP35	MD816
			AN32	MD818
			AP32	MD822
			AM29	MD825
			AM28	MD828
			AR29	MD827
			AR28	MD830
			AL28	MD824
			AL28	MD829
			AP29	MD826
			AP28	MD831
			AR12	MD832
			AL12	MD835
			AR13	MD836
			AP13	MD837
			AM13	MD838
			AM12	MD839
			AR9	MD845
			AP9	MD841
			AR6	MD847
			AP6	MD843
			AR10	MD844
			AP10	MD840
			AR7	MD846
			AP7	MD842
			AM9	MD852
			AL9	MD853
			AL6	MD850
			AL7	MD855
			AM10	MD848
			AL10	MD849
			AM6	MD854
			AM7	MD851
			AH6	MD861
			AH7	MD860
			AE6	MD859
			AE7	MD863
			AJ6	MD856
			AJ7	MD857
			AF6	MD858
			AF7	MD862
			AF35	DQSB0
			AL33	DQSB1
			AP33	DQSB2
			AN28	DQSB3
			AN12	DQSB4
			AP8	DQSB5
			AL8	DQSB6
			AG7	DQSB7
			AN25	
			AF34	DQSB0
			AK33	DQSB1
			AN33	DQSB2
			AN29	DQSB3
			AN13	DQSB4
			AR8	DQSB5
			AM8	DQSB6
			AG6	DQSB7
			AN26	

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

## LGA1150 (CR)

CR  
CPU RETENTION/X

LGA1150\_P



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

DDR BUS

[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
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[8] DQSB[0..7]	DQSB0..7
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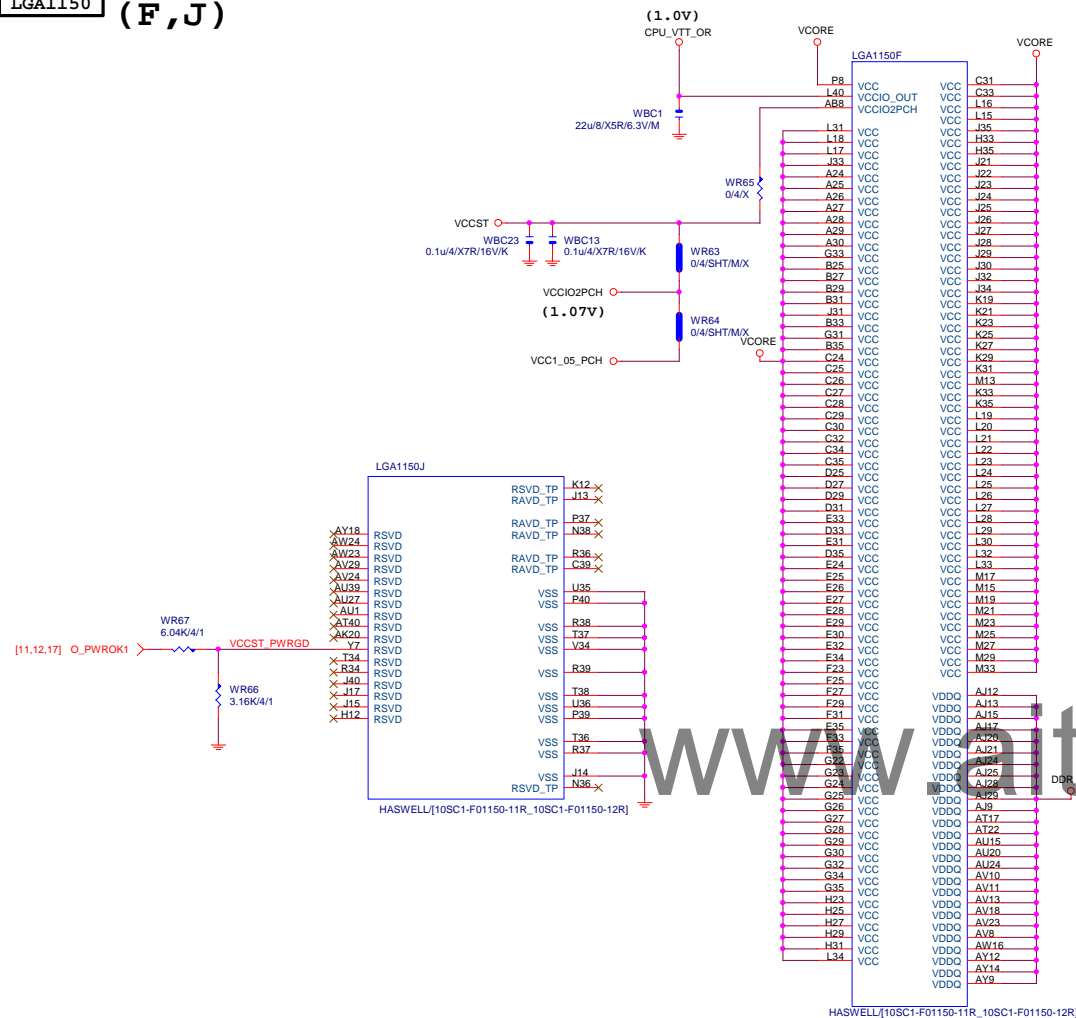
Gigabyte Technology

CPU LGA1150-B

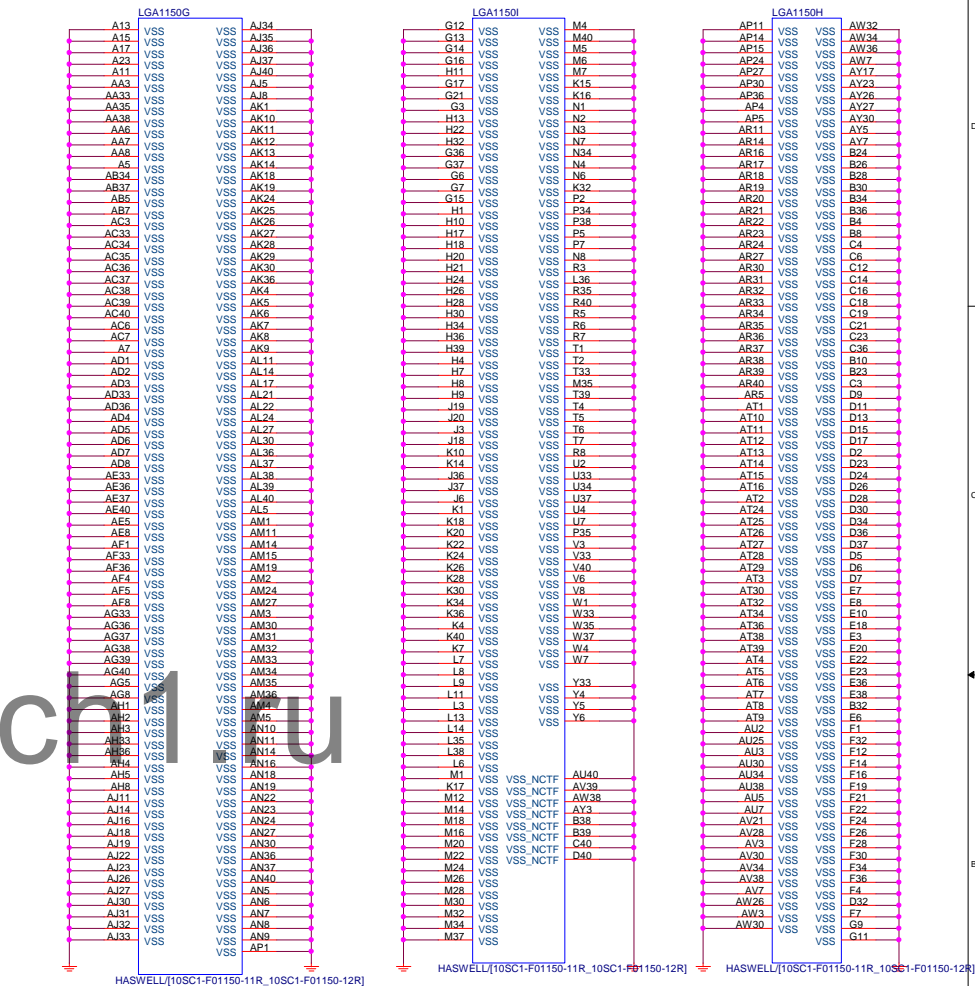
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Size	GA-B85M-HD3G	1.0
Custom		

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# LGA1150 (F,J)

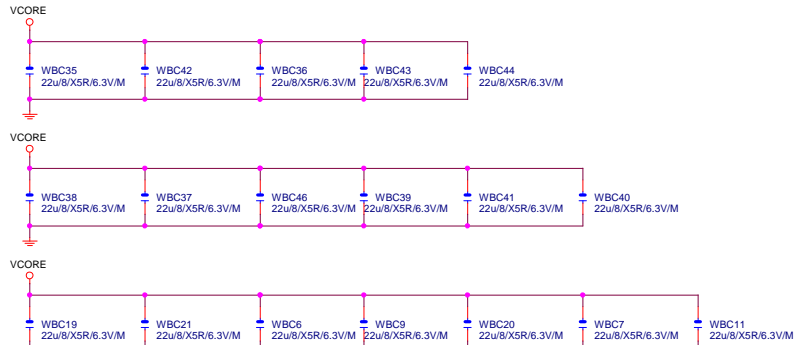


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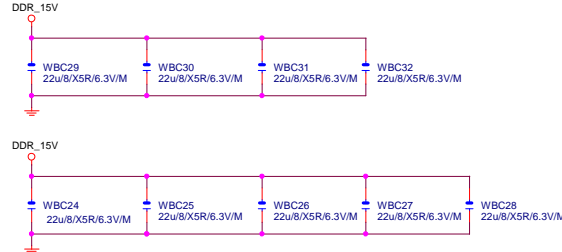
## VCore CAP

(X18)



## DDR CAP

(X9)



Gigabyte Technology

Title		CPU LGA1150-C	
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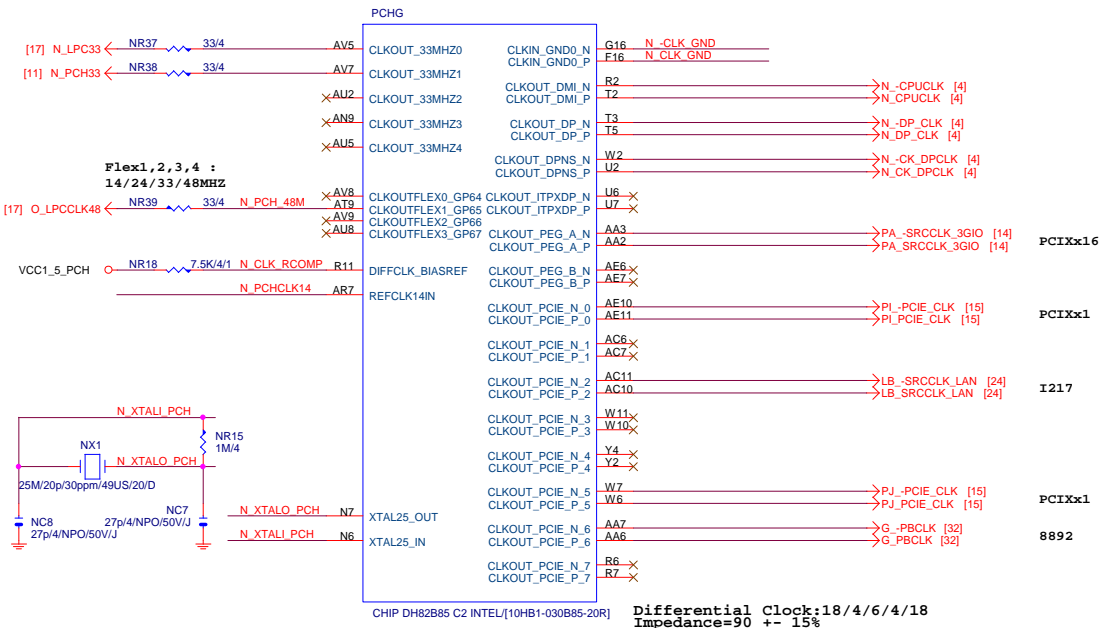
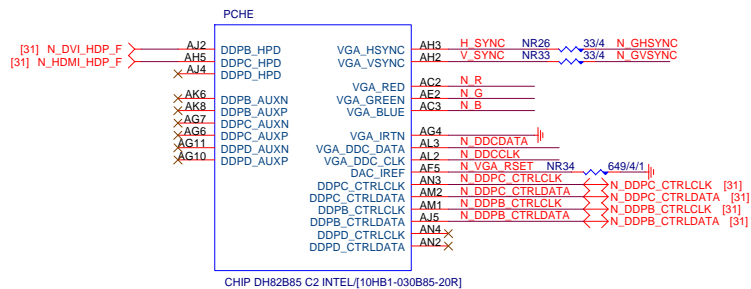


PCH

(E)

PCH

(G)



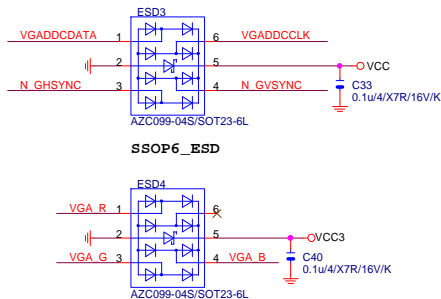
PCH CLK PD



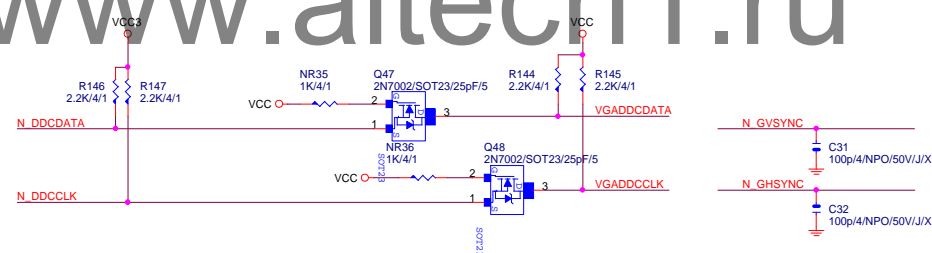
Mount for integrated clock Generation Mode



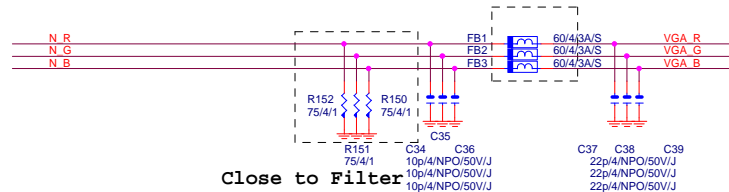
VGA ESD



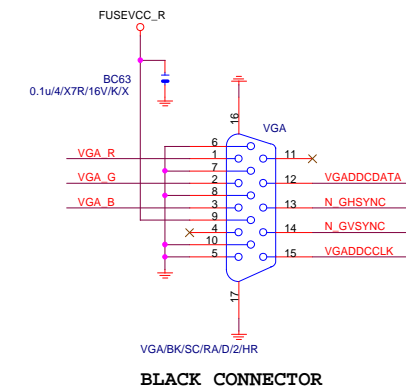
VGA DDC



VGA DDC



VGA CONNECTOR



Gigabyte Technology

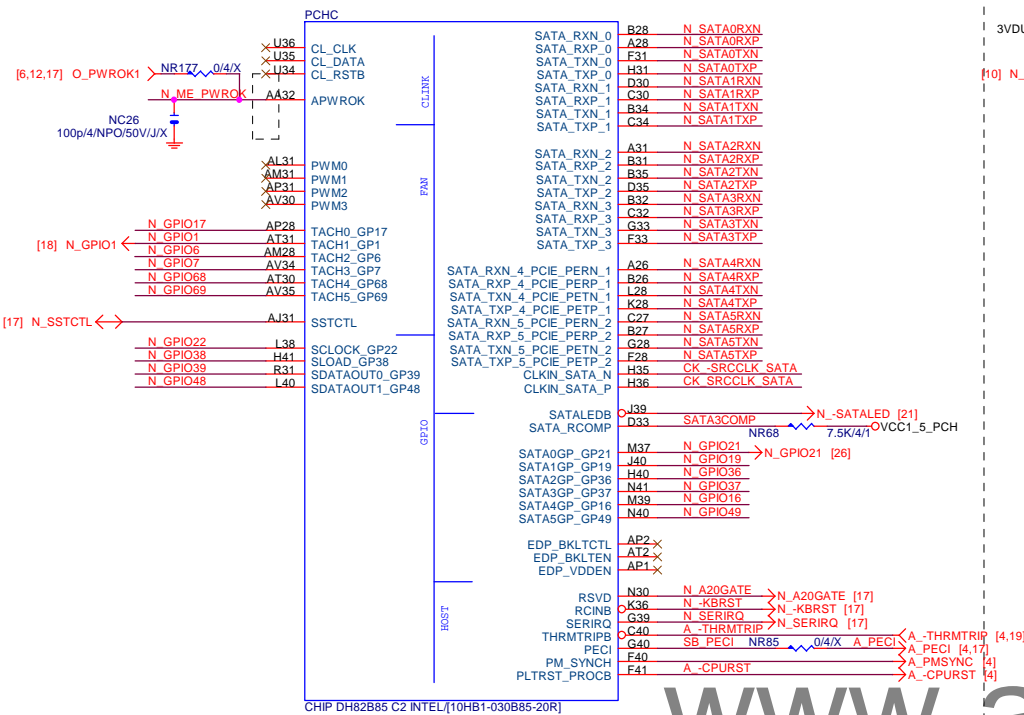
PCH DISPLAY\_CLK BUFFER

GA-B85M-HD3G

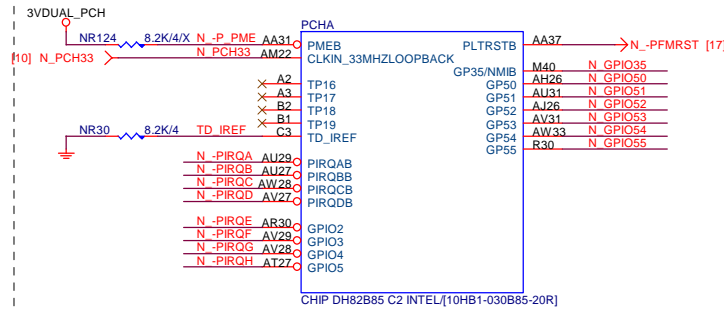
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# PCH (C)

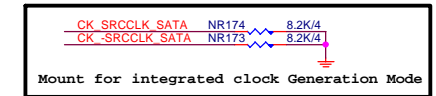
SATA3 : 20/7.5/4.5/7.5/20 (breakout min 8/4/4/4/8)  
Impedance=90 +- 17.5%  
SATA2 : 15/7.5/4.5/7.5/15 (breakout min 8/4/4/4/8)  
Impedance=90 +- 17.5%



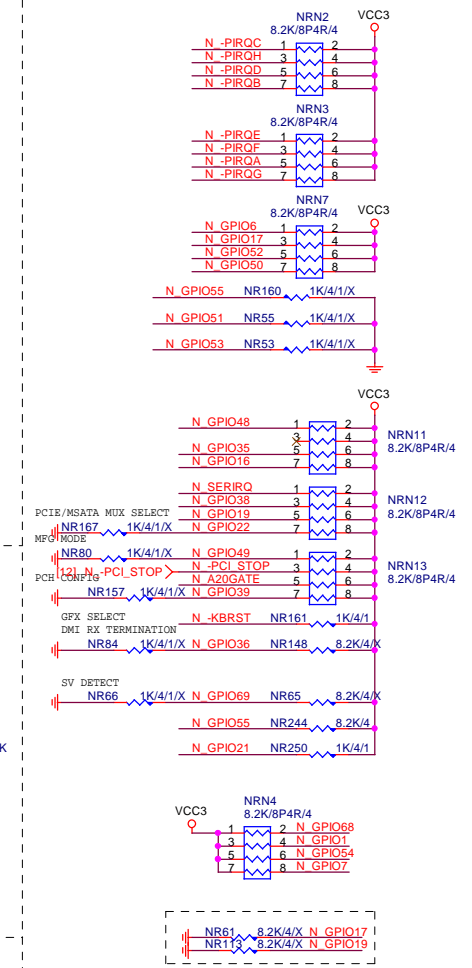
# PCH (A)



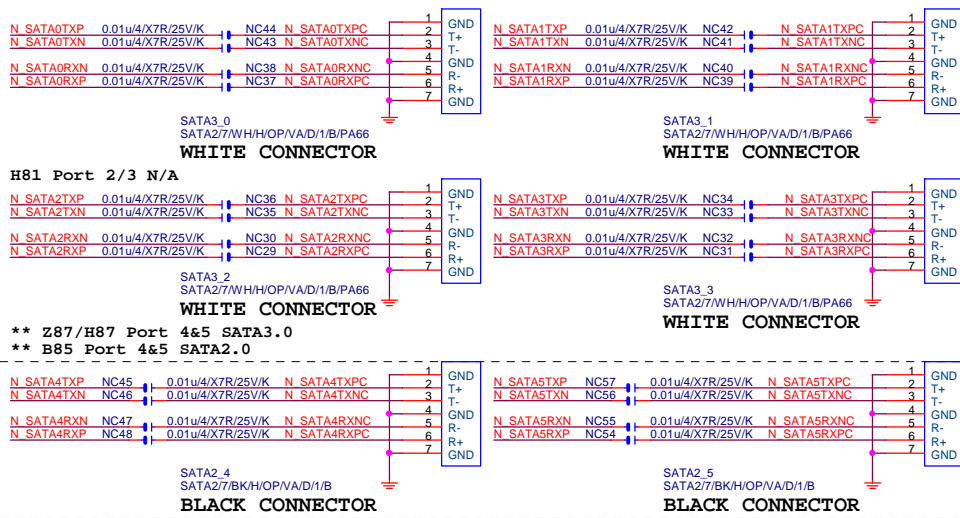
# PCH CLK PD



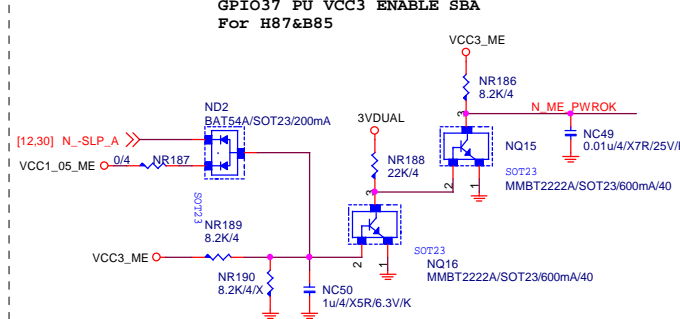
# PCH PU/PD



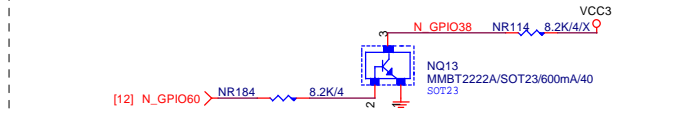
# SATA CONNECTOR



# ME PWROK



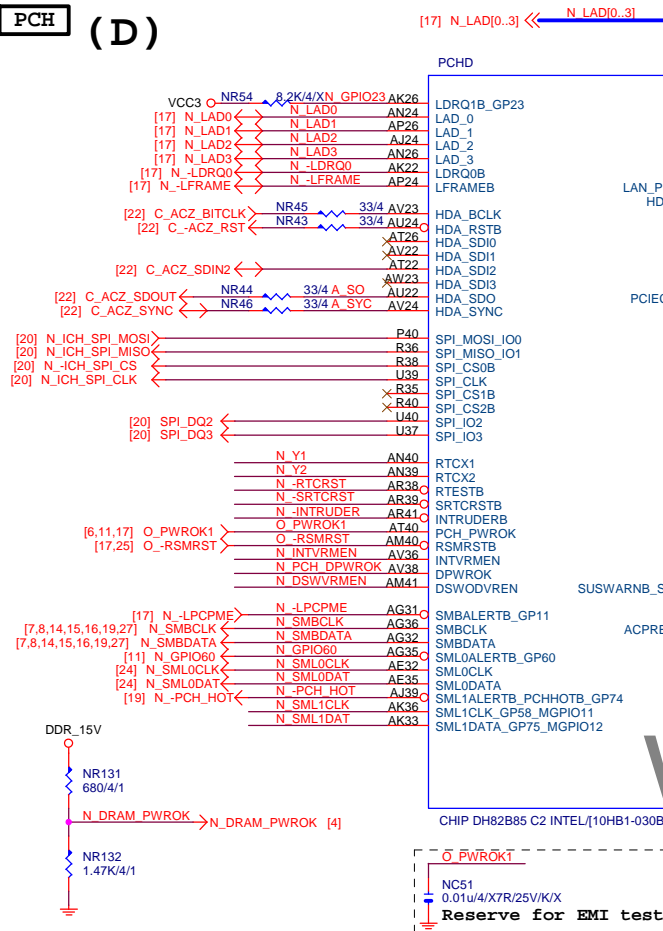
# GPIO38 Ctrl



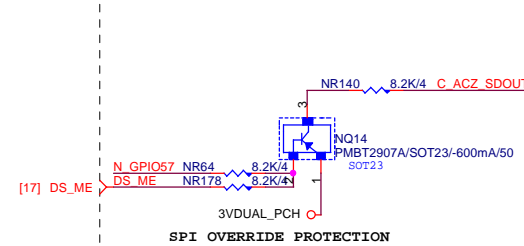
# Gigabyte Technology

Title		PCH HOST , SATA, PCI		Rev
Size	Document Number	GA-B85M-HD3G		
Custom				1.0
Date:	Monday, June 24, 2013		Sheet	11 of 32

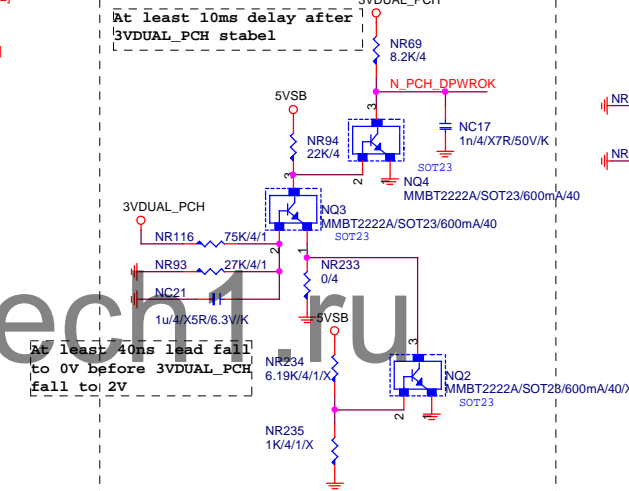
# PCH (D)



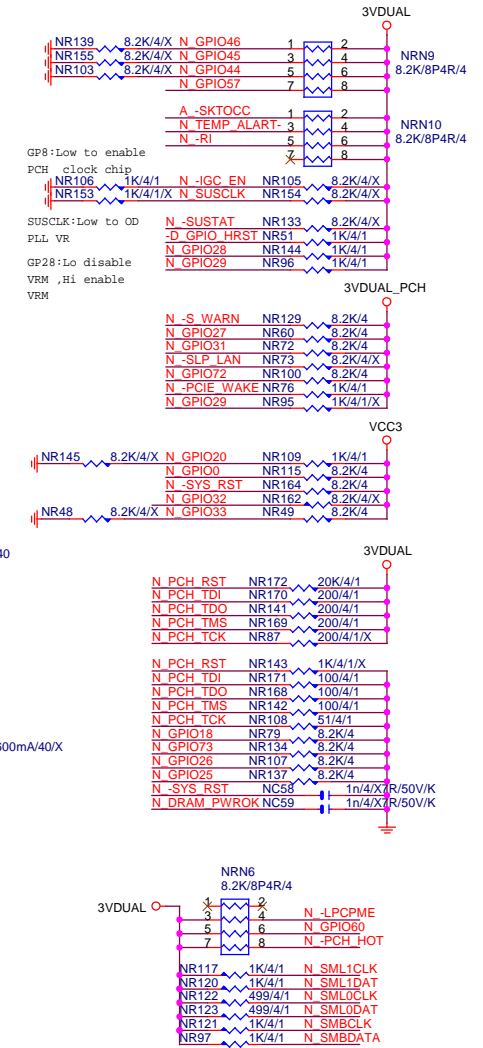
## ACZ\_SDOUT



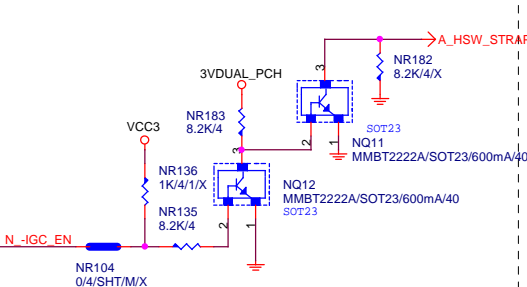
## PCH\_DPWROK



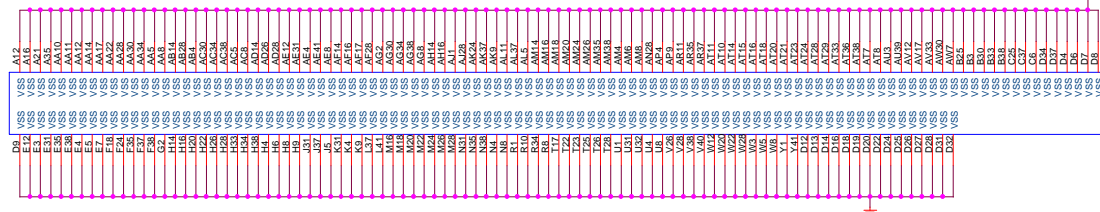
## PCH PU/PD



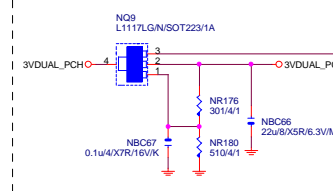
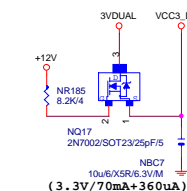
## HSW\_STRAP13



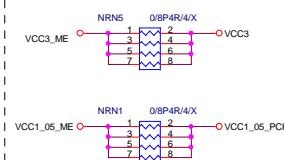
**PCH (I)**



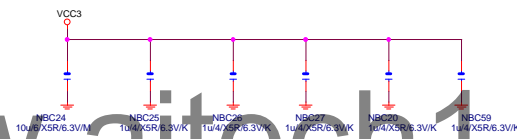
## 3VDUAL\_PCH



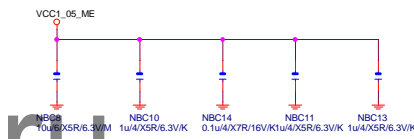
## Gigabyte Technology



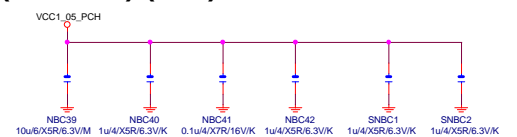
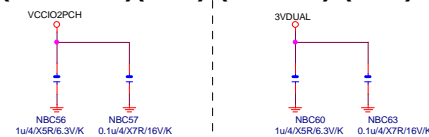
( 3.3V ) ( X6 )



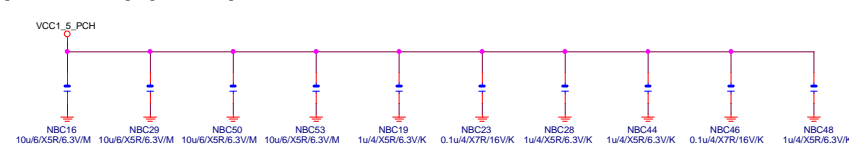
(1.05V) (x5)



(1.05V) (x6)

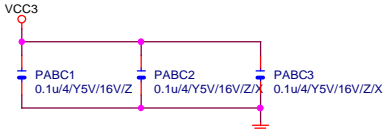

$$(1.05V)(x_2) - (3.3V)(x_2)$$


(1.05V) (x10)

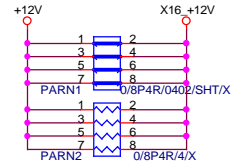




## PCIEX16 CAP



## PCIEX16 PROTECT SHT



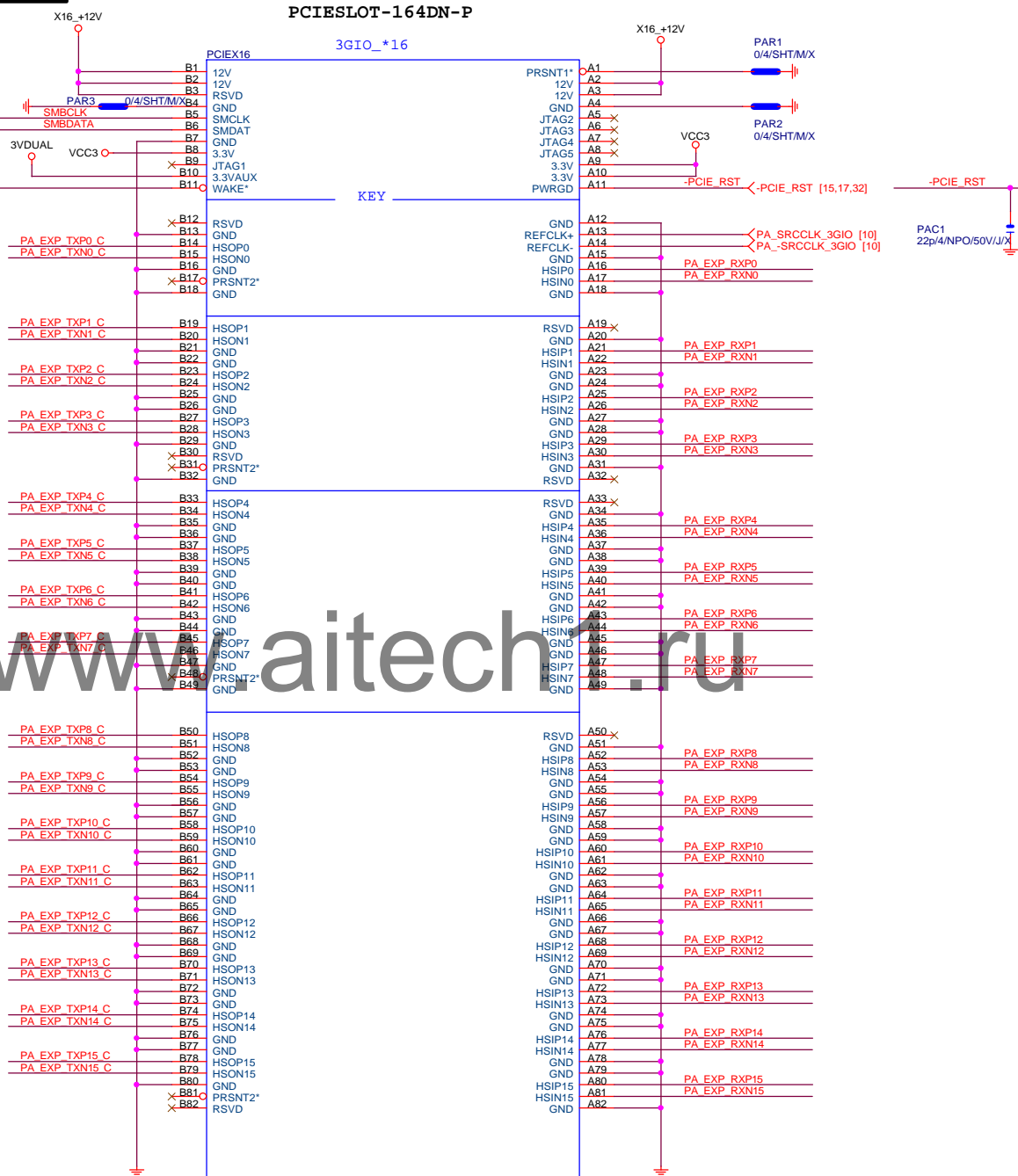
## PCIEX16 AC CAP

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	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

[7,8,12,15,16,19,27] N\_SMBCLK  
 [7,8,12,15,16,19,27] N\_SMBDATA  
 [12,15,32] N\_-PCIE\_WAKE

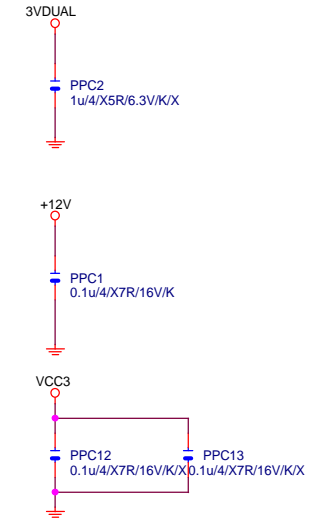
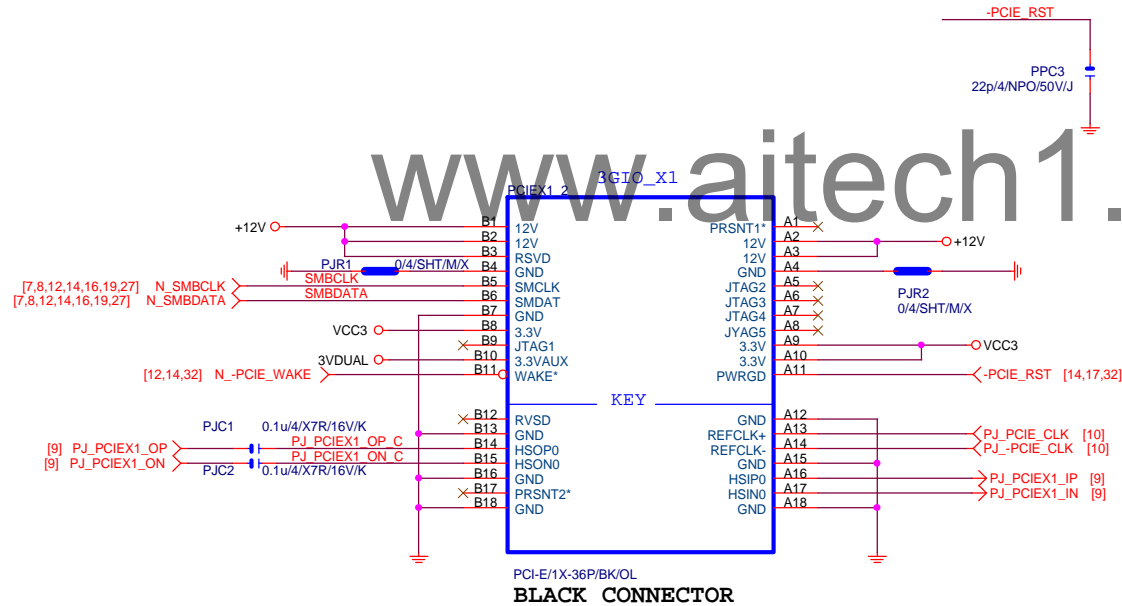
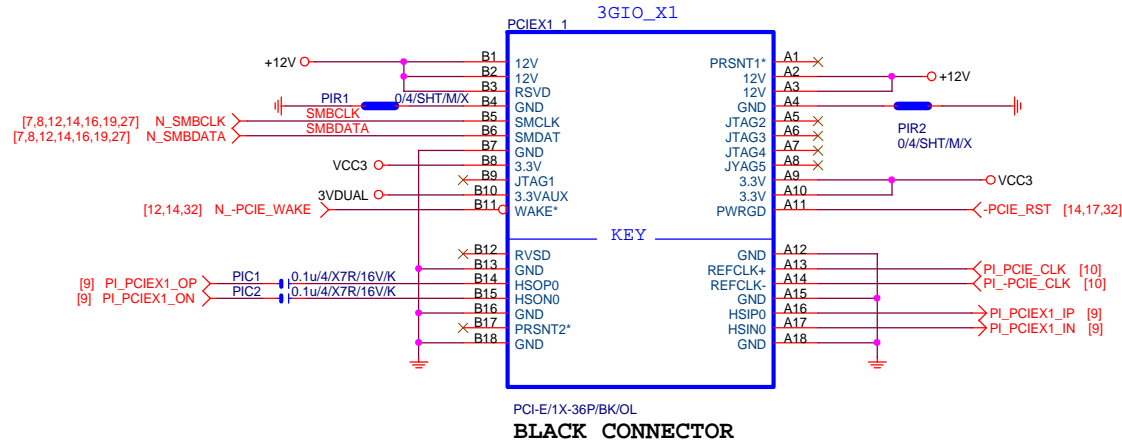


BLACK CONNECTOR

Gigabyte Technology

Title			PCI EXPRESS * 16	
Size			GA-B85M-HD3G	
Custom			Rev 1.0	
Date: Monday, June 24, 2013			Sheet 14 of 32	

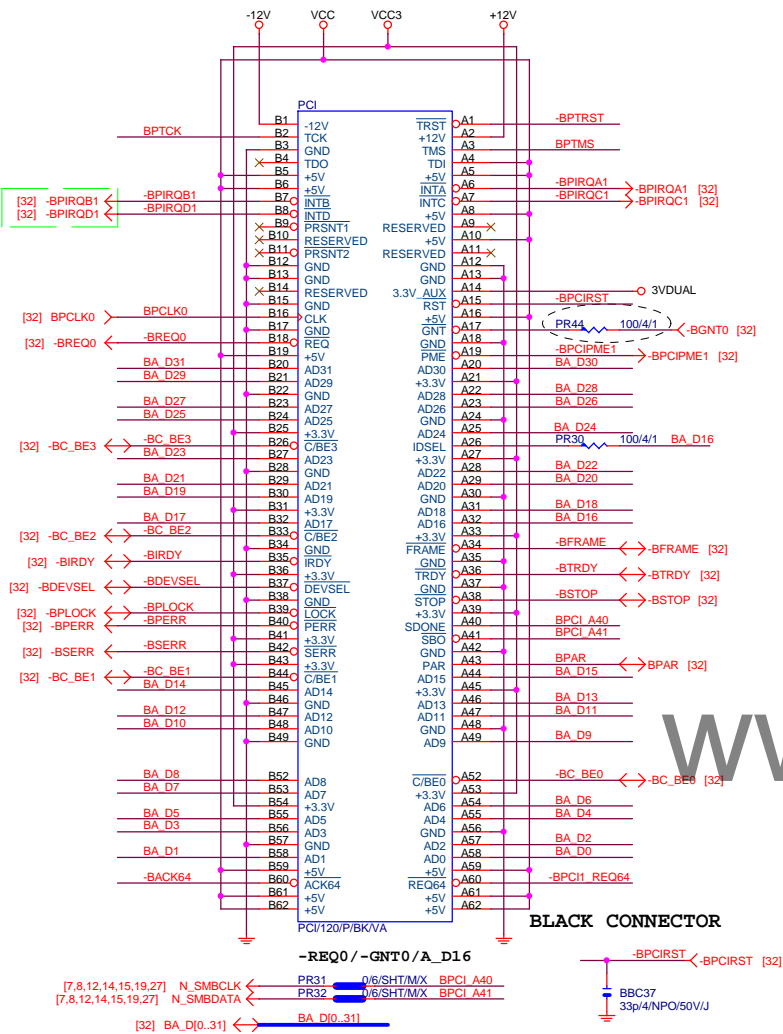
# PCIEX1 SLOT



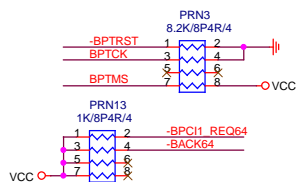
**Gigabyte Technology**

Title			PCI EXPRESS X 1 PORT
Size	Document Number	GA-B85M-HD3G	
Custom		Rev	1.0
Date:	Monday, June 24, 2013	Sheet	15 of 32

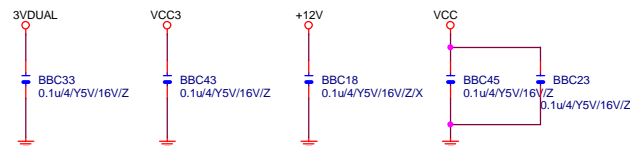
PCI SLOT 1



## PCI PU



## PCI CAP



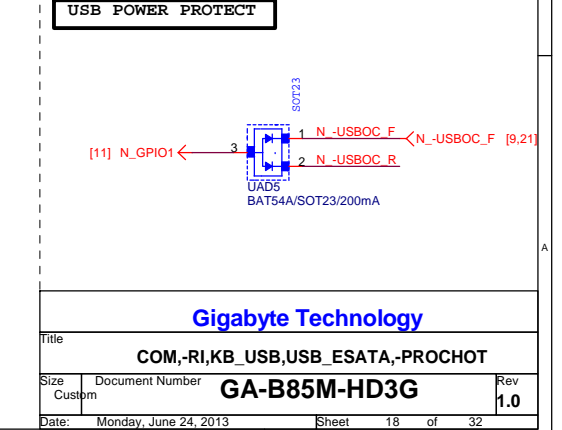
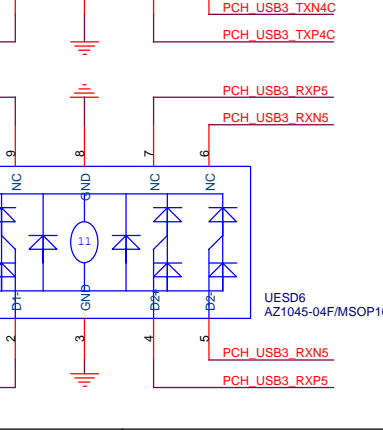
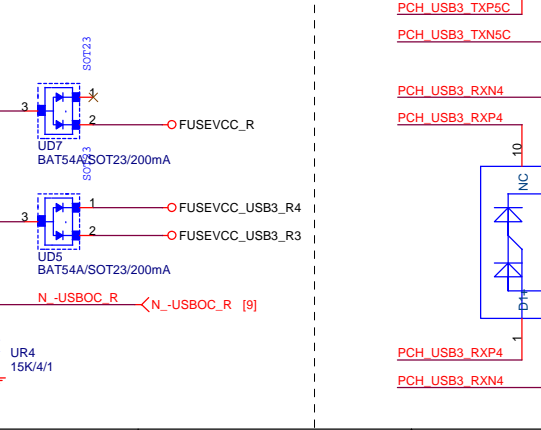
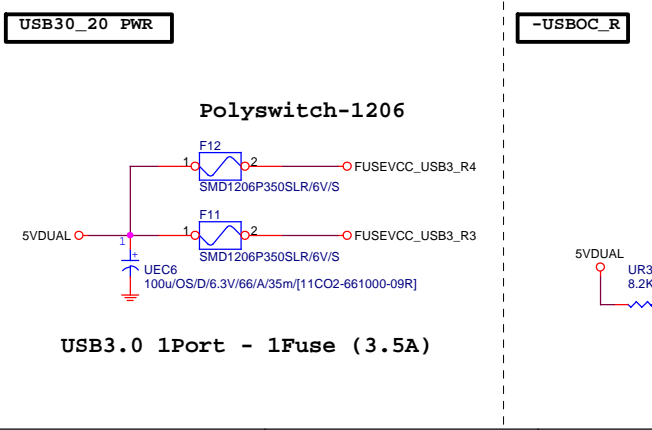
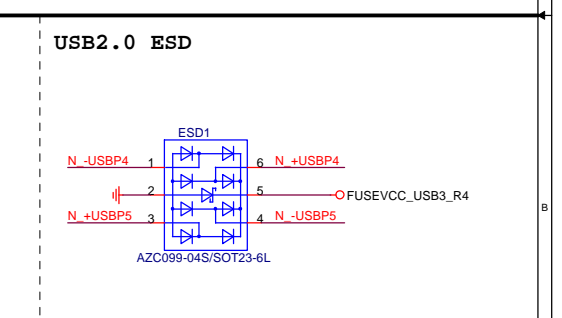
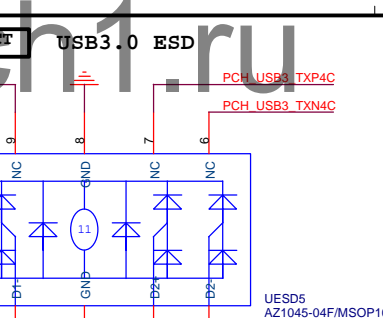
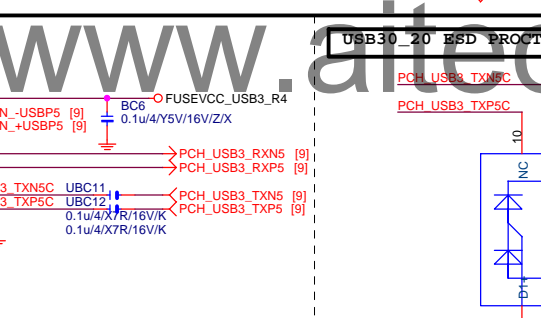
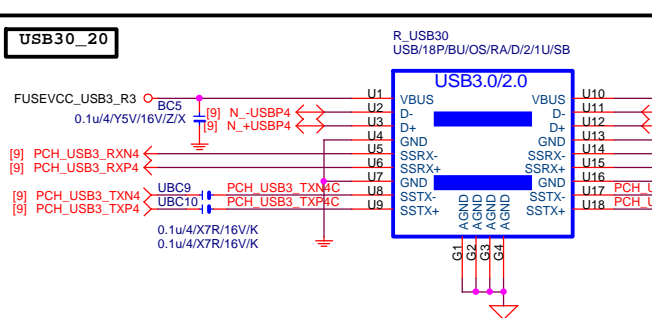
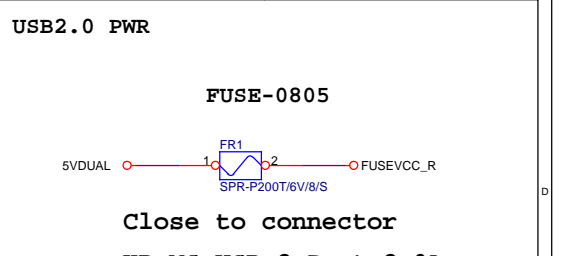
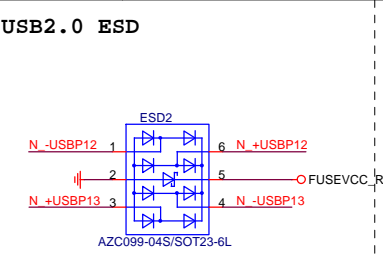
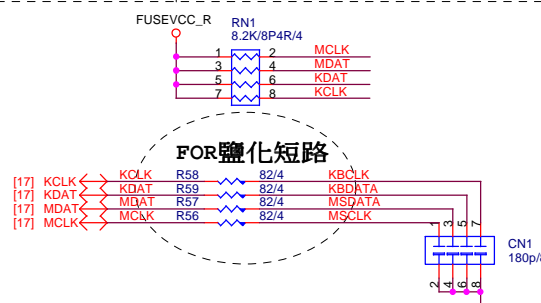
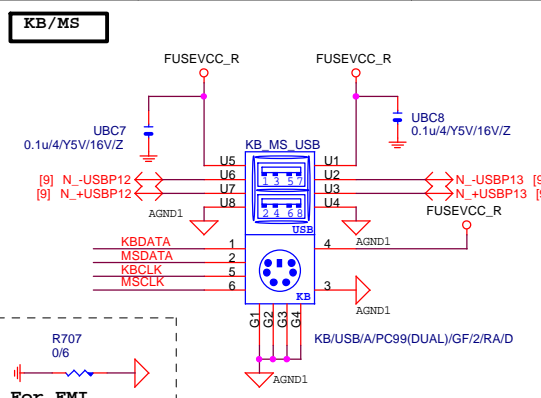
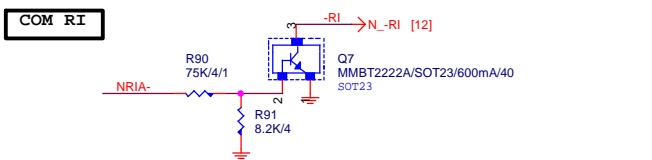
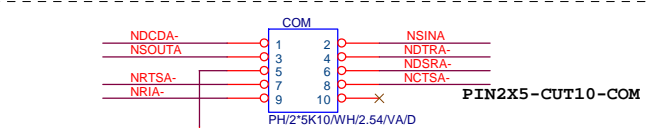
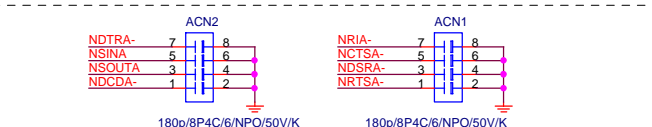
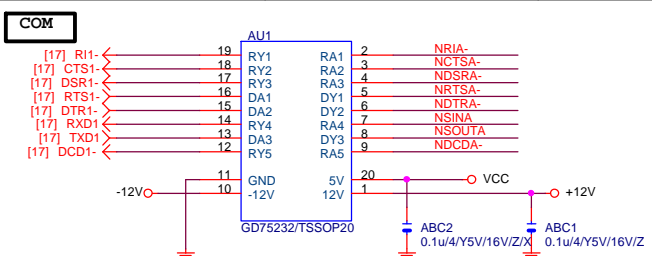
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## Gigabyte Technology

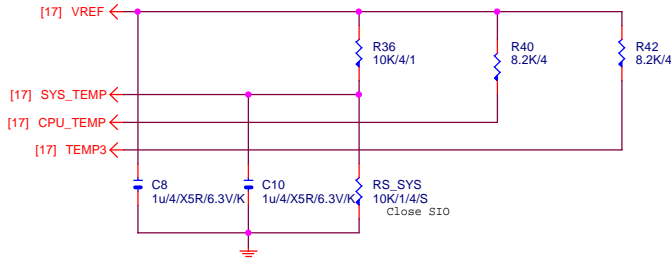
Title				PCI SLOT 1&2				Rev	
Size Custom		Document Number		GA-B85M-HD3G				1.0	
Date: Monday, June 24, 2013				Sheet		16		of 32	



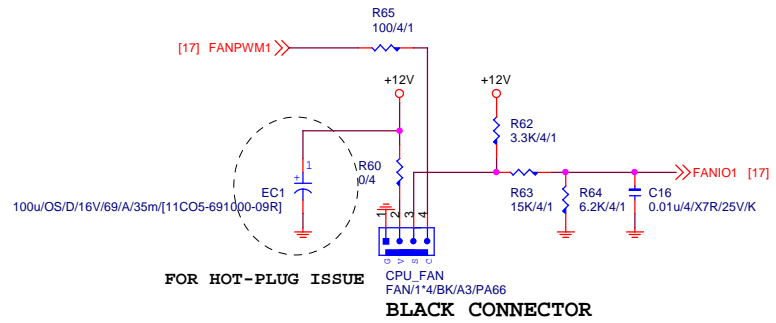




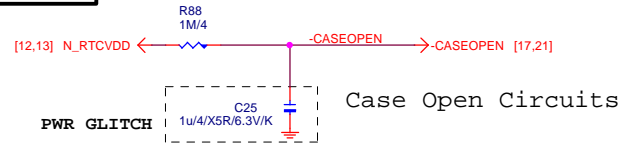
# TEMP H/W MONITOR



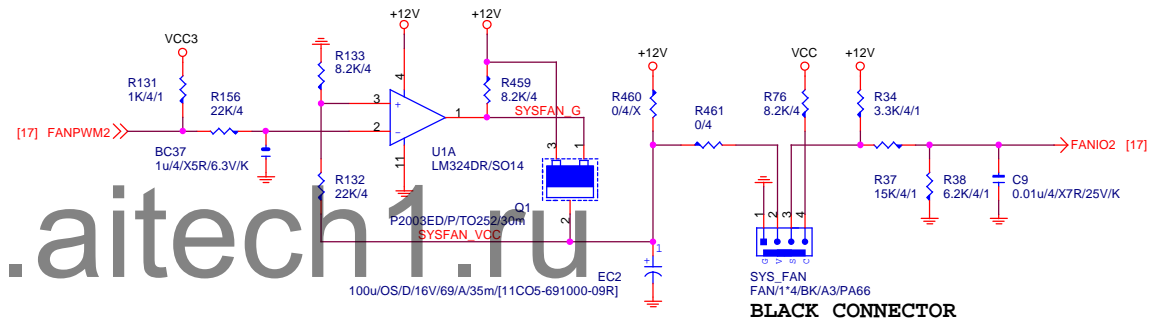
# CPU SMART FAN



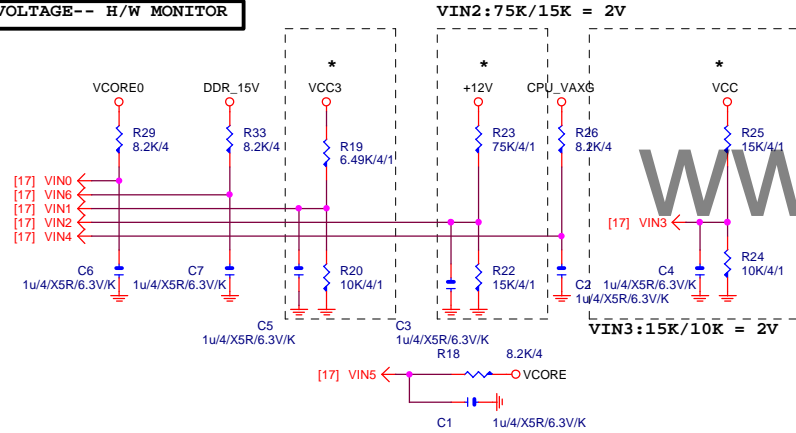
# CASE OPEN



# SYS SMART FAN

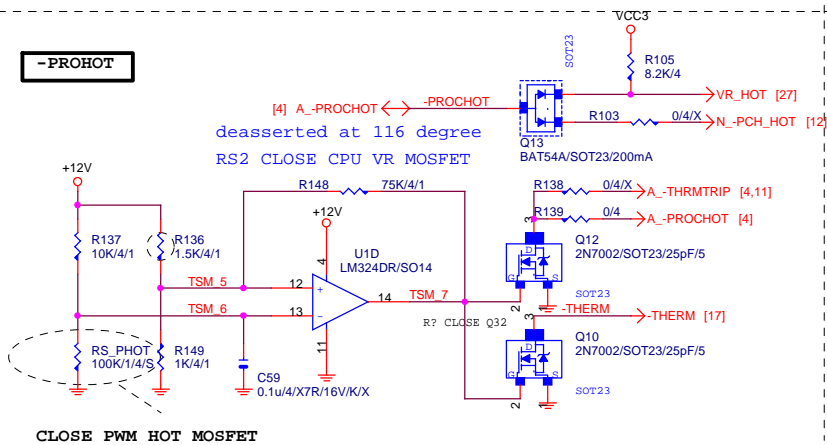


# VOLTAGE-- H/W MONITOR



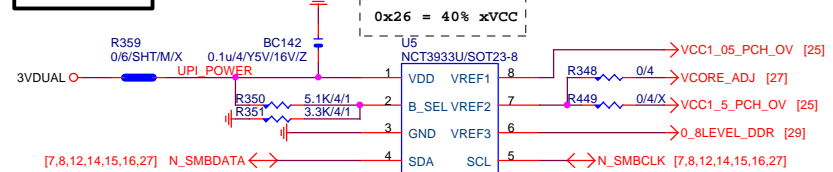
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# -PROHOT



# 接pwm feedback pin

# OV NCT3933



Gigabyte Technology

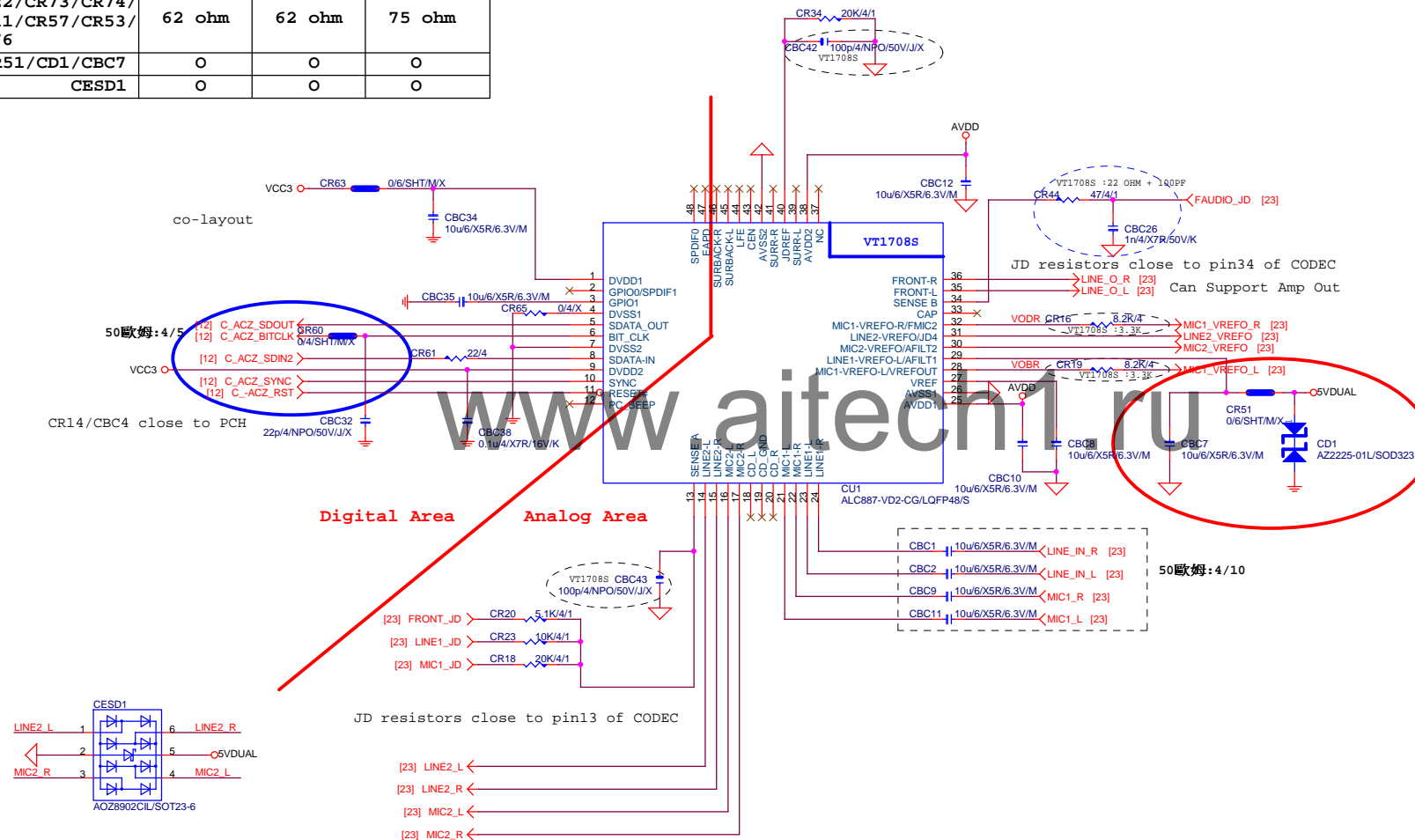
Title		HWM,FAN CTRL,OV	
Size	Document Number	GA-B85M-HD3G	
Custom		Rev 1.0	
Date:	Monday, June 24, 2013	Sheet	19 of 32

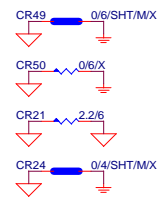




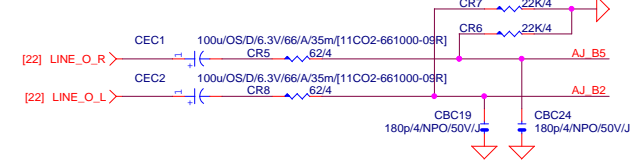
AZALIA CODEC ALC892/ALC887-VD2/VT1708-CE Colay

	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





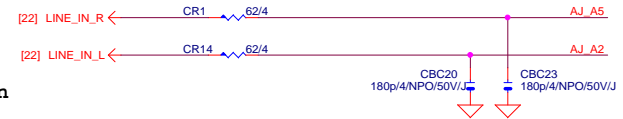
## LINE-OUT



## LINE-IN

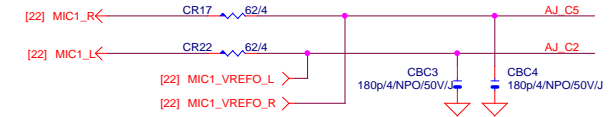
Verify MIC function  
in LINE-in

Only reserved for ALC888



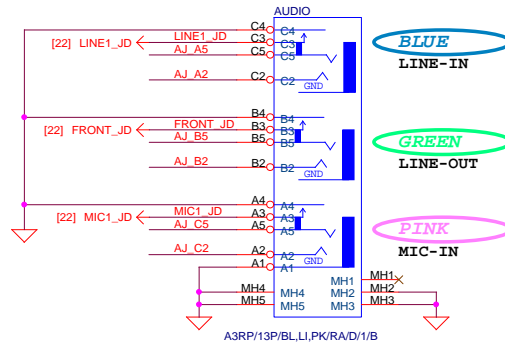
For 889A/888

## MIC-IN

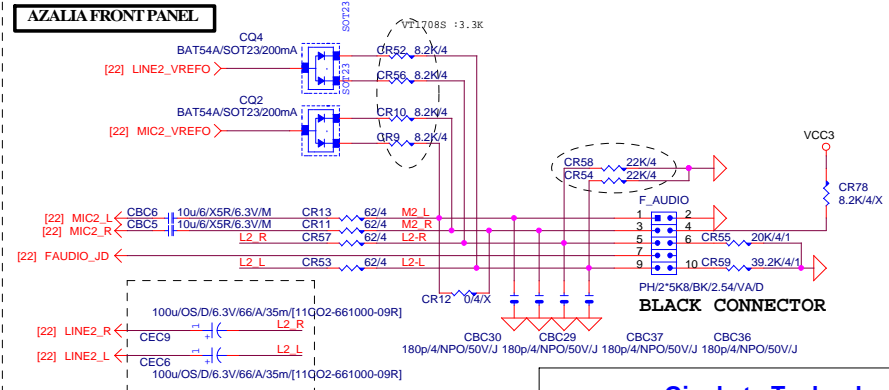


## SPDIF\_OUT

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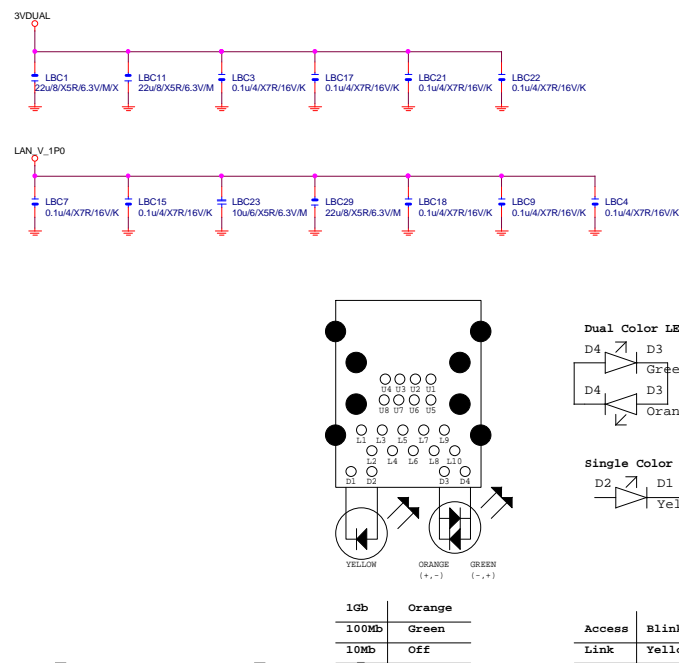
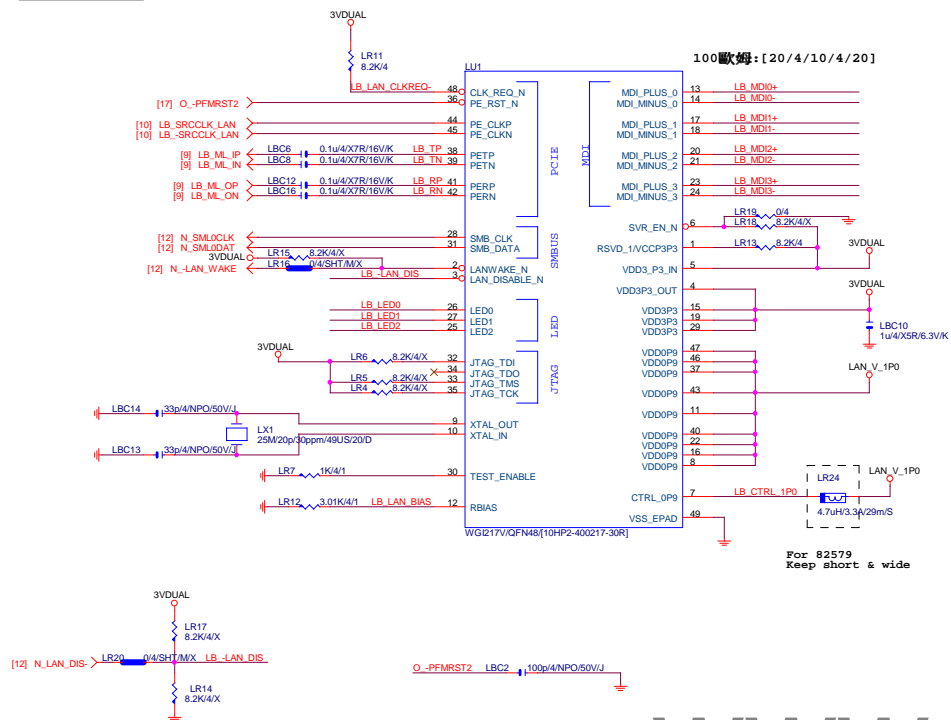
## AZALIA FRONT PANEL



Gigabyte Technology

Title		
AUDIO JACK		
Size	Document Number	Rev
Custom	GA-B85M-HD3G	1.0
Date:	Monday, June 24, 2013	Sheet 23 of 32

## LAN:INTEL I217



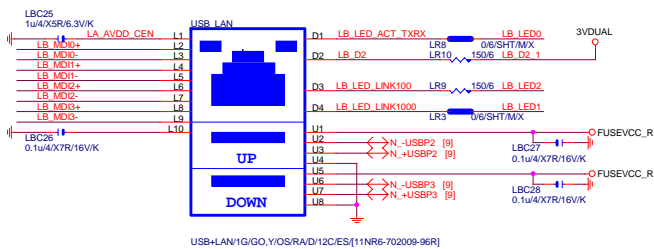
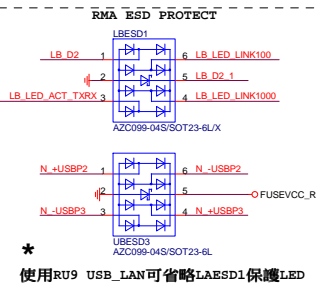
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## USB LAN CONNECTOR

## LA\_MDI--&gt;100歐姆:[20/4/8/4/20]

## USB X3 POWER

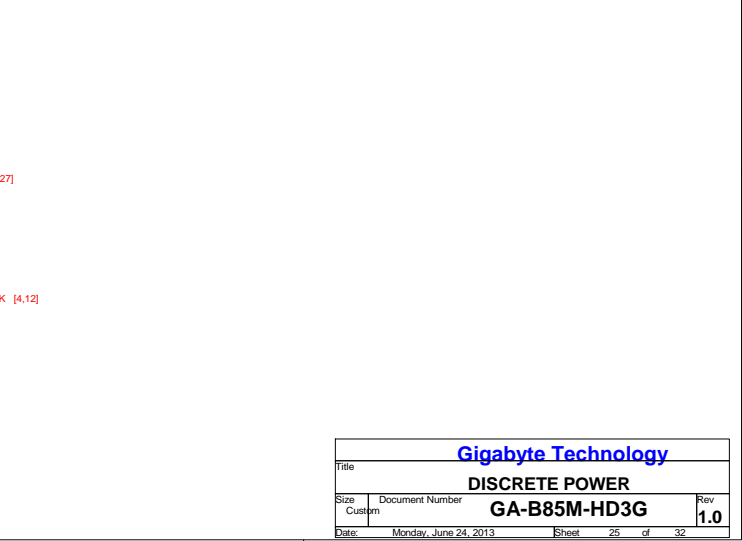
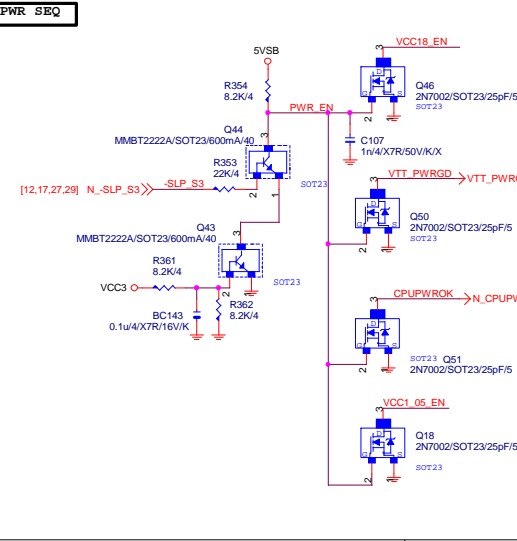
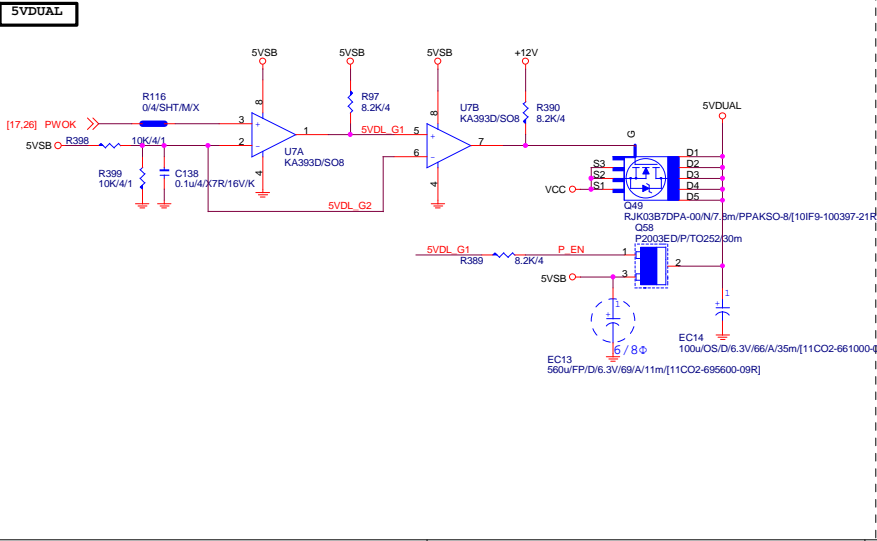
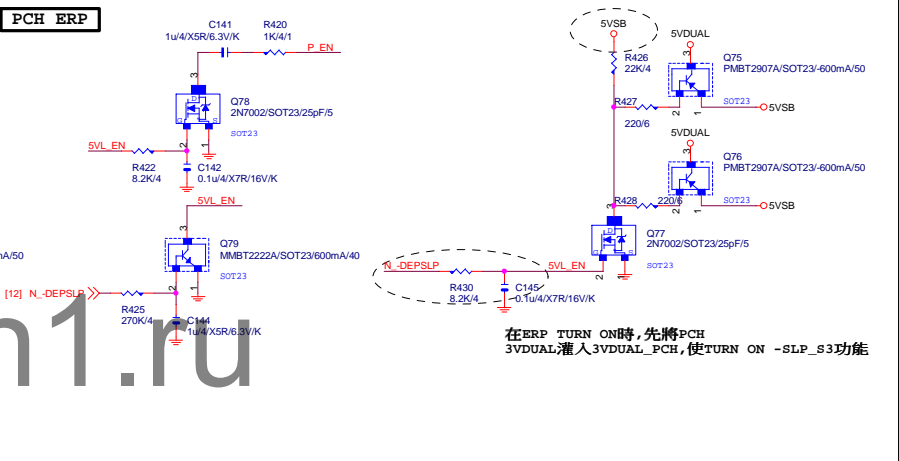
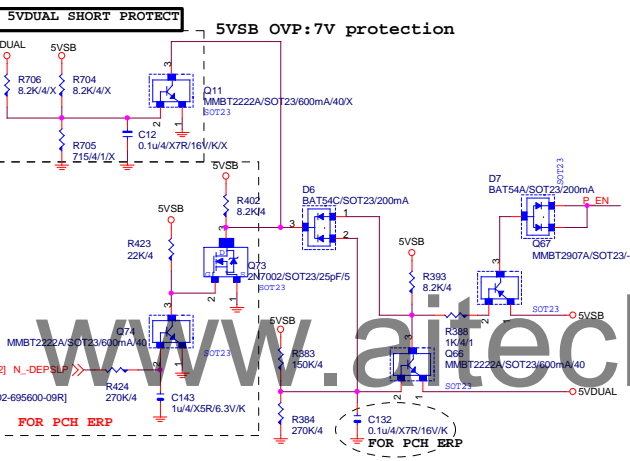
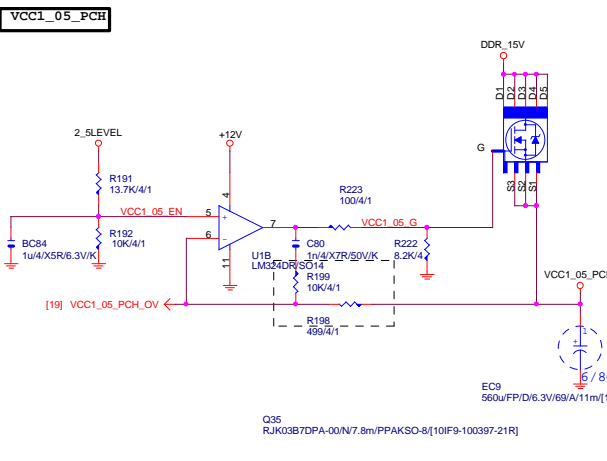
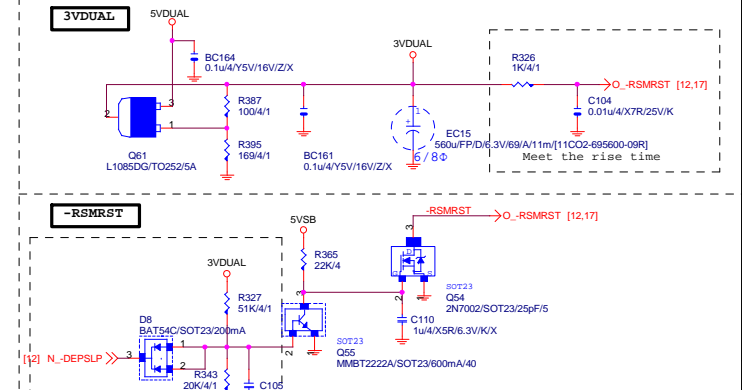
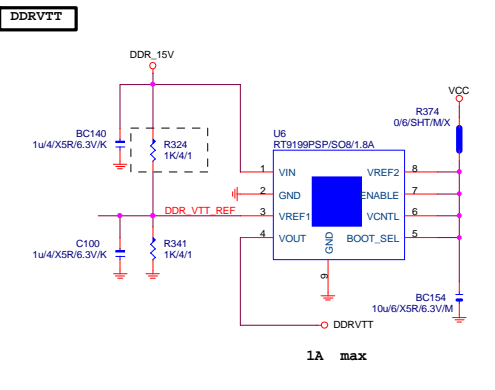
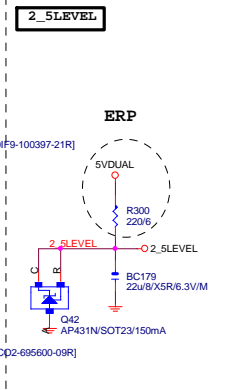
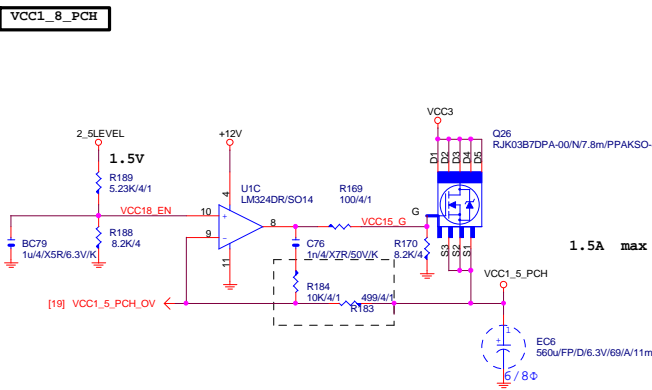
## EMI SHORT PAD



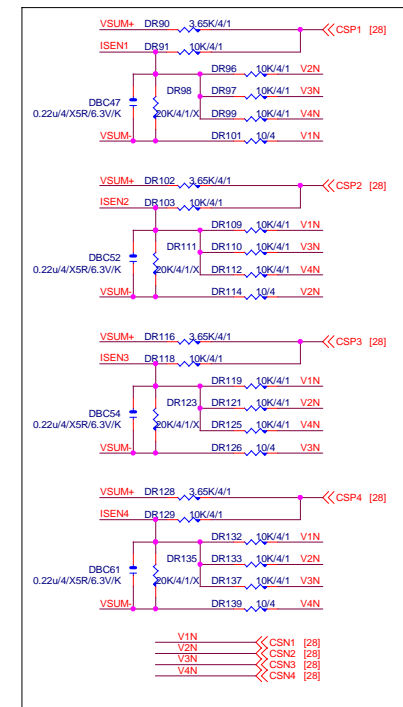
Gigabyte Technology

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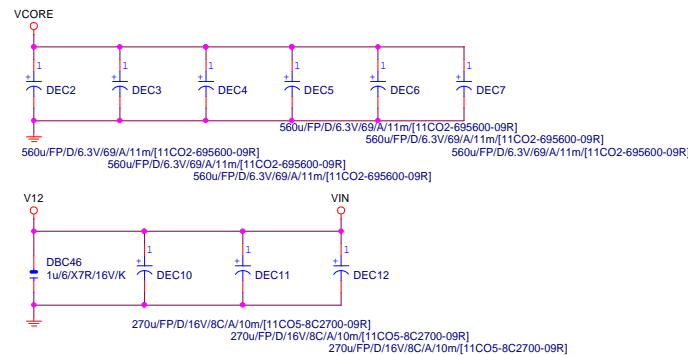
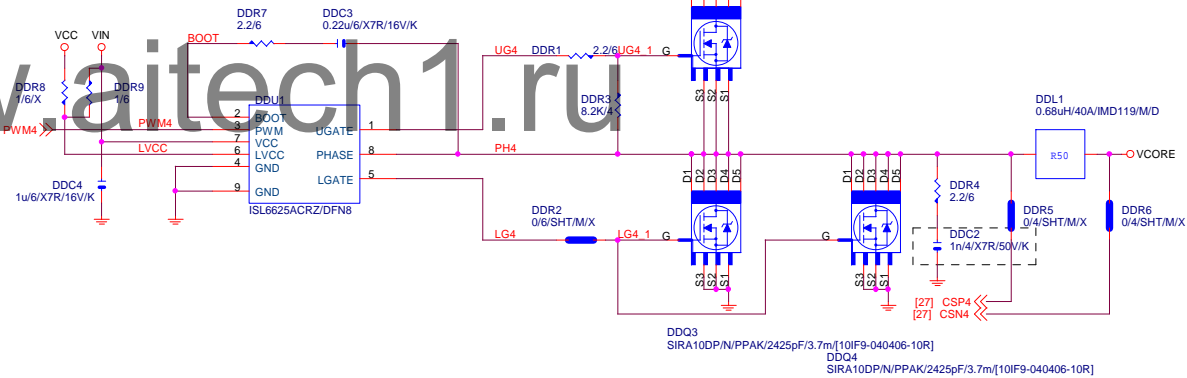
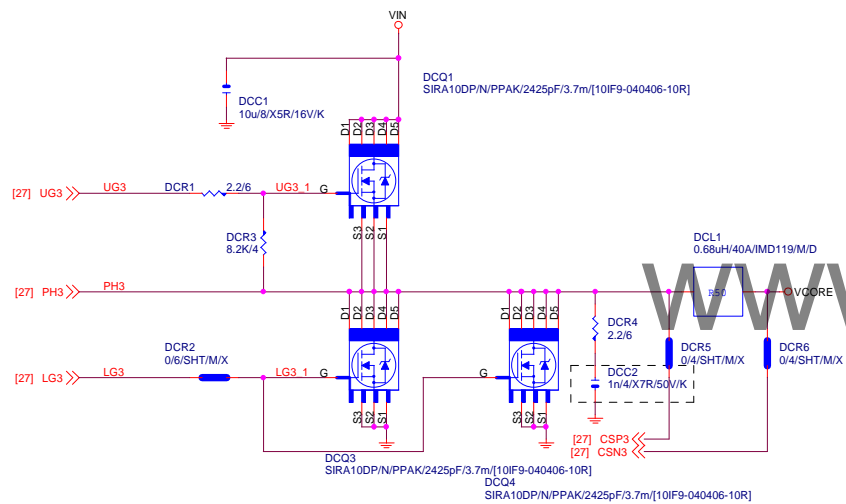
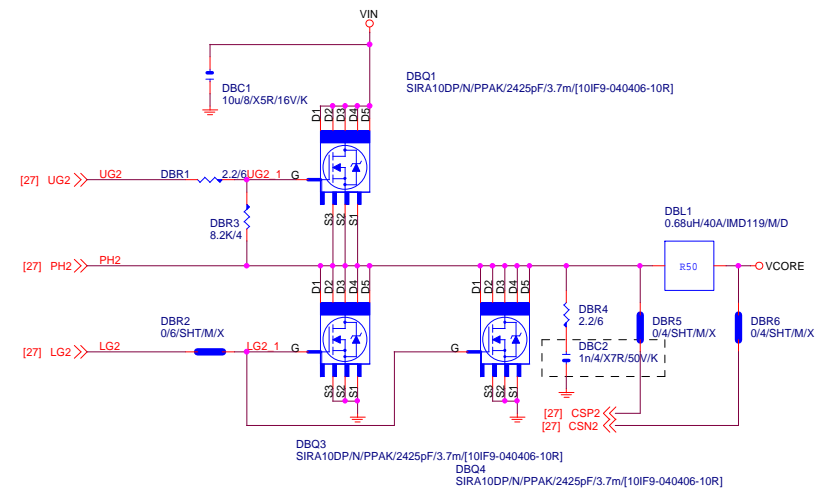
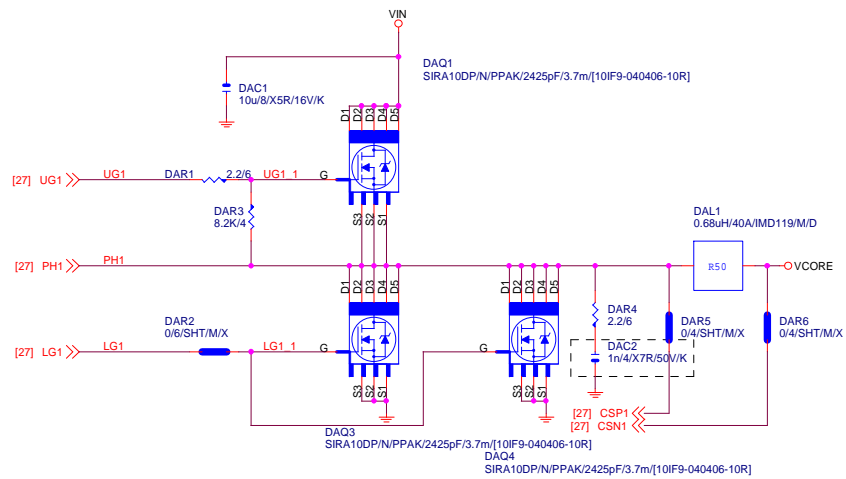






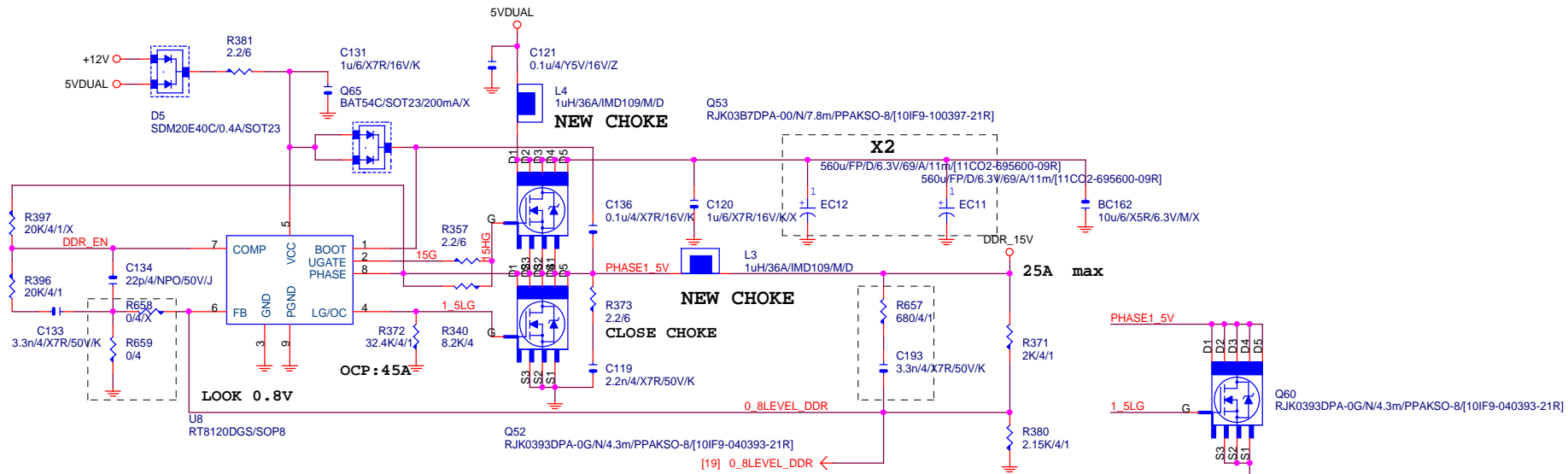


CLOSE PWM

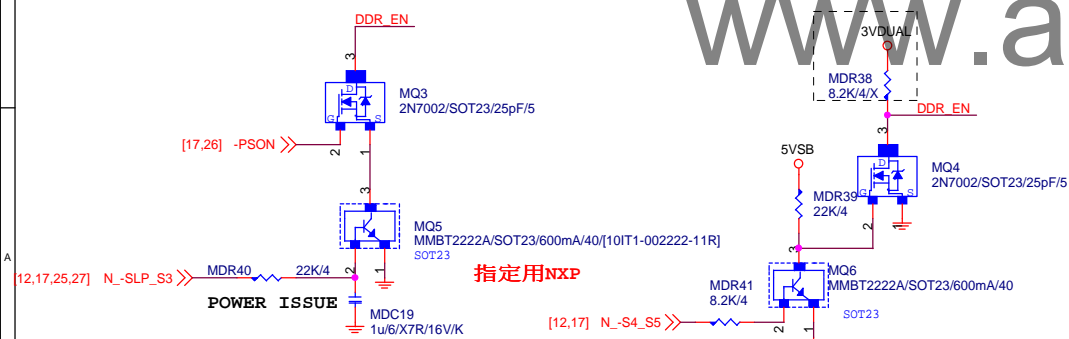


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Title			
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# DDR1.5V



# PWR\_SEQ



VIN=5V, VOUT=1.5V, IOU=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

$Rocset = (I_{ocp} * L_{gate, rdson}) / I_{ocset}$   
 $Rocset = (45A * 6.7m\Omega) / 10uA = 30K$   
 $I_{ocset} = 10uA$

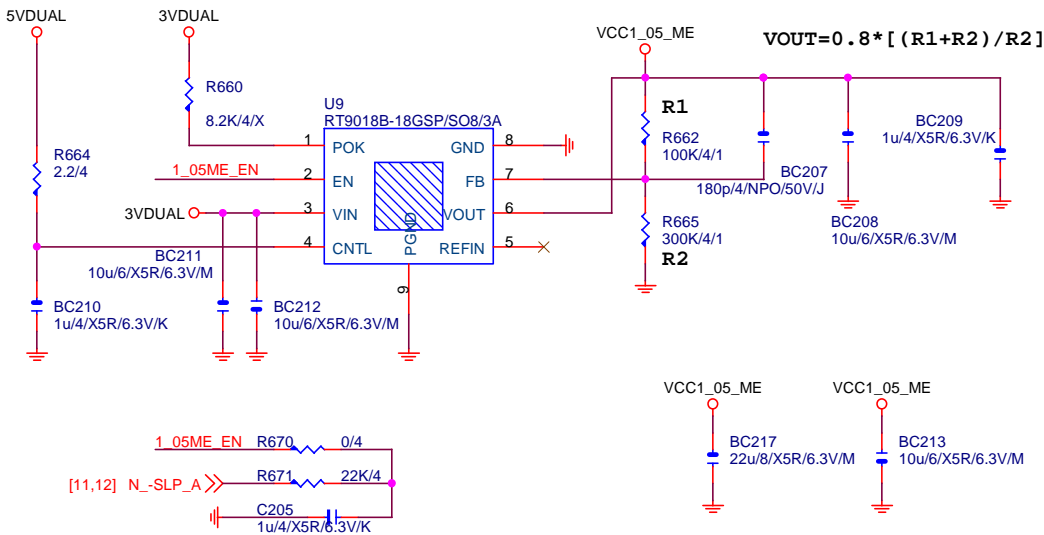
Gigabyte Technology

Title		
DDR POWER		
Size	Document Number	Rev
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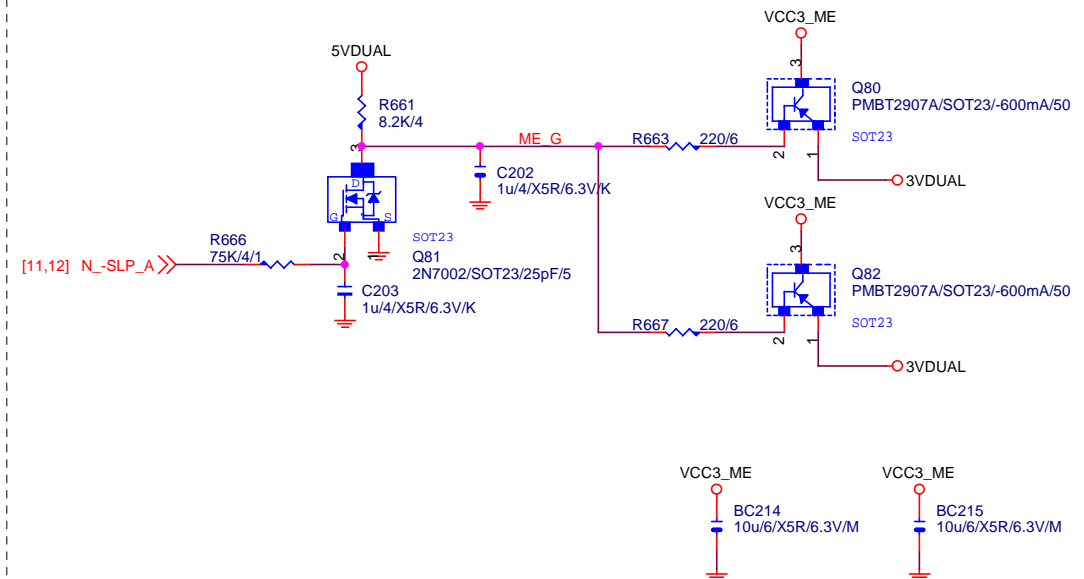
# VCC1\_05\_ME

## 【技術通報R&D技術通報156】

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

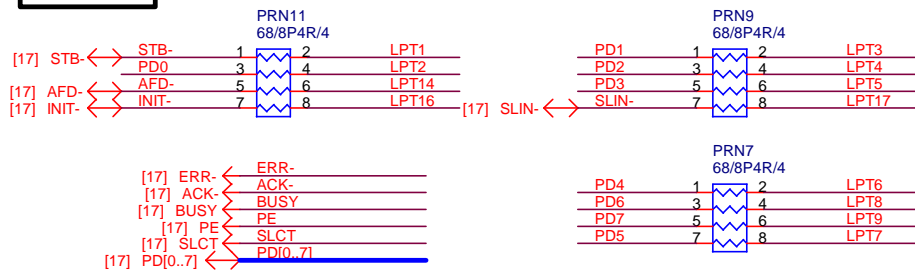


# VCC3\_ME



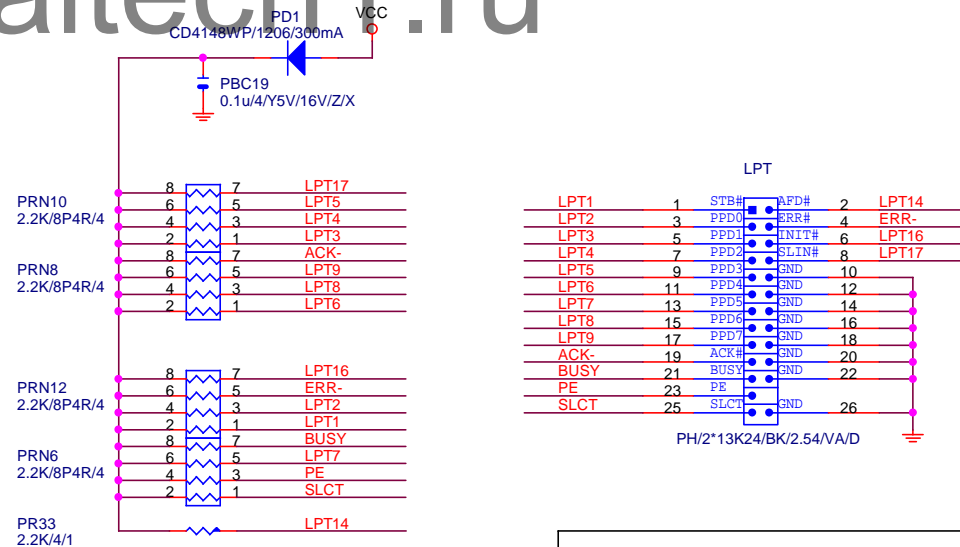
www.aitech1.ru

## LPT PORT



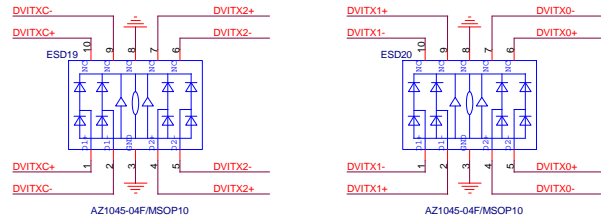
## 【技術通報R&D技術通報151】

33ohm Change to 68ohm

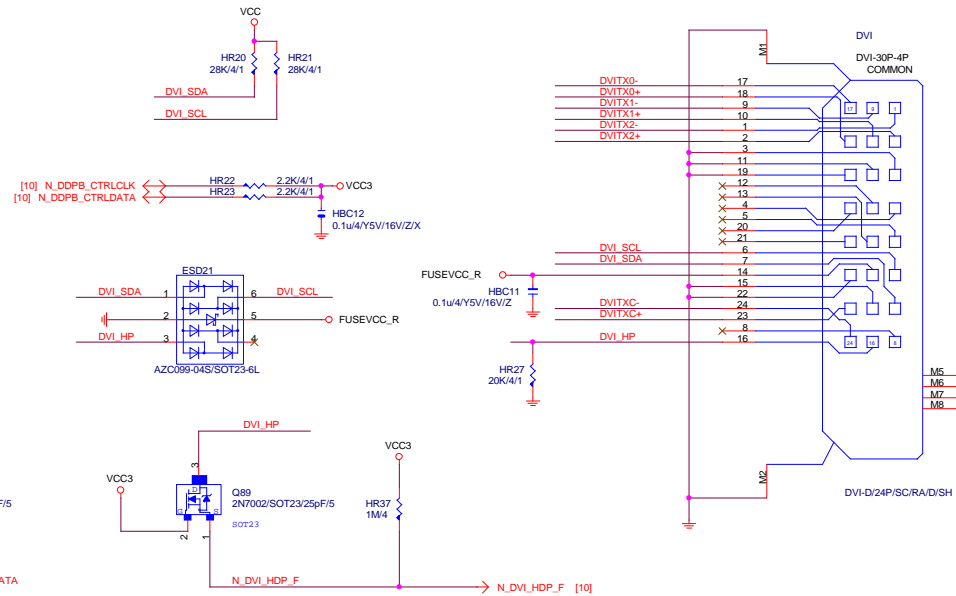


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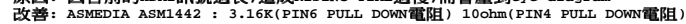
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LPT			
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Close to connector



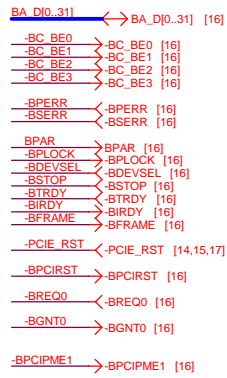
HDMI LEVEL SHIFT



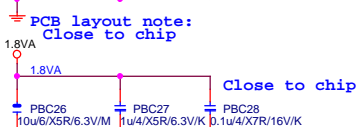
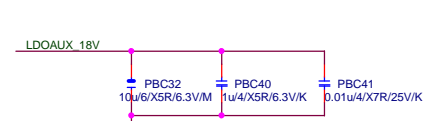
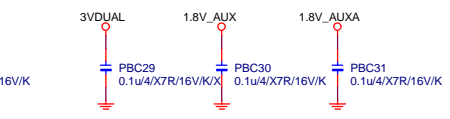
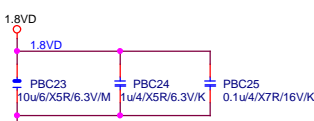
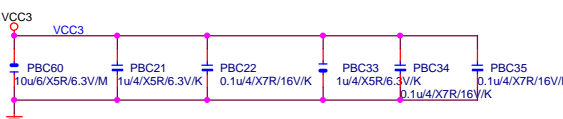
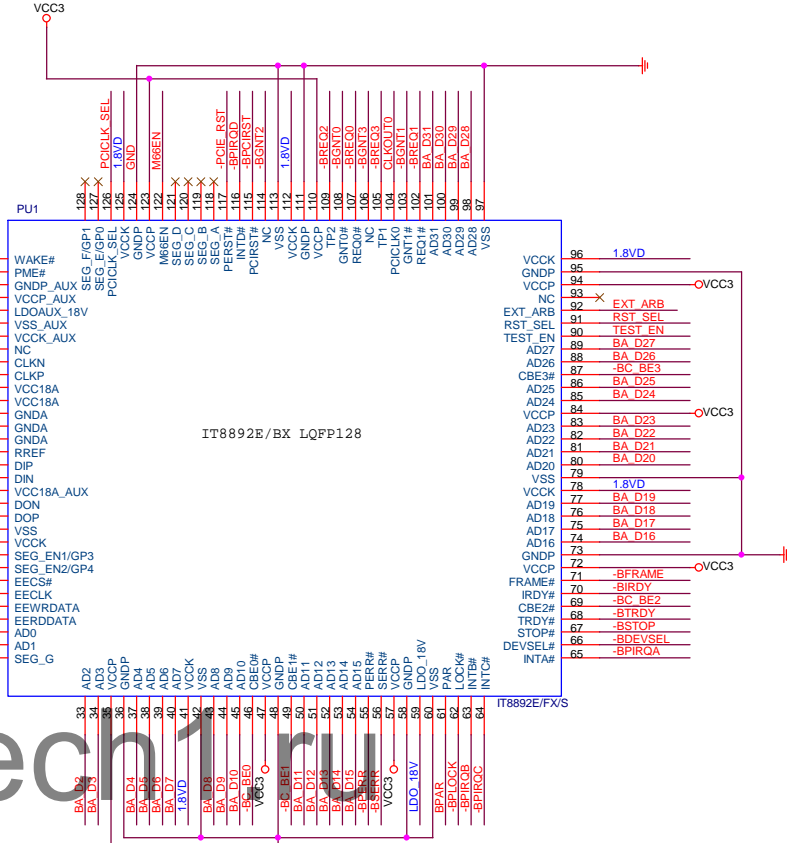
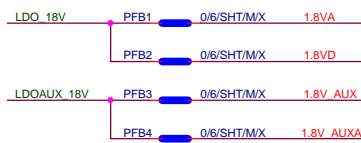
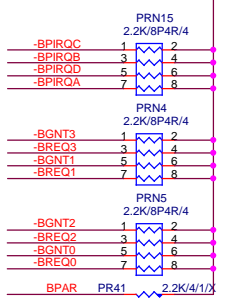
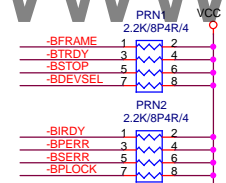
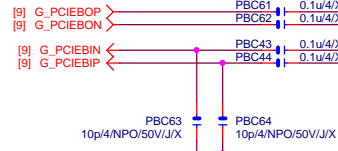
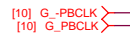
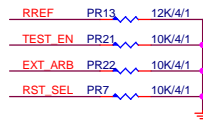
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Title			
<b>DVI</b>			
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# PCIE TO PCI

PCI:5/4/5 Impedance=50 +- 15%



IT8892: PR24 -> 47ohm  
IT8893: PR24 -> 22ohm



PCB layout note:  
Close to chip

Gigabyte Technology

ITE IT8892E  
GA-B85M-HD3G

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