

Model Name: GA-B85M-DS3H

Revision 3.0

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 1,2
08	DDR III CHANNEL B 1,2
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	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
26	VCORE ISL95812 1
27	VCORE ISL95812 2

SHEET

TITLE

28	RT8120 DDR POWER
29	LPT, M3 POWER
30	DVI

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Gigabyte Technology

Cover Sheet			
Size Custom	Document Number	GA-B85M-DS3H	Rev 3.0
Date:	Thursday, September 11, 2014	Sheet	1 of 30

Revision 3.0

Component value change history

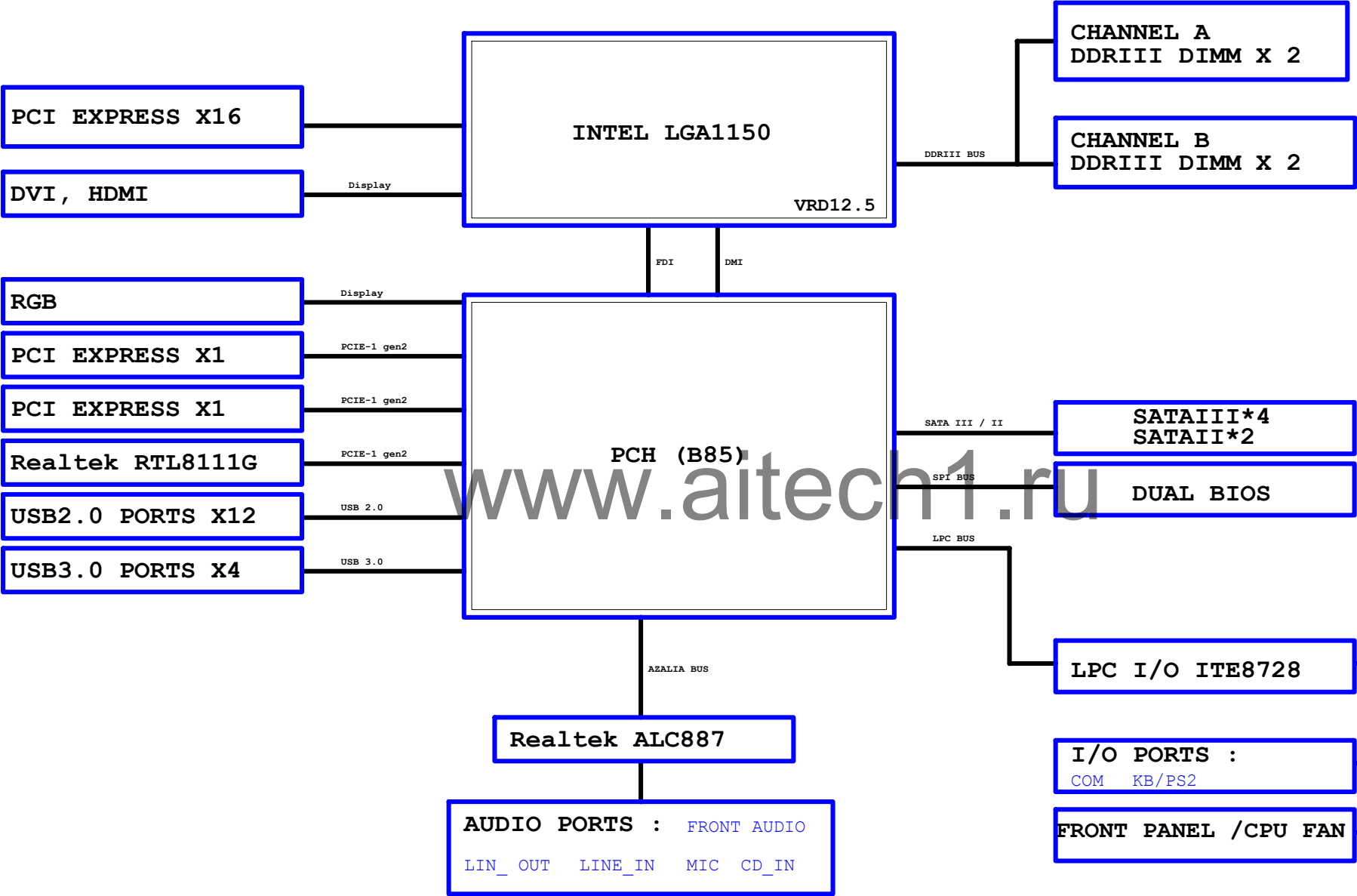
2014/07/31

Data	Change Item	Reason
2013/06/28	ADD RSMRST DELAY	
2013/08/13	Update Rev to 1.1	
	PCIE X16 New Footprint "PCIESLOT-164DN-Q-1"	
2013/08/23		EBOM: 9M85MDS3H-00-11A
2013/09/13	Update to R1.11	
	Follow Crystal Trace Rule	
	SYS_FAN, DDR 0ohm 0402 -> 0603	
	Update Fuse 1206 Footprint "POLYSWITCH-1206-1"	
	Update PPAK Footprint "Q_TDS0N8-GDS-T"	
2013/10/22	NX1: 25M/20p -> 12p	PBOM: 9M85MDS3H-00-11B
	NC7, NX8: 27p -> 10p	
2013/11/04	NC7, NX8: 10p -> 15p	PBOM: 9M85MDS3H-00-11C
2013/11/05	Update to R1.12	PBOM: 9M85MDS3H-00-11D
	Modify NX1 Trace	
2013/11/27	MR17 0ohm -> 0603 FUSE(10FP5-06100B-00R)	PBOM: 9M85MDS3H-00-11E
	ALC887 強壯版 (10HP5-368870-32R)	
2014/02/17	Sales Costdown Rev2.0	
	CPU Power ISL95820 1U2D -> ISL95812 1U1D	
	DVI Non-Level Shift	
	BIOS Size 64M -> 32M	
2014/02/20	SBA線路OPTION,整合電阻成排阻,精簡線路	
2014/02/24	整合電阻成排阻	
2014/02/27	MASK/DEL CAP	
2014/03/07	ADD ESD : NC3,NC4 (22P)	
2014/03/11	NR6改SHT PAD	
2014/03/12	WBC28,30,25,27,31解開MASK	
	COM:BLACK,F_AUDIO:GRAY	
	DEL後窗AUDIO 180P	

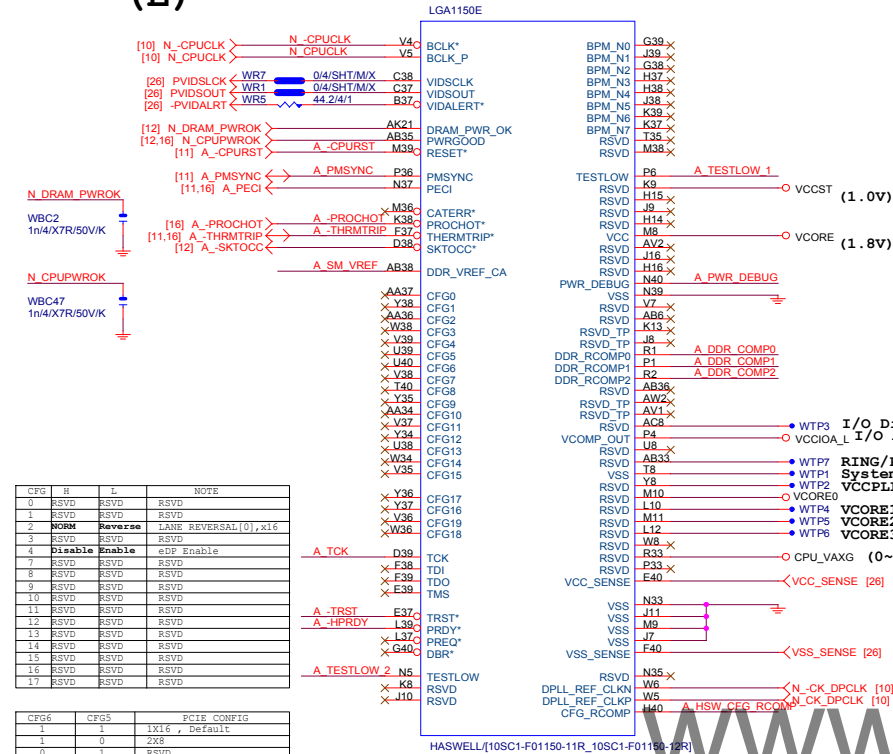
Circuit or PCB layout change

[illegible]

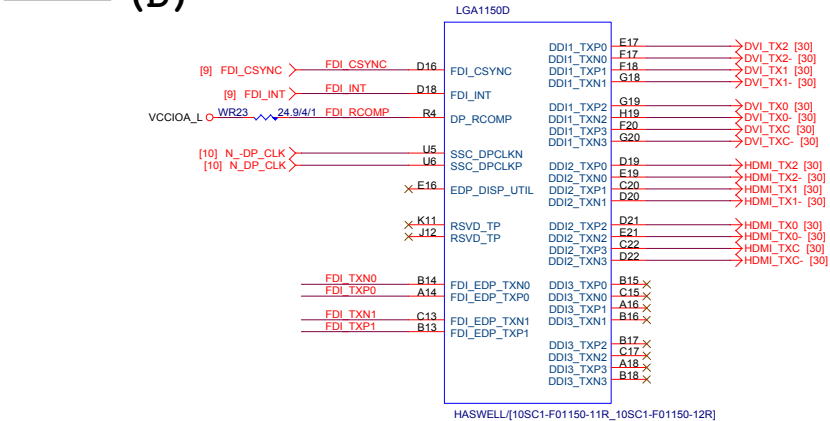
BLOCK DIAGRAM



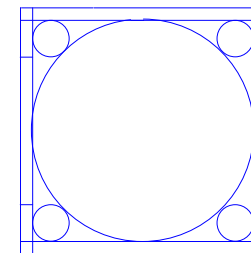
LGA1150 (E)



LGA1150 (D)



LGA1150B

CR
CPU RETENTION/X

LGA1150_P



ILM_BP/1156/CSP/LM_BP/1156/CSP/[12KRC-0F0001-52R_12KRC-0F0001-51R]

DDR BUS

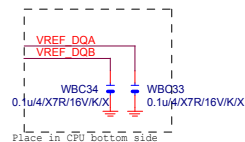
- [7] MODT_A[0..3] <=> MODT_A[0..3]
 [8] MODT_B[0..3] <=> MODT_B[0..3]
 [7] MDA[0..63] <=> MDA[0..63]
 [8] MDB[0..63] <=> MDB[0..63]
 [7] DQSA[0..7] <=> DQSA[0..7]
 [7] -DQSA[0..7] <=> -DQSA[0..7]
 [7] MAA[A0..15] <=> MAA[A0..15]
 [8] MAB[B0..15] <=> MAB[B0..15]
 [8] DQSB[0..7] <=> DQSB[0..7]
 [8] -DQSB[0..7] <=> -DQSB[0..7]

LGA1150A

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	MDA13
MAAA14	AT20	DDR0_MA14	DDR0_D14	AK37	MDA14
MAAA15	AU21	DDR0_MA15	DDR0_D15	AK40	MDA15
MODT_A0	AW10	DDR0_ODT0	DDR0_D16	AM40	MDA17
MODT_A1	AY3	DDR0_ODT1	DDR0_D17	AM39	MDA21
MODT_A2	AW9	DDR0_ODT2	DDR0_D18	AP38	MDA19
MODT_A3	AU8	DDR0_ODT3	DDR0_D19	AM37	MDA20
			DDR0_D20	AM38	MDA16
			DDR0_D21	AP37	MDA22
			DDR0_D22	AP40	MDA23
			DDR0_D23	AV37	MDA25
			DDR0_D24	AW37	MDA29
			DDR0_D25	AU35	MDA26
			DDR0_D26	AV35	MDA27
			DDR0_D27	AT37	MDA28
			DDR0_D28	AU37	MDA24
			DDR0_D29	AT35	MDA30
			DDR0_D30	AW35	MDA31
			DDR0_D31	AY6	MDA33
			DDR0_D32	AU6	MDA37
			DDR0_D33	AV4	MDA34
			DDR0_D34	AU4	MDA35
			DDR0_D35	AW6	MDA36
			DDR0_D36	AW4	MDA38
			DDR0_D37	AY4	MDA39
			DDR0_D38	AR1	MDA41
			DDR0_D39	AR4	MDA45
			DDR0_D40	AN3	MDA42
			DDR0_D41	AN4	MDA43
			DDR0_D42	AR2	MDA44
			DDR0_D43	AR3	MDA40
			DDR0_D44	AN2	MDA46
			DDR0_D45	AN1	MDA47
			DDR0_D46	AL1	MDA49
			DDR0_D47	AL4	MDA53
			DDR0_D48	AL3	MDA50
			DDR0_D49	AJ4	MDA51
			DDR0_D50	AL2	MDA52
			DDR0_D51	AL3	MDA48
			DDR0_D52	AJ2	MDA54
			DDR0_D53	AJ1	MDA55
			DDR0_D54	AG1	MDA57
			DDR0_D55	AG4	MDA61
			DDR0_D56	AE3	MDA58
			DDR0_D57	AE4	MDA59
			DDR0_D58	AG2	MDA60
			DDR0_D59	AG3	MDA56
			DDR0_D60	AE2	MDA62
			DDR0_D61	AE1	MDA63
			DDR0_D62	AE39	DQSA0
			DDR0_D63	AJ39	DQSA1
			DDR0_D64	AN39	DQSA2
			DDR0_D65	AV36	DQSA3
			DDR0_D66	AV5	DQSA4
			DDR0_D67	AP3	DQSA5
			DDR0_D68	AK3	DQSA6
			DDR0_D69	AF3	DQSA7
			DDR0_D70	AV32	DQSA0
			DDR0_D71	AE38	DQSA1
			DDR0_D72	AJ38	DQSA2
			DDR0_D73	AN38	DQSA3
			DDR0_D74	AJ36	DQSA4
			DDR0_D75	AW5	DQSA4
			DDR0_D76	AP2	DQSA5
			DDR0_D77	AK2	DQSA6
			DDR0_D78	AF2	DQSA7
			DDR0_D79	AU32	

HASWELL-[10SC1-F01150-11R_10SC1-F01150-12R]

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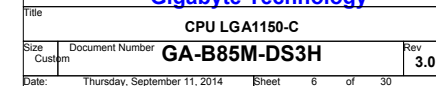
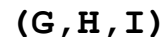
HASWELL-[10SC1-F01150-11R_10SC1-F01150-12R]

Gigabyte Technology

CPU LGA1150-B

Title	Document Number	Rev
Size	GA-B85M-DS3H	3.0
Custom		
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(F, J)



(A)

DDP3 2

5



(B)



~~-.DQSB[0..7]~~ <-DQSB[0..7] [5]
 DQSB[0..7] <-DQSB[0..7] [5]
 MODT_B[0..3] <=> MODT_B[0..3] [5]



CHA

CHB

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

放靠近 Device & PCI-E Slot
Impedance=80 +- 17.5%

```

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

```

Base	Frequency
A	10
AT	9
AA	8
AAA	7
AAV	6
AWW	5
AWW	4
E	3
E	2
C	1
D	1

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

DMI_RXN_0	USBN_0	AV10 - N_USBP0	N_USBP0 [20]
DMI_RXP_0	USBN_0	AV10 - N_USBP0	N_USBP0 [20]
DMI_TXN_0	USBP_0	AV11 - N_USBP1	N_USBP1 [20]
DMI_TXP_0	USBP_1	AW11 - N_USBP1	N_USBP1 [20]
DMI_RXN_1	USBN_2	AV14 - N_USBP2	N_USBP2 [23]
DMI_RXP_1	USBP_2	AP14 - N_USBP2	N_USBP2 [23]
DMI_TXN_1	USBN_3	AV16 - N_USBP3	N_USBP3 [23]
DMI_TXP_1	USBP_3	AK16 - N_USBP3	N_USBP3 [23]
DMI_RXN_2	USBN_4	AV15 - N_USBP4	N_USBP4 [17]
DMI_RXP_2	USBP_4	AU15 - N_USBP4	N_USBP4 [17]
DMI_TXN_2	USBN_5	AU12 - N_USBP5	N_USBP5 [17]
DMI_TXP_2	USBP_5	AT12 - N_USBP5	N_USBP5 [17]
DMI_RXN_3	USBN_6	AV14	
DMI_RXP_3	USBP_6	AW14	
DMI_TXN_3	USBN_7	AU17	
DMI_TXP_3	USBP_7	AT17	
	USBN_8	AW16 - N_USBP8	N_USBP8 [20]
DMI_RCOMP	USBP_8	AV16 - N_USBP8	N_USBP8 [20]
PCIe_RCOMP	USBN_9	AN16 - N_USBP9	N_USBP9 [20]
	USBP_9	AP16 - N_USBP9	N_USBP9 [20]
	USBN_10	AJ18 - N_USBP10	N_USBP10 [20]
CLKIN_DMI_N	USBP_10	AK18 - N_USBP10	N_USBP10 [20]
CLKIN_DMI_P	USBN_11	AP18 - N_USBP11	N_USBP11 [20]
	USBP_11	AN18 - N_USBP11	N_USBP11 [20]
PCIe_PERN_1_USBP3_RXN_2	USBN_12	AW18 - N_USBP12	N_USBP12 [17]
PCIe_PERN_1_USBP3_RXP_2	USBP_12	AV18 - N_USBP12	N_USBP12 [17]
PCIe_PETN_1_USBP3_TXN_2	USBN_13	AP20 - N_USBP13	N_USBP13 [17]
PCIe_PETP_1_USBP3_TXP_2	USBP_13	AN20 - N_USBP13	N_USBP13 [17]
PCIe_PERN_2_USBP3_RXN_3			

PCIE_PERP_2_USB3_RXP_3	OC0B, GP59	AF40	N_USBOC_F [17]
PCIE_PETN_2_USB3_TXN_3	OC1B, GP40	AF37	
PCIE_PETP_2_USB3_TXP_3	OC2B, GP40	AD39	N_USBOC_R [17]
PCIE_PERN_3	OC1B, GP41	AD40	
PCIE_PERP_3	OC3B, GP42	AD40	N_USBOC_R [17]
PCIE_PETN_3	OC4B, GP43	AF39	
PCIE_PETP_3	OC5B, GP9	AC41	N_USBOC_R [17]
PCIE_PERN_4	OC6B, GP10	AF40	
PCIE_PERP_4	OC7B, GP14	AG40	N_GPIO14

W= mil out of P
S= mil out of P

PCIE_PETN_4	USBRIASB	AV20	N USBRIAS	NR47	22.6/4/1
PCIE_PETP_4	USBRIASB	AU20			
PCIE_PERN_5	USBRIASB				
PCIE_PERP_5					
PCIE_PETN_5	CLKIN_DOT96N	AP11	CK -DOTCLK		
PCIE_PETP_5	CLKIN_DOT96P	AM11	CK DOTCLK		

PCIE_PERN_6
PCIE_PERP_6
PCIE_PETN_6
PCIE_PETP_6
PCIE_PERN_7
PCIE_PERP_7
PCIE_PETN_7
PCIE_PETP_7
PCIE_PERN_8
PCIE_PERP_8
PCIE_PETN_8
PCIE_PETP_8

NR130
8.2K/4
3VDUAL

N_GPI014

N_USBOC_F
NBC82
0.1u4/X7R/16V/K

N_USBOC_R
NBC83
0.1u4/X7R/16V/K

CHIP DH82B85 C2 INTEL[F10HB1-030B85-20R]

```

[20] PCH_USB3_RXN0 >>> F20
[20] PCH_USB3_RXP0 >>> G20
[20] PCH_USB3_TXN0 <<< B18
[20] PCH_USB3_TXP0 <<< C18

[20] PCH_USB3_RXN1 >>> G18
[20] PCH_USB3_RXP1 >>> H18
[20] PCH_USB3_TXN1 <<< B18
[20] PCH_USB3_TXP1 <<< B18

[17] PCH_USB3_RXN4 >>> K20
[17] PCH_USB3_RXP4 >>> L20
[17] PCH_USB3_TXN4 <<< D18
[17] PCH_USB3_TXP4 <<< C18

[17] PCH_USB3_RXN5 >>> L18
[17] PCH_USB3_RXP5 >>> K18
[17] PCH_USB3_TXN5 <<< B18
[17] PCH_USB3_TXP5 <<< A18

```

VCC3

NR62 8.2K/4/X AK22

NR63 8.2K/4/X AT34

N/A

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

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CK_SRCCLK
CK_SRCCLK

Mount for integr

[10] N_PCHCLK14 ←
Ch
Ch

PCH H/S

LOW COST ICH7 HEATSINK

PCH_HS
PCH_HS/[12SP2-030005-51R_12SP2-030005-52R_12SP2-030005-53R_12SP2-030005-54R_12SP2-030005-55R_12SP2-030005-56R_12SP2-030005-57R_12SP2-030005-58R_12SP2-030005-59R_12SP2-030005-60R_12SP2-030005-61R_12SP2-030005-62R_12SP2-030005-63R_12SP2-030005-64R_12SP2-030005-65R_12SP2-030005-66R_12SP2-030005-67R_12SP2-030005-68R_12SP2-030005-69R_12SP2-030005-70R_12SP2-030005-71R_12SP2-030005-72R_12SP2-030005-73R_12SP2-030005-74R_12SP2-030005-75R_12SP2-030005-76R_12SP2-030005-77R_12SP2-030005-78R_12SP2-030005-79R_12SP2-030005-80R_12SP2-030005-81R_12SP2-030005-82R_12SP2-030005-83R_12SP2-030005-84R_12SP2-030005-85R_12SP2-030005-86R_12SP2-030005-87R_12SP2-030005-88R_12SP2-030005-89R_12SP2-030005-90R_12SP2-030005-91R_12SP2-030005-92R_12SP2-030005-93R_12SP2-030005-94R_12SP2-030005-95R_12SP2-030005-96R_12SP2-030005-97R_12SP2-030005-98R_12SP2-030005-99R_12SP2-030005-100R]

USB TABLE

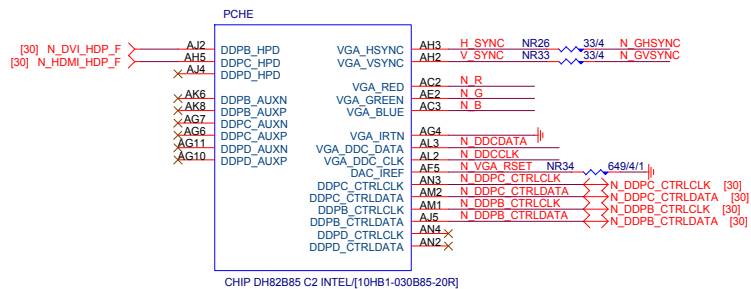
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OC[3:0]# for Device 29 (ports 0-7)
OC[7:4]# for Device 26 (ports 8-13)
```

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

<h1 style="text-align: center;">Gigabyte Technology</h1>			
<h2 style="text-align: center;">PCH FDI,DMI,USB ,PCIE,NVRAM</h2>			
Title	Document Number		
Size Custom	<h1 style="text-align: center;">GA-B85M-DS3H</h1>		
Date:	Thursday, September 11, 2014	Sheet	9 of 30

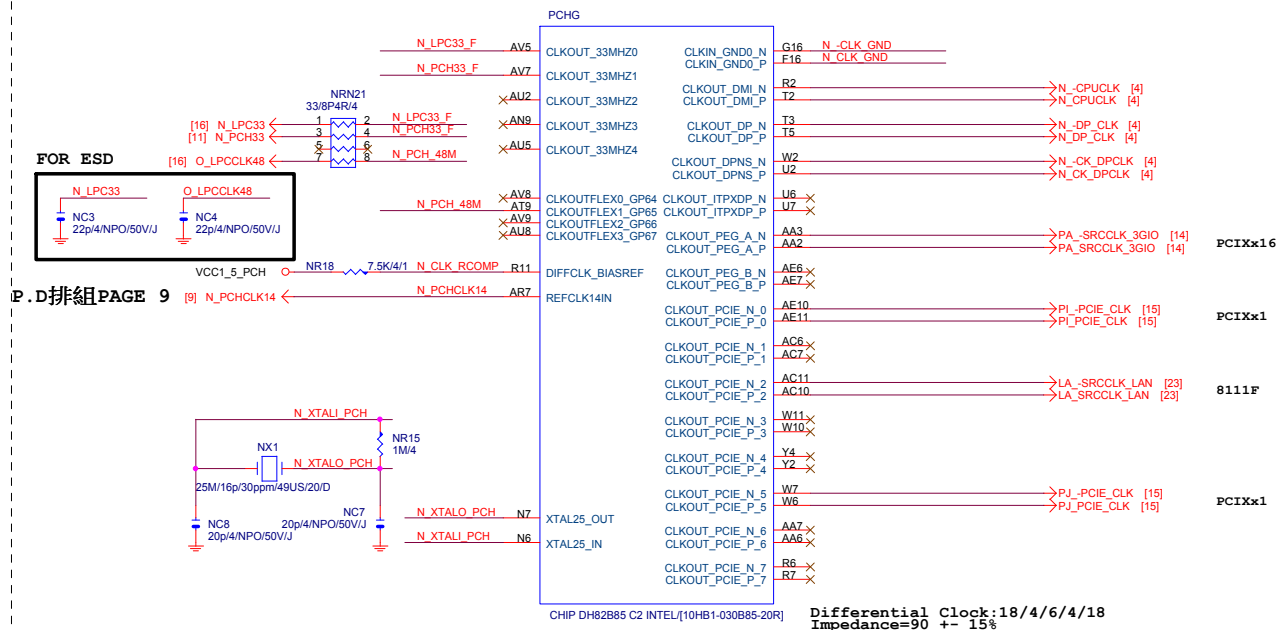
PCH

(E)

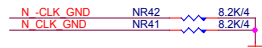


PCH

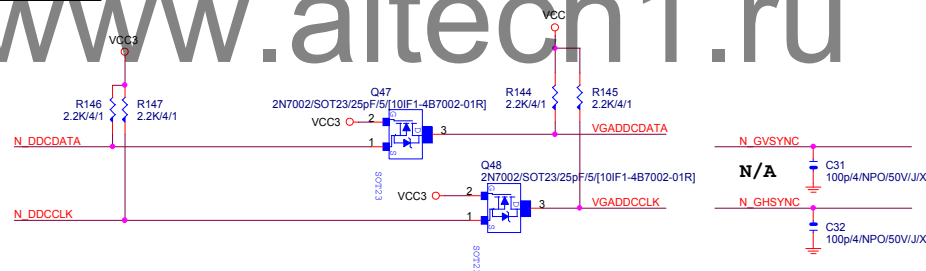
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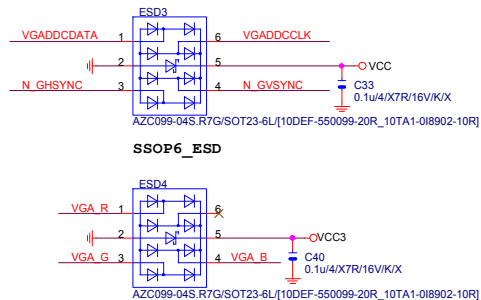
PCH CLK PD



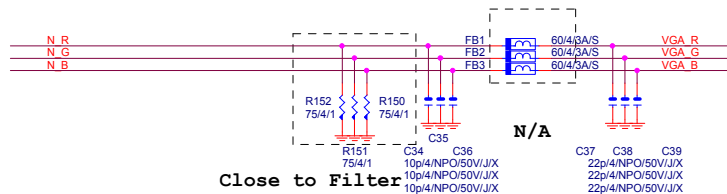
VGA DDC



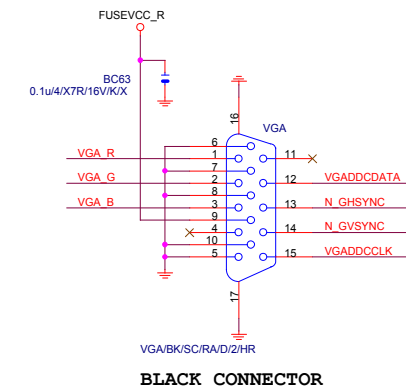
VGA ESD



VGA DDC



VGA CONNECTOR

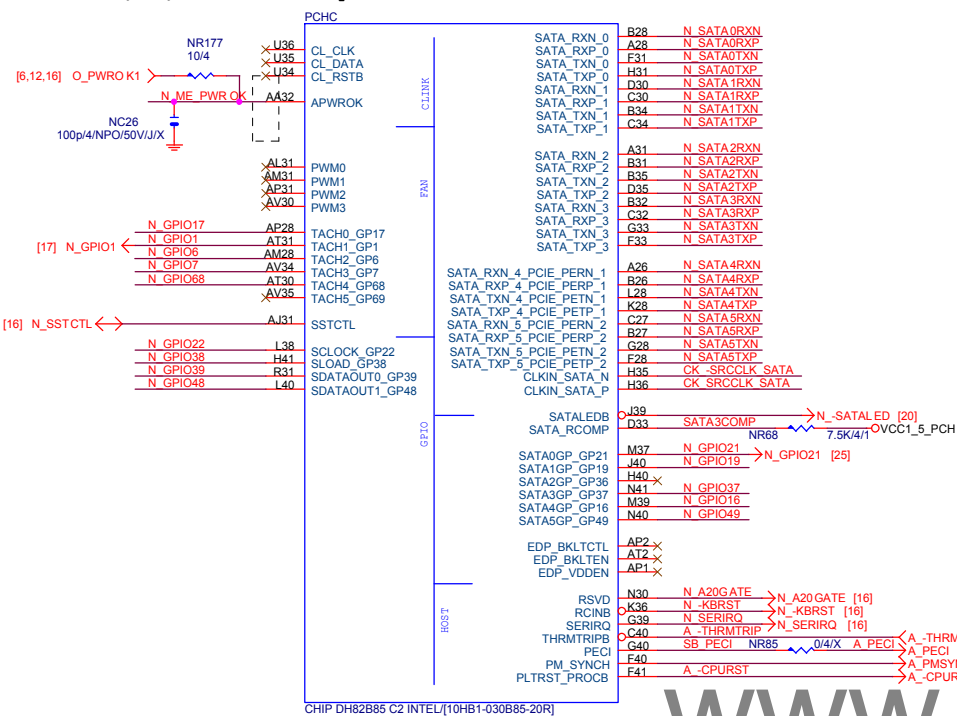


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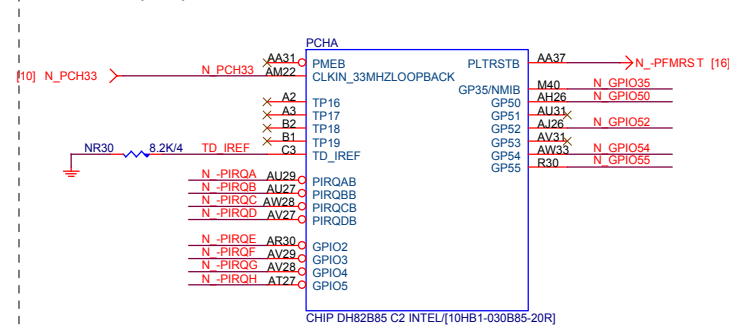
Title			PCH DISPLAY_CLK BUFFER		
Size			GA-B85M-DS3H		
Date			Thursday, September 11, 2014		
Sheet			10 of 30		
Rev			3.0		

(C)

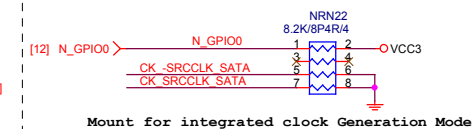
SATA3 : 20/7.5/4.5/7.5/20 (breakout min 8/4/4/4/8)
Impedance=90 +- 17.5%
SATA2 : 15/7.5/4.5/7.5/15 (breakout min 8/4/4/4/8)
Impedance=90 +- 17.5%



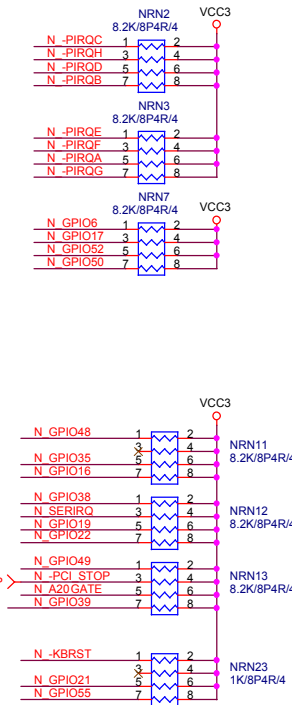
(A)



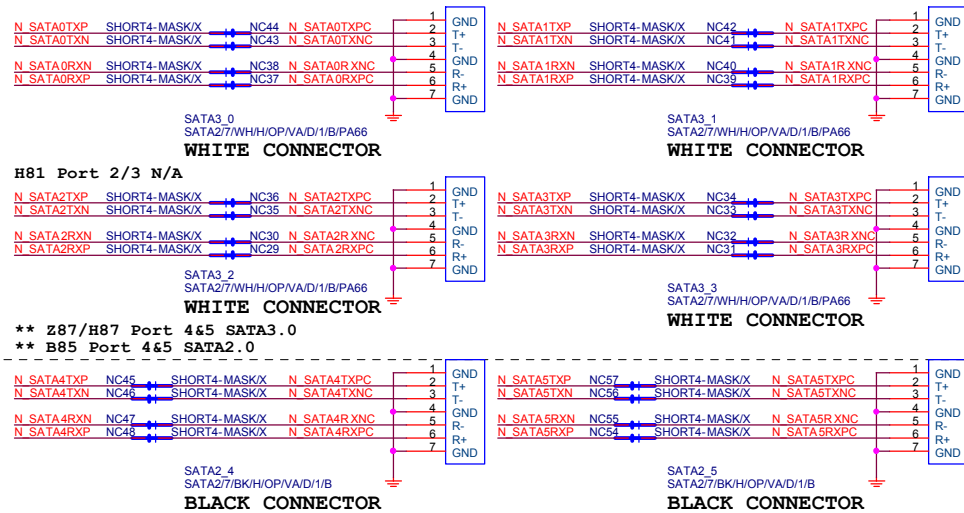
PCH CLK PD



PCH	PU/PD
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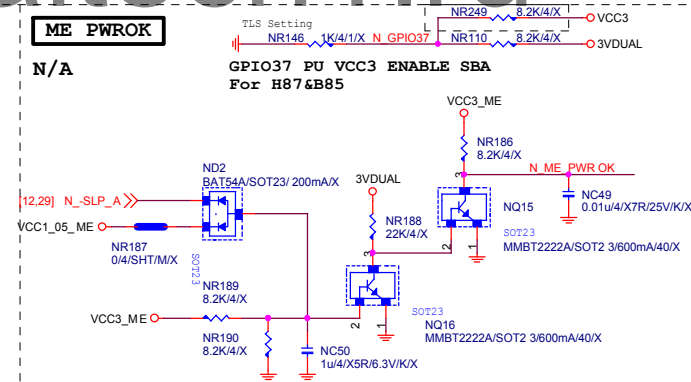


SATA CONNECTOR Remove SATA MLCC [Footprint: C0402-SHORT4-MASK]



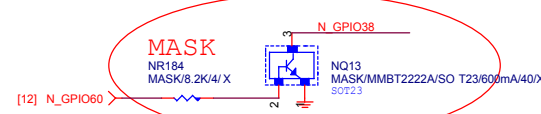
ME PWROK

N/A



GPIO38 Ctrl

N/A

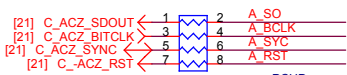


Gigabyte Technology

Title			
PCH HOST , SATA, PCI			
Size	Document Number		Rev
Custom	GA-B85M-DS3H		3.0
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PCH

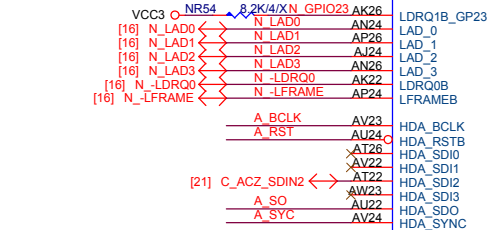
(D)



NRN15 33/8P4R/4

PCHD

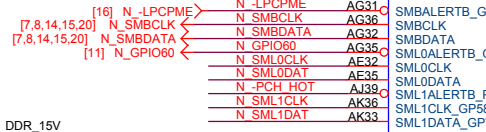
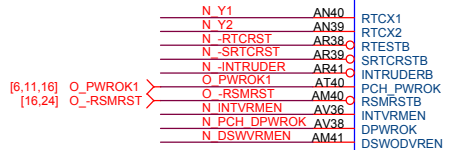
[16] N_LAD[0..3] << N_LAD[0..3]



[21] C_ACZ_SDI2<>
A SO
A SYNC



[19] SPI_DQ2<>
[19] SPI_DQ3<>



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

O_FWROK1

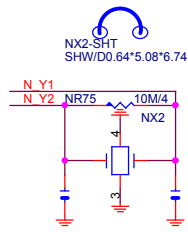
NC51 0.01u/4/X7R/25V/K/X

Reserve for EMI test

HSW STRAP13

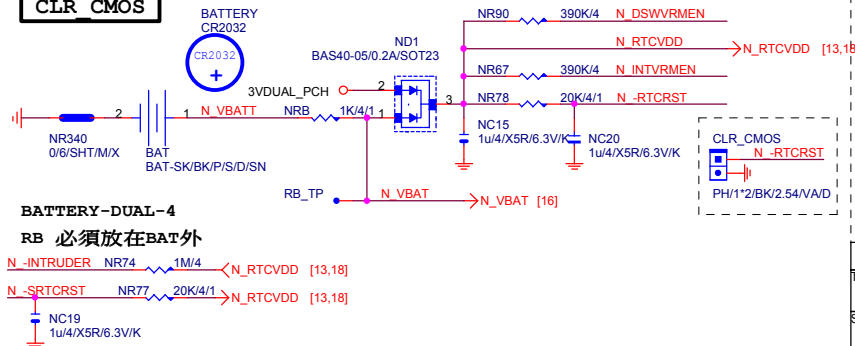
N/A

32.768KHZ



XTALS-RH-N

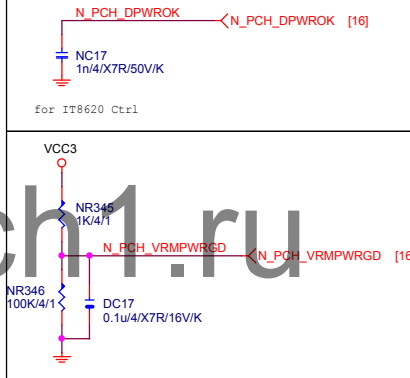
CLR CMOS



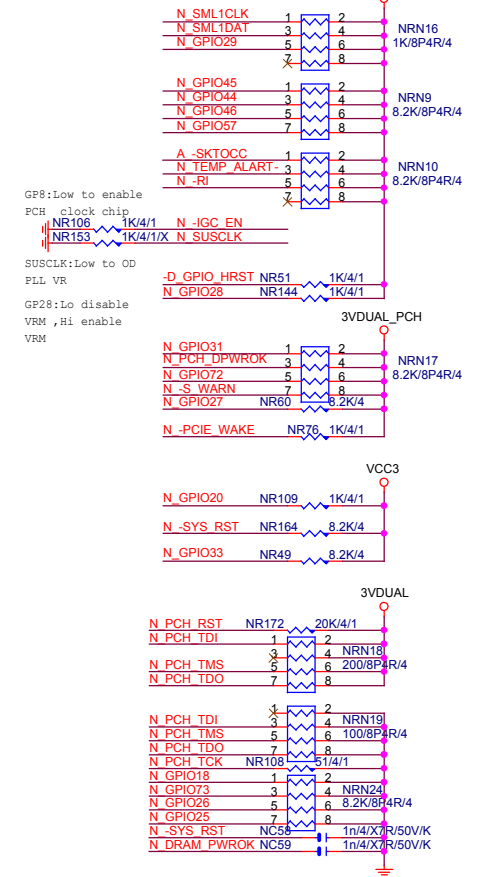
ACZ SDOUT

N/A

PCH DPWROK



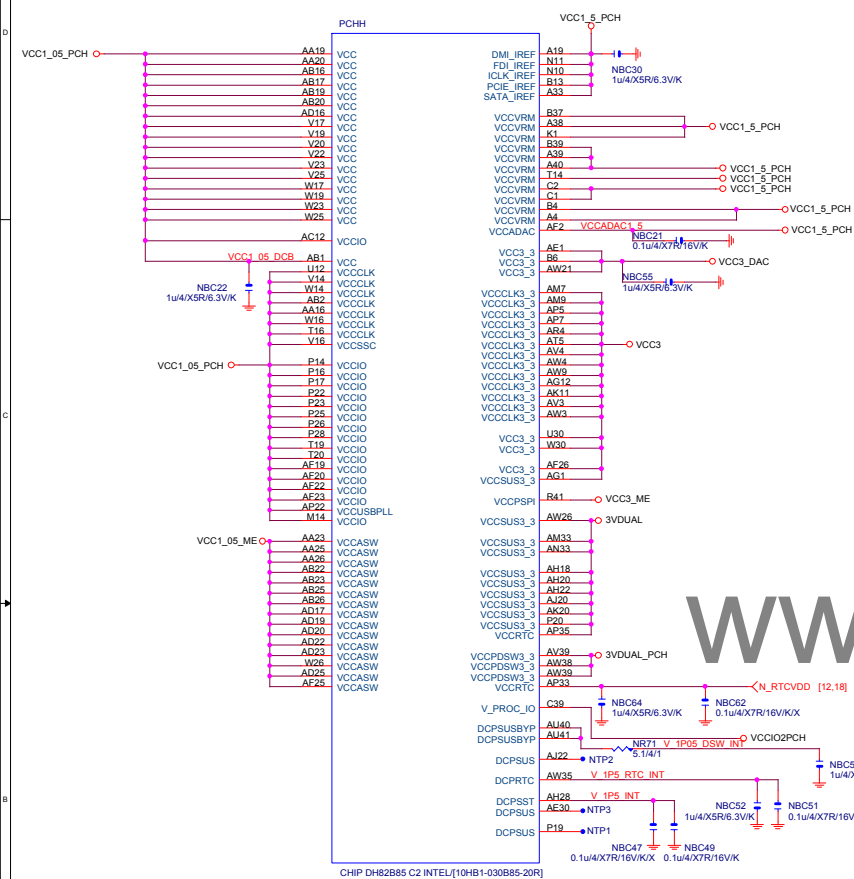
PCH PU/PD



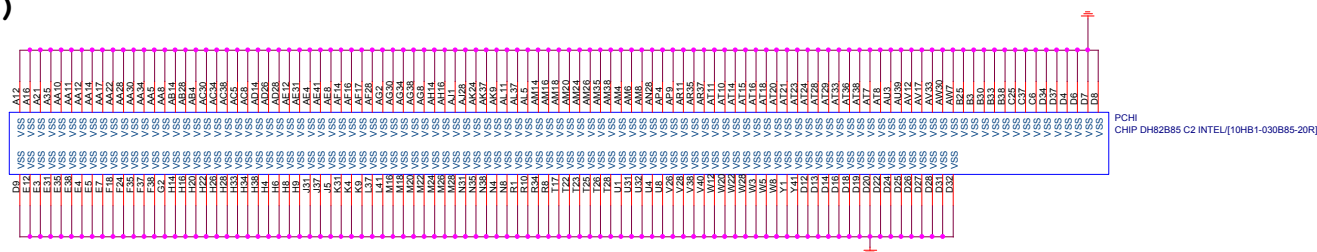
Gigabyte Technology

Title				PCH GPIO , CTRL , AUDIO	
Size		Document Number		GA-B85M-DS3H	
Custom				Rev 3.0	
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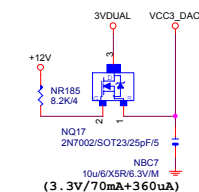
PCH (H)



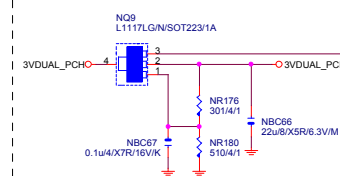
PCH (I)



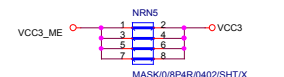
VCC3 DAC



3VDUAL PCH

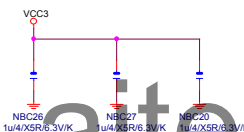


SHT PWR

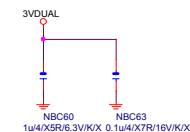
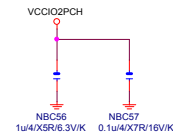


CAP

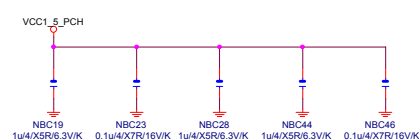
(3.3V) (X3)



(1.05V)(x2) (3.3V) (x2)

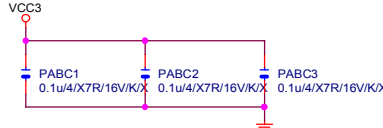


(1.5V) (x5)

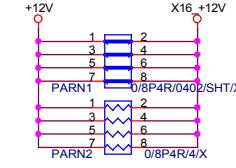


PCIEX16 CAP

N/A



PCIEX16 PROTECT SHT



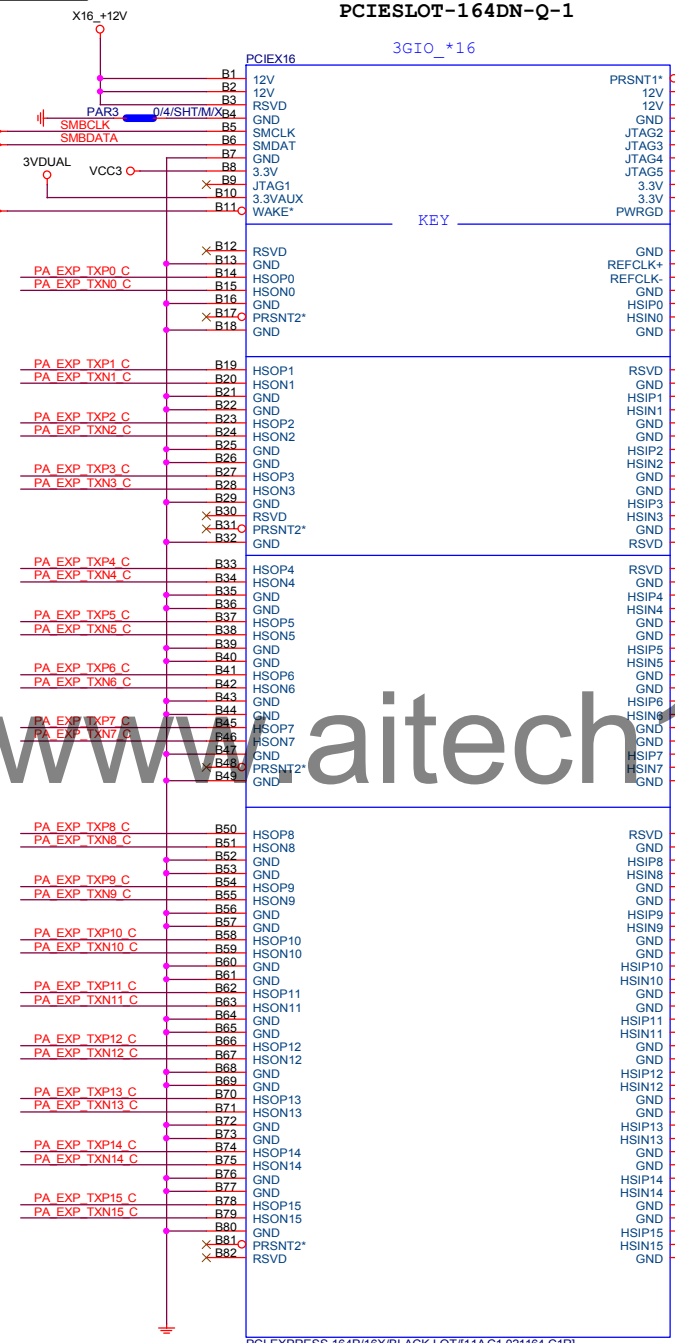
PCIEX16 AC CAP

PA EXP TXP0	PAC5	0.22uF/4X5R/6.3V/K	PA EXP TXP0 C
PA EXP TXN0	PAC4	0.22uF/4X5R/6.3V/K	PA EXP TXN0 C
PA EXP TXP1	PAC6	0.22uF/4X5R/6.3V/K	PA EXP TXP1 C
PA EXP TXN1	PAC7	0.22uF/4X5R/6.3V/K	PA EXP TXN1 C
PA EXP TXP2	PAC8	0.22uF/4X5R/6.3V/K	PA EXP TXP2 C
PA EXP TXN2	PAC9	0.22uF/4X5R/6.3V/K	PA EXP TXN2 C
PA EXP TXP3	PAC10	0.22uF/4X5R/6.3V/K	PA EXP TXP3 C
PA EXP TXN3	PAC11	0.22uF/4X5R/6.3V/K	PA EXP TXN3 C
PA EXP TXP4	PAC12	0.22uF/4X5R/6.3V/K	PA EXP TXP4 C
PA EXP TXN4	PAC13	0.22uF/4X5R/6.3V/K	PA EXP TXN4 C
PA EXP TXP5	PAC14	0.22uF/4X5R/6.3V/K	PA EXP TXP5 C
PA EXP TXN5	PAC15	0.22uF/4X5R/6.3V/K	PA EXP TXN5 C
PA EXP TXP6	PAC16	0.22uF/4X5R/6.3V/K	PA EXP TXP6 C
PA EXP TXN6	PAC17	0.22uF/4X5R/6.3V/K	PA EXP TXN6 C
PA EXP TXP7	PAC18	0.22uF/4X5R/6.3V/K	PA EXP TXP7 C
PA EXP TXN7	PAC19	0.22uF/4X5R/6.3V/K	PA EXP TXN7 C
PA EXP TXP8	PAC20	0.22uF/4X5R/6.3V/K	PA EXP TXP8 C
PA EXP TXN8	PAC21	0.22uF/4X5R/6.3V/K	PA EXP TXN8 C
PA EXP TXP9	PAC22	0.22uF/4X5R/6.3V/K	PA EXP TXP9 C
PA EXP TXN9	PAC23	0.22uF/4X5R/6.3V/K	PA EXP TXN9 C
PA EXP TXP10	PAC24	0.22uF/4X5R/6.3V/K	PA EXP TXP10 C
PA EXP TXN10	PAC25	0.22uF/4X5R/6.3V/K	PA EXP TXN10 C
PA EXP TXP11	PAC26	0.22uF/4X5R/6.3V/K	PA EXP TXP11 C
PA EXP TXN11	PAC27	0.22uF/4X5R/6.3V/K	PA EXP TXN11 C
PA EXP TXP12	PAC28	0.22uF/4X5R/6.3V/K	PA EXP TXP12 C
PA EXP TXN12	PAC29	0.22uF/4X5R/6.3V/K	PA EXP TXN12 C
PA EXP TXP13	PAC30	0.22uF/4X5R/6.3V/K	PA EXP TXP13 C
PA EXP TXN13	PAC31	0.22uF/4X5R/6.3V/K	PA EXP TXN13 C
PA EXP TXP14	PAC32	0.22uF/4X5R/6.3V/K	PA EXP TXP14 C
PA EXP TXN14	PAC33	0.22uF/4X5R/6.3V/K	PA EXP TXN14 C
PA EXP TXP15	PAC34	0.22uF/4X5R/6.3V/K	PA EXP TXP15 C
PA EXP TXN15	PAC35	0.22uF/4X5R/6.3V/K	PA EXP TXN15 C

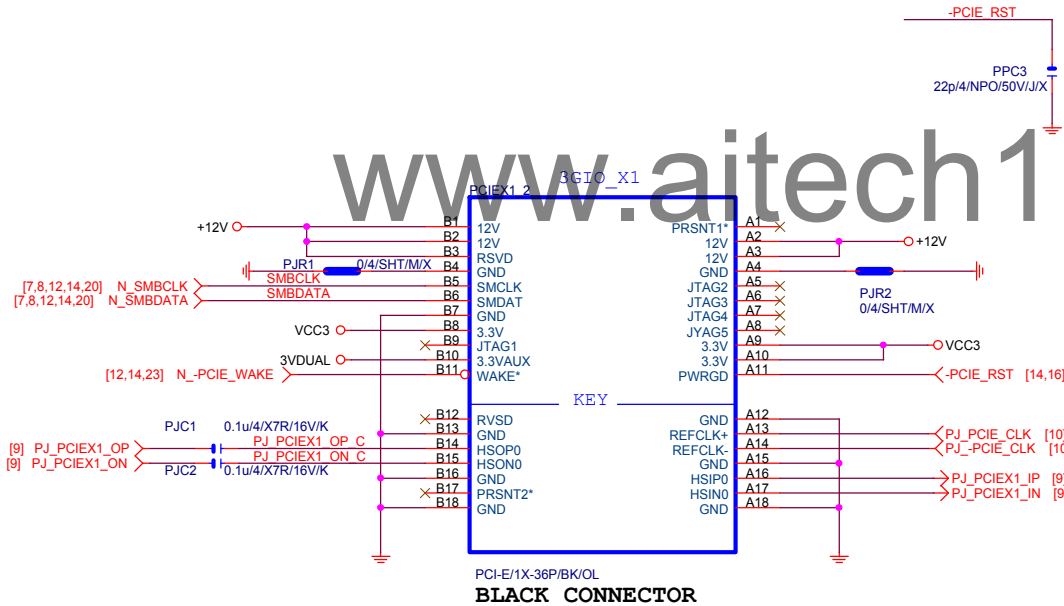
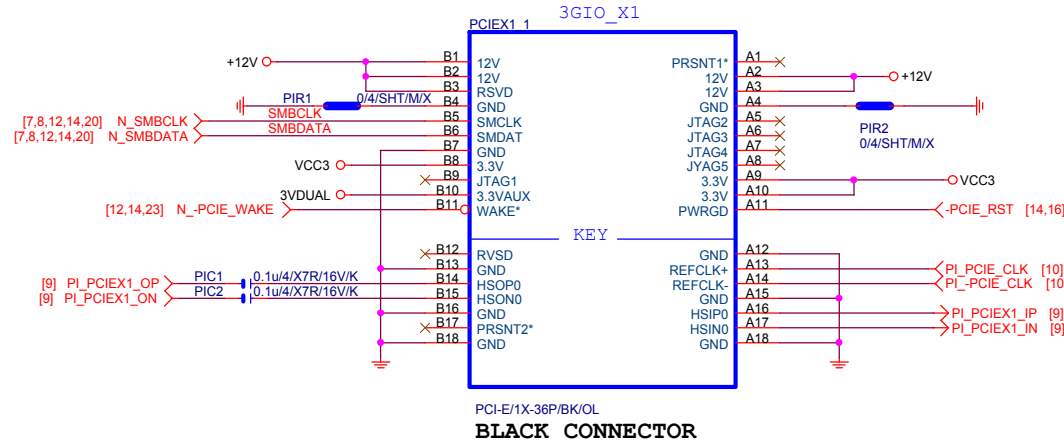
PA EXP RXP0 [15] >>> PA_EXP_RXP[0..15] [4]
 PA EXP RXN0 [15] >>> PA_EXP_RXN[0..15] [4]
 PA EXP TXP0 [15] >>> PA_EXP_TXP[0..15] [4]
 PA EXP TXN0 [15] >>> PA_EXP_TXN[0..15] [4]

PCIEX16 SLOT

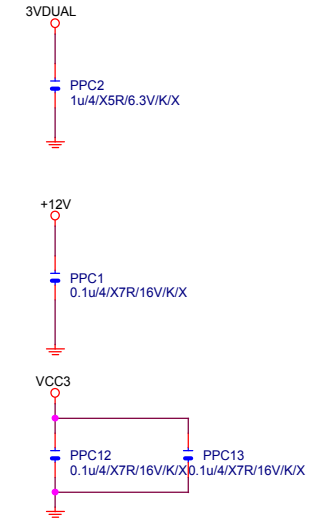
[7,8,12,15,20] N_SMBCLK
 [7,8,12,15,20] N_SMBDATA
 [12,15,23] N_PCIE_WAKE



PCIEX1 SLOT



N/A



Gigabyte Technology

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SIO IT8620

PROCHOT

DUAL BIOS OPT STRAP

SIO CAP

FIX ATX 插拔漏電

PWR SHT

SIO PU

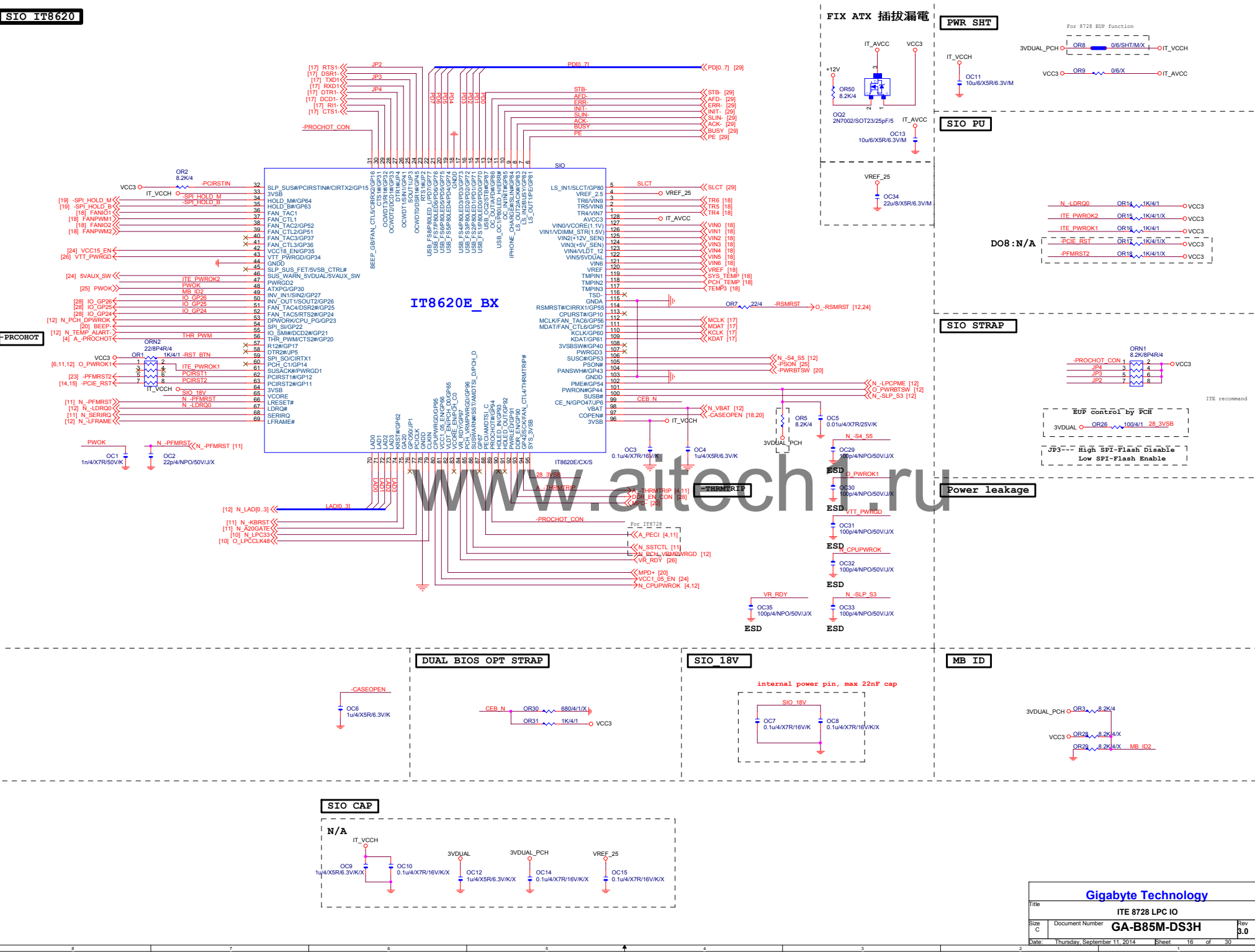
SIO STRAP

Power leakage

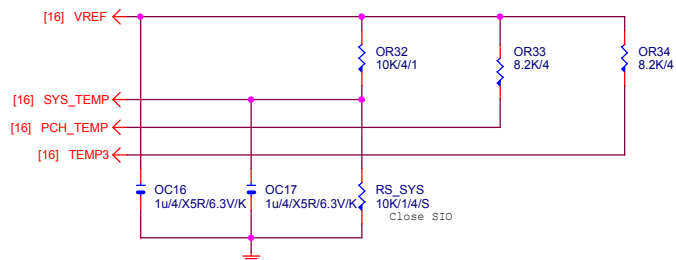
MB ID

SIO 18V

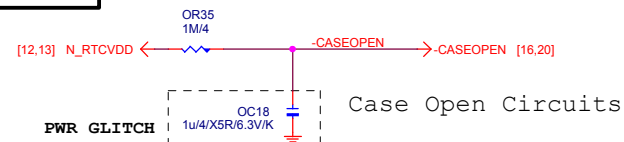
DUAL BIOS OPT STRAP



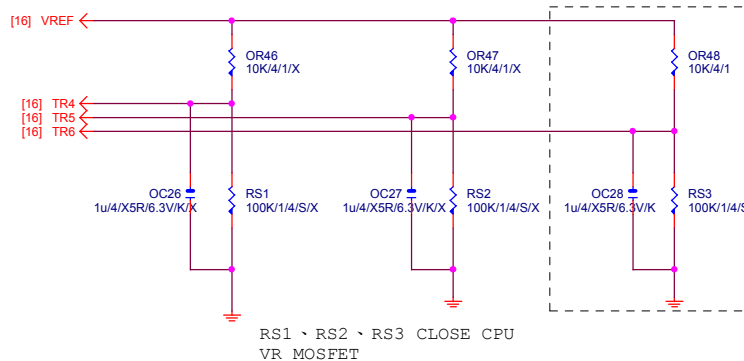
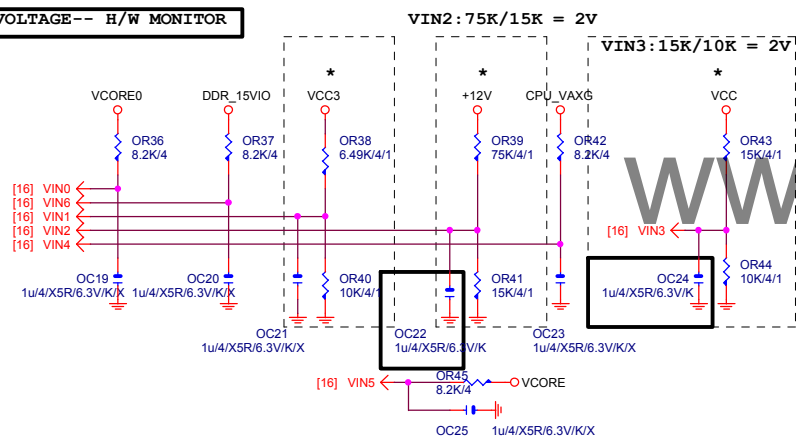
TEMP H/W MONITOR



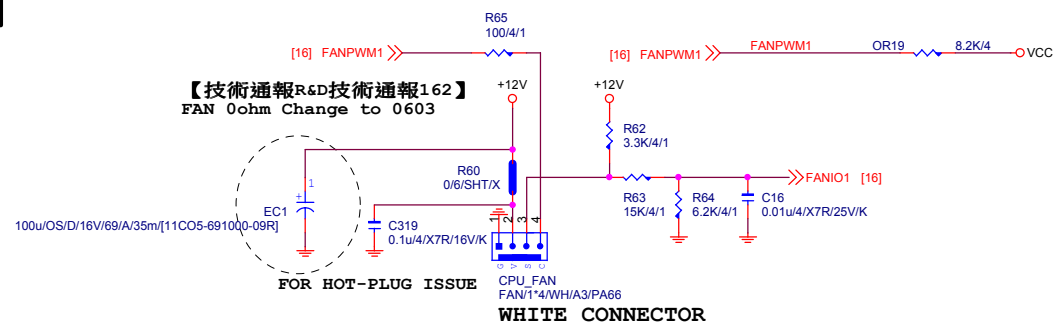
CASE OPEN



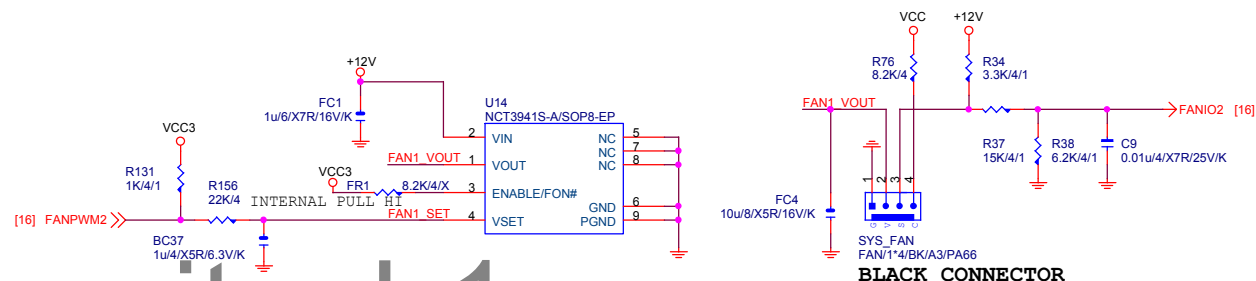
VOLTAGE--	H/W MONITOR
-----------	-------------

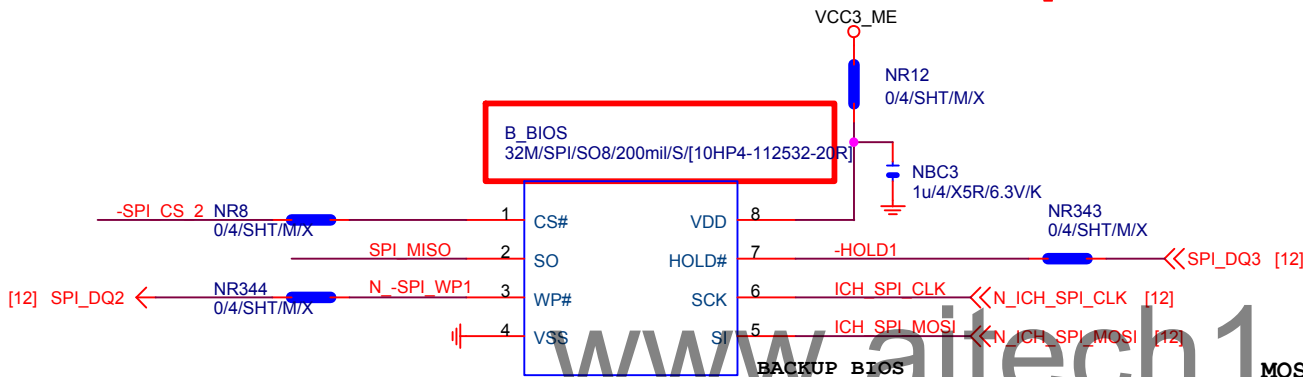
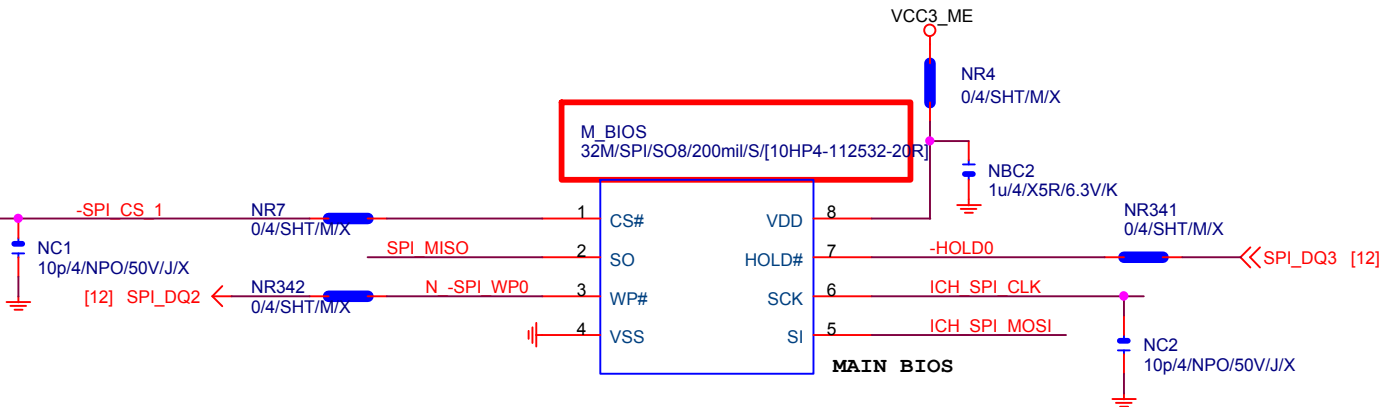


CPU SMART FAN



SYS SMART FAN

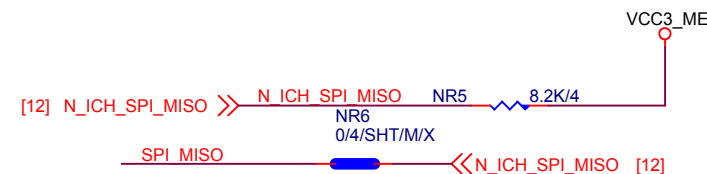
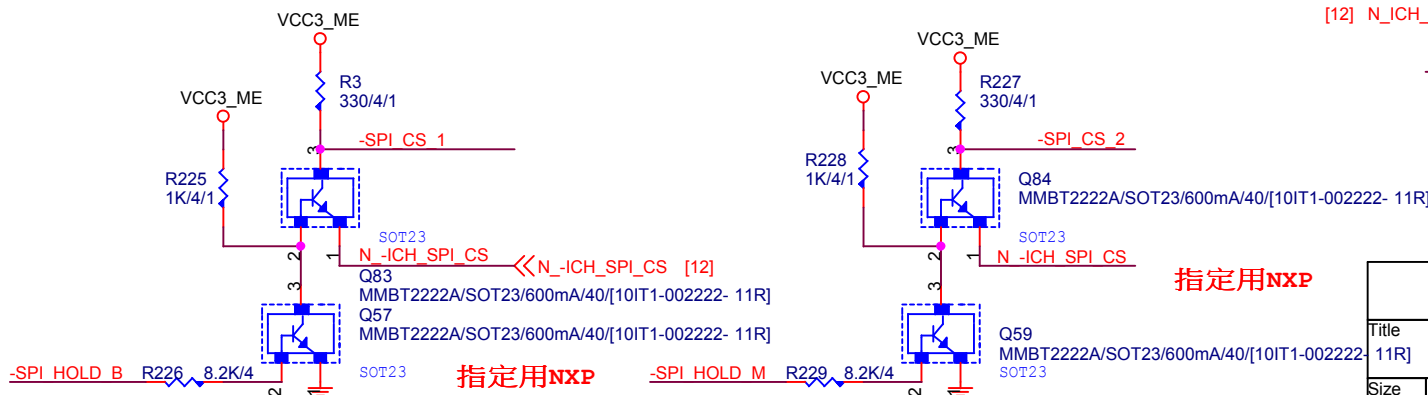
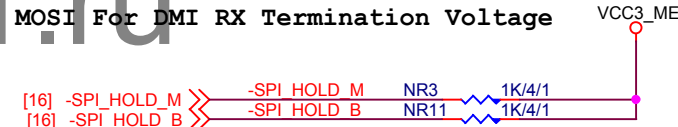




BOOT DEVICE	GNT0	GNT1
LPC	0	0
PCI	0	1
NAND	1	0
SPI	1	1

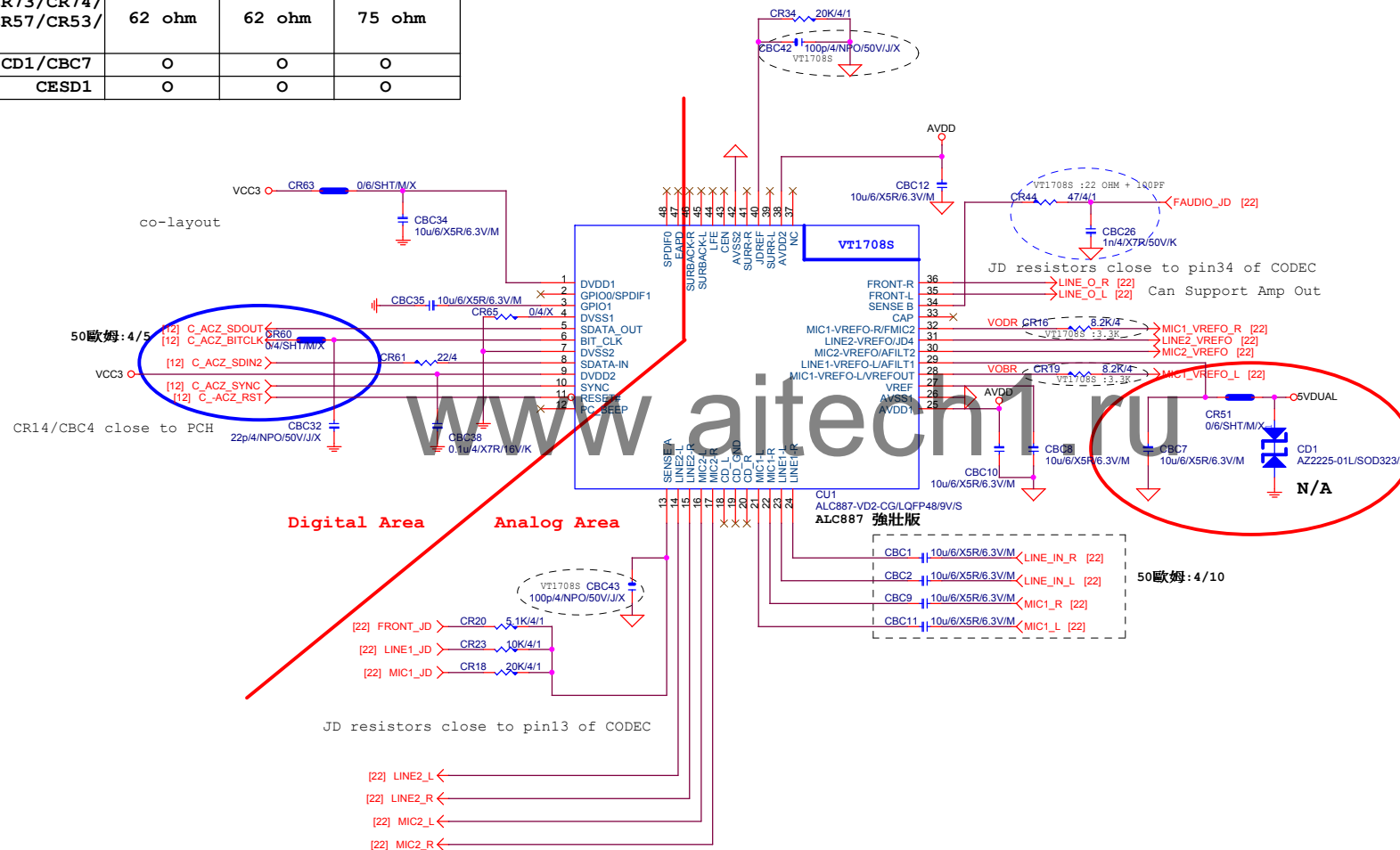
1 means floating
0 means PD 1K

MOSI For DMI RX Termination Voltage

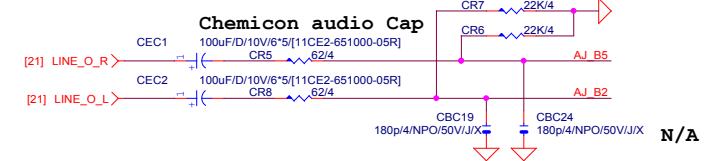


Gigabyte Technology		
DUAL BIOS		
GA-B85M-DS3H		
Title	Document Number	Rev
11R		3.0
Date: Thursday, September 11, 2014		
Sheet 19 of 30		

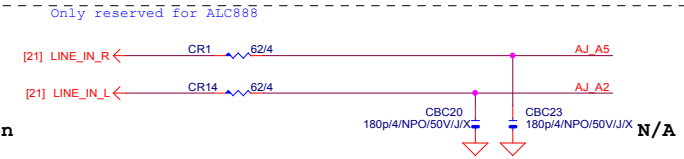
	ALC892	ALC887-VD2	VT1708S-CE
CR44/CBC26	47ohm+1nF	47ohm+1nF	22ohm+100P
CBC42/CBC43	X	X	100P/4
CR6/CR7/CR58/CR54/ CR67/CR68/CR69/CR70	22K/4	22K/4	10K/4/1
CR5/CR8/CR1/CR14/ CR17/CR22/CR73/CR74/ CR13/CR11/CR57/CR53/ CR75/CR76	62 ohm	62 ohm	75 ohm
CR51/CD1/CBC7	O	O	O
CESD1	O	O	O



LINE-OUT

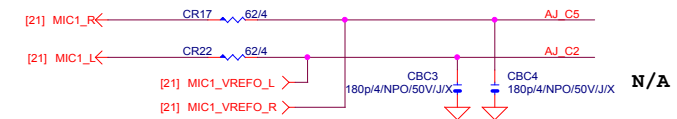


LINE-IN



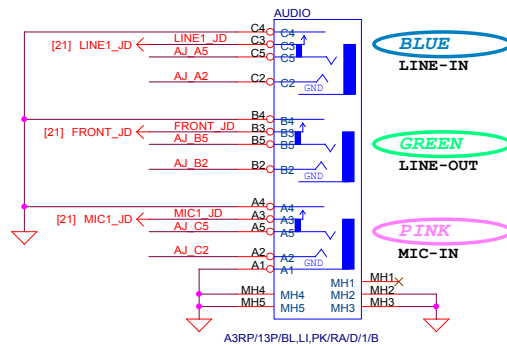
Verify MIC function
in LINE-in

For 889A/888

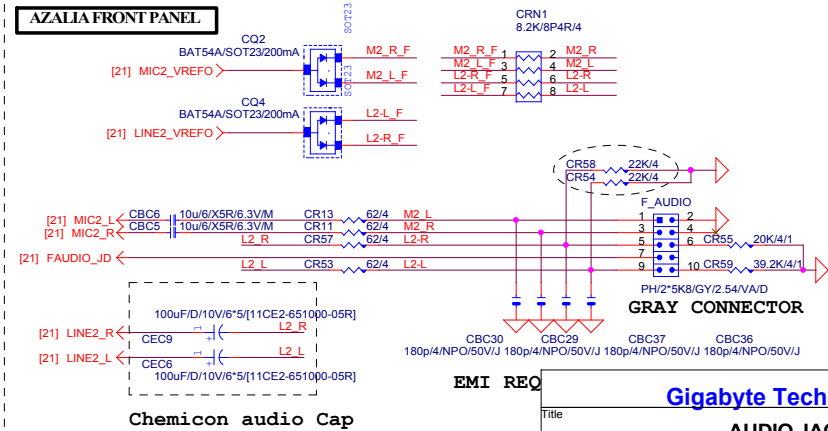
MIC-IN

SPDIF_OUT

www.aitech1.ru



AZALIA FRONT PANEL



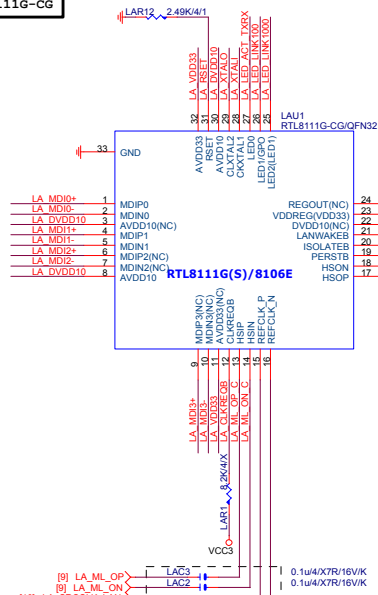
EMI REQ

Gigabyte Technology

AUDIO JACK

Size Custom	Document Number GA-B85M-DS3H	Rev 3.0
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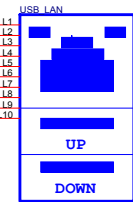
LAN RTL8111G-CG



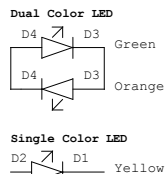
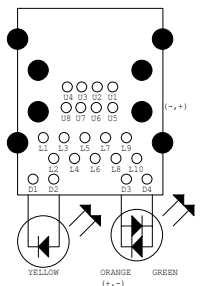
SRCCLK-->50歐姆: [18/4/10/4/18]

LA_ML-->80歐姆: [15/5/5/15]

LA_MDI-->100歐姆: [20/4/8/4/20]



★
使用RU9 USB_LAN可省略LAESD1保護LED

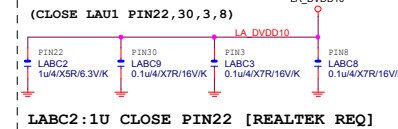


注意:USB PORT(目前:暫代6,7PORT)
USB-->90歐姆: [15/4.5/7.5/4.5/15]

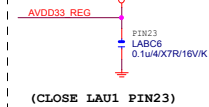
BOM NOTICE

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]		
1.	9KV ESD BOM:	
USB LAN (RU9):	11NR6-702009-96R	
2.	28KV ESD BOM:	
USB LAN (RU9):	11NR6-702009-96R	
LAESD2, LAESD3:	上件AZC398-04S	

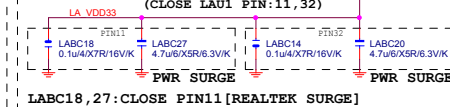
LAN POWER



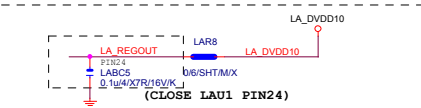
LABC2:1U CLOSE PIN22 [REALTEK REQ]



(CLOSE LAU1 PIN23)



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

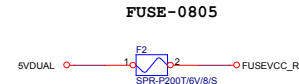


NOTE:
RT8106E: PIN3, 11, 22, 24-->NC
LABC2LABC3, LABC5, LABC18, LABC27-->N/A

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]		
1.	9KV ESD BOM:	
USB LAN (RU9):	11NR6-702009-96R	
2.	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



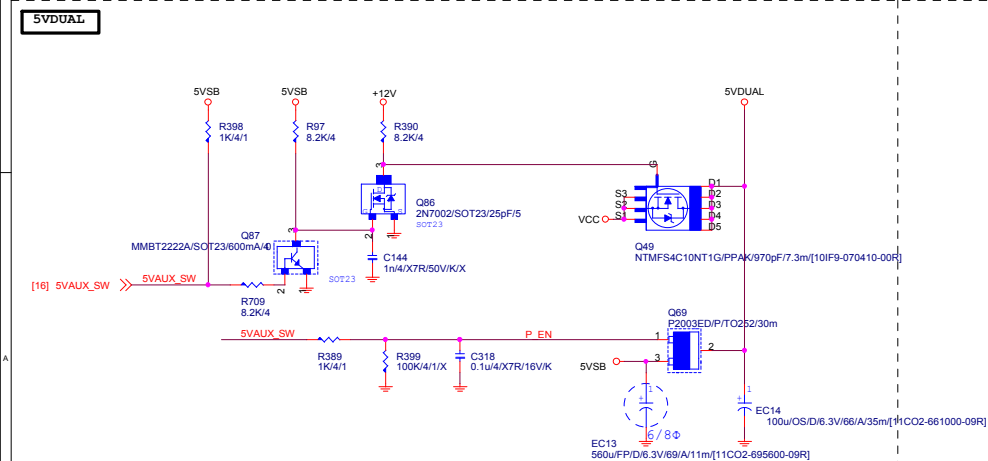
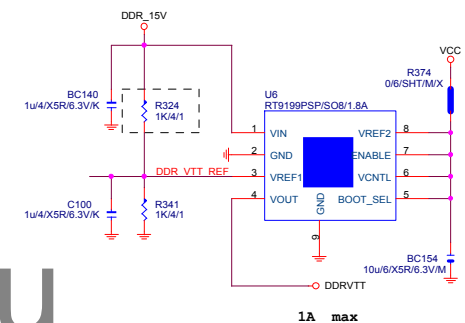
Gigabyte Technology

Title	Realtek RTL8111G	
Size	Document Number	GA-B85M-DS3H
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N/A

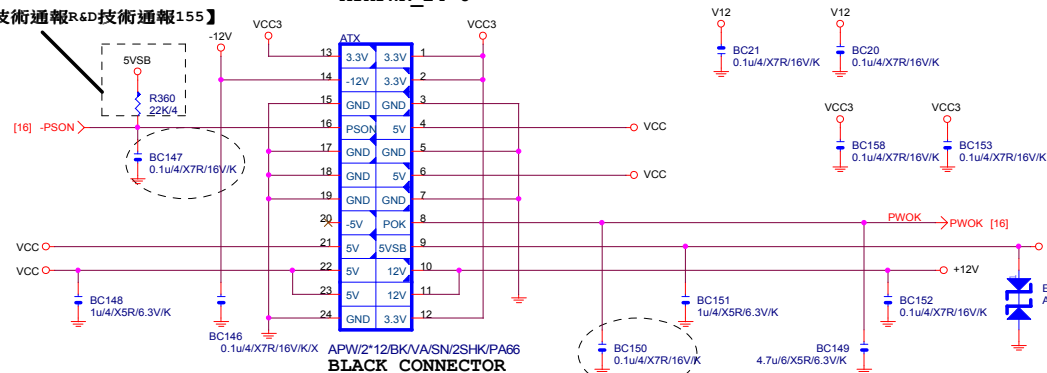
DDRVTT



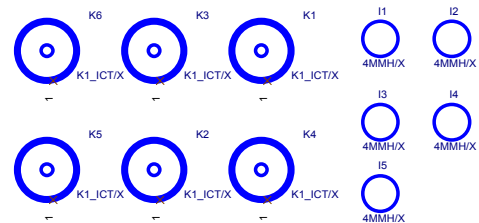
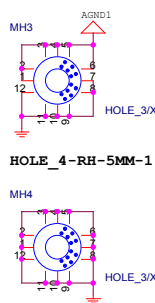
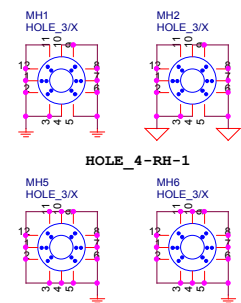
ATXX24 POWER CONNECTOR

【技術通報R&D技術通報155】

ATXPWR_24-6



BLACK CONNECTOR

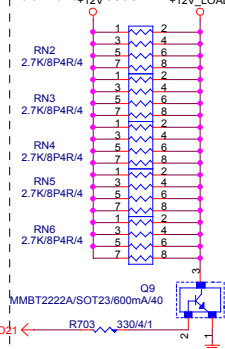


To prevent the 5VSB under loading when boot

TPM

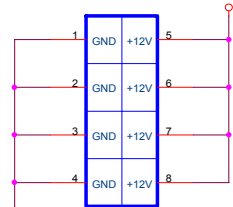
【技術通報R&D技術通報153】

To fix 12V light load abnormal issue



ATXX4 POWER CONNECTOR

ATXPW2X4-6



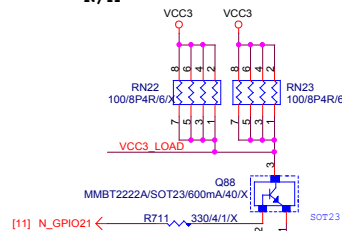
BLACK CONNECTOR

ATX_12V_24
APW2'4/BK/OC/PI4.2VA/SN/OH

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FIX PWR MINMUN LOAD

N/A



PWOK PATCH

【技術通報R&D技術通報154】

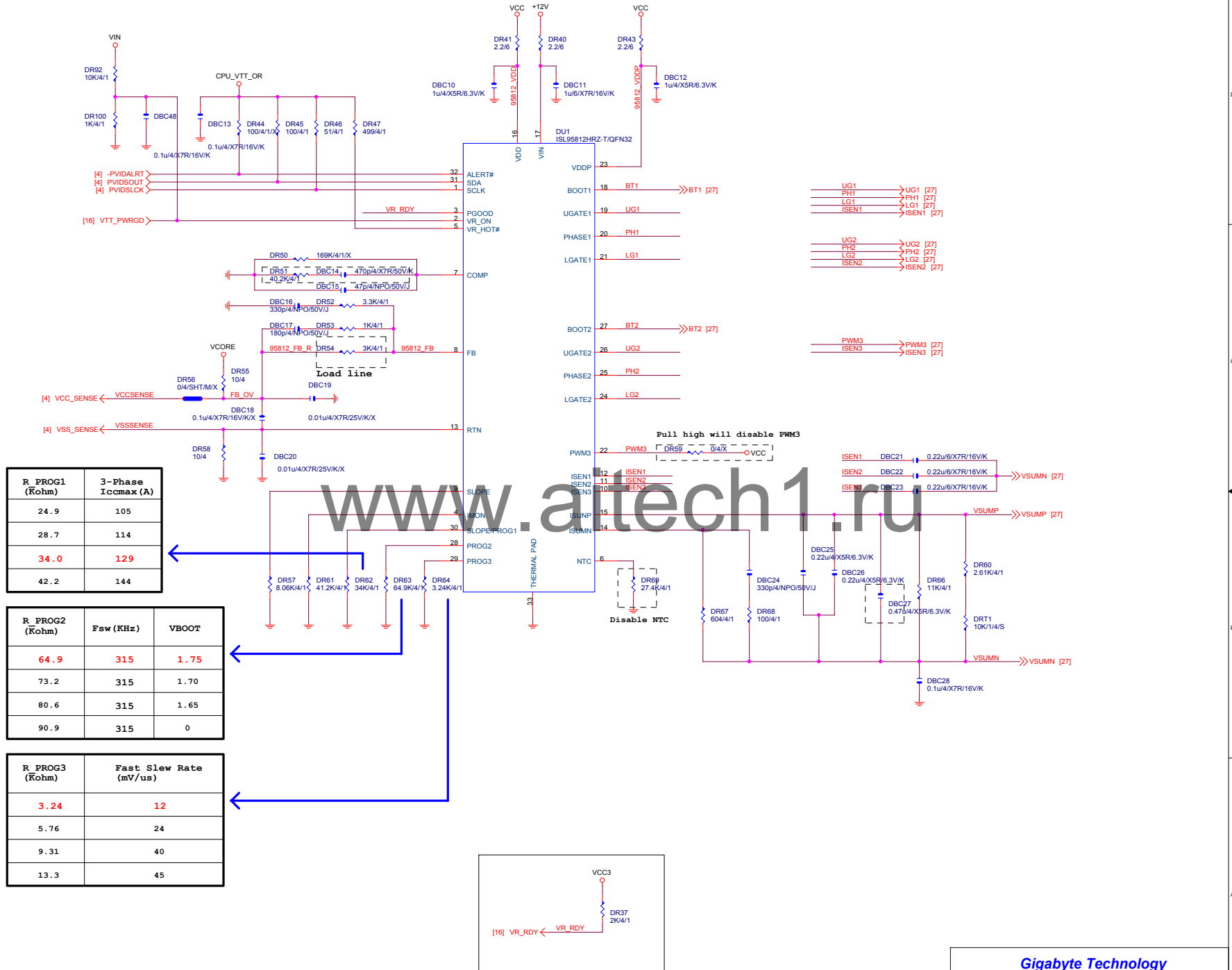
Gigabyte Technology

ATX CONNECTOR

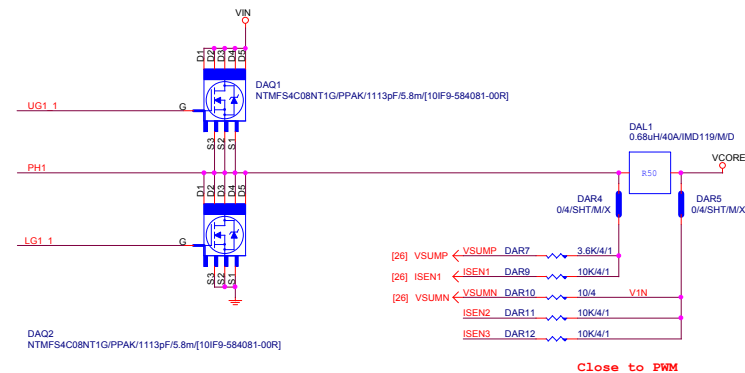
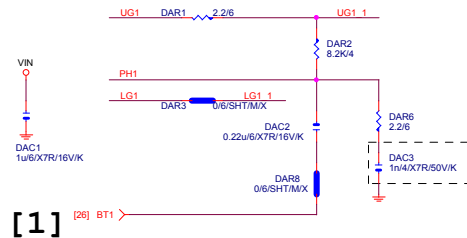
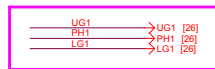
GA-B85M-DS3H

Rev 3.0

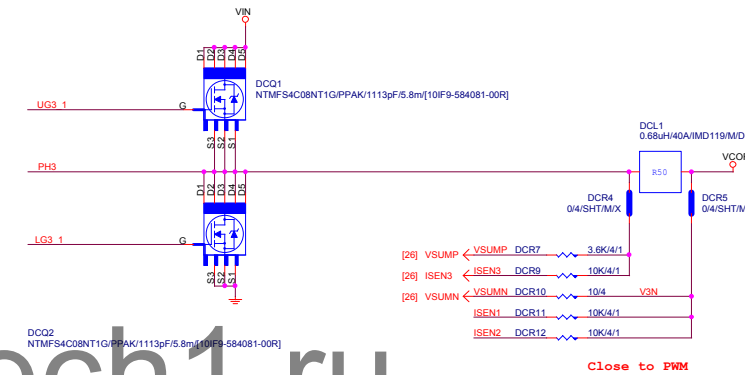
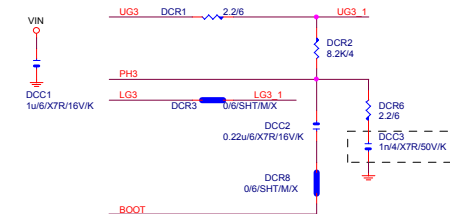
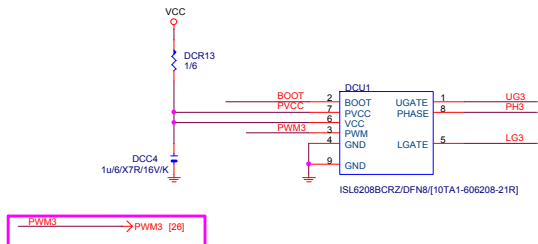
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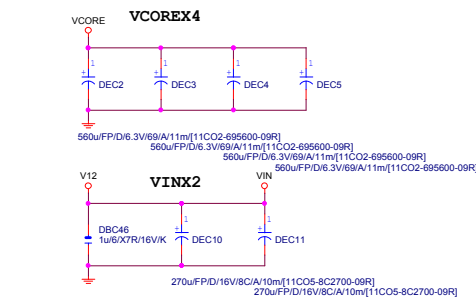
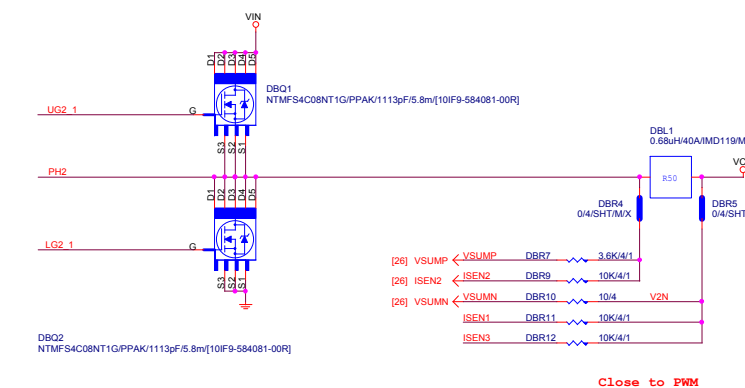
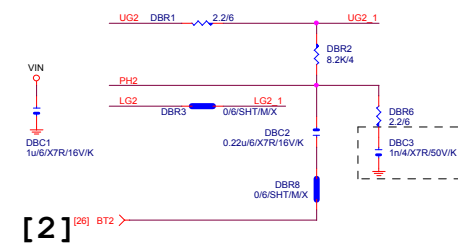
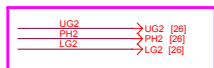
PHASE 1



PHASE 3

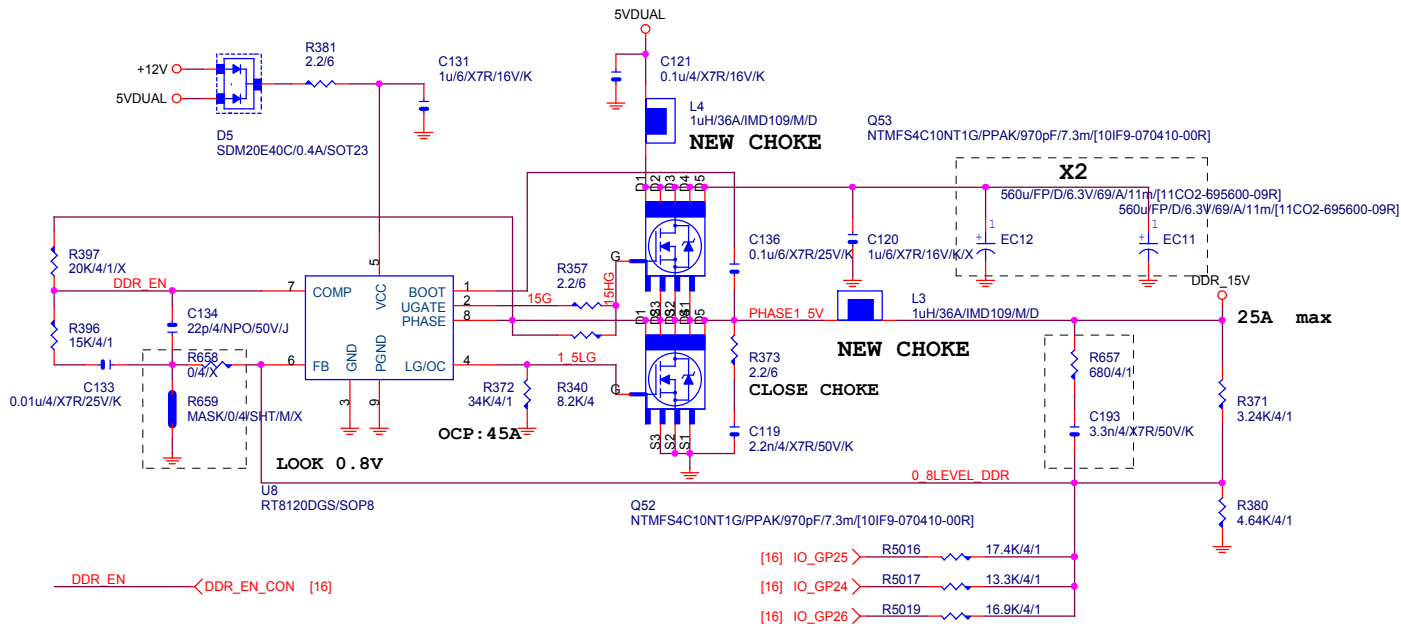


PHASE 2



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CPU CORE VR-2		
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DDR15V



PWR_SEQ

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

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

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Title			
DDR POWER			
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Second source
EM5103 - 10GL2-305103-01R
NCT3730S -
10GL2-303730-01R

【技術通報R&D技術通報151】
33ohm Change to 68ohm

The diagram illustrates the 68000 bus architecture, showing the connections between the processor and three peripheral devices: PRN6, PRN9, and PRN7. Each device is connected to the 68000 bus via a 68B4R/4 chip.

PRN6 (68/8P4R/4): This device is connected to the 68000 bus via a 68B4R/4 chip. The connections are as follows:

- STB- (16-bit) to AFD- (16-bit) to SLIN- (16-bit) to INIT- (16-bit)
- 1 to 2
- 3 to 4
- 5 to 6
- 7 to 8
- LPT1
- LPT14
- LPT17
- LPT16

PRN9 (68/8P4R/4): This device is connected to the 68000 bus via a 68B4R/4 chip. The connections are as follows:

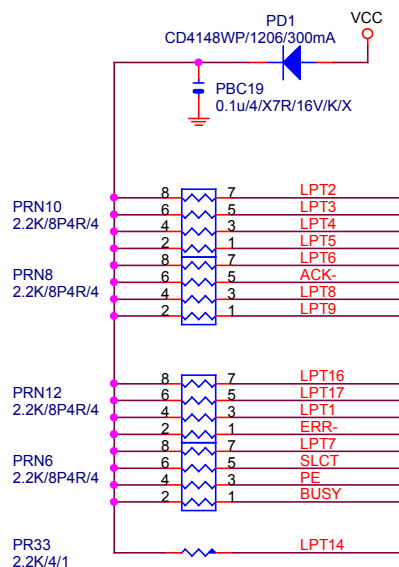
- PD3 (16-bit) to PD2 (16-bit) to PD1 (16-bit) to PD0 (16-bit)
- 1 to 2
- 3 to 4
- 5 to 6
- 7 to 8
- LPT5
- LPT4
- LPT3
- LPT2

PRN7 (68/8P4R/4): This device is connected to the 68000 bus via a 68B4R/4 chip. The connections are as follows:

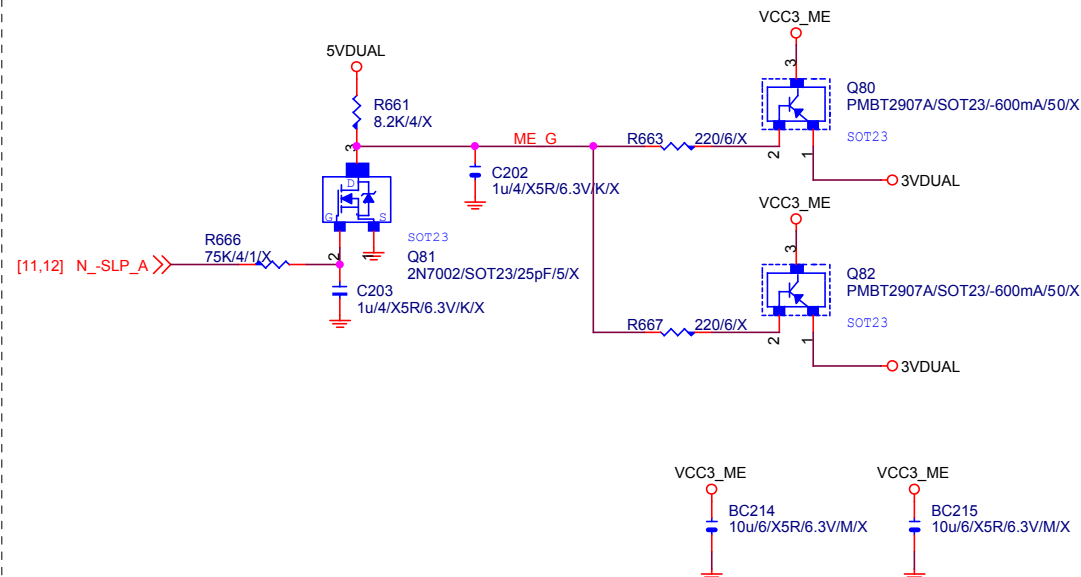
- PD7 (16-bit) to PD6 (16-bit) to PD5 (16-bit) to PD4 (16-bit)
- 1 to 2
- 3 to 4
- 5 to 6
- 7 to 8
- LPT9
- LPT8
- LPT7
- LPT6

PRN7 (68/8P4R/4): This device is connected to the 68000 bus via a 68B4R/4 chip. The connections are as follows:

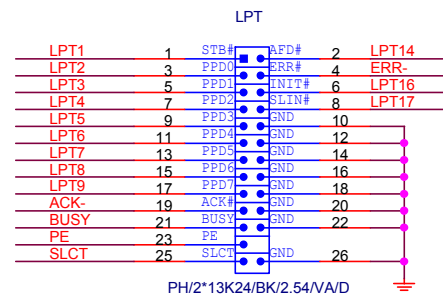
- ERR- (16-bit) to ACK- (16-bit) to BUSY (16-bit) to PE (16-bit) to SLCT (16-bit) to PDIO[0..7] (16-bit)
- ERR-
- ACK-
- BUSY
- PE
- SLCT
- PDIO[0..7]



N/A



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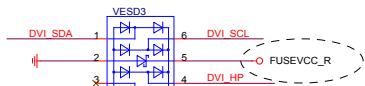
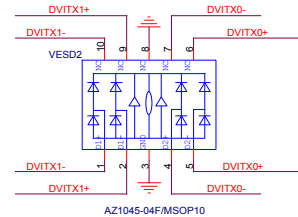
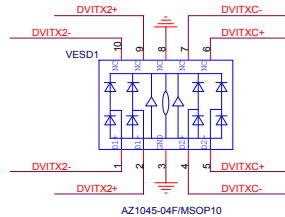
LPT

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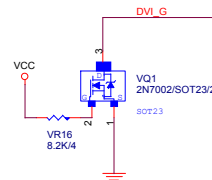
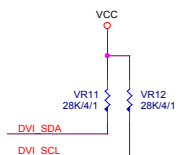
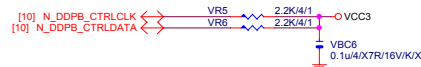
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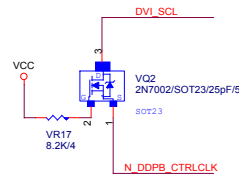
DVI



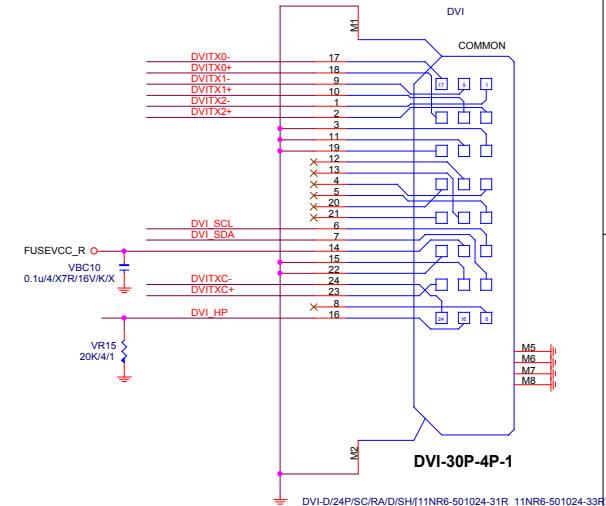
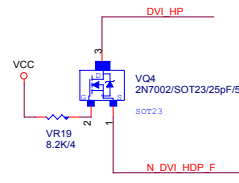
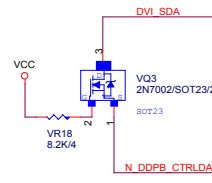
Close to connector



Close to connector

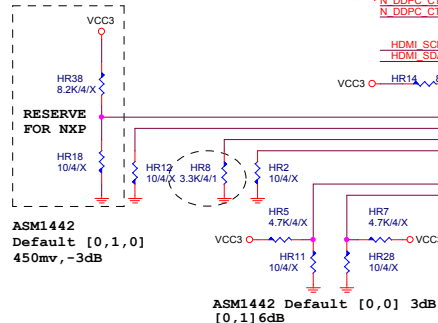
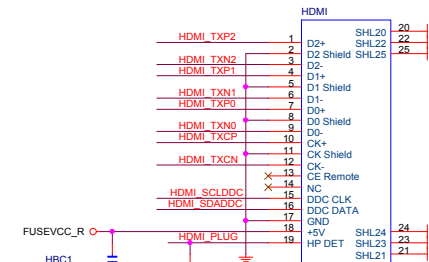
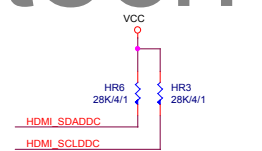
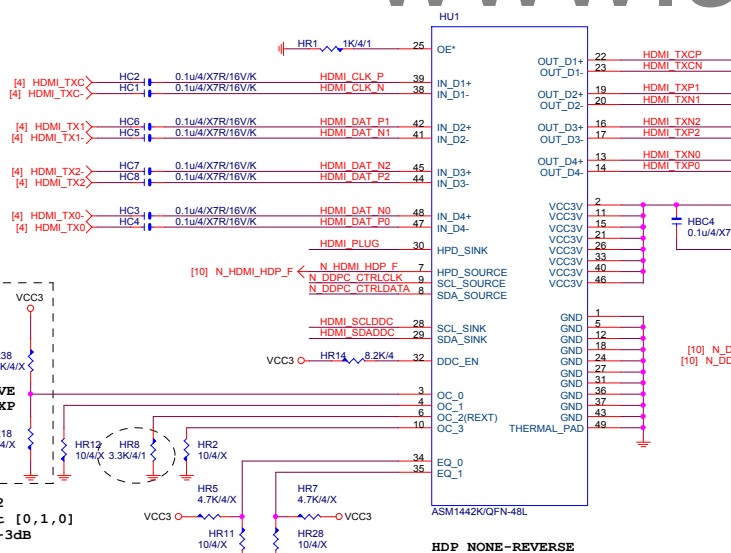


Close to connector



HDMI LEVEL SHIFT

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HDP NONE-REVERSE

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DVI		
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