Model Name: GA-H81M-S2PH *Revision 1.02*

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	ITE 8620 LPC IO
16	COM,KB_MS,USB PWR
17	IT8892E
18	PCI SLOT 1,2
19	PCI EXPRESS*1 SLOT.LPT
20	HWM,FAN CTRL,OV,-PROCHOT
21	DUAL BIOS
22	FP,F_USB,SPK,SATALED
23	Realtek ALC887-VD2
24	REAR AUDIO JACK
25	REALTEK RTL8111F
26	DISCRETE POWER
27	ATX,DUMMY LOAD

SHEET	TITLE
28	RT8120_DDR POWER
29	VCORE ISL95812_1
30	VCORE ISL95812_2
31	HDMI

Gigabyte Technology

Title: Cover Sheet		
Size: Custom	Document Number: GA-H81M-S2PH	Rev: 1.02
Date: Tuesday, December 24, 2013	Sheet 1 of 31	

Model Name: GA-H81M-S2PH

Revision 1.02

Component value change history

2013/12/24

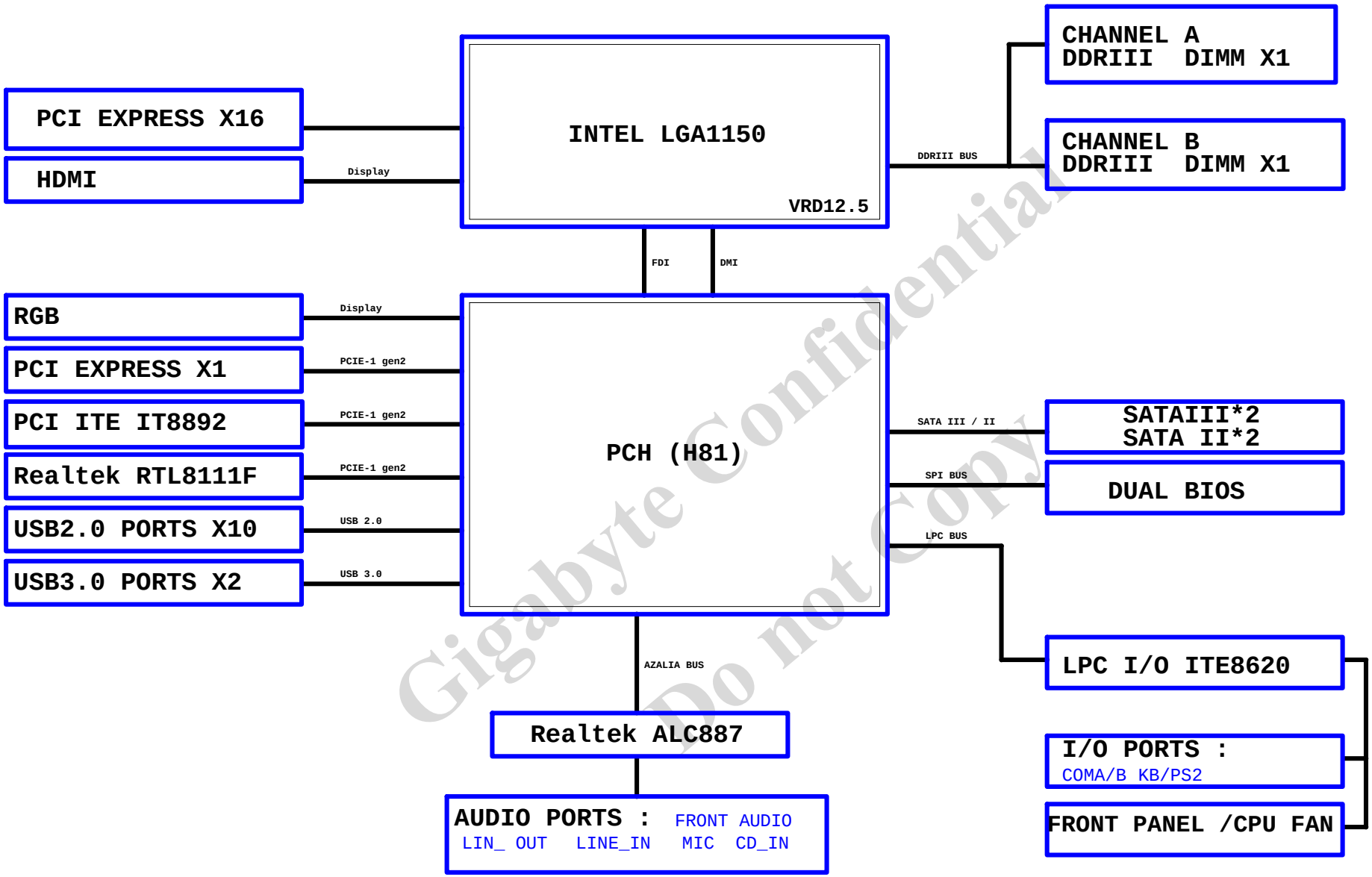
Data	Change Item	Reason
2013/05/17	BACK PANEL FOR EMI KB_MS,COMA,LPT -->AGND1.	
2013/06/18	R1.0 .MODIFY PROCHOT,5VSB CIRCUIT.BOM CHANGE R_USB30/HDMI.	
2013/06/28	R1.01.FIX RSMRST TIMMING.ADD 5VSB OVP PROTECTION.	
2013/09/13	R1.02. Follow Crystal Trace Rule.	
	SYS_FAN, DDR 0ohm 0402 -> 0603	
	Update Fuse 1206 Footprint "POLYSWITCH-1206-1"	
	Update PPAK Footprint "Q_TDSON8-GDS-T"	PBOM:9MH81MS2H-00-10D
2013/10/31	MODIFY 25MHZ X'TAL NC7/NC8 15PF.	PBOM:9MH81MS2H-00-10E
2013/12/19	MODIFY CODEC ALC887-VD2 ENHANCE VERSION.	PBOM:9MH81MS2H-00-10F
2013/12/24	USB30+HDMI 改為一體式	PBOM:9MH81MS2H-00-10G

Circuit or PCB layout change

DATE	Change Item	Reason

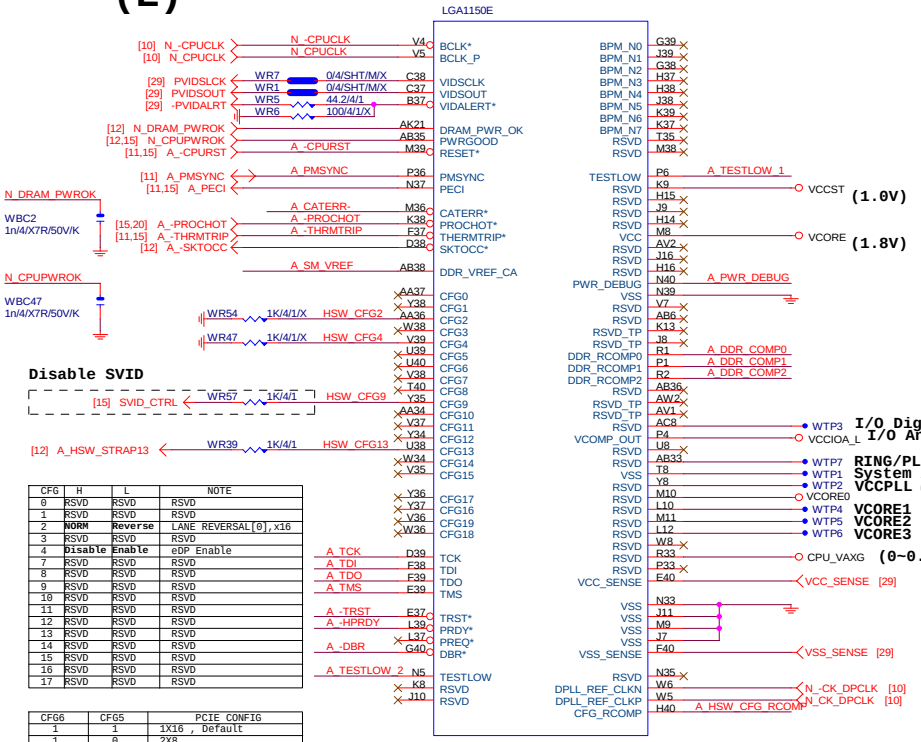
Gigabyte Technology			
Title	BOM & PCB MODIFY HISTORY		
Size: Custom	Document Number: GA-H81M-S2PH		Rev: 1.02
Date: Tuesday, December 24, 2013	Sheet 2 of 31		

BLOCK DIAGRAM



Gigabyte Technology			
Title: BLOCK DIAGRAM			
Size: C	Document Number: GA-H81M-S2PH		Rev: 1.02
Date: Tuesday, December 24, 2013	Sheet 3 of 31		

LGA1150 (E)

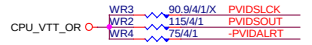


CFG	H	L	NOTE
0	RSVD	RSVD	RSVD
1	RSVD	RSVD	RSVD
2	**NORM**	**Reverse**	LANE REVERSAL[0],x16
3	RSVD	RSVD	RSVD
4	**Disable**	**Enable**	eDP Enable
7	RSVD	RSVD	RSVD
8	RSVD	RSVD	RSVD
9	RSVD	RSVD	RSVD
10	RSVD	RSVD	RSVD
11	RSVD	RSVD	RSVD
12	RSVD	RSVD	RSVD
13	RSVD	RSVD	RSVD
14	RSVD	RSVD	RSVD
15	RSVD	RSVD	RSVD
16	RSVD	RSVD	RSVD
17	RSVD	RSVD	RSVD

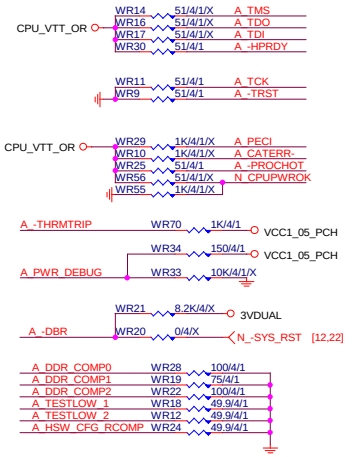
CFG6	CFG5	PCIE CONFIG
1	1	1X16 , Default
1	0	2X8
0	1	RSVD
0	0	X8,X4,X4

LGA1155 (C)

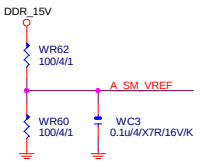
CPU SVID



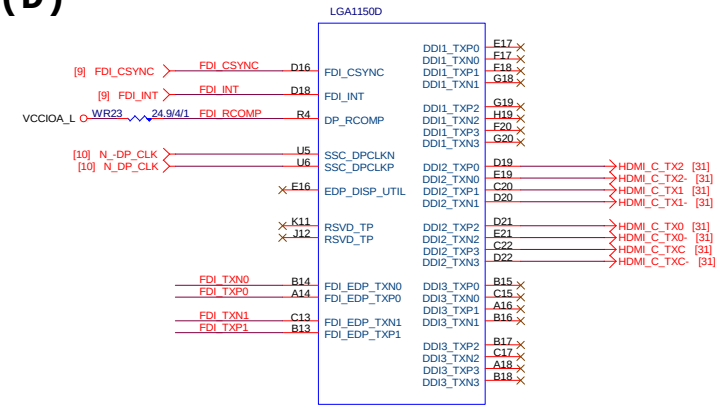
CPU PU/PD



SM REF

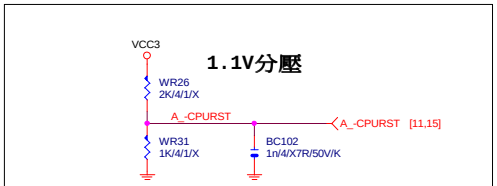


LGA1150 (D)



-CPURST

FOR IT8620 Ctrl



THRMTRIP DISABLE

Gigabyte Technology

Title	CPU LGA1150-A	
Size: Custom	Document Number: GA-H81M-S2PH	Rev: 1.02
Date: Tuesday, December 24, 2013	Sheet 4 of 31	

LGA1150 (A)

LGA1150A

MAAA0	AU13	DDR0_MA0	DDR0_DQ0	AD38	MDA0
MAAA1	AV16	DDR0_MA1	DDR0_DQ1	AD39	MDA1
MAAA2	AU16	DDR0_MA2	DDR0_DQ2	AF38	MDA2
MAAA3	AW17	DDR0_MA3	DDR0_DQ3	AF39	MDA3
MAAA4	AU17	DDR0_MA4	DDR0_DQ4	AD37	MDA4
MAAA5	AW18	DDR0_MA5	DDR0_DQ5	AD40	MDA5
MAAA6	AV17	DDR0_MA6	DDR0_DQ6	AE37	MDA6
MAAA7	AT18	DDR0_MA7	DDR0_DQ7	AF40	MDA7
MAAA8	AU18	DDR0_MA8	DDR0_DQ8	AH40	MDA9
MAAA9	AT19	DDR0_MA9	DDR0_DQ9	AH39	MDA13
MAAA10	AW11	DDR0_MA10	DDR0_DQ10	AK38	MDA10
MAAA11	AV19	DDR0_MA11	DDR0_DQ11	AK39	MDA11
MAAA12	AU19	DDR0_MA12	DDR0_DQ12	AH37	MDA12
MAAA13	AY10	DDR0_MA13	DDR0_DQ13	AH38	MDA8
MAAA14	AT20	DDR0_MA14	DDR0_DQ14	AK37	MDA14
MAAA15	AU21	DDR0_MA15	DDR0_DQ15	AK40	MDA15
			DDR0_DQ16	AM40	MDA17
MODT_A0	AW10	DDR0_ODT0	DDR0_DQ17	AM39	MDA21
MODT_A1	AY8	DDR0_ODT1	DDR0_DQ18	AP38	MDA18
	AW9	DDR0_ODT2	DDR0_DQ19	AP39	MDA19
	AU8	DDR0_ODT3	DDR0_DQ20	AM37	MDA20
			DDR0_DQ21	AM38	MDA16
			DDR0_DQ22	AP37	MDA22
	AW33	DDR0_ECC0	DDR0_DQ23	AP40	MDA23
	AV33	DDR0_ECC1	DDR0_DQ24	AV37	MDA25
	AU31	DDR0_ECC2	DDR0_DQ25	AW37	MDA29
	AV31	DDR0_ECC3	DDR0_DQ26	AU35	MDA26
	AT33	DDR0_ECC4	DDR0_DQ27	AV35	MDA27
	AU33	DDR0_ECC5	DDR0_DQ28	AT37	MDA28
	AT31	DDR0_ECC6	DDR0_DQ29	AU37	MDA24
	AW31	DDR0_ECC7	DDR0_DQ30	AT35	MDA30
			DDR0_DQ31	AW35	MDA31
[7] SBAA0	SBAA0 AV12	DDR0_BA0	DDR0_DQ32	AY6	MDA33
[7] SBAA1	SBAA1 AY11	DDR0_BA1	DDR0_DQ33	AU6	MDA37
[7] SBAA2	SBAA2 AT21	DDR0_BA2	DDR0_DQ34	AV4	MDA34
			DDR0_DQ35	AU4	MDA35
[7] CKEA0	CKEA0 AV22	DDR0_CKE0	DDR0_DQ36	AW6	MDA36
[7] CKEA1	CKEA1 AT23	DDR0_CKE1	DDR0_DQ37	AV6	MDA32
	AU22	DDR0_CKE2	DDR0_DQ38	AW4	MDA38
	AU23	DDR0_CKE3	DDR0_DQ39	AY4	MDA39
			DDR0_DQ40	AR1	MDA41
[7] -CSA0	-CSA0 AU14	DDR0_CS_N0	DDR0_DQ41	AR4	MDA45
[7] -CSA1	-CSA1 AV9	DDR0_CS_N1	DDR0_DQ42	AN3	MDA42
	AU10	DDR0_CS_N2	DDR0_DQ43	AN4	MDA43
	AW8	DDR0_CS_N3	DDR0_DQ44	AR2	MDA44
			DDR0_DQ45	AR3	MDA40
[7] DCLKA0	DCLKA0 AY15	DDR0_CLK_P0	DDR0_DQ46	AN2	MDA46
[7] -DCLKA0	-DCLKA0 AY16	DDR0_CLK_N0	DDR0_DQ47	AN1	MDA47
[7] DCLKA1	DCLKA1 AW15	DDR0_CLK_P1	DDR0_DQ48	AL1	MDA49
[7] -DCLKA1	-DCLKA1 AV15	DDR0_CLK_N1	DDR0_DQ49	AL4	MDA53
	AV14	DDR0_CLK_P2	DDR0_DQ50	AJ3	MDA50
	AW14	DDR0_CLK_N2	DDR0_DQ51	AJ4	MDA51
	AW13	DDR0_CLK_P3	DDR0_DQ52	AL2	MDA52
	AY13	DDR0_CLK_N3	DDR0_DQ53	AL3	MDA48
			DDR0_DQ54	AJ2	MDA54
	AW12	RSVD	DDR0_DQ55	AJ1	MDA55
			DDR0_DQ56	AG1	MDA57
			DDR0_DQ57	AG4	MDA61
			DDR0_DQ58	AE3	MDA58
			DDR0_DQ59	AE4	MDA59
			DDR0_DQ60	AG2	MDA60
			DDR0_DQ61	AG3	MDA56
[7] -SRASA	-SRASA AU12	DDR0_RAS*	DDR0_DQ62	AE2	MDA62
			DDR0_DQ63	AE1	MDA63
[7] -SWEA	-SWEA AU11	DDR0_WE*	DDR0_DQS_P0	AE39	DQSA0
			DDR0_DQS_P1	AJ39	DQSA1
	AV20	RSVD	DDR0_DQS_P2	AN39	DQSA2
			DDR0_DQS_P3	AV36	DQSA3
	AW27	RSVD	DDR0_DQS_P4	AV5	DQSA4
			DDR0_DQS_P5	AP3	DQSA5
[7] -SCASA	-SCASA AU9	DDR0_CAS*	DDR0_DQS_P6	AK3	DQSA6
			DDR0_DQS_P7	AE3	DQSA7
[7,8] -DDR3_RST	WR61 0/4/SHT/MX AK22	DDR_RESET*	DDR0_DQS_P8	AV32	
	WC4 0.1u/4/X7R/16V/K/X		DDR0_DQS_N0	AE38	-DQSA0
			DDR0_DQS_N1	AJ38	-DQSA1
			DDR0_DQS_N2	AN38	-DQSA2
			DDR0_DQS_N3	AU36	-DQSA3
			DDR0_DQS_N4	AW5	-DQSA4
			DDR0_DQS_N5	AP2	-DQSA5
			DDR0_DQS_N6	AK2	-DQSA6
			DDR0_DQS_N7	AF2	-DQSA7
			DDR0_DQS_N8	AU32	

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

LGA1150 (B)

LGA1150B

MAAB0	AL19	DDR1_MA0	DDR1_DQ0	AE34	MDB0
MAAB1	AK23	DDR1_MA1	DDR1_DQ1	AE35	MDB1
MAAB2	AM22	DDR1_MA2	DDR1_DQ2	AG35	MDB2
MAAB3	AM23	DDR1_MA3	DDR1_DQ3	AH35	MDB3
MAAB4	AP23	DDR1_MA4	DDR1_DQ4	AD34	MDB4
MAAB5	AL23	DDR1_MA5	DDR1_DQ5	AD35	MDB5
MAAB6	AY24	DDR1_MA6	DDR1_DQ6	AG34	MDB6
MAAB7	AV25	DDR1_MA7	DDR1_DQ7	AH34	MDB7
MAAB8	AU26	DDR1_MA8	DDR1_DQ8	AL34	MDB8
MAAB9	AW25	DDR1_MA9	DDR1_DQ9	AL35	MDB9
MAAB10	AP18	DDR1_MA10	DDR1_DQ10	AK31	MDB10
MAAB11	AY25	DDR1_MA11	DDR1_DQ11	AL31	MDB11
MAAB12	AV26	DDR1_MA12	DDR1_DQ12	AK34	MDB12
MAAB13	AR15	DDR1_MA13	DDR1_DQ13	AK35	MDB13
MAAB14	AV27	DDR1_MA14	DDR1_DQ14	AK32	MDB14
MAAB15	AY28	DDR1_MA15	DDR1_DQ15	AL32	MDB15
			DDR1_DQ16	AN34	MDB17
MODT_B0	AM17	DDR1_ODT0	DDR1_DQ17	AP34	MDB21
MODT_B1	AL16	DDR1_ODT1	DDR1_DQ18	AN31	MDB19
	AM16	DDR1_ODT2	DDR1_DQ19	AP31	MDB23
	AK15	DDR1_ODT3	DDR1_DQ20	AN35	MDB20
			DDR1_DQ21	AP35	MDB16
	AM26	DDR1_ECC0	DDR1_DQ22	AN32	MDB18
	AM25	DDR1_ECC1	DDR1_DQ23	AP32	MDB22
	AP25	DDR1_ECC2	DDR1_DQ24	AM29	MDB25
	AP26	DDR1_ECC3	DDR1_DQ25	AM28	MDB28
	AL26	DDR1_ECC4	DDR1_DQ26	AR29	MDB27
	AL25	DDR1_ECC5	DDR1_DQ27	AR28	MDB30
	AR26	DDR1_ECC6	DDR1_DQ28	AL29	MDB24
	AR25	DDR1_ECC7	DDR1_DQ29	AL28	MDB29
			DDR1_DQ30	AP29	MDB26
	AK17		DDR1_DQ31	AP28	MDB31
[8] SBAB0	SBAB0	DDR1_BA0	DDR1_DQ32	AR12	MDB32
[8] SBAB1	SBAB1 AL18	DDR1_BA1	DDR1_DQ33	AP12	MDB33
[8] SBAB2	SBAB2 AW28	DDR1_BA2	DDR1_DQ34	AL13	MDB34
			DDR1_DQ35	AL12	MDB35
[8] CKEB0	CKEB0 AW29	DDR1_CKE0	DDR1_DQ36	AR13	MDB36
[8] CKEB1	CKEB1 AY29	DDR1_CKE1	DDR1_DQ37	AP13	MDB37
	AU28	DDR1_CKE2	DDR1_DQ38	AM13	MDB38
	AU29	DDR1_CKE3	DDR1_DQ39	AM12	MDB39
			DDR1_DQ40	AR9	MDB45
[8] -CSB0	-CSB0 AP17	DDR1_CS_N0	DDR1_DQ41	AP9	MDB41
[8] -CSB1	-CSB1 AN15	DDR1_CS_N1	DDR1_DQ42	AR6	MDB47
	AN17	DDR1_CS_N2	DDR1_DQ43	AP6	MDB43
	AL15	DDR1_CS_N3	DDR1_DQ44	AR10	MDB44
			DDR1_DQ45	AP10	MDB40
			DDR1_DQ46	AR7	MDB46
[8] DCLKB0	DCLKB0 AM20	DDR1_CLK_P0	DDR1_DQ47	AP7	MDB42
[8] -DCLKB0	-DCLKB0 AM21	DDR1_CLK_N0	DDR1_DQ48	AM9	MDB52
[8] DCLKB1	DCLKB1 AP22	DDR1_CLK_P1	DDR1_DQ49	AL9	MDB53
[8] -DCLKB1	-DCLKB1 AP21	DDR1_CLK_N1	DDR1_DQ50	AL6	MDB50
			DDR1_DQ51	AL7	MDB55
	AN20	DDR1_CLK_P2	DDR1_DQ52	AM10	MDB48
	AN21	DDR1_CLK_N2	DDR1_DQ53	AL10	MDB49
	AP19	DDR1_CLK_P3	DDR1_DQ54	AM6	MDB54
	AP20	DDR1_CLK_N3	DDR1_DQ55	AM7	MDB51
			DDR1_DQ56	AH6	MDB61
			DDR1_DQ57	AH7	MDB60
[8] -SCASB	-SCASB AP16	DDR1_CAS*	DDR1_DQ58	AE6	MDB59
	AL20	RSVD	DDR1_DQ59	AE7	MDB63
[8] -SRASB	-SRASB AM18	DDR1_RAS*	DDR1_DQ60	AJ6	MDB56
[8] -SWEB	-SWEB AK16	DDR1_WE*	DDR1_DQ61	AJ7	MDB57
			DDR1_DQ62	AF6	MDB58
[7] VREF_DQA	VREF_DQA AB39	DDR_VREF_DQ0	DDR1_DQ63	AF7	MDB62
[8] VREF_DQB	VREF_DQB AB40	DDR_VREF_DQ1	DDR1_DQS_P0	AF35	DQSB0
			DDR1_DQS_P1	AL33	DQSB1
			DDR1_DQS_P2	AP33	DQSB2
			DDR1_DQS_P3	AN28	DQSB3
			DDR1_DQS_P4	AN12	DQSB4
			DDR1_DQS_P5	AP8	DQSB5
			DDR1_DQS_P6	AL8	DQSB6
			DDR1_DQS_P7	AG7	DQSB7
			DDR1_DQS_P8	AN25	
			DDR1_DQS_N0	AF34	-DQSB0
			DDR1_DQS_N1	AK33	-DQSB1
			DDR1_DQS_N2	AN33	-DQSB2
			DDR1_DQS_N3	AP29	-DQSB3
			DDR1_DQS_N4	AN13	-DQSB4
			DDR1_DQS_N5	AR8	-DQSB5
			DDR1_DQS_N6	AM8	-DQSB6
			DDR1_DQS_N7	AG6	-DQSB7
			DDR1_DQS_N8	AN26	

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

Place in CPU bottom side

VREF_DQA
VREF_DQB
WBC34 0.1u/4/X7R/16V/K
WBC33 0.1u/4/X7R/16V/K

LGA1150 (CR)

CR
CPU RETAINTION/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_A[0..1]
[8] MODT_B[0..1] MODT_B[0..1]
[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] MAAA[0..15] MAAA[0..15]
[8] MAAB[0..15] MAAB[0..15]
[8] DQSB[0..7] DQSB[0..7]
[8] -DQSB[0..7] -DQSB[0..7]

Gigabyte Technology			
Title: CPU LGA1156-B			
Size: Custom	Document Number: GA-H81M-S2PH		Rev: 1.02
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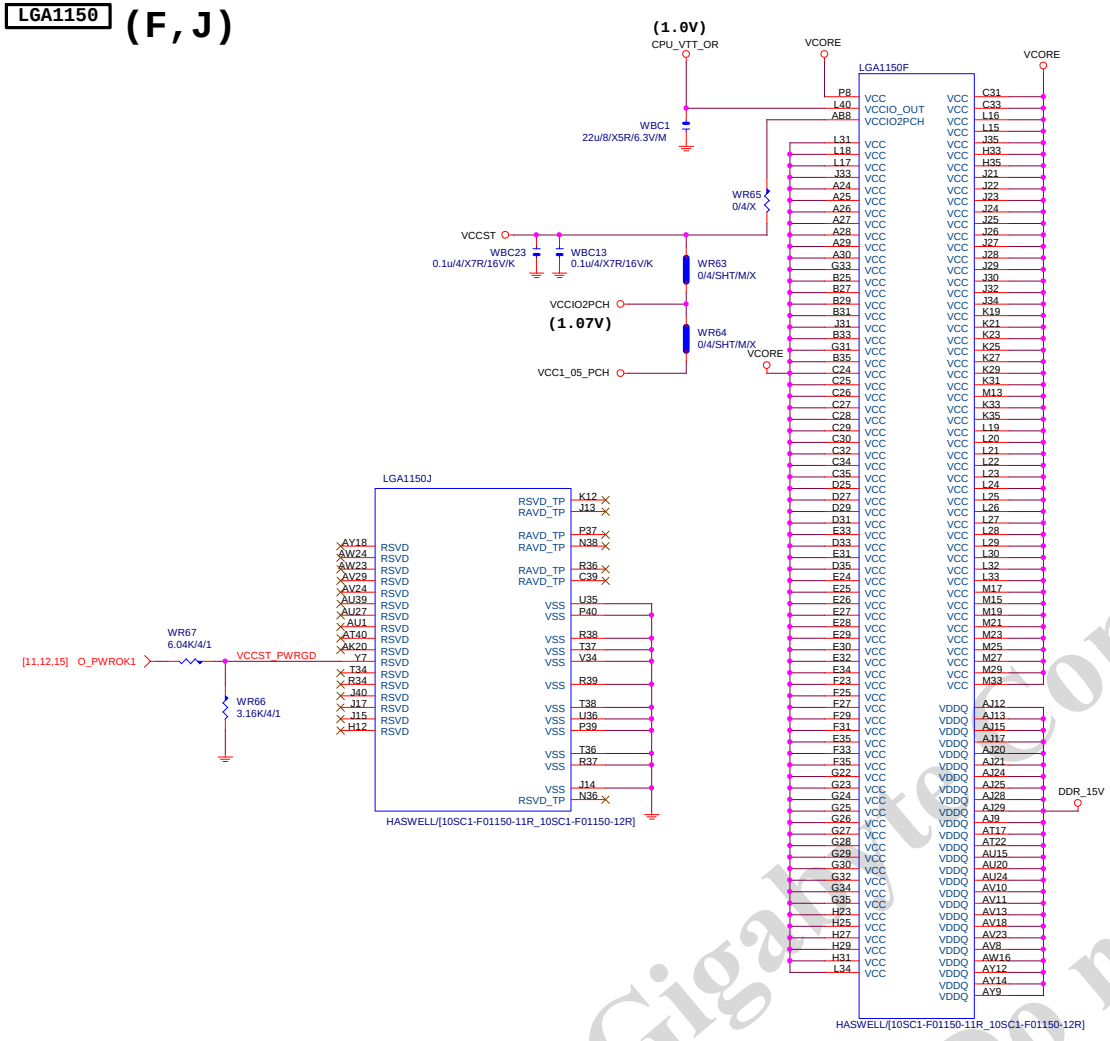
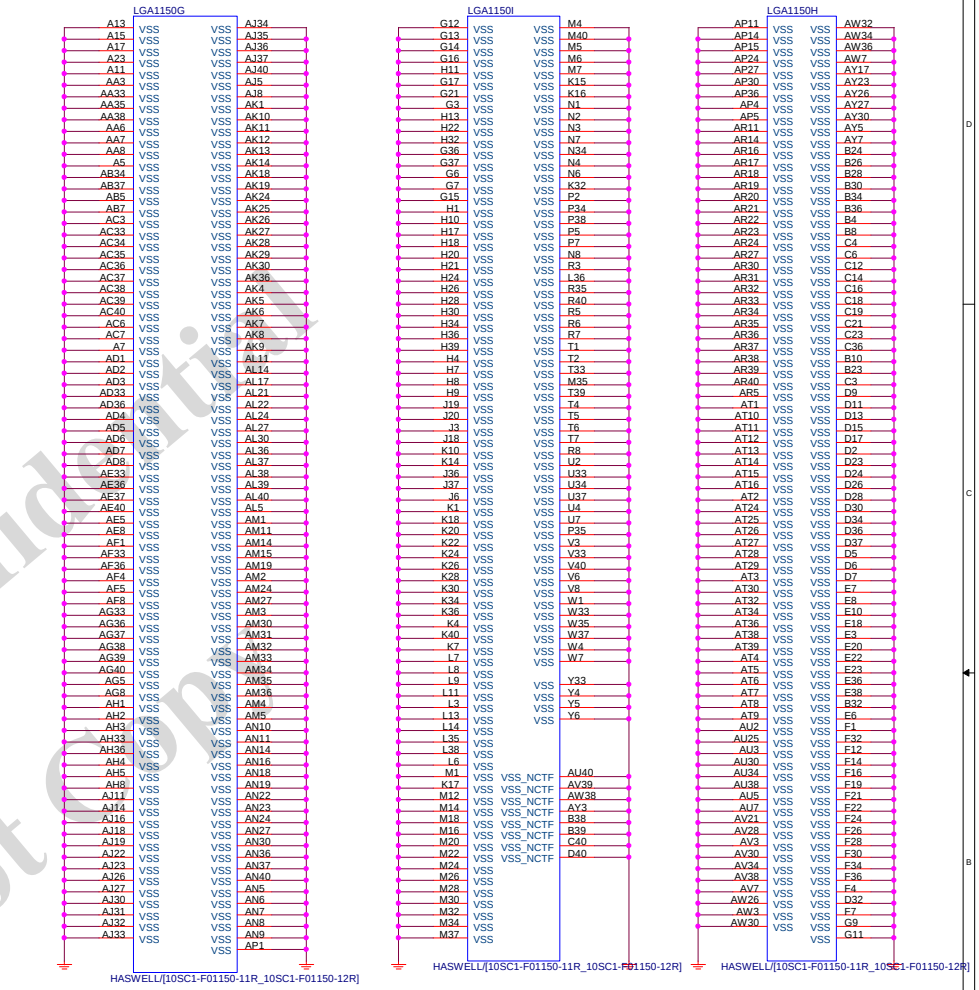
LGA1150 (F,J)

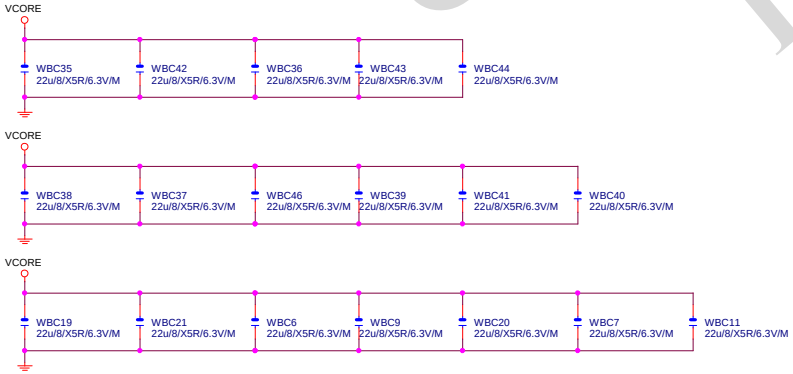


LGA1155 (G,H,I)



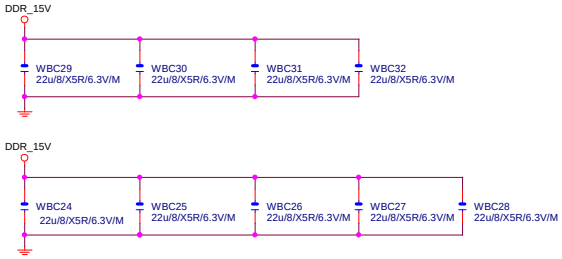
VCore CAP

(X18)



DDR CAP

(X9)



Gigabyte Technology			
Title: CPU LGA1150-C			
Size: Custom	Document Number: GA-H81M-S2PH		Rev: 1.02
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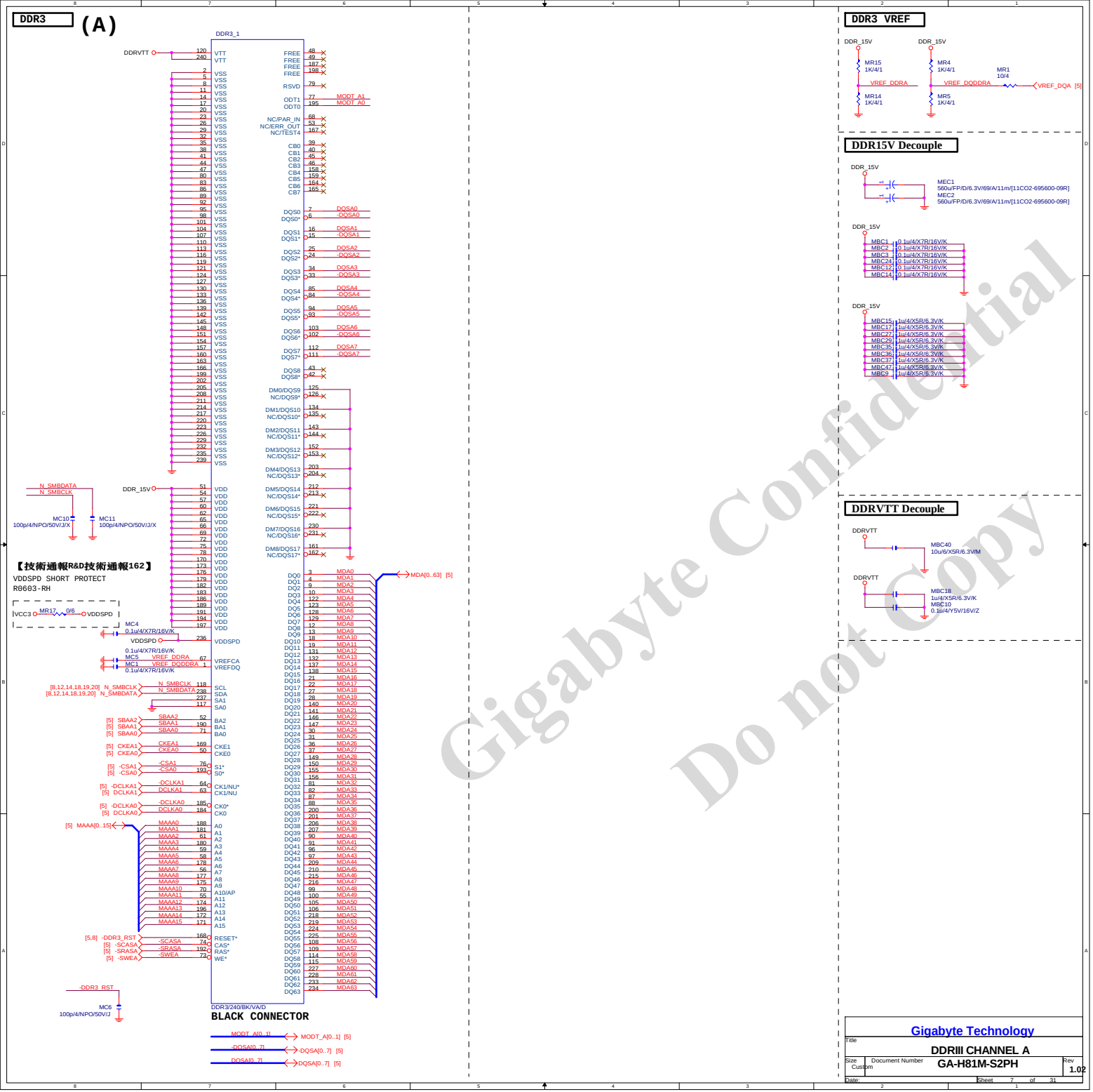

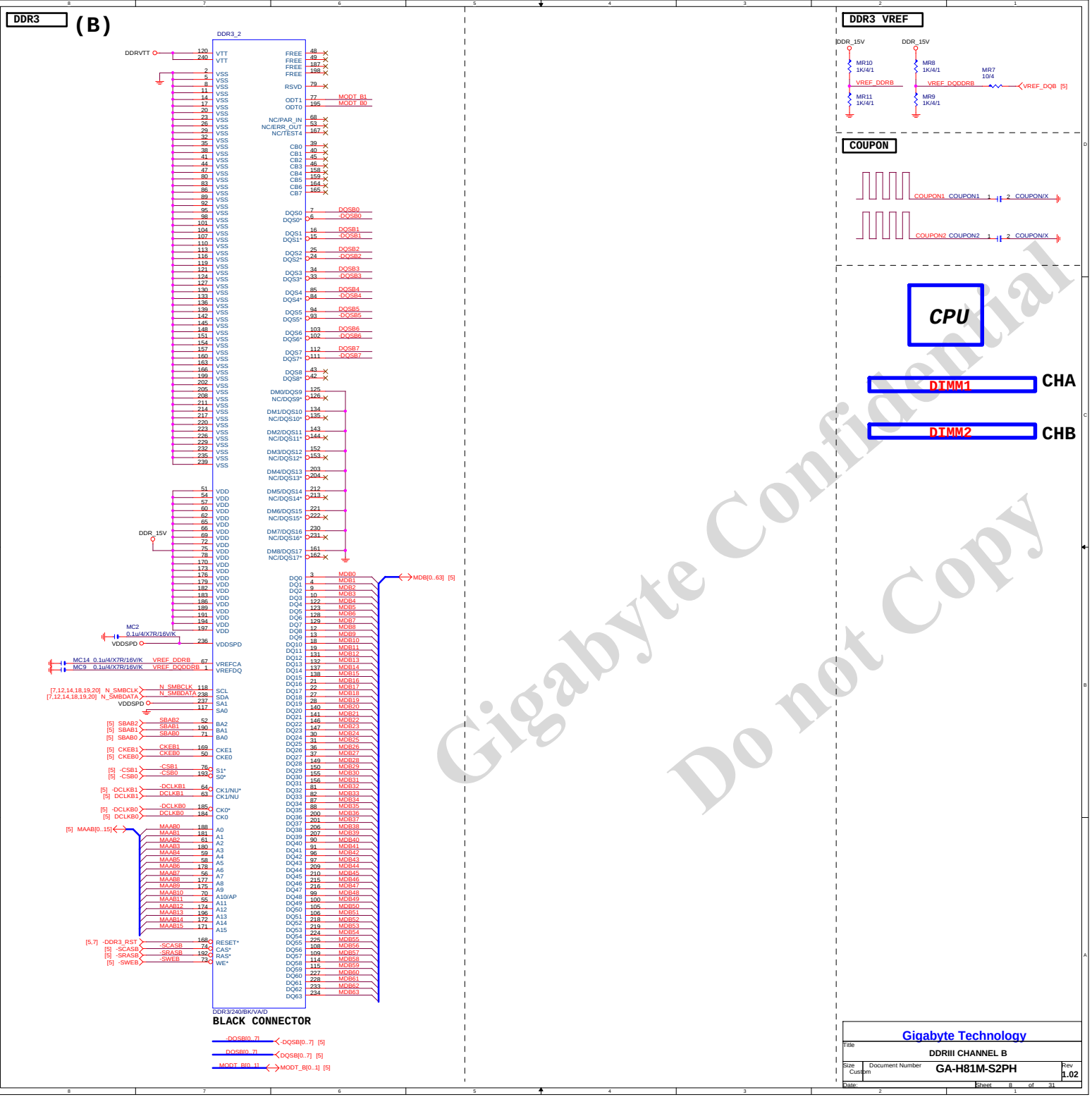

Gigabyte Technology

Title: DDRIII CHANNEL B

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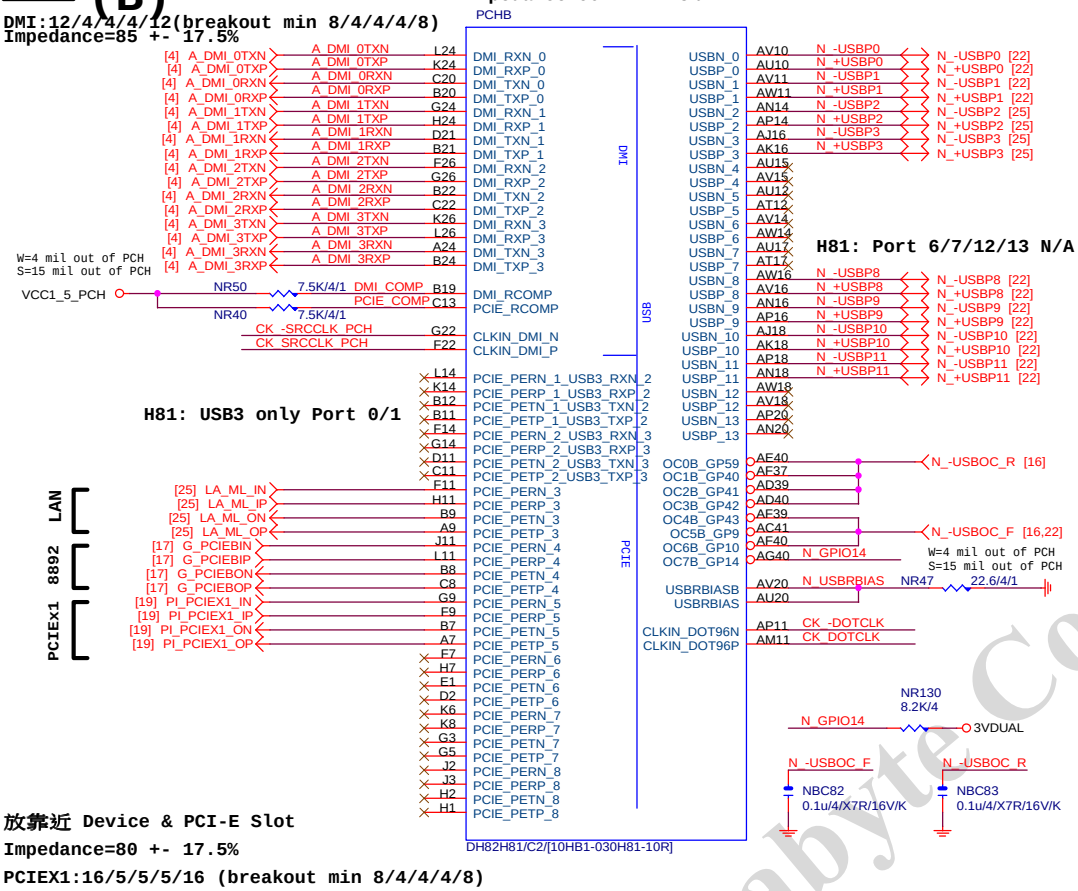
PCH (B)

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

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



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

H81: USB3 only Port 0/1

LAN
8892
PCIEx1

W=4 mil out of PCH
S=15 mil out of PCH

VCC1_5_PCH — NR50 7.5K/4/1 DMI_COMP, PCIE_COMP — NR40 7.5K/4/1

CK_-SRCCLK_PCH
CK_SRCCLK_PCH

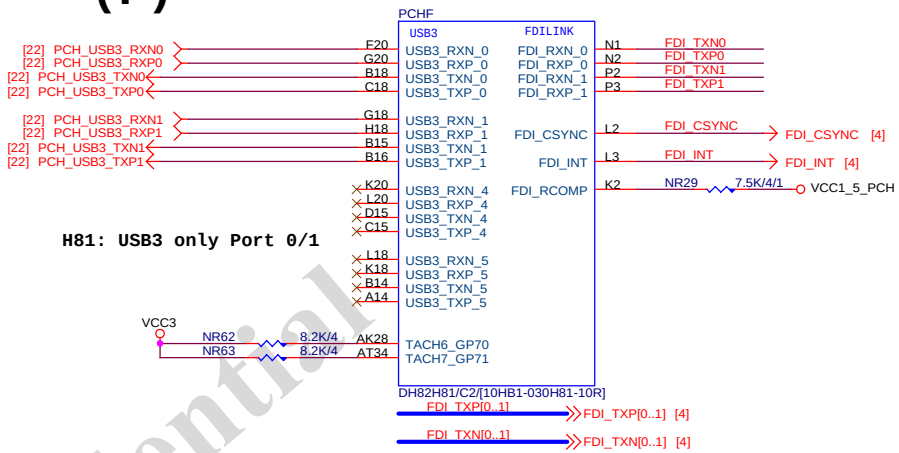
N_GPIO14 — NR130 8.2K/4 — 3VDUAL

N_-USBOC_F — NBC82 0.1u/4/X7R/16V/K
N_-USBOC_R — NBC83 0.1u/4/X7R/16V/K

N_USBRBIAS — NR47 22.6/4/1

放靠近 Device & PCI-E Slot
Impedance=80 +- 17.5%
PCIEX1:16/5/5/5/16 (breakout min 8/4/4/4/8)

PCH (F)



H81: USB3 only Port 0/1

VCC3 — NR62 8.2K/4 — NR63 8.2K/4

FDI_TXP[0..1] [4]
FDI_TXN[0..1] [4]

USB3.0:20/5/7/5/20 (breakout min 8/4/4/4/8) ; ONLY 3 VIAS
Impedance=85 +- 17.5%
Back Panel < 10000 MILS
Front Panel < 6000 MILS

PCH CLK PD

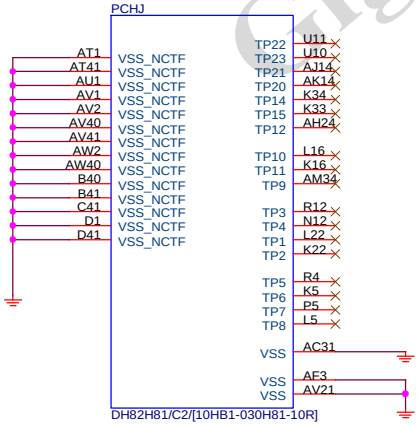
CK_SRCCLK_PCH — NR89 8.2K/4
CK_-SRCCLK_PCH — NR88 8.2K/4

Mount for integrated clock Generation Mode

CK_DOTCLK — NR92 8.2K/4
CK_-DOTCLK — NR91 8.2K/4

NR225 short to GND in non graphic SKU

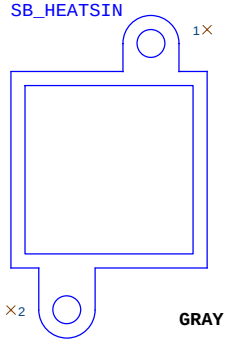
PCH (J)



PCH H/S

LOW COST ICH7 HEATSINK

SB_HEATSIN



GRAY HS

PCH_HS
PCH_HS/[12SP2-030005-43R_12SP2-030005-41R_12SP2-030005-42R]

USB TABLE

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

USB OC#	Configure
OC0#	USB30_HDMI
OC1#	R_USB
OC2#	N/A
OC3#	N/A
OC4#	F_USB1
OC5#	F_USB2
OC6#	N/A
OC7#	Not Use

Gigabyte Technology

Title: PCH FDI,DMI,USB ,PCIE,NVRAM

Size: Custom | Document Number: GA-H81M-S2PH | Rev: 1.02

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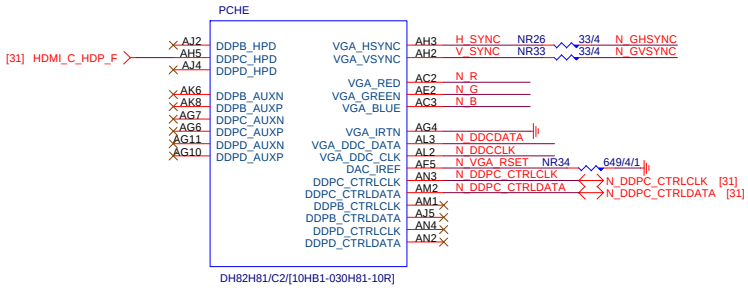
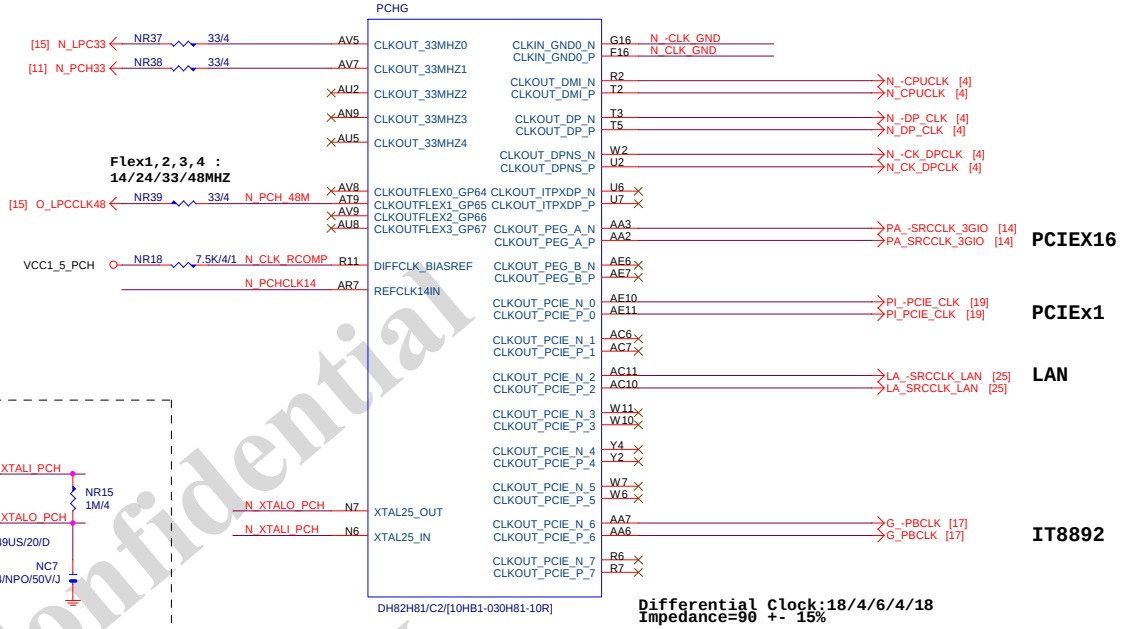
PCH (E)

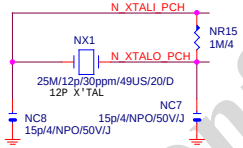


PCH (G)

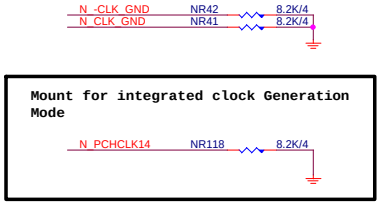


Differential Clock:18/4/6/4/18
Impedance=90 +- 15%

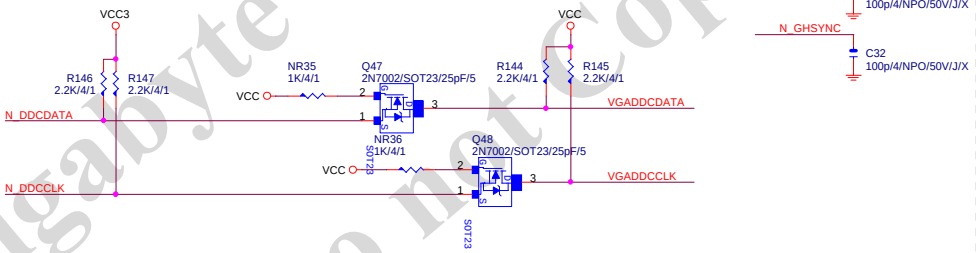
25MHZ X'TAL

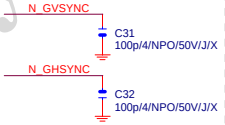


PCH CLK PD

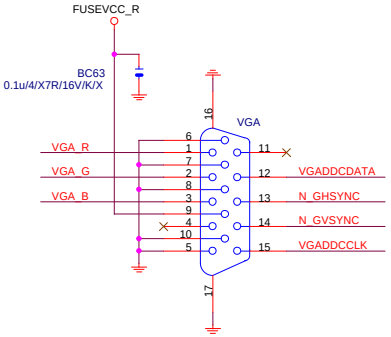


VGA DDC





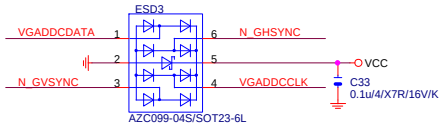
VGA CONNECTOR



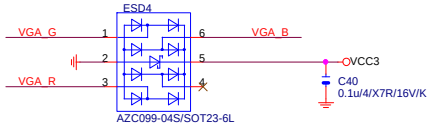
VGA/BK/SC-11/RA/D/L/[11NR6-103015-21R_11NR6-103015-22R]

BLACK D-SUB

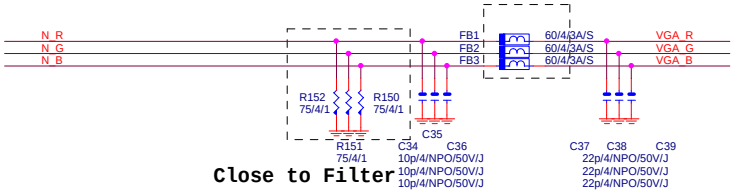
VGA ESD



SSOP6_ESD



VGA DDC



Close to Filter

Gigabyte Technology		
Title: PCH DISPLAY ,CLK BUFFER		
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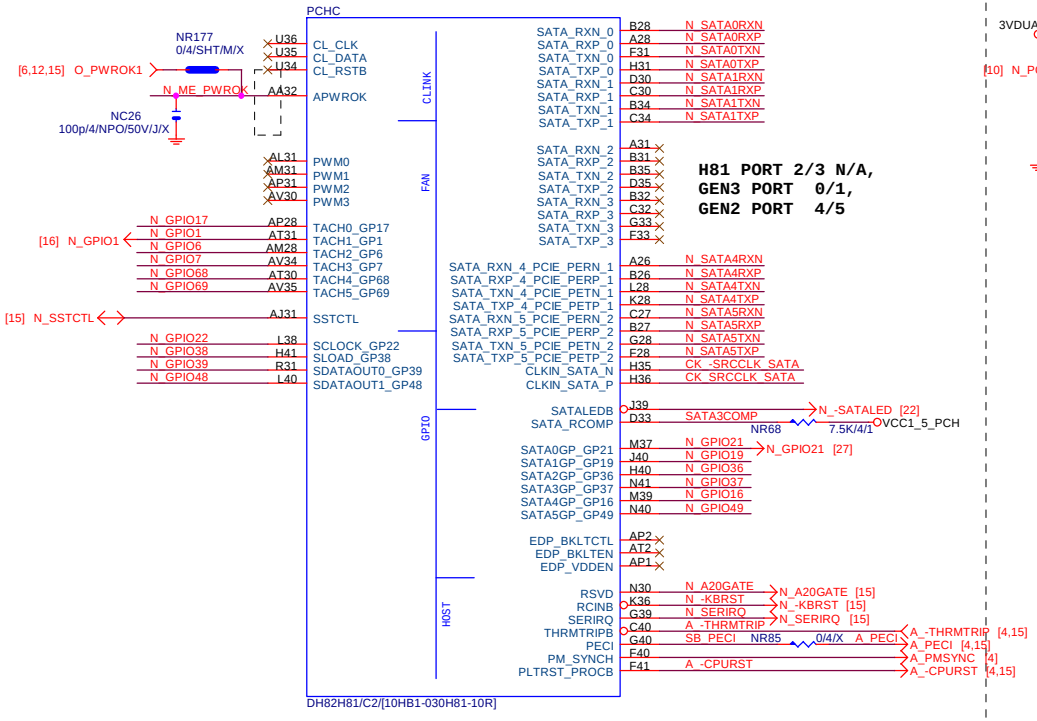
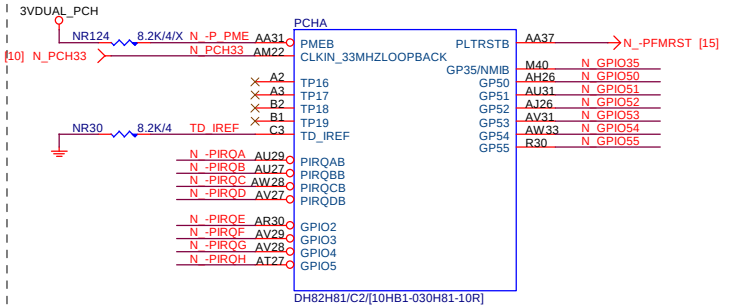
PCH (C)

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%

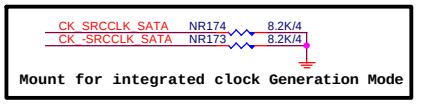


H81 PORT 2/3 N/A,
GEN3 PORT 0/1,
GEN2 PORT 4/5

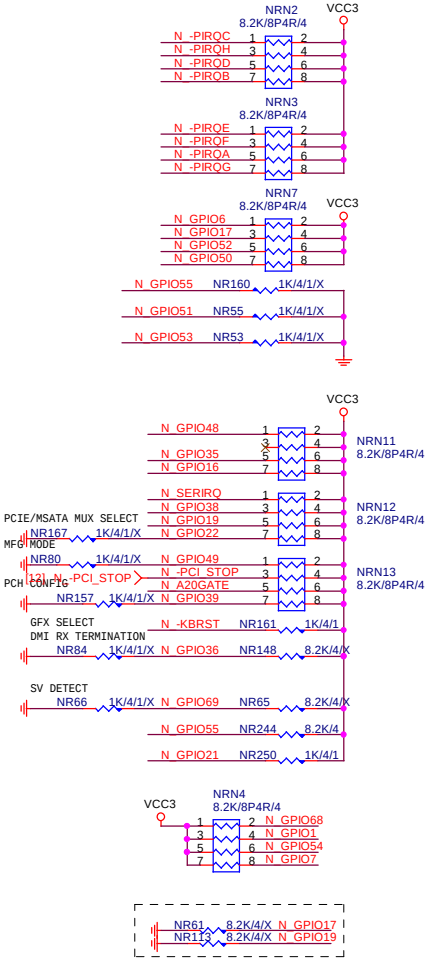
PCH (A)



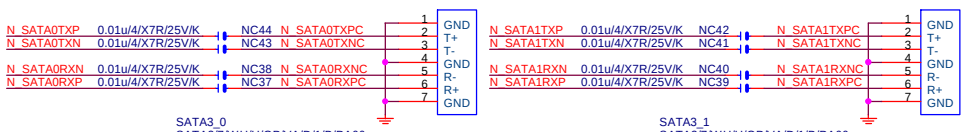
PCH CLK PD



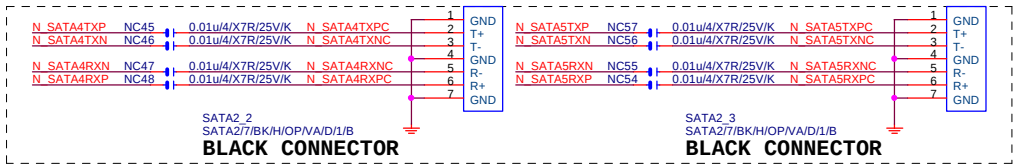
PCH PU/PD



SATA CONNECTOR

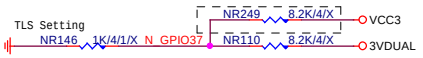


** Z87/H87 Port 4&5 SATA3.0
** B85 Port 4&5 SATA2.0



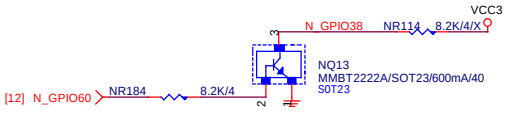
ME PWROK

H81 N/A



GPIO37 PU VCC3 ENABLE SBA
For H87&B85

GPIO38 Ctrl



Gigabyte Technology			
Title: PCH HOST , SATA, PCI			
Size: Custom	Document Number: GA-H81M-S2PH		Rev: 1.02
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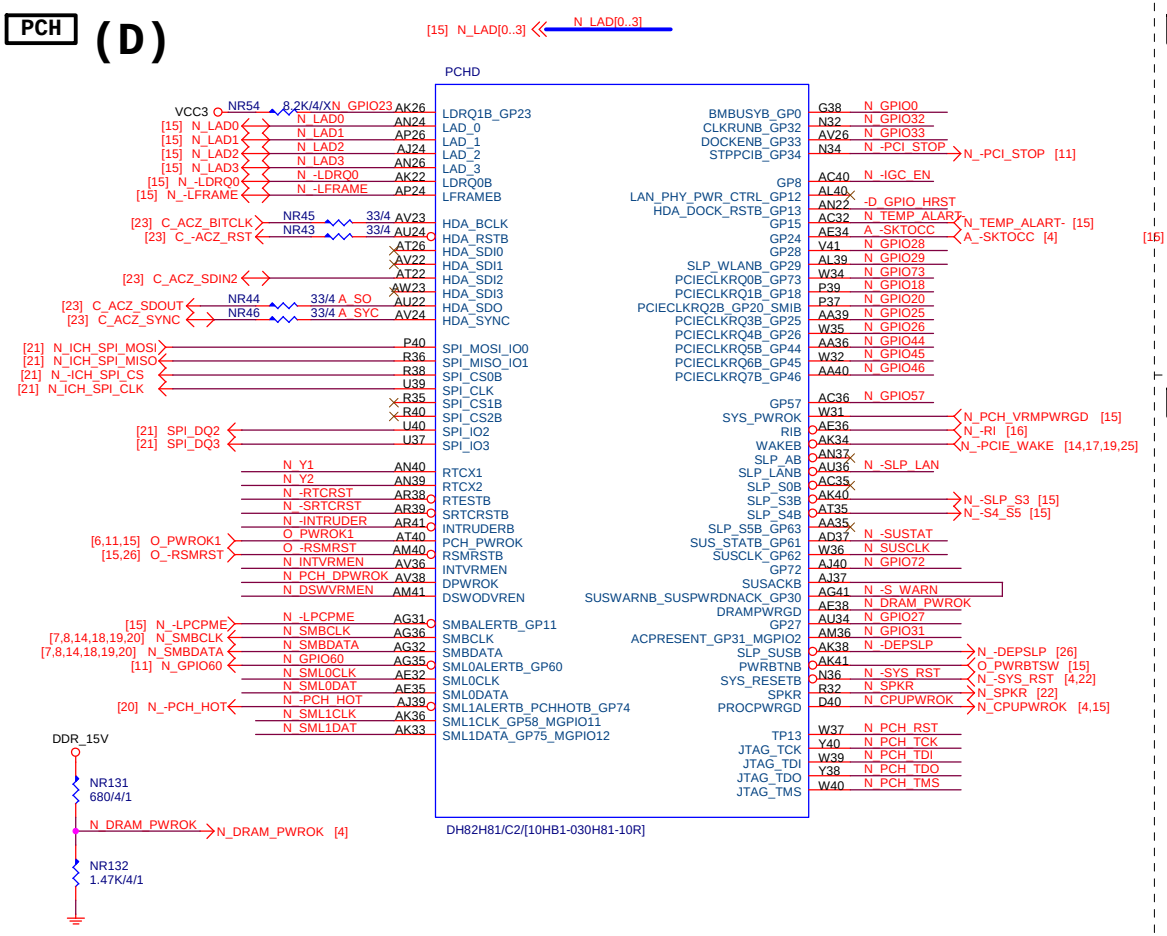
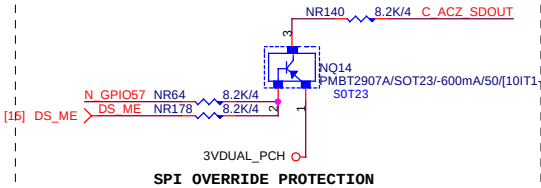
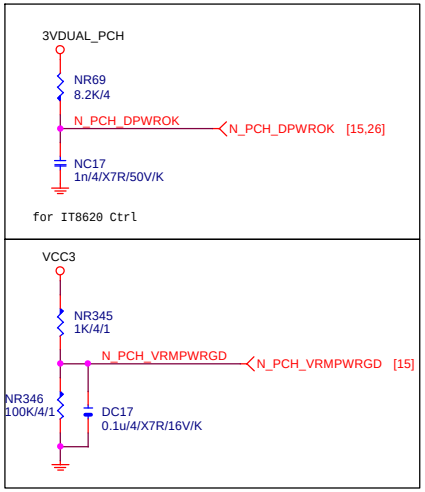
PCH (D)



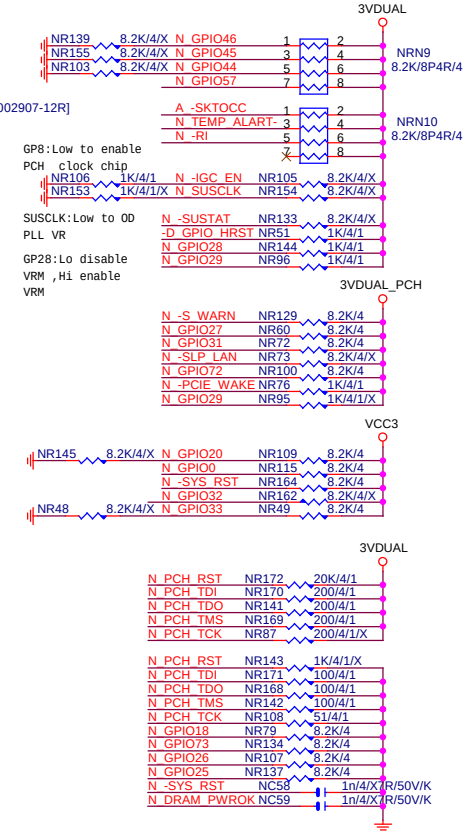
ACZ_SDOUT



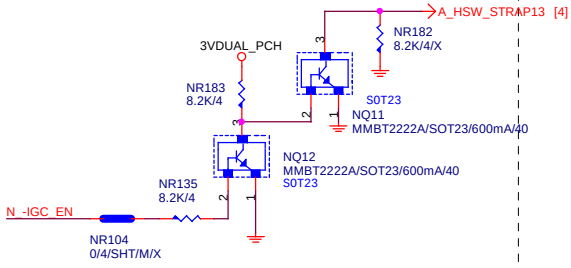
PCH_DPWROK



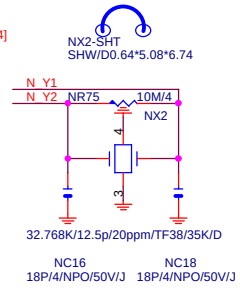
PCH PU/PD



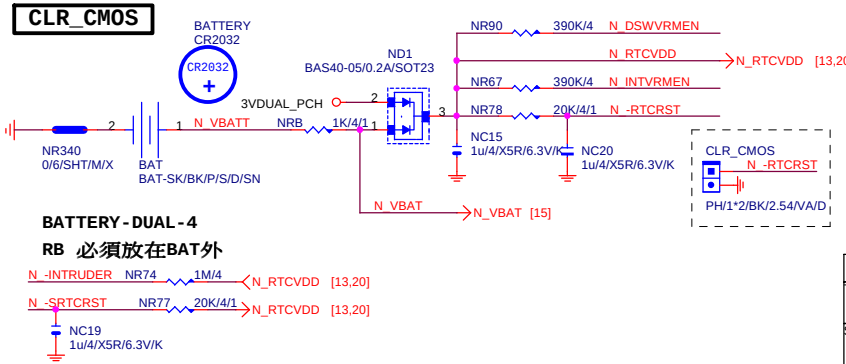
HSW_STRAP13

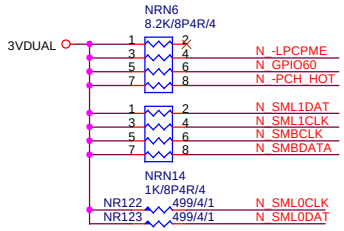


32.768KHZ



CLR_CMOS





Gigabyte Technology		
Title: PCH GPIO , CTRL , AUDIO		
Size: Custom	Document Number: GA-H81M-S2PH	Rev: 1.02
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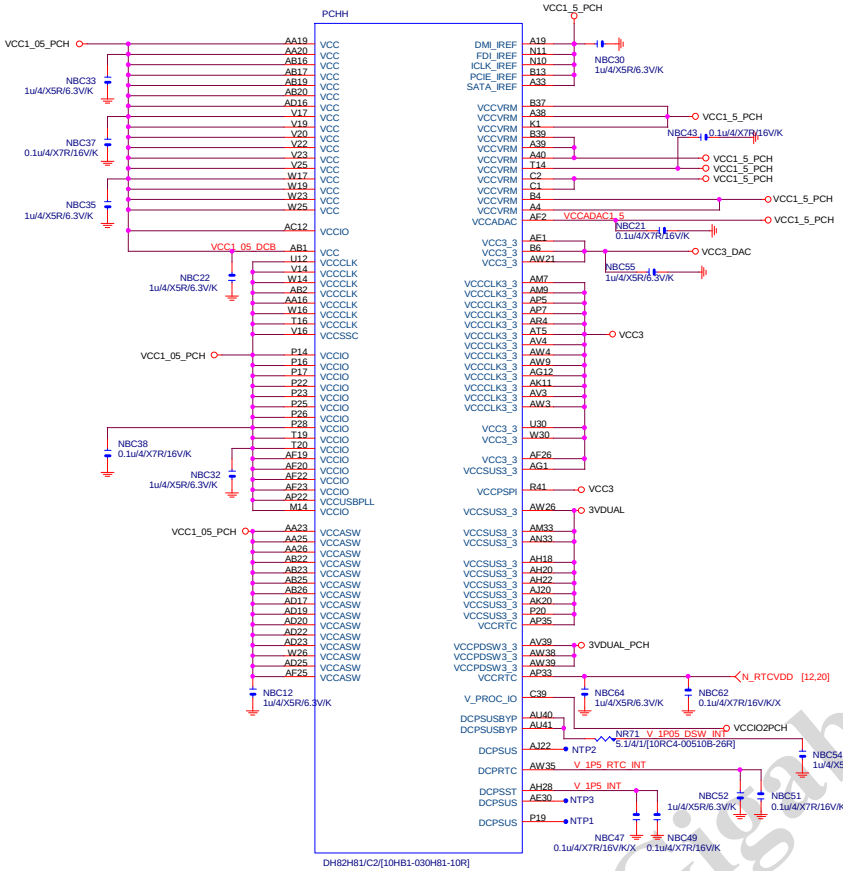
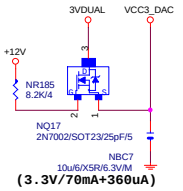
PCH (H)



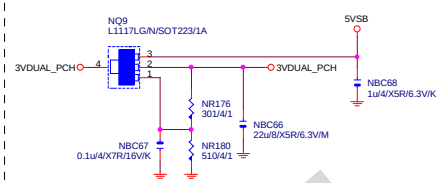
VCC3_DAC

CLOSE北橋(注意震盪水波紋)



(3.3V/70mA+360uA)

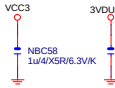
3VDUAL_PCH



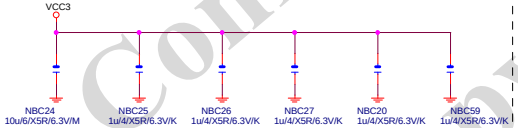
SHT PWR

M3 POWER

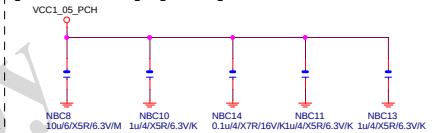
CAP



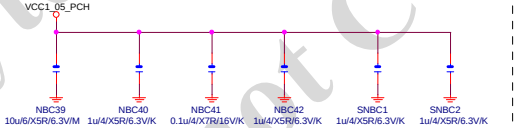
(3.3V)(X6)



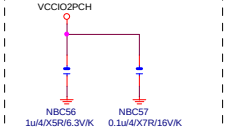
(1.05V)(X5)



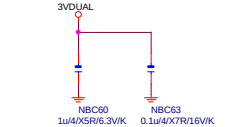
(1.05V)(X6)



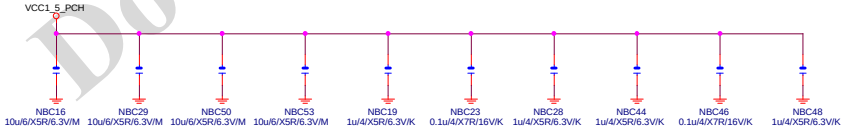
(1.05V)(X2)



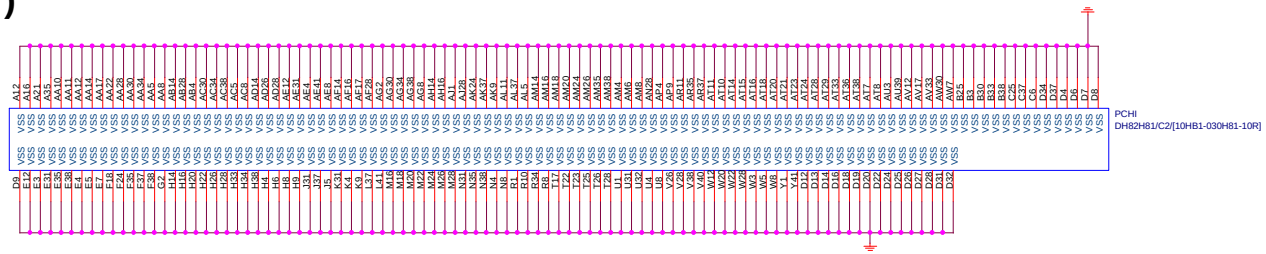
(3.3V)(X2)



(1.05V)(X10)



PCH (I)



Gigabyte Technology			
Title: PCH PWR ,GND			
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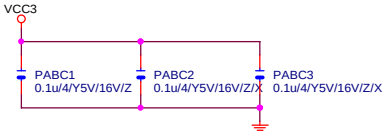
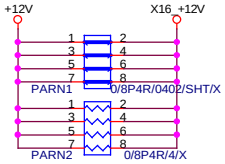
PCIEX16 CAP



PCIEX16 PROTECT SHT



PCIEX16 AC CAP

PA_EXP_TXP0	PAC5	0.22u/4/X5R/6.3V/K	PA_EXP_TXP0_C
PA_EXP_TXN0	PAC4	0.22u/4/X5R/6.3V/K	PA_EXP_TXN0_C
PA_EXP_TXP1	PAC6	0.22u/4/X5R/6.3V/K	PA_EXP_TXP1_C
PA_EXP_TXN1	PAC7	0.22u/4/X5R/6.3V/K	PA_EXP_TXN1_C
PA_EXP_TXP2	PAC8	0.22u/4/X5R/6.3V/K	PA_EXP_TXP2_C
PA_EXP_TXN2	PAC9	0.22u/4/X5R/6.3V/K	PA_EXP_TXN2_C
PA_EXP_TXP3	PAC10	0.22u/4/X5R/6.3V/K	PA_EXP_TXP3_C
PA_EXP_TXN3	PAC11	0.22u/4/X5R/6.3V/K	PA_EXP_TXN3_C
PA_EXP_TXP4	PAC12	0.22u/4/X5R/6.3V/K	PA_EXP_TXP4_C
PA_EXP_TXN4	PAC13	0.22u/4/X5R/6.3V/K	PA_EXP_TXN4_C
PA_EXP_TXP5	PAC14	0.22u/4/X5R/6.3V/K	PA_EXP_TXP5_C
PA_EXP_TXN5	PAC15	0.22u/4/X5R/6.3V/K	PA_EXP_TXN5_C
PA_EXP_TXP6	PAC16	0.22u/4/X5R/6.3V/K	PA_EXP_TXP6_C
PA_EXP_TXN6	PAC17	0.22u/4/X5R/6.3V/K	PA_EXP_TXN6_C
PA_EXP_TXP7	PAC19	0.22u/4/X5R/6.3V/K	PA_EXP_TXP7_C
PA_EXP_TXN7	PAC18	0.22u/4/X5R/6.3V/K	PA_EXP_TXN7_C
PA_EXP_TXP8	PAC20	0.22u/4/X5R/6.3V/K	PA_EXP_TXP8_C
PA_EXP_TXN8	PAC21	0.22u/4/X5R/6.3V/K	PA_EXP_TXN8_C
PA_EXP_TXP9	PAC22	0.22u/4/X5R/6.3V/K	PA_EXP_TXP9_C
PA_EXP_TXN9	PAC23	0.22u/4/X5R/6.3V/K	PA_EXP_TXN9_C
PA_EXP_TXP10	PAC24	0.22u/4/X5R/6.3V/K	PA_EXP_TXP10_C
PA_EXP_TXN10	PAC25	0.22u/4/X5R/6.3V/K	PA_EXP_TXN10_C
PA_EXP_TXP11	PAC26	0.22u/4/X5R/6.3V/K	PA_EXP_TXP11_C
PA_EXP_TXN11	PAC27	0.22u/4/X5R/6.3V/K	PA_EXP_TXN11_C
PA_EXP_TXP12	PAC28	0.22u/4/X5R/6.3V/K	PA_EXP_TXP12_C
PA_EXP_TXN12	PAC29	0.22u/4/X5R/6.3V/K	PA_EXP_TXN12_C
PA_EXP_TXP13	PAC30	0.22u/4/X5R/6.3V/K	PA_EXP_TXP13_C
PA_EXP_TXN13	PAC31	0.22u/4/X5R/6.3V/K	PA_EXP_TXN13_C
PA_EXP_TXP14	PAC32	0.22u/4/X5R/6.3V/K	PA_EXP_TXP14_C
PA_EXP_TXN14	PAC33	0.22u/4/X5R/6.3V/K	PA_EXP_TXN14_C
PA_EXP_TXP15	PAC34	0.22u/4/X5R/6.3V/K	PA_EXP_TXP15_C
PA_EXP_TXN15	PAC35	0.22u/4/X5R/6.3V/K	PA_EXP_TXN15_C

PA_EXP_RXP[0..15] >> PA_EXP_RXP[0..15] [4]

PA_EXP_RXN[0..15] >> PA_EXP_RXN[0..15] [4]

PA_EXP_TXP[0..15] >> PA_EXP_TXP[0..15] [4]

PA_EXP_TXN[0..15] >> PA_EXP_TXN[0..15] [4]

PCIEX16 SLOT

PCIESLOT-164DN-Q-1

3GIO_*16

PCIEX16

X16_+12V	B1	12V	
	B2	12V	
	B3	RSVD	
PAR3 0/4/SHT/M/X	B4	GND	
[7,8,12,18,19,20] N_SMBCLK	B5	SMCLK	SMBCLK
[7,8,12,18,19,20] N_SMBDATA	B6	SMDAT	SMBDATA
	B7	GND	
3VDUAL	B8	3.3V	VCC3
	B9	JTAG1	
[12,17,19,25] N_-PCIE_WAKE	B10	3.3VAUX	
	B11	WAKE*	
	B12	RSVD	
	B13	GND	
PA_EXP_TXP0_C	B14	HSOP0	
PA_EXP_TXN0_C	B15	HSON0	
	B16	GND	
	B17	PRSNT2*	
	B18	GND	
PA_EXP_TXP1_C	B19	HSOP1	
PA_EXP_TXN1_C	B20	HSON1	
	B21	GND	
	B22	GND	
PA_EXP_TXP2_C	B23	HSOP2	
PA_EXP_TXN2_C	B24	HSON2	
	B25	GND	
	B26	GND	
PA_EXP_TXP3_C	B27	HSOP3	
PA_EXP_TXN3_C	B28	HSON3	
	B29	GND	
	B30	RSVD	
	B31	PRSNT2*	
	B32	GND	
PA_EXP_TXP4_C	B33	HSOP4	
PA_EXP_TXN4_C	B34	HSON4	
	B35	GND	
	B36	GND	
PA_EXP_TXP5_C	B37	HSOP5	
PA_EXP_TXN5_C	B38	HSON5	
	B39	GND	
	B40	GND	
PA_EXP_TXP6_C	B41	HSOP6	
PA_EXP_TXN6_C	B42	HSON6	
	B43	GND	
	B44	GND	
PA_EXP_TXP7_C	B45	HSOP7	
PA_EXP_TXN7_C	B46	HSON7	
	B47	GND	
	B48	PRSNT2*	
	B49	GND	
PA_EXP_TXP8_C	B50	HSOP8	
PA_EXP_TXN8_C	B51	HSON8	
	B52	GND	
	B53	GND	
PA_EXP_TXP9_C	B54	HSOP9	
PA_EXP_TXN9_C	B55	HSON9	
	B56	GND	
	B57	GND	
PA_EXP_TXP10_C	B58	HSOP10	
PA_EXP_TXN10_C	B59	HSON10	
	B60	GND	
	B61	GND	
PA_EXP_TXP11_C	B62	HSOP11	
PA_EXP_TXN11_C	B63	HSON11	
	B64	GND	
	B65	GND	
PA_EXP_TXP12_C	B66	HSOP12	
PA_EXP_TXN12_C	B67	HSON12	
	B68	GND	
	B69	GND	
PA_EXP_TXP13_C	B70	HSOP13	
PA_EXP_TXN13_C	B71	HSON13	
	B72	GND	
	B73	GND	
PA_EXP_TXP14_C	B74	HSOP14	
PA_EXP_TXN14_C	B75	HSON14	
	B76	GND	
	B77	GND	
PA_EXP_TXP15_C	B78	HSOP15	
PA_EXP_TXN15_C	B79	HSON15	
	B80	GND	
	B81	PRSNT2*	
	B82	RSVD	

KEY

X16_+12V	A1	PRSNT1*	PAR1 0/4/SHT/M/X
	A2	12V	
	A3	12V	
	A4	GND	PAR2 0/4/SHT/M/X
	A5	JTAG2	
	A6	JTAG3	
	A7	JTAG4	
	A8	JTAG5	
VCC3	A9	3.3V	
	A10	3.3V	
-PCIE_RST	A11	PWRGD	-PCIE_RST [15,17,19]
	A12	GND	
	A13	REFCLK+	PA_SRCCLK_3GIO [10]
	A14	REFCLK-	PA_-SRCCLK_3GIO [10]
	A15	GND	
PA_EXP_RXP0	A16	HSIP0	
PA_EXP_RXN0	A17	HSIN0	
	A18	GND	
	A19	RSVD	
	A20	GND	
PA_EXP_RXP1	A21	HSIP1	
PA_EXP_RXN1	A22	HSIN1	
	A23	GND	
	A24	GND	
PA_EXP_RXP2	A25	HSIP2	
PA_EXP_RXN2	A26	HSIN2	
	A27	GND	
	A28	GND	
PA_EXP_RXP3	A29	HSIP3	
PA_EXP_RXN3	A30	HSIN3	
	A31	GND	
	A32	RSVD	
	A33	RSVD	
	A34	GND	
PA_EXP_RXP4	A35	HSIP4	
PA_EXP_RXN4	A36	HSIN4	
	A37	GND	
	A38	GND	
PA_EXP_RXP5	A39	HSIP5	
PA_EXP_RXN5	A40	HSIN5	
	A41	GND	
	A42	GND	
PA_EXP_RXP6	A43	HSIP6	
PA_EXP_RXN6	A44	HSIN6	
	A45	GND	
	A46	GND	
PA_EXP_RXP7	A47	HSIP7	
PA_EXP_RXN7	A48	HSIN7	
	A49	GND	
	A50	RSVD	
	A51	GND	
PA_EXP_RXP8	A52	HSIP8	
PA_EXP_RXN8	A53	HSIN8	
	A54	GND	
	A55	GND	
PA_EXP_RXP9	A56	HSIP9	
PA_EXP_RXN9	A57	HSIN9	
	A58	GND	
	A59	GND	
PA_EXP_RXP10	A60	HSIP10	
PA_EXP_RXN10	A61	HSIN10	
	A62	GND	
	A63	GND	
PA_EXP_RXP11	A64	HSIP11	
PA_EXP_RXN11	A65	HSIN11	
	A66	GND	
	A67	GND	
PA_EXP_RXP12	A68	HSIP12	
PA_EXP_RXN12	A69	HSIN12	
	A70	GND	
	A71	GND	
PA_EXP_RXP13	A72	HSIP13	
PA_EXP_RXN13	A73	HSIN13	
	A74	GND	
	A75	GND	
PA_EXP_RXP14	A76	HSIP14	
PA_EXP_RXN14	A77	HSIN14	
	A78	GND	
	A79	GND	
PA_EXP_RXP15	A80	HSIP15	
PA_EXP_RXN15	A81	HSIN15	
	A82	GND	

-PCIE_RST

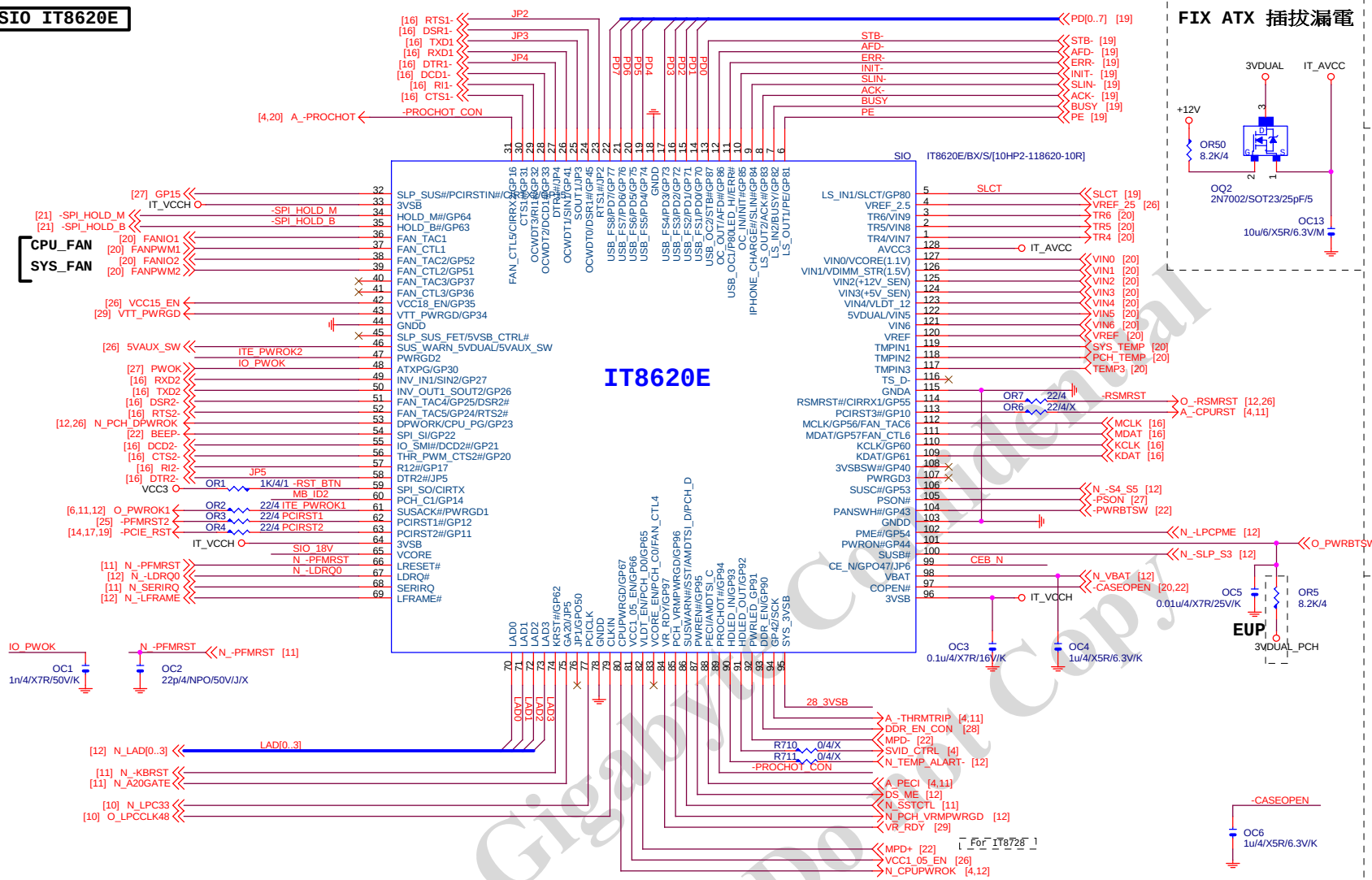
PAC1 22p/4/NPO/50V/J/X

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

BLACK CONNECTOR

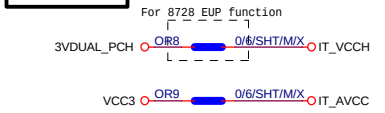
Gigabyte Technology		
Title: PCI EXPRESS * 16		
Size: Custom	Document Number: GA-H81M-S2PH	Rev: 1.02
Date: Tuesday, December 24, 2013	Sheet 14 of 31	

SIO IT8620E

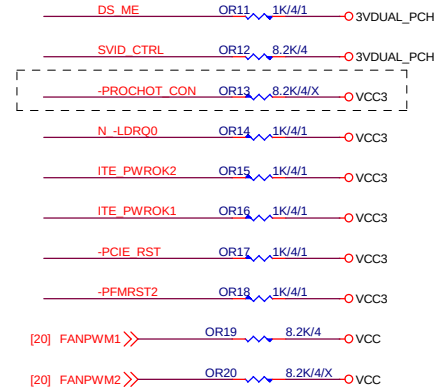


FIX ATX 插拔漏電

PWR SHT



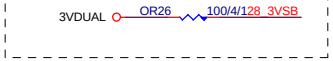
SIO PU



SIO STRAP

IT8620
PULL DOWN OVP REMOVE

EUP control by PCH



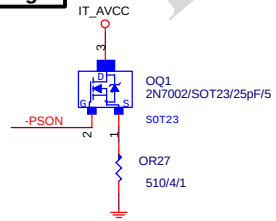
JP3--- High SPI-Flash Disable
Low SPI-Flash Enable

IT8620 NOTE

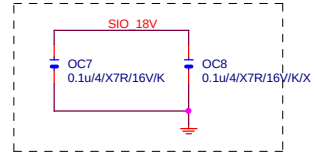
	IT8728
PIN121	VCORE_EN/PCH_C0
PIN120	VLDT_EN/PCH_D0
PIN19	ATXPG
PIN31	PCH_C1
PIN53	SST/AMDTSI_D/MTRB#/PCH_D1
PIN55	PECI/AMDTSI_C/DRVB#
PIN66	SYS_3VSB
PIN70	GP47
PIN95	VIN2(VCC5)
PIN96	VIN1(VCC12)
PIN97	VIN1/VDIMM_STR(1.5V)
PIN98	VIN0/VCORE(1.1V)/NC

DUAL BIOS OPT STRAP

Power leakage

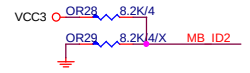


SIO_18V

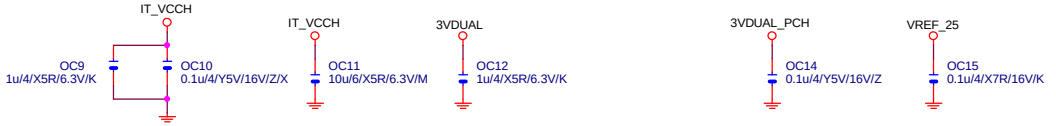


FOR LOW TEMP POWER ON INTO TEST MODE ISSUE

MB ID



SIO CAP



Gigabyte Technology

Title: ITE 8620 LPC IO

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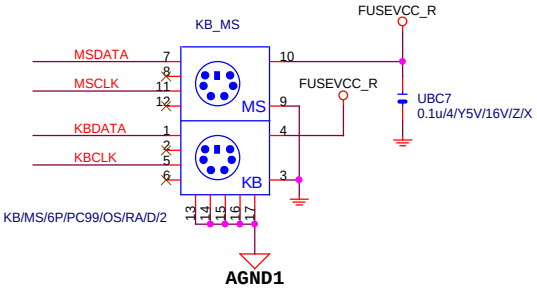
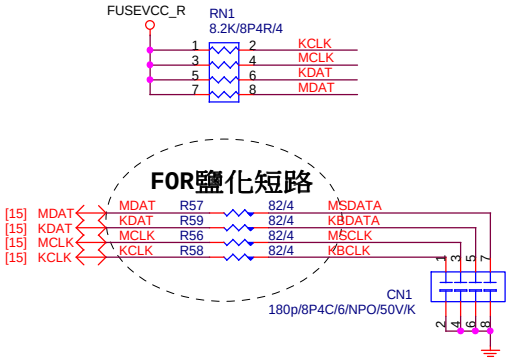
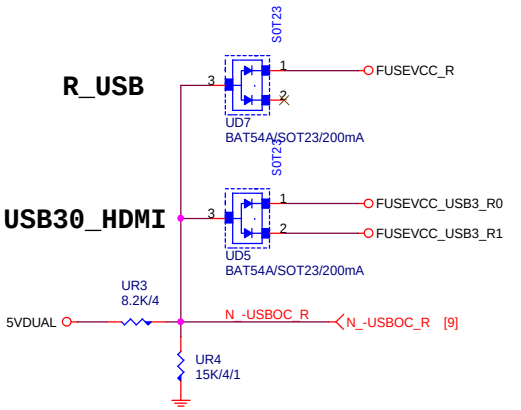
KB/MS

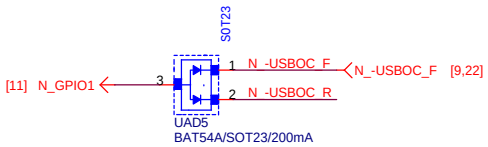




-USBOC_R



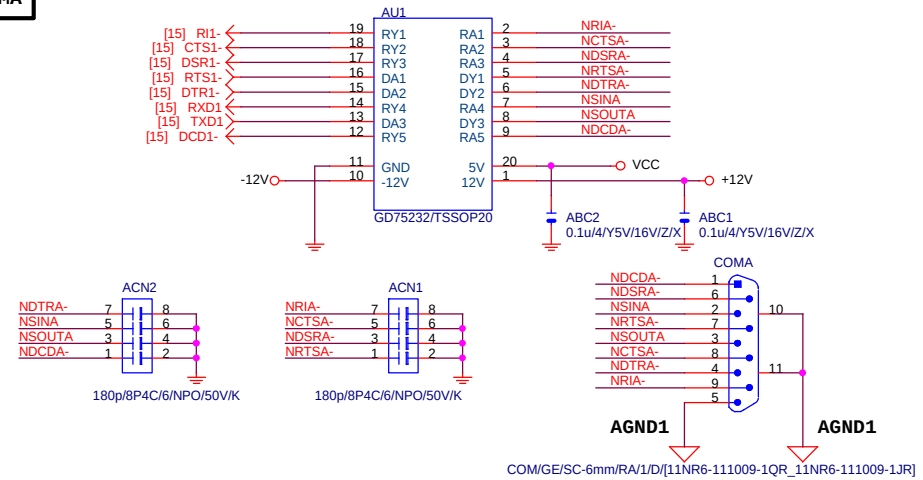
USB POWER PROTECT



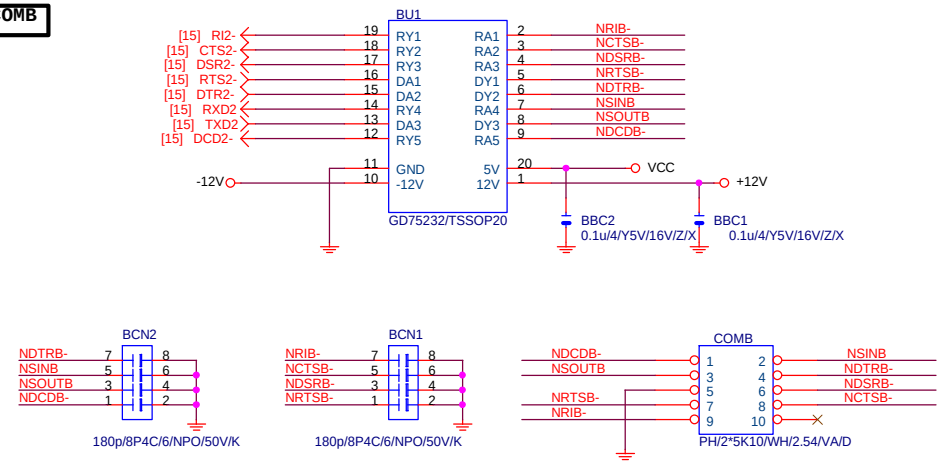
R_USB PWR

Close to connector
KB_MS_USB 2-Port 2.0A

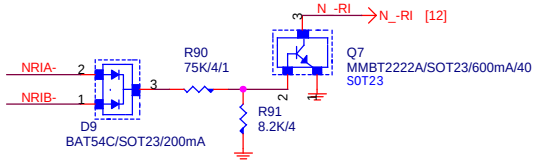
COMA



COMB



COM RI



Gigabyte Technology		
Title: COM,-RI,KB_MS		
Size: Custom	Document Number: GA-H81M-S2PH	Rev: 1.02
Date: Tuesday, December 24, 2013	Sheet 16 of 31	

PCIE TO PCI

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

High: Enable PCI CLK 66MHz
Low: Disable PCI CLK 66MHz

High: PCICLK INTPUT form CLK Gen
Low: PCICLK OUTPUT form IT8893 chip

IT8892 — **PCI slot**

PCI slot — **chipset side**

IT8892E/BX LQFP128

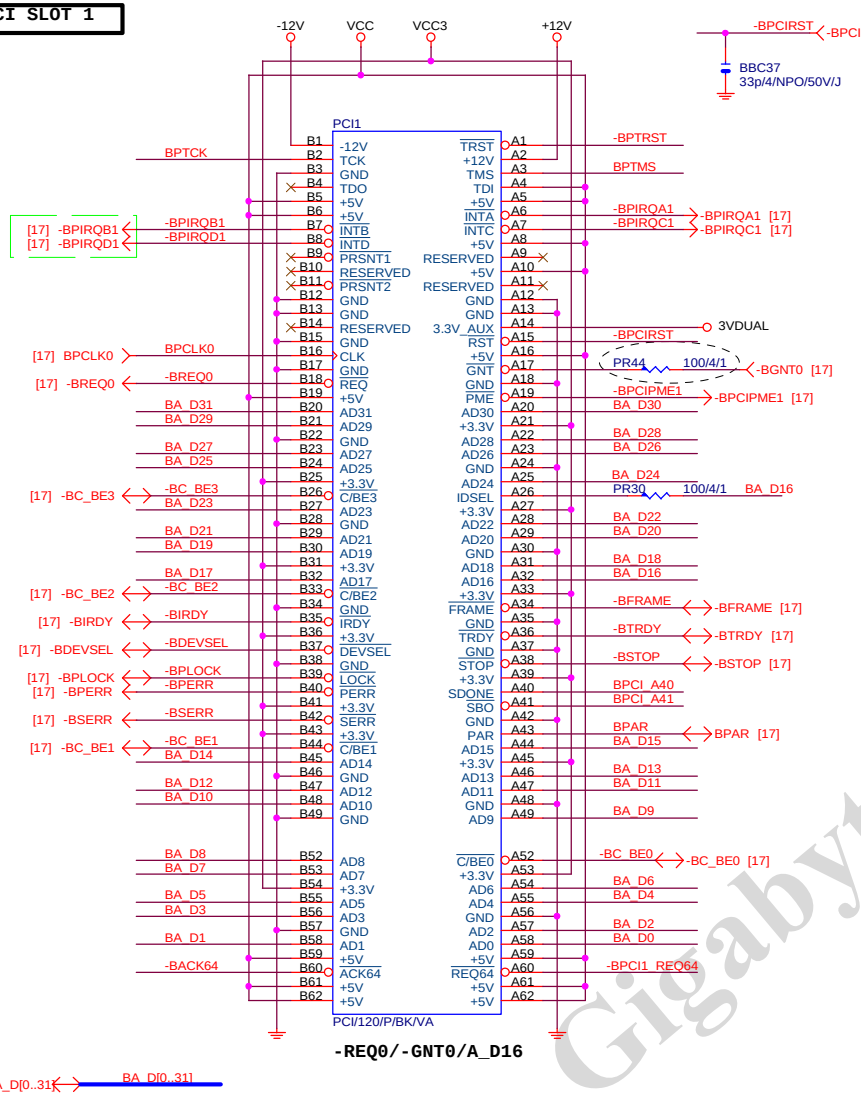
IT8892E/FX/S/[10HP2-698892-40R]

PCB layout note: Close to chip

Close to chip

Gigabyte Technology		
Title: ITE IT8892E		
Size: Custom	Document Number: GA-H81M-S2PH	Rev: 1.02
Date: Tuesday, December 24, 2013	Sheet 17 of 31	

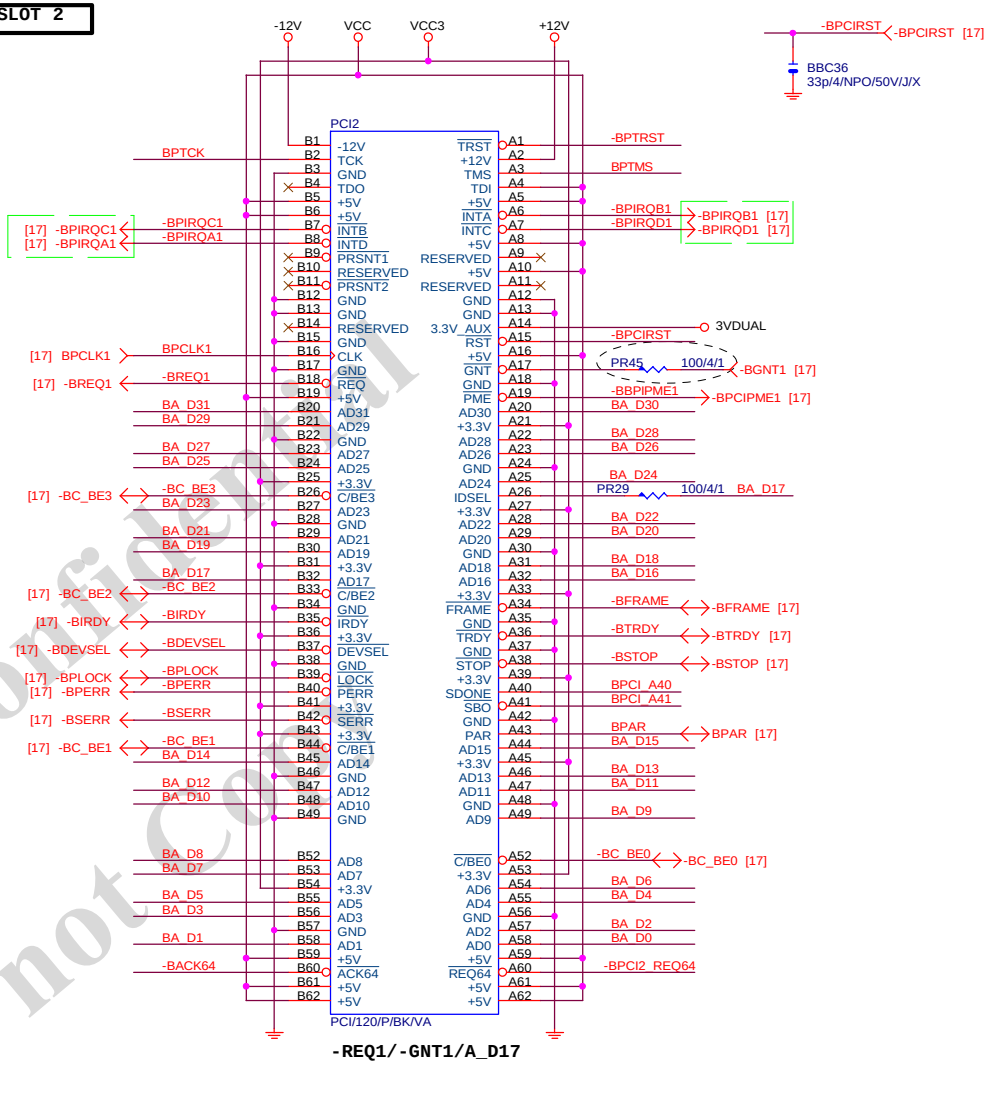
PCI SLOT 1



-REQ0/-GNT0/A_D16

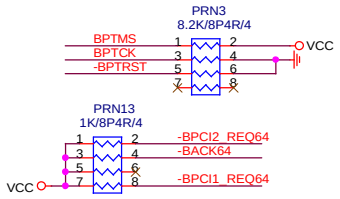
[17] BA_D[0..31] — BA_D[0..31]

PCI SLOT 2

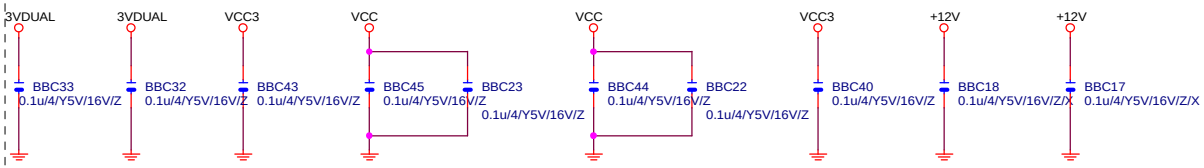


-REQ1/-GNT1/A_D17

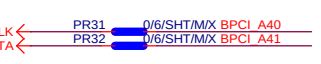
PCI PU



PCI CAP



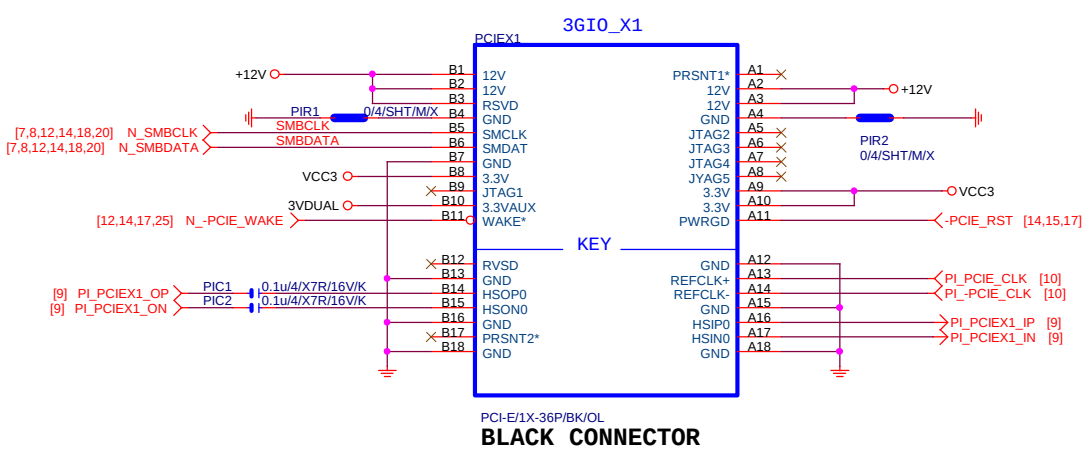
PCI SMBUS



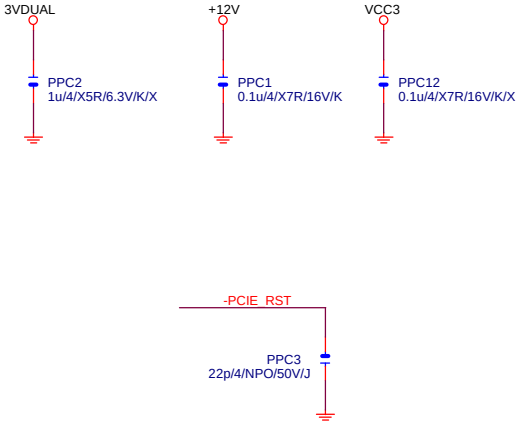
Gigabyte Technology

Title	PCI SLOT 1&2	
Size: Custom	Document Number: GA-H81M-S2PH	Rev: 1.02
Date: Tuesday, December 24, 2013	Sheet 18 of 31	

PCIEX1 SLOT

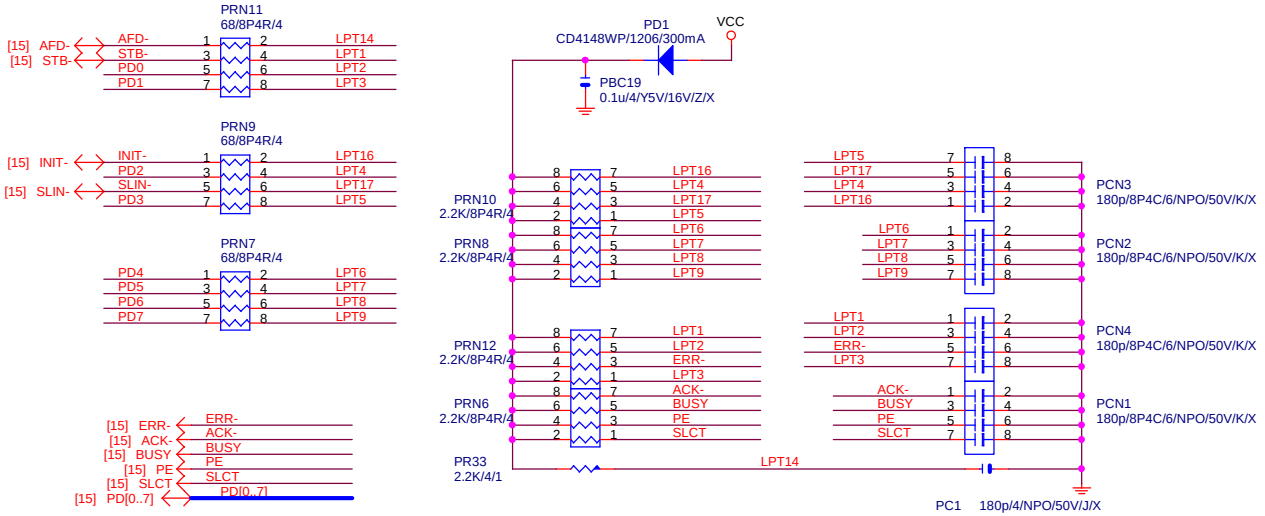


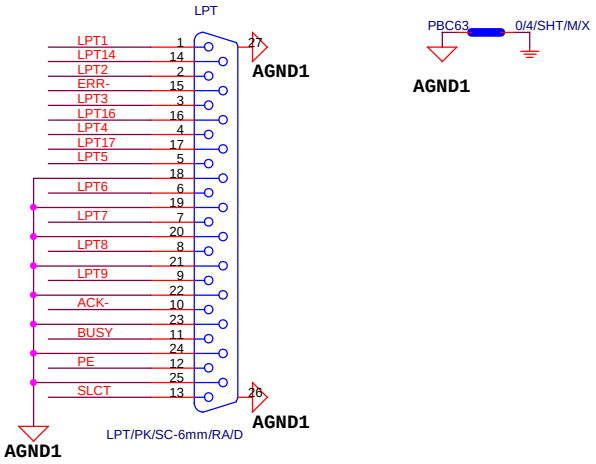
BLACK CONNECTOR



LPT PORT

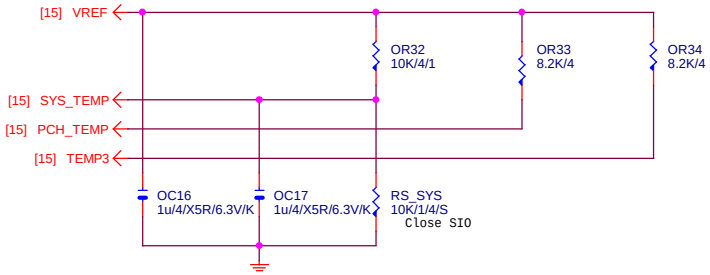
【技術通報R&D技術通報151】
33ohm Change to 68ohm



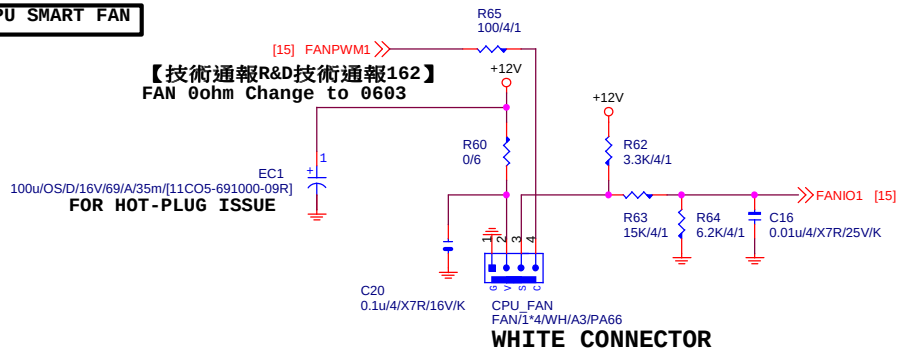


Gigabyte Technology		
Title: LPT		
Size: B	Document Number: GA-H81M-S2PH	Rev: 1.02
Date: Tuesday, December 24, 2013	Sheet 19 of 31	

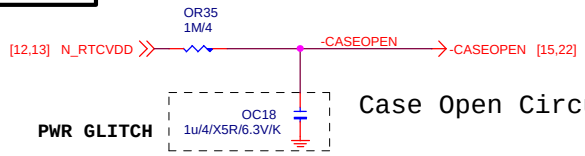
TEMP H/W MONITOR



CPU SMART FAN

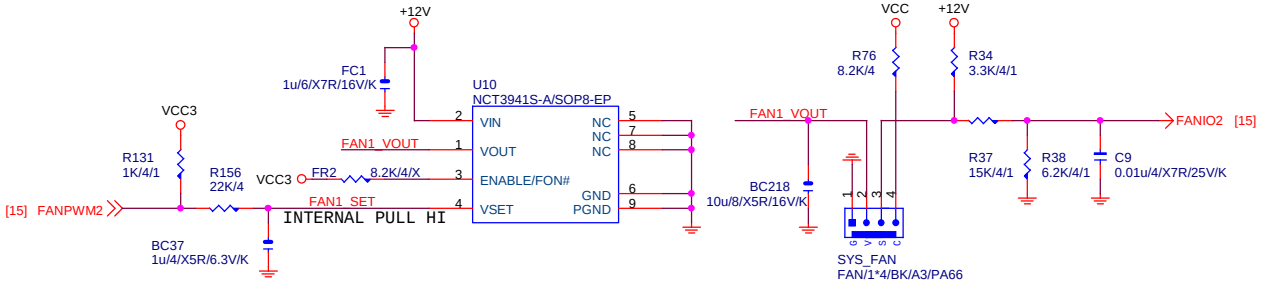


CASE OPEN

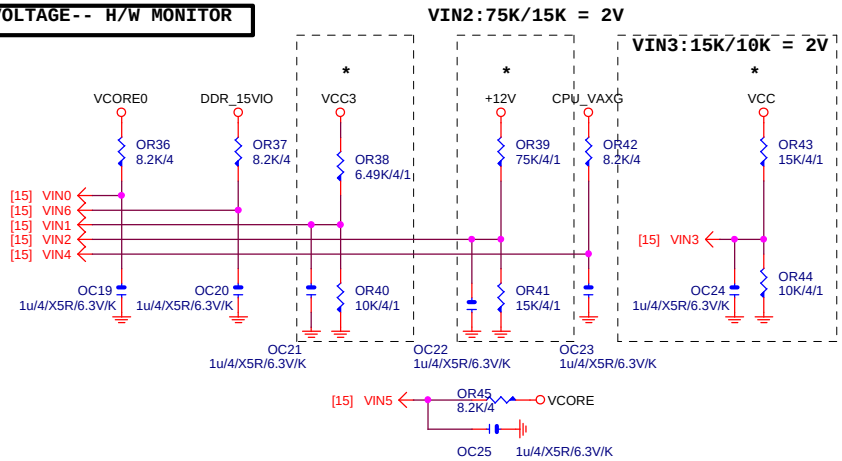


SYS SMART FAN

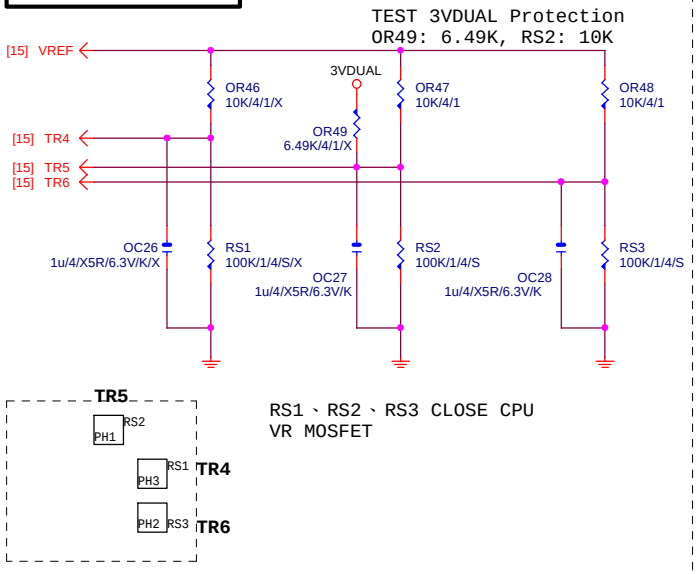
Linear SYS_FAN



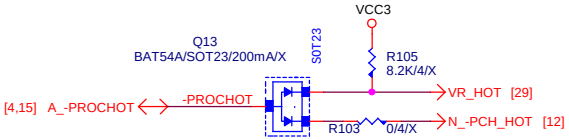
VOLTAGE-- H/W MONITOR



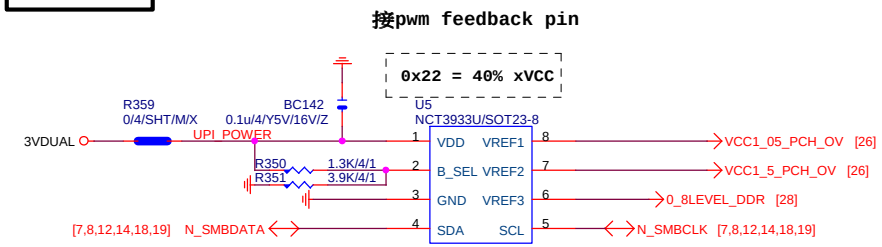
THERMISTOR MONITOR



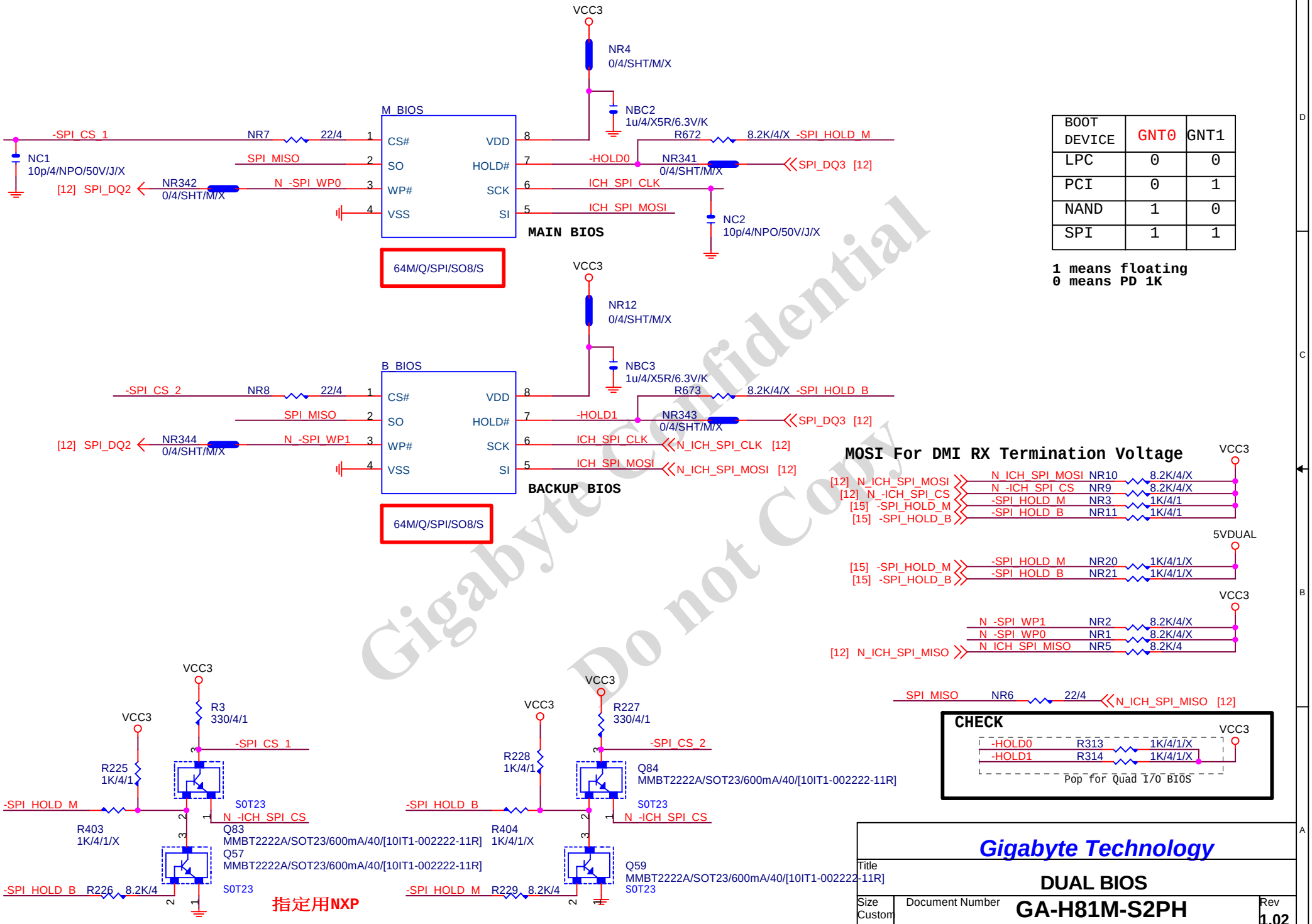
-PROHOT



OV NCT3933



Gigabyte Technology			
Title: HWM,FAN CTRL,OV			
Size: Custom	Document Number: GA-H81M-S2PH		Rev: 1.02
Date: Tuesday, December 24, 2013		Sheet 20 of 31	



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

1 means floating
0 means PD 1K

Gigabyte Technology

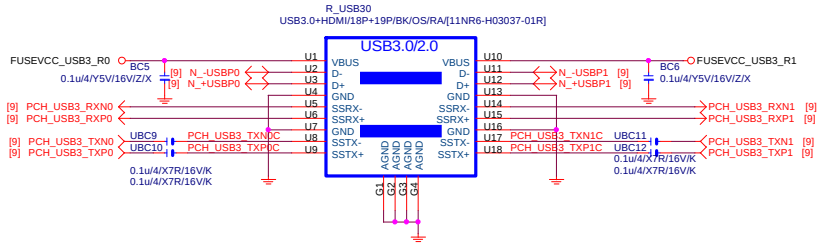
Title: DUAL BIOS

Size: Custom | Document Number: GA-H81M-S2PH | Rev: 1.02

Date: Tuesday, December 24, 2013 | Sheet 21 of 31

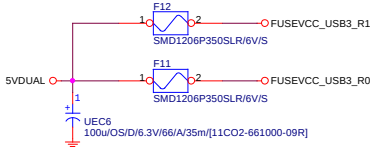
R_USB30

USB30+HDMI 一體式



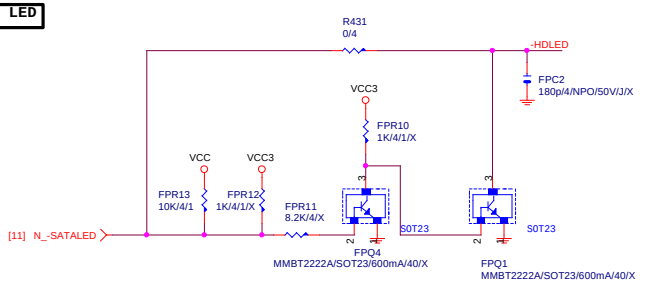
R_USB30 PWR

POLYSWITCH-1206-1

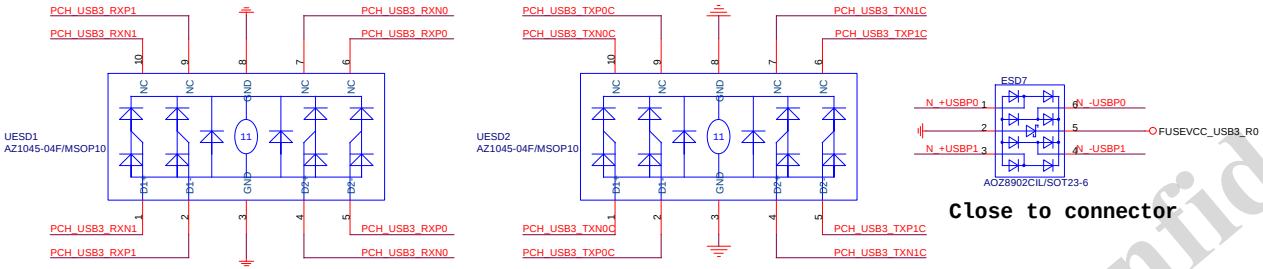


USB3.0 1Port - 1Fuse (3.5A)

SATA LED

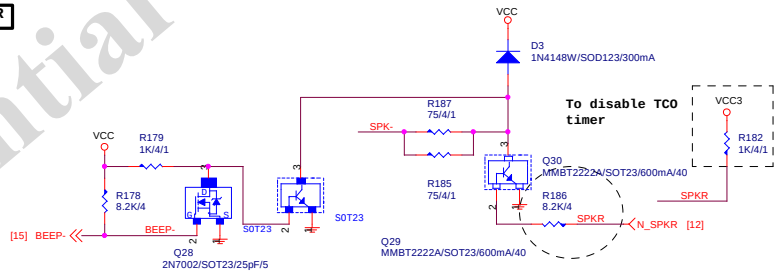


USB30_HDMI ESD PROTECT

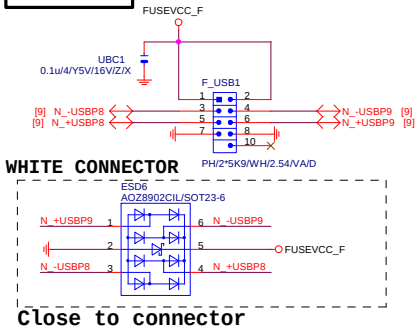


Close to connector

SPKR



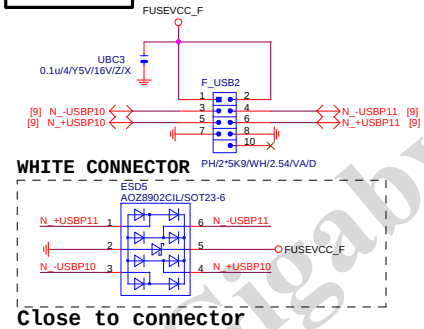
FRONT USB1



WHITE CONNECTOR

Close to connector

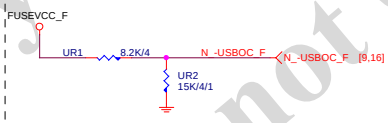
FRONT USB2



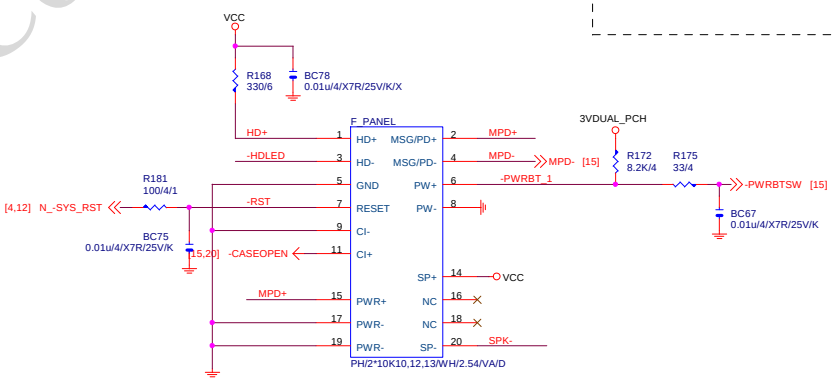
WHITE CONNECTOR

Close to connector

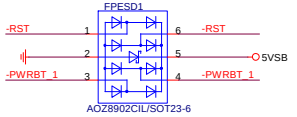
-USBOC_F



INTEL FRONT PANEL

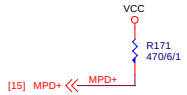


PIN2X10PANEL_NEW

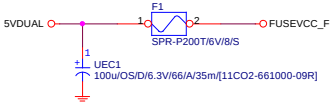


PWR LED

FOR IT8620 Ctrl



FUSEVCC_F



F_USB1, F_USB2 4-Port 2.6A

Gigabyte Technology		
Title: FP,F_USB,USB PWR,SPKR,SATA LED		
Size: Custom	Document Number: GA-H81M-S2PH	Rev: 1.02
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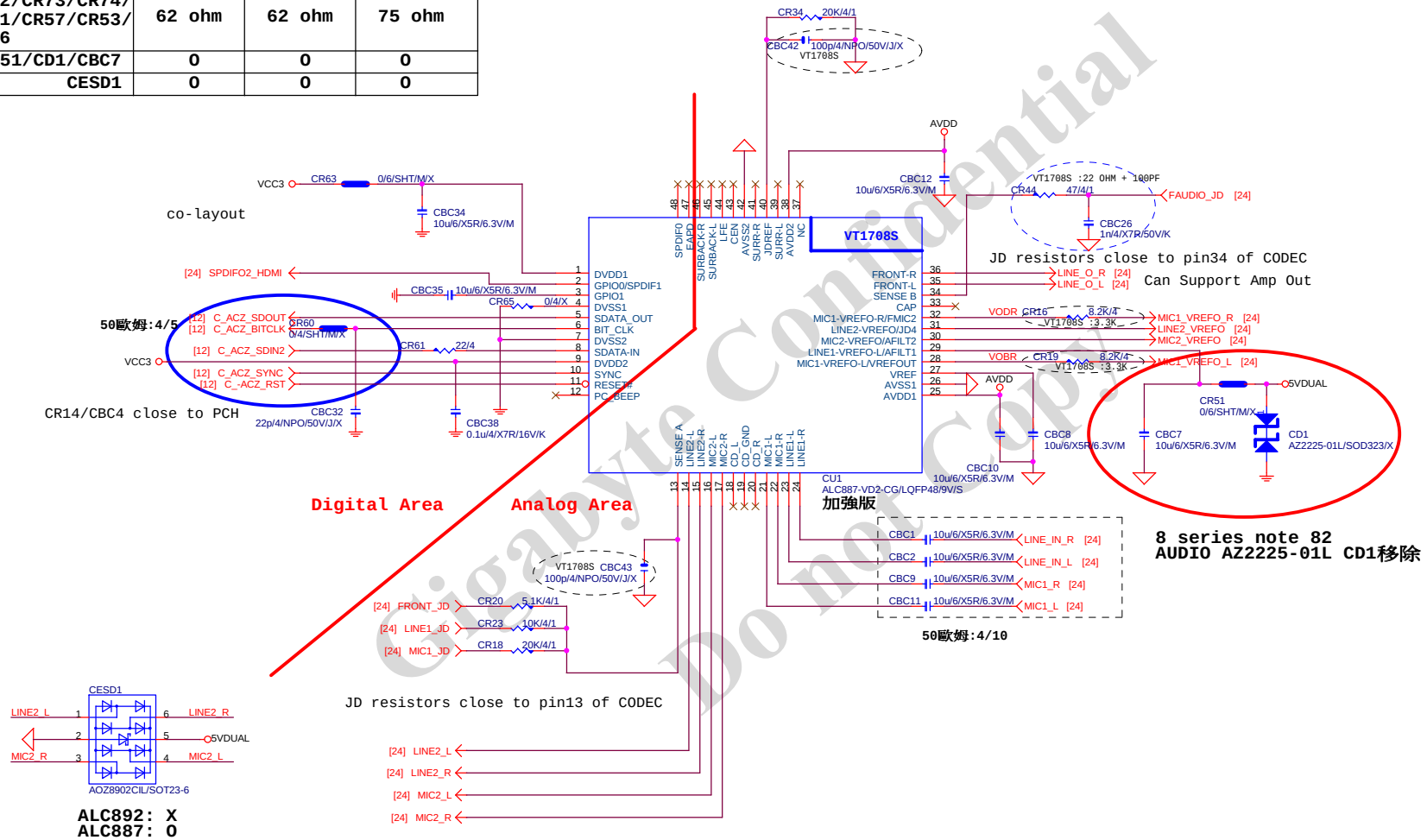
AZALIA CODEC *ALC892/ALC887-VD2/VT1708-CE Colay*

	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	0	0	0
CESD1	0	0	0



Gigabyte Technology			
Title: HD AUDIO ALC887B-VD2/VT1708S/VT2021			
Size: Custom	Document Number: GA-H81M-S2PH		Rev: 1.02
Date: Tuesday, December 24, 2013	Sheet 23 of 31		

CR49 0/6/SHT/M/X
CR50 0/6/X
CR21 2.2/6
CR24 0/4/SHT/M/X

LINE-OUT

CR7 22K/4
CR6 22K/4
CEC1 100u/OS/D/6.3V/66/A/35m/[11CO2-661000-09R]
[23] LINE_O_R CR5 62/4 AJ_B5
CEC2 100u/OS/D/6.3V/66/A/35m/[11CO2-661000-09R]
[23] LINE_O_L CR8 62/4 AJ_B2
CBC19 180p/4/NPO/50V/J
CBC24 180p/4/NPO/50V/J

Only reserved for ALC888

LINE-IN

[23] LINE_IN_R CR1 62/4 AJ_A5
[23] LINE_IN_L CR14 62/4 AJ_A2
CBC20 180p/4/NPO/50V/J
CBC23 180p/4/NPO/50V/J

Verify MIC function in LINE-in

For 889A/888

MIC-IN

[23] MIC1_R CR17 62/4 AJ_C5
[23] MIC1_L CR22 62/4 AJ_C2
[23] MIC1_VREFO_L
[23] MIC1_VREFO_R
CBC3 180p/4/NPO/50V/J
CBC4 180p/4/NPO/50V/J

SPDIF_OUT

[23] SPDIFO2_HDMI CR26 0/4/SHT/M/X
CBC14 100p/4/NPO/50V/J
PIN
SPDIF_O
PH/1*2/BK/2.54/VA/D
For HDMI SPDIF

SPDIF_OUT

AUDIO
[23] LINE1_JD LINE1_JD AJ_A5 AJ_A2 GND
BLUE LINE-IN
[23] FRONT_JD FRONT_JD AJ_B5 AJ_B2 GND
GREEN LINE-OUT
[23] MIC1_JD MIC1_JD AJ_C5 AJ_C2 GND
PINK MIC-IN
MH1 MH2 MH3 MH4 MH5
A3RP/13P/BL,LI,PK/RA/D/1/B

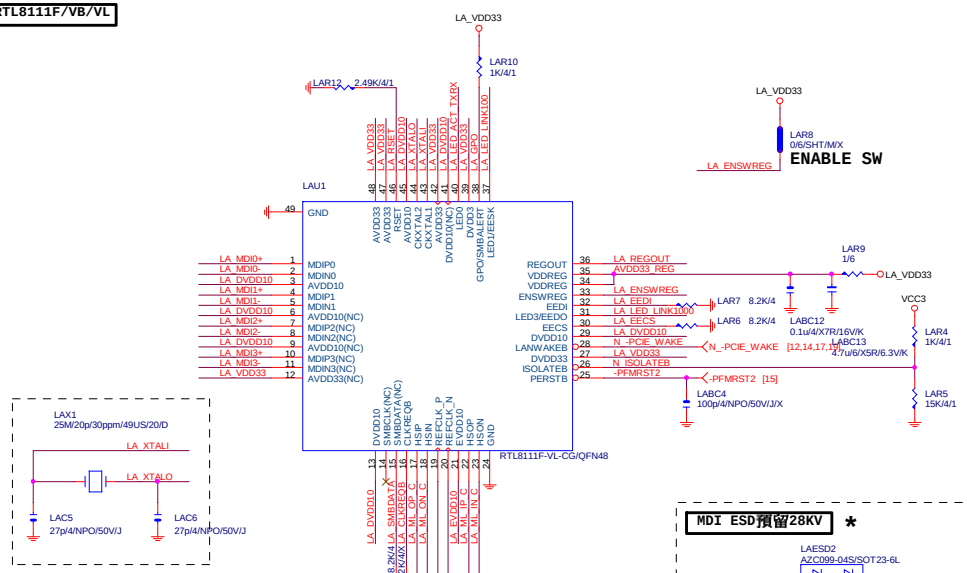
AZALIA FRONT PANEL

CQ4 BAT54A/SOT23/200mA SOT23
[23] LINE2_VREFO
CQ2 BAT54A/SOT23/200mA SOT23
[23] MIC2_VREFO
VT1708S :3.3K
CR52 8.2K/4
CR56 8.2K/4
CR10 8.2K/4
CR9 8.2K/4
[23] MIC2_L CBC6 10u/6/X5R/6.3V/M CR13 62/4 M2_L
[23] MIC2_R CBC5 10u/6/X5R/6.3V/M CR11 62/4 M2_R
L2_R CR57 62/4 L2-R
[23] FAUDIO_JD
L2_L CR53 62/4 L2-L
CR12 0/4/X
CR58 22K/4
CR54 22K/4
F_AUDIO
CR55 20K/4/1
CR59 39.2K/4/1
VCC3
CR78 8.2K/4/X
PH/2*5K8/BK/2.54/VA/D
BLACK CONNECTOR
CBC30 CBC29 CBC37 CBC36
180p/4/NPO/50V/J 180p/4/NPO/50V/J 180p/4/NPO/50V/J 180p/4/NPO/50V/J
[23] LINE2_R CEC9 L2_R
[23] LINE2_L CEC6 L2_L
100u/OS/D/6.3V/66/A/35m/[11CO2-661000-09R]

Gigabyte Technology

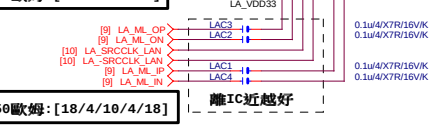
Title	AUDIO JACK	
Size: Custom	Document Number: GA-H81M-S2PH	Rev: 1.02
Date: Tuesday, December 24, 2013	Sheet 24 of 31	

LAN:RTL8111F/VB/VL

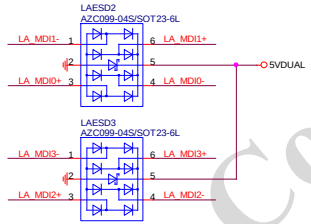


LA_ ML-->80歐姆:[15/5/5/5/15]

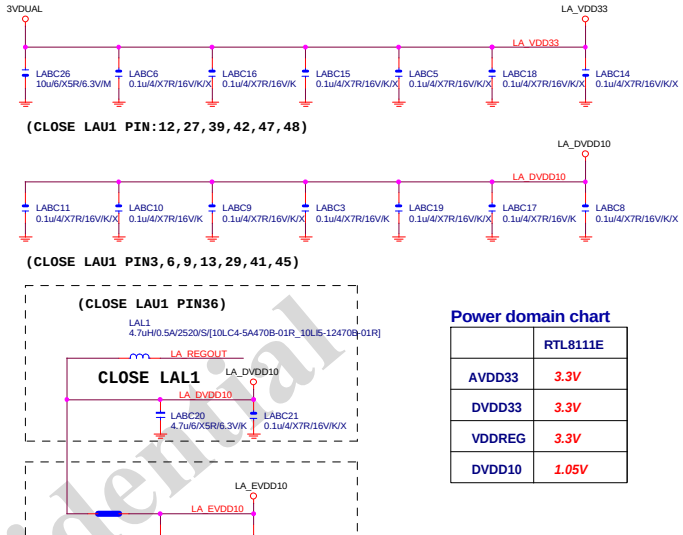
SRCCLK-->50歐姆:[18/4/10/4/18]



MDI ESD預留28KV *



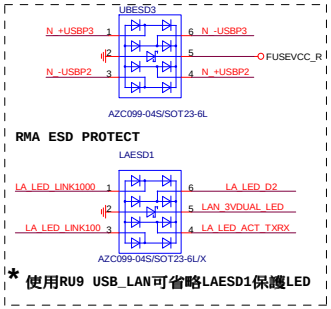
LAN POWER



Power domain chart

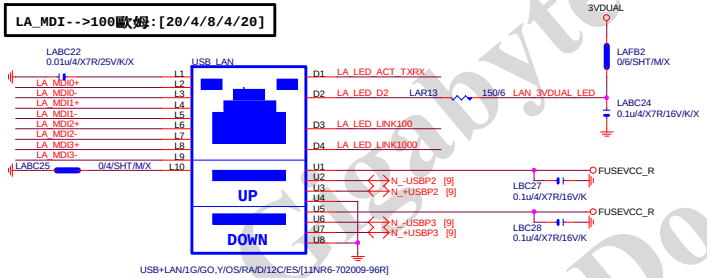
	RTL8111E
AVDD33	3.3V
DVDD33	3.3V
VDDREG	3.3V
DVDD10	1.05V

USB_LAN CONNECTOR



* 使用RU9 USB_LAN可省略LAESD1保護LED

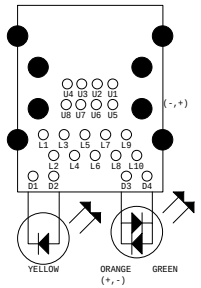
LA_MDI-->100歐姆:[20/4/8/4/20]

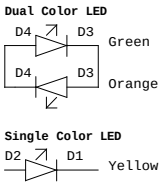


EMI SHORT PAD

PS:視EMI需求

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

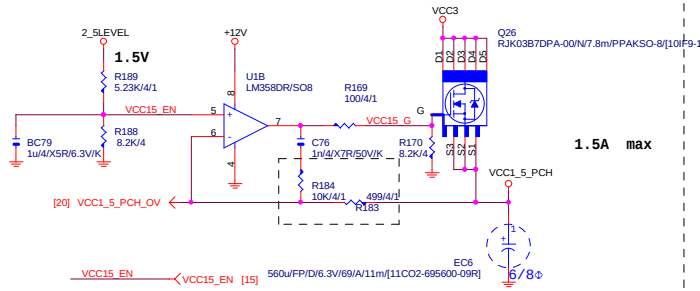
Gigabyte Technology

Title: Realtek RTL8111F

Size: Custom | Document Number: GA-H81M-S2PH | Rev: 1.02

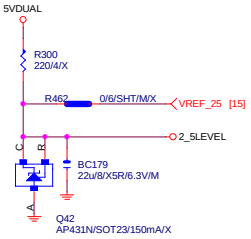
Date: Tuesday, December 24, 2013 | Sheet 25 of 31

VCC1_5_PCH

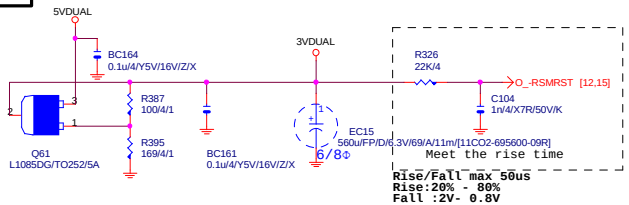


2_5LEVEL

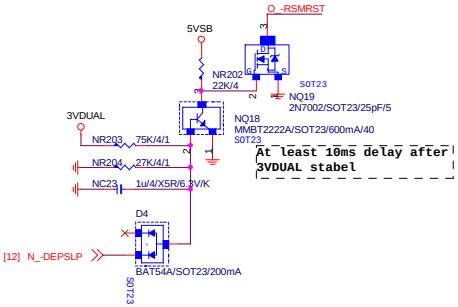
FROM I/O



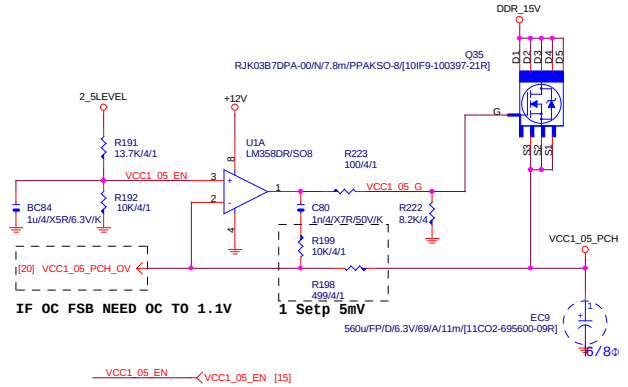
3VDUAL



-RSMRST

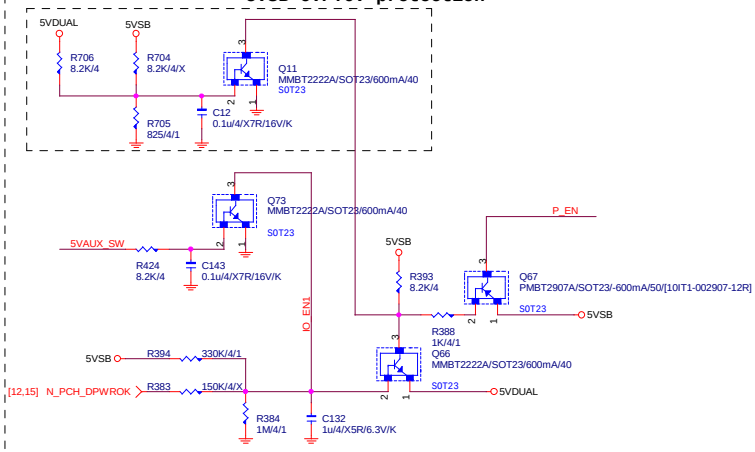


VCC1_05_PCH

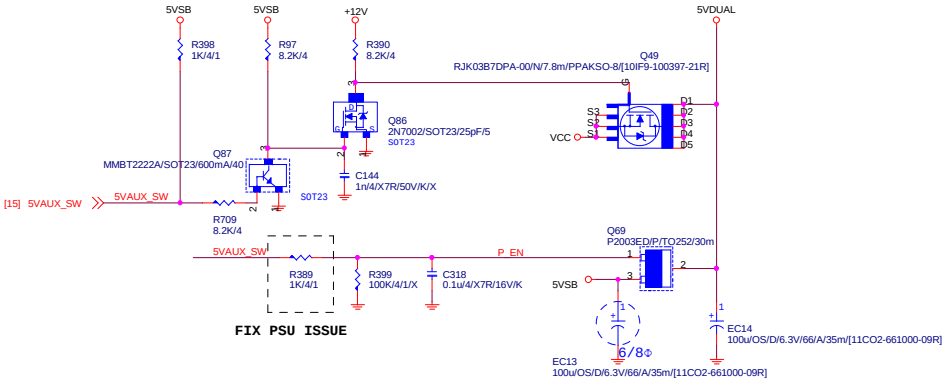


5VDUAL SHORT PROTECT

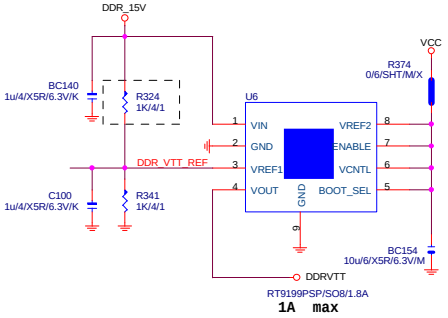
8 series note 82
5VSB OVP:6V protection



5VDUAL



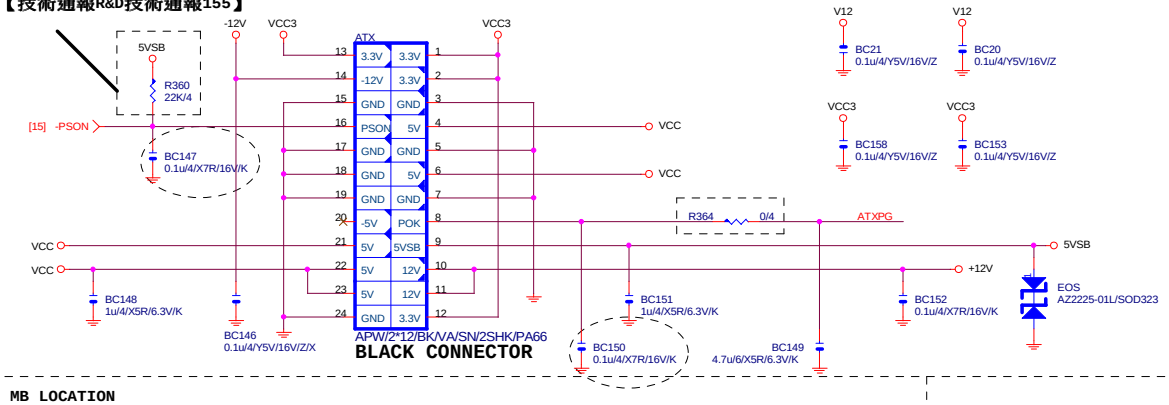
DDRVTT



Gigabyte Technology		
Title: DISCRETE POWER		
Size: Custom	Document Number: GA-H81M-S2PH	Rev: 1.02
Date: Tuesday, December 24, 2013	Sheet 26 of 31	

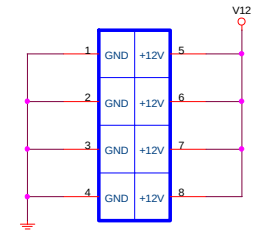
ATXX24 POWER CONNECTOR

【技術通報R&D技術通報155】



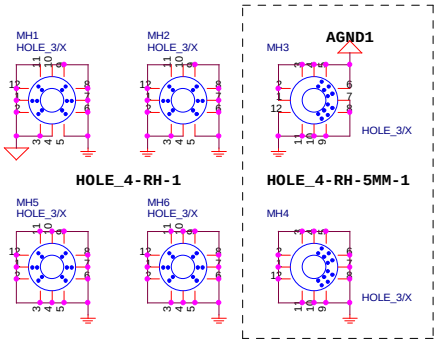
BLACK CONNECTOR

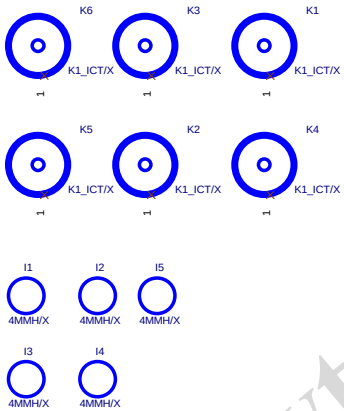
ATXX4 POWER CONNECTOR



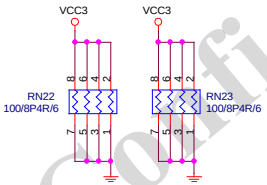
BLACK CONNECTOR

MB LOCATION



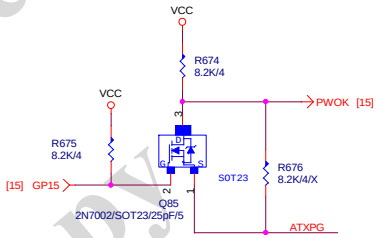


FIX PWR MINMUN LOAD



PWOK PATCH

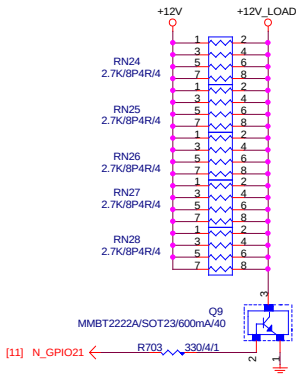
【技術通報R&D技術通報154】



CLK GEN

N/A

【技術通報R&D技術通報153】

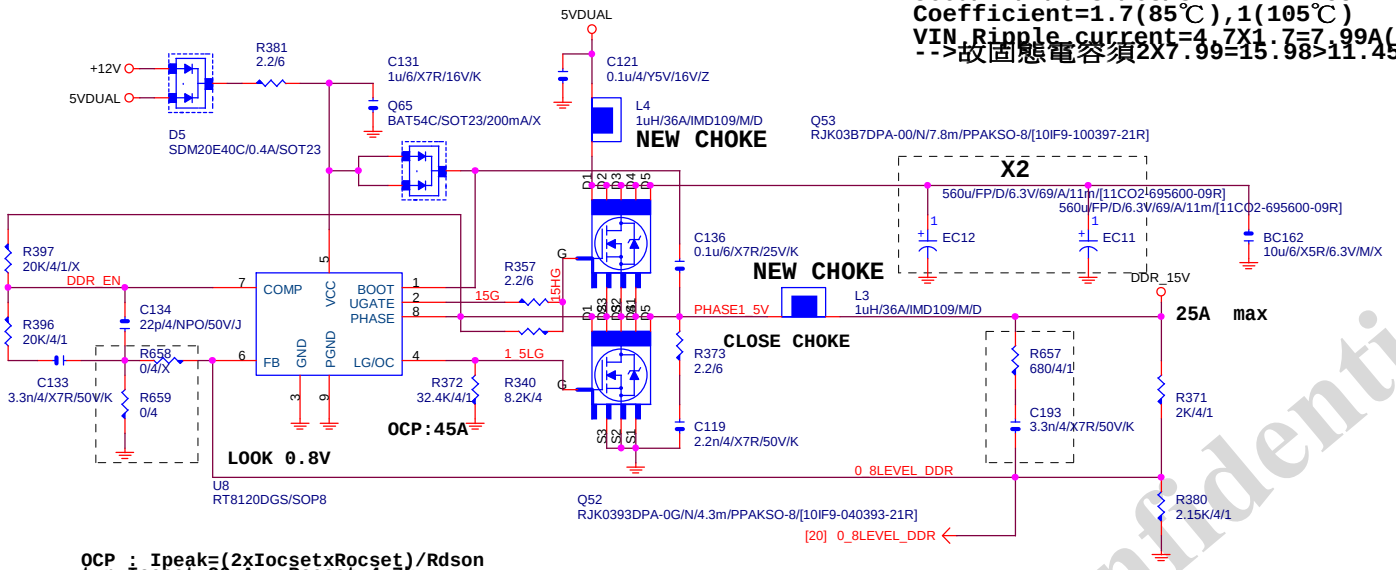


To fix 12V light load abnromal issue

Gigabyte Technology			
Title: ATX CONNECTOR			
Size: Custom	Document Number: GA-H81M-S2PH		Rev: 1.02
Date: Tuesday, December 24, 2013	Sheet 27 of 31		

DDR15V

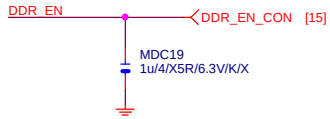
VIN=5V,VOUT=1.5V,IOUT=25A,PHASE=1
IRMS=11.45A
560u/FP/D/6.3V/68/8m RIPPLE CURRENT=4.7A
Coefficient=1.7(85℃),1(105℃)
VIN Ripple current=4.7X1.7=7.99A(85℃)
-->故固態電容須2X7.99=15.98>11.45A



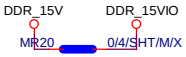
OCP : Ipeak=(2xIocsetxRocset)/Rdson
typ Iocset=20uA , Rocset=4.7k

OCP :53.71A=(2x20uax4.7k)/(7m//7m)

PWR SEQ



From DDR_15V source
10 mils trace to SIO



VCC1_05_ME

Z81 N/A

VCC3_ME

H81 N/A

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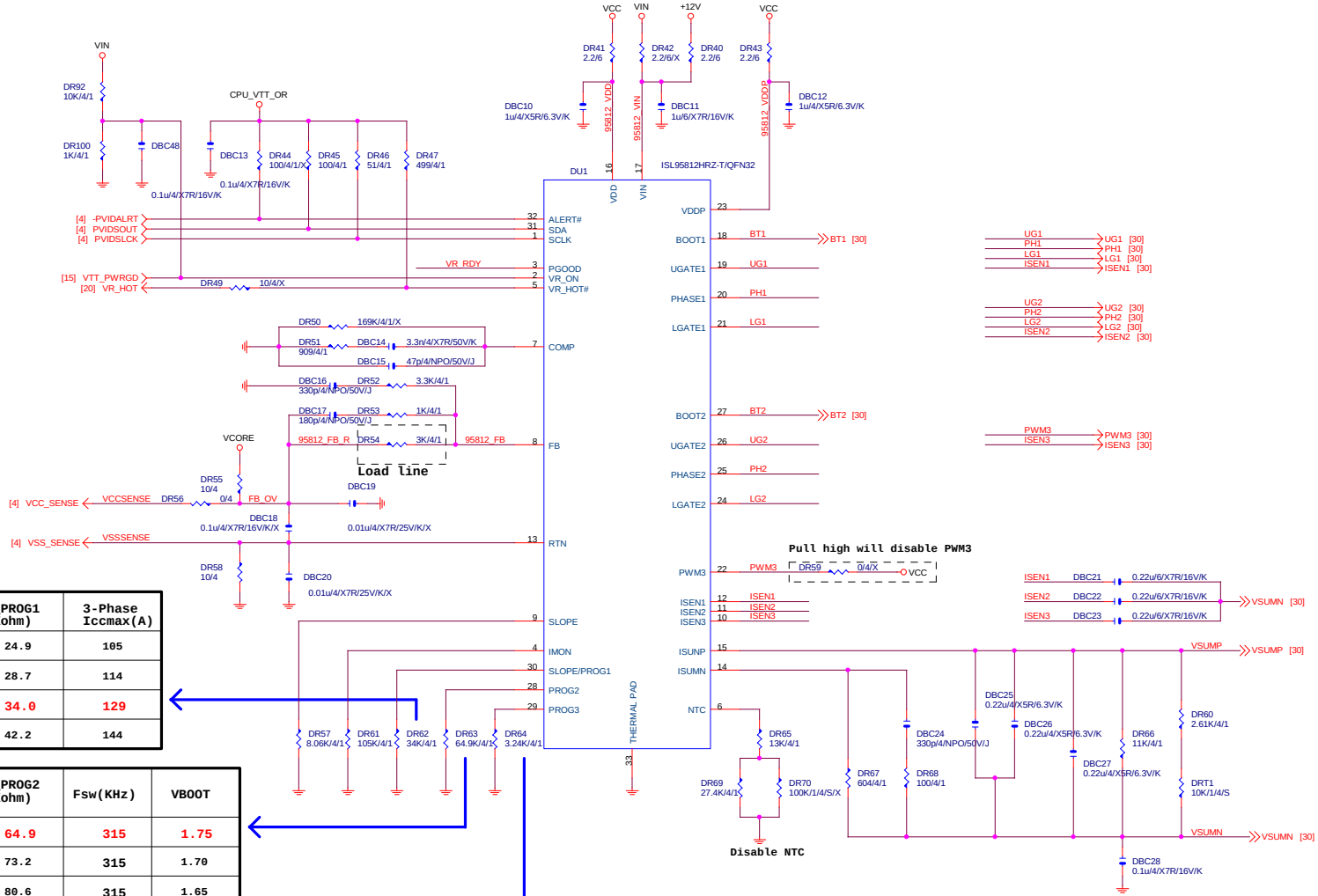

R_PROG1 (Kohm)	3-Phase Iccmax(A)
24.9	105
28.7	114
34.0	129
42.2	144

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

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

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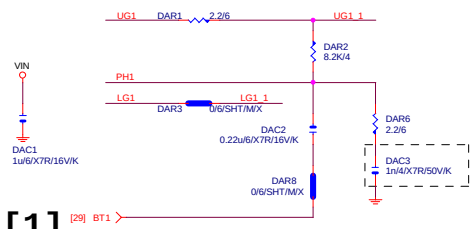
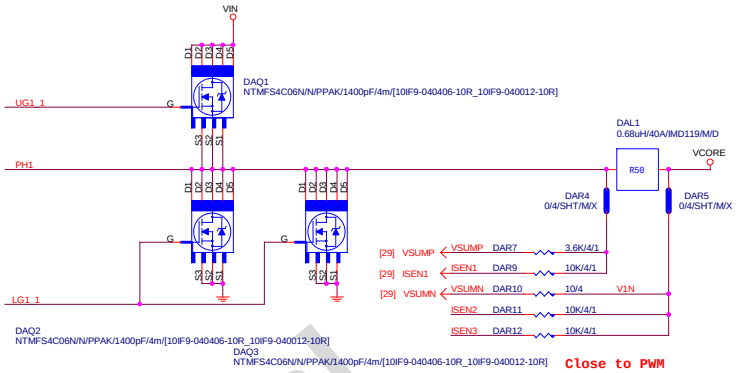
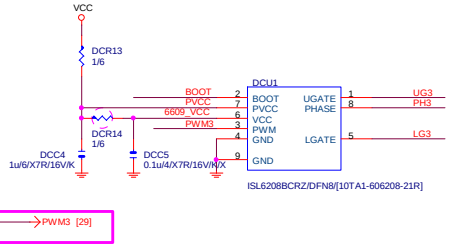
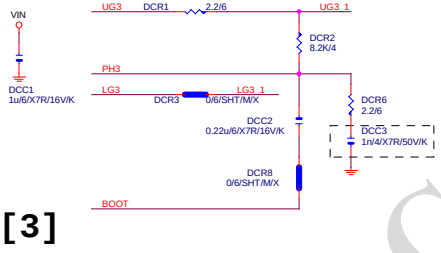
PHASE 1

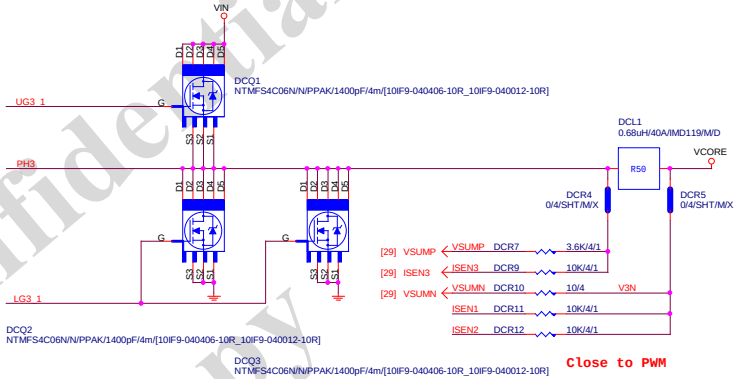




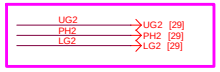
PHASE 3

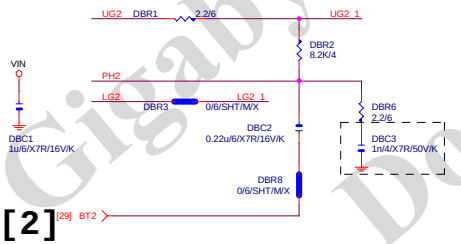


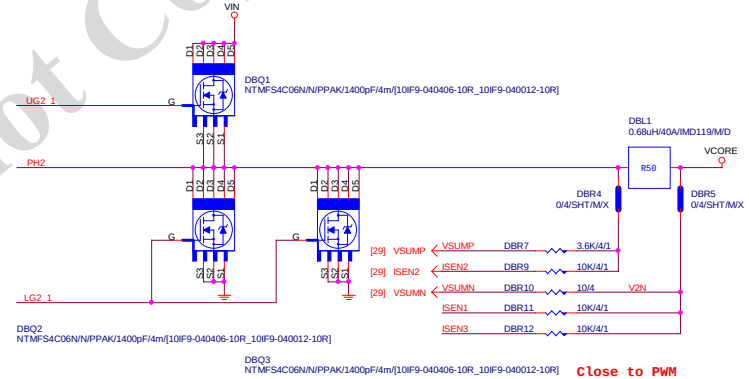


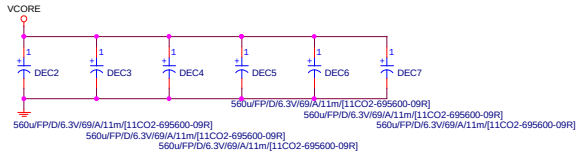


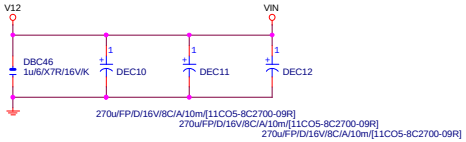
PHASE 2











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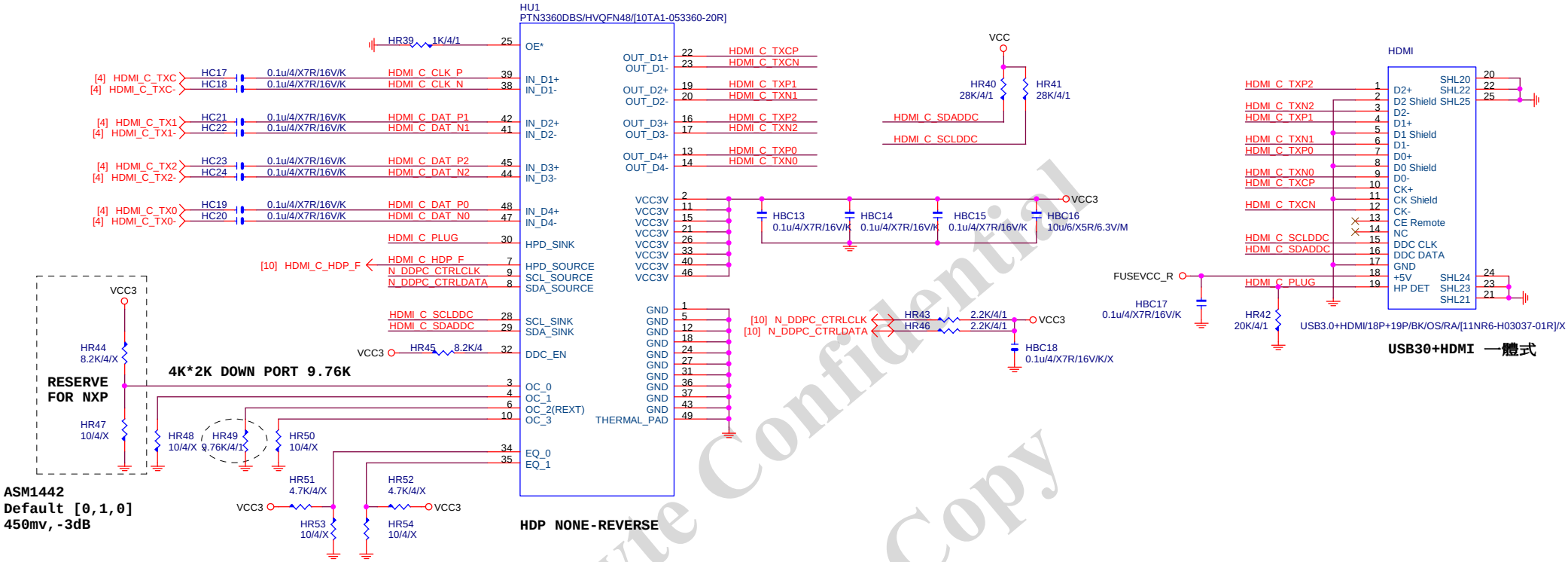
HDMI LEVEL SHIFT



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