Model Name: GA-H97N-WIFI

Revision 1.01

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_USB20
17	HWM,FAN CTRL,OV,-PROCHOT
18	DUAL BIOS
19	FP,FUSB,SPK,SATALED
20	Realtek ALC892-GR
21	REAR AUDIO JACK
22	INTEL LAN I217V(A)
23	ARTHEROS LAN AR8161B(B)
24	DISCRETE POWER
25	ATX
26	RT8120_DDR POWER,M3 POWER
27	VCORE ISL95820_1

SHEET	TITLE
28	VCORE ISL95820_2
29	DVI-I
30	HDMI*2
31	mSATA, Mini-PCIe

Gigabyte Technology

Title: Cover Sheet

Size: Custom | Document Number: GA-H97N-WIFI | Rev: 1.01

Date: Wednesday, June 25, 2014 | Sheet 1 of 31

Model Name: GA-H97N-WIFI

Revision 1.01

Component value change history

2014/06/25

Data	Change Item	Reason
2013/12/24	R0.1 MODIFY FROM H97N-WIFI R0.1.	
2014/01/06	FOLLOW 2PORT/1FUSE.REMOVE DVI-I LEVEL SHIFTER.	
	HDD LED/FUSB3.0 ESD PROTECTOR,USB防燒,IT8620斜插ISSUE	
2014/02/06	移除F_USB保護線路及AP431	
	COSTDOWN:5VDUAL-->FUSEVCC_R,DEL UD7 BAT54A	
	ESD:F_AUDIO不要加.	
2014/02/10	ADD OC29 CLOSE SIO PIN4 VREF_25.	
2014/02/17	Footprint mask:USB2.0 PROTECT,2_5LEVEL,ESD PROTECT,IT_AVCC OQ1,DAQ4,DBQ4,BCQ4,DDQ4.	
	C136 0.1u 0603-->0402. Q47,Q48:2N7002 GATE~VCC3	
2014/02/24	Footprint mask:NRN1/NRN5	
2014/03/21	PBOM. ADD WIFI CARD SCREW*2.	PBOM:9MH97NWIF-00-10A.
2014/04/14	MODIFY MP H97 CHIPSET.	PBOM:9MH97NWIF-00-10B.
2014/06/25	R1.01.REMOVE SATA CAP,FOOTPRINT MODIFY MASK SHORT PAD.	PBOM:9MH97NWIF-00-10C.

Circuit or PCB layout change

DATE	Change Item	Reason

Gigabyte Technology

Title: BOM & PCB MODIFY HISTORY

Size: Custom | Document Number: GA-H97N-WIFI | Rev: 1.01

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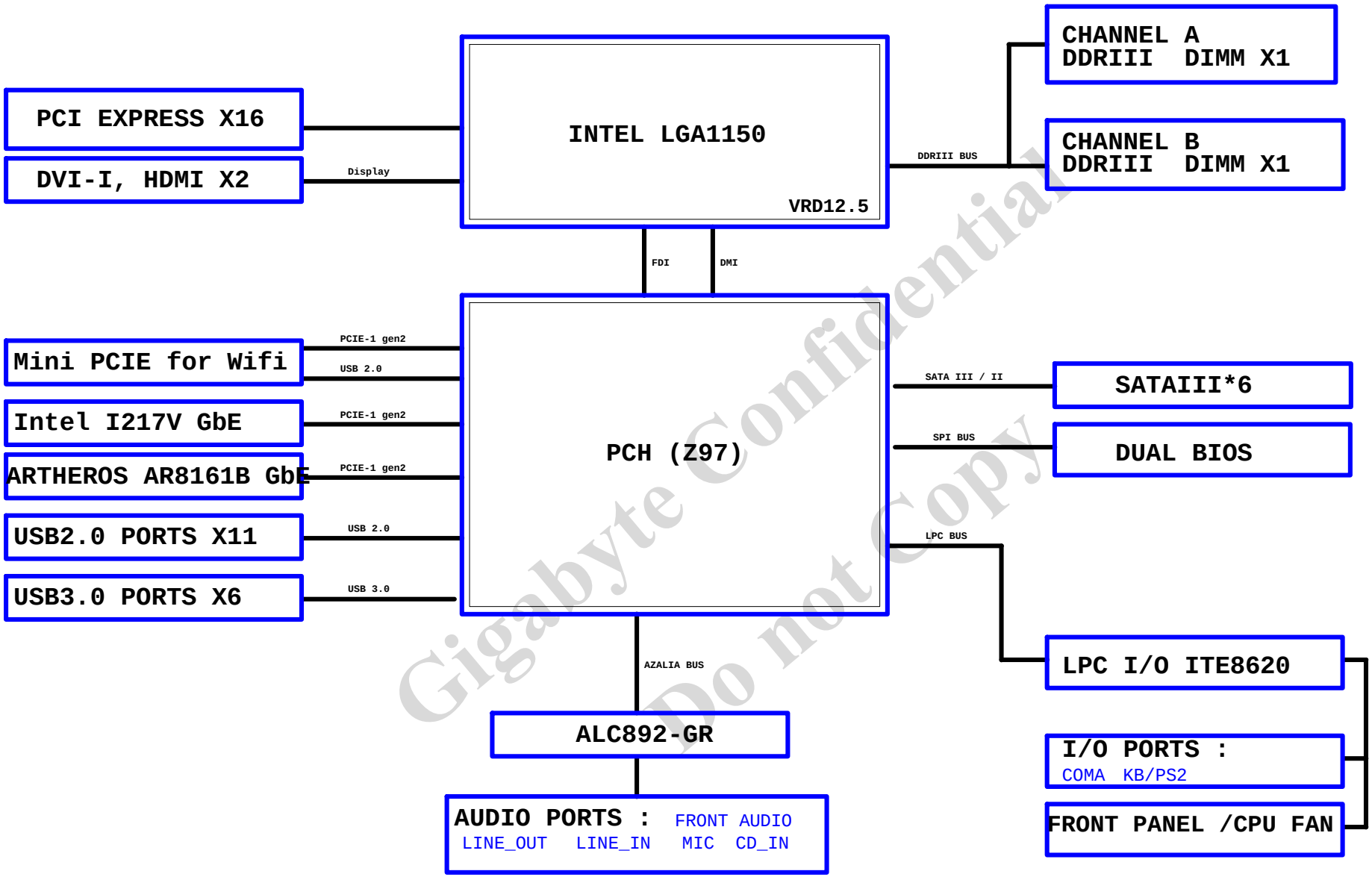
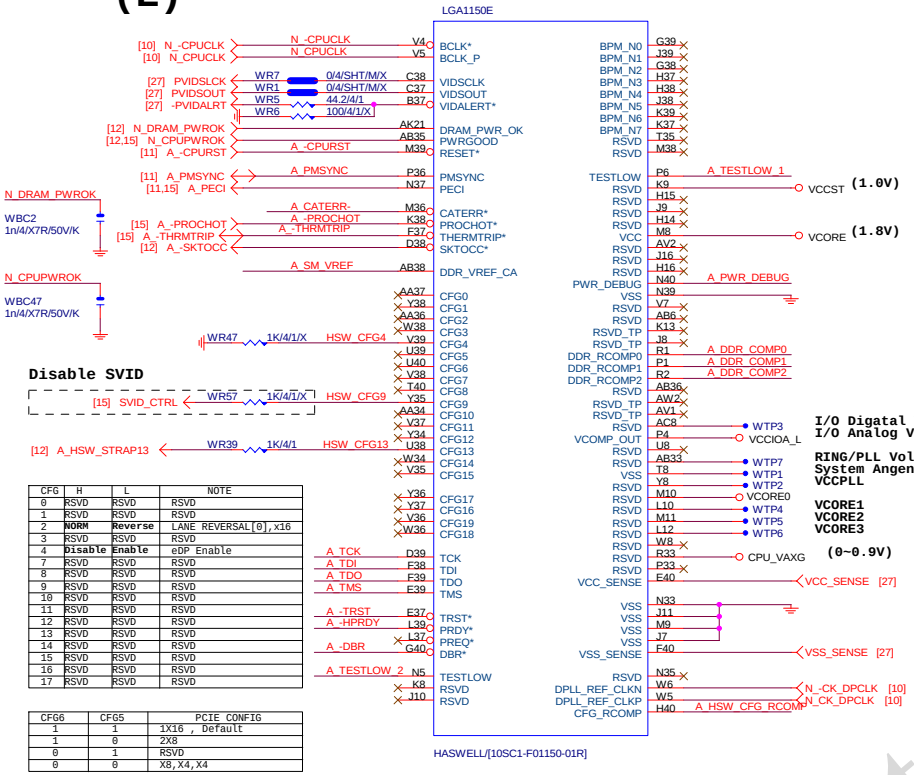
BLOCK DIAGRAM



Gigabyte Technology		
Title: BLOCK DIAGRAM		
Size: C	Document Number: GA-Z97N-WIFI	Rev: 1.01
Date: Wednesday, June 25, 2014	Sheet 3 of 31	

LGA1150

(E)



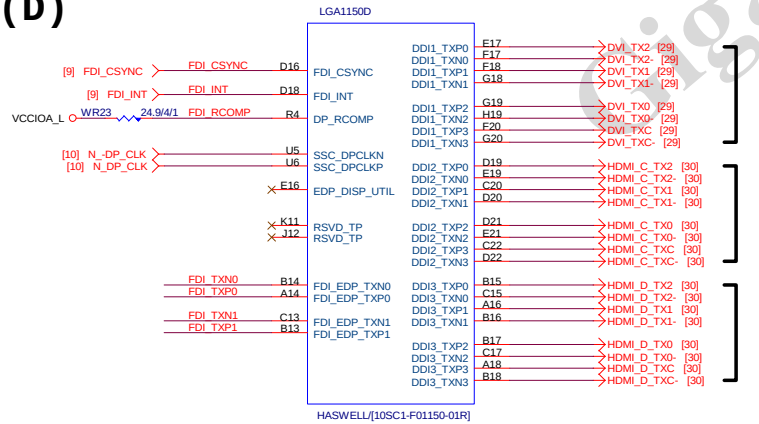
CFG	H	L	NOTE
0	RSVD	RSVD	RSVD
1	RSVD	RSVD	RSVD
2	**NORM**	**Reverse**	LANE REVERSAL[0],x16
3	RSVD	RSVD	RSVD
4	**Disable**	**Enable**	eDP Enable
7	RSVD	RSVD	RSVD
8	RSVD	RSVD	RSVD
9	RSVD	RSVD	RSVD
10	RSVD	RSVD	RSVD
11	RSVD	RSVD	RSVD
12	RSVD	RSVD	RSVD
13	RSVD	RSVD	RSVD
14	RSVD	RSVD	RSVD
15	RSVD	RSVD	RSVD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

LGA1150

(D)

DVI-I + HDMI組態就是: DVI-I port B, HDMI port C
DVI-D + HDMI組態就是: DVI-D port C, HDMI port B

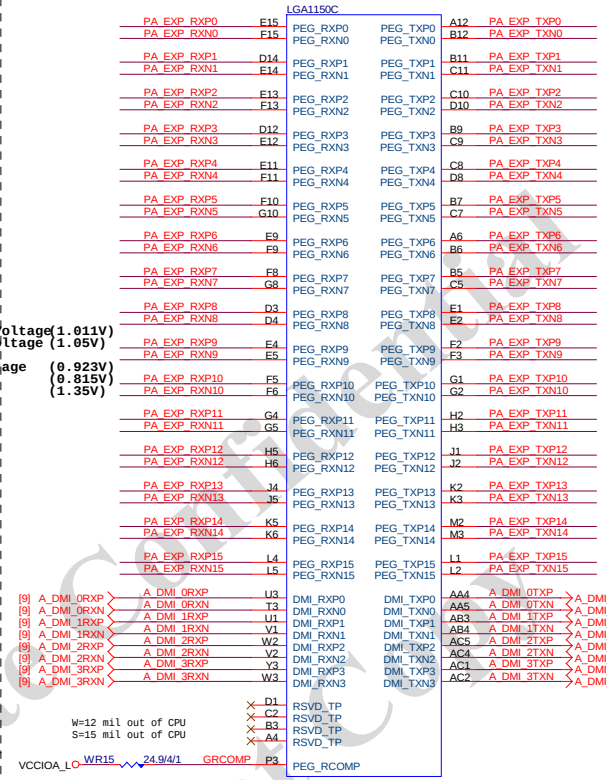


FDI:12/4/5/4/12(breakout min 6/4/4/4/6)
Impedance=85 +- 17.5%

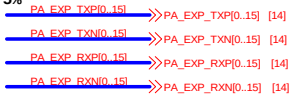
LGA1155

(C)

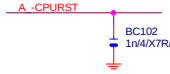
PCIEX16:16/5/5/5/16(breakout min 10/4/4/4/10)
Impedance=80 +- 17.5%



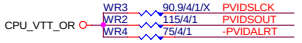
DMI:12/4/4/4/12(breakout min 8/4/4/4/8)
Impedance=85 +- 17.5%



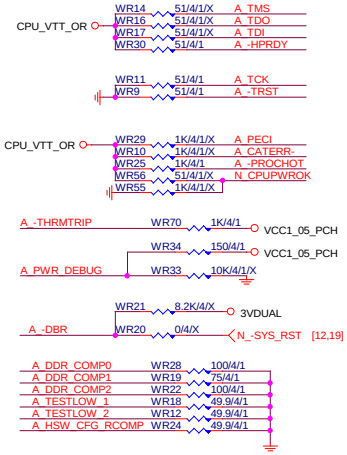
-CPURST



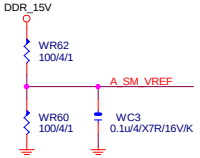
CPU SVID



CPU PU/PD



SM REF



THRMTRIP DISABLE

Gigabyte Technology			
Title: CPU LGA1150-A			
Size: Custom	Document Number: GA-Z97N-WIFI		Rev: 1.01
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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
	AW33	DDR0_ECC0	DDR0_DQ22	AP37	MDA22
	AV33	DDR0_ECC1	DDR0_DQ23	AP40	MDA23
	AU31	DDR0_ECC2	DDR0_DQ24	AV37	MDA25
	AV31	DDR0_ECC3	DDR0_DQ25	AW37	MDA29
	AT33	DDR0_ECC4	DDR0_DQ26	AU35	MDA26
	AU33	DDR0_ECC5	DDR0_DQ27	AV35	MDA27
	AT31	DDR0_ECC6	DDR0_DQ28	AT37	MDA28
	AW31	DDR0_ECC7	DDR0_DQ29	AU37	MDA24
			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 AW15	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
[7] -SWEA	-SWEA AU11	DDR0_WE*	DDR0_DQ63	AE1	MDA63
			DDR0_DQS_P0	AE39	DQSA0
	AV20	RSVD	DDR0_DQS_P1	AJ39	DQSA1
			DDR0_DQS_P2	AN39	DQSA2
	AW27	RSVD	DDR0_DQS_P3	AV36	DQSA3
			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	AK22	DDR_RESET*	DDR0_DQS_P8	AV32	
	WR61 0/4/SHT/M/X		DDR0_DQS_N0	AE38	-DQSA0
			DDR0_DQS_N1	AJ38	-DQSA1
	WC4 0.1u/4/X7R/16V/K/X		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	AE2	-DQSA7
			DDR0_DQS_N8	AU32	

HASWELL/[10SC1-F01150-01R]

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
[8] SBAB0	SBAB0 AK17	DDR1_BA0	DDR1_DQ31	AP28	MDB31
[8] SBAB1	SBAB1 AL18	DDR1_BA1	DDR1_DQ32	AR12	MDB32
[8] SBAB2	SBAB2 AW28	DDR1_BA2	DDR1_DQ33	AP12	MDB33
			DDR1_DQ34	AL13	MDB34
[8] CKEB0	CKEB0 AW29	DDR1_CKE0	DDR1_DQ35	AL12	MDB35
[8] CKEB1	CKEB1 AY29	DDR1_CKE1	DDR1_DQ36	AR13	MDB36
	AU28	DDR1_CKE2	DDR1_DQ37	AP13	MDB37
	AU29	DDR1_CKE3	DDR1_DQ38	AM13	MDB38
			DDR1_DQ39	AM12	MDB39
[8] -CSB0	-CSB0 AP17	DDR1_CS_N0	DDR1_DQ40	AR9	MDB45
[8] -CSB1	-CSB1 AN15	DDR1_CS_N1	DDR1_DQ41	AP9	MDB41
	AN17	DDR1_CS_N2	DDR1_DQ42	AR6	MDB47
	AL15	DDR1_CS_N3	DDR1_DQ43	AP6	MDB43
			DDR1_DQ44	AR10	MDB44
[8] DCLKB0	DCLKB0 AM20	DDR1_CLK_P0	DDR1_DQ45	AP10	MDB40
[8] -DCLKB0	-DCLKB0 AM21	DDR1_CLK_N0	DDR1_DQ46	AR7	MDB46
[8] DCLKB1	DCLKB1 AP22	DDR1_CLK_P1	DDR1_DQ47	AP7	MDB42
[8] -DCLKB1	-DCLKB1 AP21	DDR1_CLK_N1	DDR1_DQ48	AM9	MDB52
	AN20	DDR1_CLK_P2	DDR1_DQ49	AL9	MDB53
	AN21	DDR1_CLK_N2	DDR1_DQ50	AL6	MDB50
	AP19	DDR1_CLK_P3	DDR1_DQ51	AL7	MDB55
	AP20	DDR1_CLK_N3	DDR1_DQ52	AM10	MDB48
			DDR1_DQ53	AL10	MDB49
[8] -SCASB	-SCASB AP16	DDR1_CAS*	DDR1_DQ54	AM6	MDB54
	AL20	RSVD	DDR1_DQ55	AM7	MDB51
[8] -SRASB	-SRASB AM18	DDR1_RAS*	DDR1_DQ56	AH6	MDB61
[8] -SWEB	-SWEB AK16	DDR1_WE*	DDR1_DQ57	AH7	MDB60
			DDR1_DQ58	AE6	MDB59
[7] VREF_DQA	VREF_DQA AB39	DDR_VREF_DQ0	DDR1_DQ59	AE7	MDB63
[8] VREF_DQB	VREF_DQB AB40	DDR_VREF_DQ1	DDR1_DQ60	AJ6	MDB56
			DDR1_DQ61	AJ7	MDB57
			DDR1_DQ62	AF6	MDB58
			DDR1_DQ63	AF7	MDB62
			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-F01150-01R]

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

COVER+BLACK NI

ILM_BP/1156/BKNI/[12KRC-0F0001-61R]

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]

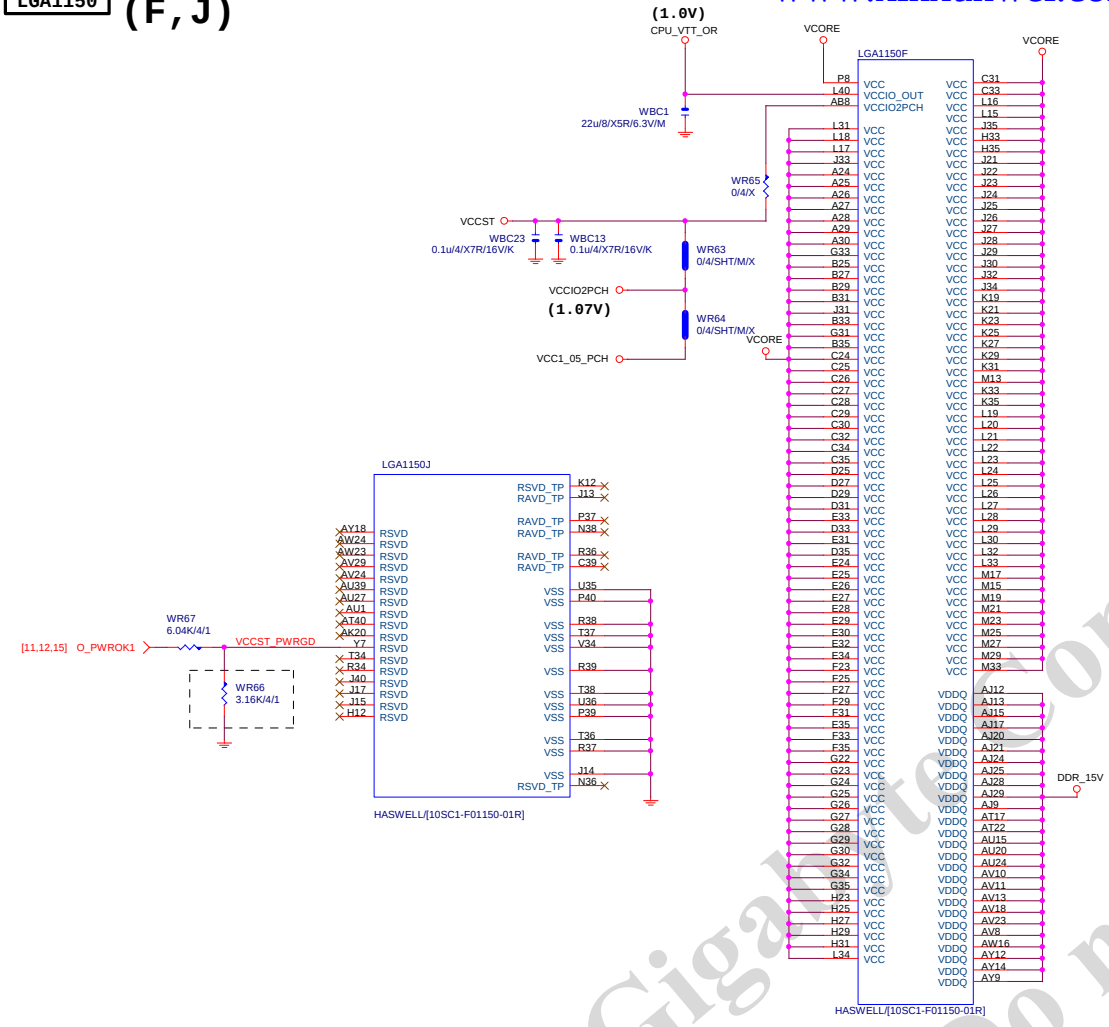
[7] DQSA[0..7] DQSA[0..7]
[7] -DQSA[0..7] -DQSA[0..7]

[7] MAAA[0..15] MAAA[0..15]
[8] MAAB[0..15] MAAB[0..15]

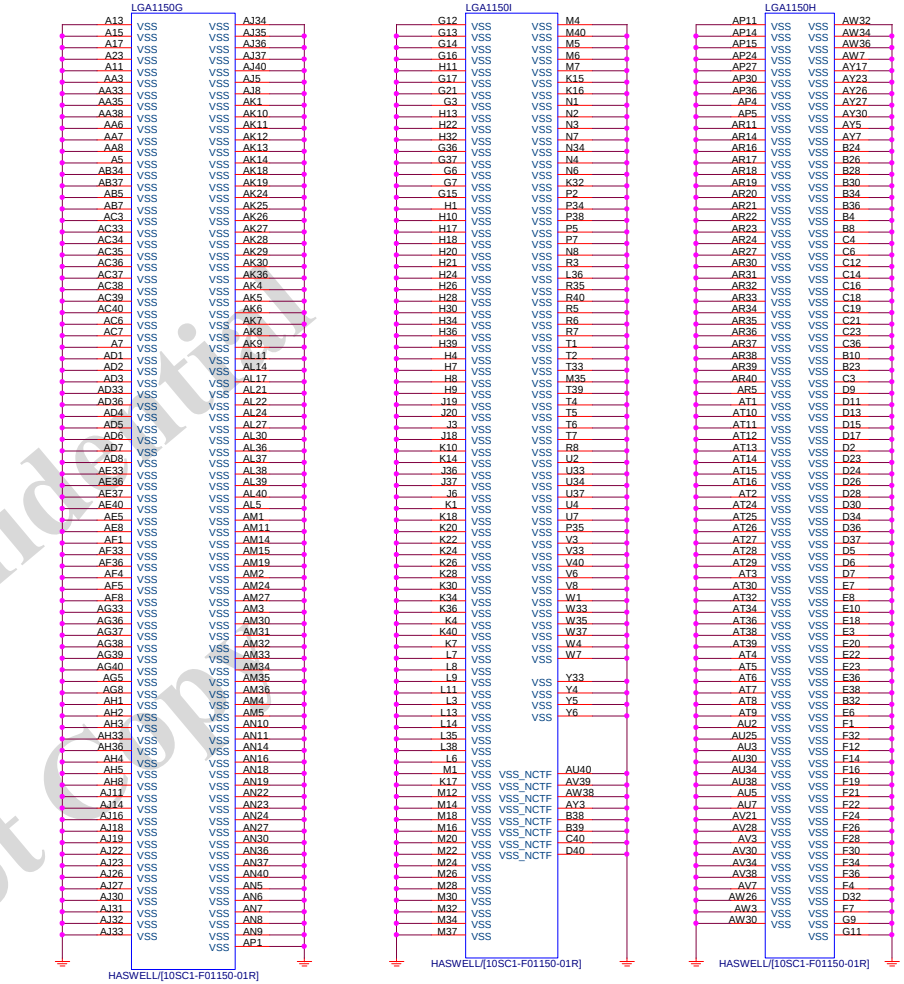
[8] DQSB[0..7] DQSB[0..7]
[8] -DQSB[0..7] -DQSB[0..7]

Gigabyte Technology			
Title: CPU LGA1156-B			
Size: Custom	Document Number: GA-Z97N-WIFI		Rev: 1.01
Date: Wednesday, June 25, 2014	Sheet 5 of 31		

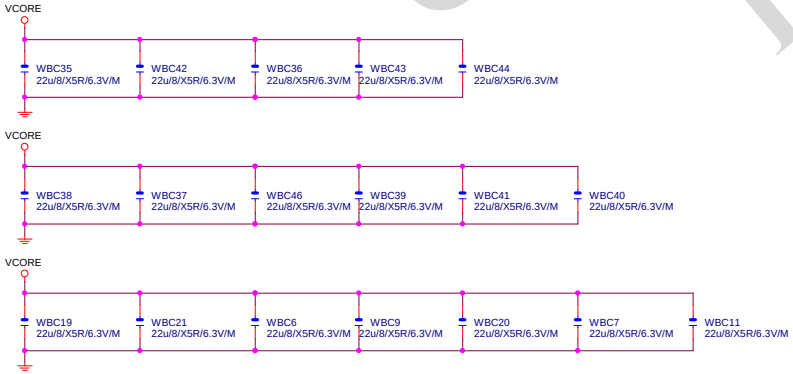
LGA1150 (F,J)



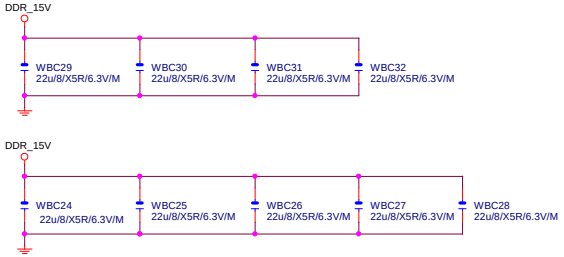
LGA1155 (G,H,I)



VCore CAP (X18)



DDR CAP (X9)



Gigabyte Technology		
Title	CPU LGA1150-C	
Size: Custom	Document Number: GA-Z97N-WIFI	Rev: 1.01
Date: Wednesday, June 25, 2014	Sheet 6 of 31	

DDR3 (A)

DDR3_1

DDRVTT
VTT
VSS
FREE
RSVD
ODT1
ODT0
MODT_A1
MODT_A0
NC/PAR_IN
NC/ERR_OUT
NC/TEST4
CB0
CB1
CB2
CB3
CB4
CB5
CB6
CB7
DQS0
DQS0*
DQSA0
-DQSA0
DQS1
DQS1*
DQSA1
-DQSA1
DQS2
DQS2*
DQSA2
-DQSA2
DQS3
DQS3*
DQSA3
-DQSA3
DQS4
DQS4*
DQSA4
-DQSA4
DQS5
DQS5*
DQSA5
-DQSA5
DQS6
DQS6*
DQSA6
-DQSA6
DQS7
DQS7*
DQSA7
-DQSA7
DQS8
DQS8*
DM0/DQS9
NC/DQS9*
DM1/DQS10
NC/DQS10*
DM2/DQS11
NC/DQS11*
DM3/DQS12
NC/DQS12*
DM4/DQS13
NC/DQS13*
DM5/DQS14
NC/DQS14*
DM6/DQS15
NC/DQS15*
DM7/DQS16
NC/DQS16*
DM8/DQS17
NC/DQS17*
DQ0
DQ1
DQ2
DQ3
DQ4
DQ5
DQ6
DQ7
DQ8
DQ9
DQ10
DQ11
DQ12
DQ13
DQ14
DQ15
DQ16
DQ17
DQ18
DQ19
DQ20
DQ21
DQ22
DQ23
DQ24
DQ25
DQ26
DQ27
DQ28
DQ29
DQ30
DQ31
DQ32
DQ33
DQ34
DQ35
DQ36
DQ37
DQ38
DQ39
DQ40
DQ41
DQ42
DQ43
DQ44
DQ45
DQ46
DQ47
DQ48
DQ49
DQ50
DQ51
DQ52
DQ53
DQ54
DQ55
DQ56
DQ57
DQ58
DQ59
DQ60
DQ61
DQ62
DQ63
MDA5
MDA1
MDA6
MDA3
MDA4
MDA0
MDA7
MDA2
MDA9
MDA8
MDA11
MDA10
MDA12
MDA13
MDA15
MDA14
MDA17
MDA16
MDA22
MDA19
MDA20
MDA21
MDA23
MDA18
MDA25
MDA24
MDA27
MDA30
MDA28
MDA29
MDA31
MDA26
MDA36
MDA33
MDA34
MDA35
MDA32
MDA37
MDA38
MDA39
MDA44
MDA41
MDA47
MDA43
MDA40
MDA45
MDA42
MDA46
MDA53
MDA49
MDA54
MDA55
MDA48
MDA52
MDA50
MDA51
MDA61
MDA57
MDA63
MDA59
MDA56
MDA60
MDA58
MDA62
MDA[0..63] [5]

VCC3
VDDSPD
MF1
SPR-P200T/6V/8/S

DDR_15V
VDD
VDDSPD
VREFCA
VREFDQ

N_SMBDATA
N_SMBCLK
MC10
100p/4/NPO/50V/J/X
MC11
100p/4/NPO/50V/J/X
MC4
0.1u/4/X7R/16V/K
MC5
VREF_DDRA
MC1
VREF_DQDDRA
0.1u/4/X7R/16V/K

[8,12,14,17,19,27,31] N_SMBCLK
[8,12,14,17,19,27,31] N_SMBDATA
SCL
SDA
SA1
SA0

[5] SBAA2
[5] SBAA1
[5] SBAA0
BA2
BA1
BA0

[5] CKEA1
[5] CKEA0
CKE1
CKE0

[5] -CSA1
[5] -CSA0
S1*
S0*

[5] -DCLKA1
[5] DCLKA1
CK1/NU*
CK1/NU

[5] -DCLKA0
[5] DCLKA0
CK0*
CK0

不可
Swap

[5] MAAA[0..15]
MAAA0
MAAA1
MAAA2
MAAA3
MAAA4
MAAA5
MAAA6
MAAA7
MAAA8
MAAA9
MAAA10
MAAA11
MAAA12
MAAA13
MAAA14
MAAA15
A0
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10/AP
A11
A12
A13
A14
A15

[5,8] -DDR3_RST
[5] -SCASA
[5] -SRASA
[5] -SWEA
RESET*
CAS*
RAS*
WE*

-DDR3_RST
MC6
100p/4/NPO/50V/J

DDR3/240/BK/VA/DIONE LATCH

BLACK CONNECTOR 單耳扣

MODT_A[0..1]
MODT_A[0..1] [5]
-DQSA[0..7]
DQSA[0..7] [5]
DQSA[0..7]
DQSA[0..7] [5]

DDR3

DDR3 VREF

DDR_15V
MR15
1K/4/1
MR14
1K/4/1
VREF_DDRA
MR4
1K/4/1
MR5
1K/4/1
VREF_DQDDRA
MR1
10/4
VREF_DQA [5]

DDR15V Decouple

DDR_15V
MEC1
560u/FP/D/6.3V/68/8m
MEC2
560u/FP/D/6.3V/68/8m

DDR_15V
MBC1
MBC2
MBC3
MBC24
MBC12
MBC14
0.1u/4/X7R/16V/K

DDR_15V
MBC15
MBC17
MBC27
MBC29
MBC35
MBC36
MBC37
MBC47
MBC9
1u/4/X5R/6.3V/K

DDRVTT Decouple

DDRVTT
MBC40
10u/6/X5R/6.3V/M

DDRVTT
MBC18
1u/4/X5R/6.3V/K
MBC10
0.1u/4/Y5V/16V/Z

Gigabyte Technology

Title: DDRIII CHANNEL A

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Date: | Sheet 7 of 31

DDR3 (B)

DDR3_2

DDR3 VREF

COUPON

CPU

DIMM1 CHA

DIMM2 CHB

REF VCC層GND,GND層GND要塞孔(TOP)

REF VCC層GND,VCC層GND要塞孔(INT1)

REF GND層GND,VCC層GND要塞孔(INT2)

REF GND層GND,VCC層GND要塞孔(BOTTOM)

BLACK CONNECTOR 單耳扣

DDR3/240/BK/VA/D/ONE LATCH

Gigabyte Technology	
Title	DDRIII CHANNEL B
Size / Document Number	GA-Z97N-WIFI
Rev	1.01
Date:	Sheet 8 of 31

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%

B85: Port 6/7 N/A
H81: Port 6/7/12/13 N/A

PCHB

DMI_RXN_0 DMI_RXP_0 DMI_TXN_0 DMI_TXP_0 DMI_RXN_1 DMI_RXP_1 DMI_TXN_1 DMI_TXP_1 DMI_RXN_2 DMI_RXP_2 DMI_TXN_2 DMI_TXP_2 DMI_RXN_3 DMI_RXP_3 DMI_TXN_3 DMI_TXP_3 — DMI

A_DMI_0TXN [4] L24 · A_DMI_0TXP [4] K24 · A_DMI_0RXN [4] C20 · A_DMI_0RXP [4] B20 · A_DMI_1TXN [4] G24 · A_DMI_1TXP [4] H24 · A_DMI_1RXN [4] D21 · A_DMI_1RXP [4] B21 · A_DMI_2TXN [4] F26 · A_DMI_2TXP [4] G26 · A_DMI_2RXN [4] B22 · A_DMI_2RXP [4] C22 · A_DMI_3TXN [4] K26 · A_DMI_3TXP [4] L26 · A_DMI_3RXN [4] A24 · A_DMI_3RXP [4] B24

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

VCC1_5_PCH — NR50 7.5K/4/1 — DMI_COMP B19 · PCIE_COMP C13 — NR40 7.5K/4/1

CK_-SRCCLK_PCH G22 · CK_SRCCLK_PCH F22

DMI_RCOMP B19 · PCIE_RCOMP C13 · CLKIN_DMI_N G22 · CLKIN_DMI_P F22

USB3.0

[23] PCH_USB3_RXN2 L14 · [23] PCH_USB3_RXP2 K14 · [23] PCH_USB3_TXN2 B12 · [23] PCH_USB3_TXP2 B11 · [23] PCH_USB3_RXN3 F14 · [23] PCH_USB3_RXP3 G14 · [23] PCH_USB3_TXN3 D11 · [23] PCH_USB3_TXP3 C11

PCIE_PERN_1_USB3_RXN_2 · PCIE_PERP_1_USB3_RXP_2 · PCIE_PETN_1_USB3_TXN_2 · PCIE_PETP_1_USB3_TXP_2 · PCIE_PERN_2_USB3_RXN_3 · PCIE_PERP_2_USB3_RXP_3 · PCIE_PETN_2_USB3_TXN_3 · PCIE_PETP_2_USB3_TXP_3

I217

[22] LA_ML_IN F11 · [22] LA_ML_IP H11 · [22] LA_ML_ON B9 · [22] LA_ML_OP A9

AR8161B

[23] LB_ML_IN J11 · [23] LB_ML_IP L11 · [23] LB_ML_ON B8 · [23] LB_ML_OP C8

MINI PCI-E

[31] MPCIE_IN0 G9 · [31] MPCIE_IP0 F9 · [31] MPCIE_TN0 B7 · [31] MPCIE_TP0 A7

PCIE_PERN_3 PCIE_PERP_3 PCIE_PETN_3 PCIE_PETP_3 PCIE_PERN_4 PCIE_PERP_4 PCIE_PETN_4 PCIE_PETP_4 PCIE_PERN_5 PCIE_PERP_5 PCIE_PETN_5 PCIE_PETP_5 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 — PCIE

E7 H7 E1 D2 K6 K8 G3 G5 J2 J3 H2 H1

USB_0 USB_0 USB_1 USB_1 USB_2 USB_2 USB_3 USB_3 USB_4 USB_4 USB_5 USB_5 USB_6 USB_6 USB_7 USB_7 USB_8 USB_8 USB_9 USB_9 USBN_10 USBP_10 USBN_11 USBP_11 USBN_12 USBP_12 USBN_13 USBP_13 — USB

AV10 N_-USBP0 → N_-USBP0 [19] · AU10 N_+USBP0 → N_+USBP0 [19] — FRONT30
AV11 N_-USBP1 → N_-USBP1 [19] · AW11 N_+USBP1 → N_+USBP1 [19]
AN14 N_-USBP2 → N_-USBP2 [23] · AP14 N_+USBP2 → N_+USBP2 [23] — LANUSB30_1
AJ16 N_-USBP3 → N_-USBP3 [23] · AK16 N_+USBP3 → N_+USBP3 [23]
AU15 N_-USBP4 → N_-USBP4 [22] · AV15 N_+USBP4 → N_+USBP4 [22] — LANUSB30_2
AU12 N_-USBP5 → N_-USBP5 [22] · AT12 N_+USBP5 → N_+USBP5 [22]
AV14 AW14 AU17 AT17
AW16 N_-USBP8 → N_-USBP8 [19] · AV16 N_+USBP8 → N_+USBP8 [19] — FRONT20
AN16 N_-USBP9 → N_-USBP9 [19] · AP16 N_+USBP9 → N_+USBP9 [19]
AJ18 N_-USBP10 → N_-USBP10 [16] · AK18 N_+USBP10 → N_+USBP10 [16] — KBMS_USB20
AP18 N_-USBP11 → N_-USBP11 [16] · AN18 N_+USBP11 → N_+USBP11 [16]
AW18 N_-USBP12 → N_-USBP12 [31] · AV18 N_+USBP12 → N_+USBP12 [31] — MINI
AP20 AN20

OC0B_GP59 AE40 → N_-USBOC_F [16,19]
OC1B_GP40 AF37
OC2B_GP41 AD39 → N_-USBOC_R [16]
OC3B_GP42 AD40
OC4B_GP43 AF39
OC5B_GP9 AC41
OC6B_GP10 AF40
OC7B_GP14 AG40 → N_GPIO14

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

USBRBIASB AV20 → N_USBRBIAS — NR47 22.6/4/1
USBRBIAS AU20

CLKIN_DOT96N AP11 CK_-DOTCLK
CLKIN_DOT96P AM11 CK_DOTCLK

NR130 8.2K/4
N_GPIO14 — 3VDUAL

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

CHIP DH82H97 A0 INTEL/[10HB1-030H97-20R]

PCIEX1:15/4/4/4/15 (breakout min 8/4/4/4/8)
Impedance=85 +- 17.5%

PCH (F)

USB2.0/3.0 PORT要對應
USB20 1/9 debug Capability Test 一定要拉出來

PCHF

USB3 / FDILINK

[19] PCH_USB3_RXN0 → F20 USB3_RXN_0 · FDI_RXN_0 → N1 FDI_TXN0
[19] PCH_USB3_RXP0 → G20 USB3_RXP_0 · FDI_RXP_0 → N2 FDI_TXP0
[19] PCH_USB3_TXN0 → B18 USB3_TXN_0 · FDI_RXN_1 → P2 FDI_TXN1
[19] PCH_USB3_TXP0 → C18 USB3_TXP_0 · FDI_RXP_1 → P3 FDI_TXP1

[19] PCH_USB3_RXN1 → G18 USB3_RXN_1
[19] PCH_USB3_RXP1 → H18 USB3_RXP_1 · FDI_CSYNC → L2 FDI_CSYNC → FDI_CSYNC [4]
B15 USB3_TXN_1
B16 USB3_TXP_1 · FDI_INT → L3 FDI_INT → FDI_INT [4]

[22] PCH_USB3_RXN4 → K20 USB3_RXN_4 · FDI_RCOMP → K2 NR29 7.5K/4/1 → VCC1_5_PCH
[22] PCH_USB3_RXP4 → L20 USB3_RXP_4
[22] PCH_USB3_TXN4 → D15 USB3_TXN_4
[22] PCH_USB3_TXP4 → C15 USB3_TXP_4

[22] PCH_USB3_RXN5 → L18 USB3_RXN_5
[22] PCH_USB3_RXP5 → K18 USB3_RXP_5
[22] PCH_USB3_TXN5 → B14 USB3_TXN_5
[22] PCH_USB3_TXP5 → A14 USB3_TXP_5

VCC3 — NR62 8.2K/4 — AK28 TACH6_GP70
NR63 8.2K/4 — AT34 TACH7_GP71

CHIP DH82H97 A0 INTEL/[10HB1-030H97-20R]

FDI_TXP[0..1] → FDI_TXP[0..1] [4]
FDI_TXN[0..1] → 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 PCIE ,DMI 15/4/4/4//15
usb2.0 12/5/7/5//12
usb3.0 20/5/7/5//20

PCHJ

AT1 AT41 AU1 AV1 AV2 AV40 AV41 AW2 AW40 B40 B41 C41 D1 D41 — VSS_NCTF

TP22 TP23 TP21 TP20 TP14 TP15 TP12 — U11 U10 AJ14 AK14 K34 K33 AH24
TP10 TP11 TP9 — L16 K16 AM34
TP3 TP4 TP1 TP2 — R12 N12 L22 K22
TP5 TP6 TP7 TP8 — R4 K5 P5 L5
VSS — AC31
VSS VSS — AF3 AV21

CHIP DH82H97 A0 INTEL/[10HB1-030H97-20R]

PCH H/S

SB_HEATSIN

1 · 2

GRAY HS

PCH_HS
PCH_HS/[12SP2-S03507-01R_12SP2-S03507-02R]

USB TABLE

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

USB OC#	Configure
OC0#	F_USB30
OC1#	USB30_LAN2
OC2#	USB30_LAN1
OC3#	N/A
OC4#	F_USB20
OC5#	KB_MS_USB
OC6#	MINI_PCIE
OC7#	Not Use

Gigabyte Technology

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

Size: Custom | Document Number: GA-Z97N-WIFI | Rev: 1.01

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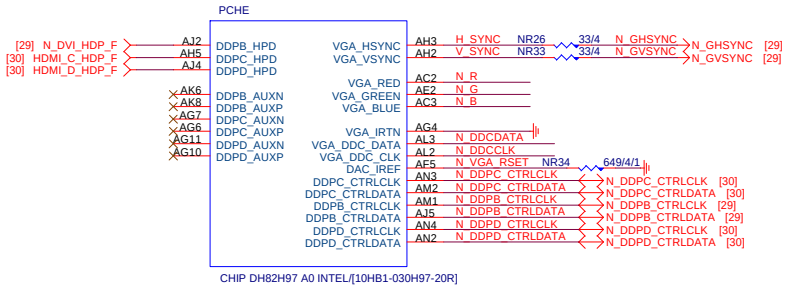
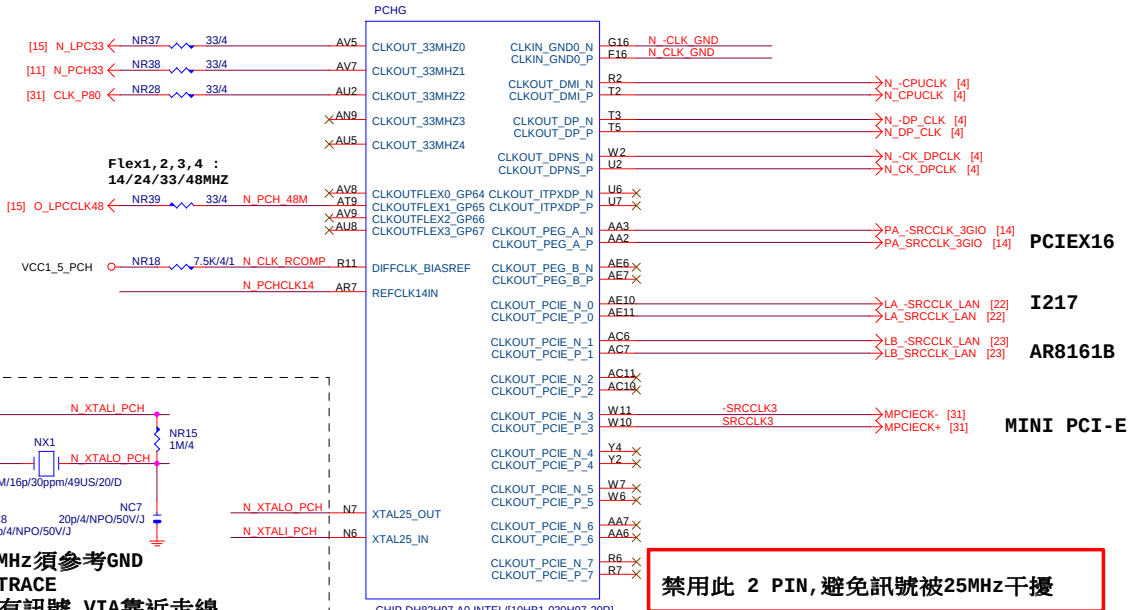
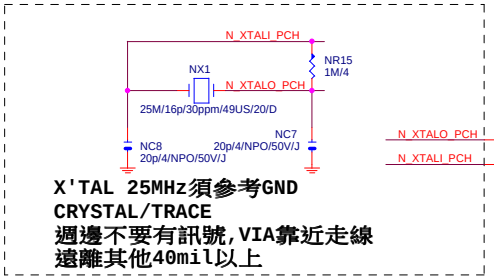
PCH (E)



VGA DISABLE
R,G,B NC OR GND
IRTN / IREF GND
VGA_HSYNC, VGA_VSYNC,DDC_CLK, DDC_DATA NC
POWER VCCADAC(AF2), VCCADACBG(AE1) GND

PCH (G)



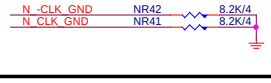


X'TAL 25MHz須參考GND
CRYSTAL/TRACE
週邊不要有訊號,VIA靠近走線
遠離其他40mil以上

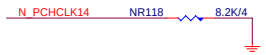
禁用此 2 PIN,避免訊號被25MHz干擾

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

PCH CLK PD

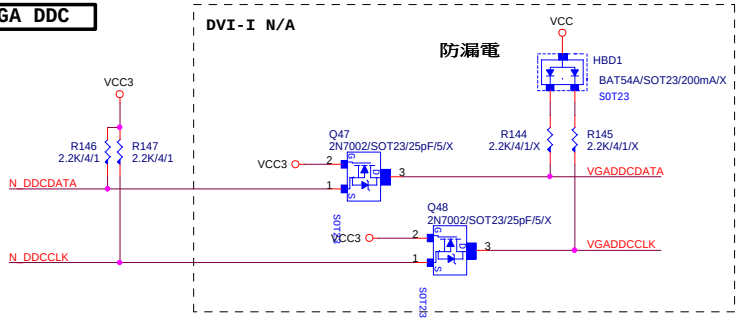


Mount for integrated clock Generation Mode



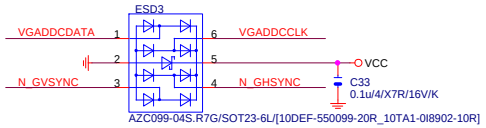
VGA DDC

DVI-I N/A

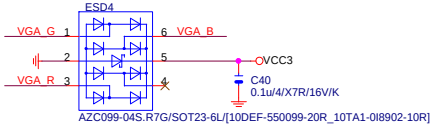


VGA CONNECTOR

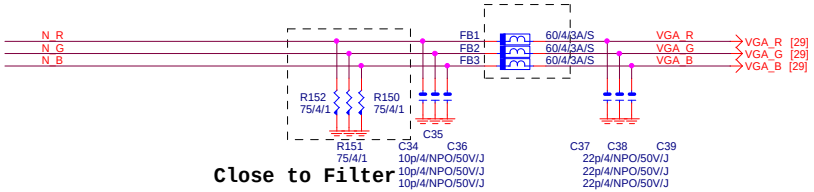
VGA ESD



SSOP6_ESD



VGA SIGNAL



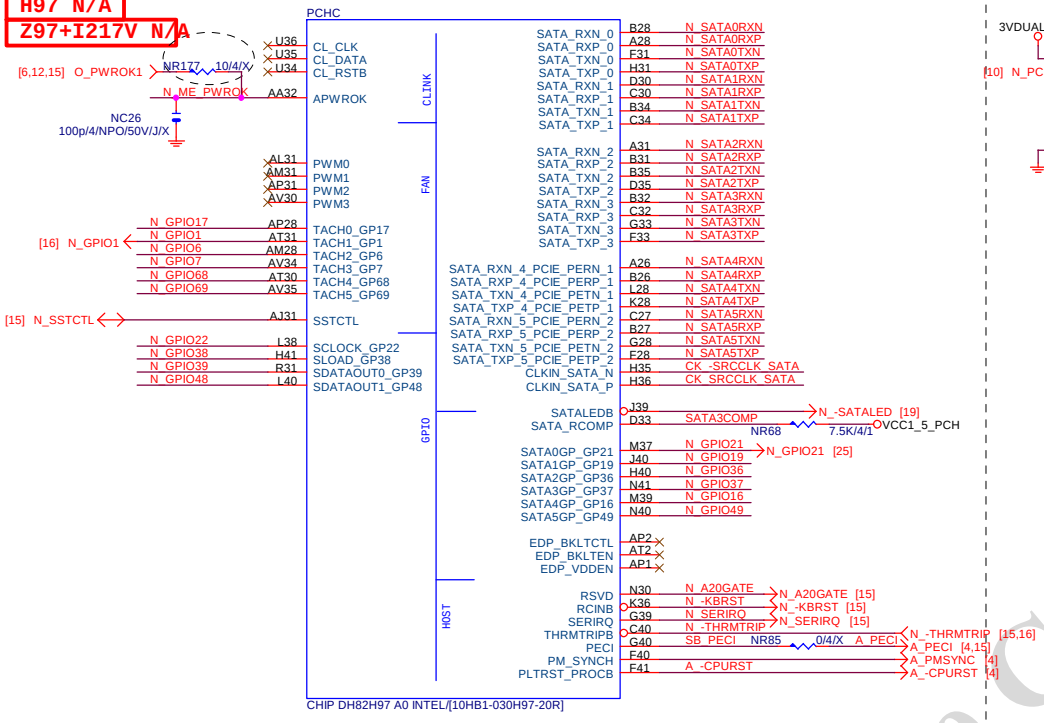
Close to Filter

Gigabyte Technology			
Title: PCH DISPLAY ,CLK BUFFER			
Size: Custom	Document Number: GA-Z97N-WIFI		Rev: 1.01
Date: Wednesday, June 25, 2014	Sheet 10 of 31		

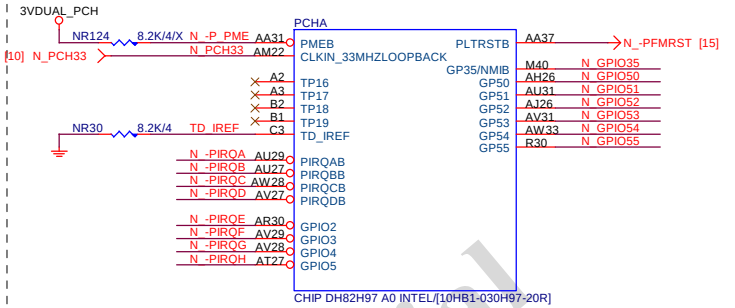
PCH (C)

H97 N/A
Z97+I217V N/A

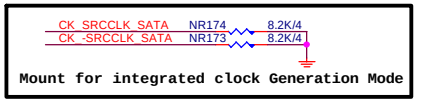
SATA3 : 20/7.5/4.5/7.5/20 (breakout min 8/4/4/4/8)
Impedance=90 +- 17.5%
SATA2 : 15/7.5/4.5/7.5/15 (breakout min 8/4/4/4/8)
Impedance=90 +- 17.5%



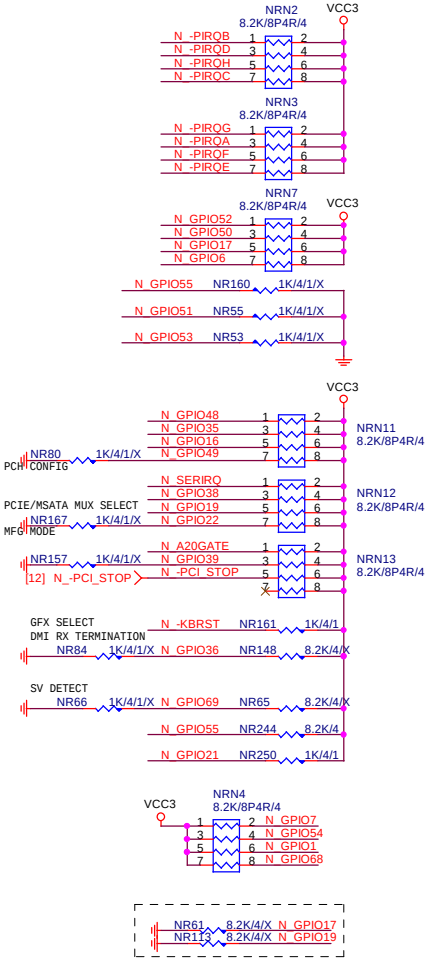
PCH (A)



PCH CLK PD

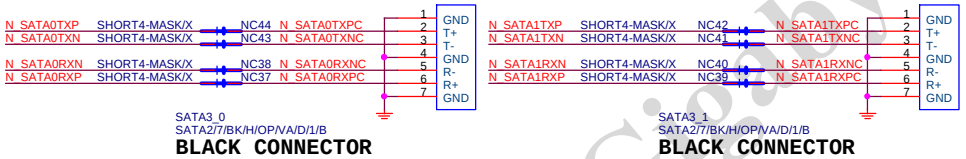


PCH PU/PD

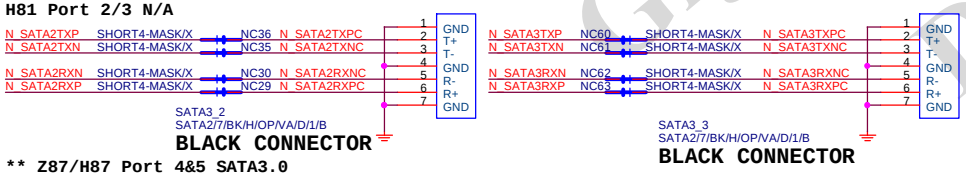


SATA CONNECTOR

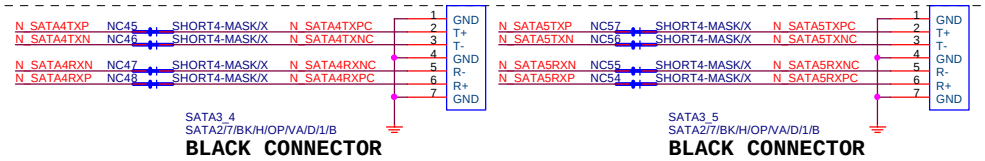
Remove SATA CAP [Footprint: C0402-SHORT4-MASK]



H81 Port 2/3 N/A



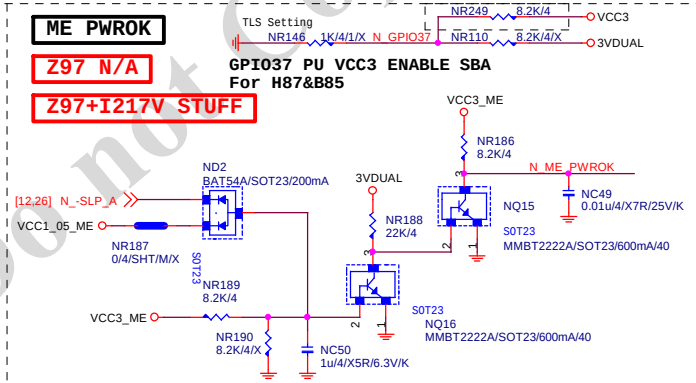
** Z87/H87 Port 4&5 SATA3.0
** B85 Port 4&5 SATA2.0



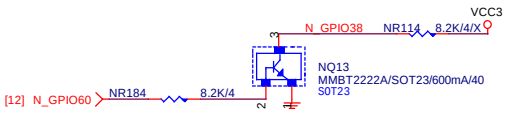
ME PWROK

Z97 N/A
Z97+I217V STUFF

GPIO37 PU VCC3 ENABLE SBA
For H87&B85



GPIO38 Ctrl



Gigabyte Technology

Title: PCH HOST , SATA, PCI

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PCH (D)

PCHD

CHIP DH82H97 A0 INTEL/[10HB1-030H97-20R]

ACZ_SDOUT

SPI OVERRIDE PROTECTION

PCH_DPWROK

CPU VRMPWRGD

PCH PU/PD

HSW_STRAP13

32.768KHZ

CLR_CMOS

BATTERY-DUAL-4

RB 必须放在BAT外

Title	PCH GPIO , CTRL , AUDIO
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Gigabyte Technology

PCH

(H)

PCHH

CHIP DH82H97 A0 INTEL/[10HB1-030H97-20R]

VCC3_DAC

CLOSE北橋(注意震盪水波紋)

(3.3V/70mA+360uA)

3VDUAL_PCH

SHT PWR

H97 N/A

Z97+I217 N/A

MASK FOOT

CAP

(3.3V)(X6)

(1.05V)(X5)

(1.05V)(X6)

(1.05V)(X2)

(3.3V)(X2)

(1.05V)(X10)

PCH

(I)

PCHI

CHIP DH82H97 A0 INTEL/[10HB1-030H97-20R]

Gigabyte Technology

Title	PCH PWR ,GND	
Size: Custom	Document Number: GA-Z97N-WIFI	Rev: 1.01
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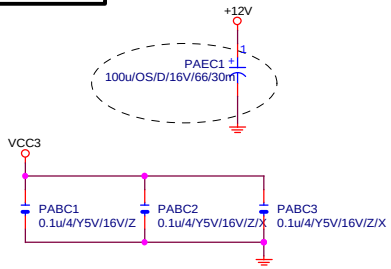
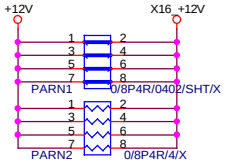
PCIEX16 CAP



PCIEX16 PROTECT SHT



PCIEX16 AC CAP

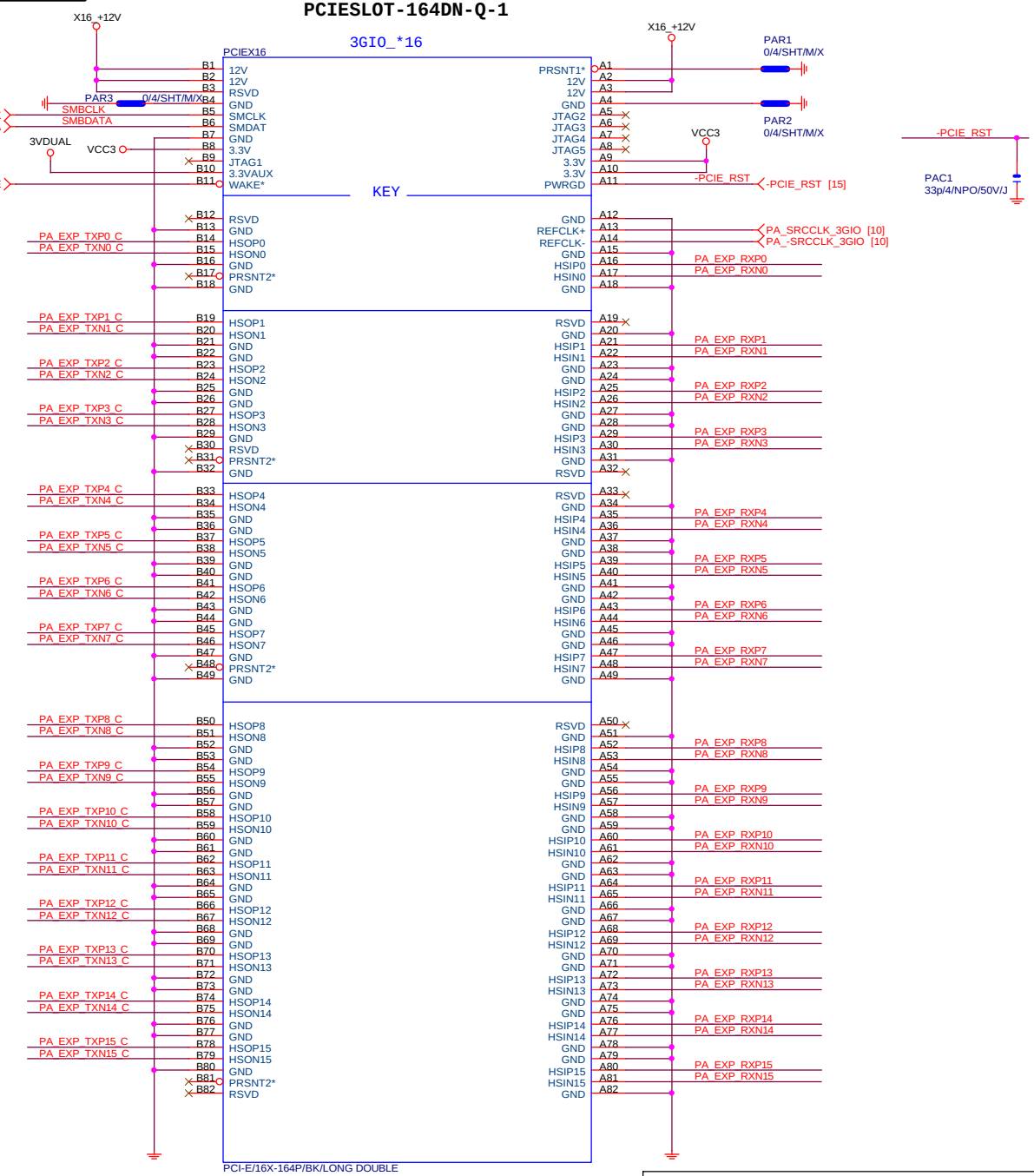
PA_EXP_TXP0	PAC5	0.22u/4/X5R/6.3V/K	PA_EXP_TXP0_C
PA_EXP_TXN0	PAC4	0.22u/4/X5R/6.3V/K	PA_EXP_TXN0_C
PA_EXP_TXP1	PAC6	0.22u/4/X5R/6.3V/K	PA_EXP_TXP1_C
PA_EXP_TXN1	PAC7	0.22u/4/X5R/6.3V/K	PA_EXP_TXN1_C
PA_EXP_TXP2	PAC8	0.22u/4/X5R/6.3V/K	PA_EXP_TXP2_C
PA_EXP_TXN2	PAC9	0.22u/4/X5R/6.3V/K	PA_EXP_TXN2_C
PA_EXP_TXP3	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



BLACK CONNECTOR

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SIO IT8620

FANIO CAP 1~2

[17] FANIO1 — C16 0.047u/4/X7R/16V/K
[17] FANIO2 — C9 0.047u/4/X7R/16V/K

FAN 風扇插拔漏電

IT_AVCC, VCC3, +12V, OR50 8.2K/4, OQ2 2N7002/SOT23/25pF/5

PWR SHT

IT_AVCC, OC13 10u/6/X5R/6.3V/M
For 8728 EUP function
3VDUAL_PCH — OR8 0/0/SHT/M/X — IT_VCCH
VCC3 — OR9 0/4/X — IT_AVCC

SIO PU

IO_GP25 — OR52 1K/4/1 — 3VDUAL_PCH
DS_ME — OR11 1K/4/1 — 3VDUAL_PCH
SVID_CTRL — OR12 8.2K/4/X — 3VDUAL_PCH
-PROCHOT_CON — OR13 8.2K/4 — VCC3
N_-LDRQ0 — OR14 1K/4/1 — VCC3
ITE_PWROK2 — OR15 1K/4/1 — VCC3
ITE_PWROK1 — OR16 1K/4/1 — VCC3
-PCIE_RST — OR17 1K/4/1/X — VCC3
O_-PFMRST2 — OR18 1K/4/1/X — VCC3
N/A

SIO STRAP

H61M-S2 1.1 JP6 stuff pull down

JP2 — OR21 8.2K/4 — VCC3
JP3 — OR22 8.2K/4 — VCC3
JP4 — OR23 8.2K/4 — VCC3
JP5 — OR24 8.2K/4/X — VCC3
OR25 8.2K/4/X
ITE recommand

EUP control by PCH
3VDUAL — OR26 100/4/1 28_3VSB

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

IT8620E_BX

SLP_SUS#/PCIRSTIN#/CIRTX2/GP15
3VSB
HOLD_M#/GP64
HOLD_B#/GP63
FAN_TAC1
FAN_CTL1
FAN_TAC2/GP52
FAN_CTL2/GP51
FAN_TAC3/GP37
FAN_CTL3/GP36
VCC18_EN/GP35
VTT_PWRGD/GP34
GNDD
SLP_SUS_FET/5VSB_CTRL#
SUS_WARN_SVDUAL/5VAUX_SW
PWRGD2
ATXPG/GP30
INV_IN1/SIN2/GP27
INV_OUT1/SOUT2/GP26
FAN_TAC4/DSR2#/GP25
FAN_TAC5/RTS2#/GP24
DPWORK/CPU_PG/GP23
SPI_SI/GP22
IO_SMI#/DCD2#/GP21
THR_PWM/CTS2#/GP20
R12#/GP17
DTR2#/JP5
SPI_SO/CIRTX1
PCH_C1/GP14
SUSACK#/PWRGD1
PCIRST1#/GP12
PCIRST2#/GP11
3VSB
VCORE
LRESET#
LDRQ#
SERIRQ
LFRAME#

[25] GP15 — IT_VCCH — -SPI_HOLD_M — -SPI_HOLD_B
[18] -SPI_HOLD_M
[18] -SPI_HOLD_B
[17] FANIO1
[17] FANPWM1
[17] FANIO2
[17] FANPWM2
[24] VCC15_EN
[27] VTT_PWRGD
[24] 5VAUX_SW
[25] PWOK — ITE_PWROK2 — PWOK — MB_ID2
[12] N_TEMP_ALART- — OR19 0/4/X — IO_GP25
[12,24] N_PCH_DPWROK
-PRCOHOT
[27] IO_GP21
[4] A_-PROCHOT — THR_PWM
[4] SVID_CTRL — OR20 0/4/X
JP5
VCC3 — OR1 1K/4/1 -RST_BTN
[6,11,12] O_PWROK1 — OR2 22/4 — ITE_PWROK1
[22,23,31] O_-PFMRST2 — OR3 22/4 — PCIRST1
[14] -PCIE_RST — OR4 22/4 — PCIRST2
IT_VCCH — SIO_18V
[11] N_-PFMRST — N_-PFMRST
[12] N_-LDRQ0 — N_-LDRQ0
[11] N_SERIRQ — N_SERIRQ
[12,31] N_-LFRAME — N_-LFRAME
PWOK — OC1 1n/4/X7R/50V/K
N_-PFMRST — OC2 22p/4/NPO/50V/J/X — N_-PFMRST [11]

BEEP_GBI/FAN_CTL5/CIRRX2/GP16
CTS1#/GP31
OCWDT2/DCD1#/GP33
OCWDT3/RI1#/GP32
DTR1#/GP4
OCWDT1/SIN1/GP41
OCWDT0/DSR1#/GP45
RTS1#/GP44
USB_FS8/P80LED_LID/GP70
USB_FS7/P81LED6/PD6/GP76
USB_FS6/P82LED5/PD5/GP75
USB_FS5/P83LED4/PD4/GP74
USB_FS4/P84LED3/PD3/GP73
USB_FS3/P85LED2/PD2/GP72
USB_FS2/P86LED1/PD1/GP71
USB_FS1/P87LED0/PD0/GP77
USB_OC2/STB#/GP87
OC_OUT7/ATF#/GP86
USB_OC1/AFD#/GP85
OC_IN7/INIT#/GP85
IPHONE_CHARGE/SLIN#/GP84
LS_OUT2/ACK#/GP83
LS_OUT1/BUSY/GP82
LS_OUT0/PE/GP81
SIO

LS_IN1/SLCT/GP80
VREF_2.5
TR6/VIN9
TR5/VIN8
TR4/VIN7
AVCC3
VIN0/VCORE(1.1V)
VIN1/VDIMM_STR(1.5V)
VIN2(+12V_SEN)
VIN3(+5V_SEN)
VIN4/VLDT_12
VIN5/5VDUAL
VIN6
VREF
TMPIN1
TMPIN2
TMPIN3
TSD-
GNDA
RSMRST#/CIRRX1/GP55
CPURST#/GP10
MCLK/FAN_TAC6/GP56
MDAT/FAN_CTL6/GP57
KCLK/GP60
KDAT/GP61
3VSBSW#/GP40
PWRGD3
SUSC#/GP53
PSON#
PANSWH#/GP43
GNDD
PME#/GP54
PWRON#/GP44
SUSB#
CE_N/GPO47/JP6
VBAT
COPEN#
3VSB

VREF_25 — TR6 [17] — TR5 [17] — TR4 [17]
VREF_25 — OC29 22u/8/X5R/6.3V/M
CLOSE SIO PIN4 VREF_25
IT_AVCC
VIN0 [17] — VIN1 [17] — VIN2 [17] — VIN3 [17] — VIN4 [17] — VIN5 [17] — VIN6 [17] — VREF [17] — SYS_TEMP [17] — PCH_TEMP [17] — CPU_TEMP [17]
OR7 22/4 -RSMRST — O_-RSMRST [12,24]
MCLK [16] — MDAT [16] — KCLK [16] — KDAT [16]
N_-S4_S5 [12] — -PSON [25] — -PWRBTSW [19]
N_-LPCPME [12] — O_PWRBTSW [12] — N_-SLP_S3 [12]
CEB_N — N_-VBAT [12] — -CASEOPEN [17]
OR5 8.2K/4 — OC5 0.01u/4/X7R/25V/K — 3VDUAL_PCH
OC3 0.1u/4/X7R/16V/K — OC4 1u/4/X5R/6.3V/K — IT_VCCH

LAD0
LAD1
LAD2
LAD3
KRST#/GP62
GA20/GPO1
PCICLK
GNDD
SERIRQ
CPUPWRGD/GP95
VCC1_05_EN/GP66
VLDT_EN/PCH_DPRSLP_LCO
VCC1_05_PG/GP65
VR_RDY/GPI97
PCH_VRMPWRGD/GP96
SUSWARN#/SSTI/AMDTSI_D/PCH_D
PECI/AMDTSI_C
PROCHOT#/GP94
HOLED_OUT/GP92
PWRLED/GP91
DDR_EN/GP90
CLKRUN#/GP97
SYS_3VSB
IT8620E/CX/S

28_3VSB
N_-THRMTRIP — N_-THRMTRIP [11,16] — DDR_EN_CON [26] — MPD- [19]
-THRMTRIP
N_LAD[0..3] — [12,31] N_LAD[0..3]
[11] N_-KBRST
[11] N_A20GATE
[10] N_LPC33
[10] O_LPCCLK48
-PROCHOT_CON — A_PECI [4,11] — DS_ME [12] — N_SSTCTL [11] — N_PCH_VRMPWRGD [12] — VR_RDY [27]
OR49 0/4/SHT/M/X — VCC1_05_EN [24] — N_CPUPWROK [4,12]
N_-THRMTRIP — OR51 1K/4/1 — A_-THRMTRIP [4]

Power leakage

N/A

IT_AVCC
OQ1 MASK/2N7002/SOT23/25pF/5/X
-PSON — SOT23
MASK — OR27 MASK/510/4/1/X

DUAL BIOS OPT STRAP

-CASEOPEN — OC6 1u/4/X5R/6.3V/K
CEB_N — OR30 680/4/1/X — OR31 1K/4/1 — VCC3

SIO_18V

internal power pin, max 22nF cap

SIO_18V — OC7 0.1u/4/X7R/16V/K — OC8 0.1u/4/X7R/16V/K/X

MB ID

VCC3 — OR28 8.2K/4 — OR29 8.2K/4/X — MB_ID2

SIO CAP

IT_VCCH — OC9 1u/4/X5R/6.3V/K — OC10 0.1u/4/Y5V/16V/Z/X
IT_VCCH — OC11 10u/6/X5R/6.3V/M
3VDUAL — OC12 1u/4/X5R/6.3V/K
3VDUAL_PCH — OC14 0.1u/4/Y5V/16V/Z
VREF_25 — OC15 0.1u/4/X7R/16V/K

IT8620E GPIO問題匯整

PIN 50	GP26--- 第一次接上POWER時會拉 LO
PIN 90/91	DEFAULT為HDLED FUNCTION, GP93 BYPASS TO GP92 高溫時 GP92 會被拉Lo(ITE
PIN 108	GP96--- POWER ON 時會拉 LO
PIN 111/112	MOUSE 跟FAN6 FUNCTION 擇一使用,不然會互相干擾

Gigabyte Technology		
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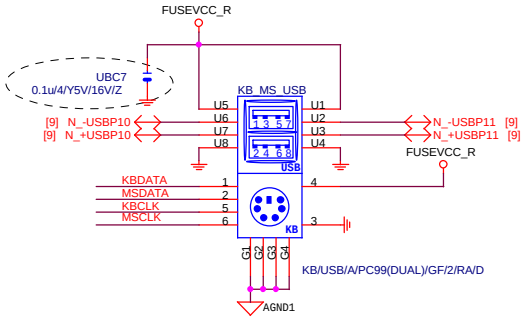
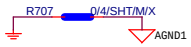
KB/MS

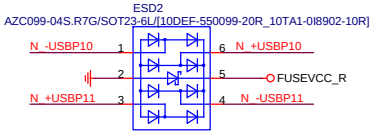




USB2.0 PWR

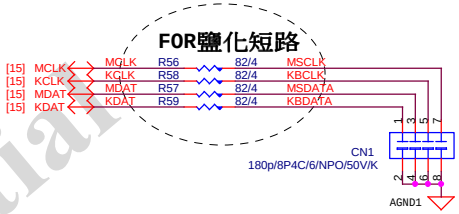
Close to connector
KB_MS_USB 2-Port 2.0A

USB2.0 ESD

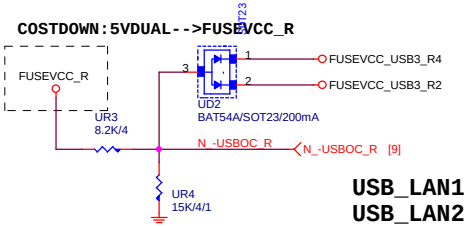


AMC099 加強版

KB_MS

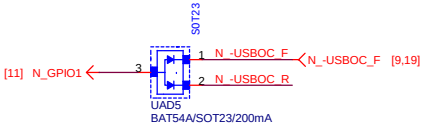


-USBOC_R



USB_LAN1
USB_LAN2

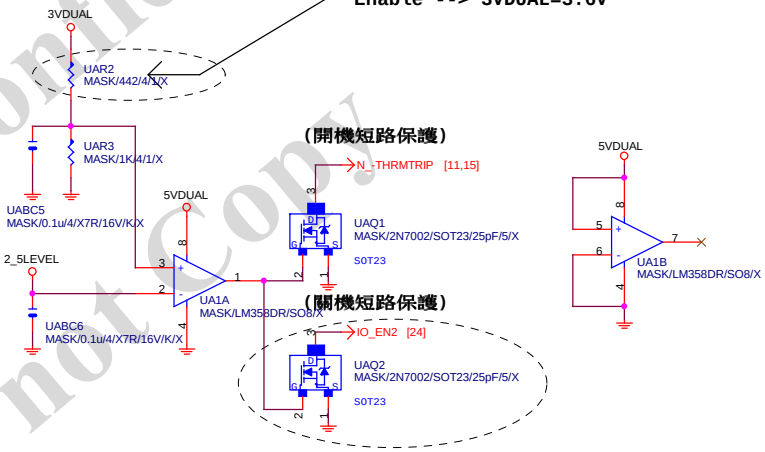
USB POWER PROTECT



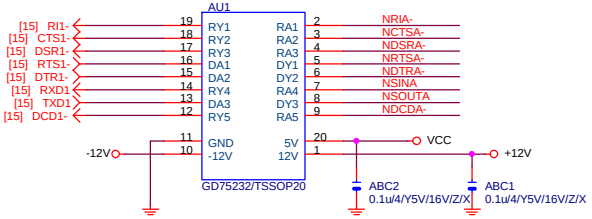
USB2.0 Short Power Protection

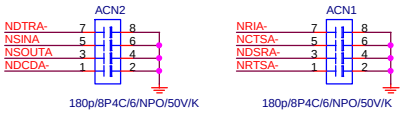
N/A

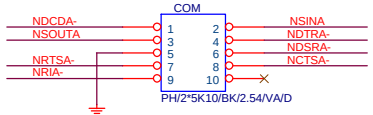
USB2.0 Signal & power short protection
USB2.0 Signal > 4.85V
Enable --> 3VDUAL=3.6V



COM

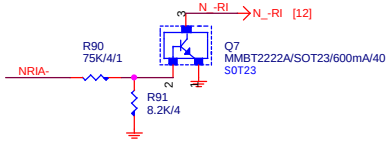






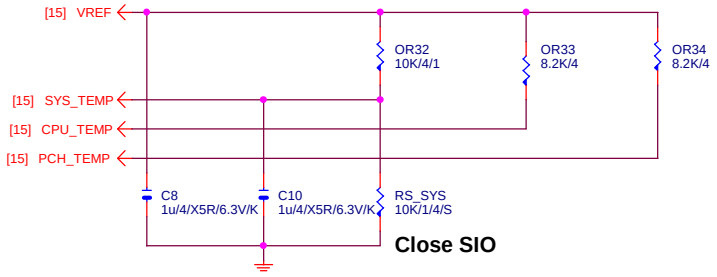
BLACK **PIN2X5-CUT10-COM**

COM RI

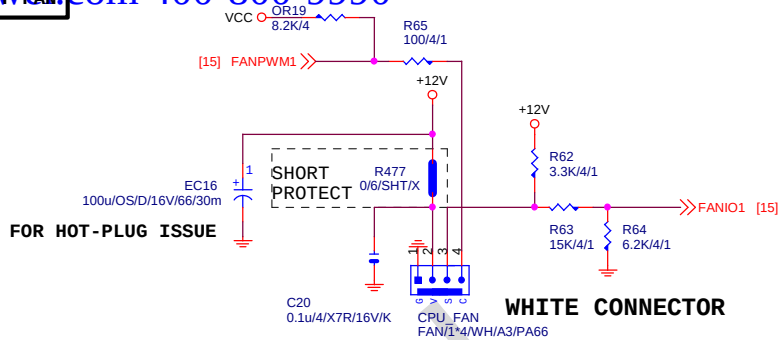


Gigabyte Technology			
Title: COM,-RI,KB_USB,USB_ESATA,-PROCHOT			
Size: Custom	Document Number: GA-Z97N-WIFI		Rev: 1.01
Date: Wednesday, June 25, 2014	Sheet 16 of 31		

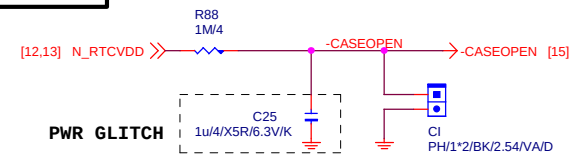
TEMP H/W MONITOR



CPU SMART FAN



CASE OPEN

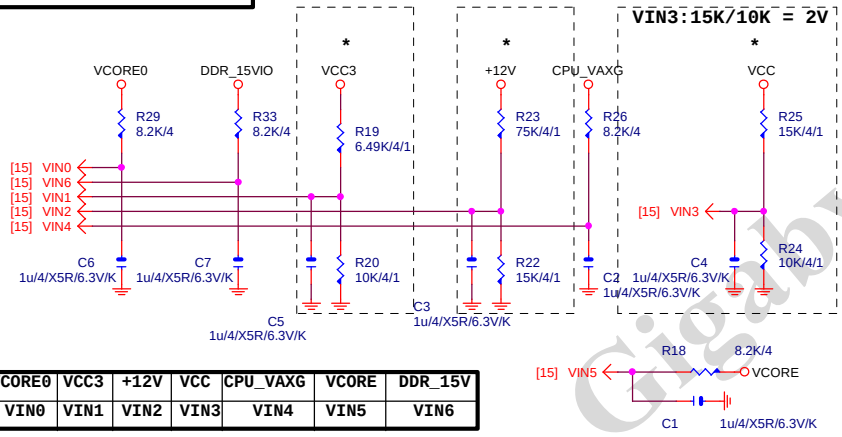


Case Open Circuits

VOLTAGE-- H/W MONITOR

VIN2:75K/15K = 2V

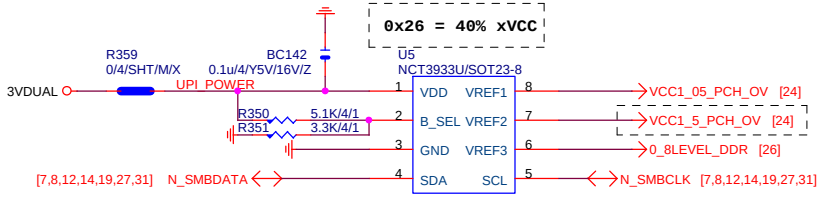
VIN3:15K/10K = 2V



VCORE0	VCC3	+12V	VCC	CPU_VAXG	VCORE	DDR_15V
VIN0	VIN1	VIN2	VIN3	VIN4	VIN5	VIN6

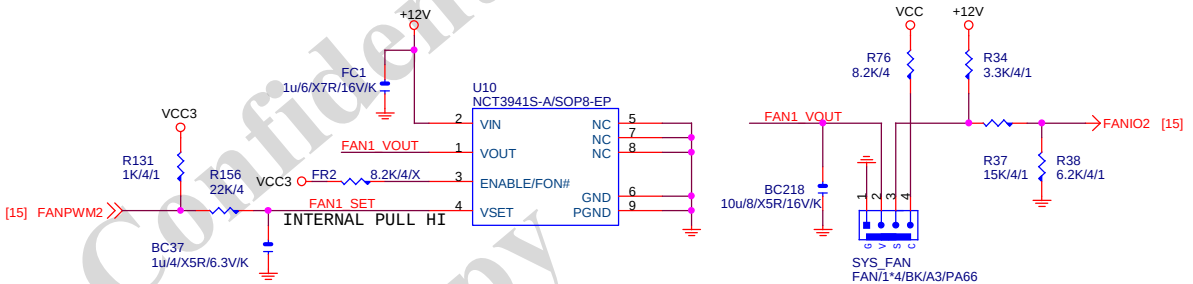
OV NCT3933

接pwm feedback pin

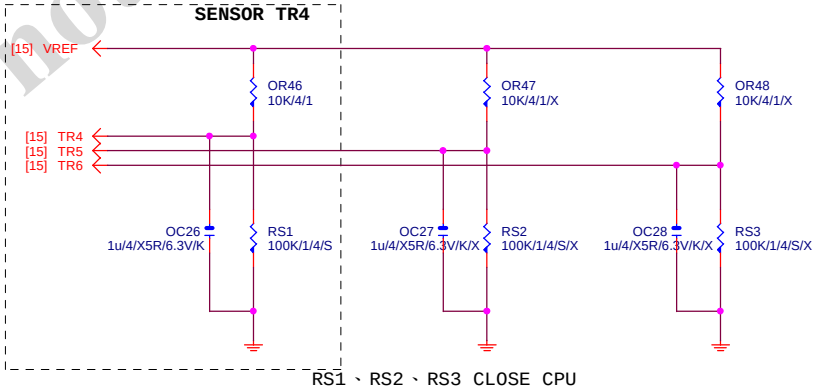


SYS SMART FAN

Linear SYS_FAN



-PROHOT



RS1、RS2、RS3 CLOSE CPU VR MOSFET

Gigabyte Technology			
Title: HWM,FAN CTRL,OV			
Size: Custom	Document Number: GA-Z97N-WIFI		Rev: 1.01
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VCC3_ME

NR4
0/4/SHT/M/X

NBC2
1u/4/X5R/6.3V/K

M_BIOS

-SPI_CS_1 — NR7 22/4 — 1 CS#
SPI_MISO — 2 SO
[12] SPI_DQ2 — NR342 0/4/SHT/M/X — N_-SPI_WP0 — 3 WP#
4 VSS
8 VDD
7 HOLD# — -HOLD0 — R672 8.2K/4/X — -SPI_HOLD_M
NR341 0/4/SHT/M/X — SPI_DQ3 [12]
6 SCK — ICH_SPI_CLK
5 SI — ICH_SPI_MOSI

NC1
10p/4/NPO/50V/J/X

NC2
10p/4/NPO/50V/J/X

MAIN BIOS

64M/Q/SPI/SO8/S

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

1 means floating
0 means PD 1K

VCC3_ME

NR12
0/4/SHT/M/X

NBC3
1u/4/X5R/6.3V/K

B_BIOS

-SPI_CS_2 — NR8 22/4 — 1 CS#
SPI_MISO — 2 SO
[12] SPI_DQ2 — NR344 0/4/SHT/M/X — N_-SPI_WP1 — 3 WP#
4 VSS
8 VDD
7 HOLD# — -HOLD1 — R673 8.2K/4/X — -SPI_HOLD_B
NR343 0/4/SHT/M/X — SPI_DQ3 [12]
6 SCK — ICH_SPI_CLK — N_ICH_SPI_CLK [12]
5 SI — ICH_SPI_MOSI — N_ICH_SPI_MOSI [12]

BACKUP BIOS

64M/Q/SPI/SO8/S

MOSI For DMI RX Termination Voltage

VCC3_ME

[12] N_ICH_SPI_MOSI — N_ICH_SPI_MOSI NR10 8.2K/4/X
[12] N_-ICH_SPI_CS — N_-ICH_SPI_CS NR9 8.2K/4/X
[15] -SPI_HOLD_M — -SPI_HOLD_M NR3 1K/4/1
[15] -SPI_HOLD_B — -SPI_HOLD_B NR11 1K/4/1

5VDUAL

[15] -SPI_HOLD_M — -SPI_HOLD_M NR20 1K/4/1/X
[15] -SPI_HOLD_B — -SPI_HOLD_B NR21 1K/4/1/X

VCC3_ME

[12] N_ICH_SPI_MISO — N_-SPI_WP1 NR2 8.2K/4/X
N_-SPI_WP0 NR1 8.2K/4/X
N_ICH_SPI_MISO NR5 8.2K/4

SPI_MISO — NR6 22/4 — N_ICH_SPI_MISO [12]

CHECK

VCC3_ME
-HOLD0 — R313 1K/4/1/X
-HOLD1 — R314 1K/4/1/X
Pop for Quad I/O BIOS

VCC3_ME
R3 330/4/1
-SPI_CS_1
R225 1K/4/1
-SPI_HOLD_M — R403 1K/4/1/X
Q83 MMBT2222A/SOT23/600mA/40/[10IT1-002222-11R] — S0T23 — N_-ICH_SPI_CS
Q57 MMBT2222A/SOT23/600mA/40/[10IT1-002222-11R] — S0T23
-SPI_HOLD_B — R226 8.2K/4

VCC3_ME
R227 330/4/1
-SPI_CS_2
R228 1K/4/1
-SPI_HOLD_B — R404 1K/4/1/X
Q84 MMBT2222A/SOT23/600mA/40/[10IT1-002222-11R] — S0T23 — N_-ICH_SPI_CS
Q59 MMBT2222A/SOT23/600mA/40/[10IT1-002222-11R] — S0T23
-SPI_HOLD_M — R229 8.2K/4

指定用NXP

Gigabyte Technology

Title: DUAL BIOS

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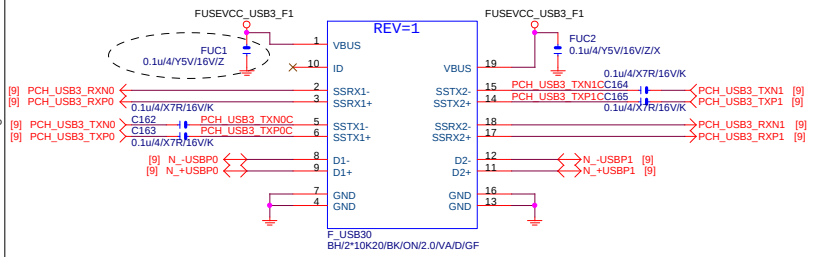
F_USB30

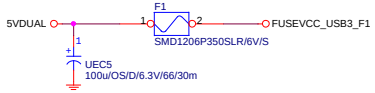


BLACK CONNECTOR

F_USB30-CUT20-1

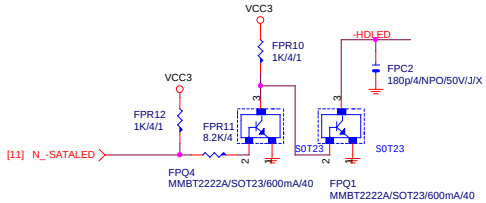
F_USB30 PWR

Polyswitch-1206-1

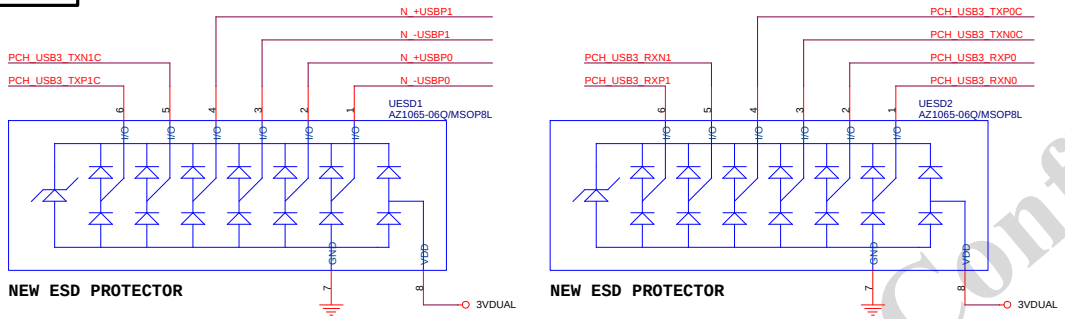


USB3.0 2Port - 1Fuse (3.5A)

SATA LED



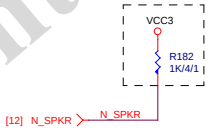
F_USB30 ESD PROTECT



NEW ESD PROTECTOR

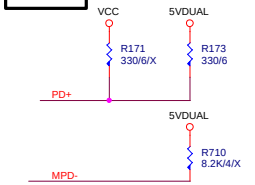
NEW ESD PROTECTOR

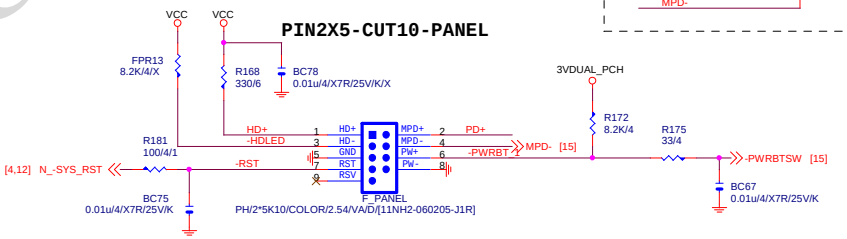
SPKR

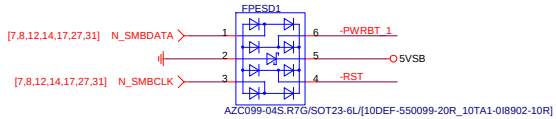


INTEL FRONT PANEL

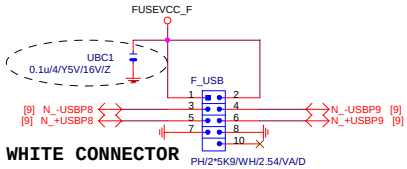
PWR LED



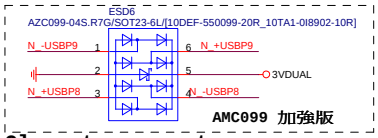




FRONT USB20



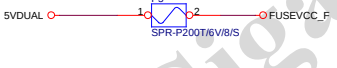
WHITE CONNECTOR



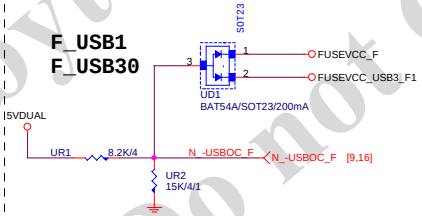
AMC099 加強版

Close to connector

FUSEVCC_F



-USBOC_F



Gigabyte Technology		
Title: FP,F_USB,USB PWR,SPKR,SATA LED		
Size: Custom	Document Number: GA-Z97N-WIFI	Rev: 1.01
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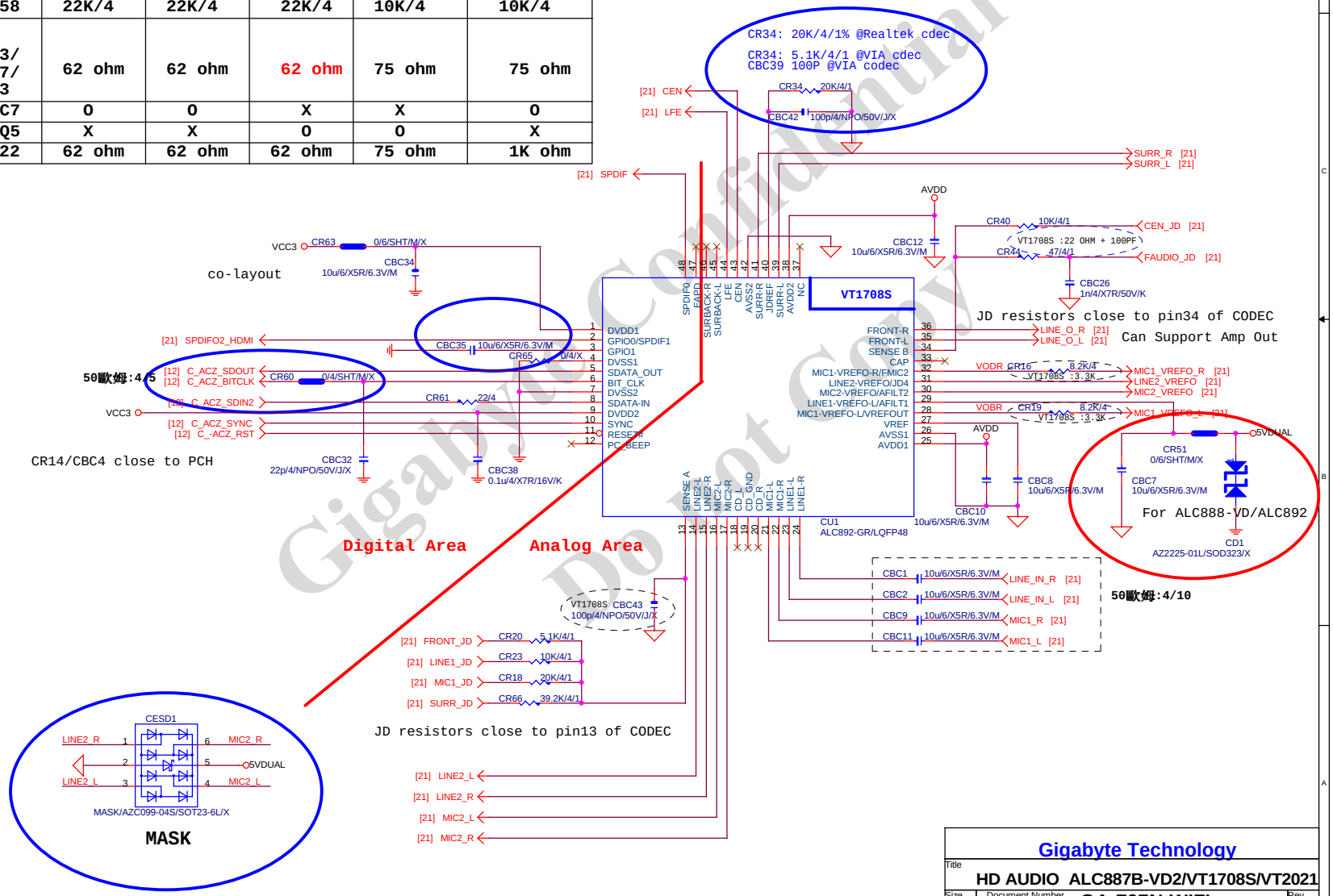
AZALIA CODEC *ALC887-VD2/ALC889/VT1708S/VT1708SCE Colay*

	ALC662	ALC887-VD2	ALC889	VT1708S	VT1708SCE
CR65	X	X	O	O	X
CR64	X	X	X	X	0.1u/4
CBC35	O	O	X	X	O
CR44/CBC6	47ohm+1nF	47ohm+1nF	47ohm+1nF	22ohm+100P	22ohm+100P
CR31	X	O	O	O	O
CR30	O	X	X	X	X
CBC1/CBC2	22uF/X5R	22uF/X5R	22uF/X5R	22uF/X5R	22uF/X5R
CR20	5.11K/4/1	5.11K/4/1	5.11K/4/1	5.1K/4/1	5.1K/4/1
CR34	20K/4/1	20K/4/1	20K/4/1	5.1K/4/1	20K/4/1
CBC39/CBC40	N/A	N/A	N/A	100P/4	100P/4
CR6/CR7/CR54/CR58	22K/4	22K/4	22K/4	10K/4	10K/4
CR5/CR8/CR11/CR4/ CR17/CR22/CR45/CR33/ CR47/CR40/CR26/CR37/ CR13/CR11/CR57/CR53	62 ohm	62 ohm	62 ohm	75 ohm	75 ohm
CR51/CD1/CBC7	O	O	X	X	O
CD2/CD3/CQ3/CQ5	X	X	O	O	X
CR1/CR14/CR17/CR22	62 ohm	62 ohm	62 ohm	75 ohm	1K ohm



Gigabyte Technology

Title: HD AUDIO ALC887B-VD2/VT1708S/VT2021

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CODEC POWER/EMI PAD

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

ADD CD2 For ESD PROTECT DIODE

LINE-OUT

[20] LINE_O_R — CEC1 100u/OS/D/6.3V/66/30m — CR5 62/4
[20] LINE_O_L — CEC2 100u/OS/D/6.3V/66/30m — CR8 62/4
CR7 22K/4 — AJ_B5
CR6 22K/4 — AJ_B2
CBC19 180p/4/NPO/50V/J
CBC24 180p/4/NPO/50V/J

Only reserved for ALC888

LINE-IN

[20] LINE_IN_R — CR1 62/4 — AJ_A5
[20] 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

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

SURROUND

EMI
[20] SURR_R — CEC10 100u/OS/D/6.3V/66/30m — CR73 62/4
[20] SURR_L — CEC11 100u/OS/D/6.3V/66/30m — CR74 62/4
CR67 22K/4 — BJ_C5
CR68 22K/4 — BJ_C2
CBC44 180p/4/NPO/50V/J
CBC45 180p/4/NPO/50V/J

CEN/LFE

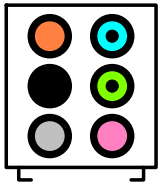
EMI
[20] LFE — CEC12 100u/OS/D/6.3V/66/30m — CR75 62/4
[20] CEN — CEC13 100u/OS/D/6.3V/66/30m — CR76 62/4
CR69 22K/4 — BJ_B5
CR70 22K/4 — BJ_B2
CBC46 180p/4/NPO/50V/J
CBC47 180p/4/NPO/50V/J

SPDIF_OUT

[20] 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

AZALIA JACK



AZALIA JACK

BLUE — LINE-IN
GREEN — LINE-OUT
PINK — MIC-IN
Orange — CEN/LFE
Black — SURROUND
SPDIF

AUDIOB
[20] LINE1_JD — LINE1_JD — AJ_A5 — AJ_A2 — REAR
[20] FRONT_JD — FRONT_JD — AJ_B5 — AJ_B2 — CEN/LFE
[20] MIC1_JD — MIC1_JD — AJ_C5 — AJ_C2 — SIDE
2X3RP/25P/BU,GE,OR,BK,GY/RA/[11NR6-403025-A1R]

AUDIOA
[20] CEN_JD — CEN_JD — BJ_B5 — BJ_B2 — LINE-IN
[20] SURR_JD — SURR_JD — BJ_C5 — BJ_C2 — LINE-OUT
[20] SPDIF — FUSEVCC_USB3_R4 — SPDIF/VCC/GND — OPTICAL
2X3RP/25P/BU,GE,OR,BK,GY/RA/[11NR6-403025-A1R]

SURR BACK

AZALIA FRONT PANEL

CQ4 BAT54A/SOT23/200mA — [20] LINE2_VREFO — CR52 8.2K/4 — CR56 8.2K/4
CQ2 BAT54A/SOT23/200mA — [20] MIC2_VREFO — CR10 8.2K/4 — CR9 8.2K/4
VT1708S :3.3K
[20] MIC2_L — CBC6 10u/6/X5R/6.3V/M — CR13 62/4 — M2_L
[20] MIC2_R — CBC5 10u/6/X5R/6.3V/M — CR11 62/4 — M2_R
[20] FAUDIO_JD — L2_R — CR57 62/4 — L2-R
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
PH/2*5K8/GY/2.54/VA/D
GRAY CONNECTOR
[20] LINE2_R — CEC9 100u/OS/D/6.3V/66/30m — L2_R
[20] LINE2_L — CEC6 100u/OS/D/6.3V/66/30m — L2_L
CBC30 180p/4/NPO/50V/J
CBC29 180p/4/NPO/50V/J
CBC37 180p/4/NPO/50V/J
CBC36 180p/4/NPO/50V/J

Gigabyte Technology

Title	AUDIO JACK	
Size: Custom	Document Number: GA-Z97N-WIFI	Rev: 1.01
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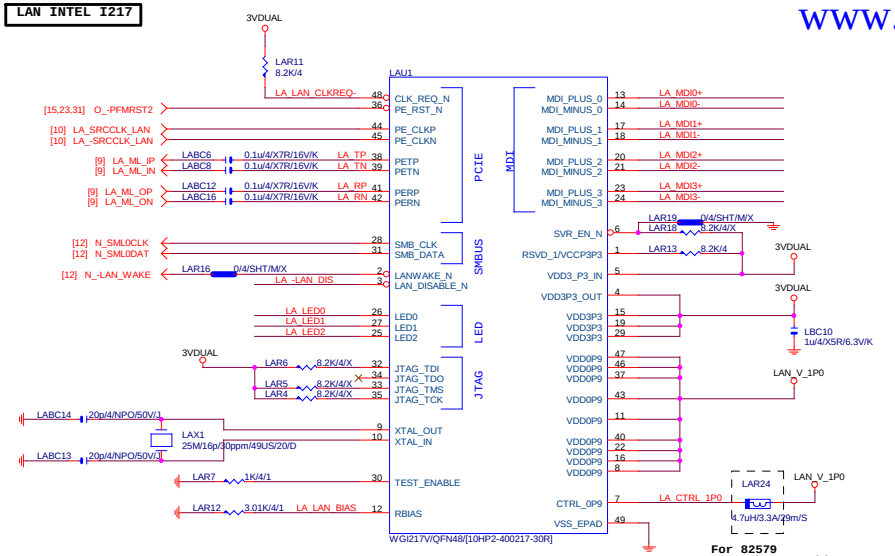
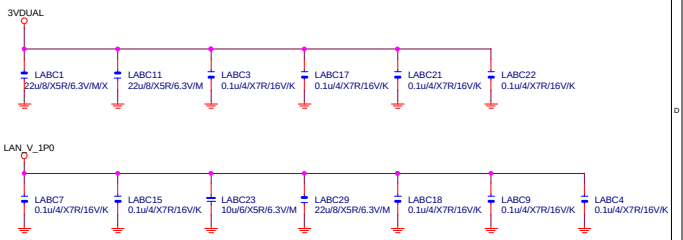
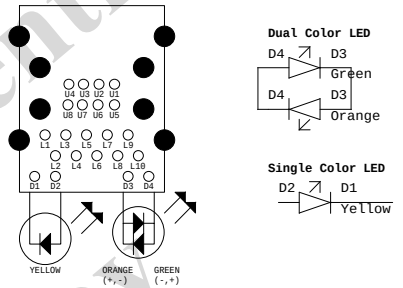
LAN INTEL I217



For 82579
Keep short & wide

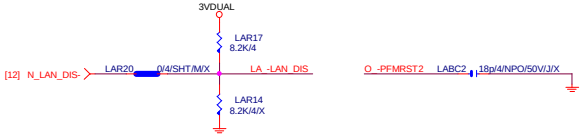
LAN POWER



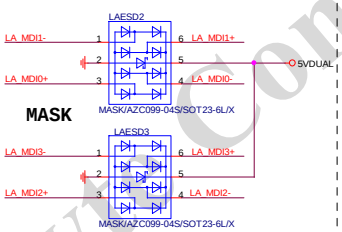


Dual Color LED

Single Color LED

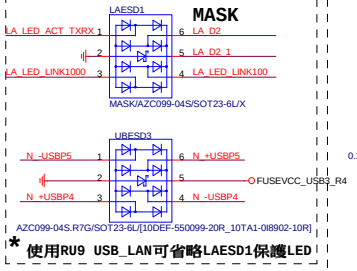


MDI ESD預留28KV



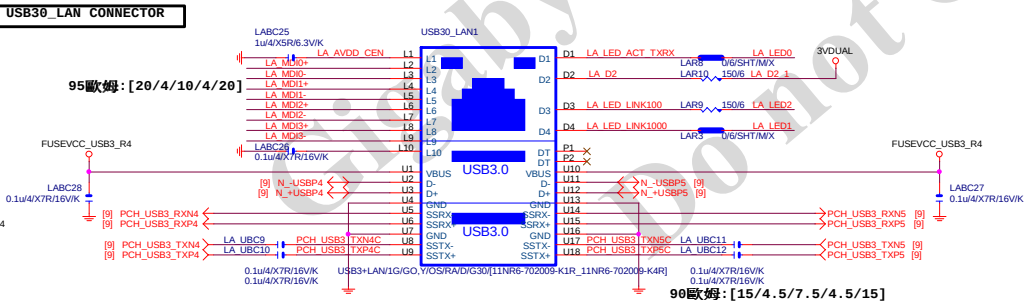
USB30_LAN ESD

RMA ESD PROTECT



*** 使用RU9 USB_LAN可省略LAESD1保護LED**

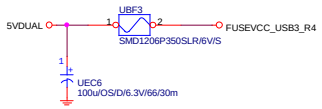
USB30_LAN CONNECTOR



90歐姆:[15/4.5/7.5/4.5/15]

USB X3 POWER

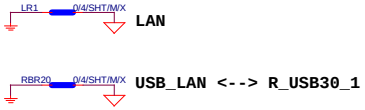
Polyswitch-1206



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

USB30 ESD PROCTECT

EMI SHORT PAD



Title	INTEL LAN I217	
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Gigabyte Technology

LAN:AR8161B

離IC近越好

LA_ ML-->80歐姆:[15/5/5/5/15]

SRCCLK-->50歐姆:[18/4/10/4/18]

LA_ ML-->80歐姆:[15/5/5/5/15]

離IC近越好

AR8161-->N/A (LBBC12)

AR8161:LB_AVDDH(LBR20)
AR8161:3VDUAL(LBR19)/0.1u(LBBC31)

MDI ESD預留28KV

LAN POWER

NEW DESIGN ONLY FOR INTERNAL SWR
AR8151:LAR3(0),LAR5(X)
AR8161:LAR5(0),LAR3/LAR4(X)

CLOSE LA_LX 200mil

AR8151 POWER

AR8161 POWER

AR8161-->(0)

AR8161-->N/A (LAR3,LAR4)

AR8161-->BEAD
AR8151-->N/A

AR8161-->BEAD
AR8151-->0/6

Power domain chart

	AR8151	AR8161
AVDD33	N/A	3.3V
VDD33	3.3V	3.3V
AVDDH	2.7V	2.7V
AVDDL/DVDDL	1.1V	1.1V
VDDCT	1.7V	

MDI : AR8161-->N/A

USB_LAN CONNECTOR

RMA ESD PROTECT

MASK

使用RU9 USB_LAN可省略LAESD1保護LED

LA_MDI-->100歐姆:[20/4/8/4/20]

USB30_LAN2

USB3.0

USB-->90歐姆:[15/4.5/7.5/4.5/15]

USB X3 POWER

注意:LAN LED PROTECT:(CO-LAYOUT)
1.ESD(6PIN):AOZ8902CIL/SOT23-6(DEFAULT)
2.SURGE(5PIN):AZ2025-04S/SOT23-5L

Dual Color LED

Green

Orange

Single Color LED

Yellow

YELLOW

ORANGE (+,-)

GREEN

USB30 ESD PROCTECT

UESD8 AZ1045-04F/MSOP10

UESD7 AZ1045-04F/MSOP10

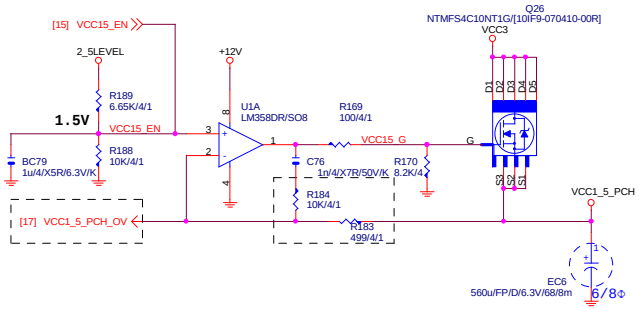
EMI SHORT PAD

PS:視EMI需求

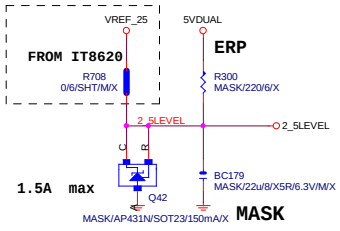
Title	ARTHEROS AR8151/AR8161	
Size C	Document Number GA-Z97N-WIFI	Rev 1.01
Date: Wednesday, June 25, 2014	Sheet 23 of 31	

Gigabyte Technology

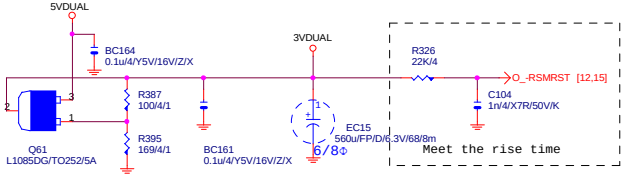
VCC1_5_PCH



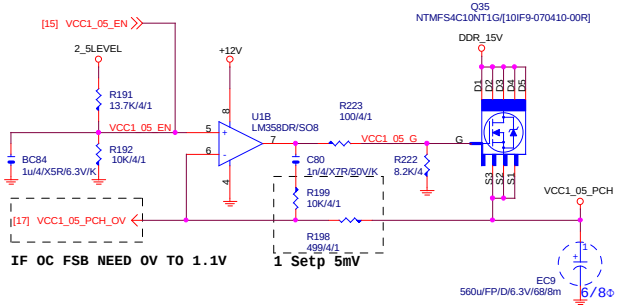
2_5LEVEL



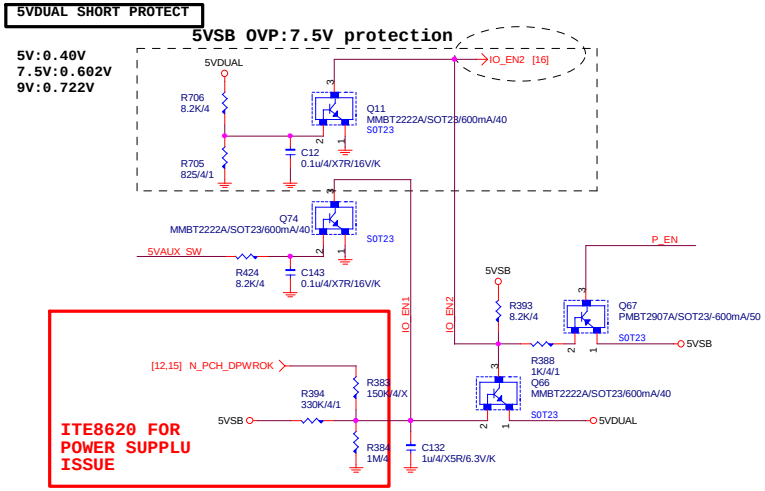
3VDUAL



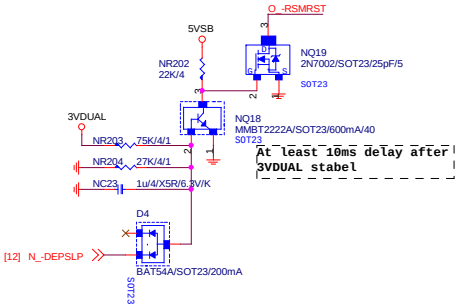
VCC1_05_PCH



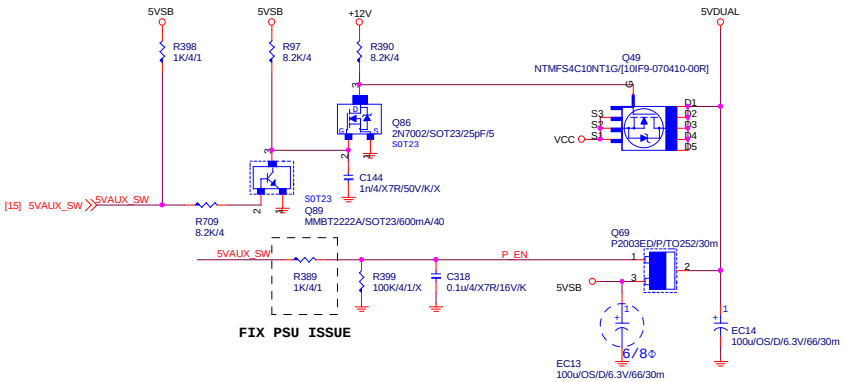
5VDUAL SHORT PROTECT



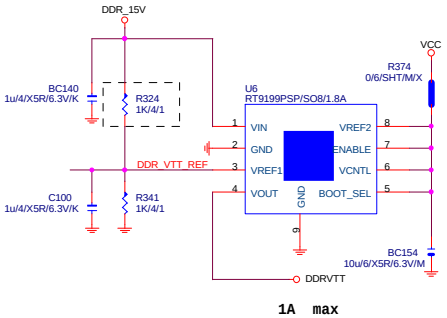
-RSMRST



5VDUAL

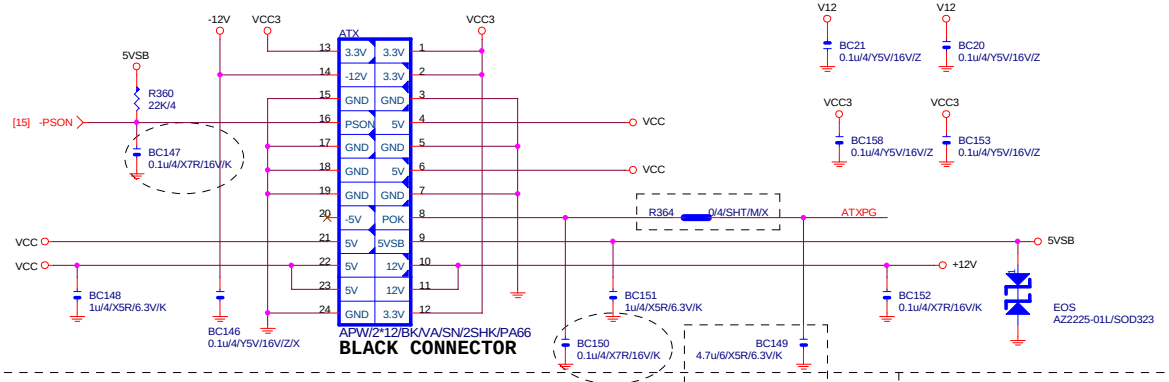


DDRVTT



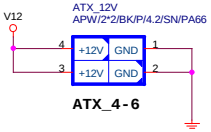
Gigabyte Technology		
Title: DISCRETE POWER		
Size: Custom	Document Number: GA-Z97N-WIFI	Rev: 1.01
Date: Wednesday, June 25, 2014	Sheet 24 of 31	

ATXX24 POWER CONNECTOR



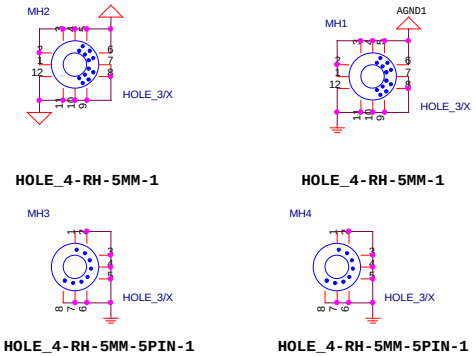
BLACK CONNECTOR

ATX4 POWER CONNECTOR



BLACK CONNECTOR

MB LOCATION

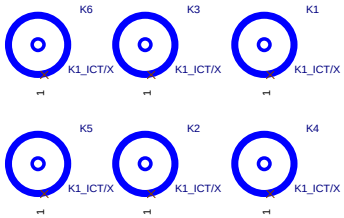


HOLE_4-RH-5MM-1

HOLE_4-RH-5MM-1

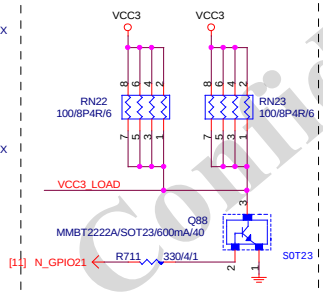
HOLE_4-RH-5MM-5PIN-1

HOLE_4-RH-5MM-5PIN-1



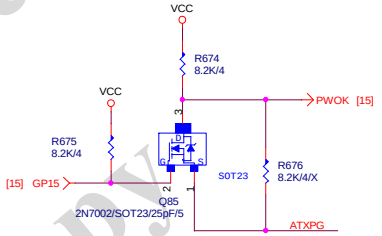
To prevent the 5VSB under loading when boot

FIX PWR MINMUN LOAD



PWOK PATCH

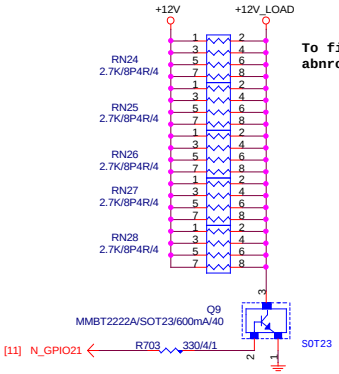
【技術通報R&D技術通報154】



CLK GEN

N/A

【技術通報R&D技術通報153】

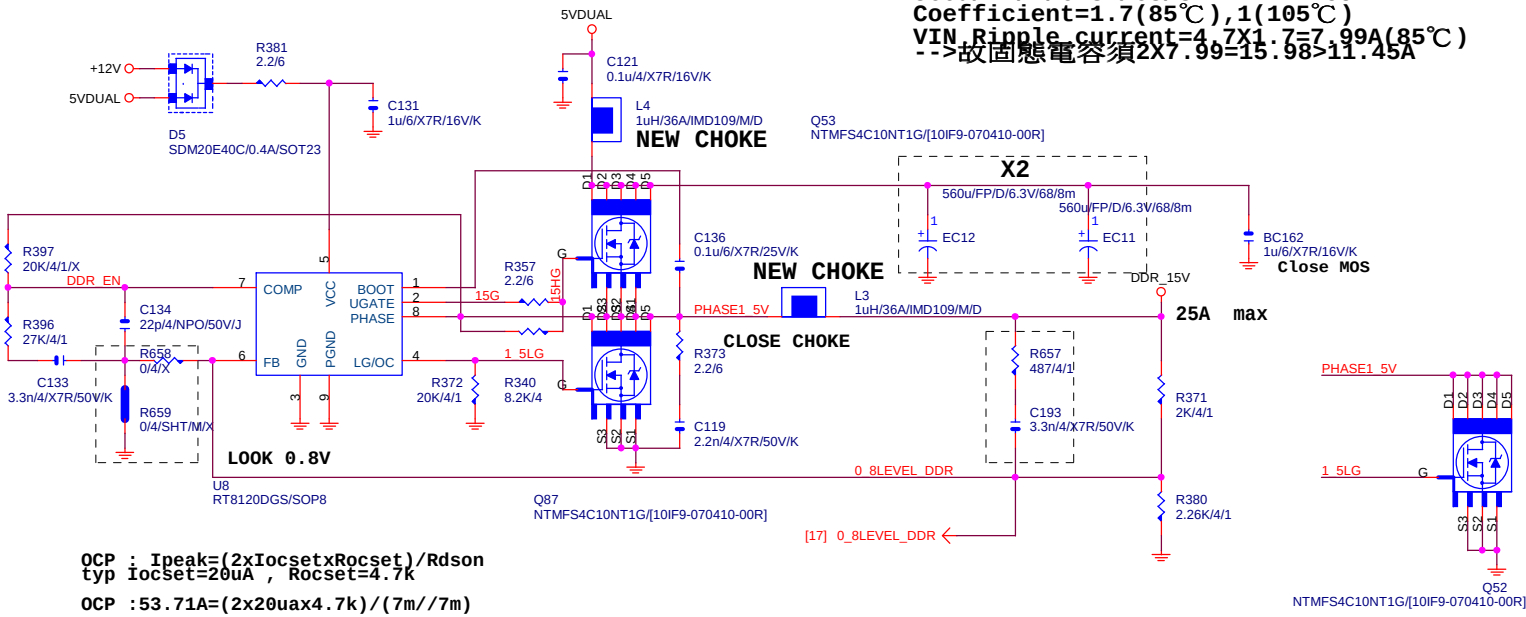


To fix 12V light load abnromal issue

Gigabyte Technology		
Title: ATX CONNECTOR		
Size: Custom	Document Number: GA-Z97N-WIFI	Rev: 1.01
Date: Wednesday, June 25, 2014	Sheet 25 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

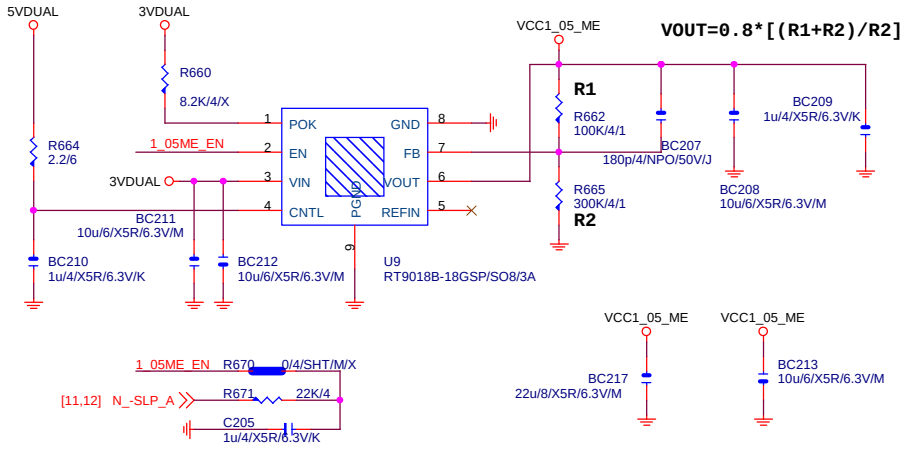
[15] DDR_EN_CON >> DDR_EN

From DDR_15V source
10 mils trace to SIO
DDR_15V DDR_15VIO
MR20 0/4/SHT/M/X

VCC1_05_ME

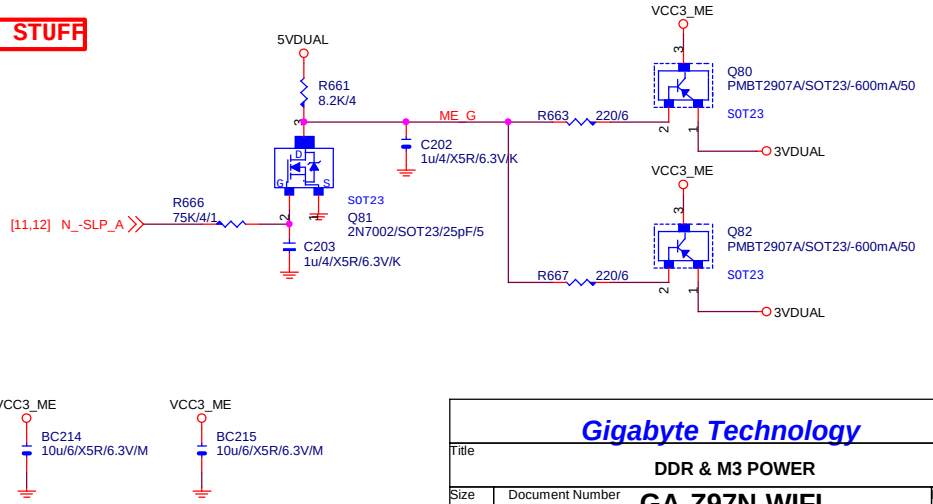
Z97 N/A
Z97+I217V STUFF

【技術通報R&D技術通報156】
(RICHTEK), (NUVOTON), (EMC)做共用
PIN7分壓阻值須做修改為100K以上電阻值



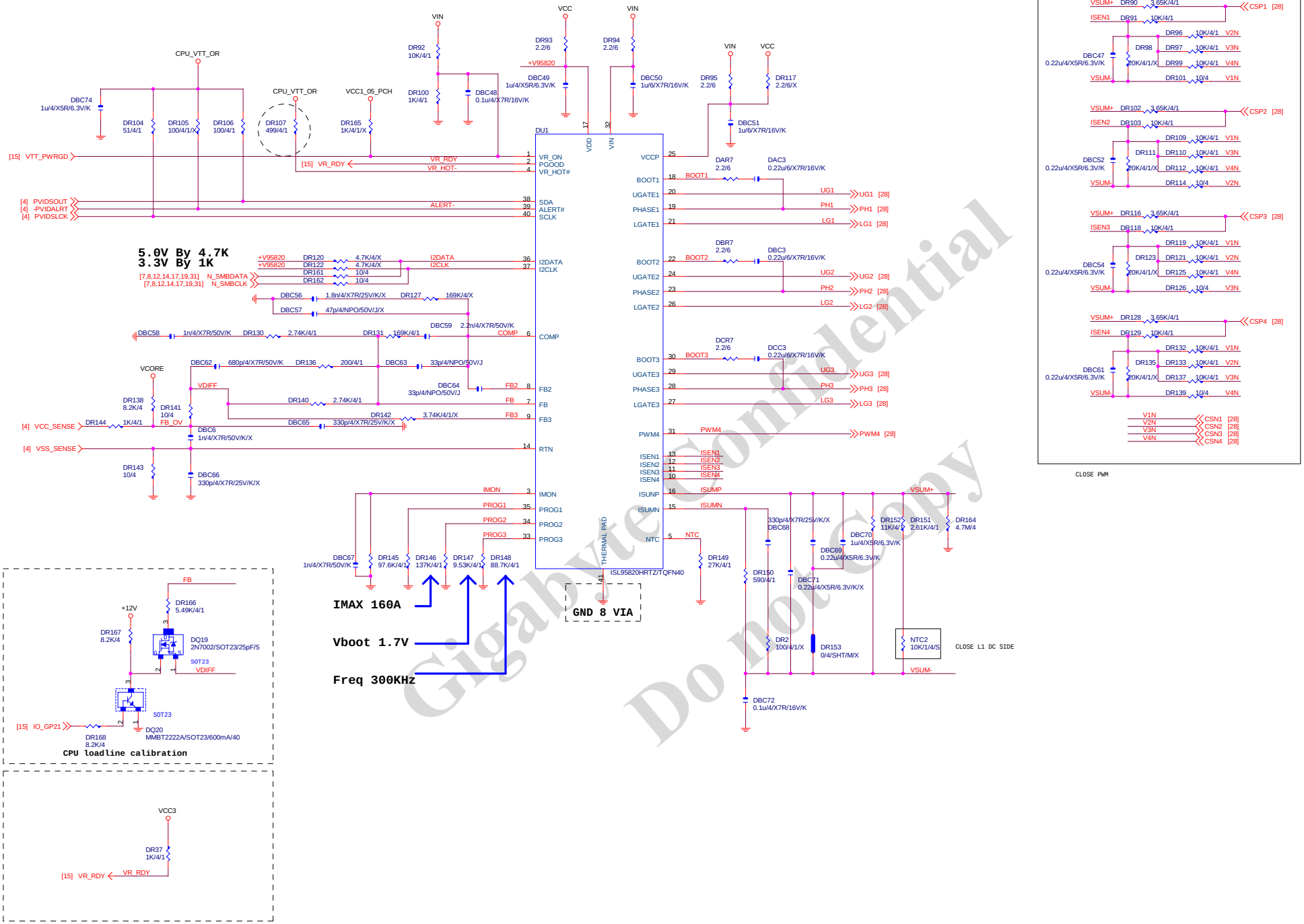
VCC3_ME

Z97 N/A
Z97+I217V STUFF



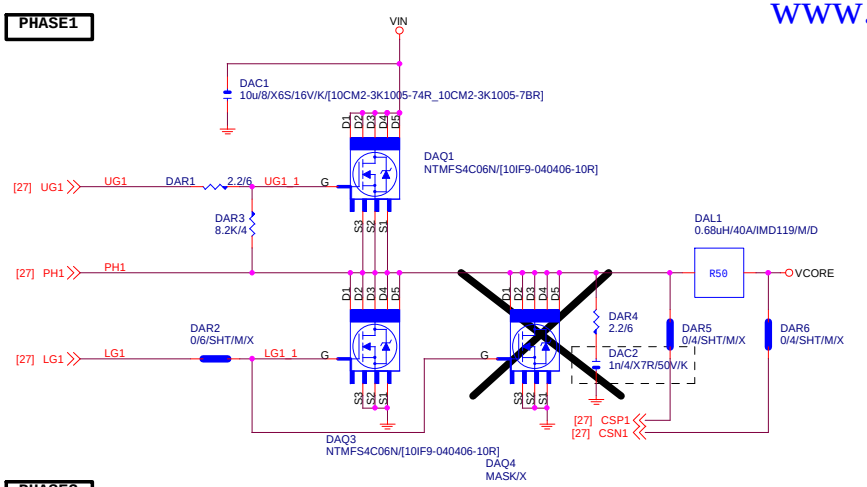
Gigabyte Technology

Title	DDR & M3 POWER	
Size B	Document Number GA-Z97N-WIFI	Rev 1.01
Date: Wednesday, June 25, 2014	Sheet 26 of 31	

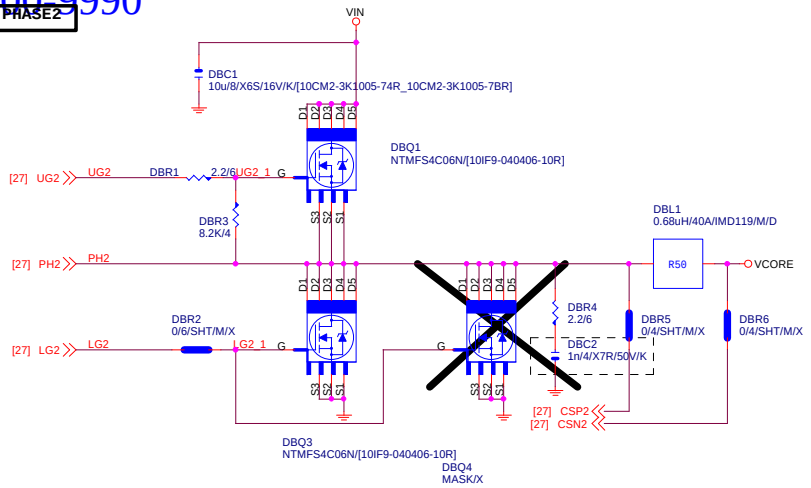


Gigabyte Technology		
Title: CPU CORE VR-1		
Size: Custom	Document Number: GA-Z97N-WIFI	Rev: 1.01
Date: Wednesday, June 25, 2014	Sheet 27 of 31	

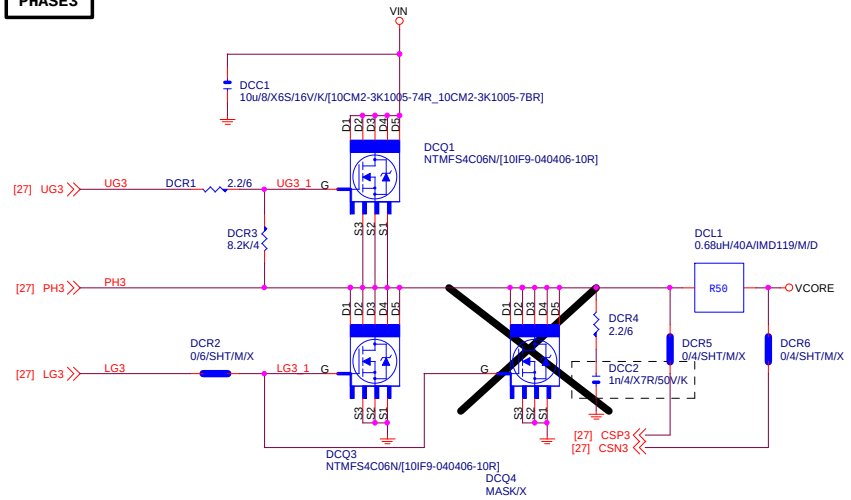
PHASE1

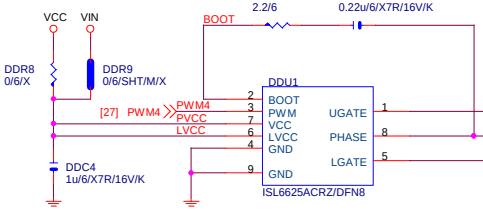


PHASE2

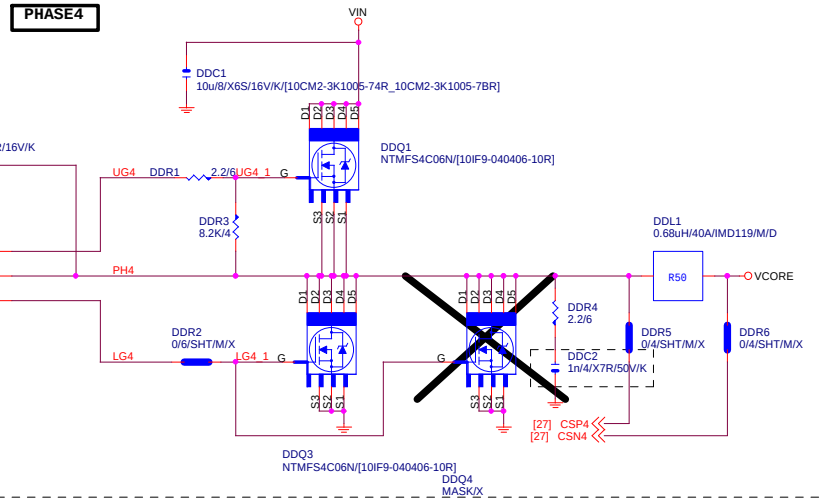


PHASE3



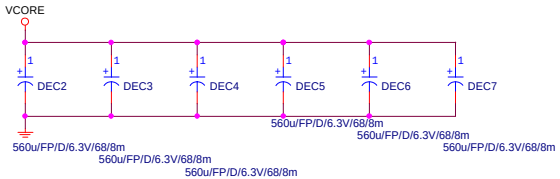


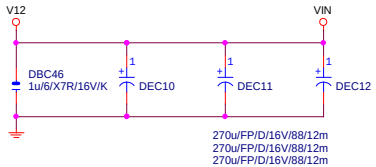
PHASE4



MOS HEATSINK

N/A





Gigabyte Technology		
Title: CPU CORE VR-2		
Size: Custom	Document Number: GA-Z97N-WIFI	Rev: 1.01
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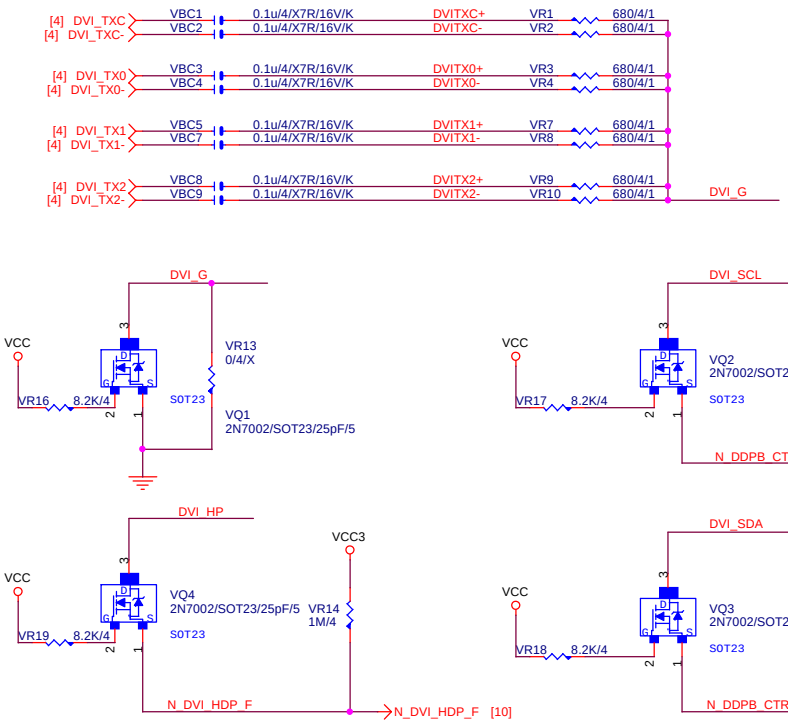
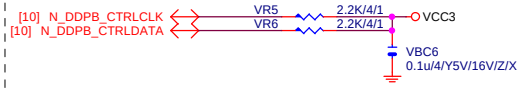
DVI NON LEVEL SHIFT



DVI I PWR



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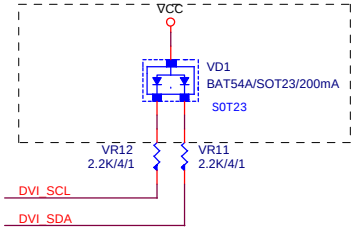
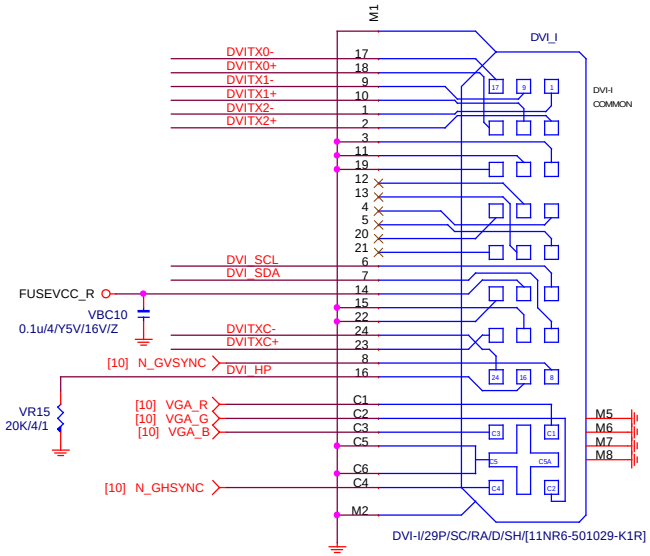
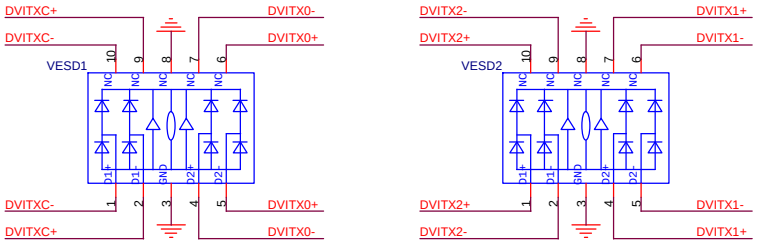


DVI-I CONNECTOR



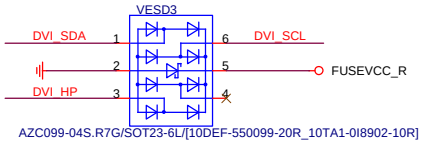
INSERT TRANSFER CONNECTOR TO DISABLE DDC_EN FOR VGA CSM FAIL.

DVI ESD



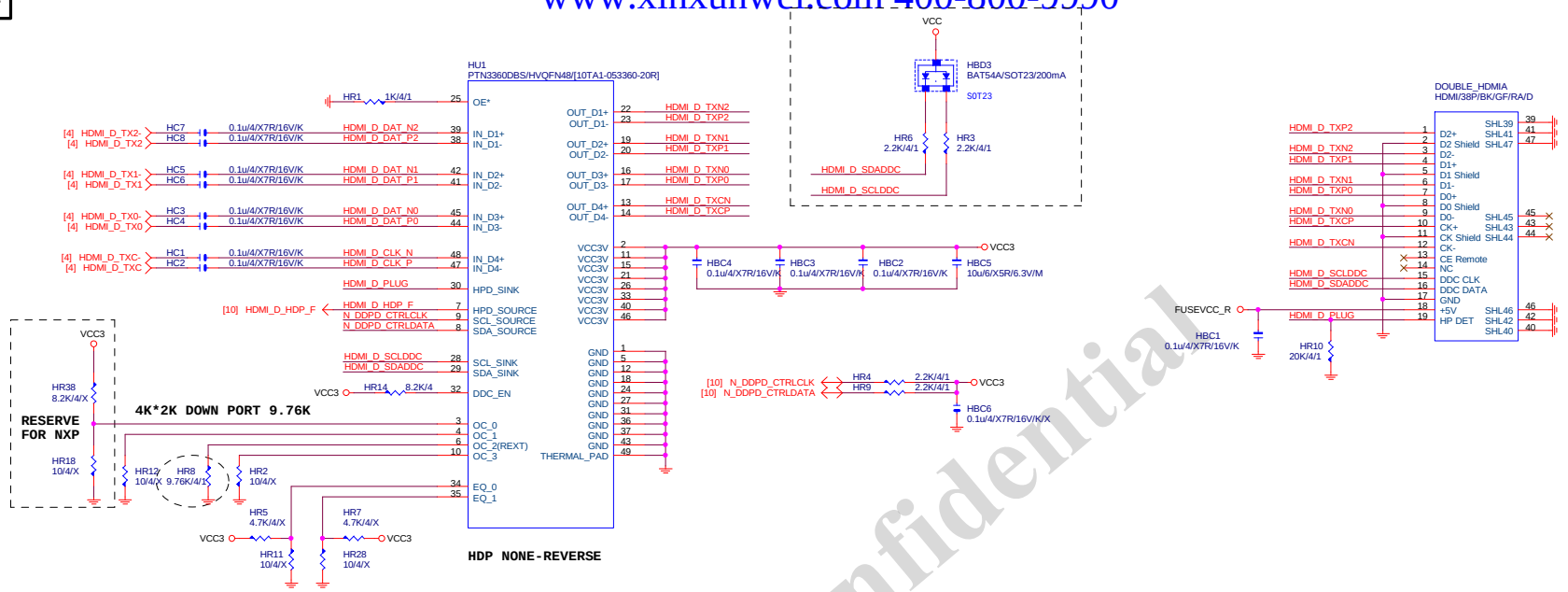
Close to connector

Close to connector

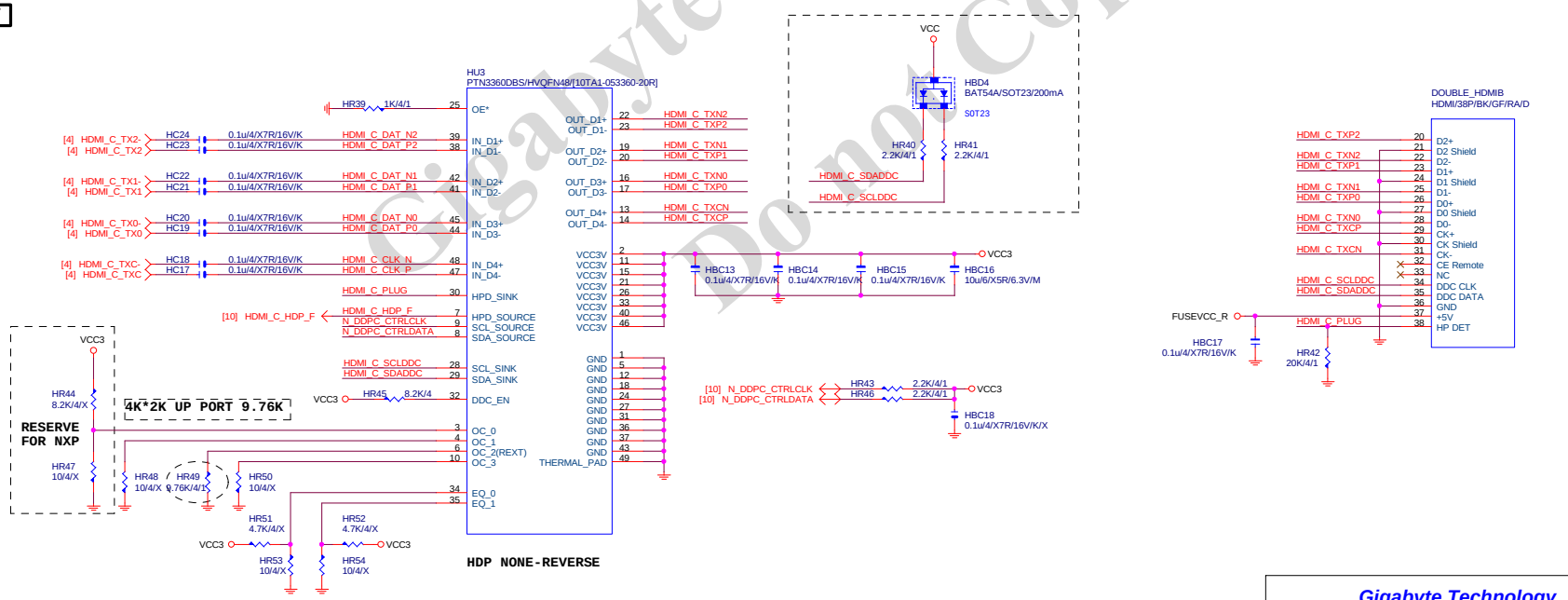


Gigabyte Technology		
Title: DVI-I		
Size: Custom	Document Number: GA-Z97N-WIFI	Rev: 1.01
Date: Wednesday, June 25, 2014	Sheet 29 of 31	

HDMI LEVEL SHIFT

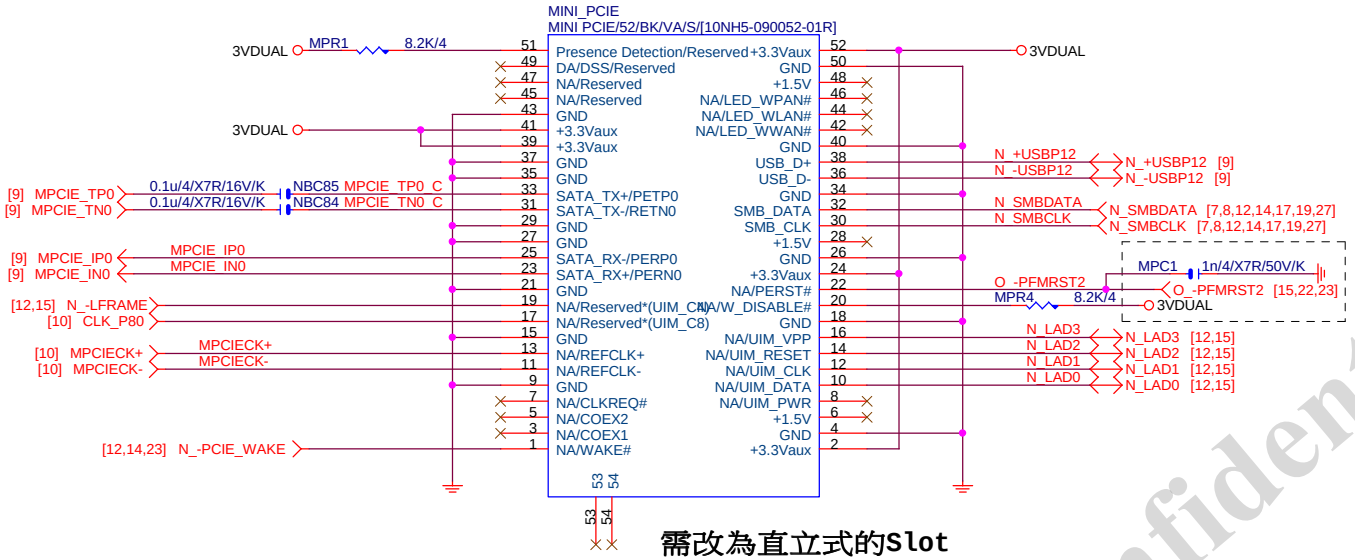


HDMI LEVEL SHIFT

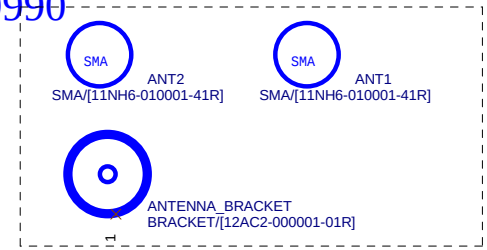


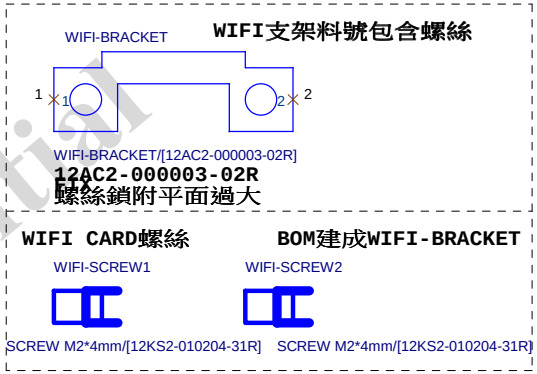
Gigabyte Technology		
Title: HDMI * 2		
Size: Custom	Document Number: GA-Z97N-WIFI	Rev: 1.01
Date: Wednesday, June 25, 2014	Sheet 30 of 31	

Mini PCIE



需改為直立式的Slot





WIFI_MODULE
WI-FI WITH BT MINI CARD INTEL/[20CB1-027260-00R]

Intel 7260 - 2x2 11ac combo

mSATA Slot

N/A

Gigabyte Technology		
Title: MINI PCIE		
Size: Custom	Document Number: GA-Z97N-WIFI	Rev: 1.01
Date: Wednesday, June 25, 2014	Sheet 31 of 31	