www.xinxunwei.com 400-800-9990

Model Name: GA-H81M-D2V

Revision 2.01

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	PCI EXPRESS X1 *2 SLOT
16	PCI SLOT (NA)
17	ITE 8620 LPC IO
18	COM,KB_MS_USB,USB30_20
19	HWM,FAN CTRL,OV
20	DUAL BIOS
21	FP,FUSB,SPK,SATALED
22	Realtek ALC887-VD2
23	REAR AUDIO JACK
24	REALTEK RTL8111F
25	DISCRETE POWER
26	ATX
27	VCORE ISL95812_1

SHEET	TITLE
28	VCORE ISL95812_2
29	RT8120_DDR POWER
30	LPT
31	DVI
32	IT8892E (NA)
33	USB3 VL805

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Gigabyte Technology

Title: Cover Sheet

Size: Custom | Document Number: GA-H81M-D2V | Rev: 2.01

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Model Name: GA-H81M-D2V

Component value change history

2013/04/08

Data	Change Item	Reason
2013/05/15	New BOM	9MH81MD2V-00-01
2013/06/19 9MH81MD2V-00-01	*** 插件位置重覆 *** 新舊線路,元件值不同********** Old BOM LGA1150HASWELL/[10SC1-F01150-11R_10SC1-F01150-12R] New BOM LGA1150HASWELL/[10SC1-F01150-11R_10SC1-F01150-12R] LGA1150ILM_BP/1156/CSP/ILM_BP/1156/CSP/[12KRC-0F0001-52R_12KRC-0F0001-51R] *** 更換 *** 新舊線路中,元件值不同;共 6 個********** U1,'LM324DR/SO14變更為'LM358DR/SO8 LAR13,'150/6變更為'150/4/1 Q59,Q83,Q84,Q57,MMBT2222A/SOT23/600mA/40/[10IT1-002222-11R]變更為MMBT2222A/SOT23/600mA/40 *** 增加 *** 只在新線路中,不在舊線路中;共 2 個********** FEC1,'100u/OS/D/16V/69/A/35m NC3,'22p/4/NPO/50V/J *** 刪除 *** 只在舊線路中,不在新線路中;共 2 個********** R364,'0/4 LGA1150_P,'ILM_BP/1156/CSP/ILM_BP/1156/CSP/[12KRC-0F0001-52R_12KRC-0F0001-51R]	

Circuit or PCB layout change

DATE	Change Item	Reason
2013/04/22	1.由B85M-HD3 Rev 1.0來修改 2.SIO change to IT8620 3.PWM change to ISL95812+6208 4.Delete 2 port SATA3 5.Add VL805 6.Delete HDMI 7.COM port change to rear 8.Delete PCI IT8892E 9.Fan control change to NCT3941S 10.SIO 統一命名O開頭	Rev 0.1
2013/05/23	1.U1 change to LM358	Rev 0.2
2013/06/27	1.PCH pin AD40 接到N_GPIO14 2.Add R394,請靠近R384&C132 3.Remove Q60 4.Add O_-RSMRST delay circuit	Rev 1.0
2013/10/15	1.修改PCH crystal 走線 (技術通報164)	Rev 1.02
2013/11/25	1.DDR VDDSPD change to 0805 fuse 2.FAN +12V,R60改為R0603-SHORT10 3.其它 0 ohm 改R0402-2-SHORT10-MASK	Rev 1.03
2014/04/08	1. H81 series 兩階段cost down	Rev 2.0
2014/04/09	1.業務需求,VCORE MOSFET改回一上二下	Rev 2.01

PCB : S4VNB (精成,全成信,伊利安達)
S:單文
4:四層板
V:第二層是VCC
N:咖啡色
B:製程

Gigabyte Technology
Title: BOM & PCB MODIFY HISTORY
Size: Custom | Document Number: GA-H81M-D2V | Rev: 2.01
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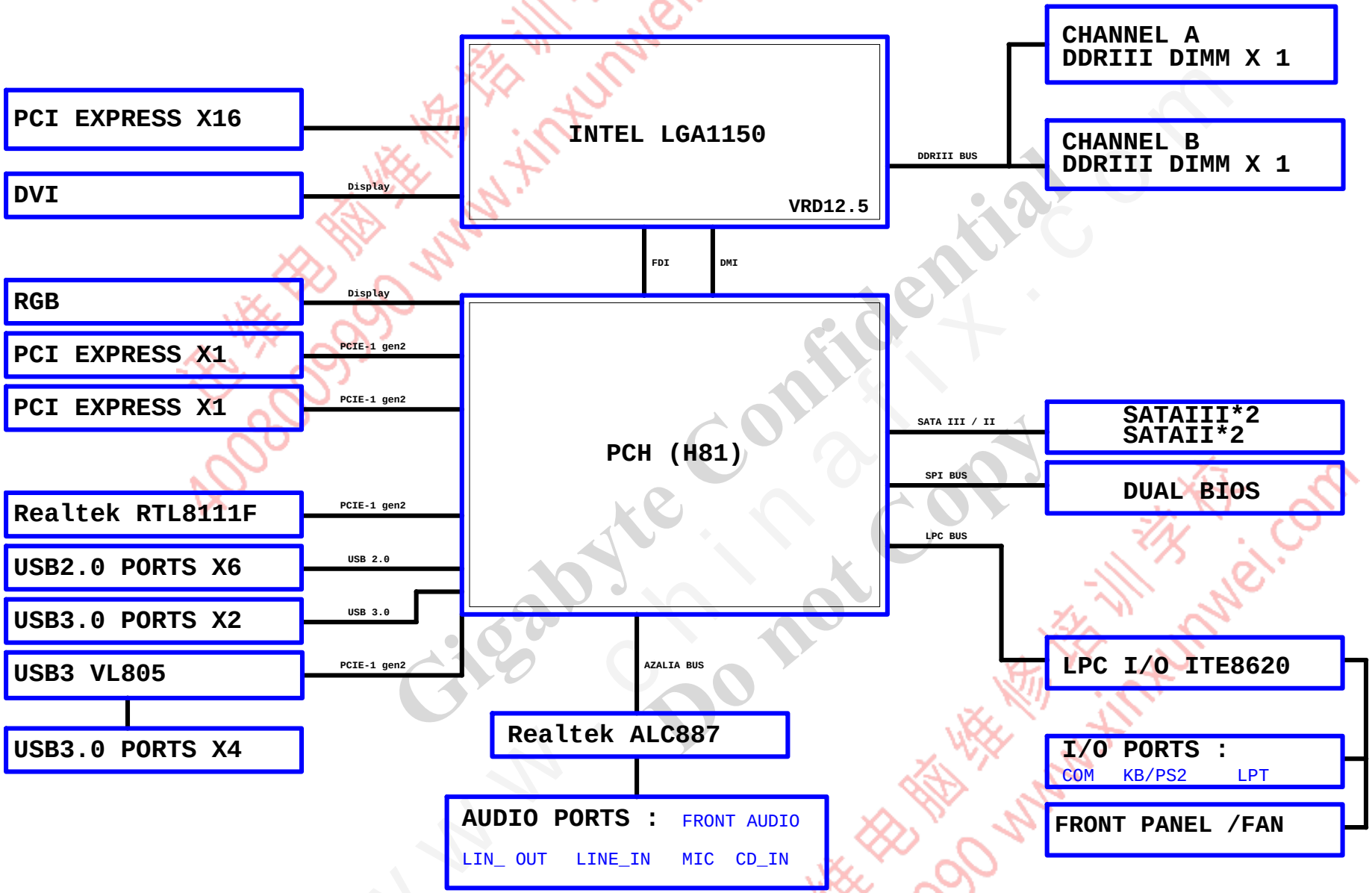
BLOCK DIAGRAM



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Gigabyte Technology		
Title: BLOCK DIAGRAM		
Size: C	Document Number: GA-H81M-D2V	Rev: 2.01
Date: Wednesday, May 21, 2014	Sheet 3 of 33	

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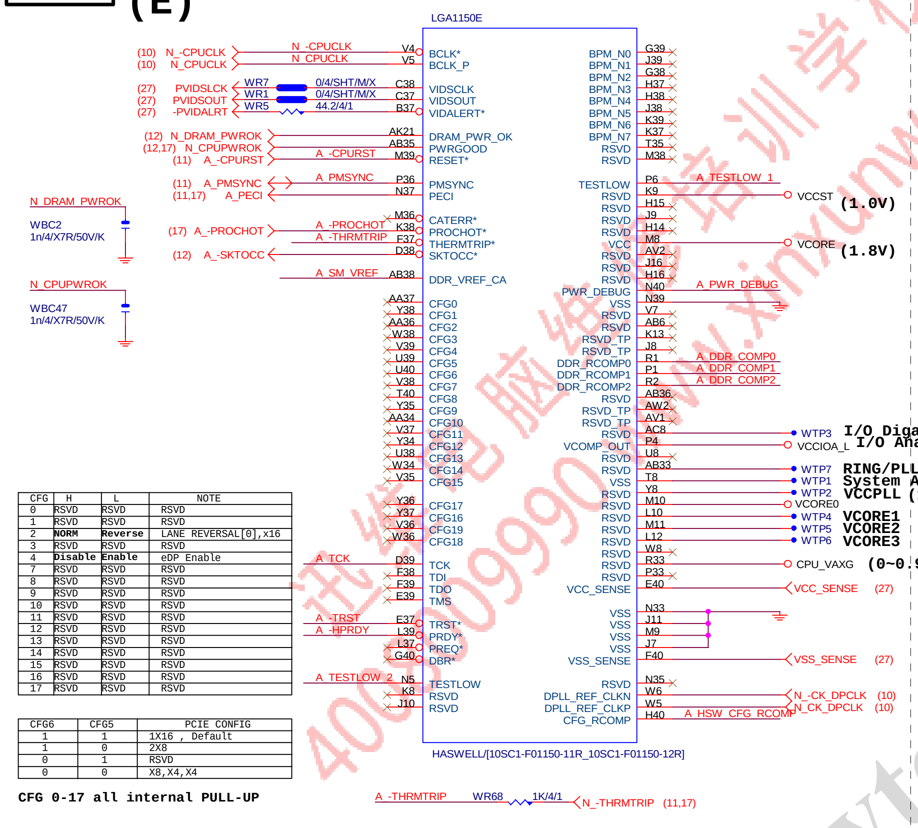
LGA1150 (E)



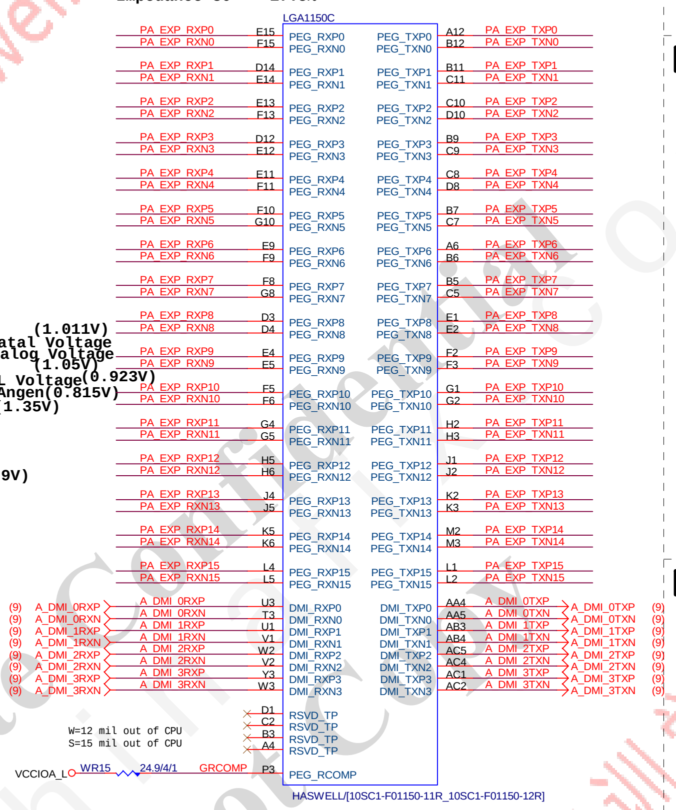
CFG	H	L	NOTE
0	RSVD	RSVD	RSVD
1	RSVD	RSVD	RSVD
2	**NORM**	**Reverse**	LANE REVERSAL[0],x16
3	RSVD	RSVD	RSVD
4	**Disable**	**Enable**	eDP Enable
7	RSVD	RSVD	RSVD
8	RSVD	RSVD	RSVD
9	RSVD	RSVD	RSVD
10	RSVD	RSVD	RSVD
11	RSVD	RSVD	RSVD
12	RSVD	RSVD	RSVD
13	RSVD	RSVD	RSVD
14	RSVD	RSVD	RSVD
15	RSVD	RSVD	RSVD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

CFG 0-17 all internal PULL-UP

LGA1155 (C)

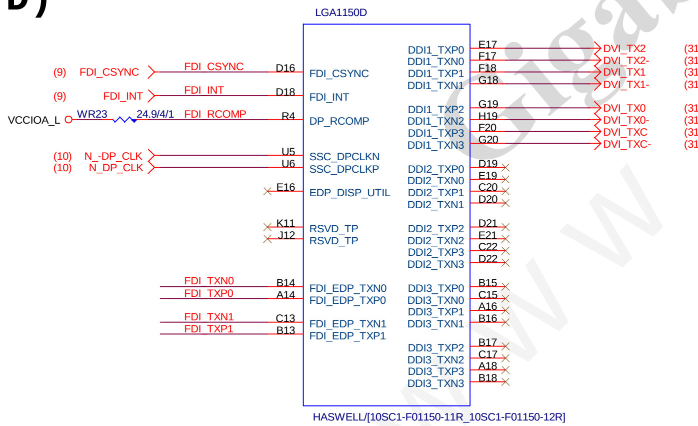
PCIEX16:16/5/5/5/16(breakout min 10/4/4/4/10)
Impedance=80 +- 17.5%



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

PA_EXP_TXP[0..15] (14)
PA_EXP_TXN[0..15] (14)
PA_EXP_RXP[0..15] (14)
PA_EXP_RXN[0..15] (14)

LGA1150 (D)



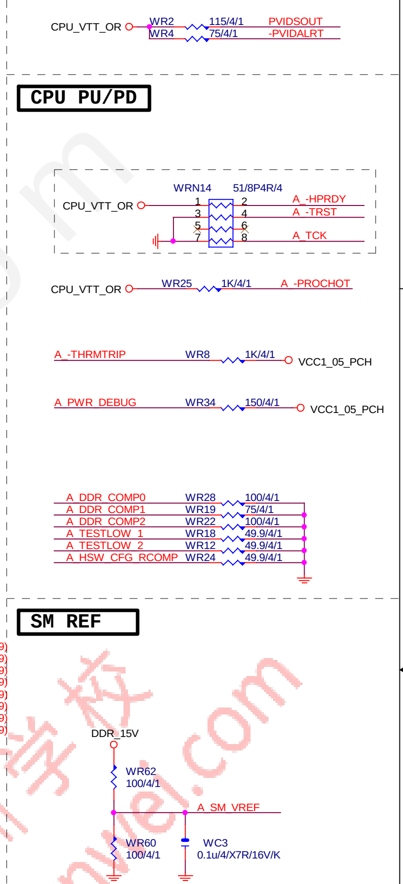
FDI:12/4/5/4/12(breakout min 6/4/4/4/6)
Impedance=85 +- 17.5%

FDI_TXP[0..1] (9)
FDI_TXN[0..1] (9)

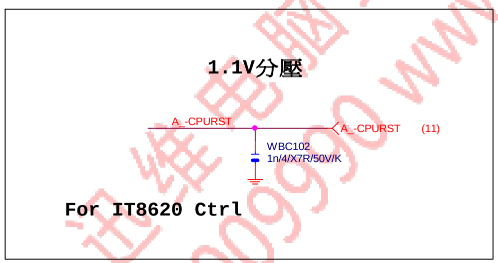
CPU SVID

CPU PU/PD

SM REF



-CPURST



	Gigabyte Technology
Title	CPU LGA1150-A
Size Custom / Document Number	GA-H81M-D2V
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Date:	Tuesday, May 27, 2014
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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_DQ22	AP37	MDA22
	AV33	DDR0_ECC0	DDR0_DQ23	AP40	MDA23
	AU31	DDR0_ECC1	DDR0_DQ24	AV37	MDA25
	AV31	DDR0_ECC2	DDR0_DQ25	AW37	MDA29
	AT33	DDR0_ECC3	DDR0_DQ26	AU35	MDA26
	AU33	DDR0_ECC4	DDR0_DQ27	AV35	MDA27
	AT31	DDR0_ECC5	DDR0_DQ28	AT37	MDA28
	AW31	DDR0_ECC6	DDR0_DQ29	AU37	MDA24
		DDR0_ECC7	DDR0_DQ30	AT35	MDA30
			DDR0_DQ31	AW35	MDA31
(7) SBAA0	SBAA0	AV12		DDR0_DQ32	AY6	MDA33
(7) SBAA1	SBAA1	AY11	DDR0_BA0	DDR0_DQ33	AU6	MDA37
(7) SBAA2	SBAA2	AT21	DDR0_BA1	DDR0_DQ34	AV4	MDA34
			DDR0_BA2	DDR0_DQ35	AU4	MDA35
(7) CKEA0	CKEA0	AV22		DDR0_DQ36	AW6	MDA36
(7) CKEA1	CKEA1	AT23	DDR0_CKE0	DDR0_DQ37	AV6	MDA32
		AU22	DDR0_CKE1	DDR0_DQ38	AW4	MDA38
		AU23	DDR0_CKE2	DDR0_DQ39	AY4	MDA39
			DDR0_CKE3	DDR0_DQ40	AR1	MDA41
(7) -CSA0	-CSA0	AU14		DDR0_DQ41	AR4	MDA45
(7) -CSA1	-CSA1	AV9	DDR0_CS_N0	DDR0_DQ42	AN3	MDA42
		AU10	DDR0_CS_N1	DDR0_DQ43	AN4	MDA43
		AW8	DDR0_CS_N2	DDR0_DQ44	AR2	MDA44
			DDR0_CS_N3	DDR0_DQ45	AR3	MDA40
(7) DCLKA0	DCLKA0	AY15		DDR0_DQ46	AN2	MDA46
(7) -DCLKA0	-DCLKA0	AY16	DDR0_CLK_P0	DDR0_DQ47	AN1	MDA47
(7) DCLKA1	DCLKA1	AW15	DDR0_CLK_N0	DDR0_DQ48	AL1	MDA49
(7) -DCLKA1	-DCLKA1	AV15	DDR0_CLK_P1	DDR0_DQ49	AL4	MDA53
		AY14	DDR0_CLK_N1	DDR0_DQ50	AJ3	MDA50
		AW14	DDR0_CLK_P2	DDR0_DQ51	AJ4	MDA51
		AW13	DDR0_CLK_N2	DDR0_DQ52	AL2	MDA52
		AY13	DDR0_CLK_P3	DDR0_DQ53	AL3	MDA48
			DDR0_CLK_N3	DDR0_DQ54	AJ2	MDA54
		AW12		DDR0_DQ55	AJ1	MDA55
			RSVD	DDR0_DQ56	AG1	MDA57
				DDR0_DQ57	AG4	MDA61
				DDR0_DQ58	AE3	MDA58
				DDR0_DQ59	AE4	MDA59
				DDR0_DQ60	AG2	MDA60
				DDR0_DQ61	AG3	MDA56
				DDR0_DQ62	AE2	MDA62
				DDR0_DQ63	AE1	MDA63
(7) -SRASA	-SRASA	AU12	DDR0_RAS*	DDR0_DQS_P0	AJ39	DQSA0
(7) -SWEA	-SWEA	AU11	DDR0_WE*	DDR0_DQS_P1	AJ39	DQSA1
		AV20	RSVD	DDR0_DQS_P2	AN39	DQSA2
		AW27	RSVD	DDR0_DQS_P3	AV36	DQSA3
(7) -SCASA	-SCASA	AU9	DDR0_CAS*	DDR0_DQS_P4	AV5	DQSA4
				DDR0_DQS_P5	AP3	DQSA5
				DDR0_DQS_P6	AK3	DQSA6
				DDR0_DQS_P7	AE3	DQSA7
					AV32	
				DDR0_DQS_P8	AE38	-DQSA0
				DDR0_DQS_N0	AJ38	-DQSA1
				DDR0_DQS_N1	AN38	-DQSA2
				DDR0_DQS_N2	AU36	-DQSA3
				DDR0_DQS_N3	AW5	-DQSA4
				DDR0_DQS_N4	AP2	-DQSA5
				DDR0_DQS_N5	AK2	-DQSA6
				DDR0_DQS_N6	AF2	-DQSA7
				DDR0_DQS_N7	AU32	
				DDR0_DQS_N8		

(7,8) -DDR3_RST — WR61 0/4/SHT/M/X — WC4 0.1u/4/X7R/16V/K/X

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_DQ17	AP34	MDB21
MODT_B1	AL16	DDR1_ODT0	DDR1_DQ18	AN31	MDB19
	AM16	DDR1_ODT1	DDR1_DQ19	AP31	MDB23
	AK15	DDR1_ODT2	DDR1_DQ20	AN35	MDB20
		DDR1_ODT3	DDR1_DQ21	AP35	MDB16
	AM26		DDR1_DQ22	AN32	MDB18
	AM25	DDR1_ECC0	DDR1_DQ23	AP32	MDB22
	AP25	DDR1_ECC1	DDR1_DQ24	AM29	MDB25
	AP26	DDR1_ECC2	DDR1_DQ25	AM28	MDB28
	AL26	DDR1_ECC3	DDR1_DQ26	AR29	MDB27
	AL25	DDR1_ECC4	DDR1_DQ27	AR28	MDB30
	AR26	DDR1_ECC5	DDR1_DQ28	AL29	MDB24
	AR25	DDR1_ECC6	DDR1_DQ29	AL28	MDB29
		DDR1_ECC7	DDR1_DQ30	AP29	MDB26
			DDR1_DQ31	AP28	MDB31
(8) SBAB0	SBAB0	AK17		DDR1_DQ32	AR12	MDB32
(8) SBAB1	SBAB1	AL18	DDR1_BA0	DDR1_DQ33	AP12	MDB33
(8) SBAB2	SBAB2	AW28	DDR1_BA1	DDR1_DQ34	AL13	MDB34
			DDR1_BA2	DDR1_DQ35	AL12	MDB35
(8) CKEB0	CKEB0	AW29		DDR1_DQ36	AR13	MDB36
(8) CKEB1	CKEB1	AY29	DDR1_CKE0	DDR1_DQ37	AP13	MDB37
		AU28	DDR1_CKE1	DDR1_DQ38	AM13	MDB38
		AU29	DDR1_CKE2	DDR1_DQ39	AM12	MDB39
			DDR1_CKE3	DDR1_DQ40	AR9	MDB45
(8) -CSB0	-CSB0	AP17		DDR1_DQ41	AP9	MDB41
(8) -CSB1	-CSB1	AN15	DDR1_CS_N0	DDR1_DQ42	AR6	MDB47
		AN17	DDR1_CS_N1	DDR1_DQ43	AP6	MDB43
		AL15	DDR1_CS_N2	DDR1_DQ44	AR10	MDB44
			DDR1_CS_N3	DDR1_DQ45	AP10	MDB40
				DDR1_DQ46	AR7	MDB46
				DDR1_DQ47	AP7	MDB42
(8) DCLKB0	DCLKB0	AM20		DDR1_DQ48	AM9	MDB52
(8) -DCLKB0	-DCLKB0	AM21	DDR1_CLK_P0	DDR1_DQ49	AL9	MDB53
(8) DCLKB1	DCLKB1	AP22	DDR1_CLK_N0	DDR1_DQ50	AL6	MDB50
(8) -DCLKB1	-DCLKB1	AP21	DDR1_CLK_P1	DDR1_DQ51	AL7	MDB55
			DDR1_CLK_N1	DDR1_DQ52	AM10	MDB48
		AN20		DDR1_DQ53	AL10	MDB49
		AN21	DDR1_CLK_P2	DDR1_DQ54	AM6	MDB54
		AP19	DDR1_CLK_N2	DDR1_DQ55	AM7	MDB51
		AP20	DDR1_CLK_P3	DDR1_DQ56	AH6	MDB61
			DDR1_CLK_N3	DDR1_DQ57	AH7	MDB60
(8) -SCASB	-SCASB	AP16		DDR1_DQ58	AE6	MDB59
		AL20	DDR1_CAS*	DDR1_DQ59	AE7	MDB63
(8) -SRASB	-SRASB	AM18	RSVD	DDR1_DQ60	AJ6	MDB56
(8) -SWEB	-SWEB	AK16	DDR1_RAS*	DDR1_DQ61	AJ7	MDB57
			DDR1_WE*	DDR1_DQ62	AF6	MDB58
				DDR1_DQ63	AF7	MDB62
(7) VREF_DQA	VREF_DQA	AB39		DDR1_DQS_P0	AE35	DQSB0
(8) VREF_DQB	VREF_DQB	AB40	DDR_VREF_DQ0	DDR1_DQS_P1	AL33	DQSB1
			DDR_VREF_DQ1	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	AE34	-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	

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

Place in CPU bottom side

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

LGA1150 (CR)

CR
CPU RETAINTION/X

LGA1150

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 LGA1150-B			
Size: Custom	Document Number: GA-H81M-D2V		Rev: 2.01
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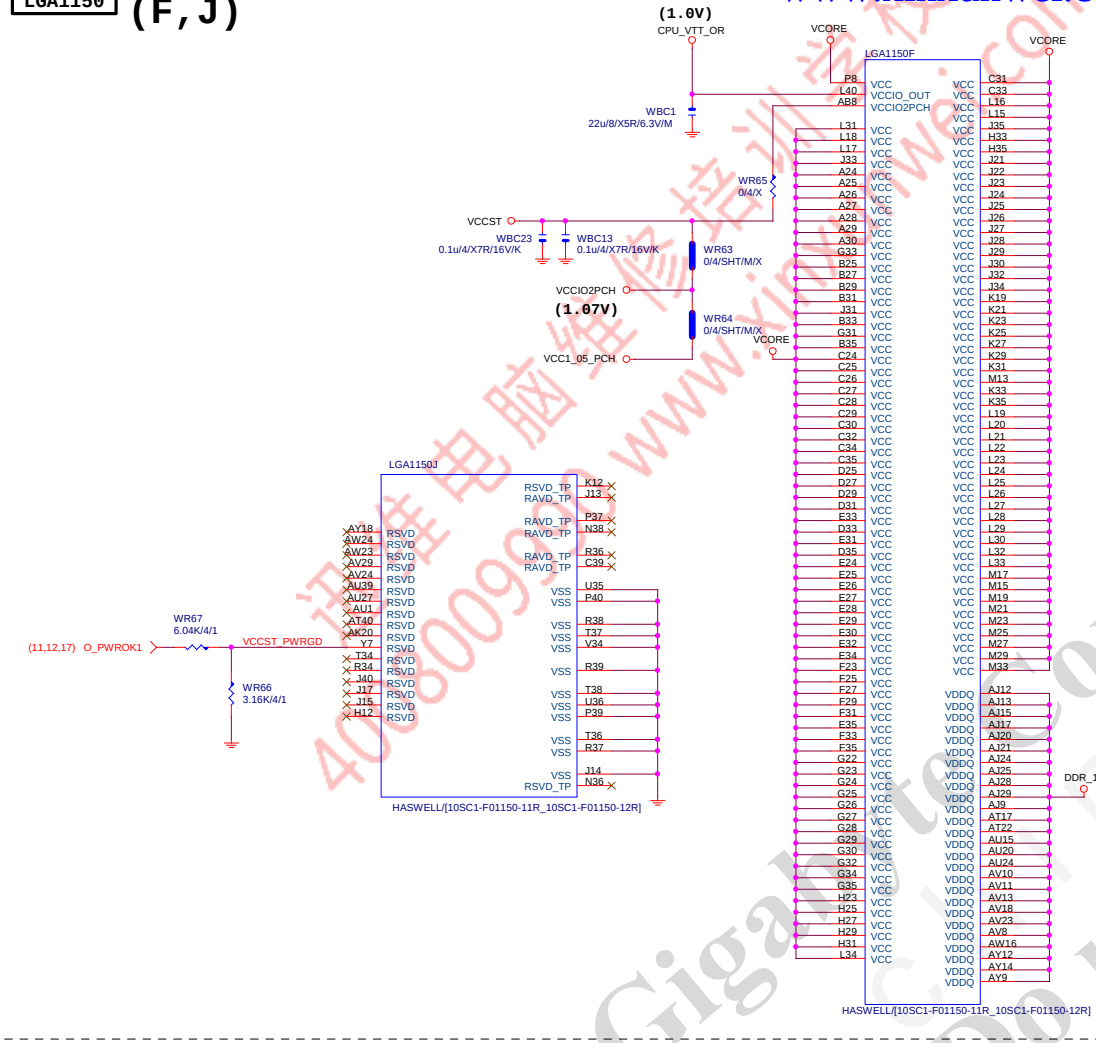
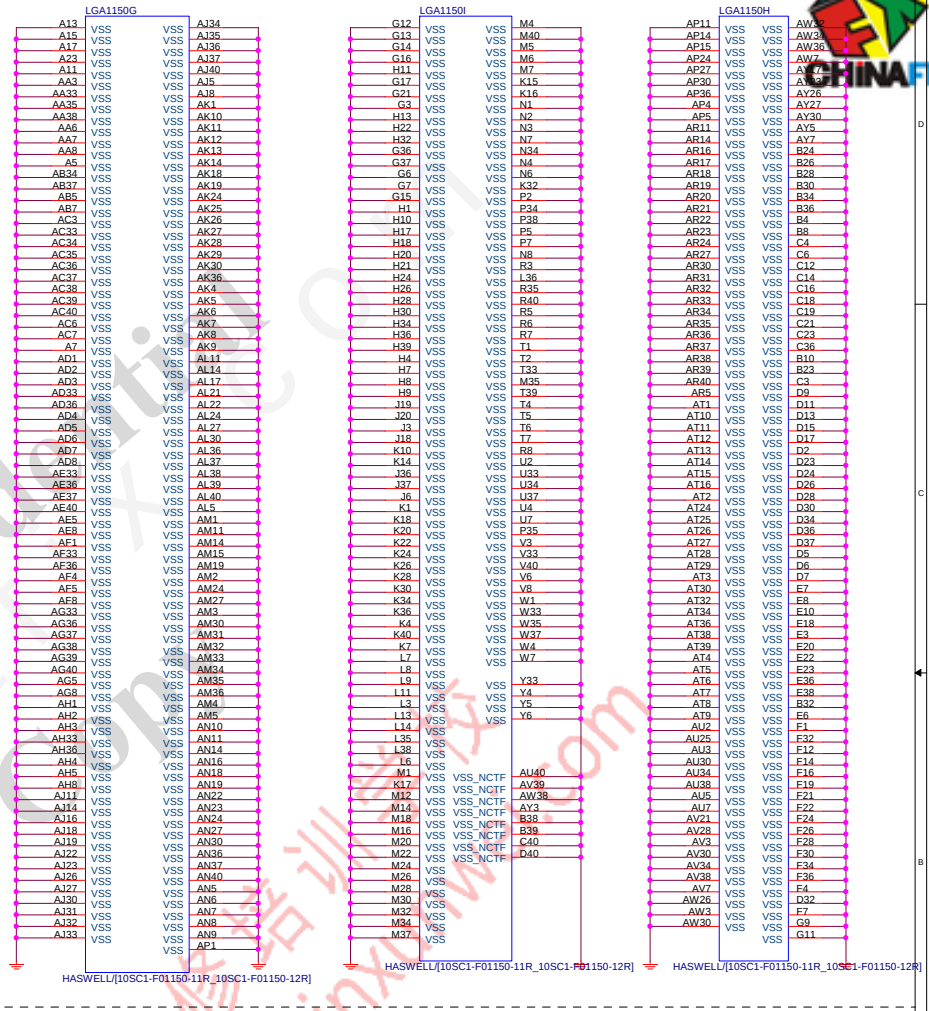
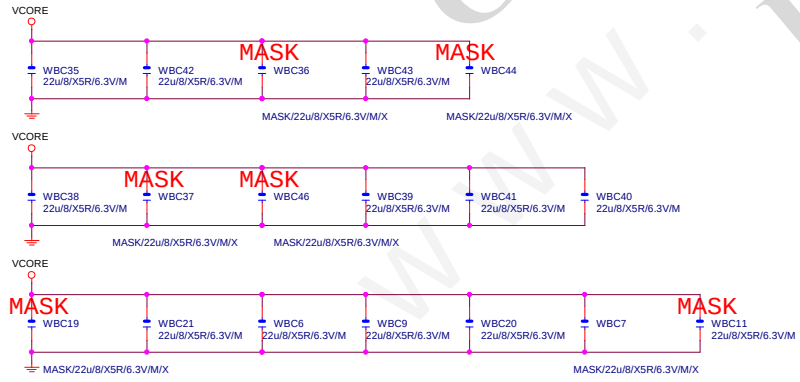
LGA1150 (F,J)



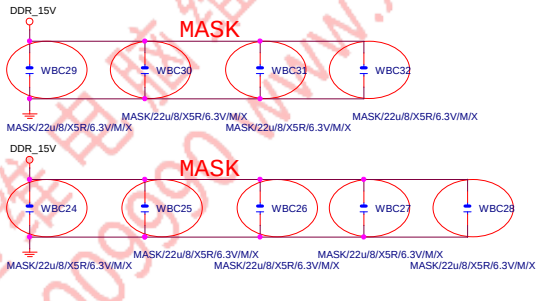
LGA1155 (G,H,I)



VCore CAP (X18)



DDR CAP (X9)



Gigabyte Technology			
Title: CPU LGA1150-C			
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DDR3 (A)

DDR3_1

DDRVTT

DDR_15V

N_SMBDATA
N_SMBCLK

MC10 100p/4/NPO/50V/J/X
MC11 100p/4/NPO/50V/J/X

MAF1 SPR-P200T/6V/8/S
VCC3
VDDSPD

MC4 0.1u/4/X7R/16V/K/X
MC5 VREF_DDRA
MC1 VREF_DQDDRA
0.1u/4/X7R/16V/K/X

VREFCA
VREFDQ

(8,12,14,15) N_SMBCLK
(8,12,14,15) N_SMBDATA

SBAA2 SBAA1 SBAA0
CKEA1 CKEA0
-CSA1 -CSA0
-DCLKA1 DCLKA1
-DCLKA0 DCLKA0
MAAA[0..15]
-DDR3_RST
-SCASA -SRASA -SWEA

MC6 100p/4/NPO/50V/J/X

DDR3/240/BK/VA/D

BLACK CONNECTOR

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

MDA[0..63] (5)

DDR3 VREF

DDR_15V

MR15 1K/4/1
MR14 1K/4/1
VREF_DDRA

MR4 1K/4/1
MR5 1K/4/1
VREF_DQDDRA
VREF_DQA (5)

DDR15V Decouple

DDR_15V

MEC1 560u/FP/D/6.3V/69/A/11m/[11CO2-695600-09R]
MEC2 560u/FP/D/6.3V/69/A/11m/[11CO2-695600-09R]

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/X7R/16V/K

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Gigabyte Technology

Title: DDRIII CHANNEL A

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DDR3 (B)

DDR3_2

DDRVTT

DDR_15V

MC2 0.1u/4/X7R/16V/K/X

VDDSPD

MC14 0.1u/4/X7R/16V/K/X VREF_DDRB

MC9 0.1u/4/X7R/16V/K/X VREF_DDDRB

(7,12,14,15) N_SMBCLK

(7,12,14,15) N_SMBDATA

(5) SBAB2 SBAB1 SBAB0

(5) CKEB1 CKEB0

(5) -CSB1 -CSB0

(5) -DCLKB1 DCLKB1

(5) -DCLKB0 DCLKB0

(5) MAAB[0..15]

(5,7) -DDR3_RST

(5) -SCASB

(5) -SRASB

(5) -SWEB

MDB[0..63] (5)

DDR3/240/BK/VA/D

BLACK CONNECTOR

-DQSB[0..7] -DQSB[0..7] (5)

DQSB[0..7] DQSB[0..7] (5)

MODT_B[0..1] MODT_B[0..1] (5)

DDR3 VREF

DDR_15V DDR_15V

MR10 1K/4/1 MR8 1K/4/1

VREF_DDRB VREF_DDDRB VREF_DQB (5)

MR11 1K/4/1 MR9 1K/4/1

COUPON

COUPON1 COUPON1 1 2 COUPON/X

COUPON2 COUPON2 1 2 COUPON/X

CPU

DIMM4 DIMM2 CHA

DIMM3 DIMM1 CHB

Gigabyte Technology

Title: DDRIII CHANNEL B

Size: Custom | Document Number: GA-H81M-D2V | Rev: 2.01

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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%

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_RCOMP PCIE_RCOMP CLKIN_DMI_N CLKIN_DMI_P

USBN_0 USBP_0 USBN_1 USBP_1 USBN_2 USBP_2 USBN_3 USBP_3 USBN_4 USBP_4 USBN_5 USBP_5 USBN_6 USBP_6 USBN_7 USBP_7 USBN_8 USBP_8 USBN_9 USBP_9 USBN_10 USBP_10 USBN_11 USBP_11 USBN_12 USBP_12 USBN_13 USBP_13

AV10 N_-USBP0 → N_-USBP0 (21)
AU10 N_+USBP0 → N_+USBP0 (21)
AV11 N_-USBP1 → N_-USBP1 (21)
AW11 N_+USBP1 → N_+USBP1 (21)
AN14 AP14 AJ16 AK16
AU15 N_-USBP4 → N_-USBP4 (18)
AV15 N_+USBP4 → N_+USBP4 (18)
AU12 N_-USBP5 → N_-USBP5 (18)
AT12 N_+USBP5 → N_+USBP5 (18)
AV14 AW14 AU17 AT17 — H81: Port 6/7/12/13 N/A
AW16 N_-USBP8 → N_-USBP8 (21)
AV16 N_+USBP8 → N_+USBP8 (21)
AN16 N_-USBP9 → N_-USBP9 (21)
AP16 N_+USBP9 → N_+USBP9 (21)
AJ18 N_-USBP10 → N_-USBP10 (21)
AK18 N_+USBP10 → N_+USBP10 (21)
AP18 N_-USBP11 → N_-USBP11 (21)
AN18 N_+USBP11 → N_+USBP11 (21)
AW18 AV18 AP20 AN20 — H81: Port 6/7/12/13 N/A

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
(10) CK_-SRCCLK_PCH — CK_-SRCCLK_PCH G22
(10) CK_SRCCLK_PCH — CK_SRCCLK_PCH F22

PCIE Only

PCIE_PERN_1_USB3_RXN_2 L14
PCIE_PERP_1_USB3_RXP_2 K14
PCIE_PETN_1_USB3_TXN_2 B12
PCIE_PETP_1_USB3_TXP_2 B11
PCIE_PERN_2_USB3_RXN_3 F14
PCIE_PERP_2_USB3_RXP_3 G14
PCIE_PETN_2_USB3_TXN_3 D11
PCIE_PETP_2_USB3_TXP_3 C11

OC0B_GP59 AE40 → N_-USBOC_F (21)
OC1B_GP40 AF37
OC2B_GP41 AD39 → N_-USBOC_R (18)
OC3B_GP42 AD40
OC4B_GP43 AF39
OC5B_GP9 AC41
OC6B_GP10 AF40
OC7B_GP14 AG40 N_GPIO14

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

CLKIN_DOT96N AP11 CK_-DOTCLK
CLKIN_DOT96P AM11 CK_DOTCLK

8111G
(24) LA_ML_IN F11
(24) LA_ML_IP H11
(24) LA_ML_ON B9
(24) LA_ML_OP A9

vl805
(33) USB3_IN1 J11
(33) USB3_IP1 L11
(33) USB3_ON1 B8
(33) USB3_OP1 C8

PCIEx1
(15) PI_PCIEX1_IN G9
(15) PI_PCIEX1_IP F9
(15) PI_PCIEX1_ON B7
(15) PI_PCIEX1_OP A7
(15) PJ_PCIEX1_IN F7
(15) PJ_PCIEX1_IP H7
(15) PJ_PCIEX1_ON E1
(15) PJ_PCIEX1_OP D2

N/A
K6 K8 G3 G5 J2 J3 H2 H1

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

H81/S

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)

PCHF

(21) PCH_USB3_RXN0 → F20 USB3_RXN_0
(21) PCH_USB3_RXP0 → G20 USB3_RXP_0
(21) PCH_USB3_TXN0 → B18 USB3_TXN_0
(21) PCH_USB3_TXP0 → C18 USB3_TXP_0
(21) PCH_USB3_RXN1 → G18 USB3_RXN_1
(21) PCH_USB3_RXP1 → H18 USB3_RXP_1
(21) PCH_USB3_TXN1 → B15 USB3_TXN_1
(21) PCH_USB3_TXP1 → B16 USB3_TXP_1

FDILINK
FDI_RXN_0 N1 FDI_TXN0
FDI_RXP_0 N2 FDI_TXP0
FDI_TXN_0 P2 FDI_TXN1
FDI_TXP_0 P3 FDI_TXP1
FDI_CSYNC L2 FDI_CSYNC → FDI_CSYNC (4)
FDI_INT L3 FDI_INT → FDI_INT (4)
FDI_RCOMP K2 NR29 7.5K/4/1 → VCC1_5_PCH

N/A
K20 L20 D15 C15 — USB3_RXN_4 USB3_RXP_4 USB3_TXN_4 USB3_TXP_4
L18 K18 B14 A14 — USB3_RXN_5 USB3_RXP_5 USB3_TXN_5 USB3_TXP_5

VCC3 — NR62 8.2K/4/X — AK28
NR63 8.2K/4/X — AT34

TACH6_GP70
TACH7_GP71

H81/S
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

Mount for integrated clock Generation Mode

(10) N_PCHCLK14 — N_PCHCLK14 — NRN16 8.2K/8P4R/4
CK_-DOTCLK
CK_DOTCLK

PCH (J)

PCHJ

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

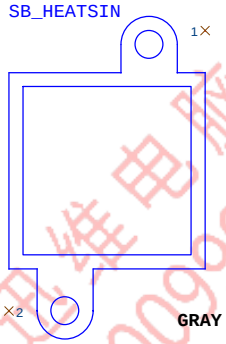
TP22 TP23 TP21 TP20 TP14 TP15 TP12 — U11 U10 AJ14 AK14 K34 K33 AH24
TP10 TP11 TP9 — L16 K16 AM34
TP3 TP4 TP1 TP2 — R12 N12 L22 K22
TP5 TP6 TP7 TP8 — R4 K5 P5 L5
VSS — AC31
VSS VSS — AF3 AV21

H81/S

PCH H/S

LOW COST ICH7 HEATSINK

SB_HEATSIN



GRAY HS

PCH_HS
PCH_HS/[12SP2-030005-41R]

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#	USB_LAN
OC2#	R_USB30
OC3#	N/A
OC4#	F_USB1
OC5#	F_USB2
OC6#	KB_MS_USB
OC7#	Not Use

Gigabyte Technology

Title: PCH FDI,DMI,USB ,PCIE,NVRAM
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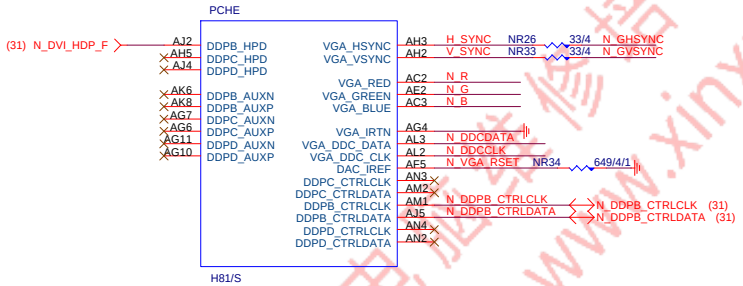
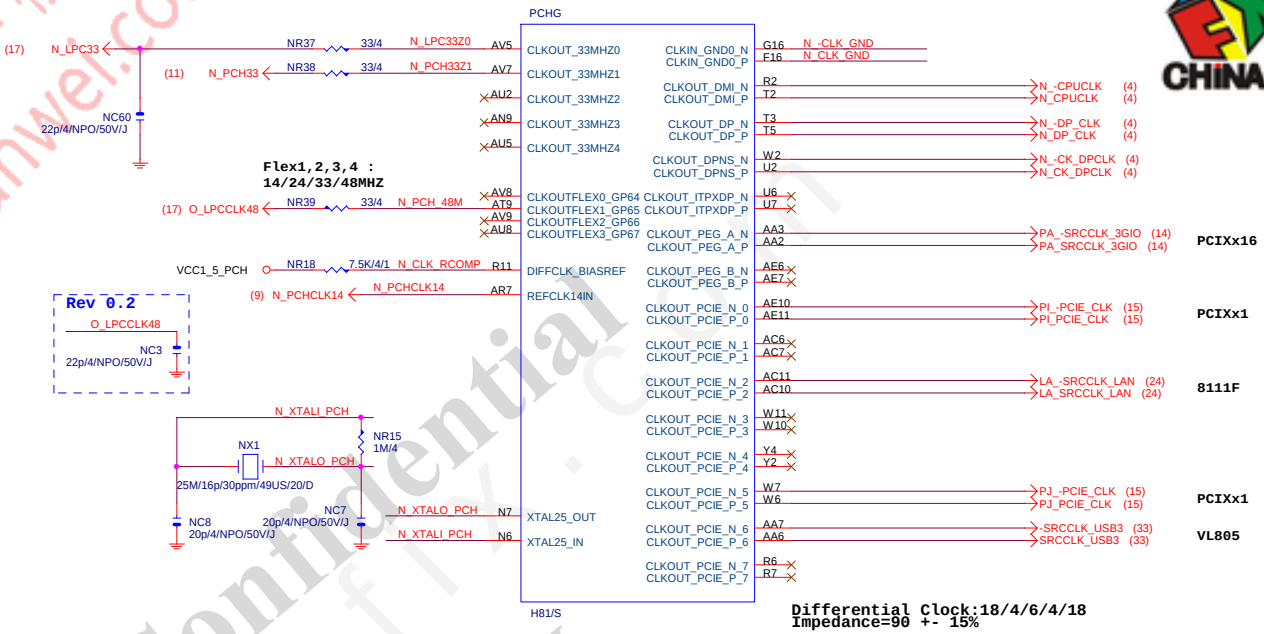
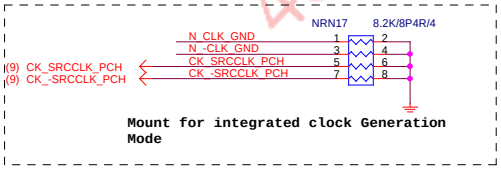
PCH (E)



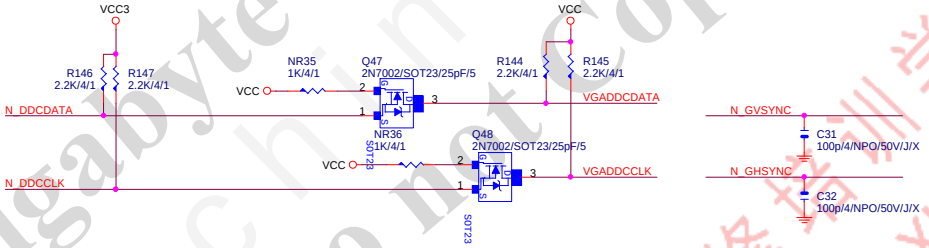
PCH (G)



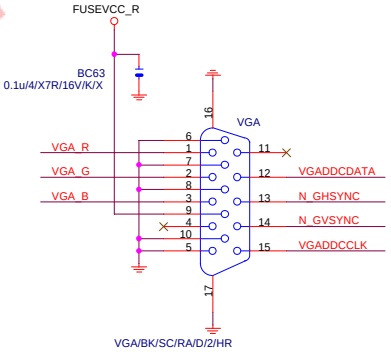
PCH CLK PD



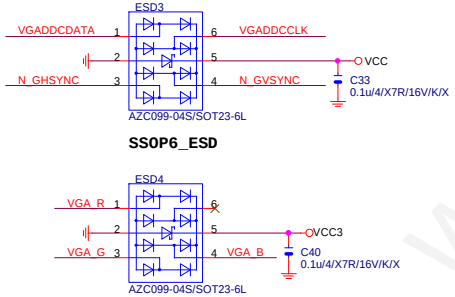
VGA DDC



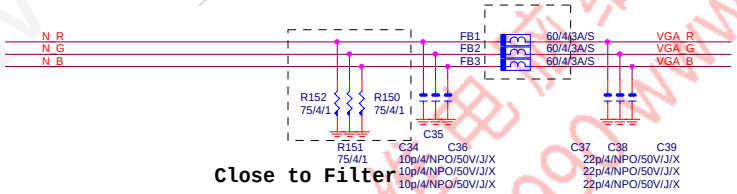
VGA CONNECTOR



VGA ESD



VGA DDC



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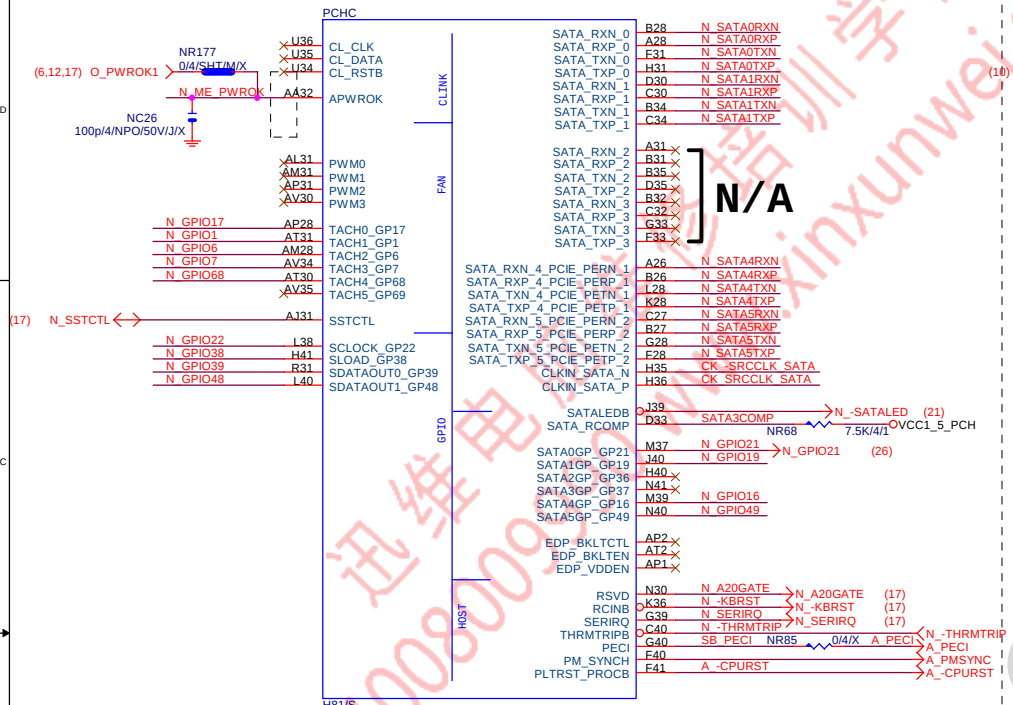
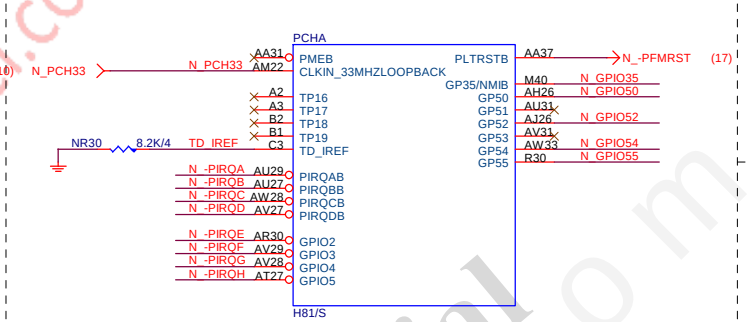
PCH (C)

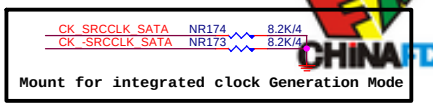
SATA3 : 20/7.5/4.5/7.5/20 (breakout min 8/4/4/4/8)
Impedance=90 +- 17.5%
SATA2 : 15/7.5/4.5/7.5/15 (breakout min 8/4/4/4/8)
Impedance=90 +- 17.5%



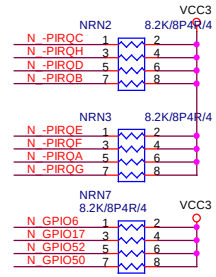
PCH (A)

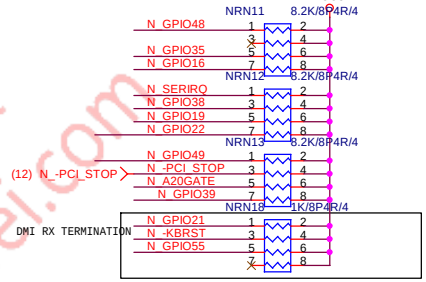


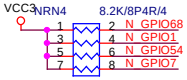
PCH CLK PD



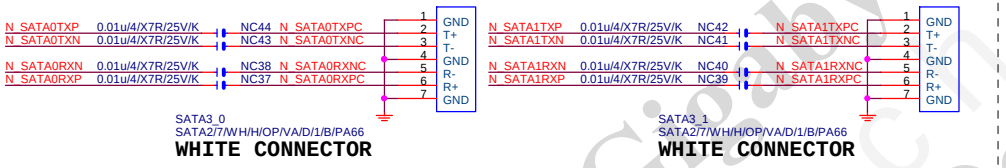
PCH PU/PD





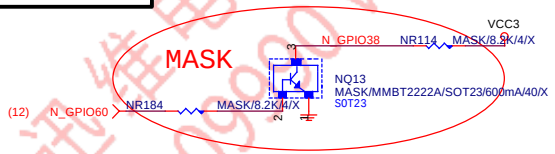


SATA CONNECTOR

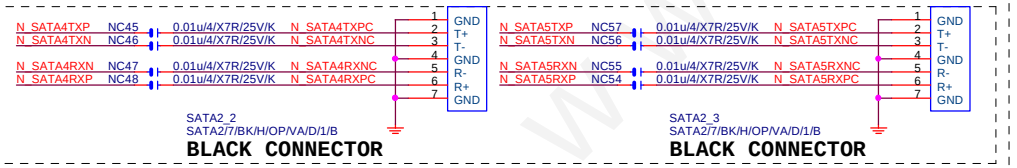


ME PWROK

GPIO38 Ctrl



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



Gigabyte Technology

Title: PCH HOST , SATA, PCI

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PCH (D)

PCHD

H81/S

ACZ_SDOUT

PCH_DPWROK

3VDUAL_PCH

NR69 8.2K/4

N_PCH_DPWROK

N_PCH_DPWROK (17)

NC17 1n/4/X7R/50V/K

for IT8620 Ctrl

VCC3

NR345 1K/4/1

N_PCH_VRMPWRGD

N_PCH_VRMPWRGD (17)

NR346 100K/4/1

NC14 0.1u/4/X7R/16V/K

At least 40ns lead fall to 0V before 3VDUAL_PCH fall to 2V

At least 10ms delay after 3VDUAL_PCH stabel

DDR_15V

NR131 680/4/1

N_DRAM_PWROK

N_DRAM_PWROK (4)

NR132 1.47K/4/1

O_PWROK1

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

Reserve for EMI test

PCH PU/PD

GP8:Low to enable PCH clock chip

NR106 1K/4/1 N_IGC_EN

3VDUAL

NRN10 8.2K/8P4R/4

SUSCLK:Low to OD PLL VR

GP28:Low disable VRM ,Hi enable VRM

3VDUAL_PCH

NRN20 8.2K/8P4R/4

NR76 1K/4/1

VCC3

NRN21 8.2K/8P4R/4

3VDUAL

NRN22 200/8P4R/4

NRN23 100/8P4R/4

NRN24 8.2K/8P4R/4

NRN6 8.2K/8P4R/4

NRN25 1K/8P4R/4

HSW_STRAP13

32.768KHZ

NX2-SHT SHW/D0.64*5.08*6.74

NX2

32.768K/12.5p/20ppm/TF38/35K/D

NC16 18P/4/NPO/50V/J

NC18 18P/4/NPO/50V/J

CLR_CMOS

BATTERY CR2032

ND1 BAS40-05/0.2A/SOT23

3VDUAL_PCH

NR340 0/6/SHT/M/X

BAT BAT-SK/BK/P/S/D/SN

NR90 390K/4 N_DSWVRMEN

N_RTCVDD (13,19)

NR67 390K/4 N_INTVRMEN

NR78 20K/4/1 N_RTCRST

NC15 1u/4/X5R/6.3V/K

NC20 1u/4/X5R/6.3V/K

RB_TP

N_VBAT

N_VBAT (17)

CLR_CMOS

N_RTCRST

PH/1*2/BK/2.54/VA/D

BATTERY-DUAL-4

RB 必须放在BAT外

N_INTRUDER NR74 1M/4 N_RTCVDD (13,19)

N_SRTCRST NR77 20K/4/1 N_RTCVDD (13,19)

NC19 1u/4/X5R/6.3V/K

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Title	PCH GPIO , CTRL , AUDIO	
Size: Custom	Document Number: GA-H81M-D2V	Rev: 2.01
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PCH (H)

VCC3_DAC

CLOSE北桥(注意震盪水波紋)

3VDUAL_PCH

SHT PWR

CAP

(3.3V)(X6)

(1.05V)(X5)

(1.05V)(X6)

(1.05V)(X2)(3.3V)(X2)

(1.05V)(X10)

Remove

PCH (I)

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Gigabyte Technology	
Title	PCH PWR ,GND
Size: Custom	Document Number: GA-H81M-D2V
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PCIEX16 CAP

VCC3

PABC1 0.1u/4/X7R/16V/K/X

PABC2 0.1u/4/X7R/16V/K/X

PABC3 0.1u/4/X7R/16V/K/X

PCIEX16 PROTECT SHT

+12V X16_+12V

PARN1 0/8P4R/0402/SHT/X

PARN2 0/8P4R/4/X

+12V

EC16

270u/FP/D/16V/8C/A/10m/[11CO5-8C2700-09R]

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)

The auxiliary reset circuit is only required for PCIe Gen3 margining and functional link training

PCIEX16 SLOT

PCIESLOT-164DN-P

3GIO_*16

X16_+12V

PAR3 0/4/SHT/M/X

(7,8,12,15) N_SMBCLK

(7,8,12,15) N_SMBDATA

3VDUAL

VCC3

(12,15,24,33) N_-PCIE_WAKE

PAR1 0/4/SHT/M/X

PAR2 0/4/SHT/M/X

-PCIE_RST

(15,17)

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

B1	12V	PCIEX16	PRSNT1*	A1	
B2	12V		12V	A2	
B3	RSVD		12V	A3	
B4	GND		GND	A4	
B5	SMCLK		JTAG2	A5	
B6	SMDAT		JTAG3	A6	
B7	GND		JTAG4	A7	
B8	3.3V		JTAG5	A8	
B9	JTAG1		3.3V	A9	
B10	3.3VAUX		3.3V	A10	
B11	WAKE*	KEY	PWRGD	A11	-PCIE_RST
B12	RSVD		GND	A12	
B13	GND		REFCLK+	A13	PA_SRCCLK_3GIO (10)
B14	HSOP0		REFCLK-	A14	PA_-SRCCLK_3GIO (10)
B15	HSON0		GND	A15	
B16	GND		HSIP0	A16	PA_EXP_RXP0
B17	PRSNT2*		HSIN0	A17	PA_EXP_RXN0
B18	GND		GND	A18	
B19	HSOP1		RSVD	A19	
B20	HSON1		GND	A20	
B21	GND		HSIP1	A21	PA_EXP_RXP1
B22	GND		HSIN1	A22	PA_EXP_RXN1
B23	HSOP2		GND	A23	
B24	HSON2		GND	A24	
B25	GND		HSIP2	A25	PA_EXP_RXP2
B26	GND		HSIN2	A26	PA_EXP_RXN2
B27	HSOP3		GND	A27	
B28	HSON3		GND	A28	
B29	GND		HSIP3	A29	PA_EXP_RXP3
B30	RSVD		HSIN3	A30	PA_EXP_RXN3
B31	PRSNT2*		GND	A31	
B32	GND		RSVD	A32	
B33	HSOP4		RSVD	A33	
B34	HSON4		GND	A34	
B35	GND		HSIP4	A35	PA_EXP_RXP4
B36	GND		HSIN4	A36	PA_EXP_RXN4
B37	HSOP5		GND	A37	
B38	HSON5		GND	A38	
B39	GND		HSIP5	A39	PA_EXP_RXP5
B40	GND		HSIN5	A40	PA_EXP_RXN5
B41	HSOP6		GND	A41	
B42	HSON6		GND	A42	
B43	GND		HSIP6	A43	PA_EXP_RXP6
B44	GND		HSIN6	A44	PA_EXP_RXN6
B45	HSOP7		GND	A45	
B46	HSON7		GND	A46	
B47	GND		HSIP7	A47	PA_EXP_RXP7
B48	PRSNT2*		HSIN7	A48	PA_EXP_RXN7
B49	GND		GND	A49	
B50	HSOP8		RSVD	A50	
B51	HSON8		GND	A51	
B52	GND		HSIP8	A52	PA_EXP_RXP8
B53	GND		HSIN8	A53	PA_EXP_RXN8
B54	HSOP9		GND	A54	
B55	HSON9		GND	A55	
B56	GND		HSIP9	A56	PA_EXP_RXP9
B57	GND		HSIN9	A57	PA_EXP_RXN9
B58	HSOP10		GND	A58	
B59	HSON10		GND	A59	
B60	GND		HSIP10	A60	PA_EXP_RXP10
B61	GND		HSIN10	A61	PA_EXP_RXN10
B62	HSOP11		GND	A62	
B63	HSON11		GND	A63	
B64	GND		HSIP11	A64	PA_EXP_RXP11
B65	GND		HSIN11	A65	PA_EXP_RXN11
B66	HSOP12		GND	A66	
B67	HSON12		GND	A67	
B68	GND		HSIP12	A68	PA_EXP_RXP12
B69	GND		HSIN12	A69	PA_EXP_RXN12
B70	HSOP13		GND	A70	
B71	HSON13		GND	A71	
B72	GND		HSIP13	A72	PA_EXP_RXP13
B73	GND		HSIN13	A73	PA_EXP_RXN13
B74	HSOP14		GND	A74	
B75	HSON14		GND	A75	
B76	GND		HSIP14	A76	PA_EXP_RXP14
B77	GND		HSIN14	A77	PA_EXP_RXN14
B78	HSOP15		GND	A78	
B79	HSON15		GND	A79	
B80	GND		HSIP15	A80	PA_EXP_RXP15
B81	PRSNT2*		HSIN15	A81	PA_EXP_RXN15
B82	RSVD		GND	A82	

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

BLACK CONNECTOR

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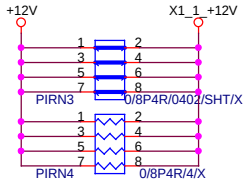
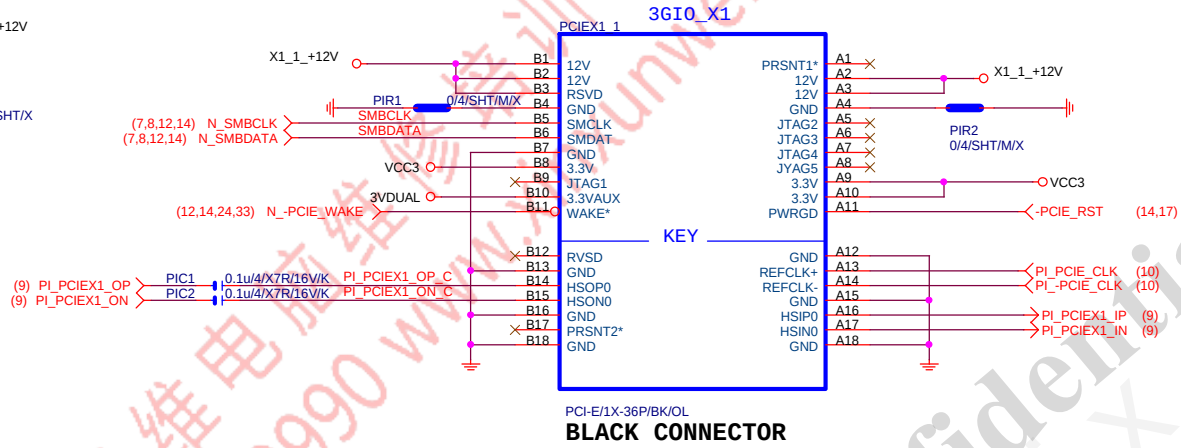
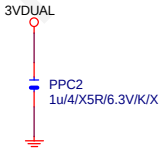
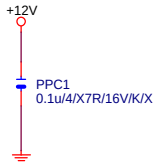
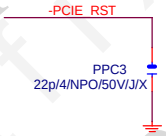
PCIEX1 SLOT

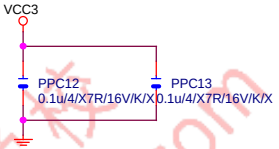


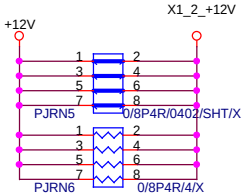


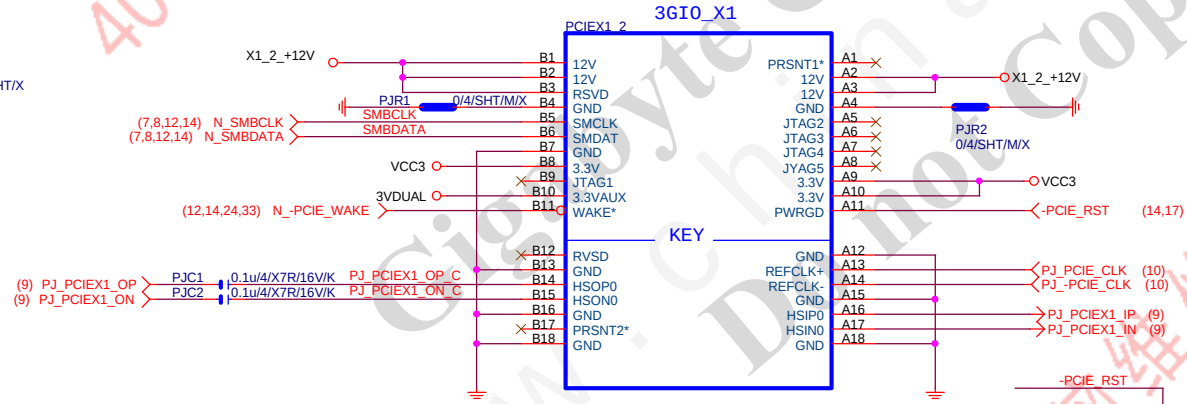


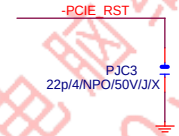












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Gigabyte Technology			
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Size: Custom	Document Number: GA-H81M-D2V		Rev: 2.01
Date: Wednesday, May 21, 2014	Sheet 16 of 33		

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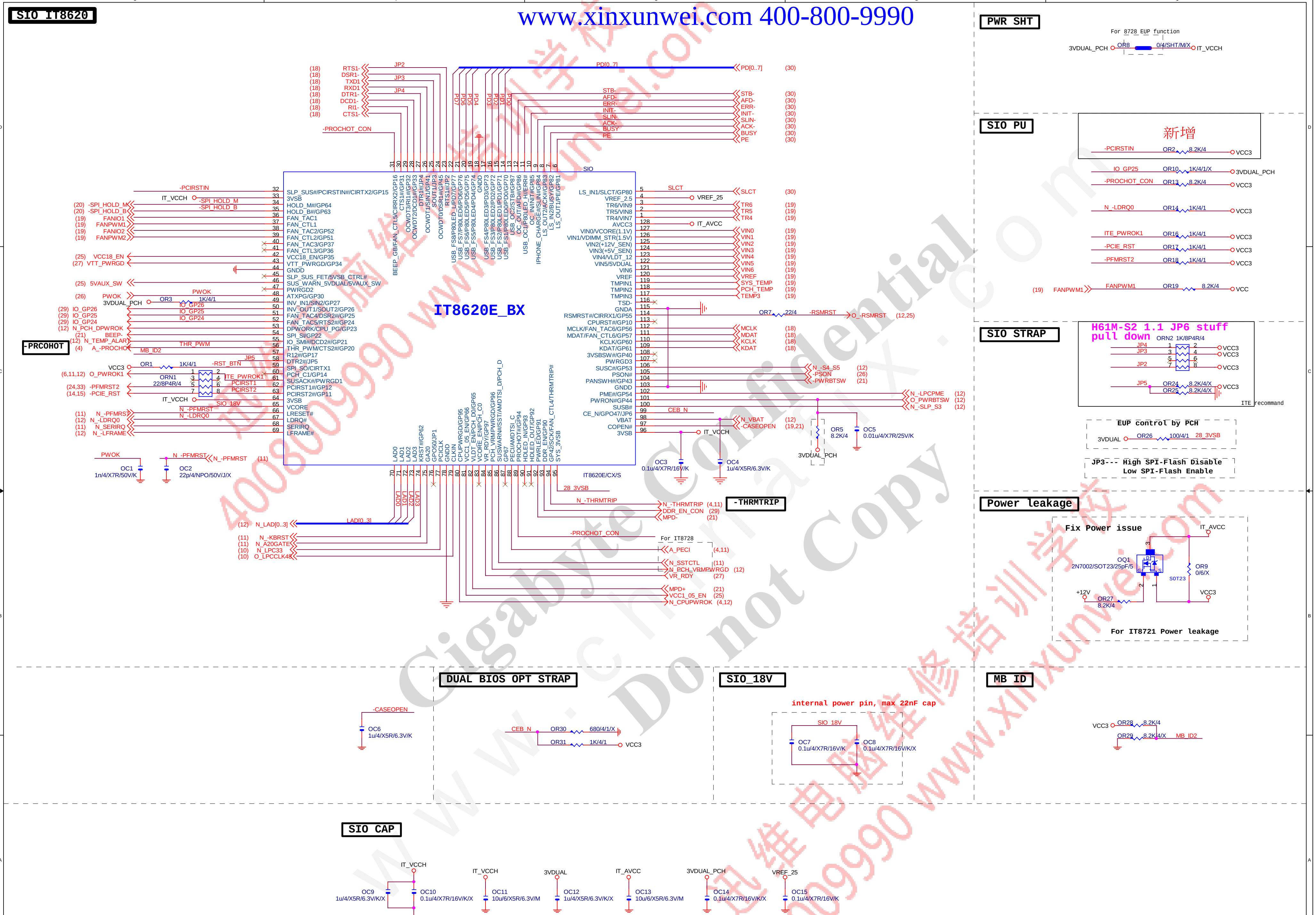

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Size: C | Document Number: GA-H81M-D2V | Rev: 2.01

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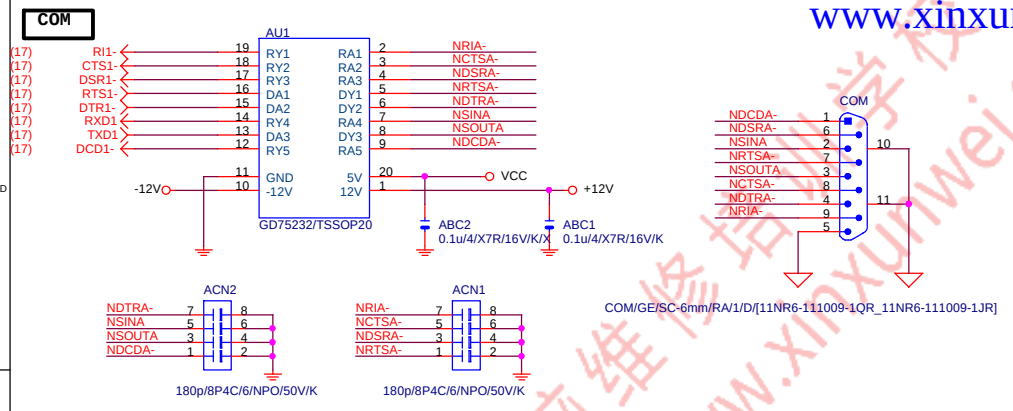
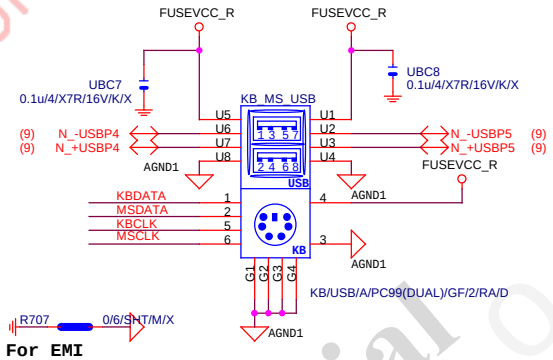
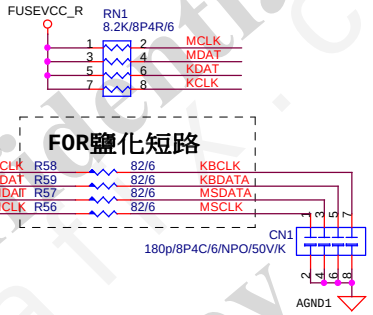
COM



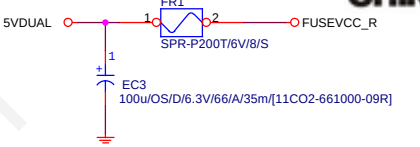
KB/MS





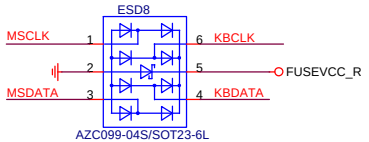
USB2.0 PWR

FUSE-0805
KB_MS_USB 2-Port 2.0A

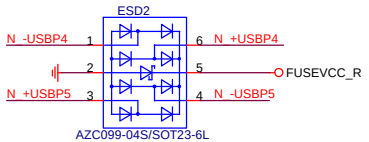


Close to connector

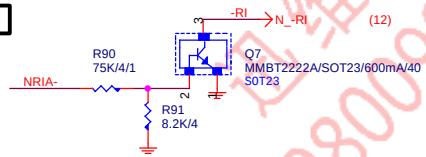
KB/MS ESD



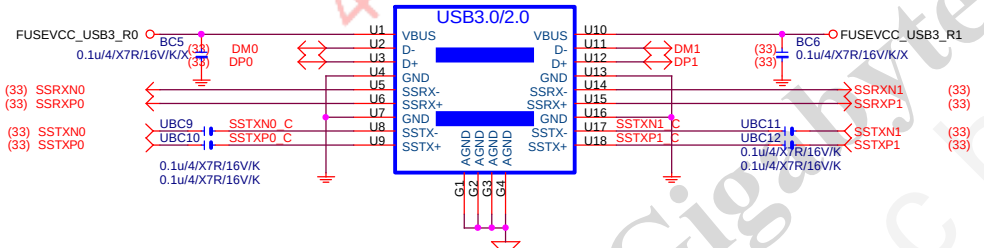
USB2.0 ESD



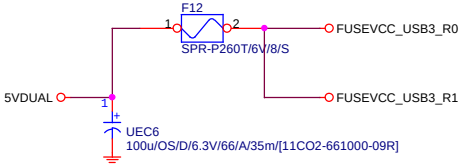
COM RI



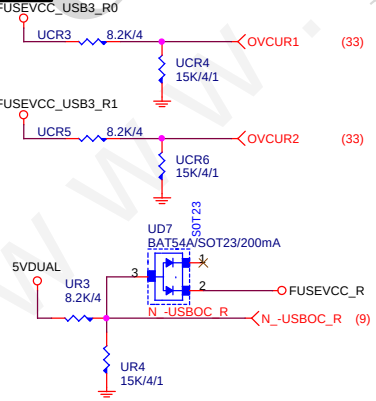
USB30_20



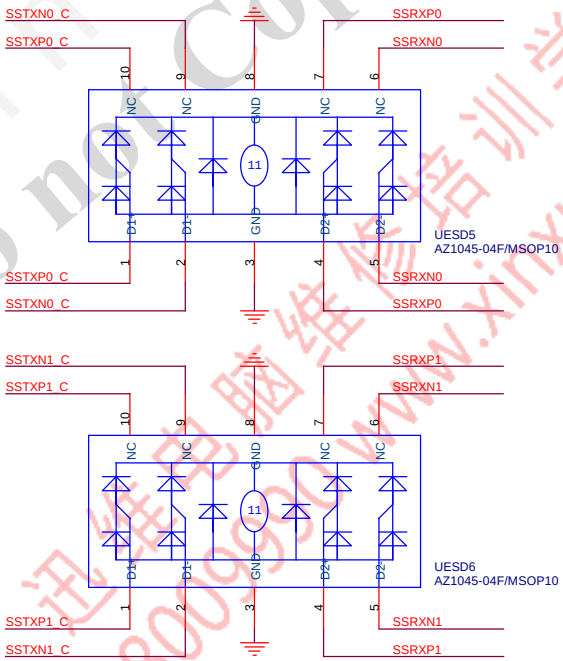
USB30_20 PWR



-USBOC_R

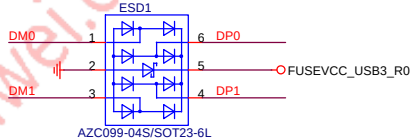


USB30_20 ESD PROCTECT



USB3.0 ESD

USB2.0 ESD



USB POWER PROTECT

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Title: COM,-RI,KB_USB,USB_ESATA,-PROCHOT

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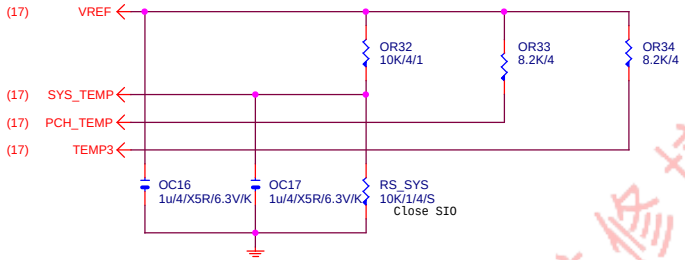
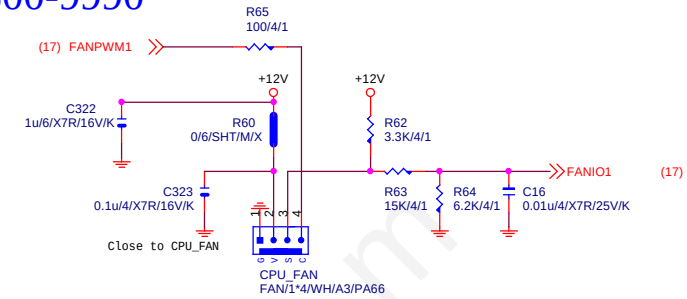
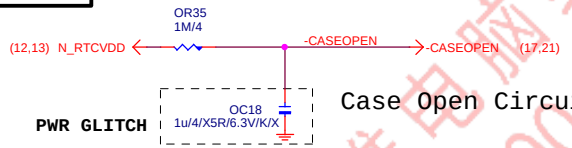
TEMP H/W MONITOR



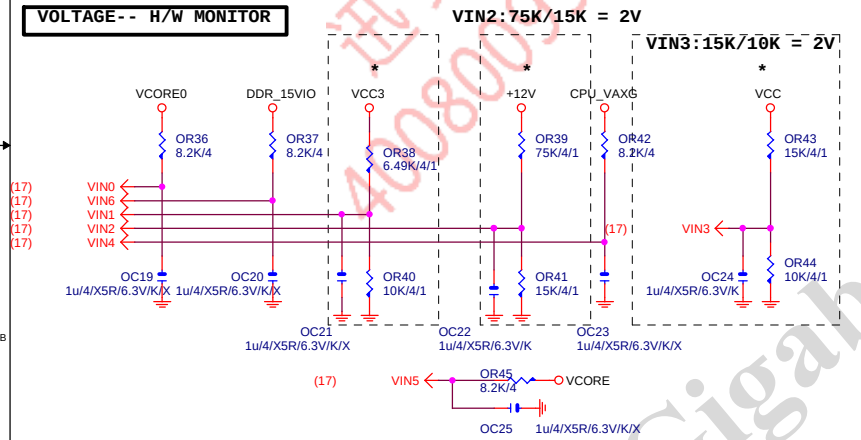
CPU SMART FAN



CASE OPEN

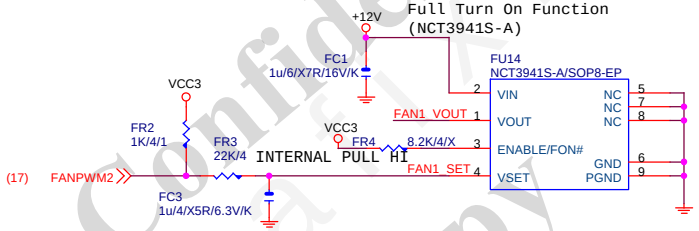


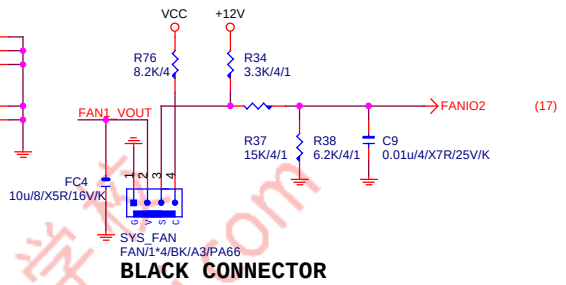
VOLTAGE-- H/W MONITOR



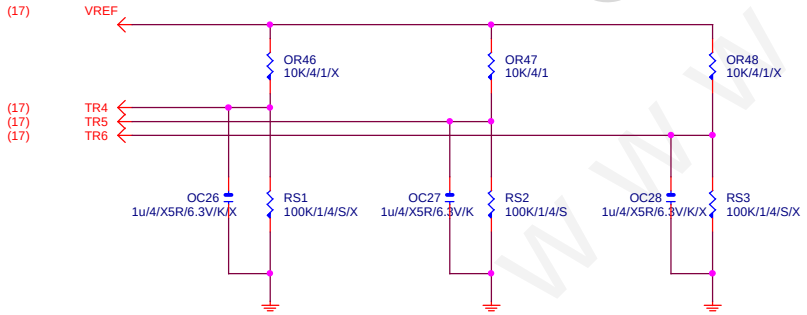
SYS SMART FAN

Linear SYS_FAN Enable Function (NCT3941S)
Full Turn On Function
(NCT3941S-A)





-PROHOT



RS1、RS2、RS3 CLOSE CPU
VR MOSFET

NCT3933	0X2A	0X20	0X22
VREF1	DDRVTT	VREF_DDRA_DQ	PCH Core
VREF2	VREF_DDRA_CA	N/A	VCC1_5_PCH
VREF3	VREF_DDRA_CA	VREF_DDRB_DQ	SMREF

Gigabyte Technology

Title: HWM,FAN CTRL,OV

Size: Custom | Document Number: GA-H81M-D2V | Rev: 2.01

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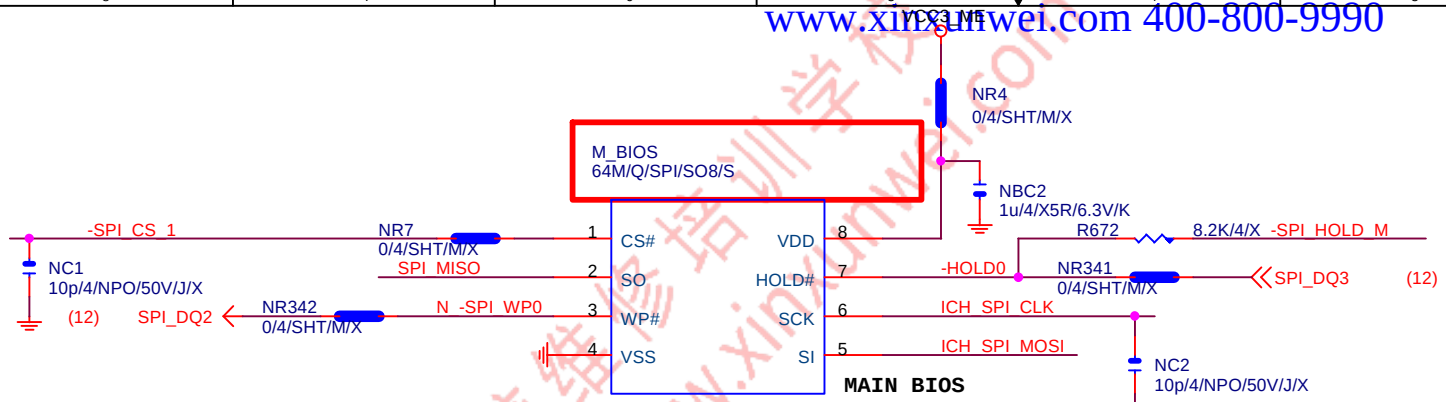
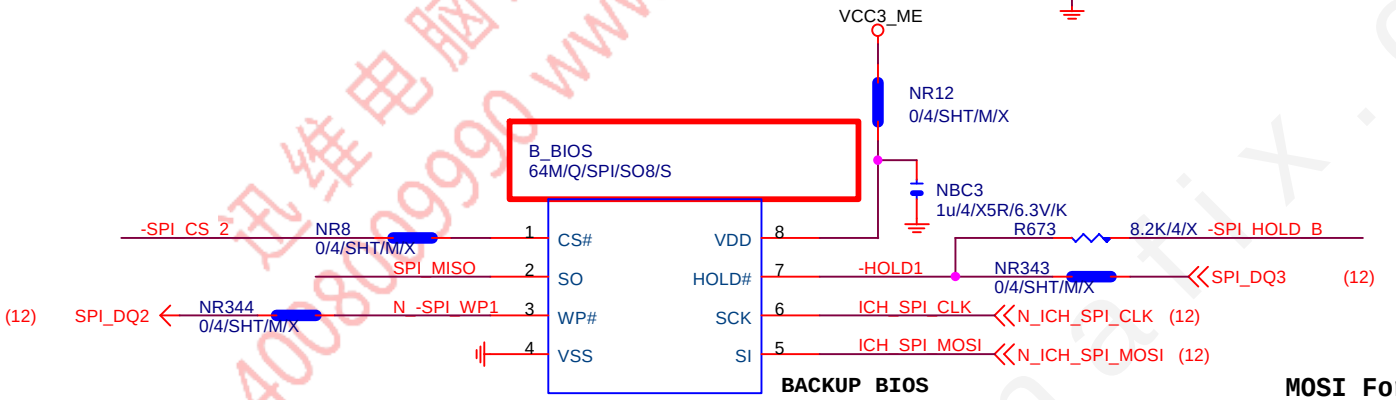
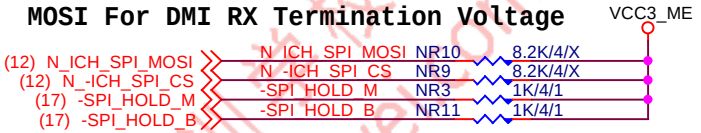
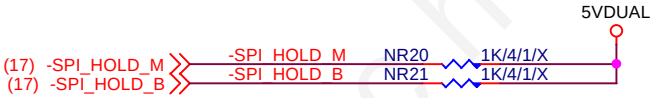


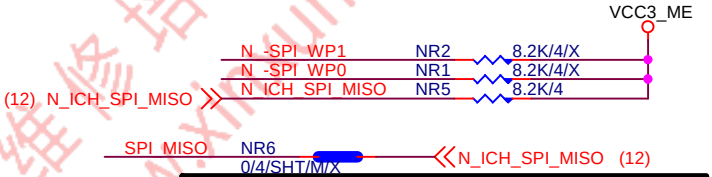


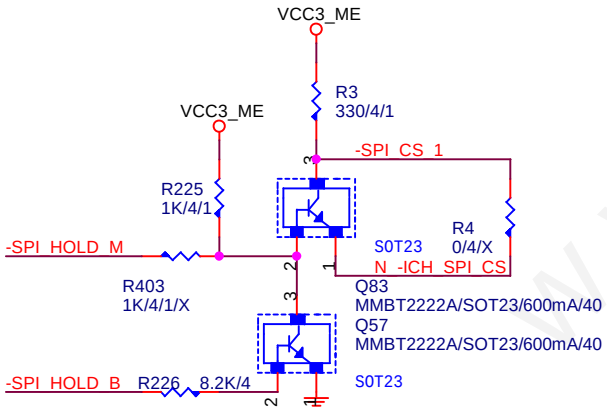
BOOT DEVICE	GNT0	GNT1
LPC	0	0
PCI	0	1
NAND	1	0
SPI	1	1

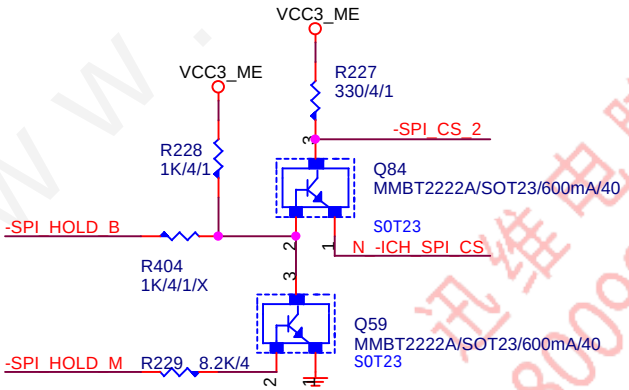
1 means floating
0 means PD 1K











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Title: **DUAL BIOS**

Size: Custom | Document Number: **GA-H81M-D2V** | Rev: **2.01**

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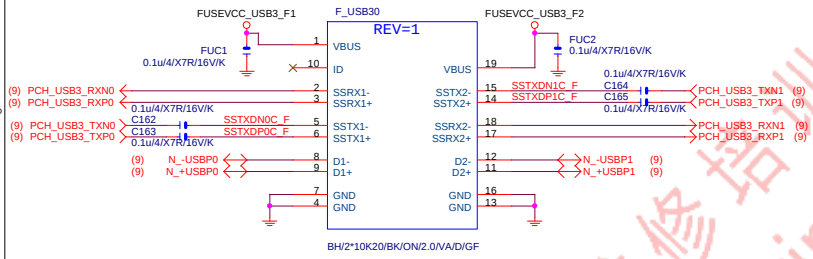
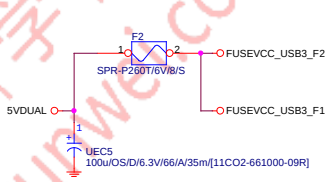
F_USB30



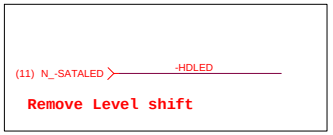
BH/2*10K20/BK/ON/2.0/VA/D/GF

BLACK CONNECTOR

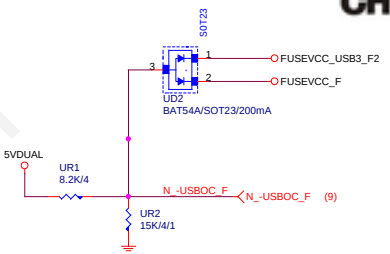
F_USB30 PWR



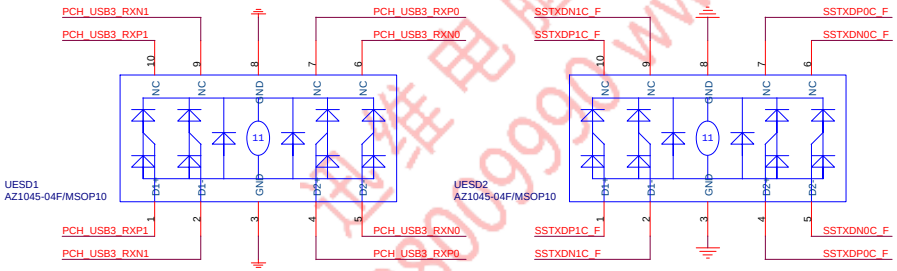
SATA LED

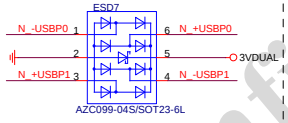


-USBOC_F



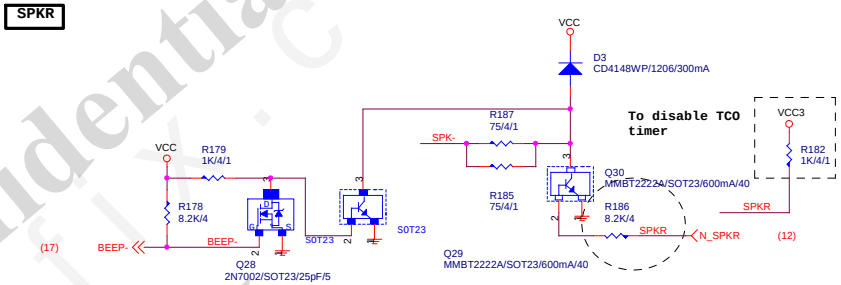
F_USB30 ESD PROTECT



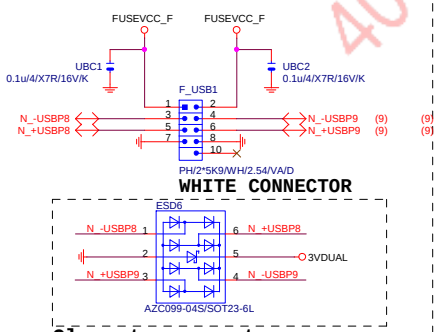


Close to connector

SPKR



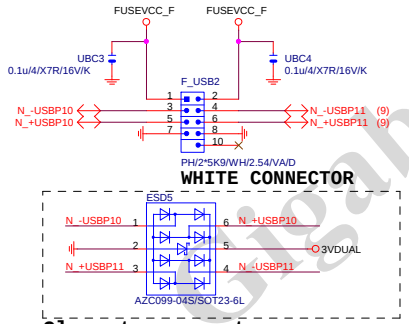
FRONT USB1



WHITE CONNECTOR

Close to connector

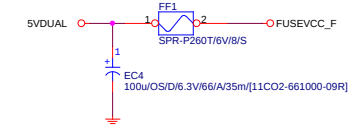
FRONT USB2



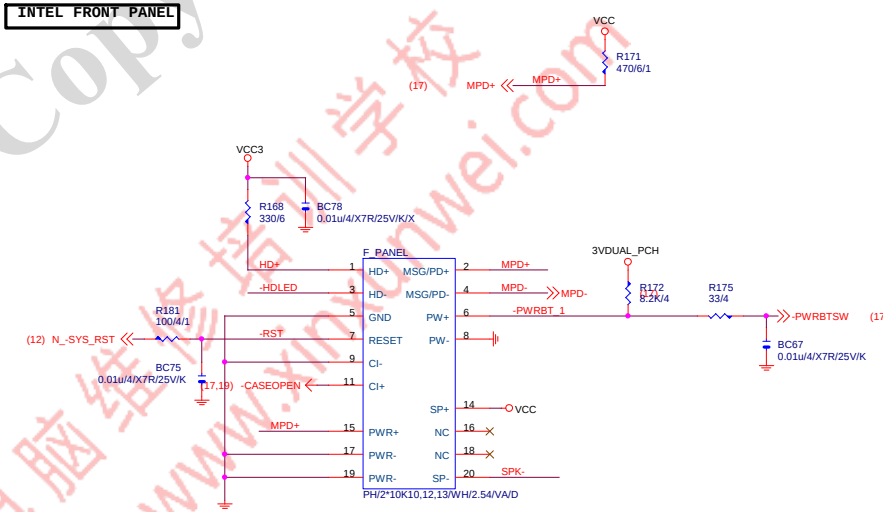
WHITE CONNECTOR

Close to connector

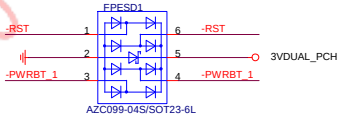
FUSE-0805
F_USB1, F_USB2 4-Port 2.6A



INTEL FRONT PANEL



PIN2X10PANEL_NEW



Gigabyte Technology			
Title: FP,F_USB,USB PWR,SPKR,SATA LED			
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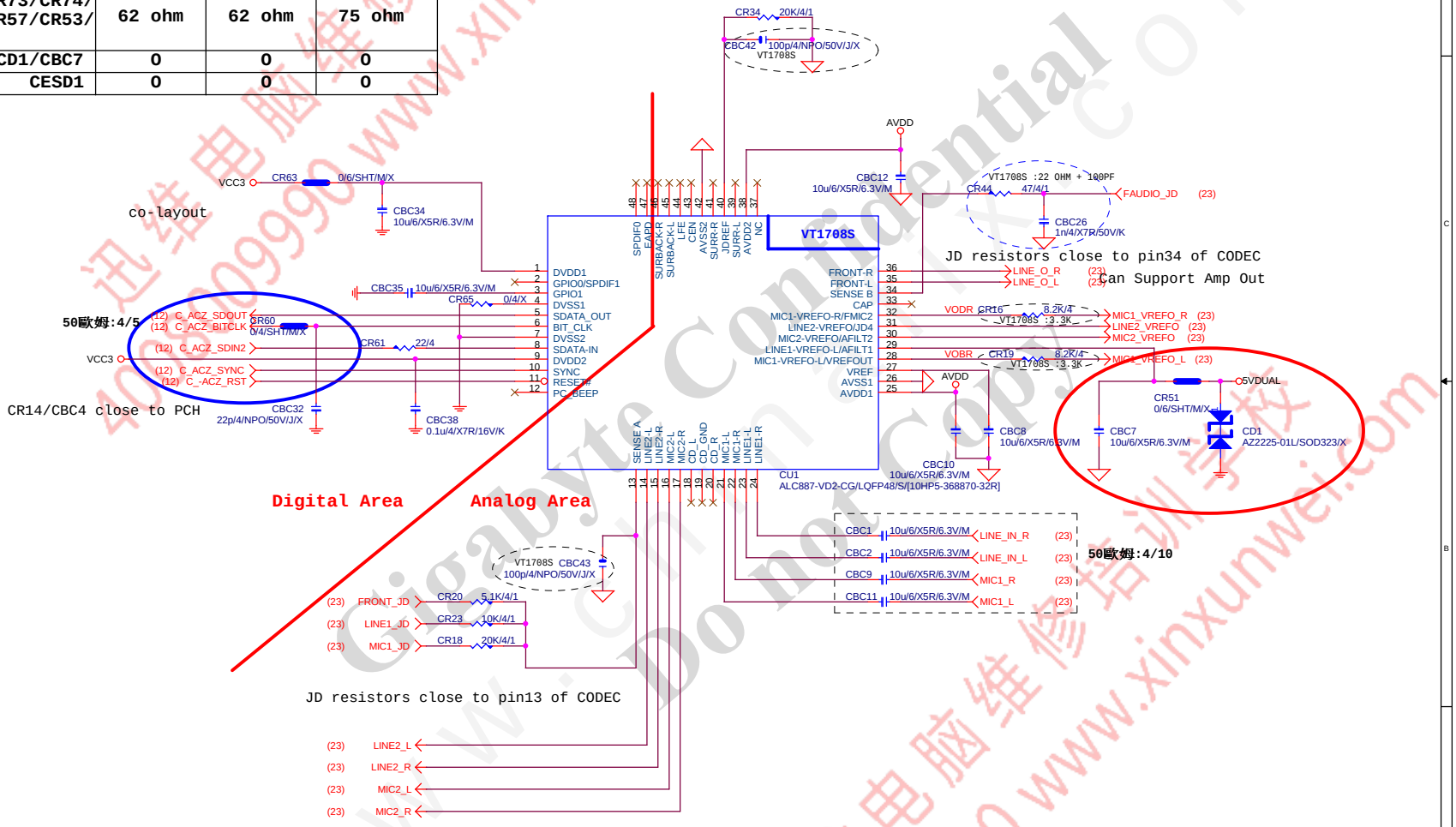
AZALIA CODEC *ALC892/ALC887-VD2/VT1708-CE Colay*

	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



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Title	HD AUDIO ALC887B-VD2/VT1708S/VT2021
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CR49 0/6/X/MM
CR50 0/6/X
CR21 2.2/6
CR24 0/4/SHT/M/X

LINE-OUT

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

Only reserved for ALC888

LINE-IN

(22) LINE_IN_R — CR1 62/4 — AJ_A5
(22) LINE_IN_L — CR14 62/4 — AJ_A2
CBC20 180p/4/NPO/50V/J/X
CBC23 180p/4/NPO/50V/J/X

Verify MIC function in LINE-in

For 889A/888

MIC-IN

(22) MIC1_R — CR17 62/4 — AJ_C5
(22) MIC1_L — CR22 62/4 — AJ_C2
(22) MIC1_VREFO_L
(22) MIC1_VREFO_R
CBC3 180p/4/NPO/50V/J/X
CBC4 180p/4/NPO/50V/J/X

SPDIF_OUT

AZALIA FRONT PANEL

CQ4 BAT54A/SOT23/200mA
CQ2 BAT54A/SOT23/200mA
(22) LINE2_VREFO
(22) MIC2_VREFO
VT1708S :3.3K
CRN1 改排阻
8.2K/8P4R/4

(22) MIC2_L — CBC6 10u/6/X5R/6.3V/M — CR13 62/4 — M2_L
(22) MIC2_R — CBC5 10u/6/X5R/6.3V/M — CR11 62/4 — M2_R
L2_R — CR57 62/4 — L2-R
(22) 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

(22) LINE2_R — CEC9 100u/OS/D/6.3V/66/A/35m/[11CO2-661000-09R] — L2_R
(22) LINE2_L — CEC6 100u/OS/D/6.3V/66/A/35m/[11CO2-661000-09R] — L2_L

CBC30 180p/4/NPO/50V/J/X
CBC29 180p/4/NPO/50V/J/X
CBC37 180p/4/NPO/50V/J/X
CBC36 180p/4/NPO/50V/J/X

AUDIO
(22) LINE1_JD — LINE1_JD — AJ_A5 — AJ_A2 — GND
(22) FRONT_JD — FRONT_JD — AJ_B5 — AJ_B2 — GND
(22) MIC1_JD — MIC1_JD — AJ_C5 — AJ_C2 — GND
MH1 MH2 MH3 MH4 MH5
A3RP/13P/BL,LI,PK/RA/D/1/B

BLUE LINE-IN
GREEN LINE-OUT
PINK MIC-IN

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Title: AUDIO JACK		
Size: Custom	Document Number: GA-H81M-D2V	Rev: 2.01
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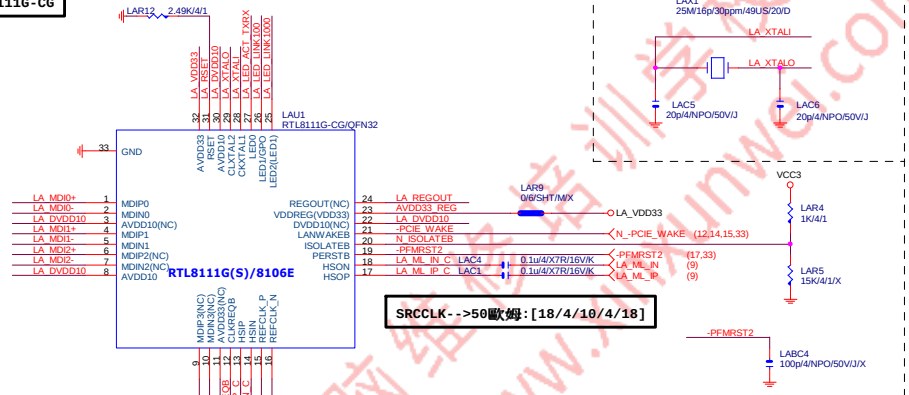
LAN RTL8111G-CG

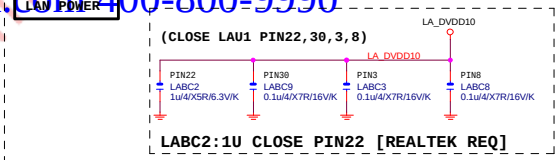


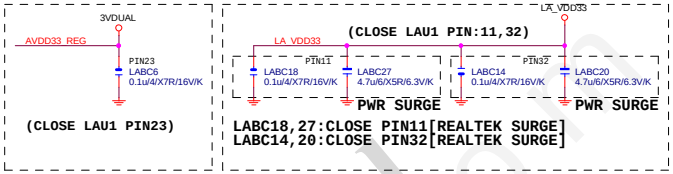
SRCCLK-->50歐姆:[18/4/10/4/18]

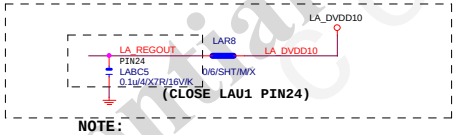
離IC近越好

LA_ ML-->80歐姆:[15/5/5/5/15]

LAN POWER

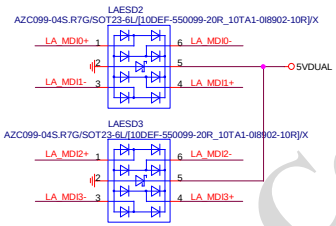






NOTE:
RT8106E:PIN3,11,22,24-->NC
LABC2LABC3,LABC5,LABC18,LABC27-->N/A

MDI ESD預留28KV *



BOM NOTICE *

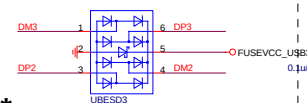
料號	規格	廠商
11NR6-702009-96R	1G LAN (12core)	UDE(RU9 ESD+)

[LED獨立走線,可省略外加AZC099料件LAESD1]

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

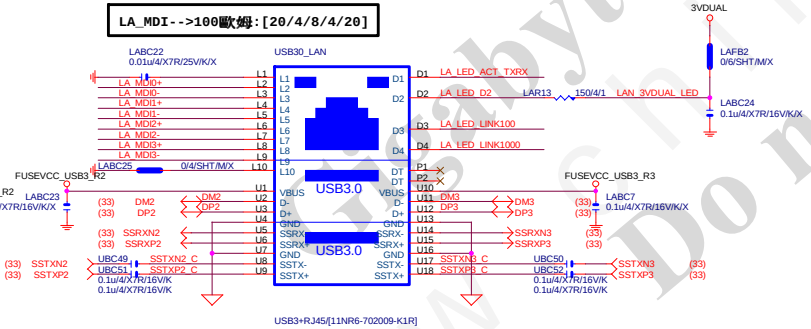
USB_LAN CONNECTOR

RMA ESD PROTECT



* 使用RU9 USB_LAN可省略LAESD1保護LED

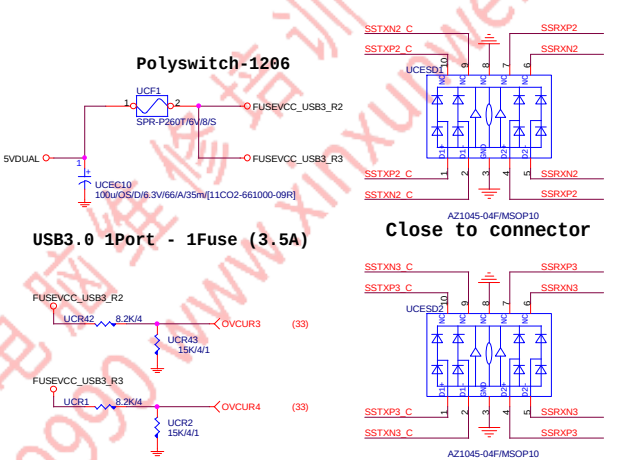
LA_MDI-->100歐姆:[20/4/8/4/20]



USB3+RJ45/[11NR6-702009-K1R]

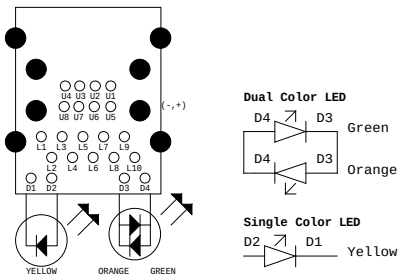
注意:USB PORT(目前:暫代6,7PORT)
USB-->90歐姆:[15/4.5/7.5/4.5/15]

USB X3 POWER



EMI SHORT PAD

PS:視EMI需求



Dual Color LED

Single Color LED

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

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Title: Realtek RTL8111G		
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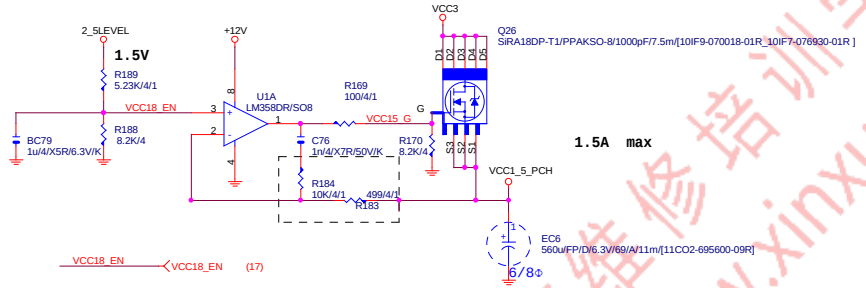
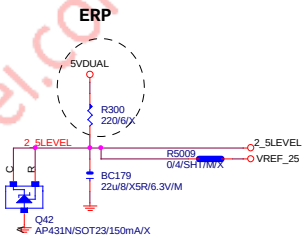
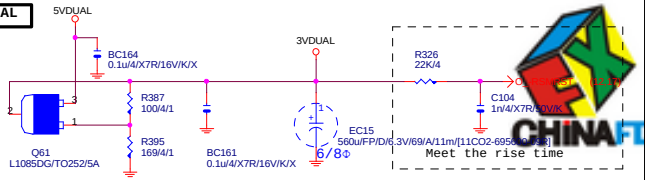
VCC1_8_PCH



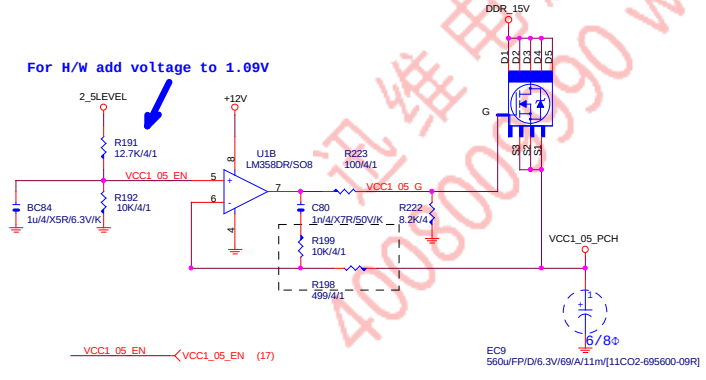
2_5LEVEL

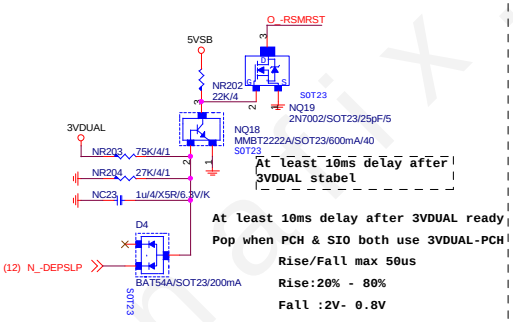


3VDUAL

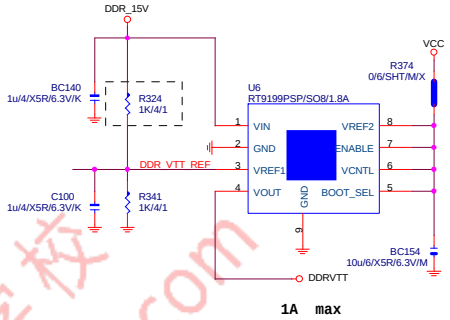


VCC1_05_PCH

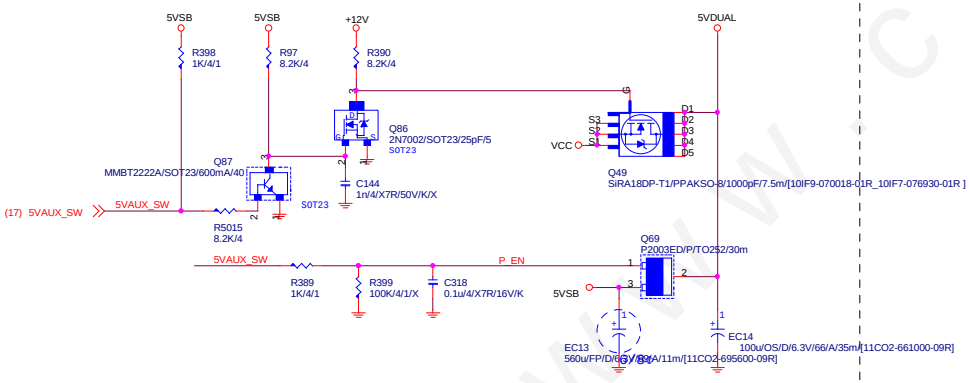




DDRVTT



5VDUAL



5VDUAL_SHORT_PROTECT

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Title	Gigabyte Technology
	DISCRETE POWER
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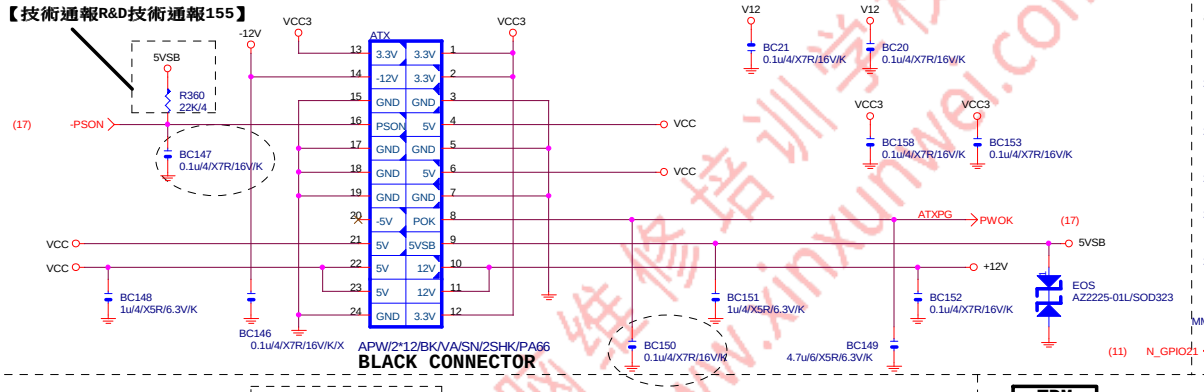
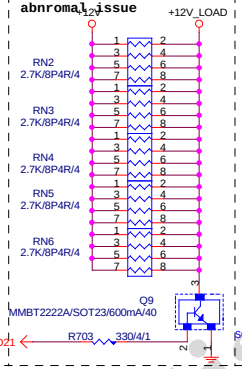
ATXX24 POWER CONNECTOR

【技術通報R&D技術通報155】

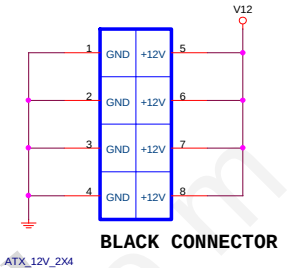


【技術通報R&D技術通報158】

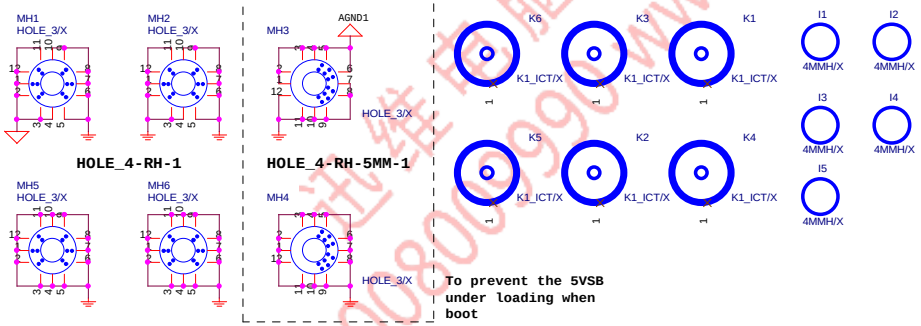
To fix 12V light load abnroma l issue



ATXX4 POWER CONNECTOR



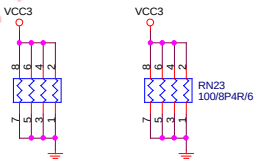
TPM



To prevent the 5VSB under loading when boot

PWOK PATCH

【技術通報R&D技術通報154】



FIX PWR MINMUN LOAD

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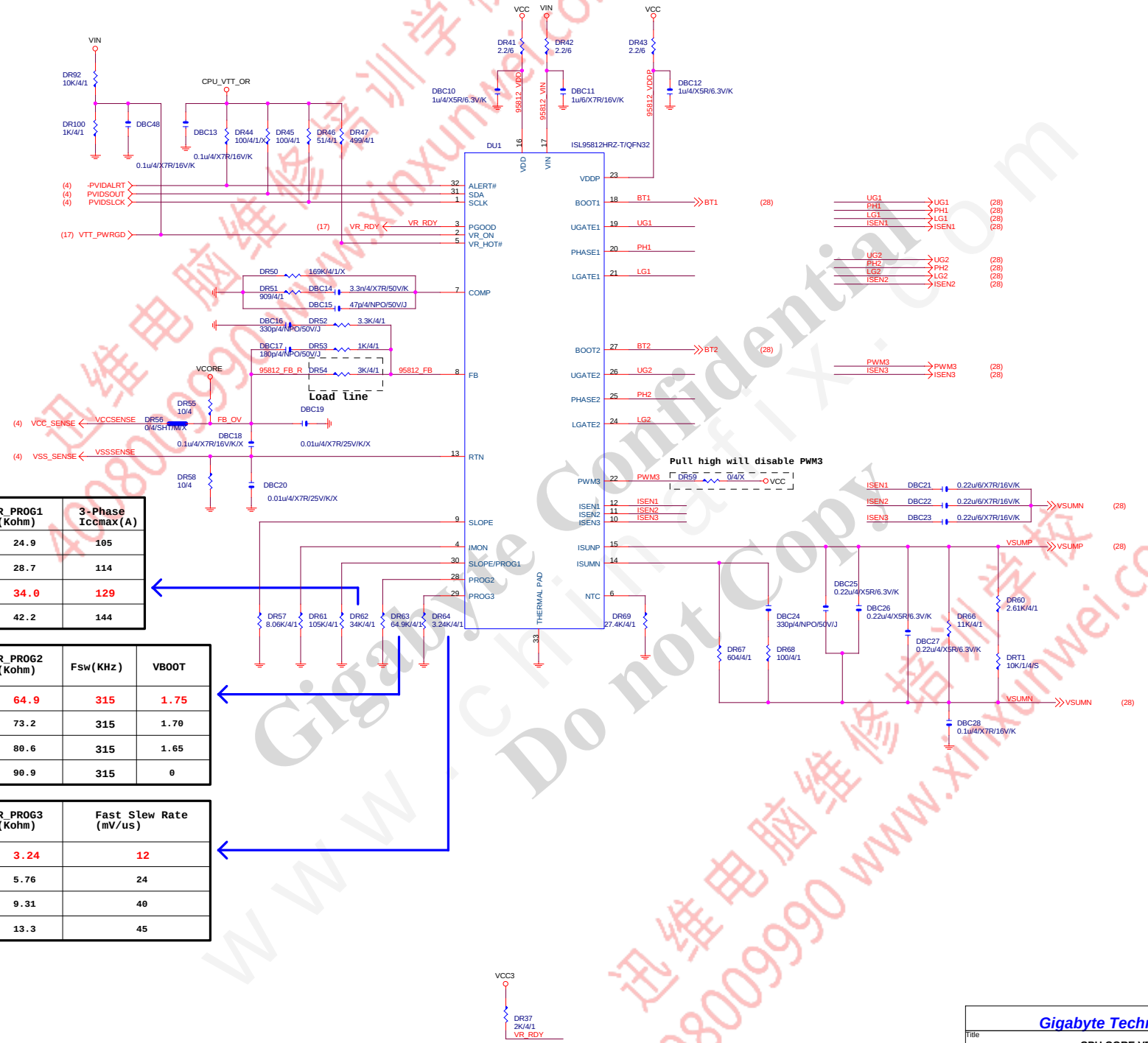

R_PROG1 (Kohm)	3-Phase Iccmax(A)
24.9	105
28.7	114
34.0	129
42.2	144

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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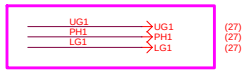
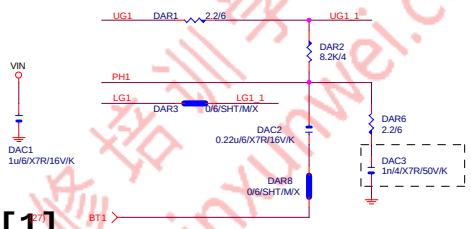
PHASE 1





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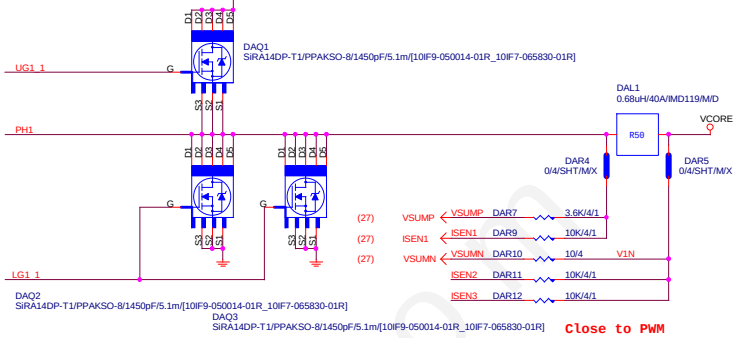
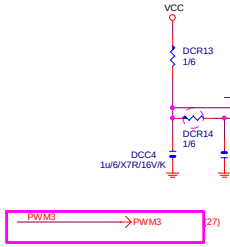
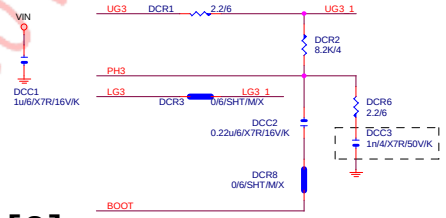


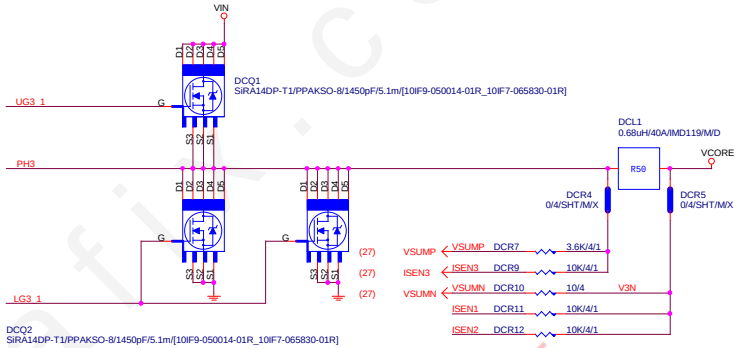
Close to PWM

PHASE 3



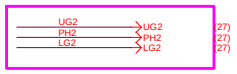


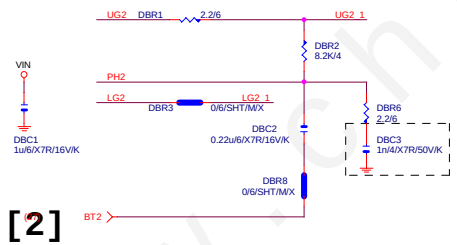
[3]



Close to PWM

PHASE 2





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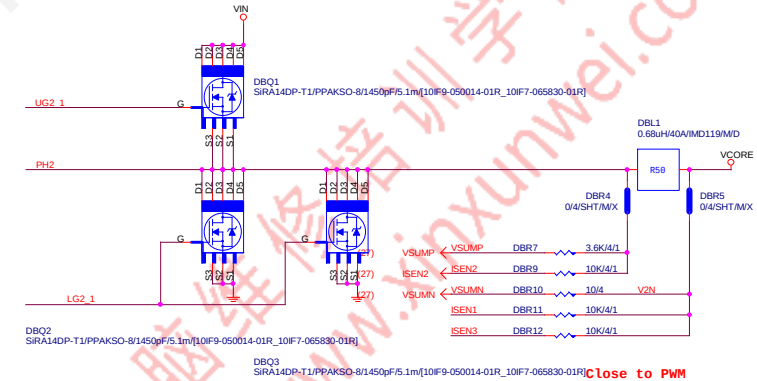
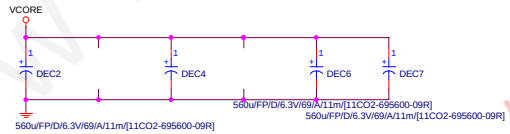
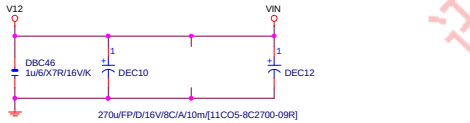


Close to PWM





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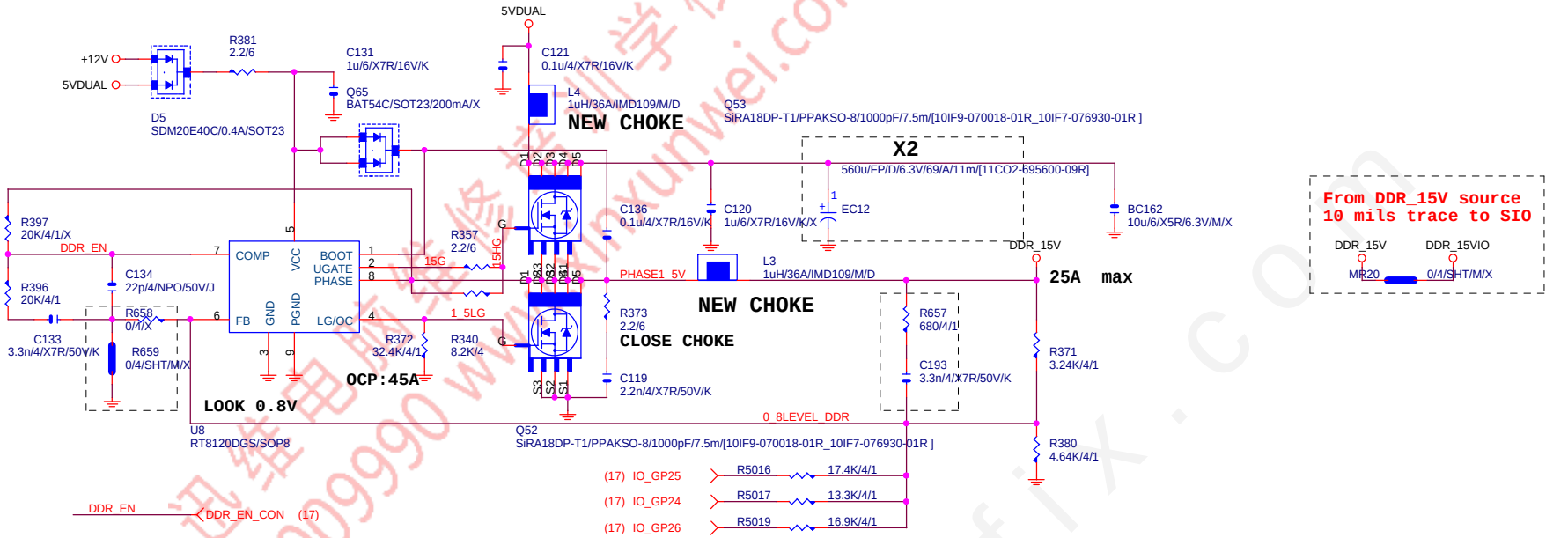
DDR15V



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

Rocset=(Iocp*Lgate,rdson)/Iocset
Rocset=(45A*6.7mOhm)/10uA = 30K
Iocset=10uA

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VCC1_05_ME

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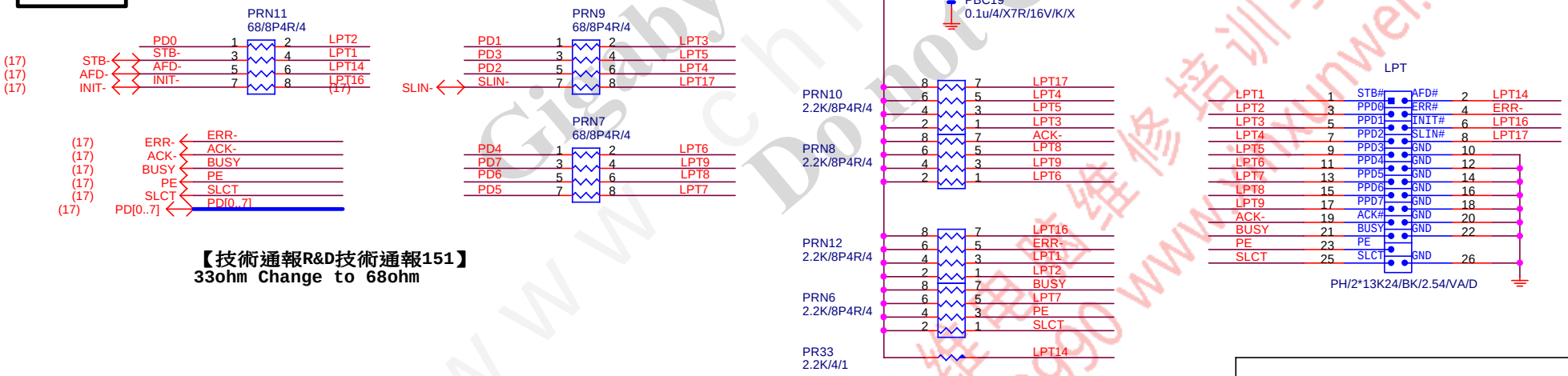
(RICHTEK), (NUVOTON), (EMC)做共用
PIN7分壓阻值須做修改為100K以上電阻值

VCC3_ME

LPT PORT



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

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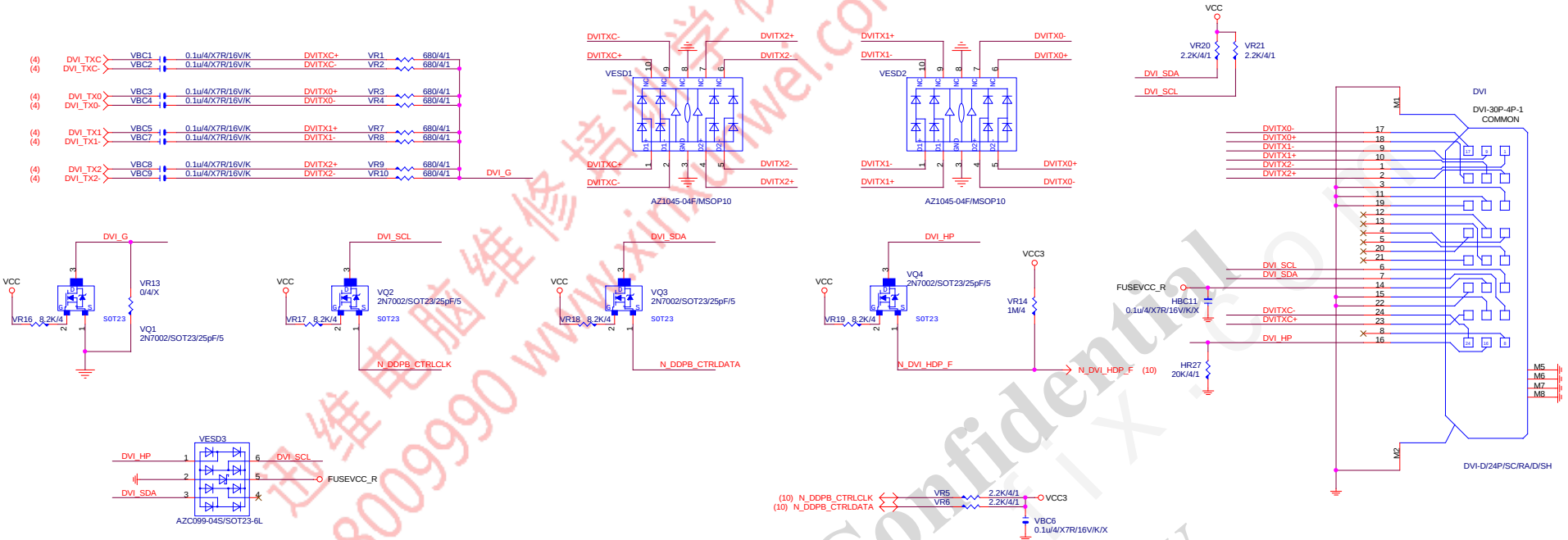
DVI



HDMI LEVEL SHIFT

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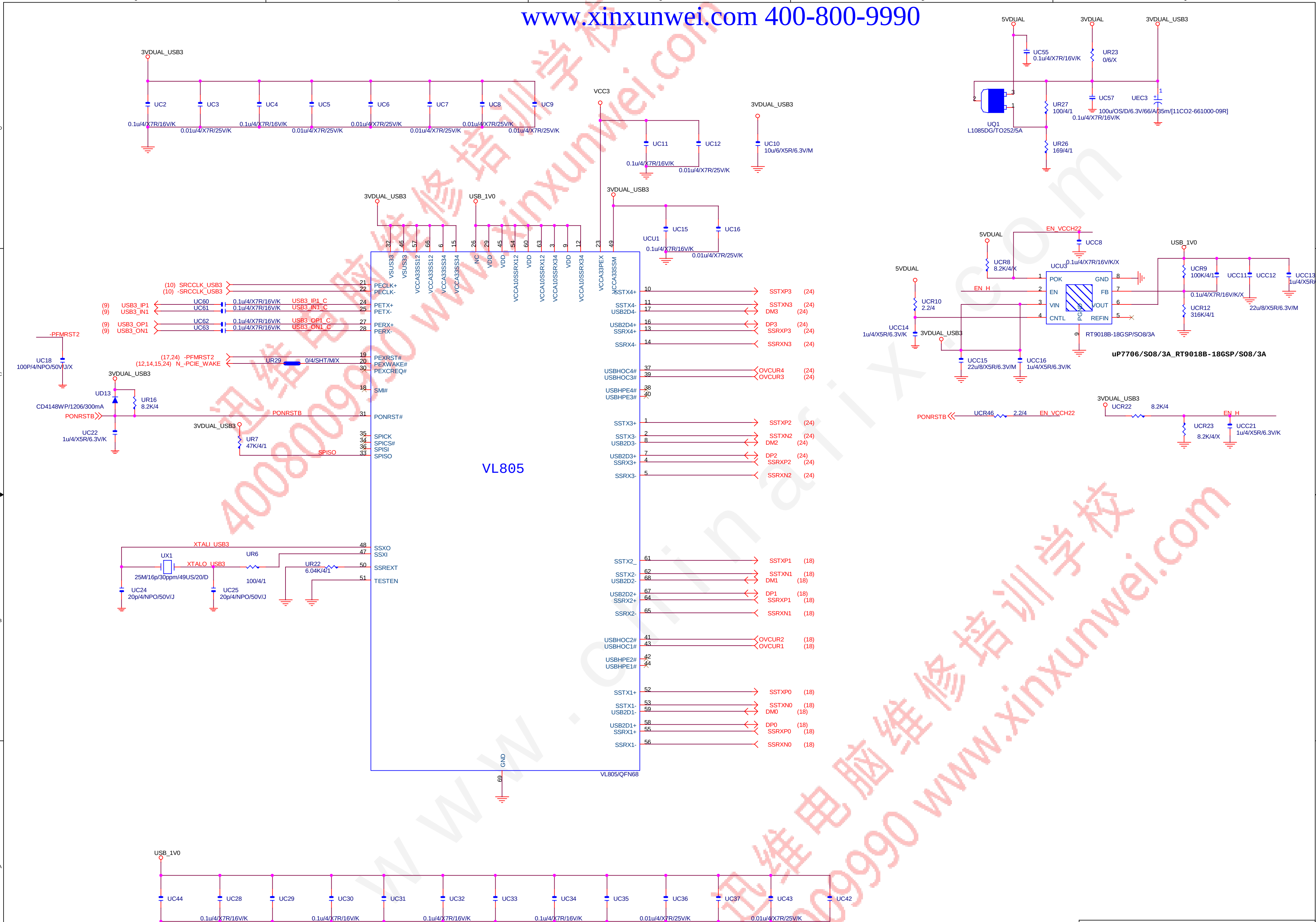

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