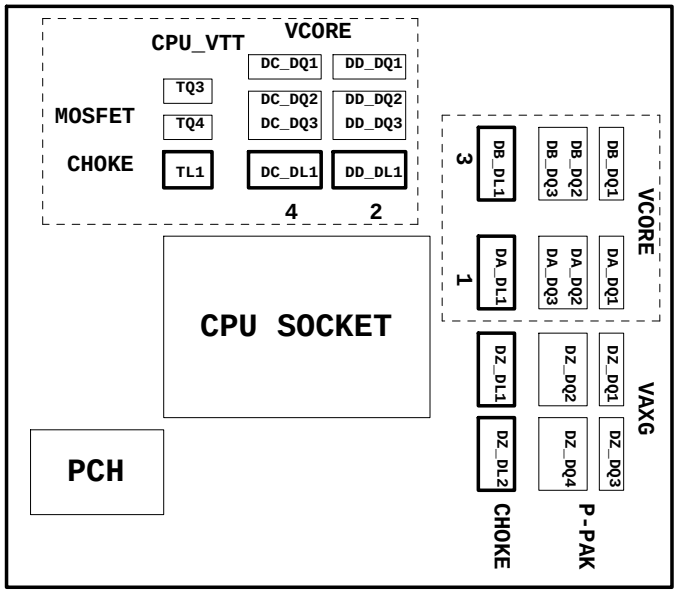
Model Name: GA-H77-D3H-MVP 1.02

SHEET	TITLE
01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	CPU_LGA1155-A
05	CPU_LGA1155-B
06	CPU_LGA1155-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	PCIEX1*3 , PCIEX4 SLOT
16	ITE8892 PCI BRIDGE
17	PCI SLOT 1&2
18	I/O ITE8728
19	COM, -PROHOT, R_USB
20	Dual BIOS , TPM SLB9635TT
21	VT2021 CODEC
22	REAR AUDIO JACK
23	VCORE PWM_IR3564
24	VCORE PWM DRIVER IR3598
25	NCP3933 OVER VOLTAGE
26	DISCRETE POWER
27	DDR_15V & CPU_VTT PWM IR3570

SHEET	TITLE
28	DDR_15V & CPU_VTT PWM DRIVER CHL8550
29	VCCSA POWER
30	F_PANEL , F_USB2.0/3.0
31	ATX POWER, CLOCK GEN
32	HWM , KB/MS , FAN CTRL
33	LAN ATHEROS AR8151
34	N/A
35	M-SATA
36	DVI
37	HDMI , R_USB30
38	TABLE LIST
39	
40	



Gigabyte Technology

Title	Cover Sheet	
Size: Custom	Document Number: GA-H77-D3H-MVP	Rev: 1.02
Date: Friday, April 06, 2012	Sheet 1 of 38	

GA-H77-D3H-MVP

Component value change history

Data	Change Item	Reason
0.1-1124	E-BOM	
02-1216	1. ADD PCH_HS & MOS_HS料號	
	2. PCIE gen2 switch PI3PCIE2415ZHE --> ASM1440	
	3. load-line DAR5=12K , DAR40=1.78K	
10A-0105	1. Z77料號更新	
	2. PWM Driver power vcc or +12v?	
	3. DART2 --> 47K/1/4/S , DAR44 --> 0 ohm	
10B-0113	1. Vcore & VAXG VSEN modify , DAR1,DAR51=100/4/1,DAR2,DAR54=0/4,DAC1,DAC24=3.3nF	
	2. 1.54K加替料:10RC4-001541-22R TA-I	
	1. Remove IR PWM 1X3 pin	
10C-0117	1. DA_DR11,DC_DR11,DZ_DR18 1ohm --> 0ohm	
10D-0119	1. Prochot R65 : 1.65K/4/1 --> 2.74K/4/1	
10E-EVT-0201	1. Modify choke=0.36uH , DRIVER=5V	
10F	1. IR3564要改用新料號03R	
	2. poochot change 100K	
10E-ECN	1. ADD PCB:依利安達	
10T	1. 0 OHM Short-pad	
	2. DDR3 FOR OC 2400MHz UP	
10G	0. PCB Rev1.0 --> ReV1.01	
	1. RS_PWM相關線路移除 (若有上prochot pull up改100 ohm)	
	2. Add M/B ID for DDR3 OC	
	3. 固態電容區分100uF/6.3V & 100uF/16V	
H77-D3H-MVP		
10A-0330	1. PCB H77-D3H REV1.01 --> H77-D3H-MVP REV1.01	
	2. Add Lucid vertune function	

Circuit or PCB layout change

DATE	Change Item	Reason
P67X-UD3-B3		
2011/02/18-0.1	1. 移除LAR11 ,LAR14 , NR28 ,新增NTP11	
2011/02/18-1.0	2. 新增DR388,DR389,DR391 ; Remove DQ49,DR347,DR371 3. CR44改成R0603-RH 4. R1,LAR3,RBR20,LABC25 -->R0402-2-SHORT 5. RAQ1 --> Q_TO223-MASK 6. RARN1 --> R8P4R-0402-SHORT 7. CESD1~5 --> SSOP5 8. RAQ2,RAEC1一起往下移40mil 9. CESD2文字面要標pin1	
2011/03/8-1.01	1. Add "Dolby" logo	
2011/03/8-1.02	1. UAFB1,UAFB2,UBF1,UBF2 Footprint update 1206-->1812 2. Add "AD1" FOR 5VSB	
Z68XP-D3		
1.0	1. update MINI_PCIE footprint 2. 文字面 : SLOT部分全對齊	
Z77-D3H-0.1	EVT	
0.2-1216	1. Remove SE9172 , Add VCC3 內層(注意其他內層power,跨切割) 2. SPDIF AGND --> GND 3. PCI SLOT & PCIEX1/X4 CAP COST DOWN 4. 0 ohm --> SHORT PAD 5. REMOVE SMBUS FROM COMP TO SOLDER SIDE IN DR POWER 6. SATA3 connect Change to 90 degree (記得SATA3訊號部分要做挖空) 7. Add "108dB"文字面 8. Remove VCC1_05_PCH & VCC1_8_PCH gate net 9. Add EJ168 R_USB30_1 & F_USB3 10. UAE1/UAE2 NET SWAP 11. 內層+12V要打VIA在COMA處 12. SPDIFO_HDMI走12mil	
1.0	1. SATA2~SATA3文字面要隱藏 2. DART2 移至 DC_DQ1左上方 3. Q7 & DAR31 NET Change	
1.01	1. 0 OHM SHORT PAD (LAN & AUDIO) 2. DDR3 2400MHz OC modify	

Gigabyte Technology

Title: BOM & PCB MODIFY HISTORY

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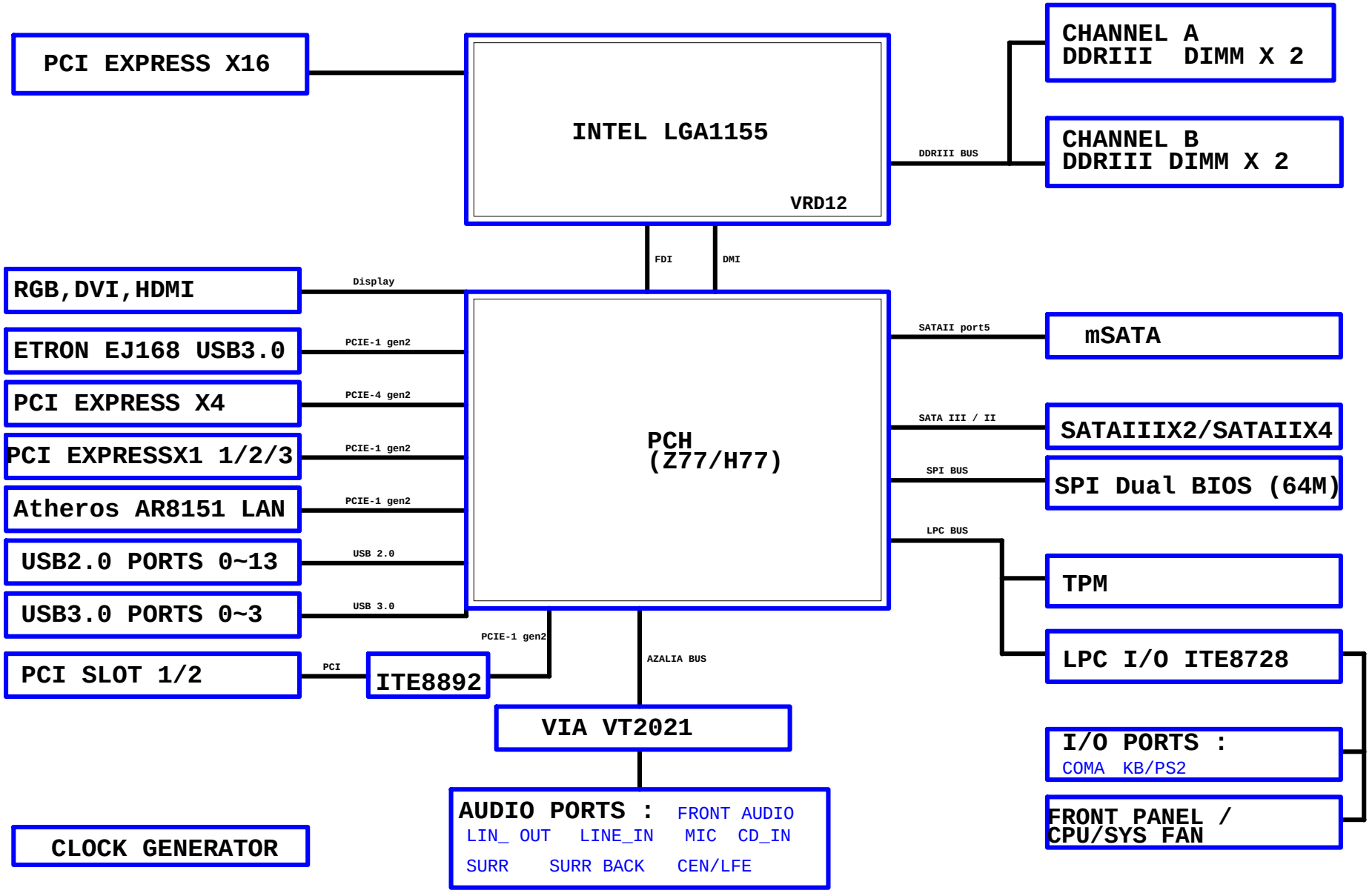
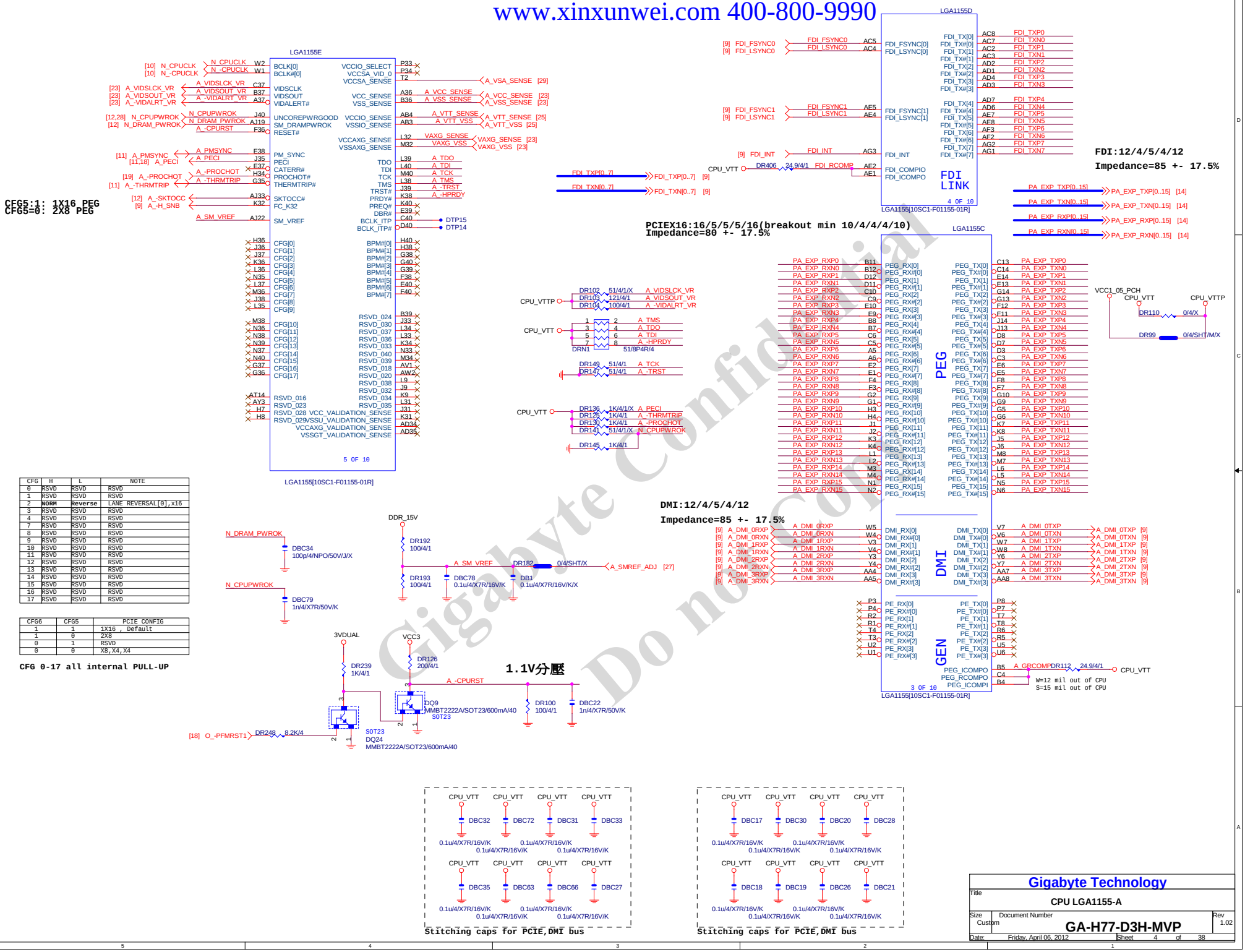
BLOCK DIAGRAM



Gigabyte Technology			
Title: BLOCK DIAGRAM			
Size: C	Document Number: GA-H77-D3H-MVP		Rev: 1.02
Date: Friday, April 06, 2012	Sheet 3 of 38		



CFG	H	L	NOTE
0	RSVD	RSVD	RSVD
1	RSVD	RSVD	RSVD
2	**NORM**	**Reverse**	LANE REVERSAL[0],x16
3	RSVD	RSVD	RSVD
4	RSVD	RSVD	RSVD
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

Title	CPU LGA1155-A
Size	Custom
Document Number	GA-H77-D3H-MVP
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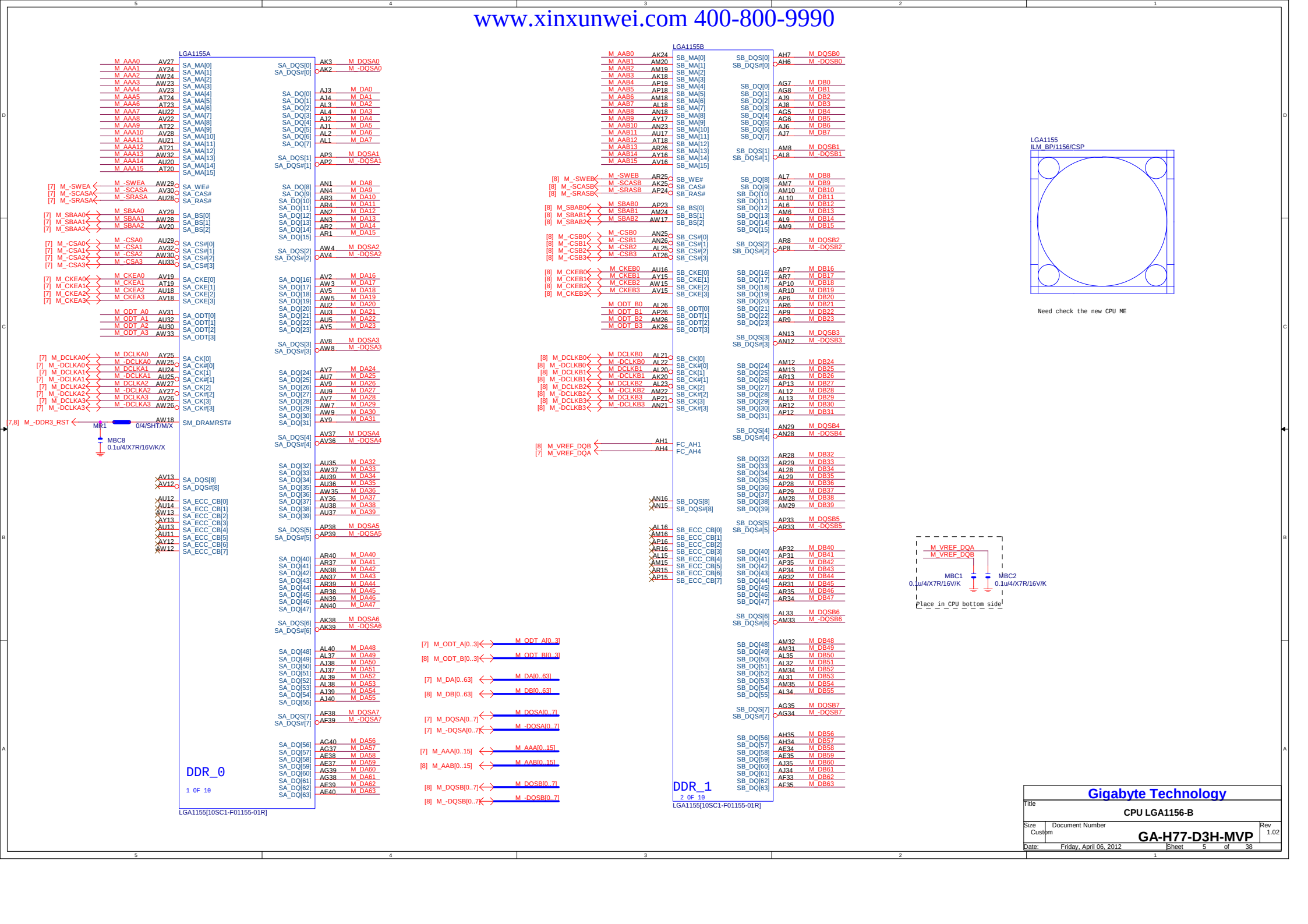
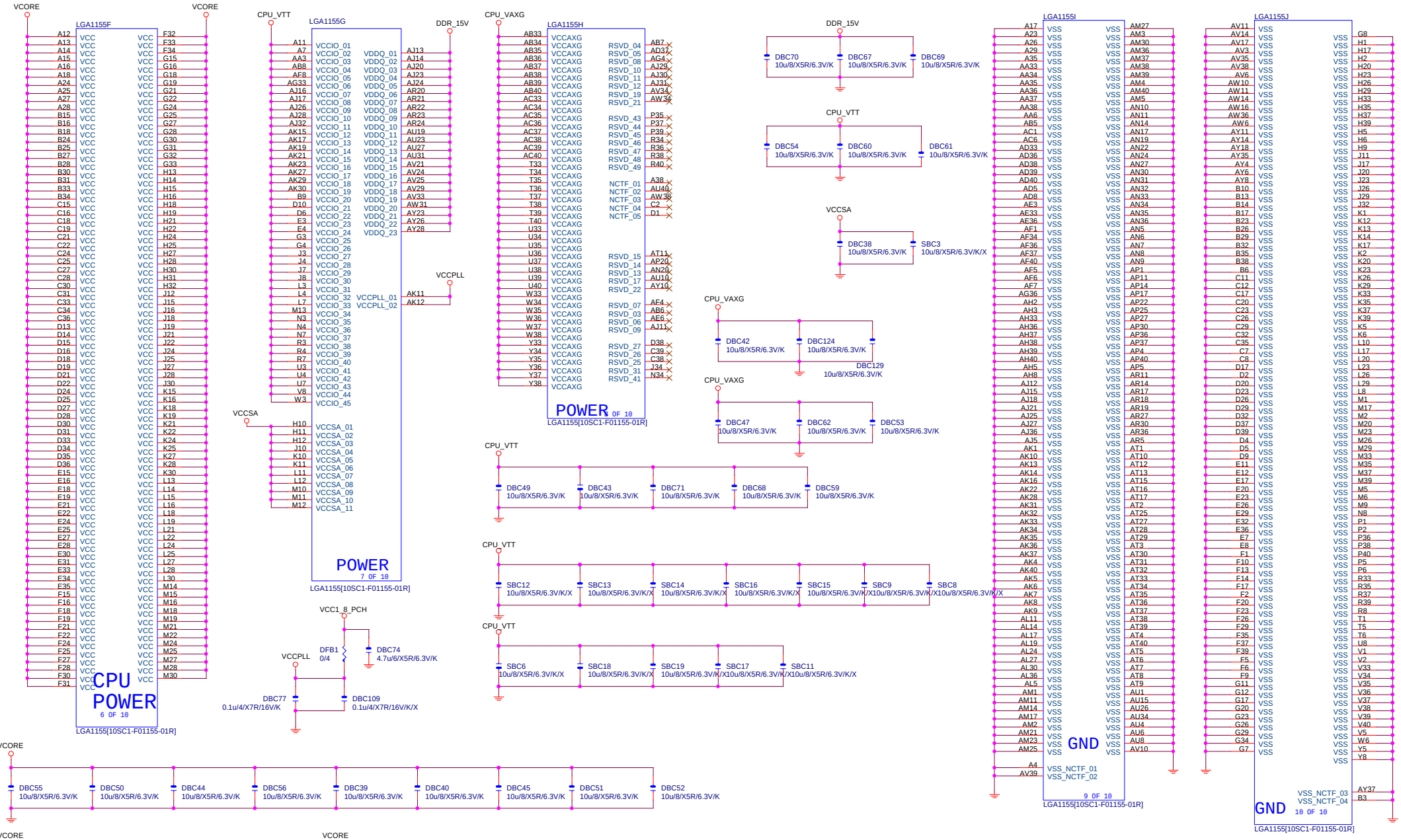


Gigabyte Technology	
Title	CPU LGA1156-B
Size: Custom	Document Number: GA-H77-D3H-MVP
Rev	1.02
Date: Friday, April 06, 2012	Sheet 5 of 38



Title	CPU LGA1156-C
Size	Custom
Document Number	GA-H77-D3H-MVP
Rev	1.02
Date:	Friday, April 06, 2012
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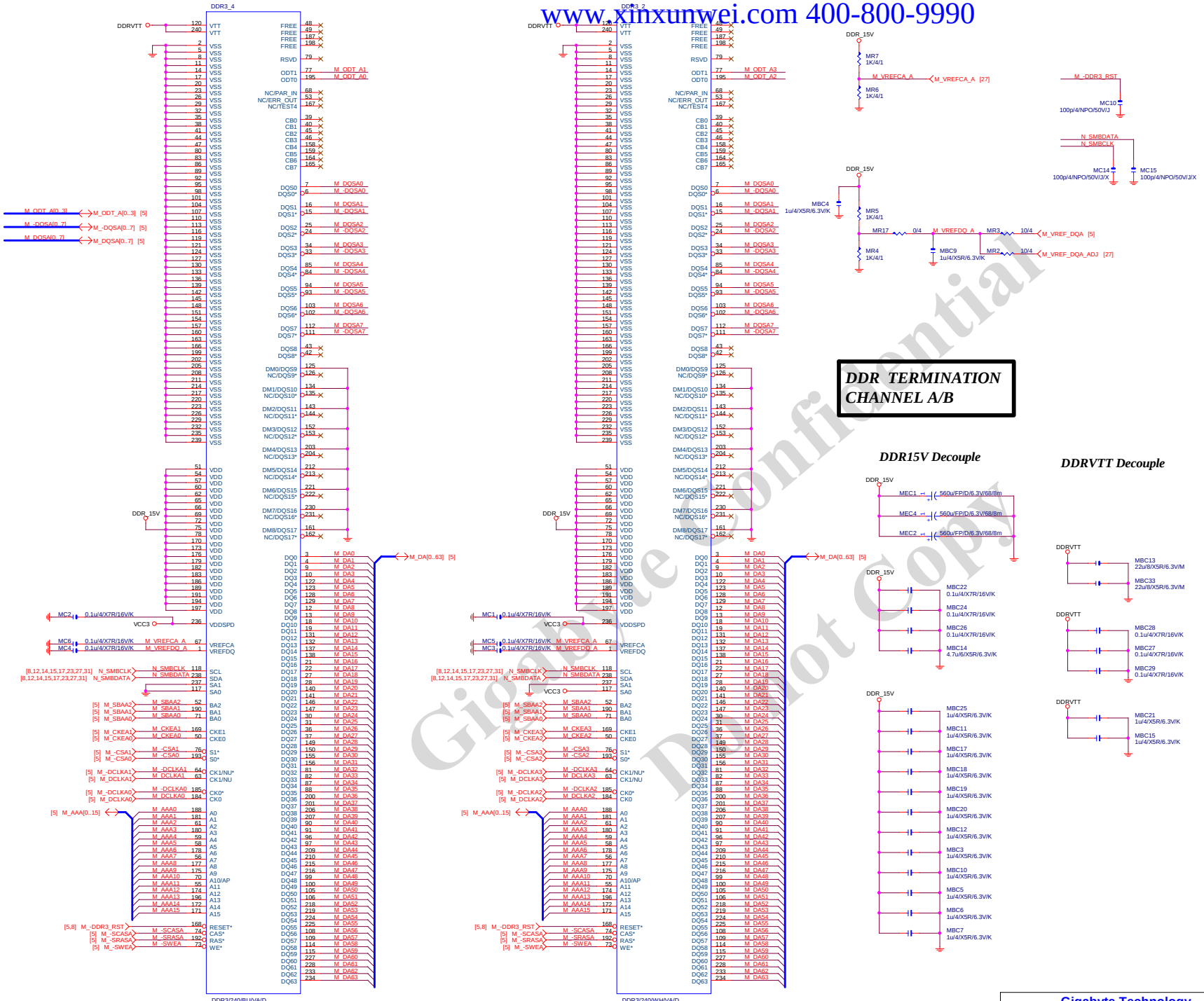
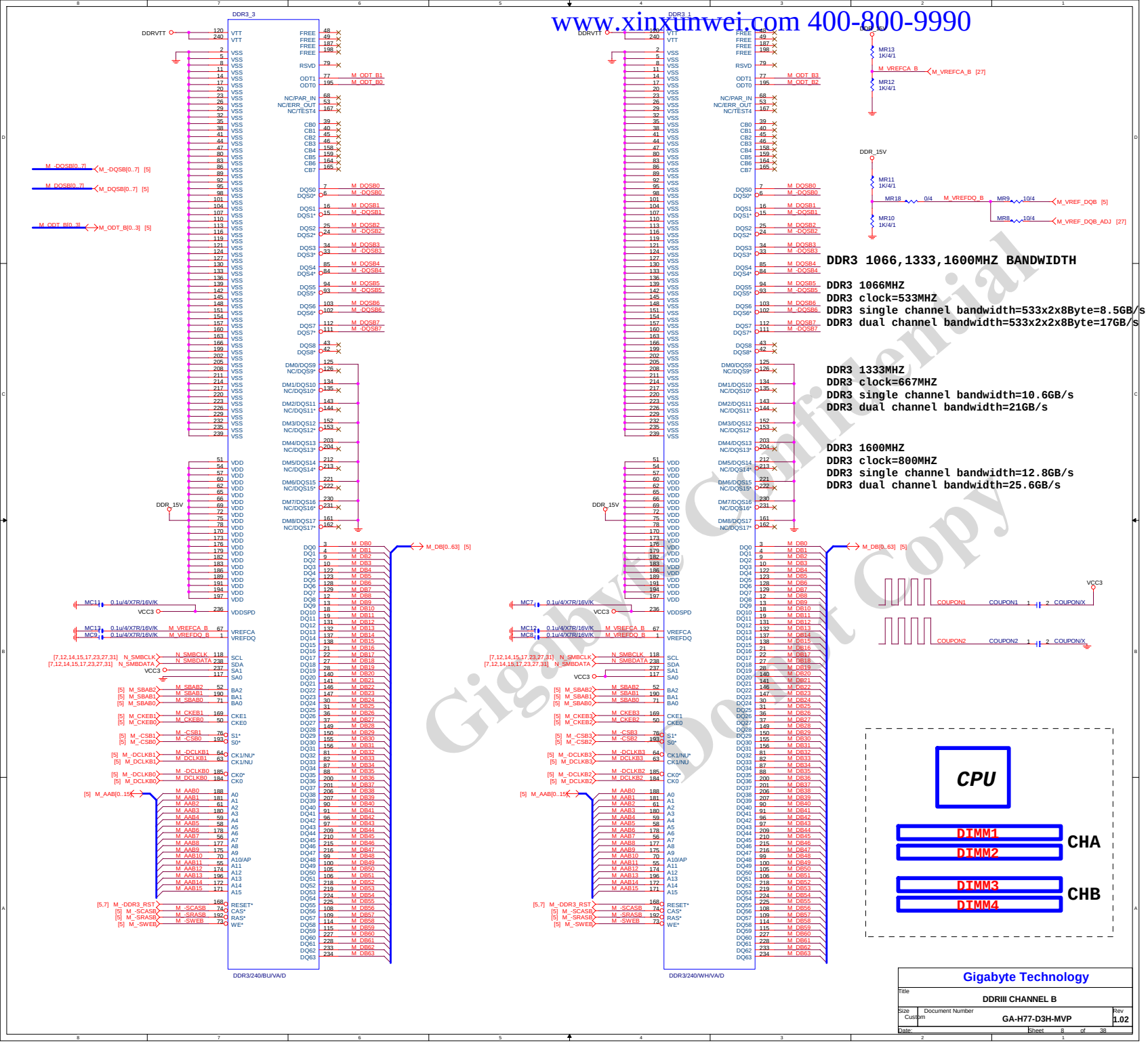
Gigabyte Technology



Gigabyte Technology		
Title: DDRIII CHANNEL A		
Size: Custom	Document Number: GA-H77-D3H-MVP	Rev: 1.02
Date:	Sheet 7 of 38	



DDR3 1066,1333,1600MHZ BANDWIDTH

DDR3 1066MHZ
DDR3 clock=533MHZ
DDR3 single channel bandwidth=533x2x8Byte=8.5GB/s
DDR3 dual channel bandwidth=533x2x2x8Byte=17GB/s

DDR3 1333MHZ
DDR3 clock=667MHZ
DDR3 single channel bandwidth=10.6GB/s
DDR3 dual channel bandwidth=21GB/s

DDR3 1600MHZ
DDR3 clock=800MHZ
DDR3 single channel bandwidth=12.8GB/s
DDR3 dual channel bandwidth=25.6GB/s

Gigabyte Technology			
Title: DDRIII CHANNEL B			
Size: Custom	Document Number: GA-H77-D3H-MVP		Rev: 1.02
Date:	Sheet 8 of 38		

USB3.0:10/5/7/5/20 (breakout min 8/4/4/4/8) ; ONLY 3 VIAS
Impedance=85 +- 17.5%
Back Panel < 10000 MILS
Front Panel < 6000 MILS

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

PCHB

DMI

[4] A_DMI_0TXN	A_DMI_0TXN	D33	DMI0RXN
[4] A_DMI_0TXP	A_DMI_0TXP	B33	DMI0RXP
[4] A_DMI_0RXN	A_DMI_0RXN	J36	DMI0TXN
[4] A_DMI_0RXP	A_DMI_0RXP	H36	DMI0TXP
[4] A_DMI_1TXN	A_DMI_1TXN	A36	DMI1RXN
[4] A_DMI_1TXP	A_DMI_1TXP	B35	DMI1RXP
[4] A_DMI_1RXN	A_DMI_1RXN	P38	DMI1TXN
[4] A_DMI_1RXP	A_DMI_1RXP	R38	DMI1TXP
[4] A_DMI_2TXN	A_DMI_2TXN	B37	DMI2RXN
[4] A_DMI_2TXP	A_DMI_2TXP	C36	DMI2RXP
[4] A_DMI_2RXN	A_DMI_2RXN	H38	DMI2TXN
[4] A_DMI_2RXP	A_DMI_2RXP	J38	DMI2TXP
[4] A_DMI_3TXN	C_DMI_3TXN	E37	DMI3RXN
[4] A_DMI_3TXP	A_DMI_3TXP	F38	DMI3RXP
[4] A_DMI_3RXN	A_DMI_3RXN	M41	DMI3TXN
[4] A_DMI_3RXP	A_DMI_3RXP	P41	DMI3TXP
	A_DMI_COMP	B31	DMI_IRCOMP
		E31	DMI_ZCOMP

W=4 mil out of PCH
S=15 mil out of PCH
VCC1_05_PCH — NR82 49.9/4/1

[31] CK_-SRCCLK_PCH	CK_-SRCCLK_PCH	P33	CLKIN_DMI_N
[31] CK_SRCCLK_PCH	CK_SRCCLK_PCH	R33	CLKIN_DMI_P

PCI-E

[15] PE_PCIE_IN1	J20	PERN1
[15] PE_PCIE_IP1	L20	PERP1
[15] PE_PCIE_TN1	F25	PETN1
[15] PE_PCIE_TP1	F23	PETP1
[15] PE_PCIE_IN2	P20	PERN2
[15] PE_PCIE_IP2	R20	PERP2
[15] PE_PCIE_TN2	C22	PETN2
[15] PE_PCIE_TP2	A22	PETP2
[15] PJ_PCIE_IN3	H17	PERN3
[15] PJ_PCIE_IP3	J17	PERP3
[15] PJ_PCIE_TN3	E21	PETN3
[15] PJ_PCIE_TP3	P17	PETP3
[15] PK_PCIE_IN4	M17	PERN4
[15] PK_PCIE_IP4	F18	PERP4
[15] PK_PCIE_TN4	E17	PETN4
[15] PK_PCIE_TP4	N15	PETP4
[15] PI_PCIE_IN1	M15	PERN5
[15] PI_PCIE_IP1	B17	PERP5
[15] PI_PCIE_TN1	C16	PETN5
[15] PI_PCIE_TP1	J15	PETP5
[16] G_PCIEBIN	L15	PERN6
[16] G_PCIEBIP	A16	PERP6
[16] G_PCIEBON	B15	PETN6
[16] G_PCIEBOP	J12	PETP6
[33] LA_ML_IN	H12	PERN7
[33] LA_ML_IP	F15	PERP7
[33] LA_ML_ON	F13	PETN7
[33] LA_ML_OP	H10	PETP7
[34] UB_USB3_IN_F	J10	PERN8
[34] UB_USB3_IP_F	B13	PERP8
[34] UB_USB3_ON_F	D13	PETN8
[34] UB_USB3_OP_F		PETP8

USB

USBP0N	BF36	N_-USBP0 [30]
USBP0P	BD36	N_+USBP0 [30]
USBP1N	BC33	N_-USBP1 [30]
USBP1P	BA33	N_+USBP1 [30]
USBP2N	BM33	N_-USBP2 [37]
USBP2P	BM35	N_+USBP2 [37]
USBP3N	BT33	N_-USBP3 [37]
USBP3P	BU32	N_+USBP3 [37]
USBP4N	BR32	N_-USBP4 [30]
USBP4P	BT31	N_+USBP4 [30]
USBP5N	BN29	N_-USBP5 [30]
USBP5P	BM30	N_+USBP5 [30]
USBP6N	BK33	N_-USBP6 [30]
USBP6P	BJ33	N_+USBP6 [30]
USBP7N	BF31	N_-USBP7 [30]
USBP7P	BD31	N_+USBP7 [30]
USBP8N	BN27	N_-USBP8 [33]
USBP8P	BR29	N_+USBP8 [33]
USBP9N	BR26	N_-USBP9 [33]
USBP9P	BT27	N_+USBP9 [33]
USBP10N	BK25	N_-USBP10 [30]
USBP10P	BJ25	N_+USBP10 [30]
USBP11N	BJ31	N_-USBP11 [30]
USBP11P	BK31	N_+USBP11 [30]
USBP12N	BF27	N_-USBP12 [32]
USBP12P	BD27	N_+USBP12 [32]
USBP13N	BJ27	N_-USBP13 [32]
USBP13P	BK27	N_+USBP13 [32]

OC0#/GPIO59	BM43	
OC1#/GPIO40	BD41	
OC2#/GPIO41	BG41	N_-USBOC_F [30]
OC3#/GPIO42	BK43	
OC4#/GPIO43	BP43	
OC5#/GPIO9	BJ41	N_-USBOC_R [30,33]
OC6#/GPIO10	BT45	
OC7#/GPIO14	BM45	N_GPIO14

USBRBIAS# BP25 — N_USBRBIAS — NR74 22.6/4/1 — BM25 USBRBIAS
W=4 mil out of PCH
S=15 mil out of PCH

CLKIN_DOT_96N BD38 — CK_-DOTCLK — CK_-DOTCLK [31]
CLKIN_DOT_96P BF38 — CK_DOTCLK — CK_DOTCLK [31]

DMI2RBIAS A32 — NR85 750/4/1
W=4 mil out of PCH
S=15 mil out of PCH

BD82H77/S

放靠近 Device & PCI-E Slot

PCIEX1:16/5/5/5/16 (breakout min 8/4/4/4/8)
Impedance=80 +- 17.5%

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

USB OC# Configure	
OC0#	USB0,1
OC1#	USB2,3
OC2#	USB4,5
OC3#	USB6,7
OC4#	USB8,9
OC5#	USB10,11
OC6#	USB12,13
OC7#	Not Use

PCHG

FDILINK

[30] PCH_USB3_RXN1	H31	USB3_RXN1	FDI_RXN0 C42
[30] PCH_USB3_RXP1	J31	USB3_RXP1	FDI_RXP0 B43
[30] PCH_USB3_TXN1	C29	USB3_TXN1	FDI_RXN1 F45
[30] PCH_USB3_TXP1	E29	USB3_TXP1	FDI_RXP1 F43
[30] PCH_USB3_RXN2	J27	USB3_RXN2	FDI_RXN2 H41
[30] PCH_USB3_RXP2	L27	USB3_RXP2	FDI_RXP2 J41
[30] PCH_USB3_TXN2	F28	USB3_TXN2	FDI_RXN3 C46
[30] PCH_USB3_TXP2	E27	USB3_TXP2	FDI_RXP3 D47
[37] PCH_USB3_RXN3	J25	USB3_RXN3	FDI_RXN4 B45
[37] PCH_USB3_RXP3	L25	USB3_RXP3	FDI_RXP4 A46
[37] PCH_USB3_TXN3	C26	USB3_TXN3	FDI_RXN5 B47
[37] PCH_USB3_TXP3	B27	USB3_TXP3	FDI_RXP5 C49
[37] PCH_USB3_RXN4	L22	USB3_RXN4	FDI_RXN6 J43
[37] PCH_USB3_RXP4	J22	USB3_RXP4	FDI_RXP6 H43
[37] PCH_USB3_TXN4	B25	USB3_TXN4	FDI_RXN7 M43
[37] PCH_USB3_TXP4	D25	USB3_TXP4	FDI_RXP7 P43

		FDI_FSYNC0	B51 FDI_FSYNC0 → FDI_FSYNC0 [4]
		FDI_LSYNC0	E49 FDI_LSYNC0 → FDI_LSYNC0 [4]
		FDI_FSYNC1	C52 FDI_FSYNC1 → FDI_FSYNC1 [4]
		FDI_LSYNC1	D51 FDI_LSYNC1 → FDI_LSYNC1 [4]
		FDI_INT	H46 FDI_INT → FDI_INT [4]

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BD82H77/S

FDI:12/4/5/4/12
Impedance=85 +- 17.5%

FDI_TXP[0..7] → FDI_TXP[0..7] [4]
FDI_TXN[0..7] → FDI_TXN[0..7] [4]

PCHE

N_NV_CLE	M48	RESERVED_29	RESERVED_22 AB50
	R47	DF_TVS	RESERVED_21 Y50
	Y41	RESERVED_6	RESERVED_14 AB49
	M50	RESERVED_4	RESERVED_13 AB44
	M49	RESERVED_3	RESERVED_12 U49
	U43	RESERVED_2	RESERVED_11 R44
	J57	RESERVED_1	RESERVED_10 U50
			RESERVED_9 U46
			RESERVED_8 U44
			RESERVED_7 H50
			RESERVED_20 K46
			RESERVED_19 L56
			RESERVED_18 J55
			RESERVED_17 F53
			RESERVED_16 H52
			RESERVED_15 E52
			RESERVED_28 K50
			RESERVED_27 K49
			RESERVED_26 AB46
			RESERVED_25 G56
			RESERVED_24 Y44
			RESERVED_23 L53
			RESERVED_5 R50 N_NV_RCOMP NR155 33/4

NVRAM

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BD82H77/S

VCC3 — NBC51 1u/4/X5R/6.3V/K

N_-USBOC_F — NBC45 0.1u/4/X7R/16V/K
N_-USBOC_R — NBC46 0.1u/4/X7R/16V/K

3VDUAL — NR98 8.2K/4 — N_GPIO14

PCH_HS

NPCH_HS/[12SP2-S05511-01R_12SP2-S05511-02R_12SP2-S05511-03R]

VCC1_8_PCH
NR118 2.2K/4/1
NR117 4.7K/4 N_NV_CLE
A_-H_SNB [4]
NBC57 0.1u/4/X7R/16V/K

DMI /FDI termination voltage

CK_SRCCLK_PCH — NR87 8.2K/4/X
CK_-SRCCLK_PCH — NR86 8.2K/4/X

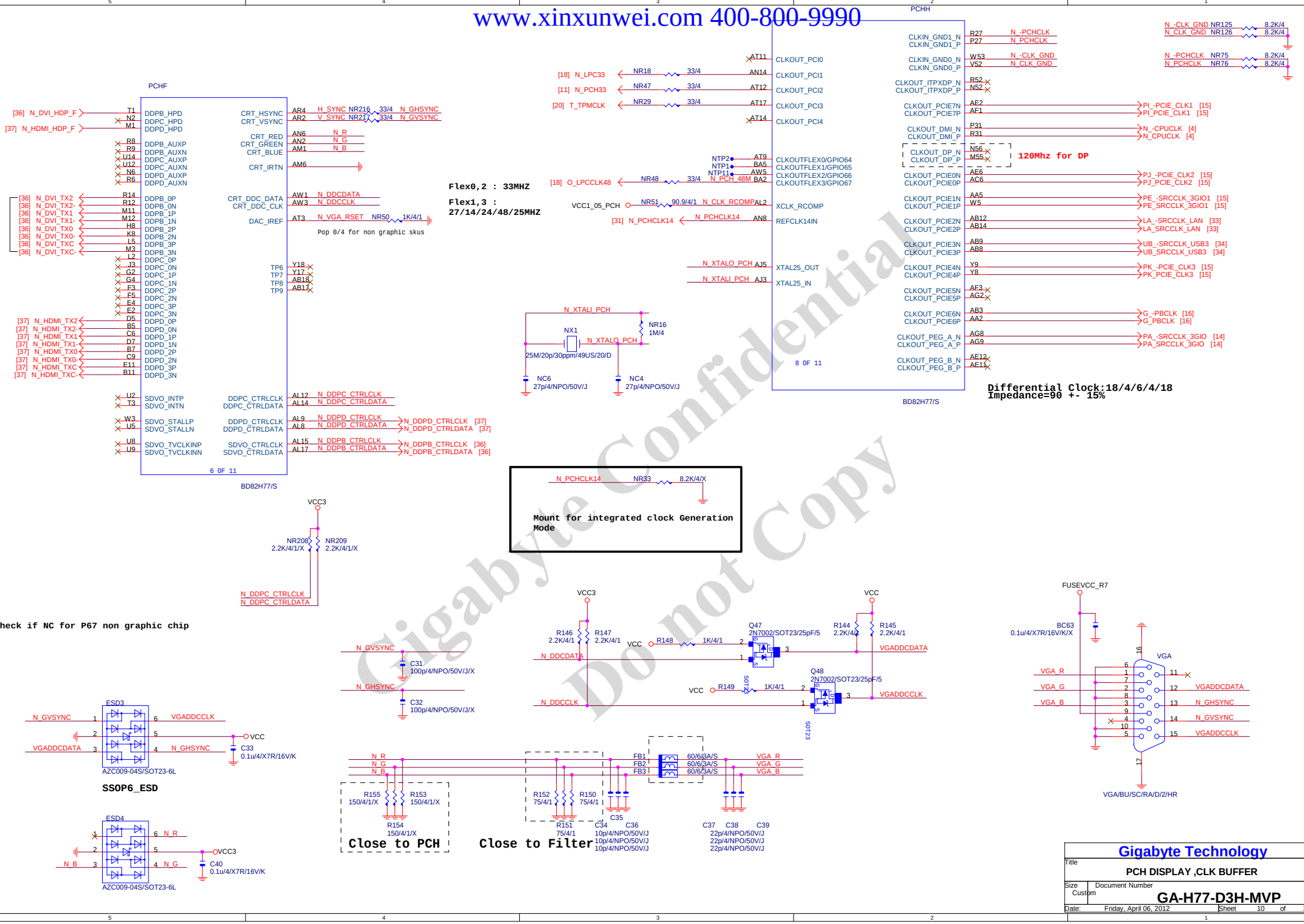
Mount for integrated clock Generation Mode

CK_DOTCLK — NR84 8.2K/4/X
CK_-DOTCLK — NR88 8.2K/4/X

R102 short to GND in non graphic SKU

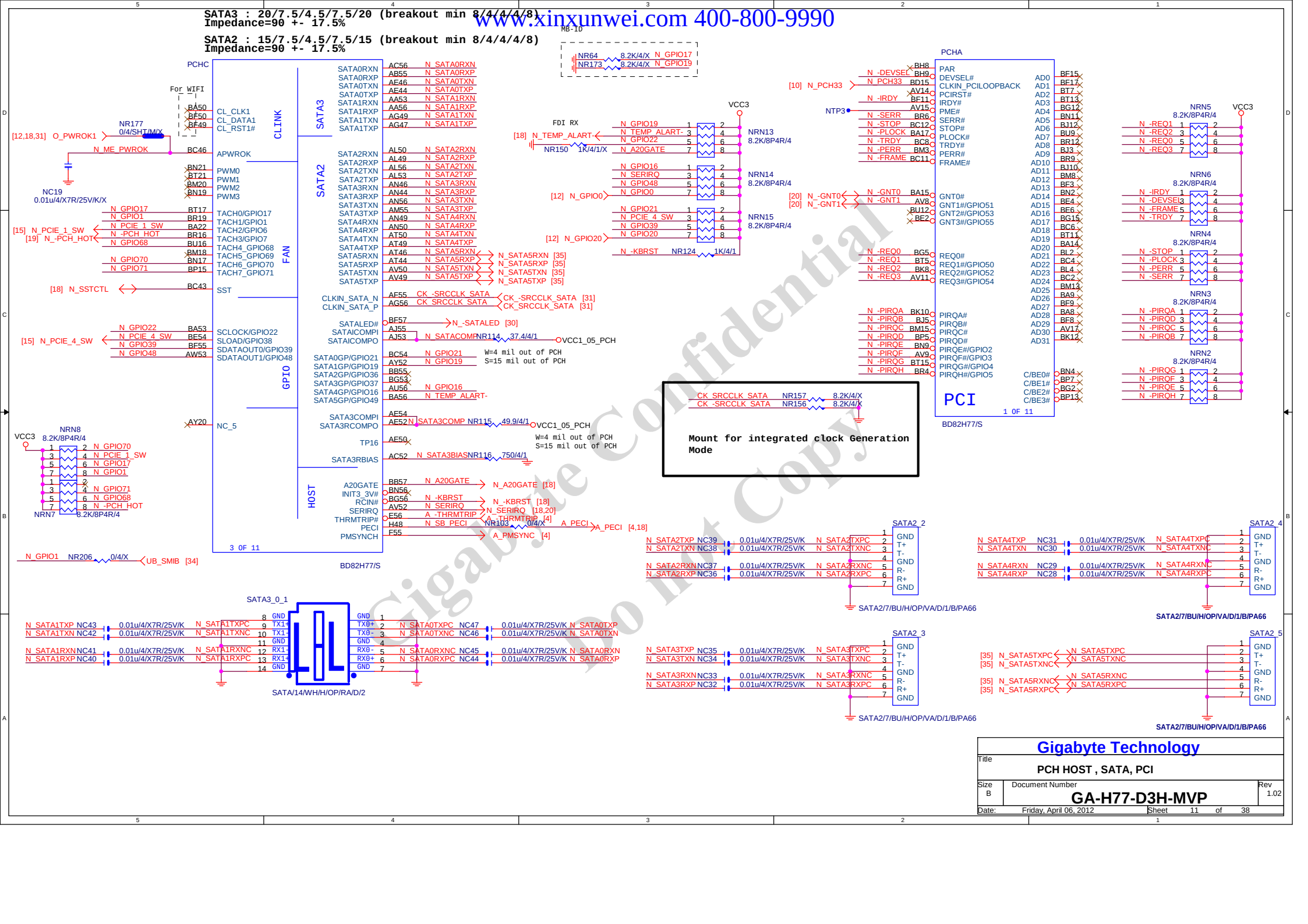
Gigabyte Technology

Title	PCH FDI,DMI,USB ,PCIE	
Size: Custom	Document Number: GA-H77-D3H-MVP	Rev: 1.02
Date: Friday, April 06, 2012	Sheet 9 of 38	



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%



Title	PCH HOST , SATA, PCI
Size	B
Document Number	GA-H77-D3H-MVP
Rev	1.02
Date:	Friday, April 06, 2012
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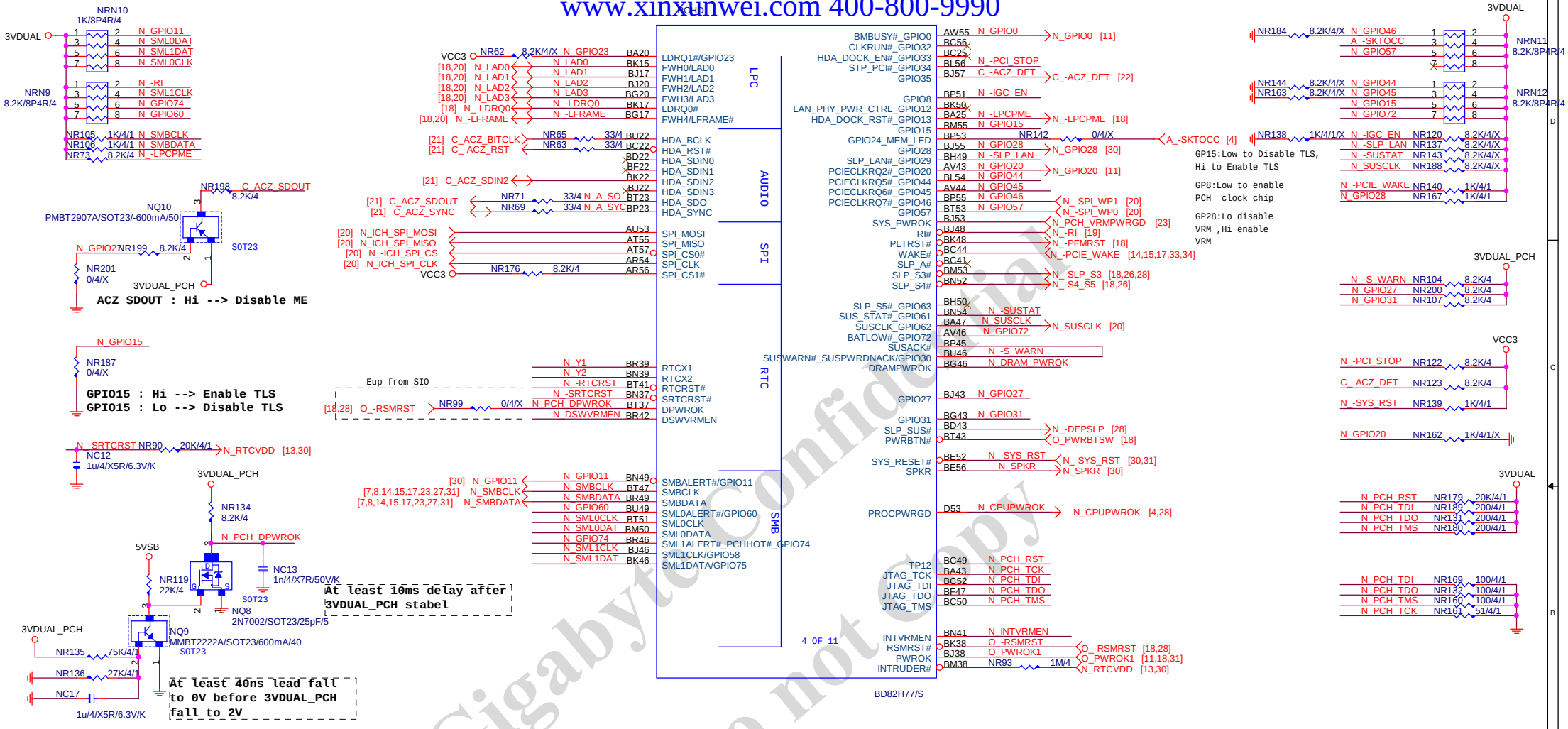
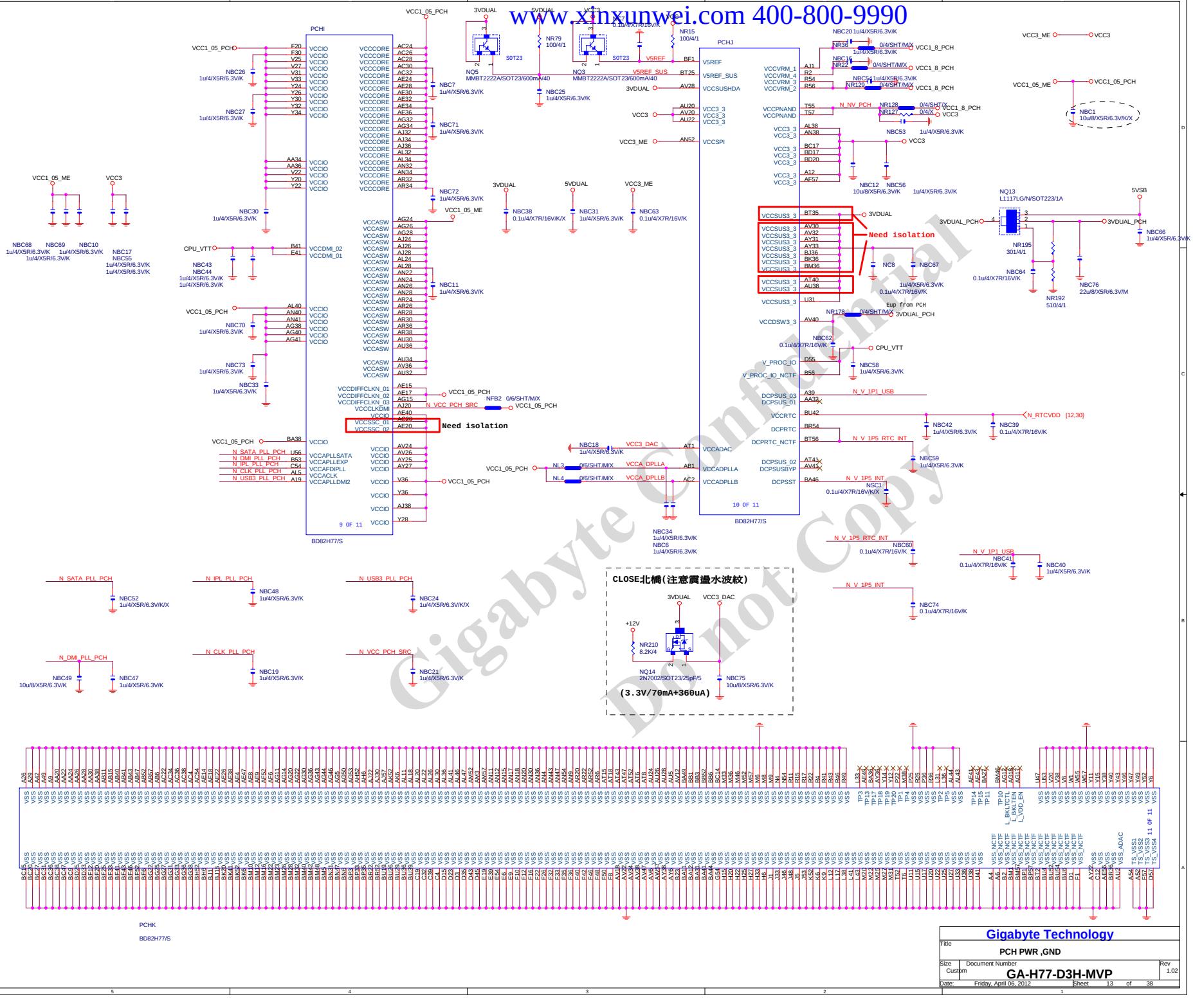
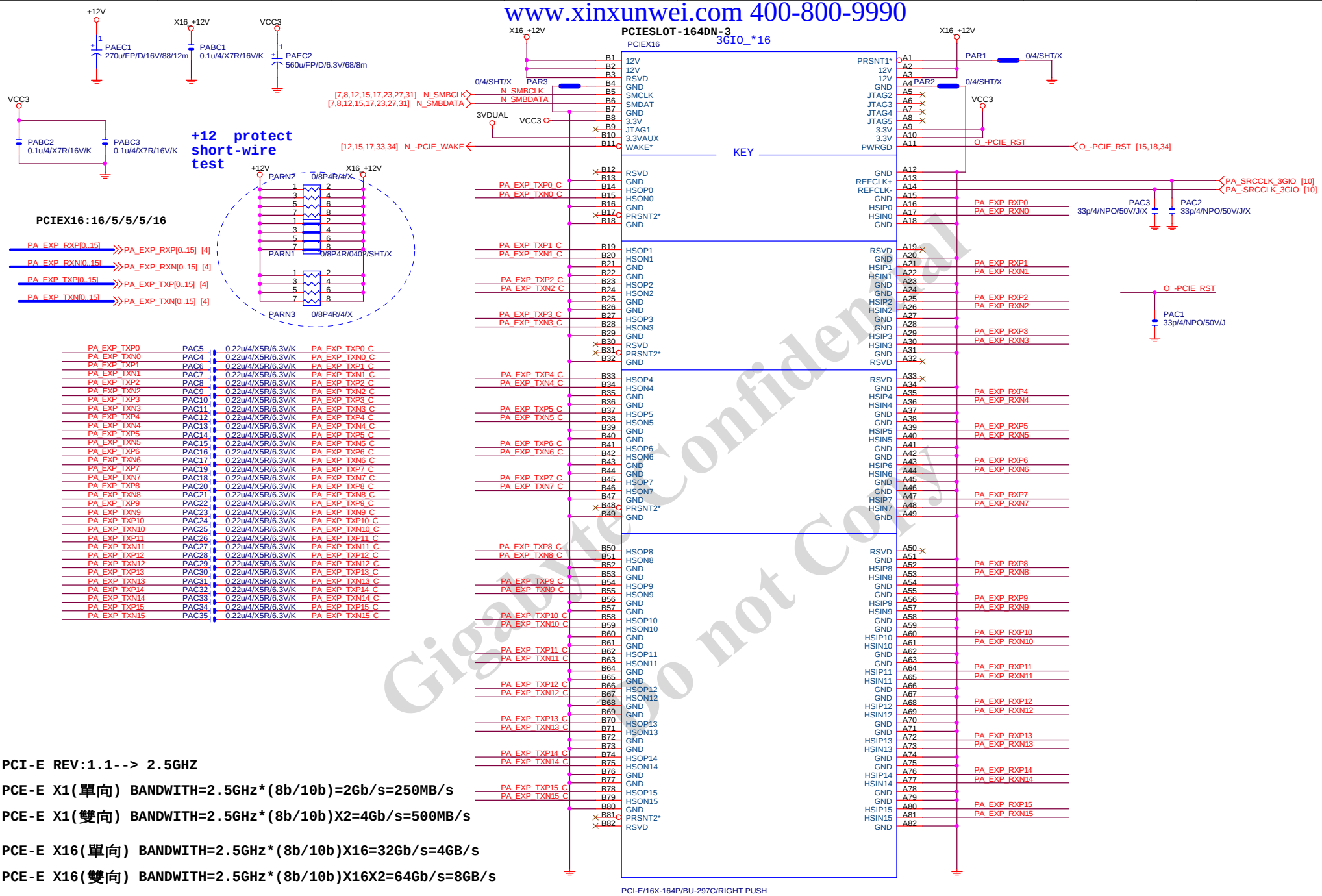
Gigabyte Technology



Gigabyte Technology		
Title: PCH GPIO , CTRL , AUDIO		
Size: B	Document Number: GA-H77-D3H-MVP	Rev: 1.02
Date: Friday, April 06, 2012	Sheet 12 of 38	





PCI-E REV:1.1--> 2.5GHZ

PCE-E X1(單向) BANDWITH=2.5GHz*(8b/10b)=2Gb/s=250MB/s

PCE-E X1(雙向) BANDWITH=2.5GHz*(8b/10b)X2=4Gb/s=500MB/s

PCE-E X16(單向) BANDWITH=2.5GHz*(8b/10b)X16=32Gb/s=4GB/s

PCE-E X16(雙向) BANDWITH=2.5GHz*(8b/10b)X16X2=64Gb/s=8GB/s

PCI-E REV:2.0--> 5GHZ

Gigabyte Technology			
Title	PCI EXPRESS * 16		
Size: Custom	Document Number: GA-H77-D3H-MVP		Rev: 1.02
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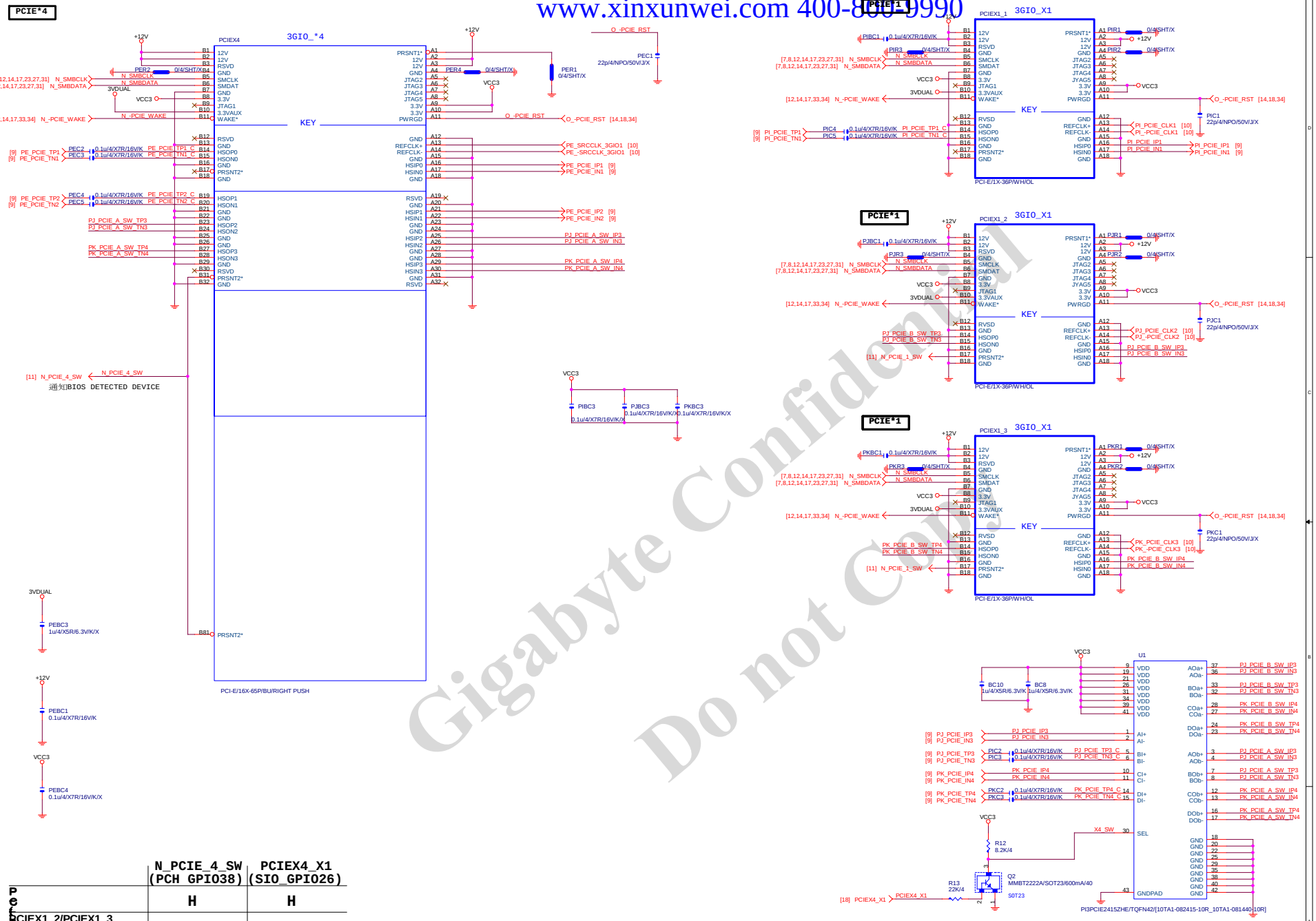

	N_PCIE_4_SW (PCH GPIO38)	PCIEX4_X1 (SIO_GPIO26)
PCIEX4	H	H
PCIEX1_2/PCIEX1_3 slave devices PCIEX4 -> X1	H	H
PCIEX1_2/PCIEX1_3 slave devices PCIEX4 -> X4	L	L

Function	SEL
xI--> xOa	L;PCIEX4 SLOT-->X1
xI--> xOb	H;PCIEX4 SLOT-->X4

Gigabyte Technology

Title: PCIE_X1 1,2

Size: Custom | Document Number: GA-H77-D3H-MVP | Rev: 1.02

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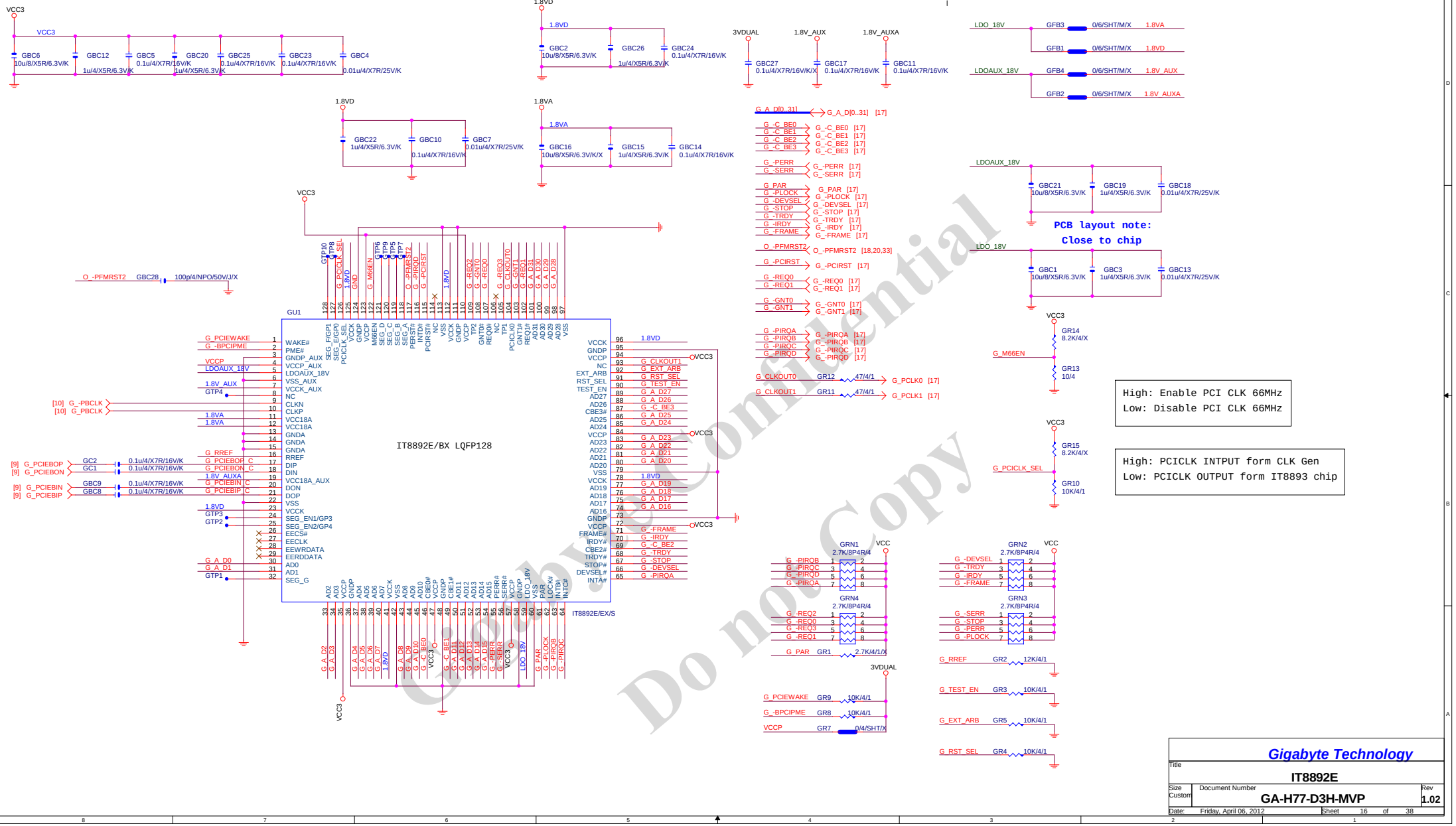
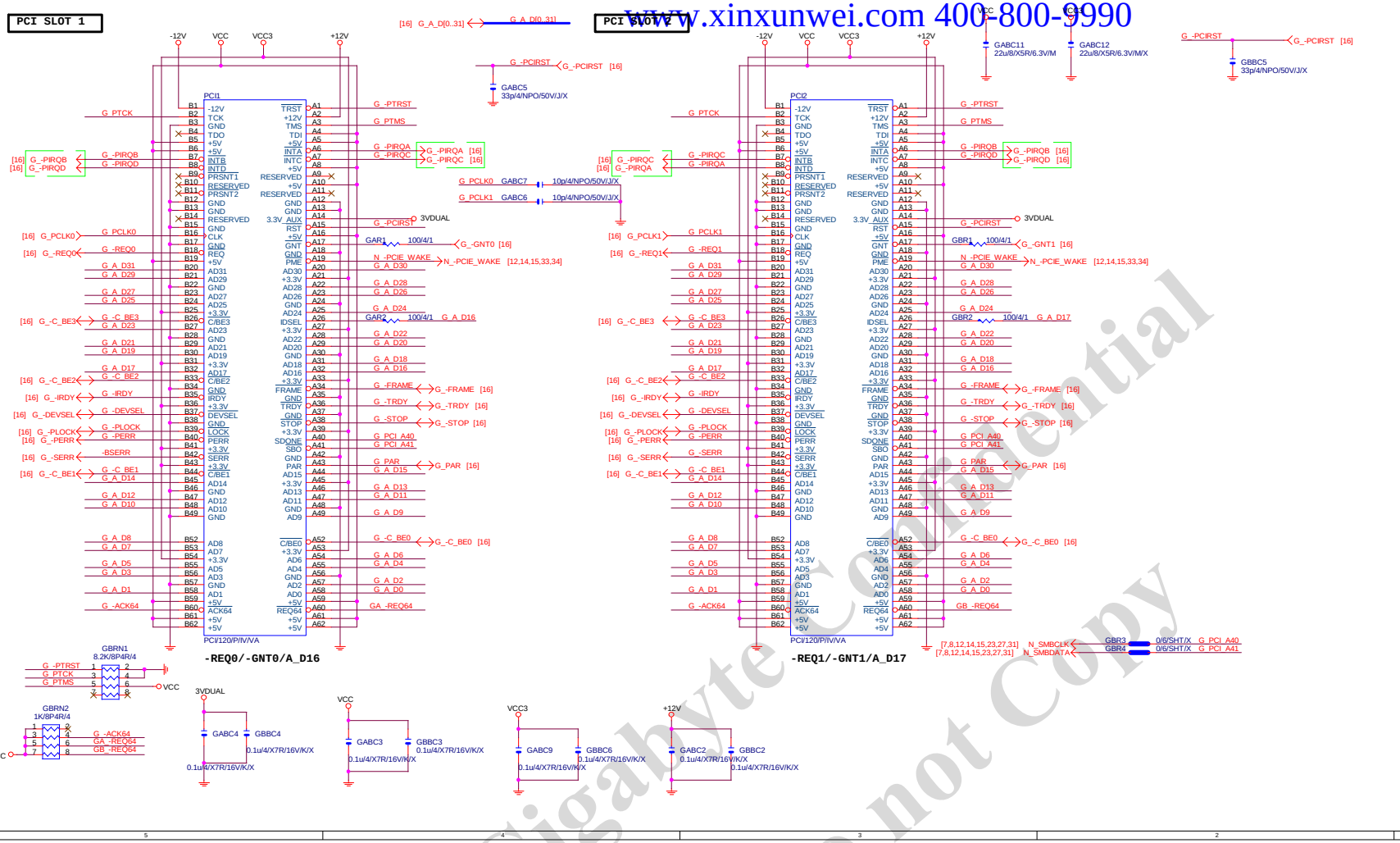
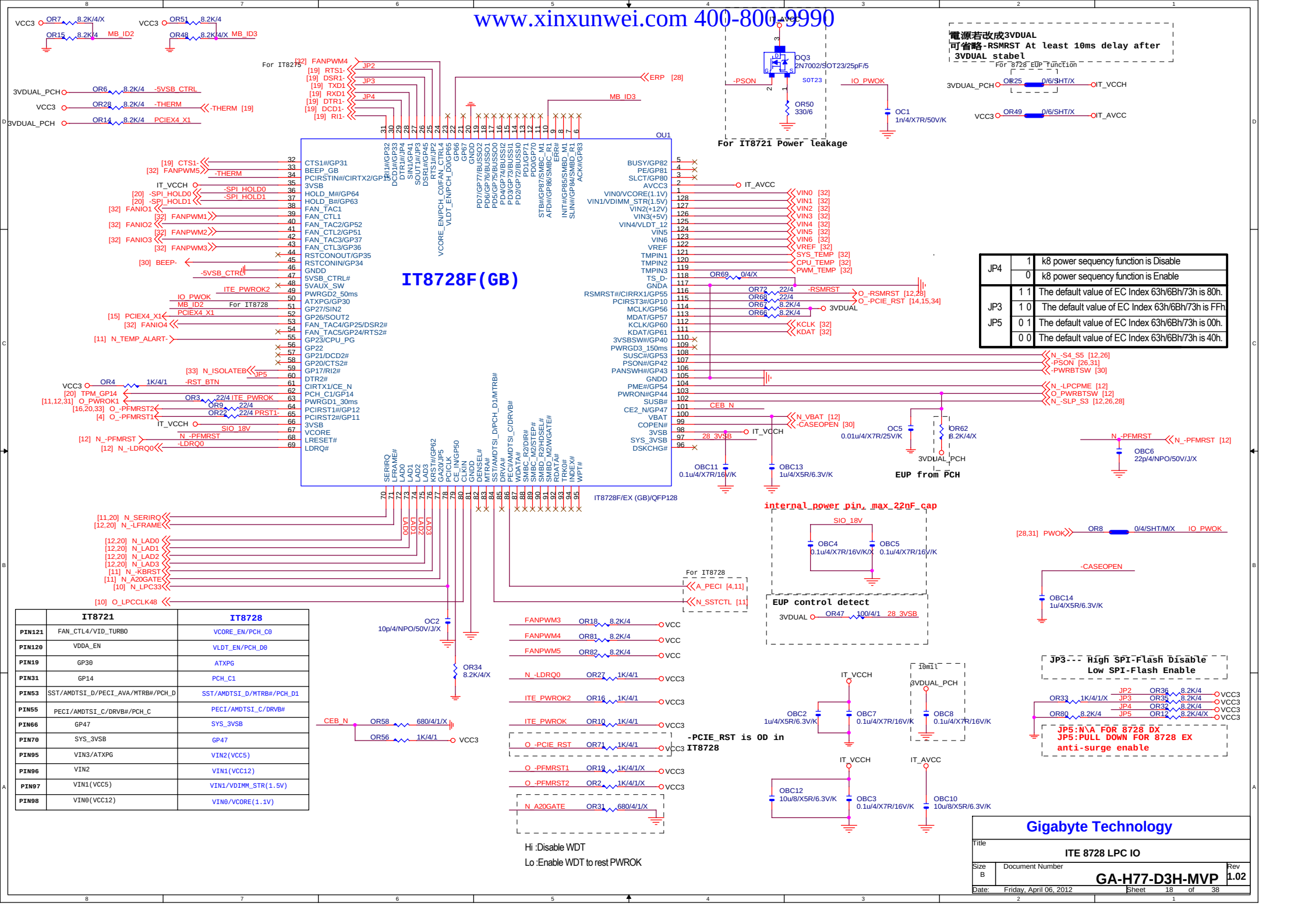




GIGABYTE™

Title	PCI SLOT 1&2	
Size: Custom	Document Number: GA-H77-D3H-MVP	Rev: 1.02
Date: Friday, April 06, 2012	Sheet 17 of 38	



JP4	1	k8 power sequency function is Disable
	0	k8 power sequency function is Enable
JP3 JP5	1 1	The default value of EC Index 63h/6Bh/73h is 80h.
	1 0	The default value of EC Index 63h/6Bh/73h is FFh
	0 1	The default value of EC Index 63h/6Bh/73h is 00h.
	0 0	The default value of EC Index 63h/6Bh/73h is 40h.

	IT8721	IT8728
PIN121	FAN_CTL4/VID_TURBO	VCORE_EN/PCH_C0
PIN120	VDDA_EN	VLDT_EN/PCH_D0
PIN19	GP30	ATXPG
PIN31	GP14	PCH_C1
PIN53	SST/AMDTSI_D/PECI_AVA/MTRB#/PCH_D	SST/AMDTSI_D/MTRB#/PCH_D1
PIN55	PECI/AMDTSI_C/DRVB#/PCH_C	PECI/AMDTSI_C/DRVB#
PIN66	GP47	SYS_3VSB
PIN70	SYS_3VSB	GP47
PIN95	VIN3/ATXPG	VIN2(VCC5)
PIN96	VIN2	VIN1(VCC12)
PIN97	VIN1(VCC5)	VIN1/VDIMM_STR(1.5V)
PIN98	VIN0(VCC12)	VIN0/VCORE(1.1V)

Gigabyte Technology		
Title	ITE 8728 LPC IO	
Size B	Document Number GA-H77-D3H-MVP	Rev 1.02
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COMA

OAU1
GD75232/TSSOP20
OABC1 0.1u/4/X7R/16V/K/X
OABC3 0.1u/4/X7R/16V/K/X
OABC2 0.1u/4/X7R/16V/K/X
-12V
VCC
+12V

COM RI

OAQ1 MMBT2222A/SOT23/600mA/40
OAD1 CD4148WP/1206/300mA
OAR1 75K/4/1
OAR2 8.2K/4
S0T23

COMA
BH/2*5K10/IV/2.54/VA/COM/PRT/TUR180
11NH3-000205-Y1R/Y2R
OACN1 180P/8P4C/6/NPO/50V/K
OACN2 180P/8P4C/6/NPO/50V/K

UBF5 SMD1812P350SLR/S
UBF6 SMD1812P350SLR/S
5VDUAL
UBEC3 100u/OS/D/6.3V/66/30m

UBR4 8.2K/4
UBR8 15K/4/1
UBR2 8.2K/4
UBR1 15K/4/1
-USBOC_R1 [34]
-USBOC_R2 [34]

Q21 BAT54A/SOT23/200mA
R80 0/4/X
A_-PROCHOT
-PROCHOT
VR_HOT [23]
N_-PCH_HOT [11]

UBESD2 AZC009-04S/SOT23-6L

R_USB30_1 USB3.0/2.0
UBBC3 0.1u/4/X7R/16V/K
UBBC4 0.1u/4/X7R/16V/K
UBC45 0.1u/4/X7R/16V/K SSTXDN1C
UBC46 0.1u/4/X7R/16V/K SSTXDP1C
UBC47 0.1u/4/X7R/16V/K SSTXDN2C
UBC48 0.1u/4/X7R/16V/K SSTXDP2C
Close to R_USB30
90歐姆:[20/4.5/7.5/4.5/20]
USB/18P/BU/OS/RA/D/2/1U/SB

UBE4 AZ1045-04F/MSOP10
UBE3 AZ1045-04F/MSOP10

+12V
R29 10K/4/1
R65 1.5K/4/1
R59 100K/4/1
R61 1K/4/1
RS1 100K/1/4/S
C6 0.1u/4/X7R/16V/K
U6B LM324DR/SO14
TSM_5
TSM_6
TSM_7
112~126 degree
Q7 2N7002/SOT23/25pF/5
Q8 2N7002/SOT23/25pF/5/X
-THERM [18]
RS1 CLOSE CPU VR MOSFET
CLOSE PWM HOT MOSFET

Gigabyte Technology

Title	COM & PROHOT/Dynamic O.C.	
Size: Custom	Document Number: GA-H77-D3H-MVP	Rev: 1.02
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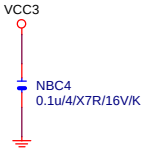

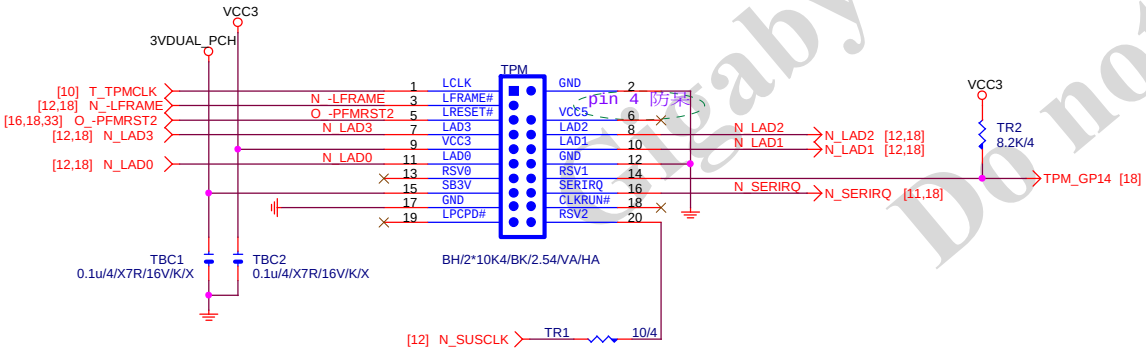

Gigabyte Technology			
Title: BIOS			
Size: Custom	Document Number: GA-H77-D3H-MVP		Rev: 1.02
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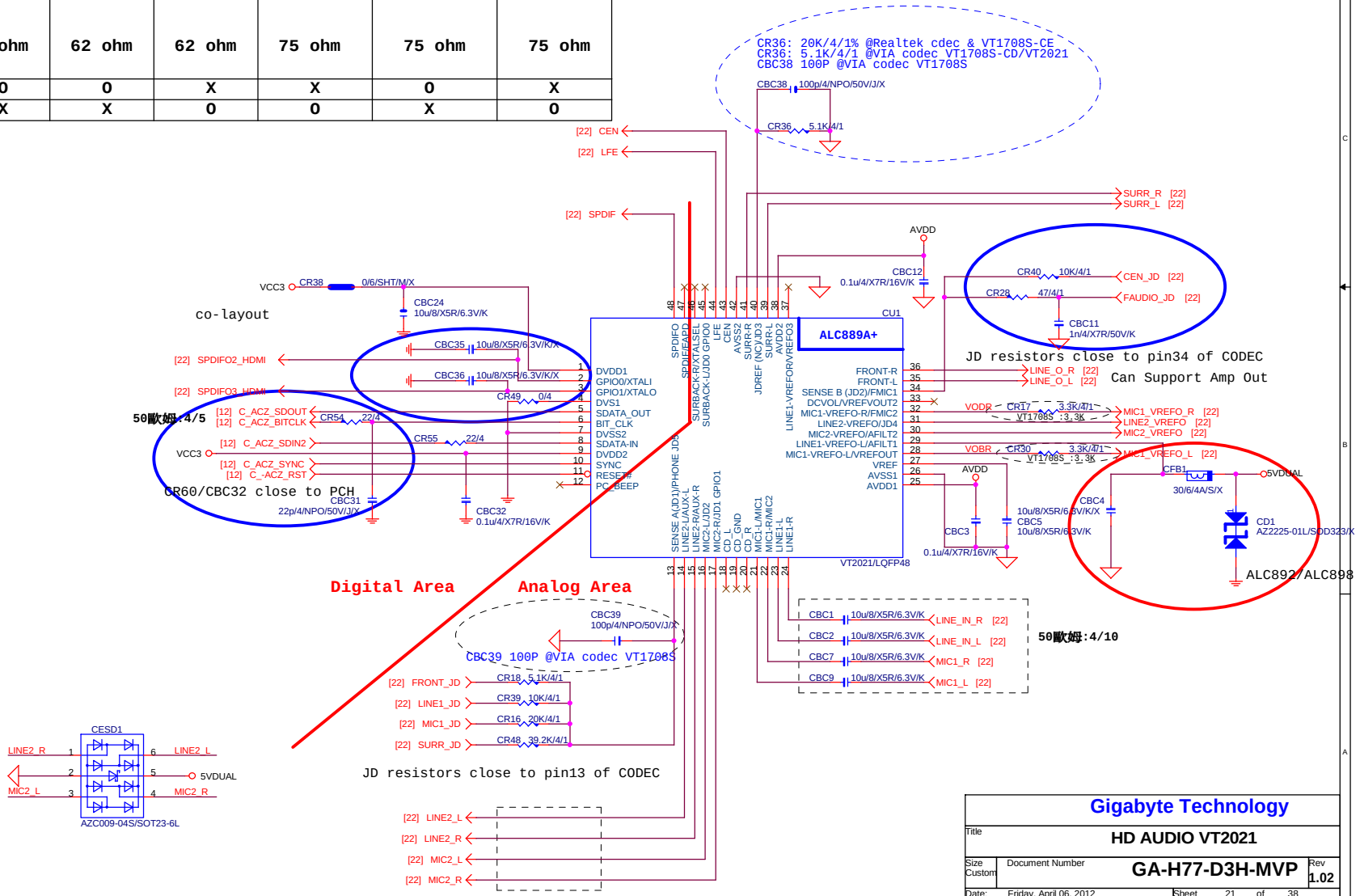
AZALIA CODEC *ALC662-VD0/ALC887-VD2/ALC889/VT1708S-CD/VT1708S-CE/VT2021 only*

	ALC662	ALC887-VD2	ALC889	VT1708S-CD	VT1708S-CE/ VT1705CF	VT2021
CR49	X	X	O	O	X	O
CBC36	O	O	X	X	O	X
CR28/CBC11	47ohm+1nF	47ohm+1nF	47ohm+1nF	22ohm+100P	22ohm+100P	47ohm+1nF
CR52	X	O	O	O	O	O
CR57	O	X	X	X	X	X
CBC1/CBC2	10uF/X5R	10uF/X5R	22uF/X5R	10uF/X5R	10uF/X5R	10uF/X5R
CR36	20K/4/1	20K/4/1	20K/4/1	5.1K/4/1	20K/4/1	5.1K/4/1
CR17/CR30/ CR25/CR15/CR12/CR3/	8.2K/4	8.2K/4	8.2K/4	3.3K/4/1	3.3K/4/1	3.3K/4/1
CBC38/CBC39	X	X	X	100P/4	100P/4	X
CR10/CR8/CR20/CR45/ CR42/CR51/CR27/CR26	22K/4	22K/4	22K/4	10K/4/1	10K/4/1	10K/4/1
CR7/CR9/CR5/CR13/ CR29/CR32/CR46/CR19/ CR50/CR41/CR2/CR11/ CR14/CR24	62 ohm	62 ohm	62 ohm	75 ohm	75 ohm	75 ohm
CFB1/CD1/CBC4/CBC8	O	O	X	X	O	X
CD2/CD3/CQ3/CQ4	X	X	O	O	X	O



Gigabyte Technology	
Title	HD AUDIO VT2021
Size: Custom	Document Number: GA-H77-D3H-MVP
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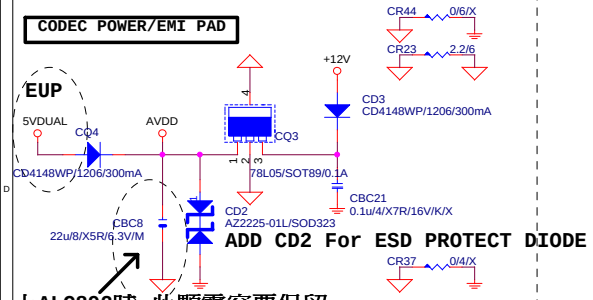
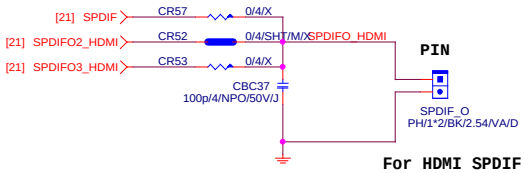
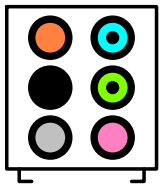
CODEC POWER/EMI PAD





AZALIA JACK

BTX AZALIA CONNECTOR



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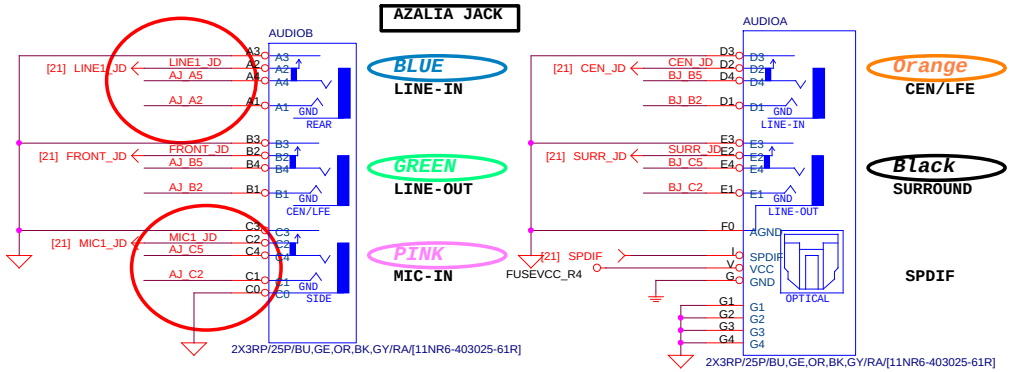
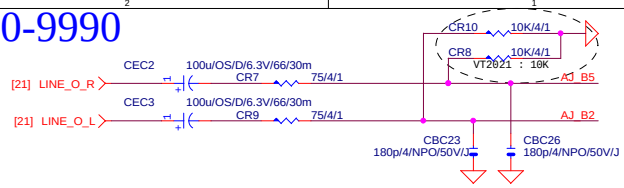
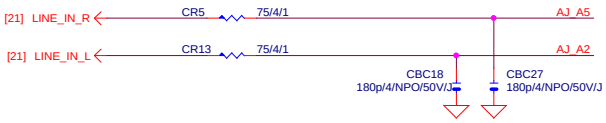


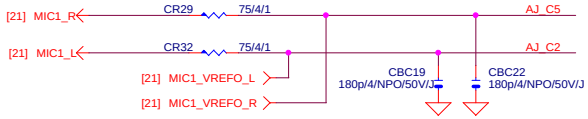
LINE-OUT



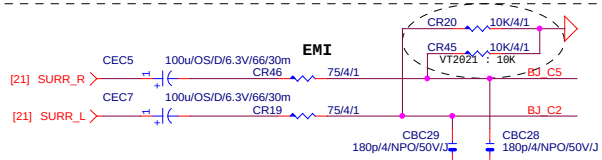
LINE-IN



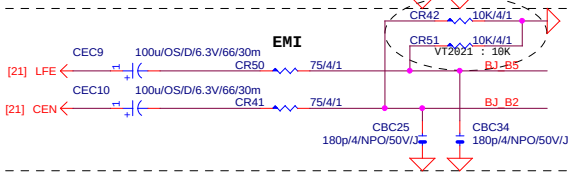
MIC-IN



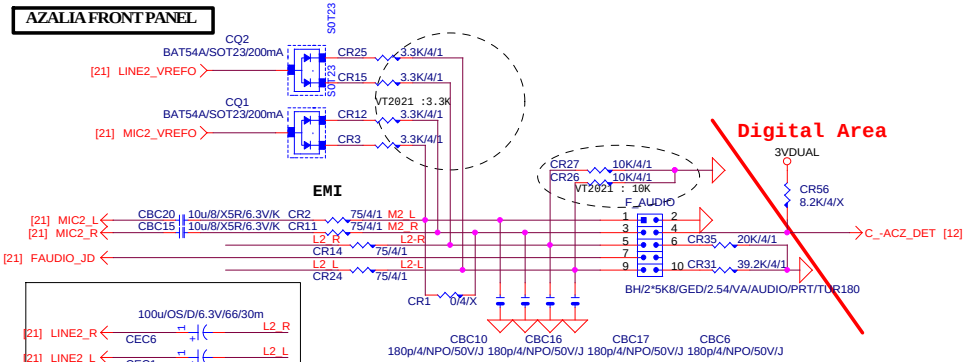
SURROUND



CEN/LFE



AZALIA FRONT PANEL



Gigabyte Technology

Title: AUDIO JACK

Size: Custom | Document Number: GA-H77-D3H-MVP | Rev: 1.02

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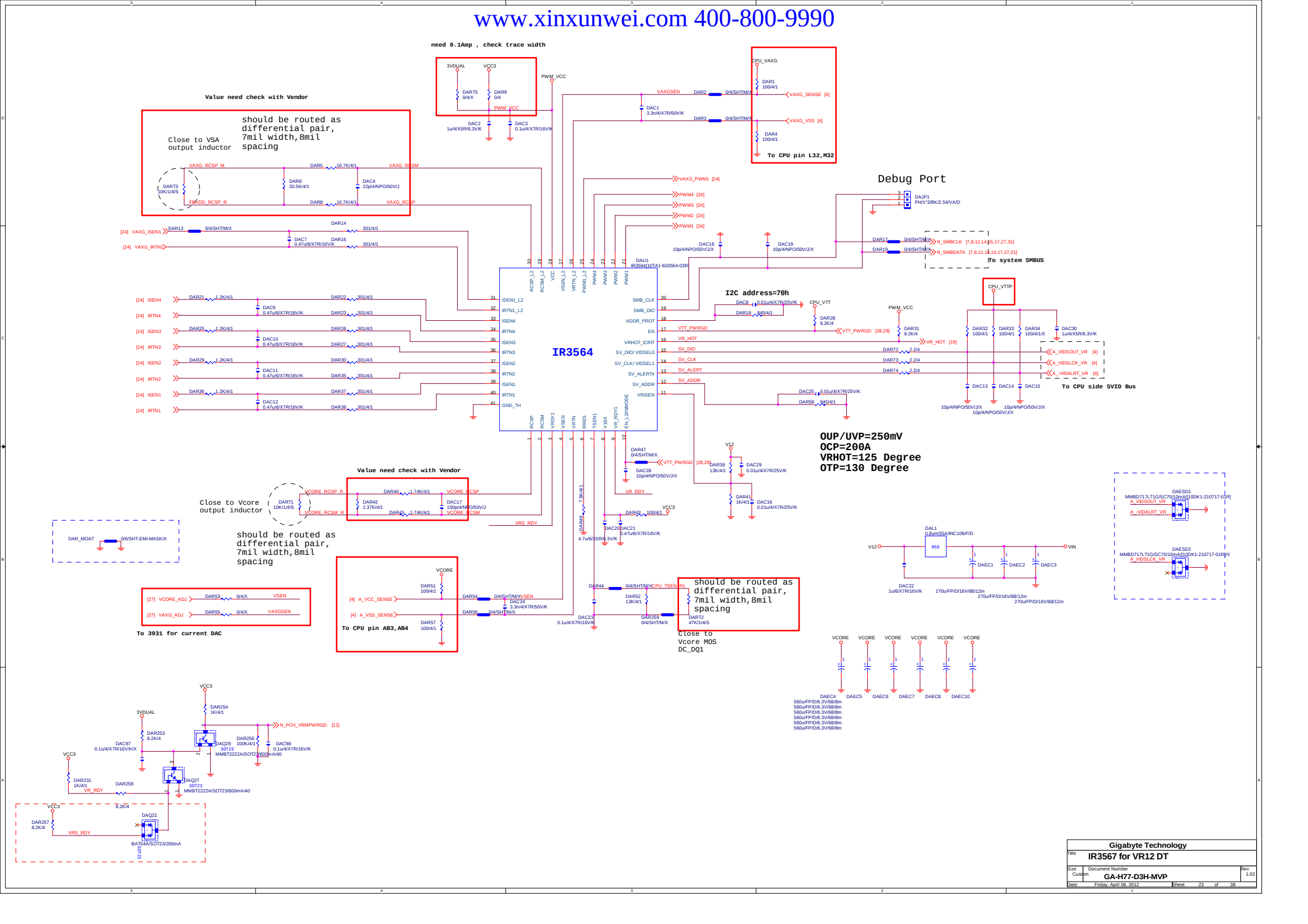
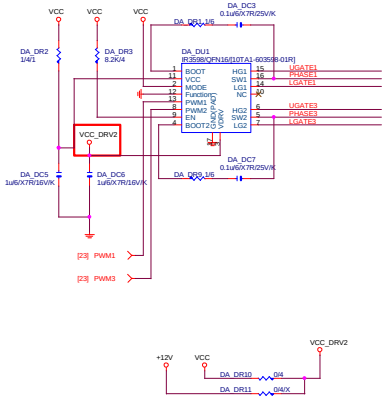
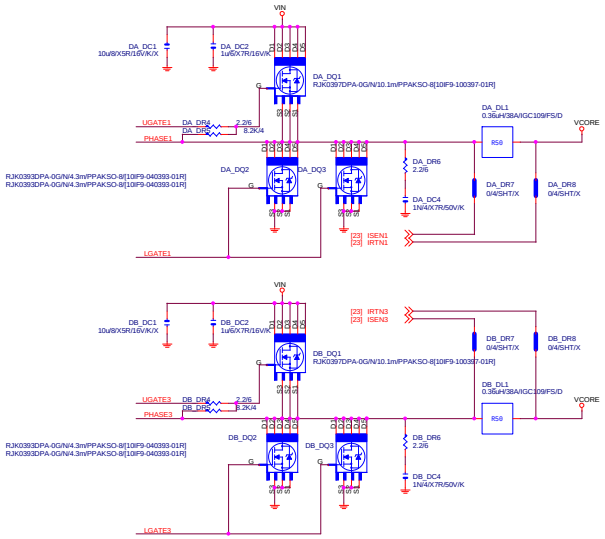


VCORE Phase 1,3

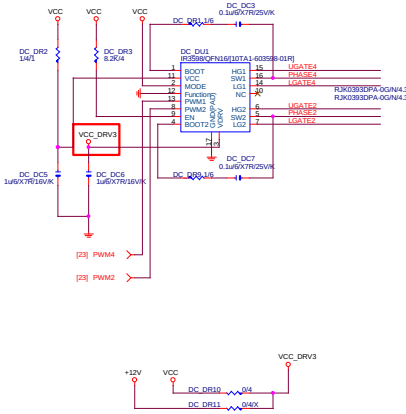


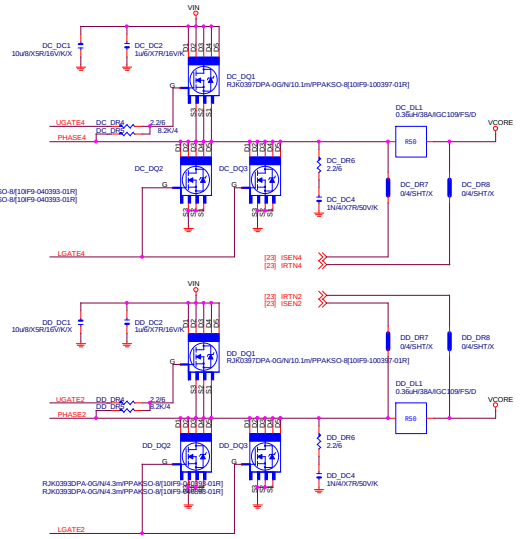
FUNCTION	MODE	PWM MODE	PHASE MODE
0	1	IR ATL	DUAL
1	1	IR ATL	Doubler
0	0	Tri-State	DUAL
1	0	Tri-State	Doubler
OPEN	0	Tri-State	Quad
OPEN	1	IR ATL	Quad

In Quad mode , IC1 pin10 link to IC2 pin10
IC1 pin9 link to IC2 pin9 without PU

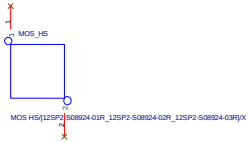


VCORE Phase 4,2

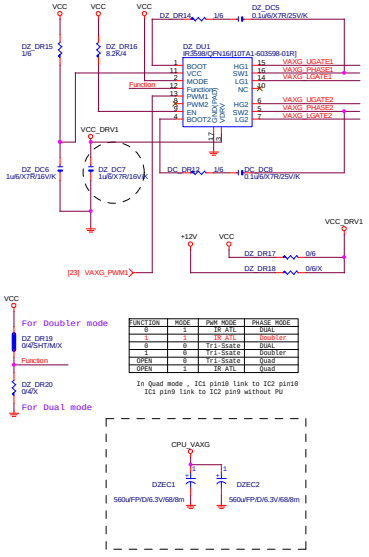




MOS HEATSINK



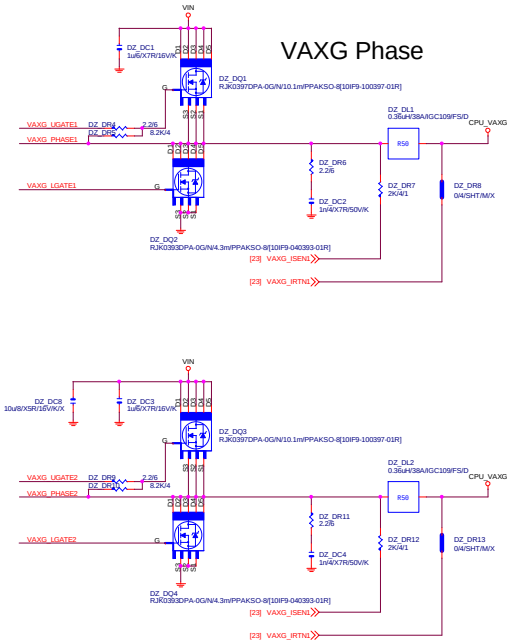
VAXG PHASE 1,2



FUNCTION	MODE	PWM MODE	PHASE MODE
0	1	IR ATL	DUAL
1	1	IR ATL	Doubler
0	0	Tri-State	DUAL
1	0	Tri-State	Doubler
OPEN	0	Tri-State	Quad
OPEN	1	IR ATL	Quad

In Quad mode , IC1 pin10 link to IC2 pin10
IC1 pin9 link to IC2 pin9 without PU

VAXG Phase



Title	Gigabyte Technology		
	CPU CORE VR		
Size: Custom	Document Number: GA-H77-D3H-MVP		Rev: 1.02
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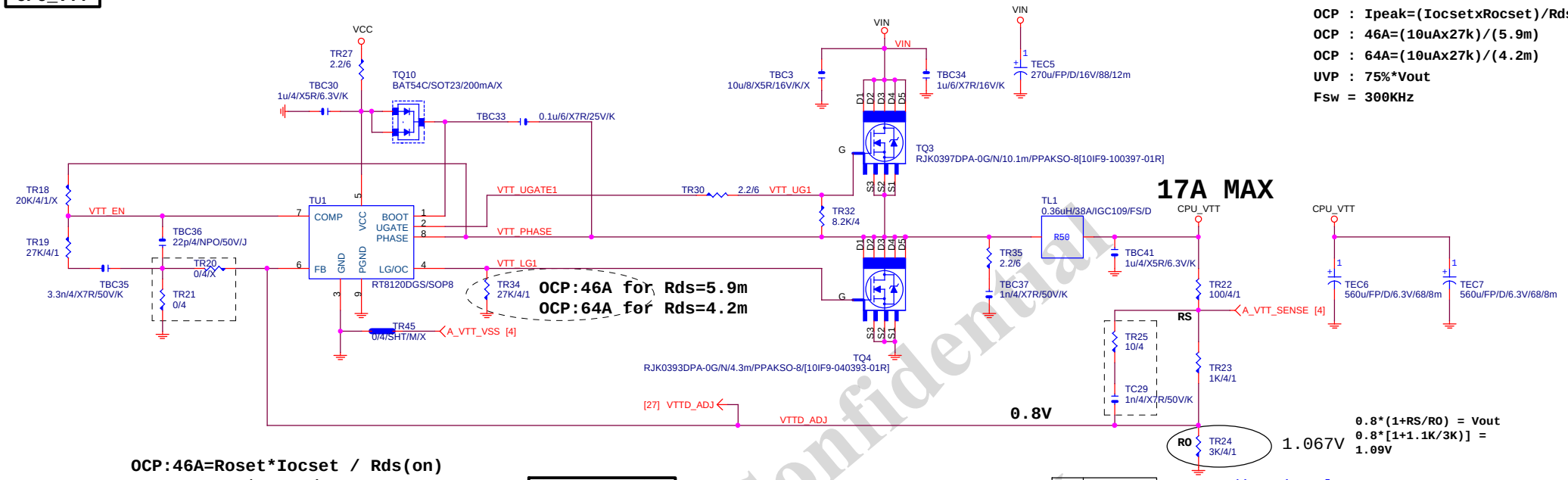
CPU_VTT

Iocset=10uA , Rocset=22k
OCP : Ipeak=(IocsetxRocset)/Rdson
OCP : 46A=(10uAx27k)/(5.9m)
OCP : 64A=(10uAx27k)/(4.2m)
UVP : 75%*Vout
Fsw = 300KHz



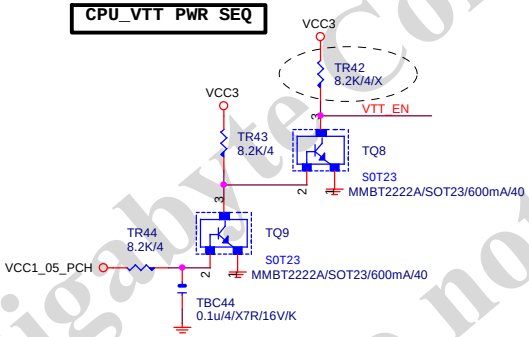
0.8*(1+RS/RO) = Vout
0.8*[1+1.1K/3K)] = 1.09V

According intel CDI/IBP#476733,固定1.05V

	VTT_SEL
HI	1.05V
LO	1.0V

OCP:46A=Roset*Iocset / Rds(on)
=27K*10uA / 5.9m

CPU_VTT PWR SEQ



GIGABYTE™

Title: RT8120_CPU_VTT
Size: Custom | Document Number: GA-H77-D3H-MVP | Rev: 1.02
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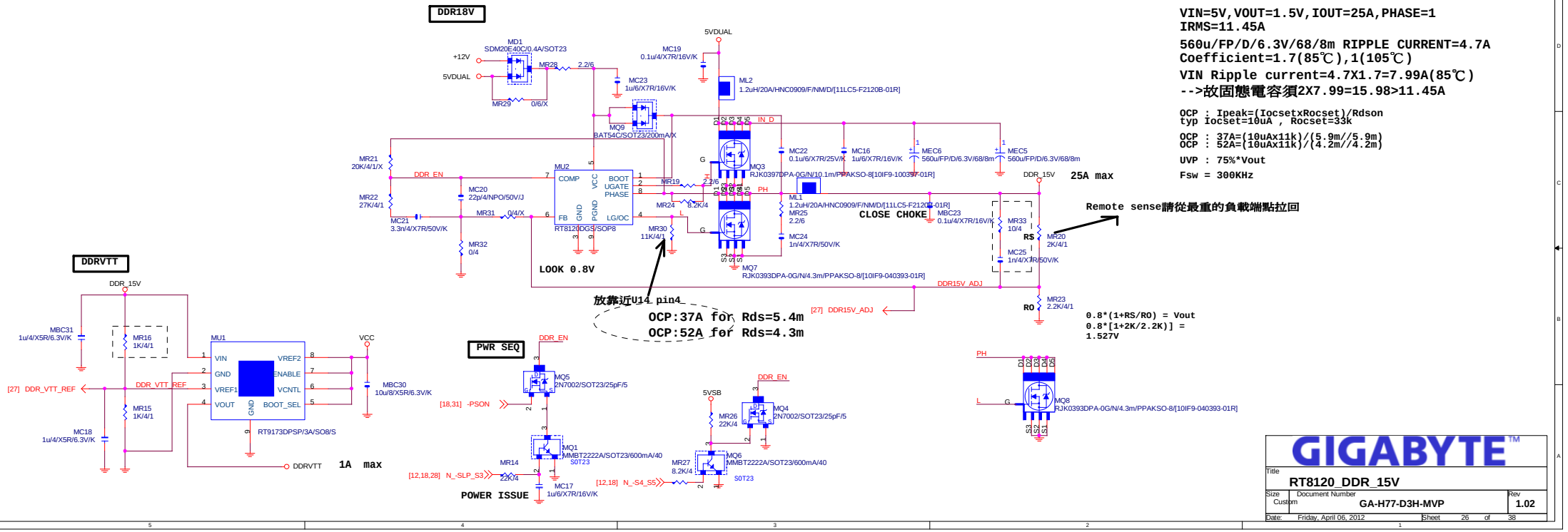

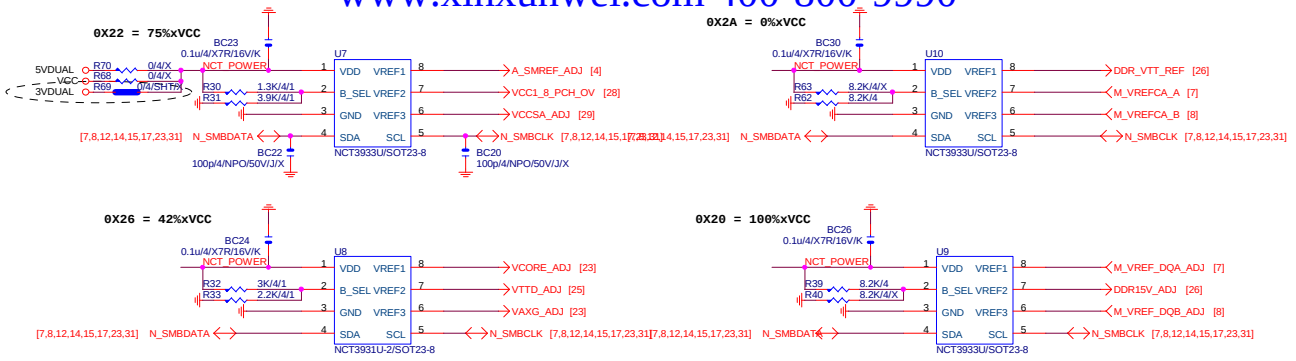

NCT3933	0X2A	0X20	0X22	0X26
VREF1	DDRVTT	VREF_DDRA_DQ	SMREF	VCORE
VREF2	VREF_DDRA_CA	DDR15V	VCC1_8_PCH	CPU_VTT
VREF3	VREF_DDRA_CA	VREF_DDRB_DQ	VCCSA	VAXG

Gigabyte Technology

Title: CPU CORE VR-2

Size: Custom | Document Number: GA-H77-D3H-MVP | Rev: 1.02

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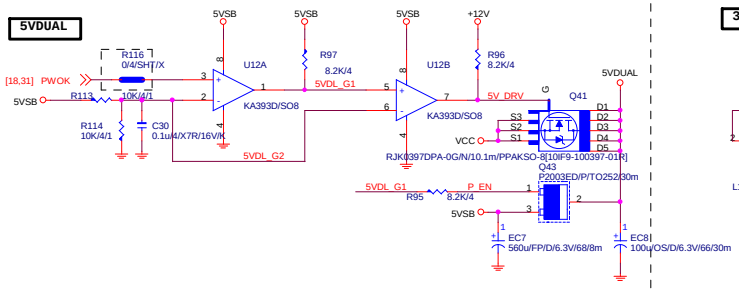

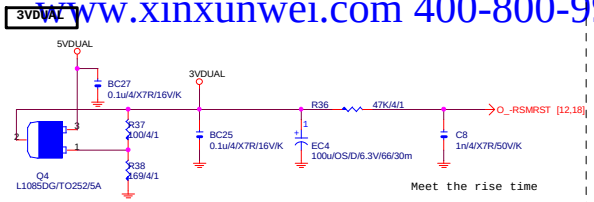

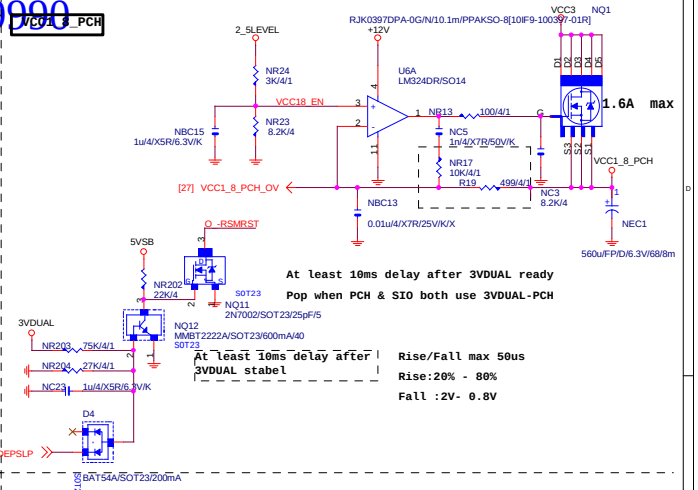

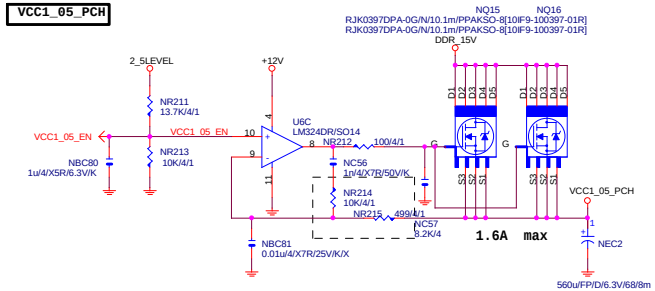

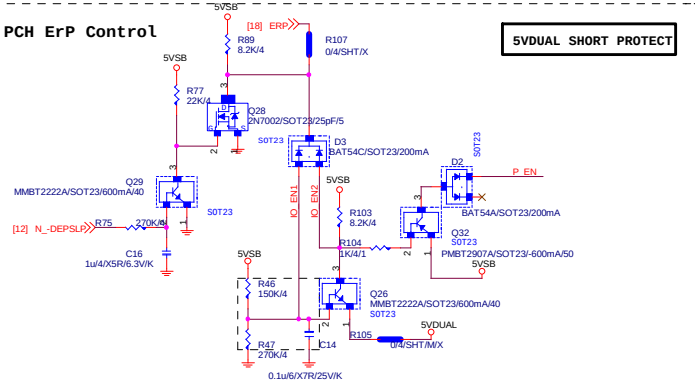

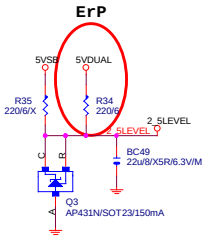

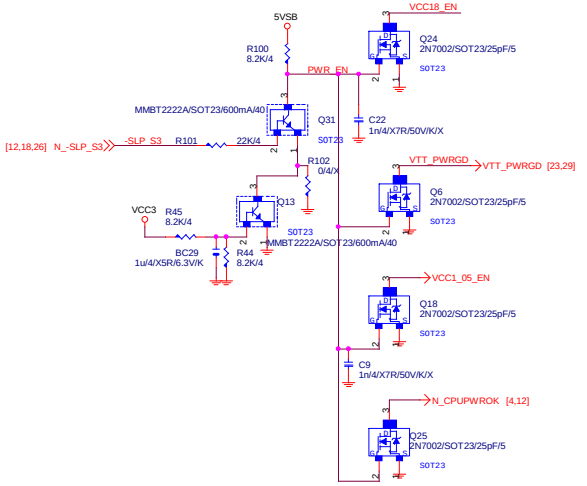

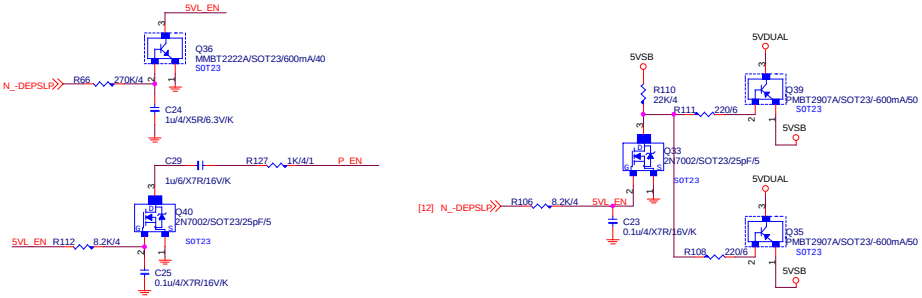

Gigabyte Technology			
Title: DISCRETE POWER			
Size: C	Document Number: GA-H77-D3H-MVP		Rev: 1.02
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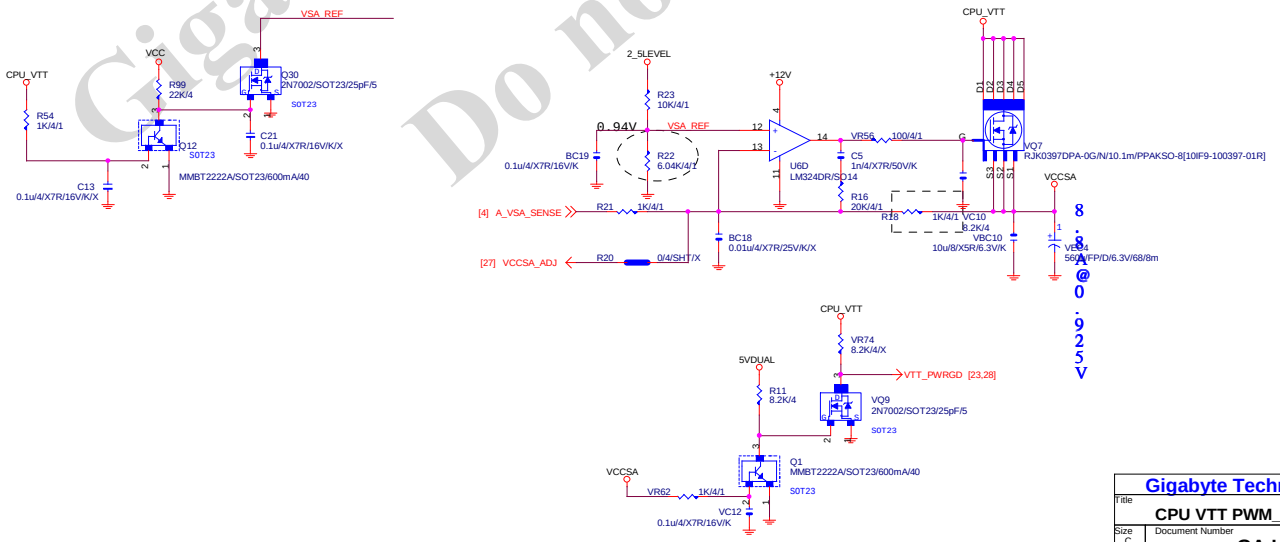
VCC_SA



Gigabyte Technology		
Title: CPU VTT PWM_ISL6312		
Size: C	Document Number: GA-H77-D3H-MVP	Rev: 1.02
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Front USB3.0

F_USB30 REV=1

FUSEVCC_F1 UAC2 0.1u/4/X7R/16V/K

FUSEVCC_F2 UAC1 0.1u/4/X7R/16V/K

[9] PCH_USB3_RXN1 [9] PCH_USB3_RXP1 — SSRX1- SSRX1+ — SSTX2- SSTX2+ — SSTXDN2C_F SSTXDP2C_F — UAC6 UAC7 0.1u/4/X7R/16V/K — PCH_USB3_TXN2 [9] PCH_USB3_TXP2 [9]

[9] PCH_USB3_TXN1 [9] PCH_USB3_TXP1 — UAC3 UAC4 0.1u/4/X7R/16V/K — SSTXDN1C_F SSTXDP1C_F — SSTX1- SSTX1+ — SSRX2- SSRX2+ — PCH_USB3_RXN2 [9] PCH_USB3_RXP2 [9]

[9] N_-USBP0 [9] N_+USBP0 — D1- D1+ — D2- D2+ — N_-USBP1 [9] N_+USBP1 [9]

GND GND — GND GND

[12,13] N_RTCVDD — FPR8 1M/4 — -CASEOPEN — -CASEOPEN [18]

FPBC4 0.01u/4/X7R/25V/K

BH/2*10K20/BU/ON/2.0/VA/D/GF/[11NH3-020210-21R]

CASE OPEN

SSTXDN1C_F SSTXDP1C_F PCH_USB3_RXP1 PCH_USB3_RXN1

UAE1 AZ1045-04F/MSOP10

PCH_USB3_RXN2 PCH_USB3_RXP2 SSTXDP2C_F SSTXDN2C_F

UAE2 AZ1045-04F/MSOP10

BLUE

UAESD4 N_-USBP0 N_+USBP0 N_-USBP1 N_+USBP1 FUSEVCC_F1 AZC009-04S/SOT23-6L

Close to connector

5VDUAL — UAFB2 SMD1812P350SLR/S — FUSEVCC_F1

5VDUAL — UAFB1 SMD1812P350SLR/S — FUSEVCC_F2

UAEC3 100u/OS/D/6.3V/66/30m

5VDUAL — UAF3 SMD1812P160/8V — FUSEVCC_F5

UAF4 SMD1812P160/8V — FUSEVCC_F6

UAF5 SMD1812P160/8V — FUSEVCC_F7

UAF6 SMD1812P160/8V — FUSEVCC_F8

SATA LED

VCC3 FPR10 1K/4/1 -HDLED FPC2 180p/4/NPO/50V/J/X

VCC3 FPR12 1K/4/1 FPR11 8.2K/4

[11] N_-SATALED [35] -MSATALED — FPD2 BAT54A/SOT23/200mA — FPQ4 MMBT2222A/SOT23/600mA/40 — FPQ1 MMBT2222A/SOT23/600mA/40 — S0T23

FRONT USB2

FUSEVCC_F3 FUSEVCC_F4 — UABC1 0.1u/4/X7R/16V/K — UABC2 0.1u/4/X7R/16V/K — F_USB1

[9] N_-USBP4 [9] N_+USBP4 — N_-USBP5 [9] N_+USBP5 [9]

BH/2*5K9/BU/ON/2.54/VA/USB/PRT/TUR180

FRONT USB2

FUSEVCC_F5 FUSEVCC_F6 — UABC3 0.1u/4/X7R/16V/K — UABC4 0.1u/4/X7R/16V/K — F_USB2

[9] N_-USBP6 [9] N_+USBP6 — N_-USBP7 [9] [9] N_+USBP7 [9] [9]

BH/2*5K9/BU/ON/2.54/VA/USB/PRT/TUR180

FRONT USB3

FUSEVCC_F7 FUSEVCC_F8 — UABC5 0.1u/4/X7R/16V/K — UABC6 0.1u/4/X7R/16V/K — F_USB3

N_-USBP10 [9] N_+USBP10 [9] — N_-USBP11 [9] N_+USBP11 [9]

BH/2*5K9/BU/ON/2.54/VA/USB/PRT/TUR180

UAESD1 N_-USBP4 N_+USBP4 N_-USBP5 FUSEVCC_F3 AZC009-04S/SOT23-6L

Close to connector

UAESD2 N_-USBP6 N_+USBP6 N_-USBP7 FUSEVCC_F5 AZC009-04S/SOT23-6L

Close to connector

UAESD3 N_-USBP10 N_+USBP10 N_-USBP11 FUSEVCC_F7 AZC009-04S/SOT23-6L

Close to connector

5VDUAL — UAF1 SMD1812P160/8V — FUSEVCC_F3

FUSEVCC_F4 — UAF2 SMD1812P160/8V

UAEC1 100u/OS/D/6.3V/66/30m

F_USB POWER PROTECT

[12] N_GPIO11 — UAD5 BAT54A/SOT23/200mA — N_-USBOC_F — N_-USBOC_R [9,33]

FUSEVCC_F1 FUSEVCC_F2 — UAD1 BAT54A/SOT23/200mA

FUSEVCC_F3 FUSEVCC_F4 — UAD2 BAT54A/SOT23/200mA

FUSEVCC_F5 FUSEVCC_F6 — UAD3 BAT54A/SOT23/200mA

FUSEVCC_F7 FUSEVCC_F8 — UAD4 BAT54A/SOT23/200mA

5VDUAL — UAR1 8.2K/4 — N_-USBOC_F — N_-USBOC_F [9]

UAR14 15K/4/1

INTEL FRONT PANEL

5VSB — FPR6 8.2K/4/X

[12,31] N_-SYS_RST — FPR5 100/4/1

FPBC2 0.01u/4/X7R/25V/K

FPESD1 -RST -PWRBT_1 — AZC009-04S/SOT23-6L

Rev 0.2 modefy

VCC — FPD1 CD4148WP/1206/300mA

VCC FPR17 1K/4/1 — FPQ7 2N7002/SOT23/25pF/5

FPR18 8.2K/4 — BEEP- — [18] BEEP-

SPK- FPR13 75/6/1 — FPQ5 MMBT2222A/SOT23/600mA/40 — FPR14 75/6/1 — S0T23

FPQ6 MMBT2222A/SOT23/600mA/40 — FPR15 8.2K/4 — N_SPKR — N_SPKR [12]

To disable TCO timer — VCC3 FPR16 1K/4/1

VCC — FPR1 330/6 — FPBC1 0.01u/4/X7R/25V/K/X

F_PANEL

HD+ — MSG/PD+ — MPD+

-HDLED — HD- — MSG/PD-

GND — PW+ — -PWRBT_1

-RST — RESET — PW-

CI-

-CASEOPEN — CI+

SP+ — VCC

MPD+ — PWR+ — NC

PWR- — NC

PWR- — SP- — SPK-

BH/2*10K10,12,13/WH/2.54/VA/PA

3VDUAL_PCH — FPR3 8.2K/4 — FPR9 33/4 — -PWRBTSW [18]

FPC1 0.01u/4/X7R/25V/K/X — FPBC3 0.01u/4/X7R/25V/K

VCC — FPR2 330/6 — MPD+ — FPQ2 MMBT2222A/SOT23/600mA/40 — S0T23 — FPR7 8.2K/4 — N_GPIO28 [12]

Gigabyte Technology	
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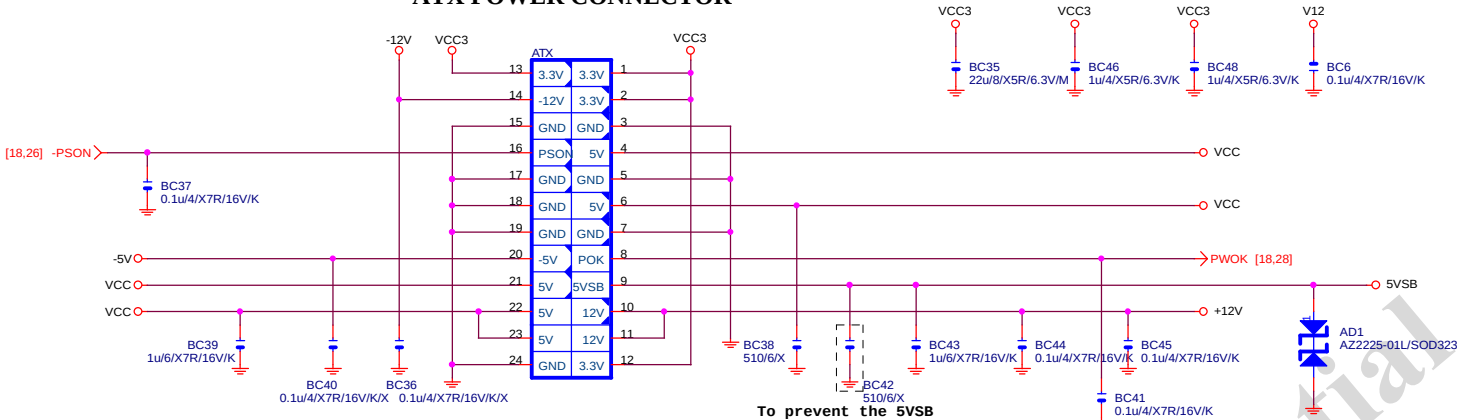
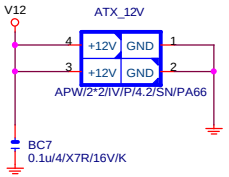
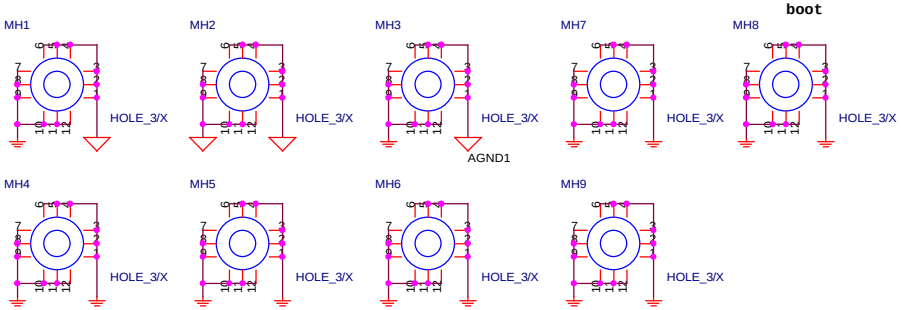
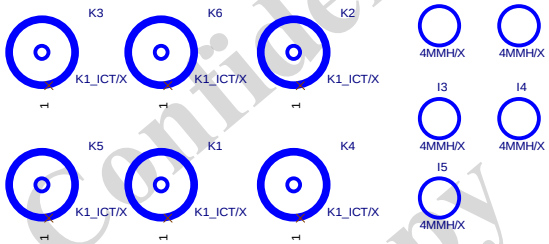
ATX POWER CONNECTOR



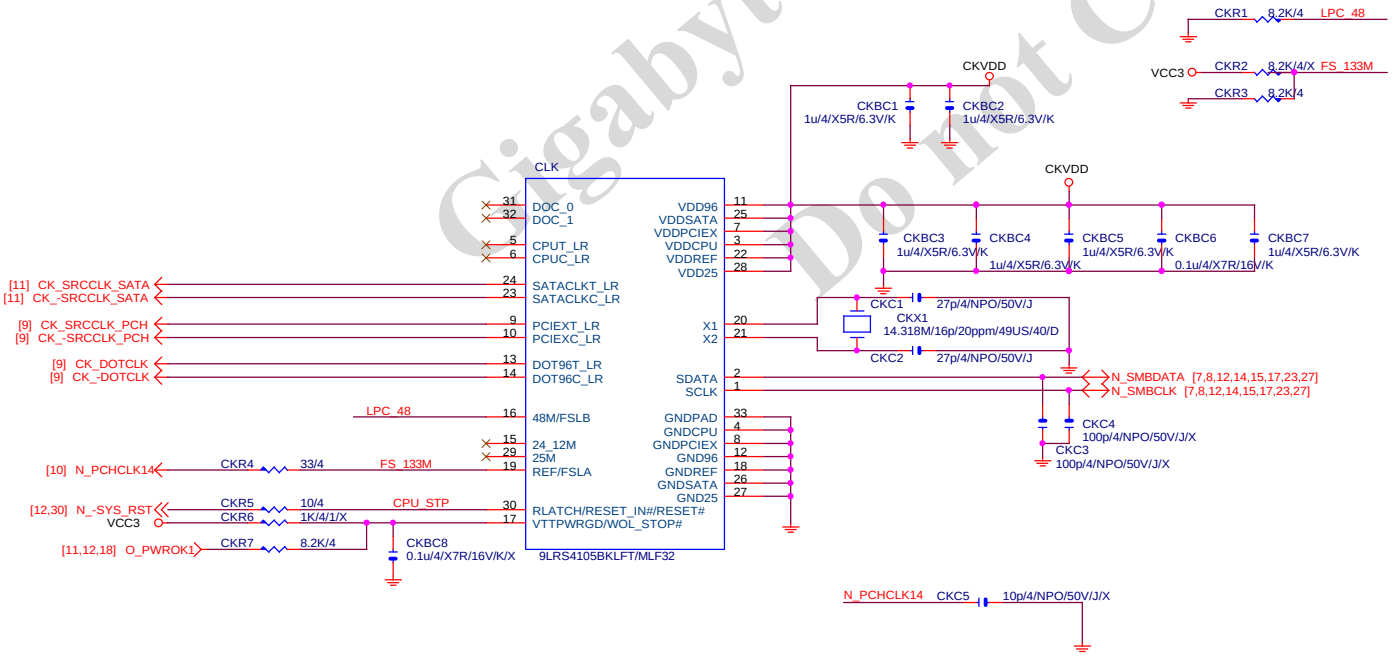
To prevent the 5VSB under loading when boot







CLK GEN



CPU Frequency Selection

FS	CPU
0	100M <Default>
1	133M

Gigabyte Technology		
Title: ATX POWER CONNECTOR		
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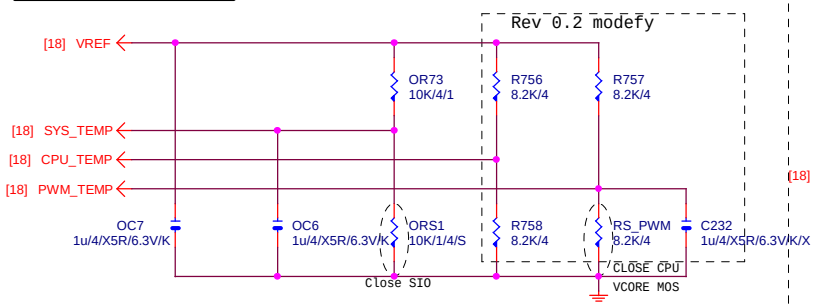
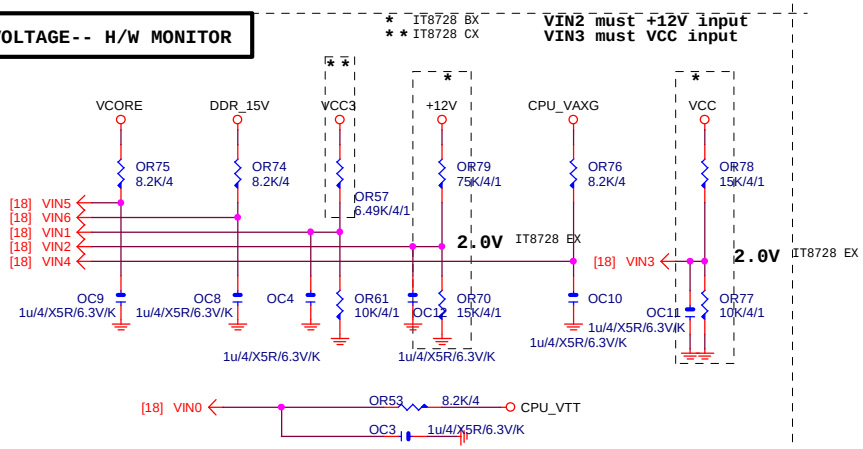
TEMP H/W MONITOR

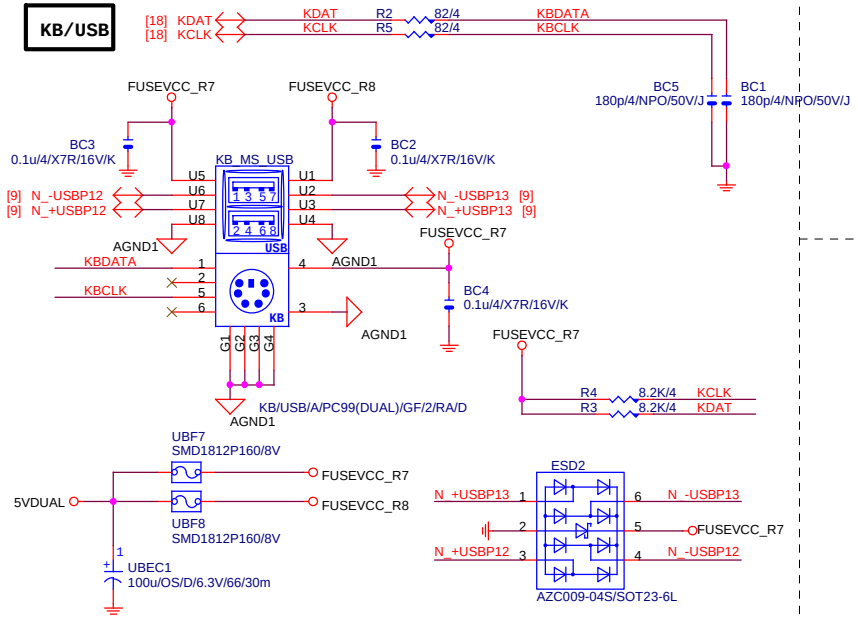


VOLTAGE-- H/W MONITOR

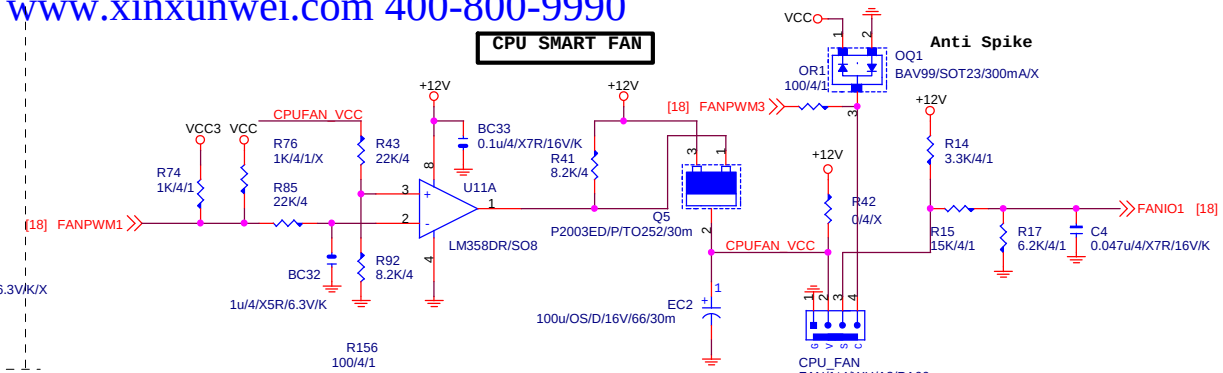


The division voltage of VIN2 & VIN3 must be around 2.9V

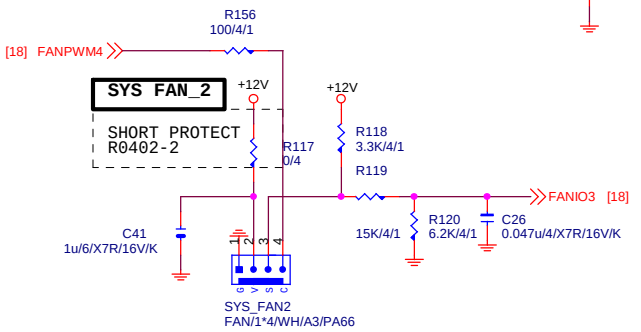
KB/USB



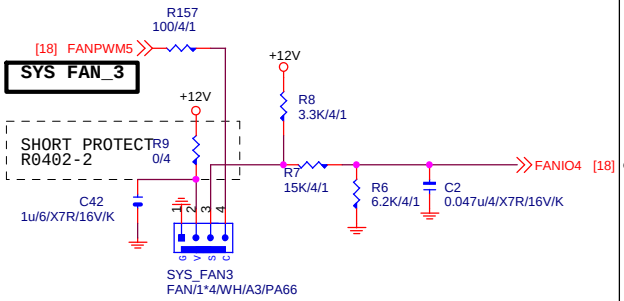
CPU SMART FAN



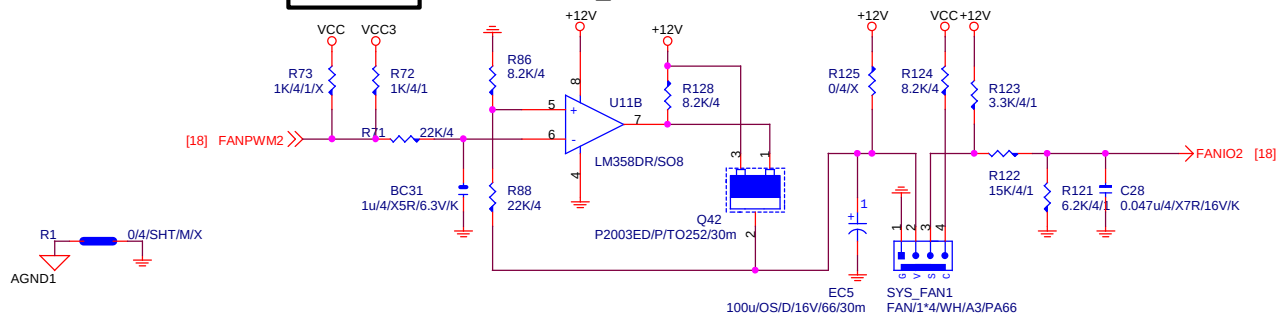
SYS FAN_2

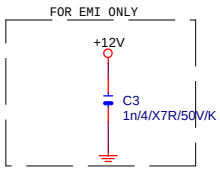


SYS FAN_3



SYS FAN_1 — Linear SYS_FAN





Gigabyte Technology		
Title: **HWM,KB/MS, FAN CTRL**		
Size: Custom	Document Number: **GA-H77-D3H-MVP**	Rev: 1.02
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LAN:AR8151/AR8161

離IC近越好

LA_ ML-->80歐姆:[15/5/5/5/15]

SRCCLK-->50歐姆:[18/4/6/4/18]

AR8161-->N/A (LABC6)

AR8161-->(O)

AR8151/AR8161

AR8161-->N/A (LABC12)

AR8161-->N/A (LAR9,LAC18)

AR8161-->N/A (LABC20)

AR8151:LA_AVDDH(LAR20)
AR8161:3VDUAL(LAR19)

SCH BOM OPT:(二擇一使用)
-->(LAC30):M/B有CLK GEN 25M
-->(LAX1,LAC31,LAC32):M/B無CLK GEN 25M

LAN POWER

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

CLOSE LA_LX 200mil

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

AR8151 POWER

AR8161 POWER

AR8161-->(O)

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

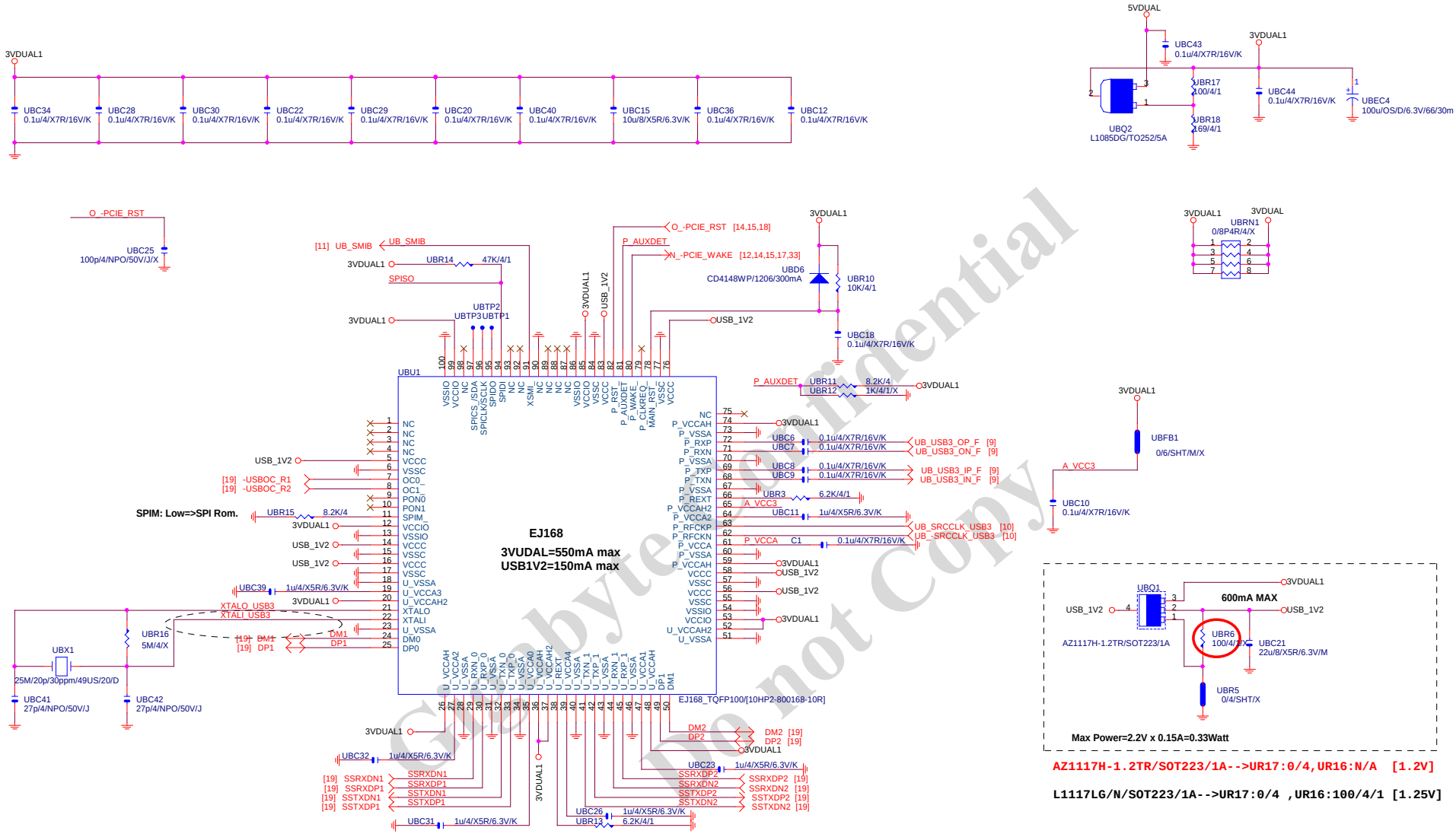
CLOSE LAN CHIP

USB30_LAN CONNECTOR

100歐姆:[20/4/8/4/20]

USB+LAN/1G/GO,Y/OS/RA/D/1/[11NR6-702009-0ER]

90歐姆:[15/4.5/7.5/4.5/15]



GIGABYTE™

Title	E-TRON EJ168	
Size: Custom	Document Number: GA-H77-D3H-MVP	Rev: 1.02
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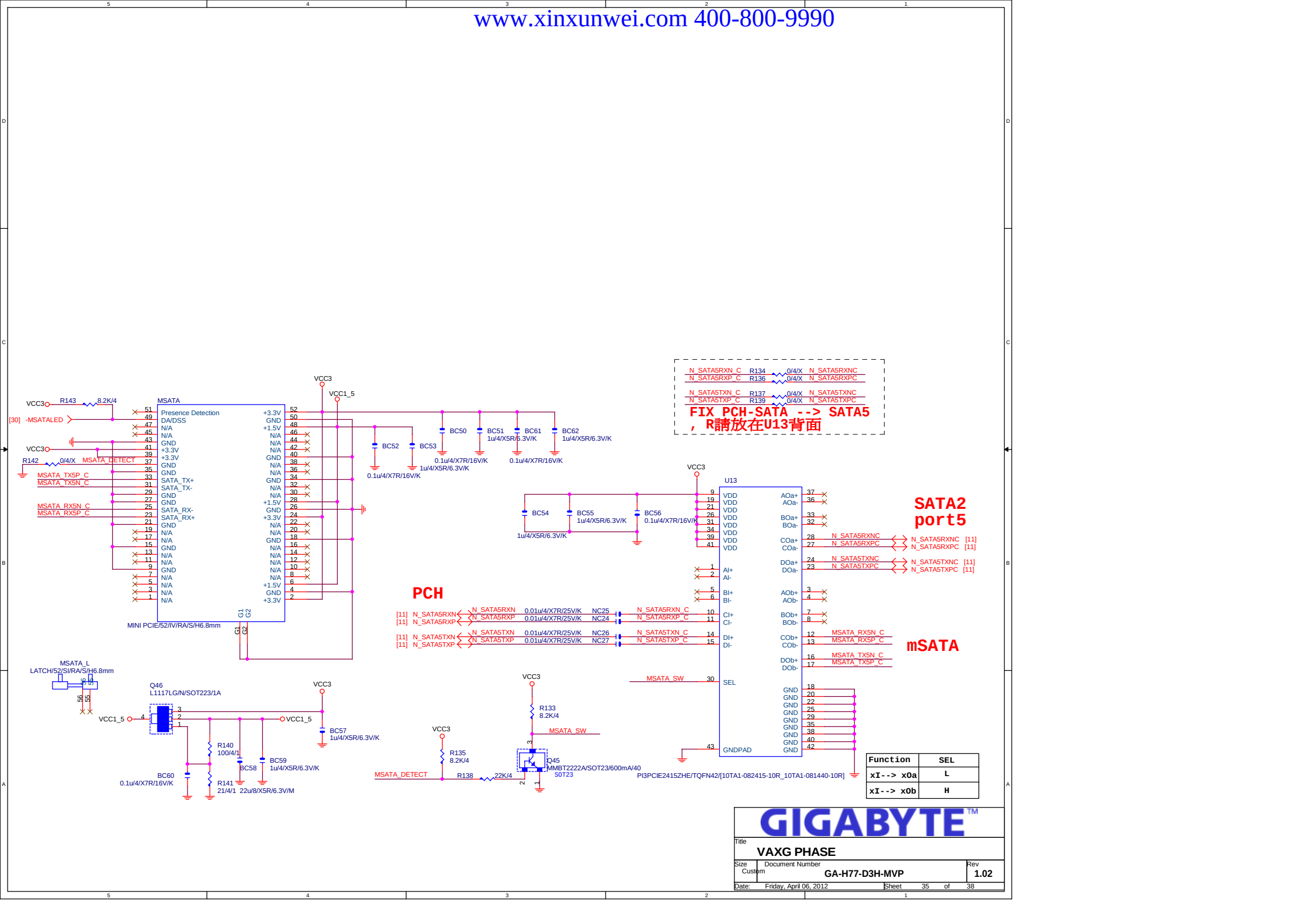

Function	SEL
xI--> x0a	L
xI--> x0b	H

GIGABYTE™

Title: VAXG PHASE

Size: Custom | Document Number: GA-H77-D3H-MVP | Rev: 1.02

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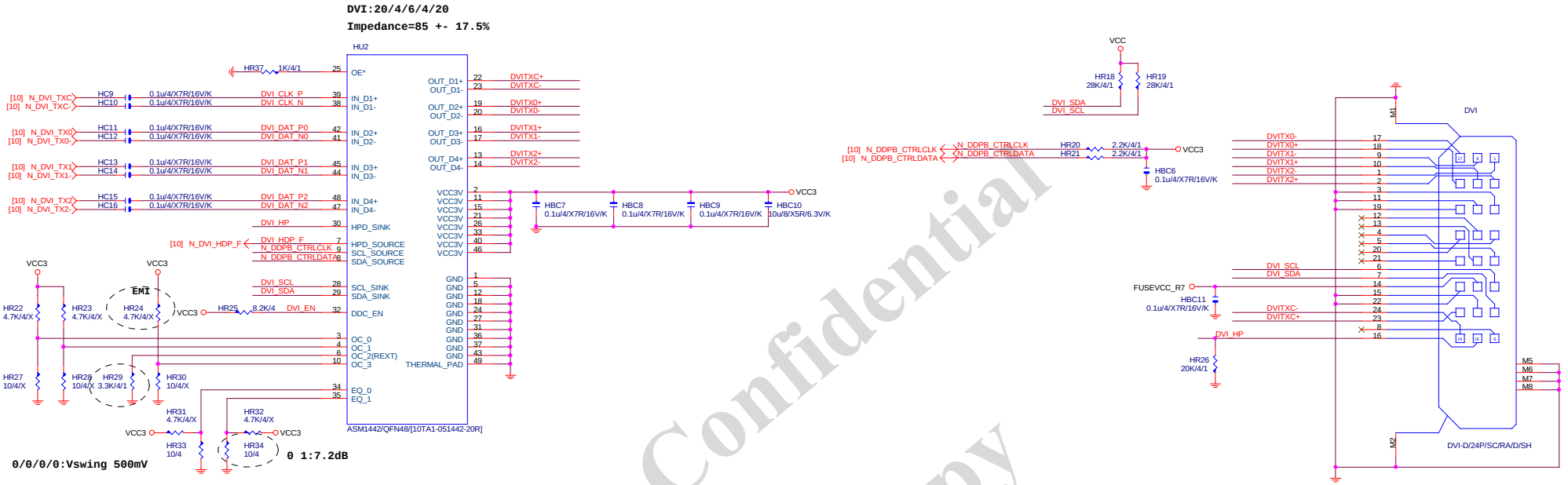

Gigabyte Technology		
Title: TI TSB43AB23 1394		
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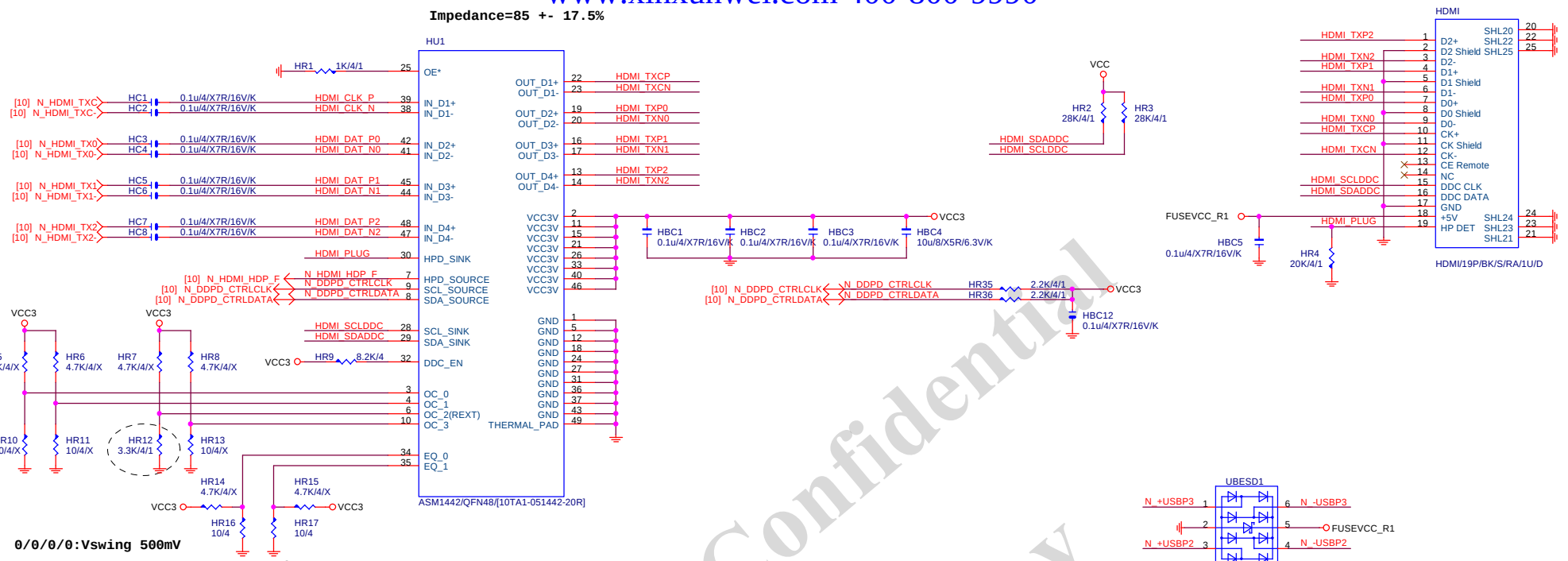
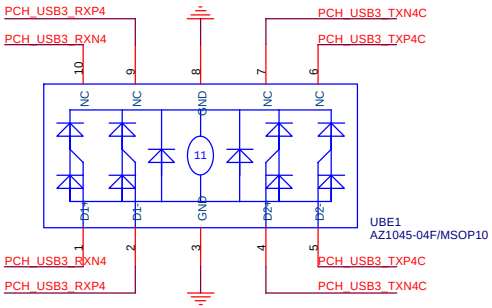
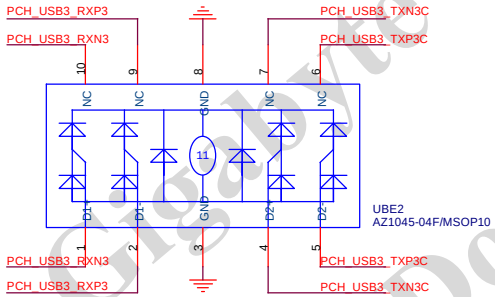
HDMI:20/4/6/4/20
Impedance=85 +- 17.5%

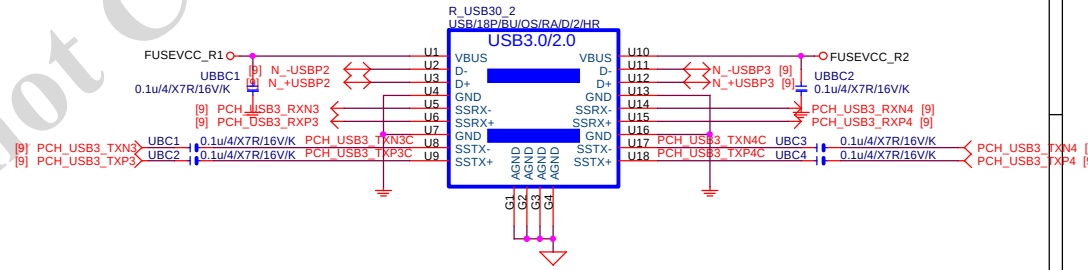


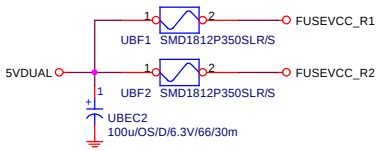
CLOSE R_USB30

USB30_20









GIGABYTE™

Title	HDMI & USB	
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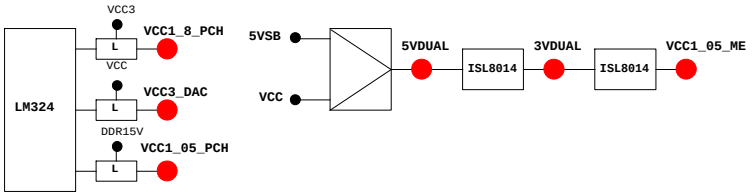
PCH GPIO LIST TABLE

PIN NAME	PWR	AFTER/PLTRST	Default	USAGE	NOTE
GP0	MAIN	H-Z	GPI	-PECI_REQ	N/A
GP1/TACH1	MAIN		GPI	ICH_FAN_TACH1	N/A
GP2/PIRQE#	MAIN		GPI	-PIRQE	P/U 8.2K VCC3
GP3/PIRQF#	MAIN		GPI	-PIRQF	P/U 8.2K VCC3
GP4/PIRQG#	MAIN		GPI	-PIRQG	P/U 8.2K VCC3
GP5/PIRQH#	MAIN		GPI	-PIRQH	P/U 8.2K VCC3
GP6/TACH2	MAIN		GPI	ICH_FAN_TACH2	N/A
GP7/TACH3	MAIN		GPI	ICH_FAN_TACH3	N/A
GP8	STBY	H	GPO	GPIO8	P/U 8.2K 3VDUAL
GP9/OC5#	STBY		NATIVE	OC5#	N/A
GP10/OC6#	STBY		NATIVE	OC6#	N/A
GP11/SMBALERT#	STBY		NATIVE	-SMBALERT	P/U 8.2K 3VDUAL
GP12	STBY	L	GPI	LAN_PHY_PWR_CTRL	P/U 8.2K 3VDUAL
GP13	STBY	L	GPI	GPIO13	P/U 8.2K 3VDUAL
GP14/OC7#	STBY		NATIVE	OC7#	N/A
GP15	STBY	L	GPO	GPIO15	N/A
GP16	MAIN		GPI	-SKTOCC	P/U 8.2K VCC3
GP17/TACH0	MAIN		GPI	ICH_FAN_TACH0	N/A
GP18	MAIN		NATIVE	MB_ID0	P/D 8.2K GND
GP19	MAIN		GPI	-LAN1_ISO	P/U 8.2K VCC3
GP20	MAIN		NATIVE	LED_CTL	P/U 1K VCC3
GP21	MAIN		GPI	VCC18_PCH_OV2	P/U 8.2K VCC3
GP22	MAIN	H-Z	GPI	VCORE_OV3	P/U 8.2K VCC3
GP23	MAIN		NATIVE	-LDRQ1	P/U 8.2K VCC3
GP24	STBY	L	GPO	TLS	P/U 8.2K 3VDUAL
GP25	STBY		NATIVE	-CPU_STOP	P/U 8.2K 3VDUAL
GP26	STBY		NATIVE	-ACZ_DET	P/U 8.2K 3VDUAL
GP27	STBY	H	GPO	GPIO27	P/U 8.2K 3VDUAL
GP28	STBY	H	GPO	GPIO28	P/U 8.2K 3VDUAL
GP29	STBY	L	GPI	GPIO29	N/A
GP30	STBY	H-Z	GPI	S_PWR_ACK	P/U 100K 3VDUAL
GP31	STBY	H-Z	GPI	N/A(Reverse)	P/U 8.2K VCC3
GP32	MAIN	H	GPO	MB_ID1	P/D 8.2K GND
GP33	MAIN	H	GPO	LOAD-LINE	P/U 1K VCC3
GP34	MAIN	H-Z	GPI	-PCI_STOP	P/U 8.2K VCC3
GP35	MAIN	L	GPO	GPIO35	P/U 8.2K VCC3
GP36	MAIN		GPI	-LAN1_DSM	P/U 8.2K VCC3
GP37	MAIN		GPI	N/A	P/U 8.2K VCC3
GP38	MAIN	H-Z	GPI	VCORE_OV2	P/U 8.2K VCC3
GP39	MAIN	H-Z	GPI	-LAN_DSM	P/U 8.2K VCC3
GP40	STBY		NATIVE	OC1#	N/A
GP41	STBY		NATIVE	OC2#	N/A
GP42	STBY		NATIVE	OC3#	N/A
GP43	STBY		NATIVE	OC4#	N/A
GP44	STBY	L	NATIVE	N/A	P/U 8.2K 3VDUAL
GP45	STBY		NATIVE	-LPCPME	P/U 8.2K 3VDUAL
GP46	STBY	L	NATIVE	PWR_LED	P/U 8.2K 3VDUAL
GP47	STBY		NATIVE	PSI LED	P/U 8.2K 3VDUAL
GP48	MAIN	H-Z	IN	EN_PWM	P/U 8.2K VCC3
GP49	MAIN	H-Z	IN	VCC18_OV1	P/U 8.2K VCC3
GP50	MAIN		NATIVE	-REQ1	P/U 2.2K VCC
GP51	MAIN	H	NATIVE	-GNT1	N/A
GP52	MAIN		NATIVE	-REQ2	P/U 2.2K VCC
GP53	MAIN	H	NATIVE	-GNT2	N/A
GP54	MAIN		NATIVE	-REQ3	P/U 2.2K VCC
GP55	MAIN	H	NATIVE	-GNT3	N/A
GP56	STBY		NATIVE	N/A(Reverse)	P/U 8.2K 3VDUAL
GP57	STBY	H-Z	IN	VCORE_OV1	P/U 8.2K 3VDUAL
GP58	STBY	H-Z	NATIVE	F_USB_OC	P/U 8.2K 3VDUAL
GP59	STBY		NATIVE	USB_OC0#	N/A
GP60	STBY	H-Z	NATIVE	N/A(Reverse)	P/U 8.2K 3VDUAL
GP61	STBY	L	NATIVE	-SUSTAT	N/A
GP62	STBY	L	NATIVE	SUSCLK	N/A
GP63	STBY	L	NATIVE	GPIO63	N/A
GP64	MAIN	L	NATIVE	CLKOUTFLEX0	N/A
GP65	MAIN	L	NATIVE	CLKOUTFLEX1	N/A
GP66	MAIN	L	NATIVE	CLKOUTFLEX2	N/A
GP67	MAIN	L	NATIVE	CLKOUTFLEX3	N/A
GP72	STBY	H-Z	NATIVE	VCORE_OV4	P/U 8.2K 3VDUAL
GP73	STBY		NATIVE	1_05V_OV1	P/U 8.2K 3VDUAL
GP74	STBY	H-Z	NATIVE	1_05V_OV2	P/U 8.2K 3VDUAL
GP75	STBY	H-Z	NATIVE	N/A(Reverse)	P/U 8.2K 3VDUAL

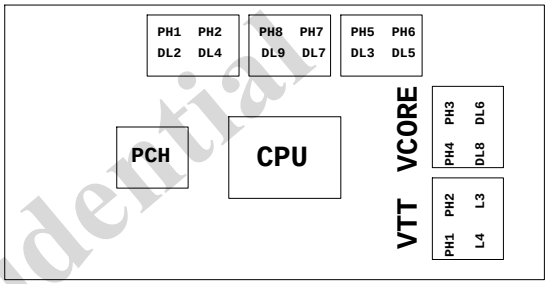
Super I/O ITE8720 GPIO Table

PIN NAME	USAGE	NOTE
SVC/PECI_RQT/GP14	-PECI_REQ	
PWROK1/GP13	PWROK1/ITE_PWROK	
KRST#/GP62	-KBRST	
SO/GP50	-ICH_SPI_CS	
IRTX/GP47/CE2_N/JP7	CEB_N	
GP46/IRRX	-LAN2_DSM	
PSION#/GP42	-PSON	
PWROK2#/GP41	PECI_CTL	
PCIRST3#/GP10/VDIMM_STR_EN	-PCIE_RST	
RSMRST#CIRRX1/GP55	-RSMRST	
PME#/GP54	-LPCPME	
PD5/GP75/BUSSO0	N/A	

PIN NAME	USAGE	NOTE
FAN_TAC2/GP52	FANIO2	
FAN_TAC3/GP37	FANIO3	
VIDO3/FAN_TAC4/GP25/DSR2#	FANIO4	
FAN_CTL2/GP51	FANPWM2	
FAN_CTL3/GP36	FANPWM3	
VID4/GP34	BEEP-	
VID3/GP33	TURBO1	
VID2/GP32	TURBO0	
VCORE_GOOD/VID6/GP63	CPUT_LED1_C	
VID5/GP35	CPUT_LED2_C	
VID1/GP31	CPUT_LED3_C	
VID0/GP30	-LAN1_DSM	NBT_LED1_C
SLCT/GP80	CPU_LED1_C	
PE/GP81	CPU_LED2_C	
BUSY/GP82	CPU_LED3_C	
PD3/GP73/BUSSI1	SB_LED1_C	
PD4/GP74/BUSSI2	SB_LED2_C	
VCORE_EN/VID7/GP64	IT_GP64	SB_LED3_C
PD0/GP70	NB_LED1_C	
PD1/GP71	NB_LED2_C	
PD2/GP72/BUSSI0	NB_LED3_C	
GP22/SCK	LOW_PWR_1	
VIDO5/GP27/SIN2	LOW_PWR_2	
PCIRST2#/GP11	-PFMRST1	
PCIRST1#/GP12	-PFMRST2	
3VSBSW#/GP40	CSI_F0	BSEL166_1
SUSC#/GP53	CSI_F1	BSEL166_2
GP23/SI	BSEL166_3/CSISBSL	
VIDO0/GP20/CTS2#	CPUT_LED1_C	BSEL166_4
GP65/VDDA_EN/GB_01	MB_ID2	
PD6/GP76/BUSSO1	MB_ID3	
PD7/GP77/BUSSO2	MB_ID4	
AFD#/GP86/SMBC_R	空 PIN	FST_2X8
INIT#/GP85/SMBD_M	SEC_2x8	GTLREF_AD2
ACK#/GP83	DDR_LED1_C	
VIDO1/GP21/DCD2#	DDR_LED2_C	
STB#/GP87/SMBC_M	DDR_LED3_C	
PWRON#GP44	VCORE_OV1	
PANSWH#/GP43	PWRBTSW	
KDAT/GP61	-PWRBTSW	
KCLK/GP60	KDAT	
MDAT/GP57	KCLK	
MACL/GP56	MDAT	
GP66/VLDT_EN/GB_02	NBT_LED1_C	MCLK
SVD/PCIRSTIN#/CIRTX/GP15	PWM2_CR	
KDAT/GP61	PWM2_CR	
GP67/CPU_PG/GB_03	EN_LOADLINE	IT_GP67/-EN_PWM2
SLIN#/GP84/SMBD_R	-EN_PWM2	
PSI_L/FAN_CLT5/CIRRX2/GP16	-THERM	
VIDO4/GP26/SOUT2	DDR18V_PH2_EN	
VIDO2/FAN_TAC5/GP24/DSR2#	DDR18V_LED	
VIDO6/GP17/RI2#	1_1V_PH_EN	
VIDO7/JP6/DTR2#	JP6	
PD5/GP75/BUSSO0	SB_LED3_C	



PWM各相位的擺法如下：



BIOS超電壓對應表：

線路圖名稱	BIOS選項
Vcore	CPU Vcore
CPU_VTT	CPU Termination
CPU_VAXG	CPU Graphic Core
VCC1_8_PCH	CPU PLL
VCC1_05_PCH	PCH core
3VDUAL	3VDUAL
DDR15V	DRAM voltage
DDRVTT	DRAM Terminatio
VREF_CA_A/VREF_CA_B	DRAM Address Ref
VREF_DQ_A/VREF_DQ_B	DRAM Data Ref

散熱模組料號：

8IBP:
1.12SP2-01A001-Y1R/Y2R
2.12SP2-01A001-Z1R/Z2R
(HIBRID模組)包材階

	3 pin FAN control	4 pin FAN control	FAN speed	Controller
CPU FAN	FANPWM1	FANPWM3	FANIO1	IT8720
	ICH_FAN_PWM2	ICH_FAN_PWM0	ICH_FAN_TACH0	PCH
SYS FAN	FANPWM2	N/A	FANIO2	IT8720
	ICH_FAN_PWM1	N/A	ICH_FAN_TACH1	PCH
PWR FAN	N/A	N/A	FANIO3	IT8720
			ICH_FAN_TACH2	PCH

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