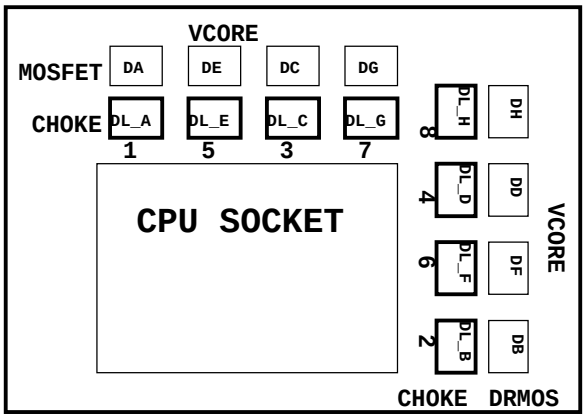
Model Name: GA-Z87X-UD3H

Rev 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	PCH HDMI/DP
15	PCI EXPRESS*16 SLOT
16	PCI EXPRESS*8 SLOT
17	PCI EXPRESS*16/*8 SWITCH
18	PCI EXPRESS*1 SLOTs X3
19	PCI EXPRESS*4 SLOT
20	ITE 8892
21	PCI SLOT 1
22	Dual BIOS
23	ALC898
24	REAR AUDIO JACK
25	AMPLIFIER
26	IR3563A PWM
27	IR3550-VCORE

SHEET	TITLE
28	IR3570-DDR PWM
29	IR3598-DDR POWER
30	5VDUAL, 3VDAUL, ERP
31	PCH1.05V, PCH1.5V, VCC3_DAC
32	I/O ITE8728
33	USB3_ESATA,KB/USB3
34	F_PANEL , F_USB , PHOT
35	F_USB 2.0
36	F_USB 3.0
37	ATX POWER, CLOCK GEN
38	HWM, FAN CTRL
39	INTEL I217
40	Marvell 9172
41	SATA SWITCH
42	RST, PWR, CLR_CMOS
43	USB 3.0 uPD720201
44	USB 3.0 uPD720201 POWER
45	TABLE LIST
46	



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Title: Cover Sheet		
Size: Custom	Document Number: GA-Z87X-UD3H	Rev: 1.02
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GA-Z87X-UD3H

Component value change history

Data	Change Item	Reason
2012/10/22	0.1 BOM to be check items ATX power connector P/N Heaksine P/N PWM firmware & P/N	First Release

Circuit or PCB layout change

DATE	Change Item	Reason
2012/11/12	REV0.1 Z87X-UD3H 0.1 gerber out	
2012/11/30	REV0.2	
2013/03/27	REV1.02 Modify from Z87X-UD3H 7.0 所有的FAN都加一顆0.1u/4/X7R/16V/K ATX4P 統一命名為OC_PEG VIO統一更名為VIOD F_USB30_2 rename F_USB30_1 F_USB30_1 rename F_USB30_2 Add NC62 靠近PCH 新增MOS防燒線路 PHSFLT-串電阻改接到N_-THRMTRIP	
2013/04/01	USB3.0 HUB	

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Title: BOM & PCB MODIFY HISTORY

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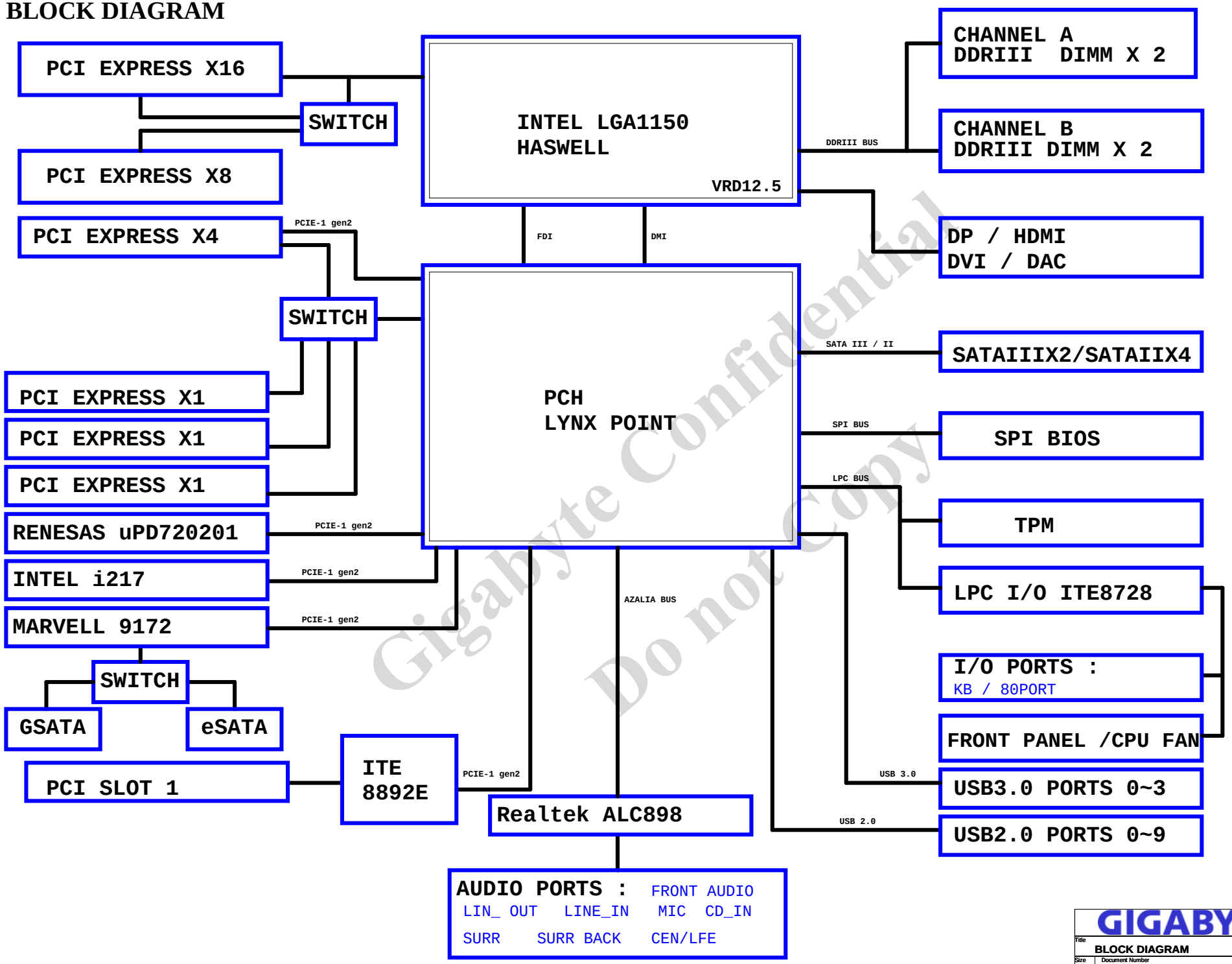
BLOCK DIAGRAM



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Title: BLOCK DIAGRAM		
Size: C	Document Number: GA-Z87X-UD3H	Rev: 1.02
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LGA1150 (E)

LGA1150E

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

LGA1150 (D)

LGA1150D

LGA1150 (C)

LGA1150C

CPU SVID

CPU PU/PD

SM REF

-CPURST

THRMTRIP DISABLE

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Title	CPU LGA1150-A	
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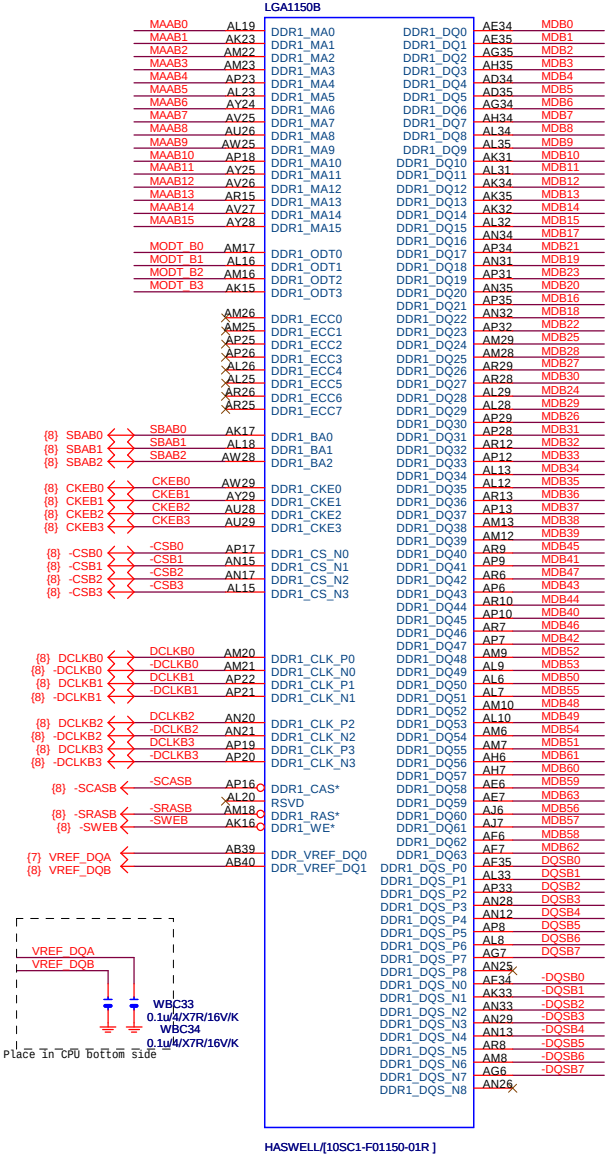
LGA1150 (A)

LGA1150A

HASWELL/[10SC1-F01150-01R]

LGA1150 (B)

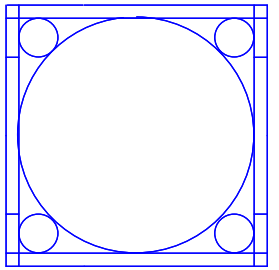
LGA1150B



HASWELL/[10SC1-F01150-01R]

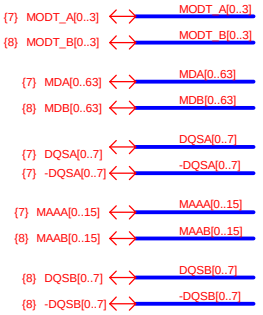
LGA1150 (CR)

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



Need check the new CPU ME

DDR BUS



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Title	CPU LGA1150-B	
Size: Custom	Document Number: GA-Z87X-UD3H	Rev: 1.02
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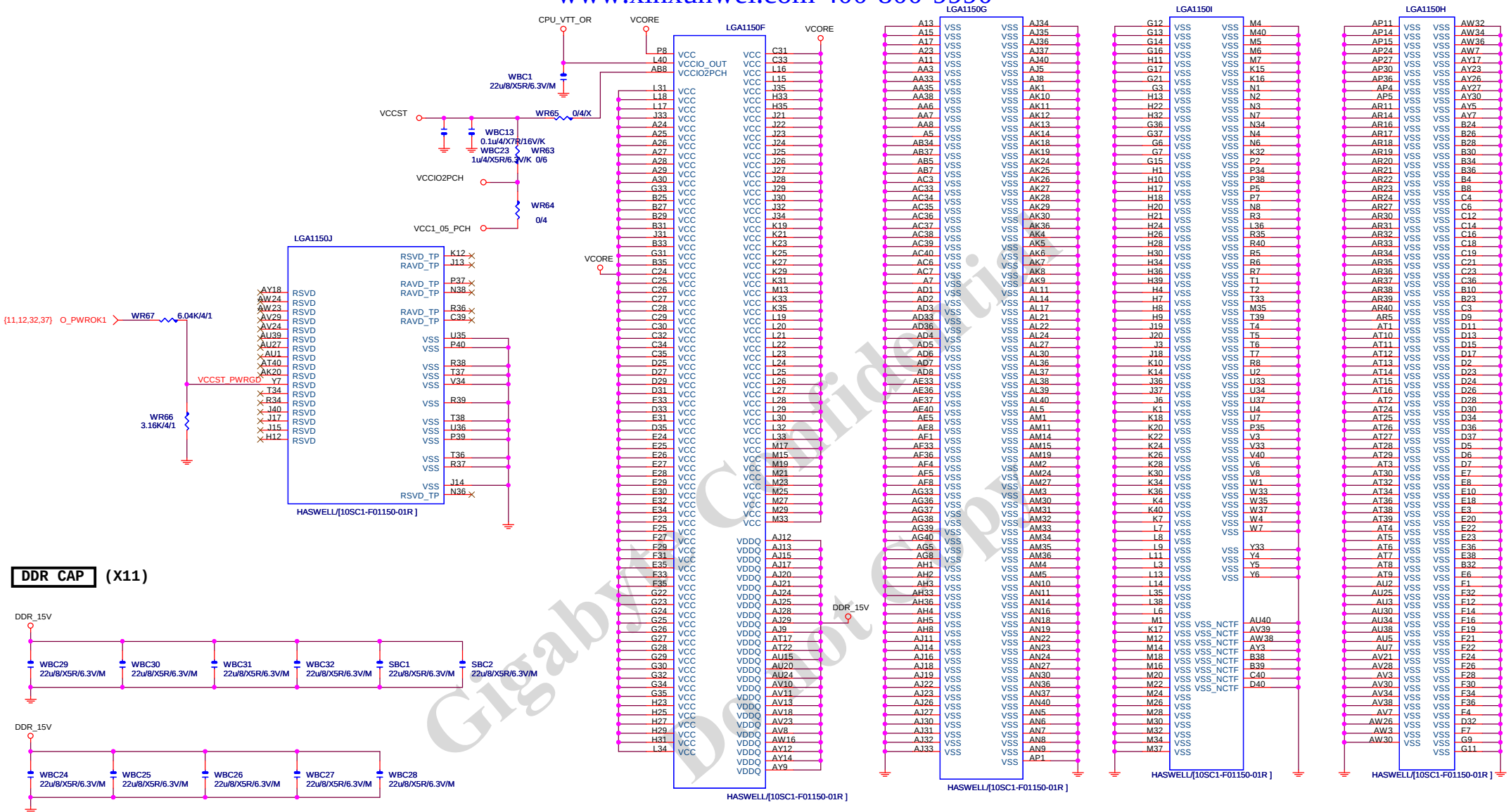
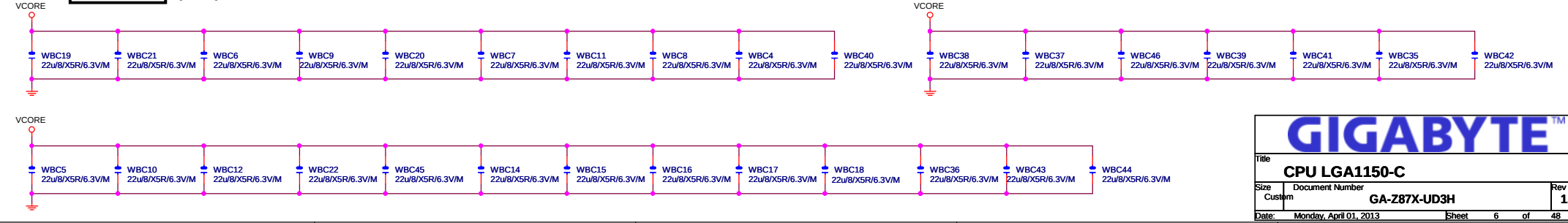


DDR CAP (X11)

VCore CAP (X30)



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Title	CPU LGA1150-C	
Size: Custom	Document Number: GA-Z87X-UD3H	Rev: 1.02
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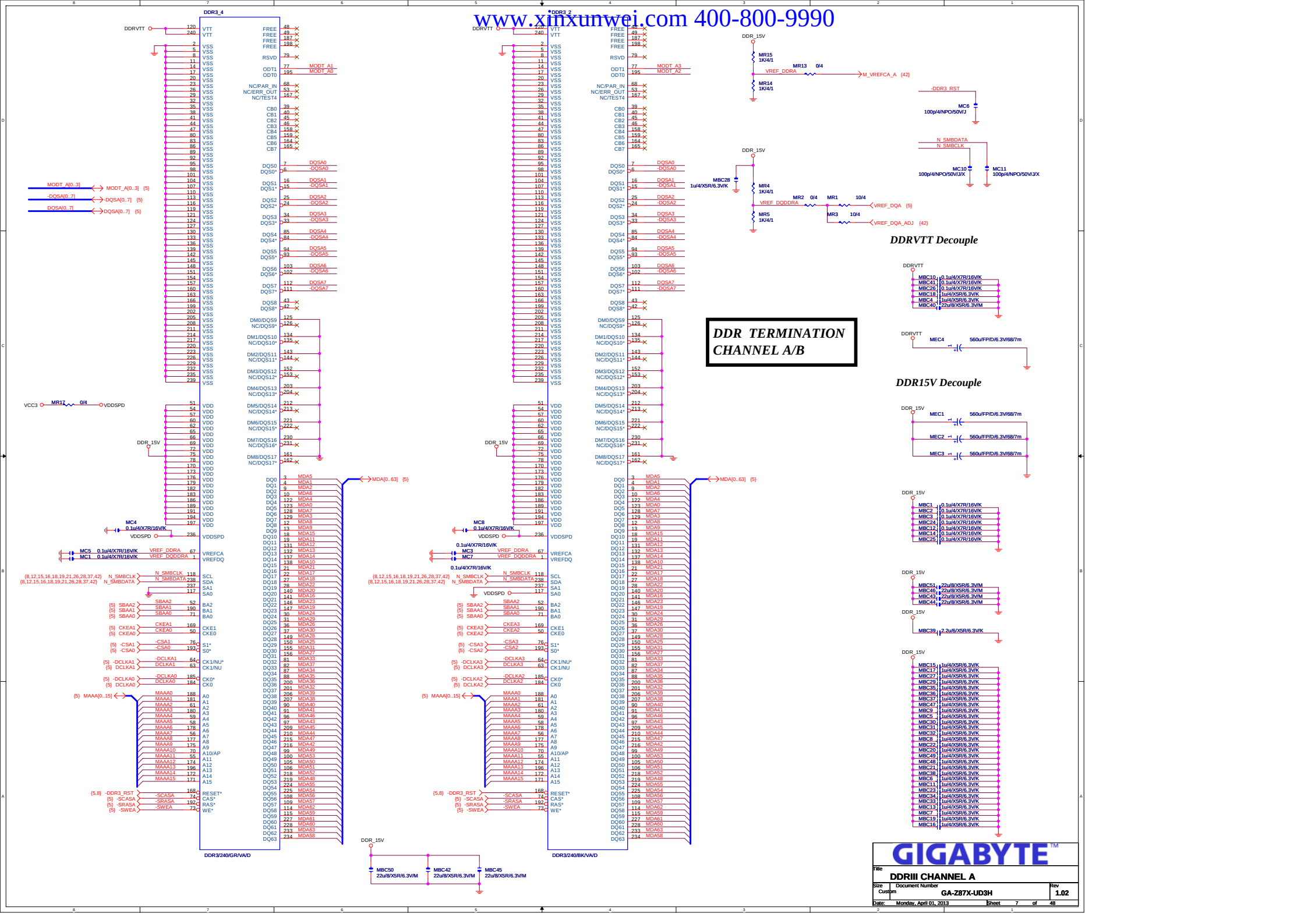

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Title	DDRIII CHANNEL A	
Size: Custom	Document Number: GA-Z87X-UD3H	Rev: 1.02
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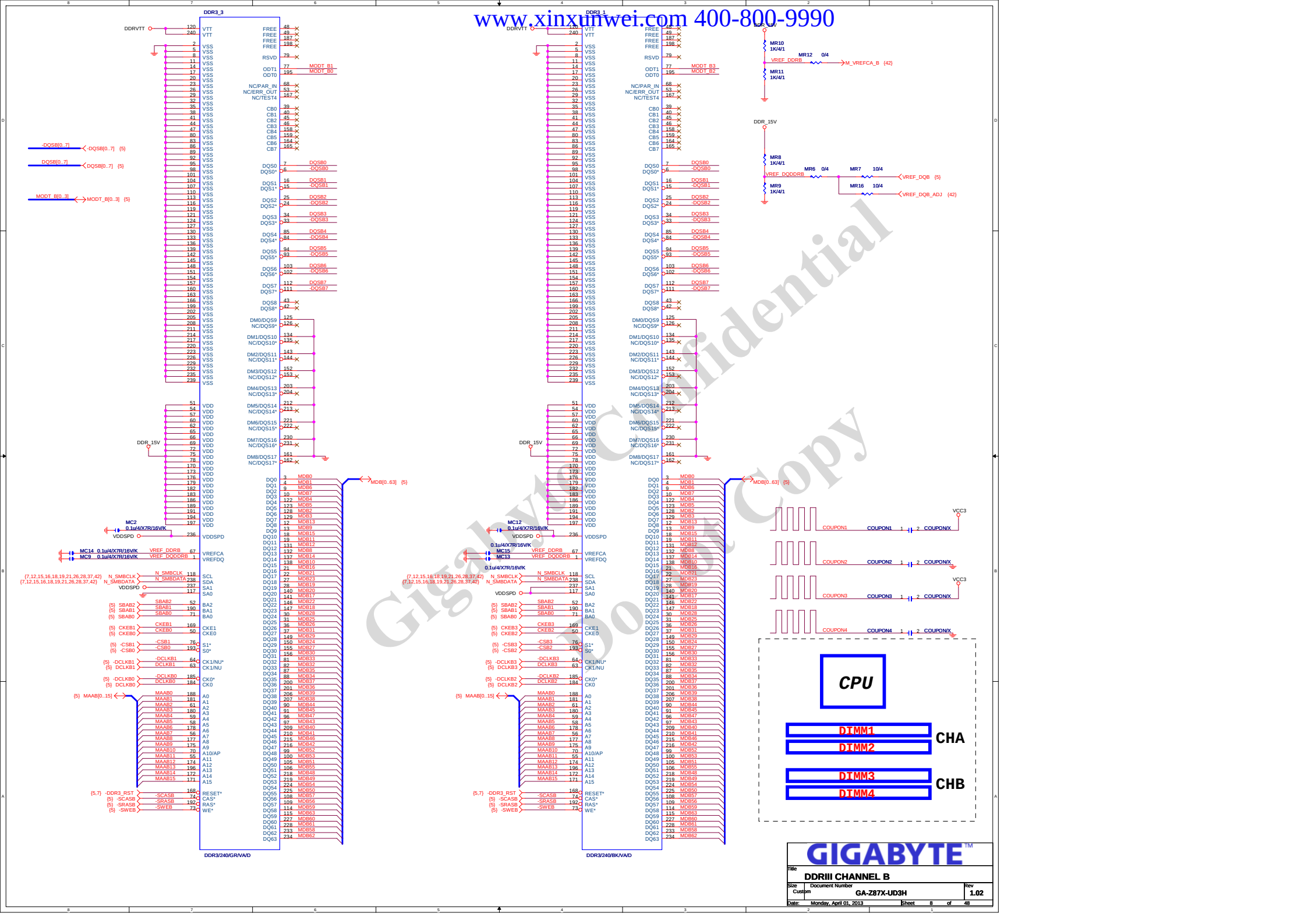

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Title	DDRIII CHANNEL B	
Size: Custom	Document Number: GA-Z87X-UD3H	Rev: 1.02
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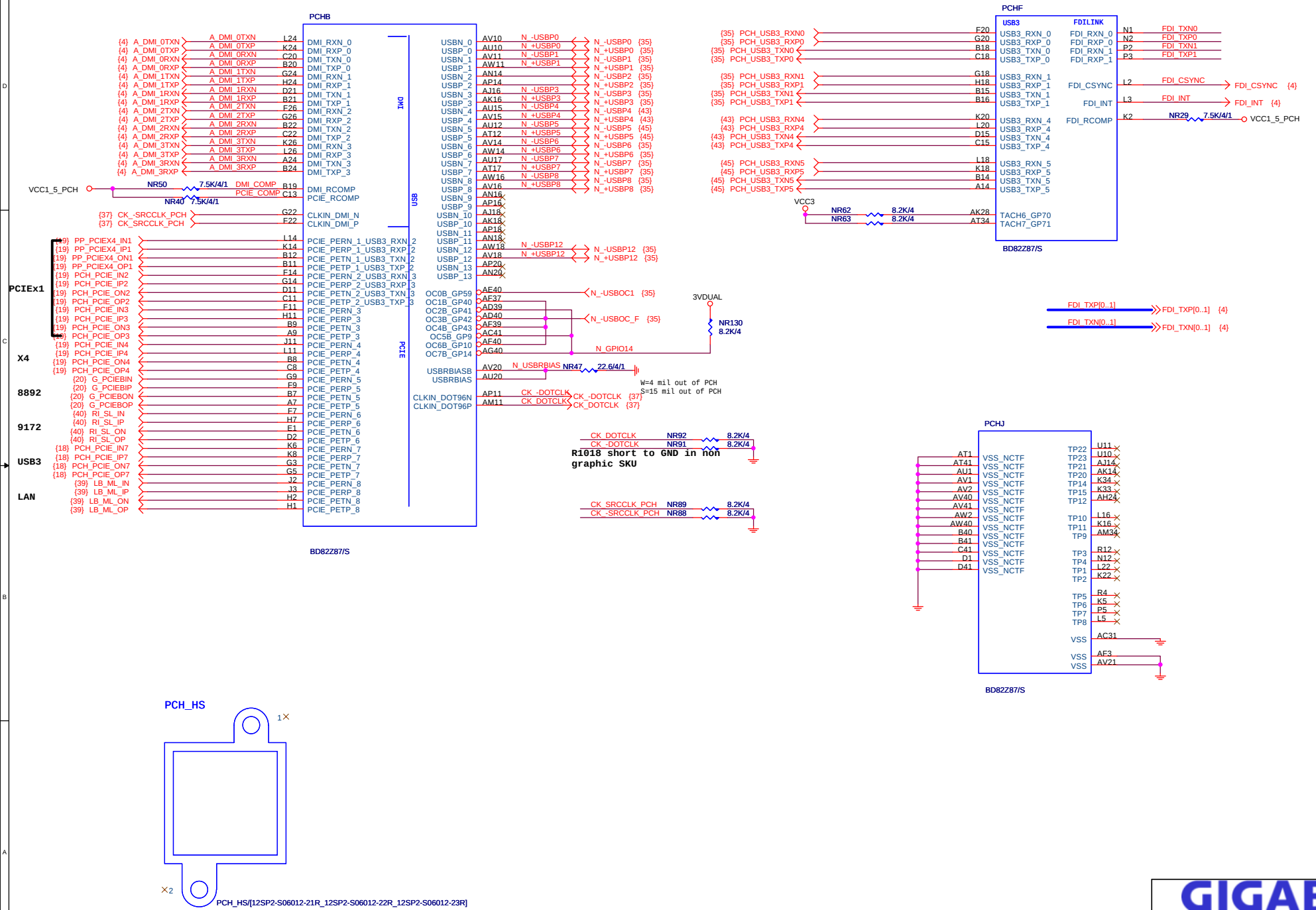

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Title	PCH FDI,DMI,USB ,PCIE,NVRAM	
Size: Custom	Document Number: GA-Z87X-UD3H	Rev: 1.02
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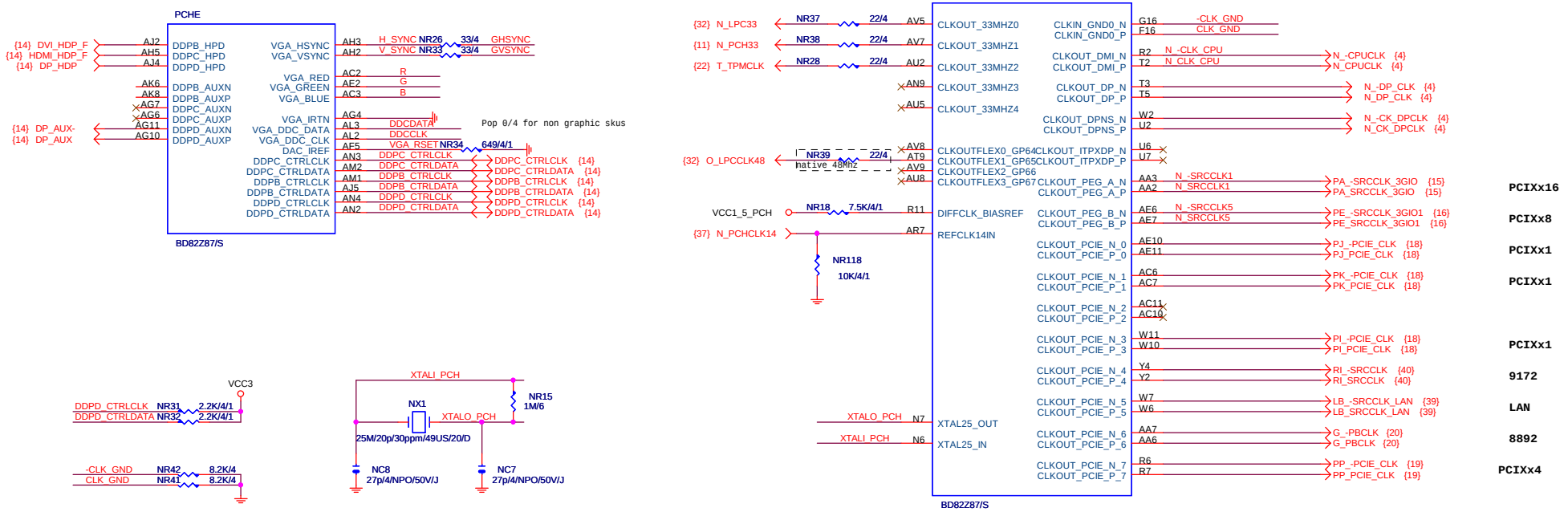

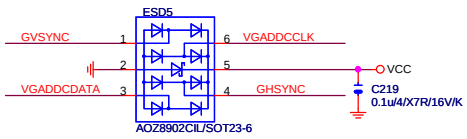

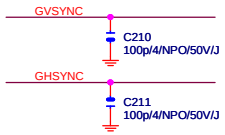

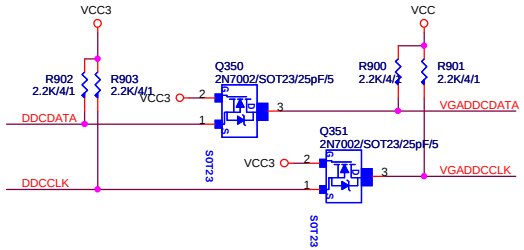

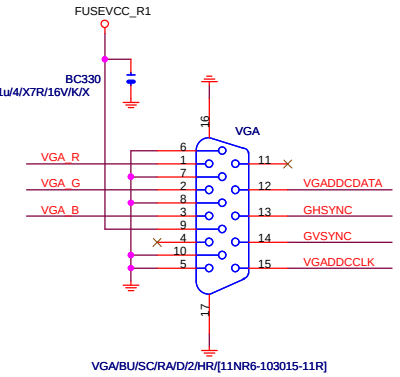

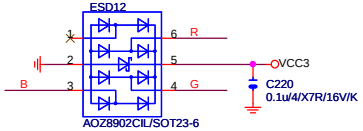

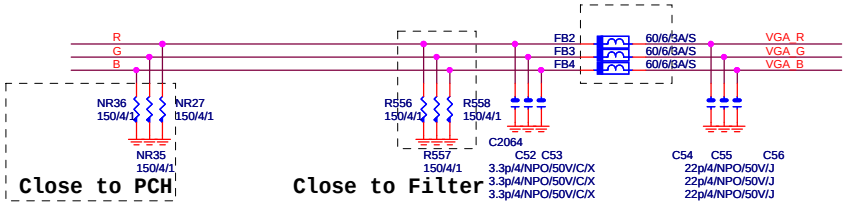

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Title	PCH DISPLAY ,CLK BUFFER	
Size: Custom	Document Number: GA-Z87X-UD3H	Rev: 1.02
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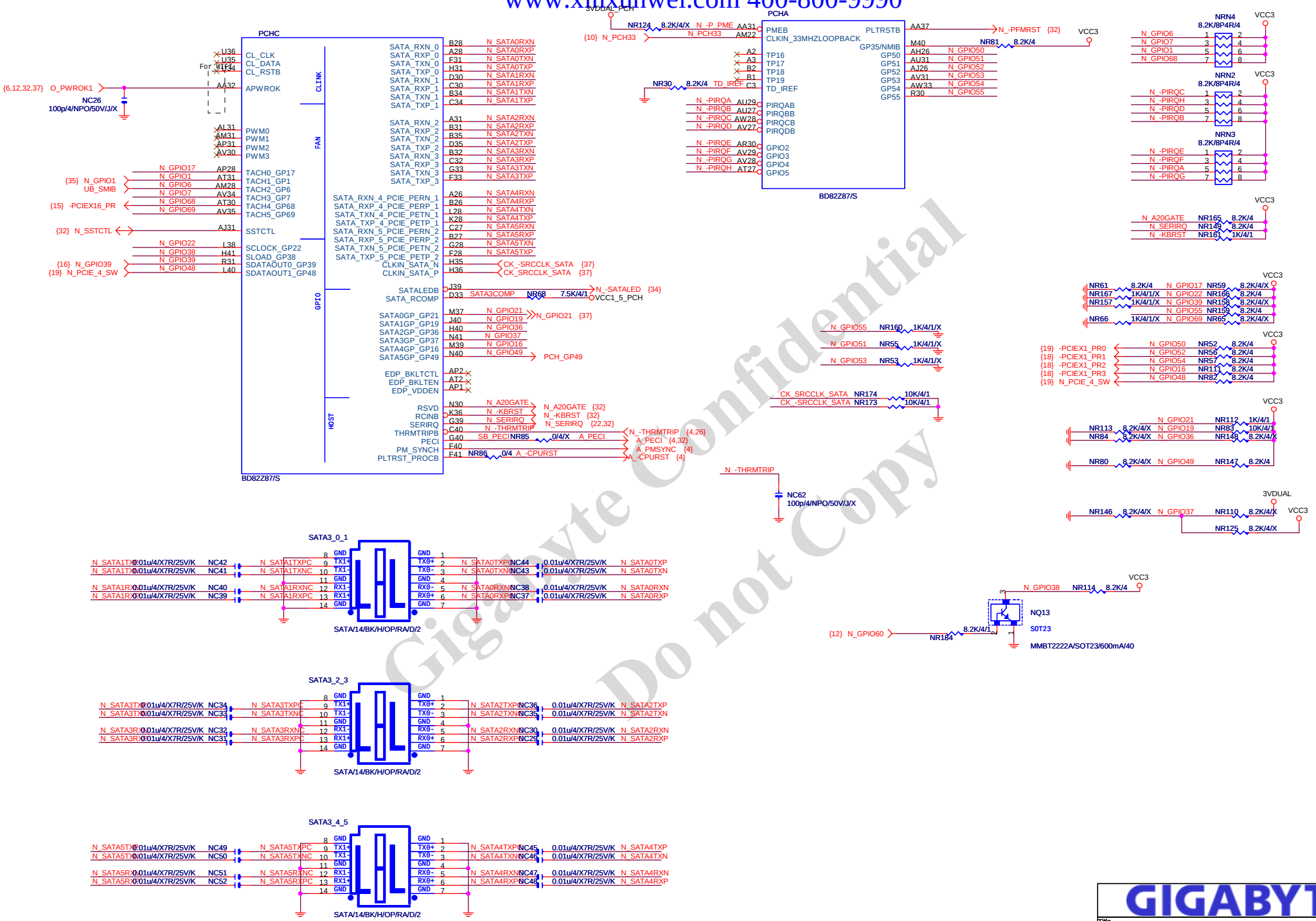

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Title	PCH HOST , SATA, PCI	
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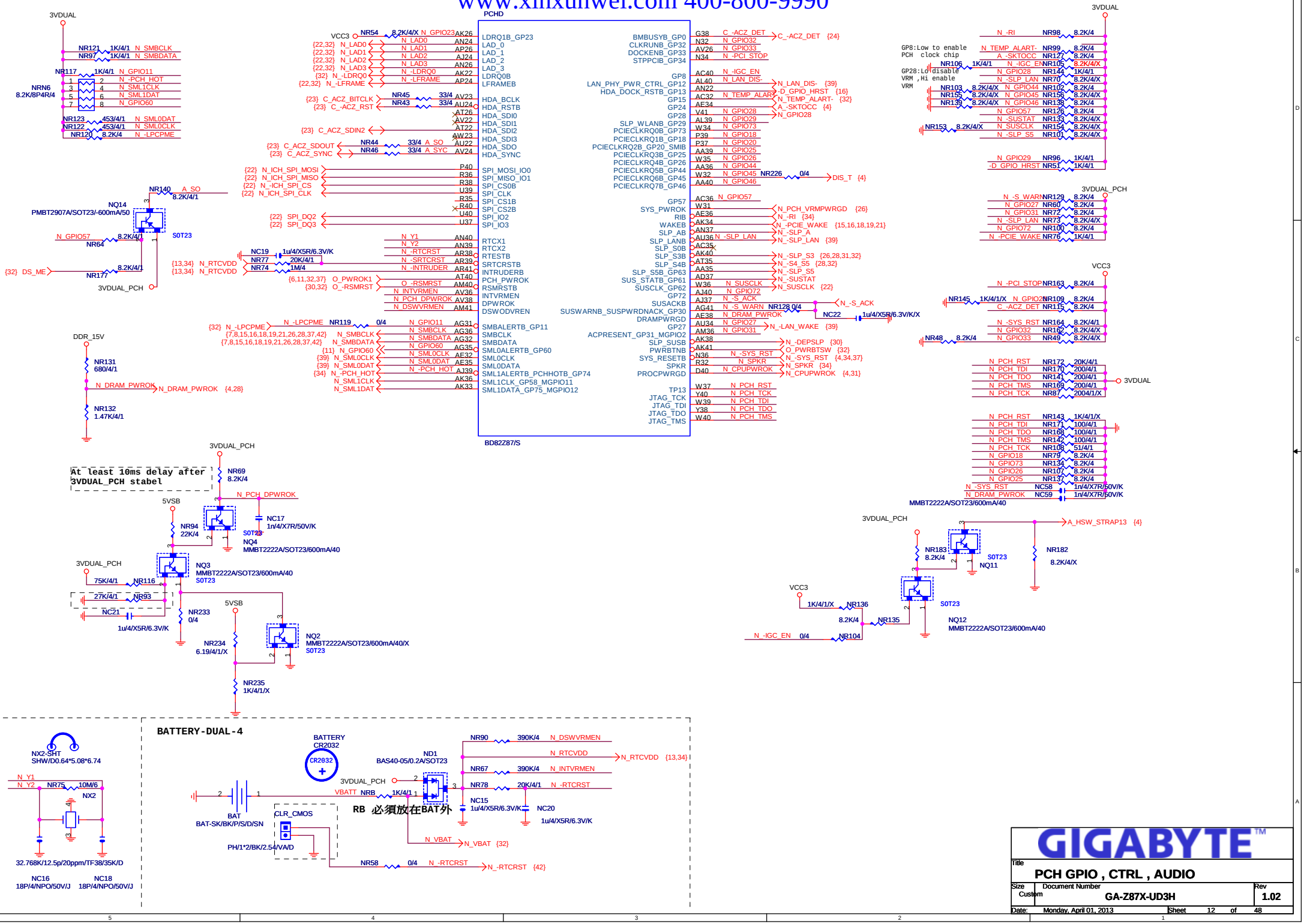

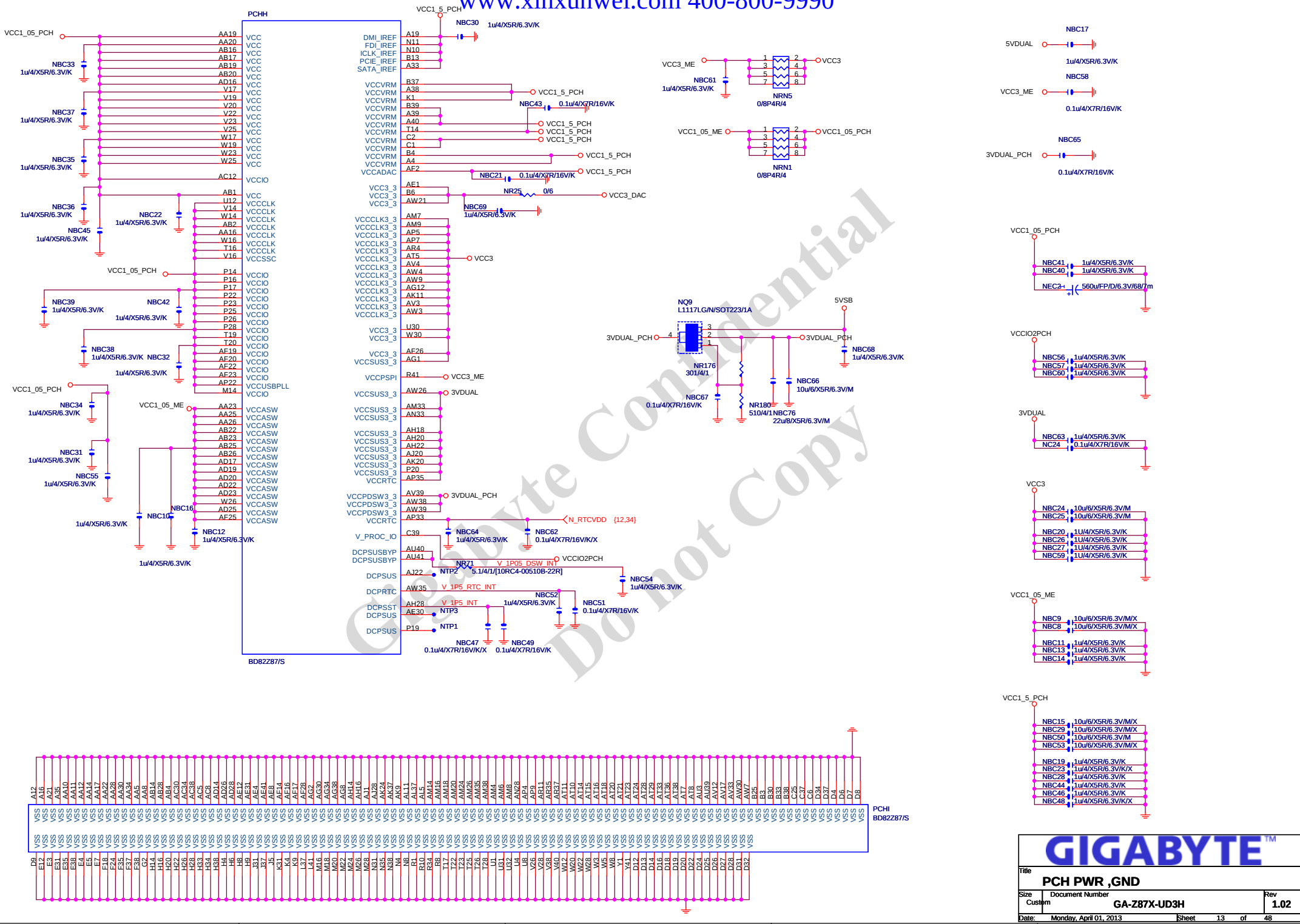

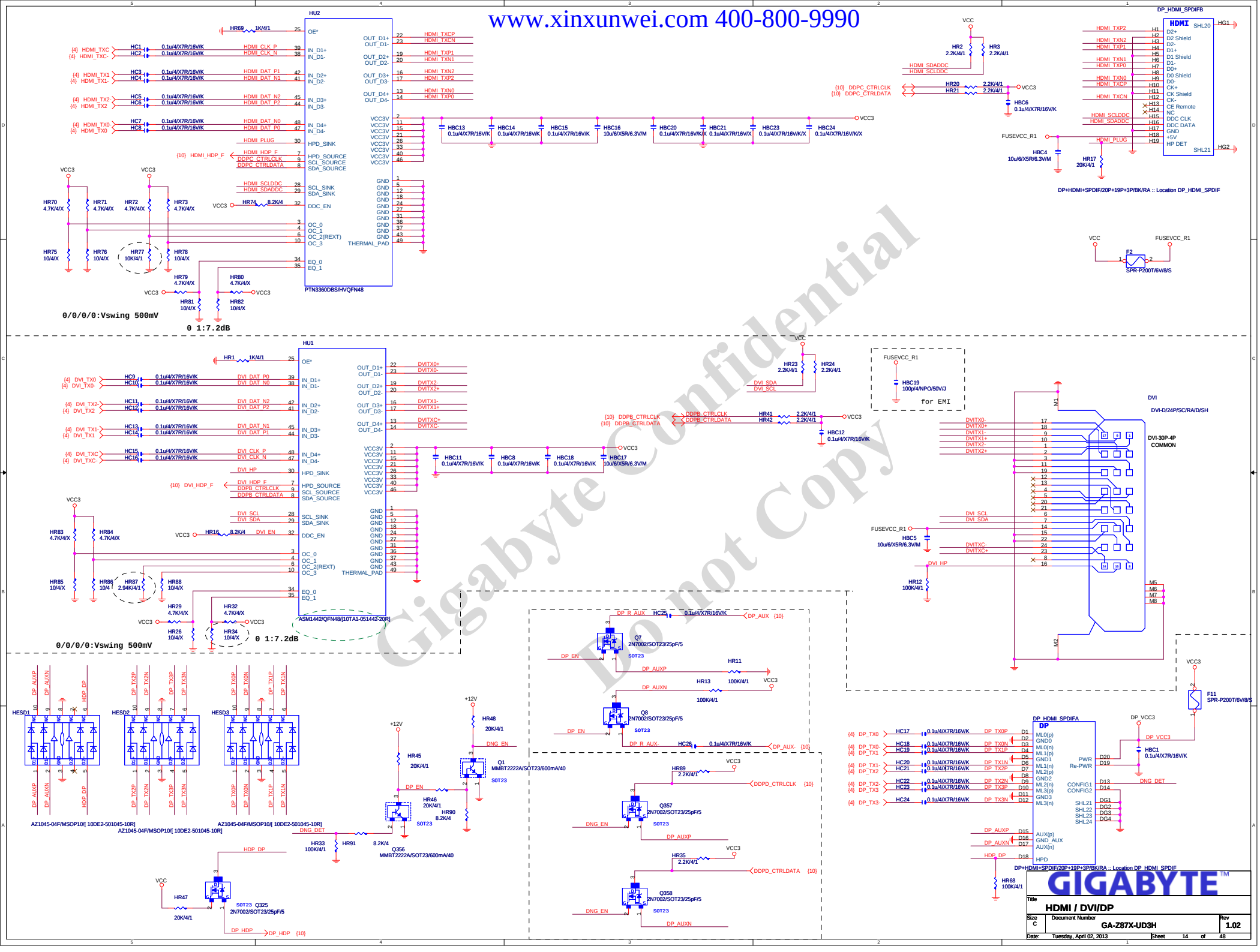

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Title	HDMI / DVI/DP	
Size C	Document Number GA-Z87X-UD3H	Rev 1.02
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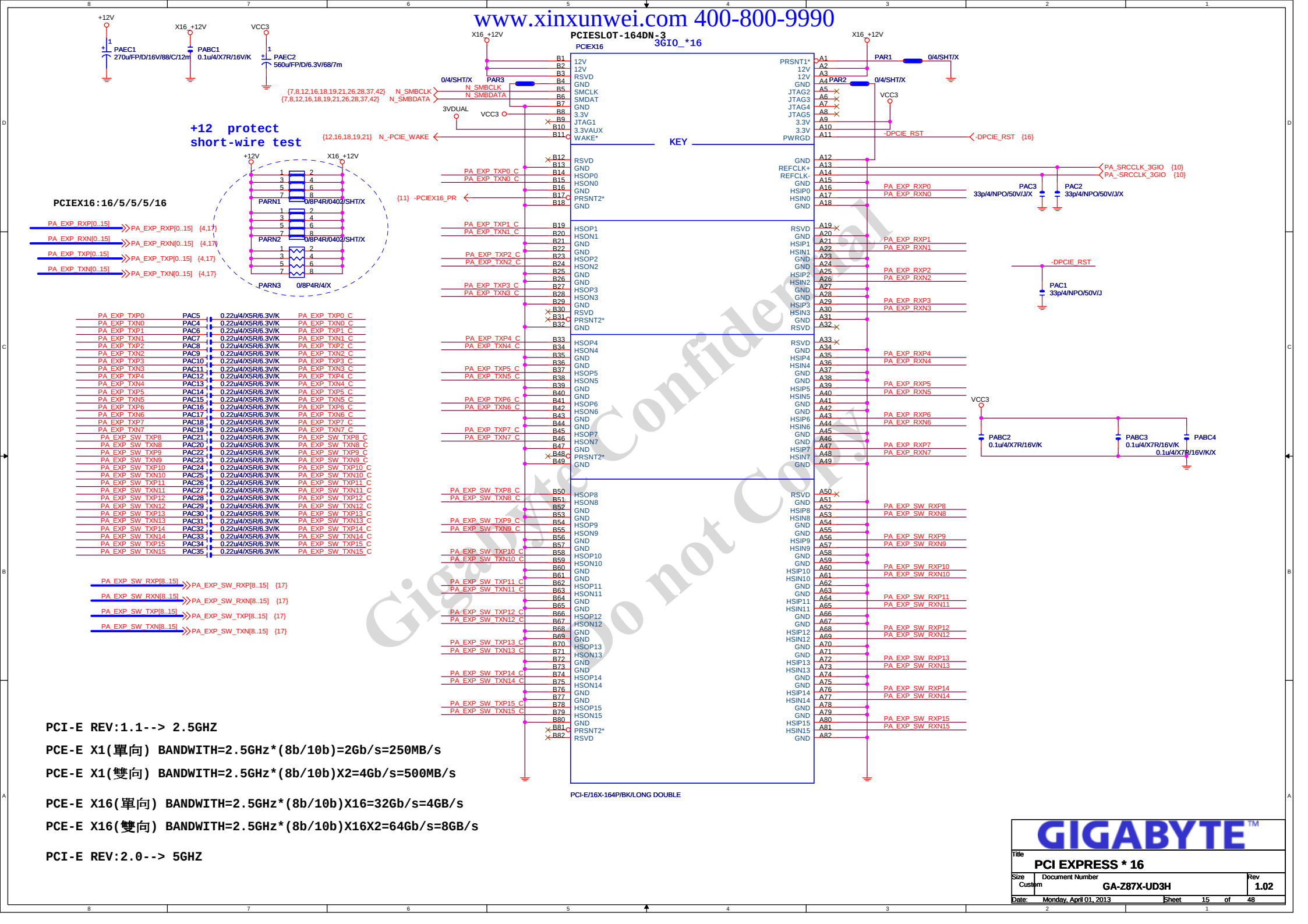

PCI-E REV:1.1--> 2.5GHZ

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

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Title	PCI EXPRESS * 16	
Size: Custom	Document Number: GA-Z87X-UD3H	Rev: 1.02
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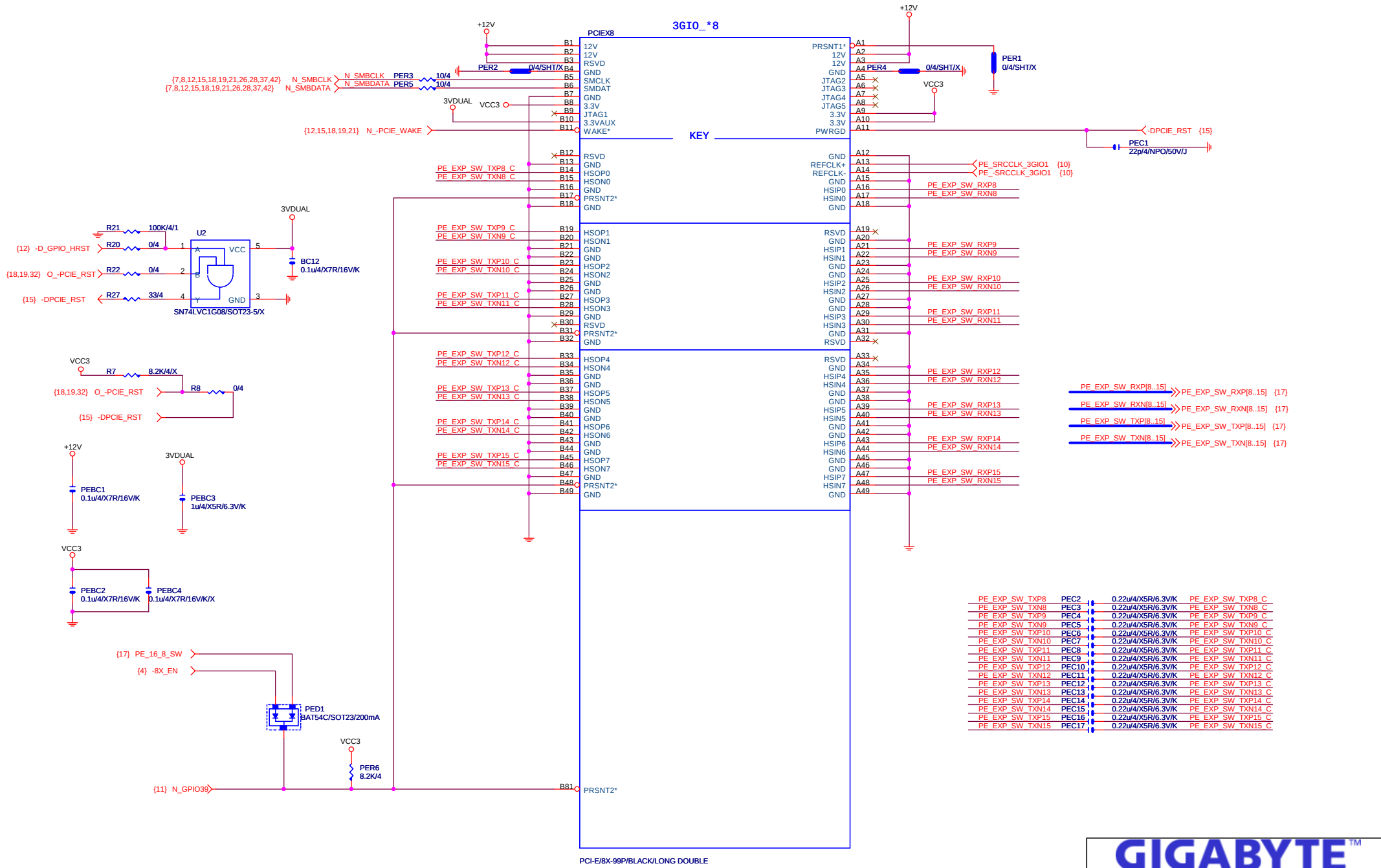

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Title	PCI EXPRESS X 8	
Size: Custom	Document Number: GA-Z87X-UD3H	Rev: 1.02
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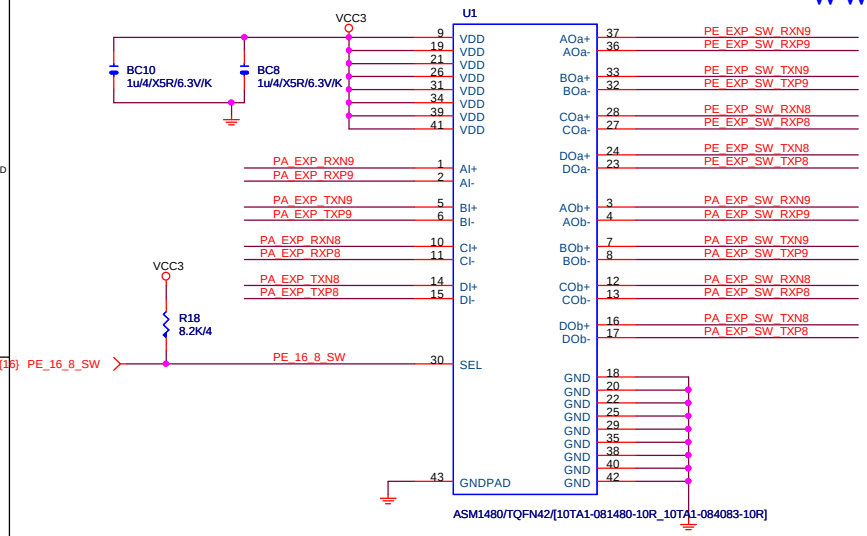
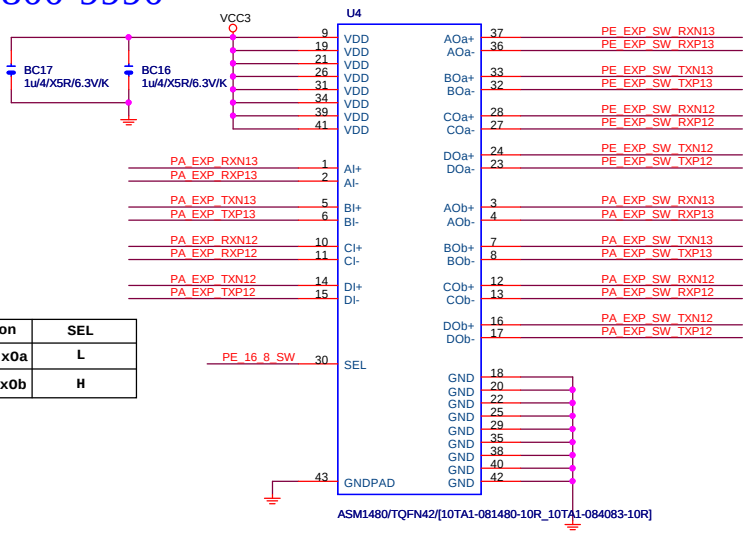
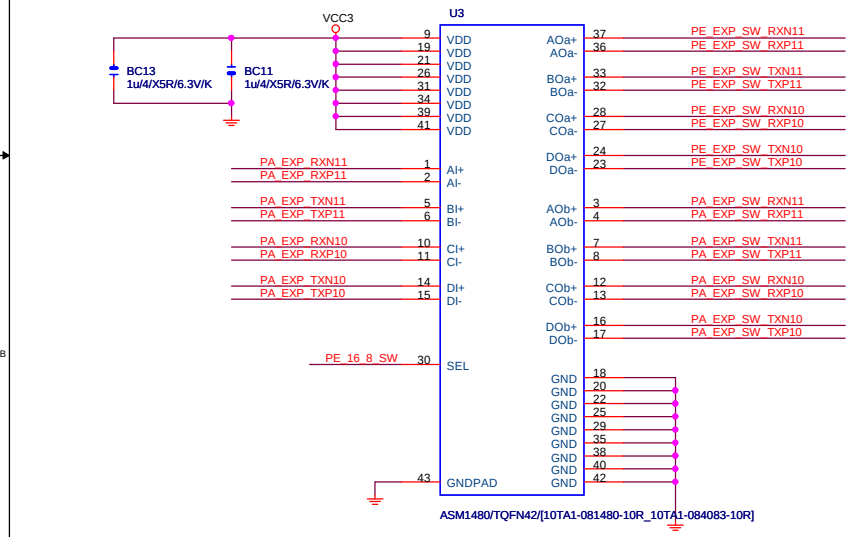
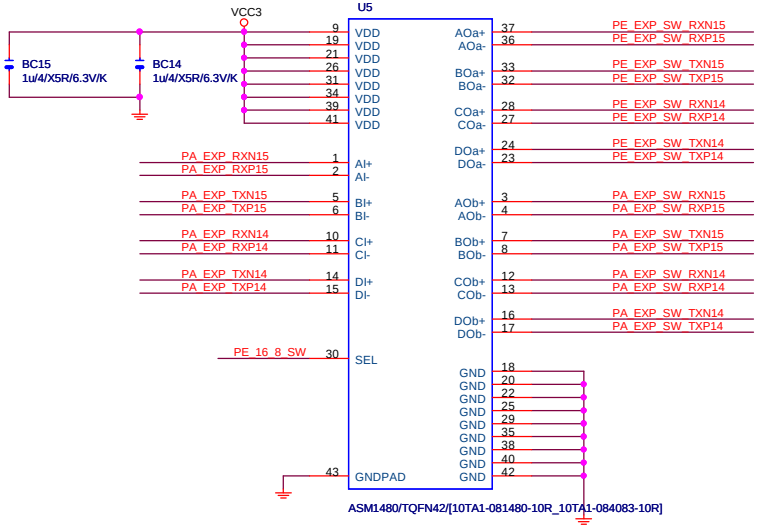




Function	SEL
xI--> x0a	L
xI--> x0b	H





PA_EXP_SW_RXP[8..15] >> PA_EXP_SW_RXP[8..15] {15}
PA_EXP_SW_RXN[8..15] >> PA_EXP_SW_RXN[8..15] {15}
PA_EXP_SW_TXP[8..15] >> PA_EXP_SW_TXP[8..15] {15}
PA_EXP_SW_TXN[8..15] >> PA_EXP_SW_TXN[8..15] {15}
PE_EXP_SW_RXP[8..15] >> PE_EXP_SW_RXP[8..15] {16}
PE_EXP_SW_RXN[8..15] >> PE_EXP_SW_RXN[8..15] {16}
PE_EXP_SW_TXP[8..15] >> PE_EXP_SW_TXP[8..15] {16}
PE_EXP_SW_TXN[8..15] >> PE_EXP_SW_TXN[8..15] {16}
PA_EXP_RXP[0..15] >> PA_EXP_RXP[0..15] {4,15}
PA_EXP_RXN[0..15] >> PA_EXP_RXN[0..15] {4,15}
PA_EXP_TXP[0..15] >> PA_EXP_TXP[0..15] {4,15}
PA_EXP_TXN[0..15] >> PA_EXP_TXN[0..15] {4,15}

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Title	PCI EXPRESS X16 SWITCH	
Size: Custom	Document Number: GA-Z87X-UD3H	Rev: 1.02
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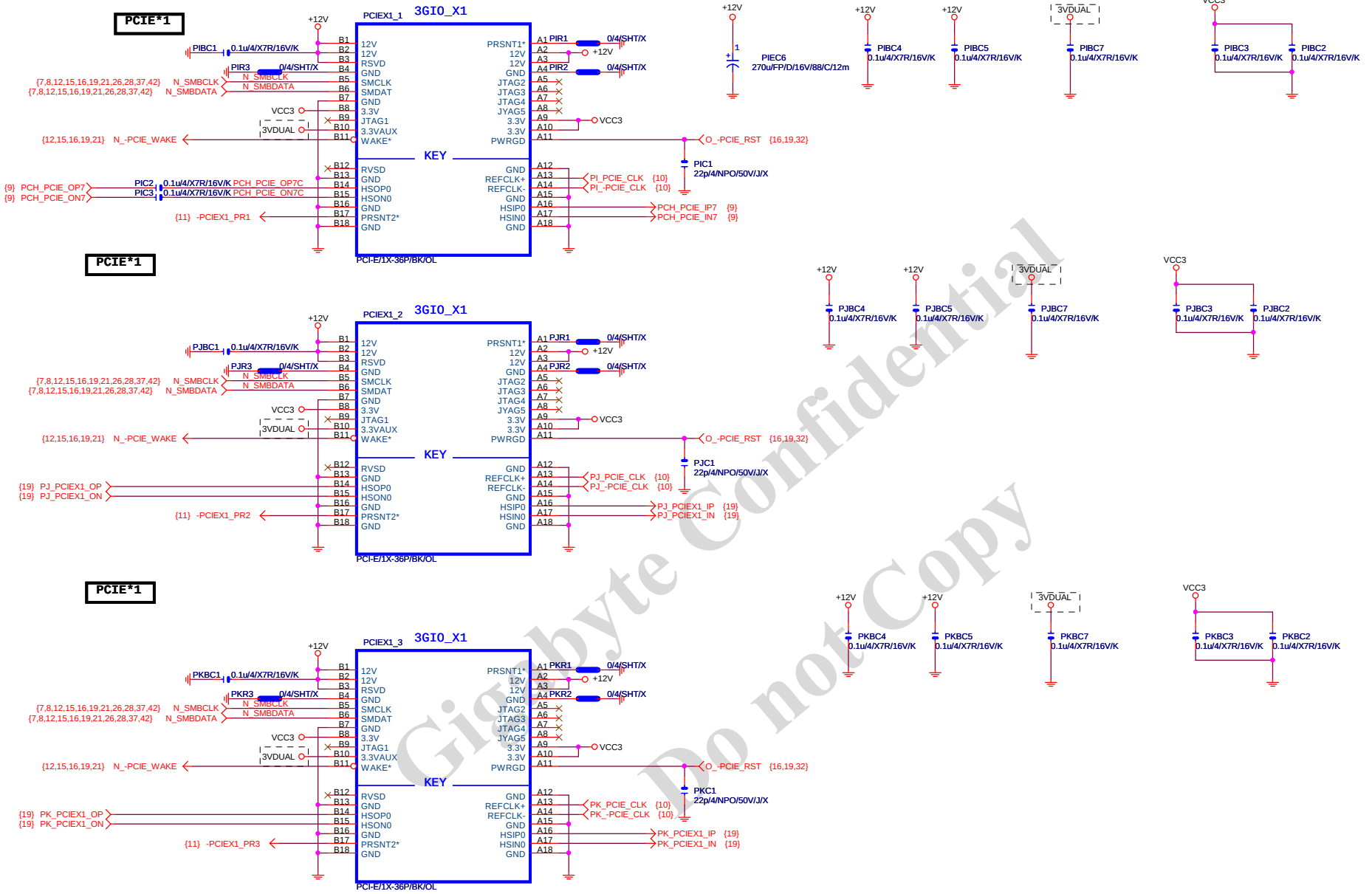

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Title	PCIE_X1 1,2,3	
Size: Custom	Document Number: GA-Z87X-UD3H	Rev: 1.02
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PCIE*4

PCIEX4

3GIO_*4

KEY

PCI-E/4X-65P/BK/LONG DOUBLE

通知BIOS DETECTED DEVICE

PPU1

ASM1440/TQFN42/{10TA1-081440-10R}

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

GIGABYTE™

Title: PCIE_X4

Size: Custom | Document Number: GA-Z87X-UD3H | Rev: 1.02

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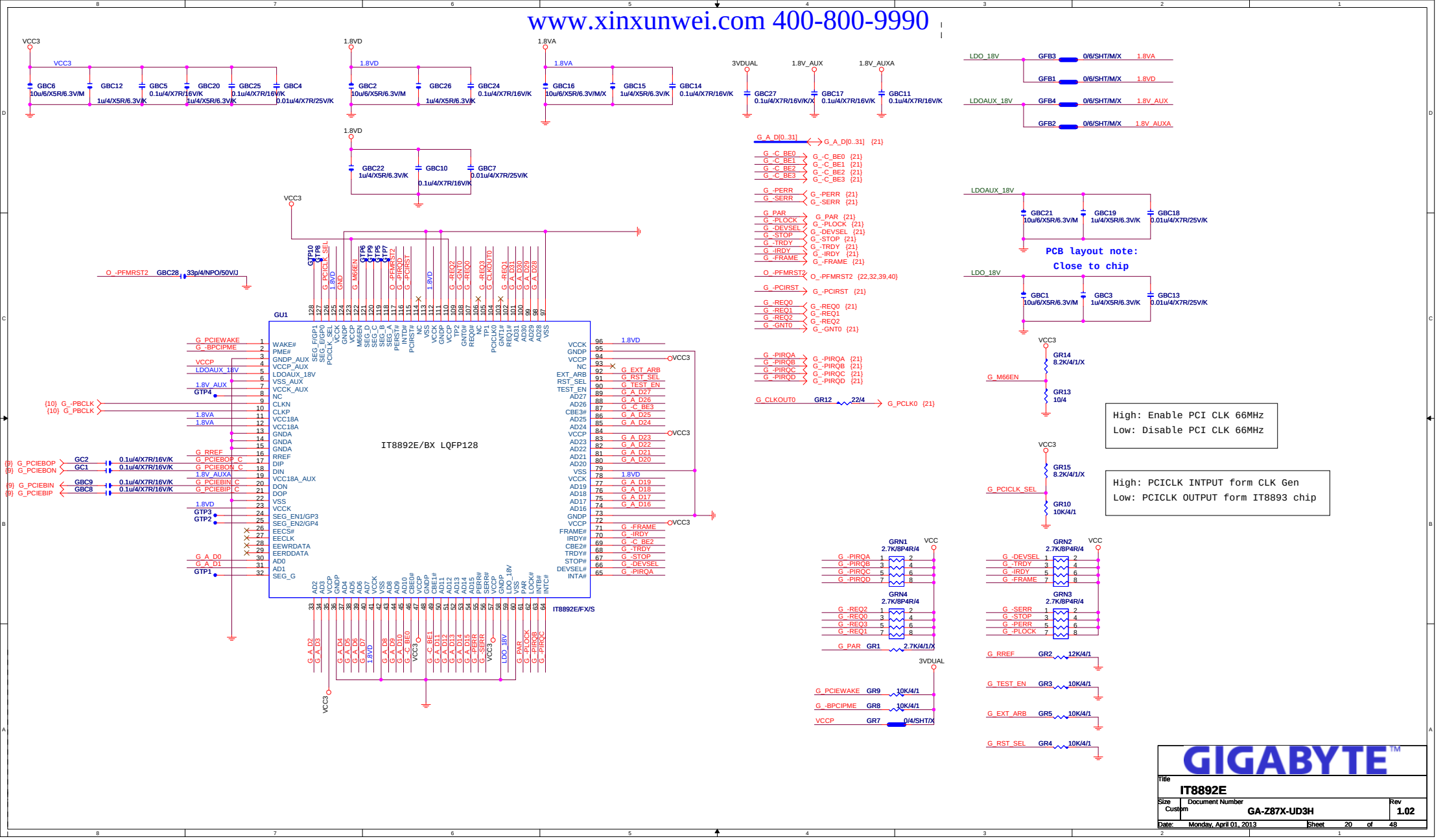
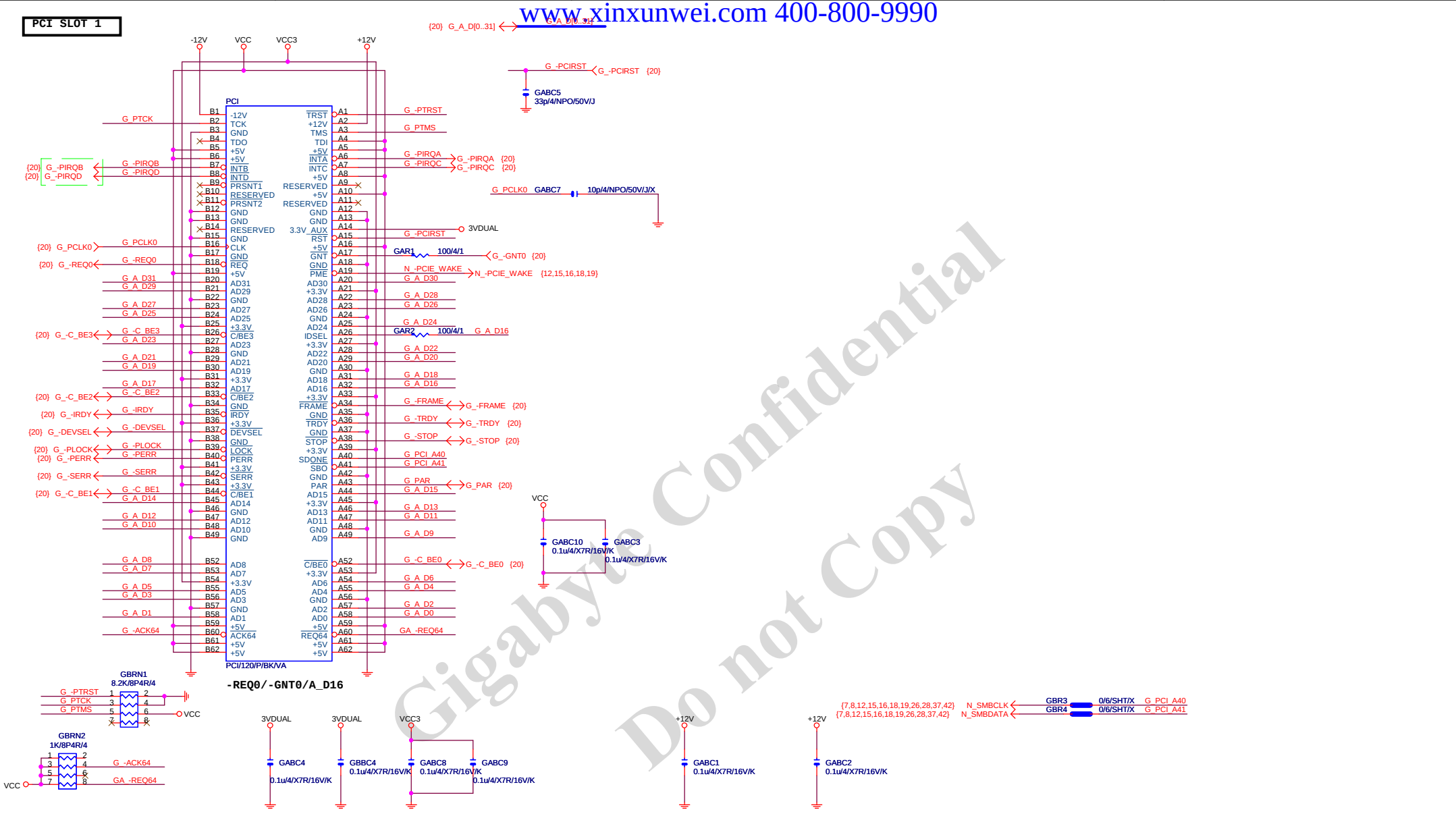


PCI SLOT 1



Title	PCI SLOT 1		
Size	Document Number		Rev
Custom	GA-Z87X-UD3H		1.02
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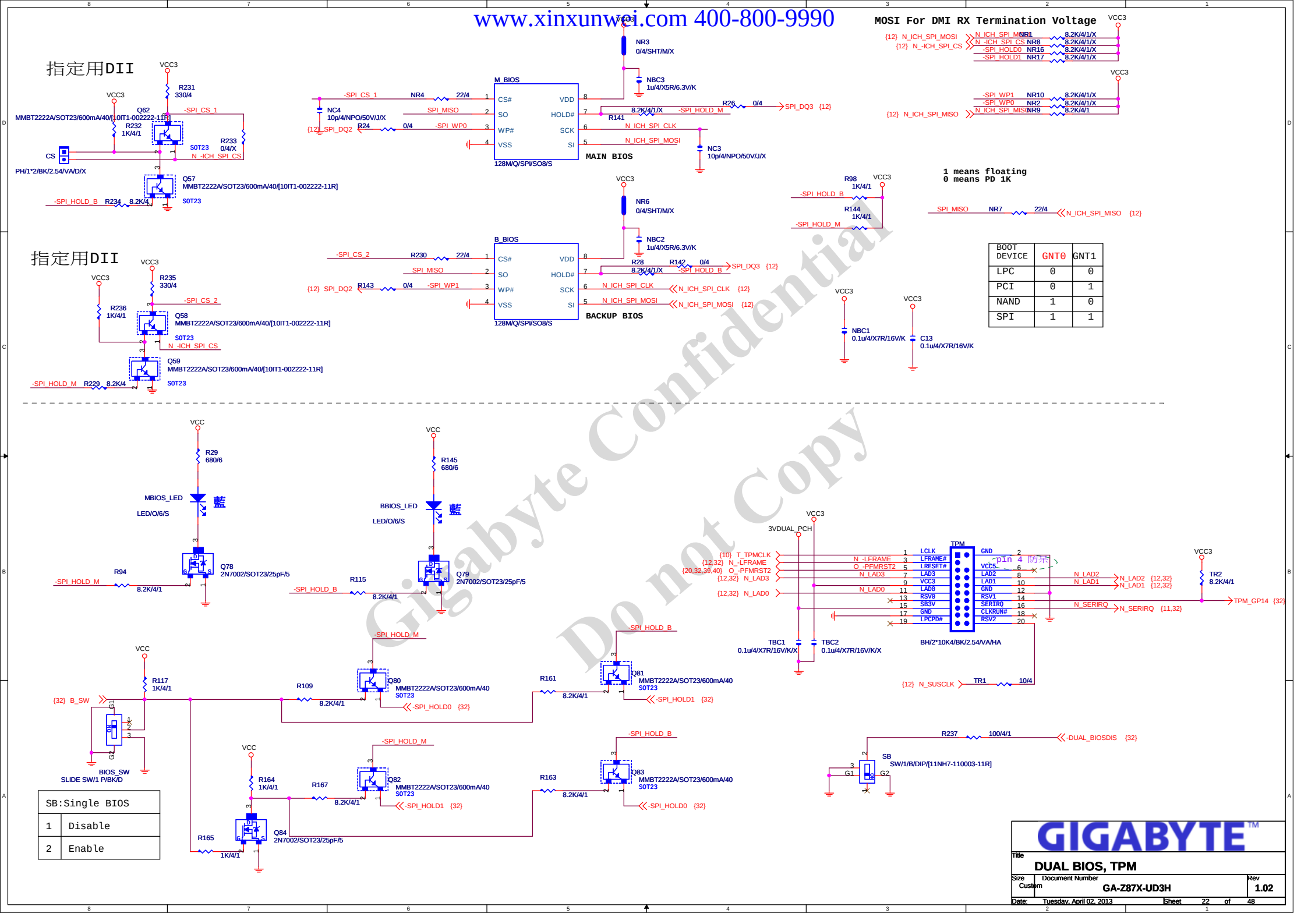

Title	DUAL BIOS, TPM
Size	Custom
Document Number	GA-Z87X-UD3H
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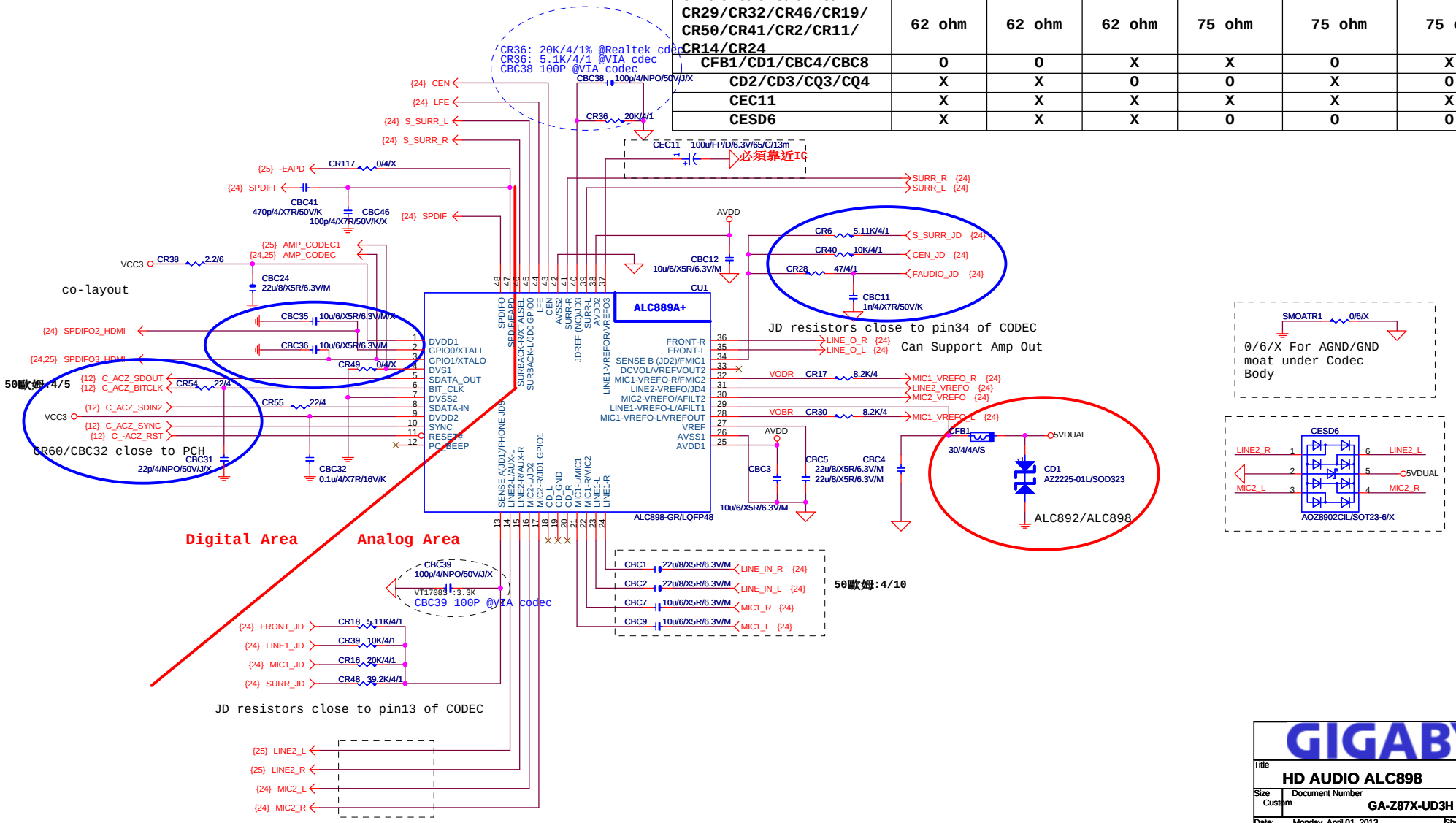
AZALIA CODEC : ALC662/ALC887-VD2/ALC889/VT1708S-CD/VT1708S-CE/VT2021 Colay

	ALC662	ALC887-VD2	ALC889	VT1708S-CD	VT1708S-CE	VT2021	ALC898/ALC892
CR49	X	X	0	0	X	0	X
CBC36	0	0	X	X	0	X	0
CR28/CBC11	47ohm+1nF	47ohm+1nF	47ohm+1nF	22ohm+100P	22ohm+100P	47ohm+1nF	47ohm+1nF
CR52	X	0	0	0	0	0	0
CR57	0	X	X	X	X	X	X
CBC1/CBC2	10uF/X5R	10uF/X5R	22uF/X5R	10uF/X5R	10uF/X5R	10uF/X5R	22uF/X5R
CR36	20K/4/1	20K/4/1	20K/4/1	5.1K/4/1	20K/4/1	5.1K/4/1	20K/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	8.2K/4
CBC38/CBC39	X	X	X	100P/4	100P/4	X	X
CR10/CR8/CR20/CR45/ CR42/CR51/CR27/CR26	22K/4	22K/4	22K/4	10K/4/1	10K/4/1	10K/4/1	22K/4
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	62 ohm
CFB1/CD1/CBC4/CBC8	0	0	X	X	0	X	0
CD2/CD3/CQ3/CQ4	X	X	0	0	X	0	X
CEC11	X	X	X	X	X	X	0
CESD6	X	X	X	0	0	0	X



GIGABYTE

Title	HD AUDIO ALC898	
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CR23 2.2/4
CR44 0/6

Audio jack --> USB

MOATC1 0/4 → Near Audio jack left

MOATC2 0/4 → Codec --> Audio jack

MOATC3 0.1u/4/X7R/16V/K → F_AUDIO

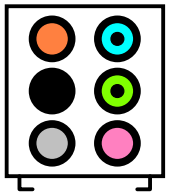
CR4 0/6/SHT/X

VCC3
CR104 8.2K/4/X
{23} SPDIFI
CR105 374K/4/1/X
5VDUAL
CR103 0/4
SPDIF_IN
PH/1*3/BK/2.54/VA/D

DP_HDMI_SPDIFC
FUSEVCC_R1
{23} SPDIF
S1 S2 S3
G1 G2 G3 G4
DP+HDMI+SPDIF/20P+19P+3P/BK/RA :: Location DP_HDMI_SPDIF

{23,25} SPDIFO3_HDMI CR53 0/4/X
{23} SPDIFO2_HDMI CR52 0/4
{23} SPDIF CR57 0/4/X
SPDIFO_HDMI
CBC37 100p/4/NPO/50V/J
PIN
SPDIF_O
PH/1*2/BK/2.54/VA/D
For HDMI SPDIF

AZALIA JACK
BTX AZALIA CONNECTOR



11NR6-403007-21R

AUDIOB
{23} LINE1_JD
LINE1_JD
AJ_A5
AJ_A2
GND LINE-IN
{23} FRONT_JD
FRONT_JD
AJ_B5
AJ_B2
GND LINE-OUT
{23} MIC1_JD
MIC1_JD
AJ_C5
AJ_C2
GND MIC-IN
2X3RP/26P/OR,BK,GY,BU,GE,PK/RA

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

AUDIOA
{23} CEN_JD
CEN_JD
BJ_B5
BJ_B2
GND REAR
{23} SURR_JD
SURR_JD
BJ_C5
BJ_C2
GND CEN
{23} S_SURR_JD
S_SURR_JD
BJ_A5
BJ_A2
GND SIDE
2X3RP/26P/OR,BK,GY,BU,GE,PK/RA

Orange CEN/LFE
Black SURROUND
Gray SURROUND SIDE

LINE-OUT
{23} LINE_O_R CEC2 100u/FP/D/6.3V/65/C/13m CR7 62/4 AJ_B5
{23} LINE_O_L CEC3 100u/FP/D/6.3V/65/C/13m CR9 62/4 AJ_B2
CR10 22K/4
CR8 22K/4
CBC23 180p/4/NPO/50V/J
CBC26 180p/4/NPO/50V/J

LINE-IN
{23} LINE_IN_R CR5 62/4 AJ_A5
{23} LINE_IN_L CR13 62/4 AJ_A2
CBC18 180p/4/NPO/50V/J
CBC27 180p/4/NPO/50V/J

MIC-IN
{23} MIC1_R CR29 62/4 AJ_C5
{23} MIC1_L CR32 62/4 AJ_C2
{23} MIC1_VREFO_L
{23} MIC1_VREFO_R
CBC19 180p/4/NPO/50V/J
CBC22 180p/4/NPO/50V/J

SURROUND
{23} SURR_R CEC5 100u/FP/D/6.3V/65/C/13m CR46 62/4 BJ_C5
{23} SURR_L CEC7 100u/FP/D/6.3V/65/C/13m CR19 62/4 BJ_C2
EMI
CR20 22K/4
CR45 22K/4
CBC29 180p/4/NPO/50V/J
CBC28 180p/4/NPO/50V/J

CEN/LFE
{23} LFE CEC9 100u/FP/D/6.3V/65/C/13m CR50 62/4 BJ_B5
{23} CEN CEC10 100u/FP/D/6.3V/65/C/13m CR41 62/4 BJ_B2
EMI
CR42 22K/4
CR51 22K/4
CBC25 180p/4/NPO/50V/J
CBC34 180p/4/NPO/50V/J

SURR BACK
{23} S_SURR_R CEC8 100u/FP/D/6.3V/65/C/13m CR21 62/4 BJ_A5
{23} S_SURR_L CEC4 100u/FP/D/6.3V/65/C/13m CR47 62/4 BJ_A2
EMI
CR43 22K/4
CR22 22K/4
CBC33 180p/4/NPO/50V/J
CBC30 180p/4/NPO/50V/J

AZALIA FRONT PANEL
CQ2 BAT54A/SOT23/200mA
{23} LINE2_VREFO
CR25 8.2K/4/1/X
CR15 8.2K/4/1/X
CQ1 BAT54A/SOT23/200mA
{23} MIC2_VREFO
CR12 8.2K/4/1
CR3 8.2K/4/1
SOT23
EMI
{23} MIC2_L
{23} MIC2_R
{25} LINE2_OUT_R
{23} FAUDIO_JD
{25} LINE2_OUT_L
CBC20 10u/6/X5R/6.3V/M
CBC15 10u/6/X5R/6.3V/M
CR33 62/4
CR34 62/4
CR2 62/4 M2_L
CR11 62/4 M2_R
L2-R
L2-L
CR1 0/4/X
CBC10 180p/4/NPO/50V/J
CBC16 180p/4/NPO/50V/J
CBC17 180p/4/NPO/50V/J
CBC6 180p/4/NPO/50V/J
CR27 22K/4
CR26 22K/4
F_AUDIO
3VDUAL
CR56 8.2K/4/X
CR35 20K/4/1
CR31 39.2K/4/1
C_-ACZ_DET {12}
BH/2*5K8/BK/2.54/VA/AUDIO/PRT/TUR180/11NH3-001205-31RI
Digital Area

GIGABYTE™

Title: AUDIO JACK
Size: Custom
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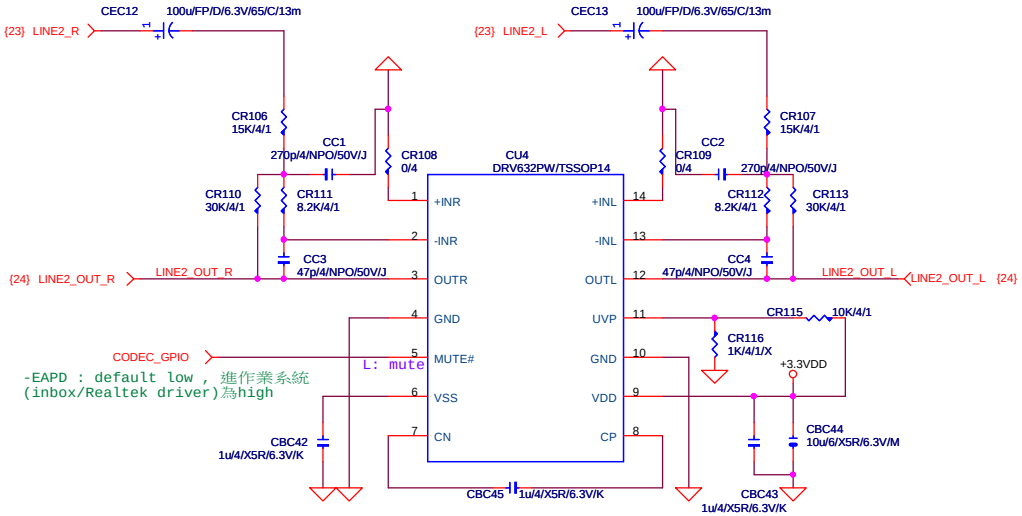
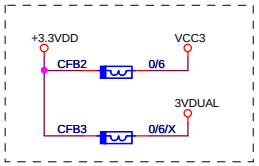
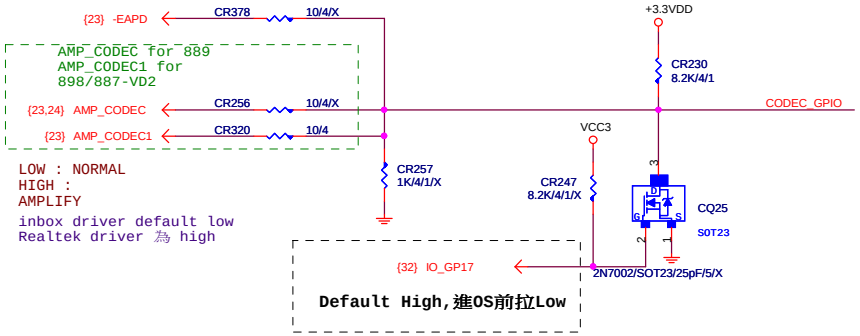
HEADPHONE



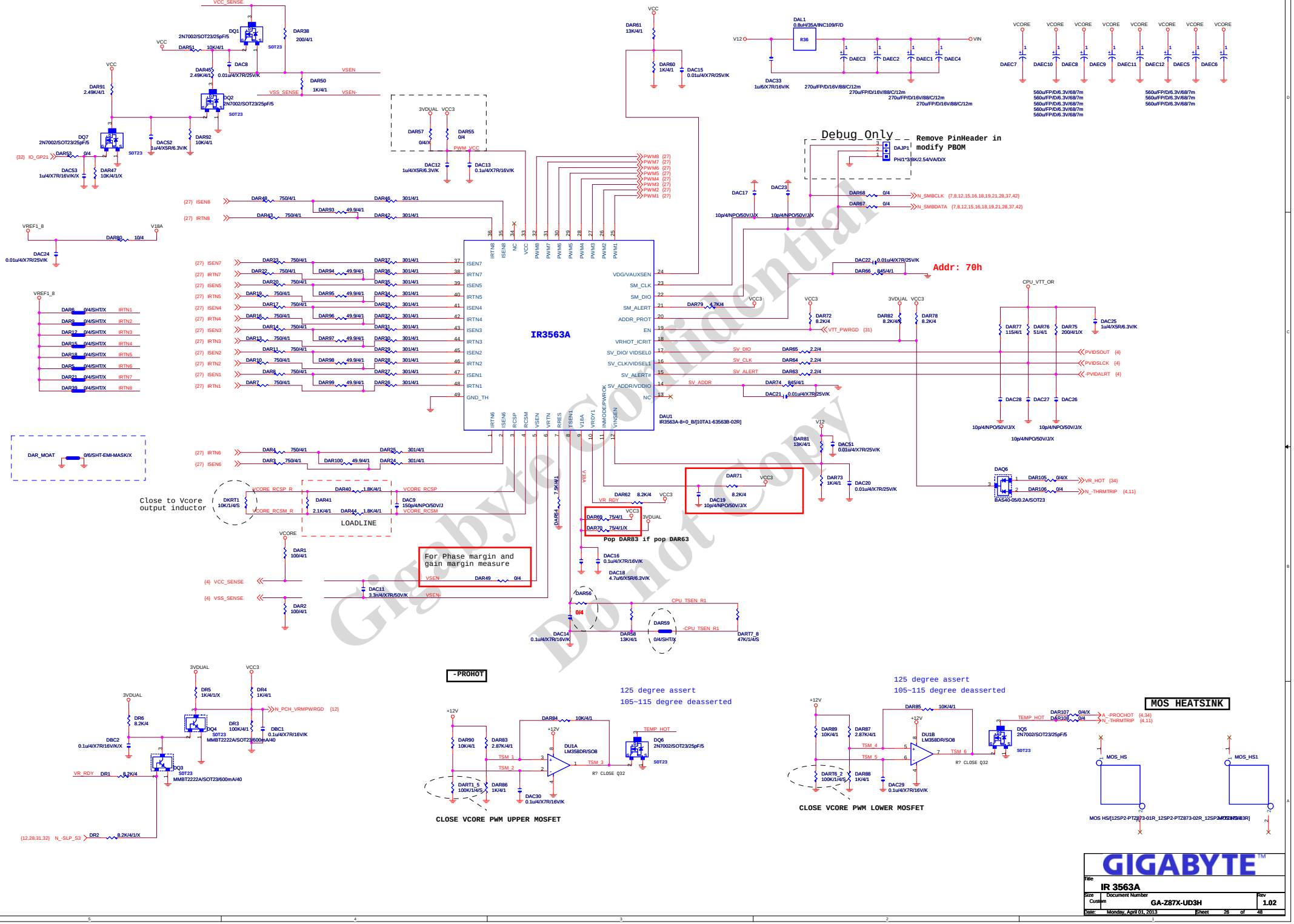


HEADPHONE



GIGABYTE™

Title: Audio Amplifier		
Size: Custom	Document Number: GA-Z87X-UD3H	Rev: 1.02
Date: Monday, April 01, 2013	Sheet 25 of 48	



Title	IR 3563A
Size	Custom
Document Number	GA-Z87X-UD3H
Rev	1.02
Date:	Monday, April 01, 2013
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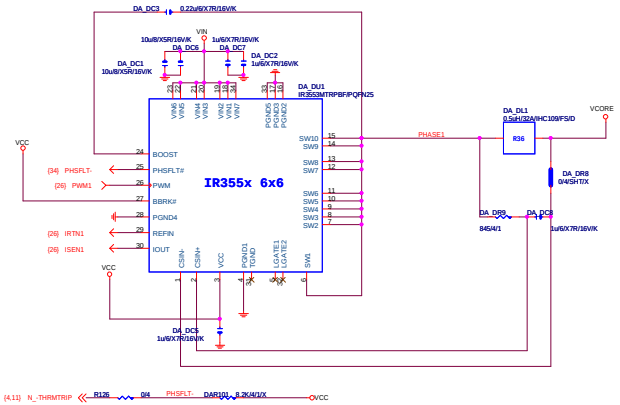
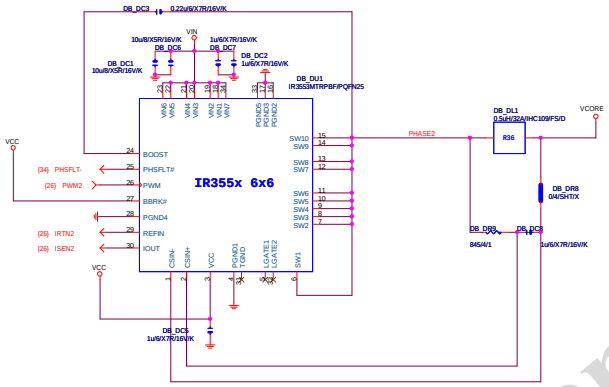
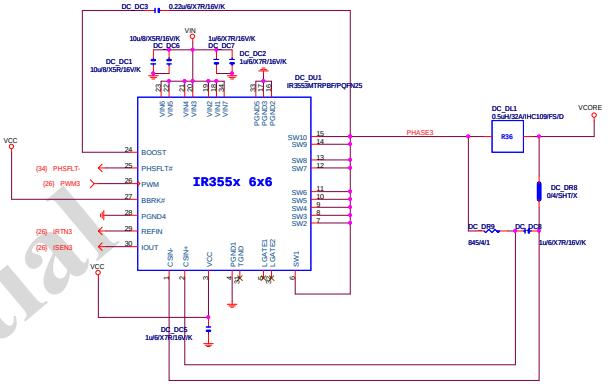
VCORE-PHASE1



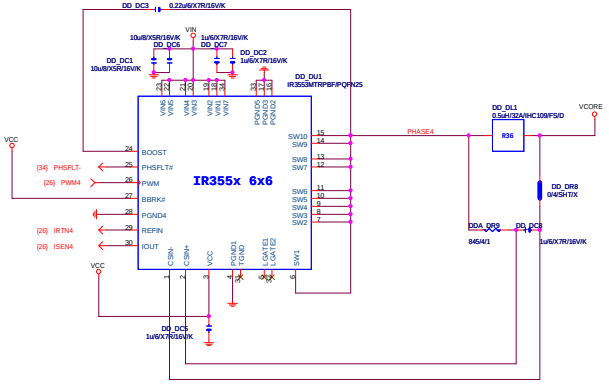
VCORE-PHASE2



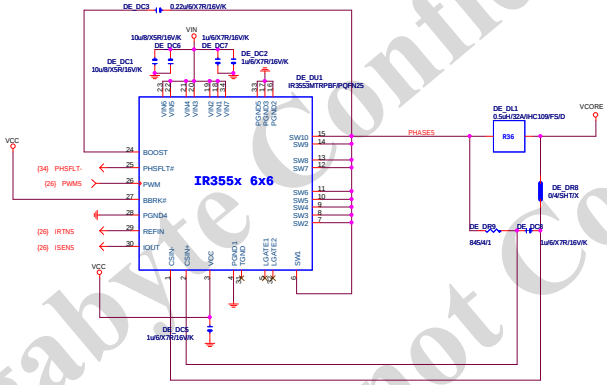
VCORE-PHASE3



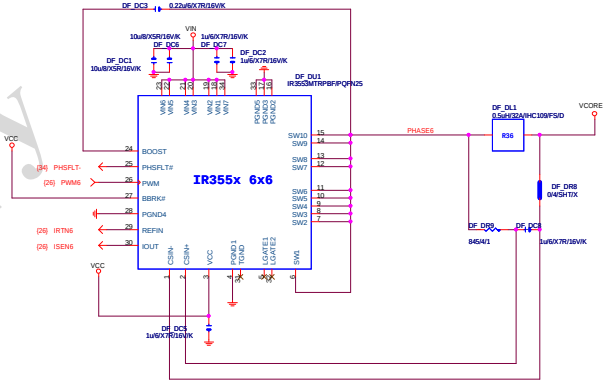
VCORE-PHASE4



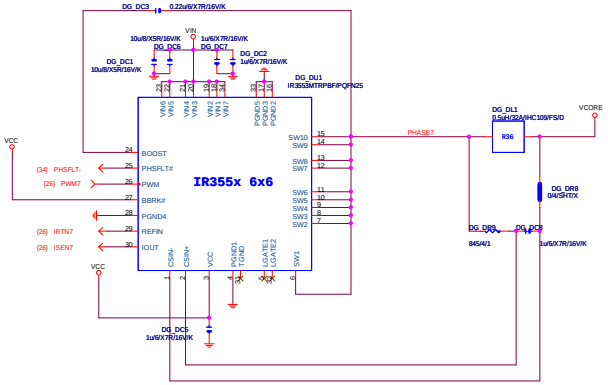
VCORE-PHASE5



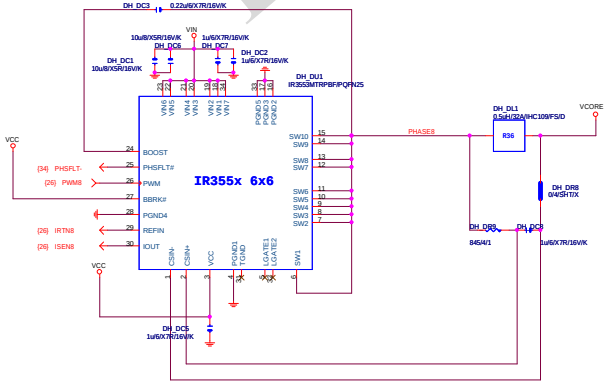
VCORE-PHASE6



VCORE-PHASE7



VCORE-PHASE8



GIGABYTE

Title	CPU CORE VR	
Size: Custom	Document Number: GA-Z87X-UD3H	Rev: 1.02
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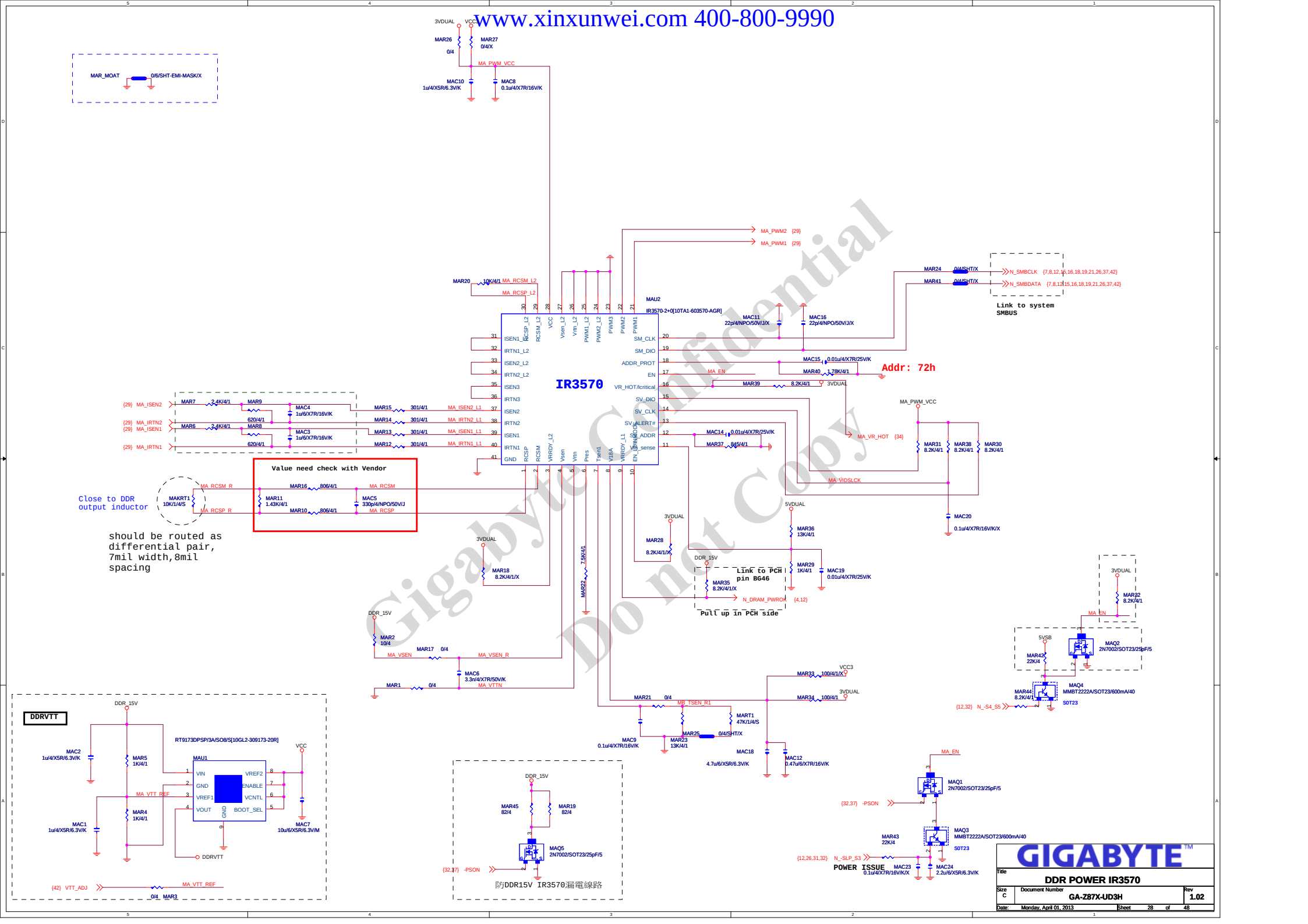

GIGABYTE™

Title	DDR POWER IR3570	
Size: C	Document Number: GA-Z87X-UD3H	Rev: 1.02
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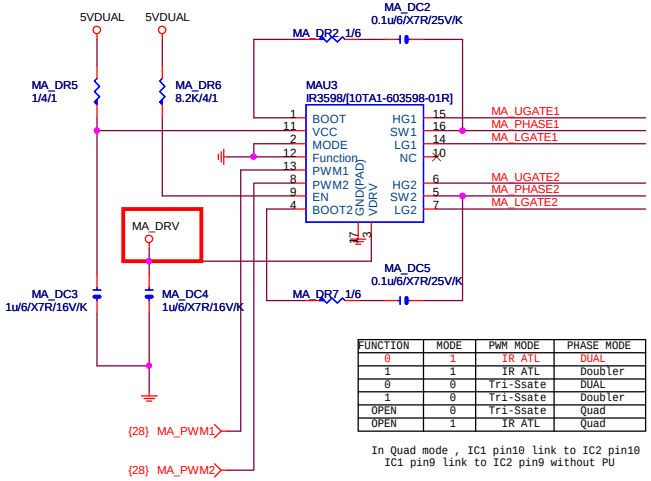
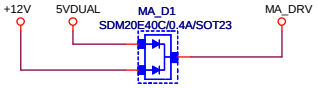
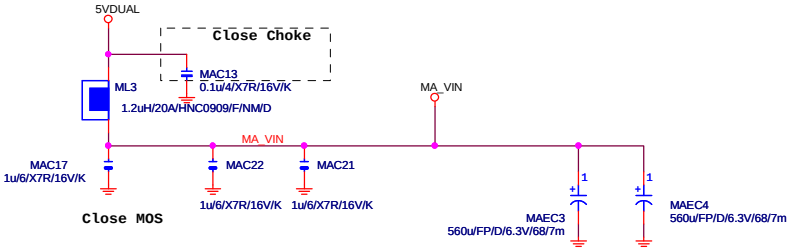
DDR_15V

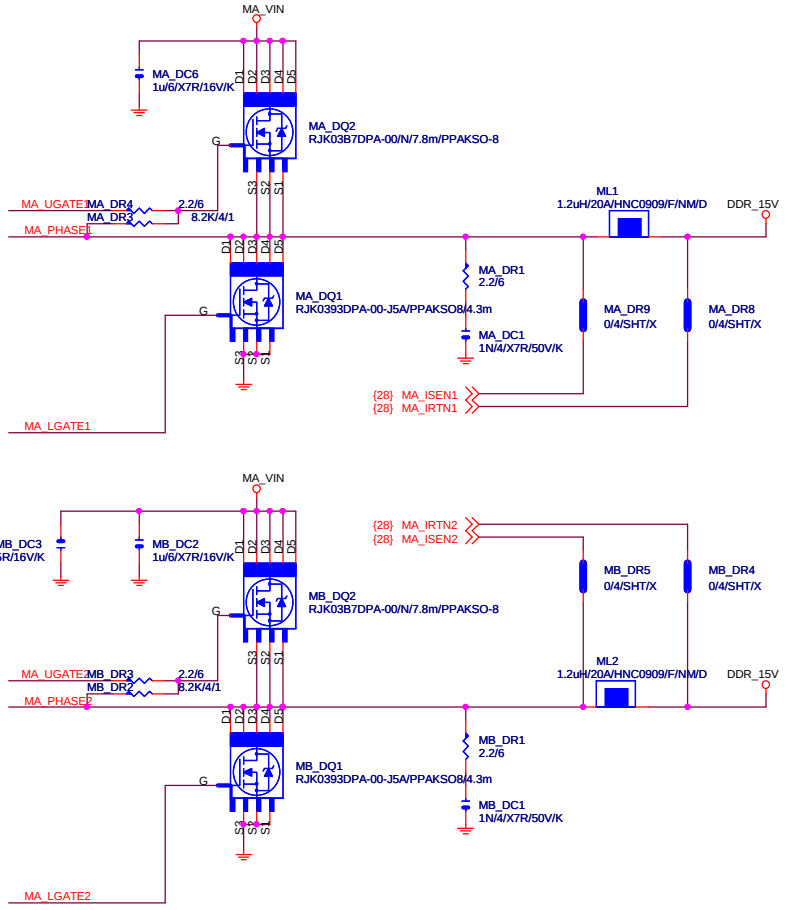


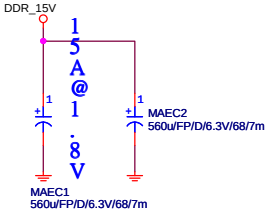
FUNCTION	MODE	PWM MODE	PHASE MODE
0	1	IR ATL	DUAL
1	1	IR ATL	Doubler
0	0	Tri-Ssate	DUAL
1	0	Tri-Ssate	Doubler
OPEN	0	Tri-Ssate	Quad
OPEN	1	IR ATL	Quad

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



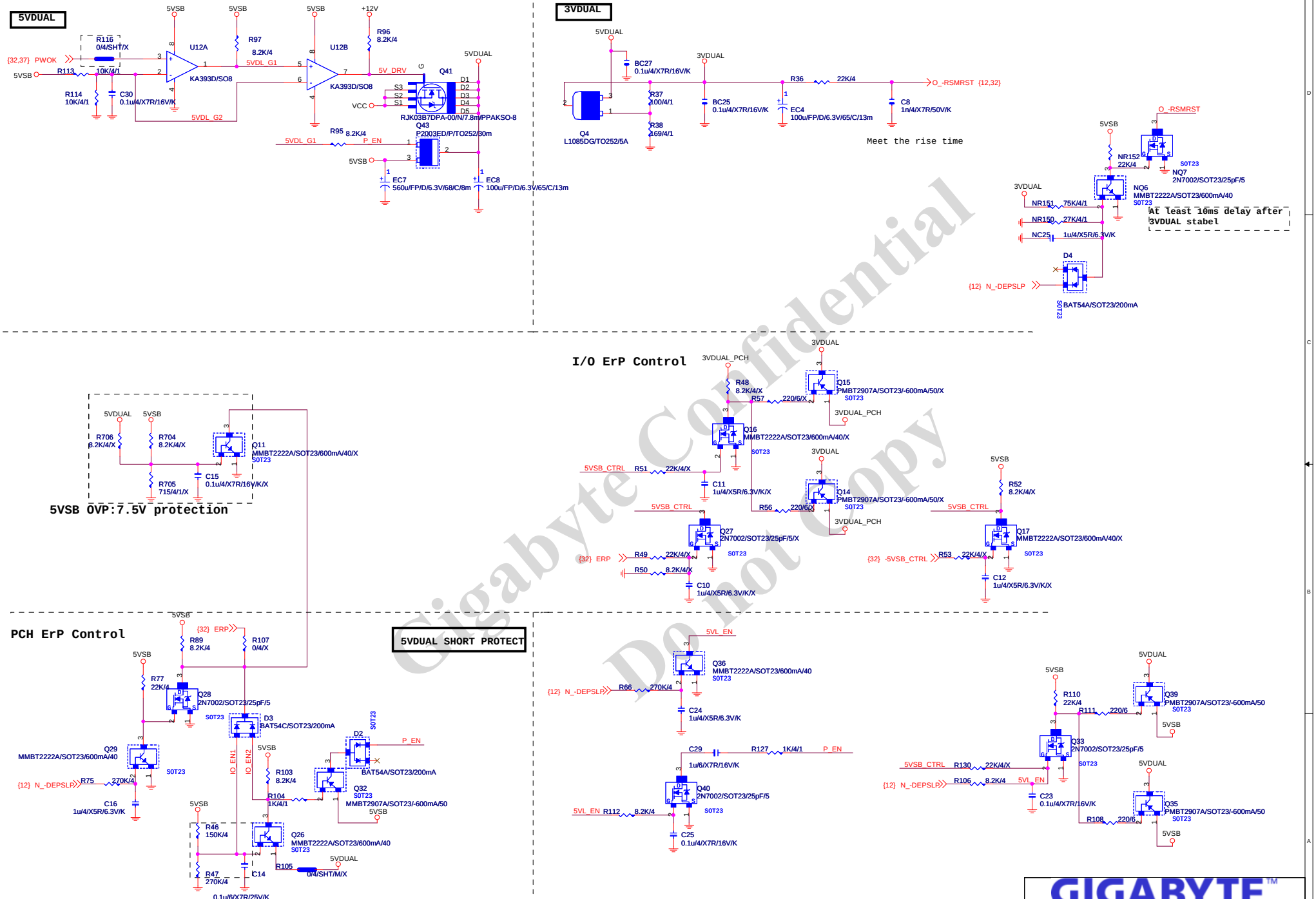






GIGABYTE™

Title: IR3570		
Size: Custom	Document Number: GA-Z87X-UD3H	Rev: 1.02
Date: Monday, April 01, 2013	Sheet 29 of 48	



GIGABYTE™

Title: 5VDUAL, 3VDAUL, ERP		
Size: Custom	Document Number: GA-Z87X-UD3H	Rev: 1.02
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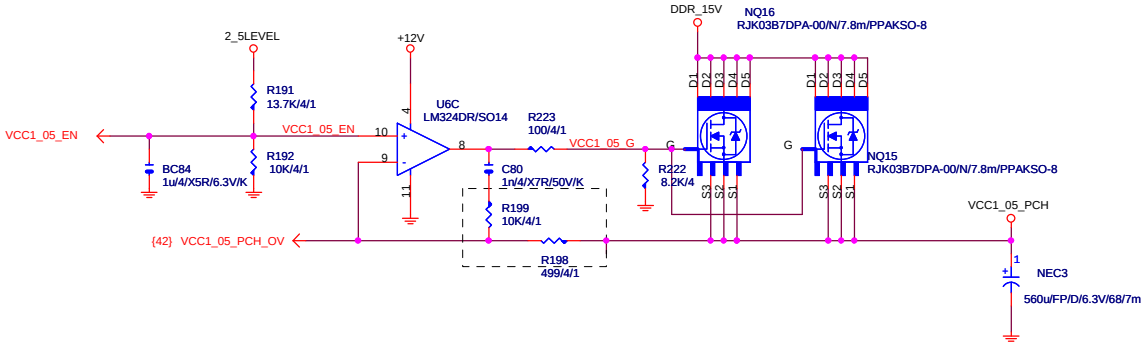
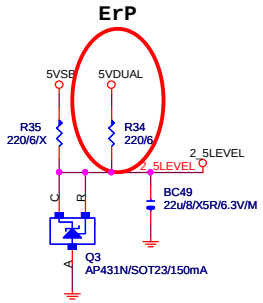
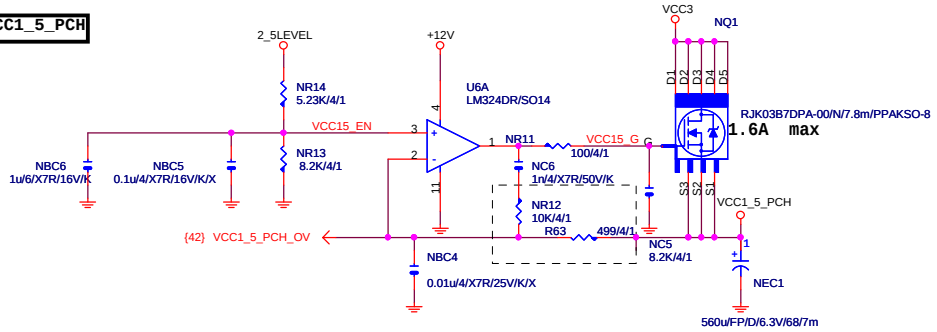
VCC1_05_PCH





VCC1_5_PCH



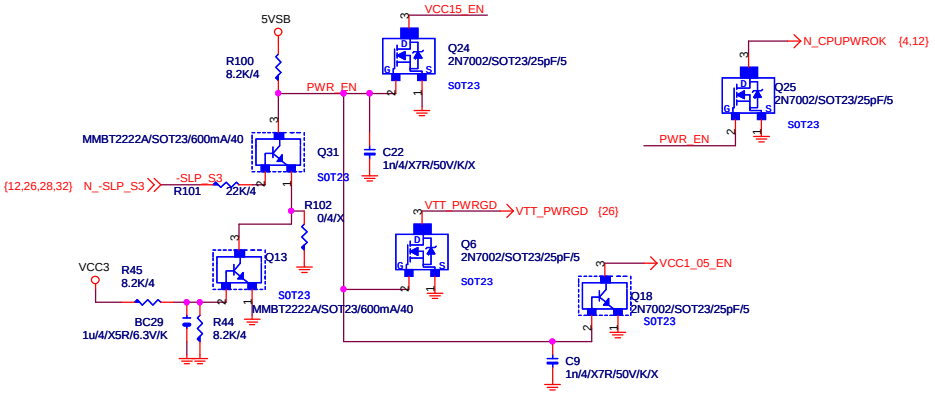
Rise/Fall max 50us

Rise:20% - 80%

Fall :2V- 0.8V

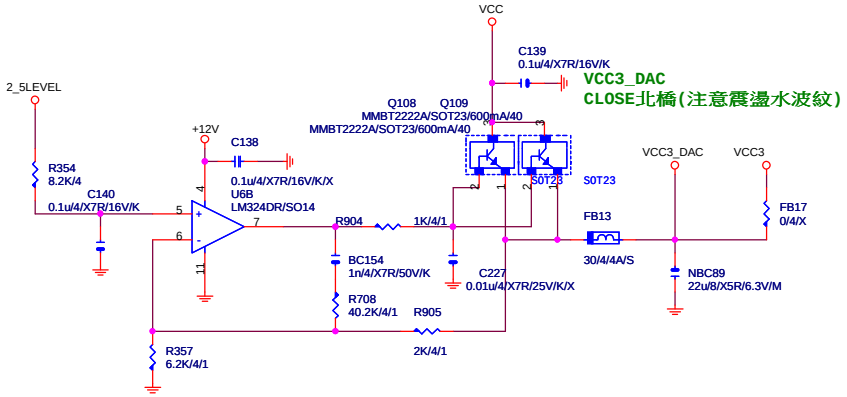
At least 10ms delay after 3VDUAL ready

Pop when PCH & SIO both use 3VDUAL-PCH



VCC3_DAC

(3.3V/70mA+360uA)



GIGABYTE		
Title: VCC 1.05 PCH, VCC1.5 PCH, CC3 DAC		
Size: Custom	Document Number: GA-Z87X-UD3H	Rev: 1.02
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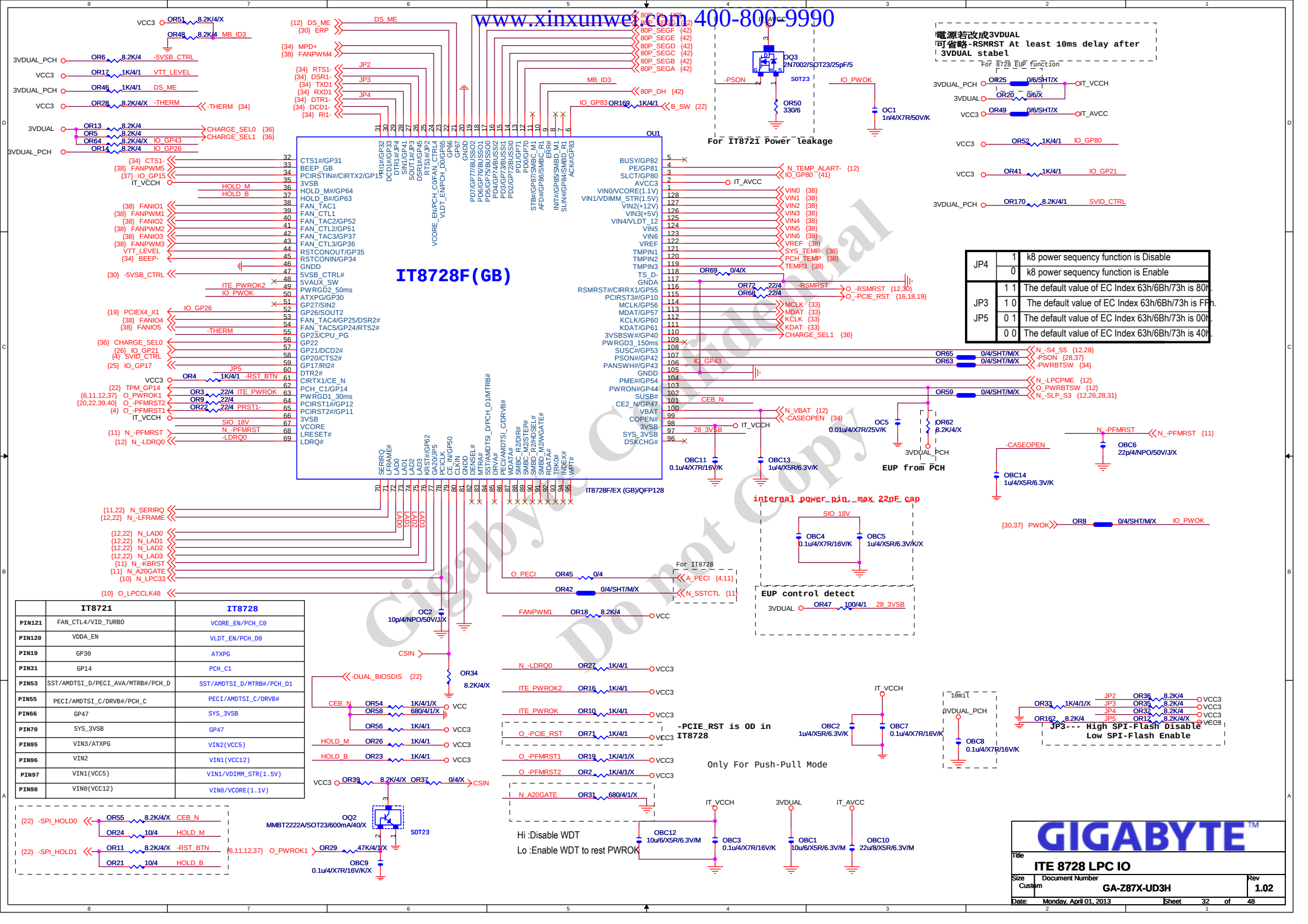

JP4		
	1	k8 power sequency function is Disable
	0	k8 power sequency function is Enable
JP3 JP5	1 1	The default value of EC Index 63h/6Bh/73h is 80h.
	1 0	The default value of EC Index 63h/6Bh/73h is FFh.
	0 1	The default value of EC Index 63h/6Bh/73h is 00h.
	0 0	The default value of EC Index 63h/6Bh/73h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

Title	ITE 8728 LPC IO	
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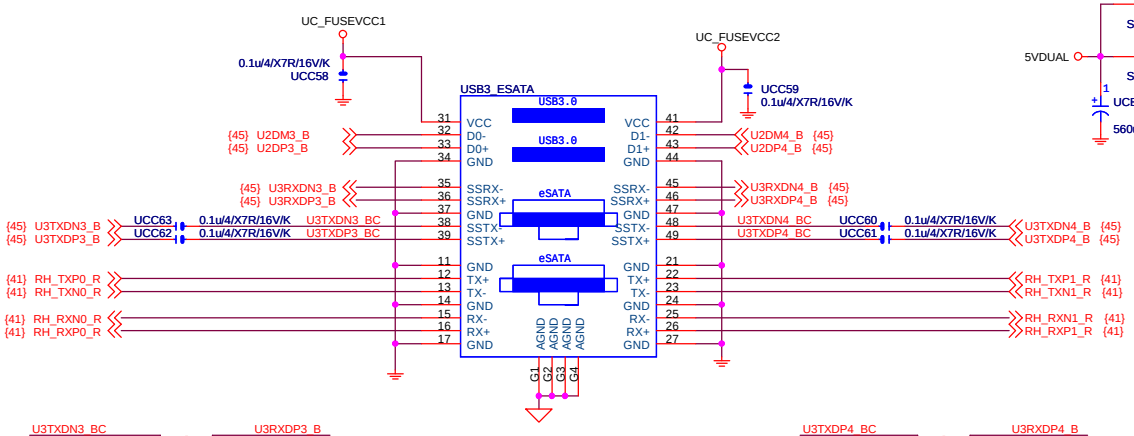
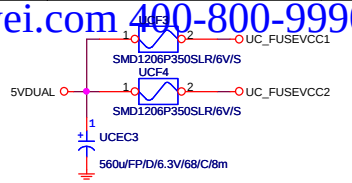
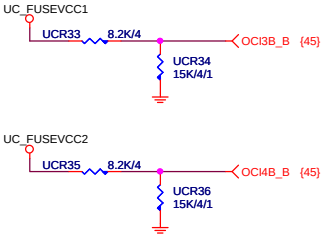
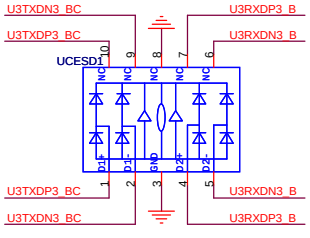
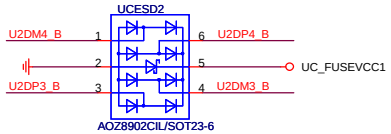




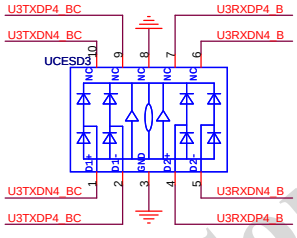




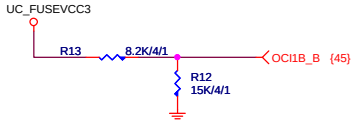
Close to connector



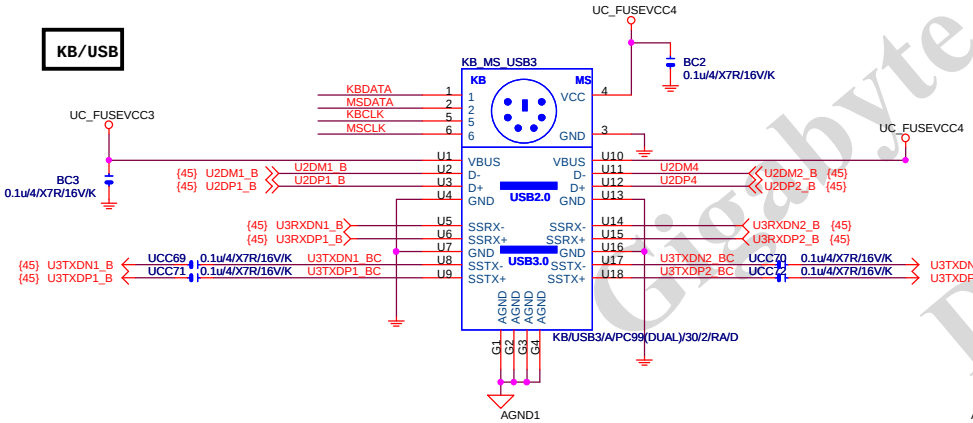
Close to connector

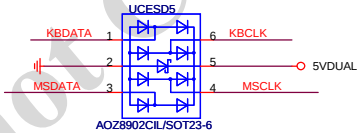


Close to connector

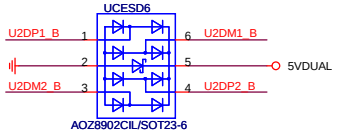


KB/USB

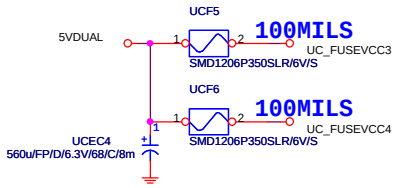


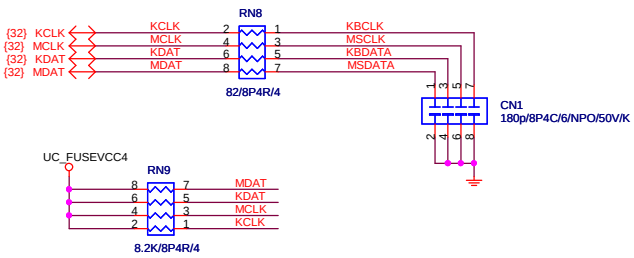


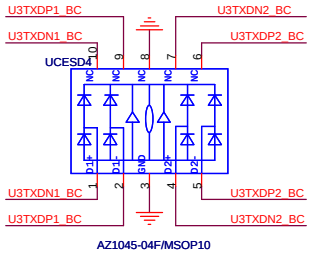
Close to connector



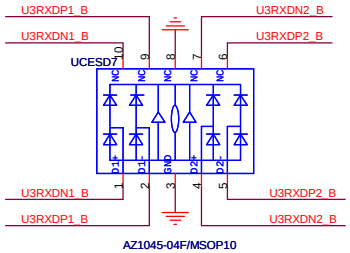
Close to connector







Close to connector



Close to connector

GIGABYTE™

Title: USB3_ESATA / KB_USB3		
Size: Custom	Document Number: GA-Z87X-UD3H	Rev: 1.02
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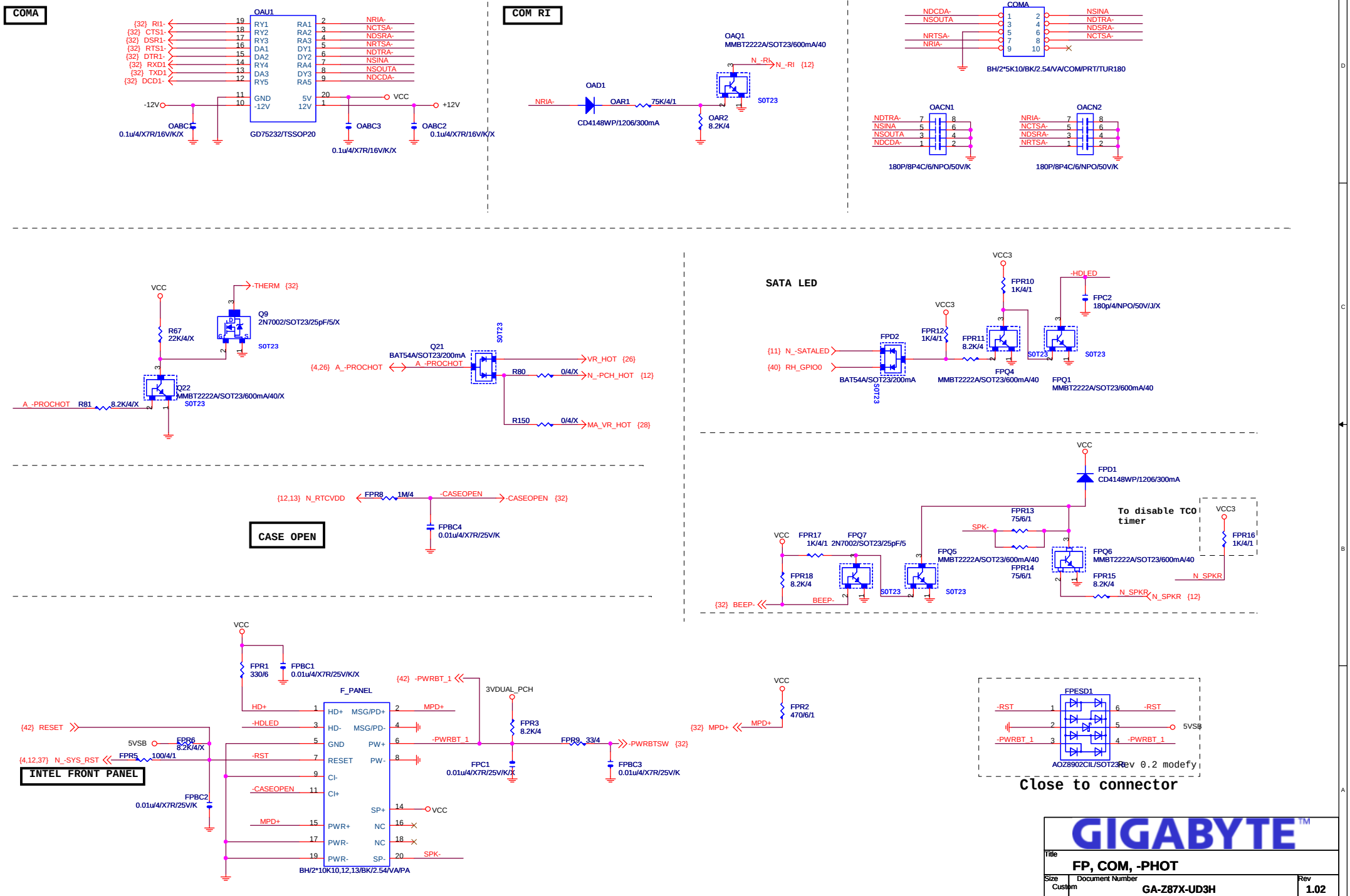

Title	FP, COM, -PHOT
Size	Custom
Document Number	GA-Z87X-UD3H
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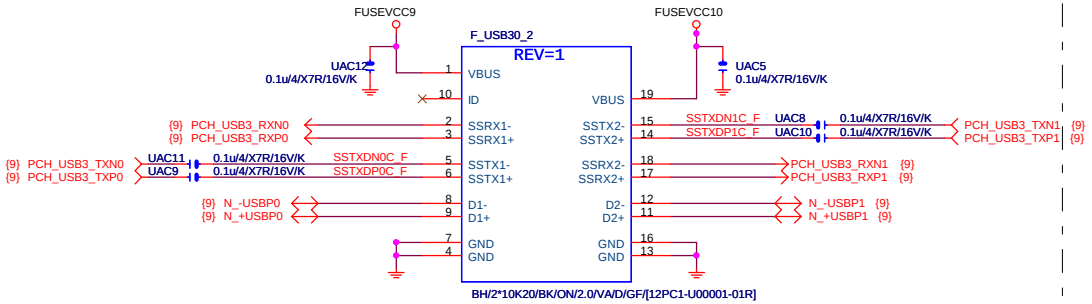
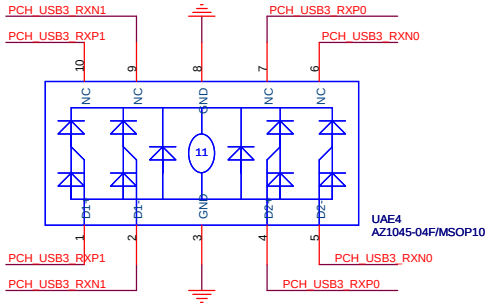
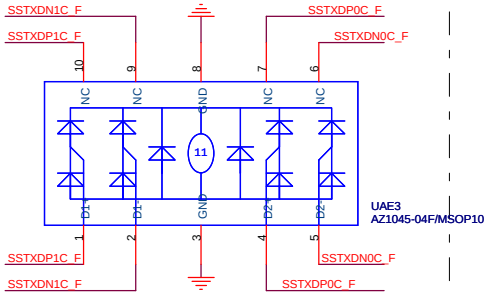
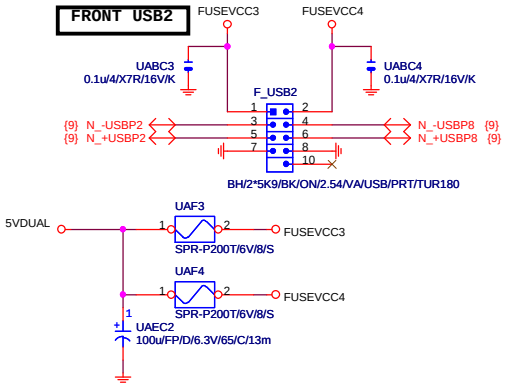
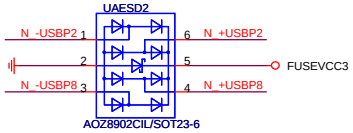


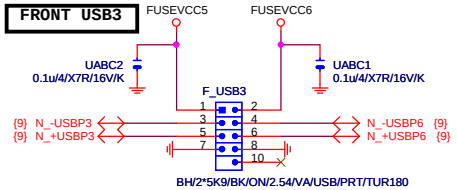


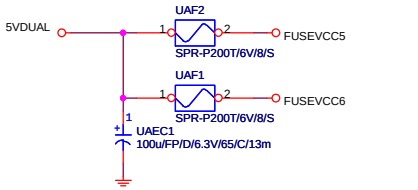


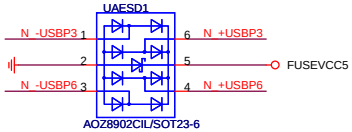




Close to connector







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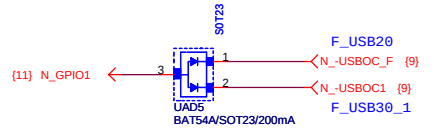

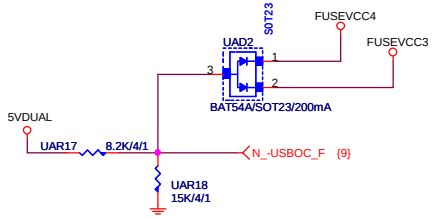

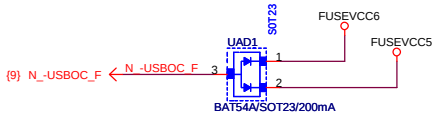

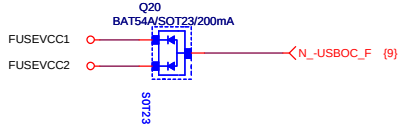

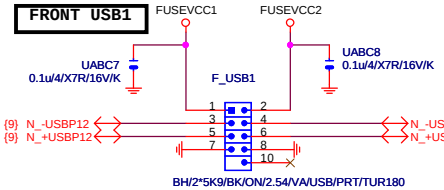

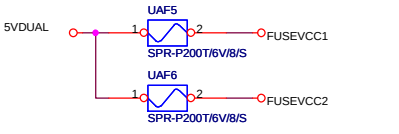

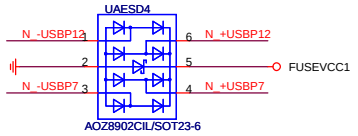

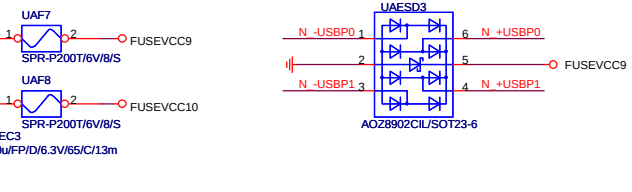

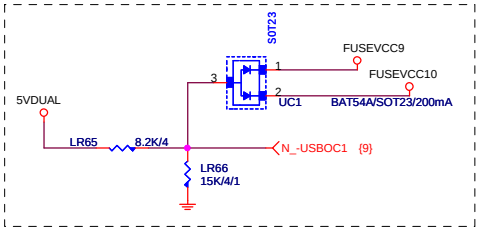

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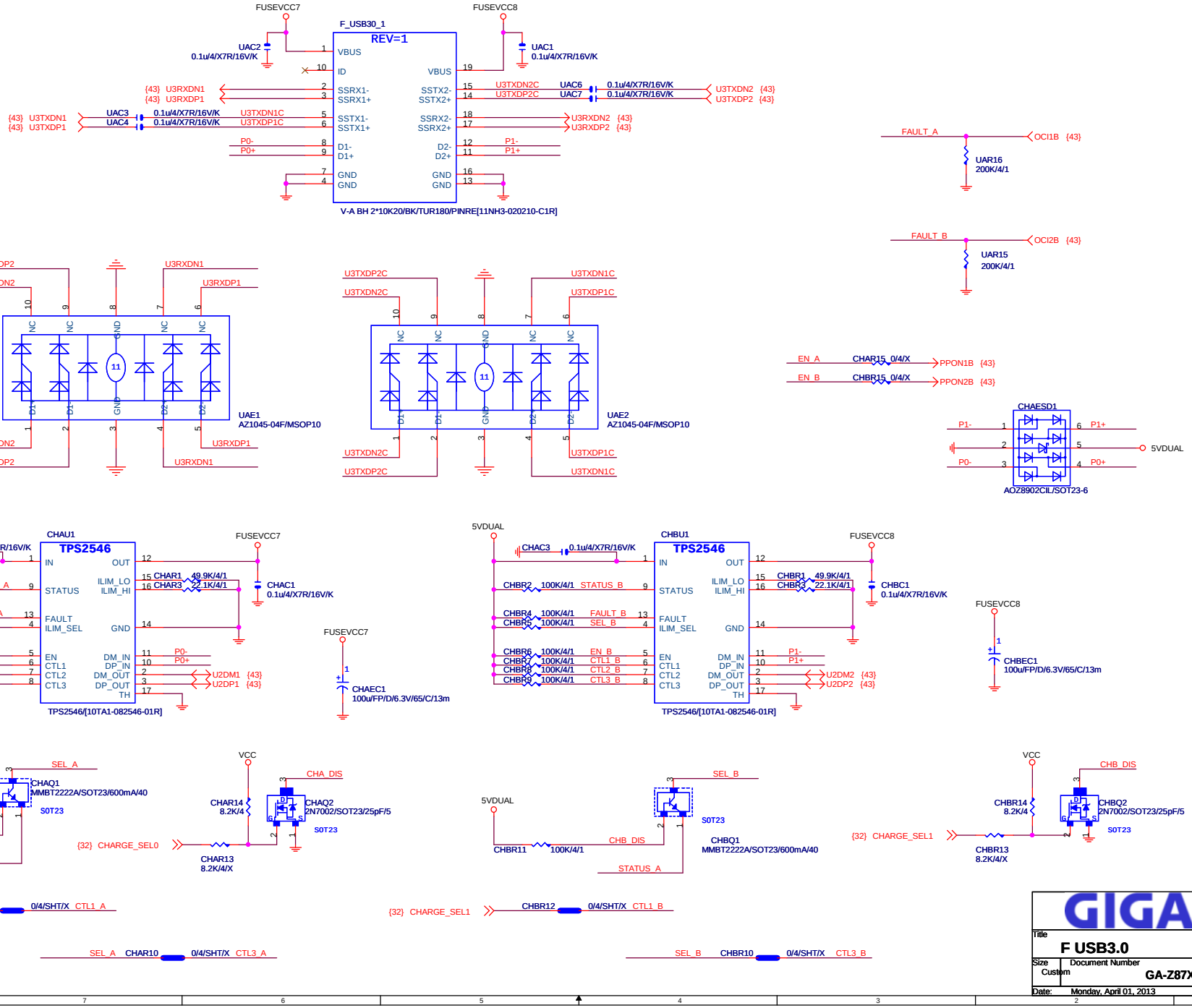

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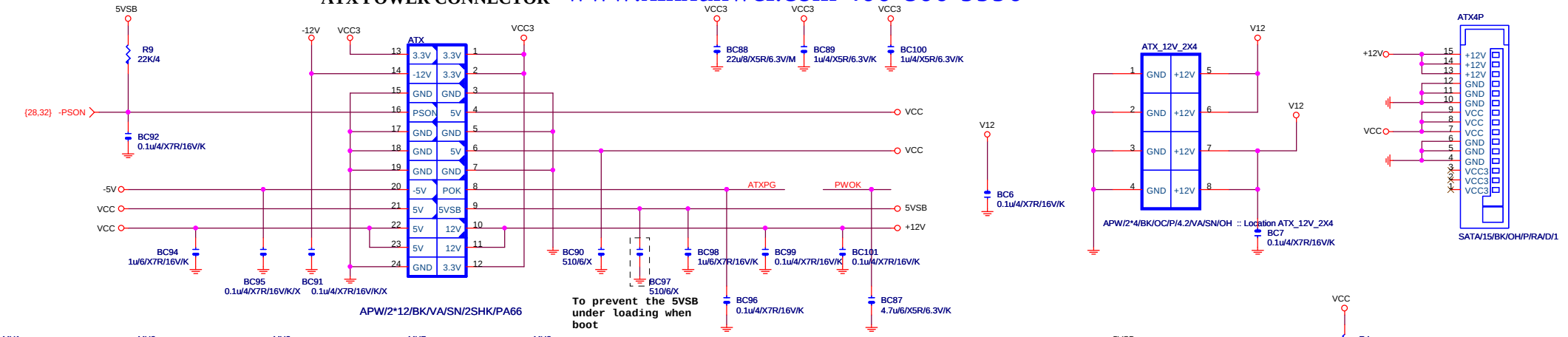
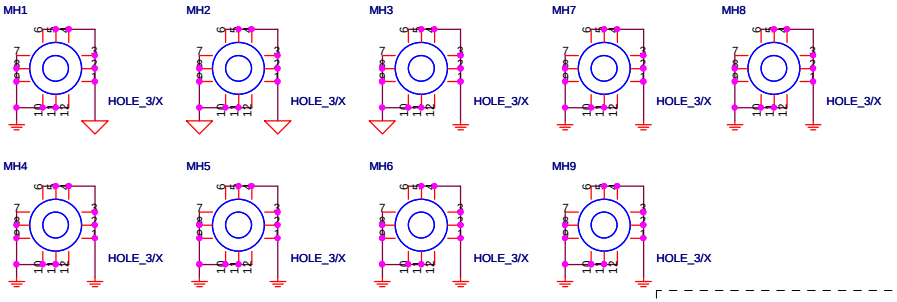
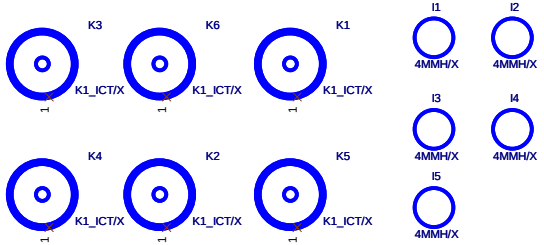
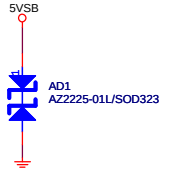
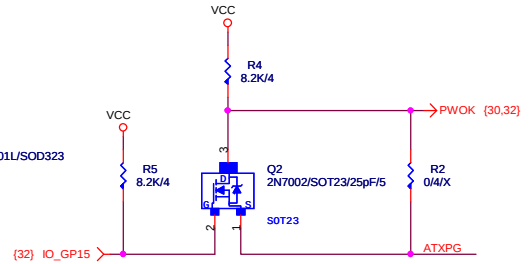
ATX POWER CONNECTOR

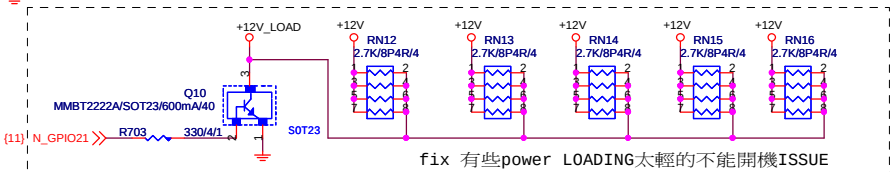


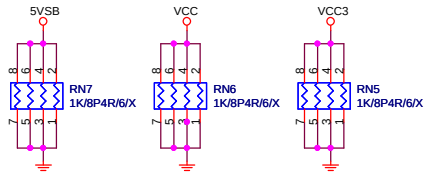








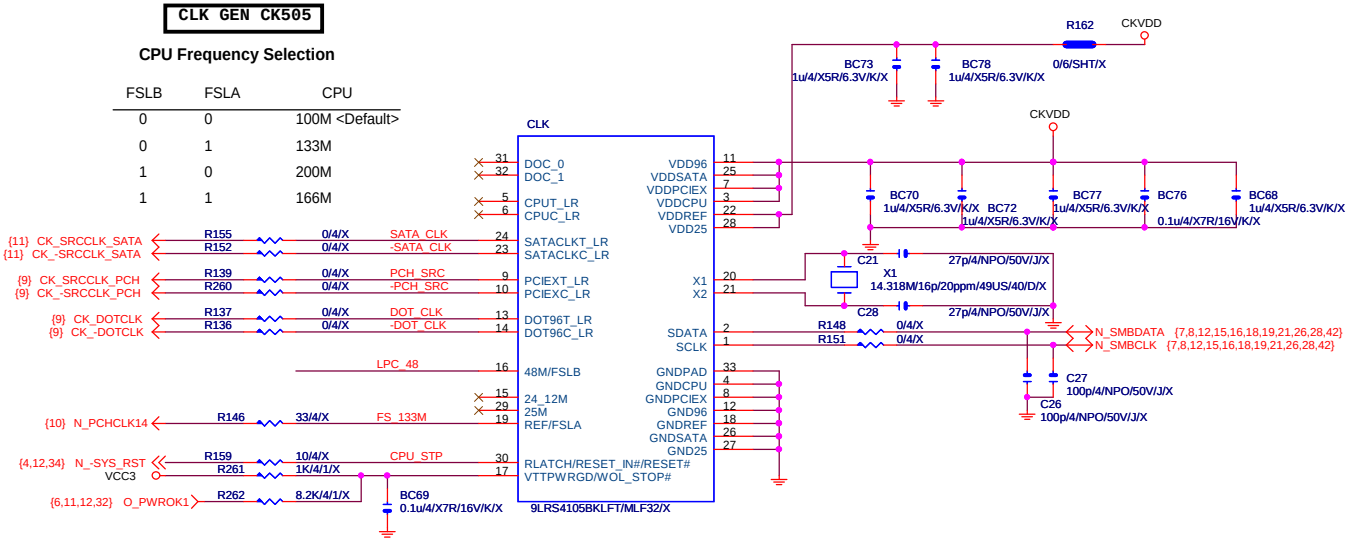


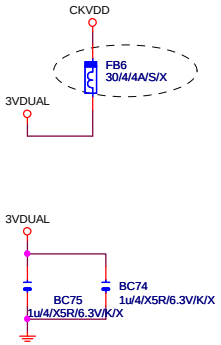


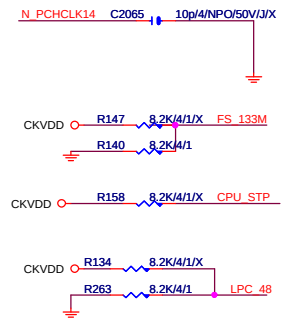
CLK GEN CK505

CPU Frequency Selection

FSLB	FSLA	CPU
0	0	100M <Default>
0	1	133M
1	0	200M
1	1	166M







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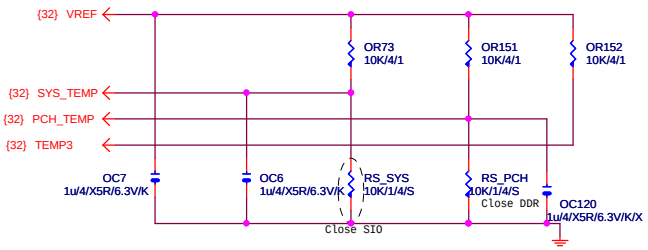
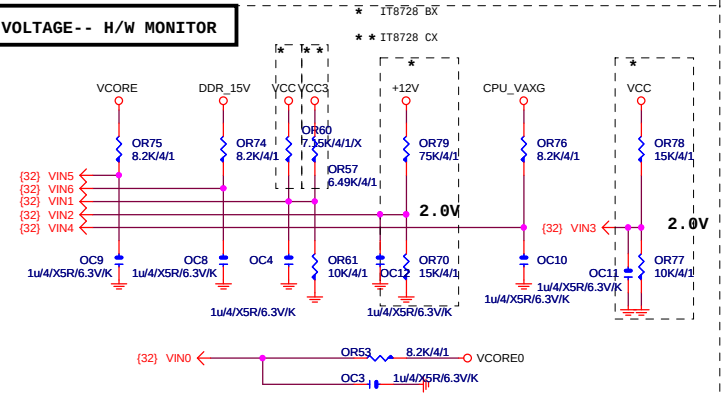
TEMP H/W MONITOR

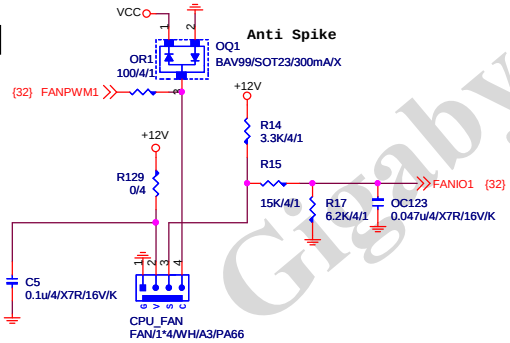


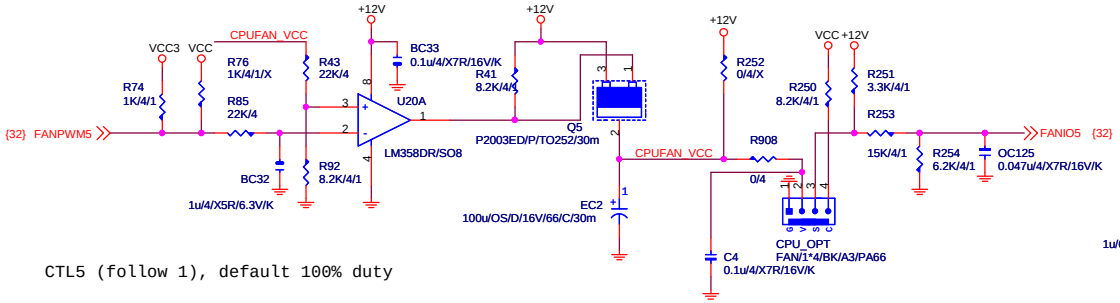
VOLTAGE-- H/W MONITOR



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

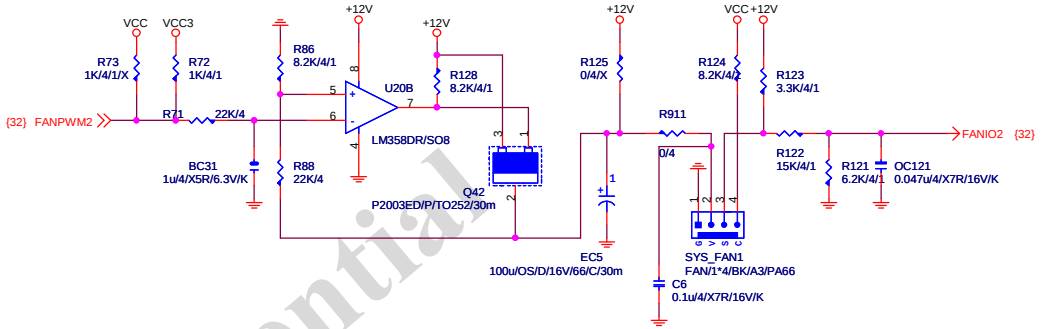
CPU SMART FAN



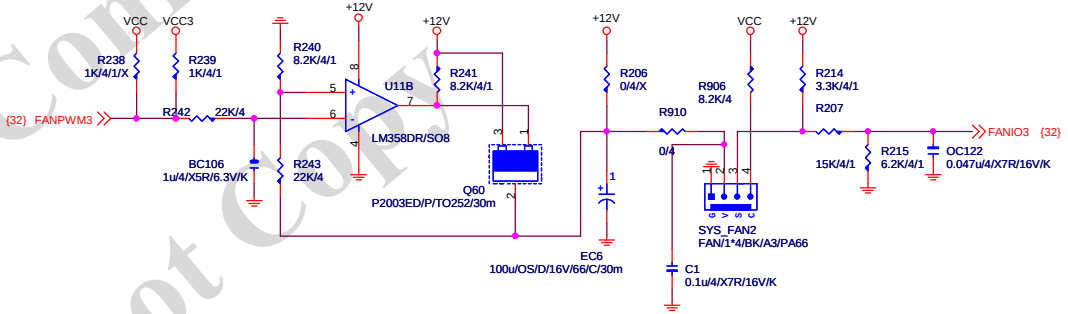


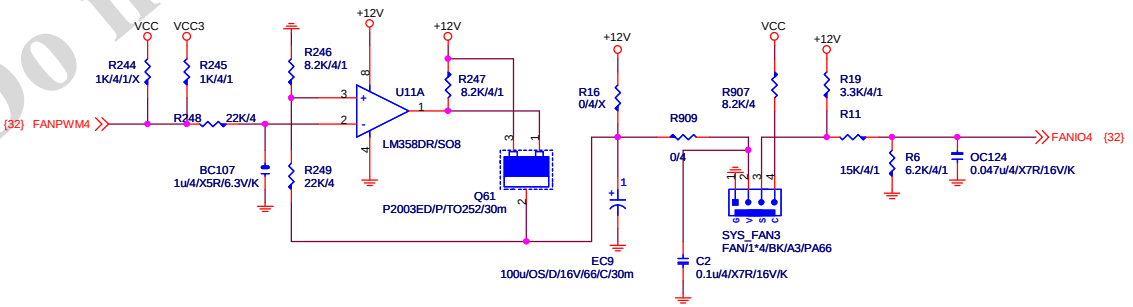
CTL5 (follow 1), default 100% duty

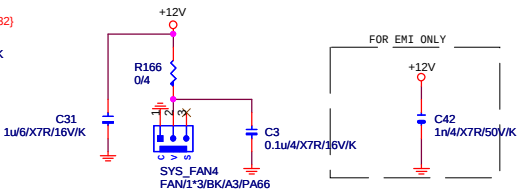
Linear SYS_FAN



Linear SYS_FAN







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Title	HWM, FAN CTRL	
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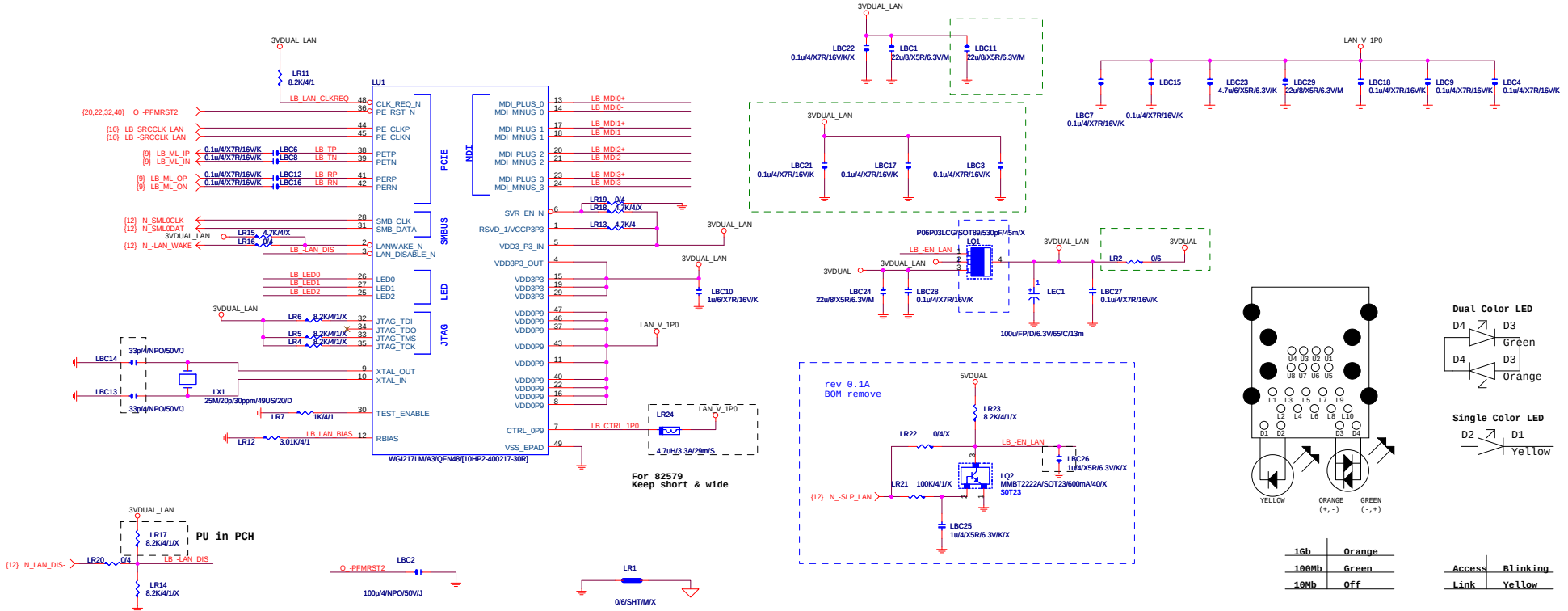

Title	INTEL LAN i217V
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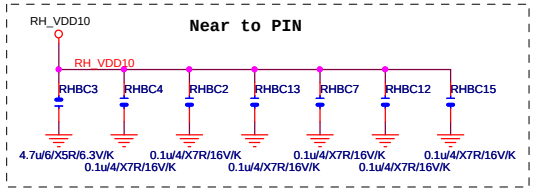

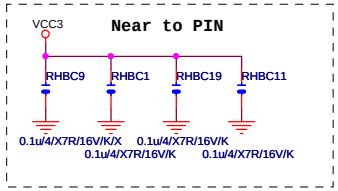

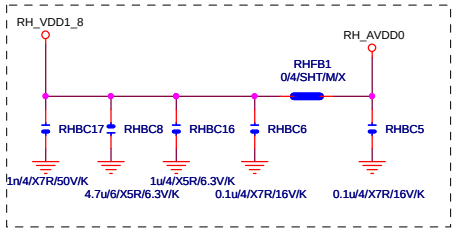

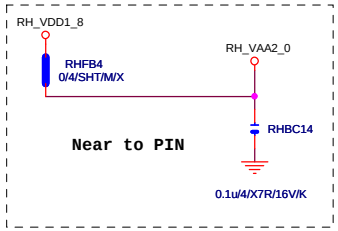

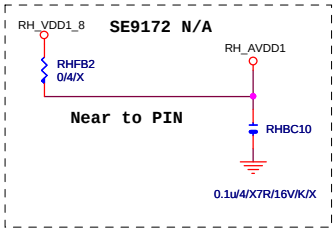

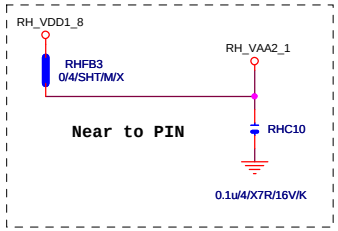

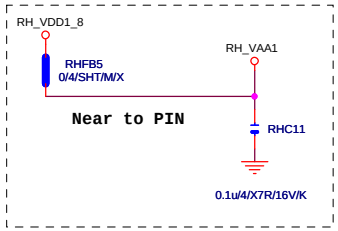

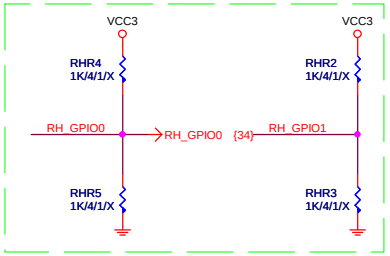

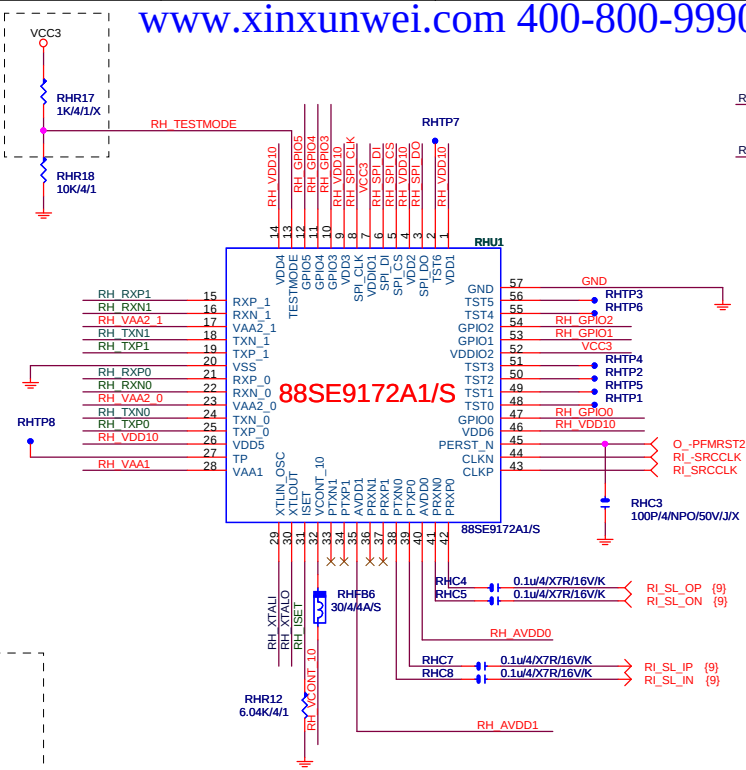

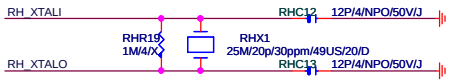

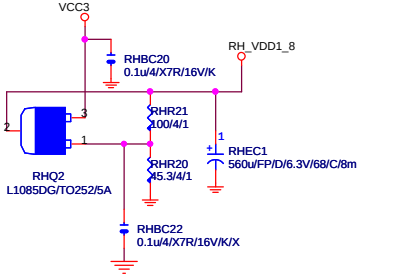

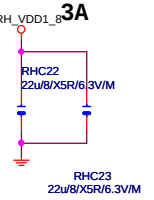

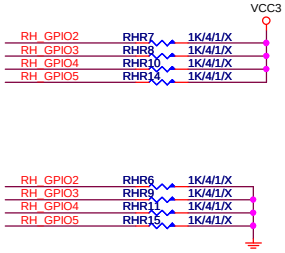

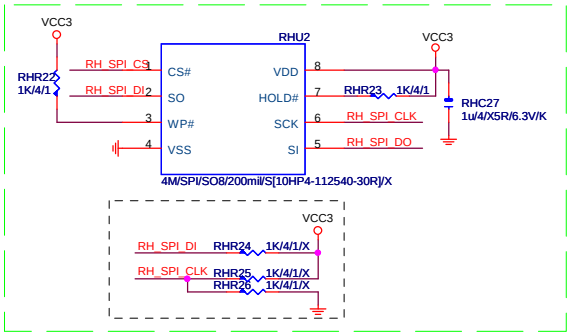

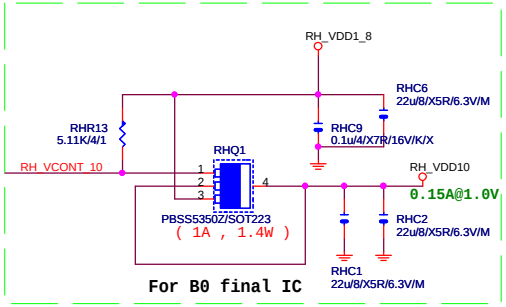

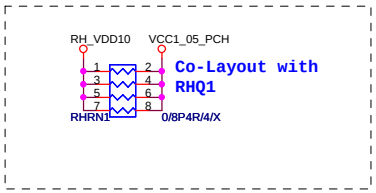

Marvell 9172 Power Requirements
Analog 1.8V 230mA
Core 1.0V 900mA
I/O 3.3V 50mA

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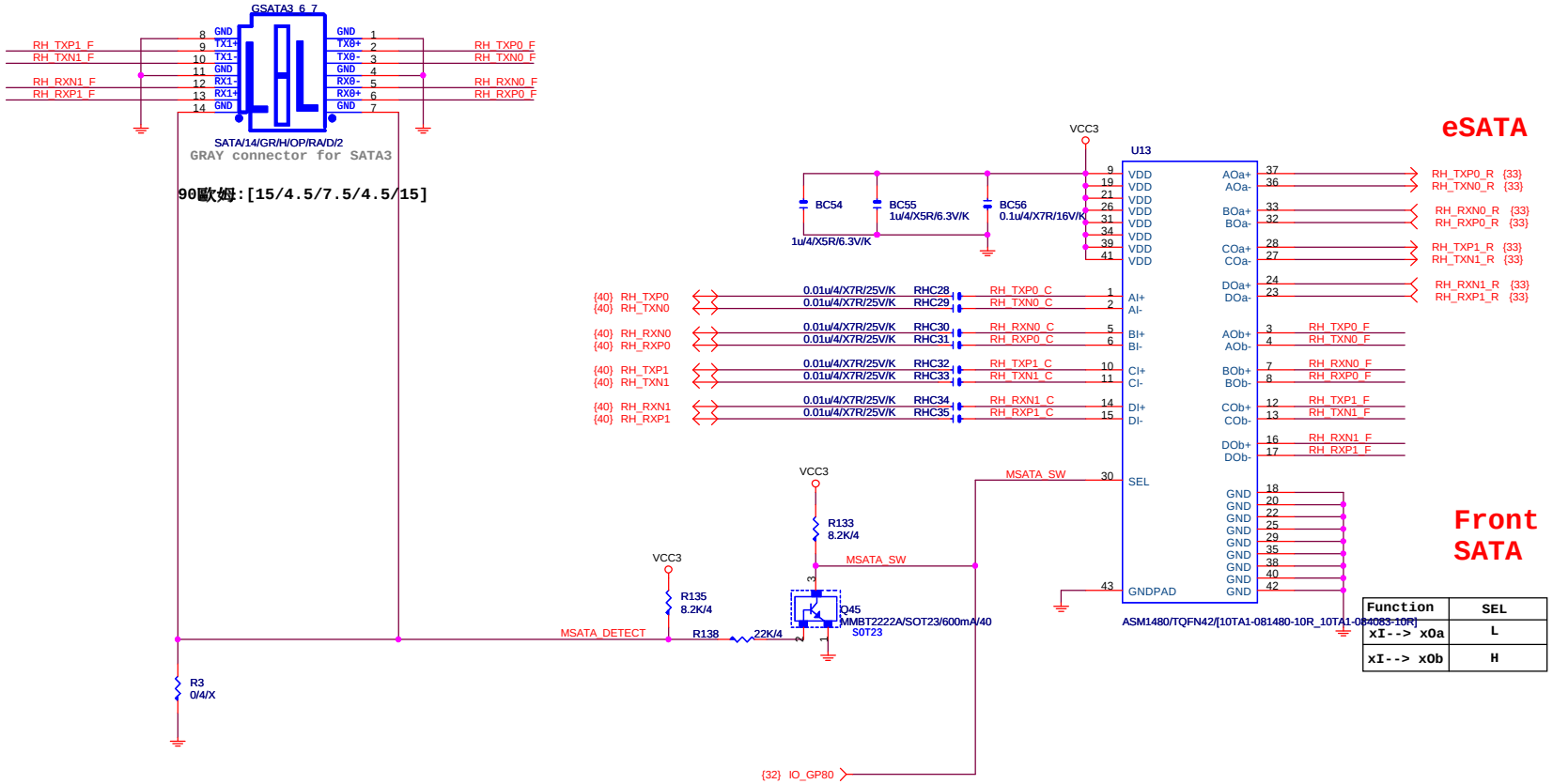

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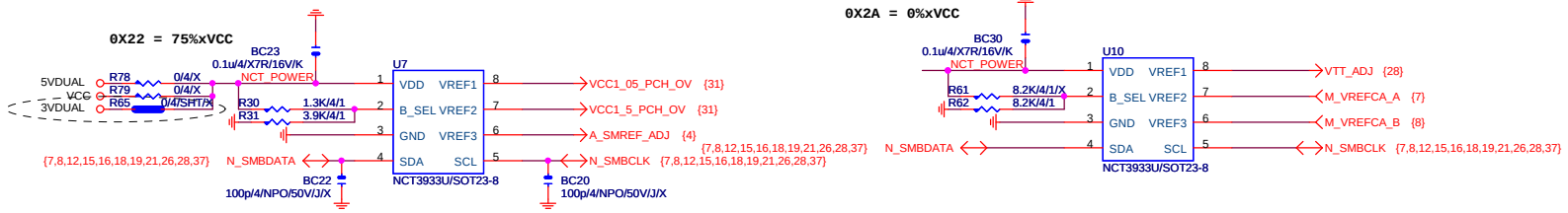
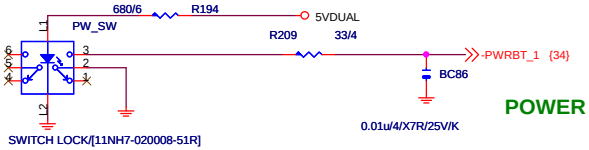
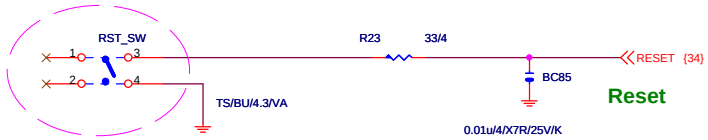
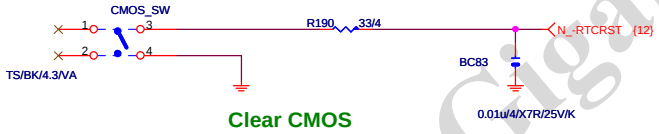




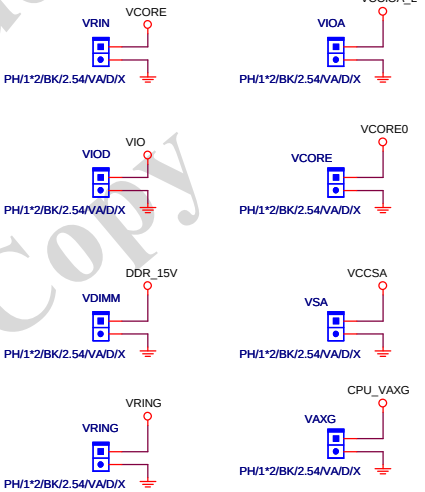
POWER



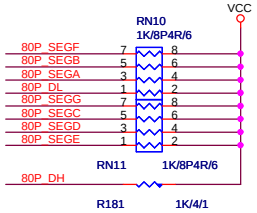
Reset

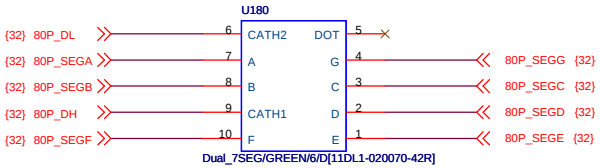


Clear CMOS

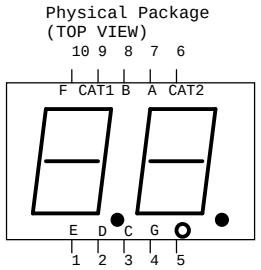


80 PORT





COMMON CATHODE



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Title: RST, PWR, CLR_CMOS, OV		
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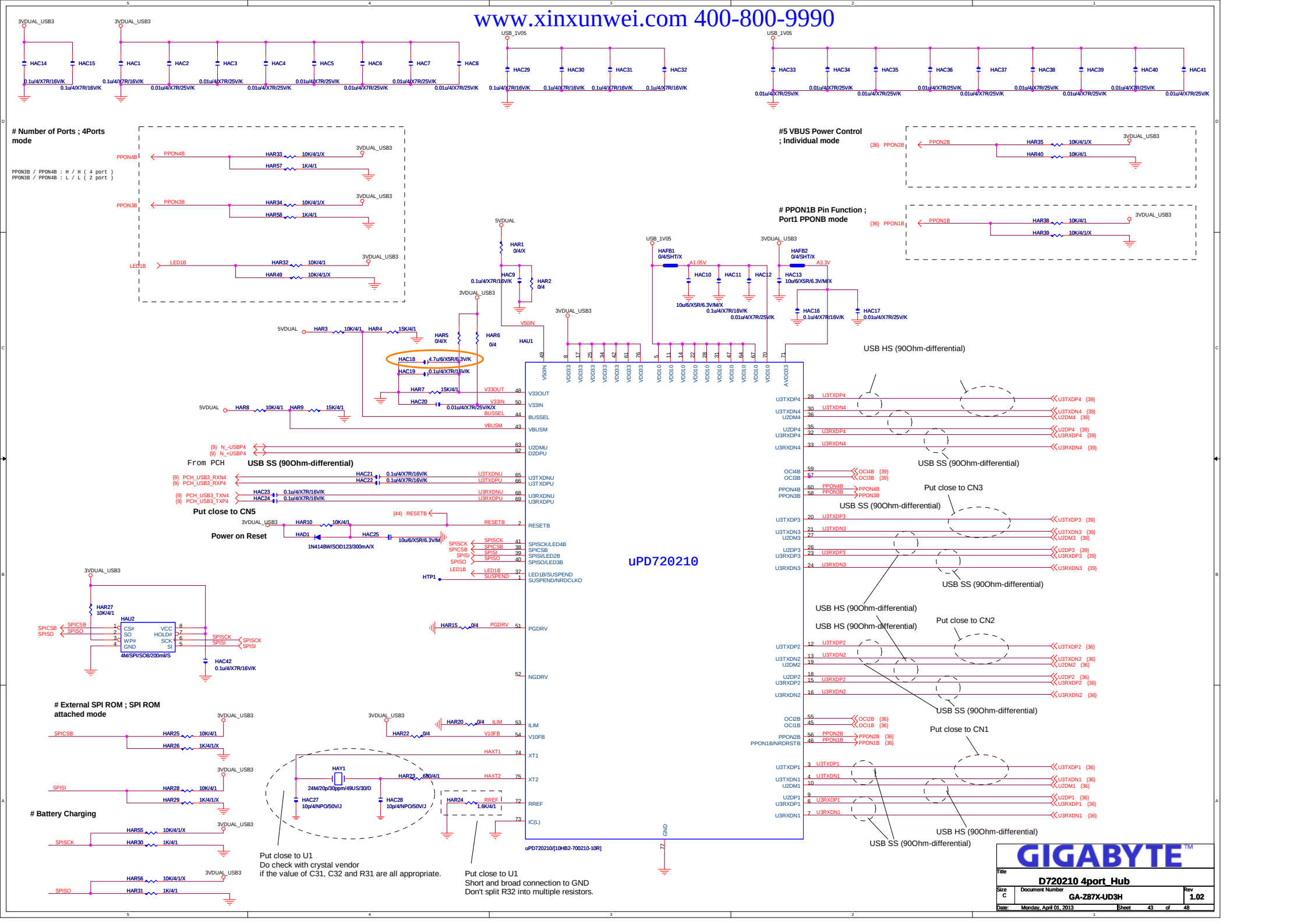
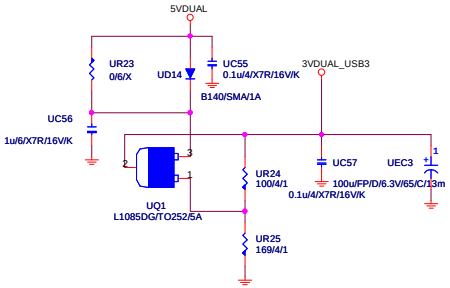
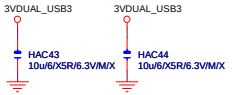
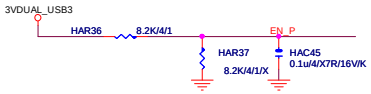


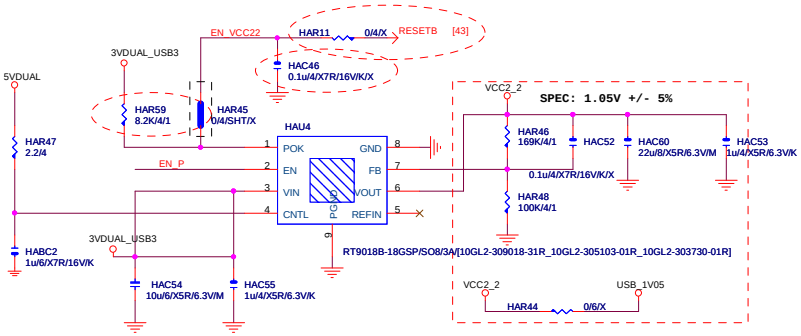
Title	D720210 4port_Hub		
Size C	Document Number GA-Z87X-UD3H		Rev 1.02
Date: Monday, April 01, 2013	Sheet 43 of 48		

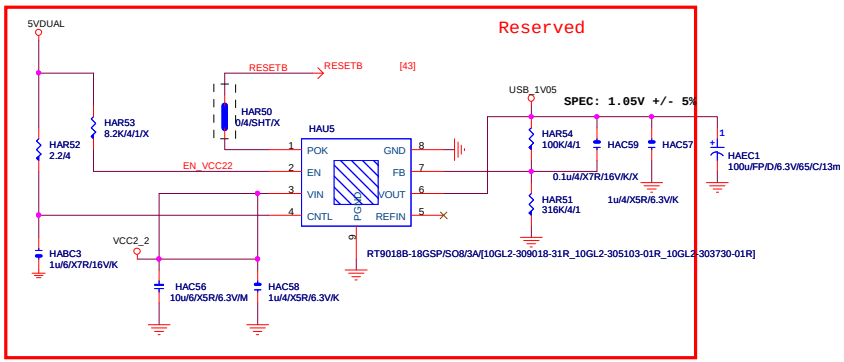


USB1_05V power consumption is 0.7A (w/o onchip regulators)









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Title: D720210 4port_Hub		
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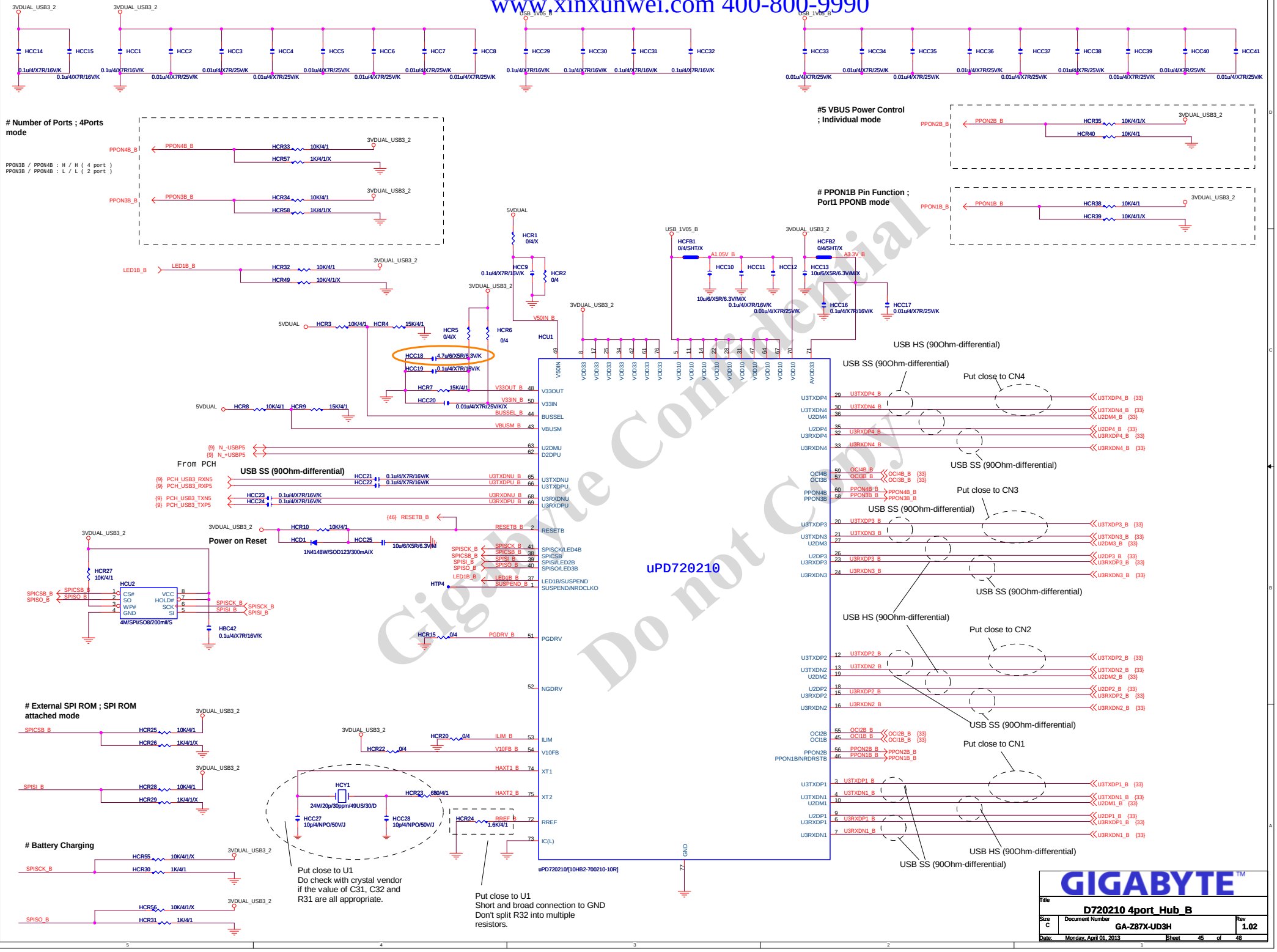
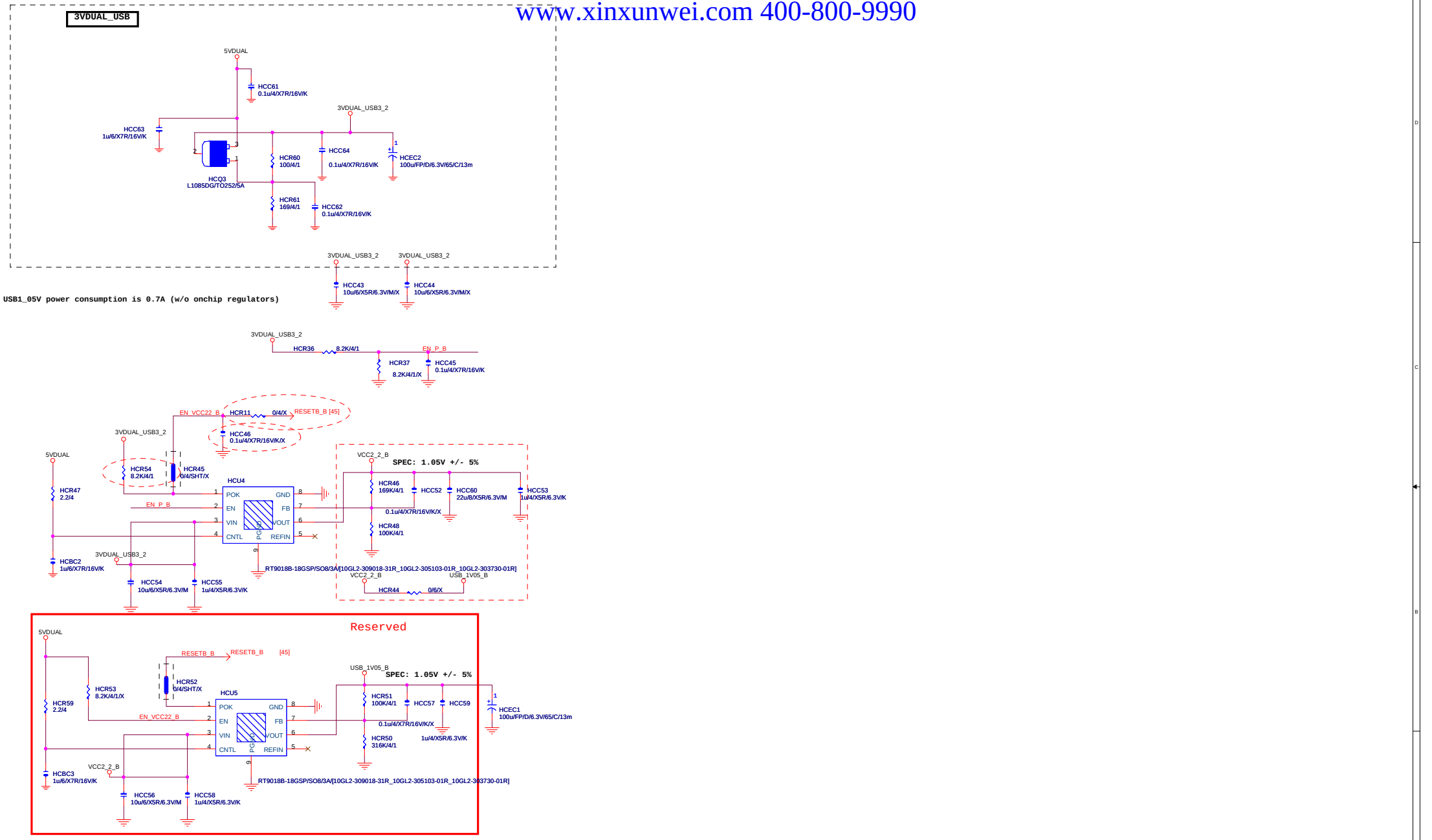


Title	D720210 4port_Hub_B	
Size: C	Document Number: GA-Z87X-UD3H	Rev: 1.02
Date: Monday, April 01, 2013	Sheet 45 of 48	



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Title	D720210 4port_Hub_B	
Size: Custom	Document Number: GA-Z87X-UD3H	Rev: 1.02
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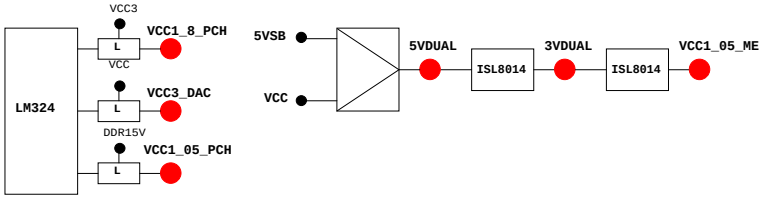
PCH GPIO LIST TABLE

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

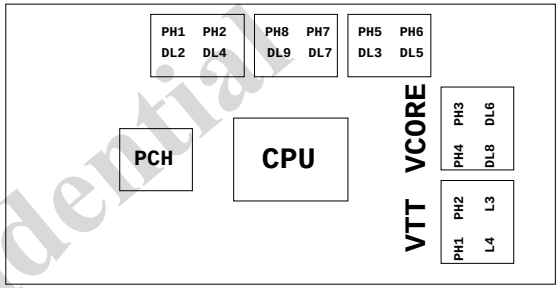
Super I/O ITE8720 GPIO Table

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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Title: TABLE LIST

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Title
RESET TABLE

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