

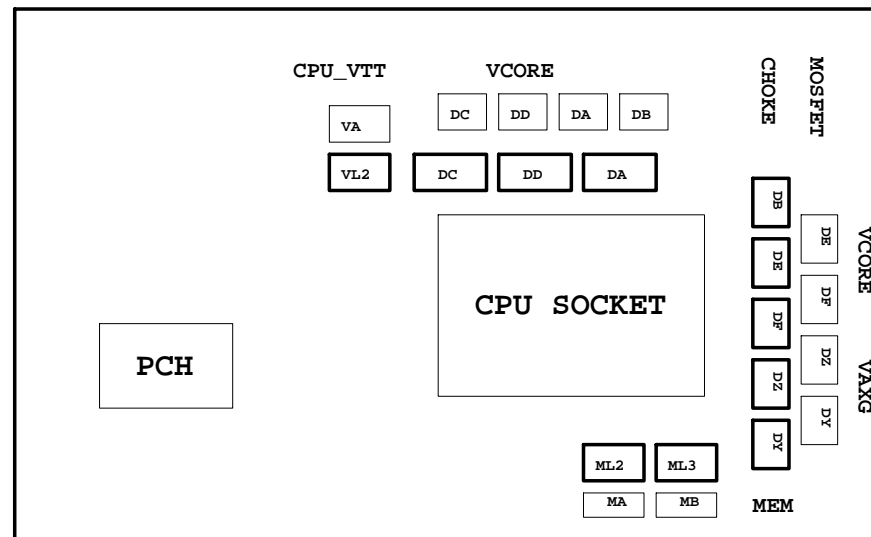
Model Name: GA-Z77X-UD4H 1.0

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
10	PCH_DP_HDMI_DVI_DAC,CLK BUFFER
11	PCH_HOST,SATA,PCI
12	PCH_GPIO,CTRL,AUDIO
13	PCH_PWR,GND
14	PCI EXPRESS*16 SLOT
15	PCI EXPRESS*8 SLOT
16	PCI EXPRESS*16/*8 SWITCH
17	PCI EXPRESS*1 SLOTS X3
18	PCI EXPRESS*4 SLOT / SWITCH
19	IT8892 PCIE to PCI BRIDGE
20	PCI SLOT
21	DP / HDMI / DVI Connector
22	mSATA Connector
23	Dual BIOS , TPM
24	VT2021
25	REAR AUDIO JACK
26	VCORE PWM_IR3567-1
27	VCORE PWM_IR3567-2

SHEET TITLE

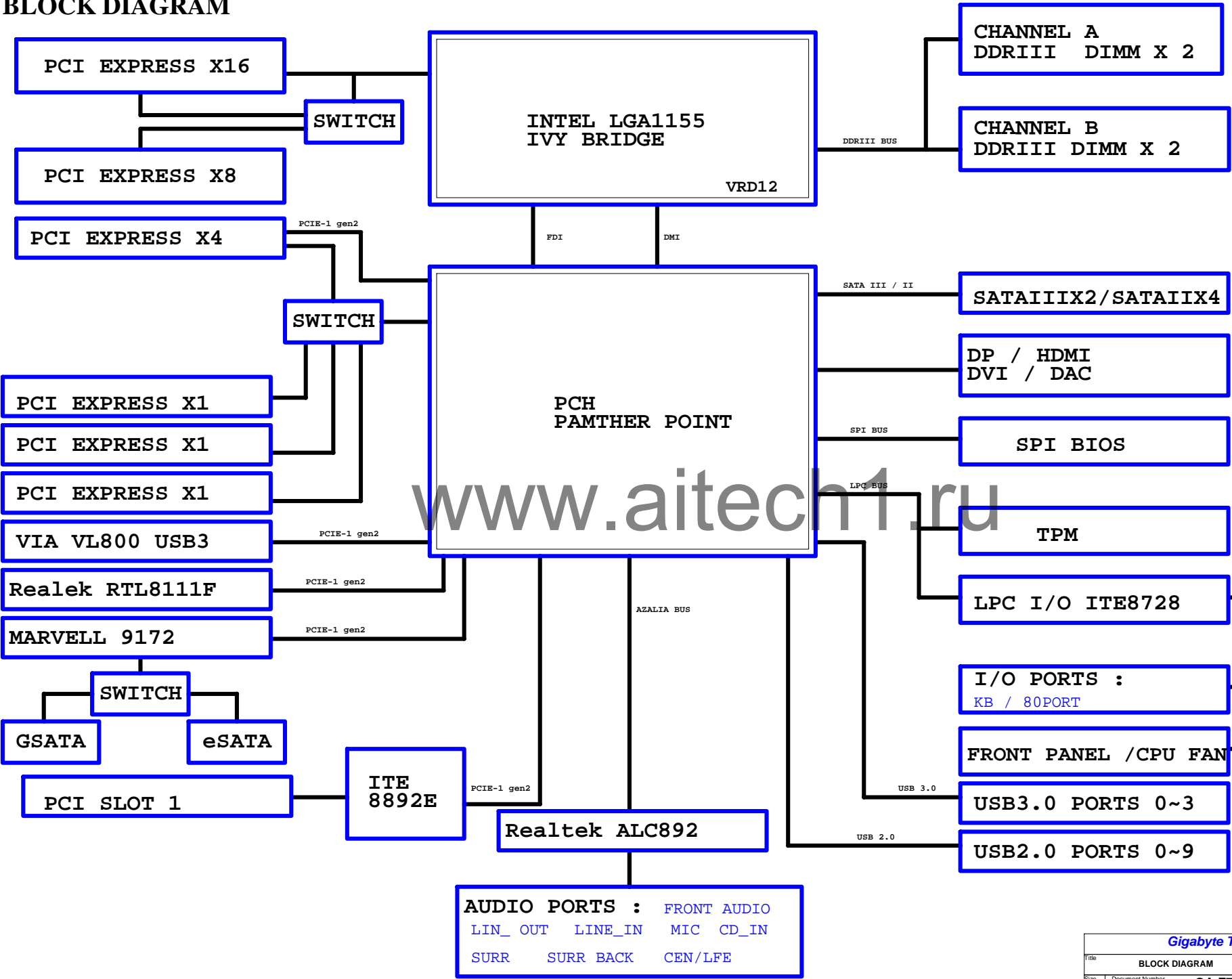
28	DDR_15V & CPUVTT PWM_IR3570-1
29	DDR_15V & CPUVTT PWM_IR3570-2
30	DISCRETE POWER 1
31	DISCRETE POWER 2
32	I/O IT8728F
33	USB3_ESATA , KB/USB3, -PHOT
34	F_PANEL , F_USB , F_USB3
35	ATX POWER, CLOCK GEN
36	HWM, FAN CTRL
37	Atheros 8151
38	ESATA SE9172
39	80PORT / PWR SW / OV NCT3933
40	VIA VL800
41	TABLE LIST



Component value change history

[illegible][illegible]

BLOCK DIAGRAM

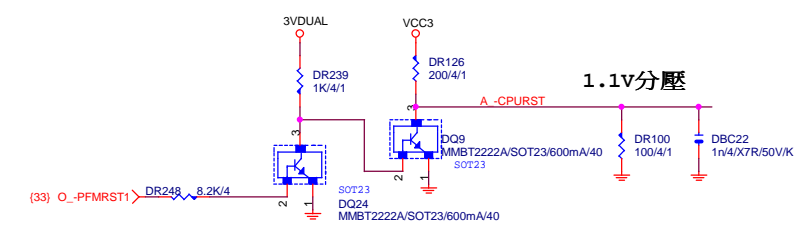


CFG5:1: 1X16 PEG
CFG5:0: 2X8 PEG

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	RSVD
0	1	RSVD
0	0	X8_X4_X4

CFG 0-17 all internal PULL-UP



(33) O_PFMST1 DR248 8.2K/4

LGA1155A

M_AAA0	AV27	SA_MA[0]	SA_DQ[0]	AK3	M_DQSA0
M_AAA1	AY24	SA_MA[1]	SA_DQ[1]	AK2	M_DQSA0
M_AAA2	AW24	SA_MA[2]	SA_DQ[2]		
M_AAA3	AV23	SA_MA[3]	SA_DQ[3]	AJ3	M_DA0
M_AAA4	AV23	SA_MA[4]	SA_DQ[4]	AJ4	M_DA1
M_AAA5	AT24	SA_MA[5]	SA_DQ[5]	AL3	M_DA2
M_AAA6	AT23	SA_MA[6]	SA_DQ[6]	AL4	M_DA3
M_AAA7	AU22	SA_MA[7]	SA_DQ[7]	AJ2	M_DA4
M_AAA8	AV22	SA_MA[8]	SA_DQ[8]	AJ1	M_DA5
M_AAA9	AT22	SA_MA[9]	SA_DQ[9]	AL2	M_DA6
M_AAA10	AV28	SA_MA[10]	SA_DQ[10]	AL1	M_DA7
M_AAA11	AU21	SA_MA[11]	SA_DQ[11]		
M_AAA12	AT21	SA_MA[12]	SA_DQ[12]	AP3	M_DQSA1
M_AAA13	AW32	SA_MA[13]	SA_DQ[13]	AP2	M_DQSA1
M_AAA14	AU20	SA_MA[14]	SA_DQ[14]		
M_AAA15	AT20	SA_MA[15]	SA_DQ[15]		

(7) M_SWEA	M_SCASA	AW29	SA_WE#		
(7) M_SCASA	M_SRASA	AV30	SA_CAS#		
(7) M_SRASA		AU28	SA_RAS#		
(7) M_SBAA0	M_SBAA0	AY29	SA_BS[0]		
(7) M_SBAA1	M_SBAA1	AW28	SA_BS[1]		
(7) M_SBAA2	M_SBAA2	AV20	SA_BS[2]		
(7) M-CSA0	M-CSA0	AU29	SA_CS#		
(7) M-CSA1	M-CSA1	AV32	SA_CS#		
(7) M-CSA2	M-CSA2	AW30	SA_CS#		
(7) M-CSA3	M-CSA3	AU33	SA_CS#		
(7) M_CKEA0	M_CKEA0	AV19	SA_CKE[0]		
(7) M_CKEA1	M_CKEA1	AT19	SA_CKE[1]		
(7) M_CKEA2	M_CKEA2	AU18	SA_CKE[2]		
(7) M_CKEA3	M_CKEA3	AV18	SA_CKE[3]		
(7) M_ODT_A0	M_ODT_A0	AV31	SA_ODT[0]		
(7) M_ODT_A1	M_ODT_A1	AU32	SA_ODT[1]		
(7) M_ODT_A2	M_ODT_A2	AU30	SA_ODT[2]		
(7) M_ODT_A3	M_ODT_A3	AW33	SA_ODT[3]		

(7) M_DCLKA0	M_DCLKA0	AY25	SA_CK[0]		
(7) M_DCLKA0	M_DCLKA0	AW25	SA_CK[0]		
(7) M_DCLKA1	M_DCLKA1	AU24	SA_CK[1]		
(7) M_DCLKA1	M_DCLKA1	AU25	SA_CK[1]		
(7) M_DCLKA2	M_DCLKA2	AW27	SA_CK[2]		
(7) M_DCLKA2	M_DCLKA2	AY27	SA_CK[2]		
(7) M_DCLKA3	M_DCLKA3	AU26	SA_CK[3]		
(7) M_DCLKA3	M_DCLKA3	AW26	SA_CK[3]		

(7,8) M_DDR3_RST ← MR1

0.1u4/7R/16V/K/X

MBC8

0.1u4/7R/16V/K/X

AV13	SA_DQS[8]
AV12	SA_DQS[8]
AU12	SA_ECC_CB[0]
AU14	SA_ECC_CB[1]
AW13	SA_ECC_CB[2]
AY13	SA_ECC_CB[3]
AU13	SA_ECC_CB[4]
AY11	SA_ECC_CB[5]
AY12	SA_ECC_CB[6]
AW12	SA_ECC_CB[7]

DDR_0

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LGA1155[10SC1-F01155-01R]

LGA1155B

M_AAB0	AK24	SB_MA[0]	SB_DQ[0]	AH7	M_DQSB0
M_AAB1	AM20	SB_MA[1]	SB_DQ[1]	AH6	M_DQSB0
M_AAB2	AM19	SB_MA[2]	SB_DQ[2]		
M_AAB3	AK18	SB_MA[3]	SB_DQ[3]	AG7	M_DB0
M_AAB4	AP19	SB_MA[4]	SB_DQ[4]	AG8	M_DB1
M_AAB5	AP18	SB_MA[5]	SB_DQ[5]	AJ9	M_DB2
M_AAB6	AM18	SB_MA[6]	SB_DQ[6]	AJ8	M_DB3
M_AAB7	AL18	SB_MA[7]	SB_DQ[7]	AG5	M_DB4
M_AAB8	AY17	SB_MA[8]	SB_DQ[8]	AG6	M_DB5
M_AAB9	AY17	SB_MA[9]	SB_DQ[9]	AJ6	M_DB6
M_AAB10	AN23	SB_MA[10]	SB_DQ[10]	AJ7	M_DB7
M_AAB11	AU17	SB_MA[11]	SB_DQ[11]		
M_AAB12	AT18	SB_MA[12]	SB_DQ[12]	AM8	M_DQSB1
M_AAB13	AR26	SB_MA[13]	SB_DQ[13]	AL8	M_DQSB1
M_AAB14	AY16	SB_MA[14]	SB_DQ[14]		
M_AAB15	AV16	SB_MA[15]	SB_DQ[15]		

(8) M_SWEB	M_SWEB	AR25	SB_WE#		
(8) M_SCASB	M_SCASB	AK25	SB_CAS#		
(8) M_SRASB	M_SRASB	AP24	SB_RAS#		
(8) M_SBAB0	M_SBAB0	AP23	SB_BS[0]		
(8) M_SBAB1	M_SBAB1	AM24	SB_BS[1]		
(8) M_SBAB2	M_SBAB2	AW17	SB_BS[2]		
(8) M-CSB0	M-CSB0	AN25	SB_CS#		
(8) M-CSB1	M-CSB1	AN26	SB_CS#		
(8) M-CSB2	M-CSB2	AL25	SB_CS#		
(8) M-CSB3	M-CSB3	AT26	SB_CS#		
(8) M_CKEB0	M_CKEB0	AU16	SB_CKE[0]		
(8) M_CKEB1	M_CKEB1	AY15	SB_CKE[1]		
(8) M_CKEB2	M_CKEB2	AW15	SB_CKE[2]		
(8) M_CKEB3	M_CKEB3	AV15	SB_CKE[3]		
(8) M_ODT_B0	M_ODT_B0	AL26	SB_ODT[0]		
(8) M_ODT_B1	M_ODT_B1	AP26	SB_ODT[1]		
(8) M_ODT_B2	M_ODT_B2	AM26	SB_ODT[2]		
(8) M_ODT_B3	M_ODT_B3	AK26	SB_ODT[3]		

(8) M-CSB0	M-CSB0	AN25	SB_CS#		
(8) M-CSB1	M-CSB1	AN26	SB_CS#		
(8) M-CSB2	M-CSB2	AL25	SB_CS#		
(8) M-CSB3	M-CSB3	AT26	SB_CS#		
(8) M_CKEB0	M_CKEB0	AU16	SB_CKE[0]		
(8) M_CKEB1	M_CKEB1	AY15	SB_CKE[1]		
(8) M_CKEB2	M_CKEB2	AW15	SB_CKE[2]		
(8) M_CKEB3	M_CKEB3	AV15	SB_CKE[3]		
(8) M_ODT_B0	M_ODT_B0	AL26	SB_ODT[0]		
(8) M_ODT_B1	M_ODT_B1	AP26	SB_ODT[1]		
(8) M_ODT_B2	M_ODT_B2	AM26	SB_ODT[2]		
(8) M_ODT_B3	M_ODT_B3	AK26	SB_ODT[3]		

(8) M_DCLKB0	M_DCLKB0	AL21	SB_CK[0]		
(8) M_DCLKB0	M_DCLKB0	AL22	SB_CK[0]		
(8) M_DCLKB1	M_DCLKB1	AK20	SB_CK[1]		
(8) M_DCLKB1	M_DCLKB1	AK20	SB_CK[1]		
(8) M_DCLKB2	M_DCLKB2	AL23	SB_CK[2]		
(8) M_DCLKB2	M_DCLKB2	AM22	SB_CK[2]		
(8) M_DCLKB3	M_DCLKB3	AP21	SB_CK[3]		
(8) M_DCLKB3	M_DCLKB3	AN21	SB_CK[3]		

(8) M_VREF_DQB	M_VREF_DQB	AH1	FC_AH1		
(7) M_VREF_DQB	M_VREF_DQB	AH4	FC_AH4		

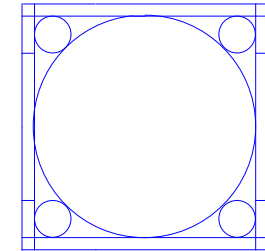
AN16	SB_DQS[8]
AN15	SB_DQS[8]

AL16	SB_ECC_CB[0]
AM16	SB_ECC_CB[1]
AP16	SB_ECC_CB[2]
AL15	SB_ECC_CB[3]
AM15	SB_ECC_CB[4]
AP15	SB_ECC_CB[5]
AL15	SB_ECC_CB[6]
AP15	SB_ECC_CB[7]

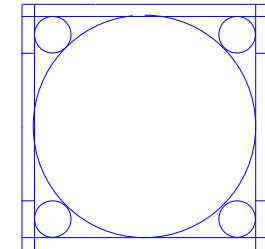
DDR_1

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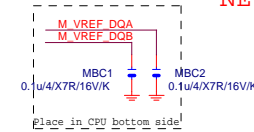
LGA1155[10SC1-F01155-01R]

LGA1155
ILM_BP/1156/BKNI

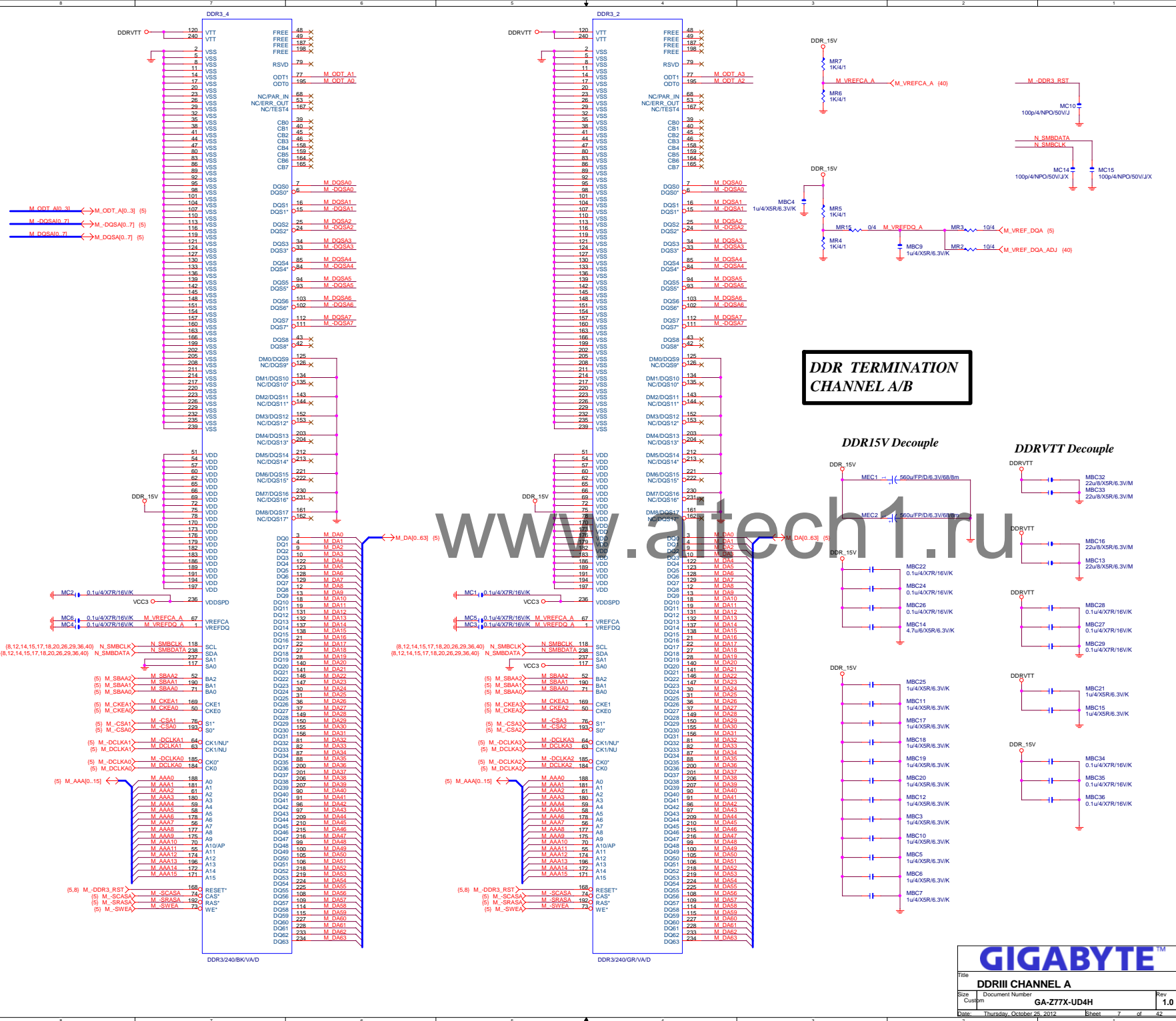
Need check the new CPU ME

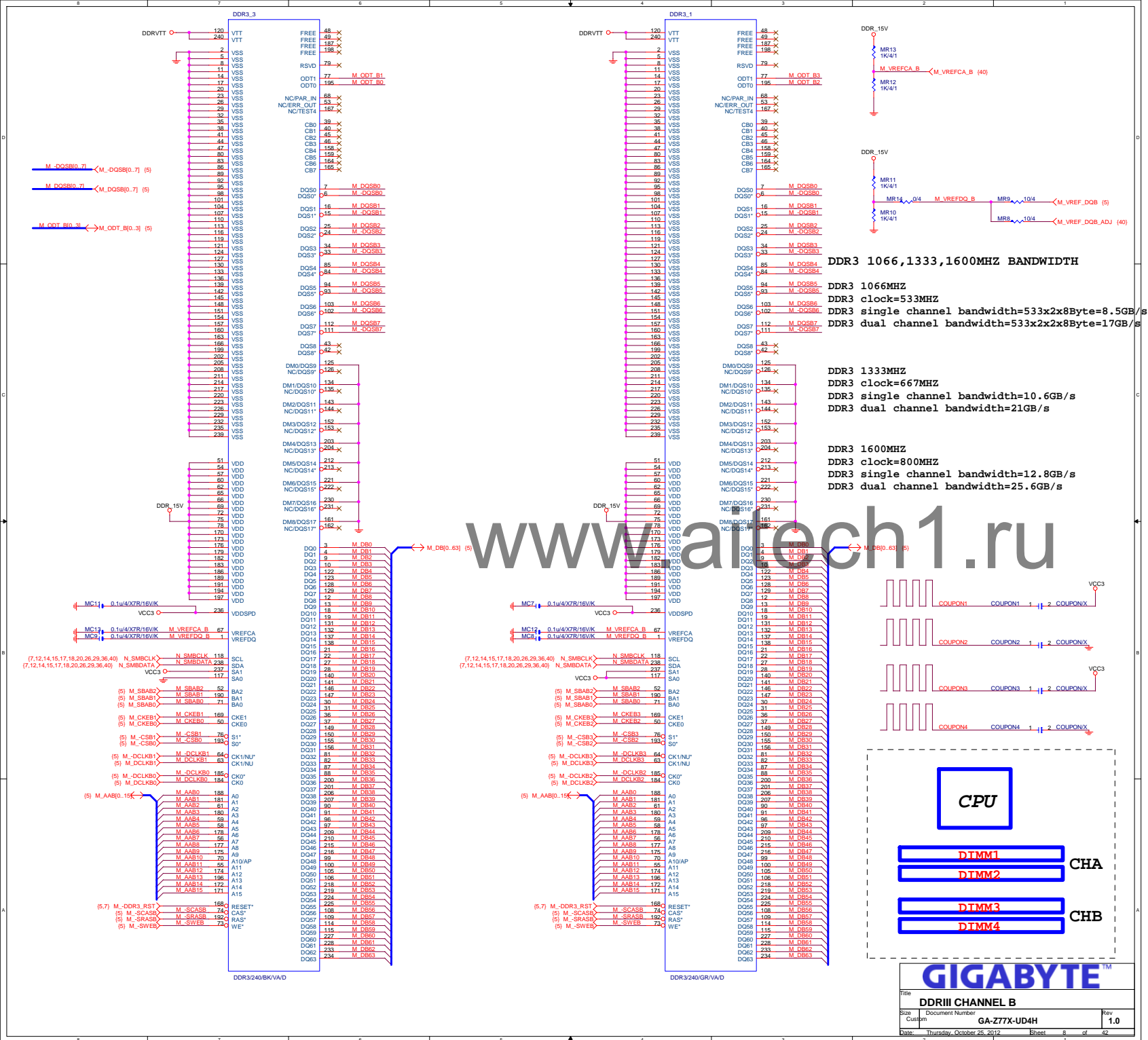
LGA1155
115X ILM COVER [12PC1-R00001-01R]

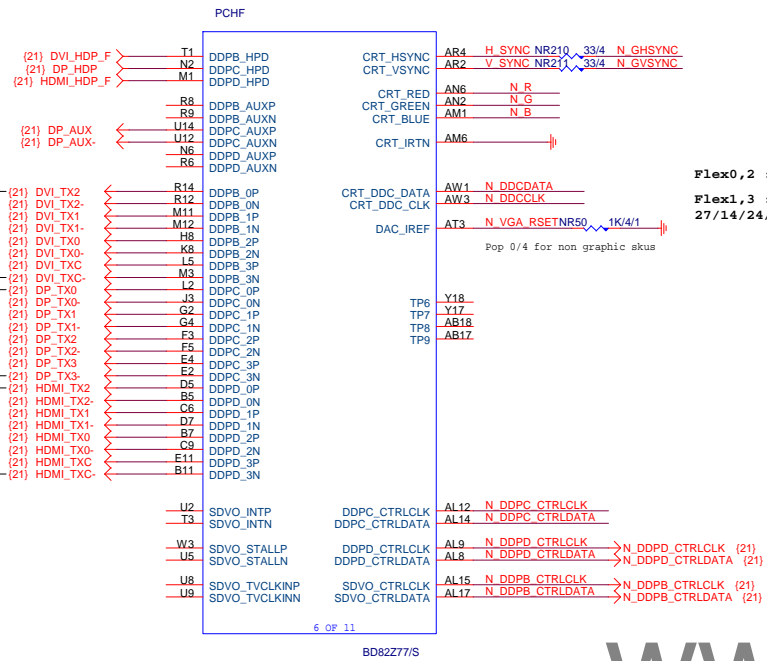
NEW LGA1155 CPU COVER



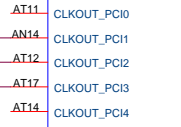
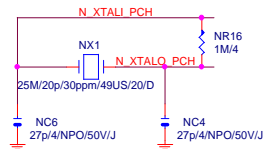
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Title CPU LGA1156-B		
Size Custom	Document Number GA-Z77X-UD4H	Rev 1.0
Date:	Thursday, October 25, 2012	Sheet 5 of 42





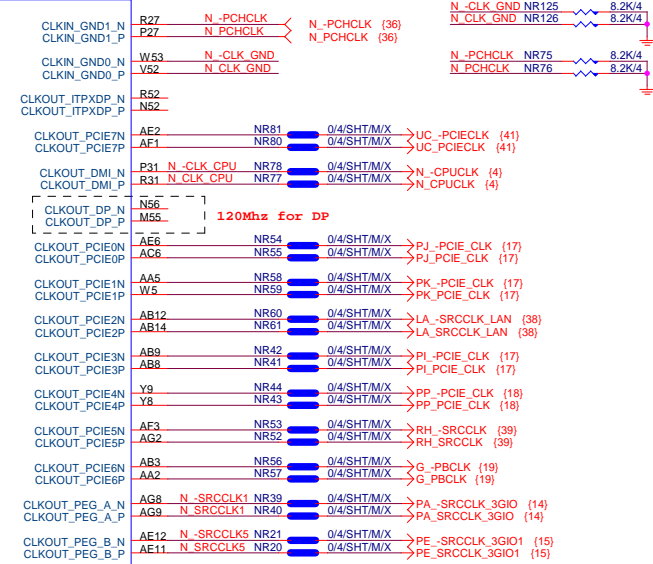


Flex0,2 : 33MHZ
Flex1,3 : 27/14/24/48/25MHZ

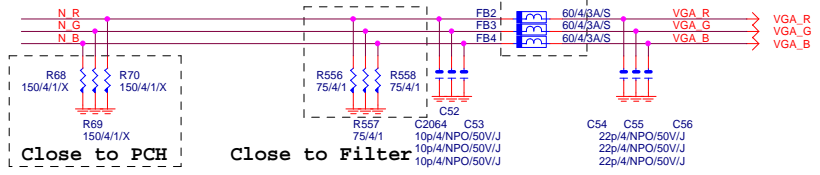
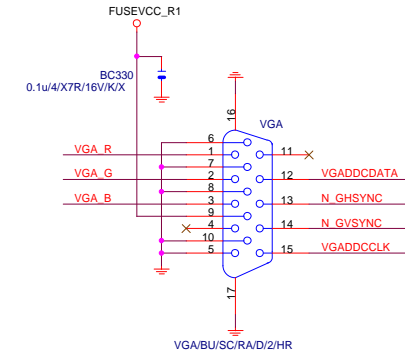
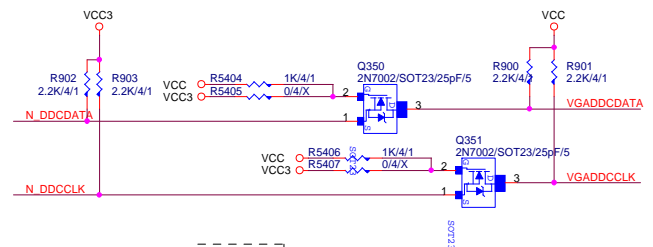
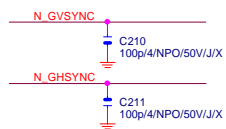
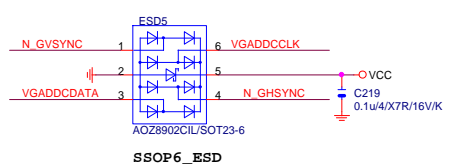
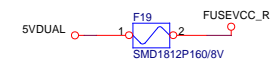
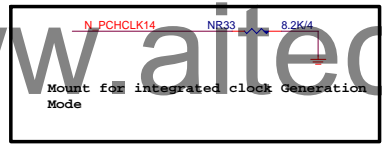
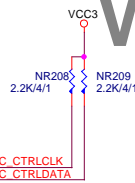


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BD82Z77/S

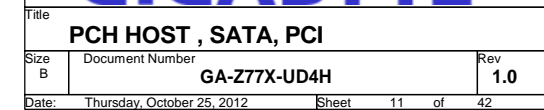


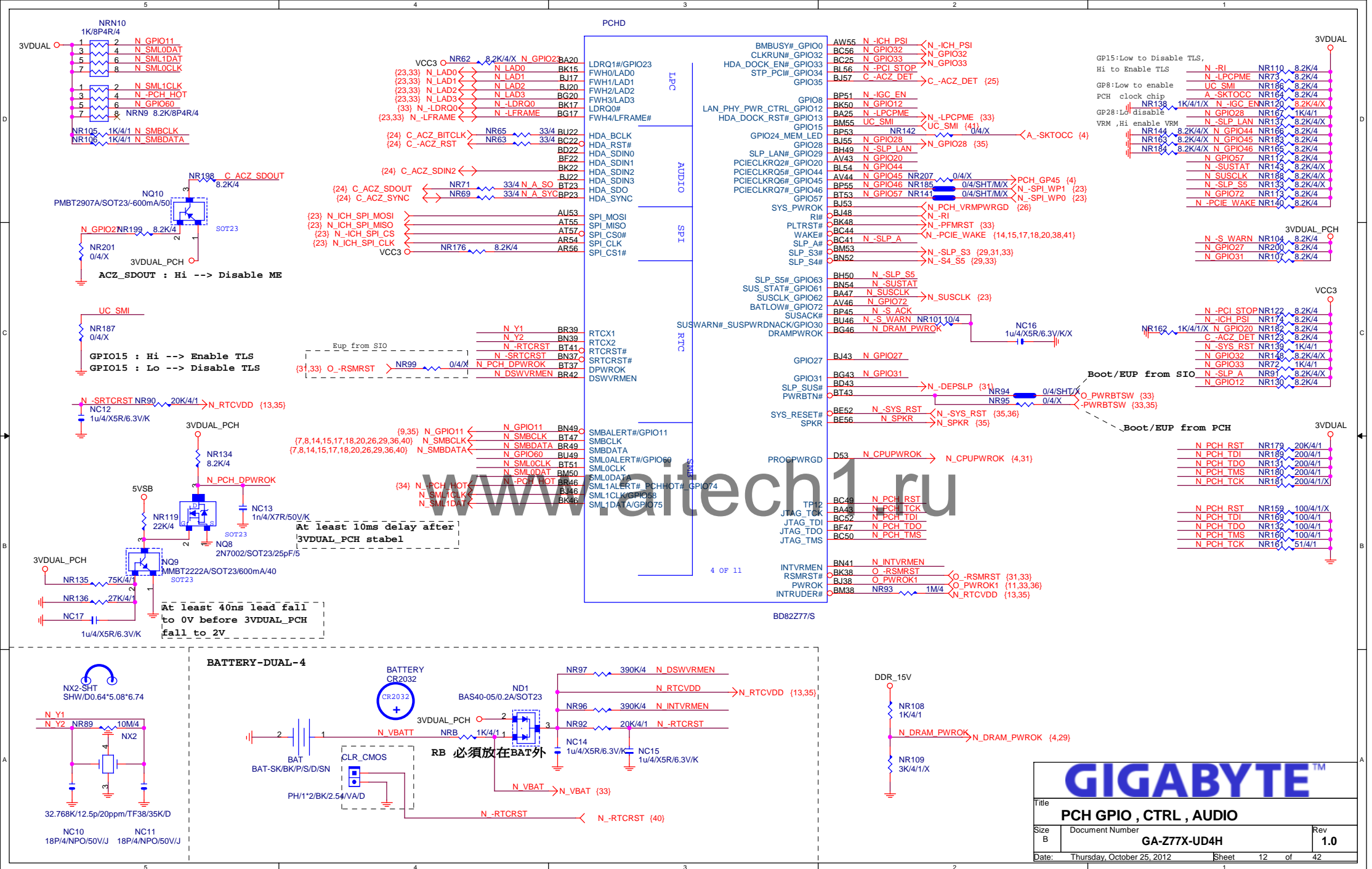
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Impedance=90 +- 15%

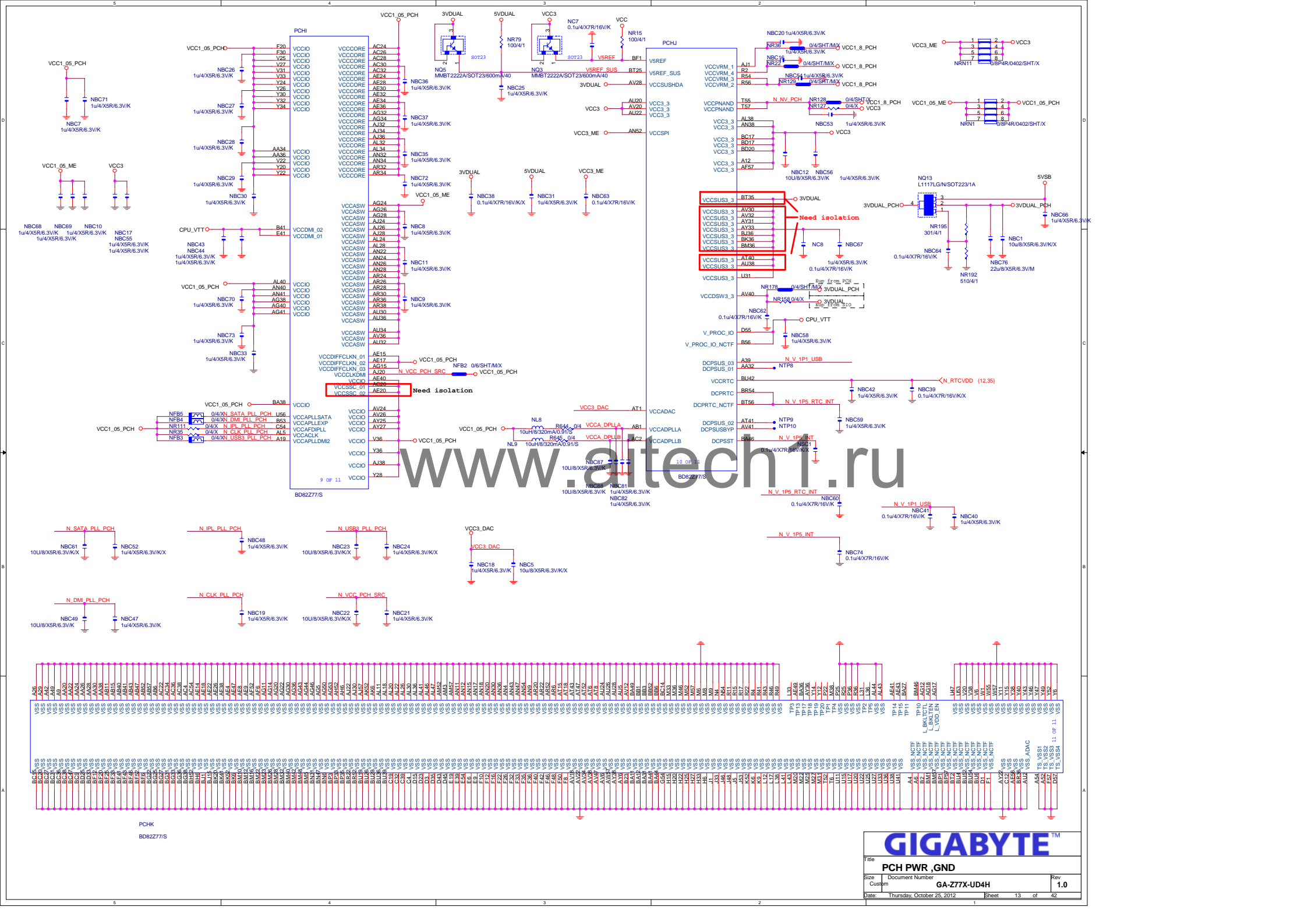


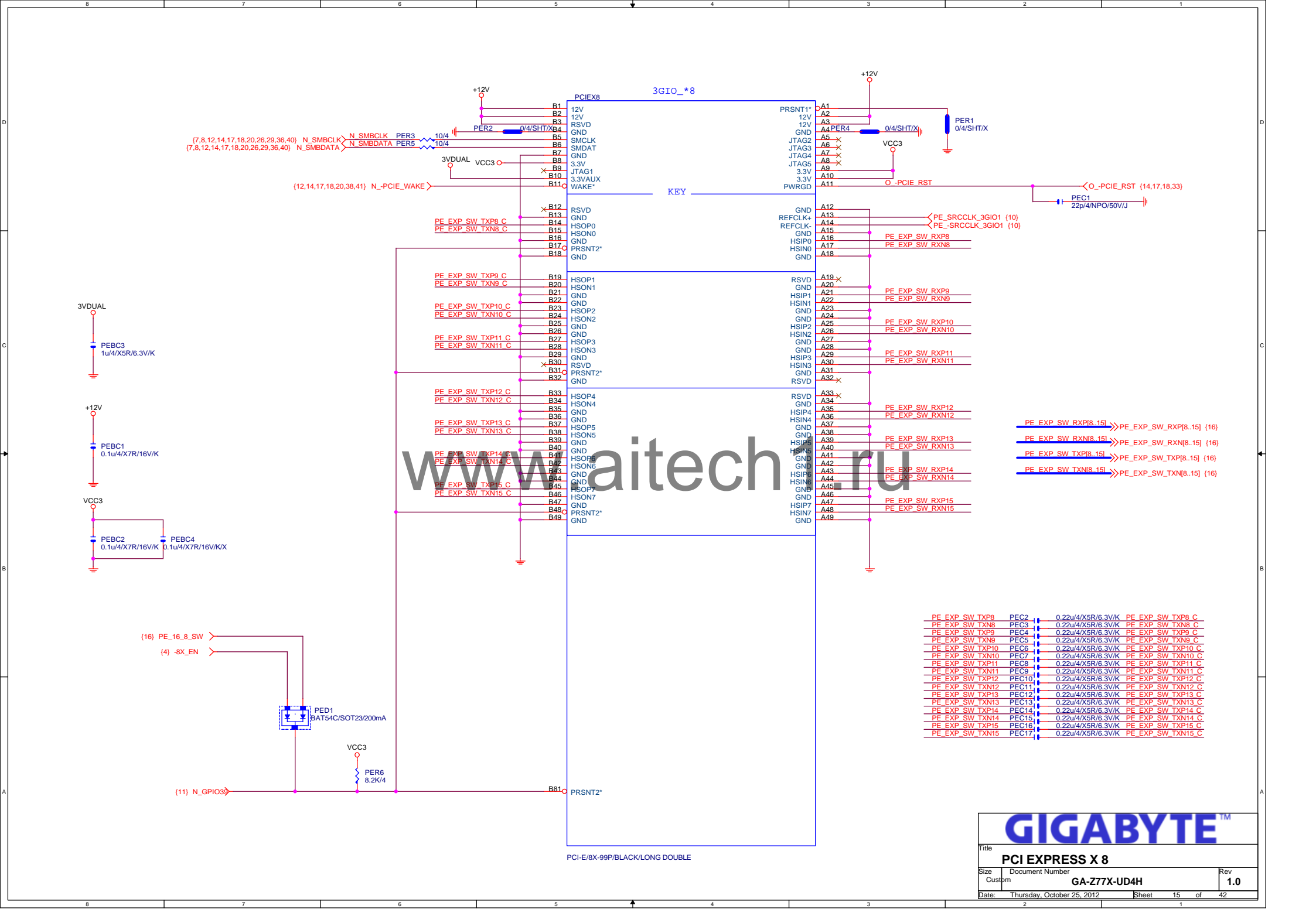
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Title PCH DISPLAY ,CLK BUFFER			
Size Custom	Document Number GA-Z77X-UD4H	Rev 1.0	
Date: Thursday, October 25, 2012	Sheet 10	of 42	

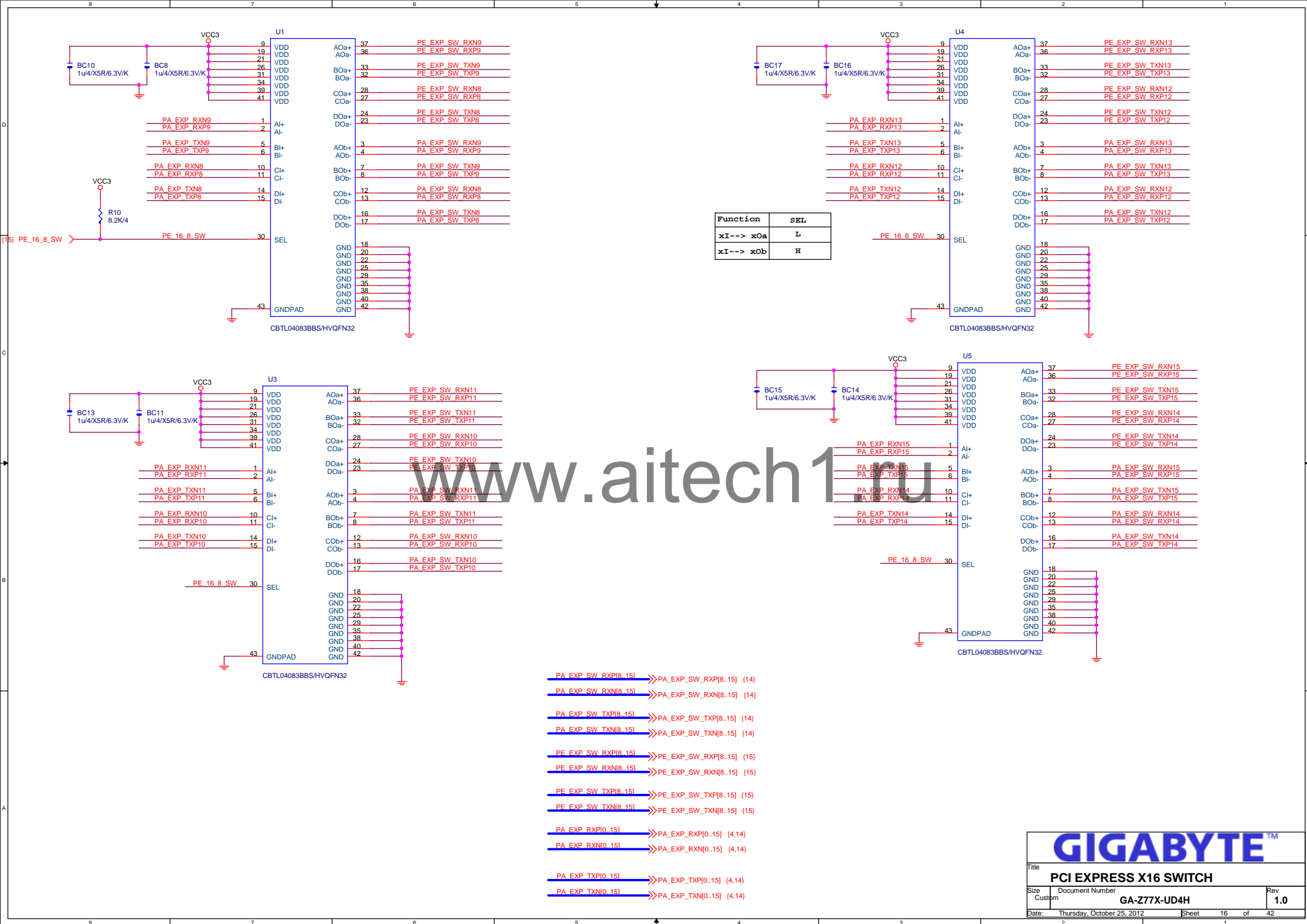
PCHC

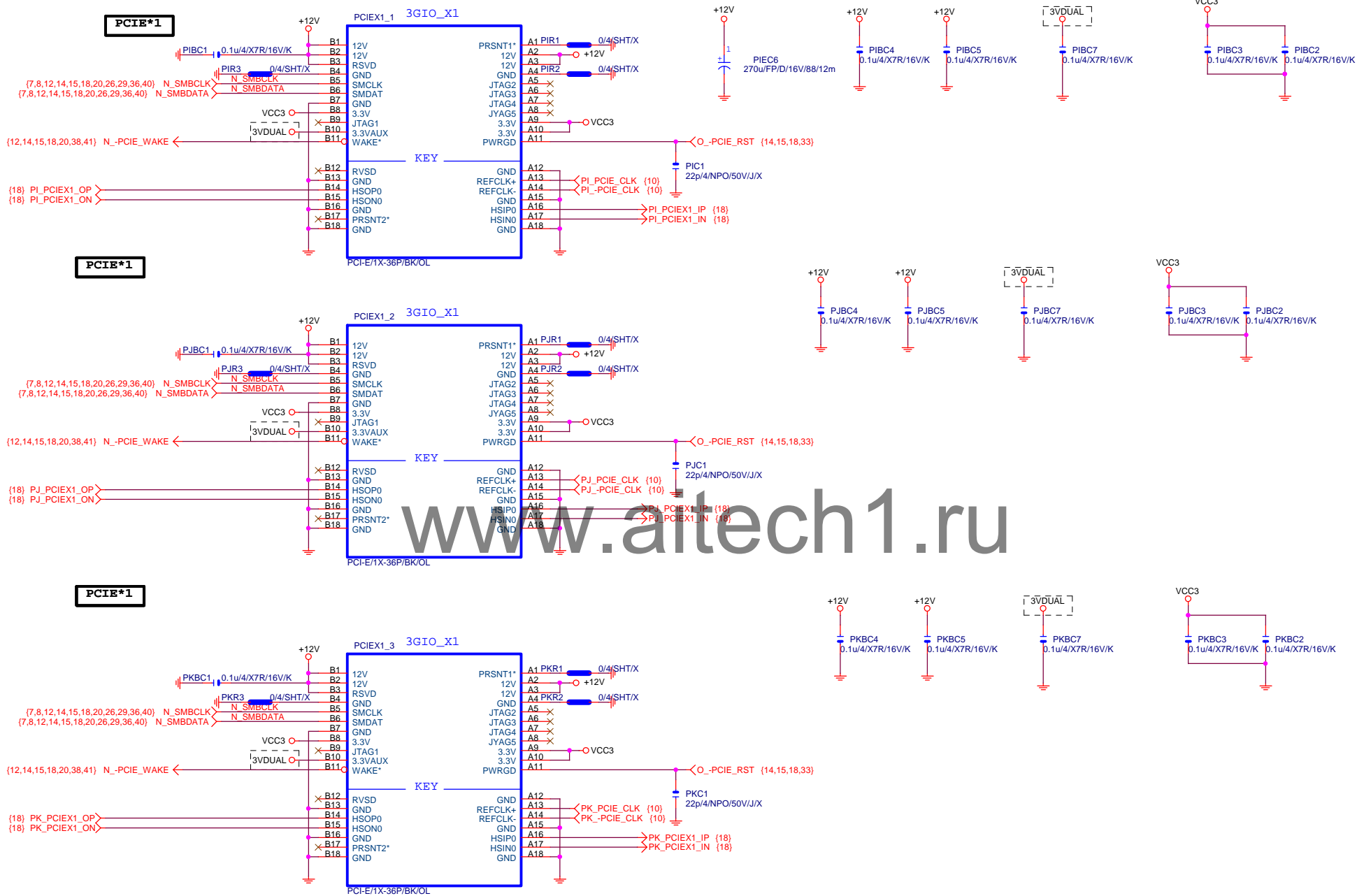









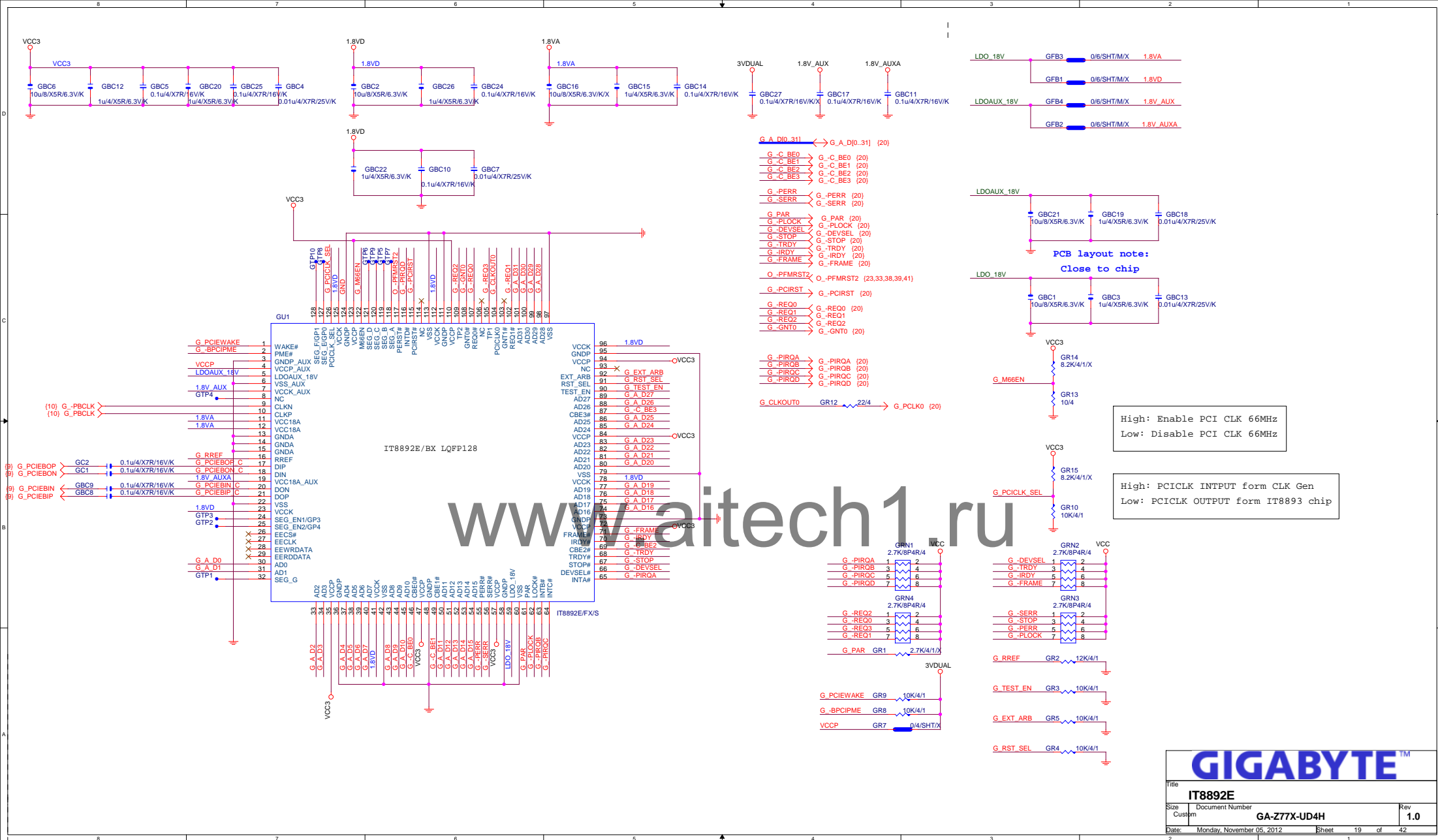




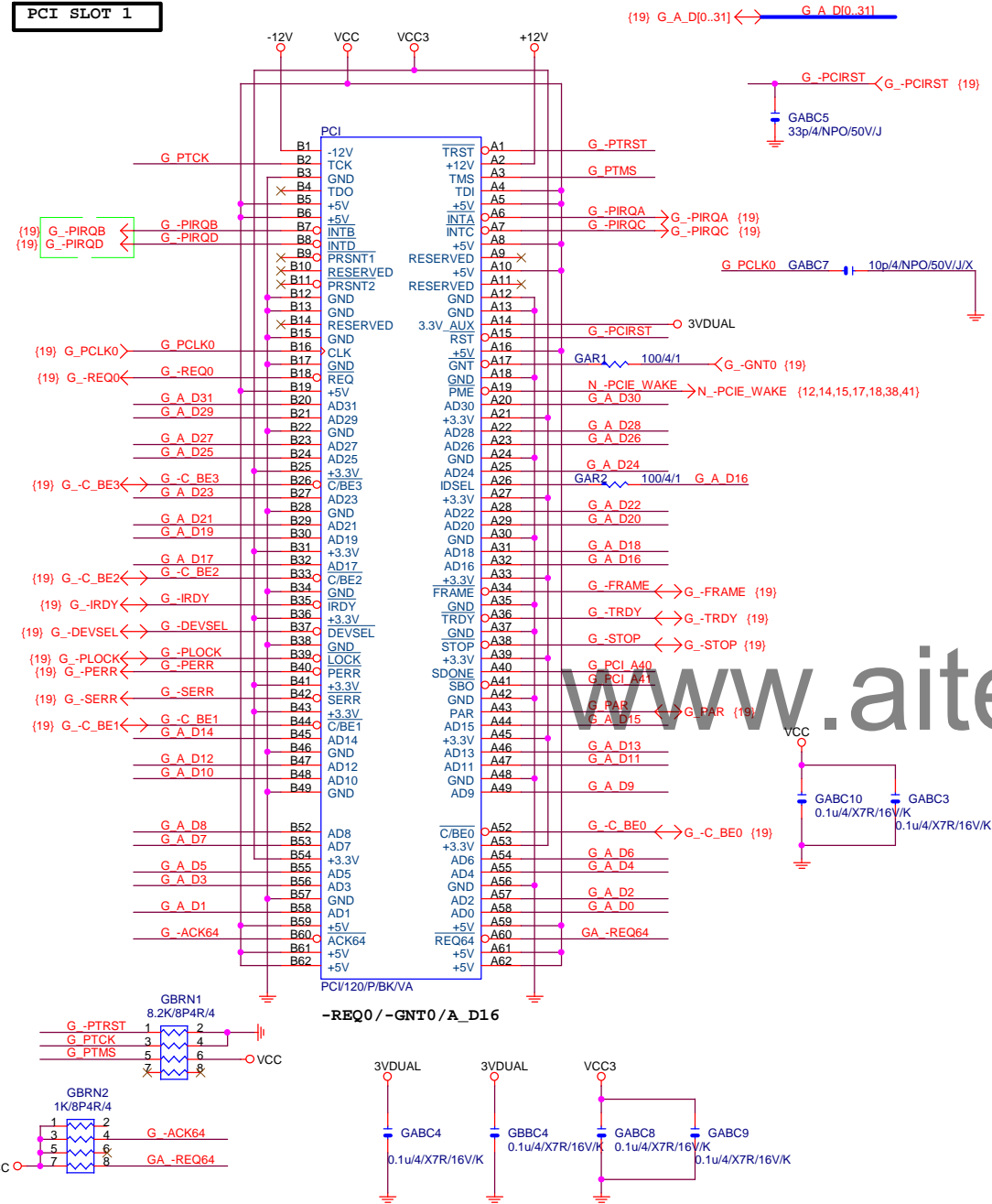
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Title			
PCIEX1 1,2,3			
Size	Document Number		Rev
Custom	GA-Z77X-UD4H		1.0
Date:	Thursday, October 25, 2012	Sheet	17 of 42



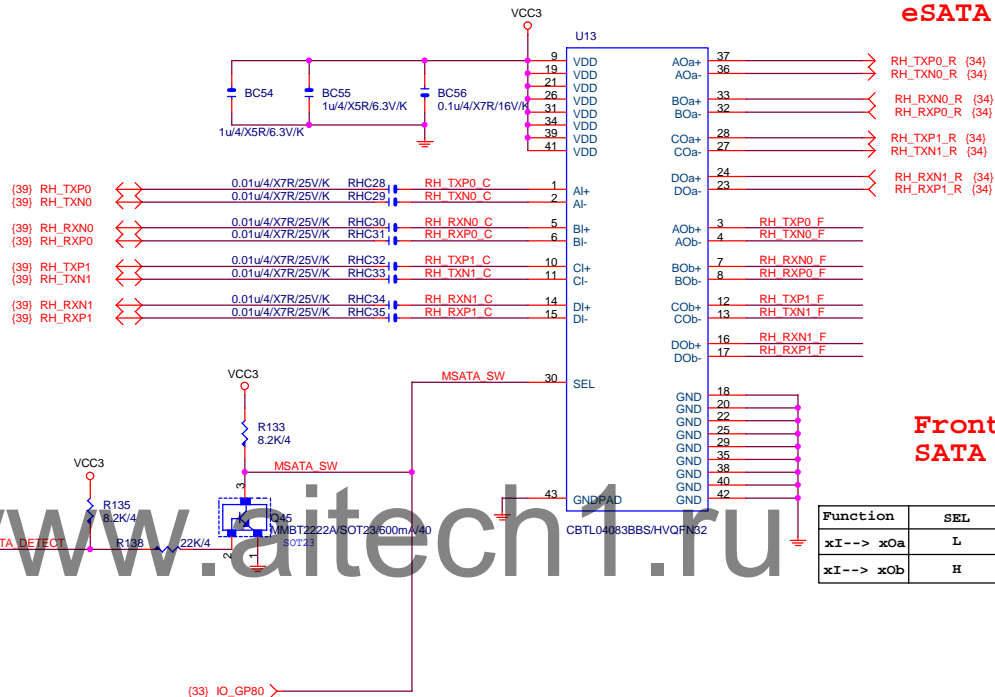
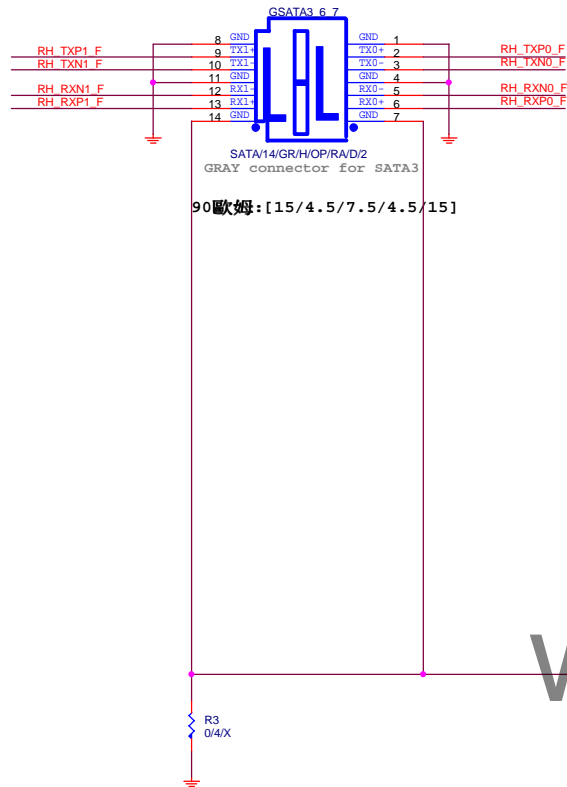
			
Title			
PCIE_X4			
Size	Document Number		Rev
Custom	GA-Z77X-UD4H		1.0
Date:	Thursday, October 25, 2012	Sheet	18 of 42



PCI SLOT 1



GIGABYTE™			
Title			
PCI SLOT 1			
Size	Document Number	Rev	
Custom	GA-Z77X-UD4H	1.0	
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eSATA

Front
SATA

Function	SEL
xI--> xOa	L
xI--> xOb	H

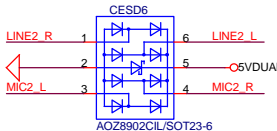
GIGABYTE™

Title
SATA SWITCH, GSATA3_67

Size Custom Document Number
GA-Z77X-UD4H

Rev
1.0

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[illegible]

EUP

BVDUAL

CD4

CD148WP/1206/300mA/X

AVDD

CD3

CD148WP/1206/300mA/X

CD2

A2225-01/L/SC0323/X

CD1

A2225-01/L/SC0323/X

CD41

78.05V/SOT89/1.0/X

CD42

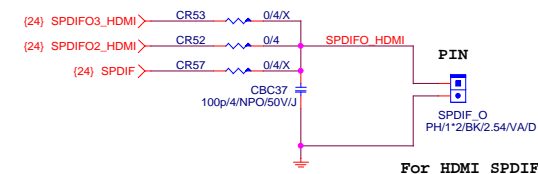
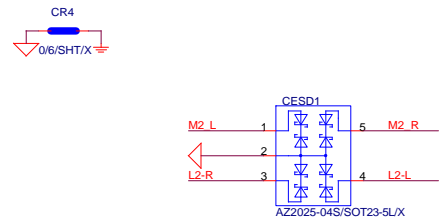
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CD43

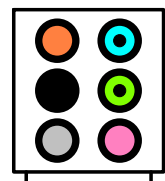
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ESD PROTECTOR

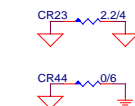
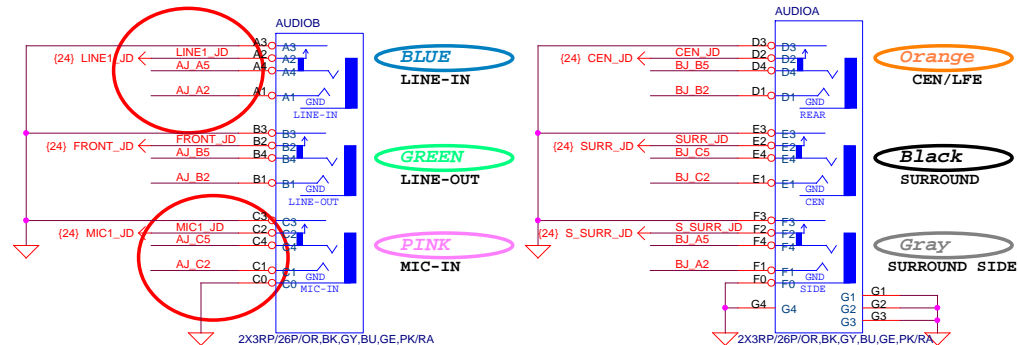
上ALC892時,此顆電容要保留



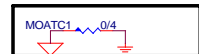
BTX AZALIA CONNECTOR



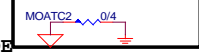
11NR6-403007-21R



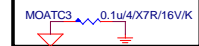
→ Audio jack --> USB



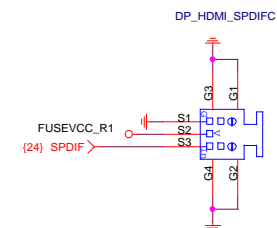
→ Near Audio jack left



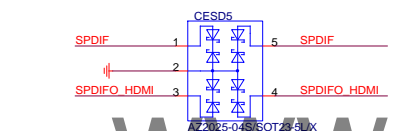
→ Codec --> Audio jack



→ F_AUDIO



DP+HDMI+SPDIF/20P+19P+3P/BK/RA :: Location DP_HDMI_SPDIF



(24) MIC1_R ← CR29 75/4/1

(24) MIC1_L ← CR32 75/4/1

(24) MIC1_VREFO_L

(24) MIC1_VREFO_R

CBC19 180pF/4NPO/50V

CBC22 180pF/4NPO/50V

AJ_C5

AJ_C2

EMI

(24) SURR_R CEC5 100u/OS/D/16V/66/30m CR46 75/4/1

(24) SURR_L CEC7 100u/OS/D/16V/66/30m CR19 75/4/1

BJ_C5

BJ_C2

CBC29 180p/4NPO/50V/V

CBC28 180p/4NPO/50V/V

CR20 10K/4/1

CR45 10K/4/1

EMI

CEC9 100uS/D/16V/66/30m

(24) LFE

CEC10 100uS/D/16V/66/30m

(24) CEN

CR50 75/4/1

CR41 75/4/1

CR42 10K/4/1

CR51 10K/4/1

BJ_B5

BJ_B2

CBC25 180p/4/NPO/50V/

CBC34 180p/4/NPO/50V/

Figure 10 is a schematic diagram of an EMI filter. It shows a power supply input with a 100uF/OS/D/16V/66/30m capacitor (CEC8) and a 100uF/OS/D/16V/66/30m capacitor (CEC4) connected to the input lines. The input lines are labeled (24) S_SURR_R and (24) S_SURR_L. The output lines are labeled BJA5 and BJA2. The filter consists of a common mode choke (CR21) and two differential mode inductors (CR22 and CR43) connected in series. The output lines are connected to the filter. The filter is connected to a 180pF/4/NPO/50V/J capacitor (CBC33) and a 180pF/4/NPO/50V/J capacitor (CBC30) connected to ground. The filter is labeled EMI.

AZALIA FRONT PANEL

Diagram illustrating the front panel connections for the AZALIA system, showing various components and their connections.

Components and Connections:

- Q2:** BAT54A/SOT23/200mA, connected to **LINE2_VREFO** (24).
- Q1:** BAT54A/SOT23/200mA, connected to **MIC2_VREFO** (24).
- CR25:** 3.3K/4/1, connected to Q2.
- CR15:** 3.3K/4/1, connected to Q2.
- CR12:** 3.3K/4/1, connected to Q1.
- CR3:** 3.3K/4/1, connected to Q1.
- EMI:** Indicated by a dashed box around the Q1 and Q2 components.
- CR27:** 10K/4/1, connected to **F AUDIO** (1).
- CR26:** 10K/4/1, connected to **F AUDIO** (2).
- CR35:** 20K/4/1, connected to **C-ACZ_DET** (12).
- CR31:** 39.2K/4/1, connected to **C-ACZ_DET** (12).
- CEC6:** 100uOS/D/16V/66/30m, connected to **LINE2_R** (24).
- CEC1:** 100uOS/D/16V/66/30m, connected to **LINE2_L** (24).
- CEC10:** 180p/4/NPO/50V/J, connected to **LINE2_R** (24).
- CEC16:** 180p/4/NPO/50V/J, connected to **LINE2_R** (24).
- CEC17:** 180p/4/NPO/50V/J, connected to **LINE2_R** (24).
- CEC6:** 180p/4/NPO/50V/J, connected to **LINE2_R** (24).
- CR1:** 0.4/X, connected to **LINE2_R** (24).
- CR2:** 75/4/1, connected to **LINE2_R** (24).
- CR3:** 75/4/1, connected to **LINE2_R** (24).
- CR4:** 75/4/1, connected to **LINE2_R** (24).
- CR5:** 75/4/1, connected to **LINE2_R** (24).
- CR6:** 75/4/1, connected to **LINE2_R** (24).
- CR7:** 75/4/1, connected to **LINE2_R** (24).
- CR8:** 75/4/1, connected to **LINE2_R** (24).
- CR9:** 75/4/1, connected to **LINE2_R** (24).
- CR10:** 75/4/1, connected to **LINE2_R** (24).
- CR11:** 75/4/1, connected to **LINE2_R** (24).
- CR12:** 75/4/1, connected to **LINE2_R** (24).
- CR13:** 75/4/1, connected to **LINE2_R** (24).
- CR14:** 75/4/1, connected to **LINE2_R** (24).
- CR15:** 75/4/1, connected to **LINE2_R** (24).
- CR16:** 75/4/1, connected to **LINE2_R** (24).
- CR17:** 75/4/1, connected to **LINE2_R** (24).
- CR18:** 75/4/1, connected to **LINE2_R** (24).
- CR19:** 75/4/1, connected to **LINE2_R** (24).
- CR20:** 75/4/1, connected to **LINE2_R** (24).
- CR21:** 75/4/1, connected to **LINE2_R** (24).
- CR22:** 75/4/1, connected to **LINE2_R** (24).
- CR23:** 75/4/1, connected to **LINE2_R** (24).
- CR24:** 75/4/1, connected to **LINE2_R** (24).
- CR25:** 75/4/1, connected to **LINE2_R** (24).
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- CR27:** 75/4/1, connected to **LINE2_R** (24).
- CR28:** 75/4/1, connected to **LINE2_R** (24).
- CR29:** 75/4/1, connected to **LINE2_R** (24).
- CR30:** 75/4/1, connected to **LINE2_R** (24).
- CR31:** 75/4/1, connected to **LINE2_R** (24).
- CR32:** 75/4/1, connected to **LINE2_R** (24).
- CR33:** 75/4/1, connected to **LINE2_R** (24).
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- CR36:** 75/4/1, connected to **LINE2_R** (24).
- CR37:** 75/4/1, connected to **LINE2_R** (24).
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- CR41:** 75/4/1, connected to **LINE2_R** (24).
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- CR52:** 75/4/1, connected to **LINE2_R** (24).
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- CR54:** 75/4/1, connected to **LINE2_R** (24).
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- CR56:** 75/4/1, connected to **LINE2_R** (24).
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- CR59:** 75/4/1, connected to **LINE2_R** (24).
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- CR63:** 75/4/1, connected to **LINE2_R** (24).
- CR64:** 75/4/1, connected to **LINE2_R** (24).
- CR65:** 75/4/1, connected to **LINE2_R** (24).
- CR66:** 75/4/1, connected to **LINE2_R** (24).
- CR67:** 75/4/1, connected to **LINE2_R** (24).
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- CR74:** 75/4/1, connected to **LINE2_R** (24).
- CR75:** 75/4/1, connected to **LINE2_R** (24).
- CR76:** 75/4/1, connected to **LINE2_R** (24).
- CR77:** 75/4/1, connected to **LINE2_R** (24).
- CR78:** 75/4/1, connected to **LINE2_R** (24).
- CR79:** 75/4/1, connected to **LINE2_R** (24).
- CR80:** 75/4/1, connected to **LINE2_R** (24).
- CR81:** 75/4/1, connected to **LINE2_R** (24).
- CR82:** 75/4/1, connected to **LINE2_R** (24).
- CR83:** 75/4/1, connected to **LINE2_R** (24).
- CR84:** 75/4/1, connected to **LINE2_R** (24).
- CR85:** 75/4/1, connected to **LINE2_R** (24).
- CR86:** 75/4/1, connected to **LINE2_R** (24).
- CR87:** 75/4/1, connected to **LINE2_R** (24).
- CR88:** 75/4/1, connected to **LINE2_R** (24).
- CR89:** 75/4/1, connected to **LINE2_R** (24).
- CR90:** 75/4/1, connected to **LINE2_R** (24).
- CR91:** 75/4/1, connected to **LINE2_R** (24).</

Digital Area

GIGABYTE

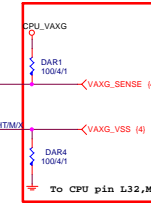
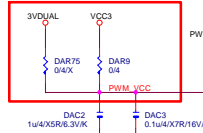
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AUDIO JACK			
Size	Document Number		Rev
Custom	GA-Z77X-UD4H		1.0
Date:	Thursday, October 25, 2012	Sheet	25 of 42

need 0.1Amp , check trace width

Value need check with Vendor

Close to VSA
output inductor

should be routed as
differential pair,
7mil width,8mil
spacing



Debug Port

DAI0P1
PWT-3BK2.54V/AD

To system SMBUS

To CPU side SVID Bus

IR3564

I2C address=70h

OUP/UVF=250mV
OCP=200A
VRHOT=125 Degree
OTP=130 Degree

Value need check with Vendor

Close to Vcore
output inductor

should be routed as
differential pair,
7mil width,8mil
spacing

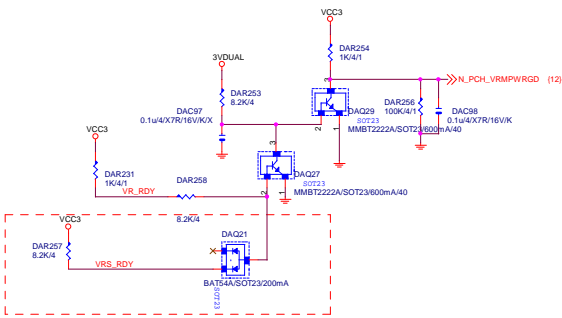
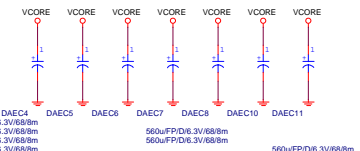
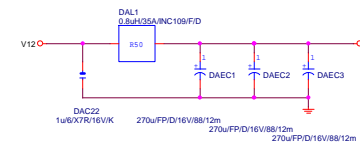
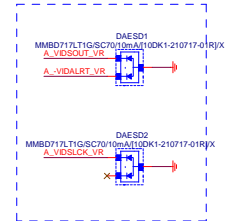


To 3931 For current DAC

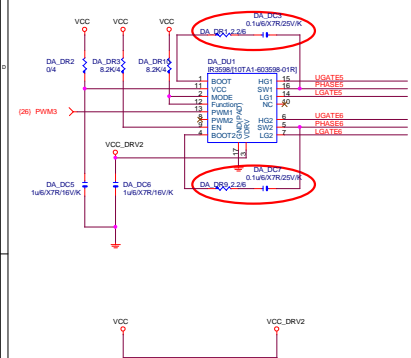


should be routed as
differential pair,
7mil width,8mil
spacing

Close to
Vcore MOS
DC_DQ1



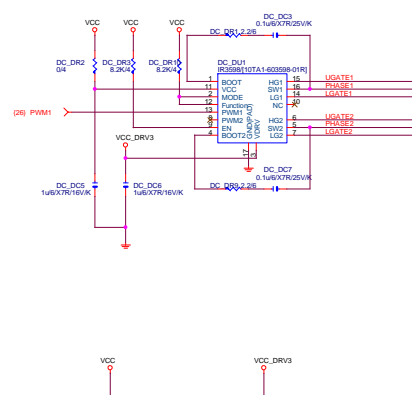
VCORE Phase 3,6



FUNCTION	MODE	PRN	MODE	PHASE	MODE
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9
10	10	10	10	10	10
11	11	11	11	11	11
12	12	12	12	12	12
13	13	13	13	13	13
14	14	14	14	14	14
15	15	15	15	15	15
16	16	16	16	16	16
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18	18	18	18	18	18
19	19	19	19	19	19
20	20	20	20	20	20

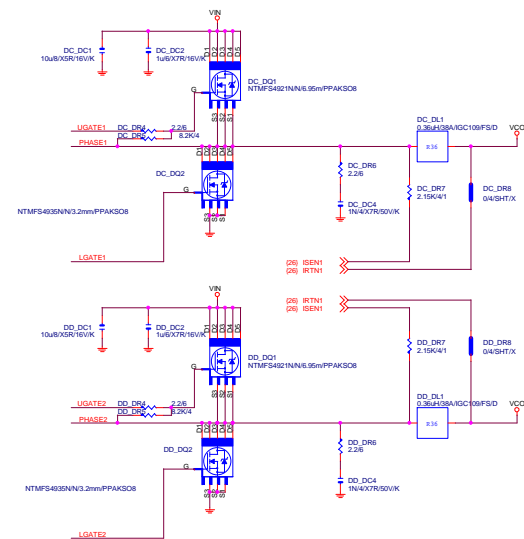
In Quad mode - I2C pin10 link to I2C pin10
I2C pin10 link to I2C pin10 without V7

VCORE Phase 1,2

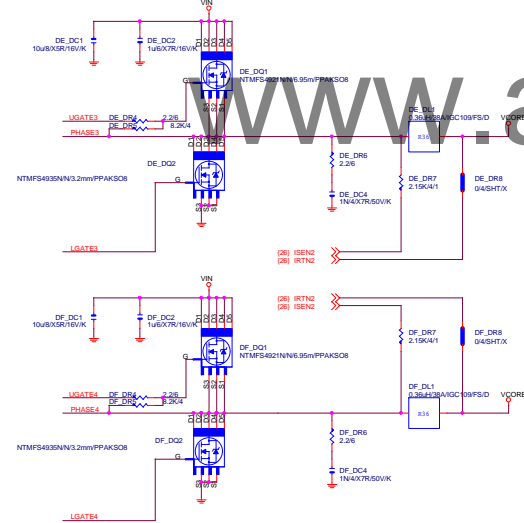
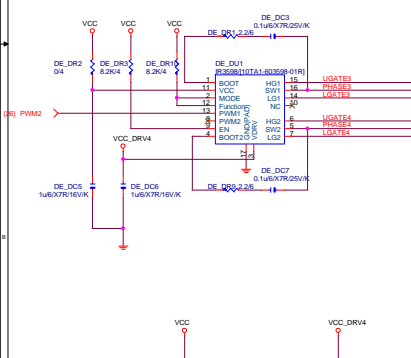


FUNCTION	MODE	PRN	MODE	PHASE	MODE
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9
10	10	10	10	10	10
11	11	11	11	11	11
12	12	12	12	12	12
13	13	13	13	13	13
14	14	14	14	14	14
15	15	15	15	15	15
16	16	16	16	16	16
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19	19	19	19	19	19
20	20	20	20	20	20

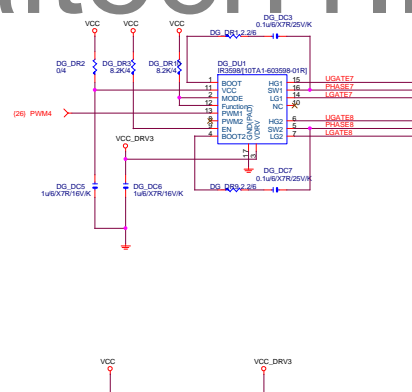
In Quad mode - I2C pin10 link to I2C pin10
I2C pin10 link to I2C pin10 without V7



VCORE Phase 5,2

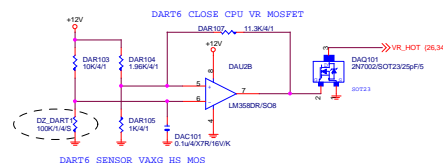
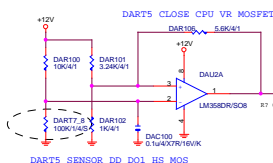
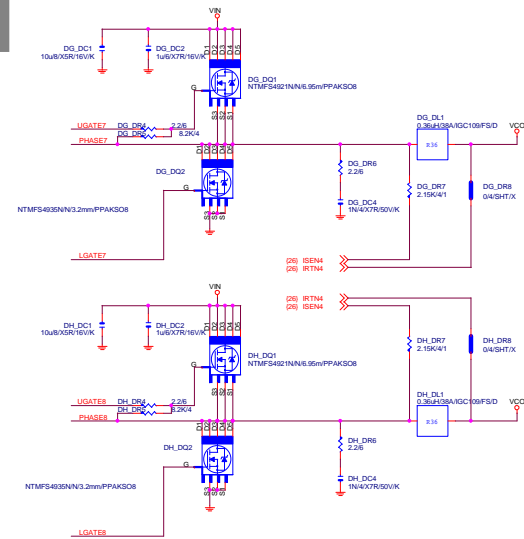


VCORE Phase 1,4

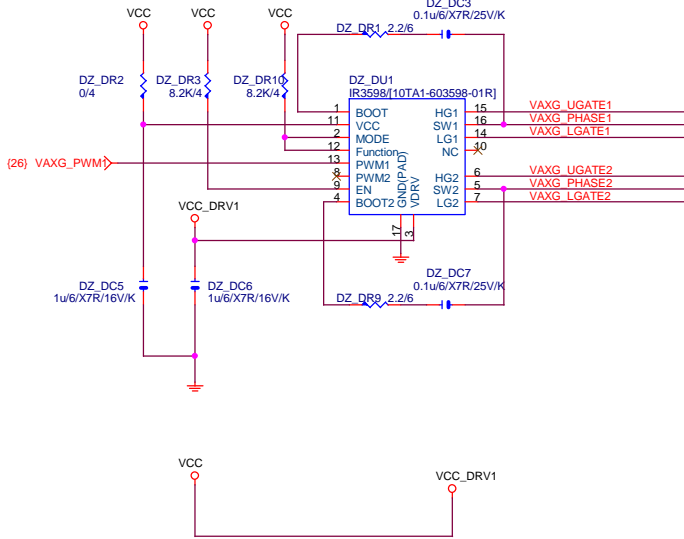


FUNCTION	MODE	PRN	MODE	PHASE	MODE
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2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9
10	10	10	10	10	10
11	11	11	11	11	11
12	12	12	12	12	12
13	13	13	13	13	13
14	14	14	14	14	14
15	15	15	15	15	15
16	16	16	16	16	16
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20	20	20	20	20	20

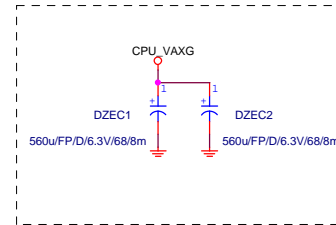
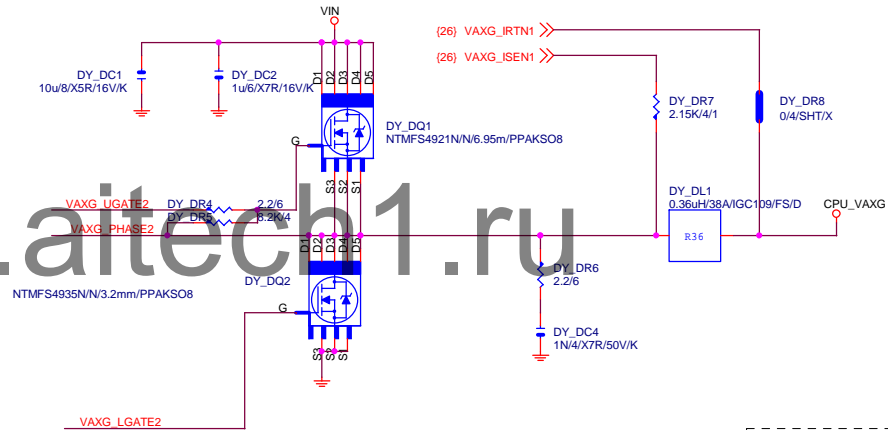
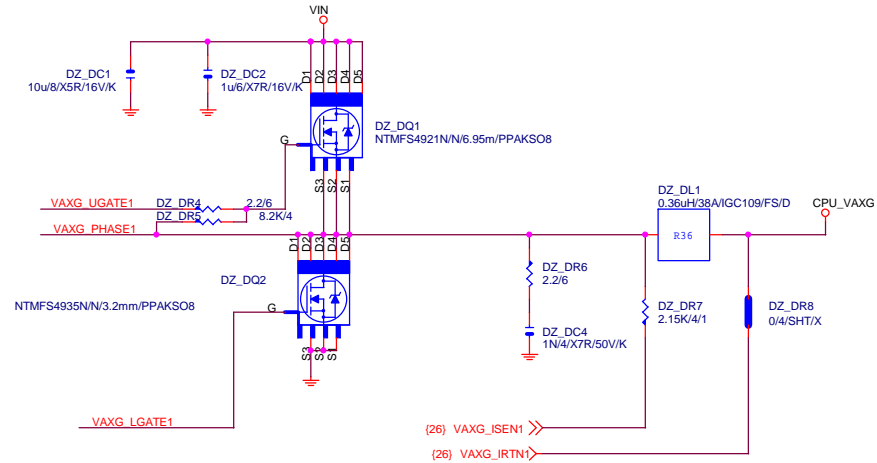
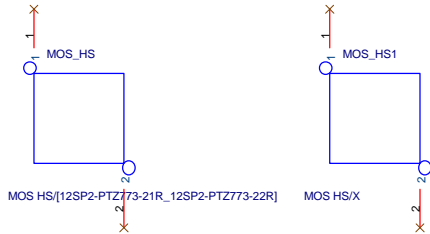
In Quad mode - I2C pin10 link to I2C pin10
I2C pin10 link to I2C pin10 without V7



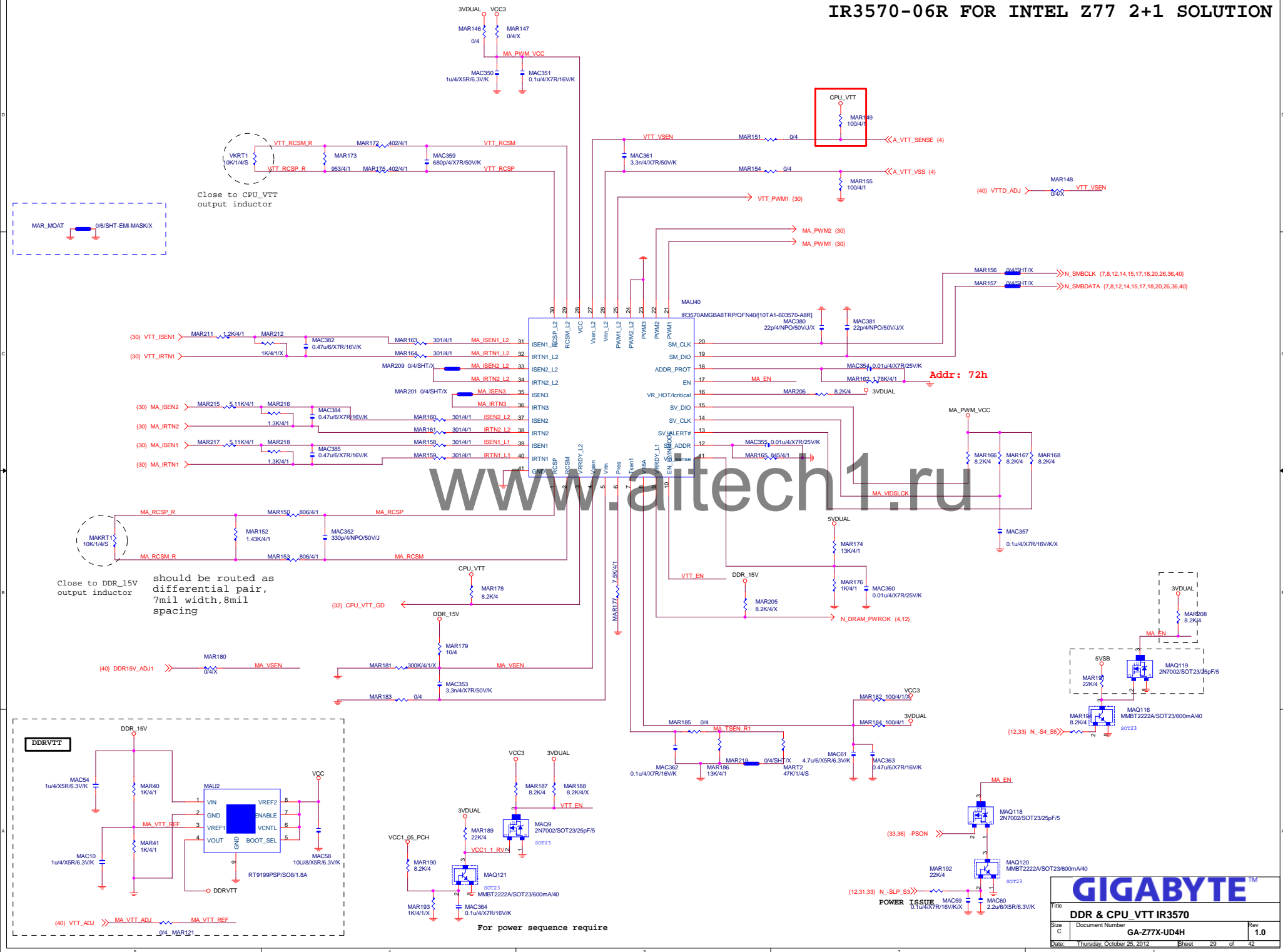
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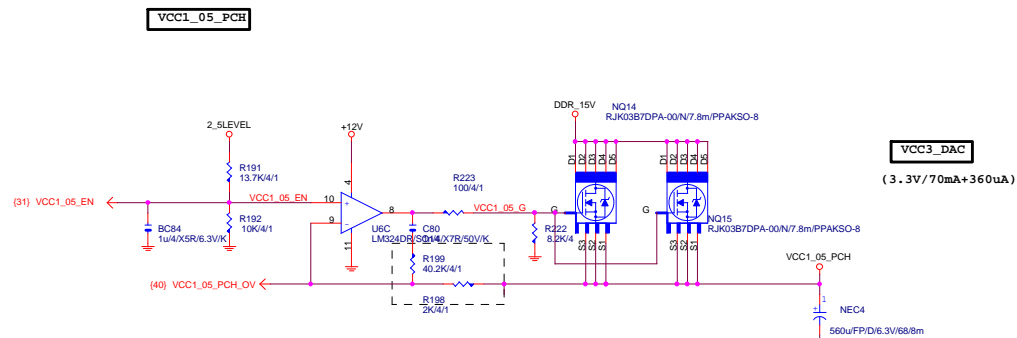


MOS HEATSINK

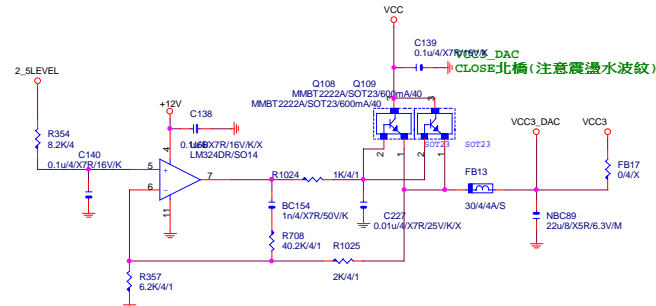


IR3570-06R FOR INTEL Z77 2+1 SOLUTION

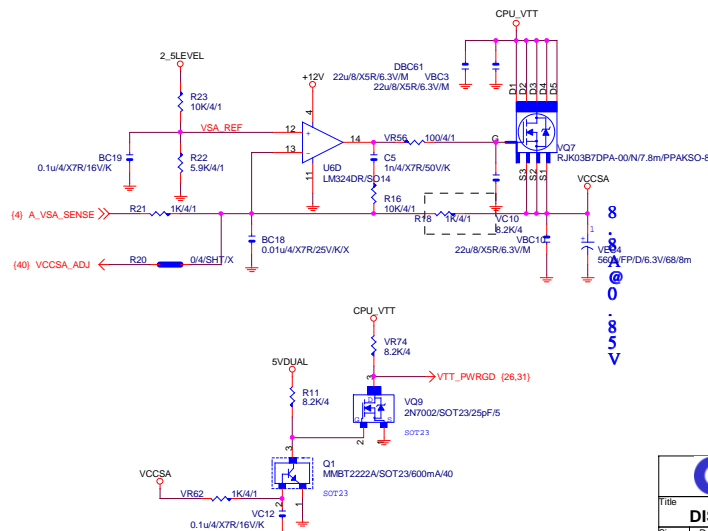
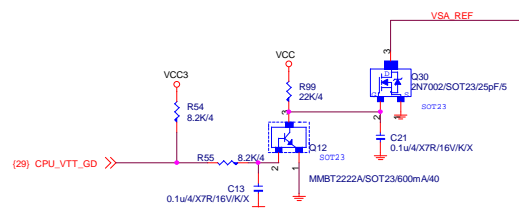


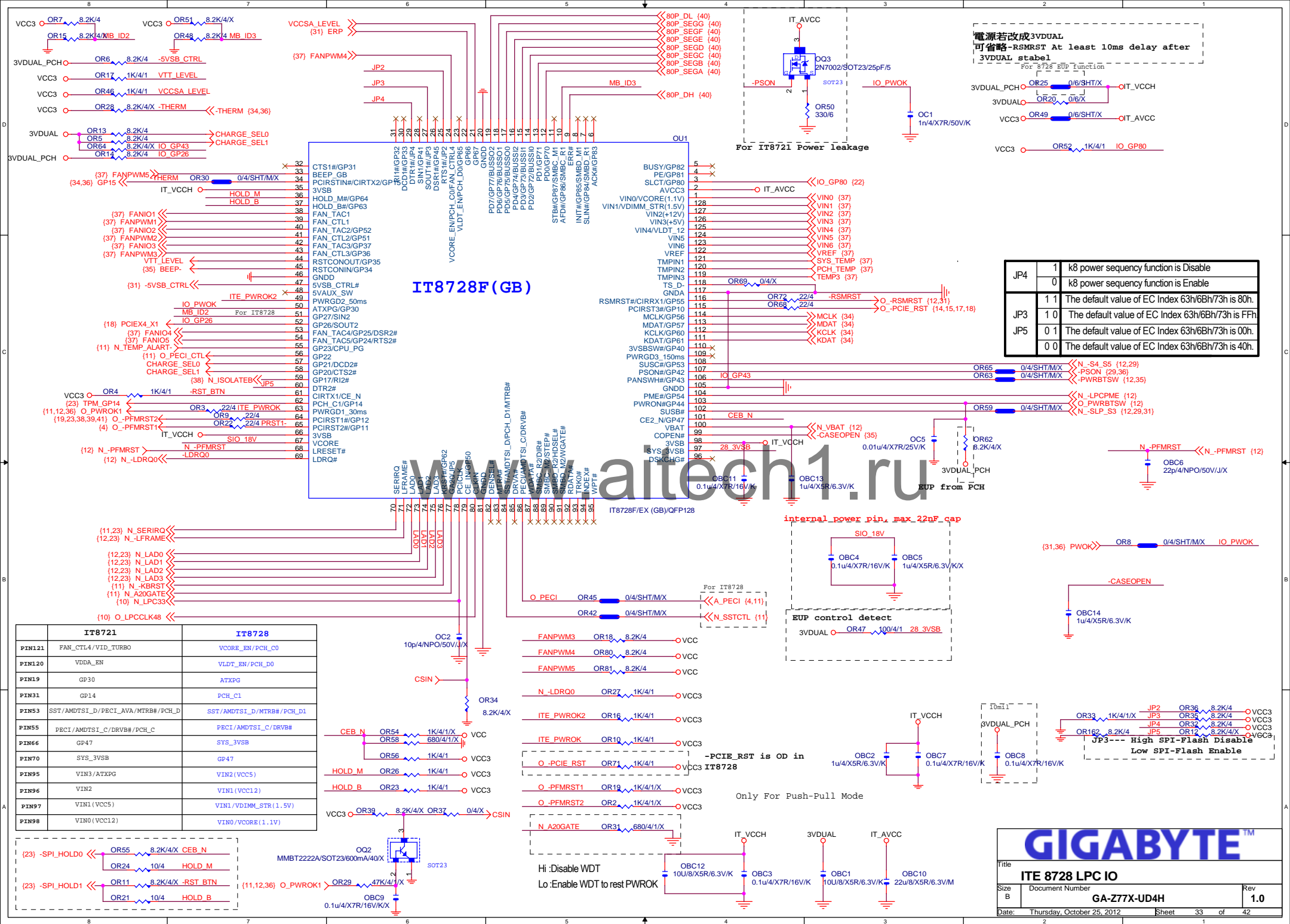


VCC3_DAC
(3.3V/70mA+360uA)



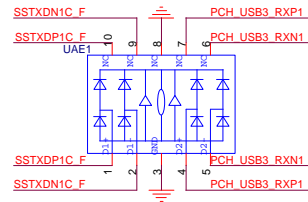
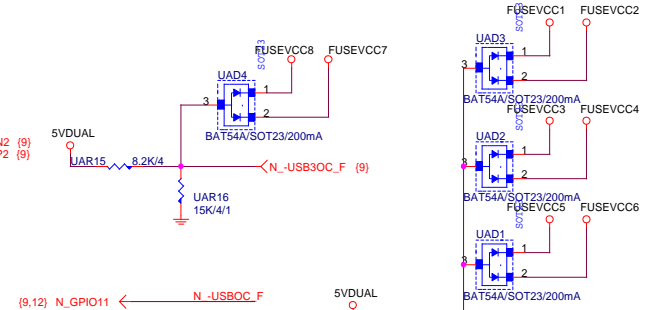
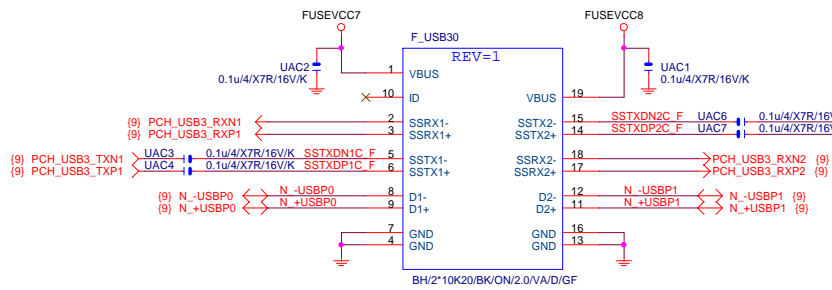
VCC_SA



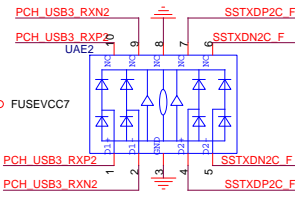




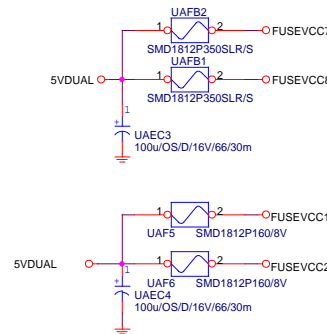
CASE OPEN



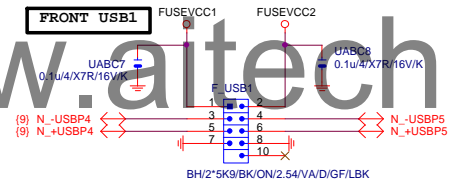
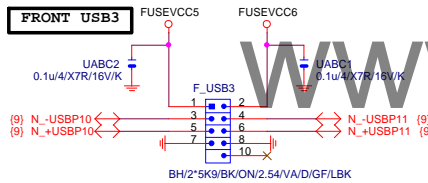
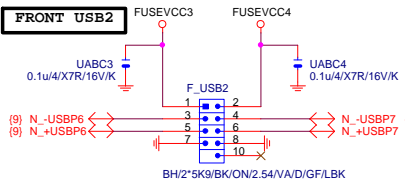
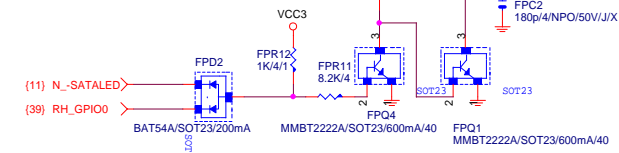
Close to connector



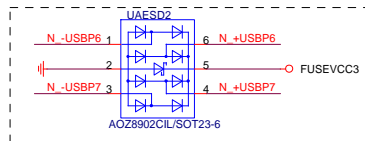
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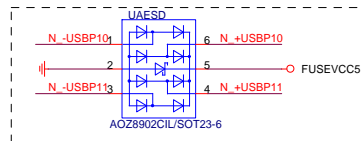
SATA LED



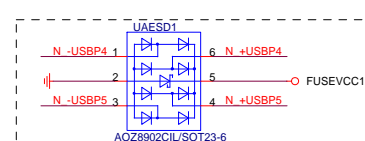
www.aitech1.ru



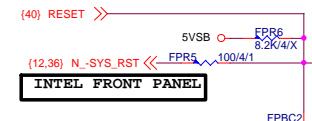
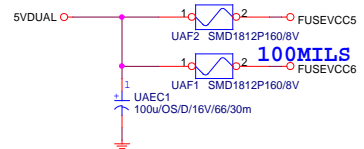
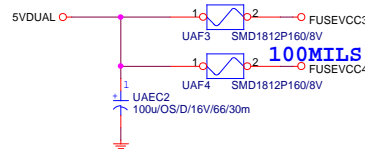
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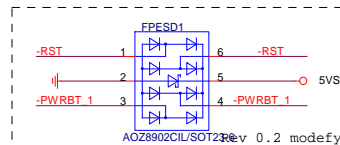
Close to connector



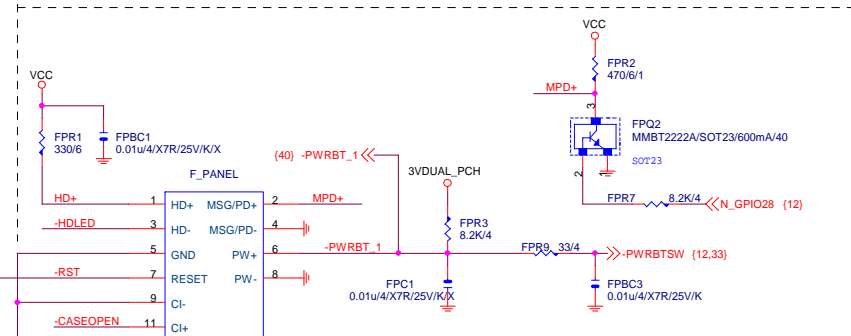
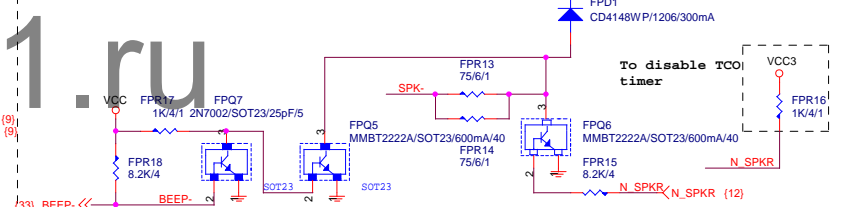
Close to connector



INTEL FRONT PANEL



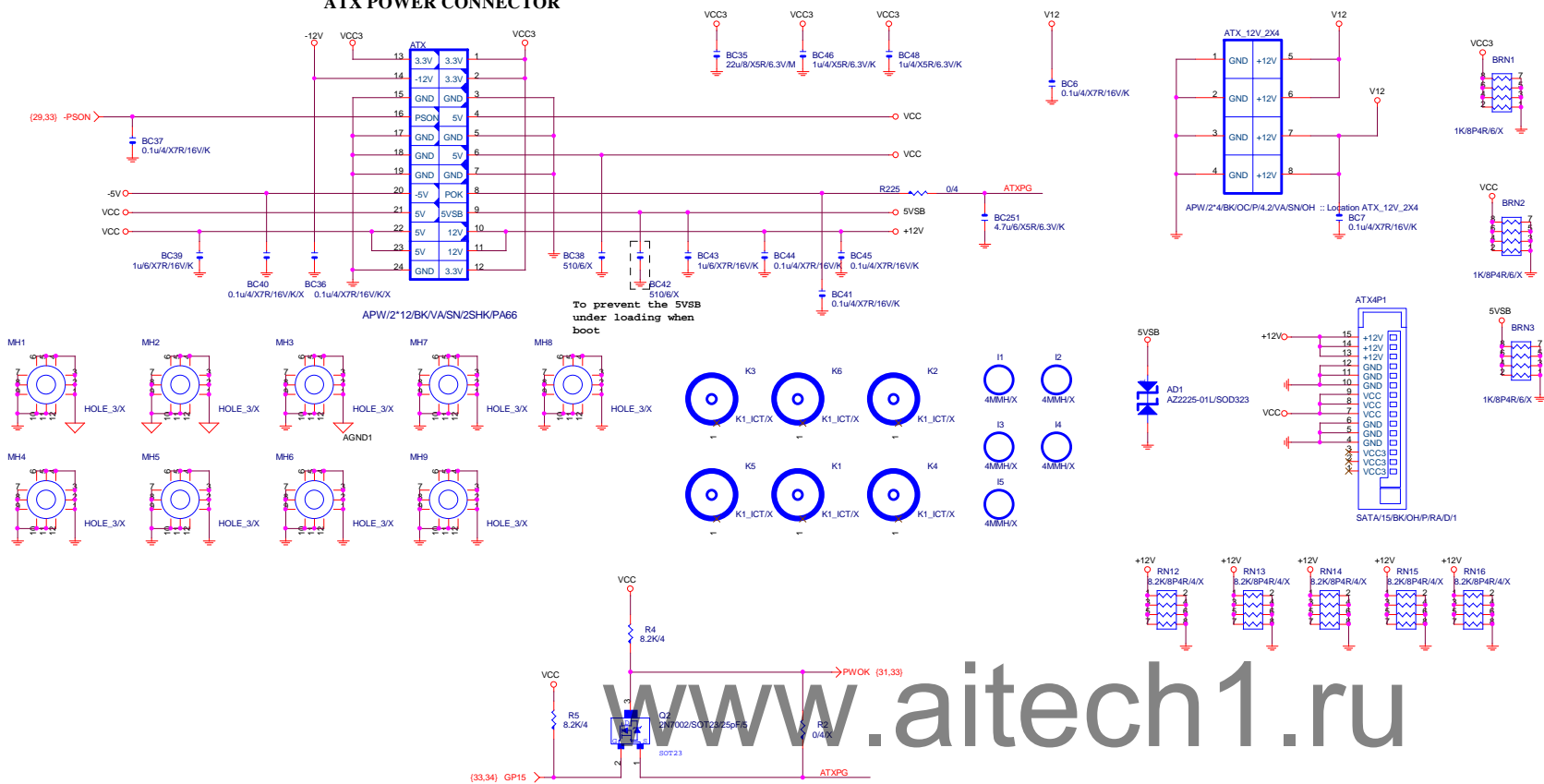
Close to connector



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Title		
FP,F_USB,BZ		
Size	Document Number	Rev
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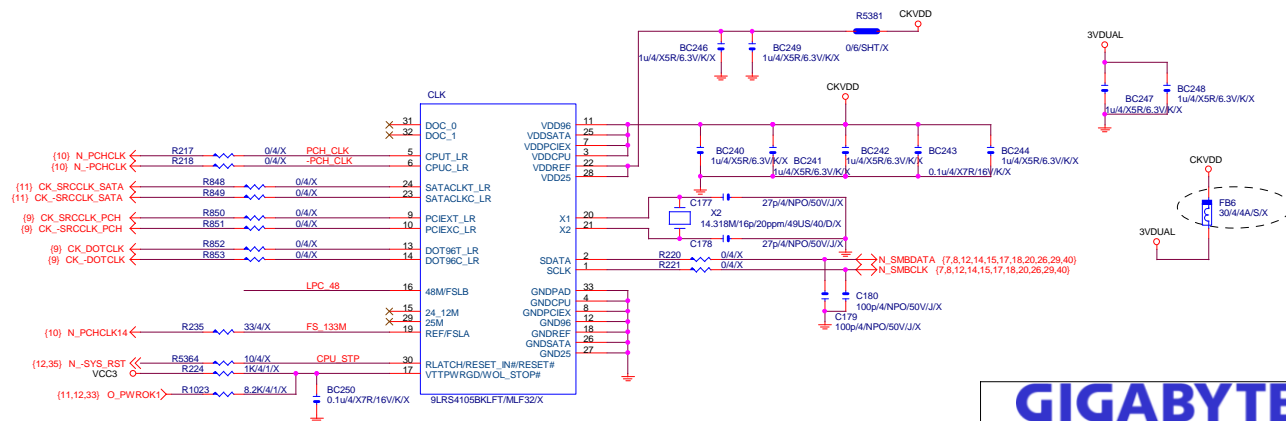
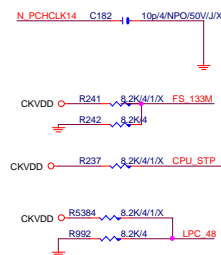
ATX POWER CONNECTOR



CLK GEN CK505

CPU Frequency Selection

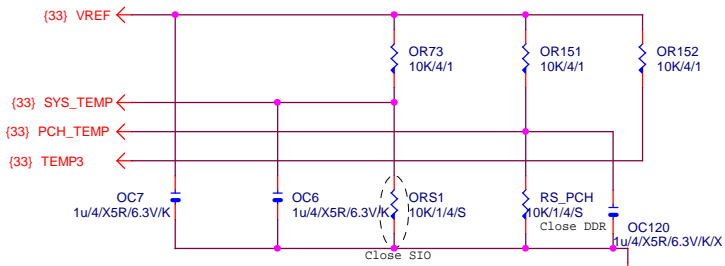
FSLB	FSLA	CPU
0	0	100M <Default>
0	1	133M
1	0	200M
1	1	166M



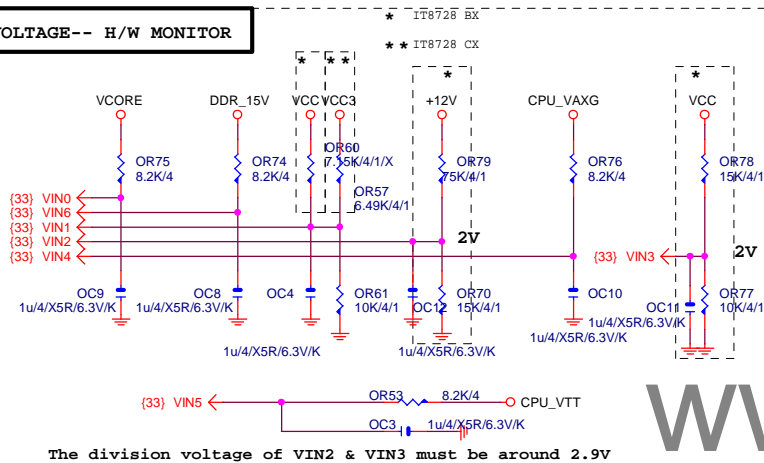
GIGABYTE

Title			
ATX POWER CONNECTOR			
Size	Document Number		Rev
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Date:	Thursday, October 25, 2012	Sheet	36 of 42

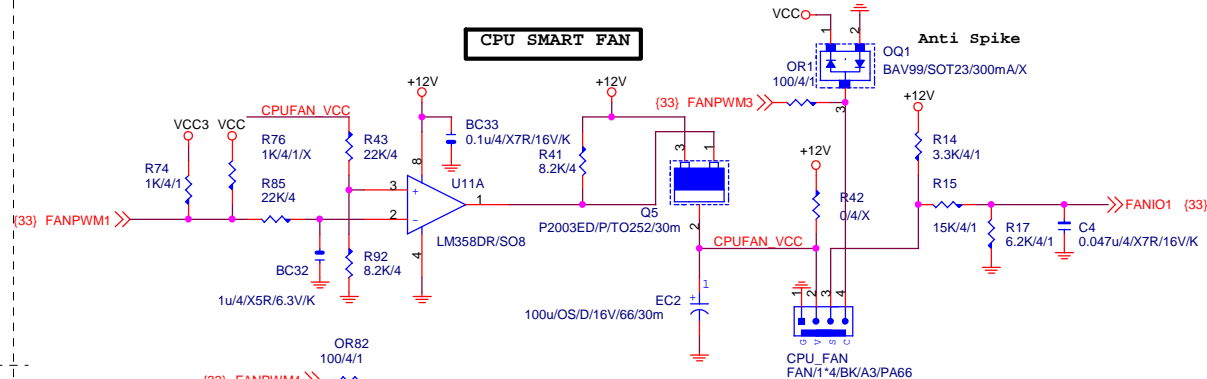
TEMP H/W MONITOR



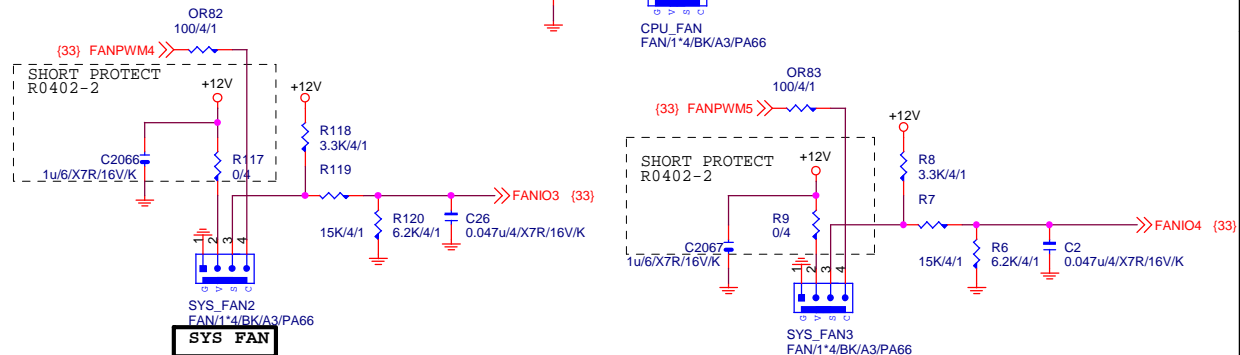
VOLTAGE-- H/W MONITOR



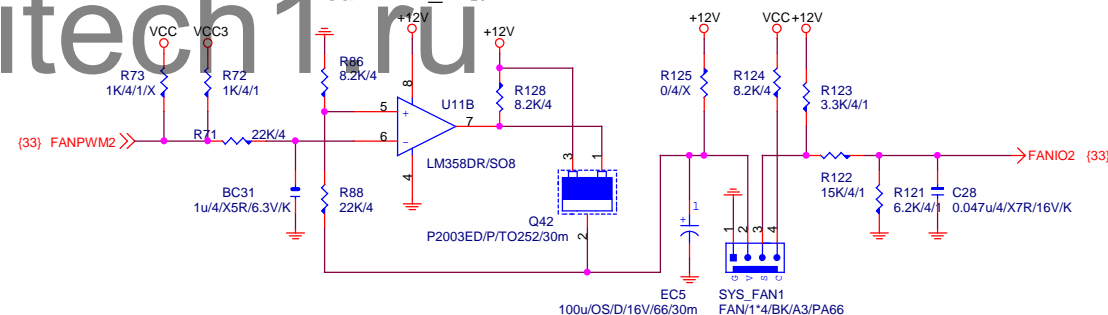
CPU SMART FAN



SYS FAN



Linear SYS_FAN

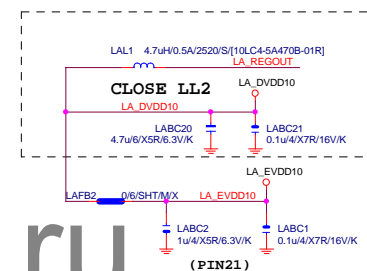
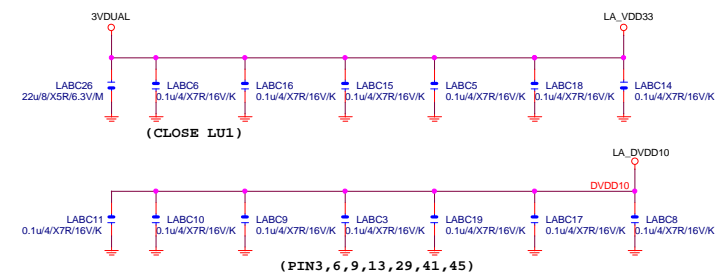
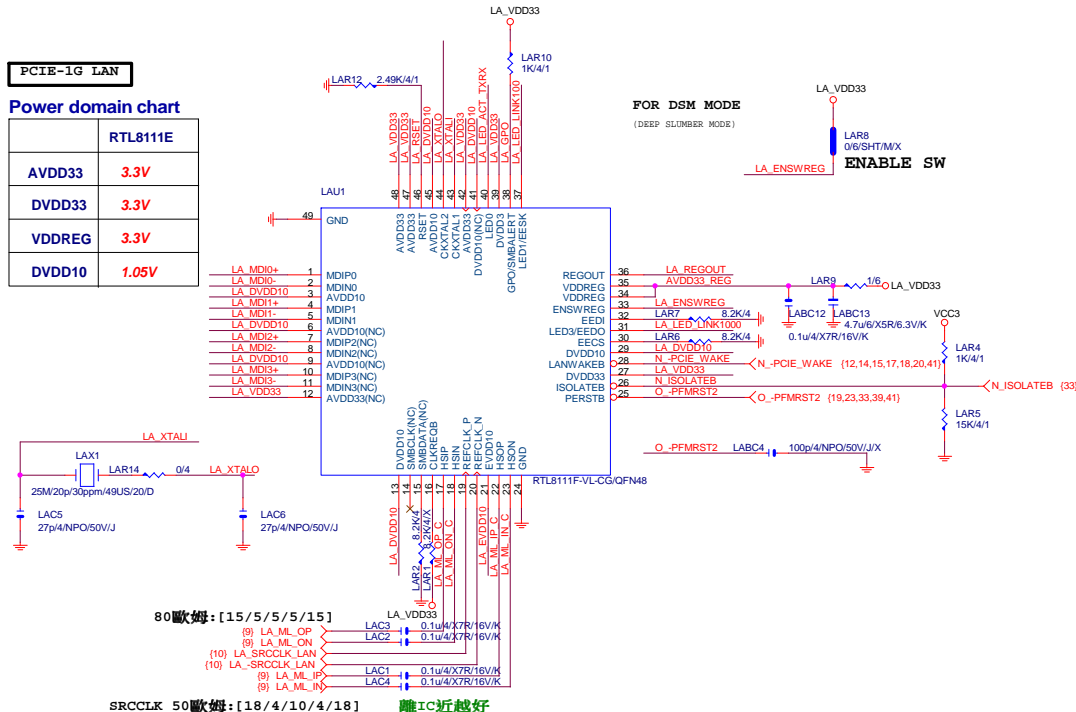


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Title			
HWM,KB/MS, FAN CTRL			
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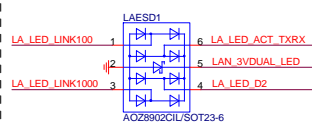
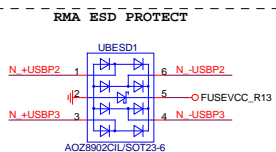
Power domain chart

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

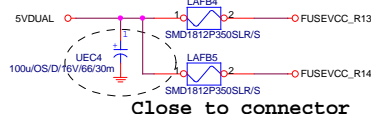


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USB LAN CONNECTOR



USB X3 POWER



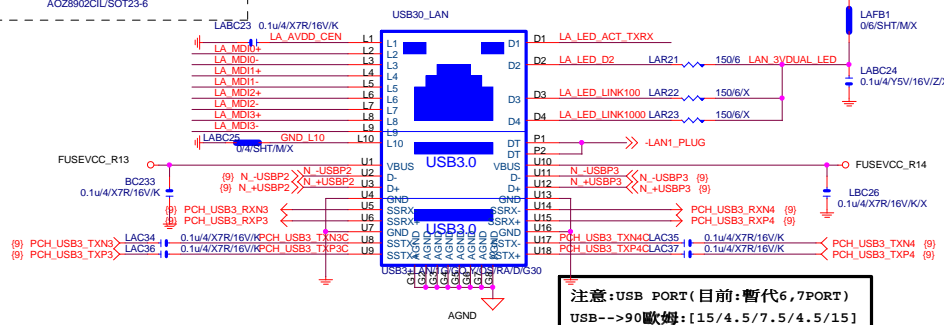
Close to connector

EMI SHORT PAD

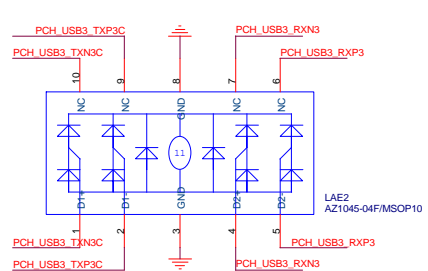
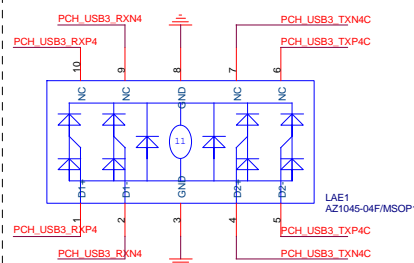
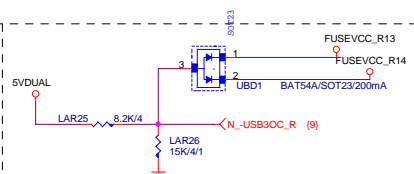
PS:視EMI需求



LA MDI-->100歐姐:[20/4/8/4/20]

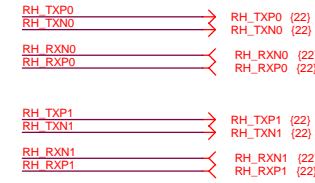
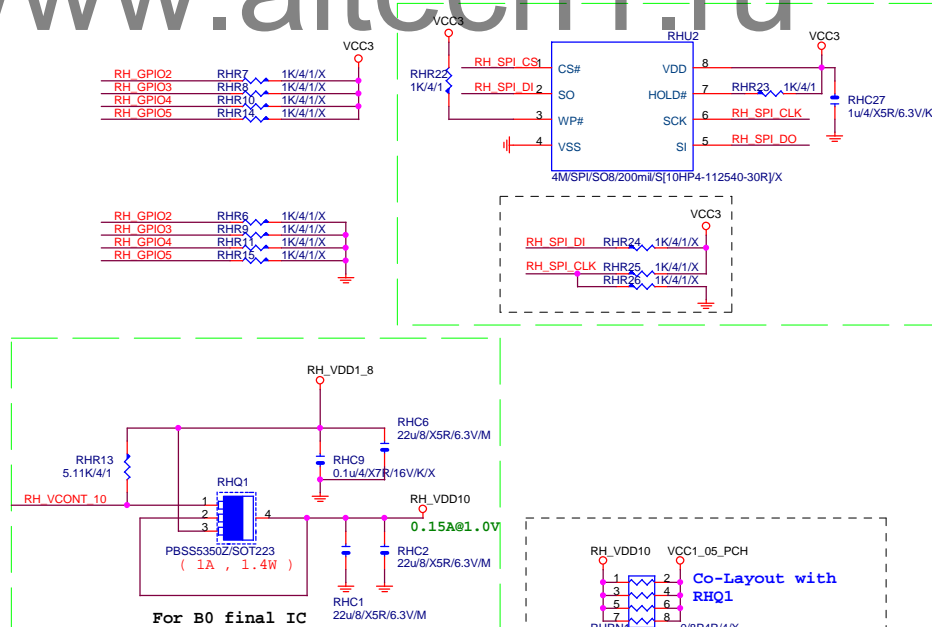
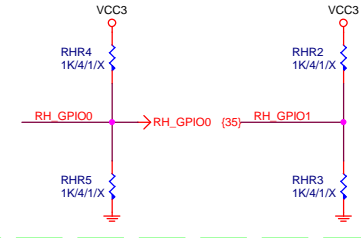
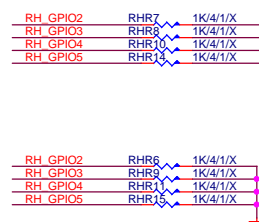
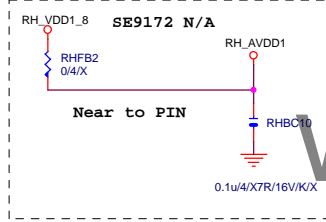
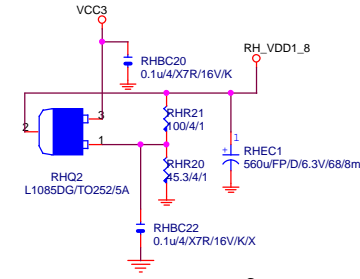
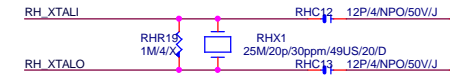
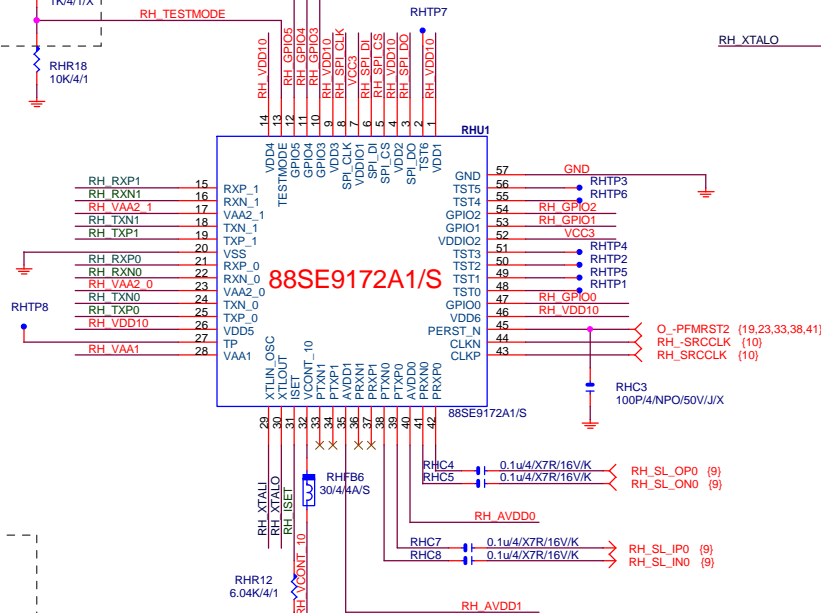
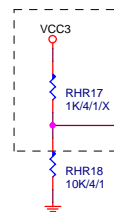


注意:USB PORT(目前:暫代6,7PORT)
USB-->90歐姆:[15/4.5/7.5/4.5/15]



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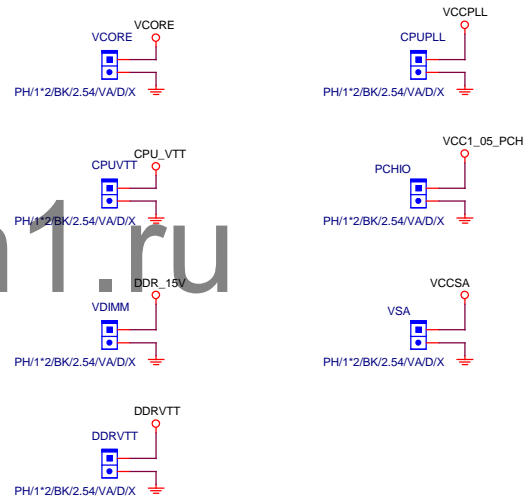
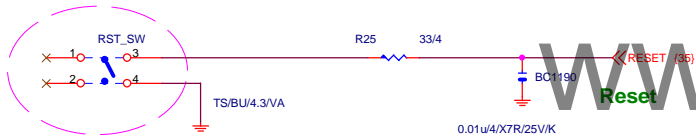
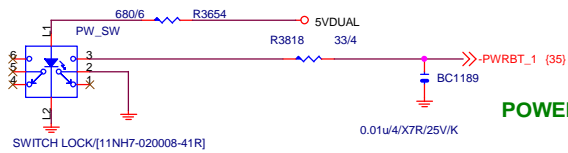
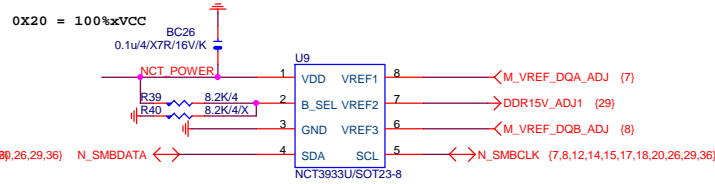
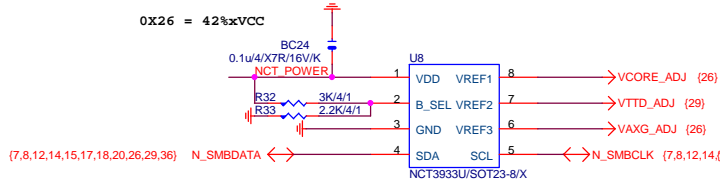
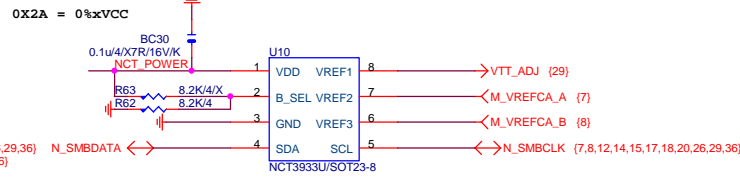
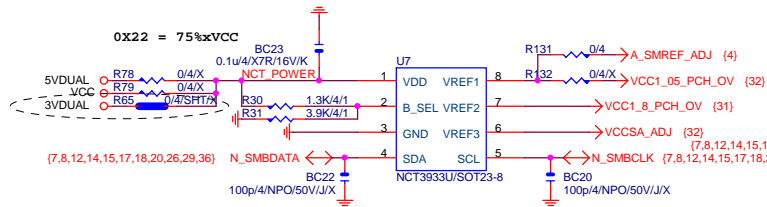
Title			
REALTEK 8111F			
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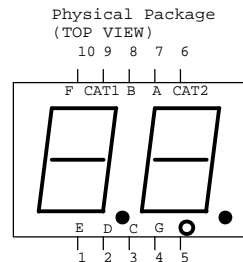
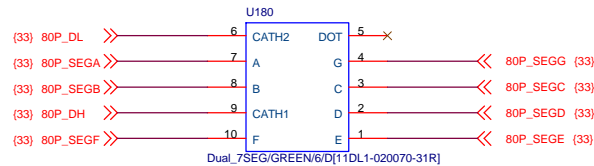
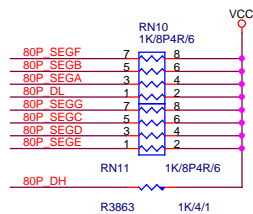
Marvell 9172 Power Requirements
Analog 1.8V 230mA
Core 1.0V 900mA
I/O 3.3V 50mA



Title			
Marvell 9172 SATA 3.0			
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80 PORT



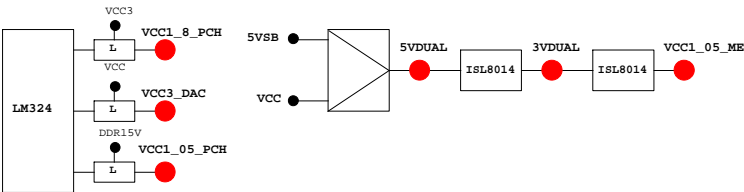
GIGABYTE™			
Title			
OV, PWR LED, 80 PORT			
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PCH GPIO LIST TABLE				
PIN NAME	PWR	Default	USAGE	NOTE
GP0	MAIN	H-Z	GPI -PECI_REQ	N/A
GP1/TACH1	MAIN		GPI ICH_FAN_TACH1	N/A
GP2/PIRQE#	MAIN		GPI -PIRQE	P/U 8.2K VCC3
GP3/PIRQF#	MAIN		GPI -PIRQF	P/U 8.2K 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_FCH_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

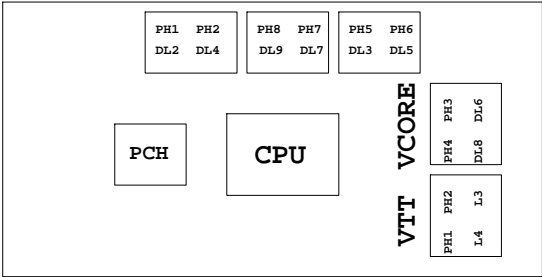
Super I/O ITE8720 GPIO Table

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#CIRRXL/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	
VID05/GP27/SIN2	LOW_PWR_2	
PCIRST2#/GP11	-PWRST1	
PCIRST1#/GP12	-PWRST2	
3VSBSW#/GP40	CSI_F0	BSEL166_1
SUSC#/GP53	CSI_F1	BSEL166_2
GP23/SI	BSEL166_3/CSISBSL	
VID00/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/SMBD_R	3V PIN	FST_2X8
INIT#/GP85/SMBD_M	SEC_2x8	GTLREF_AD2
ACK#/GP83	DDR_LED1_C	
VID01/GP21/DCD2#	DDR_LED2_C	
STB#/GP87/SMBD_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/CIRRXL2/GP16	-THERM	
VID04/GP26/SOUT2	DDR18V_PH2_EN	
VID02/FAN_TAC5/GP24/DSR2#	DDR18V_LED	
VID06/GP17/RI2#	1_1V_PH_EN	
VID07/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：

散熱模組料號：

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

	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

GIGABYTE™			
Title	TABLE LIST		
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