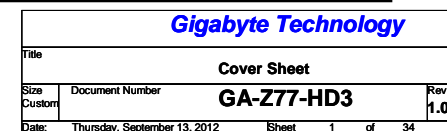


SHEET	TITLE
28	F_PANEL , F_USB
29	ATX POWER, CLOCK GEN
30	HWM,KB/MS , FAN CTRL
31	REALTEK RTL8111F-VL
32	RT8120_DDR POWER
33	DVI/HDMI
34	ITE8892
35	
36	
37	
38	
39	
40	



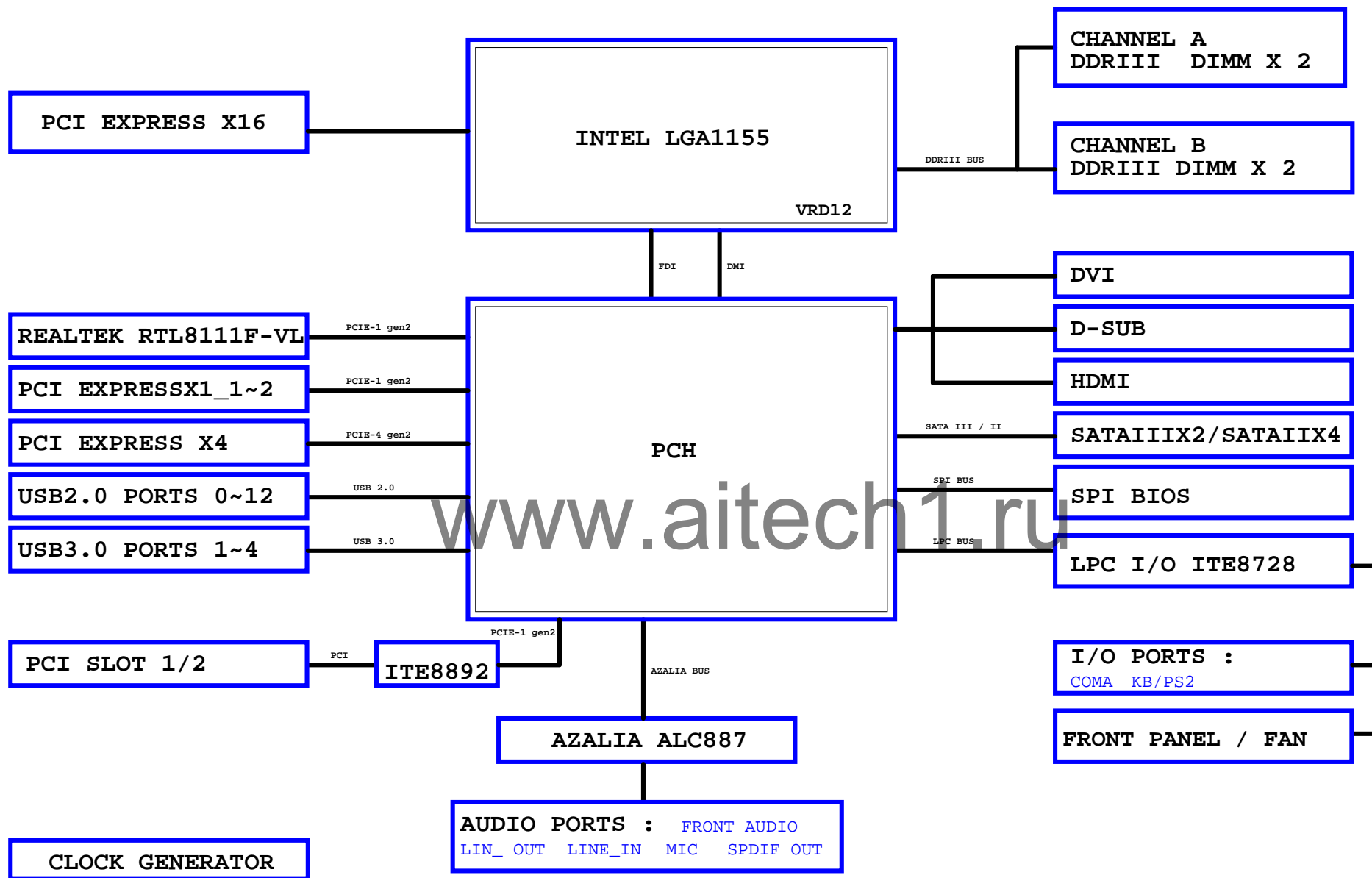
GA-Z77-HD3  
Component value change history

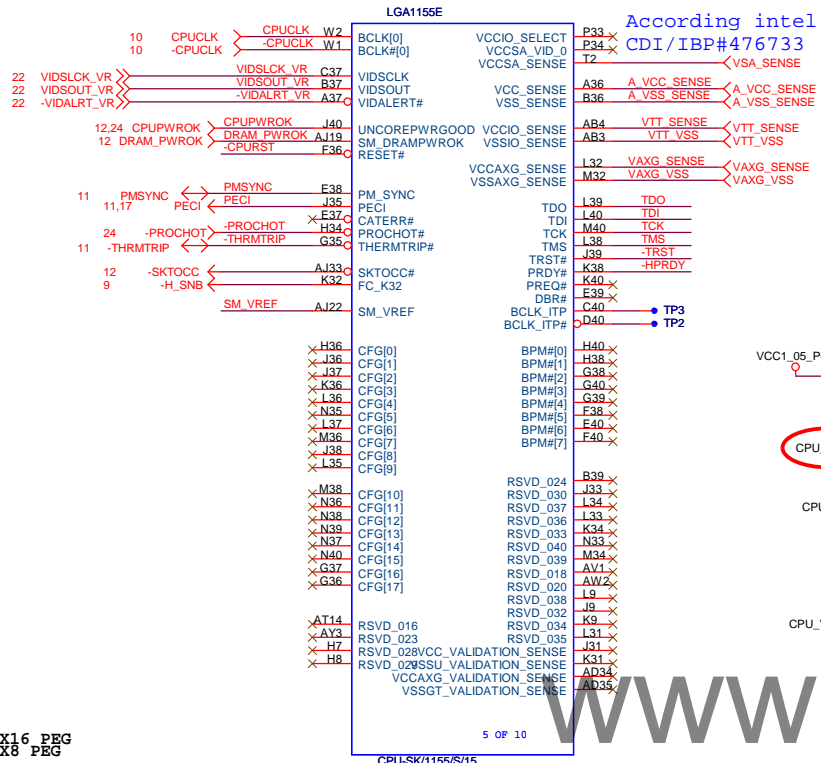
Data	Change Item	Reason
2011/12/15 EBOM:01	1.FOR B75-D3V	
2011/12/15 EBOM:01	1.FOR Z77-DS3H	
02-0125	1.ADD R756,R757,R758,C232,RS_PWM. RS_PWM請放到DQ12附近. 2. DRT1,DR59請放到DRT3右邊	
Z77-DS3H-10A	1. P-BOM	
Z77-DS3H-10B	4. RS_PWM相關線路移除	
Z77-DS3H-10C	0. PCB Rev1.0 --> Rev1.01 1. DDR3 OC 2400MHz LAYOUT 2. CHOKE 0.6UH指定用:11LC5-R4600C-01R 3. Add M/B ID for DDR3 OC	
Z77-DS3H-10D	1. PCB Rev1.01 --> Rev1.02 2. Updrage DDR3 OC 3. Add M/B ID for DDR3 OC	
10E-0427	1. Patch PWM ISL95836 vcc_sense issue (For Vcore OVP issue) : DR466 8.2K-->100ohm , DR472 1K-->0ohm	
11A	1. AR8151 --> AR8161 2. ATX_12V_2X2 --> ATX_12V_2X4 3. Add pwrok 4.7uF	
11B-0629	1. VCC1_05_PCH 1.05 --> 1.1V	
11B-0815	1.Remove PANJT MMBT2222A (95836 CPU TURBO FUNCTION DISABLE)	
11C-0824	1.U9,U11 NCT3931 --> NCT3933 2.DR474 510/4/1 --> 301/4/1 3.M/B ID R40,R43 --> R41,R44 8.2K/4	
2012/09/07 EBOM:01	1.REMOVE MSATA,ANALOGUE ---->DIGI POWER,SATA2_6;RTL8111F-VL 2.MOS /PCH HEATSINK 改為?灰	
2012/10/09 PBOM:10A	1.LS MOS 393 / 397 ---->21R FOR 同樣的厚度 2.REMOVE DAJF1, add Q36 for VR hot function 3.Tune R418 1.4k----->845 ohm for VR hot 啓動點	

Circuit or PCB layout change

DATE	Change Item	Reason
2011/12/14 PCB:0.1	1.由P75-D3-0.1 修改 成B75-D3V	
2011/12/14 PCB:0.1	1.由B75-D3V-0.1 修改成Z77-DS3H	
0.2	1. DDR DIP 560uF電容移除 2. SATA0RXP第二層REF挖空位置 3. DDR3_1-4文字面對齊 4. 修改CPU_VAXG 包含PHASE部份,以及VIN Bottom增加鋪銅散熱 5.ADD R756,R757,R758,C232,RS_PWM. RS_PWM請放到DQ12附近.	
1.0	1. 0 ohm ahort pad (audio , lan , rt8120)	
1.01	1. DDR3 2400MHz OC modify (DDR3 DQ 走T型)	
1.02	1. DDR3 2400MHz OC modify (縮小DDR3間距)	
1.1	1. F.B "FB0603-RH" change to "FB0402-RH" 2. ATX_12V_2X2 change to ATX_12V_2X4 3. Atheros LAN AR8161 co-layout 4. Add pwrok R200,BC10 放在ATX 端 5. msATA LAYOUT 龍華& FOXCONN CO-LAY(變更FOOTPRINT) 6. add VCC1_05_PCH over voltage control	
1.11	1. Remove ITE8728 GP66 For Erp Function	
2012/09/06 PCB:0.1	1. NEW MODEL FOR Z77-HD3由z77-DS3H修改,REMOVE MSATA,ANALOGUE ---->DIGI POWER,SATA2_5,RTL 8111F-VL	
2012/10/09 PCB:1.0	for MP 1.BC121,BC123 MASK	

# BLOCK DIAGRAM



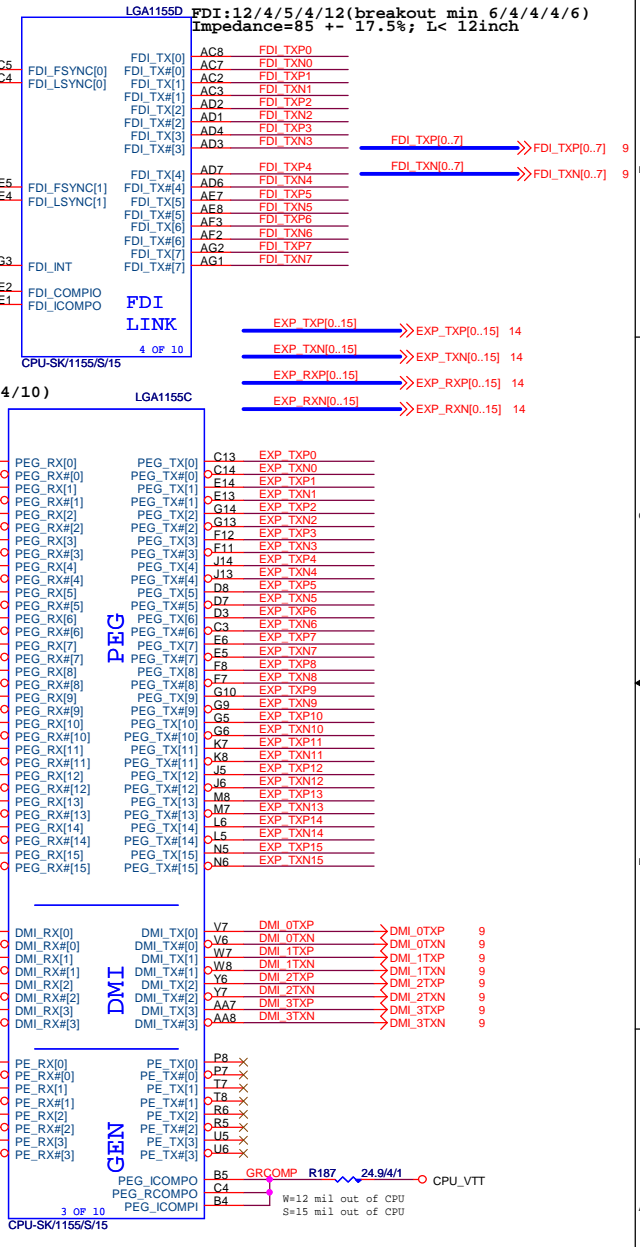
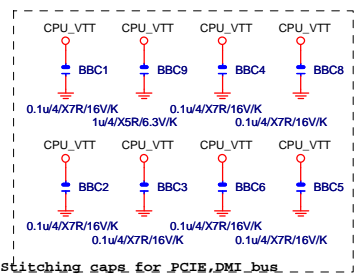
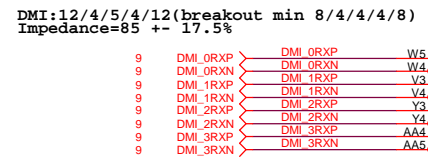
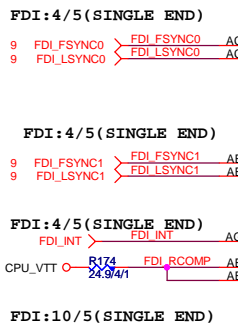
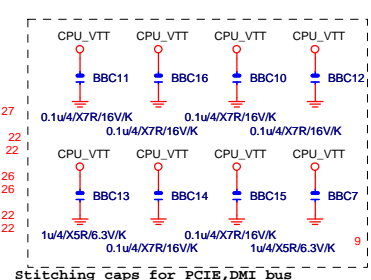
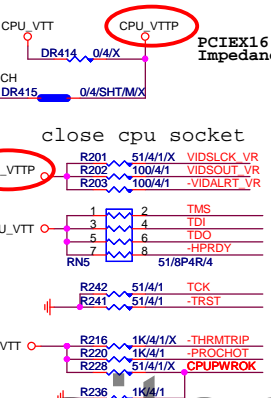
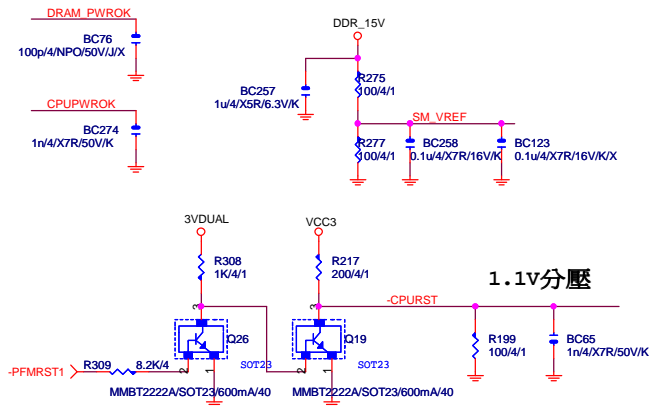


CFG5=1: 1x16 PEG  
CFG5=0: 2x8 PEG

CFG	H	L	NOTE
0	RSVD	RSVD	RSVD
1	RSVD	RSVD	RSVD
2	RSVD	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
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



Gigabyte Technology

Title CPU LGA1155-A

Size Custom Document Number GA-Z77-HD3 Rev 1.0

Date: Monday, October 08, 2012 Sheet 4 of 34



## LGA1155A

M\_AA0 AV27  
M\_AA1 AY24  
M\_AA2 AW24  
M\_AA3 AW23  
M\_AA4 AV23  
M\_AA5 AT24  
M\_AA6 AT23  
M\_AA7 AU22  
M\_AA8 AV22  
M\_AA9 AT22  
M\_AA10 AV28  
M\_AA11 AU21  
M\_AA12 AT21  
M\_AA13 AW32  
M\_AA14 AU20  
M\_AA15 AT20

SA\_DQS[0] AK3 M\_DQSA0  
SA\_DQS[0] AK2 M\_DQSA0  
SA\_DQ[0] AJ3 M\_DA0  
SA\_DQ[1] AJ4 M\_DA1  
SA\_DQ[2] AL3 M\_DA2  
SA\_DQ[3] AL4 M\_DA3  
SA\_DQ[4] AJ2 M\_DA4  
SA\_DQ[4] AJ1 M\_DA5  
SA\_DQ[5] AL2 M\_DA6  
SA\_DQ[6] AL1 M\_DA7  
SA\_DQS[1] AP3 M\_DQSA1  
SA\_DQS[1] AP2 M\_DQSA1

SA\_WE# M\_SWEA AW29  
SA\_DQ[8] AN4 M\_DA9  
SA\_DQ[9] AN4 M\_DA10  
SA\_DQ[10] AR3 M\_DA11  
SA\_DQ[11] AR4 M\_DA12  
SA\_DQ[12] AN2 M\_DA13  
SA\_DQ[13] AR2 M\_DA14  
SA\_DQ[14] AR1 M\_DA15

SA\_BS[0] M\_SBA0 AY29  
SA\_BS[1] M\_SBA1 AW28  
SA\_BS[2] M\_SBA2 AV20  
SA\_DQ[15] M-CSA0 AU29  
SA\_CS[0] M-CSA1 AV32  
SA\_CS[1] M-CSA2 AW30  
SA\_CS[2] M-CSA3 AU33  
SA\_CS[3]

SA\_CKE[0] M\_CKEA0 AV19  
SA\_CKE[1] M\_CKEA1 AT19  
SA\_CKE[2] M\_CKEA2 AU18  
SA\_CKE[3] M\_CKEA3 AV18  
SA\_ODT[0] M\_ODT\_A0 AV31  
SA\_ODT[1] M\_ODT\_A1 AU32  
SA\_ODT[2] M\_ODT\_A2 AU30  
SA\_ODT[3] M\_ODT\_A3 AW33

SA\_DQS[3] AV8 M\_DQSA3  
SA\_DQS[3] AW8 M\_DQSA3  
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SA\_CK[1] M\_DCLKA1 AU25  
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SA\_CK[2] M\_DCLKA2 AY27  
SA\_CK[2] M\_DCLKA3 AW26  
SA\_CK[3] M\_DCLKA3 AW26  
SA\_CK[3]

SA\_DQ[24] AY7 M\_DA24  
SA\_DQ[25] AU7 M\_DA25  
SA\_DQ[26] AU9 M\_DA26  
SA\_DQ[27] AU7 M\_DA28  
SA\_DQ[28] AW7 M\_DA29  
SA\_DQ[29] AU9 M\_DA30  
SA\_DQ[30] AY9 M\_DA31  
SA\_DQ[31]

SA\_DQS[4] AV37 M\_DQSA4  
SA\_DQS[4] AV36 M\_DQSA4  
SA\_DQ[32] AU35 M\_DA32  
SA\_DQ[33] AU37 M\_DA33  
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SA\_DQ[52] AL39 M\_DA52  
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SA\_DQ[62] AE39 M\_DA62  
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DDR\_0

1 OF 10

CPU-SK/1155/S/15

## LGA1155B

M\_AAB0 AK24  
M\_AAB1 AM20  
M\_AAB2 AM19  
M\_AAB3 AK18  
M\_AAB4 AP19  
M\_AAB5 AP18  
M\_AAB6 AM18  
M\_AAB7 AL18  
M\_AAB8 AN18  
M\_AAB9 AY17  
M\_AAB10 AN23  
M\_AAB11 AU17  
M\_AAB12 AT18  
M\_AAB13 AR26  
M\_AAB14 AV16  
M\_AAB15 AV16

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SB\_DQS[0] AH6 M\_DQSB0  
SB\_DQ[0] AG7 M\_DB0  
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SB\_DQ[2] AJ9 M\_DB2  
SB\_DQ[3] AJ8 M\_DB3  
SB\_DQ[4] AG9 M\_DB4  
SB\_DQ[5] AG8 M\_DB5  
SB\_DQ[6] AJ6 M\_DB6  
SB\_DQ[7] AJ7 M\_DB7  
SB\_DQS[1] AM8 M\_DQSB1  
SB\_DQS[1] AL8 M\_DQSB1

SB\_WE# M\_SWEB AR25  
SB\_CAS# M\_SCASB AK25  
SB\_RAS# M\_SRASB AP24  
SB\_BS[0] M\_SBA0 AP23  
SB\_BS[1] M\_SBA1 AM24  
SB\_BS[2] M\_SBA2 AW17  
SB\_CS[0] M-CSB0 AN25  
SB\_CS[1] M-CSB1 AN26  
SB\_CS[2] M-CSB2 AL26  
SB\_CS[3] M-CSB3 AT26

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SB\_CKE[2] M\_CKEB2 AW15  
SB\_CKE[3] M\_CKEB3 AV15  
SB\_ODT[0] M\_ODT\_B0 AL26  
SB\_ODT[1] M\_ODT\_B1 AP26  
SB\_ODT[2] M\_ODT\_B2 AM26  
SB\_ODT[3] M\_ODT\_B3 AK26

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SB\_DQS[3] AN12 M\_DQSB3  
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SB\_DQ[33] AR29 M\_DB33  
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SB\_DQ[35] AL29 M\_DB35  
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SB\_DQ[37] AP29 M\_DB37  
SB\_DQ[38] AN28 M\_DB38  
SB\_DQ[39] AM29 M\_DB39

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SB\_DQS[5] AR33 M\_DQSB5  
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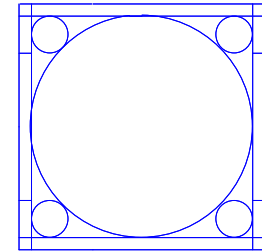
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SB\_DQ[50] AL35 M\_DB50  
SB\_DQ[51] AL32 M\_DB51  
SB\_DQ[52] AM34 M\_DB52  
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SB\_DQ[54] AM35 M\_DB54  
SB\_DQ[55] AL34 M\_DB55

SB\_DQS[7] AG35 M\_DQSB7  
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SB\_DQ[56] AH35 M\_DB56  
SB\_DQ[57] AH34 M\_DB57  
SB\_DQ[58] AE34 M\_DB58  
SB\_DQ[59] AE35 M\_DB59  
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SB\_DQ[63] AF35 M\_DB63

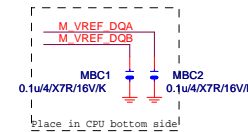
DDR\_1

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CPU-SK/1155/S/15

LGA1155  
ILM\_BP/1156/CSP

Need check the new CPU ME



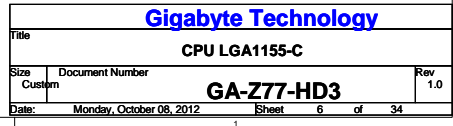
Gigabyte Technology

CPU LGA1155-B

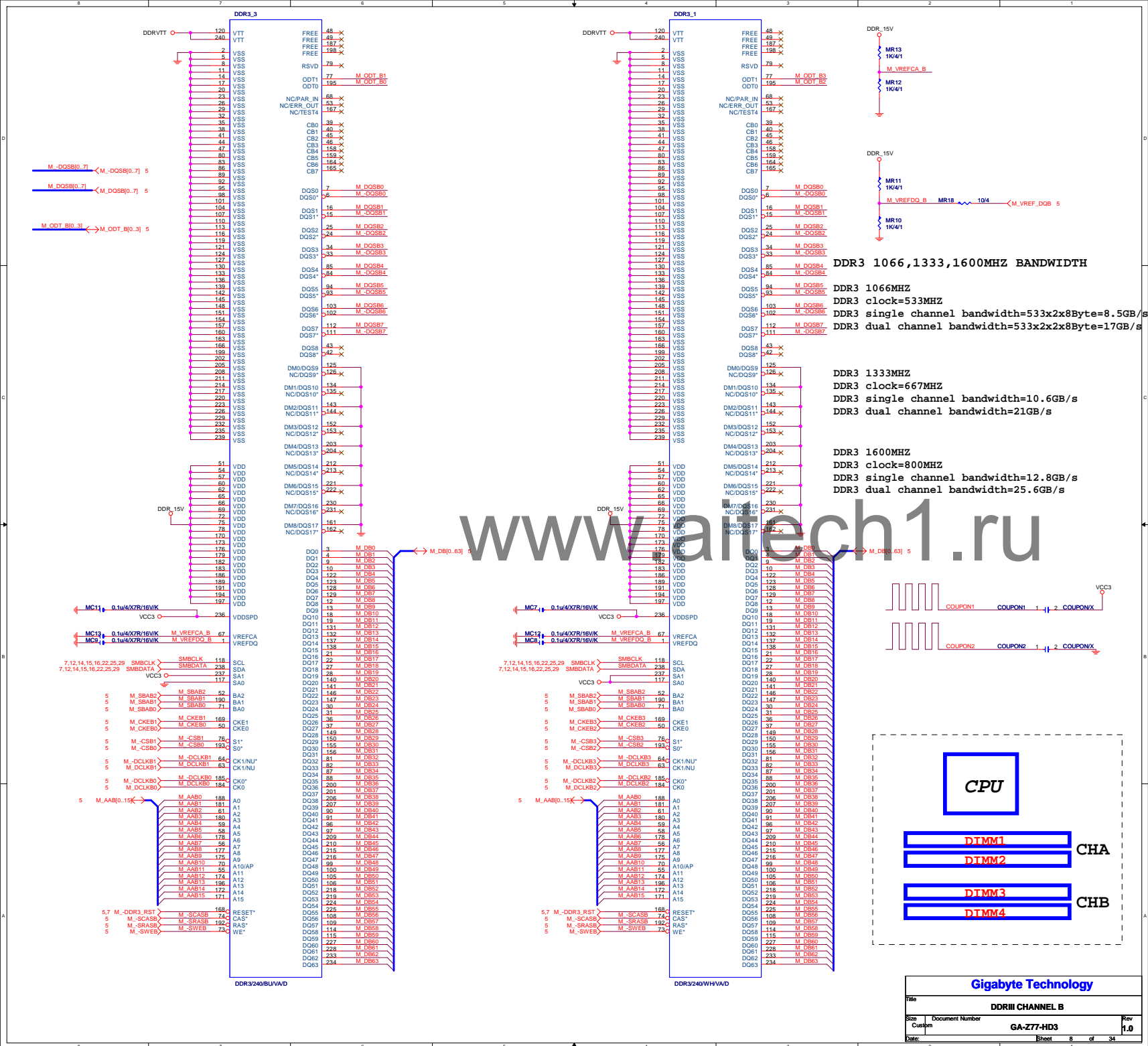
Title  
Size Custom  
Date: Thursday, September 13, 2012 Sheet 5 of 34

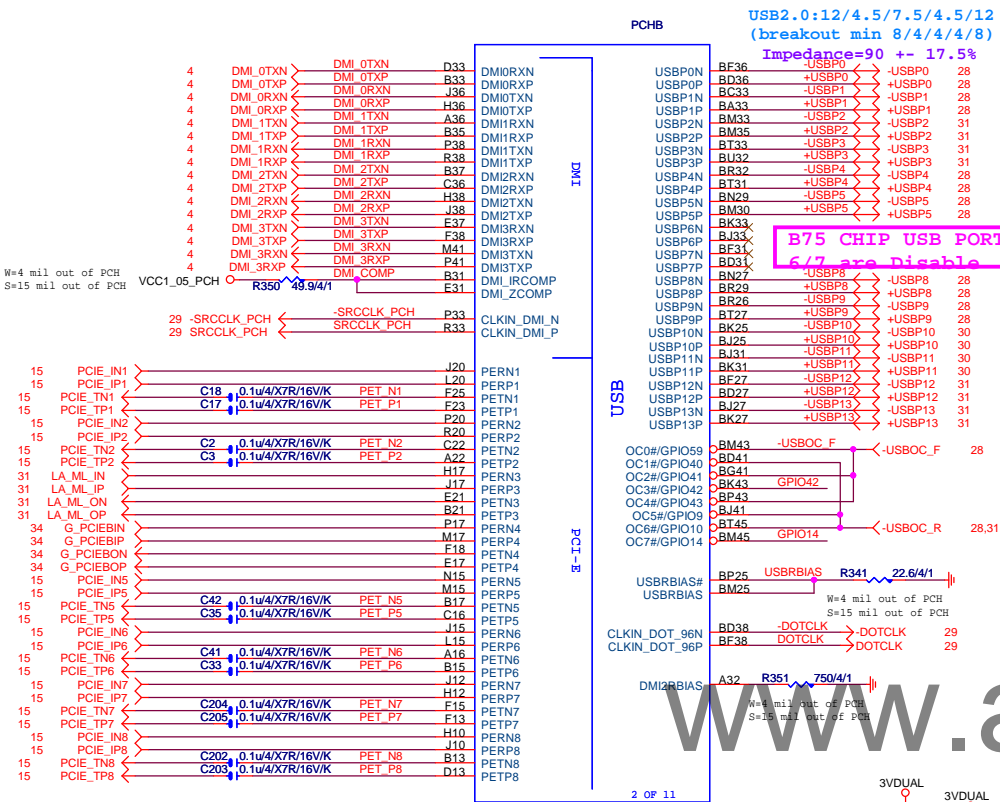
GA-Z77-HD3

Rev 1.0

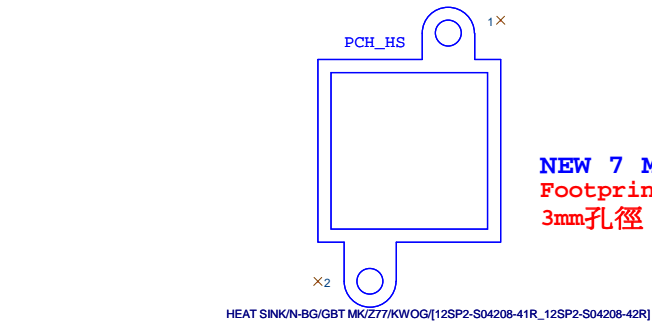








放靠近 Device & PCI-E Slot  
PCIEX1:16/5/5/16 (breakout min 8/4/4/4/8)  
Impedance=80 +/- 17.5%



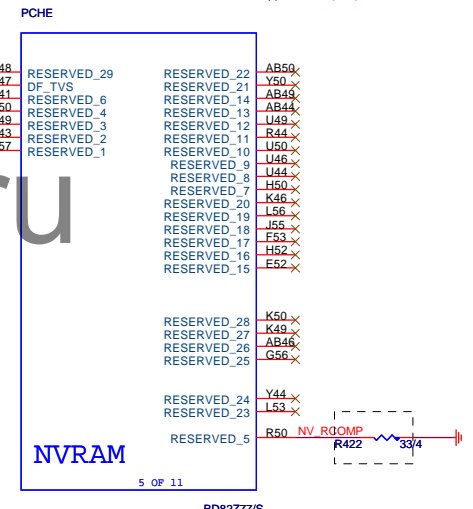
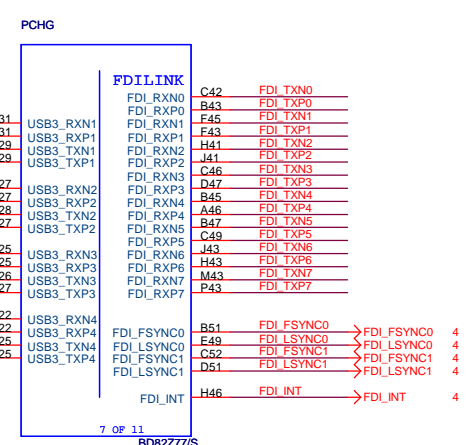
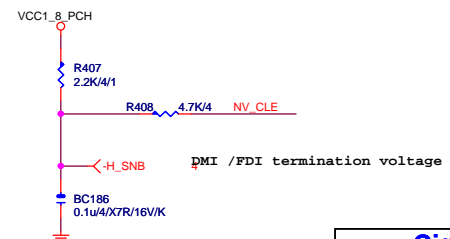
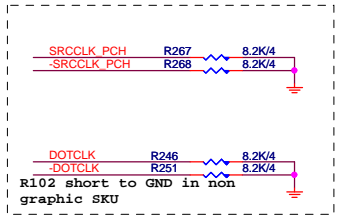
NEW 7 MODEL; ?灰  
Footprint: BGAHSINK-75;  
3mm孔径

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

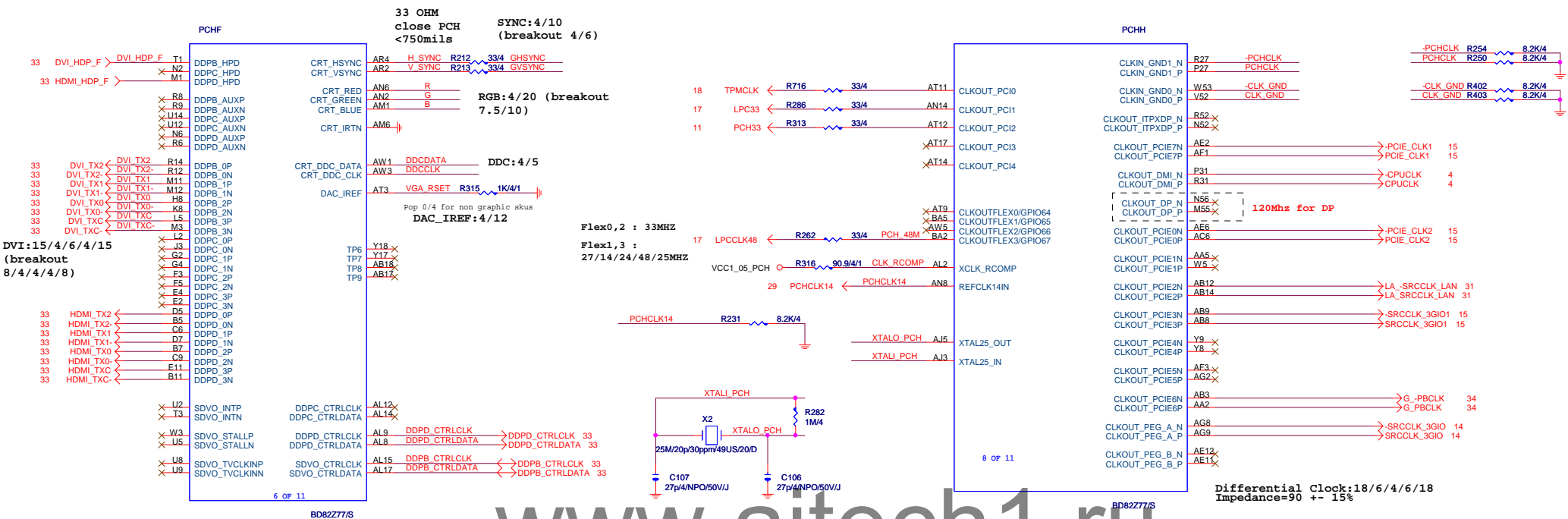
B75 CHIP USB PORT  
6/7 are Disable

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

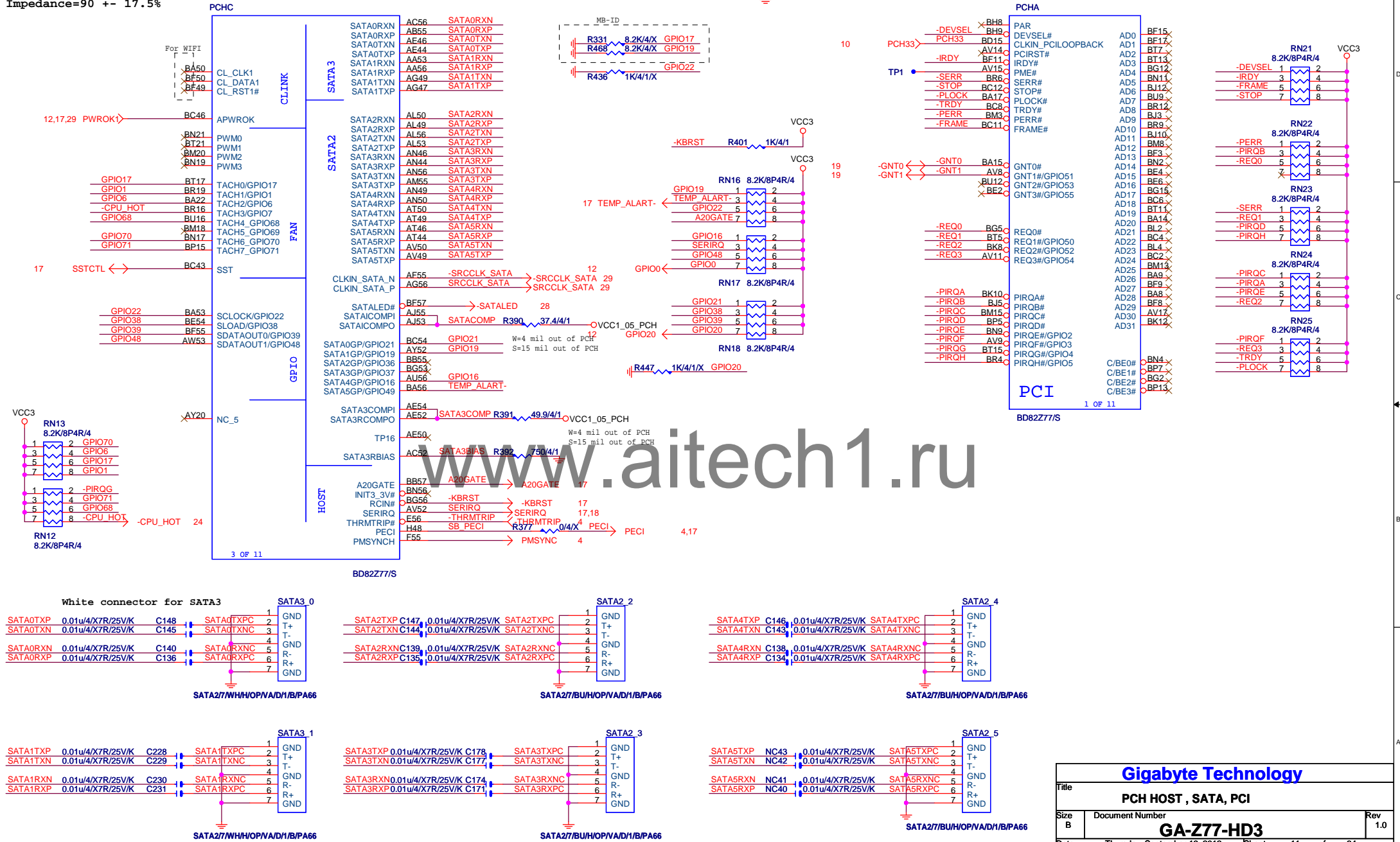
USB OC# Configure	
OC0#	USB0_1
OC1#	USB2_3
OC2#	USB4_5
OC3#	USB6_7
OC4#	USB8_9
OC5#	USB10_11
OC6#	USB12_13
OC7#	Not Use

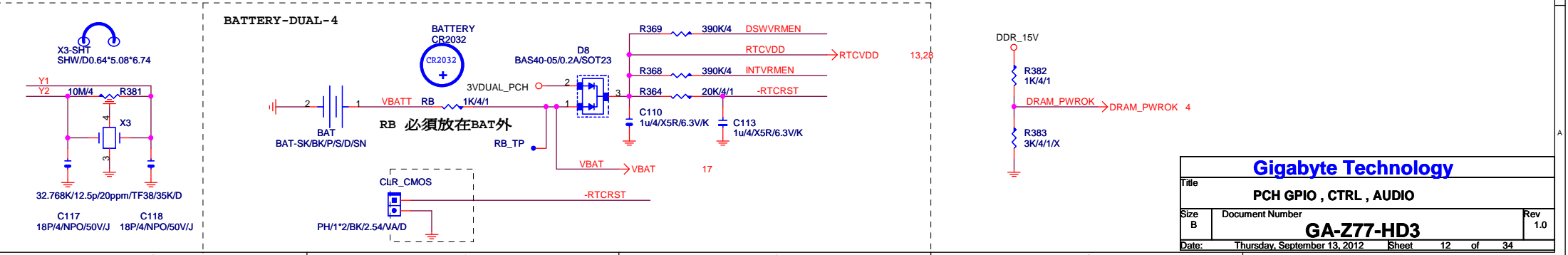
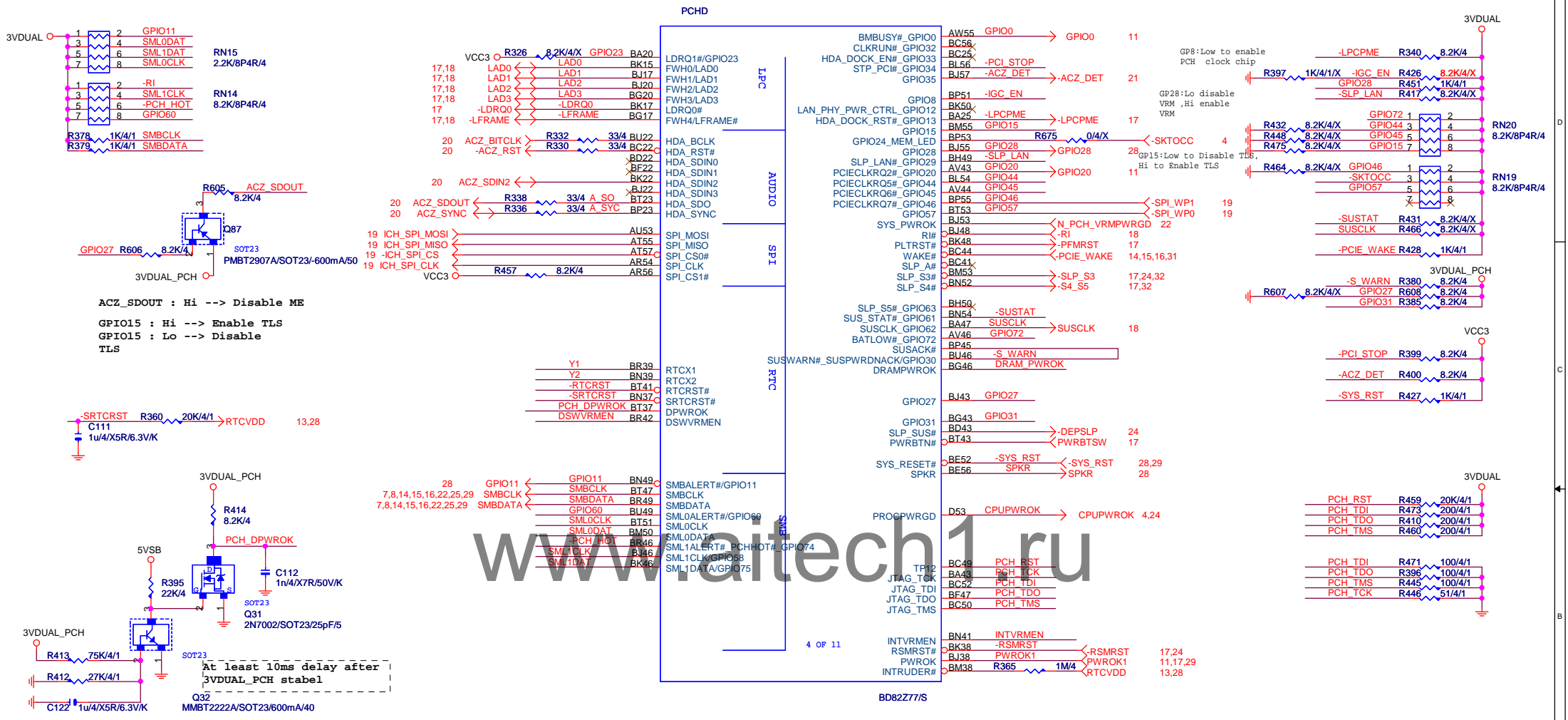






SATA2 : 15/7.5/4.5/7.5/15 (breakout min 8/4/4/4/8)  
Impedance=90 +- 17.5% PCHC

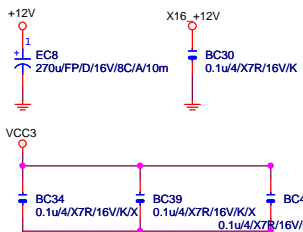




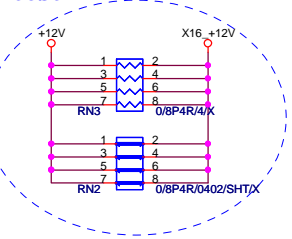
Gigabyte Technology			
Title			
PCH GPIO , CTRL , AUDIO			
Size	Document Number	Rev	
B	GA-Z77-HD3	1.0	
Date:	Thursday, September 13, 2012	Sheet	12 of 34







+12 protect  
short-wire  
test



PCIE16:16/5/5/5/16

EXP\_RXP[0..15] >> EXP\_RXP[0..15] 4  
EXP\_RXN[0..15] >> EXP\_RXN[0..15] 4  
EXP\_TXP[0..15] >> EXP\_TXP[0..15] 4  
EXP\_TXN[0..15] >> EXP\_TXN[0..15] 4

EXP_TXP0	C43	0.22u4/X5R/6.3V/K	EXP_TXP0C
EXP_TXN0	C36	0.22u4/X5R/6.3V/K	EXP_TXN0C
EXP_TXP1	C47	0.22u4/X5R/6.3V/K	EXP_TXP1C
EXP_TXN1	C49	0.22u4/X5R/6.3V/K	EXP_TXN1C
EXP_TXP2	C52	0.22u4/X5R/6.3V/K	EXP_TXP2C
EXP_TXN2	C54	0.22u4/X5R/6.3V/K	EXP_TXN2C
EXP_TXP3	C57	0.22u4/X5R/6.3V/K	EXP_TXP3C
EXP_TXN3	C59	0.22u4/X5R/6.3V/K	EXP_TXN3C
EXP_TXP4	C62	0.22u4/X5R/6.3V/K	EXP_TXP4C
EXP_TXN4	C64	0.22u4/X5R/6.3V/K	EXP_TXN4C
EXP_TXP5	C65	0.22u4/X5R/6.3V/K	EXP_TXP5C
EXP_TXN5	C67	0.22u4/X5R/6.3V/K	EXP_TXN5C
EXP_TXP6	C69	0.22u4/X5R/6.3V/K	EXP_TXP6C
EXP_TXN6	C71	0.22u4/X5R/6.3V/K	EXP_TXN6C
EXP_TXP7	C76	0.22u4/X5R/6.3V/K	EXP_TXP7C
EXP_TXN7	C75	0.22u4/X5R/6.3V/K	EXP_TXN7C
EXP_TXP8	C79	0.22u4/X5R/6.3V/K	EXP_TXP8C
EXP_TXN8	C80	0.22u4/X5R/6.3V/K	EXP_TXN8C
EXP_TXP9	C81	0.22u4/X5R/6.3V/K	EXP_TXP9C
EXP_TXN9	C82	0.22u4/X5R/6.3V/K	EXP_TXN9C
EXP_TXP10	C86	0.22u4/X5R/6.3V/K	EXP_TXP10C
EXP_TXN10	C87	0.22u4/X5R/6.3V/K	EXP_TXN10C
EXP_TXP11	C90	0.22u4/X5R/6.3V/K	EXP_TXP11C
EXP_TXN11	C91	0.22u4/X5R/6.3V/K	EXP_TXN11C
EXP_TXP12	C92	0.22u4/X5R/6.3V/K	EXP_TXP12C
EXP_TXN12	C93	0.22u4/X5R/6.3V/K	EXP_TXN12C
EXP_TXP13	C95	0.22u4/X5R/6.3V/K	EXP_TXP13C
EXP_TXN13	C96	0.22u4/X5R/6.3V/K	EXP_TXN13C
EXP_TXP14	C97	0.22u4/X5R/6.3V/K	EXP_TXP14C
EXP_TXN14	C98	0.22u4/X5R/6.3V/K	EXP_TXN14C
EXP_TXP15	C99	0.22u4/X5R/6.3V/K	EXP_TXP15C
EXP_TXN15	C100	0.22u4/X5R/6.3V/K	EXP_TXN15C

PCI-E REV:1.1--> 2.5GHZ

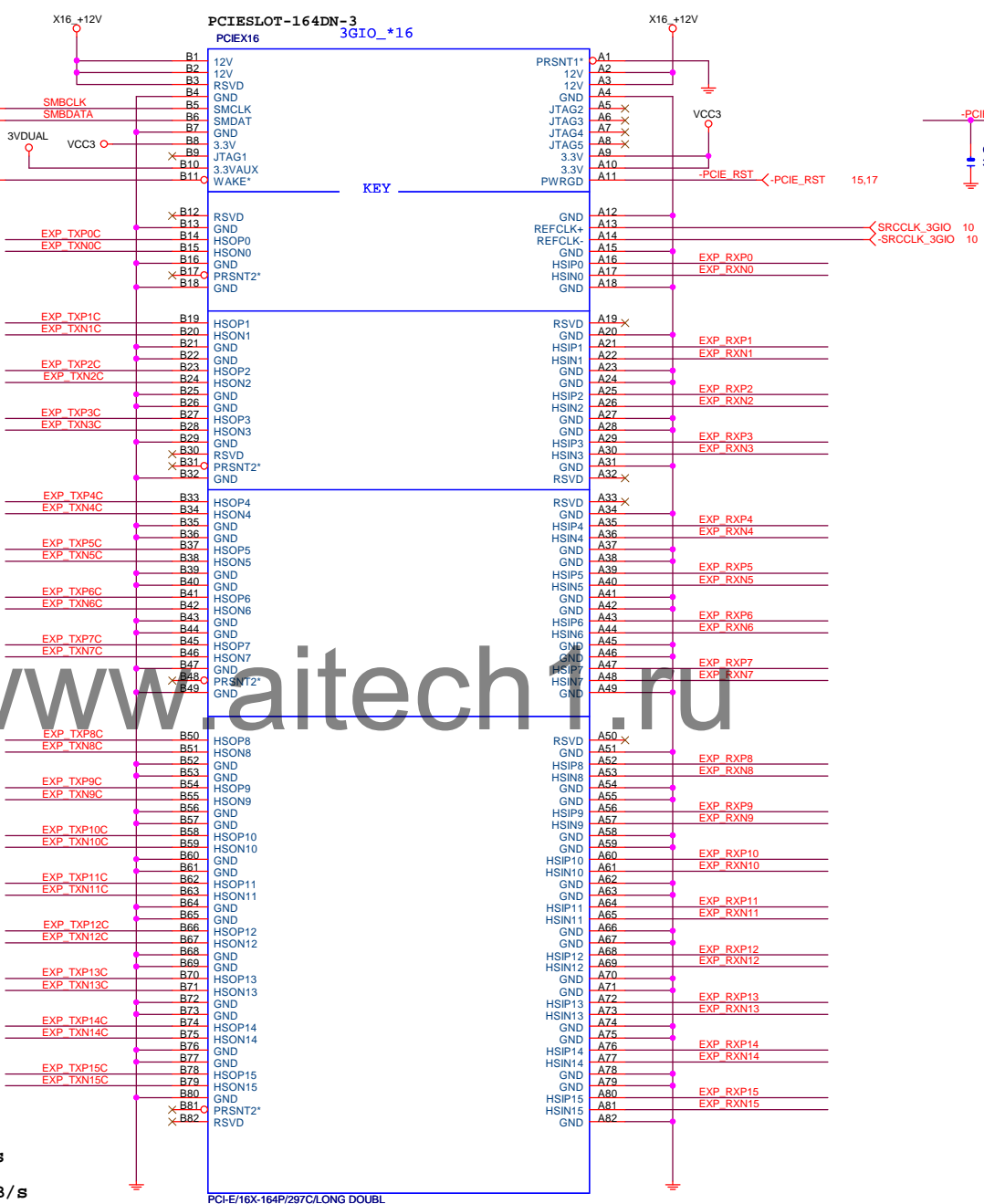
PCE-E X1(單向) BANDWIDTH=2.5GHz\*(8b/10b)=2Gb/s=250MB/s

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

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

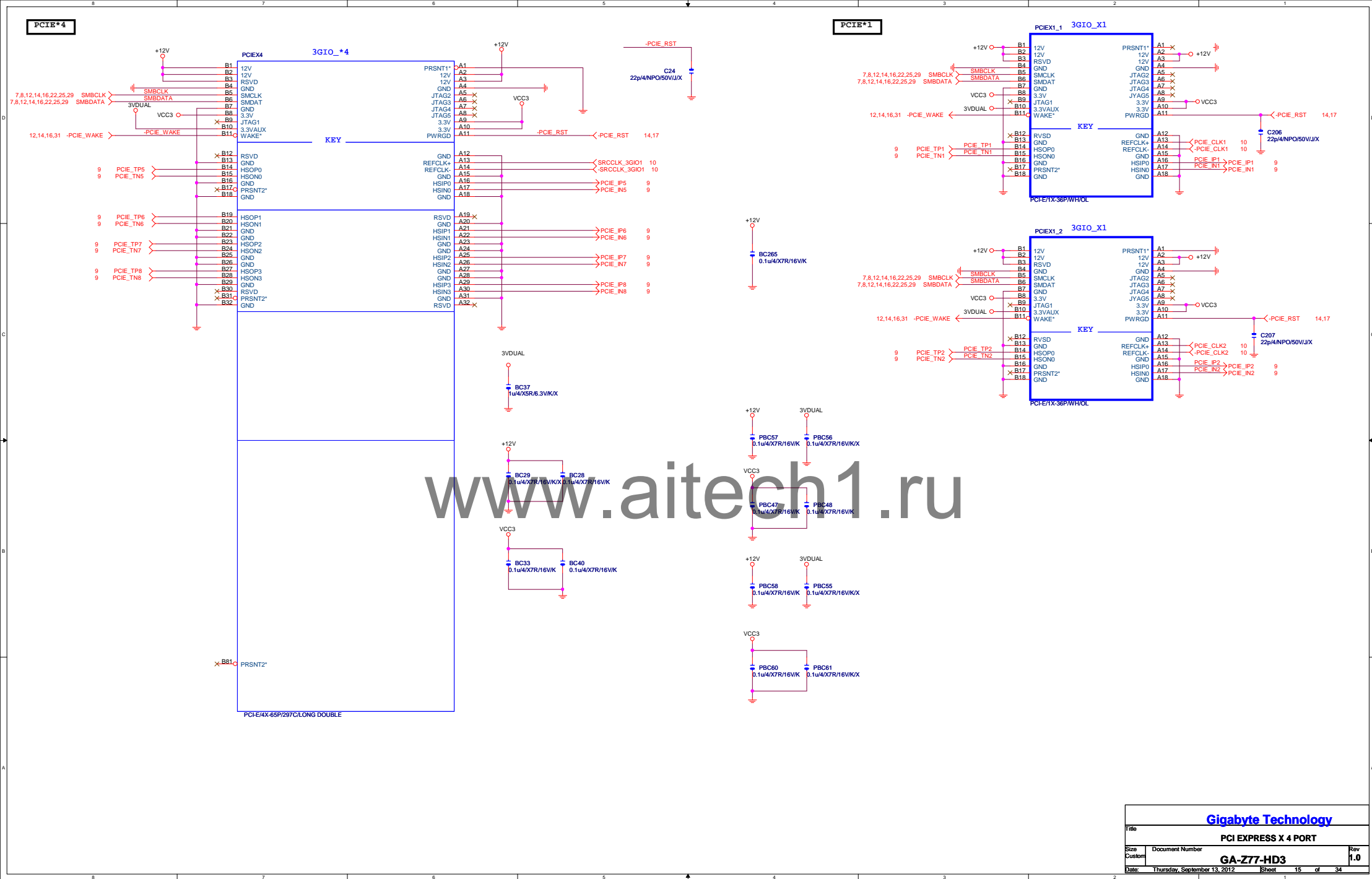
PCE-E X16(雙向) BANDWIDTH=2.5GHz\*(8b/10b)X16X2=64Gb/s=8GB/s

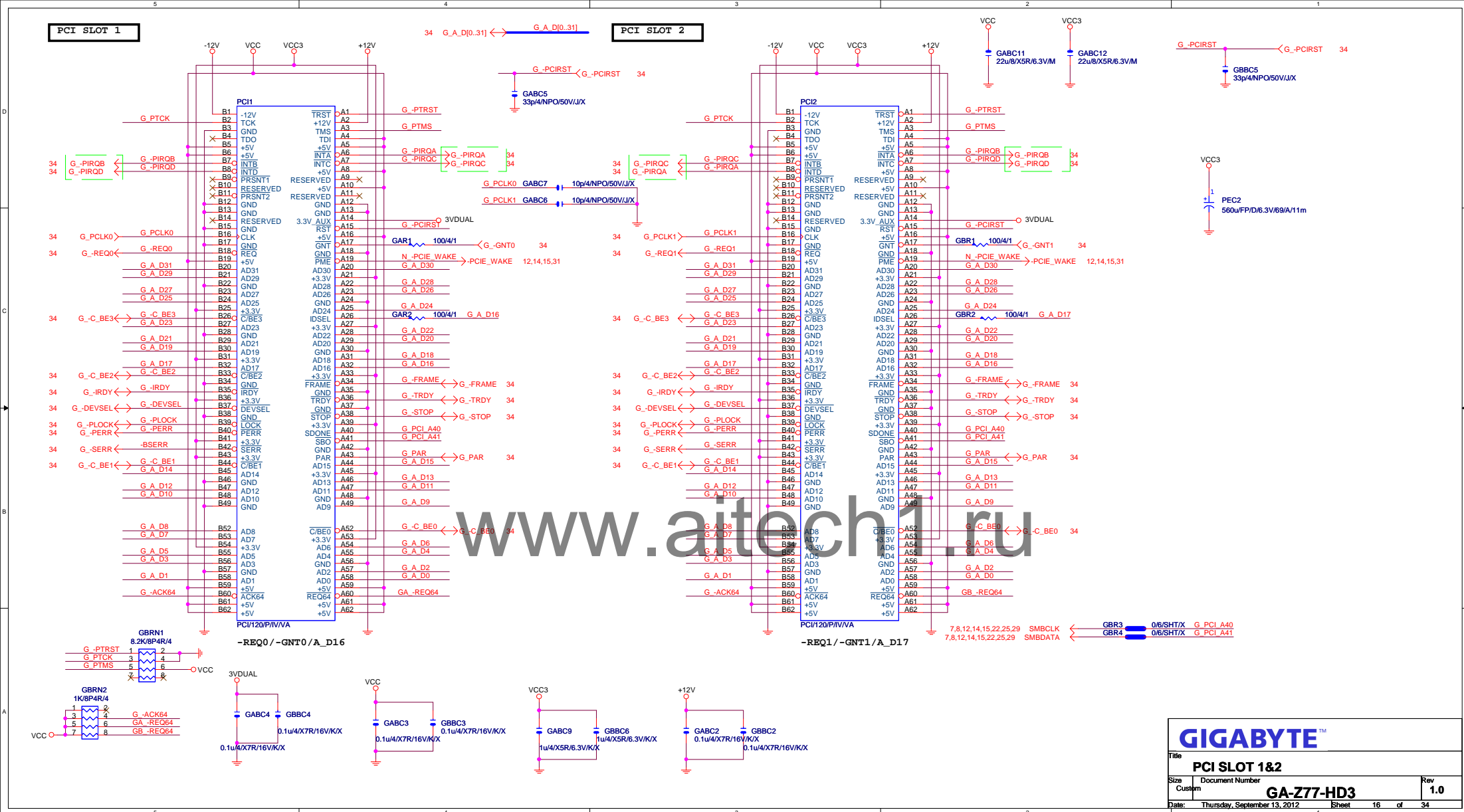
PCI-E REV:2.0--> 5GHZ

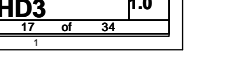
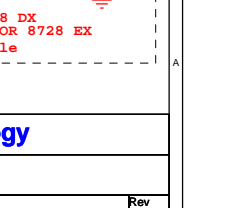
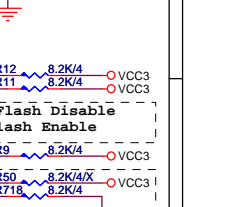
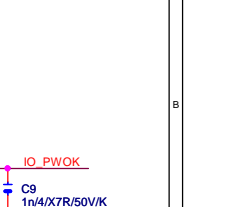
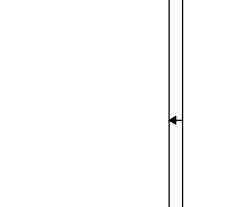
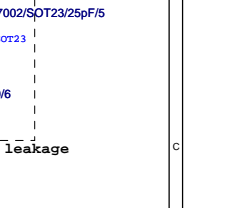
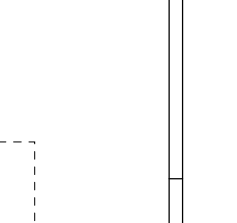
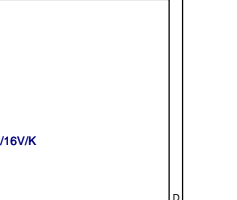
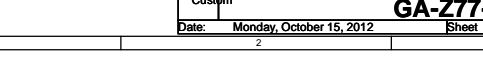
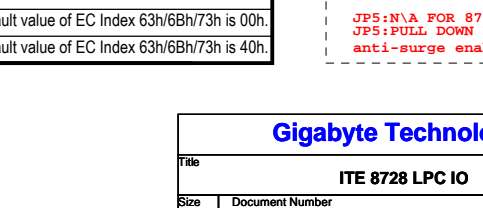
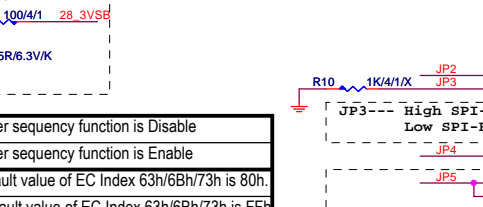
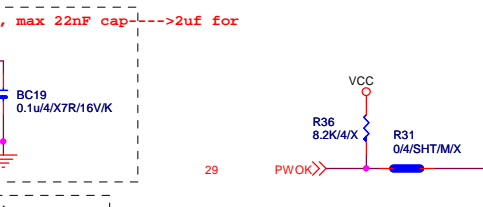
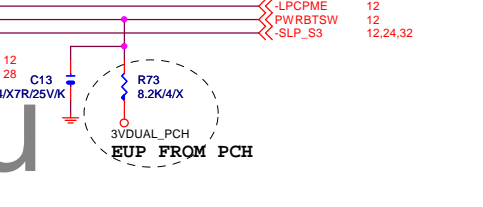
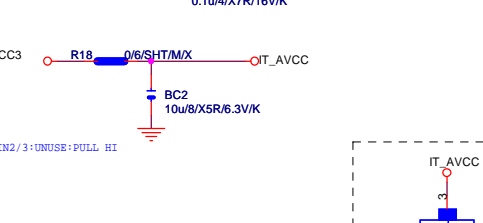
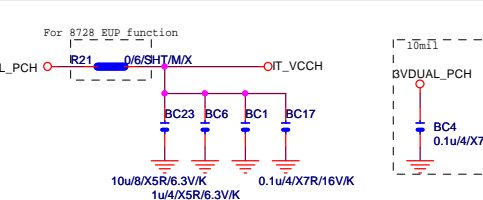
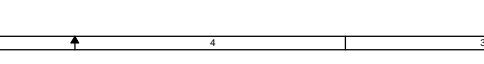
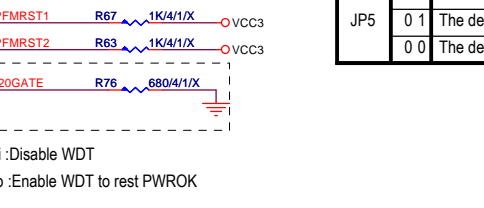
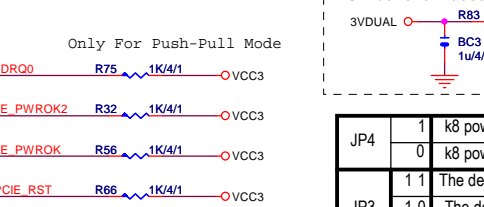
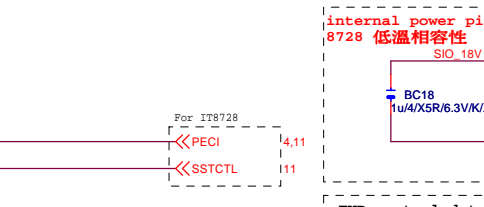
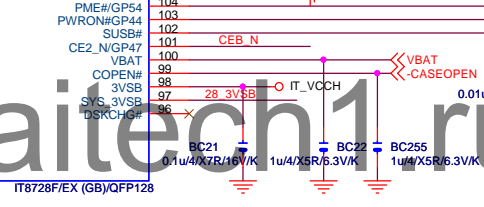
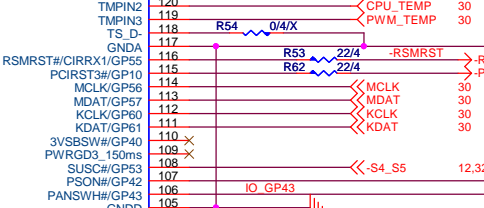
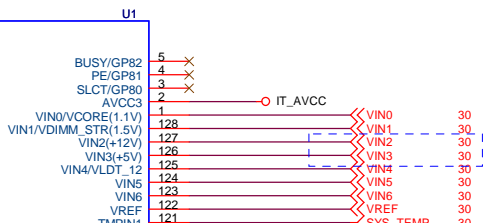
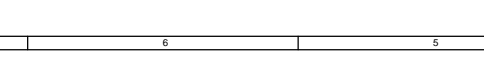
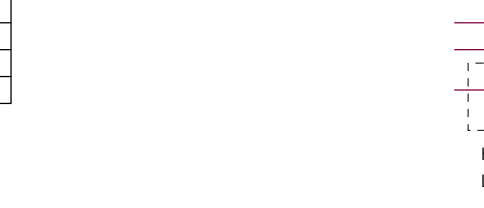
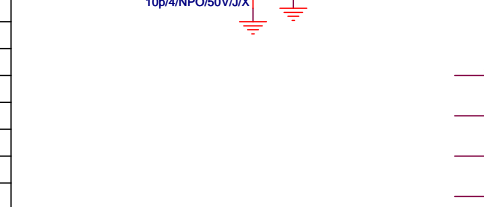
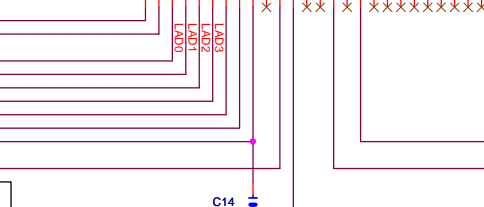
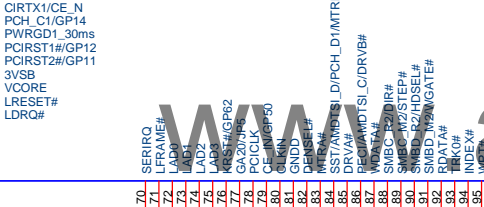
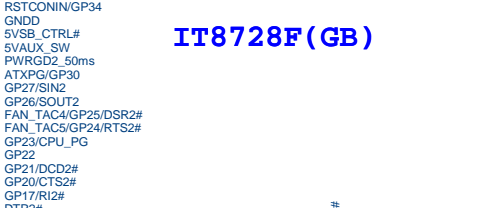
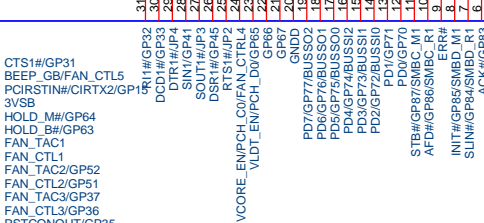
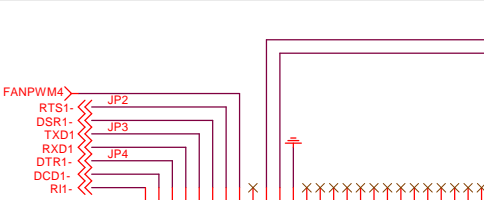
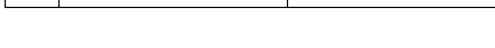
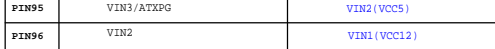
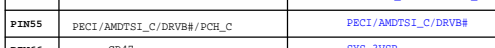
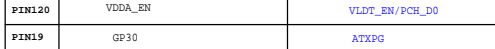
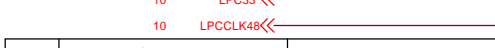
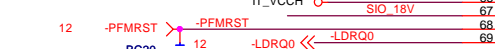
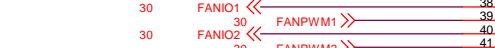
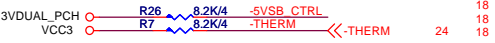
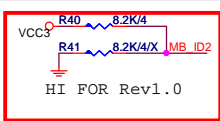


Gigabyte Technology

Title			PCI EXPRESS * 16
Size	Document Number	GA-Z77-HD3	
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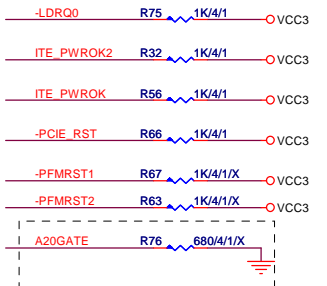
IT8728F(GB)

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IT8728F/EX (GB)/QFP128

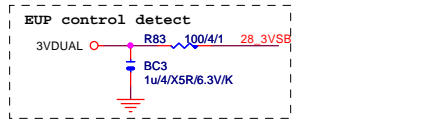
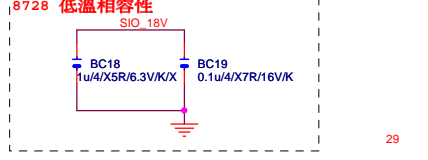
	IT8721	IT8728
PIN121	FAN_CTL4/VID_TURBO	VCORE_EN/PCH_C0
PIN120	VDDA_EN	VLDI_EN/PCH_D0
PIN19	GP30	ATXPG
PIN31	GP14	PCH_C1
PIN53	SST/AMDTSI_D/PB/C1_AVA/MTB#/PCH_D	SST/AMDTSI_D/MTB#/PCH_D1
PIN55	PB/C1/AMDTSI_C/DRV#/PCH_C	PB/C1/AMDTSI_C/DRV#
PIN66	GP47	SYS_3VSB
PIN70	SYS_3VSB	GP47
PIN95	VIN3/ATXPG	VIN2(VCC5)
PIN96	VIN2	VIN1(VCC12)
PIN97	VIN1(VCC5)	VIN1/VDIMM_STR(1.5V)
PIN98	VIN0(VCC12)	VIN0/VCORE(1.1V)

Only For Push-Pull Mode

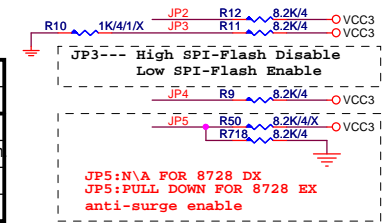
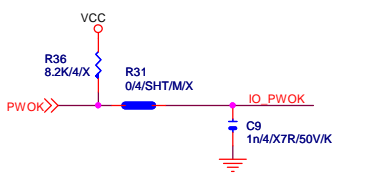


Hi :Disable WDT  
Lo :Enable WDT to rest PWROK

internal power pin, max 22nF cap! --->2uF for 8728 低温相容性



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



JP5:N/A FOR 8728 DX  
JP5:PULL DOWN FOR 8728 EX  
anti-surge enable

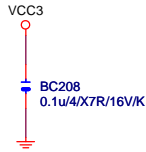
**Gigabyte Technology**

Title  
**ITE 8728 LPC IO**

Size Custom  
Document Number  
**GA-Z77-HD3**

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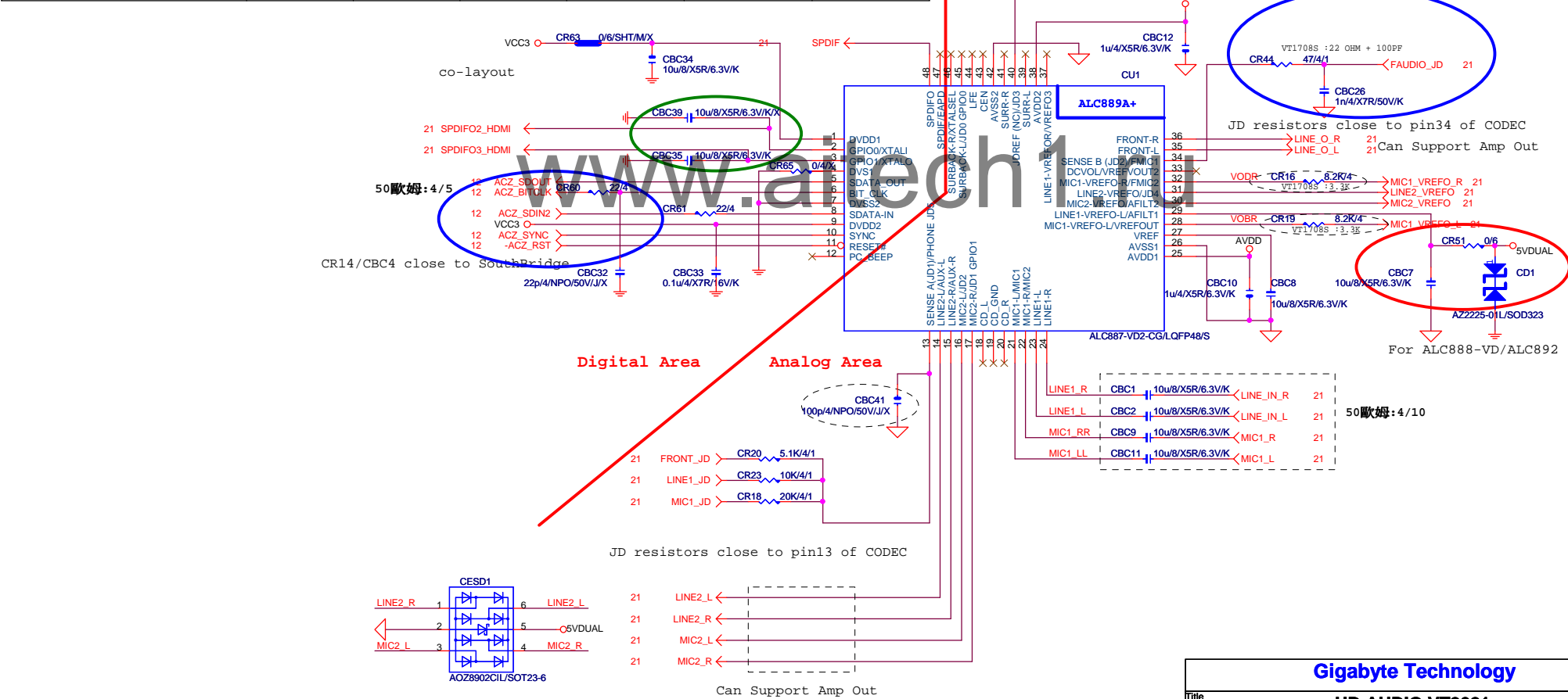


0 means PD 1K

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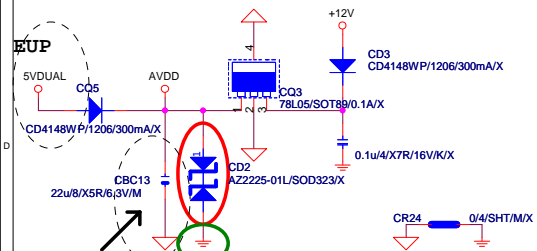
Gigabyte Technology			
Title		BIOS	
Size	Document Number	GA-Z77-HD3	Rev
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	ALC662	ALC887-VD2	ALC889	VT1708S-CD	VT1708S-CE	VT2021
CR65	X	X	O	O	X	O
CBC35	O	O	X	X	O	X
CR44/CBC26	47ohm+1nF	47ohm+1nF	47ohm+1nF	22ohm+100P	22ohm+100P	47ohm+1nF
CR31	X	O	O	O	O	O
CR30	O	X	X	X	X	X
CBC1/CBC2	10uF/X5R	10uF/X5R	22uF/X5R	10uF/X5R	10uF/X5R	10uF/X5R
CR20	5.11K/4/1	5.11K/4/1	5.11K/4/1	5.1K/4/1	5.1K/4/1	5.1K/4/1
CR34	20K/4/1	20K/4/1	20K/4/1	5.1K/4/1	20K/4/1	5.1K/4/1
CBC40/CBC41	X	X	X	100P/4	100P/4	X
CR6/CR7/CR58/CR54	22K/4	22K/4	22K/4	10K/4/1	10K/4/1	10K/4/1
CR5/CR8/CR1/CR14/ CR17/CR22/CR13/CR11/ CR57/CR53	62 ohm	62 ohm	62 ohm	75 ohm	75 ohm	75 ohm
CR51/CD1/CBC7	O	O	X	X	O	O
CD2/CD3/CQ5/CQ5	X	X	O	O	X	X



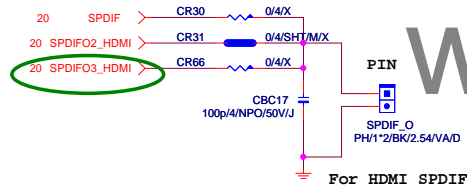


# CODEC POWER/EMI PAD

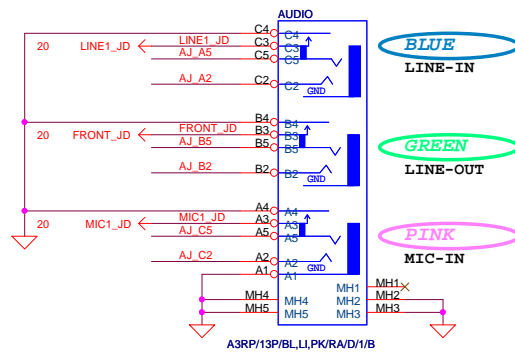


上ALC892時,此顆電容要保留  
ADD CD2 For ESD PROTECT DIODE

# SPDIF\_OUT

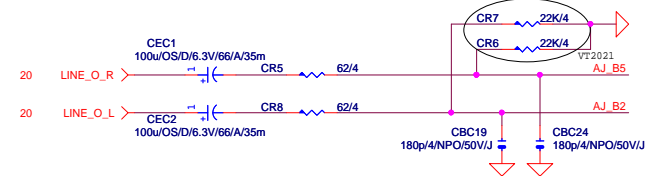


For HDMI SPDIF



A3RP/13P/BL/LI/PK/RA/D/1/B

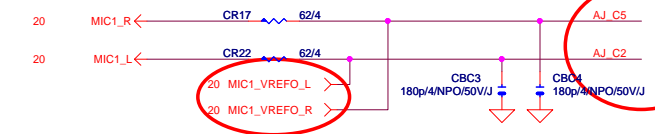
# LINE-OUT



# LINE-IN

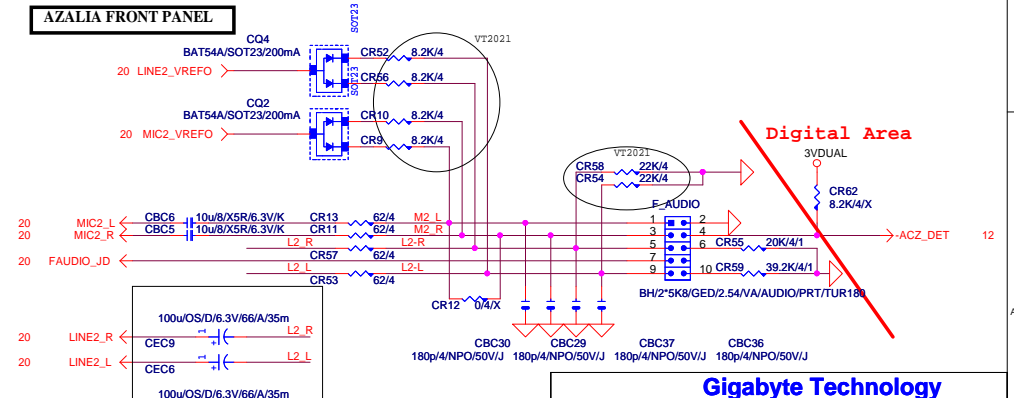
Verify MIC function  
in LINE-in

# MIC-IN



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# AZALIA FRONT PANEL

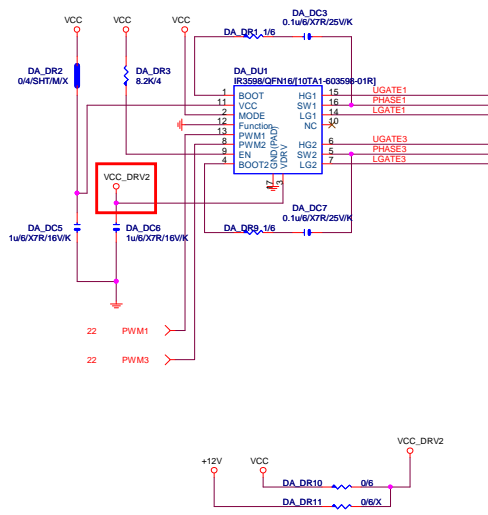


Digital Area

Gigabyte Technology			
Title			
AUDIO JACK			
GA-Z77-HD3			
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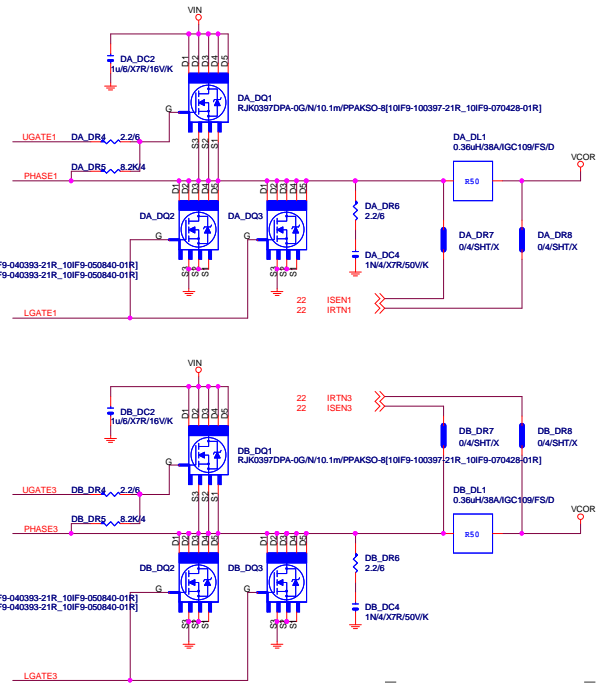
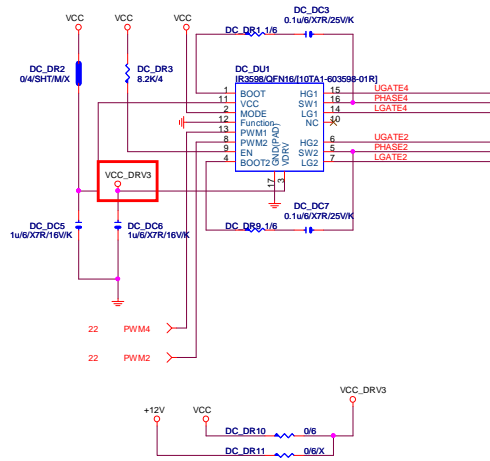
## VCORE Phase 1,3



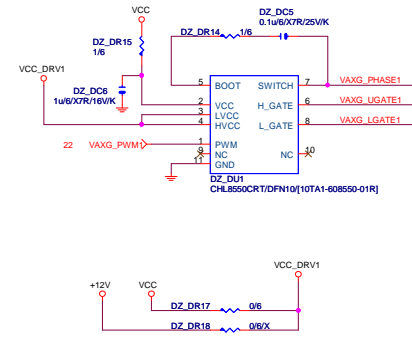
FUNCTION	MODE	PWM MODE	PHASE MODE
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9
10	10	10	10
11	11	11	11
12	12	12	12
13	13	13	13
14	14	14	14
15	15	15	15
16	16	16	16
17	17	17	17
18	18	18	18
19	19	19	19
20	20	20	20
21	21	21	21
22	22	22	22
23	23	23	23
24	24	24	24
25	25	25	25
26	26	26	26
27	27	27	27
28	28	28	28
29	29	29	29
30	30	30	30
31	31	31	31

In Quad mode, ICI pin10 link to ICI pin10  
ICI pin10 link to ICI pin10 without PV

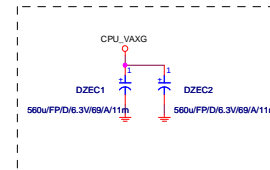
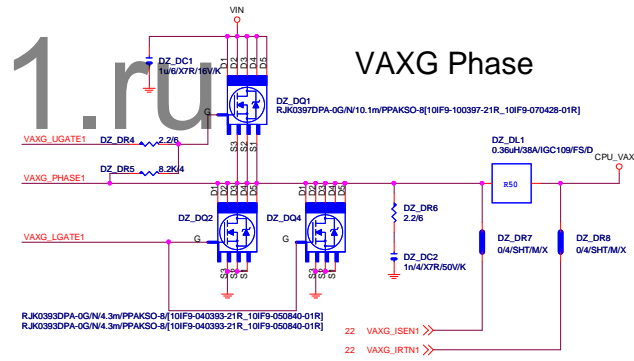
## VCORE Phase 4,2



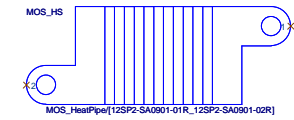
## VAXG PHASE 1



## VAXG Phase

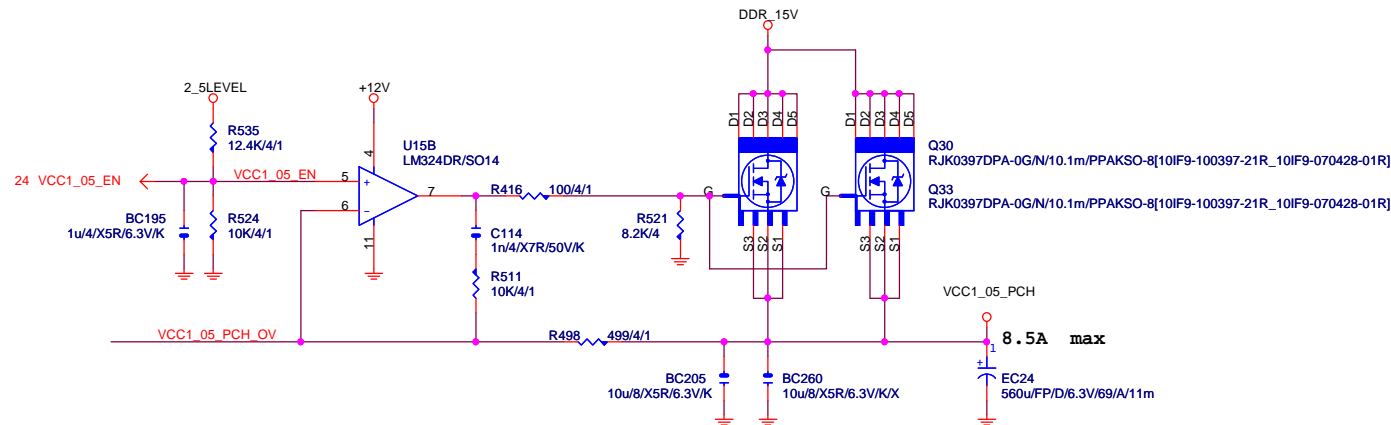


## MOS HEATSINK



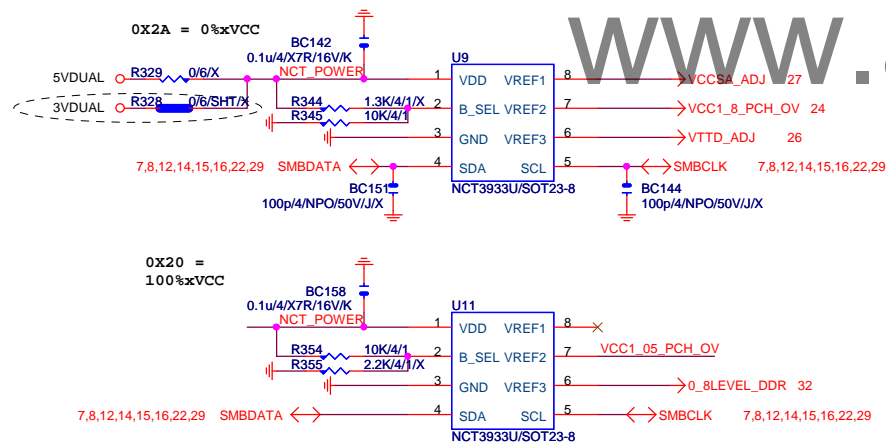


# VCC1\_05\_PCH



# Voltage console

ADDRESS	0X2A	0X20	0X22	0X26
R1 (K)	OPEN	10	1.3	3
R2 (K)	10	OPEN	3.9	2.2
%VCC	0	100	75	42

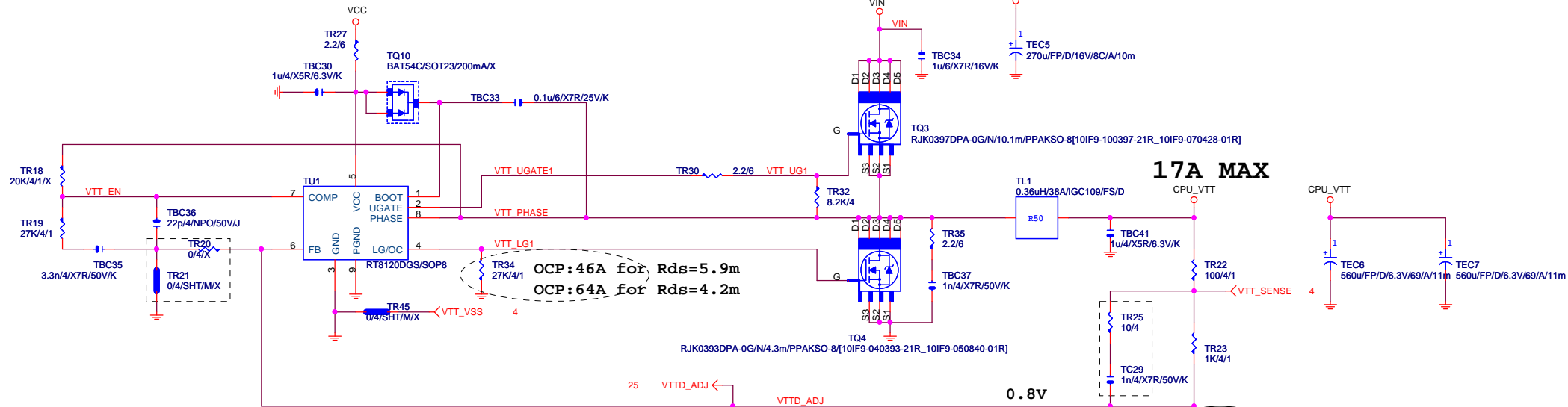


up6262	0X2A	0X20
VREF1	VCC1_05_PCH	VCORE
VREF2	VCC1_8_PCH	VCCSA
VREF3	CPU_VTT	DDR

Z77-DS3H	ITE8728 MB_ID2 (GP27)	ITE8728 MB_ID3 (GP67)
1.0 3931	1	0
1.01 3931	1	1
1.02 3931	0	1
1.1 3931	1	1
1.1 3933	0	0

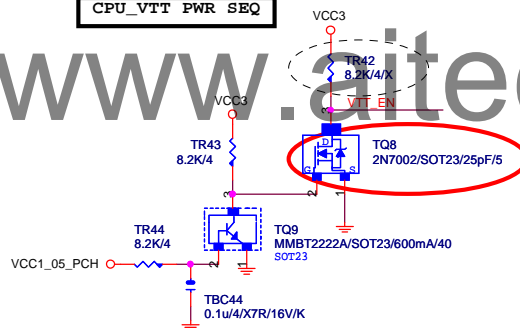
Gigabyte Technology		
Title	PCH CORE / VOLTAGE CONSOLE	
Size B	Document Number	Rev
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# CPU\_VTT



$$OCP: 46A = \frac{R_{oset} * I_{ocset}}{R_{ds(on)}} = \frac{27K * 10\mu A}{5.9m}$$

## CPU\_VTT PWR SEQ



	VTT_SEL
HI	1.05V
LO	1.0V

According intel  
CDI/IBP#476733, 固定1.05V

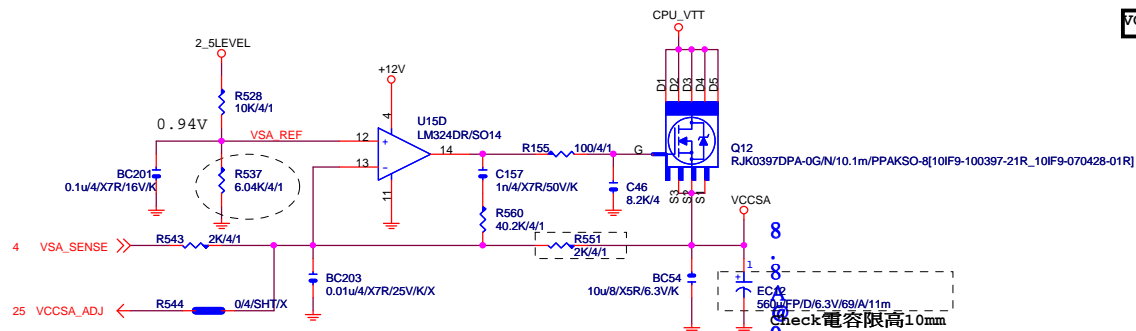
**GIGABYTE**

Title		
RT8120_CPU_VTT		
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VCC\_SA

Check電容限高10mm

VCCSA PWR SEQ



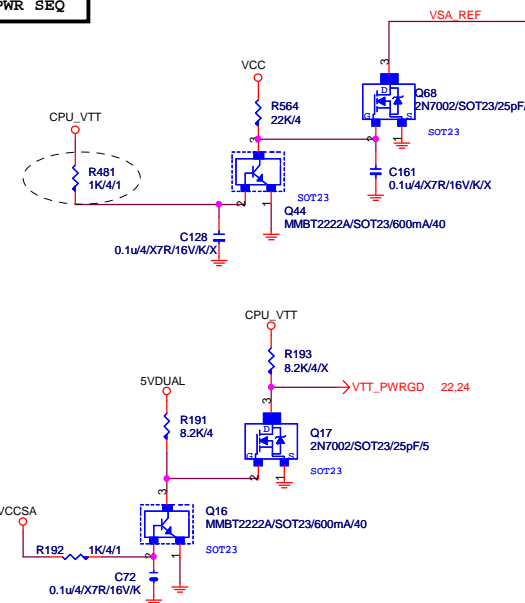
PDG 1.01

VSA_SEL	
HI	0.85V
LO	0.925V

According intel  
CDI/IBP#476733, 固定0.925V

Check電容限高10mm

8  
.  
8  
5  
/  
0  
:  
9  
2  
5  
V

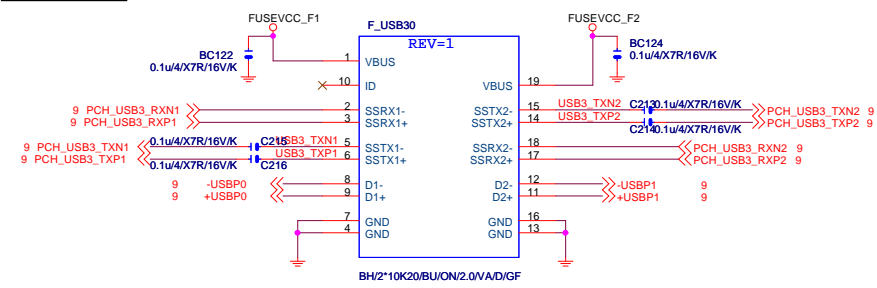


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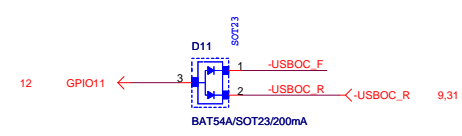
Gigabyte Technology

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VCCSA POWER		
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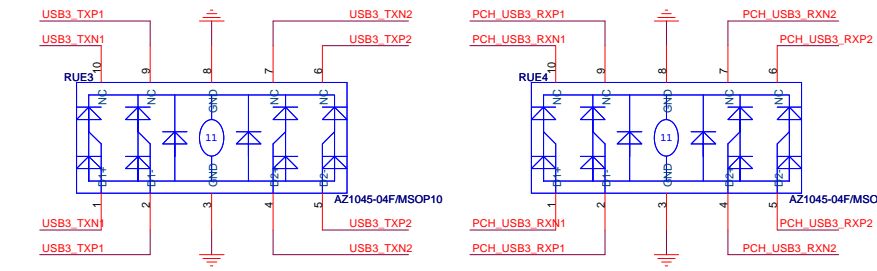
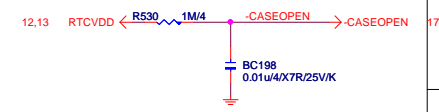
FRONT USB1



F\_USB POWER PROTECT

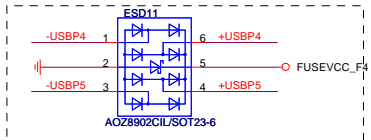
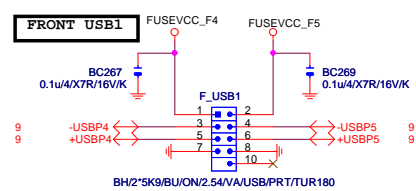
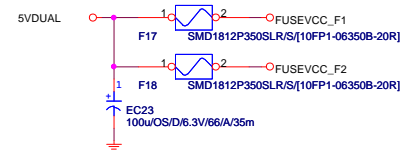
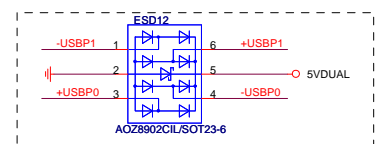


CASE OPEN

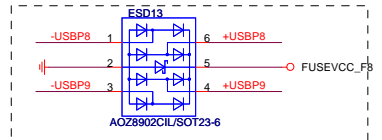
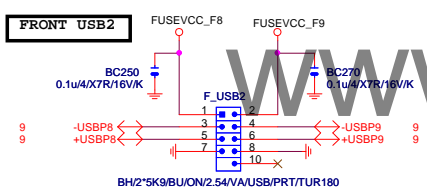


ESD Close to connector

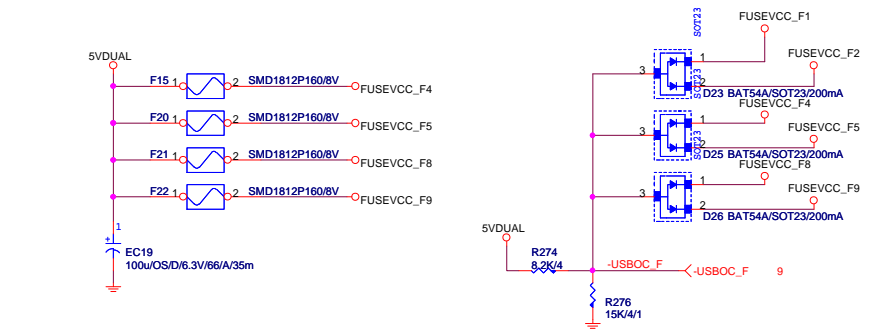
ESD Close to connector



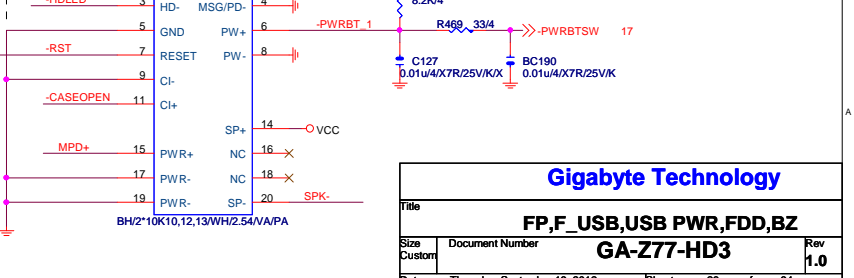
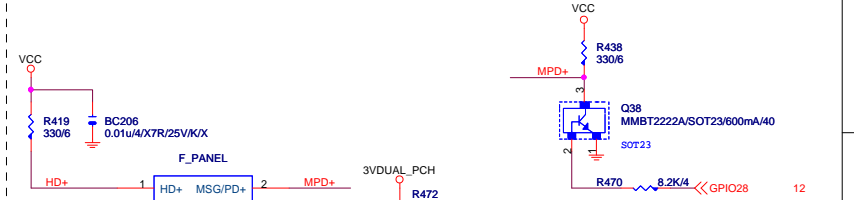
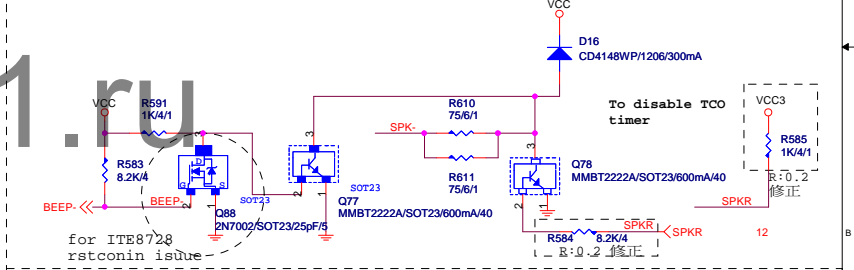
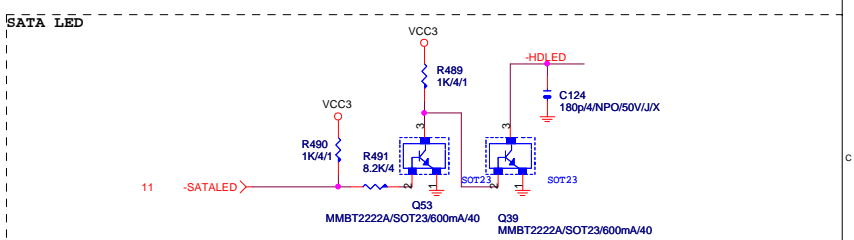
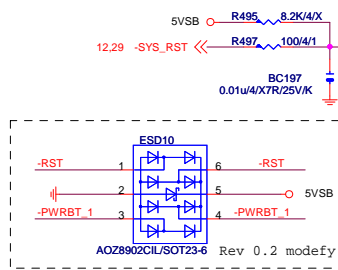
ESD Close to connector



ESD Close to connector



INTEL FRONT PANEL



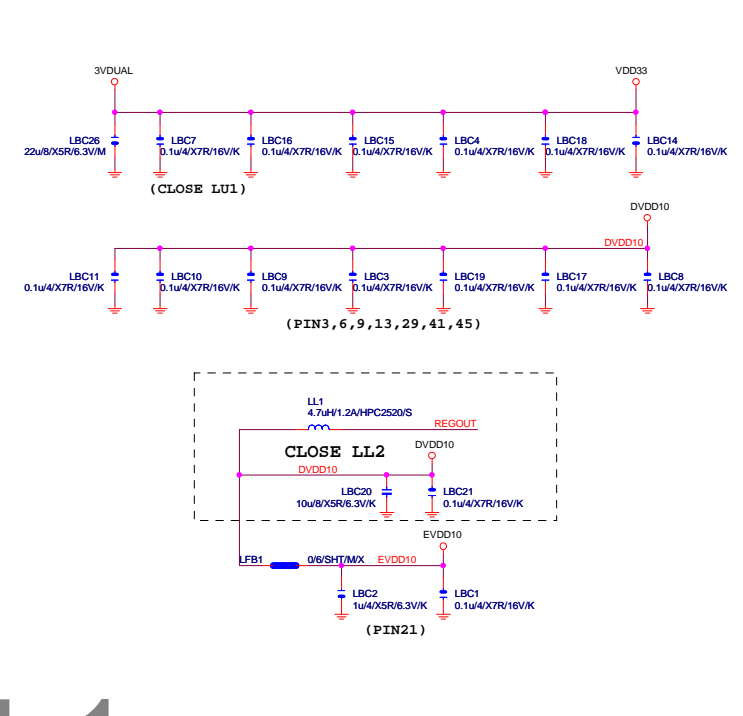
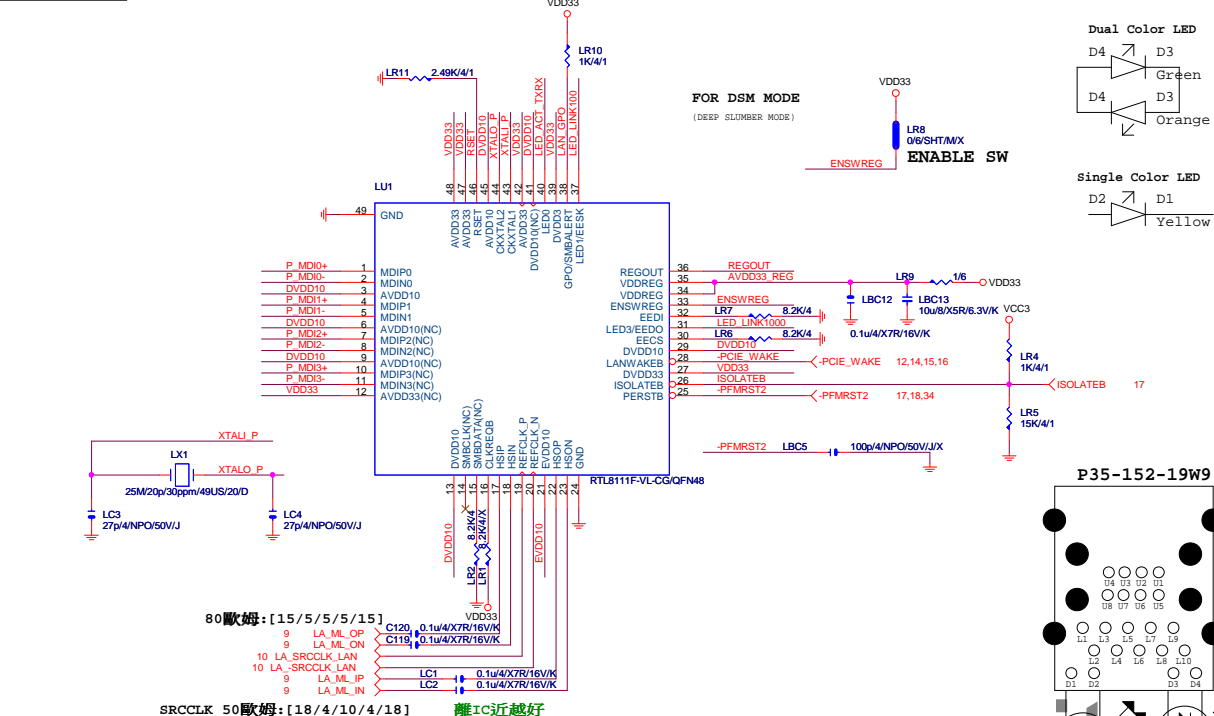
Gigabyte Technology			
Title			
FF,P_USB,USB PWR,FDD,BZ			
Size			
Custom			
Document Number			
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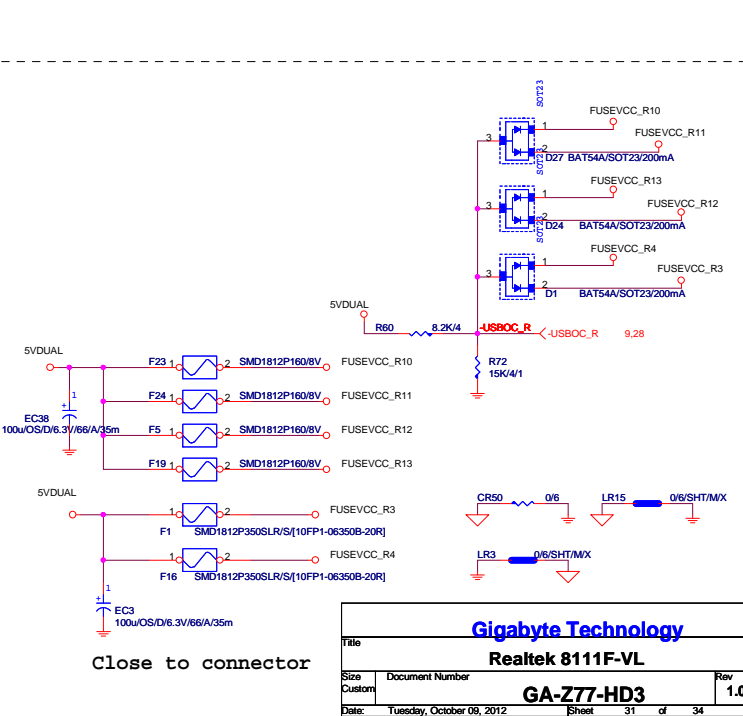
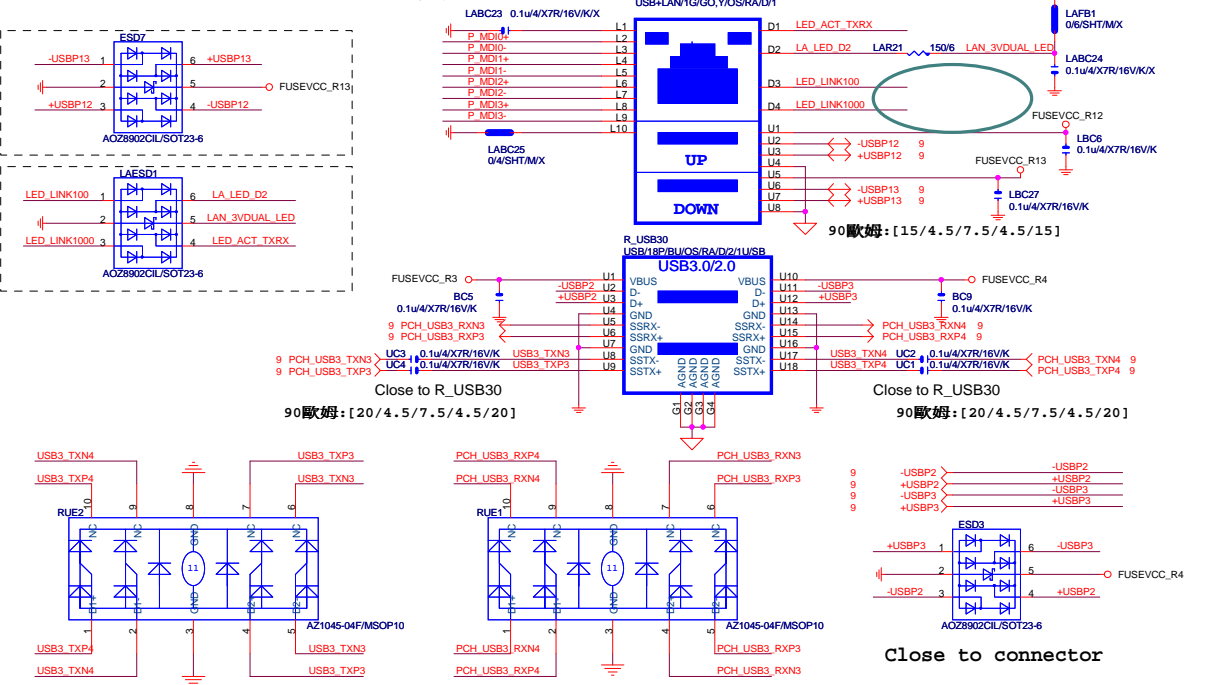




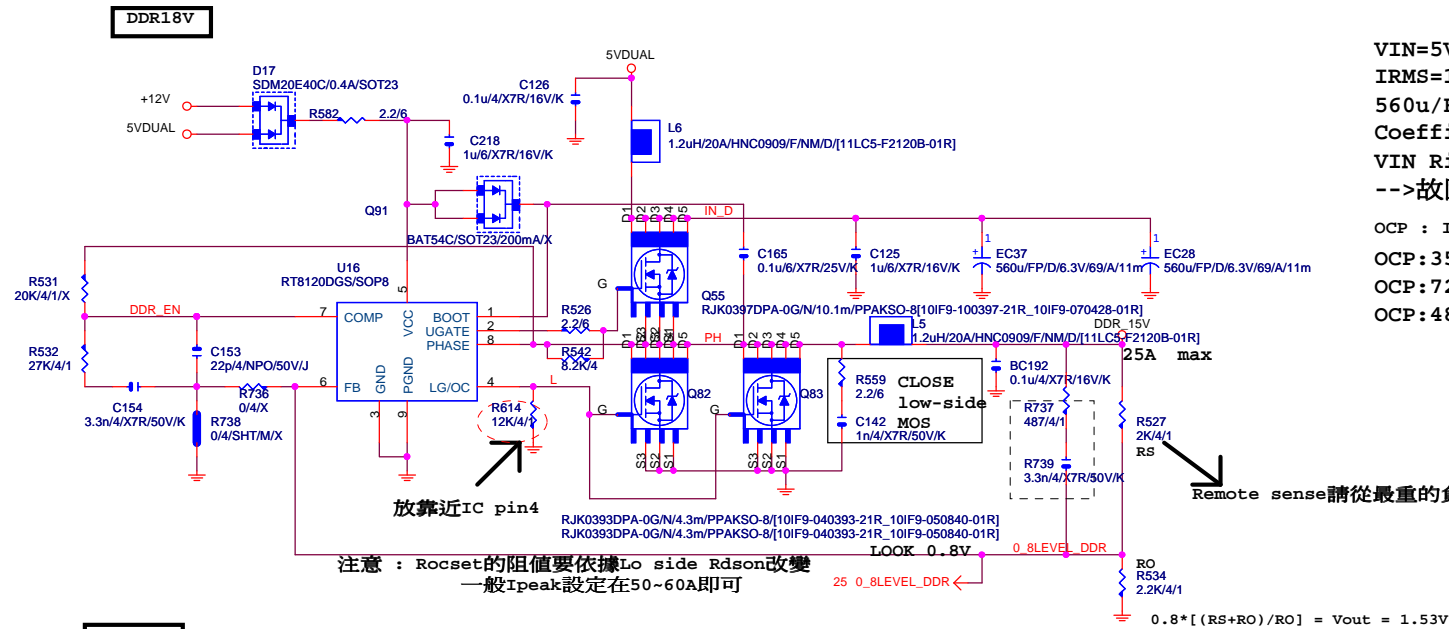
# PCIE-1G LAN



# USB3.0 LAN CONNECTOR



Gigabyte Technology			
Title			
Realtek 8111F-VL			
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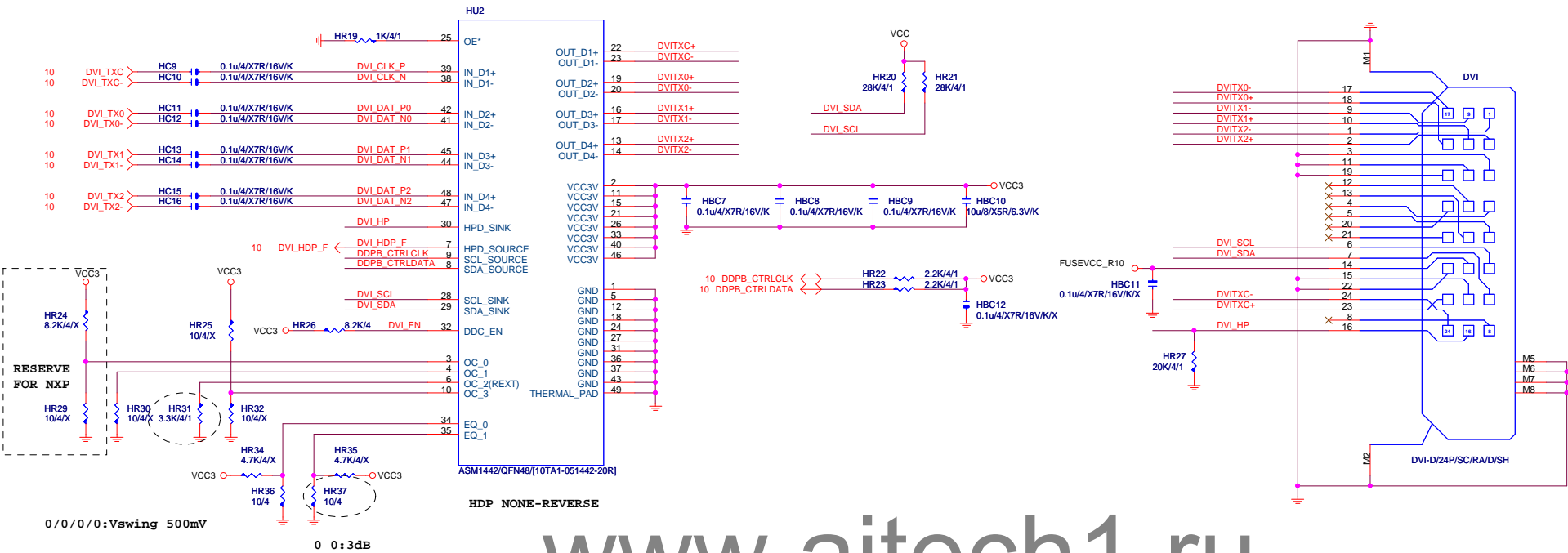
VIN=5V, VOUT=1.5V, IOUT=25A, PHASE=1  
 IRMS=11.45A  
 560u/FP/D/6.3V/68/8m RIPPLE CURRENT=4.7A  
 Coefficient=1.7(85°C), 1(105°C)  
 VIN Ripple current=4.7X1.7=7.99A(85°C)  
 -->故固態電容須2X7.99=15.98>11.45A  
 OCP : Ipeak=(Iocset x Rocset)/Rdson  
 OCP:35.82A for Rds=6.7m for vishay@4.5V  
 OCP:72.73A for Rds=3.3m for renesas@10V  
 OCP:48A=Rocset\*Iocset / Rds(on)  
 =12K\*10uA / [5//5]

**PWR SEQ**



GIGABYTE™			
Title			
RT8120			
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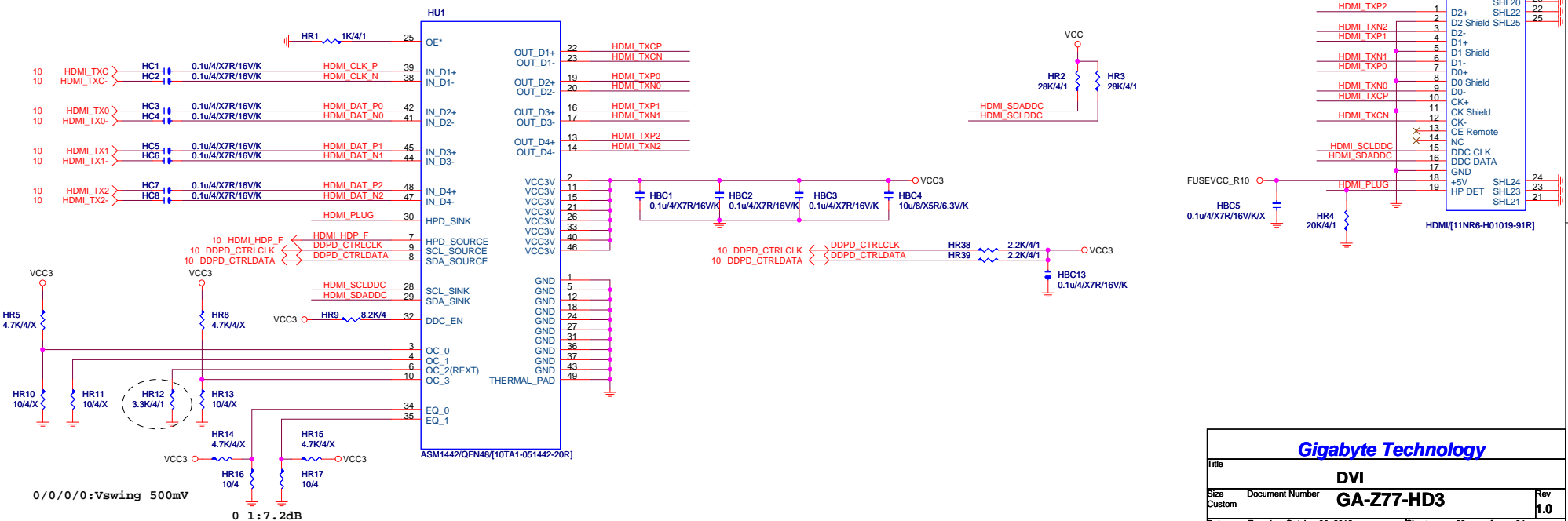
## DVI LEVEL SHIFT



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## HDMI LEVEL SHIFT

HDMI:20/4/6/4/20  
Impedance=85 +- 17.5%



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DVI			
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