Model Name: G1.Sniper B5 1.1

SHEET	TITLE
01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	CPU_LGA1150-A
05	CPU_LGA1150-B
06	CPU_LGA1150-C
07	DDR III CHANNEL A
08	DDR III CHANNEL B
09	PCH_FDI,DMI,USB,PCIE
10	PCH_RGB,CLK BUFFER
11	PCH_HOST,SATA,PCI
12	PCH_GPIO,CTRL,AUDIO
13	PCH_PWR,GND
14	PCI EXPRESS*16 SLOT
15	PCIEX1*2 , PCIEX4 SLOT
16	ITE8892 PCI BRIDGE
17	PCI SLOT 1&2
18	I/O ITE8728
19	COM, -PROHOT, R_USB
20	Dual BIOS / LPT
21	ALC892 CODEC
22	REAR AUDIO JACK
23	VCORE_ ISL95820_1
24	VCORE_ ISL95820_2
25	DDR15V / M3 POWER
26	NCP3933 OVER VOLTAGE
27	DISCRETE POWER

SHEET	TITLE
28	F_PANEL , F_USB2.0/3.0
29	ATX POWER, CLOCK GEN
30	HWM , KB/MS , FAN CTRL
31	Realtek 8111F-VL
32	DVI
33	HDMI
34	TABLE LIST
35	
36	
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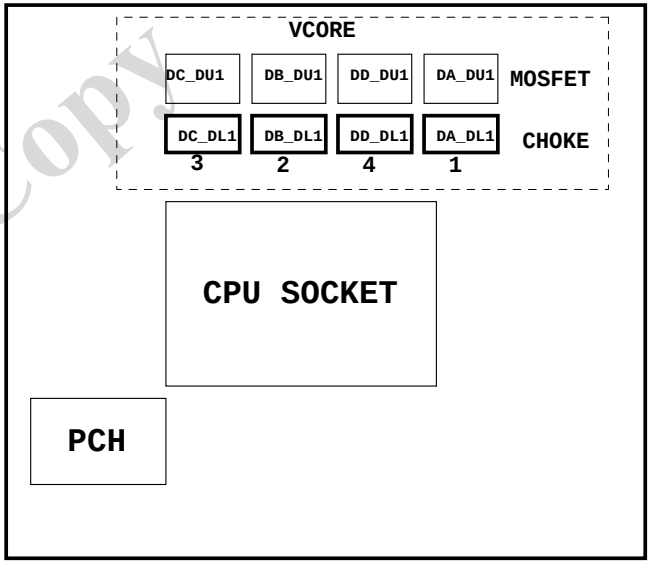

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Title: Cover Sheet

Size: Custom | Document Number: G1.Sniper B5 | Rev: 1.1

Date: Thursday, June 27, 2013 | Sheet 1 of 34

G1.Sniper B5

Component value change history

Data	Change Item	Reason
0.1	E-BOM	
	1. 注意N_GPIO37上法(3VDUAL or VCC3)	
	2. CQ4 & CU2 socket & LED 用料問"樹人"	
	3. slot 改"綠配黑"	
0.2	1. PCH/MOS HEATSINK料號要指定Gaming名板	
	2. AUDIO 蓋子的料號要UPDATE ALC898專用	
	3. PCIEX4/PCIEX14/DDR3_1~DDR3_4/RCA修改料號	
1.0A-EBOM	1. CR79/CR96 1.1K/4/1 --> 499/4/1	
1.0A-PBOM	1. PCB加入:全成信	
10B	1. AUDIO & COAXIAL 改為鍍金料號	
11A	1. For PCH Rev.C2	
11B	1. Disable Anti-surge Function	
11C	1. 5VSB --> 5VDUAL OVP & Remove CD1:AZ2225	

Circuit or PCB layout change

DATE	Change Item	Reason
0.1	1. B85-HD3 Rev0.2修改 1. LAN --> I217 , AUDIO --> ALC898 0. Remove USB ESDIC "UAR1,UBR1" power 1ohm 1. 0 ohm --> short pad 2. 簡化CPU Config setting 3. 背板電容移除或mask (包含pch) 4. Remove BIOS "CS" pin 5. UBF9/UBF10 1206 --> 0805 6. N_GPIO37 pull-up to VCC3 7. +12V RN2~RN6要不要上? Add VCC/VCC3/5VSB dummy load 8. 5VSB/5VDUAL OVP protection 9. 預留N_PCH_DPWROK 控制線路 10. USB2.0 port2/3 , 4/5 swap	
0.2	1. AUDIO AGND LED切割線(COMP/SOLDER要挖空) 2. Update AUDIO_HS footprint "AUDIO-SHIELD-G1B5"	
1.0	1. AUDIO GND-AGND 內部切割改15mil 2. CBC49/CBC50/CBC51/CBC52/CBC56/CBC69/CR105/CR110 從DGND改成AGND	
1.1	1. For PCH Rev.C2	
1.2	1. AUDIO CR75/CR92 short pad 2. DDU1 PIN6/7 short 3. Fix AUDIO AMP POP Noise	

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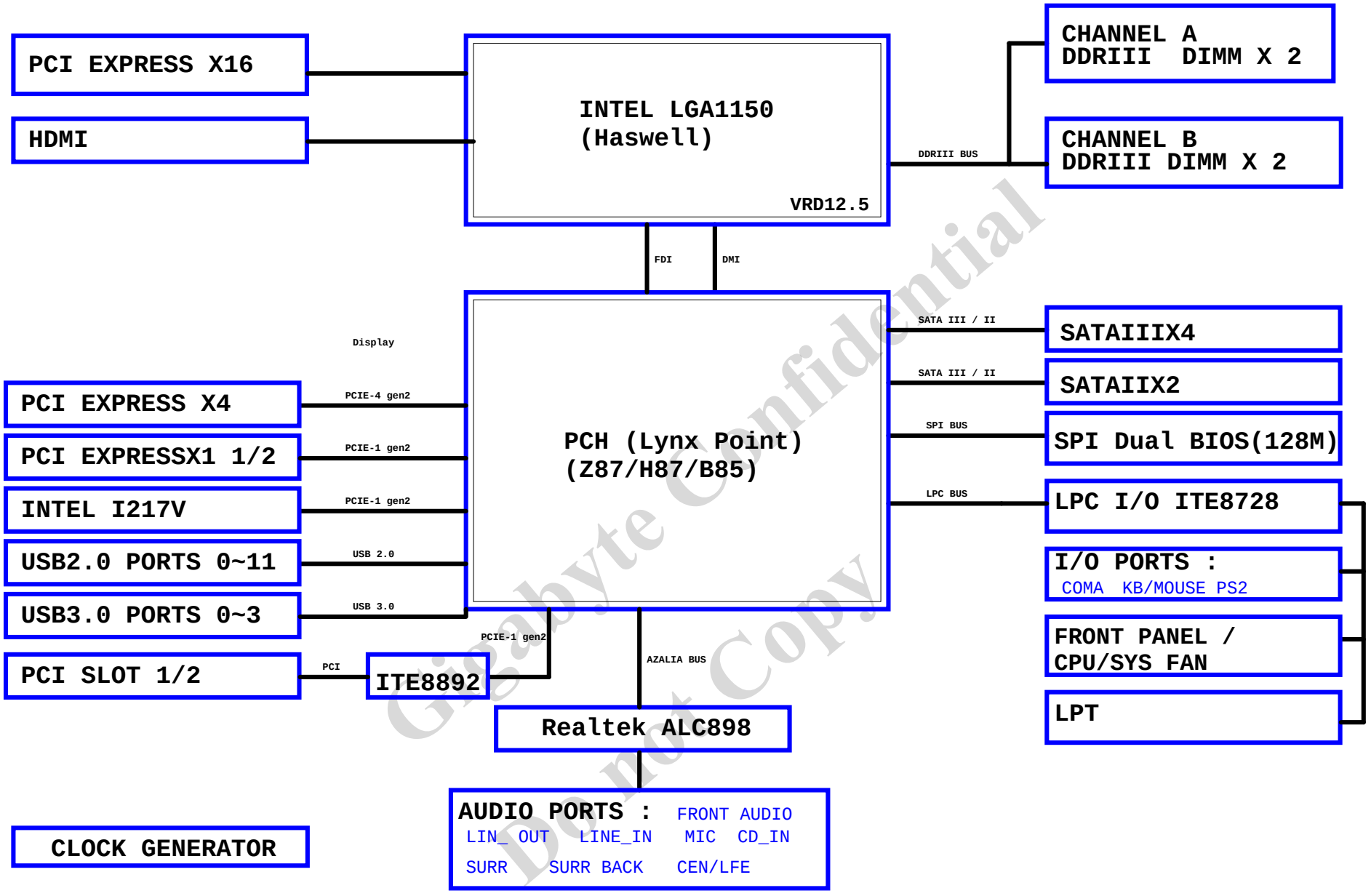
Title: BOM & PCB MODIFY HISTORY

Size: Custom | Document Number: G1.Sniper B5 | Rev: 1.1

Date: Tuesday, July 09, 2013 | Sheet 2 of 34

BLOCK DIAGRAM



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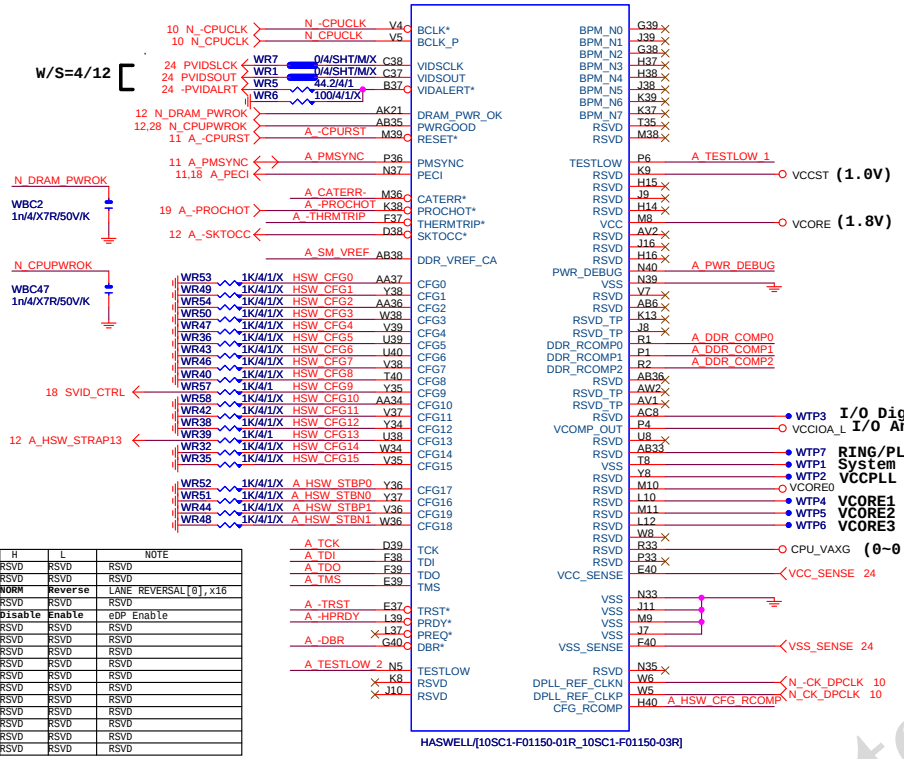
Title: BLOCK DIAGRAM		
Size: C	Document Number: G1.Sniper B5	Rev: 1.1
Date: Thursday, June 27, 2013	Sheet 3 of 34	

LGA1150 (E)

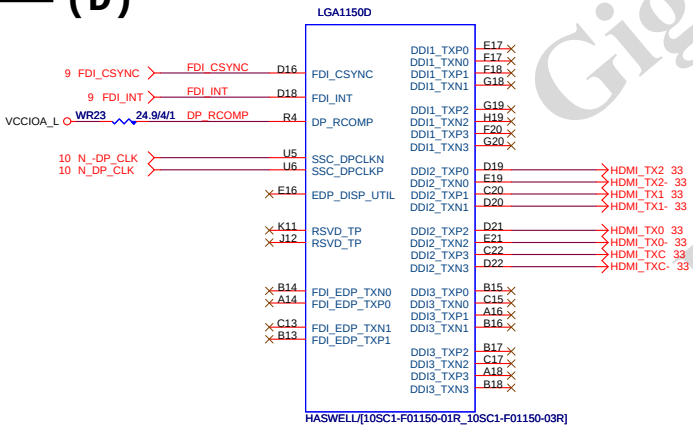


CFG	H	L	NOTE
0	RSVD	RSVD	RSVD
1	RSVD	RSVD	RSVD
2	**NORM**	**Reverse**	LANE_REVERSAL[0],x16
3	RSVD	RSVD	RSVD
4	**Disable**	**Enable**	eDP Enable
7	RSVD	RSVD	RSVD
8	RSVD	RSVD	RSVD
9	RSVD	RSVD	RSVD
10	RSVD	RSVD	RSVD
11	RSVD	RSVD	RSVD
12	RSVD	RSVD	RSVD
13	RSVD	RSVD	RSVD
14	RSVD	RSVD	RSVD
15	RSVD	RSVD	RSVD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

CFG6	CFG5	PCIE CONFIG
1	1	1X16 , Default
1	0	2X8
0	1	RSVD
0	0	X8,X4,X4

CFG 0-17 all internal PULL-UP

LGA1150 (D)



FDI:15/4/4/4/15(breakout min 4/4/4//8)
Impedance=85 +- 15%

DP/HDMI 15/4/4/4//15 FDI 12/4/4/4/12

Impedance=85 +- 15%

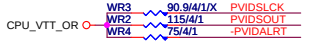
LGA1155 (C)

CPU PEG 20/5/4/5/20 Impedance=80 +- 15%

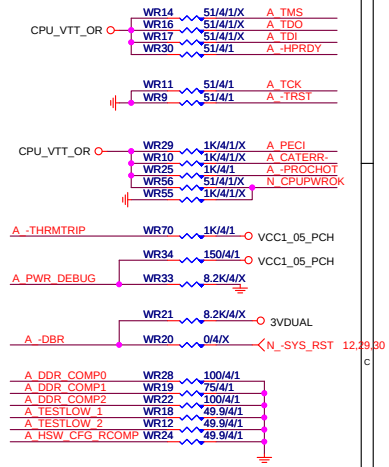
DMI 12/4/4/4//12 Impedance=85 +- 15%

PA_EXP_TXP[0..15] → PA_EXP_TXP[0..15] 14
PA_EXP_TXN[0..15] → PA_EXP_TXN[0..15] 14
PA_EXP_RXP[0..15] → PA_EXP_RXP[0..15] 14
PA_EXP_RXN[0..15] → PA_EXP_RXN[0..15] 14

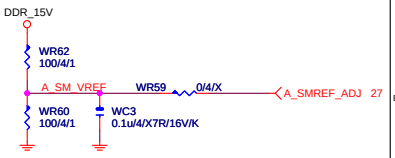
CPU SVID



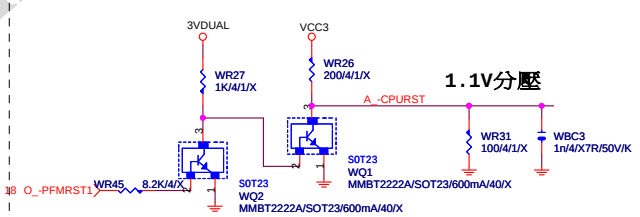
CPU PU/PD



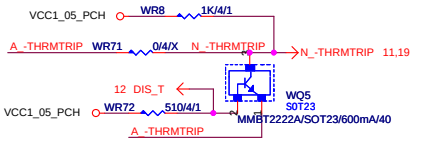
SM REF



-CPURST



THRMTRIP DISABLE FOR Z87 OVERCLOCK



Gigabyte Technology			
Title: CPU LGA1150-A			
Size: Custom	Document Number: G1.Sniper B5		Rev: 1.1
Date: Thursday, June 27, 2013	Sheet 4 of 34		

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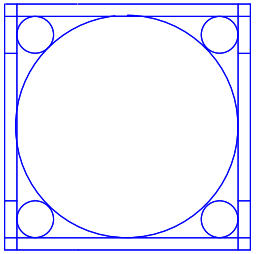
LGA1150 (A)

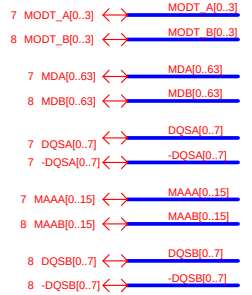
LGA1150 (B)

LGA1150 (CR)

LGA1150
ILM_BP/1156/BKNI/[12KRC-0F0001-61R_12KRC-0F0001-62R]



DDR BUS



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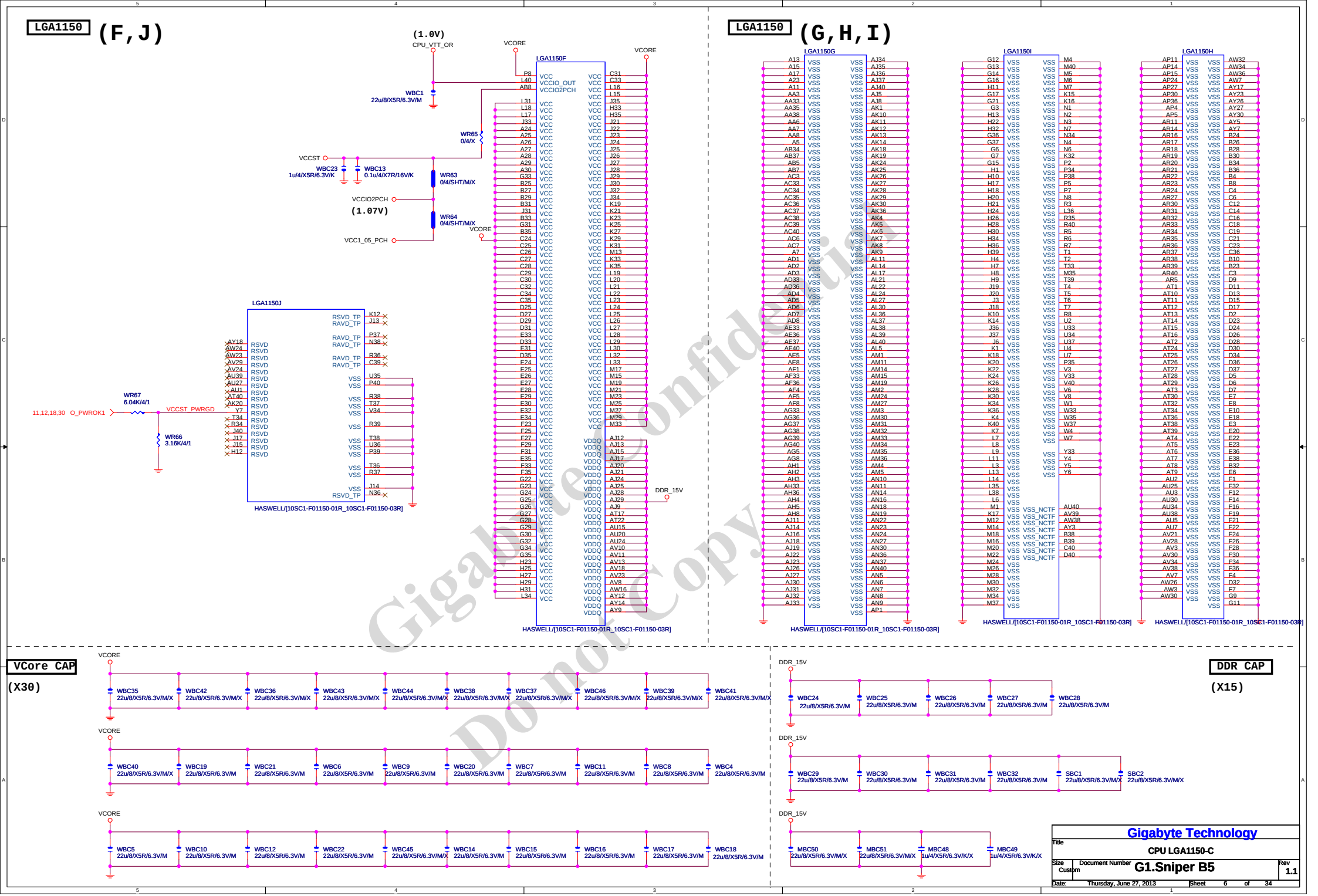
Title: CPU LGA1150-B			
Size: Custom	Document Number: G1.Sniper B5		Rev: 1.1
Date: Thursday, June 27, 2013	Sheet 5 of 34		



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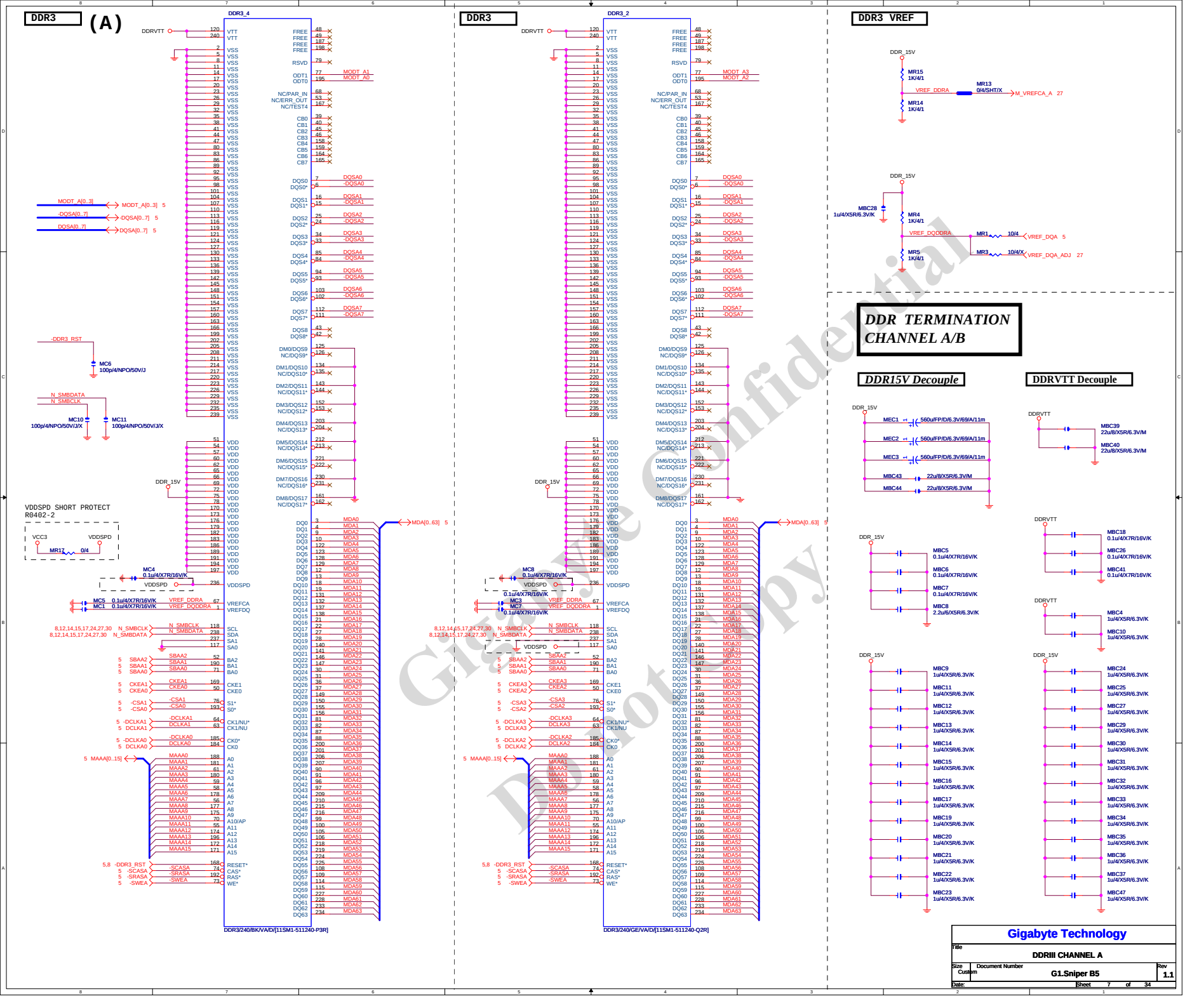
DDR3
(A)
DDR3_4
DDRVTT
VSS
VDD
FREE
RSVD
ODT1
ODT0
NC/PAR_IN
NC/ERR_OUT
NC/TEST4
CB0
CB1
CB2
CB3
CB4
CB5
CB6
CB7
DQS0
DQS0*
DQS1
DQS1*
DQS2
DQS2*
DQS3
DQS3*
DQS4
DQS4*
DQS5
DQS5*
DQS6
DQS6*
DQS7
DQS7*
DQS8
DQS8*
DM0/DQS9
NC/DQS9*
DM1/DQS10
NC/DQS10*
DM2/DQS11
NC/DQS11*
DM3/DQS12
NC/DQS12*
DM4/DQS13
NC/DQS13*
DM5/DQS14
NC/DQS14*
DM6/DQS15
NC/DQS15*
DM7/DQS16
NC/DQS16*
DM8/DQS17
NC/DQS17*
MODT_A1
MODT_A0
MODT_A[0..3]
-DQSA[0..7]
DQSA[0..7]
-DDR3_RST
MC6
100p/4/NPO/50V/J
N_SMBDATA
N_SMBCLK
MC10
100p/4/NPO/50V/J/X
MC11
100p/4/NPO/50V/J/X
DDR_15V
VDDSPD SHORT PROTECT
R0402-2
VCC3
VDDSPD
MR17
0/4
MC4
0.1u/4/X7R/16V/K
MC5
MC1
VREF_DDRA
VREF_DQDDRA
VREFCA
VREFDQ
MDA[0..63]
SCL
SDA
SA1
SA0
SBAA2
SBAA1
SBAA0
BA2
BA1
BA0
CKE1
CKE0
-CSA1
-CSA0
S1*
S0*
-DCLKA1
DCLKA1
CK1/NU*
CK1/NU
-DCLKA0
DCLKA0
CK0*
CK0
MAAA[0..15]
A0
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10/AP
A11
A12
A13
A14
A15
-DDR3_RST
-SCASA
-SRASA
-SWEA
RESET*
CAS*
RAS*
WE*
DDR3/240/BK/VA/D/[11SM1-511240-P3R]
DDR3_2
MODT_A3
MODT_A2
DDR3/240/GE/VA/D/[11SM1-511240-Q2R]
DDR3 VREF
DDR_15V
MR15
1K/4/1
MR13
0/4/SHT/X
MR14
1K/4/1
VREF_DDRA
M_VREFCA_A
MBC28
1u/4/X5R/6.3V/K
MR4
1K/4/1
MR5
1K/4/1
VREF_DQDDRA
MR1
10/4
MR3
10/4/X
VREF_DQA
VREF_DQA_ADJ
DDR TERMINATION
CHANNEL A/B
DDR15V Decouple
DDRVTT Decouple
MEC1
MEC2
MEC3
560u/FP/D/6.3V/69/A/11m
MBC43
MBC44
22u/8/X5R/6.3V/M
MBC39
MBC40
MBC5
MBC6
MBC7
MBC8
0.1u/4/X7R/16V/K
2.2u/6/X5R/6.3V/K
MBC18
MBC26
MBC41
MBC4
MBC10
MBC9
MBC11
MBC12
MBC13
MBC14
MBC15
MBC16
MBC17
MBC19
MBC20
MBC21
MBC22
MBC23
1u/4/X5R/6.3V/K
MBC24
MBC25
MBC27
MBC29
MBC30
MBC31
MBC32
MBC33
MBC34
MBC35
MBC36
MBC37
MBC47
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DDRIII CHANNEL A
G1.Sniper B5
1.1
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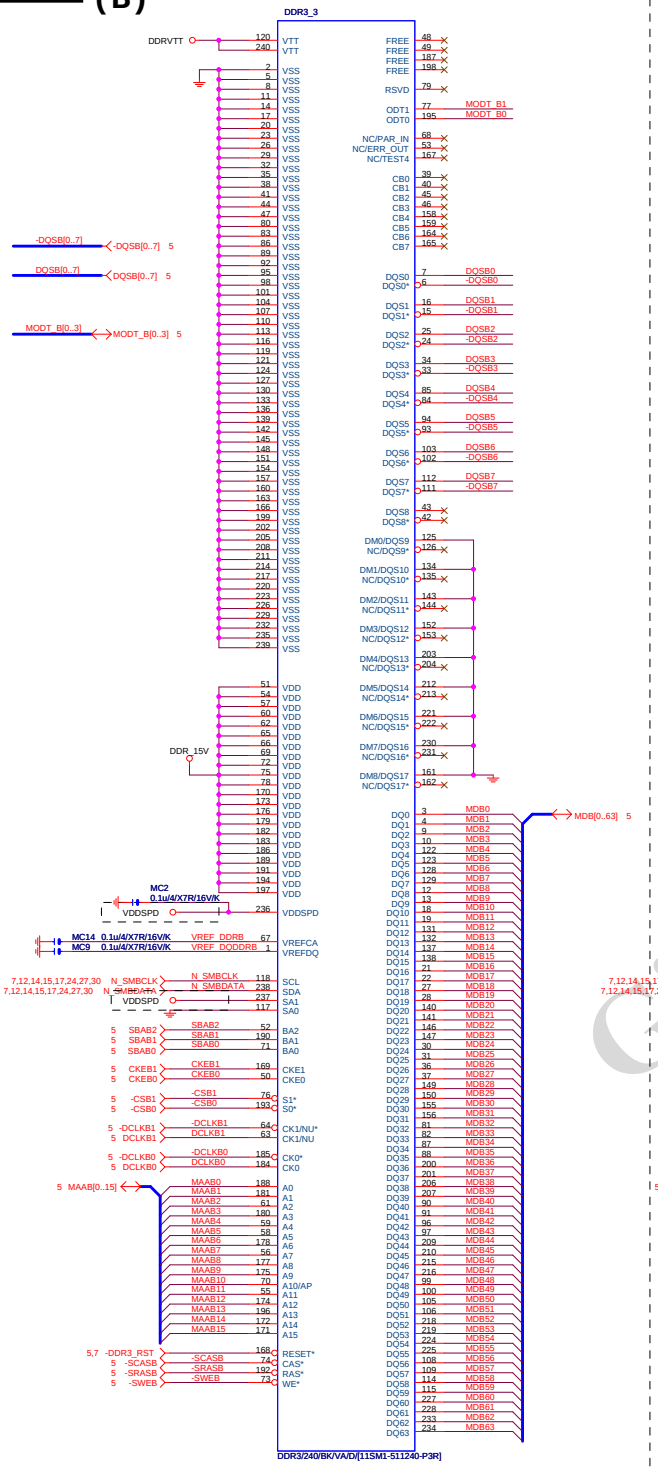
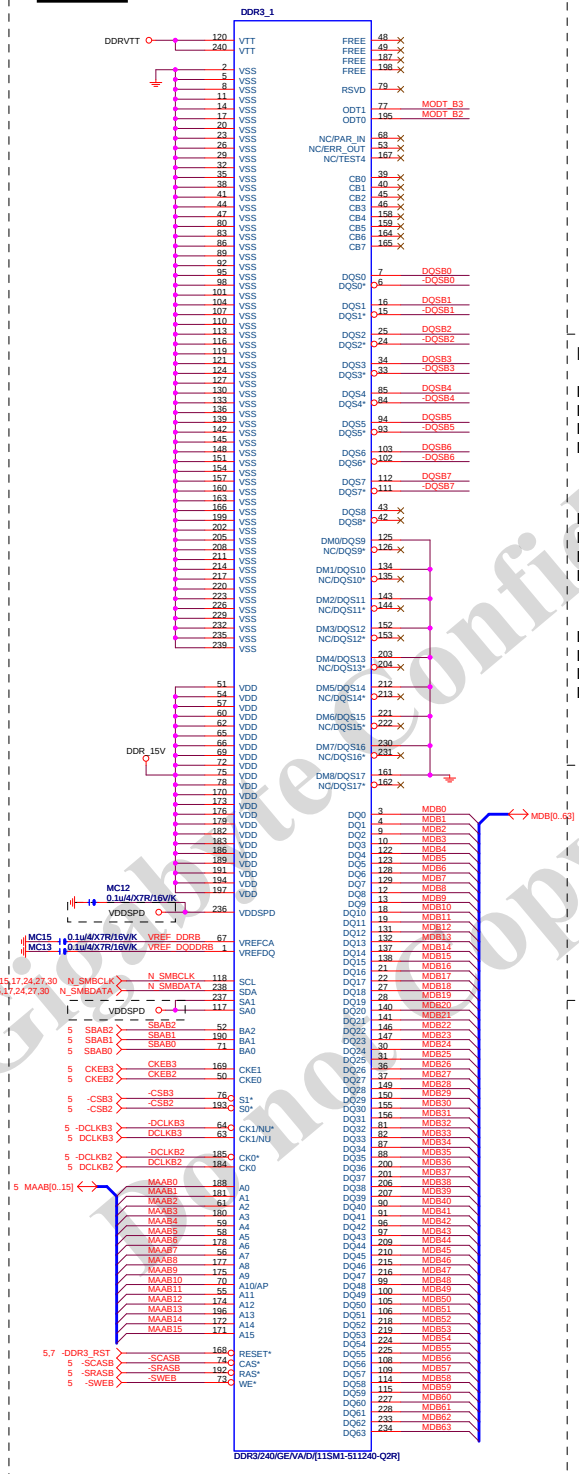
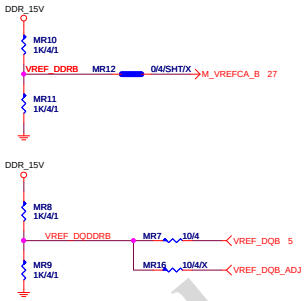
DDR3 (B)





DDR3 VREF



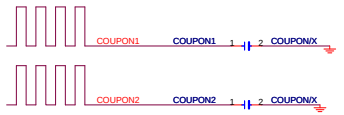
DDR3 1066,1333,1600MHZ BANDWIDTH

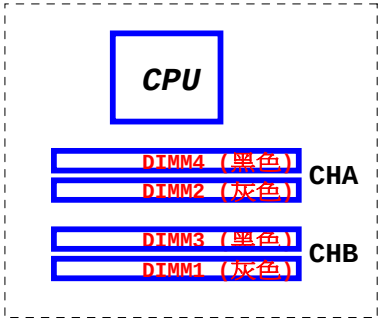
DDR3 1066MHZ
DDR3 clock=533MHZ
DDR3 single channel bandwidth=533x2x8Byte=8.5GB/s
DDR3 dual channel bandwidth=533x2x2x8Byte=17GB/s

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

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

COUPON





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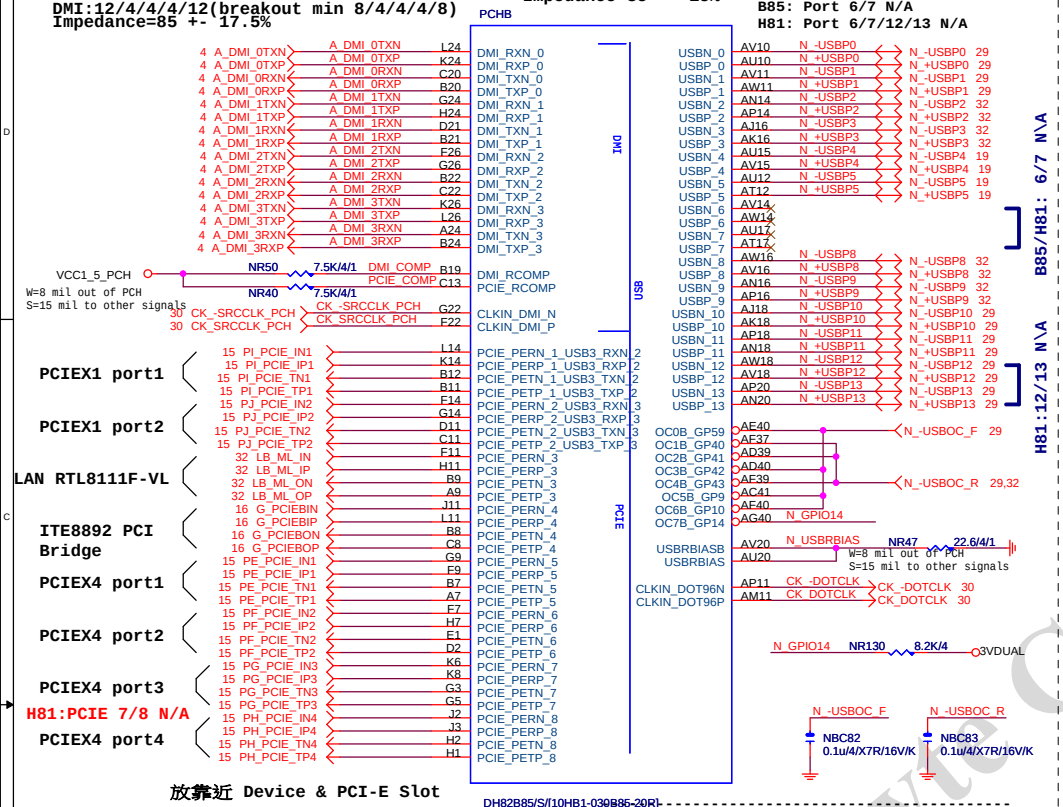
Title: DDRIII CHANNEL B		
Size: Custom	Document Number: G1.Sniper B5	Rev: 1.1
Date:	Sheet 8 of 34	

PCH (B)

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

USB2.0 : 12/5/7/5/12 (breakout min 8/4/4/4/8)
Impedance=85 +- 15%

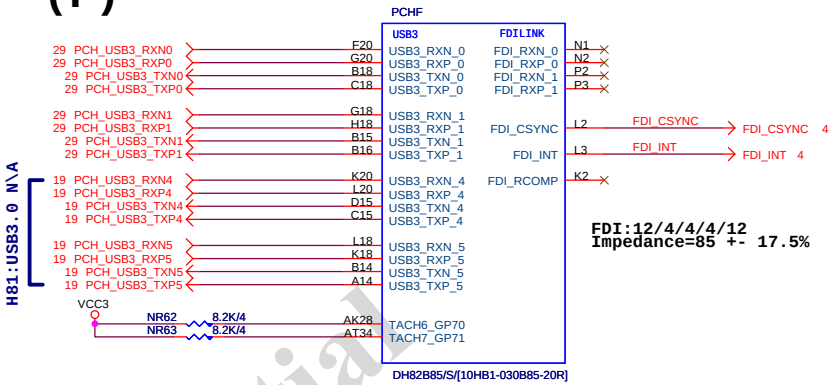
B85: Port 6/7 N/A
H81: Port 6/7/12/13 N/A



PCH PCIE ,DMI 15/4/4/4//15 Impedance=85 +- 15%

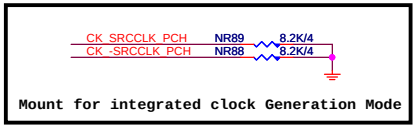
usb2.0 12/5/7/5/12
usb3.0 20/5/7/5/20 Impedance=85 +- 15%

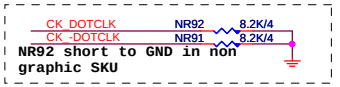
PCH (F)



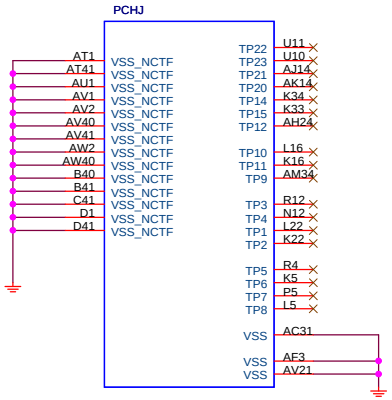
FDI:12/4/4/4/12
Impedance=85 +- 17.5%

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

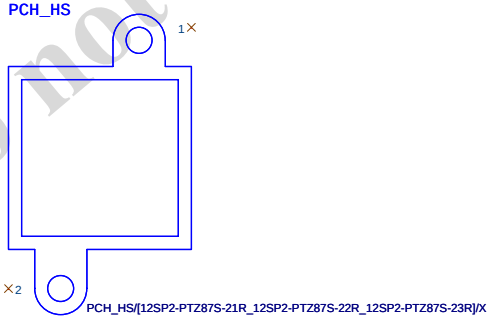




PCH (J)



PCH H/S



USB TABLE

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

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Title: PCH FDI,DMI,USB ,PCIE

Size: Custom | Document Number: G1.Sniper B5 | Rev: 1.1

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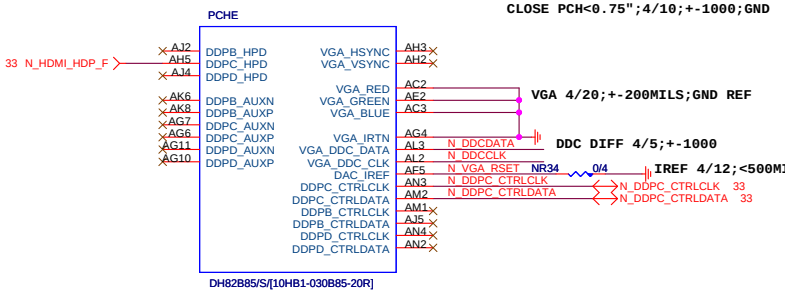
PCH (E)



CLOSE PCH<0.75";4/10;+-1000;GND

VGA 4/20;+-200MILS;GND REF

DDC DIFF 4/5;+-1000

IREF 4/12;<500MILS;GND

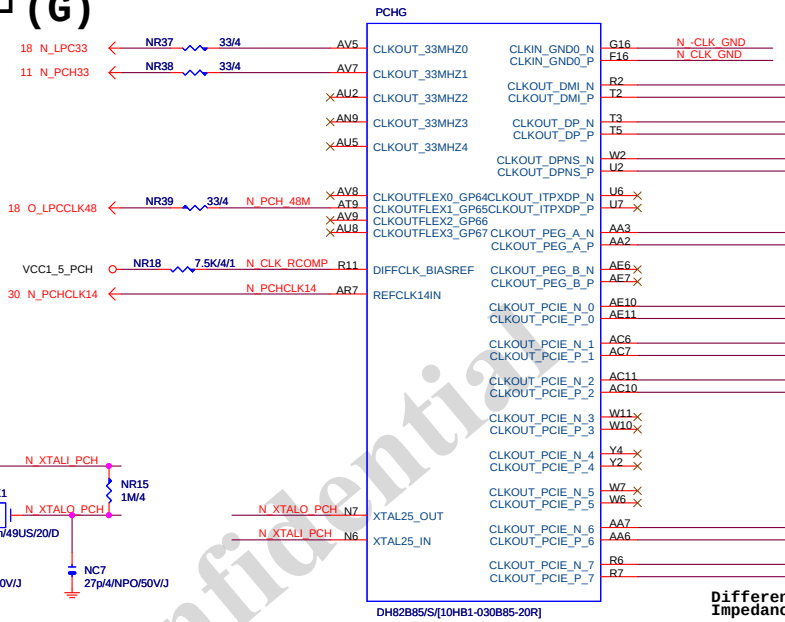
VGA DAC Disabling Guidelines

VGA DISABLE
R,G,B NC OR GND
IRTN / IREF GND
VGA_HSYNC, VGA_VSYNC,DDC_CLK, DDC_DATA NC
POWER VCCADAC(AF2) GND, VCCADACBG(AE1) GND

FDI Disabling Guidelines

PCH FDI_RXP[0:1] NC
PCH FDI_RXN[0:1] NC
CPU FDI_TXP[0:1] NC
CPU FDI_TXN[0:1] NC
FDI_RCOMP NC
FDI_IREF (N11)

PCH (G)



PCIXx16

PCIXx1_2

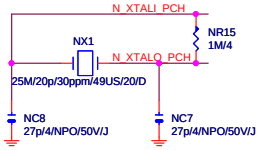
RTL81111F-VL

ITE8892

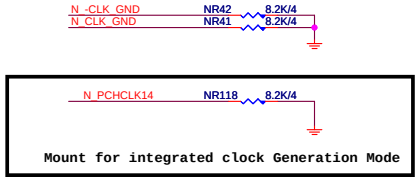
PCIXx1_1

PCIXx4

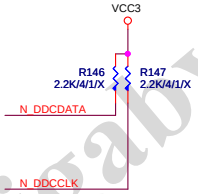
Differential Clock:18/4/6/4/18
Impedance=90 +- 15%



PCH CLK PD



VGA DDC



VGA CONNECTOR

VGA ESD

VGA DDC

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Gigabyte Technology		
Title: PCH DISPLAY ,CLK BUFFER		
Size: Custom	Document Number: G1.Sniper B5	Rev: 1.1
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PCH (C)

SATA3 : 20/4/4/4/20 (breakout min 8/4/4/4/8)
Impedance=85 +- 17.5%
SATA2 15/4/4/4/15
SATA3 20/4/4/4/20

PCHC

DH82B85/S/[10HB1-030B85-20R]

PCH (A)

PCHA

DH82B85/S/[10HB1-030B85-20R]

BOOT DEVICE	GP51	GP19
LPC	0	0
SPI	float	float

Default int pull up on GP51,
Default SPI boot devices

PCH CLK PD

Mount for integrated clock Generation Mode

PCH PU/PD

ME PWROK

GPIO37 PU ENABLE SBA
For H87&B85

soft strap	GP16	GP49
0	pcie1	pcie2
1	sata4	sata5

SATA CONNECTOR

White connector for SATA3

[Z87/H87] all SATA3
SATA3(From Z87) - 黑色
SATA3(From Marvell) - 灰色
[B85] SATA2+SATA3
SATA2(From B85) - 黑色
SATA3(From B85) - 白色

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

H81 Port 2/3 N/A

GPIO38 Ctrl

MFG Mode
N_GPIO38 : Lo --> Enable
Hi --> Disable

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Gigabyte Technology

Title: PCH HOST , SATA, PCI

Size: Custom | Document Number: G1.Sniper B5 | Rev: 1.1

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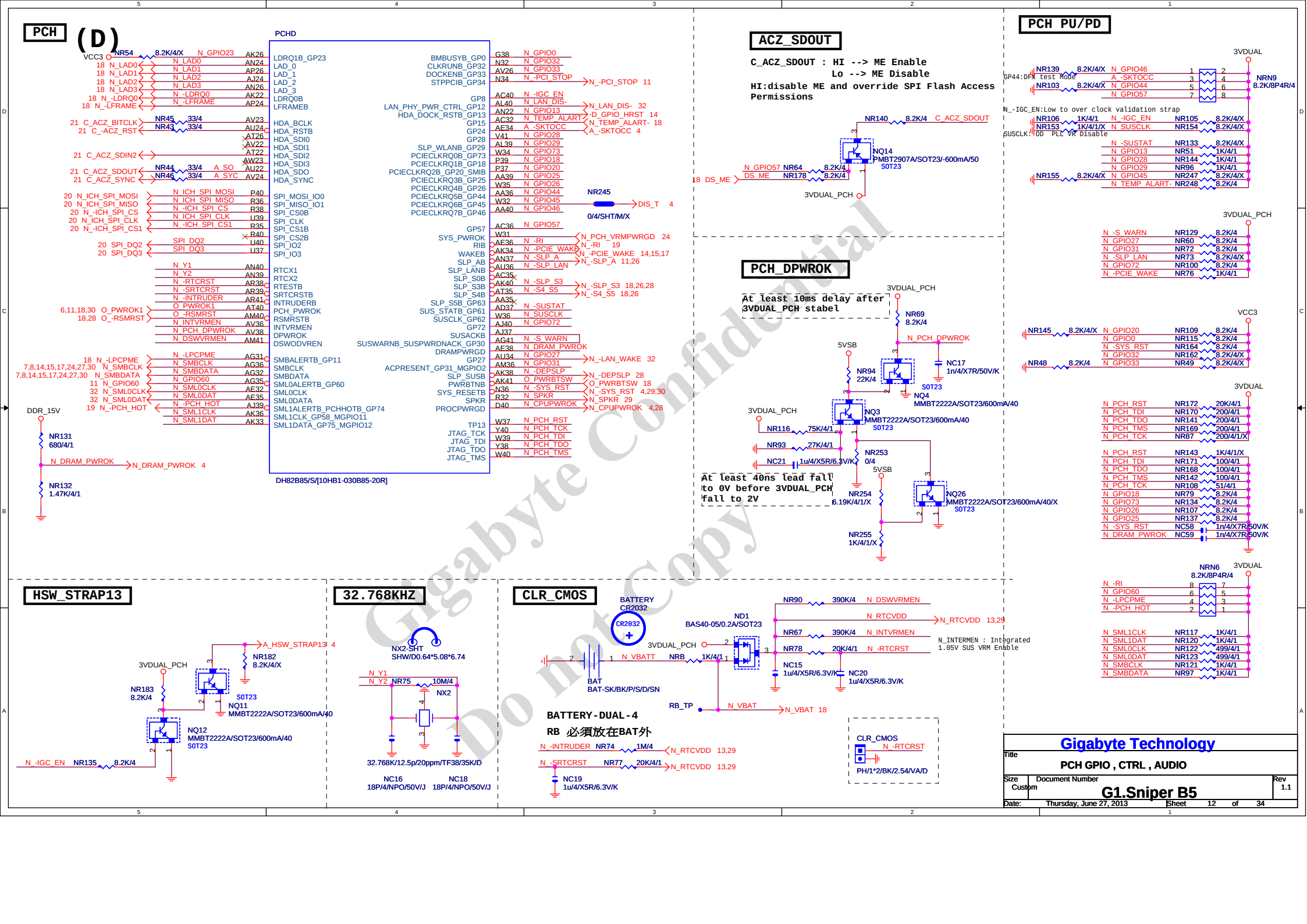
PCH
(D)
PCHD
DH82B85/S/[10HB1-030B85-20R]
ACZ_SDOUT
C_ACZ_SDOUT : HI --> ME Enable
Lo --> ME Disable
HI:disable ME and override SPI Flash Access Permissions
PCH_DPWROK
At least 10ms delay after 3VDUAL_PCH stabel
At least 40ns lead fall to 0V before 3VDUAL_PCH fall to 2V
PCH PU/PD
HSW_STRAP13
32.768KHZ
CLR_CMOS
BATTERY-DUAL-4
RB 必須放在BAT外
Gigabyte Technology
PCH GPIO , CTRL , AUDIO
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Rev 1.1
Thursday, June 27, 2013
Sheet 12 of 34
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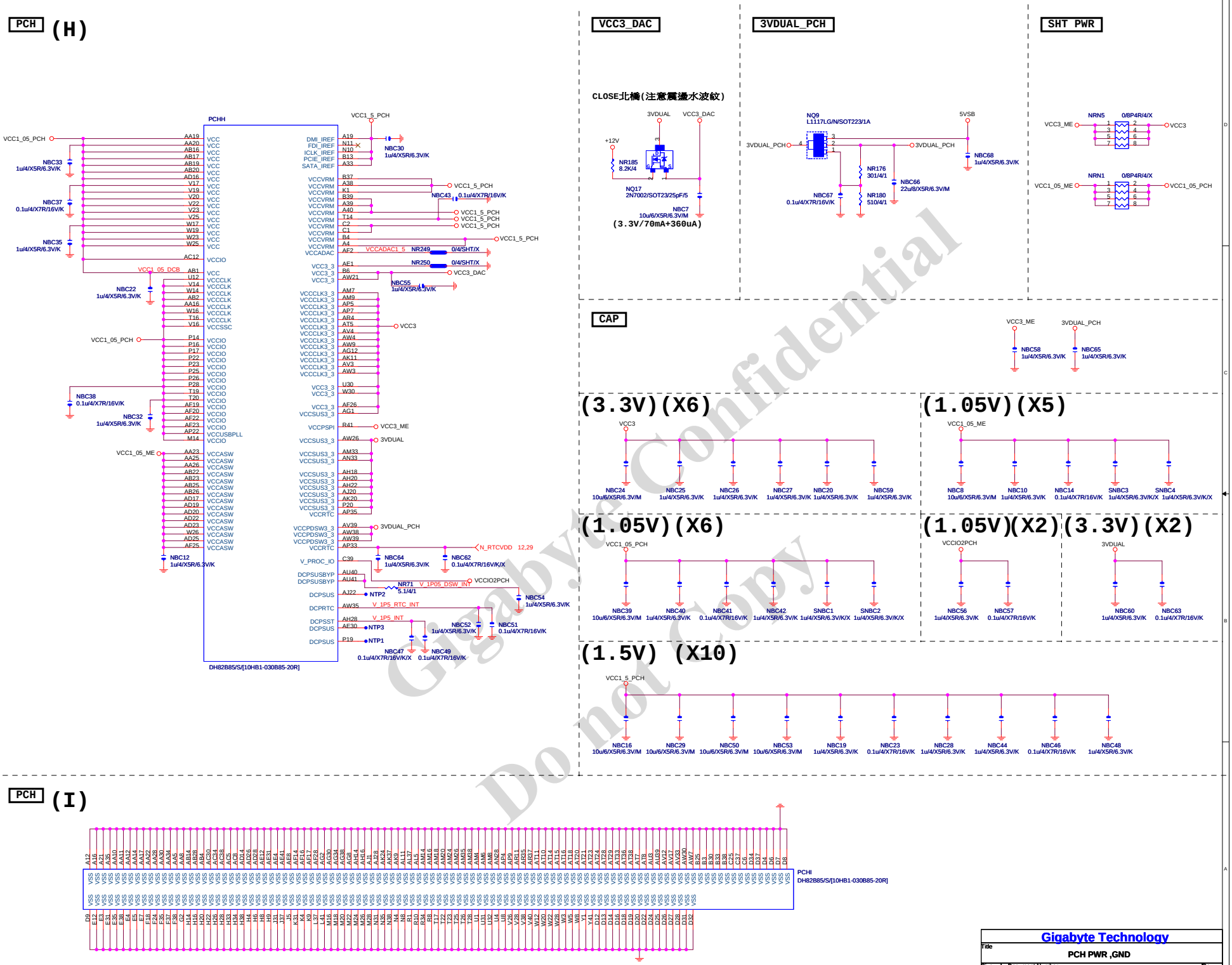

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Title: PCH PWR ,GND			
Size: Custom	Document Number: G1.Sniper B5		Rev: 1.1
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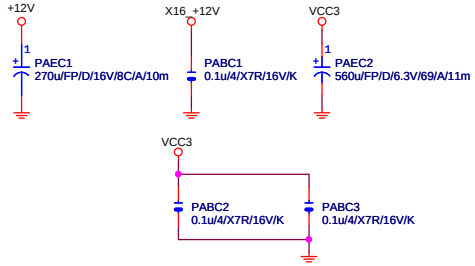
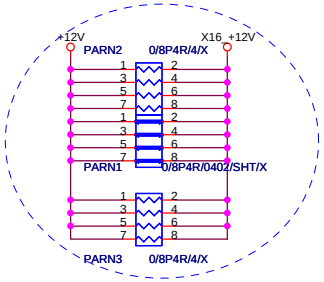
PCIEX16 CAP



PCIEX16 PROTECT SHT

+12 protect short-wire test



PCIEX16 AC CAP

PA_EXP_TXP0	PAC5	0.22u/4/X5R/6.3V/K	PA_EXP_TXP0_C
PA_EXP_TXN0	PAC4	0.22u/4/X5R/6.3V/K	PA_EXP_TXN0_C
PA_EXP_TXP1	PAC6	0.22u/4/X5R/6.3V/K	PA_EXP_TXP1_C
PA_EXP_TXN1	PAC7	0.22u/4/X5R/6.3V/K	PA_EXP_TXN1_C
PA_EXP_TXP2	PAC8	0.22u/4/X5R/6.3V/K	PA_EXP_TXP2_C
PA_EXP_TXN2	PAC9	0.22u/4/X5R/6.3V/K	PA_EXP_TXN2_C
PA_EXP_TXP3	PAC10	0.22u/4/X5R/6.3V/K	PA_EXP_TXP3_C
PA_EXP_TXN3	PAC11	0.22u/4/X5R/6.3V/K	PA_EXP_TXN3_C
PA_EXP_TXP4	PAC12	0.22u/4/X5R/6.3V/K	PA_EXP_TXP4_C
PA_EXP_TXN4	PAC13	0.22u/4/X5R/6.3V/K	PA_EXP_TXN4_C
PA_EXP_TXP5	PAC14	0.22u/4/X5R/6.3V/K	PA_EXP_TXP5_C
PA_EXP_TXN5	PAC15	0.22u/4/X5R/6.3V/K	PA_EXP_TXN5_C
PA_EXP_TXP6	PAC16	0.22u/4/X5R/6.3V/K	PA_EXP_TXP6_C
PA_EXP_TXN6	PAC17	0.22u/4/X5R/6.3V/K	PA_EXP_TXN6_C
PA_EXP_TXP7	PAC19	0.22u/4/X5R/6.3V/K	PA_EXP_TXP7_C
PA_EXP_TXN7	PAC18	0.22u/4/X5R/6.3V/K	PA_EXP_TXN7_C
PA_EXP_TXP8	PAC20	0.22u/4/X5R/6.3V/K	PA_EXP_TXP8_C
PA_EXP_TXN8	PAC21	0.22u/4/X5R/6.3V/K	PA_EXP_TXN8_C
PA_EXP_TXP9	PAC22	0.22u/4/X5R/6.3V/K	PA_EXP_TXP9_C
PA_EXP_TXN9	PAC23	0.22u/4/X5R/6.3V/K	PA_EXP_TXN9_C
PA_EXP_TXP10	PAC24	0.22u/4/X5R/6.3V/K	PA_EXP_TXP10_C
PA_EXP_TXN10	PAC25	0.22u/4/X5R/6.3V/K	PA_EXP_TXN10_C
PA_EXP_TXP11	PAC26	0.22u/4/X5R/6.3V/K	PA_EXP_TXP11_C
PA_EXP_TXN11	PAC27	0.22u/4/X5R/6.3V/K	PA_EXP_TXN11_C
PA_EXP_TXP12	PAC28	0.22u/4/X5R/6.3V/K	PA_EXP_TXP12_C
PA_EXP_TXN12	PAC29	0.22u/4/X5R/6.3V/K	PA_EXP_TXN12_C
PA_EXP_TXP13	PAC30	0.22u/4/X5R/6.3V/K	PA_EXP_TXP13_C
PA_EXP_TXN13	PAC31	0.22u/4/X5R/6.3V/K	PA_EXP_TXN13_C
PA_EXP_TXP14	PAC32	0.22u/4/X5R/6.3V/K	PA_EXP_TXP14_C
PA_EXP_TXN14	PAC33	0.22u/4/X5R/6.3V/K	PA_EXP_TXN14_C
PA_EXP_TXP15	PAC34	0.22u/4/X5R/6.3V/K	PA_EXP_TXP15_C
PA_EXP_TXN15	PAC35	0.22u/4/X5R/6.3V/K	PA_EXP_TXN15_C

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

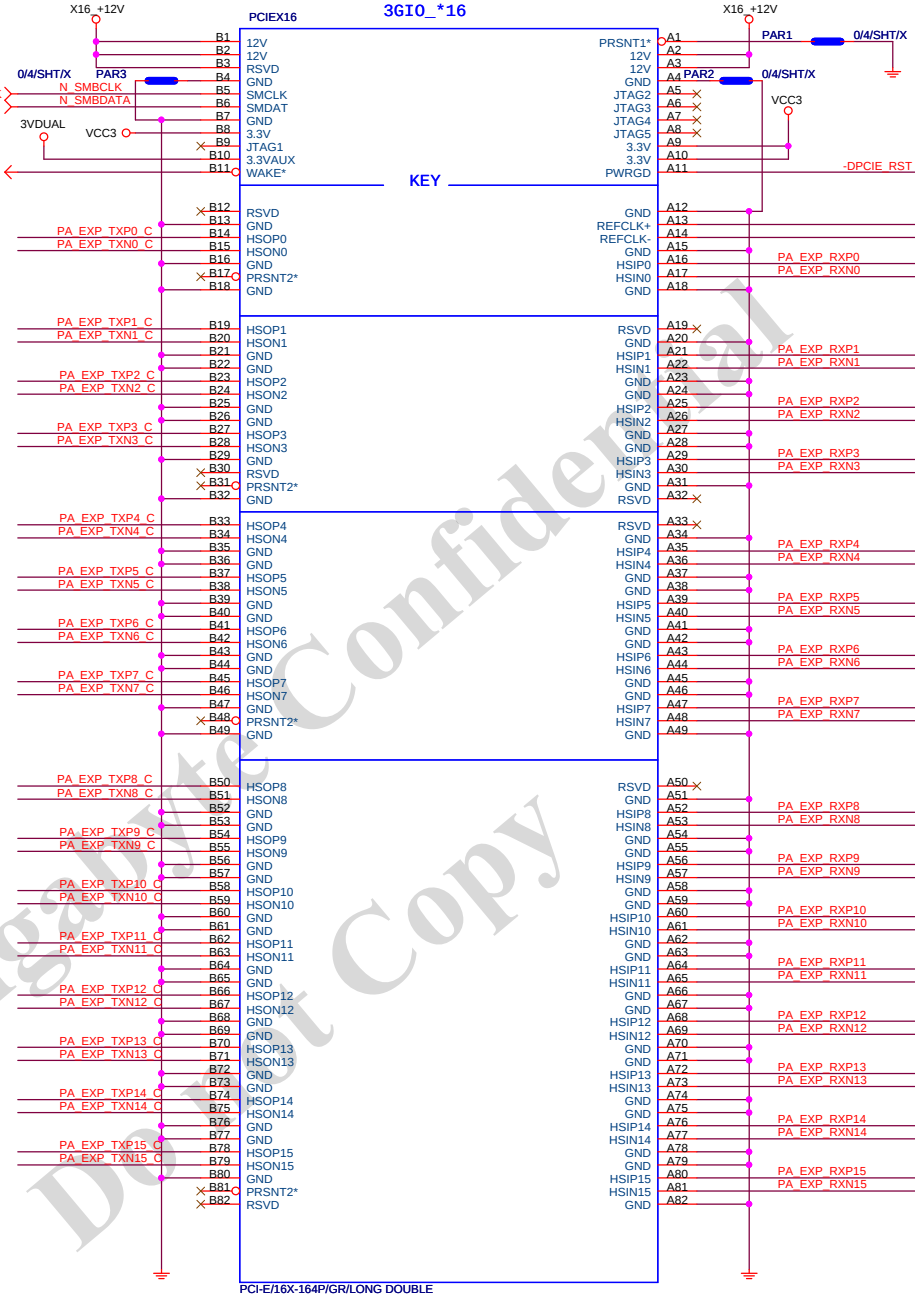
PCE-E X16(單向) BANDWITH=2.5GHz*(8b/10b)X16=32Gb/s=4GB/s

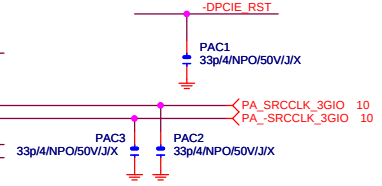
PCE-E X16(雙向) BANDWITH=2.5GHz*(8b/10b)X16X2=64Gb/s=8GB/s

PCI-E REV:2.0--> 5GHZ

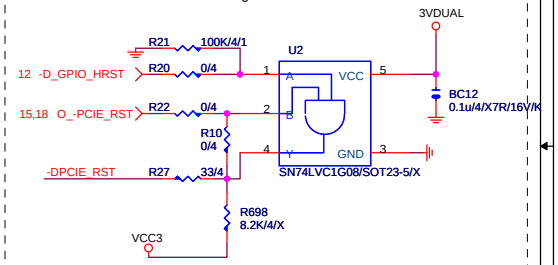
PCIEX16 SLOT

PCIESLOT-164DN-Q





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



PCIEX16:16/5/5/5/16

PA_EXP_RXP[0..15] >> PA_EXP_RXP[0..15] 4

PA_EXP_RXN[0..15] >> PA_EXP_RXN[0..15] 4

PA_EXP_TXP[0..15] >> PA_EXP_TXP[0..15] 4

PA_EXP_TXN[0..15] >> PA_EXP_TXN[0..15] 4

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Title: PCI EXPRESS * 16			
Size: Custom	Document Number: G1.Sniper B5		Rev: 1.1
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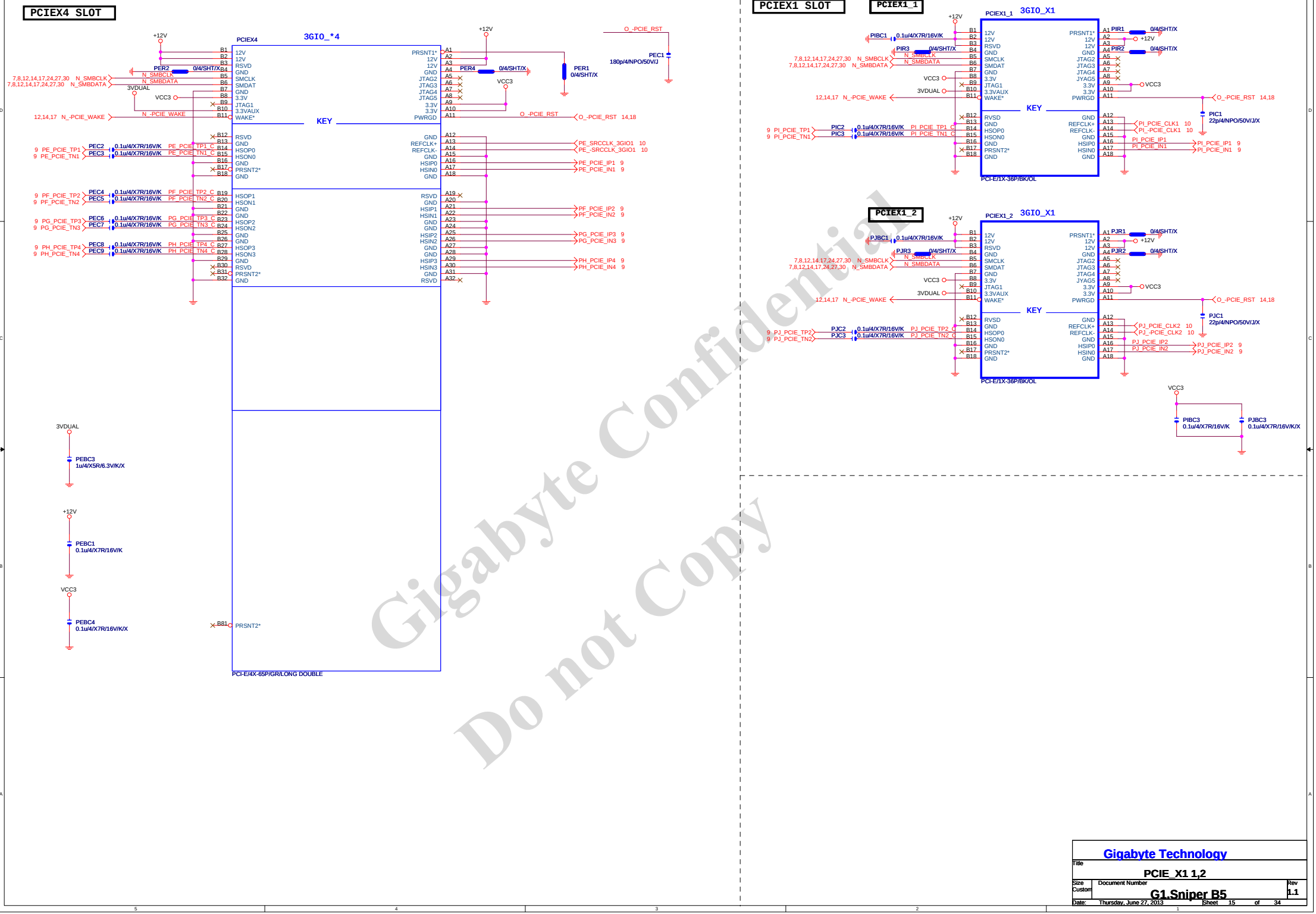
PCIEX4 SLOT
PCIEX4
3GIO_*4
KEY
PCI-E/4X-65P/GR/LONG DOUBLE
PCIEX1 SLOT
PCIEX1_1
PCIEX1_1 3GIO_X1
PCIEX1_2
PCIEX1_2 3GIO_X1
KEY
PCI-E/1X-36P/BK/OL
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PCIE_X1 1,2
G1.Sniper B5
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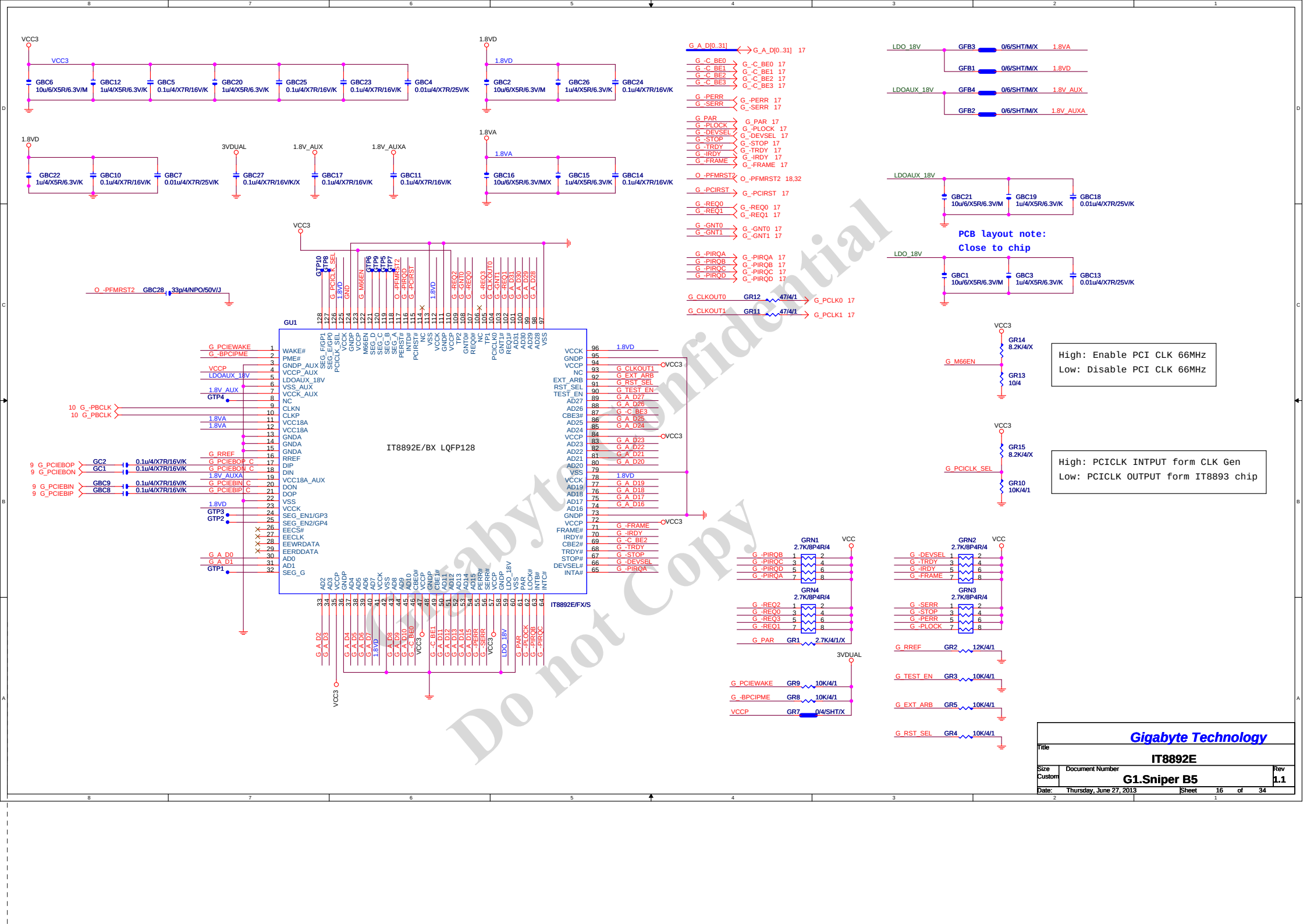
34


VCC3
GBC6 10u/6/X5R/6.3V/M
GBC12 1u/4/X5R/6.3V/K
GBC5 0.1u/4/X7R/16V/K
GBC20 1u/4/X5R/6.3V/K
GBC25 0.1u/4/X7R/16V/K
GBC23 0.1u/4/X7R/16V/K
GBC4 0.01u/4/X7R/25V/K
1.8VD
GBC2 10u/6/X5R/6.3V/M
GBC26 1u/4/X5R/6.3V/K
GBC24 0.1u/4/X7R/16V/K
GBC22 1u/4/X5R/6.3V/K
GBC10 0.1u/4/X7R/16V/K
GBC7 0.01u/4/X7R/25V/K
3VDUAL
GBC27 0.1u/4/X7R/16V/K/X
1.8V_AUX
GBC17 0.1u/4/X7R/16V/K
1.8V_AUXA
GBC11 0.1u/4/X7R/16V/K
1.8VA
GBC16 10u/6/X5R/6.3V/M/X
GBC15 1u/4/X5R/6.3V/K
GBC14 0.1u/4/X7R/16V/K
G_A_D[0..31]
G_-C_BE0
G_-C_BE1
G_-C_BE2
G_-C_BE3
G_-PERR
G_-SERR
G_PAR
G_-PLOCK
G_-DEVSEL
G_-STOP
G_-TRDY
G_-IRDY
G_-FRAME
O_-PFMRST2
G_-PCIRST
G_-REQ0
G_-REQ1
G_-GNT0
G_-GNT1
G_-PIRQA
G_-PIRQB
G_-PIRQC
G_-PIRQD
G_CLKOUT0
G_CLKOUT1
GR12 47/4/1
GR11 47/4/1
G_PCLK0
G_PCLK1
LDO_18V
GFB3 0/6/SHT/M/X 1.8VA
GFB1 0/6/SHT/M/X 1.8VD
LDOAUX_18V
GFB4 0/6/SHT/M/X 1.8V_AUX
GFB2 0/6/SHT/M/X 1.8V_AUXA
GBC21 10u/6/X5R/6.3V/M
GBC19 1u/4/X5R/6.3V/K
GBC18 0.01u/4/X7R/25V/K
PCB layout note:
Close to chip
GBC1 10u/6/X5R/6.3V/M
GBC3 1u/4/X5R/6.3V/K
GBC13 0.01u/4/X7R/25V/K
O_-PFMRST2
GBC28 33p/4/NPO/50V/J
GU1
IT8892E/BX LQFP128
IT8892E/FX/S
GR14 8.2K/4/X
GR13 10/4
G_M66EN
High: Enable PCI CLK 66MHz
Low: Disable PCI CLK 66MHz
GR15 8.2K/4/X
GR10 10K/4/1
G_PCICLK_SEL
High: PCICLK INTPUT form CLK Gen
Low: PCICLK OUTPUT form IT8893 chip
GRN1 2.7K/8P4R/4
GRN2 2.7K/8P4R/4
GRN4 2.7K/8P4R/4
GRN3 2.7K/8P4R/4
G_PAR GR1 2.7K/4/1/X
G_RREF GR2 12K/4/1
G_TEST_EN GR3 10K/4/1
G_EXT_ARB GR5 10K/4/1
G_RST_SEL GR4 10K/4/1
G_PCIEWAKE GR9 10K/4/1
G_-BPCIPME GR8 10K/4/1
VCCP GR7 0/4/SHT/X
GC2 0.1u/4/X7R/16V/K
GC1 0.1u/4/X7R/16V/K
GBC9 0.1u/4/X7R/16V/K
GBC8 0.1u/4/X7R/16V/K
GTP1
GTP2
GTP3
GTP4
GTP5
GTP6
GTP7
GTP8
GTP9
GTP10
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IT8892E
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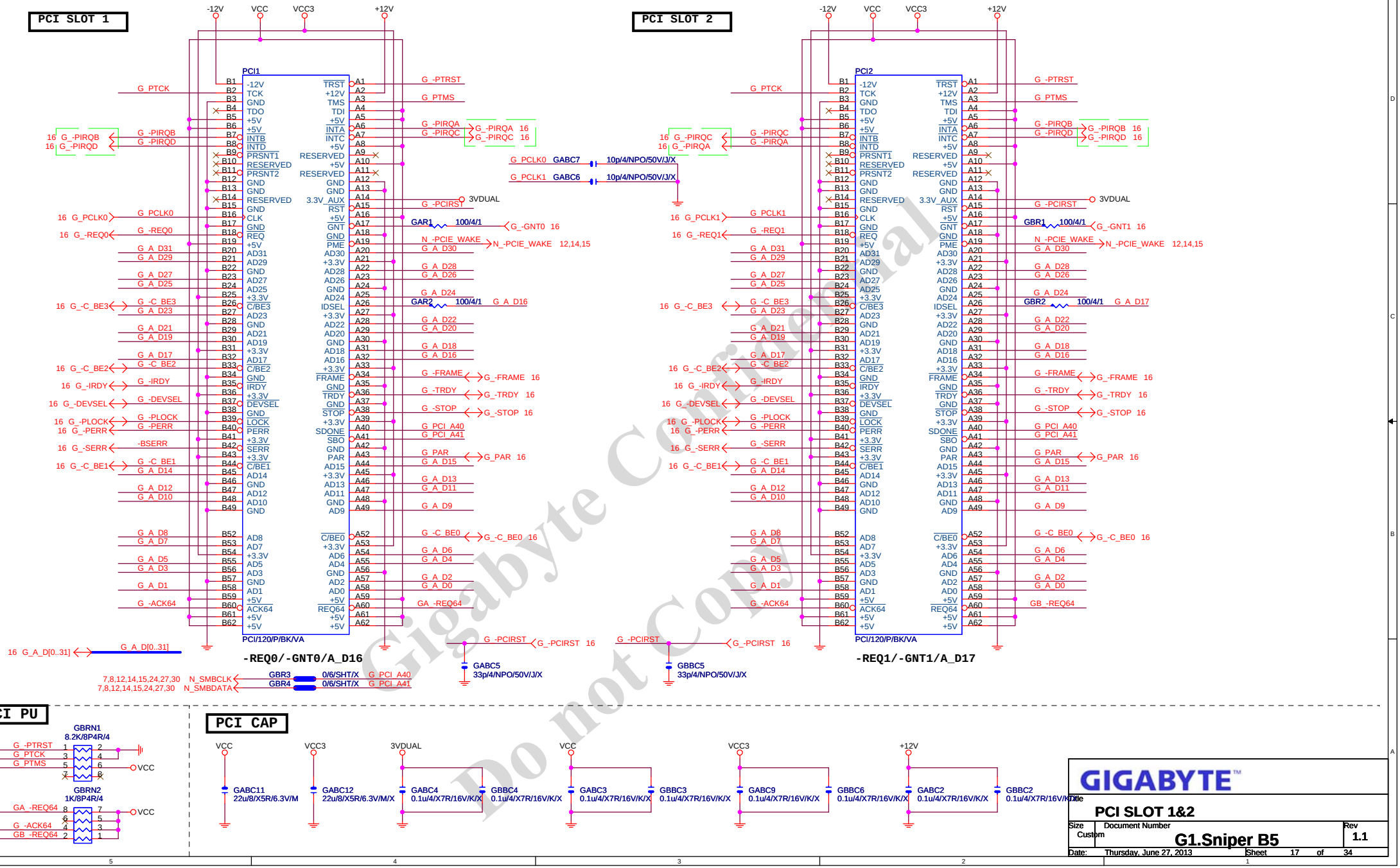

PCI PU

GBRN1 8.2K/8P4R/4

GBRN2 1K/8P4R/4

PCI CAP

GABC11 22u/8/X5R/6.3V/M

GABC12 22u/8/X5R/6.3V/M/X

GABC4 0.1u/4/X7R/16V/K/X

GBBC4 0.1u/4/X7R/16V/K/X

GABC3 0.1u/4/X7R/16V/K/X

GBBC3 0.1u/4/X7R/16V/K/X

GABC9 0.1u/4/X7R/16V/K/X

GBBC6 0.1u/4/X7R/16V/K/X

GABC2 0.1u/4/X7R/16V/K/X

GBBC2 0.1u/4/X7R/16V/K/X

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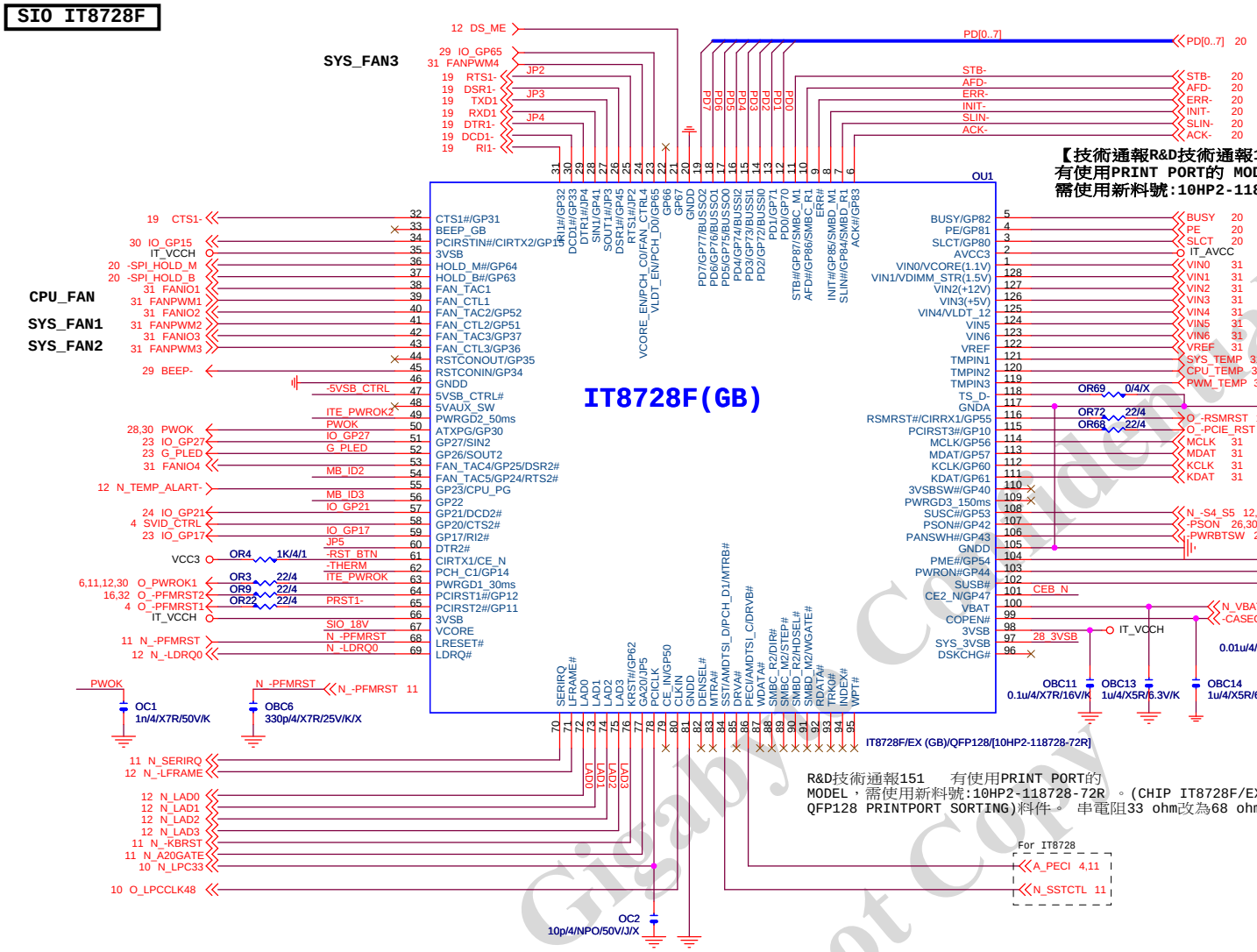
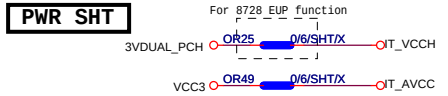
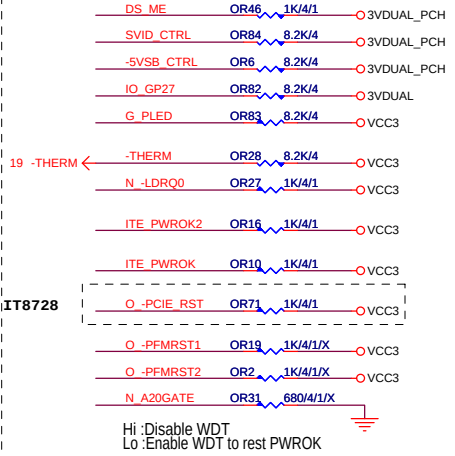
SIO IT8728F



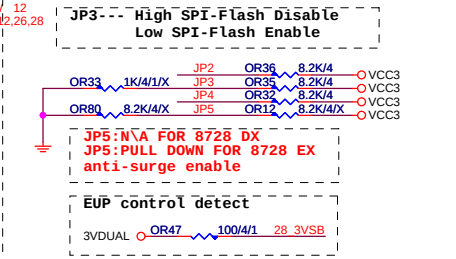
PWR SHT



SIO PU



SIO STRAP



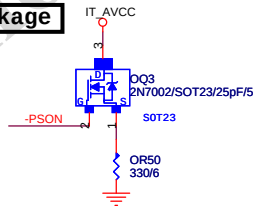
JP4	1	k8 power sequency function is Disable
	0	k8 power sequency function is Enable
JP3 JP5	1 1	The default value of EC Index 63h/6Bh/73h is 80h.
	1 0	The default value of EC Index 63h/6Bh/73h is FFh
	0 1	The default value of EC Index 63h/6Bh/73h is 00h.
	0 0	The default value of EC Index 63h/6Bh/73h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

IT8728F NOTE

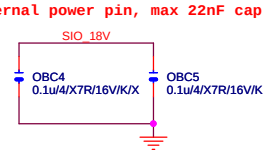
	IT8728
PIN121	VCORE_EN/PCH_C0
PIN120	VLDT_EN/PCH_D0
PIN19	ATXPG
PIN31	PCH_C1
PIN53	SST/AMDTSI_D/MTRB#/PCH_D1
PIN55	PECI/AMDTSI_C/DRVB#
PIN66	SYS_3VSB
PIN70	GP47
PIN95	VIN2(VCC5)
PIN96	VIN1(VCC12)
PIN97	VIN1/VDIMM_STR(1.5V)
PIN98	VIN0/VCORE(1.1V)/NC

DUAL BIOS OPT STRAP

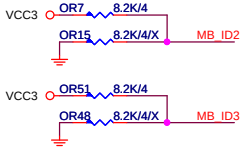
Power leakage



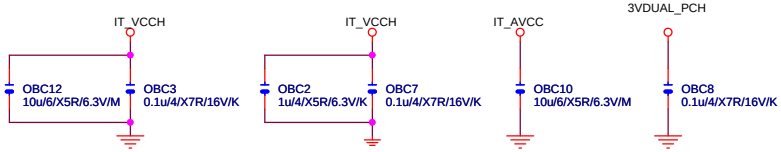
SIO_18V



MB ID



SIO CAP



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Title	ITE 8728 LPC IO
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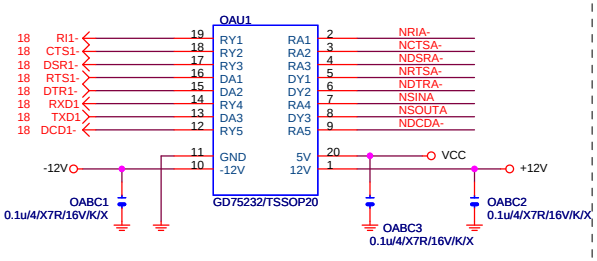
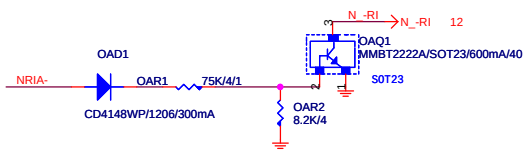
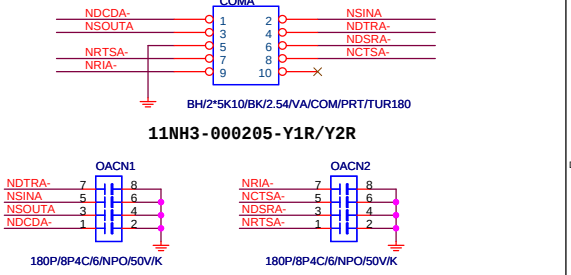
COMA



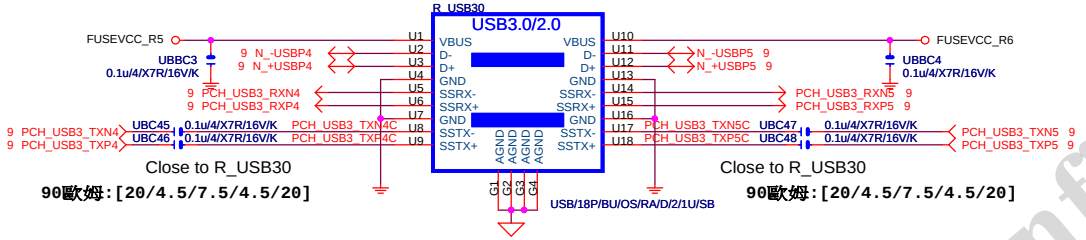
COM RI



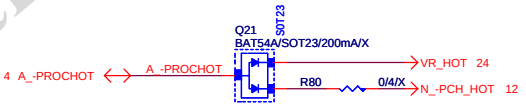
COM BUFFER



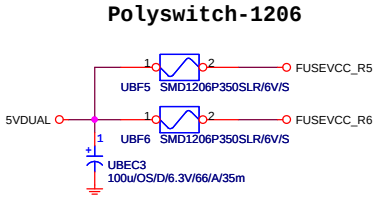
USB30_20 CONNECT



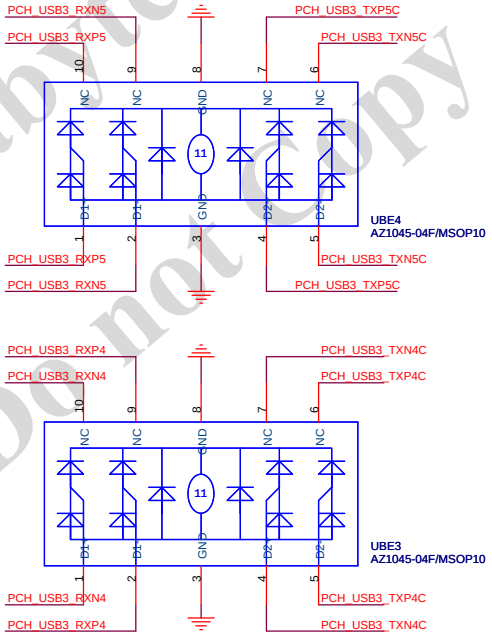
-PROHOT



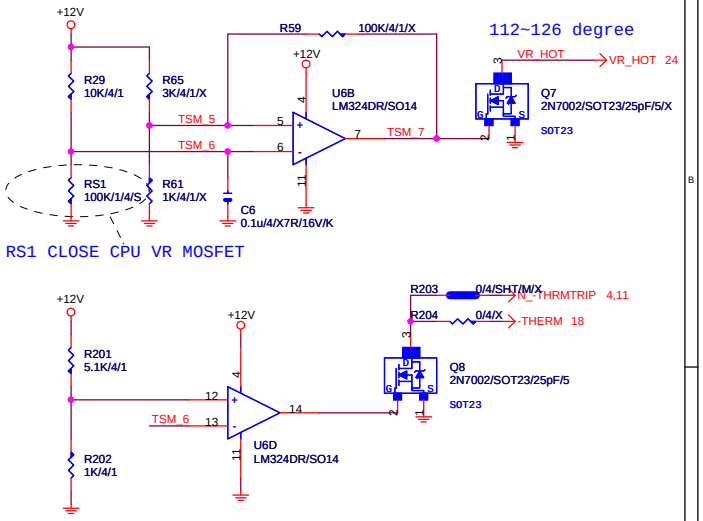
USB30 PWR



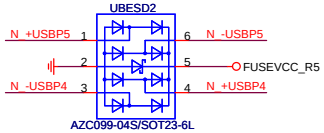
USB30 ESD PROCTECT



-PROHOT



USB20 ESD PROCTECT



CLOSE R_USB30

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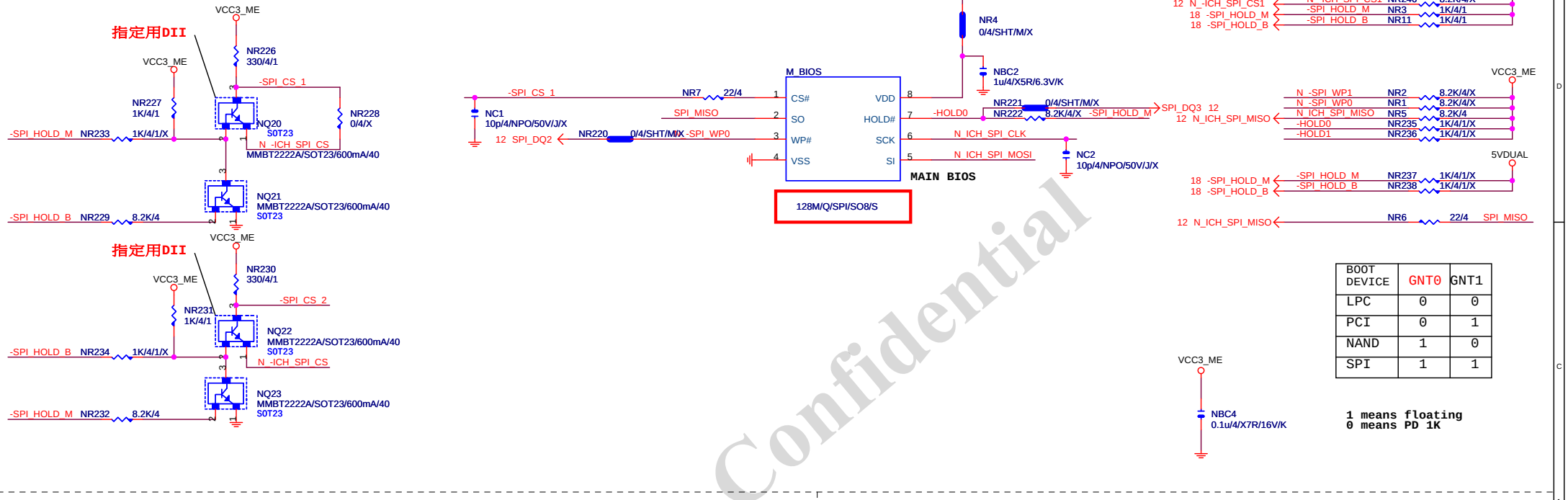
Gigabyte Technology		
Title: COM & PROHOT/Dynamic O.C.		
Size: Custom	Document Number: G1.Sniper B5	Rev: 1.1
Date: Thursday, June 27, 2013	Sheet 19 of 34	

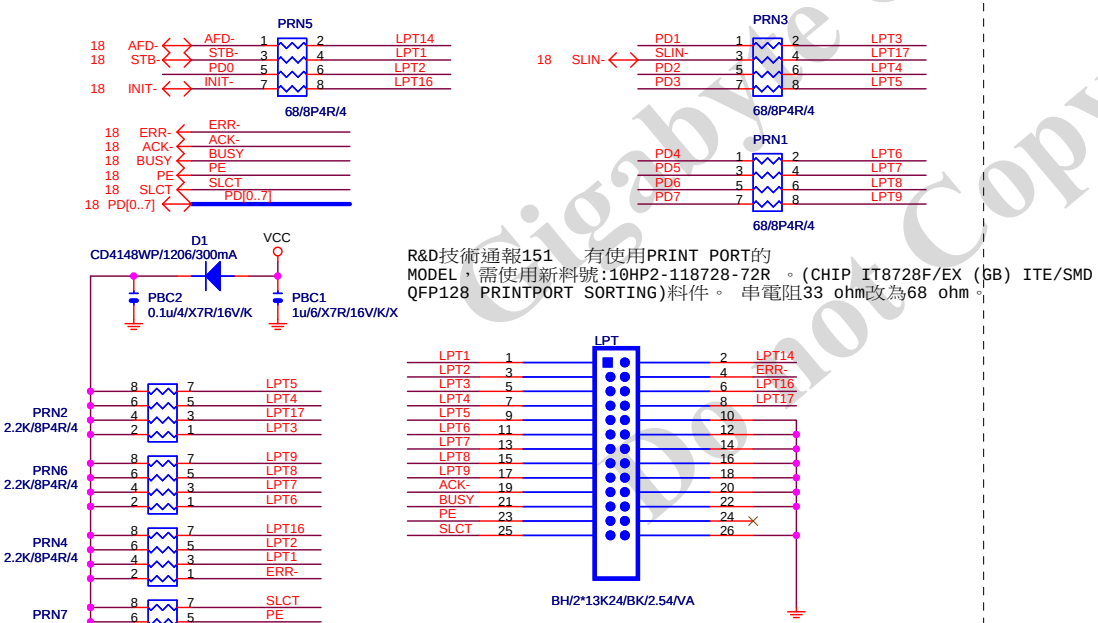
DUAL BIOS



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

1 means floating
0 means PD 1K

LPT PORT



R&D技術通報151　有使用PRINT PORT的
MODEL，需使用新料號:10HP2-118728-72R 。(CHIP IT8728F/EX (GB) ITE/SMD
QFP128 PRINTPORT SORTING)料件。 串電阻33 ohm改為68 ohm。

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Title	BIOS	
Size: Custom	Document Number: G1.Sniper B5	Rev: 1.1
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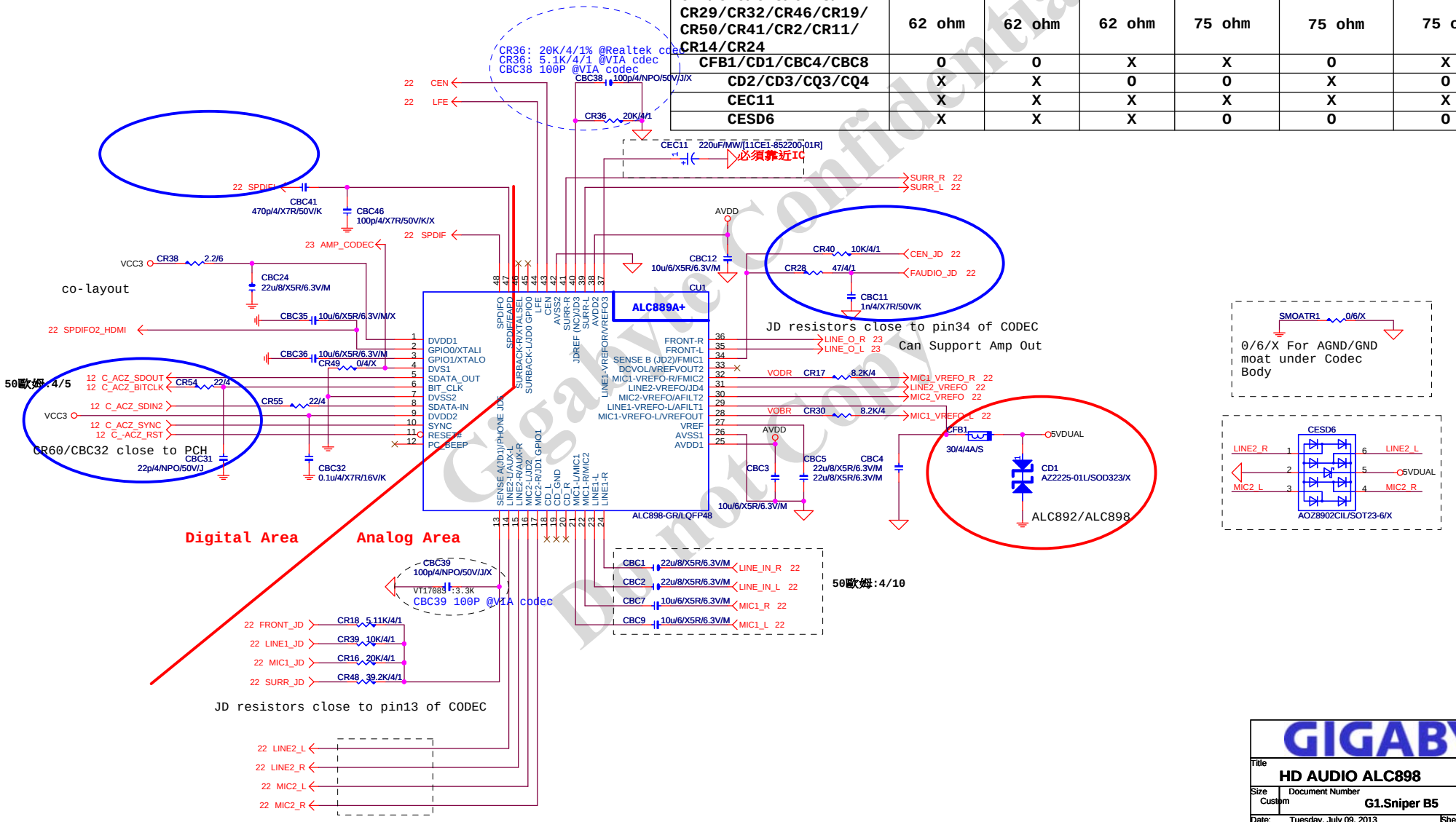
AZALIA CODEC *ALC662-VD0/ALC887-VD2/ALC889/VT1708S-CD/VT1708S-CE/VT2021 Colay*

	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



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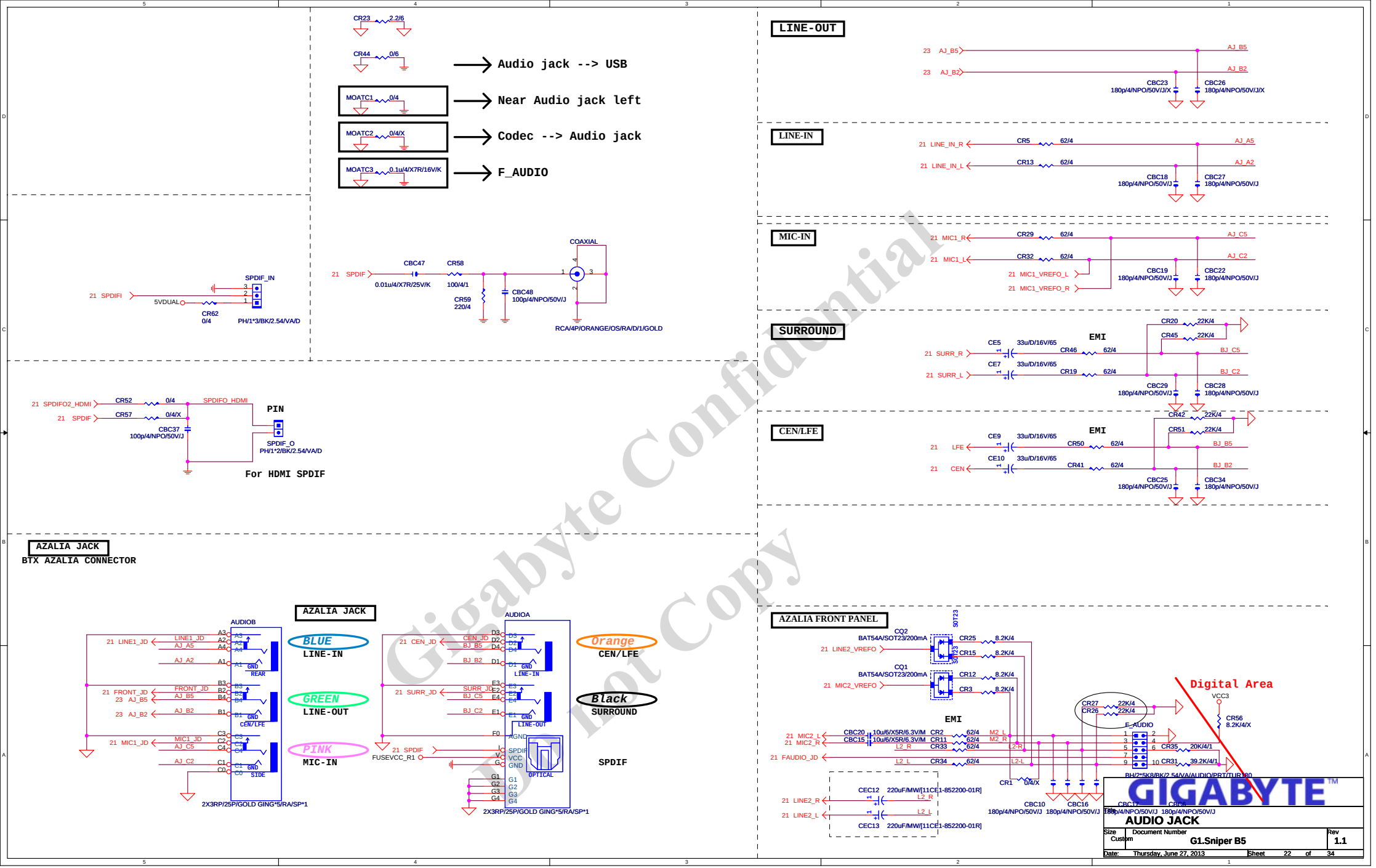
Title	HD AUDIO ALC898	
Size: Custom	Document Number: G1.Sniper B5	Rev: 1.1
Date: Tuesday, July 09, 2013	Sheet 21 of 34	



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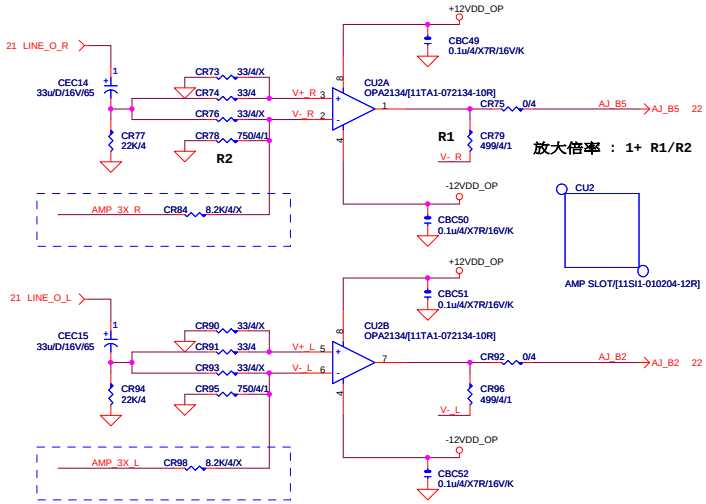
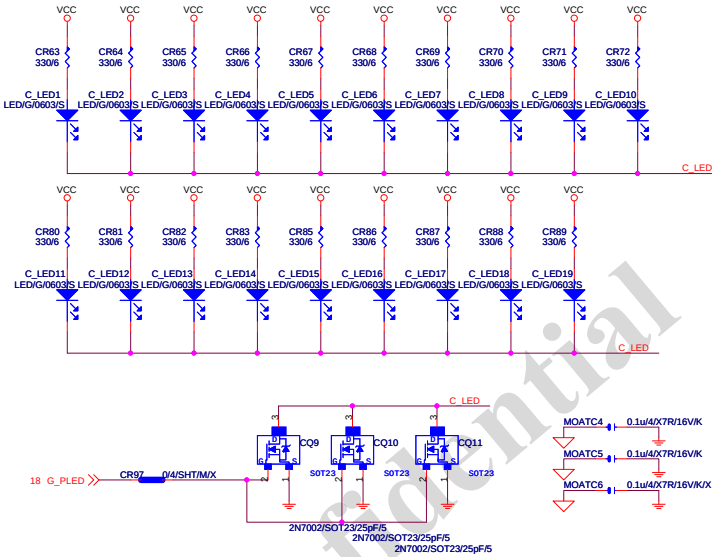
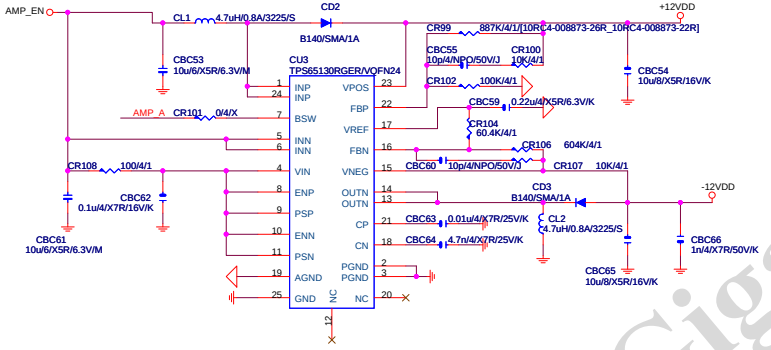
AMPLIFIED

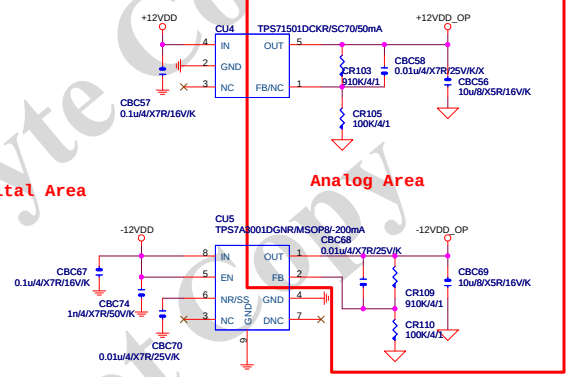


Analog Area

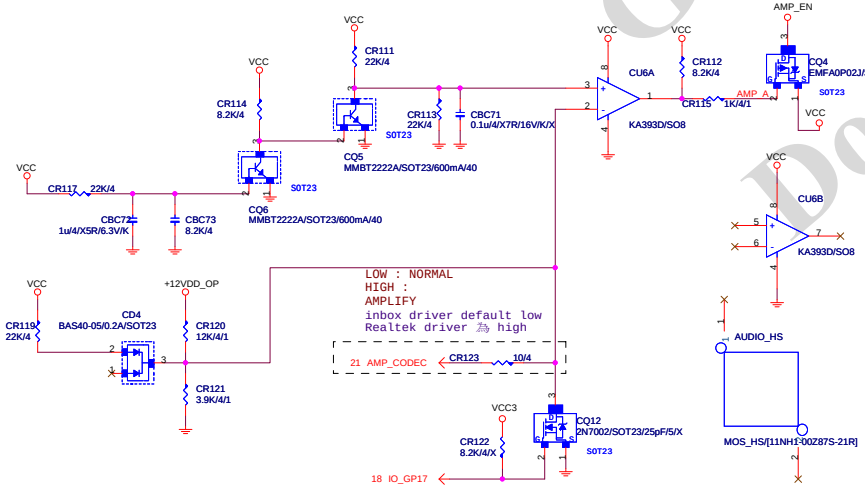


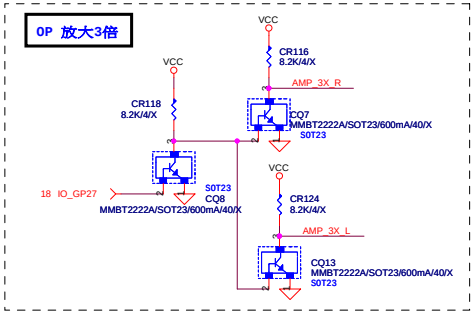


Digital Area



Analog Area





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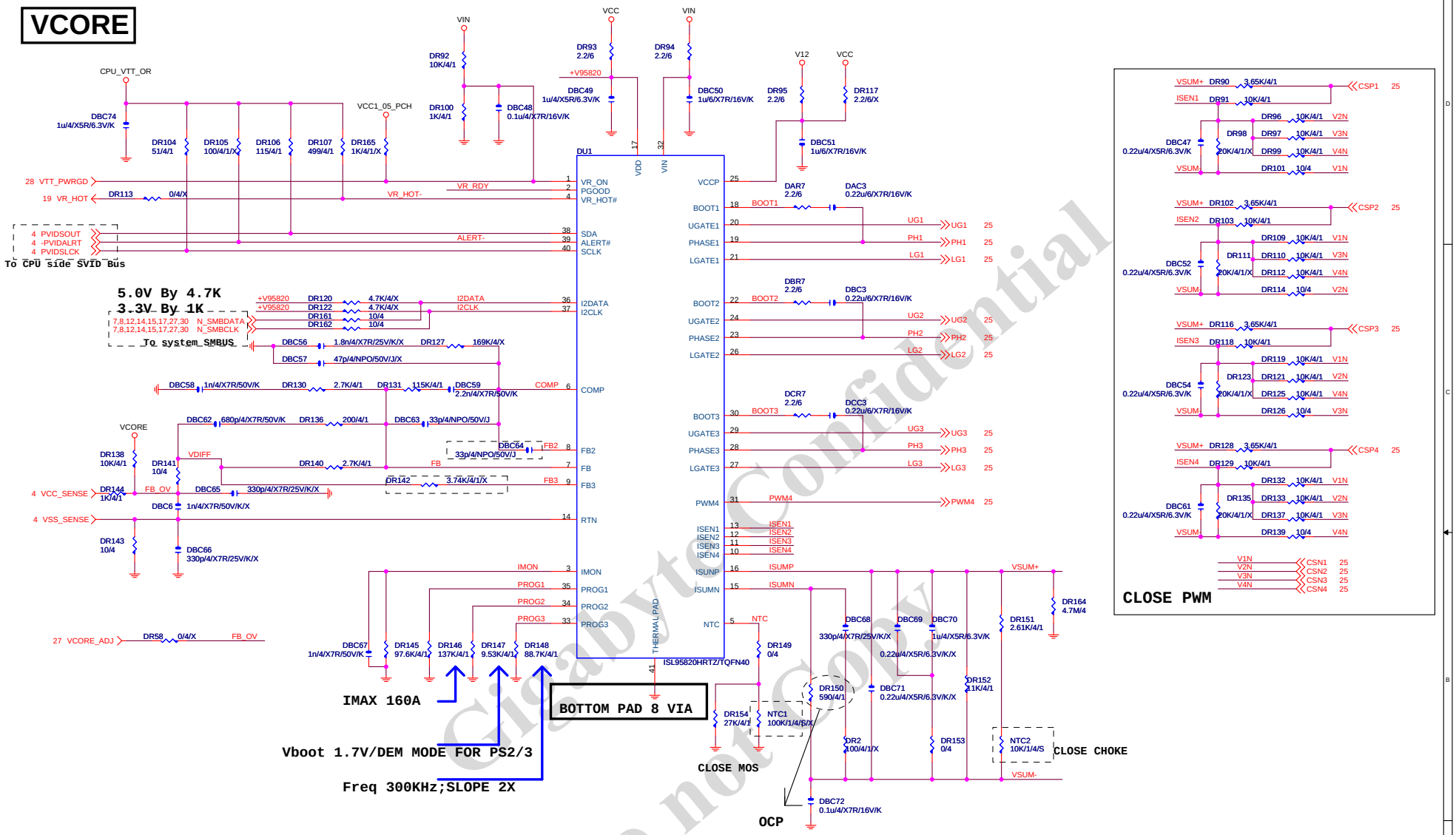
Title: Audio Amplifier		
Size: Custom	Document Number: G1.Sniper B5	Rev: 1.1
Date: Thursday, June 27, 2013	Sheet 23 of 34	

VCORE



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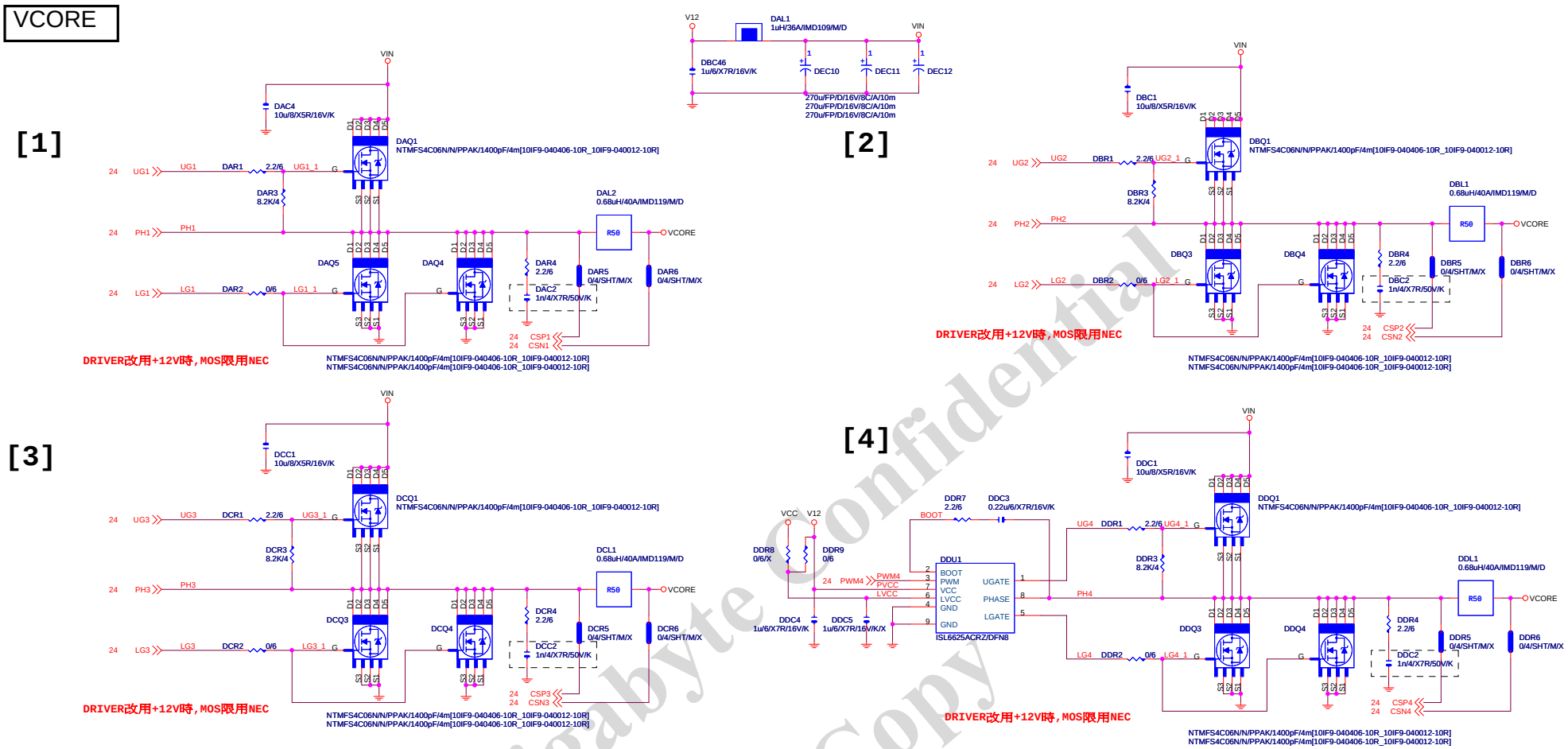
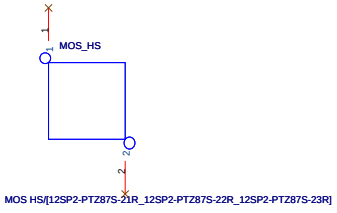
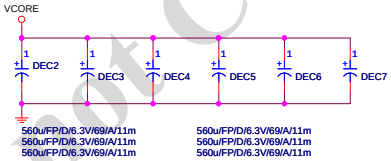
Gigabyte Technology			
Title: VCORE_ ISL95820			
Size: Custom	Document Number: G1.Sniper B5		Rev: 1.1
Date: Thursday, June 27, 2013	Sheet 24 of 34		

VCORE



MOSFET HEATSINK





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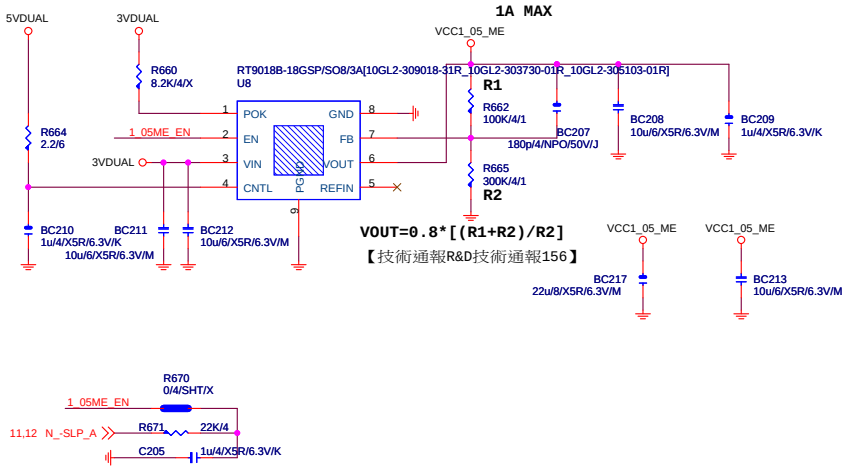
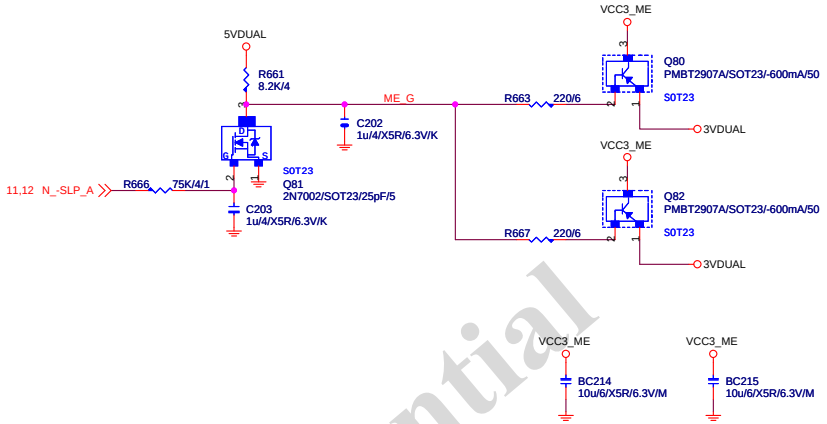
Gigabyte Technology		
Title	ISL95820_2	
Size: Custom	Document Number: G1.Sniper B5	Rev: 1.1
Date: Thursday, June 27, 2013	Sheet 25 of 34	

VCC1_05_ME

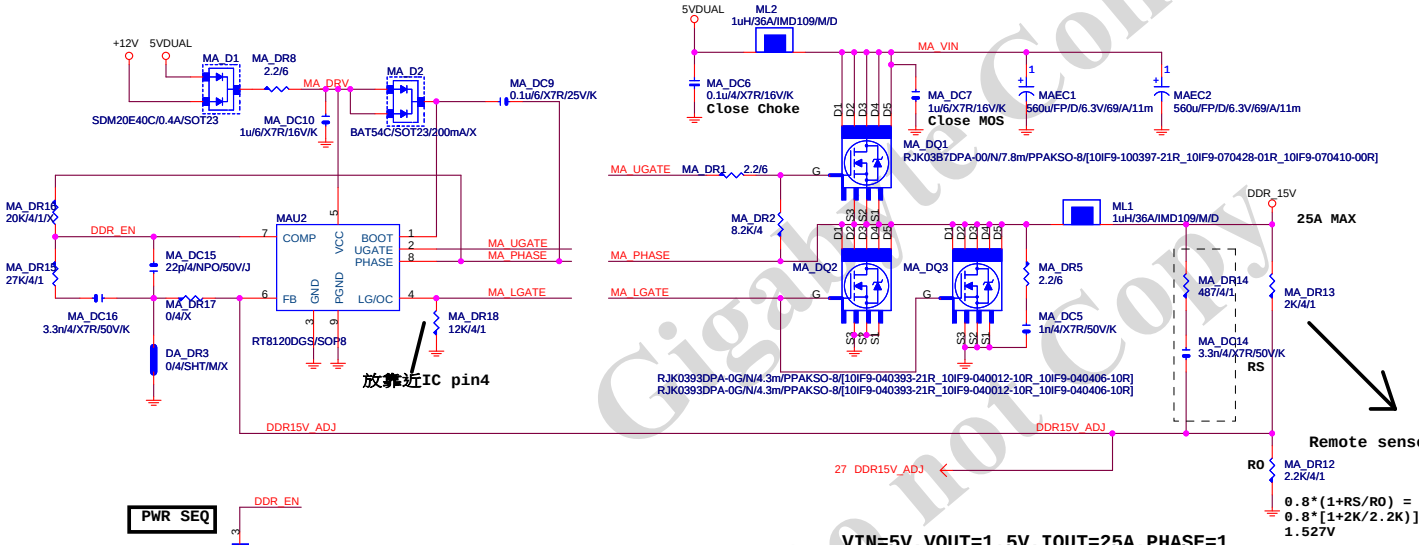
【技術通報R&D技術通報156】
(RICHTEK), (NUVOTON), (EMC)做共用
PIN7分壓阻值須做修改為100K以上電阻值



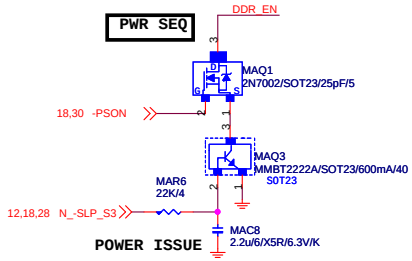
VCC3_ME

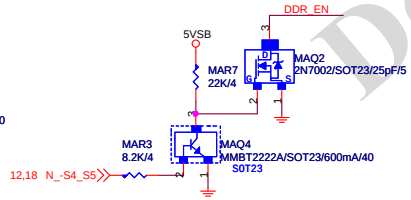


DDR_15V



PWR SEQ

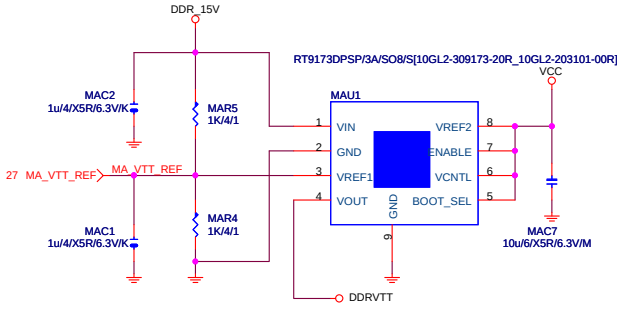




VIN=5V,VOUT=1.5V,IOUT=25A,PHASE=1
IRMS=11.45A
560u/FP/D/6.3V/68/8m RIPPLE CURRENT=4.7A
Coefficient=1.7(85℃),1(105℃)
VIN Ripple current=4.7X1.7=7.99A(85℃)
-->故固態電容須2X7.99=15.98>11.45A

OCP:35.82A for Rds=6.7m for vishay@4.5V
OCP:72.727A for Rds=3.3m for renesas@10V
OCP:48A=Roset*Iocset / Rds(on)
=12K*10uA / [5//5]

DDRVTT



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Title	DDR15V / M3 POWER	
Size: Custom	Document Number: G1.Sniper B5	Rev: 1.1
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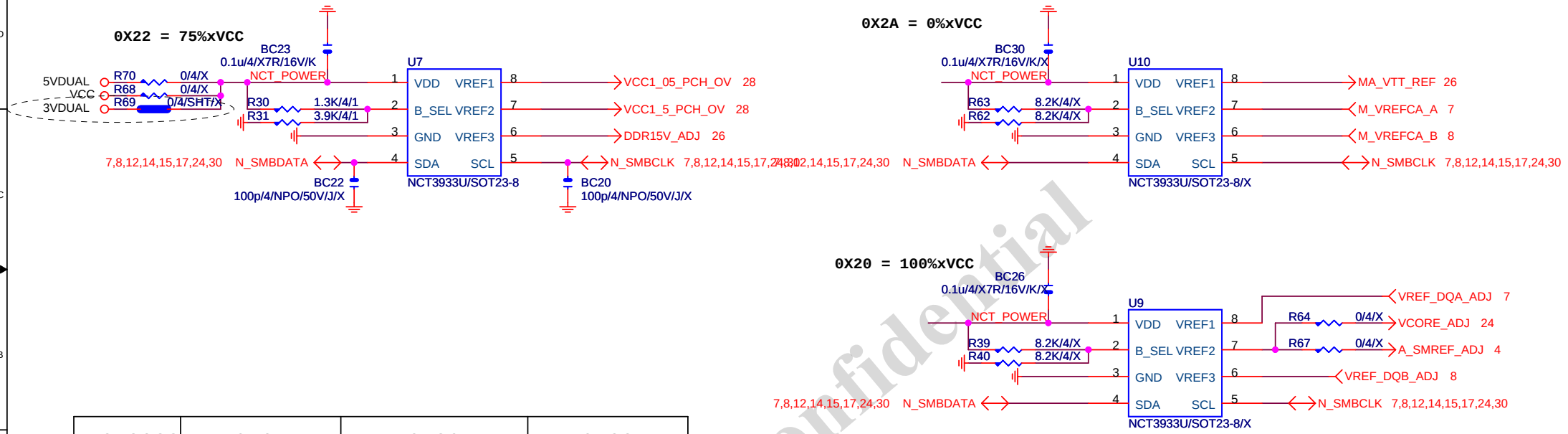
OVER VOLTAGE



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

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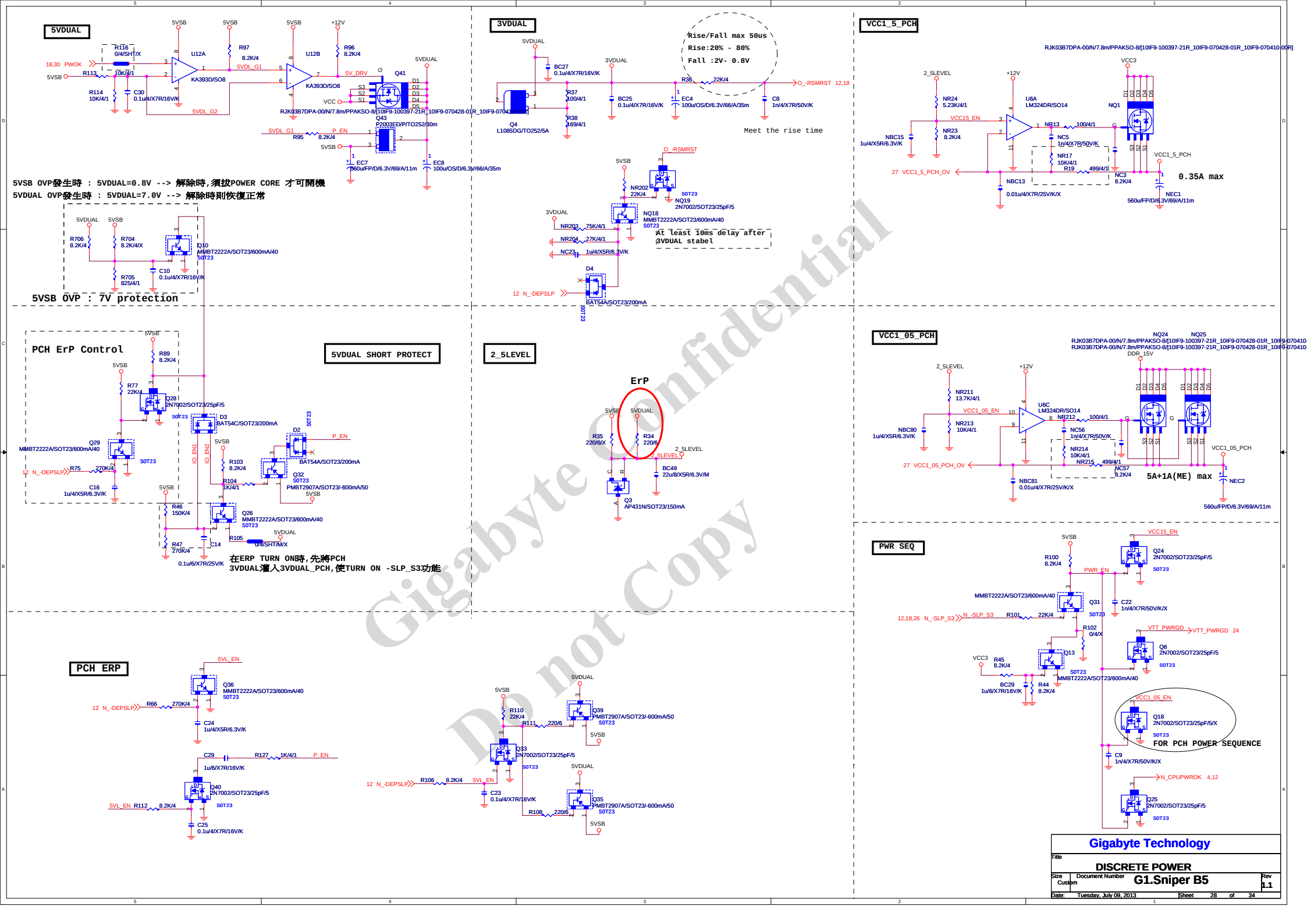
Gigabyte Technology		
Title: CPU CORE VR-2		
Size: Custom	Document Number: G1.Sniper B5	Rev: 1.1
Date: Thursday, June 27, 2013	Sheet 27 of 34	


5VDUAL
3VDUAL
VCC1_5_PCH
PCH ErP Control
5VDUAL SHORT PROTECT
2_5LEVEL
VCC1_05_PCH
PCH ERP
PWR SEQ
5VSB OVP發生時 : 5VDUAL=0.8V --> 解除時,須拔POWER CORE 才可開機
5VDUAL OVP發生時 : 5VDUAL=7.0V --> 解除時則恢復正常
5VSB OVP : 7V protection
Rise/Fall max 50us
Rise:20% - 80%
Fall :2V- 0.8V
Meet the rise time
At least 10ms delay after 3VDUAL stabel
0.35A max
5A+1A(ME) max
ErP
在ERP TURN ON時,先將PCH 3VDUAL灌入3VDUAL_PCH,使TURN ON -SLP_S3功能
FOR PCH POWER SEQUENCE
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DISCRETE POWER
G1.Sniper B5
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Tuesday, July 09, 2013
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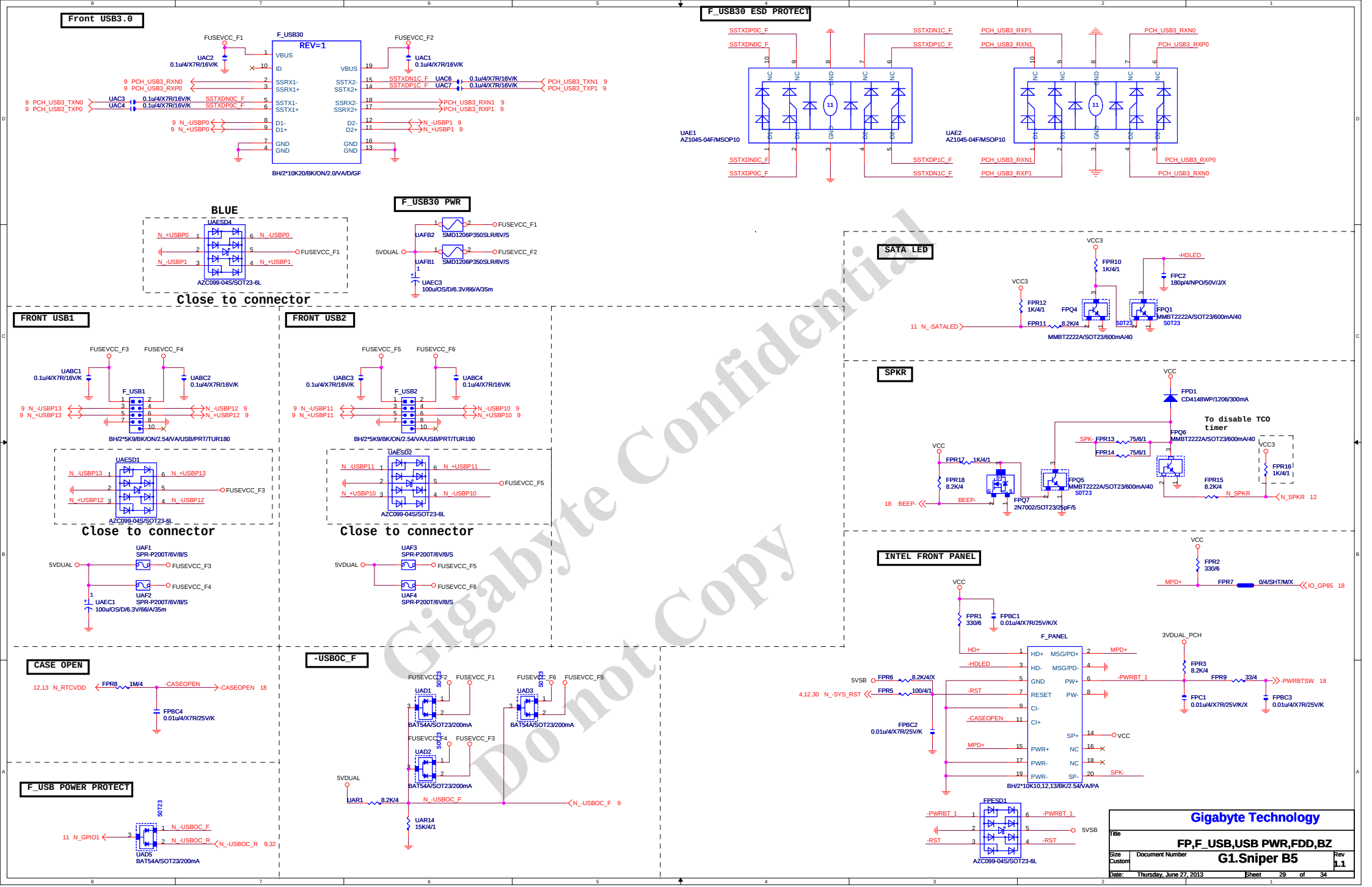

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ATXX24 POWER CONNECTOR

Patch some PSU no internal pull up resistor

5VSB R695 22K/4

18,26 -PSON

BC37 0.1u/4/X7R/16V/K

ATX

13	3.3V	3.3V	1
14	-12V	3.3V	2
15	GND	GND	3
16	PSON	5V	4
17	GND	GND	5
18	GND	5V	6
19	GND	GND	7
20	-5V	POK	8
21	5V	5VSB	9
22	5V	12V	10
23	5V	12V	11
24	GND	3.3V	12

-12V VCC3 VCC3

-5V VCC VCC

BC39 1u/4/X5R/6.3V/K BC40 0.1u/4/X7R/16V/K/X BC36 0.1u/4/X7R/16V/K/X

VCC3 VCC3 VCC3

BC35 22u/8/X5R/6.3V/M BC46 1u/4/X5R/6.3V/K BC48 1u/4/X5R/6.3V/K

VCC VCC +12V

BC38 510/6/X BC42 510/6/X BC43 1u/4/X5R/6.3V/K BC44 0.1u/4/X7R/16V/K BC45 0.1u/4/X7R/16V/K BC41 0.1u/4/X7R/16V/K

5VSB

AD1 AZ2225-01L/SOD323

R200 0/4 ATXPG

BC9 4.7u/6/X5R/6.3V/K

APW/2*12/BK/VA/SN/2SHK/PA66

To prevent the 5VSB under loading when boot

ATXX4 POWER CONNECTOR

ATX_12V_2X4

1	GND	+12V	5
2	GND	+12V	6
3	GND	+12V	7
4	GND	+12V	8

V12

APW/2*4/BK/OC/P/4.2/VA/SN/OH::Location ATX_12V_2X4

BC7 0.1u/4/X7R/16V/K

MH1 MH2 MH3 MH4 MH5 MH6 MH8

HOLE_3/X

AGND1

HOLE_4-RH-1

K3 K6 K2 K5 K1 K4

K1_ICT/X

K1-ICT

I1 I2 I3 I4 I5

4MMH/X

4MMH

【技術通報R&D技術通報153】

To fix 12V light load abnromal issue

+12V

RN2 2.7K/8P4R/4

RN3 2.7K/8P4R/4

RN4 2.7K/8P4R/4

RN5 2.7K/8P4R/4

RN6 2.7K/8P4R/4

+12V_LOAD

Q9 MMBT2222A/SOT23/600mA/40

SOT23

11 N_GPIO21 R703 330/4/1

CLK GEN

CPU Frequency Selection

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

CKVDD CKR8 8.2K/4/X LPC_48 CKR1 8.2K/4/X

CKVDD CKR2 8.2K/4/X FS_133M CKR3 8.2K/4/X

CLK

DOC_0 DOC_1 CPUT_LR CPUC_LR SATACLKT_LR SATACLKC_LR PCIEXT_LR PCIEXC_LR DOT96T_LR DOT96C_LR 48M/FSLB 24_12M 25M REF/FSLA RLATCH/RESET_IN#/RESET# VTTPWRGD/WOL_STOP#

VDD96 VDDSATA VDDPCIEX VDDCPU VDDREF VDD25 SDATA SCLK GNDPAD GNDCPU GNDPCIEX GND96 GNDREF GNDSATA GND25

9LRS4105BKLFT/MLF32/X

11 CK_SRCCLK_SATA 11 CK_-SRCCLK_SATA

9 CK_SRCCLK_PCH 9 CK_-SRCCLK_PCH

9 CK_DOTCLK 9 CK_-DOTCLK

LPC_48

10 N_PCHCLK14 CKR4 33/4/X FS_133M

4,12,29 N_-SYS_RST VCC3 CKR5 10/4/X CKR6 1K/4/1/X CPU_STP

6,11,12,18 O_PWROK1 CKR7 8.2K/4/X

CKBC8 0.1u/4/X7R/16V/K/X

CKVDD

CKBC1 1u/4/X5R/6.3V/K/X CKBC2 1u/4/X5R/6.3V/K/X

3VDUAL CKFB1 30/4/4A/S/X

CKBC3 1u/4/X5R/6.3V/K/X CKBC4 1u/4/X5R/6.3V/K/X CKBC5 1u/4/X5R/6.3V/K/X CKBC6 0.1u/4/X7R/16V/K/X CKBC7 1u/4/X5R/6.3V/K/X

CKC1 27p/4/NPO/50V/J/X CKX1 14.318M/16p/20ppm/49US/40/D/X CKC2 27p/4/NPO/50V/J/X

N_SMBDATA 7,8,12,14,15,17,24,27 N_SMBCLK 7,8,12,14,15,17,24,27

CKC4 100p/4/NPO/50V/J/X CKC3 100p/4/NPO/50V/J/X

N_PCHCLK14 CKC5 10p/4/NPO/50V/J/X

5VSB VCC VCC3

RN7 1K/8P4R/6/X RN8 1K/8P4R/6/X RN9 1K/8P4R/6/X

PWOK PATCH

【技術通報R&D技術通報154】

VCC

FPR19 8.2K/4

PWOK 18,28

VCC FPR20 8.2K/4

FPR21 0/4/X

FPQ8 2N7002/SOT23/25pF/5

ATXPG

18 IO_GP15

FPBC5 0.1u/4/X7R/16V/K/X

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Gigabyte Technology

Title: ATX POWER CONNECTOR

Size: Custom | Document Number: G1.Sniper B5 | Rev: 1.1

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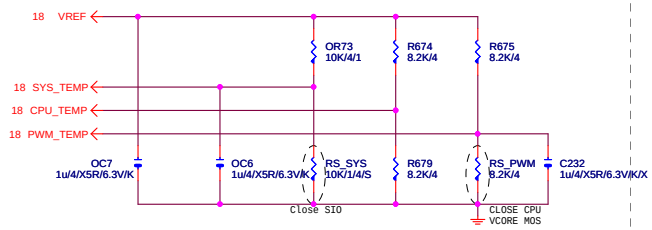
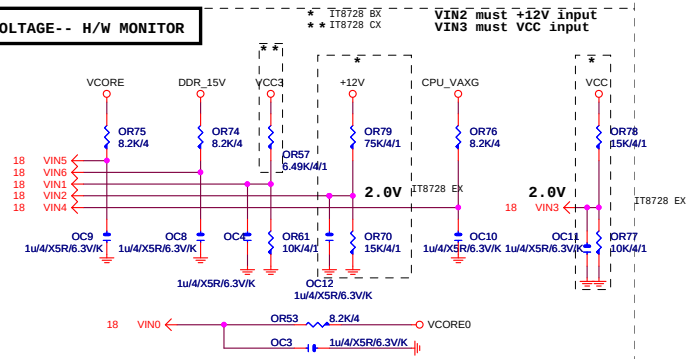
TEMP H/W MONITOR

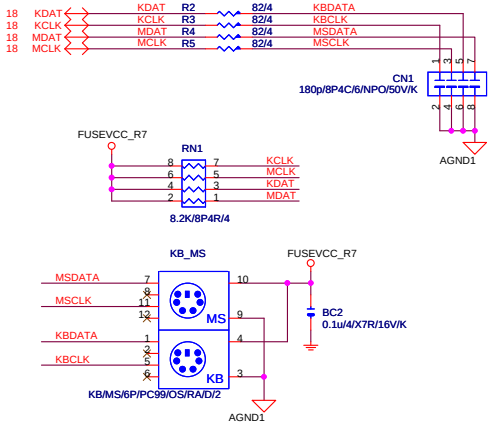


VOLTAGE-- H/W MONITOR

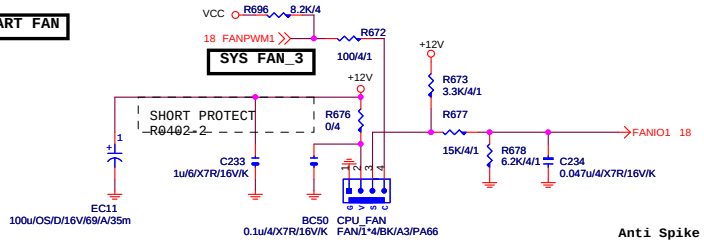


The division voltage of VIN2 & VIN3 must be around 2.9V

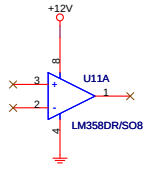
KB/USB



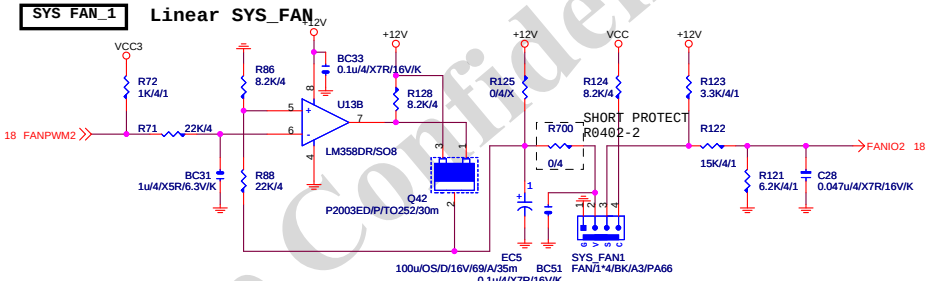
CPU SMART FAN



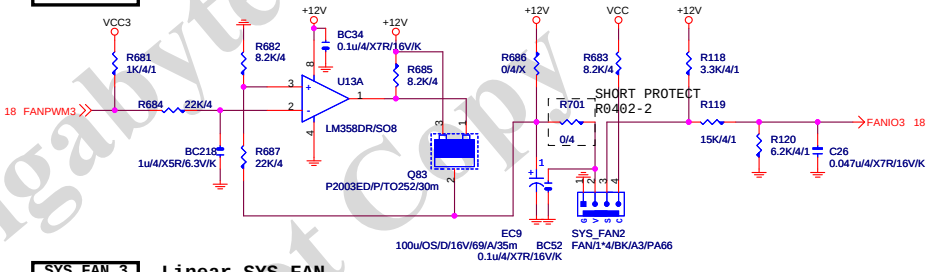
Anti Spike



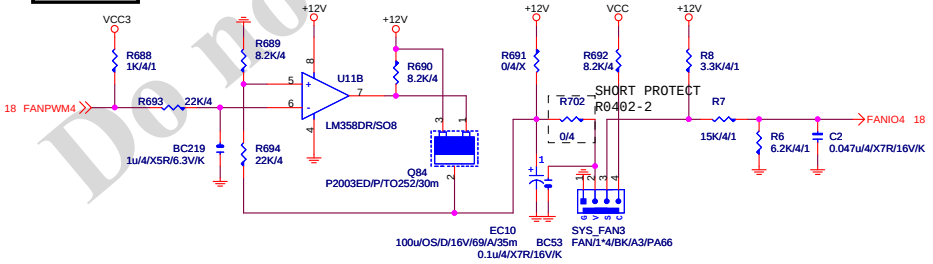
SYS FAN_1 Linear SYS_FAN



SYS FAN_2 Linear SYS_FAN



SYS FAN_3 Linear SYS_FAN



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LAN:INTEL I217

100歐姆:[20/4/10/4/20]

LU1

WGI217V/A3/QFN48/[10HP2-400217-30R]

For 82579
Keep short & wide

Dual Color LED
D4 D3 Green
D4 D3 Orange

Single Color LED
D2 D1 Yellow

1Gb	Orange
100Mb	Green
10Mb	Off

Access	Blinking
Link	Yellow

100歐姆:[20/4/10/4/20]

90歐姆:[15/4.5/7.5/4.5/15]

USB_LAN

USB+LAN/1G/GO,Y/OS/RA/D/12C/ES/[11NR6-702009-96R]

LAN

USB_LAN <--> R_USB30_1

-USBOC_R

CLOSE USB30_LAN

R_USB30

R_USB

USB/A/O/BLACK/GF/2/RA/D

USB20 ESD PROCTECT

CLOSE R_USB30

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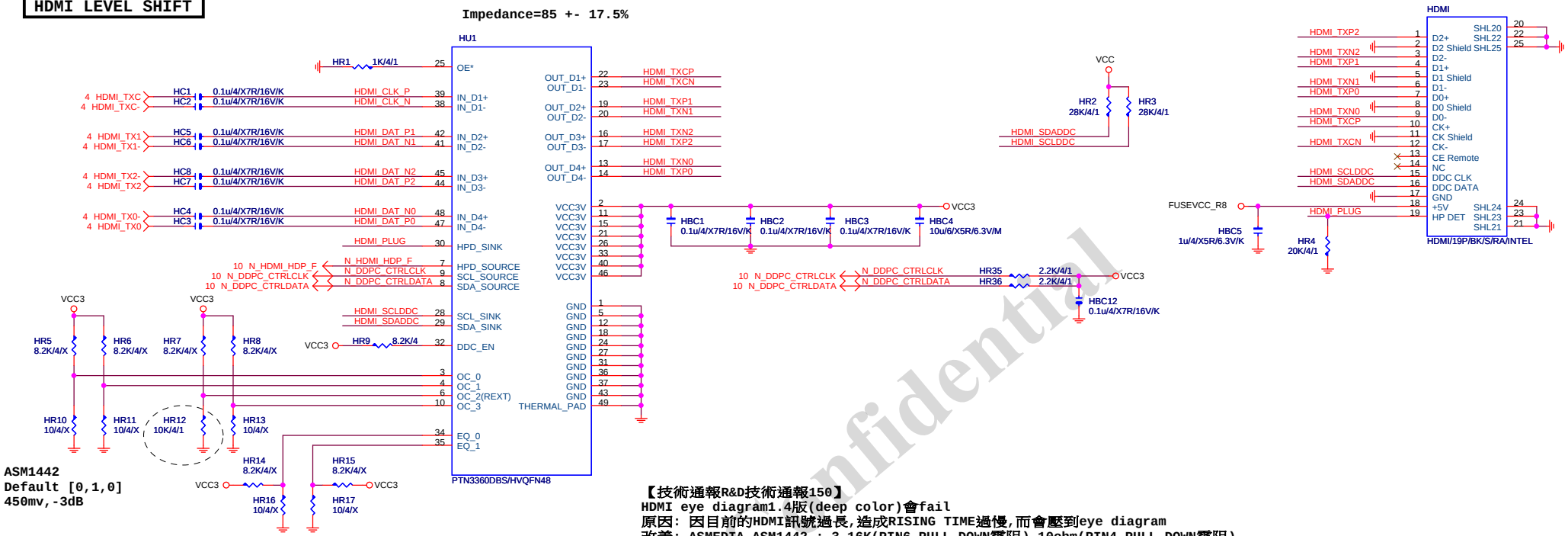
HDMI LEVEL SHIFT

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



ASM1442
Default [0,1,0]
450mv,-3dB

ASM1442 Default [0,0] 3dB
[0,1]6dB

【技術通報R&D技術通報150】
HDMI eye diagram1.4版(deep color)會fail
原因: 因目前的HDMI訊號過長,造成RISING TIME過慢,而會壓到eye diagram
改善: ASMEDIA ASM1442 : 3.16K(PIN6 PULL DOWN電阻) 10ohm(PIN4 PULL DOWN電阻)

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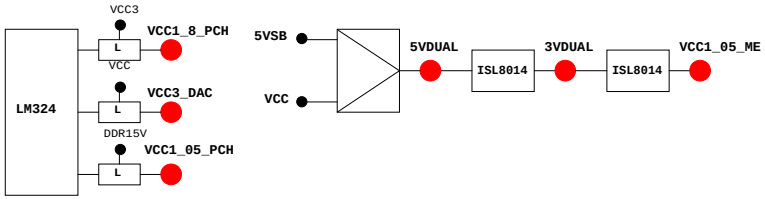
PCH GPIO LIST TABLE

PIN NAME	PWR	AFTER/PLTRST	Default	USAGE	NOTE
GP0	MAIN	H-Z	GPI	GPIO0	N/A
GP1/TACH1	MAIN		GPI	GPIO1	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	PCIEX1 Detect	P/U 8.2K VCC3
GP7/TACH3	MAIN		GPI	GPIO7	P/U 8.2K VCC3
GP8	STBY	H	GPI	GPIO8	N/A
GP9/OC5#	STBY		NATIVE	USB OC5#	N/A
GP10/OC6#	STBY		NATIVE	USB OC6#	N/A
GP11/SMBALERT#	STBY		NATIVE	USB PWR protect	P/U 8.2K 3VDUAL
GP12	STBY	L	GPI	GPIO12	N/A
GP13	STBY	L	GPI	LPCPME#	P/U 8.2K 3VDUAL
GP14/OC7#	STBY		NATIVE	USB OC7#	N/A
GP15	STBY	L	GPI	GPIO15(TLS Enable)	P/U 8.2K 3VDUAL
GP16	MAIN		GPI	GPIO16	P/U 8.2K VCC3
GP17/TACH0	MAIN		GPI	GPIO17	P/U 8.2K VCC3
GP18	MAIN		GPI	Mobile Only	N/A
GP19	MAIN		GPI	GPIO19	P/U 8.2K VCC3
GP20	MAIN		GPI	GPIO20	P/U 8.2K VCC3
GP21	MAIN		GPI	GPIO21	P/U 8.2K VCC3
GP22	MAIN	H-Z	GPI	GPIO22	P/U 8.2K VCC3
GP23	MAIN		GPI	GPIO23	N/A
GP24	STBY	L	GPI	SKTOCC#	N/A
GP25	STBY			Mobile Only	N/A
GP26	STBY			Mobile Only	N/A
GP27	STBY	H	GPO	GPIO27	P/U 8.2K 3VDUAL
GP28	STBY	H	GPO	PWR LED	P/U 8.2K 3VDUAL
GP29	STBY	L	GPI	GPIO29	N/A
GP30	STBY	H-Z	GPI	Mobile Only	N/A
GP31	STBY	H-Z	GPI	Mobile Only	N/A
GP32	MAIN	H	GPO	N/A	N/A
GP33	MAIN	H	GPO	N/A	N/A
GP34	MAIN	H-Z	GPI	-PCI_STOP	P/U 8.2K VCC3
GP35	MAIN	L	GPO	-ACZ_DET	P/U 8.2K VCC3
GP36	MAIN		GPI	N/A	N/A
GP37	MAIN		GPI	N/A	N/A
GP38	MAIN	H-Z	GPI	PCIEX4 Detect	P/U 8.2K VCC3
GP39	MAIN	H-Z	GPI	GPIO39	P/U 8.2K VCC3
GP40	STBY		NATIVE	USB OC1#	N/A
GP41	STBY		NATIVE	USB OC2#	N/A
GP42	STBY		NATIVE	USB OC3#	N/A
GP43	STBY		NATIVE	USB OC4#	N/A
GP44	STBY	L	NATIVE	GPIO44	P/U 8.2K 3VDUAL
GP45	STBY		NATIVE	GPIO45	P/U 8.2K 3VDUAL
GP46	STBY	L	NATIVE	GPIO46	P/U 8.2K 3VDUAL
GP47	STBY			Mobile Only	N/A
GP48	MAIN	H-Z	IN	GPIO48	P/U 8.2K 3VDUAL
GP49	MAIN	H-Z	IN	GPIO49	P/U 8.2K 3VDUAL
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	Mobile Only	N/A
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			Mobile Only	N/A
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

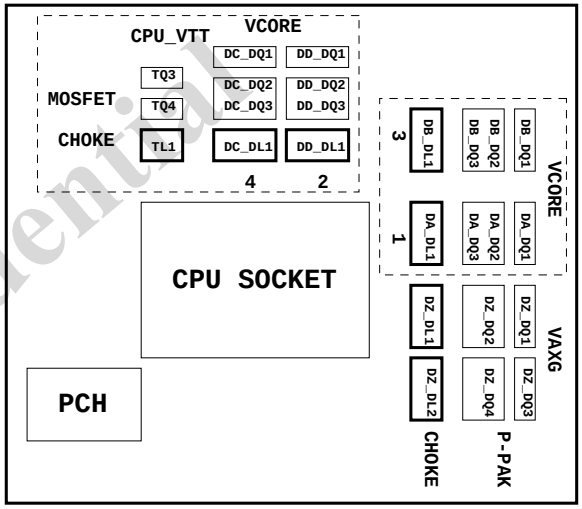
Super I/O ITE8720 GPIO Table

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：

Z77-D3H :
PCH :
12SP2-S05511-01R/02R/03R
MOSFET :
12SP2-S08924-01R/02R/03R

	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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