Model Name: GA-B85M-D3H

SHEET	TITLE	*Revision 1.1*
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 1,2	
08	DDR III CHANNEL B 1,2	
09	PCH_FDI,DMI,USB,PCIE,NVRAM	
10	PCH_DP,CLK BUFFER	
11	PCH_HOST,SATA,PCI	
12	PCH_GPIO,CTRL,AUDIO	
13	PCH_PWR,GND	
14	PCI EXPRESS*16 SLOT	
15	PCI EXPRESS*4 SLOT	
16	PCI SLOT1,2	
17	ITE 8728 LPC IO	
18	COM,KB_MS_USB,USB30_20	
19	HWM,FAN CTRL,OV,-PROCHOT	
20	DUAL BIOS	
21	FP,FUSB,SPK,SATALED	
22	Realtek ALC892-GR	
23	REAR AUDIO JACK	
24	REALTEK RTL8111F	
25	DISCRETE POWER	
26	ATX , CLOCK GEN, TPM	
27	VCORE ISL95820_1	

SHEET	TITLE
28	VCORE ISL95820_2
29	RT8120_DDR POWER
30	LPT, M3 POWER
31	DVI, HDMI
32	IT8892E

Gigabyte Technology		
Title: Cover Sheet		
Size: Custom	Document Number: GA-B85M-D3H	Rev: 1.1
Date: Monday, July 15, 2013	Sheet 1 of 32	

Model Name: GA-B85M-D3H

Component value change history

Revision 1.1
P-Code U12090-0

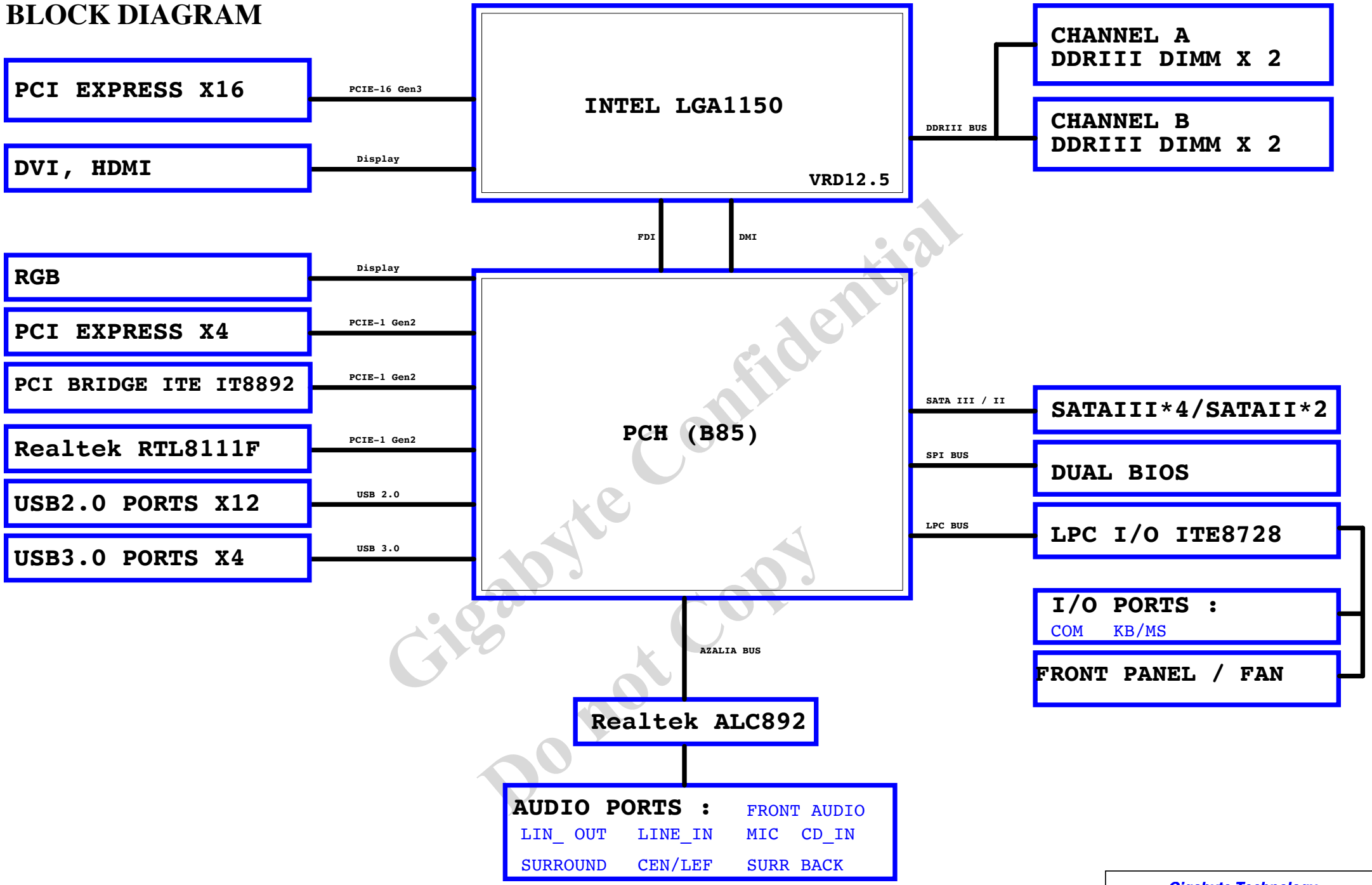
Date	BOM and PCB version		Modify Items
2012.11.05	New E-BOM release.	PCB:0.1	
2013.01.25	New E-BOM release.	PCB:0.2	pciex4超頻時掉device issue(CLK USE p.10) / for disable ME(p.17)/ H/W monitor / PWM change to 1up2down (8 series 線路注意事項)
2013.03.26	10A D-BOM release.	PCB:1.0	(8 series 線路注意事項64/62/60/59/58/53/48)
2013.04.08	10B P-BOM release.	PCB:1.0	轉P-BOM(修改DVI level shift NXP change to ASMEDIA & ASMEDIA搭配用阻值)
2013.04.17	10C F-BOM release.	PCB:1.0	修改INTEL PCI LAN CARD(PCI1),並輸出為HDMI&D-SUB ,PCI LAN CARD會斷線&D-SUB畫面抖動ISSUE(add NQ17 , remove NR13),remove CS
2013.05.13	10D P-BOM release.	PCB:1.0	修改MOS Heatsink用料 MOS HS/[12SP2-S08824-41R_12SP2-S08824-42R_12SP2-S08824-43R]
2013.05.30	10E P-BOM release.	PCB:1.0	修改PCIEx4 cap (0.22u --> 0.1u) 同步此10E版本,會是產C2 chipset,同步驗證
2013.07.01	11A P-BOM release.	PCB:1.1	CHANGE TO C2 CHIPSET / add 5vdual short protect sch(上件)
2013.07.09	11B F-BOM release.	PCB:1.1	5vdual short protect sch(5VDUAL 上件 / R705 change to 825/4/1) & remove Audio "CD1"
2013.07.15	11B ECN release.	PCB:1.1	MOS_HS 增加墊片, 防止板彎(新增替料12SP2-S08824-71R/72R/73R)

Circuit or PCB layout change

Date	PCB Version	Modify Items
2012.11.05	0.1 Gerber out.	
2013.01.25	0.2 Gerber out.	Change F_panel footprint / H/W monitor / DS_ME / ACZ_SDOUT / PCIEx4 CLK MODIFY Z87M-D3H
2013.03.21	1.0 Gerber out.	Change F_Panel footprint / H/W monitor / DS_ME / ACZ_SDOUT / PCIEx4 CLK MODIFY Z87M-D3H
2013.06.27	1.1 Gerber out.	僅修改版本(Rev1.0-->Rev1.1) & HDMI FOOTPRINT (HDMI-3)

Gigabyte Technology			
Title: BOM & PCB MODIFY HISTORY			
Size: Custom	Document Number: GA-B85M-D3H		Rev: 1.1
Date: Monday, July 15, 2013		Sheet 2 of 32	

BLOCK DIAGRAM



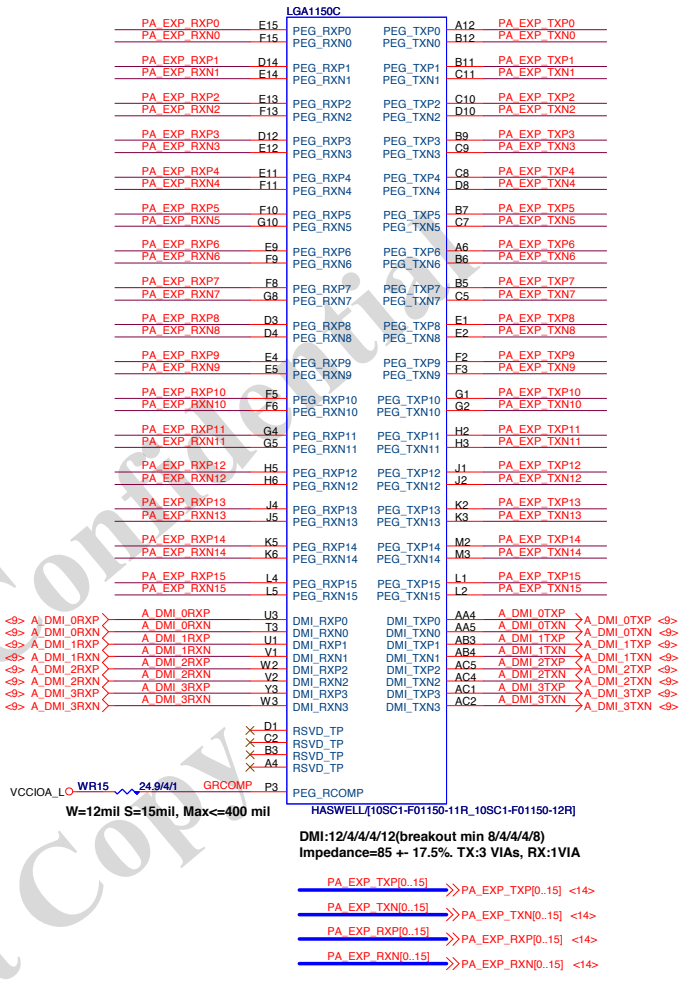
Gigabyte Technology			
Title: BLOCK DIAGRAM			
Size: Custom	Document Number: GA-B85M-D3H		Rev: 1.1
Date: Monday, July 15, 2013	Sheet 3 of 32		

LGA1150 (E)

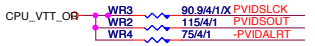
CFG	H	L	NOTE
0	RSVD	RSVD	RSVD
1	RSVD	RSVD	RSVD
2	**NORM**	**Reverse**	LANE REVERSAL[0],x16
3	RSVD	RSVD	RSVD
4	**Disable**	**Enable**	eDP Enable
7	RSVD	RSVD	RSVD
8	RSVD	RSVD	RSVD
9	RSVD	RSVD	RSVD
10	RSVD	RSVD	RSVD
11	RSVD	RSVD	RSVD
12	RSVD	RSVD	RSVD
13	RSVD	RSVD	RSVD
14	RSVD	RSVD	RSVD
15	RSVD	RSVD	RSVD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

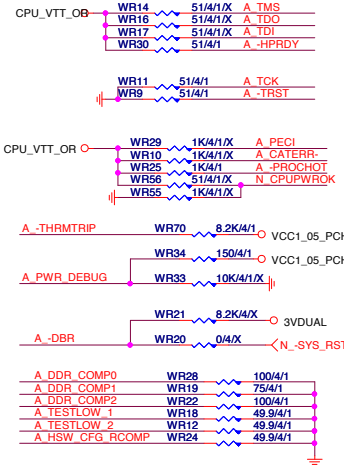
LGA1150 (C)



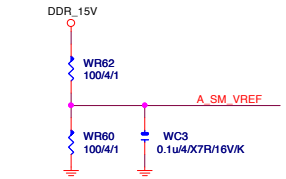
CPU SVID



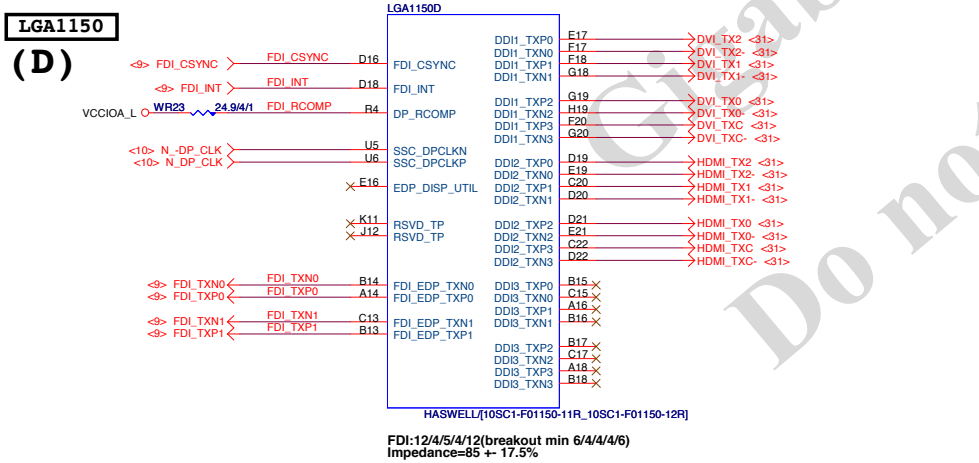
CPU PU/PD



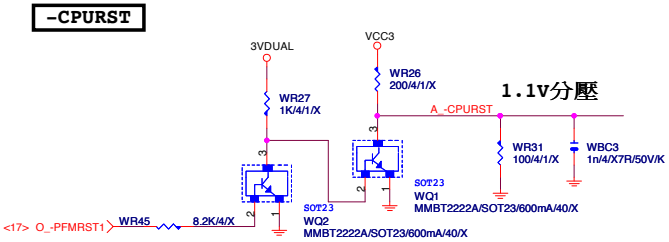
SM_REF



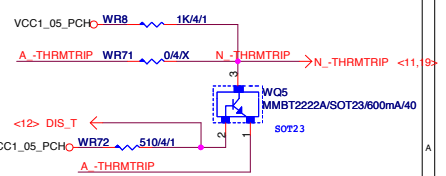
LGA1150 (D)



-CPURST



THRMTRIP DISABLE



Gigabyte Technology

Title	CPU LGA1150-A		
Size: Custom	Document Number: GA-B85M-D3H		Rev: 1.1
Date: Monday, July 15, 2013	Sheet 4 of 32		

LGA1150 (A)

LGA1150A

MAAA0 AU13 DDR0_MA0
MAAA1 AV16 DDR0_MA1
MAAA2 AU16 DDR0_MA2
MAAA3 AW17 DDR0_MA3
MAAA4 AU17 DDR0_MA4
MAAA5 AW18 DDR0_MA5
MAAA6 AV17 DDR0_MA6
MAAA7 AT18 DDR0_MA7
MAAA8 AU18 DDR0_MA8
MAAA9 AT19 DDR0_MA9
MAAA10 AW11 DDR0_MA10
MAAA11 AV19 DDR0_MA11
MAAA12 AU19 DDR0_MA12
MAAA13 AY10 DDR0_MA13
MAAA14 AT20 DDR0_MA14
MAAA15 AU21 DDR0_MA15

MODT_A0 AW10 DDR0_ODT0
MODT_A1 AY8 DDR0_ODT1
MODT_A2 AW9 DDR0_ODT2
MODT_A3 AU8 DDR0_ODT3

AW33 DDR0_ECC0
AV33 DDR0_ECC1
AU31 DDR0_ECC2
AV31 DDR0_ECC3
AT33 DDR0_ECC4
AU33 DDR0_ECC5
AT31 DDR0_ECC6
AW31 DDR0_ECC7

<7> SBAA0 SBAA0 AV12 DDR0_BA0
<7> SBAA1 SBAA1 AY11 DDR0_BA1
<7> SBAA2 SBAA2 AT21 DDR0_BA2

<7> CKEA0 CKEA0 AV22 DDR0_CKE0
<7> CKEA1 CKEA1 AT23 DDR0_CKE1
<7> CKEA2 CKEA2 AU22 DDR0_CKE2
<7> CKEA3 CKEA3 AU23 DDR0_CKE3

<7> -CSA0 -CSA0 AU14 DDR0_CS_N0
<7> -CSA1 -CSA1 AV9 DDR0_CS_N1
<7> -CSA2 -CSA2 AU10 DDR0_CS_N2
<7> -CSA3 -CSA3 AW8 DDR0_CS_N3

<7> DCLKA0 DCLKA0 AV15 DDR0_CLK_P0
<7> -DCLKA0 -DCLKA0 AV16 DDR0_CLK_N0
<7> DCLKA1 DCLKA1 AW15 DDR0_CLK_P1
<7> -DCLKA1 -DCLKA1 AV15 DDR0_CLK_N1
<7> DCLKA2 DCLKA2 AY14 DDR0_CLK_P2
<7> -DCLKA2 -DCLKA2 AW14 DDR0_CLK_N2
<7> DCLKA3 DCLKA3 AW13 DDR0_CLK_P3
<7> -DCLKA3 -DCLKA3 AY13 DDR0_CLK_N3

AW12 RSVD

<7> -SRASA -SRASA AU12 DDR0_RAS*
<7> -SWEA -SWEA AU11 DDR0_WE*
AV20 RSVD
AW27 RSVD
<7> -SCASA -SCASA AU9 DDR0_CAS*
<7,8> -DDR3_RST WR61 0/4/SHT/MX AK22 DDR_RESET*
WC4 0.1u/4/X7R/16V/K/X

DDR0_DQ0 AD38 MDA0
DDR0_DQ1 AD39 MDA1
DDR0_DQ2 AF38 MDA2
DDR0_DQ3 AF39 MDA3
DDR0_DQ4 AD37 MDA4
DDR0_DQ5 AD40 MDA5
DDR0_DQ6 AF37 MDA6
DDR0_DQ7 AF40 MDA7
DDR0_DQ8 AH40 MDA9
DDR0_DQ9 AH39 MDA13
DDR0_DQ10 AK38 MDA10
DDR0_DQ11 AK39 MDA11
DDR0_DQ12 AH37 MDA12
DDR0_DQ13 AH38 MDA8
DDR0_DQ14 AK37 MDA14
DDR0_DQ15 AK40 MDA15
DDR0_DQ16 AM40 MDA17
DDR0_DQ17 AM39 MDA21
DDR0_DQ18 AP38 MDA18
DDR0_DQ19 AP39 MDA19
DDR0_DQ20 AM37 MDA20
DDR0_DQ21 AM38 MDA16
DDR0_DQ22 AP37 MDA22
DDR0_DQ23 AP40 MDA23
DDR0_DQ24 AV37 MDA25
DDR0_DQ25 AW37 MDA29
DDR0_DQ26 AU35 MDA26
DDR0_DQ27 AV35 MDA27
DDR0_DQ28 AT37 MDA28
DDR0_DQ29 AU37 MDA24
DDR0_DQ30 AT35 MDA30
DDR0_DQ31 AW35 MDA31
DDR0_DQ32 AY6 MDA33
DDR0_DQ33 AU6 MDA37
DDR0_DQ34 AV4 MDA34
DDR0_DQ35 AU4 MDA35
DDR0_DQ36 AW6 MDA36
DDR0_DQ37 AV6 MDA32
DDR0_DQ38 AW4 MDA38
DDR0_DQ39 AY4 MDA39
DDR0_DQ40 AR1 MDA41
DDR0_DQ41 AR4 MDA45
DDR0_DQ42 AN3 MDA42
DDR0_DQ43 AN4 MDA43
DDR0_DQ44 AR2 MDA44
DDR0_DQ45 AR3 MDA40
DDR0_DQ46 AN2 MDA46
DDR0_DQ47 AN1 MDA47
DDR0_DQ48 AL1 MDA49
DDR0_DQ49 AL4 MDA53
DDR0_DQ50 AJ3 MDA50
DDR0_DQ51 AJ4 MDA51
DDR0_DQ52 AL2 MDA52
DDR0_DQ53 AL3 MDA48
DDR0_DQ54 AJ2 MDA54
DDR0_DQ55 AJ1 MDA55
DDR0_DQ56 AG1 MDA57
DDR0_DQ57 AG4 MDA61
DDR0_DQ58 AE3 MDA58
DDR0_DQ59 AE4 MDA59
DDR0_DQ60 AG2 MDA60
DDR0_DQ61 AG3 MDA56
DDR0_DQ62 AE2 MDA62
DDR0_DQ63 AE1 MDA63

DDR0_DQS_P0 AE39 DQSA0
DDR0_DQS_P1 AJ39 DQSA1
DDR0_DQS_P2 AN39 DQSA2
DDR0_DQS_P3 AV36 DQSA3
DDR0_DQS_P4 AV5 DQSA4
DDR0_DQS_P5 AP3 DQSA5
DDR0_DQS_P6 AK3 DQSA6
DDR0_DQS_P7 AF3 DQSA7
DDR0_DQS_P8 AV32 AE38 -DQSA0
DDR0_DQS_N0 AJ38 -DQSA1
DDR0_DQS_N1 AN38 -DQSA2
DDR0_DQS_N2 AU36 -DQSA3
DDR0_DQS_N3 AW5 -DQSA4
DDR0_DQS_N4 AP2 -DQSA5
DDR0_DQS_N5 AK2 -DQSA6
DDR0_DQS_N6 AF2 -DQSA7
DDR0_DQS_N7 AU32
DDR0_DQS_N8

HASWELL/[10SC1-F01150-11R_10SC1-F01150-12R]

LGA1150 (B)

LGA1150B

MAAB0 AL19 DDR1_MA0
MAAB1 AK23 DDR1_MA1
MAAB2 AM22 DDR1_MA2
MAAB3 AM23 DDR1_MA3
MAAB4 AP23 DDR1_MA4
MAAB5 AL23 DDR1_MA5
MAAB6 AY24 DDR1_MA6
MAAB7 AV25 DDR1_MA7
MAAB8 AU26 DDR1_MA8
MAAB9 AW25 DDR1_MA9
MAAB10 AP18 DDR1_MA10
MAAB11 AY25 DDR1_MA11
MAAB12 AV26 DDR1_MA12
MAAB13 AR15 DDR1_MA13
MAAB14 AV27 DDR1_MA14
MAAB15 AY28 DDR1_MA15

MODT_B0 AM17 DDR1_ODT0
MODT_B1 AL16 DDR1_ODT1
MODT_B2 AM16 DDR1_ODT2
MODT_B3 AK15 DDR1_ODT3

AM26 DDR1_ECC0
AM25 DDR1_ECC1
AP25 DDR1_ECC2
AP26 DDR1_ECC3
AL26 DDR1_ECC4
AL25 DDR1_ECC5
AR26 DDR1_ECC6
AR25 DDR1_ECC7

<8> SBAB0 SBAB0 AK17 DDR1_BA0
<8> SBAB1 SBAB1 AL18 DDR1_BA1
<8> SBAB2 SBAB2 AW28 DDR1_BA2

<8> CKEB0 CKEB0 AW29 DDR1_CKE0
<8> CKEB1 CKEB1 AY29 DDR1_CKE1
<8> CKEB2 CKEB2 AU28 DDR1_CKE2
<8> CKEB3 CKEB3 AU29 DDR1_CKE3

<8> -CSB0 -CSB0 AP17 DDR1_CS_N0
<8> -CSB1 -CSB1 AN15 DDR1_CS_N1
<8> -CSB2 -CSB2 AN17 DDR1_CS_N2
<8> -CSB3 -CSB3 AL15 DDR1_CS_N3

<8> DCLKB0 DCLKB0 AM20 DDR1_CLK_P0
<8> -DCLKB0 -DCLKB0 AM21 DDR1_CLK_N0
<8> DCLKB1 DCLKB1 AP22 DDR1_CLK_P1
<8> -DCLKB1 -DCLKB1 AP21 DDR1_CLK_N1

<8> DCLKB2 DCLKB2 AN20 DDR1_CLK_P2
<8> -DCLKB2 -DCLKB2 AN21 DDR1_CLK_N2
<8> DCLKB3 DCLKB3 AP19 DDR1_CLK_P3
<8> -DCLKB3 -DCLKB3 AP20 DDR1_CLK_N3

<8> -SCASB -SCASB AP16 DDR1_CAS*
AL20 RSVD
<8> -SRASB -SRASB AM18 DDR1_RAS*
<8> -SWEB -SWEB AK16 DDR1_WE*

<7> VREF_DQA VREF_DQA AB39 DDR_VREF_DQ0
<8> VREF_DQB VREF_DQB AB40 DDR_VREF_DQ1

VREF_DQA
VREF_DQB
WBC34 0.1u/4/X7R/16V/K
WBC33 0.1u/4/X7R/16V/K
Place in CPU bottom side

DDR1_DQ0 AE34 MDB0
DDR1_DQ1 AE35 MDB1
DDR1_DQ2 AG35 MDB2
DDR1_DQ3 AH35 MDB3
DDR1_DQ4 AD34 MDB4
DDR1_DQ5 AD35 MDB5
DDR1_DQ6 AG34 MDB6
DDR1_DQ7 AH34 MDB7
DDR1_DQ8 AL34 MDB8
DDR1_DQ9 AL35 MDB9
DDR1_DQ10 AK31 MDB10
DDR1_DQ11 AL31 MDB11
DDR1_DQ12 AK34 MDB12
DDR1_DQ13 AK35 MDB13
DDR1_DQ14 AK32 MDB14
DDR1_DQ15 AL32 MDB15
DDR1_DQ16 AN34 MDB17
DDR1_DQ17 AP34 MDB21
DDR1_DQ18 AN31 MDB19
DDR1_DQ19 AP31 MDB23
DDR1_DQ20 AN35 MDB20
DDR1_DQ21 AP35 MDB16
DDR1_DQ22 AN32 MDB18
DDR1_DQ23 AP32 MDB22
DDR1_DQ24 AM29 MDB25
DDR1_DQ25 AM28 MDB28
DDR1_DQ26 AR29 MDB27
DDR1_DQ27 AR28 MDB30
DDR1_DQ28 AL29 MDB24
DDR1_DQ29 AL28 MDB29
DDR1_DQ30 AP29 MDB26
DDR1_DQ31 AP28 MDB31
DDR1_DQ32 AR12 MDB32
DDR1_DQ33 AP12 MDB33
DDR1_DQ34 AL13 MDB34
DDR1_DQ35 AL12 MDB35
DDR1_DQ36 AR13 MDB36
DDR1_DQ37 AP13 MDB37
DDR1_DQ38 AM13 MDB38
DDR1_DQ39 AM12 MDB39
DDR1_DQ40 AR9 MDB45
DDR1_DQ41 AP9 MDB41
DDR1_DQ42 AR6 MDB47
DDR1_DQ43 AP6 MDB43
DDR1_DQ44 AR10 MDB44
DDR1_DQ45 AP10 MDB40
DDR1_DQ46 AR7 MDB46
DDR1_DQ47 AP7 MDB42
DDR1_DQ48 AM9 MDB52
DDR1_DQ49 AL9 MDB53
DDR1_DQ50 AL6 MDB50
DDR1_DQ51 AL7 MDB55
DDR1_DQ52 AM10 MDB48
DDR1_DQ53 AL10 MDB49
DDR1_DQ54 AM6 MDB54
DDR1_DQ55 AM7 MDB51
DDR1_DQ56 AH6 MDB61
DDR1_DQ57 AH7 MDB60
DDR1_DQ58 AE6 MDB59
DDR1_DQ59 AE7 MDB63
DDR1_DQ60 AJ6 MDB56
DDR1_DQ61 AJ7 MDB57
DDR1_DQ62 AF6 MDB58
DDR1_DQ63 AF7 MDB62

DDR1_DQS_P0 AE35 DQSB0
DDR1_DQS_P1 AL33 DQSB1
DDR1_DQS_P2 AP33 DQSB2
DDR1_DQS_P3 AN28 DQSB3
DDR1_DQS_P4 AN12 DQSB4
DDR1_DQS_P5 AP8 DQSB5
DDR1_DQS_P6 AL8 DQSB6
DDR1_DQS_P7 AG7 DQSB7
DDR1_DQS_P8 AN25 AF34 -DQSB0
DDR1_DQS_N0 AK33 -DQSB1
DDR1_DQS_N1 AN33 -DQSB2
DDR1_DQS_N2 AP29 -DQSB3
DDR1_DQS_N3 AN13 -DQSB4
DDR1_DQS_N4 AR8 -DQSB5
DDR1_DQS_N5 AM8 -DQSB6
DDR1_DQS_N6 AG6 -DQSB7
DDR1_DQS_N7 AN26
DDR1_DQS_N8

HASWELL/[10SC1-F01150-11R_10SC1-F01150-12R]

LGA1150 (CR)

CR

CPU RETAINTION/X

LGA1150_P

ILM_BP/1156/CSP/ILM_BP/1156/CSP/[12KRC-0F0001-52R_12KRC-0F0001-51R]

DDR BUS

<7> MODT_A[0..3] MODT_A[0..3]
<8> MODT_B[0..3] MODT_B[0..3]

<7> MDA[0..63] MDA[0..63]
<8> MDB[0..63] MDB[0..63]

<7> DQSA[0..7] DQSA[0..7]
<7> -DQSA[0..7] -DQSA[0..7]

<7> MAAA[0..15] MAAA[0..15]
<8> MAAB[0..15] MAAB[0..15]

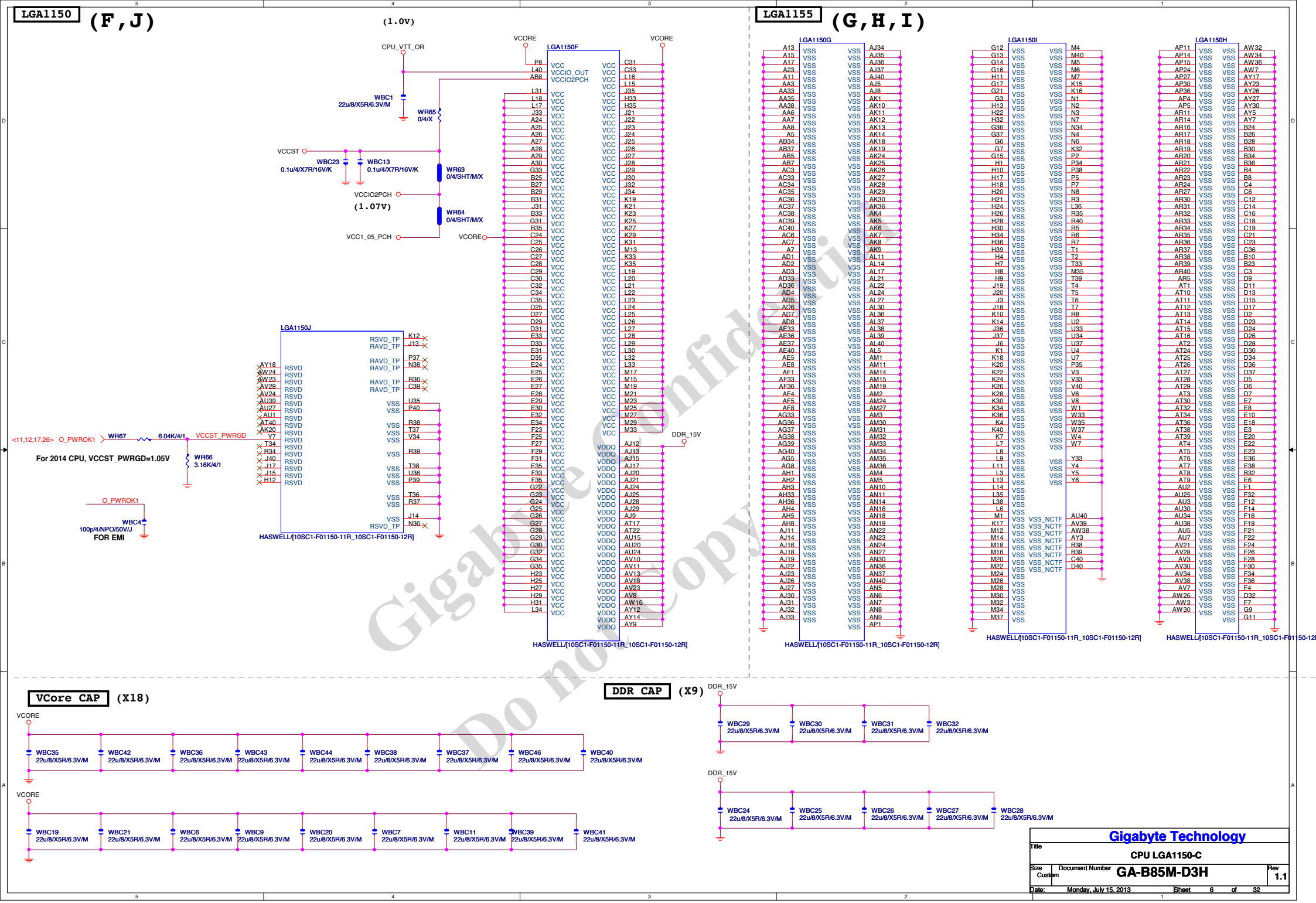
<8> DQSB[0..7] DQSB[0..7]
<8> -DQSB[0..7] -DQSB[0..7]

Gigabyte Technology

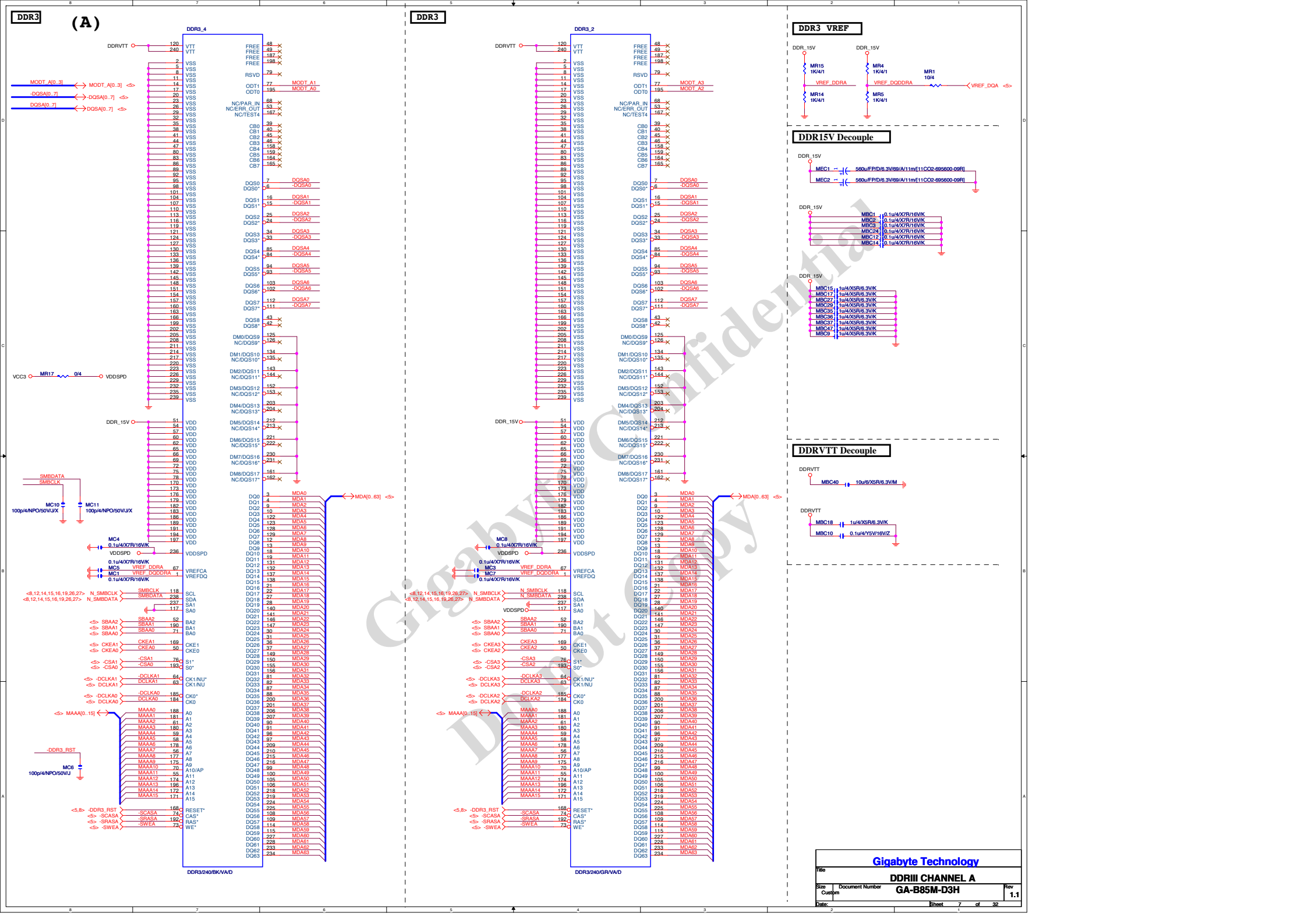
Title: CPU LGA1150-B

Size: Custom | Document Number: GA-B85M-D3H | Rev: 1.1

Date: Monday, July 15, 2013 | Sheet 5 of 32



Gigabyte Technology	
Title	CPU LGA1150-C
Size: Custom	Document Number: GA-B85M-D3H
Rev	1.1
Date: Monday, July 15, 2013	Sheet 6 of 32


DDR3
(A)
DDR3_4
DDRVTT
VCC3
MR17
0/4
VDDSPD
DDR_15V
SMBDATA
SMBCLK
MC10
100p/4/NPO/50V/J/X
MC11
100p/4/NPO/50V/J/X
MC4
0.1u/4/X7R/16V/K
MC5
VREF_DDRA
MC1
VREF_DQDDRA
0.1u/4/X7R/16V/K
MODT_A[0..3]
-DQSA[0..7]
DQSA[0..7]
MDA[0..63]
MAAA[0..15]
-DDR3_RST
MC6
100p/4/NPO/50V/J
DDR3_2
MC2
MC3
MC7
DDR3 VREF
VREF_DDRA
VREF_DQDDRA
VREF_DQA
DDR15V Decouple
MEC1
MEC2
560u/FP/D/6.3V/69/A/11m/[11CO2-695600-09R]
MBC1
MBC2
MBC3
MBC24
MBC12
MBC14
MBC15
MBC17
MBC27
MBC29
MBC35
MBC36
MBC37
MBC47
MBC9
DDRVTT Decouple
MBC40
10u/6/X5R/6.3V/M
MBC18
MBC10
0.1u/4/Y5V/16V/Z
DDR3/240/BK/VA/D
DDR3/240/GR/VA/D
Gigabyte Technology
DDRIII CHANNEL A
GA-B85M-D3H
Rev 1.1
Sheet 7 of 32
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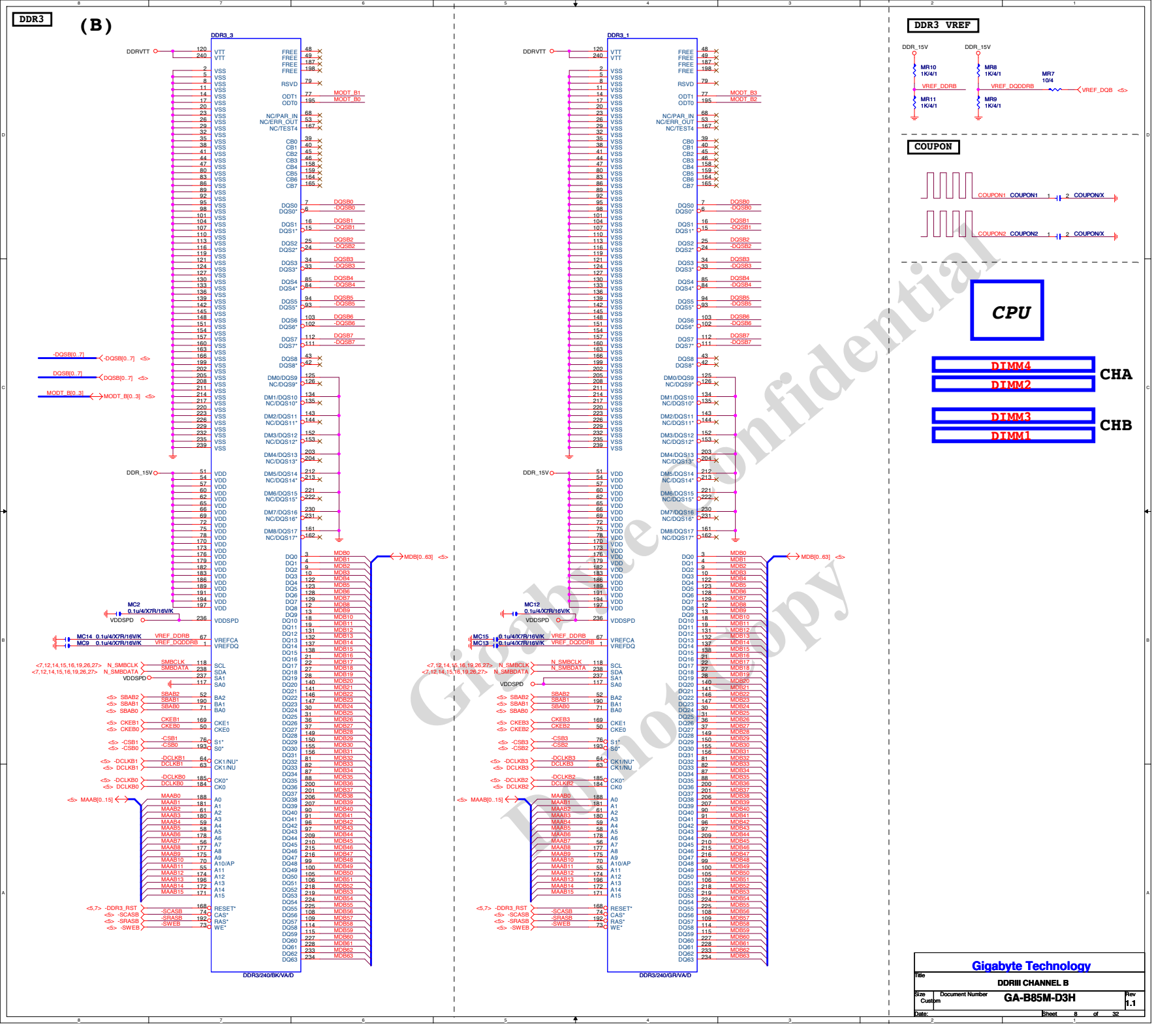


PCH (B)

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

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

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

PCHB

DMI:
A_DMI_0TXN L24
A_DMI_0TXP K24
A_DMI_0RXN C20
A_DMI_0RXP B20
A_DMI_1TXN G24
A_DMI_1TXP H24
A_DMI_1RXN D21
A_DMI_1RXP B21
A_DMI_2TXN F26
A_DMI_2TXP G26
A_DMI_2RXN B22
A_DMI_2RXP C22
A_DMI_3TXN K26
A_DMI_3TXP L26
A_DMI_3RXN A24
A_DMI_3RXP B24

W=4 mil out of PCH
S=15 mil out of PCH

VCC1_5_PCH
NR50 7.5K/4/1 DMI_COMP B19
NR40 7.5K/4/1 PCIE_COMP C13

CK_-SRCCLK_PCH G22
CK_SRCCLK_PCH F22

DMI_RXN_0 DMI_RXP_0 DMI_TXN_0 DMI_TXP_0 DMI_RXN_1 DMI_RXP_1 DMI_TXN_1 DMI_TXP_1 DMI_RXN_2 DMI_RXP_2 DMI_TXN_2 DMI_TXP_2 DMI_RXN_3 DMI_RXP_3 DMI_TXN_3 DMI_TXP_3
DMI_RCOMP
PCIE_RCOMP
CLKIN_DMI_N
CLKIN_DMI_P

USB:
USBN_0 AV10 N_-USBP0 → N_-USBP0 <21>
USBP_0 AU10 N_+USBP0 → N_+USBP0 <21>
USBN_1 AV11 N_-USBP1 → N_-USBP1 <21>
USBP_1 AW11 N_+USBP1 → N_+USBP1 <21>
USBN_2 AN14 N_-USBP2 → N_-USBP2 <24>
USBP_2 AP14 N_+USBP2 → N_+USBP2 <24>
USBN_3 AJ16 N_-USBP3 → N_-USBP3 <24>
USBP_3 AK16 N_+USBP3 → N_+USBP3 <24>
USBN_4 AU15 N_-USBP4 → N_-USBP4 <18>
USBP_4 AV15 N_+USBP4 → N_+USBP4 <18>
USBN_5 AU12 N_-USBP5 → N_-USBP5 <18>
USBP_5 AT12 N_+USBP5 → N_+USBP5 <18>
USBN_6 AV14
USBP_6 AW14
USBN_7 AU17
USBP_7 AT17
USBN_8 AW16 N_-USBP8 → N_-USBP8 <21>
USBP_8 AV16 N_+USBP8 → N_+USBP8 <21>
USBN_9 AN16 N_-USBP9 → N_-USBP9 <21>
USBP_9 AP16 N_+USBP9 → N_+USBP9 <21>
USBN_10 AJ18 N_-USBP10 → N_-USBP10 <18>
USBP_10 AK18 N_+USBP10 → N_+USBP10 <18>
USBN_11 AP18 N_-USBP11 → N_-USBP11 <18>
USBP_11 AN18 N_+USBP11 → N_+USBP11 <18>
USBN_12 AW18 N_-USBP12 → N_-USBP12 <21>
USBP_12 AV18 N_+USBP12 → N_+USBP12 <21>
USBN_13 AP20 N_-USBP13 → N_-USBP13 <21>
USBP_13 AN20 N_+USBP13 → N_+USBP13 <21>

PCIE:
PCIE_PERN_1_USB3_RXN_2 L14
PCIE_PERP_1_USB3_RXP_2 K14
PCIE_PETN_1_USB3_TXN_2 B12
PCIE_PETP_1_USB3_TXP_2 B11
PCIE_PERN_2_USB3_RXN_3 F14
PCIE_PERP_2_USB3_RXP_3 G14
PCIE_PETN_2_USB3_TXN_3 D11
PCIE_PETP_2_USB3_TXP_3 C11

8111G:
LA_ML_IN F11
LA_ML_IP H11
LA_ML_ON B9
LA_ML_OP A9

8892:
G_PCIEBIN J11
G_PCIEBIP L11
G_PCIEBON B8
G_PCIEBOP C8

PCIEx4:
PP_EXP_RXN0 G9
PP_EXP_RXP0 F9
PP_EXP_TXN0 B7
PP_EXP_TXP0 A7
PP_EXP_RXN1 F7
PP_EXP_RXP1 H7
PP_EXP_TXN1 E1
PP_EXP_TXP1 D2
PP_EXP_RXN2 K8
PP_EXP_RXP2 K9
PP_EXP_TXN2 G3
PP_EXP_TXP2 G5
PP_EXP_RXN3 J2
PP_EXP_RXP3 J3
PP_EXP_TXN3 H2
PP_EXP_TXP3 H1

PCIE_PERN_3 PCIE_PERP_3 PCIE_PETN_3 PCIE_PETP_3 PCIE_PERN_4 PCIE_PERP_4 PCIE_PETN_4 PCIE_PETP_4 PCIE_PERN_5 PCIE_PERP_5 PCIE_PETN_5 PCIE_PETP_5 PCIE_PERN_6 PCIE_PERP_6 PCIE_PETN_6 PCIE_PETP_6 PCIE_PERN_7 PCIE_PERP_7 PCIE_PETN_7 PCIE_PETP_7 PCIE_PERN_8 PCIE_PERP_8 PCIE_PETN_8 PCIE_PETP_8

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

OC:
OC0B_GP59 AE40 → N_-USBOC_F <18,21>
OC1B_GP40 AF37
OC2B_GP41 AD39
OC3B_GP42 AD40
OC4B_GP43 AF39 → N_-USBOC_R <18>
OC5B_GP9 AC41
OC6B_GP10 AF40
OC7B_GP14 AG40 N_GPIO14 NR130 8.2K/4 3VDUAL

USBRBIASB AV20 N_USBRBIAS NR47 22.6/4/1
USBRBIAS AU20
W=4 mil out of PCH
S=15 mil out of PCH

CLKIN_DOT96N AP11 CK_-DOTCLK → CK_-DOTCLK <26>
CLKIN_DOT96P AM11 CK_DOTCLK → CK_DOTCLK <26>

N_-USBOC_F → NBC82 0.1u/4/X7R/16V/K
N_-USBOC_R → NBC83 0.1u/4/X7R/16V/K

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

PCH (F)

PCHF

USB3: RXN_0 F20, RXP_0 G20, TXN_0 B18, TXP_0 C18, RXN_1 G18, RXP_1 H18, TXN_1 B15, TXP_1 B16, RXN_4 K20, RXP_4 L20, TXN_4 D15, TXP_4 C15, RXN_5 L18, RXP_5 K18, TXN_5 B14, TXP_5 A14, TACH6_GP70 AK28, TACH7_GP71 AT34

<21> PCH_USB3_RXN0
<21> PCH_USB3_RXP0
<21> PCH_USB3_TXN0
<21> PCH_USB3_TXP0
<21> PCH_USB3_RXN1
<21> PCH_USB3_RXP1
<21> PCH_USB3_TXN1
<21> PCH_USB3_TXP1
<18> PCH_USB3_RXN4
<18> PCH_USB3_RXP4
<18> PCH_USB3_TXN4
<18> PCH_USB3_TXP4
<18> PCH_USB3_RXN5
<18> PCH_USB3_RXP5
<18> PCH_USB3_TXN5
<18> PCH_USB3_TXP5

VCC3 NR62 8.2K/4 NR63 8.2K/4

FDILINK: FDI_RXN_0 N1, FDI_RXP_0 N2, FDI_TXN_1 P2, FDI_RXP_1 P3, FDI_CSYNC L2, FDI_INT L3, FDI_RCOMP K2 NR29 7.5K/4/1 VCC1_5_PCH

FDI_TXN0 FDI_TXP0 FDI_TXN1 FDI_TXP1
FDI_CSYNC → FDI_CSYNC <4>
FDI_INT → FDI_INT <4>

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

FDI_TXP[0..1] → FDI_TXP[0..1] <4>
FDI_TXN[0..1] → FDI_TXN[0..1] <4>

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 CLK PD

CK_SRCCLK_PCH NR89 8.2K/4
CK_-SRCCLK_PCH NR88 8.2K/4
Mount for integrated clock Generation Mode

CK_DOTCLK NR92 8.2K/4
CK_-DOTCLK NR91 8.2K/4
NR225 short to GND in non graphic SKU

PCH (J)

PCHJ

VSS_NCTF: AT1, AT41, AU1, AV1, AV2, AV40, AV41, AW2, AW40, B40, B41, C41, D1, D41

TP22 U11, TP23 U10, TP21 AJ14, TP20 AK14, TP14 K34, TP15 K33, TP12 AH24
TP10 L16, TP11 K16, TP9 AM34
TP3 R12, TP4 N12, TP1 L22, TP2 K22
TP5 R4, TP6 K5, TP7 P5, TP8 L5
VSS AC31, VSS AF3, VSS AV21

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

PCH H/S

SB_HEATSIN 1×
×2

PCH_HS
PCH_HS[12SP2-S04209-01R_12SP2-S04209-02R_12SP2-S04209-03R]

USB TABLE

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

USB OC#	Configure
OC0#	F_USB30
OC1#	F_USB1
OC2#	F_USB2
OC3#	F_USB3
OC4#	USB_LAN
OC5#	R_USB30
OC6#	KB_MS_USB
OC7#	Not Use

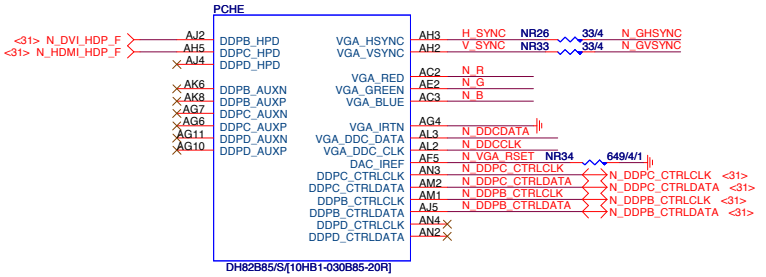
Gigabyte Technology

Title: PCH FDI,DMI,USB ,PCIE,NVRAM

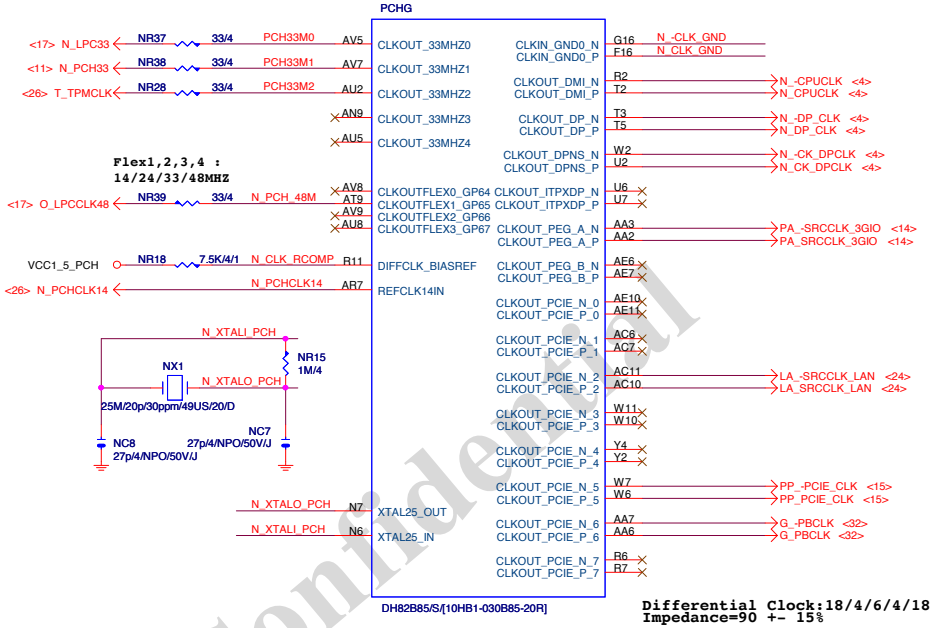
Size: Custom | Document Number: GA-B85M-D3H | Rev: 1.1

Date: Monday, July 15, 2013 | Sheet 9 of 32

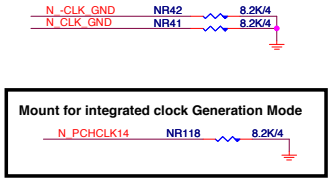
PCH (E)



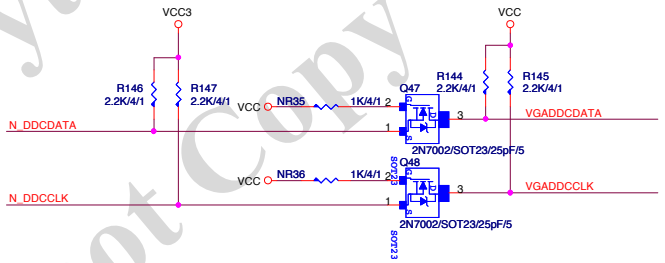
PCH (G)



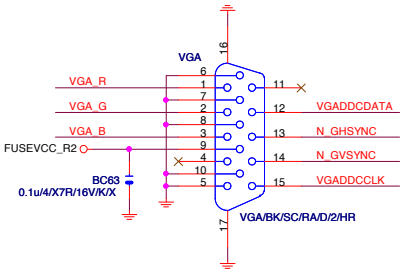
PCH CLK PD



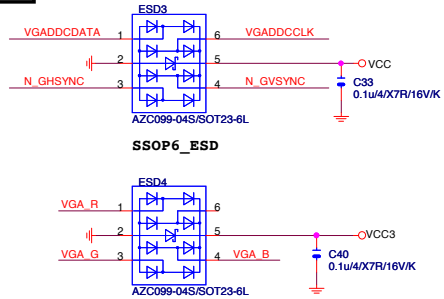
VGA DDC



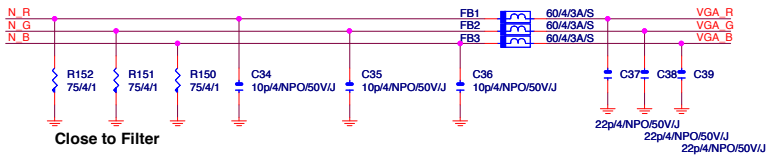
VGA CONNECTOR



VGA ESD



VGA DDC



Gigabyte Technology			
Title: PCH DISPLAY ,CLK BUFFER			
Size: Custom	Document Number: GA-B85M-D3H		Rev: 1.1
Date: Monday, July 15, 2013	Sheet 10 of 32		

PCH (C)

SATA3 : 20/7.5/4.5/7.5/20 (breakout min 8/4/4/4/8)
Impedance=90 +- 17.5%
SATA2 : 15/7.5/4.5/7.5/15 (breakout min 8/4/4/4/8)
Impedance=90 +- 17.5%

PCHC

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

PCH (A)

PCHA

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

PCH CLK PD

Mount for integrated Clock Generator Mode

PCH PU/PD

GPIO37 PU VCC3 ENABLE SBA
For H87&B85

SATA CONNECTOR

SATA3_0_1

SATA/14/WH/H/OP/RA/D/2

H81 Port 2/3 N/A

SATA3_2

SATA2/7/WH/H/OP/V/A/D/1/B/PA66

SATA3_3

SATA2/7/WH/H/OP/V/A/D/1/B/PA66

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

SATA2_0

SATA2/7/BK/H/OP/V/A/D/1/B

SATA2_1

SATA2/7/BK/H/OP/V/A/D/1/B

ME PWROK

Z87 N/A

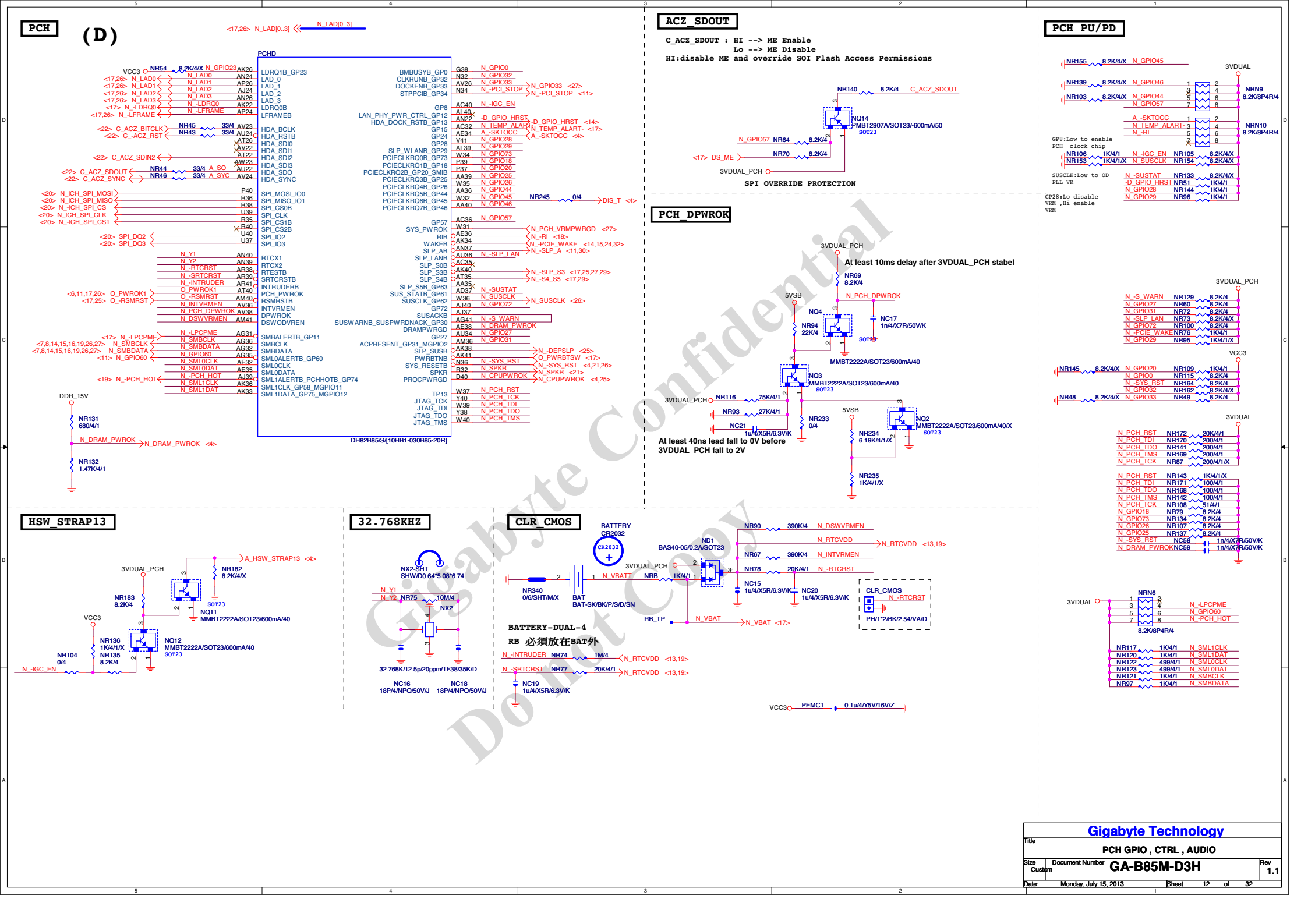
GPIO38 Ctrl

Gigabyte Technology

Title: PCH HOST , SATA, PCI

Size: Custom | Document Number: GA-B85M-D3H | Rev: 1.1

Date: Monday, July 15, 2013 | Sheet 11 of 32


PCH
(D)
PCHD
DH82B85/S/[10HB1-030B85-20R]
ACZ_SDOUT
C_ACZ_SDOUT : HI --> ME Enable
Lo --> ME Disable
HI:disable ME and override SOI Flash Access Permissions
SPI OVERRIDE PROTECTION
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
GA-B85M-D3H
Rev 1.1
Monday, July 15, 2013
Sheet 12 of 32
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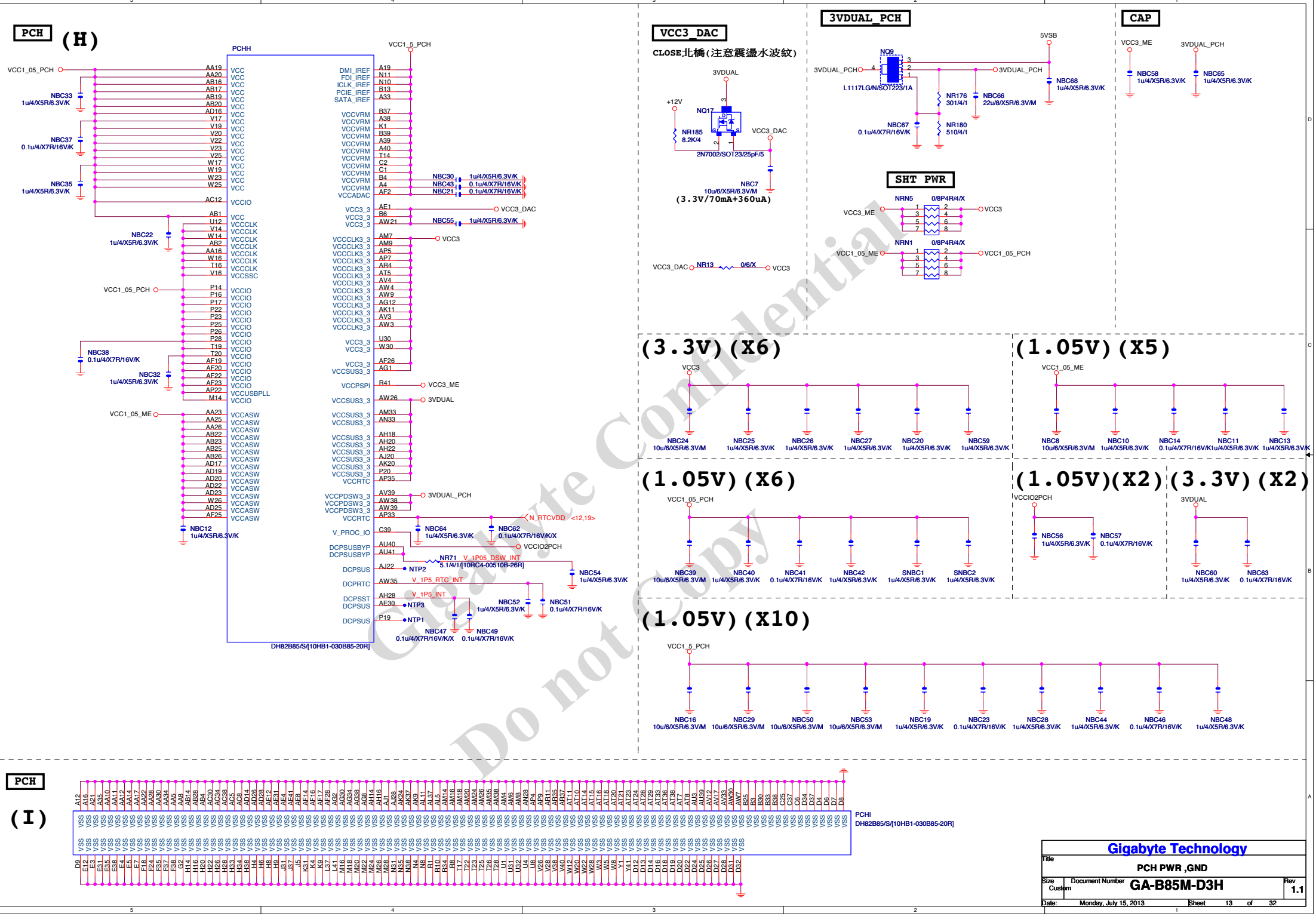
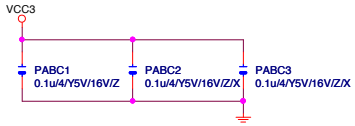
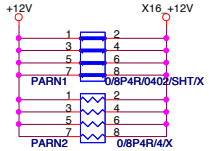


Gigabyte Technology			
Title	PCH PWR ,GND		
Size Custom	Document Number GA-B85M-D3H		Rev 1.1
Date: Monday, July 15, 2013		Sheet 13 of 32	

PCIEX16 CAP



PCIEX16 PROTECT SHT



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

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>

PCIEX16 SLOT

PCIESLOT-164DN-P

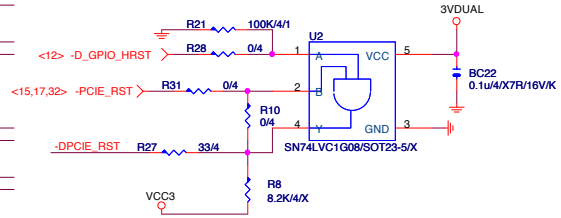
PCIEX16 3GIO_*16

X16_+12V	B1	12V	PRSNT1*	A1	PAR1 0/4/SHT/M/X
	B2	12V	12V	A2	
	B3	RSVD	12V	A3	
PAR3 0/4/SHT/M/X	B4	GND	GND	A4	PAR2 0/4/SHT/M/X
<7,8,12,15,16,19,26,27> N_SMBCLK	B5	SMCLK	JTAG2	A5	
<7,8,12,15,16,19,26,27> N_SMBDATA	B6	SMDAT	JTAG3	A6	
	B7	GND	JTAG4	A7	
VCC3	B8	3.3V	JTAG5	A8	
3VDUAL	B9	JTAG1	3.3V	A9	VCC3
<12,15,24,32> N_-PCIE_WAKE	B10	3.3VAUX	3.3V	A10	
	B11	WAKE*	PWRGD	A11	-DPCIE_RST
		KEY			
	B12	RSVD	GND	A12	
	B13	GND	REFCLK+	A13	PA_SRCCLK_3GIO <10>
PA_EXP_TXP0_C	B14	HSOP0	REFCLK-	A14	PA_-SRCCLK_3GIO <10>
PA_EXP_TXN0_C	B15	HSON0	GND	A15	
	B16	GND	HSIP0	A16	PA_EXP_RXP0
	B17	PRSNT2*	HSIN0	A17	PA_EXP_RXN0
	B18	GND	GND	A18	
PA_EXP_TXP1_C	B19	HSOP1	RSVD	A19	
PA_EXP_TXN1_C	B20	HSON1	GND	A20	
	B21	GND	HSIP1	A21	PA_EXP_RXP1
	B22	GND	HSIN1	A22	PA_EXP_RXN1
PA_EXP_TXP2_C	B23	HSOP2	GND	A23	
PA_EXP_TXN2_C	B24	HSON2	GND	A24	
	B25	GND	HSIP2	A25	PA_EXP_RXP2
	B26	GND	HSIN2	A26	PA_EXP_RXN2
PA_EXP_TXP3_C	B27	HSOP3	GND	A27	
PA_EXP_TXN3_C	B28	HSON3	GND	A28	
	B29	GND	HSIP3	A29	PA_EXP_RXP3
	B30	RSVD	HSIN3	A30	PA_EXP_RXN3
	B31	PRSNT2*	GND	A31	
	B32	GND	RSVD	A32	
PA_EXP_TXP4_C	B33	HSOP4	RSVD	A33	
PA_EXP_TXN4_C	B34	HSON4	GND	A34	
	B35	GND	HSIP4	A35	PA_EXP_RXP4
	B36	GND	HSIN4	A36	PA_EXP_RXN4
PA_EXP_TXP5_C	B37	HSOP5	GND	A37	
PA_EXP_TXN5_C	B38	HSON5	GND	A38	
	B39	GND	HSIP5	A39	PA_EXP_RXP5
	B40	GND	HSIN5	A40	PA_EXP_RXN5
PA_EXP_TXP6_C	B41	HSOP6	GND	A41	
PA_EXP_TXN6_C	B42	HSON6	GND	A42	
	B43	GND	HSIP6	A43	PA_EXP_RXP6
	B44	GND	HSIN6	A44	PA_EXP_RXN6
PA_EXP_TXP7_C	B45	HSOP7	GND	A45	
PA_EXP_TXN7_C	B46	HSON7	GND	A46	
	B47	GND	HSIP7	A47	PA_EXP_RXP7
	B48	PRSNT2*	HSIN7	A48	PA_EXP_RXN7
	B49	GND	GND	A49	
PA_EXP_TXP8_C	B50	HSOP8	RSVD	A50	
PA_EXP_TXN8_C	B51	HSON8	GND	A51	
	B52	GND	HSIP8	A52	PA_EXP_RXP8
	B53	GND	HSIN8	A53	PA_EXP_RXN8
PA_EXP_TXP9_C	B54	HSOP9	GND	A54	
PA_EXP_TXN9_C	B55	HSON9	GND	A55	
	B56	GND	HSIP9	A56	PA_EXP_RXP9
	B57	GND	HSIN9	A57	PA_EXP_RXN9
PA_EXP_TXP10_C	B58	HSOP10	GND	A58	
PA_EXP_TXN10_C	B59	HSON10	GND	A59	
	B60	GND	HSIP10	A60	PA_EXP_RXP10
	B61	GND	HSIN10	A61	PA_EXP_RXN10
PA_EXP_TXP11_C	B62	HSOP11	GND	A62	
PA_EXP_TXN11_C	B63	HSON11	GND	A63	
	B64	GND	HSIP11	A64	PA_EXP_RXP11
	B65	GND	HSIN11	A65	PA_EXP_RXN11
PA_EXP_TXP12_C	B66	HSOP12	GND	A66	
PA_EXP_TXN12_C	B67	HSON12	GND	A67	
	B68	GND	HSIP12	A68	PA_EXP_RXP12
	B69	GND	HSIN12	A69	PA_EXP_RXN12
PA_EXP_TXP13_C	B70	HSOP13	GND	A70	
PA_EXP_TXN13_C	B71	HSON13	GND	A71	
	B72	GND	HSIP13	A72	PA_EXP_RXP13
	B73	GND	HSIN13	A73	PA_EXP_RXN13
PA_EXP_TXP14_C	B74	HSOP14	GND	A74	
PA_EXP_TXN14_C	B75	HSON14	GND	A75	
	B76	GND	HSIP14	A76	PA_EXP_RXP14
	B77	GND	HSIN14	A77	PA_EXP_RXN14
PA_EXP_TXP15_C	B78	HSOP15	GND	A78	
PA_EXP_TXN15_C	B79	HSON15	GND	A79	
	B80	GND	HSIP15	A80	PA_EXP_RXP15
	B81	PRSNT2*	HSIN15	A81	PA_EXP_RXN15
	B82	RSVD	GND	A82	

PCI-E/16X-164P/BK/LONG DOUBLE

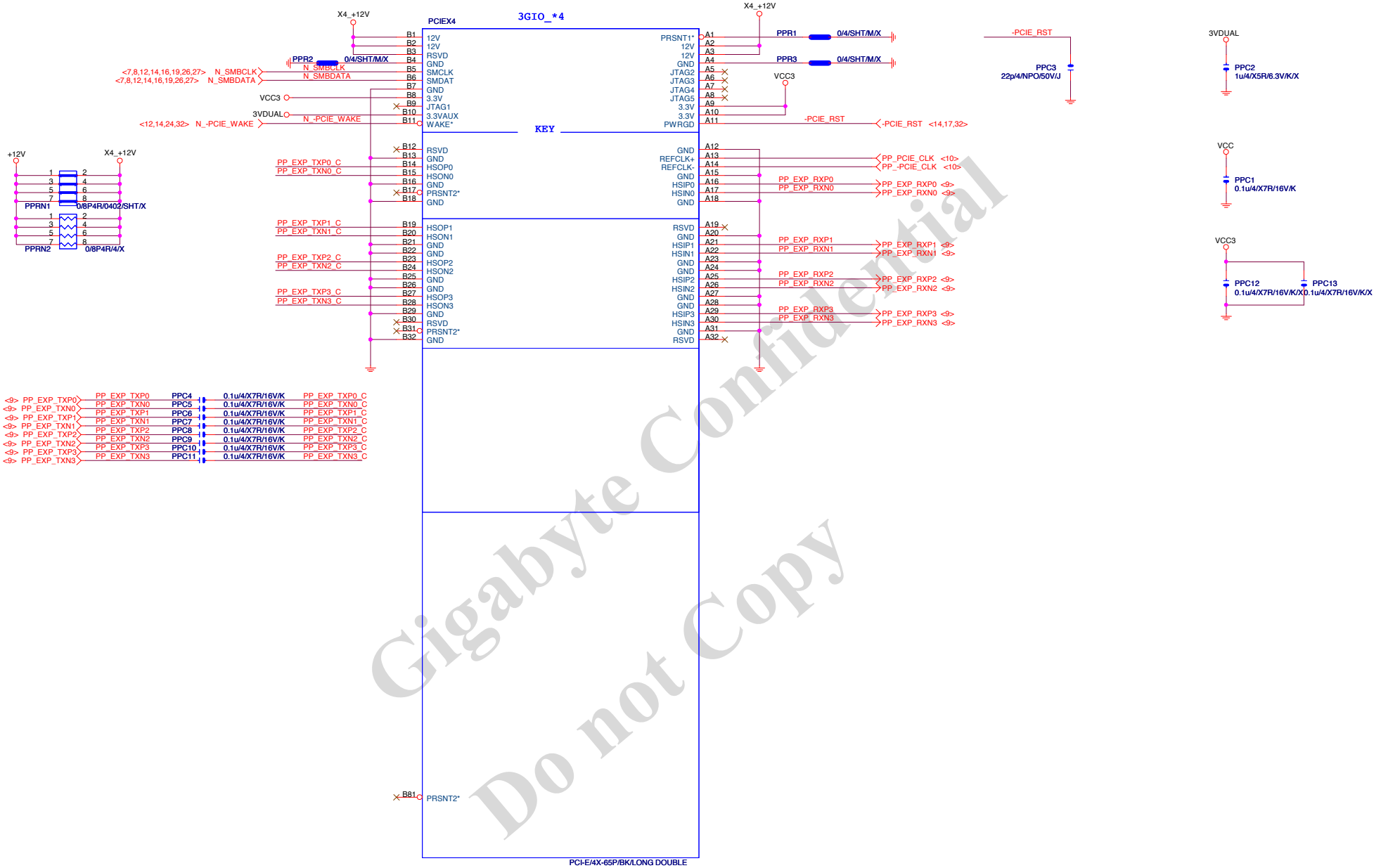
-DPCIE_RST >> PAC1 33p/4/NPO/50V/J

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



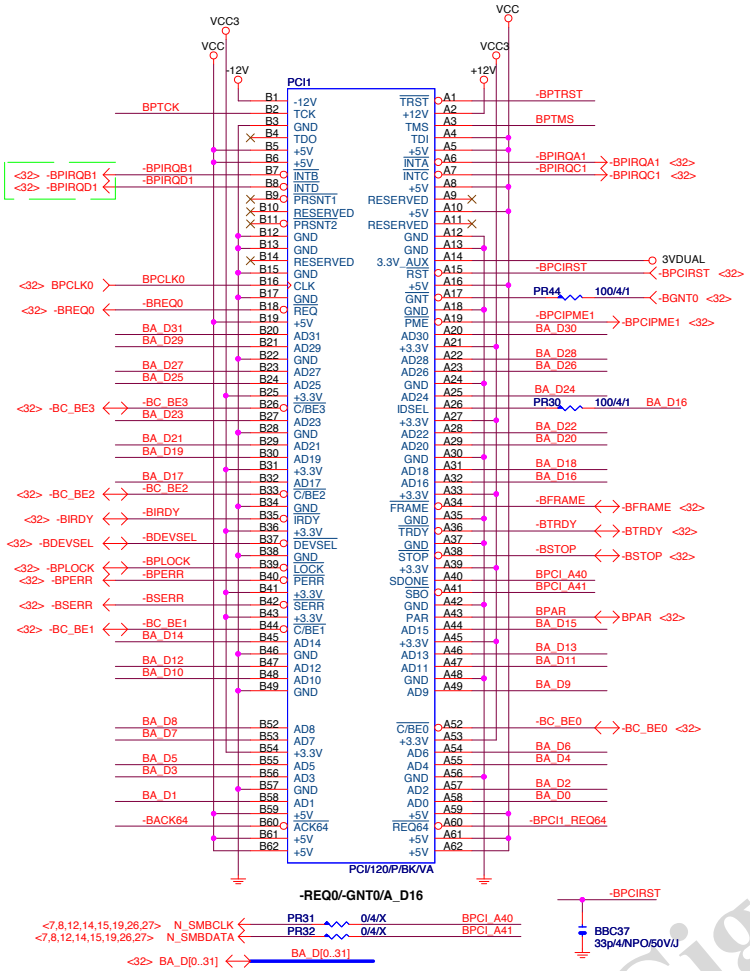
Gigabyte Technology			
Title: PCI EXPRESS * 16			
Size: Custom	Document Number: GA-B85M-D3H		Rev: 1.1
Date: Monday, July 15, 2013	Sheet 14 of 32		

PCIEX4 SLOT

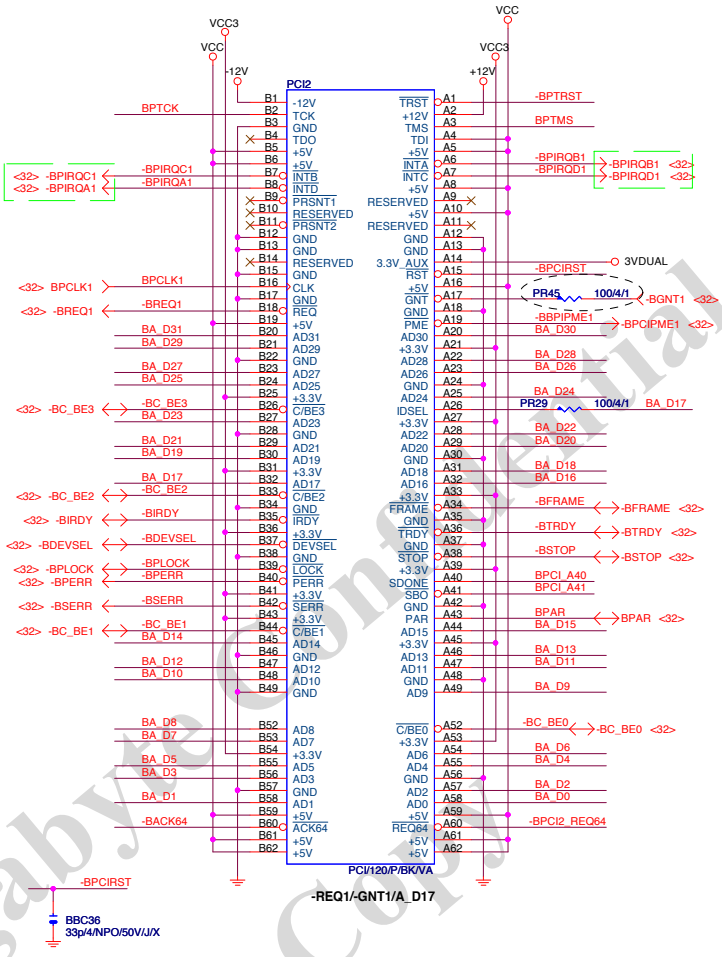


Gigabyte Technology		
Title: PCI EXPRESS X 1 PORT		
Size: Custom	Document Number: GA-B85M-D3H	Rev: 1.1
Date: Monday, July 15, 2013	Sheet 15 of 32	

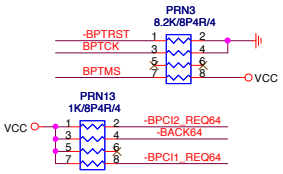
PCI SLOT 1



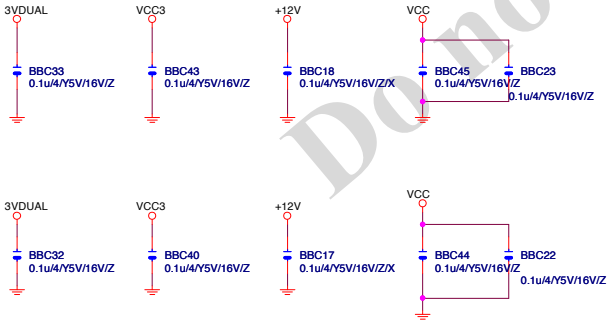
PCI SLOT 2



PCI PU

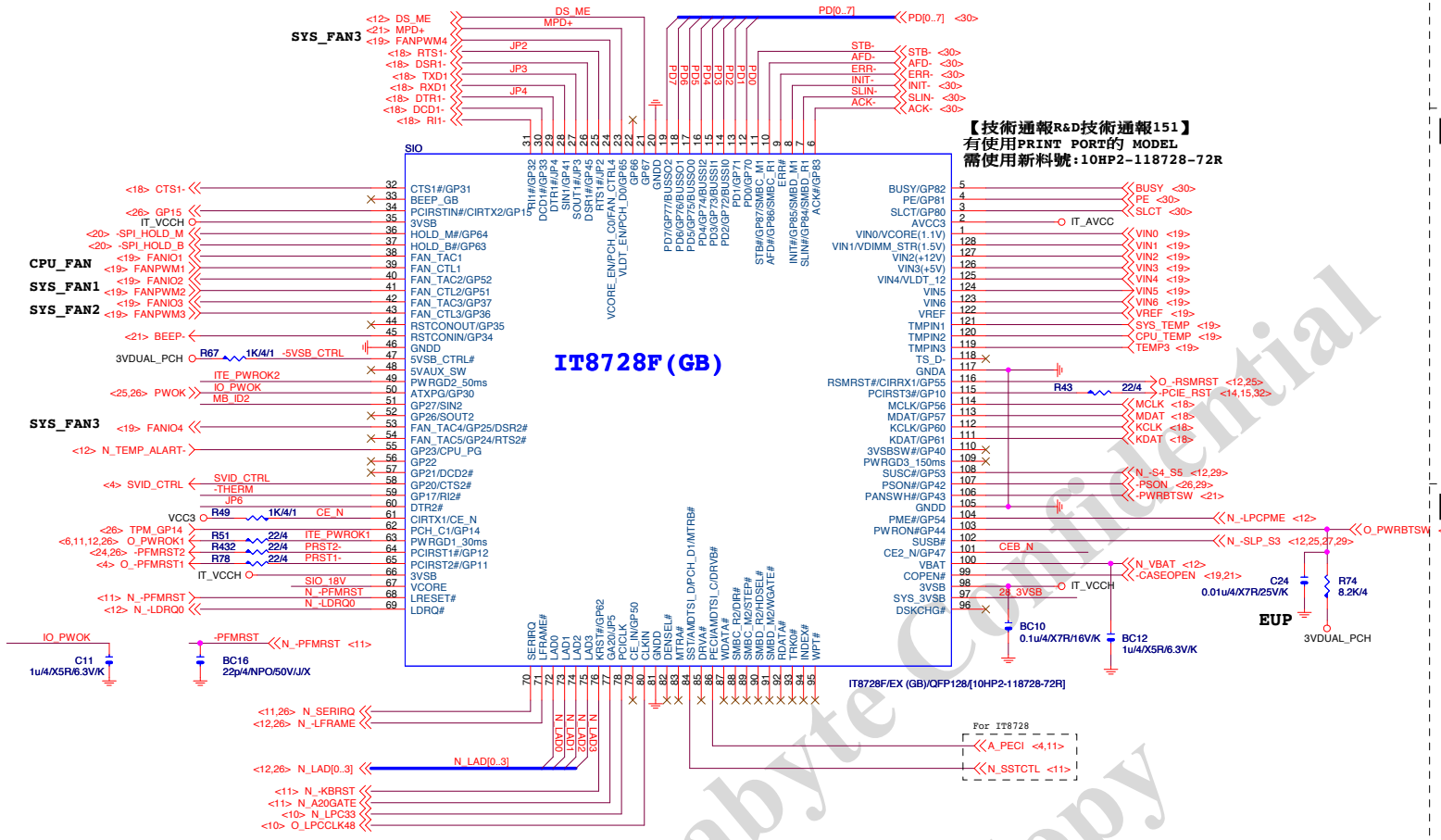


PCI CAP

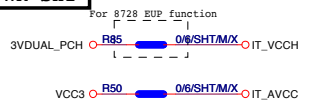


Gigabyte Technology		
Title: PCI SLOT 1&2		
Size: Custom	Document Number: GA-B85M-D3H	Rev: 1.1
Date: Monday, July 15, 2013	Sheet 16 of 32	

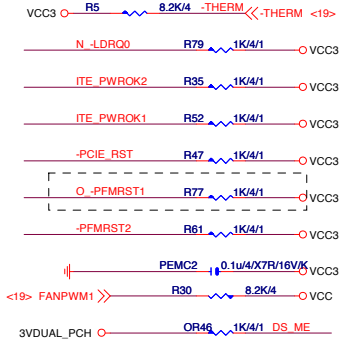
SIO IT8728F



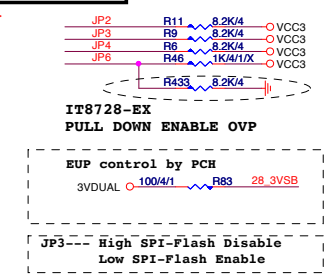
PWR SHT



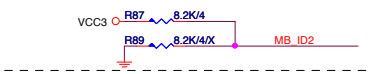
SIO PU



SIO STRAP



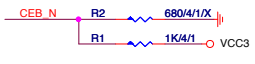
MB ID



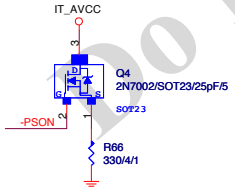
IT8728F NOTE

	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

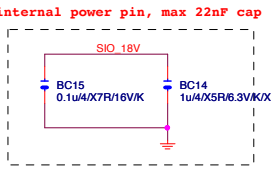


Power leakage



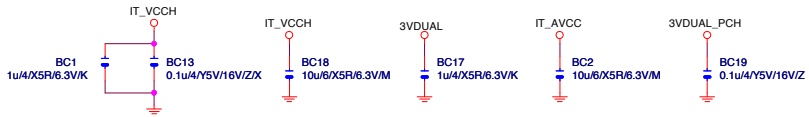
For IT8721 Power leakage

SIO_18V

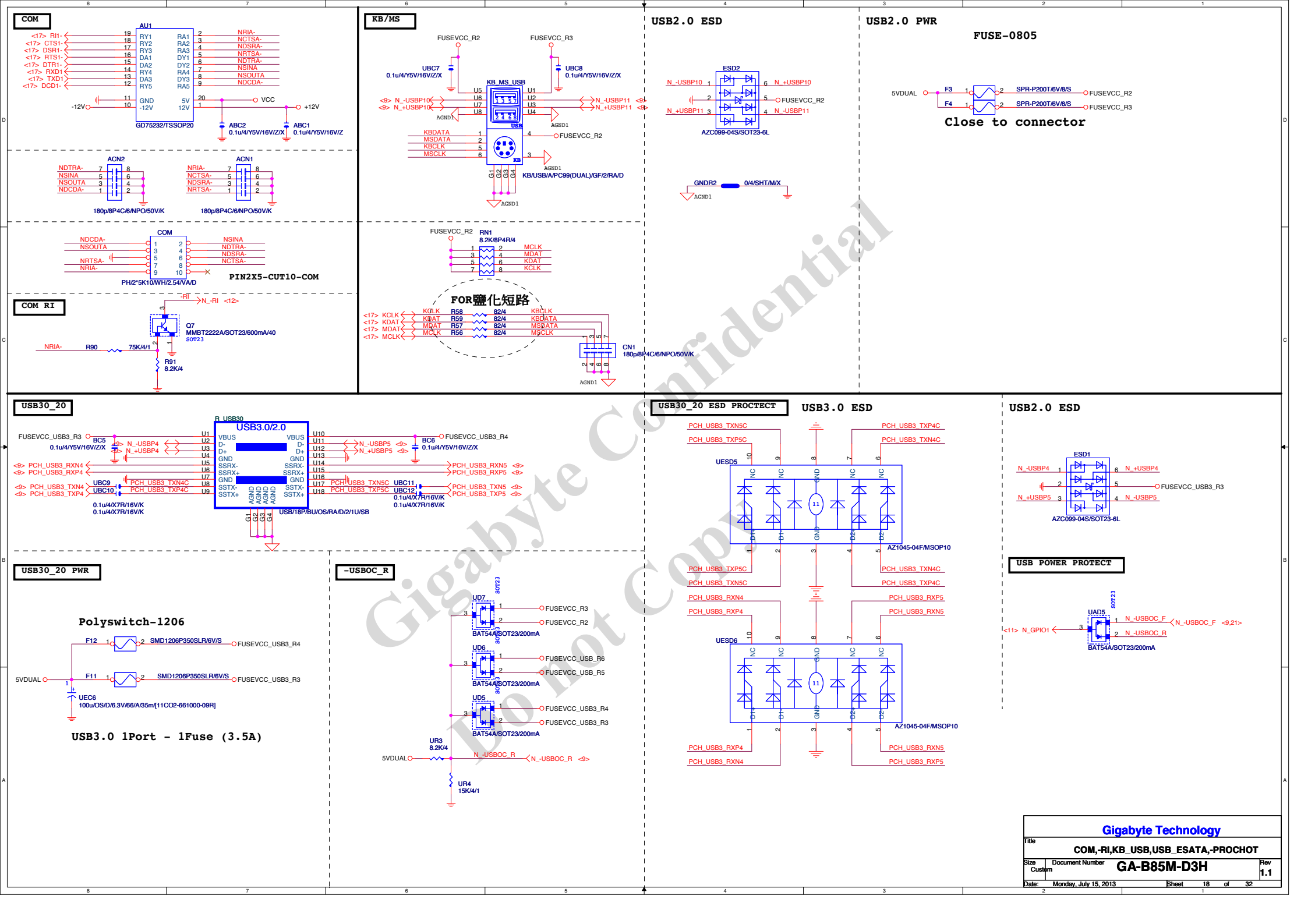


FOR LOW TEMP POWER ON INTO TEST MODE ISSUE

SIO CAP

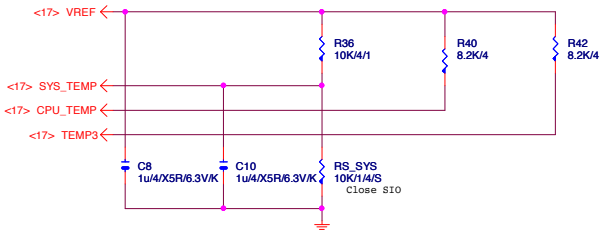


Gigabyte Technology		
Title: ITE 8728 LPC IO		
Size: Custom	Document Number: GA-B85M-D3H	Rev: 1.1
Date: Monday, July 15, 2013	Sheet 17 of 32	

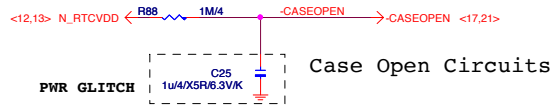


Gigabyte Technology			
Title	COM,-RI,KB_USB,USB_ESATA,-PROCHOT		
Size: Custom	Document Number: GA-B85M-D3H		Rev: 1.1
Date: Monday, July 15, 2013	Sheet 18 of 32		

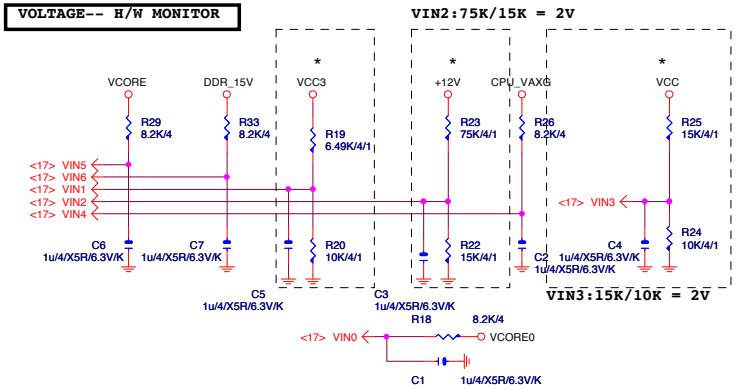
TEMP H/W MONITOR



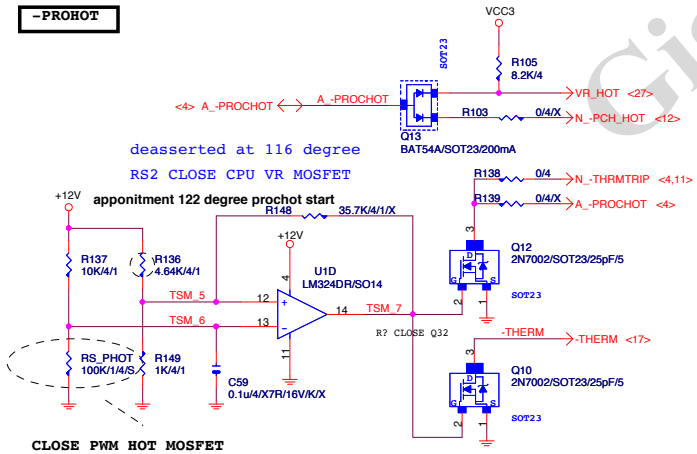
CASE OPEN



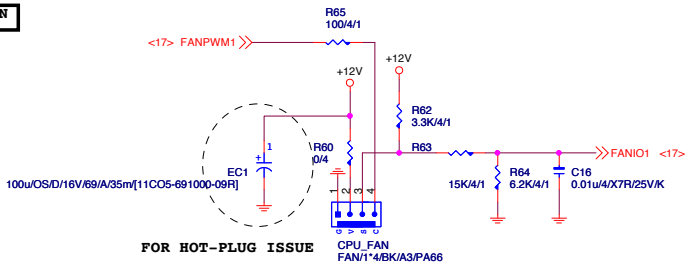
VOLTAGE-- H/W MONITOR



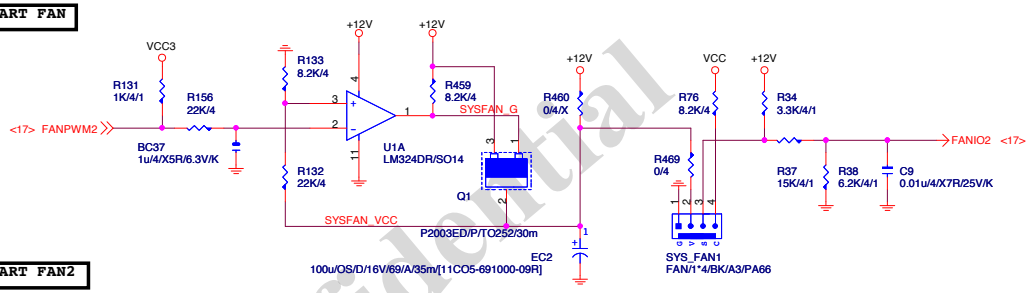
-PROHOT



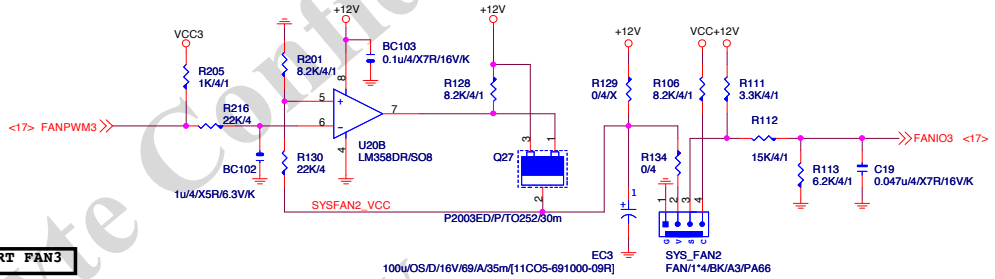
CPU SMART FAN



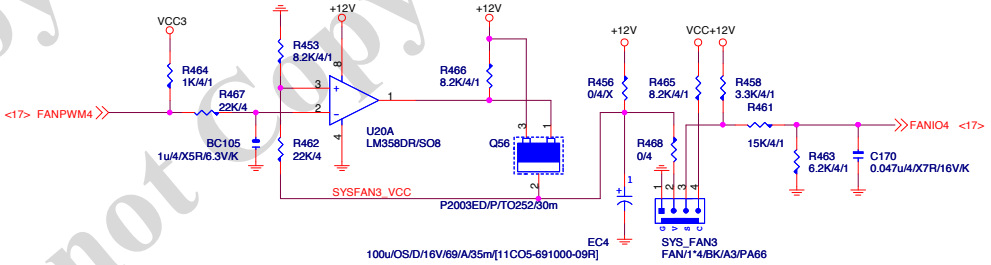
SYS SMART FAN



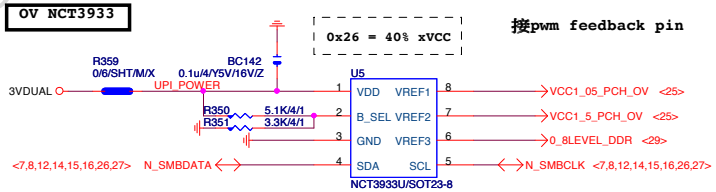
SYS SMART FAN2



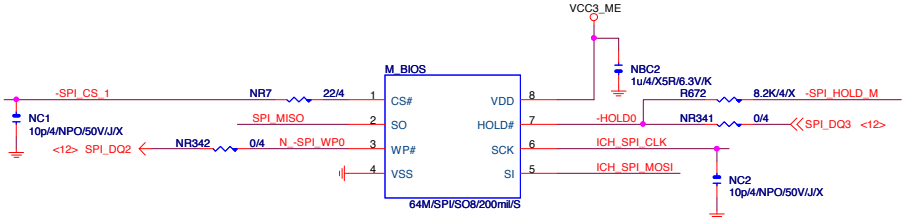
SYS SMART FAN3

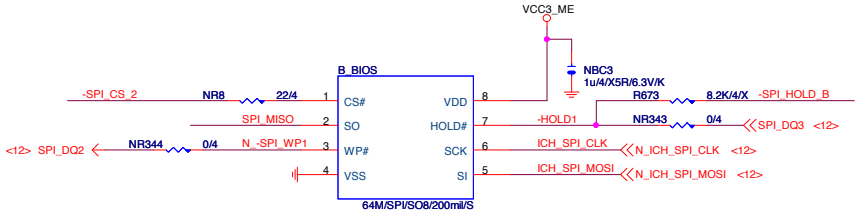


OV NCT3933



Gigabyte Technology		
Title: HWM,FAN CTRL,OV		
Size: Custom	Document Number: GA-B85M-D3H	Rev: 1.1
Date: Monday, July 15, 2013	Sheet 19 of 32	

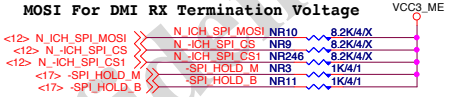


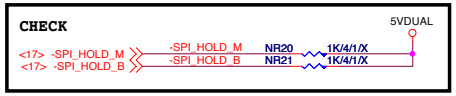


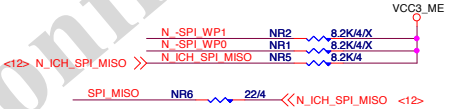
BOOT DEVICE	GNT0	GNT1
LPC	0	0
PCI	0	1
NAND	1	0
SPI	1	1

1 means floating
0 means PD 1K

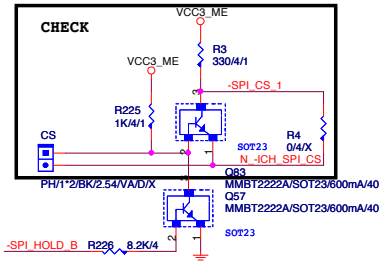
MOSI For DMI RX Termination Voltage

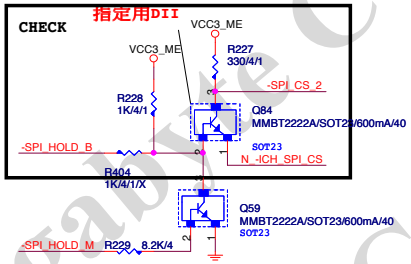






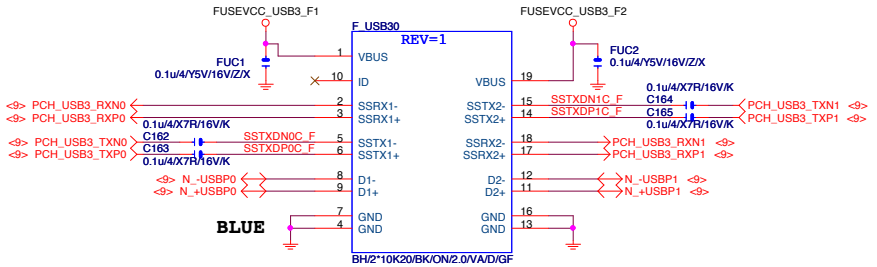
Dual BIOS CS connect circuit update



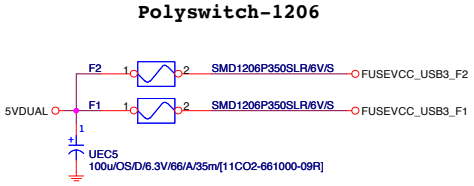


Gigabyte Technology			
Title: DUAL BIOS			
Size: Custom	Document Number: GA-B85M-D3H		Rev: 1.1
Date: Monday, July 15, 2013		Sheet 20 of 32	

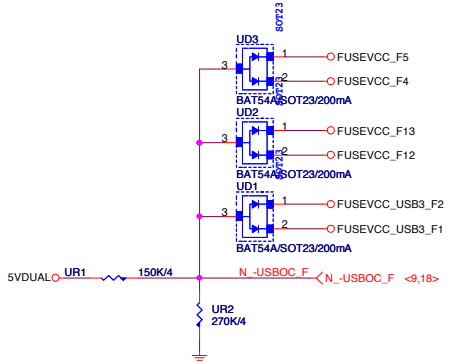
F_USB30



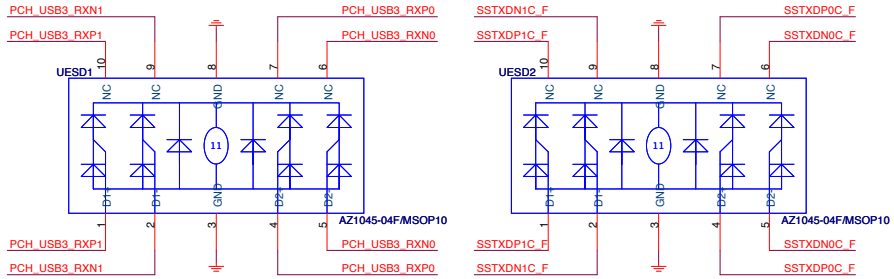
F_USB30 PWR

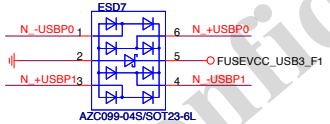


-USBOC_F



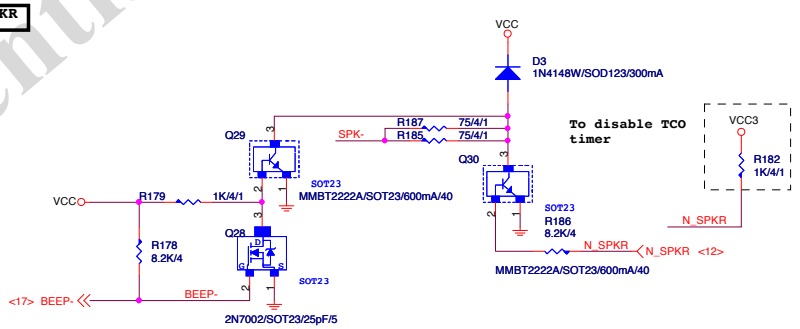
F_USB30 ESD PROTECT



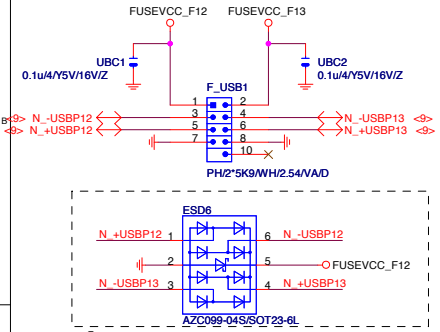


Close to connector

SPKR

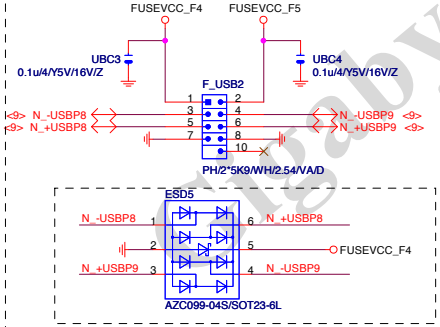


FRONT USB1



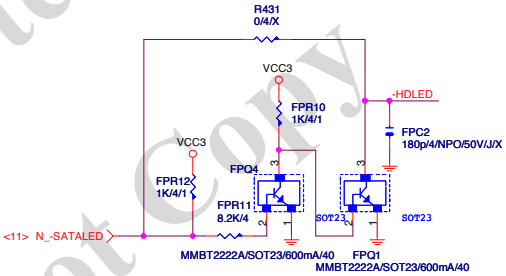
Close to connector

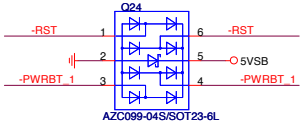
FRONT USB2



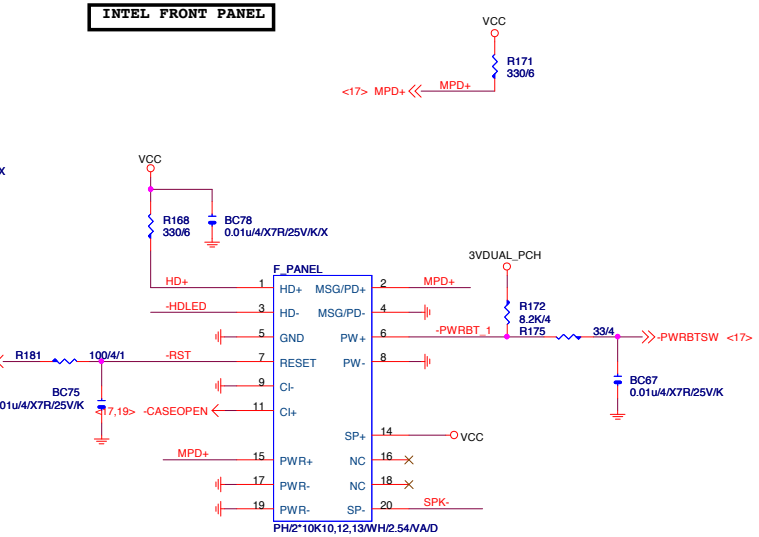
Close to connector

SATA LED

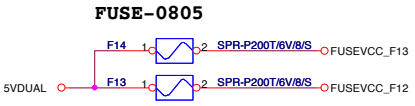




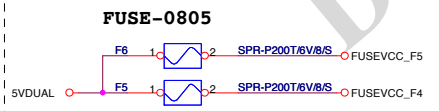
INTEL FRONT PANEL



FUSE-0805



FUSE-0805



Gigabyte Technology

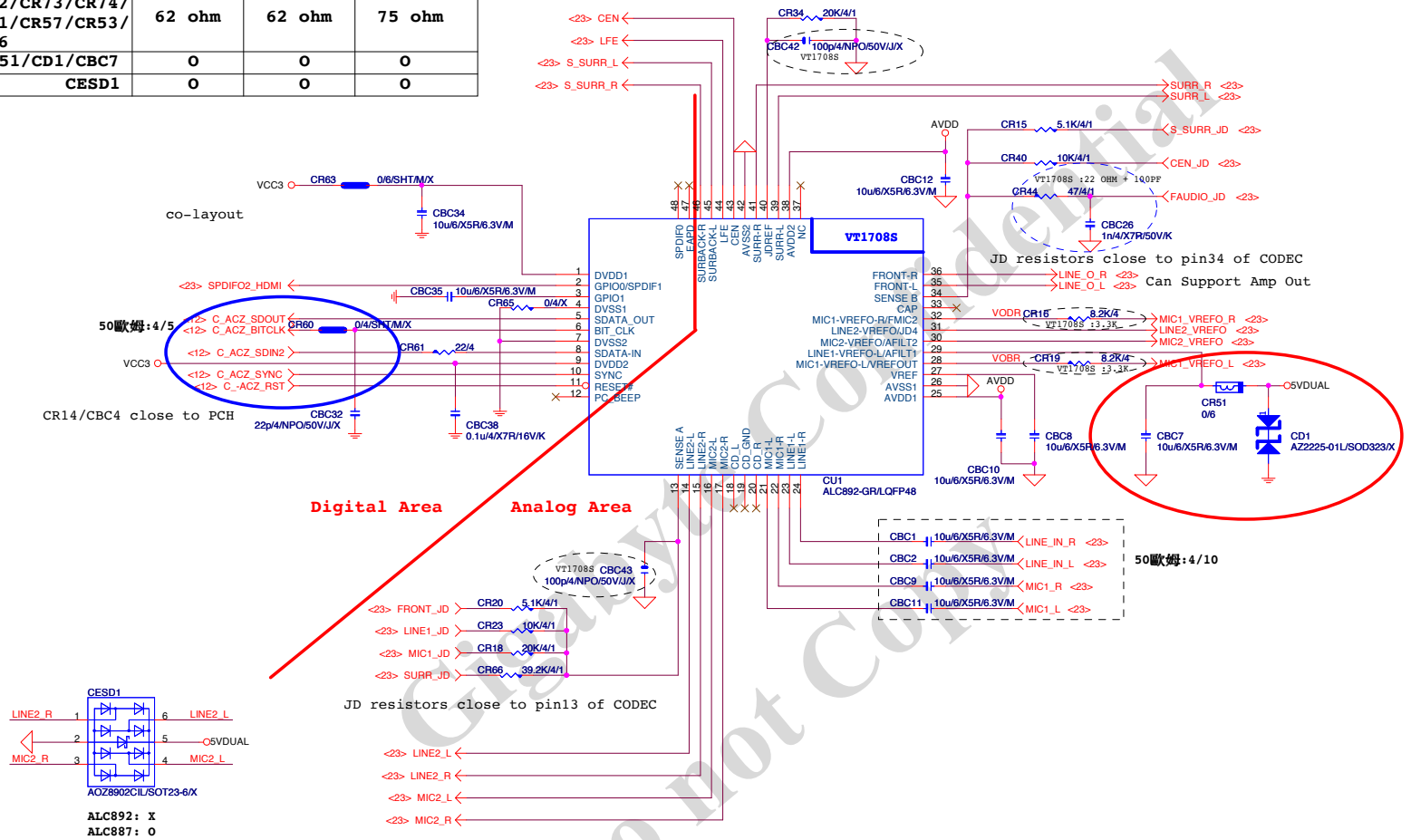
Title: FP,F_USB,USB PWR,SPKR,SATA LED

Size: Custom | Document Number: GA-B85M-D3H | Rev: 1.1

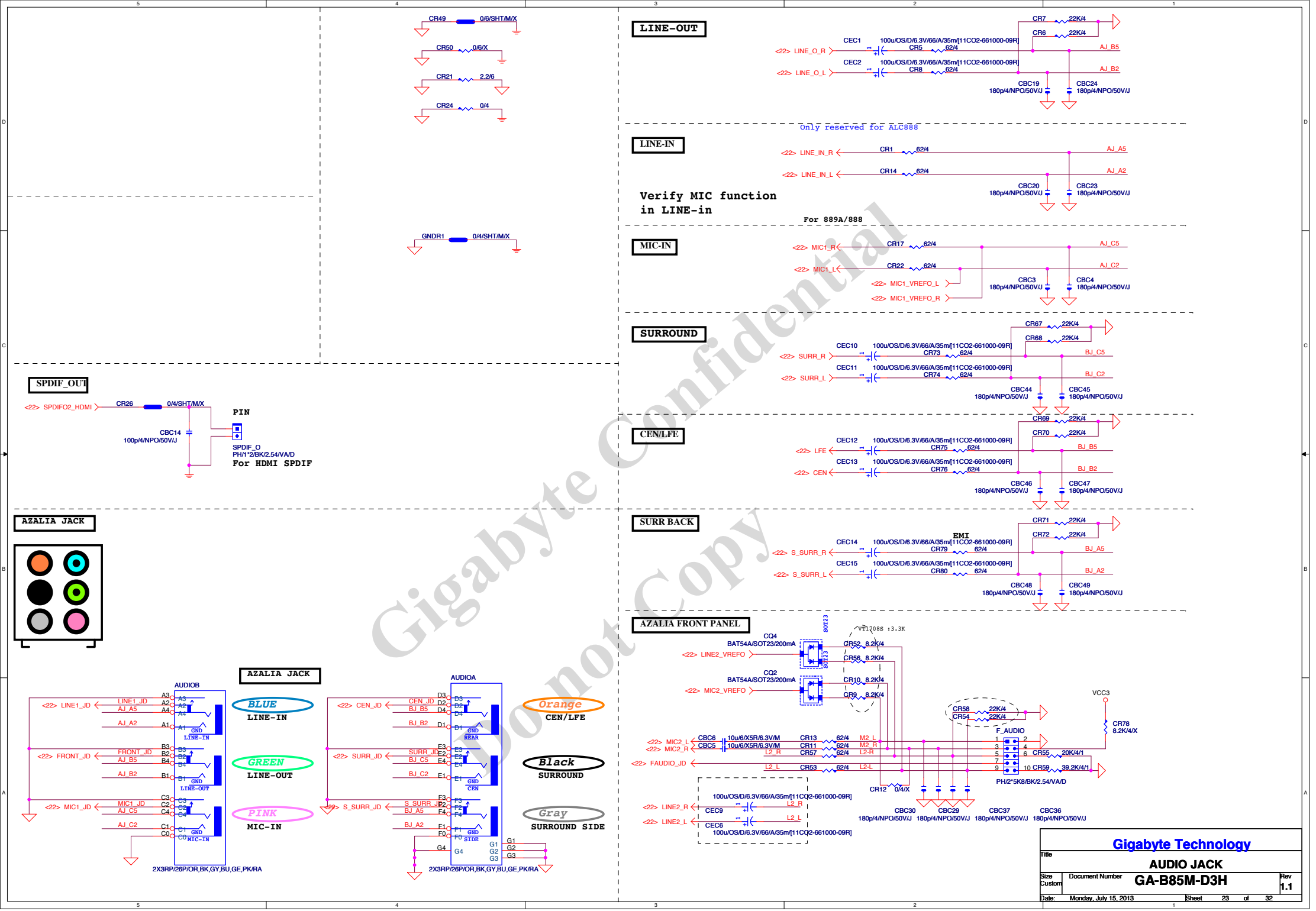
Date: Monday, July 15, 2013 | Sheet 21 of 32

AZALIA CODEC *ALC892/ALC887-VD2/VT1708-CE Colay*

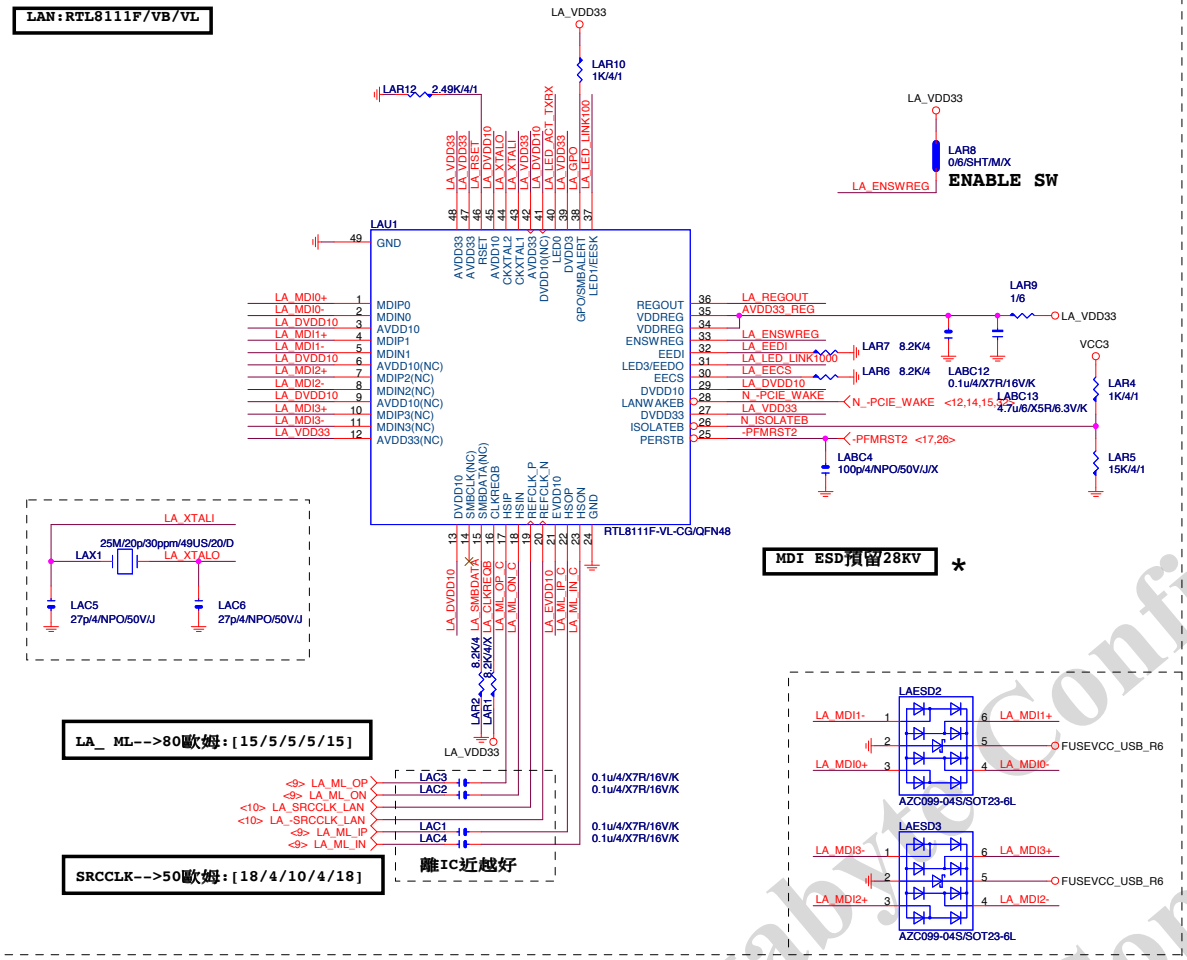
	ALC892	ALC887-VD2	VT1708S-CE
CR44/CBC26	47ohm+1nF	47ohm+1nF	22ohm+100P
CBC42/CBC43	X	X	100P/4
CR6/CR7/CR58/CR54/ CR67/CR68/CR69/CR70	22K/4	22K/4	10K/4/1
CR5/CR8/CR1/CR14/ CR17/CR22/CR73/CR74/ CR13/CR11/CR57/CR53/ CR75/CR76	62 ohm	62 ohm	75 ohm
CR51/CD1/CBC7	O	O	O
CESD1	O	O	O



Gigabyte Technology			
Title: HD AUDIO ALC887B-VD2/VT1708S/VT2021			
Size: Custom	Document Number: GA-B85M-D3H		Rev: 1.1
Date: Monday, July 15, 2013		Sheet 22 of 32	



LAN:RTL8111F/VB/VL



LA_ENSWREG — LAR8 0/6/SHT/M/X — **ENABLE SW**

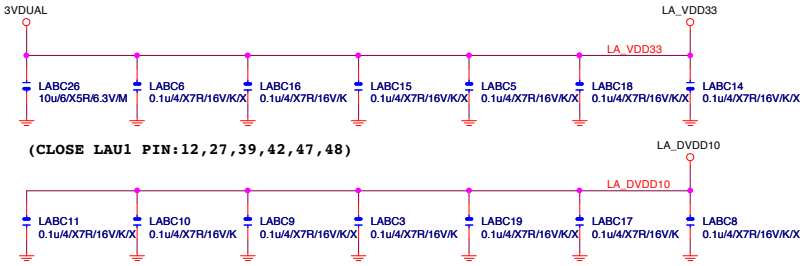
MDI ESD預留28KV *

LA_ ML-->80歐姆:[15/5/5/5/15]

SRCCLK-->50歐姆:[18/4/10/4/18]

離IC近越好

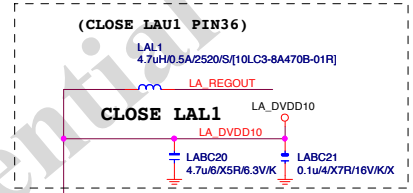
LAN POWER

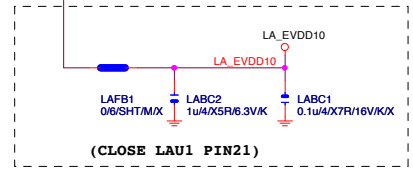


(CLOSE LAU1 PIN:12,27,39,42,47,48)

(CLOSE LAU1 PIN3,6,9,13,29,41,45)

(CLOSE LAU1 PIN36)

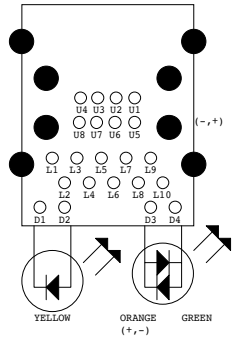




(CLOSE LAU1 PIN21)

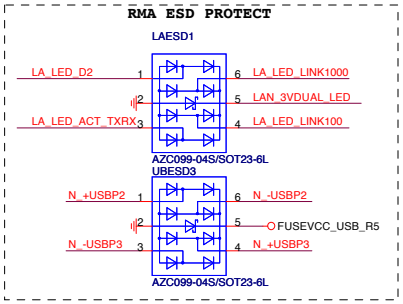
Power domain chart

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

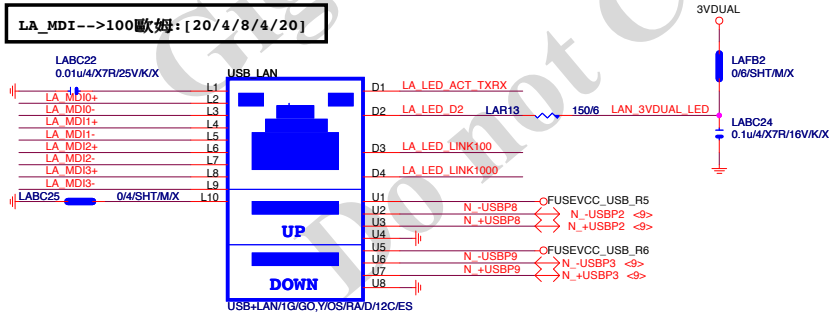


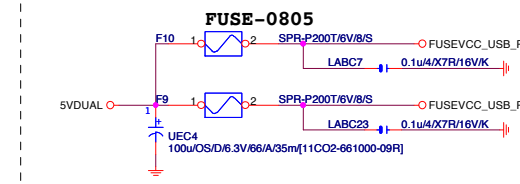
USB_LAN CONNECTOR

RMA ESD PROTECT



LA_MDI-->100歐姆:[20/4/8/4/20]



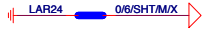


USB X3 POWER

FUSE-0805

EMI SHORT PAD

PS:視EMI需求



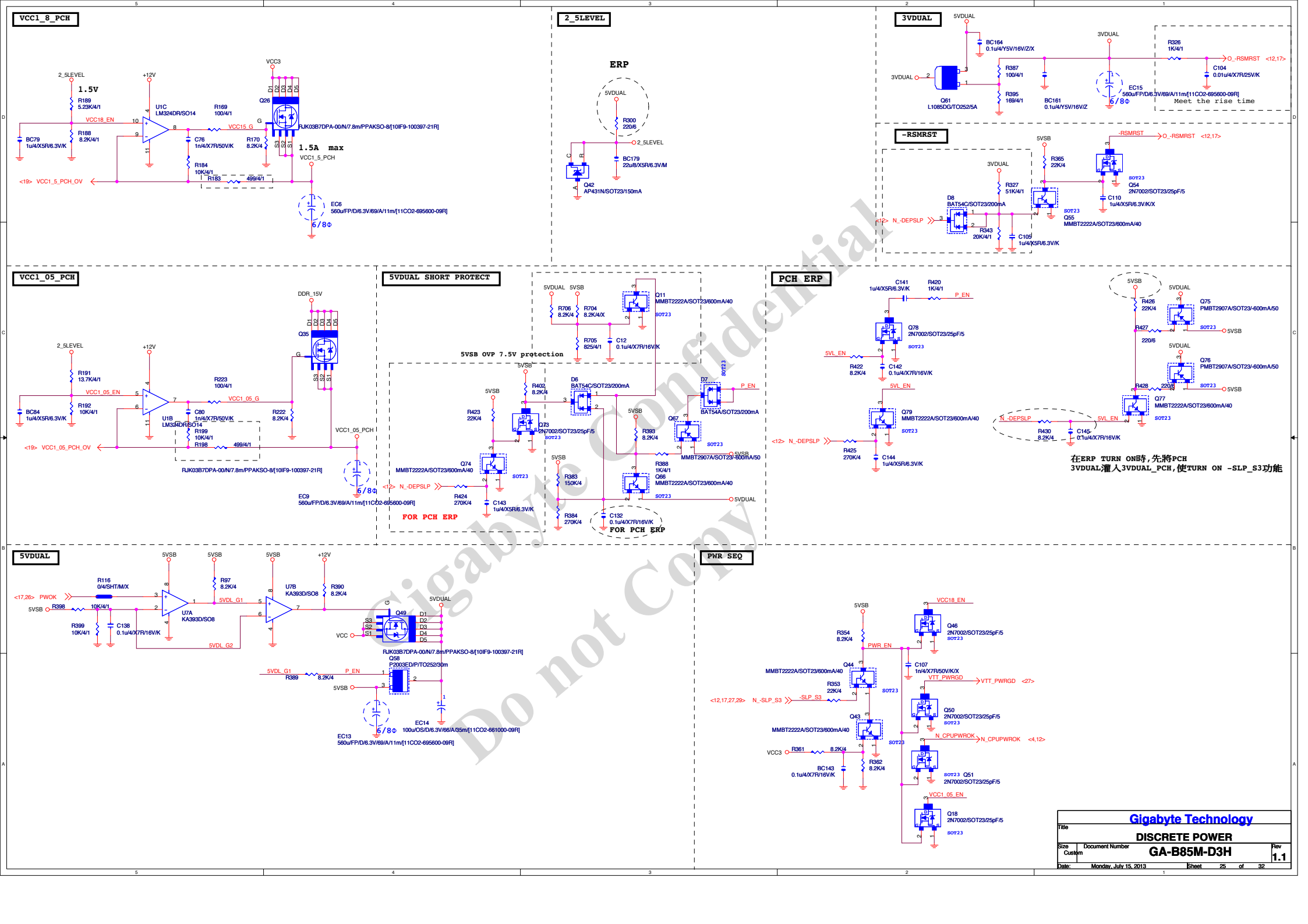
料號	規格	廠商
11NR6-702009-0ER 1G	LAN (12core)	UDE
11NR6-702009-91R 1G	LAN(8 core)	FOXCONN
11NR6-702009-92R 1G	LAN(8 core)	UDE
11NR6-702009-11R 1G	LAN(12core/RED)	UDE
11NR6-702009-12R 1G	LAN(8 core/RED)	FOXCONN

注意:LAN LED PROTECT:(CO-LAYOUT)
1.ESD(6PIN):AOZ8902CIL/SOT23-6(DEFAULT)
2.SURGE(5PIN):AZ2025-04S/SOT23-5L

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

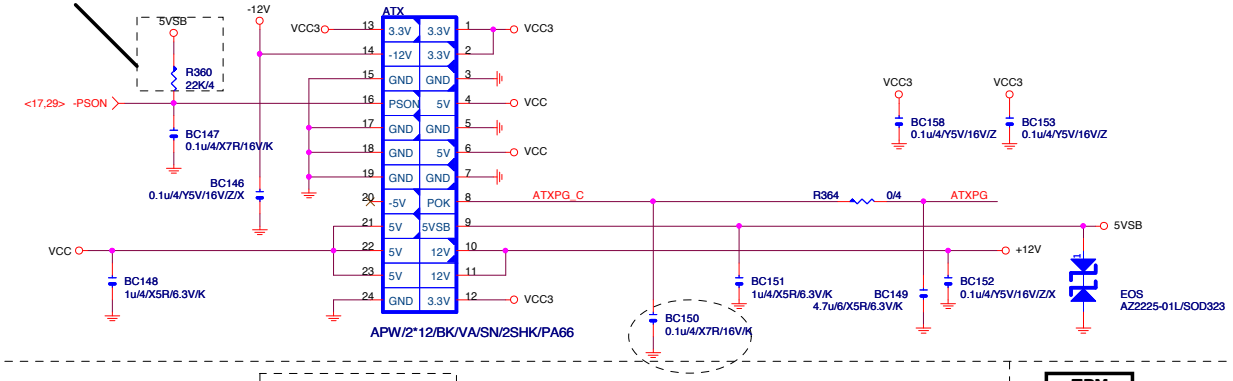
USB_LAN BOM區分:
1.(紅色/12CORE/三倍):USB+LAN/1G/GO,Y/OS/RA/D/1/RED
2.(黑色/12CORE):USB+LAN/1G/GO,Y/OS/RA/D/1
3.(黑色/8CORE):USB+LAN/1G/GO,Y/OS/RA/D/8C

Gigabyte Technology
Title: Realtek RTL8111G
Size: Custom | Document Number: GA-B85M-D3H | Rev: 1.1
Date: Monday, July 15, 2013 | Sheet 24 of 32


VCC1_8_PCH
2_5LEVEL
1.5V
R189 5.23K/4/1
R188 8.2K/4/1
BC79 1u/4/X5R/6.3V/K
VCC18_EN
+12V
U1C LM324DR/SO14
R169 100/4/1
VCC15_G
C76 1n/4/X7R/50V/K
R170 8.2K/4
R184 10K/4/1
R183 499/4/1
VCC3
Q26
RJK03B7DPA-00/N/7.8m/PPAKSO-8/[10IF9-100397-21R]
1.5A max
VCC1_5_PCH
<19> VCC1_5_PCH_OV
EC6 560u/FP/D/6.3V/69/A/11m/[11CO2-695600-09R]
2_5LEVEL
ERP
5VDUAL
R300 220/6
2_5LEVEL
BC179 22u/8/X5R/6.3V/M
Q42 AP431N/SOT23/150mA
3VDUAL
5VDUAL
BC164 0.1u/4/Y5V/16V/Z/X
3VDUAL
R387 100/4/1
R395 169/4/1
Q61 L1085DG/TO252/5A
BC161 0.1u/4/Y5V/16V/Z
EC15 560u/FP/D/6.3V/69/A/11m/[11CO2-695600-09R]
R326 1K/4/1
O_-RSMRST <12,17>
C104 0.01u/4/X7R/25V/K
Meet the rise time
-RSMRST
5VSB
R365 22K/4
3VDUAL
R327 51K/4/1
D8 BAT54C/SOT23/200mA
<12> N_-DEPSLP
R343 20K/4/1
C105 1u/4/X5R/6.3V/K
Q54 2N7002/SOT23/25pF/5
C110 1u/4/X5R/6.3V/K/X
Q55 MMBT2222A/SOT23/600mA/40
VCC1_05_PCH
2_5LEVEL
R191 13.7K/4/1
R192 10K/4/1
BC84 1u/4/X5R/6.3V/K
VCC1_05_EN
+12V
U1B LM324DR/SO14
R223 100/4/1
VCC1_05_G
C80 1n/4/X7R/50V/K
R199 10K/4/1
R198 499/4/1
R222 8.2K/4
DDR_15V
Q35
VCC1_05_PCH
<19> VCC1_05_PCH_OV
RJK03B7DPA-00/N/7.8m/PPAKSO-8/[10IF9-100397-21R]
EC9 560u/FP/D/6.3V/69/A/11m/[11CO2-695600-09R]
5VDUAL SHORT PROTECT
5VDUAL 5VSB
R706 8.2K/4
R704 8.2K/4/X
Q11 MMBT2222A/SOT23/600mA/40
R705 825/4/1
C12 0.1u/4/X7R/16V/K
5VSB OVP 7.5V protection
5VSB
R402 8.2K/4
D6 BAT54C/SOT23/200mA
D7 BAT54A/SOT23/200mA
P_EN
R423 22K/4
Q73 2N7002/SOT23/25pF/5
Q67
MMBT2907A/SOT23/-600mA/50
Q74 MMBT2222A/SOT23/600mA/40
<12> N_-DEPSLP
R424 270K/4
C143 1u/4/X5R/6.3V/K
R393 8.2K/4
R388 1K/4/1
Q66 MMBT2222A/SOT23/600mA/40
R383 150K/4
R384 270K/4
C132 0.1u/4/X7R/16V/K
FOR PCH ERP
FOR PCH ERP
PCH ERP
C141 1u/4/X5R/6.3V/K
R420 1K/4/1
P_EN
Q78 2N7002/SOT23/25pF/5
5VL_EN
R422 8.2K/4
C142 0.1u/4/X7R/16V/K
Q79 MMBT2222A/SOT23/600mA/40
<12> N_-DEPSLP
R425 270K/4
C144 1u/4/X5R/6.3V/K
5VSB
5VDUAL
R426 22K/4
Q75 PMBT2907A/SOT23/-600mA/50
R427 220/6
Q76 PMBT2907A/SOT23/-600mA/50
R428 220/6
Q77 MMBT2222A/SOT23/600mA/40
N_-DEPSLP
R430 8.2K/4
C145 0.1u/4/X7R/16V/K
在ERP TURN ON時，先將PCH
3VDUAL灌入3VDUAL_PCH，使TURN ON -SLP_S3功能
5VDUAL
<17,26> PWOK
5VSB
R398 10K/4/1
R116 0/4/SHT/M/X
U7A KA393D/SO8
R399 10K/4/1
C138 0.1u/4/X7R/16V/K
R97 8.2K/4
5VDL_G1
5VDL_G2
U7B KA393D/SO8
R390 8.2K/4
Q49
VCC
RJK03B7DPA-00/N/7.8m/PPAKSO-8/[10IF9-100397-21R]
Q58 P2003ED/P/TO252/30m
5VDL_G1
R389 8.2K/4
P_EN
EC13 560u/FP/D/6.3V/69/A/11m/[11CO2-695600-09R]
EC14 100u/OS/D/6.3V/66/A/35m/[11CO2-661000-09R]
PWR SEQ
5VSB
R354 8.2K/4
PWR_EN
VCC18_EN
Q46 2N7002/SOT23/25pF/5
C107 1n/4/X7R/50V/K/X
MMBT2222A/SOT23/600mA/40
Q44
R353 22K/4
<12,17,27,29> N_-SLP_S3
-SLP_S3
VTT_PWRGD
VTT_PWRGD <27>
Q50 2N7002/SOT23/25pF/5
Q43
MMBT2222A/SOT23/600mA/40
N_CPUPWROK
N_CPUPWROK <4,12>
VCC3
R361 8.2K/4
BC143 0.1u/4/X7R/16V/K
R362 8.2K/4
Q51 2N7002/SOT23/25pF/5
VCC1_05_EN
Q18 2N7002/SOT23/25pF/5
Gigabyte Technology
Title
DISCRETE POWER
Size Custom
Document Number
GA-B85M-D3H
Rev 1.1
Date: Monday, July 15, 2013
Sheet 25 of 32
Gigabyte Confidential
Do not Copy

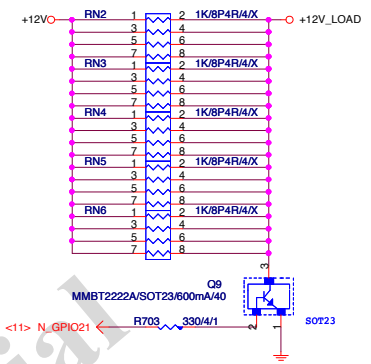
ATXX24 POWER CONNECTOR

【技術通報R&D技術通報155】

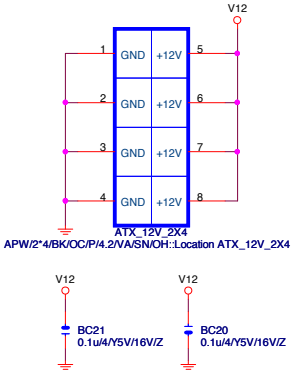


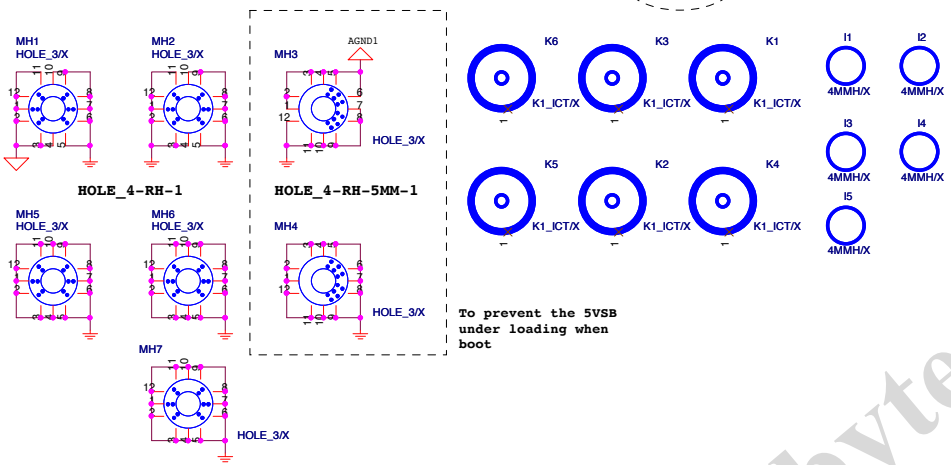
【技術通報R&D技術通報153】

To fix 12V light load abnromal issue

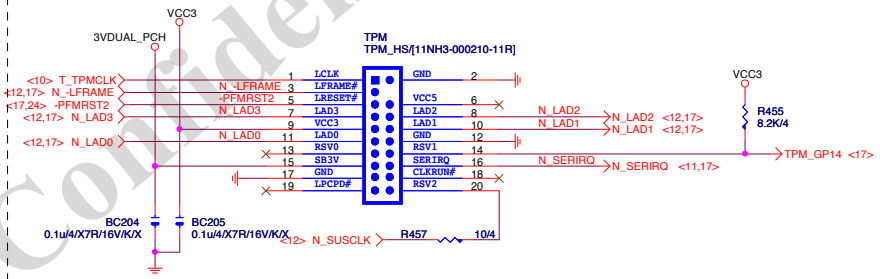


ATXX4 POWER CONNECTOR





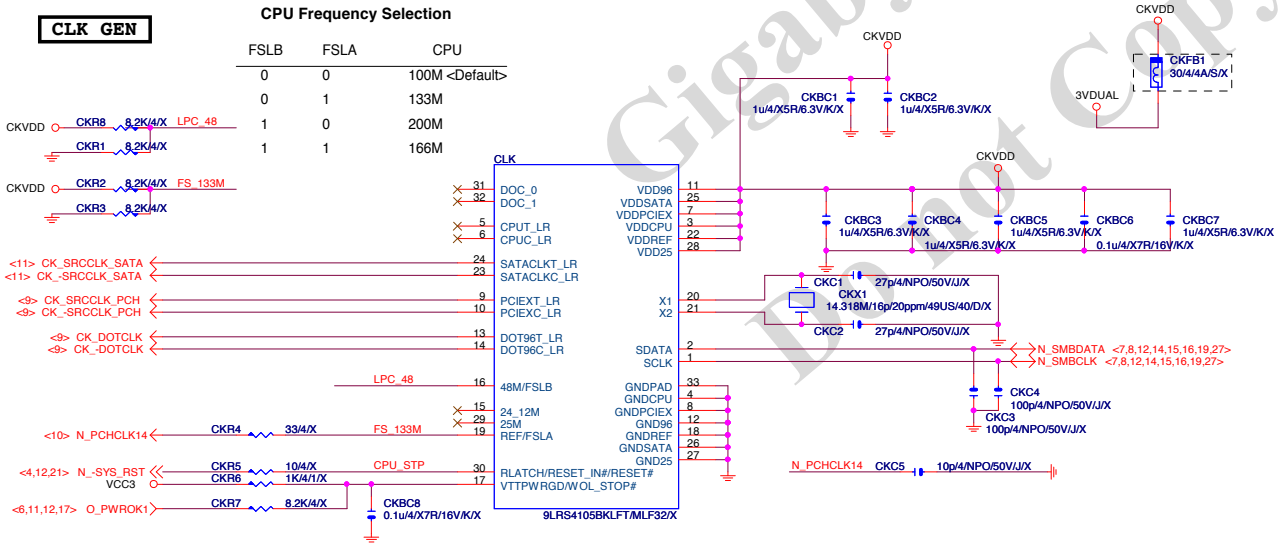
TPM



CLK GEN

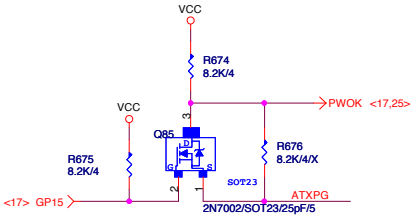
CPU Frequency Selection

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

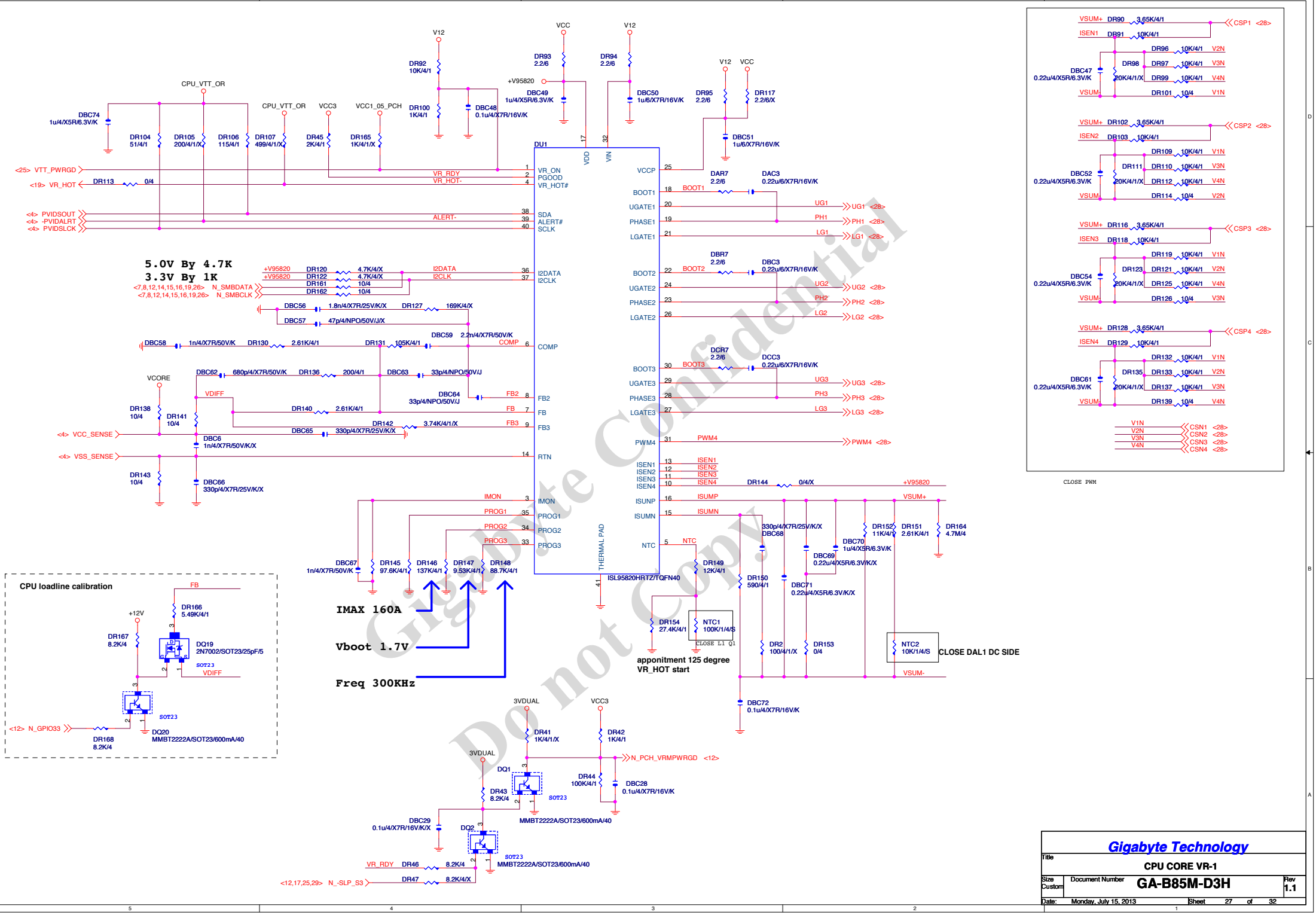


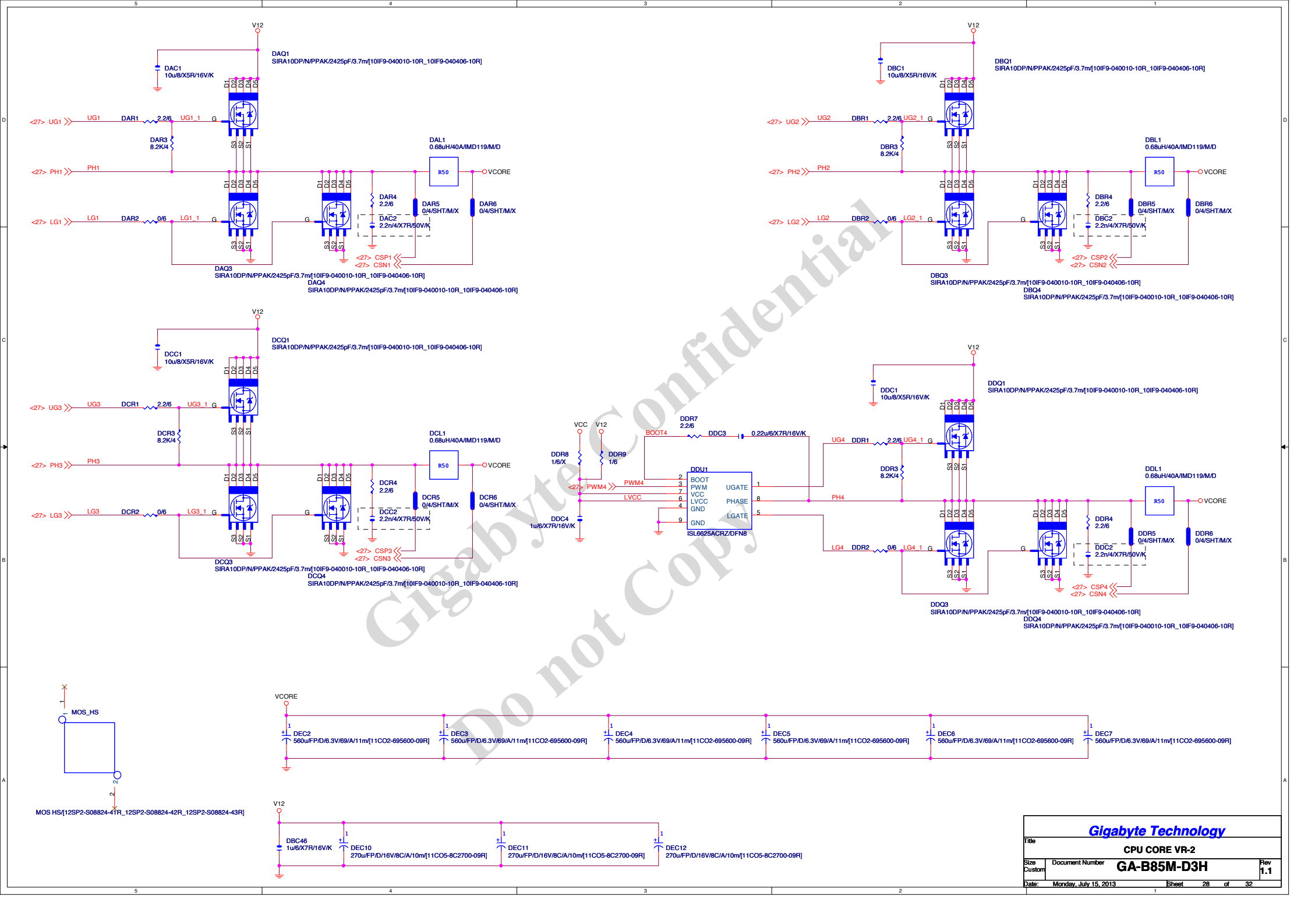
PWOK PATCH

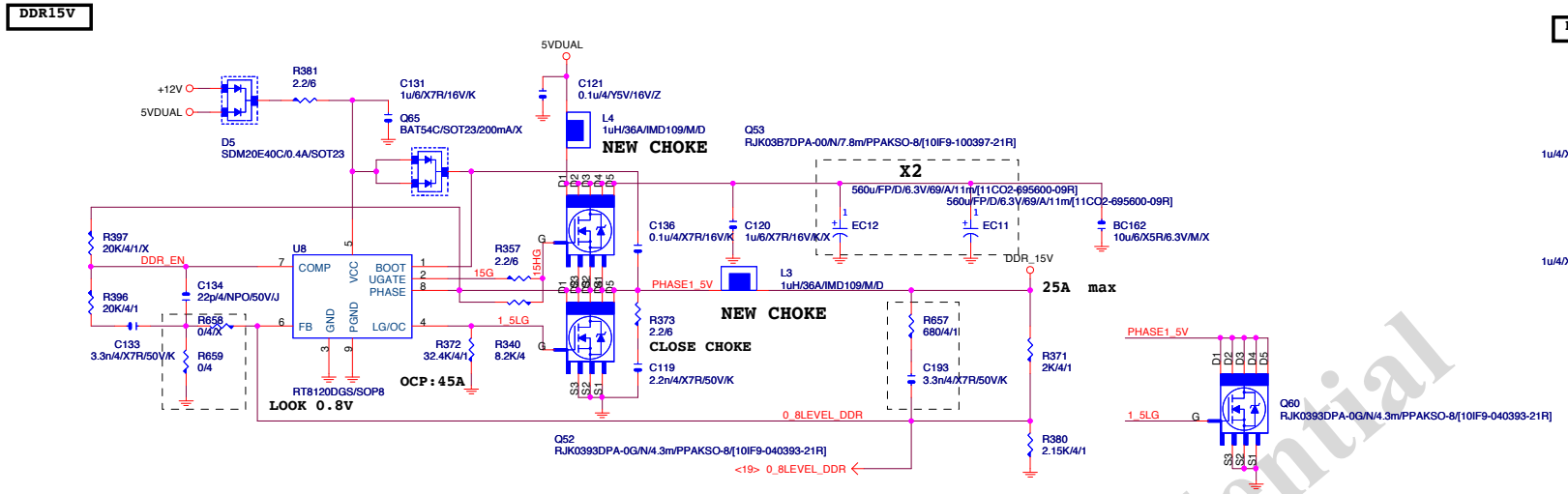
【技術通報R&D技術通報154】

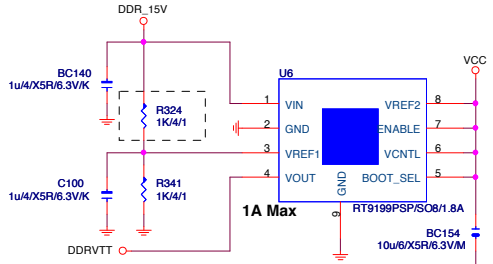


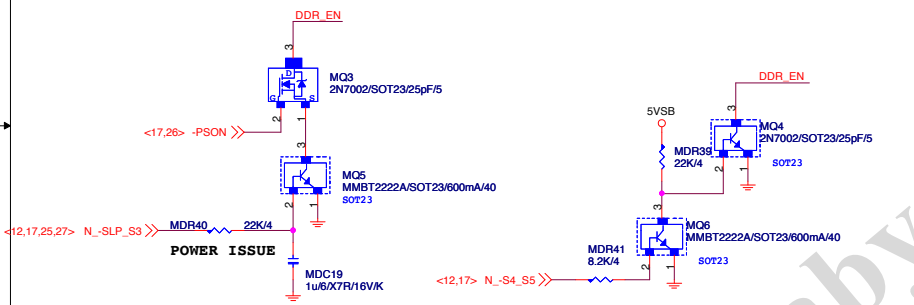
Gigabyte Technology		
Title: ATX CONNECTOR		
Size: Custom	Document Number: GA-B85M-D3H	Rev: 1.1
Date: Monday, July 15, 2013	Sheet 26 of 32	









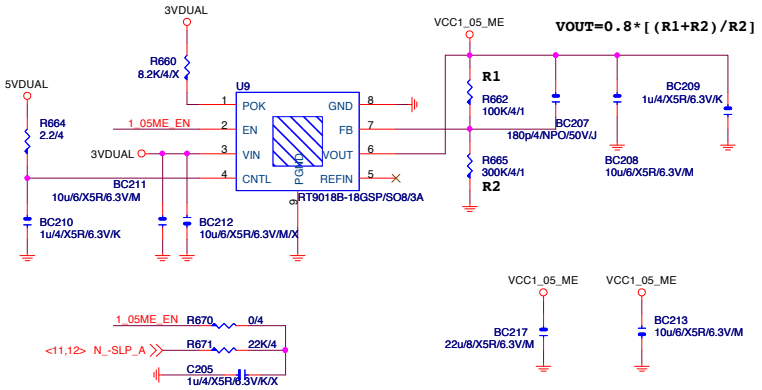


VIN=5V,VOUT=1.5V,IOUT=25A,PHASE=1
IRMS=11.45A
560u/FP/D/6.3V/68/8m RIPPLE CURRENT=4.7A
Coefficient=1.7(85℃),1(105℃)
VIN Ripple current=4.7X1.7=7.99A(85℃)
-->故固態電容須2X7.99=15.98>11.45A

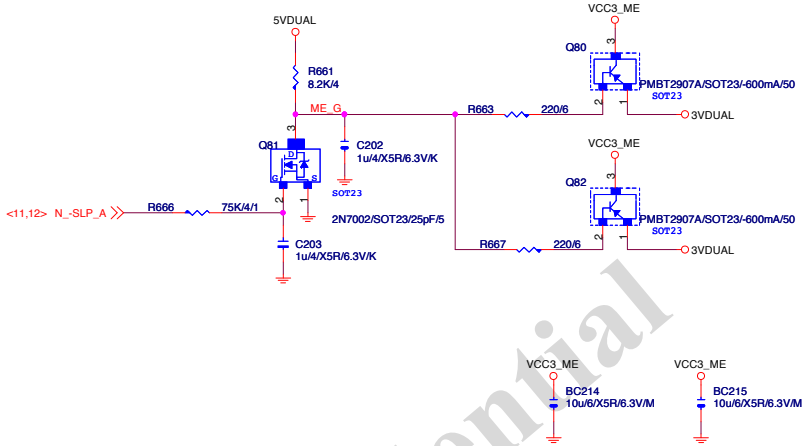
Rocset=(Iocp*Lgate,rdson)/Iocset
Rocset=(45A*6.7mOhm)/10uA = 30K
Iocset=10uA

Gigabyte Technology		
Title: DDR POWER		
Size: Custom	Document Number: GA-B85M-D3H	Rev: 1.1
Date: Monday, July 15, 2013	Sheet 29 of 32	

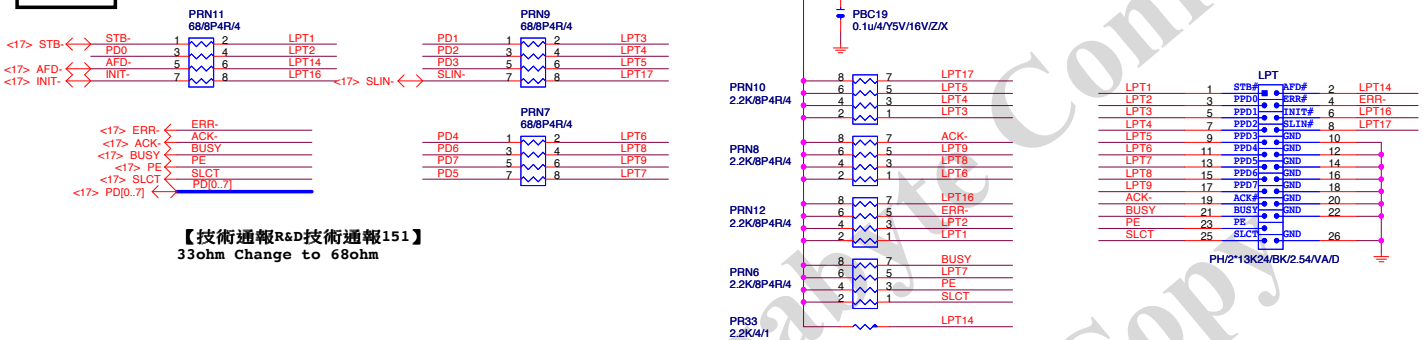
VCC1_05_ME



VCC3_ME



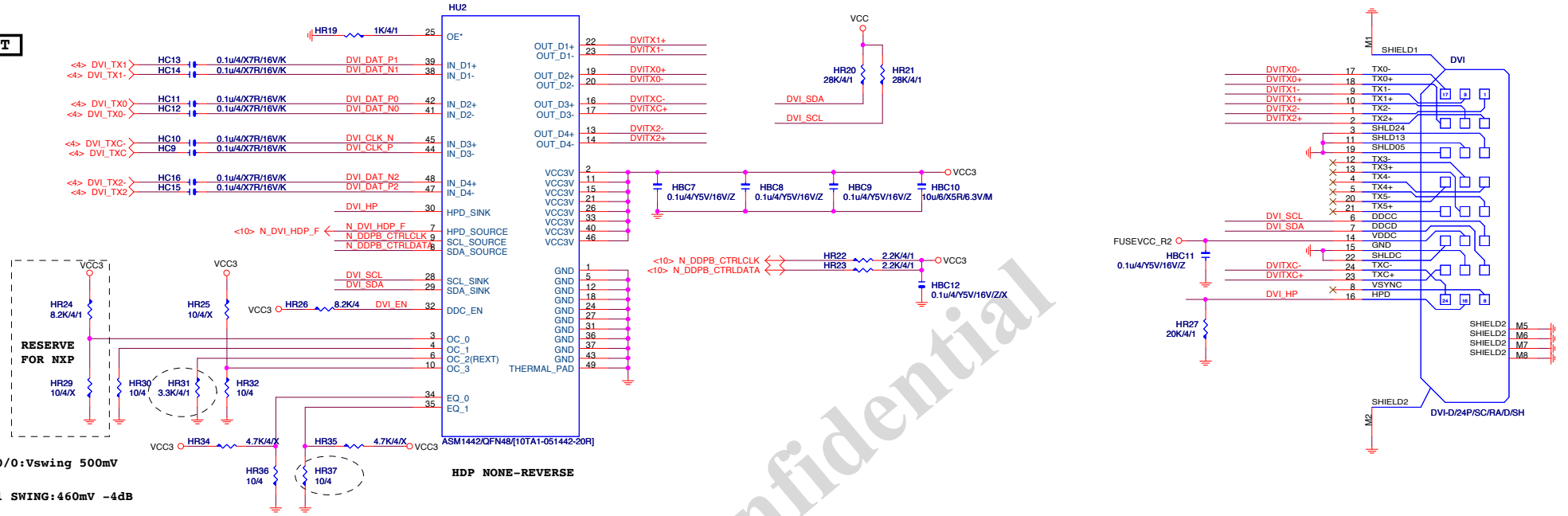
LPT PORT



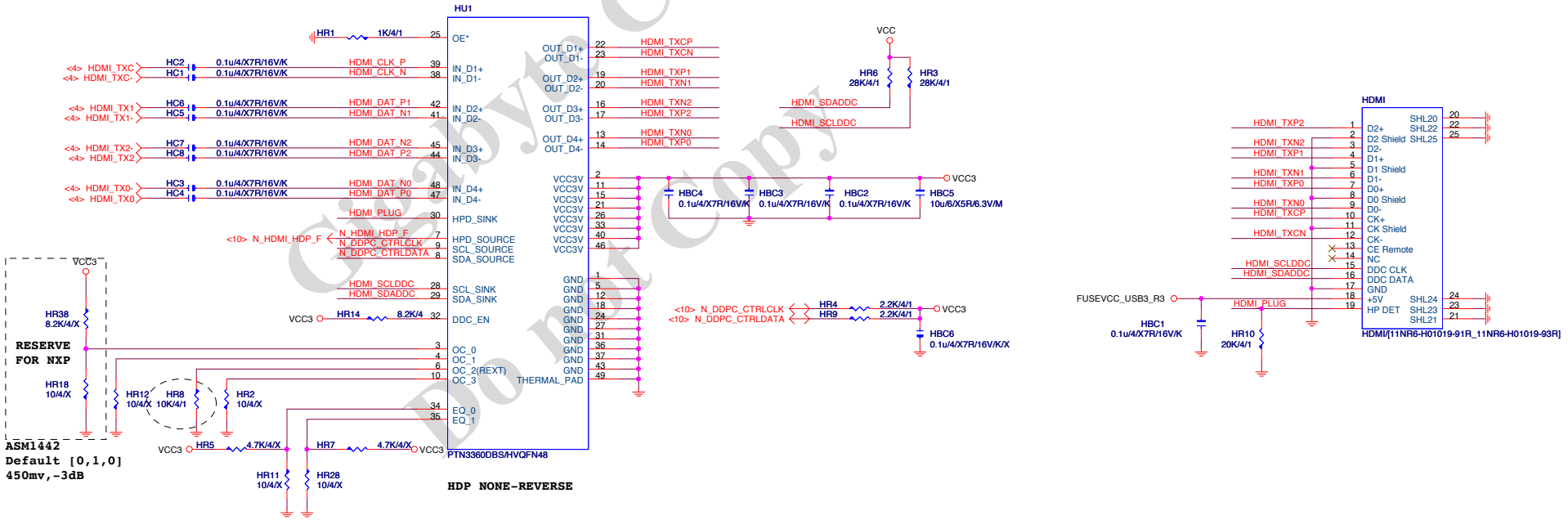
【技術通報R&D技術通報151】
33ohm Change to 68ohm

Gigabyte Technology		
Title: LPT		
Size: Custom	Document Number: GA-B85M-D3H	Rev: 1.1
Date: Monday, July 15, 2013	Sheet 30 of 32	

DVI LEVEL SHIFT



HDMI LEVEL SHIFT



【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)

Gigabyte Technology			
Title: DVI			
Size: Custom	Document Number: GA-B85M-D3H		Rev: 1.1
Date: Monday, July 15, 2013		Sheet 31 of 32	

PCIE TO PCI

PCI:5/4/5 Impedance=50 +- 15%

Co-Lay IT8893 (IT8893 CLKOUT1 N/A)

IT8892: PR24 -> 47ohm
IT8893: PR24 -> 22ohm

IT8892: PR46 -> X
IT8893: PR46 -> O

IT8892: PR19 -> O
IT8893: PR19 -> X

High: Enable PCI CLK 66MHz
Low: Disable PCI CLK 66MHz

High: PCICLK INTPUT form CLK Gen
Low: PCICLK OUTPUT form IT8893 chip

IT8892E/BX LQFP128

IT8892E/FX/S

IT8892

PCI slot

PCI slot

chipset side

PCB layout note: Close to chip

PCB layout note: Close to chip

Close to chip

Title	ITE IT8892E
Size / Document Number	Custom / GA-B85M-D3H
Rev	1.1
Date:	Monday, July 15, 2013
Sheet	32 of 32

Gigabyte Technology