Model Name: GA-B75M-HD3

Revision 1.0

SHEET	TITLE
01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	CPU_LGA1155-A
05	CPU_LGA1155-B
06	CPU_LGA1155-C
07	DDR III CHANNEL A
08	DDR III CHANNEL B
09	PCH_FDI,DMI,USB,PCIE,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*1 X2 SLOT
16	PCI SLOT1
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 ALC887-VD2
23	REAR AUDIO JACK
24	REALTEK RTL8111F-VL
25	DISCRETE POWER
26	ATX, M3 POWER
27	RT8120_CPU_VTT

SHEET	TITLE
28	VCORE ISL95836_1
29	VCORE ISL95836_2
30	RT8120_DDR POWER
31	LPT
32	DVI

Gigabyte Technology

Title: Cover Sheet

Size: Custom | Document Number: GA-B75M-HD3 | Rev: 1.0

Date: Thursday, September 20, 2012 | Sheet 1 of 32

Model Name: GA-B75M-HD3

Revision 1.0

Component value change history

2012/09/17

Data	Change Item	Reason
2012/08/15	Modify Form B75M-D3V	
2012/08/16	REMOVE ISL6609 CO-LAY	
2012/08/21	Update KB & MS	
2012/09/17	Update Rev to 1.0	

Circuit or PCB layout change

DATE	Change Item	Reason

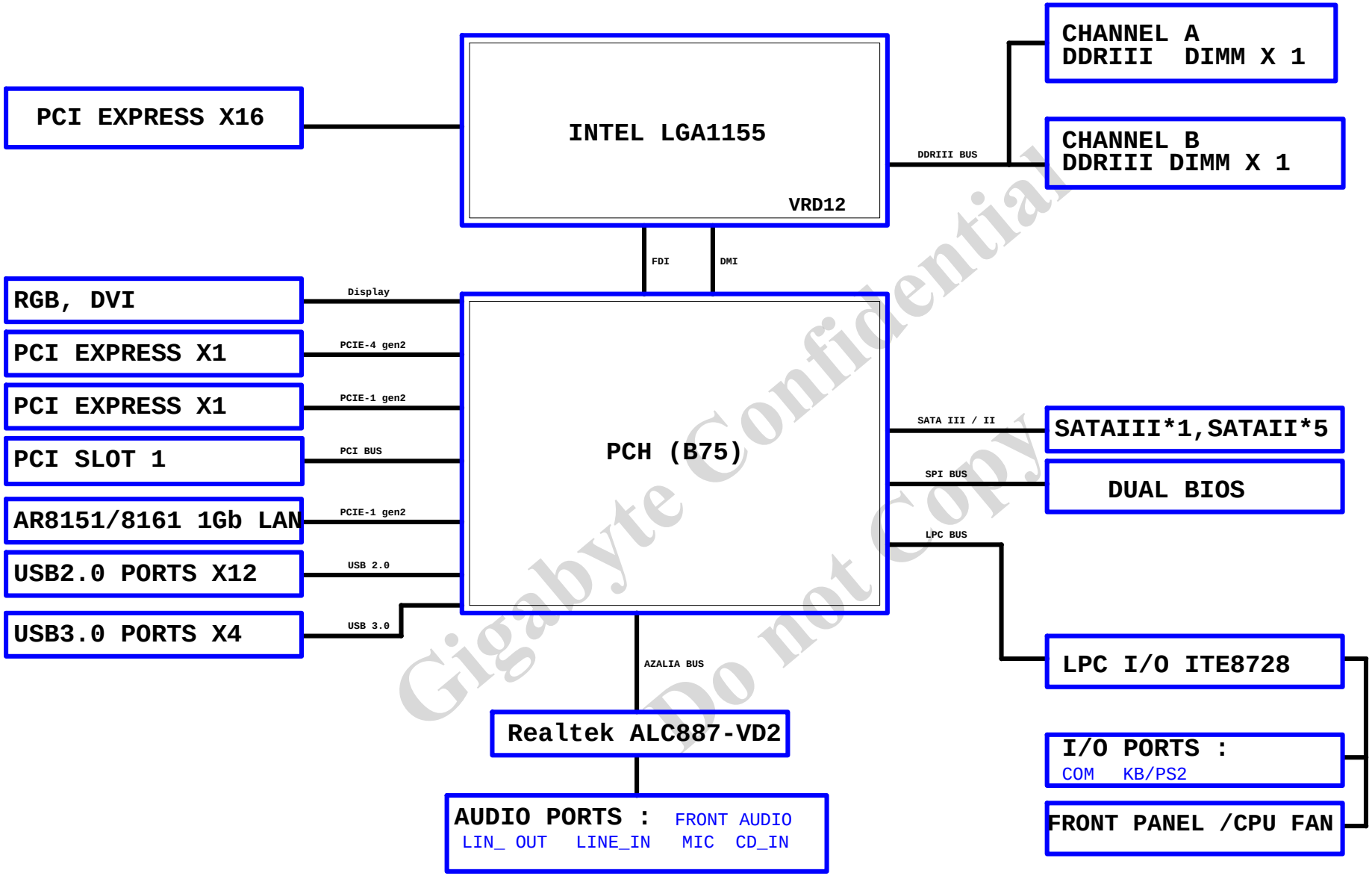
Gigabyte Technology

Title: BOM & PCB MODIFY HISTORY

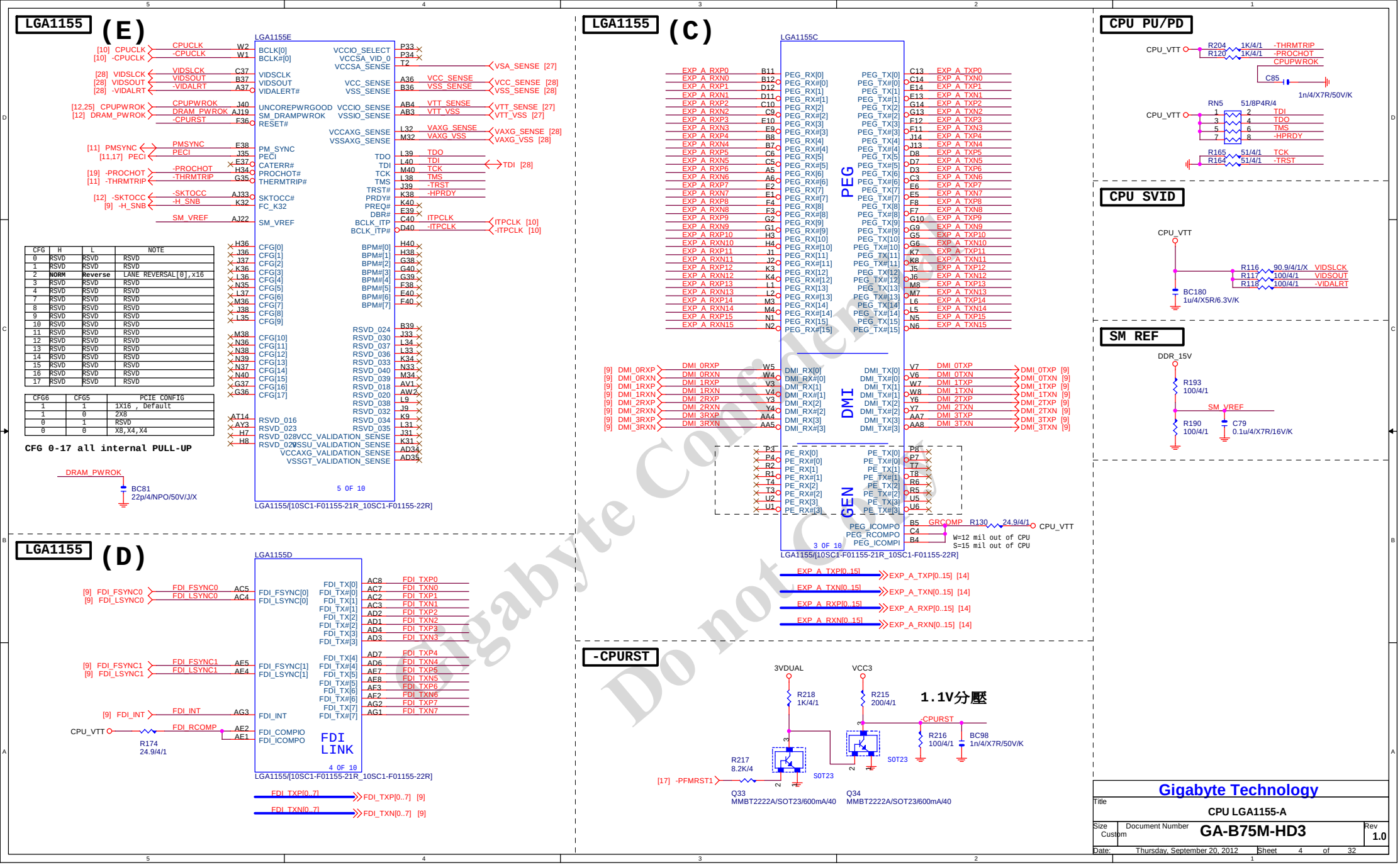
Size: Custom | Document Number: GA-B75M-HD3 | Rev: 1.0

Date: Thursday, September 20, 2012 | Sheet 2 of 32

BLOCK DIAGRAM



Gigabyte Technology		
Title: BLOCK DIAGRAM		
Size: C	Document Number: GA-B75M-HD3	Rev: 1.0
Date: Thursday, September 20, 2012	Sheet 3 of 32	



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

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

LGA1155 (A)

LGA1155A

DDR_0

1 OF 10

LGA1155/[10SC1-F01155-21R_10SC1-F01155-22R]

LGA1155 (B)

LGA1155B

DDR_1

2 OF 10

LGA1155/[10SC1-F01155-21R_10SC1-F01155-22R]

BC80 0.1u/4/X7R/16V/K

BC82 0.1u/4/X7R/16V/K

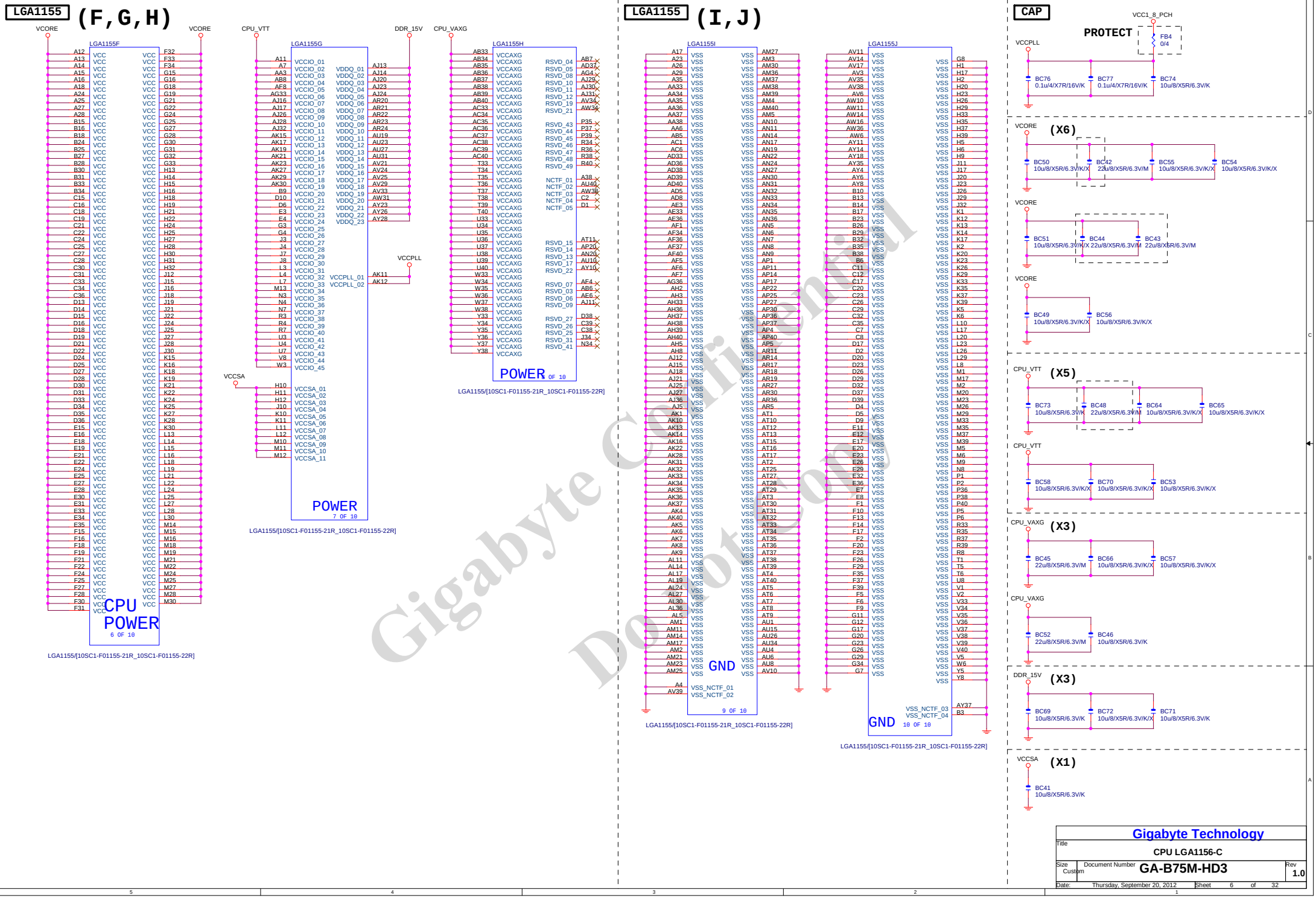
LGA1155 (CR)

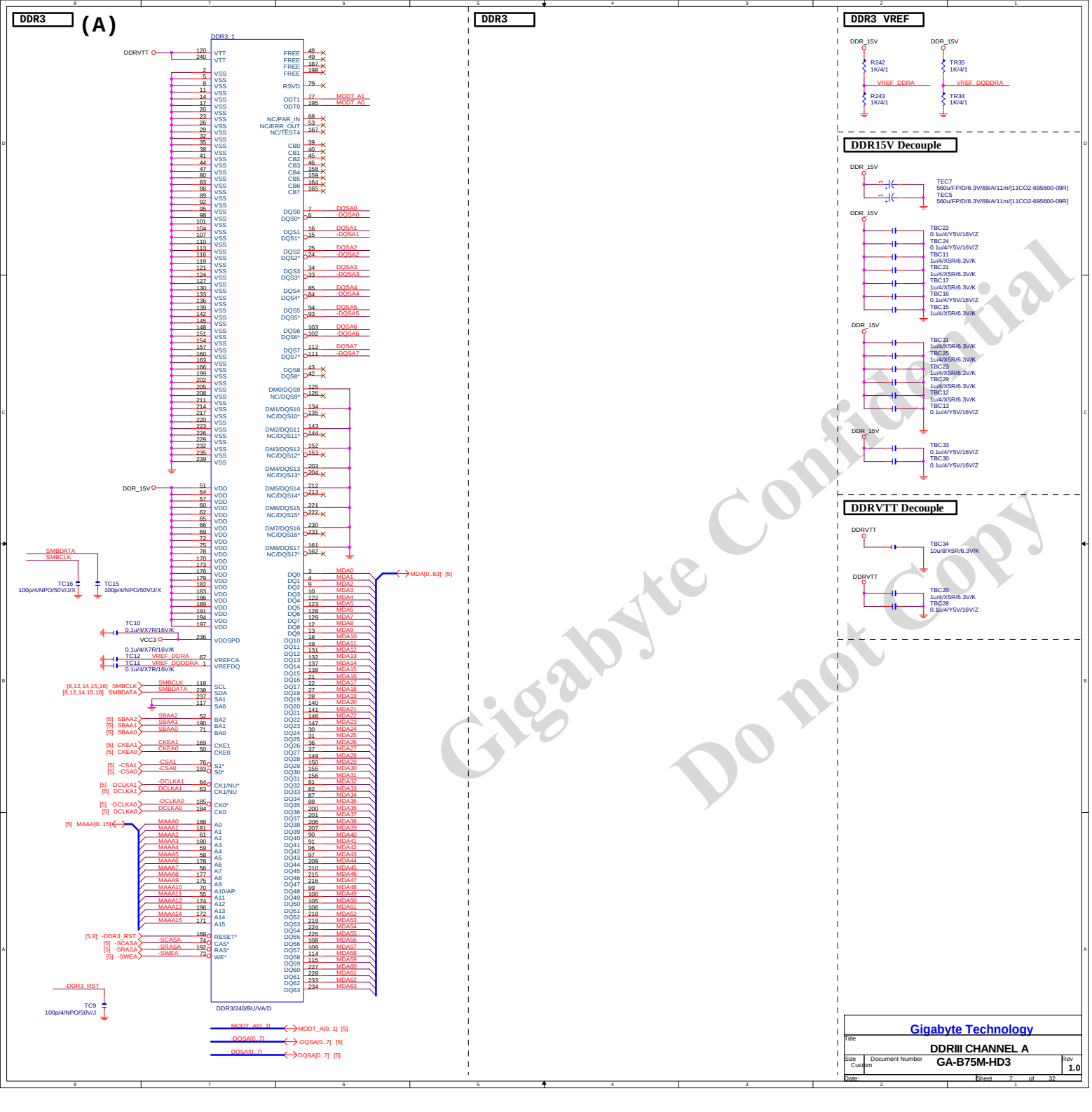
CR
CPU RETAINTION/X

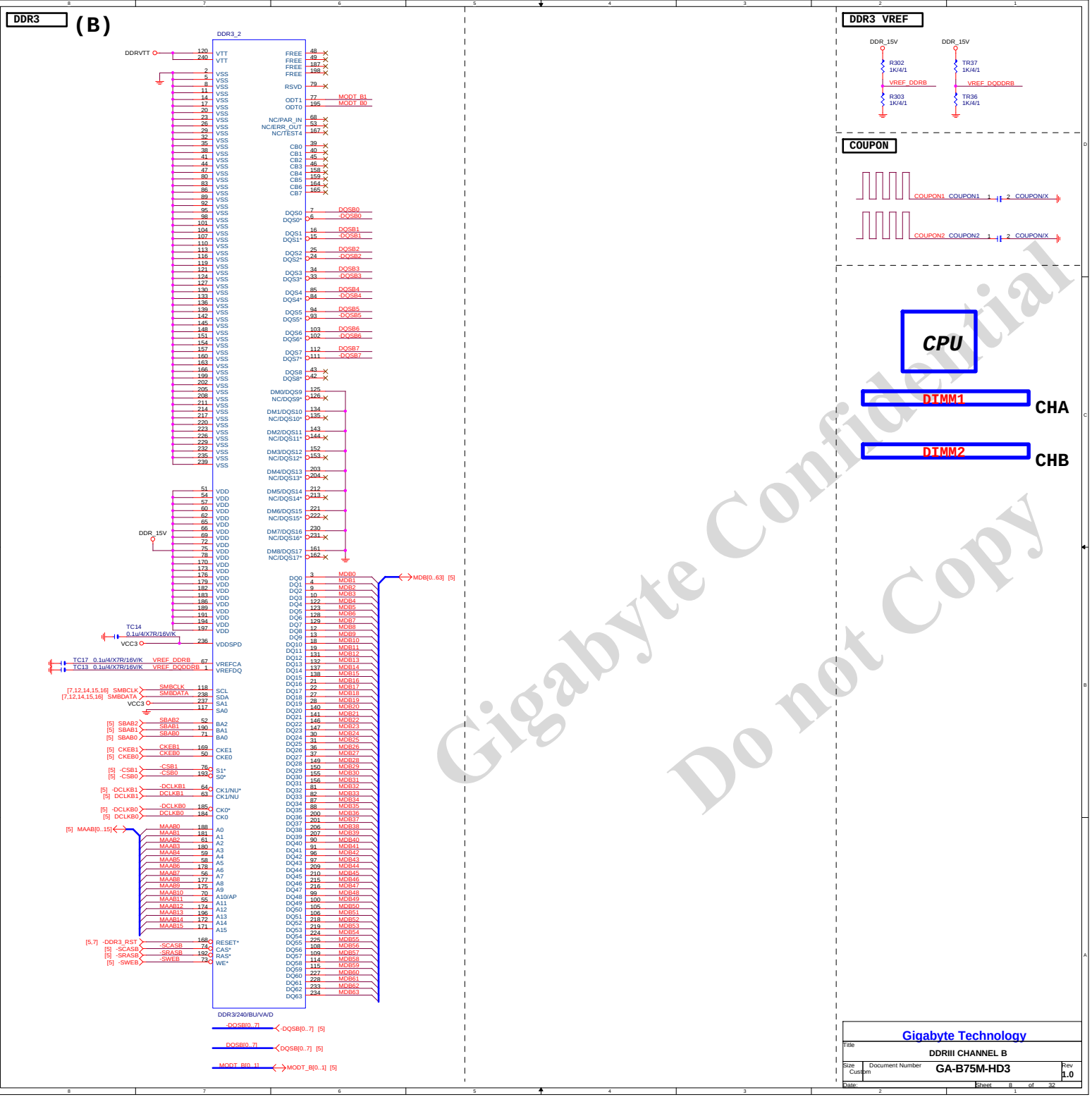
LGA1155_P

ILM_BP/1156/CSP/ILM_BP/1156/CSP/[12KRC-0F0001-05R_12KRC-0F0001-31R]

Gigabyte Technology		
Title: CPU LGA1156-B		
Size: Custom	Document Number: GA-B75M-HD3	Rev: 1.0
Date: Thursday, September 20, 2012	Sheet 5 of 32	






DDR3 (B)
DDR3_2
DDRVTT
DDR_15V
TC14 0.1u/4/X7R/16V/K
VCC3
TC17 0.1u/4/X7R/16V/K VREF_DDRB
TC13 0.1u/4/X7R/16V/K VREF_DQDDRB
[7,12,14,15,16] SMBCLK
[7,12,14,15,16] SMBDATA
[5] SBAB2
[5] SBAB1
[5] SBAB0
[5] CKEB1
[5] CKEB0
[5] -CSB1
[5] -CSB0
[5] -DCLKB1
[5] DCLKB1
[5] -DCLKB0
[5] DCLKB0
[5] MAAB[0..15]
[5,7] -DDR3_RST
[5] -SCASB
[5] -SRASB
[5] -SWEB
VTT
VSS
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*
VDD
VDDSPD
VREFCA
VREFDQ
SCL
SDA
SA1
SA0
BA2
BA1
BA0
CKE1
CKE0
S1*
S0*
CK1/NU*
CK1/NU
CK0*
CK0
A0
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10/AP
A11
A12
A13
A14
A15
RESET*
CAS*
RAS*
WE*
DQ0
DQ1
DQ2
DQ3
DQ4
DQ5
DQ6
DQ7
DQ8
DQ9
DQ10
DQ11
DQ12
DQ13
DQ14
DQ15
DQ16
DQ17
DQ18
DQ19
DQ20
DQ21
DQ22
DQ23
DQ24
DQ25
DQ26
DQ27
DQ28
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DQ31
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DQ41
DQ42
DQ43
DQ44
DQ45
DQ46
DQ47
DQ48
DQ49
DQ50
DQ51
DQ52
DQ53
DQ54
DQ55
DQ56
DQ57
DQ58
DQ59
DQ60
DQ61
DQ62
DQ63
MDB[0..63] [5]
DDR3/240/BU/VA/D
-DQSB[0..7]
DQSB[0..7]
MODT_B[0..1]
-DQSB[0..7] [5]
DQSB[0..7] [5]
MODT_B[0..1] [5]
DDR3 VREF
DDR_15V
R302 1K/4/1
R303 1K/4/1
VREF_DDRB
TR37 1K/4/1
TR36 1K/4/1
VREF_DQDDRB
COUPON
COUPON1 COUPON1
COUPON2 COUPON2
COUPON/X
CPU
DIMM1
CHA
DIMM2
CHB
Gigabyte Confidential
Do not Copy
Gigabyte Technology
Title
DDRIII CHANNEL B
Size Custom
Document Number GA-B75M-HD3
Rev 1.0
Date:
Sheet 8 of 32

PCH (B)

PCHB

DMI

DMI0RXN DMI0RXP DMI0TXN DMI0TXP DMI1RXN DMI1RXP DMI1TXN DMI1TXP DMI2RXN DMI2RXP DMI2TXN DMI2TXP DMI3RXN DMI3RXP DMI3TXN DMI3TXP DMI_IRCOMP DMI_ZCOMP

[4] DMI_0TXN → DMI_0TXN D33
[4] DMI_0TXP → DMI_0TXP B33
[4] DMI_0RXN → DMI_0RXN J36
[4] DMI_0RXP → DMI_0RXP H36
[4] DMI_1TXN → DMI_1TXN A36
[4] DMI_1TXP → DMI_1TXP B35
[4] DMI_1RXN → DMI_1RXN P38
[4] DMI_1RXP → DMI_1RXP R38
[4] DMI_2TXN → DMI_2TXN B37
[4] DMI_2TXP → DMI_2TXP C36
[4] DMI_2RXN → DMI_2RXN H38
[4] DMI_2RXP → DMI_2RXP J38
[4] DMI_3TXN → DMI_3TXN E37
[4] DMI_3TXP → DMI_3TXP F38
[4] DMI_3RXN → DMI_3RXN M41
[4] DMI_3RXP → DMI_3RXP P41
DMI_COMP → B31
VCC1_05_PCH — R232 49.9/4/1 — E31

-SRCCLK_PCH → P33
SRCCLK_PCH → R33
CLKIN_DMI_N
CLKIN_DMI_P

USB

USBP0N USBP0P USBP1N USBP1P USBP2N USBP2P USBP3N USBP3P USBP4N USBP4P USBP5N USBP5P USBP6N USBP6P USBP7N USBP7P USBP8N USBP8P USBP9N USBP9P USBP10N USBP10P USBP11N USBP11P USBP12N USBP12P USBP13N USBP13P

BF36 -USBP0 → -USBP0 [21]
BD36 +USBP0 → +USBP0 [21]
BC33 -USBP1 → -USBP1 [21]
BA33 +USBP1 → +USBP1 [21]
BM33 -USBP2 → -USBP2 [18]
BM35 +USBP2 → +USBP2 [18]
BT33 -USBP3 → -USBP3 [18]
BU32 +USBP3 → +USBP3 [18]
BR32 -USBP4 → -USBP4 [21]
BT31 +USBP4 → +USBP4 [21]
BN29 -USBP5 → -USBP5 [21]
BM30 +USBP5 → +USBP5 [21]
BK33
BJ33
BF31
BD31

B75: USB2.0 X12 [6/7 PORT-->N/A]

BN27 -USBP8 → -USBP8 [21]
BR29 +USBP8 → +USBP8 [21]
BR26 -USBP9 → -USBP9 [21]
BT27 +USBP9 → +USBP9 [21]
BK25 -USBP10 → -USBP10 [24]
BJ25 +USBP10 → +USBP10 [24]
BJ31 -USBP11 → -USBP11 [24]
BK31 +USBP11 → +USBP11 [24]
BF27 -USBP12 → -USBP12 [18]
BD27 +USBP12 → +USBP12 [18]
BJ27 -USBP13 → -USBP13 [18]
BK27 +USBP13 → +USBP13 [18]

PCIE

PCIEX1_2

[15] PCIE_IN1 → J20
[15] PCIE_IP1 → L20
[15] PCIE_TN1 → 0.1u/4/X7R/16V/K C170 PET_N1 → F25
[15] PCIE_TP1 → 0.1u/4/X7R/16V/K C171 PET_P1 → F23

PERN1 PERP1 PETN1 PETP1 PERN2 PERP2 PETN2 PETP2 PERN3 PERP3 PETN3 PETP3 PERN4 PERP4 PETN4 PETP4 PERN5 PERP5 PETN5 PETP5 PERN6 PERP6 PETN6 PETP6 PERN7 PERP7 PETN7 PETP7 PERN8 PERP8 PETN8 PETP8

P20 R20 C22 A22 H17 J17 E21 B21 P17 M17 F18 E17 N15 M15 B17 C16 J15 L15 A16 B15 J12 H12 F15 F13 H10 J10 B13 D13

PCIEX1_1 LAN

[24] LA_ML_IN → N15
[24] LA_ML_IP → M15
[24] LA_ML_ON → B17
[24] LA_ML_OP → C16
[15] PCIE_IN6 → J15
[15] PCIE_IP6 → L15
[15] PCIE_TN6 → 0.1u/4/X7R/16V/K C33 PET_N6 → A16
[15] PCIE_TP6 → 0.1u/4/X7R/16V/K C31 PET_P6 → B15

OC0#/GPIO59 OC1#/GPIO40 OC2#/GPIO41 OC3#/GPIO42 OC4#/GPIO43 OC5#/GPIO9 OC6#/GPIO10 OC7#/GPIO14

BM43 -USBOC_F → -USBOC_F [21] — BC121 0.1u/4/X7R/16V/K
BD41
BG41
BK43
BP43 -USBOC_R → -USBOC_R [18] — BC126 0.1u/4/X7R/16V/K
BJ41
BT45
BM45 GPIO14

USBRBIAS# USBRBIAS

BP25 USBRBIAS R229 22.6/4/1
BM25

CLKIN_DOT_96N CLKIN_DOT_96P

BD38 -DOTCLK
BF38 DOTCLK

DMI2RBIAS

A32 R233 750/4/1

2 OF 11

BD82B75/S/[10HB1-030B75-10R]

PCH (G)

PCHG

FDILINK

USB3_RXN1 USB3_RXP1 USB3_TXN1 USB3_TXP1 USB3_RXN2 USB3_RXP2 USB3_TXN2 USB3_TXP2 USB3_RXN3 USB3_RXP3 USB3_TXN3 USB3_TXP3 USB3_RXN4 USB3_RXP4 USB3_TXN4 USB3_TXP4

[21] PCH_USB3_RXN1 → PCH_USB3_RXN1 H31
[21] PCH_USB3_RXP1 → PCH_USB3_RXP1 J31
[21] PCH_USB3_TXN1 → PCH_USB3_TXN1 C29
[21] PCH_USB3_TXP1 → PCH_USB3_TXP1 E29
[21] PCH_USB3_RXN2 → PCH_USB3_RXN2 J27
[21] PCH_USB3_RXP2 → PCH_USB3_RXP2 L27
[21] PCH_USB3_TXN2 → PCH_USB3_TXN2 F28
[21] PCH_USB3_TXP2 → PCH_USB3_TXP2 E27
[18] PCH_USB3_RXN3 → PCH_USB3_RXN3 J25
[18] PCH_USB3_RXP3 → PCH_USB3_RXP3 L25
[18] PCH_USB3_TXN3 → PCH_USB3_TXN3 C26
[18] PCH_USB3_TXP3 → PCH_USB3_TXP3 B27
[18] PCH_USB3_RXN4 → PCH_USB3_RXN4 L22
[18] PCH_USB3_RXP4 → PCH_USB3_RXP4 J22
[18] PCH_USB3_TXN4 → PCH_USB3_TXN4 B25
[18] PCH_USB3_TXP4 → PCH_USB3_TXP4 D25

FDI_RXN0 FDI_RXP0 FDI_RXN1 FDI_RXP1 FDI_RXN2 FDI_RXP2 FDI_RXN3 FDI_RXP3 FDI_RXN4 FDI_RXP4 FDI_RXN5 FDI_RXP5 FDI_RXN6 FDI_RXP6 FDI_RXN7 FDI_RXP7 FDI_FSYNC0 FDI_LSYNC0 FDI_FSYNC1 FDI_LSYNC1 FDI_INT

C42 FDI_TXN0
B43 FDI_TXP0
F45 FDI_TXN1
F43 FDI_TXP1
H41 FDI_TXN2
J41 FDI_TXP2
C46 FDI_TXN3
D47 FDI_TXP3
B45 FDI_TXN4
A46 FDI_TXP4
B47 FDI_TXN5
C49 FDI_TXP5
J43 FDI_TXN6
H43 FDI_TXP6
M43 FDI_TXN7
P43 FDI_TXP7

B51 FDI_FSYNC0 → FDI_FSYNC0 [4]
E49 FDI_LSYNC0 → FDI_LSYNC0 [4]
C52 FDI_FSYNC1 → FDI_FSYNC1 [4]
D51 FDI_LSYNC1 → FDI_LSYNC1 [4]
H46 FDI_INT → FDI_INT [4]

7 OF 11

BD82B75/S/[10HB1-030B75-10R]

FDI_TXP[0..7] → FDI_TXP[0..7] [4]
FDI_TXN[0..7] → FDI_TXN[0..7] [4]

-USBOC F/R PROTECT

[12] GPIO11 — 3 — D4 BAT54A/SOT23/200mA — 1 -USBOC_F — 2 -USBOC_R

R238 8.2K/4
GPIO14 — 3VDUAL

PCH CLK PD

SRCCLK_PCH R414 8.2K/4
-SRCCLK_PCH R416 8.2K/4

DOTCLK R417 8.2K/4
-DOTCLK R419 8.2K/4

short to GND in non graphic SKU

PCH H/S

LOW COST ICH7 HEATSINK
BGAHSINK_SB-N

SB_HEATSIN

1 2 PCH_HS **GRAY HS**

PCH_HS/[12SP2-030005-41R_12SP2-030005-42R_12SP2-030005-43R]

PCH (E)

PCHE

NV_CLE → M48

RESERVED_29 DF_TVS RESERVED_6 RESERVED_4 RESERVED_3 RESERVED_2 RESERVED_1

M48 R47 Y41 M50 M49 U43 J57

RESERVED_22 RESERVED_21 RESERVED_14 RESERVED_13 RESERVED_12 RESERVED_11 RESERVED_10 RESERVED_9 RESERVED_8 RESERVED_7 RESERVED_20 RESERVED_19 RESERVED_18 RESERVED_17 RESERVED_16 RESERVED_15

AB50 Y50 AB49 AB44 U49 R44 U50 U46 U44 H50 K46 L56 J55 F53 H52 E52

RESERVED_28 RESERVED_27 RESERVED_26 RESERVED_25

K50 K49 AB46 G56

RESERVED_24 RESERVED_23

Y44 L53

RESERVED_5 — R50 NV_RCOMP — R256 33/4

32.4/4/1 for ONFI enable

NVRAM

5 OF 11

BD82B75/S/[10HB1-030B75-10R]

NVRAM PU

VCC1_8_PCH
R282 1K/4/1
NV_CLE
R257 8.2K/4
-H_SNB [4]
BC139 0.1u/4/X7R/16V/K

USB TABLE

USB OC#	Configure
OC0#	USB0,1(F_USB30)
OC1#	USB2,3(USB30_20)
OC2#	USB4,5(F_USB1)
OC3#	USB6,7(B75:N/A)
OC4#	USB8,9(F_USB2)
OC5#	USB10,11(USB_LAN)
OC6#	USB12,13(KB_USB)
OC7#	N/A

Gigabyte Technology

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

Size: Custom | Document Number: GA-B75M-HD3 | Rev: 1.0

Date: Thursday, September 20, 2012 | Sheet 9 of 32

PCH (F)

PCHF

[32] DVI_HDP_F — DVI_HDP_F — T1 — DDPB_HPD
N2 — DDPC_HPD
[32] HDMI_HDP_F — M1 — DDPD_HPD
R8 — DDPB_AUXP
R9 — DDPB_AUXN
U14 — DDPC_AUXP
U12 — DDPC_AUXN
N6 — DDPD_AUXP
R6 — DDPD_AUXN

[32] DVI_TX2 — DVI_TX2 — R14 — DDPB_0P
[32] DVI_TX2- — DVI_TX2- — R12 — DDPB_0N
[32] DVI_TX1 — DVI_TX1 — M11 — DDPB_1P
[32] DVI_TX1- — DVI_TX1- — M12 — DDPB_1N
[32] DVI_TX0 — DVI_TX0 — H8 — DDPB_2P
[32] DVI_TX0- — DVI_TX0- — K8 — DDPB_2N
[32] DVI_TXC — DVI_TXC — L5 — DDPB_3P
[32] DVI_TXC- — DVI_TXC- — M3 — DDPB_3N
L2 — DDPC_0P
J3 — DDPC_0N
G2 — DDPC_1P
G4 — DDPC_1N
F3 — DDPC_2P
F5 — DDPC_2N
E4 — DDPC_3P
E2 — DDPC_3N

[32] HDMI_TX2 — D5 — DDPD_0P
[32] HDMI_TX2- — B5 — DDPD_0N
[32] HDMI_TX1 — C6 — DDPD_1P
[32] HDMI_TX1- — D7 — DDPD_1N
[32] HDMI_TX0 — B7 — DDPD_2P
[32] HDMI_TX0- — C9 — DDPD_2N
[32] HDMI_TXC — E11 — DDPD_3P
[32] HDMI_TXC- — B11 — DDPD_3N

U2 — SDVO_INTP
T3 — SDVO_INTN
W3 — SDVO_STALLP
U5 — SDVO_STALLN
U8 — SDVO_TVCLKINP
U9 — SDVO_TVCLKINN

6 0F 11

BD82B75/S/[10HB1-030B75-10R]

CRT_HSYNC — AR4 — H_SYNC — R212 — 33/4 — GHSYNC
CRT_VSYNC — AR2 — V_SYNC — R213 — 33/4 — GVSYNC
CRT_RED — AN6 — R
CRT_GREEN — AN2 — G
CRT_BLUE — AM1 — B
CRT_IRTN — AM6
CRT_DDC_DATA — AW1 — DDCDATA
CRT_DDC_CLK — AW3 — DDCCLK
DAC_IREF — AT3 — VGA_RSET — R211 — 1K/4/1
Pop 0/4 for non graphic skus

TP6 — Y18
TP7 — Y17
TP8 — AB18
TP9 — AB17

DDPC_CTRLCLK — AL12
DDPC_CTRLDATA — AL14
DDPD_CTRLCLK — AL9 — DDPD_CTRLCLK [32]
DDPD_CTRLDATA — AL8 — DDPD_CTRLDATA [32]
SDVO_CTRLCLK — AL15 — DDPB_CTRLCLK — DDPB_CTRLCLK [32]
SDVO_CTRLDATA — AL17 — DDPB_CTRLDATA — DDPB_CTRLDATA [32]

PCH (F)

PCHH

[17] LPC33 — R201 — 33/4 — AT11 — CLKOUT_PCI0
[11] PCH33 — R405 — 33/4 — AN14 — CLKOUT_PCI1
[16] PCLK0 — R453 — 33/4 — AT12 — CLKOUT_PCI2
AT17 — CLKOUT_PCI3
AT14 — CLKOUT_PCI4

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

AT9 — CLKOUTFLEX0/GPIO64
BA5 — CLKOUTFLEX1/GPIO65
AW5 — CLKOUTFLEX2/GPIO66
[17] LPCCLK48 — R209 — native 48Mhz — 33/4 — PCH_48M — BA2 — CLKOUTFLEX3/GPIO67

VCC1_05_PCH — R206 — 90.9/4/1 — CLK_RCOMP — AL2 — XCLK_RCOMP
PCHCLK14 — AN8 — REFCLK14IN

XTALO_PCH — AJ5 — XTAL25_OUT
XTALI_PCH — AJ3 — XTAL25_IN

XTALI_PCH — R197 1M/4 — X1 — XTALO_PCH
25M/20p/30ppm/49US/20/D
C81 27p/4/NPO/50V/J
C82 27p/4/NPO/50V/J

8 0F 11

BD82B75/S/[10HB1-030B75-10R]

CLKIN_GND1_N — R27 — -PCHCLK
CLKIN_GND1_P — P27 — PCHCLK
CLKIN_GND0_N — W53 — -CLK_GND
CLKIN_GND0_P — V52 — CLK_GND
CLKOUT_ITPXDP_N — R52 — -CLK_ITP — -ITPCLK [4]
CLKOUT_ITPXDP_P — N52 — CLK_ITP — ITPCLK [4]
CLKOUT_PCIE7N — AE2
CLKOUT_PCIE7P — AF1
CLKOUT_DMI_N — P31 — -CLK_CPU — -CPUCLK [4]
CLKOUT_DMI_P — R31 — CLK_CPU — CPUCLK [4]
CLKOUT_DP_N — N56
CLKOUT_DP_P — M55

CLKOUT_PCIE0N — AE6 — -SRCCLK0 — -SRCCLK_PCIEX11 [15]
CLKOUT_PCIE0P — AC6 — SRCCLK0 — SRCCLK_PCIEX11 [15] — **PCIEX1_1**
CLKOUT_PCIE1N — AA5 — -SRCCLK1 — -SRCCLK_PCIEX12 [15]
CLKOUT_PCIE1P — W5 — SRCCLK1 — SRCCLK_PCIEX12 [15] — **PCIEX1_2**
CLKOUT_PCIE2N — AB12
CLKOUT_PCIE2P — AB14
CLKOUT_PCIE3N — AB9 — -SRCCLK3 — LA_-SRCCLK_LAN [24]
CLKOUT_PCIE3P — AB8 — SRCCLK3 — LA_SRCCLK_LAN [24] — **LAN**
CLKOUT_PCIE4N — Y9
CLKOUT_PCIE4P — Y8
CLKOUT_PCIE5N — AF3
CLKOUT_PCIE5P — AG2
CLKOUT_PCIE6N — AB3
CLKOUT_PCIE6P — AA2

CLKOUT_PEG_A_N — AG8 — -SRCCLKA — -SRCCLK_PCIEX16 [14]
CLKOUT_PEG_A_P — AG9 — SRCCLKA — SRCCLK_PCIEX16 [14] — **PCIEX16 FOR OC**
CLKOUT_PEG_B_N — AE12
CLKOUT_PEG_B_P — AE11

PCH CLK PD

PCHCLK14 R210 8.2K/4
-CLK_GND R278 8.2K/4
CLK_GND R279 8.2K/4
-PCHCLK R412 8.2K/4
PCHCLK R411 8.2K/4

VGA DDC

VCC3 — R70 2.2K/4/1 — R73 2.2K/4/1 — DDCDATA
VCC — R68 1K/4/1 — Q2 2N7002/SOT23/25pF/5 — R69 2.2K/4/1 — R72 2.2K/4/1 — VGADDCDATA
GVSYNC — C22 100p/4/NPO/50V/J
GHSYNC — C20 100p/4/NPO/50V/J
VCC — Q3 2N7002/SOT23/25pF/5 — VGADDCCLK
DDCCLK — R71 1K/4/1 — SOT23

VGA CONNECTOR

FUSEVCC_R
BC9 0.1u/4/X7R/16V/K/X
VGA
VGA_R
VGA_G
VGA_B
VGADDCDATA
GHSYNC
GVSYNC
VGADDCCLK

VGA/BU/SC/RA/D/2/HR/[11NR6-102015-R1R]

VGA ESD

ESD3
VGADDCDATA — VGADDCCLK
VCC
GHSYNC — GVSYNC
AOZ8902CIL/SOT23-6
SSOP6_ESD

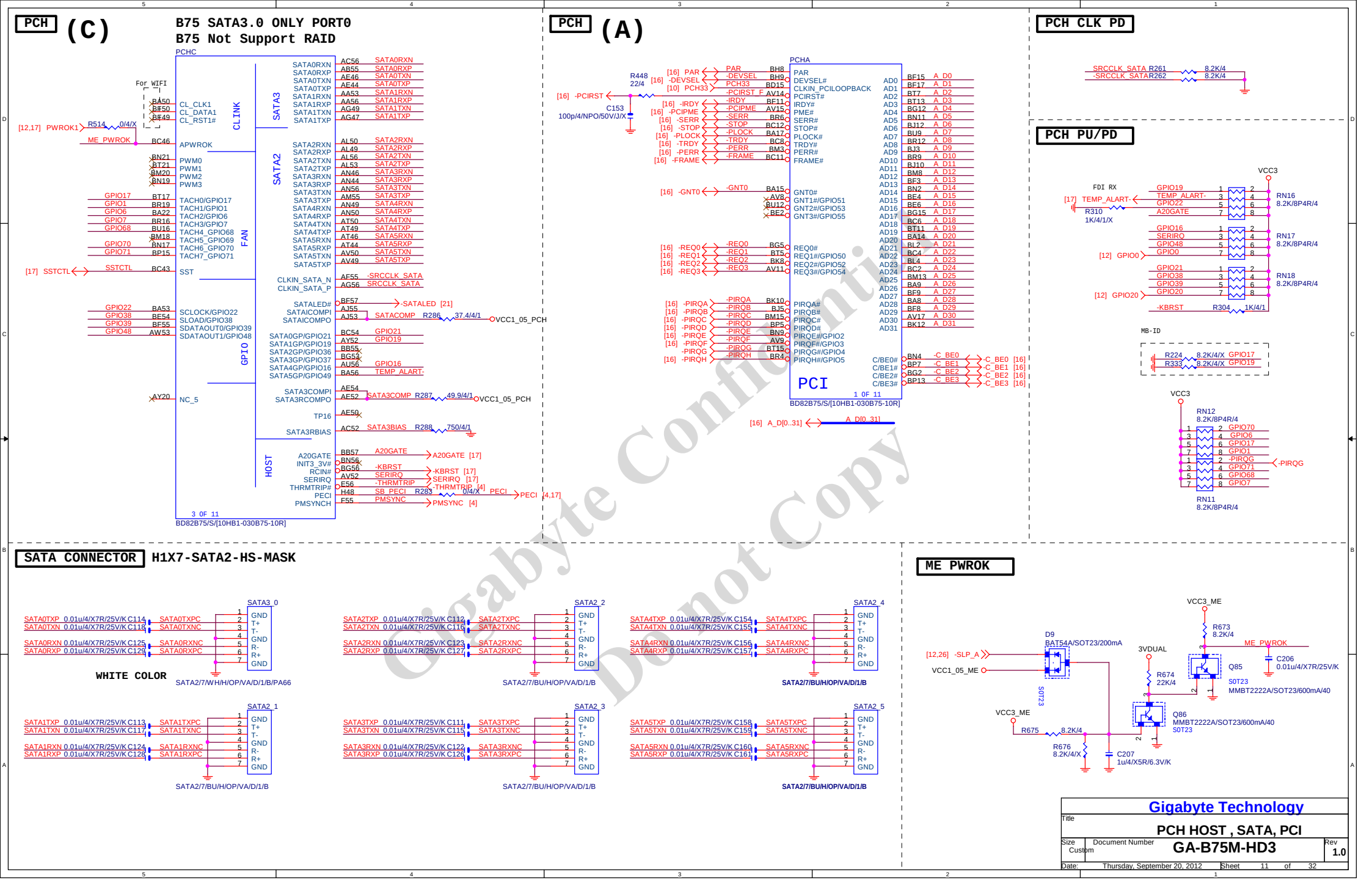
ESD4
B — R
VCC3
G
AOZ8902CIL/SOT23-6

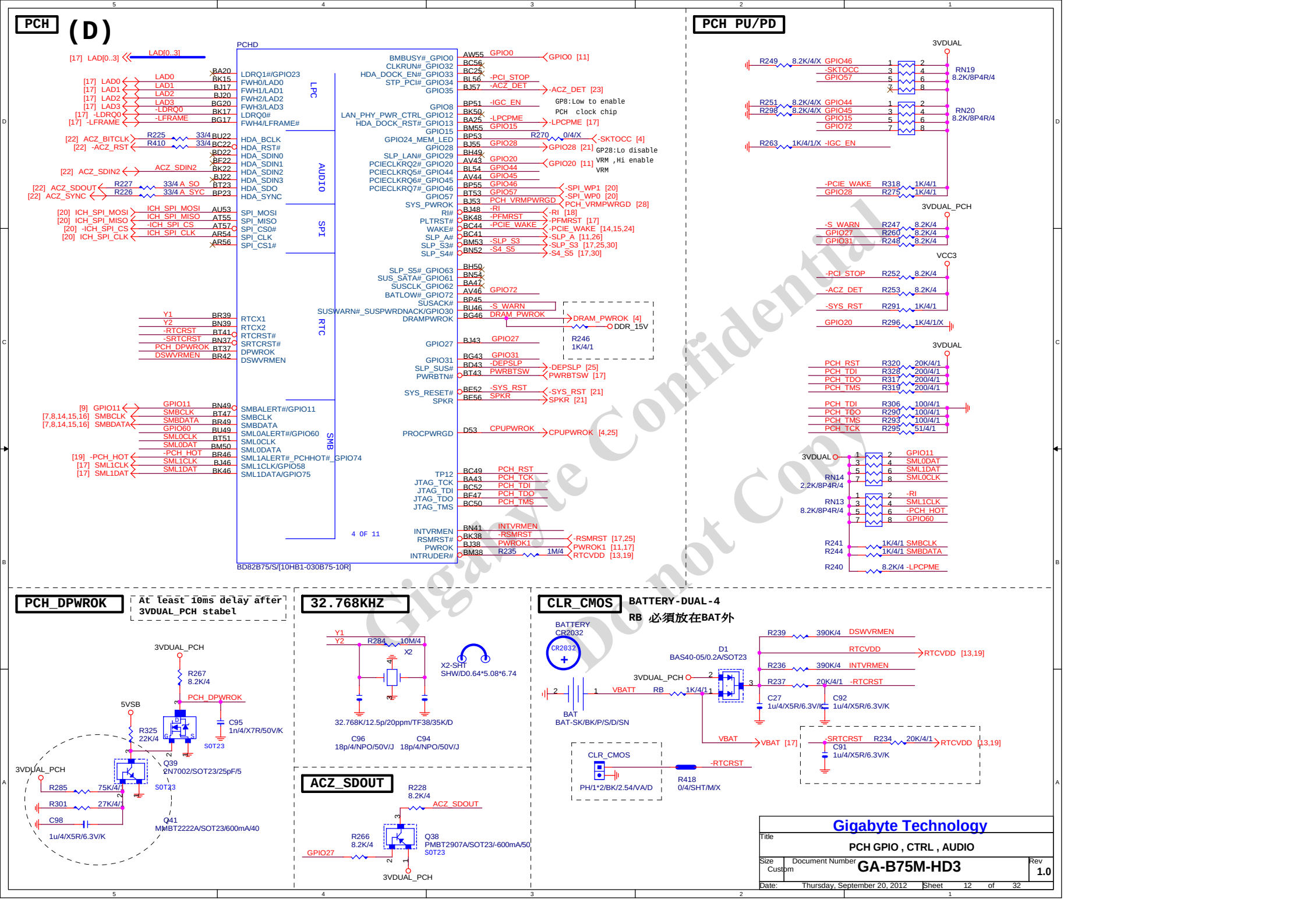
VGA DDC

R — FB1 — 60/4/3A/S — VGA_R
G — FB2 — 60/4/3A/S — VGA_G
B — FB3 — 60/4/3A/S — VGA_B
R53 75/4/1 — R55 75/4/1 — R54 75/4/1
C17 C18 C19 — 10p/4/NPO/50V/J
C13 C14 C15 — 22p/4/NPO/50V/J

Close to Filter

Gigabyte Technology		
Title: PCH DISPLAY ,CLK BUFFER		
Size: Custom	Document Number: GA-B75M-HD3	Rev: 1.0
Date: Thursday, September 20, 2012	Sheet 10 of 32	




PCH (D)
PCHD
LAD[0..3]
LDRQ1#/GPIO23
FWH0/LAD0
FWH1/LAD1
FWH2/LAD2
FWH3/LAD3
LDRQ0#
FWH4/LFRAME#
LPC
HDA_BCLK
HDA_RST#
HDA_SDIN0
HDA_SDIN1
HDA_SDIN2
HDA_SDIN3
HDA_SDO
HDA_SYNC
AUDIO
SPI_MOSI
SPI_MISO
SPI_CS0#
SPI_CLK
SPI_CS1#
SPI
RTCX1
RTCX2
RTCRST#
SRTCRST#
DPWROK
DSWVRMEN
RTC
SMBALERT#/GPIO11
SMBCLK
SMBDATA
SML0ALERT#/GPIO60
SML0CLK
SML0DATA
SML1ALERT#_PCHHOT#_GPIO74
SML1CLK/GPIO58
SML1DATA/GPIO75
SMB
4 OF 11
BD82B75/S/[10HB1-030B75-10R]
BMBUSY#_GPIO0
CLKRUN#_GPIO32
HDA_DOCK_EN#_GPIO33
STP_PCI#_GPIO34
GPIO35
GPIO8
LAN_PHY_PWR_CTRL_GPIO12
HDA_DOCK_RST#_GPIO13
GPIO15
GPIO24_MEM_LED
GPIO28
SLP_LAN#_GPIO29
PCIECLKRQ2#_GPIO20
PCIECLKRQ5#_GPIO44
PCIECLKRQ6#_GPIO45
PCIECLKRQ7#_GPIO46
GPIO57
SYS_PWROK
RI#
PLTRST#
WAKE#
SLP_A#
SLP_S3#
SLP_S4#
SLP_S5#_GPIO63
SUS_STAT#_GPIO61
SUSCLK_GPIO62
BATLOW#_GPIO72
SUSACK#
SUSWARN#_SUSPWRDNACK/GPIO30
DRAMPWROK
GPIO27
GPIO31
SLP_SUS#
PWRBTN#
SYS_RESET#
SPKR
PROCPWRGD
TP12
JTAG_TCK
JTAG_TDI
JTAG_TDO
JTAG_TMS
INTVRMEN
RSMRST#
PWROK
INTRUDER#
GPIO0 [11]
-PCI_STOP
-ACZ_DET [23]
GP8:Low to enable PCH clock chip
-IGC_EN
-LPCPME
-LPCPME [17]
GPIO15
R270 0/4/X
-SKTOCC [4]
GPIO28
GPIO28 [21]
GP28:Lo disable VRM ,Hi enable VRM
GPIO20
GPIO20 [11]
GPIO44
GPIO45
GPIO46
GPIO57
-SPI_WP1 [20]
-SPI_WP0 [20]
PCH_VRMPWRGD
PCH_VRMPWRGD [28]
-RI
-RI [18]
-PFMRST
-PFMRST [17]
-PCIE_WAKE
-PCIE_WAKE [14,15,24]
-SLP_A [11,26]
-SLP_S3
-SLP_S3 [17,25,30]
-S4_S5
-S4_S5 [17,30]
GPIO72
-S_WARN
DRAM_PWROK
DRAM_PWROK [4]
DDR_15V
R246 1K/4/1
GPIO27
GPIO31
-DEPSLP
-DEPSLP [25]
PWRBTSW
PWRBTSW [17]
-SYS_RST
-SYS_RST [21]
SPKR
SPKR [21]
CPUPWROK
CPUPWROK [4,25]
PCH_RST
PCH_TCK
PCH_TDI
PCH_TDO
PCH_TMS
INTVRMEN
-RSMRST
-RSMRST [17,25]
PWROK1
PWROK1 [11,17]
RTCVDD
RTCVDD [13,19]
R235 1M/4
PCH PU/PD
3VDUAL
R249 8.2K/4/X GPIO46
-SKTOCC
GPIO57
RN19 8.2K/8P4R/4
R251 8.2K/4/X GPIO44
R298 8.2K/4/X GPIO45
GPIO15
GPIO72
RN20 8.2K/8P4R/4
R263 1K/4/1/X -IGC_EN
-PCIE_WAKE R318 1K/4/1
GPIO28 R275 1K/4/1
3VDUAL_PCH
-S_WARN R247 8.2K/4
GPIO27 R260 8.2K/4
GPIO31 R248 8.2K/4
VCC3
-PCI_STOP R252 8.2K/4
-ACZ_DET R253 8.2K/4
-SYS_RST R291 1K/4/1
GPIO20 R296 1K/4/1/X
3VDUAL
PCH_RST R320 20K/4/1
PCH_TDI R328 200/4/1
PCH_TDO R317 200/4/1
PCH_TMS R319 200/4/1
PCH_TDI R306 100/4/1
PCH_TDO R290 100/4/1
PCH_TMS R293 100/4/1
PCH_TCK R295 51/4/1
3VDUAL
RN14 2.2K/8P4R/4
GPIO11
SML0DAT
SML1DAT
SML0CLK
RN13 8.2K/8P4R/4
-RI
SML1CLK
-PCH_HOT
GPIO60
R241 1K/4/1 SMBCLK
R244 1K/4/1 SMBDATA
R240 8.2K/4 -LPCPME
PCH_DPWROK
At least 10ms delay after 3VDUAL_PCH stabel
3VDUAL_PCH
R267 8.2K/4
PCH_DPWROK
5VSB
R325 22K/4
C95 1n/4/X7R/50V/K
SOT23
Q39 2N7002/SOT23/25pF/5
SOT23
R285 75K/4/1
R301 27K/4/1
C98 1u/4/X5R/6.3V/K
Q41 MMBT2222A/SOT23/600mA/40
32.768KHZ
Y1
Y2
R284 10M/4
X2
X2-SHT SHW/D0.64*5.08*6.74
32.768K/12.5p/20ppm/TF38/35K/D
C96 18p/4/NPO/50V/J
C94 18p/4/NPO/50V/J
ACZ_SDOUT
R228 8.2K/4
ACZ_SDOUT
R266 8.2K/4
GPIO27
Q38 PMBT2907A/SOT23/-600mA/50
SOT23
3VDUAL_PCH
CLR_CMOS
BATTERY-DUAL-4
RB 必须放在BAT外
BATTERY CR2032
CR2032
BAT BAT-SK/BK/P/S/D/SN
VBATT
RB
1K/4/1
D1 BAS40-05/0.2A/SOT23
3VDUAL_PCH
R239 390K/4 DSWVRMEN
RTCVDD
RTCVDD [13,19]
R236 390K/4 INTVRMEN
R237 20K/4/1 -RTCRST
C27 1u/4/X5R/6.3V/K
C92 1u/4/X5R/6.3V/K
VBAT
VBAT [17]
-SRTCRST R234 20K/4/1
RTCVDD [13,19]
C91 1u/4/X5R/6.3V/K
CLR_CMOS
PH/1*2/BK/2.54/VA/D
-RTCRST
R418 0/4/SHT/M/X
Gigabyte Technology
Title
PCH GPIO , CTRL , AUDIO
Size Custom
Document Number GA-B75M-HD3
Rev 1.0
Date: Thursday, September 20, 2012
Sheet 12 of 32
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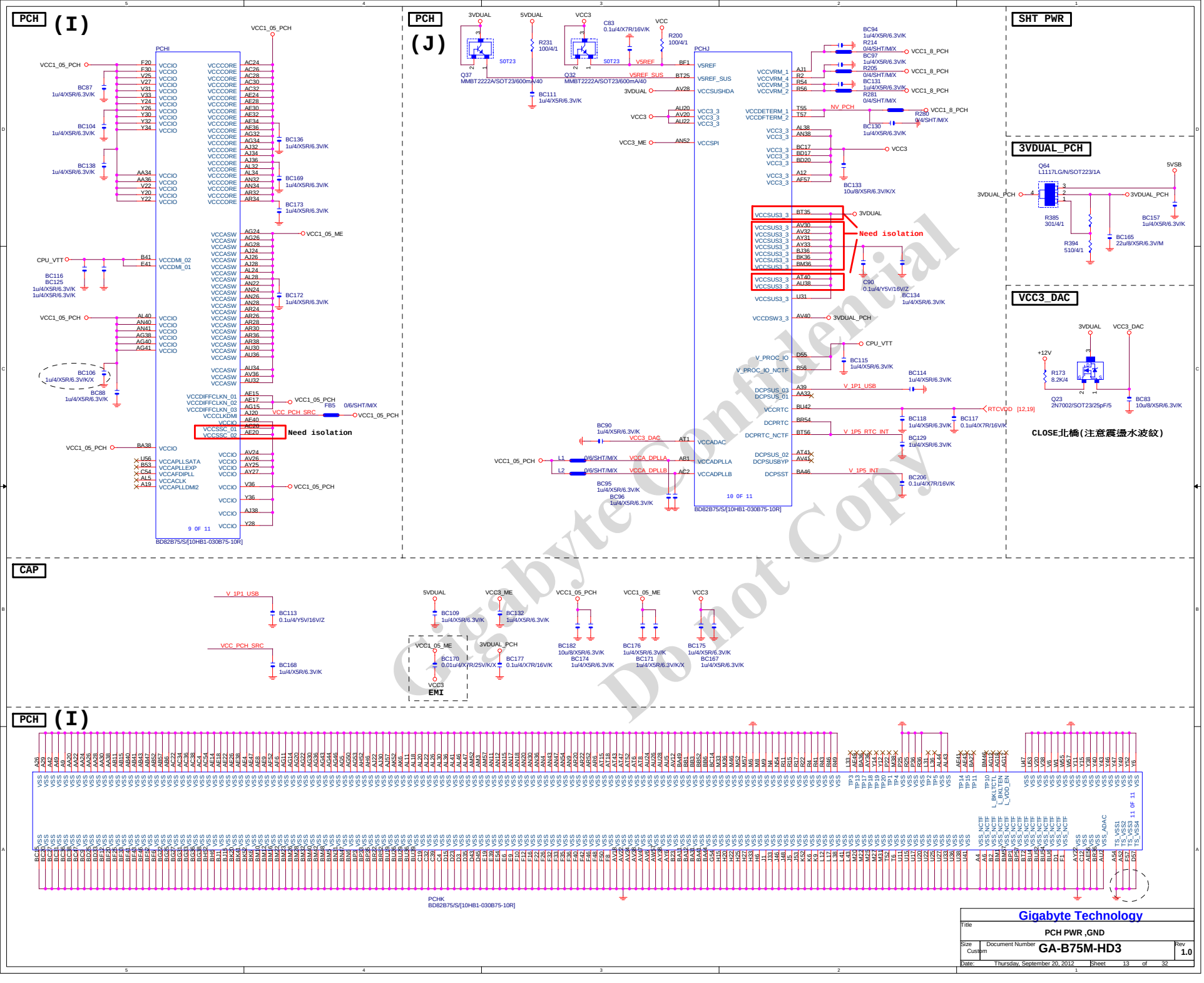
PCH (I)
PCH (J)
SHT PWR
3VDUAL_PCH
VCC3_DAC
CAP
PCH (I)
PCHI
PCHJ
PCHK
BD82B75/S/[10HB1-030B75-10R]
9 OF 11
10 OF 11
11 OF 11
Need isolation
Need isolation
CLOSE北橋(注意霞邊水波紋)
EMI
Gigabyte Technology
PCH PWR ,GND
GA-B75M-HD3
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PCIEX16 CAP

VCC3

BC30 0.1u/4/Y5V/16V/Z

BC26 0.1u/4/Y5V/16V/Z/X

BC28 0.1u/4/Y5V/16V/Z/X

PCIEX16 PROTECT SHT

+12V

X16_+12V

RN4 0/8P4R/0402/SHT/X

RN2 0/8P4R/4/X

PCIEX16 AC CAP

EXP_A_TXP0	C32	0.22u/4/X5R/6.3V/K	EXP_A_TXP0C
EXP_A_TXN0	C30	0.22u/4/X5R/6.3V/K	EXP_A_TXN0C
EXP_A_TXP1	C35	0.22u/4/X5R/6.3V/K	EXP_A_TXP1C
EXP_A_TXN1	C37	0.22u/4/X5R/6.3V/K	EXP_A_TXN1C
EXP_A_TXP2	C39	0.22u/4/X5R/6.3V/K	EXP_A_TXP2C
EXP_A_TXN2	C41	0.22u/4/X5R/6.3V/K	EXP_A_TXN2C
EXP_A_TXP3	C43	0.22u/4/X5R/6.3V/K	EXP_A_TXP3C
EXP_A_TXN3	C45	0.22u/4/X5R/6.3V/K	EXP_A_TXN3C
EXP_A_TXP4	C46	0.22u/4/X5R/6.3V/K	EXP_A_TXP4C
EXP_A_TXN4	C49	0.22u/4/X5R/6.3V/K	EXP_A_TXN4C
EXP_A_TXP5	C50	0.22u/4/X5R/6.3V/K	EXP_A_TXP5C
EXP_A_TXN5	C51	0.22u/4/X5R/6.3V/K	EXP_A_TXN5C
EXP_A_TXP6	C52	0.22u/4/X5R/6.3V/K	EXP_A_TXP6C
EXP_A_TXN6	C54	0.22u/4/X5R/6.3V/K	EXP_A_TXN6C
EXP_A_TXP7	C57	0.22u/4/X5R/6.3V/K	EXP_A_TXP7C
EXP_A_TXN7	C58	0.22u/4/X5R/6.3V/K	EXP_A_TXN7C
EXP_A_TXP8	C60	0.22u/4/X5R/6.3V/K	EXP_A_TXP8C
EXP_A_TXN8	C61	0.22u/4/X5R/6.3V/K	EXP_A_TXN8C
EXP_A_TXP9	C62	0.22u/4/X5R/6.3V/K	EXP_A_TXP9C
EXP_A_TXN9	C63	0.22u/4/X5R/6.3V/K	EXP_A_TXN9C
EXP_A_TXP10	C64	0.22u/4/X5R/6.3V/K	EXP_A_TXP10C
EXP_A_TXN10	C65	0.22u/4/X5R/6.3V/K	EXP_A_TXN10C
EXP_A_TXP11	C66	0.22u/4/X5R/6.3V/K	EXP_A_TXP11C
EXP_A_TXN11	C67	0.22u/4/X5R/6.3V/K	EXP_A_TXN11C
EXP_A_TXP12	C68	0.22u/4/X5R/6.3V/K	EXP_A_TXP12C
EXP_A_TXN12	C70	0.22u/4/X5R/6.3V/K	EXP_A_TXN12C
EXP_A_TXP13	C72	0.22u/4/X5R/6.3V/K	EXP_A_TXP13C
EXP_A_TXN13	C73	0.22u/4/X5R/6.3V/K	EXP_A_TXN13C
EXP_A_TXP14	C74	0.22u/4/X5R/6.3V/K	EXP_A_TXP14C
EXP_A_TXN14	C75	0.22u/4/X5R/6.3V/K	EXP_A_TXN14C
EXP_A_TXP15	C77	0.22u/4/X5R/6.3V/K	EXP_A_TXP15C
EXP_A_TXN15	C78	0.22u/4/X5R/6.3V/K	EXP_A_TXN15C

EXP_A_RXP[0..15] >> EXP_A_RXP[0..15] [4]

EXP_A_RXN[0..15] >> EXP_A_RXN[0..15] [4]

EXP_A_TXP[0..15] >> EXP_A_TXP[0..15] [4]

EXP_A_TXN[0..15] >> EXP_A_TXN[0..15] [4]

PCIEX16 SLOT

PCIESLOT-164DN-P

3GIO_*16

PCIEX16

	B1	12V	PRSNT1*	A1	
	B2	12V	12V	A2	
	B3	RSVD	12V	A3	
R97 0/4/SHT/M/X	B4	GND	GND	A4	R92 0/4/SHT/M/X
[7,8,12,15,16] SMBCLK	B5	SMBCLK	JTAG2	A5	
[7,8,12,15,16] SMBDATA	B6	SMBDATA	JTAG3	A6	R96 0/4/SHT/M/X
	B7	GND	JTAG4	A7	
3VDUAL VCC3	B8	3.3V	JTAG5	A8	VCC3
	B9	JTAG1	3.3V	A9	
	B10	3.3VAUX	3.3V	A10	
[12,15,24] -PCIE_WAKE	B11	WAKE*	PWRGD	A11	-PCIE_RST [15,17]
		KEY			
	B12	RSVD	GND	A12	
EXP_A_TXP0C	B13	GND	REFCLK+	A13	SRCCLK_PCIEX16 [10]
EXP_A_TXN0C	B14	HSOP0	REFCLK-	A14	-SRCCLK_PCIEX16 [10]
	B15	HSON0	GND	A15	
	B16	GND	HSIP0	A16	EXP_A_RXP0
	B17	PRSNT2*	HSIN0	A17	EXP_A_RXN0
	B18	GND	GND	A18	
EXP_A_TXP1C	B19	HSOP1	RSVD	A19	
EXP_A_TXN1C	B20	HSON1	GND	A20	
	B21	GND	HSIP1	A21	EXP_A_RXP1
	B22	GND	HSIN1	A22	EXP_A_RXN1
EXP_A_TXP2C	B23	HSOP2	GND	A23	
EXP_A_TXN2C	B24	HSON2	GND	A24	
	B25	GND	HSIP2	A25	EXP_A_RXP2
	B26	GND	HSIN2	A26	EXP_A_RXN2
EXP_A_TXP3C	B27	HSOP3	GND	A27	
EXP_A_TXN3C	B28	HSON3	GND	A28	
	B29	GND	HSIP3	A29	EXP_A_RXP3
	B30	RSVD	HSIN3	A30	EXP_A_RXN3
	B31	PRSNT2*	GND	A31	
	B32	GND	RSVD	A32	
EXP_A_TXP4C	B33	HSOP4	RSVD	A33	
EXP_A_TXN4C	B34	HSON4	GND	A34	
	B35	GND	HSIP4	A35	EXP_A_RXP4
	B36	GND	HSIN4	A36	EXP_A_RXN4
EXP_A_TXP5C	B37	HSOP5	GND	A37	
EXP_A_TXN5C	B38	HSON5	GND	A38	
	B39	GND	HSIP5	A39	EXP_A_RXP5
	B40	GND	HSIN5	A40	EXP_A_RXN5
EXP_A_TXP6C	B41	HSOP6	GND	A41	
EXP_A_TXN6C	B42	HSON6	GND	A42	
	B43	GND	HSIP6	A43	EXP_A_RXP6
	B44	GND	HSIN6	A44	EXP_A_RXN6
EXP_A_TXP7C	B45	HSOP7	GND	A45	
EXP_A_TXN7C	B46	HSON7	GND	A46	
	B47	GND	HSIP7	A47	EXP_A_RXP7
	B48	PRSNT2*	HSIN7	A48	EXP_A_RXN7
	B49	GND	GND	A49	
EXP_A_TXP8C	B50	HSOP8	RSVD	A50	
EXP_A_TXN8C	B51	HSON8	GND	A51	
	B52	GND	HSIP8	A52	EXP_A_RXP8
	B53	GND	HSIN8	A53	EXP_A_RXN8
EXP_A_TXP9C	B54	HSOP9	GND	A54	
EXP_A_TXN9C	B55	HSON9	GND	A55	
	B56	GND	HSIP9	A56	EXP_A_RXP9
	B57	GND	HSIN9	A57	EXP_A_RXN9
EXP_A_TXP10C	B58	HSOP10	GND	A58	
EXP_A_TXN10C	B59	HSON10	GND	A59	
	B60	GND	HSIP10	A60	EXP_A_RXP10
	B61	GND	HSIN10	A61	EXP_A_RXN10
EXP_A_TXP11C	B62	HSOP11	GND	A62	
EXP_A_TXN11C	B63	HSON11	GND	A63	
	B64	GND	HSIP11	A64	EXP_A_RXP11
	B65	GND	HSIN11	A65	EXP_A_RXN11
EXP_A_TXP12C	B66	HSOP12	GND	A66	
EXP_A_TXN12C	B67	HSON12	GND	A67	
	B68	GND	HSIP12	A68	EXP_A_RXP12
	B69	GND	HSIN12	A69	EXP_A_RXN12
EXP_A_TXP13C	B70	HSOP13	GND	A70	
EXP_A_TXN13C	B71	HSON13	GND	A71	
	B72	GND	HSIP13	A72	EXP_A_RXP13
	B73	GND	HSIN13	A73	EXP_A_RXN13
EXP_A_TXP14C	B74	HSOP14	GND	A74	
EXP_A_TXN14C	B75	HSON14	GND	A75	
	B76	GND	HSIP14	A76	EXP_A_RXP14
	B77	GND	HSIN14	A77	EXP_A_RXN14
EXP_A_TXP15C	B78	HSOP15	GND	A78	
EXP_A_TXN15C	B79	HSON15	GND	A79	
	B80	GND	HSIP15	A80	EXP_A_RXP15
	B81	PRSNT2*	HSIN15	A81	EXP_A_RXN15
	B82	RSVD	GND	A82	

PCI-E/16X-164P/297C/LONG DOUBL

-PCIE_RST

C29 22p/4/NPO/50V/J/X

Gigabyte Technology		
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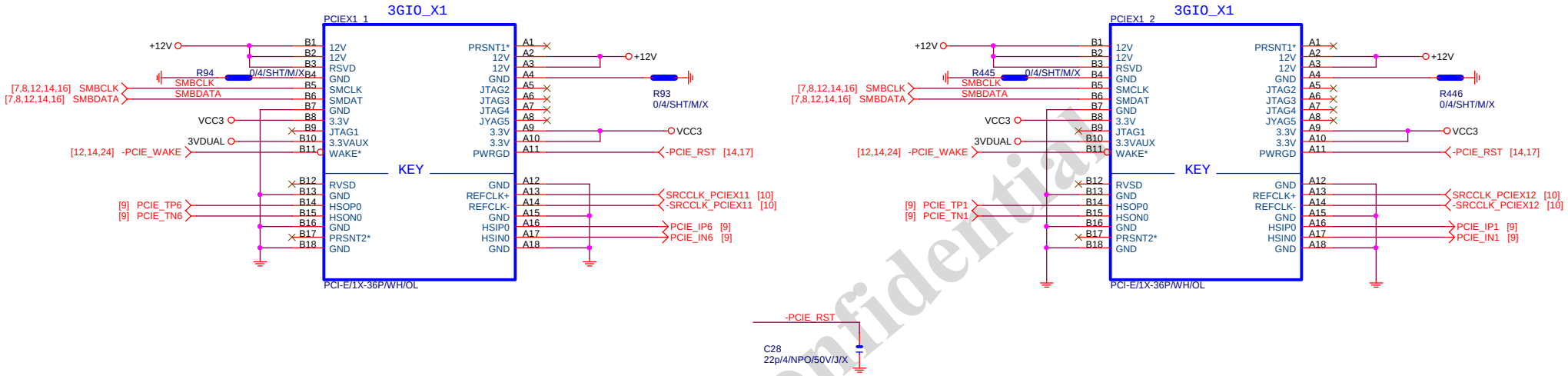
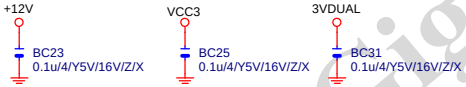
Date: Thursday, September 20, 2012	Sheet 14 of 32	

PCIEX1 SLOT



PCIEX1 CAP



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Title: PCI EXPRESS X 1 PORT		
Size: Custom	Document Number: GA-B75M-HD3	Rev: 1.0
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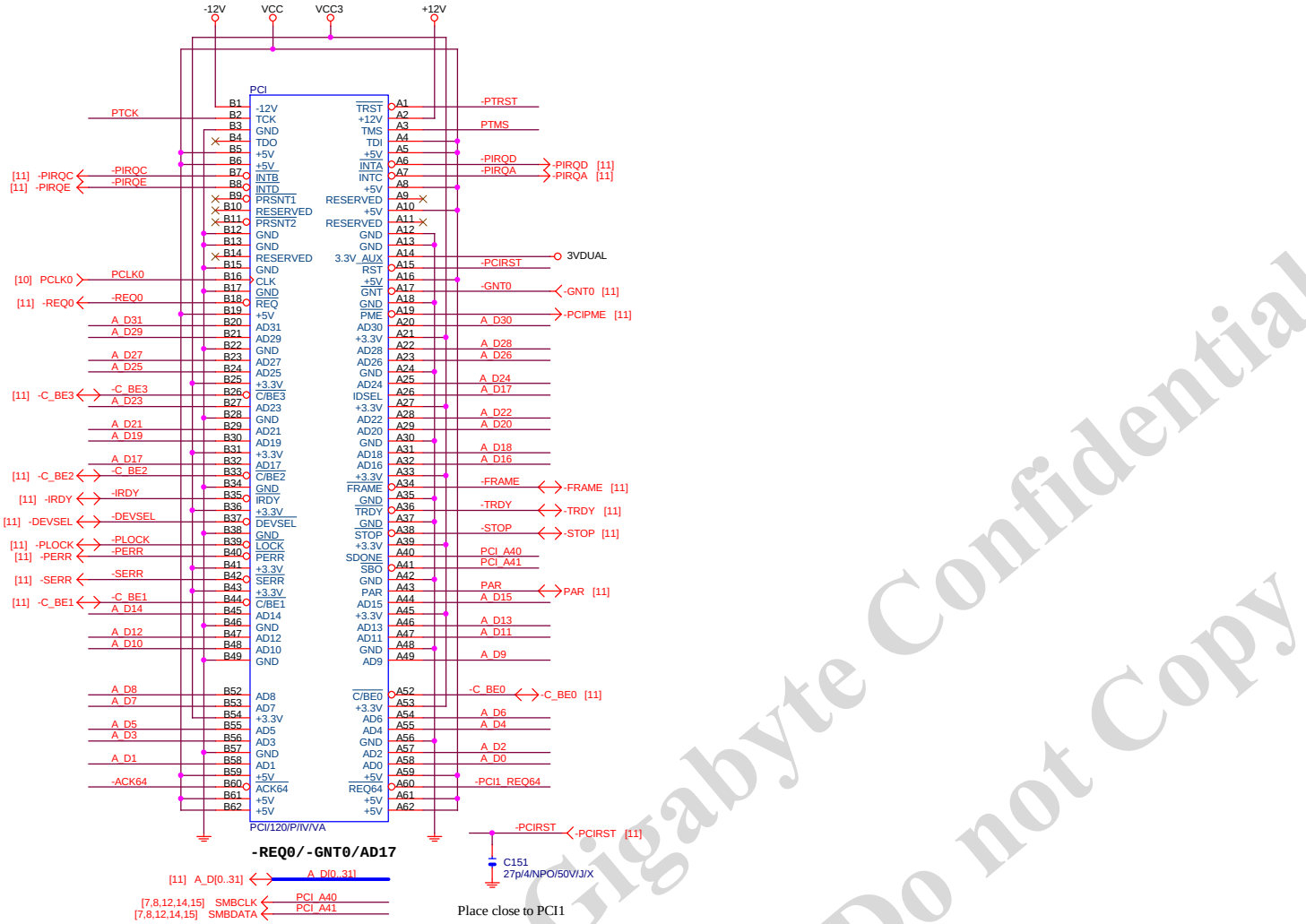
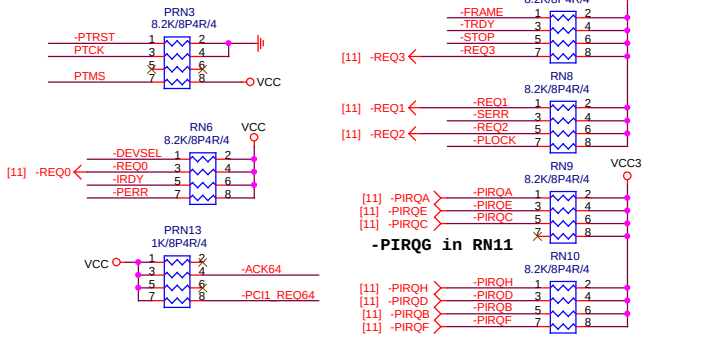
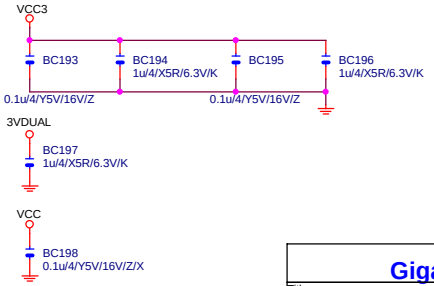
PCI SLOT



PCI PU



PCI CAP



Gigabyte Technology		
Title: PCI SLOT 1&2		
Size: Custom	Document Number: GA-B75M-HD3	Rev: 1.0
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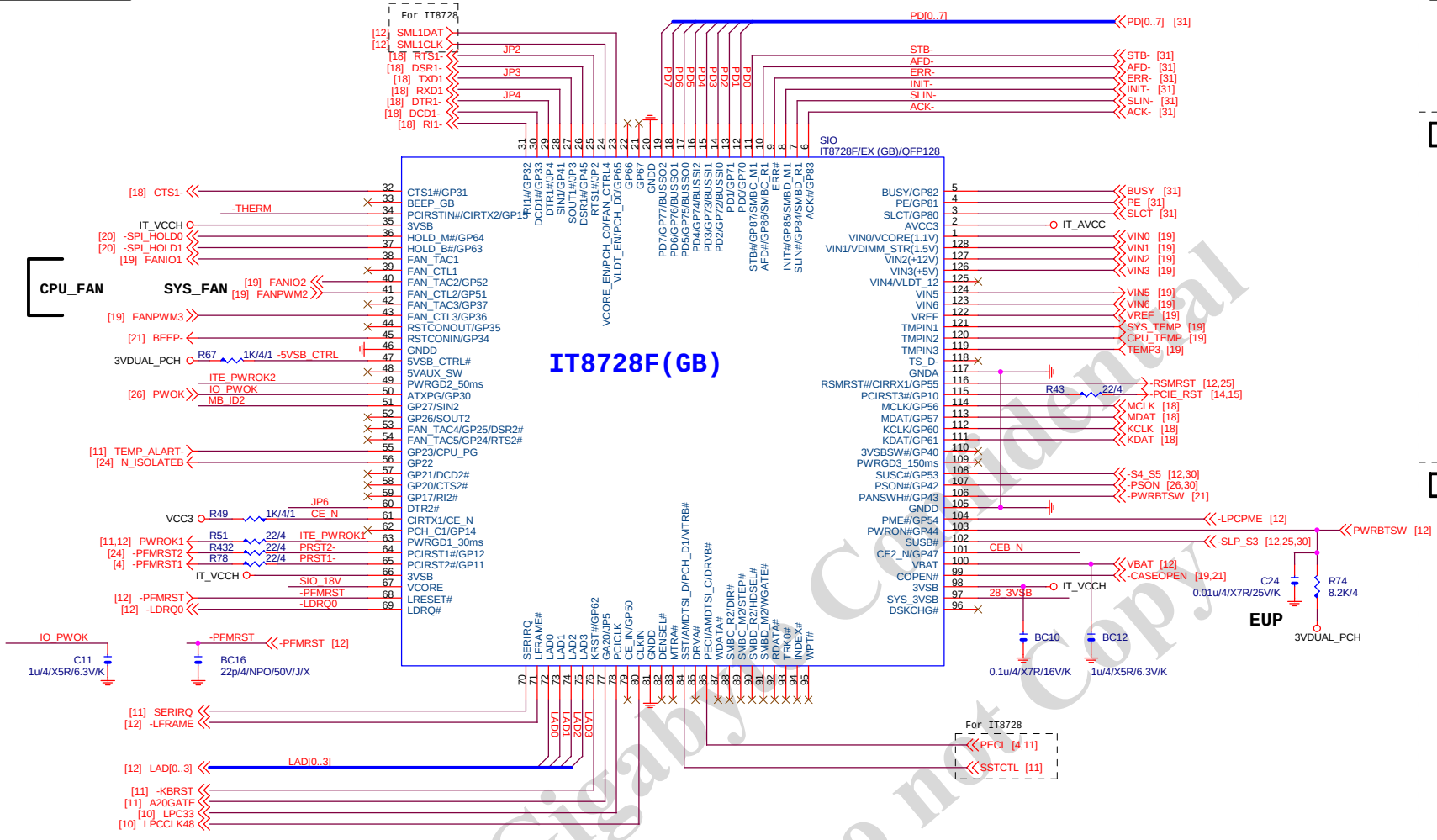
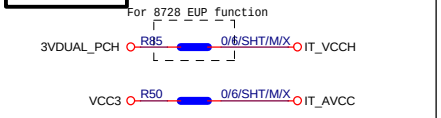
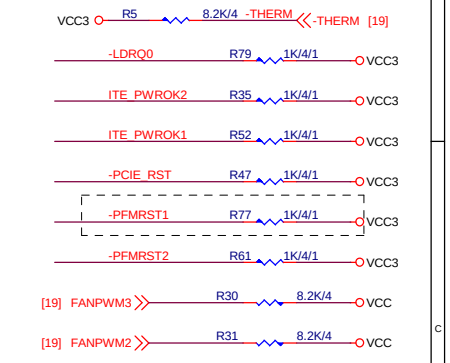
SIO IT8728F



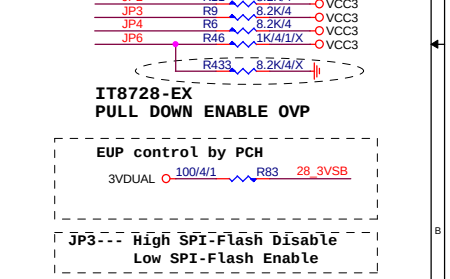
PWR SHT



SIO PU



SIO STRAP

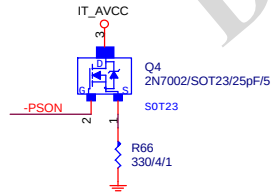


IT8728F NOTE

	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

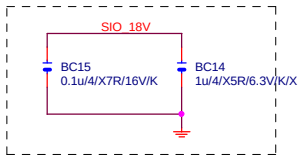
Power leakage



For IT8721 Power leakage

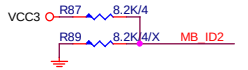
SIO_18V

internal power pin, max 22nF cap

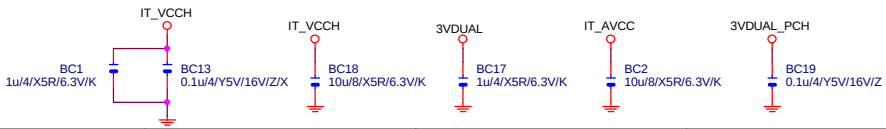


FOR LOW TEMP POWER ON INTO TEST MODE ISSUE

MB ID



SIO CAP



Gigabyte Technology

Title: ITE 8728 LPC IO

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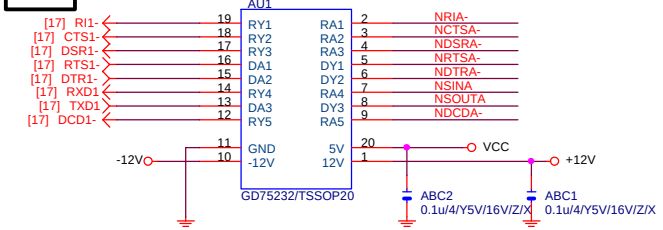
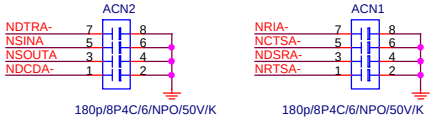
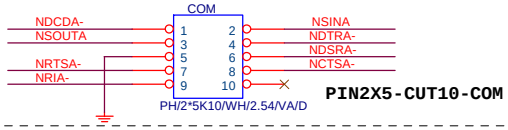
COM

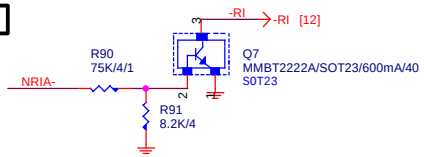




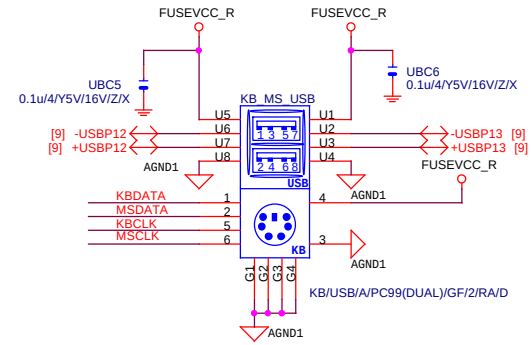


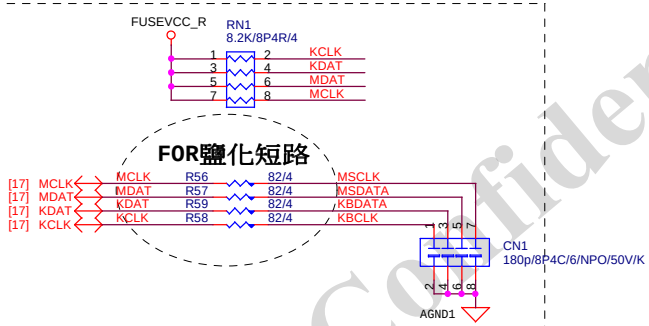
PIN2X5-CUT10-COM

COM RI

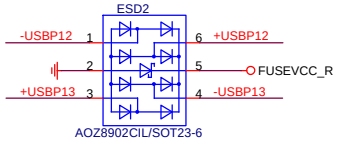


KB/MS



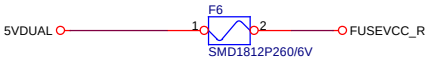


USB2.0 ESD



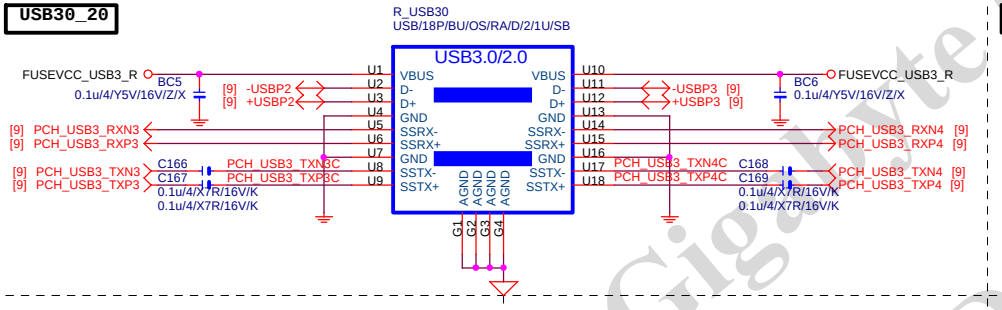
USB2.0 PWR

USB_LAN, KB_USB 4-Port 2.6A

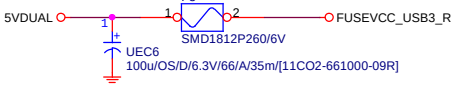


Close to connector

USB30_20

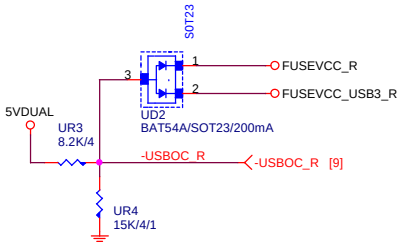


USB30_20 PWR



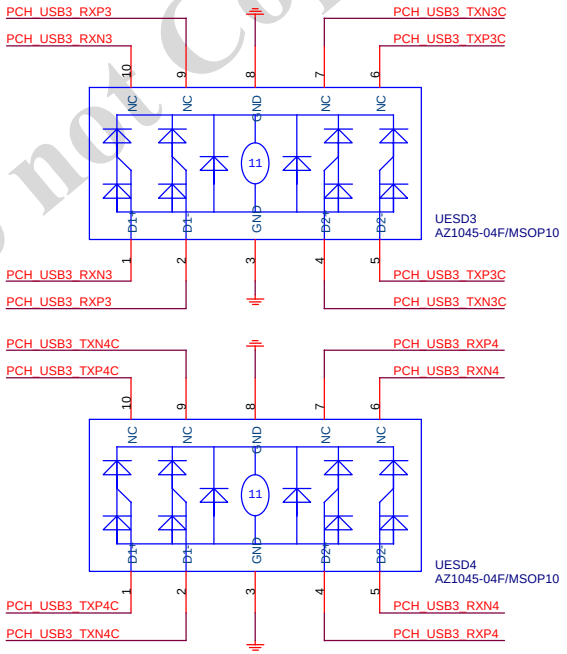
USB3.0 1Port - 1Fuse (3.5A)

-USBOC_R

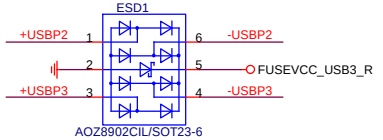


USB30_20 ESD PROCTECT

USB3.0 ESD



USB2.0 ESD



Gigabyte Technology			
Title: COM,-RI,KB_USB,USB_ESATA,-PROCHOT			
Size: Custom	Document Number: GA-B75M-HD3		Rev: 1.0
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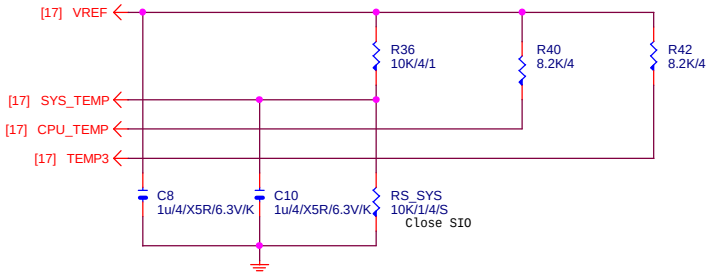
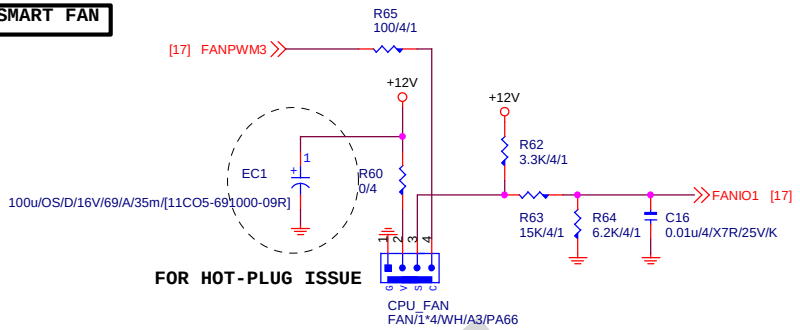
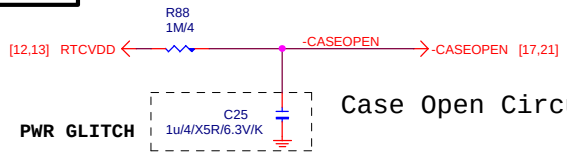
TEMP H/W MONITOR



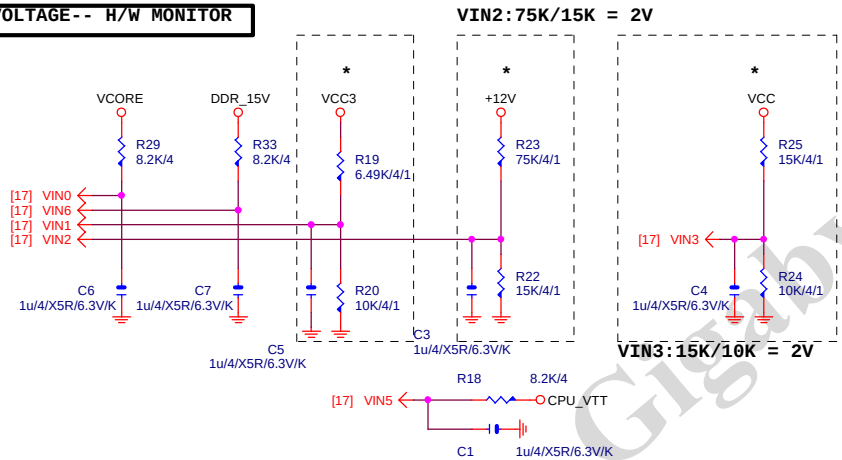
CPU SMART FAN



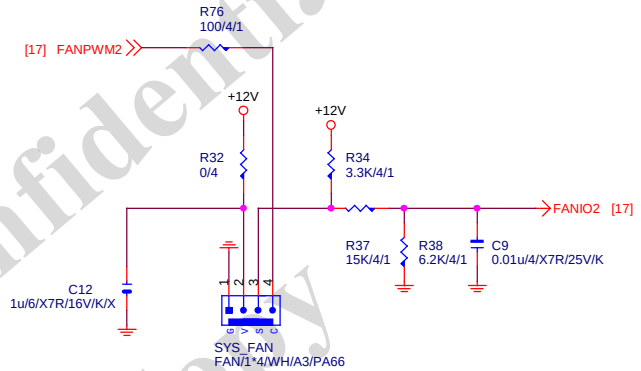
CASE OPEN



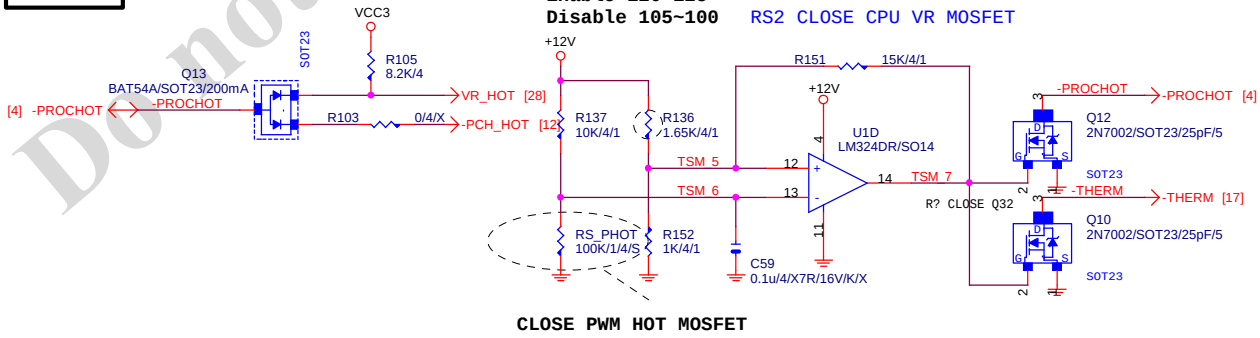
VOLTAGE-- H/W MONITOR



SYS SMART FAN



-PROHOT



Gigabyte Technology		
Title: HWM,FAN CTRL,OV		
Size: Custom	Document Number: GA-B75M-HD3	Rev: 1.0
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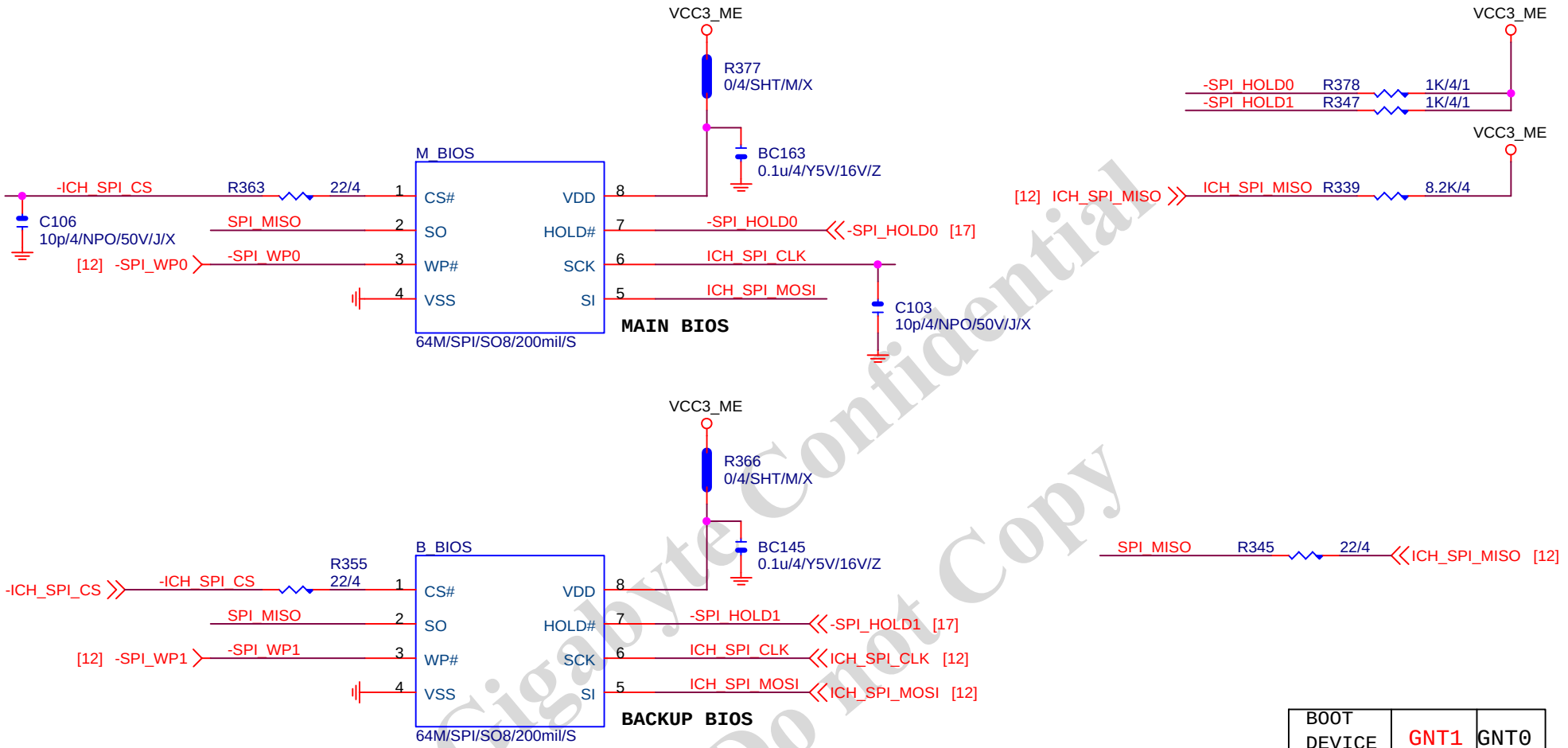
DUAL BIOS



B65使用64M BIOS

使用H67暫用32M

H61使用32M BIOS

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

1 means floating
0 means PD 1K

Gigabyte Technology		
Title: DUAL BIOS		
Size: A	Document Number: GA-B75M-HD3	Rev: 1.0
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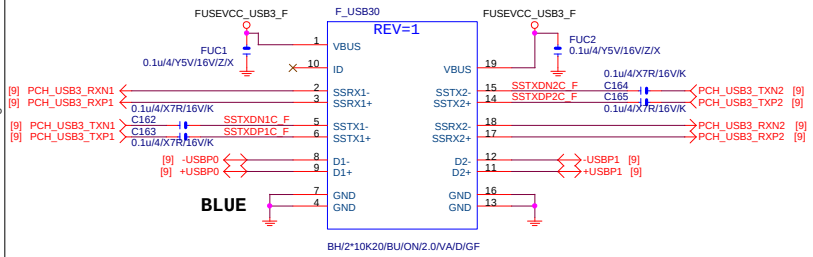
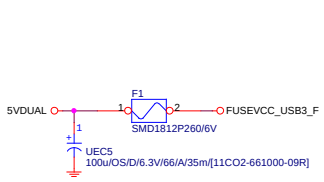
F_USB30

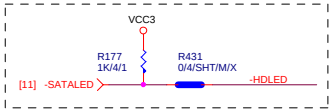


F_USB30 PWR

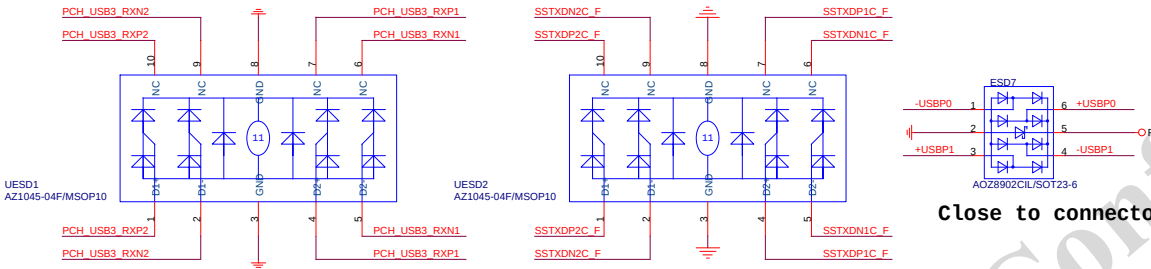


USB3.0 1Port - 1Fuse (3.5A)

SATA LED

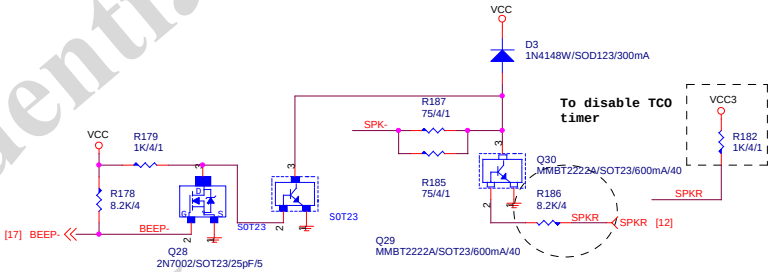


F_USB30 ESD PROTECT

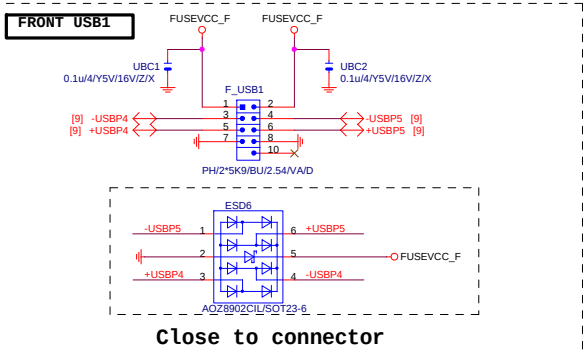


Close to connector

SPKR

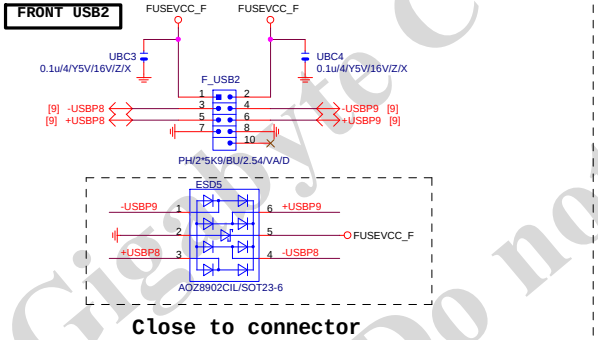


FRONT USB1



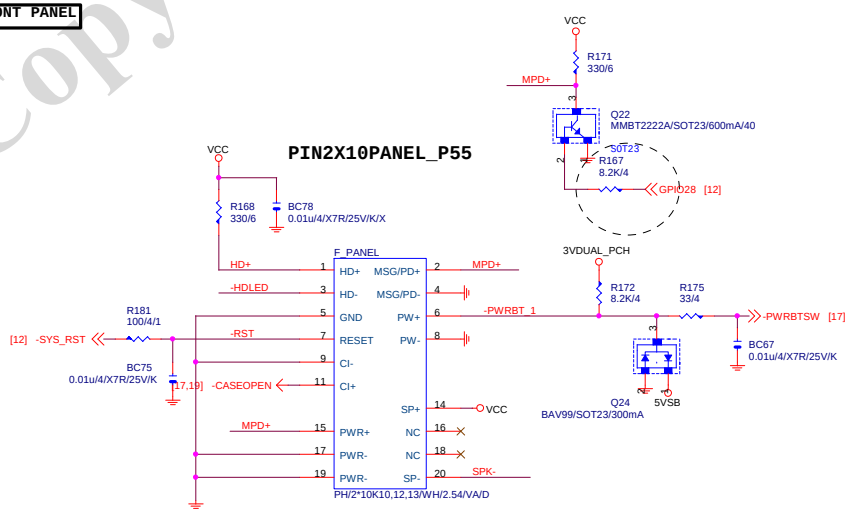
Close to connector

FRONT USB2



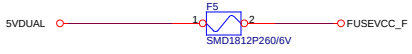
Close to connector

INTEL FRONT PANEL



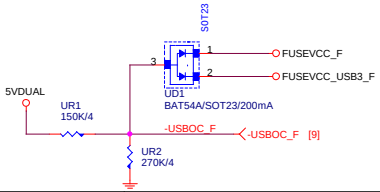
FUSEVCC_F

F_USB1, F_USB2 4-Port 2.6A



-USBOC_F

F_USB30



Gigabyte Technology

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

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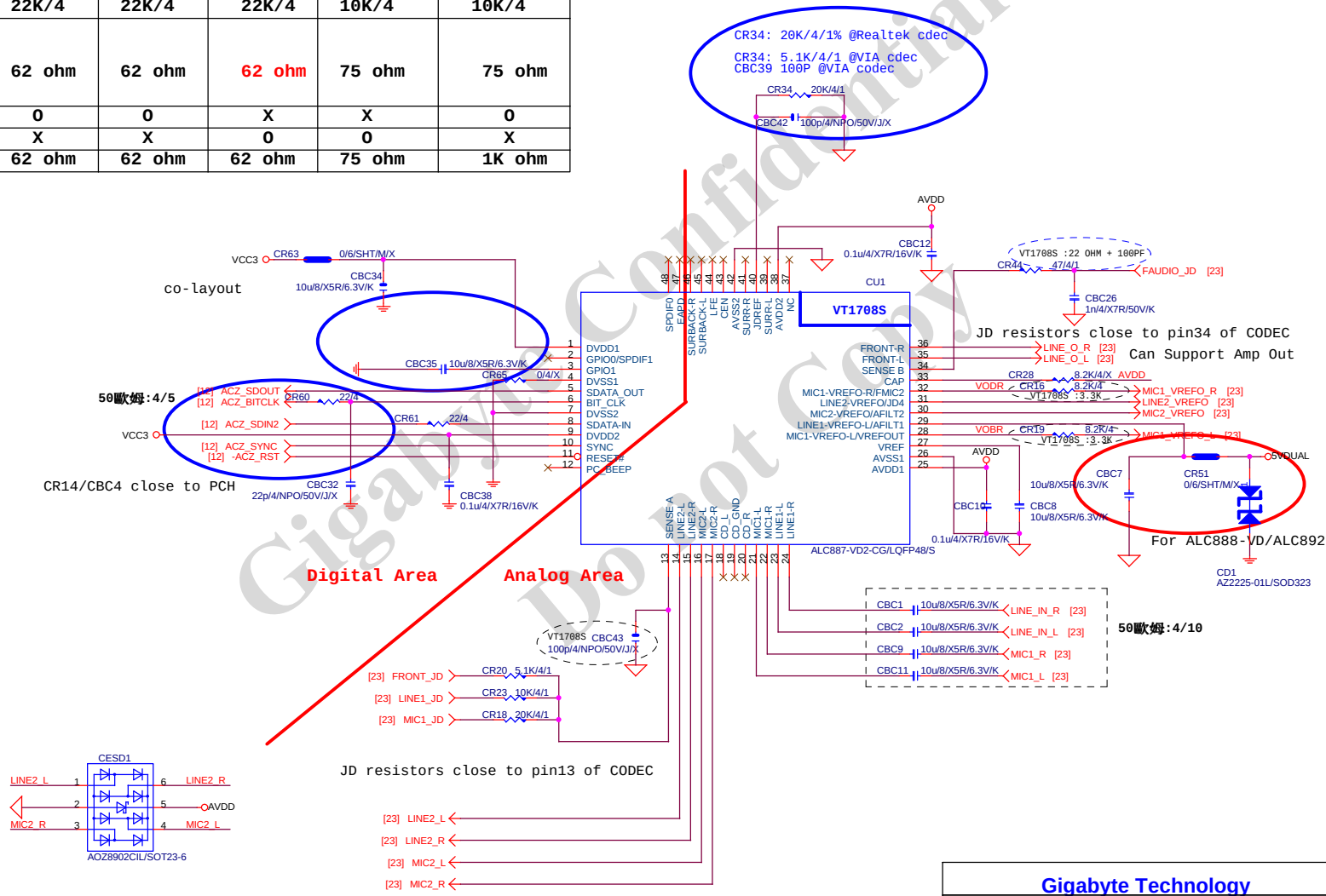
AZALIA CODEC *ALC887-VD2/ALC889/VT1708S/VT1708SCE Colay*

	ALC662	ALC887-VD2	ALC889	VT1708S	VT1708SCE
CR65	X	X	O	O	X
CR64	X	X	X	X	0.1u/4
CBC35	O	O	X	X	O
CR44/CBC6	47ohm+1nF	47ohm+1nF	47ohm+1nF	22ohm+100P	22ohm+100P
CR31	X	O	O	O	O
CR30	O	X	X	X	X
CBC1/CBC2	22uF/X5R	22uF/X5R	22uF/X5R	22uF/X5R	22uF/X5R
CR20	5.11K/4/1	5.11K/4/1	5.11K/4/1	5.1K/4/1	5.1K/4/1
CR34	20K/4/1	20K/4/1	20K/4/1	5.1K/4/1	20K/4/1
CBC39/CBC40	N/A	N/A	N/A	100P/4	100P/4
CR6/CR7/CR54/CR58	22K/4	22K/4	22K/4	10K/4	10K/4
CR5/CR8/CR11/CR4/ CR17/CR22/CR45/CR33/ CR47/CR40/CR26/CR37/ CR13/CR11/CR57/CR53	62 ohm	62 ohm	62 ohm	75 ohm	75 ohm
CR51/CD1/CBC7	O	O	X	X	O
CD2/CD3/CQ3/CQ5	X	X	O	O	X
CR1/CR14/CR17/CR22	62 ohm	62 ohm	62 ohm	75 ohm	1K ohm



Gigabyte Technology

Title	HD AUDIO ALC887B-VD2/VT1708S/VT2021	
Size: Custom	Document Number: GA-B75M-HD3	Rev: 1.0
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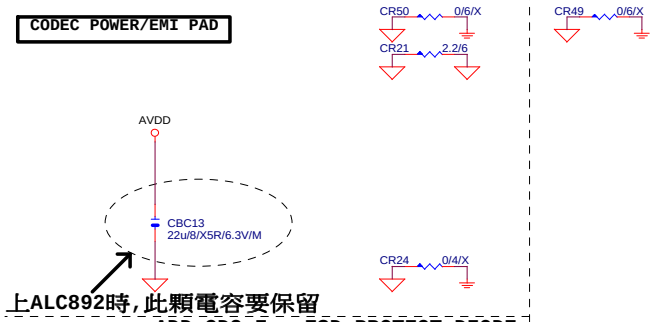
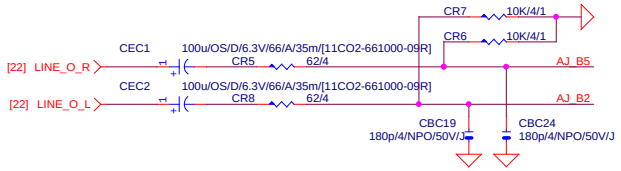
CODEC POWER/EMI PAD

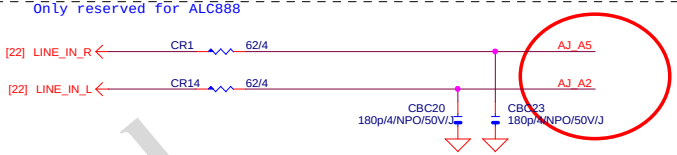


LINE-OUT



Only reserved for ALC888

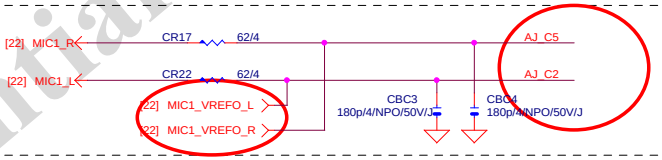
LINE-IN



Verify MIC function in LINE-in

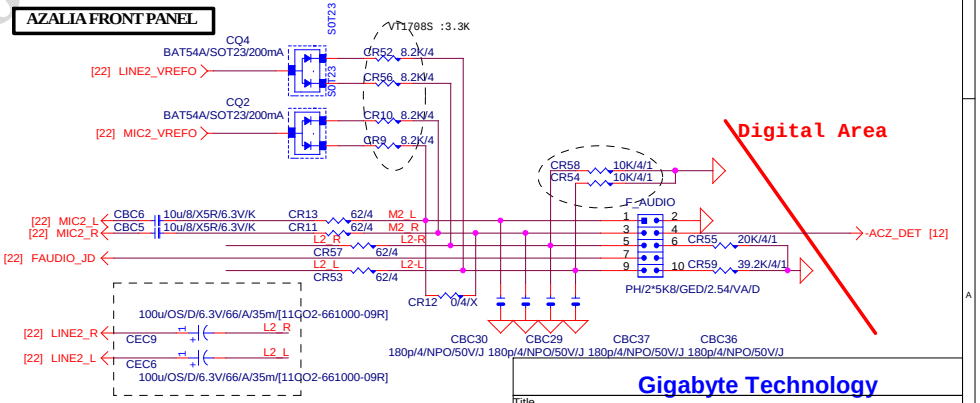
For 889A/888

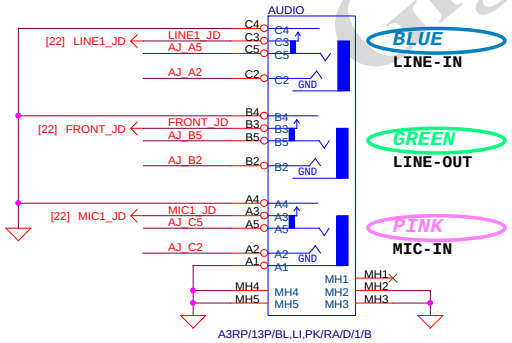
MIC-IN



SPDIF_OUT

AZALIA FRONT PANEL





Gigabyte Technology

Title: AUDIO JACK

Size: Custom | Document Number: GA-B75M-HD3 | Rev: 1.0

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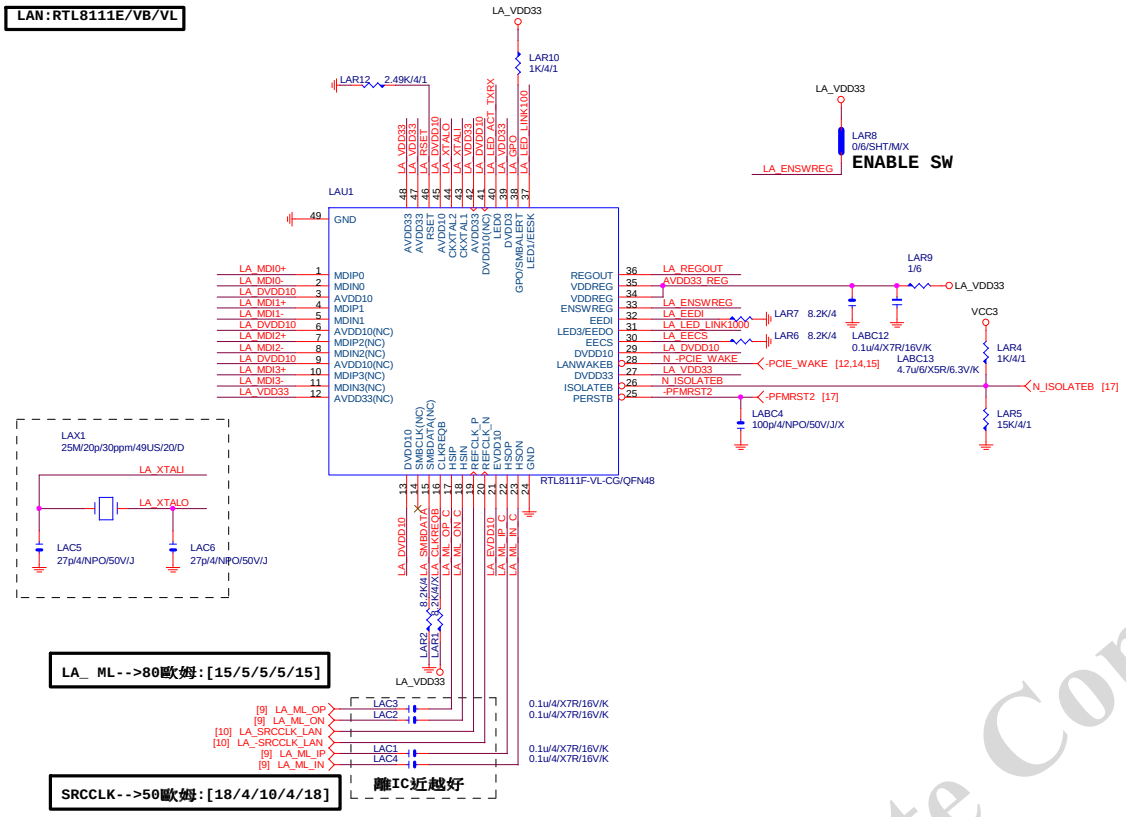
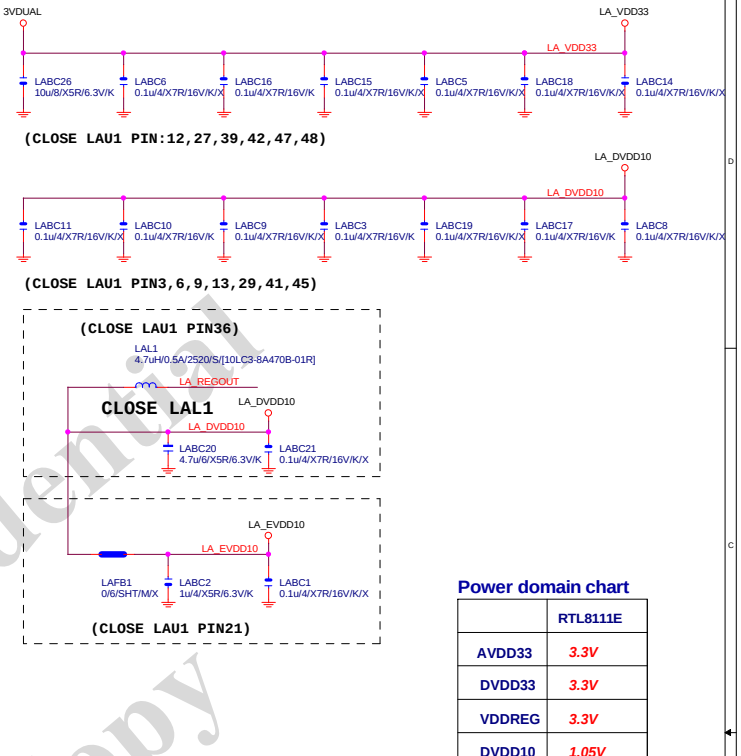
LAN:RTL8111E/VB/VL



LAN POWER

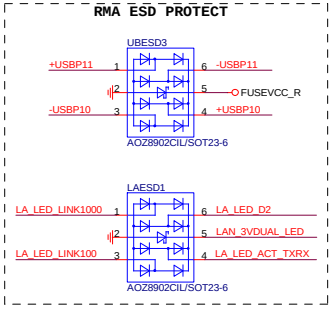


Power domain chart

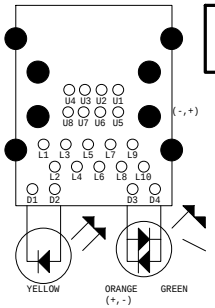
	RTL8111E
AVDD33	3.3V
DVDD33	3.3V
VDDREG	3.3V
DVDD10	1.05V

USB_LAN CONNECTOR

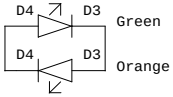
RMA ESD PROTECT



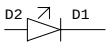
注意:LAN LED PROTECT:(CO-LAYOUT)
1.ESD(6PIN):AOZ8902CIL/SOT23-6(DEFAULT)
2.SURGE(5PIN):AZ2025-04S/SOT23-5L



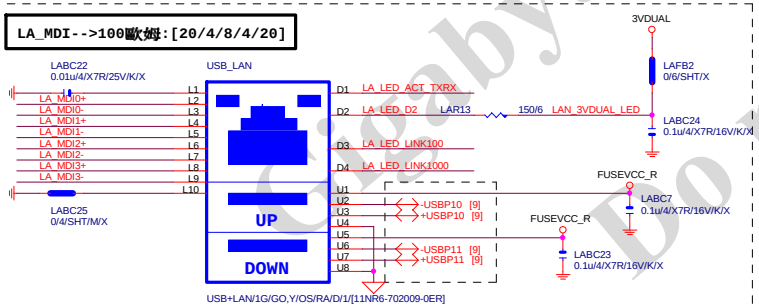
Dual Color LED



Single Color LED



LA_MDI-->100歐姆:[20/4/8/4/20]



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

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

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

USB X3 POWER

EMI SHORT PAD

PS:視EMI需求

Gigabyte Technology

Title: ARTHEROS AR8151/AR8161

Size: Custom | Document Number: GA-B75M-HD3 | Rev: 1.0

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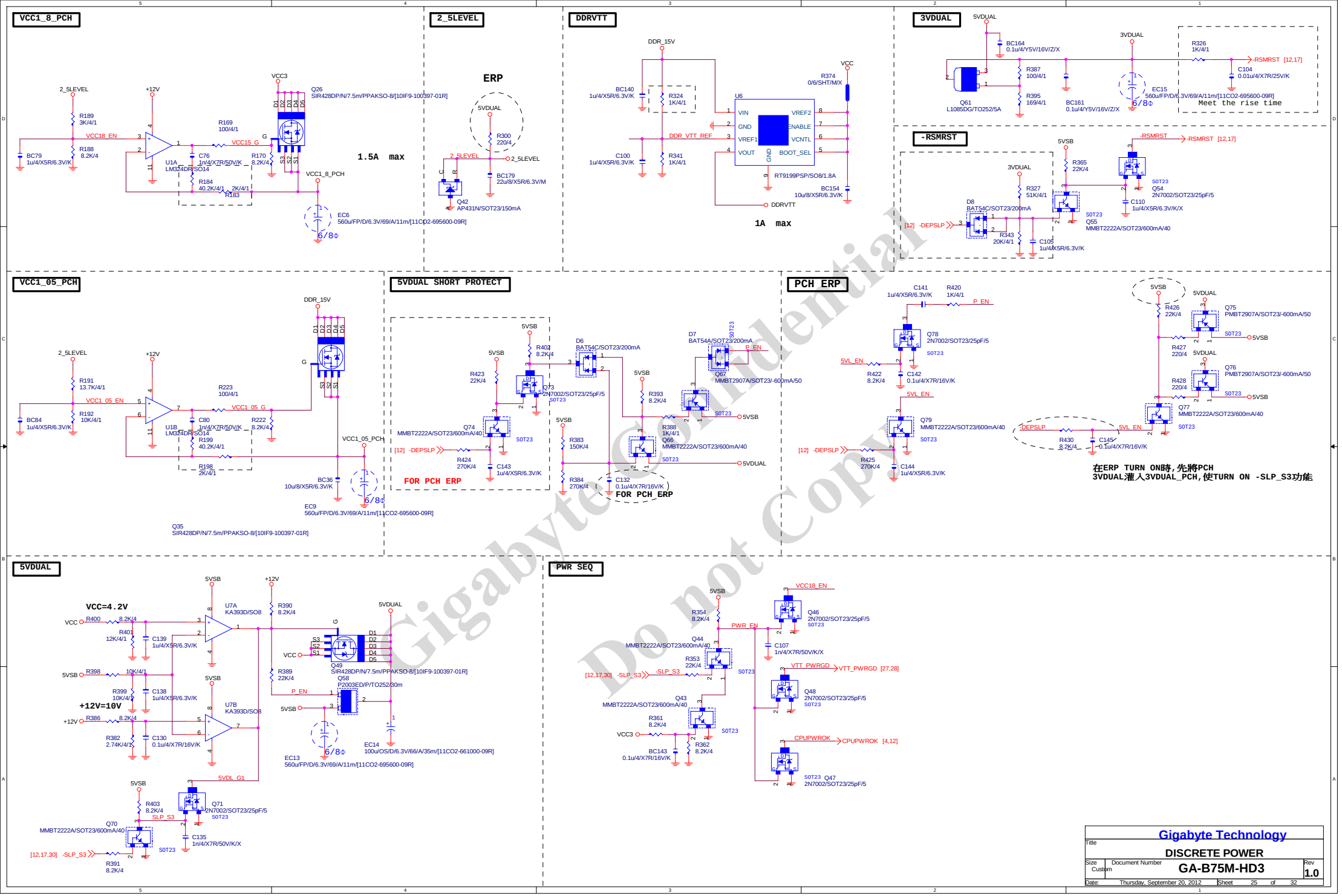
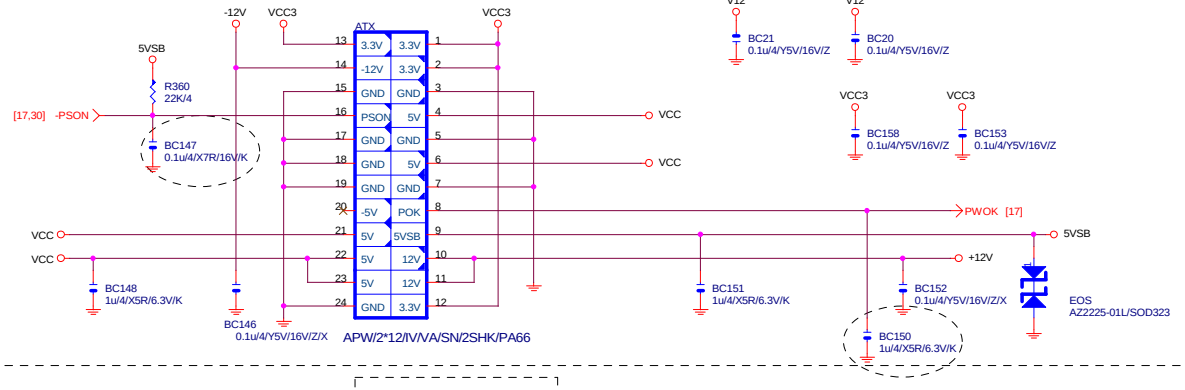
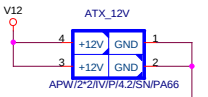


ATXX24 POWER CONNECTOR

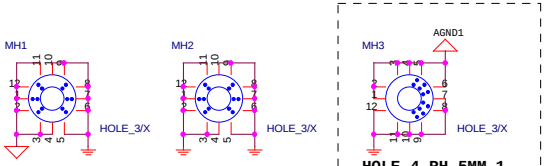
ATXPWR_24-6

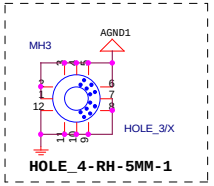


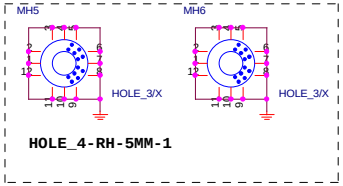
ATXX4 POWER CONNECTOR

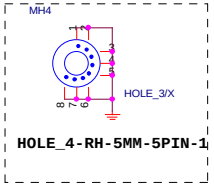


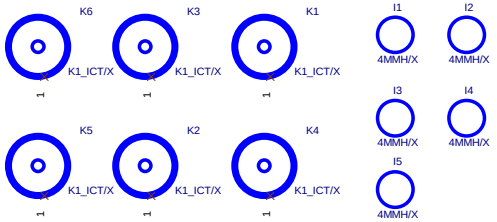
ATX_4-6





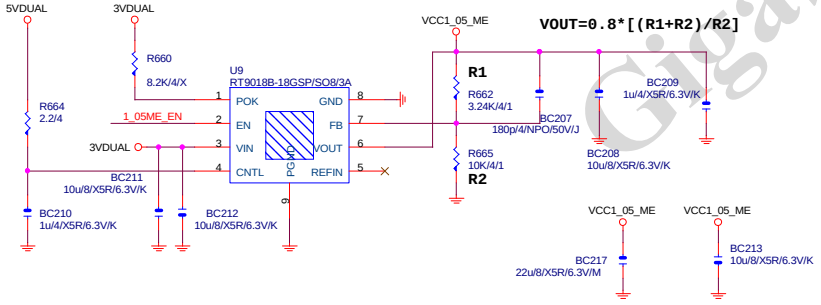




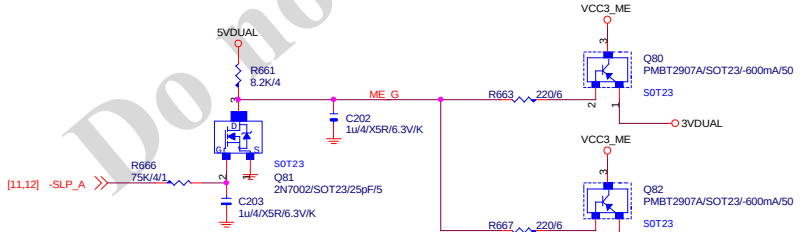


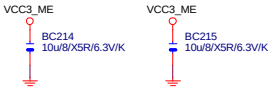
To prevent the 5VSB under loading when boot

VCC1_05_ME

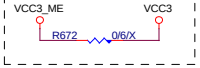


VCC3_ME



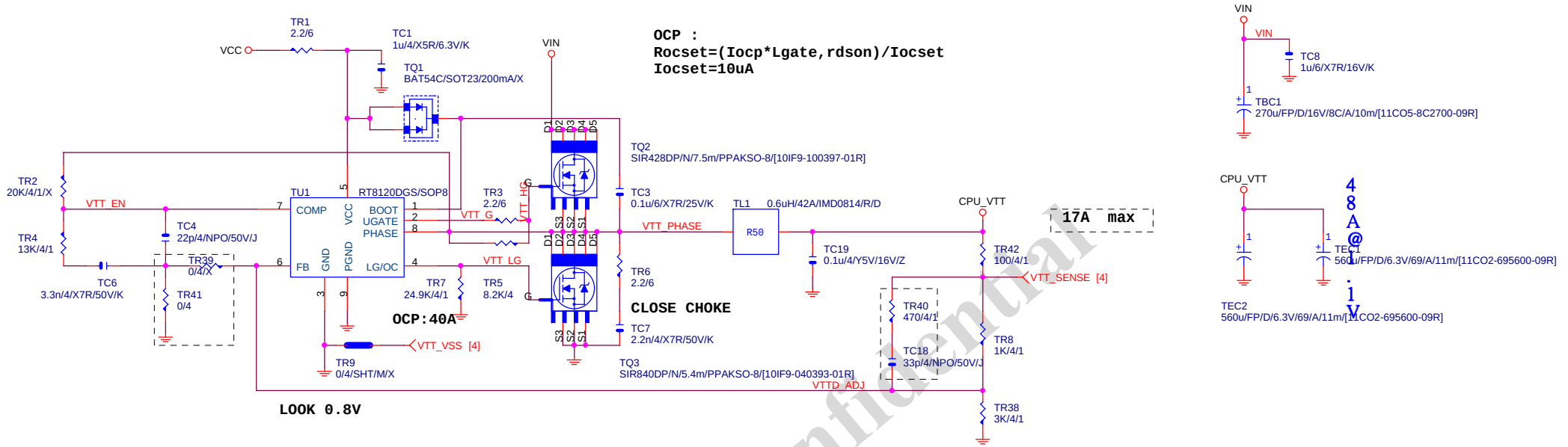


Power Option



Gigabyte Technology		
Title: ATX CONNECTOR		
Size: Custom	Document Number: GA-B75M-HD3	Rev: 1.0
Date: Thursday, September 20, 2012	Sheet 26 of 32	

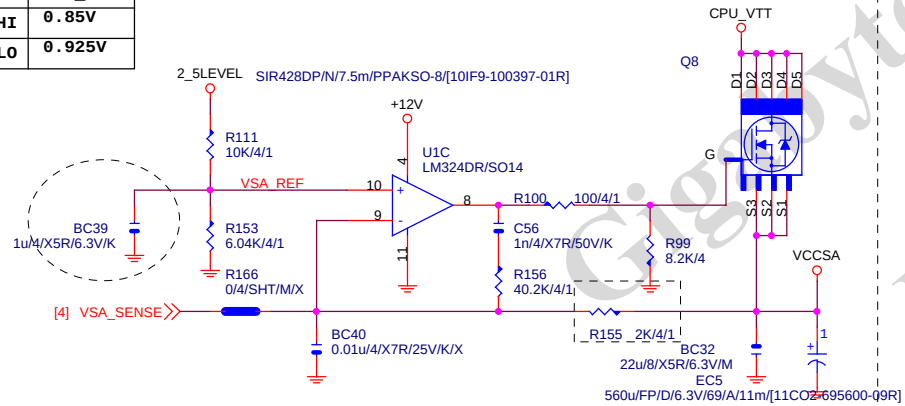
CPU_VTT



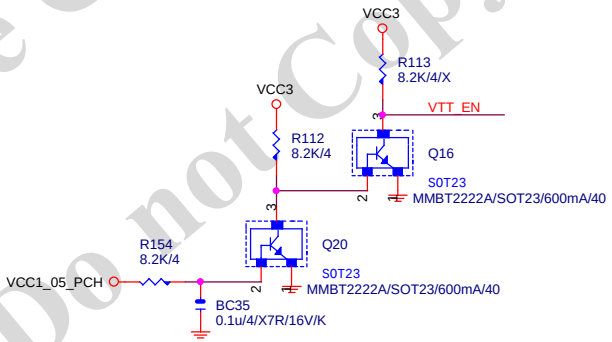
VCCSA

PDG 0.8

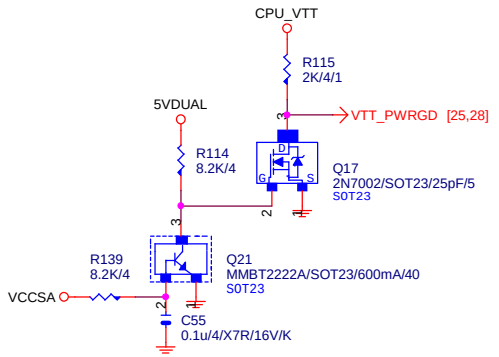
	VSA_SEL
HI	0.85V
LO	0.925V



CPU_VTT PWR SEQ



VTT_PWRGD



GIGABYTE™

Title	CPU_VTT PWM_RT8120	
Size: Custom	Document Number: GA-B75M-HD3	Rev: 1.0
Date: Thursday, September 20, 2012	Sheet 27 of 32	

VCORE PWM

Intersil Original Design

CPU_VAXG
[4] VAXG_SENSE VSENG
DR445 100/4/1
DR482 0/4
DBC93 0.01u/4/X7R/25V/K
FBG_OV
DBC95 0.01u/4/X7R/25V/K
[4] VAXG_VSS RTNG
DR450 10/4

DR446 845/4/1
DBC91 1n/4/X7R/50V/K
DR447 3.6K/4/1
Load line-->4.1mohm
DBC90 330p/4/NPO/50V/J
DR444 2K/4/1
DBC92 47p/4/NPO/50V/J
DBC94 680p/4/X7R/50V/K
DR448 270K/4
DR449 169K/4/1
S.W frequncy-->300Khz
Imax-->45A

LAYOUT RESERVE
CHOKE SPACE
V12
VIN
DBC1 1u/6/X7R/16V/K
DEC6 270u/FP/D/16V/8C/A/10m/[11CO5-8C2700-09R]
DEC2 270u/FP/D/16V/8C/A/10m/[11CO5-8C2700-09R]

Close DL6
[29] VSUMNG
DBC113 0.1u/4/X7R/16V/K
DR4 10K/1/4/S
RGntc=(RGseries+DRT4)//RGparellel
DR159 11K/4/1
DR157 7.5K/4/1
RGseries
RGparellel
DBC64 0.047u/4/X7R/16V/K/X
DBC66 0.033u/4/X7R/16V/K
DBC67 0.22u/4/X5R/6.3V/K
[29] VSUMPG
DBC96 0.22u/6/X7R/16V/K/X
DR475 100/4/1
DBC114 330p/4/NPO/50V/J
DR162 549/4/1
RGi
IGocp-->56A
ISUMNG
ISUMPG

Disable PWM2G
VCC
DR454 0/4/SHT/M/X ISEN2G
DRT1 close to the VAXG low side MOS
DRT1 100K/1/4/S
DR486 10K/4/1
DR456 27K/4/1
DR477 51/4/1 PVIDSLCK_F
DR59 27K/4/1
Disable NTC

CPU_VTT
DBC69 0.1u/4/X7R/16V/K
DR81 100/4/1
DR84 100/4/1
DR76 100/4/1
DR79 100/4/1
[4] VIDSLCK
[4] -VIDALRT
[4] VIDSOUT
[19] VR_HOT
DR82 10/4
[25,27] VTT_PWRGD

DU1
PWM
INTERSIL
ISL95836HRTZ
ISL95836HRZ/[10TA1-695836-01R]
1 ISUMPG
2 ISEN1G
3 ISEN2G
4 NTCG
5 SCLK
6 ALERT#
7 SDA
8 VR_HOT#
9 VR_ON
10 NTC
41 PAD
40 ISUMNG
39 RTNG
38 FBG
37 COMPG
36 PGOODG
35 PWM2G
34 LGATE1G
33 PHASE1G
32 UGATE1G
31 BOOT1G
30 BOOT2
29 UG2
28 PHS2
27 LG2
26 VCCP
25 VDD
24 PWM3
23 LG1
22 PHS1
21 UGATE1
11 ISEN3/FB2
12 ISEN2
13 ISEN1
14 ISUMP
15 ISUMN
16 RTN
17 FB
18 COMP
19 PGOOD
20 BOOT1

BOTTOM PAD
CONNECT TO GND
THROUGH 10 VIA

DR452 8.2K/4
VCC3
DR453 0/4/X
VCC
PWM2G
LGS
PHS
UGS
BTS
BTS [29]
BT2
BT2 [29]
UG2
PH2
LG2
LG1
PH1
PWM3
PWM3 [29]
UG1
BT1
BT1 [29]
DBC98 1u/4/X5R/6.3V/K
DR457 2.2/6
DR458 2.2/6
DBC99 1u/4/X5R/6.3V/K
VCC
PWM3 [29]

UG1 UG1 [29]
PH1 PH1 [29]
LG1 LG1 [29]
ISEN1 ISEN1 [29]
UG2 UG2 [29]
PH2 PH2 [29]
LG2 LG2 [29]
ISEN2 ISEN2 [29]
UGS UGS [29]
PHS PHS [29]
LGS LGS [29]
PWM3 PWM3 [29]
ISEN3 ISEN3 [29]

VCC3
DR109 1K/4/1
PCH_VRMPWRGD [12]
3VDUAL
DR108 8.2K/4
DR110 100K/4/1
DC17 0.1u/4/X7R/16V/K
SOT23
DQ19 MMBT2222A/SOT23/600mA/40
VCC3
C84 0.1u/4/X7R/16V/K/X
DR85 1K/4/1
VR_RDY
DR91 8.2K/4
DQ18 MMBT2222A/SOT23/600mA/40 SOT23

[29] VSUMN
DBC100 0.22u/6/X7R/16V/K ISEN3
DBC101 0.22u/6/X7R/16V/K ISEN2
DBC102 0.22u/6/X7R/16V/K ISEN1
[29] ISEN3
[29] ISEN2
[29] ISEN1

FOR RMA
Set VBOOT=GND for Vboot=0V
VBOOT=OPEN for
Vboot=1.1V
VBOOT
DQ56 MMBT2222A/SOT23/600mA/40
SOT23
[4] TDI
DR485 330/4/1
DR485->X, DQ56 -> 7002
DR485->O, DQ56 -> 2222

[29] VSUMP
VSUMP
Close DL2
Rseries
DR478 2.61K/4/1
DR46 11K/4/1
DRT3 10K/1/4/S
Rntc=(Rseries+DRT3)//Rparellel
Rparellel
DBC117 0.22u/4/X5R/6.3V/K
DBC25 0.22u/6/X7R/16V/K
DBC23 0.22u/4/X5R/6.3V/K
DBC20 330p/4/NPO/50V/J
DR47 620/4/1
DR49 100/4/1
Ri
Iocp-->150A
[29] VSUMN
VSUMN
DBC29 0.1u/4/X7R/16V/K

COMP
DBC103 10p/4/NPO/50V/J/X
ISEN3 [29]
DR462 3.24K/4/1/X
DBC104 1n/4/X7R/50V/K
DR461 845/4/1
DBC105 47p/4/NPO/50V/J
DR465 3.24K/4/1
VBOOT
DR483 4.02K/4/1
DR464 470K/4/1
DBC106 680p/4/X7R/50V/K
Vboot-->0V
Imax-->99A
DBC107 1n/4/X7R/50V/K/X
FB_OV
DR466 100/4/1
VCORE
DBC108 0.01u/4/X7R/25V/K
VCCSENSE
VCC_SENSE [4]
DR483 0/4
DBC109 0.01u/4/X7R/25V/K
VSSSENSE
VSS_SENSE [4]
DR468 100/4/1
Load line-->1.7mohm
Intersil Original Design

Gigabyte Technology
Title: CPU CORE VR-1
Size: Custom
Document Number: GA-B75M-HD3
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Date: Thursday, September 20, 2012
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PHASE 1

H61 ALL MOSFET =VISHAY 6+9m OHM

[1]

PHASE 3

[3]

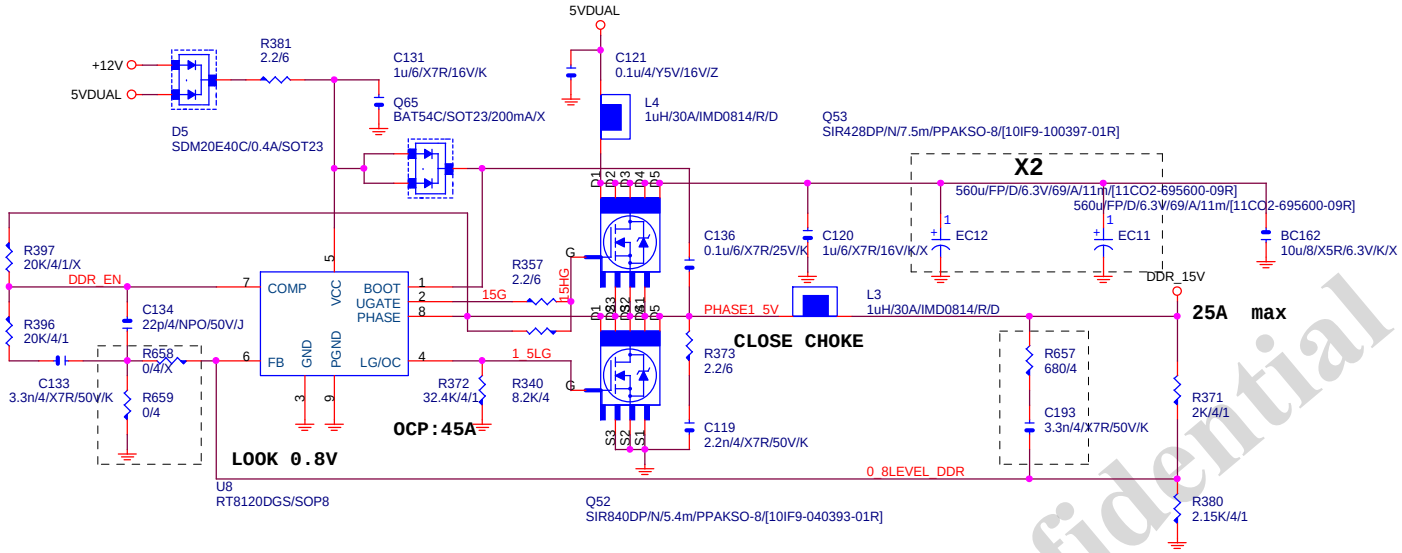
PHASE 2

[2]

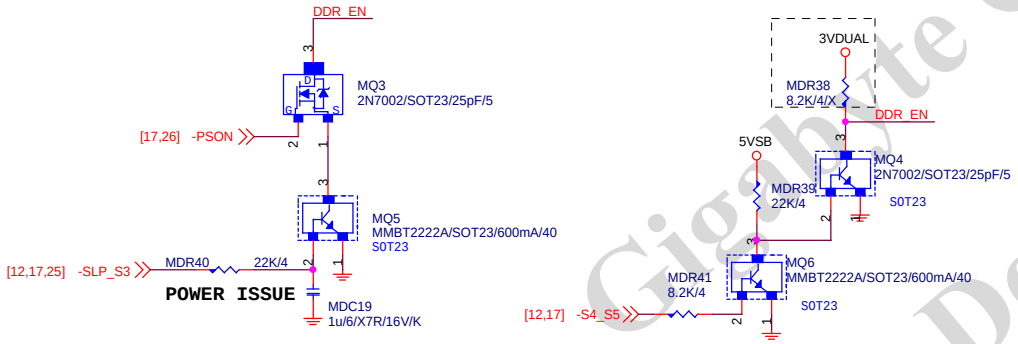
VAXG

Gigabyte Technology			
Title: CPU CORE VR-2			
Size: Custom	Document Number: GA-B75M-HD3		Rev: 1.0
Date: Thursday, September 20, 2012	Sheet 29 of 32		

DDR15V



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℃)

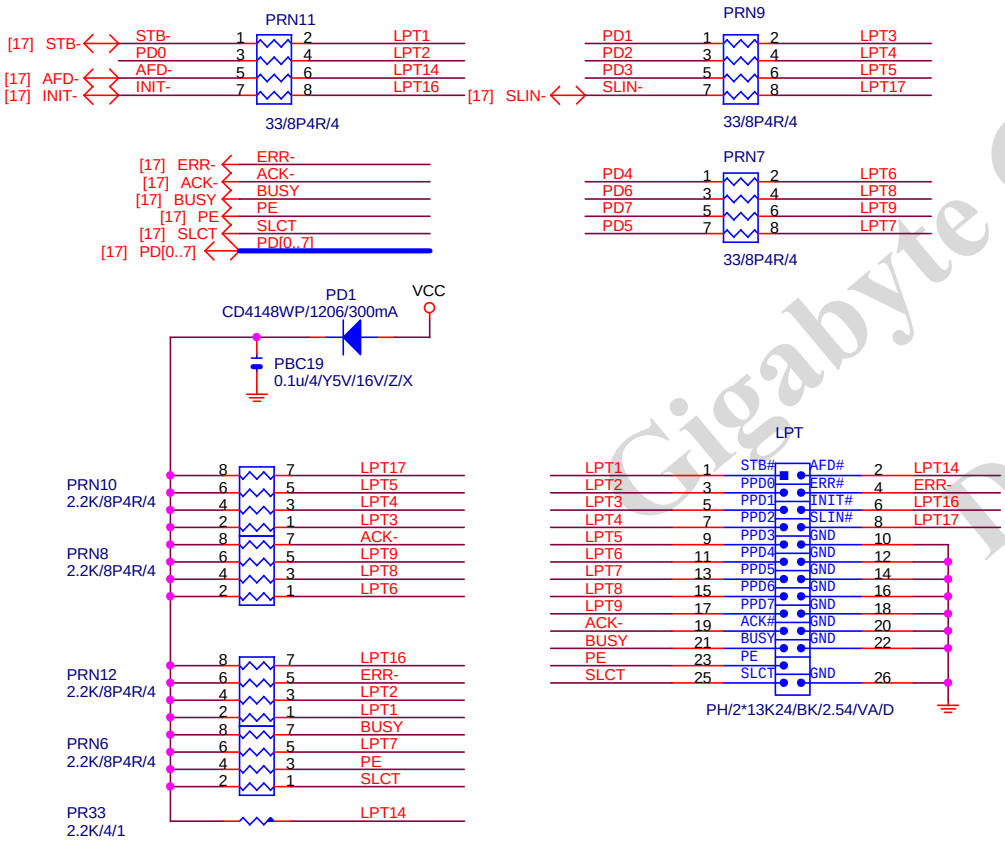
VIN Ripple current=4.7X1.7=7.99A(85℃)
-->故固態電容須2X7.99=15.98>11.45A

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

Gigabyte Technology			
Title: DDR POWER			
Size: Custom	Document Number: GA-B75M-HD3		Rev: 1.0
Date: Thursday, September 20, 2012	Sheet 30 of 32		

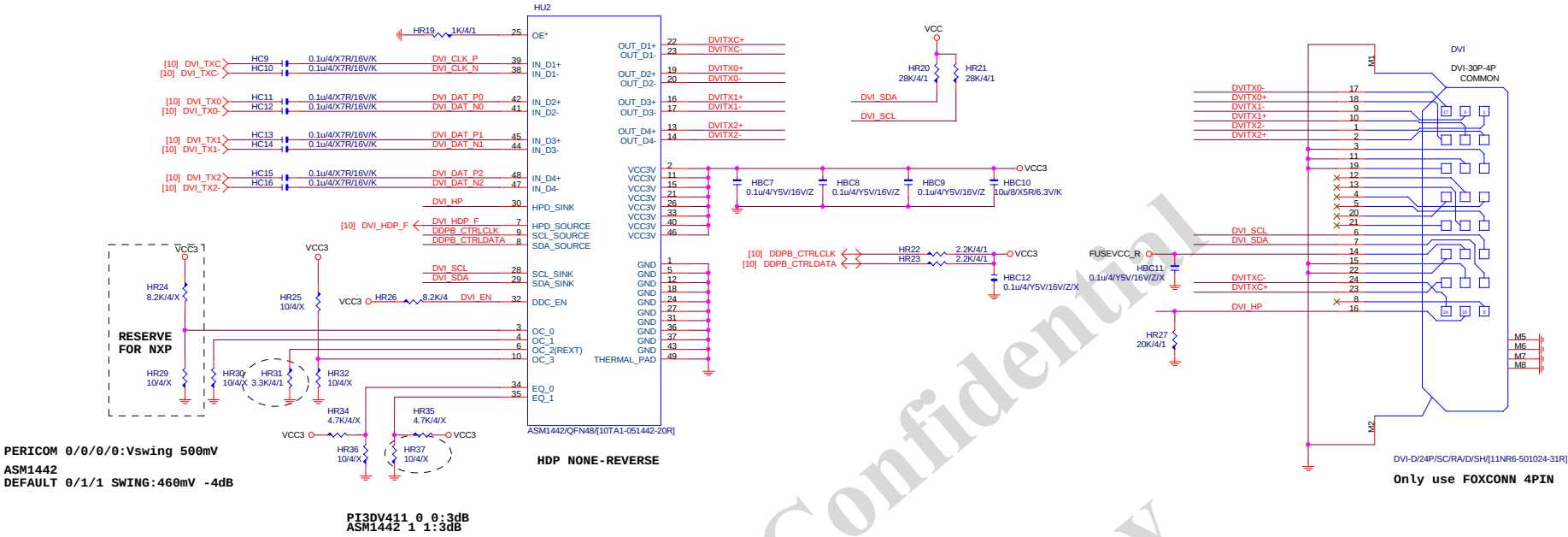
TPM

LPT PORT



Gigabyte Technology		
Title: LPT		
Size: Custom	Document Number: GA-B75M-HD3	Rev: 1.0
Date: Thursday, September 20, 2012	Sheet 31 of 32	

DVI LEVEL SHIFT



PERICOM 0/0/0/0:Vswing 500mV

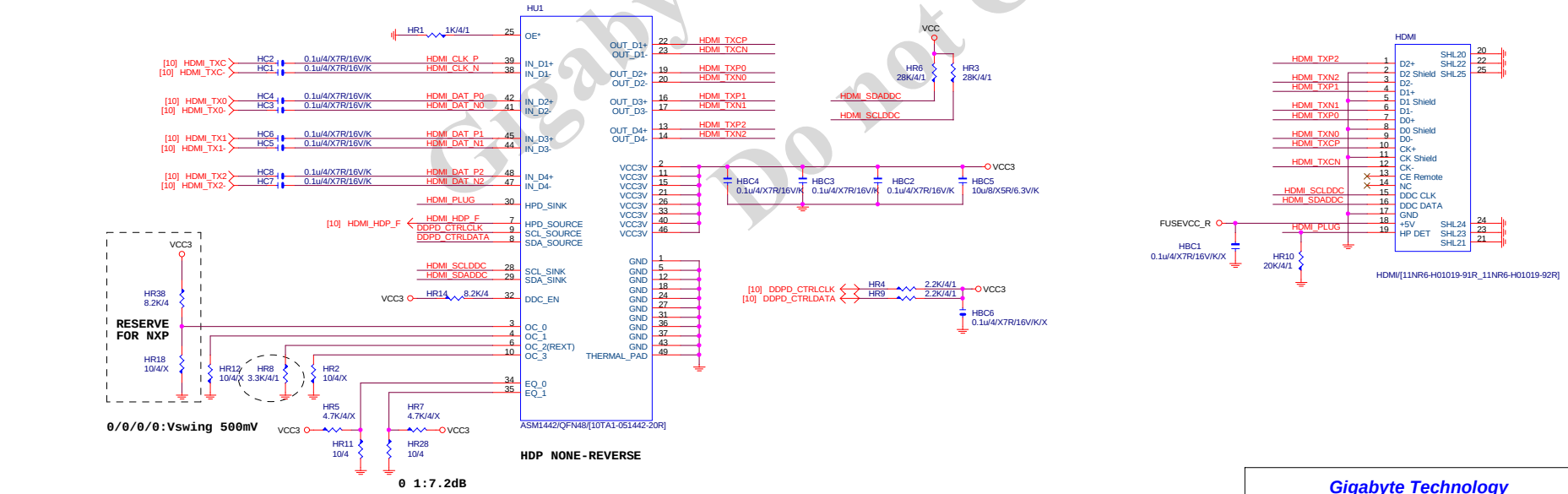
ASM1442
DEFAULT 0/1/1 SWING:460mV -4dB

HDP NONE-REVERSE

Only use FOXCONN 4PIN

PI3DV411 0 0:3dB
ASM1442 1 1:3dB

HDMI LEVEL SHIFT



0/0/0/0:Vswing 500mV

HDP NONE-REVERSE

0 1:7.2dB

Gigabyte Technology		
Title: DVI		
Size: Custom	Document Number: GA-B75M-HD3	Rev: 1.0
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