Model Name: GA-H55M-D2H

REV: 1.4

SHEET	TITLE
01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	CPU_LGA1156-A
05	CPU_LGA1156-B
06	CPU_LGA1156-C
07	DDR III CHANNEL A
08	DDR III CHANNEL B
09	DDR III POWER CAP
10	PCH_FDI,DMI,USB,PCIE,NVRAM
11	PCH_DP,CLK BUFFER
12	PCH_HOST,SATA,PCI
13	PCH_GPIO,CTRL,AUDIO
14	PCH_PWR,GND
15	PCI EXPRESS*16 SLOT
16	PCI EXPRESS*4 SLOT
17	PCI SLOT 1,2
18	ITE 8720 LPC IO
19	Dual BIOS,PHOT,D-OC
20	ALC888B-VD2
21	REAR AUDIO JACK
22	CLOCK GEN ICS9LPRS914
23	DISCRETE POWER
24	DDR 15V,PWR SEQ
25	CPU_VAXG PWM_ISL6314CRZ
26	CPU_VTT PWM_ISL6322G
27	VCORE PWM_ISL6334CR

SHEET	TITLE
28	F_PANEL , F_USB , FDD
29	ATX POWER,TPM
30	REALTEK RTL8111E
31	JMB368
32	HDMI,DVI
33	HWM,KB/MS , FAN CTRL
34	TABLE LIST

Gigabyte Technology

Title: Cover Sheet

Size: Custom | Document Number: GA-H55M-D2H | Rev: 1.4

Date: Wednesday, June 30, 2010 | Sheet 1 of 34

GA-H55M-D2H Version: 1.4

Component value change history

2010/07/09

Data	Change Item	Reason
2009/08/24	ADD DISPLAY LED	
2009/11/03	REV1.0 MODIFY MH7	
2010/01/07	PBOM:10A CHANGE 10B , 改一般1.0uH/1.2uH CHOKE S1R	
2010/02/22	REV1.01 REMOVE DISPLAY_LED	
2010/03/17	R1.1 RENAME FORM R1.01	
2010/03/24	R1.2 MODIFY LAN RTL8111E/CODEC ALC892R.	
2010/03/25	ADD 4PHASE PWM MODE -PROCHOT .	
2010/03/26	MODIFY SATA FOOTPRINT.	
2010/04/15	R1.3 MODIFY F_USB1/F_USB2 FUSE 3.5A FOR 3X POWER.	
2010/07/01	RENAM H55M-D2H R1.4.	
	MODIFY SOLID CAPACITOR/CODEC ALC888B-VD2.	EBOM:9MH55MD2H-00-14A.
2010/07/05	Modify OV. IC ->NCT3931U-2	EBOM:9MH55MD2H-00-14B
2010/07/09	PBOM	PBOM:9MH55MD2H-00-14B

Circuit or PCB layout change for next version

DATE	Change Item	Reason

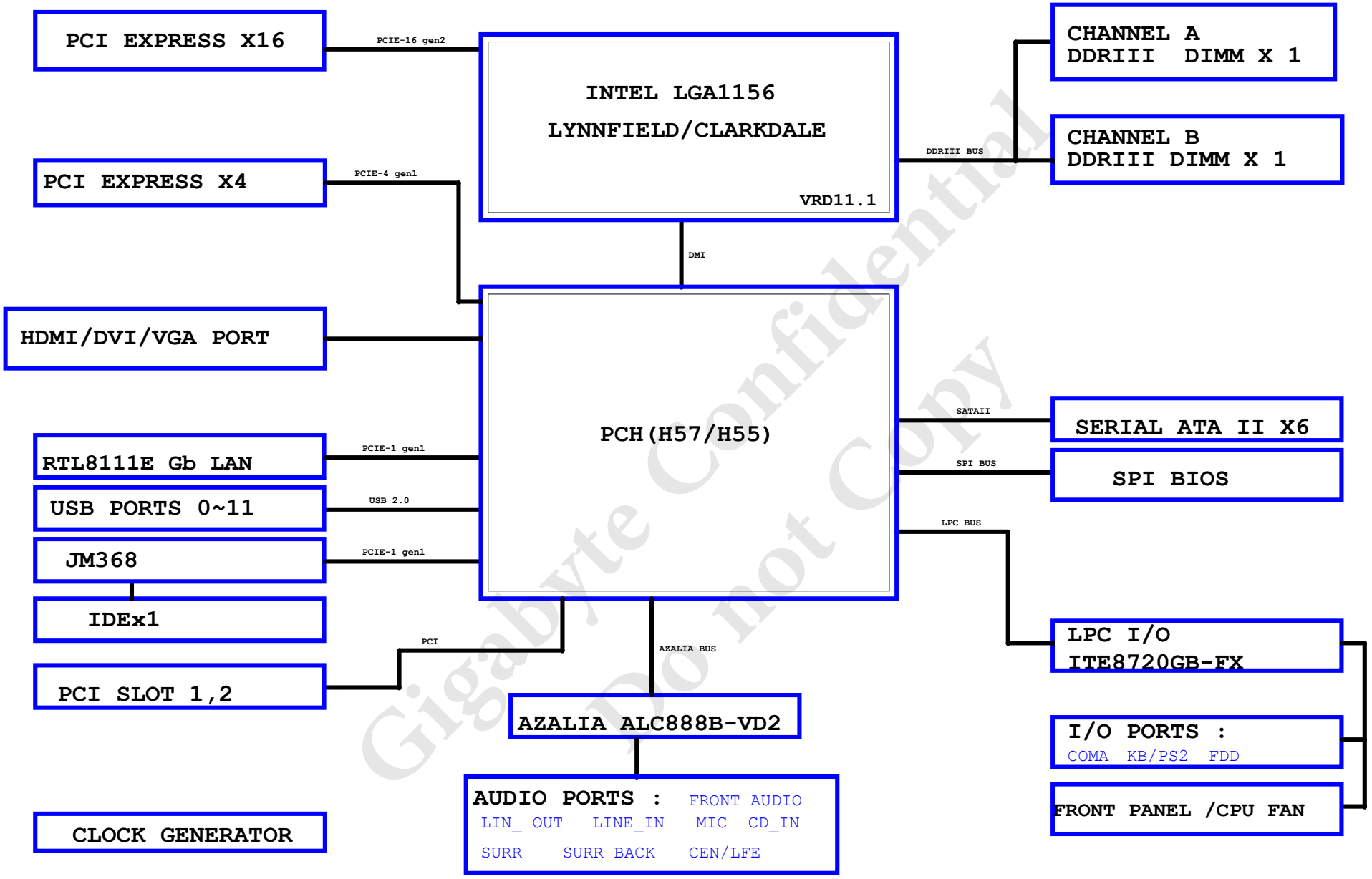
Gigabyte Technology

Title: BOM & PCB MODIFY HISTORY

Size: Custom | Document Number: GA-H55M-D2H | Rev: 1.4

Date: Monday, July 12, 2010 | Sheet 2 of 34

BLOCK DIAGRAM



Gigabyte Technology			
Title: BLOCK DIAGRAM			
Size: C	Document Number: GA-H55M-D2H		Rev: 1.4
Date: Wednesday, June 30, 2010	Sheet 3 of 34		

FDI : 16/5/5/5/16(breakout min 8/4/5/4/8)
Impedance=80 +- 17.5%

PCIEX16:16/5/5/5/16(breakout min 8/4/5/4/8)
Impedance=80 +- 17.5%

DMI:12/5/5/5/12
Impedance=80 +- 17.5%

CFG0=1: 1X16 PEG
CFG0=0: 2X8 PEG

For PCIE2.0 issue
Must remove after
fixed issue

CFG 0-5 all internal PULL-UP

CFG	H	L	NOTE
0			H:1X16 , L:2X8
1	RSVD		
2	RSVD		
3	NORM	RSVD	LANE REVERSAL
4	DISABLE	ENABLE	DP PRESENCE
5	RSVD		
6	RSVD		
7	RSVD		ENGINEERING EXPERIMENT
15	RSVD		ENGINEERING EXPERIMENT

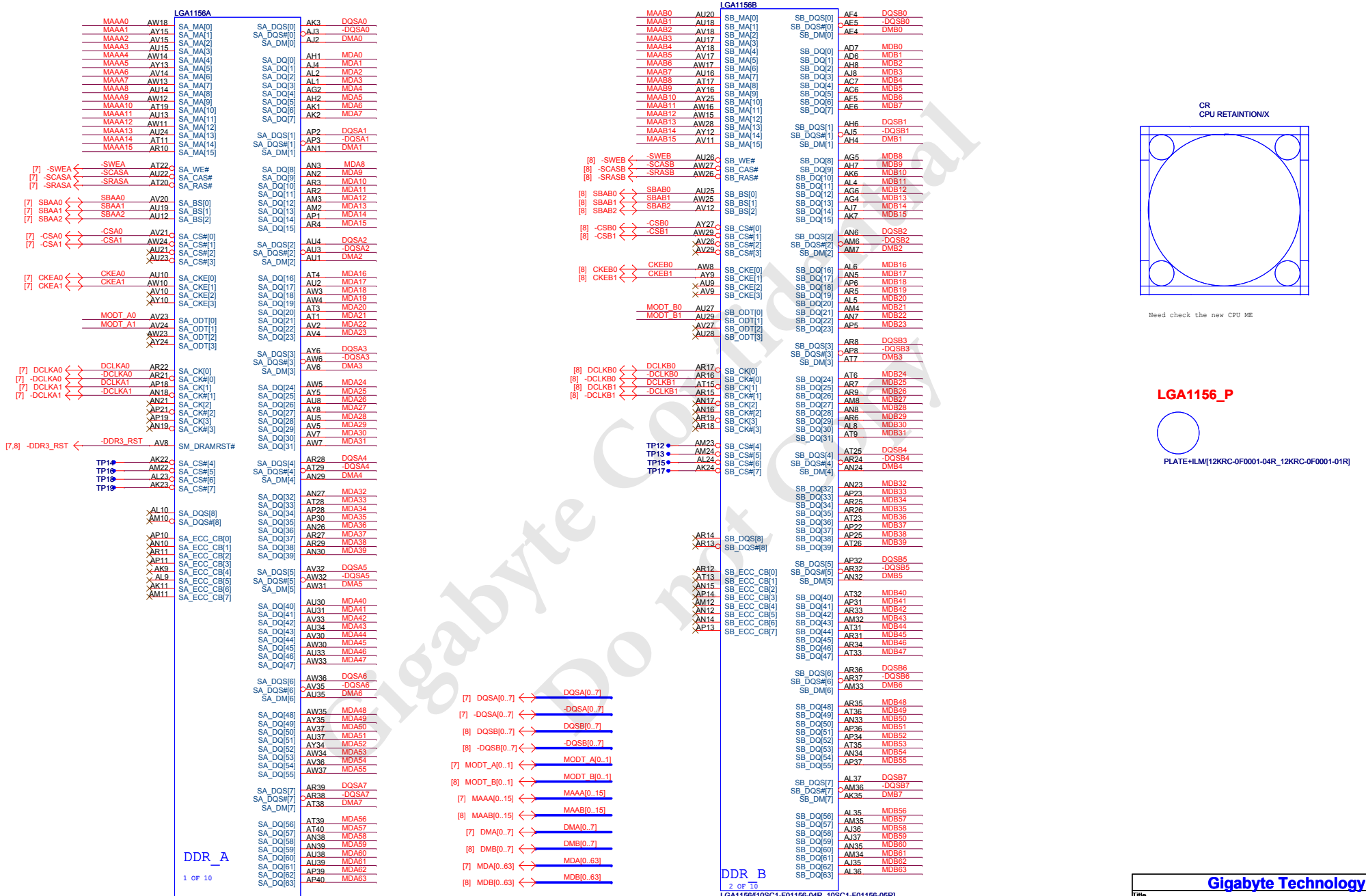
	FUNCTION	DEFAULT
VID0	MSI0	0
VID1	MSI1	1
VID2	MSI2	1
VID3	IMON CFG0	1
VID4	IMON CFG1	1
VID5	IMON CFG2	1
VID6	RSVD	0
VID7	VRD SEL	0
PSI#	RSVD	

POWER ON CONFIG TABLE (Default=1.2250V)

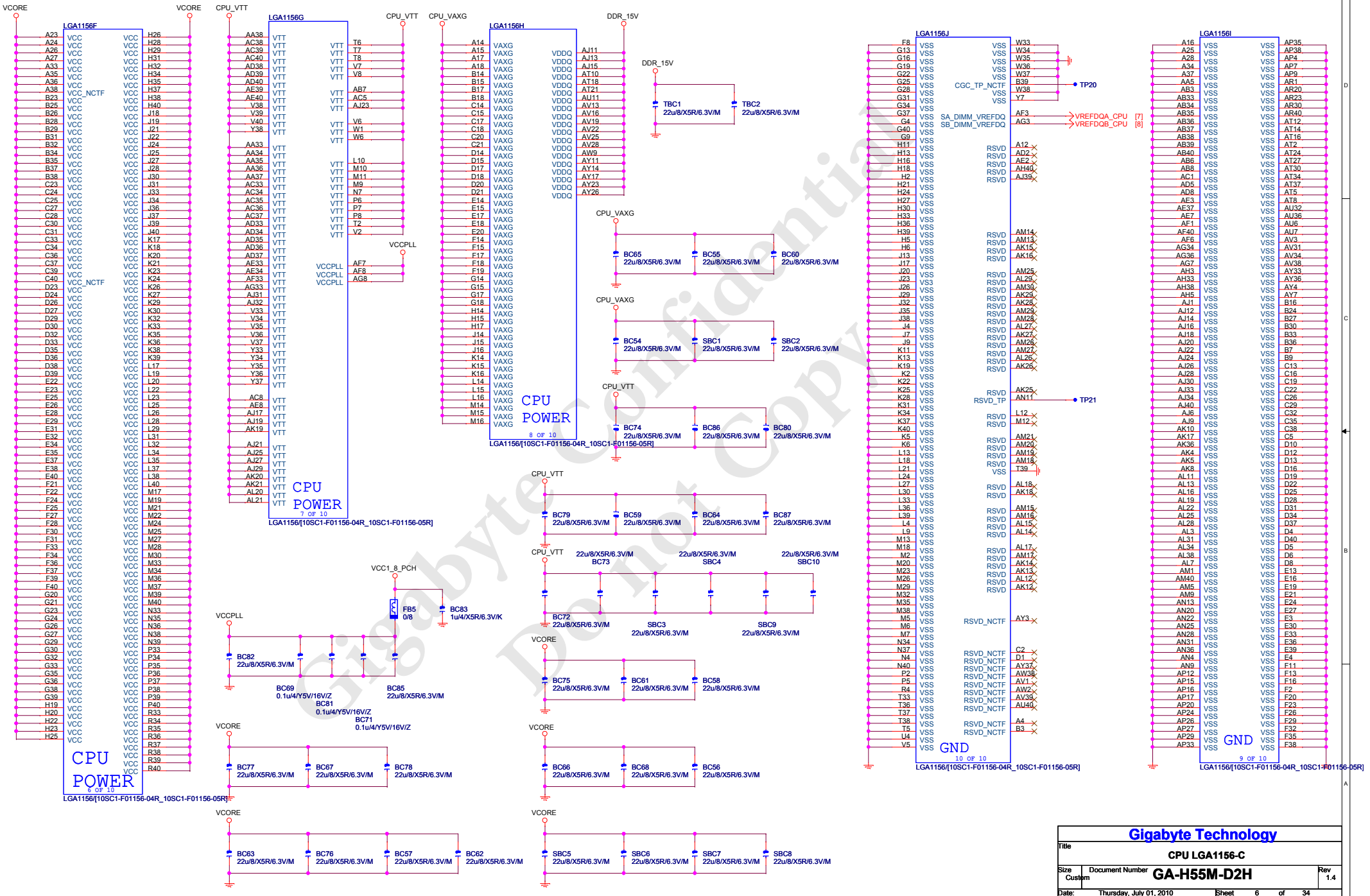
Check Trace length/ width

Title	CPU LGA1156-A
Size	Custom
Document Number	GA-H55M-D2H
Rev	1.4
Date:	Thursday, July 01, 2010
Sheet	4 of 34

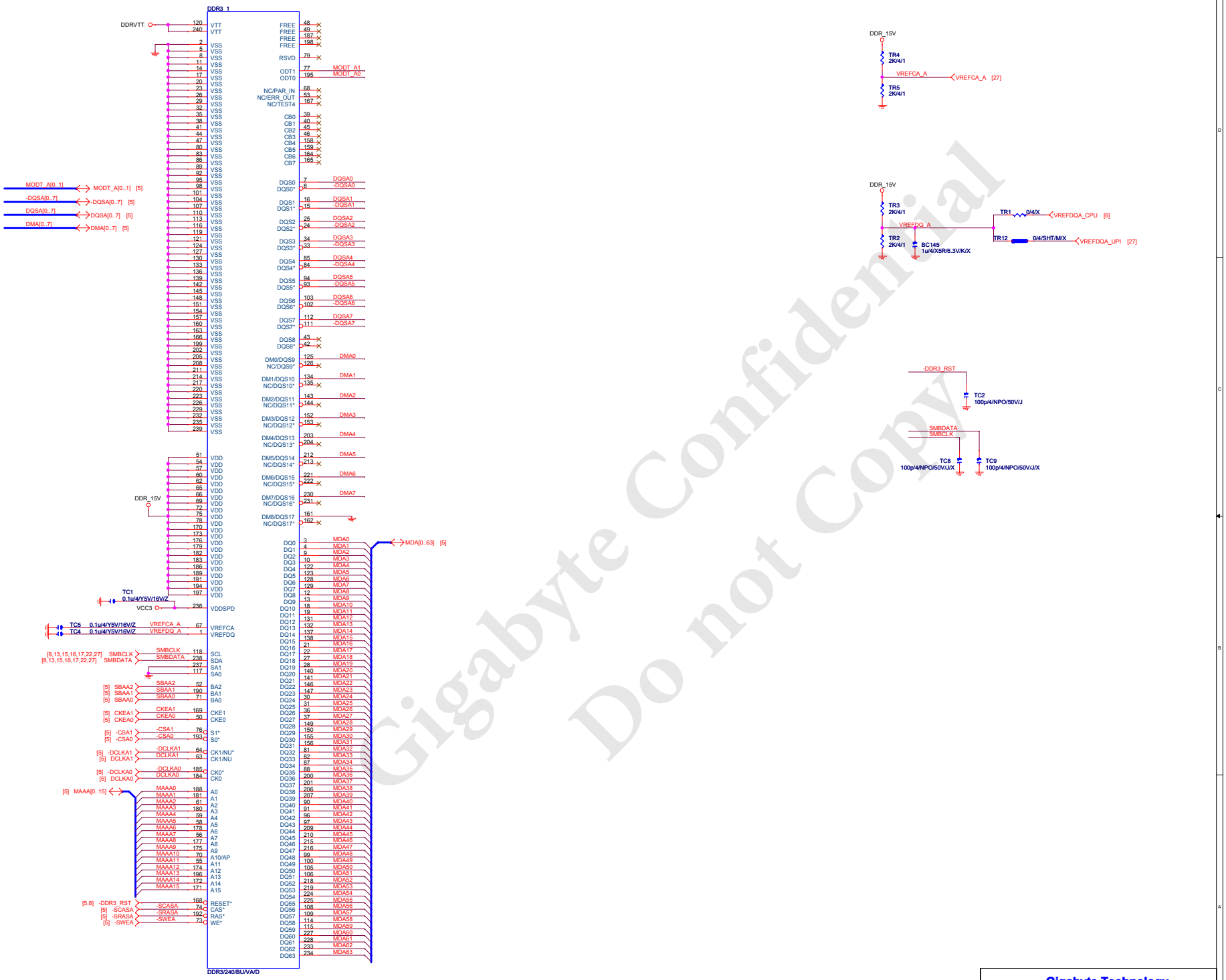
Gigabyte Technology



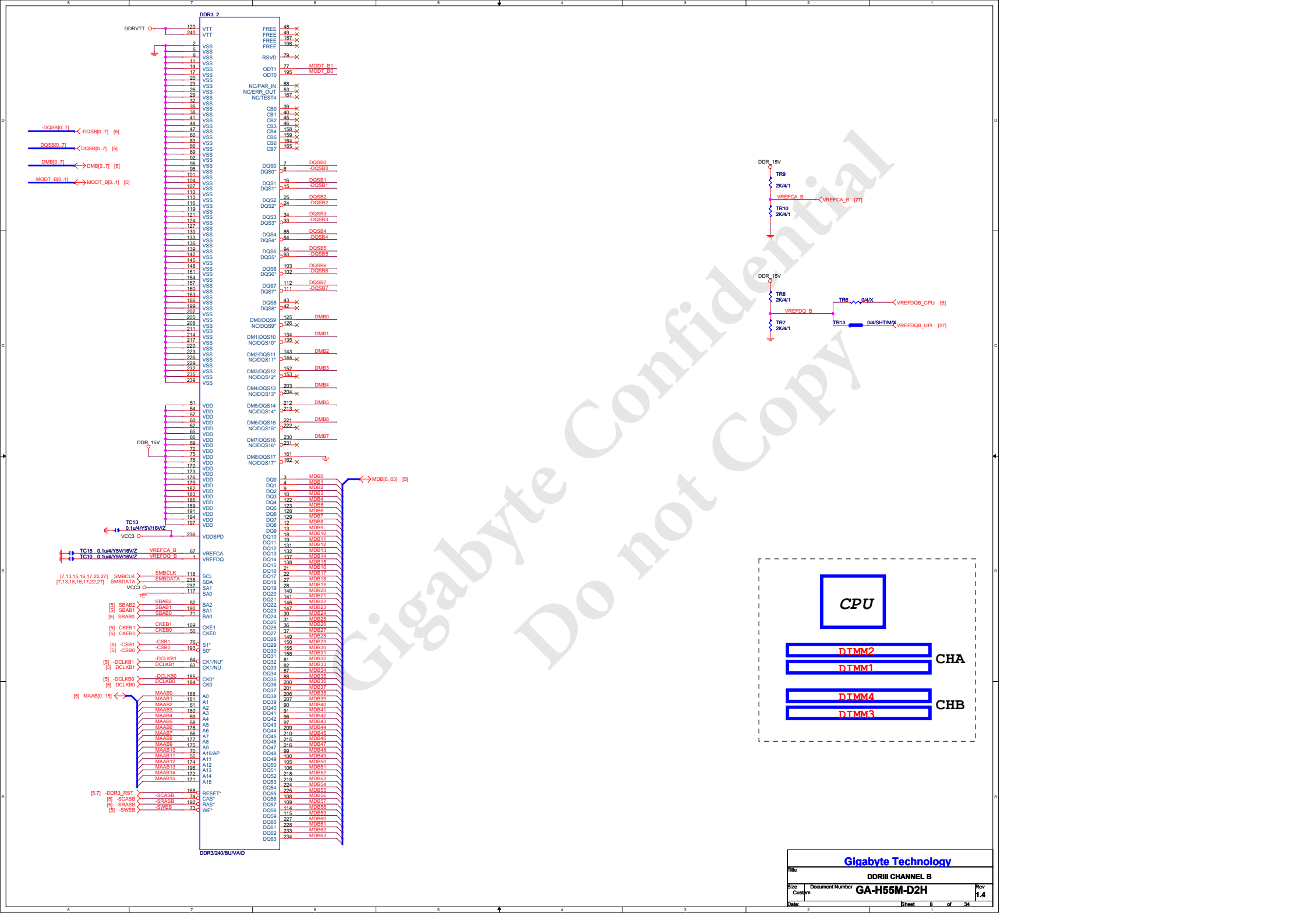
Gigabyte Technology			
Title	CPU LGA1156-B		
Size: Custom	Document Number: GA-H55M-D2H		Rev: 1.4
Date: Thursday, July 01, 2010	Sheet 5 of 34		



Gigabyte Technology			
Title: CPU LGA1156-C			
Size: Custom	Document Number: GA-H55M-D2H		Rev: 1.4
Date: Thursday, July 01, 2010	Sheet 6 of 34		



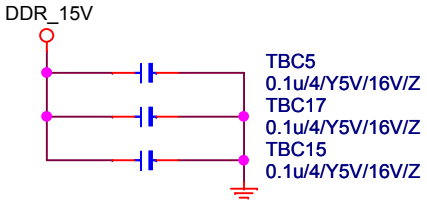
Gigabyte Technology		
Title: DDRIII CHANNEL A		
Size: Custom	Document Number: GA-H55M-D2H	Rev: 1.4
Date:	Sheet 7 of 34	

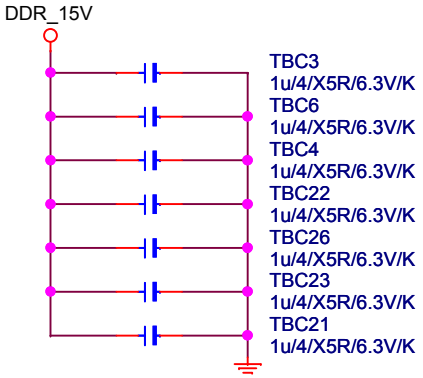


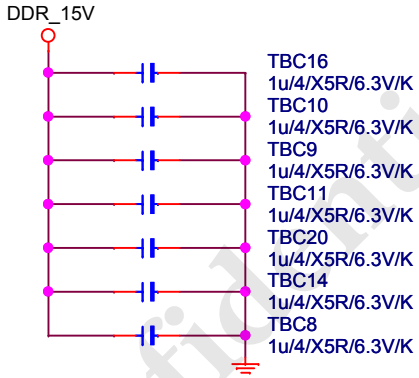
Gigabyte Technology			
Title: DDRIII CHANNEL B			
Size: Custom	Document Number: GA-H55M-D2H		Rev: 1.4
Date:	Sheet 8 of 34		

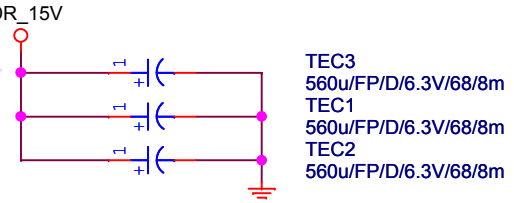
DDR TERMINATION CHANNEL A/B

DDR15V Decouple

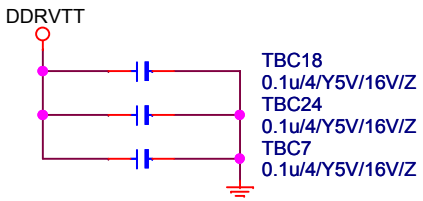


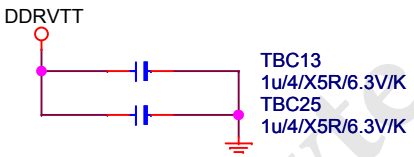


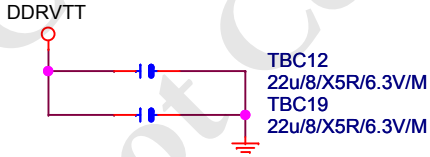


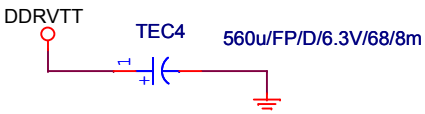


DDRVTT Decouple

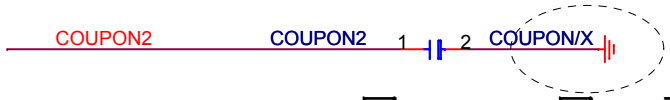








REF VCC層GND,GND層GND要塞孔



REF GND層GND,VCC層GND要塞孔

Gigabyte Technology			
Title: DDRIII POWER CAP			
Size: A	Document Number: GA-H55M-D2H		Rev: 1.4
Date: Thursday, July 01, 2010		Sheet 9 of 34	

DMI:12/5/5/5/12
Impedance=80 +- 17.5%

PCHB

[4] DMI_0TXN → DMI_0TXN → A19 DMI0RXN
[4] DMI_0TXP → DMI_0TXP → B18 DMI0RXP
[4] DMI_0RXN → DMI_0RXN → J22 DMI0TXN
[4] DMI_0RXP → DMI_0RXP → H22 DMI0TXP
[4] DMI_1TXN → DMI_1TXN → B20 DMI1RXN
[4] DMI_1TXP → DMI_1TXP → C19 DMI1RXP
[4] DMI_1RXN → DMI_1RXN → G22 DMI1TXN
[4] DMI_1RXP → DMI_1RXP → F22 DMI1TXP
[4] DMI_2TXN → DMI_2TXN → E20 DMI2RXN
[4] DMI_2TXP → DMI_2TXP → D20 DMI2RXP
[4] DMI_2RXN → DMI_2RXN → H24 DMI2TXN
[4] DMI_2RXP → DMI_2RXP → G24 DMI2TXP
[4] DMI_3TXN → DMI_3TXN → G18 DMI3RXN
[4] DMI_3TXP → DMI_3TXP → H18 DMI3RXP
[4] DMI_3RXN → DMI_3RXN → L24 DMI3TXN
[4] DMI_3RXP → DMI_3RXP → K24 DMI3TXP
VCC1_05_PCH — R241 49.9/4/1 — DMI_COMP → D21 DMI_IRCOMP
C21 DMI_ZCOMP

DMI

Impedance=80 +- 17.5%
PCIE X1 :15/5/5/5/15

[22] -SRCCLK_PCH → H20 CLKIN_DMI_N
[22] SRCCLK_PCH → G20 CLKIN_DMI_P

PCIEX4
[16] PCIE_IN1 → D15 PERN1
[16] PCIE_IP1 → C16 PERP1
[16] PCIE_TN1 — 0.1u/4/X7R/16V/K — C35 — PET_N1 → D18 PETN1
[16] PCIE_TP1 — 0.1u/4/X7R/16V/K — C34 — PET_P1 → D17 PETP1
[16] PCIE_IN2 → B17 PERN2
[16] PCIE_IP2 → A16 PERP2
[16] PCIE_TN2 — 0.1u/4/X7R/16V/K — C41 — PET_N2 → H16 PETN2
[16] PCIE_TP2 — 0.1u/4/X7R/16V/K — C38 — PET_P2 → G16 PETP2
[16] PCIE_IN3 → B15 PERN3
[16] PCIE_IP3 → C14 PERP3
[16] PCIE_TN3 — 0.1u/4/X7R/16V/K — C46 — PET_N3 → H14 PETN3
[16] PCIE_TP3 — 0.1u/4/X7R/16V/K — C44 — PET_P3 → G14 PETP3
[16] PCIE_IN4 → D14 PERN4
[16] PCIE_IP4 → D13 PERP4
[16] PCIE_TN4 — 0.1u/4/X7R/16V/K — C52 — PET_N4 → K14 PETN4
[16] PCIE_TP4 — 0.1u/4/X7R/16V/K — C51 — PET_P4 → L14 PETP4

JMB368
[31] MIDE_IN → C12 PERN5
[31] MIDE_IP → B13 PERP5
[31] MIDE_ON — 0.1u/4/X7R/16V/K — C96 — PET_N5 → H12 PETN5
[31] MIDE_OP — 0.1u/4/X7R/16V/K — C97 — PET_P5 → G12 PETP5

LAN
[30] ML_IN → D8 PERN6
[30] ML_IP → C9 PERP6
[30] ML_ON — 0.1u/4/X7R/16V/K — C92 — PET_N6 → G11 PETN6
[30] ML_OP — 0.1u/4/X7R/16V/K — C93 — PET_P6 → H11 PETP6

A12 PERN7
B11 PERP7
D11 PETN7
D10 PETP7
C7 PERN8
B8 PERP8
K12 PETN8
J12 PETP8

PCI-E

2 OF 11
BD82H55/BGA951

電容要靠近 slot 端

PCH_HS
1X
2X
PCH_HS[12SP2-030030-C1R_12SP2-030030-C2R]

USB:15/4.5/7.5/4.5/15
Impedance=90+- 15%

USB

USBP0N AW25 → -USBP0 → -USBP0 [28]
USBP0P AY25 → +USBP0 → +USBP0 [28]
USBP1N BA23 → -USBP1 → -USBP1 [28]
USBP1P AY24 → +USBP1 → +USBP1 [28]
USBP2N AW23 → -USBP2 → -USBP2 [28]
USBP2P AY22 → +USBP2 → +USBP2 [28]
USBP3N AR22 → -USBP3 → -USBP3 [28]
USBP3P AP22 → +USBP3 → +USBP3 [28]
USBP4N AV21 → -USBP4 → -USBP4 [30]
USBP4P AV22 → +USBP4 → +USBP4 [30]
USBP5N AY20 → -USBP5 → -USBP5 [30]
USBP5P AW21 → +USBP5 → +USBP5 [30]
USBP6N AK20
USBP6P AL20
USBP7N AV20
USBP7P AW19
USBP8N BA19 → -USBP8 → ~~-USBP8 [26]~~
USBP8P AY18 → +USBP8 → +USBP8 [28]
USBP9N AM20 → -USBP9 → -USBP9 [28]
USBP9P AN20 → +USBP9 → +USBP9 [28]
USBP10N AV17 → -USBP10 → -USBP10 [28]
USBP10P AV18 → +USBP10 → +USBP10 [28]
USBP11N AR20 → -USBP11 → -USBP11 [28]
USBP11P AT20 → +USBP11 → +USBP11 [28]
USBP12N AK18 → -USBP12 → -USBP12 [33]
USBP12P AL18 → +USBP12 → +USBP12 [33]
USBP13N AY17 → -USBP13 → -USBP13 [33]
USBP13P BA16 → +USBP13 → +USBP13 [33]

H55-->PORT6,7:N/A

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

OC0#/GPIO59 AT31 → -USBOC_F [13,28]
OC1#/GPIO40 AT30
OC2#/GPIO41 AK28
OC3#/GPIO42 AP30
OC4#/GPIO43 AP31 → -USBOC_R [30]
OC5#/GPIO9 AL28
OC6#/GPIO10 AL30
OC7#/GPIO14 AM30 — GPIO14

USBRBIAS# AY15 — USBRBIAS R232 22.6/4/1
USBRBIAS AV15

CLKIN_DOT_96N AM22 → -DOTCLK → -DOTCLK [22]
CLKIN_DOT_96P AL22 → DOTCLK → DOTCLK [22]

USB OC# Configure	
OC0#	USB0,1(F_USB1)
OC1#	USB2,3(F_USB2)
OC2#	USB4,5(USB_LAN)
OC3#	USB6,7(X)H55-->N/A
OC4#	USB8,9(R_USB)
OC5#	USB10~11(R_USB)
OC6#	USB12~13(KB_USB)
OC7#	GPIO14

NV_ALE	
Hi	Enable Danbury
Lo	Disable Danbury

Intel anti theft techonlogy

PCHE

NV_ALE J34
NV_CLE L35
M32 NV_RB#
J36 NV_WR#0_RE#
J35 NV_WR#1_RE#
M31 NV_WE#_CK0
F38 NV_WE#_CK1

NV_DQ0/NV_IO0 T33
NV_DQ1/NV_IO1 P35
NV_DQ2/NV_IO2 T31
NV_DQ3/NV_IO3 P33
NV_DQ4/NV_IO4 M35
NV_DQ5/NV_IO5 L33
NV_DQ6/NV_IO6 M36
NV_DQ7/NV_IO7 M34
NV_DQ8/NV_IO8 M30
NV_DQ9/NV_IO9 F36
NV_DQ10/NV_IO10 H33
NV_DQ11/NV_IO11 F37
NV_DQ12/NV_IO12 E39
NV_DQ13/NV_IO13 G33
NV_DQ14/NV_IO14 D40
NV_DQ15/NV_IO15 F33

NV_CE#0 H36
NV_CE#1 H35
NV_CE#2 P32
NV_CE#3 E41

NV_DQS0 P36
NV_DQS1 F40

NV_RCOMP L36 — NV_RCOMP R283 33/4

NVRAM
5 OF 11
BD82H55/BGA951

3VDUAL_ICH
R248 8.2K/4/X
GPIO14

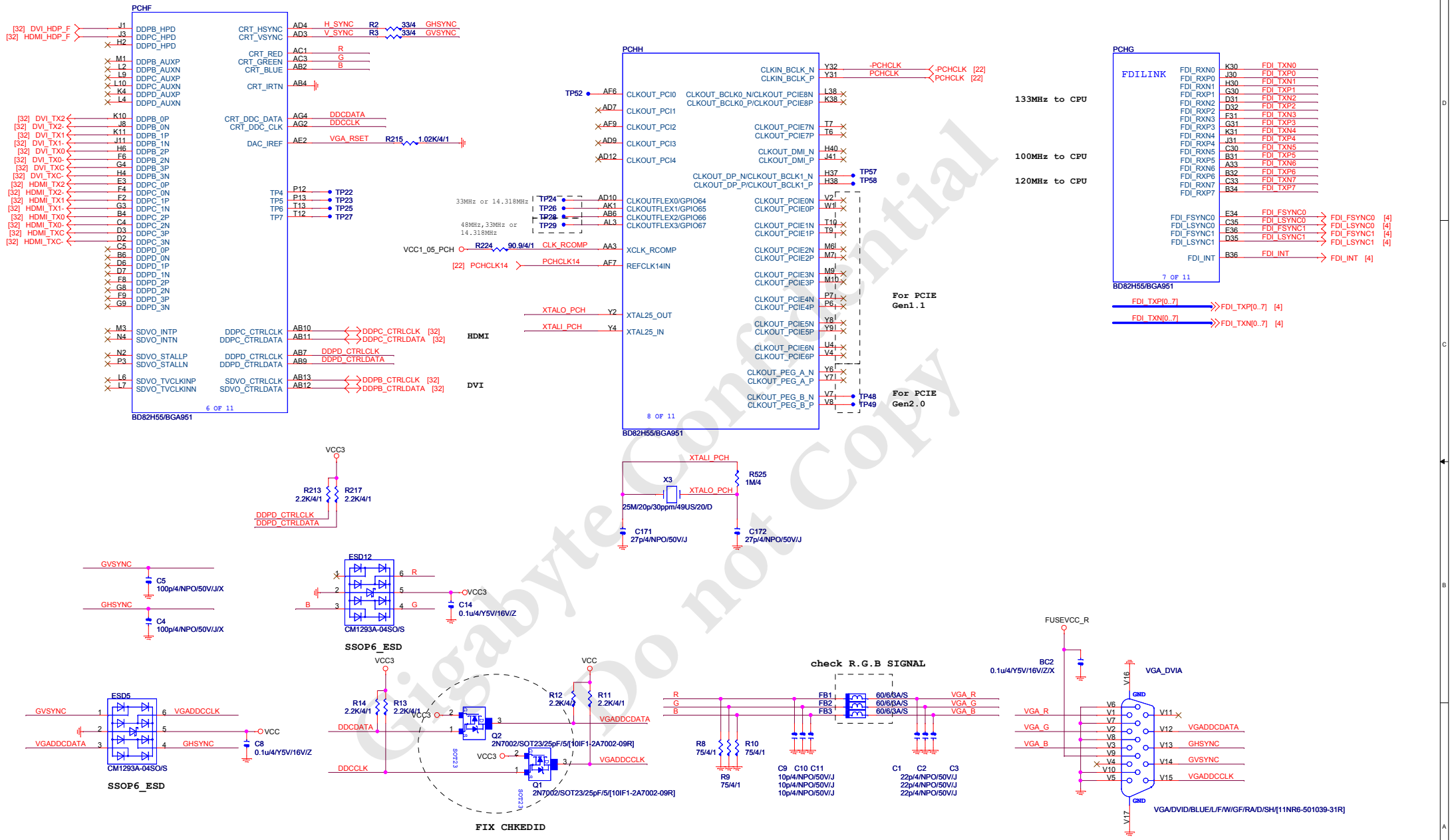
Impedance=50+- 15%
ONFI: NV_DQ 4/5
NV_DQS 4/10
NV_CTRL 4/10
NV_CK 4/15

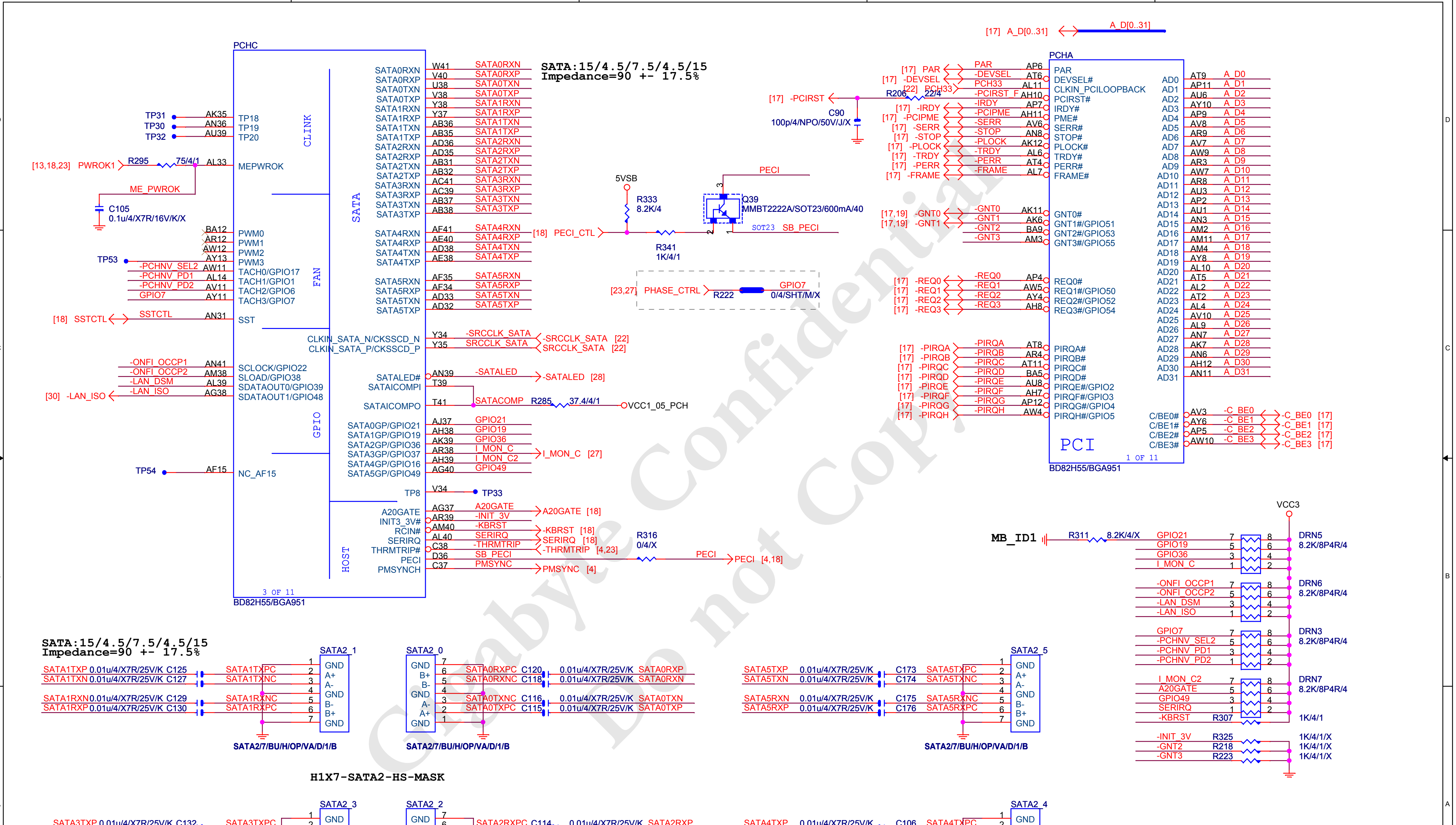
NV_PCH
R275 8.2K/4
NV_ALE
R273 8.2K/4/X

NV_PCH
R280 8.2K/4/X
NV_CLE
R277 4.75K/4/1/X

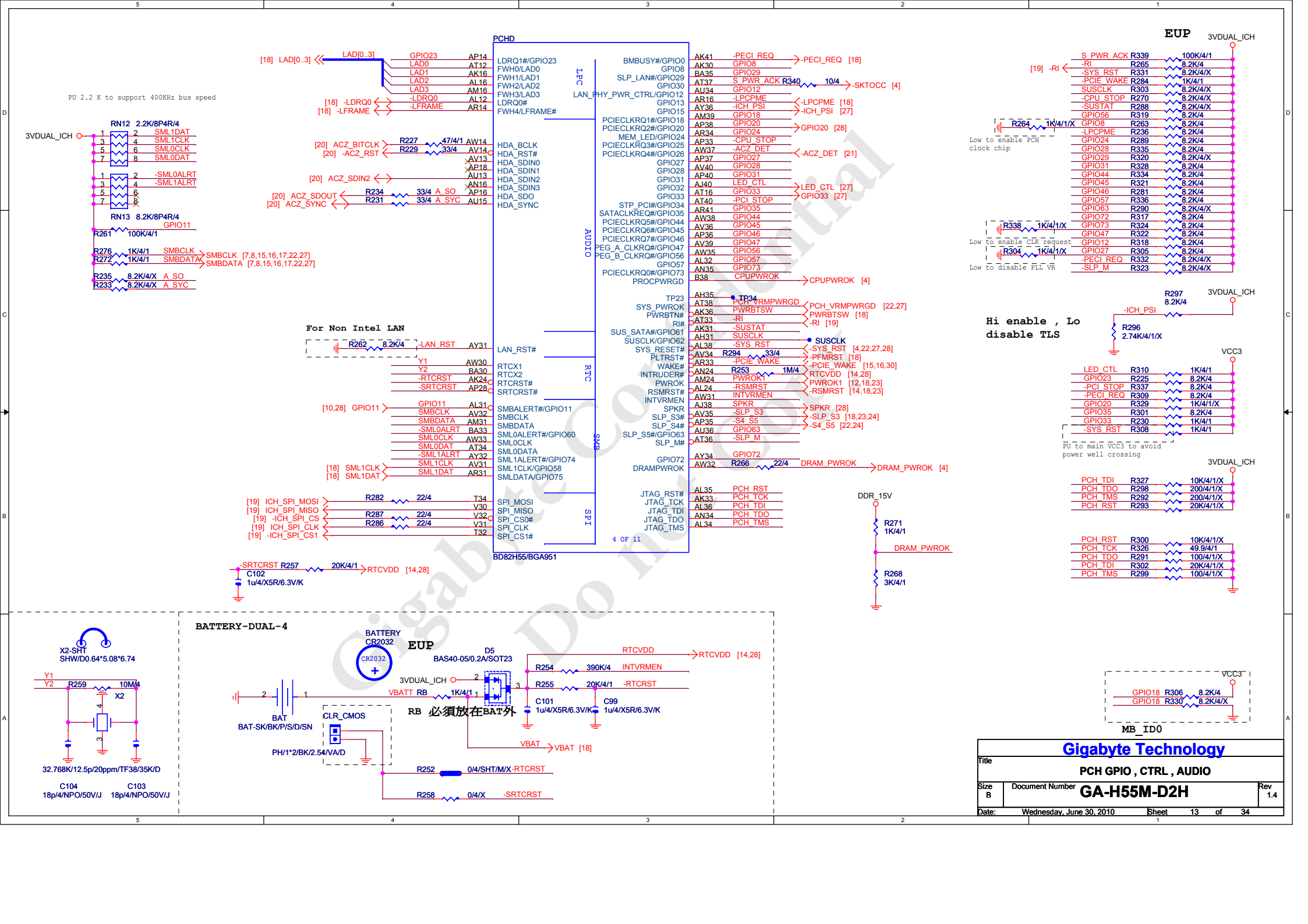
DMI Terminator voltage
HI : AC COUP : TX/RX TO VCC
LO : DC COUP : HALF SWING

Gigabyte Technology			
Title: PCH FDI,DMI,USB ,PCIE,NVRAM			
Size: B	Document Number: GA-H55M-D2H		Rev: 1.4
Date: Thursday, July 01, 2010	Sheet 10 of 34		


PCHF
PCHH
PCHG
BD82H55/BGA951
6 OF 11
8 OF 11
7 OF 11
FDILINK
133MHz to CPU
100MHz to CPU
120MHz to CPU
For PCIE Gen1.1
For PCIE Gen2.0
HDMI
DVI
SSOP6_ESD
FIX CHKEDID
check R.G.B SIGNAL
VGA_DVIA
VGA/DVID/BLUE/L/F/W/GF/RA/D/SH/[11NR6-501039-31R]
Gigabyte Technology
PCH DISPLAY ,CLK BUFFER
GA-H55M-D2H
Thursday, July 01, 2010
Sheet 11 of 34
Rev 1.4
Gigabyte Confidential
Do not Copy


PCHC
SATA:15/4.5/7.5/4.5/15
Impedance=90 +- 17.5%
CLINK
SATA
FAN
GPIO
HOST
3 OF 11
BD82H55/BGA951
PCHA
PCI
1 OF 11
BD82H55/BGA951
[17] A_D[0..31]
A_D[0..31]
5VSB
R333
8.2K/4
Q39
MMBT2222A/SOT23/600mA/40
SOT23 SB_PECI
PECI
[18] PECI_CTL
R341
1K/4/1
[23,27] PHASE_CTRL
R222
GPIO7
0/4/SHT/M/X
C90
100p/4/NPO/50V/J/X
R206
22/4
[17] -PCIRST
R295
75/4/1
[13,18,23] PWROK1
ME_PWROK
C105
0.1u/4/X7R/16V/K/X
TP31
TP30
TP32
TP53
TP54
TP33
[18] SSTCTL
[30] -LAN_ISO
R285
37.4/4/1
VCC1_05_PCH
R316
0/4/X
[4,18] PECI
MB_ID1
R311
8.2K/4/X
VCC3
DRN5
8.2K/8P4R/4
DRN6
8.2K/8P4R/4
DRN3
8.2K/8P4R/4
DRN7
8.2K/8P4R/4
R307
1K/4/1
R325
1K/4/1/X
R218
1K/4/1/X
R223
1K/4/1/X
SATA:15/4.5/7.5/4.5/15
Impedance=90 +- 17.5%
SATA2_1
SATA2_0
SATA2_5
SATA2_3
SATA2_2
SATA2_4
SATA2/7/BU/H/OP/VA/D/1/B
H1X7-SATA2-HS-MASK

	Gigabyte Technology
Title	PCH HOST , SATA, PCI
Size B	Document Number **GA-H55M-D2H** — Rev 1.4
Date:	Wednesday, June 30, 2010 — Sheet 12 of 34


PCHD
PU 2.2 K to support 400KHz bus speed
RN12 2.2K/8P4R/4
RN13 8.2K/8P4R/4
3VDUAL_ICH
SML1DAT
SML1CLK
SML0CLK
SML0DAT
-SML0ALRT
-SML1ALRT
GPIO11
SMBCLK [7,8,15,16,17,22,27]
SMBDATA [7,8,15,16,17,22,27]
A_SO
A_SYC
LAD[0..3]
-LDRQ0
-LFRAME
ACZ_BITCLK
-ACZ_RST
ACZ_SDIN2
ACZ_SDOUT
ACZ_SYNC
HDA_BCLK
HDA_RST#
HDA_SDIN0
HDA_SDIN1
HDA_SDIN2
HDA_SDIN3
HDA_SDO
HDA_SYNC
LPC
AUDIO
For Non Intel LAN
-LAN_RST
LAN_RST#
RTCX1
RTCX2
RTCRST#
SRTCRST#
RTC
SMBALERT#/GPIO11
SMBCLK
SMBDATA
SML0ALERT#/GPIO60
SML0CLK
SML0DATA
SML1ALERT#/GPIO74
SML1CLK/GPIO58
SMLDATA/GPIO75
SMB
SPI_MOSI
SPI_MISO
SPI_CS0#
SPI_CLK
SPI_CS1#
SPI
4 OF 11
BD82H55/BGA951
BMBUSY#/GPIO0
GPIO8
GPIO29
S_PWR_ACK
GPIO30
GPIO12
-LPCPME
-ICH_PSI
GPIO18
GPIO20
GPIO24
-CPU_STOP
-ACZ_DET
GPIO27
GPIO28
GPIO31
LED_CTL
GPIO33
-PCI_STOP
GPIO35
GPIO44
GPIO45
GPIO46
GPIO47
GPIO56
GPIO57
GPIO73
CPUPWROK
TP23
PCH_VRMPWRGD
PWRBTSW
-RI
-SUSTAT
SUSCLK
-SYS_RST
-PFMRST
-PCIE_WAKE
RTCVDD
PWROK1
-RSMRST
INTVRMEN
SPKR
-SLP_S3
-S4_S5
GPIO63
-SLP_M
GPIO72
DRAM_PWROK
PCH_RST
PCH_TCK
PCH_TDI
PCH_TDO
PCH_TMS
-PECI_REQ
-SKTOCC
-LPCPME
-ICH_PSI
GPIO20
-ACZ_DET
LED_CTL
GPIO33
CPUPWROK
PCH_VRMPWRGD
PWRBTSW
-RI
-SUSTAT
SUSCLK
-SYS_RST
-PFMRST
-PCIE_WAKE
RTCVDD
PWROK1
-RSMRST
SPKR
-SLP_S3
-S4_S5
GPIO63
-SLP_M
GPIO72
DRAM_PWROK
JTAG_RST#
JTAG_TCK
JTAG_TDI
JTAG_TDO
JTAG_TMS
DDR_15V
R271 1K/4/1
R268 3K/4/1
EUP
3VDUAL_ICH
S_PWR_ACK R339 100K/4/1
-RI R265 8.2K/4
-SYS_RST R331 8.2K/4/X
-PCIE_WAKE R284 1K/4/1
SUSCLK R303 8.2K/4/X
-CPU_STOP R270 8.2K/4/X
-SUSTAT R288 8.2K/4/X
GPIO56 R319 8.2K/4
GPIO8 R263 8.2K/4
-LPCPME R236 8.2K/4
GPIO24 R289 8.2K/4
GPIO28 R335 8.2K/4
GPIO29 R320 8.2K/4/X
GPIO31 R328 8.2K/4
GPIO44 R334 8.2K/4
GPIO45 R321 8.2K/4
GPIO46 R281 8.2K/4
GPIO57 R336 8.2K/4
GPIO63 R290 8.2K/4/X
GPIO72 R317 8.2K/4
GPIO73 R324 8.2K/4
GPIO47 R322 8.2K/4
GPIO12 R318 8.2K/4
GPIO27 R305 8.2K/4
-PECI_REQ R332 8.2K/4/X
-SLP_M R323 8.2K/4/X
R264 1K/4/1/X
Low to enable PCH clock chip
R338 1K/4/1/X
Low to enable CLK request
R304 1K/4/1/X
Low to disable PLL VR
Hi enable , Lo disable TLS
R297 8.2K/4
R296 2.74K/4/1/X
VCC3
LED_CTL R310 1K/4/1
GPIO23 R225 8.2K/4
-PCI_STOP R337 8.2K/4
-PECI_REQ R309 8.2K/4
GPIO20 R329 1K/4/1/X
GPIO35 R301 8.2K/4
GPIO33 R230 1K/4/1
-SYS_RST R308 1K/4/1
PU to main VCC3 to avoid power well crossing
PCH_TDI R327 10K/4/1/X
PCH_TDO R298 200/4/1/X
PCH_TMS R292 200/4/1/X
PCH_RST R293 20K/4/1/X
PCH_RST R300 10K/4/1/X
PCH_TCK R326 49.9/4/1
PCH_TDO R291 100/4/1/X
PCH_TDI R302 20K/4/1/X
PCH_TMS R299 100/4/1/X
GPIO18 R306 8.2K/4
GPIO18 R330 8.2K/4/X
MB_ID0
BATTERY-DUAL-4
X2-SHT
SHW/D0.64*5.08*6.74
Y1
Y2
R259 10M/4
X2
32.768K/12.5p/20ppm/TF38/35K/D
C104 18p/4/NPO/50V/J
C103 18p/4/NPO/50V/J
BATTERY
CR2032
BAT
BAT-SK/BK/P/S/D/SN
CLR_CMOS
PH/1*2/BK/2.54/VA/D
D5
BAS40-05/0.2A/SOT23
VBATT
RB
1K/4/1
RB 必须放在BAT外
R254 390K/4 INTVRMEN
R255 20K/4/1 -RTCRST
C101 1u/4/X5R/6.3V/K
C99 1u/4/X5R/6.3V/K
VBAT
VBAT [18]
R252 0/4/SHT/M/X -RTCRST
R258 0/4/X -SRTCRST
R262 8.2K/4
R282 22/4
R287 22/4
R286 22/4
R257 20K/4/1
C102 1u/4/X5R/6.3V/K
R227 47/4/1
R229 33/4
R234 33/4 A_SO
R231 33/4 A_SYC
R294 33/4
R253 1M/4
R266 22/4
SRTCRST
RTCVDD [14,28]
Gigabyte Technology
PCH GPIO , CTRL , AUDIO
GA-H55M-D2H
Rev 1.4
Wednesday, June 30, 2010
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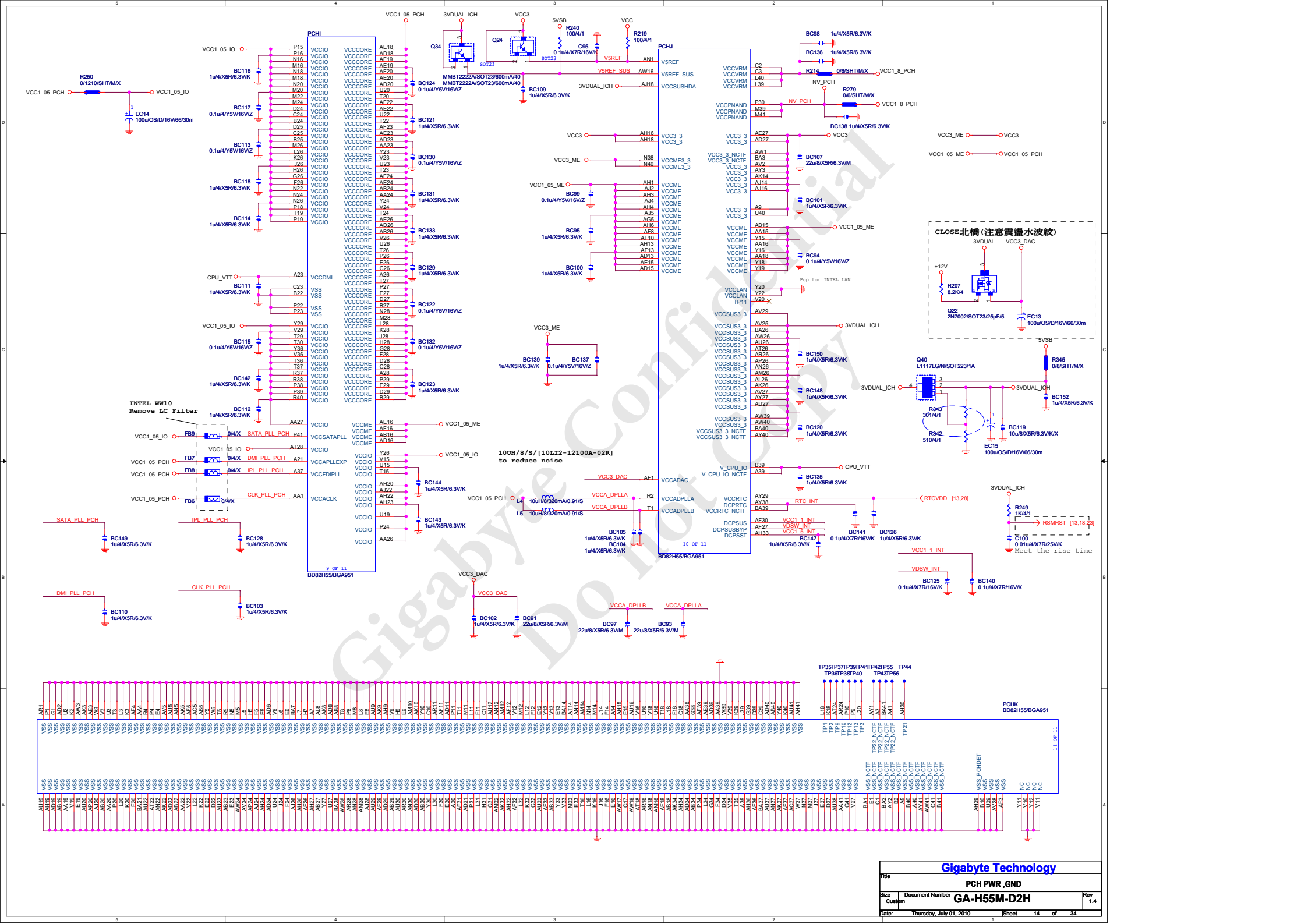
PCHI
PCHJ
PCHK
BD82H55/BGA951
INTEL WW10
Remove LC Filter
10UH/8/S/[10LI2-12100A-02R]
to reduce noise
CLOSE北橋(注意震盪水波紋)
Pop for INTEL LAN
Meet the rise time
Gigabyte Technology
PCH PWR ,GND
GA-H55M-D2H
Rev 1.4
Thursday, July 01, 2010
Sheet 14 of 34
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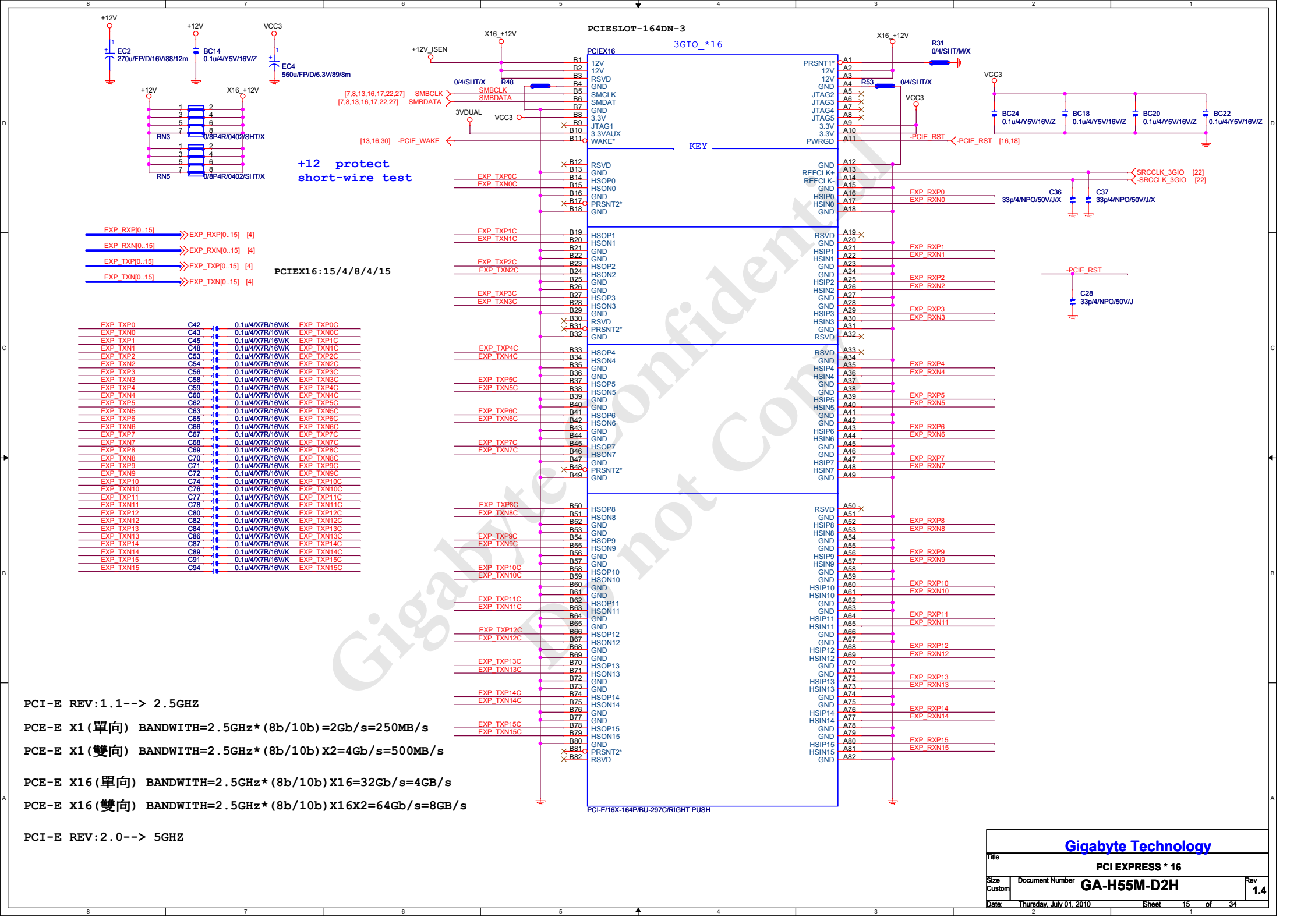
PCIESLOT-164DN-3
3GIO_*16
PCIEX16
KEY
PCI-E/16X-164P/BU-297C/RIGHT PUSH
+12 protect
short-wire test
PCIEX16:15/4/8/4/15
PCI-E REV:1.1--> 2.5GHZ
PCE-E X1(單向) BANDWITH=2.5GHz*(8b/10b)=2Gb/s=250MB/s
PCE-E X1(雙向) BANDWITH=2.5GHz*(8b/10b)X2=4Gb/s=500MB/s
PCE-E X16(單向) BANDWITH=2.5GHz*(8b/10b)X16=32Gb/s=4GB/s
PCE-E X16(雙向) BANDWITH=2.5GHz*(8b/10b)X16X2=64Gb/s=8GB/s
PCI-E REV:2.0--> 5GHZ
Gigabyte Technology
PCI EXPRESS * 16
GA-H55M-D2H
1.4
Thursday, July 01, 2010
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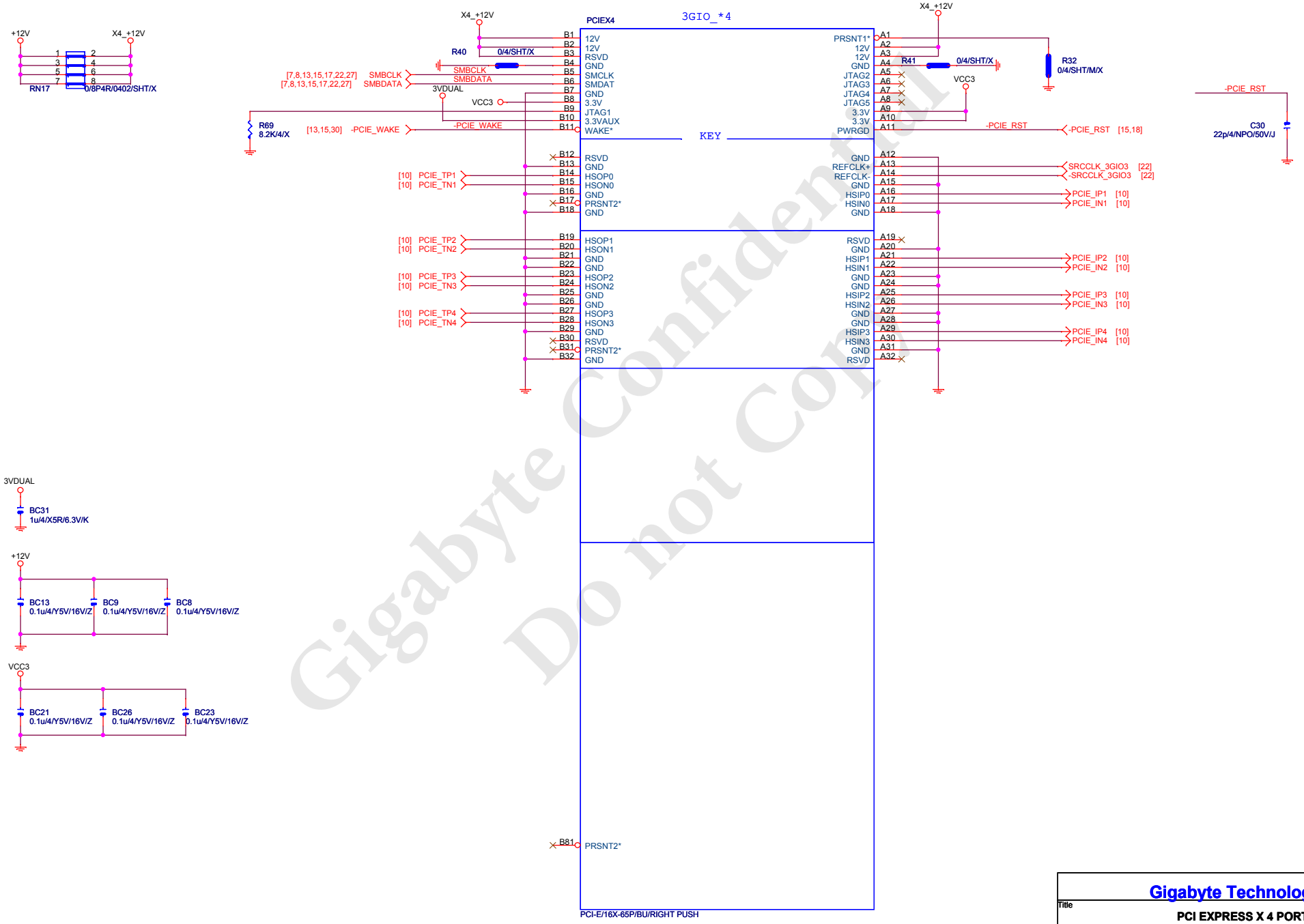
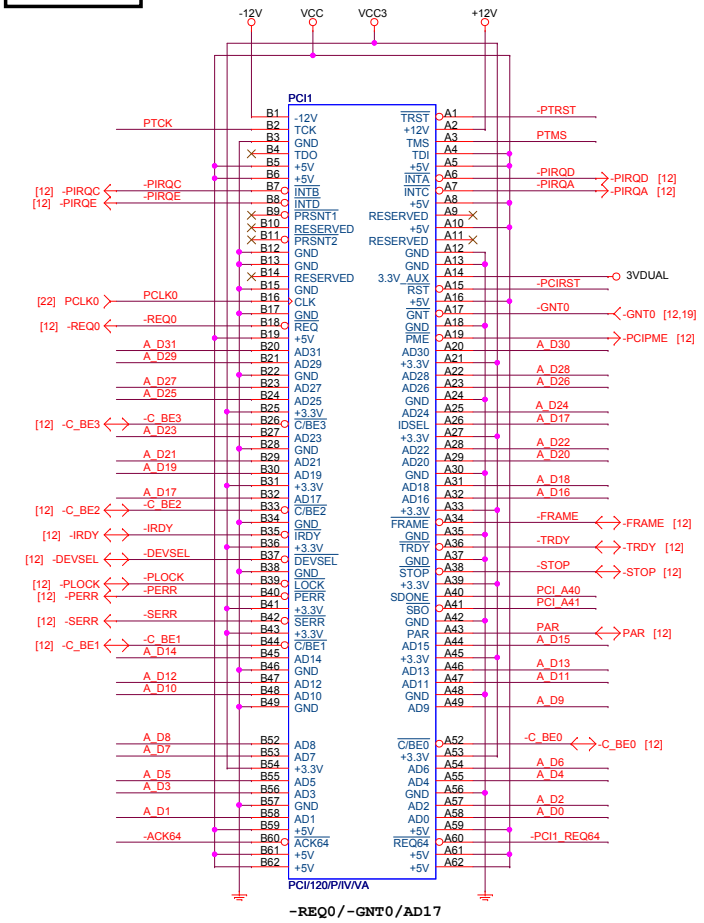
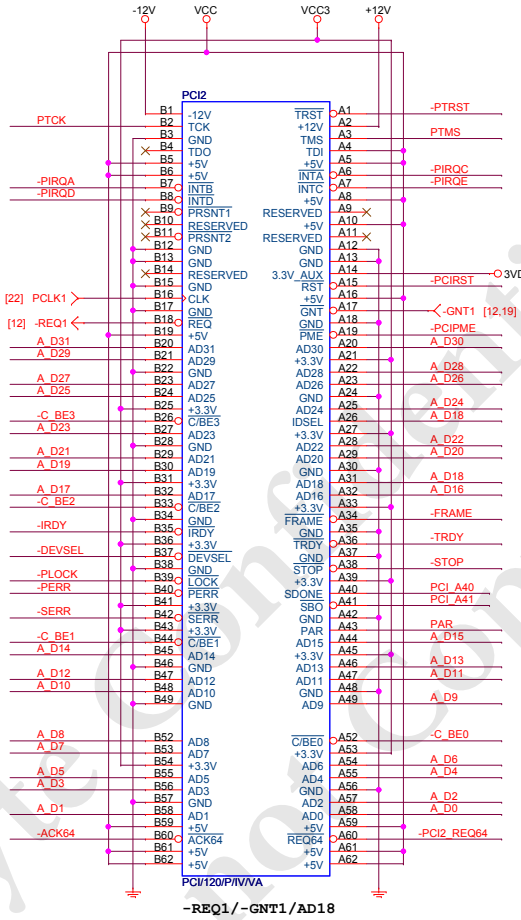


PCI1,2 SLOT





[12] A_D[0..31] — A_D[0..31]

-PCIRST — -PCIRST [12]

C32
27p/4/NPO/50V/J/X

Place close to PCI1

[7,8,13,15,16,22,27] SMBCLK — PCI_A40
[7,8,13,15,16,22,27] SMBDATA — PCI_A41

RN1 8.2K/8P4R/4
-PTRST
PTCK
PTMS
VCC

RN7 2.2K/8P4R/4
-REQ3
-REQ2
-REQ1
-REQ0

RN10 2.2K/8P4R/4
-PCI2_REQ64
-ACK64
-PCI1_REQ64

R533 2.2K/4/1/X — PAR — PAR [12]

3VDUAL — BC19 1u/4/X5R/6.3V/K

RN8 2.2K/8P4R/4
-FRAME
-IRDY
-TRDY
-DEVSEL

RN9 2.2K/8P4R/4
-STOP
-PLOCK
-PERR
-SERR

RN2 8.2K/8P4R/4
-PIRQC
-PIRQD
-PIRQG
-PIRQA

RN6 8.2K/8P4R/4
-PIRQH
-PIRQF
-PIRQB
-PIRQE

VCC3 — BC48 0.1u/4/Y5V/16V/Z — BC52 1u/4/X5R/6.3V/K — BC40 0.1u/4/Y5V/16V/Z — BC84 1u/4/X5R/6.3V/K

VCC — BC89 0.1u/4/Y5V/16V/Z/X — EC5 560u/FP/D/6.3V/89/8m

Gigabyte Technology			
Title: PCI SLOT 1, 2			
Size: Custom	Document Number: GA-H55M-D2H		Rev: 1.4
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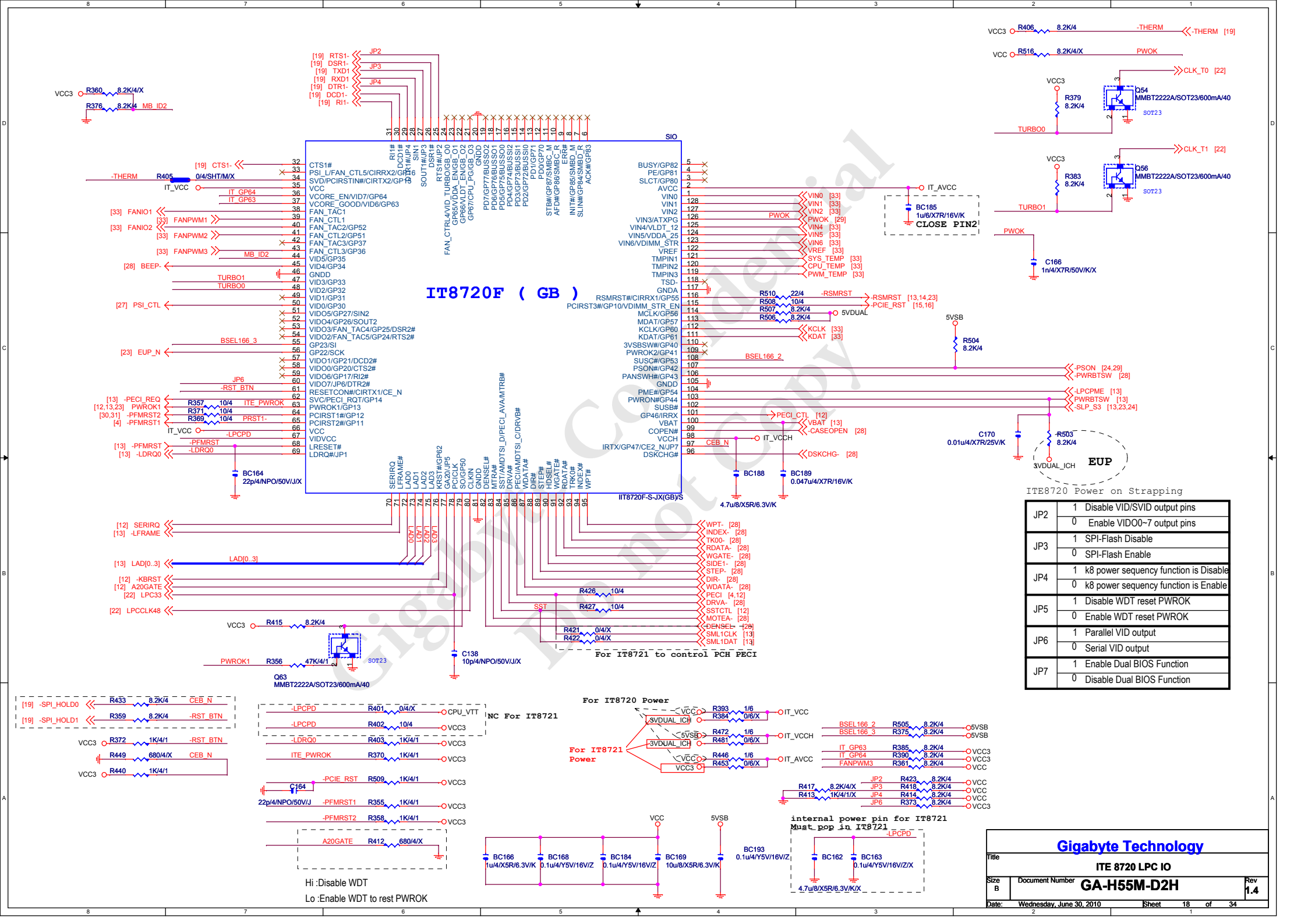
IT8720F (GB)
SIO
IIT8720F-S-JX(GB)/S
For IT8721 to control PCH PECI
For IT8720 Power
For IT8721 Power
NC For IT8721
EUP
ITE8720 Power on Strapping
JP2 1 Disable VID/SVID output pins
0 Enable VID0~7 output pins
JP3 1 SPI-Flash Disable
0 SPI-Flash Enable
JP4 1 k8 power sequency function is Disable
0 k8 power sequency function is Enable
JP5 1 Disable WDT reset PWROK
0 Enable WDT reset PWROK
JP6 1 Parallel VID output
0 Serial VID output
JP7 1 Enable Dual BIOS Function
0 Disable Dual BIOS Function
Hi :Disable WDT
Lo :Enable WDT to rest PWROK
internal power pin for IT8721 Must pop in IT8721
CLOSE PIN2
Gigabyte Technology
ITE 8720 LPC IO
GA-H55M-D2H
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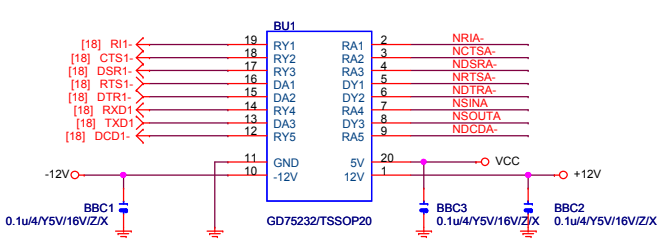
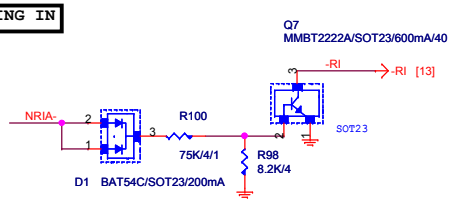
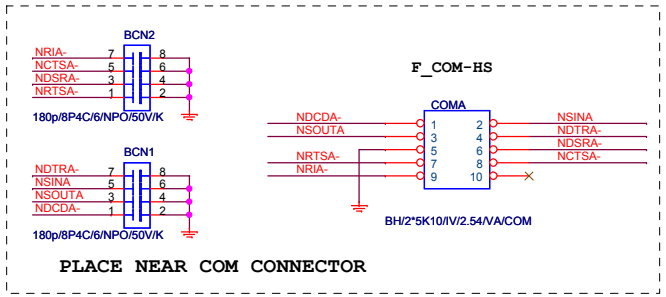
COMB

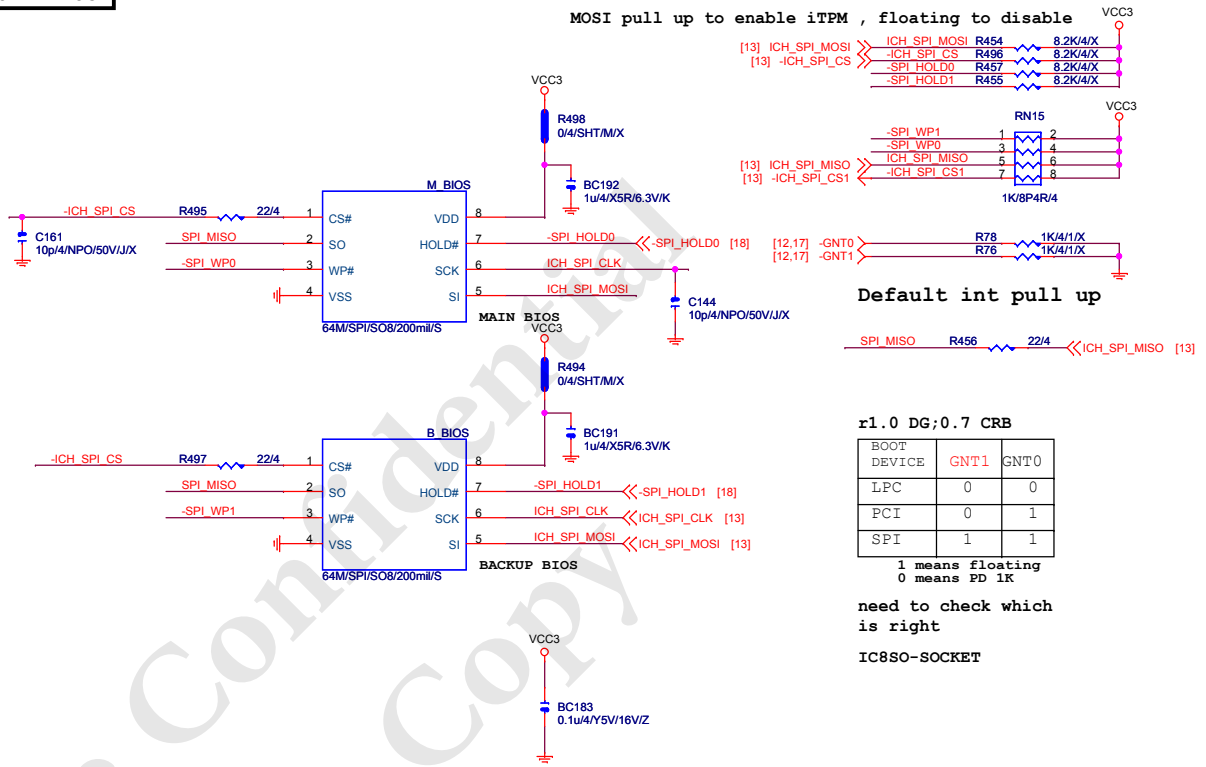


RING IN

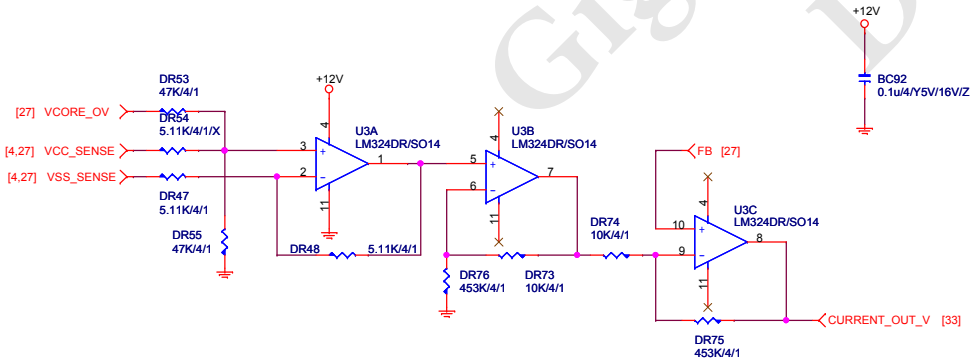




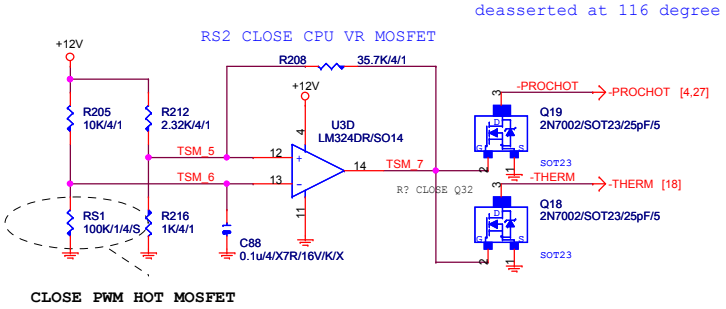
DUAL BIOS



DYNAMIC CURRENT OC



-PROHOT



Gigabyte Technology			
Title: COM & PROHOT/Dynamic O.C.			
Size: Custom	Document Number: GA-H55M-D2H		Rev: 1.4
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AZALIA CODEC

ALC892/ALC889A/ALC888Vx/ALC888B Colay

	ALC888B	ALC888 -VA	ALC889A	ALC888 -VD	ALC892
CR59	X	O	O	O	O
CR53,58	X	X	O	X	X
CR56	O	O	O	O	X
CR63	X	X	X	X	O
CR34	20K/1%	20K/1%	20K/0.1%	20K/1%	20K/1%

20K/4/0.1% @ALC889A

20K/4/1% @ALC889A+/ALC888Vx

CR34 20K/4/1

[21] CEN
[21] LFE
[21] S_SURR_L
[21] S_SURR_R
[21] SPDIFI
CBC31 470p/4/X7R/50V/K
[21] SPDIF

CR65 10/4/X

SURR_R [21]
SURR_L [21]
VOCR [21]

AVDD
CBC13 0.1u/4/Y5V/16V/Z

CR44 5.11K/4/1 S_SURR_JD [21]
CR43 10K/4/1 CEN_JD [21]
CR42 47/4/1 FAUDIO_JD [21]
CBC23 1n/4/X7R/50V/K

JD resistors close to pin34 of CODEC

VCC3 CR57 2.2/8
CBC32 22u/8/X5R/6.3V/M
co-layout

[21] SPDIFO2_HDMI
CR58 8.2K/4/X
10U FOR ALC892
CBC38 10u/8/X5R/6.3V/K
CR53 8.2K/4/X
CR59 0/4/X

[13] ACZ_SDOUT
[13] ACZ_BITCLK
CR60 22/4
50歐姆:4/5
[13] ACZ_SDIN2
CR61 22/4
VCC3
[13] ACZ_SYNC
[13] -ACZ_RST

CR14/CBC4 close to SouthBridge

CBC33 22p/4/NPO/50V/J/X
CBC34 0.1u/4/Y5V/16V/Z
CBC35 0.1u/4/Y5V/16V/Z

CU1

ALC889A+

1 DVDD1
2 GPIO0/XTALI
3 GPIO1/XTALO
4 DVS1
5 SDATA_OUT
6 BIT_CLK
7 DVSS2
8 SDATA-IN
9 DVDD2
10 SYNC
11 RESET#
12 PC_BEEP

48 SPDIFO
47 SPDIF/EAPD
46 SURBACK-R/XTALSEL
45 SURBACK-L/JD0 GPIO0
44 LFE
43 CEN
42 AVSS2
41 SURR-R
40 JDREF (NC)/JD3
39 SURR-L
38 AVDD2
37 LINE1-VREFOR/VREFO3

36 FRONT-R
35 FRONT-L
34 SENSE B (JD2)/FMIC1
33 DCVOL/VREFVOUT2
32 MIC1-VREFO-R/FMIC2
31 LINE2-VREFO/JD4
30 MIC2-VREFO/AFILT2
29 LINE1-VREFO-L/AFILT1
28 MIC1-VREFO-L/VREFOUT
27 VREF
26 AVSS1
25 AVDD1

13 SENSE A(JD1)/PHONE JD5
14 LINE2-L/AUX-L
15 LINE2-R/AUX-R
16 MIC2-L/JD2
17 MIC2-R/JD1 GPIO1
18 CD_L
19 CD_GND
20 CD_R
21 MIC1-L/MIC1
22 MIC1-R/MIC2
23 LINE1-L
24 LINE1-R

ALC888B-VD2-GR/LQFP48

LINE_O_R [21]
LINE_O_L [21]
Can Support Amp Out

VODR CR23 8.2K/4
MIC1_VREFO_R [21]
LINE2_VREFO [21]
MIC2_VREFO [21]
CR66 10/4/X
VOCR [21]
VOBR CR27 8.2K/4
MIC1_VREFO_L [21]

AVDD
CBC8 10u/8/X5R/6.3V/K
CBC9 0.1u/4/Y5V/16V/Z

CR64 0/6
5VDUAL
CD2 AZ2225-01L/SOD323
CBC39 10u/8/X5R/6.3V/K
FOR ALC892
50歐姆:4/10

Digital Area Analog Area

CBC4 4.7u/8/X5R/6.3V/K LINE_IN_R [21]
CBC5 4.7u/8/X5R/6.3V/K LINE_IN_L [21]
CBC6 4.7u/8/X5R/6.3V/K MIC1_R [21]
CBC10 4.7u/8/X5R/6.3V/K MIC1_L [21]
CBC11 0.1u/4/X7R/16V/K CD_R [21]
CBC12 0.1u/4/X7R/16V/K CDGND [21]
CBC18 0.1u/4/X7R/16V/K CD_L [21]

[21] FRONT_JD CR19 5.11K/4/1
[21] LINE1_JD CR21 10K/4/1
[21] MIC1_JD CR13 20K/4/1
[21] SURR_JD CR16 39.2K/4/1

JD resistors close to pin13 of CODEC

[21] LINE2_L
[21] LINE2_R
[21] MIC2_L
[21] MIC2_R

Can Support Amp Out

Gigabyte Technology

Title: HD AUDIO ALC888B-VD2

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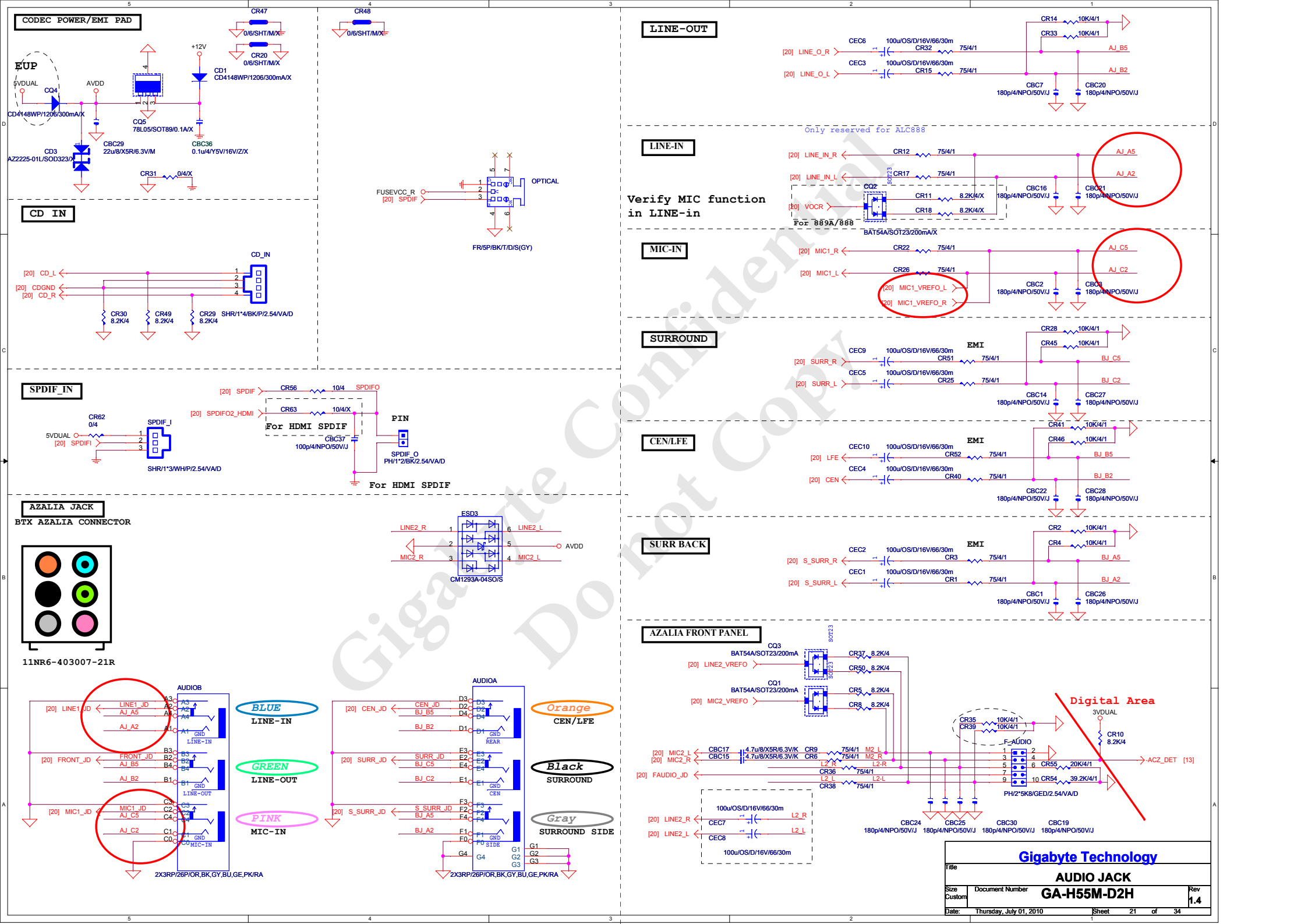
CODEC POWER/EMI PAD
EUP
5VDUAL
AVDD
CQ4
CD4148WP/1206/300mA/X
CQ5
78L05/SOT89/0.1A/X
+12V
CD1
CD4148WP/1206/300mA/X
CR47
0/6/SHT/M/X
CR20
0/6/SHT/M/X
CR48
0/6/SHT/M/X
CD3
AZ2225-01L/SOD323/X
CBC29
22u/8/X5R/6.3V/M
CBC36
0.1u/4/Y5V/16V/Z/X
CR31
0/4/X
CD_IN
CD_L
CDGND
CD_R
CR30
8.2K/4
CR49
8.2K/4
CR29
8.2K/4
SHR/1*4/BK/P/2.54/VA/D
FUSEVCC_R
SPDIF
OPTICAL
FR/5P/BK/T/D/S(GY)
SPDIF_IN
CR62
0/4
SPDIF_I
SHR/1*3/WH/P/2.54/VA/D
SPDIFO
CR56
10/4
CR63
10/4/X
For HDMI SPDIF
CBC37
100p/4/NPO/50V/J
SPDIF_O
PH/1*2/BK/2.54/VA/D
PIN
For HDMI SPDIF
AZALIA JACK
BTX AZALIA CONNECTOR
11NR6-403007-21R
ESD3
CM1293A-04SO/S
LINE2_R
LINE2_L
MIC2_R
MIC2_L
AVDD
AUDIOB
AUDIOA
BLUE
LINE-IN
GREEN
LINE-OUT
PINK
MIC-IN
Orange
CEN/LFE
Black
SURROUND
Gray
SURROUND SIDE
2X3RP/26P/OR,BK,GY,BU,GE,PK/RA
LINE-OUT
CR14
10K/4/1
CR33
10K/4/1
CEC6
100u/OS/D/16V/66/30m
CR32
75/4/1
CEC3
CR15
AJ_B5
AJ_B2
CBC7
180p/4/NPO/50V/J
CBC20
LINE-IN
Only reserved for ALC888
Verify MIC function in LINE-in
CR12
CR17
CQ2
CR11
8.2K/4/X
CR18
For 889A/888
BAT54A/SOT23/200mA/X
CBC16
CBC21
AJ_A5
AJ_A2
MIC-IN
CR22
CR26
MIC1_VREFO_L
MIC1_VREFO_R
CBC2
CBC3
AJ_C5
AJ_C2
SURROUND
EMI
CEC9
CR51
CEC5
CR25
CR28
CR45
BJ_C5
BJ_C2
CBC14
CBC27
CEN/LFE
CEC10
CR52
CEC4
CR40
CR41
CR46
BJ_B5
BJ_B2
CBC22
CBC28
SURR BACK
CEC2
CR3
CEC1
CR1
CR2
CR4
BJ_A5
BJ_A2
CBC1
CBC26
AZALIA FRONT PANEL
CQ3
BAT54A/SOT23/200mA
LINE2_VREFO
CQ1
MIC2_VREFO
CR37
8.2K/4
CR50
8.2K/4
CR5
CR8
CBC17
CBC15
4.7u/8/X5R/6.3V/K
CR9
CR6
M2_L
M2_R
L2_R
L2_L
CR36
CR38
FAUDIO_JD
CR35
CR39
F_AUDIO
CR10
8.2K/4
CR55
20K/4/1
CR54
39.2K/4/1
ACZ_DET
PH/2*5K8/GED/2.54/VA/D
Digital Area
3VDUAL
CEC7
CEC8
CBC24
CBC25
CBC30
CBC19
Gigabyte Technology
AUDIO JACK
GA-H55M-D2H
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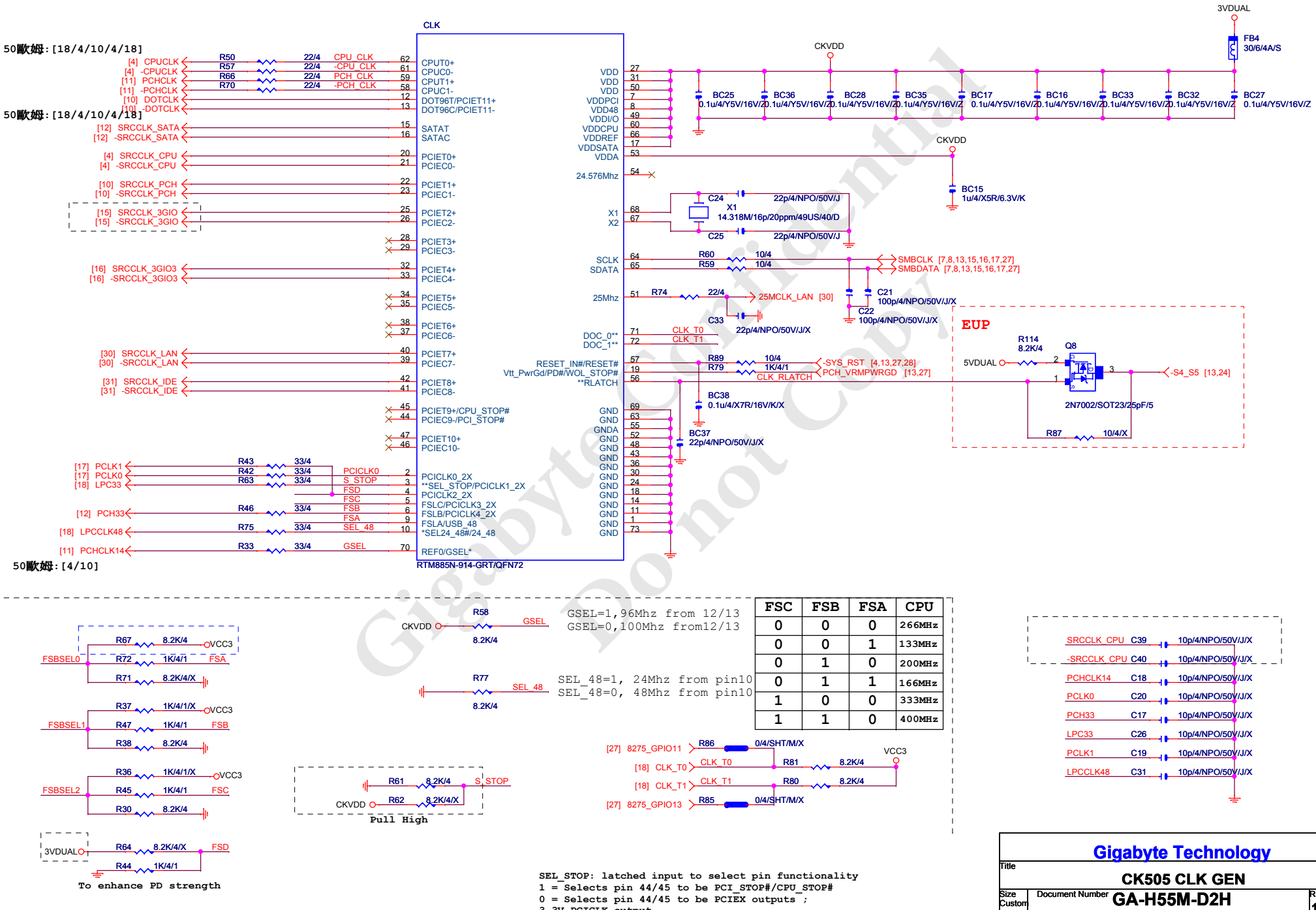
Do not Copy

CLK GEN CK505



FSC	FSB	FSA	CPU
0	0	0	266MHz
0	0	1	133MHz
0	1	0	200MHz
0	1	1	166MHz
1	0	0	333MHz
1	1	0	400MHz

Title	CK505 CLK GEN
Size / Custom	Document Number GA-H55M-D2H
Rev	1.4
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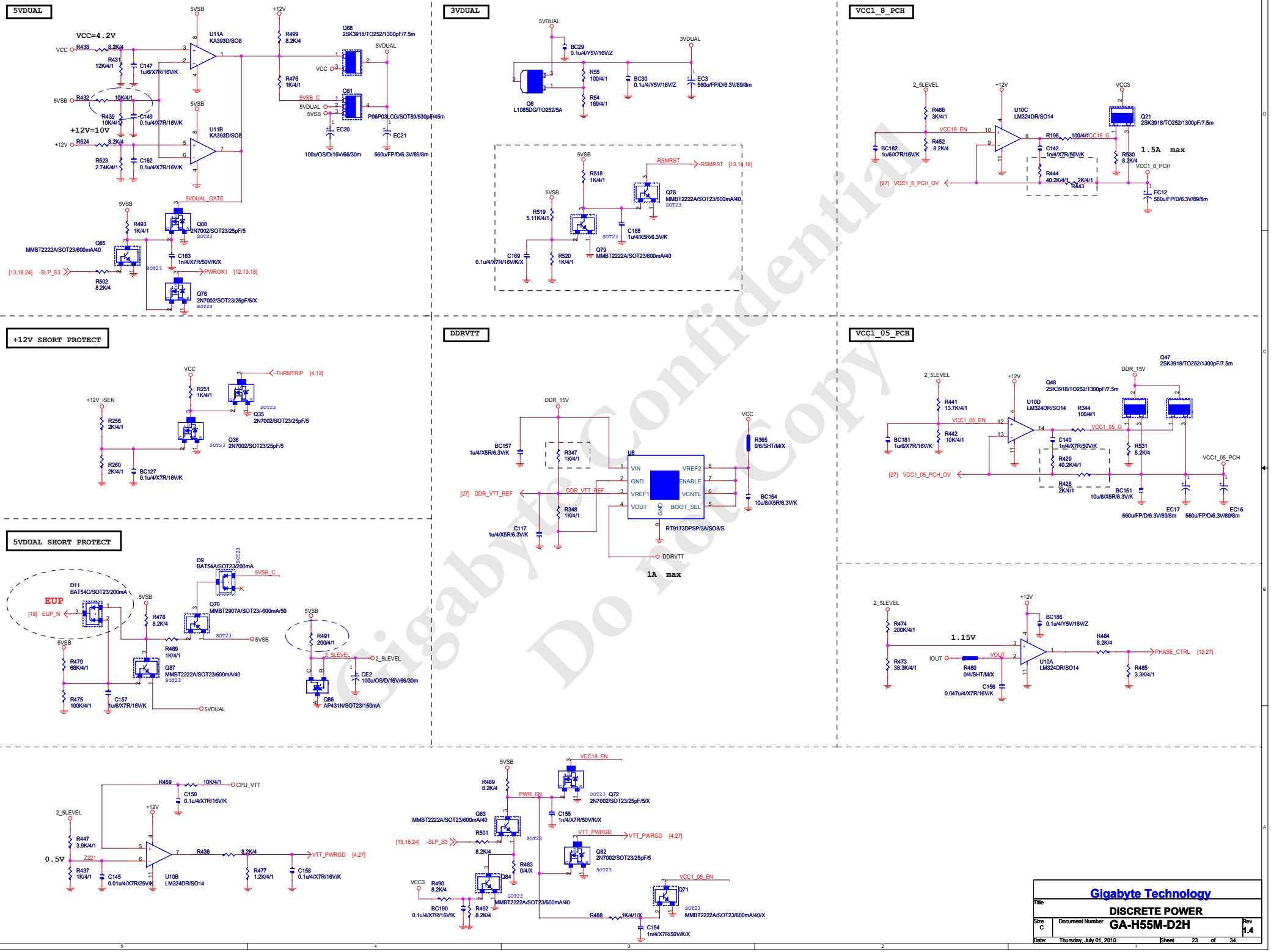
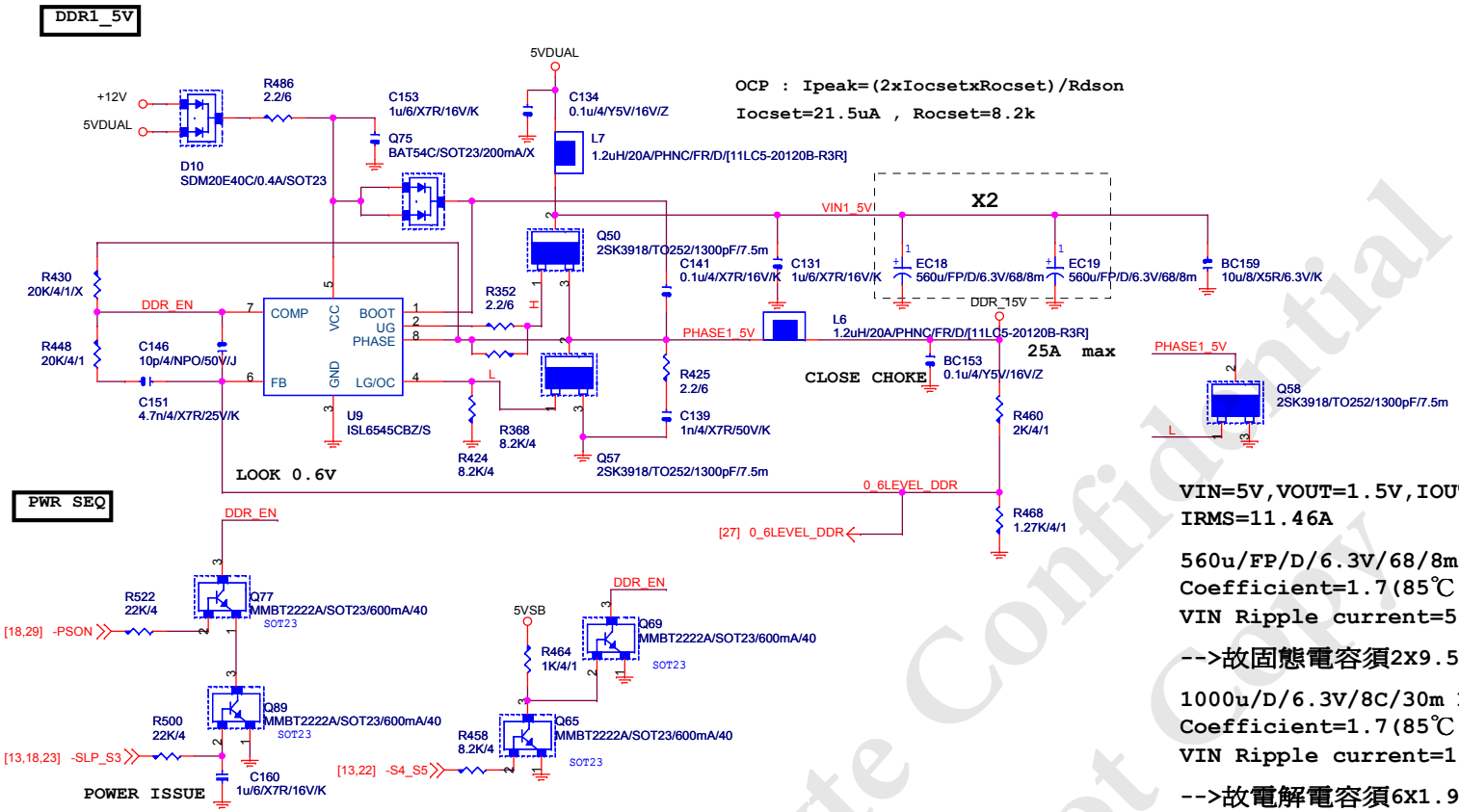
Sheet	22 of 34

Gigabyte Technology





VIN=5V,VOUT=1.5V,IOUT=25A,PHASE=1
IRMS=11.46A

560u/FP/D/6.3V/68/8m RIPPLE CURRENT=5.6A
Coefficient=1.7(85℃),1(105℃)
VIN Ripple current=5.6X1.7=9.52A(85℃)

-->故固態電容須2X9.52=19.04>11.46A

1000u/D/6.3V/8C/30m RIPPLE CURRENT=1.14A
Coefficient=1.7(85℃),1(105℃)
VIN Ripple current=1.14X1.7=1.938A(85℃)

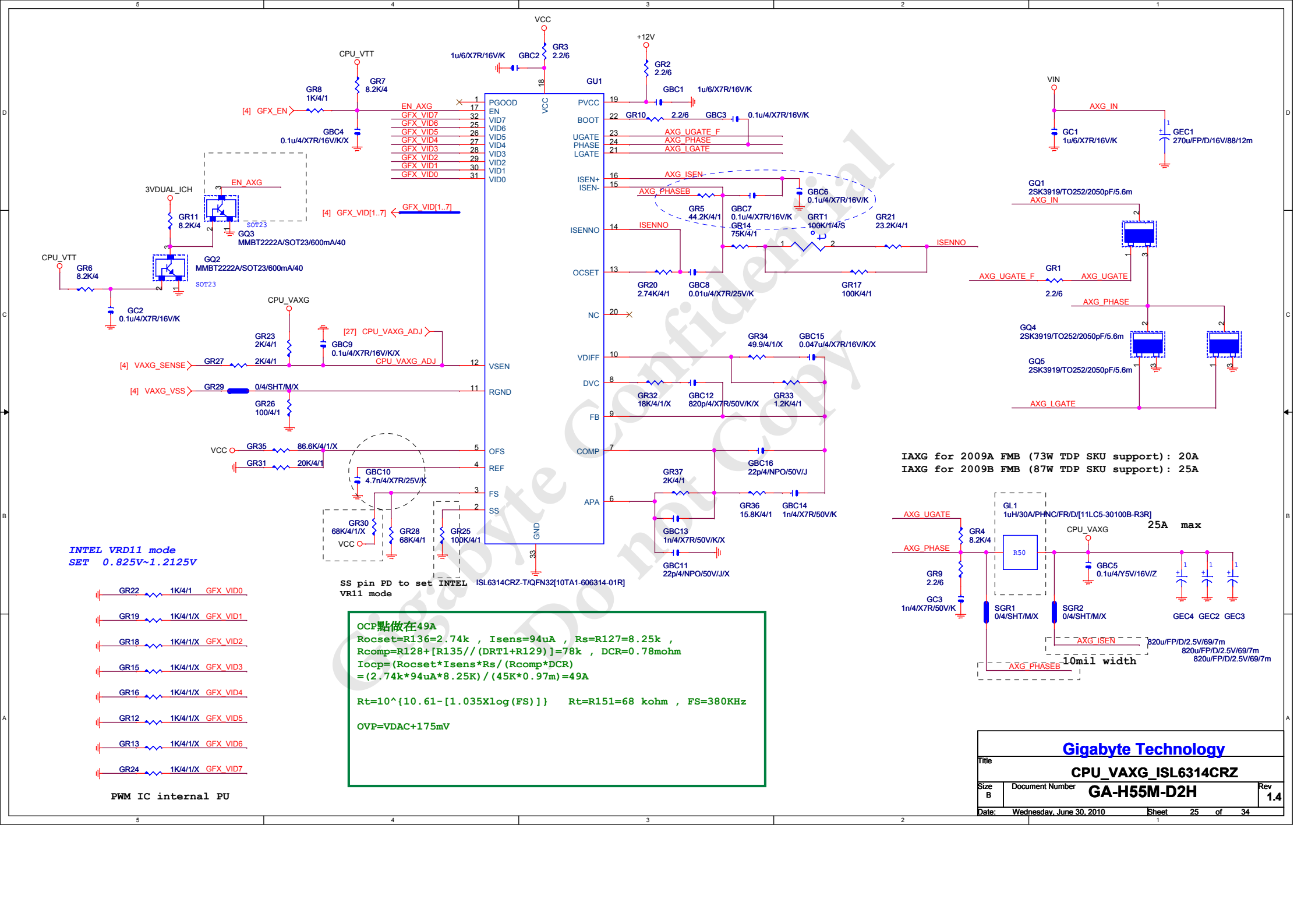
-->故電解電容須6X1.938=11.628>11.46A

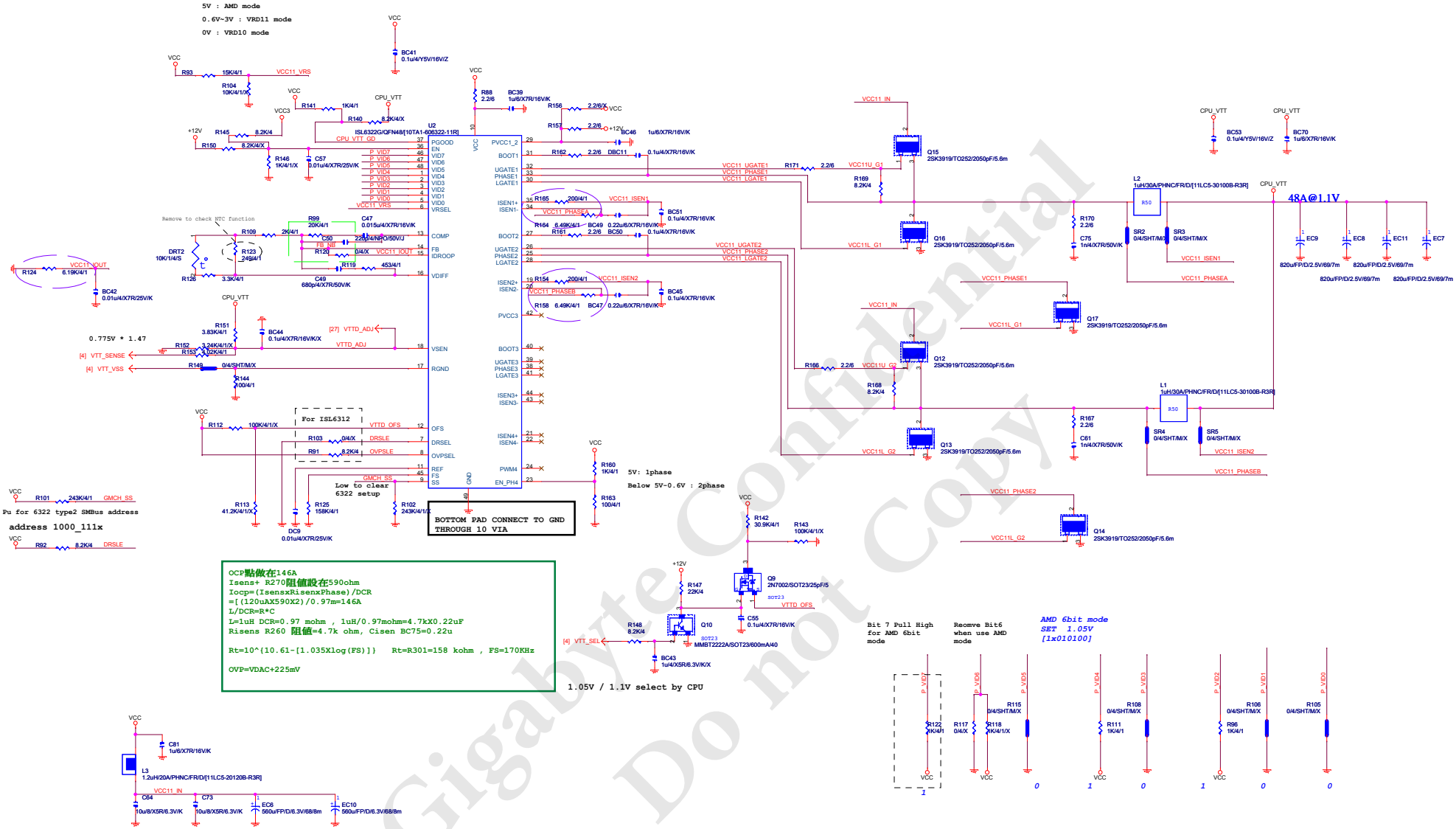
VIN=3V,VOUT=1.05V,IOUT=7.5A,PHASE=1
IRMS=3.5A

-->故固態電容須1X9.52=9.52>3.5A

-->故電解電容須2X1.938=3.876>3.5A

Gigabyte Technology		
Title: DDR_15V		
Size: Custom	Document Number: GA-H55M-D2H	Rev: 1.4
Date: Wednesday, June 30, 2010	Sheet 24 of 34	





VIN=5V,VOUT=1.1V,IOUT=48A,PHASE=2
IRMS=11.91A

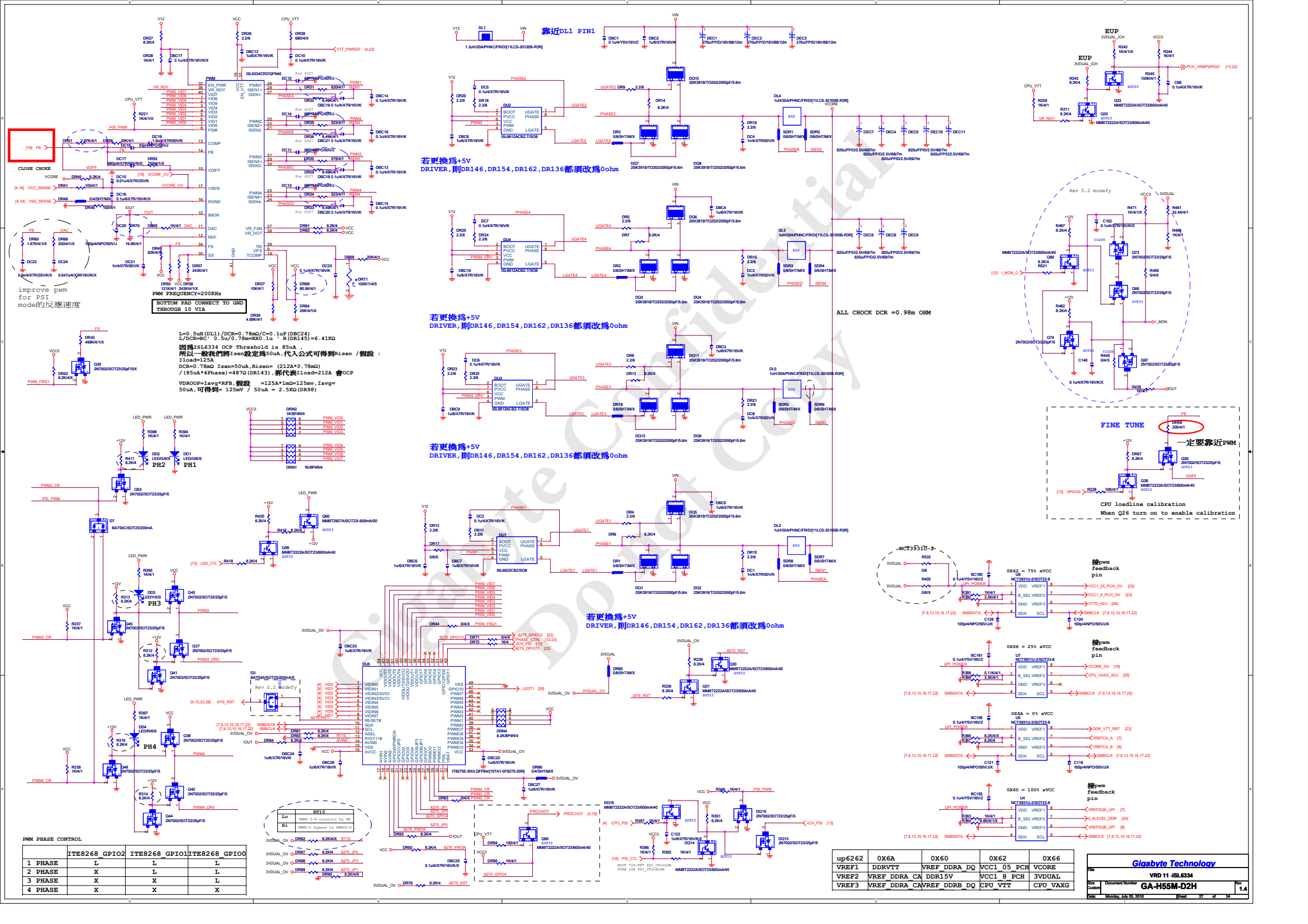
560u/FP/D/6.3V/68/8m RIPPLE CURRENT=5.6A
Coefficient=1.7(85℃),1(105℃)
VIN Ripple current=5.6X1.7=9.52A(85℃)

-->故固態電容須2X9.52=19.04>11.91A

1000u/D/6.3V/8C/30m RIPPLE CURRENT=1.14A
Coefficient=1.7(85℃),1(105℃)
VIN Ripple current=1.14X1.7=1.938A(85℃)

-->故電解電容須7X1.938=13.566>11.91A

GIGABYTE			
Title	CPU_VTT PWM_ISL6322CRZ		
Size: Custom	Document Number: GA-H55M-D2H		Rev: 1.4
Date: Wednesday, June 30, 2010	Sheet 26 of 34		


靠近DL1 PIN1
若更換爲+5V
DRIVER,則DR146,DR154,DR162,DR136都須改爲0ohm
若更換爲+5V
DRIVER,則DR146,DR154,DR162,DR136都須改爲0ohm
若更換爲+5V
DRIVER,則DR146,DR154,DR162,DR136都須改爲0ohm
若更換爲+5V
DRIVER,則DR146,DR154,DR162,DR136都須改爲0ohm
ALL CHOCK DCR =0.98m OHM
CLOSE CHOKE
improve pwm for PSI mode的反應速度
PWM FREQUENCY=200KHz
BOTTOM PAD CONNECT TO GND THROUGH 10 VIA
L=0.5uH(DL1)/DCR=0.78mΩ/C=0.1uF(DBC24)
I/DCR=RC' 0.5u/0.78m=RX0.1u ' R(DR145)=6.41KΩ
因爲ISL6334 OCP Threshold is 85uA ,
所以一般我們將Isen設定爲50uA,代入公式可得到Risen /假設 :
Iload=125A
DCR=0.78mΩ Isen=50uA,Risen= (212A*0.78mΩ)
/(85uA*4Phase)=487Ω(DR143),那代表Iload=212A 會OCP
VDROOP=Iavg*RFB,假設 =125A*1mΩ=125mv,Iavg=
50uA,可得到= 125mV / 50uA = 2.5KΩ(DR98)
PH2
PH1
PH3
PH4
EUP
EUP
FINE TUNE
一定要靠近PWM
CPU loadline calibration
When Q26 turn on to enable calibration
Rev 0.2 modefy
Rev 0.2 modefy
0X62 = 75% xVCC
0X66 = 25% xVCC
0X6A = 0% xVCC
0X60 = 100% xVCC
接pwm feedback pin
接pwm feedback pin
PWM PHASE CONTROL
ITE8268_GPIO2 ITE8268_GPIO1 ITE8268_GPIO0
1 PHASE L L L
2 PHASE X L L
3 PHASE X X L
4 PHASE X X X
up6262 0X6A 0X60 0X62 0X66
VREF1 DDRVTT VREF_DDRA_DQ VCC1_05_PCH VCORE
VREF2 VREF_DDRA_CA DDR15V VCC1_8_PCH 3VDUAL
VREF3 VREF_DDRA_CA VREF_DDRB_DQ CPU_VTT CPU_VAXG
Gigabyte Technology
VRD 11 -ISL6334
GA-H55M-D2H
1.4
Monday, July 05, 2010
27
34
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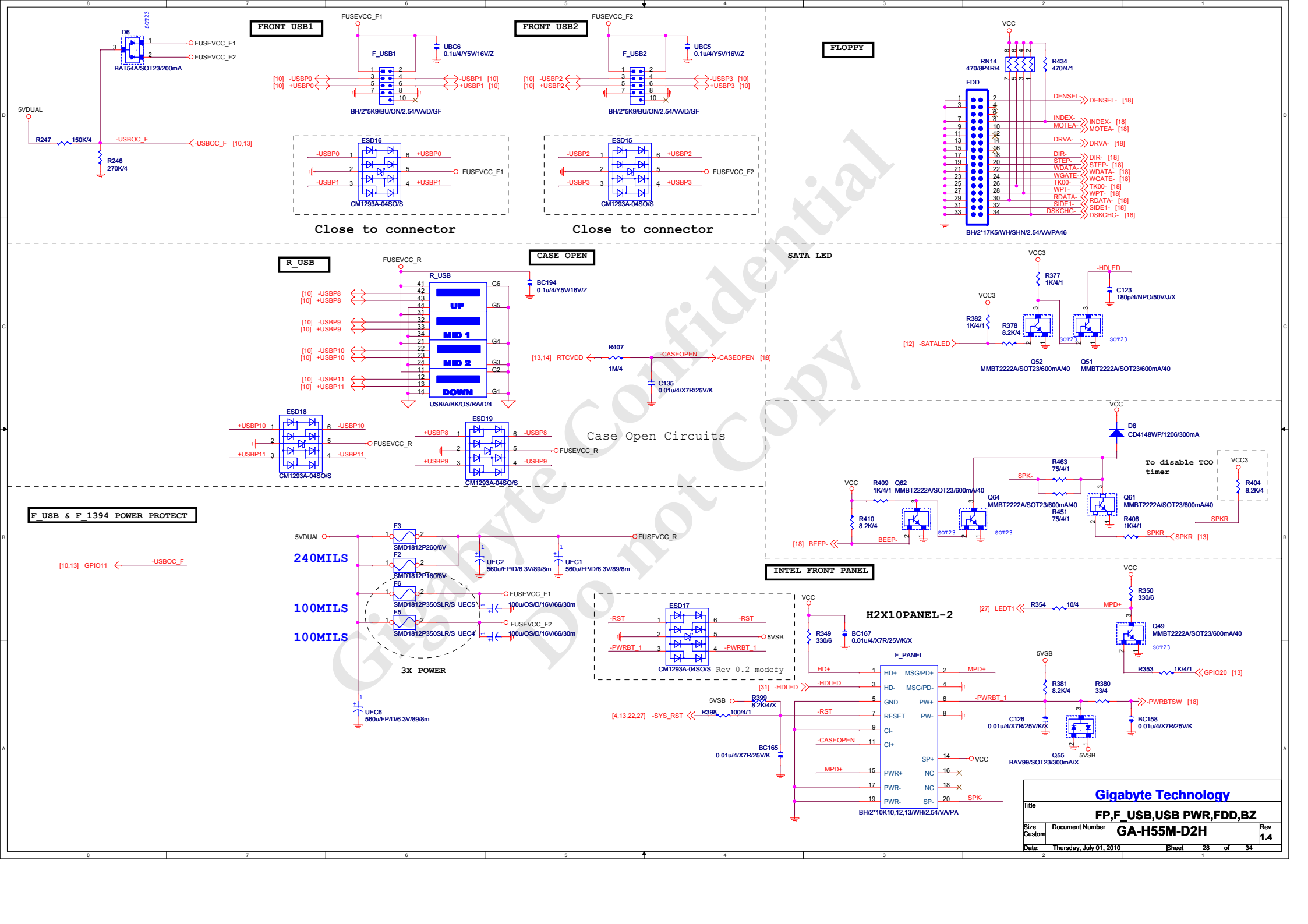
FRONT USB1
FRONT USB2
FLOPPY
R_USB
CASE OPEN
SATA LED
F_USB & F_1394 POWER PROTECT
INTEL FRONT PANEL
Close to connector
Close to connector
Case Open Circuits
3X POWER
H2X10PANEL-2
To disable TCO timer
Rev 0.2 modefy
Gigabyte Technology
FP,F_USB,USB PWR,FDD,BZ
GA-H55M-D2H
Rev 1.4
Thursday, July 01, 2010
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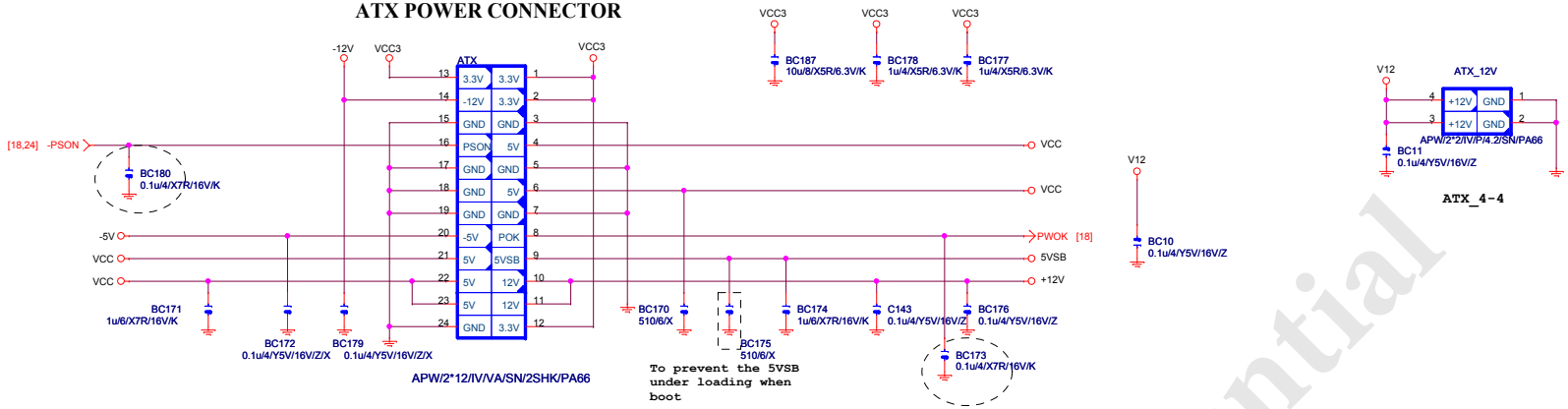
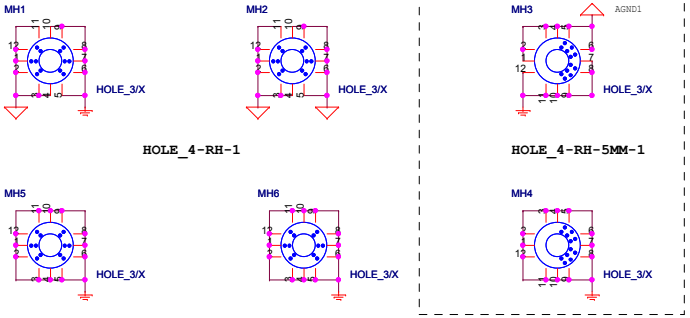
ATX POWER CONNECTOR

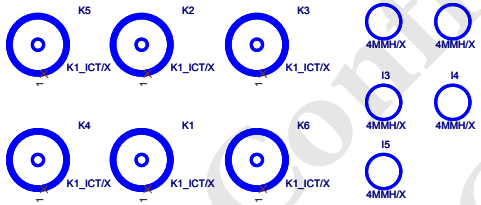


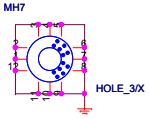
ATX_4-4



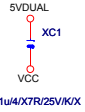
HOLE_4-RH-1

HOLE_4-RH-5MM-1





HOLE_4-RH-5MM-1



Gigabyte Technology			
Title: ATX POWER CONNECTOR			
Size: Custom	Document Number: GA-H55M-D2H		Rev: 1.4
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PCIE-1G LAN

XTAL2:外部CLK IN

[22] 25MCLK_LAN

LR16 2.49K/4/1

RSET需LAYOUT GND GUARD

VDD33

LR35 1K/4/1

LU1

RTL8111E-VB-GR/QFN48

FOR DSM MODE

(DEEP SLUMBER MODE)

ENSWREG

LR39 0/6/SHT/M/X

ENABLE SW

Dual Color LED

D4 D3 Green

D4 D3 Orange

Single Color LED

D2 D1 Yellow

LR43 1/6

LBC61 0.1u/4/Y5V/16V/Z

LBC62 4.7u/8/X5R/6.3V/K

VCC3

LR33 1K/4/1

LR42 10/4/X

LR34 15K/4/1

-LAN_ISO [12]

-PCIE_WAKE [13,15,16]

-PFMRST2 [18,31]

LR40 8.2K/4

LR41 8.2K/4

LED_LINK1000

LR37 8.2K/4

LR38 8.2K/4

[10] ML_OP

[10] ML_ON

[22] SRCCLK_LAN

[22] -SRCCLK_LAN

[10] ML_IP

[10] ML_IN

LC3 0.1u/4/X7R/16V/K

LC4 0.1u/4/X7R/16V/K

CLOSE LAN CHIP

-PFMRST2 LBC34 100p/4/NPO/50V/J/X

P35-152-19W9

YELLOW ORANGE (+,-) GREEN (-,+)

3VDUAL

LEC7 100u/OS/D/16V/66/30m

LBC35 0.1u/4/Y5V/16V/Z

LBC36 0.1u/4/Y5V/16V/Z

LBC51 0.1u/4/Y5V/16V/Z

LBC66 0.1u/4/Y5V/16V/Z

LBC67 0.1u/4/Y5V/16V/Z

LBC70 0.1u/4/Y5V/16V/Z

(CLOSE LU1)

VDD10

LBC69 0.1u/4/Y5V/16V/Z

LBC44 0.1u/4/Y5V/16V/Z

LBC45 0.1u/4/Y5V/16V/Z

LBC65 0.1u/4/Y5V/16V/Z

LBC47 0.1u/4/Y5V/16V/Z

LBC48 0.1u/4/Y5V/16V/Z

LBC50 0.1u/4/Y5V/16V/Z

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

LL1 4.7uH/1A/[10LC3-5A470B-01R]

CLOSE LL1

LBC64 4.7u/8/X5R/6.3V/K

LBC71 0.1u/4/Y5V/16V/Z

LFB3 0/6/SHT/M/X

LBC59 1u/4/X5R/6.3V/K

LBC57 0.1u/4/Y5V/16V/Z

(PIN21)

USB_LAN CONNECTOR

ESD11 CM1293A-04SO/S

-USBP5 +USBP5 FUSEVCC_R -USBP4 +USBP4

Close to connector

FOR EMI

100p/4/NPO/50V/J/X LBC28

LBC31 0.01u/4/X7R/25V/K

USB_LAN

UP

DOWN

90歐姆:[20/4/8/4/20]

USB+LAN/1G/GO,Y/OS/RA/D/1

LFB4 0/6/SHT/M/X

LBC30 0.1u/4/Y5V/16V/Z/X

LBC29 0.1u/4/Y5V/16V/Z

LR9 150/6

LR10 150/6/X

LR11 150/6/X

RTL8111DL -->N/A

LED_ACT_TXRX

LED_LINK100

LED_LINK1000

-USBP4 [10] +USBP4 [10]

-USBP5 [10] +USBP5 [10]

90歐姆:[15/4.5/7.5/4.5/15]

LR1 0/6/X

FUSEVCC_R

LR13 150K/4

LR12 270K/4

-USBOC_R

-USBOC_R [10]

Gigabyte Technology

Title: REALTEK RTL8111E

Size: Custom | Document Number: GA-H55M-D2H | Rev: 1.4

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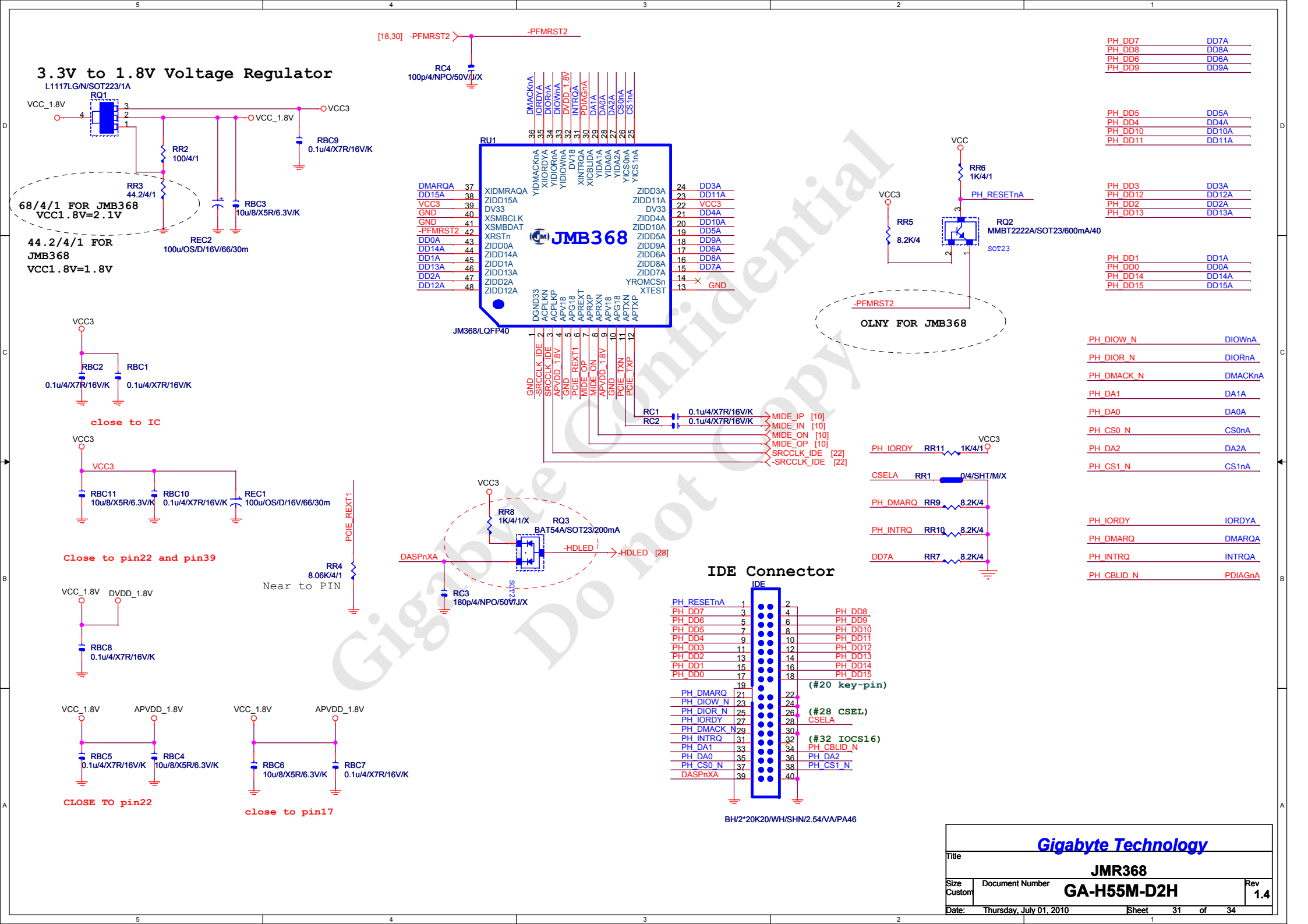
3.3V to 1.8V Voltage Regulator
L1117LG/N/SOT223/1A
RQ1
VCC_1.8V
VCC3
RR2
100/4/1
RR3
44.2/4/1
RBC9
0.1u/4/X7R/16V/K
RBC3
10u/8/X5R/6.3V/K
REC2
100u/OS/D/16V/66/30m
68/4/1 FOR JMB368
VCC1.8V=2.1V
44.2/4/1 FOR
JMB368
VCC1.8V=1.8V
[18,30] -PFMRST2
-PFMRST2
RC4
100p/4/NPO/50V/J/X
RU1
JMB368
JM368/LQFP40
RBC2
RBC1
0.1u/4/X7R/16V/K
close to IC
RBC11
10u/8/X5R/6.3V/K
RBC10
0.1u/4/X7R/16V/K
REC1
100u/OS/D/16V/66/30m
Close to pin22 and pin39
RR4
8.06K/4/1
Near to PIN
PCIE_REXT1
RR8
1K/4/1/X
RQ3
BAT54A/SOT23/200mA
-HDLED
-HDLED [28]
DASPnXA
RC3
180p/4/NPO/50V/J/X
RC1
RC2
0.1u/4/X7R/16V/K
MIDE_IP [10]
MIDE_IN [10]
MIDE_ON [10]
MIDE_OP [10]
SRCCLK_IDE [22]
-SRCCLK_IDE [22]
RR6
1K/4/1
PH_RESETnA
RR5
8.2K/4
RQ2
MMBT2222A/SOT23/600mA/40
SOT23
OLNY FOR JMB368
PH_IORDY RR11 1K/4/1
CSELA RR1 0/4/SHT/M/X
PH_DMARQ RR9 8.2K/4
PH_INTRQ RR10 8.2K/4
DD7A RR7 8.2K/4
IDE Connector
IDE
(#20 key-pin)
(#28 CSEL)
(#32 IOCS16)
BH/2*20K20/WH/SHN/2.54/VA/PA46
RBC8
0.1u/4/X7R/16V/K
RBC5
0.1u/4/X7R/16V/K
RBC4
10u/8/X5R/6.3V/K
CLOSE TO pin22
RBC6
10u/8/X5R/6.3V/K
RBC7
0.1u/4/X7R/16V/K
close to pin17
PH_DD7 DD7A
PH_DD8 DD8A
PH_DD6 DD6A
PH_DD9 DD9A
PH_DD5 DD5A
PH_DD4 DD4A
PH_DD10 DD10A
PH_DD11 DD11A
PH_DD3 DD3A
PH_DD12 DD12A
PH_DD2 DD2A
PH_DD13 DD13A
PH_DD1 DD1A
PH_DD0 DD0A
PH_DD14 DD14A
PH_DD15 DD15A
PH_DIOW_N DIOWnA
PH_DIOR_N DIORnA
PH_DMACK_N DMACKnA
PH_DA1 DA1A
PH_DA0 DA0A
PH_CS0_N CS0nA
PH_DA2 DA2A
PH_CS1_N CS1nA
PH_IORDY IORDYA
PH_DMARQ DMARQA
PH_INTRQ INTRQA
PH_CBLID_N PDIAGnA
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Gigabyte Technology
Title
JMR368
Size Custom
Document Number
GA-H55M-D2H
Rev 1.4
Date: Thursday, July 01, 2010
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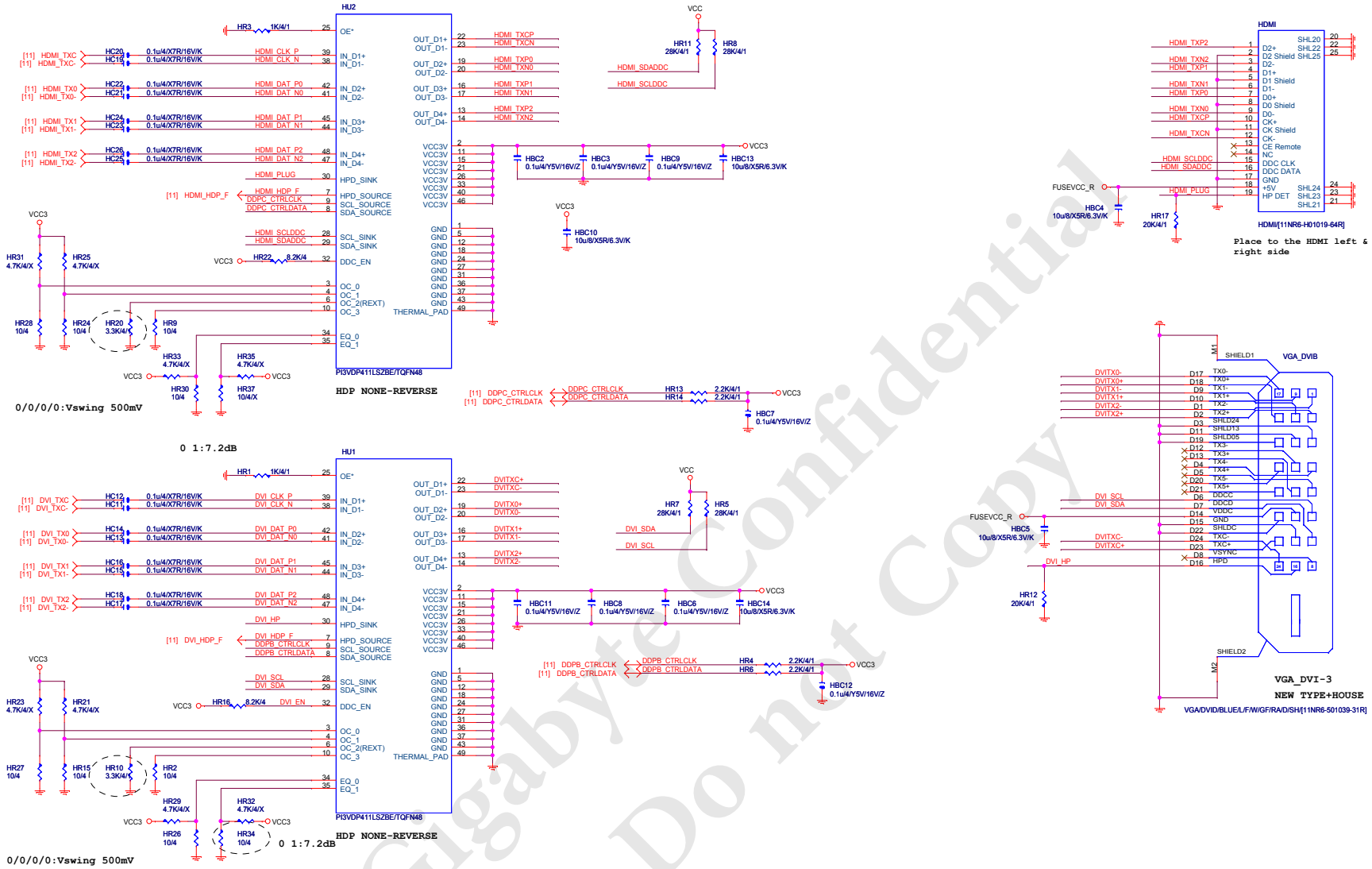
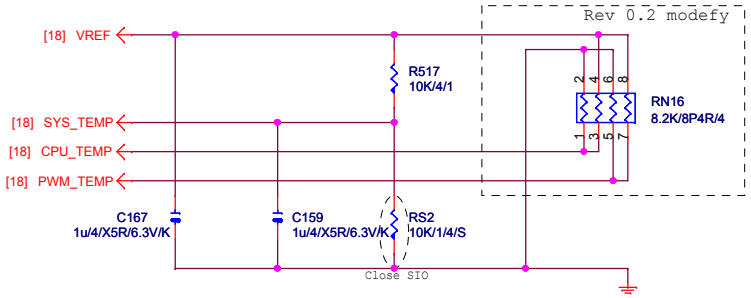
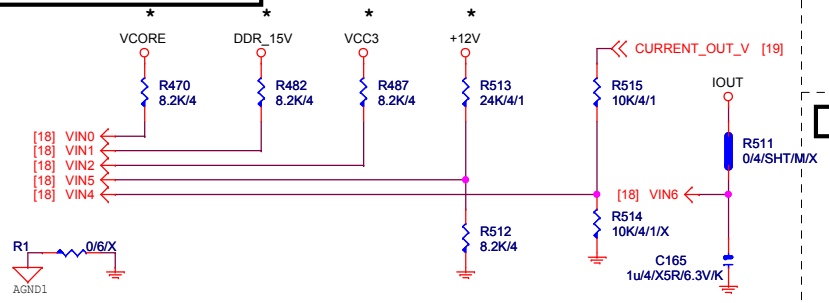


Gigabyte Technology			
Title: HDMI / DVI/DP			
Size: C	Document Number: GA-H55M-D2H		Rev: 1.4
Date: Wednesday, June 30, 2010	Sheet 32 of 34		

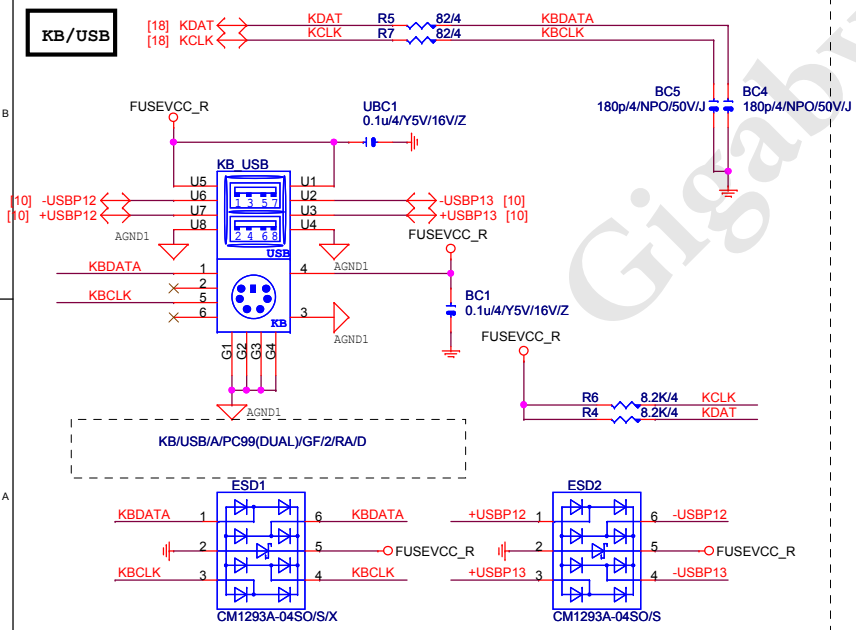
TEMP H/W MONITOR



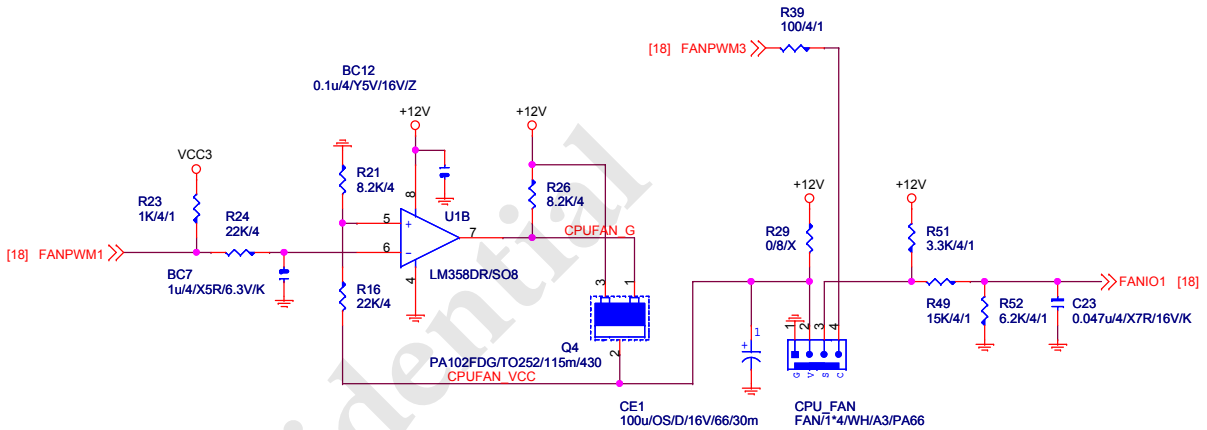
VOLTAGE-- H/W MONITOR



KB/USB

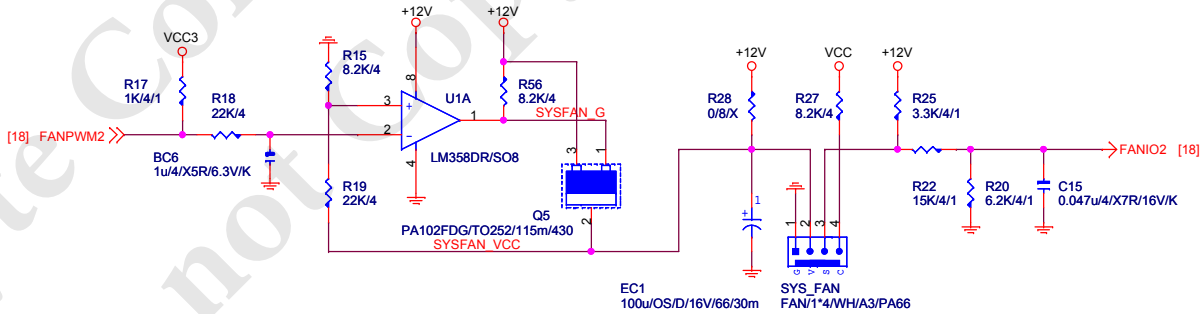


CPU SMART FAN



SYS SMART FAN

Linear SYS_FAN



Gigabyte Technology			
Title: HWM,KB/MS, FAN CTRL			
Size: Custom	Document Number: GA-H55M-D2H		Rev: 1.4
Date: Thursday, July 01, 2010	Sheet 33 of 34		

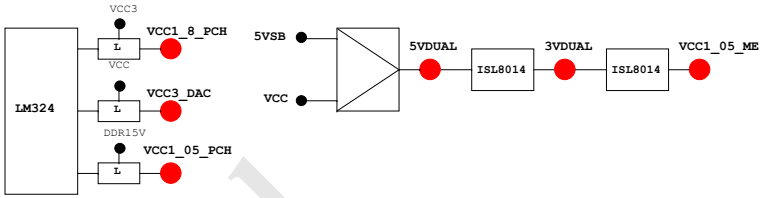
PCH GPIO LIST TABLE

PIN NAME	PWR	AFTER/PLTRST	Default	USAGE	NOTE
GP0	MAIN	H-Z	GPI	-PECI_REQ	N/A
GP1/TACH1	MAIN		GPI	ICH_FAN_TACH1	N/A
GP2/PIRQE#	MAIN		GPI	-PIRQE	P/U 8.2K VCC3
GP3/PIRQF#	MAIN		GPI	-PIRQF	P/U 8.2K VCC3
GP4/PIRQG#	MAIN		GPI	-PIRQG	P/U 8.2K VCC3
GP5/PIRQH#	MAIN		GPI	-PIRQH	P/U 8.2K VCC3
GP6/TACH2	MAIN		GPI	ICH_FAN_TACH2	N/A
GP7/TACH3	MAIN		GPI	ICH_FAN_TACH3	N/A
GP8	STBY	H	GPO	GPIO8	P/U 8.2K 3VDUAL
GP9/OC5#	STBY		NATIVE	OC5#	N/A
GP10/OC6#	STBY		NATIVE	OC6#	N/A
GP11/SMBALERT#	STBY		NATIVE	-SMBALERT	P/U 8.2K 3VDUAL
GP12	STBY	L	GPI	LAN_PHY_PWR_CTRL	P/U 8.2K 3VDUAL
GP13	STBY	L	GPI	GPIO13	P/U 8.2K 3VDUAL
GP14/OC7#	STBY		NATIVE	OC7#	N/A
GP15	STBY	L	GPO	GPIO15	N/A
GP16	MAIN		GPI	-SKTOCC	P/U 8.2K VCC3
GP17/TACH0	MAIN		GPI	ICH_FAN_TACH0	N/A
GP18	MAIN		NATIVE	MB_ID0	P/D 8.2K GND
GP19	MAIN		GPI	-LAN1_ISO	P/U 8.2K VCC3
GP20	MAIN		NATIVE	LED_CTL	P/U 1K VCC3
GP21	MAIN		GPI	VCC18_PCH_OV2	P/U 8.2K VCC3
GP22	MAIN	H-Z	GPI	VCORE_OV3	P/U 8.2K VCC3
GP23	MAIN		NATIVE	-LDRQ1	P/U 8.2K VCC3
GP24	STBY	L	GPO	TLS	P/U 8.2K 3VDUAL
GP25	STBY		NATIVE	-CPU_STOP	P/U 8.2K 3VDUAL
GP26	STBY		NATIVE	-ACZ_DET	P/U 8.2K 3VDUAL
GP27	STBY	H	GPO	GPIO27	P/U 8.2K 3VDUAL
GP28	STBY	H	GPO	GPIO28	P/U 8.2K 3VDUAL
GP29	STBY	L	GPI	GPIO29	N/A
GP30	STBY	H-Z	GPI	S_PWR_ACK	P/U 100K 3VDUAL
GP31	STBY	H-Z	GPI	N/A(Reverse)	P/U 8.2K VCC3
GP32	MAIN	H	GPO	MB_ID1	P/D 8.2K GND
GP33	MAIN	H	GPO	LOAD-LINE	P/U 1K VCC3
GP34	MAIN	H-Z	GPI	-PCI_STOP	P/U 8.2K VCC3
GP35	MAIN	L	GPO	GPIO35	P/U 8.2K VCC3
GP36	MAIN		GPI	-LAN1_DSM	P/U 8.2K VCC3
GP37	MAIN		GPI	N/A	P/U 8.2K VCC3
GP38	MAIN	H-Z	GPI	VCORE_OV2	P/U 8.2K VCC3
GP39	MAIN	H-Z	GPI	-LAN_DSM	P/U 8.2K VCC3
GP40	STBY		NATIVE	OC1#	N/A
GP41	STBY		NATIVE	OC2#	N/A
GP42	STBY		NATIVE	OC3#	N/A
GP43	STBY		NATIVE	OC4#	N/A
GP44	STBY	L	NATIVE	N/A	P/U 8.2K 3VDUAL
GP45	STBY		NATIVE	-LPCPME	P/U 8.2K 3VDUAL
GP46	STBY	L	NATIVE	PWR_LED	P/U 8.2K 3VDUAL
GP47	STBY		NATIVE	PSI LED	P/U 8.2K 3VDUAL
GP48	MAIN	H-Z	IN	EN_PWM	P/U 8.2K VCC3
GP49	MAIN	H-Z	IN	VCC18_OV1	P/U 8.2K VCC3
GP50	MAIN		NATIVE	-REQ1	P/U 2.2K VCC
GP51	MAIN	H	NATIVE	-GNT1	N/A
GP52	MAIN		NATIVE	-REQ2	P/U 2.2K VCC
GP53	MAIN	H	NATIVE	-GNT2	N/A
GP54	MAIN		NATIVE	-REQ3	P/U 2.2K VCC
GP55	MAIN	H	NATIVE	-GNT3	N/A
GP56	STBY		NATIVE	N/A(Reverse)	P/U 8.2K 3VDUAL
GP57	STBY	H-Z	IN	VCORE_OV1	P/U 8.2K 3VDUAL
GP58	STBY	H-Z	NATIVE	F_USB_OC	P/U 8.2K 3VDUAL
GP59	STBY		NATIVE	USB_OC0#	N/A
GP60	STBY	H-Z	NATIVE	N/A(Reverse)	P/U 8.2K 3VDUAL
GP61	STBY	L	NATIVE	-SUSTAT	N/A
GP62	STBY	L	NATIVE	SUSCLK	N/A
GP63	STBY	L	NATIVE	GPIO63	N/A
GP64	MAIN	L	NATIVE	CLKOUTFLEX0	N/A
GP65	MAIN	L	NATIVE	CLKOUTFLEX1	N/A
GP66	MAIN	L	NATIVE	CLKOUTFLEX2	N/A
GP67	MAIN	L	NATIVE	CLKOUTFLEX3	N/A
GP72	STBY	H-Z	NATIVE	VCORE_OV4	P/U 8.2K 3VDUAL
GP73	STBY		NATIVE	1_05V_OV1	P/U 8.2K 3VDUAL
GP74	STBY	H-Z	NATIVE	1_05V_OV2	P/U 8.2K 3VDUAL
GP75	STBY	H-Z	NATIVE	N/A(Reverse)	P/U 8.2K 3VDUAL

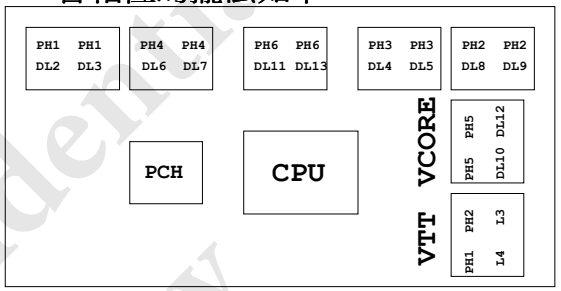
Super I/O ITE8720 GPIO Table

PIN NAME	USAGE	NOTE
SVC/PECI_RQT/GP14	-PECI_REQ	
PWROK1/GP13	PWROK1/ITE_PWROK	
KRST#/GP62	-KBRST	
SO/GP50	-ICH_SPI_CS	
IRTX/GP47/CE2_N/JP7	CEB_N	
GP46/IRRX	-LAN2_DSM	
PSION#/GP42	-PSON	
PWROK2#/GP41	PECI_CTL	
PCIRST3#/GP10/VDIMM_STR_EN	-PCIE_RST	
RSMRST#CIRRX1/GP55	-RSMRST	
PME#/GP54	-LPCPME	
PD5/GP75/BUSSO0	N/A	

PIN NAME	USAGE	NOTE
FAN_TAC2/GP52	FANIO2	
FAN_TAC3/GP37	FANIO3	
VIDO3/FAN_TAC4/GP25/DSR2#	FANIO4	
FAN_CTL2/GP51	FANPWM2	
FAN_CTL3/GP36	FANPWM3	
VID4/GP34	BEEP-	
VID3/GP33	TURBO1	
VID2/GP32	TURBO0	
VCORE_GOOD/VID6/GP63	CPUT_LED1_C	
VID5/GP35	CPUT_LED2_C	
VID1/GP31	CPUT_LED3_C	
VID0/GP30	-LAN1_DSM	NBT_LED1_C
SLCT/GP80	CPU_LED1_C	
PE/GP81	CPU_LED2_C	
BUSY/GP82	CPU_LED3_C	
PD3/GP73/BUSSI1	SB_LED1_C	
PD4/GP74/BUSSI2	SB_LED2_C	
VCORE_EN/VID7/GP64	IT_GP64	SB_LED3_C
PD0/GP70	NB_LED1_C	
PD1/GP71	NB_LED2_C	
PD2/GP72/BUSSI0	NB_LED3_C	
GP22/SCK	LOW_PWR_1	
VIDO5/GP27/SIN2	LOW_PWR_2	
PCIRST2#/GP11	-PFMRST1	
PCIRST1#/GP12	-PFMRST2	
3VSBSW#/GP40	CSI_F0	BSEL166_1
SUSC#/GP53	CSI_F1	BSEL166_2
GP23/SI	BSEL166_3/CSISBSL	
VIDO0/GP20/CTS2#	CPUT_LED1_C	BSEL166_4
GP65/VDDA_EN/GB_01	MB_ID2	
PD6/GP76/BUSSO1	MB_ID3	
PD7/GP77/BUSSO2	MB_ID4	
AFD#/GP86/SMBC_R	空 PIN	FST_2X8
INIT#/GP85/SMBD_M	SEC_2x8	GTLREF_AD2
ACK#/GP83	DDR_LED1_C	
VIDO1/GP21/DCD2#	DDR_LED2_C	
STB#/GP87/SMBC_M	DDR_LED3_C	
PWRON#GP44	VCORE_OV1	
PANSWH#/GP43	PWRBTSW	
KDAT/GP61	-PWRBTSW	
KCLK/GP60	KDAT	
MDAT/GP57	KCLK	
MACL/GP56	MDAT	
GP66/VLDT_EN/GB_02	NBT_LED1_C	MCLK
SVD/PCIRSTIN#/CIRTX/GP15	PWM2_CR	
KDAT/GP61	PWM2_CR	
GP67/CPU_PG/GB_03	EN_LOADLINE	IT_GP67/-EN_PWM2
SLIN#/GP84/SMBD_R	-EN_PWM2	
PSI_L/FAN_CLT5/CIRRX2/GP16	-THERM	
VIDO4/GP26/SOUT2	DDR18V_PH2_EN	
VIDO2/FAN_TAC5/GP24/DSR2#	DDR18V_LED	
VIDO6/GP17/RI2#	1_1V_PH_EN	
VIDO7/JP6/DTR2#	JP6	
PD5/GP75/BUSSO0	SB_LED3_C	



PWM各相位的擺法如下：



BIOS超電壓對應表：

線路圖名稱	BIOS選項
Vcore	CPU Vcore
CPU_VTT	CPU Termination
CPU_VAXG	CPU Graphic Core
VCC1_8_PCH	CPU PLL
VCC1_05_PCH	PCH core
3VDUAL	3VDUAL
DDR15V	DRAM voltage
DDRVTT	DRAM Terminatio
VREF_CA_A/VREF_CA_B	DRAM Address Ref
VREF_DQ_A/VREF_DQ_B	DRAM Data Ref

散熱模組料號：

8IBP:
1.12SP2-01A001-Y1R/Y2R
2.12SP2-01A001-Z1R/Z2R
(HIBRID模組)包材階

	3 pin FAN control	4 pin FAN control	FAN speed	Controller
CPU FAN	FANPWM1	FANPWM3	FANIO1	IT8720
	ICH_FAN_PWM2	ICH_FAN_PWM0	ICH_FAN_TACH0	PCH
SYS FAN	FANPWM2	N/A	FANIO2	IT8720
	ICH_FAN_PWM1	N/A	ICH_FAN_TACH1	PCH
PWR FAN	N/A	N/A	FANIO3	IT8720
			ICH_FAN_TACH2	PCH

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Title: TABLE LIST

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