Model Name: GA-P55-USB3L *1.0*

Gigabyte Technology

Title: Cover Sheet

Size: Custom | Document Number: GA-P55-USB3L | Rev: 1.0

Date: Tuesday, December 29, 2009 | Sheet 1 of 36

GA-P55-USB3L Version: 1.0

Component value change history

Data	Change Item	Reason
EP55A-UD3P 0.2	1. CHECK +12V SHORT PAD FOR 10mil	9. LU1,LU4 RTL8111D --> RTL8111C
	2. F1_1394加蓋(包材階)	10. PCB "育富"移除
	3. ADD DR86=124K/4/1 , DR88=249K/4/1	11. ONFI指定用11SM1-600078-02R
	4. U12~U15 upi6262M --> upi6267M	12. R376 2.26K/4/1 --> 2.55K/4/1
	5. DRAM_PWROK R490=1K/4/1 , R491=3K/4/1	13. 確認上哪種upi6262 10%/upi6267?
	6. REMOVE DR138=0/4 , ADD DR139,DR141=0/4	14. FB7~FB10 REMOVE
	7. RU2指定料號:10HP4-112540-11R	15. PCH BUFFER 25MHz REMOVE "X2,C93,C94,R420"
	8. 排阻指定廠牌用WALSIN	16. BIOS 16M --> 32M (FOR ONFI ONBOARD)
2009/06/10 EBOM:0.1	1.NEW MODEL: P55-UD3LP-0.1	
2009/07/06 EBOM:02	1.NEW MODEL: P55-UD3L-0.2(因之前已有一版本爲P55-UD3L-0.1.,此版本爲P55-US3RENAME)	
2009/07/20 PBOM:10A	1.ADD CPU 背板電容 9PCS	
	2.移除PCH PLL電源電容,修改CPU load line,thermal balance,Prochot阻值	
	3.change F_USB,SPDIFI connector color	
2009/07/29 PBOM:10B	1.ADD R190 ,LD2 FOR PCIE OVER CLOCK	
2009/10/27 EBOM:20A	1.FOR P55-UD3L-2.0(CO-LAY H55 PCB)	
2009/11/30 EBOM:01	1.NEW MODEL: P55-USB3L-0.1	
2009/12/17 PBOM:10A	1.R873 改8.2K	

Circuit or PCB layout change for next version

DATE	Change Item	Reason
EP55A-UD3P 0.2	1. REMOVE AUDIO ESD	7. 1394 "IEC1" NET SWAP & SHORT PROTECT
	2. REMOVE CPU_VAXG	8. PIN HEATER CHECK
	3. PCH_CLK 改 SHORT PAD (0 ohm維持10pcs以下)	9. ITE8275 SYS_RST PATCH
	4. ITE8275 GPIO11,GPIO13 TO TURBO0/TURBO1	10. BC118,BC119 --> TBC29,TBC30
	5. F_PANEL UPDATE H2X10PANEL-1	11. BC5靠近M_BIOS PIN8 , BC6靠近M_BIOS PIN8
	6. ONFI 改 ON BOARD	12. U2 7474 REMOVE
EP55-UD4P 0.2	1.ONFI作塞孔	
2009/05/20 PCB:0.1	1.NEW MODEL: P55-UD3P-0.1由EP55A-UD3P-0.2修改	
2009/06/10 PCB:0.1	1.NEW MODEL: P55-US3-0.1由P55-UD3L-0.1修改	
2009/06/11 PCB:0.2	1.NEW MODEL: P55-US3-0.1由P55-UD3LP-0.1修改	
	2.RENAME P55-US3----->P55-UD3L	
2009/10/22 PCB:1.0	1.NEW MODEL: P55H-UDSL-1.0由P55-UD3L-1.0修改,又改P55-UD3L-2.0	
2009/11/26 PCB:0.1	1.NEW MODEL: P55-USB3L-0.1由P55-UD3L-2.0修改	
	2.DEL PCI SLOT,ADD PCIE SLOT,USB3.0 IC,CO-LAY H55 CHIP	
	3.add turbo mode for NEC USB3.0	
2009/12/17 PCB:1.0	1.改1.0 FOR MP	
	2.移除CcrossfireX文字面,DES---->DES2	

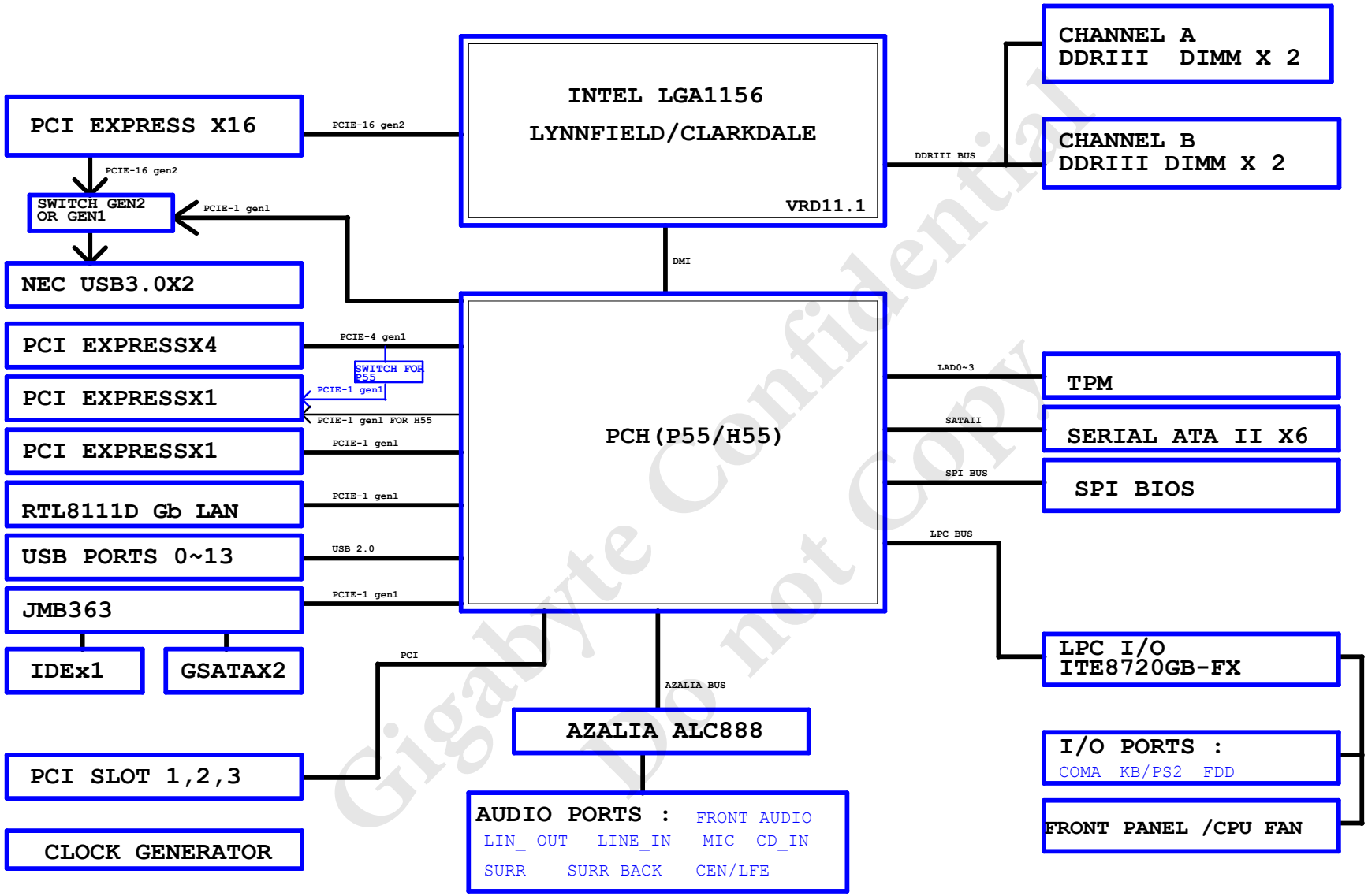
Gigabyte Technology

Title: BOM & PCB MODIFY HISTORY

Size: Custom | Document Number: GA-P55-USB3L | Rev: 1.0

Date: Tuesday, December 29, 2009 | Sheet 2 of 36

BLOCK DIAGRAM



Gigabyte Technology

Title	BLOCK DIAGRAM	
Size C	Document Number GA-P55-USB3L	Rev 1.0
Date: Tuesday, December 29, 2009	Sheet 3 of 36	

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

LGA1156E

LGA1156D

LGA1156[10SC1-F01156-01R]

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

LGA1156C

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

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

MISC

Rev 0.2 modefy

POWER ON CONFIG TABLE (Default=1.2250V)

	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	
VID7	VRD SEL	LOW
PSI#	RSVD	LOW

Check Trace length/ width

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

CFG 0-5 all internal PULL-UP

Q100 MMBT2222A/SOT23/600mA40 Rev 0.2 modefy

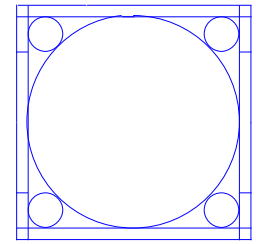
Q99 MMBT2222A/SOT23/600mA40

Title	CPU LGA1156-A
Size	Custom
Document Number	GA-P55-USB3L
Rev	1.0
Date:	Tuesday, December 29, 2009
Sheet	4 of 36

Gigabyte Technology

LGA1156A

LGA1156B



LGA1156

PLATE+ILM/[12KRC-0F0001-01R]

DDR_A

1 OF 10

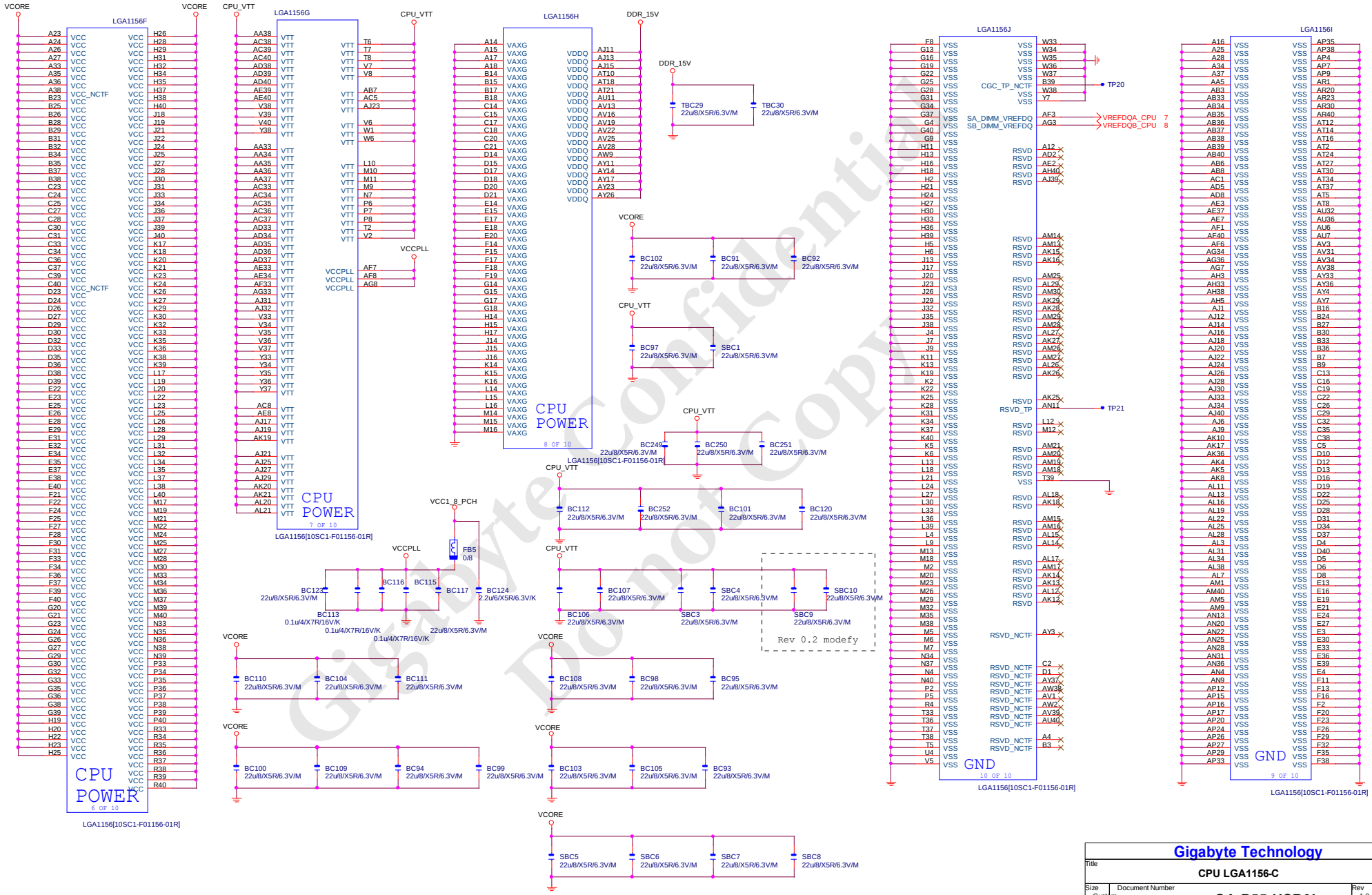
LGA1156[10SC1-F01156-01R]

DDR_B

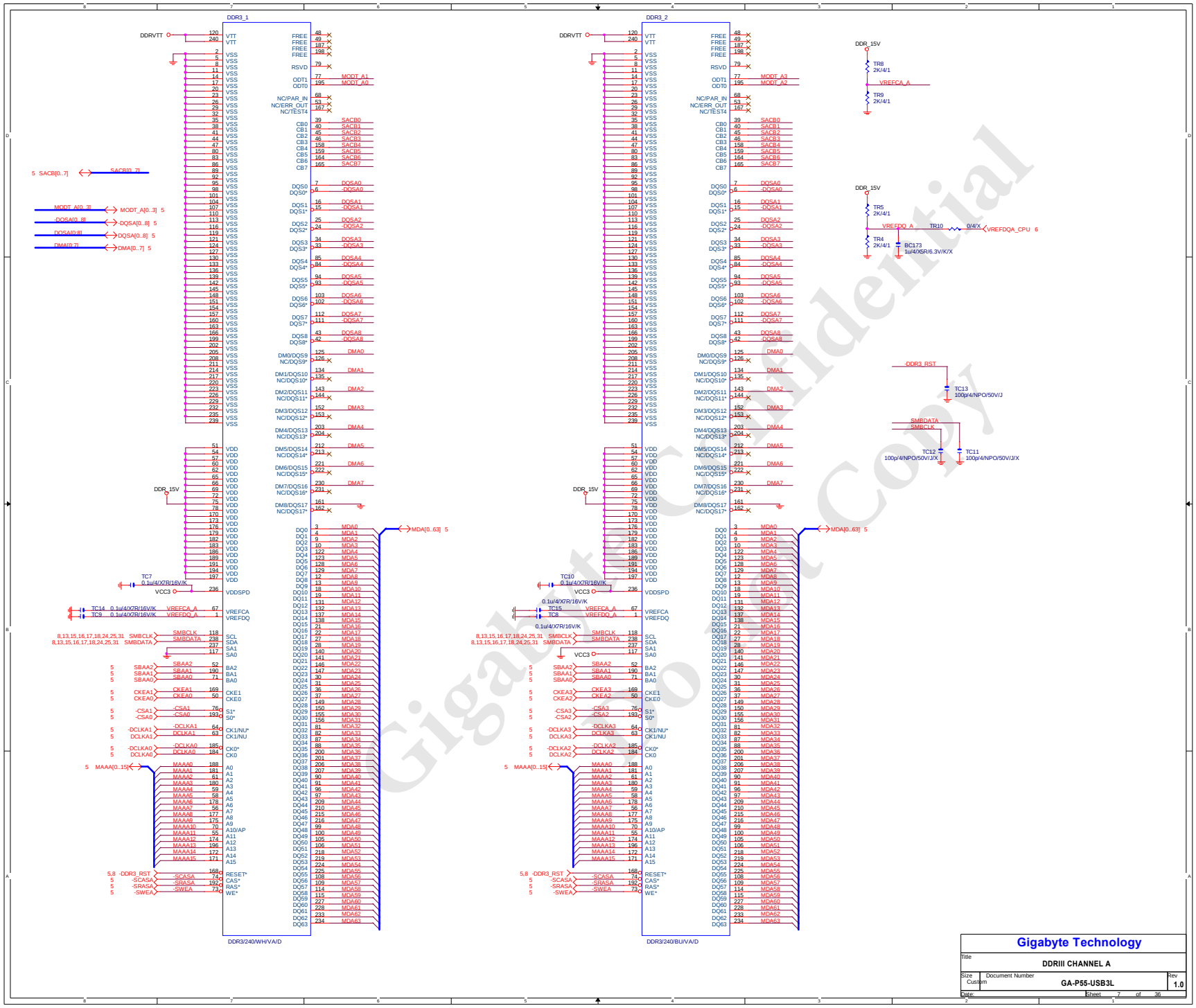
2 OF 10

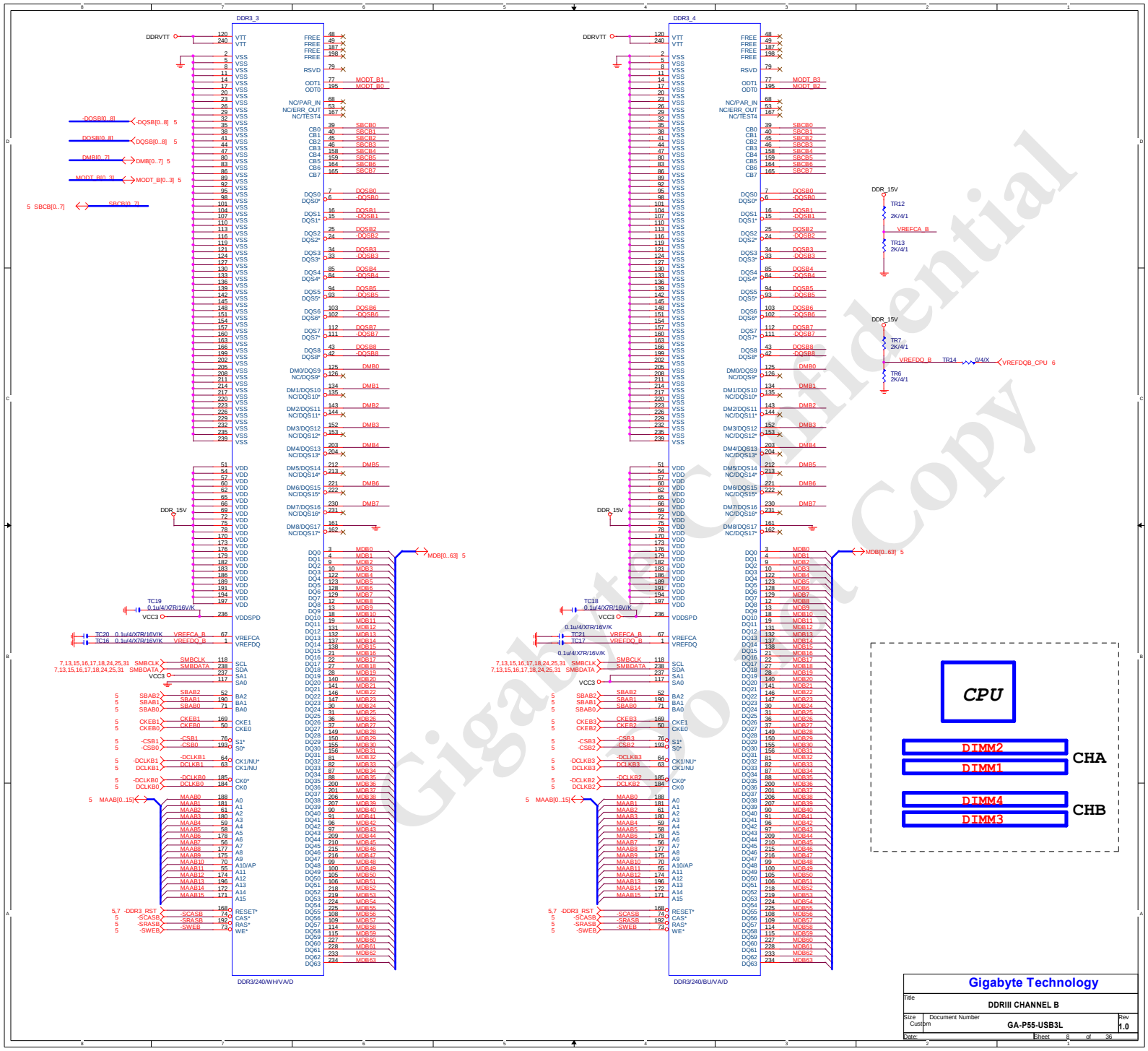
LGA1156[10SC1-F01156-01R]

Title	Gigabyte Technology
	CPU LGA1156-B
Size	Custom
Document Number	GA-P55-USB3L
Rev	1.0
Date:	Tuesday, December 29, 2009
Sheet	5 of 36

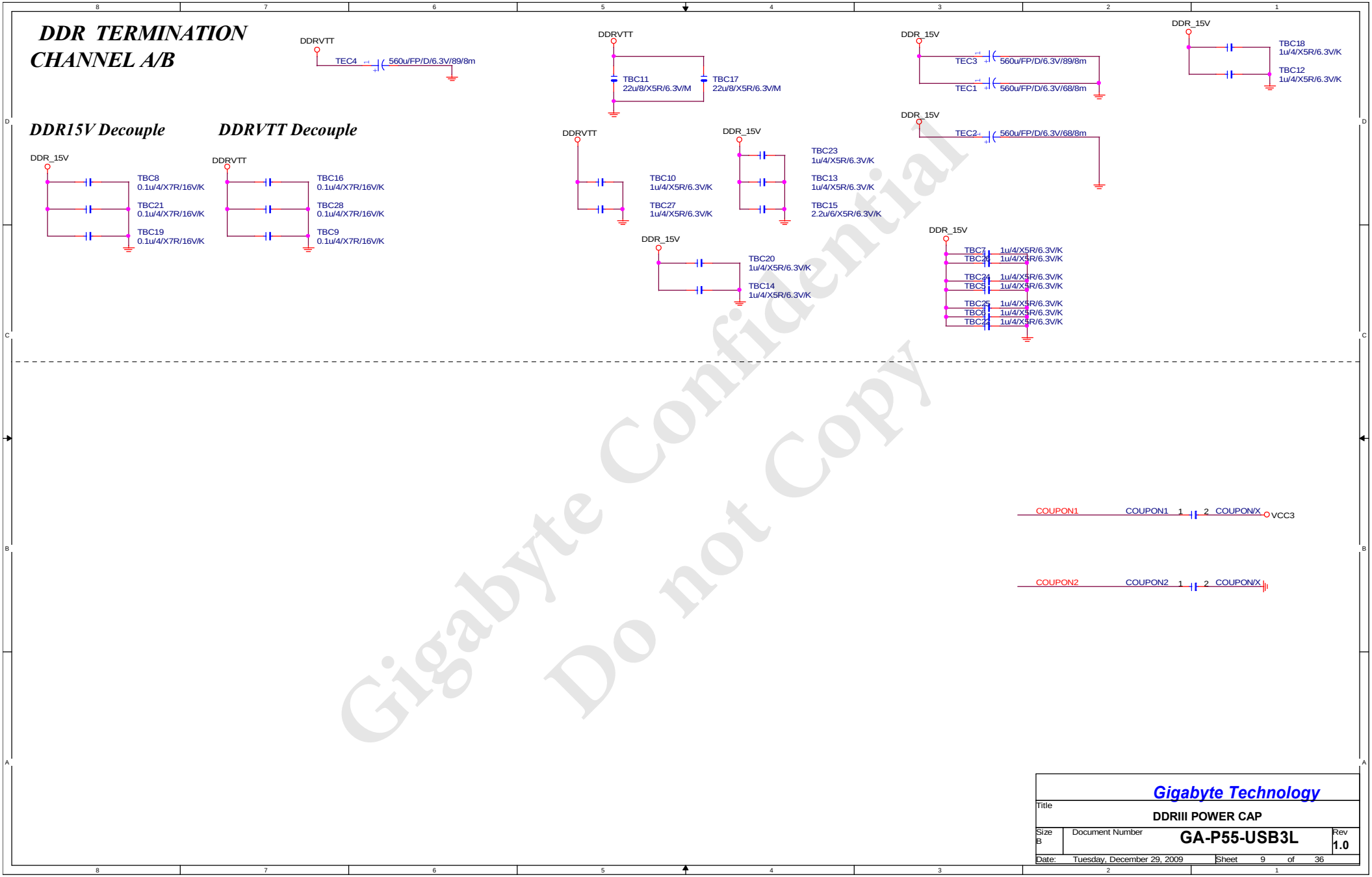


Gigabyte Technology		
Title: CPU LGA1156-C		
Size: Custom	Document Number: GA-P55-USB3L	Rev: 1.0
Date: Tuesday, December 29, 2009	Sheet 6 of 36	





DDR TERMINATION CHANNEL A/B



Gigabyte Technology		
Title: DDRIII POWER CAP		
Size: B	Document Number: GA-P55-USB3L	Rev: 1.0
Date: Tuesday, December 29, 2009	Sheet 9 of 36	

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

PCHB

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

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

H55->PORT6,7:N/A

Rev 0.2 modefy

OC[3:0]# for
Device 29
(ports 0-7)

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

Intel anti theft techonlogy

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

PCHE

NVRAM

BD82P55-B2/S

電容要靠近 slot 端

FOR H55 PCIE7/8 移除

PCH_HS

PCH_HS[12SP2-030030-C1R]

USB OC#	Configure
OC0#	USB0,1
OC1#	USB2,3
OC2#	USB4,5
OC3#	USB6,7
OC4#	USB8,9
OC5_6#	USB10~13
OC7#	

P55-UD3L/US3L料號都一樣

NV_ALE	
Hi	Enable Danbury
Lo	Disable Danbury

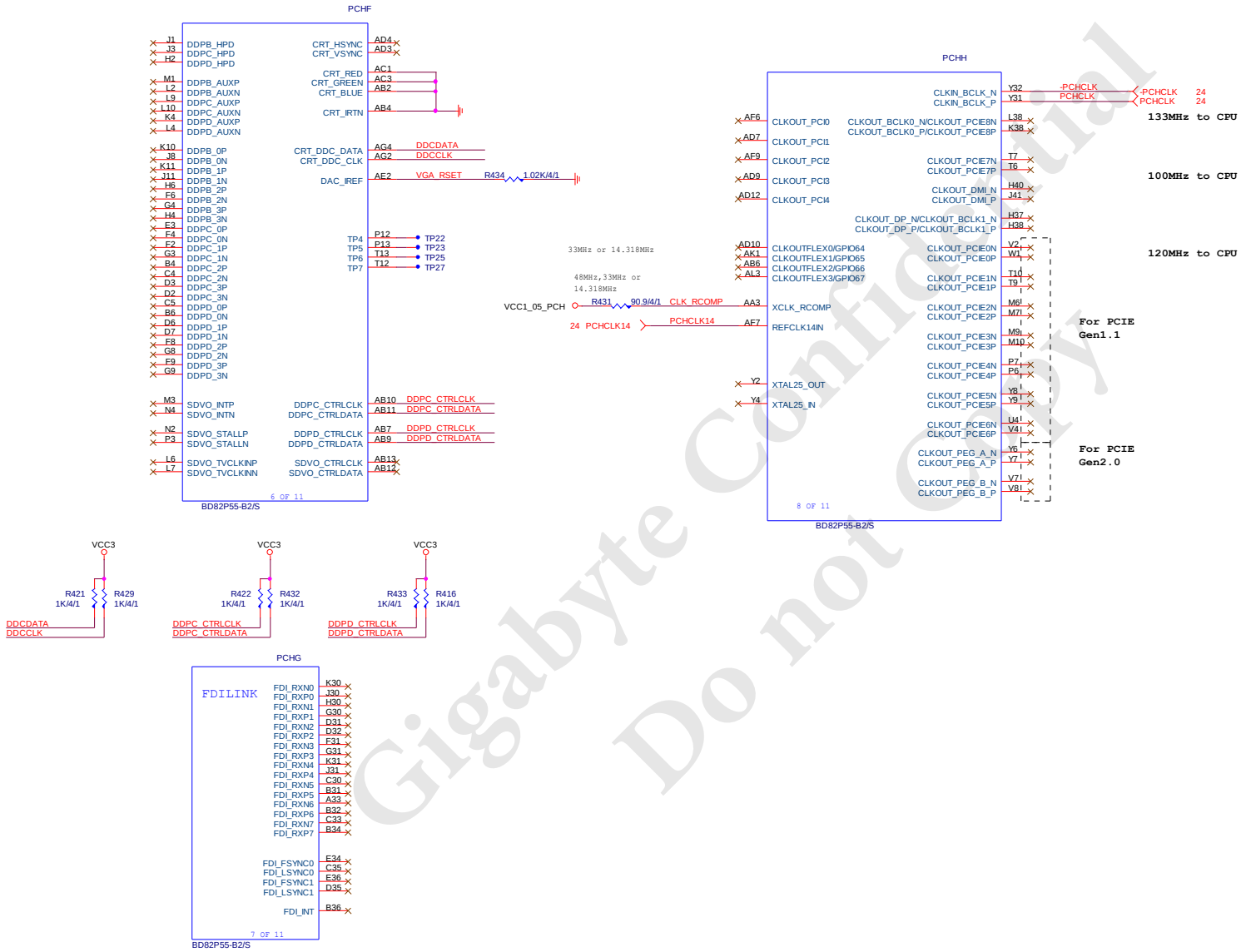
DMI Terminator voltage
HI : AC COUP : TX/RX TO VCC
LO : DC COUP : HALF SWING

Gigabyte Technology

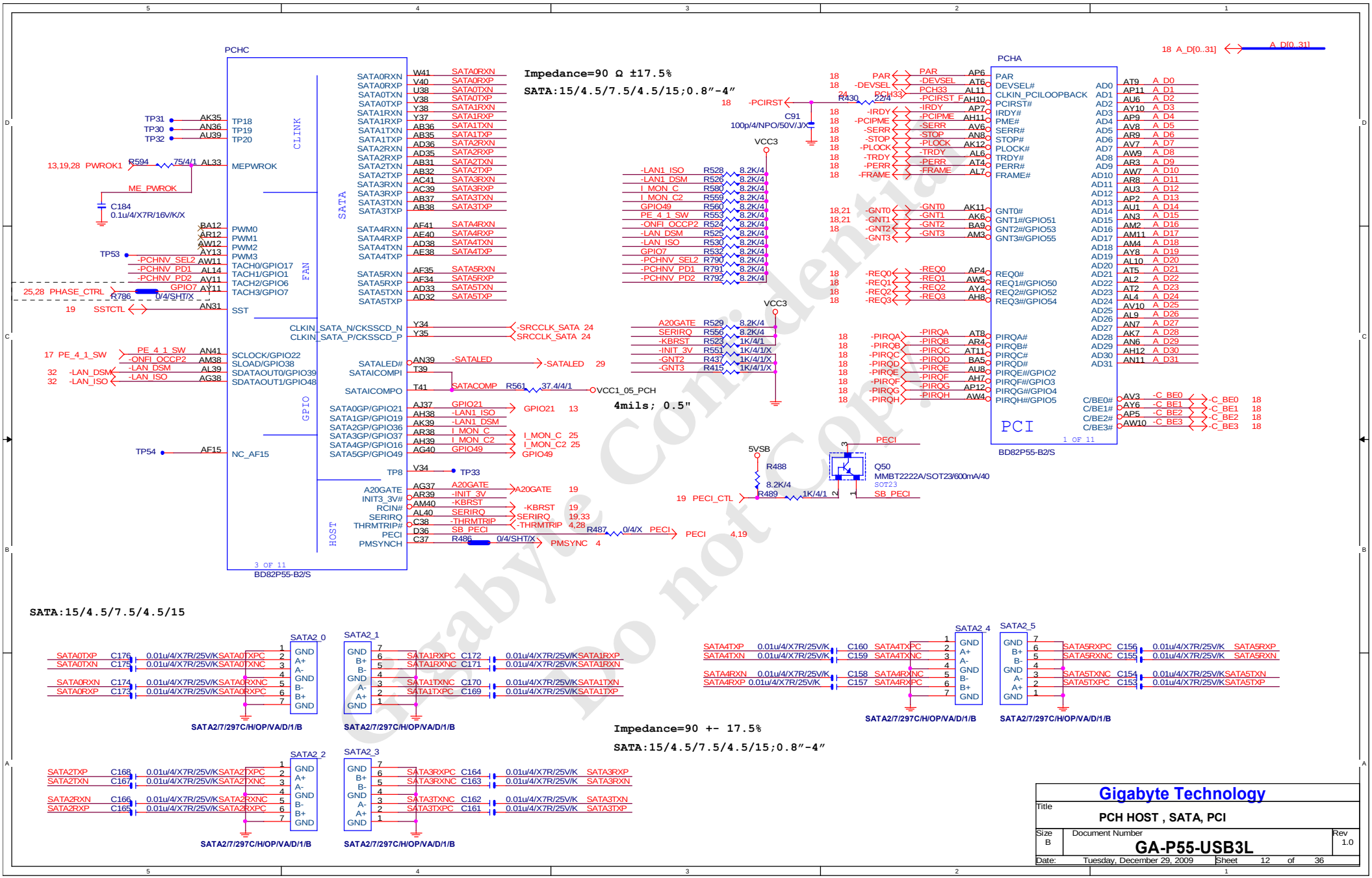
Title: PCH FDI,DMI,USB ,PCIE,NVRAM

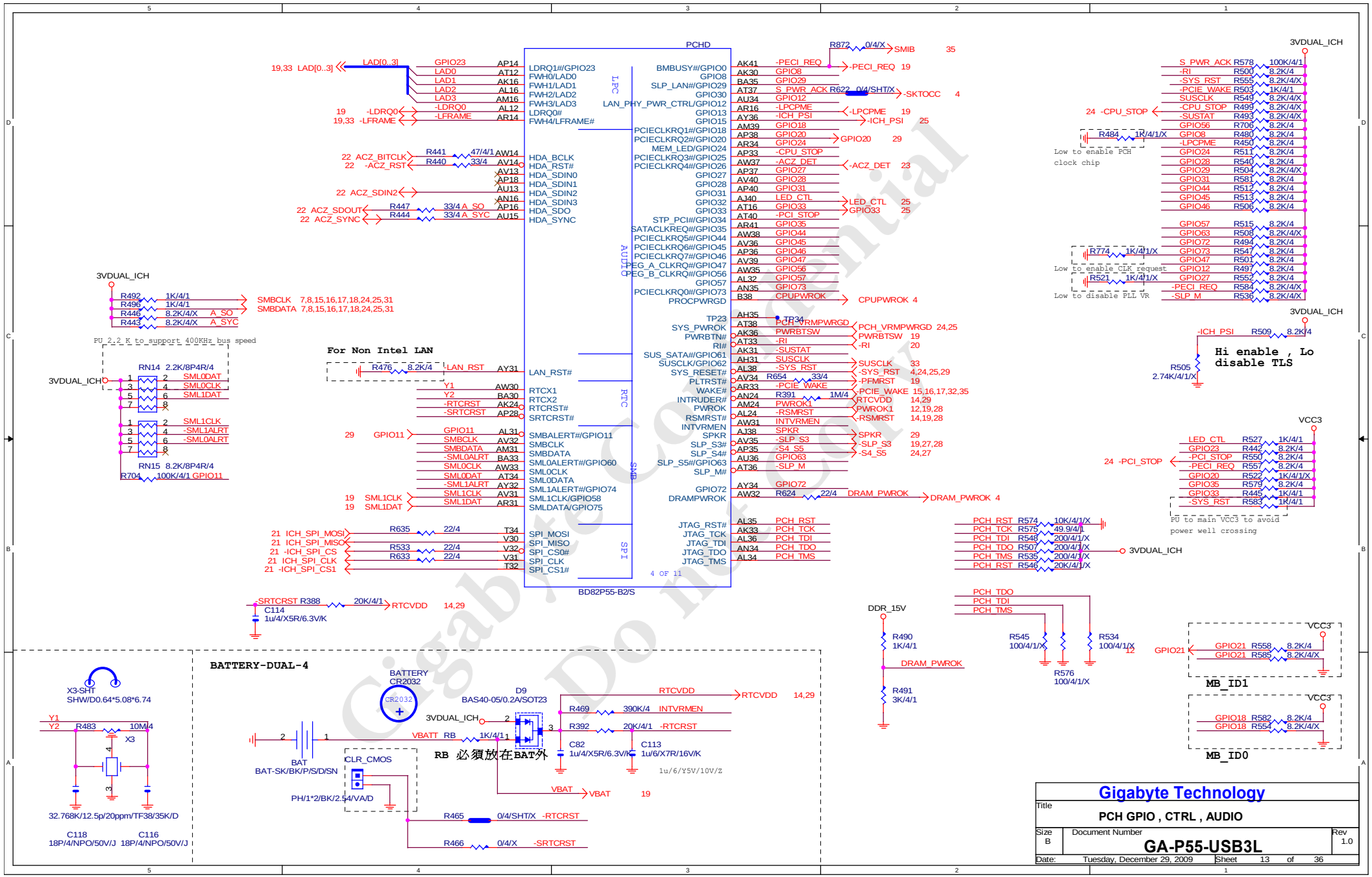
Size: B | Document Number: GA-P55-USB3L | Rev: 1.0

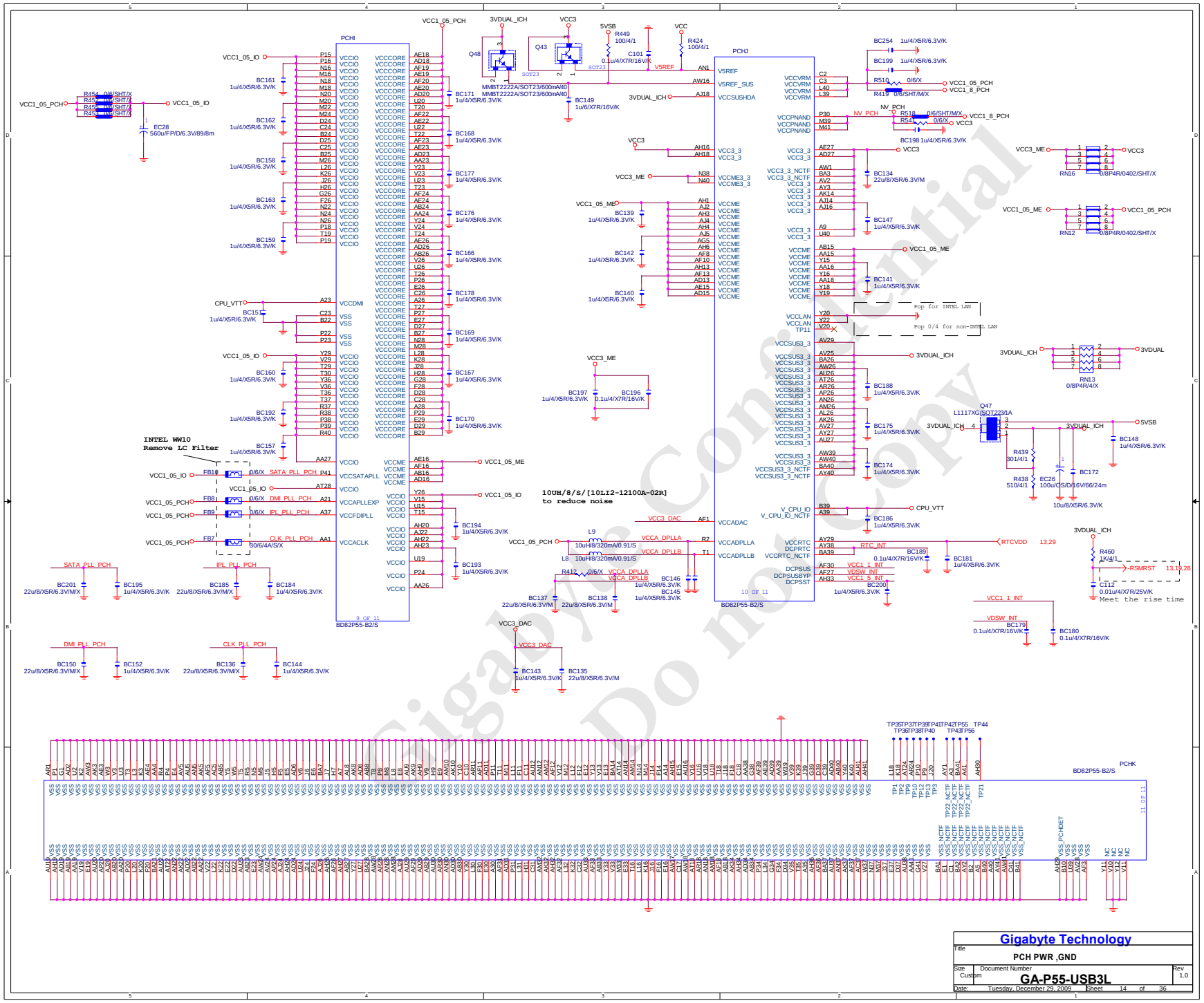
Date: Tuesday, December 29, 2009 | Sheet 10 of 36

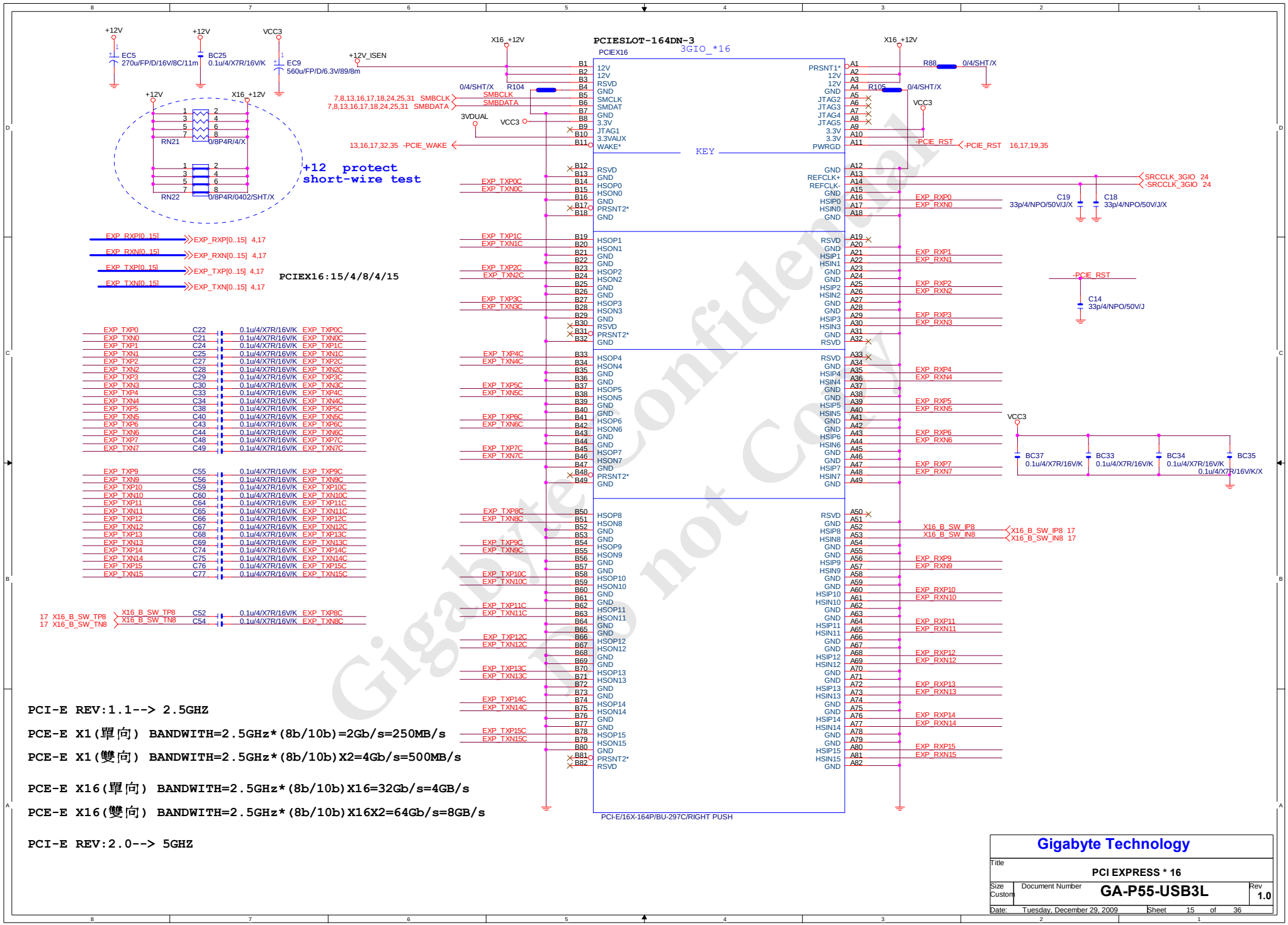


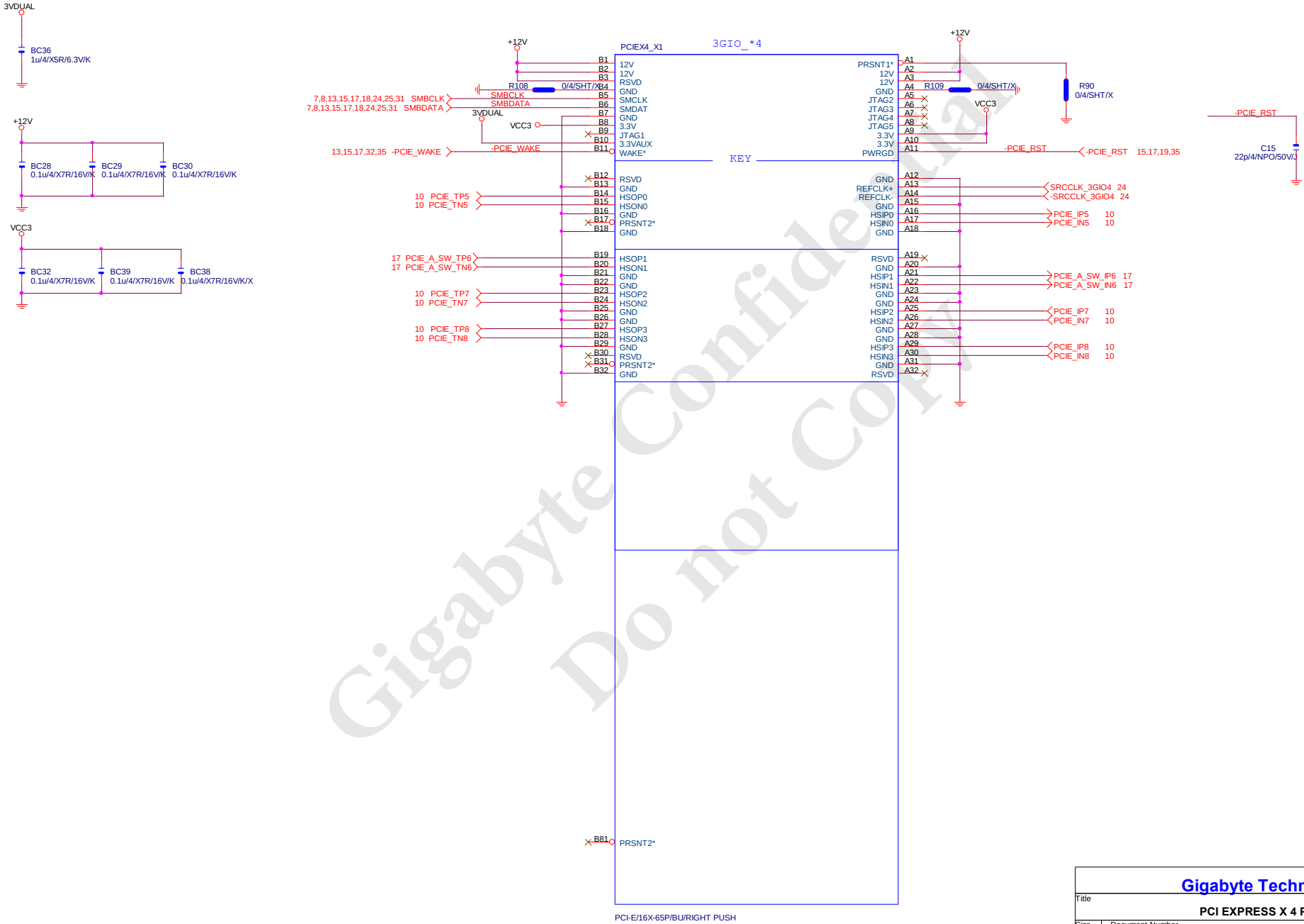
Gigabyte Technology		
Title: PCH DISPLAY ,CLK BUFFER		
Size: Custom	Document Number: GA-P55-USB3L	Rev: 1.0
Date: Tuesday, December 29, 2009	Sheet 11 of 36	



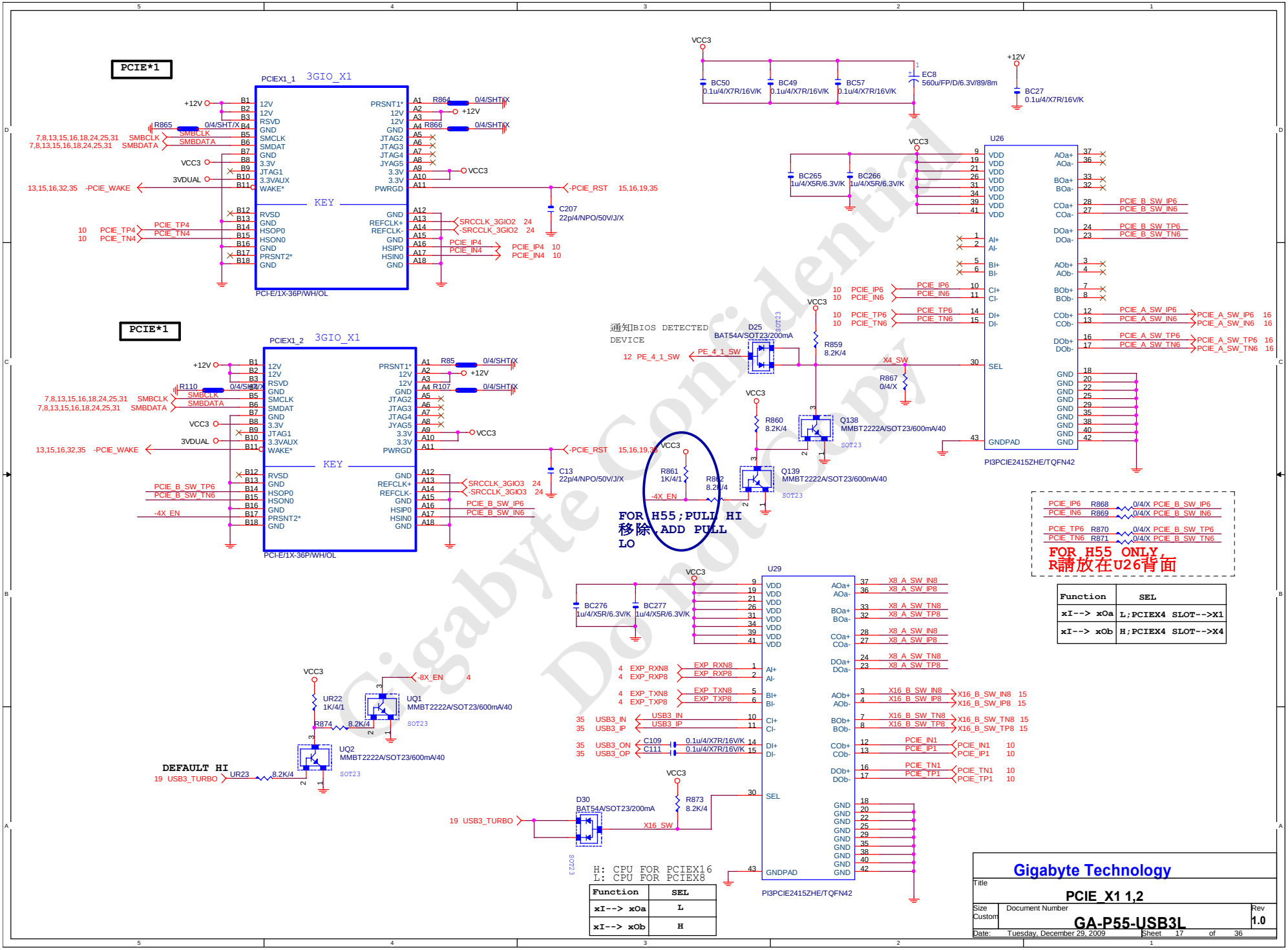




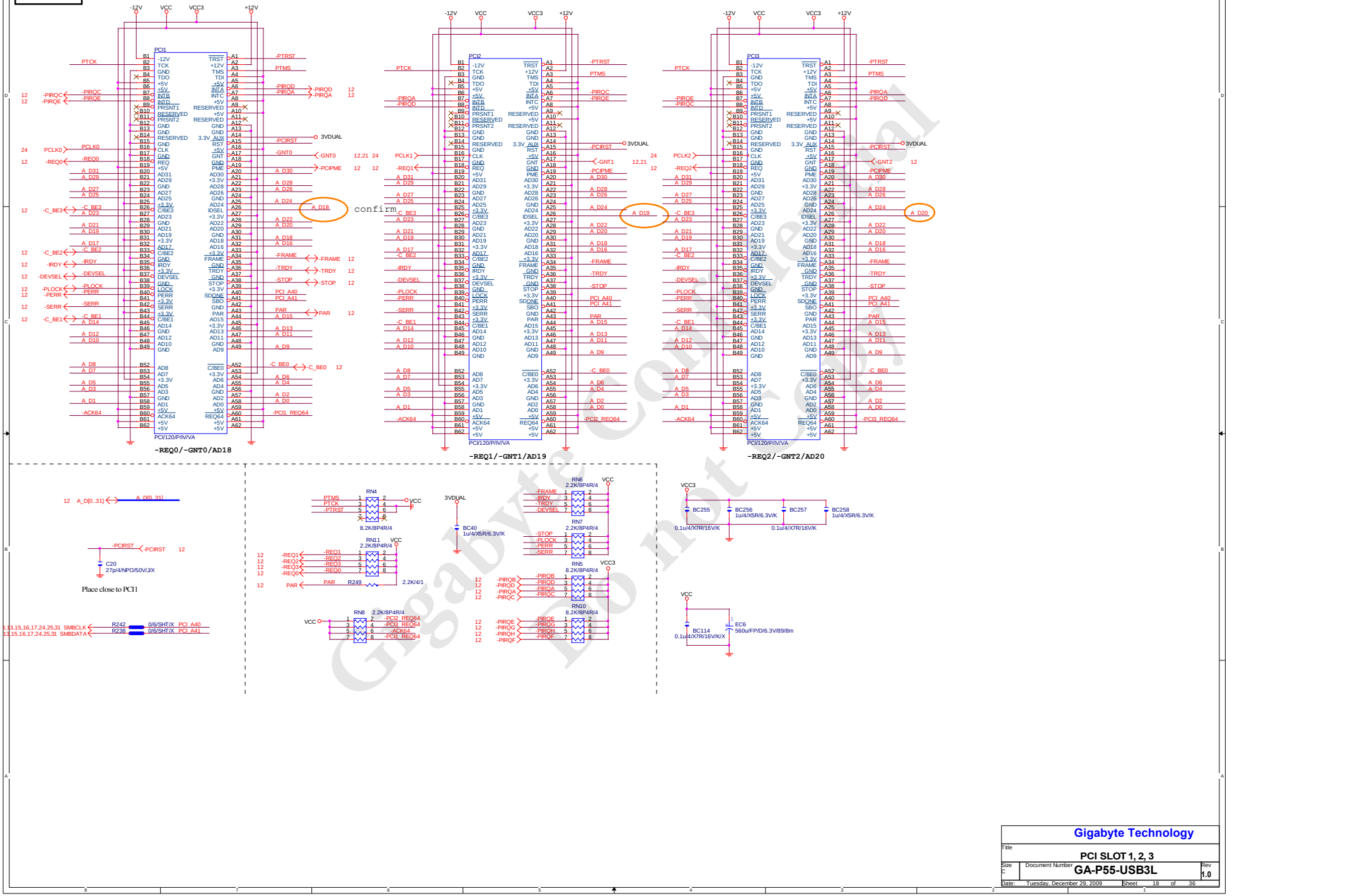




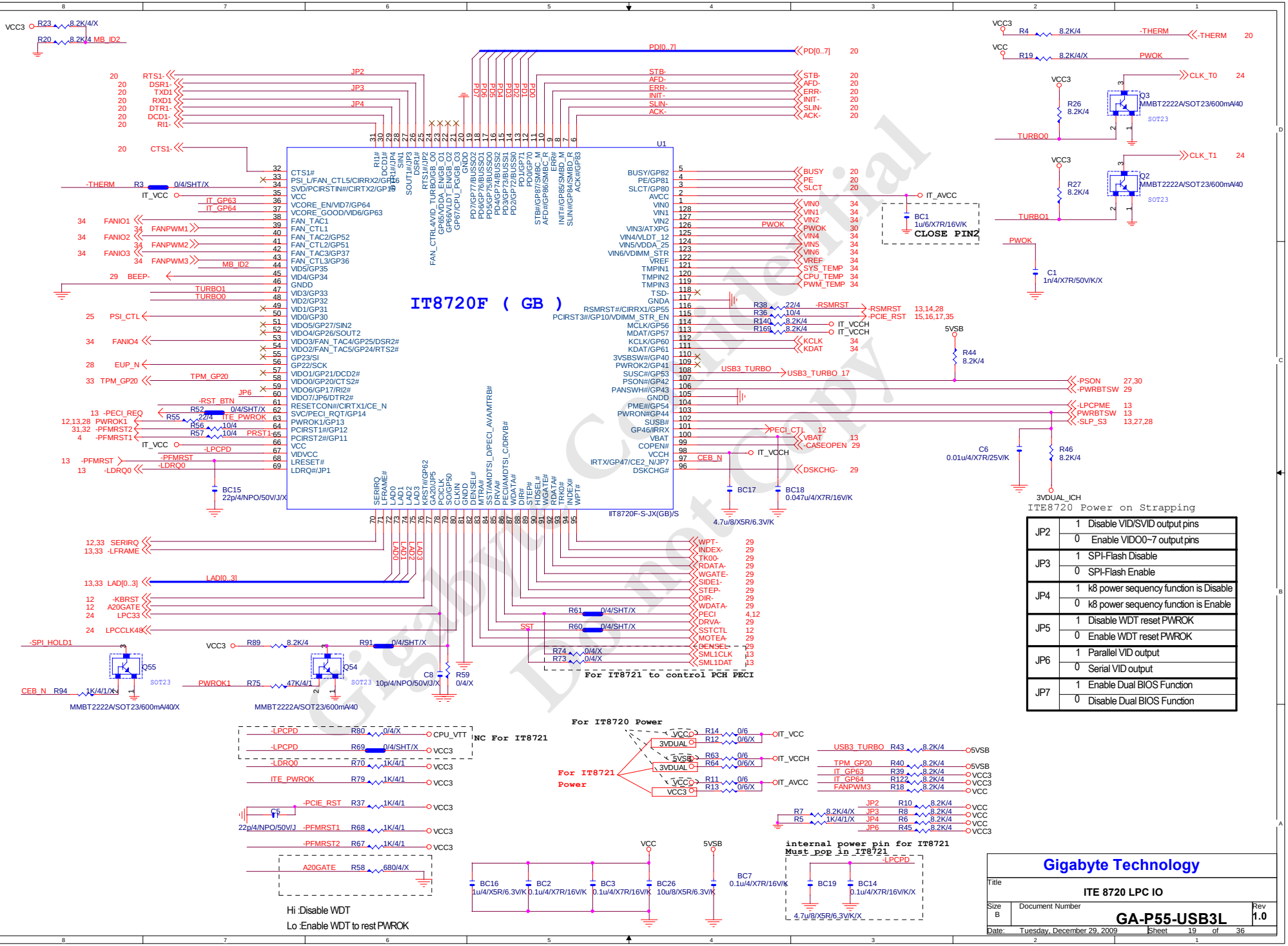
Gigabyte Technology		
Title: PCI EXPRESS X 4 PORT		
Size: Custom	Document Number: GA-P55-USB3L	Rev: 1.0
Date: Tuesday, December 29, 2009	Sheet 16 of 36	



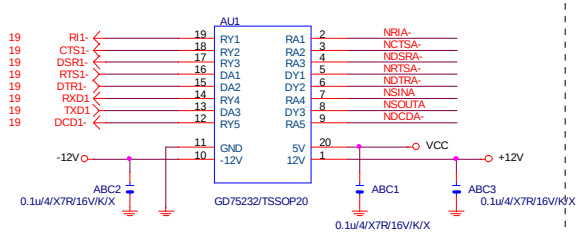
PCI1,2 SLOT



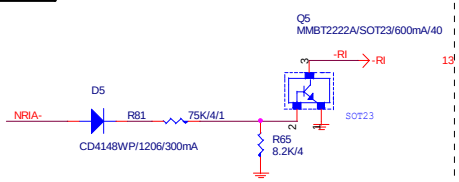
Gigabyte Technology	
Title	PCI SLOT 1, 2, 3
Size C	Document Number GA-P55-USB3L
Rev	1.0
Date: Tuesday, December 29, 2009	Sheet 18 of 36

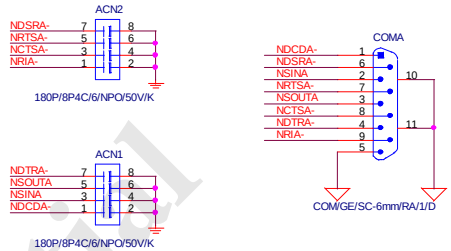


COMA

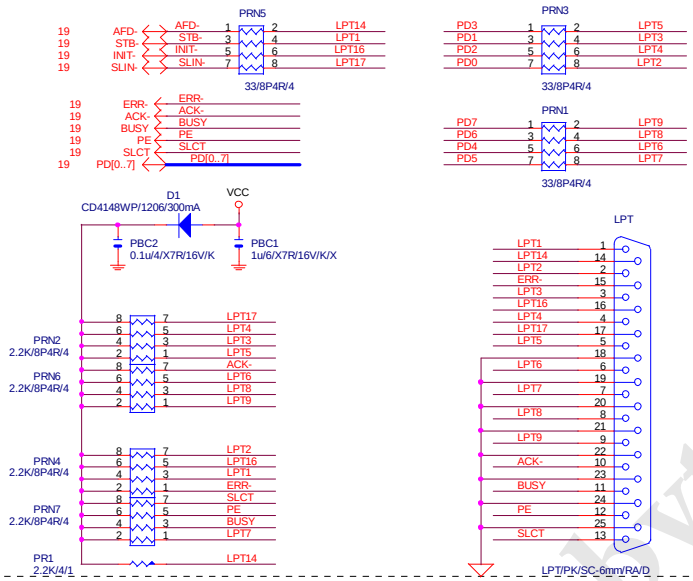


COM RI

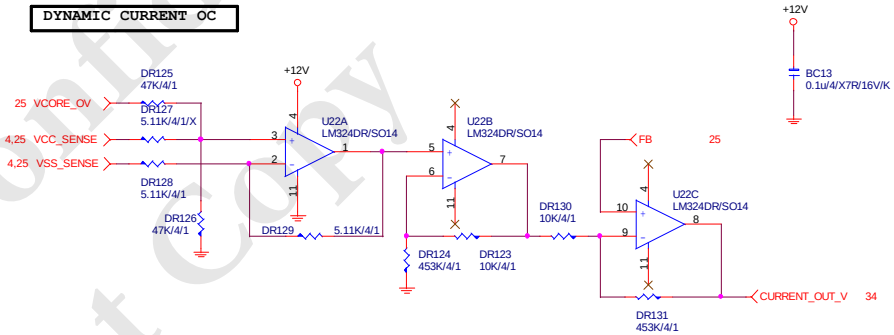




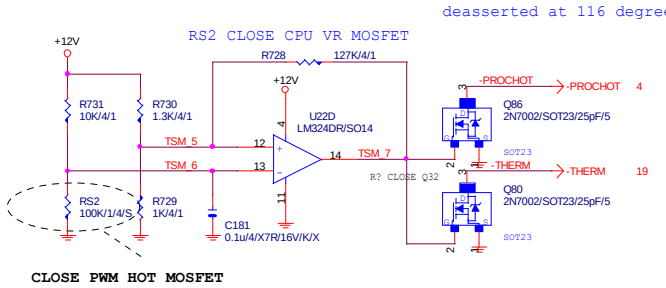
LPT PORT



DYNAMIC CURRENT OC

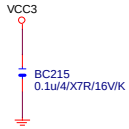


-PROHOT



CLOSE PWM HOT MOSFET

Gigabyte Technology		
Title: COM & PROHOT/Dynamic O.C.		
Size: Custom	Document Number: GA-P55-USB3L	Rev: 1.0
Date: Tuesday, December 29, 2009	Sheet 20 of 36	



r1.0 DG;0.7 CRB

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

1 means floating
0 means PD 1K

Gigabyte Technology			
Title: BIOS			
Size: Custom	Document Number: GA-P55-USB3L		Rev: 1.0
Date: Tuesday, December 29, 2009	Sheet 21 of 36		

AZALIA CODEC *ALC889A+/ALC889A/ALC888Vx Colay*

	ALC888-VA ALC888-VC2	ALC888S-VC ALC888B ALC892	ALC889A	ALC889A
CR49	O	X	O	O
CR46	X	X	O	X
CR57	X	X	O	X
CR47	X	O	X	O
CR48	O	X	O	X
CR26	20K/1%	20K/0.1%	20K/1%	20K/1%

CR2: 20K/4/0.1% @ALC889A
CR2: 20K/4/1% @ALC889A+/ALC888Vx

CR26 20K/4/1

AVDD

CBC12 0.1u/4/X7R/16V/K

SPDIFI

CBC31 470p/4/X7R/50V/K

SPDIFI_I

SPDIF

CR66 0/4/X VOCR 23

For 888-VD & ALC892

VCC3

CR53 2.2/H/6

CBC37 22u/8/X5R/6.3V/M

co-layout

23 SPDIFO2_HDMI

CR46 8.2K/4/X

CBC40 10u/8/X5R/6.3V/K/X

CR57 8.2K/4/X

CR49 0/4

CU1

ALC889A+

DVDD1
GPIO0/XTALI
GPIO1/XTALO
DVS1
SDATA_OUT
BIT_CLK
DVSS2
SDATA-IN
DVDD2
SYNC
RESET#
PC_BEEP

SPDIFO
SPDIF/EAPD
SURBACK-R/XTALSEL
SURBACK-L/JD0 GPIO0
LFE
CEN
AVSS2
SURR-R
JDREF (NC)/JD3
SURR-L
AVDD2
LINE1-VREFO/VREFO3

FRONT-R
FRONT-L
SENSE B (JD2)/FMIC1
DCVOL/VREFVOUT2
MIC1-VREFO-R/FMIC2
LINE2-VREFO/JD4
MIC2-VREFO/AFILT2
LINE1-VREFO-L/AFILT1
MIC1-VREFO-L/VREFOUT
VREF
AVSS1
AVDD1

SENSE A(JD1)/PHONE JD5
LINE2-L/AUX-L
LINE2-R/AUX-R
MIC2-L/JD2
MIC2-R/JD1 GPIO1
CD_L
CD_GND
CD_R
MIC1-L/MIC1
MIC1-R/MIC2
LINE1-L
LINE1-R

ALC888-GR/S

CR65 47/4/1 FAUDIO_JD 23

CBC39 1n/4/X7R/50V/K

JD resistors close to pin34 of CODEC

Can Support Amp Out

LINE_O_R 23
LINE_O_L 23

VODR CR14 8.2K/4

MIC1_VREFO_R 23
LINE2_VREFO 23
MIC2_VREFO 23

VOBR CR17 8.2K/4

MIC1_VREFO_L 23

CR67 0/4 VOCR 23

5VDUAL

CR68 0/6/X

CBC41 22u/8/X5R/6.3V/M/X

CD2 AZ2225-01L/SOD323/X

For 888-VD & ALC892

AVDD

22u/8/X5R/6.3V/M

CBC8 0.1u/4/X7R/16V/K

CBC7

50歐姆:4/5

13 ACZ_SDOUT
13 ACZ_BITCLK
13 ACZ_SDIN2
13 ACZ_SYNC
13 -ACZ_RST

CR58 22/4

CR59 22/4

VCC3

CR14/CBC4 close to SouthBridge

CBC34 22p/4/NPO/50V/J/X

CBC35 0.1u/4/X7R/16V/K

CBC33 0.1u/4/X7R/16V/K

Digital Area

Analog Area

CBC2 4.7u/6/X5R/6.3V/K LINE_IN_R 23
CBC4 4.7u/6/X5R/6.3V/K LINE_IN_L 23
CBC10 4.7u/6/X5R/6.3V/K MIC1_R 23
CBC11 4.7u/6/X5R/6.3V/K MIC1_L 23

50歐姆:4/10

CBC15 0.1u/4/X7R/16V/K CD_R 23
CBC14 0.1u/4/X7R/16V/K CDGND 23
CBC13 0.1u/4/X7R/16V/K CD_L 23

23 FRONT_JD CR32 5.1K/4/1
23 LINE1_JD CR33 10K/4/1
23 MIC1_JD CR31 20K/4/1

JD resistors close to pin13 of CODEC

23 LINE2_L
23 LINE2_R
23 MIC2_L
23 MIC2_R

Can Support Amp Out

Gigabyte Technology

Title: HD AUDIO ALC888

Size: Custom | Document Number: GA-P55-USB3L | Rev: 1.0

Date: Tuesday, December 29, 2009 | Sheet 22 of 36

CODEC POWER/EMI PAD

CR45 0/6/SHT/X
CR16 2.2/6
+12V
5VDUAL
CQ5
CD4148WP/1206/300mA
AVDD
CQ3
CD1 CD4148WP/1206/300mA
78L05/SOT89/0.1A
0.1u/4/X7R/16V/K/X
CBC16 22u/8/X5R/6.3V/M
CD3 AZ2225-01L/SOD323
CR18 0/4/X

CD IN

CD_IN
22 CD_L
22 CDGND
22 CD_R
CR24 8.2K/4
CR23 8.2K/4
CR25 8.2K/4
SHR/1*4/BK/P/2.54/VA/D

CR44 0/6/SHT/X

COAXIAL
RCA/4P/1/O/ORANGE/GF/RA/D/[11NR6-501004-81R]
22 SPDIF
SPDIF
CBC17
CR29 100/4/1
SPDIF_RCA
0.01u/4/X7R/25V/K
CR30 220/4
CBC18
100p/4/NPO/50V/J

SPDIF_IN

VCC
CR64 0/4
22 SPDIFI
Rev 0.2 modefy
R0402-2-SHORT10
SPDIF_I
V-A SHR WF 1*3P WHITE JOINT TE/[11NH5-010103-W1R]

22 SPDIF
CR48 0/4 SPDIFO
22 SPDIFO2_HDMI
CR47 0/4/X
PIN
CBC32 100p/4/NPO/50V/J
SPDIF_O
PH/1*2/BK/2.54/VA/D
For HDMI SPDIF

AZALIA JACK

USB_LAN

AUDIO
22 LINE1_JD
LINE1_JD
AJ_A5
AJ_A2
BLUE
LINE-IN
22 FRONT_JD
FRONT_JD
AJ_B5
AJ_B2
GREEN
LINE-OUT
22 MIC1_JD
MIC1_JD
AJ_C5
AJ_C2
PINK
MIC-IN
MH1 MH2 MH3 MH4 MH5
A3RP/13P/BL_LI_PK/RA/D/1/B

LINE-OUT

22 LINE_O_R
22 LINE_O_L
CEC1 100u/OS/D/16V/66/24m
CEC2 100u/OS/D/16V/66/24m
CR1 75/4/1
CR3 75/4/1
CR4 22K/4
CR2 22K/4
AJ_B5
AJ_B2
CBC9 180p/4/NPO/50V/J
CBC21 180p/4/NPO/50V/J

LINE-IN

Only reserved for ALC888
Verify MIC function in LINE-in
22 LINE_IN_R
22 LINE_IN_L
22 VOCR
CR10 75/4/1
CR12 75/4/1
CQ1
CR11 8.2K/4
CR13 8.2K/4
For 889A/888
BAT54A/SOT23/200mA
CBC20 180p/4/NPO/50V/J
CBC23 180p/4/NPO/50V/J
AJ_A5
AJ_A2

MIC-IN

22 MIC1_R
22 MIC1_L
CR15 75/4/1
CR19 75/4/1
22 MIC1_VREFO_L
22 MIC1_VREFO_R
CBC3 180p/4/NPO/50V/J
CBC1 180p/4/NPO/50V/J
AJ_C5
AJ_C2

SURROUND

CENLFE

SURR BACK

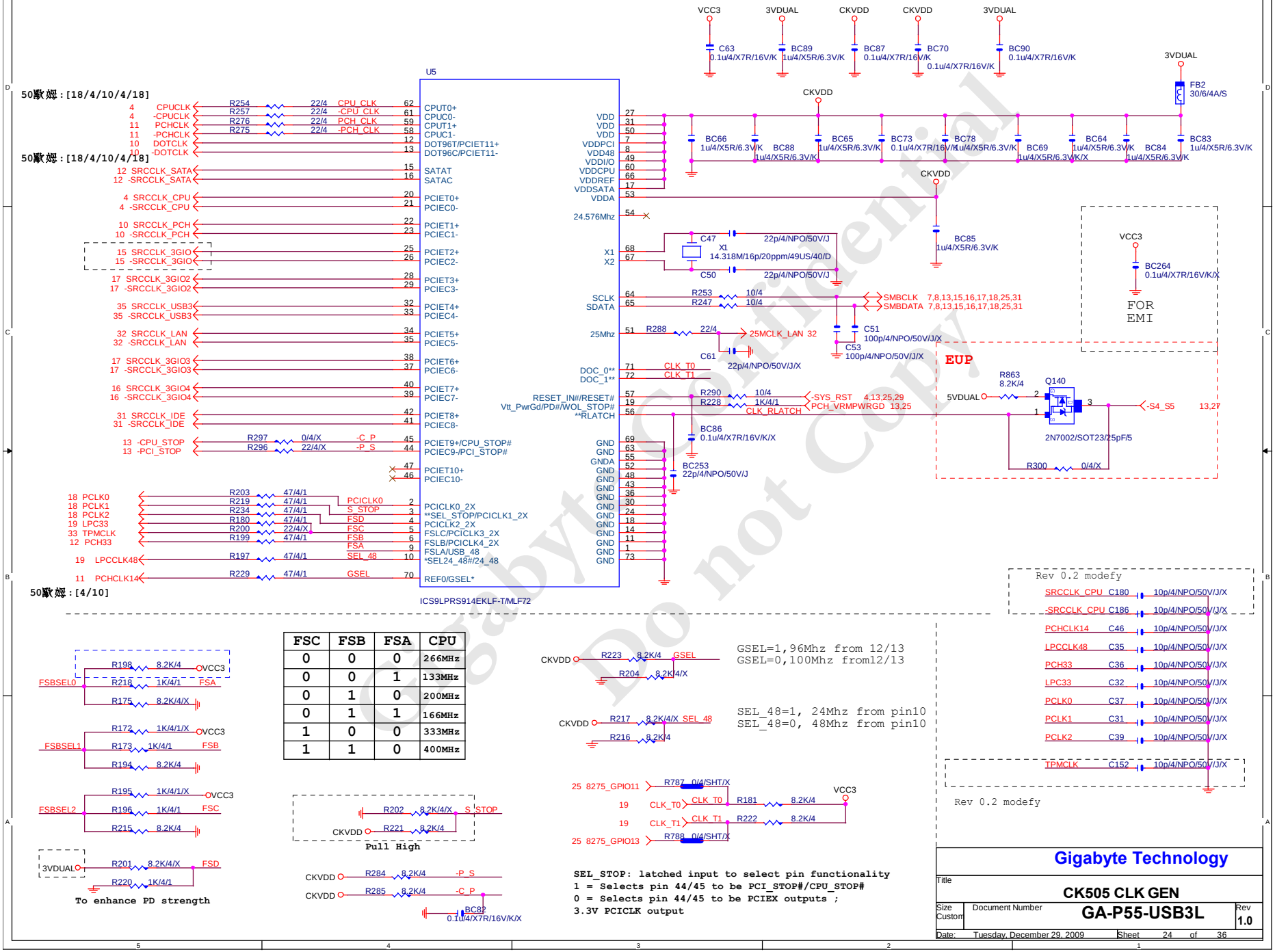
AZALIA FRONT PANEL

CQ4 BAT54A/SOT23/200mA
22 LINE2_VREFO
CQ2 BAT54A/SOT23/200mA
22 MIC2_VREFO
CR50 8.2K/4
CR60 8.2K/4
CR8 8.2K/4
CR5 8.2K/4
22 MIC2_L
22 MIC2_R
CBC5 4.7u/6/X5R/6.3V/K
CBC6 4.7u/6/X5R/6.3V/K
CR6 75/4/1 M2_L
CR9 75/4/1 M2_R
22 FAUDIO_JD
CR61 75/4/1
CR51 75/4/1
CR7 0/4/X
F_AUDIO
PH/2*5K8/GED/2.54/VA/D
CR62 22K/4
CR52 22K/4
CR41 20K/4/1
CR63 39.2K/4/1
ACZ_DET 13
Digital Area
3VDUAL
CR54 8.2K/4
22 LINE2_R
22 LINE2_L
100u/OS/D/16V/66/24m
CEC10
CEC7
CBC27 CBC26 CBC38 CBC36
180p/4/NPO/50V/J

Gigabyte Technology

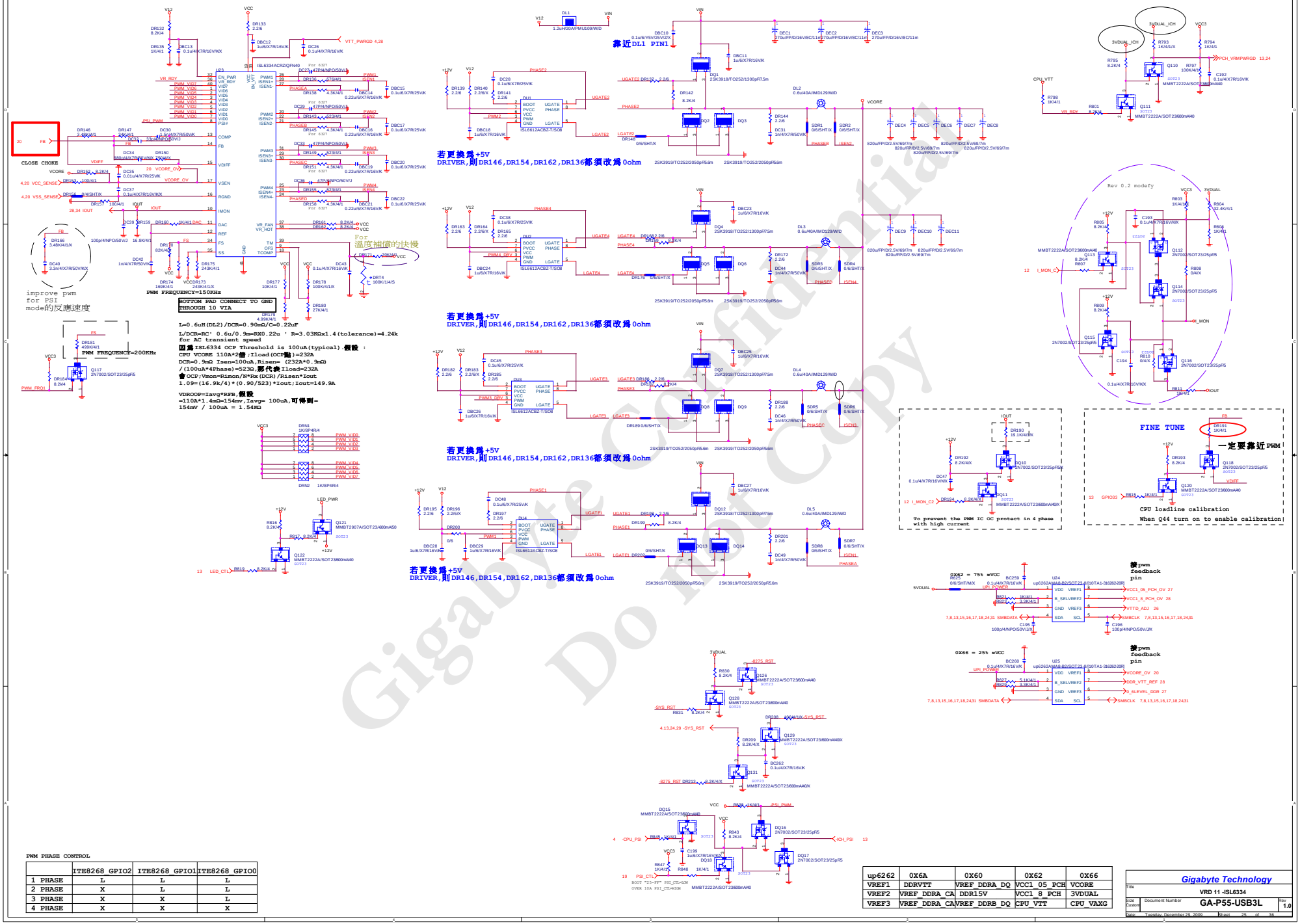
Title	AUDIO JACK	
Size: Custom	Document Number: GA-P55-USB3L	Rev: 1.0
Date: Tuesday, December 29, 2009	Sheet 23 of 36	

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

Gigabyte Technology	
Title	CK505 CLK GEN
Size: Custom	Document Number: GA-P55-USB3L
Rev	1.0
Date: Tuesday, December 29, 2009	Sheet 24 of 36



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

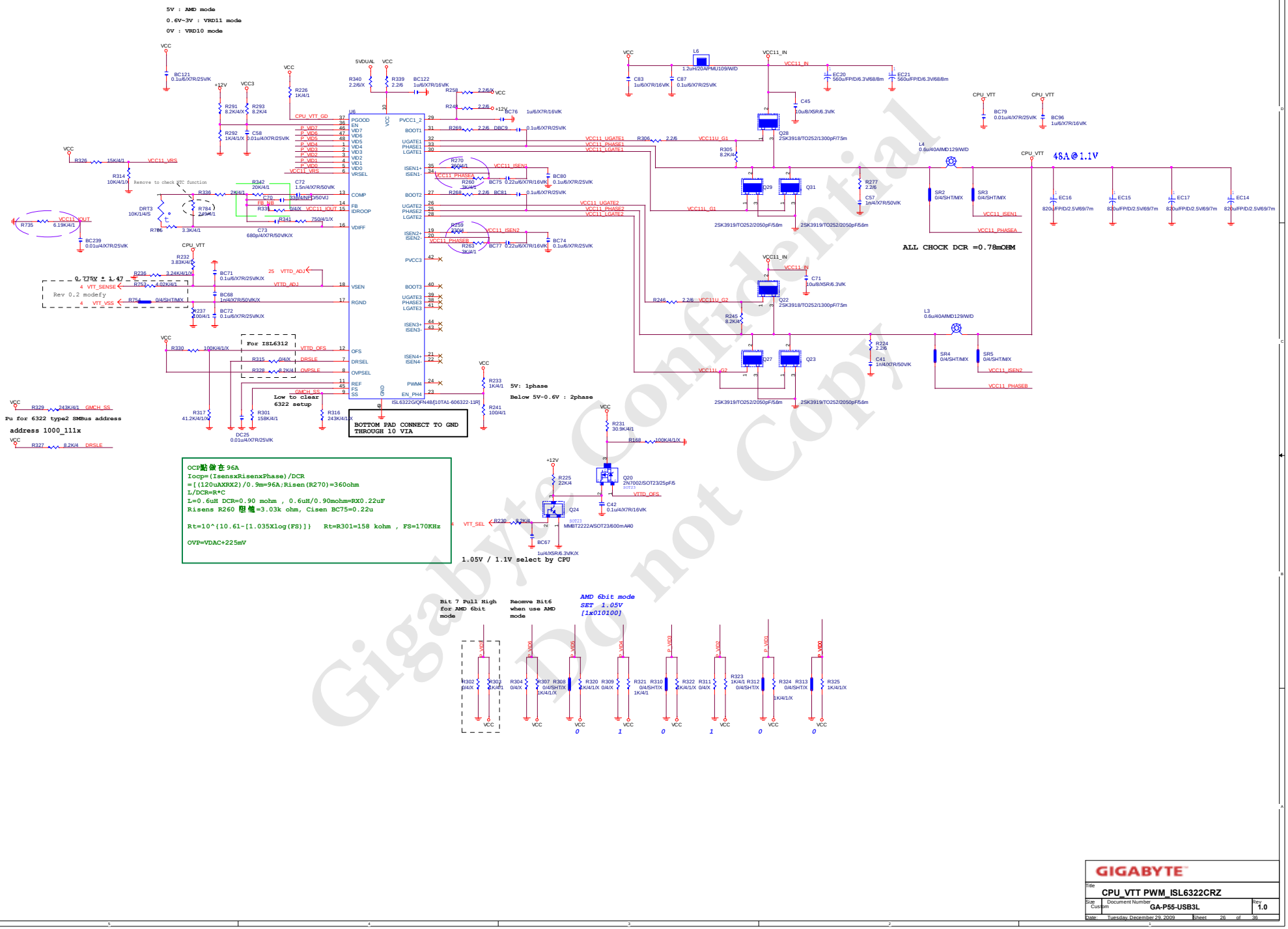
up6262	0X6A	0X60	0X62	0X66
VREF1	DDRVTT	VREF_DDRA_DQ	VCC1_05_PCH	VCORE
VREF2	VREF_DDRA_CA	DDR15V	VCC1_8_PCH	3VDUAL
VREF3	VREF_DDRA_CA	VREF_DDRB_DQ	CPU_VTT	CPU_VAXG

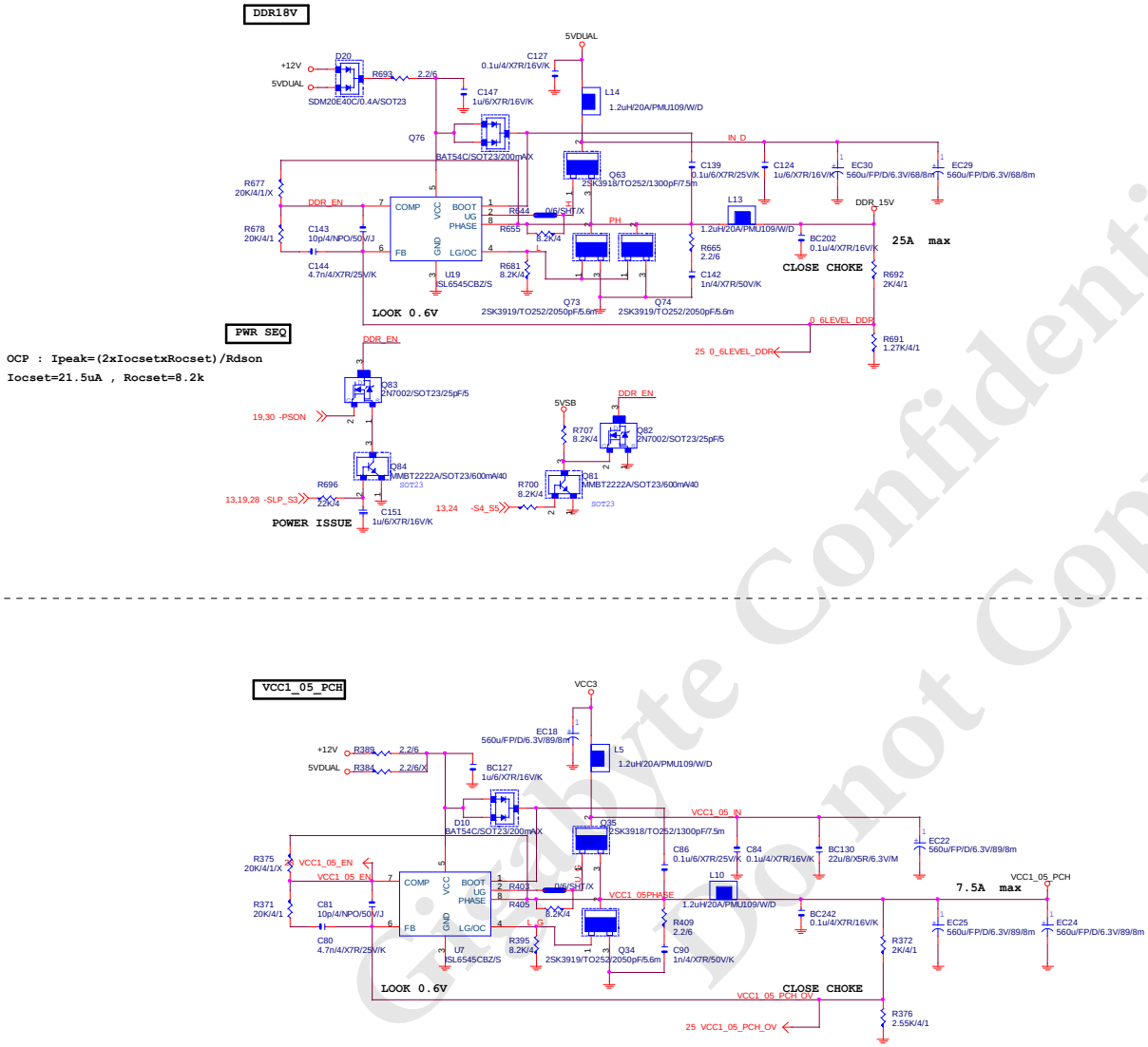
Gigabyte Technology

Title: VRD 11 -ISL6334

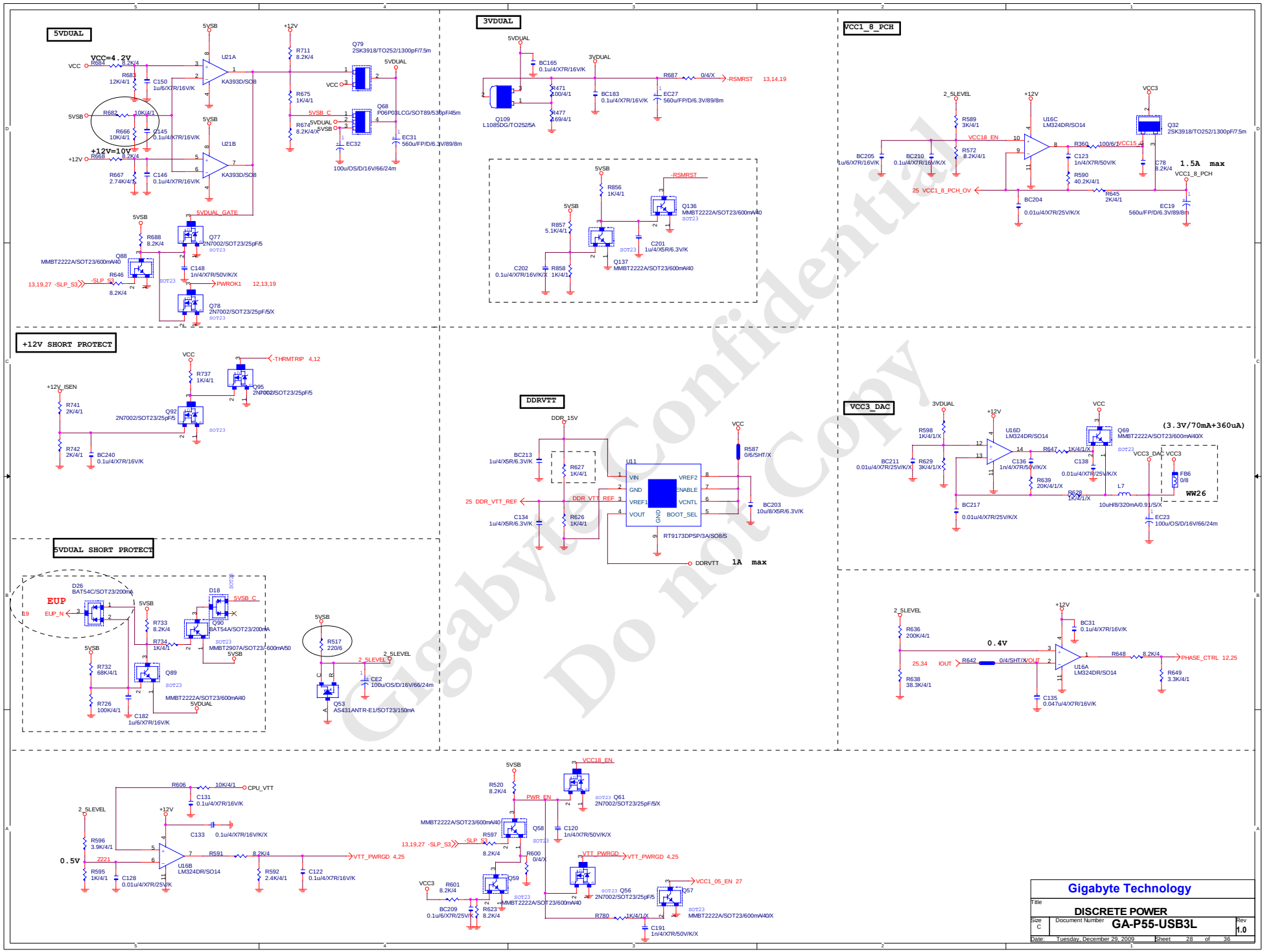
Size: Custom | Document Number: GA-P55-USB3L | Rev: 1.0

Date: Tuesday, December 29, 2009 | Sheet 25 of 36





Gigabyte Technology		
Title: DDR_15V		
Size: C	Document Number: GA-P55-USB3L	Rev: 1.0
Date: Tuesday, December 29, 2009	Sheet 27 of 36	



FRONT USB1

FUSEVCC0

F_USB1

BC236 0.1u/4/X7R/16V/K

10 -USBP0 / 10 +USBP0 — -USBP1 10 / +USBP1 10

BH/2*5K9/BU/ON/2.54/VA/D/GF

ESD7 CM1293A-04SO/S

-USBP0 / +USBP0 / -USBP1 / +USBP1 / 5VDUAL

Close to connector

FRONT USB2

FUSEVCC1

F_USB2

BC218 0.1u/4/X7R/16V/K

10 -USBP2 / 10 +USBP2 — -USBP3 10 / +USBP3 10

BH/2*5K9/BU/ON/2.54/VA/D/GF

ESD6 CM1293A-04SO/S

-USBP2 / +USBP2 / -USBP3 / +USBP3 / 5VDUAL

Close to connector

FRONT USB3

FUSEVCC2

F_USB3

BC263 0.1u/4/X7R/16V/K

10 -USBP6 / 10 +USBP6 — -USBP7 10 / +USBP7 10

BH/2*5K9/BU/ON/2.54/VA/D/GF

ESD5 CM1293A-04SO/S

+USBP6 / +USBP7 / -USBP6 / -USBP7 / 5VDUAL

Close to connector

CASE OPEN

13,14 RTCVDD — R411 1M/4 — -CASEOPEN — CASEOPEN 19

C89 0.01u/4/X7R/25V/K

Case Open Circuits

FLOPPY

VCC

RN3 470/8P4R/4

R62 470/4/1

FDD

DENSEL- / INDEX- / MOTEA- / DRVA- / DIR- / STEP- / WDATA- / WGATE- / TK00- / WPT- / RDATA- / SIDE1- / DSKCHG-

BH/2*17K5/WH/SHN/2.54/VA/PA46

Rear USB CONNECTOR

ESD4 CM1293A-04SO/S

+USBP8 / +USBP9 / -USBP8 / -USBP9 / 5VDUAL

ESD1 CM1293A-04SO/S

+USBP11 / +USBP10 / -USBP11 / -USBP10 / 5VDUAL

FUSEVCCR2

BC11 0.1u/4/X7R/16V/K/X

BC246 0.1u/4/X7R/16V/K

90歐姆：[15/4.5/7.5/4.5/15]

FUSEVCCR2

R_USB

UP / MID 1 / MID 2 / DOWN

10 -USBP8 / 10 +USBP8 — G6

10 -USBP9 / 10 +USBP9 — G5 G4

10 -USBP10 / 10 +USBP10 — G3 G2

10 -USBP11 / 10 +USBP11 — G1

USB/A/BK/OS/RA/D/4

SATA LED

31 DASPrIXA — DASPrIXA — RD3 BAT54A/SOT23/200mA

31 HD_LEDn — HD_LEDn — RD2 BAT54A/SOT23/200mA

12 -SATALED

VCC3

R396 1K/4/1

R399 1K/4/1

R400 8.2K/4

HDLED

C85 180p/4/NPO/50V/J/X

Q37 MMBT2222A/SOT23/600mA/40

Q36 MMBT2222A/SOT23/600mA/40

VCC

D11 CD4148WP/1206/300mA

To disable TCO timer

VCC3

R426 8.2K/4

SPK- — R414 75/4/1 — R423 75/4/1

Q45 MMBT2222A/SOT23/600mA/40

Q42 MMBT2222A/SOT23/600mA/40

R427 1K/4/1

SPKR — SPKR 13

VCC — R425 1K/4/1 — Q46 MMBT2222A/SOT23/600mA/40

R428 8.2K/4

19 BEEP- — BEEP-

Close to connector

F_USB & F_1394 POWER PROTECT

5VDUAL — F5 SMD1812P350SLR/S — 100MILS — FUSEVCC0

F4 SMD1812P350SLR/S — 100MILS — FUSEVCC1

F6 SMD1812P350SLR/S — FUSEVCC2

EC34 560u/FP/D/6.3V/89/8m

5VDUAL — 200MILS — F7 SMD1812P260/6V — FUSEVCCR2

13 GPIO11 — D19 BAT54A/SOT23/200mA — -USBOC_F

FUSEVCC1 / FUSEVCC0

D17 BAT54A/SOT23/200mA

5VDUAL — R468 150K/4 — R462 270K/4

D23 BAT54A/SOT23/200mA — FUSEVCC2

10 -USBOC_F — -USBOC_F

5VDUAL — LR10 150K/4 — LR9 270K/4

10 -USBOC_R

D4 BAT54A/SOT23/200mA — FUSEVCCR3 / FUSEVCCR2

D24 BAT54A/SOT23/200mA — FUSEVCCR4 / FUSEVCCR5

INTEL FRONT PANEL

ESD17 CM1293A-04SO/S

-RST / -PWRBT_1 / -RST / -PWRBT_1 / 5VSB

Rev 0.2 modefy

VCC

R390 330/6

BC132 0.01u/4/X7R/25V/K/X

F_PANEL

HD+ / -HDLED / -RST / -CASEOPEN / MPD+ / -PWRBT_1

HD+ HD- GND RESET CI- CI+ PWR+ PWR- MSG/PD+ MSG/PD- PW+ PW- SP+ NC NC SP-

BH/2*10K10,12,13/WH/2.54/VA/PA

4,13,24,25 -SYS_RST

5VSB — R406 8.2K/4/X — R407 100/4/1

BC131 0.01u/4/X7R/25V/K

VCC

MPD+ — R393 330/6 — Q33 MMBT2222A/SOT23/600mA/40

R397 1K/4/1 — GPIO20 13 — LED1 25

R472 0/4/SHT/X

5VSB — R404 8.2K/4 — R402 33/4 — -PWRBTSW 19

C88 0.01u/4/X7R/25V/K/X

BC129 0.01u/4/X7R/25V/K

Q38 BAV99/SOT23/300mA

5VSB

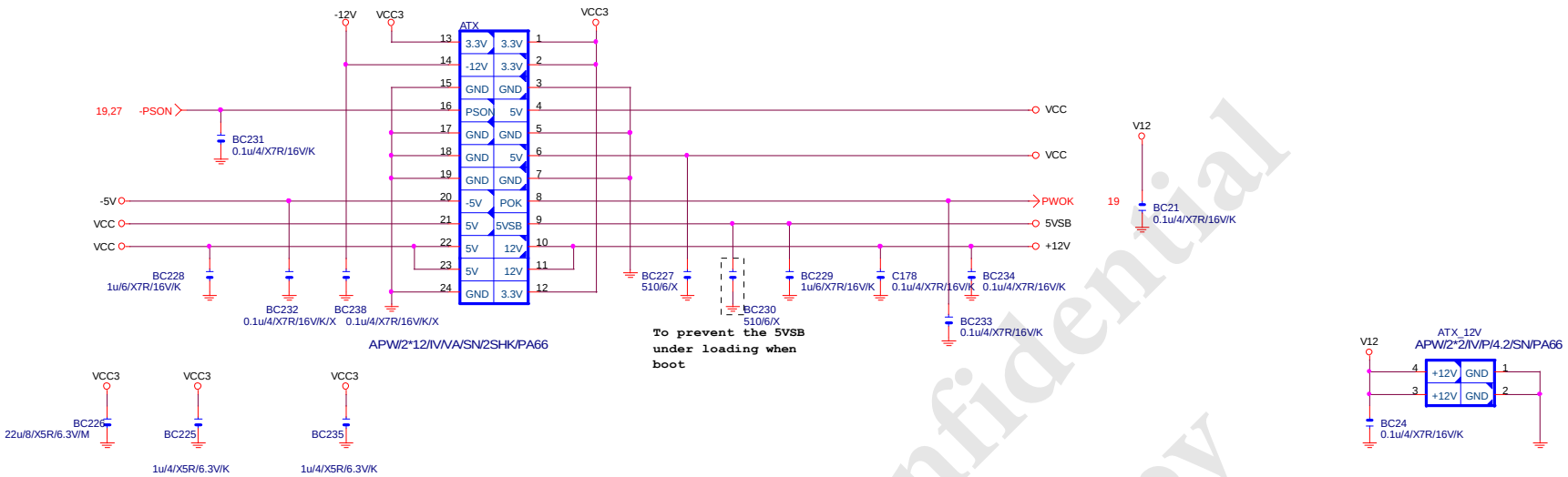
Gigabyte Technology

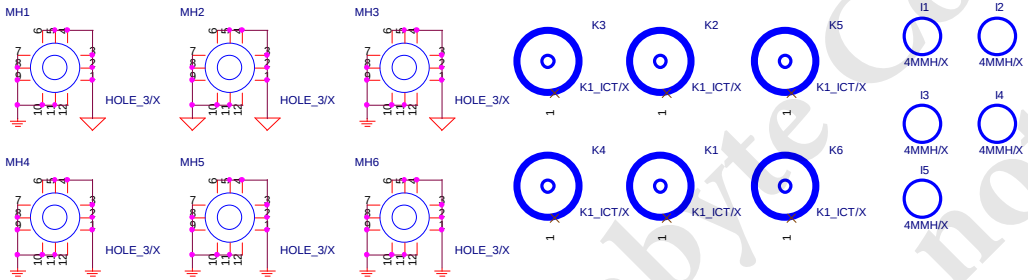
Title: FP,F_USB,USB PWR,FDD,BZ

Size: Custom — Document Number: GA-P55-USB3L — Rev: 1.0

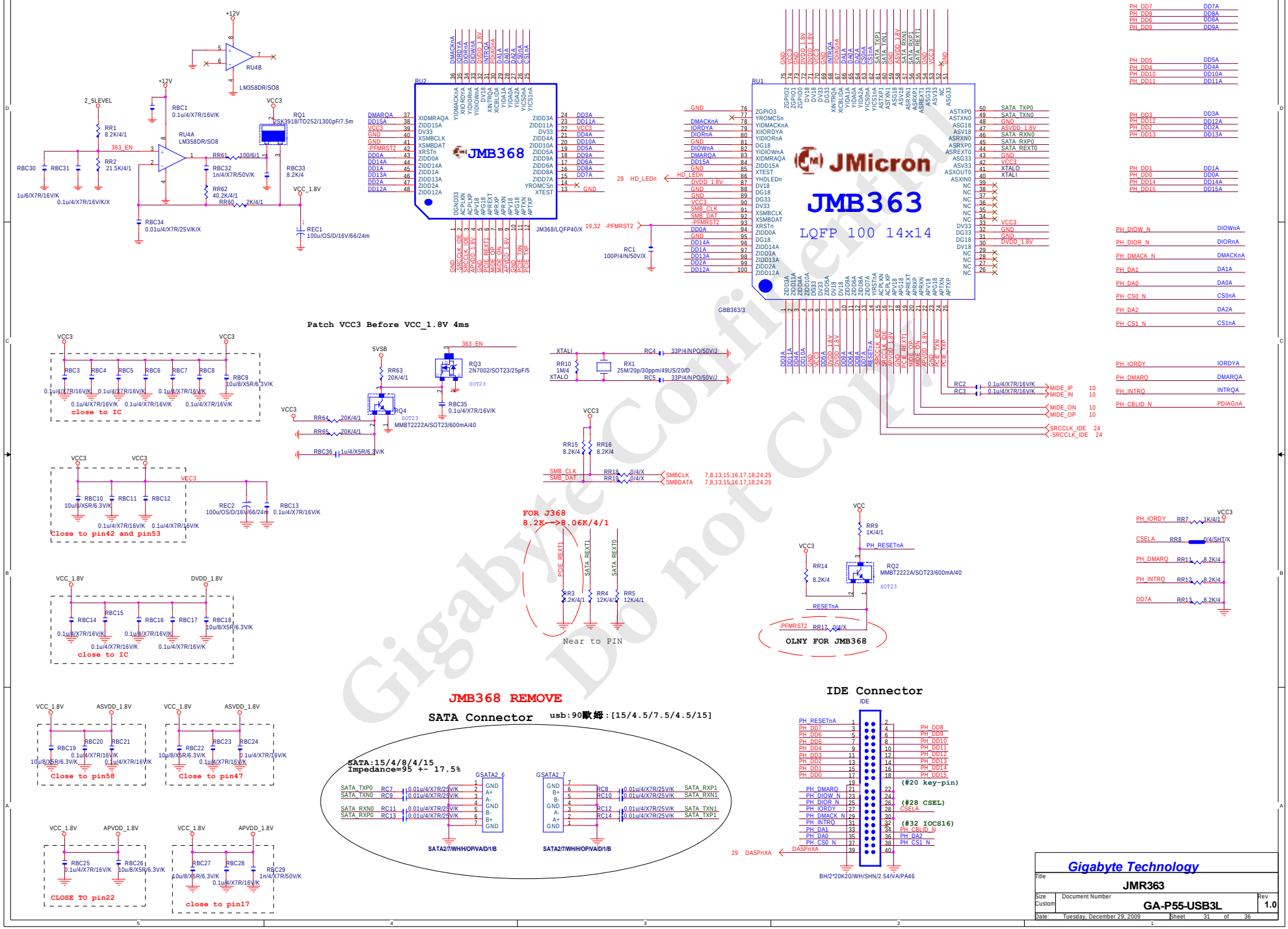
Date: Tuesday, December 29, 2009 — Sheet 29 of 36

ATX POWER CONNECTOR





Gigabyte Technology		
Title: ATX POWER CONNECTOR		
Size: B	Document Number: GA-P55-USB3L	Rev: 1.0
Date: Tuesday, December 29, 2009	Sheet 30 of 36	



PCIE-1G LAN

Power domain chart

	RTL8111B/ RTL8101E	RTL8111C
AVDD33	3.3V	3.3V
AVDD18	1.8V	1.2V
EVDD18	1.8V	1.2V
VDD15	1.5V	1.2V

For RT8111C/D

for RT8111B N/C
for RT8111C 0 ohm
(Internal Regulator)
for RT8111C N/C
(external Regulator)

LU4
RTL8111D-GR/QFN64/[10HP2-408111-70R]

Dual Color LED
Green
Orange

Single Color LED
Yellow

P35-152-19W9

FOR CLOSE
PIN1,29,37,40

距離pin1 在0.5cm以內

距離LL2 在0.5cm以內

80歐姆:[15/5/5/5/15]

SRCCLK 50歐姆:[18/4/10/4/18]

離 PIN63 0.5cm以內

LR27離IC越近越好

離IC近越好

USB30_LAN CONNECTOR

USB30_LAN
R-A USB+LAN/W TF1G/USB3.0 UDE/[11NR6-702009-K1R]

Close to USB30_LAN

Close to USB30_LAN

400MILS

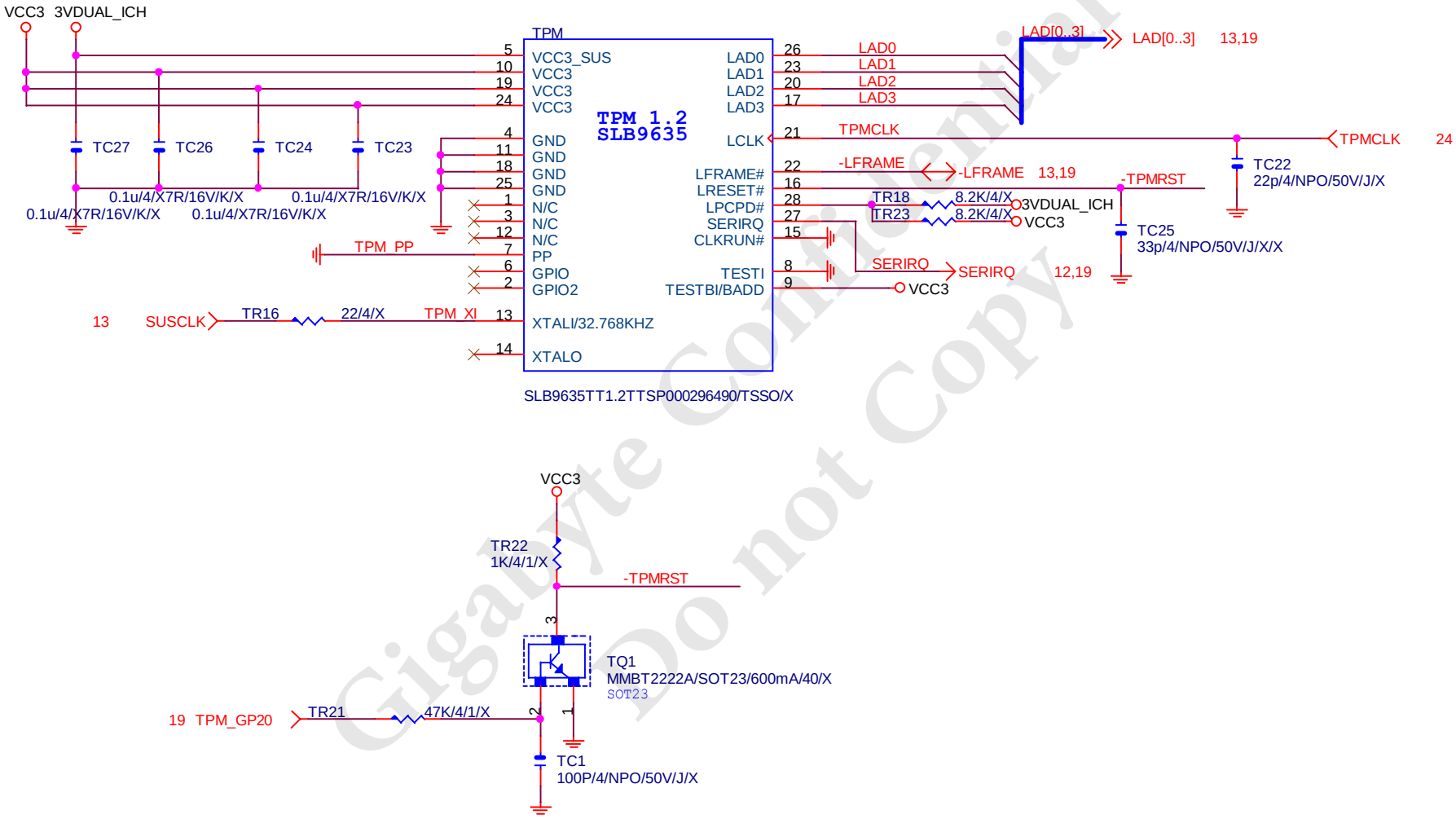
240MILS

AZ1045-04F/MSOP10

AZ1045-04F/MSOP10

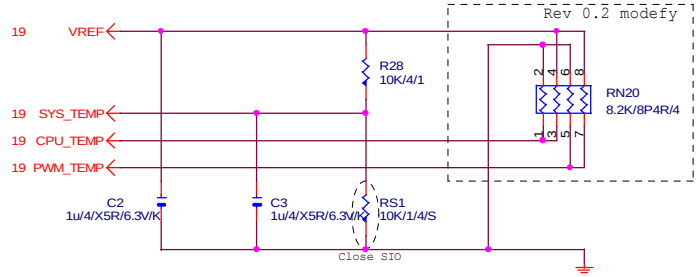
CM1293A-04SO/S

Title	Gigabyte Technology REALTEK RTL8111D
Size: Custom	Document Number: GA-P55-USB3L
Rev	1.0
Date:	Tuesday, December 29, 2009
Sheet	32 of 36

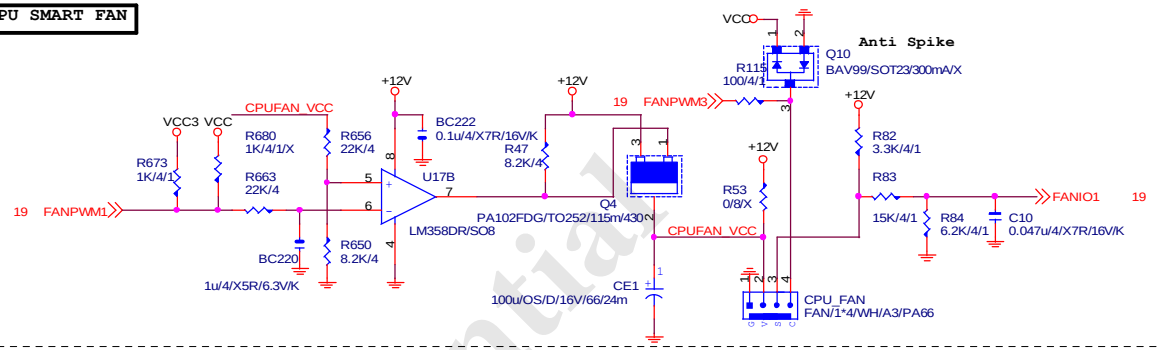


Gigabyte Technology		
Title: TPM I/F-SLB 9635 TT 1.2		
Size: A	Document Number: GA-P55-USB3L	Rev: 1.0
Date: Tuesday, December 29, 2009	Sheet 33 of 36	

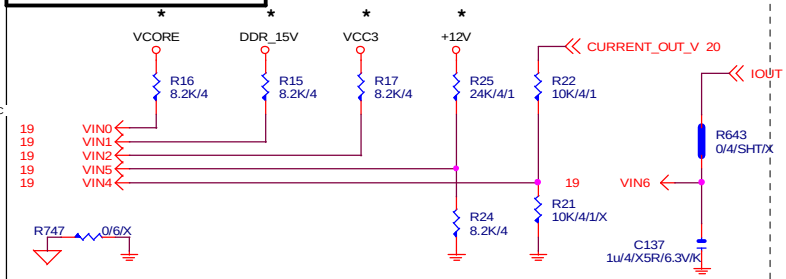
TEMP H/W MONITOR



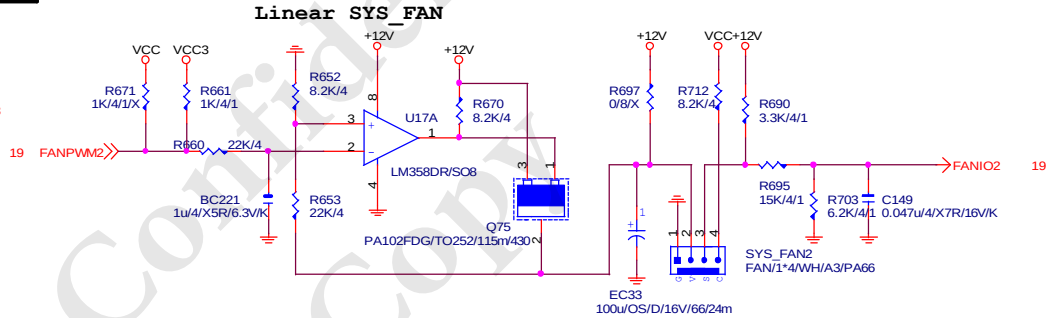
CPU SMART FAN



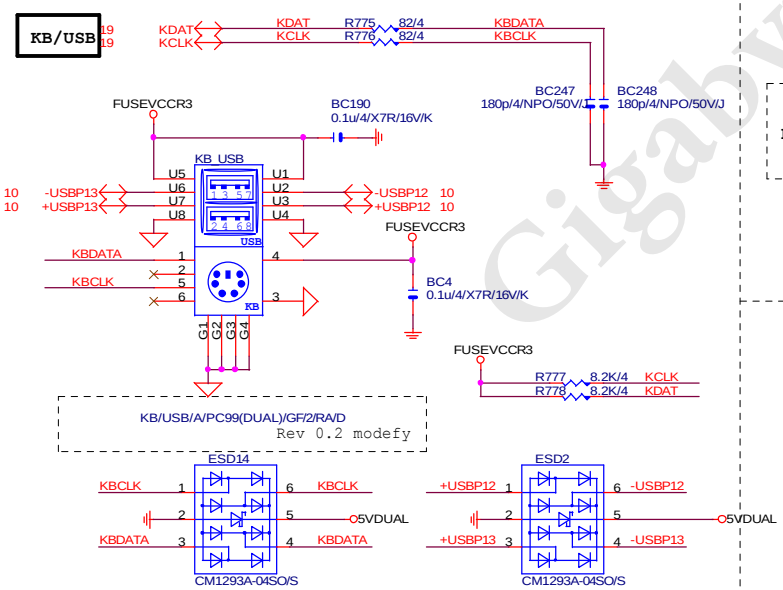
VOLTAGE-- H/W MONITOR



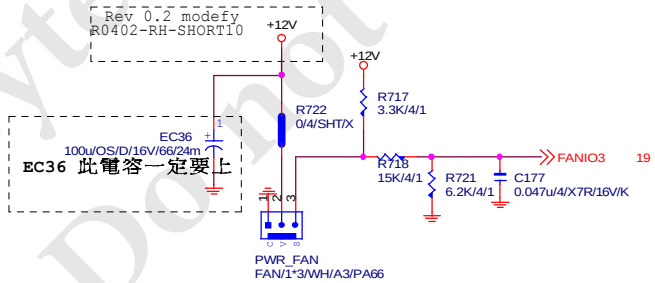
SYS FAN2



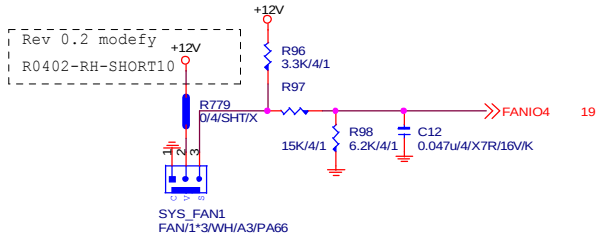
KB/USB

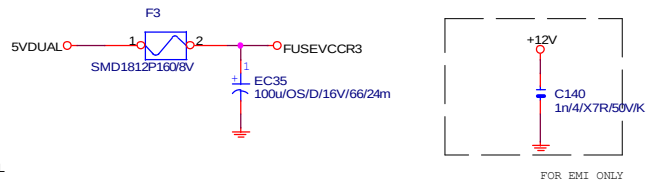


PWR FAN



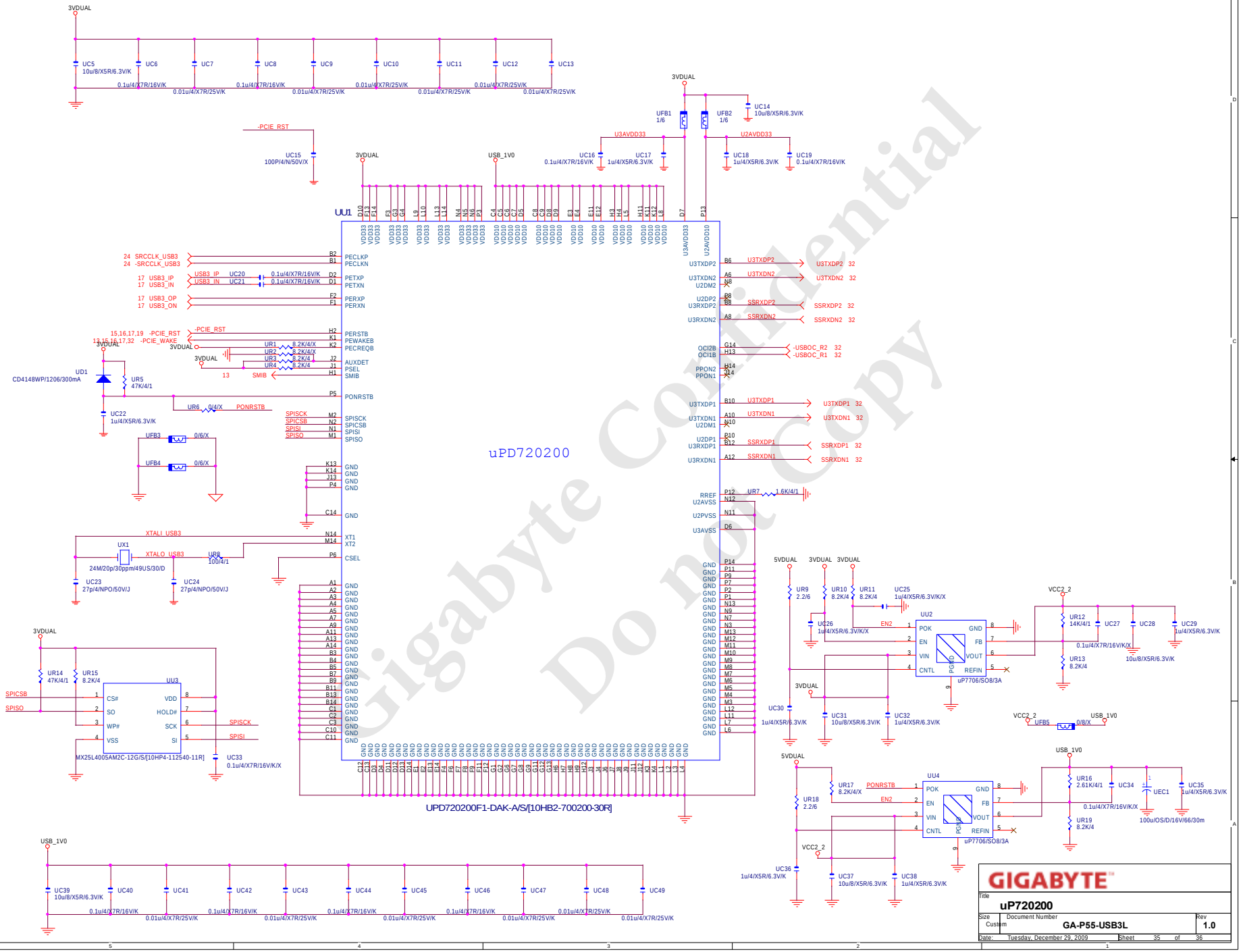
SYS FAN1





Gigabyte Technology

Title: HWM,KB/MS, FAN CTRL		
Size: Custom	Document Number: GA-P55-USB3L	Rev: 1.0
Date: Tuesday, December 29, 2009	Sheet 34 of 36	



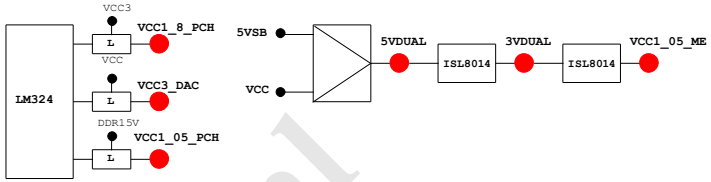
PCH GPIO LIST TABLE

PIN NAME	PWR	AFTER G3ET/RST	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

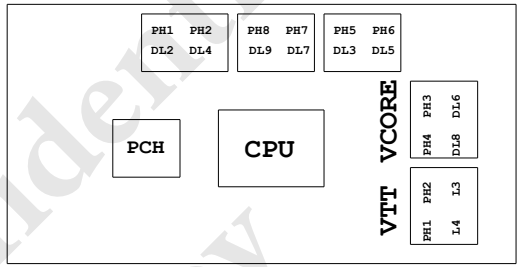
Super I/O ITE8720 GPIO Table

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	
VID03/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	
VID05/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	
VID00/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	32 PIN	FST_2X8
INIT#/GP85/SMBD_M	SEC_2x8	GTLREF_AD2
ACK#/GP83	DDR_LED1_C	
VID01/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	
VID04/GP26/SOUT2	DDR18V_PH2_EN	
VID02/FAN_TAC5/GP24/DSR2#	DDR18V_LED	
VID06/GP17/RI2#	1_1V_PH_EN	
VID07/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
Size: C | Document Number: GA-P55-USB3L | Rev: 1.0
Date: Tuesday, December 29, 2009 | Sheet 36 of 36