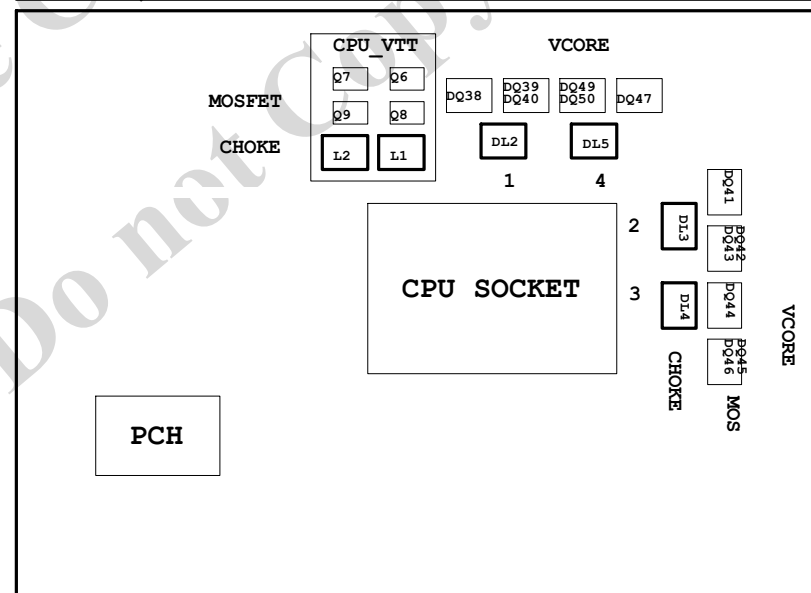


**Model Name: GA-PA65-UD3-B3 1.12**
**SHEET**
**TITLE**

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
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 SLOT &CLOCK BUFFER
16	ITE8892
17	PCI SLOT 1&2&3&4
18	I/O ITE8728
19	COM, R_USB
20	Dual BIOS
21	ALC889
22	REAR AUDIO JACK
23	VCORE PWM ISL6364CRZ-1
24	VCORE PWM ISL6364CRZ-2
25	DISCRETE POWER
26	DDR 15V & VCC1 05 PCH PWM ISL6545CBZ
27	CPU VTT PWM ISL95870

**SHEET**
**TITLE**

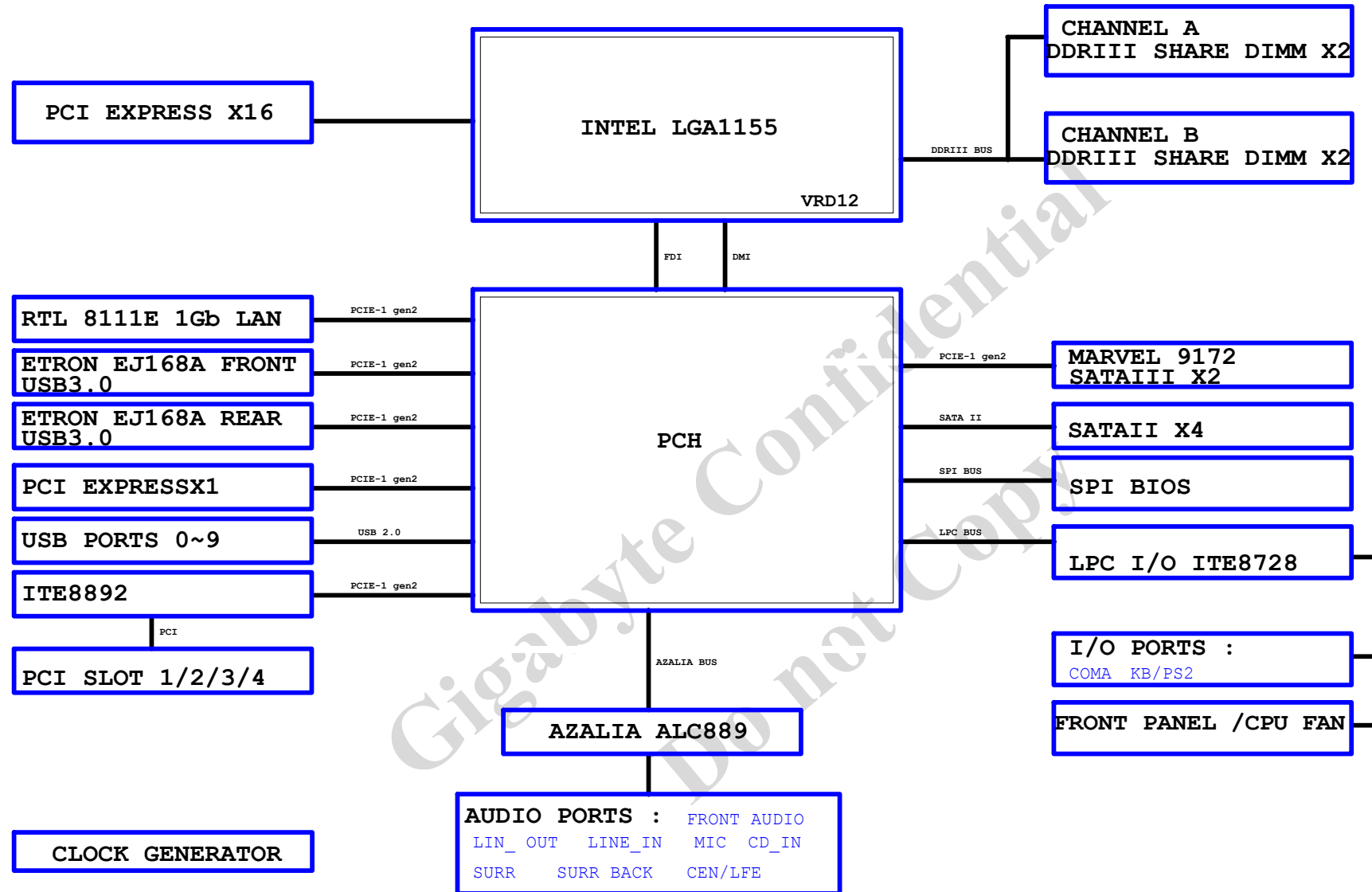
28	VCCSA POWER
29	F PANEL , F USB
30	ATX POWER, CLOCK GEN
31	HWM,KB/MS , FAN CTRL
32	REALTEK RTL8111E
33	ETRON EJ168A R USB30
34	MARVEL 9172
35	ETRON EJ168A F USB30
36	
37	
38	
39	
40	


**Gigabyte Technology**

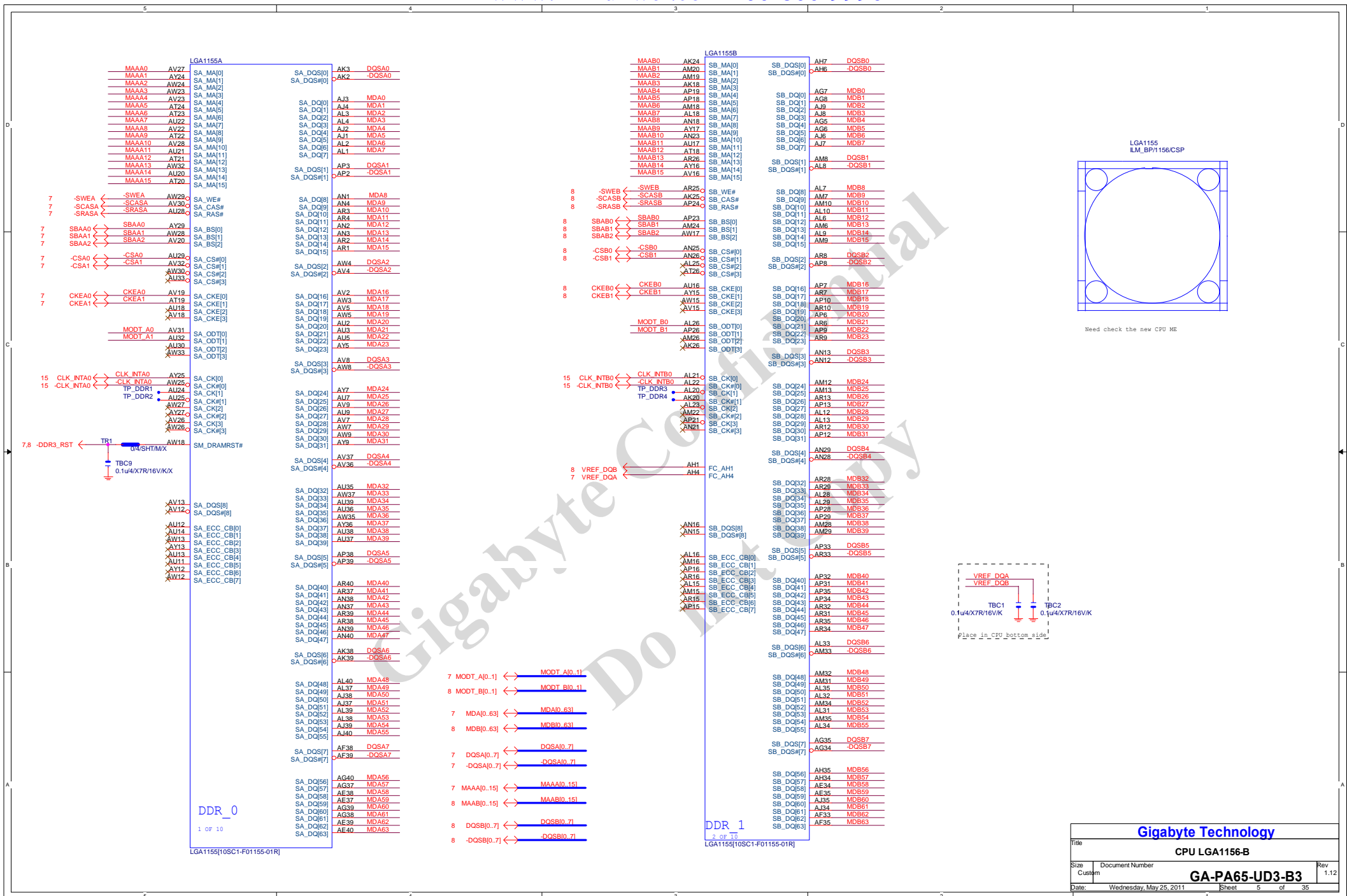
Title	Cover Sheet
Size	Document Number
Custom	GA-PA65-UD3-B3
Date	Wednesday, May 25, 2011
Sheet	1 of 35



# BLOCK DIAGRAM

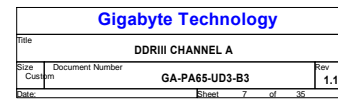


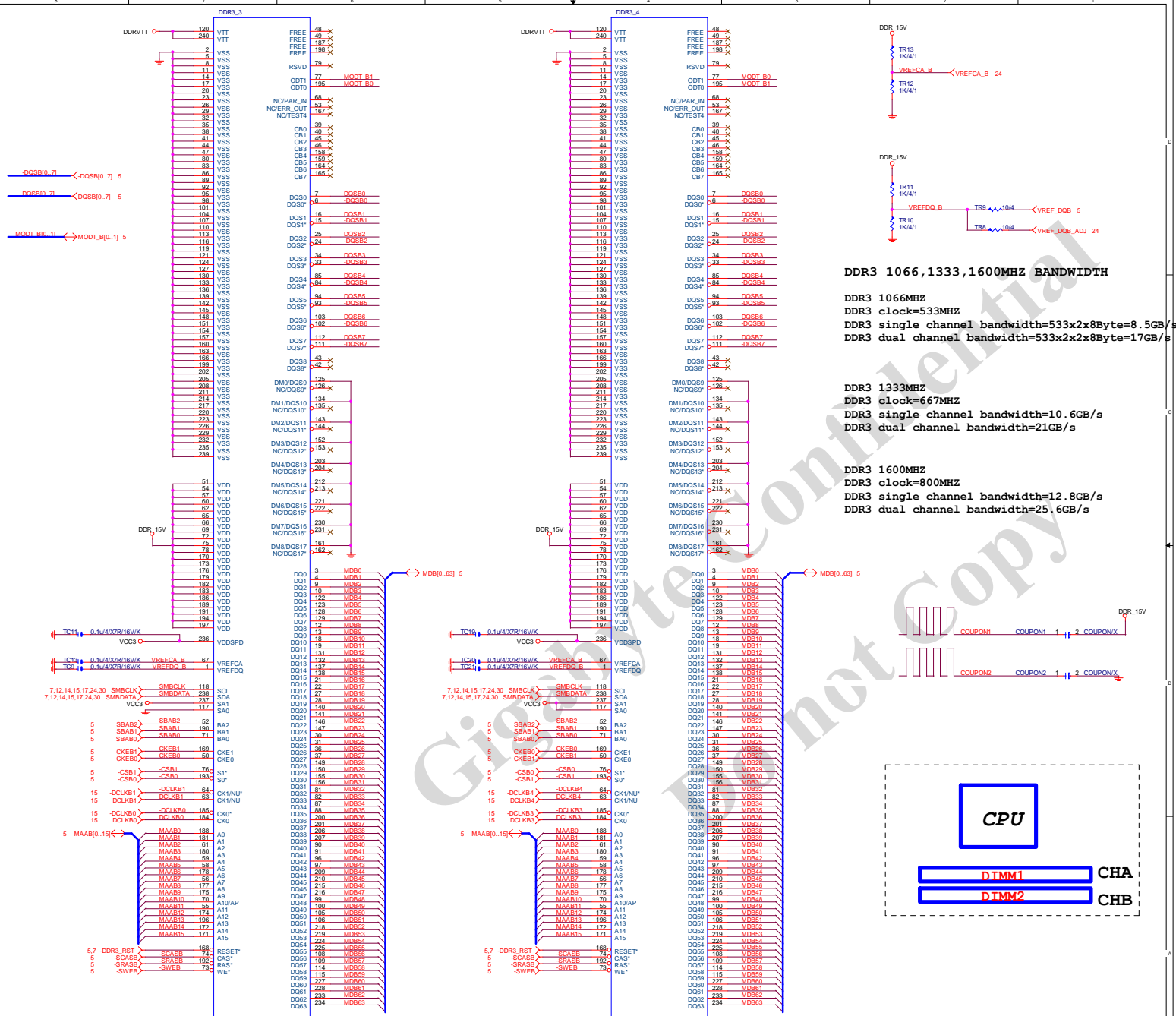






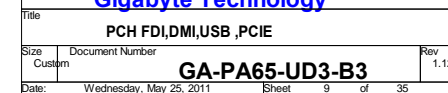


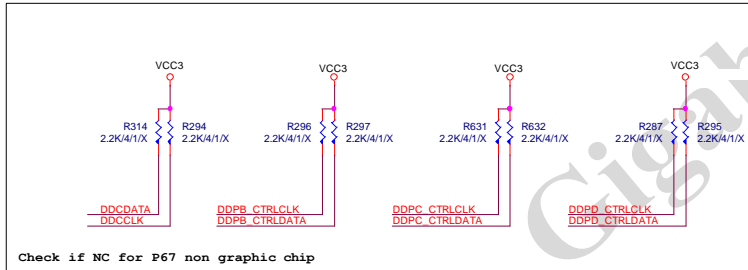
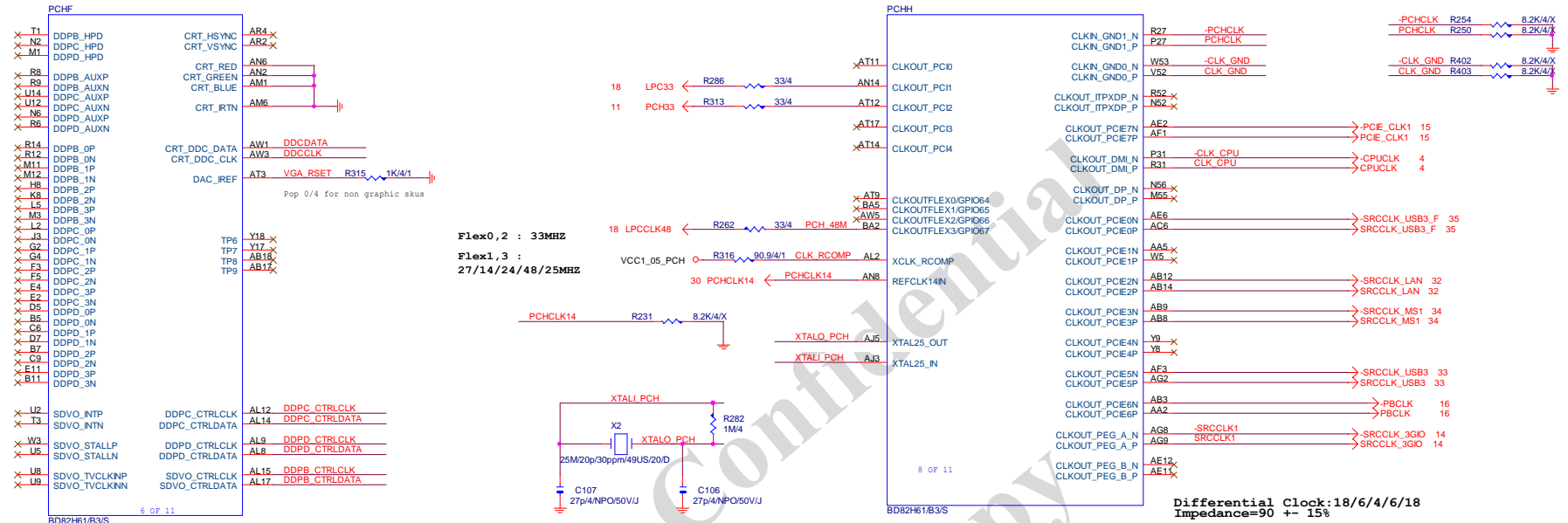




Gigabyte Technology		
DDR3 CHANNEL B		
File	Document Number	Rev
Size	CA-PA65-UD3-B3	1.12
Date	Ennet	P of 35



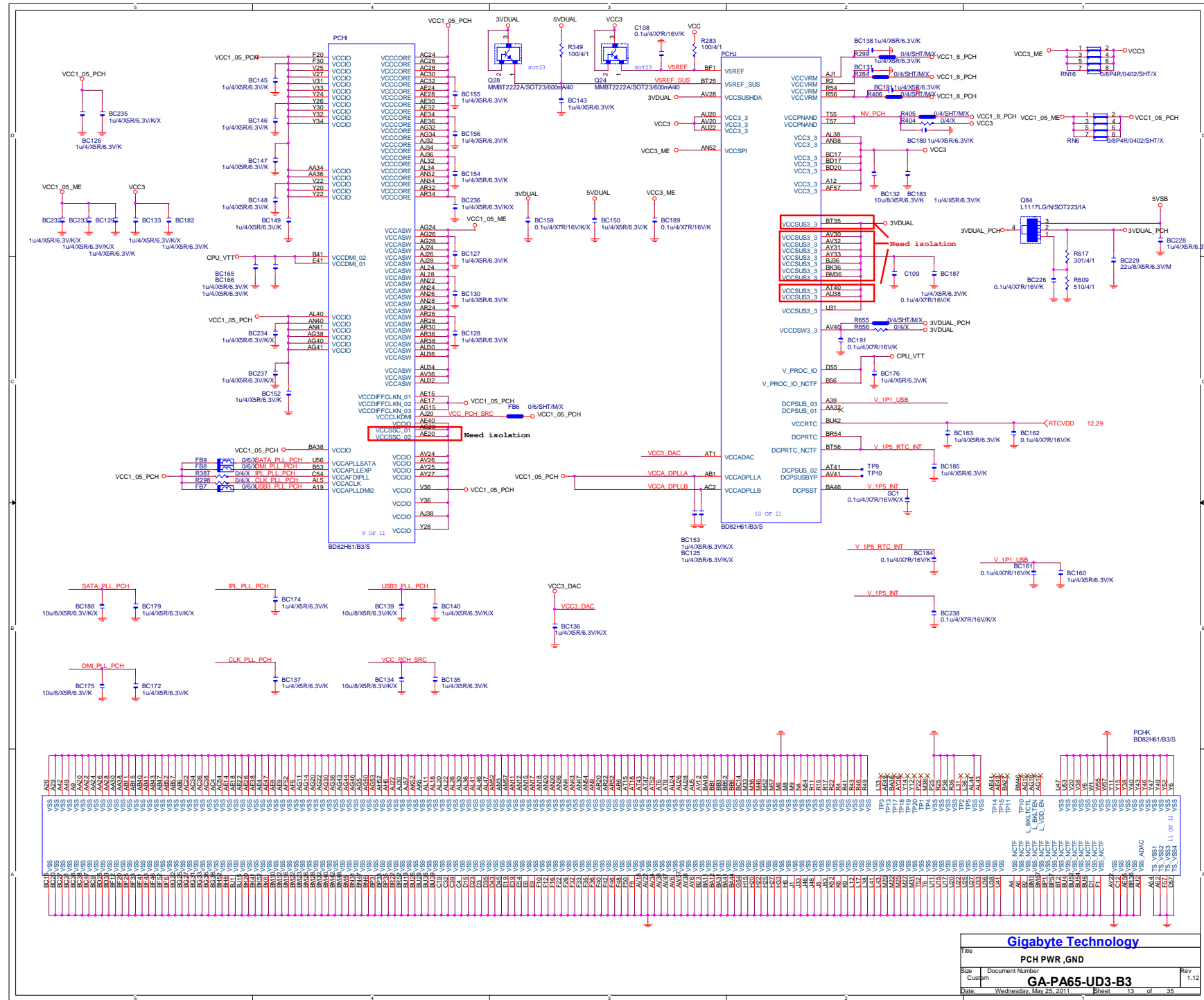


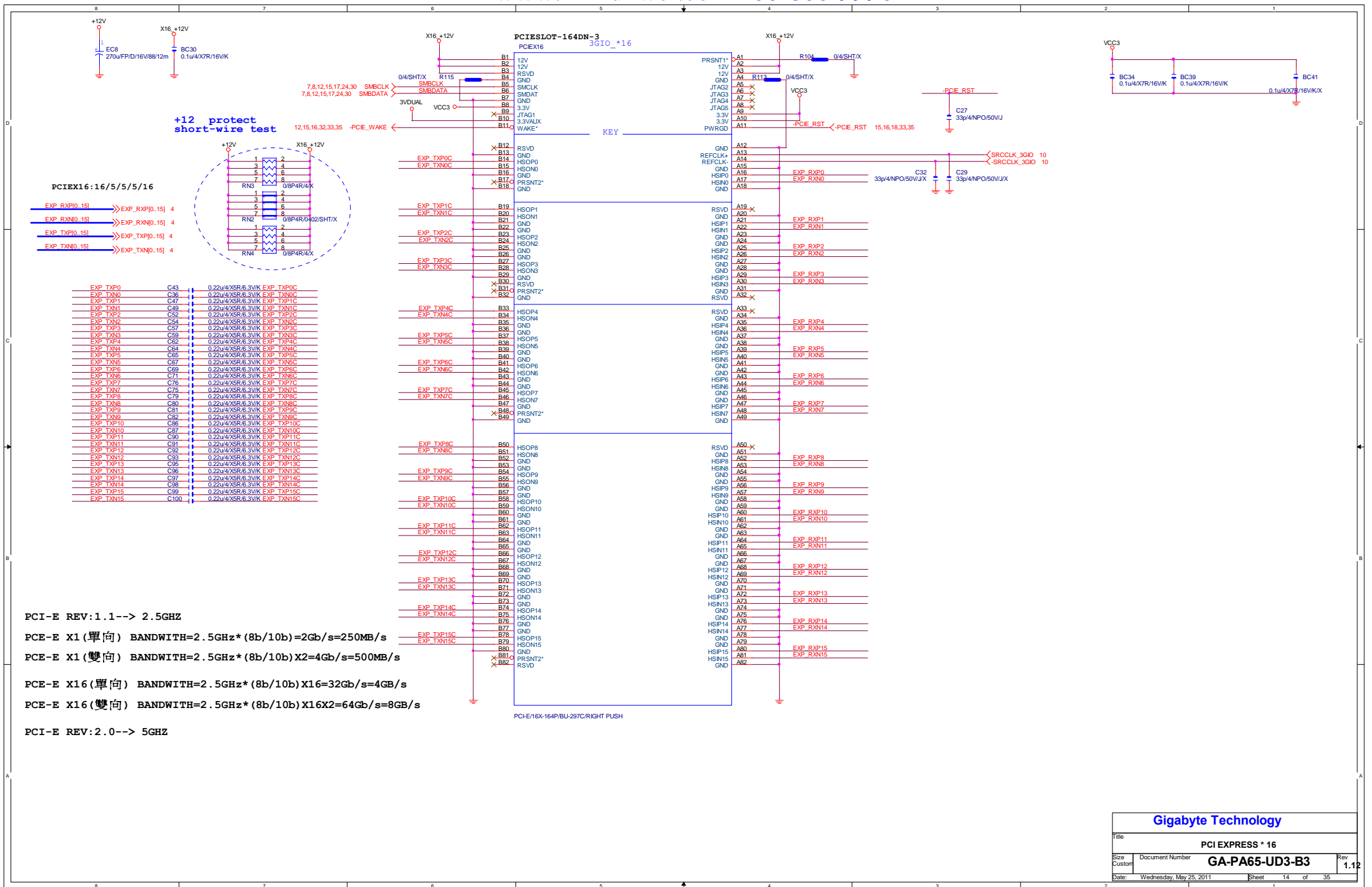


Gigabyte Technology			
Title			
PCH DISPLAY ,CLK BUFFER			
Size	Document Number	Rev	
Custom	GA-PA65-UD3-B3	1.12	
Date:	Wednesday, May 25, 2011	Sheet	10 of 35









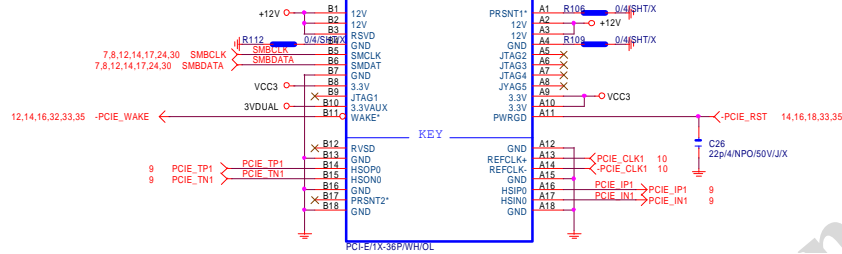


# NOTICE

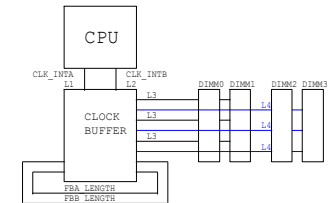
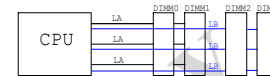
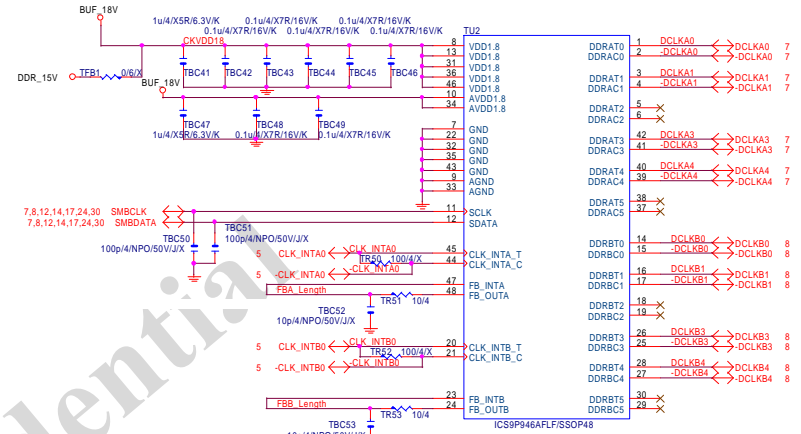
FBA\_LENGTH=L1+L3-LA  
 FBB\_LENGTH=L2+L4-LB  
 $DCLKA\_SPEC(AVG) = (2.0 + 3.25) / 2 = 2.60 [in]$   
 $DCLKB\_SPEC(AVG) = (3.0 + 4.25) / 2 = 3.60 [in]$   
 $FBA\_Length = [CLK\_INTA(MAX) + DCLKA(MAX)] - [DCLKA\_SPEC(AVG)]$   
 $FBB\_Length = [CLK\_INTB(MAX) + DCLKB(MAX)] - [DCLKB\_SPEC(AVG)]$   
 $FBA(3700) = [CLK\_INTA(3700) + DCLKA(2700)] - DCLKA\_SPEC(2700)$   
 $FBB(4500) = [CLK\_INTB(4400) + DCLKB(3700)] - [DCLKB\_SPEC(3600)]$

## PCIE\*1

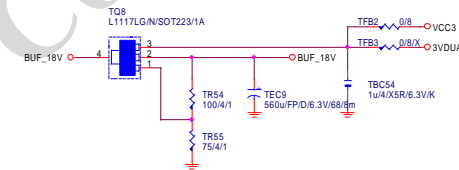
## 3GIO\_X1



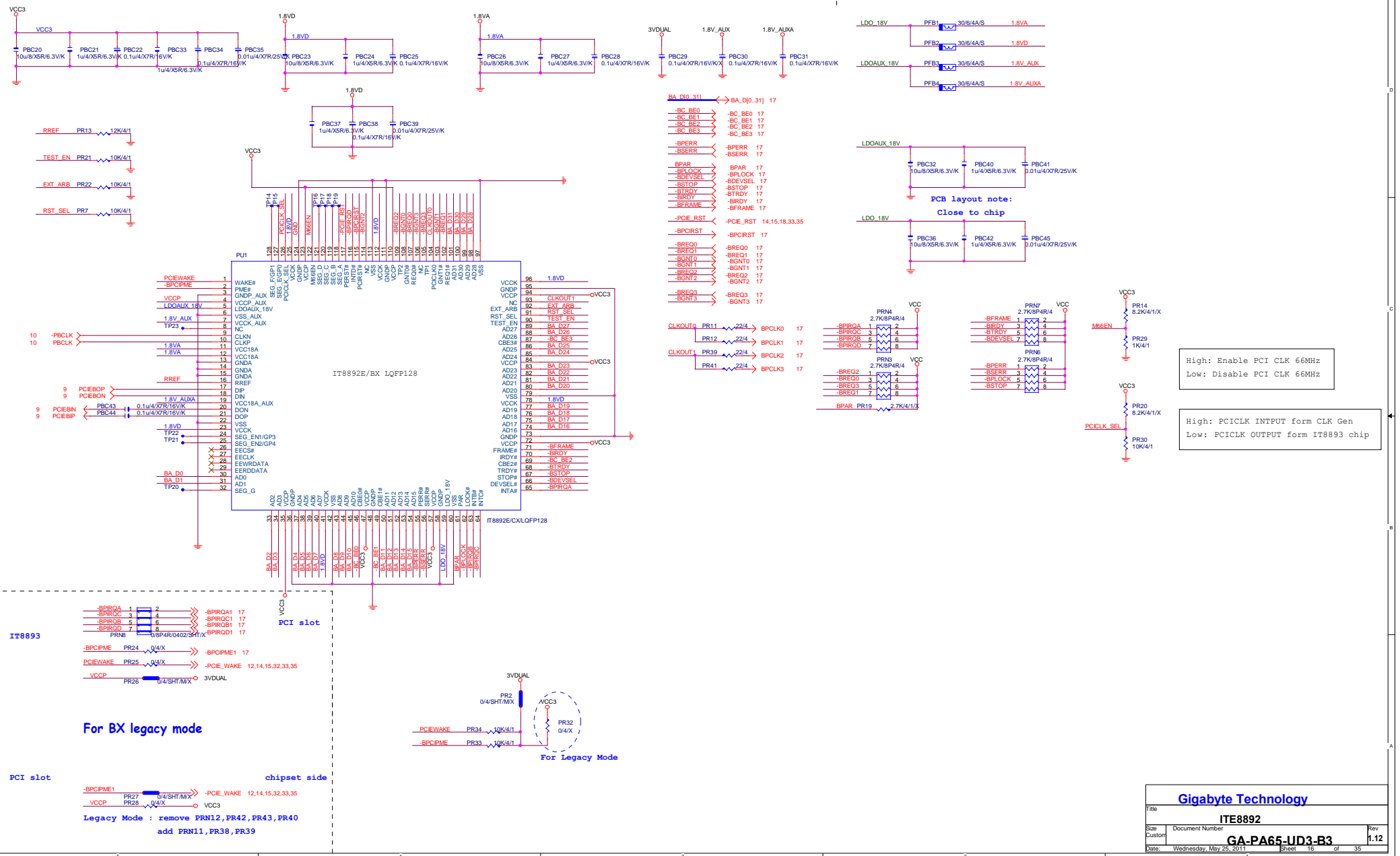
## DDR3 CLOCK BUFFER



## 3.3V to 1.8V Voltage Regulator

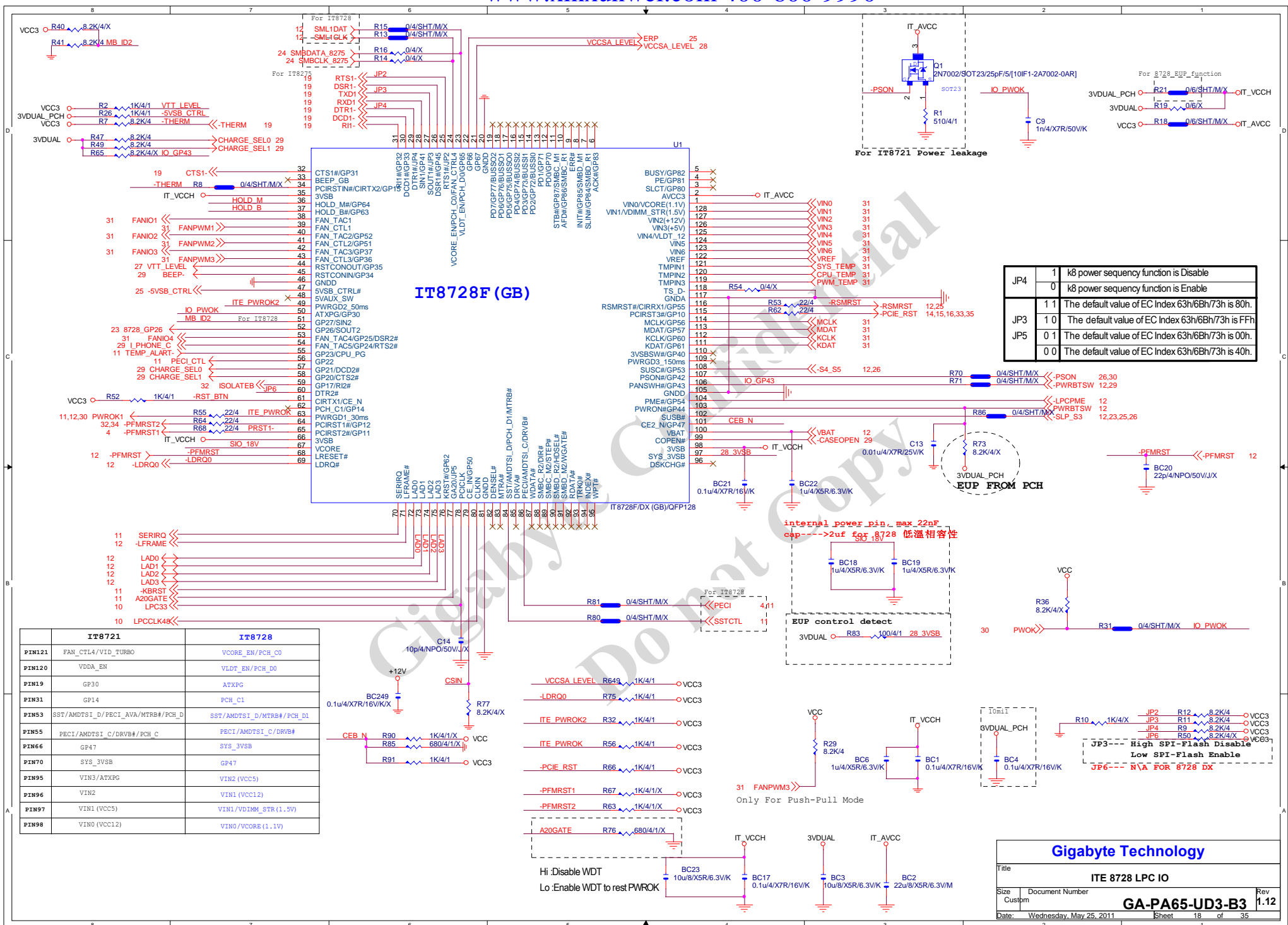


Gigabyte Technology			
PCI EXPRESS X 1 & Clock buffer			
Size	Document Number	Rev	
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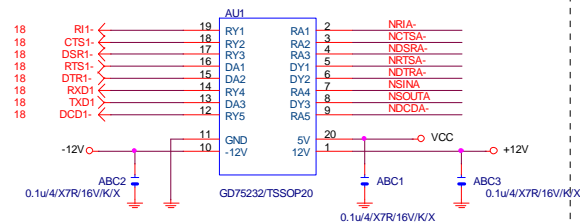


Gigabyte Technology			
ITE8892			
File	Document Number	Rev	1.12
Sub	Customer	GA-PA65-UD3-B3	
Date	Wednesday, May 25, 2011	Sheet	16 of 35

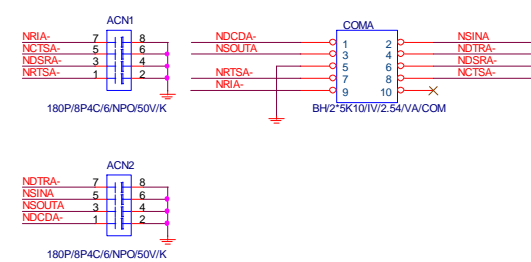
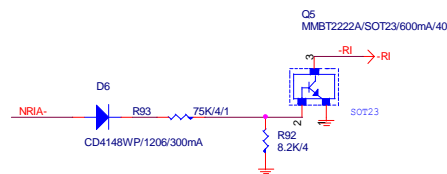




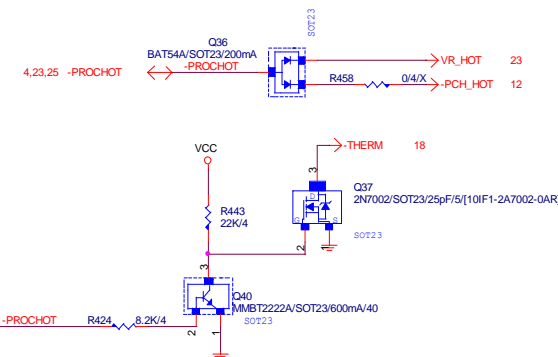
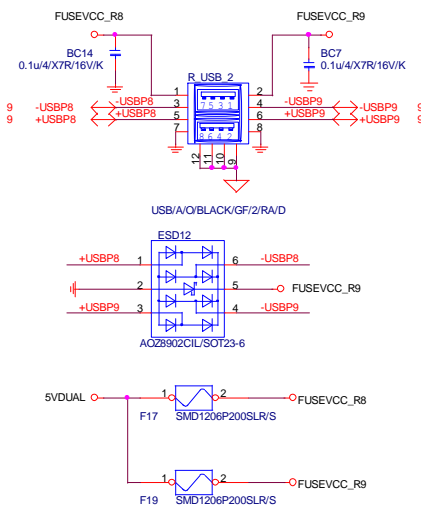
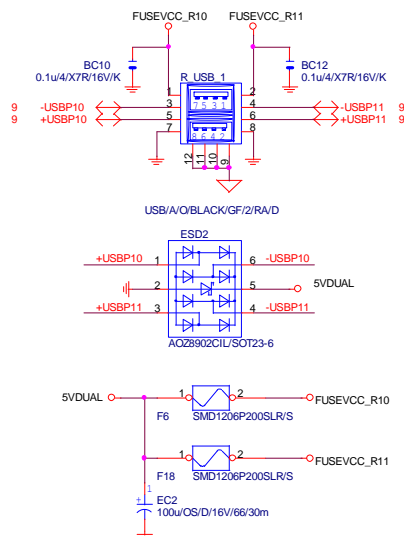
# COMA



# COM RI

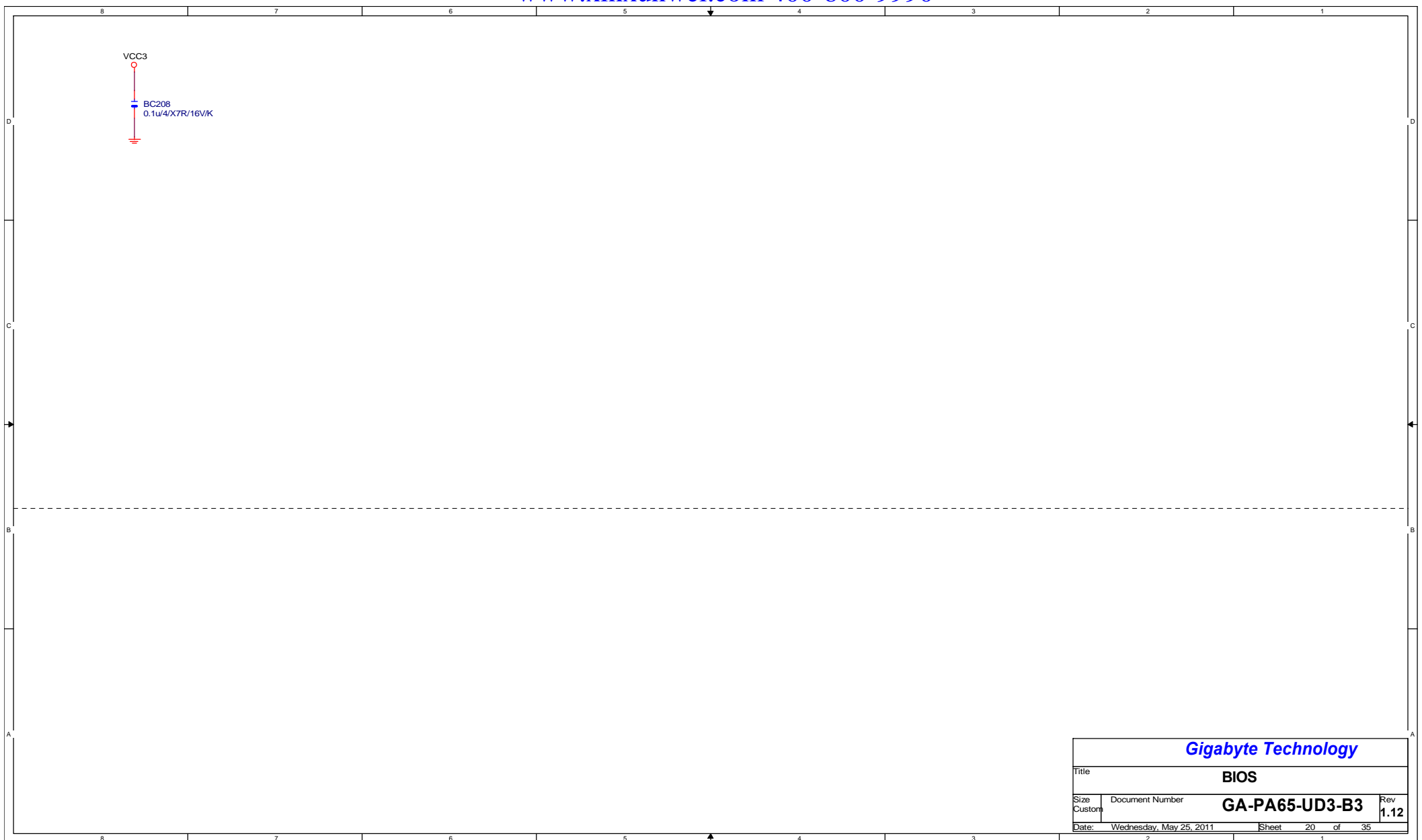


# R\_USB



Gigabyte Technology

Title			COM & R_USB
Size	Document Number	GA-PA65-UD3-B3	
Custom		Rev	1.12
Date:	Wednesday, May 25, 2011	Sheet	19 of 35



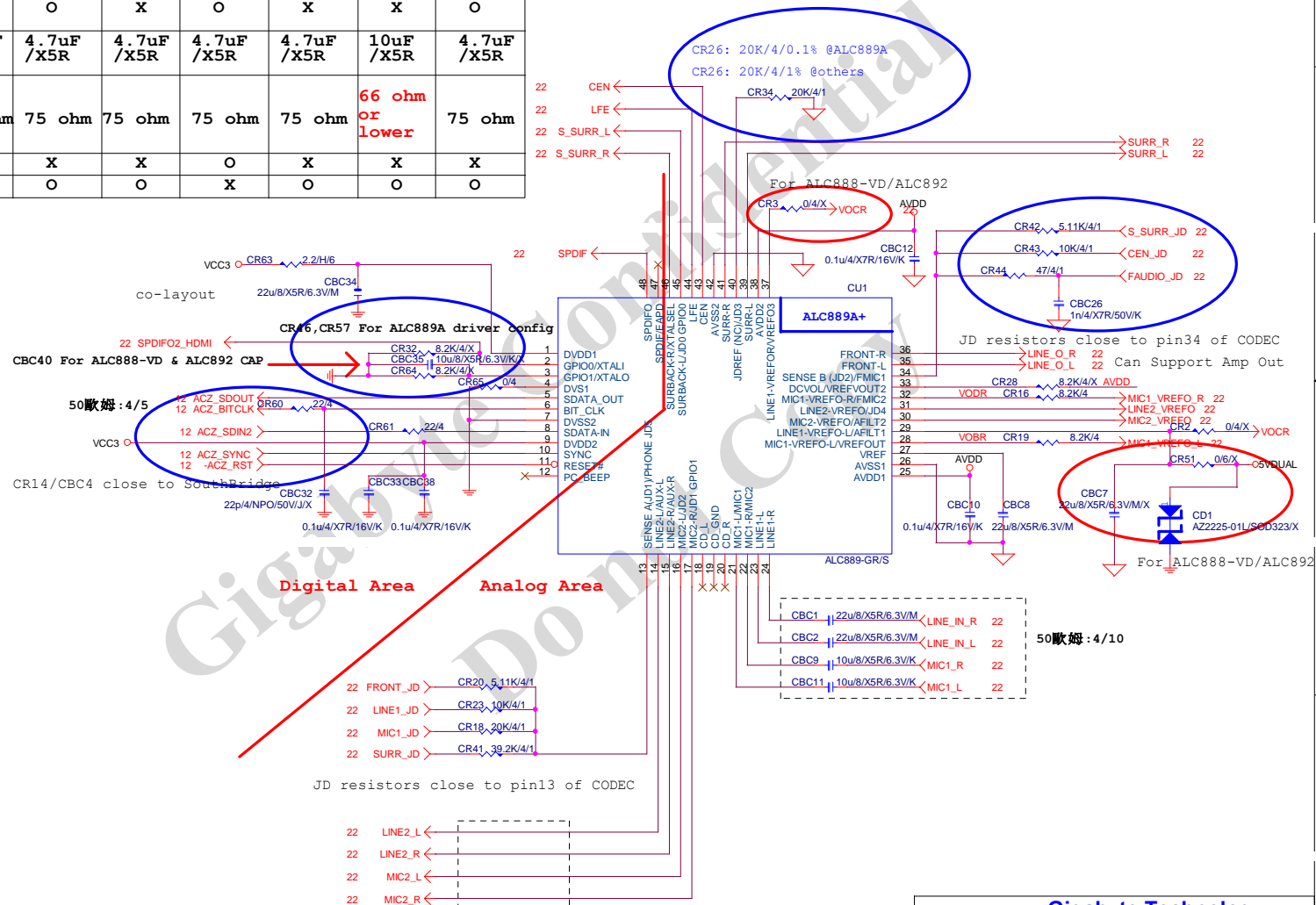
Gigabyte Technology			
Title		BIOS	
Size	Document Number	GA-PA65-UD3-B3	Rev
Custom			1.12
Date: Wednesday, May 25, 2011		Sheet	20 of 35
		2	1



## AZALIA CODEC

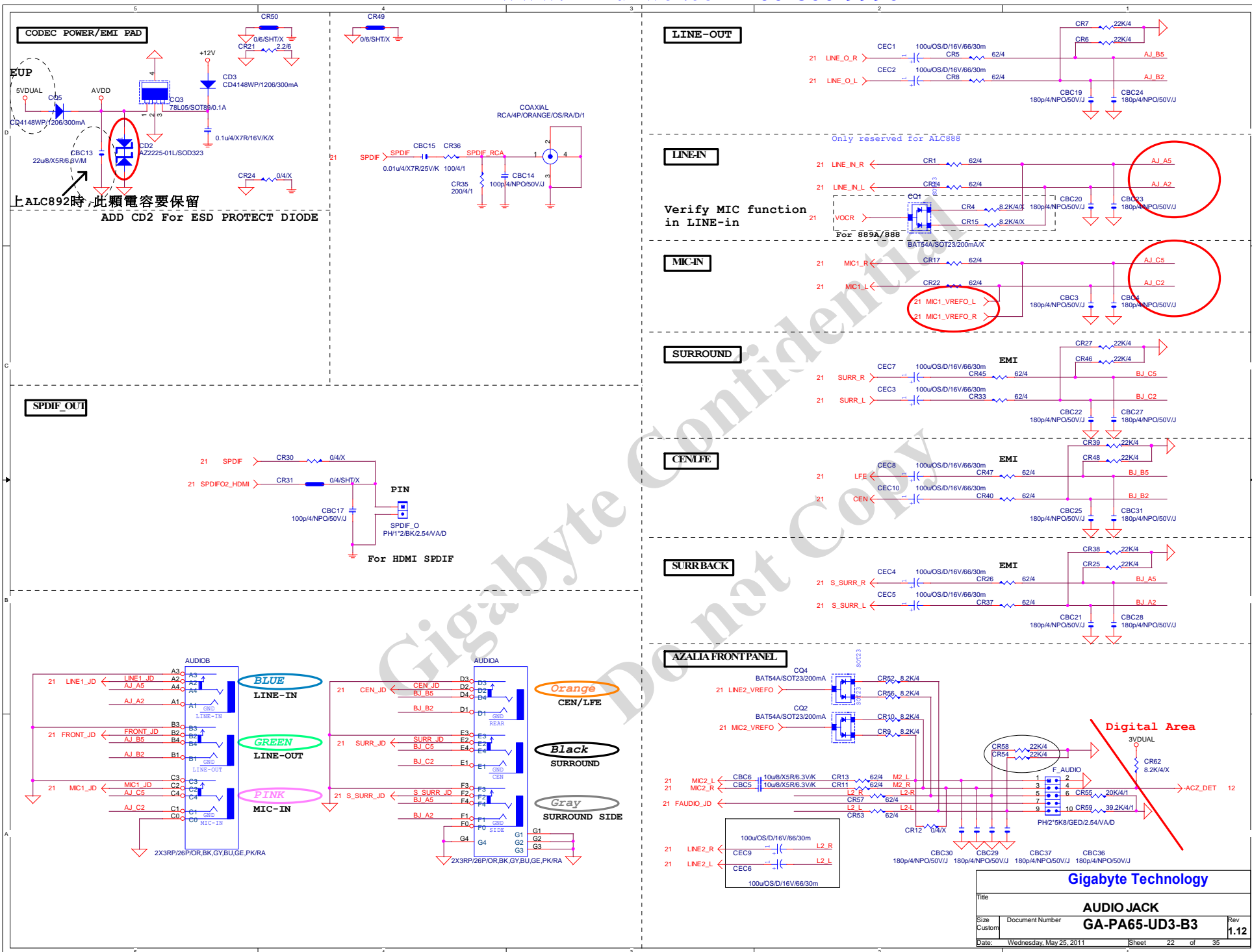
ALC883/ALC888-A/ALC888B/ALC888-VD/ALC892R/ALC889/ALC889A Colay

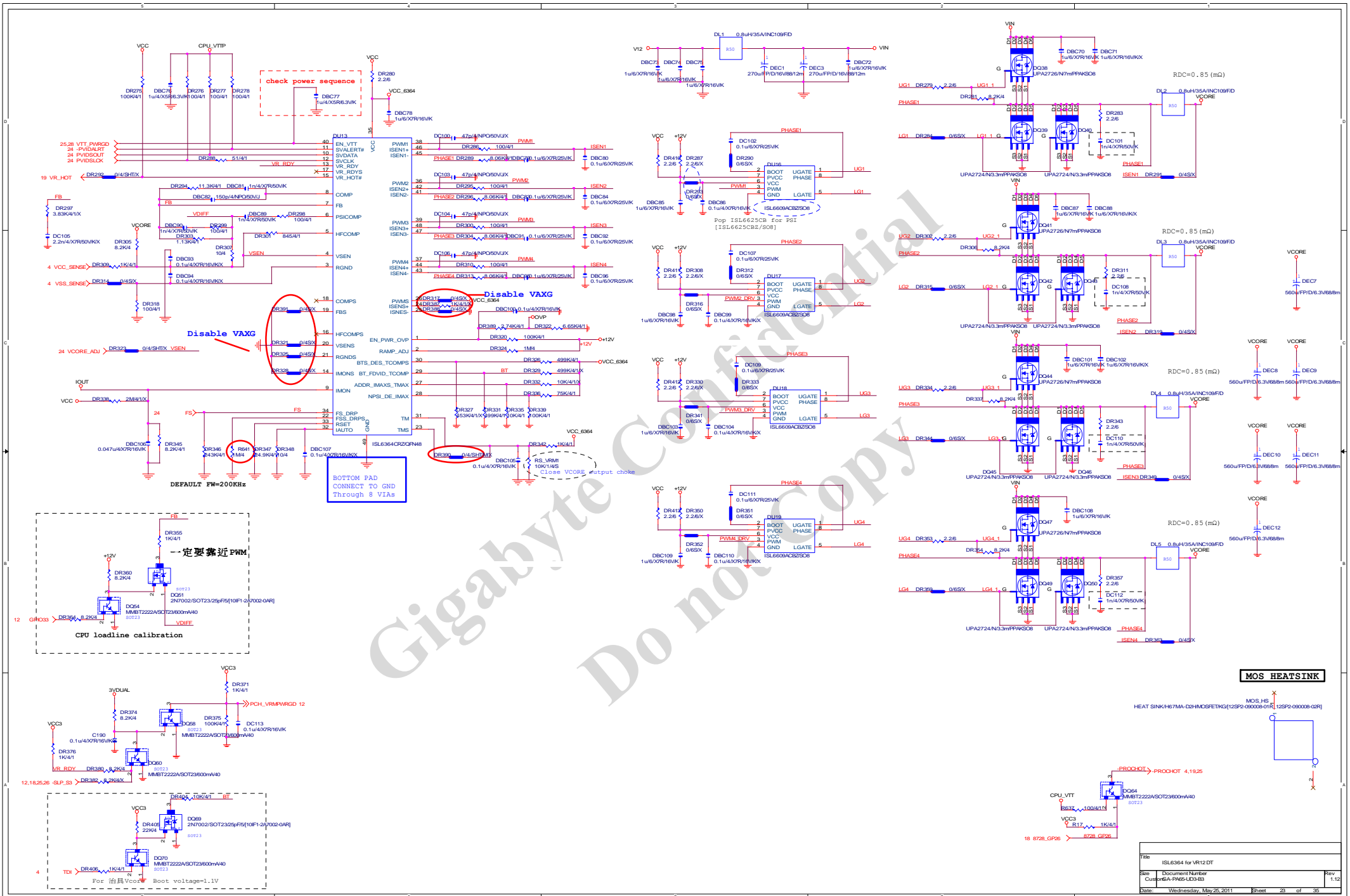
	ALC883	ALC888-VA	ALC888B	ALC888-VD	ALC892R	ALC889	ALC889A
CR32	X	X	X	X	X	X	O
CR64	X	X	X	X	X	X	O
CR65	O	O	X	X	X	O	O
CBC35	X	X	X	10uF/X5R	10uF/X5R	X	X
CR28	O	X	X	X	X	X	X
CR34	20K/1%	20K/1%	20K/1%	20K/1%	20K/1%	20K/1%	20K/0.1%
CR31	X	X	O	X	O	O	X
CR30	O	O	X	O	X	X	O
CBC1/CBC2/CBC5/ CBC6/CBC9/CBC11	4.7uF/ X5R	4.7uF/ X5R	4.7uF/ X5R	4.7uF/ X5R	4.7uF/ X5R	10uF/ X5R	4.7uF/ X5R
CR5/CR8/CR11/CR4/ CR17/CR22/CR45/CR33/ CR47/CR40/CR26/CR37/ CR13/CR11/CR57/CR53	75 ohm	75 ohm	75 ohm	75 ohm	75 ohm	66 ohm or lower	75 ohm
CR51/CD1/CBC7	X	X	X	O	X	X	X
CD2/CD3/CQ3/CQ5	O	O	O	X	O	O	O

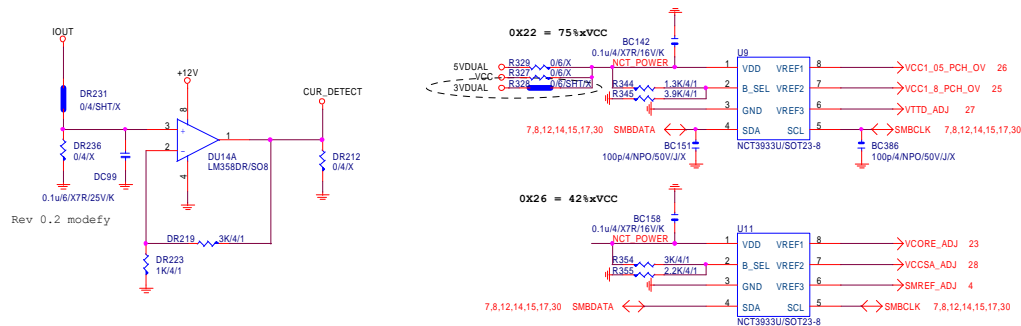


Gigabyte Technology

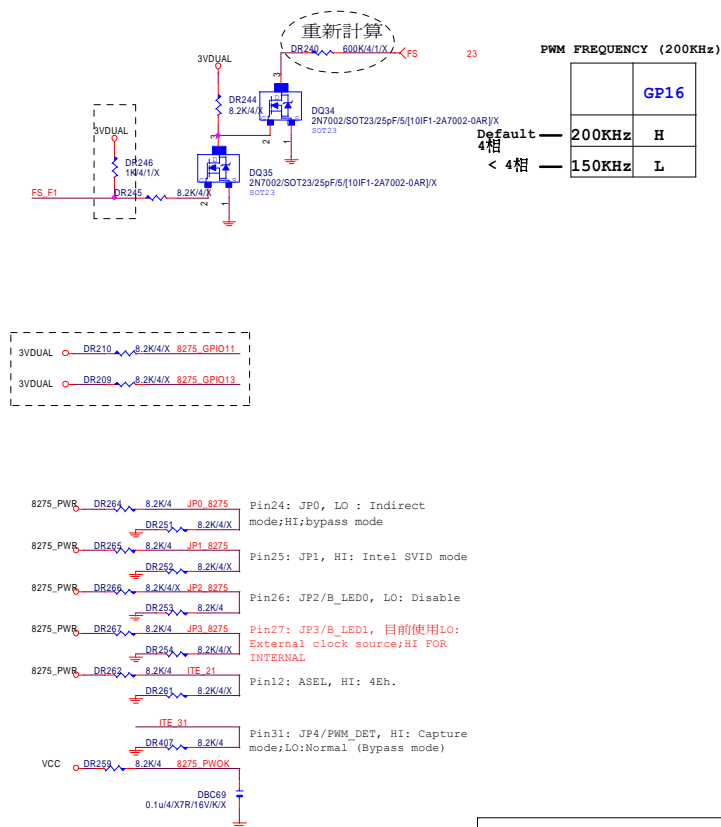
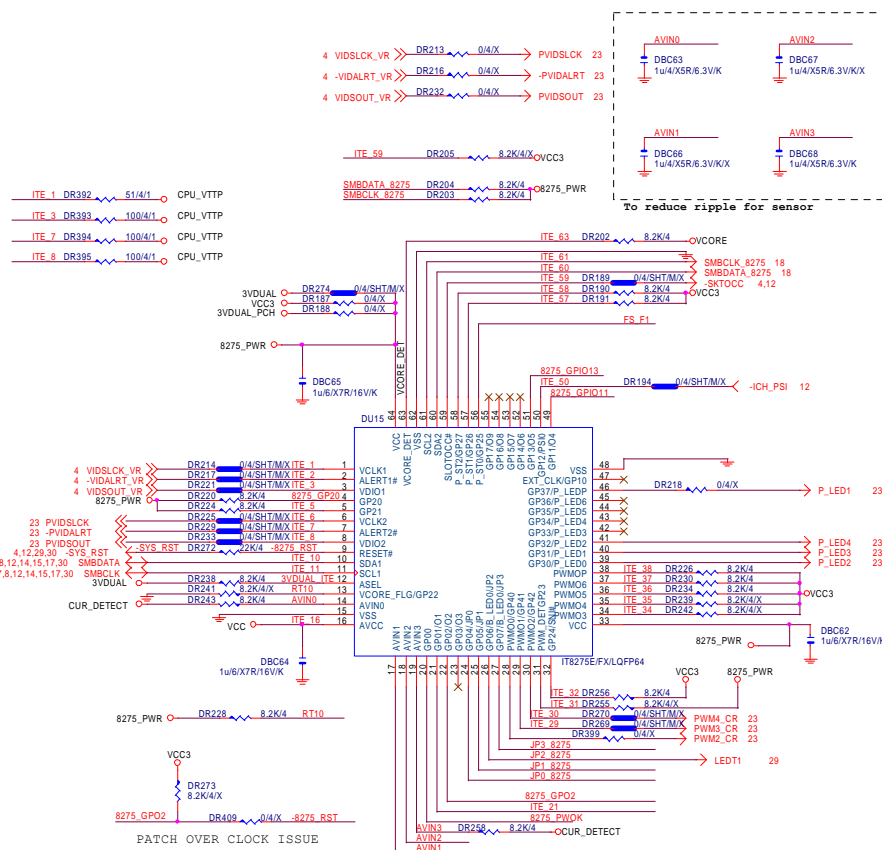
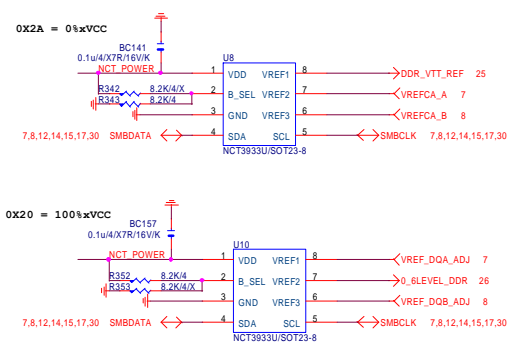
Title		HD AUDIO ALC889	
Size	Document Number	GA-PA65-UD3-B3	Rev 1.12
Custom			
Date:	Wednesday, May 25, 2011	Sheet	21 of 35








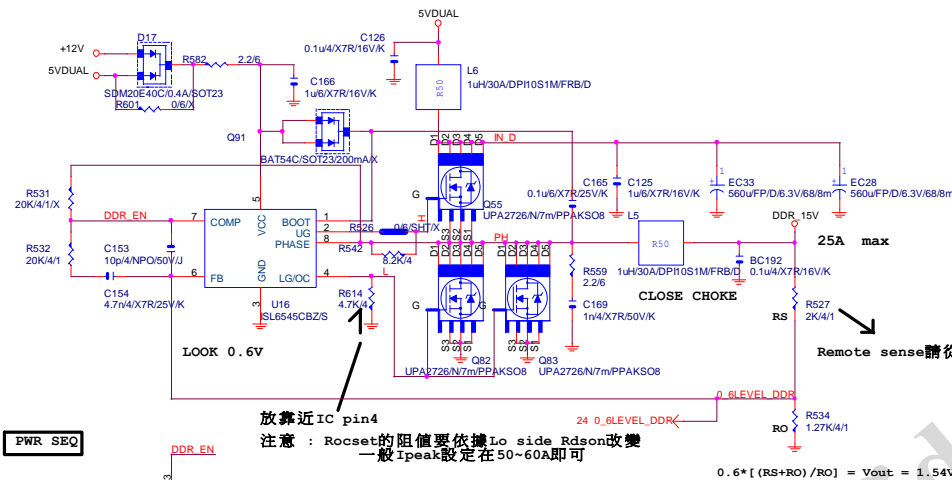
up6262	0X2A	0X20	0X22	0X26
VREF1	DDRVTT	VREF_DDRA_DQ	VCC1_05_PCH	VCORE
VREF2	VREF_DDRA_CA	DDR15V	VCC1_8_PCH	VCCSA
VREF3	VREF_DDRA_CA	VREF_DDRB_DQ	CPU_VTT	SMREF



			
Title			
CPU CORE VR-2			
Size	Document Number	Rev	
Custom	GA-PA65-UD3-B3	1.12	
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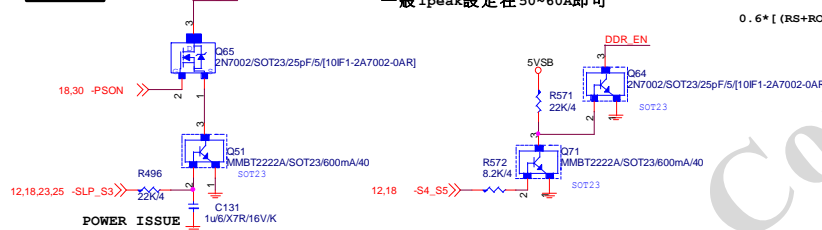
# DDR18V



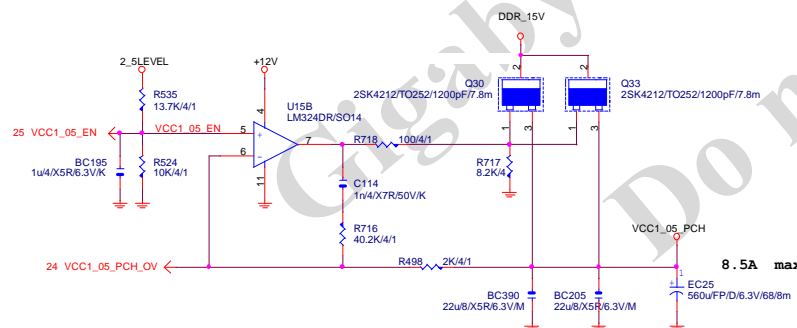
VIN=5V, VOUT=1.5V, IOUT=25A, PHASE=1  
IRMS=11.45A  
560uF/D/6.3V/68/8m RIPPLE CURRENT=4.7A  
Coefficient=1.7 (85°C), 1 (105°C)  
VIN Ripple current=4.7X1.7=7.99A (85°C)  
-->故固態電容須2X7.99=15.98>11.45A

OCF : Ipeak=(2xIocsetxRocset)/Rdsn  
typ Iocset=20uA, Rocset=4.7k  
OCF : 67.14A=(2x20uax4.7k)/(7m//7m)

## PWR SEQ



## VCC1\_05\_PCH



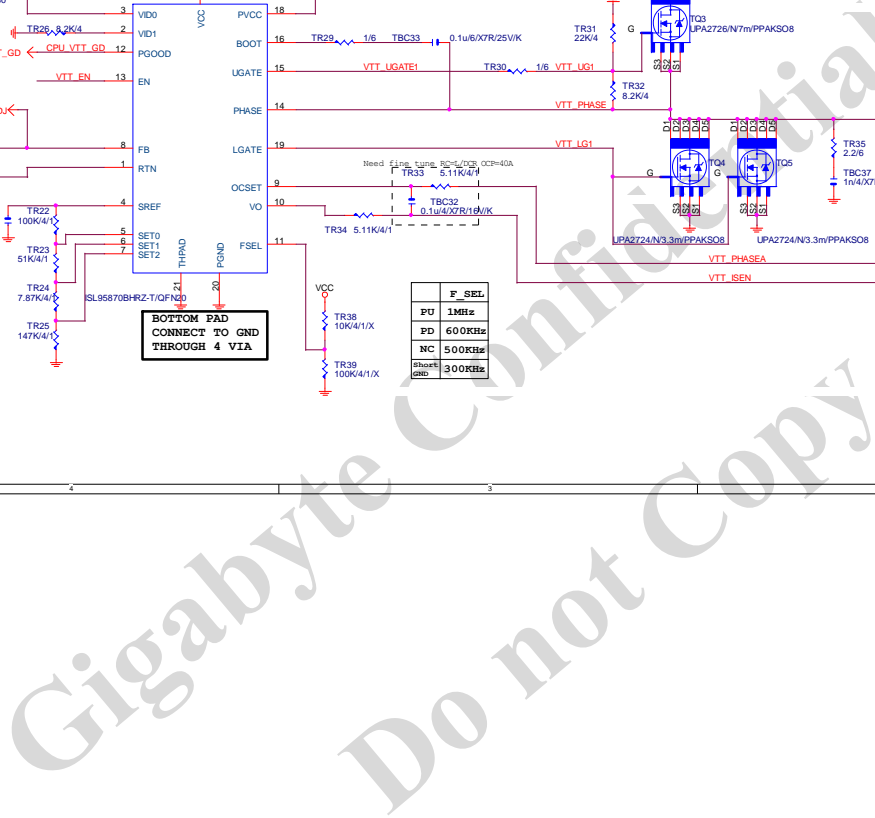
VIN=3.3V, VOUT=1.05V, IOUT=7.5A, PHASE=1  
IRMS=3.4875A  
1000uF/D/6.3V/8C/30m RIPPLE CURRENT=1.14A  
Coefficient=1.7 (85°C), 1 (105°C)  
VIN Ripple current=1.14X1.7=1.938A (85°C)  
-->故電解電容須2X1.938=3.876>3.4875A

OCF : Ipeak=(2xIocsetxRocset)/Rdsn  
typ Iocset=20uA, Rocset=8.2k  
OCF : 58.57A=(2x20uax8.2k)/5.6m

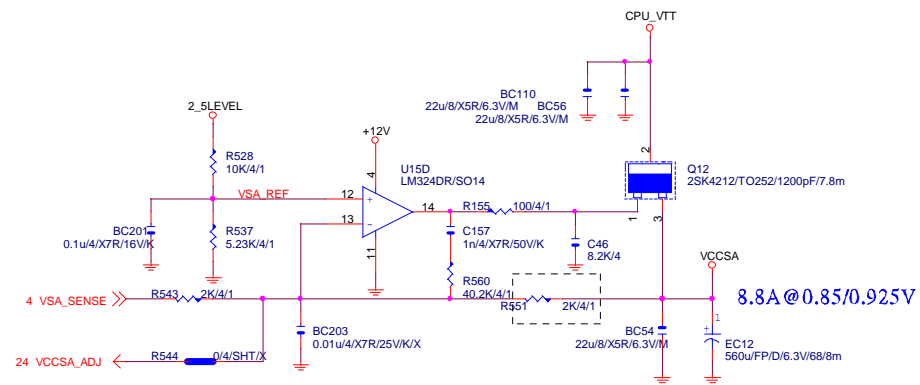
Gigabyte Technology			
Title	DDR_15V		
Size	Custom	Document Number	GA-PA65-UD3-B3
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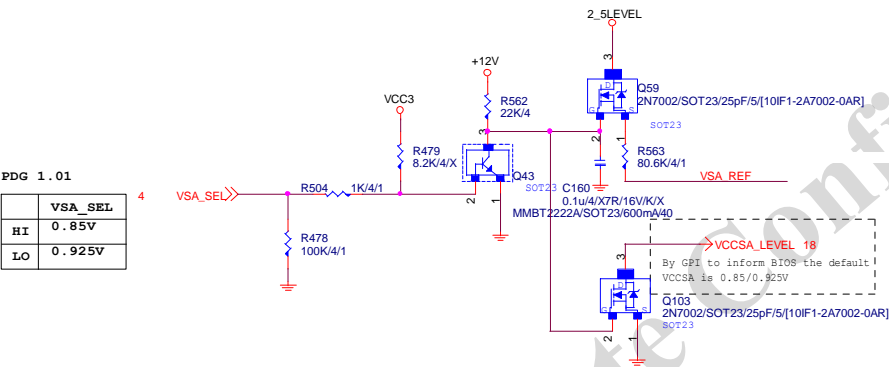


## VCC\_SA

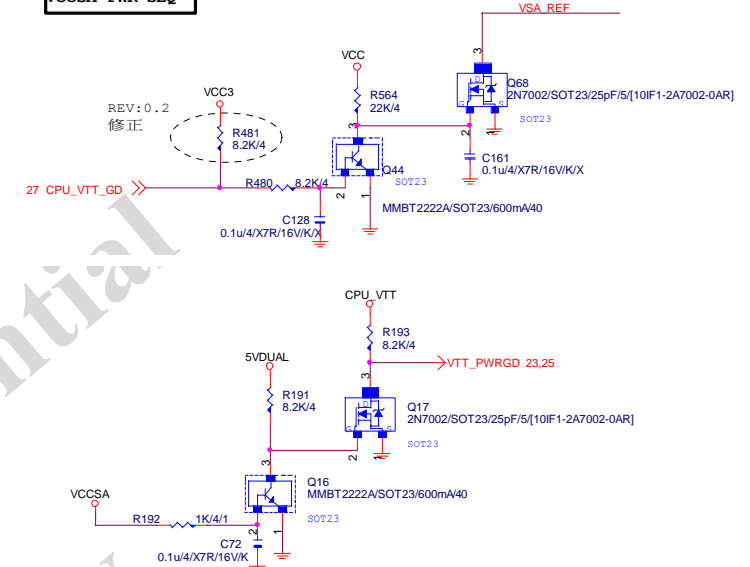


PDG 1.01

VSA_SEL	
HI	0.85V
LO	0.925V

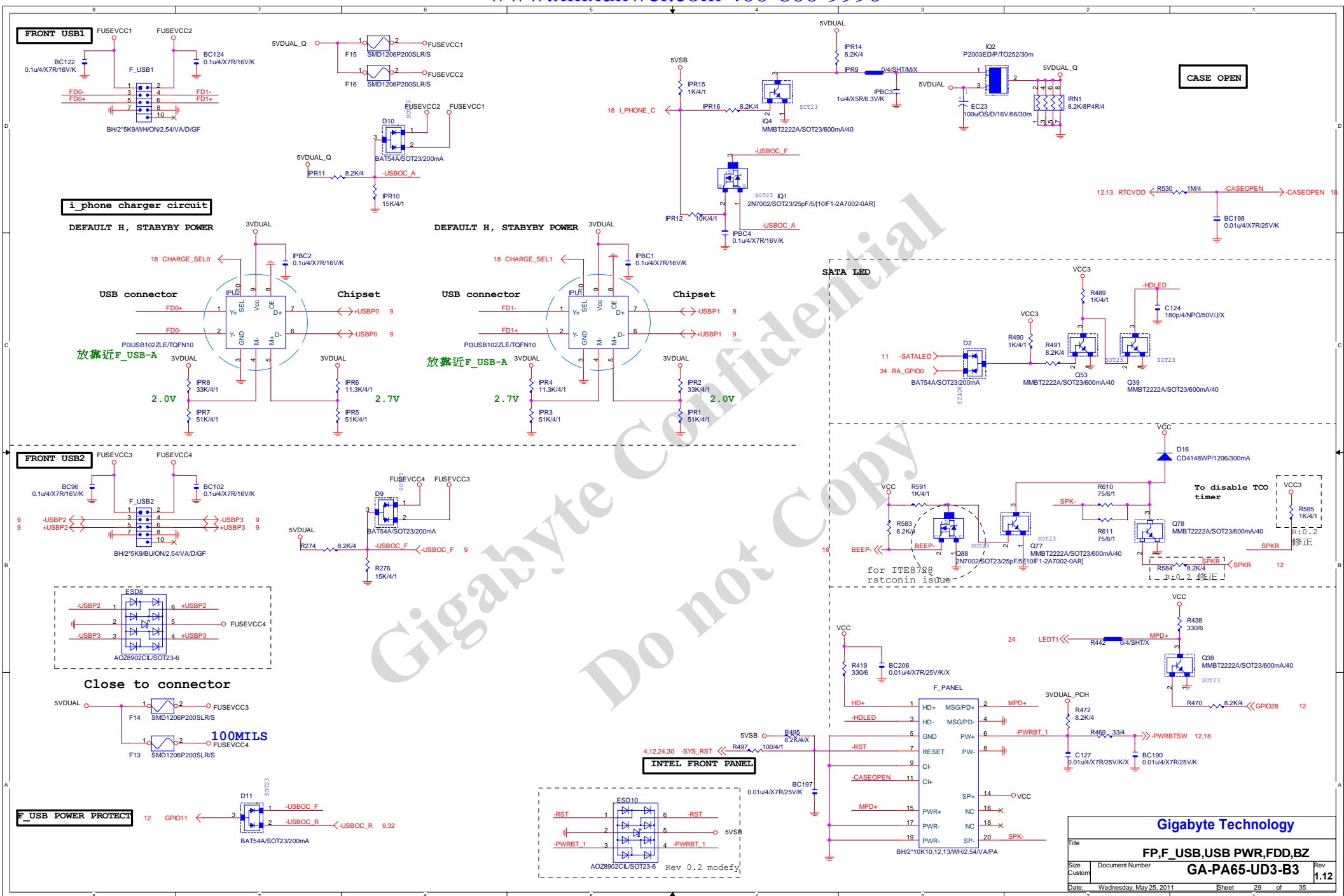


## VCCSA\_PWR\_SEQ



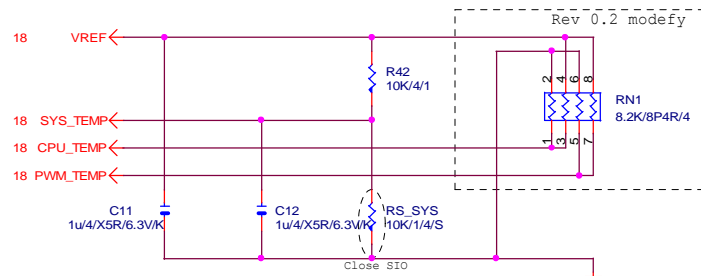
Gigabyte Technology

Title	CPU VTT PWM_ISL6312	Rev	1.12
Size	Document Number		
Custom	GA-PA65-UD3-B3		
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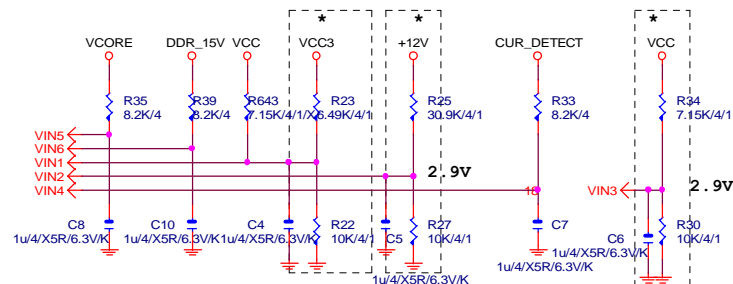




### TEMP H/W MONITOR

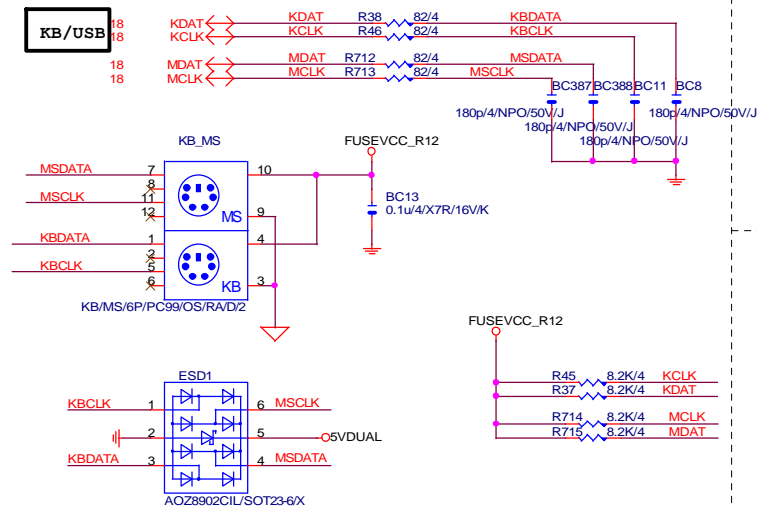


### VOLTAGE-- H/W MONITOR

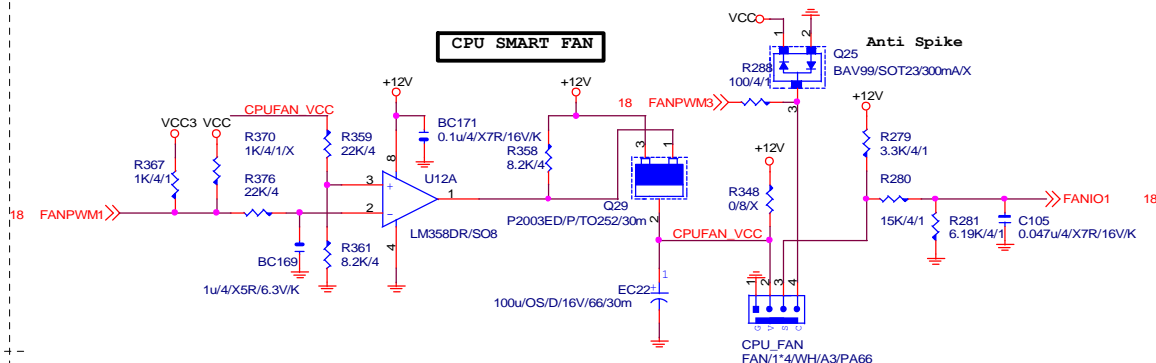


The division voltage of VIN2 & VIN3 must be around 2.9V

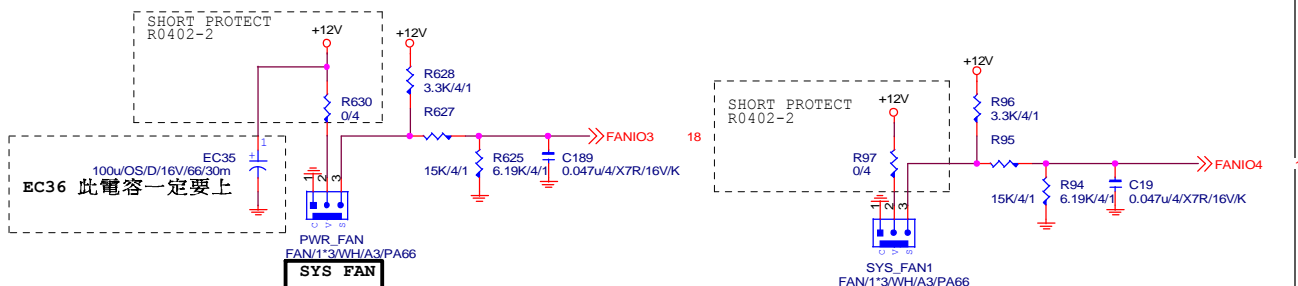
### KB/USB



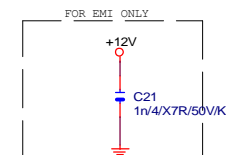
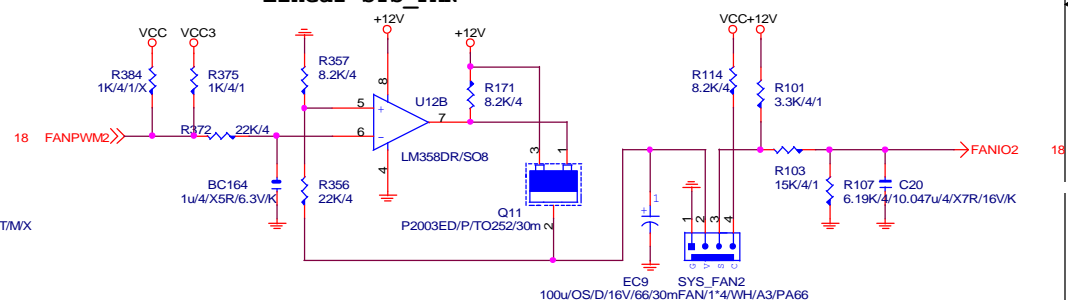
### CPU SMART FAN



### SHORT PROTECT



### Linear SYS\_FAN



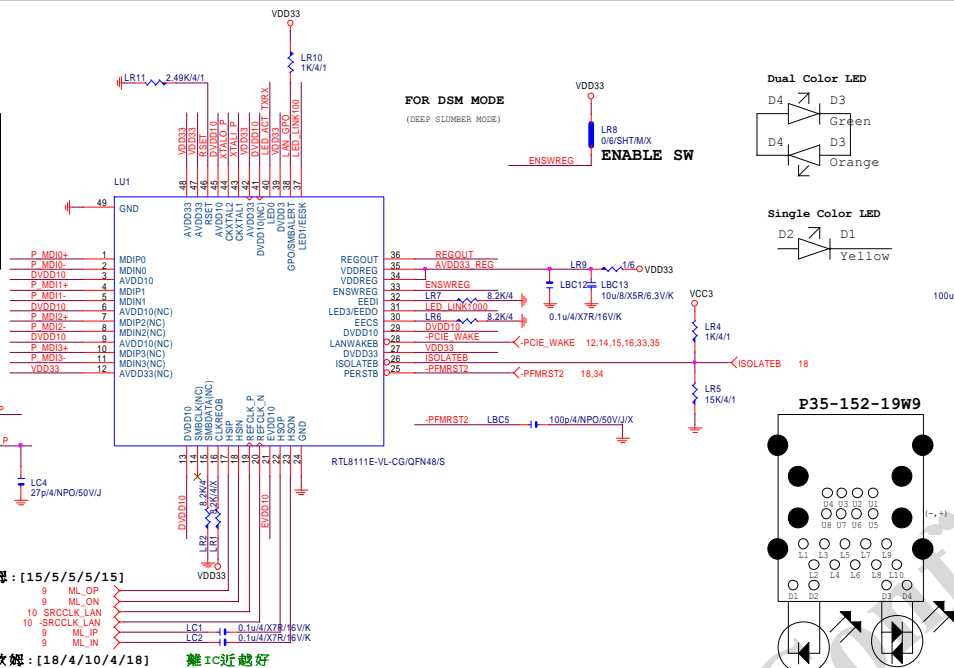
Gigabyte Technology

Title		
HWM,KB/MS, FAN CTRL		
Size	Document Number	Rev
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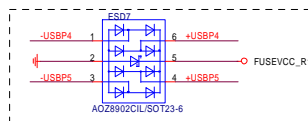
## PCIE-1G LAN

## Power domain chart

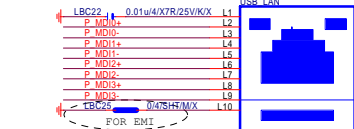
RTL8111E	
AVDD33	3.3V
DVDD33	3.3V
VDDREG	3.3V
DVDD10	1.05V



## USB30\_LAN CONNECTOR

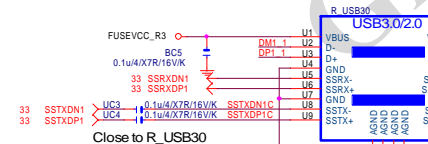


100歐姆: [20/4/8/4/20]



USB LAN 1G/GO.Y/OS/RA/D/1

90歐姆: [15/4.5/7.5/4.5/15]

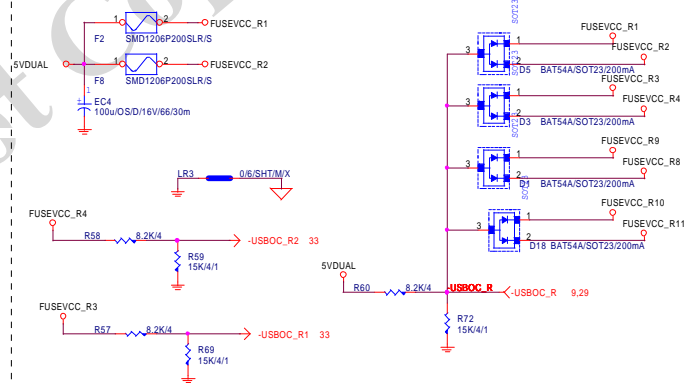
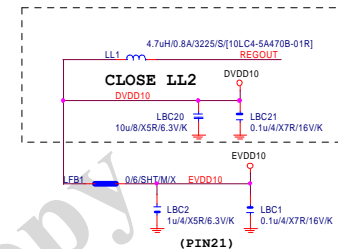
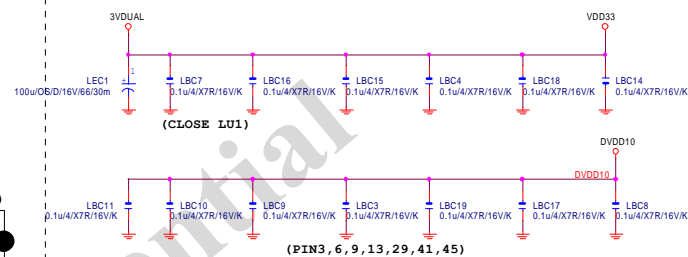
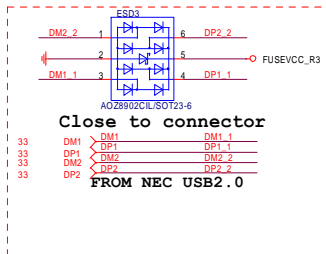
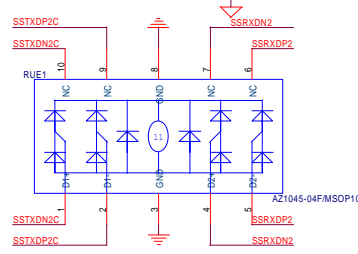
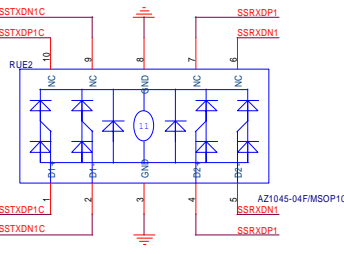


Close to R\_USB30

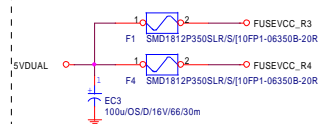
90歐姆: [20/4.5/7.5/4.5/20]

Close to R\_USB30

90歐姆: [20/4.5/7.5/4.5/20]

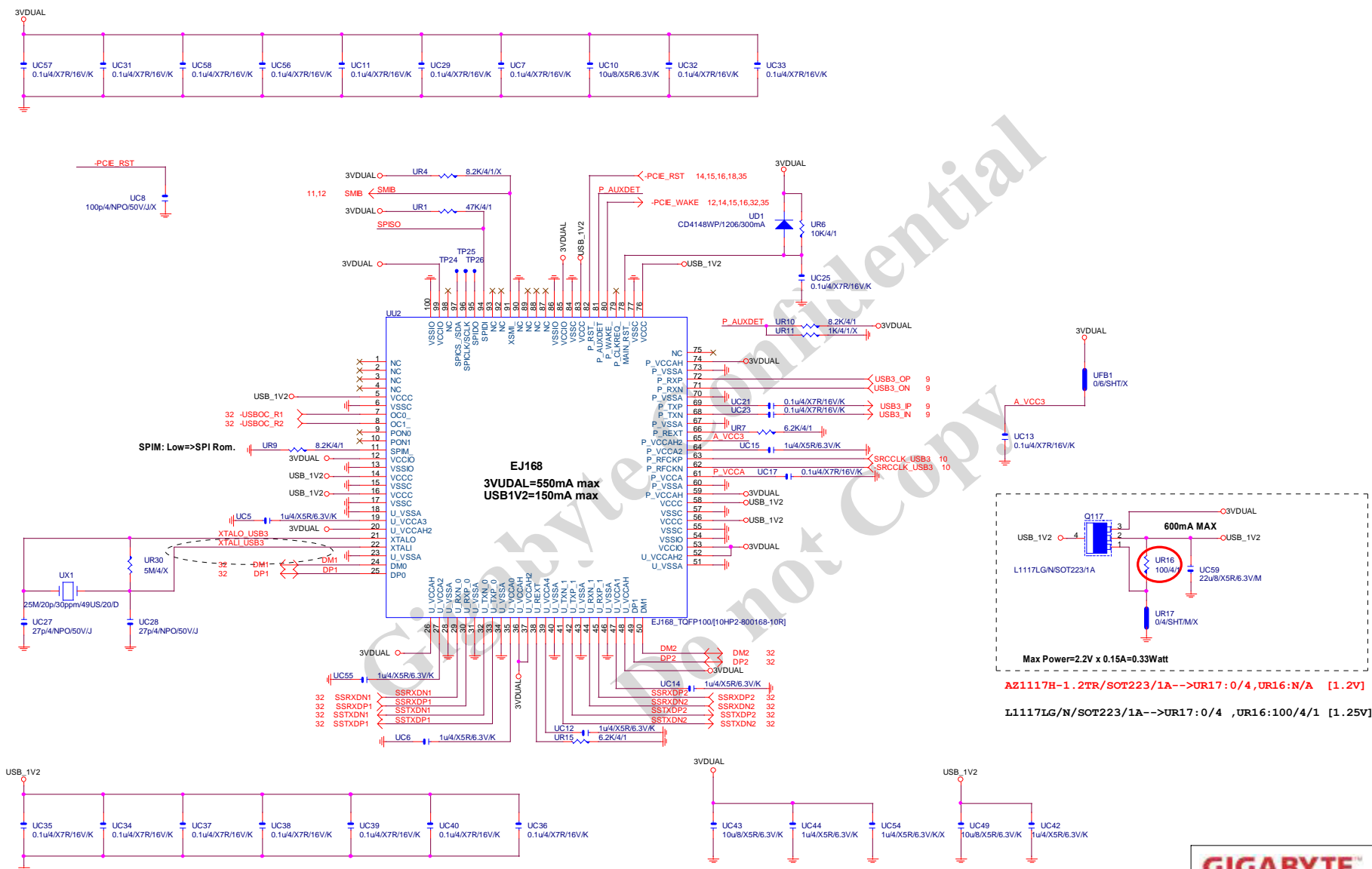


Close to connector



Gigabyte Technology	
REALTEK RTL8111E	
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GIGABYTE™			
Title			
REAR USB3.0 E168A			
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