

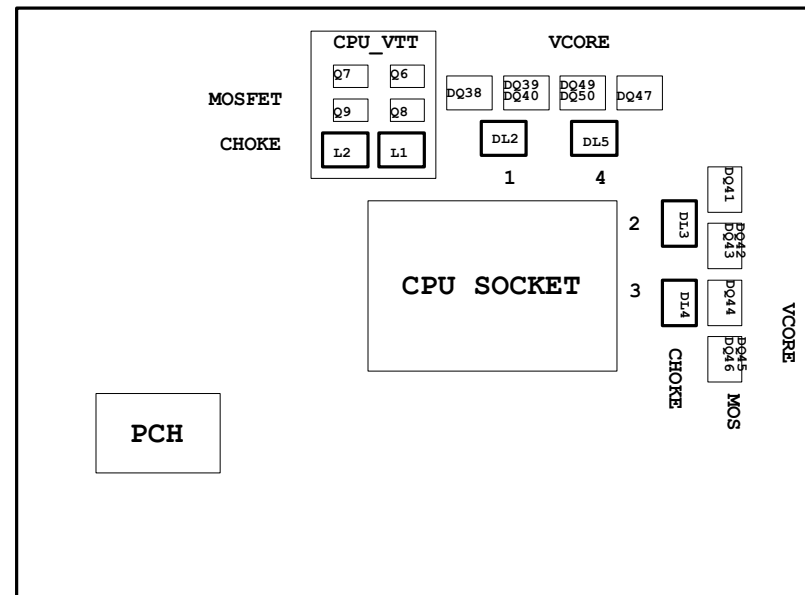
Model Name: GA-PH67-DS3-B3 1.0

SHEET TITLE

01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	CPU LGA1155-A
05	CPU LGA1155-B
06	CPU LGA1155-C
07	DDR III CHANNEL A
08	DDR III CHANNEL B
09	PCH FDI,DMI,USB,PCIE,NVRAM
10	PCH DP,CLK BUFFER
11	PCH HOST,SATA,PCI
12	PCH GPIO,CTRL,AUDIO
13	PCH PWR,GND
14	PCI EXPRESS*16 SLOT
15	PCI EXPRESSX4 SLOT / PCIE X1 SLOT
16	IT8892
17	PCI SLOT 1&2&3
18	I/O ITE8728
19	COM, LPT, TPM
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	
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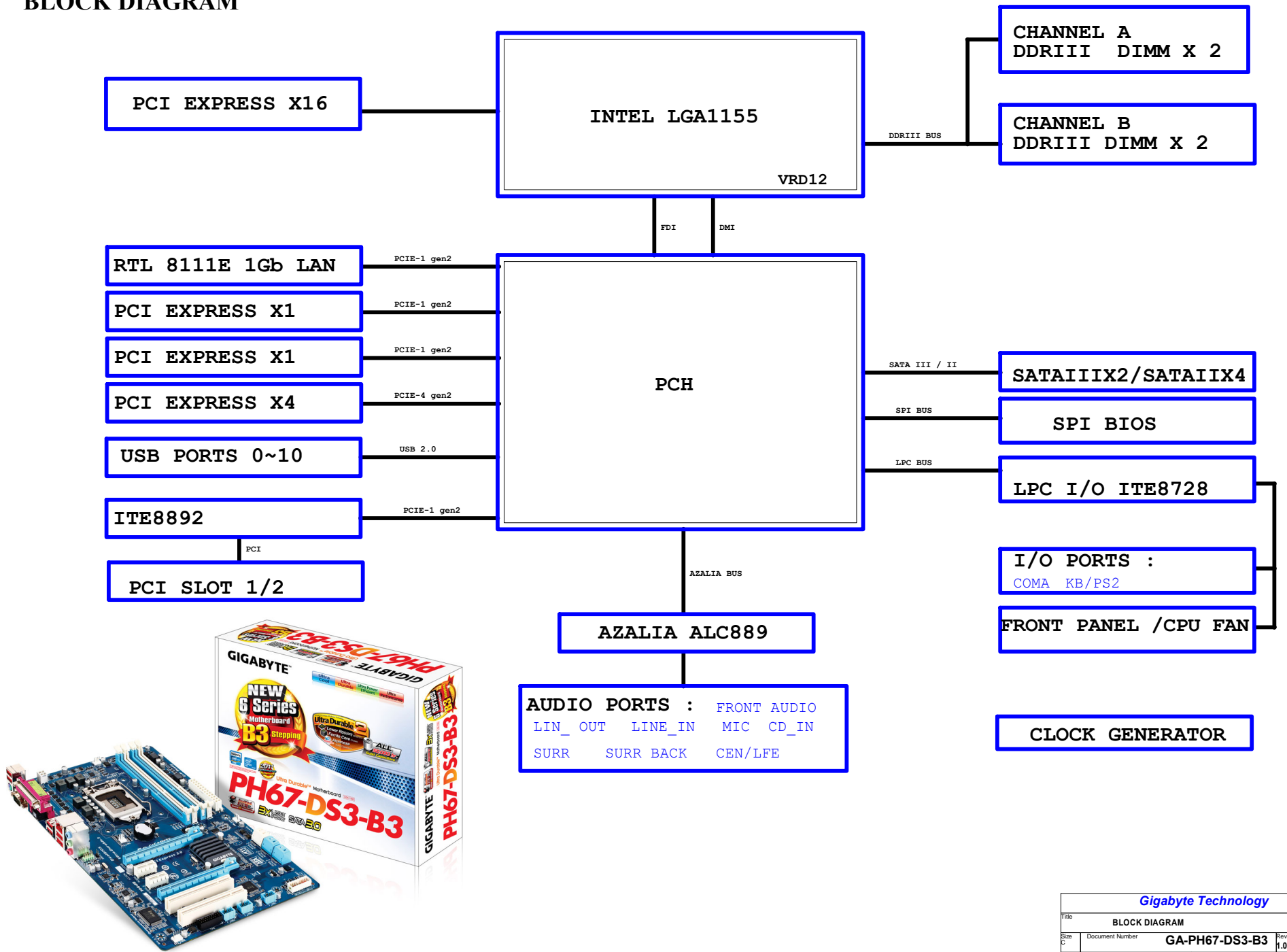
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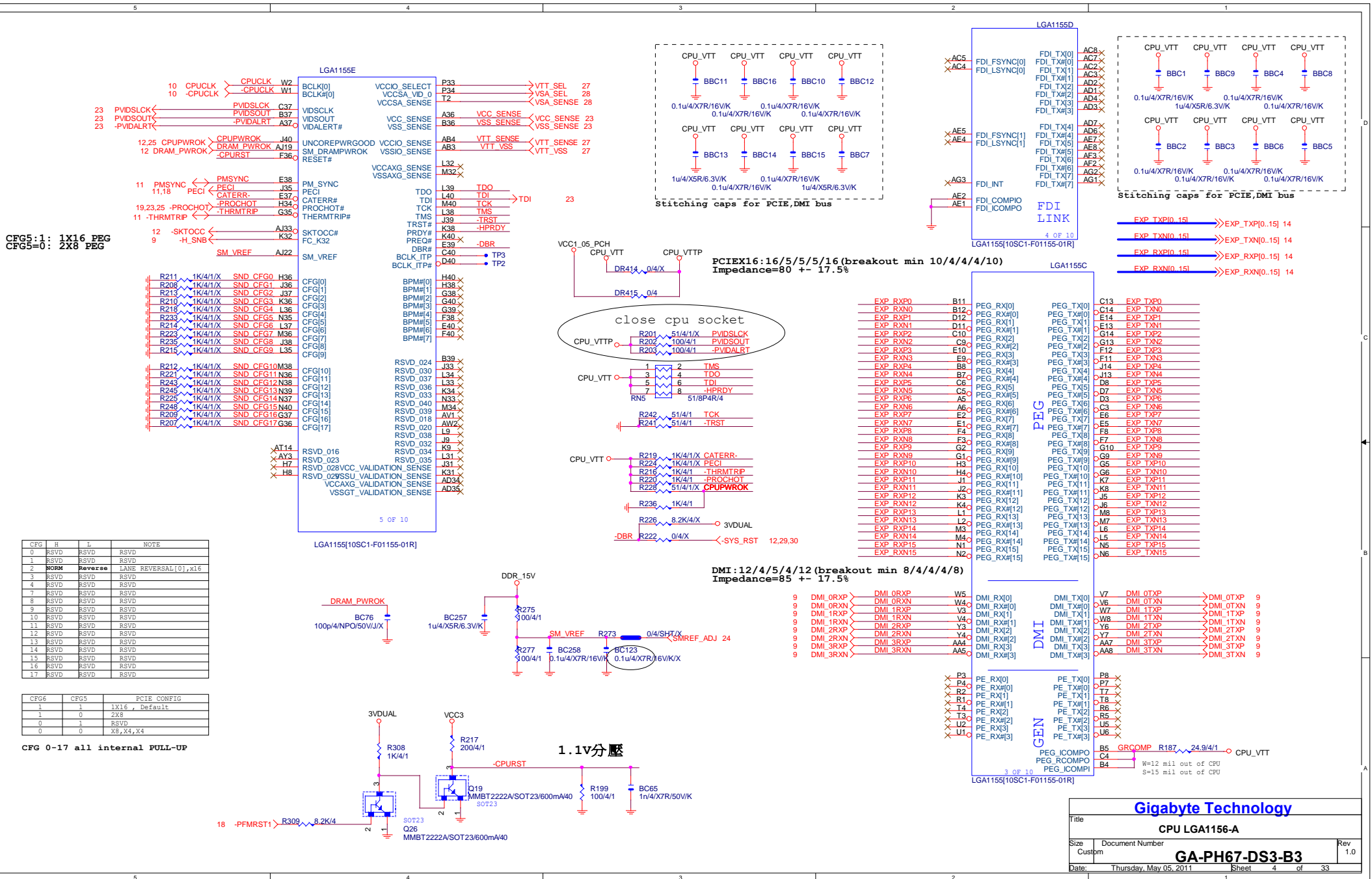
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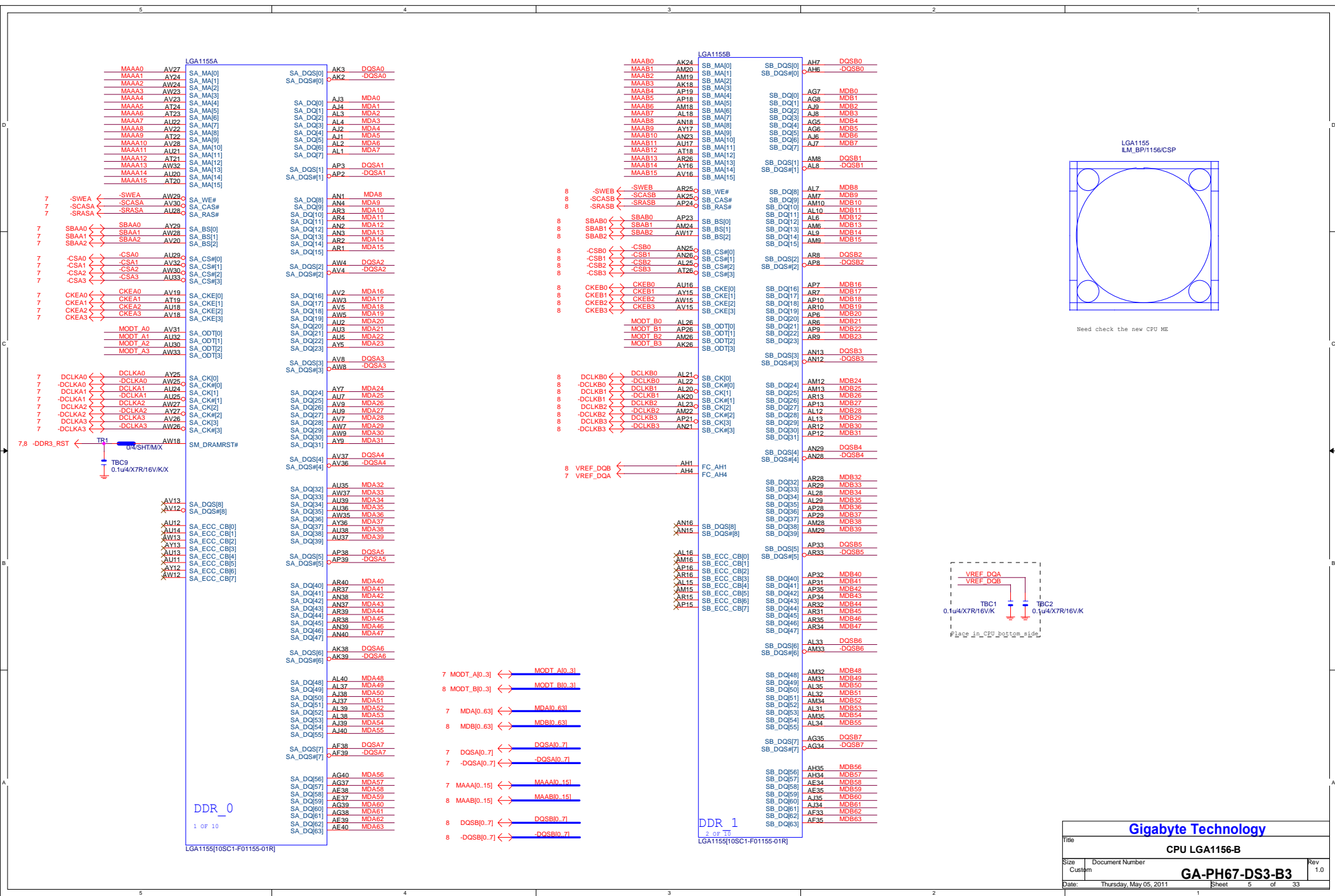
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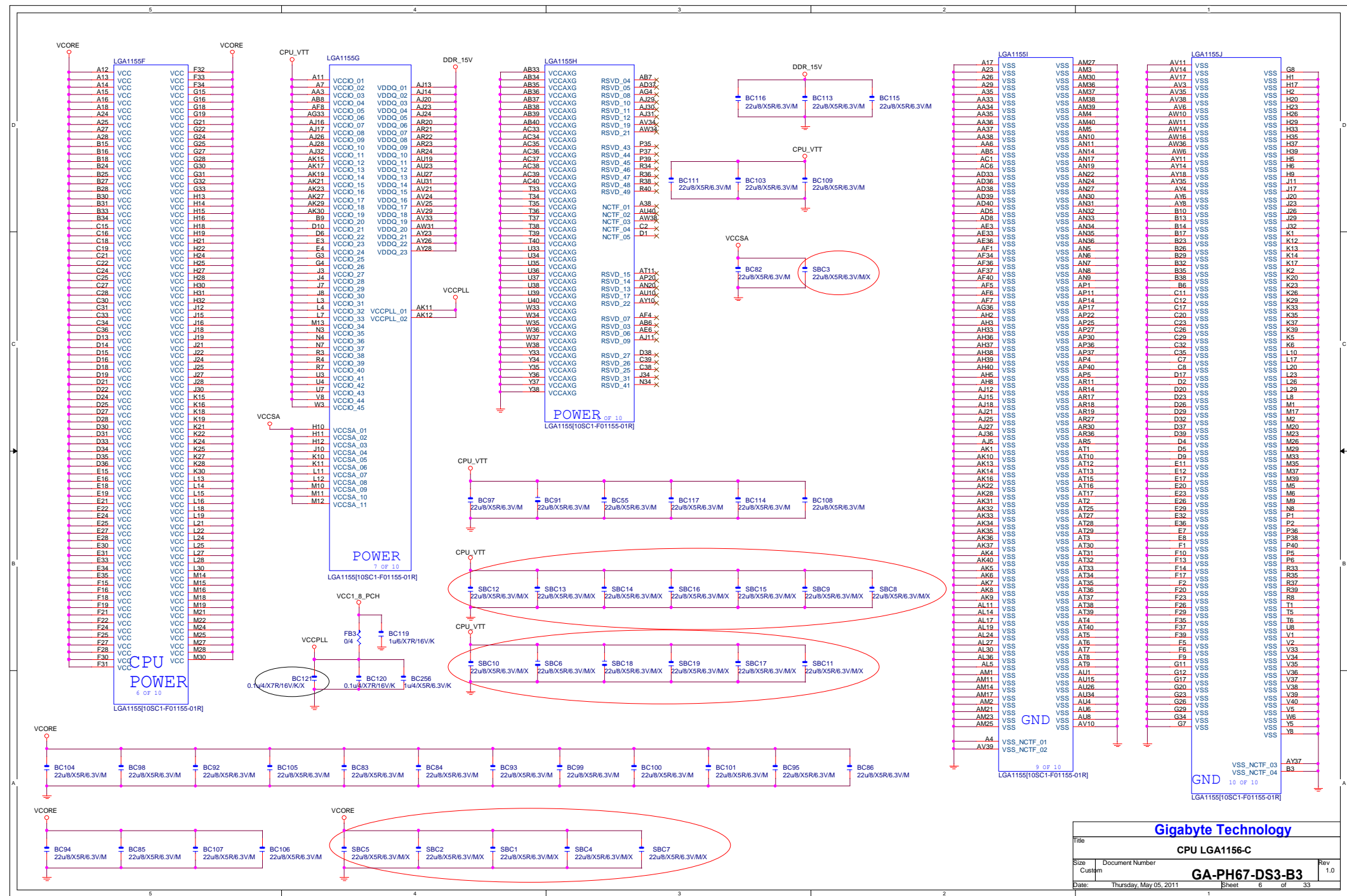
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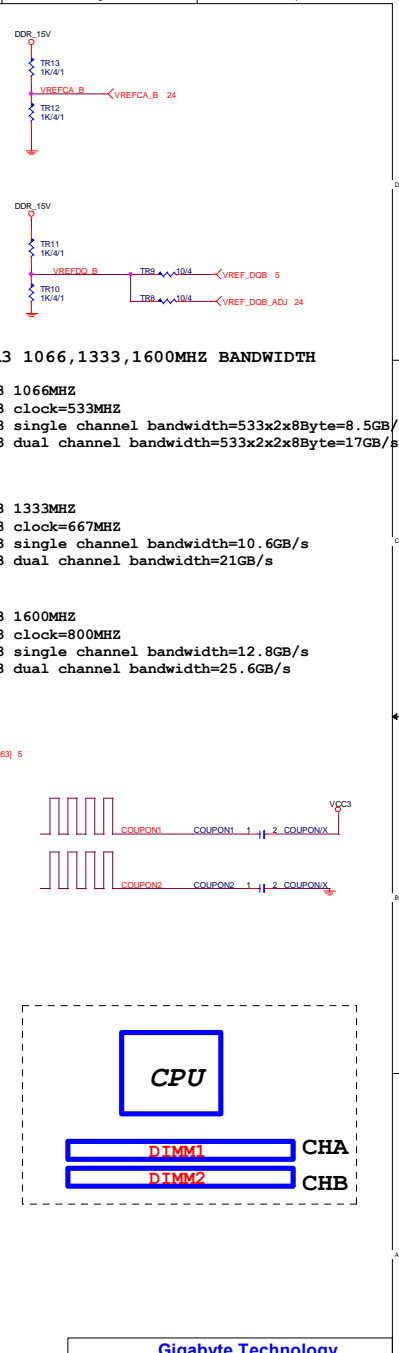
BLOCK DIAGRAM





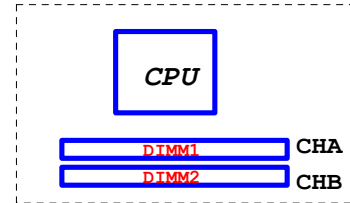
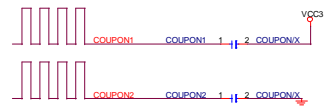


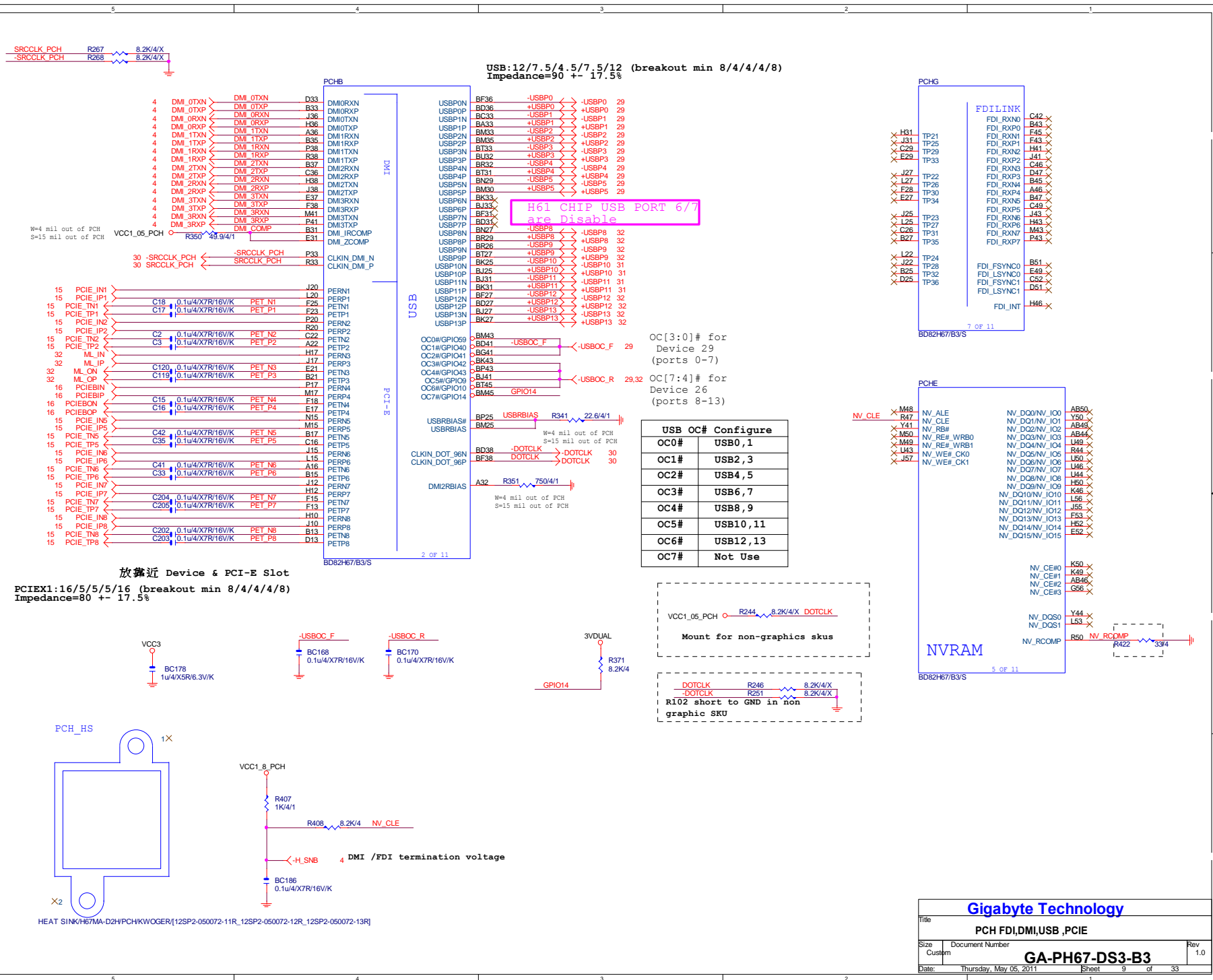


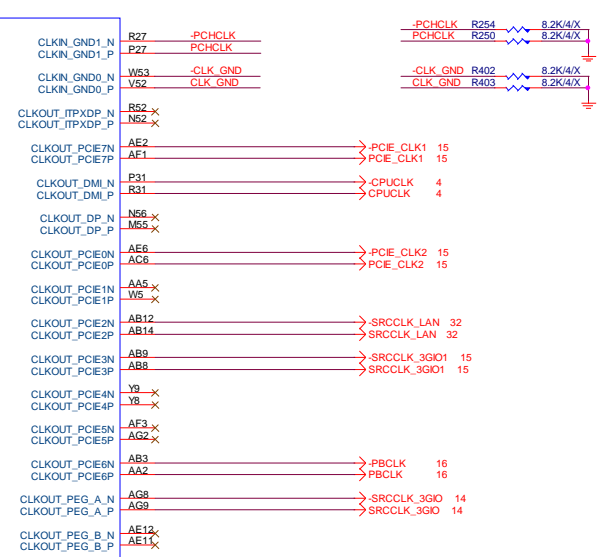
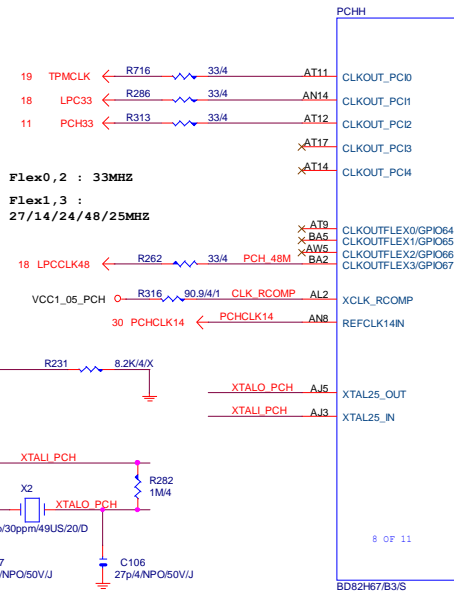
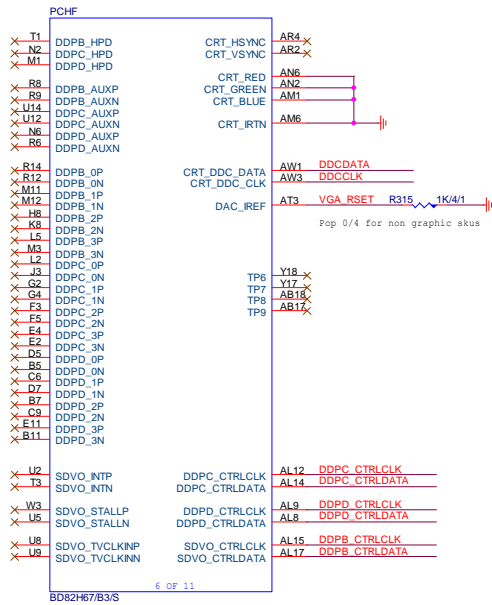


```
DDR3 1066MHZ
DDR3 clock=533MHZ
DDR3 single channel bandwidth=533x2x8Byte=8.5GB/s
DDR3 dual channel bandwidth=533x2x2x8Byte=17GB/s
```

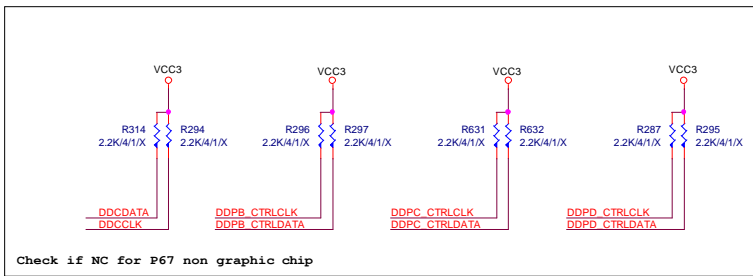
```
DDR3 1600MHZ
DDR3 clock=800MHZ
DDR3 single channel bandwidth=12.8GB/s
DDR3 dual channel bandwidth=25.6GB/s
```

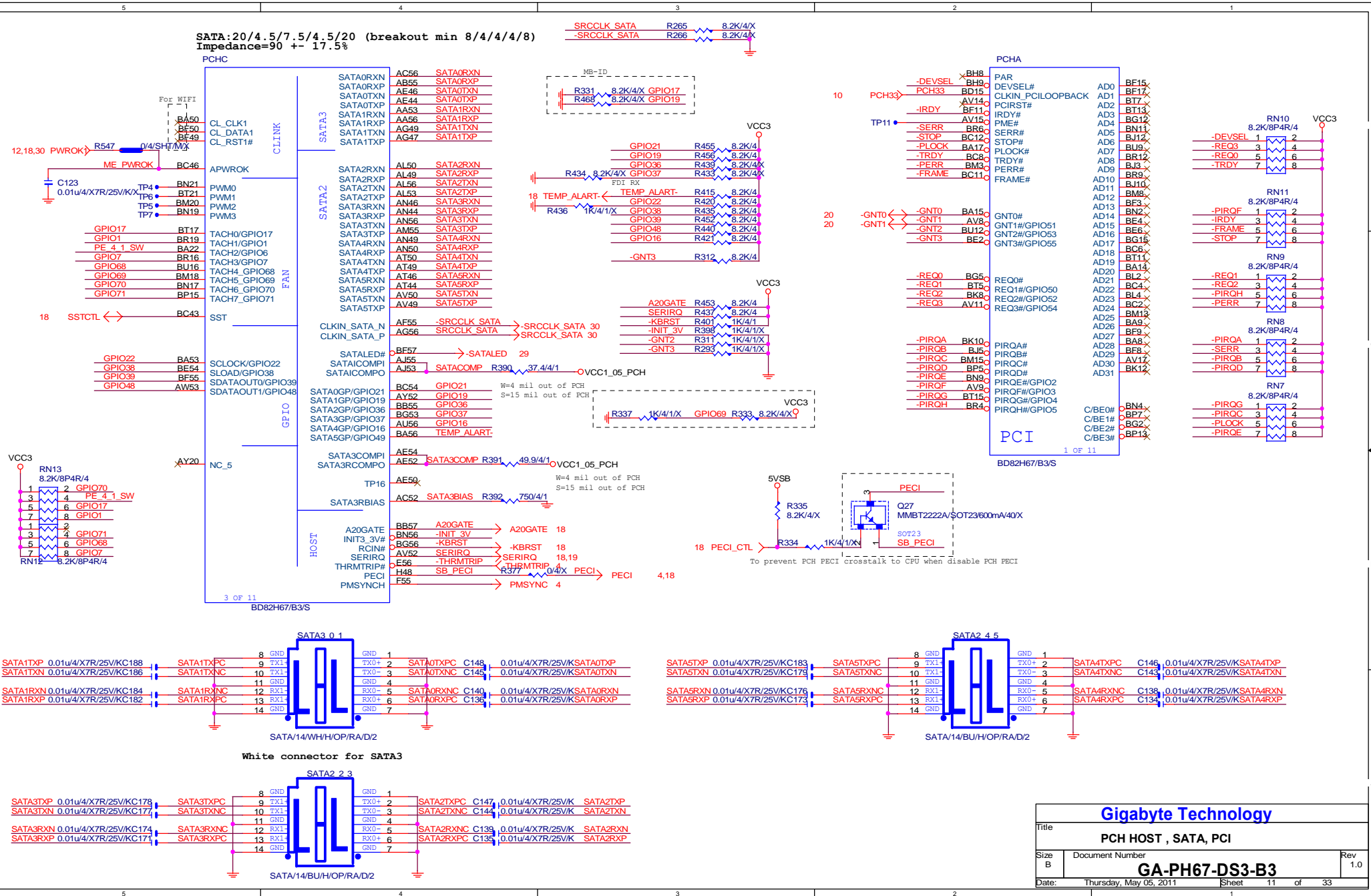


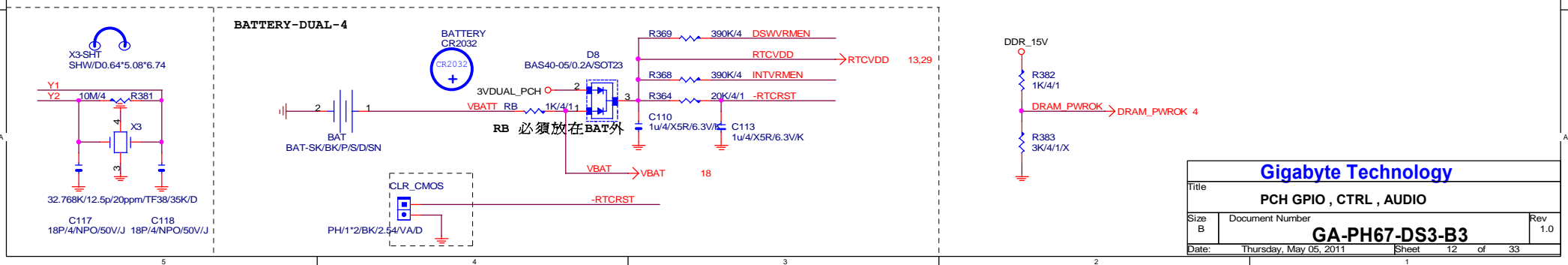
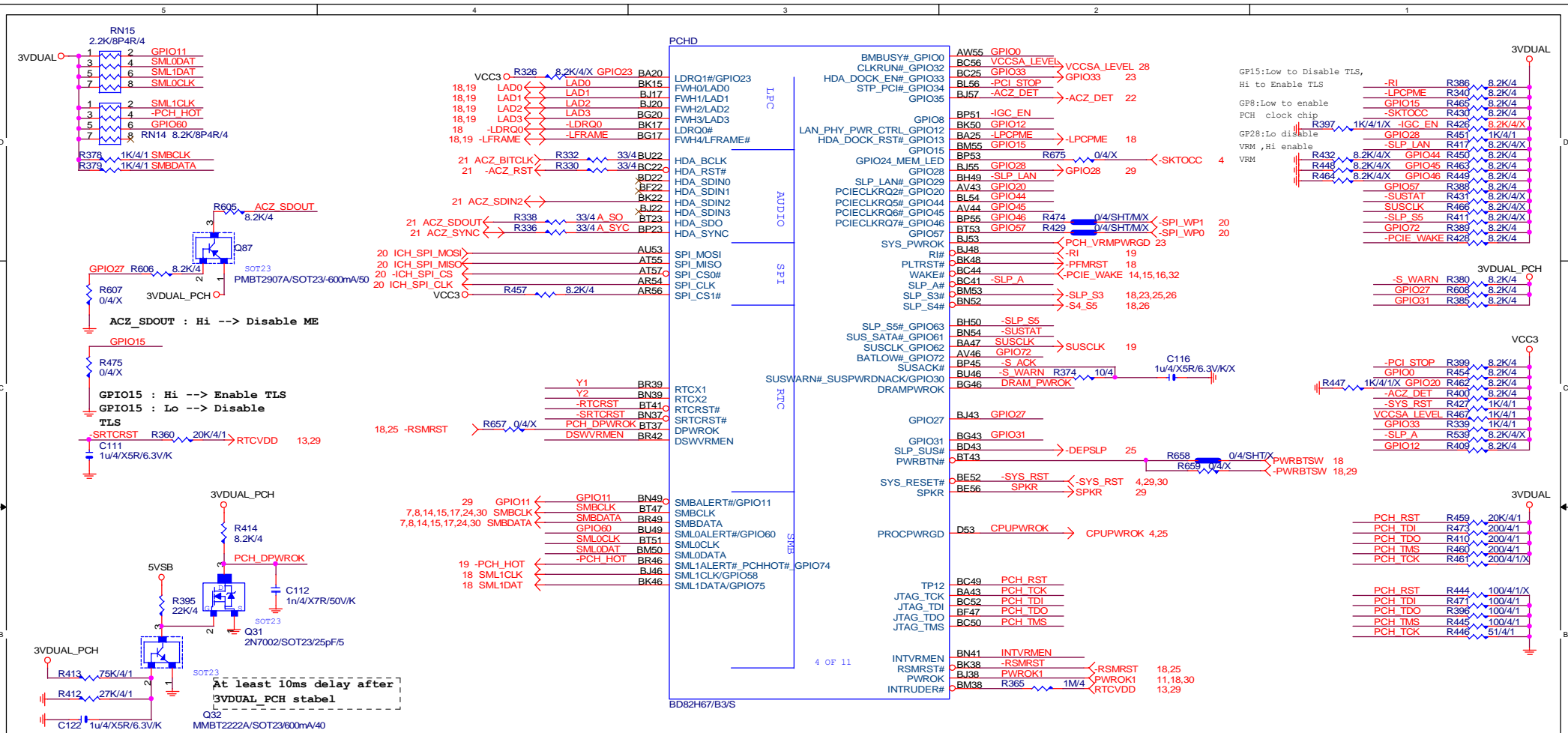


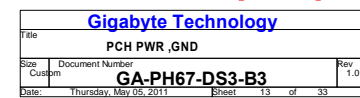


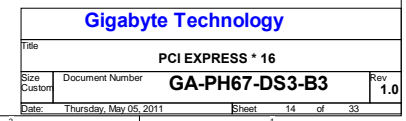
Differential Clock: 18/6/4/6/18
 Impedance=90 +- 15%

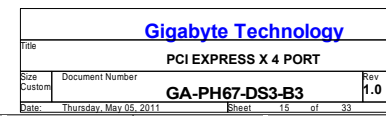
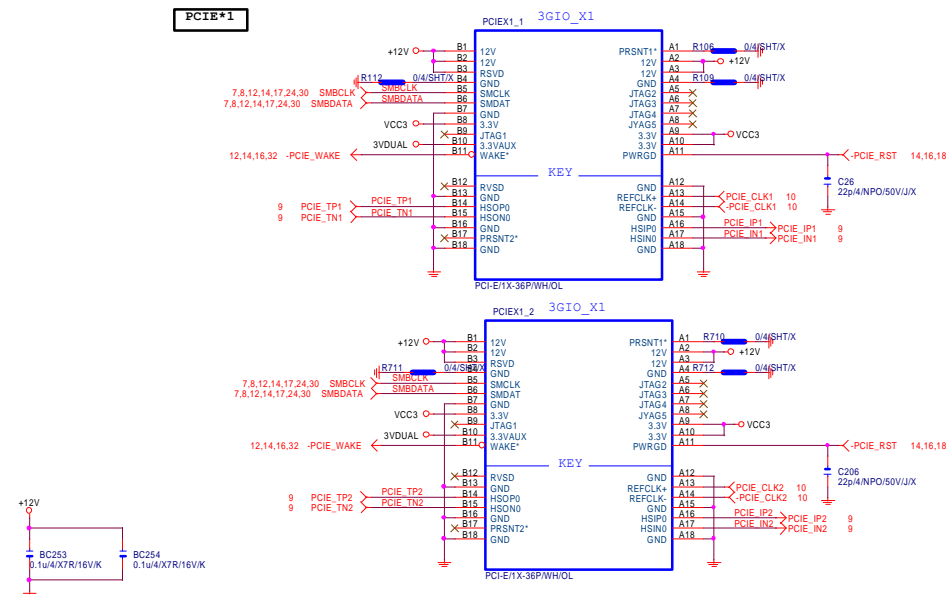


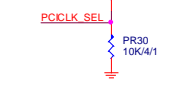
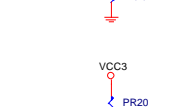
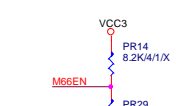
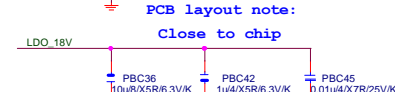
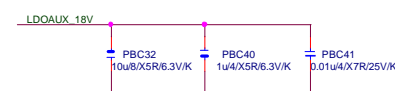
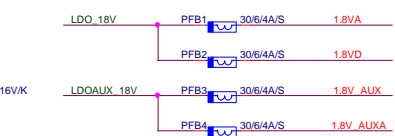
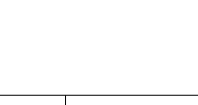
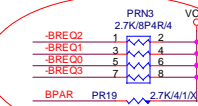
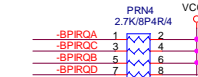
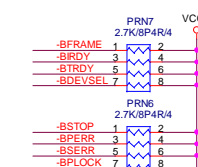
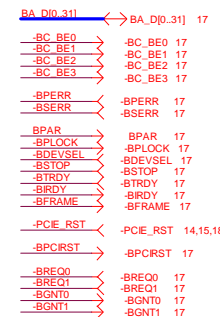
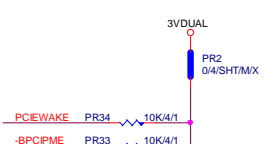
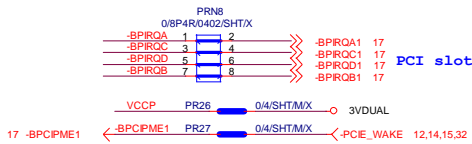
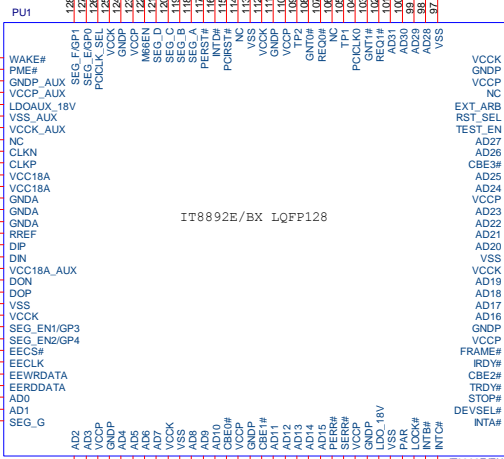
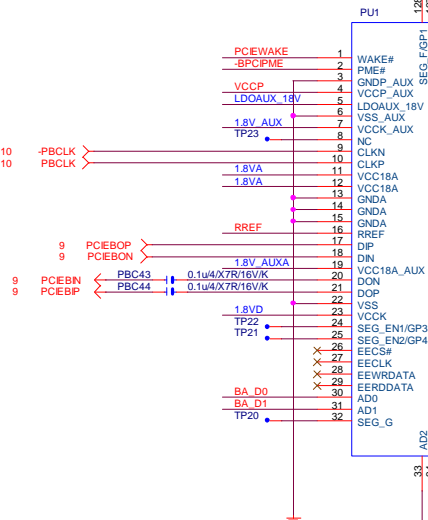
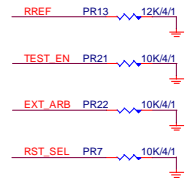
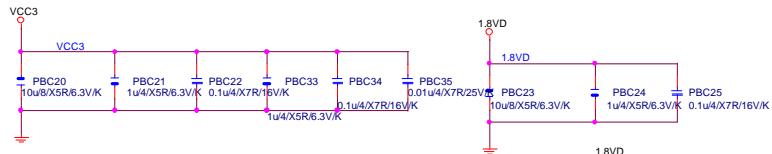








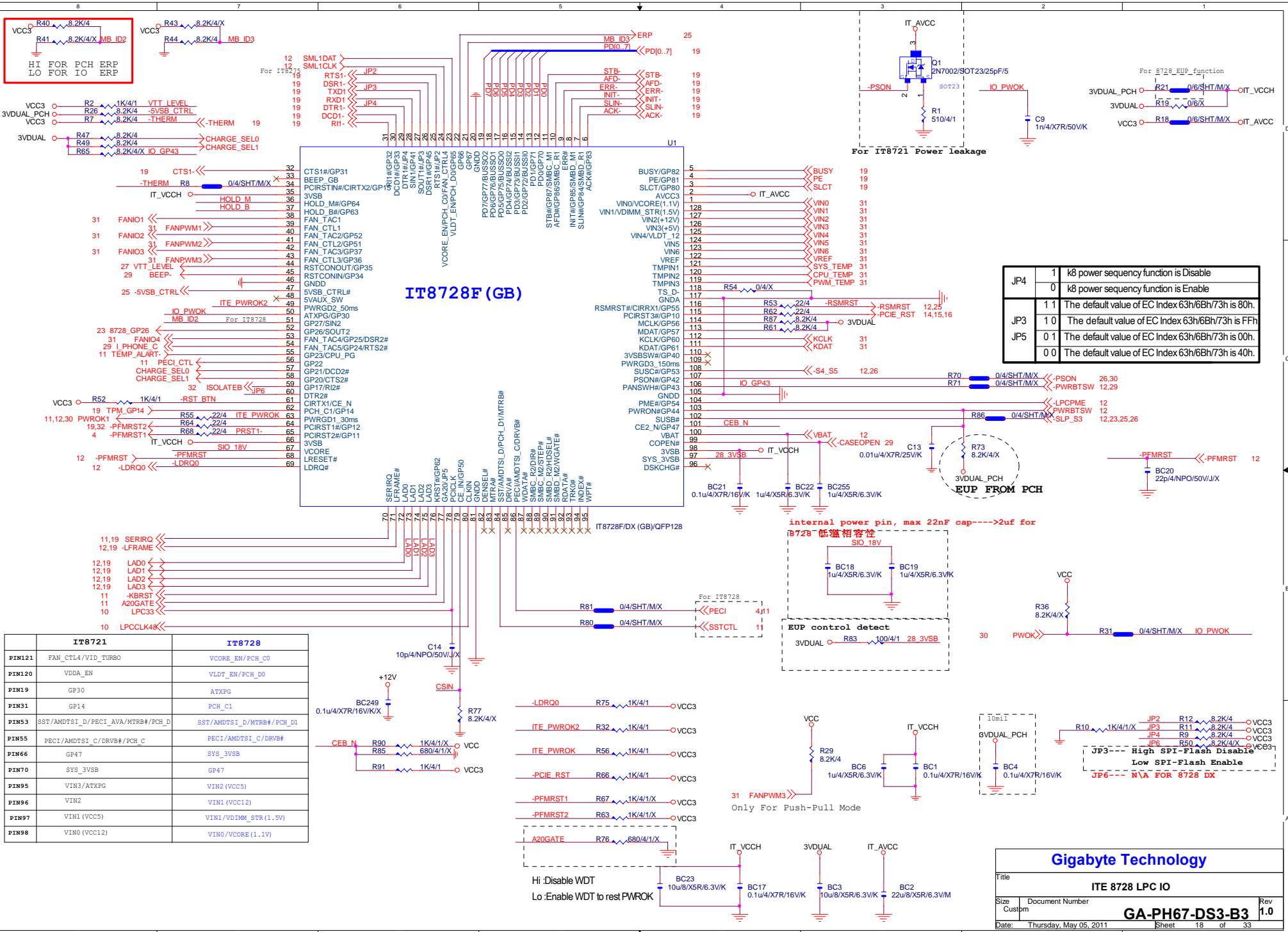




High: Enable PCI CLK 66MHz
Low: Disable PCI CLK 66MHz

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





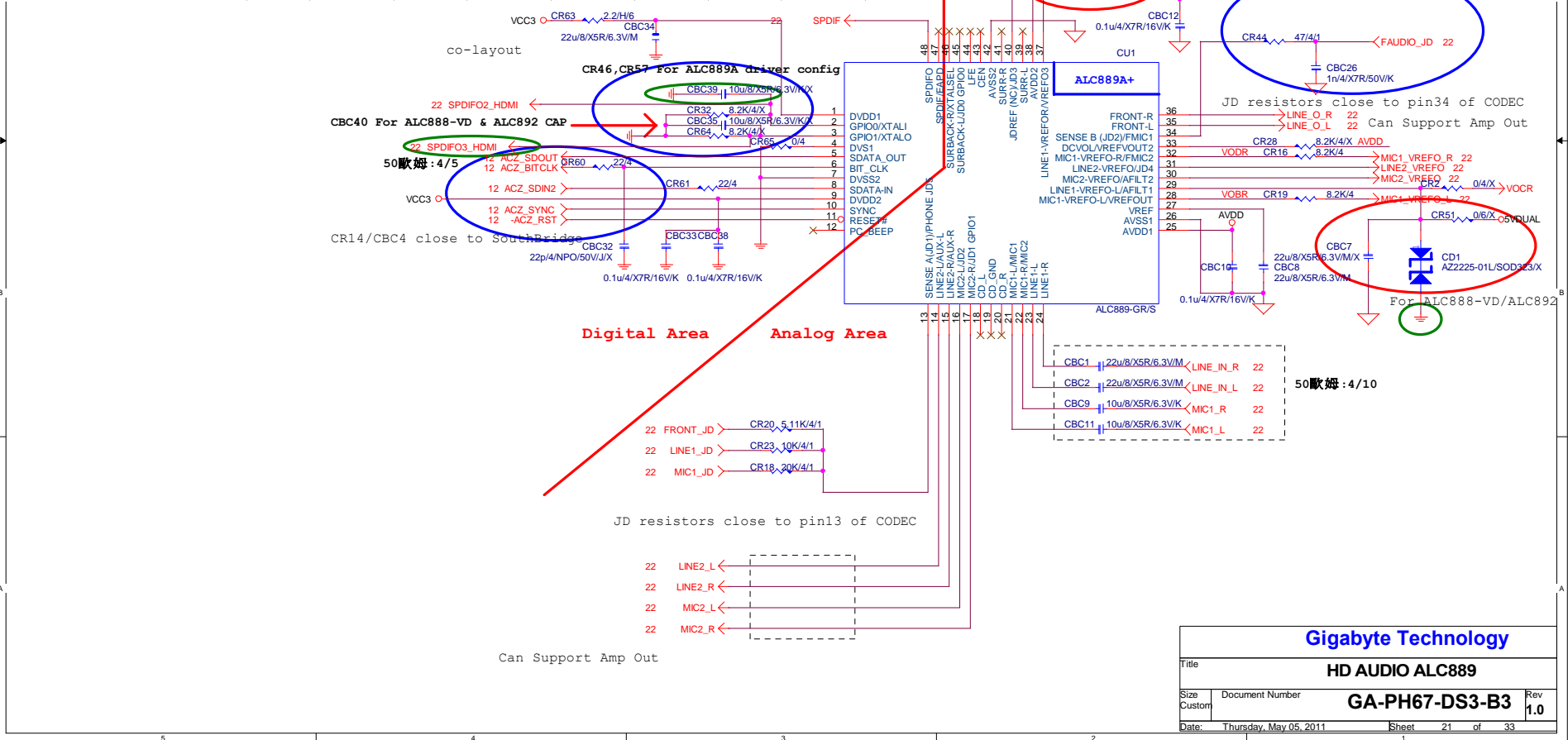
JP4	1	k8 power sequency function is Disable
	0	k8 power sequency function is Enable
JP3	1 1	The default value of EC Index 63h/6Bh/73h is 80h.
	1 0	The default value of EC Index 63h/6Bh/73h is FFh
JP5	0 1	The default value of EC Index 63h/6Bh/73h is 00h.
	0 0	The default value of EC Index 63h/6Bh/73h is 40h.

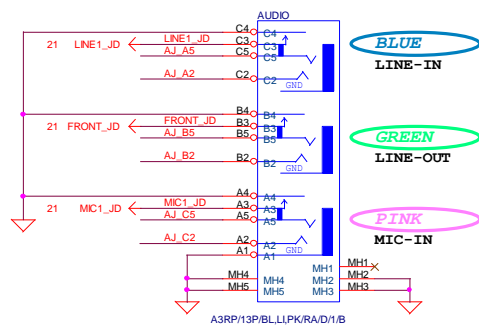
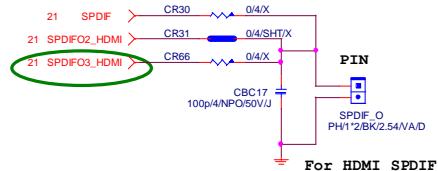
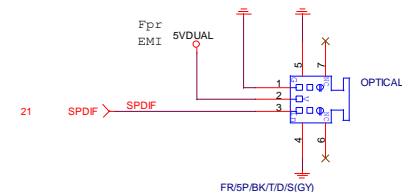
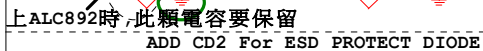
IT8721	IT8728
PIN121	FAN_CTL4/VID_TURBO
PIN120	VDDA_EN
PIN19	GP30
PIN31	GP14
PIN53	SST/AMDTSI_D/PECI_AVA/MTRB#/PCH_D
PIN55	PECI/AMDTSI_C/DRVB#/PCH_C
PIN66	GP47
PIN70	SYS_3VSB
PIN95	VIN3/ATXPG
PIN96	VIN2
PIN97	VIN1
PIN98	VIN0

8		7		6		5		4		3		2		1			
D																D	
C																C	
B																B	
A																A	
8		7		6		5		4		3		2		1			

Gigabyte Technology		
Title		BIOS
Size Custom	Document Number	GA-PH67-DS3-B3
Date: Thursday, May 05, 2011	Sheet 20 of 33	Rev 1.0

AZALIA CODEC		5		4		3				
		ALC883	ALC888-VA	ALC888B	ALC888-VD	ALC892R	ALC889	ALC889A	ALC889 New Bonding	ALC898 ALC892
ALC883/ALC888-A/ALC888B/ALC888-VD/ALC892R/ALC889/ALC889A Colay										
CR32	X	X	X	X	X	X	X	O	X	X
CR64	X	X	X	X	X	X	X	O	X	X
CR65	O	O	X	X	X	O	O	O	O	X
CBC35	X	X	X	10uF/X5R	10uF/X5R	X	X	X	X	10uF/X5R
CR28	O	X	X	X	X	X	X	X	X	X
CR34	20K/1%	20K/1%	20K/1%	20K/1%	20K/1%	20K/1%	20K/1%	20K/0.1%	20K/1%	20K/1%
CR31	X	X	O	X	O	O	X	X	X	O
CR30	O	O	X	O	X	X	O	X	X	X
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	10uF/X5R	4.7uF/X5R	10uF/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	62 ohm	75 ohm	62 ohm	75 ohm	62 ohm
CR51/CD1/CBC7	X	X	X	O	X	X	X	X	X	O
CD2/CD3/CQ3/CQ5	O	O	O	X	O	O	O	O	O	X
CBC1/CBC2	10uF	10uF	10uF	10uF	10uF	22uF	10uF	22uF	10uF	10uF
CR66	X	X	X	X	X	X	X	O	X	X
CBC39	X	X	X	X	X	X	X	10uF	X	X





21 LINE_O_R > 100VOS/D16.3V/66/A35[m] 11C02-661000-09R CEC1 CR5 62/4

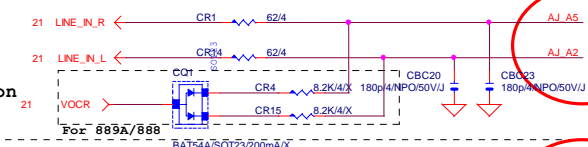
21 LINE_O_L > CEC2 CR8 62/4 100VOS/D16.3V/66/A35[m] 11C02-661000-09R

CR6 22K/4 CR7 22K/4

AJ B5 AJ B2

CB9 180p/4 NPO50V/J CB24 180p/4 NPO50V/J

Only reserved for ALC888



21 MIC1_R CR17 62/4 AJ_C5

21 MIC1_L CR22 62/4 AJ_C2

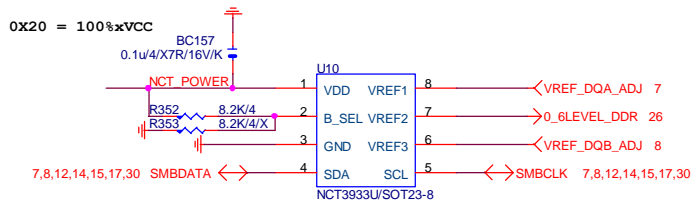
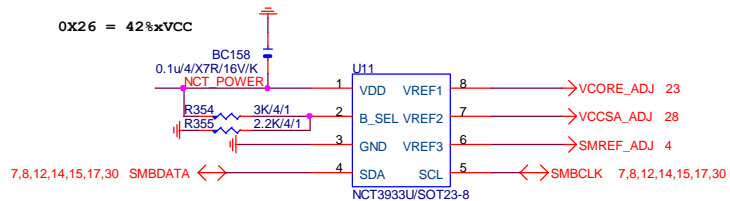
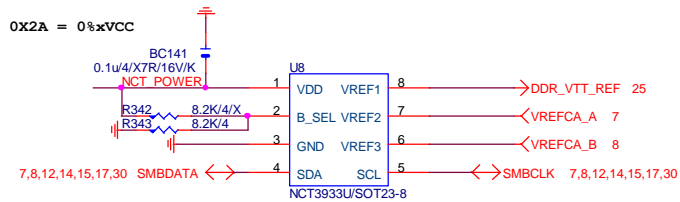
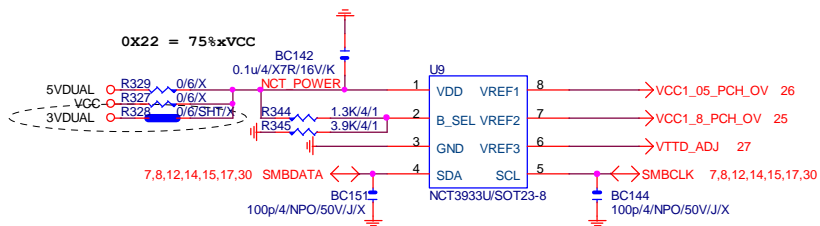
21 MIC1_VREF0_L

21 MIC1_VREF0_R

CBC3 180pF/NPO 50V/J

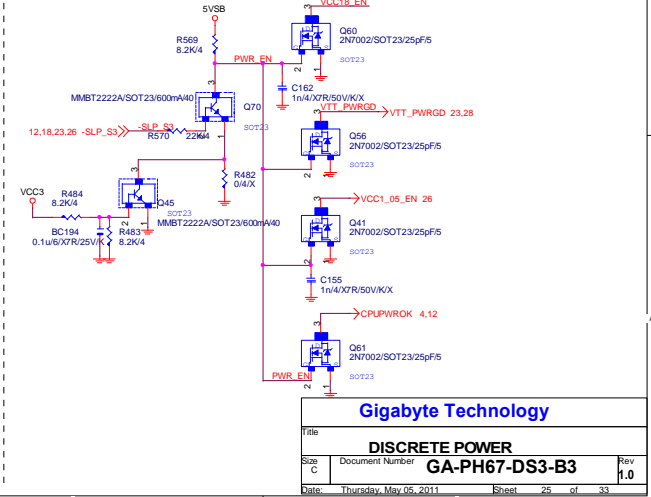
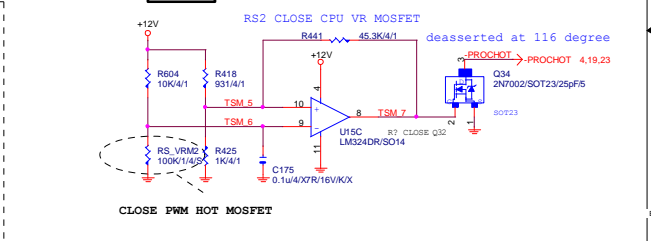
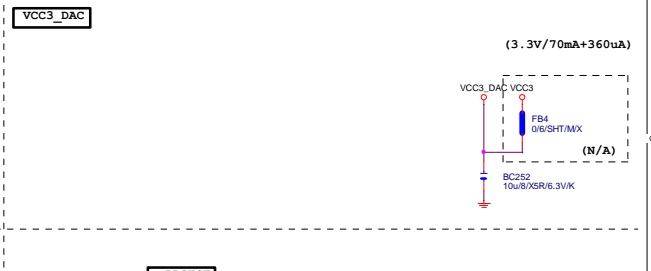
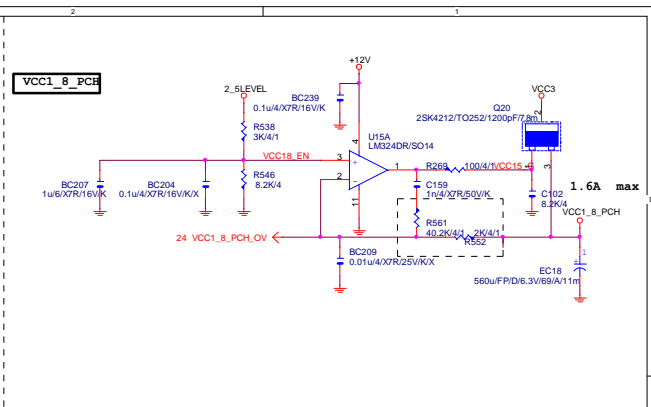
CB04 180pF/NPO 50V/J

[illegible]

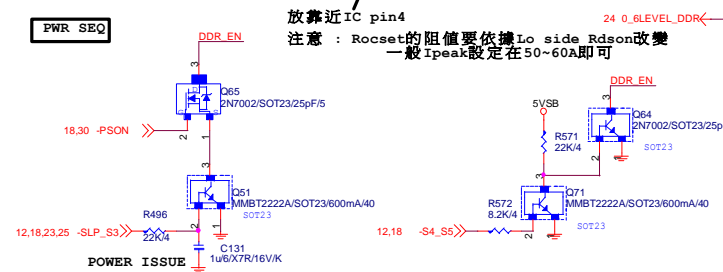


up6262	0X2A	0X20	0X22	0X26
VREF1	DDRVTT	VREF_DDRA_DQ	VCC1_05_PCH	VCORE
VREF2	VREF_DDRA_CA	DDR15V	VCC1_8_PCH	VCCSA
VREF3	VREF_DDRA_CAV	VREF_DDRB_DQ	CPU_VTT	SMREF

Gigabyte Technology			
Title CPU CORE VR-2			
Size Custom	Document Number	Rev 1.0	
Date: Thursday, May 05, 2011	Sheet 24 of 33	GA-PH67-DS3-B3	

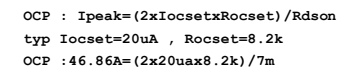


DDR18V



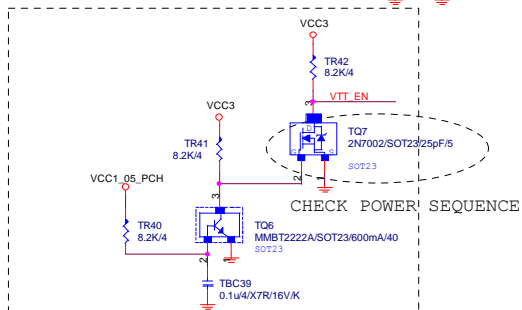
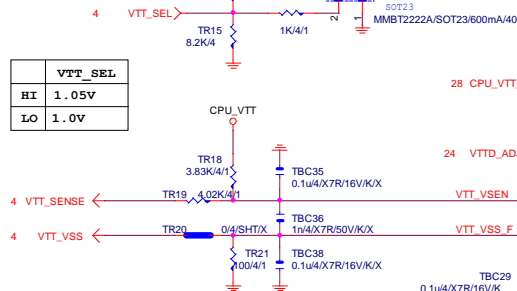
OCP : $I_{peak} = (2 \times I_{ocset} \times R_{ocset}) / R_{dson}$
 typ $I_{ocset} = 20\mu A$, $R_{ocset} = 4.7k$
 OCP : $53.71A = (2 \times 20\mu A \times 4.7k) / (7m / 7m)$

VCC1_05_PCH



CPU_VTT

VTT_SEL	
HI	1.05V
LO	1.0V

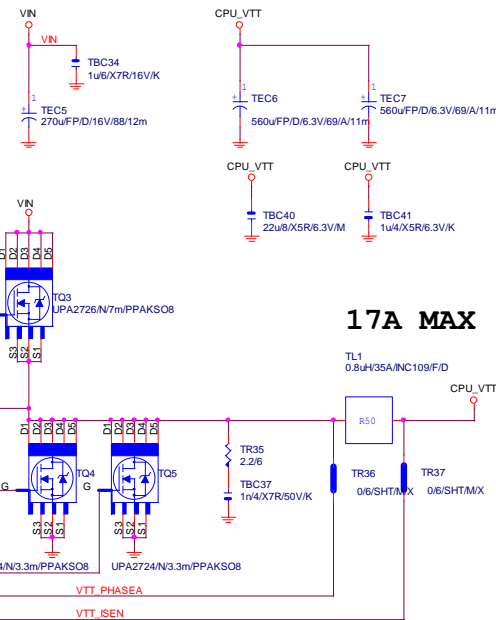


Patch EUP function

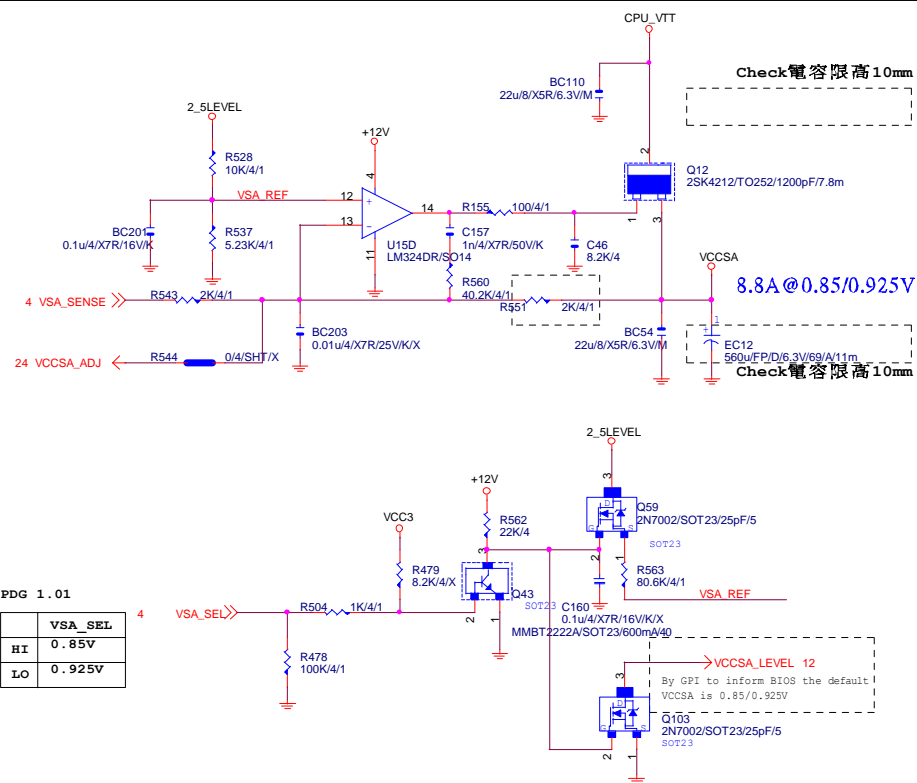
By GPI to inform BIOS the default CPU_VTT is 1.05/1.1V

BOTTOM PAD CONNECT TO GND THROUGH 4 VIA

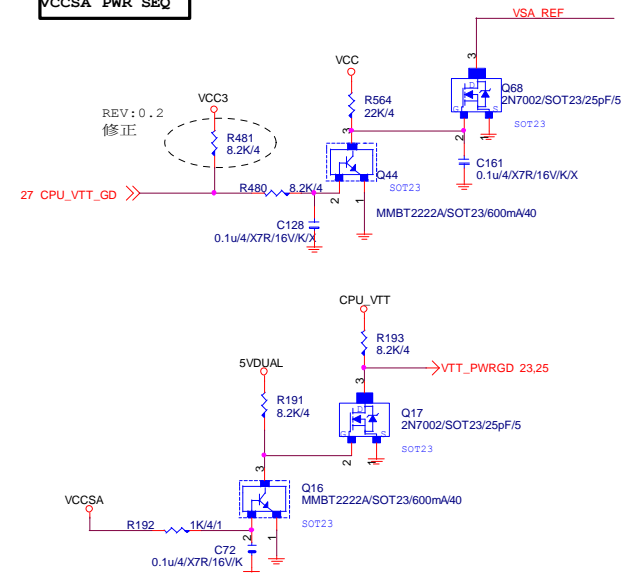
F_SEL	
PU	1MHz
PD	600KHz
NC	500KHz
Short GND	300KHz



VCC_SA



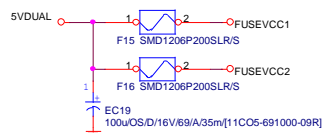
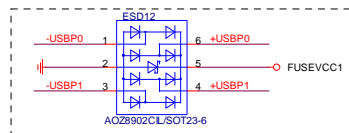
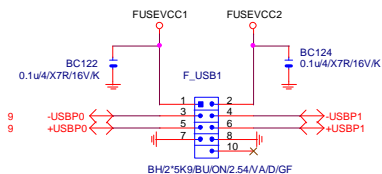
VCCSA_PWR_SEQ



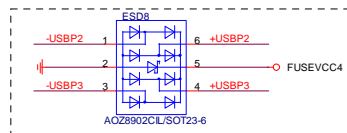
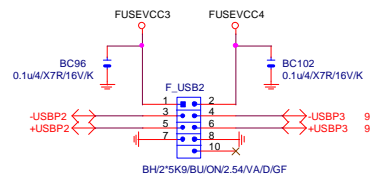
Gigabyte Technology

Title		
CPU VTT PWM_ISL6312		
Size	Document Number	Rev
Custm	GA-PH67-DS3-B3	1.0
Date:	Thursday, May 05, 2011	Sheet 28 of 33

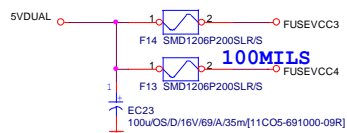
FRONT USB1



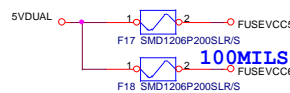
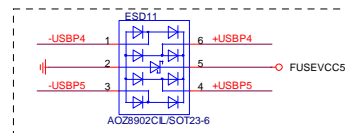
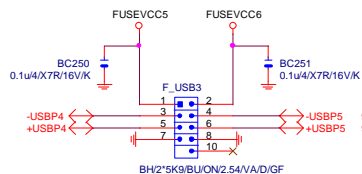
FRONT USB2



Close to connector



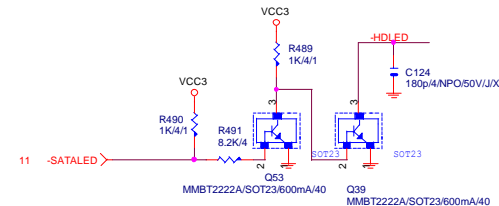
FRONT USB3



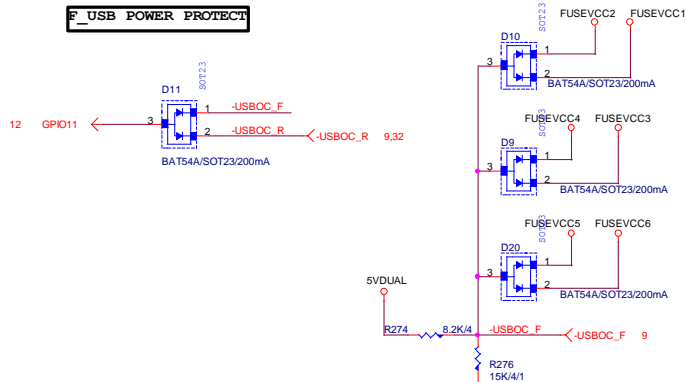
CASE OPEN



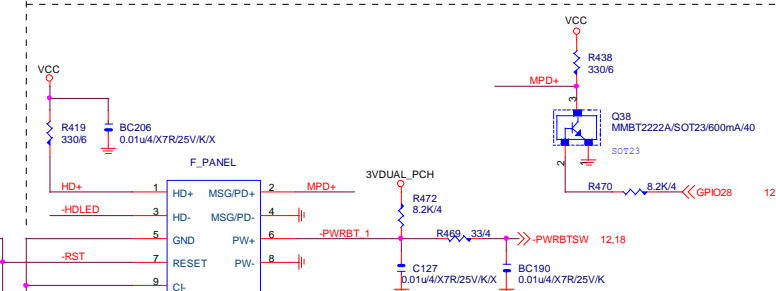
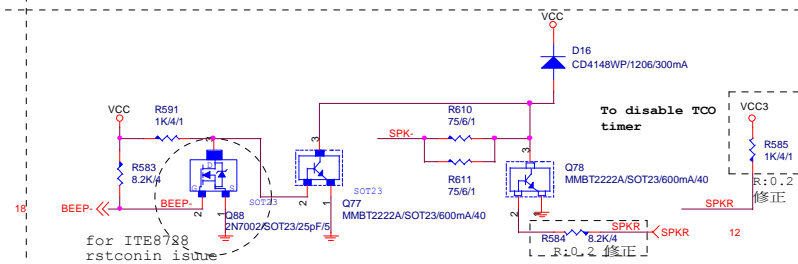
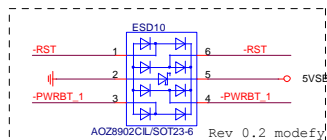
SATA LED



F_USB POWER PROTECT



INTEL FRONT PANEL



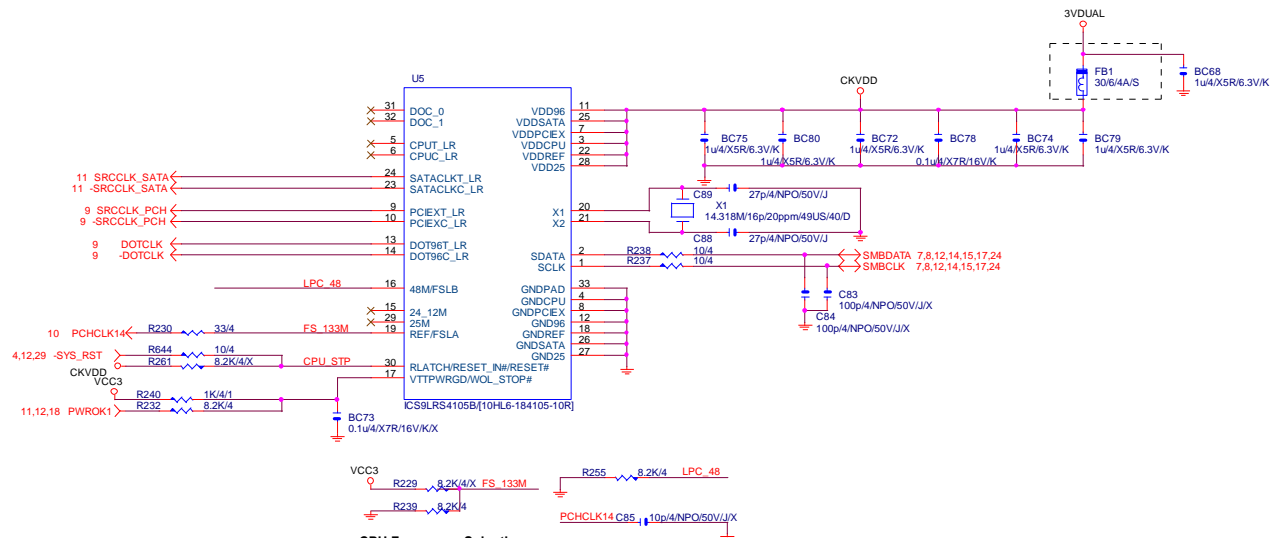
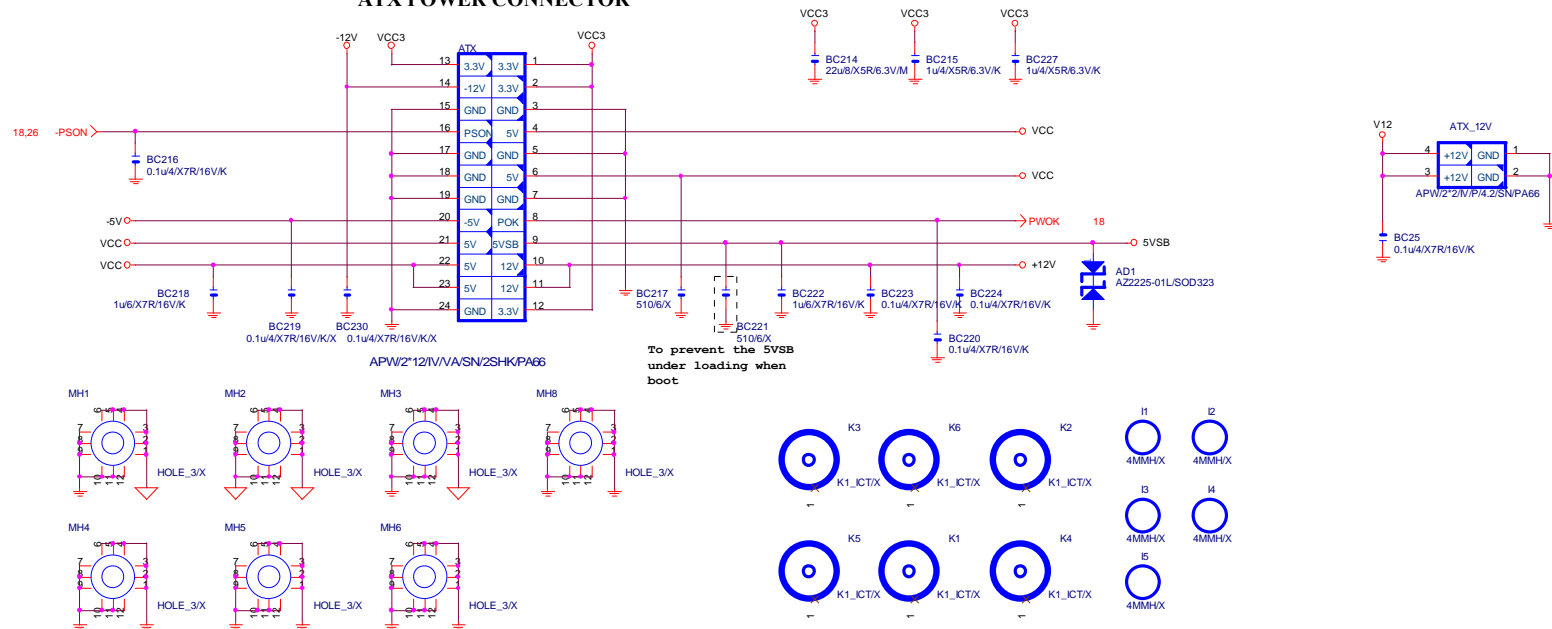
Gigabyte Technology

FP,F_USB,USB PWR,FDD,BZ

GA-PH67-DS3-B3

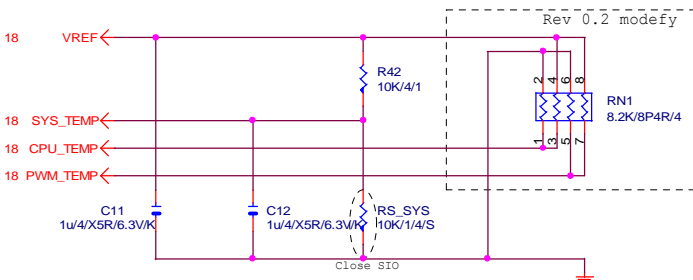
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Date:	Thursday, May 05, 2011	Sheet 29 of 33

ATX POWER CONNECTOR

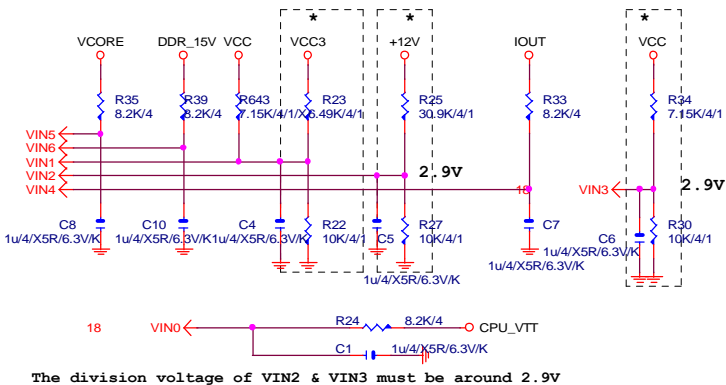


CPU Frequency Selection	
FS	CPU
0	100M <Default>
1	133M

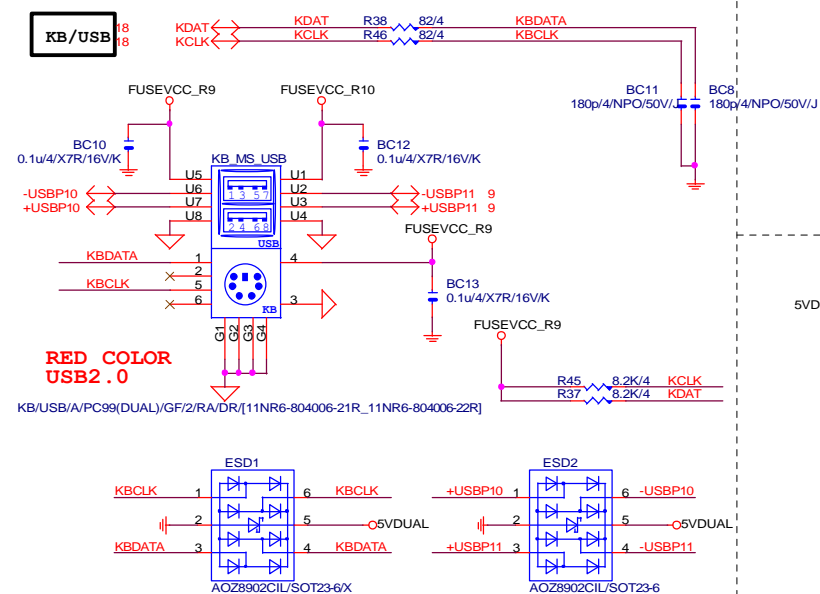
TEMP H/W MONITOR



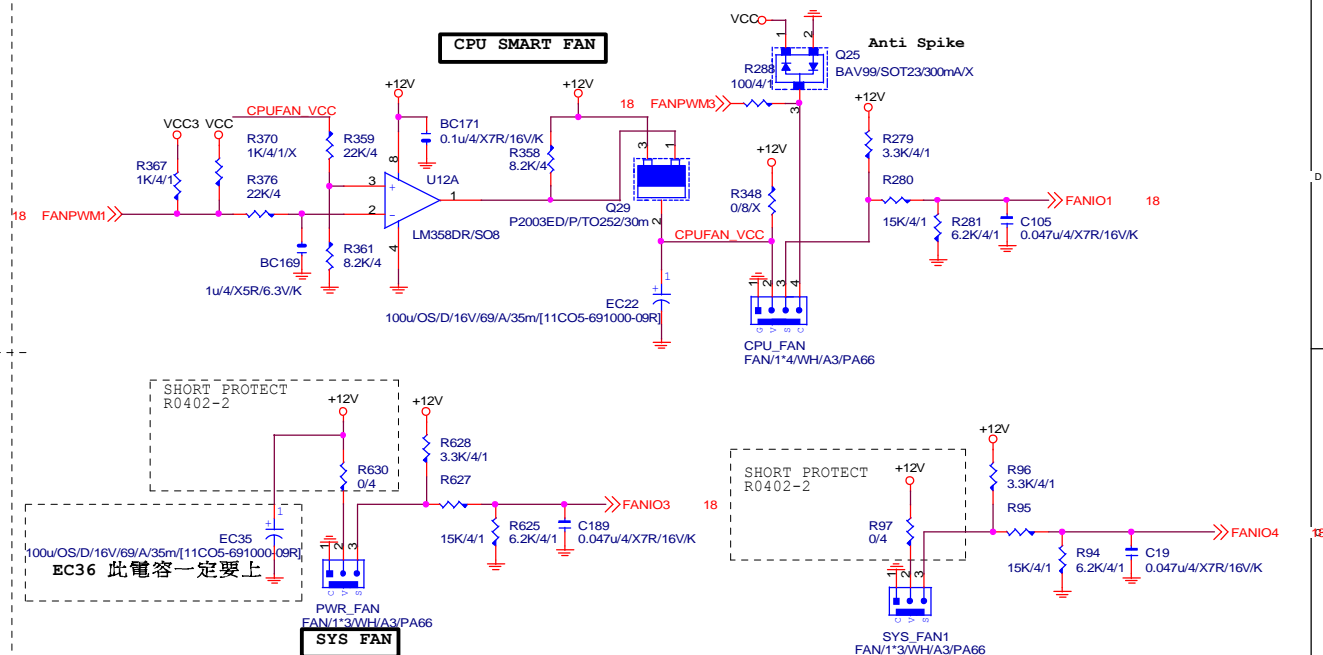
VOLTAGE-- H/W MONITOR



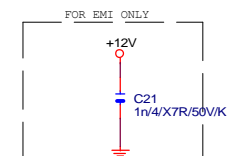
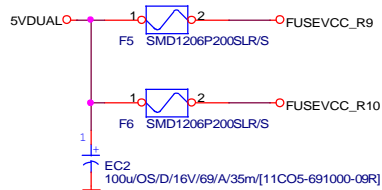
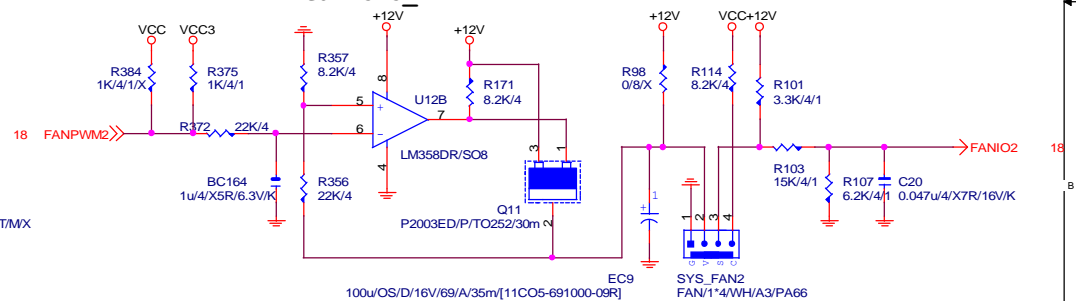
KB/USB



CPU SMART FAN



Linear SYS_FAN



Gigabyte Technology

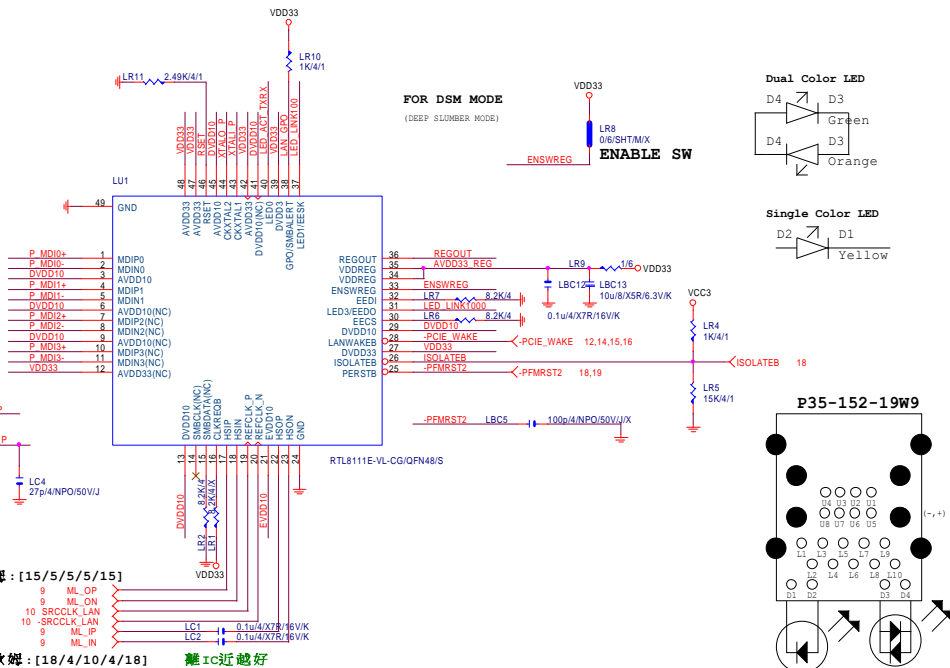
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Size			Document Number			Rev		
Custom			GA-PH67-DS3-B3			1.0		
Date:			Thursday, May 05, 2011			Sheet 31 of 33		

PCIE-1G LAN

Power domain chart

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



USB30_LAN CONNECTOR

