

Model Name: GA-C1037UN-L

Revision 1.0

SHEET

TITLE

01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	Celeron1037 PCIE_DMI_FDI_eDP
05	Celeron1037 MEM Controller
06	Celeron1037 PWR
07	Celeron1037 GND
08	DDR III CHANNEL A,B
09	NM70 FDI, DMI,USB,PCI
10	NM70 DISPLAY,GPIO
11	NM70 HOST,SATA,PCI
12	NM70 CLK BUFFER,PCIE
13	NM70 PWR
14	NM70 GND
15	IT8892E
16	PCI SLOT
17	ITE 8620 LPC IO
18	COM,KB_MS,R_USB,-PROCHOT
19	HWM,FAN CTRL,OV,
20	DUAL BIOS
21	FP,FUSB,SPK,SATALED
22	Realtek ALC887-VD2
23	REAR AUDIO JACK
24	Realtek RTL8111F
25	DISCRETE POWER
26	ATX
27	CPU_VTT

SHEET

TITLE

28	VCORE PWM ISL95836_1
29	VCORE PWM ISL95836_2
30	HDMI,LPT
31	JMB368

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**Gigabyte Technology**

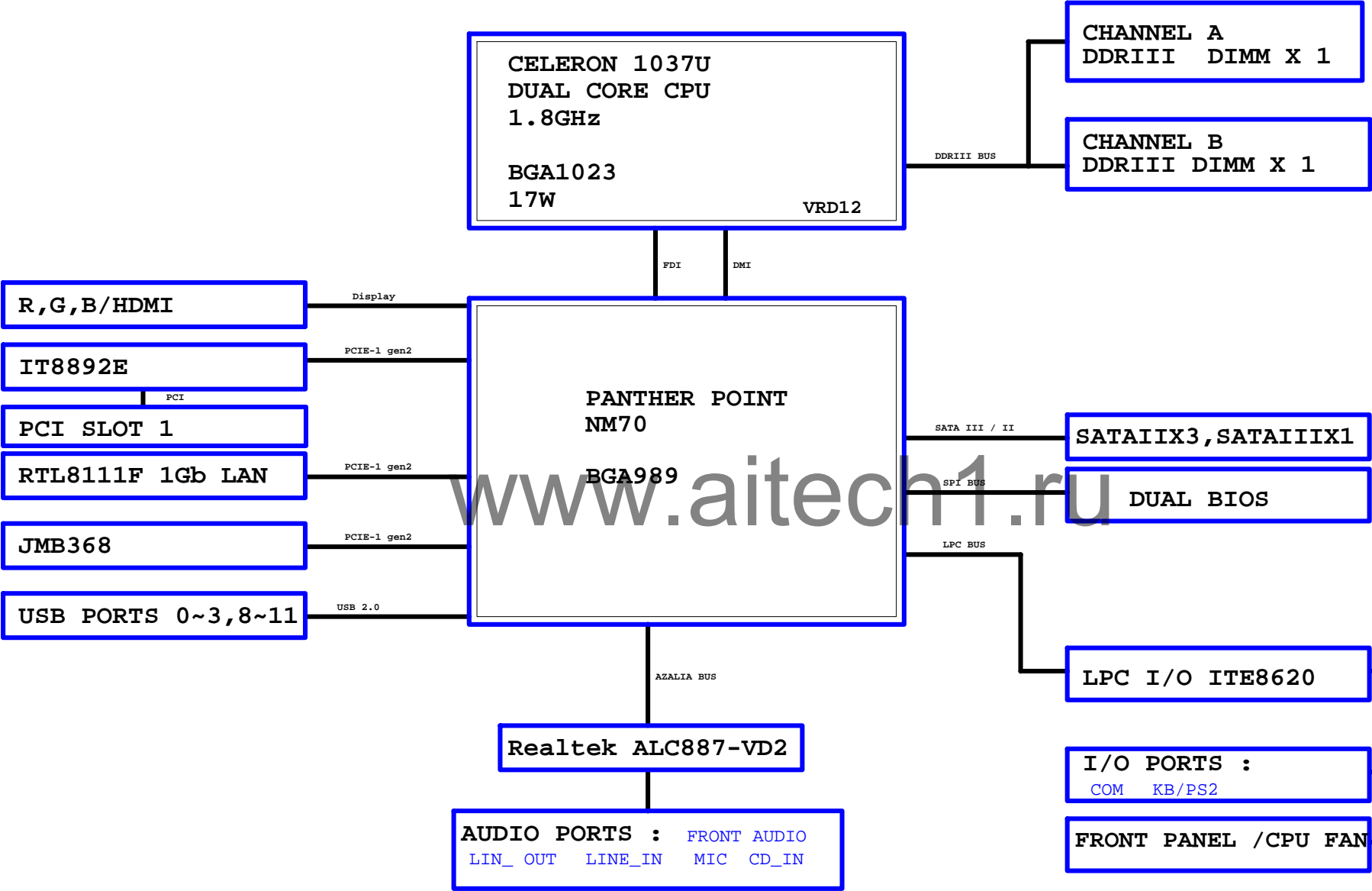
Title			Cover Sheet
Size	Document Number	GA-C1037UN-L	
Custom			Rev 1.0
Date:	Tuesday, September 17, 2013	Sheet 1	of 31

Revision 1.0

## 2013/09/13

[illegible][illegible]

BLOCK DIAGRAM



### *Sandy Bridge 2C BGA Processor (CLK,MISC,JTAG)*

### PEG Compensation

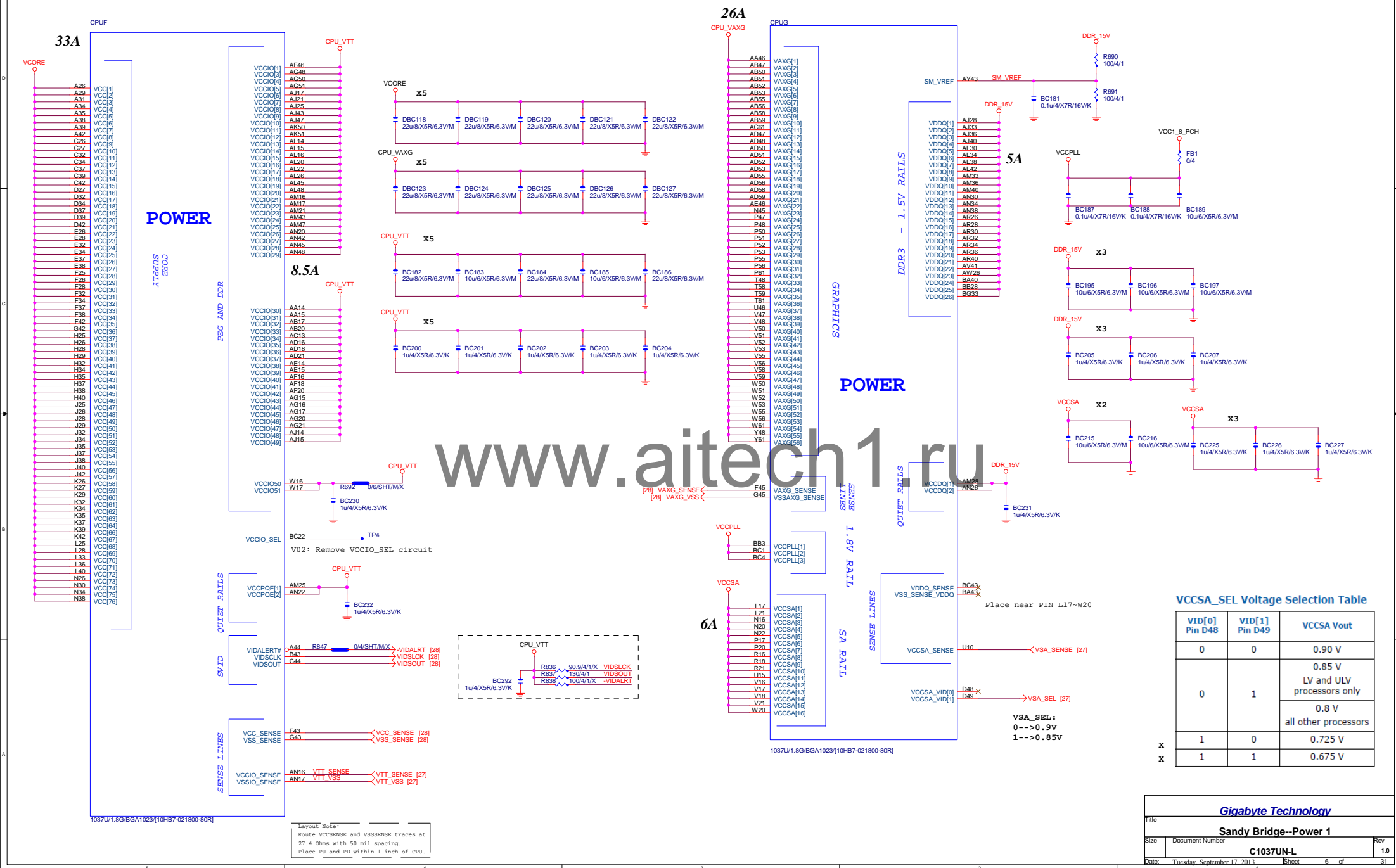


## CPU RST

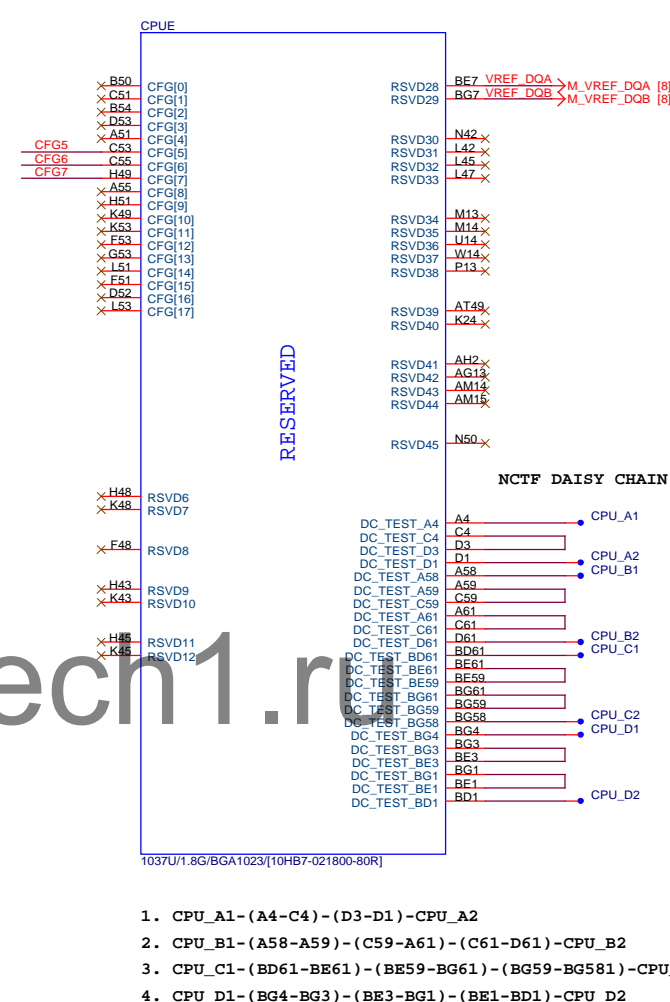




### *Sandy Bridge 2C BGA Processor (Power)*



***Sandy Bridge 2C BGA Processor (Reserved)***



CFG6	CFG5	PCIE CONFIG
1	1	1X16 , Default
1	0	2X8
0	1	RSVD
0	0	X8_X4_X4

R696	1K/4/1/X
R697	1K/4/1/X
R698	1K/4/1/X

### Sandy Bridge --GND

Size	Document Number	Rev
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	C1037UN-L	1
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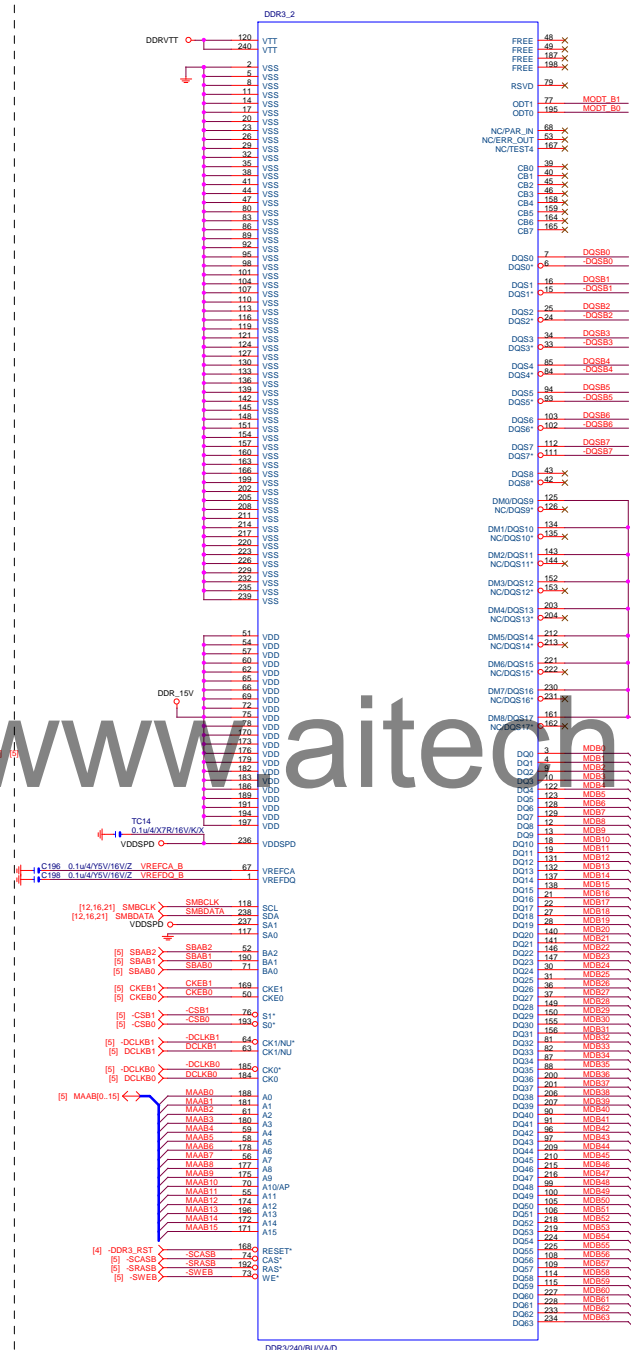
Date: Tuesday, September 17, 2013 Sheet 7 of 3

[illegible]

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## DDR CHE



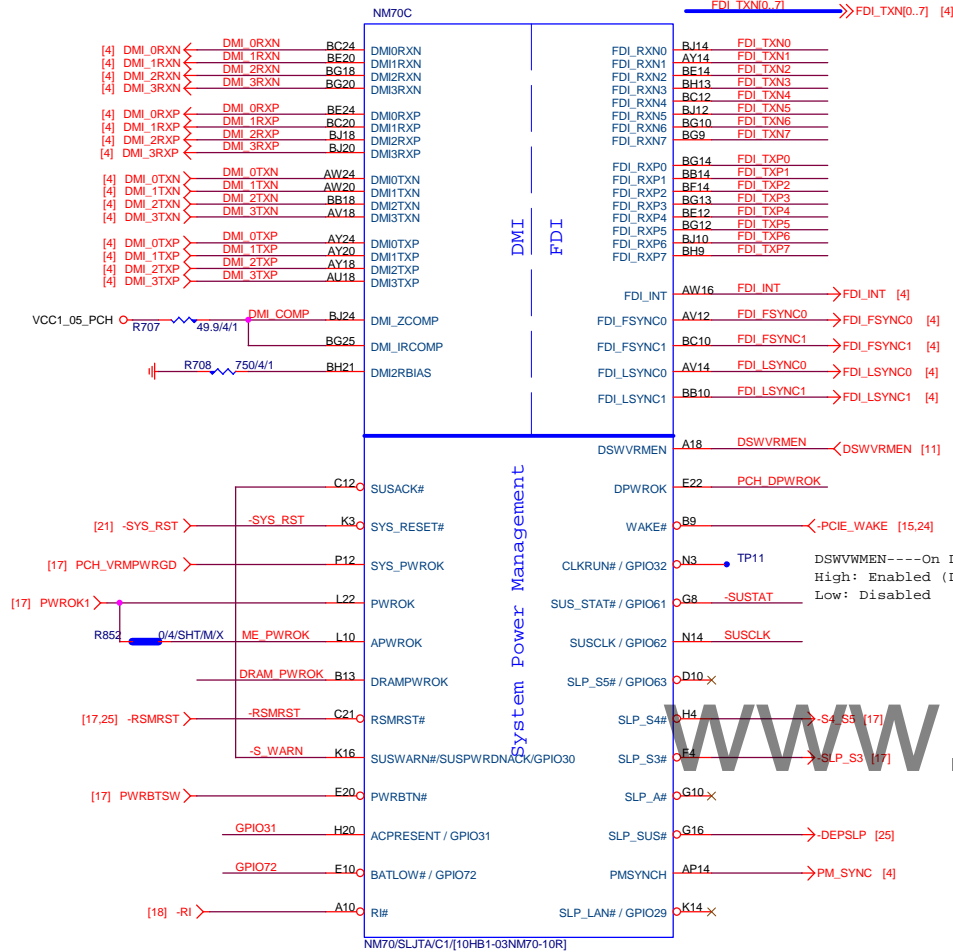
The schematic shows two voltage divider circuits. The first circuit, labeled VREF\_DQA, is connected to a 15V supply (DDR\_15V) and a reference input (REFCA\_A). It consists of a 1K401 resistor in series with a parallel combination of R700 and R702. The output is taken from the node between R700 and R702. The second circuit, labeled VREF\_DQB, is connected to the same 15V supply and a different reference input (REFCA\_B). It consists of a 1K401 resistor in series with a parallel combination of R704 and R706. The output is taken from the node between R704 and R706. Both circuits include a feedback resistor of 0/47K connected to the output.

*DDR\_15V Decouple*

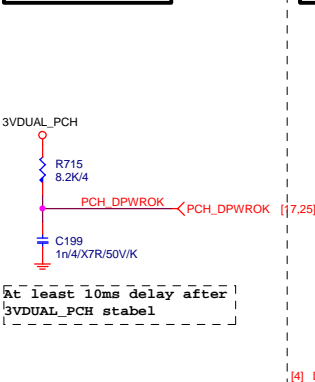
### DDRVTT Decouple



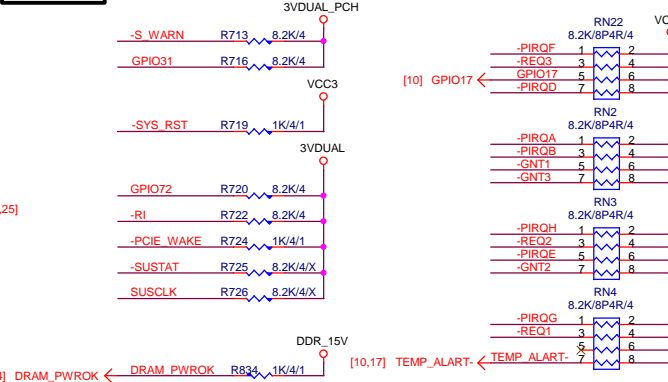
# PCH C



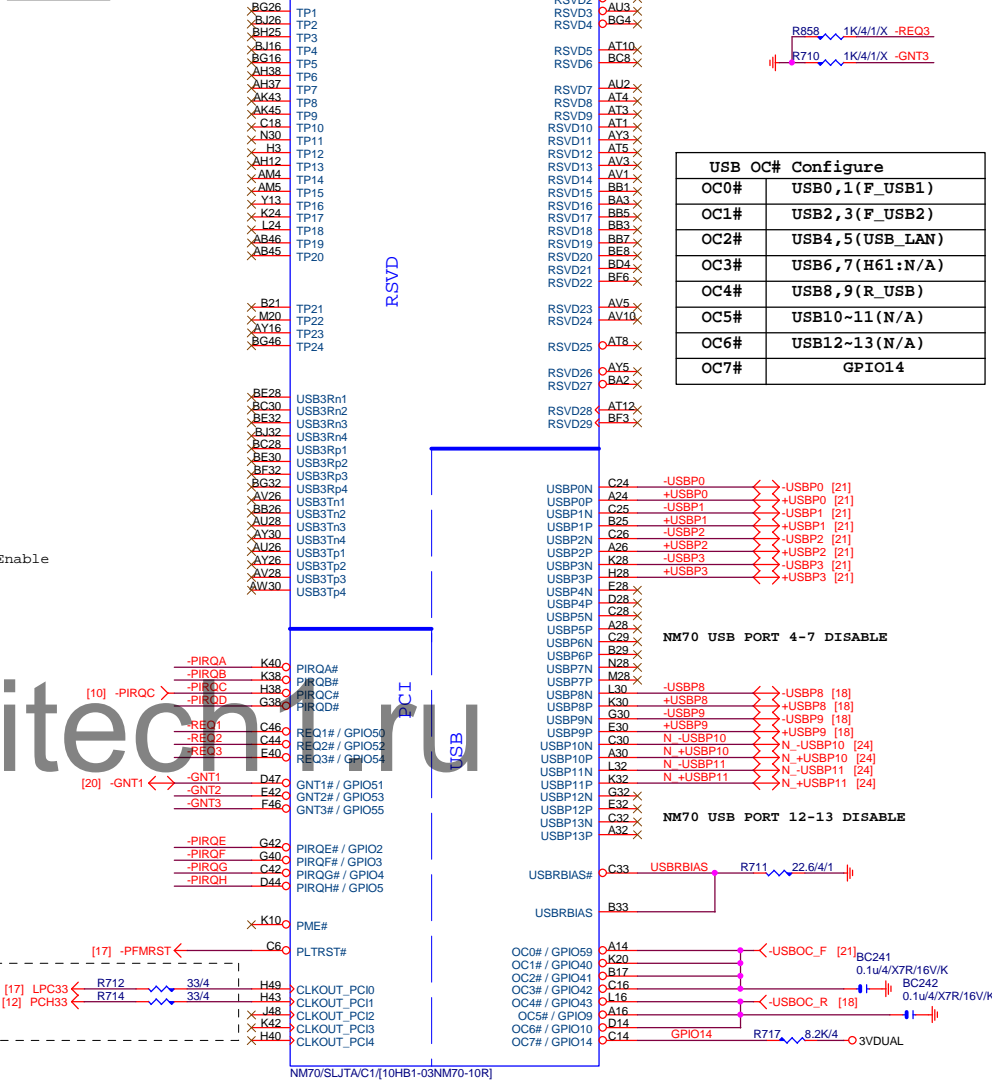
# PCH\_DPWROK



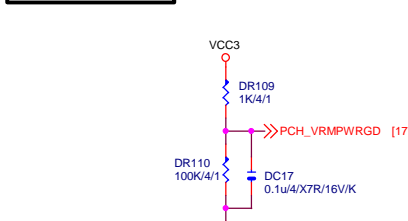
# PCH\_PU



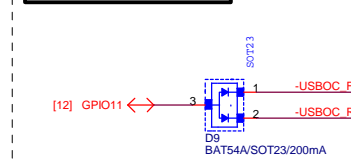
# PCH E



# PCH\_VRMPWRGD

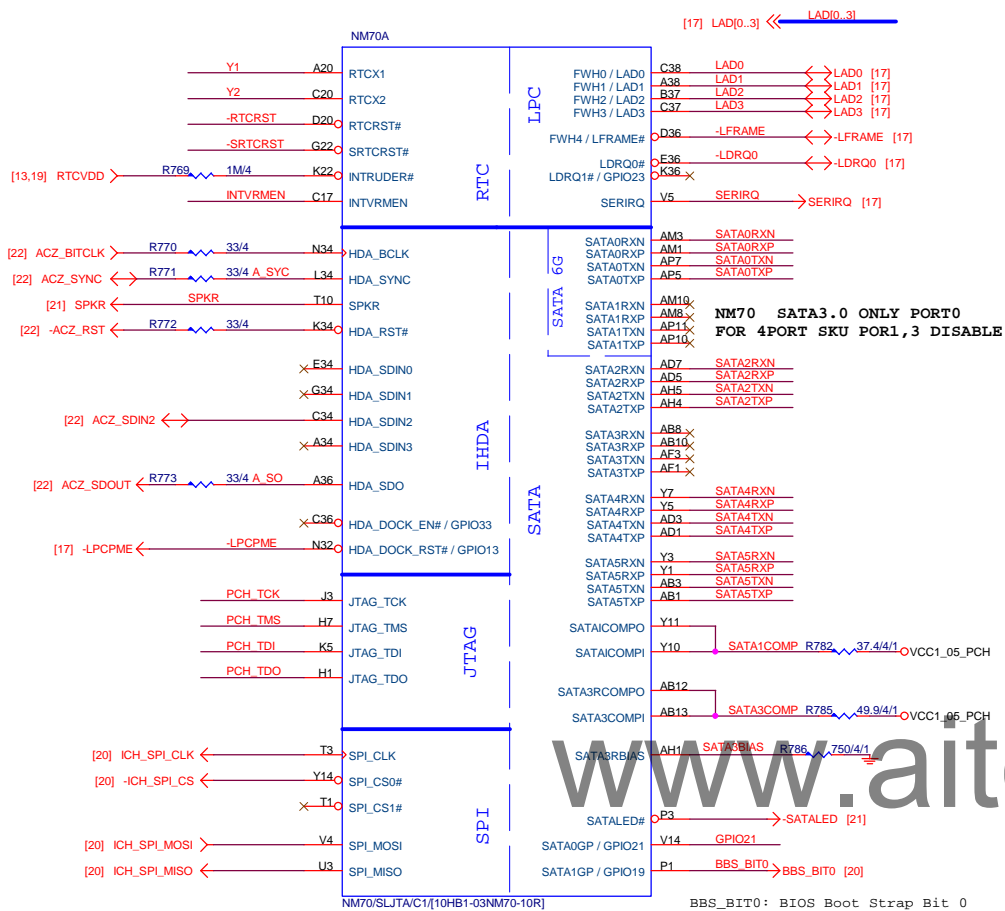


# FUSE SHORT GPIO

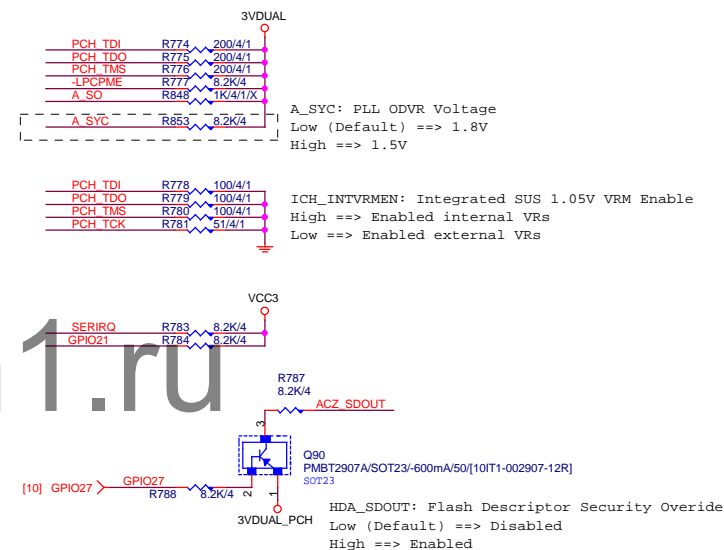
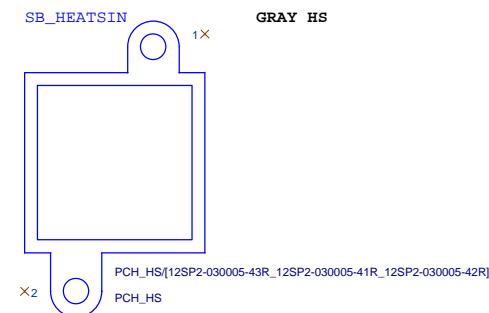




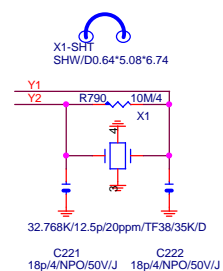
PCH A



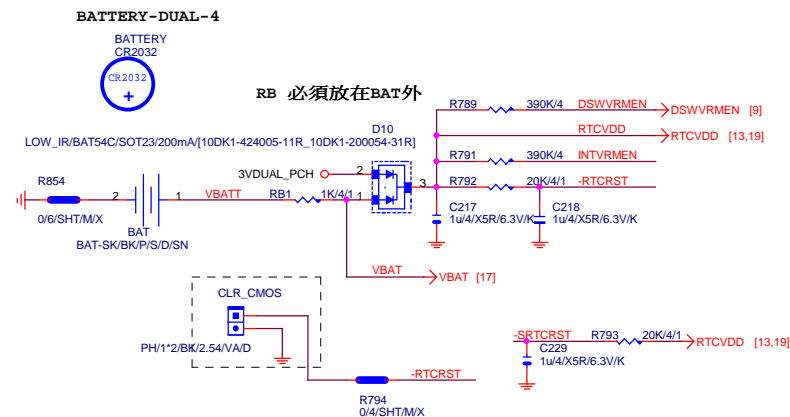
## PCH HS



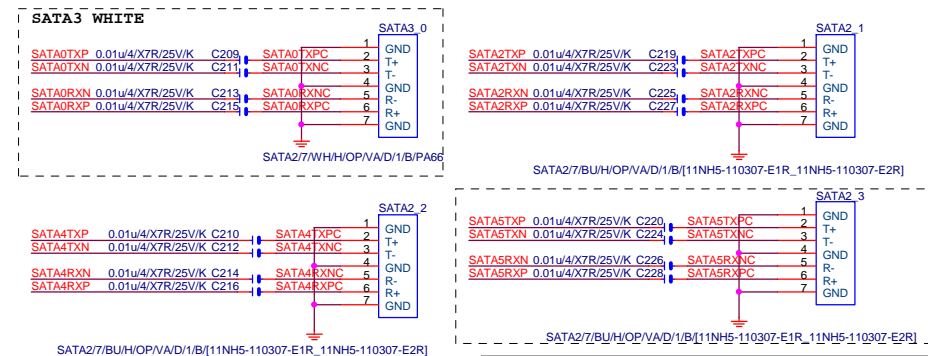
## X'TAL 32.768K



## BATTERY



SATA CONN



H1X7-SATA2-HS-MASK

***Gigabyte Technology***

**PCH HOST , SATA, PCI**

GA-C1037UN-L

Rev  
1.0

Date: Tuesday, September 17, 2013 Sheet 11 of 31

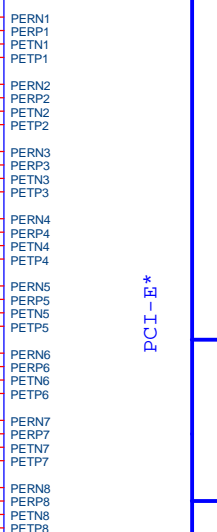
Sheet 11 of 31

## PCH B

LAN

JM368 BRIDGE

NM70B



NM70 5~8 PORT DISABLE

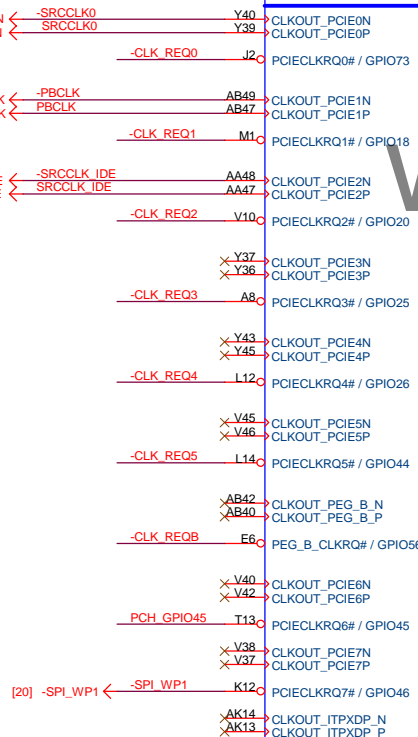
PCI-E\*

CLOCKS

LAN

BRIDGE

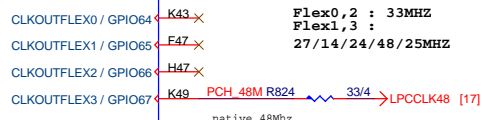
JM368



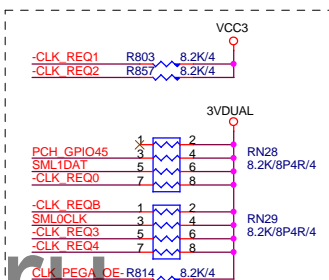
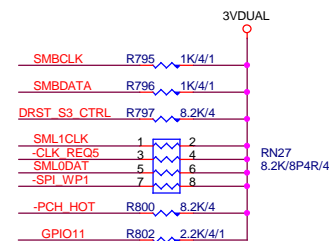
all the CLKRQ# signals are Mobile Only.

NM70/SLJTA/C1/[10HB1-03NM70-10R]

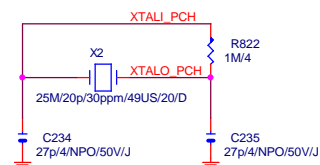
FLEX CLOCKS



## PCH PH



## PCH XTAL 25M



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Title		
PCH GPIO , CTRL , AUDIO		
Size	Document Number	Rev
Custm	GA-C1037UN-L	1.0
Date:	Tuesday, September 17, 2013	Sheet 12 of 31



NM70H		
H5	VSS[0]	
AA17	VSS[1]	AK38
AA2	VSS[2]	AK4
AA3	VSS[3]	AK8
AA33	VSS[4]	AK42
AA34	VSS[5]	AK46
AB11	VSS[6]	AK8
AB14	VSS[7]	AL16
AB39	VSS[8]	AL17
AB4	VSS[9]	AL19
AB43	VSS[10]	AL2
AB5	VSS[11]	AL21
AB7	VSS[12]	AL23
AC19	VSS[13]	AL26
AC2	VSS[14]	AL27
AC21	VSS[15]	AL31
AC24	VSS[16]	AL33
AC33	VSS[17]	AL34
AC34	VSS[18]	AL48
AC48	VSS[19]	AM11
AD10	VSS[20]	AM14
AD11	VSS[21]	AM36
AD12	VSS[22]	AM39
AD13	VSS[23]	AM43
AD19	VSS[24]	AM45
AD24	VSS[25]	AM46
AD26	VSS[26]	AM7
AD27	VSS[27]	AN2
AD33	VSS[28]	AN29
AD34	VSS[29]	AN3
AD36	VSS[30]	AN31
AD37	VSS[31]	AP12
AD38	VSS[32]	AP19
AD39	VSS[33]	AP28
AD4	VSS[34]	AP30
AD40	VSS[35]	AP32
AD42	VSS[36]	AP38
AD43	VSS[37]	AP4
AD46	VSS[38]	AP42
AD8	VSS[39]	AP46
AE2	VSS[40]	AP8
AE3	VSS[41]	AR2
AE10	VSS[42]	AR48
AE12	VSS[43]	AT11
AD14	VSS[44]	AT13
AD16	VSS[45]	AT16
AF12	VSS[46]	AT22
AF16	VSS[47]	AT26
AF19	VSS[48]	AT28
AF24	VSS[49]	AT30
AF26	VSS[50]	AT32
AF27	VSS[51]	AT34
AF29	VSS[52]	AT39
AF31	VSS[53]	AT42
AF38	VSS[54]	AT46
AF4	VSS[55]	AT7
AF42	VSS[56]	AU24
AF46	VSS[57]	AU30
AF5	VSS[58]	AV16
AF7	VSS[59]	AV20
AF8	VSS[60]	AV24
AG19	VSS[61]	AV30
AG2	VSS[62]	AV38
AG31	VSS[63]	AV4
AG48	VSS[64]	AV43
AH11	VSS[65]	AV8
AH3	VSS[66]	AW14
AH36	VSS[67]	AW18
AH39	VSS[68]	AW2
AH40	VSS[69]	AW22
AH42	VSS[70]	AW28
AH46	VSS[71]	AW32
AH7	VSS[72]	AW34
AJ19	VSS[73]	AW38
AJ21	VSS[74]	AW40
AJ24	VSS[75]	AW48
AJ33	VSS[76]	AV11
AJ34	VSS[77]	AY12
AK12	VSS[78]	AY22
AK3	VSS[79]	AY28

NM70/SLJTA/C1/[10HB1-03NM70-10R]

NM70I		
AY4	VSS[159]	
AY42	VSS[160]	H46
AY46	VSS[161]	K18
AY8	VSS[162]	K26
B11	VSS[163]	K39
B15	VSS[164]	K46
B19	VSS[165]	K7
B23	VSS[166]	L18
B27	VSS[167]	L2
B31	VSS[168]	L20
B35	VSS[169]	L26
B39	VSS[170]	L28
B7	VSS[171]	L36
F45	VSS[172]	L48
BB12	VSS[173]	M12
BB16	VSS[174]	M16
BB20	VSS[175]	M18
BB22	VSS[176]	M22
BB24	VSS[177]	M24
BB28	VSS[178]	M30
BB30	VSS[179]	M32
BB36	VSS[180]	M34
BB4	VSS[181]	M38
BB46	VSS[182]	M4
BC14	VSS[183]	M42
BC18	VSS[184]	M46
BC2	VSS[185]	M8
BC22	VSS[186]	N18
BC26	VSS[187]	P30
BC32	VSS[188]	N47
BC34	VSS[189]	P11
BC36	VSS[190]	P18
BC40	VSS[191]	T33
BC42	VSS[192]	P40
BC48	VSS[193]	P43
BD46	VSS[194]	P47
BD6	VSS[195]	P7
BE22	VSS[196]	R2
BE26	VSS[197]	R48
BE40	VSS[198]	T12
BF10	VSS[199]	T31
BF12	VSS[200]	T37
BF16	VSS[201]	T4
BF20	VSS[202]	W34
BF22	VSS[203]	T46
BF24	VSS[204]	T47
BF28	VSS[205]	T8
BD3	VSS[206]	V11
BF30	VSS[207]	V17
BF32	VSS[208]	V26
BF40	VSS[209]	V27
BF8	VSS[210]	V29
BG17	VSS[211]	V31
BG21	VSS[212]	V36
BG33	VSS[213]	V39
BG42	VSS[214]	V43
BG8	VSS[215]	V73
BH11	VSS[216]	W17
BH15	VSS[217]	W19
BH17	VSS[218]	W2
BH19	VSS[219]	W27
H10	VSS[220]	W46
BH27	VSS[221]	Y12
BH31	VSS[222]	Y4
BH33	VSS[223]	Y42
BH35	VSS[224]	Y46
BH39	VSS[225]	Y8
BH43	VSS[226]	BG29
BH7	VSS[227]	N24
D3	VSS[228]	AJ3
D12	VSS[229]	AD47
D16	VSS[230]	B43
D18	VSS[231]	BE10
D22	VSS[232]	BG41
D24	VSS[233]	G14
D26	VSS[234]	H16
D30	VSS[235]	T36
D32	VSS[236]	BG22
D34	VSS[237]	BG24
D38	VSS[238]	C22
D42	VSS[239]	AP13
D8	VSS[240]	M14
E18	VSS[241]	AP3
E26	VSS[242]	AP1
G18	VSS[243]	BE16
G20	VSS[244]	BC16
G26	VSS[245]	BG28
G28	VSS[246]	BJ28
G36	VSS[247]	
G48	VSS[248]	
H12	VSS[249]	
H18	VSS[250]	
H22	VSS[251]	
H24	VSS[252]	
H26	VSS[253]	
H30	VSS[254]	
H32	VSS[255]	
H34	VSS[256]	
F3	VSS[257]	
	VSS[258]	

NM70/SLJTA/C1/[10HB1-03NM70-10R]

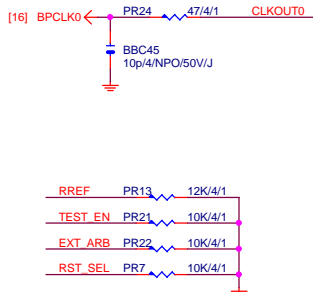
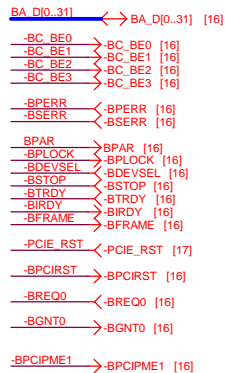
Gigabyte Technology

Title		
PCH ,GND		
Size	Document Number	Rev
Custom	GA-C1037UN-L	1.0
Date:	Tuesday, September 17, 2013	Sheet 14 of 31



# PCIe TO PCI

PCI:5/4/5 Impedance=50 +- 15%



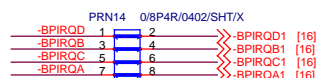
High: Enable PCI CLK 66MHz  
 Low: Disable PCI CLK 66MHz



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



IT8892



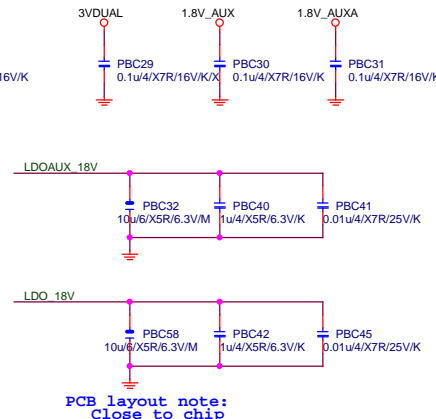
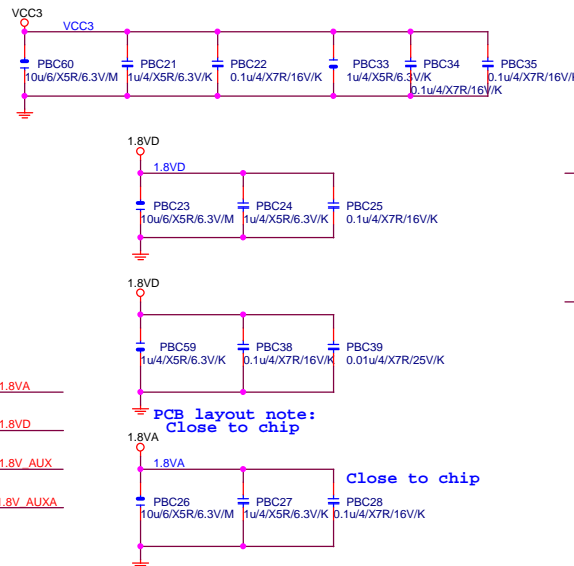
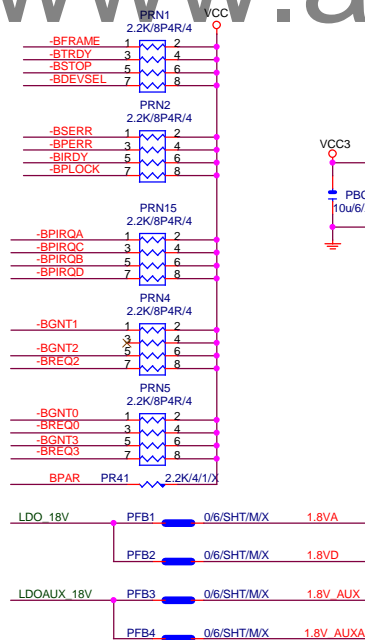
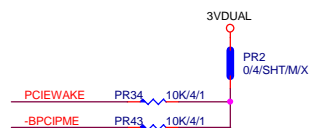
PCI slot



PCI slot



chipset side

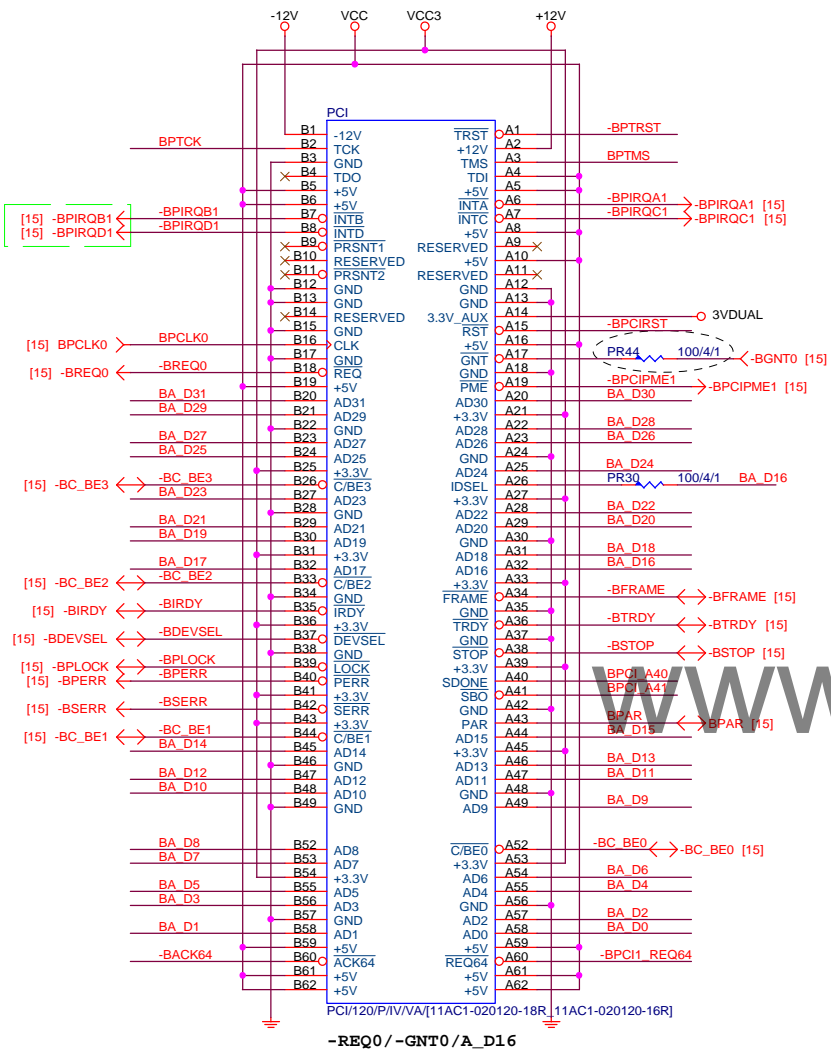


Gigabyte Technology

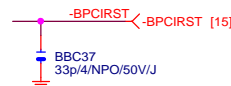
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Size			GA-C1037UN-L	
Document Number			Rev 1.0	
Date:	Tuesday, September 17, 2013	Sheet	15	of 31



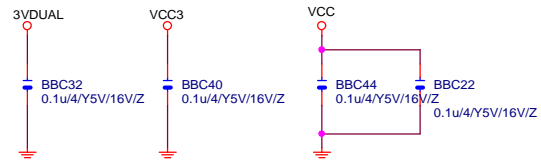
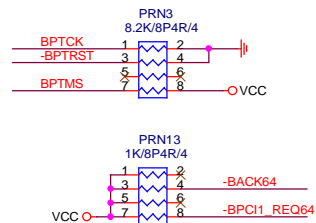
# PCI SLOT



[15] BA\_D0[0..31] → BA\_D0..31



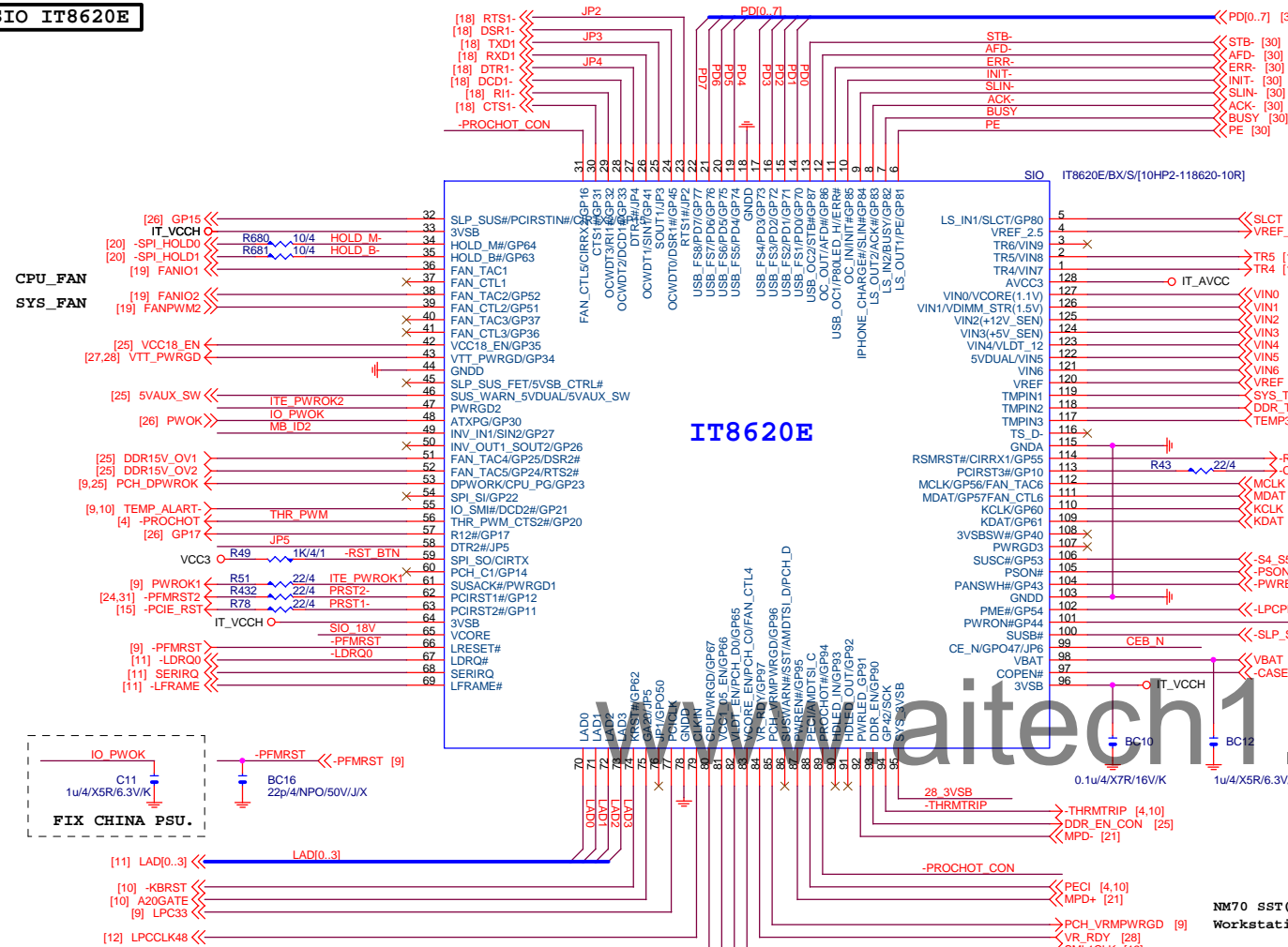
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[8,12,21] SMBCLK ← PR31 0/6/SHT/M/X BPC1\_A40  
[8,12,21] SMBDATA ← PR32 0/6/SHT/M/X BPC1\_A41

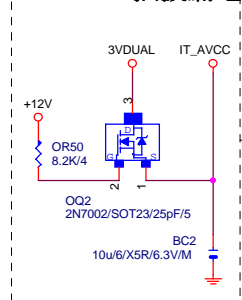
Gigabyte Technology			
PCI SLOT 1			
Size	Document Number	Rev	
Custom	GA-C1037UN-L	1.0	
Date:	Tuesday, September 17, 2013	Sheet	16 of 31

## SIO IT8620E

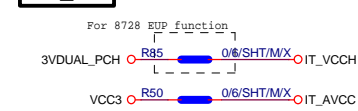


## IT8620E

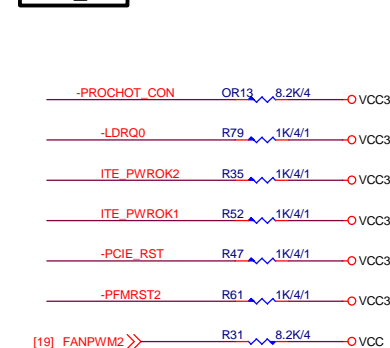
## FIX ATX 插拔漏電



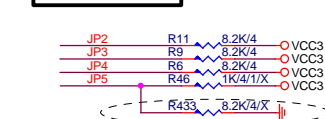
## PWR\_SHT



## SIO\_PU

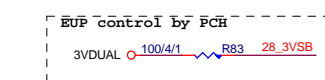


## SIO\_STRAP

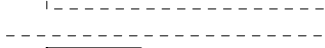


## IT8728-EX

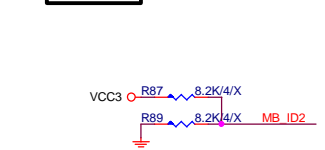
PULL DOWN ENABLE OVP



EUP control by PCH



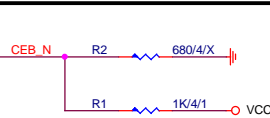
## MB\_ID



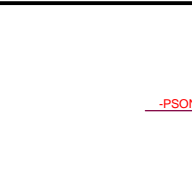
## IT8620 NOTE

IT8728	
PIN121	VCORE_EN/PCH_C0
PIN120	VLDT_EN/PCH_D0
PIN19	ATXPG
PIN31	PCH_C1
PIN53	SST/AMDTSI_D/MTRB#/PCH_D1
PIN55	PECI/AMDTSI_C/DRV#
PIN66	SYS_3VSB
PIN70	GP47
PIN95	VIN2(VCC5)
PIN96	VIN1(VCC12)
PIN97	VIN1/VDIMM_STR(1.5V)
PIN98	VIN0/VCORE(1.1V)/NC

## DUAL BIOS OPT STRAP



## Power leakage



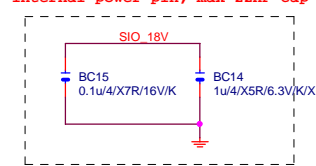
For IT8721 Power leakage

## SIO\_18V

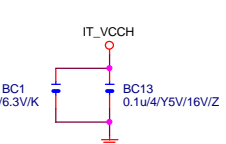
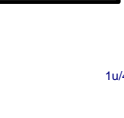


FOR LOW TEMP POWER ON INTO TEST MODE ISSUE

## internal power pin, max 22nF cap



## SIO CAP



## Gigabyte Technology

ITE 8728 LPC IO

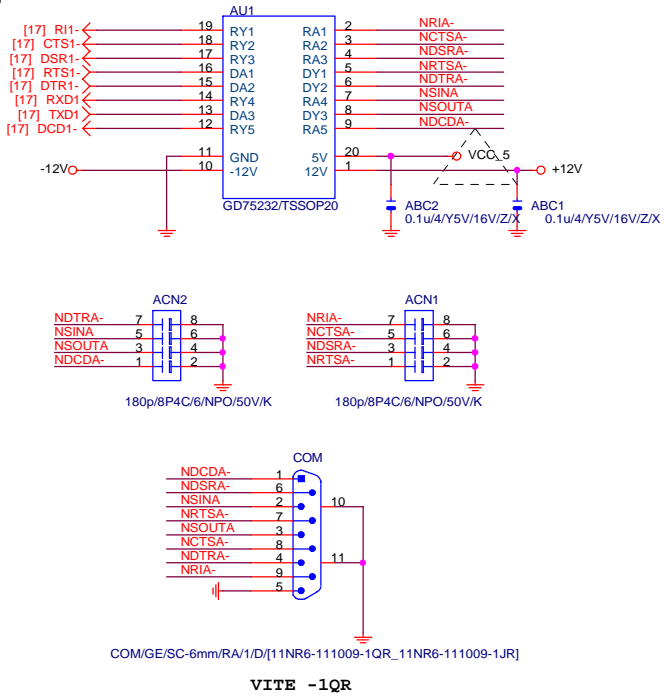
GA-C1037UN-L

Rev 1.0

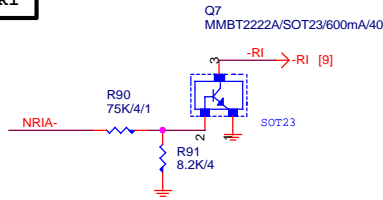
Date: Tuesday, September 17, 2013

Sheet 17 of 31

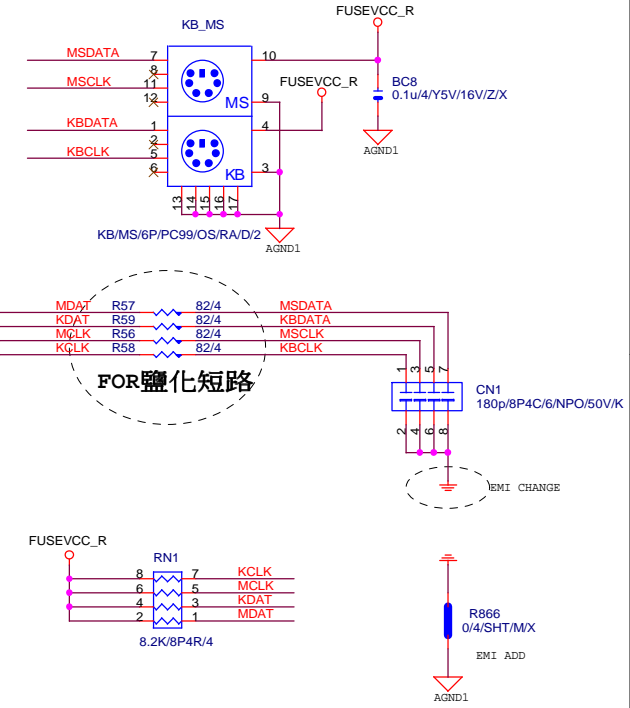
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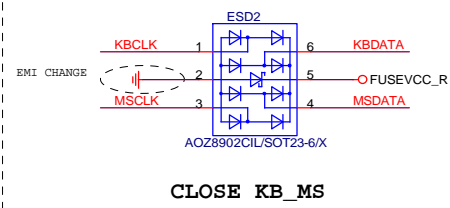
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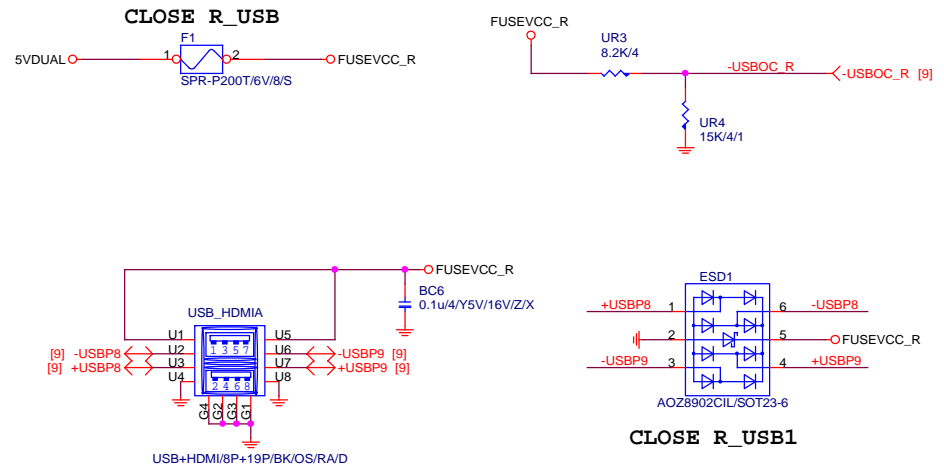
KB/MS



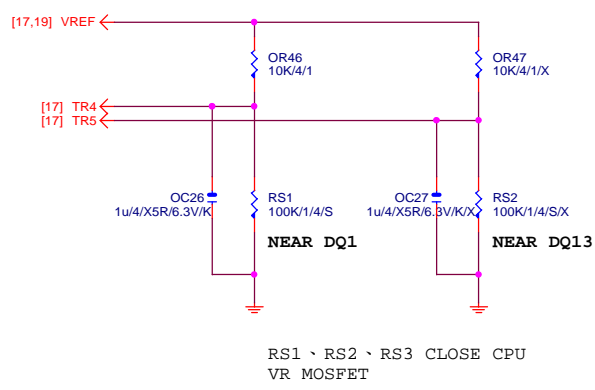
KB/MS ESD



R\_USB POWER

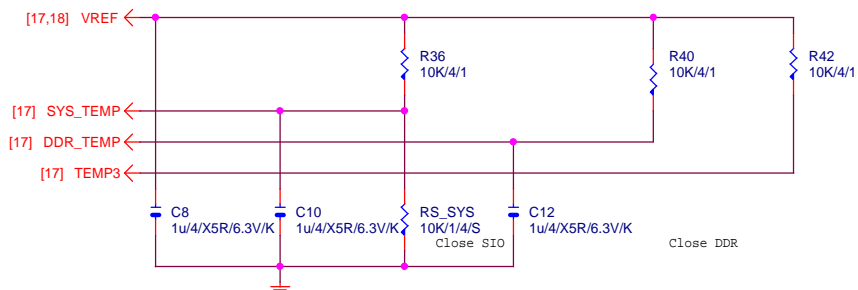


I/O TEMP SENSOR



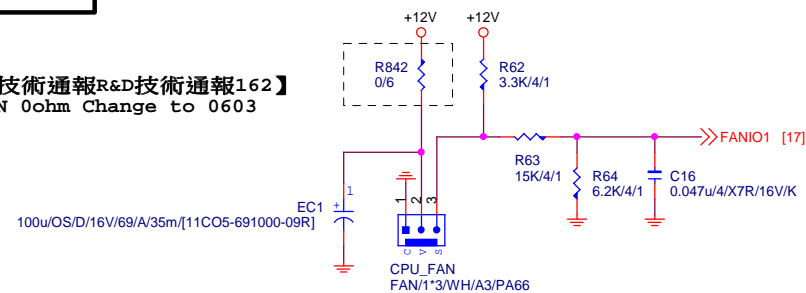
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# TEMP H/W MONITOR



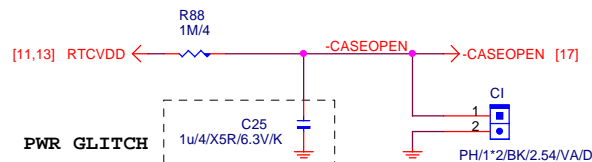
# CPU SMART FAN

【技術通報R&D技術通報162】  
FAN Ohm Change to 0603



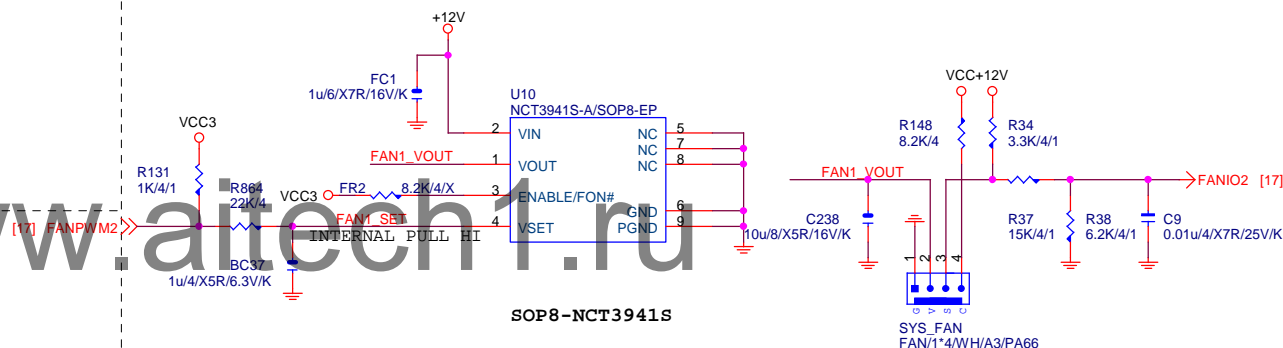
# CASE OPEN

Case Open Circuits



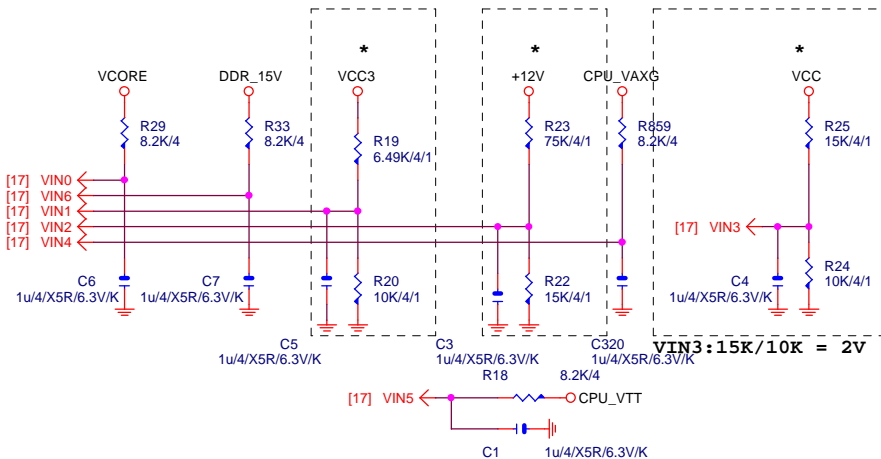
# SYS SMART FAN

Linear SYS\_FAN



# VOLTAGE-- H/W MONITOR

VIN2:75K/15K = 2V



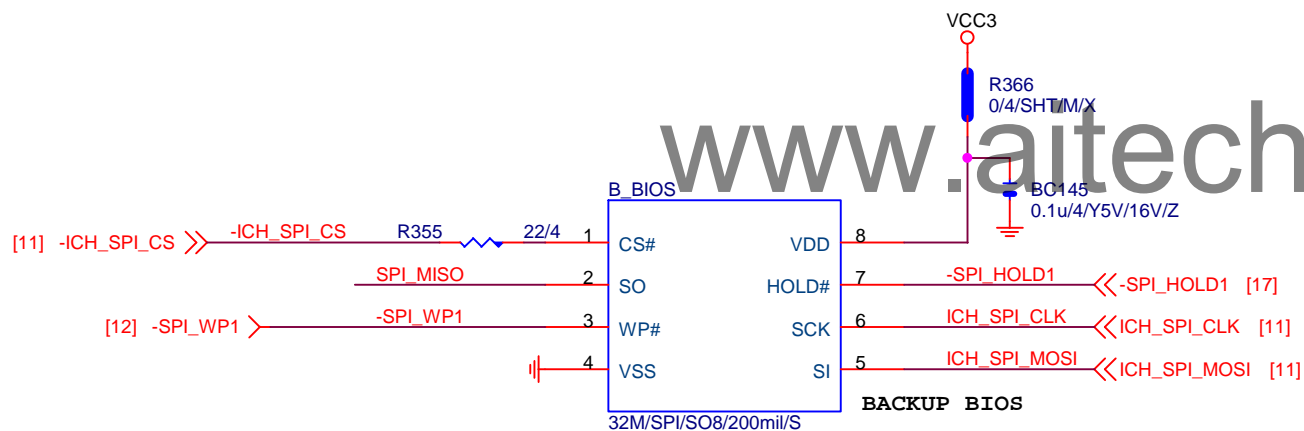
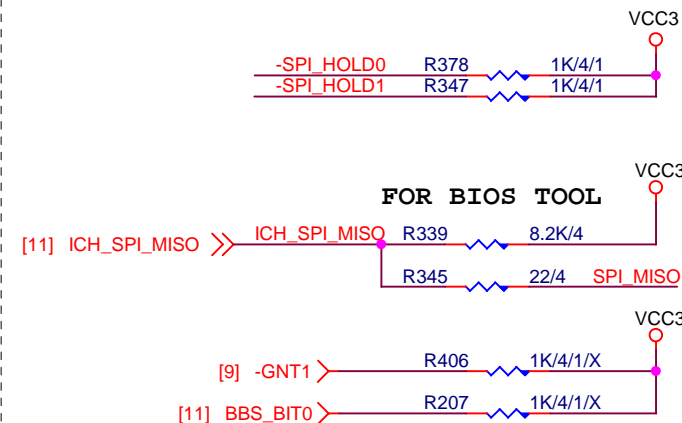
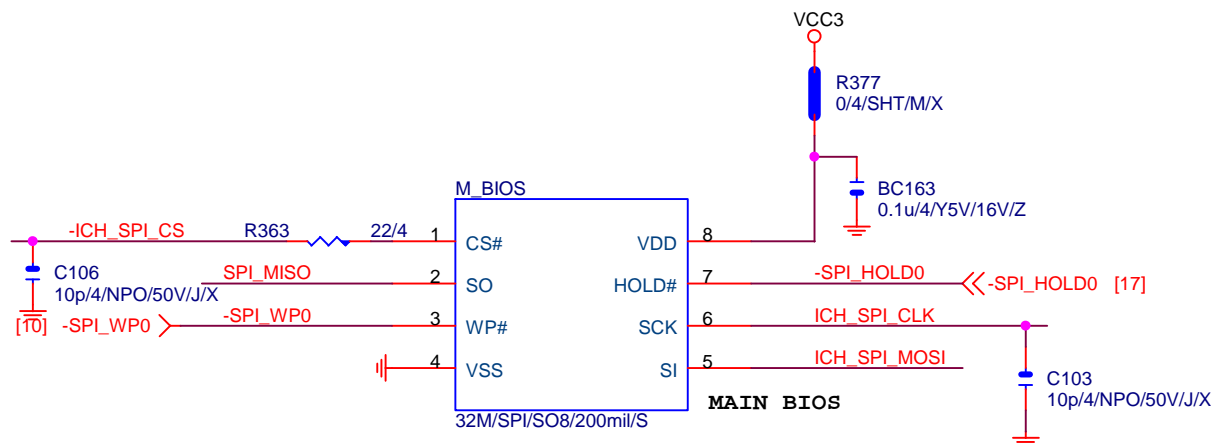
# O.V.

N/A

Gigabyte Technology

Title			HWM,FAN CTRL,OV	
Size	Document Number	GA-C1037UN-L		Rev
Custom				1.0
Date:	Tuesday, September 17, 2013	Sheet	19	of 31

# DUAL BIOS



Boot BIOS Strap		
PCI GNT#1	BBS BIT0	Boot BIOS Location
1	1	SPI (Default)
0	1	Reserved (NAND)
0	0	LPC

1 means floating  
0 means PD 1K

**Gigabyte Technology**

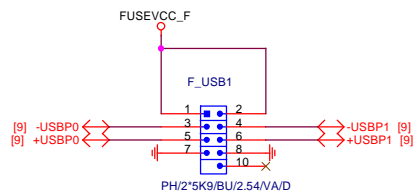
**DUAL BIOS**

**GA-C1037UN-L**

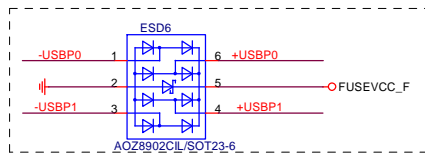
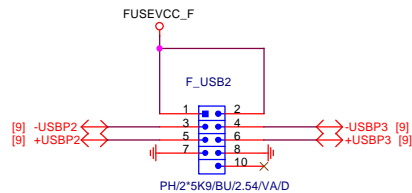
Rev  
**1.0**

Date: Tuesday, September 17, 2013 Sheet 20 of 31

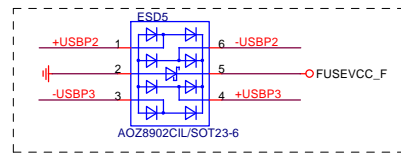
## FRONT USB1



## FRONT USB2

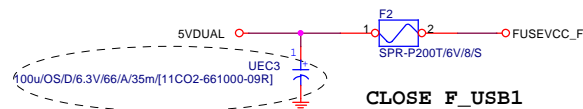


Close to connector

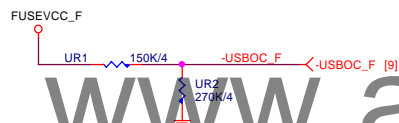


Close to connector

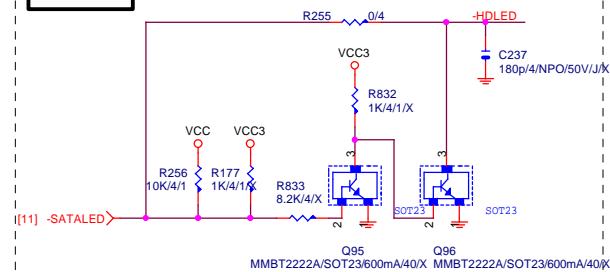
## FUSEVCC\_F



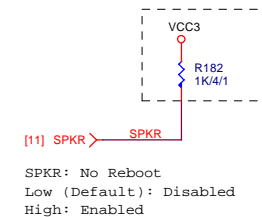
CLOSE F\_USB1



## SATA LED

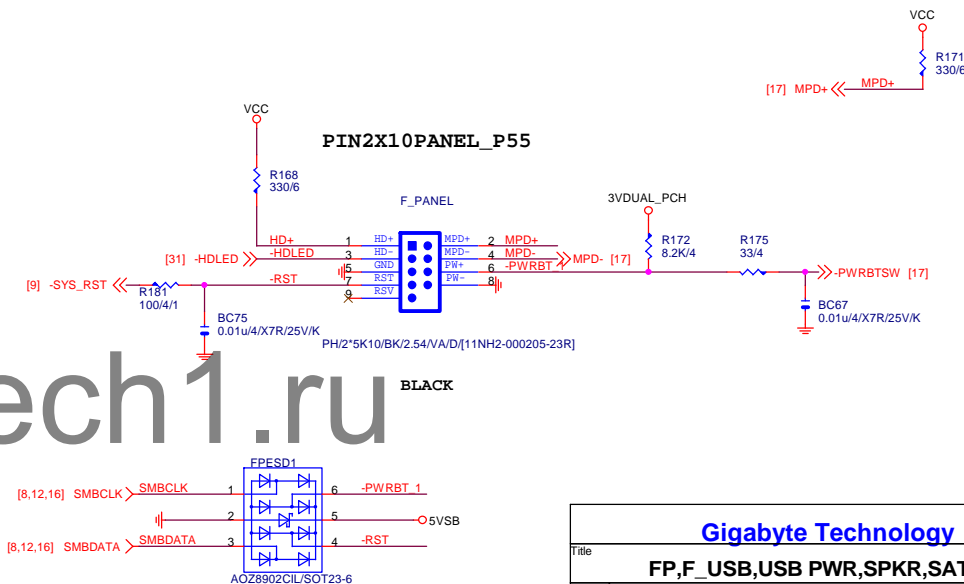


## SPKR



SPKR: No Reboot  
Low (Default): Disabled  
High: Enabled

## INTEL FRONT PANEL



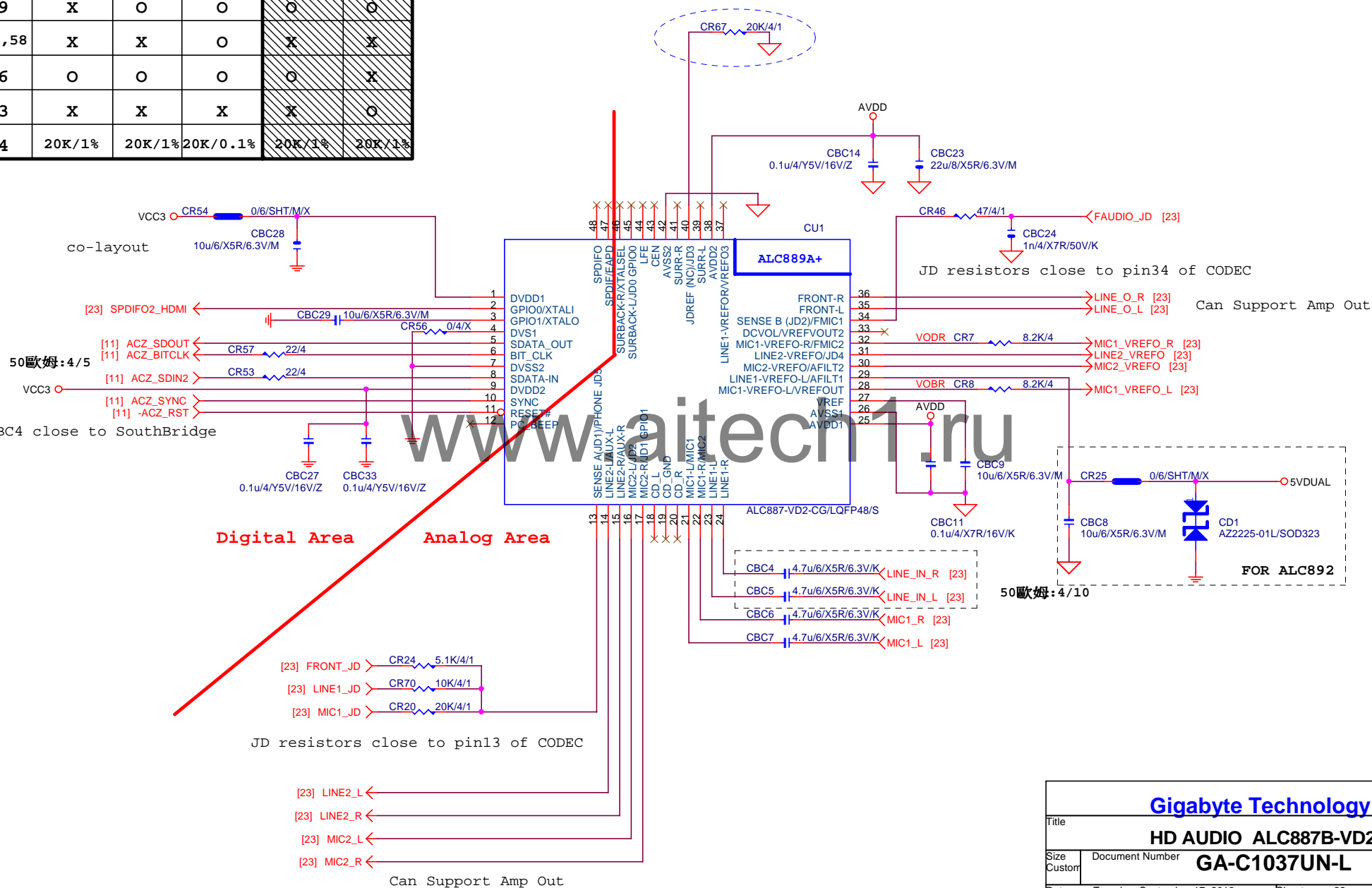
PIN2X10PANEL\_P55

F\_PANEL

BLACK

Gigabyte Technology			
FP,F_USB,USB PWR,SPKR,SATA LED			
Title	Document Number	GA-C1037UN-L	
Size	Custom	Rev 1.0	
Date:	Tuesday, September 17, 2013	Sheet	21 of 31

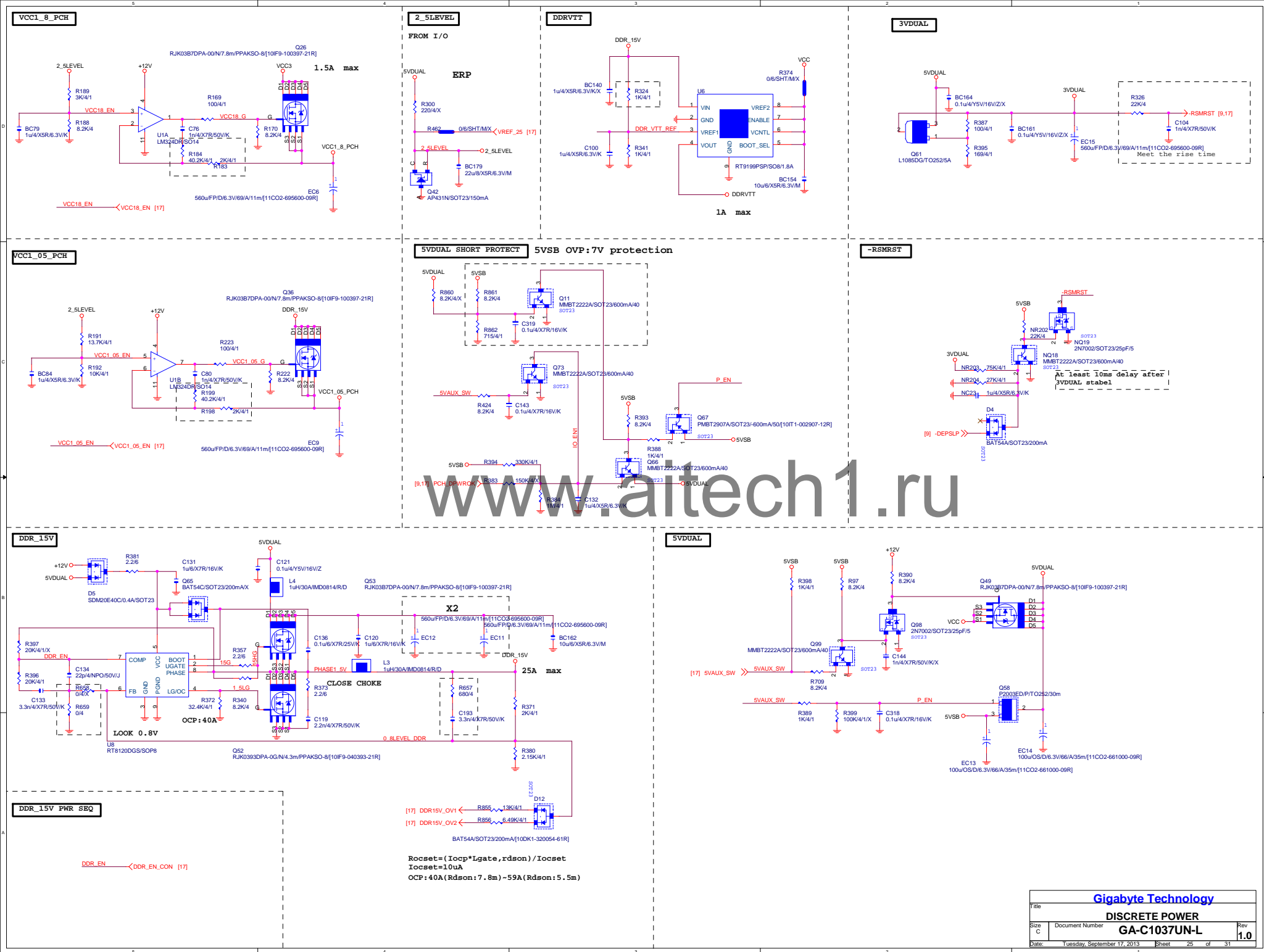
	ALC888B	ALC888-VA	ALC889A	ALC888-VD	ALC892
CR59	X	O	O	O	O
CR53,58	X	X	O	X	X
CR56	O	O	O	O	X
CR63	X	X	X	X	O
CR34	20K/1%	20K/1%	20K/0.1%	20K/1%	20K/1%



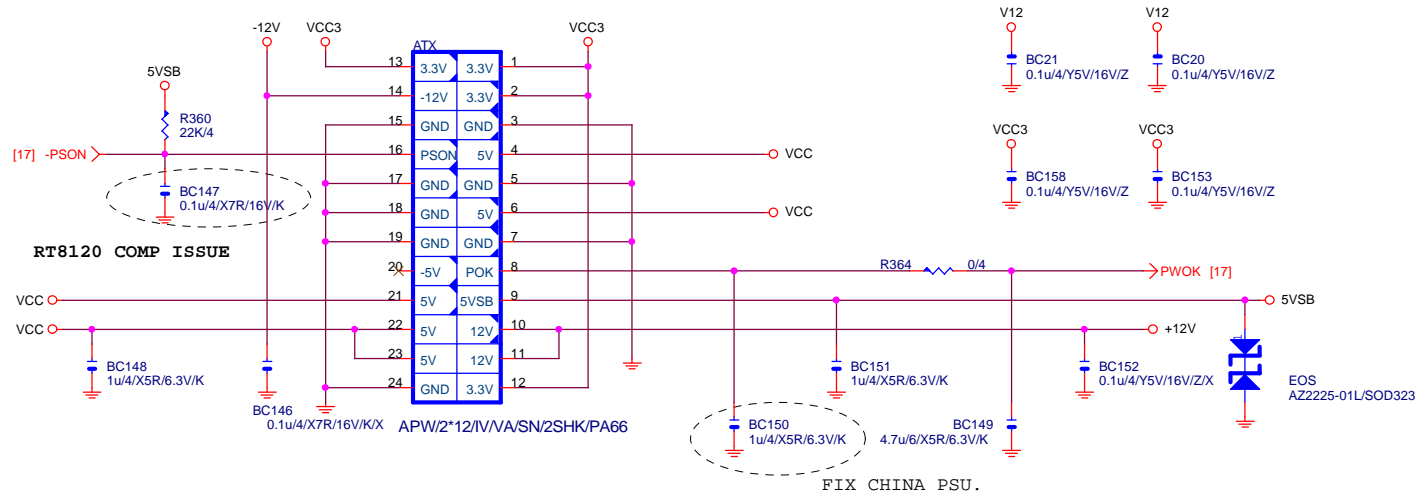




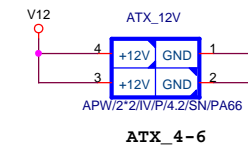




## ATXX24 POWER CONNECTOR

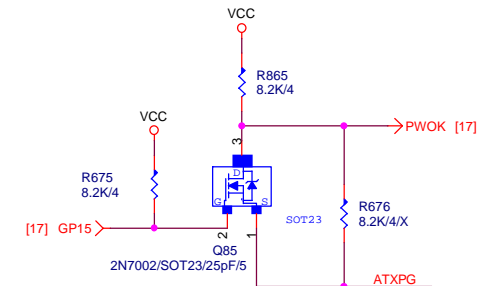


## ATXX4 POWER CONNECTOR



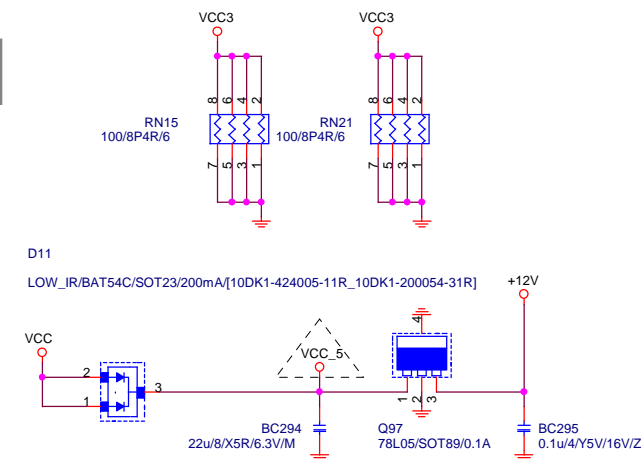
## PWOK PATCH

【技術通報R&D技術通報154】



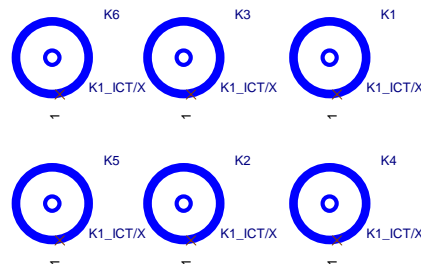
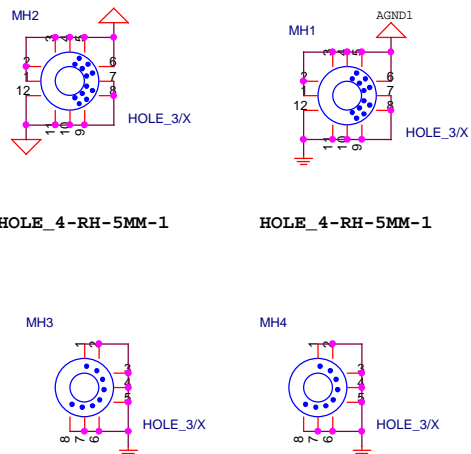
## MIN. LOAD

FIX PWR MINMUN LOAD



FIX POWER SUPPLY MIN LOAD +5V ISSUE

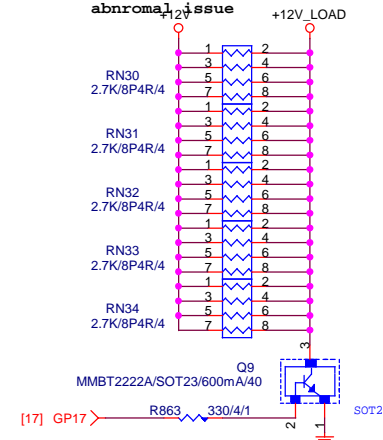
## MB LOCATION



## +12V LOAD

【技術通報R&D技術通報153】

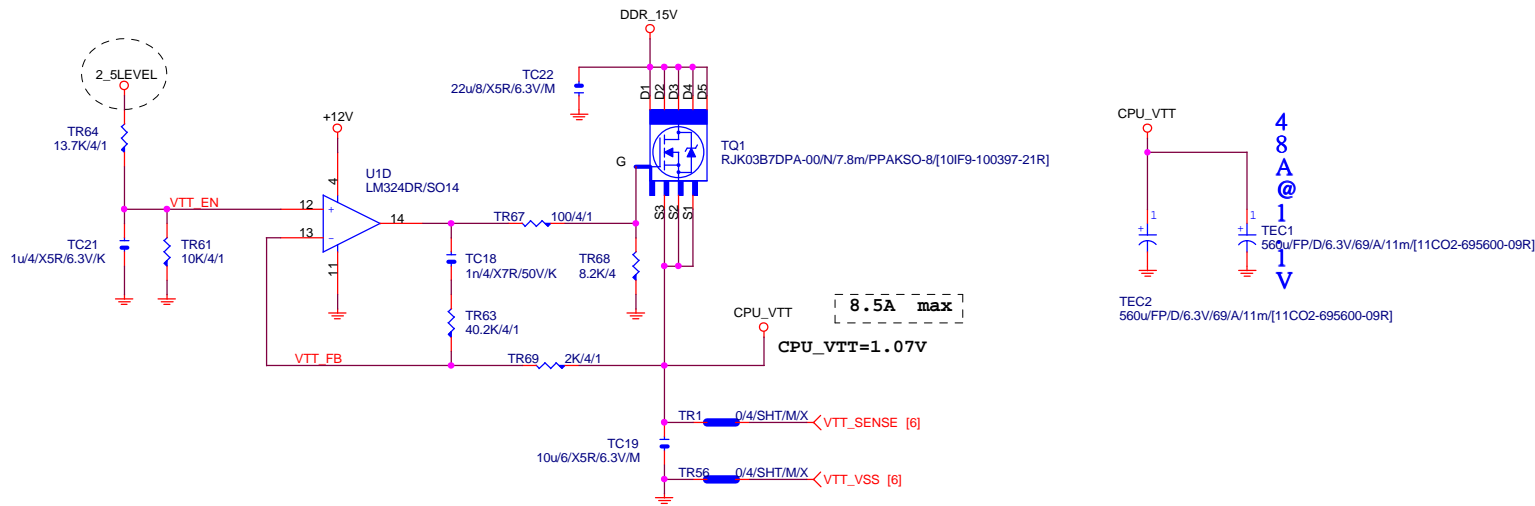
To fix 12V light load abnormal issue



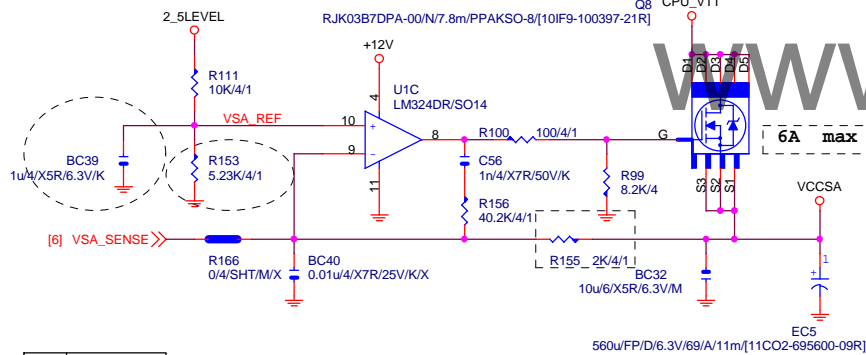
Gigabyte Technology

Title		
ATX CONNECTOR		
Size B	Document Number	Rev
	GA-C1037UN-L	1.0
Date:	Tuesday, September 17, 2013	Sheet 26 of 31

# CPU\_VTT

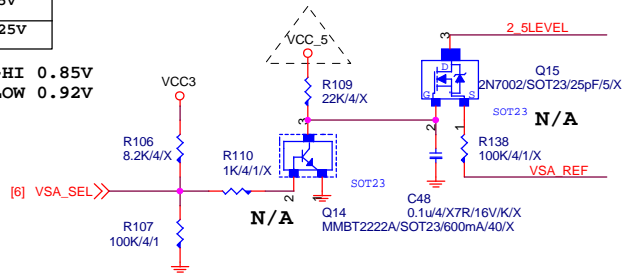


# VCCSA

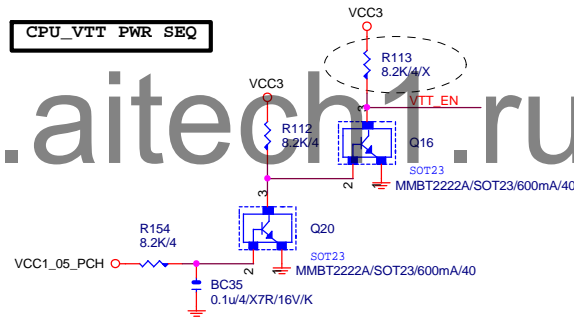


	VSA_SEL
HI	0.85V
LO	0.925V

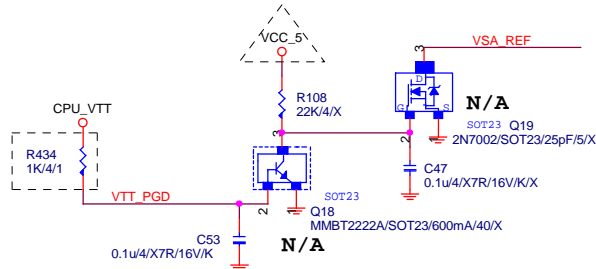
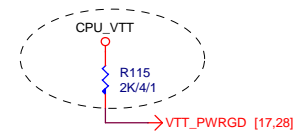
C1007-->HI 0.85V  
C847-->LOW 0.92V



# CPU\_VTT PWR SEQ



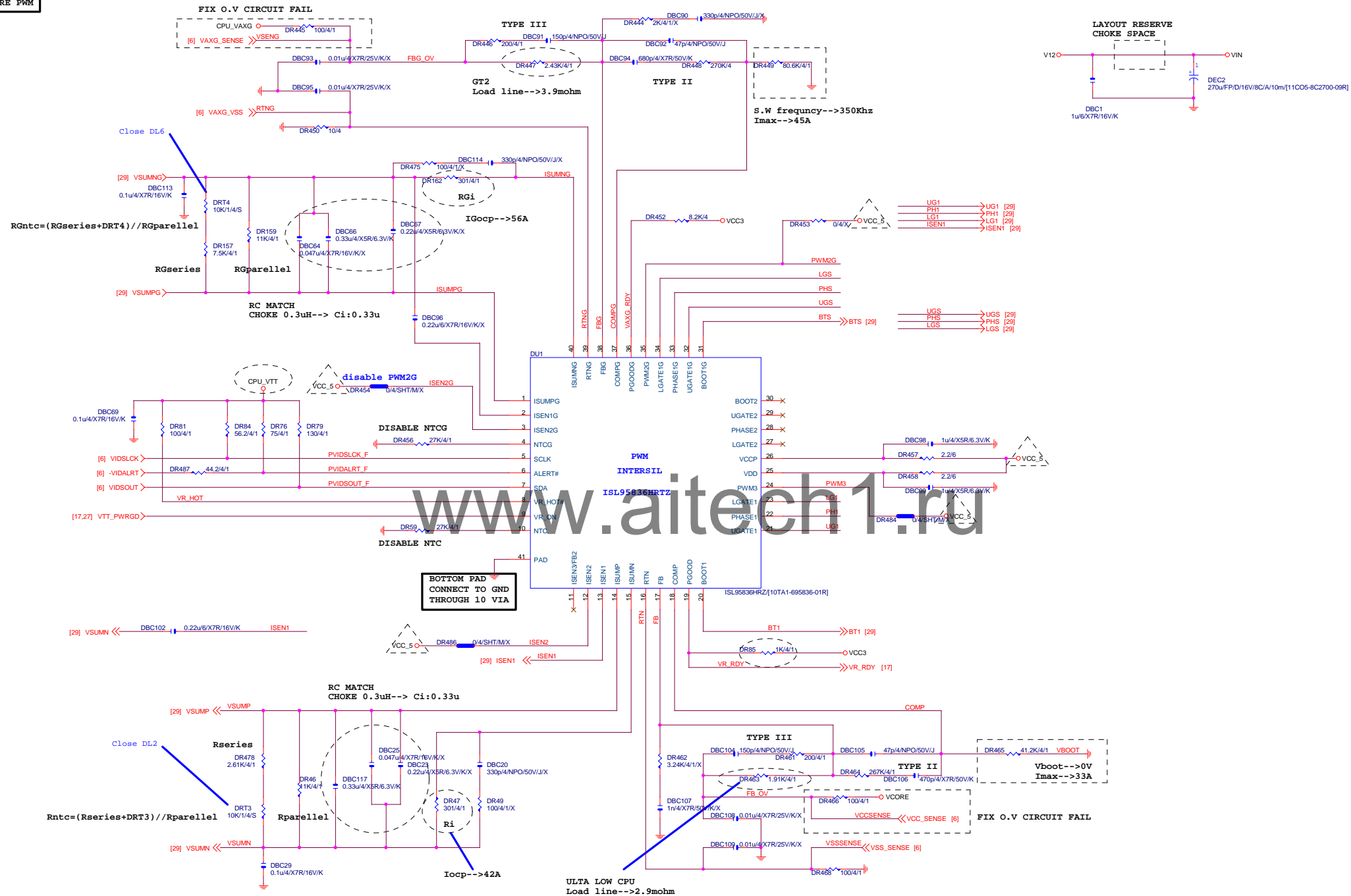
# VTT\_PWRGD



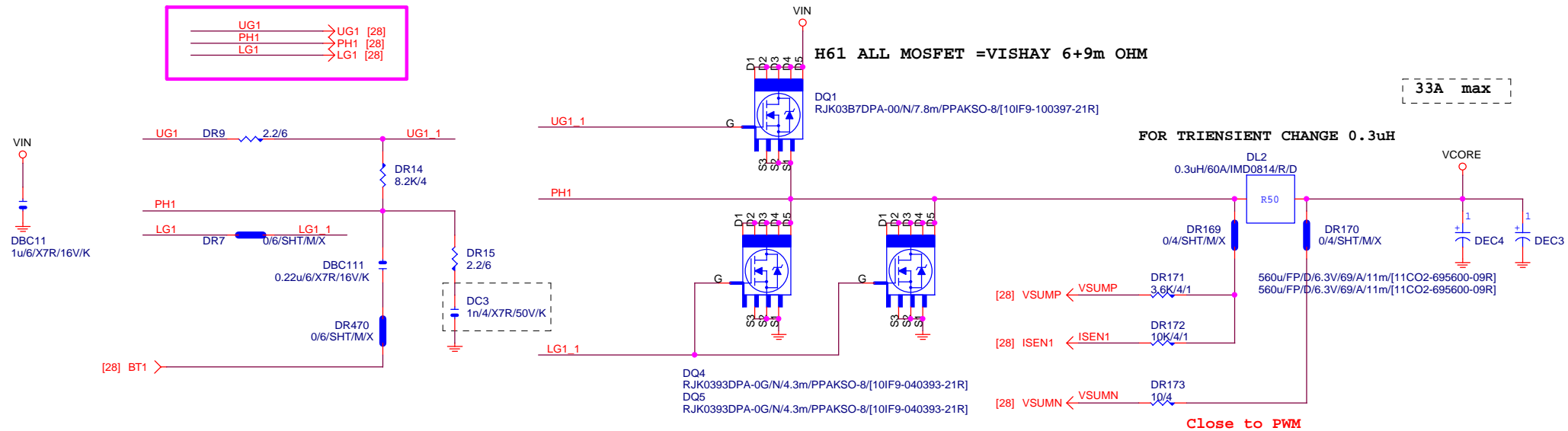
**GIGABYTE™**

Title		
CPU_VTT PWM_RT8120		
Size	Document Number	Rev
Custom	GA-C1037UN-L	1.0
Date:	Tuesday, September 17, 2013	Sheet 27 of 31

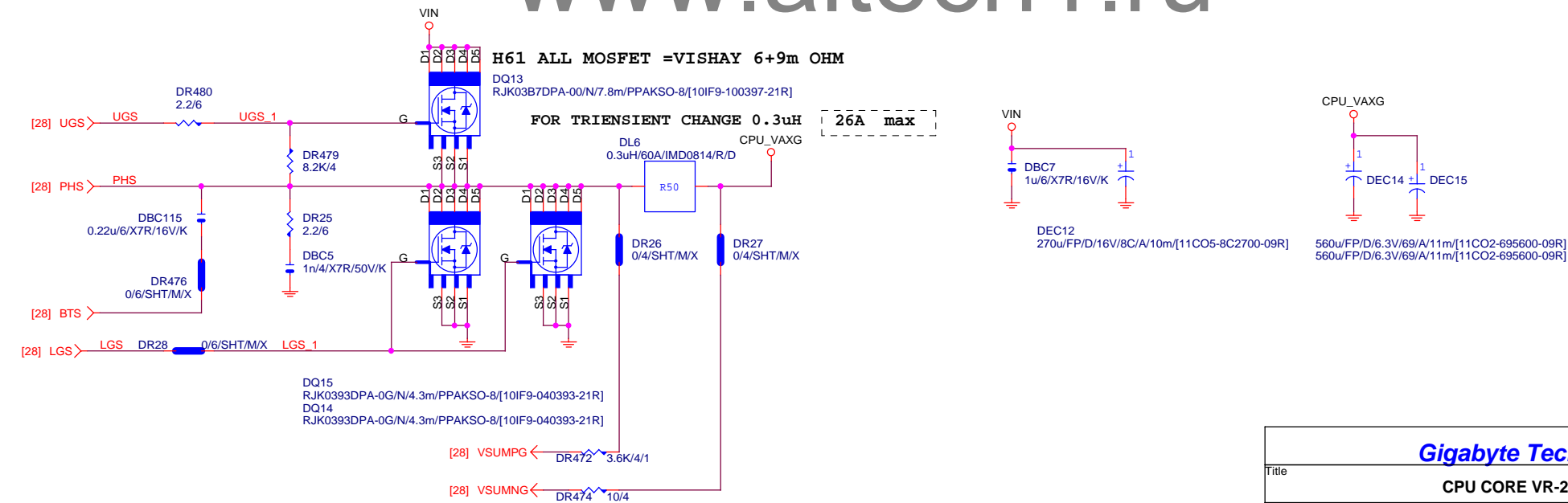
## VCORE PWM



# VCORE



# VAXG

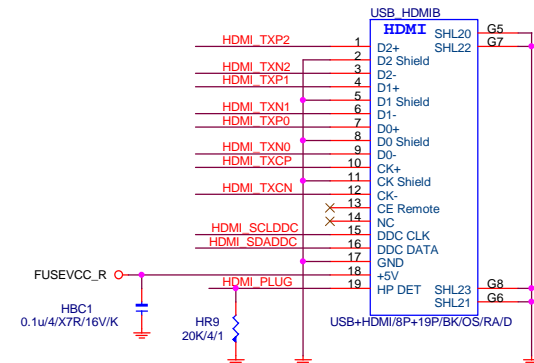
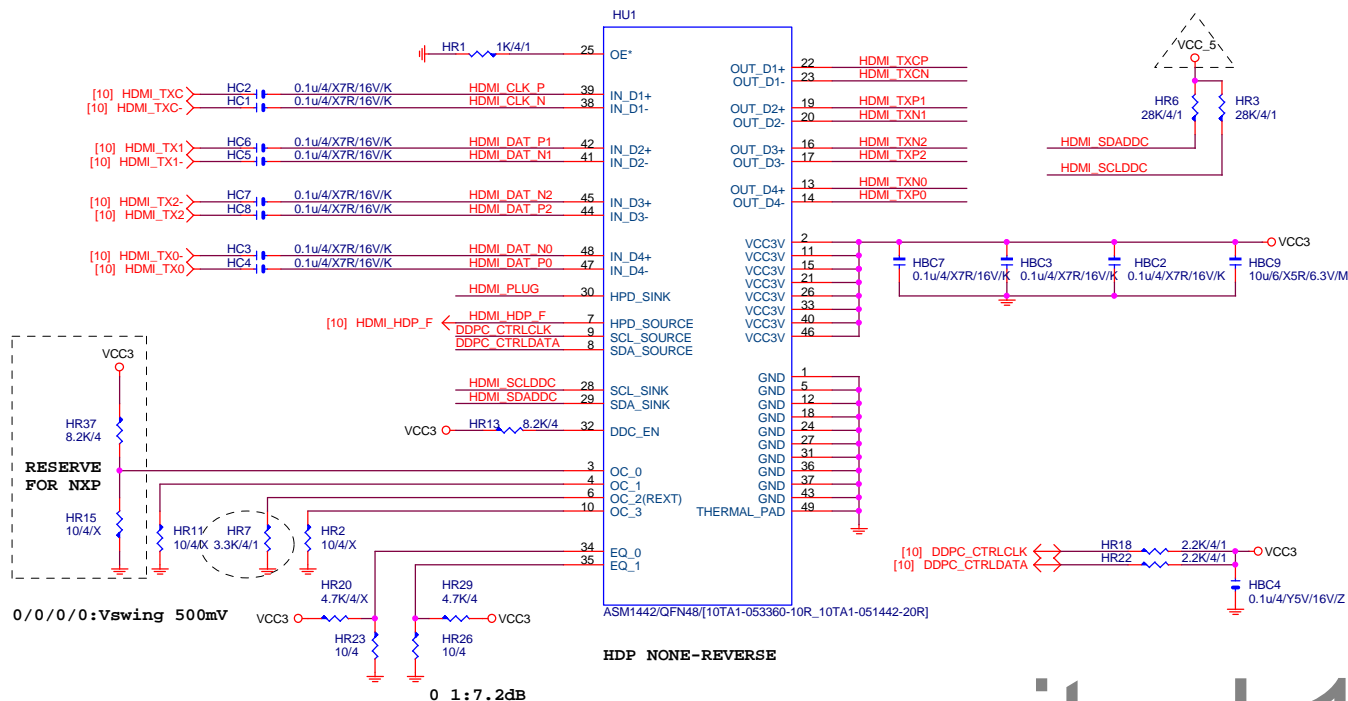


Gigabyte Technology

Title	CPU CORE VR-2		
Size	Document Number	GA-C1037UN-L	
Custom		Rev 1.0	
Date:	Tuesday, September 17, 2013	Sheet 29 of 31	



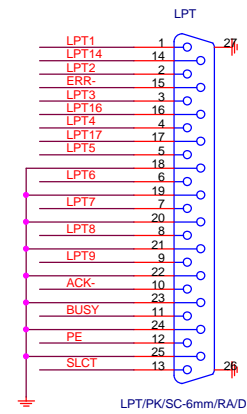
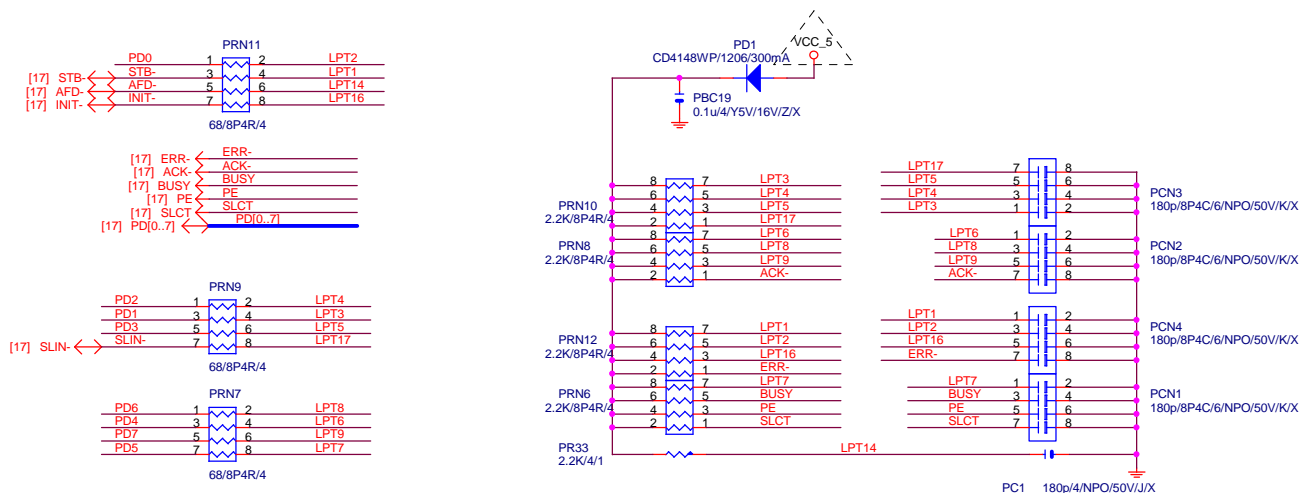
# HDMI



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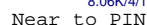
# LPT PORT

【技術通報R&D技術通報151】  
33ohm Change to 68ohm



Gigabyte Technology			
Title			
HDMI ,LPT			
Size	Document Number	Rev	
Custom	GA-C1037UN-L	1.0	
Date:	Tuesday, September 17, 2013	Sheet	30 of 31

L1117LG/N/SOT223/1A



close to pin17

PH CBLID N PDIAGnA