

Model Name: GA-C1037UN

Revision 2.0

SHEET

TITLE

01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	Celeron1037U PCIE_DMI_FDI_eDP
05	Celeron1037U MEM Controller
06	Celeron1037U MEM Controller
07	Celeron1037U 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 8728 LPC IO
18	COMA,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_A
25	Realtek RTL8111F_B
26	DISCRETE POWER
27	ATX

SHEET

TITLE

28	RT8120_CPU_VTT
29	VCORE PWM ISL95836_1
30	VCORE PWM ISL95836_2
31	LPT,COMB
32	JMB368
33	HDMI

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Revision 2.0

Component value change history

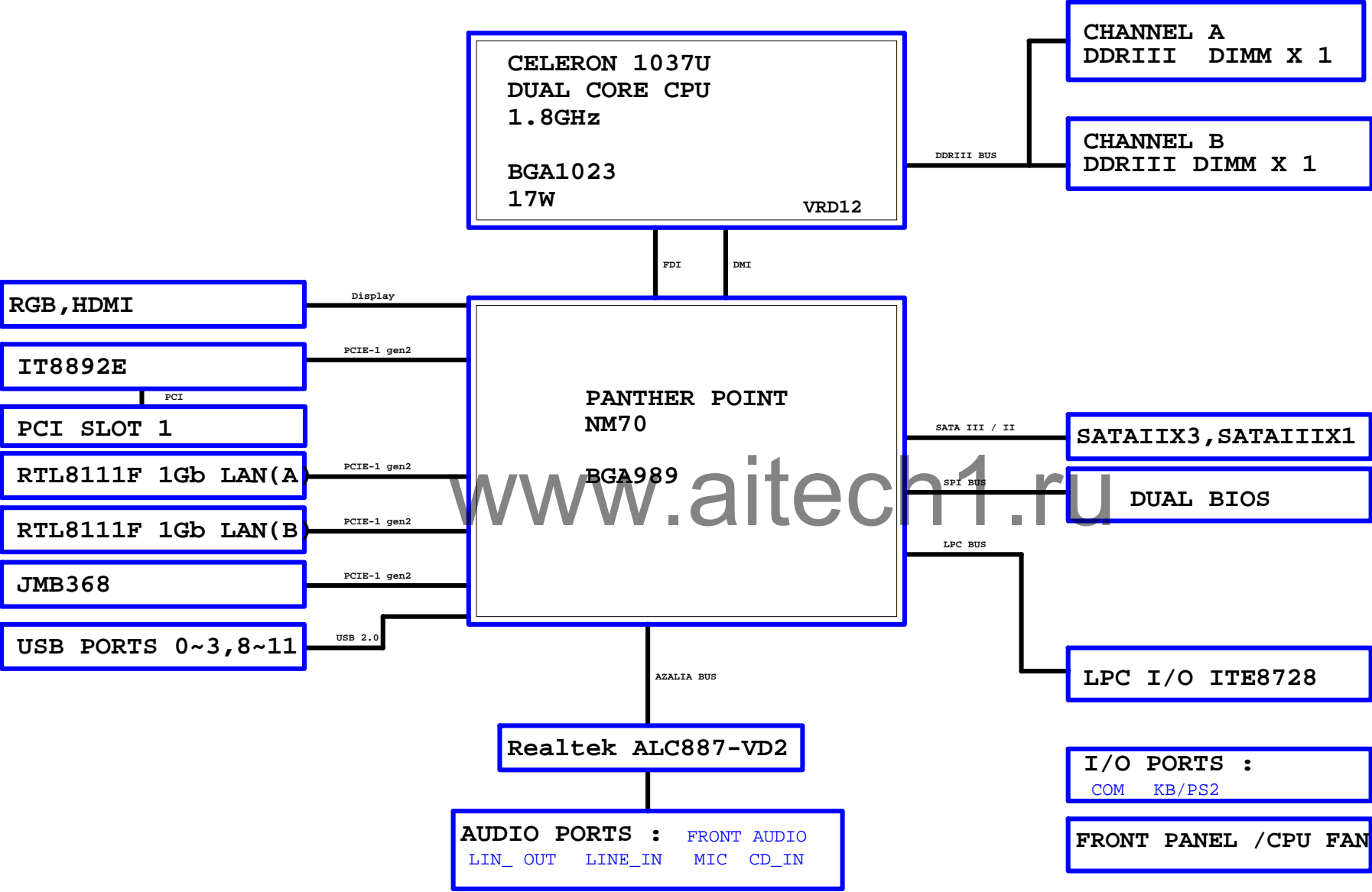
2014/02/26

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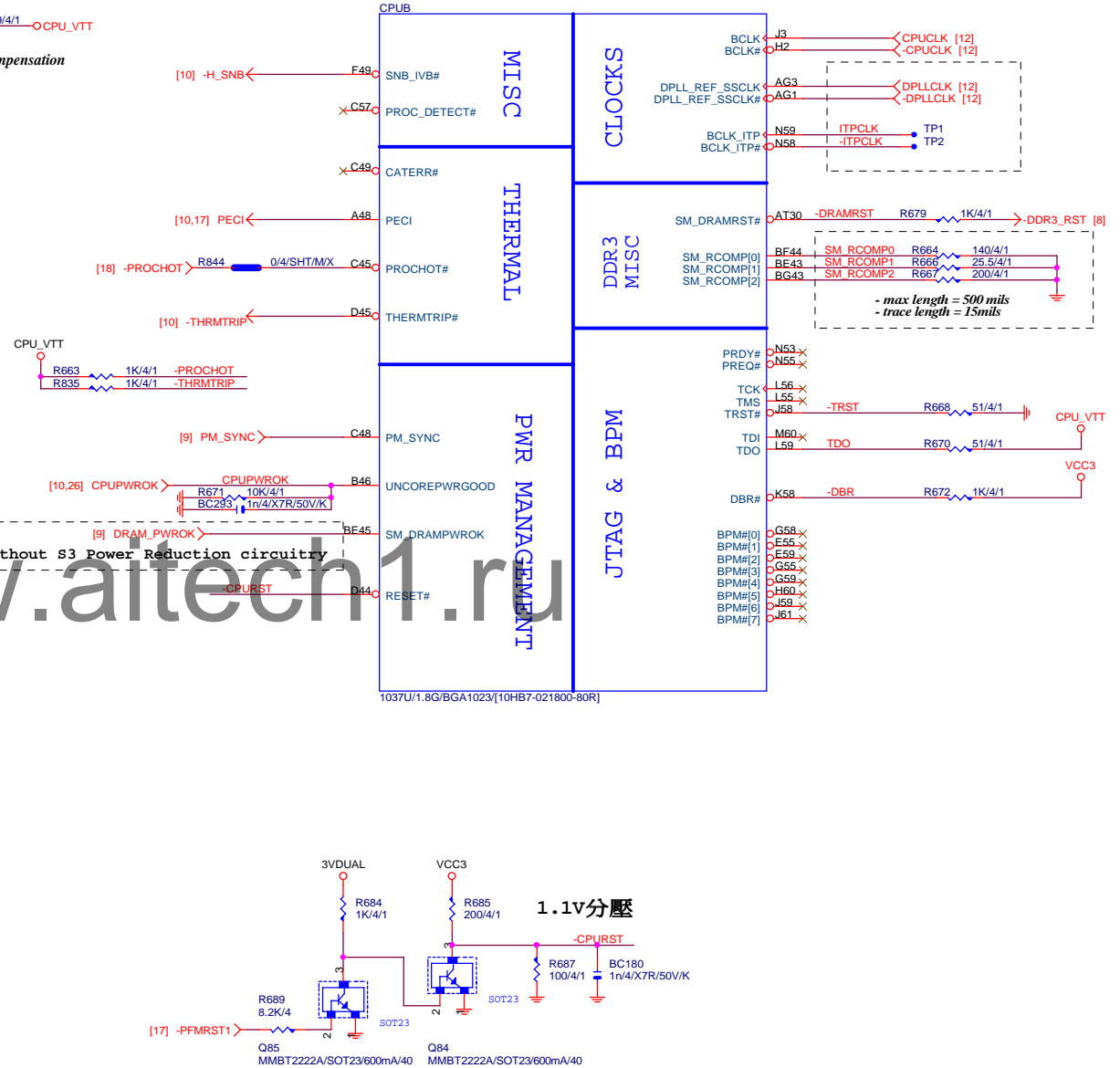
Circuit or PCB layout change

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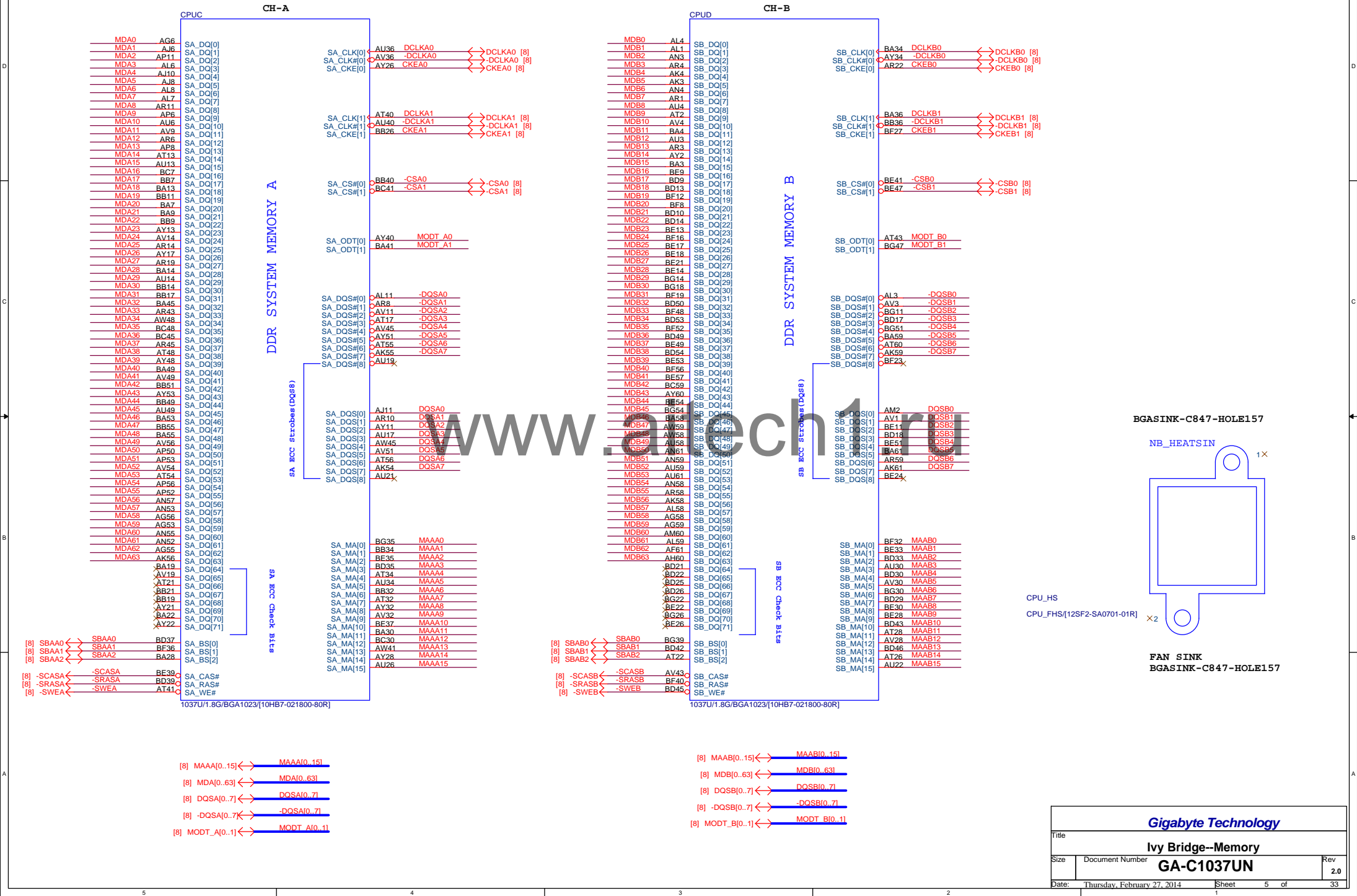
BLOCK DIAGRAM



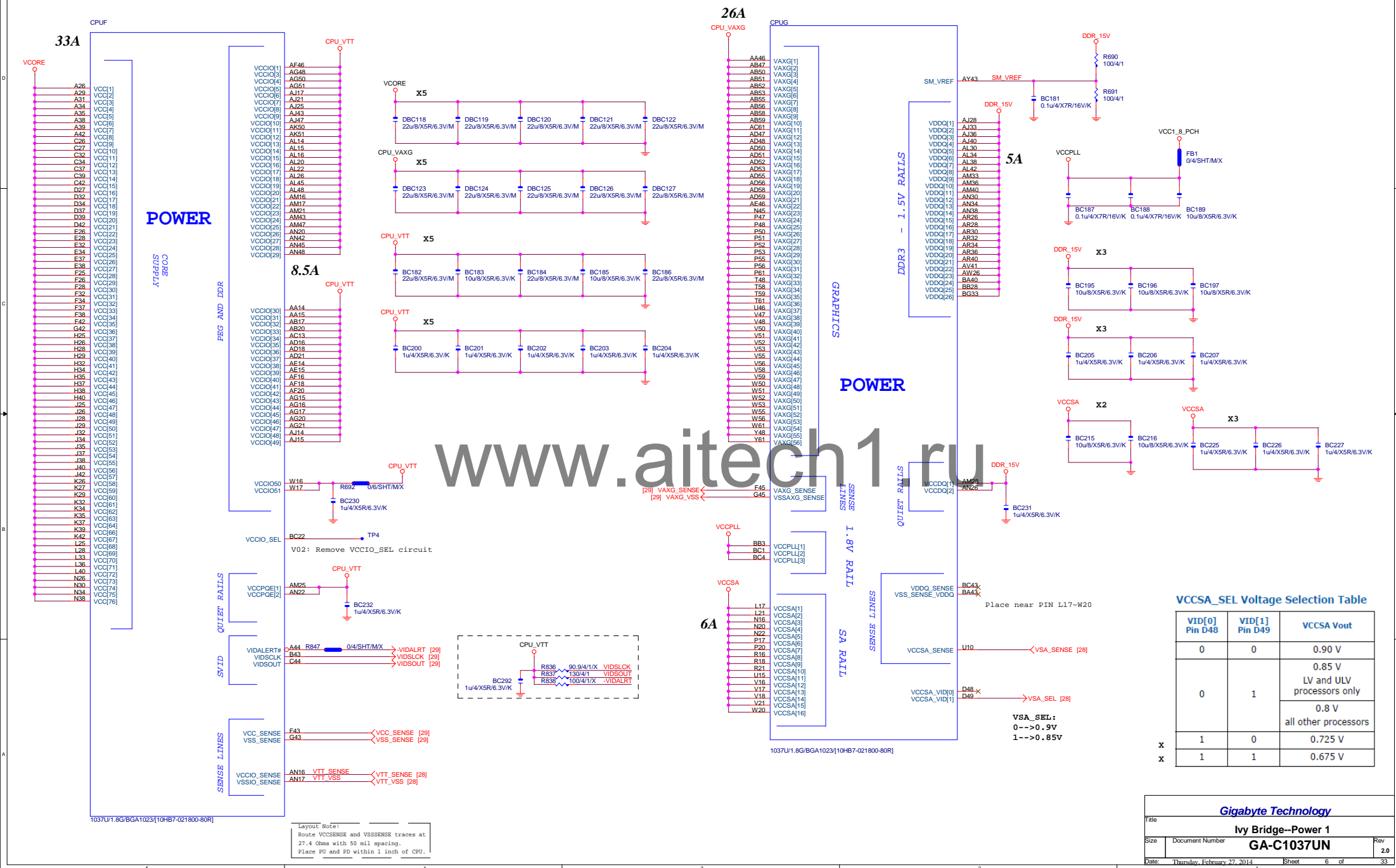
Ivy Bridge 2C BGA Processor (CLK,MISC,JTAG)

[illegible]

Ivy Bridge 2C BGA Processor (DDR3)

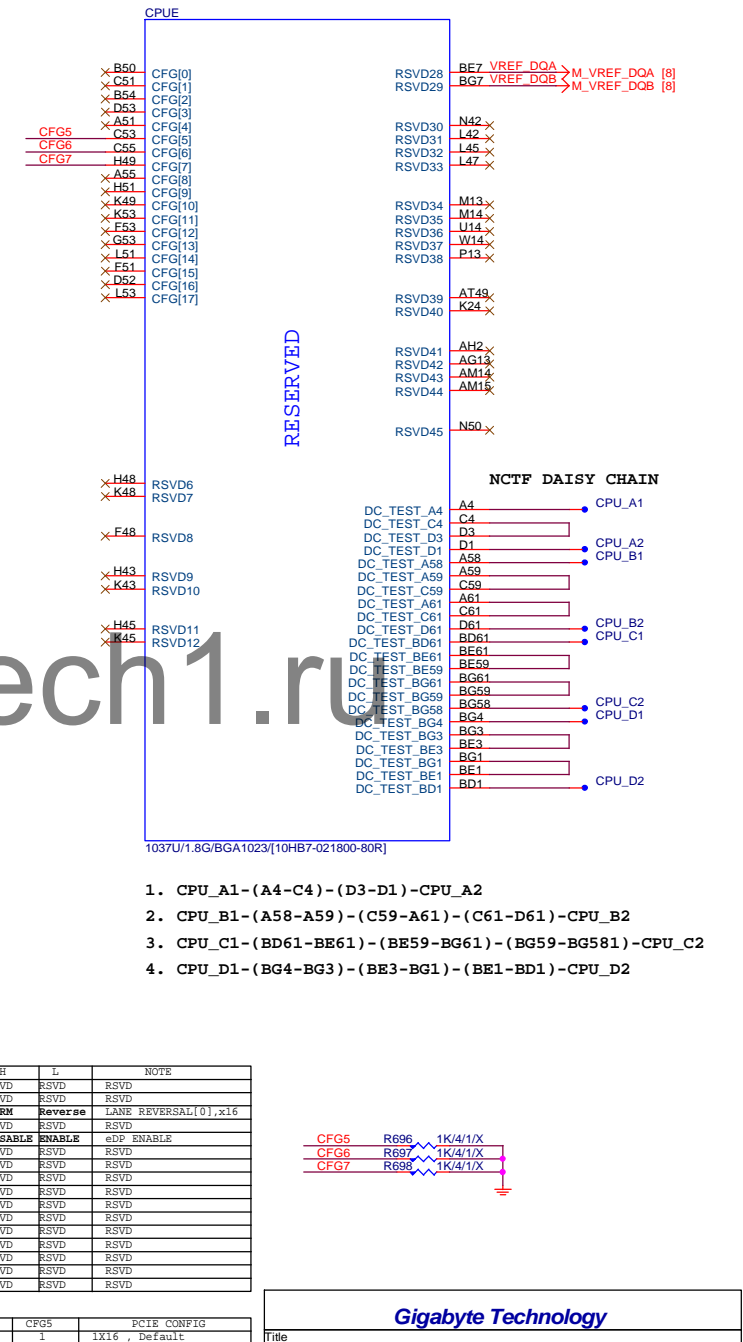
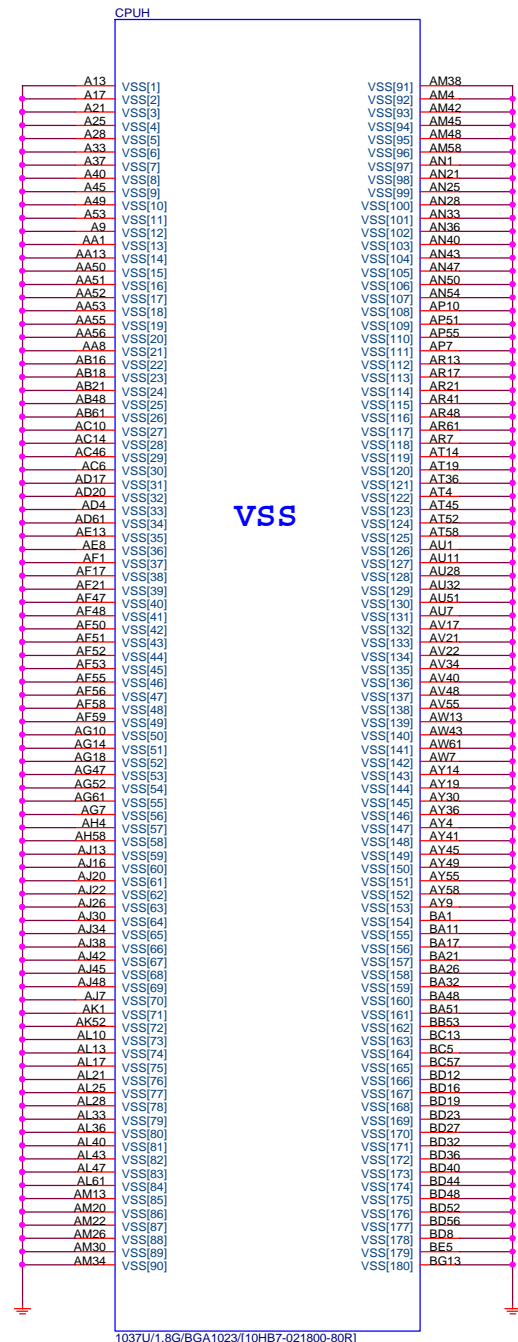


Ivy Bridge 2C BGA Processor (Power)



Ivy Bridge 2C BGA Processor (GND)

Ivy Bridge 2C BGA Processor (Reserved)



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CFG	H	L	NOTE
0	RSVD	RSVD	RSVD
1	RSVD	RSVD	RSVD
2	NORM	Reverse	LANE REVERSAL[0],x16
3	RSVD	RSVD	RSVD
4	DISABLE	ENABLE	eDP ENABLE
7	RSVD	RSVD	RSVD
8	RSVD	RSVD	RSVD
9	RSVD	RSVD	RSVD
10	RSVD	RSVD	RSVD
11	RSVD	RSVD	RSVD
12	RSVD	RSVD	RSVD
13	RSVD	RSVD	RSVD
14	RSVD	RSVD	RSVD
15	RSVD	RSVD	RSVD
16	RSVD	RSVD	RSVD
17	RSVD	RSVD	RSVD



CFG6	CFG5	PCIE CONFIG
1	1	1X16, Default
1	0	2X8
0	1	RSVD
0	0	X8,X4,X4

CFG 0-17 all internal PULL-UP

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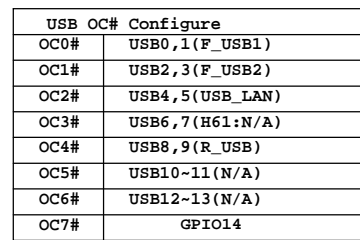
Title: Ivy Bridge --GND

Size: Document Number: GA-C1037UN

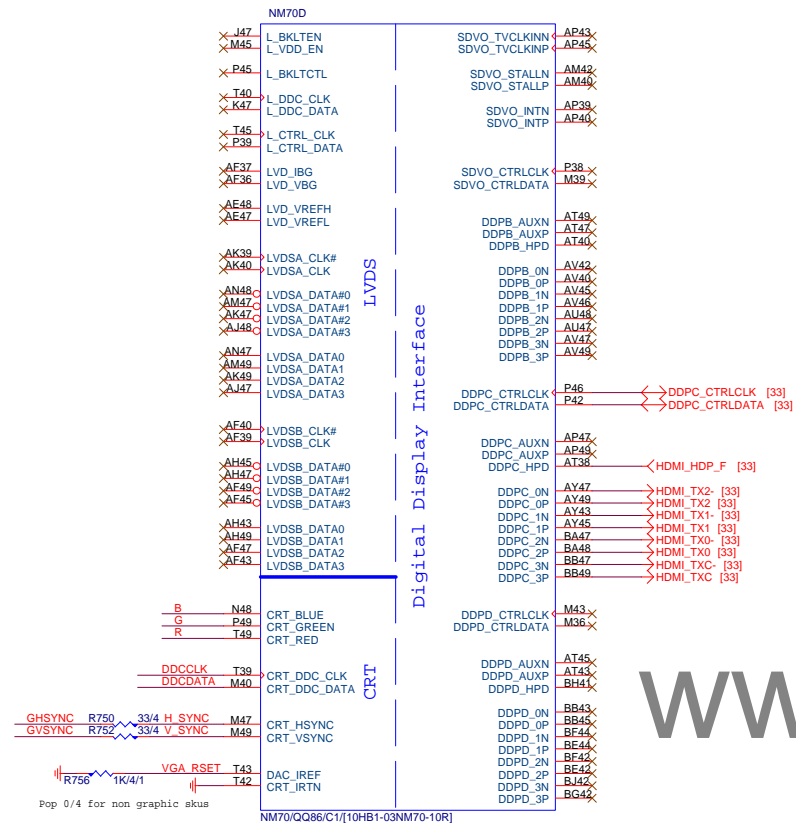
Date: Thursday, February 27, 2014

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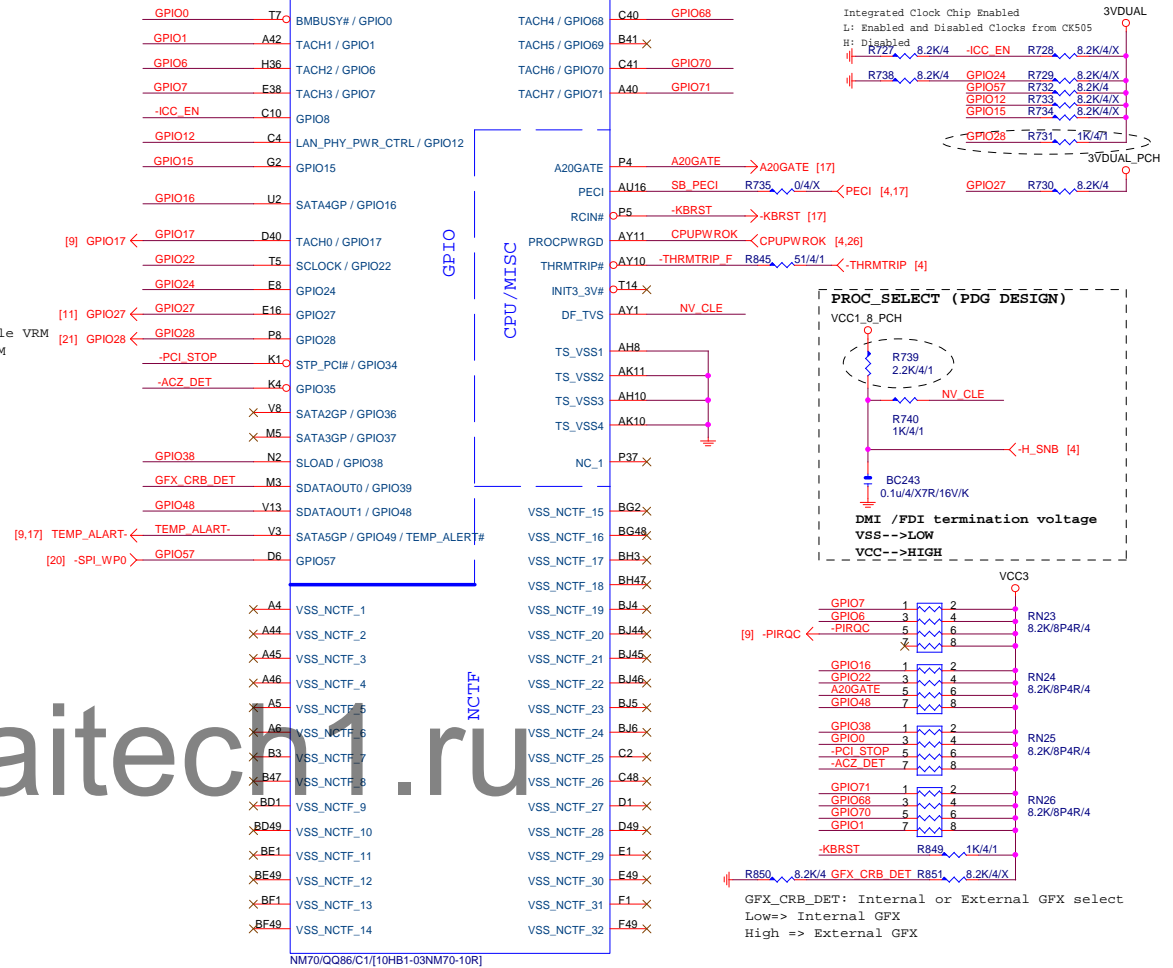
Rev: 2.0



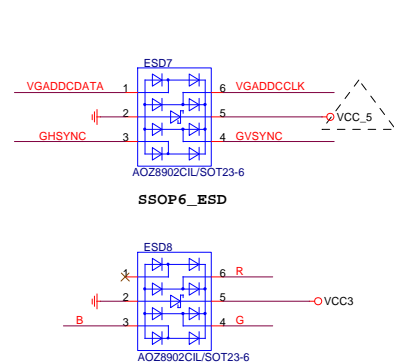
PCH D DISPLAY



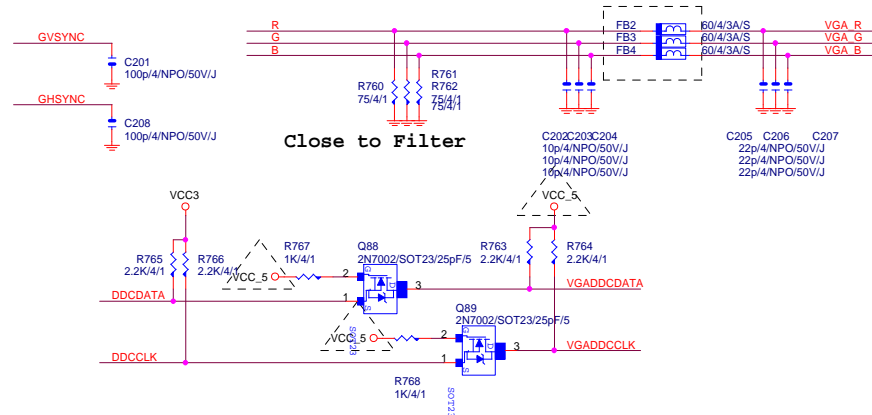
PCH F



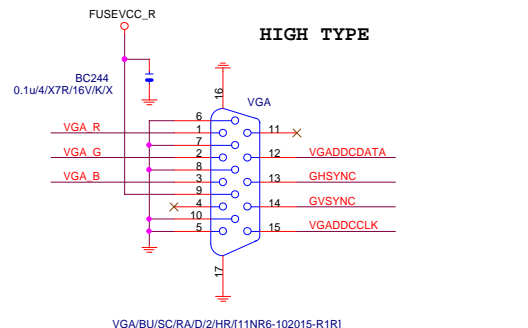
VGA ESD



VGA SIGNAL

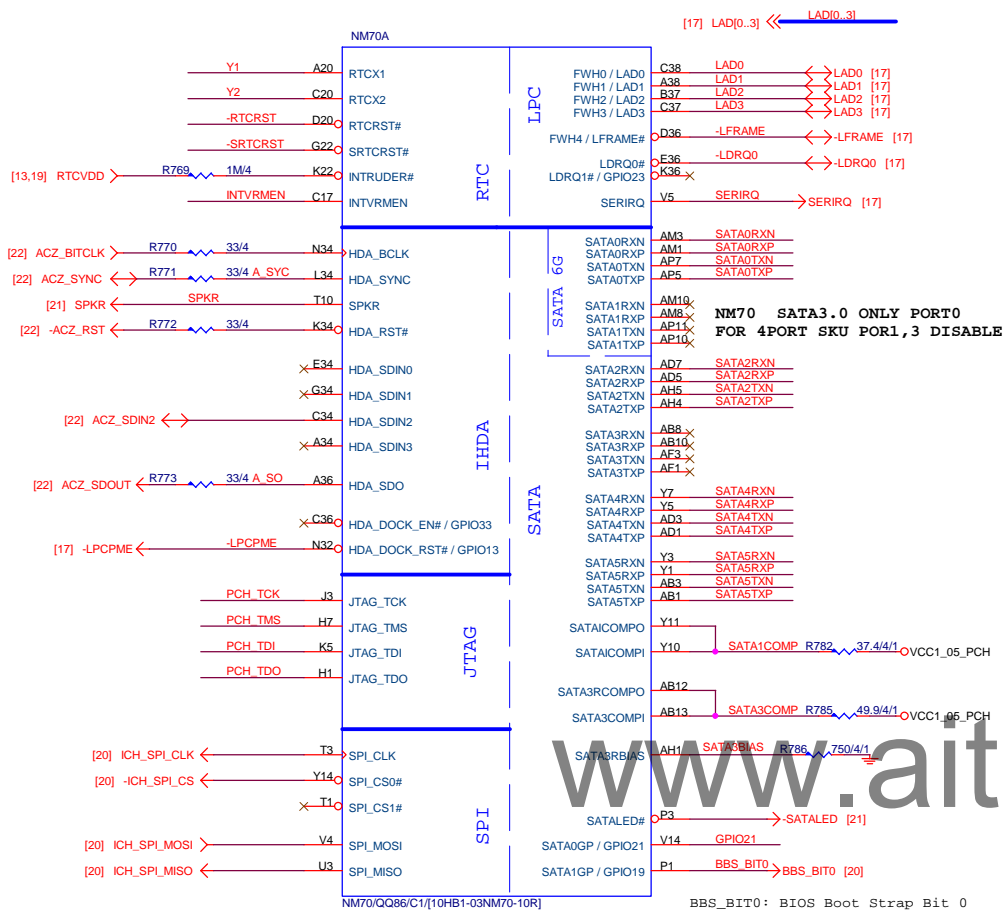


D-SUB

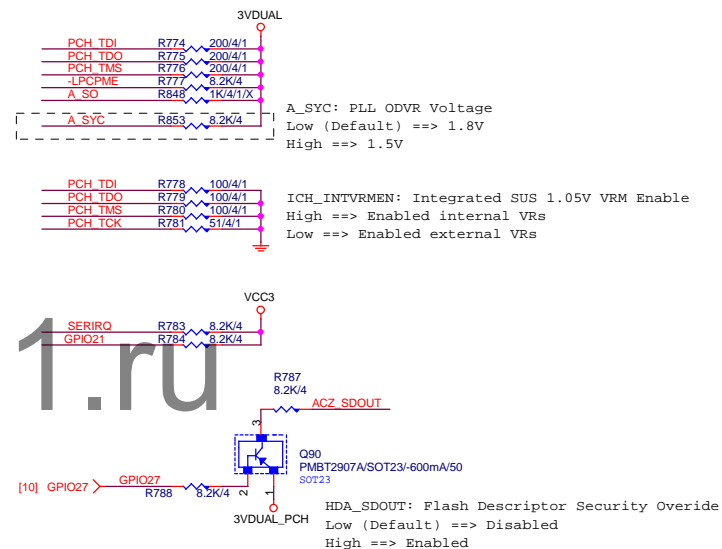
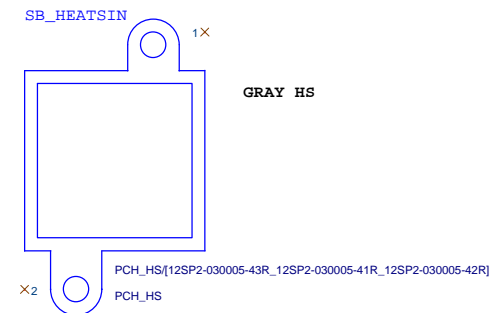


Gigabyte Technology			
PCH DISPLAY, CLK BUFFER			
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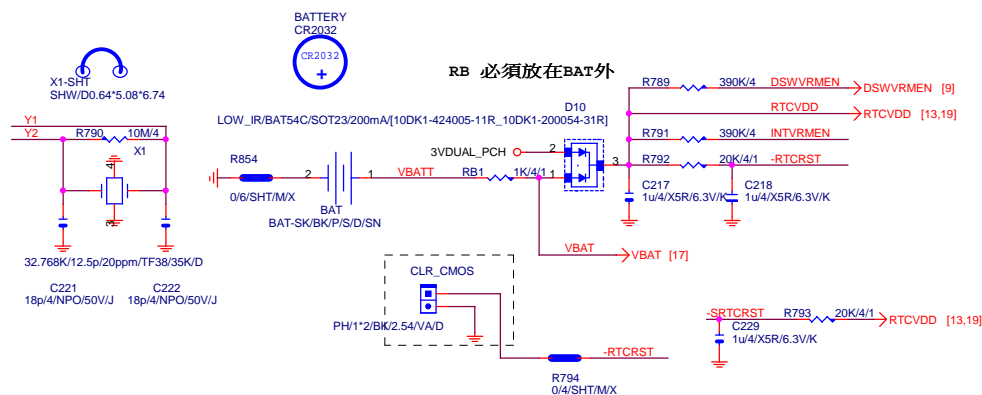
PCH A



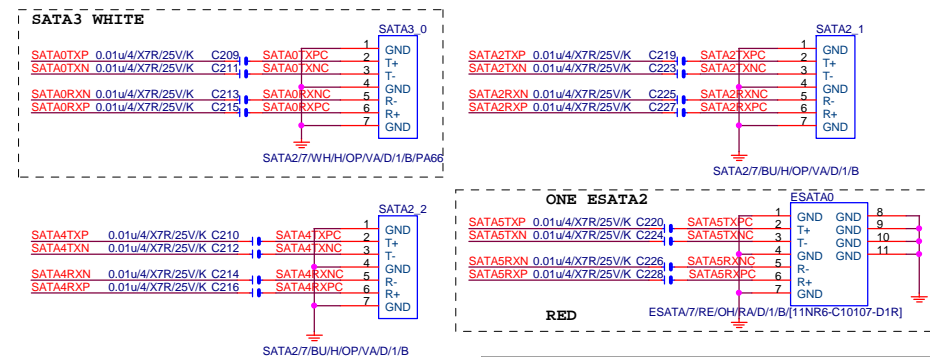
PCH HS



BATTERY-DUAL-4

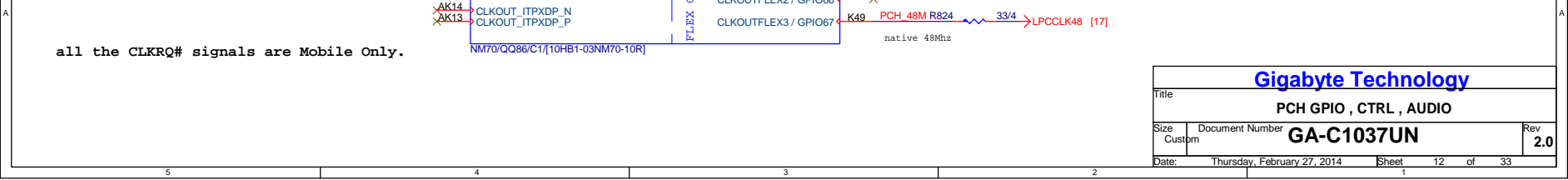


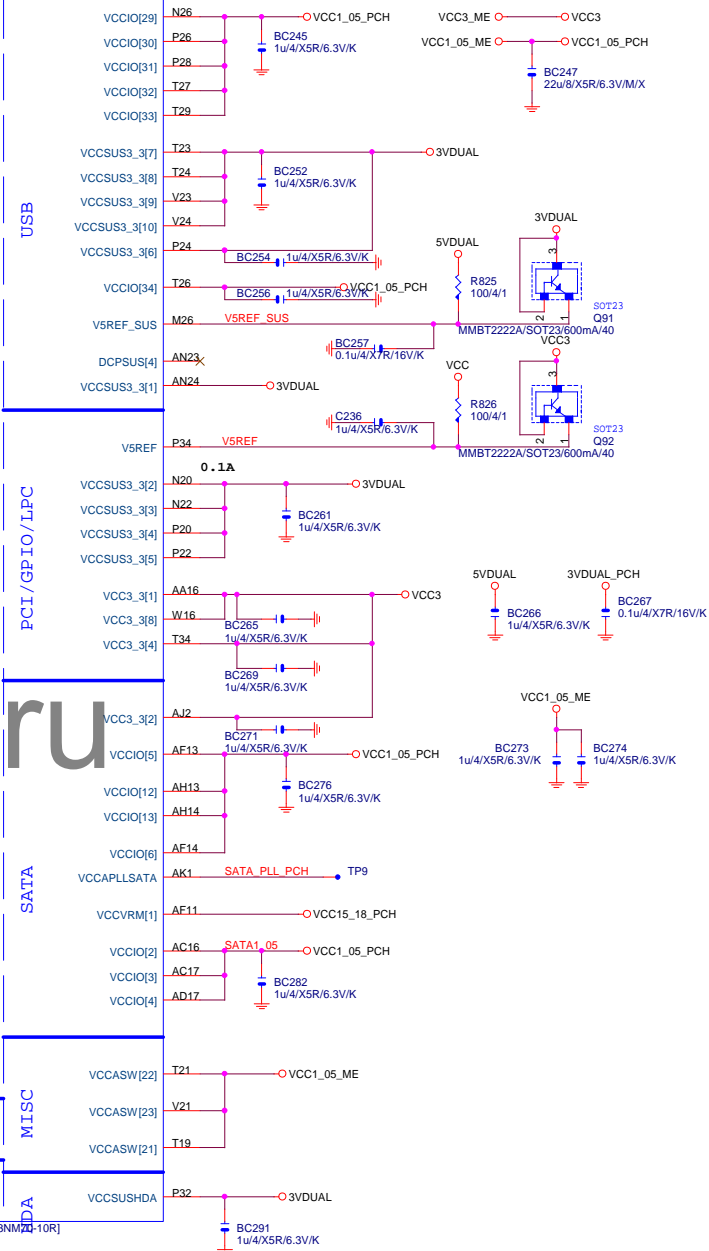
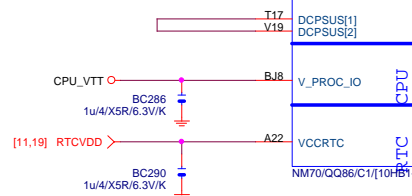
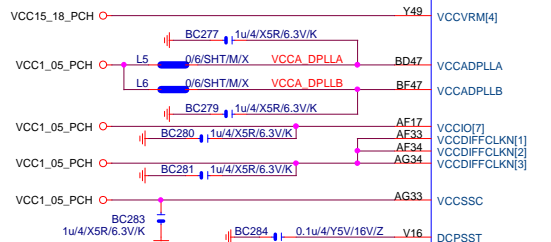
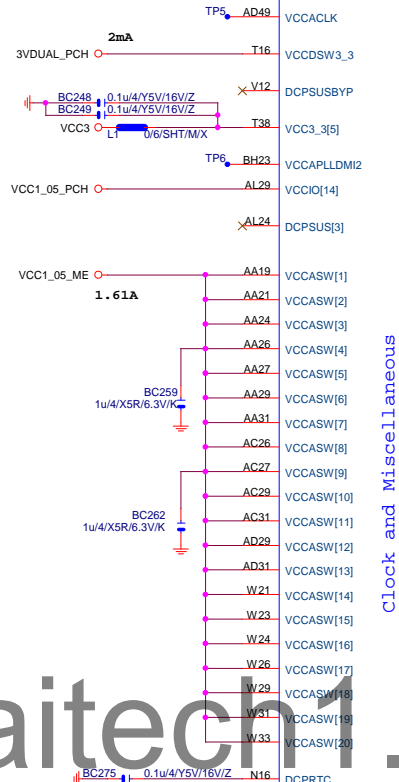
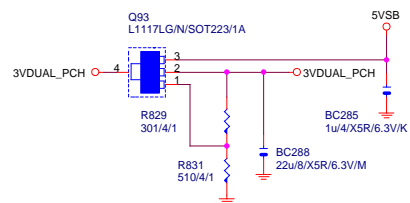
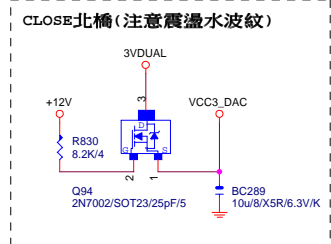
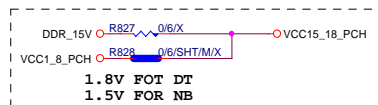
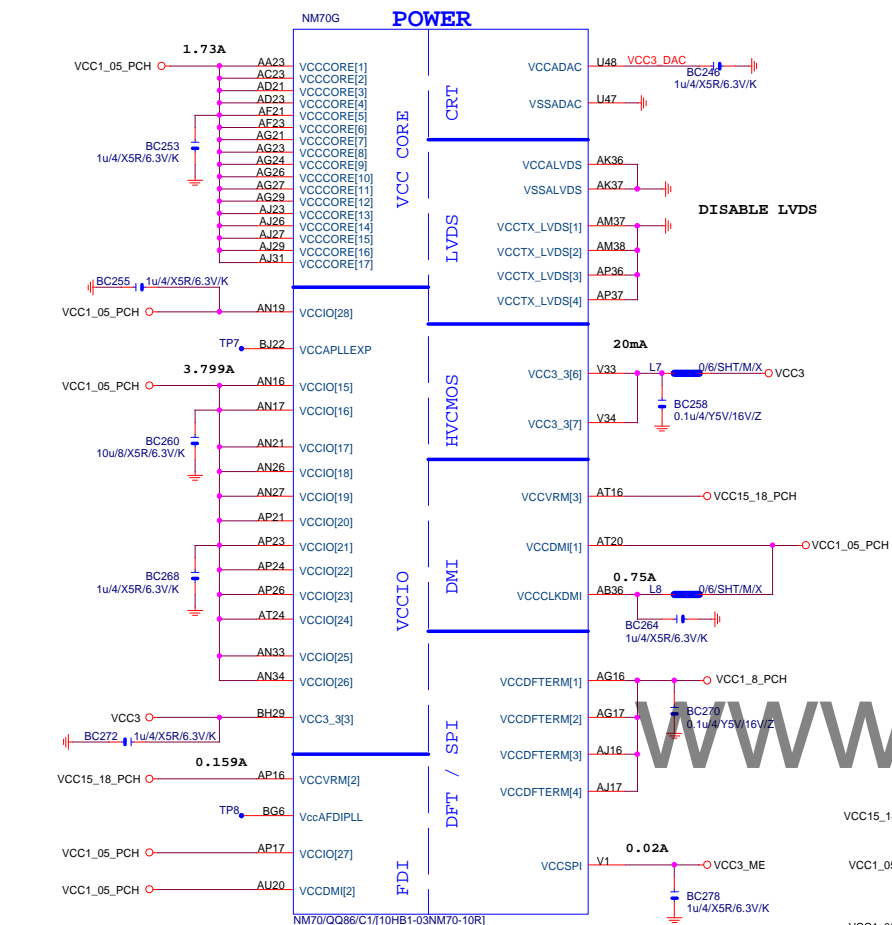
SATA CONN



H1X7-SATA2-HS-MASK

Gigabyte Technology			
Title			
PCH HOST , SATA, PCI			
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NM70H		
H5	VSS[0]	
AA17	VSS[1]	AK38
AA2	VSS[2]	AK4
AA3	VSS[3]	AK8
AA33	VSS[4]	AK46
AA34	VSS[5]	AK8
AB11	VSS[6]	AL16
AB14	VSS[7]	AL17
AB39	VSS[8]	AL19
AB4	VSS[9]	AL2
AB43	VSS[10]	AL21
AB5	VSS[11]	AL23
AB7	VSS[12]	AL26
AC19	VSS[13]	AL27
AC2	VSS[14]	AL31
AC21	VSS[15]	AL33
AC24	VSS[16]	AL34
AC33	VSS[17]	AL48
AC34	VSS[18]	AM11
AC48	VSS[19]	AM14
AD10	VSS[20]	AM36
AD11	VSS[21]	AM39
AD12	VSS[22]	AM43
AD13	VSS[23]	AM45
AD19	VSS[24]	AM7
AD24	VSS[25]	AN2
AD26	VSS[26]	AN29
AD27	VSS[27]	AN3
AD33	VSS[28]	AN31
AD34	VSS[29]	AP12
AD36	VSS[30]	AP19
AD37	VSS[31]	AP28
AD38	VSS[32]	AP30
AD39	VSS[33]	AP42
AD4	VSS[34]	AP46
AD40	VSS[35]	AP8
AD42	VSS[36]	AR2
AD43	VSS[37]	AR48
AD45	VSS[38]	AT11
AD46	VSS[39]	AT13
AD8	VSS[40]	AT16
AE2	VSS[41]	AT22
AE3	VSS[42]	AT26
AE10	VSS[43]	AT28
AE12	VSS[44]	AT30
AD14	VSS[45]	AT32
AD16	VSS[46]	AT34
AF16	VSS[47]	AT39
AF19	VSS[48]	AT42
AF24	VSS[49]	AT46
AF26	VSS[50]	AT7
AF27	VSS[51]	AU24
AF29	VSS[52]	AU30
AF31	VSS[53]	AV16
AF38	VSS[54]	AV20
AF4	VSS[55]	AV24
AF42	VSS[56]	AV30
AF46	VSS[57]	AV38
AF5	VSS[58]	AV4
AF7	VSS[59]	AV43
AF8	VSS[60]	AV8
AG19	VSS[61]	AW14
AG2	VSS[62]	AW18
AG31	VSS[63]	AW2
AG48	VSS[64]	AW22
AH11	VSS[65]	AW28
AH3	VSS[66]	AW32
AH36	VSS[67]	AW34
AH39	VSS[68]	AW38
AH40	VSS[69]	AW40
AH42	VSS[70]	AW48
AH46	VSS[71]	AV11
AH7	VSS[72]	AY12
AJ19	VSS[73]	AY22
AJ21	VSS[74]	AY28
AJ24	VSS[75]	
AJ33	VSS[76]	
AJ34	VSS[77]	
AK12	VSS[78]	
AK3	VSS[79]	

NM70/QQ86/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]	P16
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
BD5	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
BF38	VSS[209]	V27
BF40	VSS[210]	V29
BF4	VSS[211]	V31
BF8	VSS[212]	V36
BG17	VSS[213]	V39
BG21	VSS[214]	V43
BG33	VSS[215]	V73
BG44	VSS[216]	W17
BG8	VSS[217]	W19
BH11	VSS[218]	W2
BH15	VSS[219]	W2
BH17	VSS[220]	W27
BH19	VSS[221]	W46
H10	VSS[222]	Y12
BH27	VSS[223]	Y38
BH31	VSS[224]	Y4
BH33	VSS[225]	Y42
BH35	VSS[226]	Y46
BH39	VSS[227]	Y8
BH43	VSS[228]	BG29
BH7	VSS[229]	N24
D3	VSS[230]	AJ3
D12	VSS[231]	AD47
D16	VSS[232]	B43
D18	VSS[233]	BE10
D22	VSS[234]	BG41
D24	VSS[235]	G14
D26	VSS[236]	H16
D30	VSS[237]	T36
D32	VSS[238]	BG22
D34	VSS[239]	BG24
D38	VSS[240]	C22
D42	VSS[241]	AP13
D8	VSS[242]	M14
E18	VSS[243]	AP3
E26	VSS[244]	AP1
G18	VSS[245]	BE16
G20	VSS[246]	BC16
G26	VSS[247]	BG28
G28	VSS[248]	BJ28
G36	VSS[249]	
G48	VSS[250]	
H12	VSS[251]	
H18	VSS[252]	
H22	VSS[253]	
H24	VSS[254]	
H26	VSS[255]	
H30	VSS[256]	
H32	VSS[257]	
H34	VSS[258]	
F3		

NM70/QQ86/C1/[10HB1-03NM70-10R]

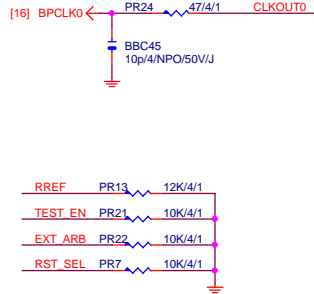
Gigabyte Technology

Title			
PCH ,GND			
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PCIe TO PCI

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

BA D0_311 <-> BA_D0_31 [16]
 -BC BE0 <-> BC_BE0 [16]
 -BC BE1 <-> BC_BE1 [16]
 -BC BE2 <-> BC_BE2 [16]
 -BC BE3 <-> BC_BE3 [16]
 -BPERR <-> BPERR [16]
 -BSERR <-> BSERR [16]
 BPAR <-> BPAR [16]
 -BPLOCK <-> BPLOCK [16]
 -BDEVSEL <-> BDEVSEL [16]
 -BSTOP <-> BSTOP [16]
 -BTRDY <-> BTRDY [16]
 -BIRDY <-> BIRDY [16]
 -BFRAME <-> BFRAME [16]
 -PCIE_RST <-> PCIE_RST [17]
 -BPCIRST <-> BPCIRST [16]
 -BREQ0 <-> BREQ0 [16]
 -BGNT0 <-> BGNT0 [16]
 -BPCIPME1 <-> BPCIPME1 [16]



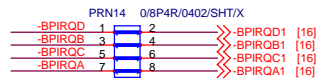
High: Enable PCI CLK 66MHz
 Low: Disable PCI CLK 66MHz



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



IT8892

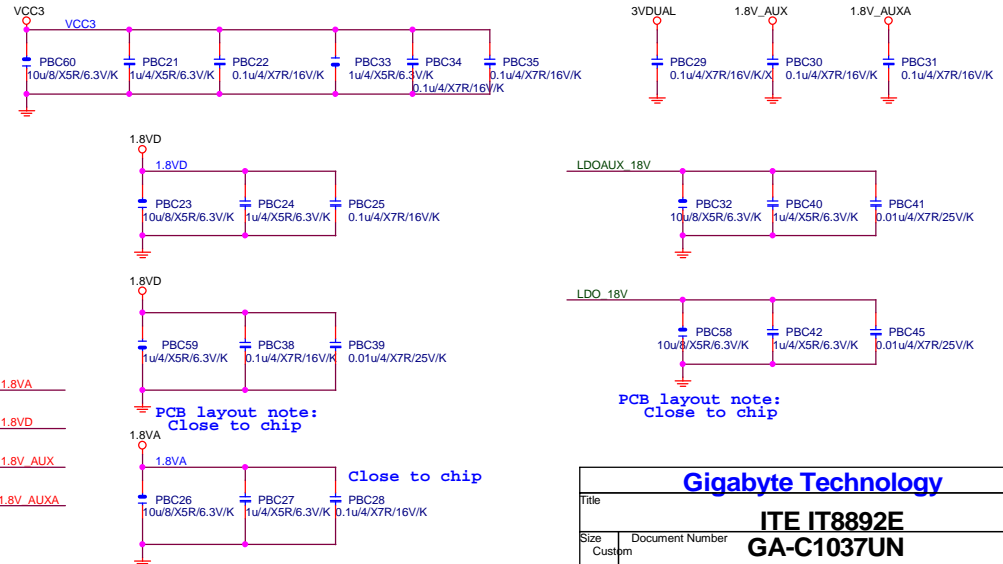
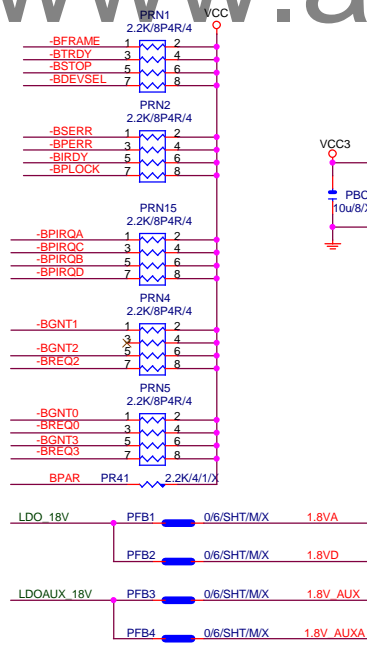
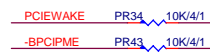
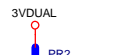


PCI slot

PCI slot



chipset side



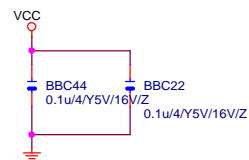
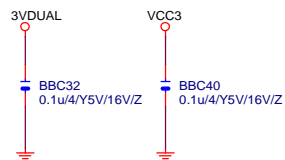
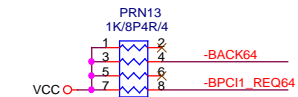
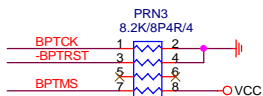
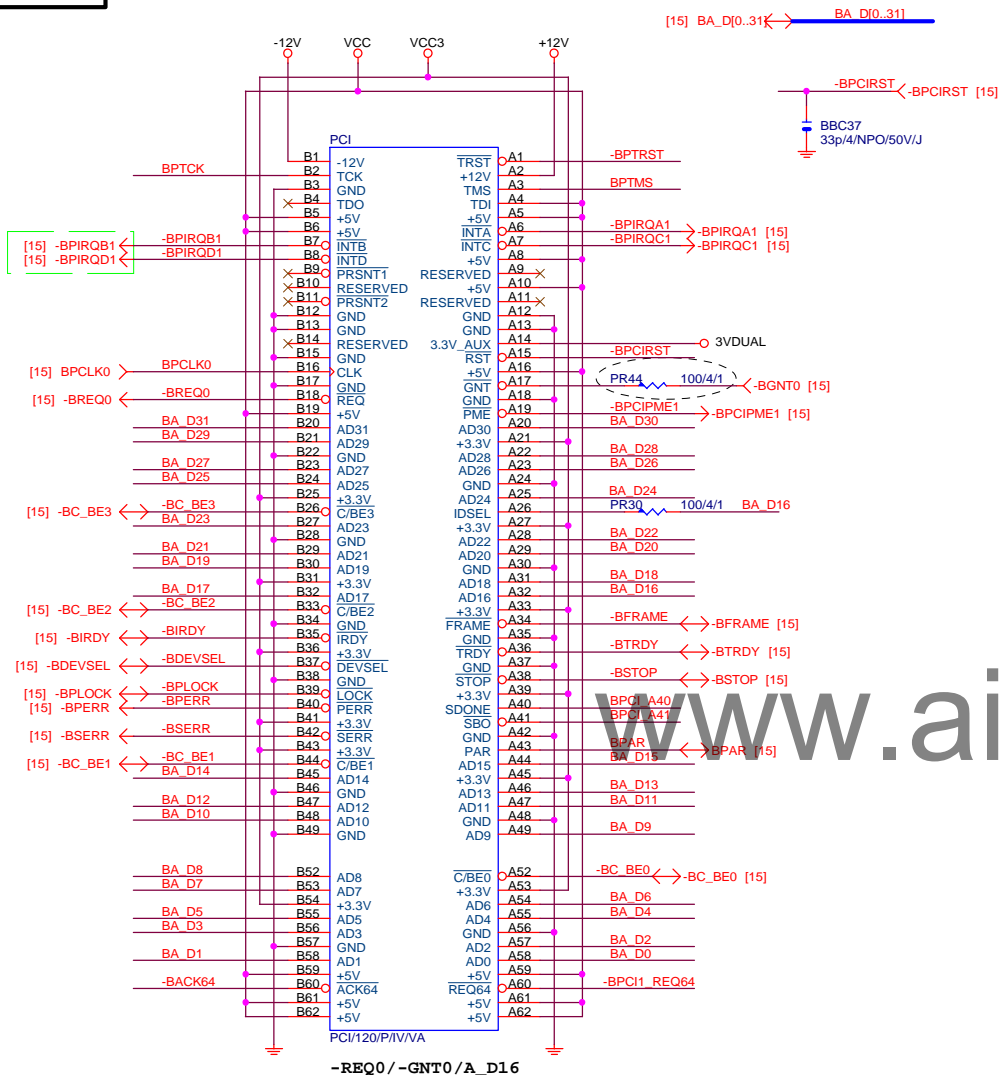
PCB layout note:
 Close to chip

PCB layout note:
 Close to chip

Gigabyte Technology

Title		
ITE IT8892E		
GA-C1037UN		
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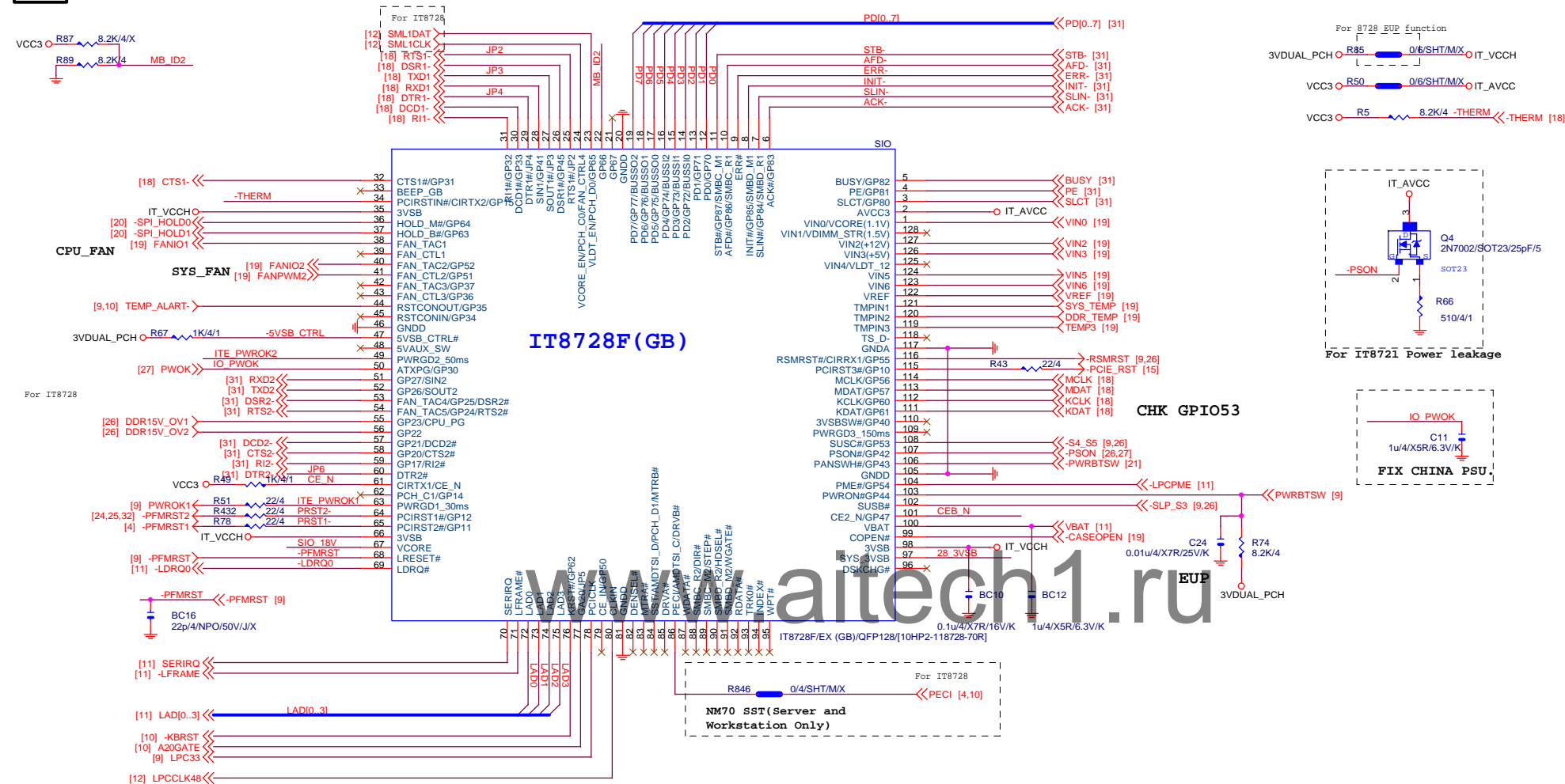
PCI SLOT



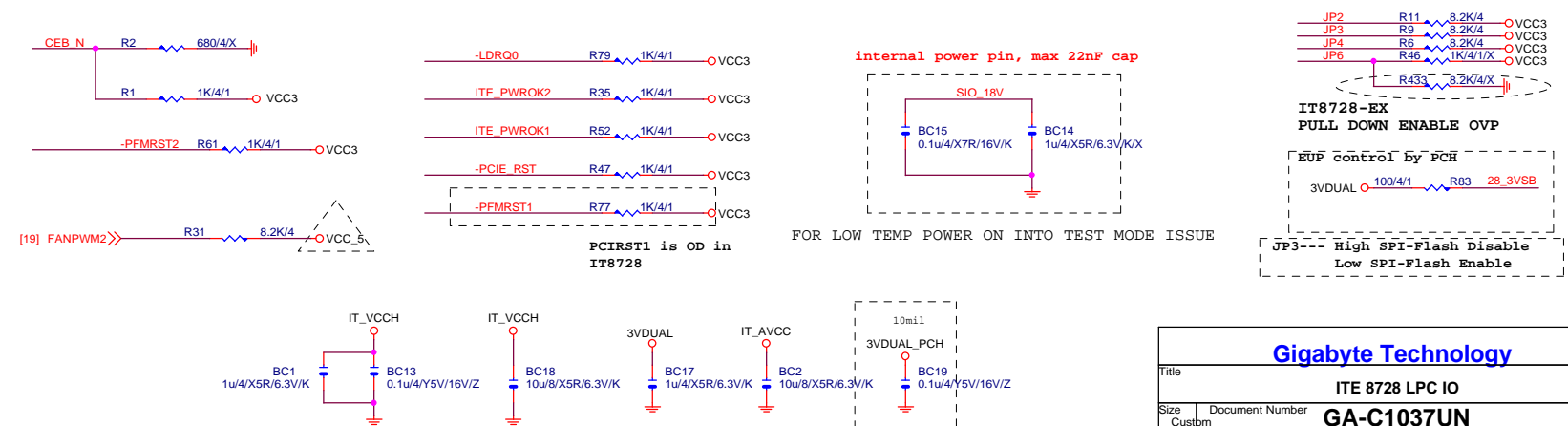
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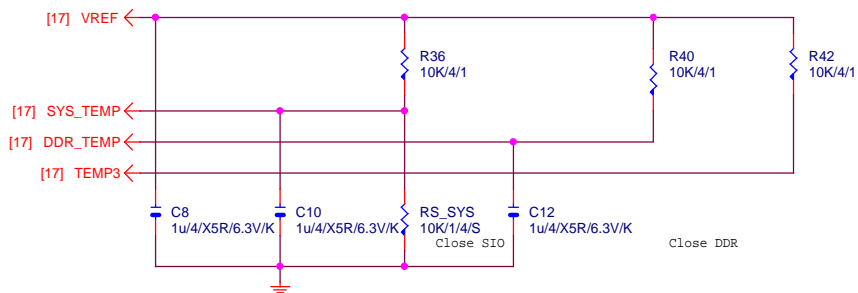
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PCI SLOT 1		
Size	Document Number	Rev
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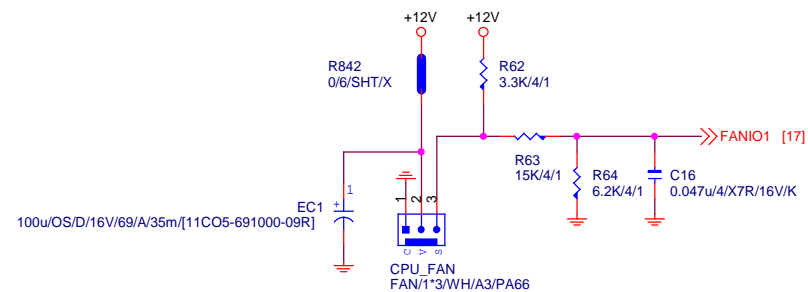
	IT8728
PIN121	VCORE_EN/PCH_C0
PIN120	VLDT_EN/PCH_D0
PIN19	ATXPG
PIN31	PCH_C1
PIN53	SST/AMDTSI_D/MTRB#/PCH_D1
PIN55	PECI/AMDTSI_C/DRV#
PIN66	SYS_3VSB
PIN70	GP47
PIN95	VIN2 (VCC5)
PIN96	VIN1 (VCC12)
PIN97	VIN1/VDIMM_STR (1.5V)
PIN98	VIN0/VCORE (1.1V)/NC



TEMP H/W MONITOR

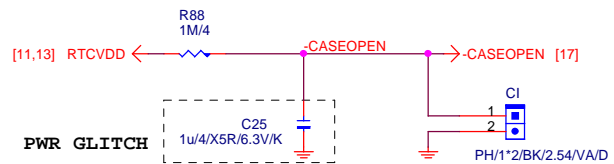


CPU SMART FAN

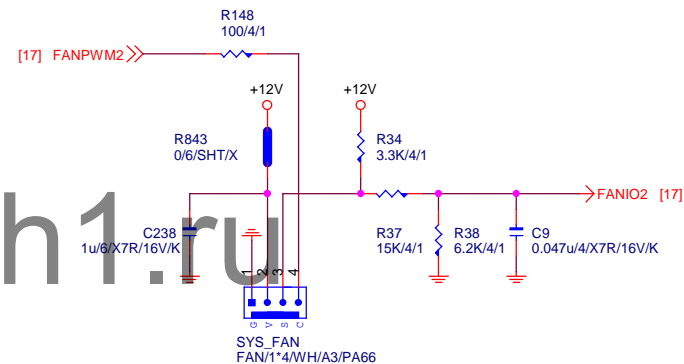


CASE OPEN

Case Open Circuits

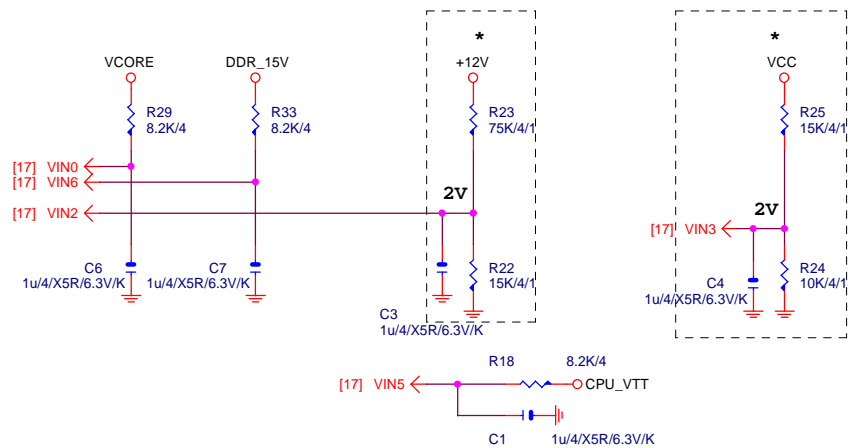


SYS SMART FAN



VOLTAGE-- H/W MONITOR

IT8728/EX VIN2/VIN3-->2V



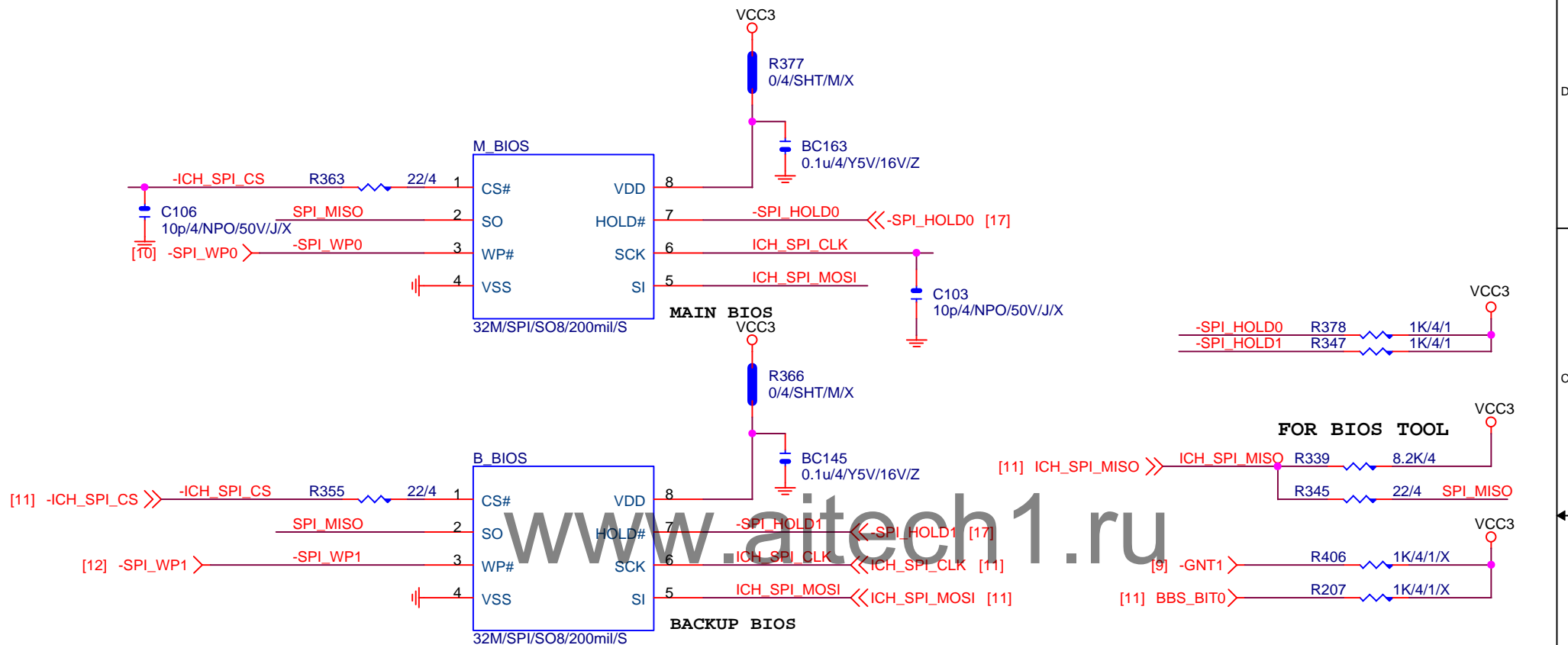
O.V.

N/A

Gigabyte Technology

Title			HWM,FAN CTRL,OV
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DUAL BIOS



B65使用64M BIOS

使用H67暫用32M

H61使用32M BIOS

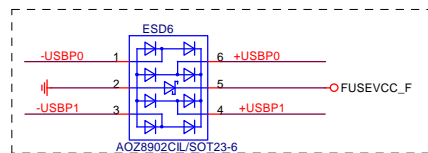
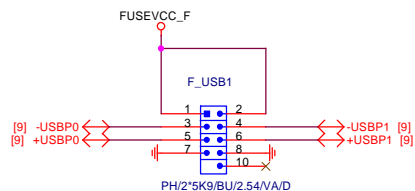
Boot BIOS Strap		
PCI GNT#1	BBS BIT0	Boot BIOS Location
1	1	SPI (Default)
0	1	Reserved (NAND)
0	0	LPC

1 means floating
0 means PD 1K

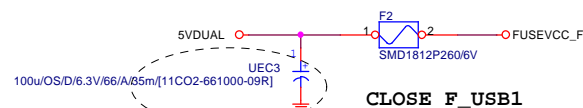
Gigabyte Technology

Title		
DUAL BIOS		
Size A	Document Number GA-C1037UN	Rev 2.0
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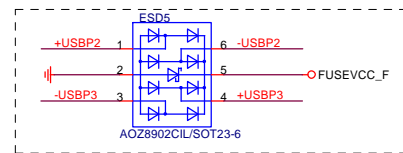
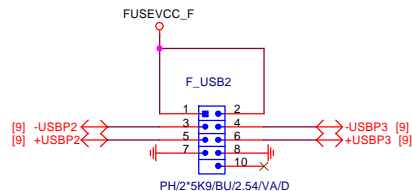
FRONT USB1



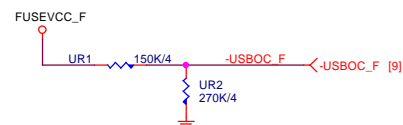
Close to connector



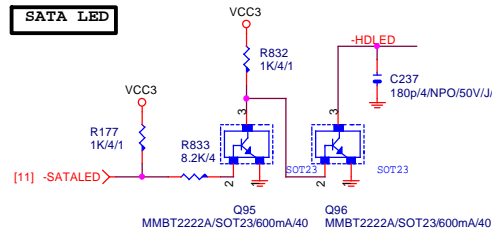
FRONT USB2



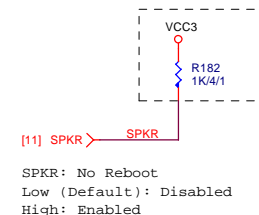
Close to connector



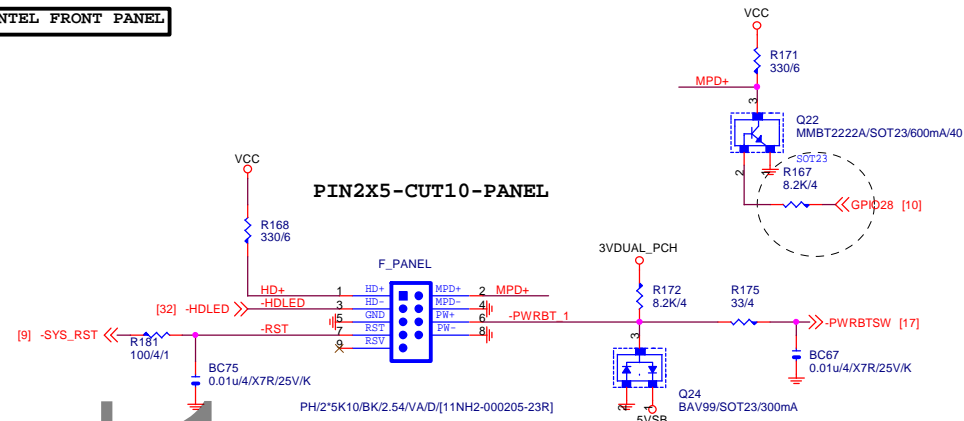
SATA LED



SPKR



INTEL FRONT PANEL



BLACK

Gigabyte Technology

Title	FP,F USB,USB PWR,SPKR,SATA LED
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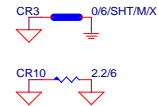
Size	Document Number	Rev
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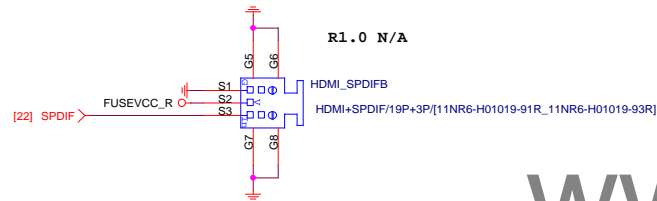
ALC892/ALC889A/ALC889/ALC888B Colay



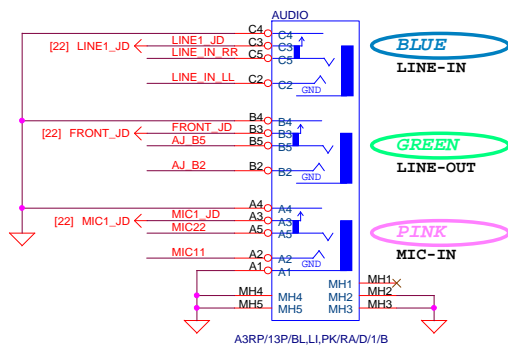
CODEC POWER/EMI PAD



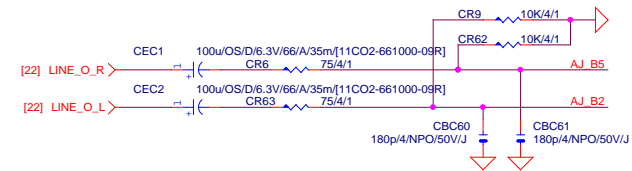
SPDIF



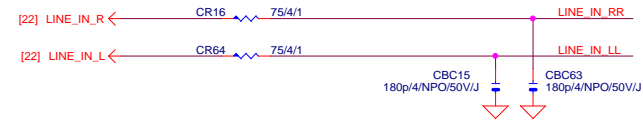
AZALIA JACK



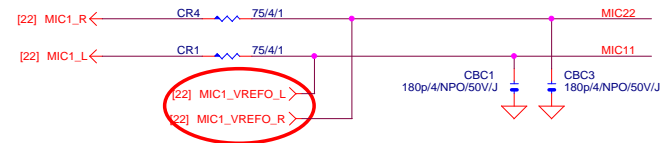
LINE-OUT



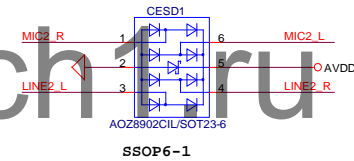
LINE-IN



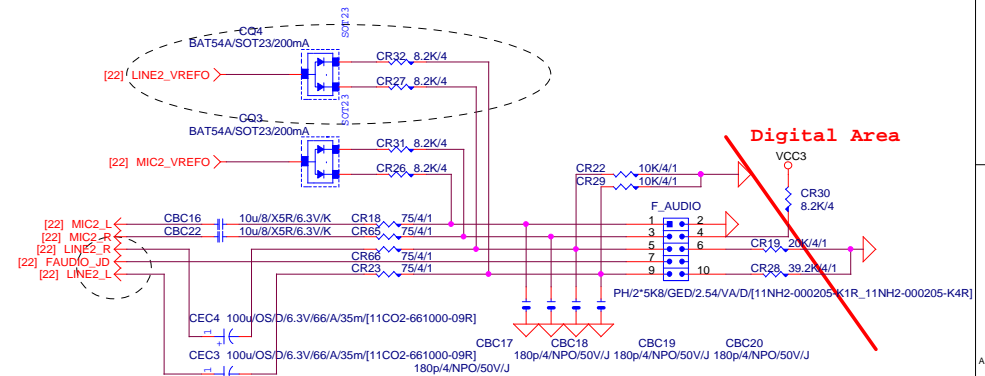
MIC-IN



F_AUDIOESD



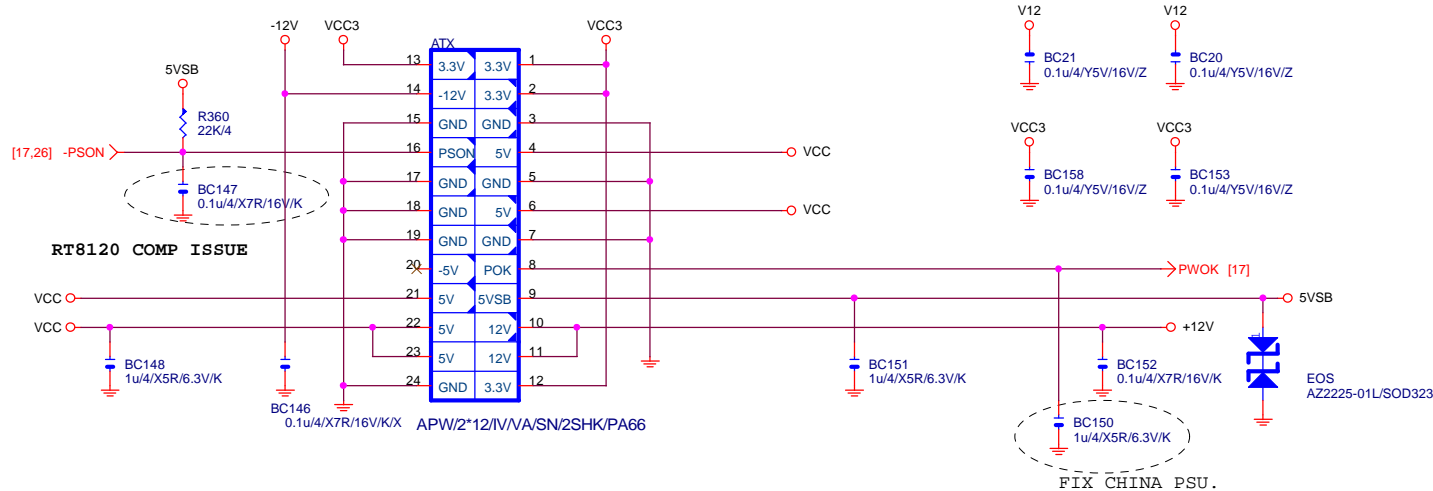
AZALIA FRONT PANEL



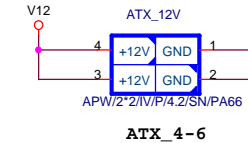
Gigabyte Technology

Title			AUDIO JACK
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ATXX24 POWER CONNECTOR

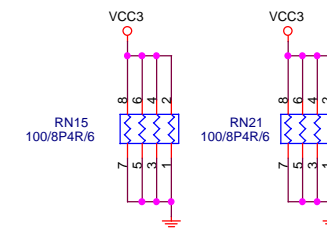


ATXX4 POWER CONNECTOR

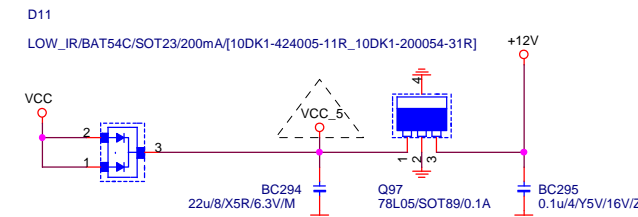
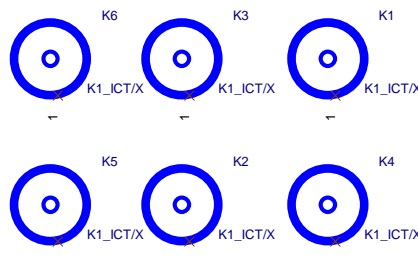
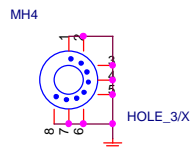
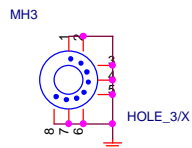
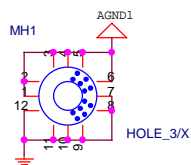
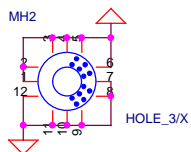


MIN. LOAD

FIX PWR MINMUN LOAD



MB LOCATION

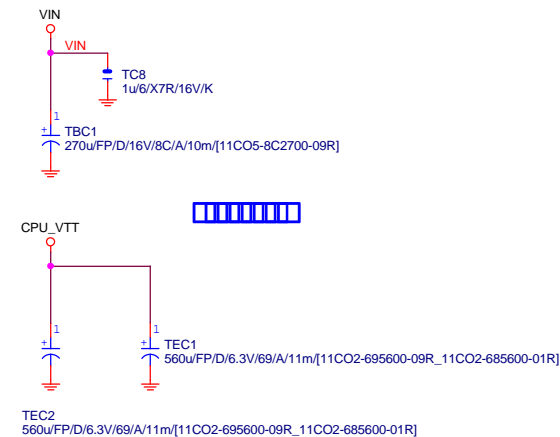
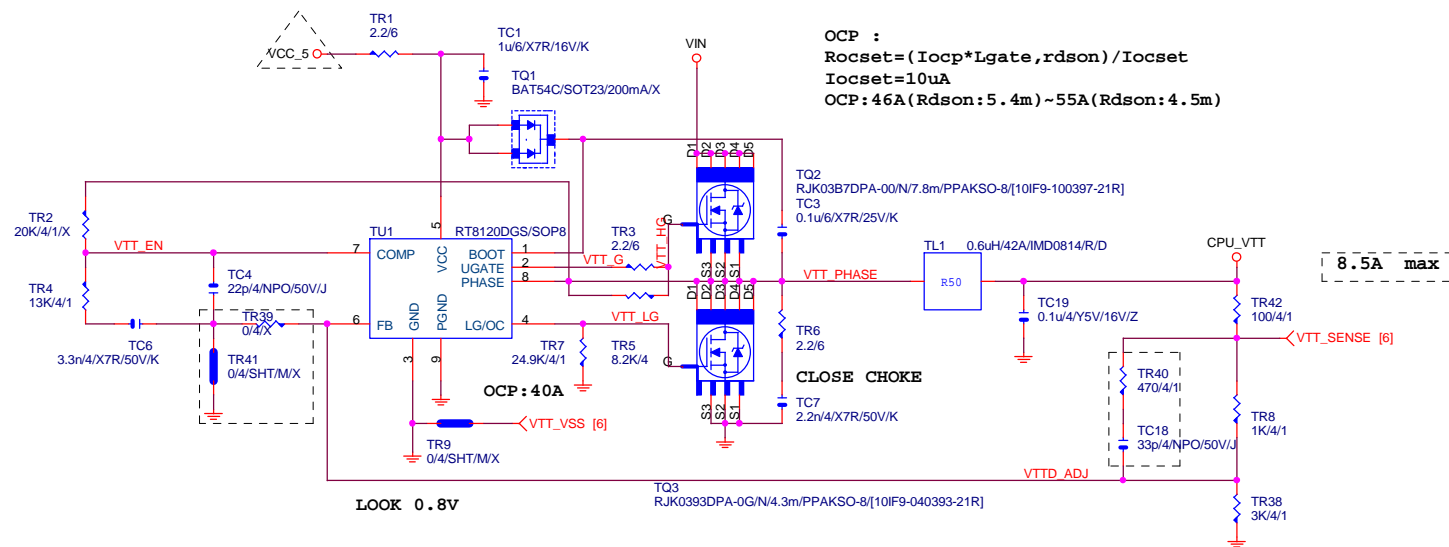


FIX POWER SUPPLY MIN LOAD +5V ISSUE

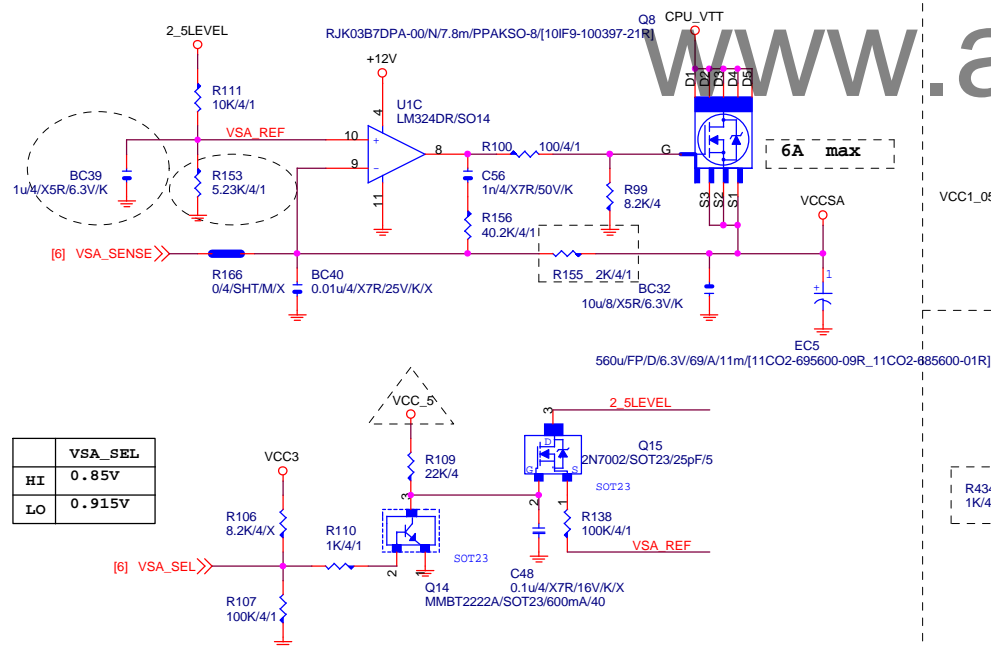
Gigabyte Technology

Title		
ATX CONNECTOR		
Size B	Document Number	Rev
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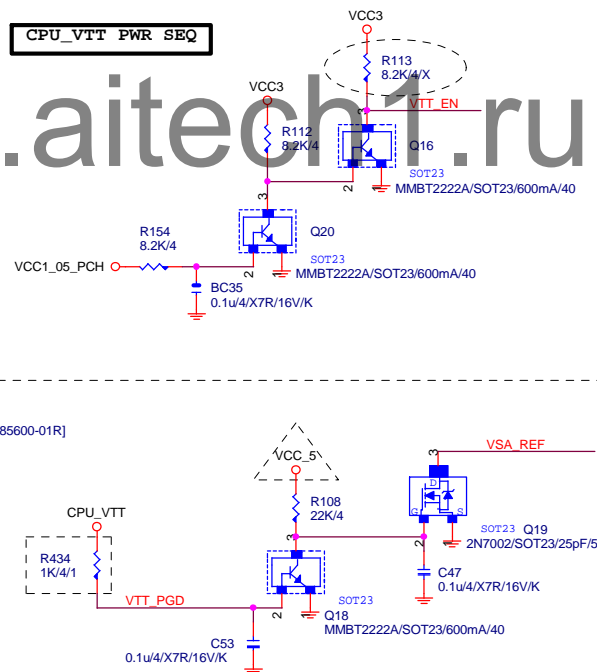
CPU_VTT



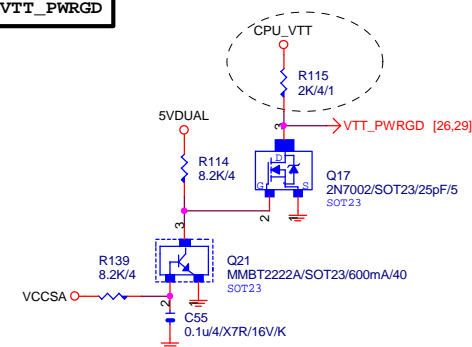
VCCSA



CPU_VTT	PWR	SEQ
0	0	0
0	0	1
0	1	0
0	1	1
1	0	0
1	0	1
1	1	0
1	1	1



VTT_PWRGD



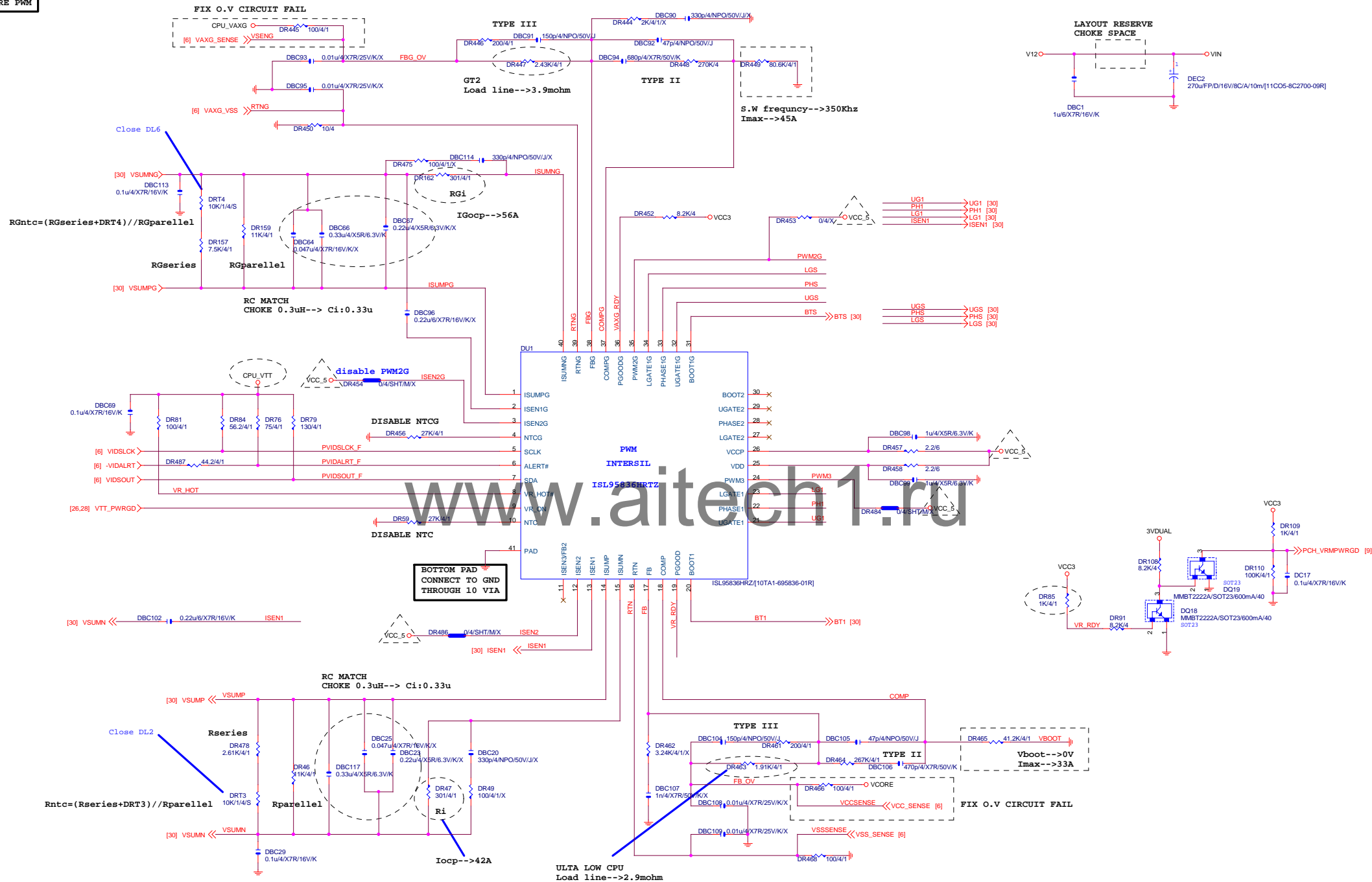
GIGABYTE™

Title	CPU_VTT PWM_RT8120
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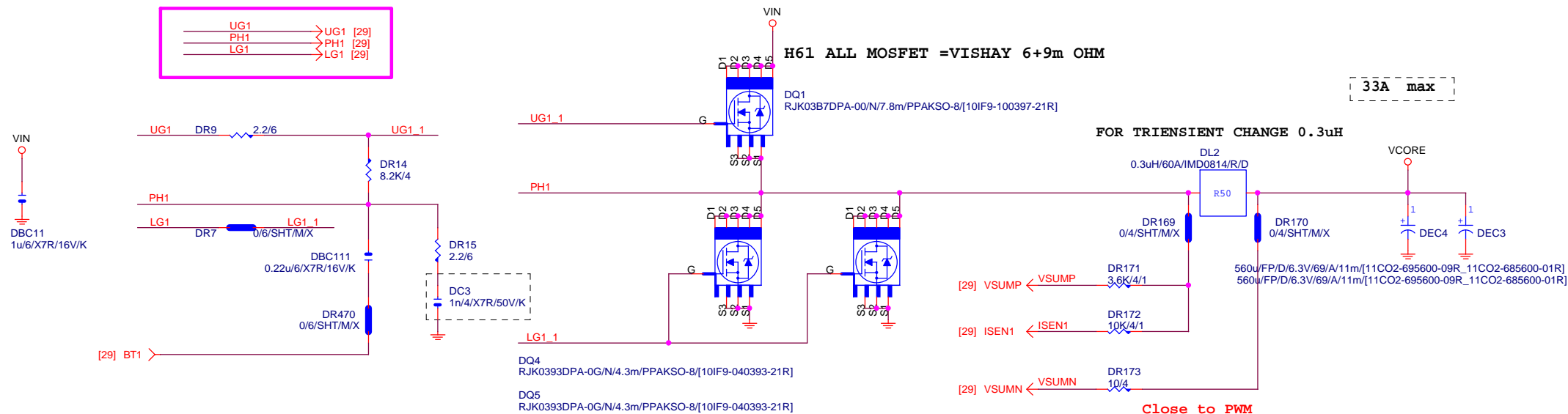
Size	Document Number	Rev
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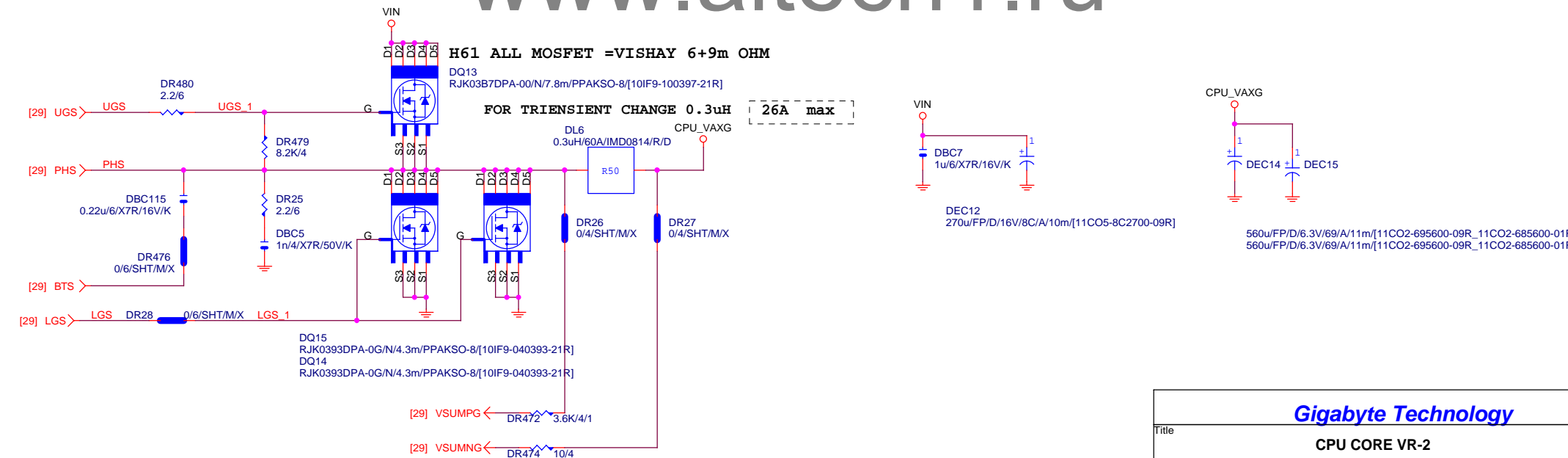
VCORE PWM



VCORE



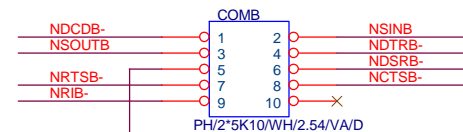
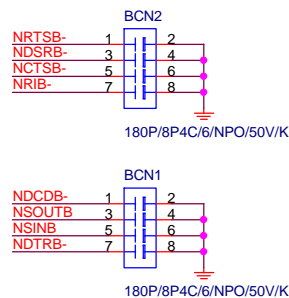
VAXG



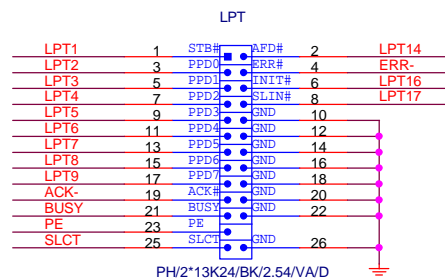
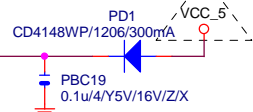
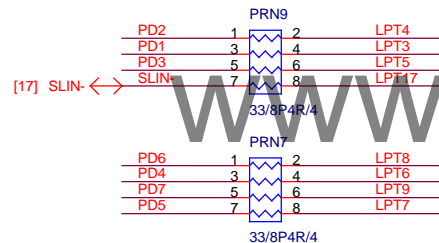
Gigabyte Technology

Title			CPU CORE VR-2
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COMB



LPT PORT



PIN2X13_LPT-CUT24

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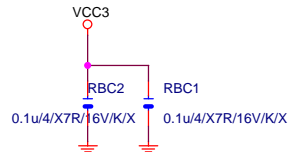
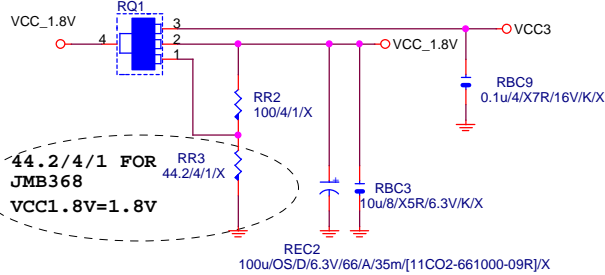
LPT,COMB

GA-C1037UN

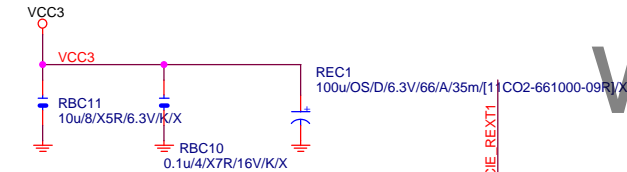
Rev
2.0

3.3V to 1.8V Voltage Regulator

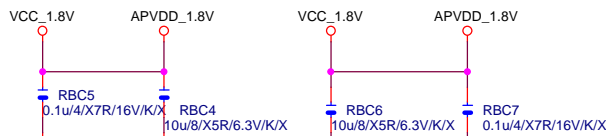
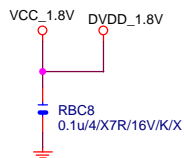
L1117LG/N/SOT223/1A/X



close to IC



Close to pin22 and pin39

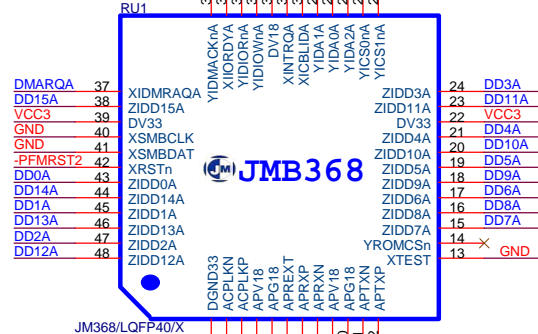


CLOSE TO pin22

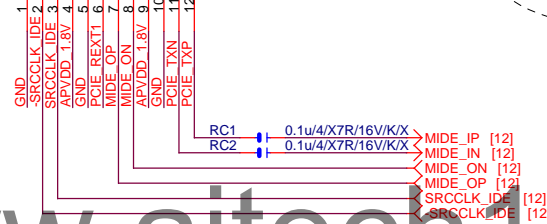
close to pin17

[17,24,25] -PFMRST2

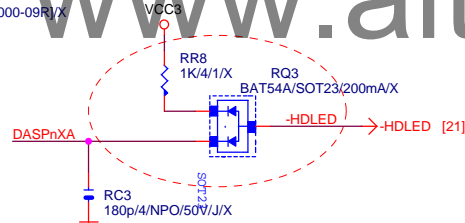
RC4
100p/4/NPO/50V/J/X



JM368/LQFP40/X



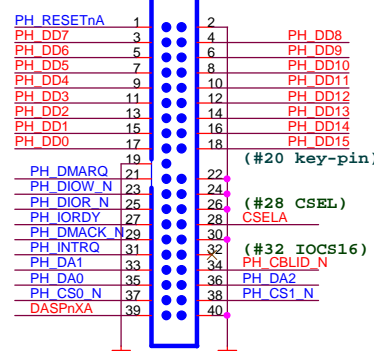
www.aitech1.ru



DASPNxA

RC3
180p/4/NPO/50V/J/X

IDE Connector



BH/2*20K20/WH/SHN/2.54/V/PA46/X

PH DD7 DD7A
PH DD8 DD8A
PH DD6 DD6A
PH DD9 DD9A

PH DD5 DD5A
PH DD4 DD4A
PH DD10 DD10A
PH DD11 DD11A

PH DD3 DD3A
PH DD12 DD12A
PH DD2 DD2A
PH DD13 DD13A

PH DD1 DD1A
PH DD0 DD0A
PH DD14 DD14A
PH DD15 DD15A

PH DIOW_N DIOWnA

PH DIOR_N DIORnA

PH DMACK_N DMACKnA

PH_DA1 DA1A

PH_DA0 DA0A

PH_CS0_N CS0nA

PH_DA2 DA2A

PH_CS1_N CS1nA

PH_IORDY IORDYA

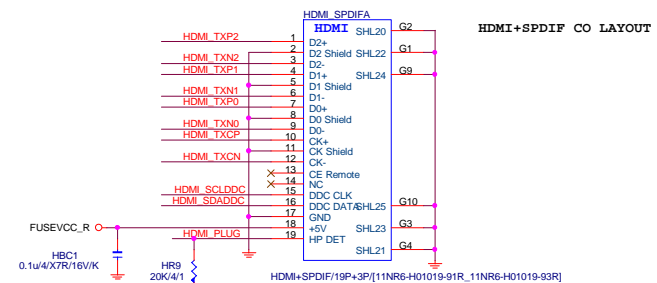
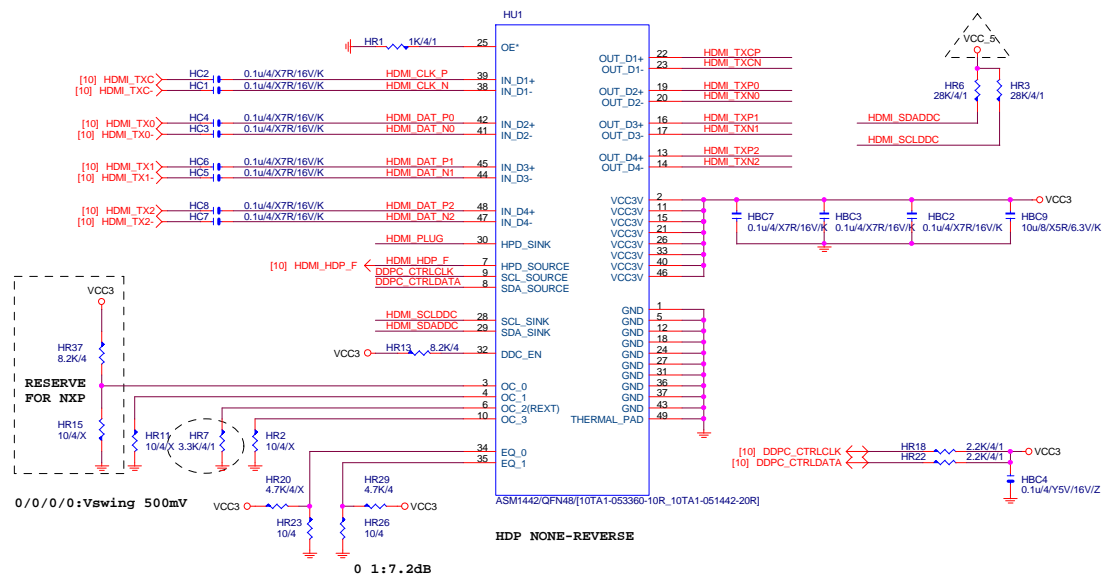
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PH_INTRQ INTRQA

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Title		
JMR368		
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DEFAULT HDMI+SPDIF

SIGLE HDMI:

11NR6-H01019-91R_11NR6-H01019-93R

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Title			
HDMI / DVI			
Size	Document Number	Rev	
Custom	GA-C1037UN	2.0	
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