

Model Name: GA-B75M-HD3

Revision 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 EXPRESS*1 X2 SLOT
16	PCI SLOT1
17	ITE 8728 LPC IO
18	COM,KB_MS_USB,USB30_20
19	HWM,FAN CTRL,OV,-PROCHOT
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21	FP,FUSB,SPK,SATALED
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23	REAR AUDIO JACK
24	REALTEK RTL8111F-VL
25	DISCRETE POWER
26	ATX, M3 POWER
27	RT8120_CPU_VTT

SHEET

TITLE

28	VCORE ISL95836_1
29	VCORE ISL95836_2
30	RT8120_DDR POWER
31	LPT
32	DVI

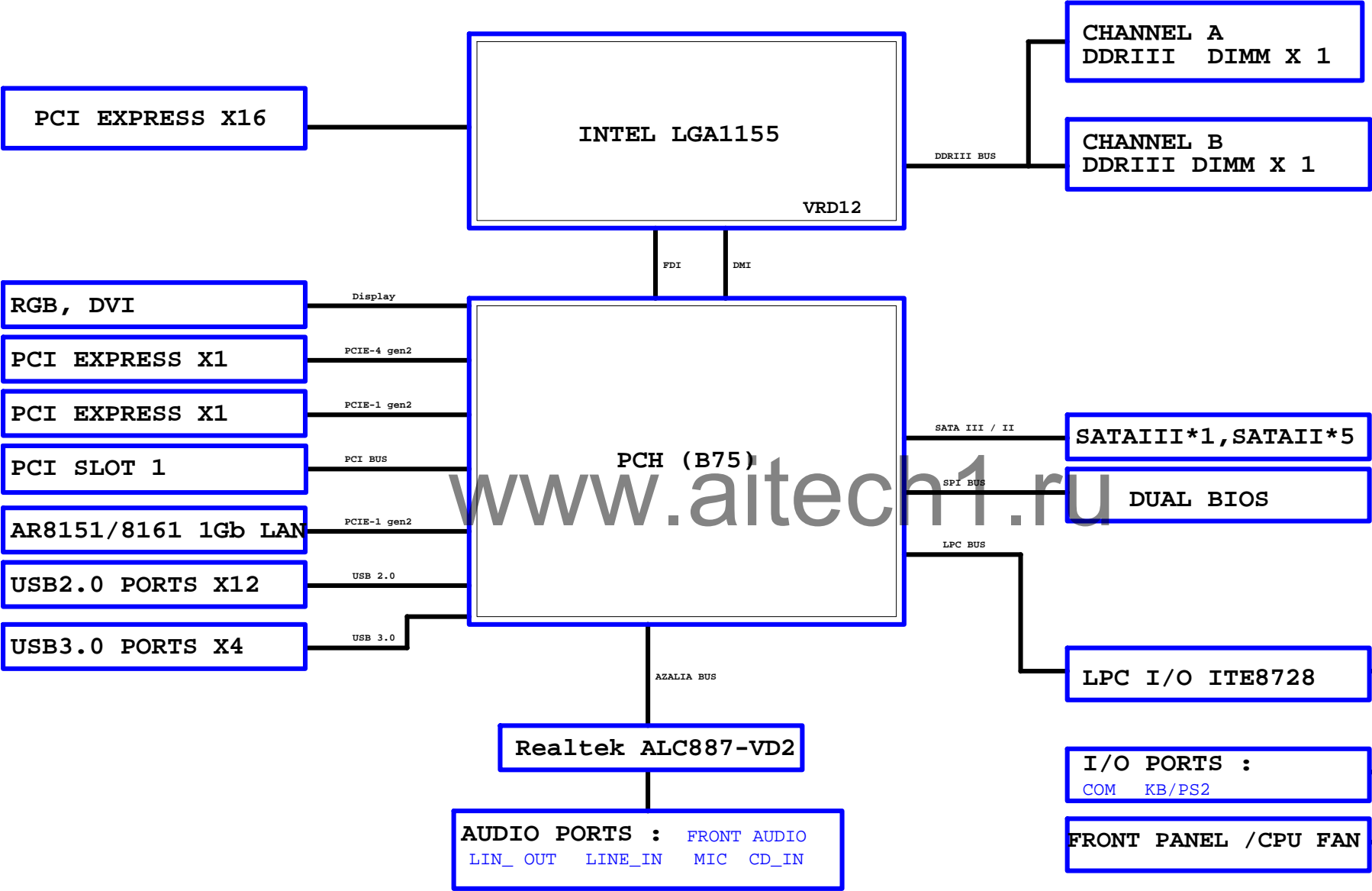
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Gigabyte Technology

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C

BLOCK DIAGRAM



LGA1155E



LGA1155D



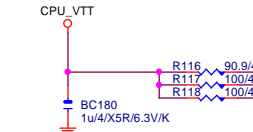
[LGA1155C](#)



R218 1K/4/1 R215 200/4/1 1.1V分壓



CPU SVID



Title			
CPU LGA1155-A			
Size	Document Number	Rev	
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(A)



LGA1155/[10SC1-F01155-21R_10SC1-F01155-22R]

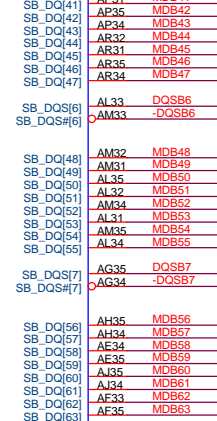
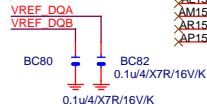
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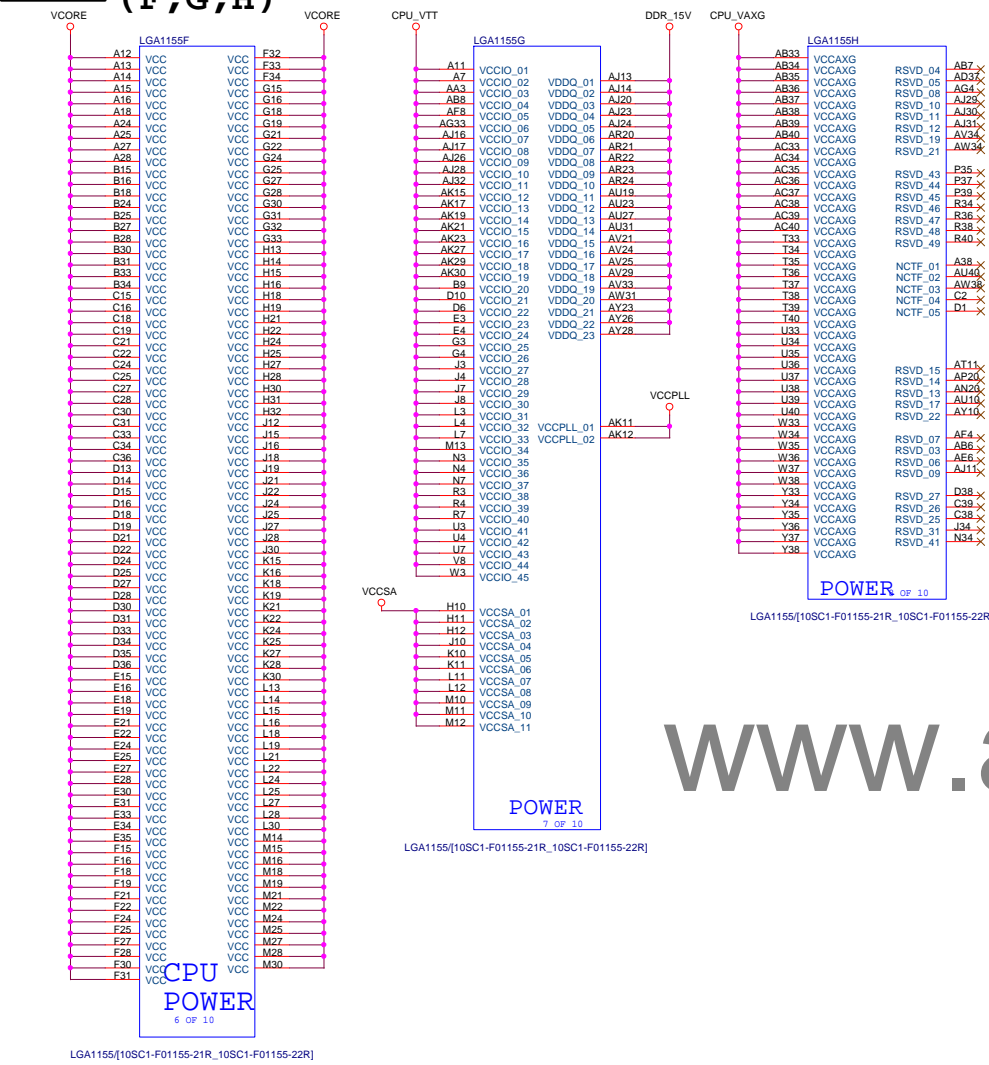
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ILM_BP/1156/CSP/ILM_BP/1156/CSP/[12KRC-0F0001-05R_12KRC-0F0001-31R]



Rev	1.0
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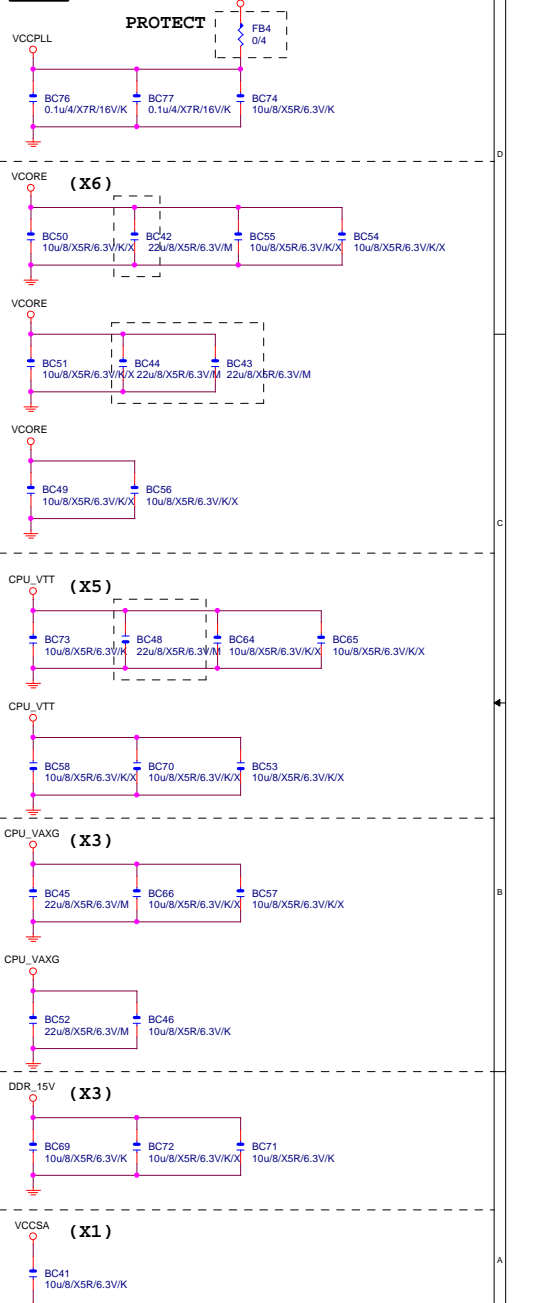
LGA1155 (F,G,H)



LGA1155 (I,J)



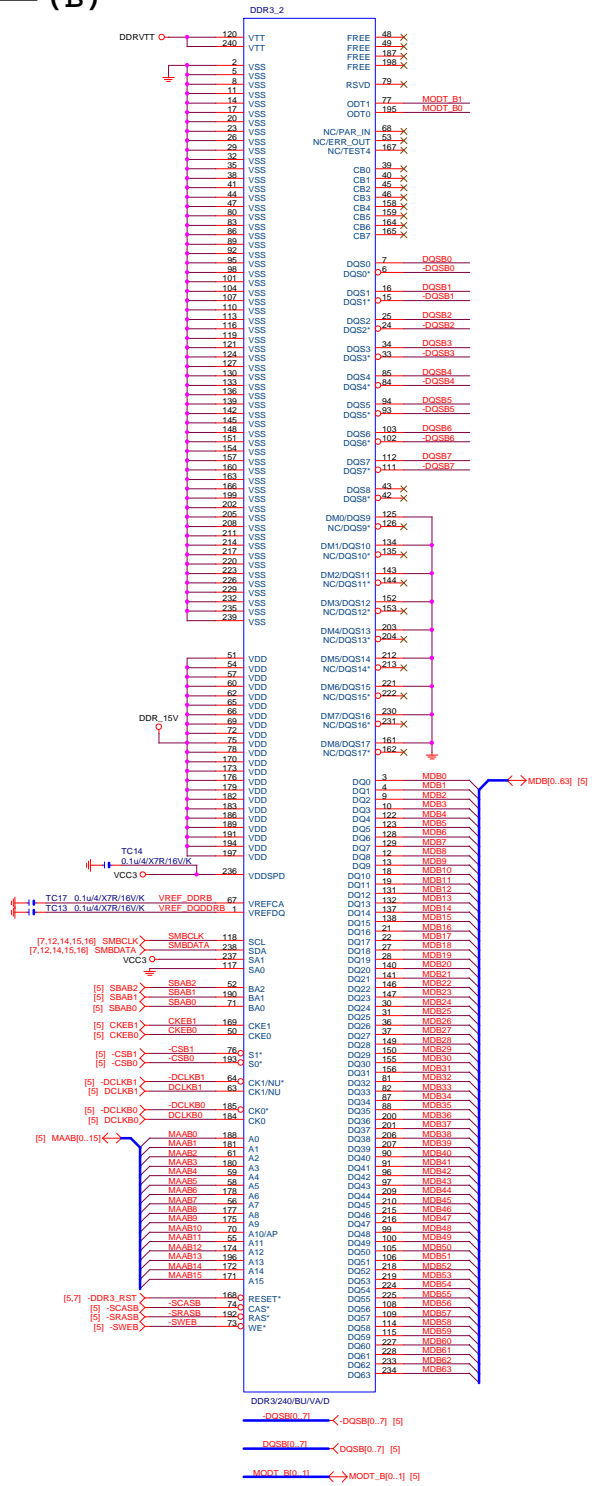
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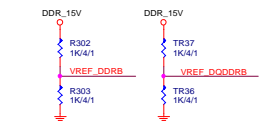
Gigabyte Technology			
Title	CPU LGA1156-C		
Size	Custom	Document Number	GA-B75M-HD3
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DDR3

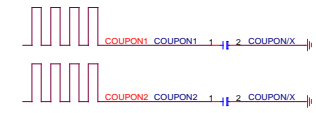
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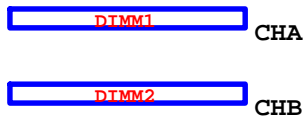
DDR3 VREF



COUPON



CPU



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(B)



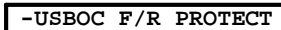
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SB HEATSIN

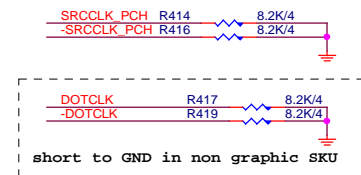


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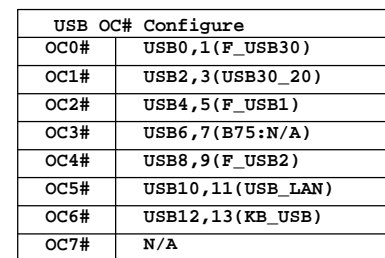
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PCH CLK PD



USB TABLE

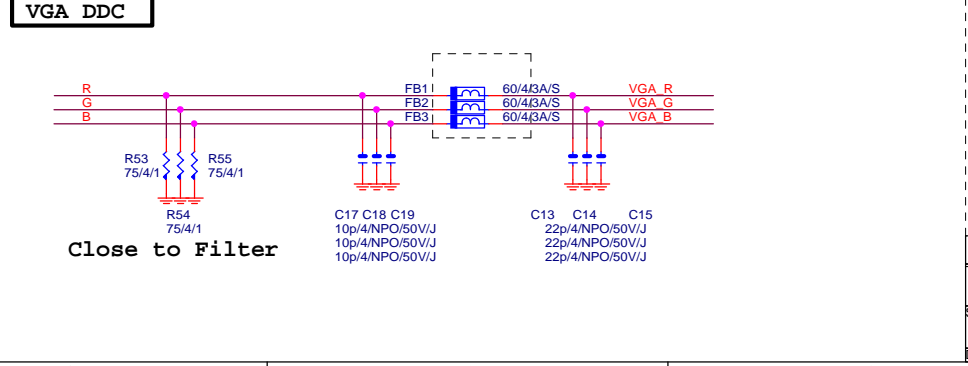
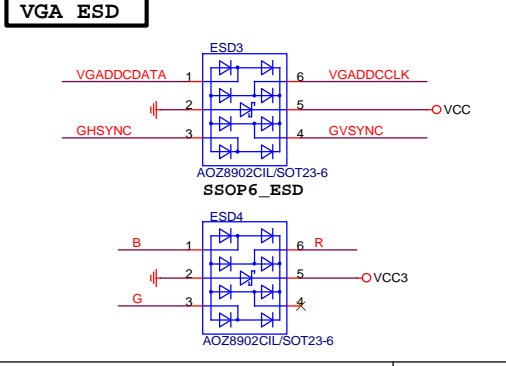
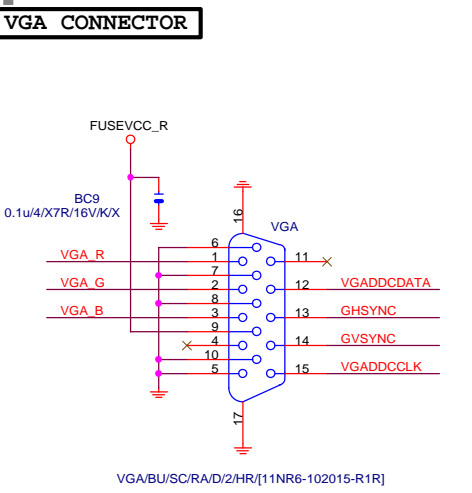
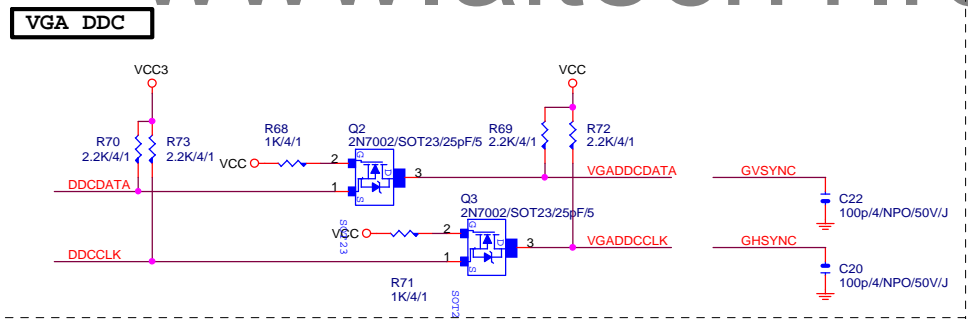
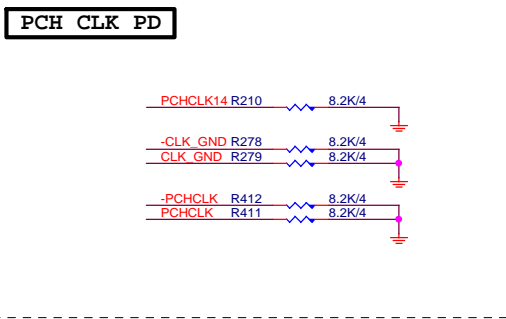
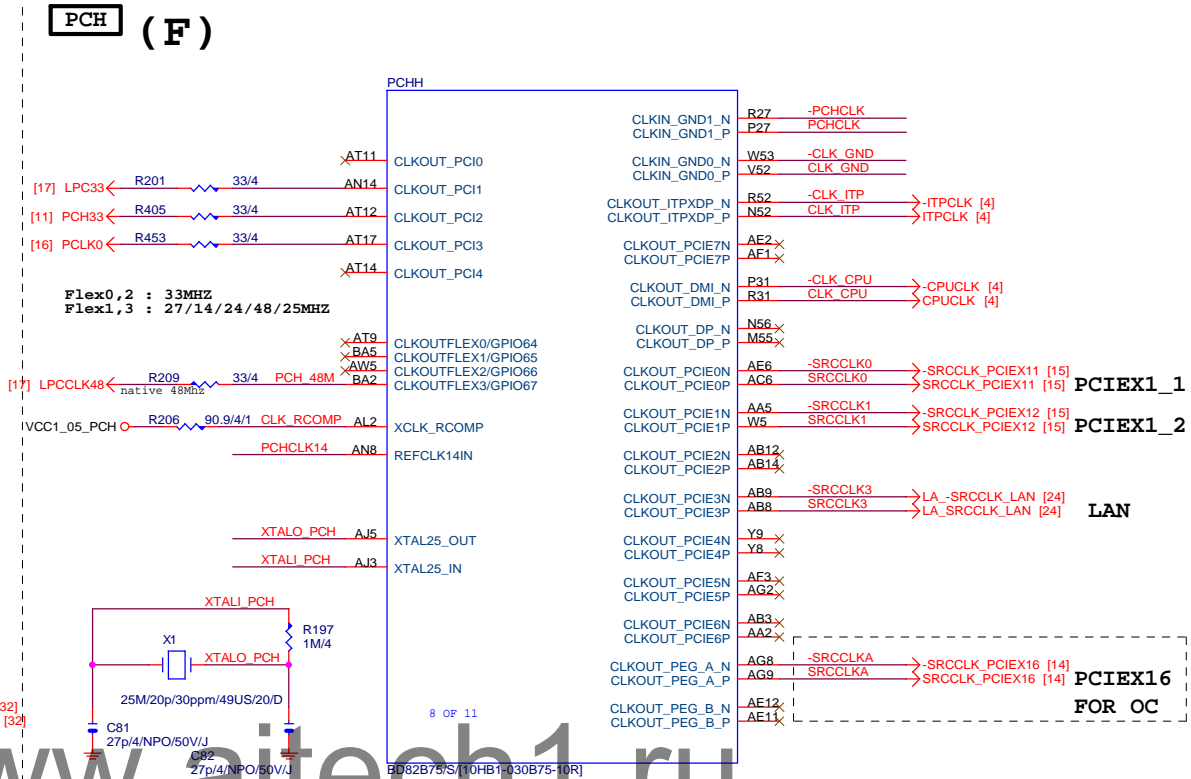
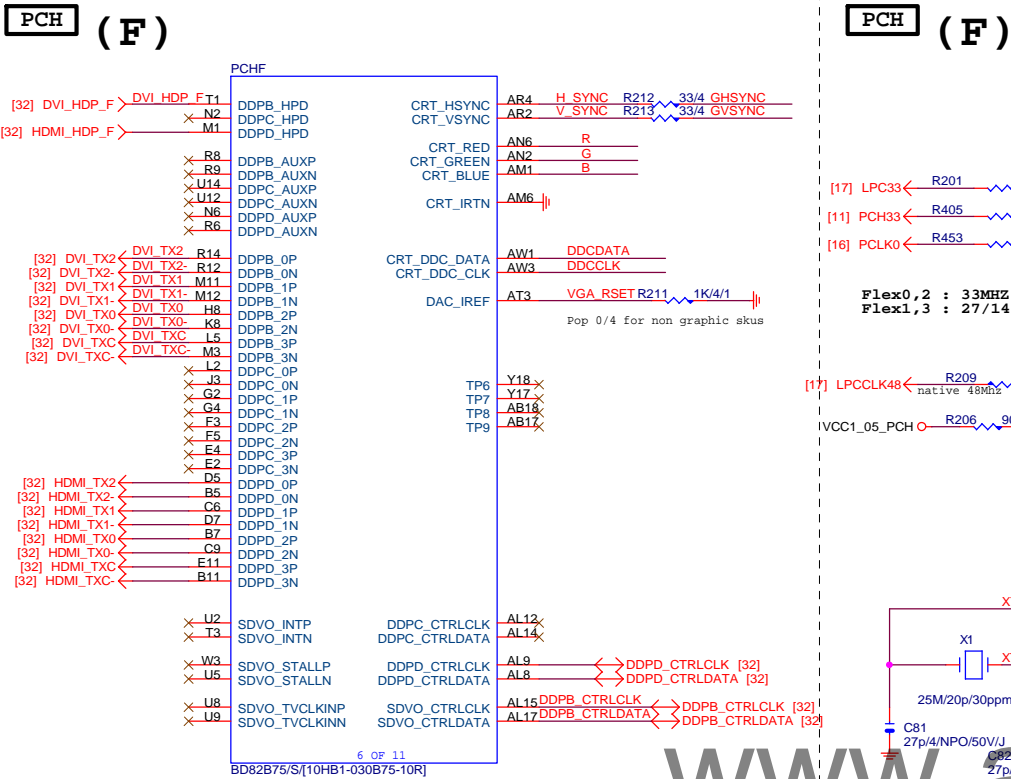


Gigabyte Technology

Title	PCH FDI,DMI,USB ,PCIE,NVRAM
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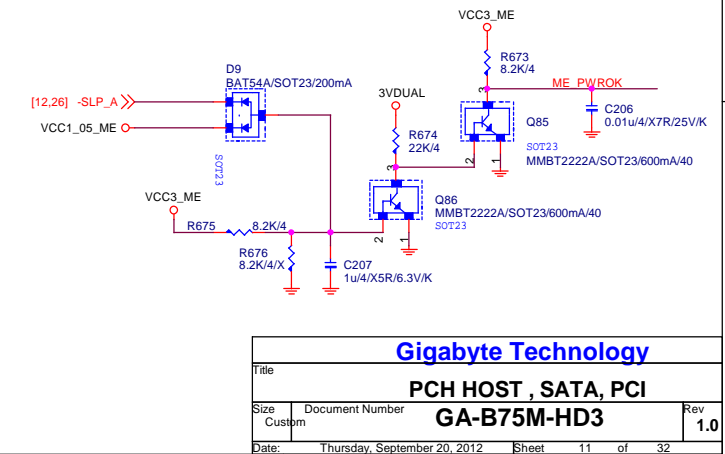
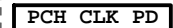
Size Custom	Document Number GA-B75M-HD3	Rev 1.0
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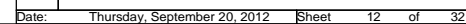


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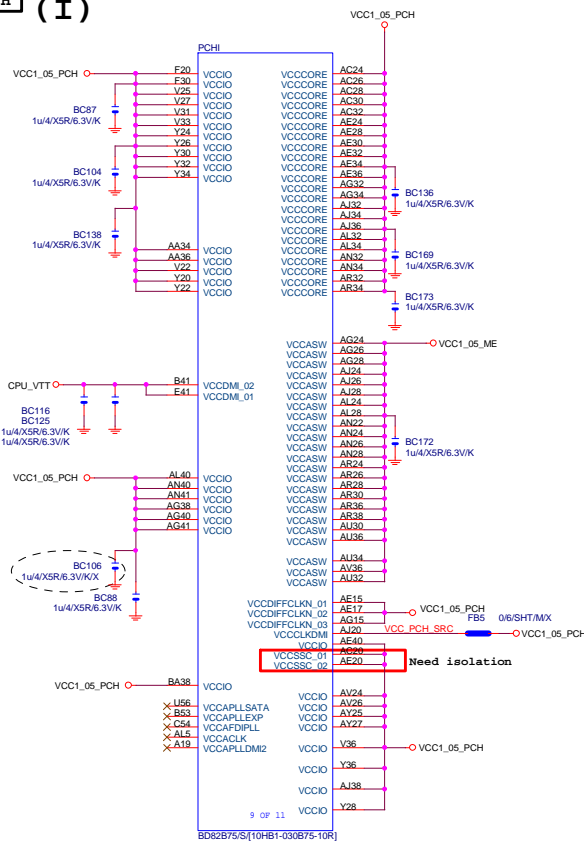
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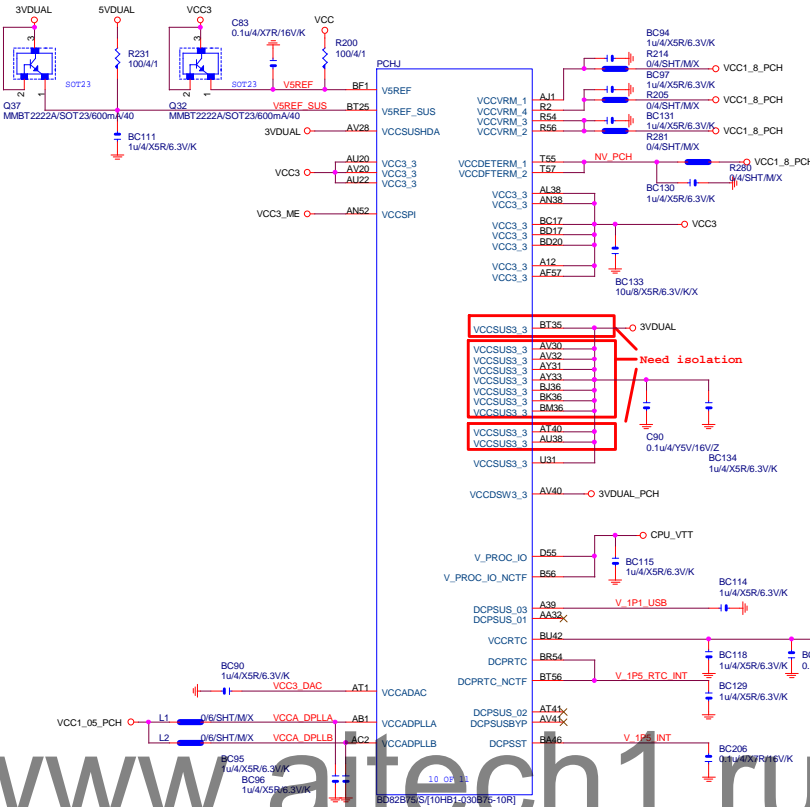
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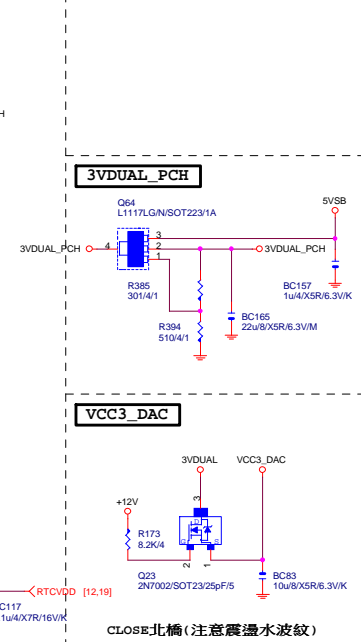
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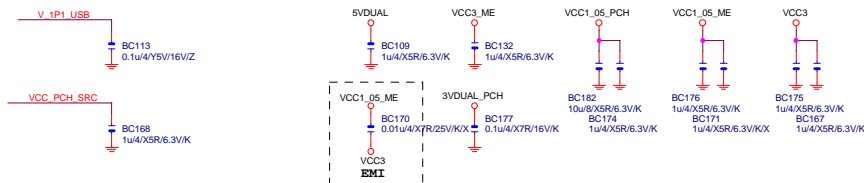


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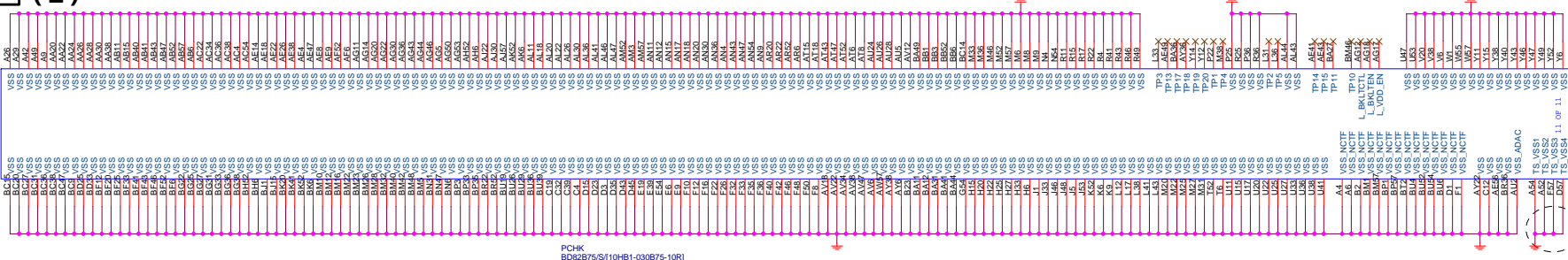


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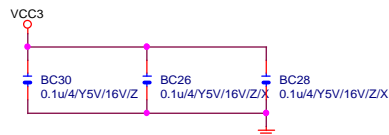




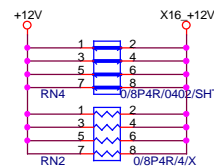
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PCIEX16 CAP



PCIEX16 PROTECT SHT



PCIEX16 AC CAP

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EXP A TXN0	C30	0.22u/4/X5R/6.3V/K	EXP A TXN0C
EXP A TXP1	C35	0.22u/4/X5R/6.3V/K	EXP A TXP1C
EXP A TXN1	C37	0.22u/4/X5R/6.3V/K	EXP A TXN1C
EXP A TXP2	C39	0.22u/4/X5R/6.3V/K	EXP A TXP2C
EXP A TXN2	C41	0.22u/4/X5R/6.3V/K	EXP A TXN2C
EXP A TXP3	C43	0.22u/4/X5R/6.3V/K	EXP A TXP3C
EXP A TXN3	C45	0.22u/4/X5R/6.3V/K	EXP A TXN3C
EXP A TXP4	C46	0.22u/4/X5R/6.3V/K	EXP A TXP4C
EXP A TXN4	C49	0.22u/4/X5R/6.3V/K	EXP A TXN4C
EXP A TXP5	C50	0.22u/4/X5R/6.3V/K	EXP A TXP5C
EXP A TXN5	C51	0.22u/4/X5R/6.3V/K	EXP A TXN5C
EXP A TXP6	C52	0.22u/4/X5R/6.3V/K	EXP A TXP6C
EXP A TXN6	C54	0.22u/4/X5R/6.3V/K	EXP A TXN6C
EXP A TXP7	C57	0.22u/4/X5R/6.3V/K	EXP A TXP7C
EXP A TXN7	C58	0.22u/4/X5R/6.3V/K	EXP A TXN7C
EXP A TXP8	C60	0.22u/4/X5R/6.3V/K	EXP A TXP8C
EXP A TXN8	C61	0.22u/4/X5R/6.3V/K	EXP A TXN8C
EXP A TXP9	C62	0.22u/4/X5R/6.3V/K	EXP A TXP9C
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EXP A TXP12	C68	0.22u/4/X5R/6.3V/K	EXP A TXP12C
EXP A TXN12	C70	0.22u/4/X5R/6.3V/K	EXP A TXN12C
EXP A TXP13	C72	0.22u/4/X5R/6.3V/K	EXP A TXP13C
EXP A TXN13	C73	0.22u/4/X5R/6.3V/K	EXP A TXN13C
EXP A TXP14	C74	0.22u/4/X5R/6.3V/K	EXP A TXP14C
EXP A TXN14	C75	0.22u/4/X5R/6.3V/K	EXP A TXN14C
EXP A TXP15	C77	0.22u/4/X5R/6.3V/K	EXP A TXP15C
EXP A TXN15	C78	0.22u/4/X5R/6.3V/K	EXP A TXN15C

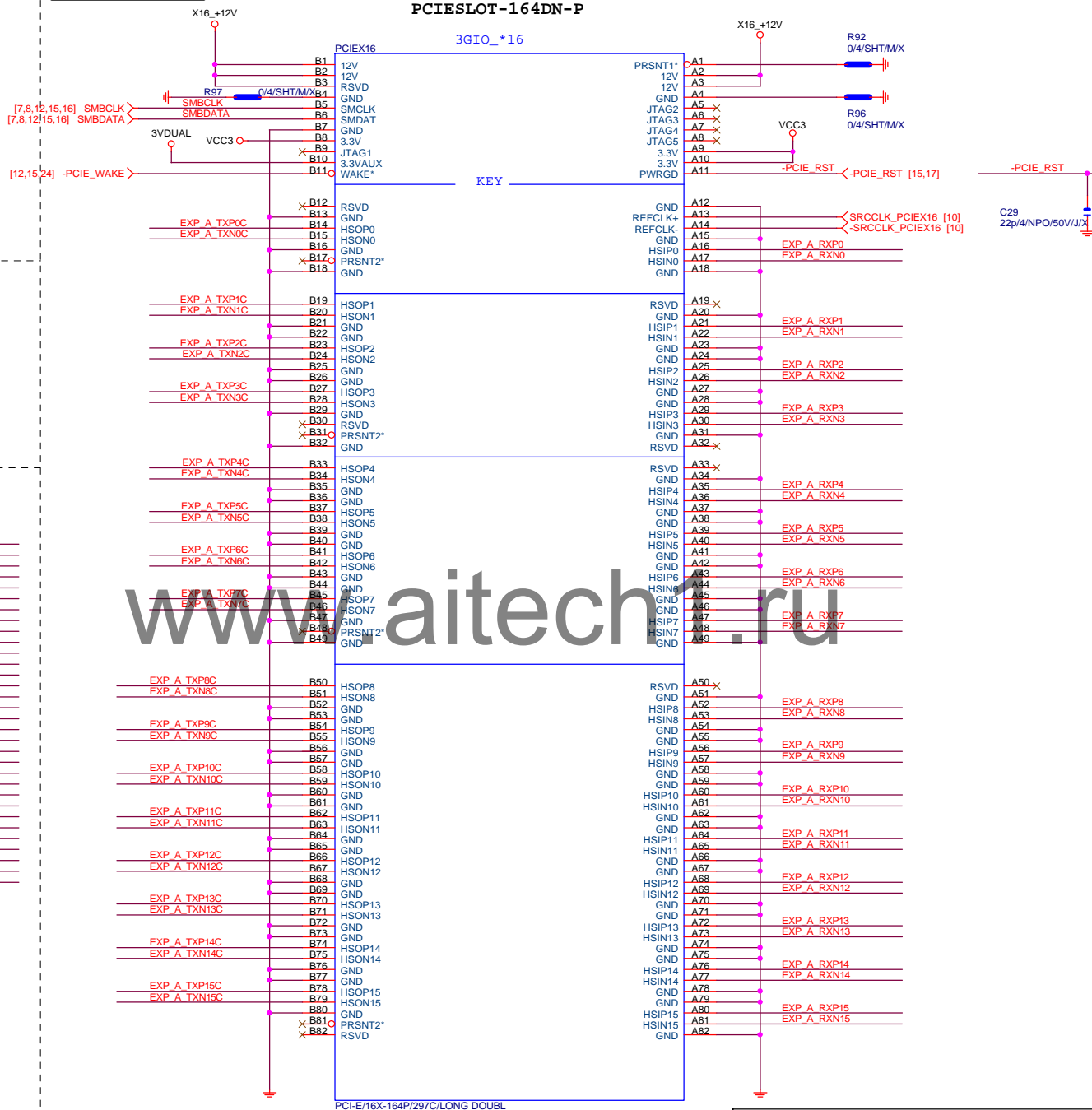
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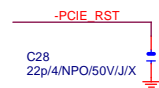
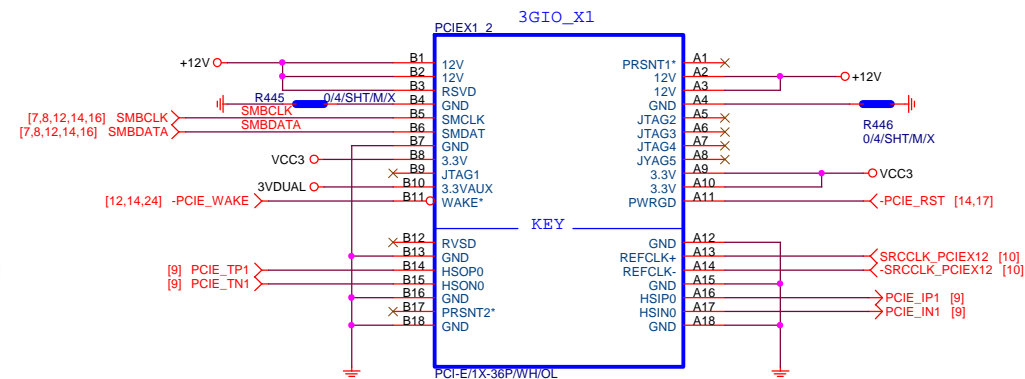
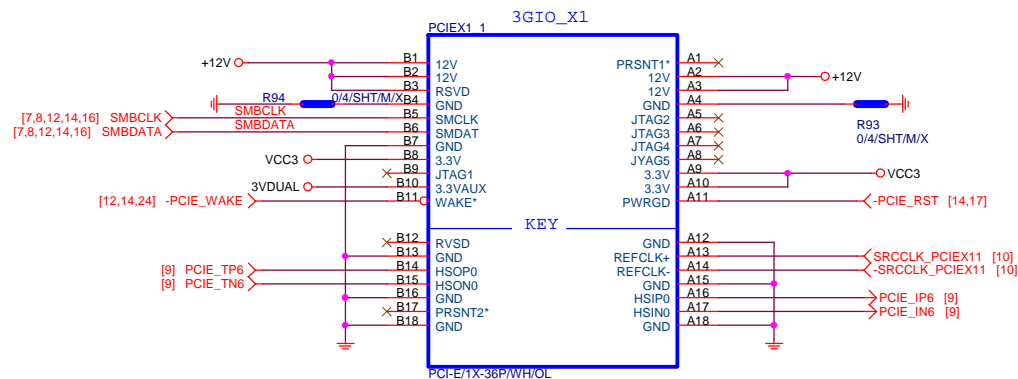
PCIEX16 SLOT



Gigabyte Technology

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Size			GA-B75M-HD3	
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PCIE1 SLOT



PCIE1 CAP

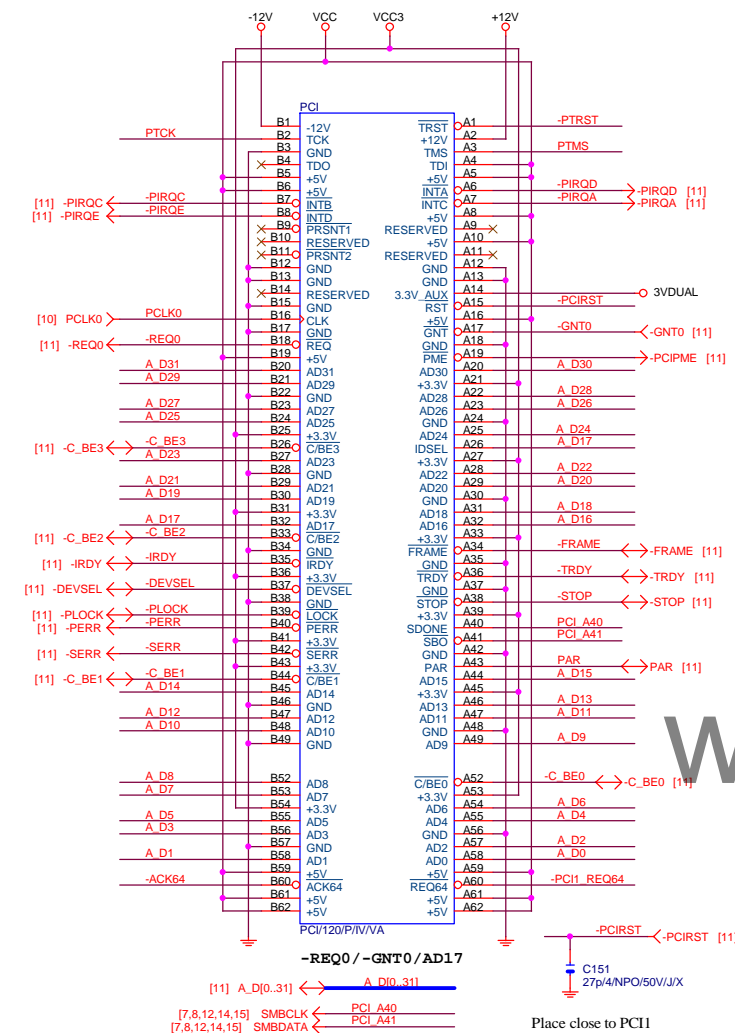


Gigabyte Technology

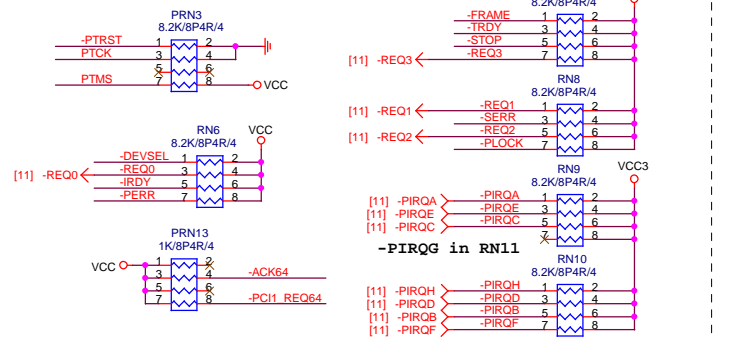
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Size	Document Number	Rev
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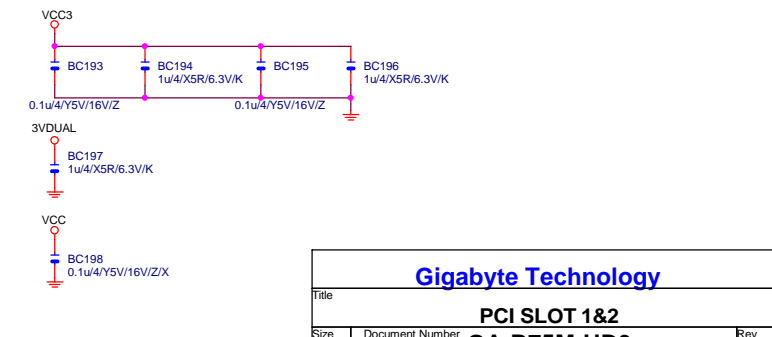
PCI SLOT



PCI PU



PCI CAP

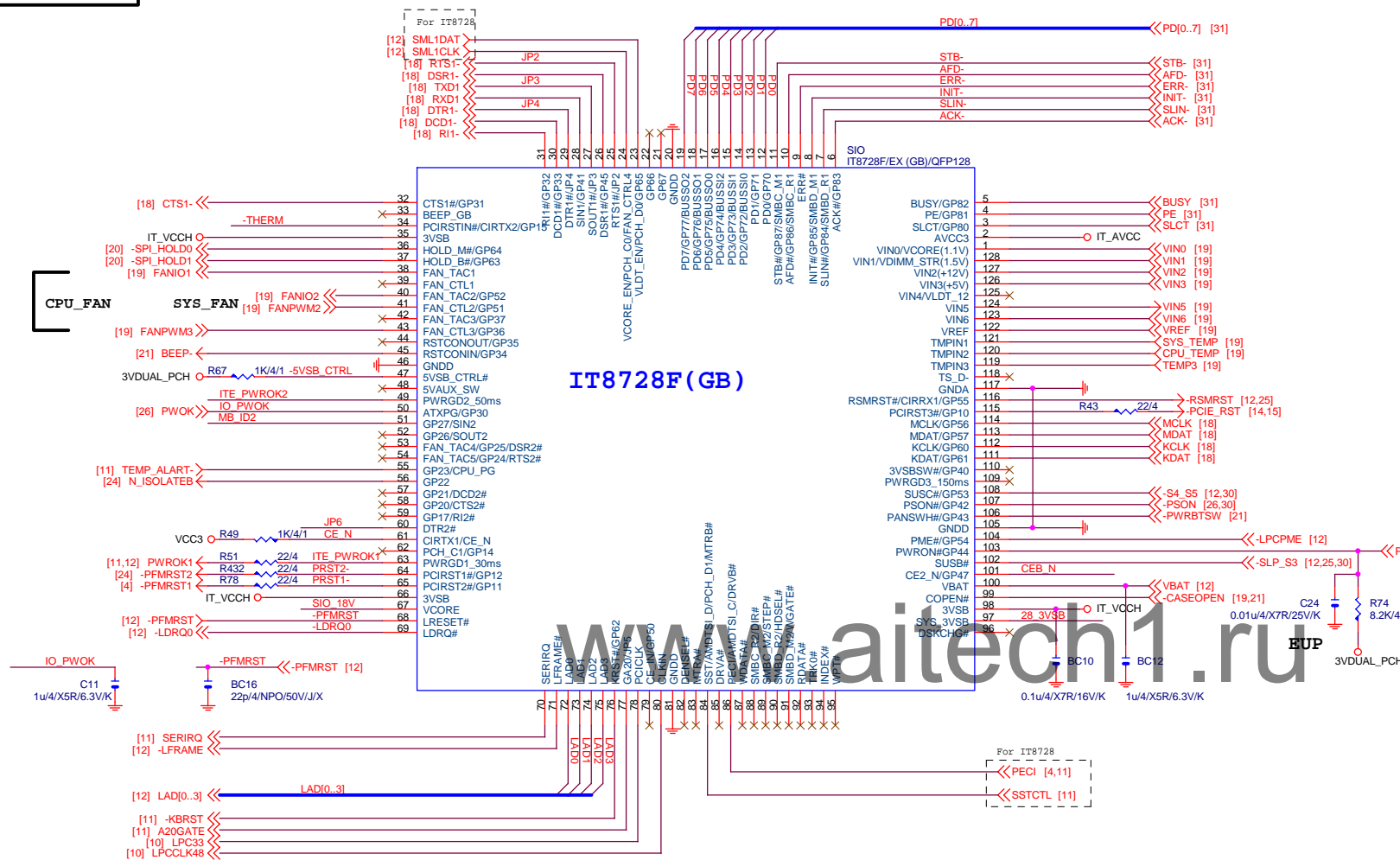


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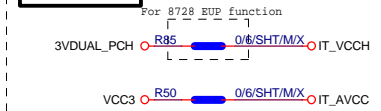
Gigabyte Technology

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GA-B75M-HD3		
Size	Document Number	Rev
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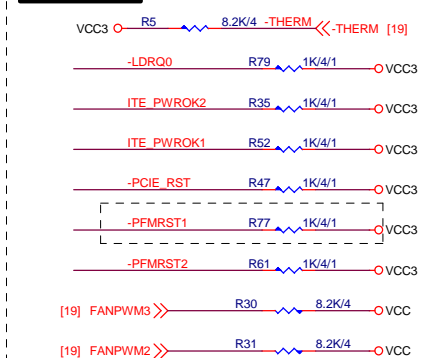
SIO IT8728F



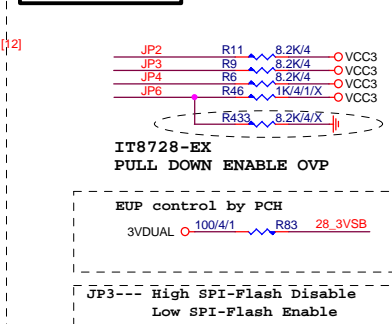
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SIO	PU
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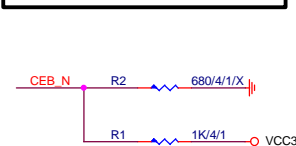
SIO STRAP



IT8728F 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	STS_3VSB
PIN70	GP47
PIN95	VIN2(VCC5)
PIN96	VIN1(VCC12)
PIN97	VIN1/VDIMM_STR(1.5V)
PIN98	VIN0/VCORE(1.1V)/NC

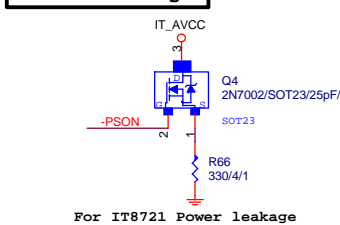
DUAL BIOS OPT STRAP



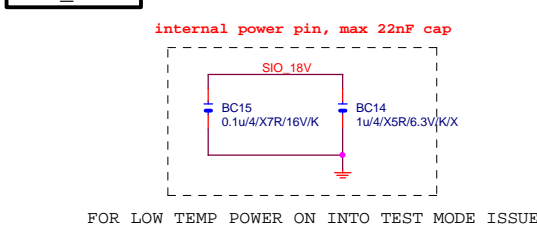
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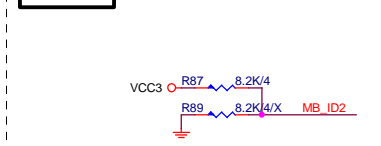
Power leakage



SIO_18V

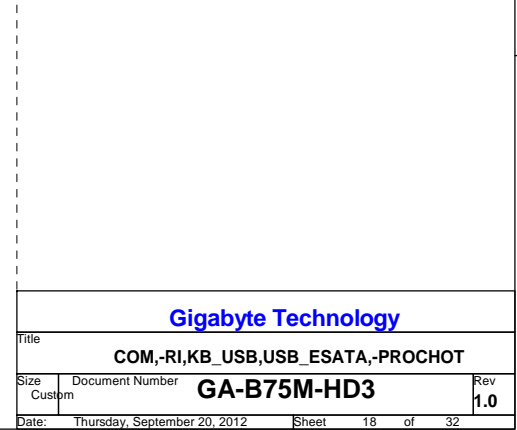
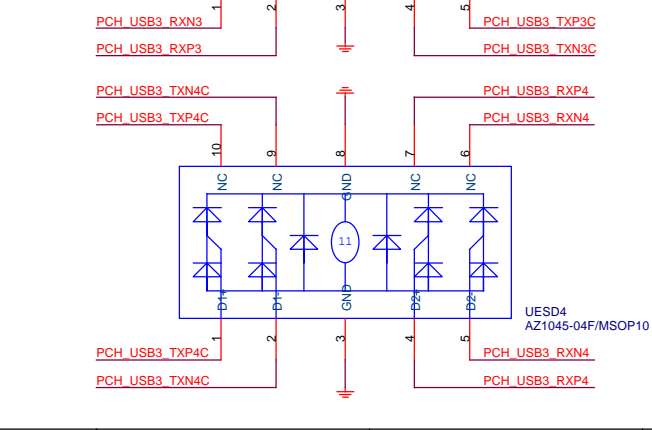
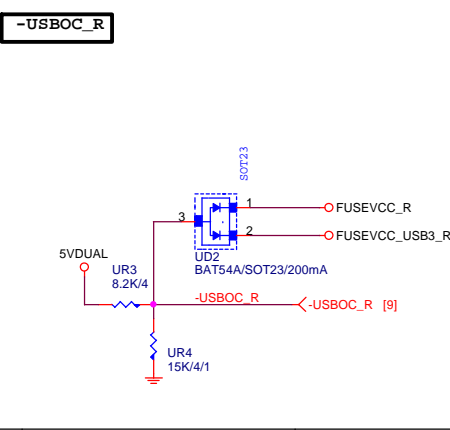
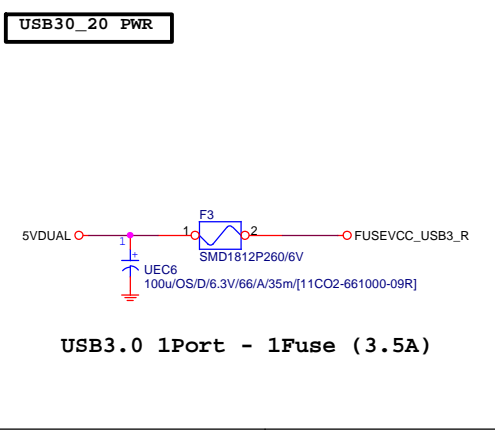
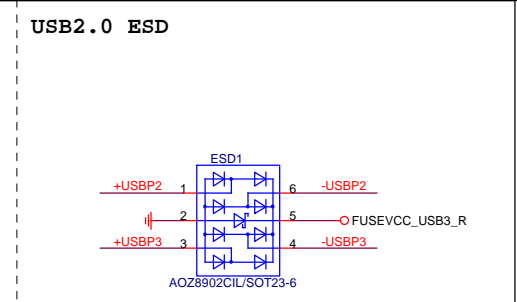
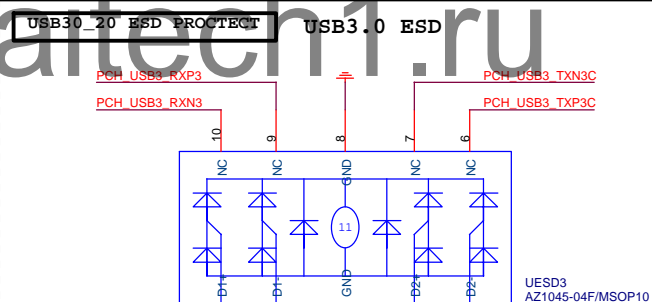
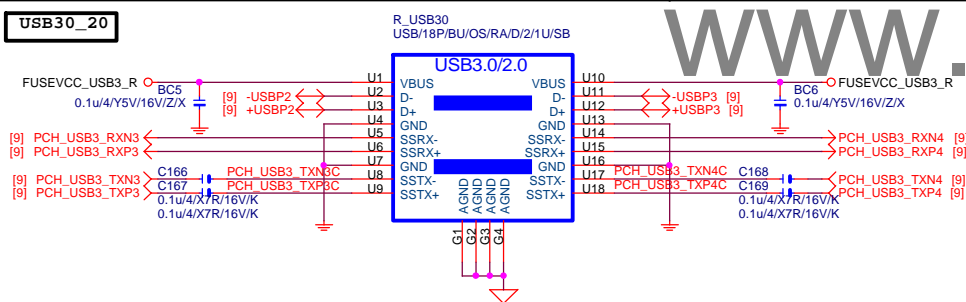
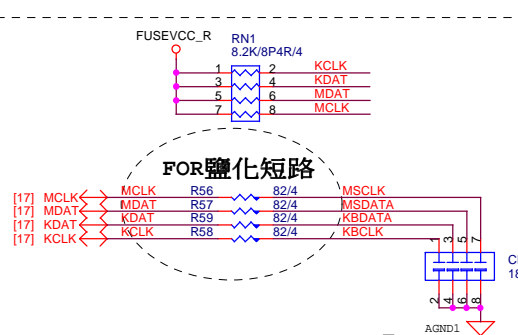
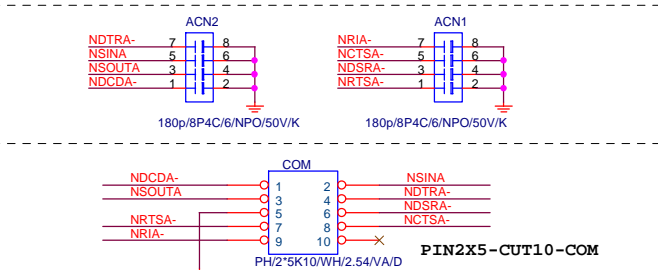
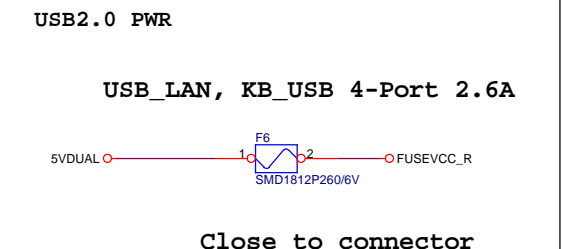
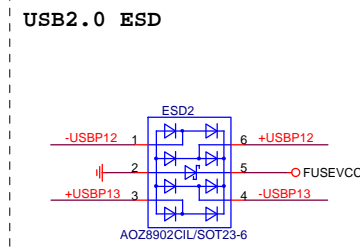
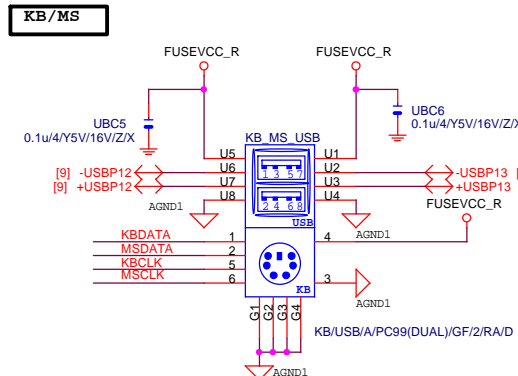
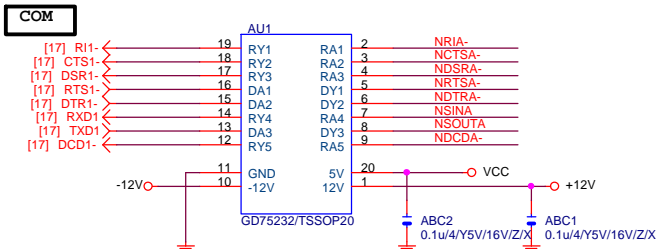


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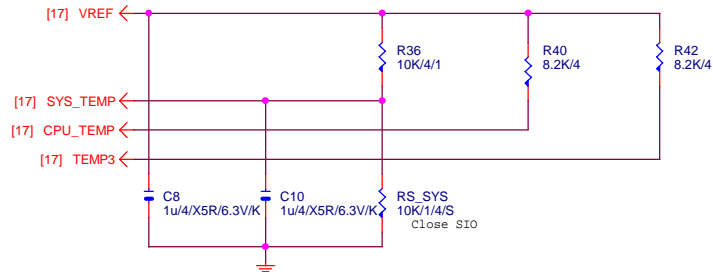


Gigabyte Technology

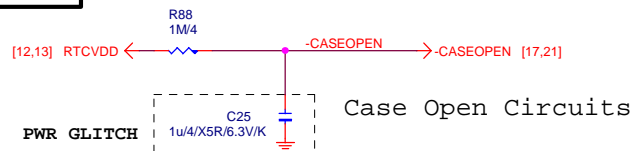
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ITE 8728 LPC IO			
Size	Document Number	Rev	
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TEMP H/W MONITOR

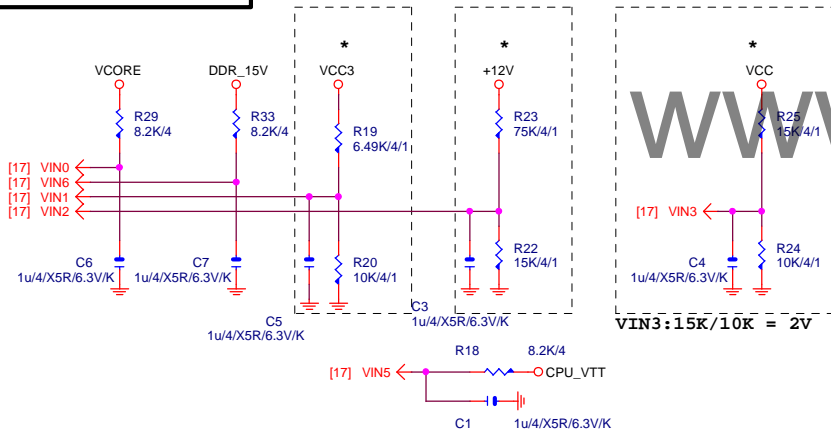


CASE OPEN

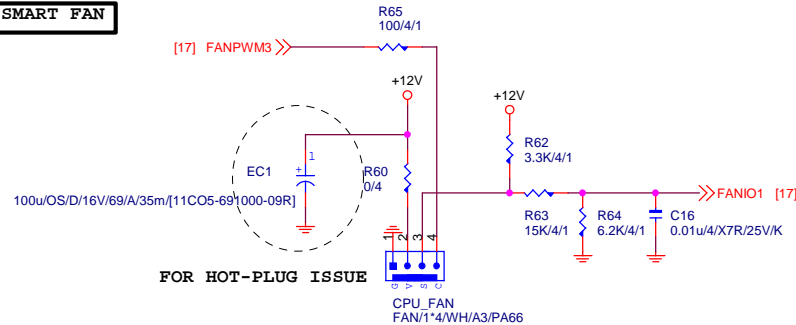


VOLTAGE-- H/W MONITOR

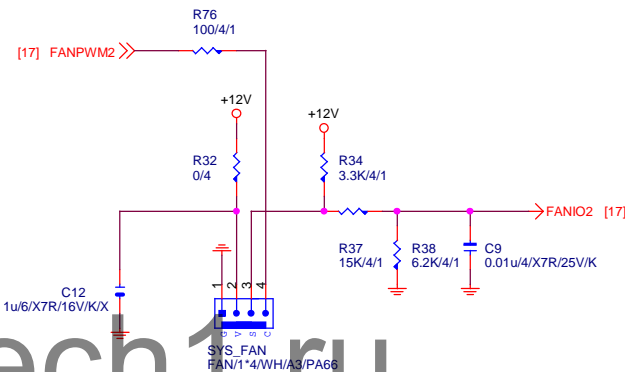
VIN2: 75K/15K = 2V



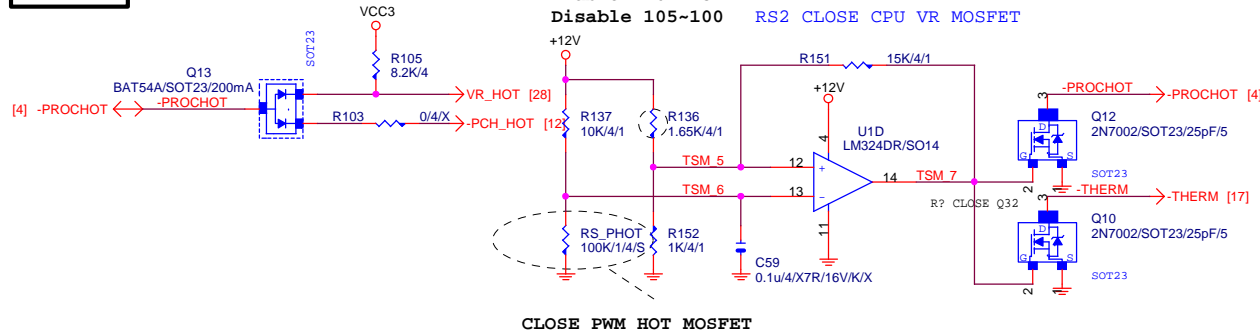
CPU SMART FAN



SYS SMART FAN



-PROHOT



Gigabyte Technology

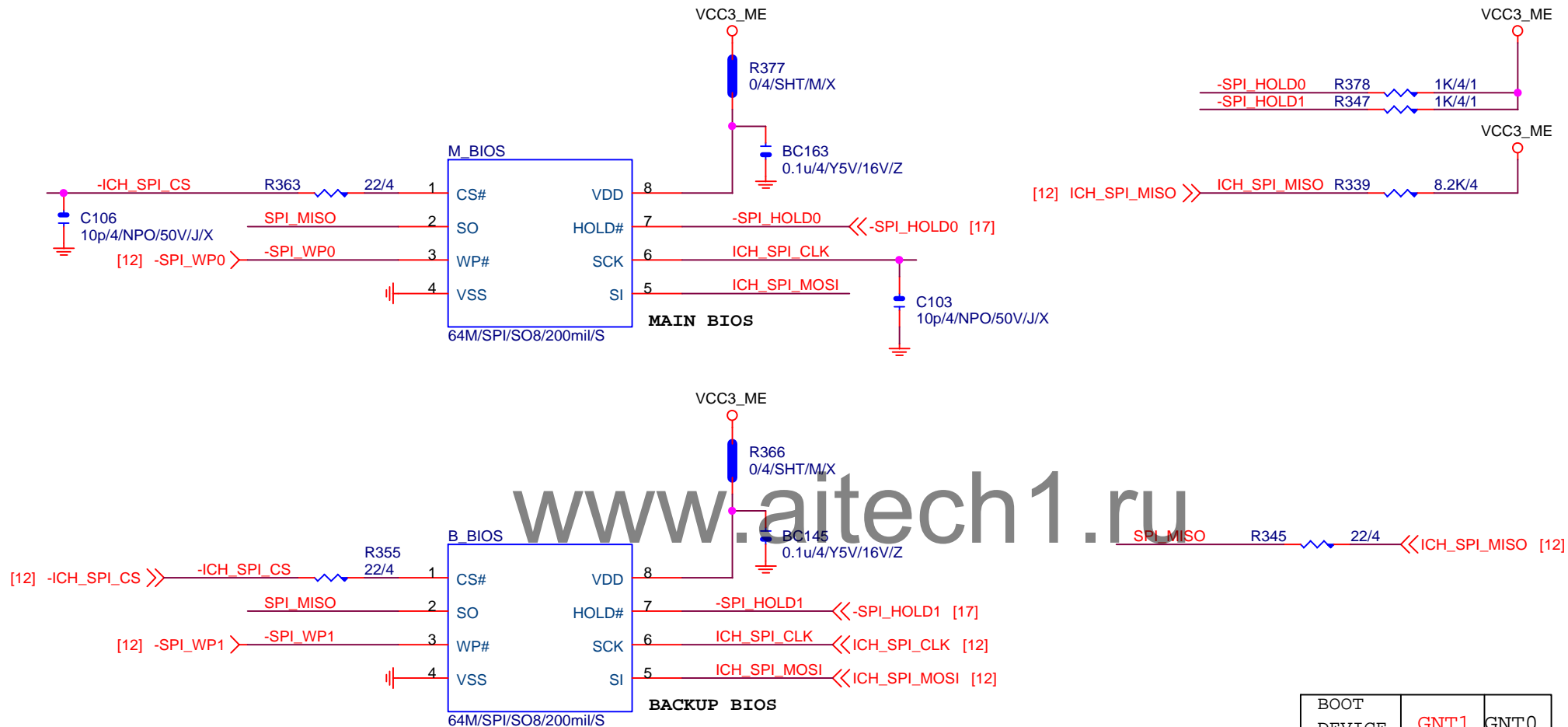
HWM,FAN CTRL,OV

GA-B75M-HD3

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DUAL BIOS



B65使用64M BIOS

使用H67暫用32M

H61使用32M BIOS

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

1 means floating
0 means PD 1K

Gigabyte Technology

Title

DUAL BIOS

Size
A

Document Number

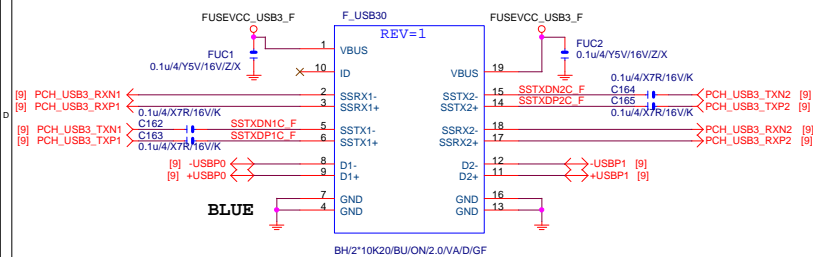
GA-B75M-HD3

Rev
1.0

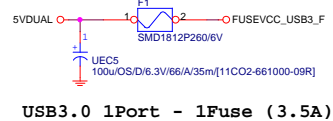
Date: Thursday, September 20, 2012

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F_USB30

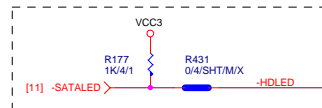


F_USB30 PWR

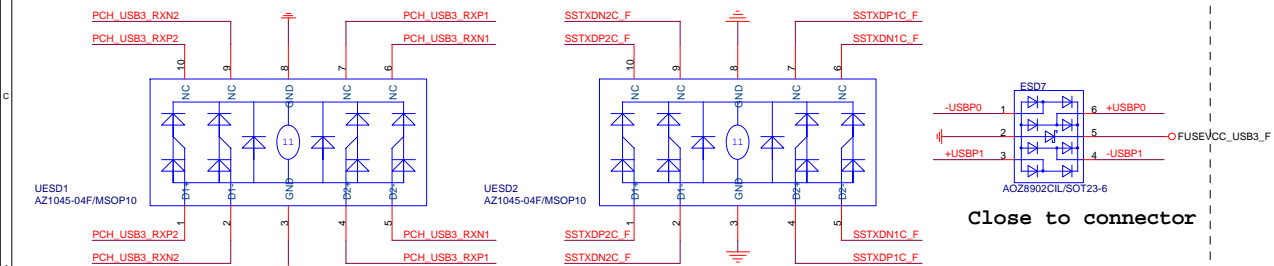


USB3.0 1Port - 1Fuse (3.5A)

SATA LED

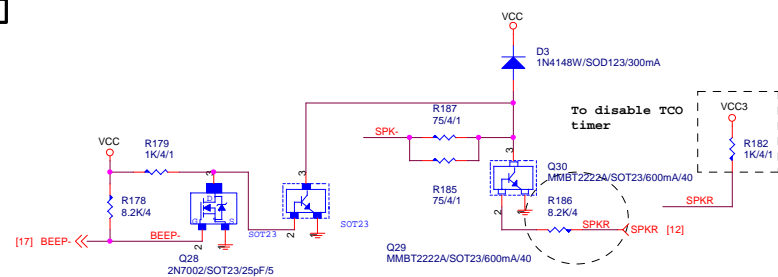


F_USB30 ESD PROTECT

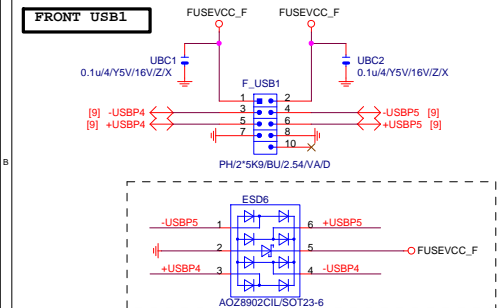


Close to connector

SPKR

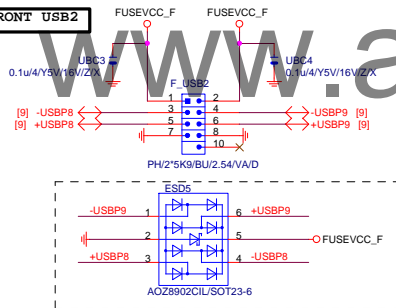


FRONT USB1



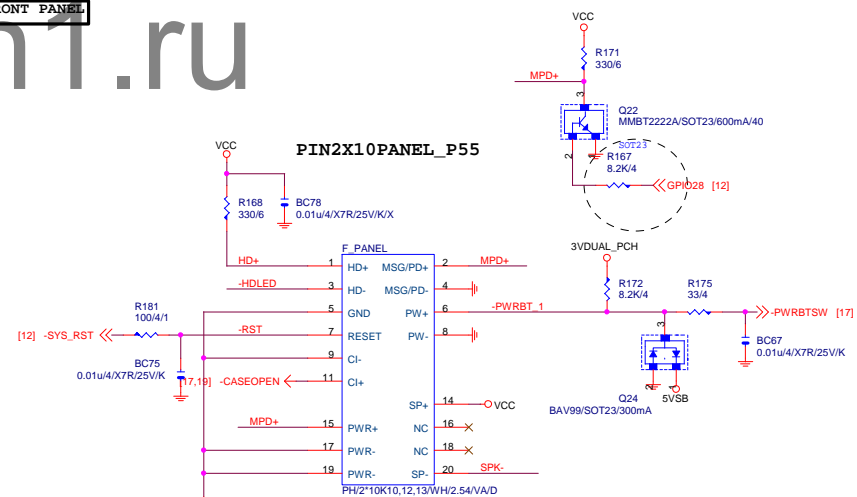
Close to connector

FRONT USB2



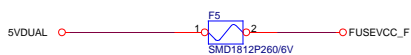
Close to connector

INTEL FRONT PANEL



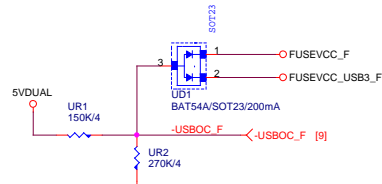
FUSEVCC_F

F_USB1, F_USB2 4-Port 2.6A



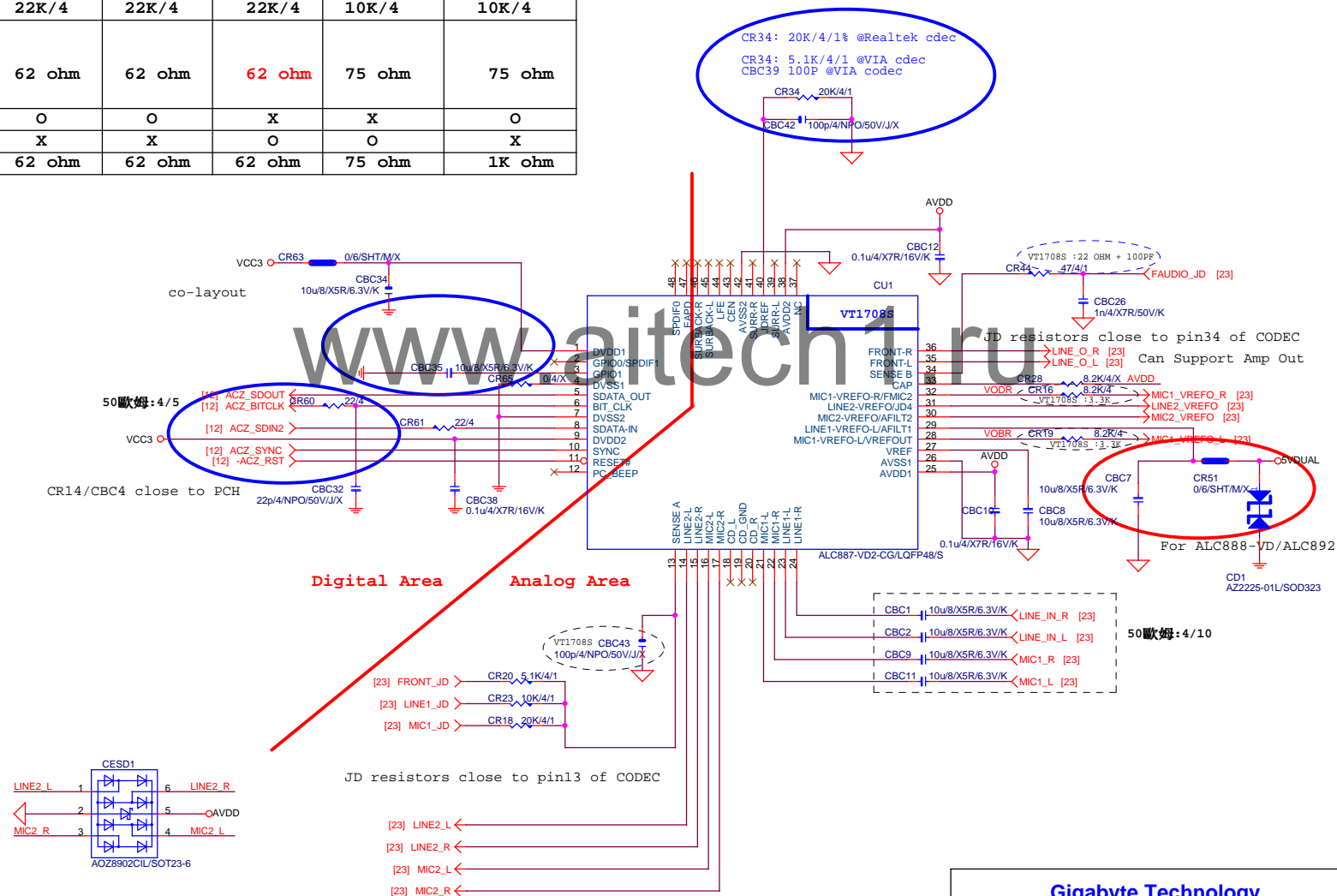
-USBOC_F

F_USB30

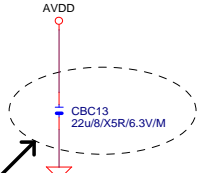
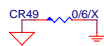
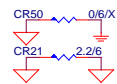


Gigabyte Technology			
FP,F_USB,USB PWR,SPKR,SATA LED			
GA-B75M-HD3			
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	ALC662	ALC887-VD2	ALC889	VT1708S	VT1708SCE
CR65	X	X	O	O	X
CR64	X	X	X	X	0.1u/4
CBC35	O	O	X	X	O
CR44/CBC6	47ohm+1nF	47ohm+1nF	47ohm+1nF	22ohm+100P	22ohm+100P
CR31	X	O	O	O	O
CR30	O	X	X	X	X
CBC1/CBC2	22uF/X5R	22uF/X5R	22uF/X5R	22uF/X5R	22uF/X5R
CR20	5.11K/4/1	5.11K/4/1	5.11K/4/1	5.1K/4/1	5.1K/4/1
CR34	20K/4/1	20K/4/1	20K/4/1	5.1K/4/1	20K/4/1
CBC39/CBC40	N/A	N/A	N/A	100P/4	100P/4
CR6/CR7/CR54/CR58	22K/4	22K/4	22K/4	10K/4	10K/4
CR5/CR8/CR11/CR4/ CR17/CR22/CR45/CR33/ CR47/CR40/CR26/CR37/ CR13/CR11/CR57/CR53	62 ohm	62 ohm	62 ohm	75 ohm	75 ohm
CR51/CD1/CBC7	O	O	X	X	O
CD2/CD3/CQ3/CQ5	X	X	O	O	X
CR1/CR14/CR17/CR22	62 ohm	62 ohm	62 ohm	75 ohm	1K ohm



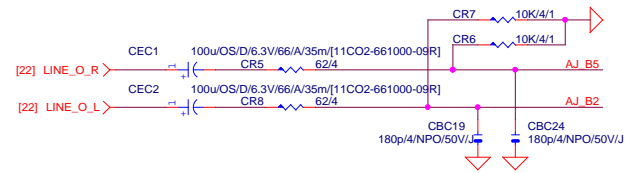
CODEC POWER/EMI PAD



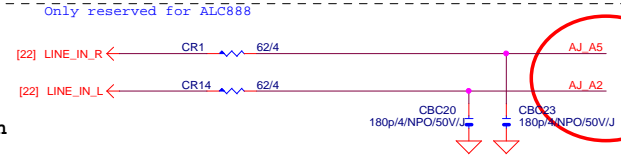
上ALC892時,此顆電容要保留

ADD CD2 For ESD PROTECT DIODE

LINE-OUT



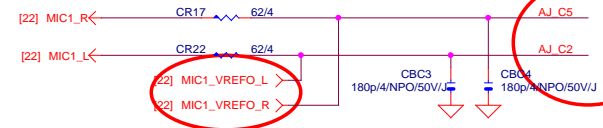
LINE-IN



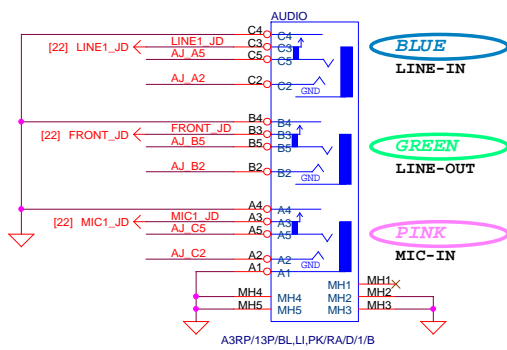
Verify MIC function in LINE-in

For 889A/888

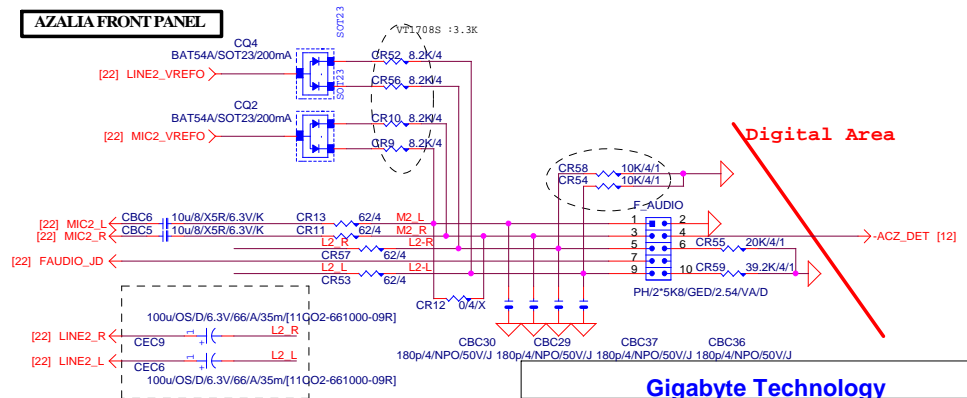
MIC-IN



SPDIF_OUT

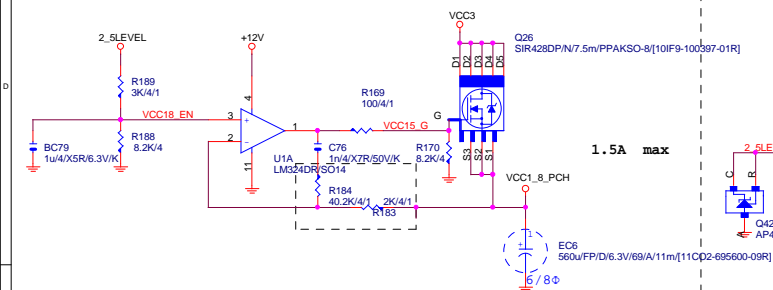


AZALIA FRONT PANEL

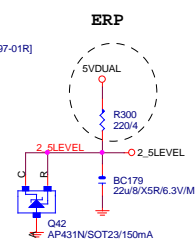


Gigabyte Technology			
Title			
AUDIO JACK			
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Custom			
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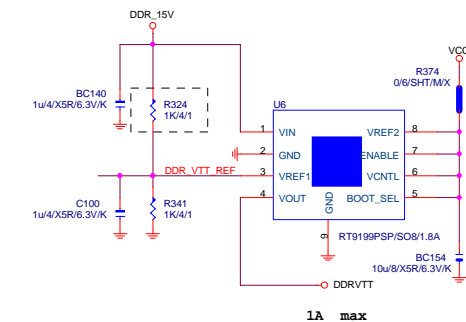
VCC1_8_PCH



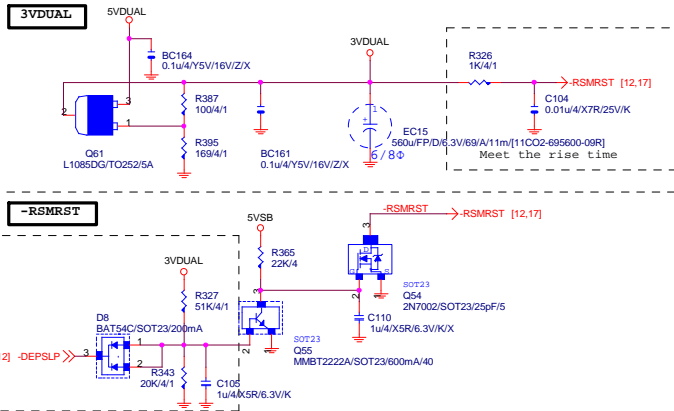
2_5LEVEL



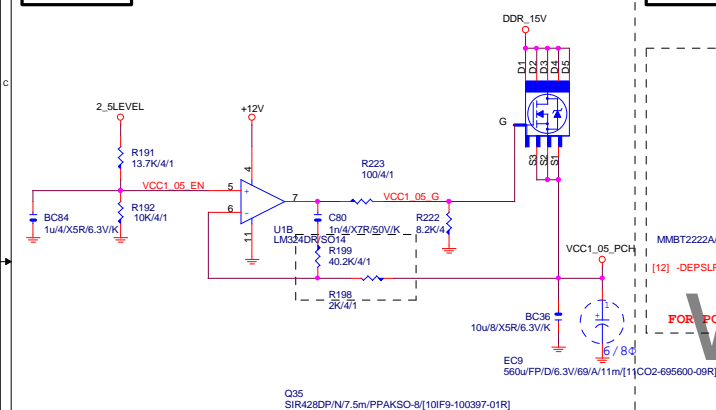
DDRVTT



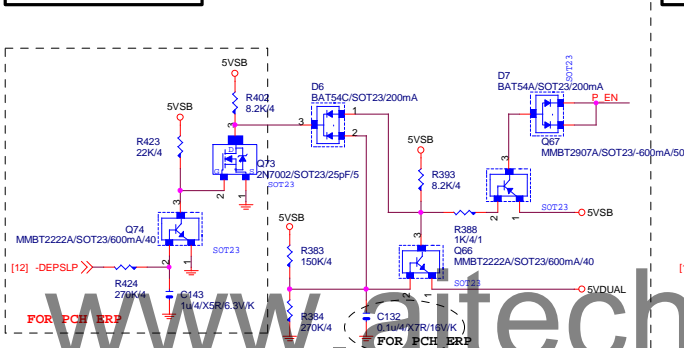
3VDUAL



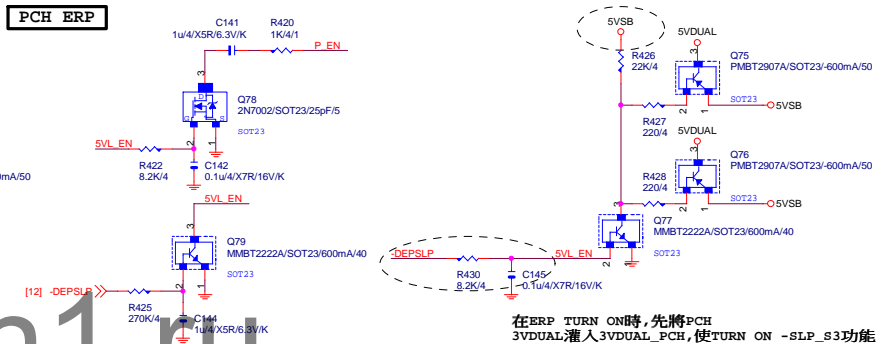
VCC1_05_PCH



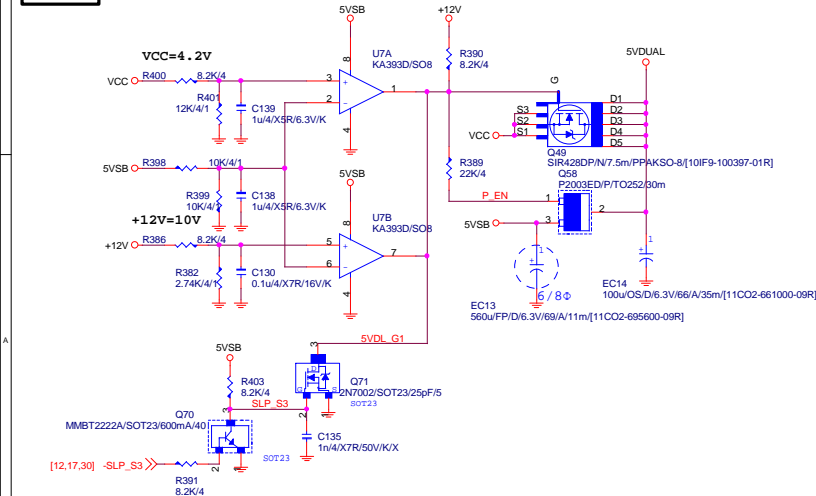
5VDUAL SHORT PROTECT



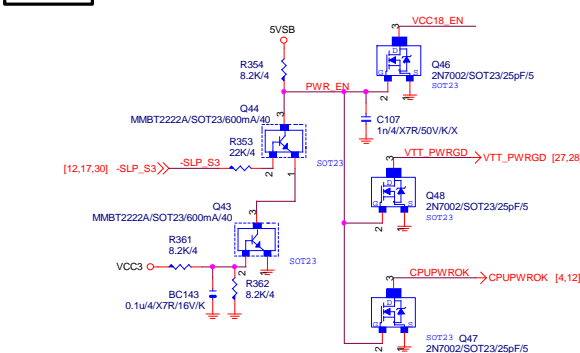
PCH ERP



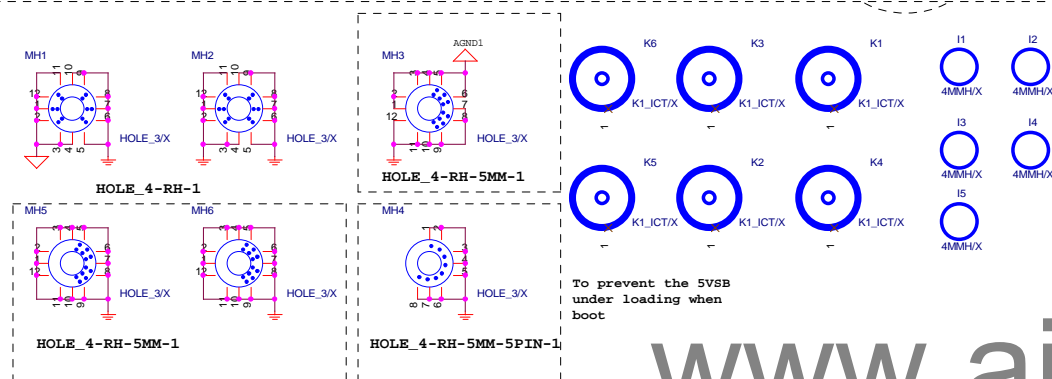
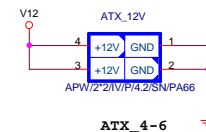
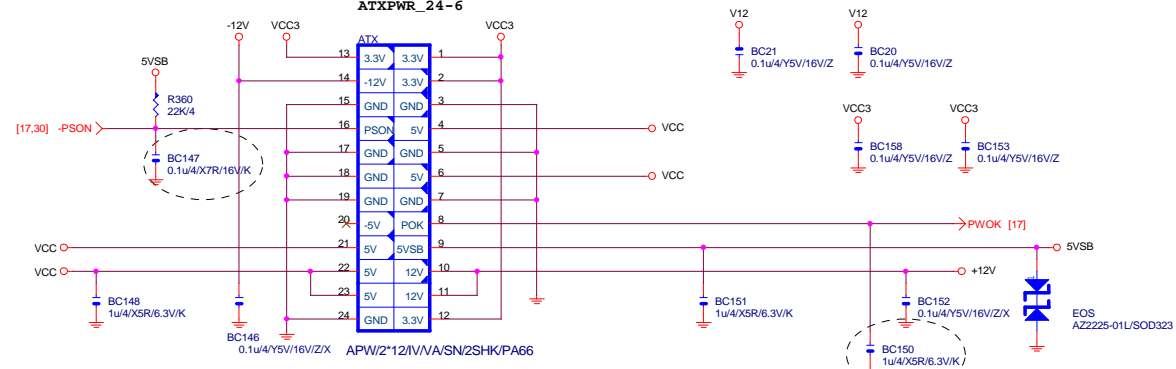
5VDUAL



PWR SEQ

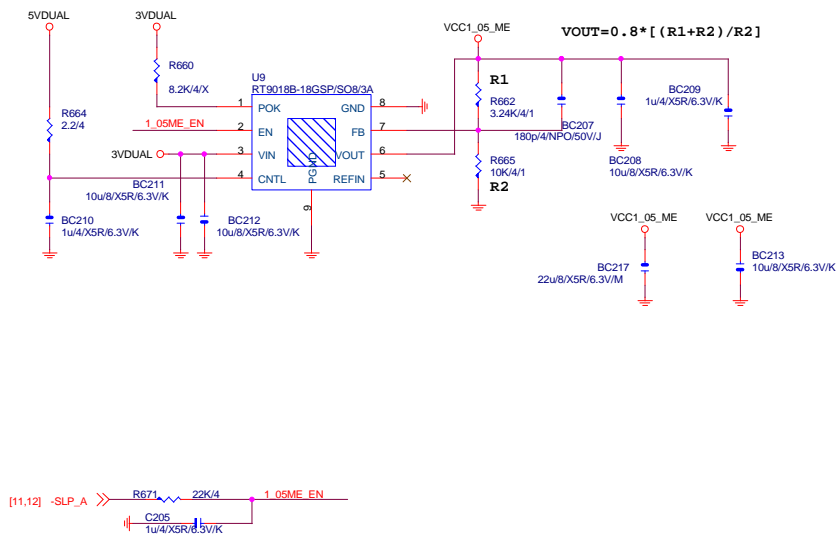


ATXX24 POWER CONNECTOR

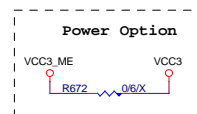
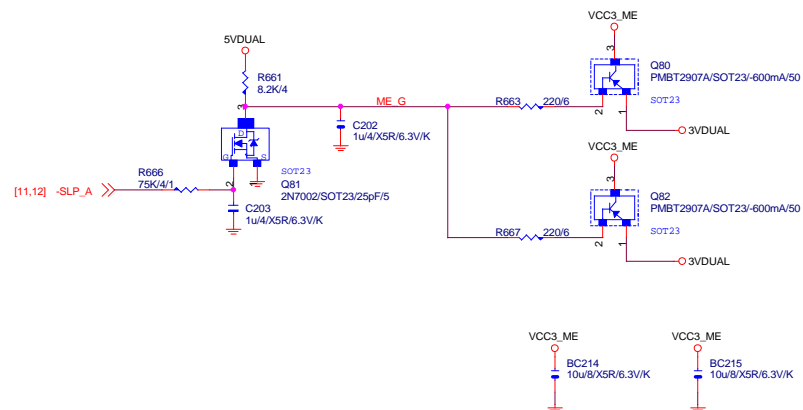


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VCC1_05_ME	
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VCC3_ME	
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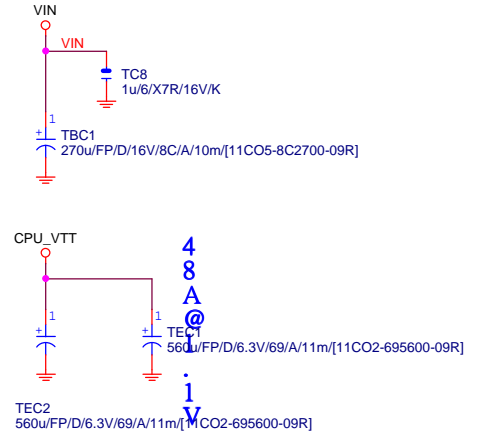
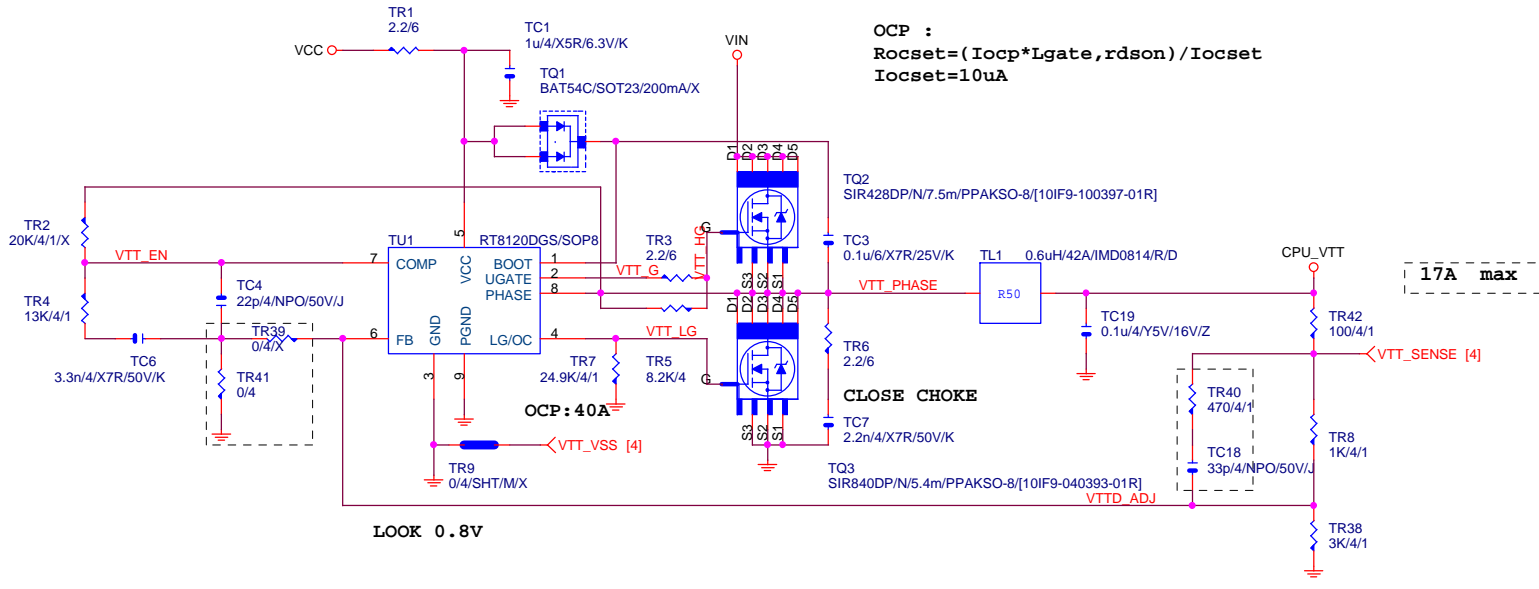
Gigabyte Technology

ATX CONNECTOR

GA-B75M-HD3

1.0

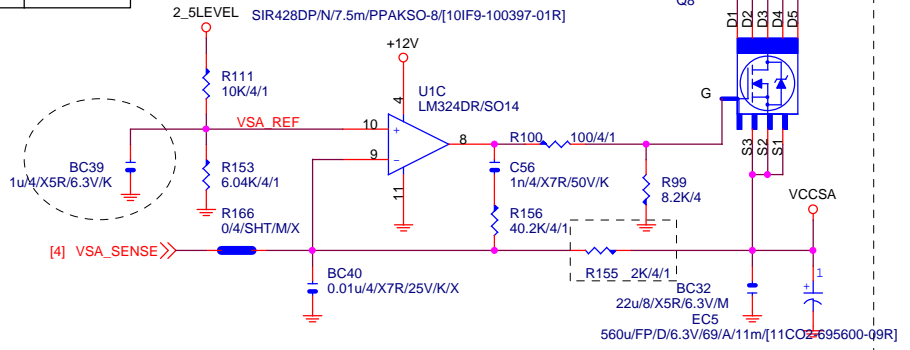
CPU_VTT



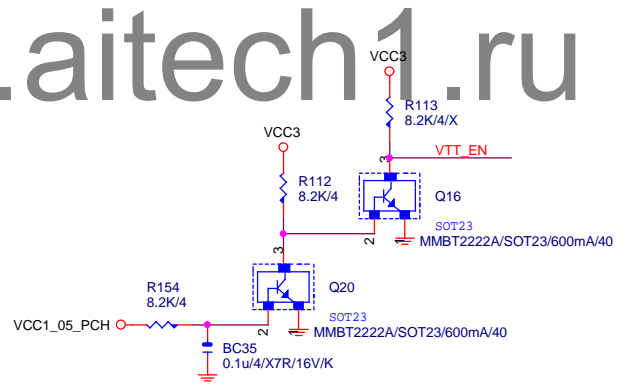
VCCSA

PDG 0.8

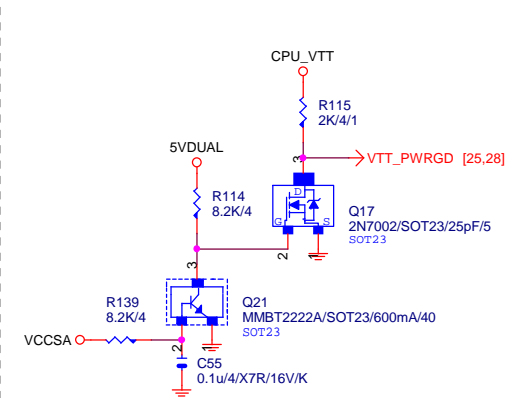
	VSA_SEL
HI	0.85V
LO	0.925V



CPU_VTT PWR SEQ



VTT_PWRGD

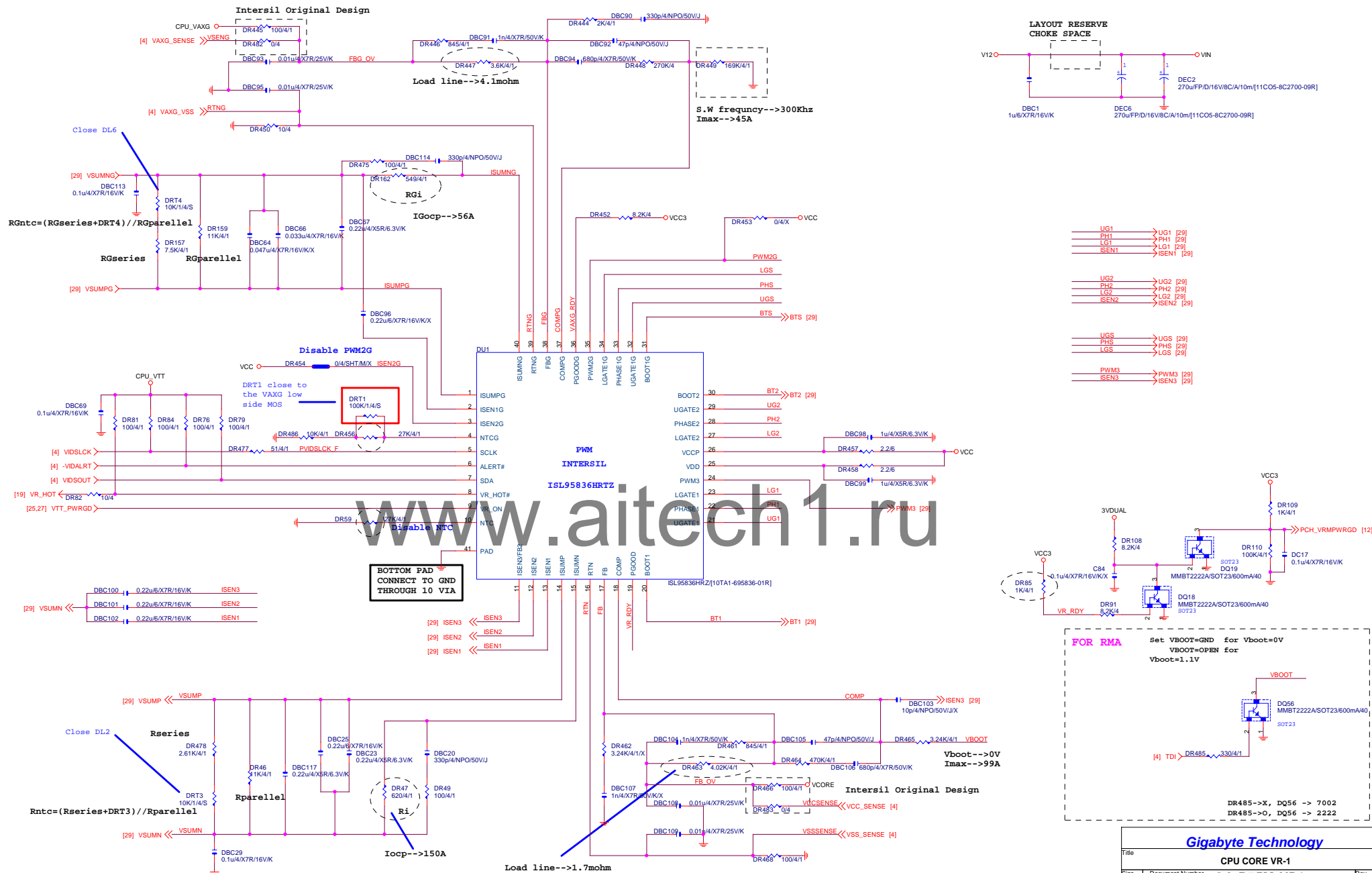


Title

CPU_VTT PWM_RT8120

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PHASE 1



PHASE 3



PHASE 2

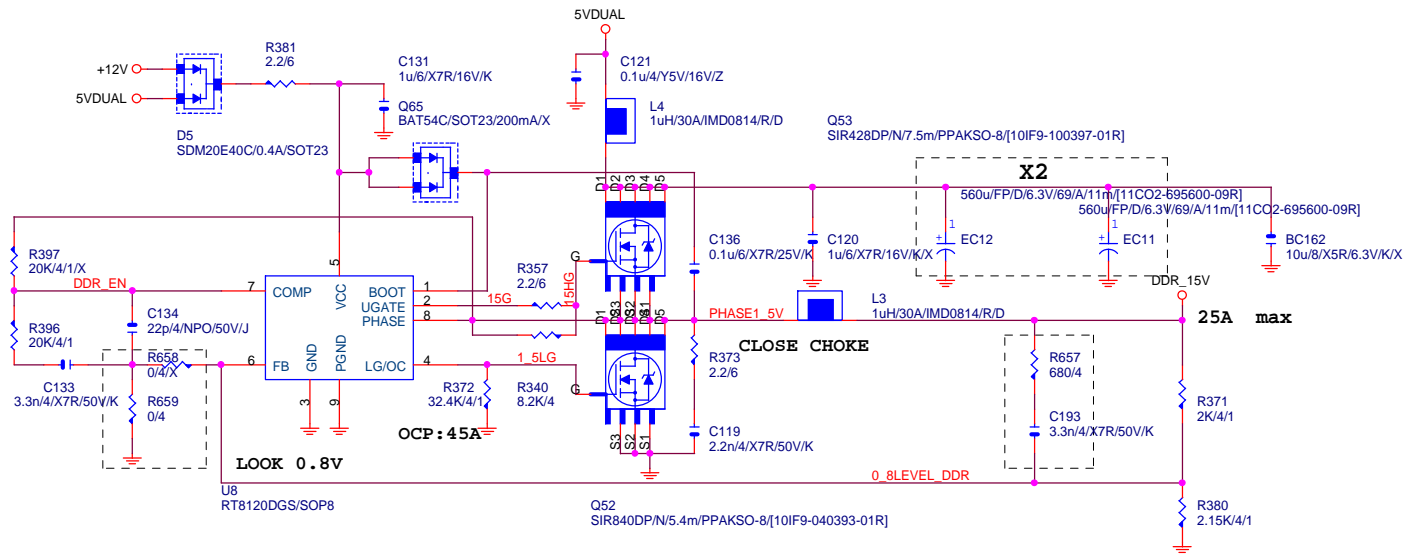


VAXG

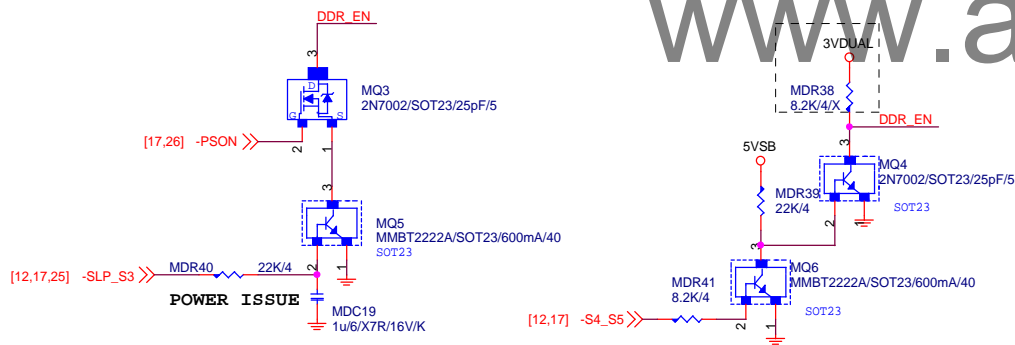


Gigabyte Technology			
Title CPU CORE VR-2			
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DDR1.5V



PWR_SEQ



VIN=5V, VOUT=1.5V, IOUT=25A, PHASE=1
 IRMS=11.45A
 560u/FP/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

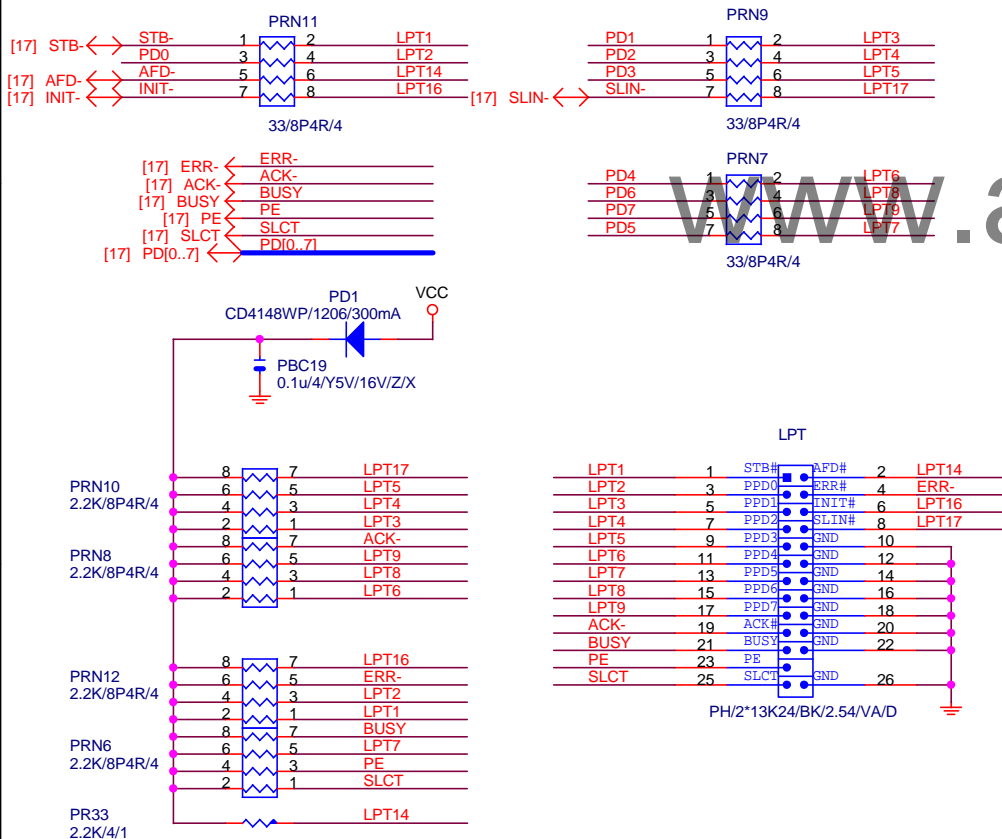
$Rocset = (I_{ocp} * L_{gate} + r_{dson}) / I_{ocset}$
 $Rocset = (45A * 6.7m\Omega) / 10uA = 30K$
 $I_{ocset} = 10uA$

Gigabyte Technology

Title		
DDR POWER		
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TPM

LPT PORT



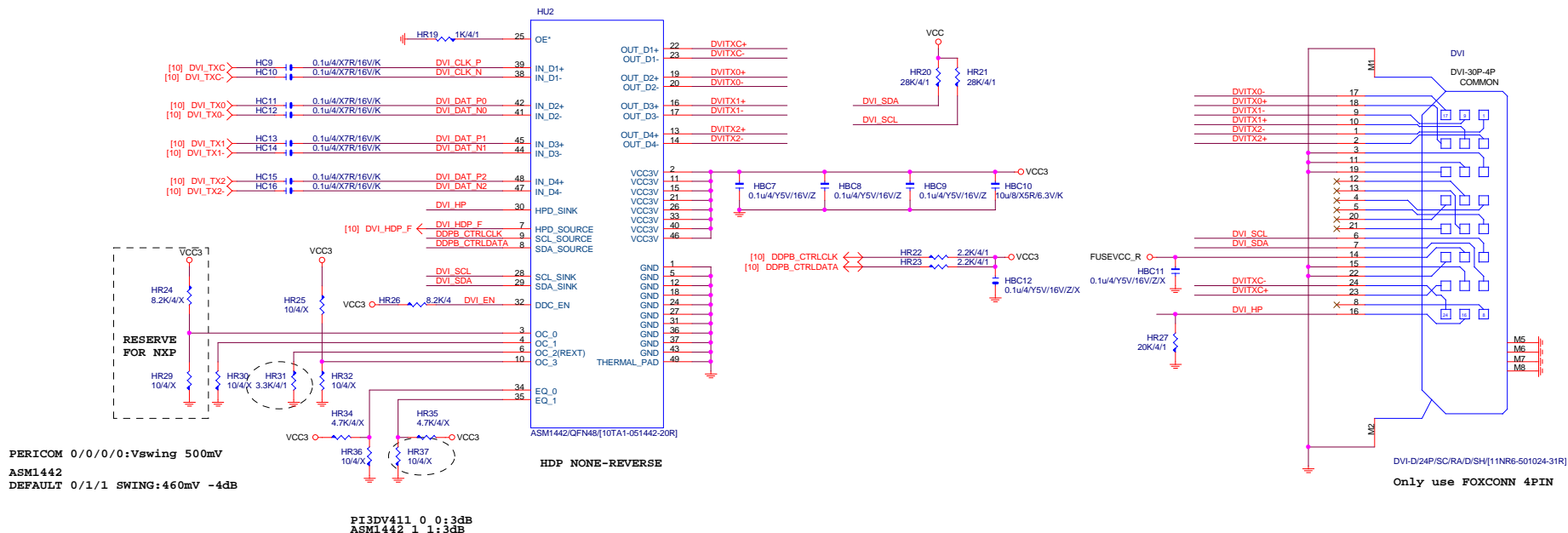
Gigabyte Technology

LPT

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DVI LEVEL SHIFT



HDMI LEVEL SHIFT

