

Model Name: GA-Z68X-UD5-B3

SHEET

TITLE

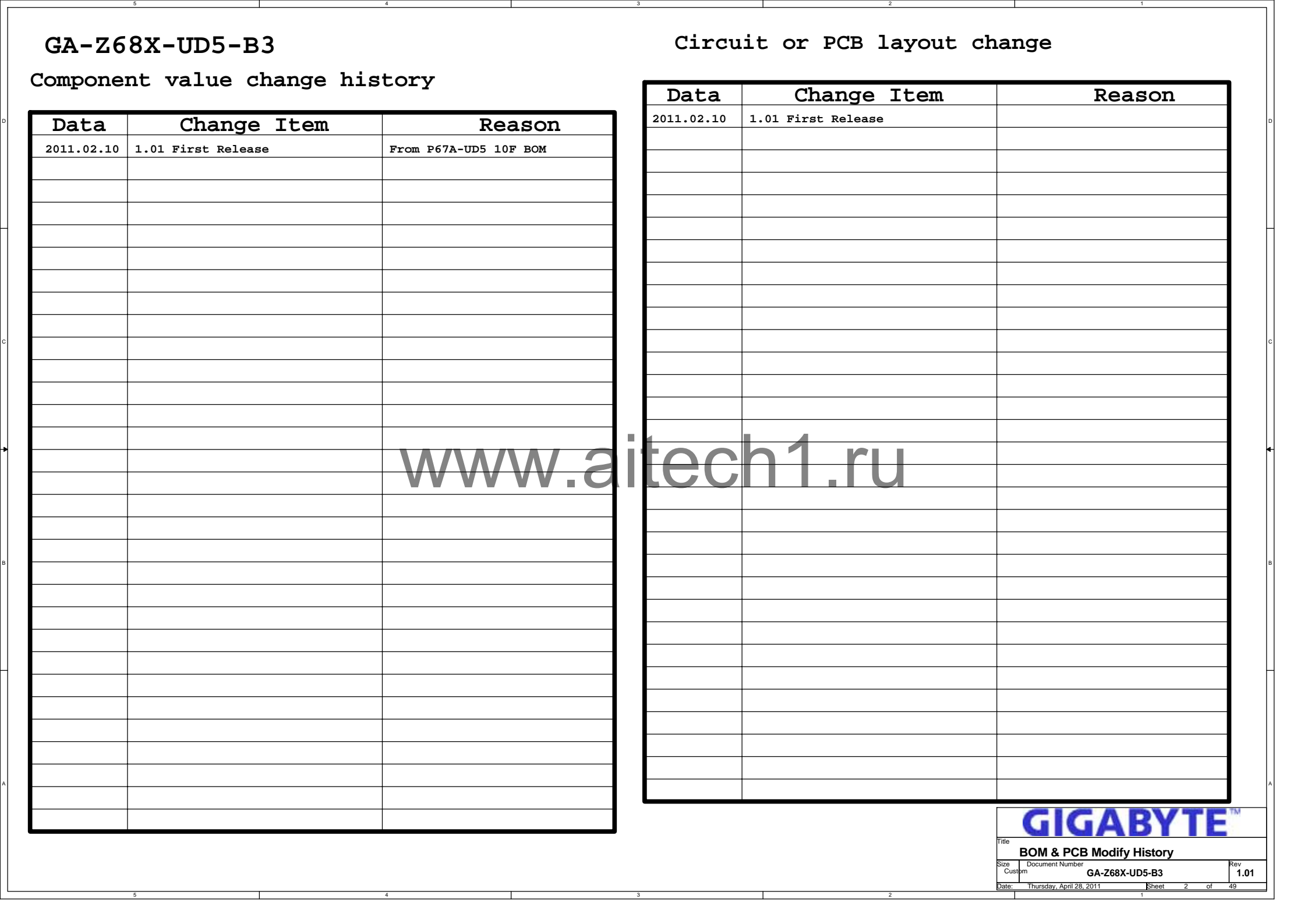
01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	CPU_LGA1155-A
05	CPU_LGA1155-B
06	CPU_LGA1155-C
07	DDR III CHANNEL A
08	DDR III CHANNEL B
09	PCH_FDI,DMI,USB,PCIE,NVRAM
10	PCH_DP,CLK BUFFER
11	PCH_HOST,SATA,PCI
12	PCH_GPIO,CTRL,AUDIO
13	PCH_PWR,GND
14	DUAL BIOS,TPM
15	PCIEX2 , PCI SIGNAL
16	ITE 8721/ITE 8728
17	-PROHOT,KB/MS,PROTECT
18-25	VCORE
26	VCCSA POWER
27	CPU_VTTD ISL6322
28	DDR POWER ISL6545
29	PCH CORE
30	DISCRETE POWER1
31	DISCRETE POWER2
32	FP, FUSB, USB PWR

SHEET

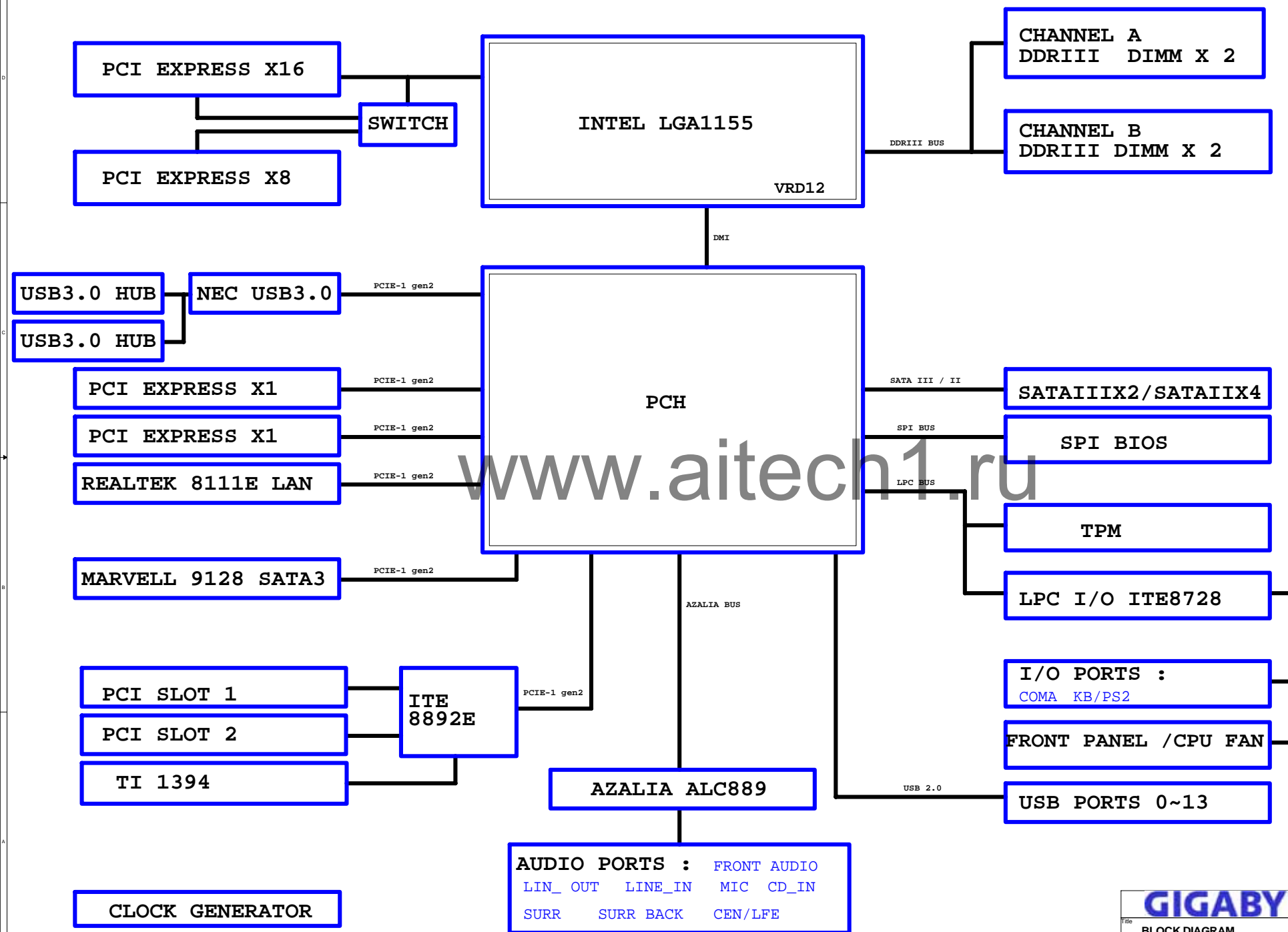
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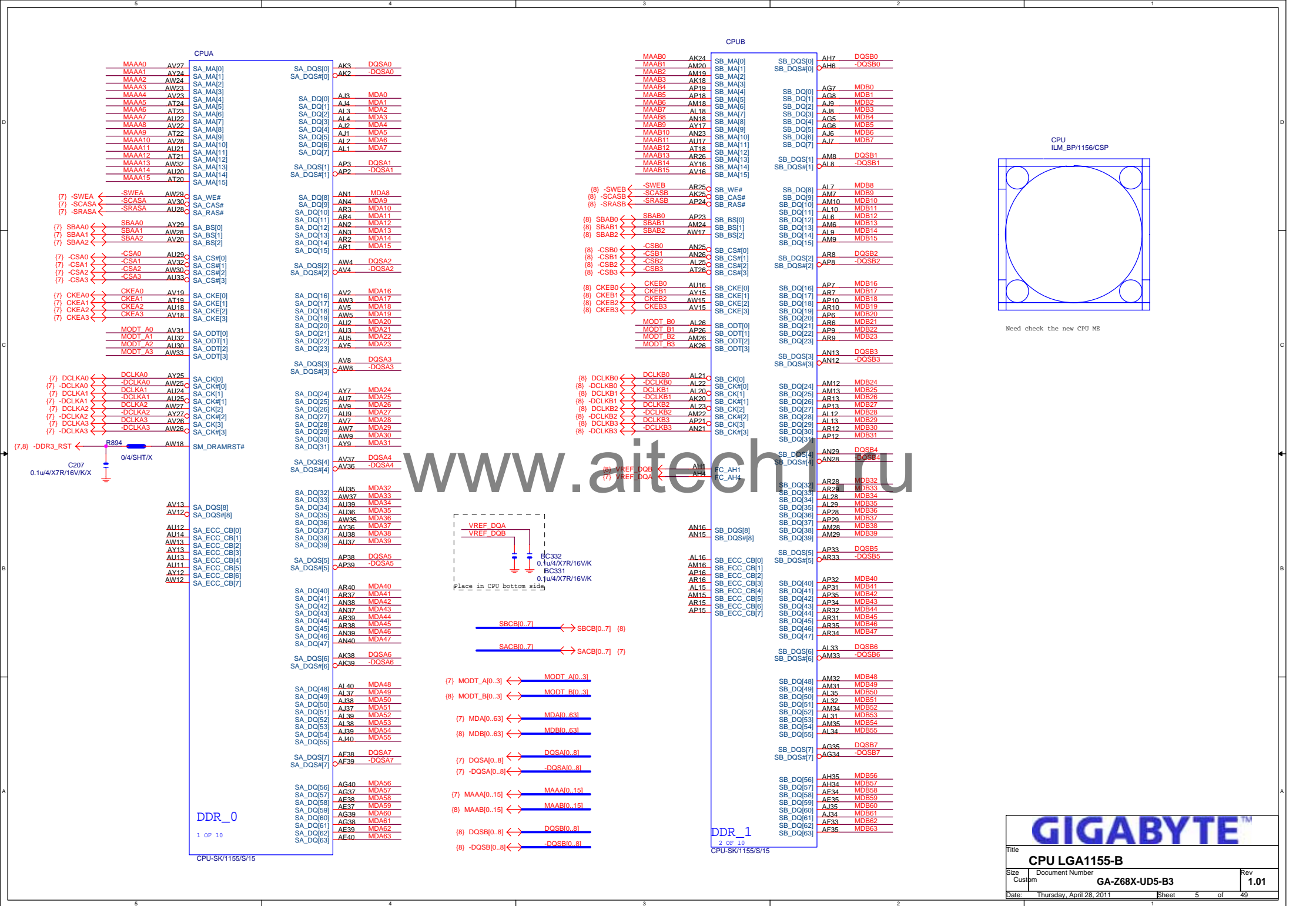
33	ATX , CLOCK GEN
34	ALC889A+
35	REAR AUDIO JACK
36	HWM,FAN CTRL
37	NEC UP720200 USB3.0
38	VL810 USB3_HUB1
39	VL810 USB3_HUB2
40	REALTEK RTL8111E
41	TI TSB43AB23 1394
42	IT8892E
43	PCI SLOT 1&2
44	ESATA MARVELL SE9128
45	PCI EXPRESS X16 SLOT
46	PCI EXPRESS X8 SLOT
47	PCI EXPRESS X16 SWITCH
48	PCI EXPRESS X4 SLOT
49	LED_BUTTON CONTROL

GIGABYTE™		
Title Cover Sheet		
Size	Document Number	Rev
Custom	GA-Z68X-UD5-B3	1.01
Date:	Thursday, April 28, 2011	Sheet 1 of 49

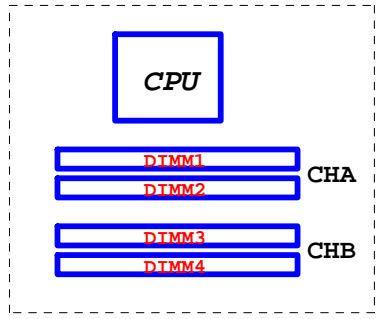
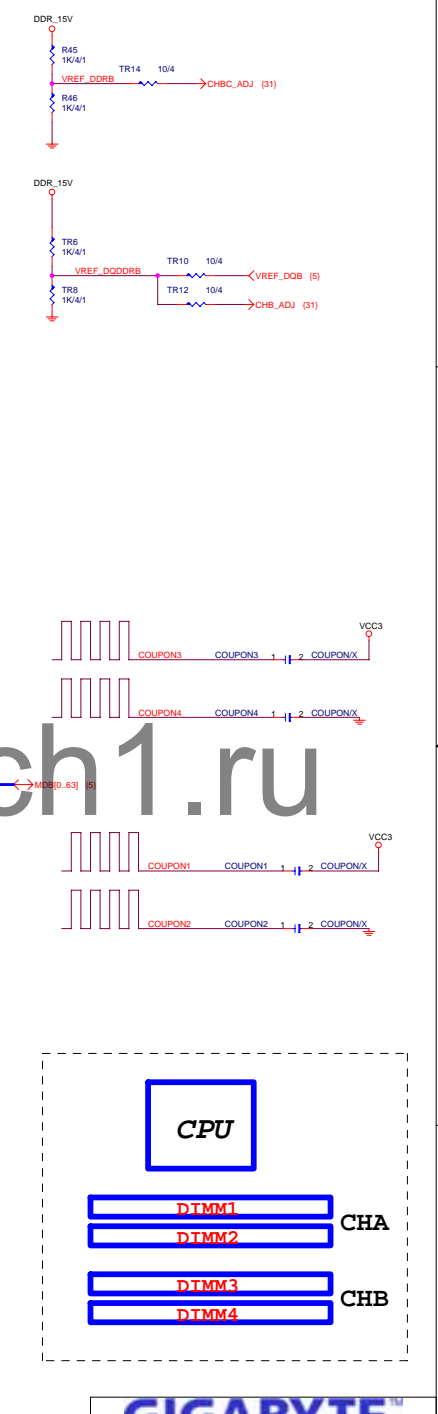
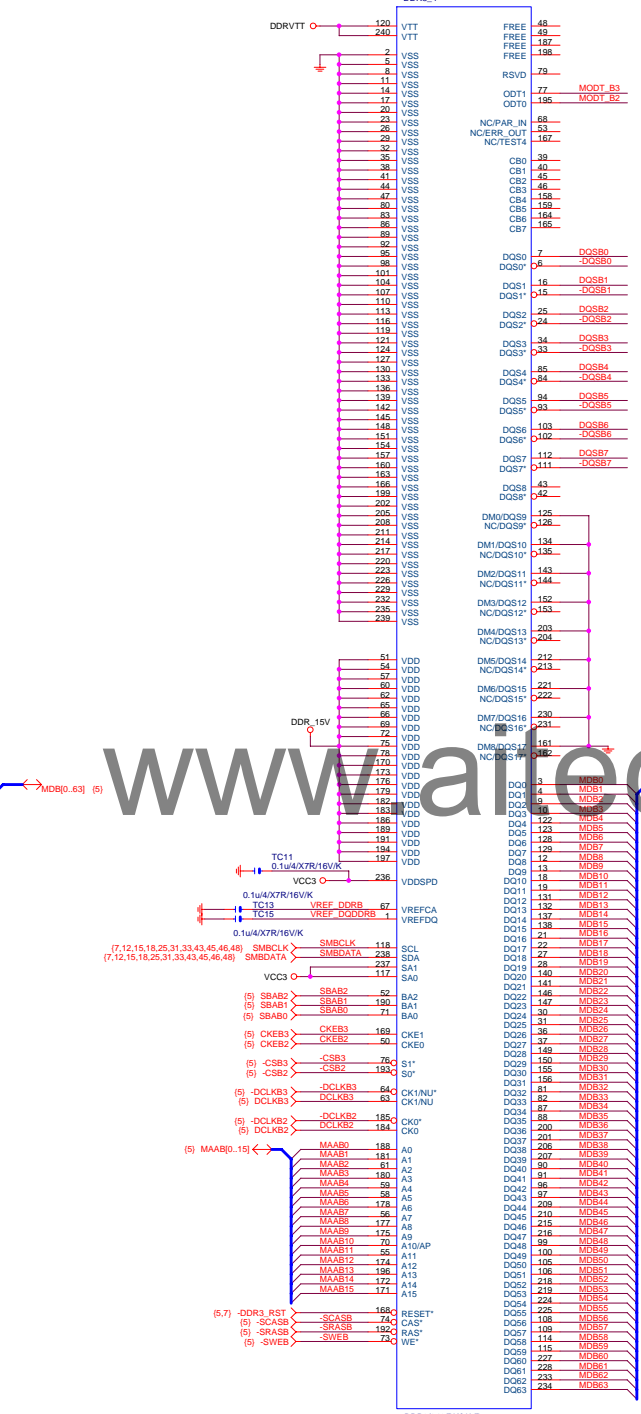
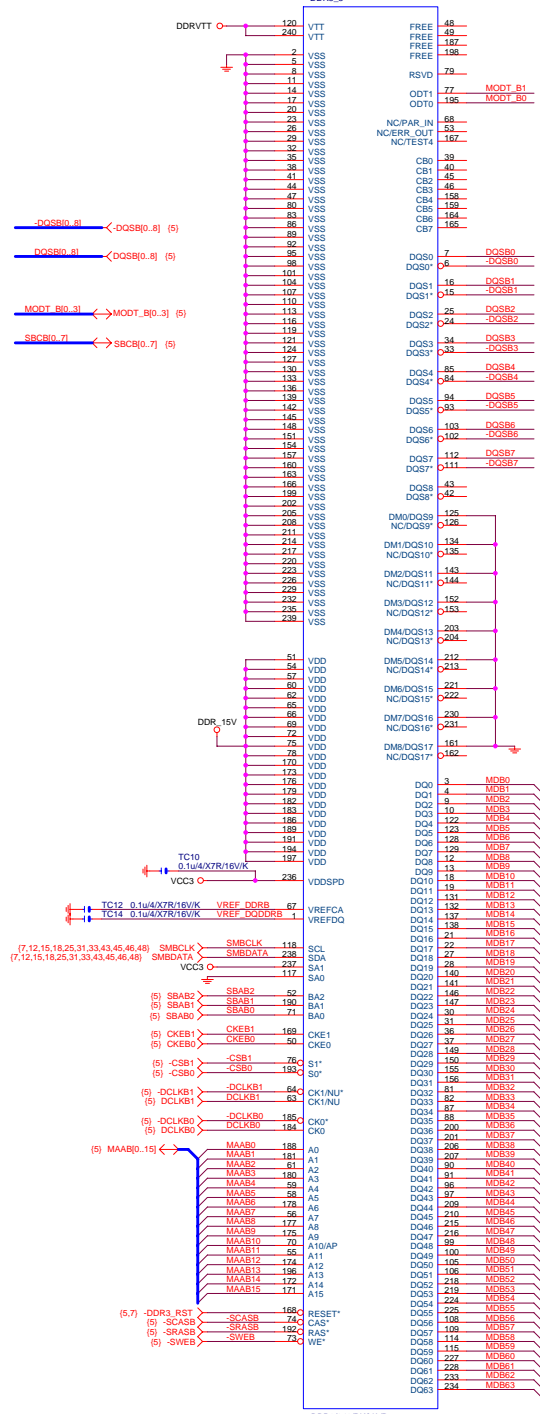
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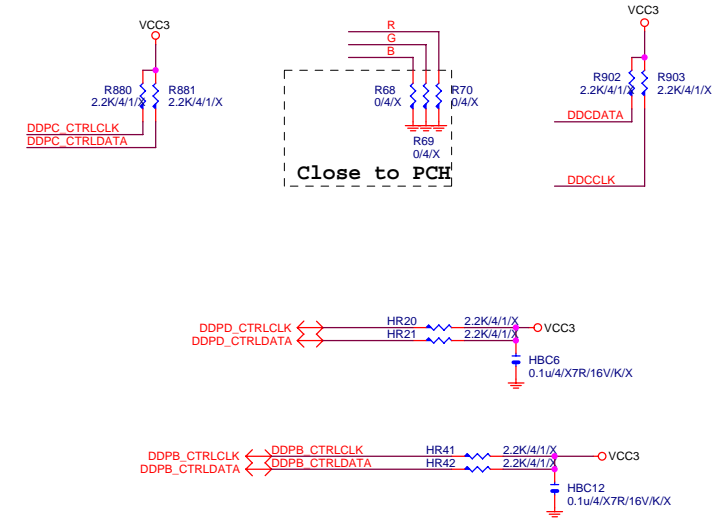
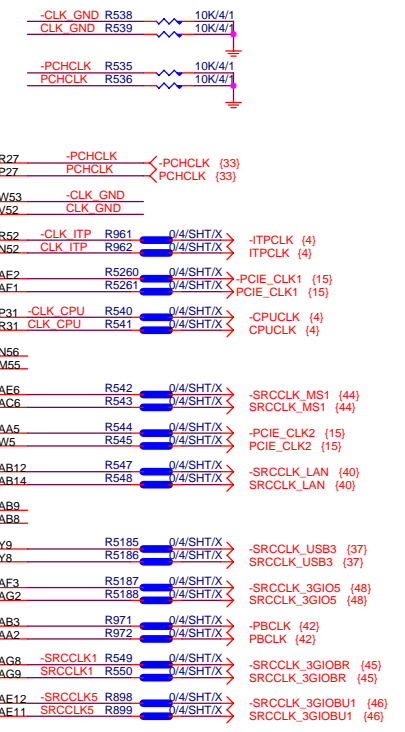
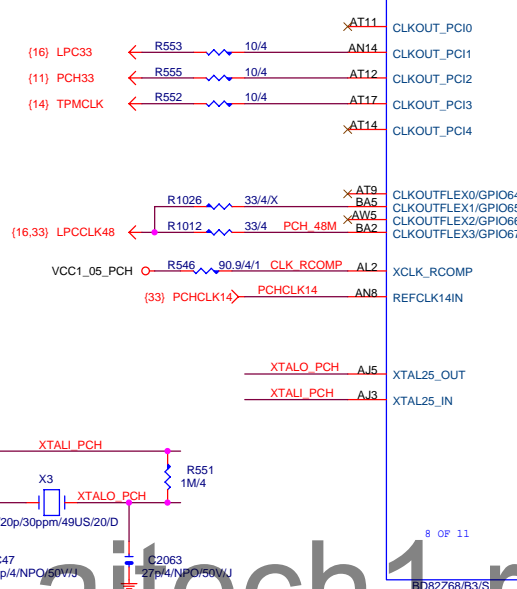
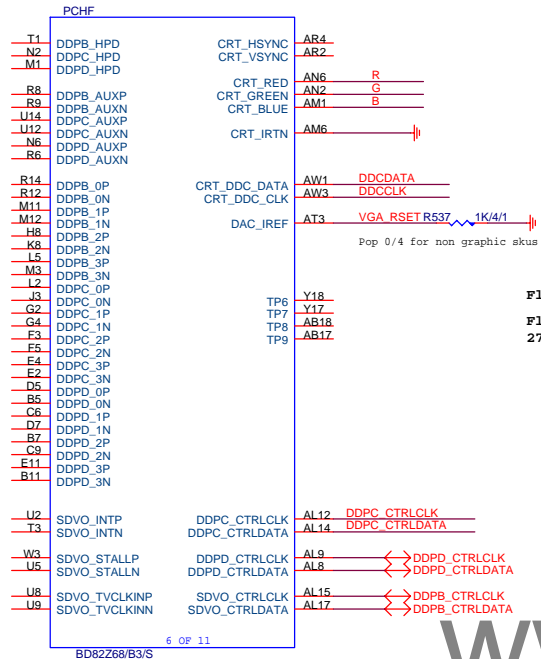
BLOCK DIAGRAM



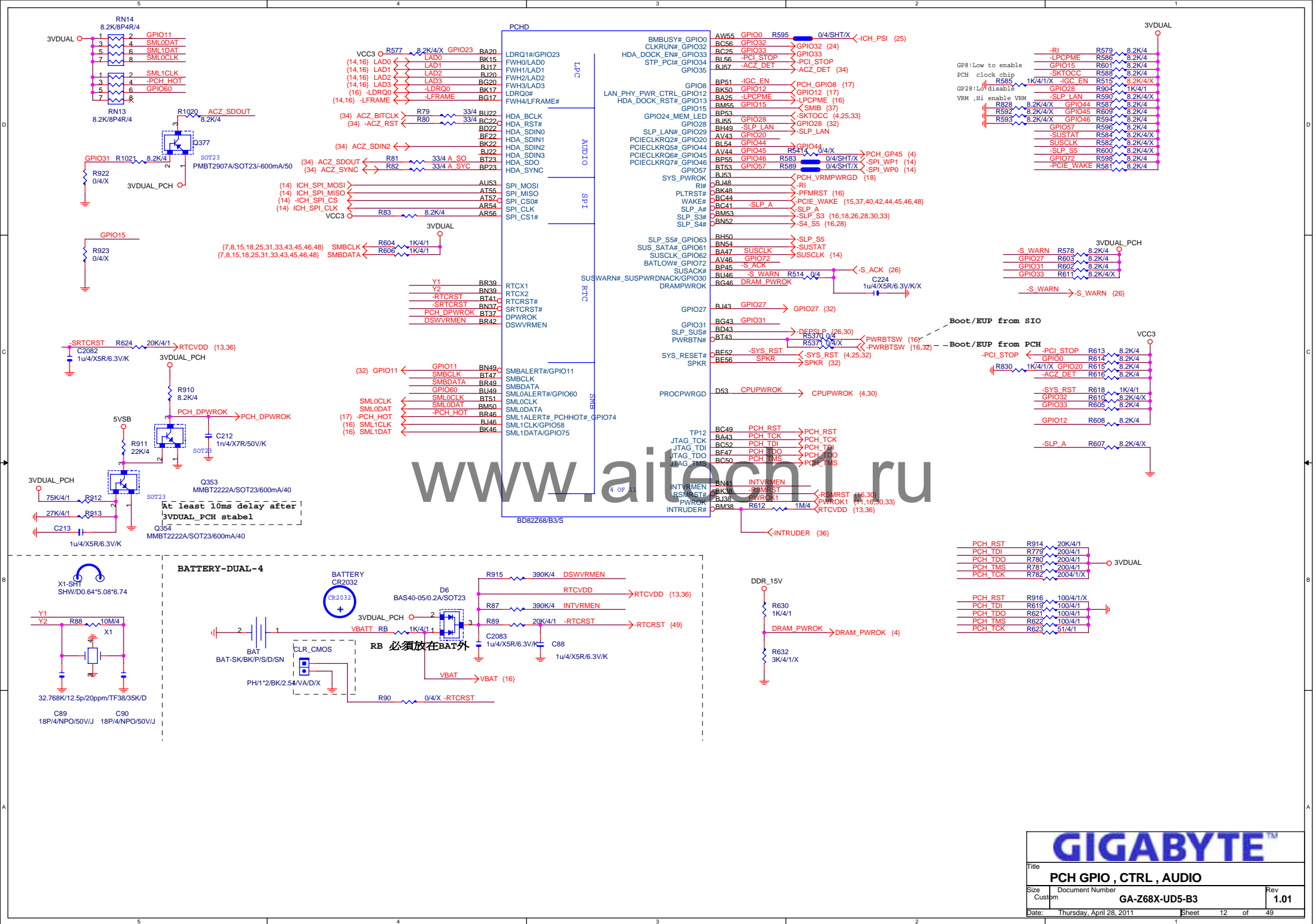


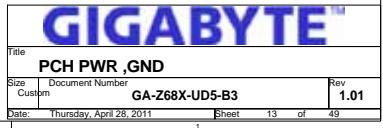




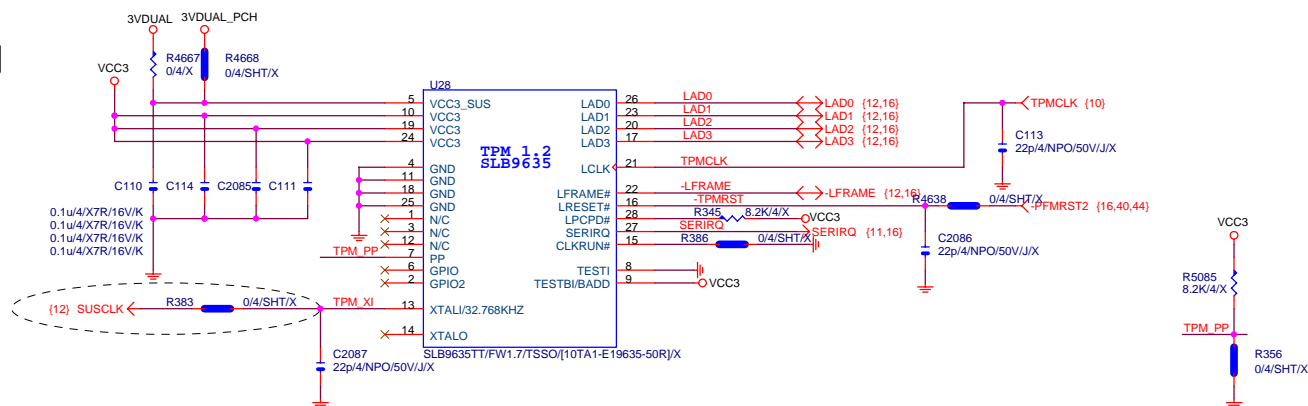
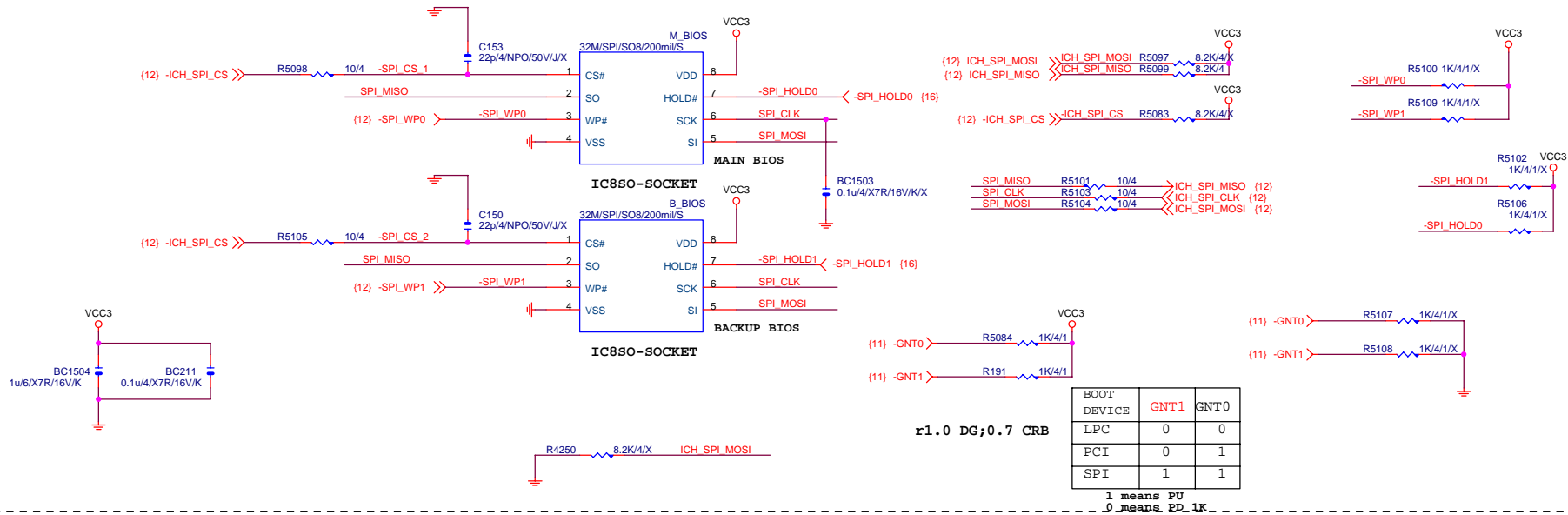






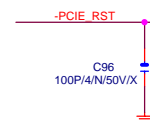
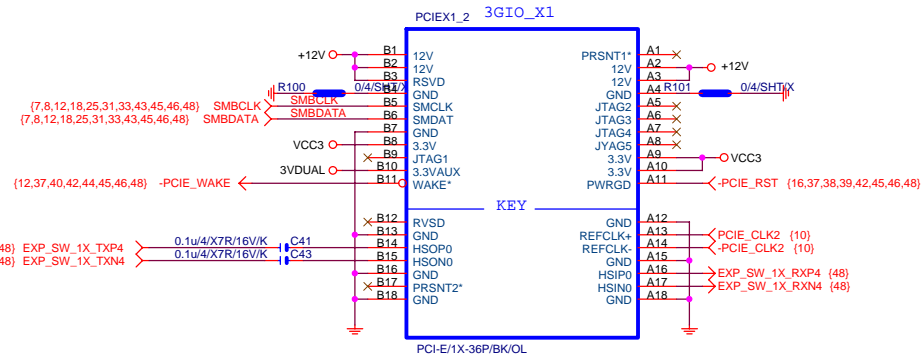
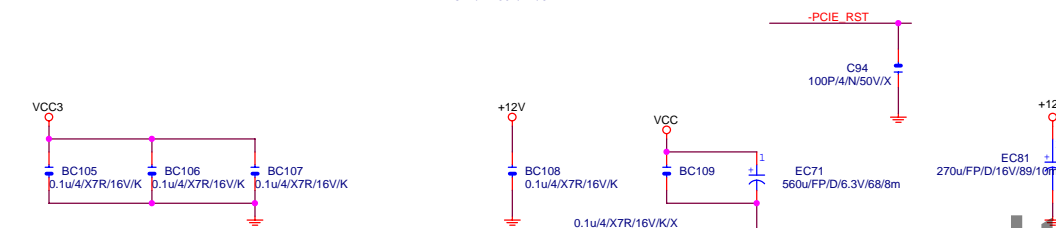
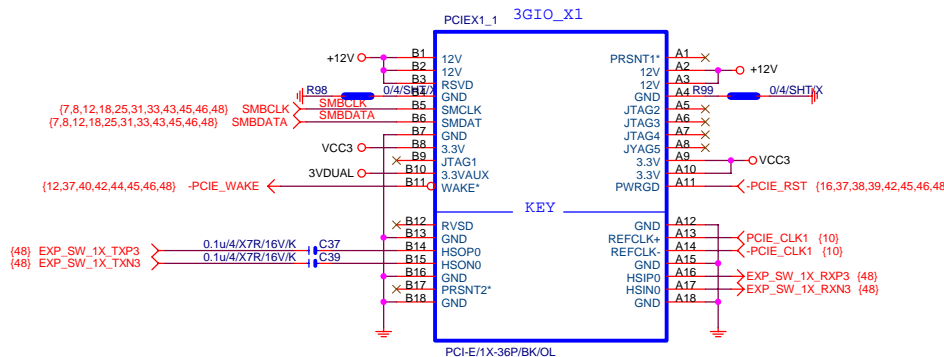


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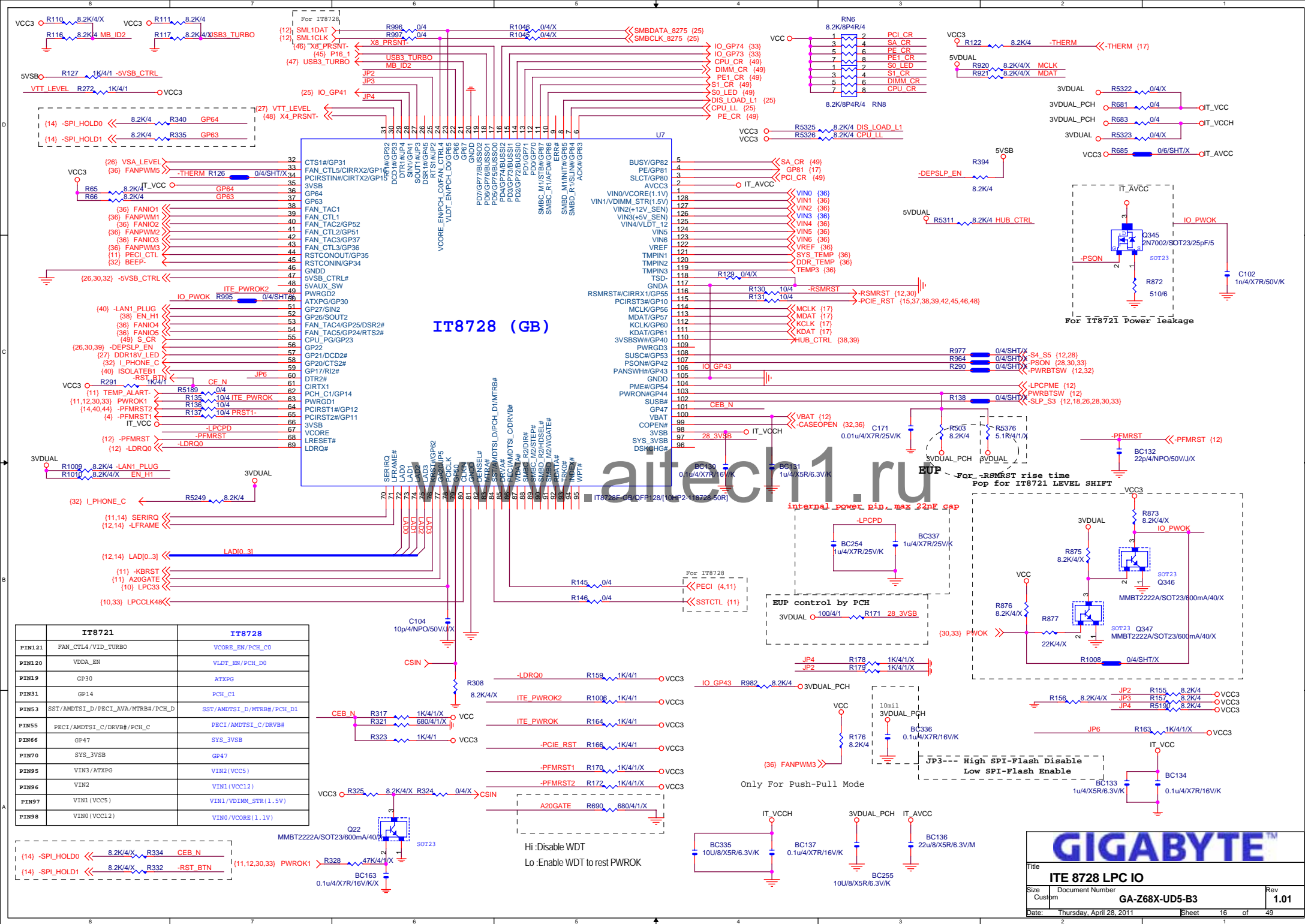


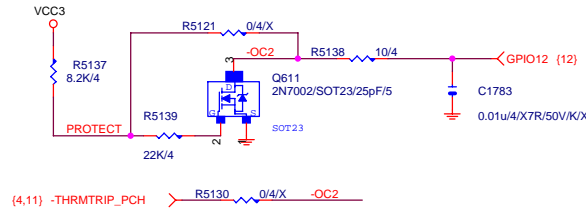
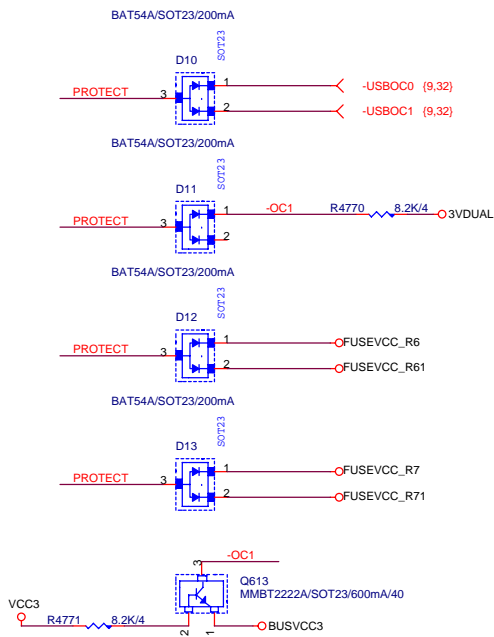
TPM Function
1.C110.C111.C114.C115
2.U28
3.R383.R345.R386.R356

PCIE*1

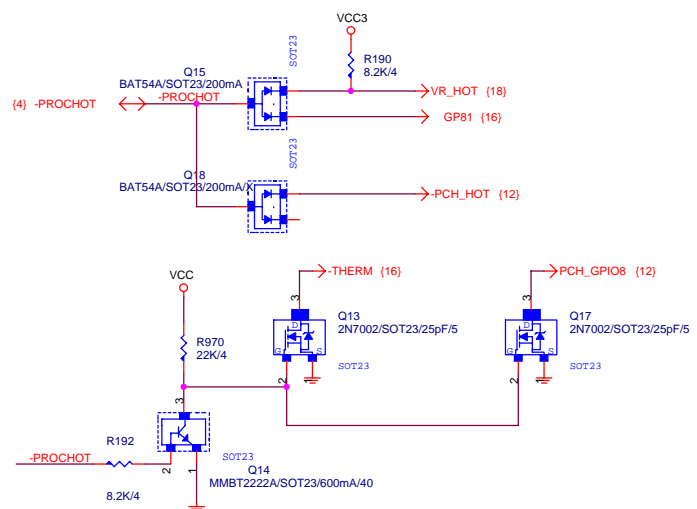


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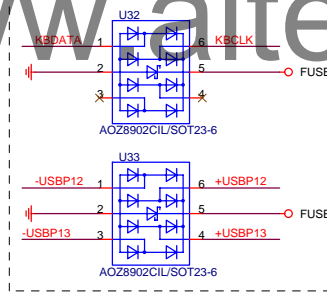
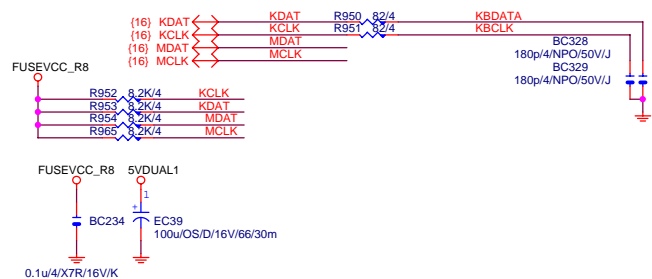


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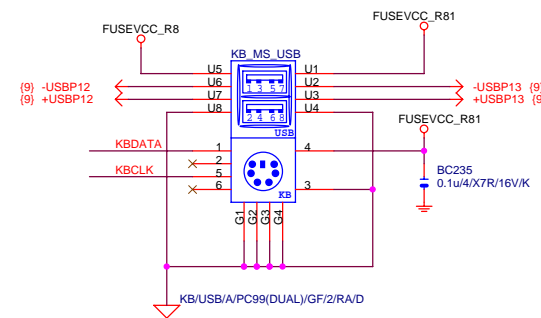
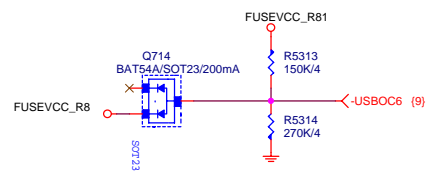
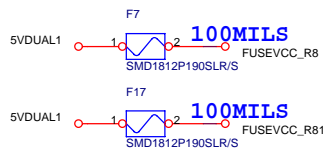
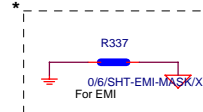


KB / MS

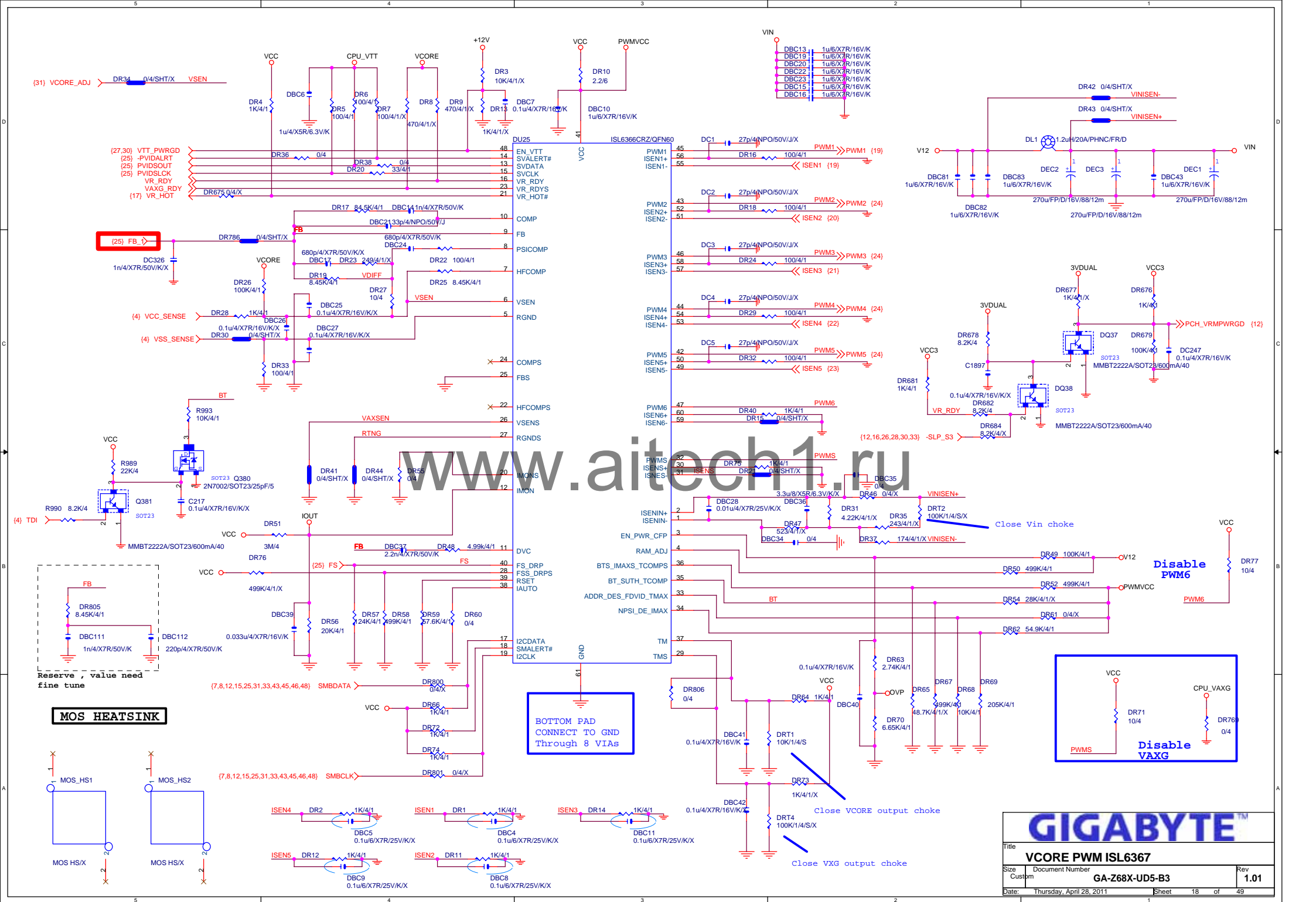
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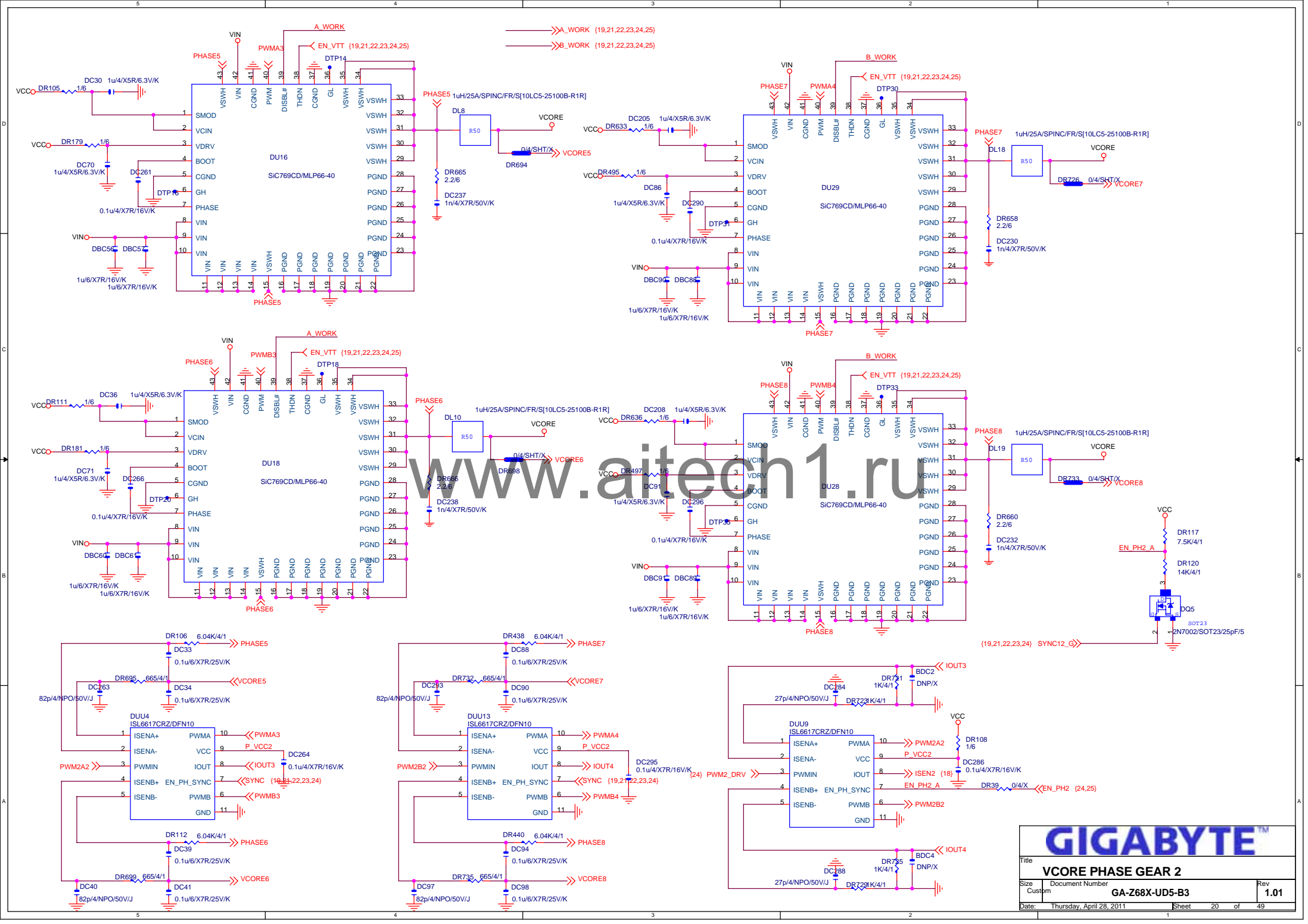


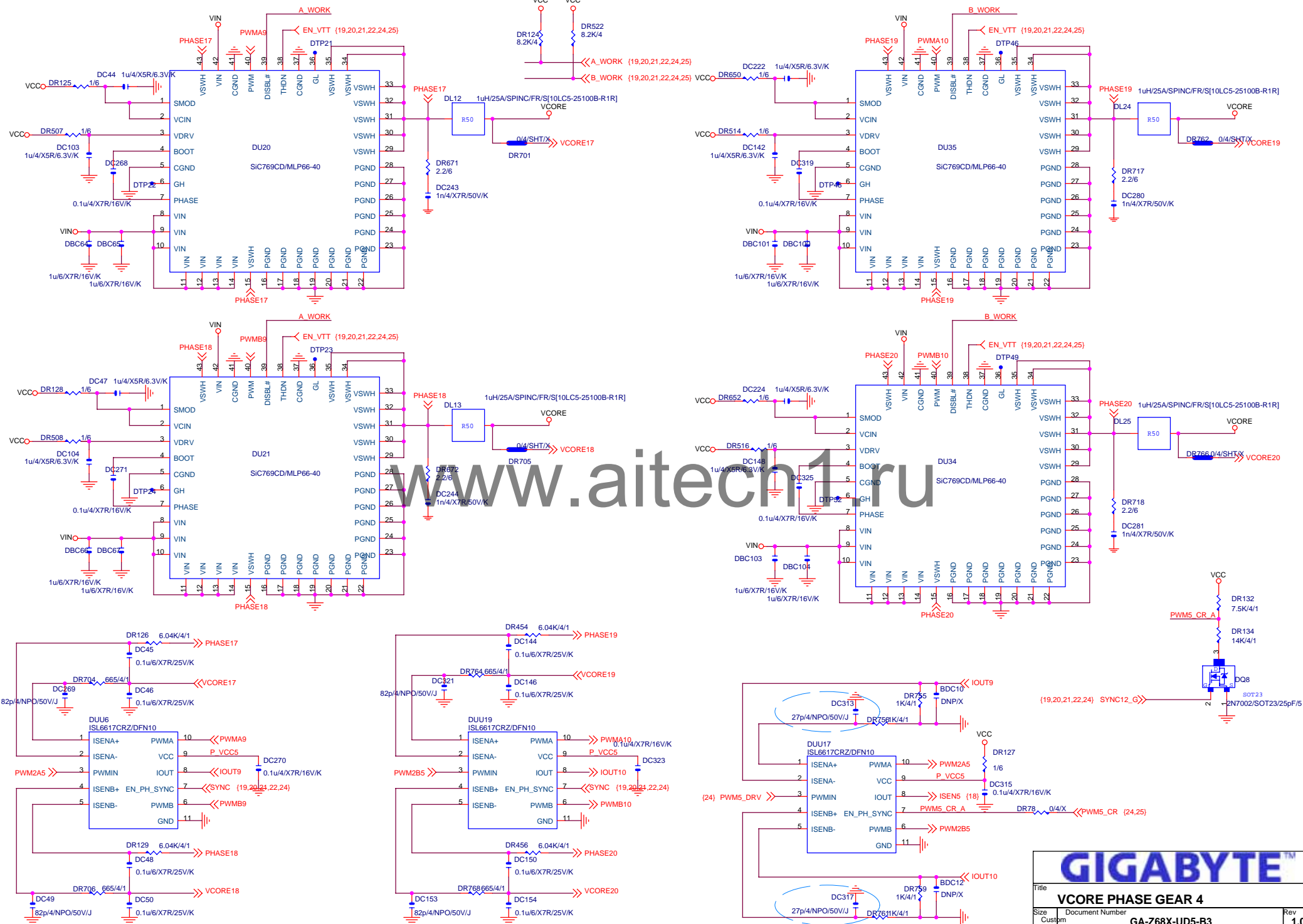
Close to connector



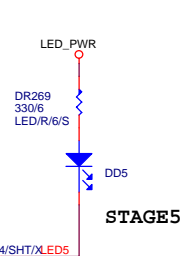
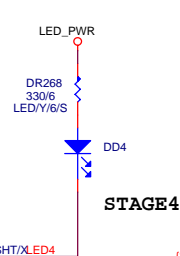
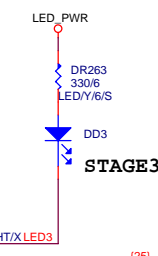
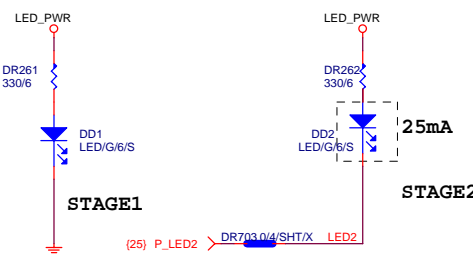
GIGABYTE™		
Title KB_USB3, -PROHOT, OC PROTECT		
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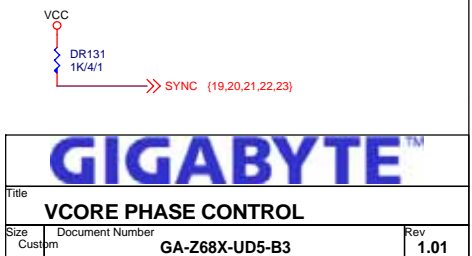
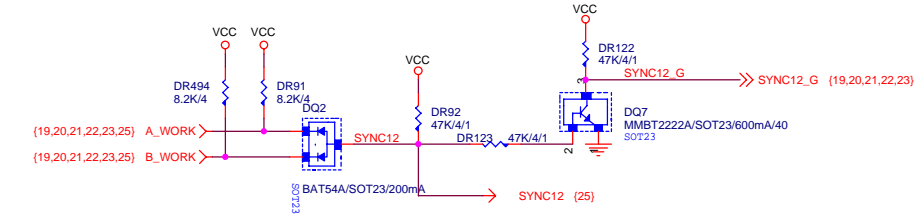
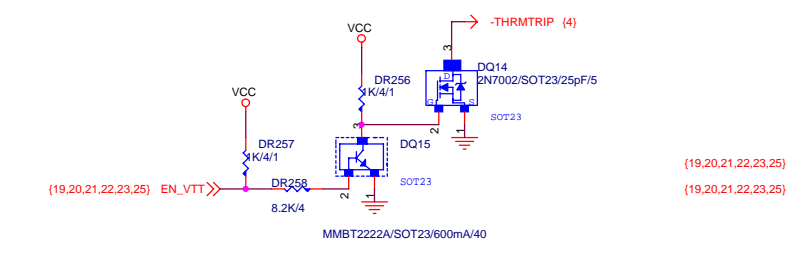
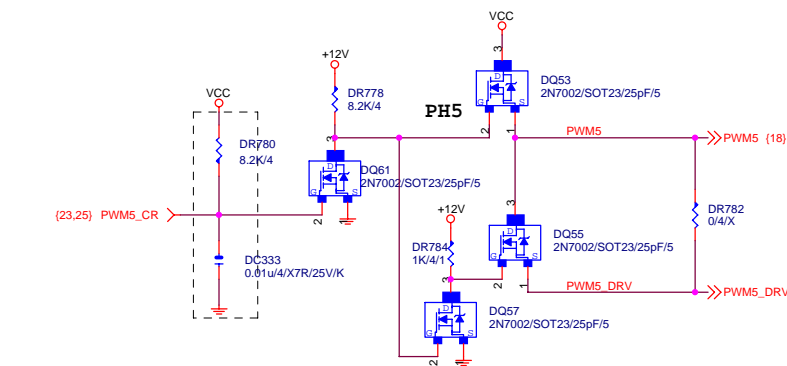
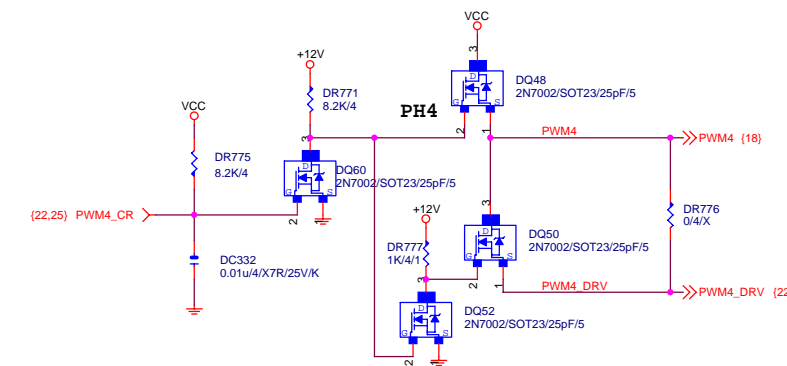
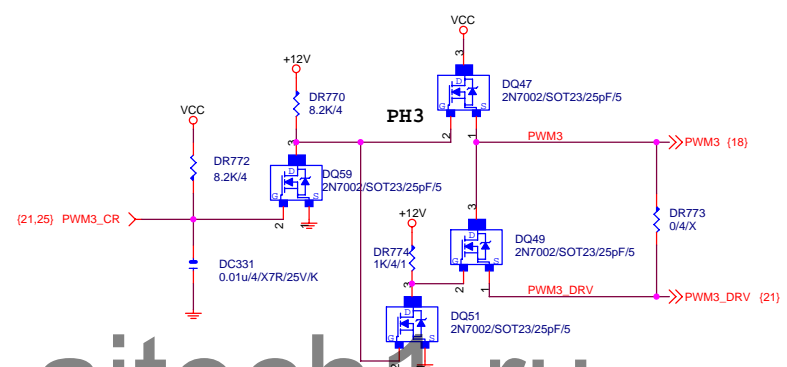
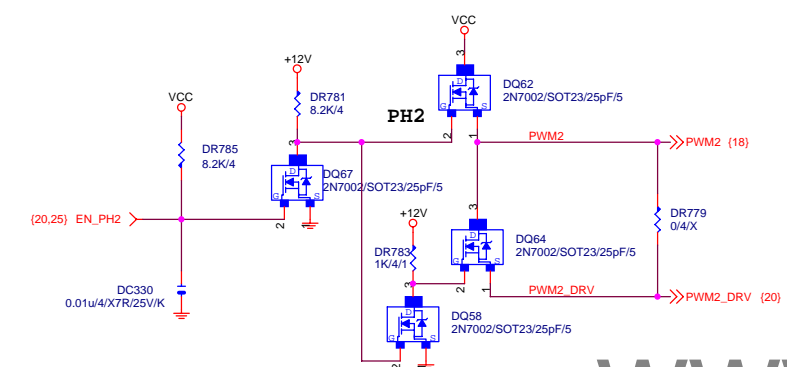
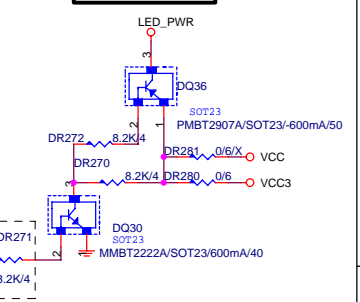




PHASE LED

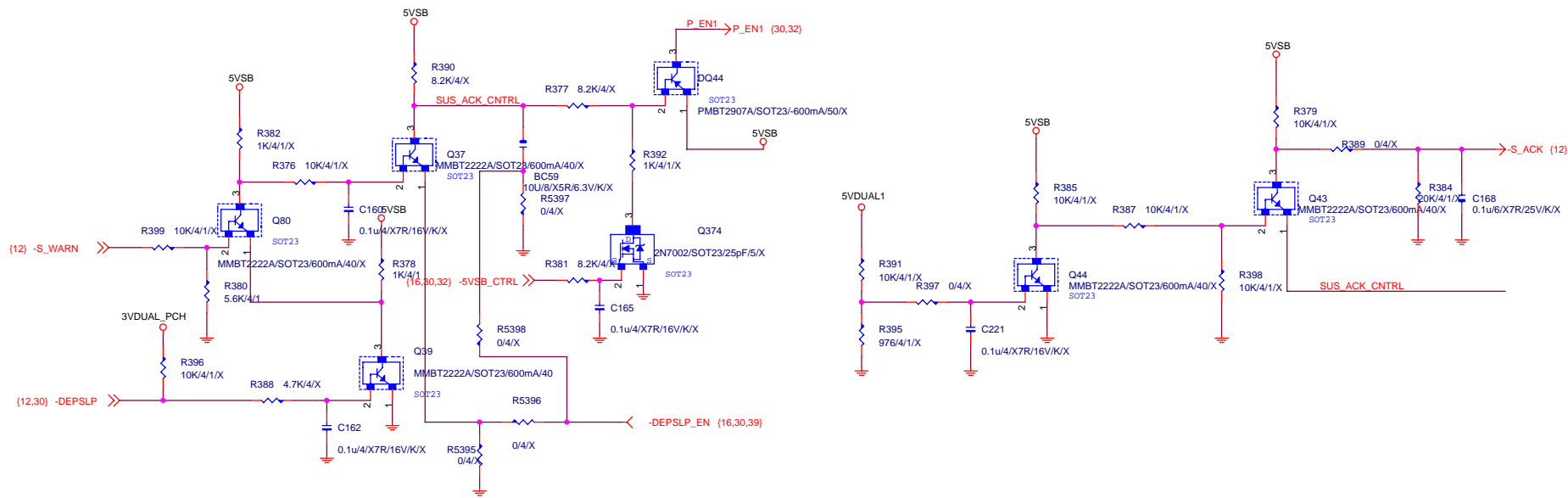


LED POWER

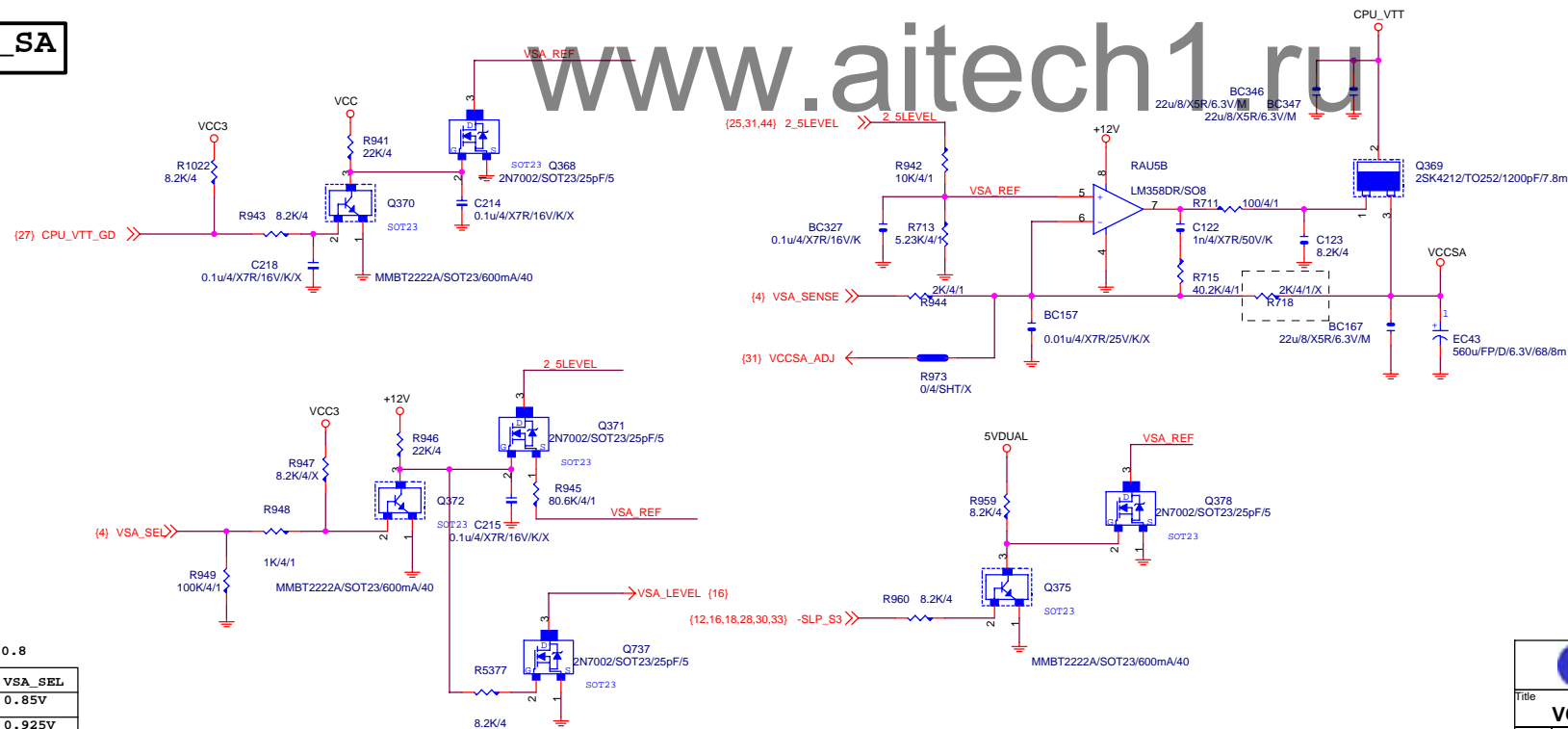


GIGABYTE™		
Title VCORE PHASE CONTROL		
Size Custom	Document Number GA-Z68X-UD5-B3	Rev 1.01
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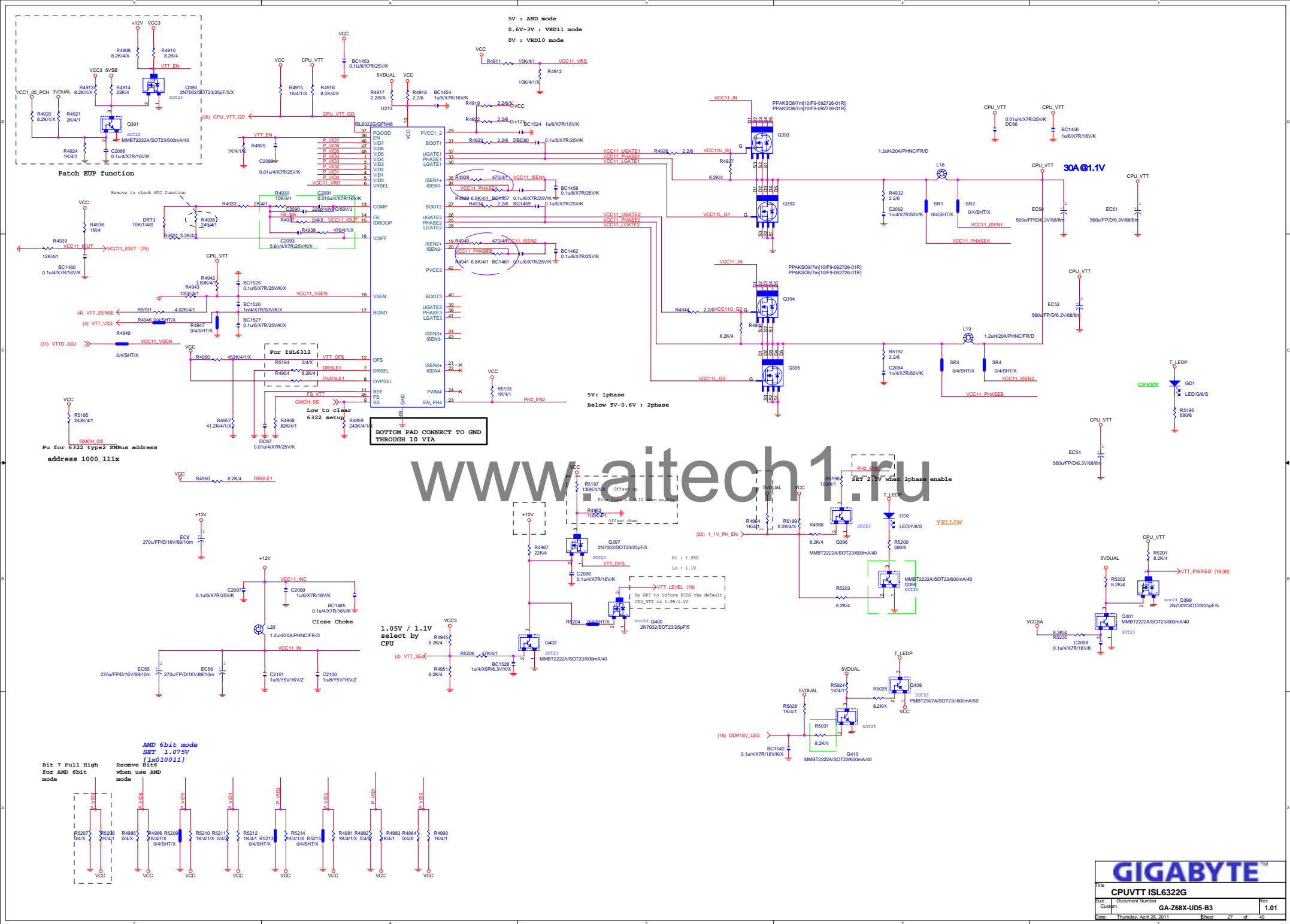
VCC_SA

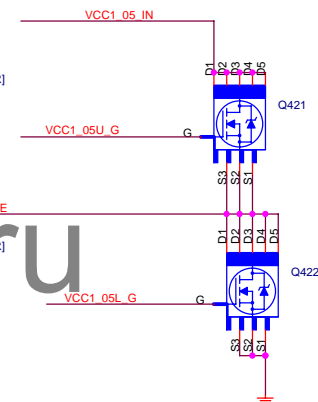
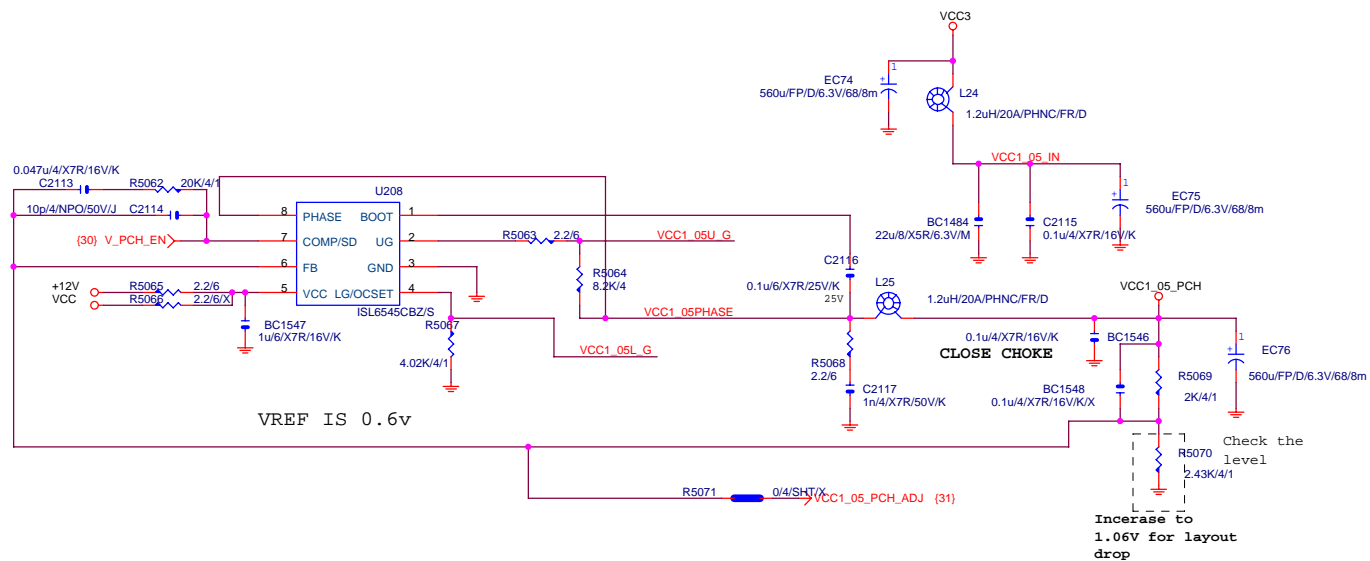


PDG 0.8

	VSA_SEL
HI	0.85V
LO	0.925V

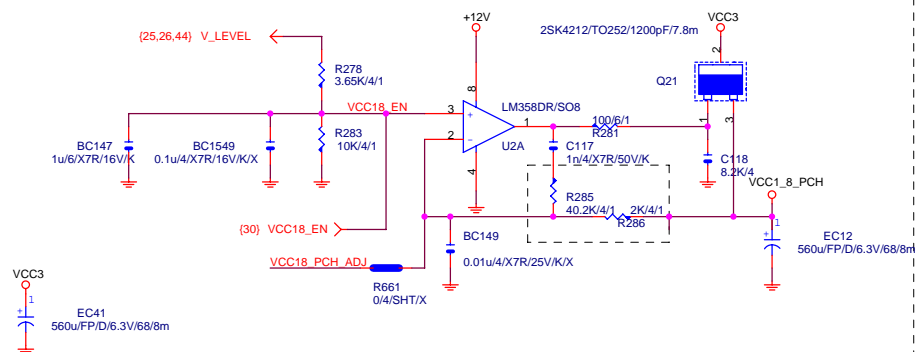
GIGABYTE™			
Title			
VCCSA POWER			
Size	Document Number	Rev	
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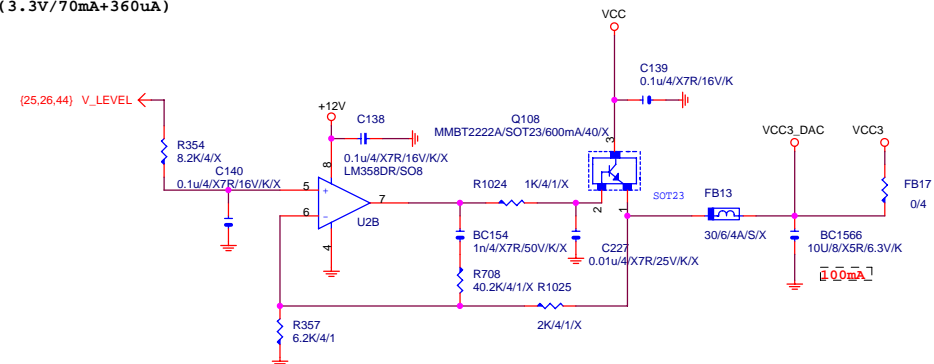
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VCC1_8_PCH

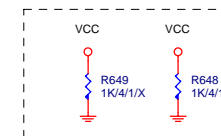
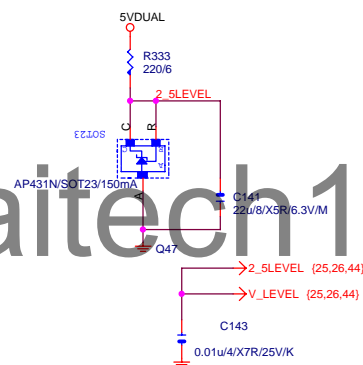
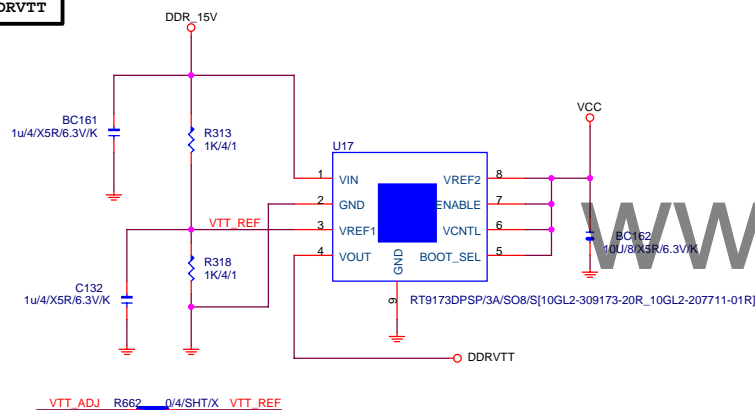


VCC3_DAC

(3.3V/70mA+360uA)



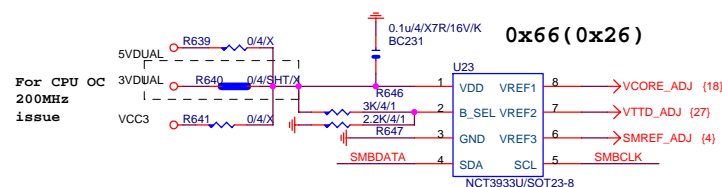
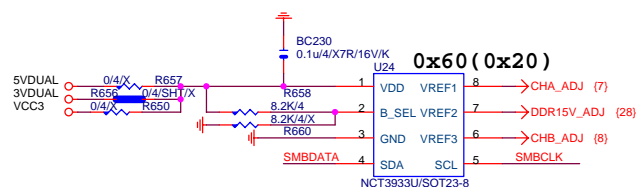
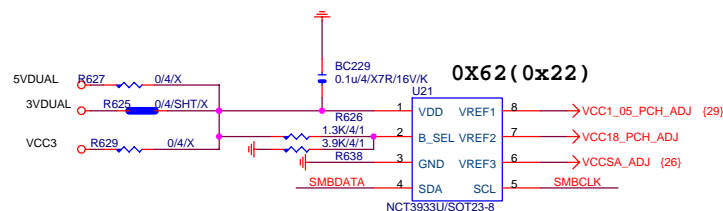
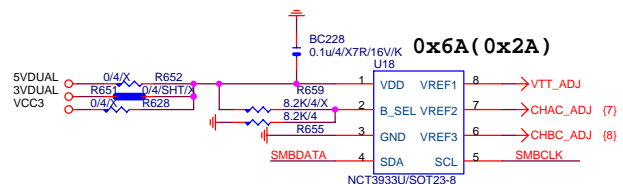
DDRVTT



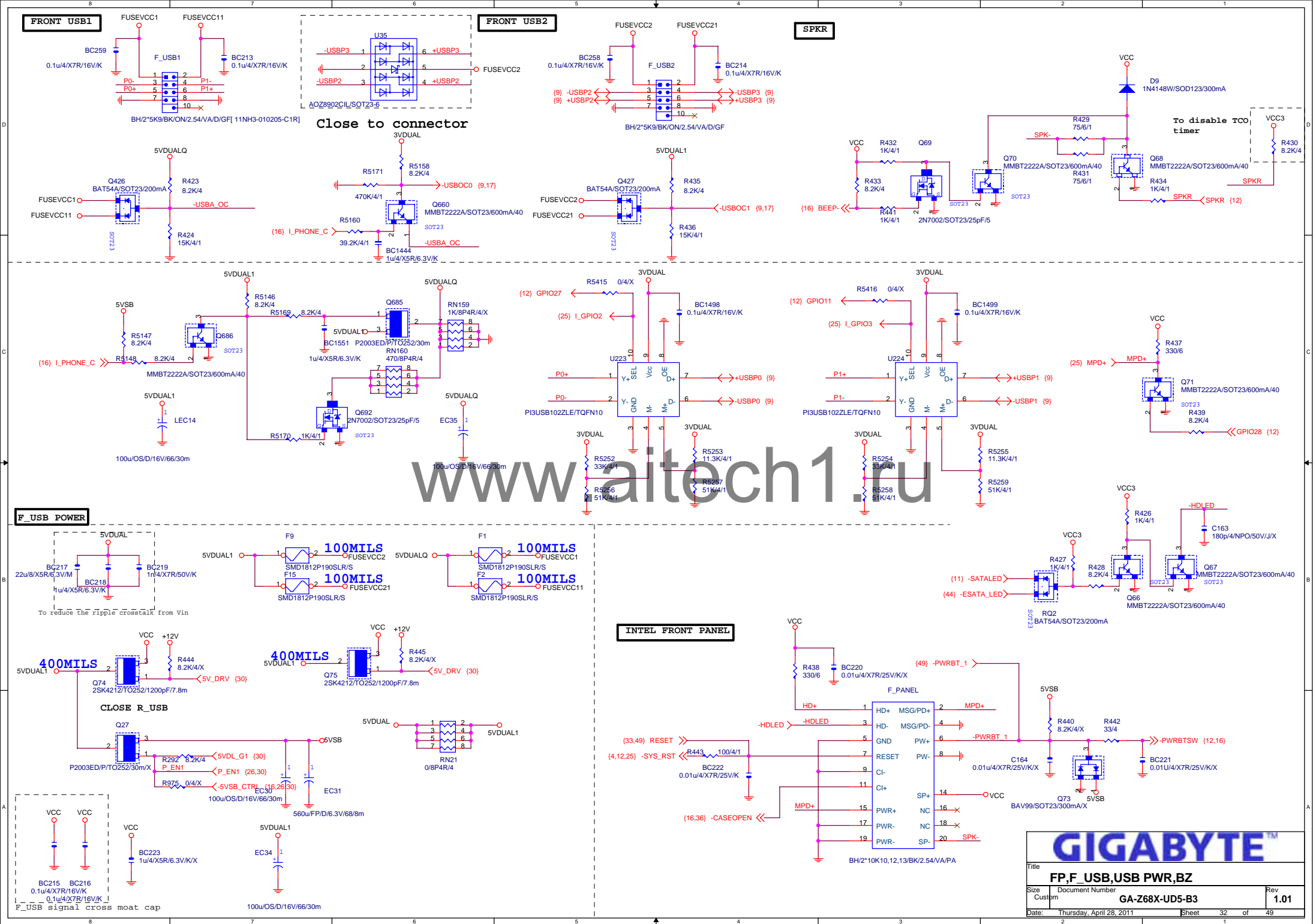
Consume upi 6262 VCC leak

SMBCLK ← SMBCLK {7 8 12 15 18 25 33 43 45 46 48}

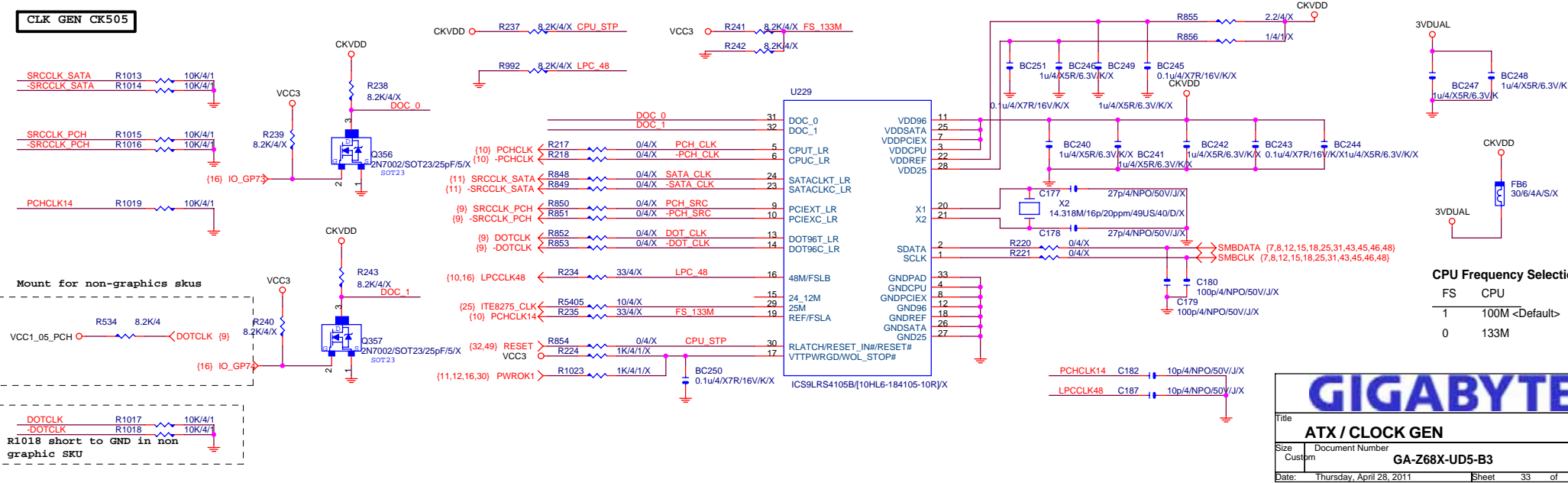
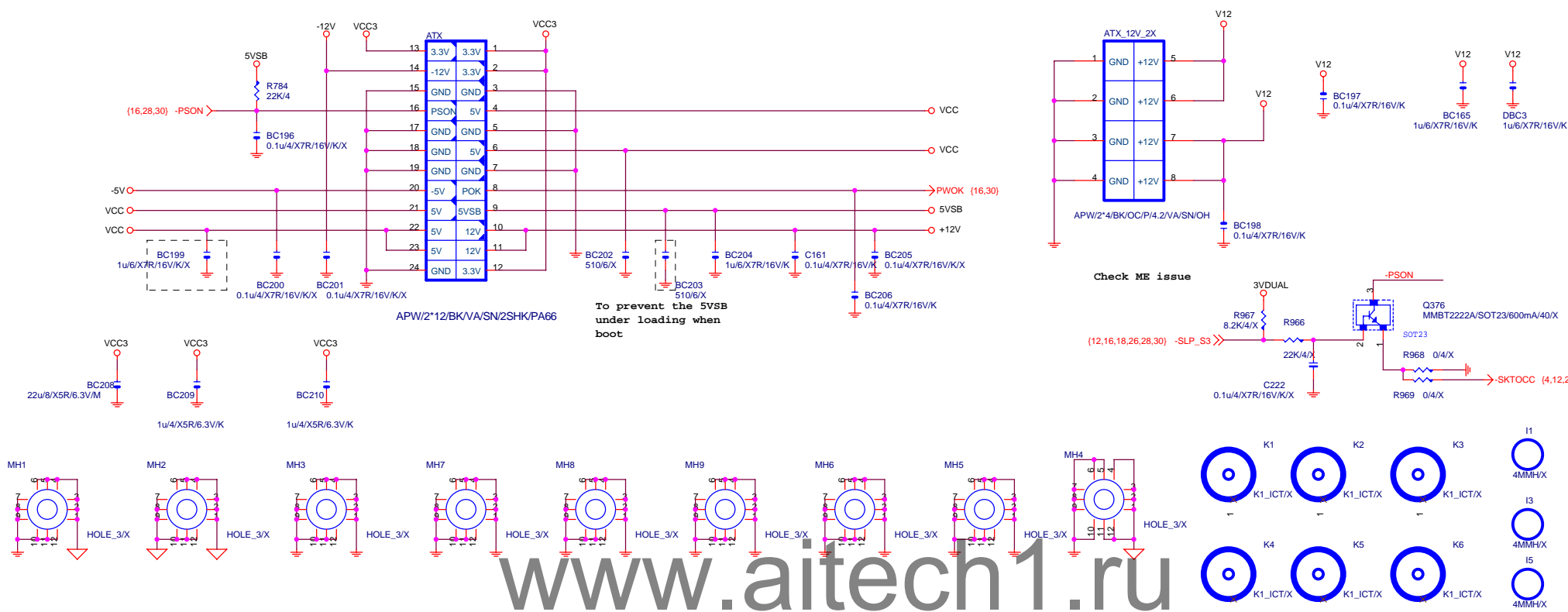
SMBDATA ↔ SMBDATA {7,8,12,15,18,25,33,43,45,46,48}



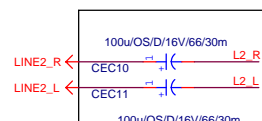
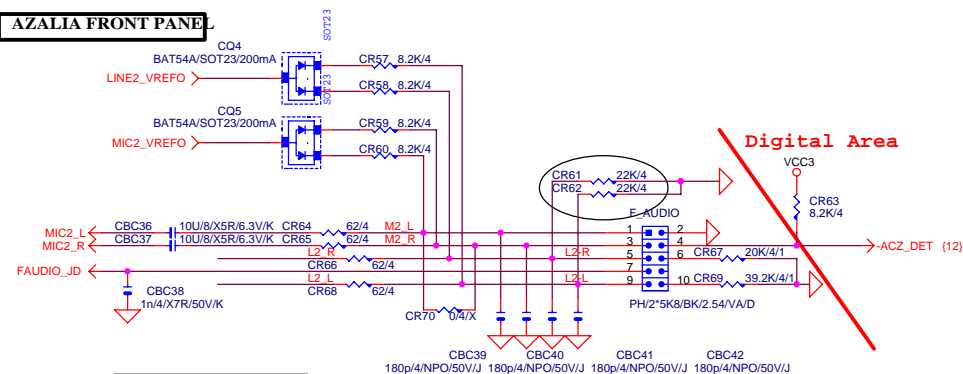
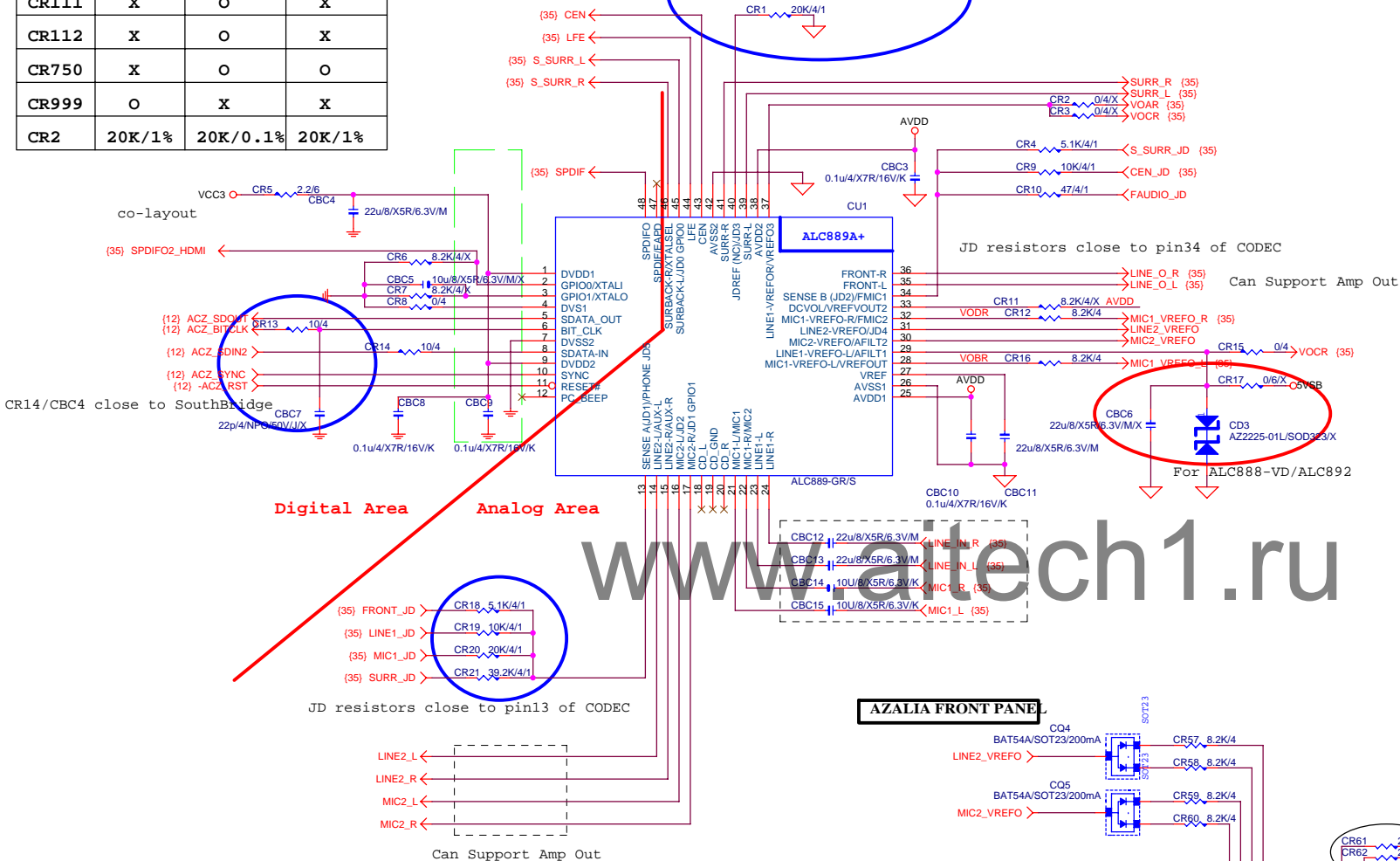
For C
200MH:
issue

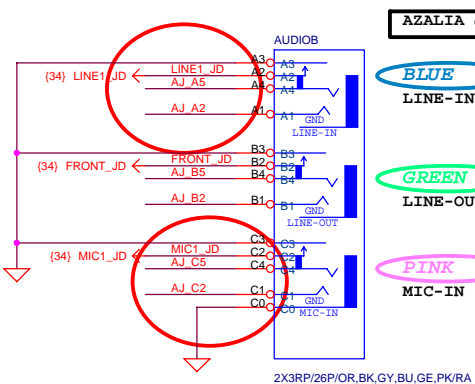
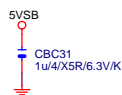


ATX POWER CONNECTOR



	ALC889A+	ALC889A	ALC888Vx
CR111	X	O	X
CR112	X	O	X
CR750	X	O	O
CR999	O	X	X
CR2	20K/1%	20K/0.1%	20K/1%

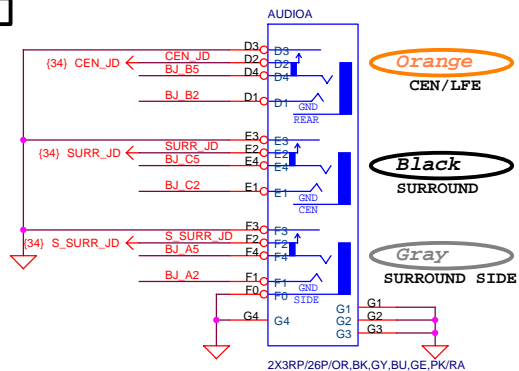


[illegible]

BLUE
LINE-IN

GREEN
LINE-OUT

PINK
MIC-IN

[illegible]

For HDMI SPDIF

(34) SPDIF

CR37 0/4/X

(34) SPDIF02_HDMI

CR38 0/4/SHT/X

CBC26

100p/4/NPO/50V/J

PIN1

SPDIF: O
PH1*2/BK/2.54V/A/D

MIC-IN

The schematic diagram illustrates the audio output section of the AD9959, showing connections for various audio signals and components. The diagram is divided into sections by dashed lines, with labels indicating specific components and their values.

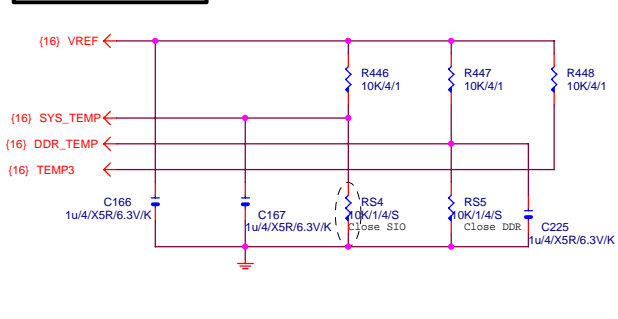
Top Section:

- LINE_O_R** and **LINE_O_L** signals are connected to **CEC1** and **CEC2** respectively, which are 100u/OS/D/16V/66/30m capacitors.
- CR26** and **CR27** are 62k/4 resistors.
- CR23** and **CR24** are 22k/4 resistors.
- CR30** and **CR31** are 8.2k/4 resistors.
- CR32** and **CR33** are 62k/4 resistors.
- CR34** and **CR35** are 62k/4 resistors.
- CR36** is an 8.2k/4 resistor.
- CR39** and **CR40** are 62k/4 resistors.
- CR28** is a 62k/4 resistor.
- CR29** is an 8.2k/4 resistor.
- CR37** is an 8.2k/4 resistor.
- CR38** is an 8.2k/4 resistor.
- CR39** and **CR40** are 62k/4 resistors.
- CR41** is an 8.2k/4 resistor.
- CR42** is an 8.2k/4 resistor.
- CR43** is an 8.2k/4 resistor.
- CR44** is an 8.2k/4 resistor.
- CR45** is an 8.2k/4 resistor.
- CR46** is an 8.2k/4 resistor.
- CR47** is an 8.2k/4 resistor.
- CR48** is an 8.2k/4 resistor.
- CR49** is an 8.2k/4 resistor.
- CR50** is an 8.2k/4 resistor.
- CR51** is an 8.2k/4 resistor.
- CR52** is an 8.2k/4 resistor.
- CR53** is an 8.2k/4 resistor.
- CR54** is an 8.2k/4 resistor.
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- CR56** is an 8.2k/4 resistor.
- CR57** is an 8.2k/4 resistor.
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- CR99** is an 8.2k/4 resistor.
- CR100** is an 8.2k/4 resistor.
- CR101** is an 8.2k/4 resistor.
- CR102** is an 8.2k/4 resistor.
- CR103** is an 8.2k/4 resistor.
- CR104** is an 8.2k/4 resistor.
- CR105** is an 8.2k/4 resistor.
- CR106** is an 8.2k/4 resistor.
- CR107** is an 8.2k/4 resistor.
- CR108** is an 8.2k/4 resistor.
- CR109** is an 8.2k/4 resistor.
- CR110** is an 8.2k/4 resistor.
- CR111** is an 8.2k/4 resistor.
- CR112** is an 8.2k/4 resistor.
- CR113** is an 8.2k/4 resistor.
- CR114** is an 8.2k/4 resistor.
- CR115** is an 8.2k/4 resistor.
- CR116** is an 8.2k/4 resistor.
- CR117** is an 8.2k/4 resistor.
- CR118** is an 8.2k/4 resistor.
- CR119** is an 8.2k/4 resistor.
- CR120** is an 8.2k/4 resistor.
- CR121** is an 8.2k/4 resistor.
- CR122** is an 8.2k/4 resistor.
- CR123** is an 8.2k/4 resistor.
- CR124** is an 8.2k/4 resistor.
- CR125** is an 8.2k/4 resistor.
- CR126** is an 8.2k/4 resistor.
- CR127** is an 8.2k/4 resistor.
- CR128** is an 8.2k/4 resistor.
- CR129** is an 8.2k/4 resistor.
- CR130** is an 8.2k/4 resistor.
- CR131** is an 8.2k/4 resistor.
- CR132** is an 8.2k/4 resistor.
- CR133** is an 8.2k/4 resistor.
- CR134** is an 8.2k/4 resistor.
- CR135** is an 8.2k/4 resistor.
- CR136** is an 8.2k/4 resistor.
- CR137** is an 8.2k/4 resistor.
- CR138** is an 8.2k/4 resistor.
- CR139** is an 8.2k/4 resistor.
- CR140** is an 8.2k/4 resistor.
- CR141** is an 8.2k/4 resistor.
- CR142** is an 8.2k/4 resistor.
- CR143** is an 8.2k/4 resistor.
- CR144** is an 8.2k/4 resistor.
- CR145** is an 8.2k/4 resistor.
- CR146** is an 8.2k/4 resistor.
- CR147** is an 8.2k/4 resistor.
- CR148** is an 8.2k/4 resistor.
- CR149** is an 8.2k/4 resistor.
- CR150** is an 8.2k/4 resistor.
- CR151** is an 8.2k/4 resistor.
- CR152** is an 8.2k/4 resistor.
- CR153** is an 8.2k/4 resistor.
- CR154** is an 8.2k/4 resistor.
- CR155** is an 8.2k/4 resistor.
- CR156** is an 8.2k/4 resistor.
- CR157** is an 8.2k/4 resistor.
- CR158** is an 8.2k/4 resistor.
- CR159** is an 8.2k/4 resistor.
- CR160** is an 8.2k/4 resistor.
- CR161** is an 8.2k/4 resistor.
- CR162** is an 8.2k/4 resistor.
- CR163** is an 8.2k/4 resistor.
- CR164** is an 8.2k/4 resistor.
- CR165** is an 8.2k/4 resistor.
- CR166** is an 8.2k/4 resistor.
- CR167** is an 8.2k/4 resistor.
- CR168** is an 8.2k/4 resistor.
- CR169** is an 8.2k/4 resistor.
- CR170** is an 8.2k/4 resistor.
- CR171** is an 8.2k/4 resistor.
- CR172** is an 8.2k/4 resistor.
- CR173** is an 8.2k/4 resistor.
- CR174** is an 8.2k/4 resistor.
- CR175** is an 8.2k/4 resistor.
- CR176** is an 8.2k/4 resistor.
- CR177** is an 8.2k/4 resistor.
- CR**

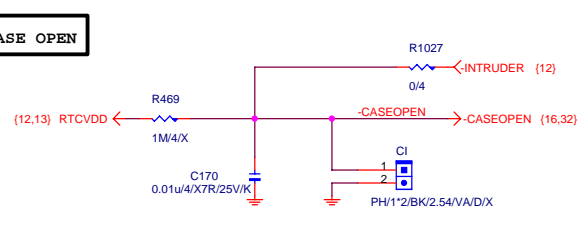
The diagrams illustrate the connection of the EMI filter to the power supply input. Each diagram shows a different configuration for the EMI filter components (CR46, CR47, CR48, CR49, CR50, CR51, CR52, CR53, CR54, CR55, CR56) and the resulting output filter components (CBC29, CBC30, CBC32, CBC33, CBC34, CBC35). The diagrams are labeled (34) SURR_R, (34) SURR_L, (34) LFE, (34) CEN, (34) S_SURR_R, and (34) S_SURR_L.

11NR6-403007-21R

TEMP H/W MONITOR

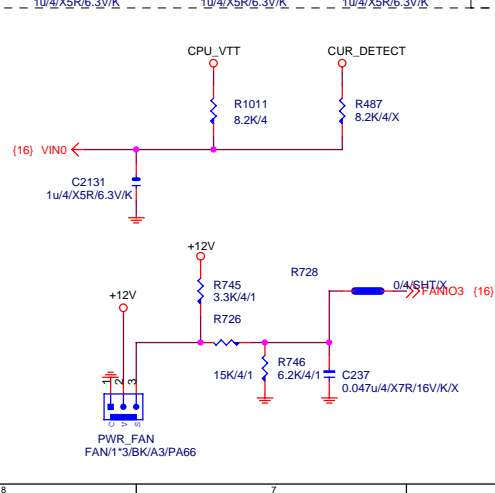
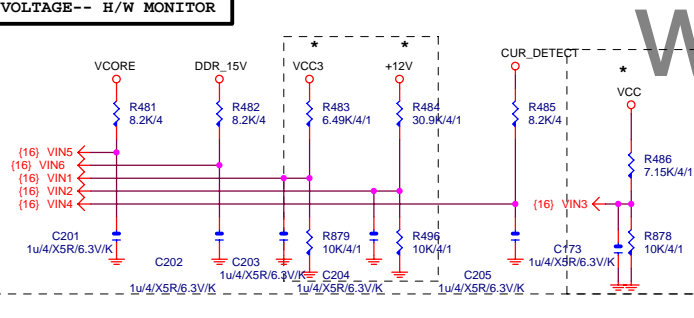


CASE OPEN

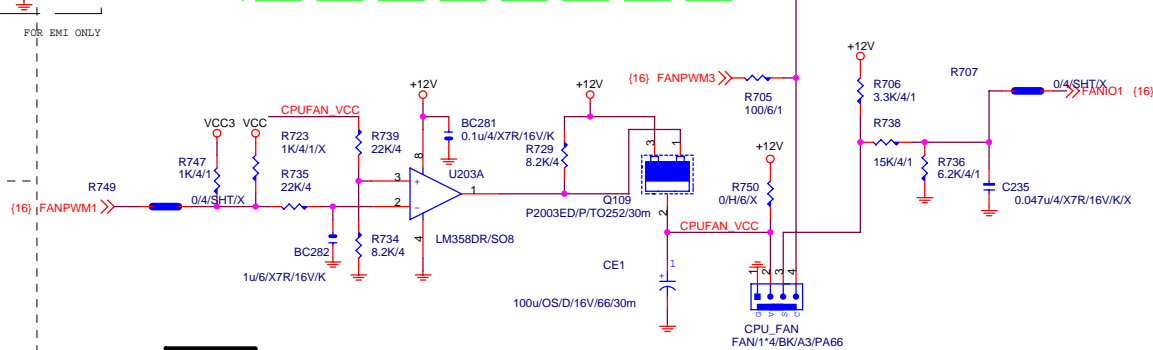
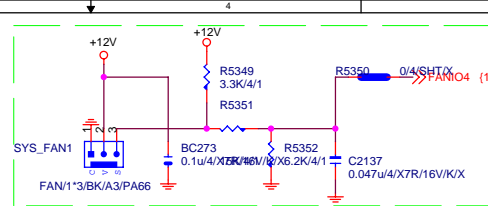
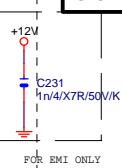


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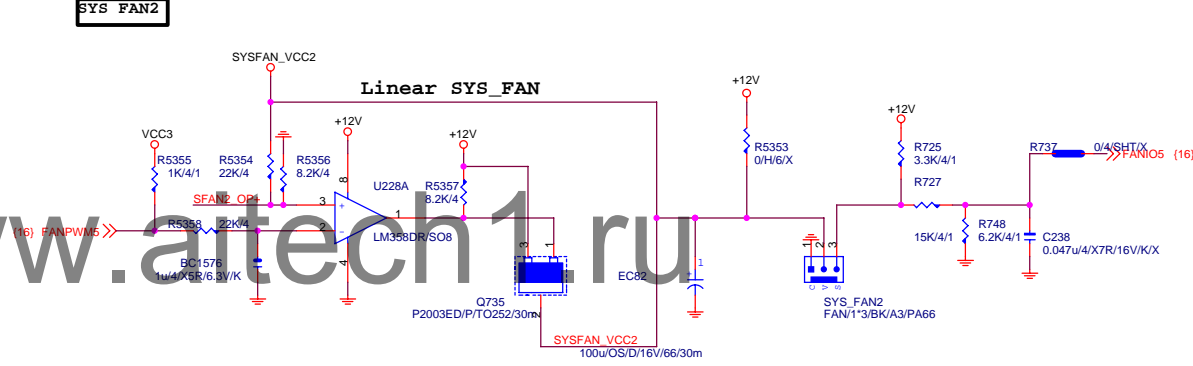
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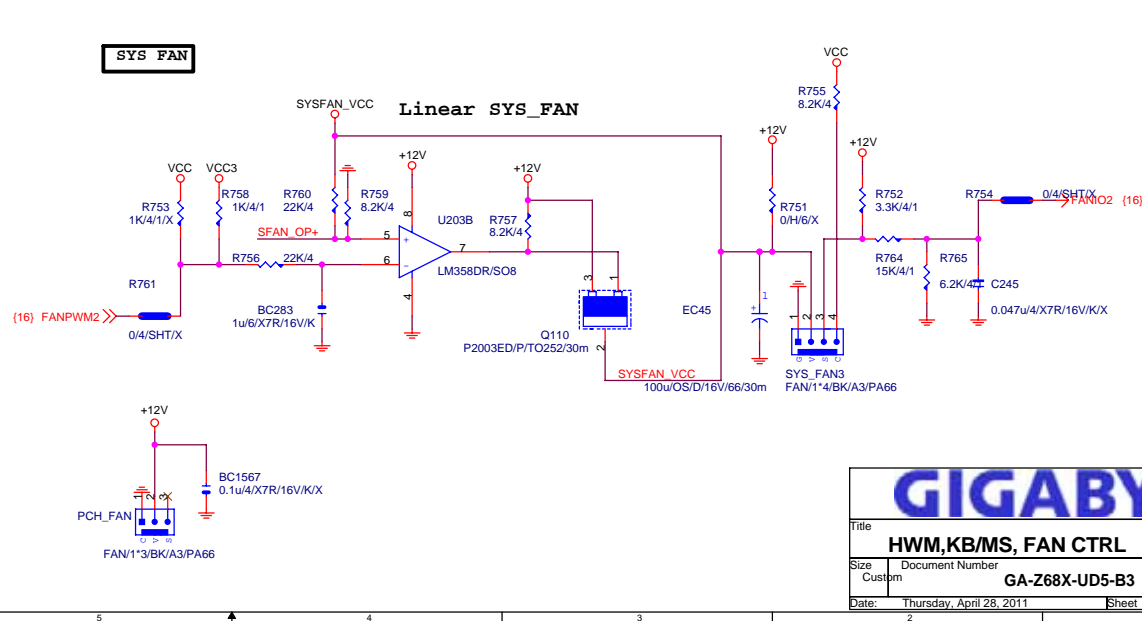
CPU SMART FAN



SYS FAN2



SYS FAN



GIGABYTE

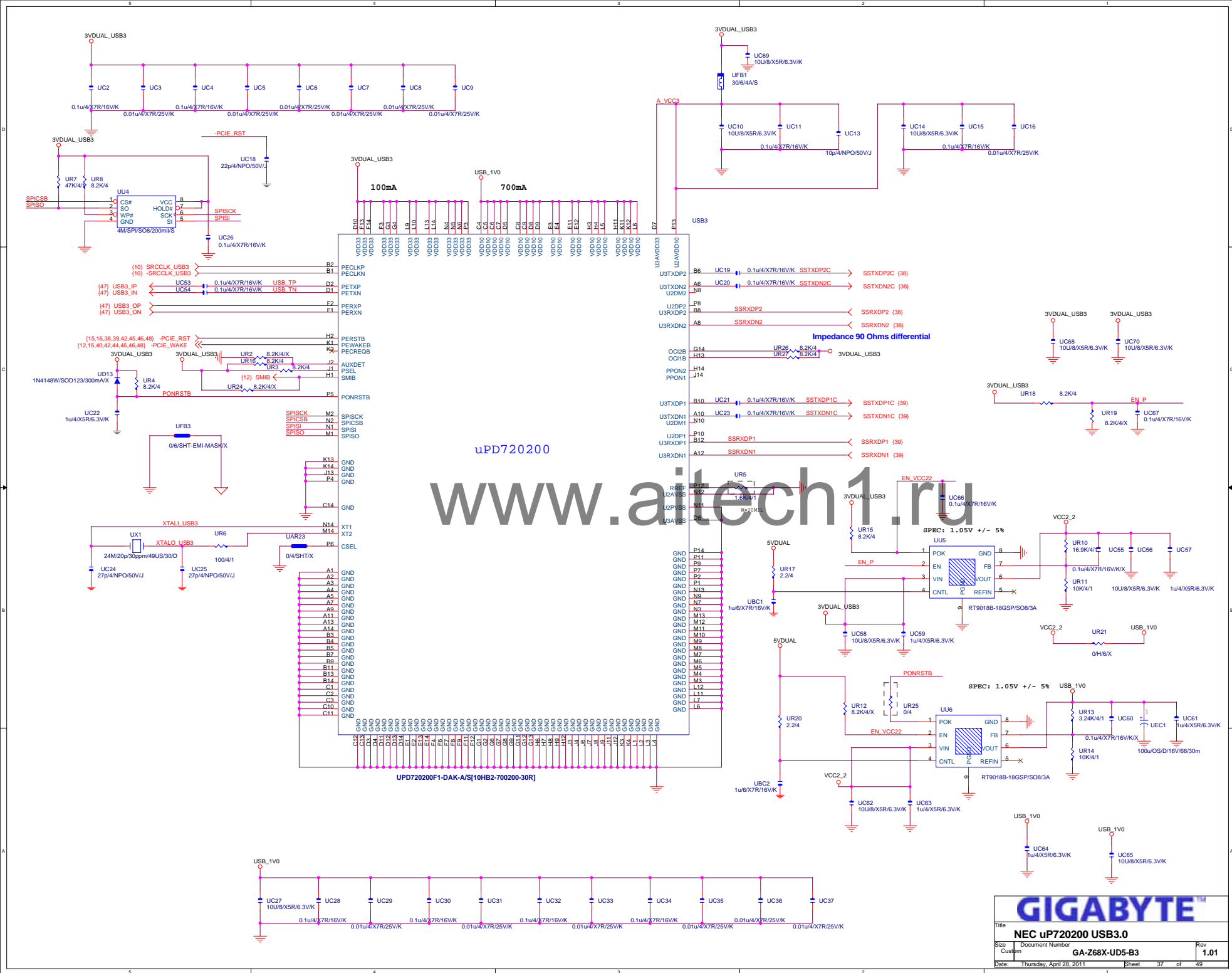
HWM,KB/MS, FAN CTRL

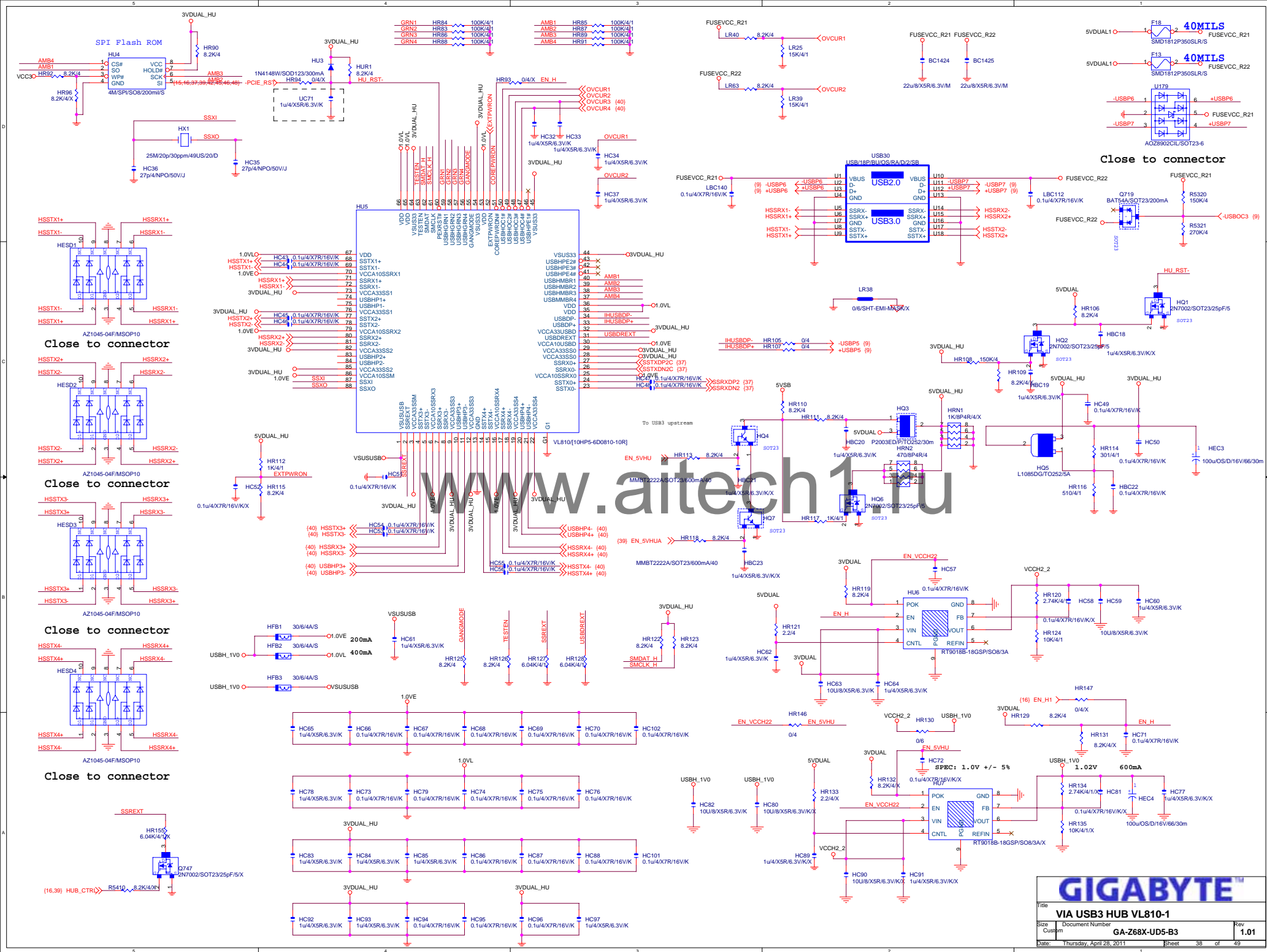
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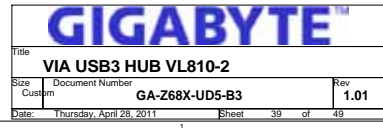
Rev	1.01
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Date: Thursday, April 28, 2011

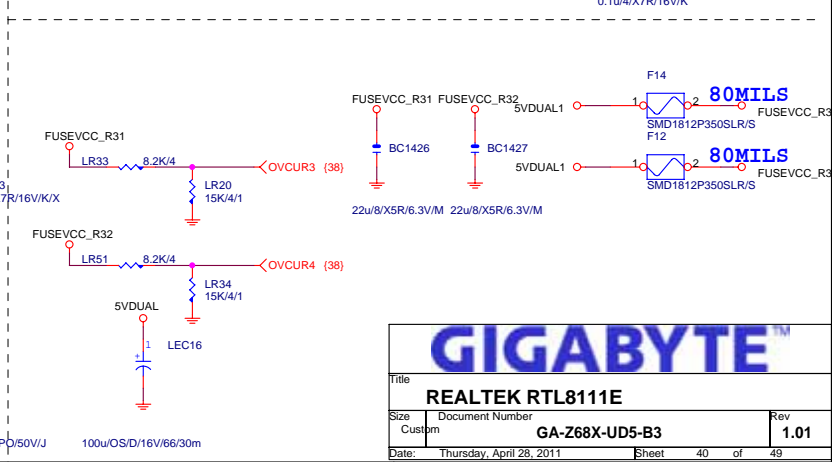
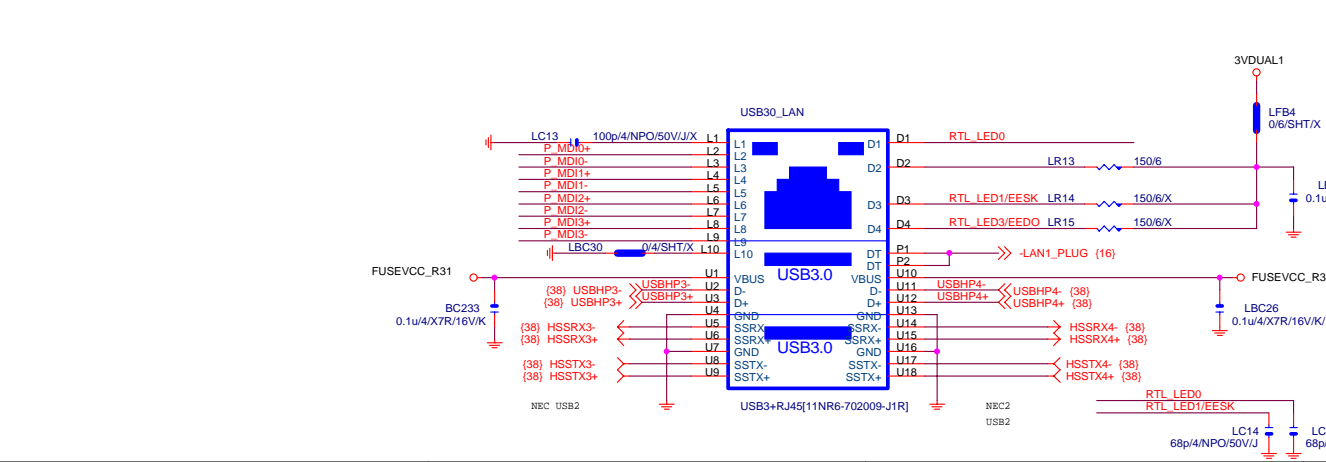
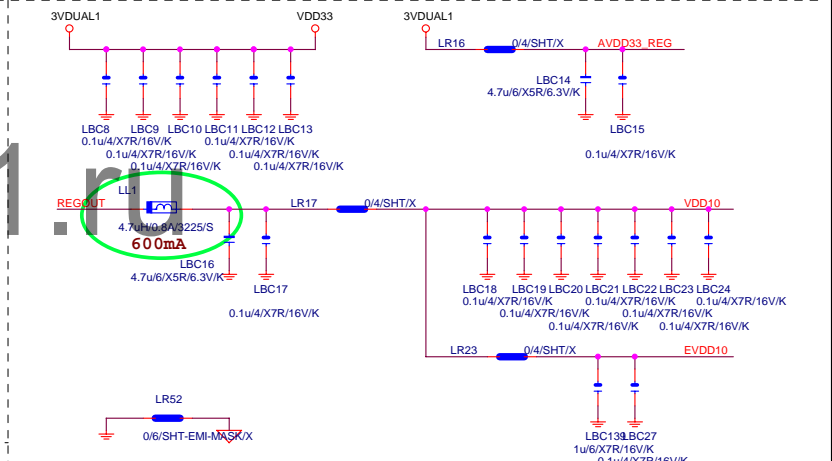
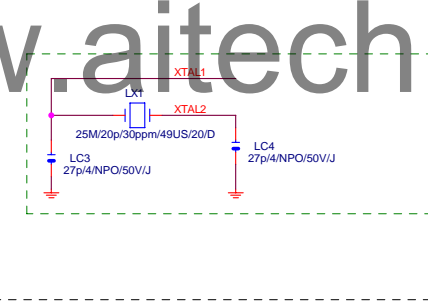
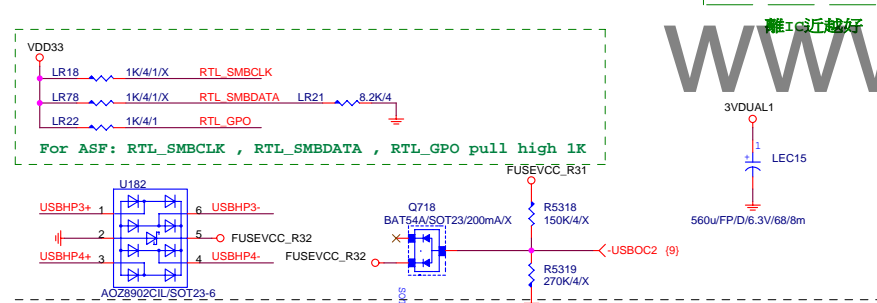
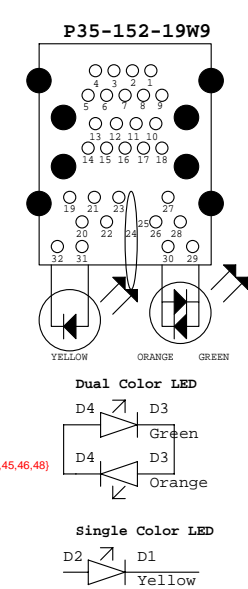
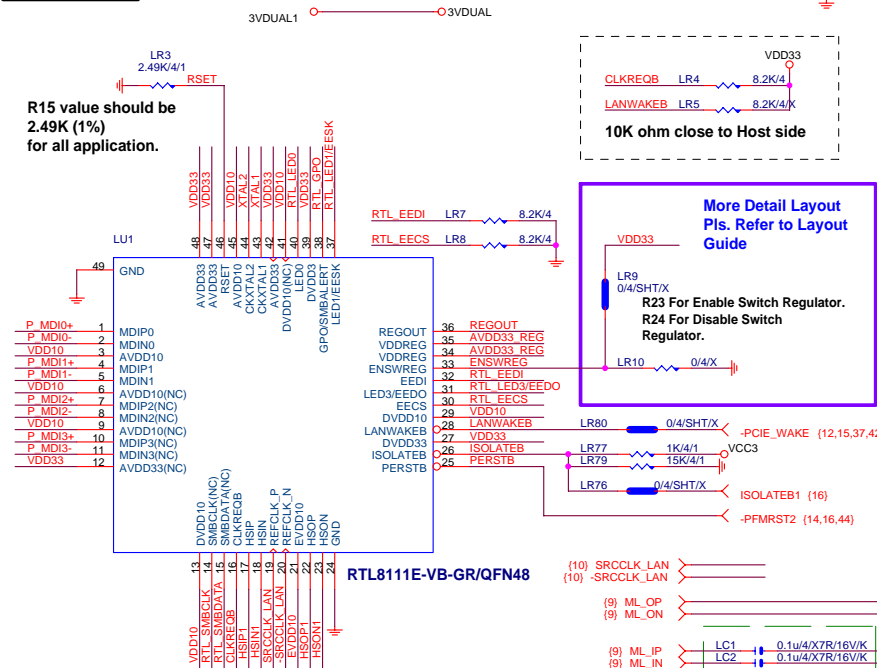
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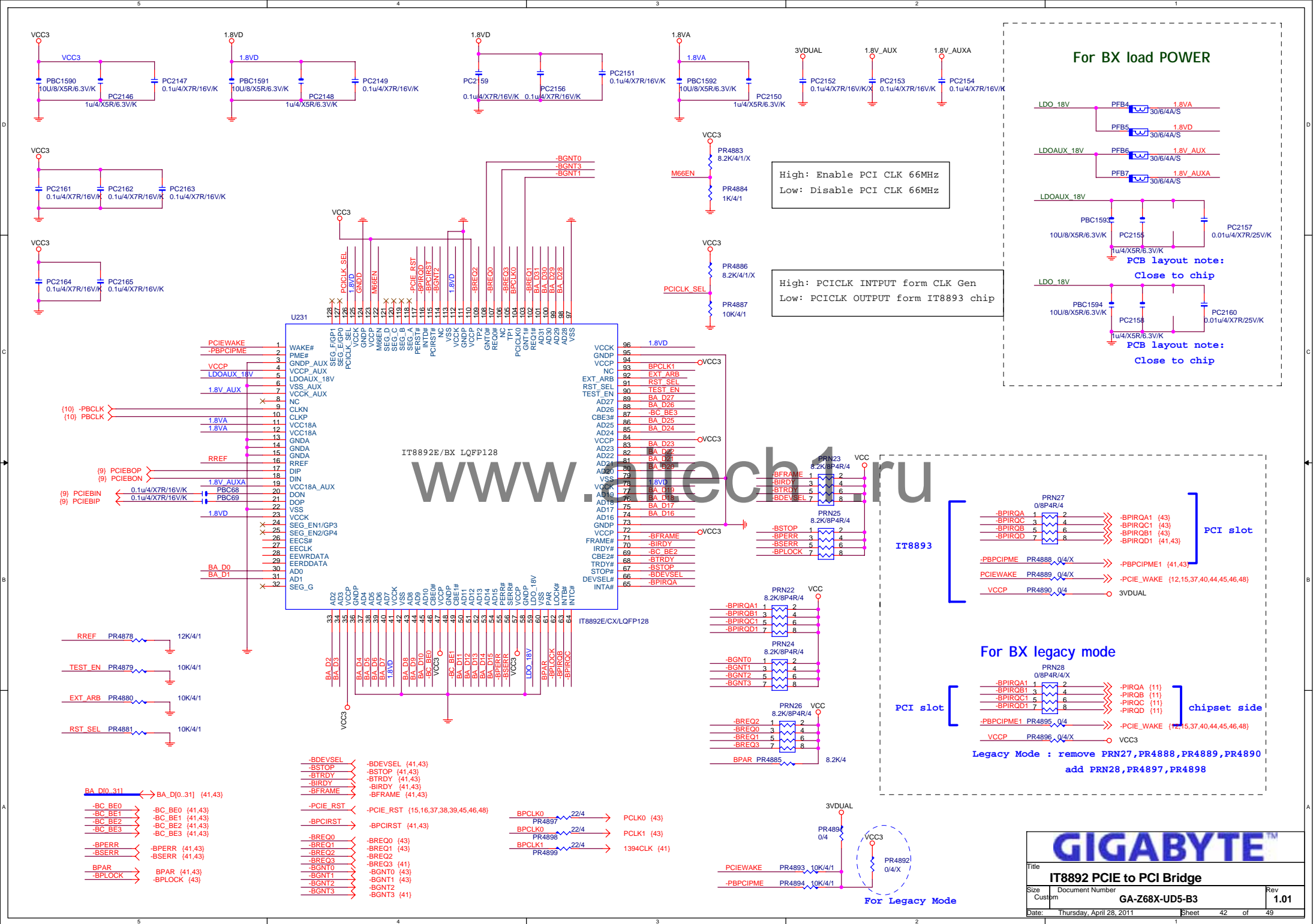




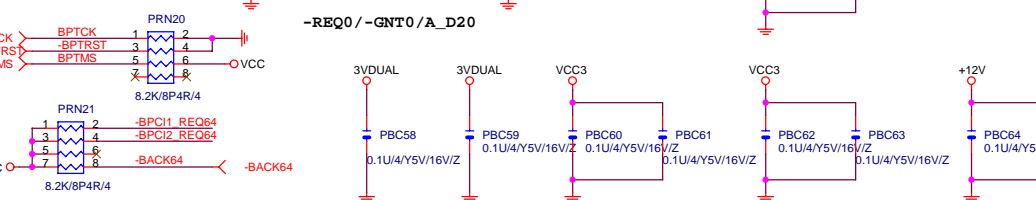
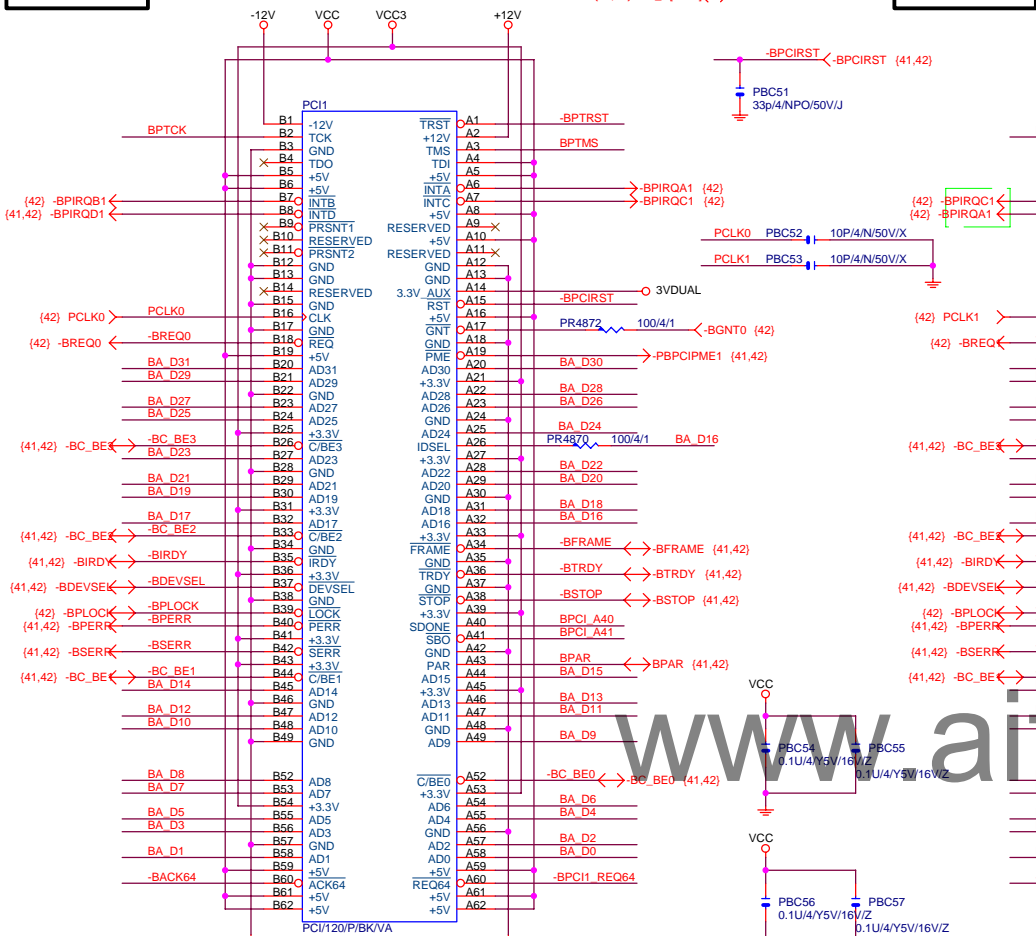


PCIE-1G LAN

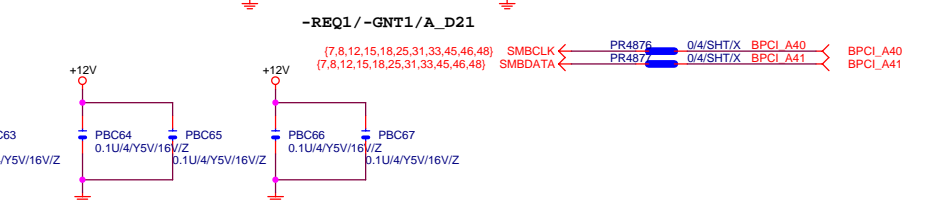
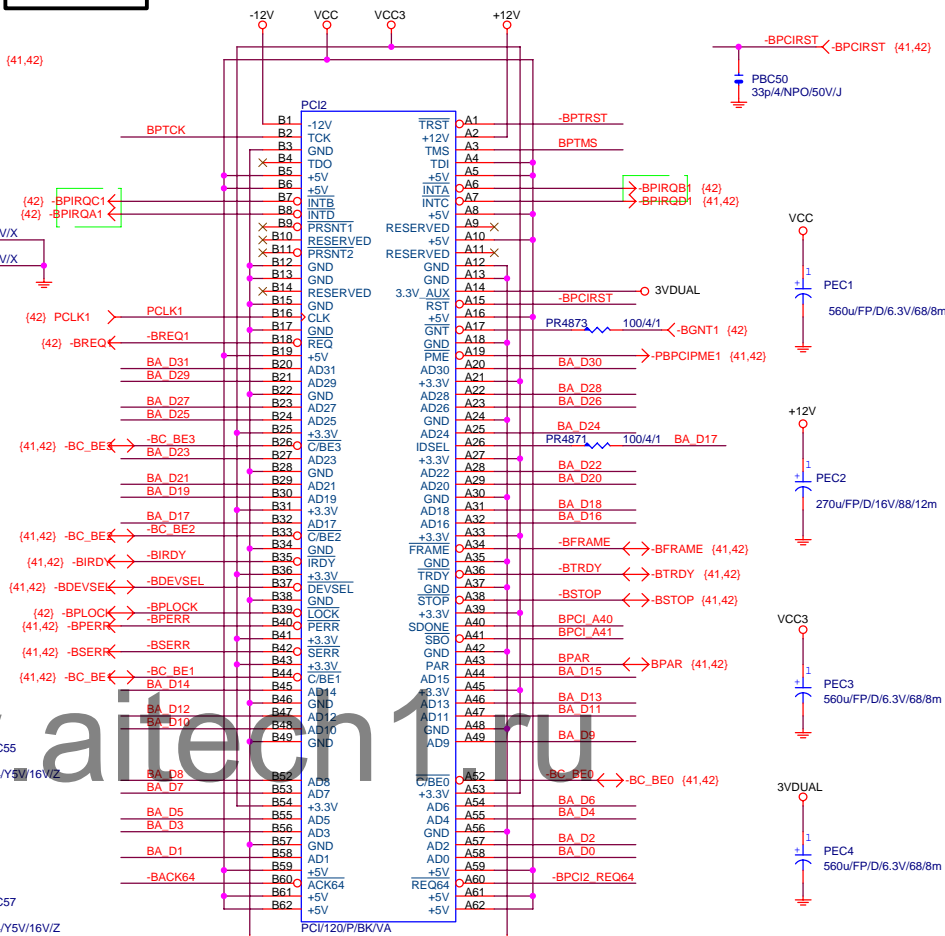




PCI SLOT 1

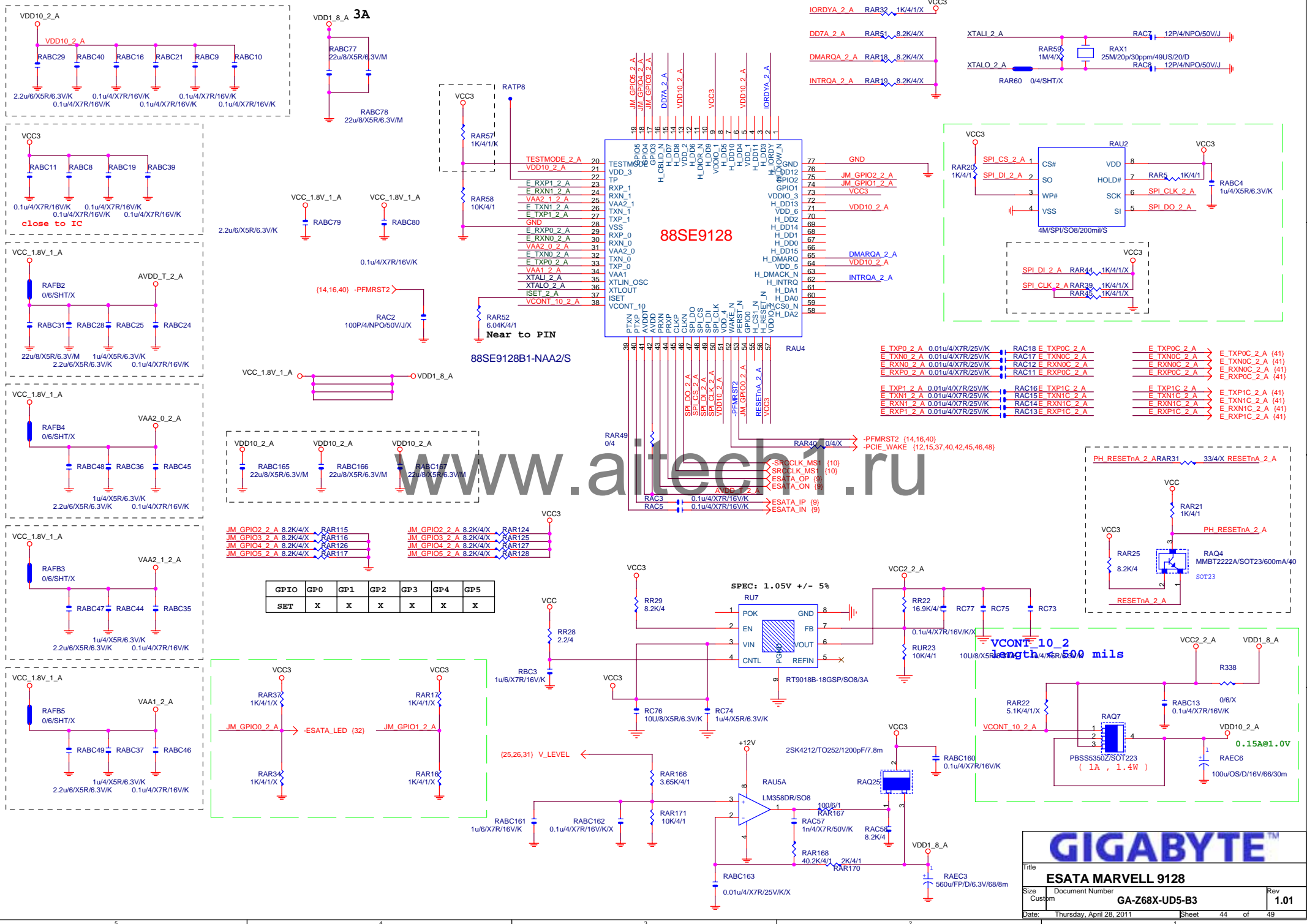


PCI SLOT 2



GIGABYTE™

Title			PCI SLOT 1&2
Size	Document Number	Rev	
Custom	GA-Z68X-UD5-B3	1.01	
Date:	Thursday, April 28, 2011	Sheet	43 of 49



EXP_SW_16X_RXN[8..15] >>> EXP_SW_16X_RXN[8..15] (47)
EXP_SW_16X_RXP[8..15] >>> EXP_SW_16X_RXP[8..15] (47)
EXP_SW_16X_TXN[8..15] >>> EXP_SW_16X_TXN[8..15] (47)
EXP_SW_16X_TXP[8..15] >>> EXP_SW_16X_TXP[8..15] (47)

EXP_TXP[0..7] >>> EXP_TXP[0..7] (4)
EXP_TXN[0..7] >>> EXP_TXN[0..7] (4)
EXP_RXP[0..7] >>> EXP_RXP[0..7] (4)
EXP_RXN[0..7] >>> EXP_RXN[0..7] (4)

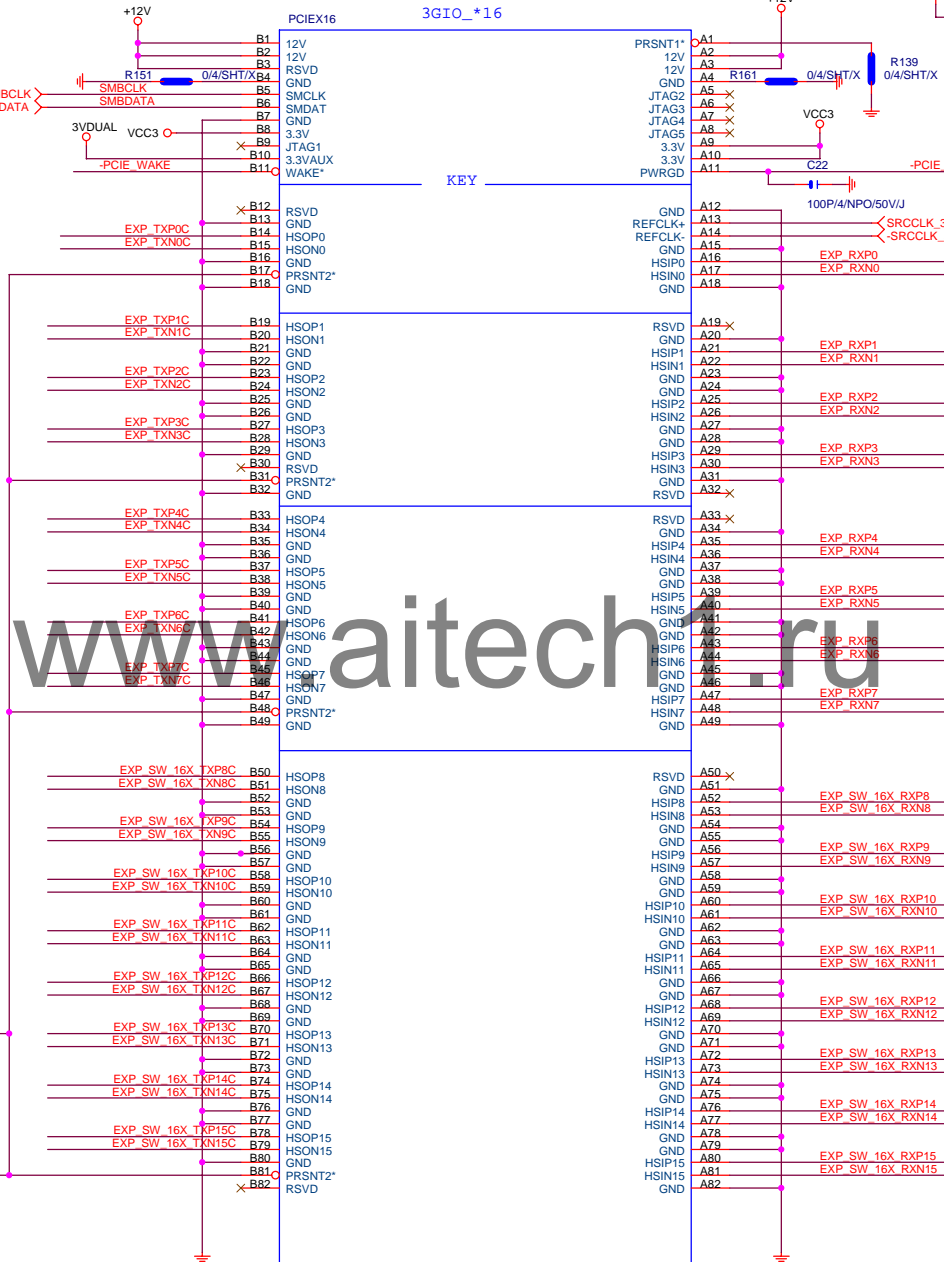
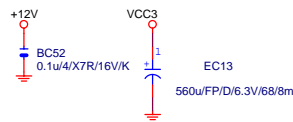
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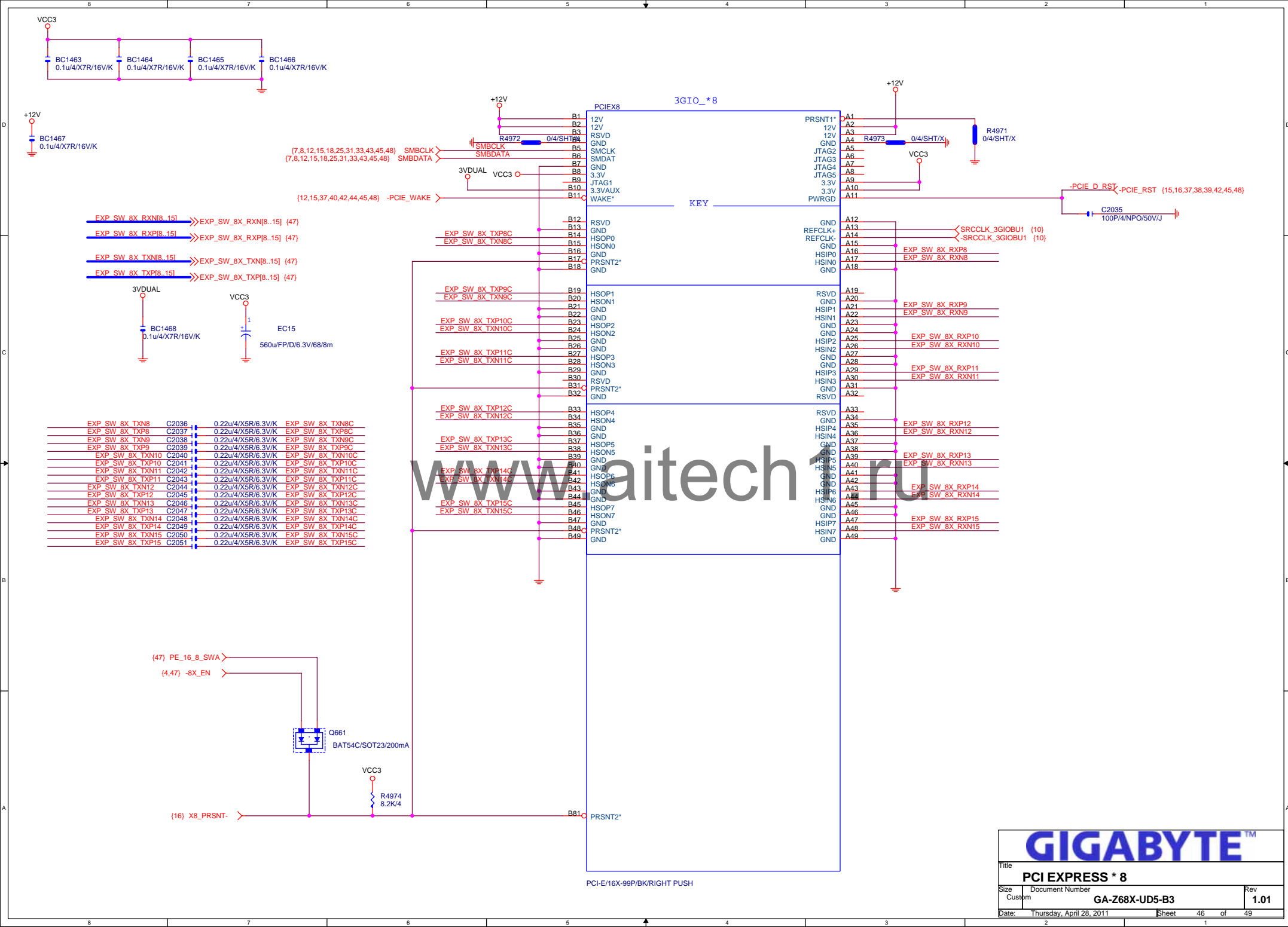
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EXP_TXN0	C26	0.22u/4/X5R/6.3V/K	EXP_TXN0C
EXP_TXP1	C35	0.22u/4/X5R/6.3V/K	EXP_TXP1C
EXP_TXN1	C38	0.22u/4/X5R/6.3V/K	EXP_TXN1C
EXP_TXP2	C40	0.22u/4/X5R/6.3V/K	EXP_TXP2C
EXP_TXN2	C42	0.22u/4/X5R/6.3V/K	EXP_TXN2C
EXP_TXP3	C46	0.22u/4/X5R/6.3V/K	EXP_TXP3C
EXP_TXN3	C44	0.22u/4/X5R/6.3V/K	EXP_TXN3C
EXP_TXP4	C48	0.22u/4/X5R/6.3V/K	EXP_TXP4C
EXP_TXN4	C50	0.22u/4/X5R/6.3V/K	EXP_TXN4C
EXP_TXP5	C58	0.22u/4/X5R/6.3V/K	EXP_TXP5C
EXP_TXN5	C60	0.22u/4/X5R/6.3V/K	EXP_TXN5C
EXP_TXP6	C62	0.22u/4/X5R/6.3V/K	EXP_TXP6C
EXP_TXN6	C64	0.22u/4/X5R/6.3V/K	EXP_TXN6C
EXP_TXP7	C66	0.22u/4/X5R/6.3V/K	EXP_TXP7C
EXP_TXN7	C69	0.22u/4/X5R/6.3V/K	EXP_TXN7C

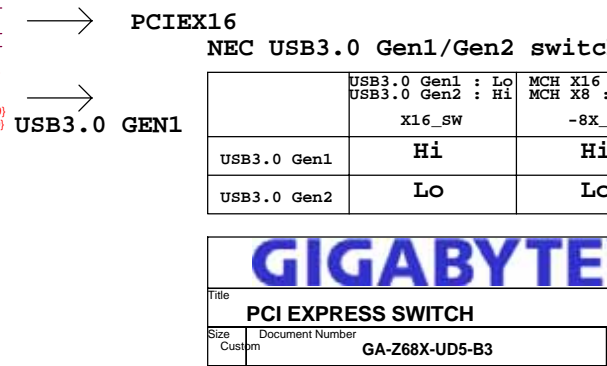
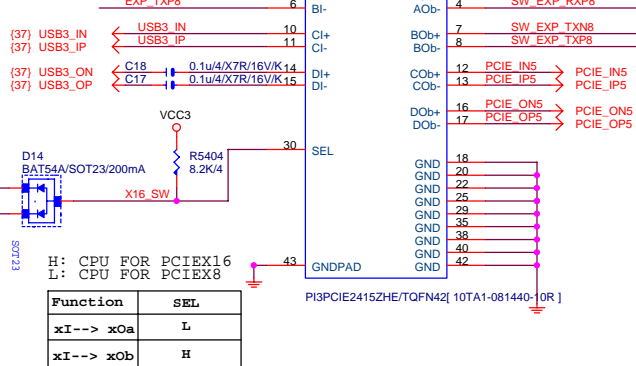
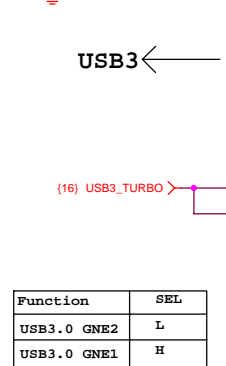
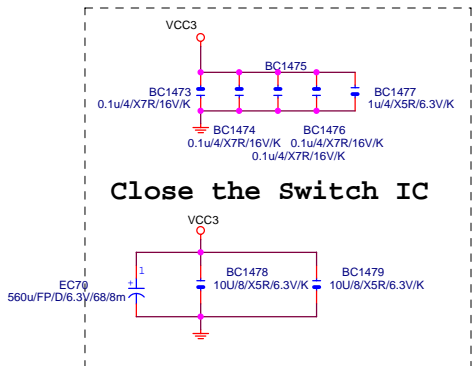
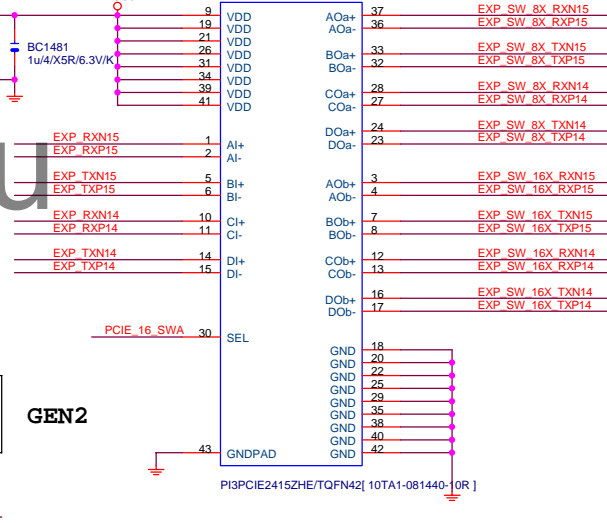
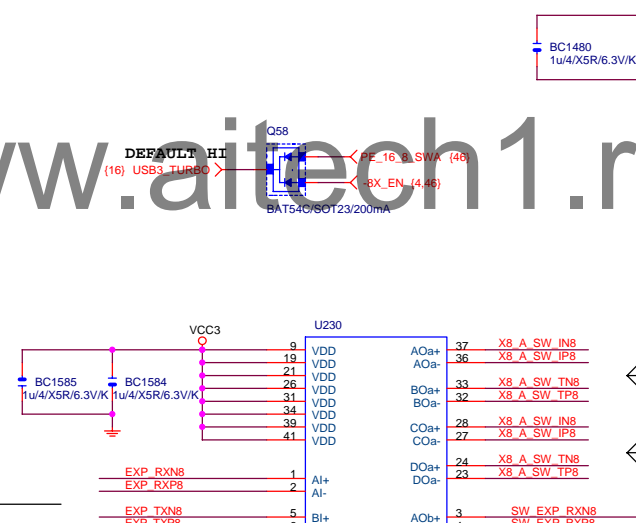
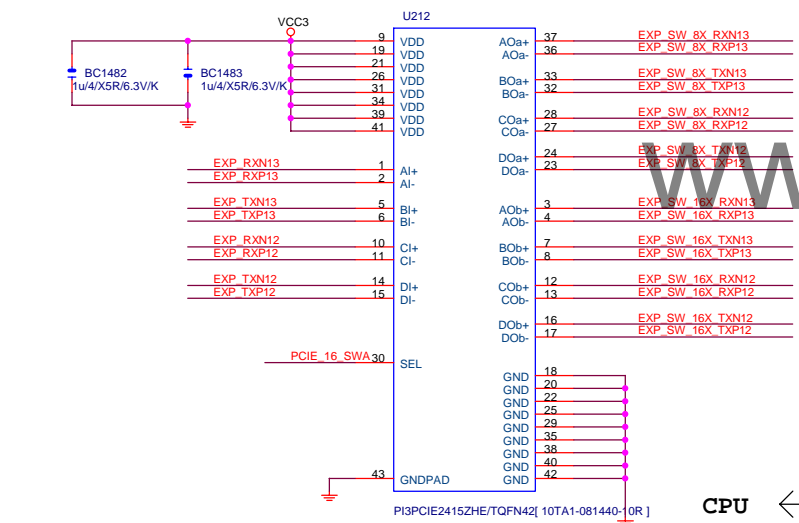
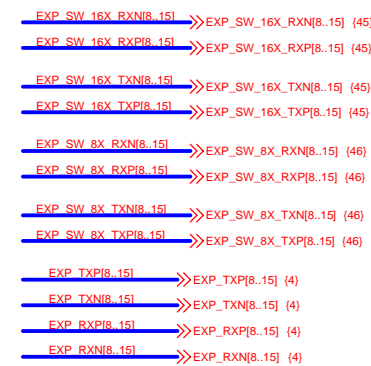
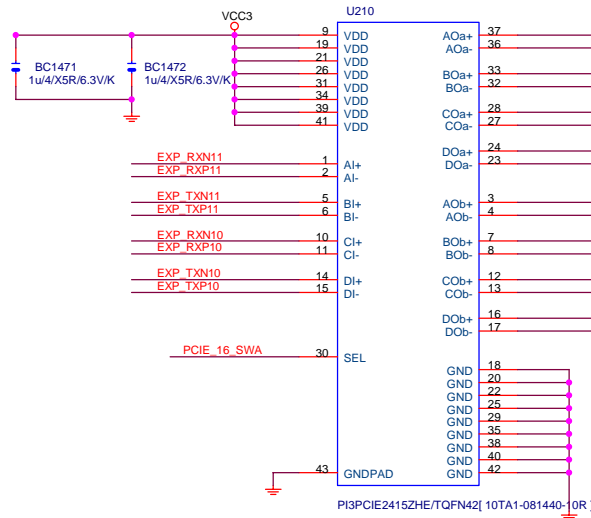
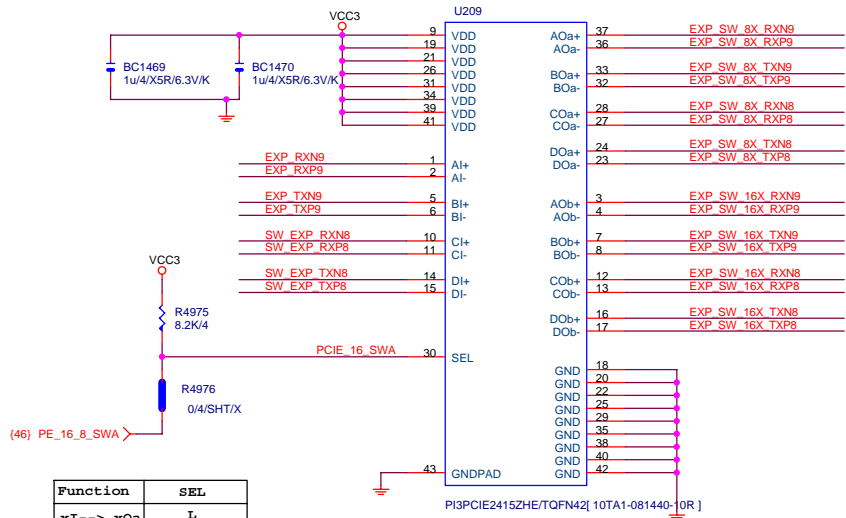
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EXP_SW_16X_TXN8	C73	0.22u/4/X5R/6.3V/K	EXP_SW_16X_TXN8C
EXP_SW_16X_TXP9	C74	0.22u/4/X5R/6.3V/K	EXP_SW_16X_TXP9C
EXP_SW_16X_TXN9	C76	0.22u/4/X5R/6.3V/K	EXP_SW_16X_TXN9C
EXP_SW_16X_TXP10	C77	0.22u/4/X5R/6.3V/K	EXP_SW_16X_TXP10C
EXP_SW_16X_TXN10	C79	0.22u/4/X5R/6.3V/K	EXP_SW_16X_TXN10C
EXP_SW_16X_TXP11	C81	0.22u/4/X5R/6.3V/K	EXP_SW_16X_TXP11C
EXP_SW_16X_TXN11	C82	0.22u/4/X5R/6.3V/K	EXP_SW_16X_TXN11C
EXP_SW_16X_TXP12	C86	0.22u/4/X5R/6.3V/K	EXP_SW_16X_TXP12C
EXP_SW_16X_TXN12	C87	0.22u/4/X5R/6.3V/K	EXP_SW_16X_TXN12C
EXP_SW_16X_TXP13	C92	0.22u/4/X5R/6.3V/K	EXP_SW_16X_TXP13C
EXP_SW_16X_TXN13	C95	0.22u/4/X5R/6.3V/K	EXP_SW_16X_TXN13C
EXP_SW_16X_TXP14	C98	0.22u/4/X5R/6.3V/K	EXP_SW_16X_TXP14C
EXP_SW_16X_TXN14	C101	0.22u/4/X5R/6.3V/K	EXP_SW_16X_TXN14C
EXP_SW_16X_TXP15	C106	0.22u/4/X5R/6.3V/K	EXP_SW_16X_TXP15C
EXP_SW_16X_TXN15	C107	0.22u/4/X5R/6.3V/K	EXP_SW_16X_TXN15C

VCC3
R4757
8.2K/4

(16) P16_1 >







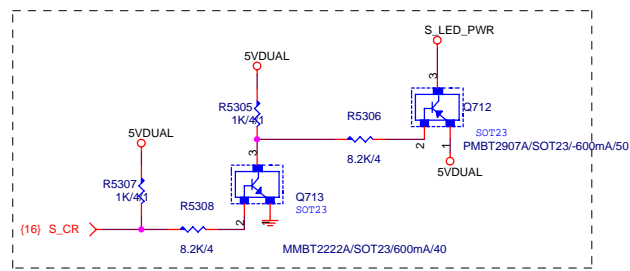
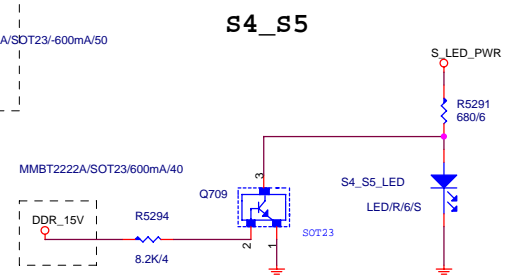
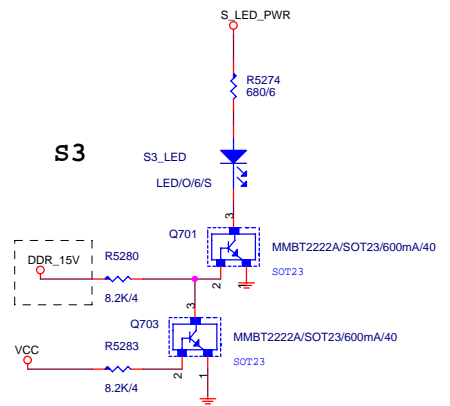
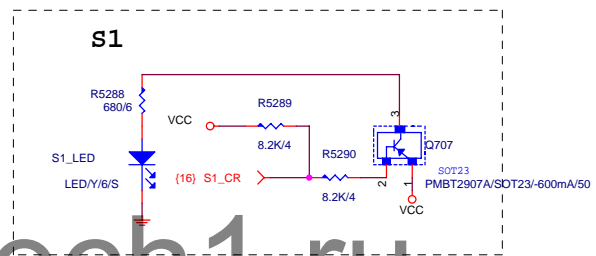
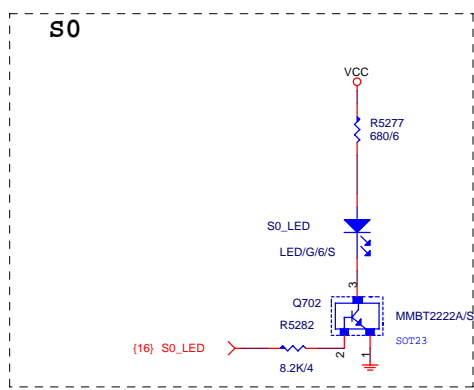
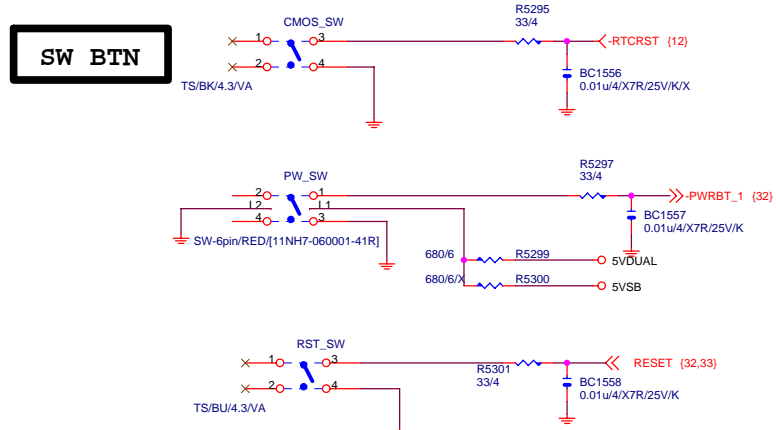
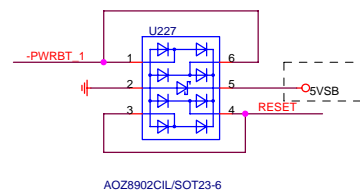
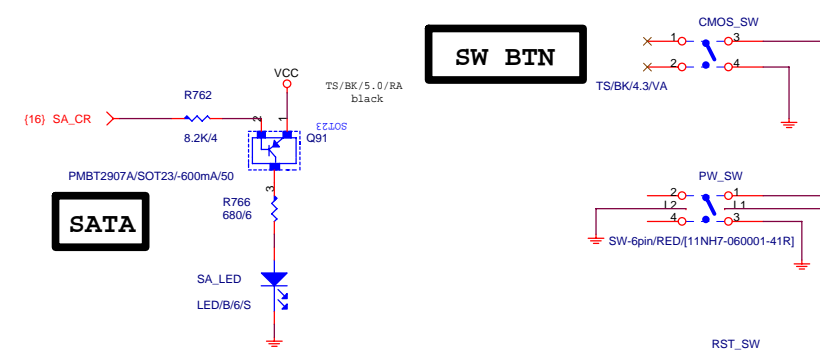
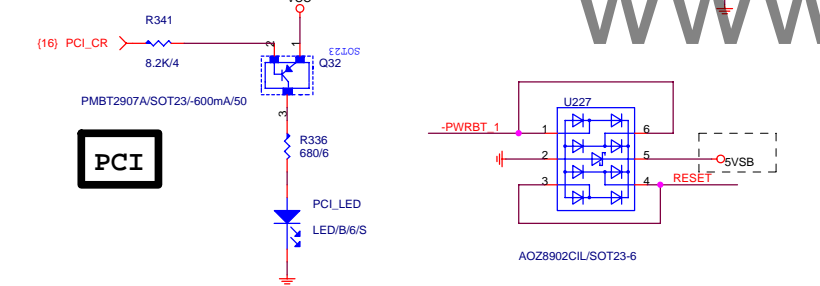
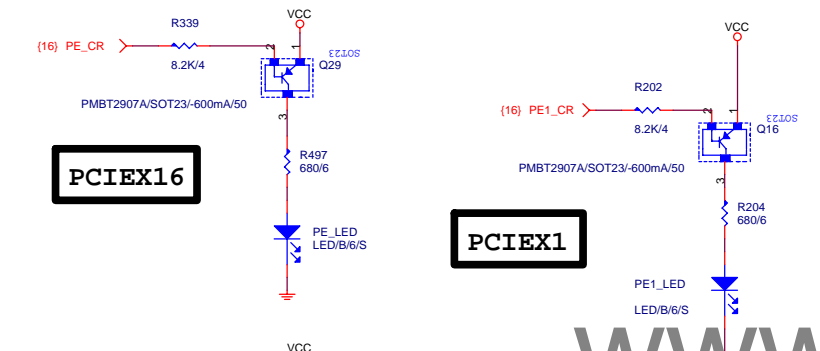
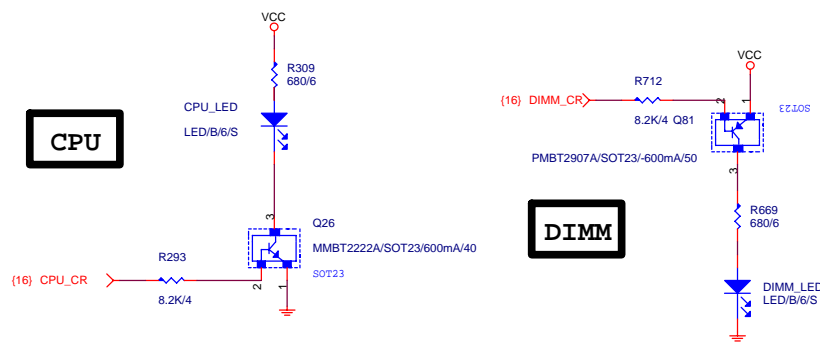
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USB3.0 Gen2 : Hi		MCH X8 : Lo
x16_SW		-8X_EN
USB3.0 Gen1	Hi	Hi
USB3.0 Gen2	Lo	Lo

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PCI EXPRESS SWITCH

GA-Z68X-UD5-B3

1.01



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