

Revision : 2.01

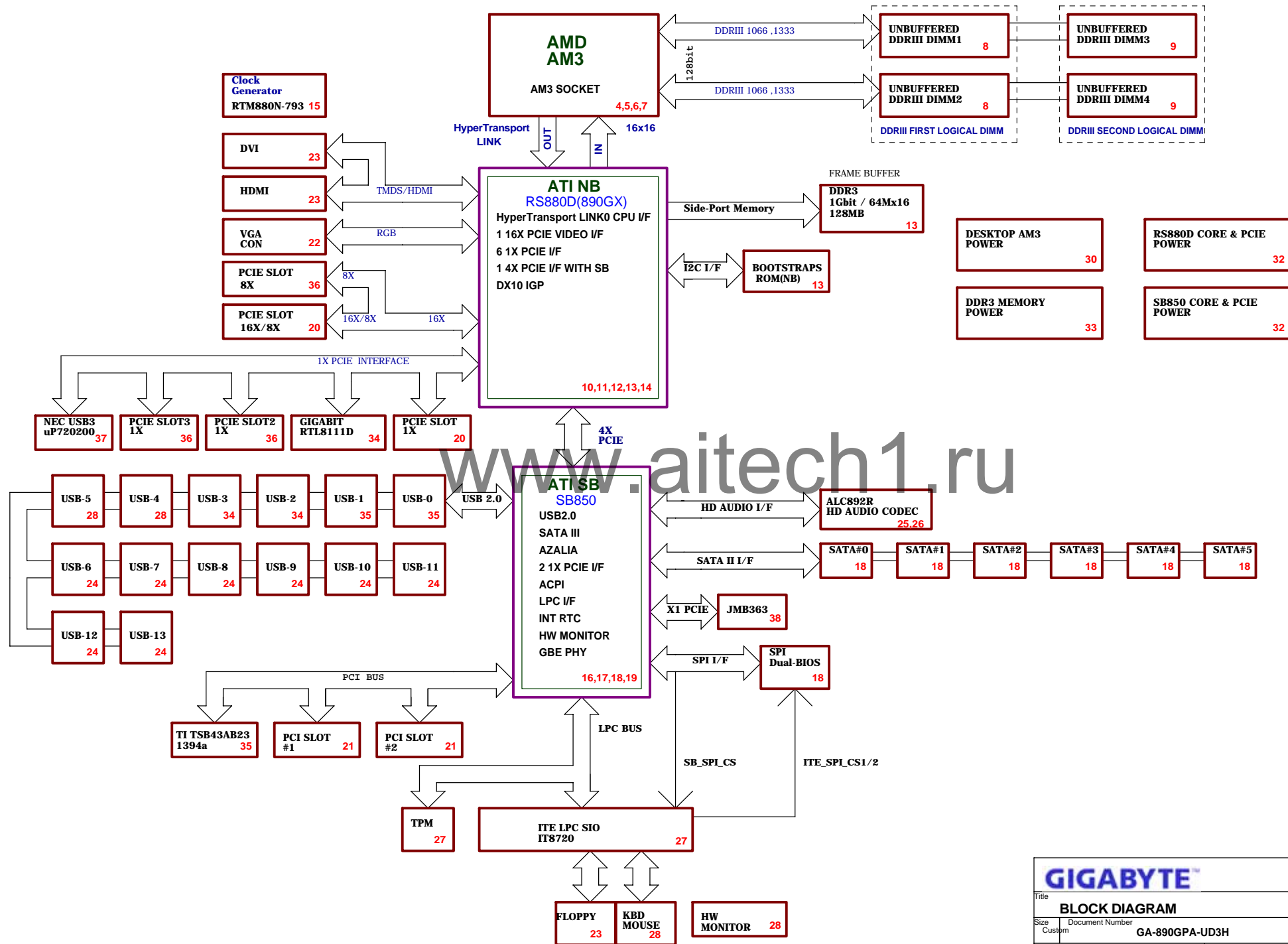
01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	CPU HYPER TRANSPORT
05	CPU DDRIII MEMORY
06	CPU CONTROL
07	CPU POWER & GND
08	DDRIII CHANNEL A
09	DDRIII CHANNEL B
10	RS880 HT-LINK I/F
11	RS880 PCIE I/F ,SWITCH
12	RS880 SYSTEM I/F
13	RS880 STRAPS ,SPMEM
14	RS880 POWER & GND
15	RTM880N-793
16	ATI SB850 PCIE/PCI/CPU/LPC
17	ATI SB850 ACPI/USB/GPIO/AUDIO
18	ATI SB850 SATA/SPI/IDE/HWM
19	ATI SB850 POWER & GND
20	PCI EXPRESS x16 ,x1
21	PCI SLOT 1, 2
22	RGB CONNECTOR
23	FDD ,HDMI ,DVI Connector
24	COM/F_USB/I_PWR
25	ALC892R

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	5		3		2		1
<div>Model Name:GA-890GPA-UD3H</div>							
<div>Component value change history</div>				<div>Circuit or PCB layout change for next version</div>			

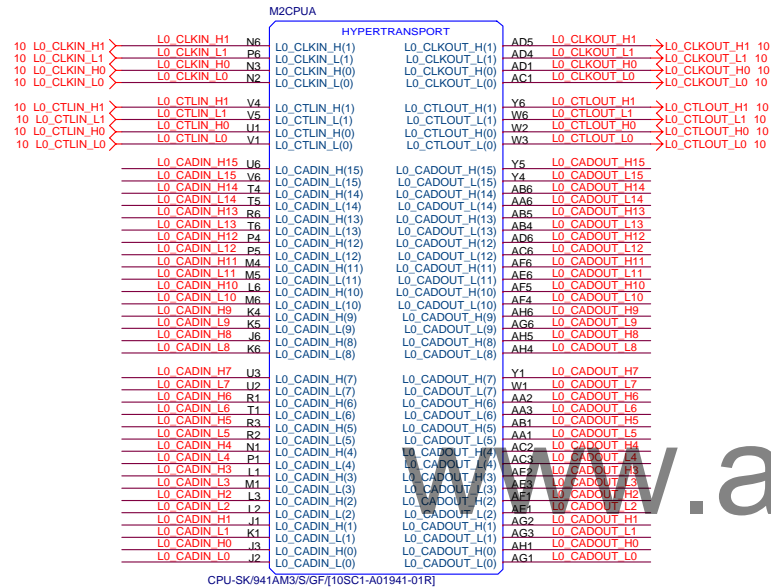
RS880 CUSTOMER DESKTOP REFERENCE DESIGN



GIGABYTE

Title	BLOCK DIAGRAM		
Size	Custom	Document Number	GA-890GPA-UD3H
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L0_CADIN_L[0..15] <L0_CADIN_L[0..15] 10
L0_CADIN_H[0..15] <L0_CADIN_H[0..15] 10
L0_CADOUT_L[0..15] <L0_CADOUT_L[0..15] 10
L0_CADOUT_H[0..15] <L0_CADOUT_H[0..15] 10

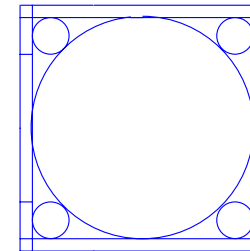


CPU_VDD_RUN = VCORE
CPU_VDDA_RUN = VDDA25
VLDT_RUN = VCC12_HT
CPU_VDDIO_SUS = DDR15V
CPU_VDDR = CPU_VDDR12

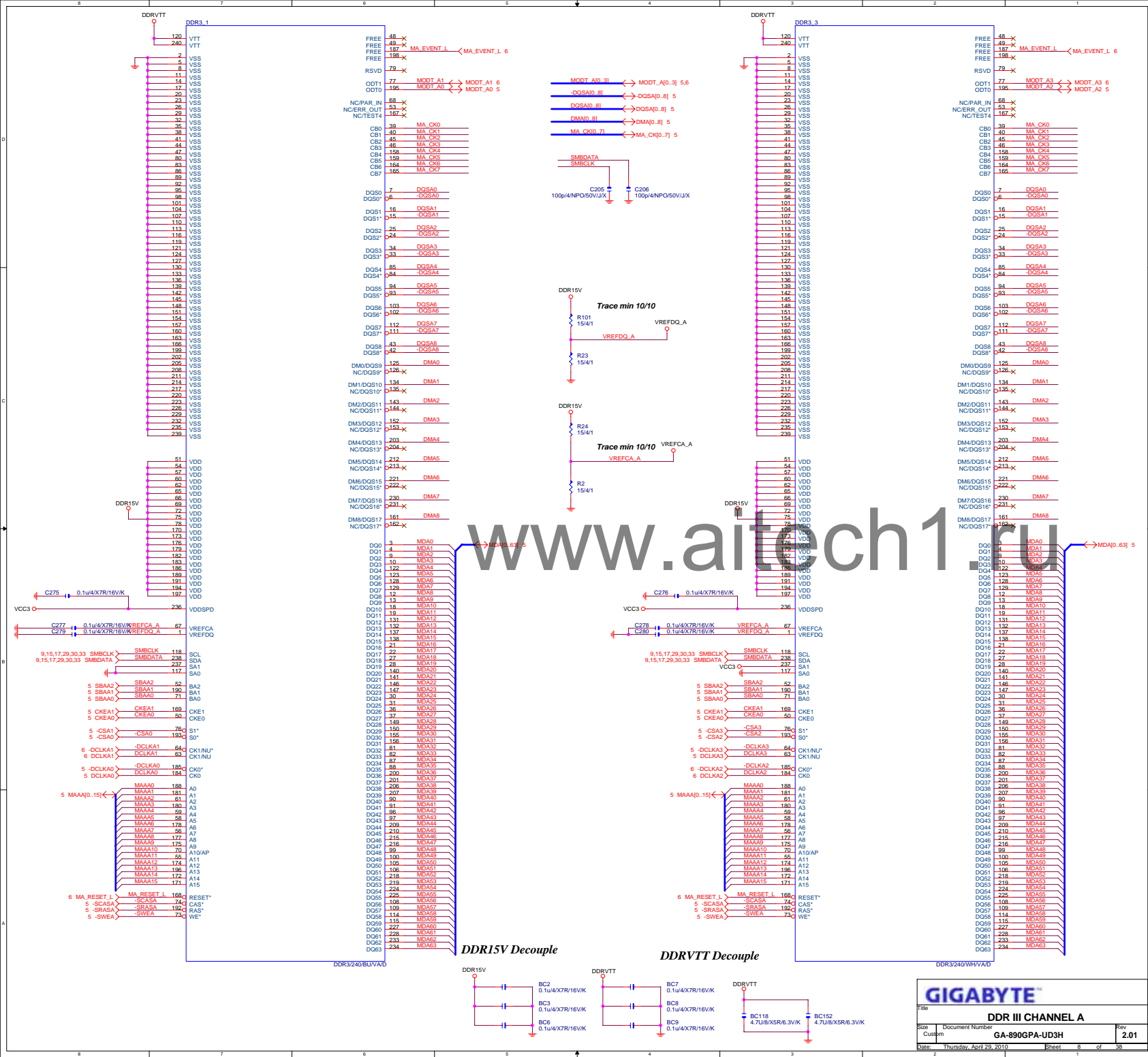
VLDT_A = VCC12_HT
VLDT_B = HT12B

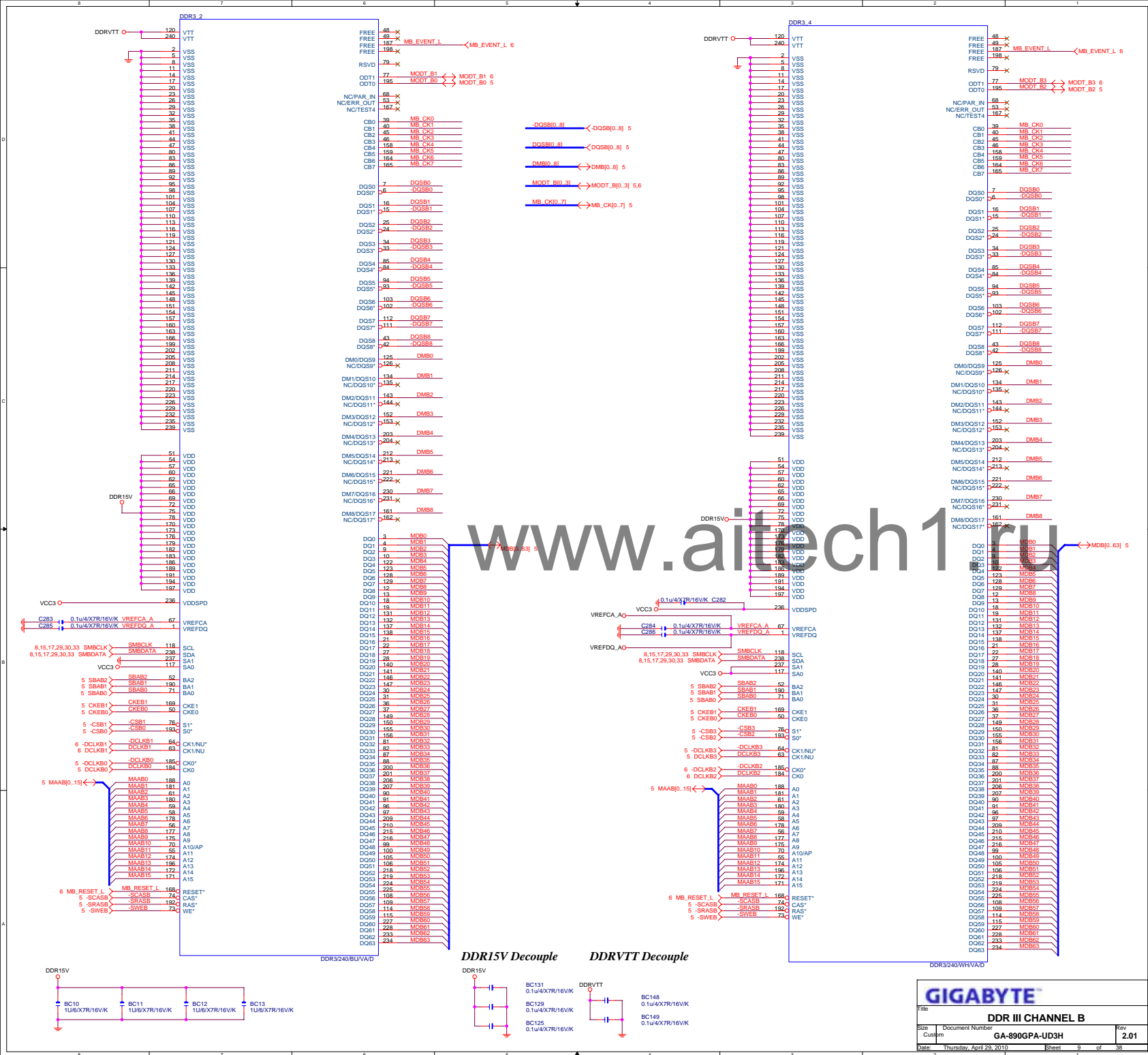
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M2CPU
AM2RM/PP/BU/PB[12KRC-04K812-12R]









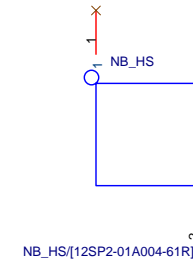
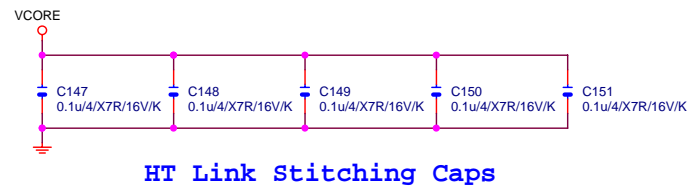


L0 CADIN L[0..15] <L0_CADIN_L[0..15] 4

L0 CADIN H[0..15] <L0_CADIN_H[0..15] 4

L0 CADOUT L[0..15] <L0_CADOUT_L[0..15] 4

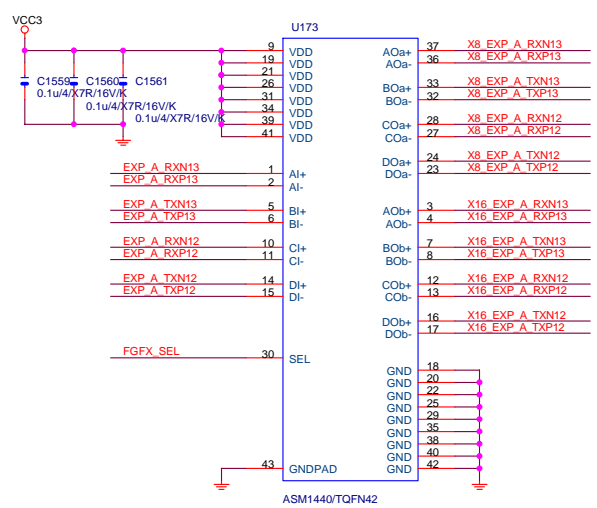
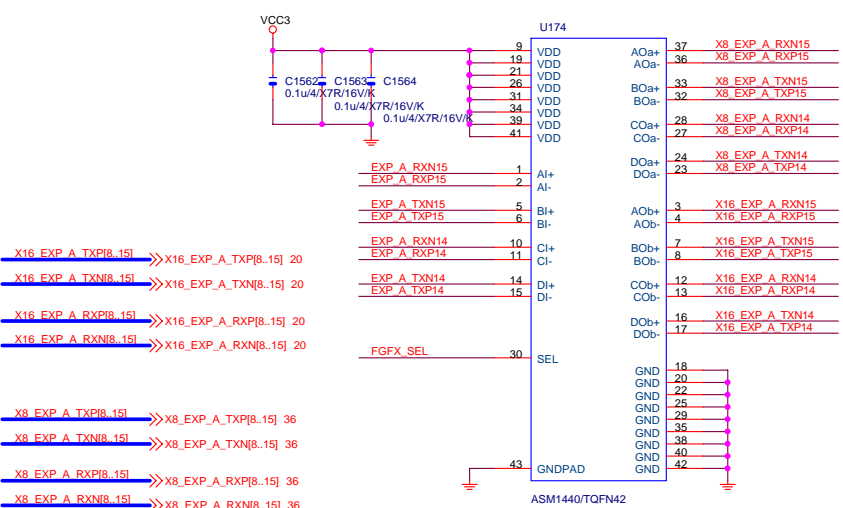
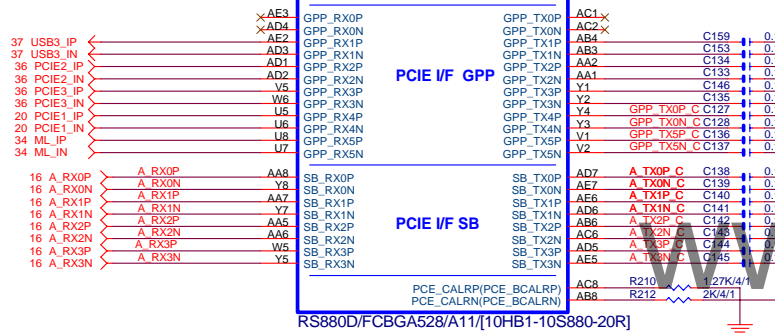
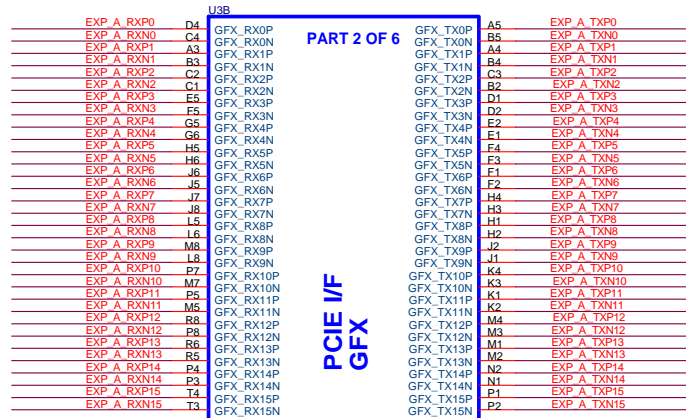
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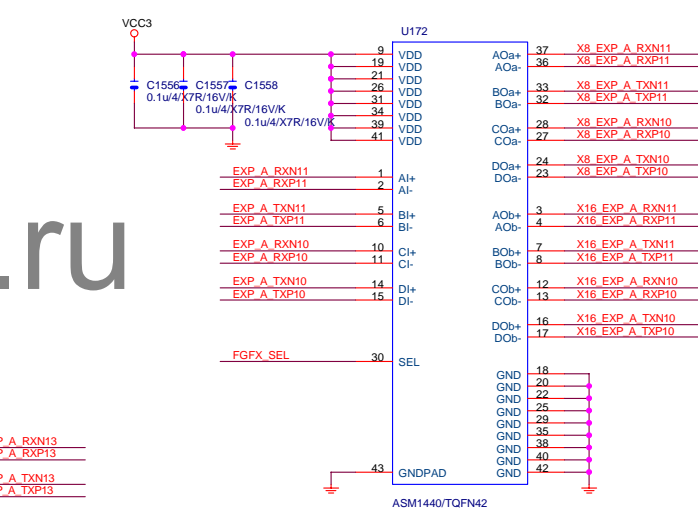
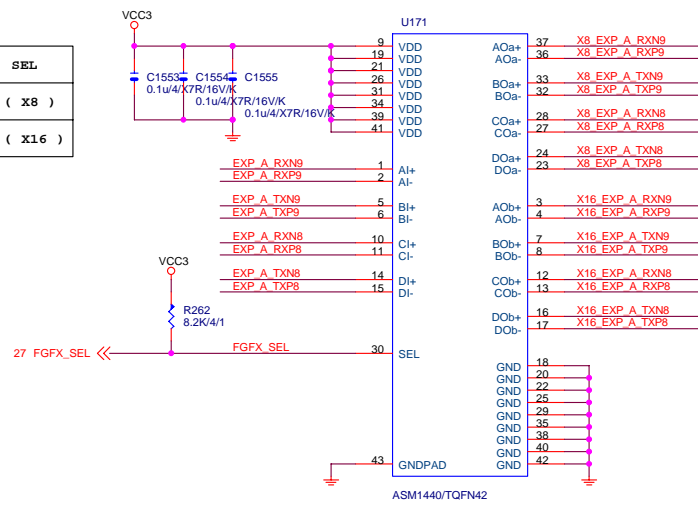
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Title		
RS880 HT-LINK I/F		
Size	Document Number	Rev
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EXP A_RXP0_71 >>> EXP_A_RXP[0..7] 20
EXP A_RXN0_71 >>> EXP_A_RXN[0..7] 20
EXP A_TXP0_71 >>> EXP_A_TXP[0..7] 20
EXP A_TXN0_71 >>> EXP_A_TXN[0..7] 20



Function	SEL
xI--> xOa	L (X8)
xI--> xOb	H (X16)



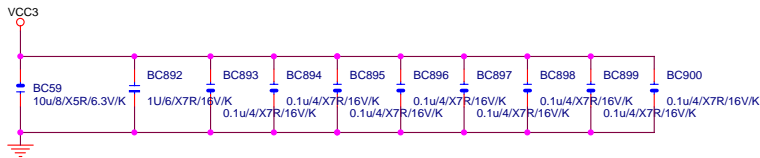
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Title
RS880 PCIE I/F ,Switch

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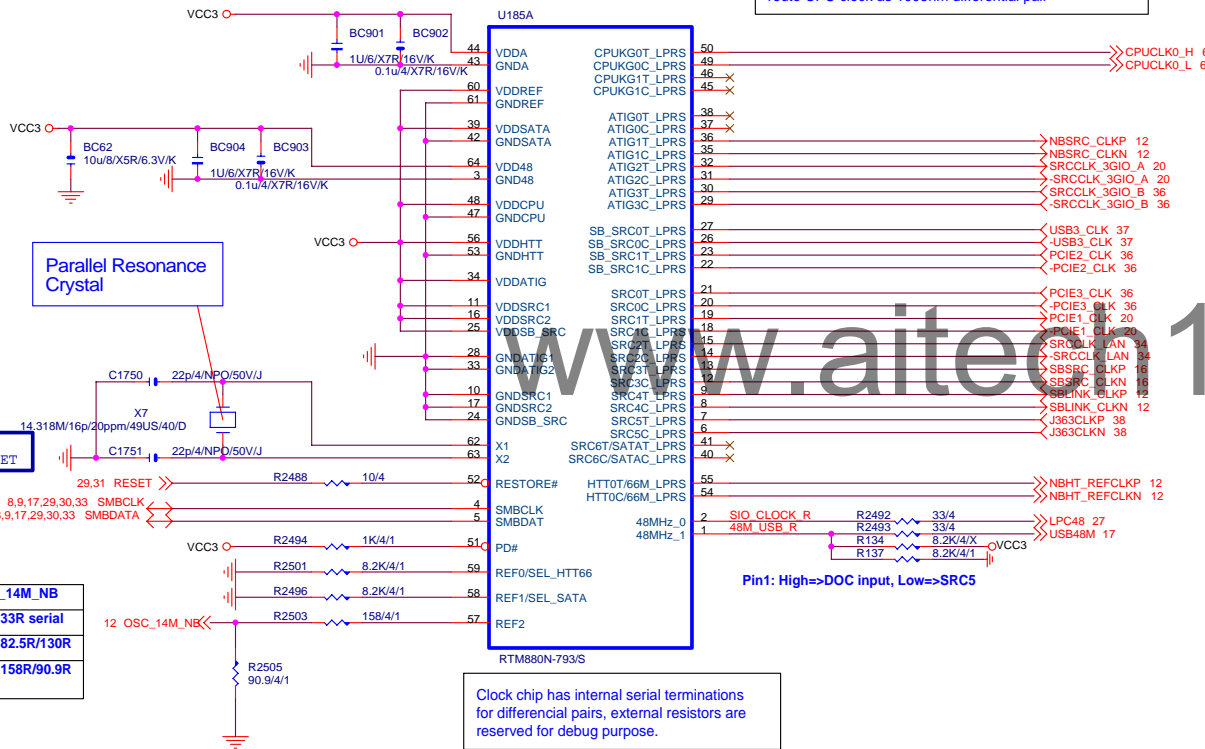
- 1- PLACE ALL THE SERIES TERMINATION RESISTORS AS CLOSE TO U800 AS POSSIBLE
- 2- ROUTE ALL SRCCLKTx AND SRCCLKCx AS DIFFERENT PAIR RULE
- 3- PUT DECOUPLING CAPS CLOSE TO U800 POWER PIN

NB CLOCK INPUT TABLE

NB CLOCKS	RS740	RX780	RS780	
HT_REFCLKP	66M SE(SE)	100M DIFF	100M DIFF	
HT_REFCLKN	NC	100M DIFF	100M DIFF	
REFCLK_P	14M SE (3.3V)	14M SE (1.8V)	14M SE (1.1V)	100M DIFF
REFCLK_N	NC	NC	vref	100M DIFF
GFX_REFCLK*	100M DIFF	100M DIFF	100M DIFF	
GPP_REFCLK	NC	100M DIFF	100M DIFF(OUT)	
GPPSB_REFCLK	100M DIFF	100M DIFF	100M DIFF	

* the GFX_REFCLK input is required for all cases

Place R800/801 less than 500 mils away from U800
R851 less than 100 mils away from R800/801
route CPU clock as 100ohm differential pair



watch dog --
RESTORE# 接 RESET

	OSC_14M_NB
RS740	3.3V 33R serial
RX780	1.8V 82.5R/130R
RS780 (Single-ended)	1.1V 158R/90.9R

REF0/SEL_HTT66	HTT CLOCK
0	100.00 DIFFERENTIAL
1	66.66 SINGLE END

REF1/SEL_SATA	SRC6/SATA
0	100.00 DIFFERENTIAL SPREADING SRC CLOCK
1	100.00 NON-SPREADING DIFFERENTIAL SATA CLOCK

Clock chip has internal serial terminations for differential pairs, external resistors are reserved for debug purpose.

Pin1: High=>DOC input, Low=>SRC5

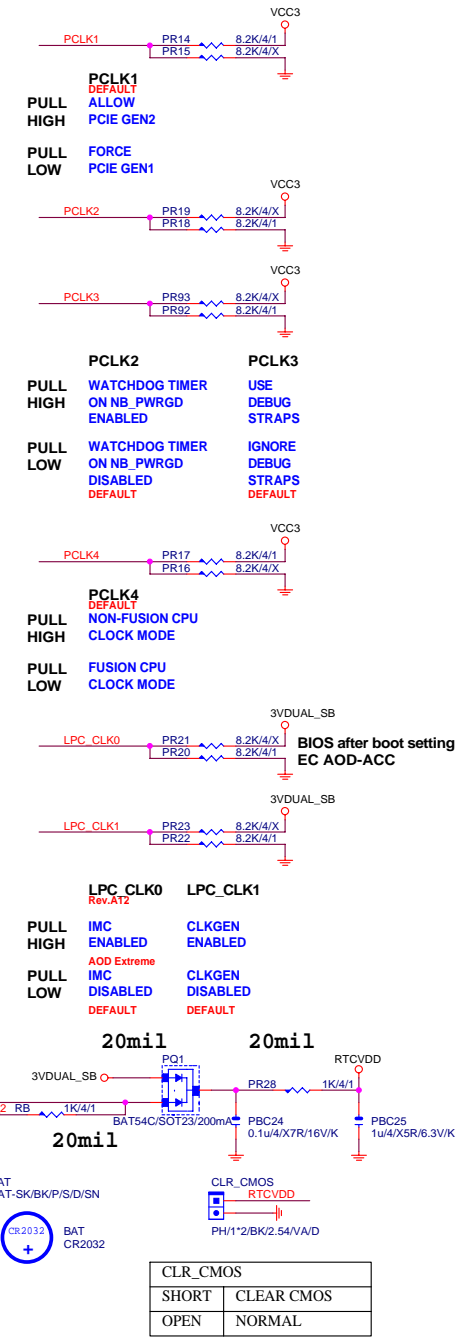
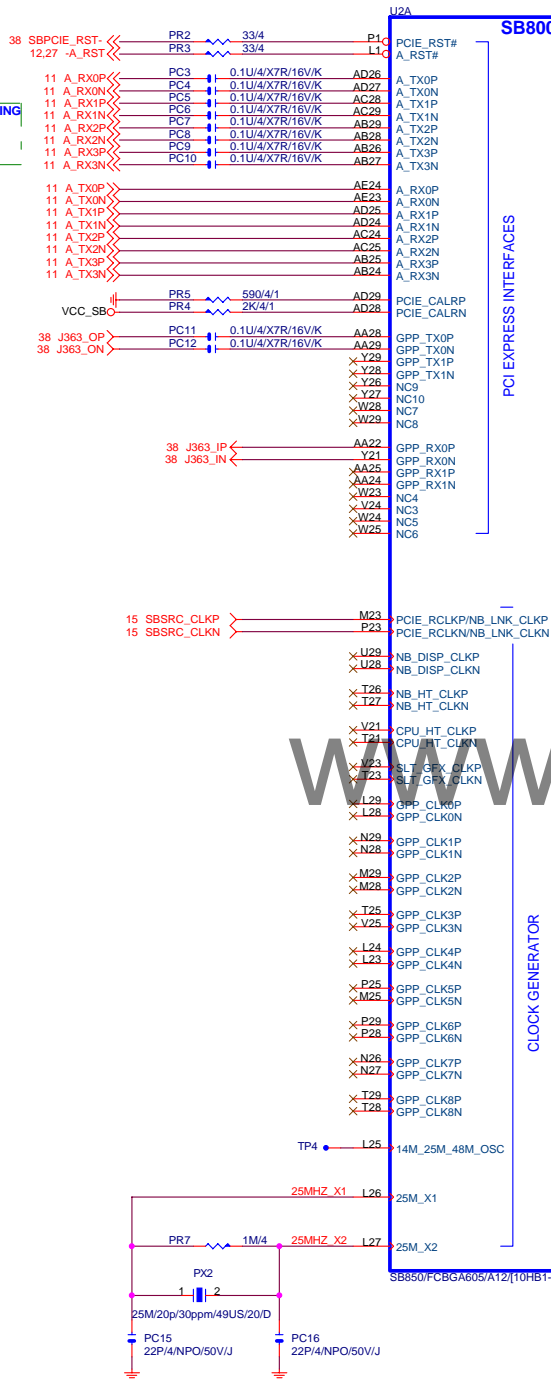
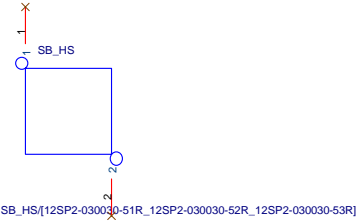
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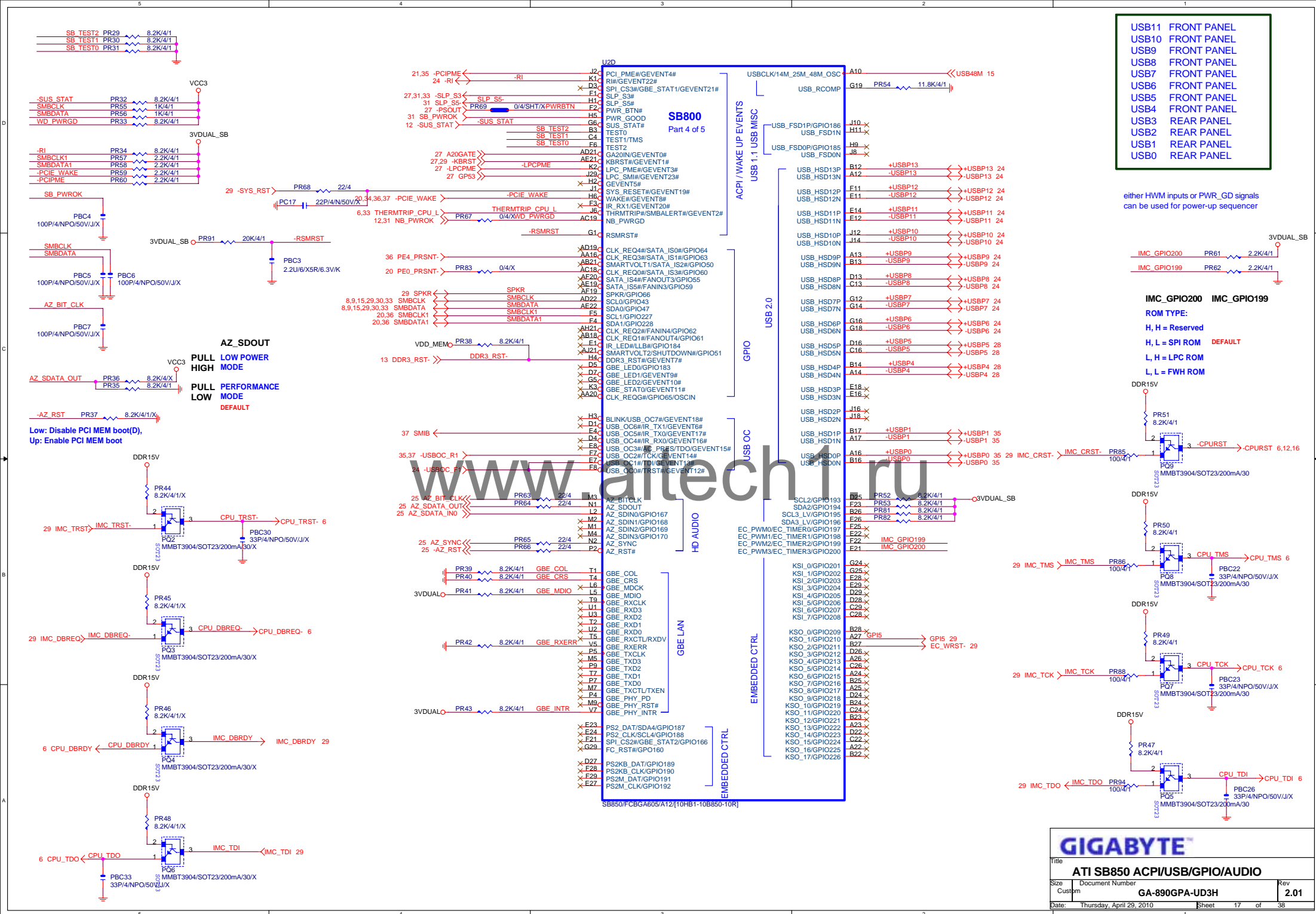
Title ICS9LPRS477		
Size Custom	Document Number GA-890GPA-UD3H	Rev 2.01
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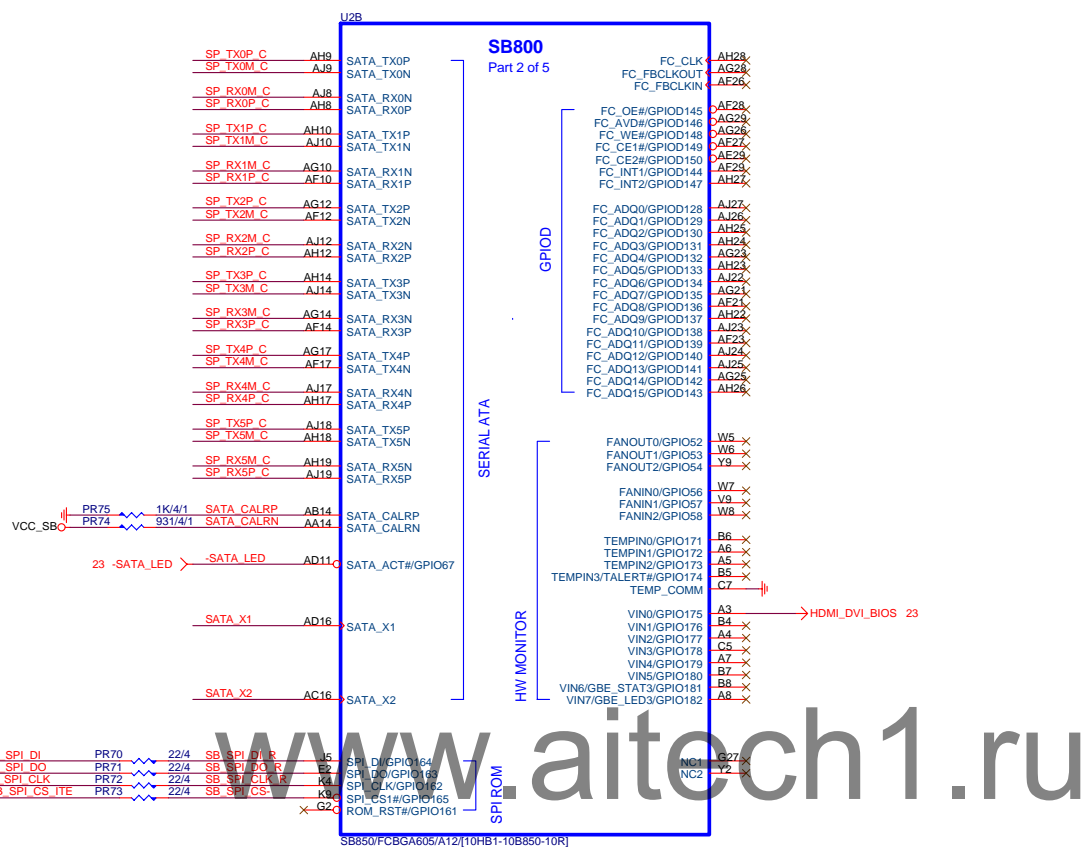


PLACE THESE PCIE AC COUPLING CAPS CLOSE TO SB850

S.B HEATSINK







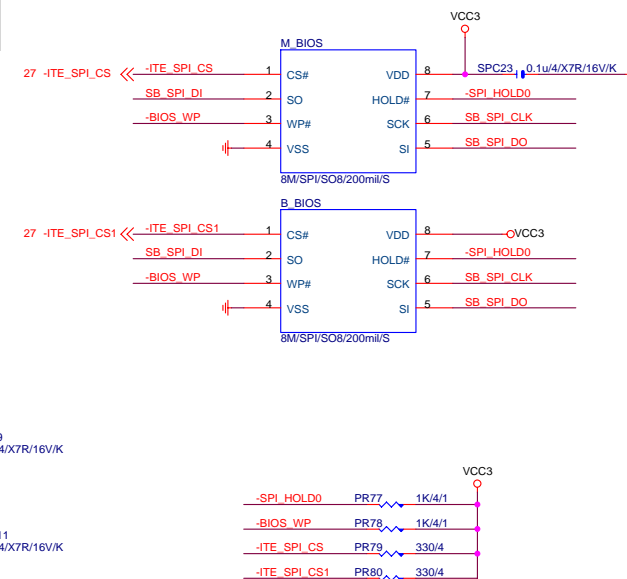
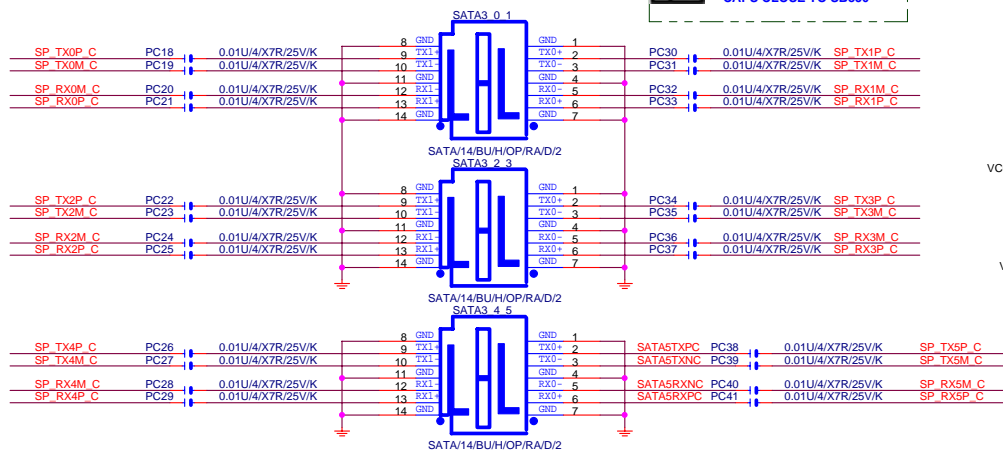
PLACE SATA_CAL
RES VERY CLOSE
TO BALL OF U600

NOTE:

R650 IS 1K 1% FOR 25MHz
XTAL, 4.99K 1% FOR 100MHz
INTERNAL CLOCK



PLACE SATA AC COUPLING
CAPS CLOSE TO SB850

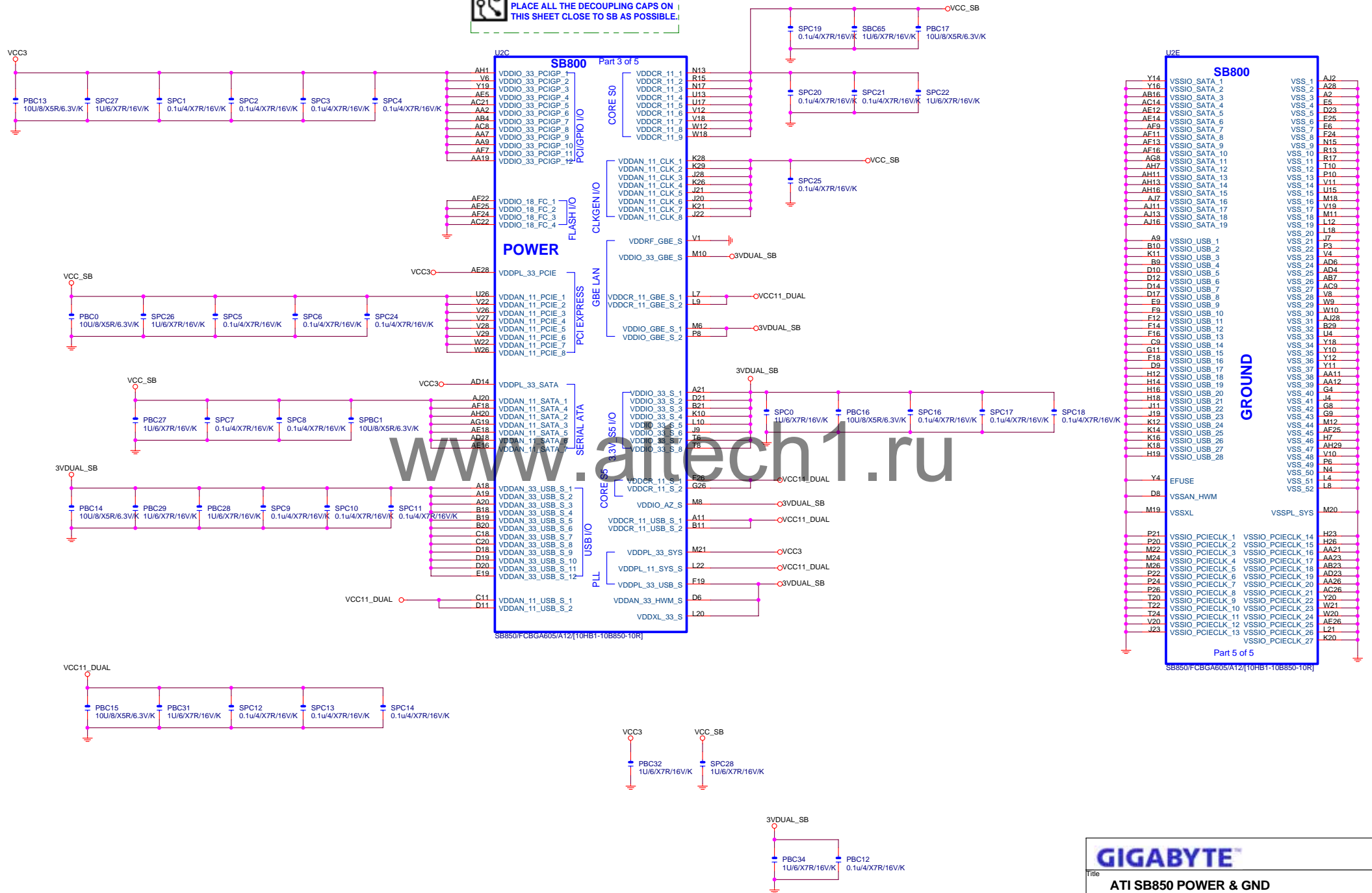
**GIGABYTE™**

Title	ATI SB850 SATA/IDE/HWM/SPI
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PLACE ALL THE DECOUPLING CAPS ON THIS SHEET CLOSE TO SB AS POSSIBLE.



Lay 在 PCIe slot 旁

+12V ISEN R16 MASK 10

17,36 SMBCLK1 17,36 SMBDATA1

3VDUAL0 -PCIE_WAKE

VCC3 R2400 8.2K/4/1

17 PE0_PRSENT-

EXP A TXP0C EXP A TXN0C

EXP A TXP0C EXP A TXN0C

EXP A TXP0C EXP A TXN0C

EXP A TXP0C EXP A TXN0C

EXP A TXP0C EXP A TXN0C

EXP A TXP0C EXP A TXN0C

EXP A TXP0C EXP A TXN0C

EXP A TXP0C EXP A TXN0C

EXP A TXP0C EXP A TXN0C

EXP A TXP0C EXP A TXN0C

EXP A TXP0C EXP A TXN0C

EXP A TXP0C EXP A TXN0C

EXP A TXP0C EXP A TXN0C

EXP A RXPI0..7I EXP_A_RXP[0..7] 11
EXP A RXNI0..7I EXP_A_RXN[0..7] 11

EXP A TXPI0..7I EXP_A_TXP[0..7] 11
EXP A TXNI0..7I EXP_A_TXN[0..7] 11

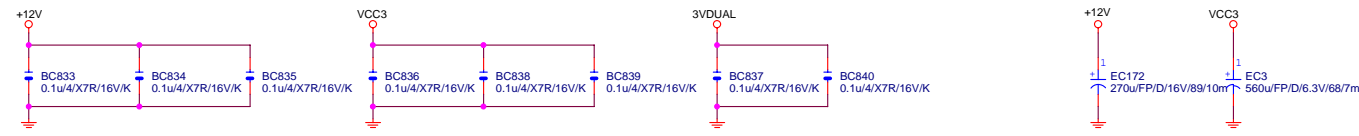
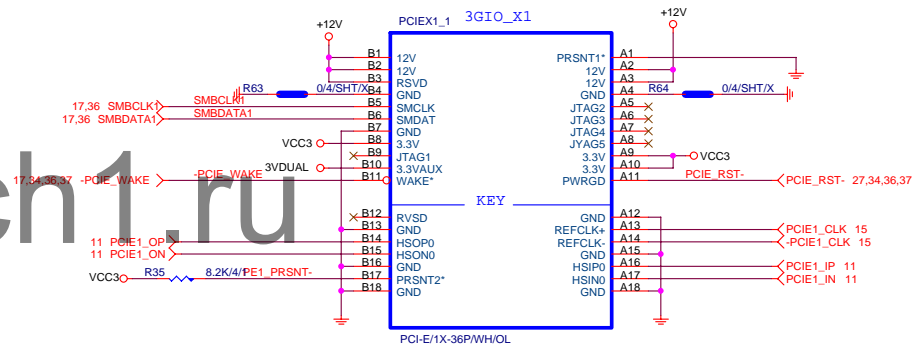
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X16 EXP A TXN[8..15] X16_EXP_A_TXN[8..15] 11
X16 EXP A RXP[8..15] X16_EXP_A_RXP[8..15] 11
X16 EXP A RXN[8..15] X16_EXP_A_RXN[8..15] 11

EXP A TXP0	C1644	0.1u4/X7R/16V/K	EXP A TXP0C
EXP A TXN0	C1645	0.1u4/X7R/16V/K	EXP A TXN0C
EXP A TXP1	C1646	0.1u4/X7R/16V/K	EXP A TXP1C
EXP A TXN1	C1647	0.1u4/X7R/16V/K	EXP A TXN1C
EXP A TXP2	C1648	0.1u4/X7R/16V/K	EXP A TXP2C
EXP A TXN2	C1649	0.1u4/X7R/16V/K	EXP A TXN2C
EXP A TXP3	C1650	0.1u4/X7R/16V/K	EXP A TXP3C
EXP A TXN3	C1651	0.1u4/X7R/16V/K	EXP A TXN3C
EXP A TXP4	C1652	0.1u4/X7R/16V/K	EXP A TXP4C
EXP A TXN4	C1653	0.1u4/X7R/16V/K	EXP A TXN4C
EXP A TXP5	C1654	0.1u4/X7R/16V/K	EXP A TXP5C
EXP A TXN5	C1655	0.1u4/X7R/16V/K	EXP A TXN5C
EXP A TXP6	C1656	0.1u4/X7R/16V/K	EXP A TXP6C
EXP A TXN6	C1657	0.1u4/X7R/16V/K	EXP A TXN6C
EXP A TXP7	C1658	0.1u4/X7R/16V/K	EXP A TXP7C
EXP A TXN7	C1659	0.1u4/X7R/16V/K	EXP A TXN7C
X16 EXP A TXP8	C1660	0.1u4/X7R/16V/K	EXP A TXP8C
X16 EXP A TXN8	C1661	0.1u4/X7R/16V/K	EXP A TXN8C
X16 EXP A TXP9	C1662	0.1u4/X7R/16V/K	EXP A TXP9C
X16 EXP A TXN9	C1663	0.1u4/X7R/16V/K	EXP A TXN9C
X16 EXP A TXP10	C1664	0.1u4/X7R/16V/K	EXP A TXP10C
X16 EXP A TXN10	C1665	0.1u4/X7R/16V/K	EXP A TXN10C
X16 EXP A TXP11	C1666	0.1u4/X7R/16V/K	EXP A TXP11C
X16 EXP A TXN11	C1667	0.1u4/X7R/16V/K	EXP A TXN11C
X16 EXP A TXP12	C1668	0.1u4/X7R/16V/K	EXP A TXP12C
X16 EXP A TXN12	C1669	0.1u4/X7R/16V/K	EXP A TXN12C
X16 EXP A TXP13	C1670	0.1u4/X7R/16V/K	EXP A TXP13C
X16 EXP A TXN13	C1671	0.1u4/X7R/16V/K	EXP A TXN13C
X16 EXP A TXP14	C1672	0.1u4/X7R/16V/K	EXP A TXP14C
X16 EXP A TXN14	C1673	0.1u4/X7R/16V/K	EXP A TXN14C
X16 EXP A TXP15	C1674	0.1u4/X7R/16V/K	EXP A TXP15C
X16 EXP A TXN15	C1675	0.1u4/X7R/16V/K	EXP A TXN15C

PCIE_RST- C1643 100P/4N/50V/X

PCIE_RST- C1746 100P/4N/50V/X

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Title

PCI EXPRESS X 16 ,X1

Size

Document Number

GA-890GPA-UD3H

Rev

2.01

Date

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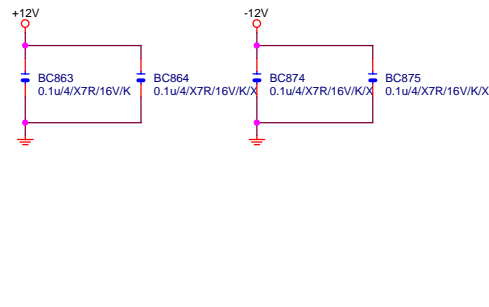
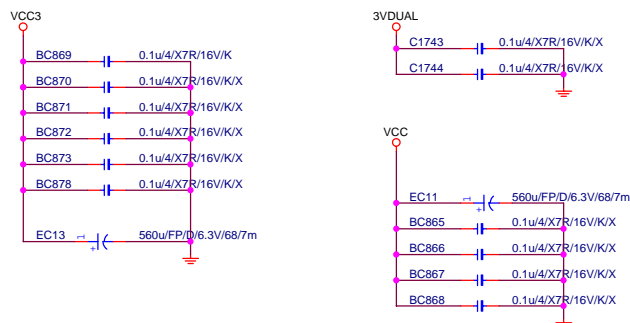
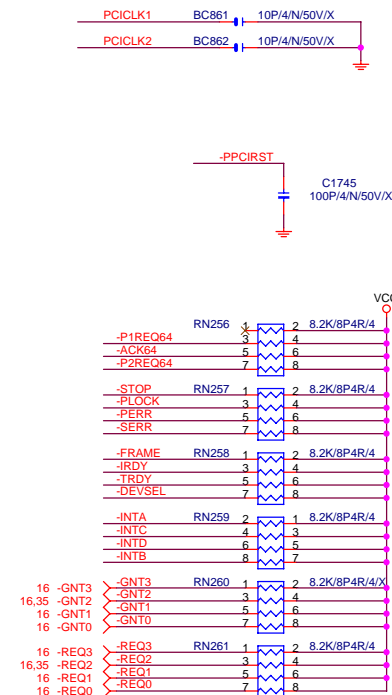
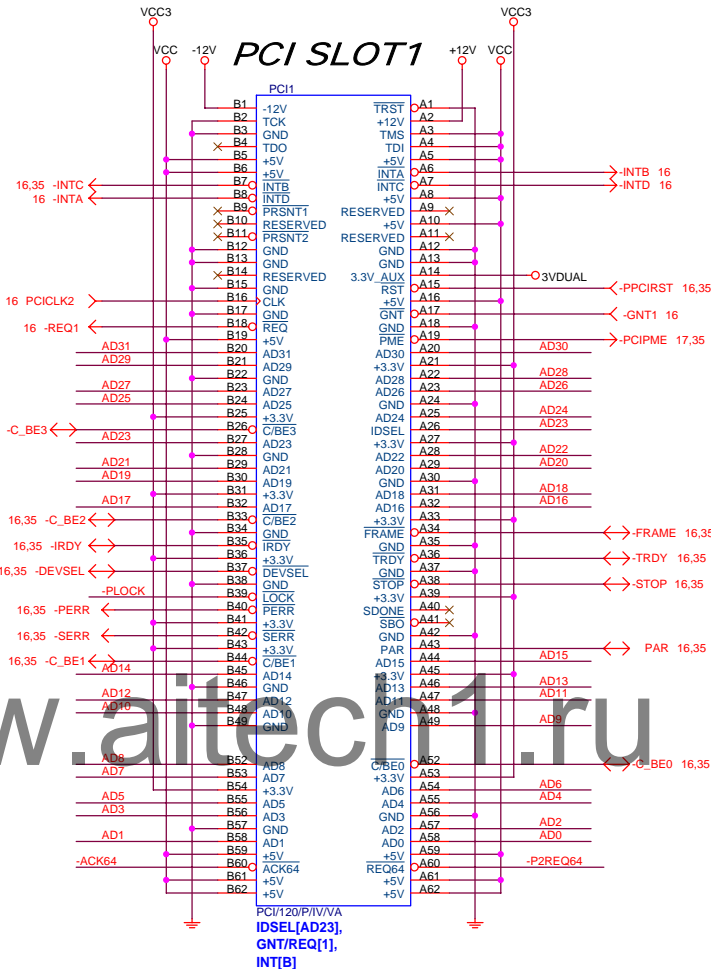
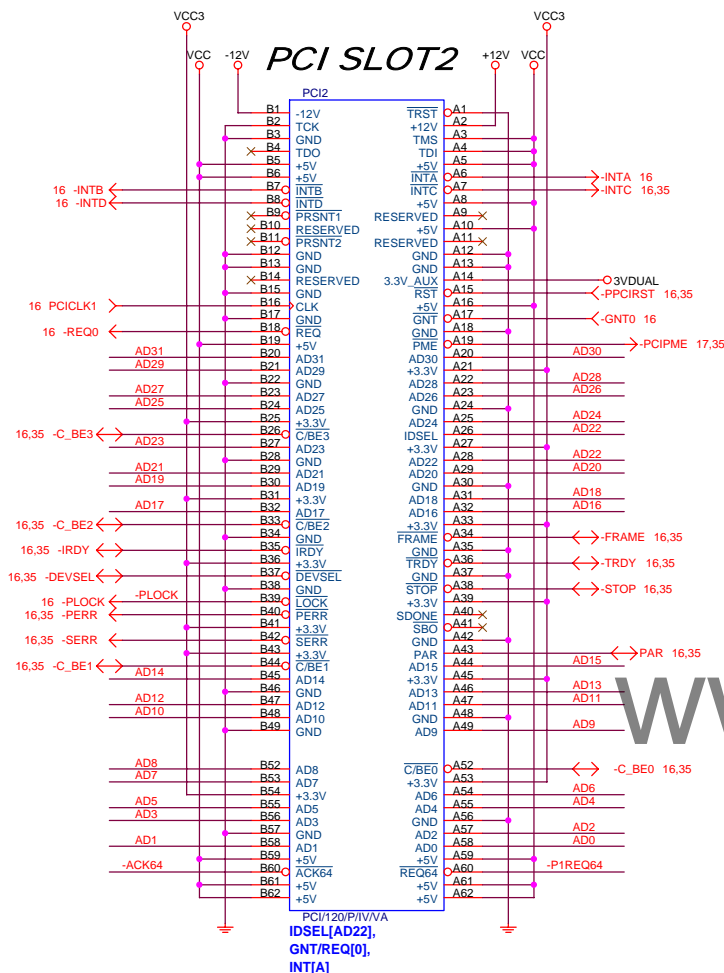
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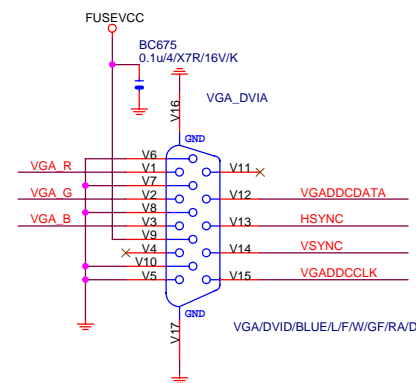
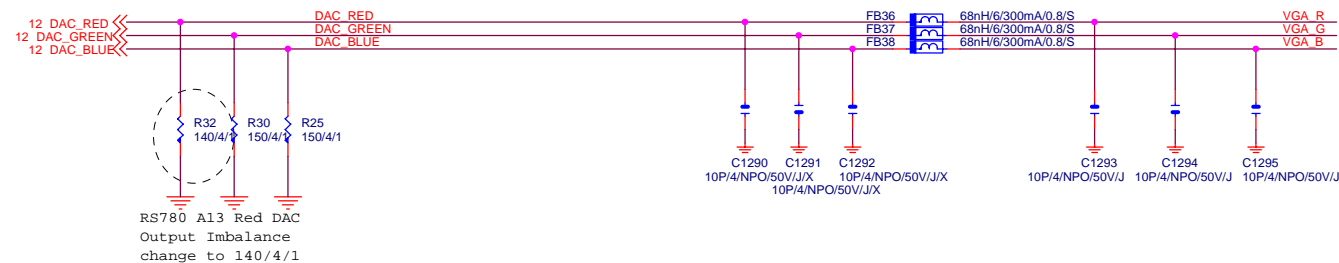
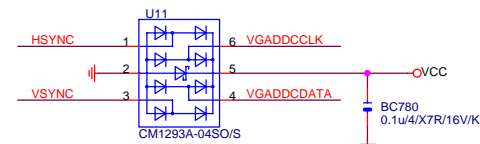
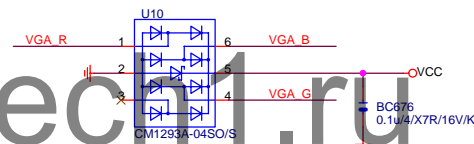
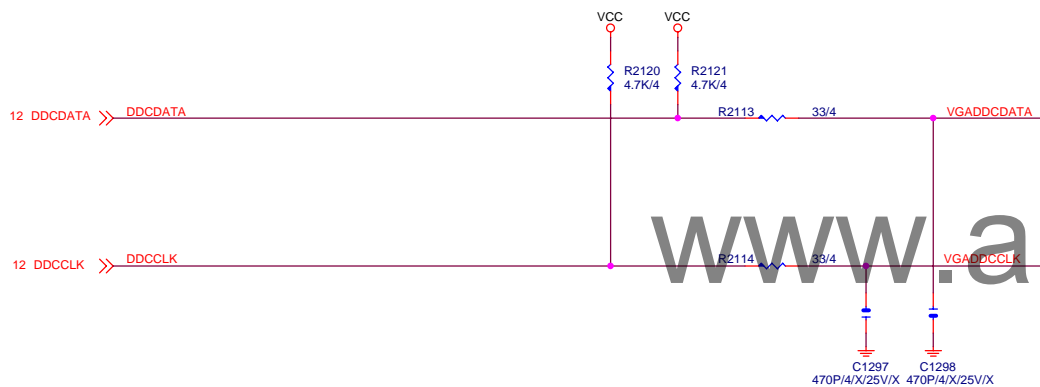
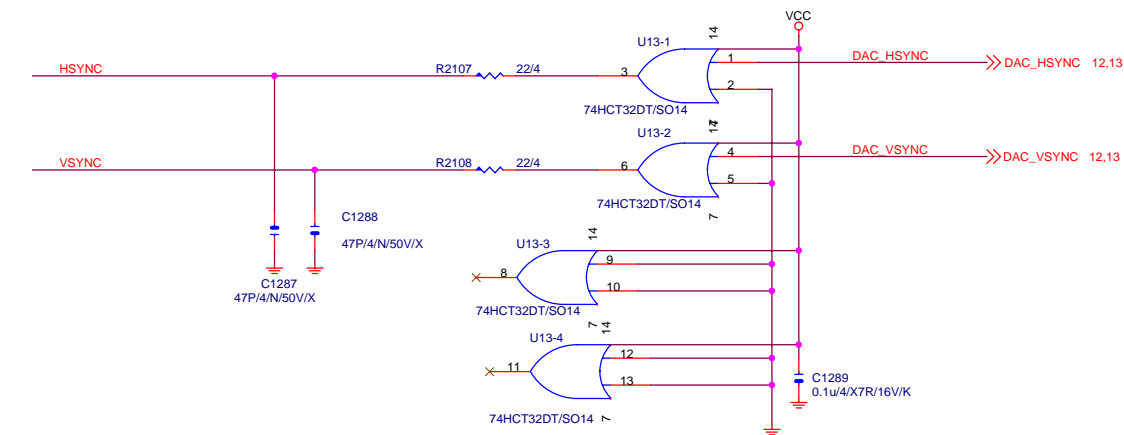
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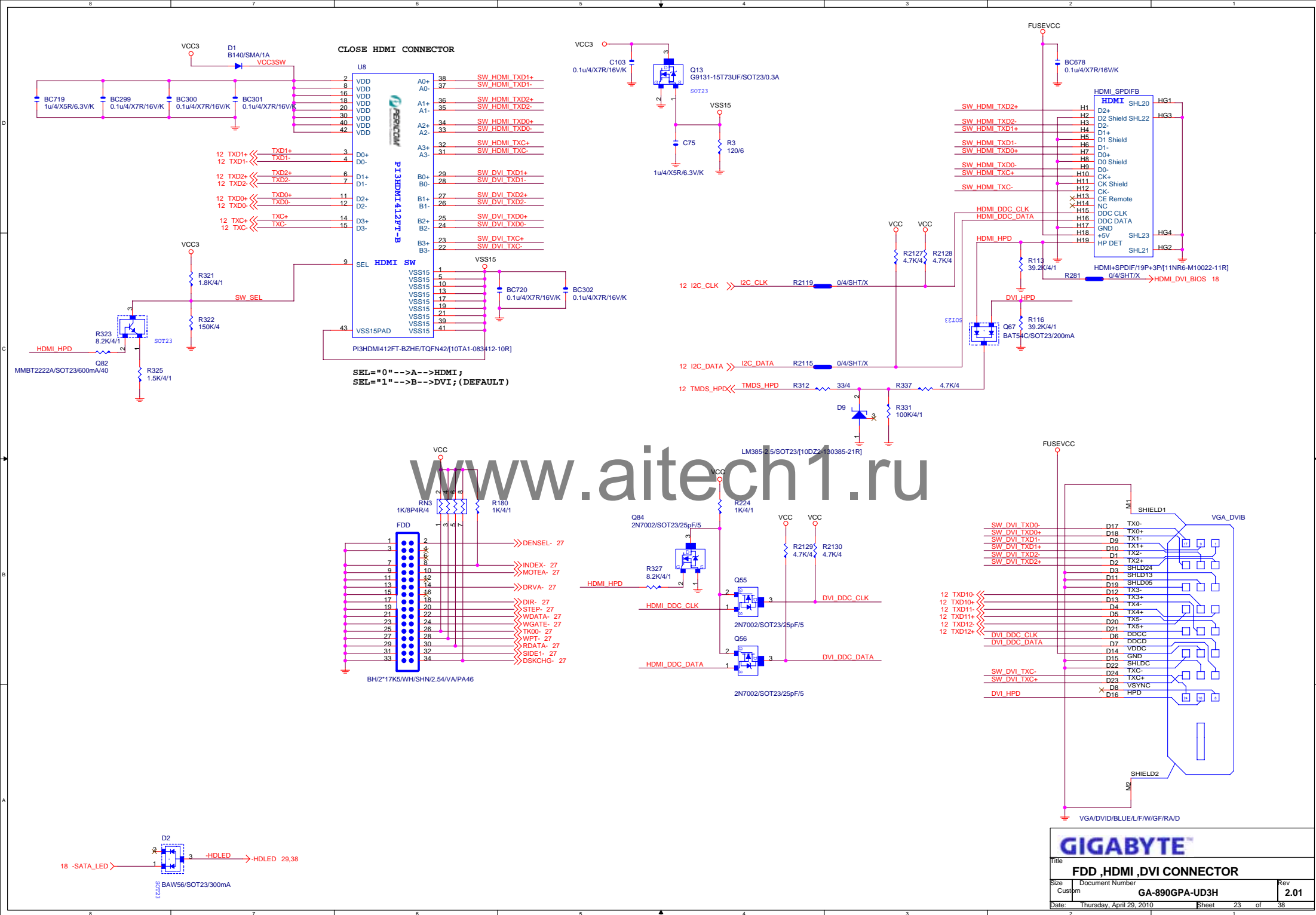
PCI SLOT 1,2

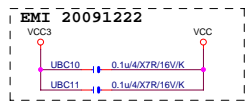
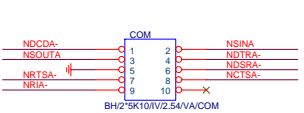
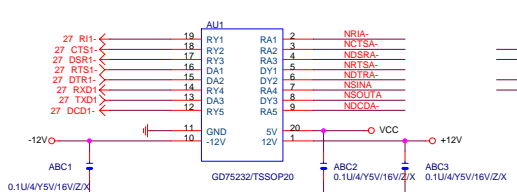




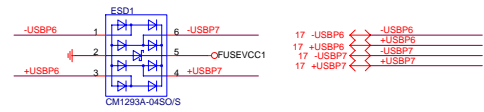
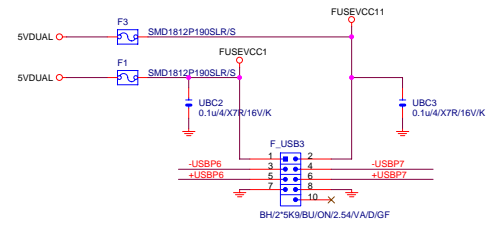
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RGB		
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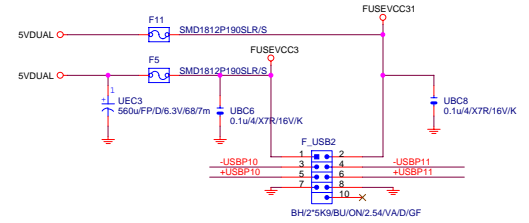




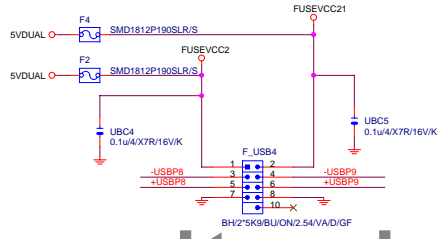
FRONT SIDE USB3



FRONT SIDE USB2

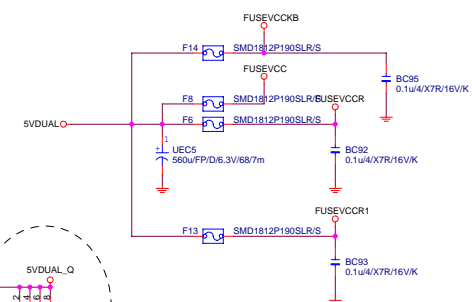
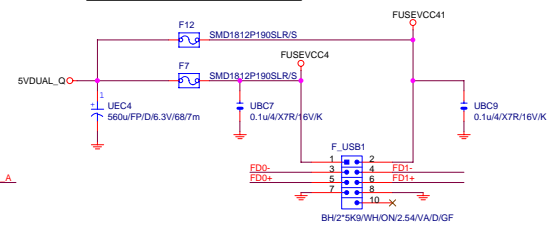


FRONT SIDE USB4

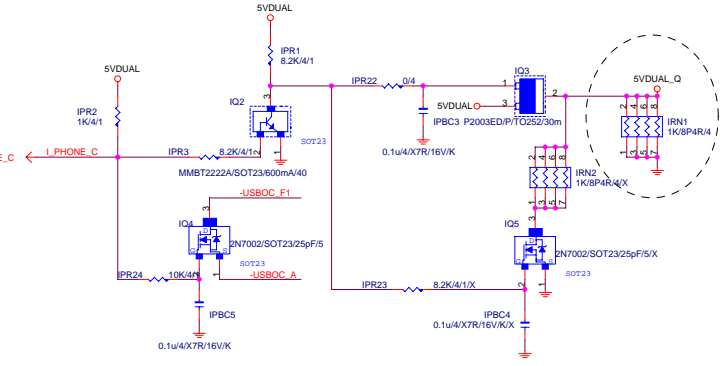
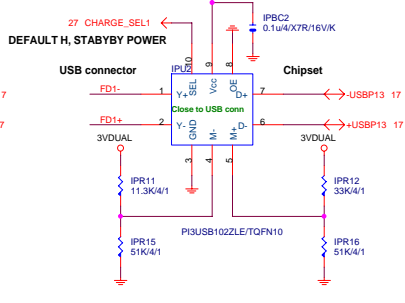
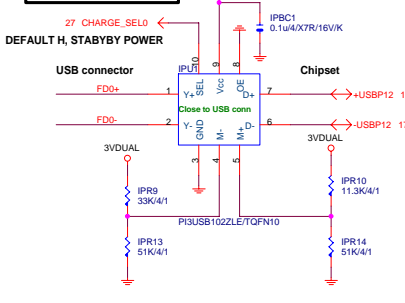


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FRONT SIDE USB1

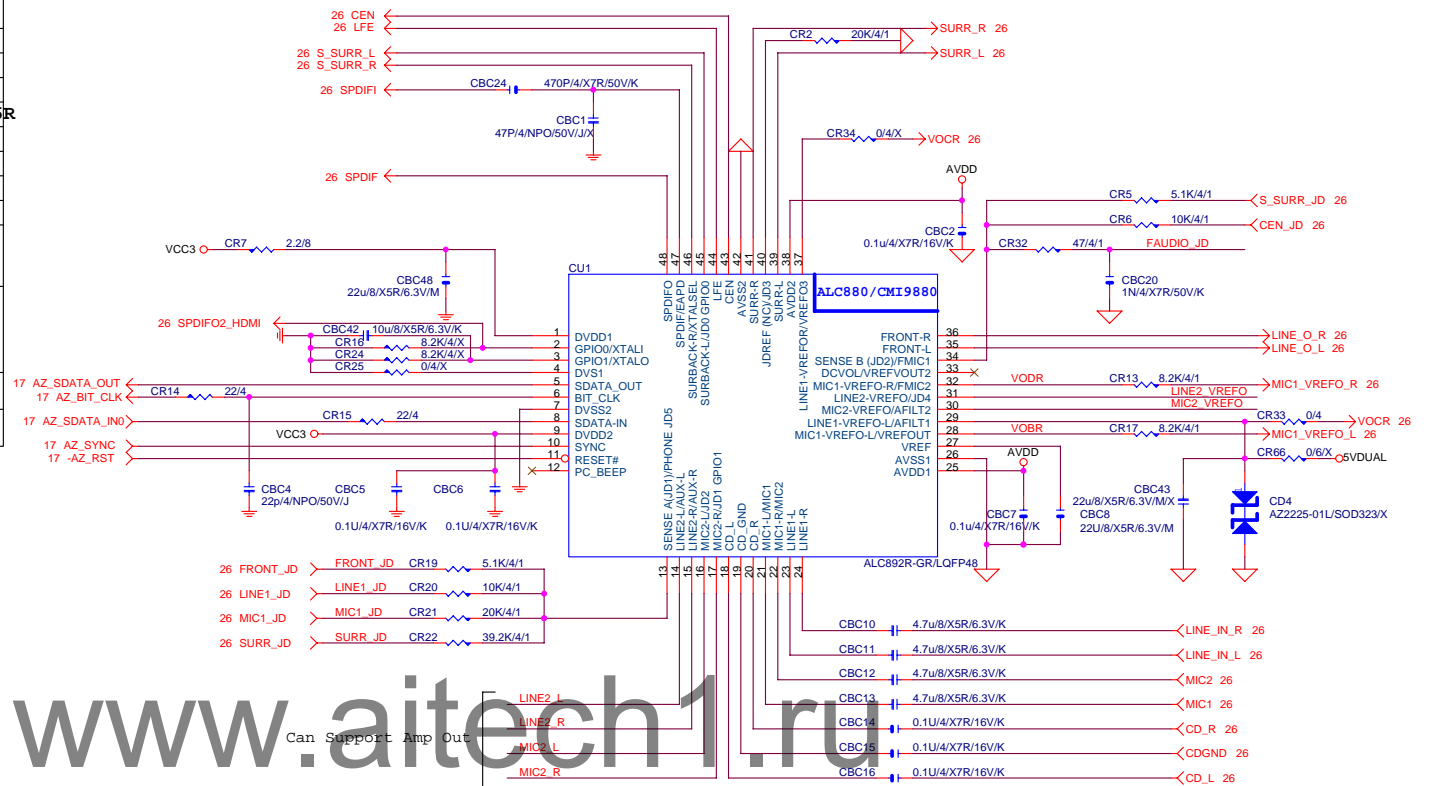


Phone charger circuit

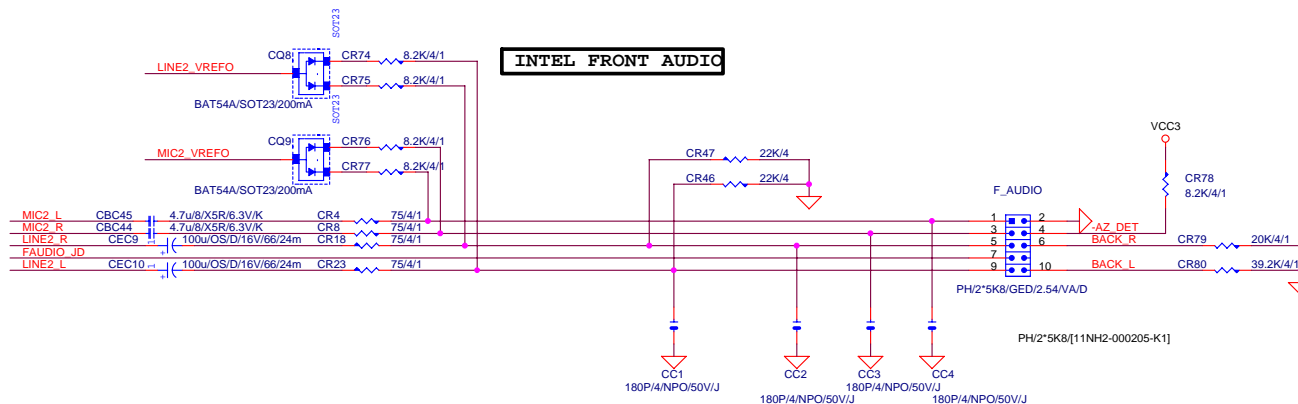
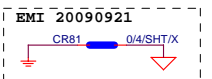


AZALIA CODEC ALC892R/ALC889/ Colay

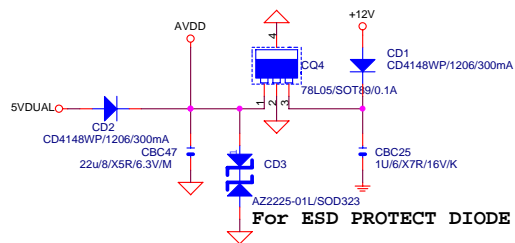
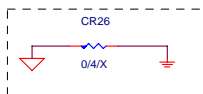
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CR16	X	X	O	X	X
CR24	X	X	O	X	X
CR25	X	O	O	O	X
CBC42	10uF/X5R	X	X	X	10uF/X5R
CR2	20K/1%	20K/1%	20K/0.1%	20K/1%	20K/1%
CR9	O	O	X	X	O
CR10	X	X	O	O	X
CBC10/CBC11/CBC12/ CBC13/CBC44/CBC45	4.7uF /X5R	10uF /X5R	4.7uF /X5R	4.7uF /X5R	4.7uF /X5R
CR4/CR8/CR18/CR23/ CR11/CR12/CR27/CR29/ CR49/CR50/CR43/CR44/ CR45/CR48/CR59/CR60	75 ohm	66 ohm or lower	75 ohm	75 ohm	75 ohm
CR33/CD1/CD2/CD3/CQ4/ CBC25	O	O	O	O	X
CR34/CR66/CBC43/CD4	X	X	X	X	O



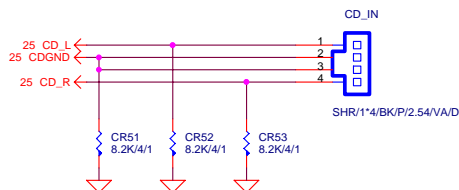
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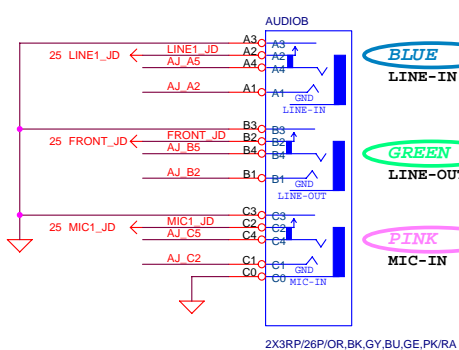
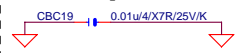
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Title		
ALC892R CODEC		
Size	Document Number	Rev
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CD IN

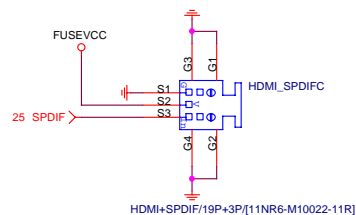
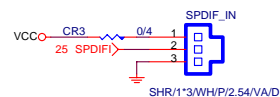
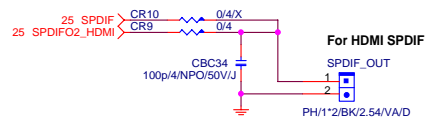


For Audio precision test

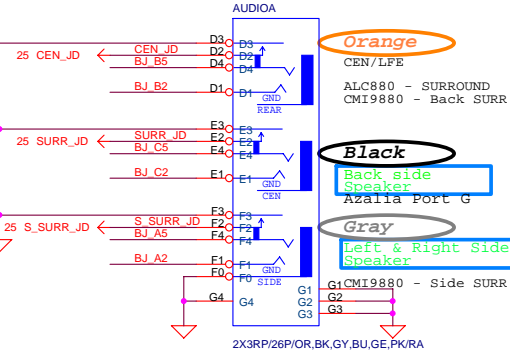
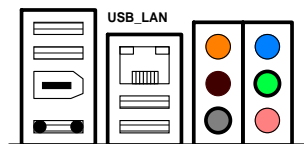


A3RJ/13P/B/[11NR6-403006-01_11NR6-403006-02]
3RJ+15P/[11NR6-403004-11]

SPDIF

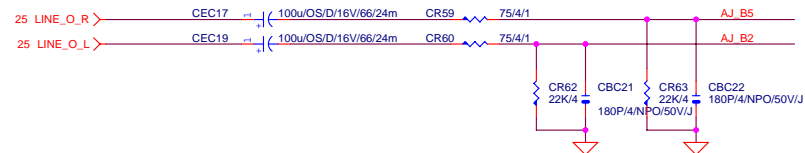


USB_1394_ESATA

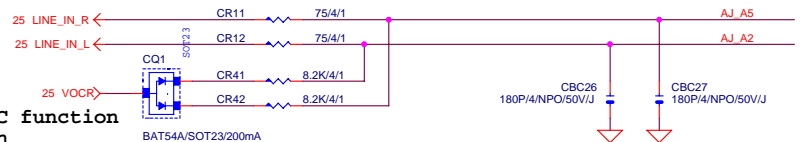


A3RJ/13P/0BG/[11NR6-403006-71]
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LINE OUT FRONT OUT

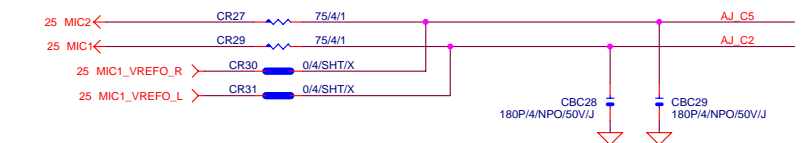


LINE-IN

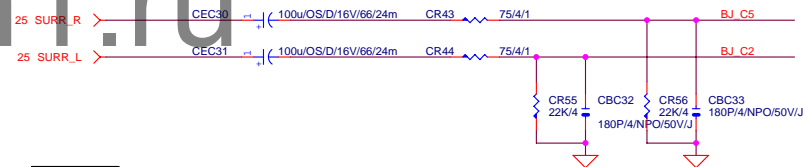


Verify MIC function
in LINE-in

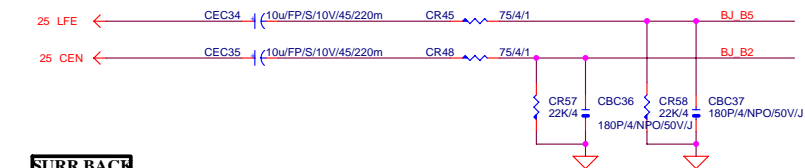
MIC



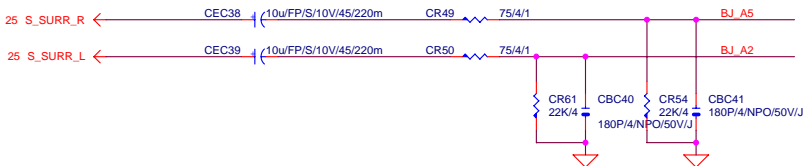
SURROUND



CEN/LFE

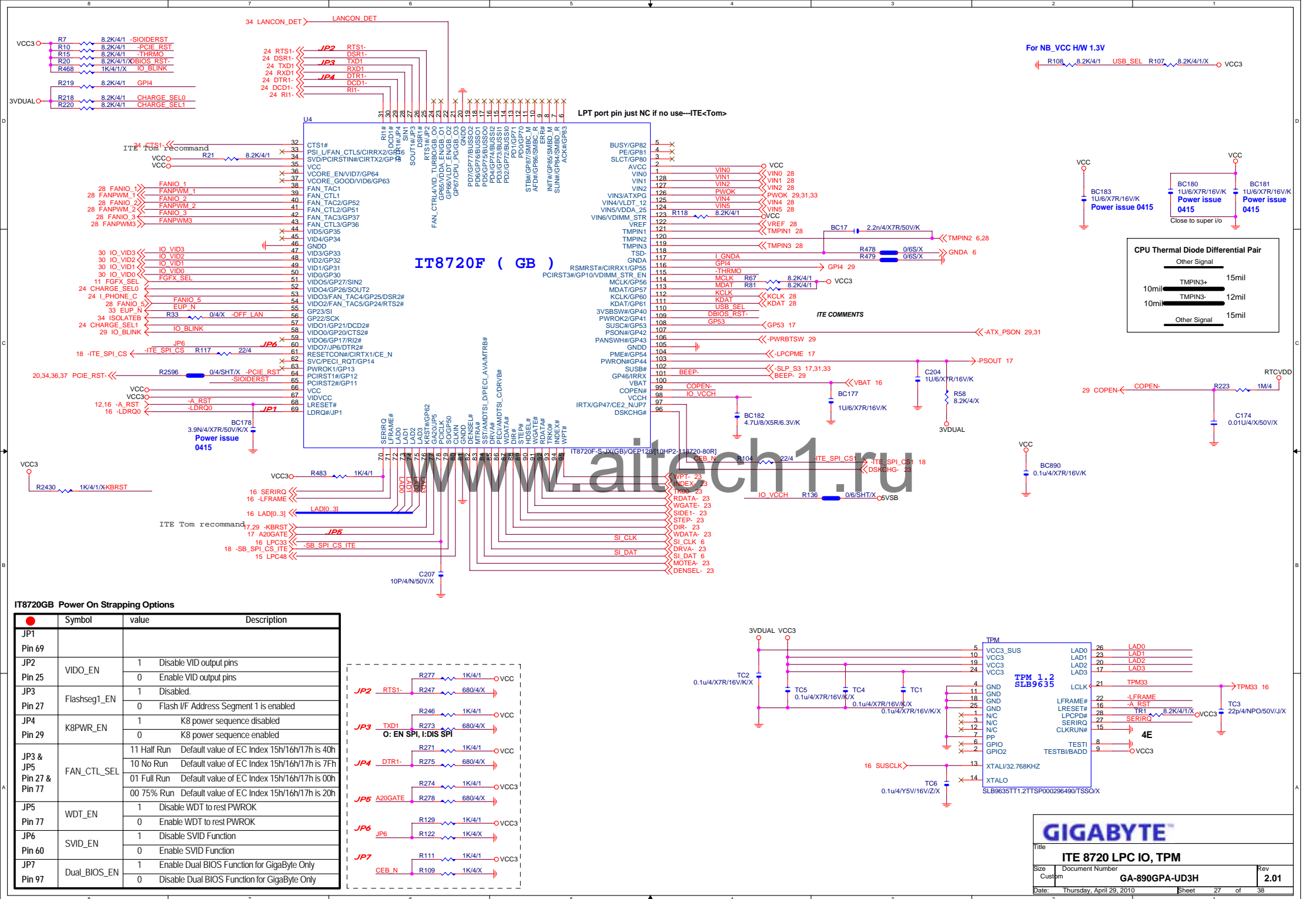


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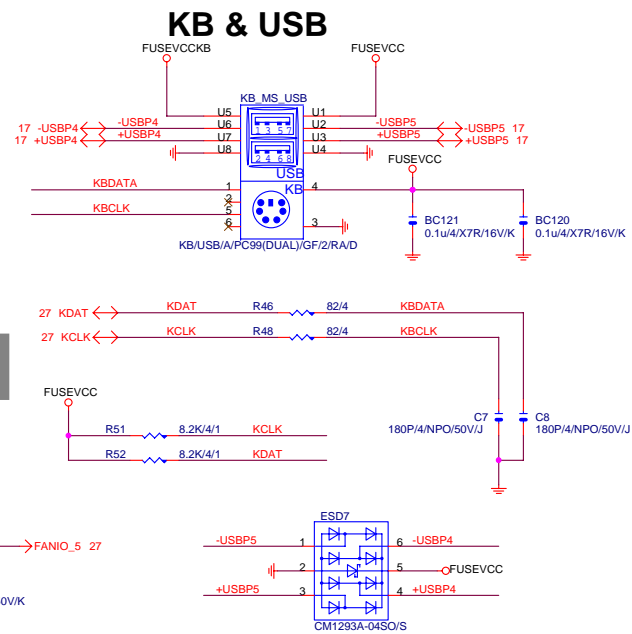
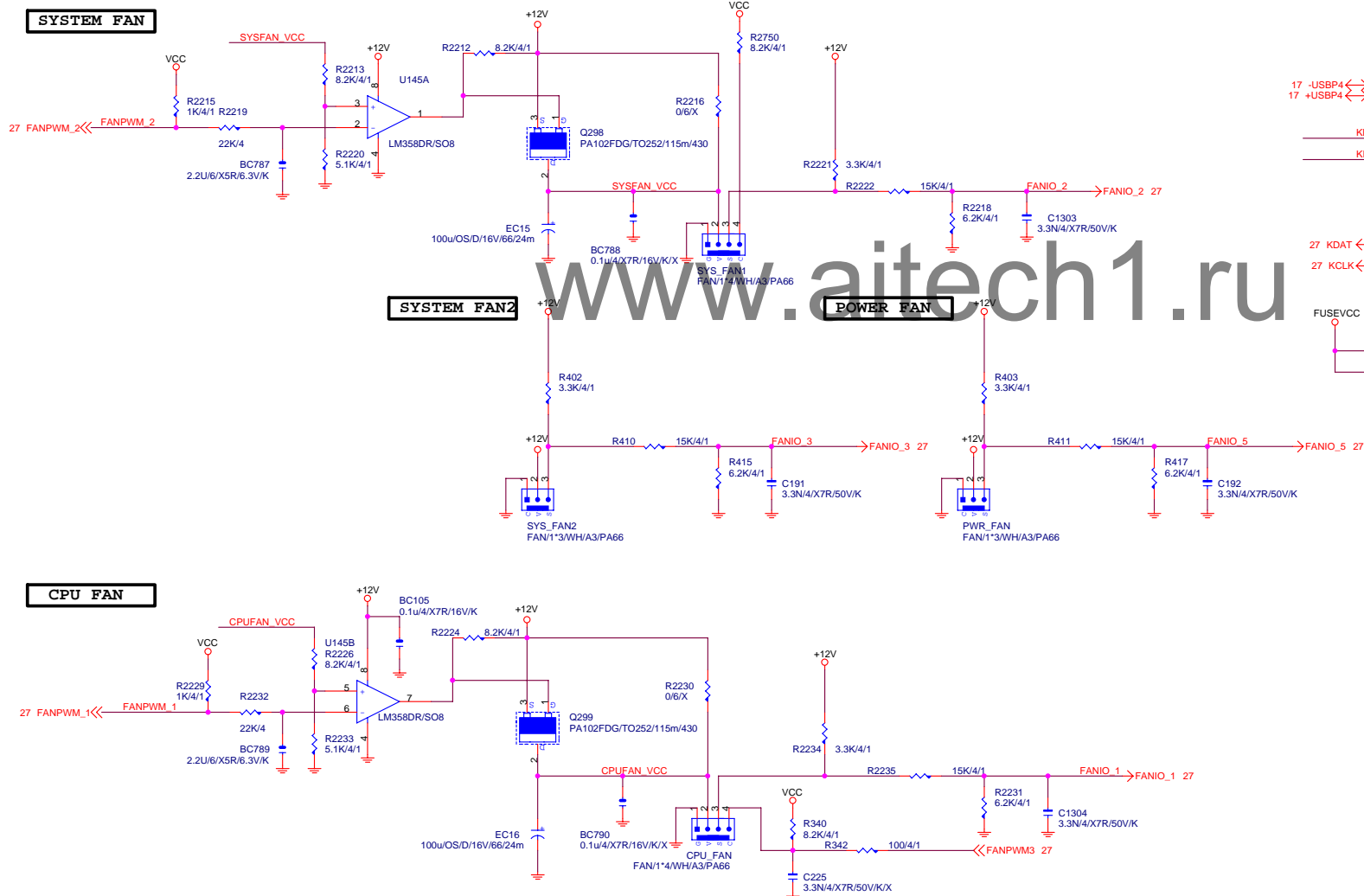
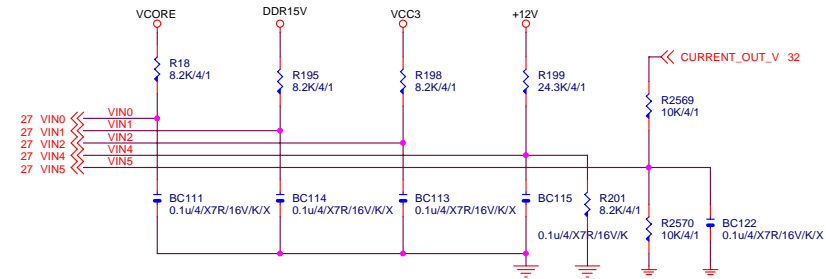
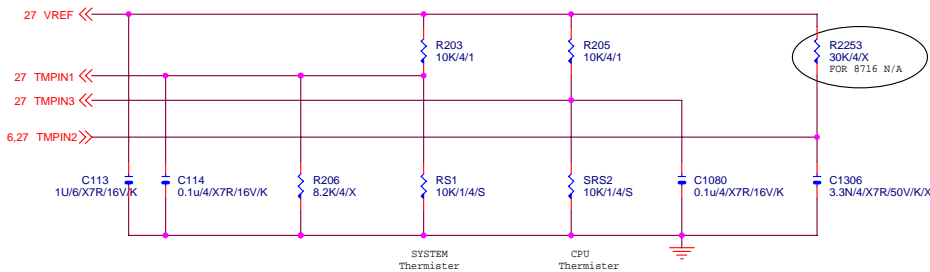


GIGABYTE

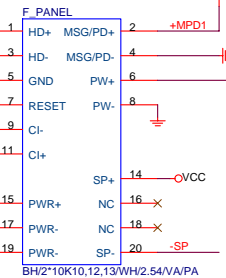
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Size	Document Number	Rev	
Custom	GA-890GPA-UD3H	2.01	
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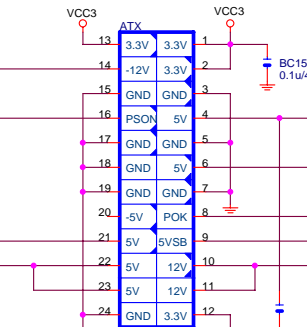
Hardware Monitor circuits



INTEL FRONT PANEL



ATX POWER CONNECTOR

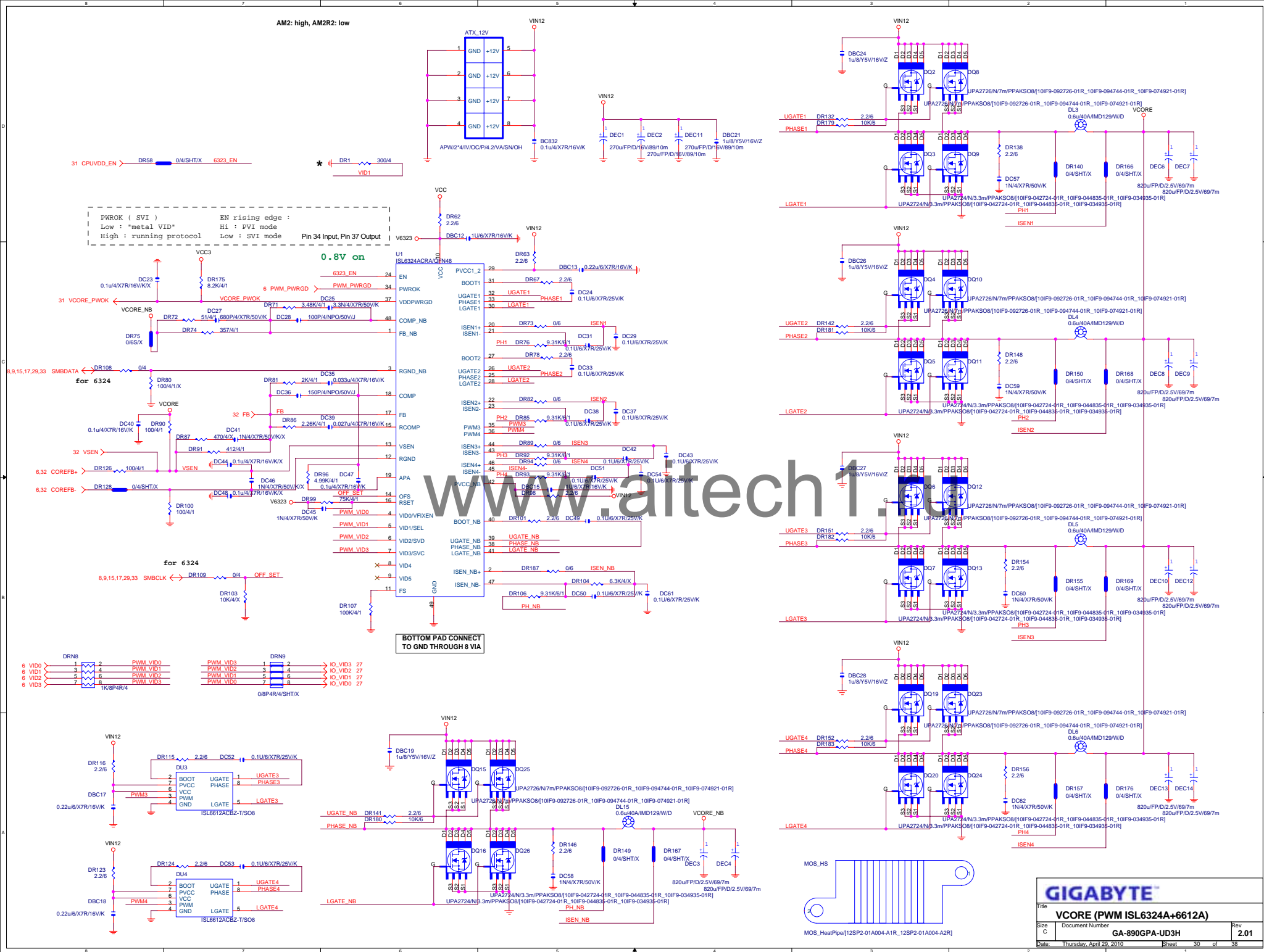


For Seasonic 900W
Power supply
cant Boot issue

GIGABYTE

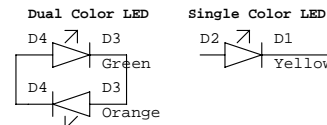
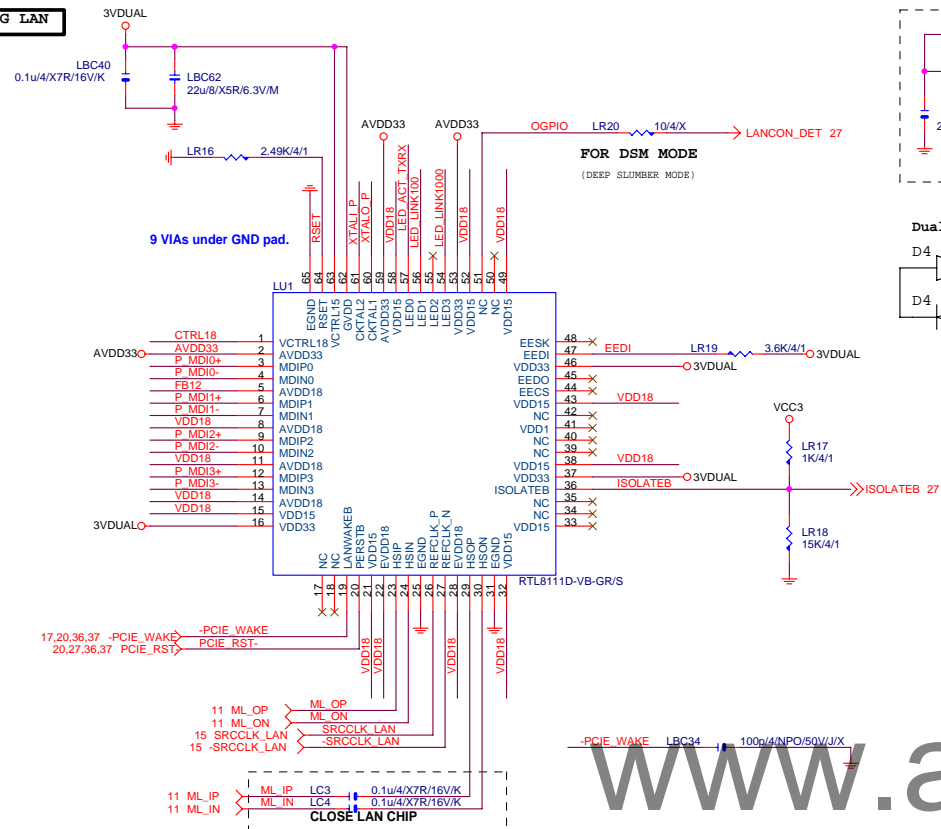
Title			ATX, FRONT PANEL ,EC
Size	Document Number	Rev	2.01
Custm	GA-890GPA-UD3H		
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AM2: high, AM2R2: low

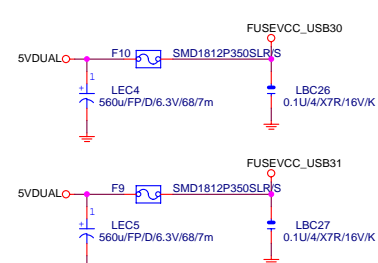
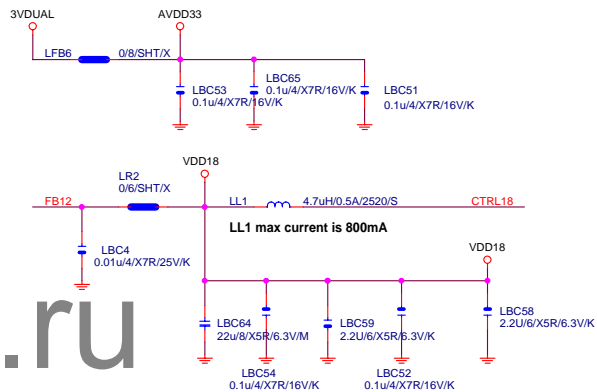
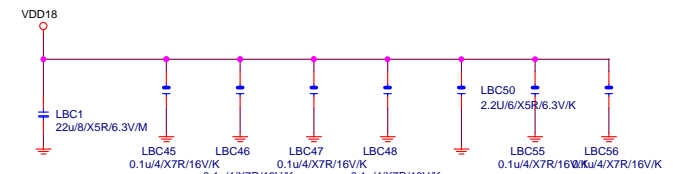
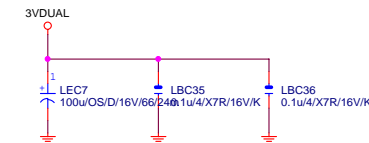
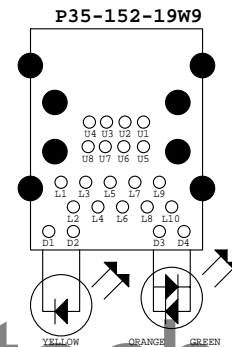


GIGABYTE			
File	VCORE (PWM ISL6324A+6612A)		
Size	Document Number	GA-890GPA-UD3H	
C		Rev 2.01	
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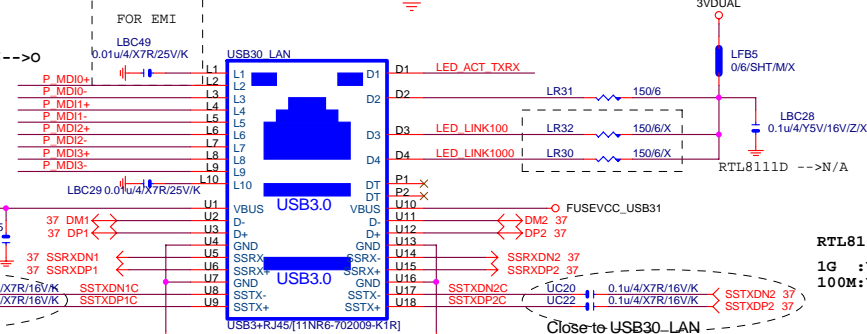
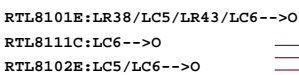
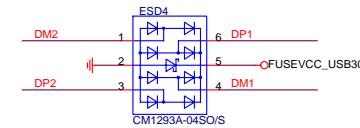
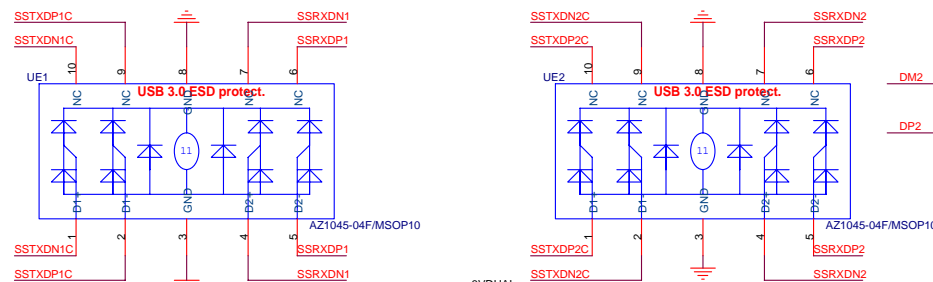
PCIE-1G LAN



USB_LAN CONNECTOR



USB_LAN

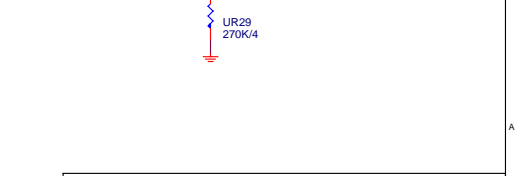
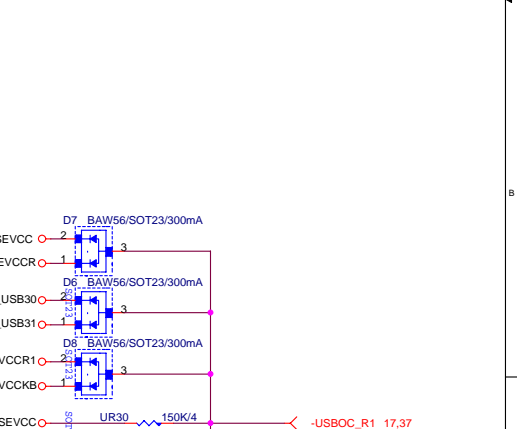
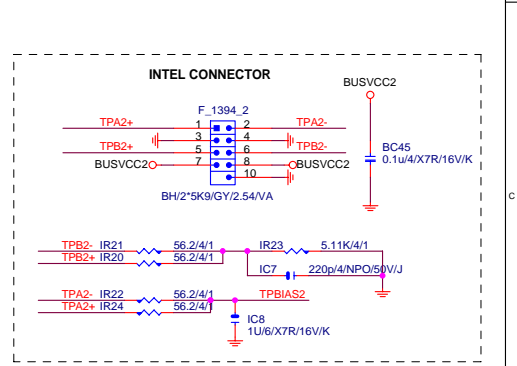
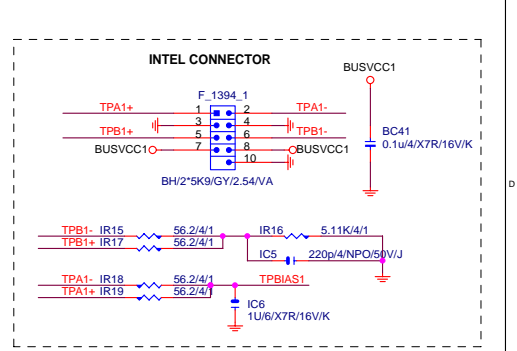
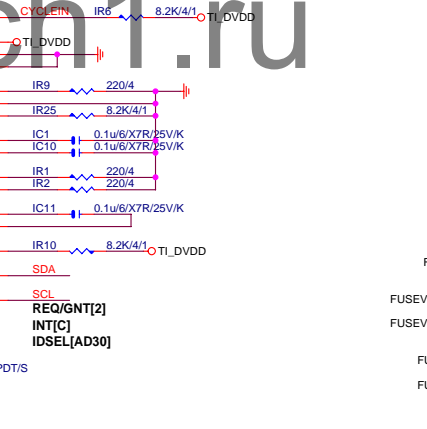
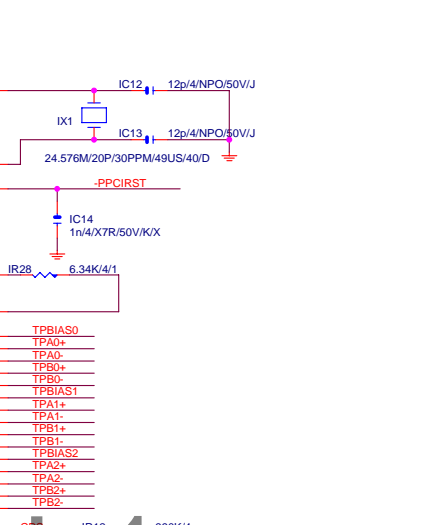
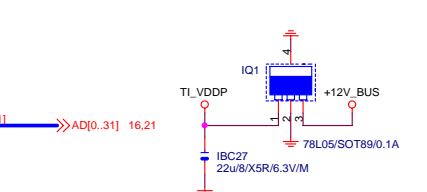
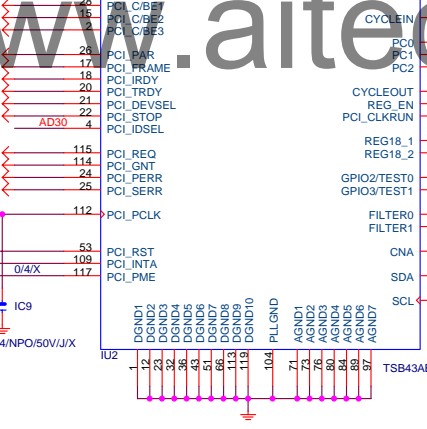
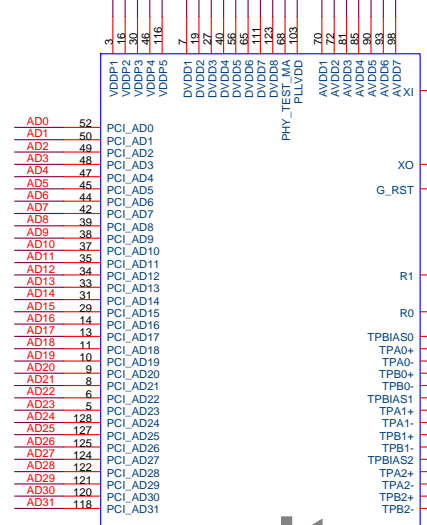
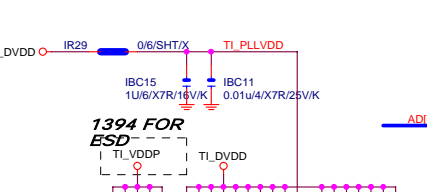
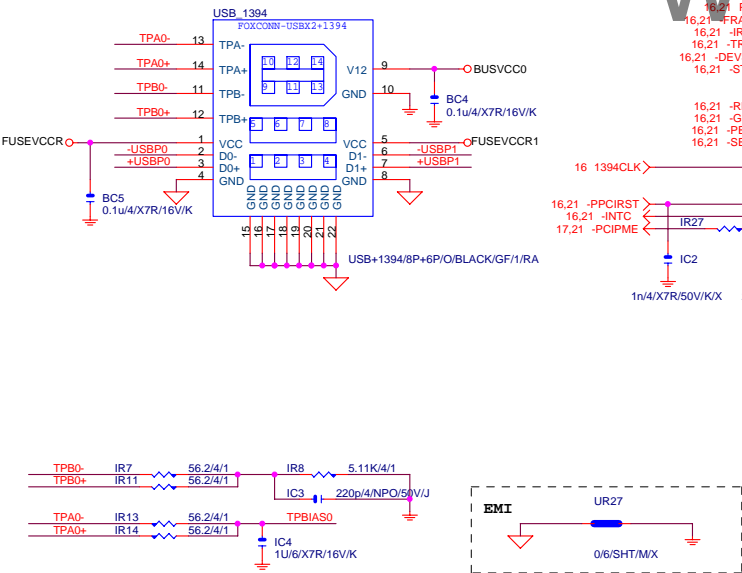
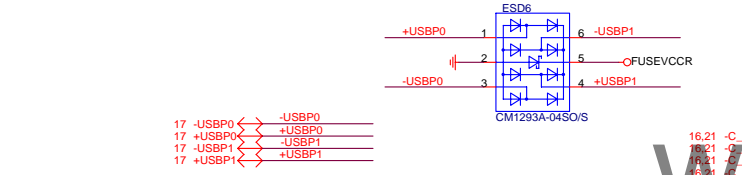
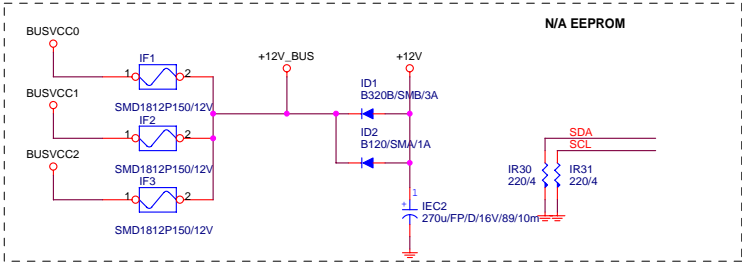
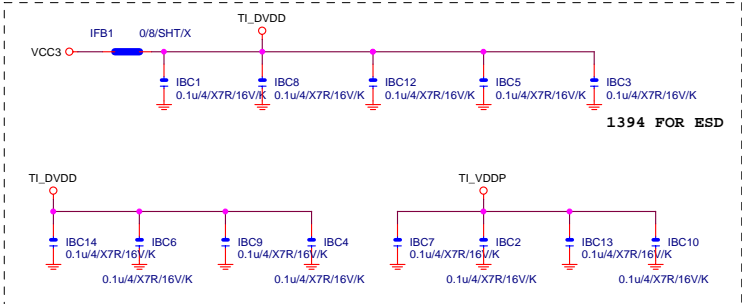


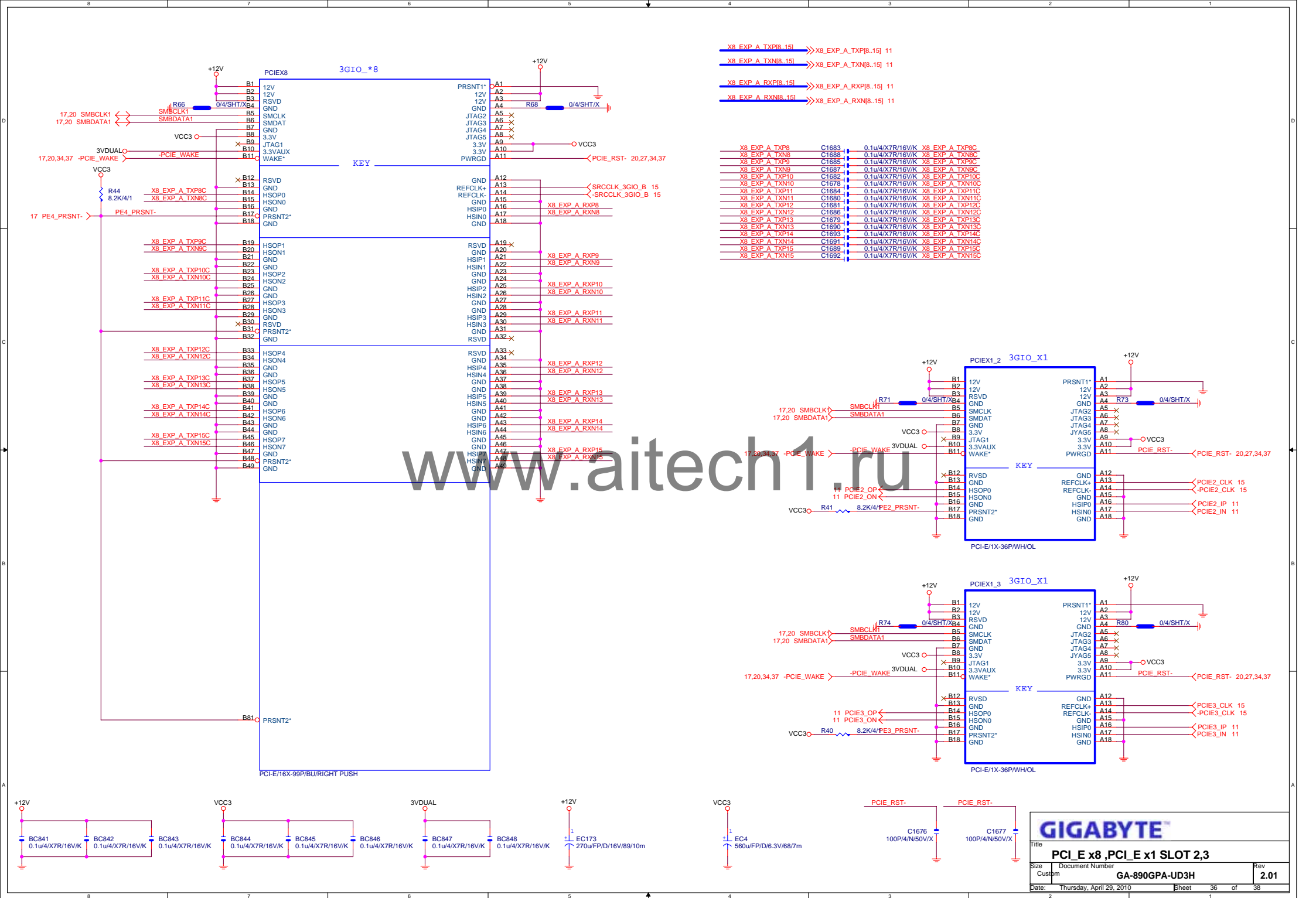
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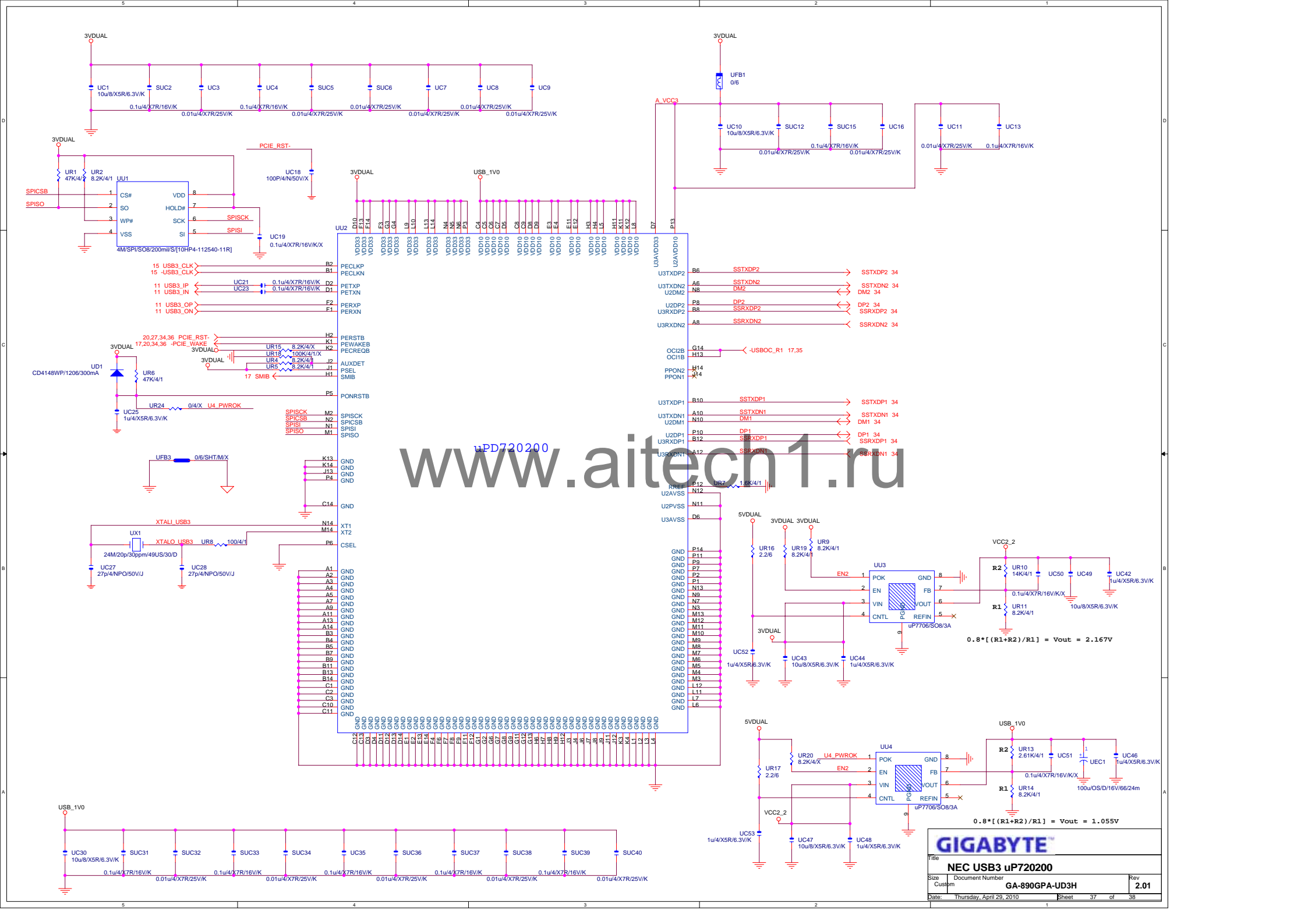
RTL8101E :L1+L10-->AVDD18+0.1U(BIOS DISABLE MDI-X FUNCTION)

1G :USB+LAN/1G/GO,Y/OS/RA/D/1
100M:USB+LAN/100/GO,Y/OS/RA/D/1

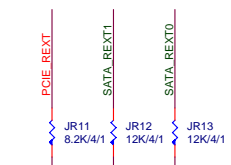
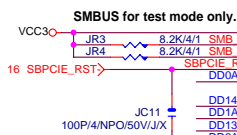
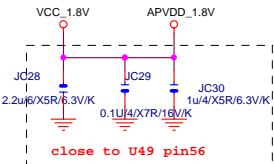
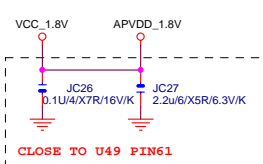
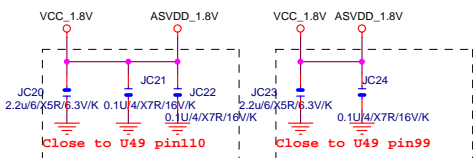
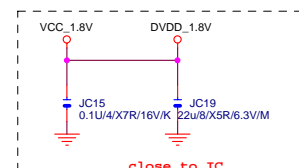
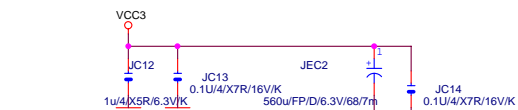
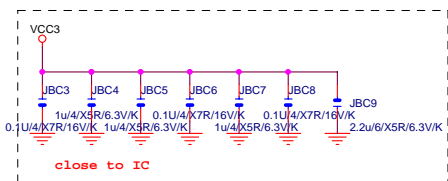
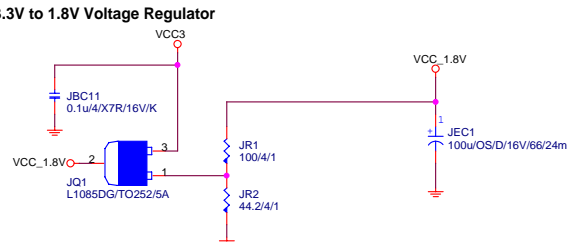
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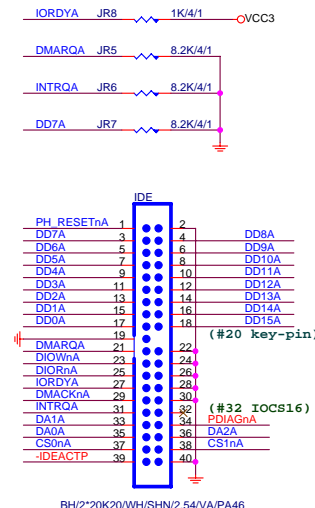
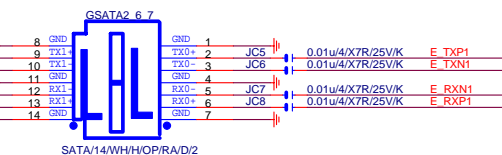
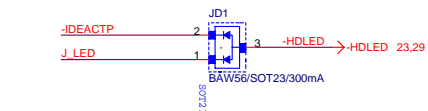
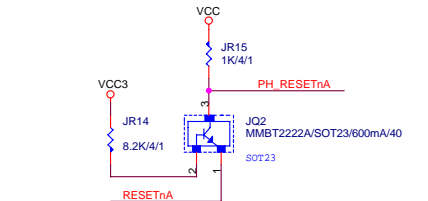
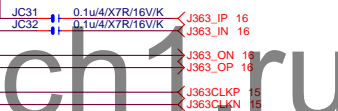
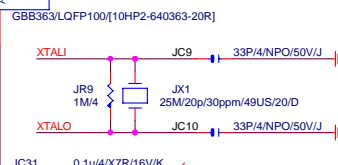
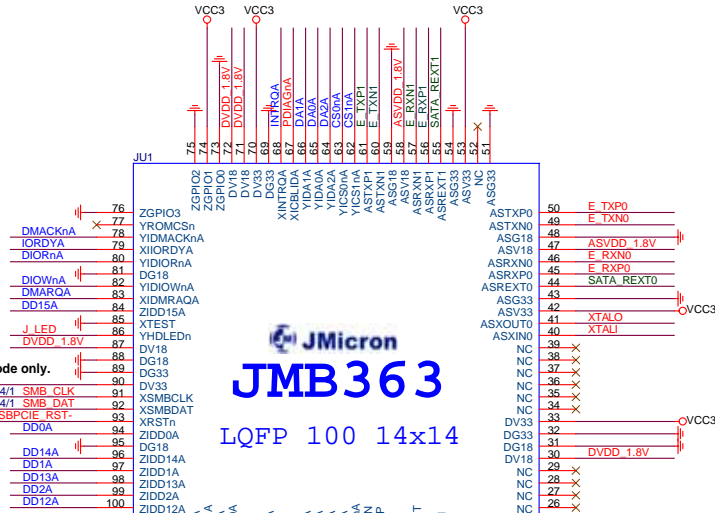
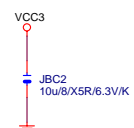




3.3V to 1.8V Voltage Regulator



Near to PIN Check SATA eye
PCIE_RST -> 8.06K/4/1



BH/2*20K20/WH/SHN/2.54/VA/PA46

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