

Revision : 1.0

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03	BLOCK DIAGRAM
04	CPU HYPER TRANSPORT
05	CPU DDRIII MEMORY
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08	DDRIII CHANNEL A
09	DDRIII CHANNEL B
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11	RD980 PCIE I/F ,SWITCH
12	RD980 SYSTEM I/F
13	RD980 STRAPS ,SPMEM, POWER, GND
14	RTM880T-793
15	SB950 PCIE/PCI/CPU/LPC
16	SB950 ACPI/USB/GPIO/AUDIO
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18	SB950 POWER & GND
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23	COM, F_USB, R_USB, I_PWR
24	ALC887R CODEC
25	AUDIO JACK

[illegible]

Model Name:GA-970A-DS3

Component value change history

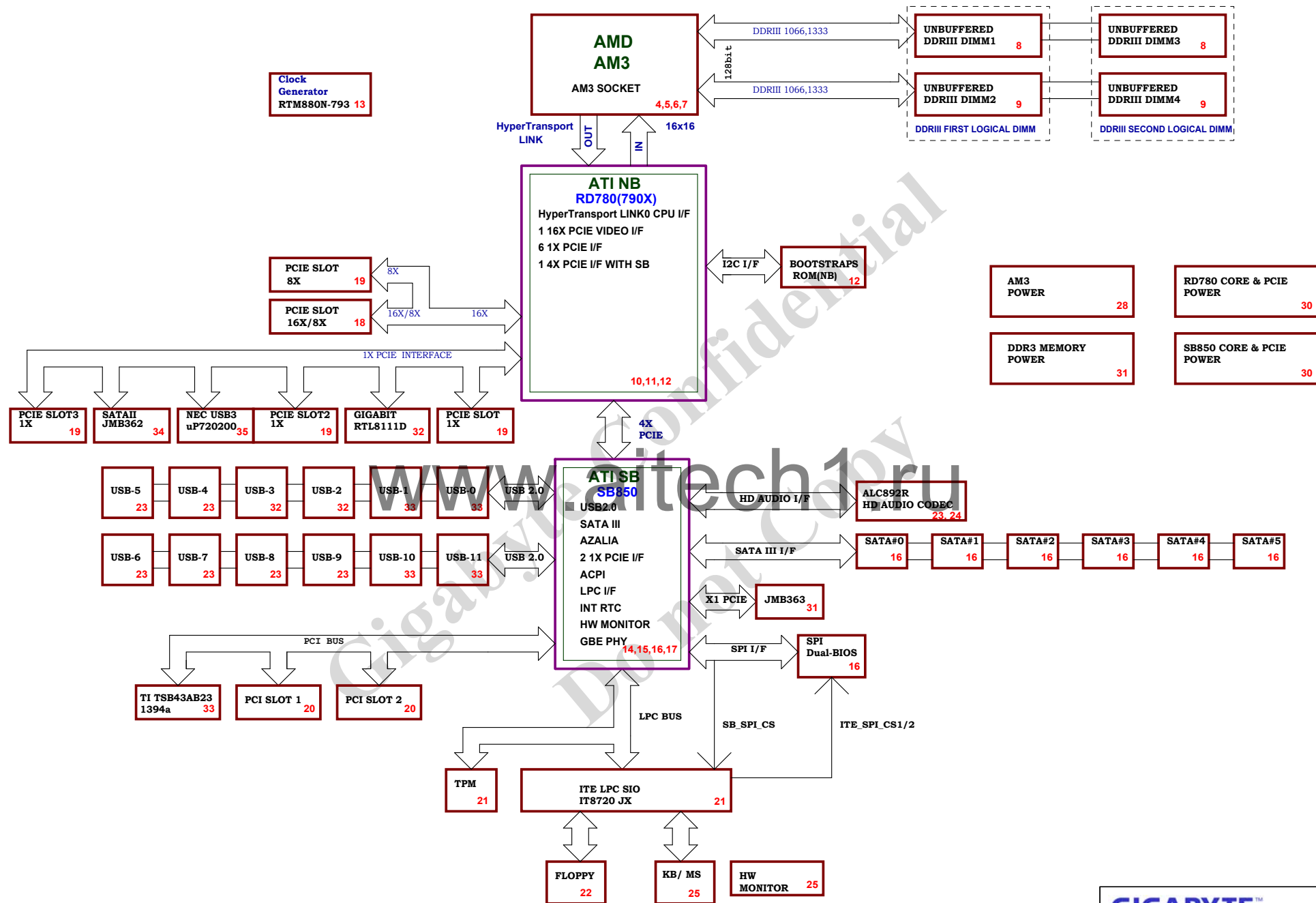
Version: 1.0

P-Code: U98094-0

[illegible]

Circuit or PCB layout change for next version

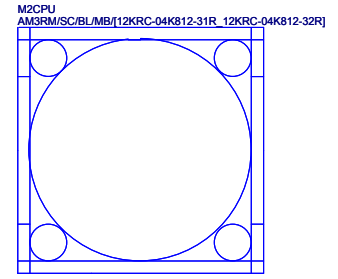
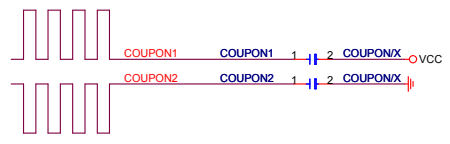
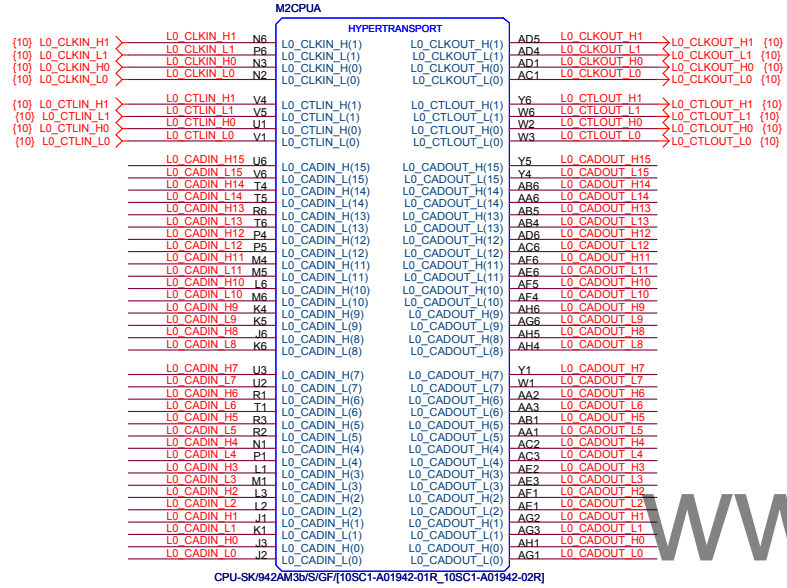
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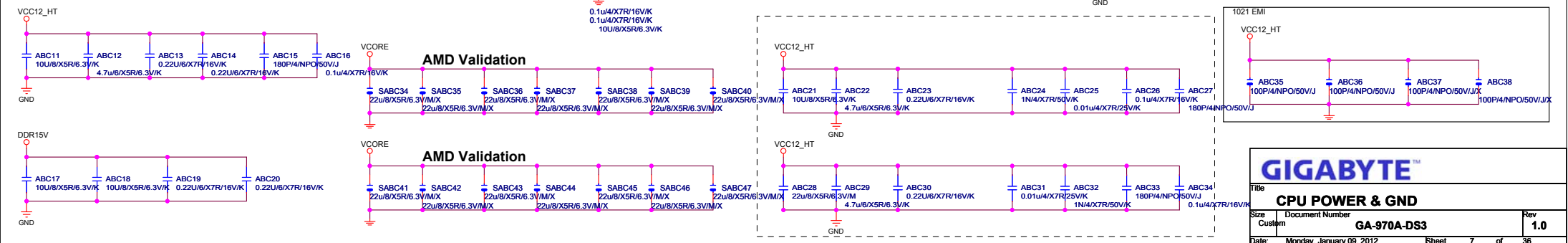
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L0_CADIN_H[0..15] <L0_CADIN_H[0..15] {10}
L0_CADOUT_L[0..15] <L0_CADOUT_L[0..15] {10}
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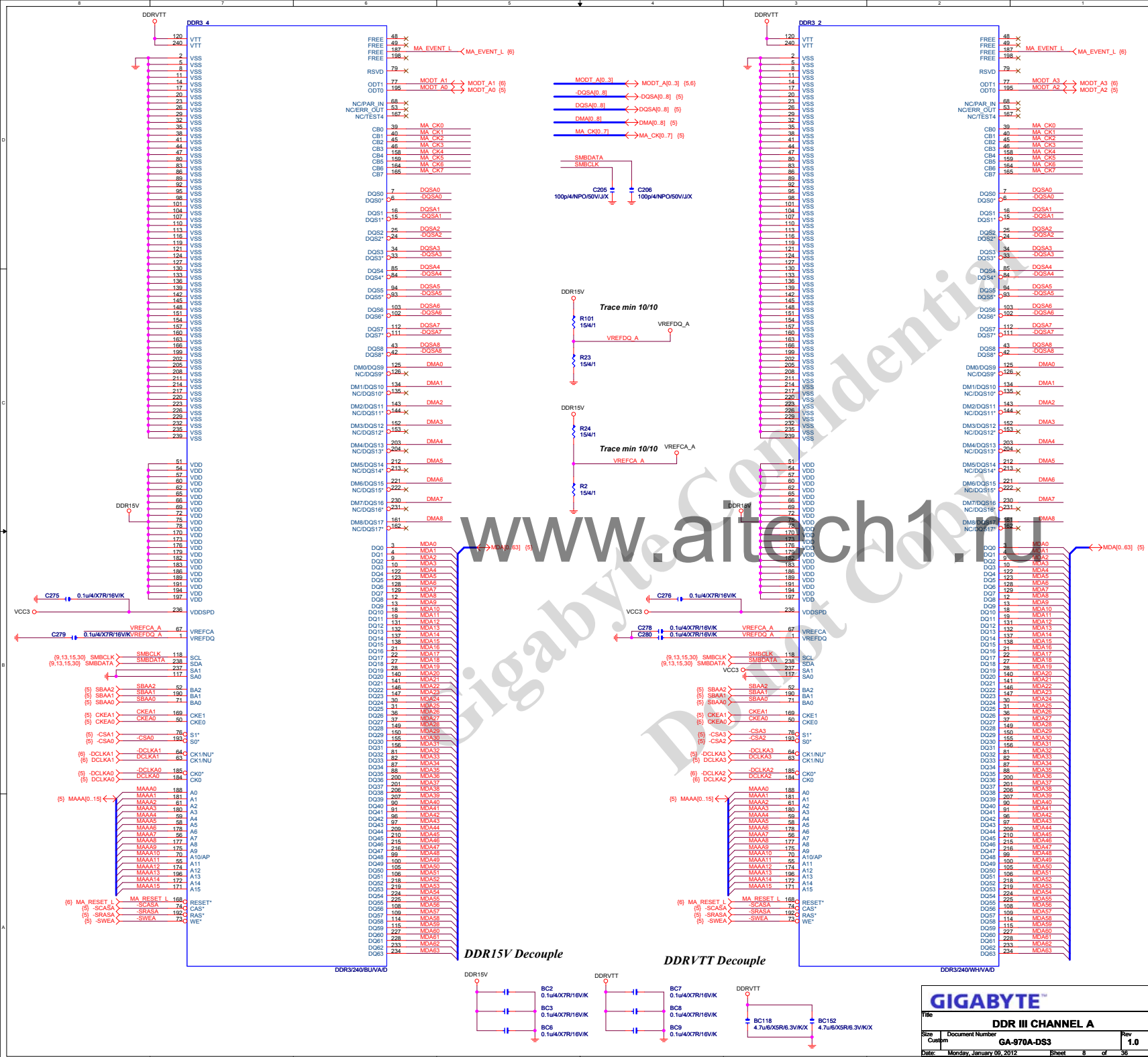
CPU_VDD_RUN = VCORE
CPU_VDDA_RUN = VDDA25
VLDT_RUN = VCC12_HT
CPU_VDDIO_SUS = DDR15V
CPU_VDDR = CPU_VDDR12

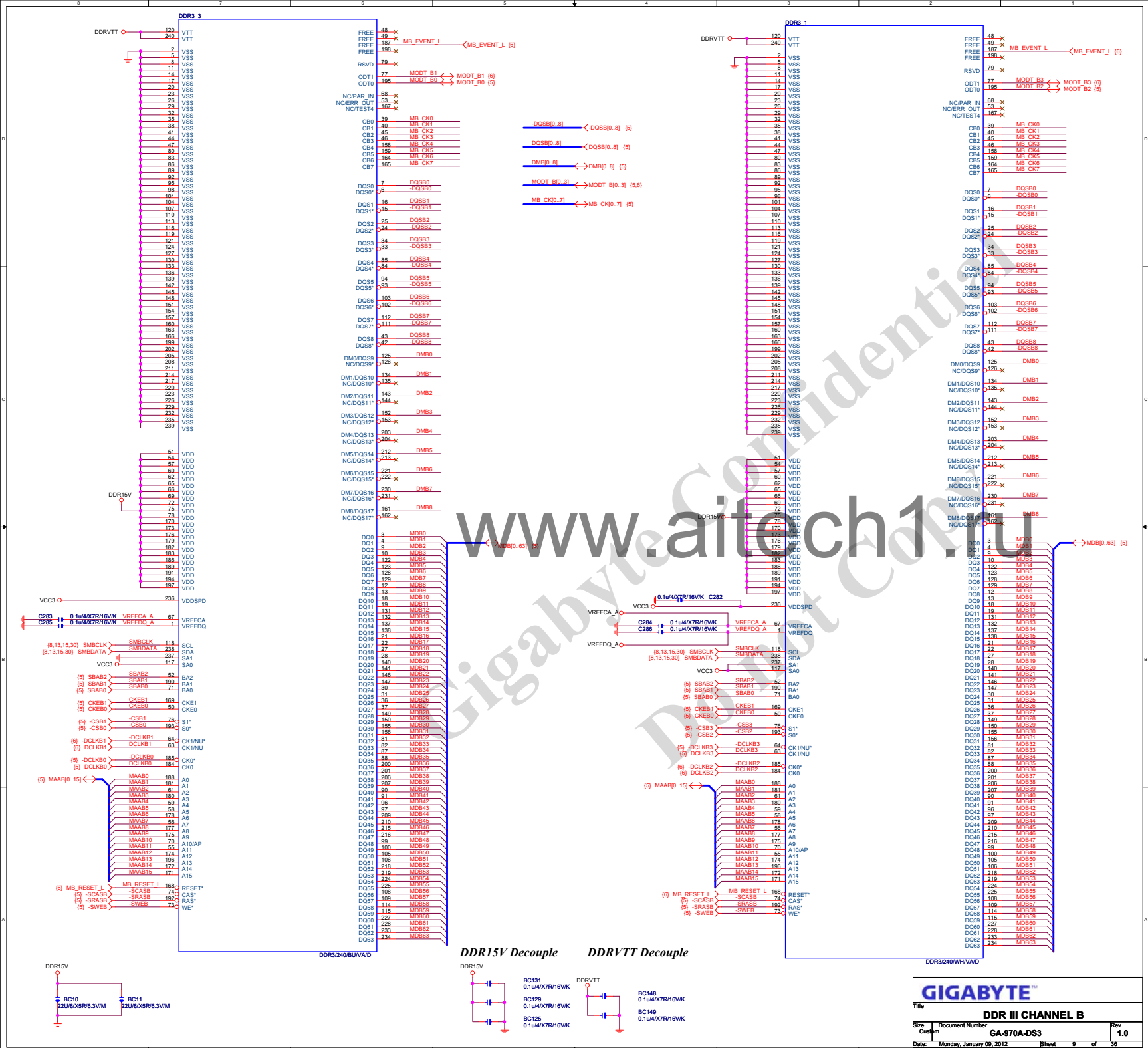
VLDT_A = VCC12_HT
VLDT_B = HT12B

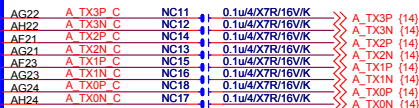
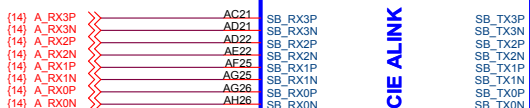
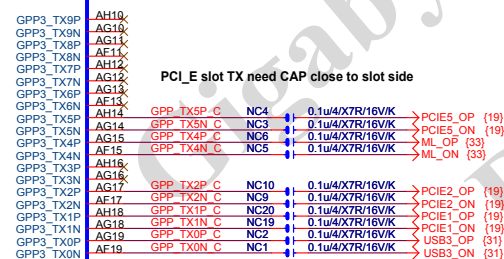
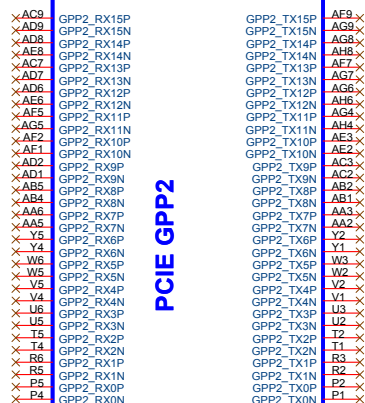
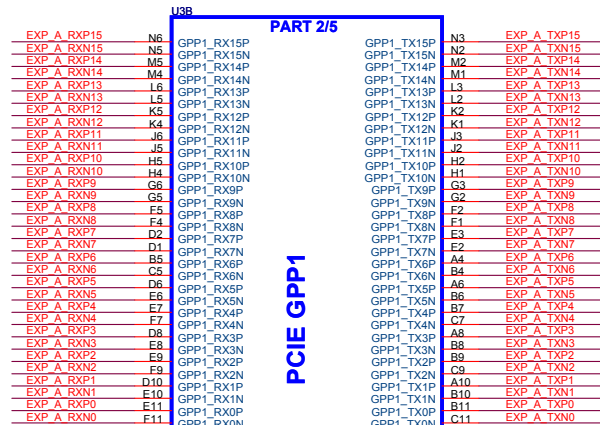




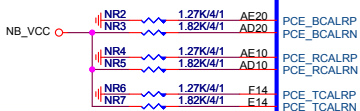








PLACE THESE CAP CLOSE TO NB.

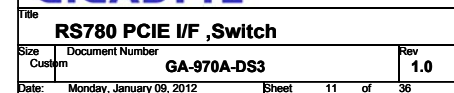


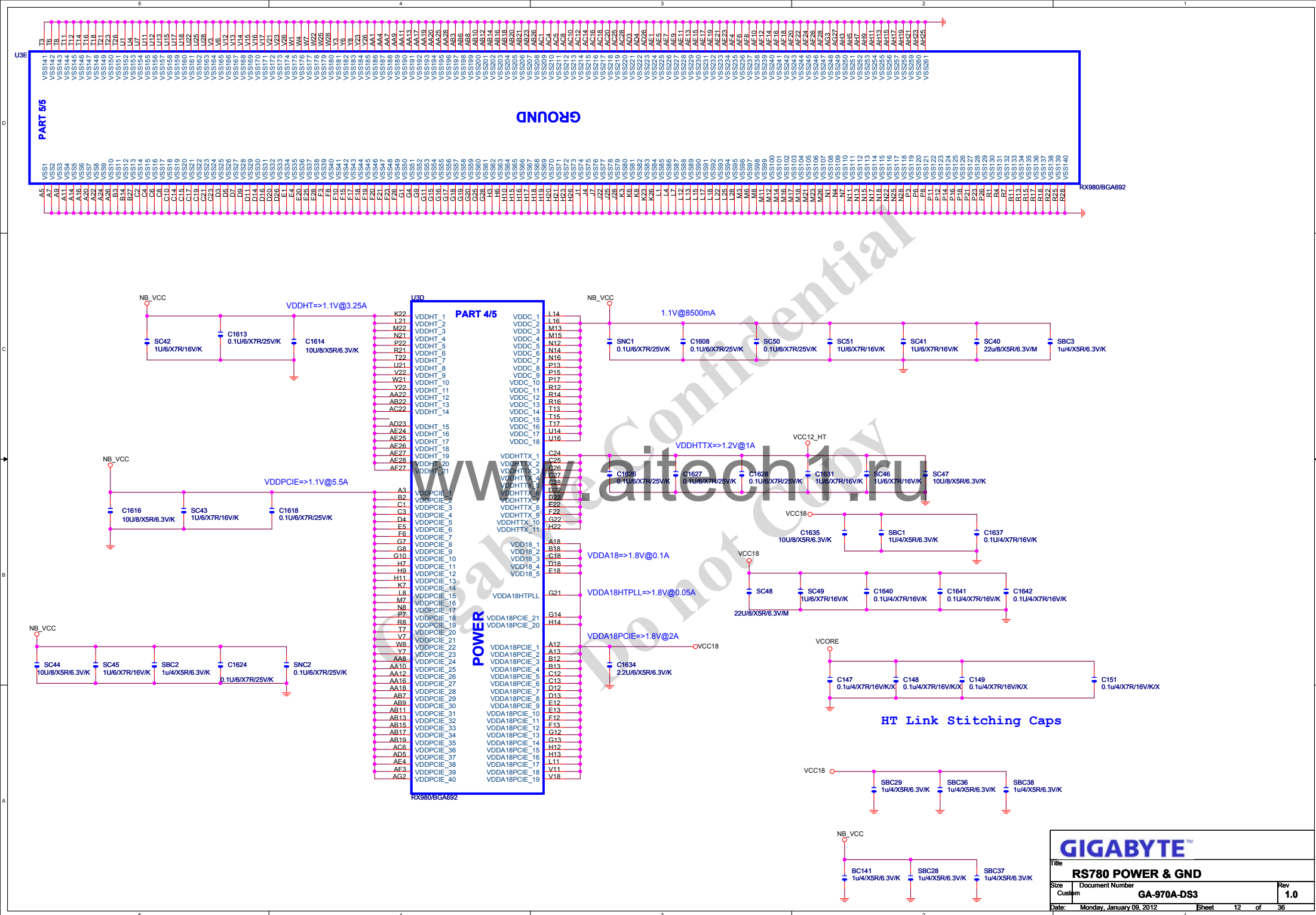
RX980/RGA692

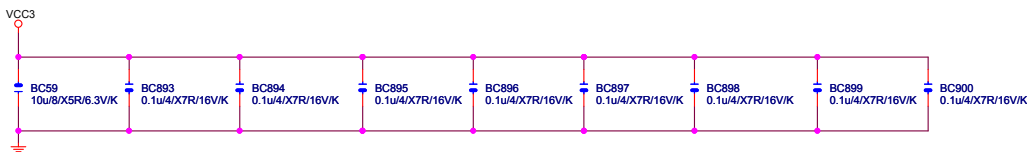
3

2

1







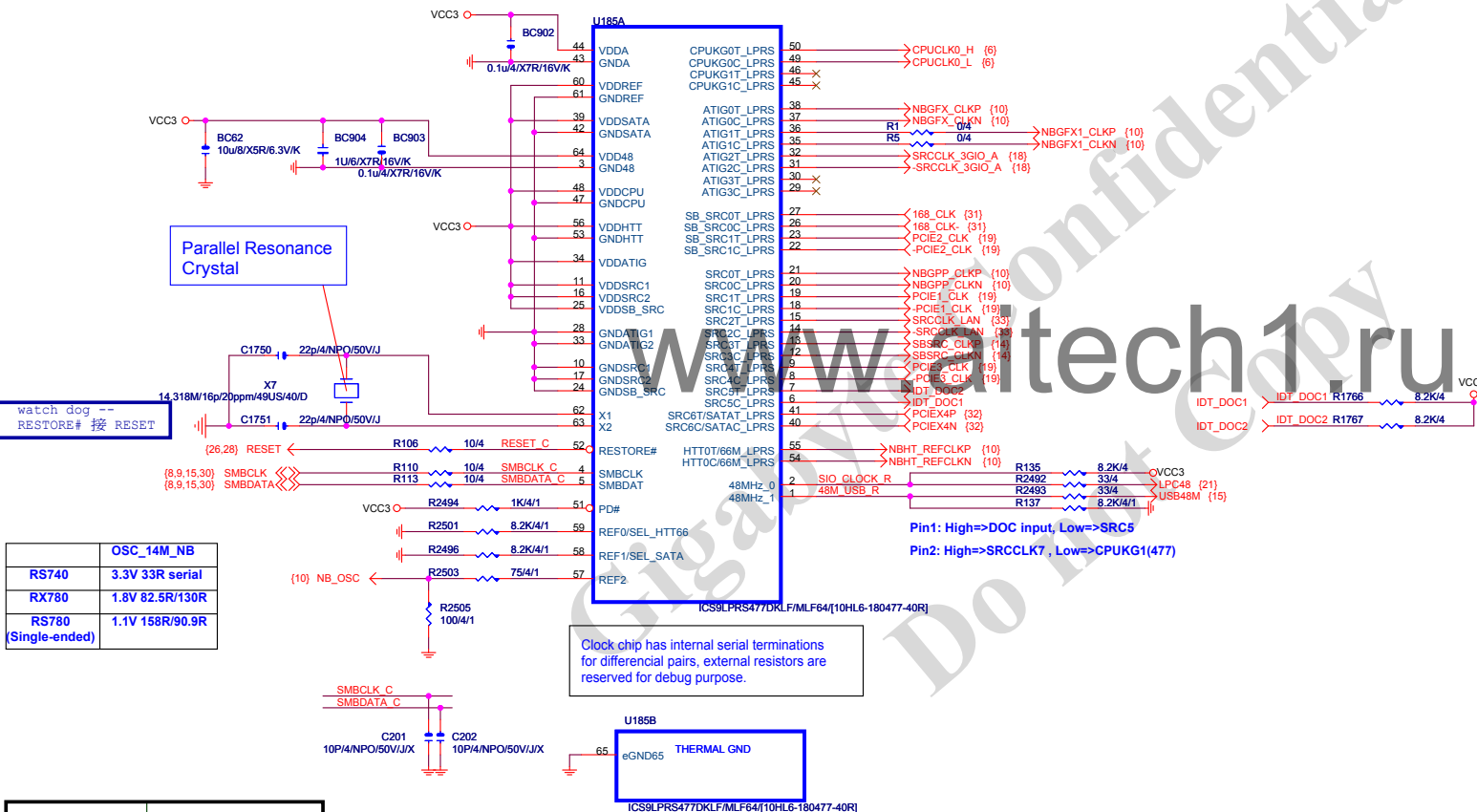
- 1- PLACE ALL THE SERIES TERMINATION RESISTORS AS CLOSE TO U800 AS POSSIBLE
- 2- ROUTE ALL SRCCLKTx AND SRCCLKCx AS DIFFERENT PAIR RULE
- 3- PUT DECOUPLING CAPS CLOSE TO U800 POWER PIN

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

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	100M DIFF
GPP_REFCLK	NC	100M DIFF	100M DIFF(OUT)	
GPSPB_REFCLK	100M DIFF	100M DIFF	100M DIFF	

* the GFX_REFCLK input is required for all cases



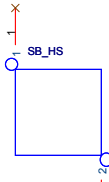
	OSC_14M_NB
RS740	3.3V 33R serial
RX780	1.8V 82.5R/130R
RS780 (Single-ended)	1.1V 158R/90.9R

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

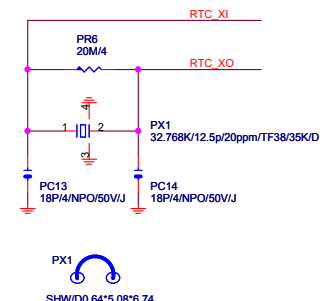
REF1/SEL_SATA	SRC6/SATA
0	100.00 DIFFERENTIAL SPREADING SRC CLOCK
1	100.00 NON-SPREADING DIFFERENTIAL SATA CLOCK

PLACE THESE PCIE AC COUPLING CAPS CLOSE TO SB850

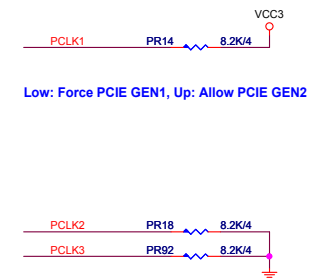
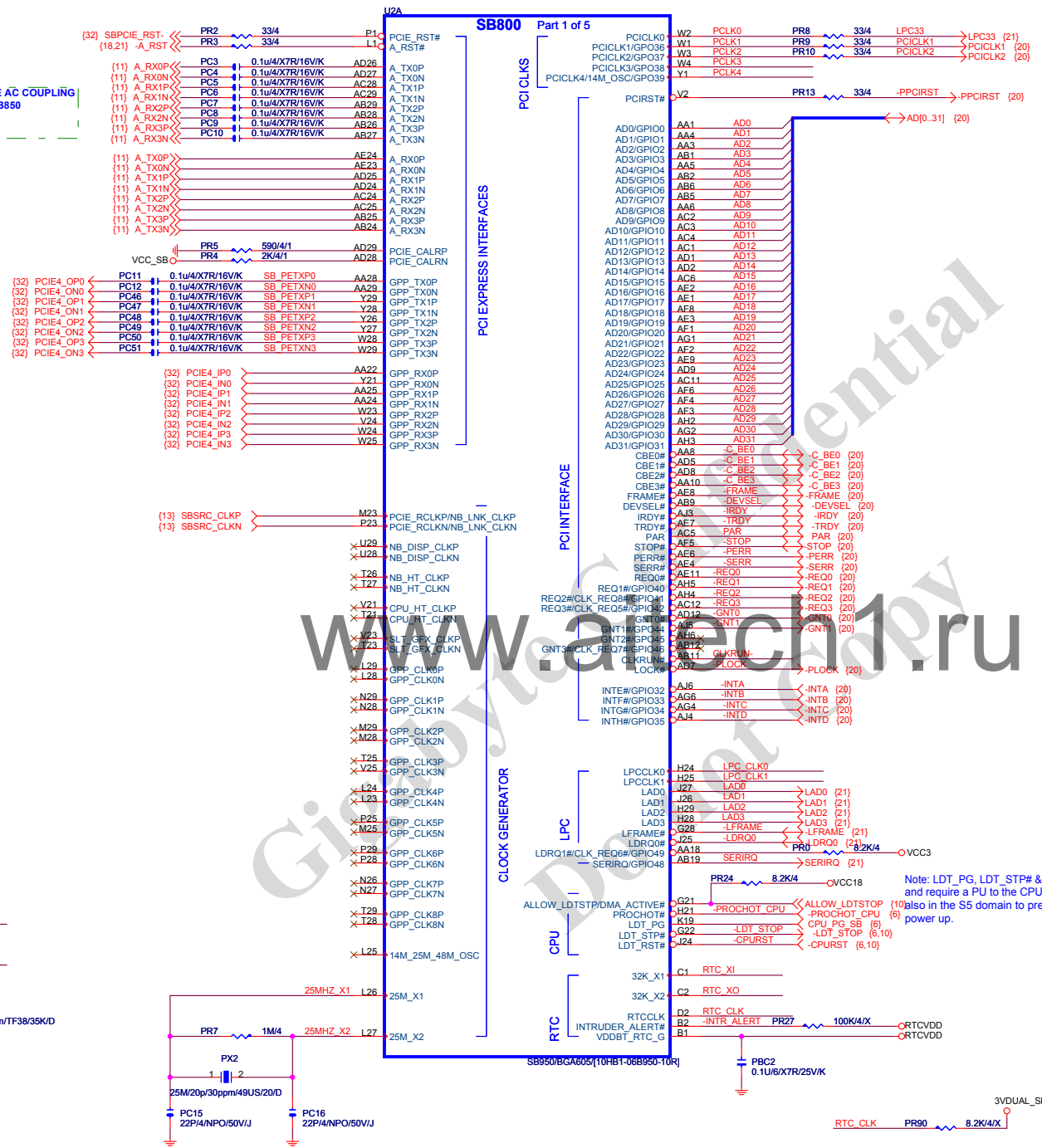
S.B HEATSINK



SB_HS[12SP2-030005-42S, 12SP2-030005-43R]

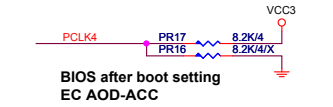


SHW/D0.64*5.08*6.74

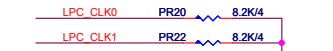


PULL HIGH
WATCHDOG TIMER ON NB_PWRGD ENABLED
USE DEBUG STRAPS

PULL LOW
WATCHDOG TIMER ON NB_PWRGD DISABLED
IGNORE DEBUG STRAPS



BIOS after boot setting
EC AOD-ACC

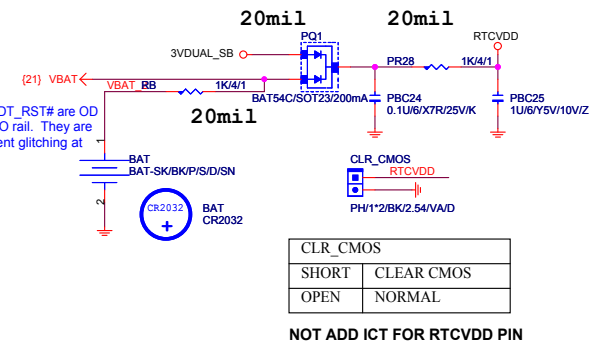


PULL HIGH
IMC ENABLED
AOD Extreme

PULL LOW
IMC DISABLED
DEFAULT

LPC_CLK0
Rev.A72

LPC_CLK1
CLKGEN ENABLED
CLKGEN DISABLED



NOT ADD ICT FOR RTCVDD PIN



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

VCC_SB 1K/4/1 9314/1
PR75 1K/4/1 9314/1
PR74 1K/4/1 9314/1

(26) -SATA_LED -SATA_LED AD11

TP5 -SATA_X1 AD16

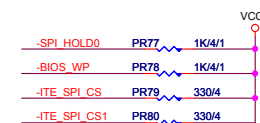
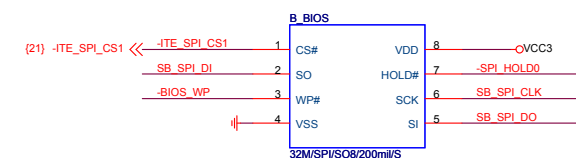
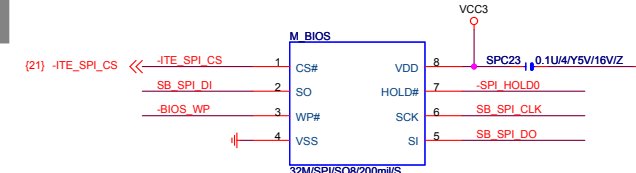
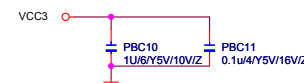
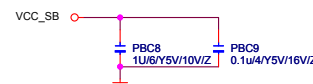
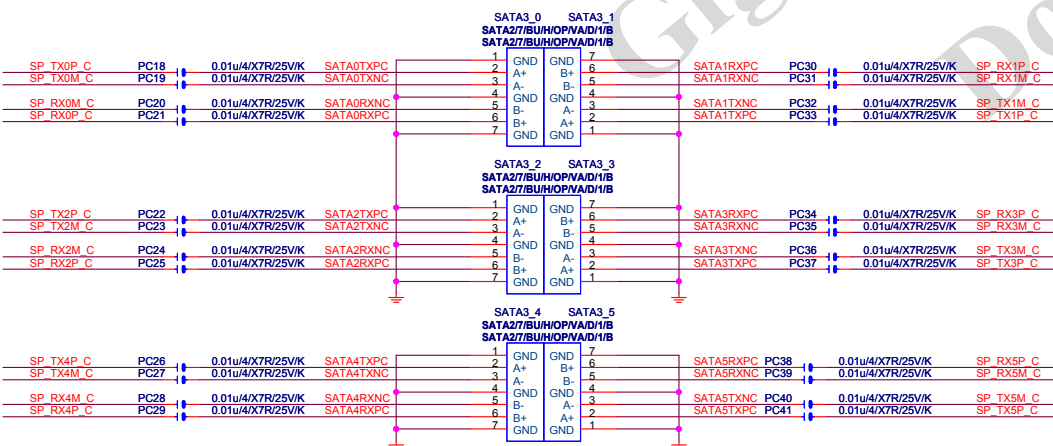
TP7 -SATA_X2 AC16

SB SPI DI PR70 22/4 SB SPI DI R J5
SB SPI DO PR71 22/4 SB SPI DO R F2
SB SPI CLK PR72 22/4 SB SPI CLK R K4
SB SPI CS_ITE PR73 22/4 SB SPI CS_ K9
X G2

SB950/BGA805(10HB1-06B950-10R)

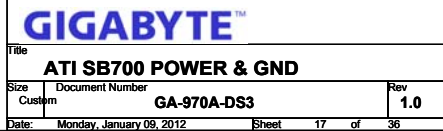


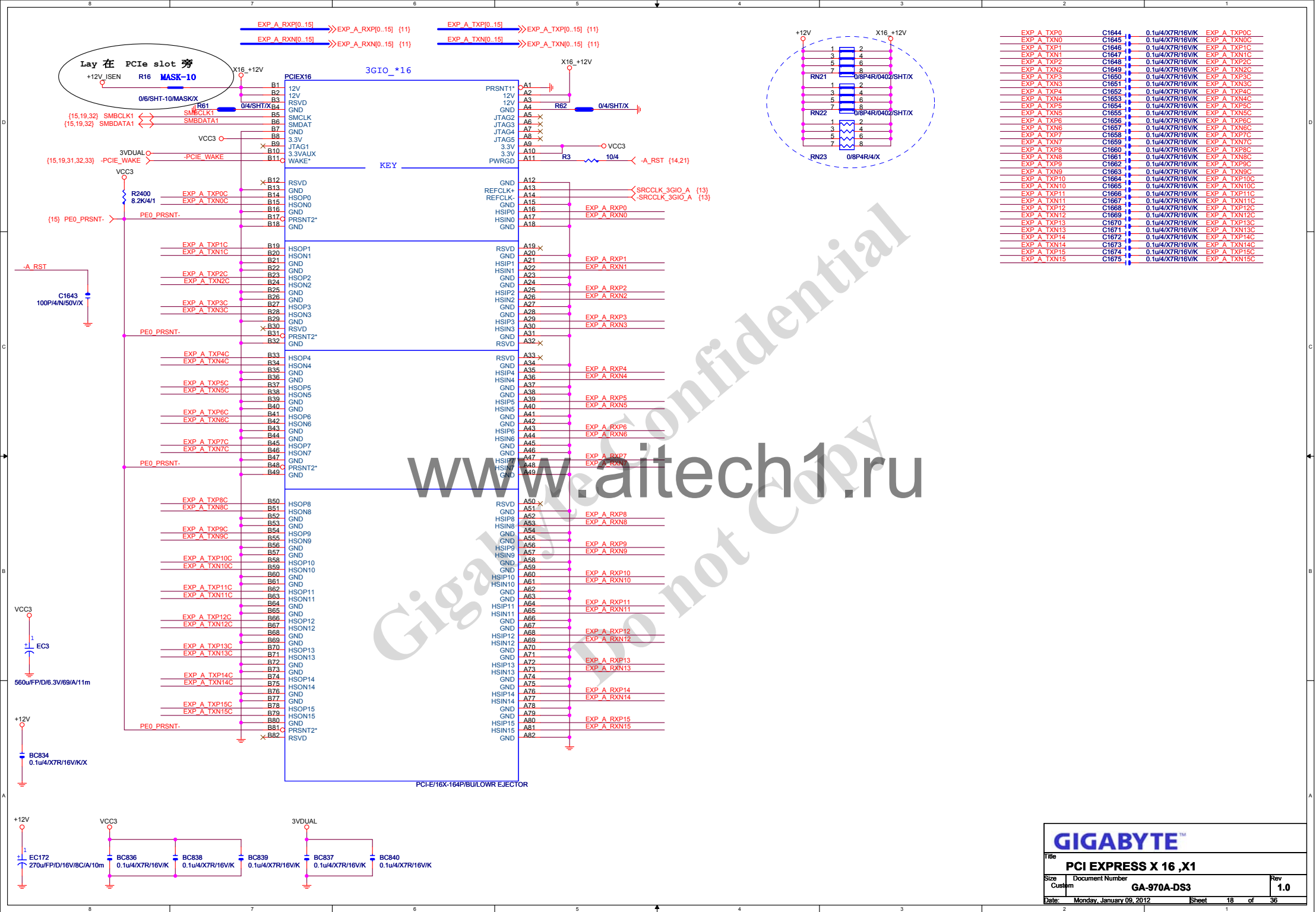
PLACE SATA AC COUPLING
CAPS CLOSE TO SB850

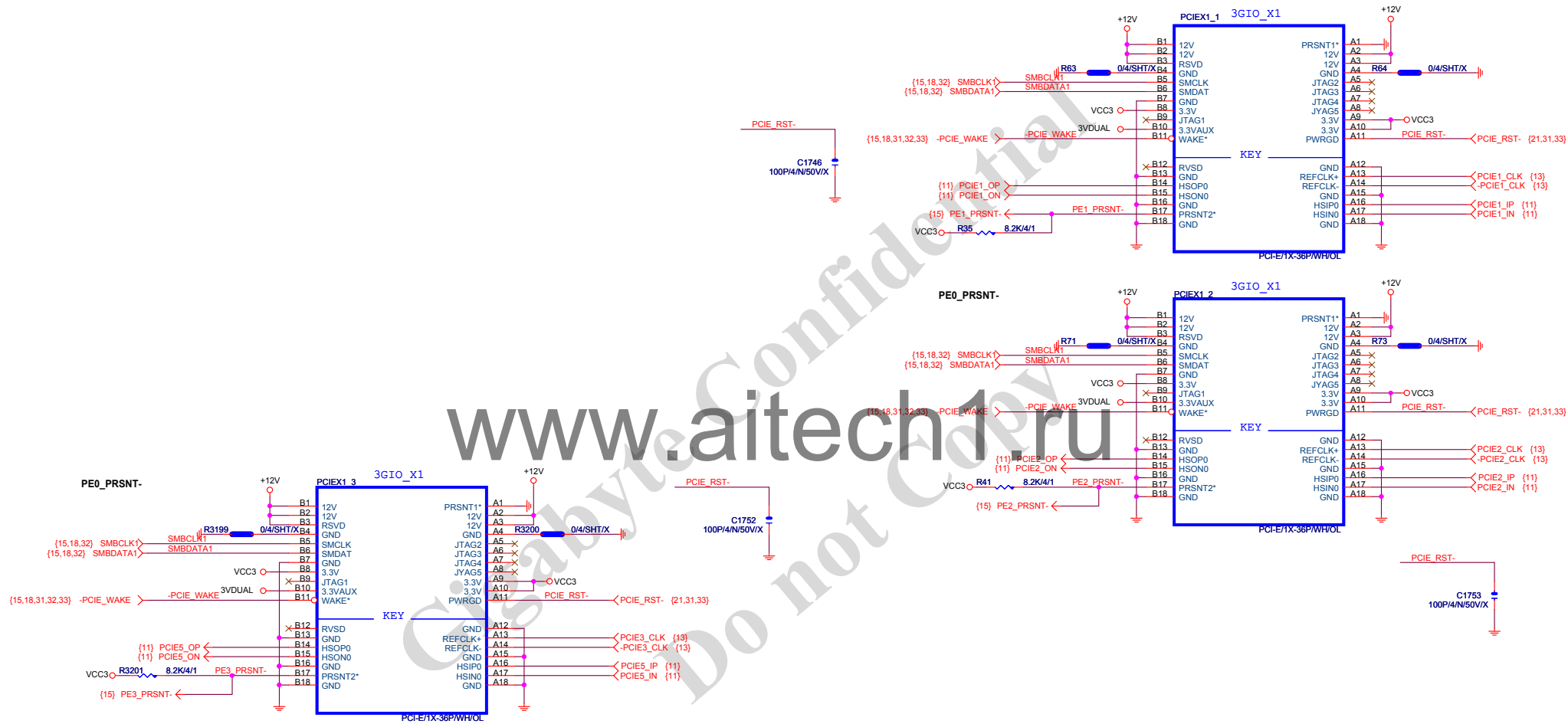


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Title			ATI SB700 SATA/IDE/HWM/SPI
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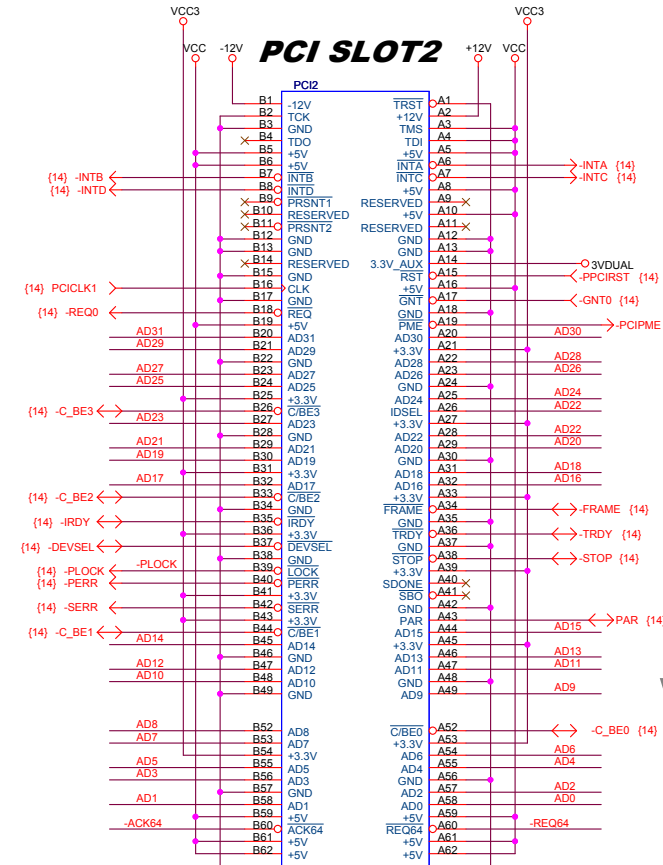


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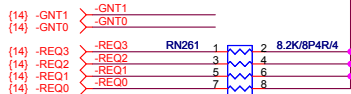
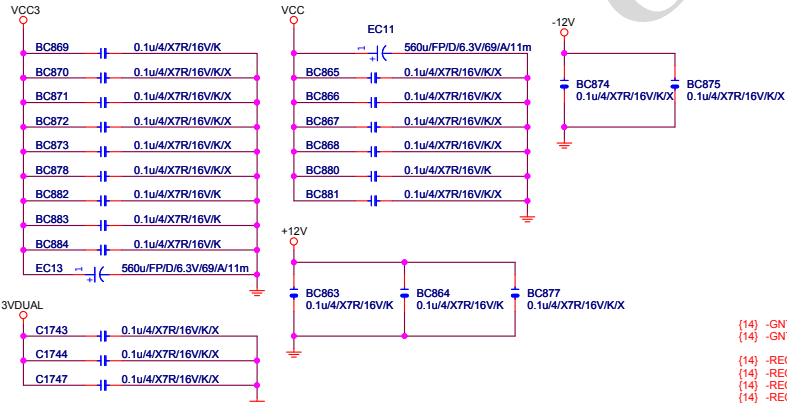
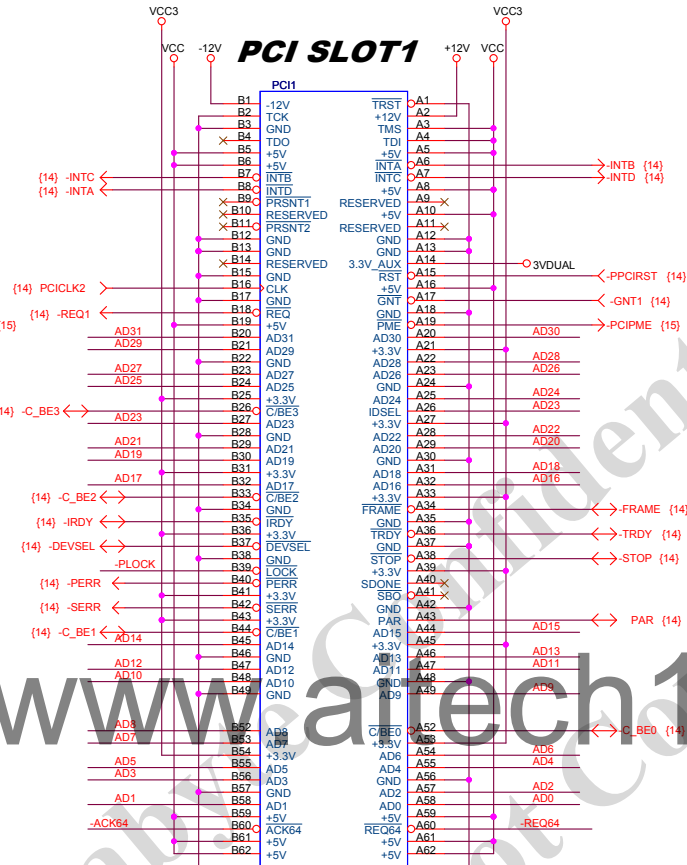
PCI SLOT 1,2

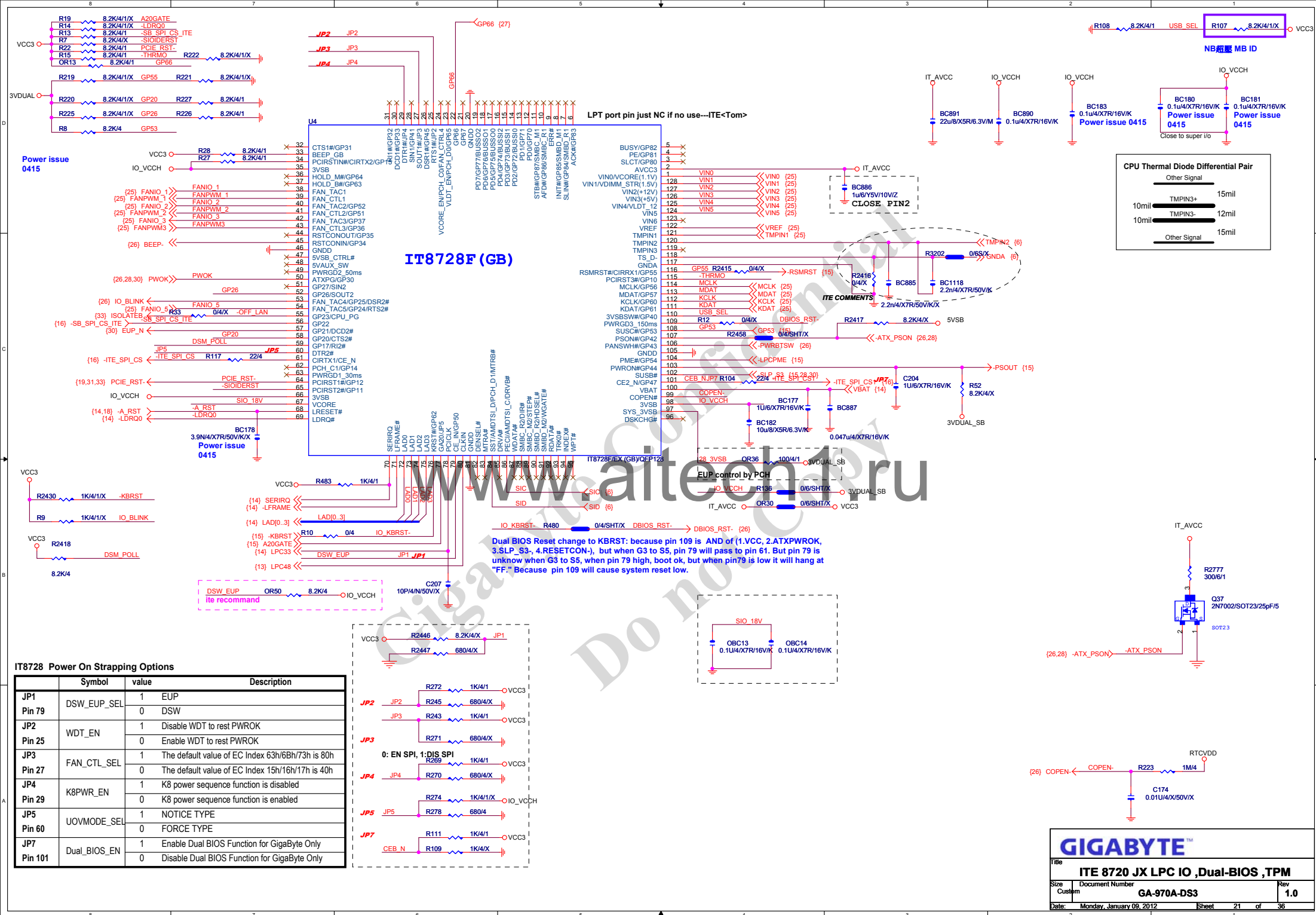
(14) AD[0..31] ↔ AD[0..31]

PCI SLOT2

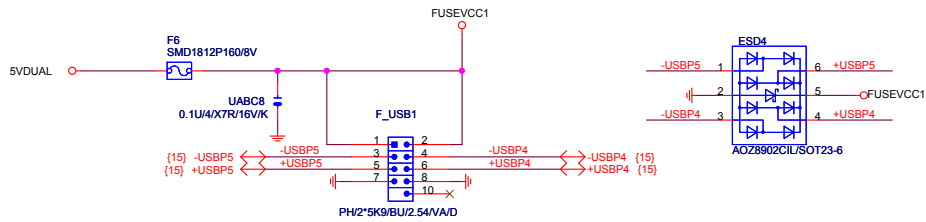


PCI SLOT1

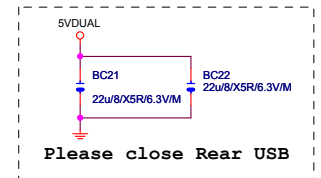
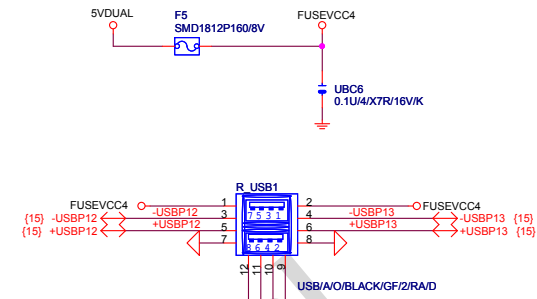




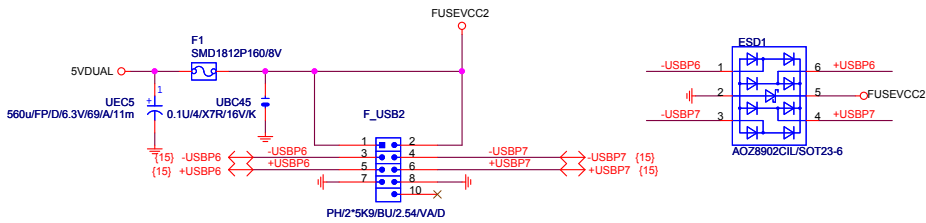
FRONT SIDE USB1



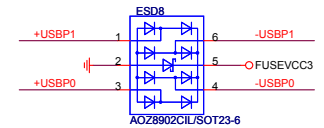
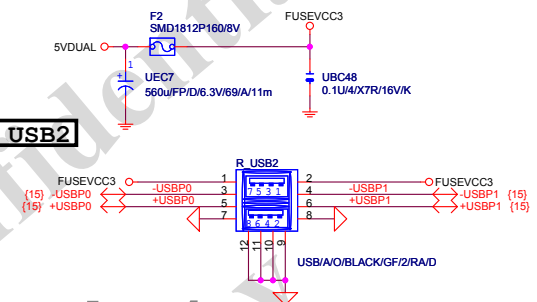
REAR USB1



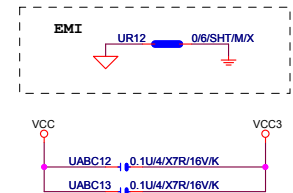
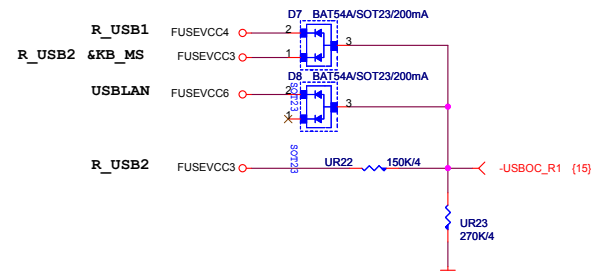
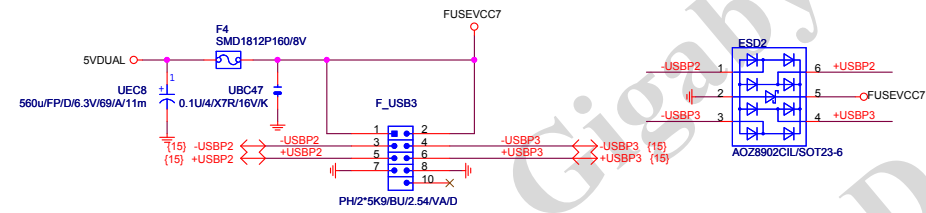
FRONT SIDE USB2



REAR USB2



FRONT SIDE USB3



For 892 with LDO

892WOR

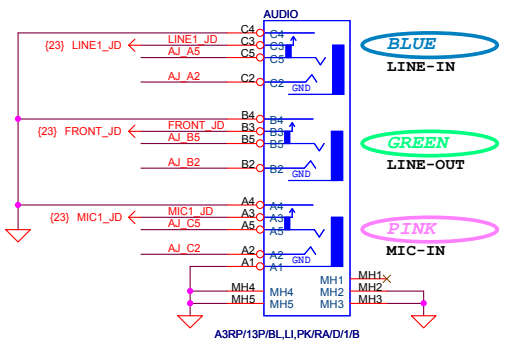
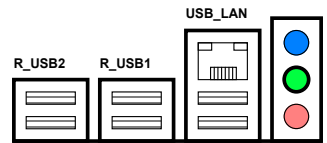
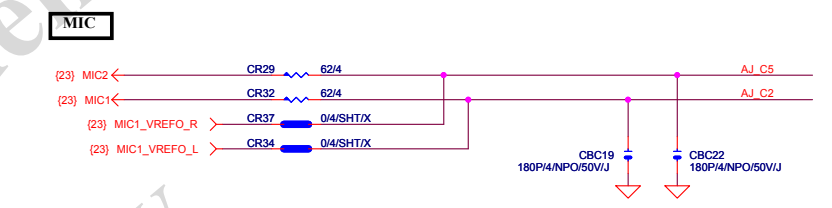
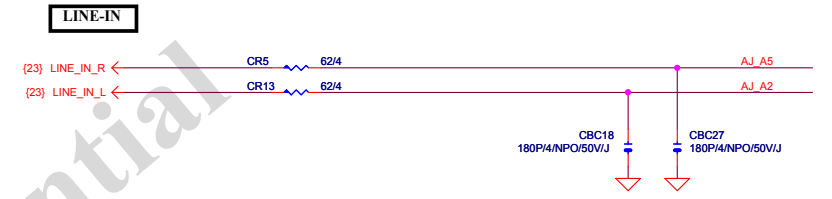
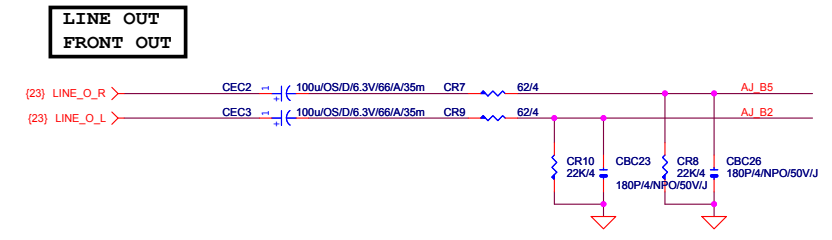
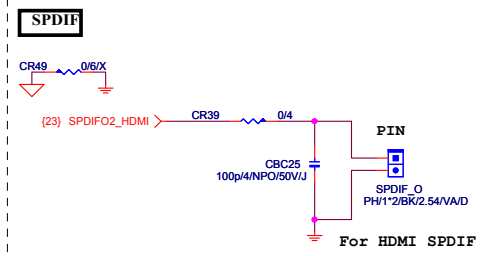
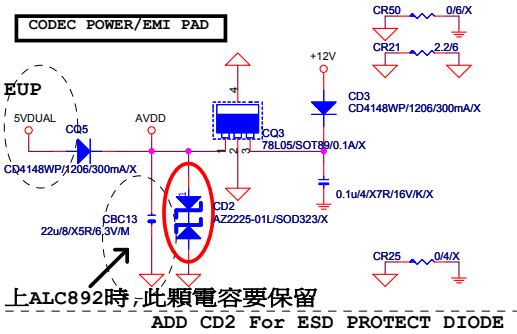
CBC7
22uF/85V/5R/6.3V/M

CR51
0.6

5VSDUAL

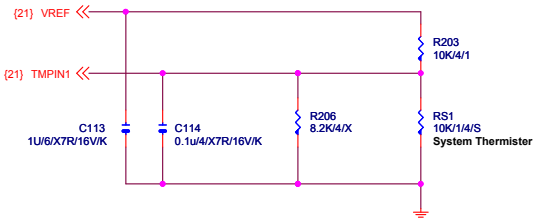
CD1
AZ2225-01L/SOD323



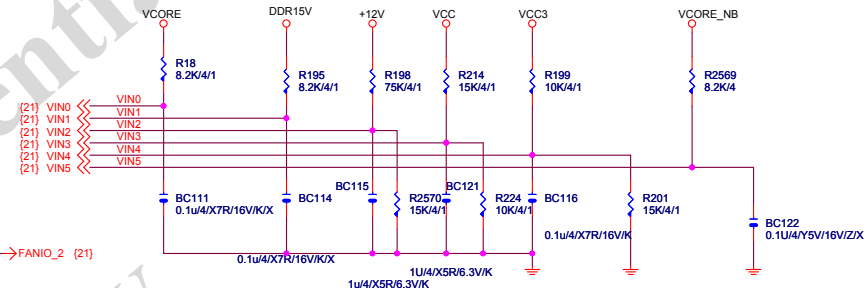
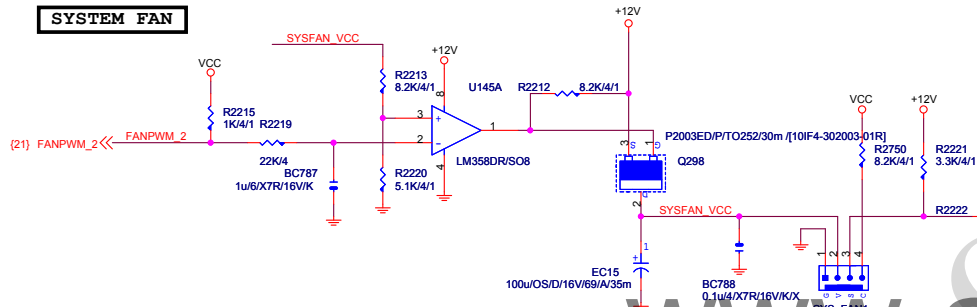


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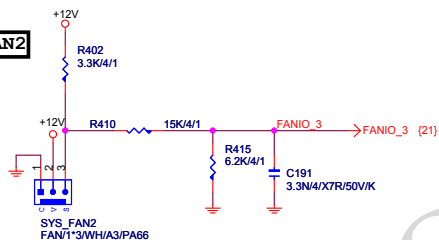
Hardware Monitor circuits



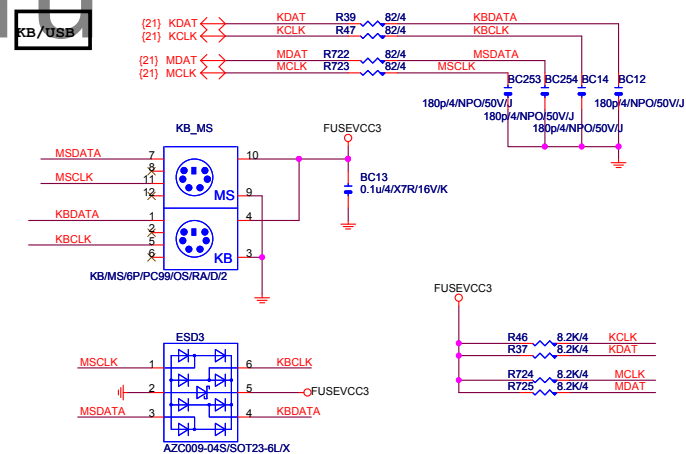
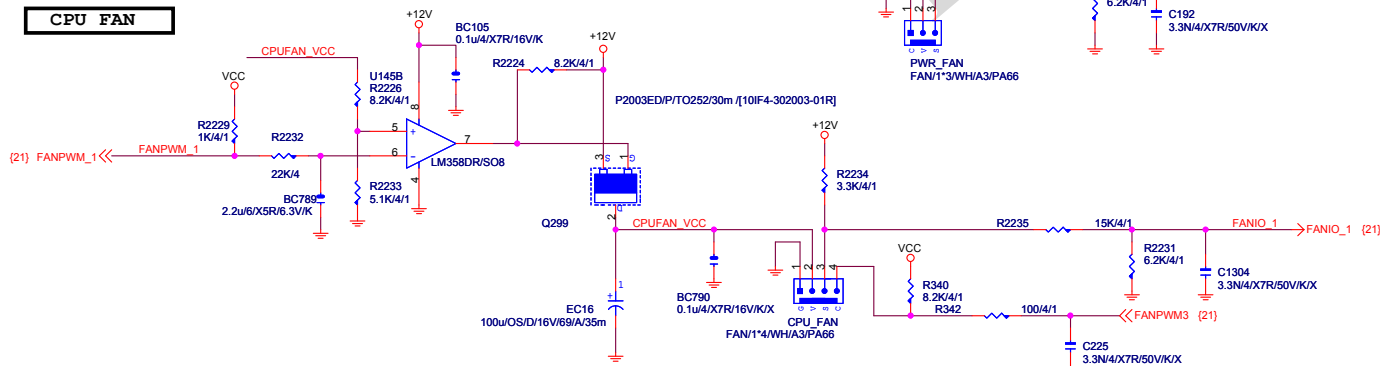
SYSTEM FAN



SYSTEM FAN2



CPU FAN



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Title: **FAN/HWMO KB/MS**

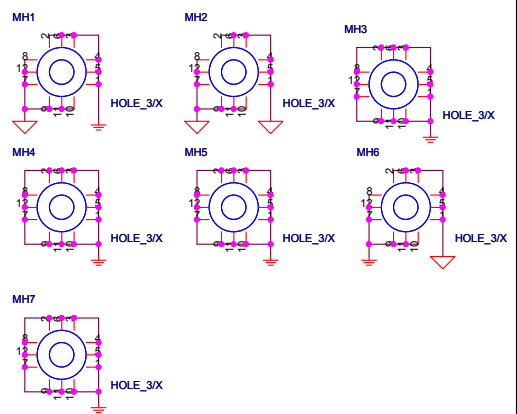
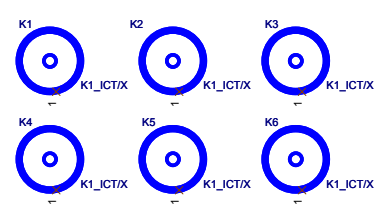
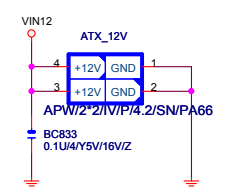
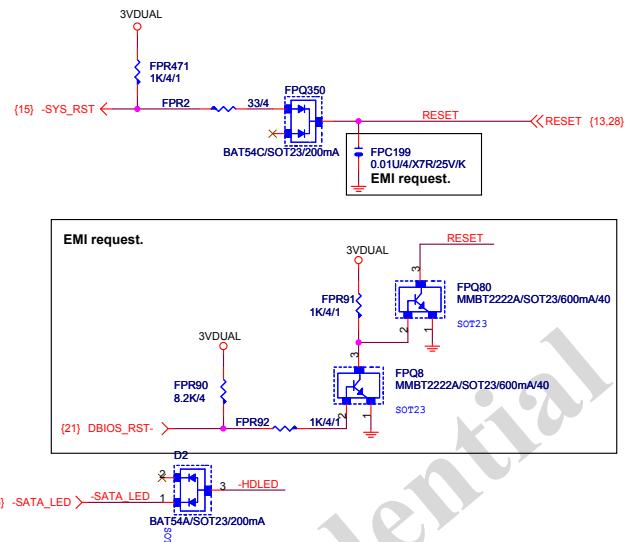
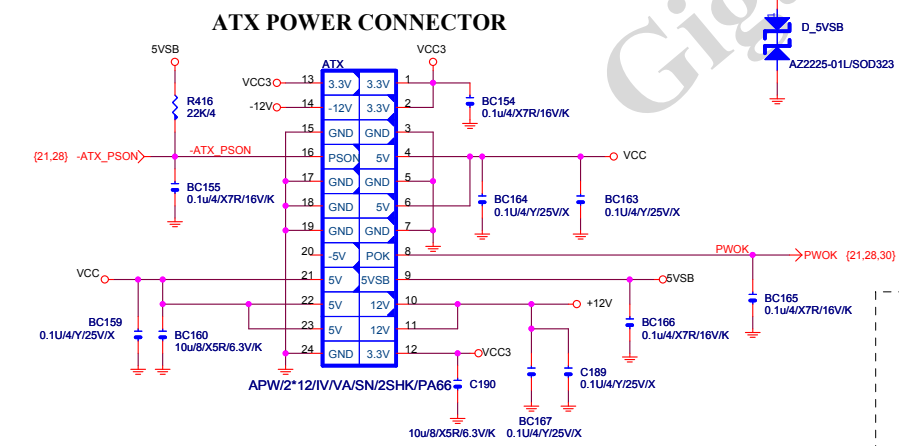
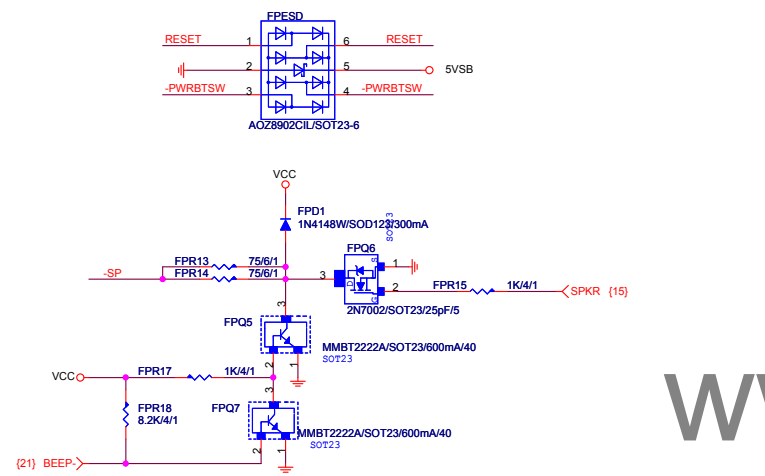
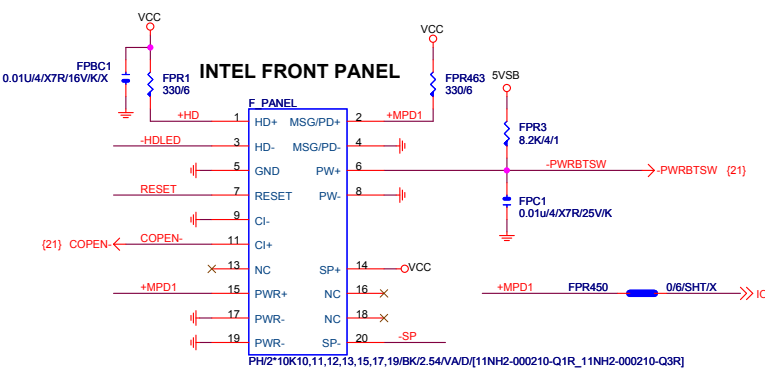
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Document Number: **GA-970A-DS3**

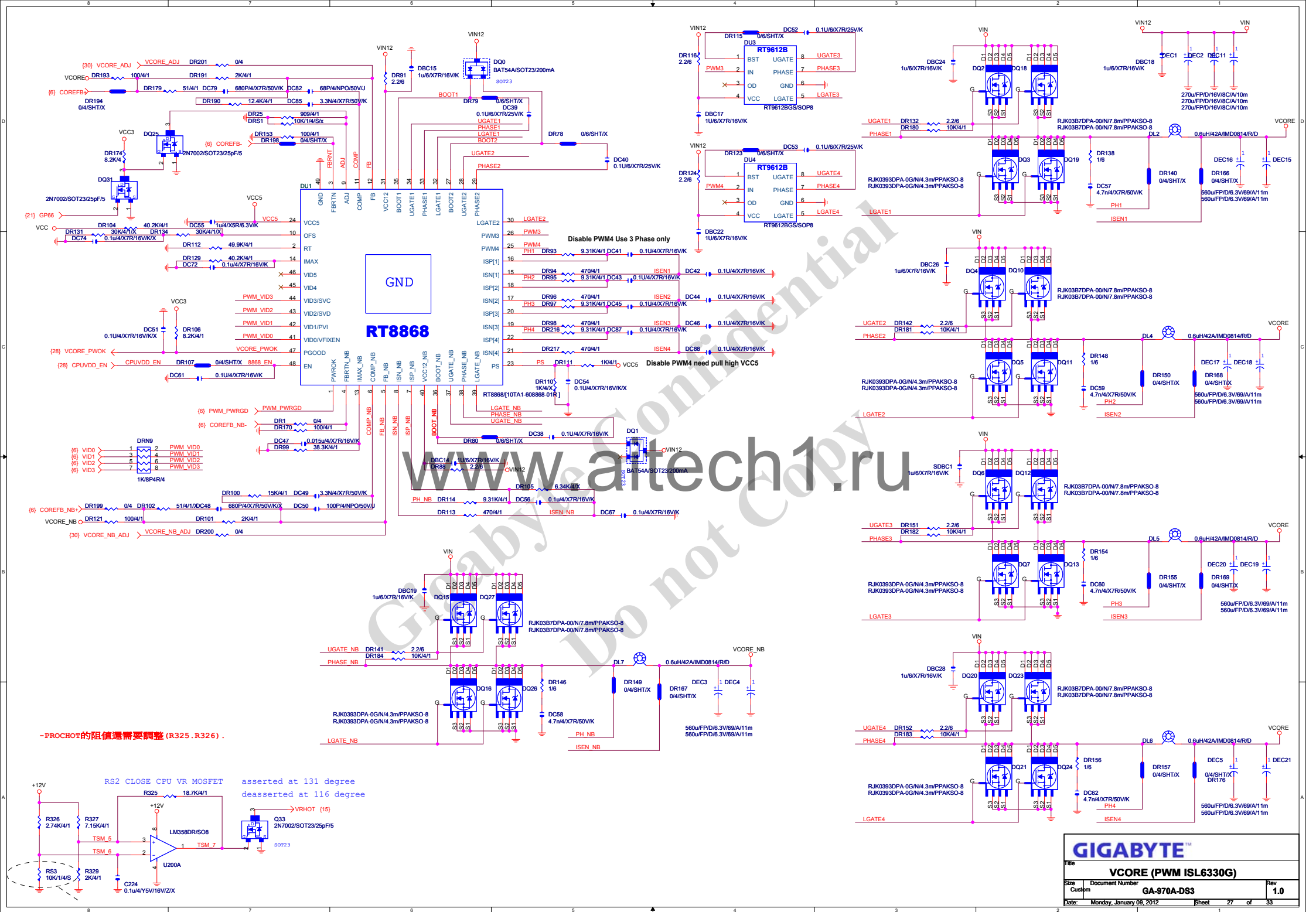
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For Seasonic 900W
Power supply
cant Boot issue



-PROCHOT的阻值还需要调整 (R325、R326) .

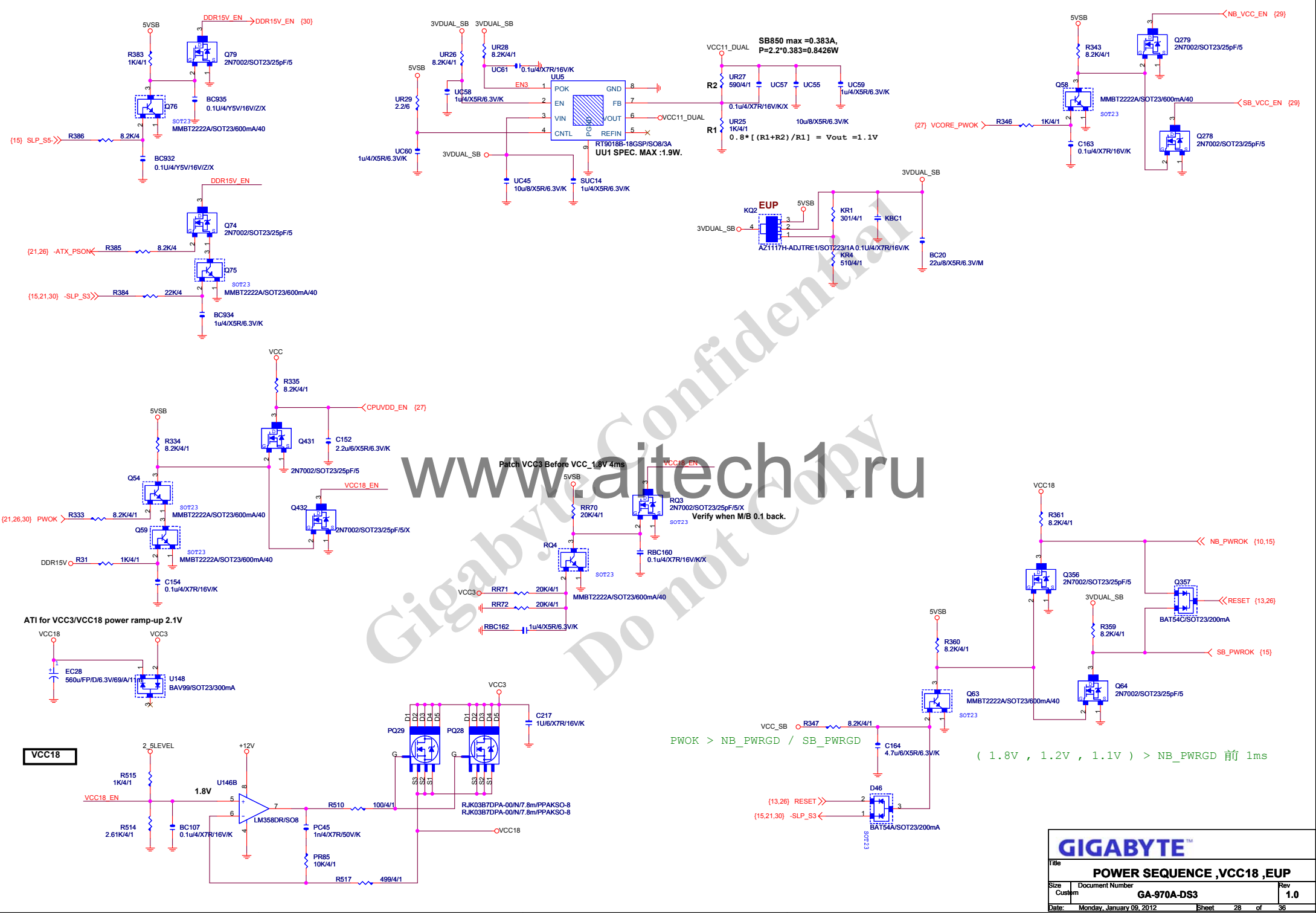
asserted at 131 degree
deasserted at 116 degree

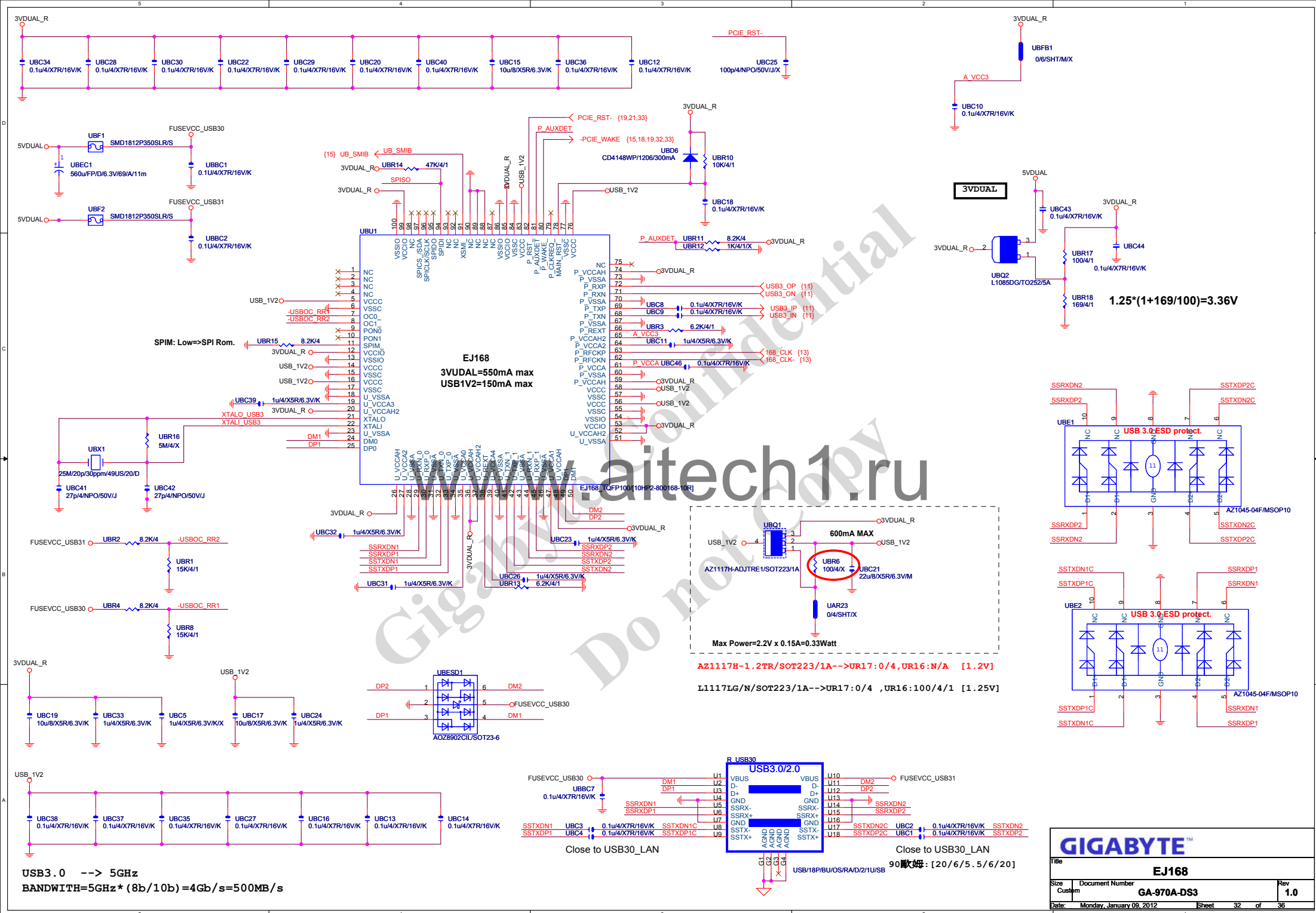
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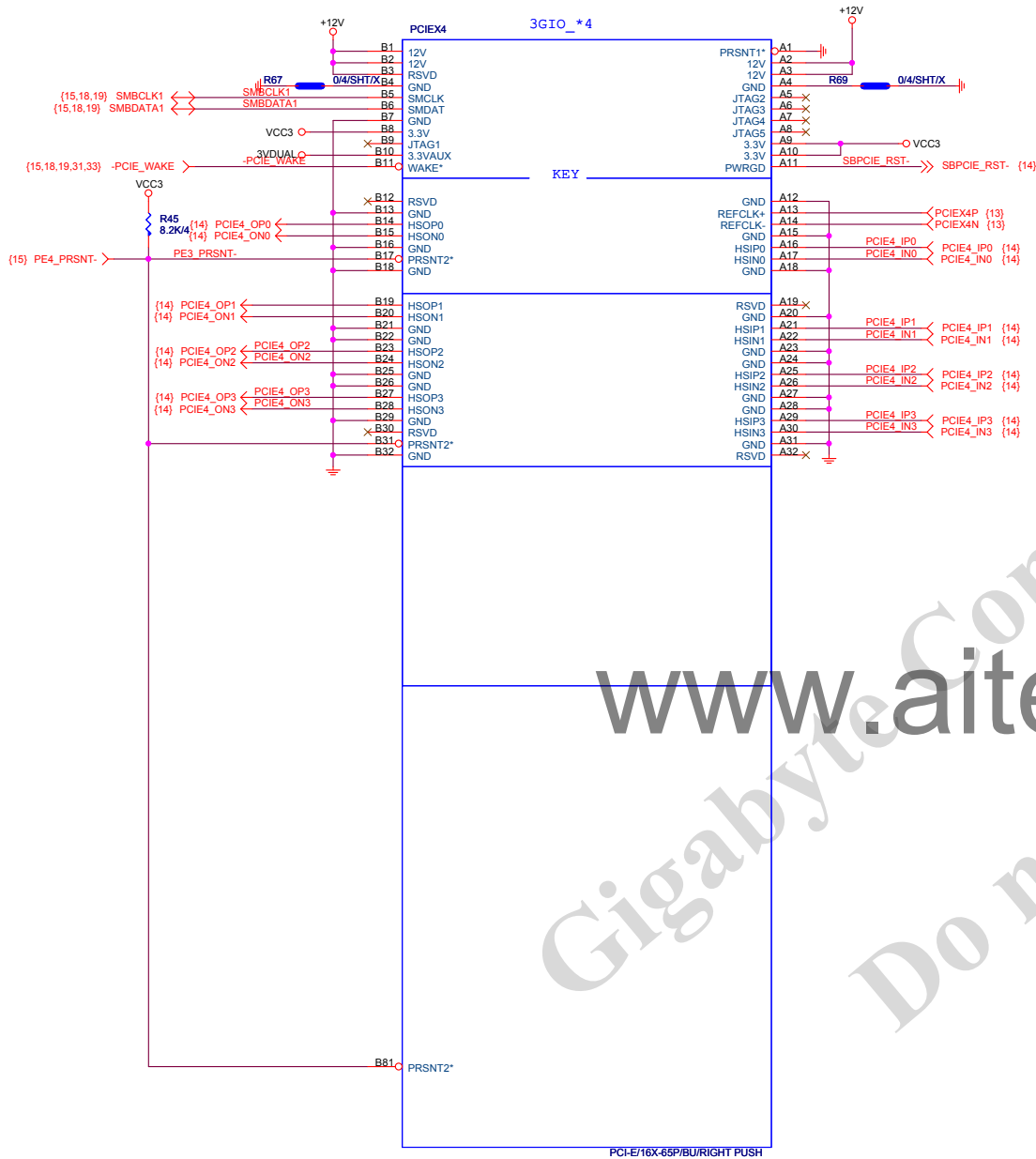
File: VCore (PWM ISL6330G)

Size: Document Number: GA-970A-DS3

Date: Monday, January 09, 2012 Sheet: 27 of 33







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