


GA-970A-D3P

Revision : 1.0

www.xinxunwei.com 400-800-9990



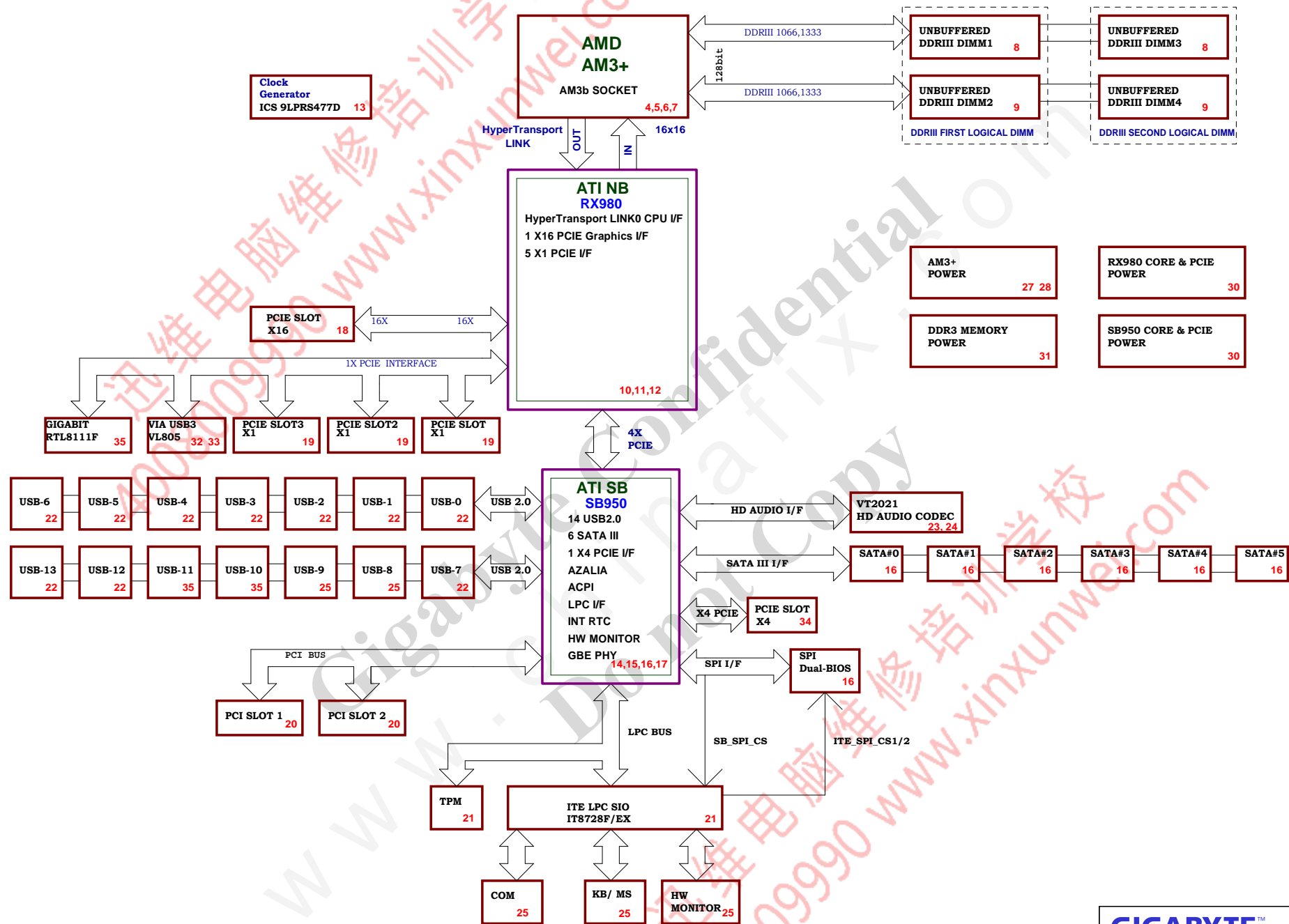
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03	BLOCK DIAGRAM
04	CPU HYPER TRANSPORT
05	CPU DDRIII MEMORY
06	CPU CONTROL
07	CPU POWER & GND
08	DDRIII CHANNEL A
09	DDRIII CHANNEL B
10	RD980 HT,SYS I/F
11	RD980 PCIE I/F ,SWITCH
12	RD980 POWER & GND
13	ICS 9LPRS477D
14	SB950 PCIE/PCI/CPU/LPC/CLK
15	SB950 ACPI/USB/GPIO/AUDIO
16	SB950 SATA/SPI/IDE/HWM
17	SB950 POWER & GND
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20	PCI SLOT 1, 2
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24	AUDIO JACK
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Title			
COVER SHEET			
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Circuit or PCB layout change for next version

Version: 1.0

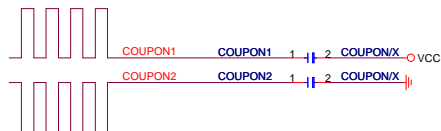
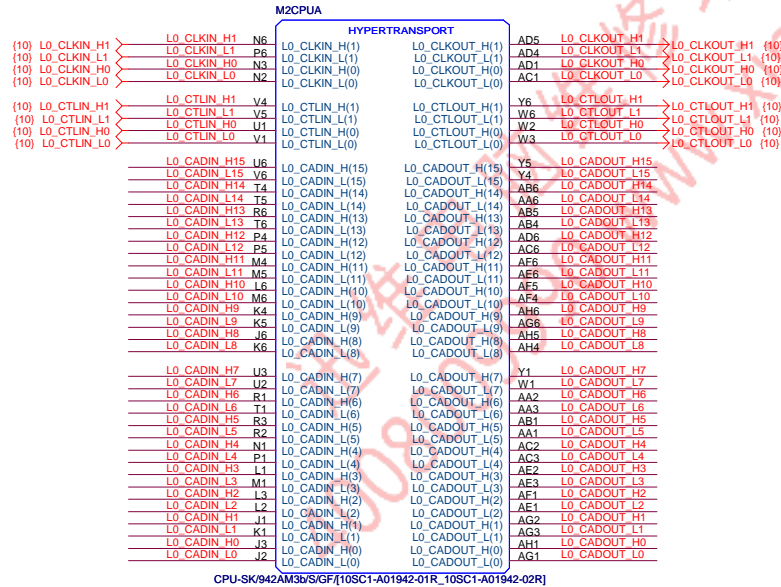
2013.02.21



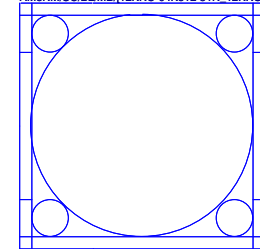
L0_CADIN_L[0..15] < L0_CADIN_L[0..15] (10)
 L0_CADIN_H[0..15] < L0_CADIN_H[0..15] (10)
 L0_CADOUT_L[0..15] < L0_CADOUT_L[0..15] (10)
 L0_CADOUT_H[0..15] < L0_CADOUT_H[0..15] (10)

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

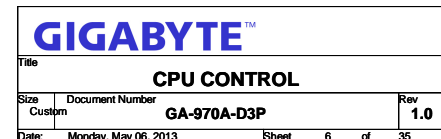


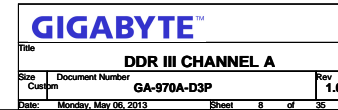
M2CPU
AM3RM/SC/BLMB/12KRC-04K812-31R_12KRC-04K812-32R



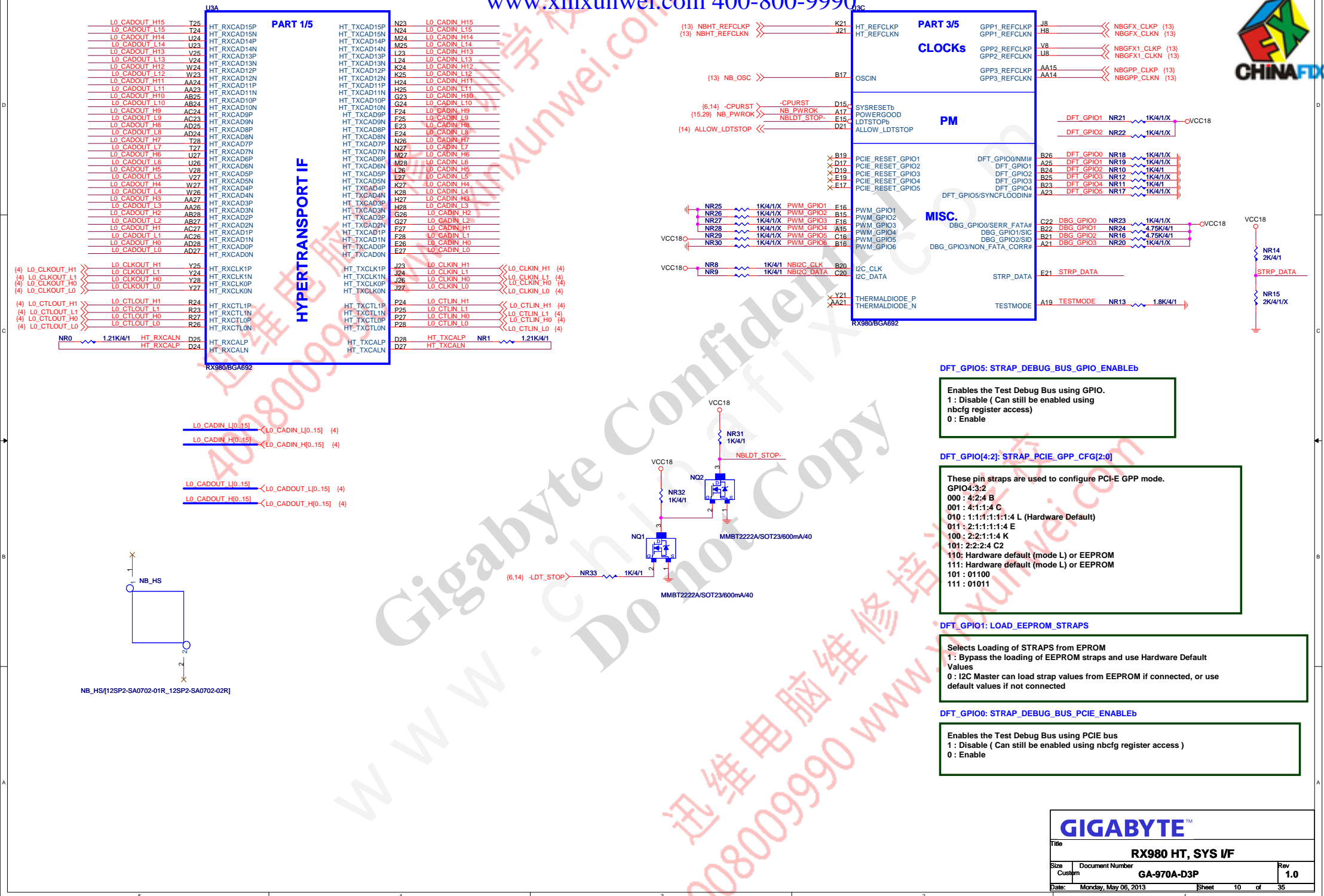
GIGABYTE™

Title			
CPU HYPER TRANSPORT			
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PCIE ALINK

SB_TX3P	AG2
SB_TX3N	AH2
SB_TX2P	AF2
SB_TX2N	AG2
SB_TX1P	AF2
SB_TX1N	AG2
SB_TX0P	AG2
SB_TX0N	AH2

A_TX3P_C
A_TX3N_C
A_TX2P_C
A_TX2N_C
A_TX1P_C
A_TX1N_C
A_TX0P_C
A_TX0N_C

NC11	0.1u/4
NC12	0.1u/4
NC14	0.1u/4
NC13	0.1u/4
NC15	0.1u/4
NC16	0.1u/4
NC18	0.1u/4
NC17	0.1u/4

X7R/16V/K
X7R/16V/K
X7R/16V/K
X7R/16V/K
X7R/16V/K
X7R/16V/K
X7R/16V/K

```
A_TX3P {14}
A_TX3N {14}
A_TX2P {14}
A_TX2N {14}
A_TX1P {14}
A_TX1N {14}
A_TX0P {14}
A_TX0N {14}
```



20

www

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RX980/BGA692

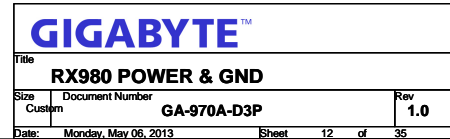
PCI_E slot TX need CAP close to slot side

GPP TX5P C	NC4	0.1u4/X7R16VK	→PCIE5_OP (19)
GPP TX5N C	NC3	0.1u4/X7R16VK	→PCIE5_ON (19)
GPP TX4P C	NC6	0.1u4/X7R16VK	→ML_OP (35)
GPP TX4N C	NC5	0.1u4/X7R16VK	→ML_ON (35)
GPP TX2P C	NC10	0.1u4/X7R16VK	→PCIE2_OP (19)
GPP TX2N C	NC9	0.1u4/X7R16VK	→PCIE2_ON (19)
GPP TX1P C	NC20	0.1u4/X7R16VK	→PCIE1_OP (19)
GPP TX1N C	NC19	0.1u4/X7R16VK	→PCIE1_ON (19)
GPP TX0P C	NC2	0.1u4/X7R16VK	→USB3_OP (32)
GPP TX0N C	NC1	0.1u4/X7R16VK	→USB3_ON (32)

A TX3P C	NC11	0.1u/4X7R/16VK	A TX3P (14)
A TX3N C	NC12	0.1u/4X7R/16VK	A TX3N (14)
A TX2P C	NC14	0.1u/4X7R/16VK	A TX2P (14)
A TX2N C	NC13	0.1u/4X7R/16VK	A TX2N (14)
A TX1P C	NC15	0.1u/4X7R/16VK	A TX1P (14)
A TX1N C	NC16	0.1u/4X7R/16VK	A TX1N (14)
A TX0P C	NC18	0.1u/4X7R/16VK	A TX0P (14)
A TX0N C	NC17	0.1u/4X7R/16VK	A TX0N (14)

PLACE THESE CAP CLOSE TO NB.

Title			
RX980 PCIE I/F			
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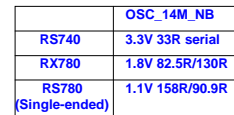


100M DIFF

* the GFX_REFCLK input is required for all cases

-

Parallel Resonance Crystal



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

				
Title				
ICS 9LPRS477D				
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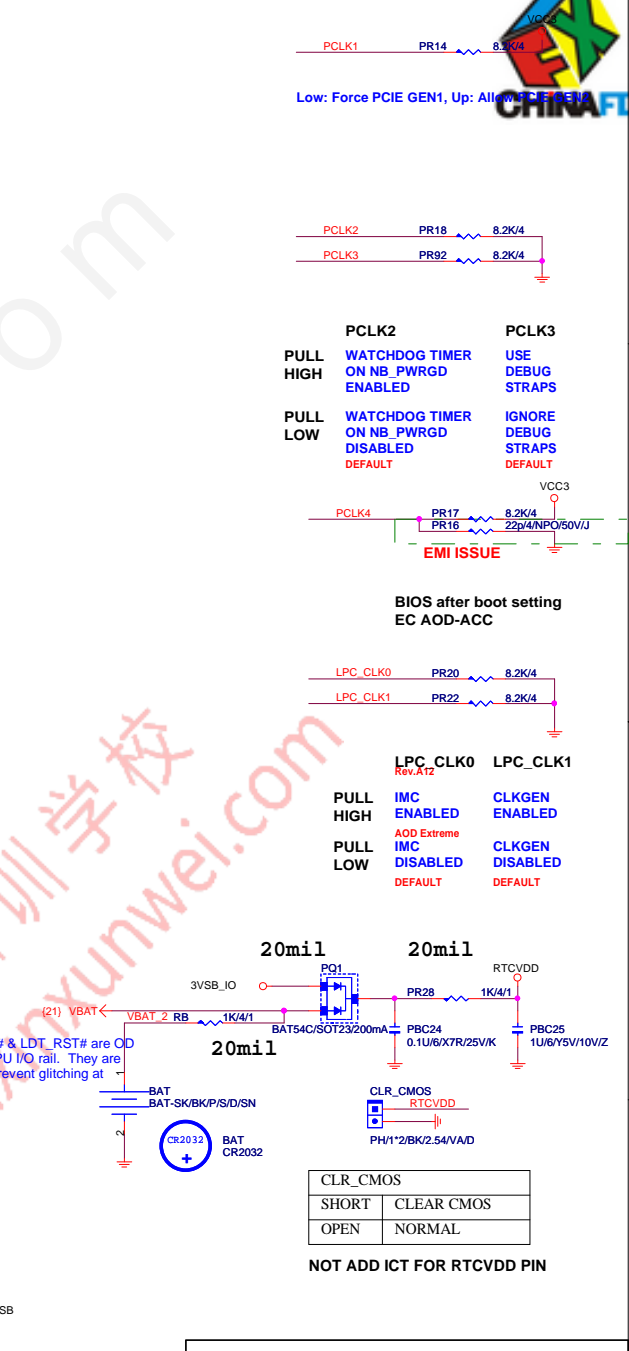
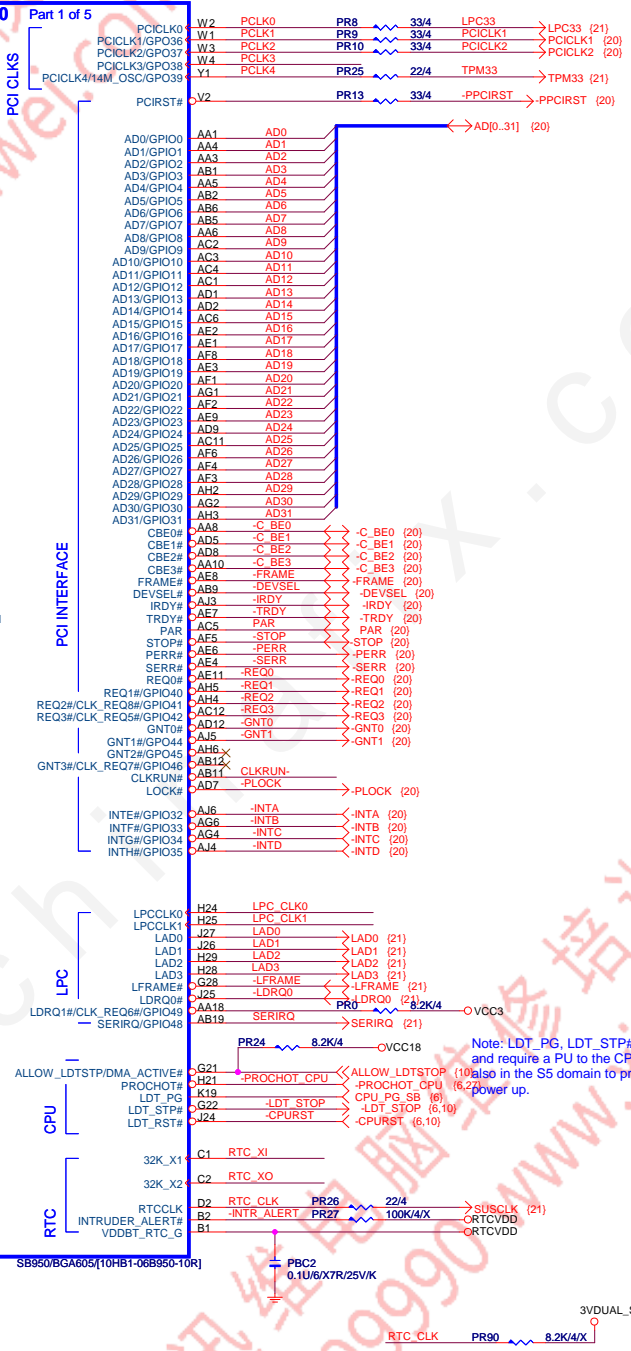
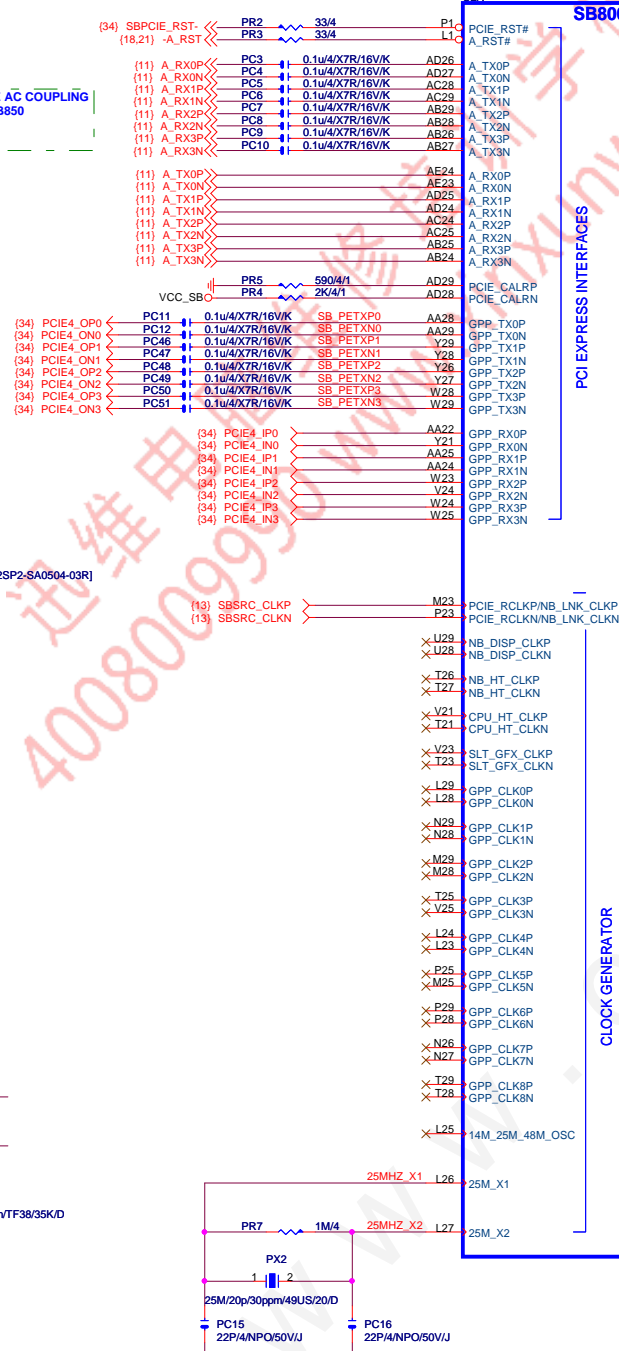


PLACE THESE PCIE AC COUPLING CAPS CLOSE TO SB850

S.B HEATSINK

SB_HS

SB_HS[12SP2-SA0504-01R_12SP2-SA0504-02R_12SP2-SA0504-03R]

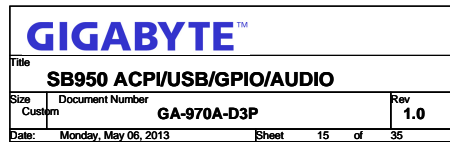


GIGABYTE

Title: **SB950 PCIE/PCI/CPU/LPC**

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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 C

(26) -SATA_LED

TP5

TP7

SB SPI DI PR70 22/4
SB SPI DO PR71 22/4
SB SPI CLK PR72 22/4
SB SPI CS_ITE PR73 22/4

(21) -SB_SPI_CS_ITE

SP TX0P C AH9
SP TX0M C AJ9
SP RX0M C AJ8
SP RX0P C AH8
SP TX1P C AH10
SP TX1M C AJ10
SP RX1M C AG10
SP RX1P C AF10
SP TX2P C AG12
SP TX2M C AF12
SP RX2M C AJ12
SP RX2P C AH12
SP TX3P C AH14
SP TX3M C AJ14
SP RX3M C AG14
SP RX3P C AF14
SP TX4P C AG17
SP TX4M C AF17
SP RX4M C AJ17
SP RX4P C AH17
SP TX5P C AJ18
SP TX5M C AH18
SP RX5M C AH19
SP RX5P C AJ19

SATA_CALRP AB14
SATA_CALRN AA14
SATA_LED AD11
SATA_X1 AD16
SATA_X2 AC16

SATA_ACT#/GPIO67

SATA_X1

SATA_X2

SPI DI/GPIO164 J5
SPI DO/GPIO163 J2
SPI CLK/GPIO162 K4
SPI CS#/GPIO165 K9
ROM_RST#/GPIO161 X G2

SB850/BGA605(10HB1-06B950-10R)

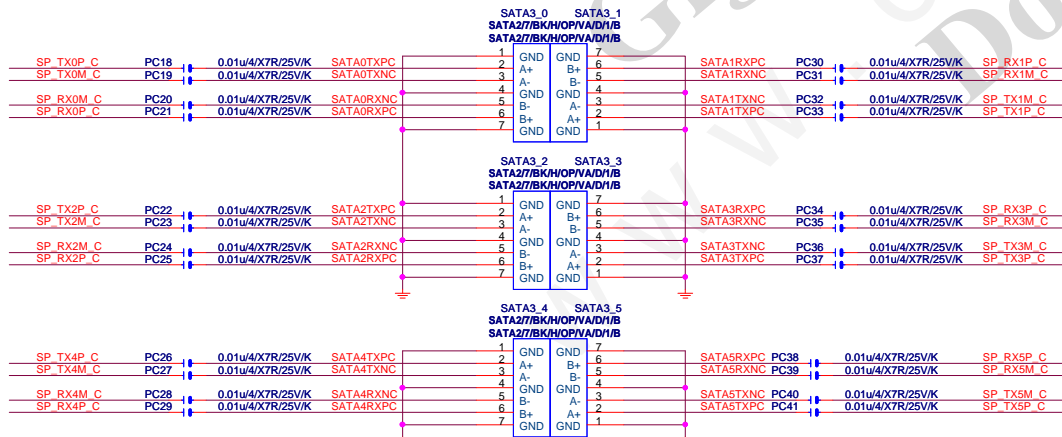
SERIAL ATA

HW MONITOR

SPIROM



PLACE SATA AC COUPLING
CAPS CLOSE TO SB850

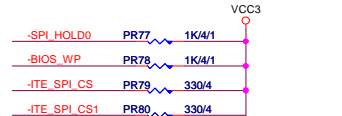
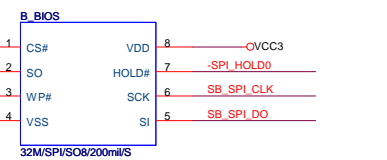
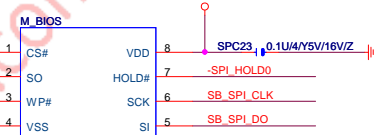


VCC_SB C

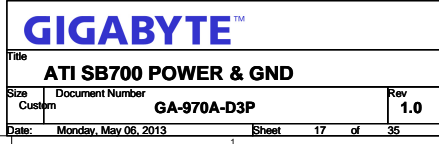
VCC3 C

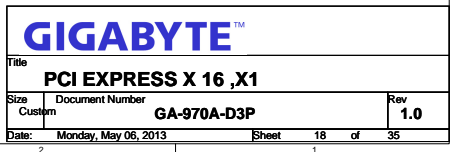
(21) -ITE_SPI_CS

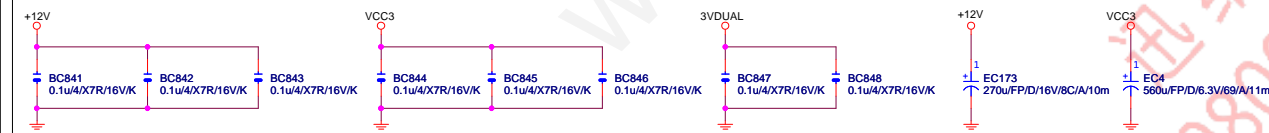
(21) -ITE_SPI_CS1



GIGABYTE™			
Title			
SB950 SATA/IDE/HWM/SPI			
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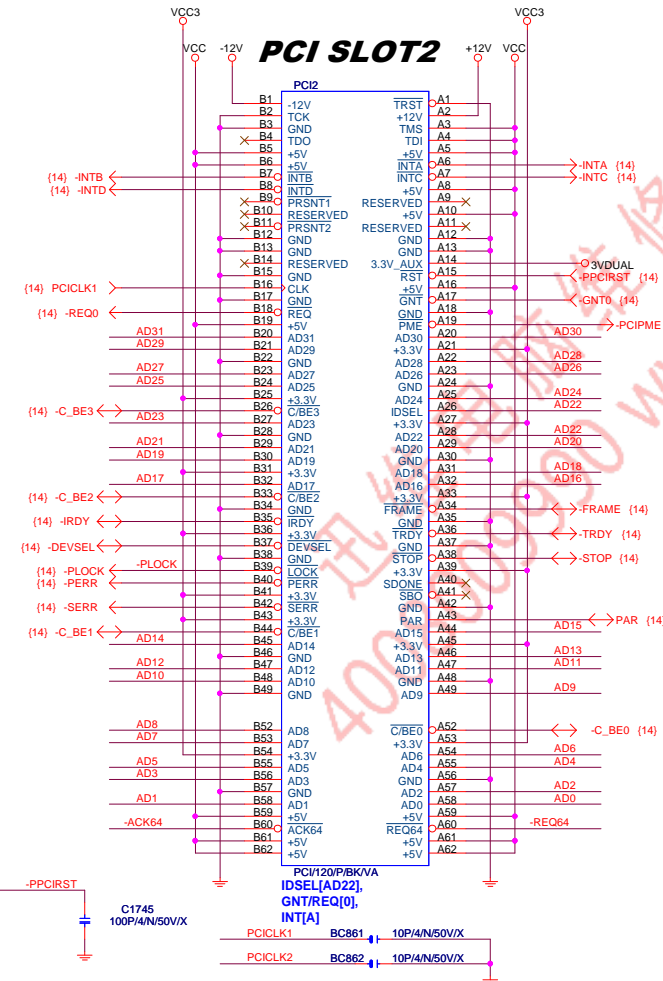




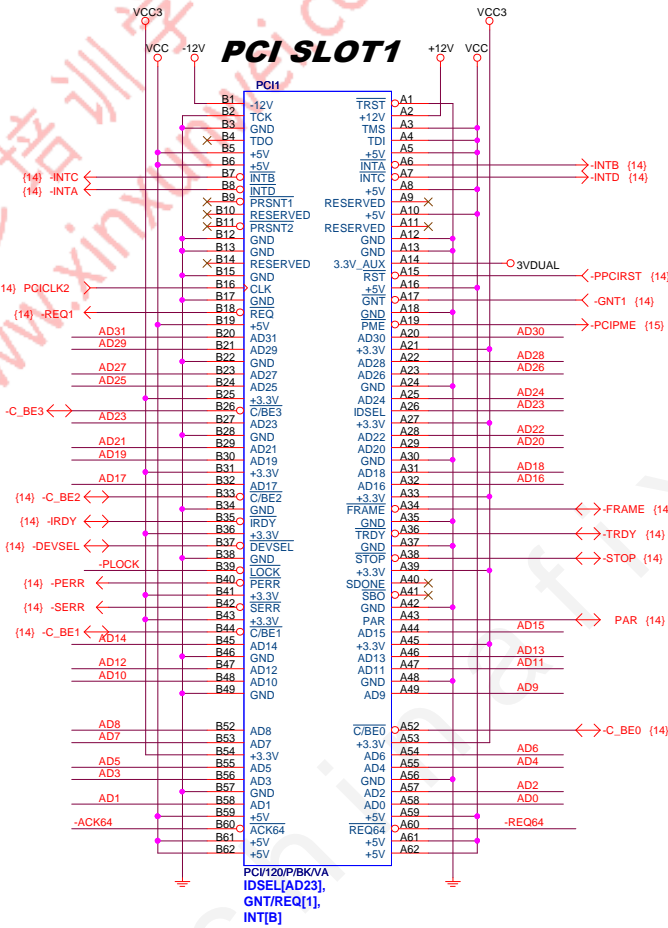
PCI SLOT 1,2

(14) AD[0..31] ↔ AD[0..31]

PCI SLOT2



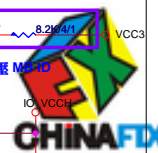
PCI SLOT1



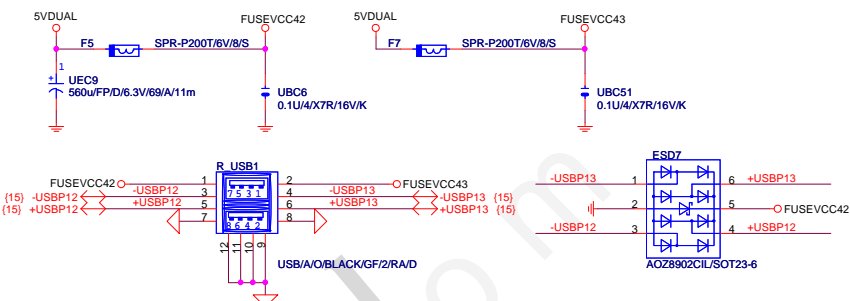
(14) -GNT1 ↔ -GNT1
(14) -GNT0 ↔ -GNT0
(14) -REQ3 ↔ -REQ3
(14) -REQ2 ↔ -REQ2
(14) -REQ1 ↔ -REQ1
(14) -REQ0 ↔ -REQ0

GIGABYTE™

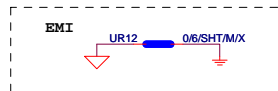
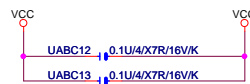
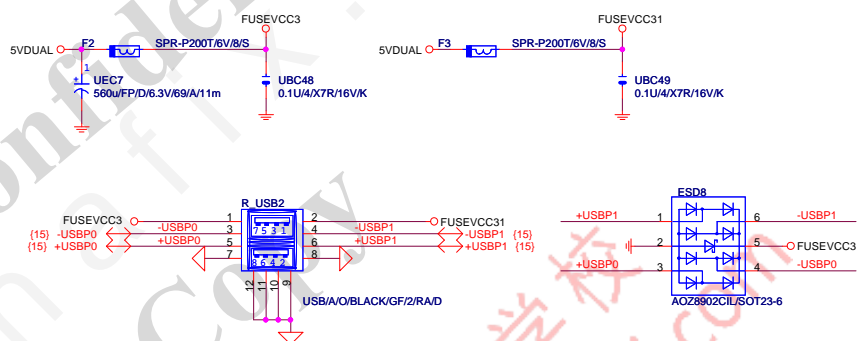
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PCI SLOT 1,2		
Size	Document Number	Rev
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REAR USB1

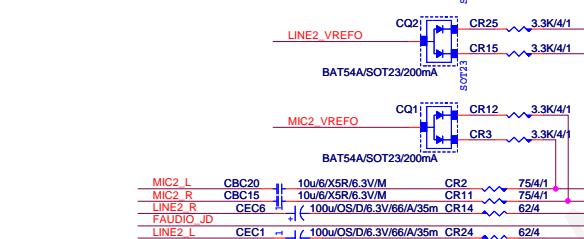
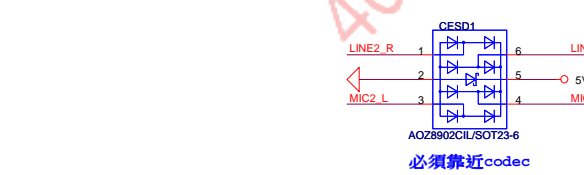
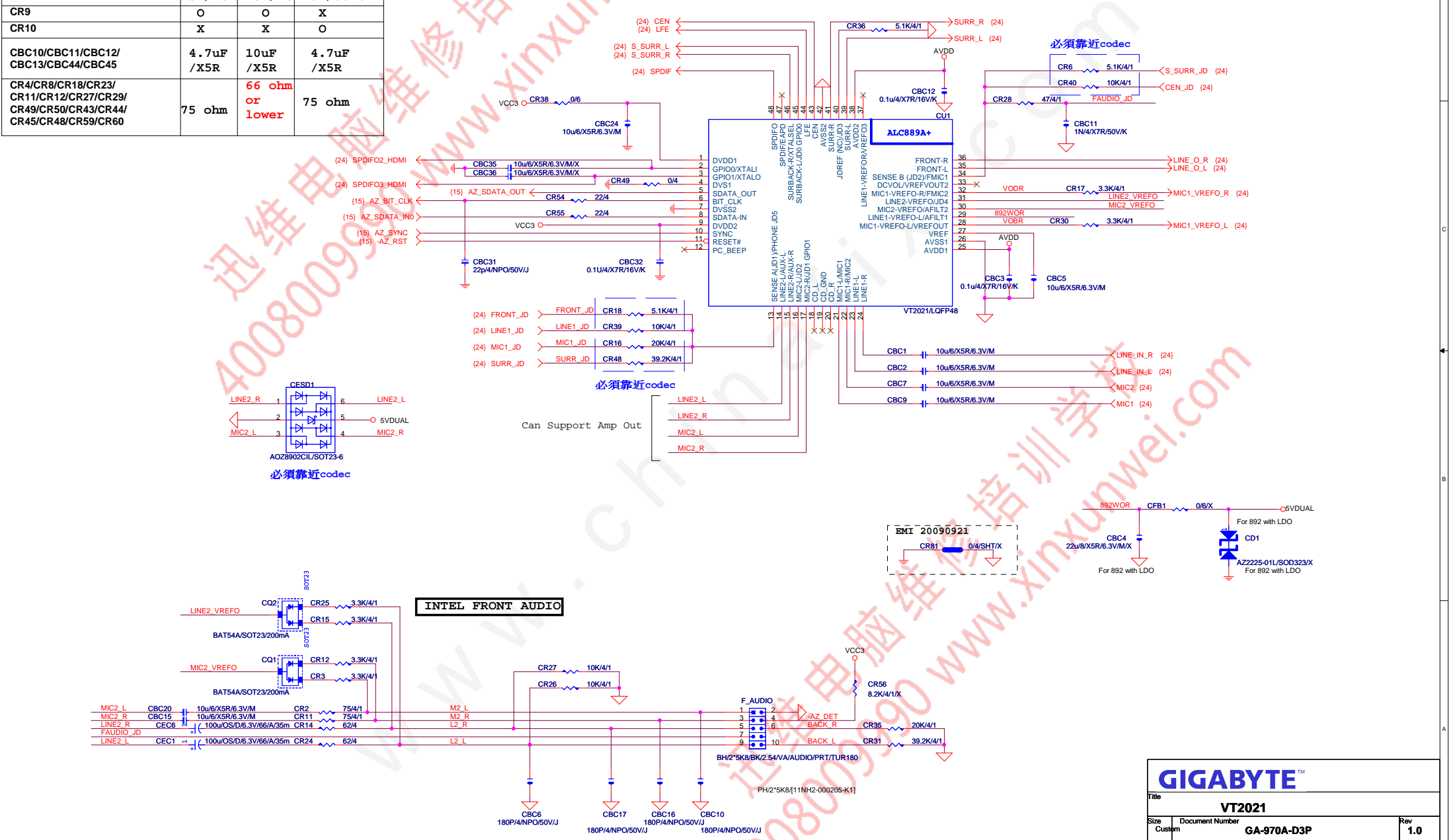


REAR USB2



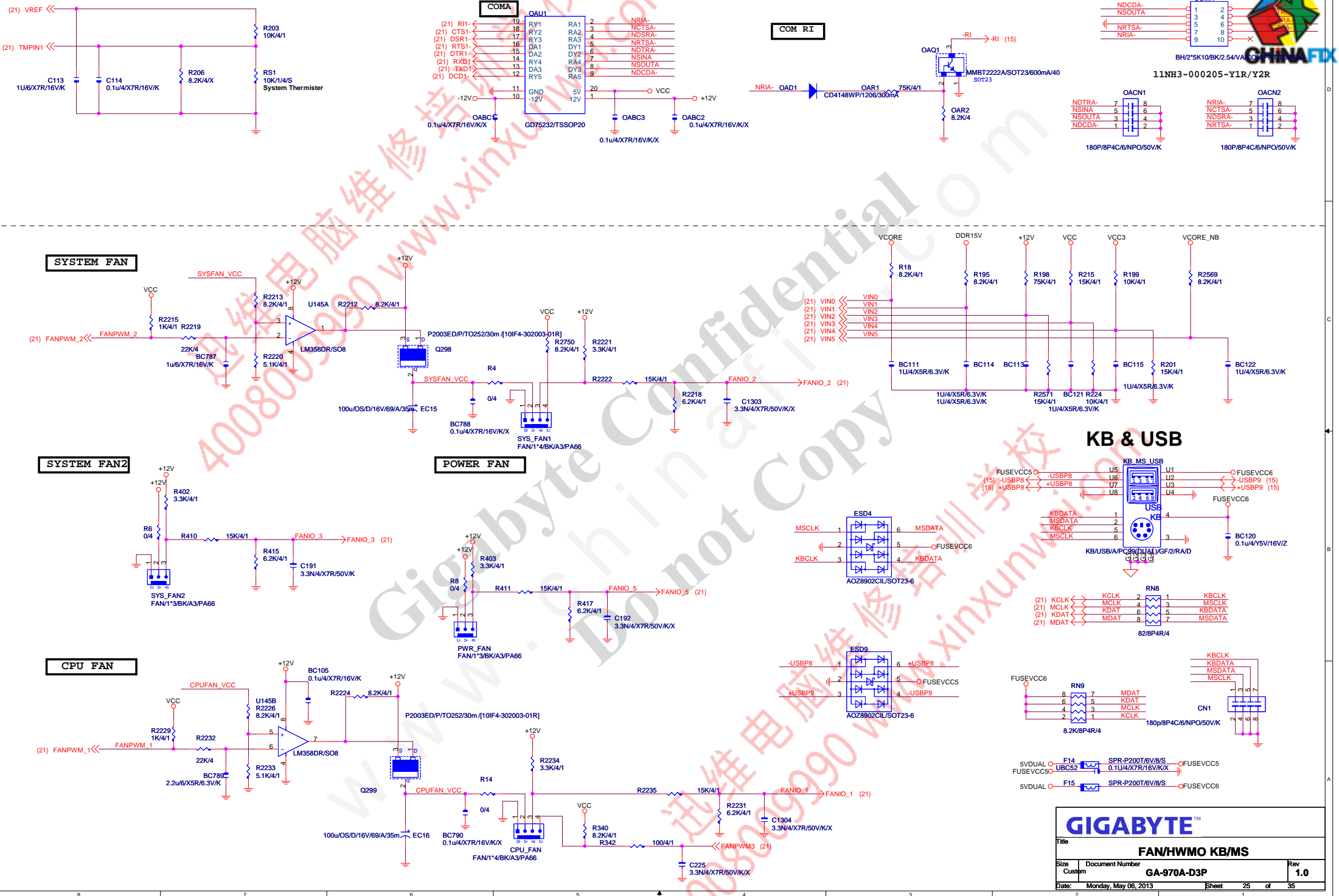


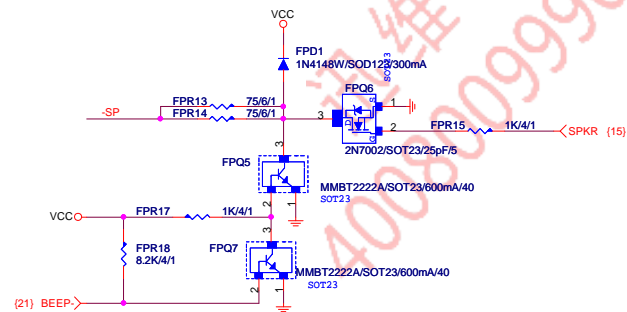
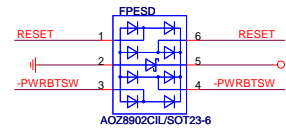
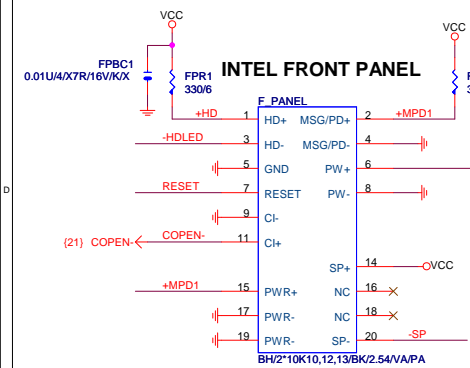
	ALC892R	ALC889	ALC889A
CR16	X	X	O
CR24	X	X	O
CR25	X	O	O
CBC42	10uF/X5R	X	X
CR2	20K/1%	20K/1%	20K/0.1%
CR9	O	O	X
CR10	X	X	O
CBC10/CBC11/CBC12/ CBC13/CBC44/CBC45	4.7uF /X5R	10uF /X5R	4.7uF /X5R
CR4/CR8/CR18/CR23/ CR11/CR12/CR27/CR29/ CR49/CR50/CR43/CR44/ CR45/CR48/CR59/CR60	75 ohm	66 ohm or lower	75 ohm



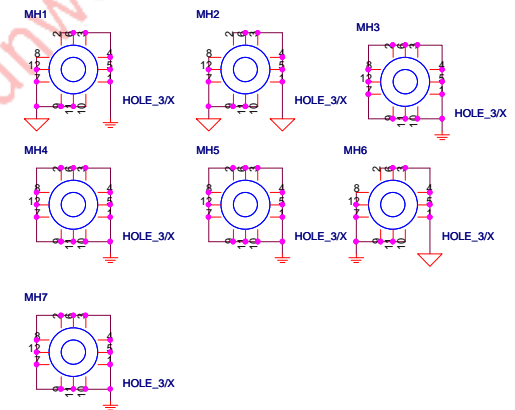
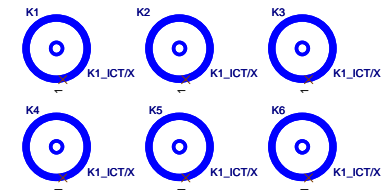
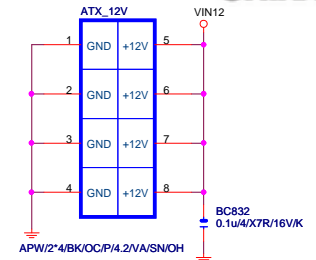
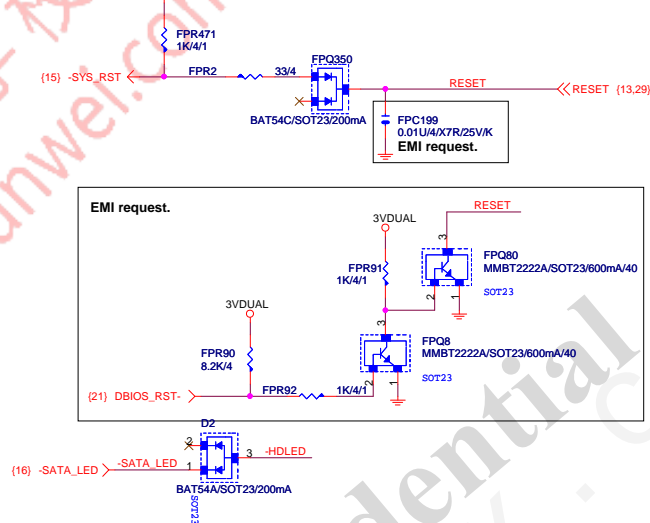
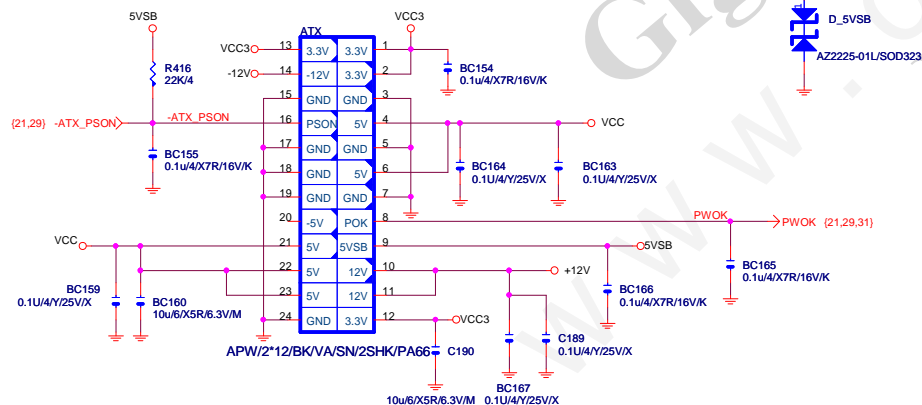
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Title VT2021		
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Hardware Monitor circuits



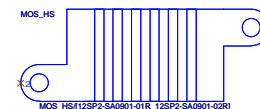


ATX POWER CONNECTOR

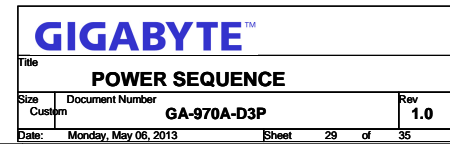


GIGABYTE™			
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ATX, FRONT PANEL			
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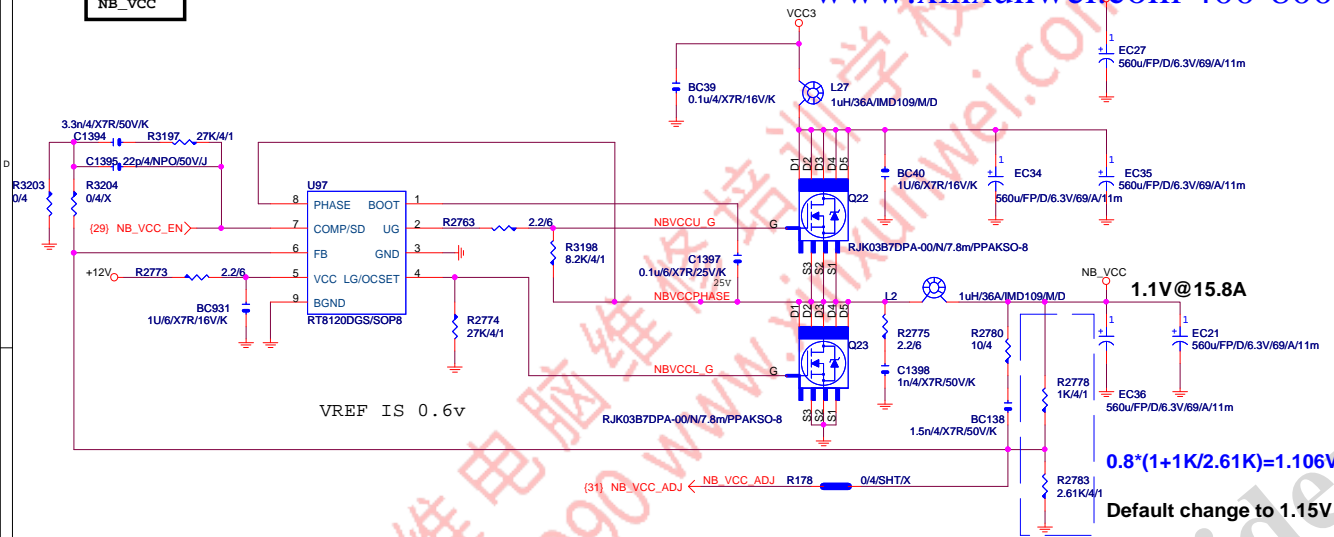
VCORE NB



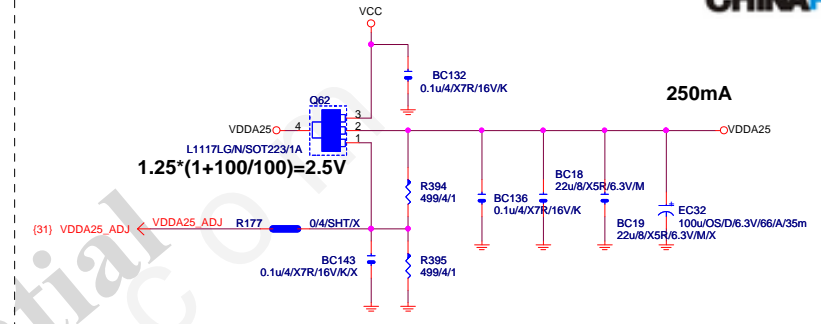
靠近MOSFET



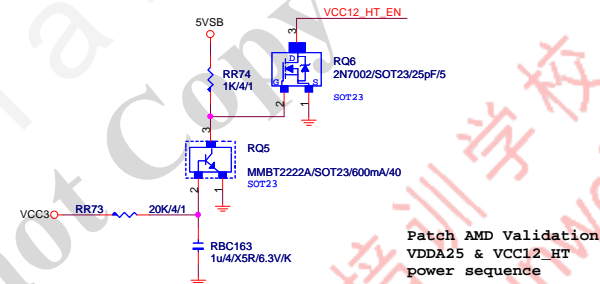
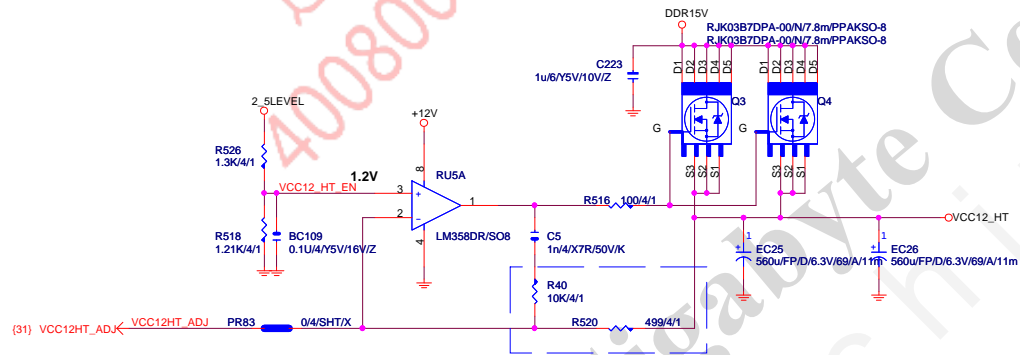
NB_VCC



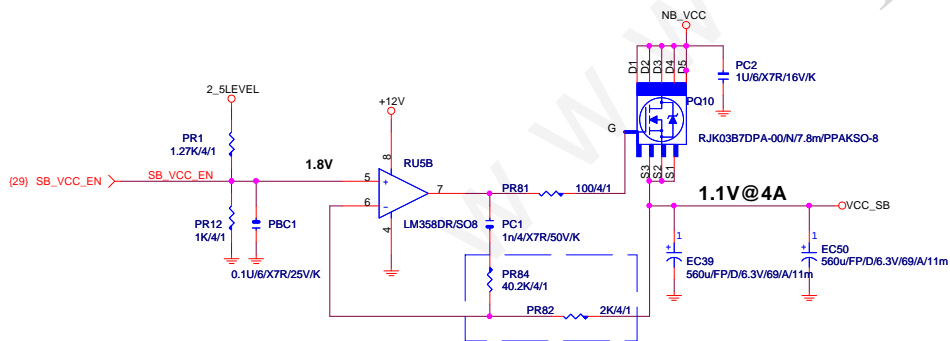
VDDA25



VCC12_HT



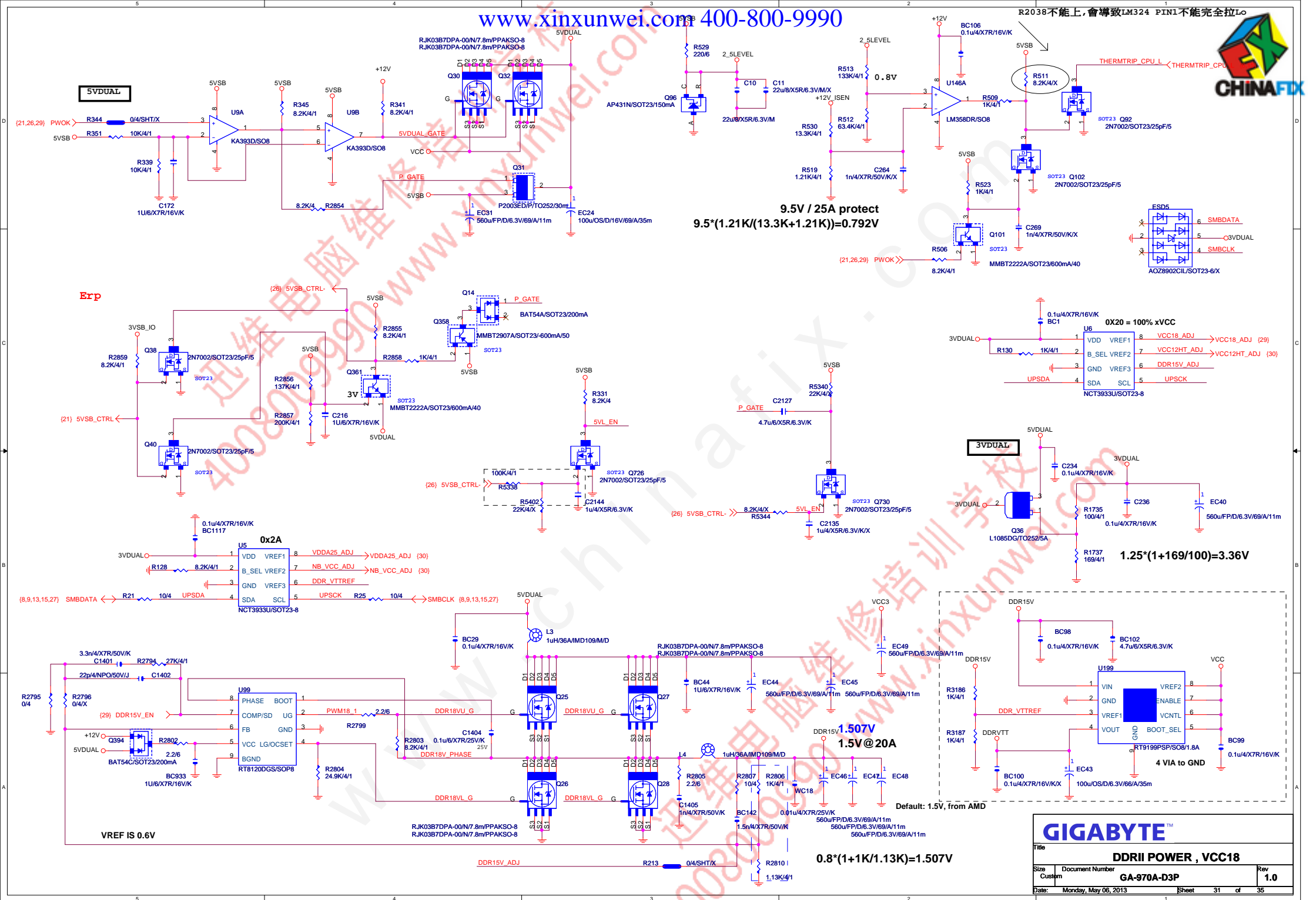
VCC_SB



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NB POWER, VCC12HT, VDDA25

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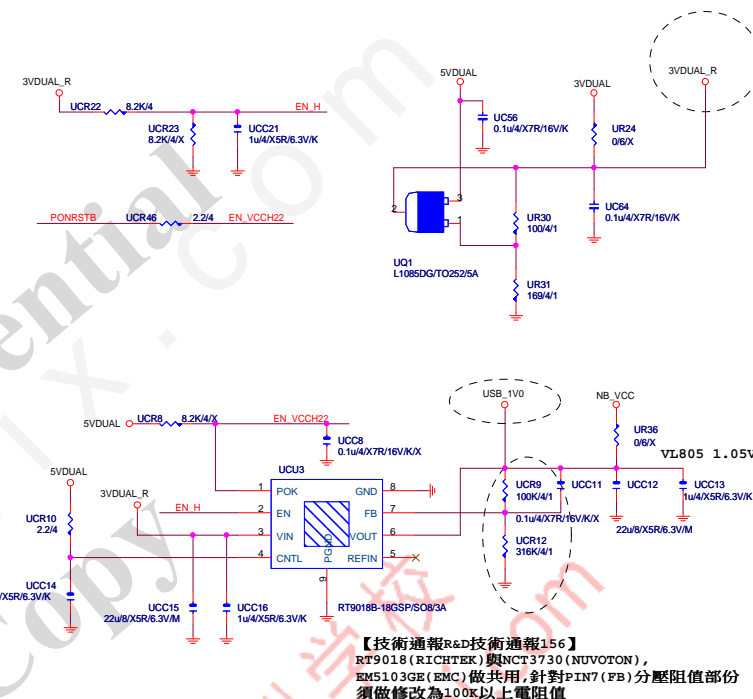


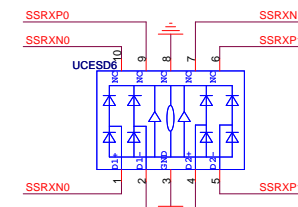
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Size	Document Number
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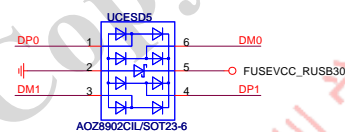
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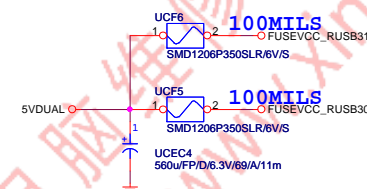




Close to connector



Close to connector



Close to connector

