


TITLE	SHEET
COVER SHEET	1
BLOCK DIAGRAM	2
POWER DELIVERY	3
CLOCK DISTRIBUTION	4
REVISION HISTORY	5
SKT 940 K8 M2 CPU	6-11
DDR3 DIMMA1/B1	13-14
RX780-HT LINK I/F	19
RX780-PCIE I/F	20
RX780-SYSTEM I/F	21
RX780-POWER	22
CLOCK GEN	23
SB710-PCIE/PCI/CPU/LPC	24
SB710-ACPI/GPIO/USB/AUD	25
SB710-SATA/IDE/HWM/SPI	26
SB710-POWER&DECOUPLING	27
SB710-STRAPS	28
PE X16 SLOT	29
PCI SLOT 1/2/3	30
IDE ATA 133 & FRONT USB	31
PS2, USB CONN	32
CODEC ALC662&AUDIO CONNECTOR	33-34
Super I/O ITE8718	35
H/W MON.FAN CONTROL	36
FDD / PS2 CONN / FLASH	37
COM & LPT CONNECTOR	38
ATX PWR/FRONT PANEL/LED	39
PWRGD/ Misc DC-DC	40
VCC_CORE DC-DC CONVER	41
MEM POWER	42
NB/SB CORE POWER	43
LAN RTL8102E	44
BOM	45

# A78XB-A3S

ATX  
VER:0.6

AMD M3 PROCESSOR/DUAL CHANNEL  
DDRIII1066\*2/PCIEx16\*1/PCIEx1\*2/PCI  
SLOT\*3/100M 8102EL LAN/ALC662 CODEC

TARZAN

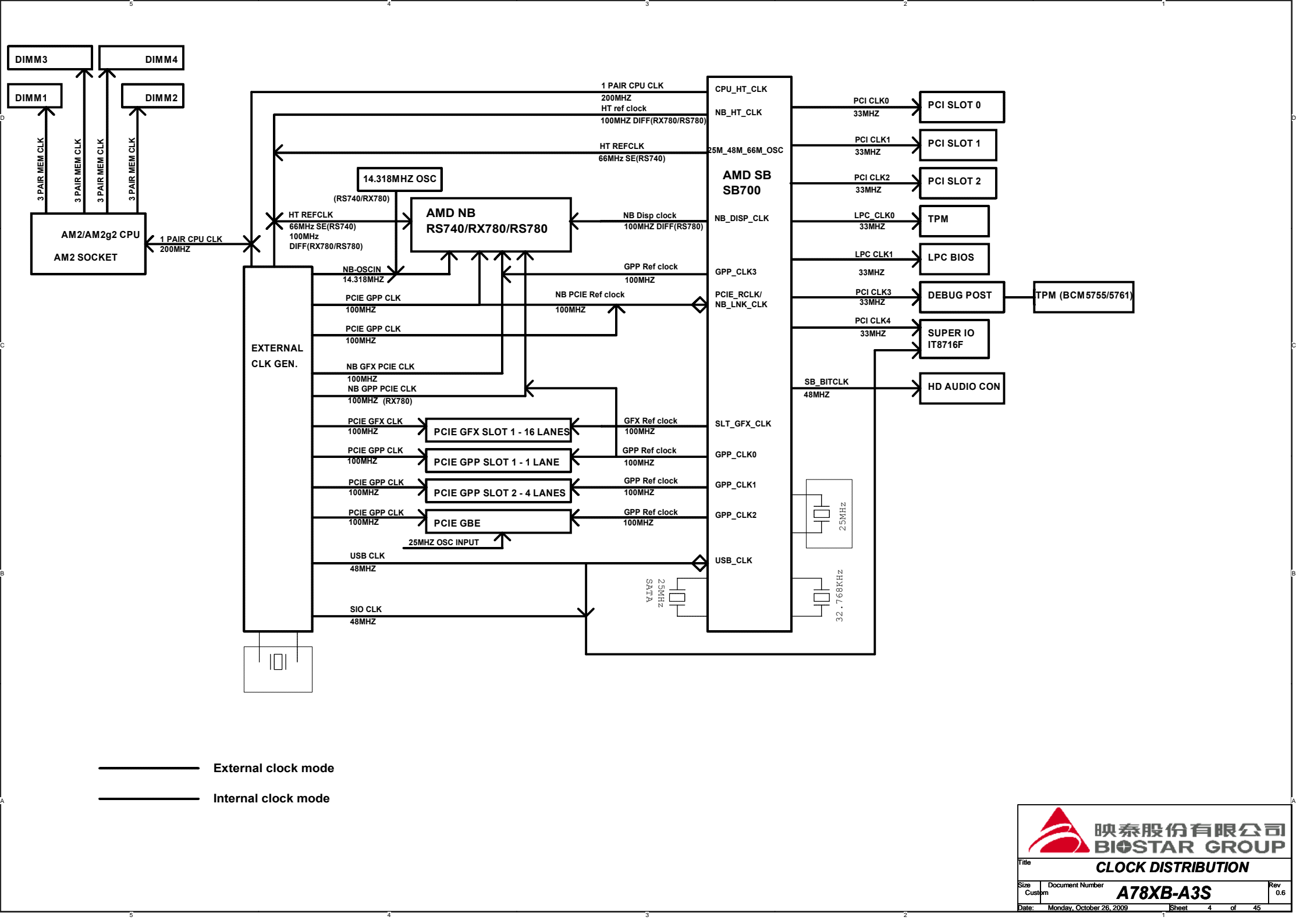


映泰股份有限公司  
BIOSTAR GROUP

TitleCOVER SHEET		
SizeCustom	Document NumberA78XB-A3S	Rev0.6
Date: Monday, October 26, 2009Sheet1 of 45		







- 20091229(V6.0)
- 1. ADD a resistor pull high at SuperIO Pin75.
  - 2. Change Lan LED power from 3.3V\_DUAL to VDD33
  - 3. Exchange Lan Power defaults from 3.3 to 3.3V\_Dual.

- 20100104
- 1. Change FAN\_CTL1 R214 pull high Power from +5V to +3.3V;
  - 2. Change R225 from 22K to 12.1K for Smart Fan;
  - 3. Change R2 and R52 to 470ohm;
  - 4. Change Panel LED pwoer from +5V\_DUAL to +3.3V\_DUAL;

- 20100112
- 1. ADD AR49 0 0805 for EMI Solution.

- 20100121

  - 1. ADD EUP CIRCUITS;
  - 2. CHANGE SUPERIO PIN4 AND PIN35 AND PIN 67 TO +3V3\_SB;
  - 3. CHANGE PWRBTNJ PULL HIGH TO +3V3\_SB
  - 4. ADD +5V\_STB TO +3V3\_SB CIRCUITS
- V0.6 á??t???è3??^60??C

Q1-67.4??C

Q15-60.1??C

Q38-61.1??C

Q40-60.2??C

Q60-67.7??C

Q53-60.8??C

PU1-82.9??C

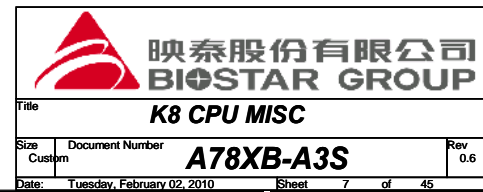
U15-78.6??C

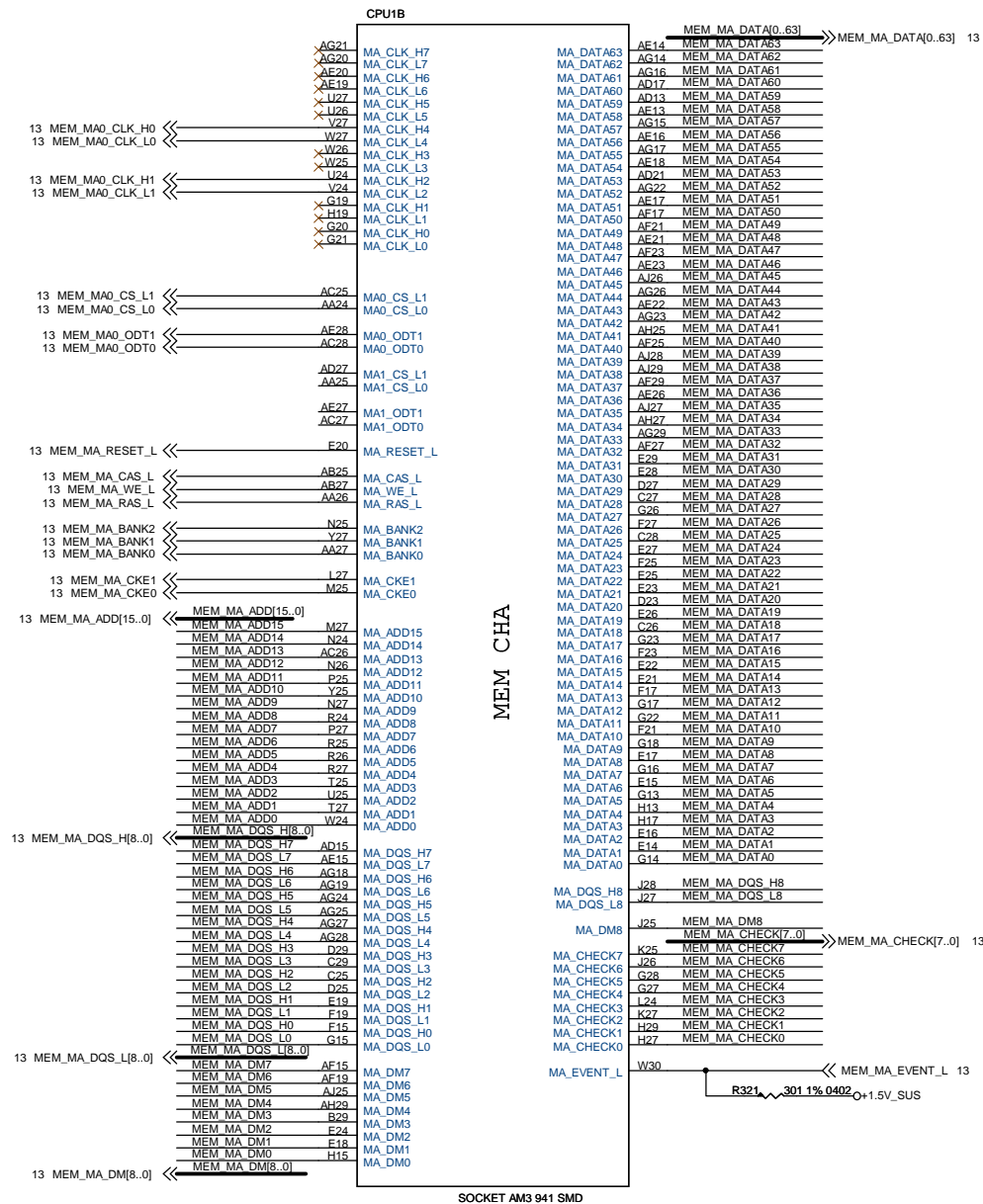
U12-60.6??C

- 20100128
- 1. Exchange JUSBV1 and JUSBV2;
  - 2. Change all 100UF to low ESR caps except Audio part;
  - 3. Change HT Power ov resistors.

## CPU1A

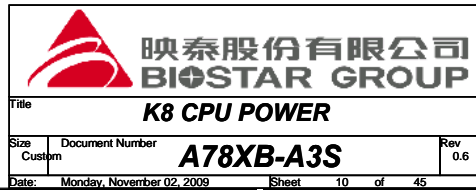
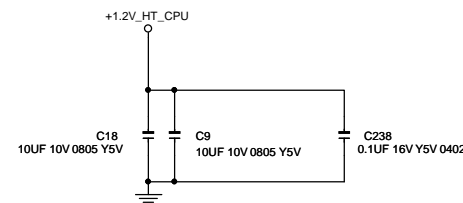
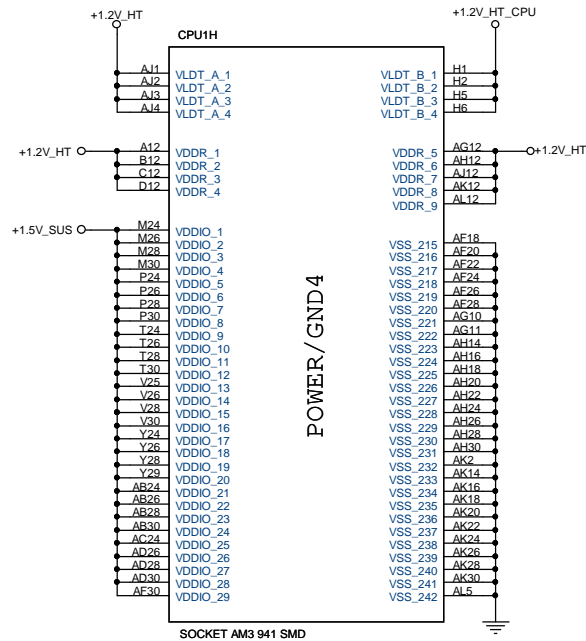
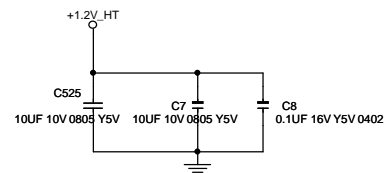
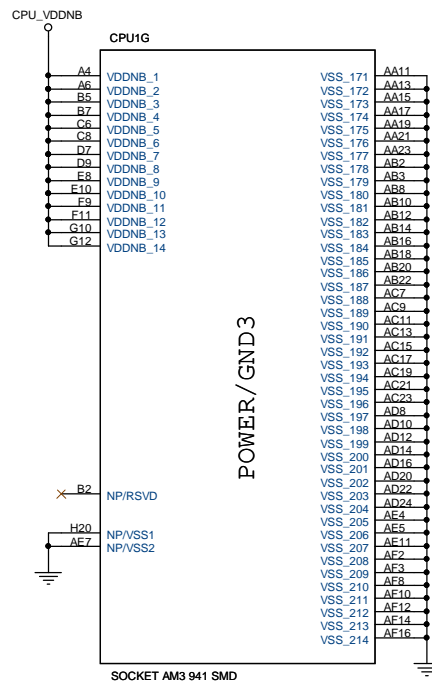
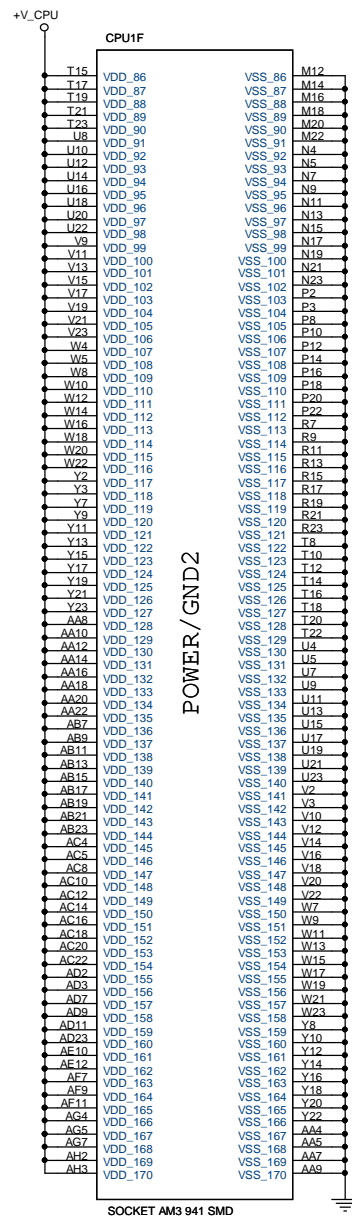
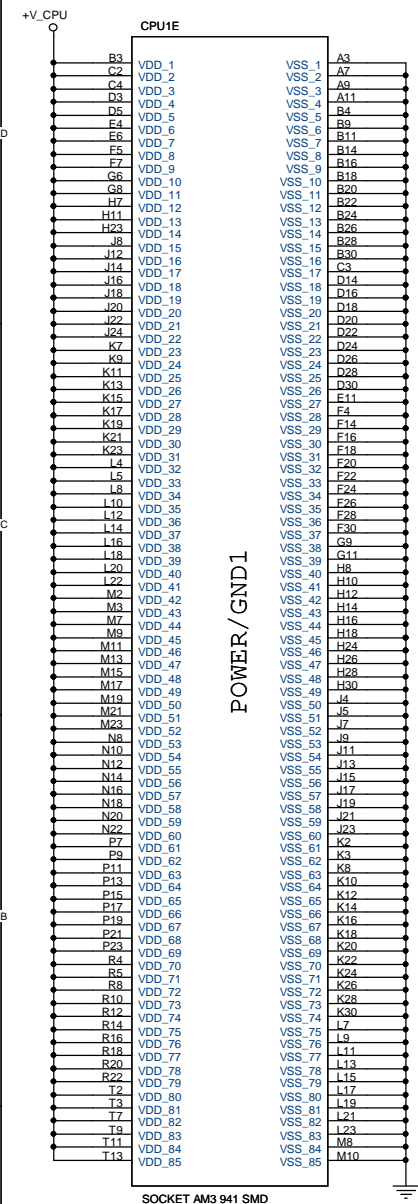


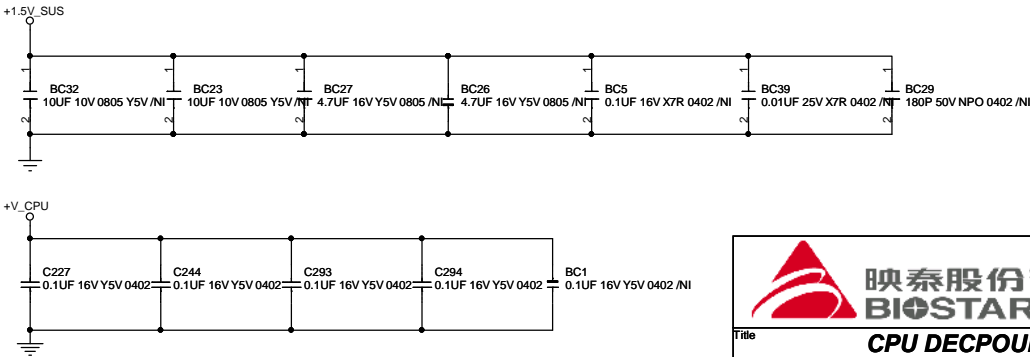
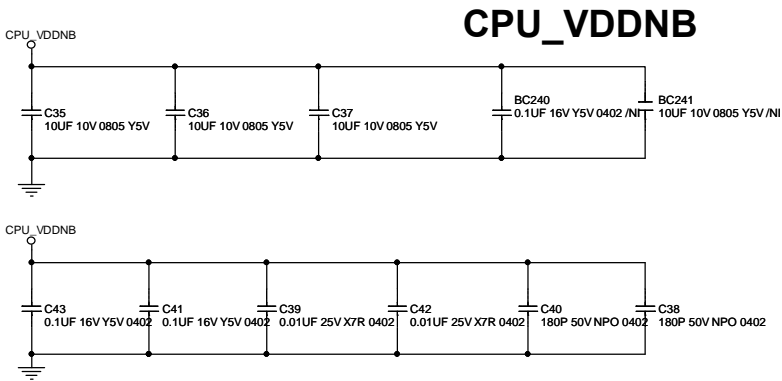
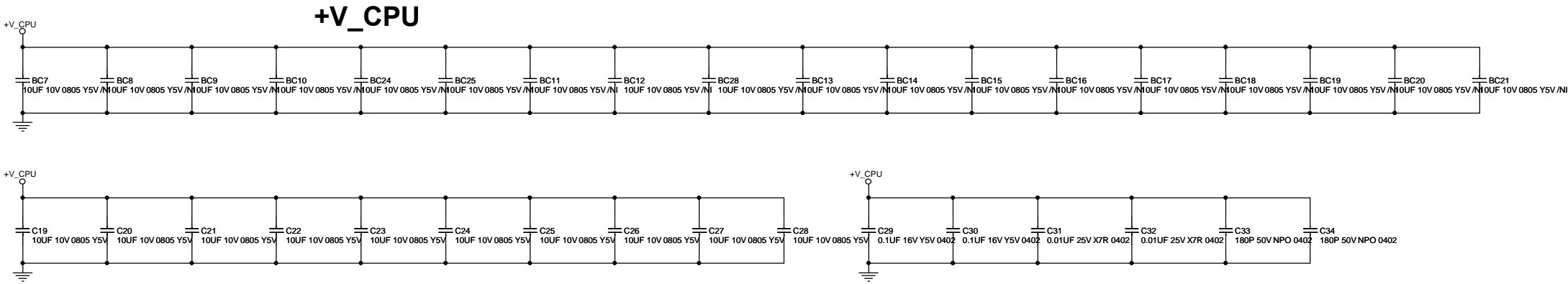
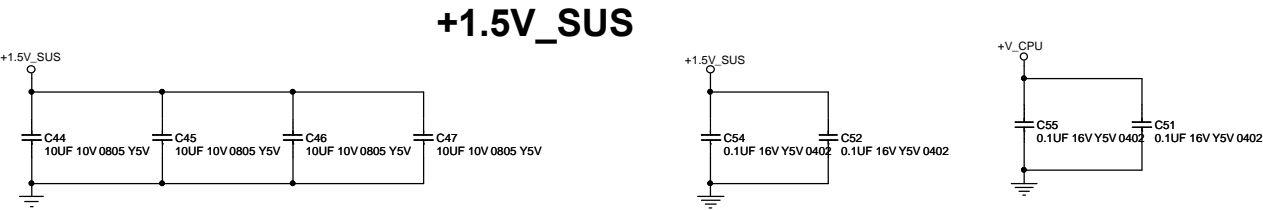
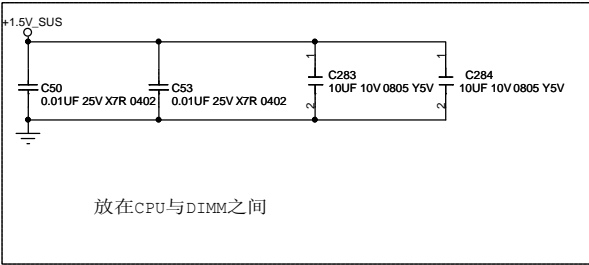
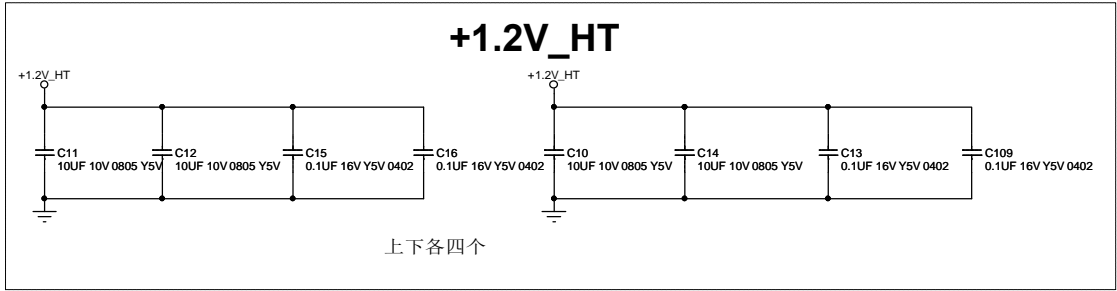




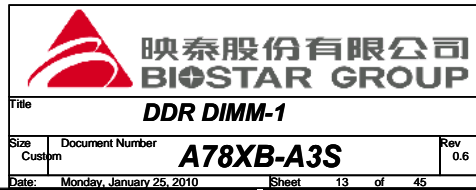
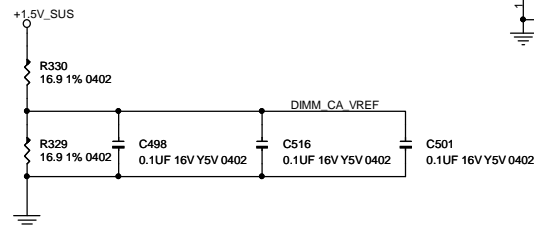
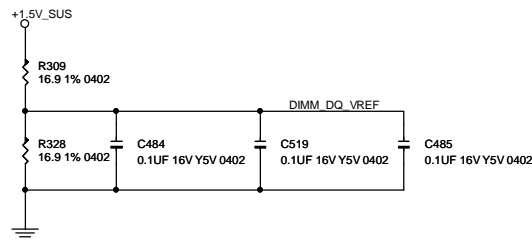
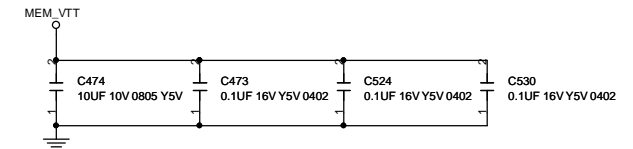
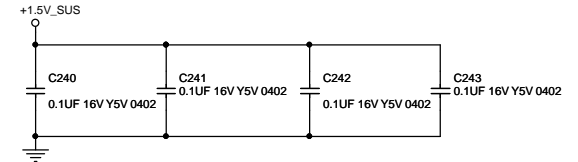
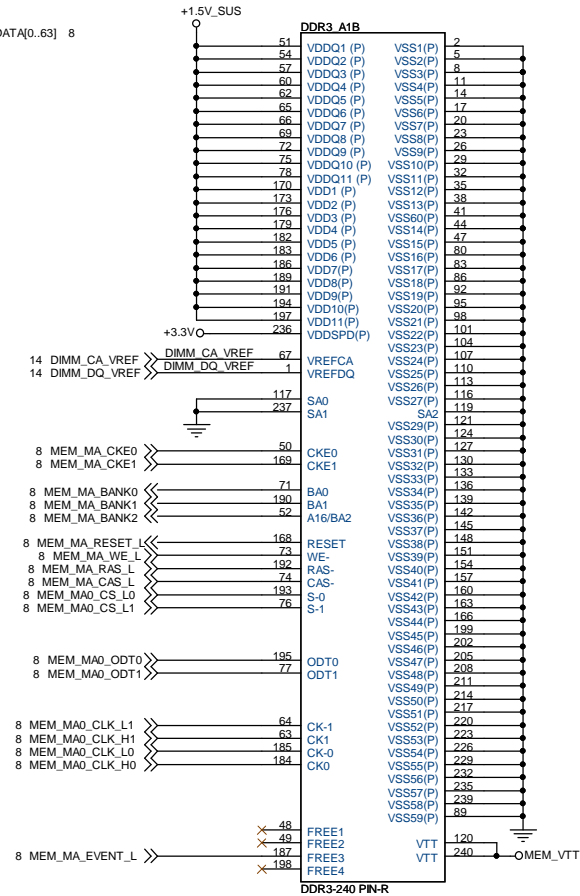
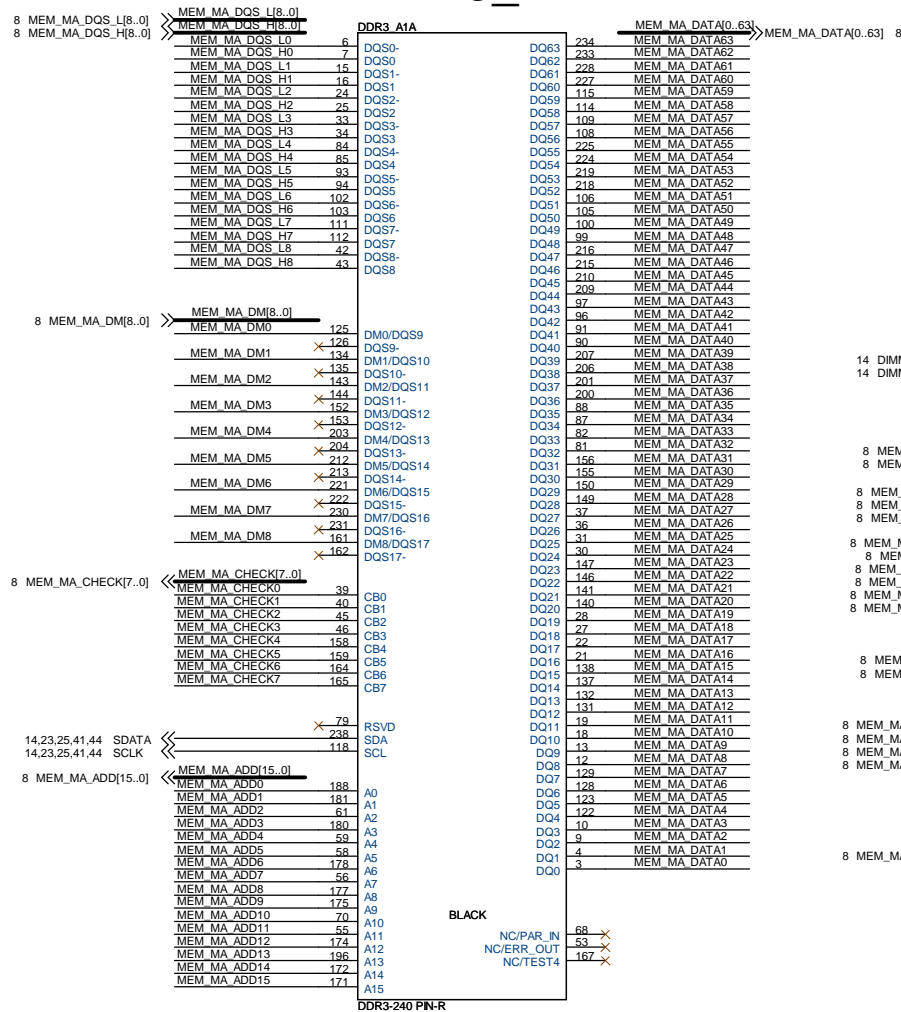




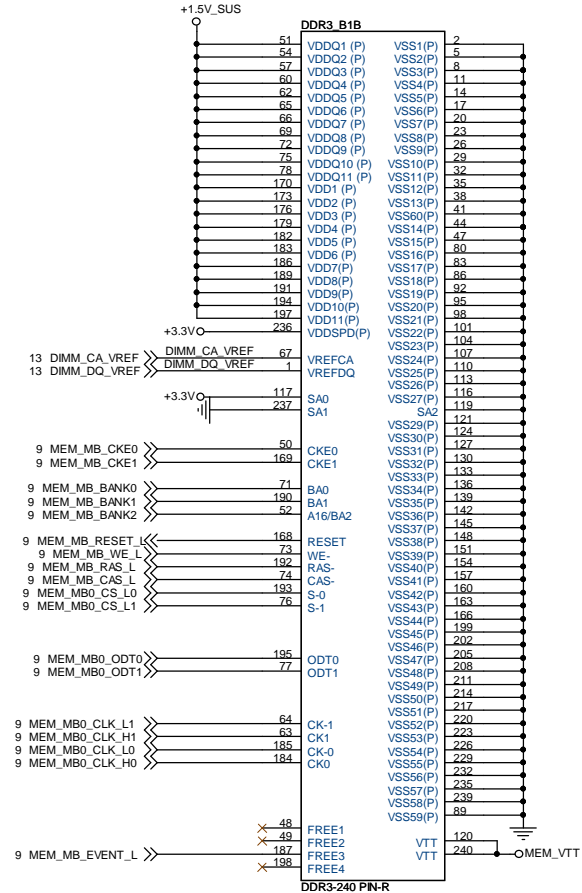
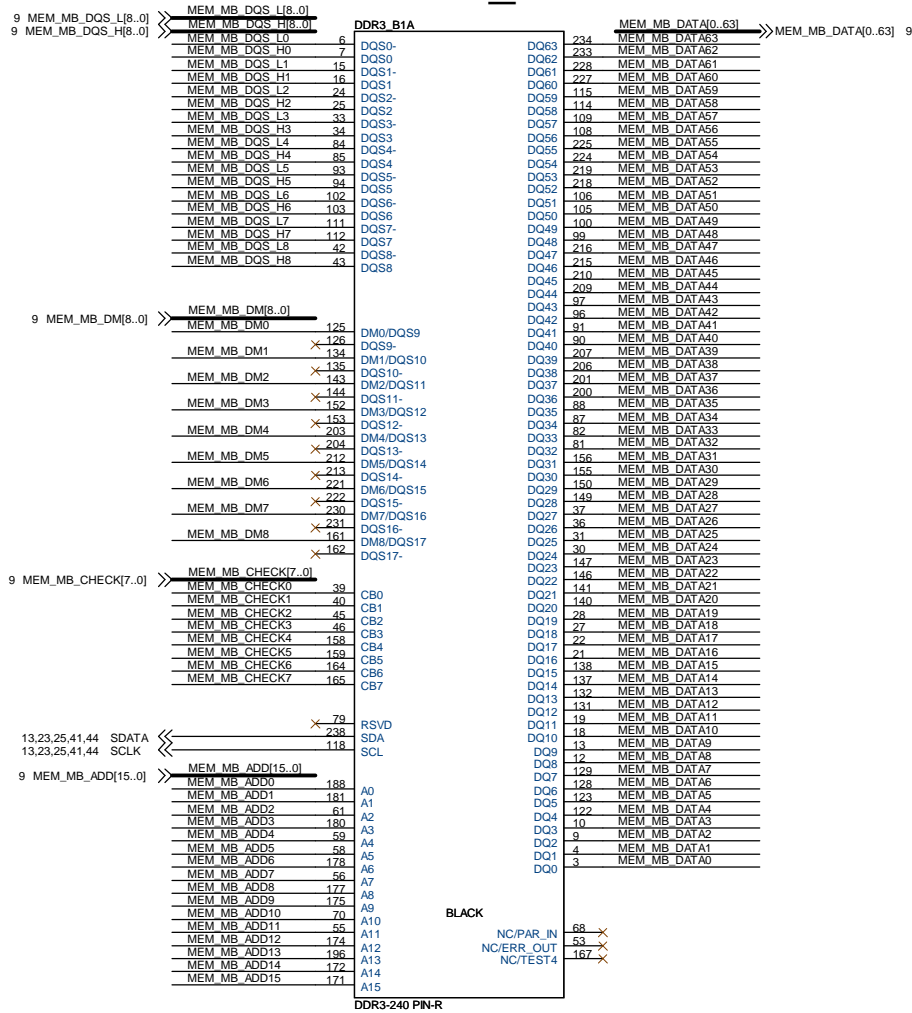


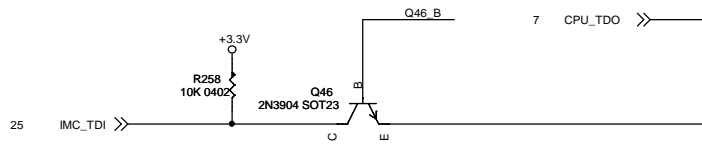
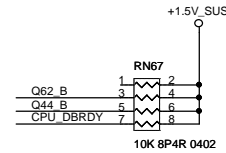
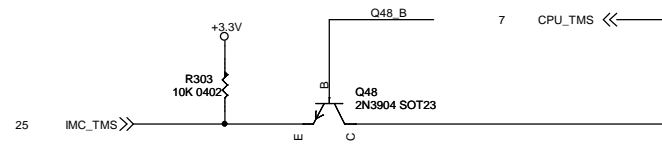
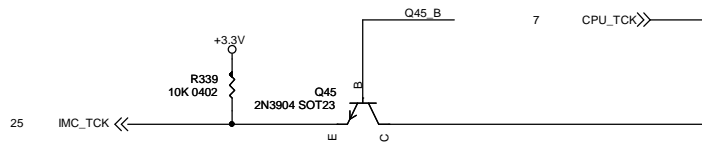
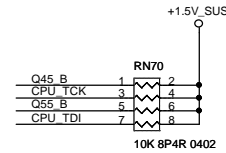
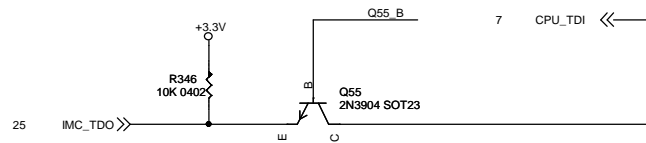
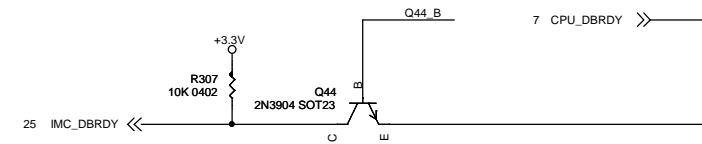
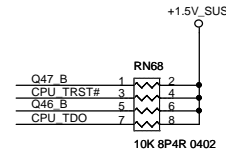
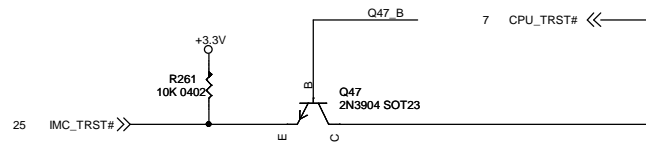
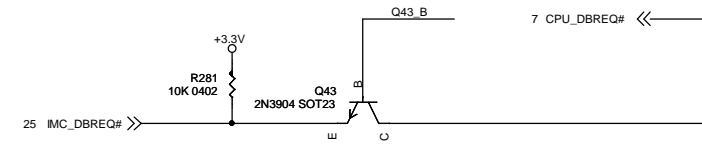
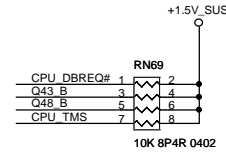
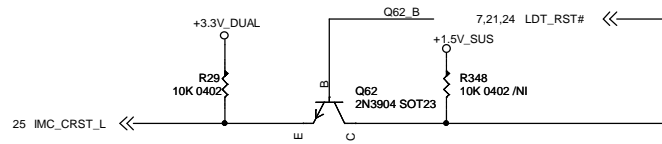


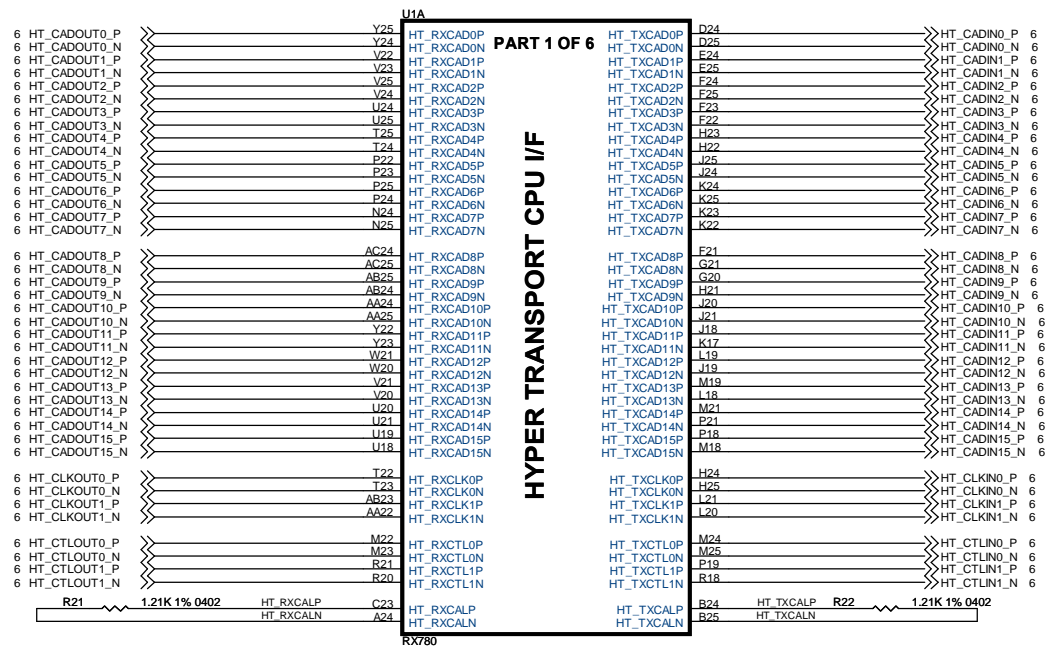
# DDR3\_A1



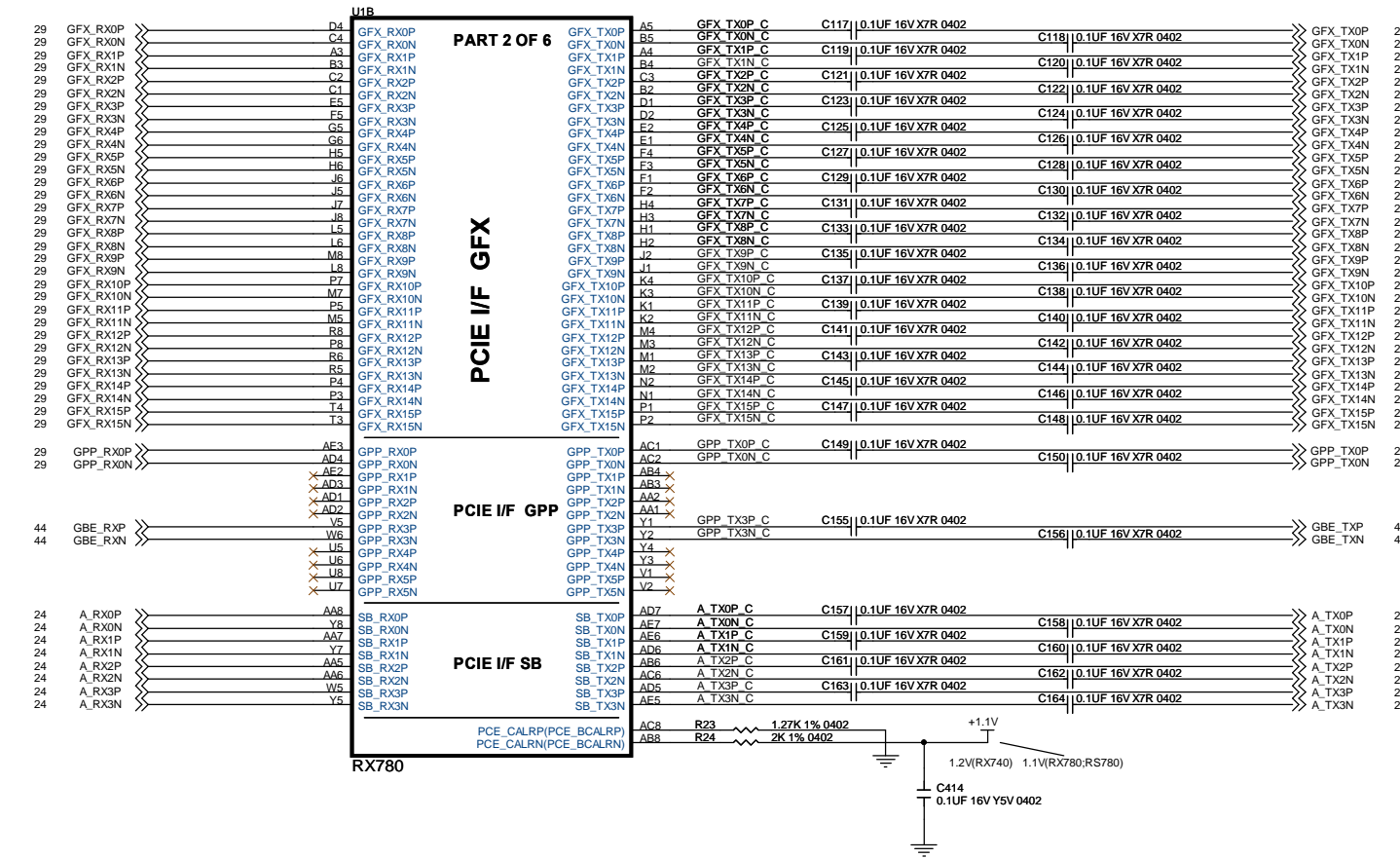
# DDR3\_B1











RS780 Display Port Support (muxed on GFX)


DP0	GFX_TX0,TX1,TX2 and TX3 AUX0 and HPD0
DP1	GFX_TX4,TX5,TX6 and TX7 AUX1 and HPD1

RX780/RS740/RS780 GPP difference table

	RS740	RX780/RS780
PCE_CALRP	562R (GND)	1.27K (GND)
GPP4	NC	GPP4
GPP5	NC	GPP5

RX780/RS740/RS780 GPP Routing table

	RS740	RX780/RS780
GPP X4 CONNECTOR	GPP[2:0]	GPP[3:0]
GPP X1 CONNECTOR		GPP4
GIGABIT ETHERNET	GPP3	GPP5



**映泰股份有限公司**  
**BIOSAR GROUP**

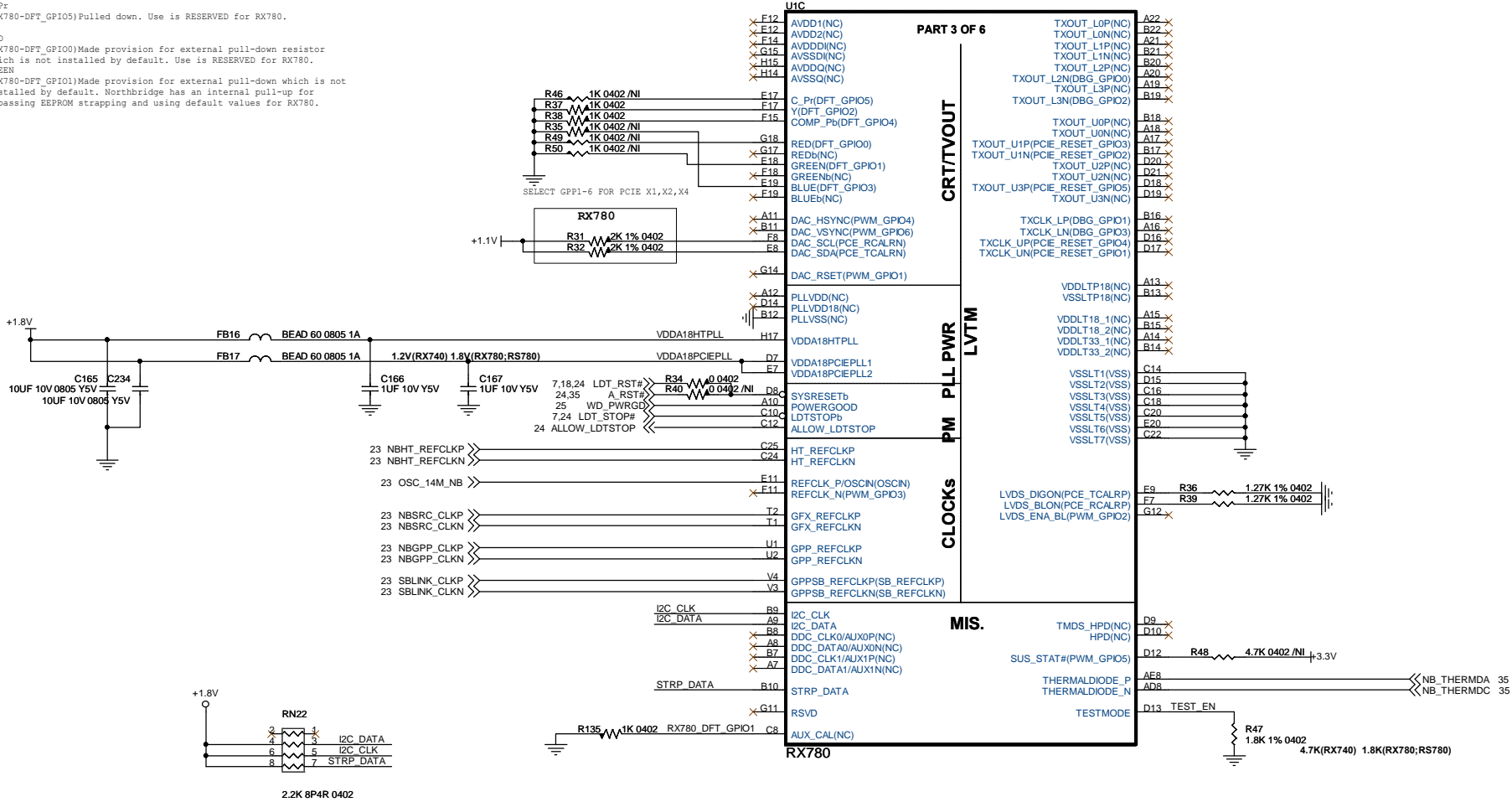
<b>Title</b> <b>RX780-PCIE</b>		
Size Custom	Document Number <b>A78XB-A3S</b>	Rev 0.6
Date: Monday, January 25, 2010		
Sheet 20 of 45		



C\_Pr  
(RX780-DFT\_GPIO5)Pulled down. Use is RESERVED for RX780.

RED  
(RX780-DFT\_GPIO0)Made provision for external pull-down resistor which is not installed by default. Use is RESERVED for RX780.

GREEN  
(RX780-DFT\_GPIO1)Made provision for external pull-down which is not installed by default. Northbridge has an internal pull-up for bypassing EEPROM strapping and using default values for RX780.




RS740/RX780/RS780 POWER DIFFERENCE TABLE

PIN NAME	RS740	RX780	RS780	PIN NAME	RS740	RX780	RS780
VDDHT	NC	+1.1V	+1.1V	IOPLLVD	+1.2V	NC	+1.1V
VDDHTRX	NC	+1.1V	+1.1V	AVDD	+3.3V	NC	+3.3V
VDDHTTX	+1.2V	+1.2V	+1.2V	AVDDDI	+1.8V	NC	+1.8V
VDDA18PCIE	NC	+1.8V	+1.8V	AVDDQ	+1.8V	NC	+1.8V
VDD18	+1.8V	+1.8V	+1.8V	PLLVD	+1.2V	NC	+1.1V
VDD18_MEM	NC	NC	+1.8V	PLLVD18	+1.8V	NC	+1.8V
VDDPCIE	+1.2V	+1.1V	+1.1V	VDDA18PCIEPLL	+1.2V	+1.8V	+1.8V
VDDC	+1.2V	+1.1V	+1.1V	VDDA18HTPLL	+1.8V	+1.8V	+1.8V
VDD_MEM	+1.8V/1.5V	NC	+1.8V/1.5V	VDDLTP18	+1.8V	NC	+1.8V
VDD33	+3.3V	NC	+3.3V	VDDL18	+1.8V	NC	+1.8V
IOPLLVD18	+1.8V	NC	+1.8V	VDDLTP33	+3.3V	NC	NC

RX740/RS740/RS780 difference table (Control signal)

	RS740	RX780	RS780
NB_PWRGD	3.3V IN	1.8V IN	1.8V IN
ALLOW_LDTSTOP	OD	OD	OD/3.3V IN
OUT(default)/IN	3.3V IN	1.8V IN	3.3V IN/OD
LDT_STOP#	3.3V IN	1.8V IN	3.3V IN/OD
IN(default)/OUT	3.3V IN	1.8V IN	3.3V IN
SYSTEMRESETb	3.3V IN	1.8V IN	3.3V IN



映泰股份有限公司  
BIOSTAR GROUP

Title  
**RX780 SYSTEM**

Size  
Custom

Document Number  
**A78XB-A3S**

Rev  
0.6

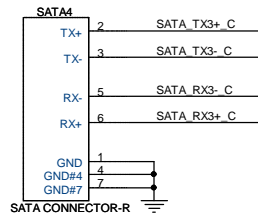
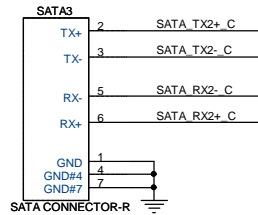
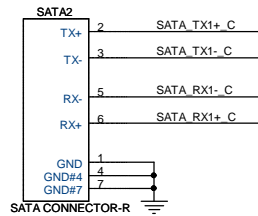
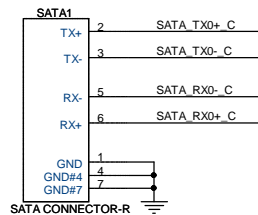
Date: Monday, January 25, 2010Sheet 21 of 45



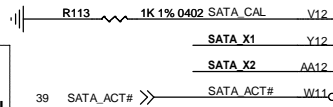








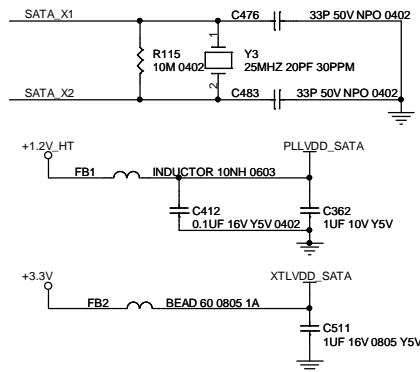
SATA TX0+ C	C246	0.01UF 25V X7R 0402	SATA TX0+ AD9
SATA TX0- C	C247	0.01UF 25V X7R 0402	SATA TX0- AE9
SATA RX0- C	C248	0.01UF 25V X7R 0402	SATA RX0- AB10
SATA RX0+ C	C249	0.01UF 25V X7R 0402	SATA RX0+ AC10
SATA TX1+ C	C250	0.01UF 25V X7R 0402	SATA TX1+ AE10
SATA TX1- C	C251	0.01UF 25V X7R 0402	SATA TX1- AD10
SATA RX1- C	C252	0.01UF 25V X7R 0402	SATA RX1- AD11
SATA RX1+ C	C253	0.01UF 25V X7R 0402	SATA RX1+ AE11
SATA TX2+ C	C254	0.01UF 25V X7R 0402	SATA TX2+ AB12
SATA TX2- C	C255	0.01UF 25V X7R 0402	SATA TX2- AC12
SATA RX2- C	C256	0.01UF 25V X7R 0402	SATA RX2- AE12
SATA RX2+ C	C257	0.01UF 25V X7R 0402	SATA RX2+ AD12
SATA TX3+ C	C258	0.01UF 25V X7R 0402	SATA TX3+ AD13
SATA TX3- C	C259	0.01UF 25V X7R 0402	SATA TX3- AE13
SATA RX3- C	C260	0.01UF 25V X7R 0402	SATA RX3- AB14
SATA RX3+ C	C261	0.01UF 25V X7R 0402	SATA RX3+ AC14



PLACE R297 CLOSE TO SB600 BALL

R297 IS 1K 1% FOR XTAL

4.99K 1% FOR INTERNAL CLK



U4B

## SB700

Part 2 of 5

SERIAL ATA

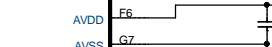
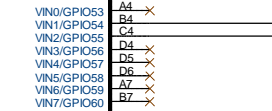
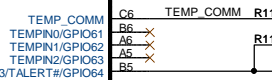
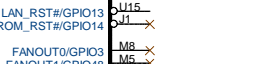
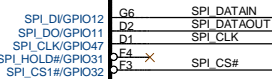
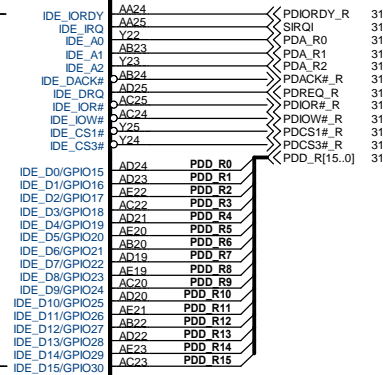
SATA PWR

HW MONITOR

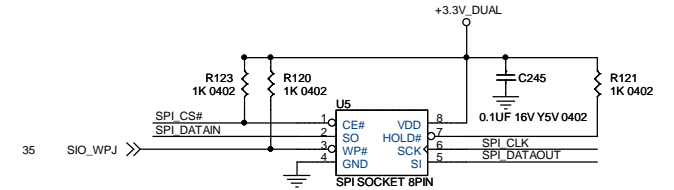
ATA 66/100/133

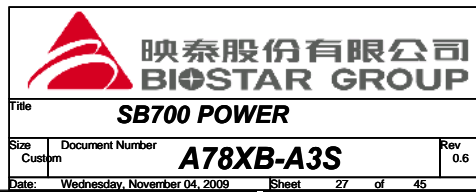
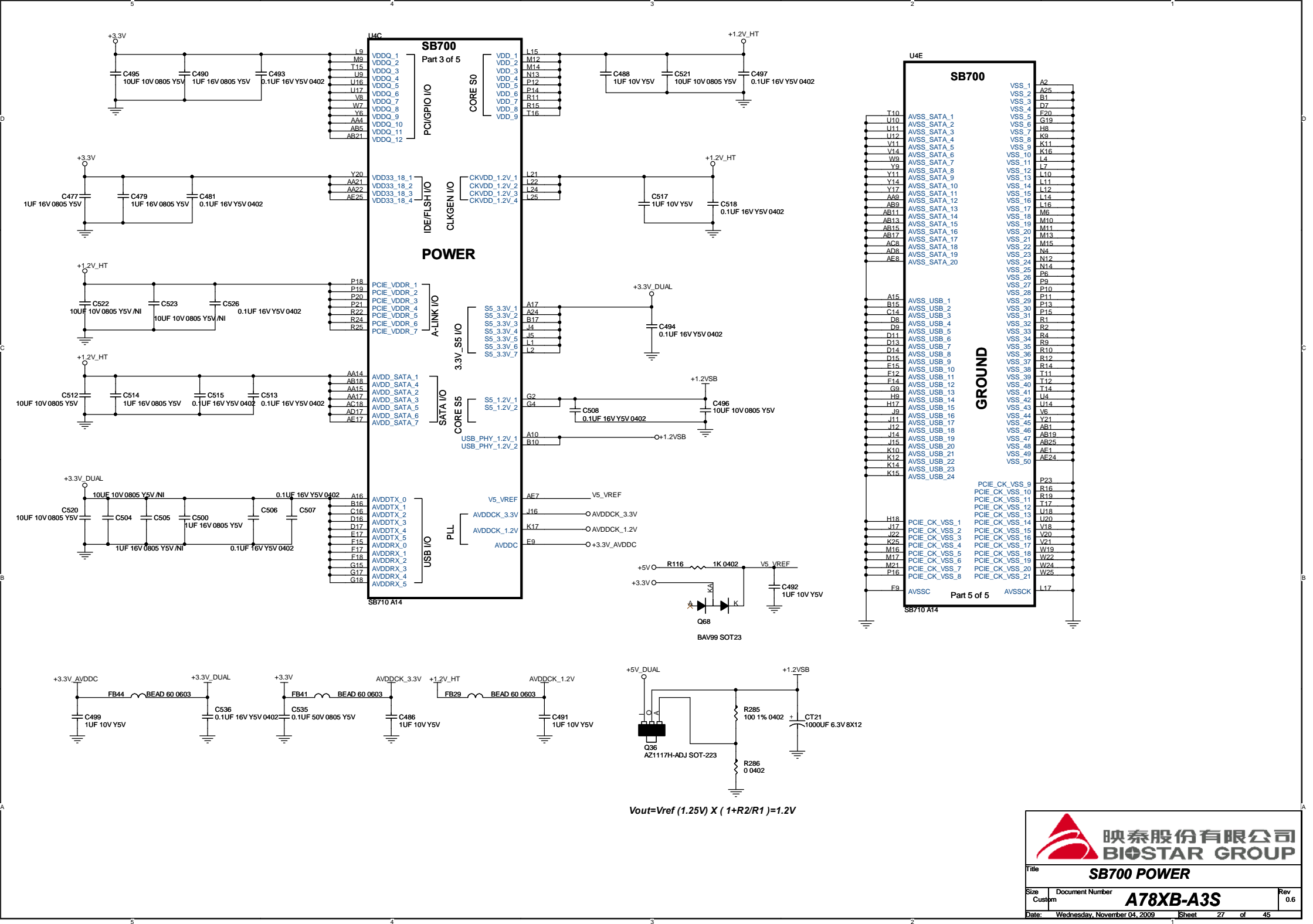
SPI ROM

HW MONITOR



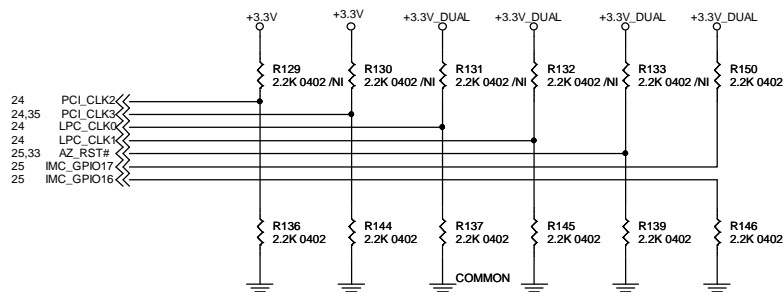
PIN NAME	BIOS
GPIO50 ~ GPIO60	0 OR 1







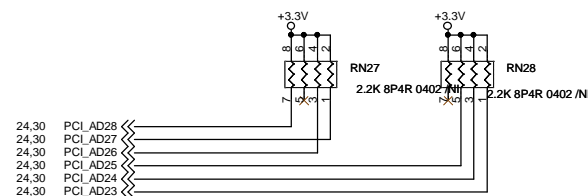
## REQUIRED STRAPS



NOTE: SB700 HAS INTERNAL 15K PULL UP RESISTOR FOR RTC\_CLK

	PCI_CLK2	PCI_CLK3	PCI_CLK4	PCI_CLK5	LPC_CLK0	LPC_CLK1	AZ_RST#	IMC_GPIO17 IMC_GPIO16
PULL HIGH	WATCHDOG TIMER ON NB_PWRGD ENABLED	USE DEBUG STRAPS	RESERVED	RESERVED	ENABLE PCI MEM BOOT	CLKGEN ENABLED	IMC ENABLED	ROM TYPE: H, L = SPI ROM
PULL LOW	WATCHDOG TIMER ON NB_PWRGD DISABLED DEFAULT	IGNORE DEBUG STRAPS DEFAULT			DISABLE PCI MEM BOOT DEFAULT	CLKGEN DISABLED DEFAULT	IMC DISABLED DEFAULT	DEFAULT

## DEBUG STRAPS



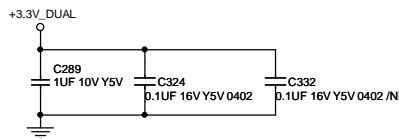
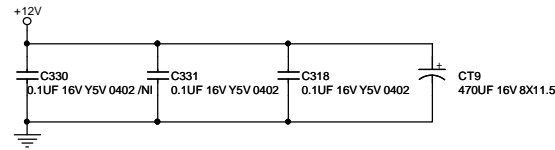
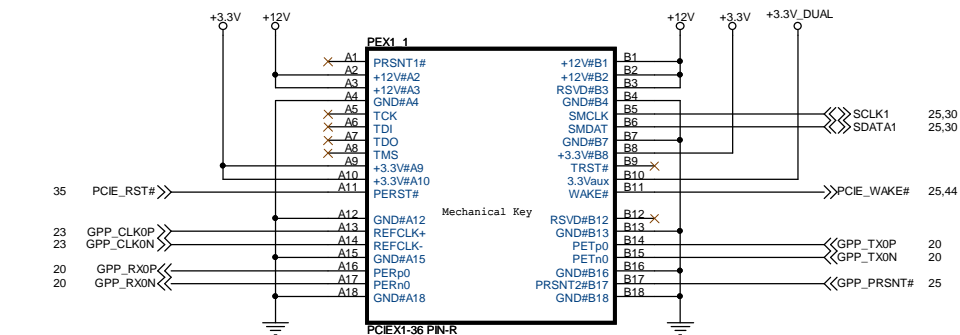
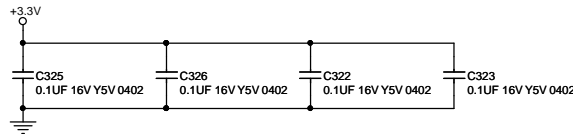
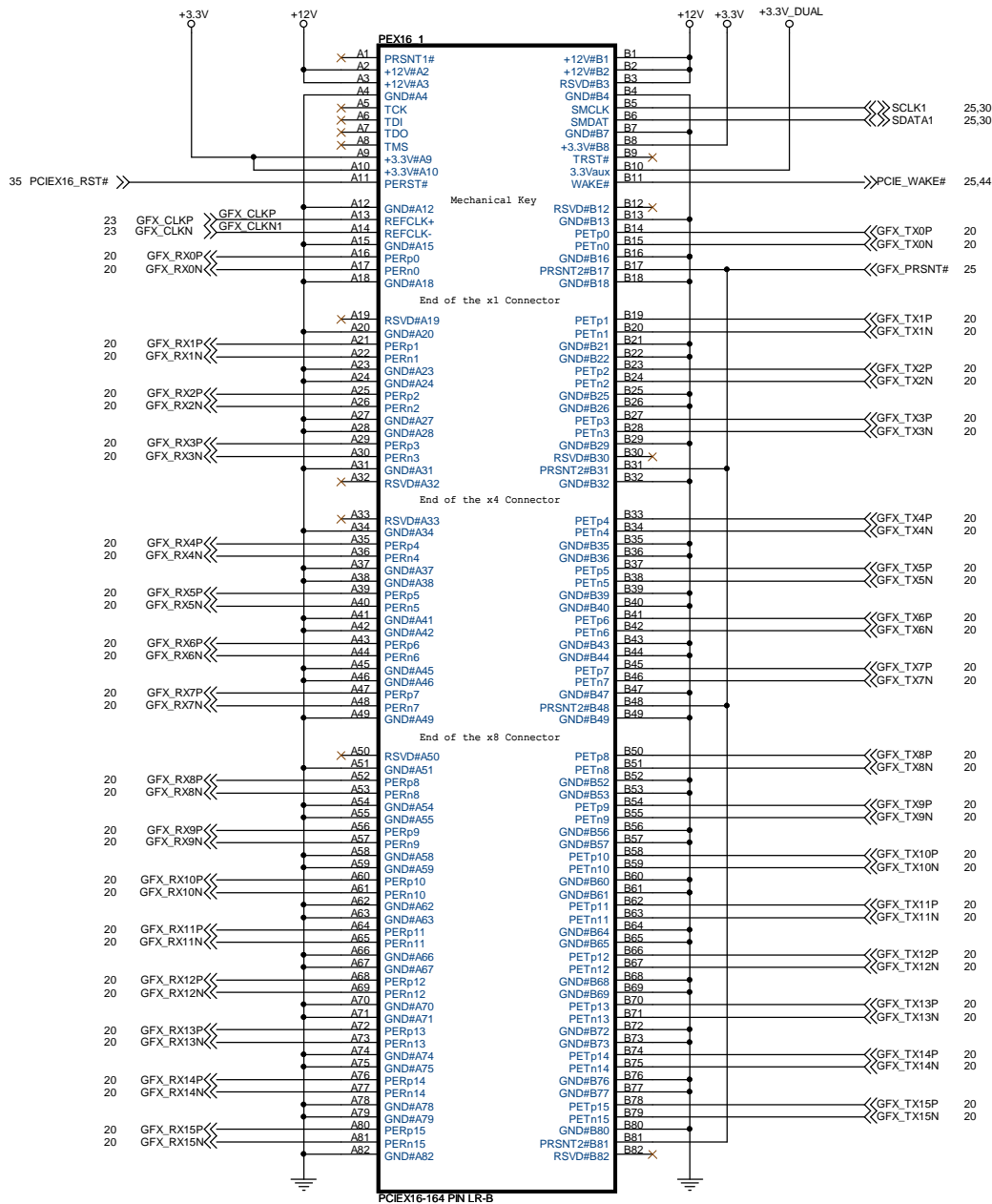
SB700 HAS 15K INTERNAL PU FOR PCI\_AD[28:23]


	PCI_AD28	PCI_AD27	PCI_AD26	PCI_AD25	PCI_AD24	PCI_AD23
PULL HIGH	USE LONG RESET DEFAULT	USE PCI PLL DEFAULT	USE ACPI BCLK DEFAULT	USE IDE PLL DEFAULT	USE DEFAULT PCIE STRAPS DEFAULT	RESERVED
PULL LOW	USE SHORT RESET	BYPASS PCI PLL	BYPASS ACPI BCLK	BYPASS IDE PLL	USE EEPROM PCIE STRAPS	



OVERLAP COMMON PADS WHERE POSSIBLE FOR DUAL-OP RESISTORS.



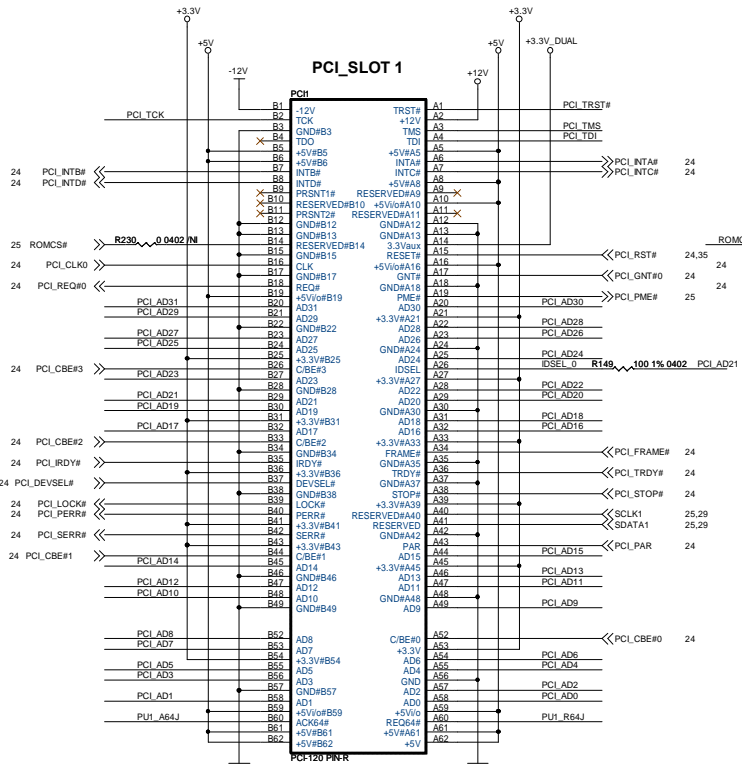




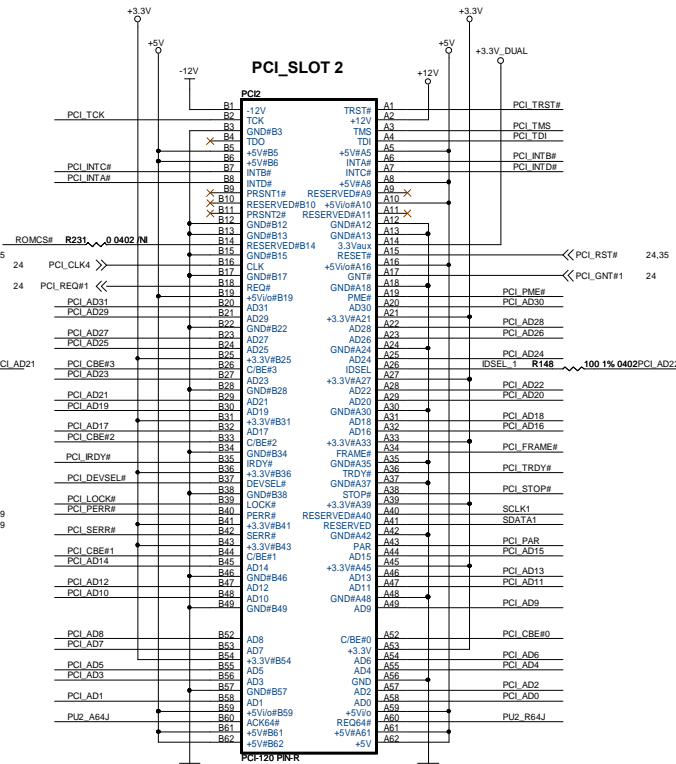
**映泰股份有限公司**  
**BIOSSTAR GROUP**

File <b>PCI-E SLOT</b>		
Size	Document Number <b>A78XB-A3S</b>	Rev 0.6
Date: Monday, January 25, 2010	Sheet 29	of 45

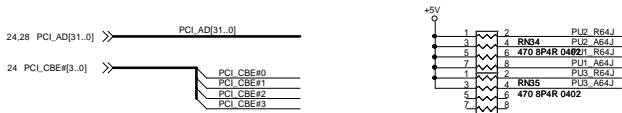
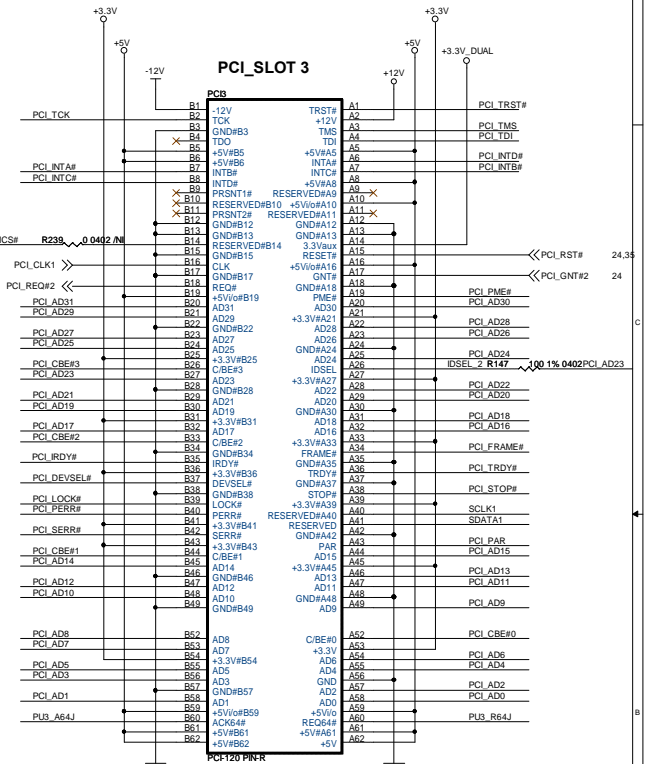
IDSEL:AD21, INT:ABCD, REQ0 &amp; GNT0, PCI\_CLK3



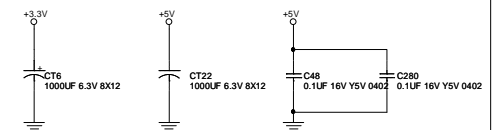
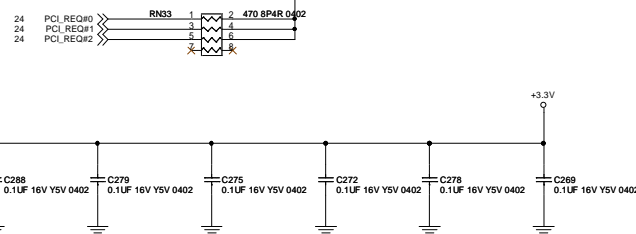
IDSEL:AD22, INT:BCDA, REQ1 &amp; GNT1, PCI\_CLK4



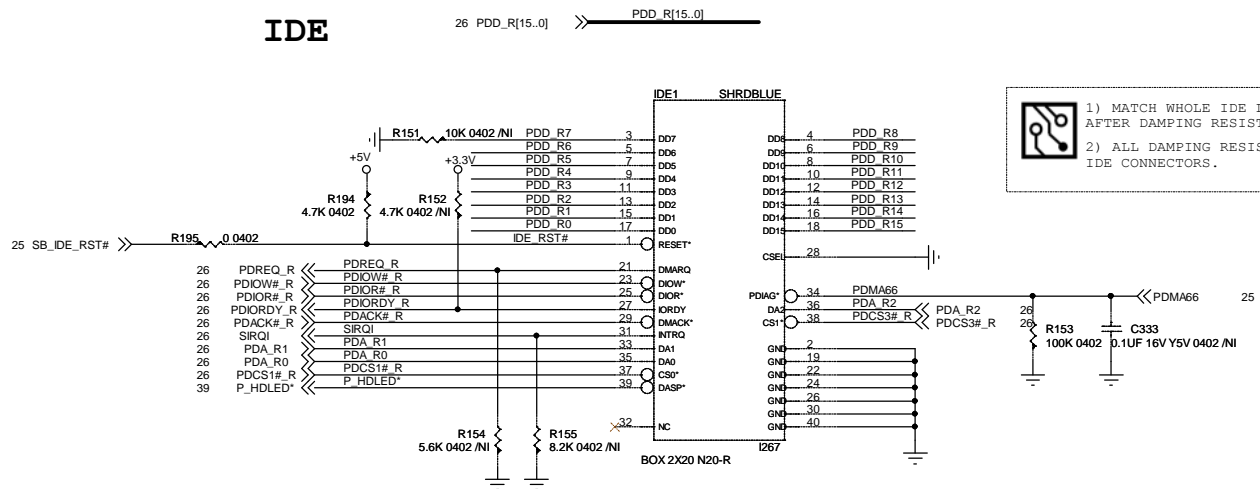
IDSEL:AD23, INT:DABC, REQ2 &amp; GNT2, PCI\_CLK2



PCI PULL UPS

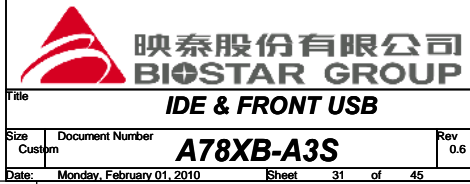
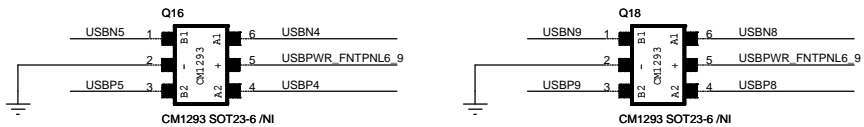
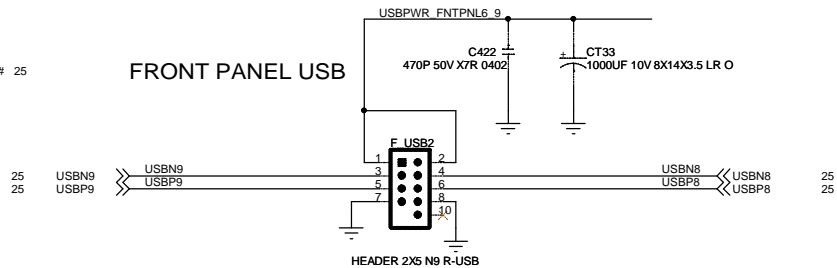
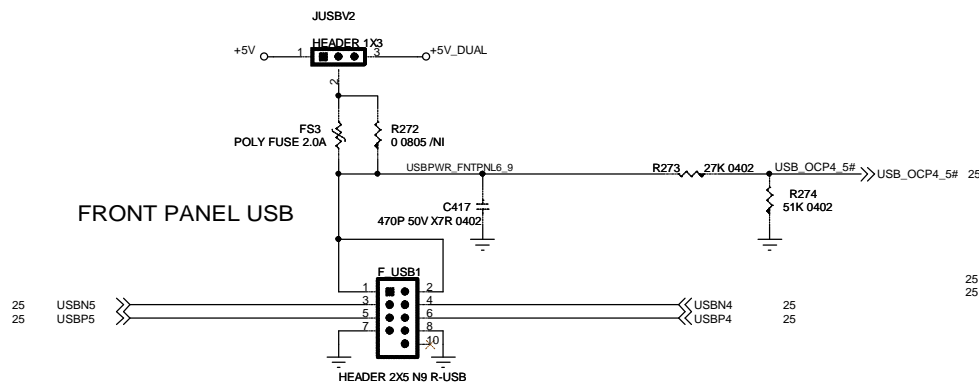


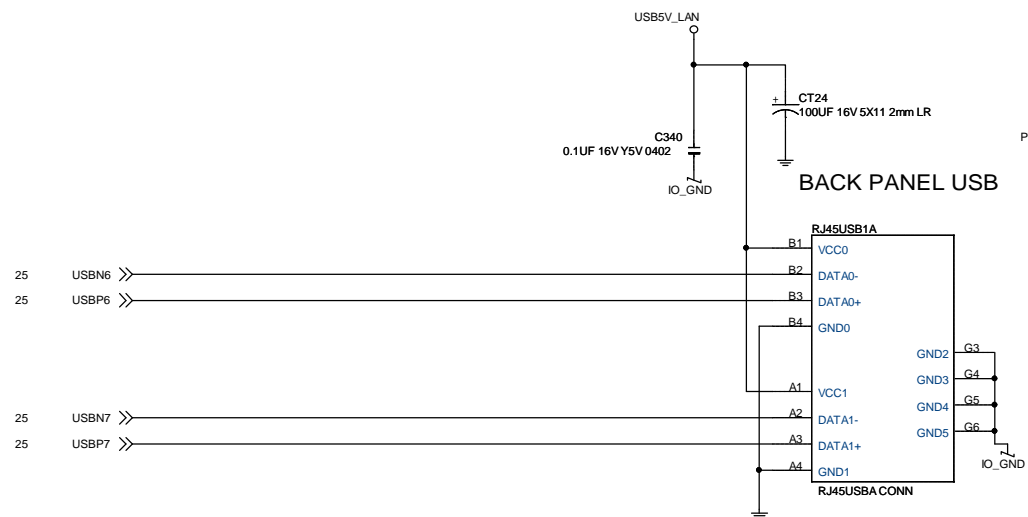
**IDE**



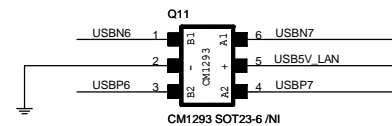
- 1) MATCH WHOLE IDE LINES (BEFORE AND AFTER DAMPING RESISTORS) WITHIN 0.5"
- 2) ALL DAMPING RESISTORS CLOSE TO IDE CONNECTORS.

FORNT USB

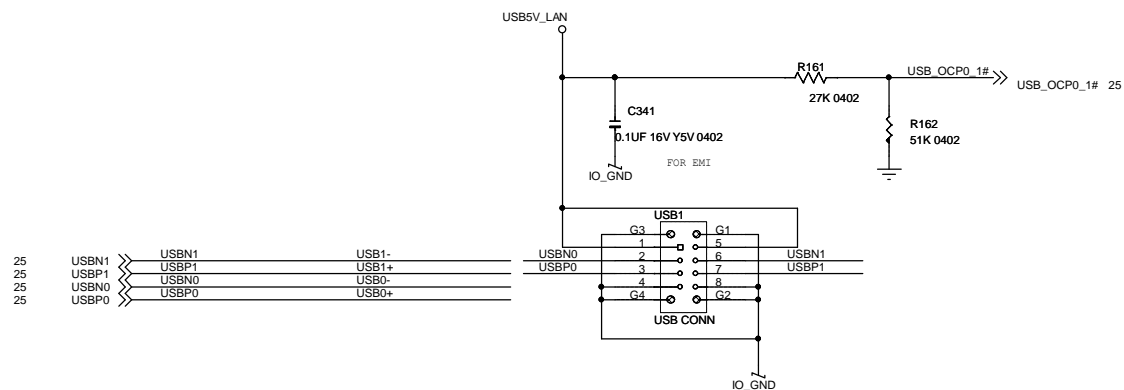
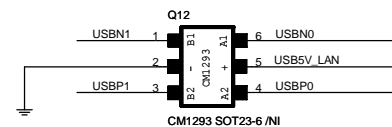




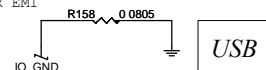
PWR SHOULD BE 75MIL MIN



PLACE NEAR CONN

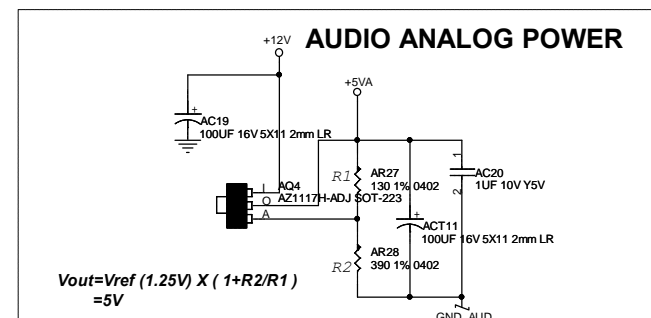
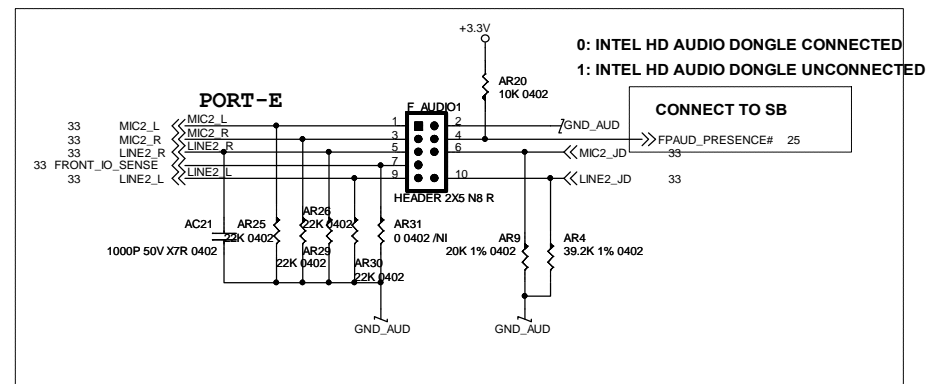


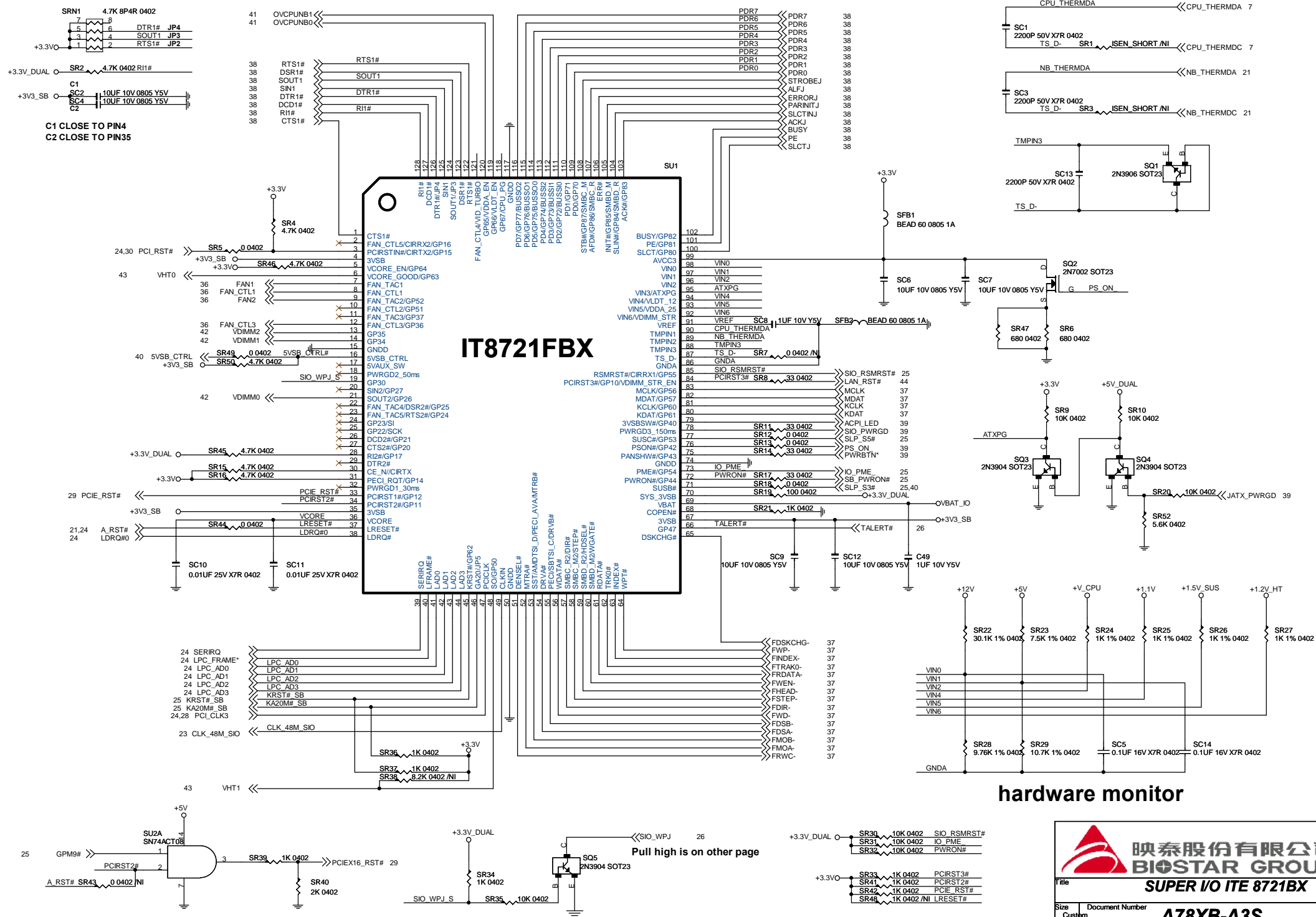
FOR EMI




<b>映泰股份有限公司</b> <b>BIOSTAR GROUP</b>	
<b>USB CONN</b>	
Title	Document Number
Size Custom	<b>A78XB-A3S</b>
Date: Monday, January 25, 2010	Sheet 32 of 45
Rev 0.6	







hardware monitor



映泰股份有限公司  
BIOSTAR GROUP

File  
**SUPER I/O ITE 8721BX**

Size  
Custom

Document Number  
**A78XB-A3S**

Date: Monday, February 01, 2010

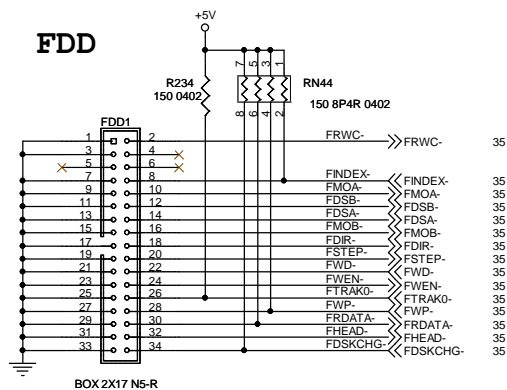
Rev  
0.6

Sheet  
35 of 45

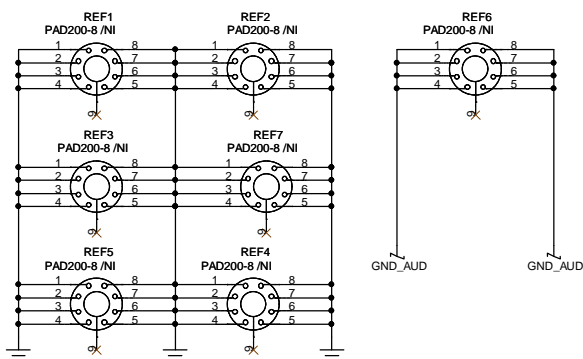
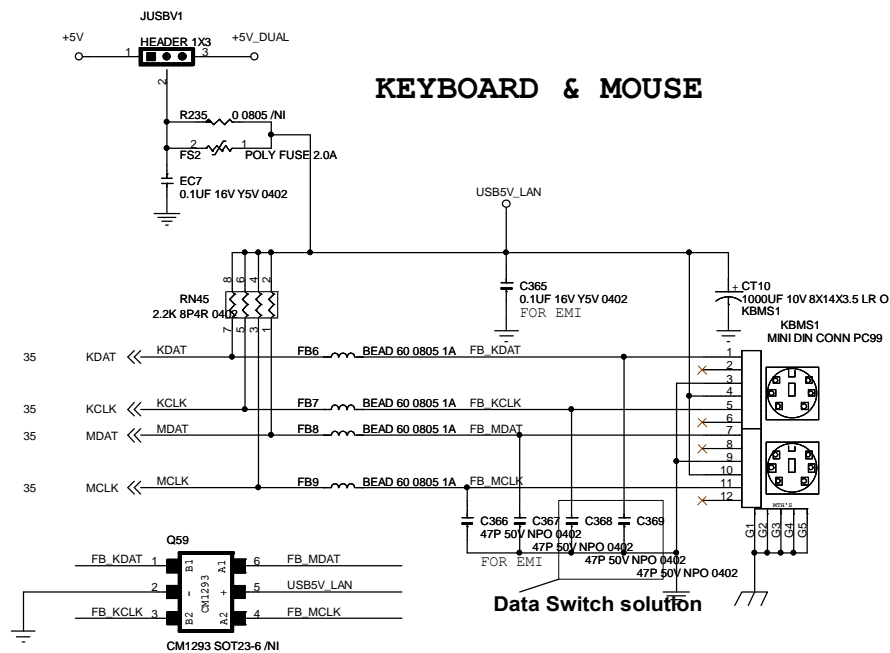


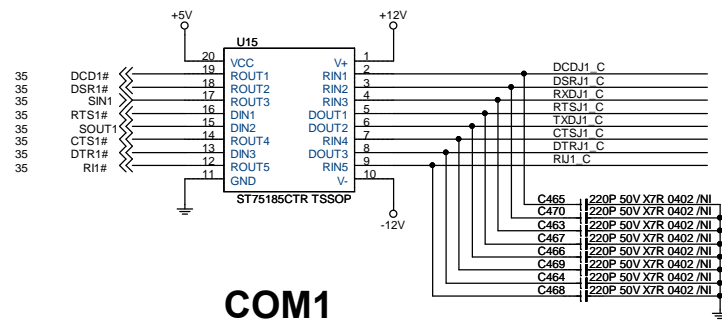


# FDD

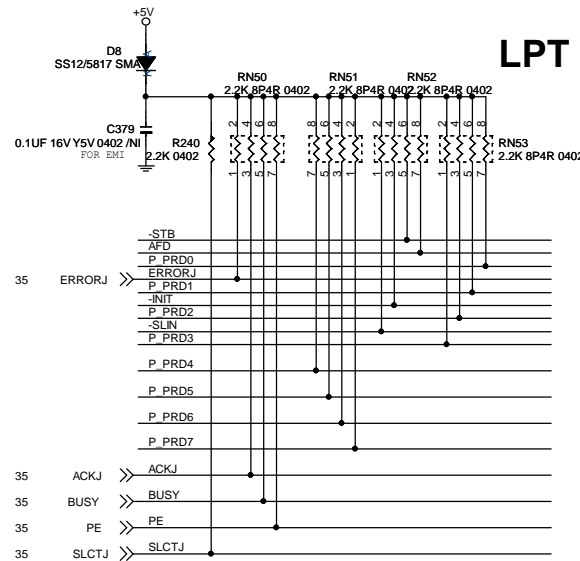
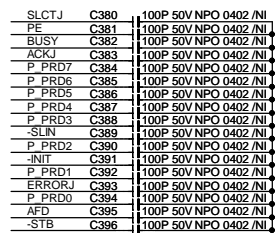
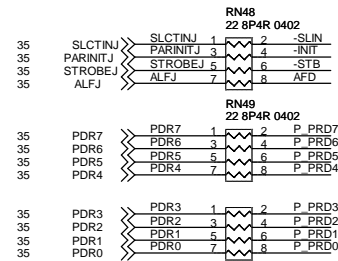
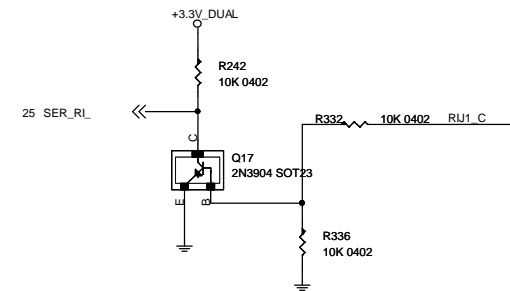
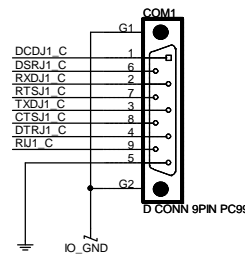


# KEYBOARD & MOUSE

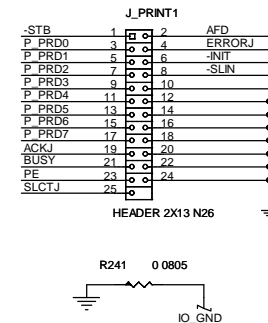


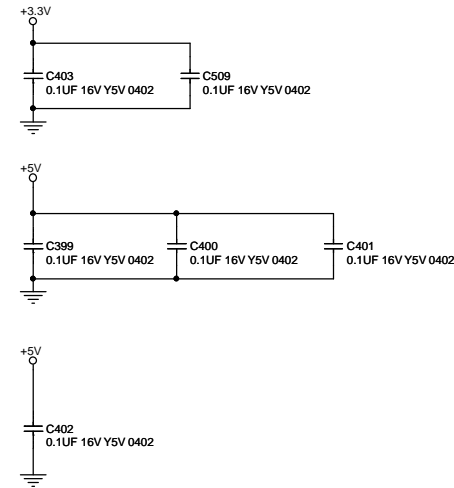
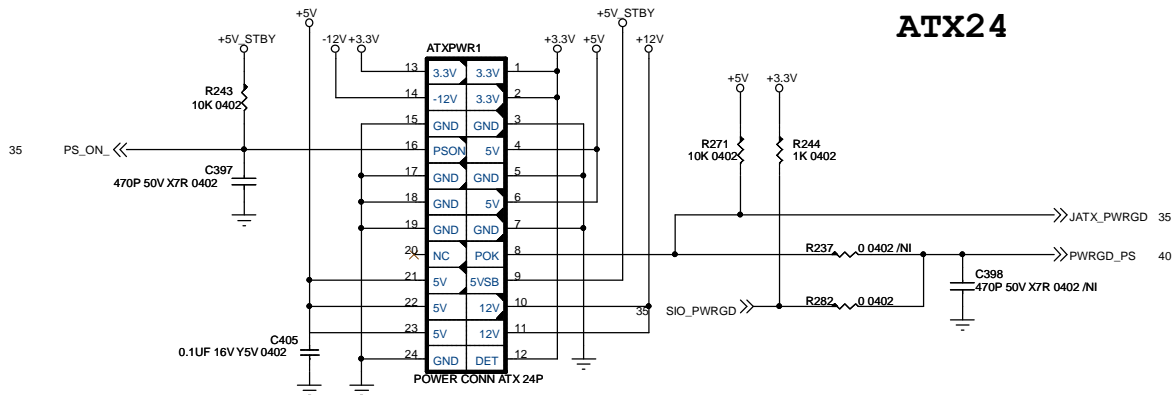


COM1

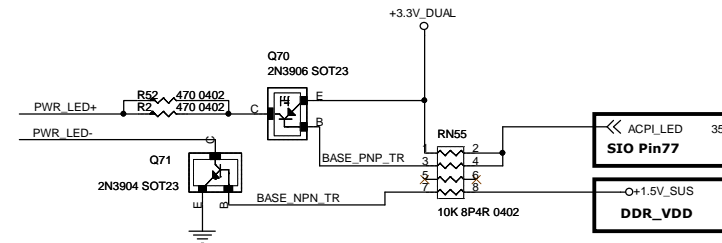
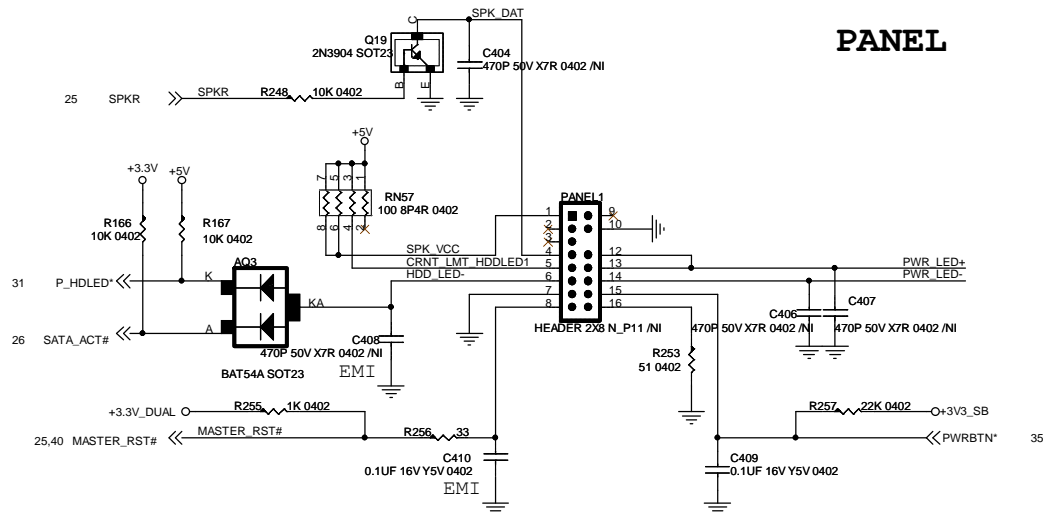


LPT

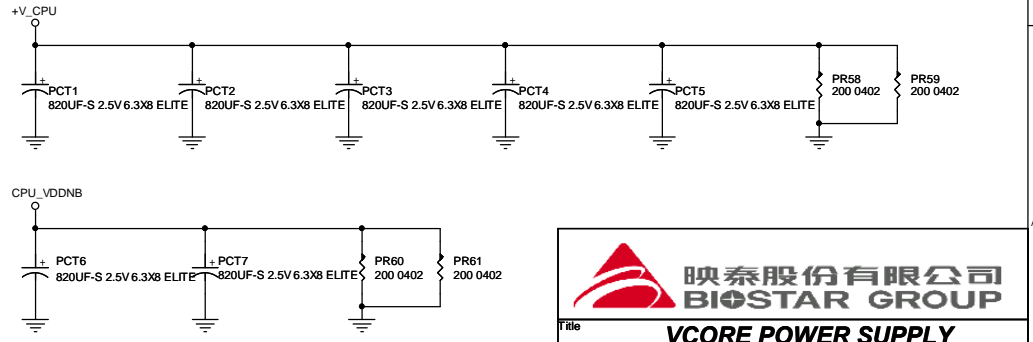
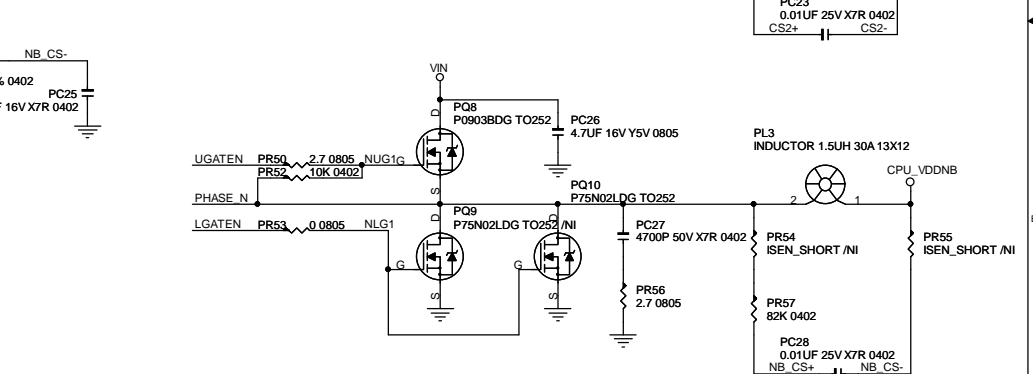
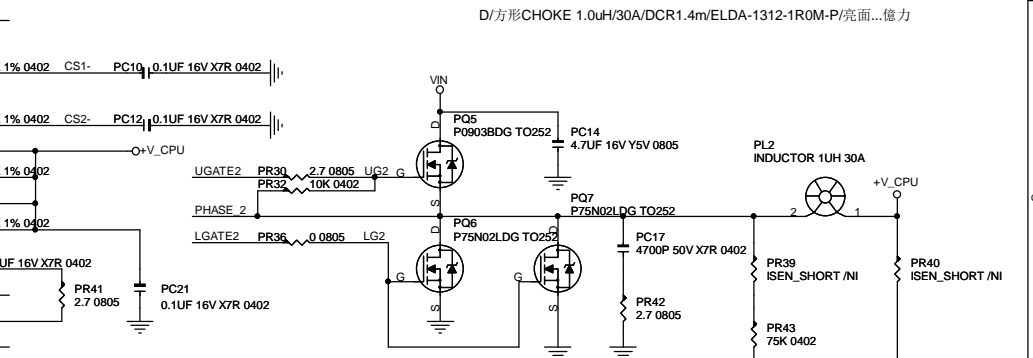
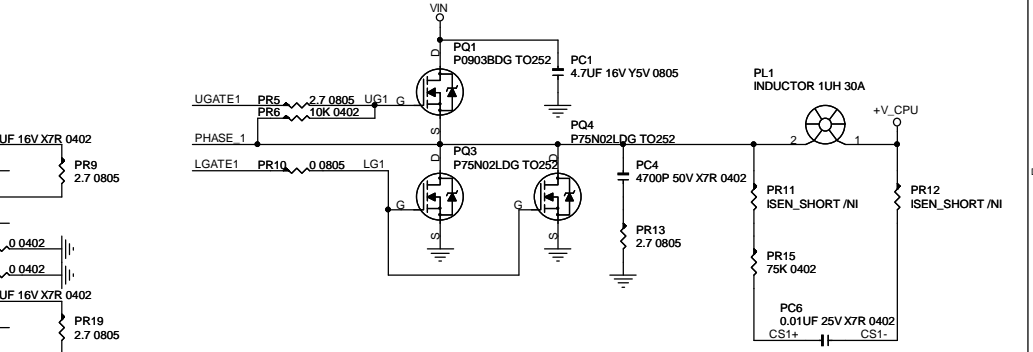
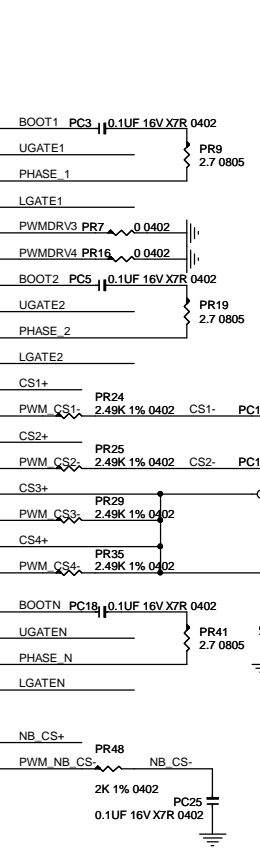
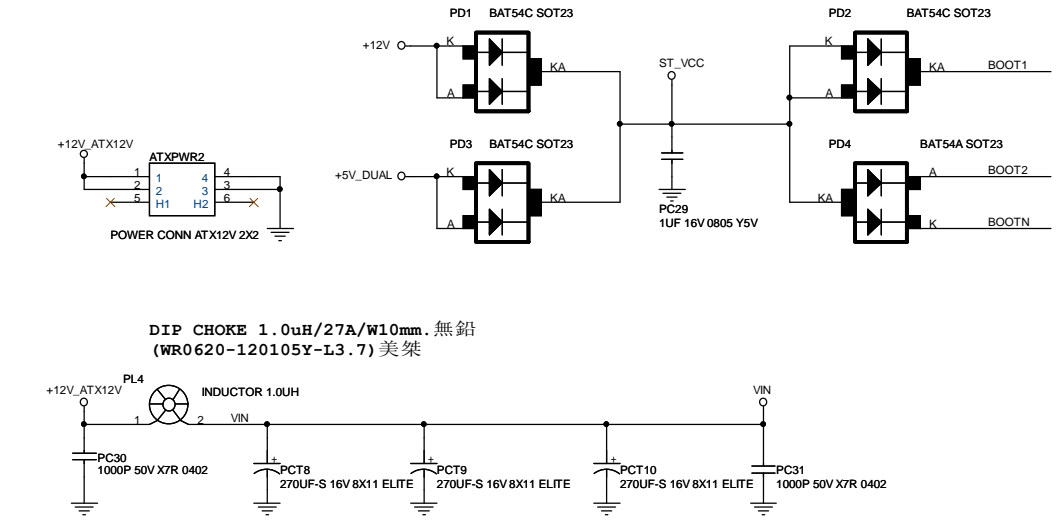
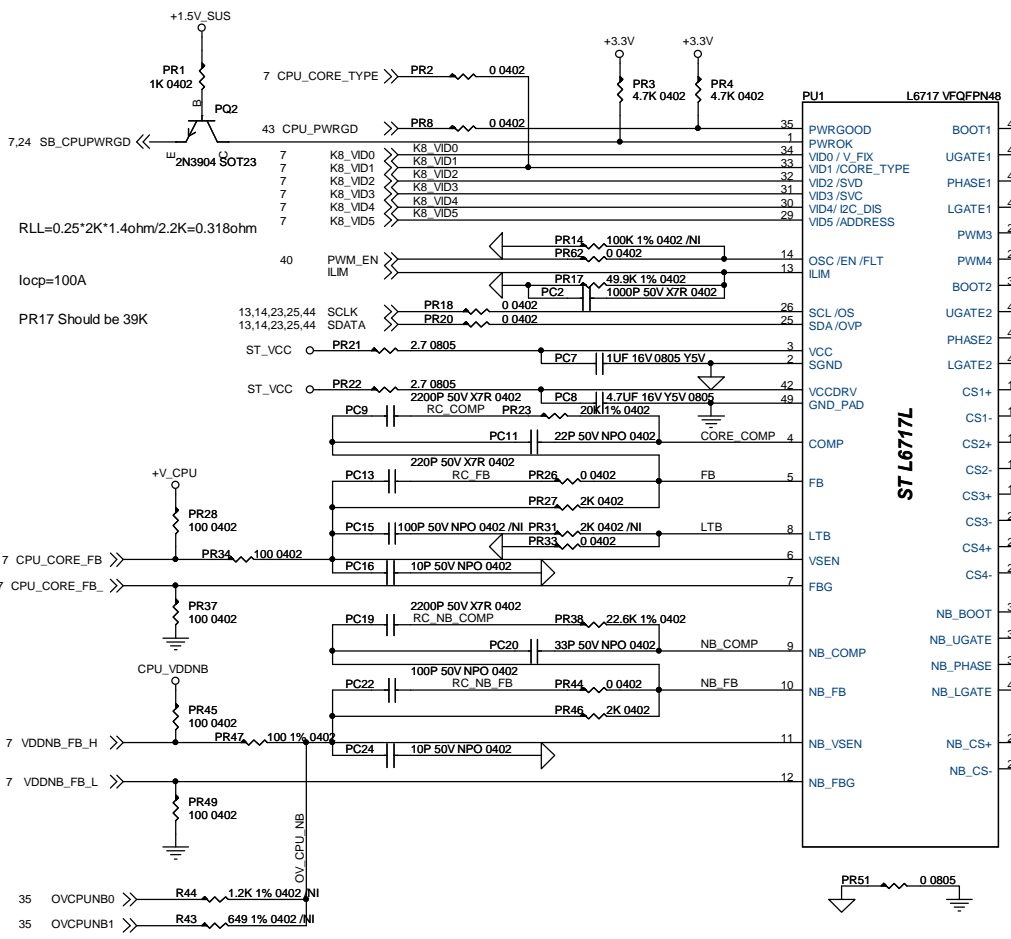




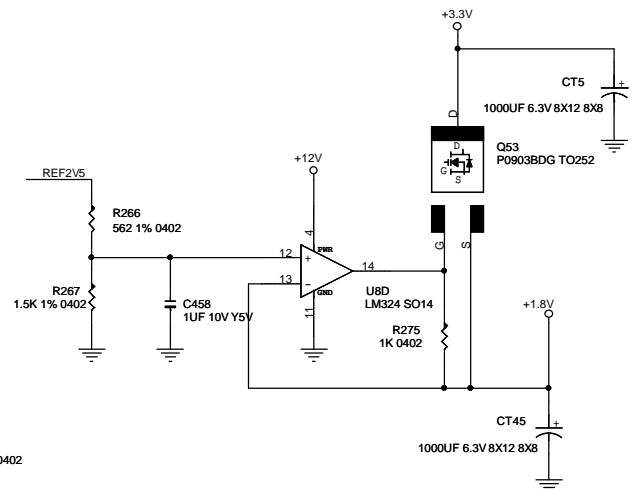
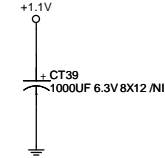
## PANEL









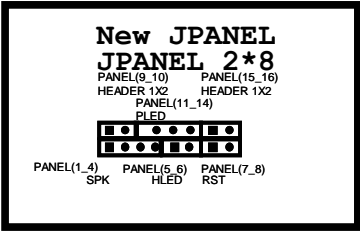
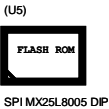
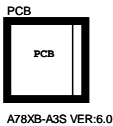
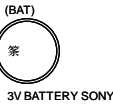
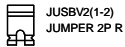






20-120-433101R11-散熱片 43.2\*31\*3.4mm/泡棉/背膠/紅銅/H1-NB182-HS08/無鹵.漢特 SBHS-A78G  
20-120-403200R11-散熱片 40.1x32.5x25.2mm/紅銅色/泡棉/熱膠(H1-NB294-HS02)/無鹵漢特 NBHS-A88G

20-120-582706R11散熱片 58\*27\*25mm(H1-NB140-HS02)銀色貼泡棉.熱膠/無鉛.漢特NB-NF61  
20-120-433100R11散熱片 43.2\*31\*3.4mm/泡棉/背膠/H1-NB182-HS02/無鉛...漢特SB SMALL-AMD



15-N12-160000R12 ... A78XB-A3S VER:6.0 無鉛 OSP+黑(180.00\*304.80\*1.5)mm 4L 智恩  
86-A78XBA3S-R01P-60  
96-A78XBA3S-R01P-60