A790GXM-AD3 V : 1.0

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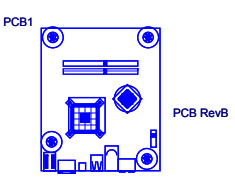
REVISION HISTORY:

Rev	Date	Notes
	A---25/07/08 - 15-V18-010010	1. From V17100(RS780DM-A) 2. Change to AM3 CPU&DDR3 3. Add e-SATA 4. Add Stand-By LED 5. Add NBFAN*1 6. DEL COM1& Add DVI 7. Add CLR_CMOS Button 8. Del 1394
	B---15/10/08 - 15-V18-010020	1. Modify for scrool/flighting screen 2. Increase stability issue 3. Verify audio connector & EMI suggestion 4. Move NB_FAN&PWR_FAN placement & cost-down some 0 Ohm parts 5. Change PCB silkscreen with PWR_BTN&RST_BTN + SATA1~SATA6 6. Revise eSATA circuit 7. SB ver. from A12 change to A14(PA_SB700AJ8)
	1.0 --- 01/07/09' -- 15-V18-011000(GE1) 15-V18-011001(CHUANYI)	1. Modify for scrool/flighting screen 2. Increase stability issue 3. Debug HDMI(EMI) suggestion 4. SB Ver. Change from A14 to A12 5. SATA1/2~SATA5/6 Refine 6. Revise OS-CON to E/C 7. SB ver. from A12 change to A14(PA_SB700AJ8)



Notes:

1). "PWR" net means inner power plane under impedance trace.

2). "GND" net means inner ground plane under impedance trace.

3). IP1 footprint is J2X2_IP

4). After nelist running, please specially take care the single net name: "IMPEDANCE_T" and "IMPEDANCE_B".

PCB Impedance control

Impedance (OHM)	Trace Width (mil)	(S/W/S)	Trace Length (inch)	Pre-preg	Default
50	4	(20/4/20)	8	1080	V

1)Circuit type 1

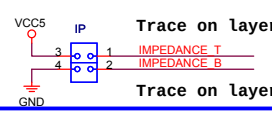
PCB STACK:

Layer 1:TOP

Layer 2:PWR

Layer 3:GND

Layer 4:BOTTOM



IMPORTANT NOTES ABOUT THIS SCHEMATIC

DESIGN NOTE: Example text for the design note to show the note inside the colored box.

1) DESIGN NOTES in grey are information notes.

DESIGN NOTE: Example text for the design note to show the note inside the colored box.

2) DESIGN NOTES in yellow are notes of caution.

3) DESIGN NOTES in red are critical, and must be understood and followed.

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Title: Cover Page

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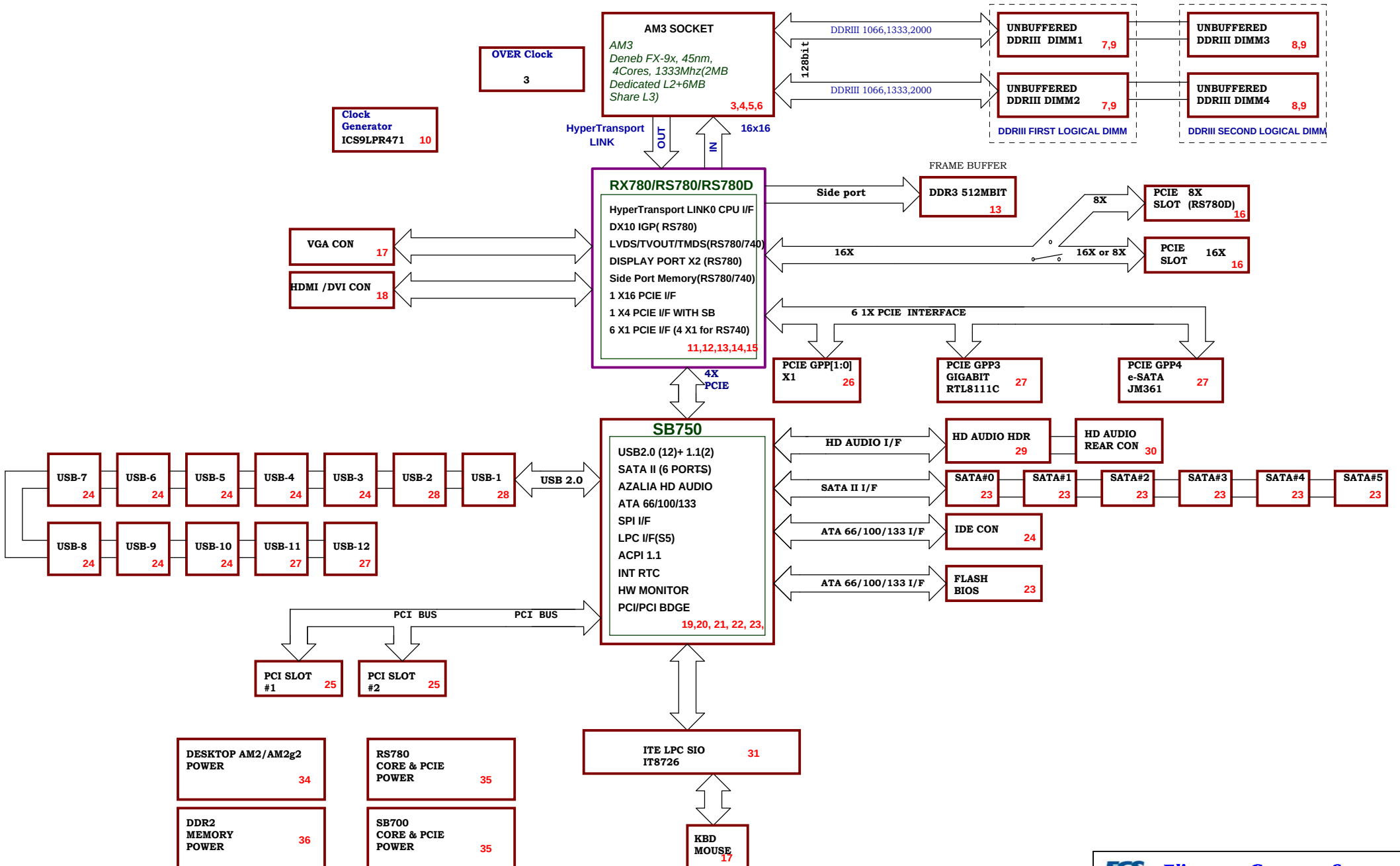

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Title: BLOCK DIAGRAM

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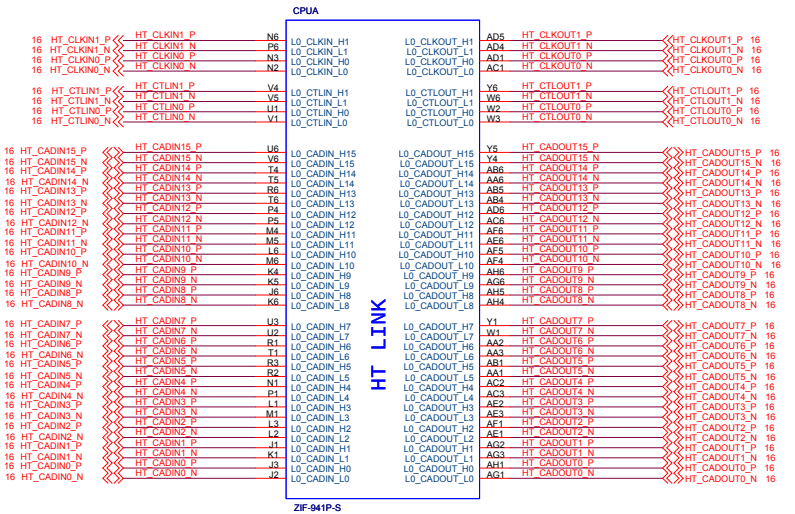
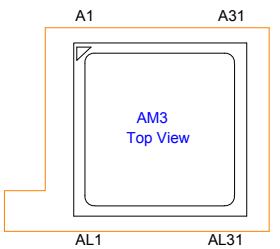
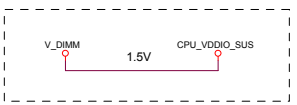
CPU HyperTransport and Overclock

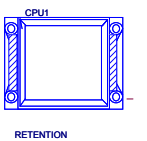
HyperTransport



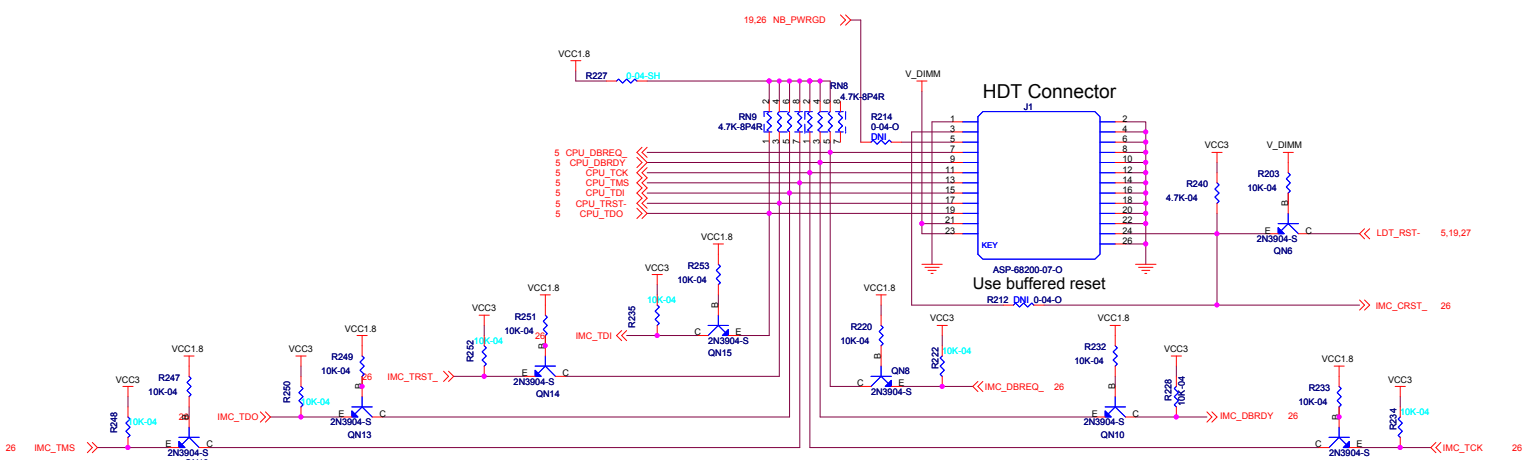
Please use 1mm pad size, place all ELT test pads on bottom side only.







Over Clocking



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Title: AM3 CPU HT&OVERCLOCK			
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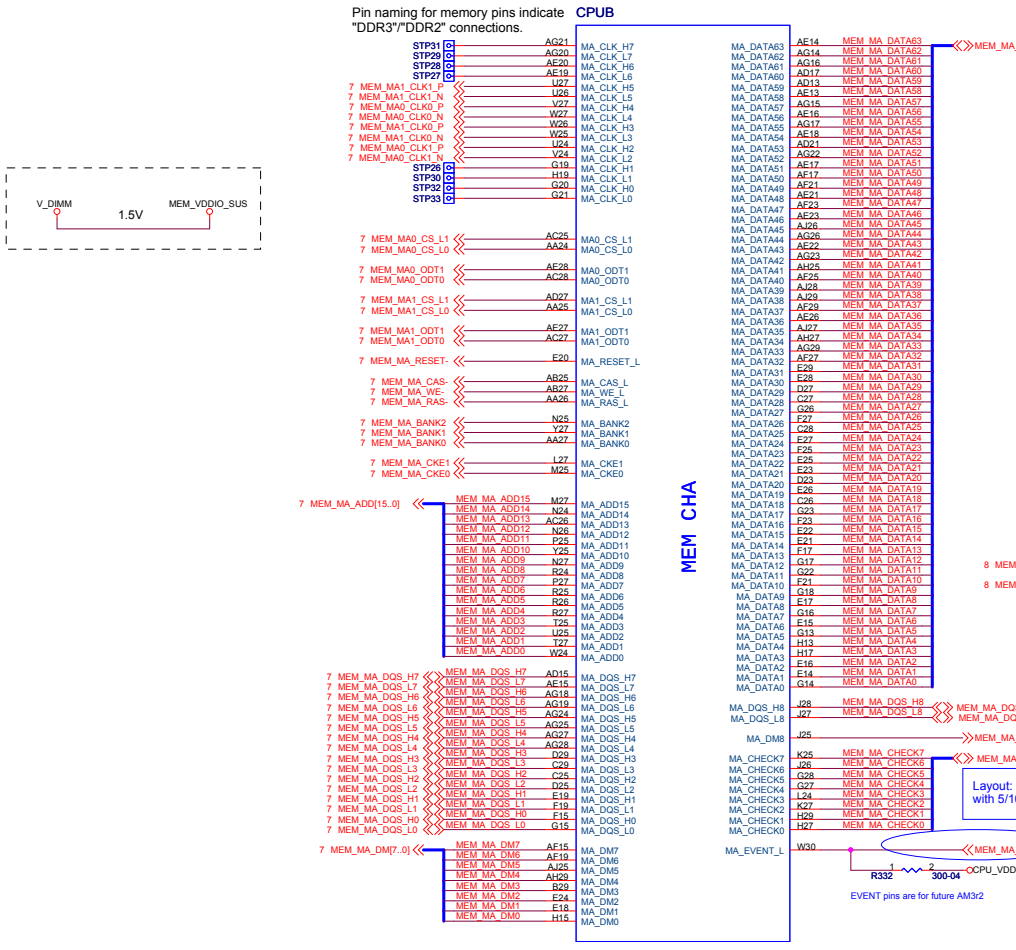
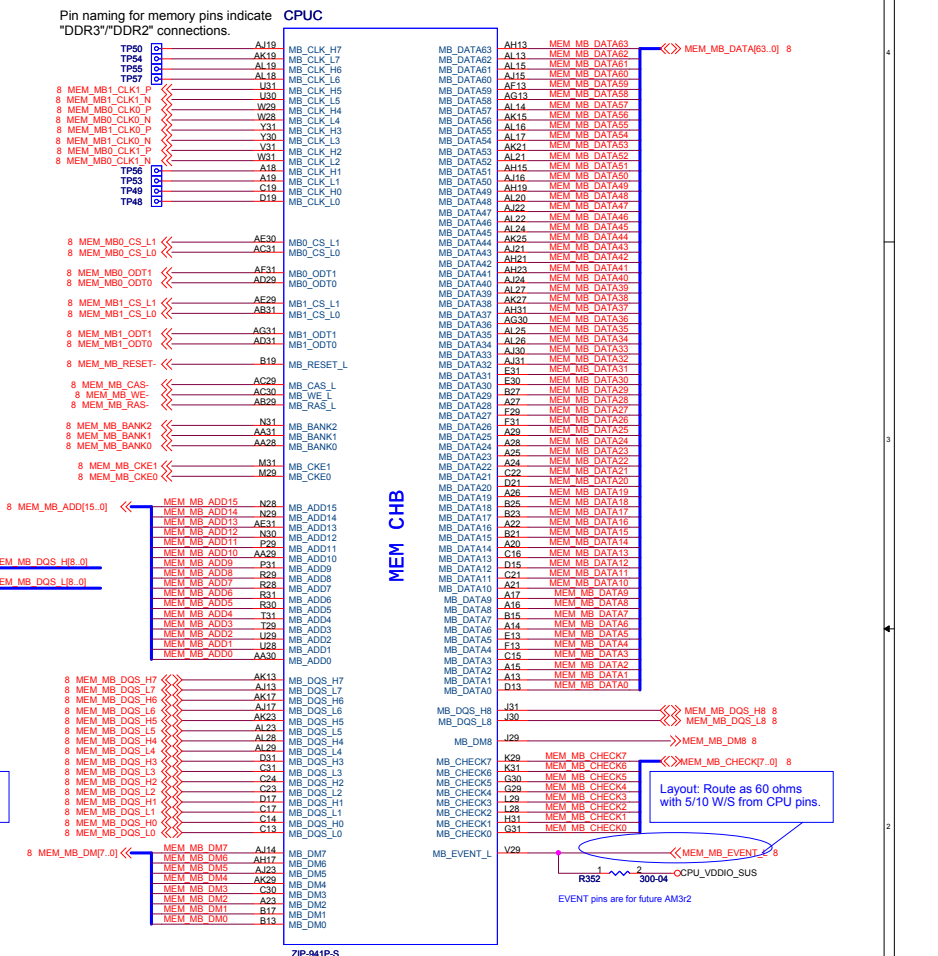
CPU Memory

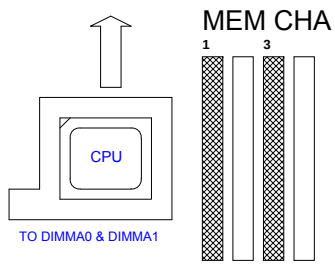
DDR3 Memory Interface A



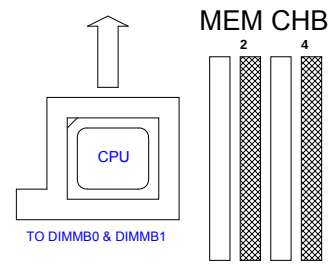
DDR3 Memory Interface B



MEM CHA



MEM CHB



MEMORY CLOCK TRANSLATION

DIMM	DDR3 Memory Signal	CPU Signal
DIMM A0	MEM_MA0_CLK1	MA_CLK2
	MEM_MA0_CLK0	MA_CLK4
DIMM A1	MEM_MA1_CLK1	MA_CLK5
	MEM_MA1_CLK0	MA_CLK3
DIMM B0	MEM_MB0_CLK1	MB_CLK2
	MEM_MB0_CLK0	MB_CLK4
DIMM B1	MEM_MB1_CLK1	MB_CLK5
	MEM_MB1_CLK0	MB_CLK3

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Title: AM3 CPU MEMORY

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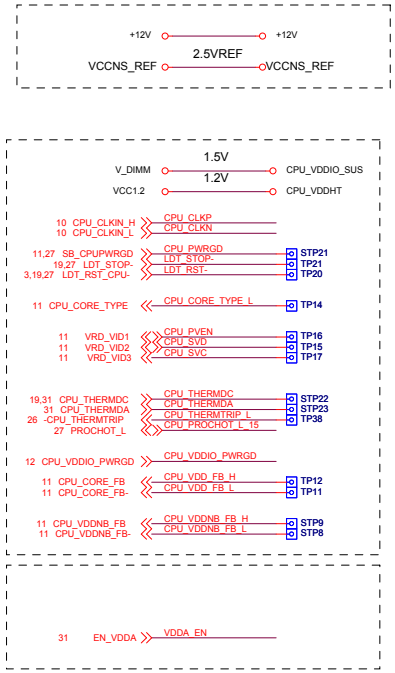
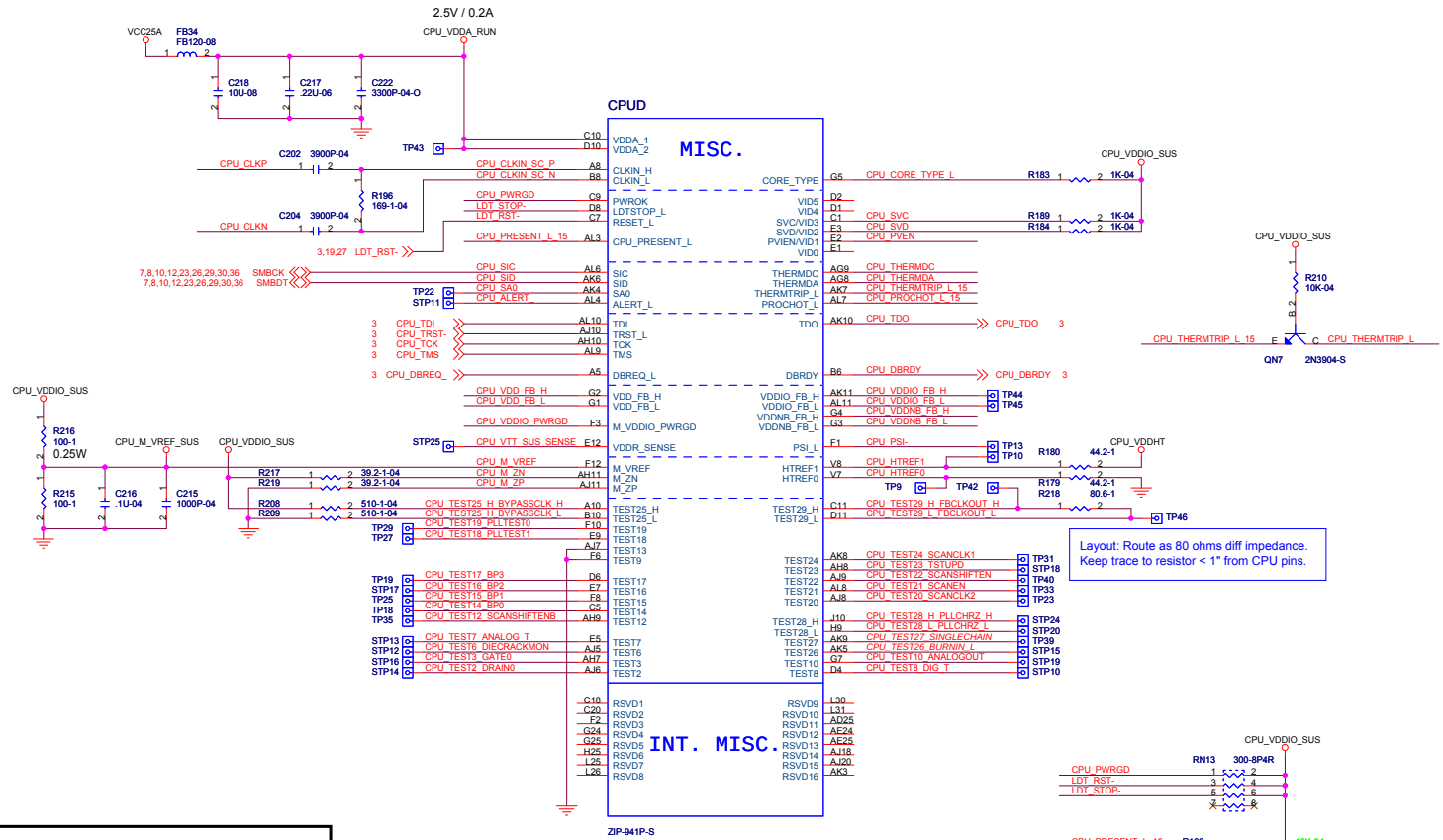
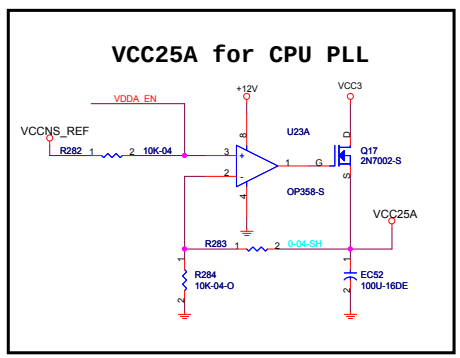
CPU Control and Miscellaneous







Elitegroup Computer Systems			
Title: AM3 CPU CONTROL&MISC			
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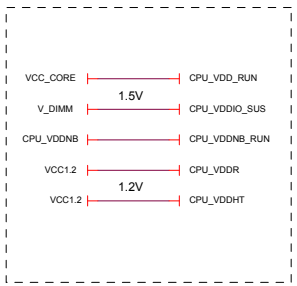
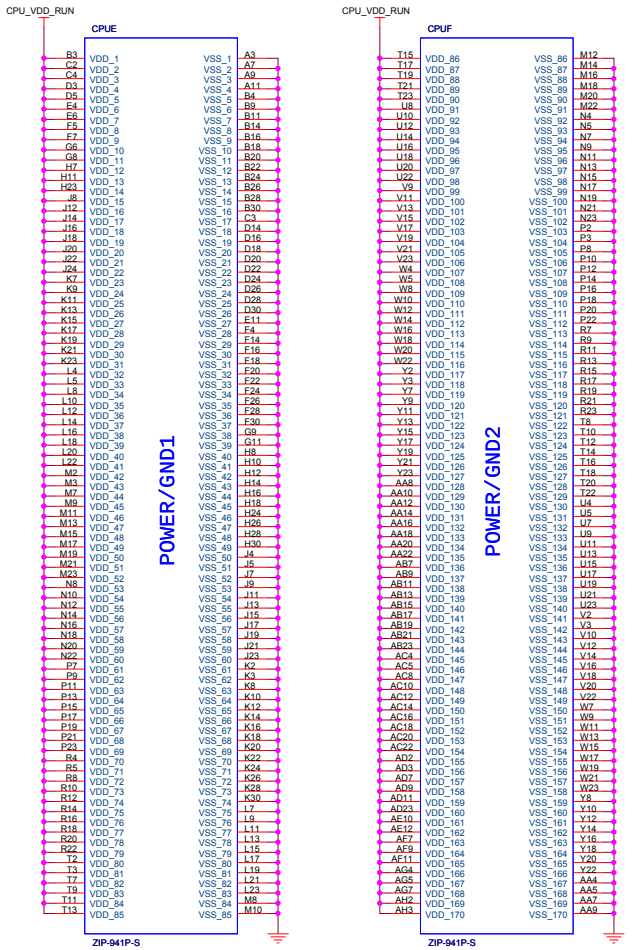
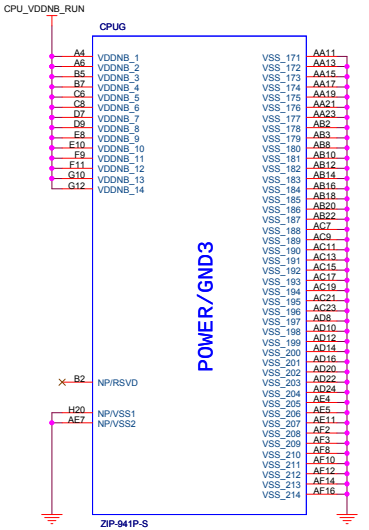
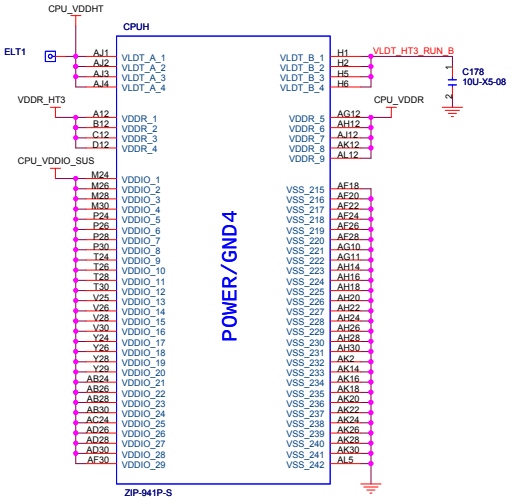
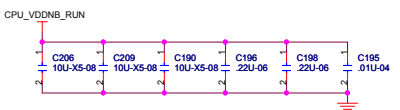
Processor Power and Ground

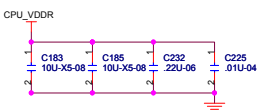


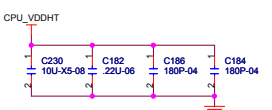


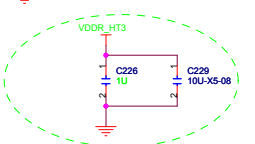


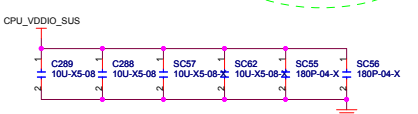




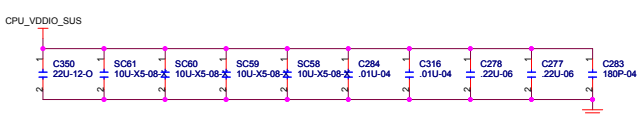


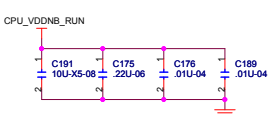


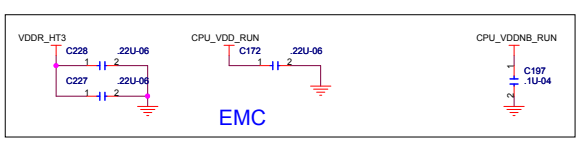


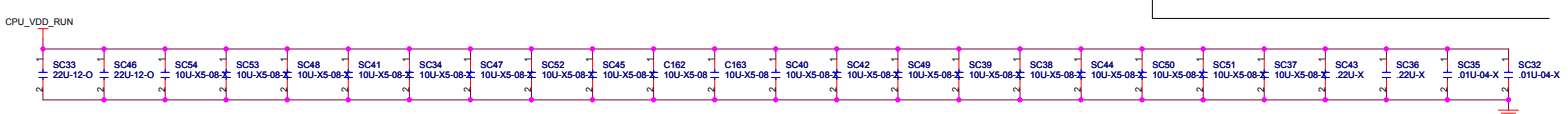


Bottom Side Decoupling









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Title: AM3 CPU PWR&GND			
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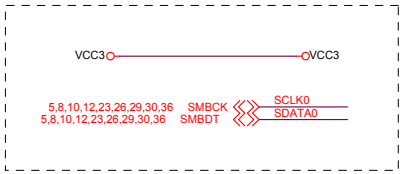
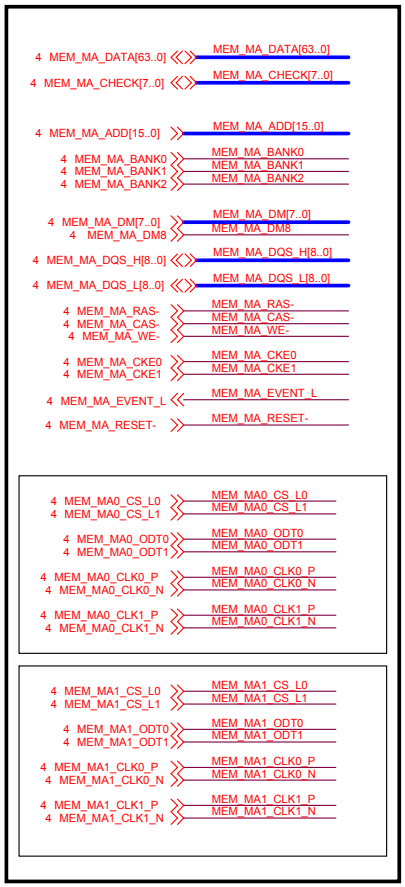
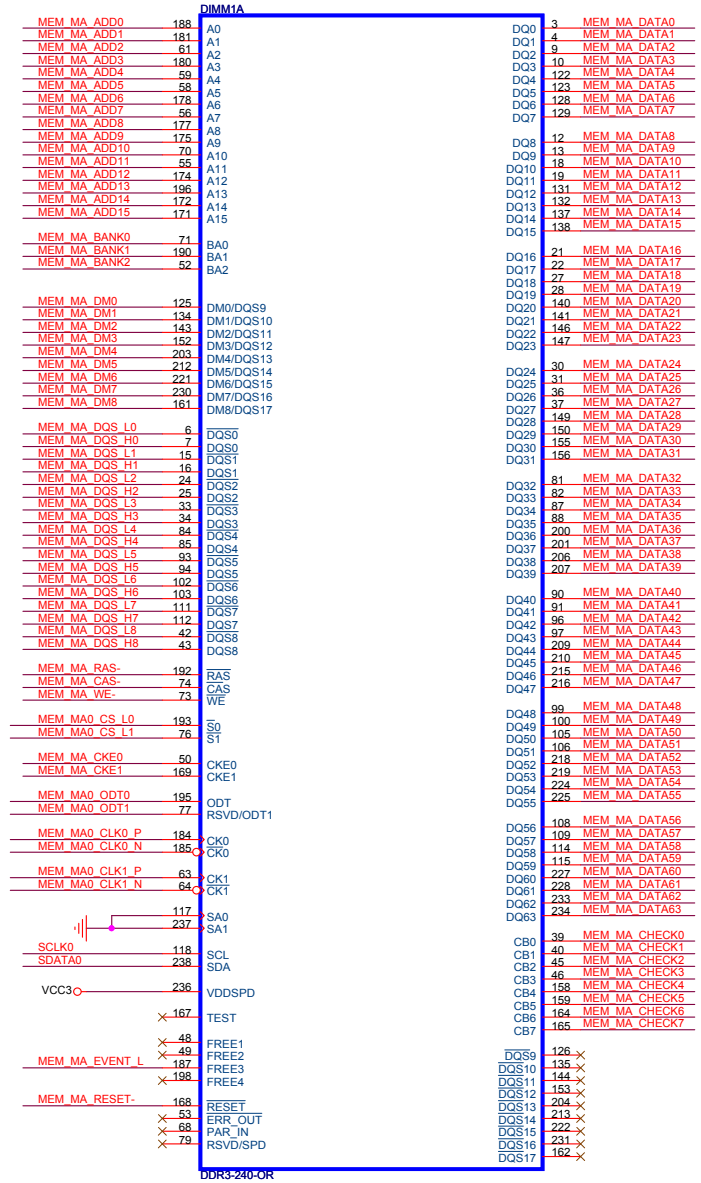
A Chanel

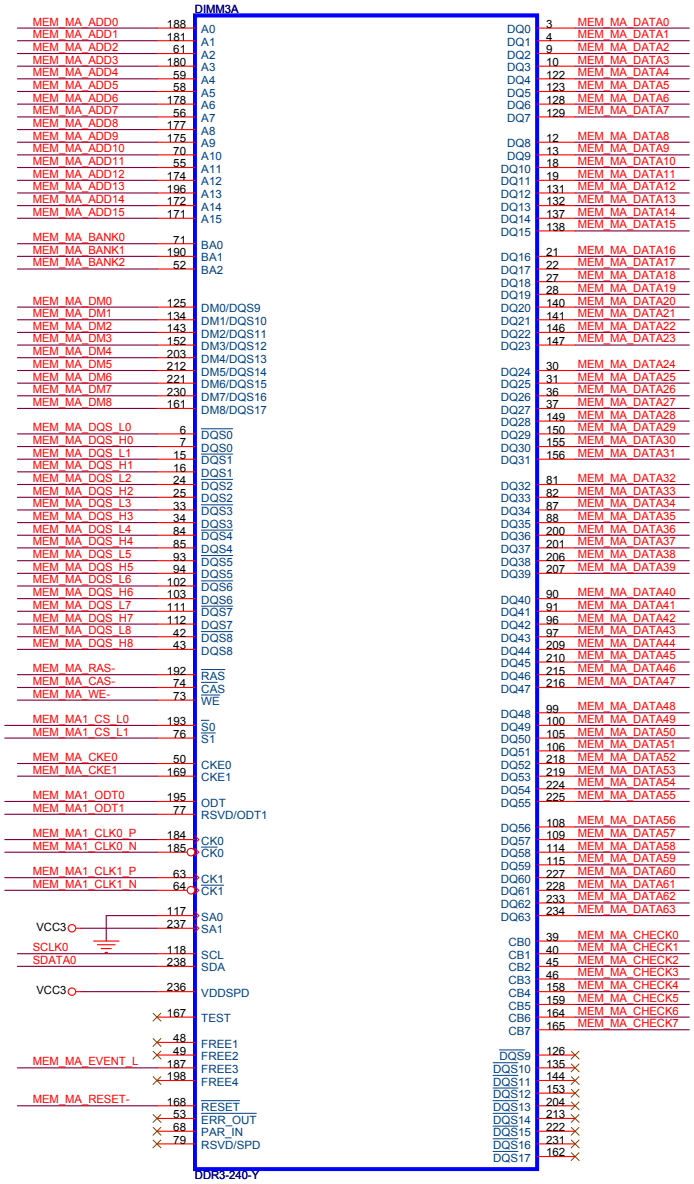




SMBus Addressing

SMBus 0	
Device	8-bit Address (hex)
DIMMA0	A0
DIMMB0	A2
DIMMA1	A4
DIMMB1	A6





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Title: DDR3 DIMM A CH

Size	Document Number	Rev
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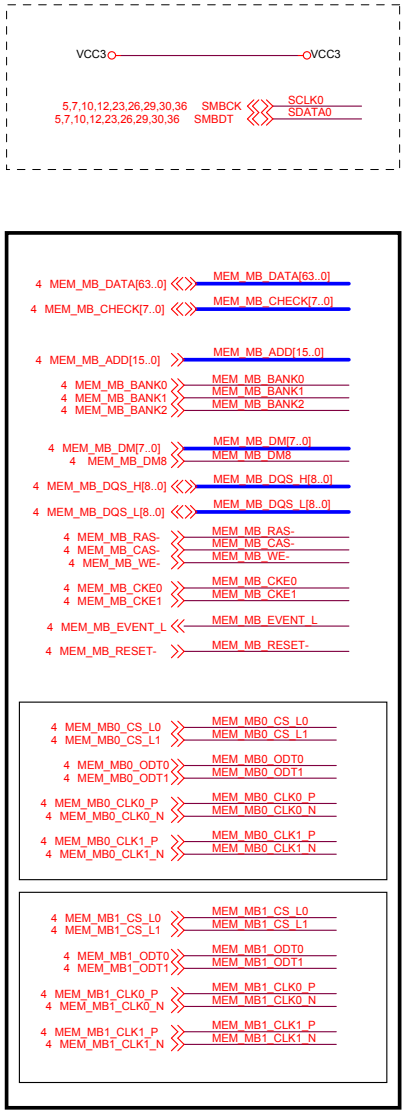
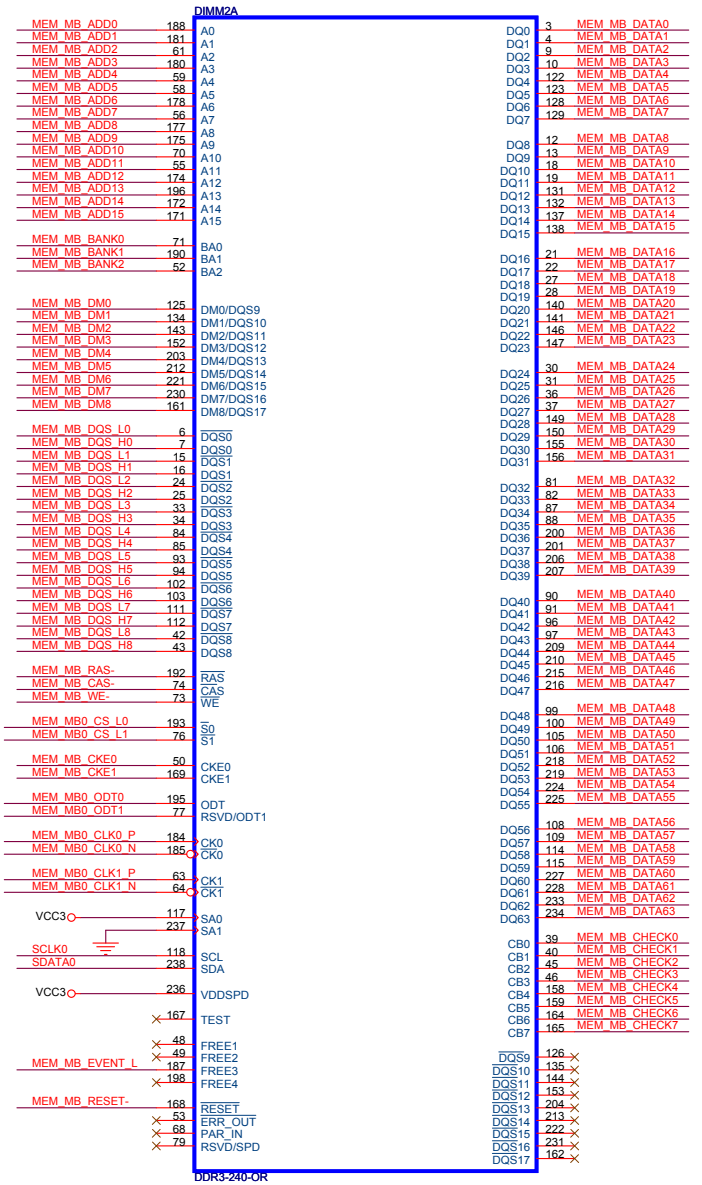
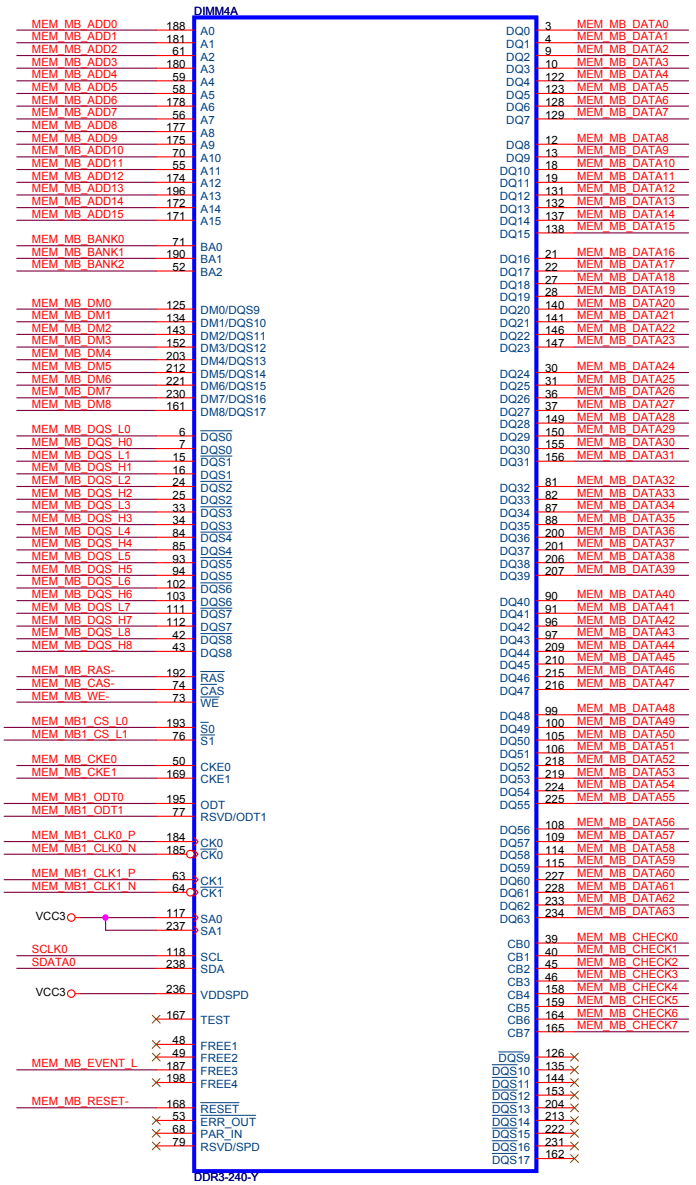
B Chanel







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Title: DDR3 DIMM B CH

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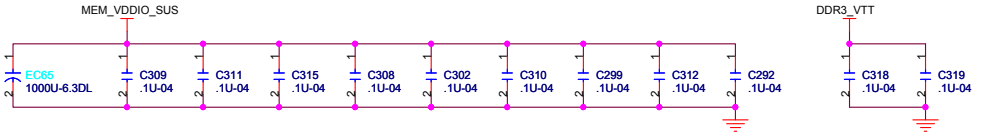
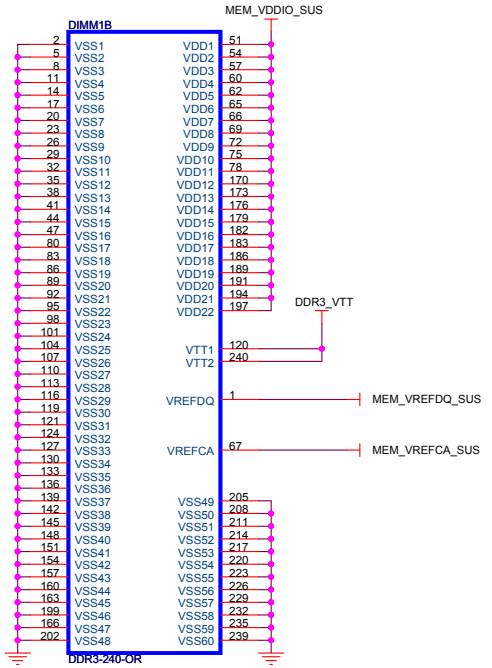
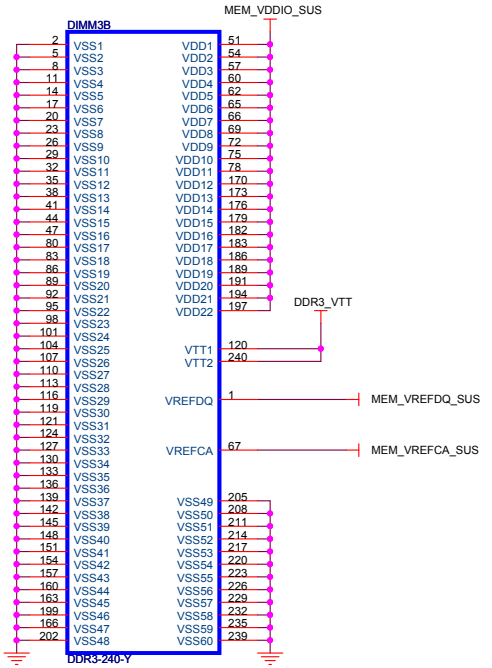
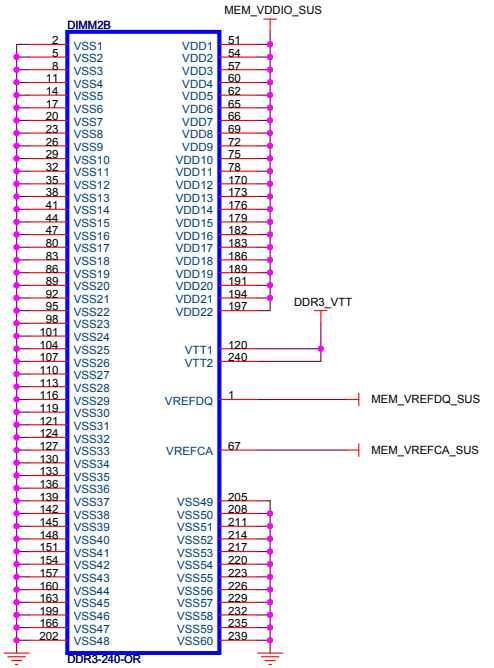
1.5V
V_DIMM
MEM_VDDIO_SUS
0.75V
DDR_VTT
DDR3_VTT

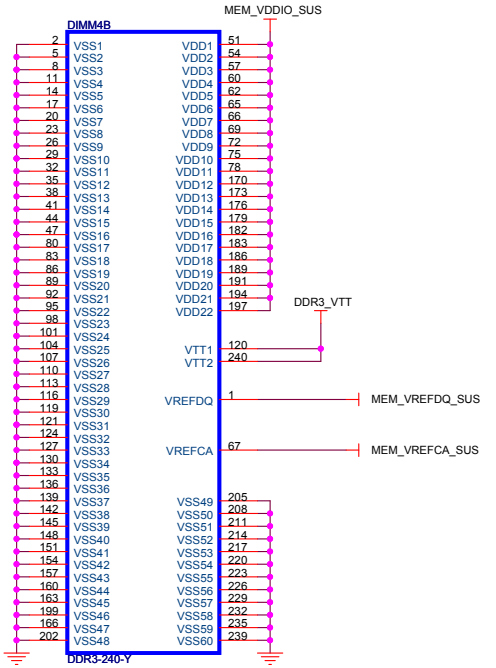
DE-COUPLING CAP FOR DIMMs



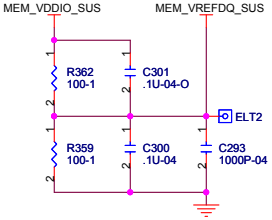






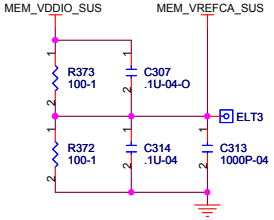


MEM_VREFDQ_SUS



Layout: Place within 500 mils of the DIMMB1(4) socket.

MEM_VREFCA_SUS



Layout: Place within 500 mils of the DIMMB1(4) socket.

Elitegroup Computer Systems

Title: DDR3 DIMM PWR

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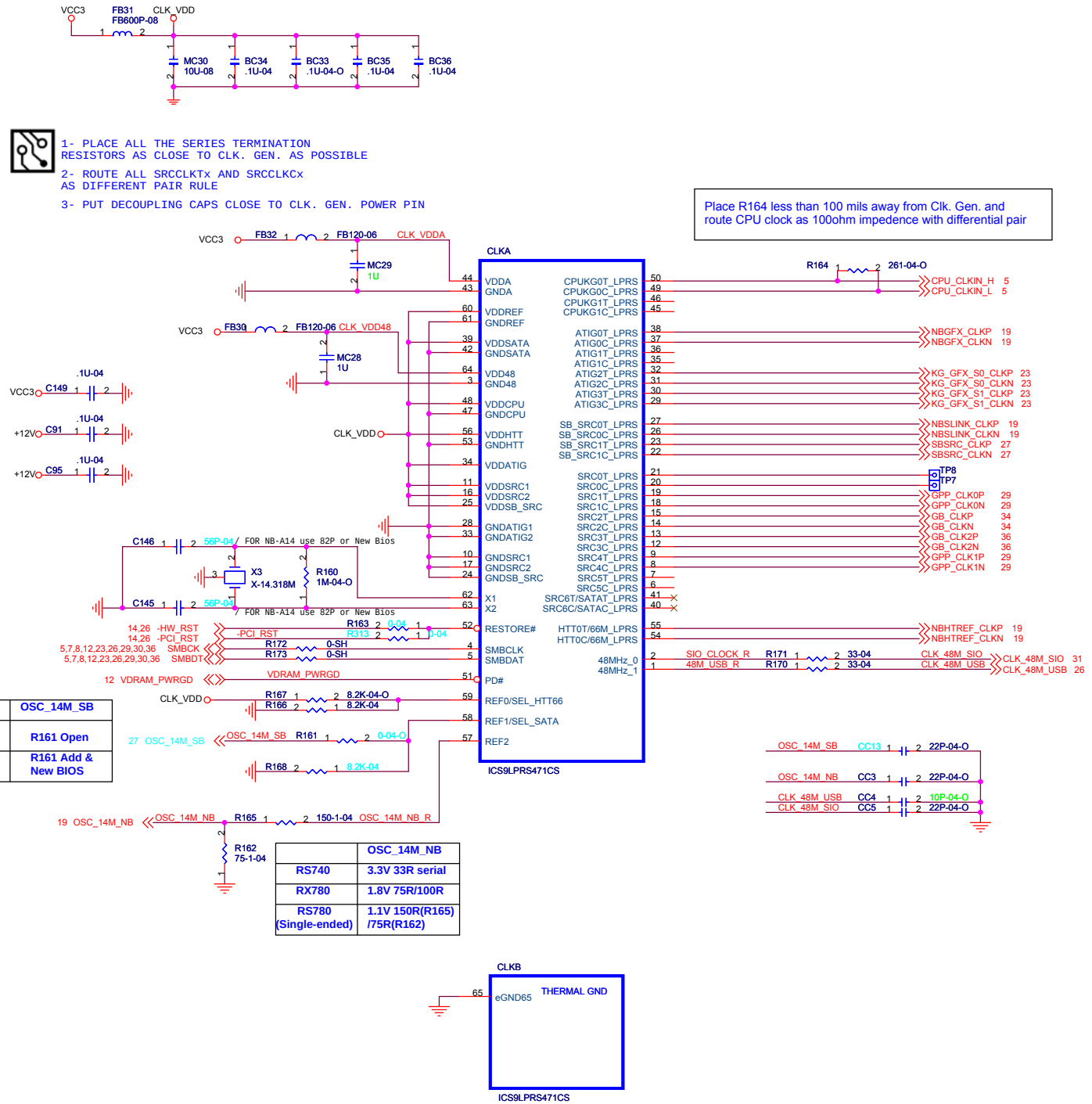

	OSC_14M_SB
SB750-A12	R161 Open
SB750-A14	R161 Add & New BIOS

	OSC_14M_NB
RS740	3.3V 33R serial
RX780	1.8V 75R/100R
RS780 (Single-ended)	1.1V 150R(R165) /75R(R162)

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(IN/OUT)*	
GPP_REFCLK	NC	100M DIFF	100M DIFF(OUT)	
GPPSB_REFCLK	100M DIFF	100M DIFF	100M DIFF	

* RS780 can be used as clock buffer to output two PCIE refererence clocks
By deault, chip will configured as input mode, BIOS can program it to output mode.

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

Elitegroup Computer Systems

Title: CLK GEN ICS9LPRS471

Size: Custom | Document Number: A790GXM-AD3 | Rev: 1.0

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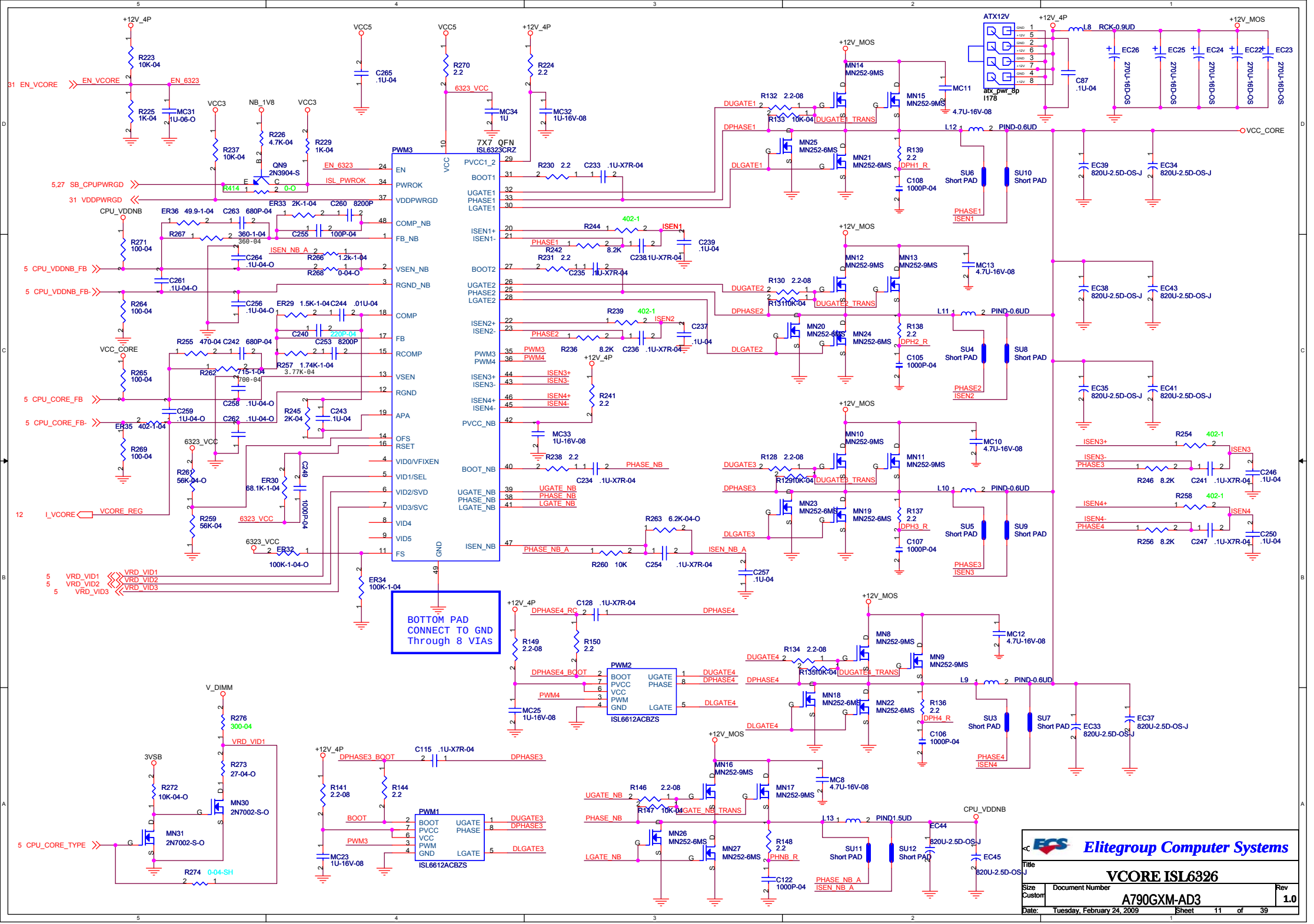
ISL6323CRZ
7X7 QFN
BOTTOM PAD
CONNECT TO GND
Through 8 VIAs
ISL6612ACBZS
ISL6612ACBZS
Elitegroup Computer Systems
VCORE ISL6326
A790GXM-AD3
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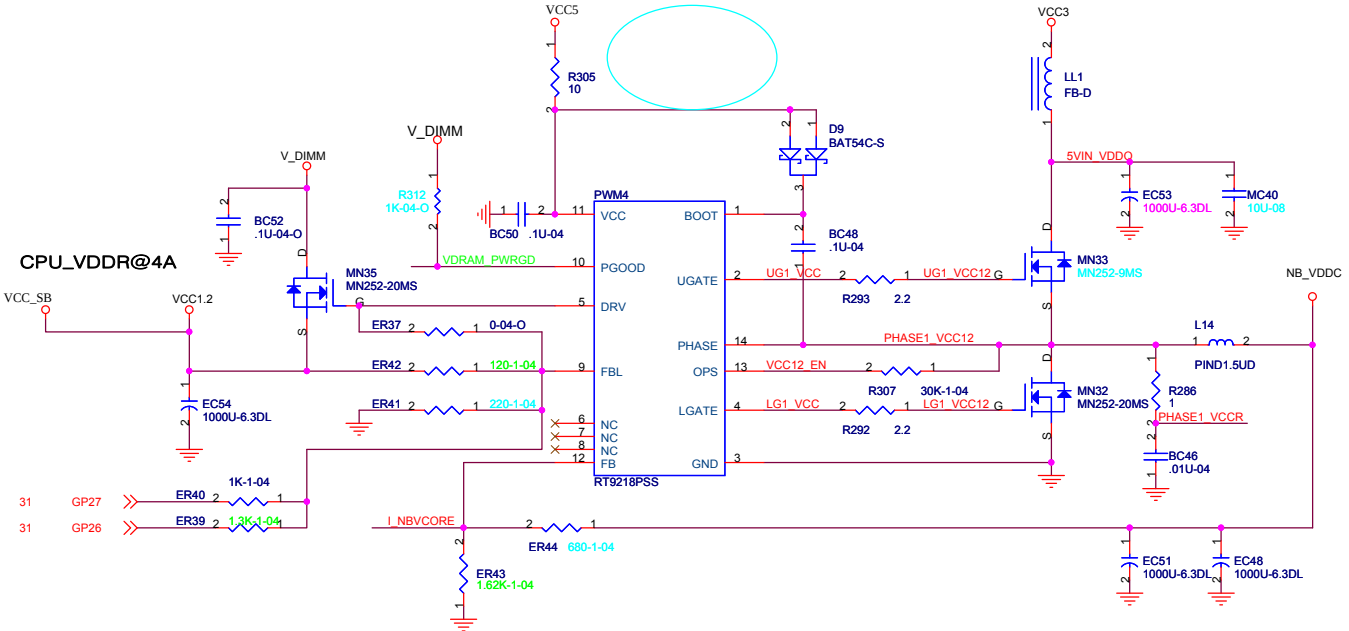
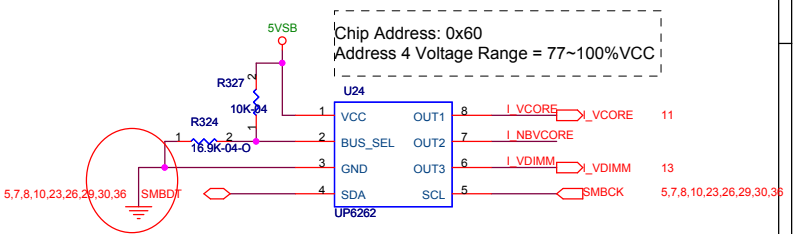
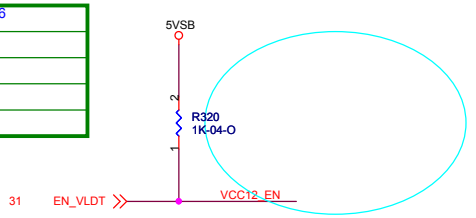
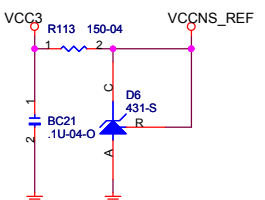


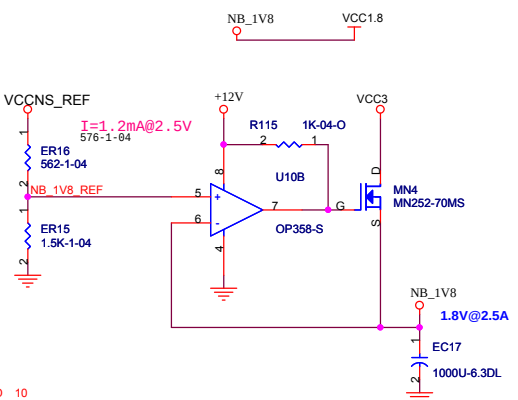
uP6262的電流輸出與ΔVout的關系如下:
選取從uP6262輸出的方向爲正,
則VCORE,CPUVTT及V_DIMM的ΔVout爲:
ΔVout = -Ic * RFB;

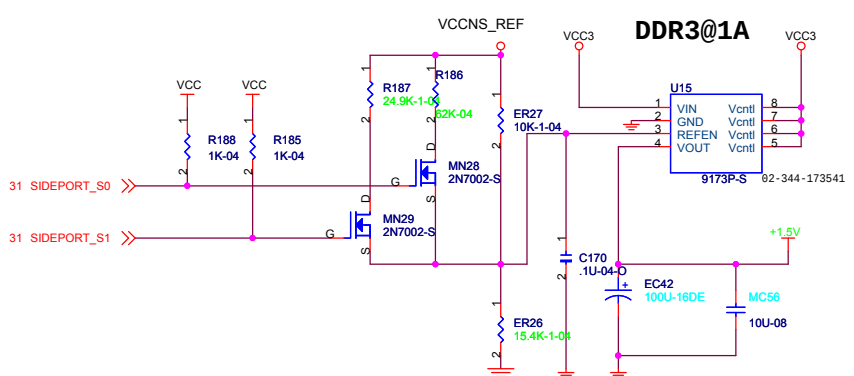


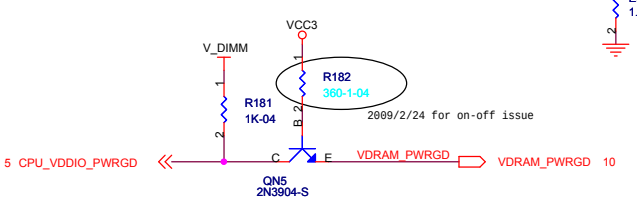
	GP27	GP26
1.35V	0	0
1.3V	0	1
1.25V	1	0
1.2V	1	1











	SIDEPORT_S1	SIDEPORT_S0
1.512	0	0
1.602V	0	1
1.705V	1	0
1.763V	1	1

Elitegroup Computer Systems

Title: NB CORE PWR

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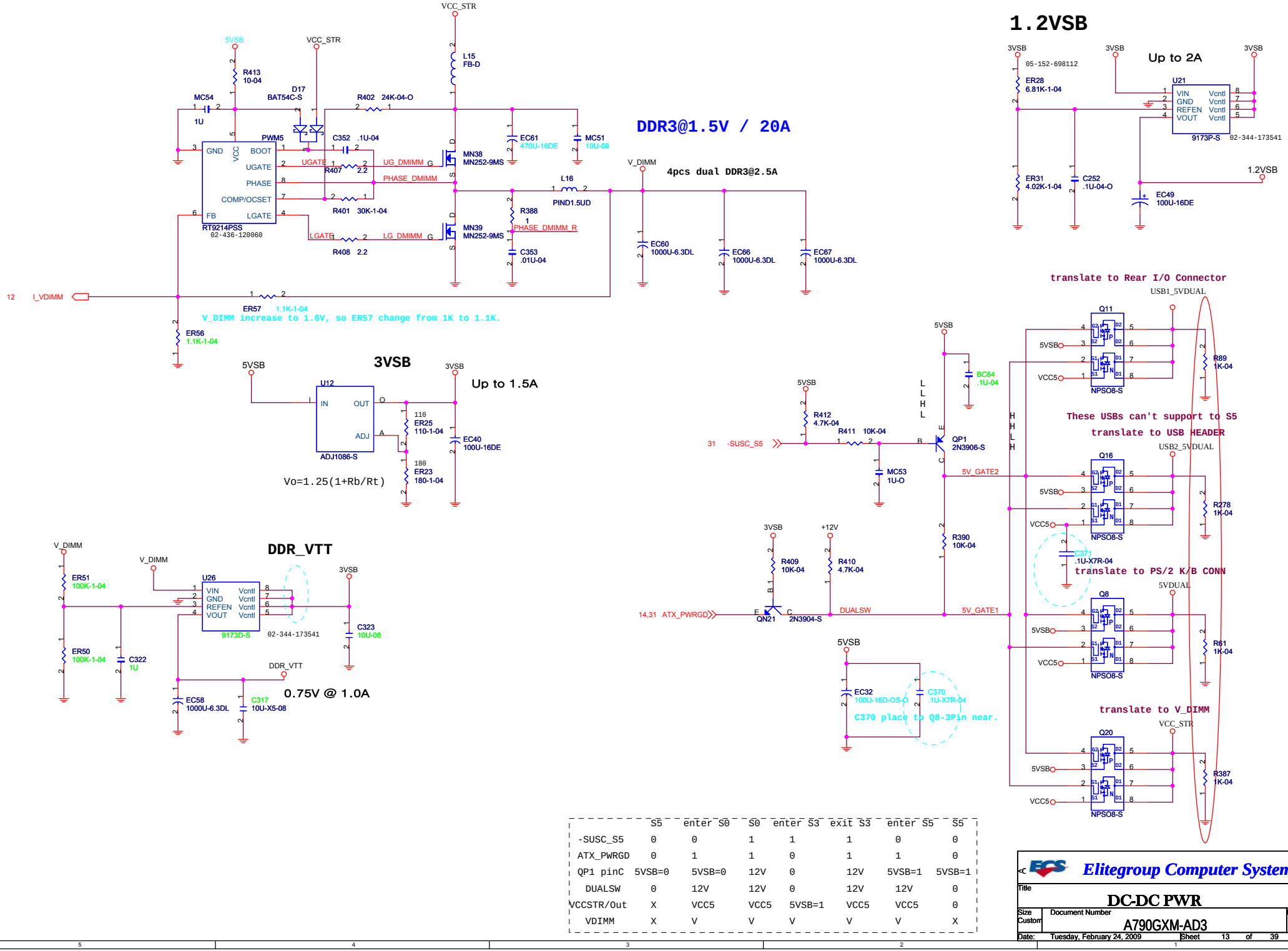

	S5	enter S0	S0	enter S3	exit S3	enter S5	S5
-SUSC_S5	0	0	1	1	1	0	0
ATX_PWRGD	0	1	1	0	1	1	0
QP1 pinC	5VSB=0	5VSB=0	12V	0	12V	5VSB=1	5VSB=1
DUALSW	0	12V	12V	0	12V	12V	0
VCCSTR/Out	X	VCC5	VCC5	5VSB=1	VCC5	VCC5	0
VDIMM	X	V	V	V	V	V	X

Elitegroup Computer Systems

Title: DC-DC PWR

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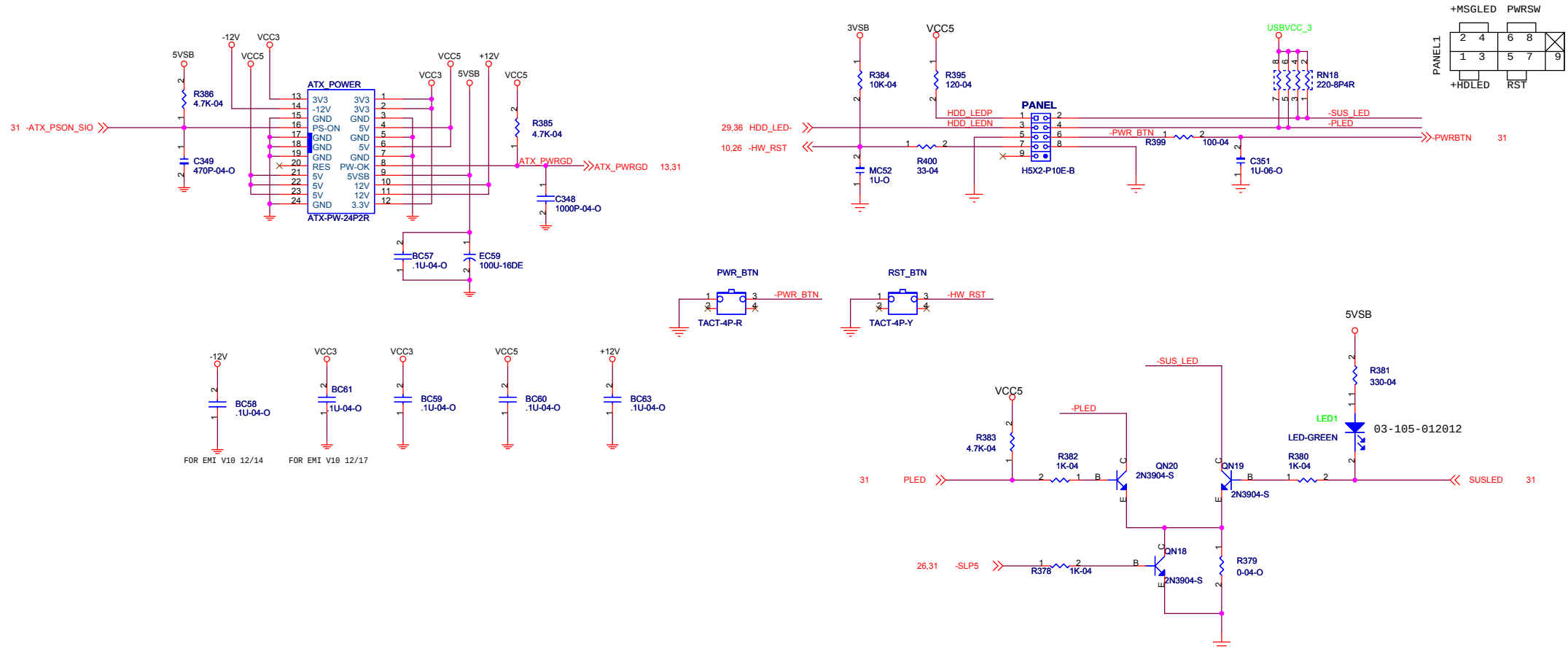
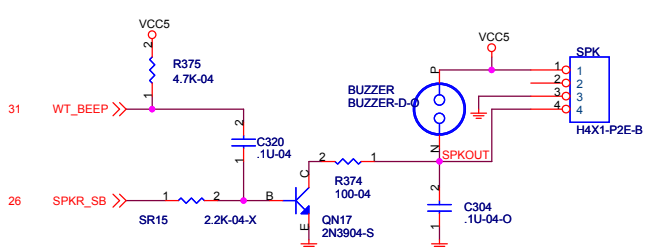


PWM4: Regulate VCC_CORE

PWM5: Regulate V_DIMM

GPP:0-->PCIE1
GPP:1-->PCIE2
GPP:2-->GIGA LAN(RTL8111C)
GPP:3-->eSATA(JM361)



GLED0(pin2)(-SUS_LED) G / Y GLED1(pin4)(-PLED)

	AC_ON	S0	S1	S3	S5
SUSLED(GP41)	0	0	B	B	0
PLED(GP31)	0	1	1	0	0
-SUSLED(PIN2)	1	1	B	B	1
-PLED(PIN4)	1	0	0	1	1
LED STATE	OFF	Green	G-blink	Y-blink	OFF

Elitegroup Computer Systems

Title: FRONT PANEL(NOTES)

Size	Document Number	Rev
Custom	A790GXM-AD3	1.0

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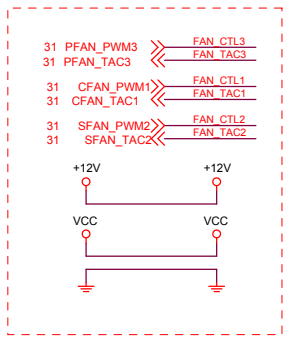

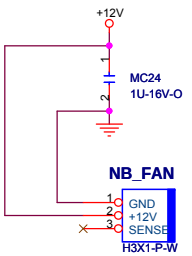

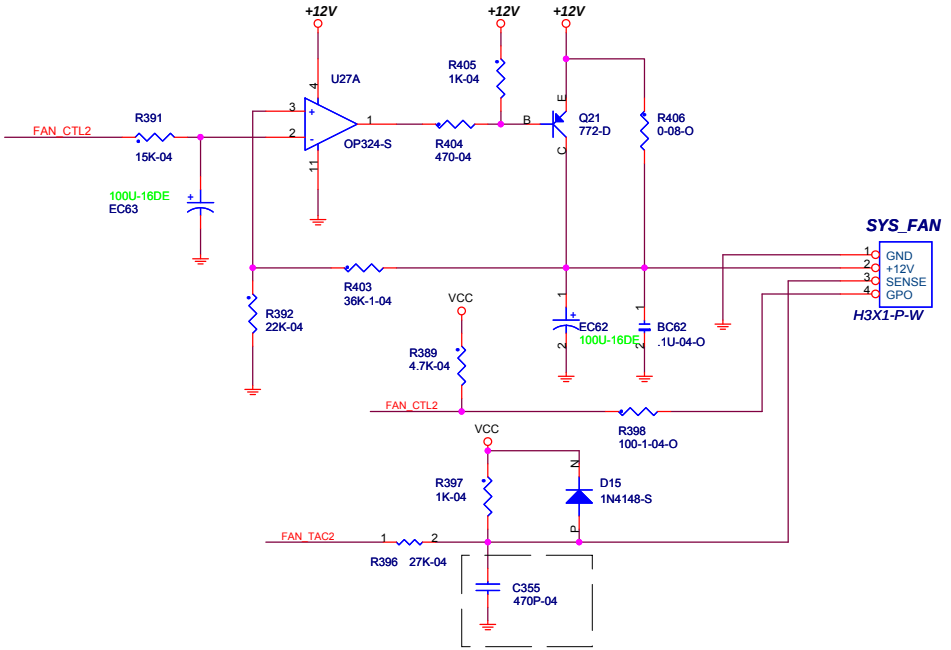

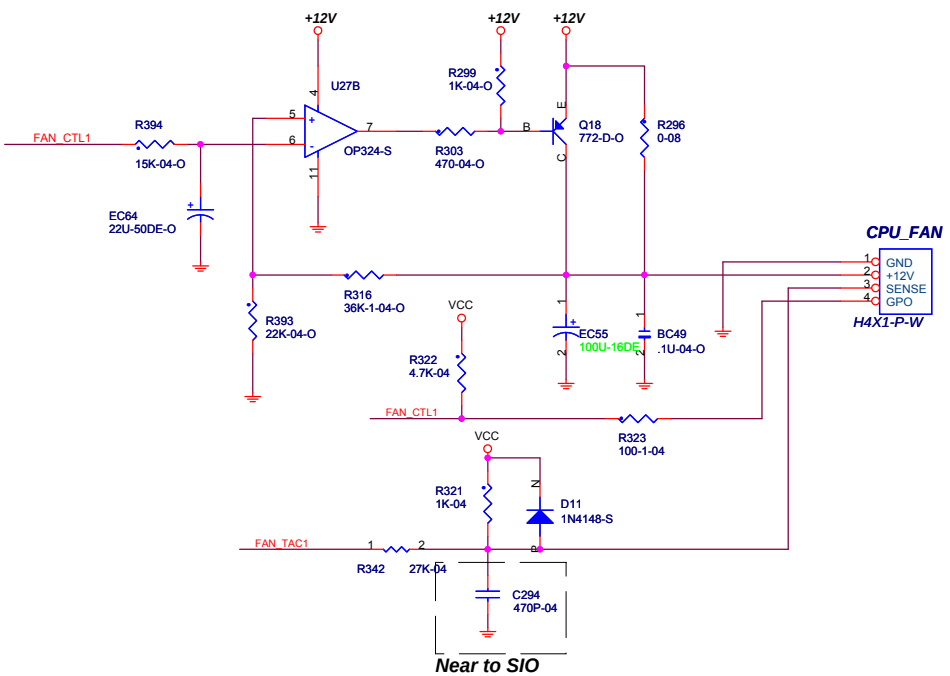

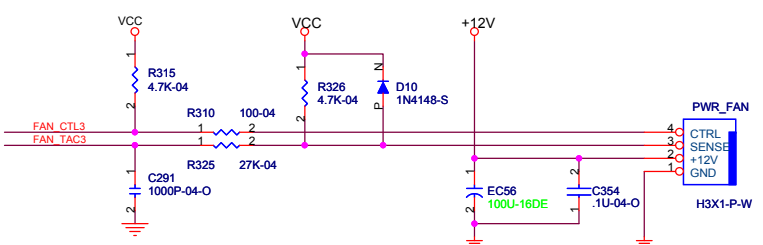

Elitegroup Computer Systems

Title: ALL FAN CTRL

Size	Document Number	Rev
Custom	A790GXM-AD3	1.0

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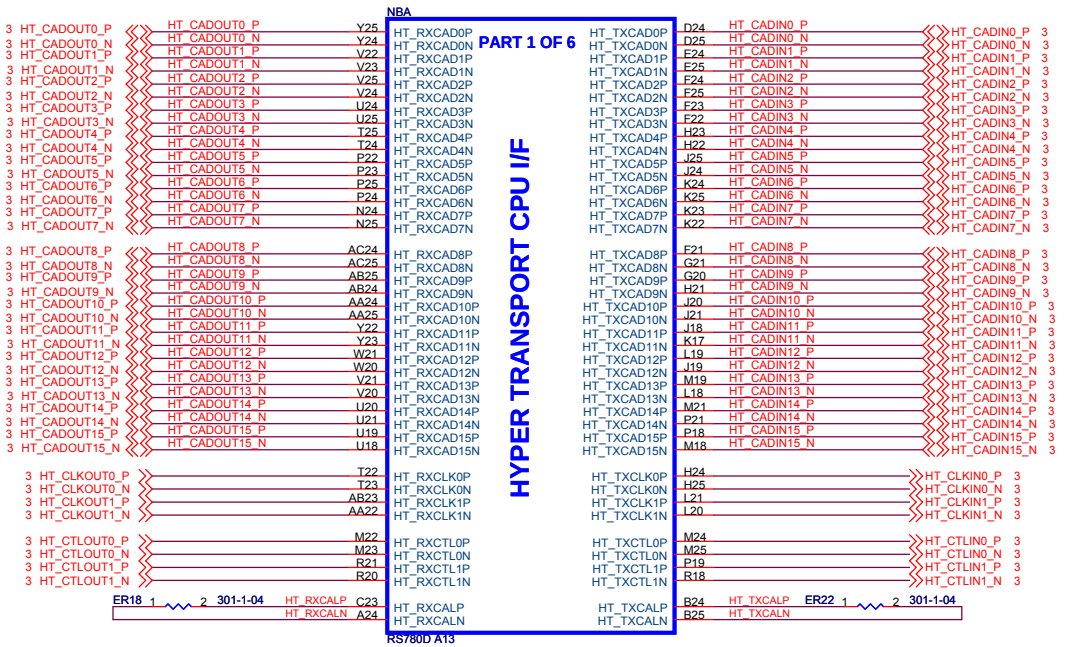
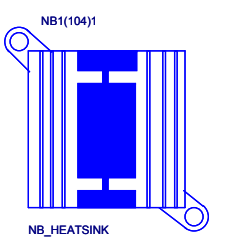


RX780/RS740/RS780 difference table (HT LINK)

SIGNALS	RS740	RX780	RS780
HT_RXCALP	49.9R (GND)	1.21K	301R
HT_RXCALN	49.9R (VDDHT)		
HT_TXCALP HT_TXCALN	100R *	1.21K	301R



Elitegroup Computer Systems

Title: RS790GX HT LINK

Size	Document Number	Rev
Custom	A790GXM-AD3	1.0

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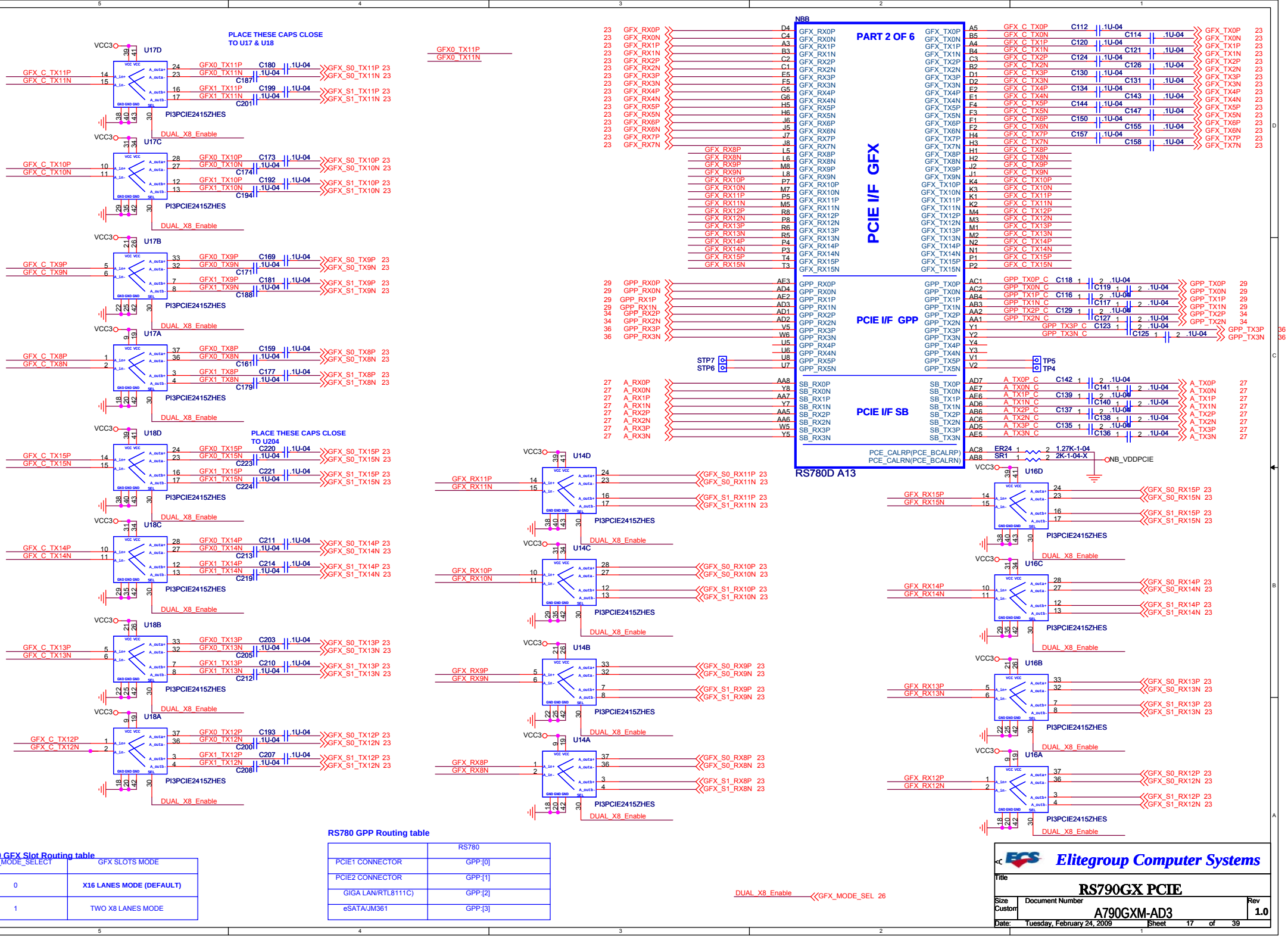

RS780 GFX Slot Routing table

GFX_MODE_SELECT	GFX SLOTS MODE
0	X16 LANES MODE (DEFAULT)
1	TWO X8 LANES MODE

RS780 GPP Routing table

	RS780
PCIE1 CONNECTOR	GPP:[0]
PCIE2 CONNECTOR	GPP:[1]
GIGA LAN/RTL8111C)	GPP:[2]
eSATA/JM361	GPP:[3]

Elitegroup Computer Systems

Title: RS790GX PCIE

Size: Custom | Document Number: A790GXM-AD3 | Rev: 1.0

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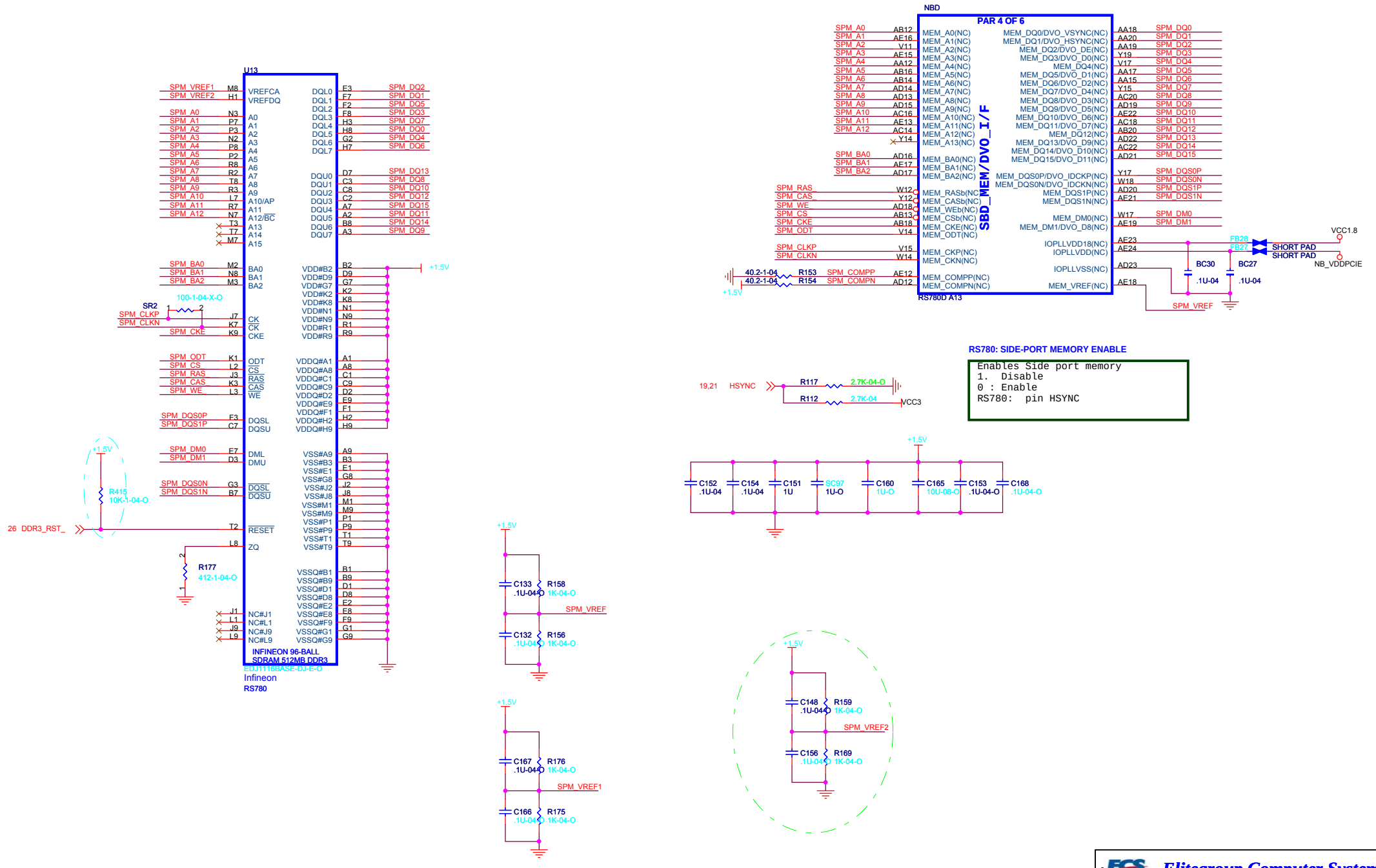

Elitegroup Computer Systems			
Title	RS790GX SP/MEM/STRAPS		
Size: Custom	Document Number: A790GXM-AD3		Rev: 1.0
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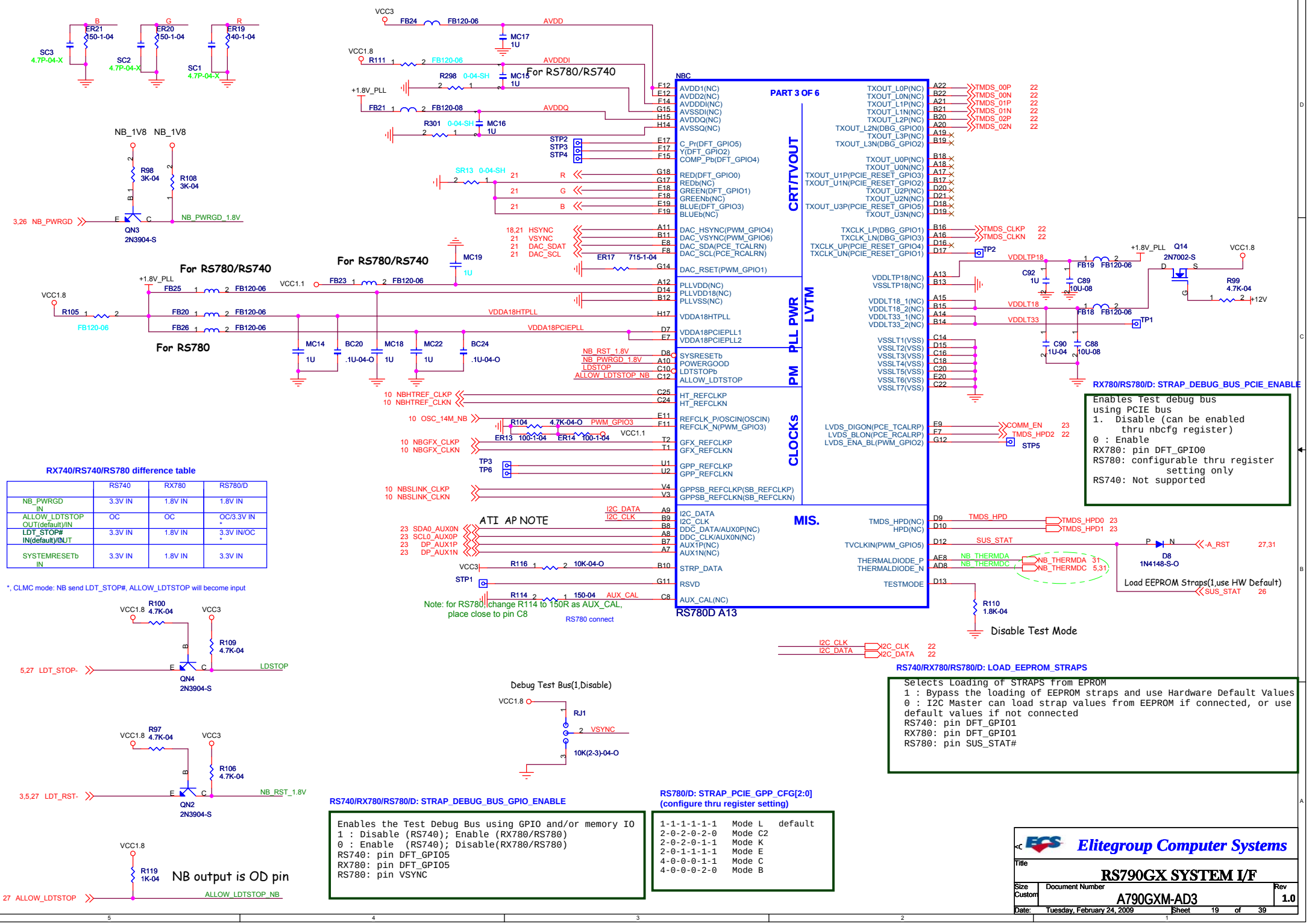
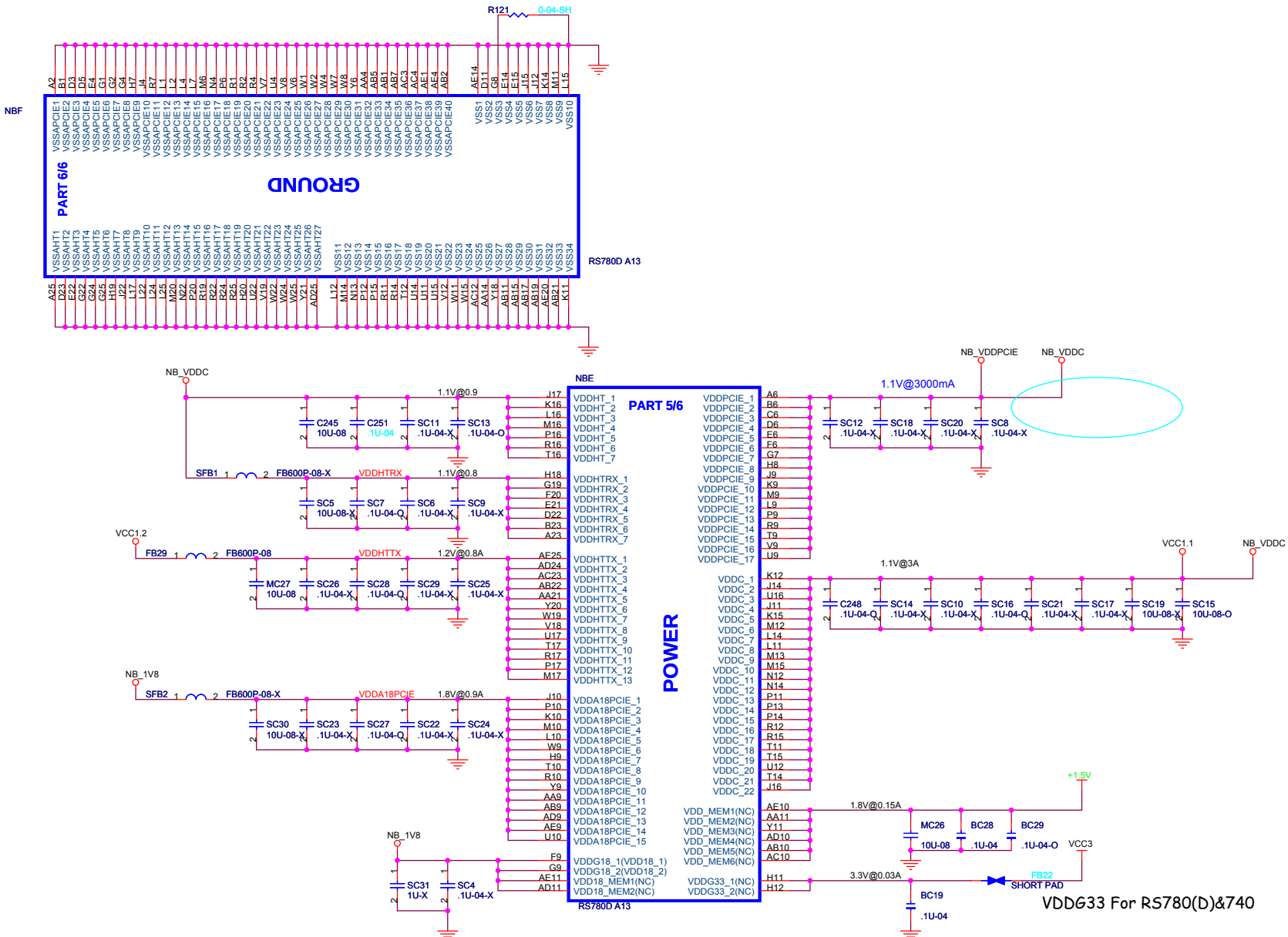
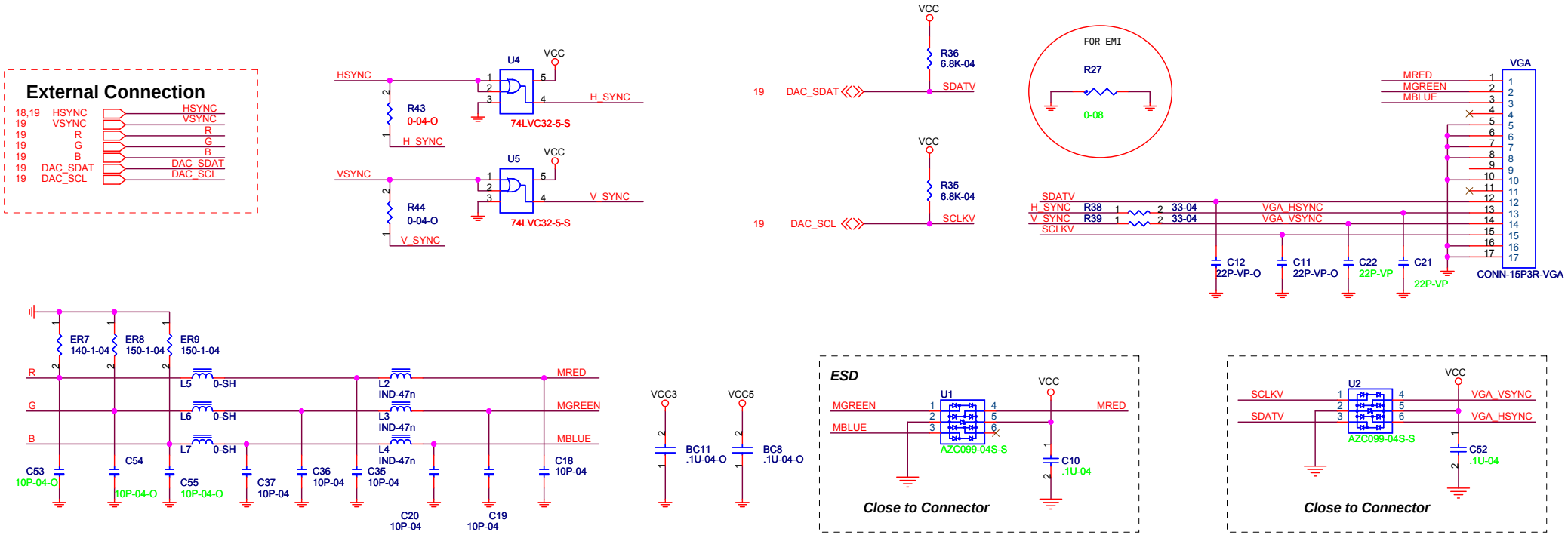
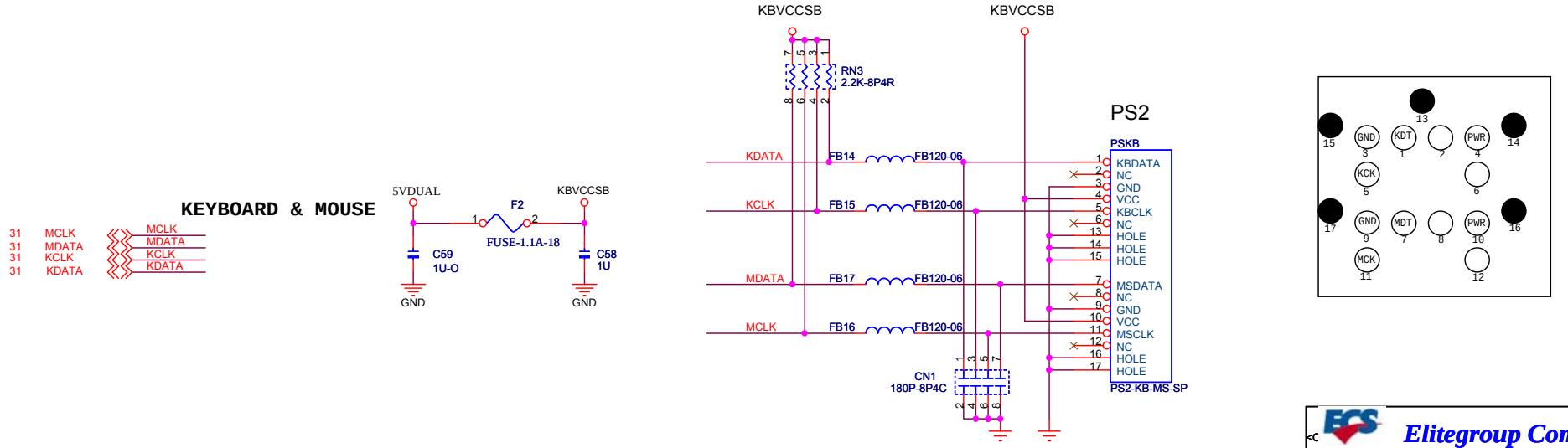


	RS740	RX780	RS780/D
NB_PWRGD IN	3.3V IN	1.8V IN	1.8V IN
ALLOW_LDTSTOP OUT(default)/IN	OC	OC	OC/3.3V IN *
LDT_STOP# IN(default)/OUT	3.3V IN	1.8V IN	3.3V IN/OC *
SYSTEMRESETb IN	3.3V IN	1.8V IN	3.3V IN



Elitegroup Computer Systems			
Title	RS790GX PWR&GND		
Size: Custom	Document Number: A790GXM-AD3		Rev: 1.0
Date: Tuesday, February 24, 2009	Sheet 20 of 39		





Elitegroup Computer Systems

Title: VGA & PS2

Size	Document Number	Rev
Custom	A790GXM-AD3	1.0

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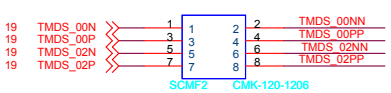
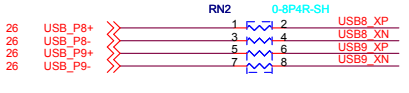
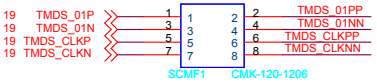
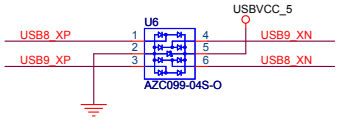
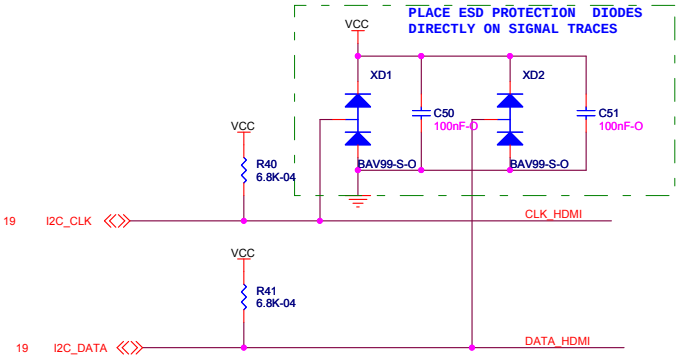


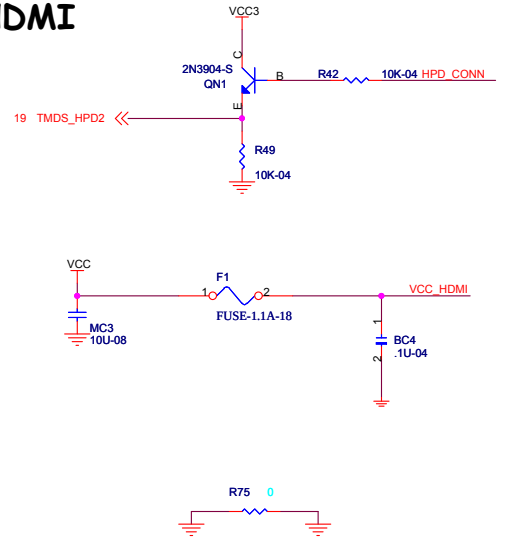




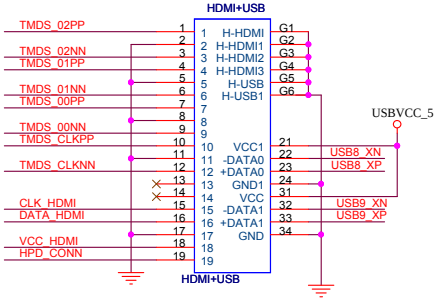


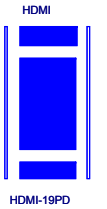
HDMI





USB8,9





Elitegroup Computer Systems

Title: HDMI or DVI

Size	Document Number	Rev
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02-191-008023

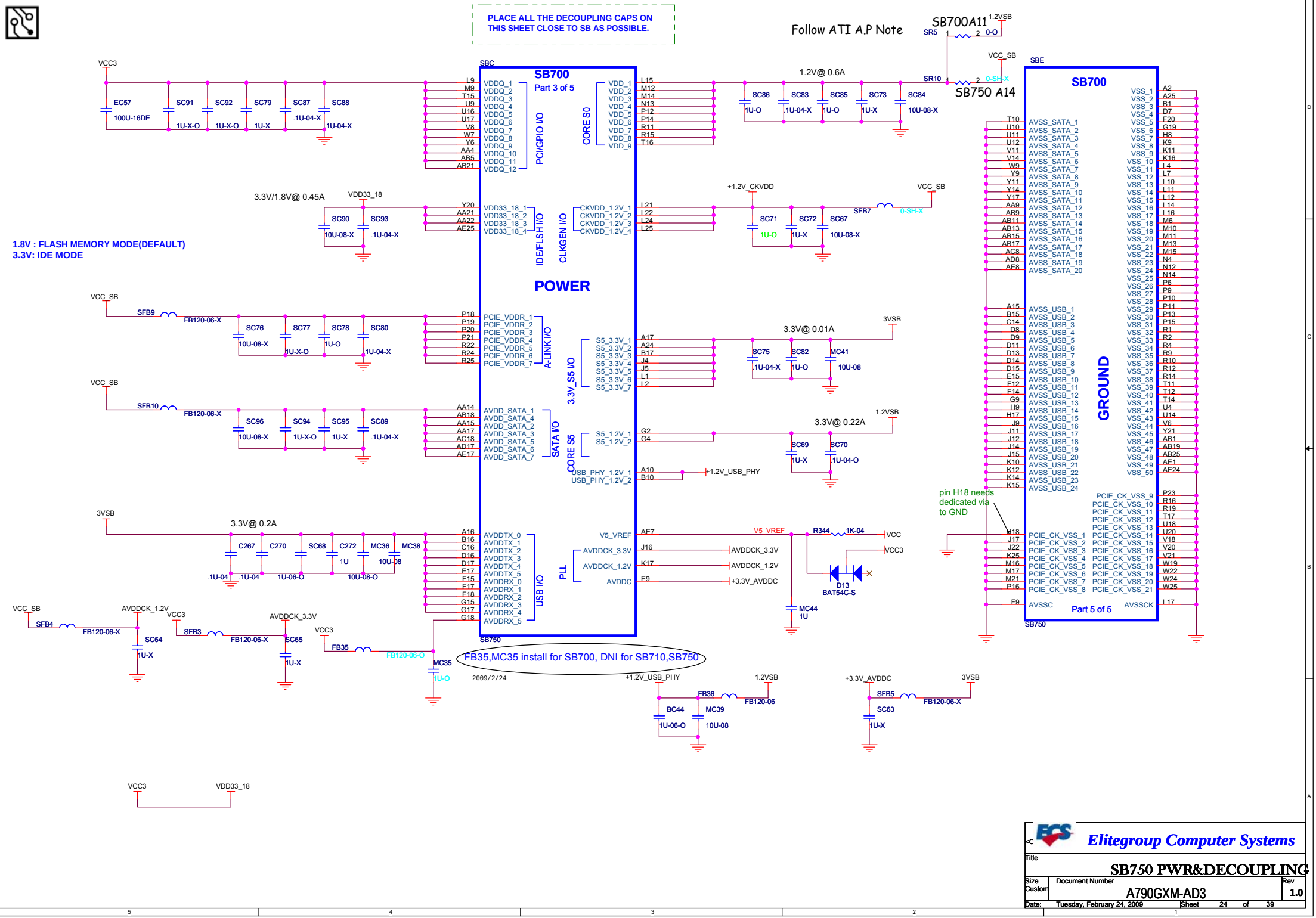
PCIE16X_1

PCIE16X_2

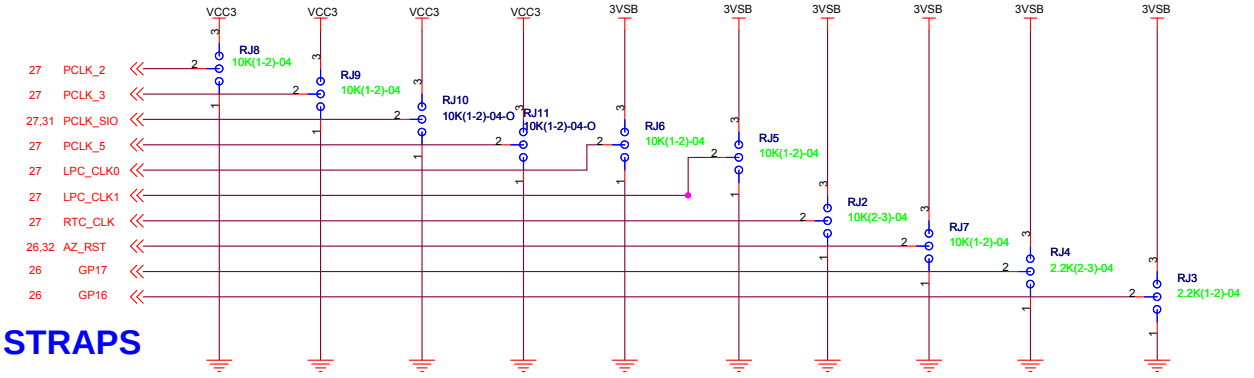
PCIEX16-R

SWITCH CIRCUIT FOR SECONDARY DISPLAYPORT

Elitegroup Computer Systems			
Title: PCIE X16 CONN & X8			
Size: Custom	Document Number: A790GXM-AD3	Rev: 1.0	
Date: Tuesday, February 24, 2009	Sheet 23 of 39		


PLACE ALL THE DECOUPLING CAPS ON THIS SHEET CLOSE TO SB AS POSSIBLE.
Follow ATI A.P Note
SB700A11
SB750 A14
SB700
Part 3 of 5
Part 5 of 5
POWER
GROUND
1.8V : FLASH MEMORY MODE(DEFAULT)
3.3V: IDE MODE
pin H18 needs dedicated via to GND
FB35,MC35 install for SB700, DNI for SB710,SB750
2009/2/24
Elitegroup Computer Systems
SB750 PWR&DECOUPLING
A790GXM-AD3
Tuesday, February 24, 2009

NOTE: SB700 HAS INTERNAL 15K PULL UP RESISTOR FOR RTC_CLK



OVERLAP COMMON PADS WHERE POSSIBLE FOR DUAL-OP RESISTORS.

REQUIRED STRAPS

	PCI_CLK2	PCI_CLK3	PCI_CLK4	PCI_CLK5	LPC_CLK0	LPC_CLK1	RTC_CLK	AZ_RST#	GP17 GP16
PULL HIGH	BOOTFAIL TIMER ENABLED	USE DEBUG STRAPS	RESERVED	RESERVED	IMC ENABLED	CLKGEN ENABLED	INTERNAL RTC DEFAULT	EC ENABLED	ROM TYPE: H, H = Reserved H, L = SPI ROM DEFAULT L, H = LPC ROM L, L = FWH ROM
PULL LOW	BOOTFAIL TIMER DISABLED DEFAULT	IGNORE DEBUG STRAPS DEFAULT			IMC DISABLED DEFAULT	CLKGEN DISABLED DEFAULT	EXT. RTC (PD on X1, apply 32KHz to RTC_CLK)	EC DISABLED DEFAULT	

DEBUG STRAPS

SB700 HAS 15K INTERNAL PU FOR PCI_AD[28:23]

Del PCIE Debug EEPROM Strap

Del Debug straps 070423

Elitegroup Computer Systems

Title: SB750 STRAPS

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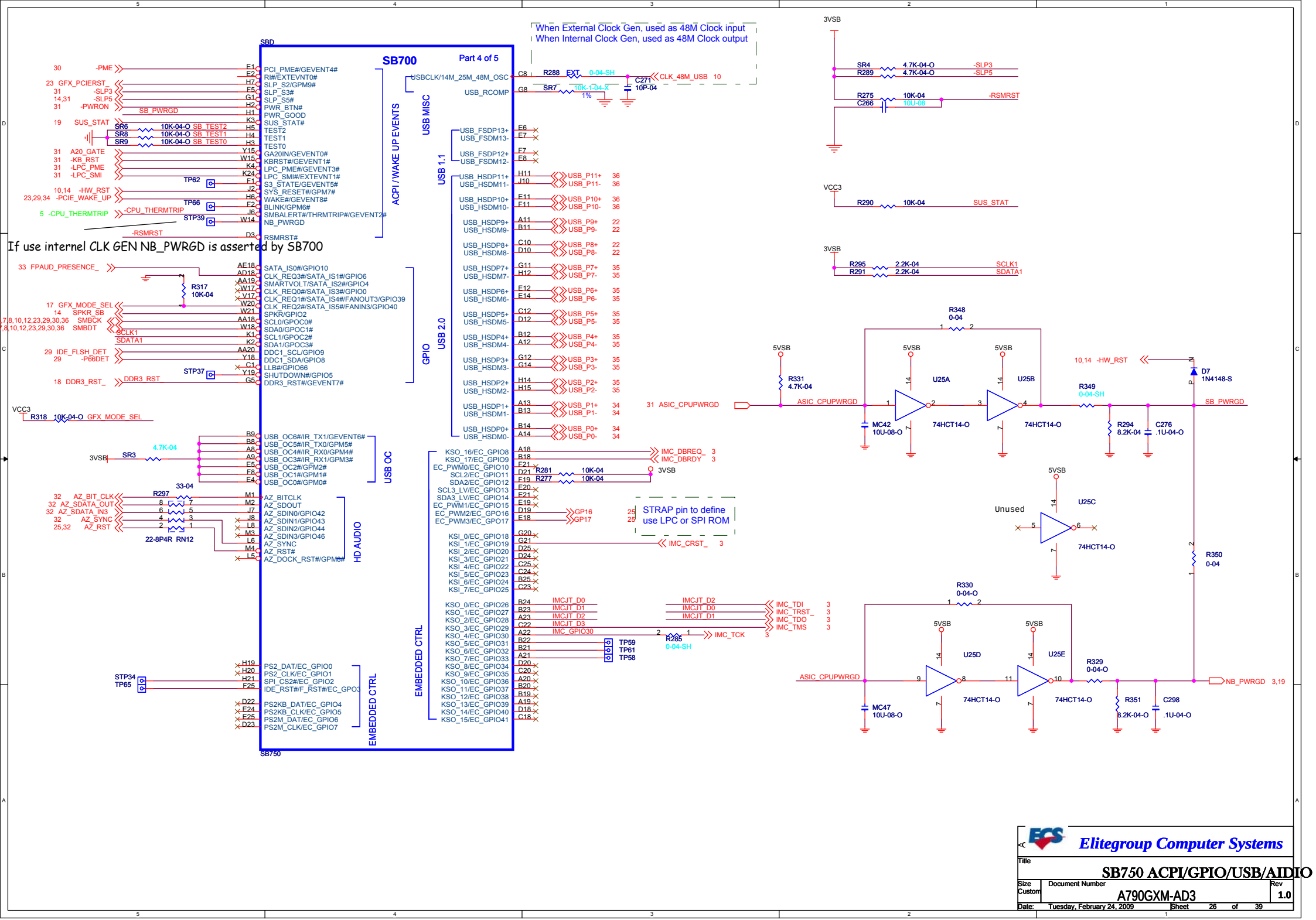
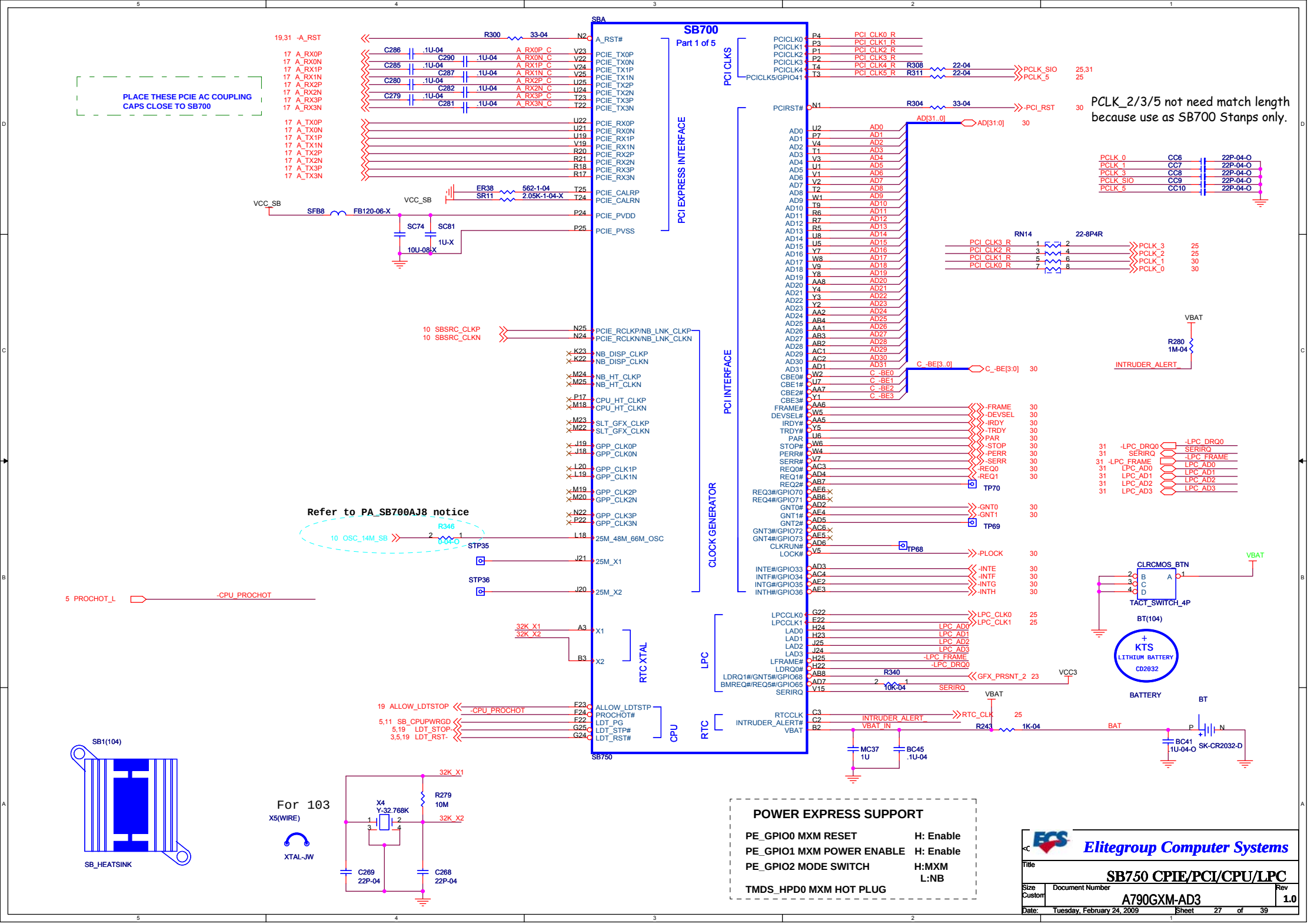
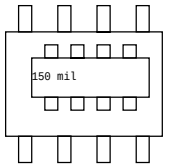

When External Clock Gen, used as 48M Clock input
When Internal Clock Gen, used as 48M Clock output
SB700
Part 4 of 5
SBD
SB750
If use internel CLK GEN NB_PWRGD is asserted by SB700
ACPI / WAKE UP EVENTS
USB MISC
USB 1.1
USB 2.0
GPIO
USB OC
HD AUDIO
EMBEDDED CTRL
STRAP pin to define use LPC or SPI ROM
Unused
Elitegroup Computer Systems
SB750 ACPI/GPIO/USB/AIDIO
A790GXM-AD3
Tuesday, February 24, 2009


SB700
Part 1 of 5
SBA
SB750
PCI EXPRESS INTERFACE
PCI INTERFACE
CLOCK GENERATOR
PCI CLKS
LPC
RTC XTAL
CPU
RTC
PLACE THESE PCIE AC COUPLING CAPS CLOSE TO SB700
PCLK_2/3/5 not need match length because use as SB700 Stanps only.
Refer to PA_SB700AJ8 notice
POWER EXPRESS SUPPORT
PE_GPIO0 MXM RESET H: Enable
PE_GPIO1 MXM POWER ENABLE H: Enable
PE_GPIO2 MODE SWITCH H:MXM L:NB
TMDS_HPD0 MXM HOT PLUG
For 103
X5(WIRE)
XTAL-JW
SB1(104)
SB_HEATSINK
BATTERY
TACT_SWITCH_4P
Elitegroup Computer Systems
SB750 CPIE/PCI/CPU/LPC
A790GXM-AD3
Tuesday, February 24, 2009

Note: Do we still keep mobile SATA connector?
Is there any side affect to test RAID mode?

PLACE SATA AC COUPLING CAPS CLOSE TO SB700

SO8 MN and MW co-layout layout draw



208 mil

SB700
Part 2 of 5

SB8

SERIAL ATA

SATA_TX0+ C327 .01U-04 SATA_TX0P AD9
SATA_TX0- C326 .01U-04 SATA_TX0N AE9
SATA_RX0- C325 .01U-04 SATA_RX0N AB10
SATA_RX0+ C324 .01U-04 SATA_RX0P AC10
SATA_TX1+ C331 .01U-04 SATA_TX1P AE10
SATA_TX1- C330 .01U-04 SATA_TX1N AD10
SATA_RX1- C329 .01U-04 SATA_RX1N AD11
SATA_RX1+ C328 .01U-04 SATA_RX1P AE11
SATA_TX2+ C335 .01U-04 SATA_TX2P AB12
SATA_TX2- C334 .01U-04 SATA_TX2N AC12
SATA_RX2- C333 .01U-04 SATA_RX2N AE12
SATA_RX2+ C332 .01U-04 SATA_RX2P AD12
SATA_TX3+ C339 .01U-04 SATA_TX3P AD13
SATA_TX3- C338 .01U-04 SATA_TX3N AE13
SATA_RX3- C337 .01U-04 SATA_RX3N AB14
SATA_RX3+ C336 .01U-04 SATA_RX3P AC14
SATA_TX4+ C343 .01U-04 SATA_TX4P AE14
SATA_TX4- C342 .01U-04 SATA_TX4N AD14
SATA_RX4- C341 .01U-04 SATA_RX4N AD15
SATA_RX4+ C340 .01U-04 SATA_RX4P AE15
SATA_TX5+ C347 .01U-04 SATA_TX5P TX5P AB16
SATA_TX5- C346 .01U-04 SATA_TX5N TX5N AC16
SATA_RX5- C345 .01U-04 SATA_RX5N AE16
SATA_RX5+ C344 .01U-04 SATA_RX5P AD16

SR12 1K-1-04-X SATA_CAL V12
SATA_X1 Y12
SATA_X2 AA12
29 -SATA_LED W11

SATA_TX0+ SATA_TX0- SATA_RX0- SATA_RX0+ SATA_TX1+ SATA_TX1- SATA_RX1- SATA_RX1+ SATA_TX2+ SATA_TX2- SATA_RX2- SATA_RX2+ SATA_TX3+ SATA_TX3- SATA_RX3- SATA_RX3+ SATA_TX4+ SATA_TX4- SATA_RX4- SATA_RX4+ SATA_TX5+ SATA_TX5- SATA_RX5- SATA_RX5+ SATA_CAL SATA_X1 SATA_X2 SATA_ACT#/GPIO67

PLACE SATA_CAL RES VERY CLOSE TO BALL OF SB700

NOTE:
SR2 IS 1K 1% FOR 25MHz XTAL, 4.99K 1% FOR 100MHz INTERNAL CLOCK

PLLVDD_ATA AA11
XTLVDD_ATA W12
PLLVDD_SATA_1
XTLVDD_SATA

SATA PWR

ATA 66/100/133

IDE_IORDY AA24 PIDE_RDY 29
IDE_IRQ AA25 PIDE_IRQ 29
IDE_A0 Y22 PIDE_A0 29
IDE_A1 AB23 PIDE_A1 29
IDE_A2 Y23 PIDE_A2 29
IDE_DACK# AB24 -PIDE_DAK 29
IDE_DRQ AD25 PIDE_DRQ 29
IDE_IOR# AC25 -PIDE_IOR 29
IDE_IOW# AC24 -PIDE_IOW 29
IDE_CS1# Y25 -PIDE_CS1 29
IDE_CS3# Y24 -PIDE_CS3 29

IDE_D0/GPIO15 AD24 IDE_D0
IDE_D1/GPIO16 AD23 IDE_D1
IDE_D2/GPIO17 AE22 IDE_D2
IDE_D3/GPIO18 AC22 IDE_D3
IDE_D4/GPIO19 AD21 IDE_D4
IDE_D5/GPIO20 AE20 IDE_D5
IDE_D6/GPIO21 AB20 IDE_D6
IDE_D7/GPIO22 AD19 IDE_D7
IDE_D8/GPIO23 AE19 IDE_D8
IDE_D9/GPIO24 AC20 IDE_D9
IDE_D10/GPIO25 AD20 IDE_D10
IDE_D11/GPIO26 AE21 IDE_D11
IDE_D12/GPIO27 AB22 IDE_D12
IDE_D13/GPIO28 AD22 IDE_D13
IDE_D14/GPIO29 AE23 IDE_D14
IDE_D15/GPIO30 AC23 IDE_D15
IDE_D[15..0] PIDE_D[15..0] 29

SPI ROM

SPI_DI/GPIO12 G6 SPI_DO
SPI_DO/GPIO11 D2 SPI_DI
SPI_CLK/GPIO47 D1 SPI_CLK
SPI_HOLD#/GPIO31 F4 SPI_HOLD
SPI_CS#/GPIO32 F3 SPI_CS

LAN_RST#/GPIO13 U15 STP38
ROM_RST#/GPIO14 J1 TP67

HW MONITOR

FANOUT0/GPIO3 M8
FANOUT1/GPIO48 M5
FANOUT2/GPIO49 M7
FANIN0/GPIO50 P5
FANIN1/GPIO51 P8
FANIN2/GPIO52 R8
TEMP_COMM C6
TEMPIN0/GPIO61 B6
TEMPIN1/GPIO62 A6
TEMPIN2/GPIO63 A5
TEMPIN3/TALERT#/GPIO64 B5
VIN0/GPIO53 A4
VIN1/GPIO54 B4
VIN2/GPIO55 C4
VIN3/GPIO56 D4
VIN4/GPIO57 D5
VIN5/GPIO58 D6
VIN6/GPIO59 A7
VIN7/GPIO60 B7

VCC3 R287 10K-04-O -THRM 31

HWM_AGND TRACE AT LEAST 10MIL WIDE

AVDD_HWM 3VSB
AVDD F6 SFB6 0-SH-X
AVSS G7 SC66 1U-O

SB750

10P-04 C296 SATA_X1
X5 X-25M R341 10M-04
10P-04 C297 SATA_X2

VCC_SB PLLVDD_ATA
FB38 FB120-06
MC45 1U MC46 1U-O
CAP CLOSE TO THE BALL OF U600

VCC3 XTLVDD_ATA
FB37 FB120-06
MC43 1U
CAP CLOSE TO THE BALL OF U600

SATA1/2A
1A GND TXP 2A SATA_TX0+
3A TXN 4A GND 5A SATA_TX0-
7A GNDRXP 6A SATA_RX0+
SATA*2-90D-OR

SATA1/2B
1B GND TXP 2B SATA_TX1+
3B TXN 4B GND 5B SATA_TX1-
7B GNDRXP 6B SATA_RX1+
SATA*2-90D-OR

SATA3/4A
1A GND TXP 2A SATA_TX2+
3A TXN 4A GND 5A SATA_TX2-
7A GNDRXP 6A SATA_RX2+
SATA*2-90D-OR

SATA3/4B
1B GND TXP 2B SATA_TX3+
3B TXN 4B GND 5B SATA_TX3-
7B GNDRXP 6B SATA_RX3+
SATA*2-90D-OR

SATA5/6A
1A GND TXP 2A SATA_TX4+
3A TXN 4A GND 5A SATA_TX4-
7A GNDRXP 6A SATA_RX4+
SATA*2-90D-OR

SATA5/6B
1B GND TXP 2B SATA_TX5+
3B TXN 4B GND 5B SATA_TX5-
7B GNDRXP 6B SATA_RX5+
SATA*2-90D-OR

3VSB D12 BAT54C-S-O R328 0-04-SH

SPI_DEBUG
SPI_CS SPI_DO -WP_ROM
31 -WP_ROM
VCC3_DUAL_SPI SPI_HOLD SPI_CLK SPI_DI
H4X2-B

VCC3 R309 4.7K-04 -WP_ROM -WP_ROM 31

BIOSWP	BIOS PROTECT
1-2	DISABLE
2-3	ENABLE

VCC3_DUAL_SPI
VCC3_DUAL_SPI R343 1K-04-O
SPI_CS SPI_DO -WP_ROM
ROM2 SMT
CE# VCC SO HOLD# WP# SCK GND SI
SPI_HOLD SPI_CLK SPI_DI
R306 10K-04
R302 0-04-O SPI_HOLD
SPI-ROM-D-4M-O
01-530-004110

Co-lay

208mil width
VCC3_DUAL_SPI
SPI_CS SPI_DO -WP_ROM
ROM1 DIP
CE# VCC SO HOLD# WP# SCK GND SI
SPI_HOLD SPI_CLK SPI_DI
BC51 .1U-04
SPI-8D

for SPI ROM
ROM1(104)
SPI-ROM-D-8M

Elitegroup Computer Systems

Title	SB750 SATA/IDE/HW/SPI	
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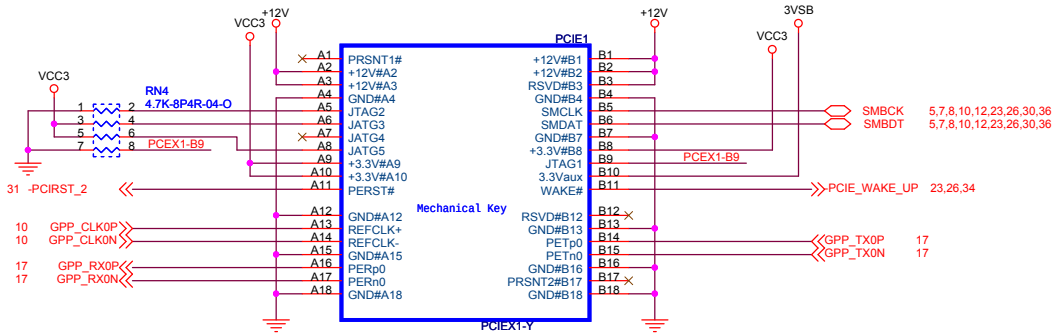
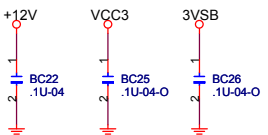
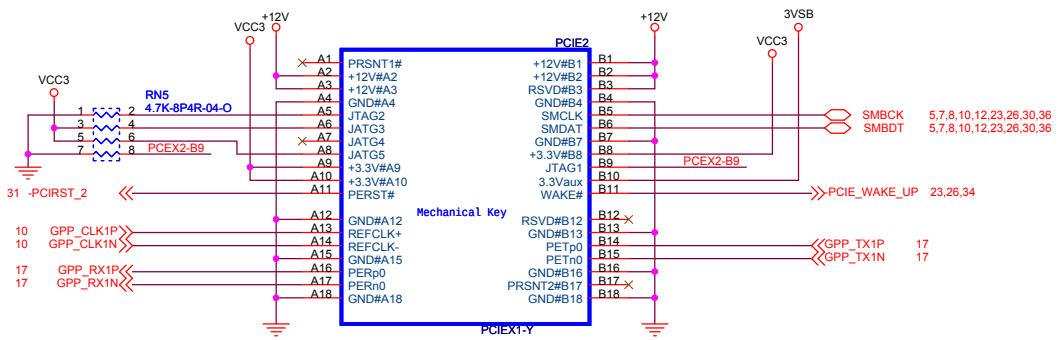
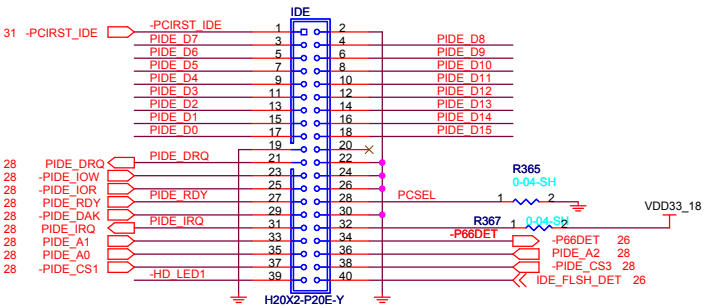
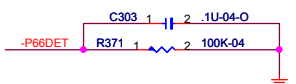
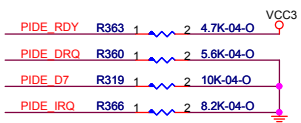


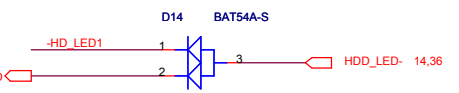






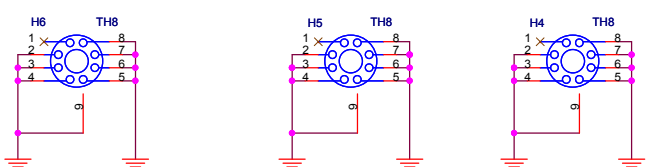




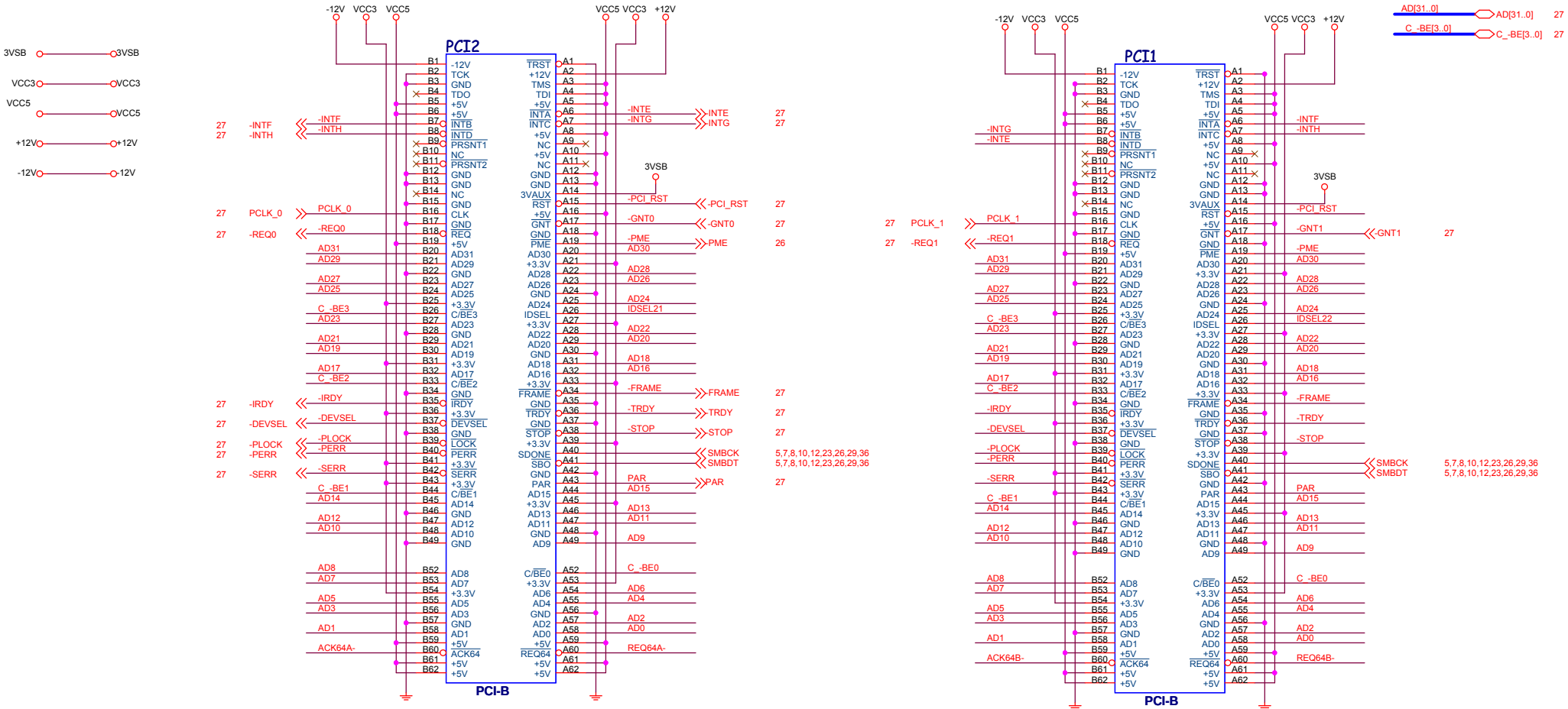


change to bat54a for space 6/8

28 PIDE_D[15:0]



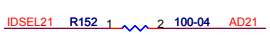
Elitegroup Computer Systems		
Title: PCIEX1 Slots & IDE		
Size: Custom	Document Number: A790GXM-AD3	Rev: 1.0
Date: Tuesday, February 24, 2009	Sheet 29 of 39	

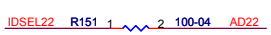


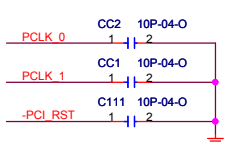
PCI SLOT1:REQ0;GNT0 IDSEL:21 INT:EFGH
PCI SLOT2:REQ1;GNT1 IDSEL:22 INT:FGHE

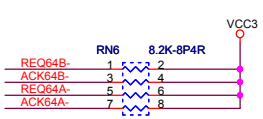
REQ0;GNT0
IDSEL:21 EFGH

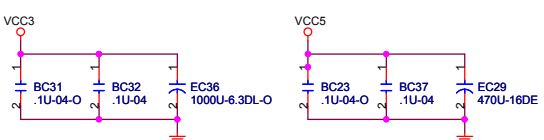
REQ1;GNT1
IDSEL:22 FGHE











<Org> Elitegroup Computer Systems

Title: **PCI 1 & 2**

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External Connection

del 5VSB and NBPWM control GPIO 6/8

change from pin85 to here
for non standby GPIO 5/15

08'1015 for AMD
Power Sequence
necessary!

add for K8 sequence 6/8

Thermal Monitor

* HM_VIN0 for VCORE
* HM_VIN1 for VCC
HM_VIN5 for 2.5V
HM_VIN3 for ATX PWRGD
HM_VIN2 for VCC3
HM_VIN4 for VLDT 1.2V I/P

BIOS SELECTION

BIOS SELECTION
HI:
LO:

If you found anything wrong with this circuit,please contact with Jack Hu (Ext:622)

For COM2 co-lay

HW STRAPPING

pin121	JP1	Flashseg1_EN	0:Enable
pin122	JP2	SerFlh_SO_SEL	0:FLH_SO1
pin124	JP3	CHIP_SEL	CHIP_SEL
pin1	JP4	BUF_SEL	1:PCIRST# O.D.
p2/46	JP5/7	FAN_CTL_SEL	
pin5	JP6	VID_ISEL	
pin46	JP7	WDT_EN	
pin38	JP8	VIDO_EN	

RS75232 internal pull high.

chang jp1 pull high 8/3

A20_GATE : Pull low for PWM
Value=25% just after power-on

FDD

FDD signals : RDATA#, INDEX#, TRAK0#, DSKCHG#, WP# is input pin.

8726 GPIO使用:
Pin14-GPIO34用作WT_BEEP
Pin13-GPIO35 用作NB_PWM_enable控制
Pin18-GPIO31 PLED
Pin78-GP41 SUSLED
Pin28-GP17 -WP_ROM
Pin79-GPIO40: SIO_VDUAL control 5vdual
Pin28-GP22-THRM
Pin27-GP20:-LPC_SMI
Pin70-GP46:Control v_dimm

BYPASS CAP

CLOSE TO PIN67

CLOSE TO PIN69

Elitegroup Computer Systems			
Title: IT8726 IO CHIP			
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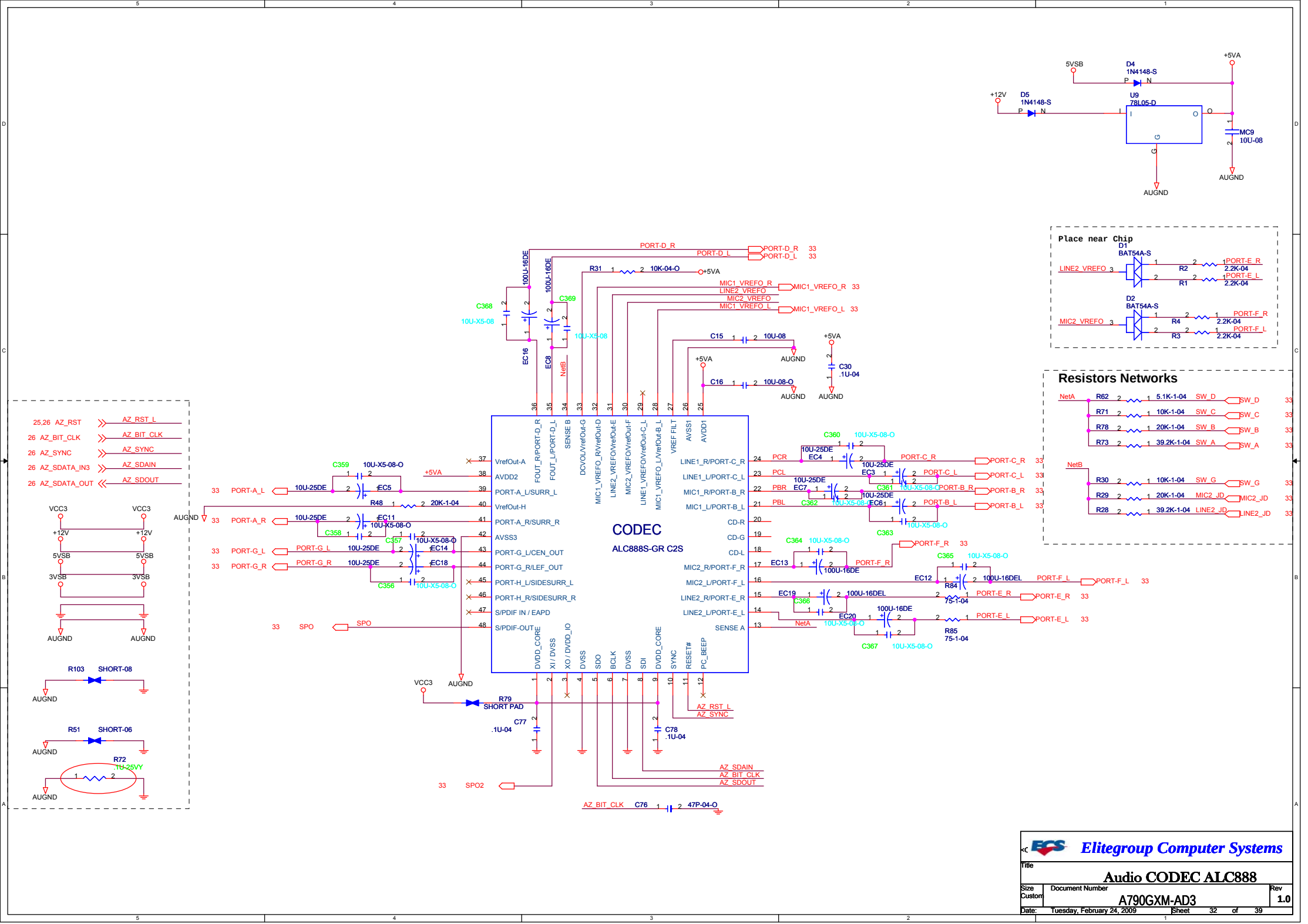
CODEC
ALC888S-GR C2S
Place near Chip
Resistors Networks
Elitegroup Computer Systems
Audio CODEC ALC888
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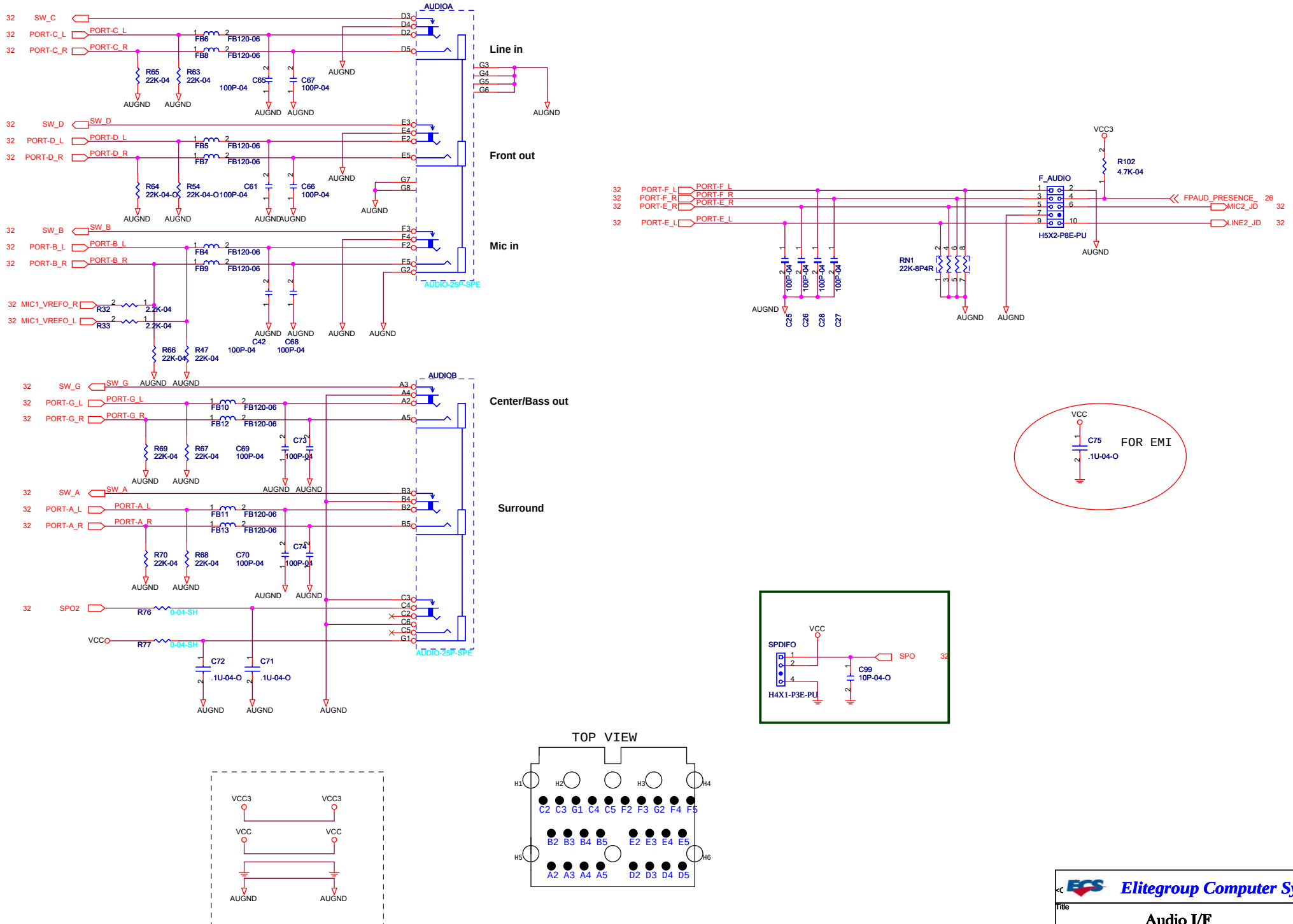

Elitegroup Computer Systems	
Title	Audio I/F
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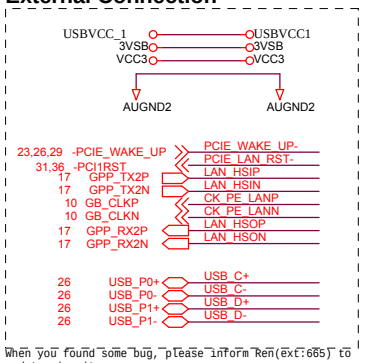
External Connection



When you found some bug, please inform Ren(ext:665) to update circuit.

新手提醒:

LAN_HSOP/N請接到SB的PCIE RX端

LAN_HSIP/N請接到SB的PCIE TX端

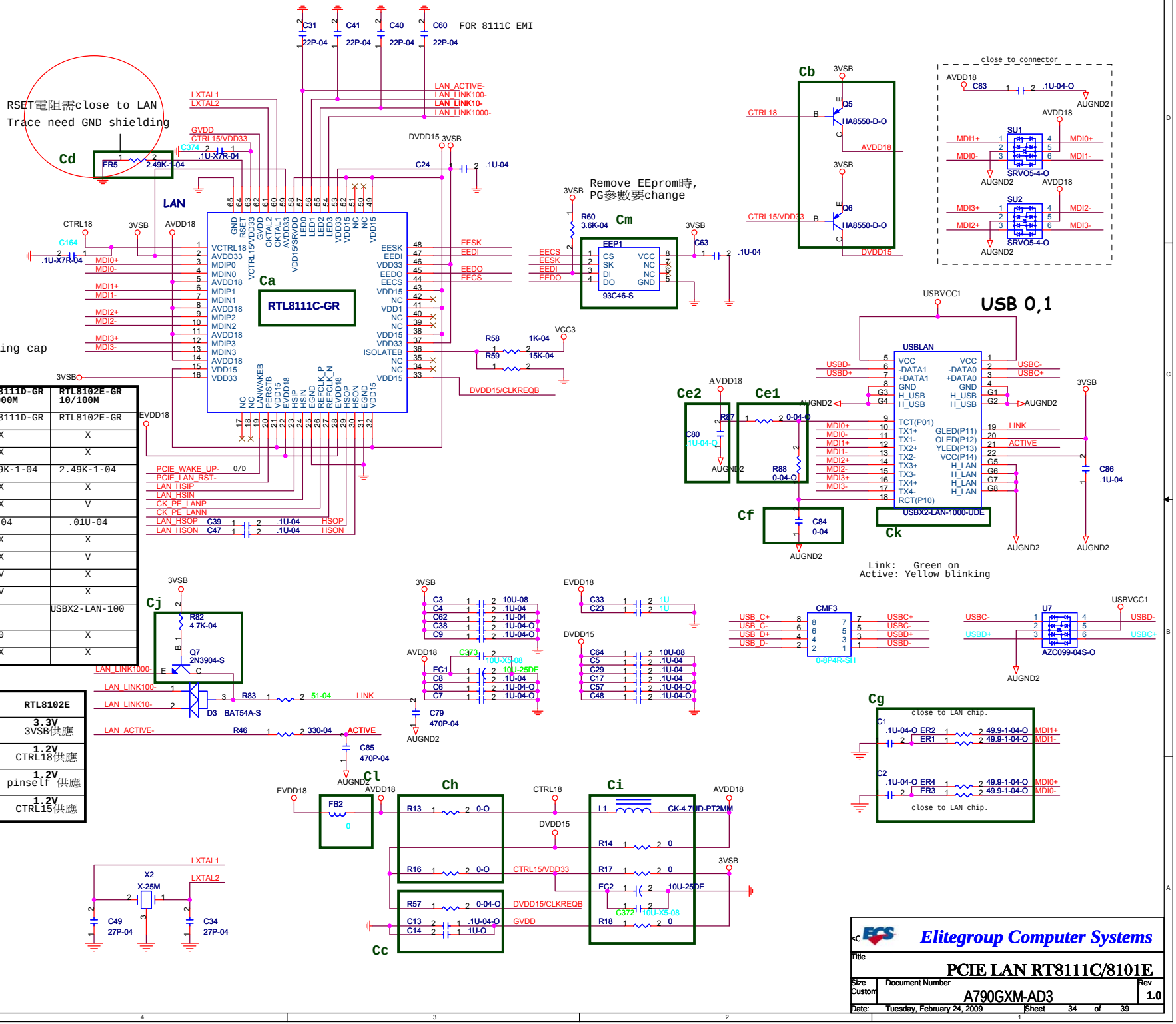
LAN_HSIP/N在SB的PCIE TX端要記得放AC coupling cap

BOM Difference

	RTL8101E-GR 10/100M	RTL8111B-GR 1000M	RTL8111C-GR 1000M	RTL8111D-GR 1000M	RTL8102E-GR 10/100M
Ca	RTL8101E-GR	RTL8111B-GR	RTL8111C-GR	RTL8111D-GR	RTL8102E-GR
Cb	X	V	X	X	X
Cc	V	V	X	X	X
Cd	2K-1-04	2.49K-1-04	2.49K-1-04	2.49K-1-04	2.49K-1-04
Ce1	V	X	X	X	X
Ce2	V	X	X	X	V
Cf	.01U-04	0-04	0-04	0-04	.01U-04
Cg	V	X	X	X	X
Ch	V	X	X	X	V
Ci	X	X	V	V	X
Cj	X	V	V	V	X
Ck	USBX2-LAN-100 symmetric	USBX2-LAN-1000			USBX2-LAN-100
Cl	0	0	0	0	X
Cm	V	V	V	X	X

Power Difference

	RTL8101E	RTL8111B	RTL8111C/D	RTL8102E
AVDD33	3.3V 3VSB供應	3.3V 3VSB供應	3.3V 3VSB供應	3.3V 3VSB供應
AVDD18	1.8V CTRL18供應	1.8V 3VSB轉BJT供應	1.2V CTRL18供應	1.2V CTRL18供應
EVDD18	1.8V CTRL18供應	1.8V 3VSB轉BJT供應	1.2V CTRL18供應	1.2V pinself 供應
DVDD15	1.5V CTRL15供應	1.5V 3VSB轉BJT供應	1.2V CTRL18供應	1.2V CTRL15供應



Elitegroup Computer Systems

Title: PCIE LAN RT8111C/8101E

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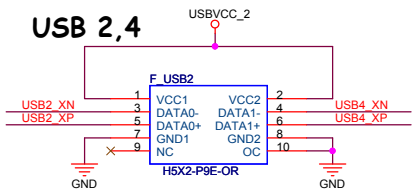

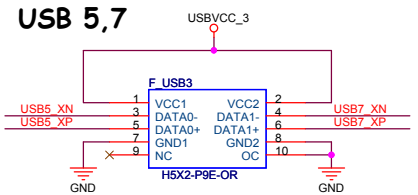

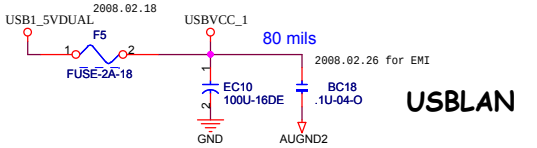

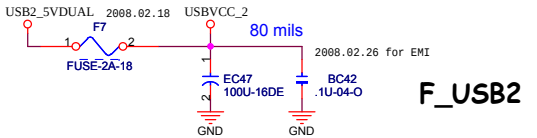

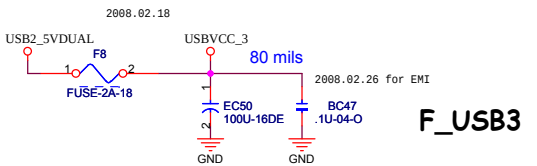

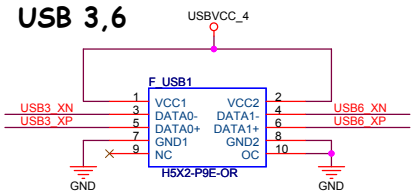

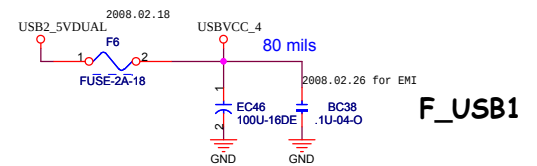

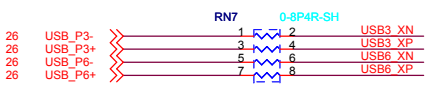

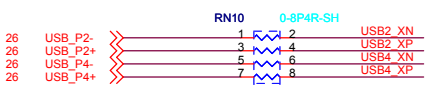

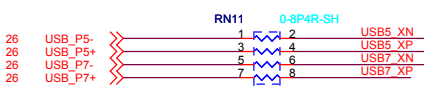

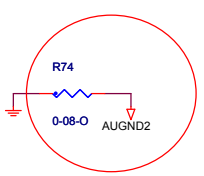

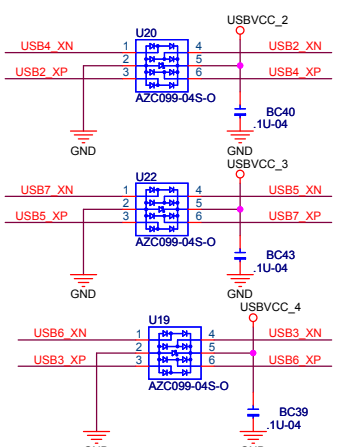

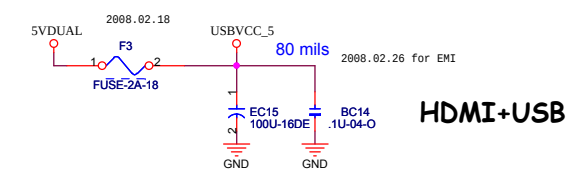

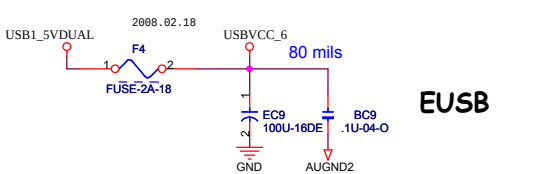

Elitegroup Computer Systems

Title: USB PORT 2~9

Size: Custom | Document Number: A790GXM-AD3 | Rev: 1.0

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External Connection

USBVCC_6 — USBVCC11
VCC3 — VCC3
AUGND2 — AUGND2

17	GPP_TX3P	PERx+
17	GPP_TX3N	PERx-
17	GPP_RX3P	PE1_IN
17	GPP_RX3N	PE1_IN-
10	GB_CLK2P	CK_PE_100M_SATA_H
10	GB_CLK2N	CK_PE_100M_SATA_L
14,29	HDD_LED-	HDDLED
31,34	-PCI1RST	XRST_L
5,7,8,10,12,23,26,29,30	SMBCK	SMBCLK
5,7,8,10,12,23,26,29,30	SMBDT	SMBDATA
26	USB_P10+	USBC+1
26	USB_P10-	USBC-1
26	USB_P11+	USBD+1
26	USB_P11-	USBD-1

PATA none use, Cheaper than JM360.-2008/09/15

U3

JMB361
LQFP 100 14x14

JMB361-LGBZ0A
01-278-361270

76	ZGPIO3	ASTXP0	50 J_TXP
77	YROMCSn	ASTXN0	49 J_TXN
78	YIDMACKnA	ASG18	48
79	XIIORDYA	ASV18	47 VCCA_J18
80	YIDIORnA	ASRXN0	46 J_RXN
81	DG18	ASRXP0	45 J_RXP
82	YIDIOWnA	ASREXT0	44 SJ_REXT1
83	XIDMRAQA	ASG33	43
84	ZIDD15A	ASV33	42 VCC3A_J
85	XTEST	ASXOUT0	41 XTALO_JSATA
86	YHDLEDn	ASXIN0	40 XTALI_JSATA
87	DV18	NC10	39
88	DG18	NC9	38
89	DG33	NC8	37
90	DV33	NC7	36
91	XSMBCLK	NC6	35
92	XSMBDAT	NC5	34
93	XRSTn	DV33	33 VCC3
94	ZIDD0A	DG33	32
95	DG18	DG18	31
96	ZIDD14A	DV18	30 VCCJ_18
97	ZIDD1A	NC4	29
98	ZIDD13A	NC3	28
99	ZIDD2A	NC2	27
100	ZIDD12A	NC1	26

JIORDYA, JDMARQA, JSATA_LEDA, SMBJ_CLK, SMBJ_DATA, XRST_L

CK_PE_100M_SATA_L, CK_PE_100M_SATA_H

PETx+, PETx-, PERx-, PERx+

USB 11,12

USBVCC11 — USBVCC11

EUSB

11	VCC0	VCC1	15
USBD-1 10	-DATA0	-DATA1	14 USBC-1
USBD+1 9	+DATA0	+DATA1	13 USBC+1
8	GND0	GND1	12

AUGND2 — AUGND2

J_TXP	C43	.01U-04	J_TXP1	6 TXP
J_TXN	C44	.01U-04	J_TXN1	5 TXN
J_RXN	C45	.01U-04	J_RXN1	3 RXN
J_RXP	C46	.01U-04	J_RXP1	2 RXP

GND 1, GND 4, GND 7, HOLE4 G4, HOLE3 G3, HOLE2 G2, HOLE1 G1

USBX2-ESATA
10-084-015060

AUGND2

Up to 1A

U8 — ADJ1117-S

MC5 10U-08
ER12 124-1-04
ADJ_JDK
ER10 54.9-1-04
EC21 100U-16DE
MC2 10U-08

Vo=1.25(1+Rb/Rt)

FB3 FB120-06
MC4 10U-08
BC3 .1U-04
BC6 .1U-04-O

FB1 FB600P-08
MC1 10U-08
MC6 1U
BC17 .1U-04-O
BC5 .1U-04

BC2 .1U-04
BC10 .1U-04
BC15 .1U-04
BC12 .1U-04

BC16 .1U-04-O
BC1 .1U-04
BC13 .1U-04
BC7 .1U-04

PE1_IN	C82	.1U-04	PETx+
PE1_IN-	C81	.1U-04	PETx-
SMBCLK	R52	0-04-SH	SMBJ_CLK
SMBDATA	R55	0-04-SH	SMBJ_DATA

D16 1N4148-S
HDDLED — JSATA_LEDA

JIORDYA	R34	4.7K-04
JDMARQA	R37	5.6K-04
JINTRQA	R15	10K-04

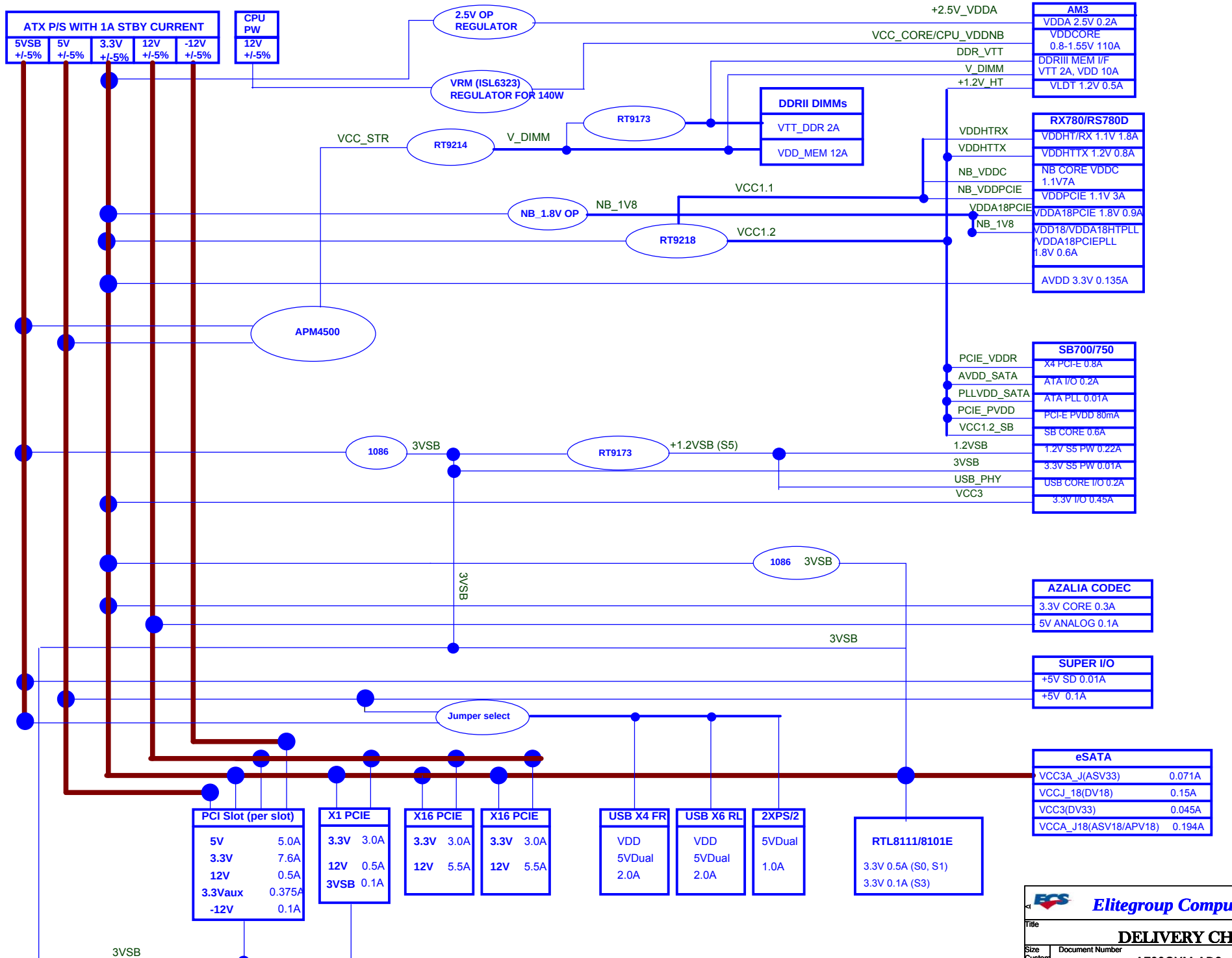
XTALI_JSATA
XTALO_JSATA — R50 1M-04
X1 X-25M
C32 10P-04
C56 10P-04

SMBJ_CLK	R53	4.7K-04
SMBJ_DATA	R56	4.7K-04
JSATA_LEDA	R45	4.7K-04
PCIE_REXTA	ER11	8.2K-04
SJ_REXT1	ER6	12K-04

注：參照Layout 擺放位置
適當Open Bypass CAP

Elitegroup Computer Systems

Title: JMicron eSATA-JM361
Size: Custom
Document Number: A790GXM-AD3
Rev: 1.0
Date: Tuesday, February 24, 2009
Sheet 36 of 39



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Title: DELIVERY CHART

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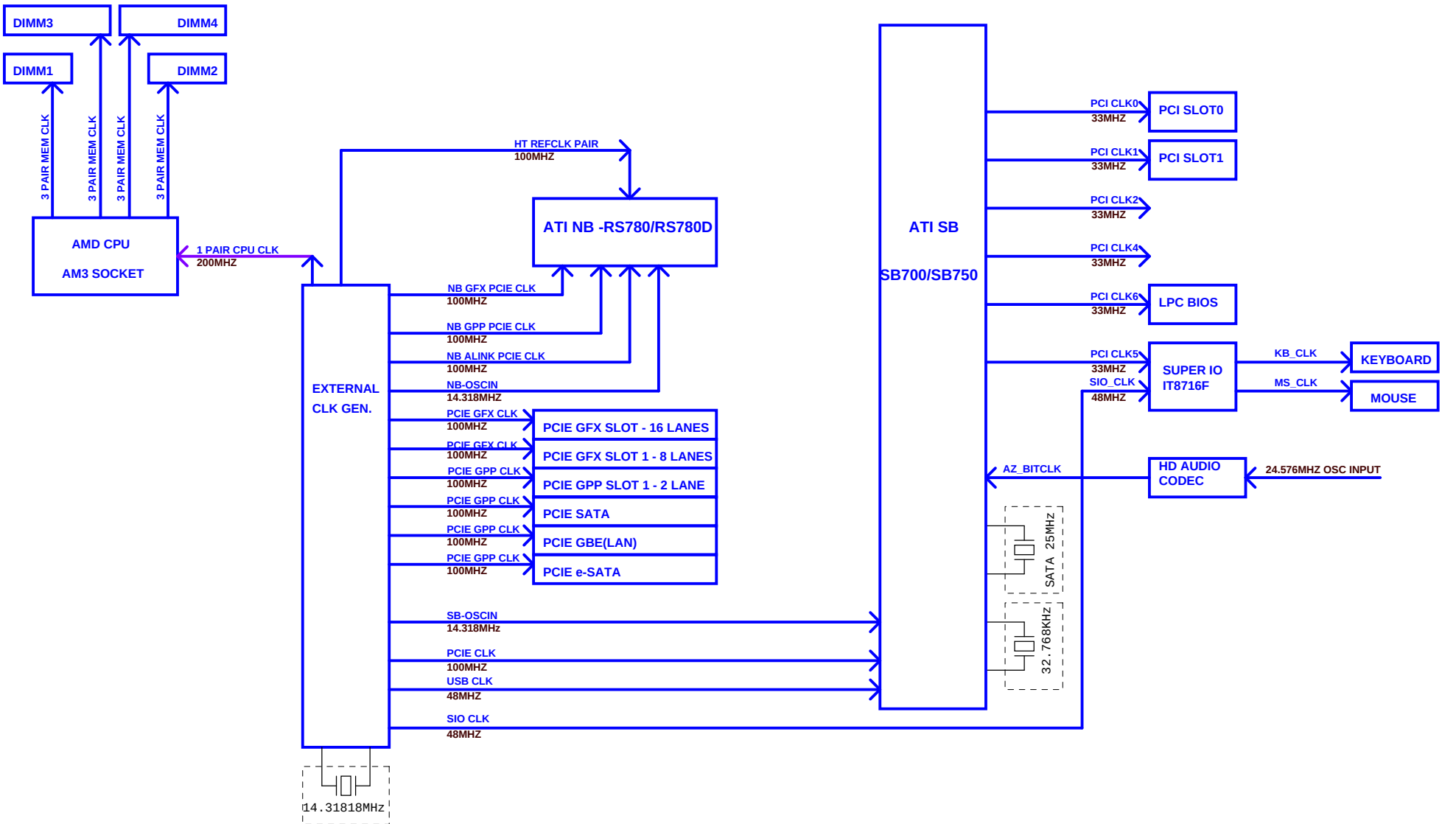

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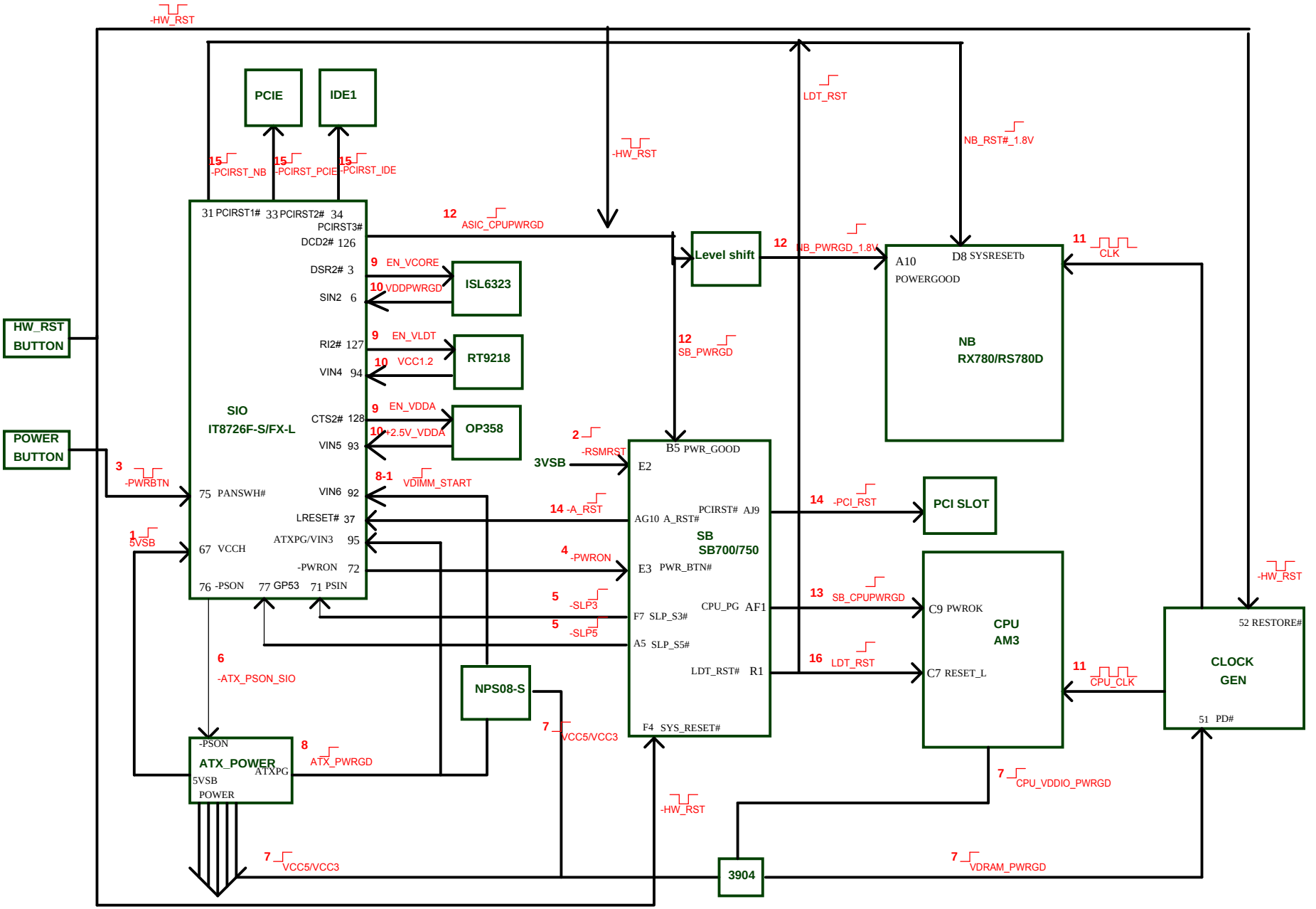

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Black Series
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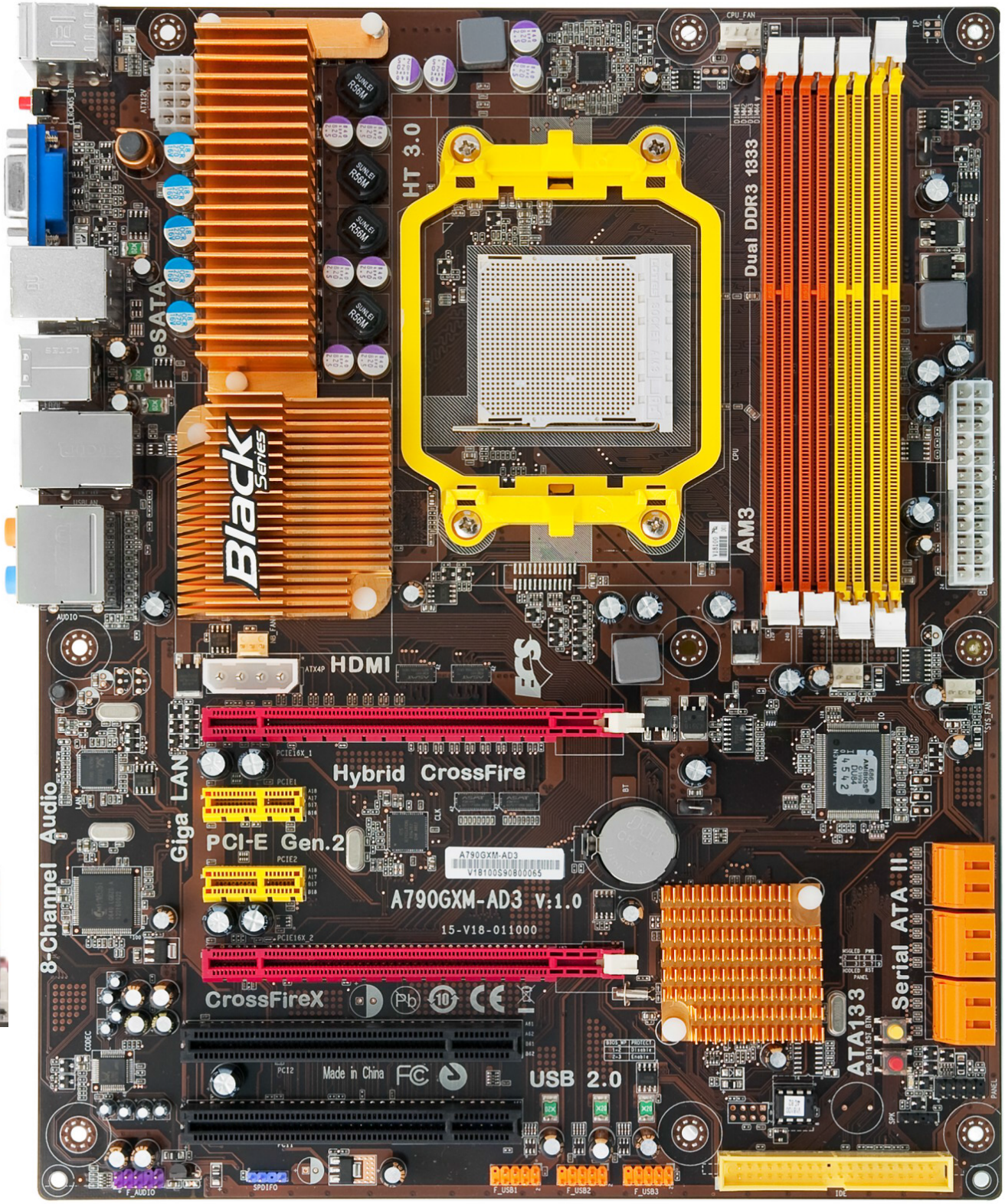
Supports AMD Phenom™ II Quad-Core Processors
DDR3 1333
HDMI
HD Video
HD Audio


HT 3.0
Dual DDR3 1333
AM3
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Serial ATA II