

# MS-7550 Ver:12

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## CPU:

AMD AM2+  
 AMD AMD Athlon 64 X2  
 AMD Athlon 64 FX  
 AMD Athlon 64  
 AMD Sempron CPUs

## System Chipset:

AMD - RS780D (North Bridge)  
 AMD - SB750 (South Bridge)

## On Board Chipset:

Super I/O - F71882FG  
 BIOS - SPI  
 Azalia CODEC - Realtek ALC888  
 LAN - Realtek RTL8111C  
 IEEE1394 - JMicron JMB381

## Main Memory:

DDR II \* 4 (Max 4GB)

## Expansion Slots:

PCI Express X16 Slot \* 1  
 PCI Express X8 Slot \* 1  
 PCI Express X1 Slot \* 2  
 PCI 2.3 Slot \* 2

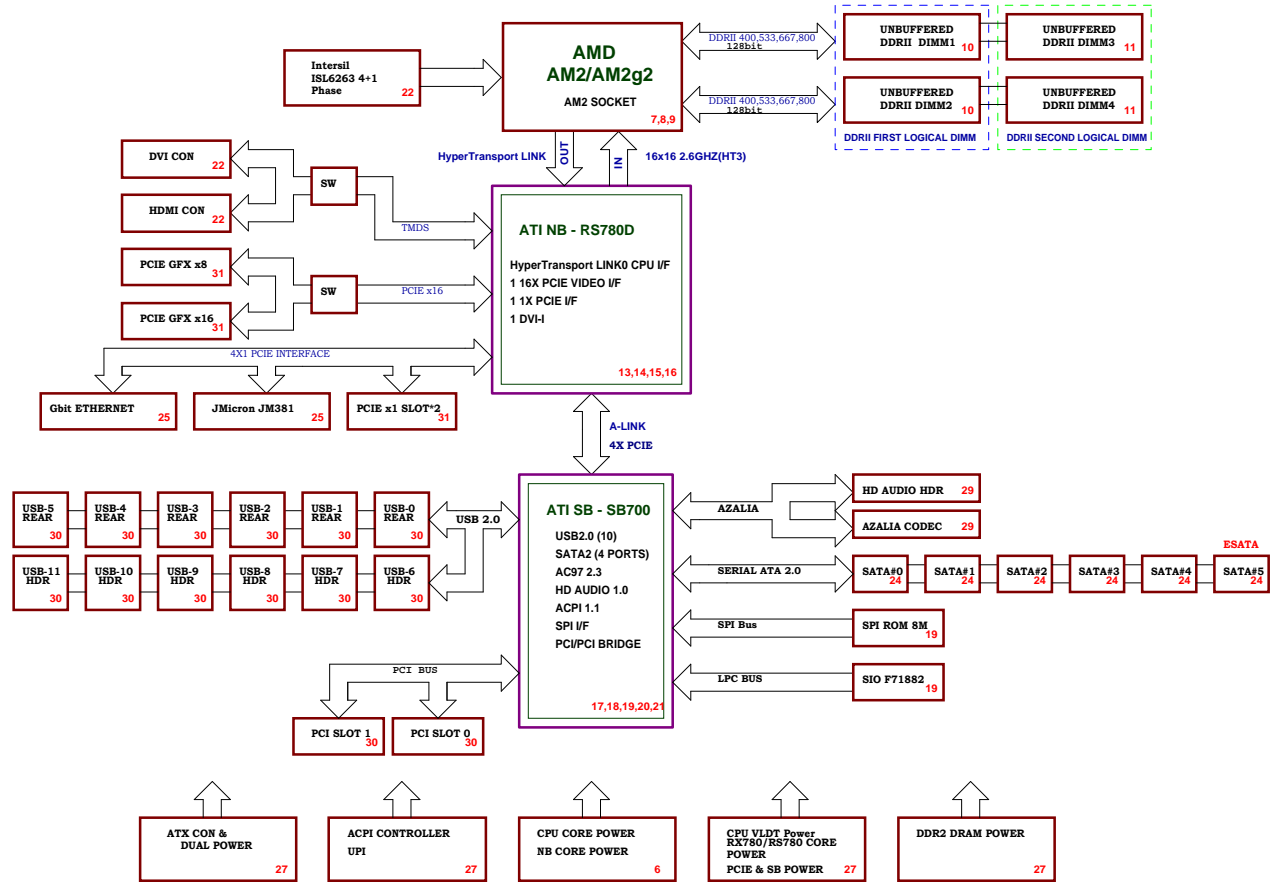
## Intersil PWM:

Controller - Intersil ISL6323 4+1 Phase



|                                  |                          |
|----------------------------------|--------------------------|
| MSI<br>MICRO-START INTL CO.,LTD. |                          |
| COVER SHEET                      |                          |
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# Project MS-7304 Block Diagram



**GPIO Configuration**

| GPIO Name                          | Type    | Function Description | Pin  | Page | GPIO Name              | Type    | Function Description | Pin  | Page | GPIO Name              | Type    | Function Description | Pin  | Page |
|------------------------------------|---------|----------------------|------|------|------------------------|---------|----------------------|------|------|------------------------|---------|----------------------|------|------|
| PC1CLK5/GPIO41                     | 3.3V    | Unused               | T3   | 17   | AZ_SDIN3/GPIO46        | S5 3.3V | Unused               | M3   | 18   | IDE_D4/GPIO19          | S5 3.3V | Unused               | AD21 | 19   |
| REQ3#/GPIO70                       | 3.3V    | PREQ#3               | AE6  | 17   | AZ_DOCK_RST#/GPM8#     | S5 3.3V | USB_EN               | L5   | 18   | IDE_D5/GPIO20          | S5 3.3V | Unused               | AE20 | 19   |
| REQ4#/GPIO71                       | 3.3V    | PREQ#4               | AB6  | 17   | PS2_DAT/EC_GPIO0       | S5 3.3V | Unused               | H19  | 18   | IDE_D6/GPIO21          | S5 3.3V | Unused               | AB20 | 19   |
| GNT3#/GPIO72                       | 3.3V    | Unused               | AC6  | 17   | PS2_CLK/EC_GPIO1       | S5 3.3V | Unused               | H20  | 18   | IDE_D7/GPIO22          | S5 3.3V | Unused               | AD19 | 19   |
| GNT4#/GPIO73                       | 3.3V    | Unused               | AE5  | 17   | SPI_CS2#/EC_GPIO2      | S5 3.3V | Unused               | H21  | 18   | IDE_D8/GPIO23          | S5 3.3V | Unused               | AE19 | 19   |
| INT#E#/GPIO33                      | 3.3V    | PCI_INTA#            | AD3  | 17   | IDE_RST#/RST#EC_GPIO3  | S5 3.3V | Unused               | F25  | 18   | IDE_D9/GPIO24          | S5 3.3V | Unused               | AC20 | 19   |
| INT#F#/GPIO33                      | 3.3V    | PCI_INTB#            | AC4  | 17   | PS2KB_DAT/EC_GPIO4     | S5 3.3V | Unused               | D22  | 18   | IDE_D10/GPIO25         | S5 3.3V | Unused               | AD20 | 19   |
| INT#G#/GPIO33                      | 3.3V    | PCI_INTC#            | AE2  | 17   | PS2KB_CLK/EC_GPIO5     | S5 3.3V | Unused               | E24  | 18   | IDE_D11/GPIO26         | S5 3.3V | Unused               | AE21 | 19   |
| INT#H#/GPIO33                      | 3.3V    | PCI_INTD#            | AE3  | 17   | PS2M_DAT/EC_GPIO6      | S5 3.3V | Unused               | E25  | 18   | IDE_D12/GPIO27         | S5 3.3V | Unused               | AB22 | 19   |
| LDRQ1#/GNT5#/GPIO68                | 3.3V    | Unused               | AB8  | 17   | PS2M_CLK/EC_GPIO7      | S5 3.3V | Unused               | D23  | 18   | IDE_D13/GPIO28         | S5 3.3V | Unused               | AD22 | 19   |
| BMREQ#/REQ5#/GPIO65                | 3.3V    | PREQ#5               | AD7  | 17   | USBCCLK14M_25M_48M_OSC | S5 3.3V | USB_48M_CLK          | C8   | 18   | IDE_D14/GPIO29         | S5 3.3V | Unused               | AE23 | 19   |
| PCI_PME#/EVENT4#                   | S5 3.3V | PCI_PME#             | E1   | 18   | KSO_16/EC_GPIO8        | S5 3.3V | Unused               | A18  | 18   | IDE_D15/GPIO30         | S5 3.3V | Unused               | AC23 | 19   |
| RH#EXTVNT0#                        | S5 3.3V | Unused               | E2   | 18   | KSO_17/EC_GPIO9        | S5 3.3V | Unused               | B18  | 18   | SPI_DI/GPIO12          | S5 3.3V | SPI_DATAIN           | G6   | 19   |
| SLP_S2/GPM9#                       | S5 3.3V | Unused               | H7   | 18   | EC_PWM0/EC_GPIO10      | S5 3.3V | Unused               | F21  | 18   | SPI_DO/GPIO11          | S5 3.3V | SPI_DATAOUT          | D2   | 19   |
| GA20IN/GEVENT0#                    | 3.3V    | Unused               | Y15  | 18   | SCL2/EC_GPIO11         | S5 3.3V | Unused               | D21  | 18   | SPI_CLK/GPIO14         | S5 3.3V | SPI_CLK              | D1   | 19   |
| KBRST#/EVENT1#                     | 3.3V    | Unused               | W15  | 18   | SDA2/EC_GPIO12         | S5 3.3V | Unused               | F19  | 18   | SPI_HOLD#/GPIO31       | S5 3.3V | SPI_HOLD_L           | F4   | 19   |
| LPC_PME#/EVENT3#                   | 3.3V    | Unused               | K4   | 18   | SCL3_LV/EC_GPIO13      | S5 3.3V | Unused               | E20  | 18   | SPI_CS#/GPIO32         | S5 3.3V | SPI_CS#              | F3   | 19   |
| LPC_SMI#/EXTVNT1#                  | 3.3V    | Unused               | K24  | 18   | SDA3_LV/EC_GPIO14      | S5 3.3V | Unused               | E21  | 18   | LAN_RST#/GPIO13        | 3.3V    | Unused               | U15  | 19   |
| S3_STATE/GEVENT5#                  | S5 3.3V | S3_STATE             | F1   | 18   | EC_PWM1/EC_GPIO15      | S5 3.3V | Unused               | E19  | 18   | ROM_RST#/GPIO14        | 3.3V    | Unused               | J1   | 19   |
| SYS_RESET#/GPM7#                   | S5 3.3V | FP_RST#              | J2   | 18   | EC_PWM2/EC_GPIO16      | S5 3.3V | SB_GP16(Strapping)   | D19  | 18   | FANOUT0/GPIO3          | 3.3V    | SB_FANOUT0           | M8   | 19   |
| WAKE#/GPM7#                        | S5 3.3V | WAKE#                | H6   | 18   | EC_PWM3/EC_GPIO17      | S5 3.3V | SB_GP17(Strapping)   | E18  | 18   | FANOUT1/GPIO48         | 3.3V    | SB_FANOUT1           | M5   | 19   |
| BLINK/GPM6#                        | S5 3.3V | PLED                 | F2   | 18   | KSI_0/EC_GPIO18        | S5 3.3V | Unused               | G20  | 18   | FANOUT2/GPIO49         | 3.3V    | Unused               | M7   | 19   |
| SMBALERT#/THRMRTRIP#/GEVENT2#      | S5 3.3V | CPU_THRIP#           | J6   | 18   | KSI_1/EC_GPIO19        | S5 3.3V | Unused               | G21  | 18   | FANIN0/GPIO50          | 3.3V    | SB_FANTACH0          | P5   | 19   |
| SATA_IS0#/GPIO10                   | 3.3V    | Unused               | AE18 | 18   | KSI_2/EC_GPIO20        | S5 3.3V | Unused               | D25  | 18   | FANIN1/GPIO51          | 3.3V    | SB_FANTACH1          | P8   | 19   |
| CLK_REQ3#/SATA_IS1#/GPIO6          | 3.3V    | Unused               | AD18 | 18   | KSI_3/EC_GPIO21        | S5 3.3V | Unused               | D24  | 18   | FANIN2/GPIO52          | 3.3V    | Unused               | E8   | 19   |
| SMARTVOLT#/SATA_IS2#/GPIO4         | 3.3V    | Unused               | AA19 | 18   | KSI_4/EC_GPIO22        | S5 3.3V | Unused               | C25  | 18   | TEMPIN0/GPIO81         | 3.3V    | SB_THERMDA_CPU       | B6   | 19   |
| CLK_REQ0#/SATA_IS3#/GPIO0          | 3.3V    | Unused               | W17  | 18   | KSI_5/EC_GPIO23        | S5 3.3V | Unused               | C24  | 18   | TEMPIN1/GPIO62         | 3.3V    | AUX_THERMDA          | A6   | 19   |
| CLK_REQ1#/SATA_IS4#/FANOUT3/GPIO39 | 3.3V    | Unused               | V17  | 18   | KSI_6/EC_GPIO24        | S5 3.3V | Unused               | B25  | 18   | TEMPIN2/GPIO63         | 3.3V    | Unused               | A5   | 19   |
| CLK_REQ2#/SATA_IS5#/FANIN3/GPIO40  | 3.3V    | Unused               | W20  | 18   | KSI_7/EC_GPIO25        | S5 3.3V | Unused               | C23  | 18   | TEMPIN3/TALERT#/GPIO64 | S5 3.3V | TALERT#              | B5   | 19   |
| SPKR/GPIO2                         | 3.3V    | SPKR                 | W21  | 18   | KSO_0/EC_GPIO26        | S5 3.3V | Unused               | B24  | 18   | VIN0/GPIO53            | 3.3V    | VIN0                 | A4   | 19   |
| SCL0/GPOC0#                        | 3.3V    | SCLK                 | AA18 | 18   | KSO_1/EC_GPIO27        | S5 3.3V | Unused               | B23  | 18   | VIN1/GPIO54            | 3.3V    | VIN1                 | B4   | 19   |
| SDA0/GPOC1#                        | 3.3V    | SDATA                | W18  | 18   | KSO_2/EC_GPIO28        | S5 3.3V | Unused               | A23  | 18   | VIN2/GPIO55            | 3.3V    | VIN2                 | C4   | 19   |
| SCL1/GPOC2#                        | S5 3.3V | SCLK1                | K1   | 18   | KSO_3/EC_GPIO29        | S5 3.3V | Unused               | C22  | 18   | VIN3/GPIO56            | 3.3V    | VIN3                 | D4   | 19   |
| SDA1/GPOC3#                        | S5 3.3V | SDATA1               | K2   | 18   | KSO_4/EC_GPIO30        | S5 3.3V | Unused               | A22  | 18   | VIN4/GPIO57            | 3.3V    | VIN4                 | D5   | 19   |
| DDC1_SCL/GPIO9                     | 3.3V    | Unused               | AA20 | 18   | KSO_5/EC_GPIO31        | S5 3.3V | Unused               | B22  | 18   | VIN5/GPIO58            | 3.3V    | VIN5                 | D6   | 19   |
| DDC1_SDA/GPIO8                     | 3.3V    | Unused               | Y18  | 18   | KSO_6/EC_GPIO32        | S5 3.3V | Unused               | B21  | 18   | VIN6/GPIO59            | 3.3V    | Unused               | A7   | 19   |
| LLB#/GPIO66                        | S5 3.3V | Unused               | C1   | 18   | KSO_7/EC_GPIO33        | S5 3.3V | Unused               | A21  | 18   | VIN7/GPIO60            | 3.3V    | Unused               | B7   | 19   |
| SHUTDOWN#/GPIO5                    | 3.3V    | Unused               | Y19  | 18   | KSO_8/EC_GPIO34        | S5 3.3V | Unused               | D20  | 18   |                        |         |                      |      |      |
| DDR3_RST#/GVENT7#                  | S5 3.3V | Unused               | G5   | 18   | KSO_9/EC_GPIO35        | S5 3.3V | Unused               | C20  | 18   |                        |         |                      |      |      |
| USB_OC6#/IR_TX1/GVENT6#            | S5 3.3V | Unused               | B9   | 18   | KSO_10/EC_GPIO36       | S5 3.3V | Unused               | A20  | 18   |                        |         |                      |      |      |
| USB_OC5#/IR_TX0/GPM5#              | S5 3.3V | OC#                  | B8   | 18   | KSO_11/EC_GPIO37       | S5 3.3V | Unused               | B20  | 18   |                        |         |                      |      |      |
| USB_OC4#/IR_RX0/GPM4#              | S5 3.3V | Unused               | A8   | 18   | KSO_12/EC_GPIO38       | S5 3.3V | Unused               | B19  | 18   |                        |         |                      |      |      |
| USB_OC3#/IR_RX1/GPM3#              | S5 3.3V | Unused               | A9   | 18   | KSO_13/EC_GPIO39       | S5 3.3V | Unused               | A19  | 18   |                        |         |                      |      |      |
| USB_OC2#/GPM2#                     | S5 3.3V | Unused               | E5   | 18   | KSO_14/EC_GPIO40       | S5 3.3V | Unused               | D18  | 18   |                        |         |                      |      |      |
| USB_OC1#/GPM1#                     | S5 3.3V | Unused               | F8   | 18   | KSO_15/EC_GPIO41       | S5 3.3V | Unused               | C18  | 18   |                        |         |                      |      |      |
| USB_OC0#/GPM0#                     | S5 3.3V | OC1#                 | E4   | 18   | SATA_ACT#/GPIO67       | 3.3V    | SATA_LED#            | W11  | 19   |                        |         |                      |      |      |
| AZ_SDIN0/GPIO42                    | S5 3.3V | SDATA_IN_R           | J7   | 18   | IDE_D0/GPIO15          | S5 3.3V | Unused               | AD24 | 19   |                        |         |                      |      |      |
| AZ_SDIN1/GPIO43                    | S5 3.3V | Unused               | J8   | 18   | IDE_D1/GPIO16          | S5 3.3V | Unused               | AD23 | 19   |                        |         |                      |      |      |
| AZ_SDIN2/GPIO44                    | S5 3.3V | Unused               | L8   | 18   | IDE_D2/GPIO17          | S5 3.3V | Unused               | AE22 | 19   |                        |         |                      |      |      |
|                                    |         |                      |      |      | IDE_D3/GPIO18          | S5 3.3V | Unused               | AC22 | 19   |                        |         |                      |      |      |

**PCI Config.**

| DEVICE     | MCP1 INT Pin                                     | REQ#/GNT#        | IDSEL | CLOCK   |
|------------|--|------------------|-------|---------|
| PCI Slot 1 | PCI_INTA#<br>PCI_INTB#<br>PCI_INTC#<br>PCI_INTD# | PREQ#0<br>PGNT#0 | AD20  | PC1CLK0 |
| PCI Slot 2 | PCI_INTB#<br>PCI_INTC#<br>PCI_INTD#<br>PCI_INTA# | PREQ#1<br>PGNT#1 | AD21  | PC1CLK1 |

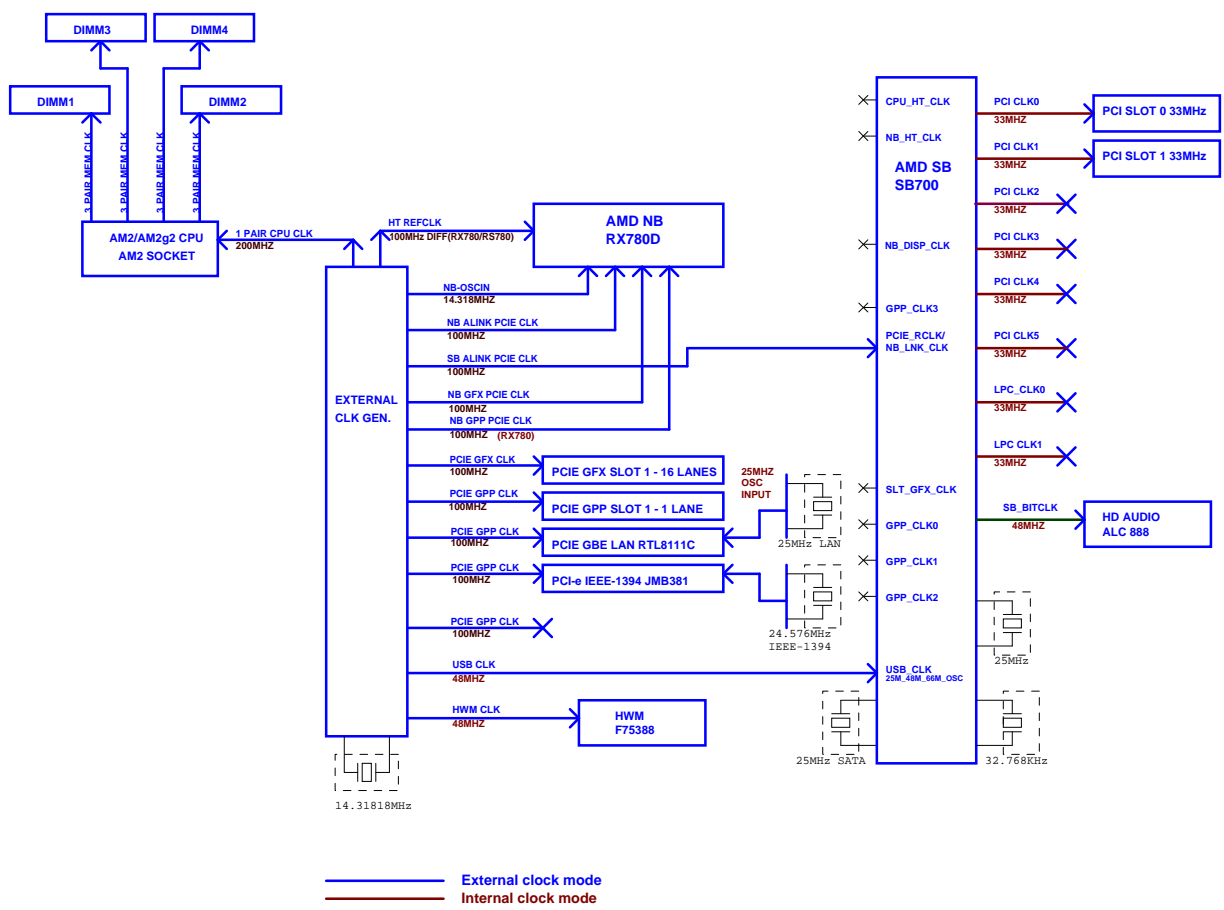
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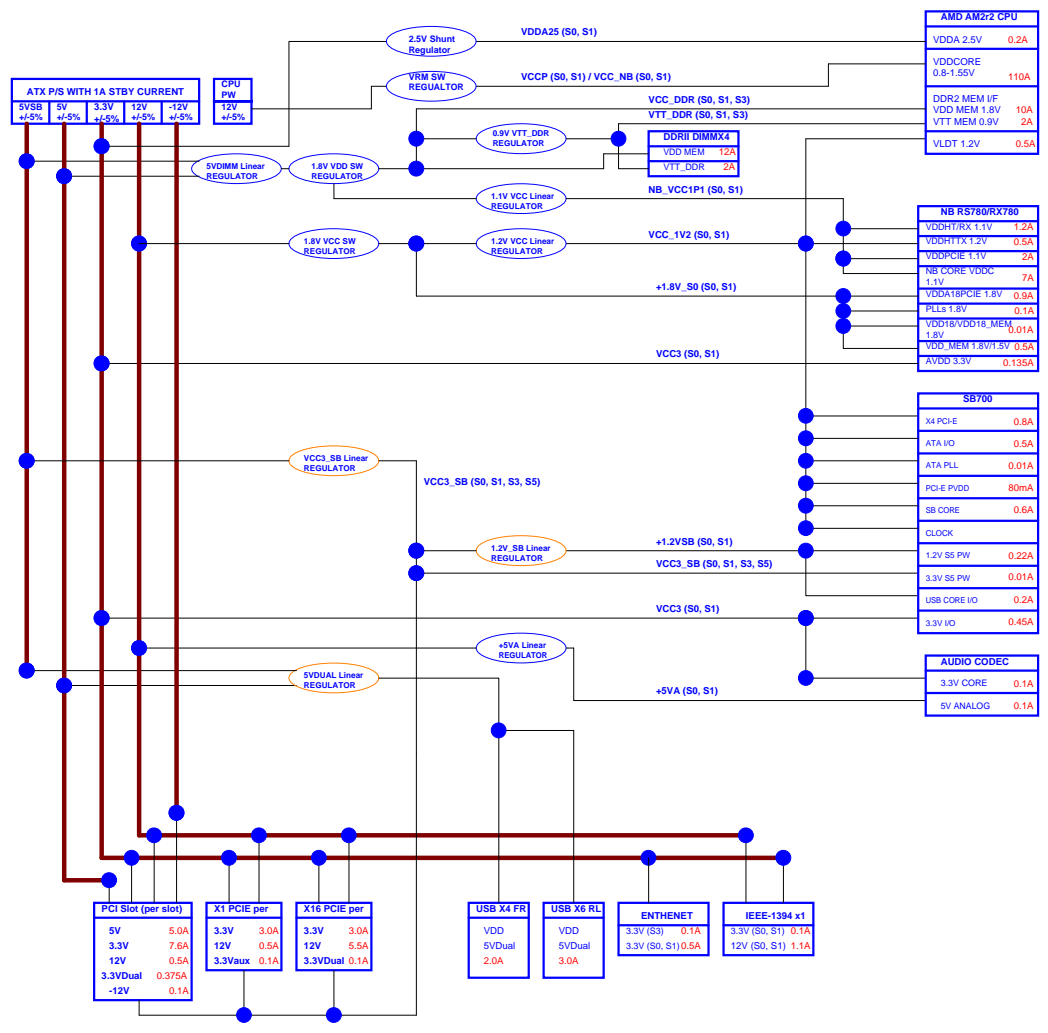
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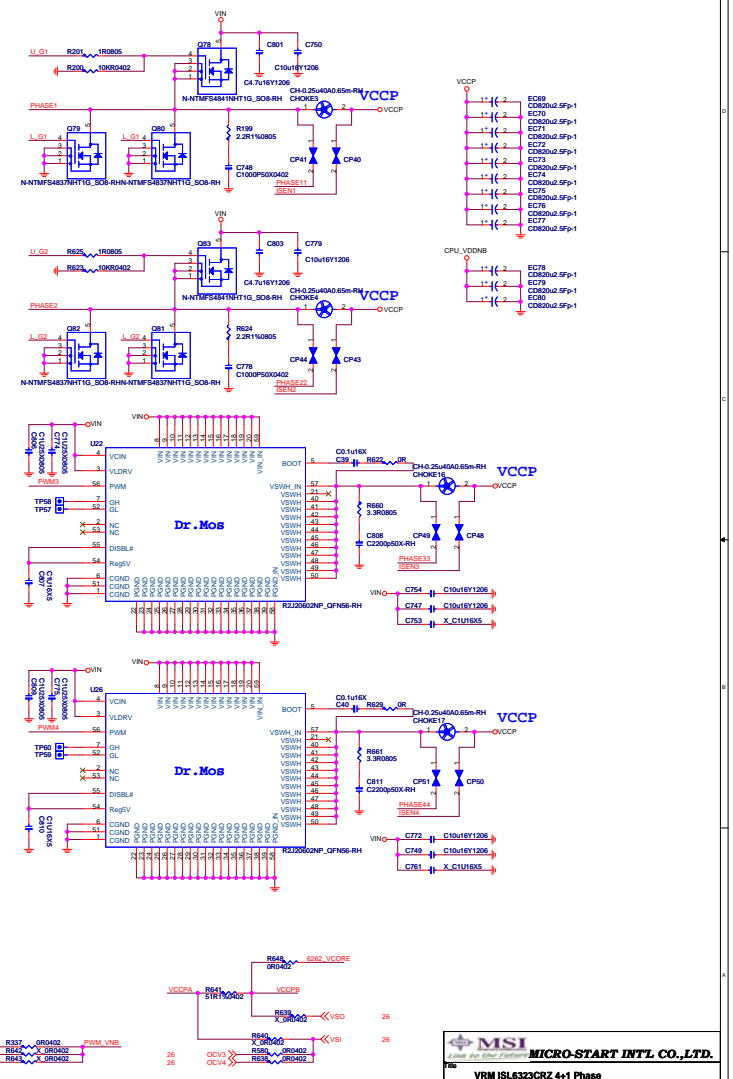
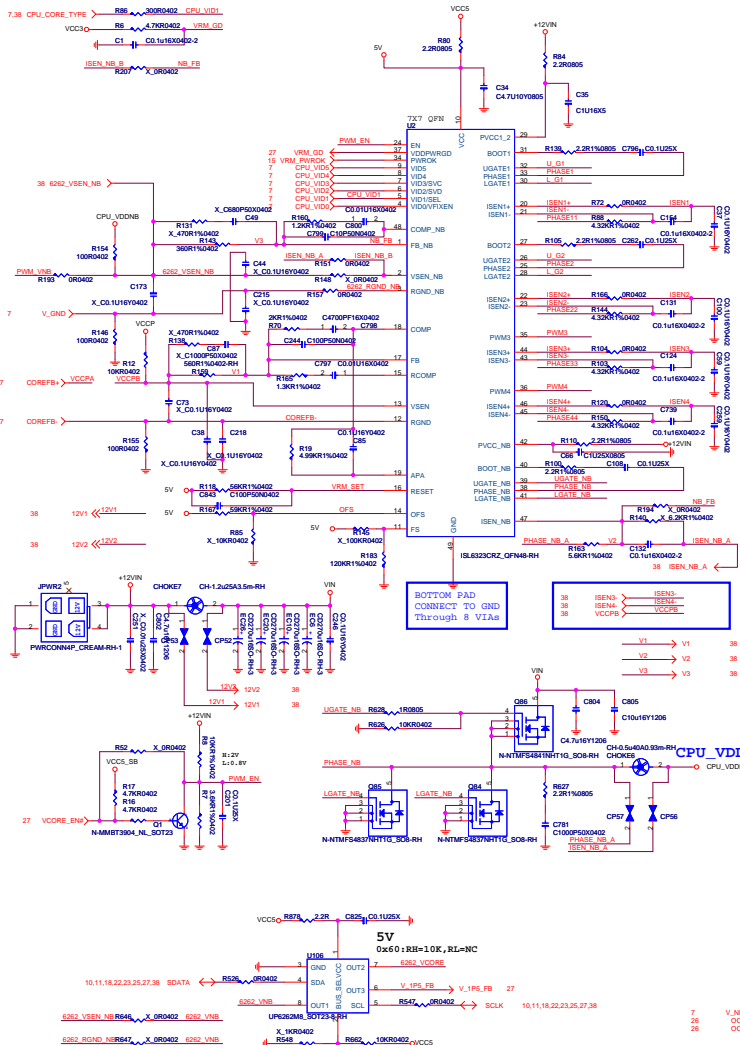
# Clock Distribution Chart



**Power Deliver Chart**



# VRM ISL6323CRZ 4+1 Phase



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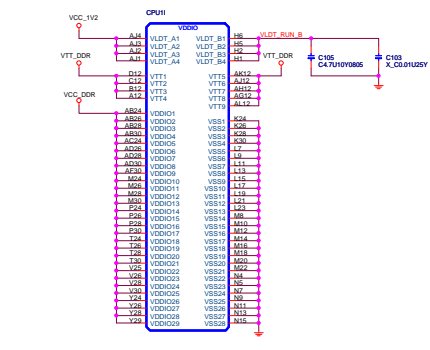
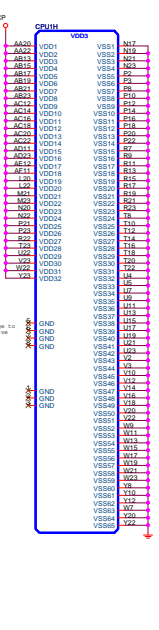
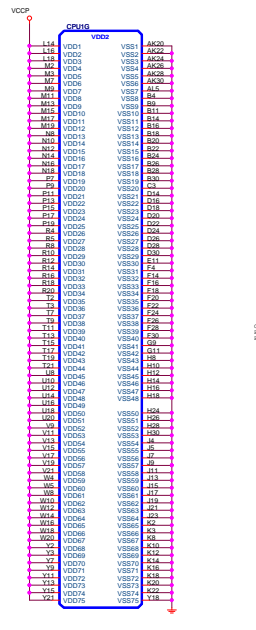
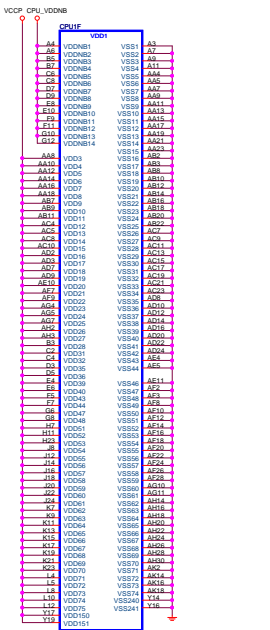
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| Size            | C                        |
| Document Number | MS-7550                  |
| Rev             | 12                       |
| Date            | F09n, August 15, 2008    |
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**CPU AM2 PWR & GND**



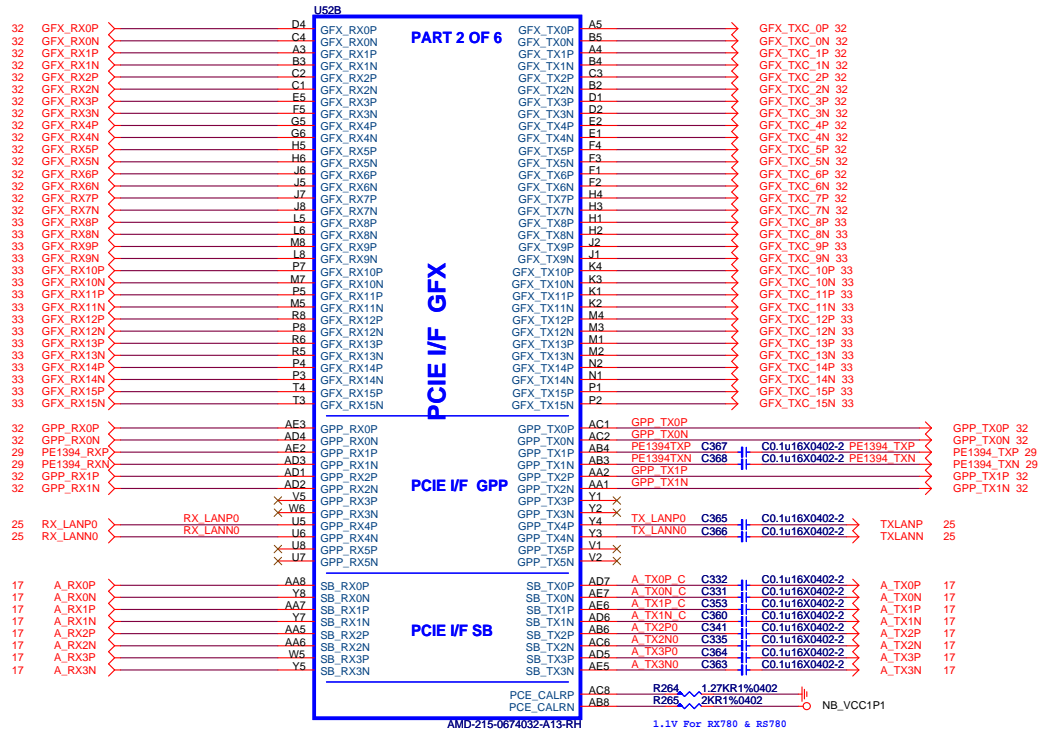








# RS780-PCIE I/F

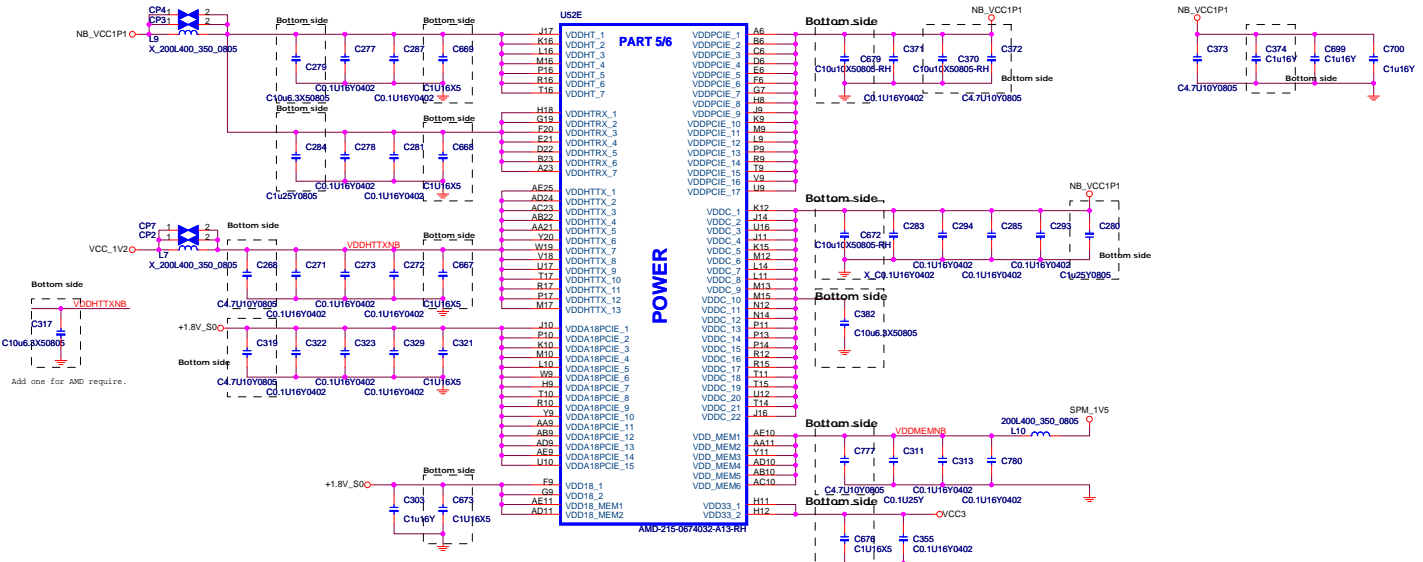
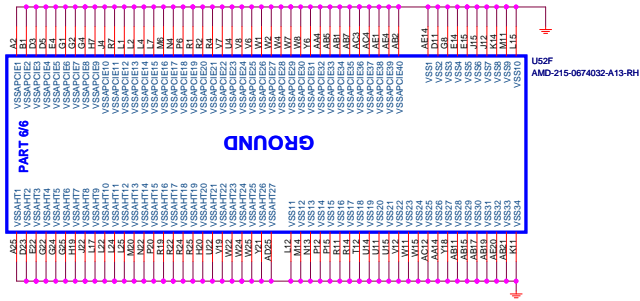


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 Link to the Future

|        |                 |                |                         |
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File: RS780-POWER

Size: Document Number MS-7550 Rev 12

Chipset: MS-7550

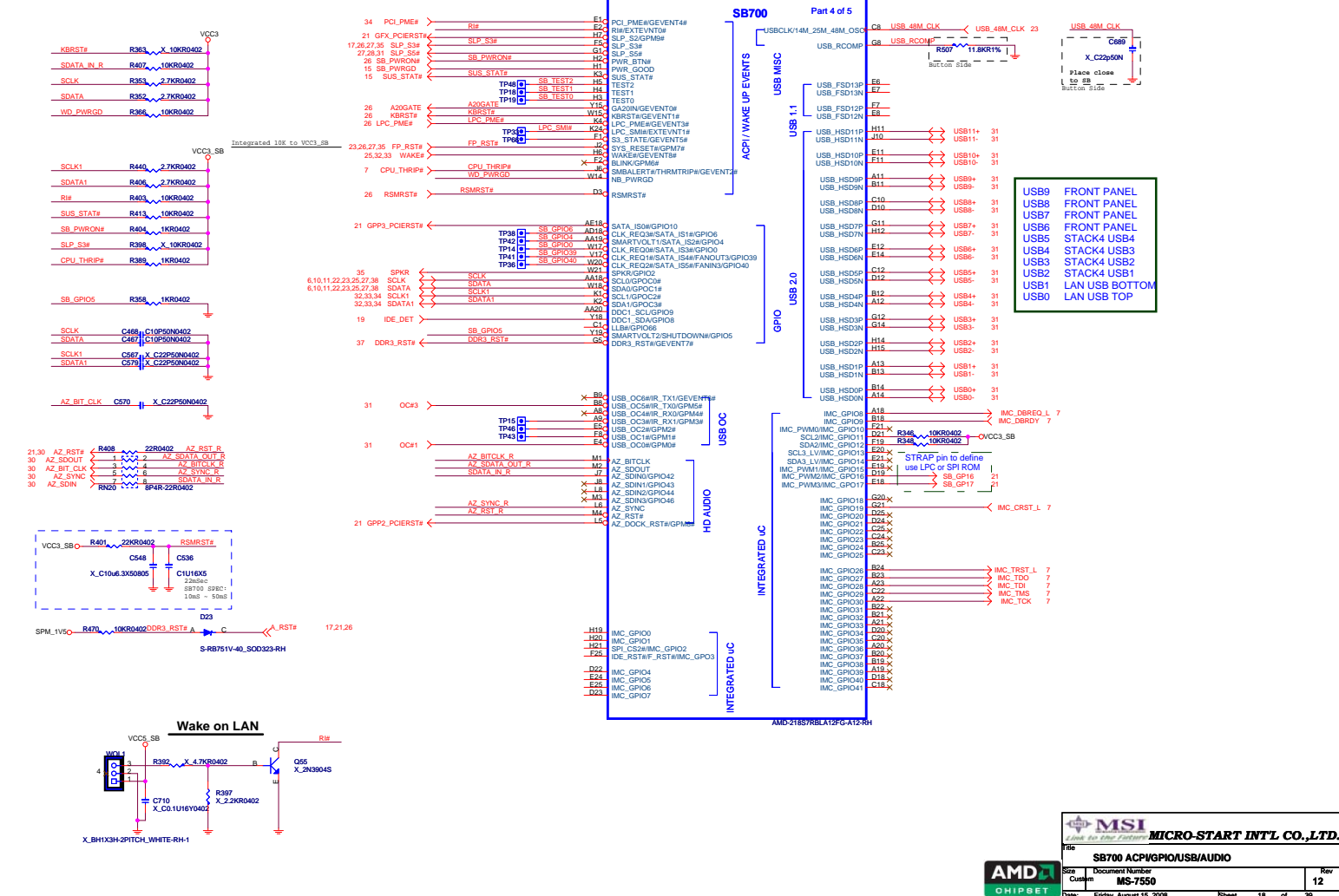
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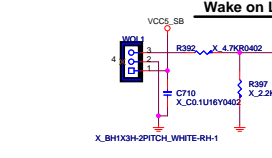
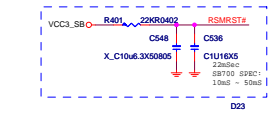




# SB700 ACPI/GPIO/USB/AUDIO



- USB9 FRONT PANEL
- USB8 FRONT PANEL
- USB7 FRONT PANEL
- USB6 FRONT PANEL
- USB5 STACK4 USB4
- USB4 STACK4 USB3
- USB3 STACK4 USB2
- USB2 STACK4 USB1
- USB1 LAN USB BOTTOM
- USB0 LAN USB TOP



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**MICRO-START INTL CO.,LTD.**

Doc: SB700 ACPI/GPIO/USB/AUDIO

Customer: MS-7550

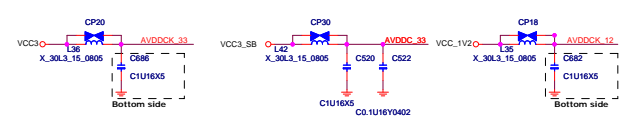
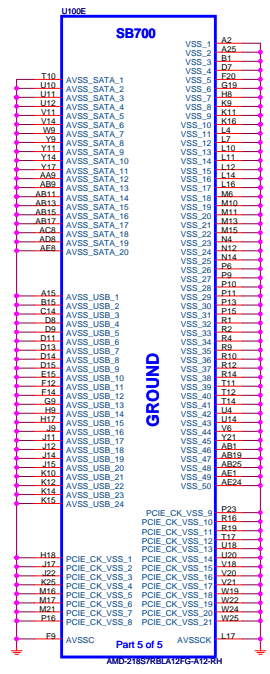
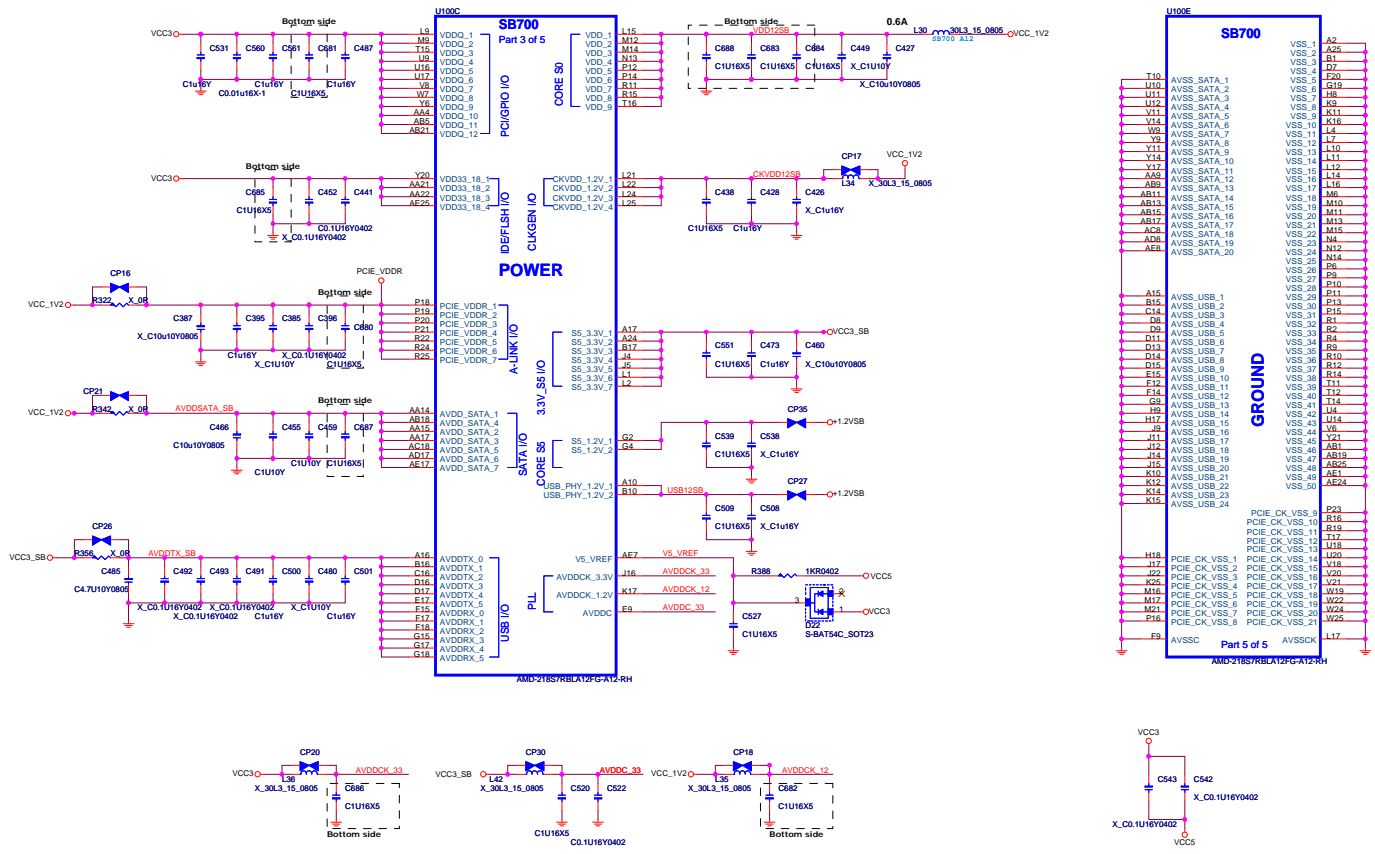
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# SB700 POWER & DECOUPLING

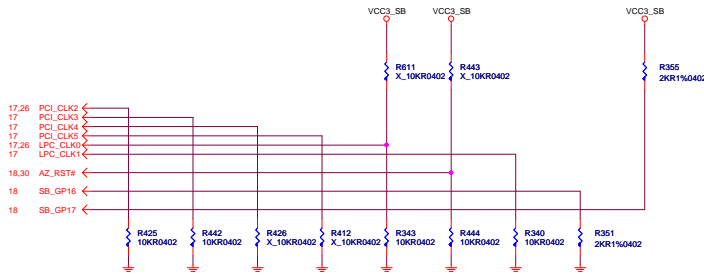


# SB700 STRAPS

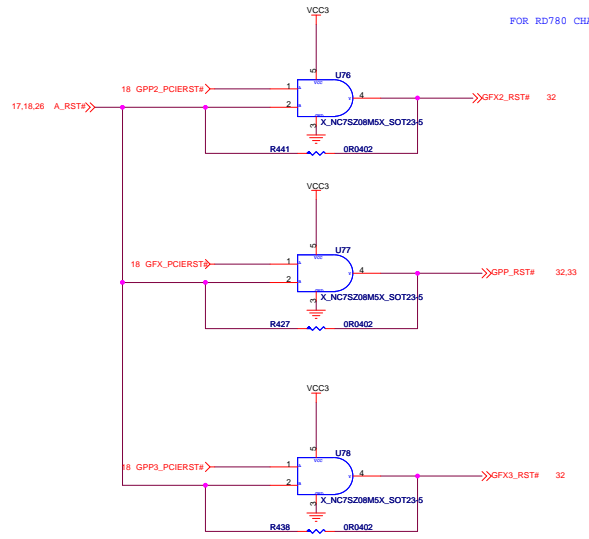
SB600 HAS 15K INTERNAL PD FOR AC\_SDATA\_OUT,  
15K PU FOR RTC\_CLK, EXTERNAL PU/PD IS  
NOT REQUIRED; FOR SB460, EXTERNAL PU/PD ARE  
REQUIRED

FOR RD780 CHANGE 1.0

## REQUIRED STRAPS

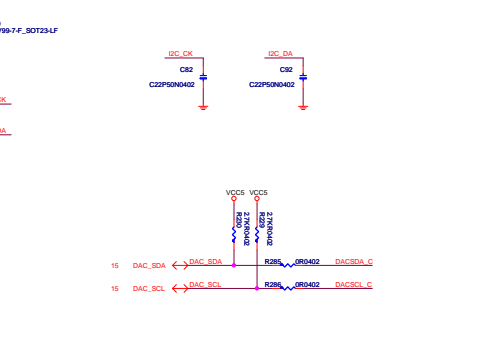
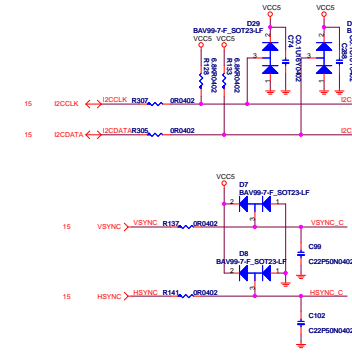
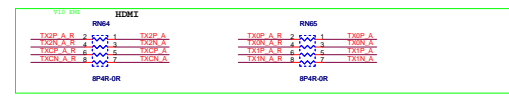
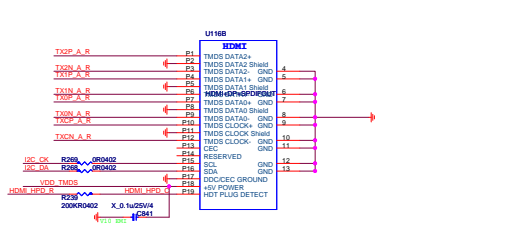
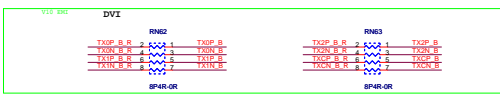
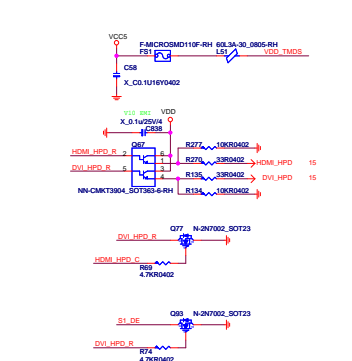


|           | PCI_CLK2                   | PCI_CLK3<br><small>STD_PCLK</small> | PCI_CLK4 | PCI_CLK5 | LPC_CLK0                | LPC_CLK1                 | RTC_CLK                        | AZ_RST#                 | GP17              | GP16   |
|-----------|----------------------------|-------------------------------------|----------|----------|-------------------------|--------------------------|--------------------------------|-------------------------|-------------------|--|
|           | Watchdog timer on NB_PWGRD | Debug straps                        | RESERVED | RESERVED | Booting from PCI Memory | Internal Clock Generator | INTERNAL RTC                   | EC ENABLED              | NC, NC = Reserved | ROM TYPE:<br>NC, L = SPI ROM <b>DEFAULT</b><br>L, NC = LPC ROM<br>L, L = FWH ROM |
| PULL HIGH | ENABLED (VCC3)             | ENABLED (VCC3)                      |          |          | ENABLED (VCC3_SB)       | ENABLED (VCC3_SB)        |                                | ENABLED                 |                   |  |
| PULL LOW  | DISABLED <b>DEFAULT</b>    | DISABLED <b>DEFAULT</b>             |          |          | DISABLED <b>DEFAULT</b> | DISABLED <b>DEFAULT</b>  | NC IS EXT. <b>DEF. DEFAULT</b> | DISABLED <b>DEFAULT</b> |                   | Note: NC represents internal 10-k $\Omega$ 5% pull-up                            |

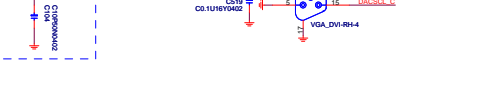
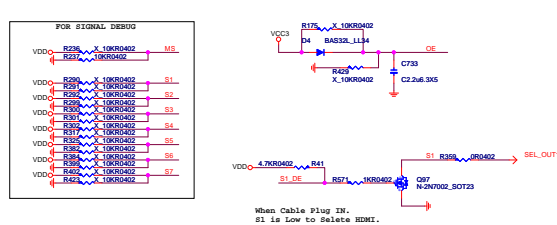
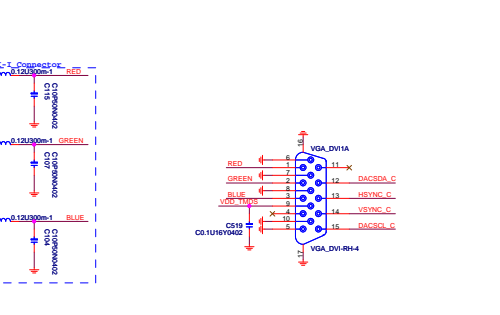
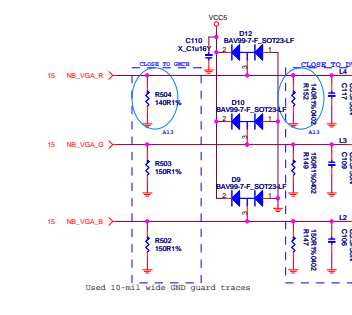
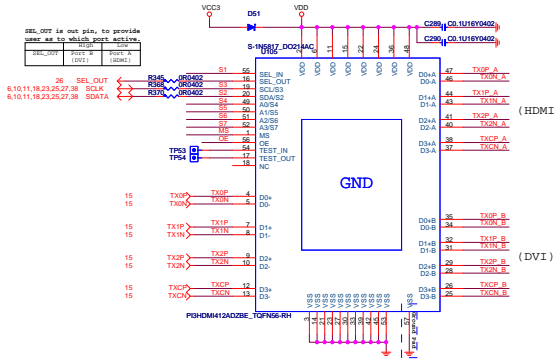


|       |                         |              |          |
|-------|-------------------------|--------------|----------|
| File  |                         | SB700 STRAPS |          |
| Size  | Document Number         |              |          |
| Count | MS-7550                 | Rev          | 12       |
| Date  | Friday, August 15, 2008 | Sheet        | 21 of 35 |

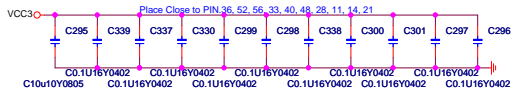
**DVI-I Connector**



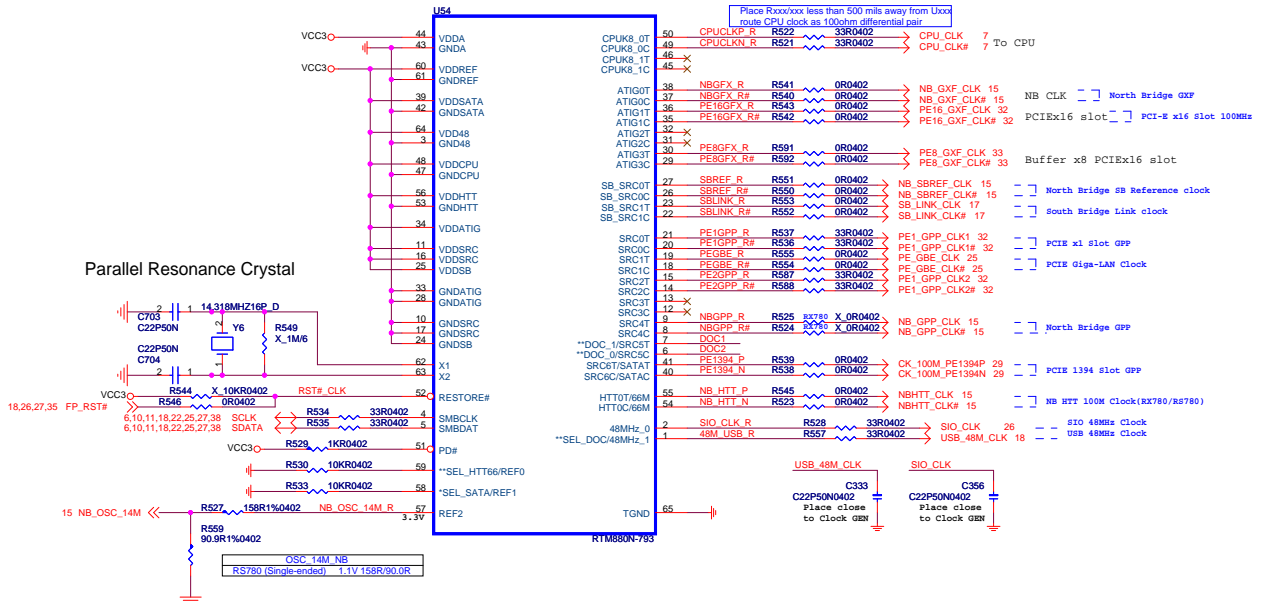
**PI3HDMI412AD DVI & HDMI Switch circuit.**



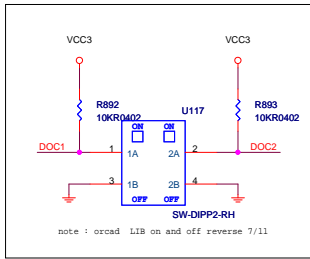
# Clock Gen RTM880N-793



IDT had modify clock from 472 to 471. Byte 15. Default is SRC PLL. Option to SB\_SRC PLL by register.



| DOC1 | DOC2 | CPU Frequency                  |
|------|------|--------------------------------|
| 0    | 0    | 200MHz                         |
| 0    | 1    | 250MHz, {CR07[7:5], CR08[7:0]} |
| 1    | 0    | 300MHz, {CR14[2:0], CR13[7:0]} |
| 1    | 1    | 350MHz, {CR1C[2:0], CR15[7:0]} |



**MICRO-START INTL CO.,LTD.**

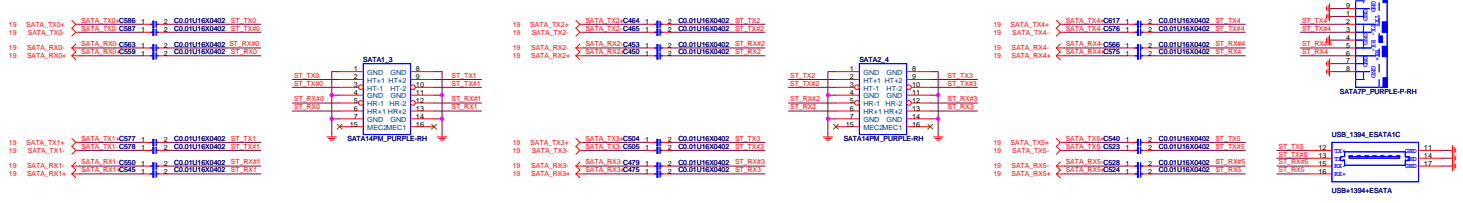
**Clock Gen RTM880N-793**

|        |                 |     |
|--------|-----------------|-----|
| Size   | Document Number | Rev |
| Custom | MS-7550         | 12  |

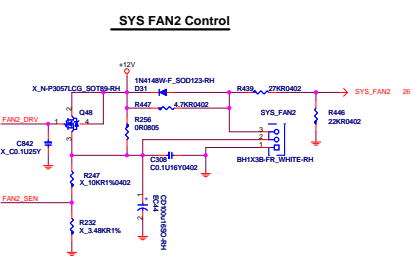
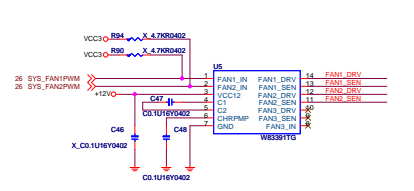
Date: Friday, August 15, 2008 Sheet 23 of 39

**SATA / FAN / CPU Thermo**

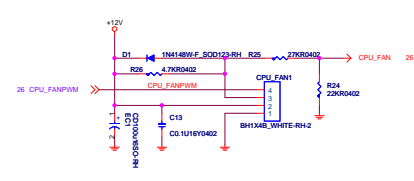
**SERIAL ATA CONNECTOR BLOCK**



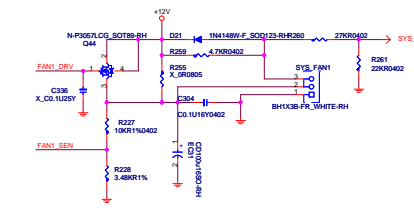
**PWM FAN CONTROL**



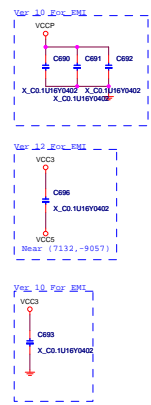
**CPU FAN Control**



**SYS FAN1 Control**



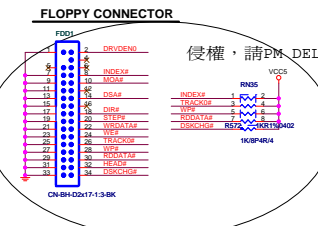
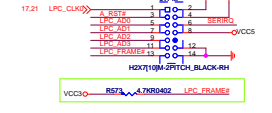
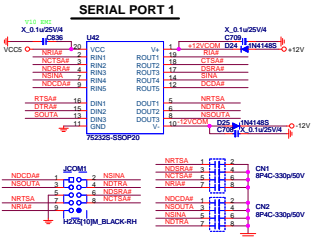
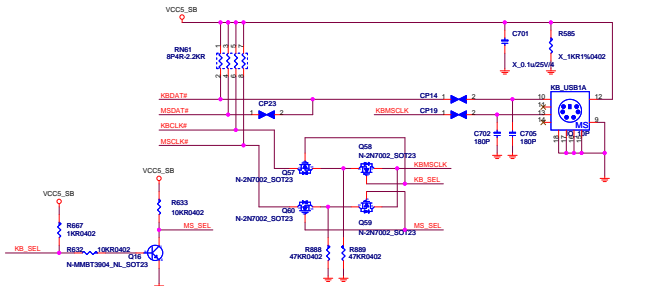
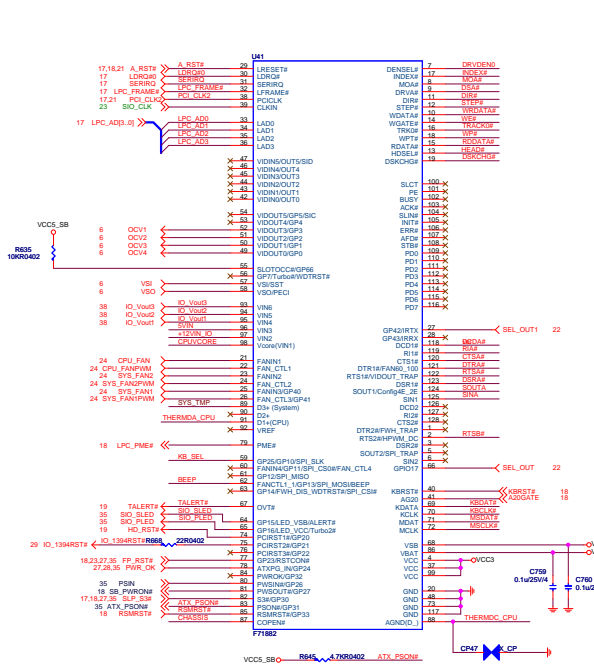
**EMI**



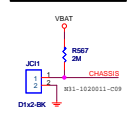
|                                      |                         |                |
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| Size: <b>Microsoft Word</b>          | Created: <b>MS-7550</b> |                |
| Date: <b>Friday, August 15, 2008</b> | Printed: <b>24</b>      | of <b>29</b>   |



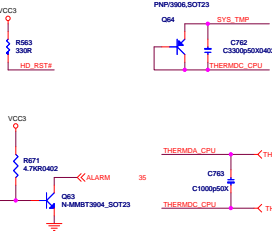




Chassis Intrusion



Thermal Resistor

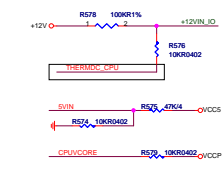


LPC I/O STRAPPING RESISTOR



| Don't STUFF | STUFF               |
|-------------|---------------------|
| RTS#B       | PWM FAN             |
| RTS#A       | PIN49-54-VID_OUT    |
| ROUTEA      | PIN42-47-VIDIN/OUT  |
| DFR#A       | FAN START DUTY 60%  |
|             | FAN START DUTY 100% |

Voltage Sensing



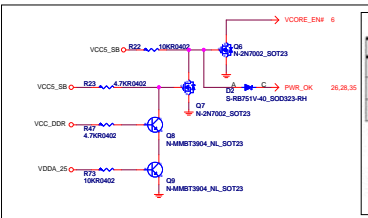
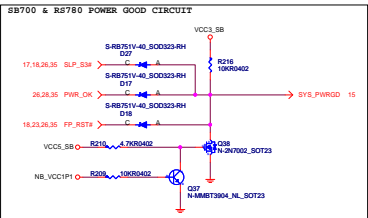
**MSI MICRO-START INTL CO., LTD.**

System Power-1& ACPI

MS-7550

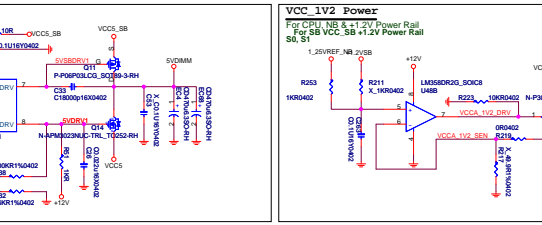
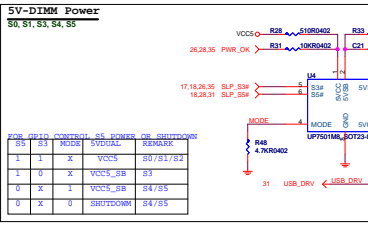
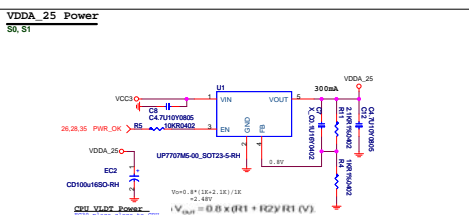
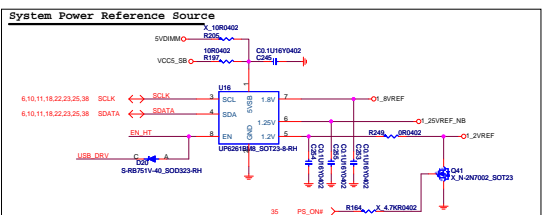
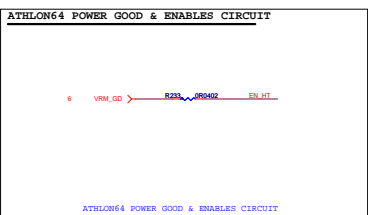
Rev 12

**System Power-1 & ACPI**



| Power Group A                | Power Group B               |
|------------------------------|-----------------------------|
| VDDIO <sup>1,2</sup> Vcc_DDR | VDD[1:0] <sup>1</sup> Vcore |
| VTT <sup>1,2</sup> VTT       | VDDNB Vcore_NB              |
| VDDA VDDA25                  | VLDLT HT                    |

Notes:  
 1) VDDIO must never exceed VTT by greater than X.XX V. This relationship must be enforced at all times including power-up, power-down, and power failure.  
 2) VDDIO and VTT only apply to DDR3 compatible processors.  
 3) VDD refers generically to the core voltage plane(s). VDD0 refers to processor power plane 0, and VDD1 refers to processor power plane 1.



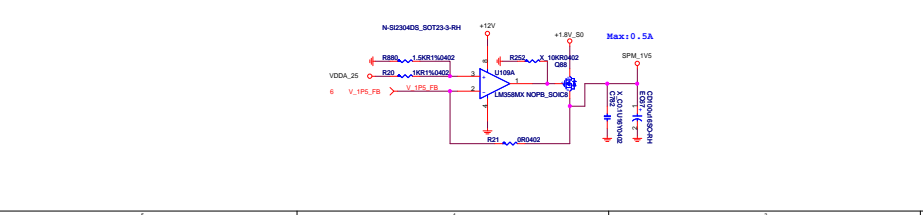
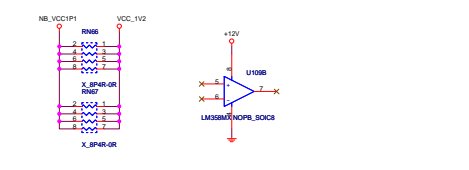
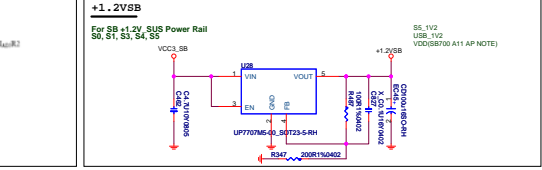
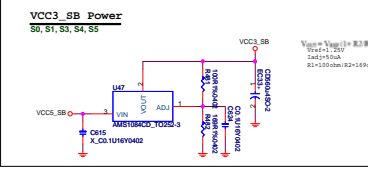
Current:  
 CPU 0.5A  
 SB780 0.5A  
 SB750 2.71A

According to SB\_R8780A1, increasing the north bridge VDDIO/VTT voltage from 1.2V to 1.35V helps to reduce the susceptibility and exposure to this problem. (This issue will be resolved in the A12 silicon revision.)

ER\_R8780A1.pdf from 1.2V change to 1.35V

SB780 A11: R11-031112-008  
 Vout = 1.2V \* [(33 / 270) + 1] = 1.3467 Volt

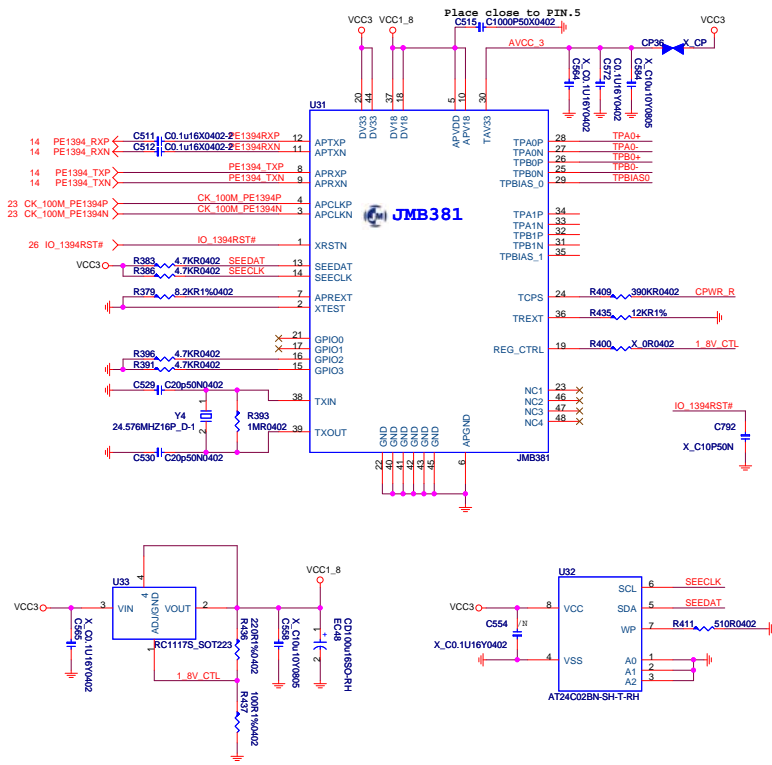
SB780 A12: R11-021712-008  
 Vout = 1.2V \* R401 0 Ohm , R402 NC



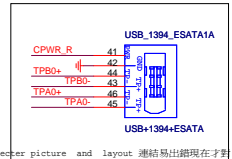
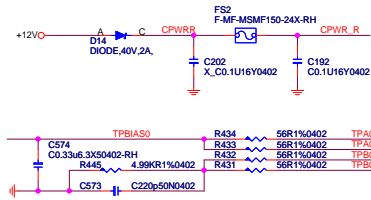


# IEEE 1394 - JMicron JMB381

Date Code : 0737

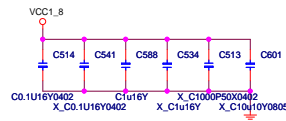
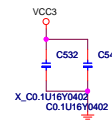
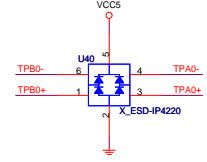


## Rear Side IEEE-1394 Port



connecter picture and layout 連結易出錯現在才對

## IEEE-1394 Port ESD

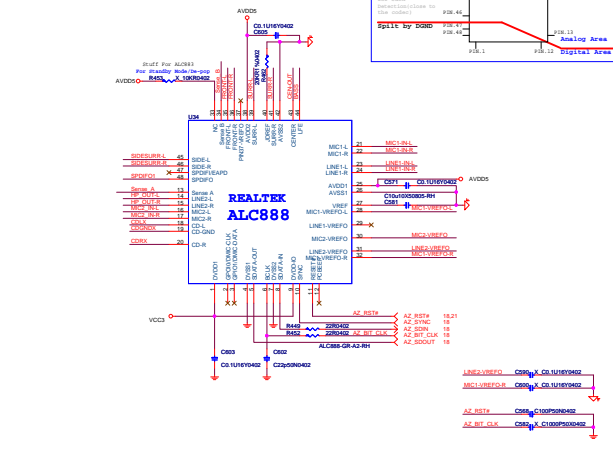


**MSI**  
Link to the Future  
**MICRO-START INT'L CO.,LTD.**

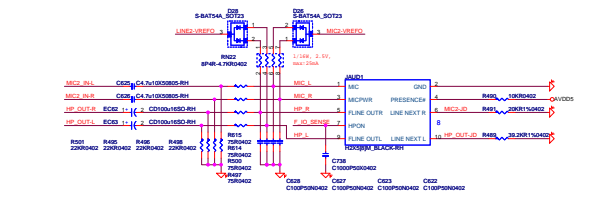
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|--------|-------------------------|----------------------------|
| Title  |                         | IEEE 1394 - JMicron JMB381 |
| Size   | Document Number         | MS-7550                    |
| Custom | MS-7550                 | Rev 12                     |
| Date:  | Friday, August 15, 2008 | Sheet 29 of 39             |

**Audio Codec ALC888**

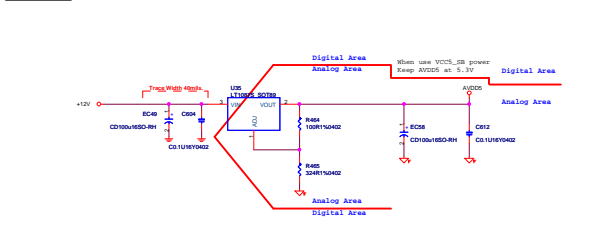
B09-ALC88804-B09 ALC888



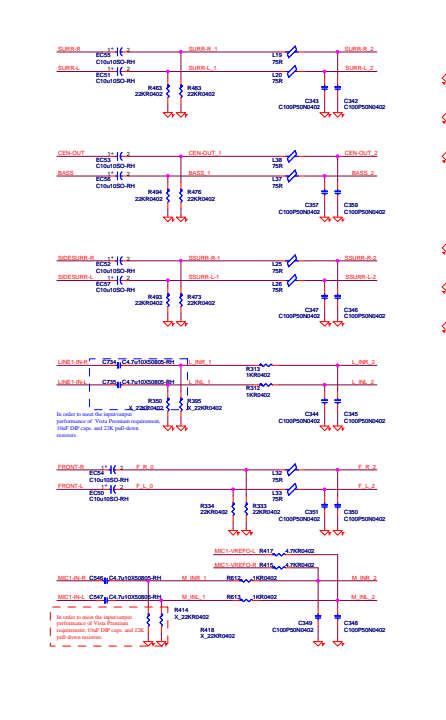
**Front Audio Jack**



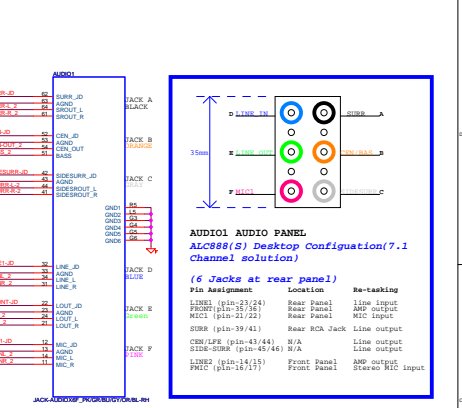
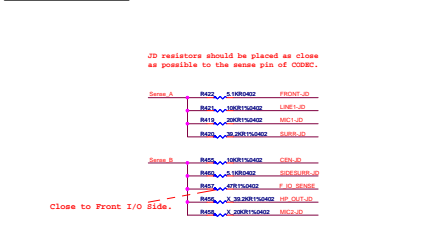
**Audio Power**



**Rear Phone Jack**



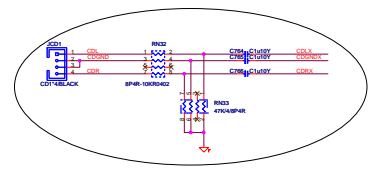
**Audio Jack Sensing**



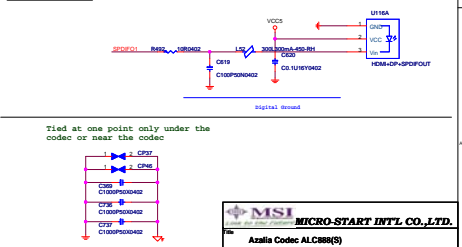
**AUDIO1 AUDIO PANEL**  
ALC888(S) Desktop Configuration(7.1 Channel solution)

(6 Jacks at rear panel)

| Pin Assignment          | Location    | Re-tasking       |
|-------------------------|-------------|------------------|
| LINE1 (pin-23/24)       | Rear Panel  | Line Input       |
| FRONT1 (pin-31/32)      | Rear Panel  | AMP Output       |
| MIC1 (pin-21/22)        | Rear Panel  | MIC Input        |
| SIDE1 (pin-39/42)       | Rear Jack   | Line output      |
| CS1/LFE (pin-43/44)     | N/A         | Line output      |
| SIDE1-SIDE2 (pin-45/46) | N/A         | Line output      |
| LINE2 (pin-14/15)       | Front Panel | AMP Output       |
| FRONT1 (pin-16/17)      | Front Panel | Stereo MIC Input |



**SFDIF OUT-1**



**MSI MICRO-START INT'L CO., LTD.**

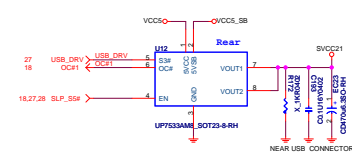
For: Azalia Codec ALC888(S)

Doc: Micro-Start

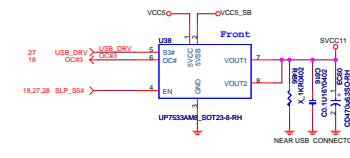
Comp: MS-7599

File: Azalia11.2008 Rev: 30 of 32

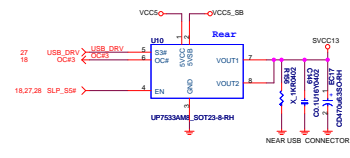
POWER CIRCUIT FOR USB PORT 2,3



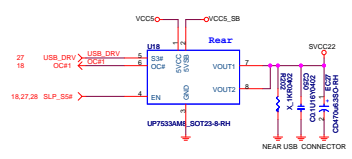
POWER CIRCUIT FOR USB PORT 6,7



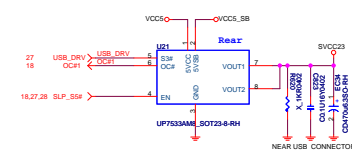
POWER CIRCUIT FOR USB PORT 4,5



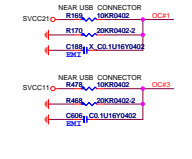
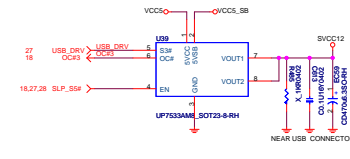
POWER CIRCUIT FOR USB PORT 0,1



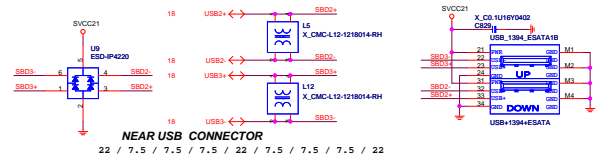
POWER CIRCUIT FOR USB PORT 0,1



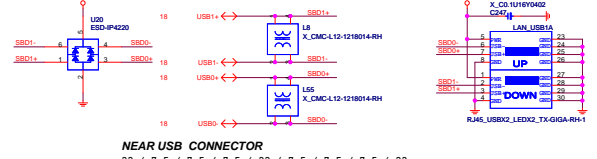
POWER CIRCUIT FOR USB PORT 8,9



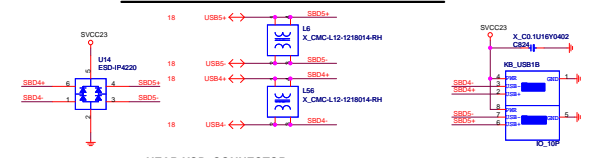
REAR PANEL USB CONNECTOR FOR USB PORT 2,3



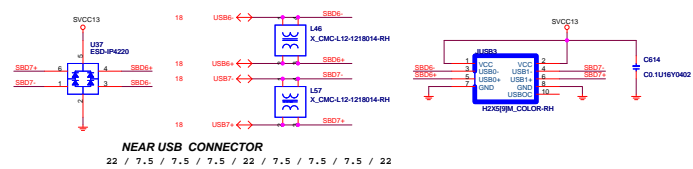
REAR PANEL USB CONNECTOR FOR USB PORT 0,1



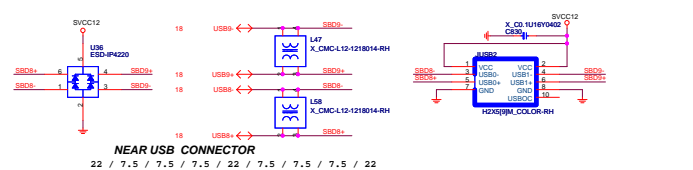
REAR PANEL USB CONNECTOR FOR USB PORT 4,5



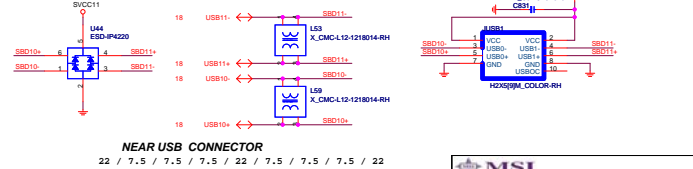
FRONT PANEL USB CONNECTOR FOR USB PORT 6,7



FRONT PANEL USB CONNECTOR FOR USB PORT 8,9



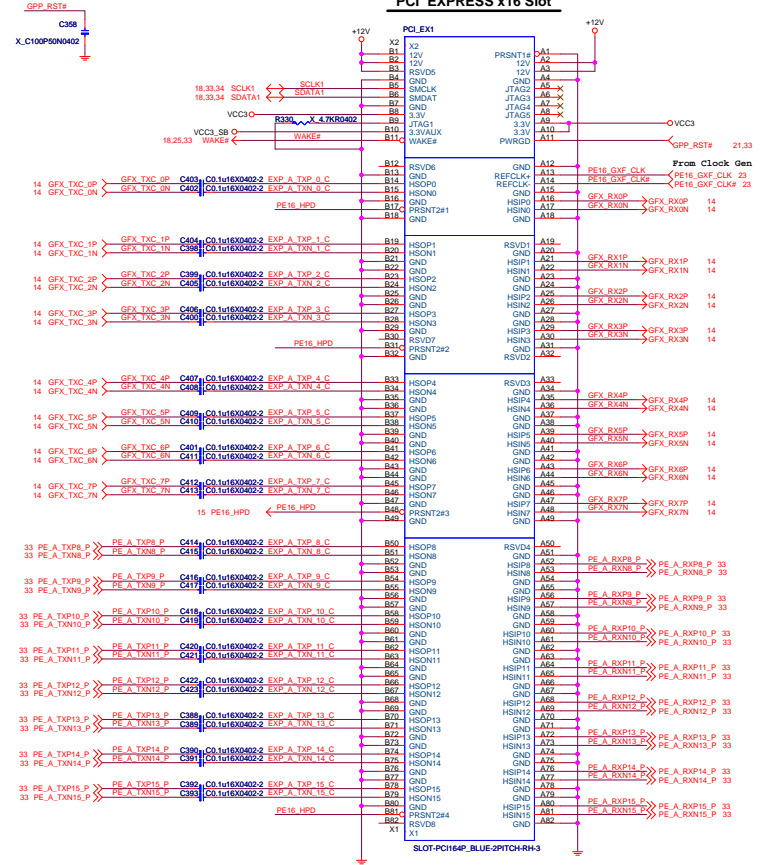
FRONT PANEL USB CONNECTOR FOR USB PORT 10,11



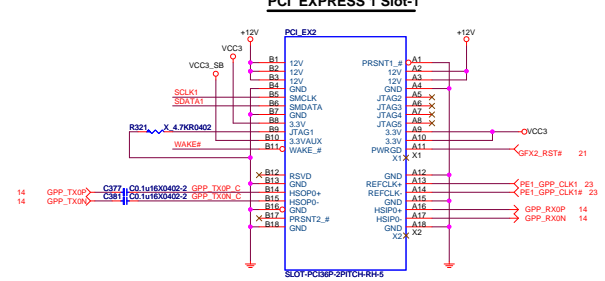
|                |                         |                            |          |
|----------------|-------------------------|----------------------------|----------|
| MSI            |                         | MICRO-START INT'L CO.,LTD. |          |
| USB CONNECTORS |                         |                            |          |
| Doc No         | MS-7550                 | Rev                        | 12       |
| Date           | Friday, August 15, 2008 | Page                       | 31 of 39 |

PCI Express Slot

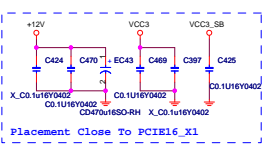
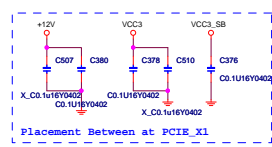
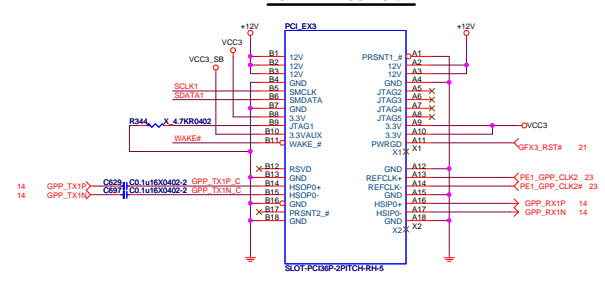
PCI EXPRESS x16 Slot



PCI EXPRESS 1 Slot-1



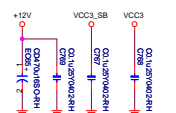
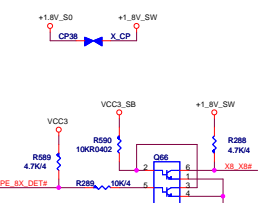
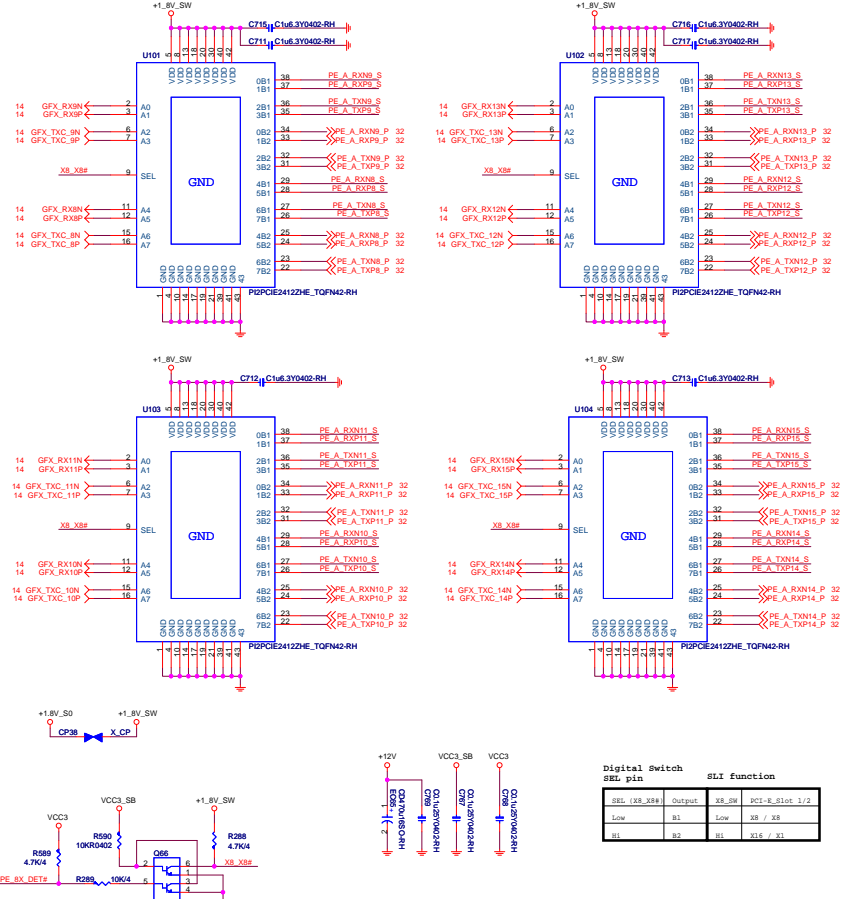
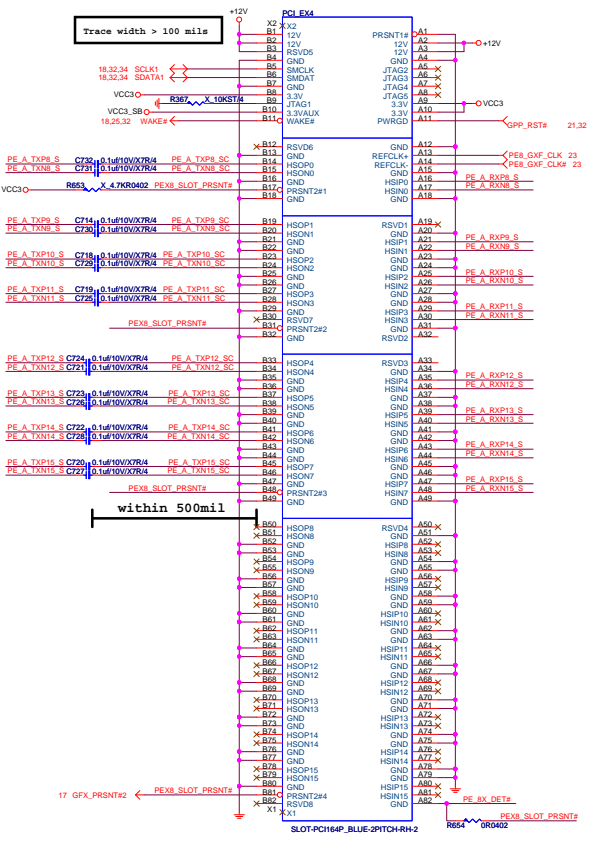
PCI EXPRESS 1 Slot-1



**MSI**  
 Link to the Future  
**MICRO-START INT'L CO., LTD.**

|  |                                 |       |
|--|---------------------------------|-------|
| File: <b>PCI EXPRESS X16 &amp; X1 SLOT</b> |                                 |       |
| Size: Custom                               | Document Number: <b>MS-7550</b> | New   |
| Date: Friday, August 15, 2008              | Sheet: 12                       | of 59 |





Digital Switch  
SEL pin      SLI Function

| SEL | X8_X8# | Output | X8_0# | Low | X8 / X8 |
|-----|--------|--------|-------|-----|---------|
| 01  | 02     | 03     | 04    | 05  | 06 / 07 |

**MSI**  
Link to the Future

**MICRO-START INT'L CO., LTD.**

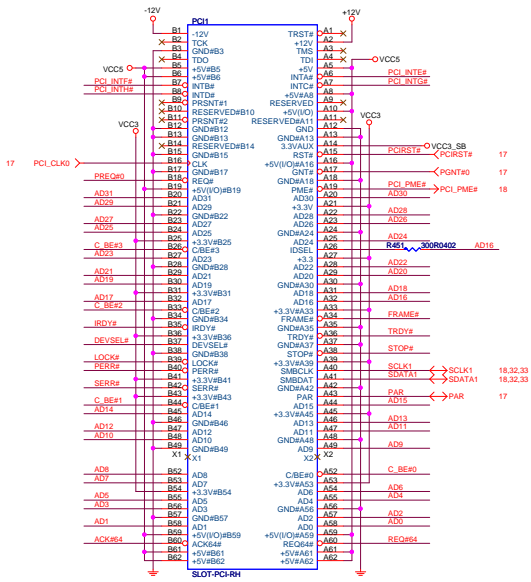
File: **PCI EXPRESS X16 & X1 SLOT**

Size:      Document Number:      New

Customer: **MS-7550**      12

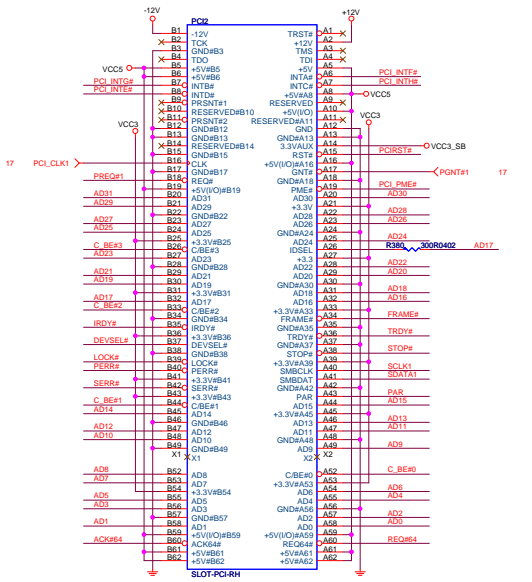
Date: Friday, August 15, 2008      Sheet: 33 of 39

**PCI SLOT 1 (PCI VER: 2.3 COMPLY)**



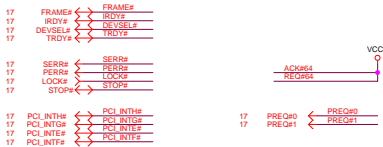
ISSEL = AD16  
 MASTER = PREQ#0  
 PCI\_INT A, B, C, D

**PCI SLOT 2 (PCI VER: 2.3 COMPLY)**

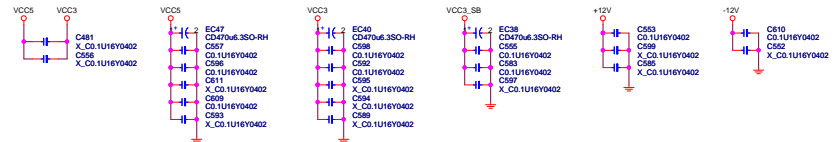


ISSEL = AD17  
 MASTER = PREQ#1  
 PCI\_INT B, C, D, A

**PCI PULL-UP / DOWN RESISTORS**



**PCI SLOT DECOUPLING CAPACITORS**



**MSI**  
 Link to the Future  
**MICRO-START INTL CO., LTD.**

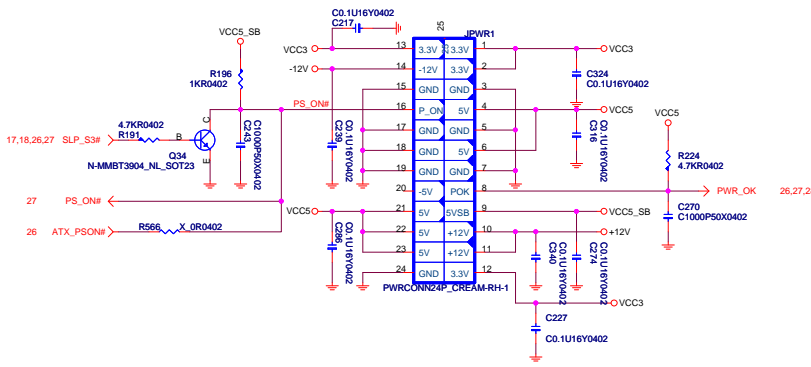
File: **PCI SLOT 1 & 2**

Size: Document Number: **MS-7550**

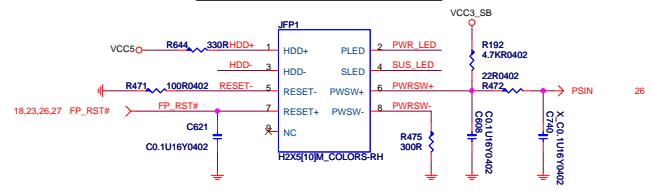
Customer: **MS-7550**

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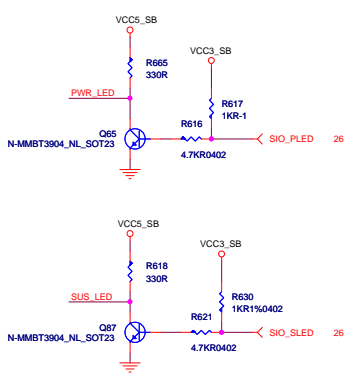
### ATX CONNECTOR



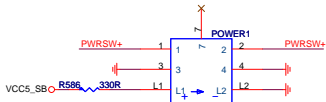
### Intel Front Panel



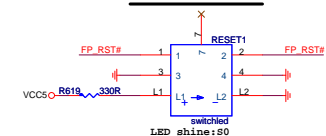
### Power LED



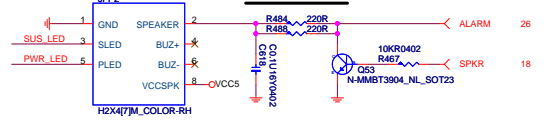
### Power Button



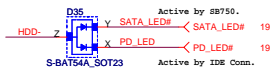
### Reset Button



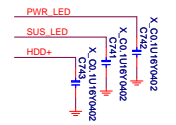
### BUZZER



### HDD LED



### EMI



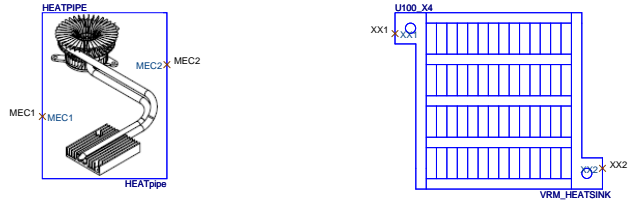
**MSI**  
MICRO-START INT'L CO.,LTD.

Title: **ATX & FRONT PANEL**

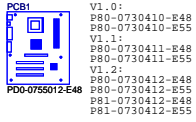
|        |                 |           |
|--------|-----------------|-----------|
| Size   | Document Number | Rev       |
| Custom | <b>MS-7550</b>  | <b>12</b> |

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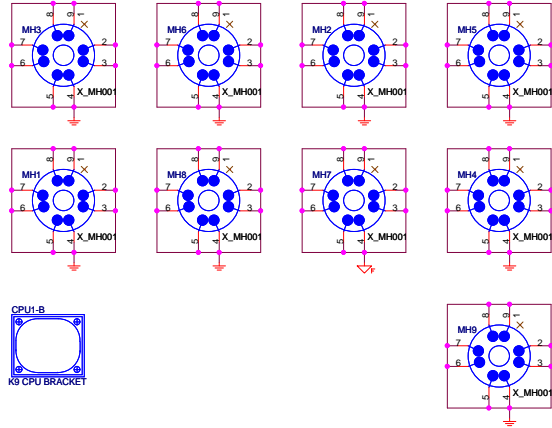
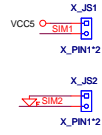
# HEAT SINK



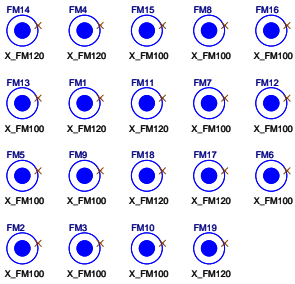
## MANUAL PART



## Simulation

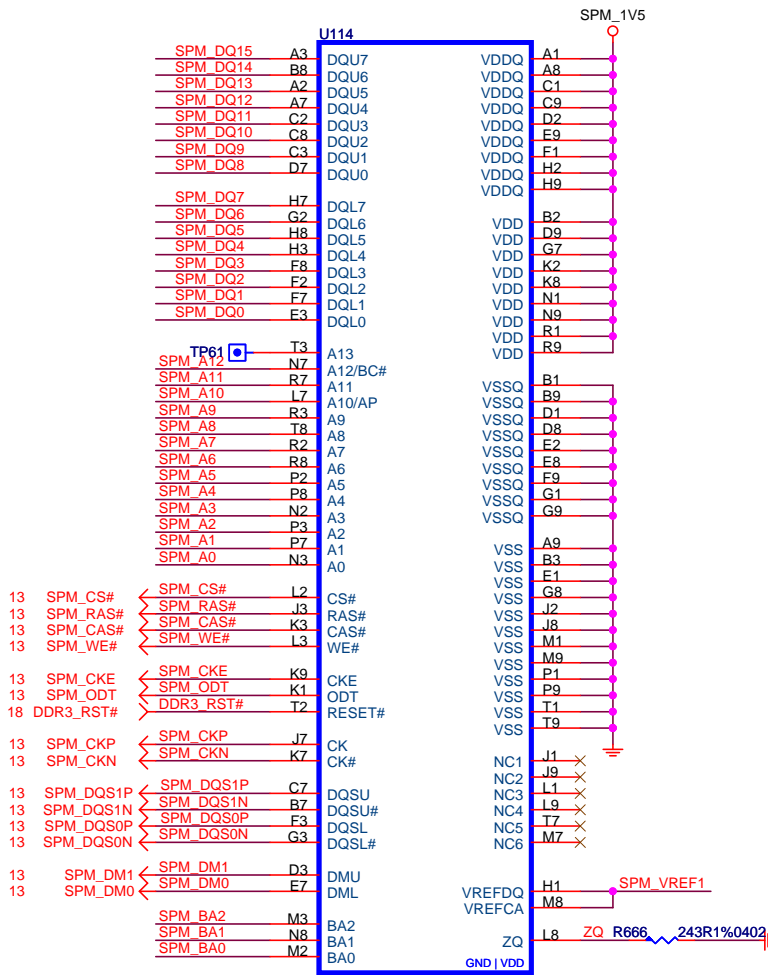


## Optics Orientation Holes

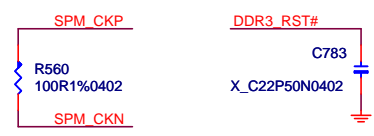
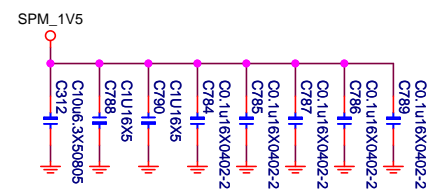
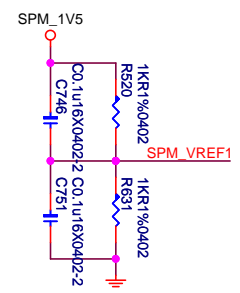
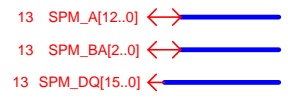


|  |                                 |
|--|---------------------------------|
| <b>MSI</b><br><small>Micro-Start Int'l Co., Ltd.</small> |                                 |
| <b>MICRO-START INT'L CO., LTD.</b>                       |                                 |
| Title: <b>Auto BOM Mnaual</b>                            |                                 |
| Size: Custom   | Document Number: <b>MS-7550</b> |
| Date: Friday, August 15, 2008                            | Rev: <b>12</b>                  |
| Sheet 36 of 59   |                                 |

# Side Port Memory

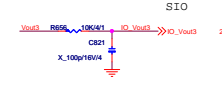
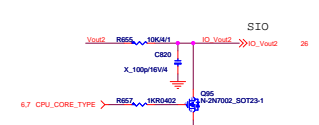
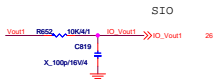
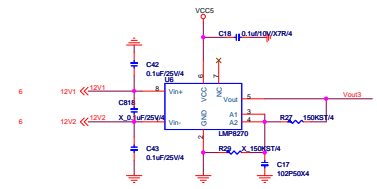
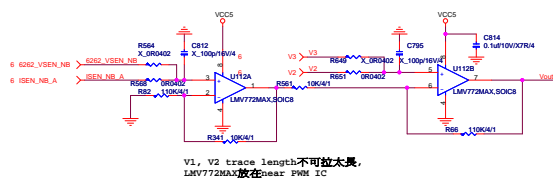
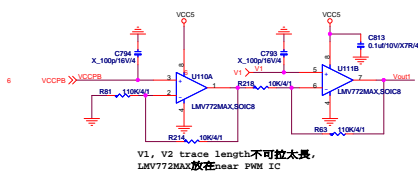


H5TQ1G63AFP-H8C  
**M12-5TQ1G05-H23**  
**FBGA96\_8X13MM**

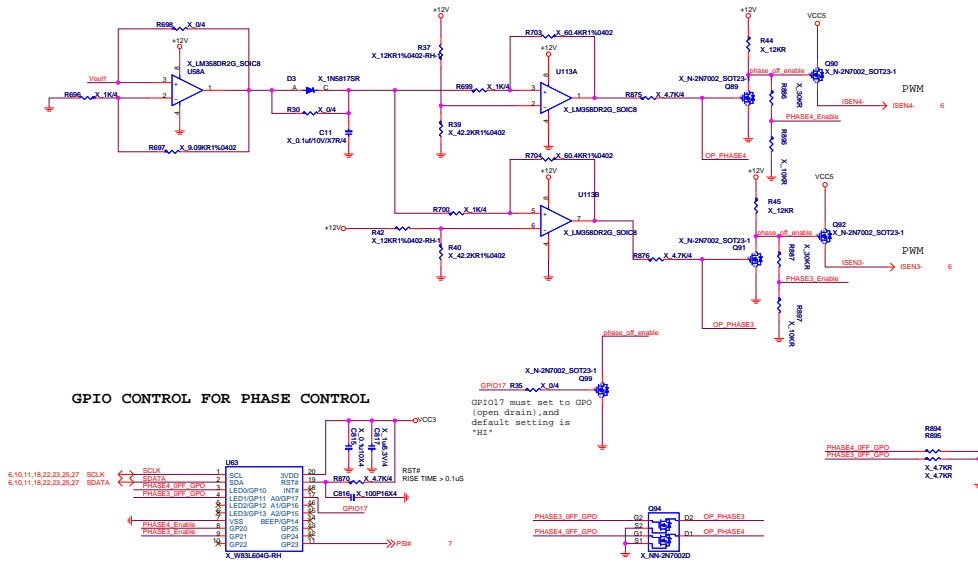


|  |                                   |                  |
|--|-----------------------------------|------------------|
| <b>MSI</b><br>Link to the Future <b>MICRO-START INT'L CO.,LTD.</b> |                                   |                  |
| <b>Side Port Memory</b>  |                                   |                  |
| Size A   | Document Number<br><b>MS-7550</b> | Rev<br><b>12</b> |
| Date: Friday, August 15, 2008                                      | Sheet 37 of 39                    |                  |

# POWER WATTAGE MONITOR




# Auto-PSI



# History

MS-7550 v1.0  
11/26/07 Preliminary release

|   |                   |                |
|---|-------------------|----------------|
|  <b>MSI</b><br><small>Leading the World in Motherboards</small> |                   |                |
| <b>MICRO-START INT'L CO.,LTD.</b>   |                   |                |
| <b>History</b>  |                   |                |
| Size  | Document Number   | Rev            |
| Custom  | MS-7550           | 12             |
| Date:   | Fri, Nov 16, 2008 | Sheet 39 of 39 |