



# MS-7250 Ver: 20

## CPU:

AMD 940 Athlon 64/Athlon 64 FX

## System Chipset:

NVIDIA MCP 55P / MCP55 Ultra

## On Board Chipset:

LPC Super I/O -- Winbond 83627EHG/DHG  
LAN -- Vitesse VSC8601 X2  
AC97 Codec --ALC883/885/888  
1394 --VIA VT8237  
BIOS --LPC FLASH ROM 4M

## Main Memory:

DDRII \* 4 (Max 4GB)

## Expansion Slots:

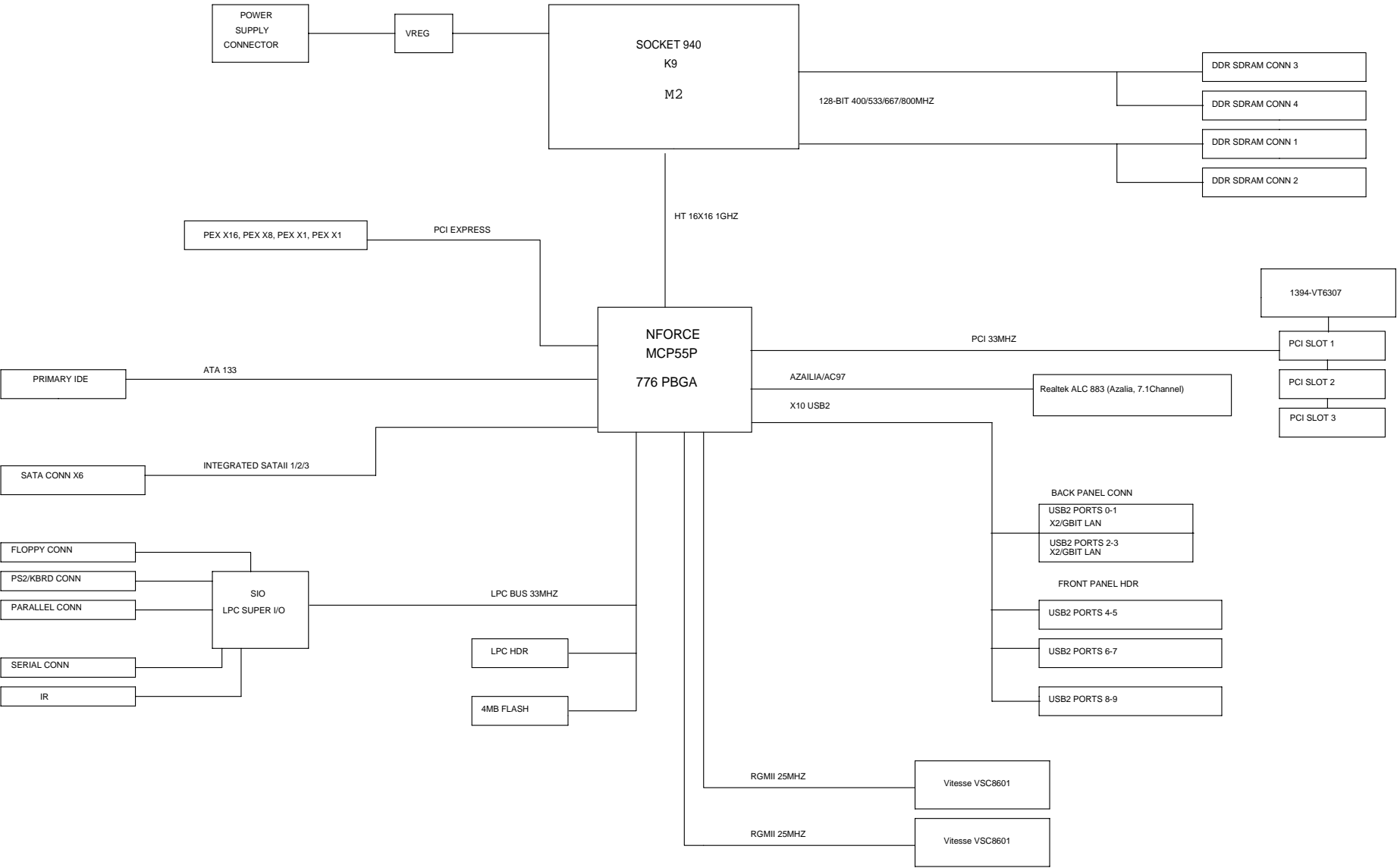
PCI-E X 16 \*2  
PCI-E X1 \*2  
PCI 2.2 Slot \* 3

## PWM:

Controller--Intersil ISL6566CR 3 Phase

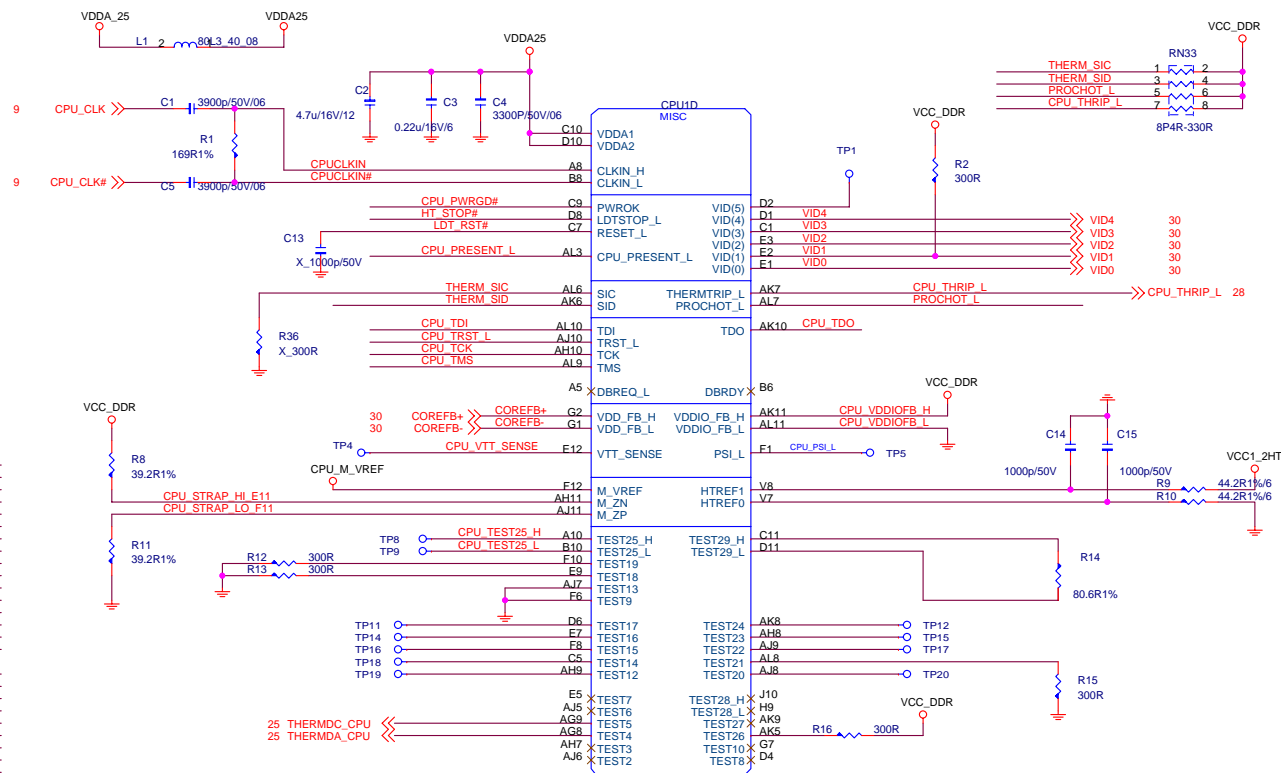
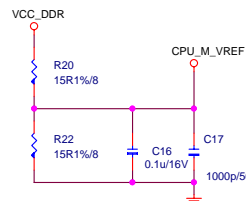
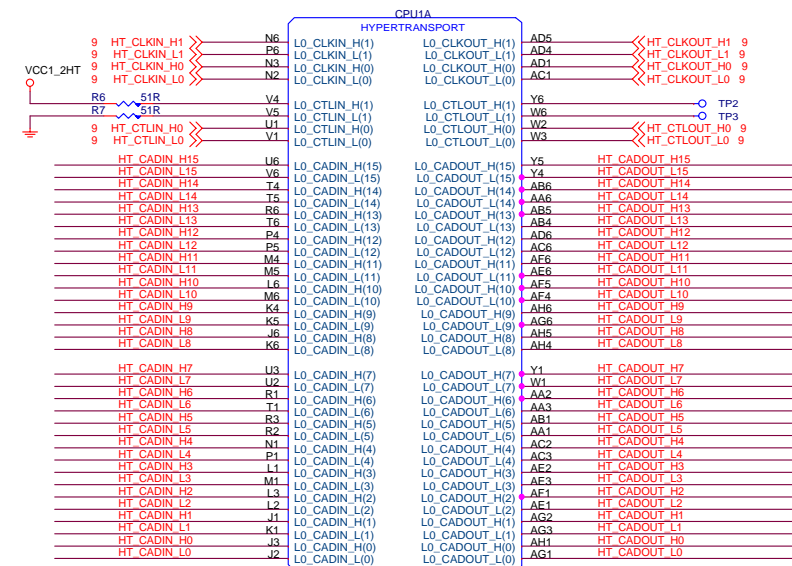
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BLOCK DIAGRAM

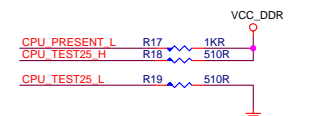
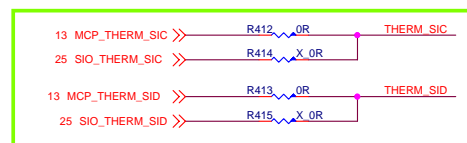


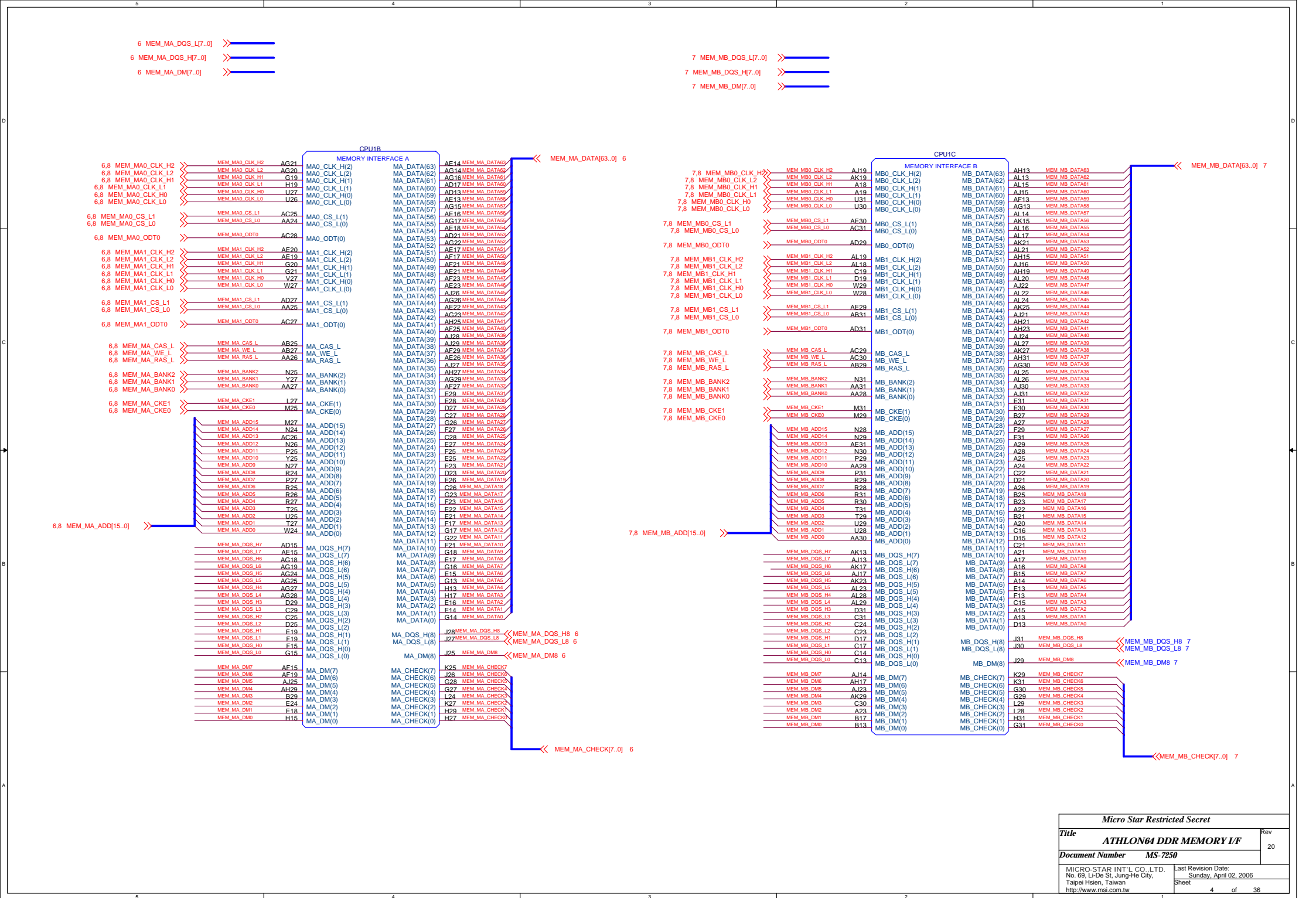
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| Title  | Block Diagram | Rev   |
| Document Number  | MS-7250       | 20  |
| MICRO-STAR INT'L CO., LTD.<br>No. 69, Li-De St, Jung-He City,<br>Taipei Hsien, Taiwan<br><a href="http://www.msi.com.tw">http://www.msi.com.tw</a> |               | Last Revision Date:<br>Sunday, April 02, 2006 |
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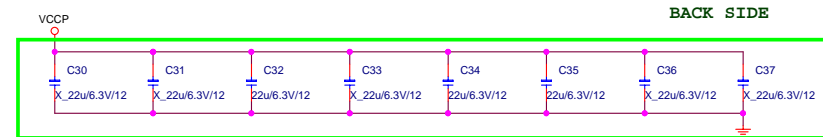
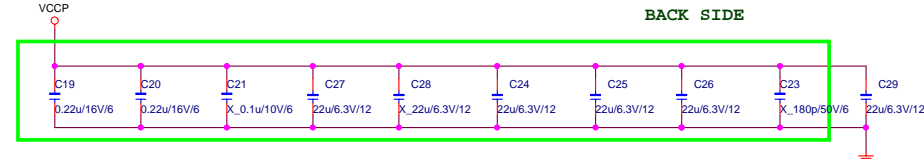
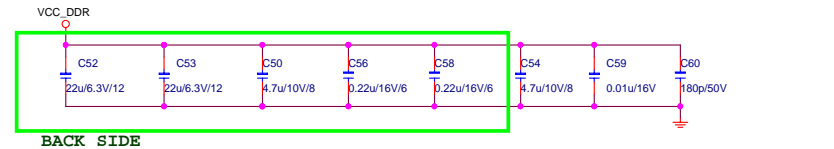
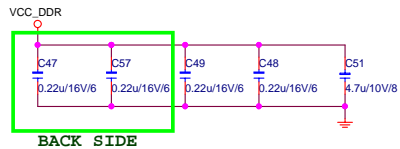
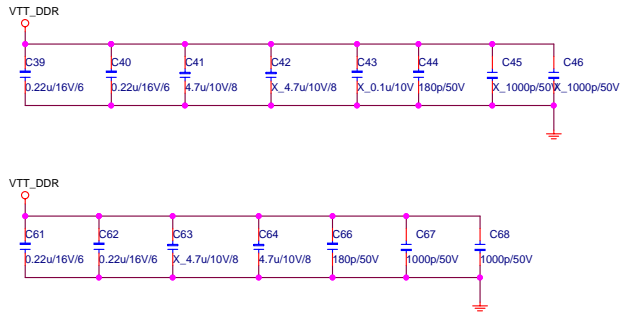
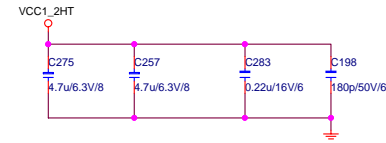
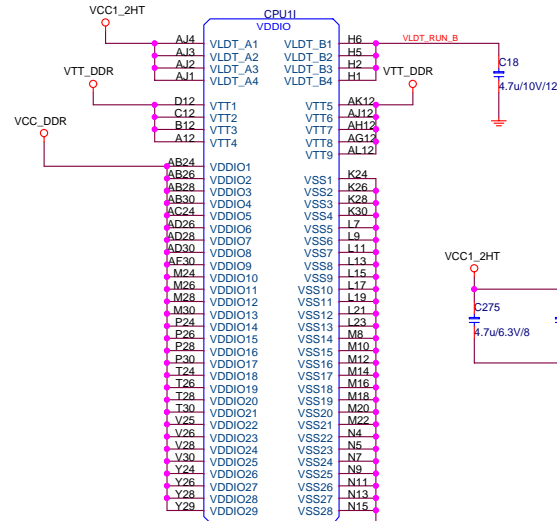
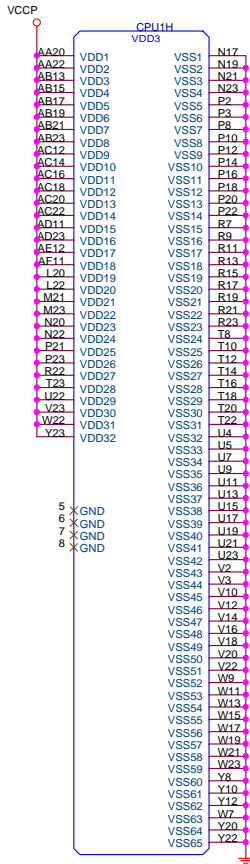
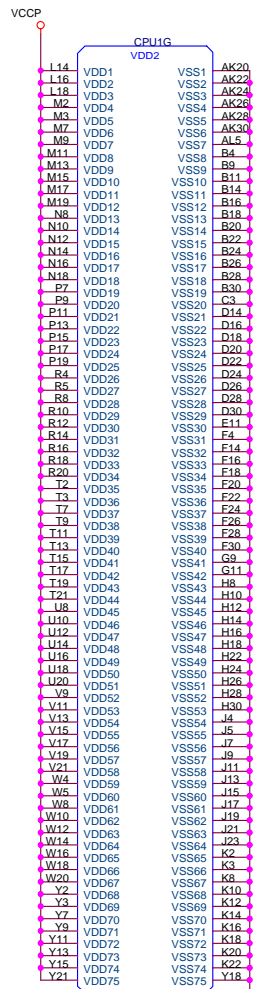
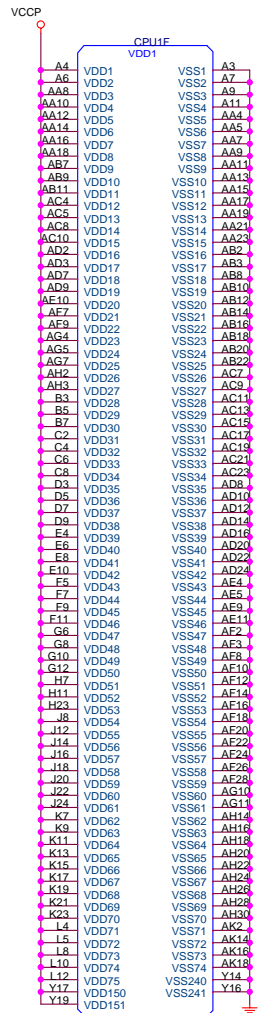
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9 HT\_CADIN\_L[15..0] >> HT\_CADIN\_L[15..0]  
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9 HT\_CADOUT\_L[15..0] >> HT\_CADOUT\_L[15..0]

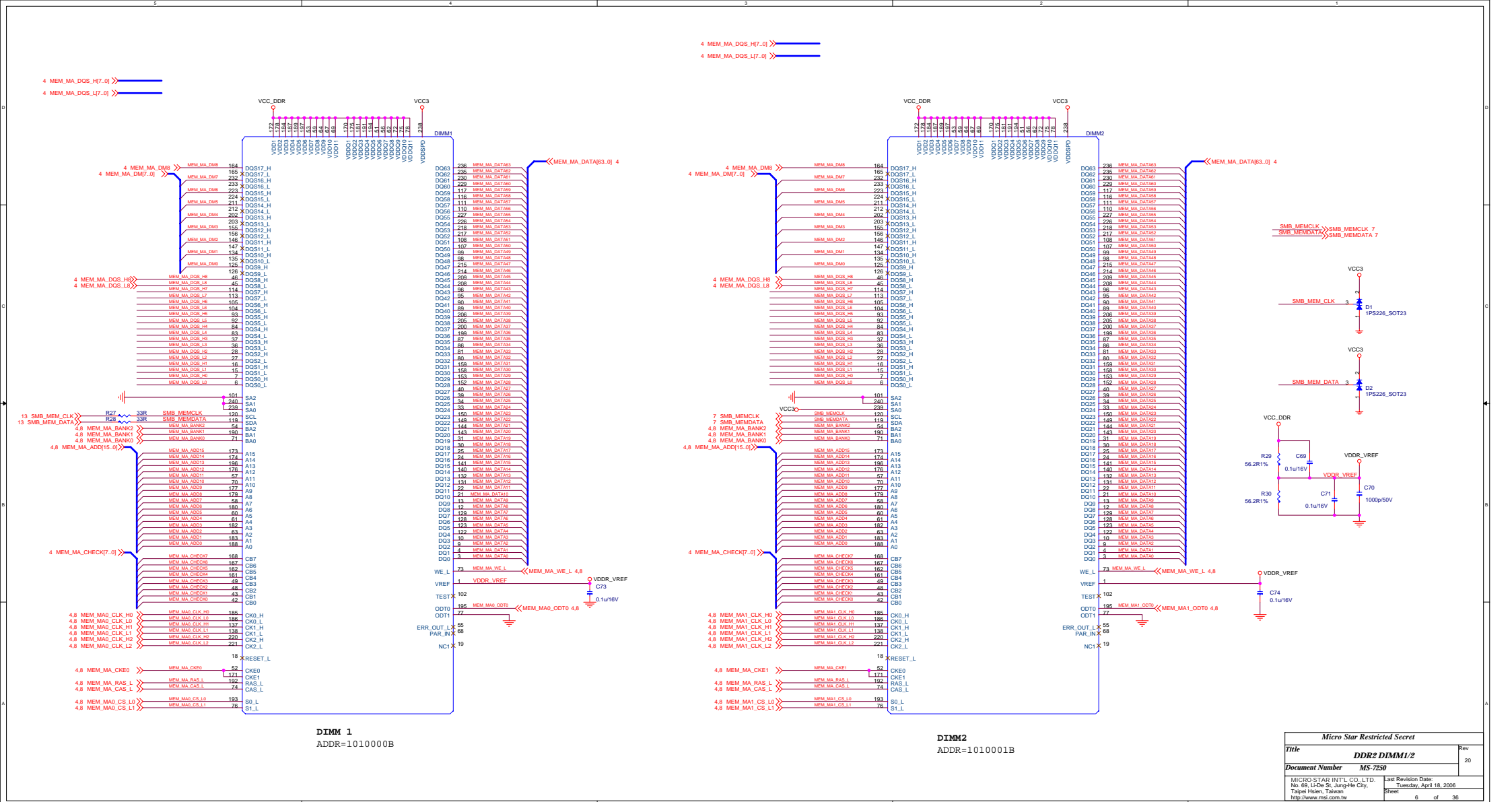


for DHG  
Remove R412, R413, add R414, R415  
for MCP55 or EHG  
Remove R414, R415, add R412, R413



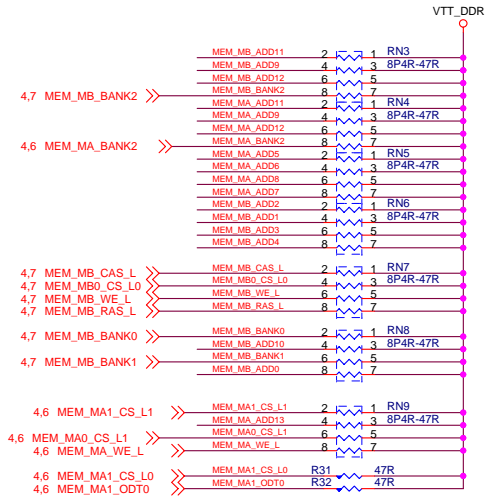




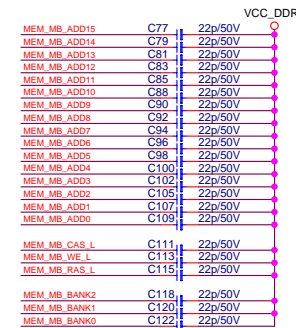
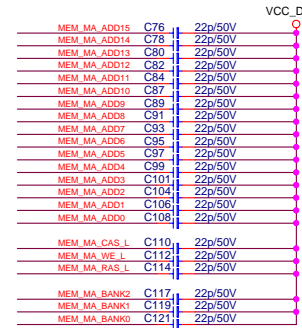
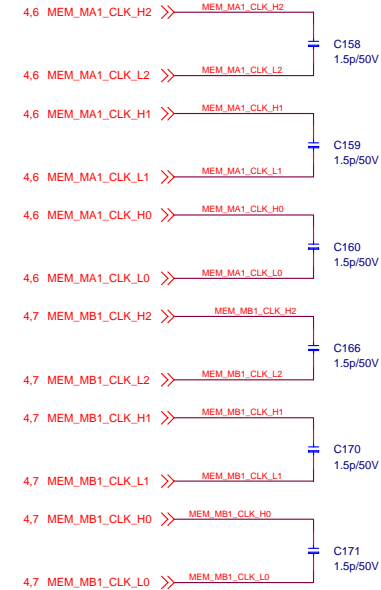
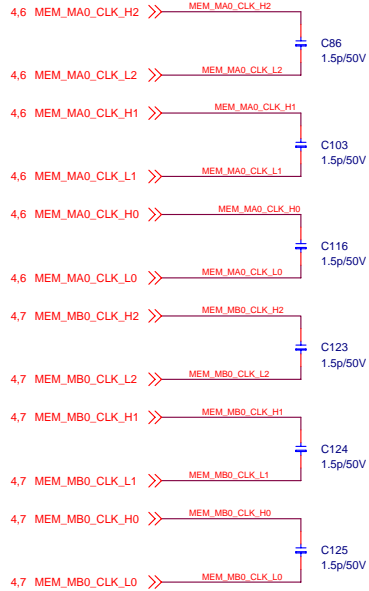
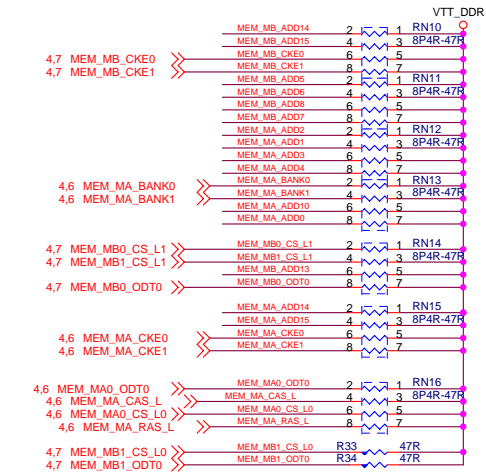




4.6 MEM\_MA\_ADD[15..0] >>

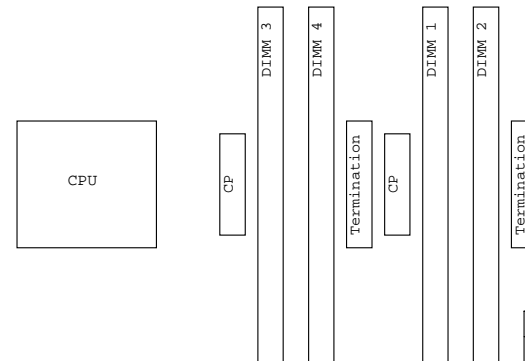
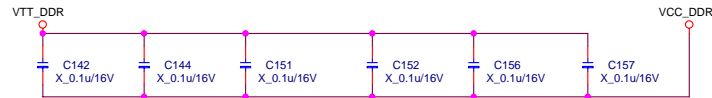
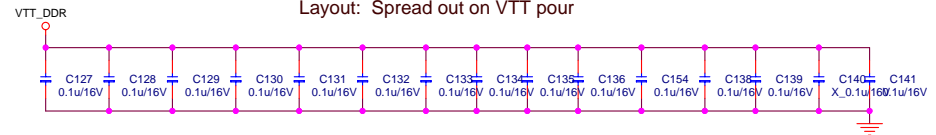


4.7 MEM\_MB\_ADD[15..0] >>



## Decoupling Between Processor and DIMMs (CP)

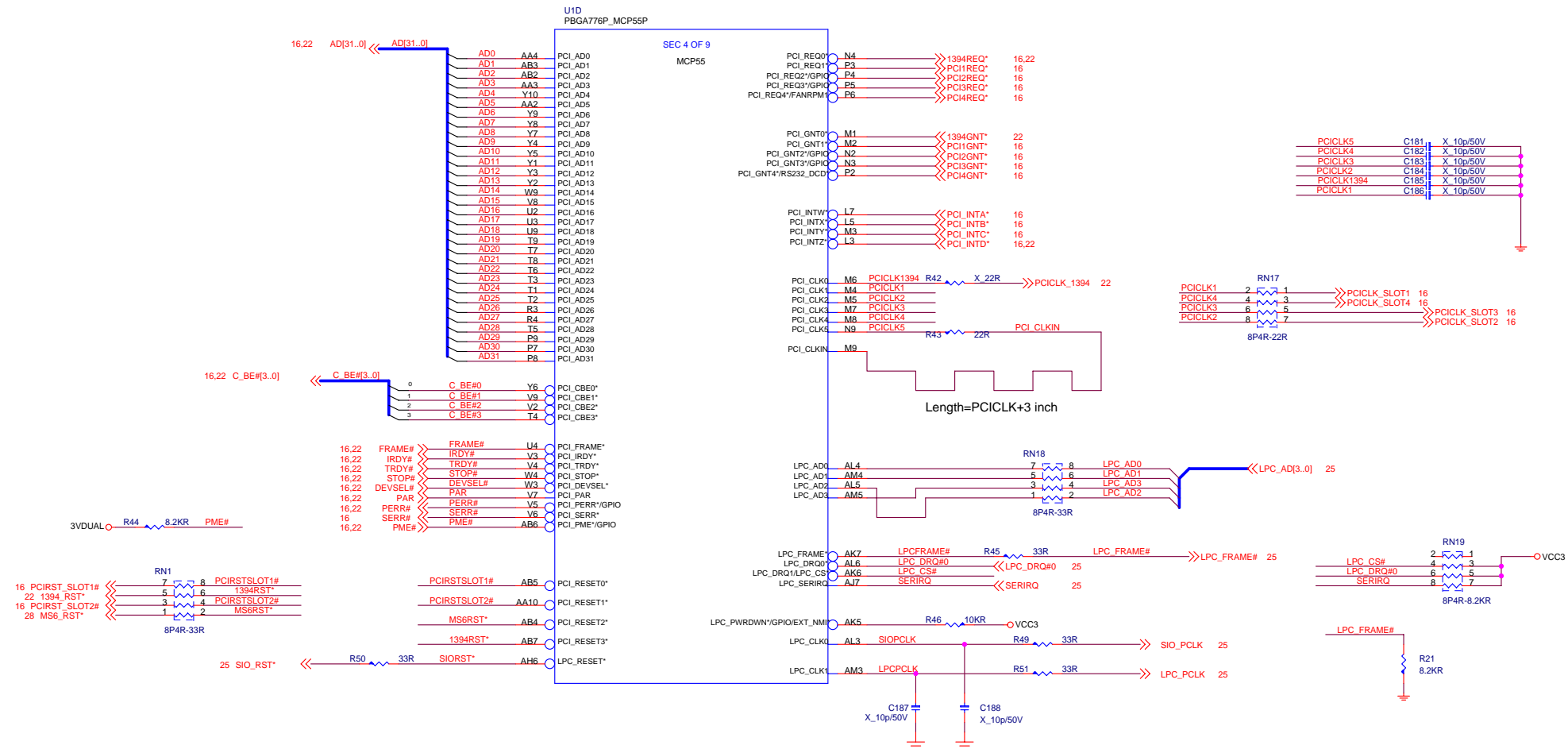
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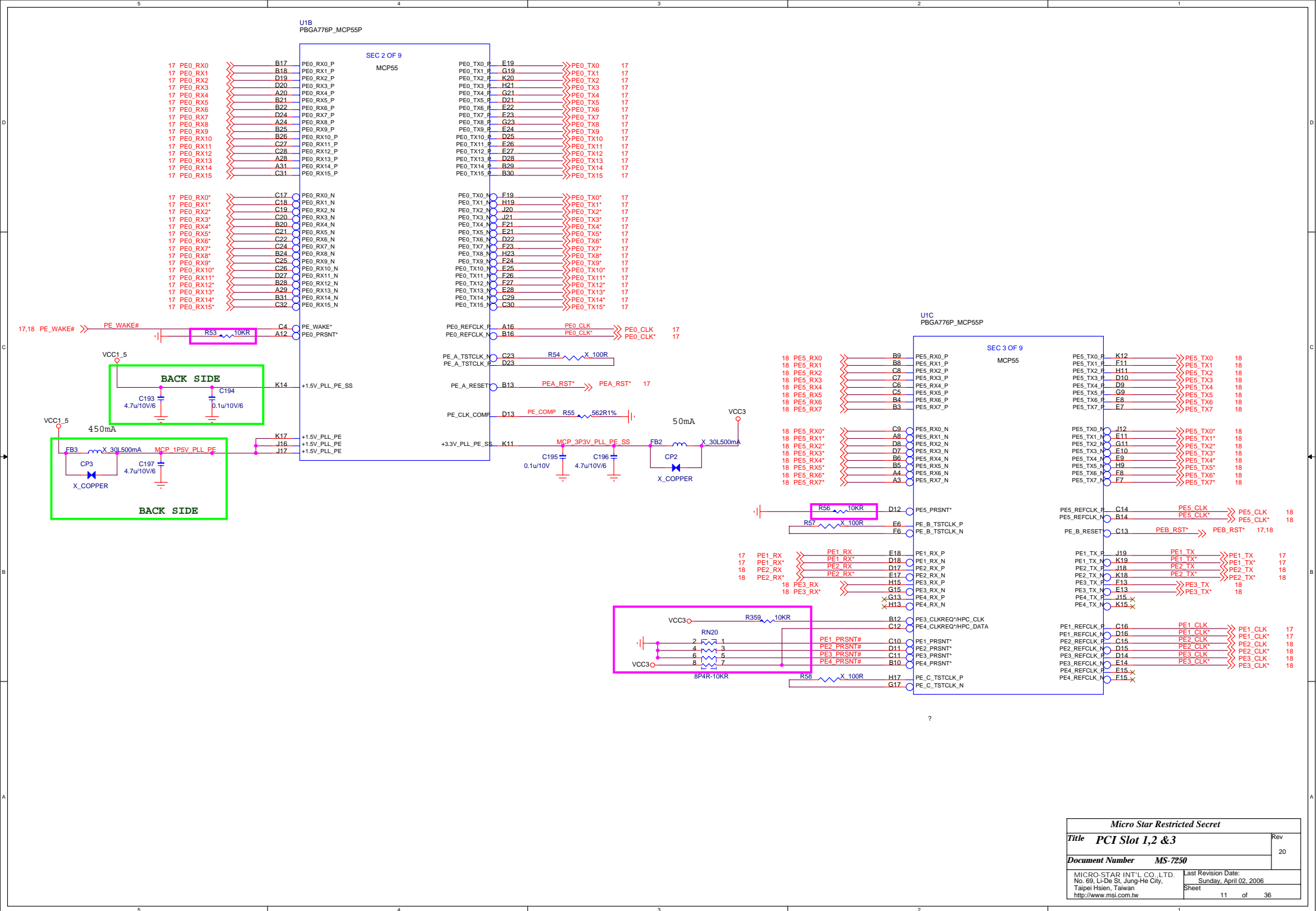


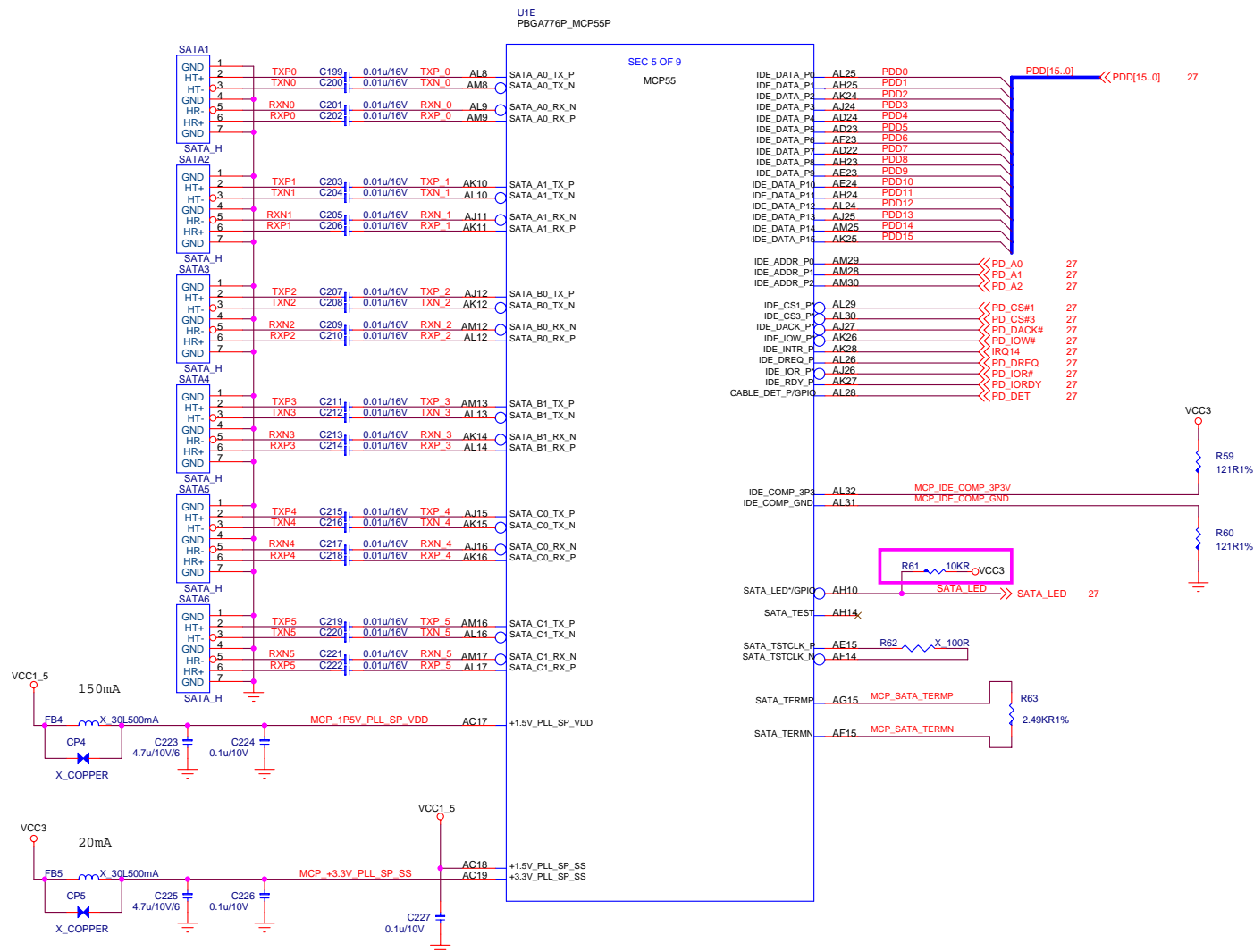
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|--|-----------------|--|
| Title  | DDR Termination | Rev<br>20  |
| Document Number  | MS-7250         |  |
| MICRO-STAR INT'L CO., LTD.<br>No. 69, Li-De St. Jung-He City,<br>Taipei Hsien, Taiwan<br>http://www.msi.com.tw |                 | Last Revision Date:<br>Sunday, April 02, 2006<br>Sheet 8 of 36 |

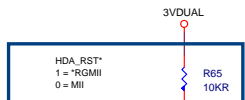




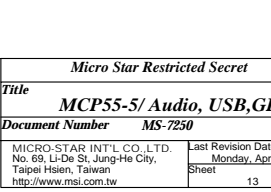
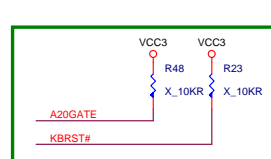
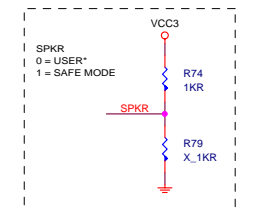
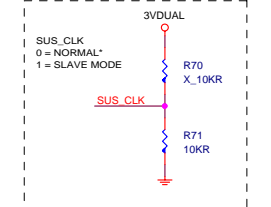
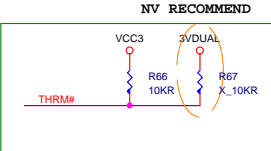
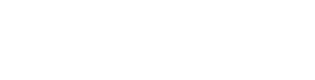
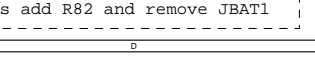
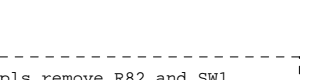
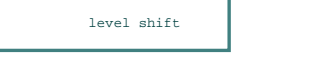
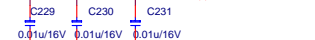
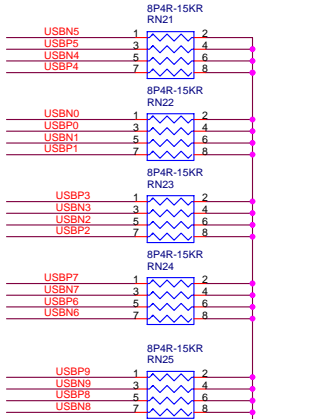
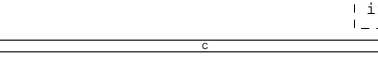
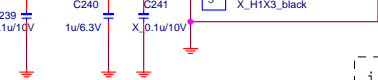
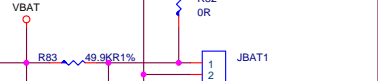
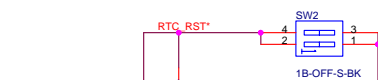
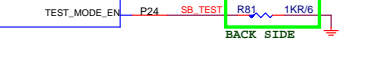
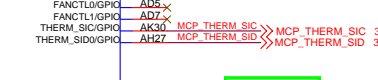
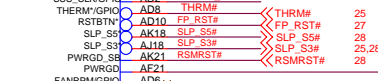
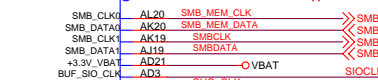
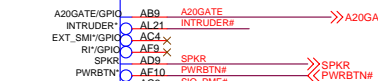
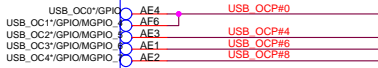
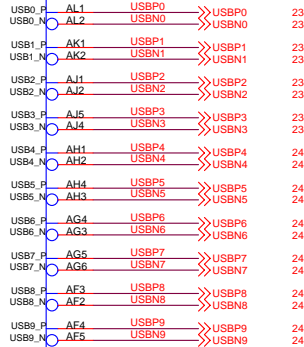
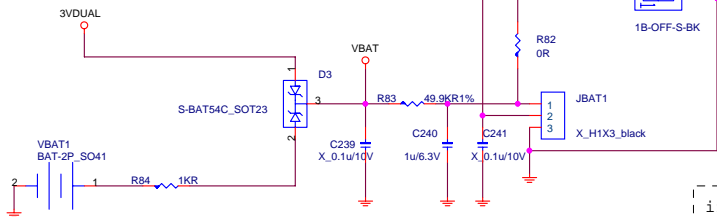
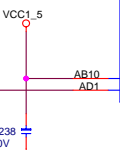
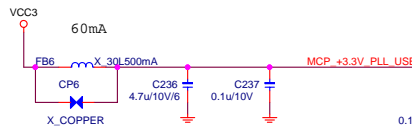
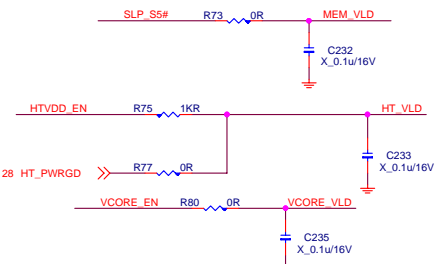








### POWER SEQUENCE



if used JBAT1,pls remove R82 and SW1  
if used SW1,pls add R82 and remove JBAT1

X\_JUMPER-1X2A\_green  
JBAT1(1-2)1

| CMOS CLEAR JUMPER |            |
|-------------------|------------|
| JBAT1 Clear CMOS  |            |
| 1 - 2             | Normal     |
| 2 - 3             | Clear CMOS |

| Micro Star Restricted Secret    |                          |
|---------------------------------|--------------------------|
| Title                           | MCP55-5/ Audio, USB,GPIO |
| Document Number                 | MS-7250                  |
| MICRO-STAR INT'L CO.,LTD.       | Last Revision Date:      |
| No. 69, Li-De St, Jung-He City, | Monday, April 10, 2006   |
| Taipei Hsien, Taiwan            | Sheet                    |
| http://www.msi.com.tw           | 13 of 36                 |

MII\_RXD / MII\_RXCTL  
0 OHM IF ROUTED 7/15 (60 OHM), Length<8"  
22 OHM IF ROUTED 5/10 (60 OHM), Length<12"

MII\_RXCLK  
0 OHM IF ROUTED 7/20 (60 OHM), Length<8"  
22 OHM IF ROUTED 5/10 (60 OHM), Length<12"

MII\_TXD / MII\_TXCTL  
0 OHM IF ROUTED 7/15 (60 OHM), Length<8"  
22 OHM IF ROUTED 5/10 (60 OHM), Length<12"

MII\_TXCLK  
0 OHM IF ROUTED 7/20 (60 OHM), Length<8"  
22 OHM IF ROUTED 5/10 (60 OHM), Length<12"

U1G  
PBGAT76P\_MCP55P

SEC 7 OF 9

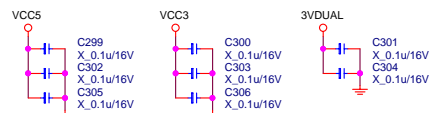
MCP55

BACK SIDE

|  |                |  |
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| Title  | MCP55-6/ RGMII | Rev<br>20  |
| Document Number  | MS-7250        |  |
| MICRO-STAR INT'L CO. LTD.<br>No. 69, Li-De St, Jung-Hsi City,<br>Taipei Hsien, Taiwan<br>http://www.msi.com.tw |                | Last Revision Date:<br>Monday, April 17, 2006<br>Sheet<br>14 of 36 |



**IDSEL = AD16**  
**MASTER = PCI1REQ\***  
**PCI1GNT\***

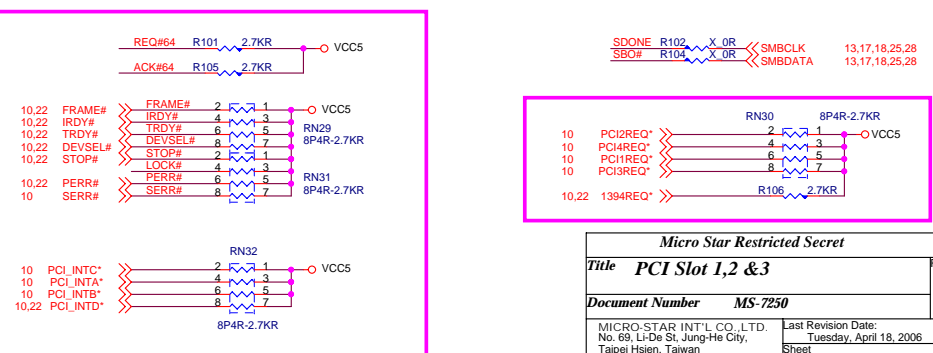


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PCI2GNT*

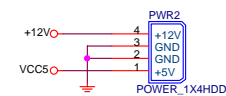
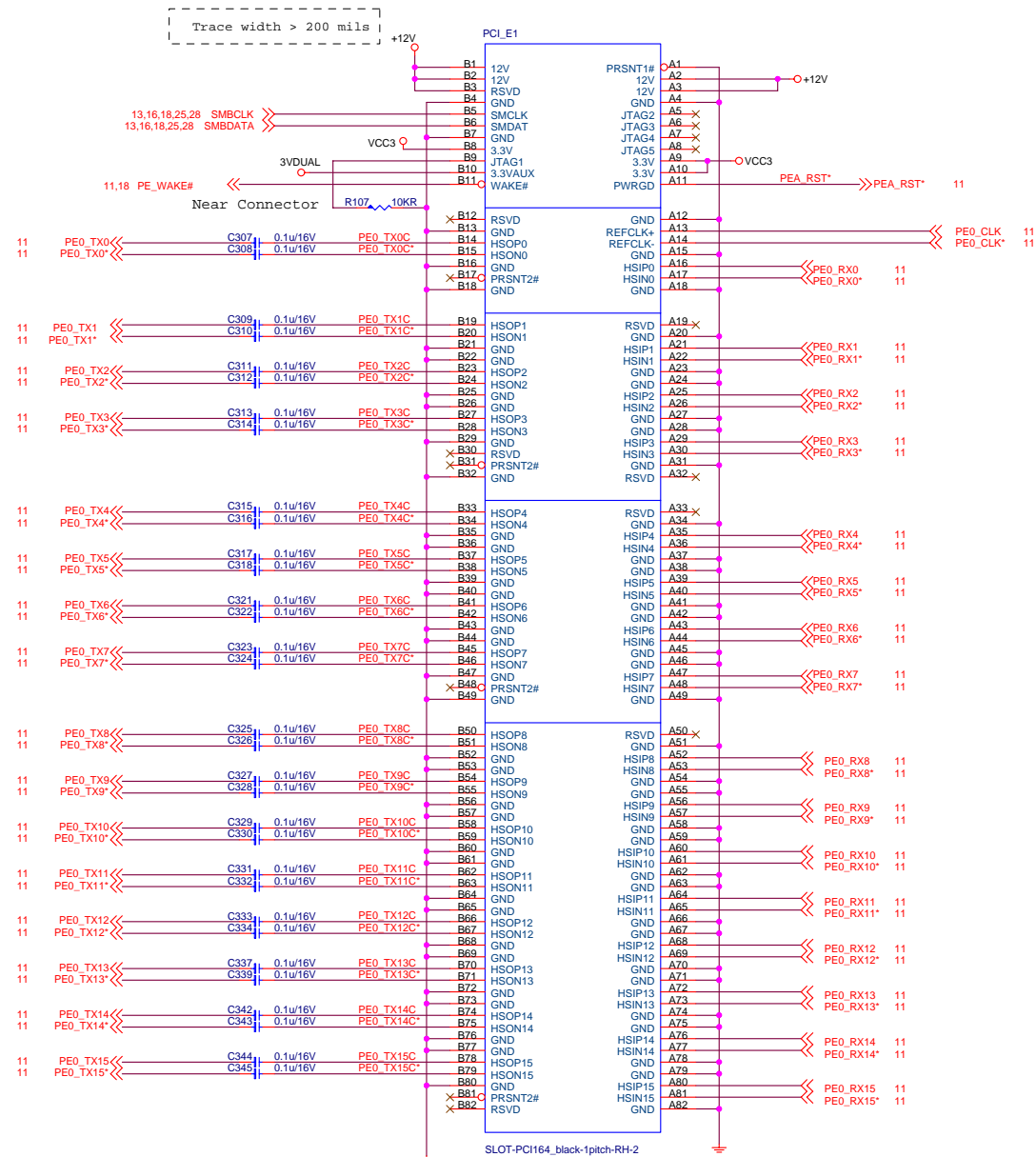
```

|                   |                   |
|-------------------|-------------------|
| IDSEL = AD18      | IDSEL = AD21      |
| MASTER = PCI3REQ# | MASTER = PCI4REQ# |
| PCI3GNT*          |                   |

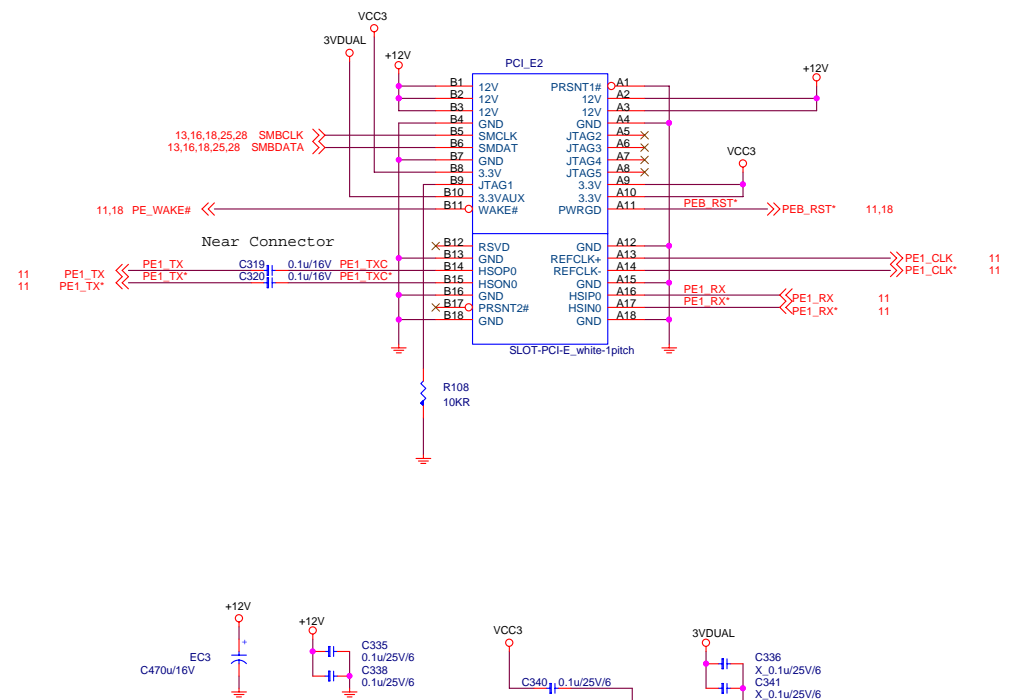




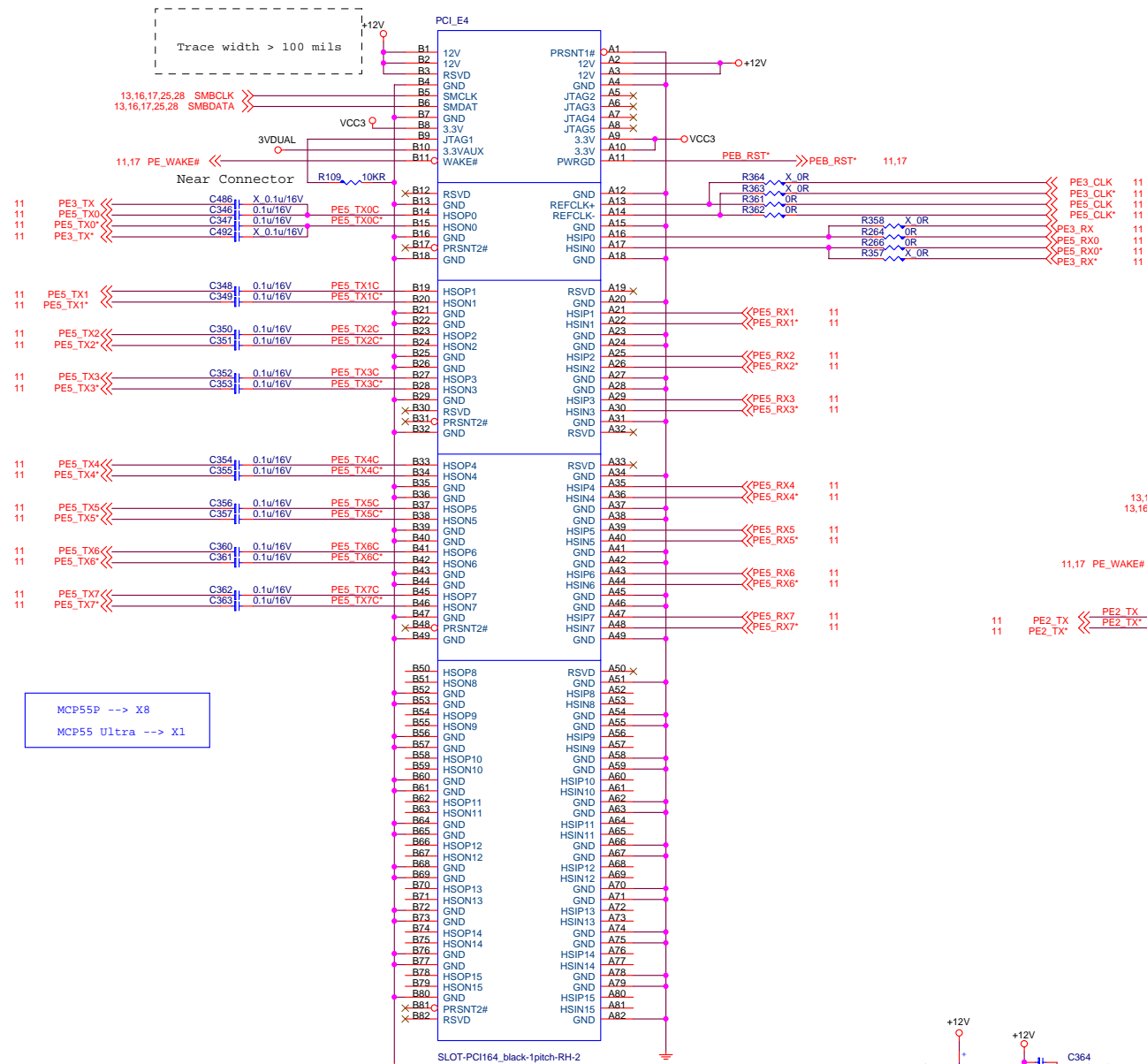
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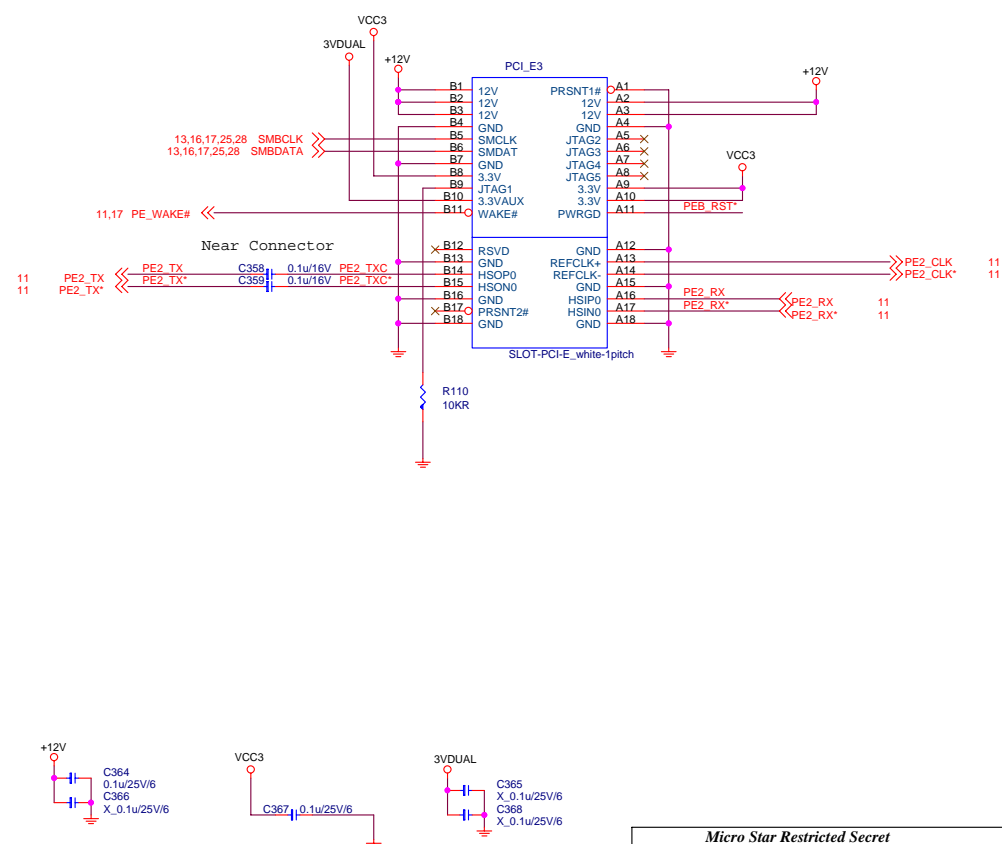
**PCI-Express x1 SLOT 1**



# PCI EXPRESS\_16



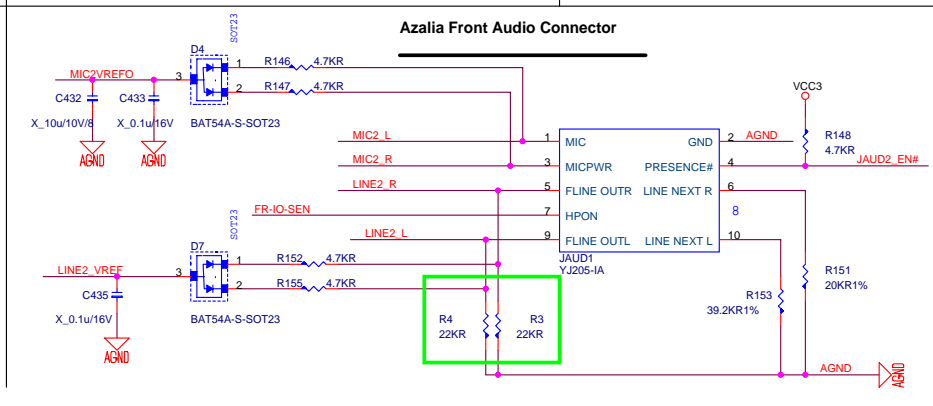
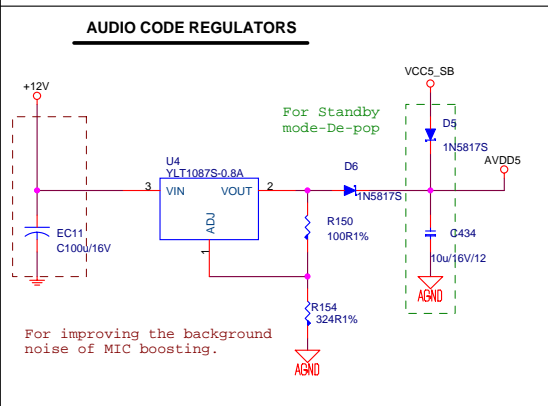
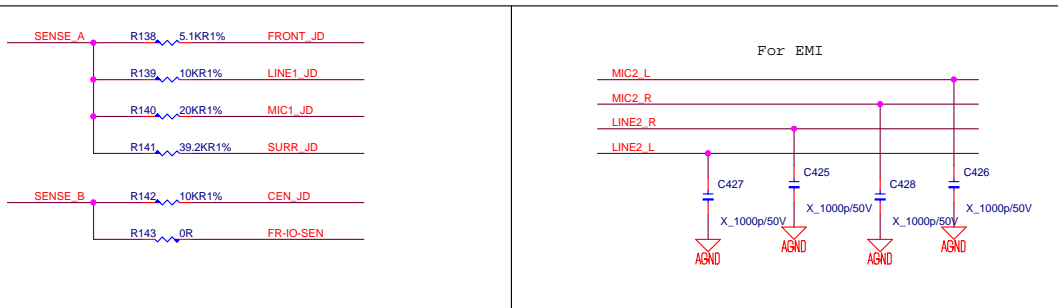
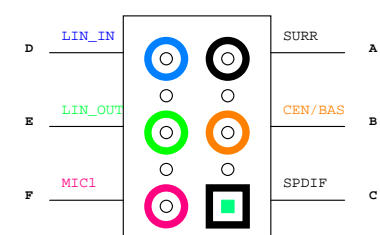
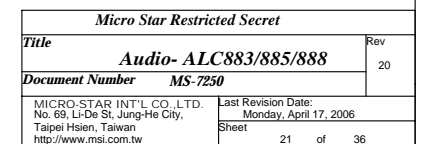
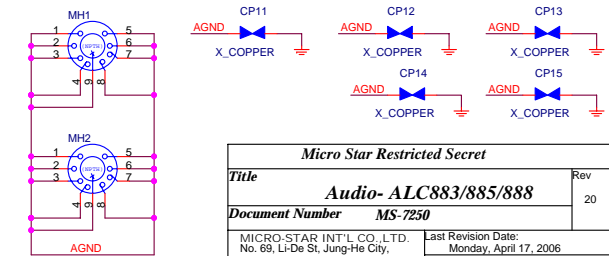
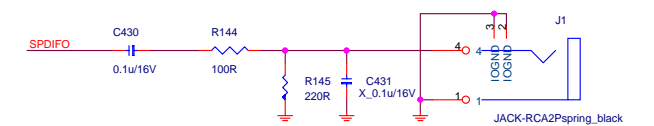
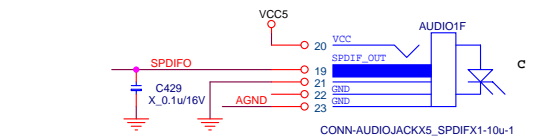
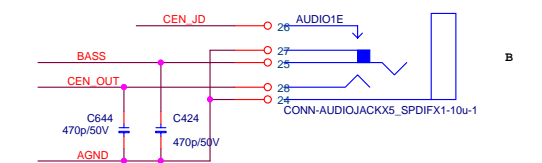
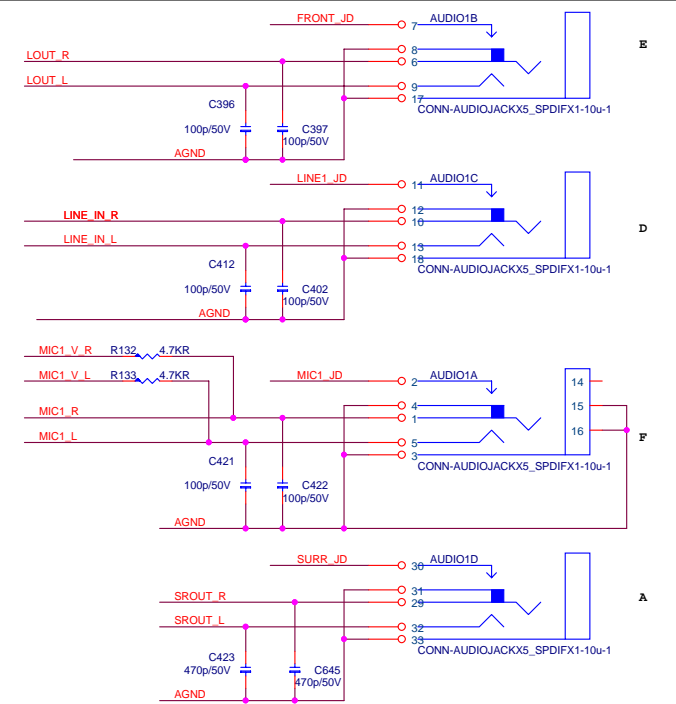
## PCI-Express x1 SLOT 3



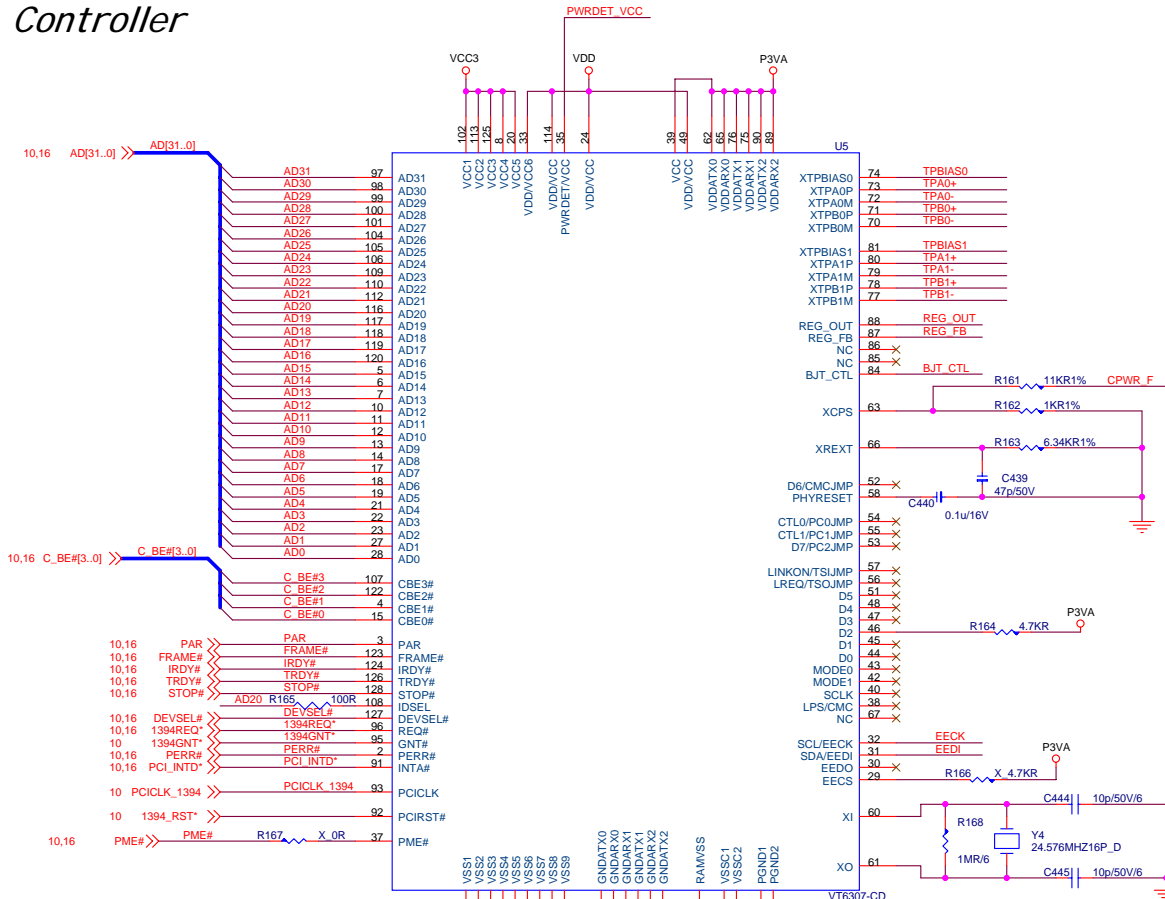
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| Title   | PCI-E X16 , X1 Slot-2 | Rev 20   |
| Document Number   | MS-7250               |  |
| MICRO-STAR INT'L CO., LTD.<br>No. 69, Li-De St., Jung-He City,<br>Taipei Hsien, Taiwan<br>http://www.msi.com.tw |                       | Last Revision Date:<br>Tuesday, April 18, 2006<br>Sheet 18 of 36 |



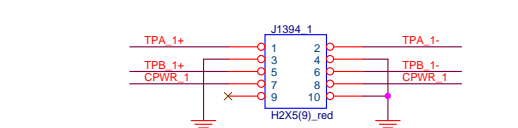
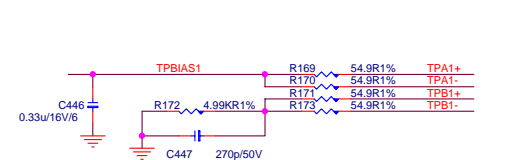
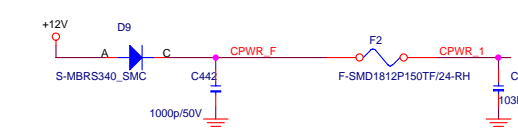
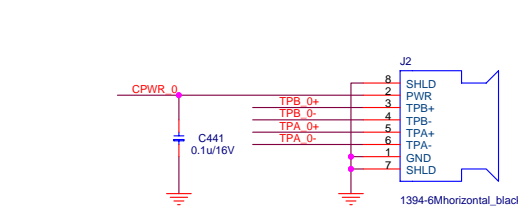
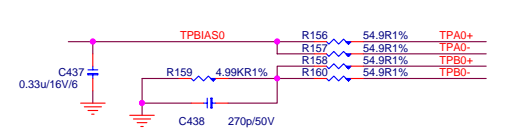
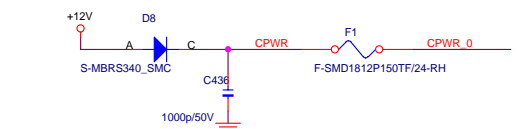
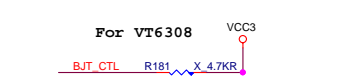
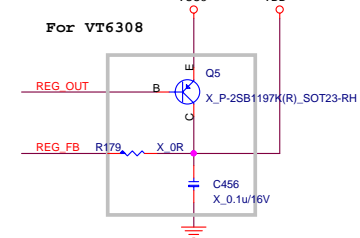
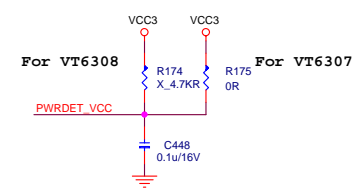
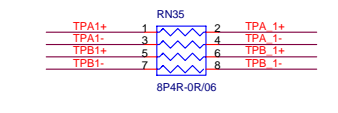
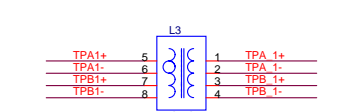
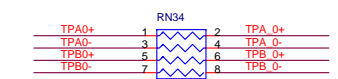
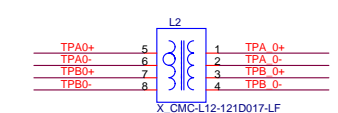
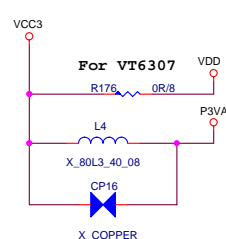
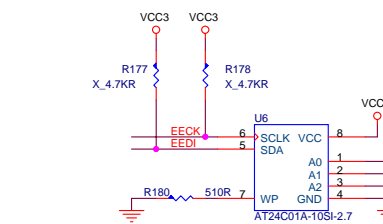
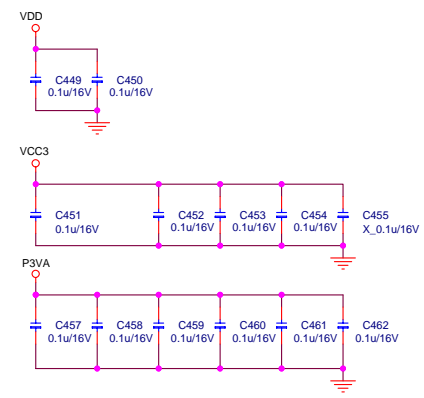




# 1394a OHCI Link Layer Controller



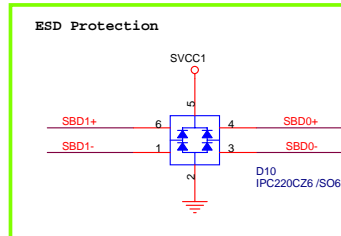
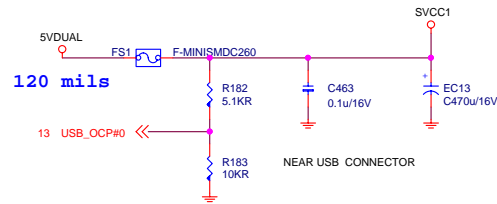
**IDSEL = AD20**  
**MASTER = 1394REQ\***  
**1394GNT\***



**For Intel 1394 pinheader**

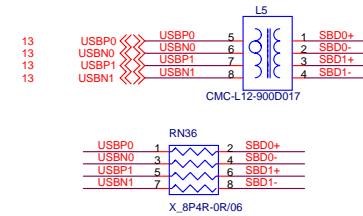
| Micro Star Restricted Secret   |  |  |
|--|--|--|
| <b>Title</b><br><b>1394a Link Layer Controller</b>   | <b>Rev</b><br>20   |  |
| <b>Document Number</b><br><b>MS-7250</b>   |  |  |
| MICRO-STAR INT'L CO., LTD.<br>No. 69, Li-De St, Jung-He City,<br>Taipei Hsien, Taiwan<br><a href="http://www.msi.com.tw">http://www.msi.com.tw</a> | <b>Last Revision Date:</b><br>Thursday, April 06, 2006<br><b>Sheet</b><br>22 of 36 |  |

### POWER CIRCUIT FOR USB PORT 0,1,2,3



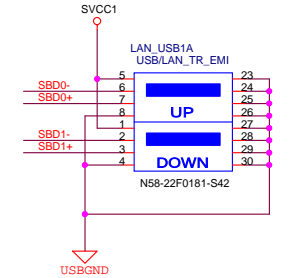
### REAR PANEL USB CONNECTOR FOR USB PORT 0,1

Should be 67 OHM, but no have...><

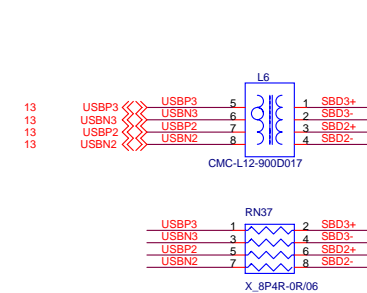


### NEAR USB CONNECTOR

22 / 7.5 / 7.5 / 7.5 / 22 / 7.5 / 7.5 / 7.5 / 22

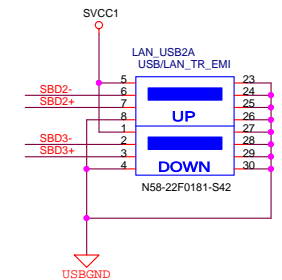


### REAR PANEL USB CONNECTOR FOR USB PORT 2,3



### NEAR USB CONNECTOR

22 / 7.5 / 7.5 / 7.5 / 22 / 7.5 / 7.5 / 7.5 / 22

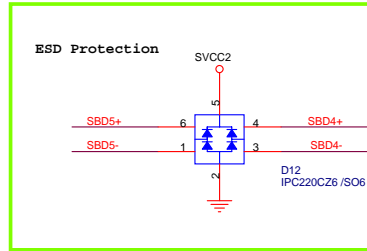
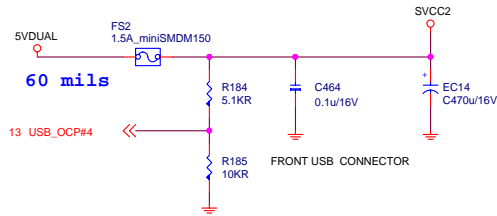


### EMI TEST

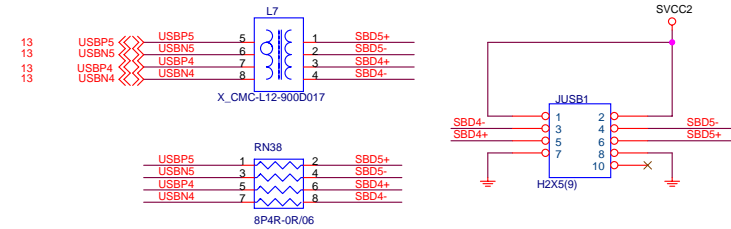


| Micro Star Restricted Secret  |                |     |
|---|----------------|-----|
| Title   | REAR USB PORTS | Rev |
| Document Number   | MS-7250        | 20  |
| MICRO-STAR INT'L CO.,LTD.<br>No. 69, Li-De St, Jung-He City,<br>Taipei Hsien, Taiwan<br><a href="http://www.msi.com.tw">http://www.msi.com.tw</a> |                |     |
| Last Revision Date:<br>Sunday, April 02, 2006   |                |     |
| Sheet 23 of 36  |                |     |

### POWER CIRCUIT FOR USB PORT 4,5



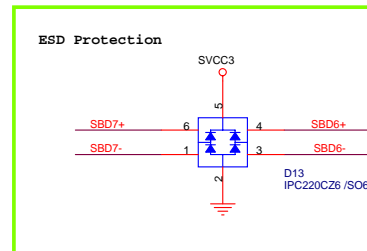
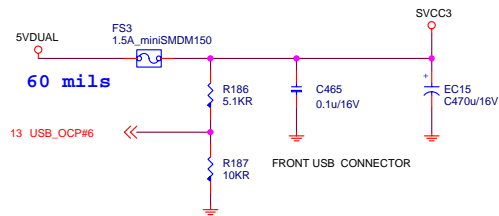
### FRONT PANEL USB CONNECTOR FOR USB PORT 4,5



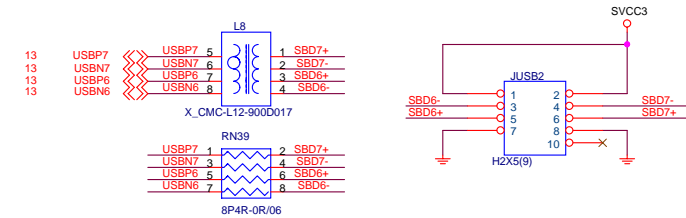
### NEAR USB CONNECTOR

22 / 7.5 / 7.5 / 7.5 / 22 / 7.5 / 7.5 / 7.5 / 22

### POWER CIRCUIT FOR USB PORT 6,7



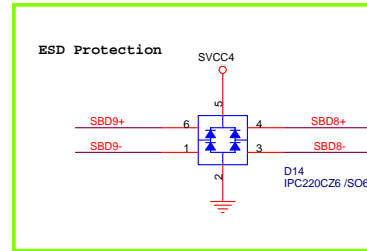
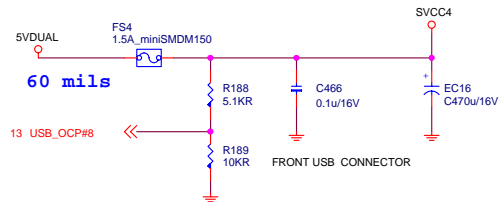
### FRONT PANEL USB CONNECTOR FOR USB PORT 6,7



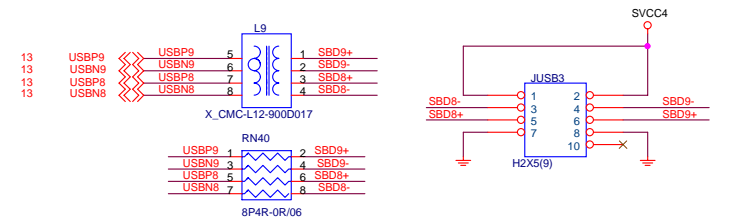
### NEAR USB CONNECTOR

22 / 7.5 / 7.5 / 7.5 / 22 / 7.5 / 7.5 / 7.5 / 22

### POWER CIRCUIT FOR USB PORT 8,9



### FRONT PANEL USB CONNECTOR FOR USB PORT 8,9



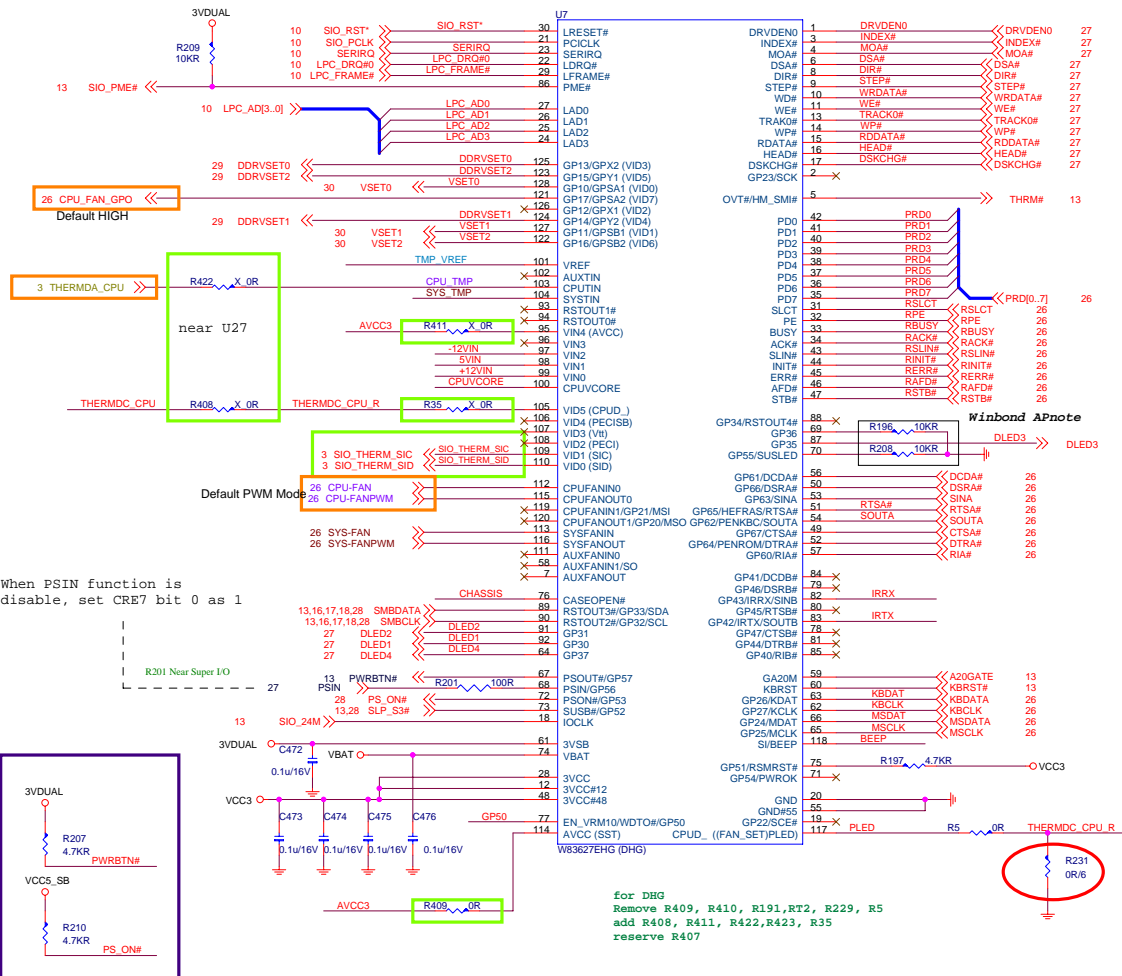
### NEAR USB CONNECTOR

22 / 7.5 / 7.5 / 7.5 / 22 / 7.5 / 7.5 / 7.5 / 22

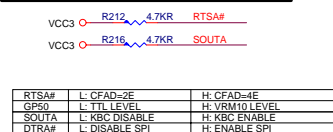
| Micro Star Restricted Secret  |                |   |
|---|----------------|---|
| Title   | FRONT USB PORT | Rev   |
| Document Number   | MS-7250        | 20  |
| MICRO-STAR INT'L CO., LTD.<br>No. 69, Li-De St, Jung-Ho City,<br>Taipei Hsien, Taiwan |                | Last Revision Date:<br>Sunday, April 02, 2006 |
| http://www.msi.com.tw   |                | Sheet 24 of 36                                |



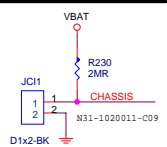
## Super I/O



## LPC I/O STRAPPING RESISTOR



## Chassis Intrusion



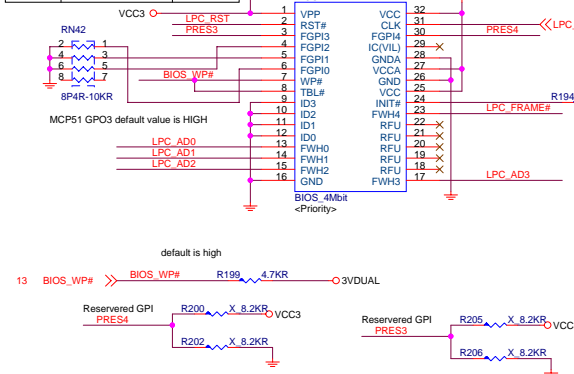
## SPEAKER BLOCK



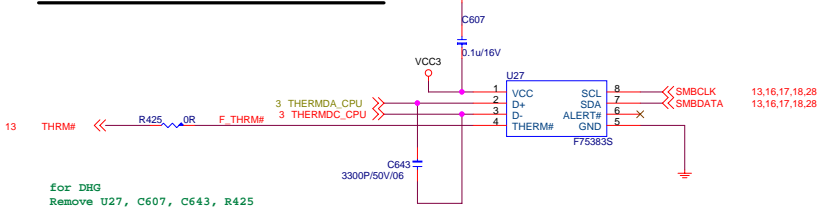
## BIOS PROTECT BLOCK

### BIOS Update Config.

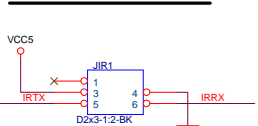
|      | Un_protected | Default |
|------|--------------|---------|
| HIGH |              |         |
| LOW  | Protected    |         |



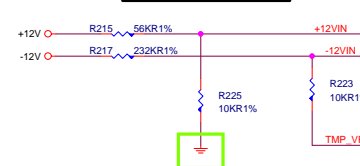
## CPU TEMPERATURE SENSOR



## Intel Front IR Header



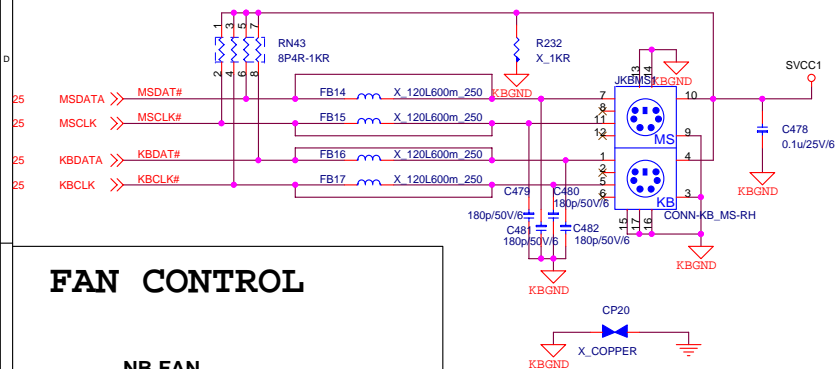
## Thermal Resistor



|  |                      |
|--|----------------------|
| Micro Star Restricted Secret   |                      |
| Title  | SIO-W83627EHG,IR,LPC |
| Document Number  | MS-7250              |
| MICRO-STAR INT'L CO., LTD.<br>No. 69, Li-De St, Jung-He City,<br>Taipei Hsien, Taiwan<br>http://www.msi.com.tw |                      |
| Last Revision Date:<br>Monday, April 10, 2006  |                      |
| Sheet  | 25 of 36             |

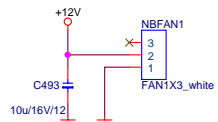
NOTE: LOCATE CLOSE STATUS  
PANEL back-side

## PS2 KEYBOARD & MOUSE CONNECTOR



## FAN CONTROL

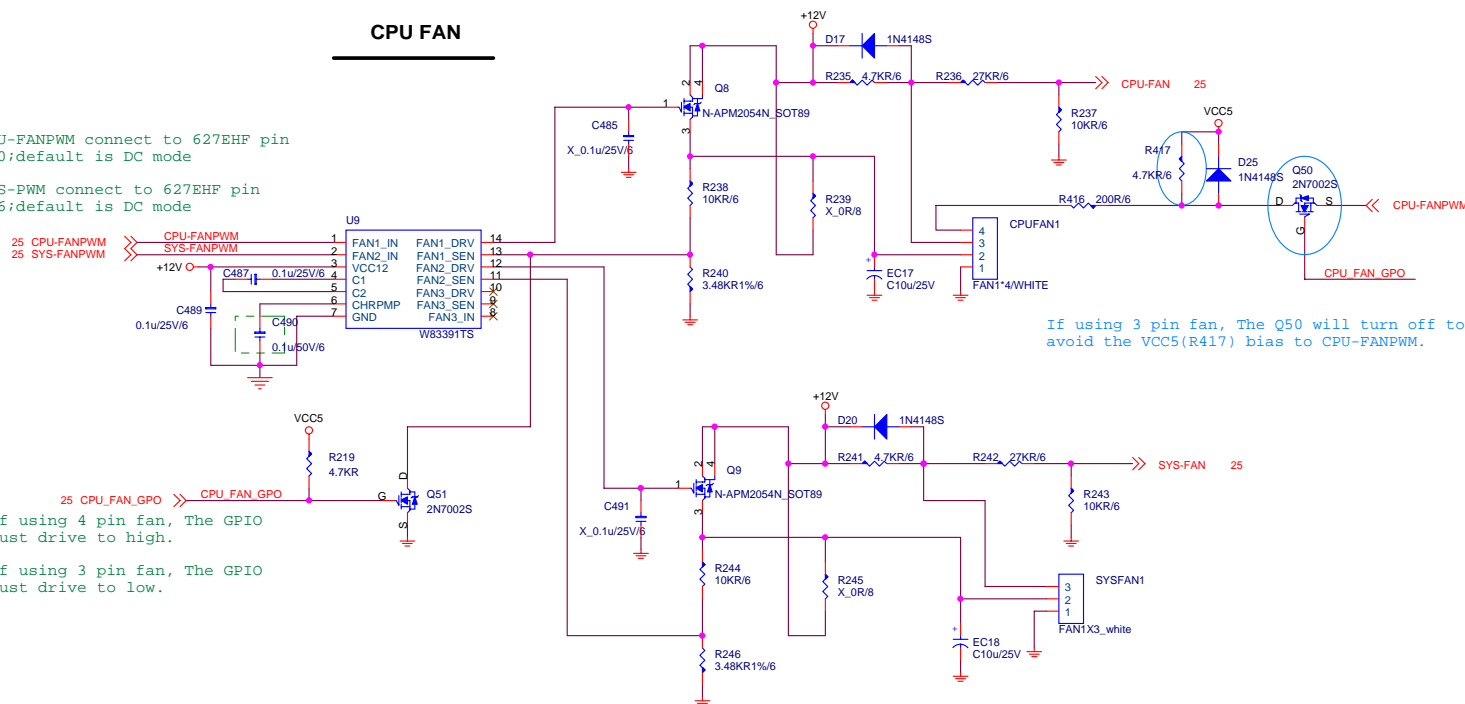
### NB FAN



### CPU FAN

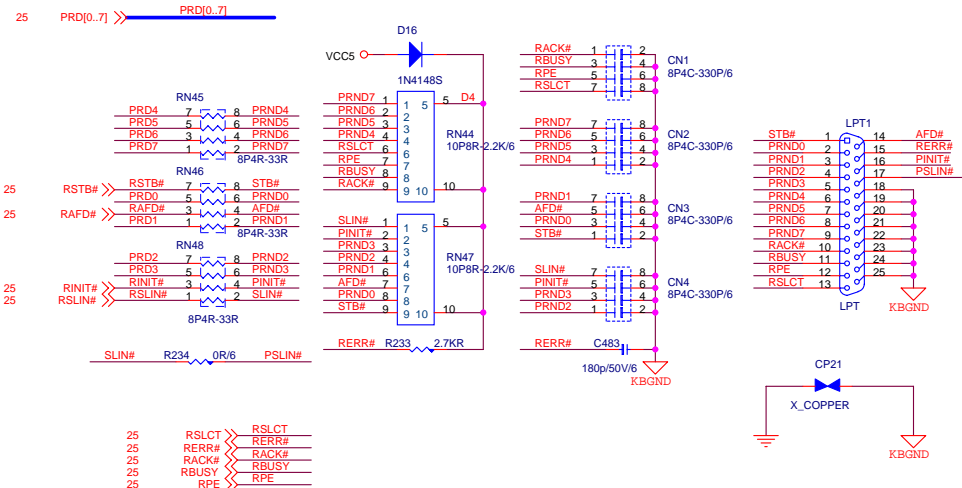
CPU-FANPWM connect to 627EHF pin 120; default is DC mode

SYS-PWM connect to 627EHF pin 116; default is DC mode

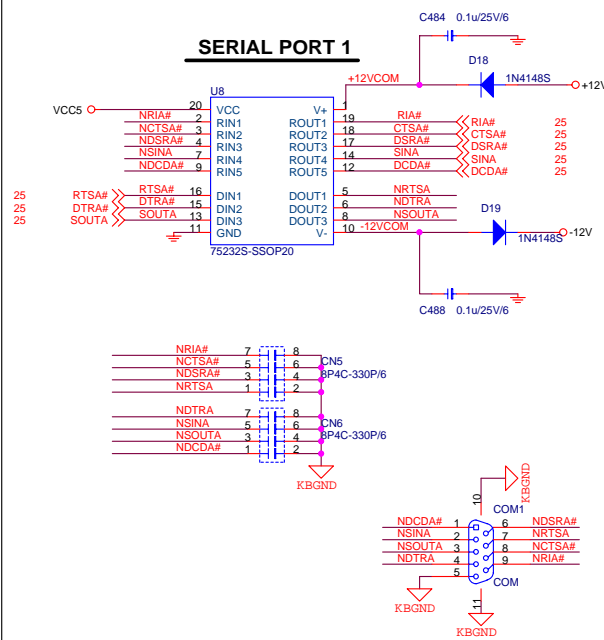


If using 3 pin fan, The Q50 will turn off to avoid the VCC5(R417) bias to CPU-FANPWM.

## PARALLAL PORT



### SERIAL PORT 1



Micro Star Restricted Secret

Title PS2 KB/MS, LPT, COM & FAN

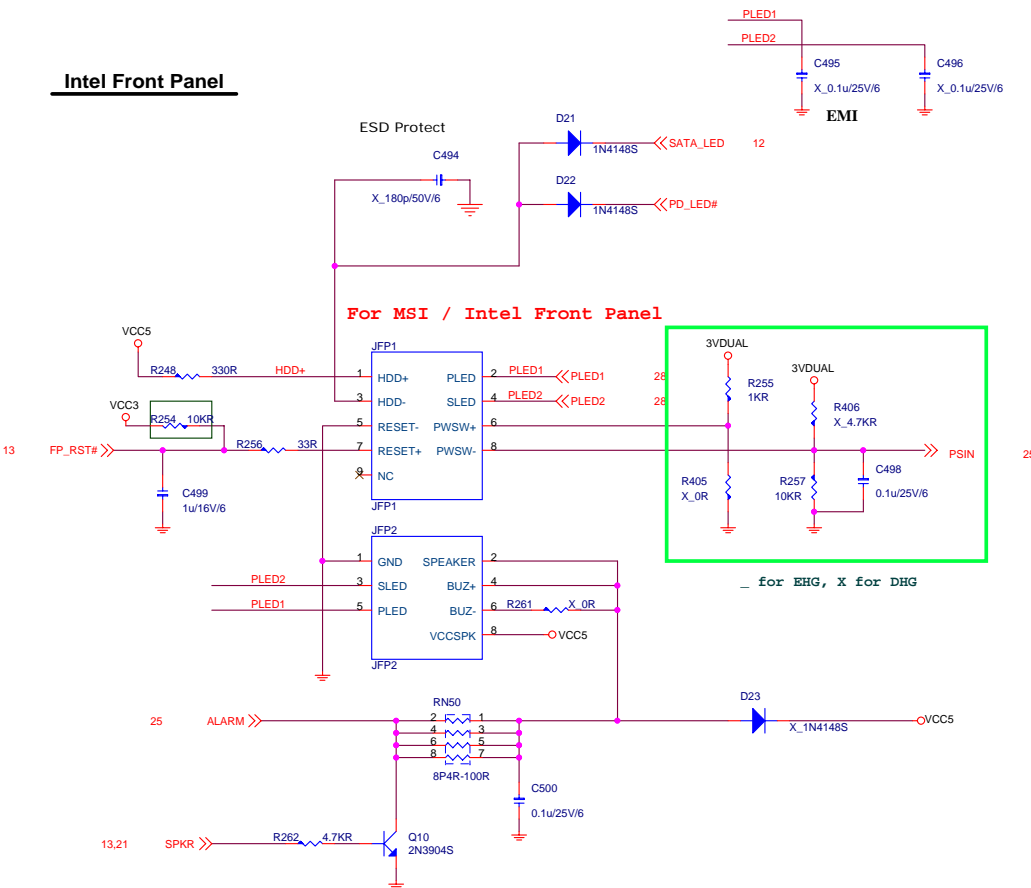
Document Number MS-7250

MICRO-STAR INT'L CO., LTD.  
No. 69, Li-De St, Jung-He City,  
Taipei Hsien, Taiwan  
http://www.msi.com.tw

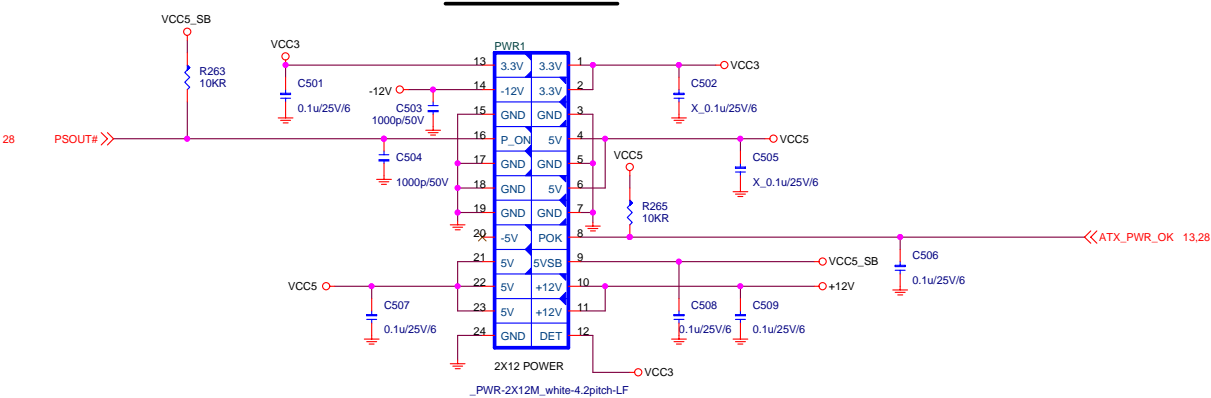
Last Revision Date:  
Tuesday, April 18, 2006  
Sheet 26 of 36

Rev 20

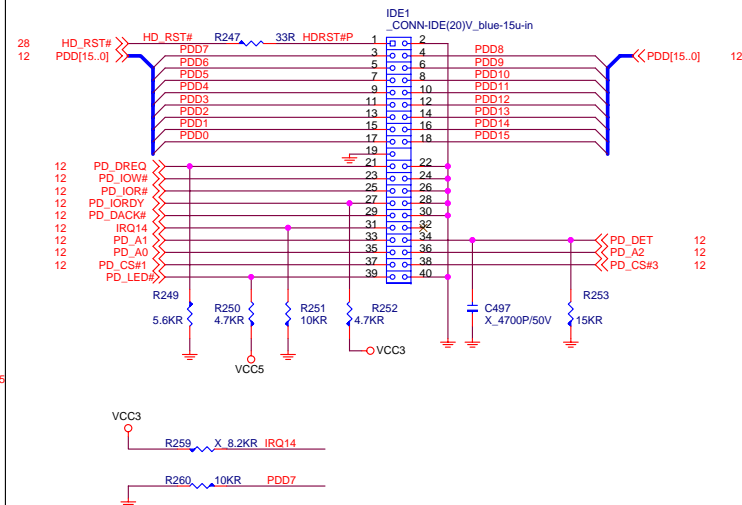
## Intel Front Panel



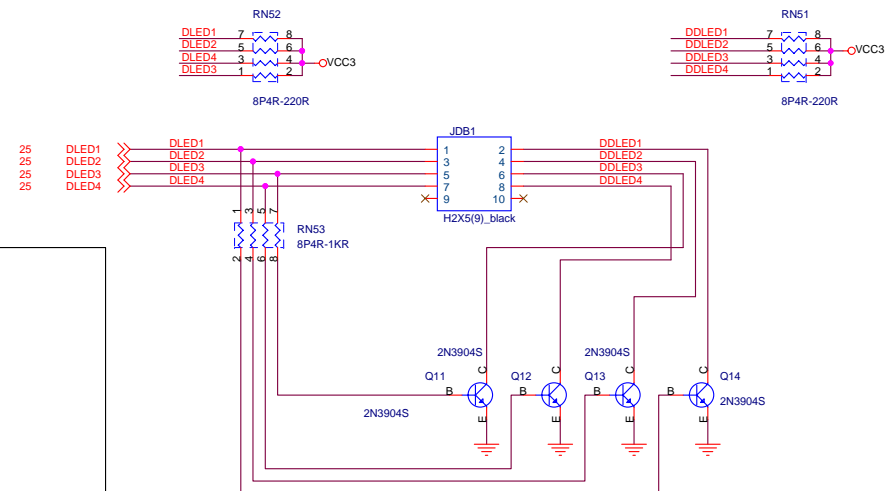
## ATX Connector



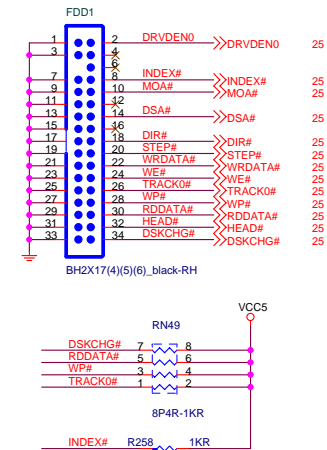
IDE 1



### D-Bracket



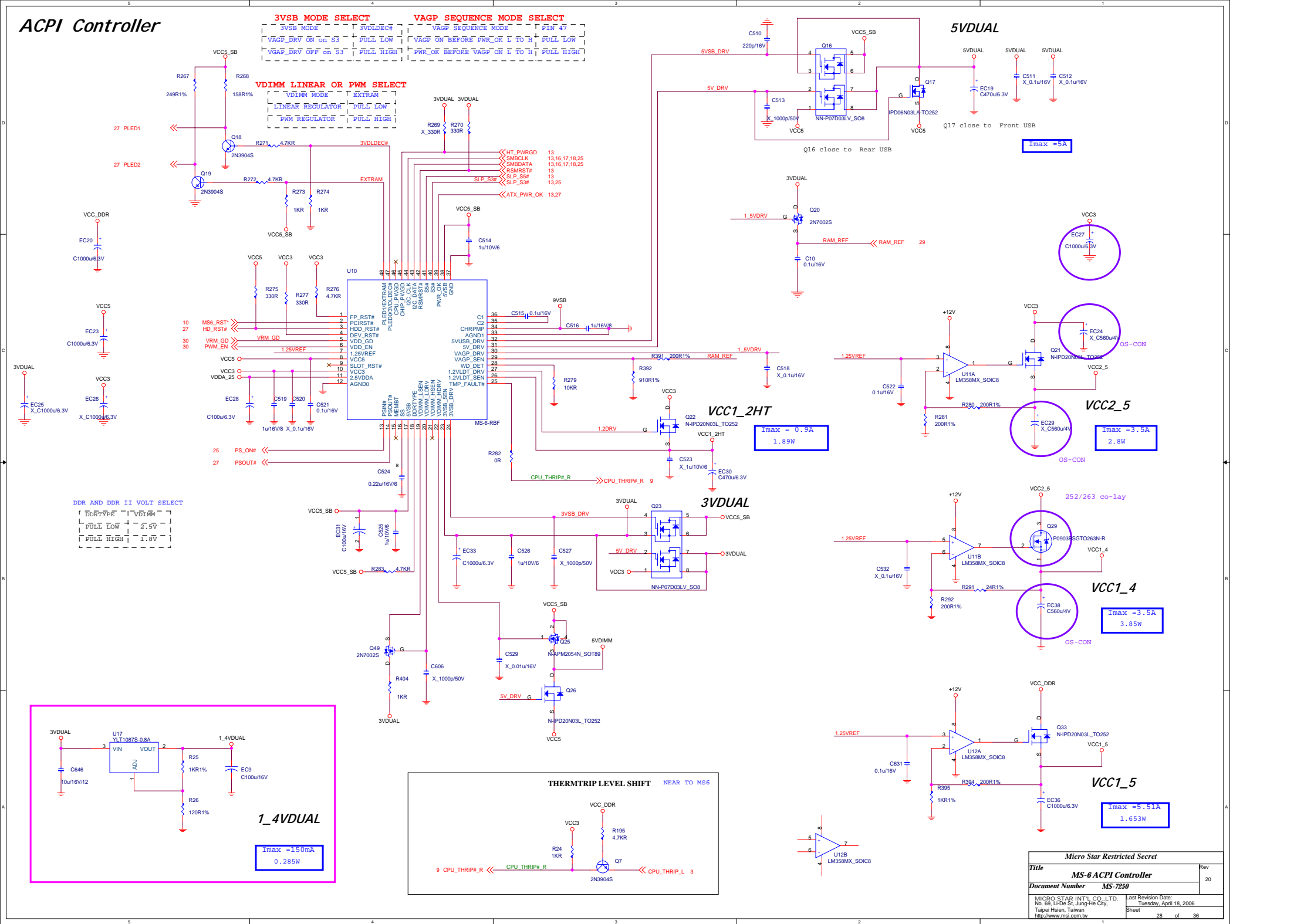
Floppy



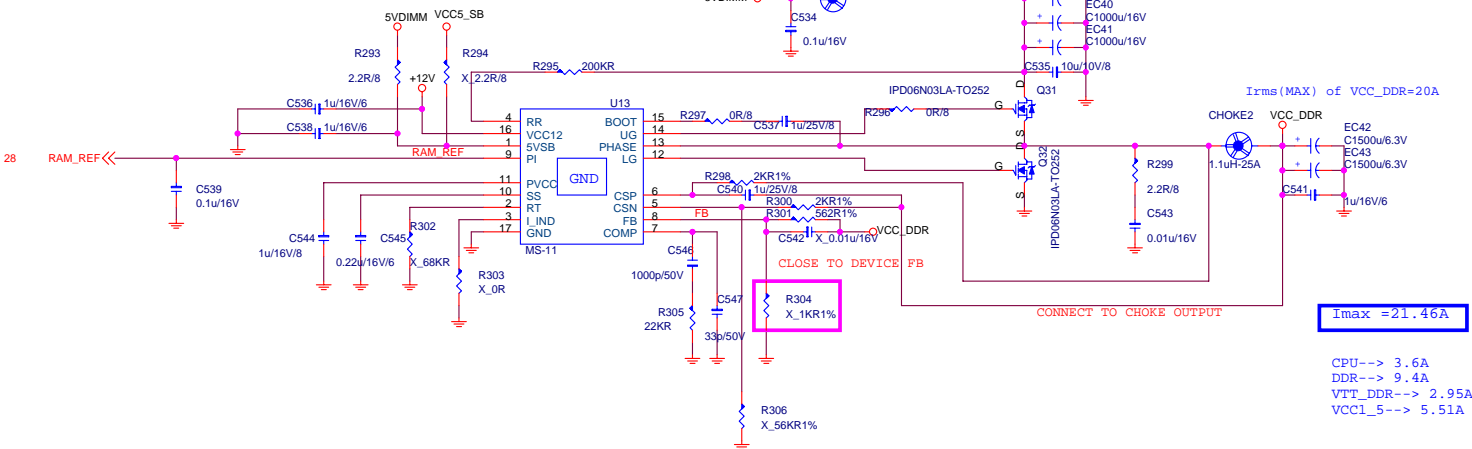
*Micro Star Restricted Secret*

|  |  |  |
|--|--|--|
| <b>Title</b>   |  | Rev<br>20  |
| <b>ATX conn / FP /IDE/FDD/ D-LED</b>   |  |  |
| <b>Document Number</b>   |  |  |
| <b>MS-7250</b>   |  |  |
| MICRO-STAR INT'L CO., LTD.<br>No. 69, Li-De St, Jung-Hs City,<br>Taipei Hsien, Taiwan<br><a href="http://www.msi.com.tw">http://www.msi.com.tw</a> |  | Last Revision Date:<br>Monday, April 10, 2006<br>Sheet<br>27 of 36 |

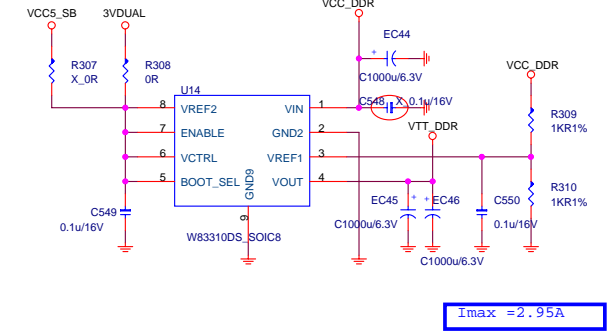
### *ACPI Controller*



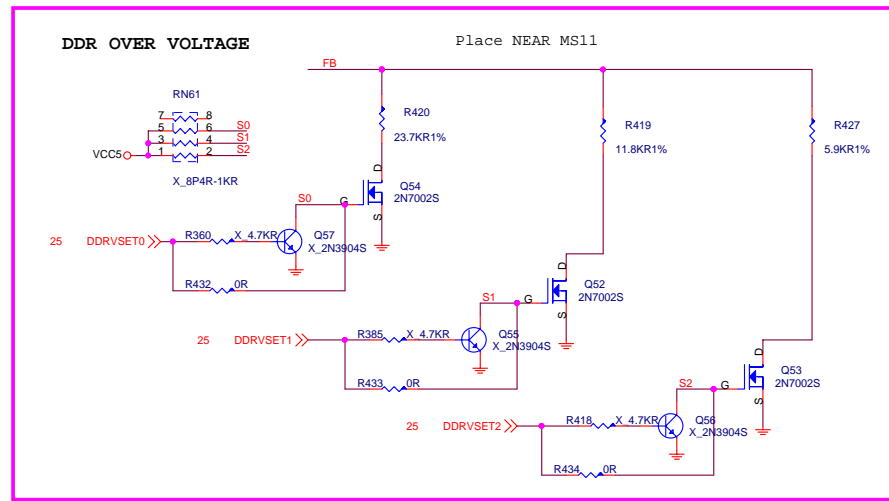
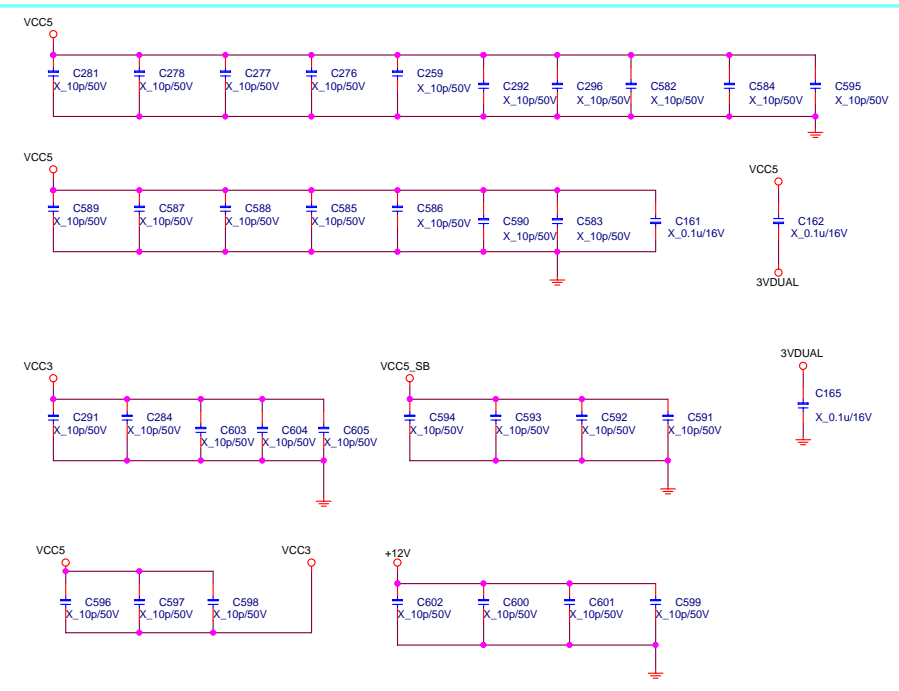
## DDR II 1.8V POWER



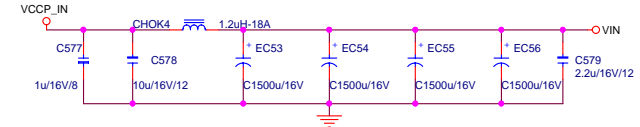
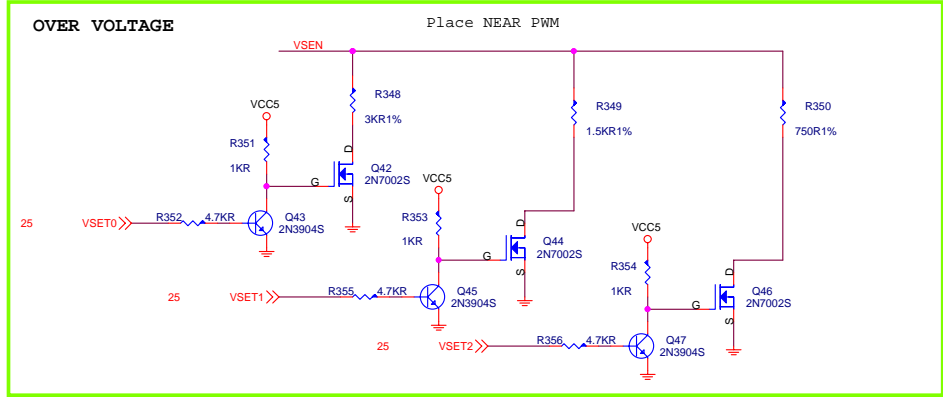
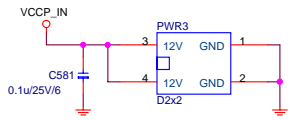
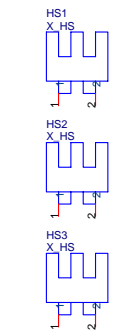
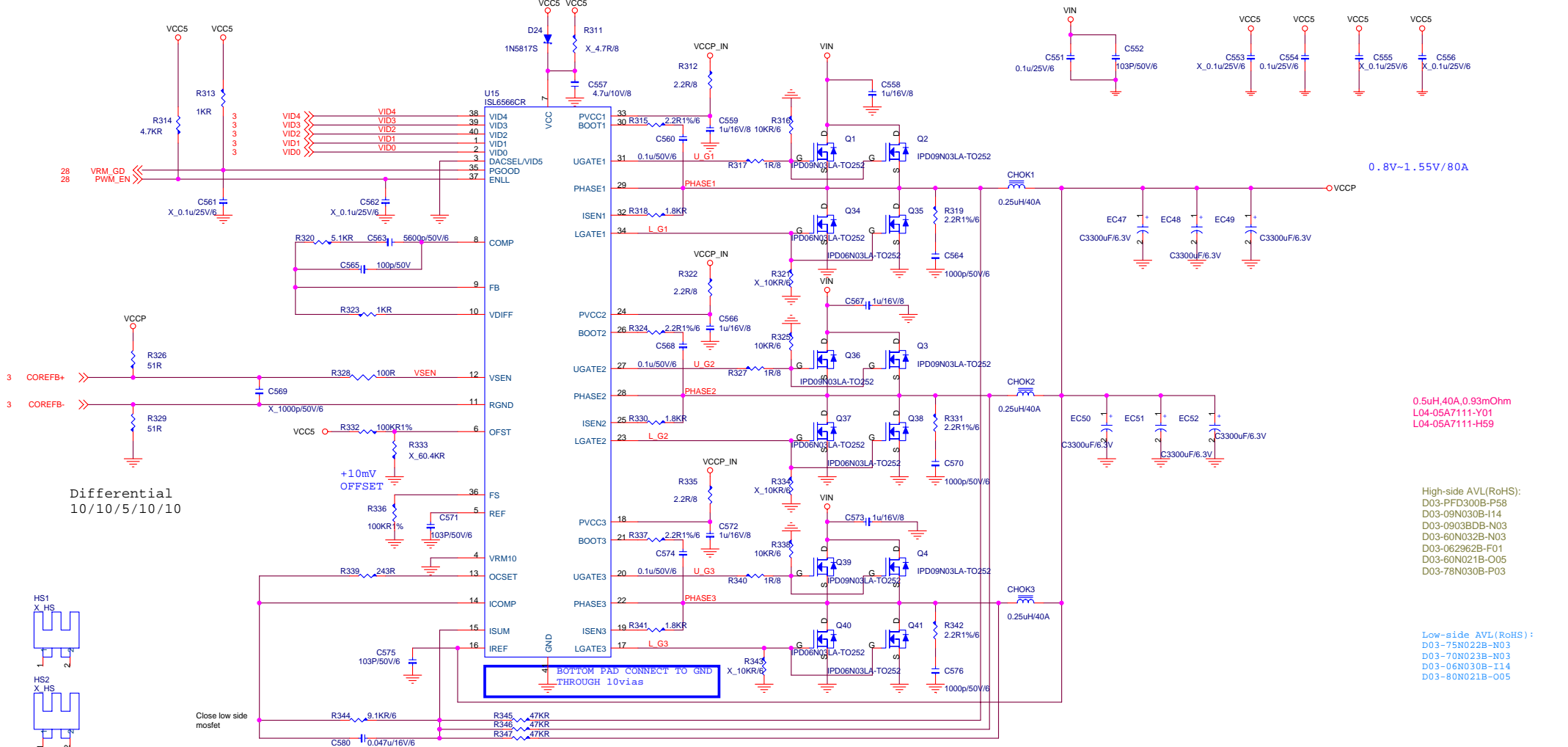
## DDR II VTT POWER



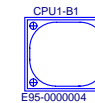
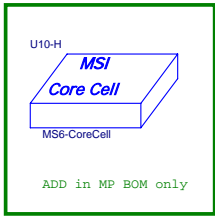
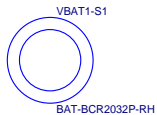
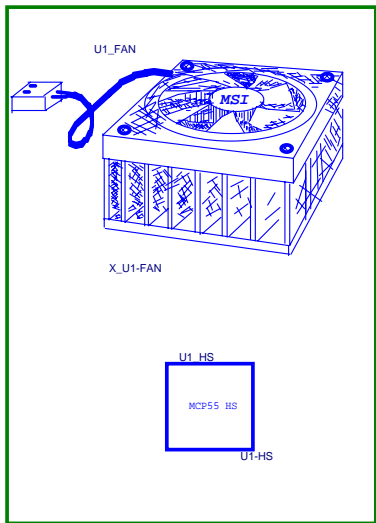
For EMI



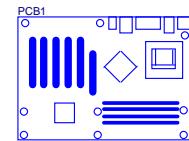
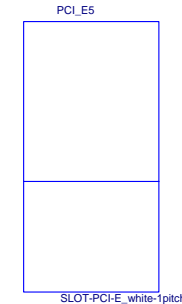
| Micro Star Restricted Secret  |                  |  |
|---|------------------|--|
| Title   | MS-11 DDR2 Power | Rev  |
| Document Number   | MS-7250          | 20   |
| MICRO-STAR INT'L CO.,LTD.<br>No. 69, Li-De St, Jung-He City,<br>Taipei Hsien, Taiwan<br>http://www.msi.com.tw |                  | Last Revision Date:<br>Tuesday, April 18, 2006<br>Sheet 29 of 36 |



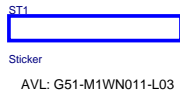
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|---|-----------------------|---|
| Title   | Intersil 6566 3 Phase | Rev   |
| Document Number   | MS-7250               | 20  |
| MICRO-STAR INT'L CO.,LTD.<br>No. 69, Li-De St, Jung-Ho City,<br>Taipei Hsien, Taiwan<br>http://www.msi.com.tw |                       | Last Revision Date:<br>Monday, April 10, 2006<br>Sheet 30 of 36 |



20: E95-0000003-H06  
10: E95-0000004-A21

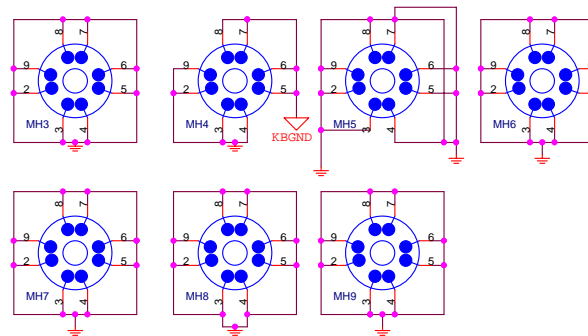


PCB P80-0725020-D05  
AVL: P80-0725020-Y34

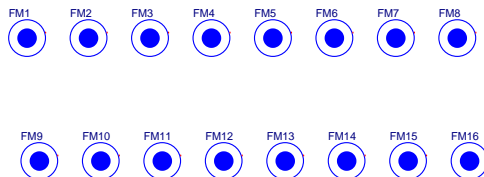


ST1 Sticker  
AVL: G51-M1WN011-L03

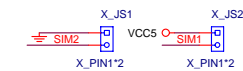
### Mounting Holes



### Optics Orientation Holes



### Simulation



## Model option table

| Model type | Function   | BOM Config | ERP BOM No.  |
|------------|--|------------|--------------|
| MS-7250    | MCP55P / VSC6801x2/ ALC883/ W83627EHG/ ISL6566CR     | Cfg-A      | 601-7250-03S |
| MS-7250    | MCP55 Ultra/ VSC6801x2/ ALC883/ W83627EHG/ ISL6566CR | Cfg-B      | 601-7250-04S |