



# MS-7250 Ver:22

## 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:

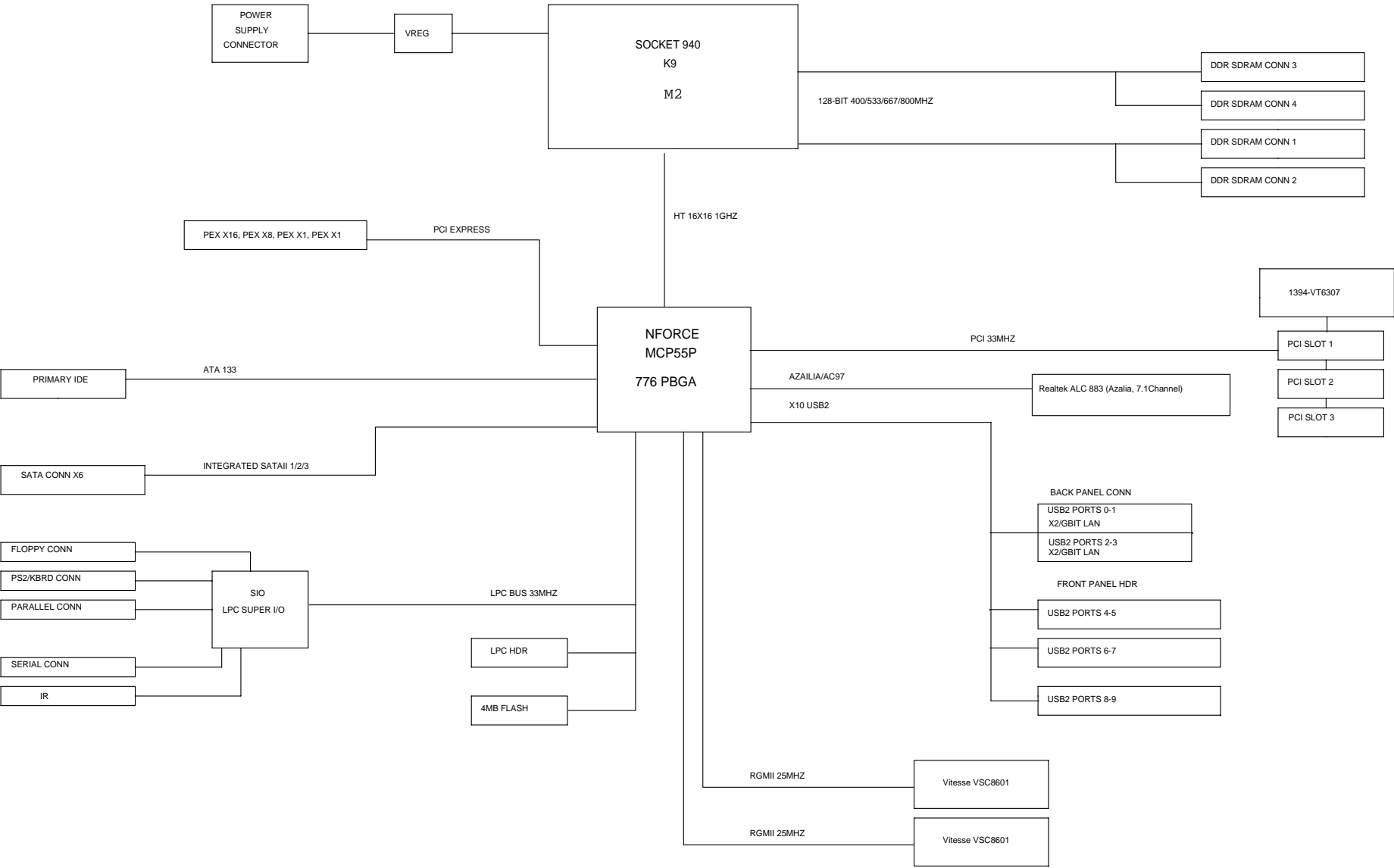
PCI-E X 16 \*2  
PCI-E X1 \*2  
PCI 2.2 Slot \* 3

## PWM:

Controller--Intersil ISL6566CR 3 Phase

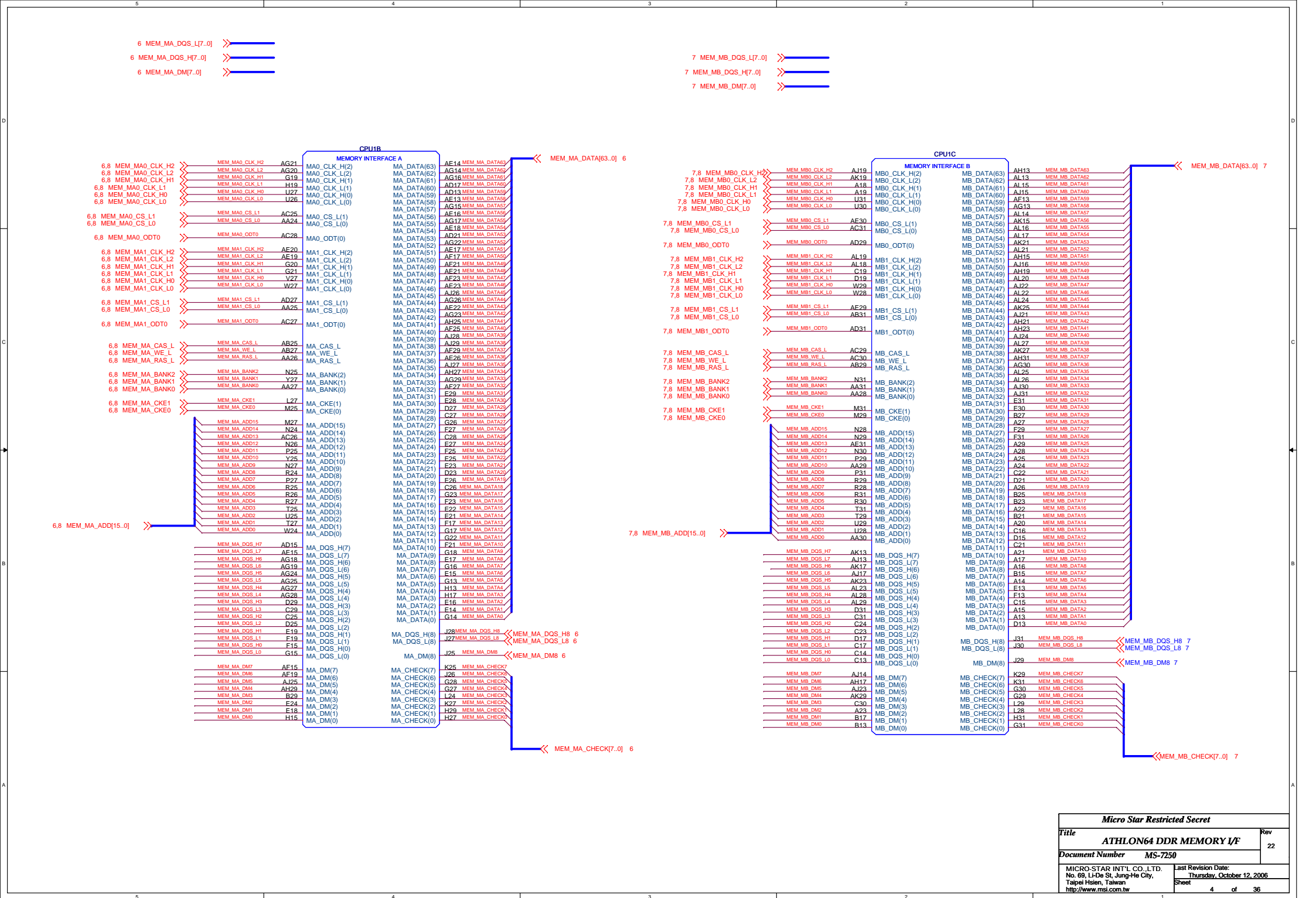
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BLOCK DIAGRAM

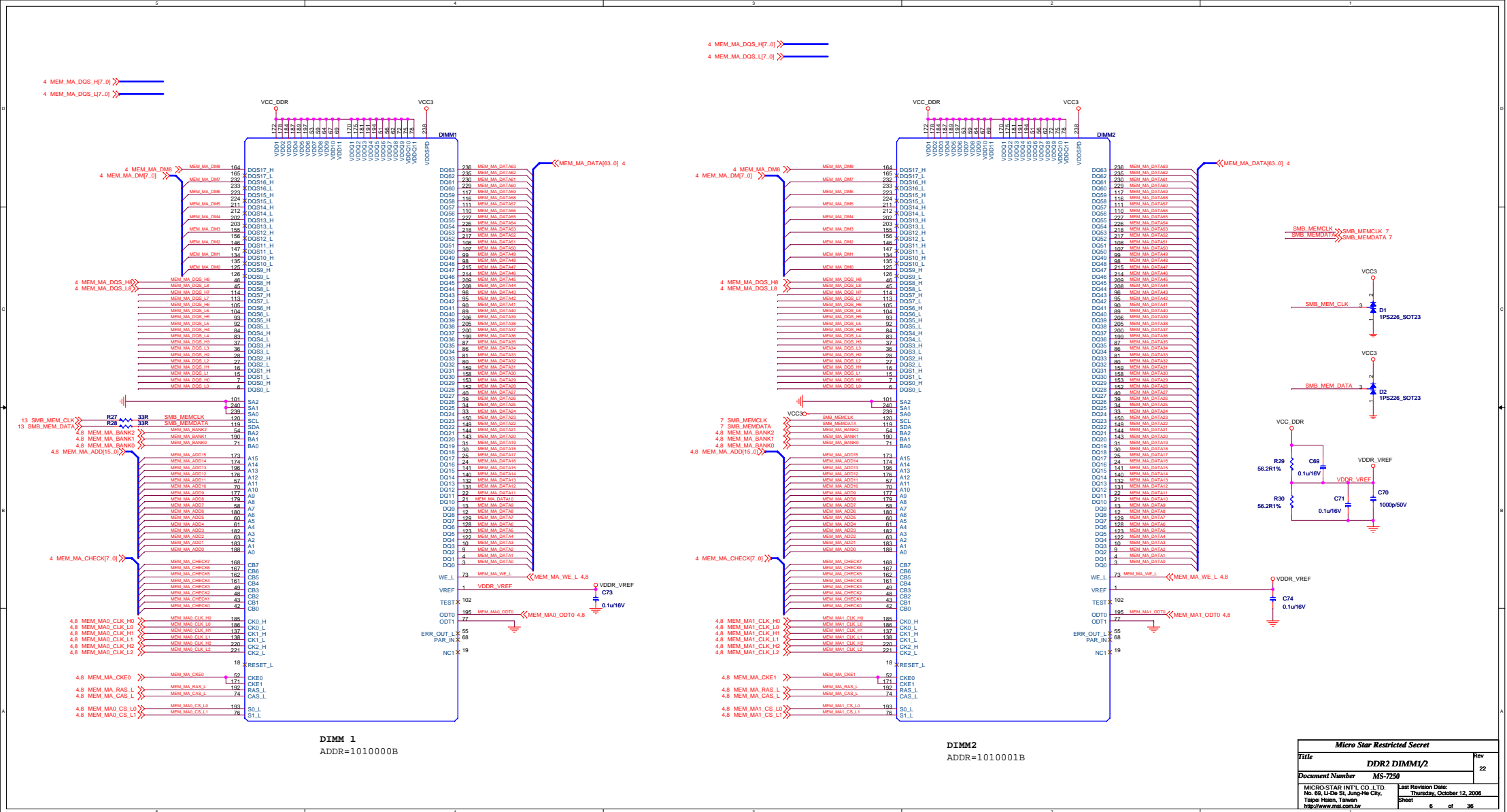


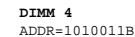
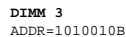
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| Micro Star Restricted Secret   |               |   |
| Title  | Block Diagram | Rev 22  |
| Document Number  | MS-7250       |   |
| MICRO-STAR INT'L CO., LTD.<br>No. 69, Li-De St, Jung-Ho City,<br>Taipei Hsien, Taiwan<br><a href="http://www.msi.com.tw">http://www.msi.com.tw</a> |               | Last Revision Date:<br>Wednesday, October 11, 2006<br>Sheet 2 of 36 |

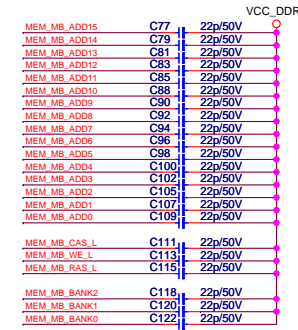
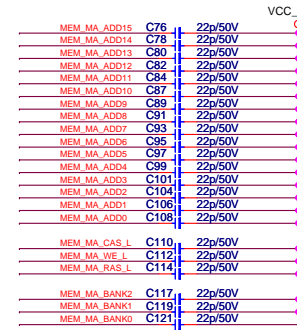
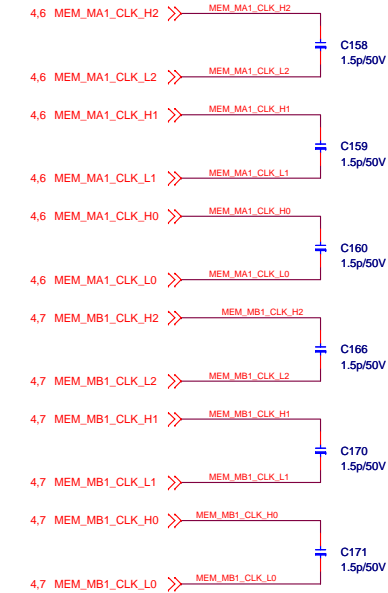
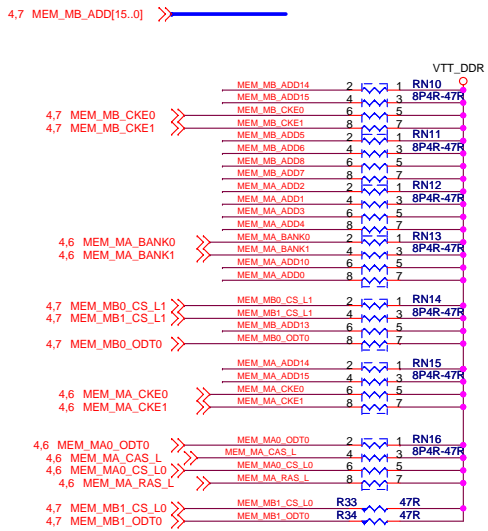
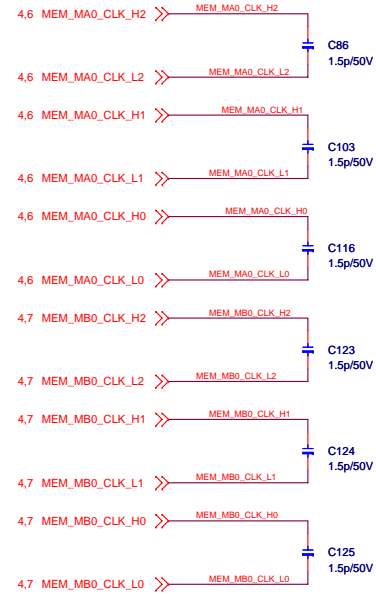
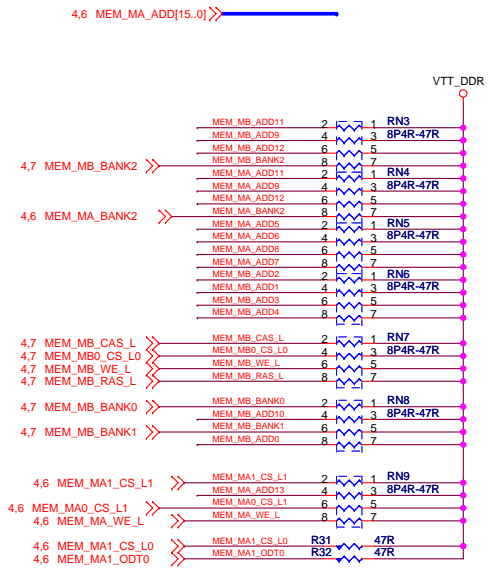






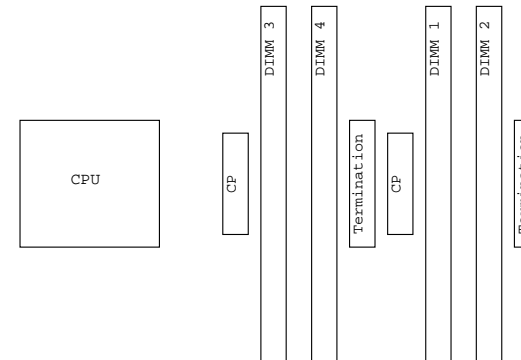
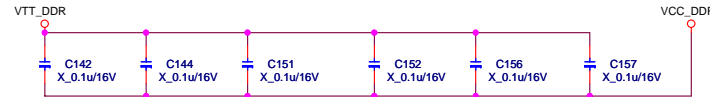
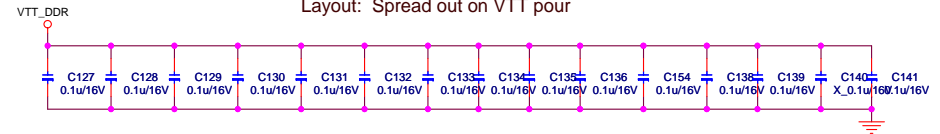






## Decoupling Between Processor and DIMMs (CP)

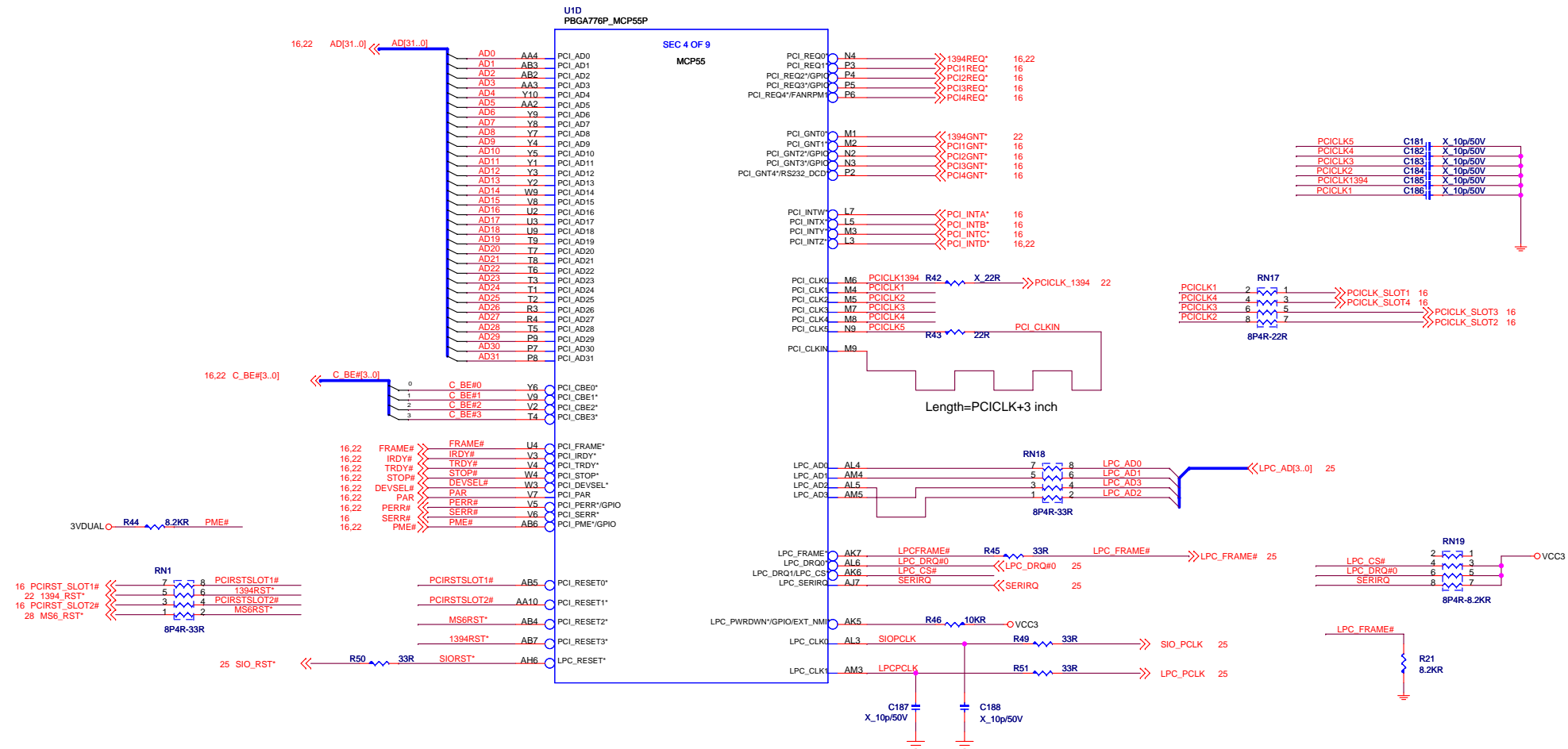
Layout: Spread out on VTT pour

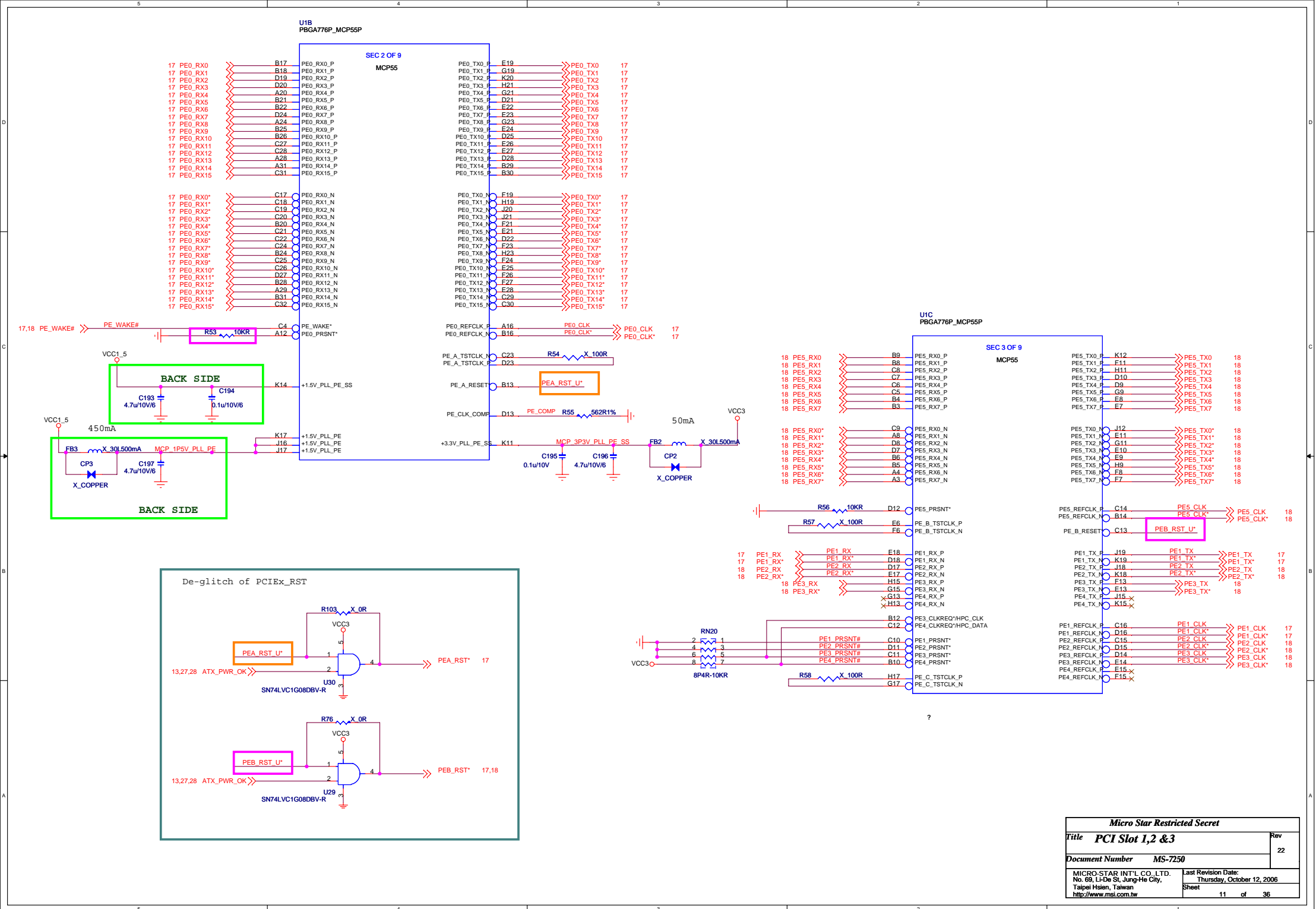


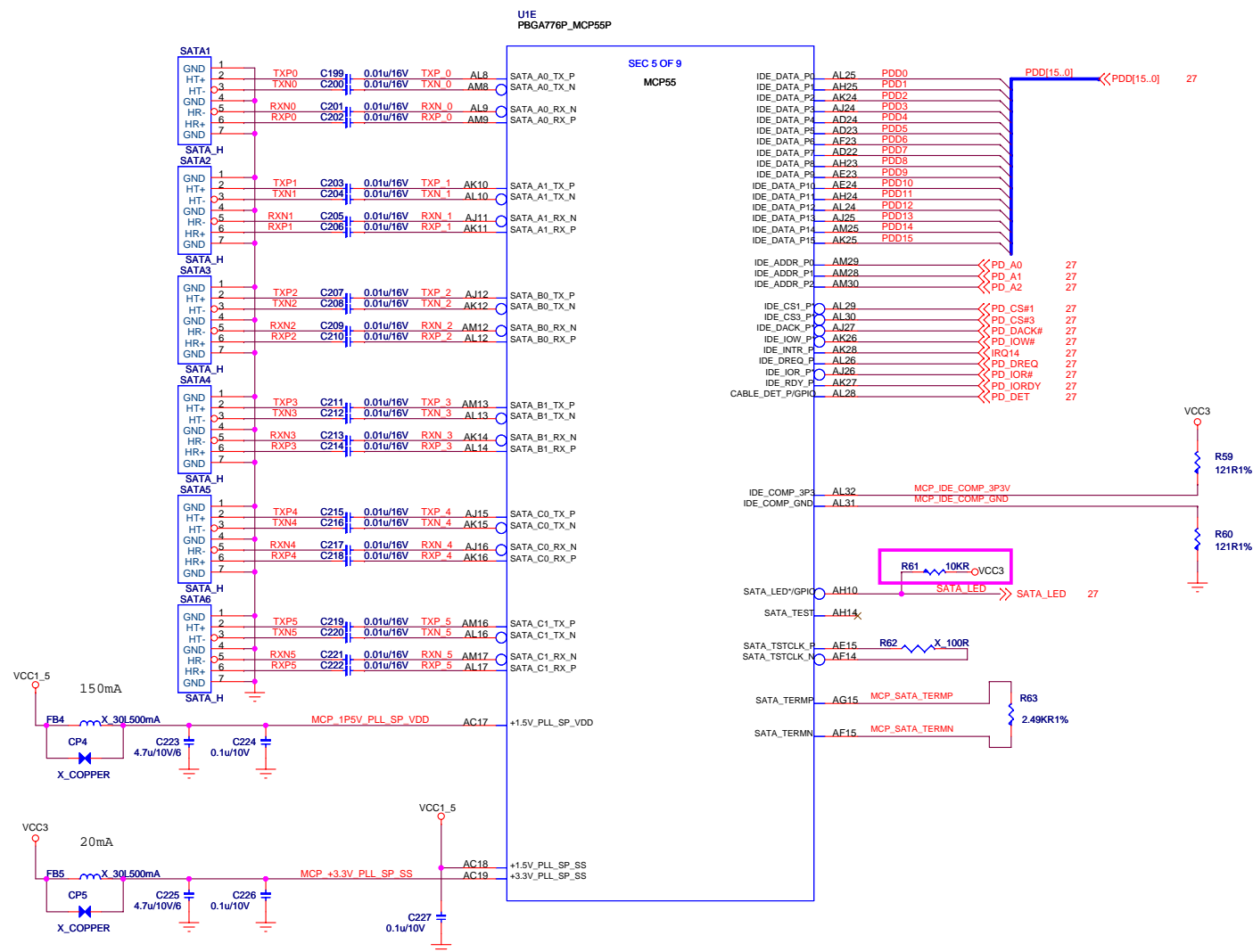
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| Title  | DDR Termination | Rev 22  |
| Document Number  | MS-7250         |   |
| MICRO-STAR INT'L CO., LTD.<br>No. 69, Li-De St., Jung-Hsi City,<br>Taipei Hsien, Taiwan<br><a href="http://www.msi.com.tw">http://www.msi.com.tw</a> |                 | Last Revision Date:<br>Wednesday, October 11, 2006<br>Sheet 8 of 36 |









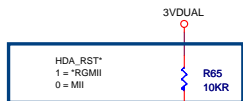


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| Title  | MCP55-2/ SATA, IDE | Rev   |
| Document Number  | MS-7250            | 22  |
| MICRO-STAR INT'L CO., LTD.<br>No. 69, Li-De St, Jung-He City,<br>Taipei Hsien, Taiwan<br><a href="http://www.msi.com.tw">http://www.msi.com.tw</a> |                    | Last Revision Date:<br>Thursday, October 12, 2006 |
| Sheet  |                    | 12 of 36  |

# U1F PBG776P\_MCP55P

SEC 6 OF 9

MCP55



21

AC\_RST#

VCC3

R47 10KR

HDA\_SYNC

(SIO CLK)

1 = 24MHz

0 = 14.318MHz

19,20 RGMIL\_RST#

VCC3

R69 10KR

AD19

AF19

AH18

AE19

AG17

AD18

AH17

AF17

AD17

AF24

M32

M31

B21

N29

N28

E30

AD20

AH19

AF18

AM20

RTC\_RST\*

AJ22

RTC\_RST\*

AG11

AF11

AH11

AD11

AE11

MEM\_VLD

AL18

HT\_VLD

AE21

HT\_VLD

AE21

VCCORE\_VLD

AD21

VCCORE\_VLD

AG21

CPUVDD\_EN

CPUVDD\_EN

VCC1\_5

AD1

+1.5V\_PLL\_USB

+3.3V\_PLL\_USB

C238

0.1u/10V

3VDUAL

D3

S-BAT54C\_SOT23

VBAT1

BAT-2P\_S041

R84

1KR

C239

0.1u/10V

C240

1u/6.3V

C241

0.1u/10V

VBAT

R82

0R

SW2

1B-OFF-S-BK

JBAT1

X\_H1X3\_black

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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"

MI1\_TXD / MI1\_TXCTL  
0 OHM IF ROUTED 7/15 (60 OHM), Length<8"  
22 OHM IF ROUTED 5/10 (60 OHM), Length<12"

MI1\_TXCLK  
0 OHM IF ROUTED 7/20 (60 OHM), Length<8"  
22 OHM IF ROUTED 5/10 (60 OHM), Length<12"

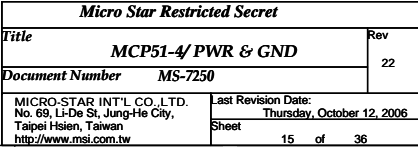
U1G  
PBG776P\_MCP55P

SEC 7 OF 9

MCP55

BACK SIDE

|  |                |   |
|--|----------------|---|
| Micro Star Restricted Secret   |                |   |
| Title  | MCP55-6/ RGMII | Rev<br>22   |
| Document Number  | MS-7250        |   |
| MICRO-STAR INT'L CO., LTD.<br>No. 69, Li-Po St, Jung-Ho City,<br>Taipei Hsien, Taiwan<br>http://www.msi.com.tw |                | Last Revision Date:<br>Thursday, October 12, 2006<br>Sheet 14 of 36 |



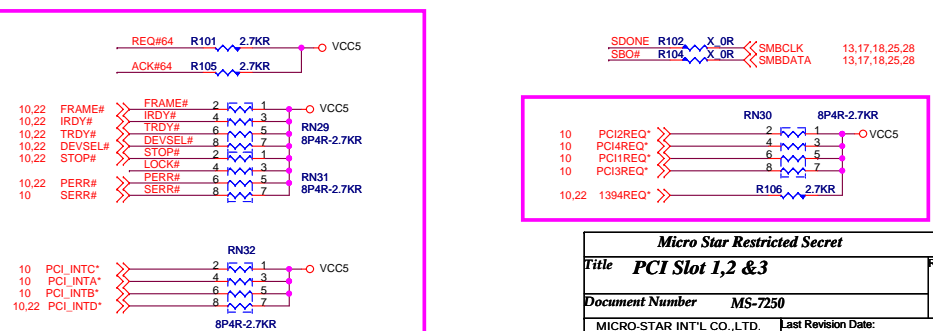
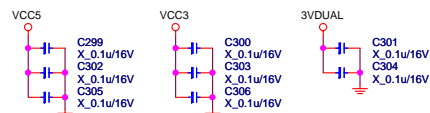
**IDSEL = AD16**  
**MASTER = PCI1REQ\***  
**PCI1GNT\***

```

IDSEL = AD17
MASTER = PCI2REQ*
PCI2GNT*

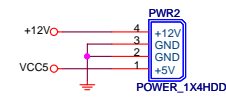
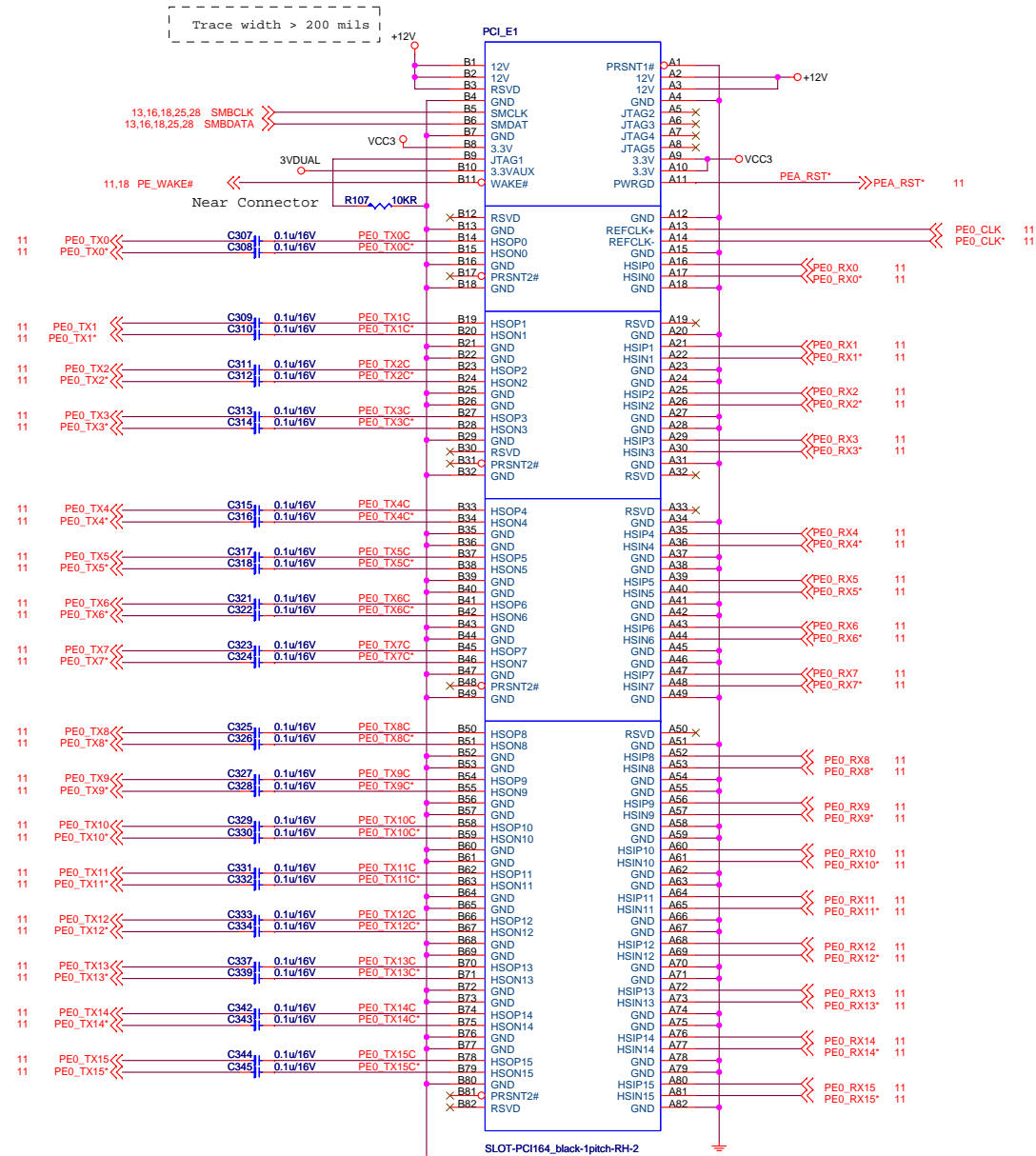
```

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

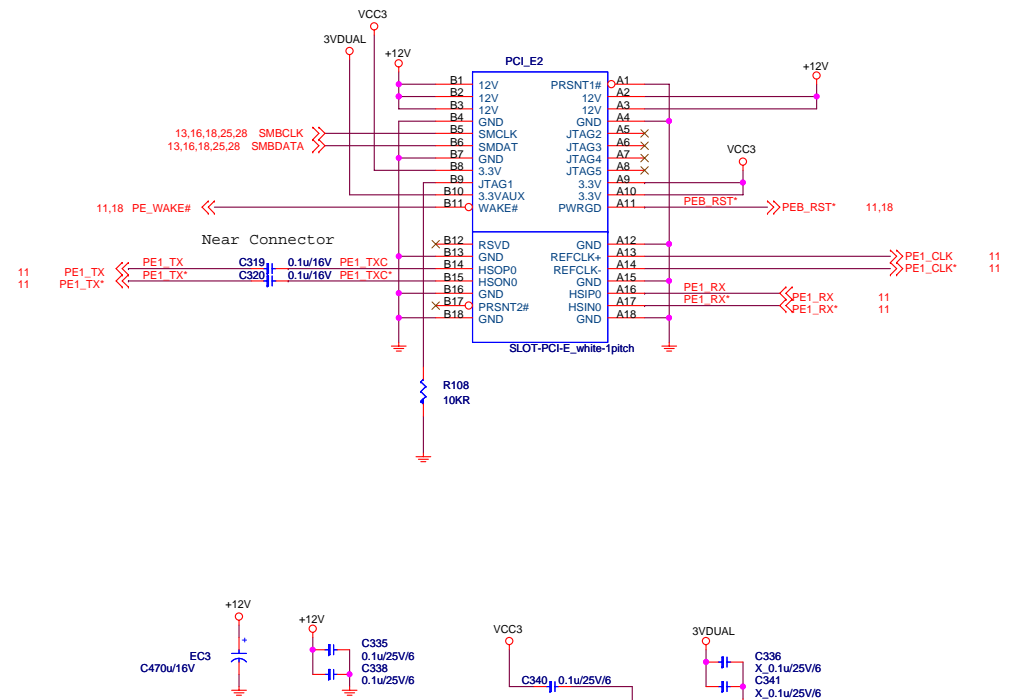


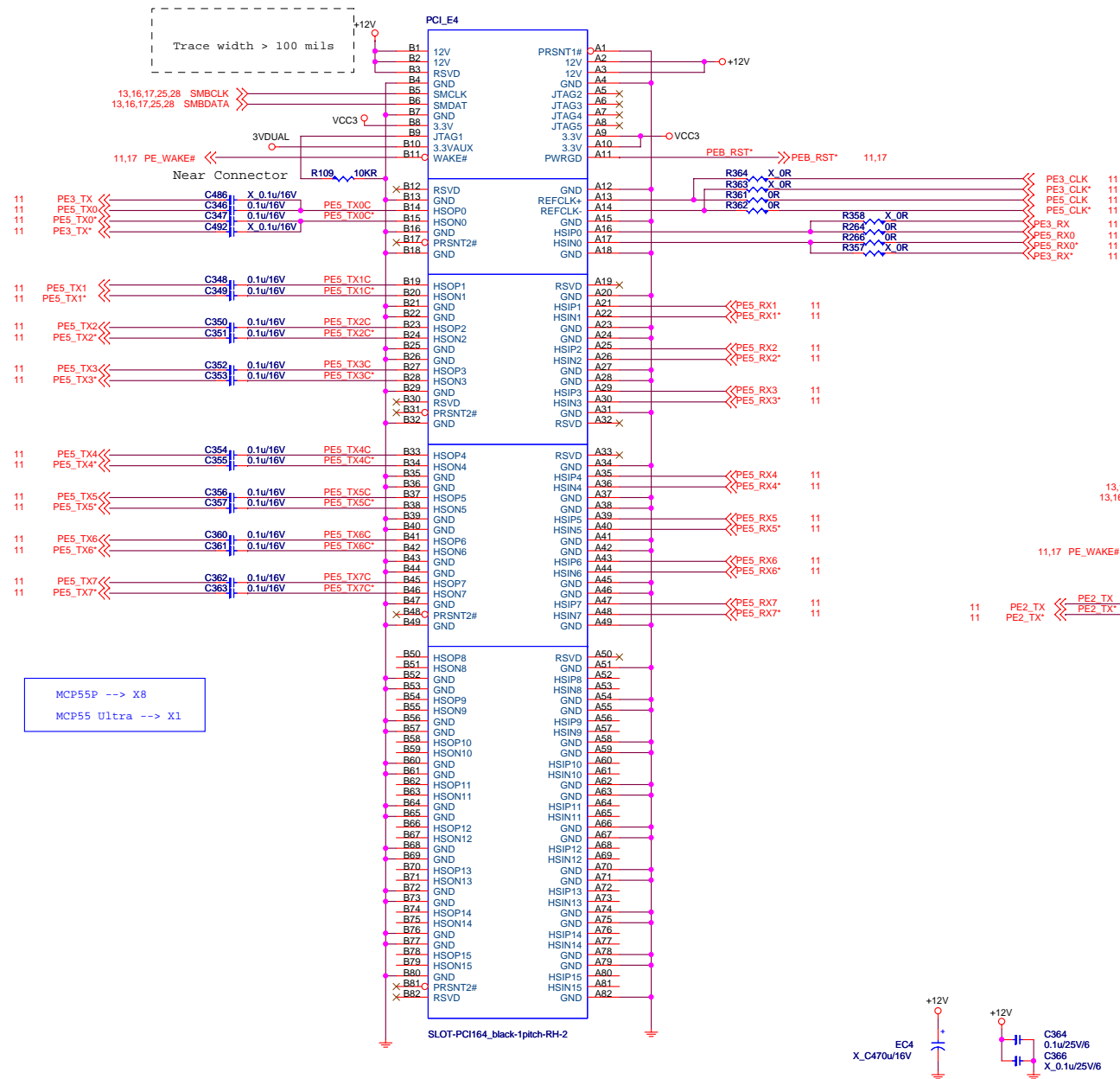


## PCI EXPRESS\_16

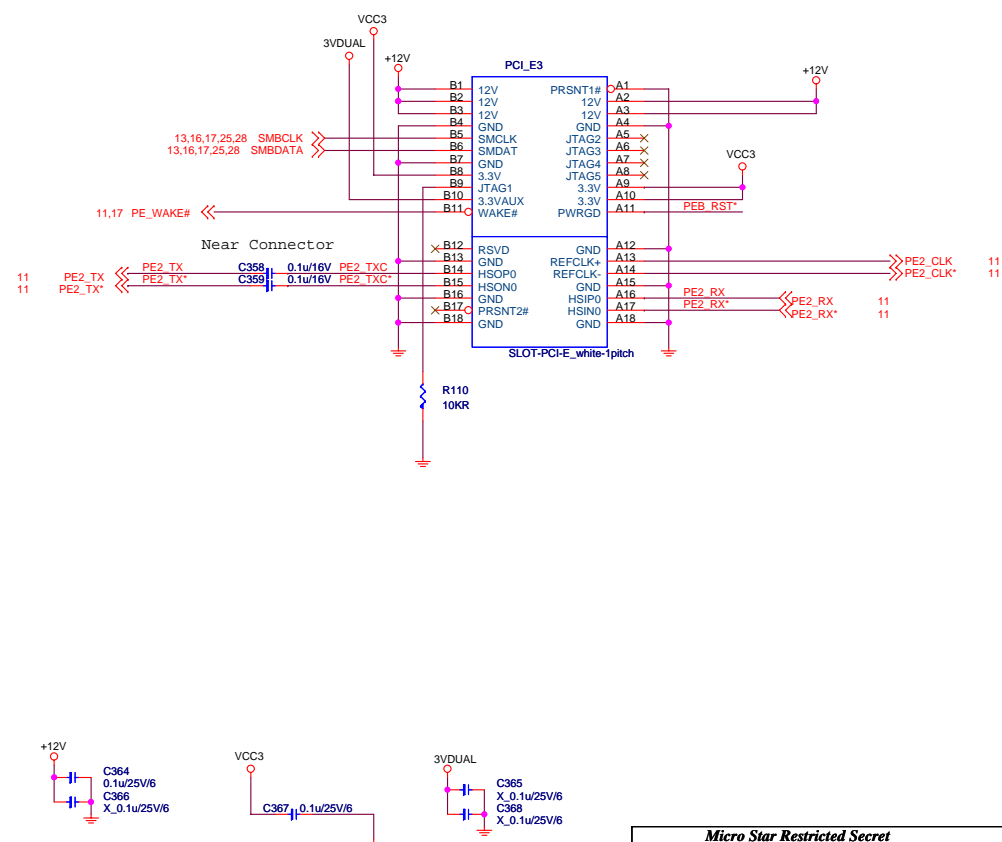


**PCI-Express x1 SLOT 1**



**PCI EXPRESS\_16**

PCI-Express x1 SLOTT 3



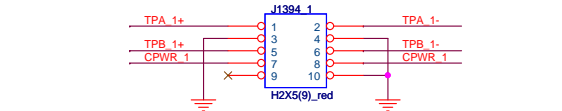
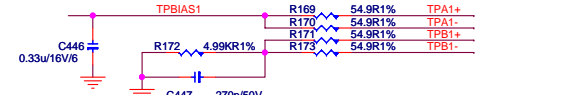
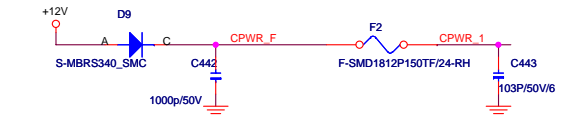
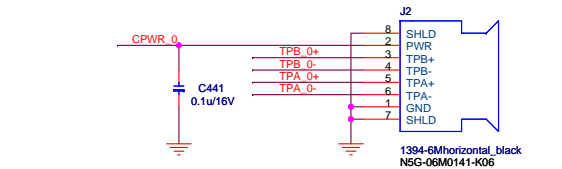
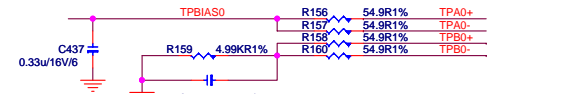
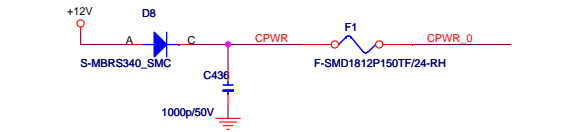
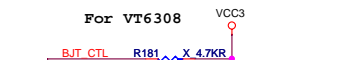
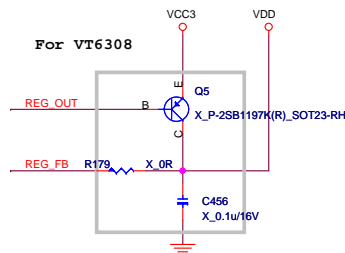
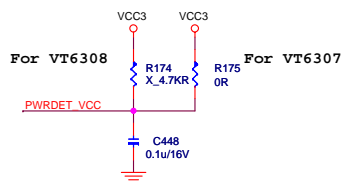
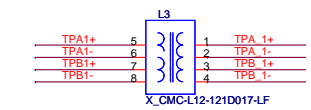
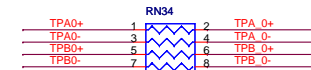
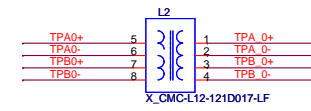
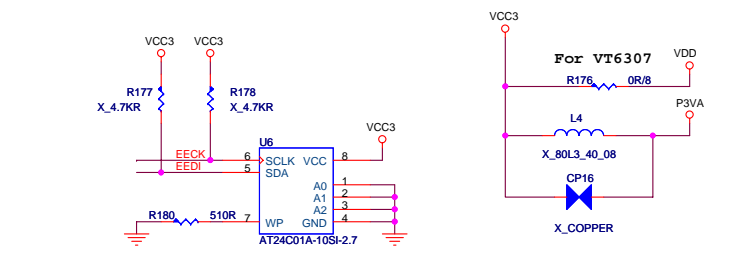
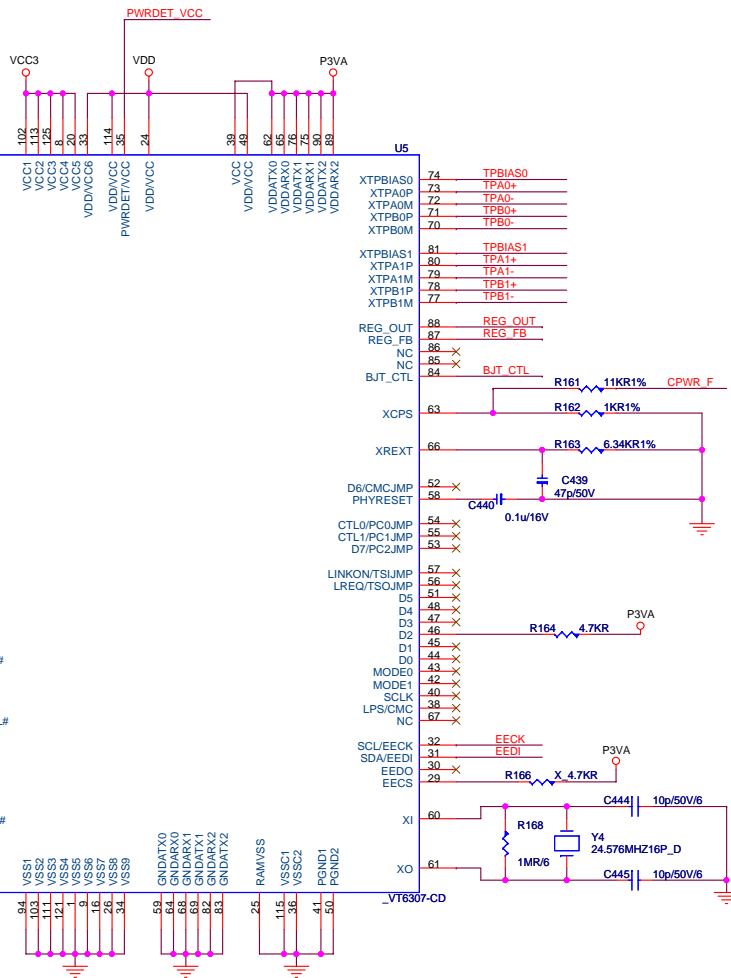
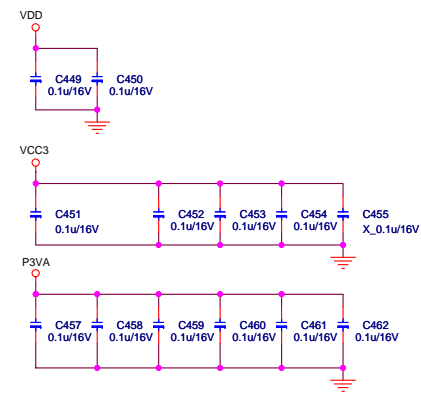
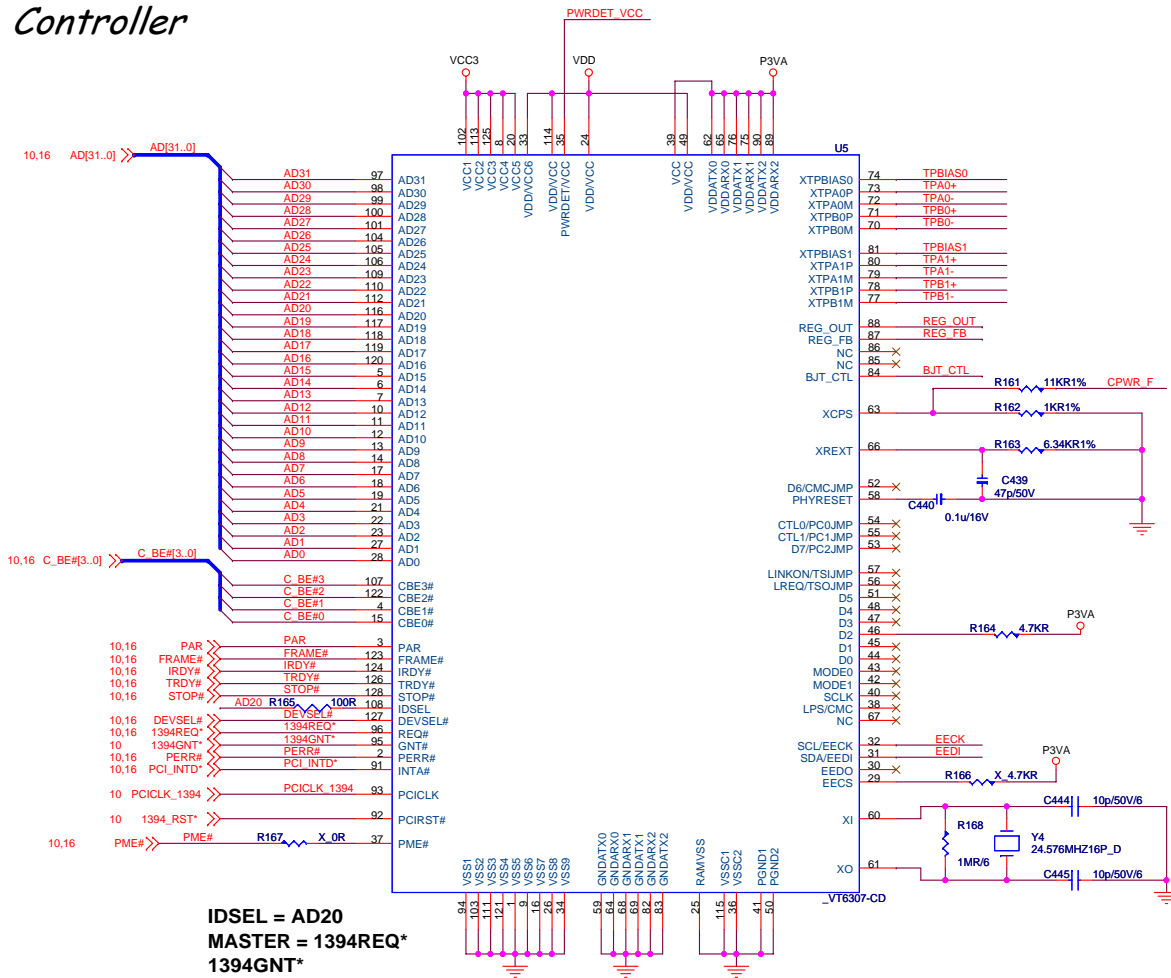
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| <b>Document Number</b>  | <i>MS-7250</i>               |  | <i>22</i>  |
| MICRO-STAR INT'L CO. LTD.<br>No. 89, Li-De St, Jung-He City,<br>Taipei Hsien, Taiwan<br><a href="http://www.msi.com.tw">http://www.msi.com.tw</a> |                              | <b>Last Revision Date:</b><br><i>Thursday, October 12, 2006</i><br><b>Sheet</b><br><div style="display: flex; justify-content: space-between;"> <span>18</span> <span>of</span> <span>36</span> </div> |            |







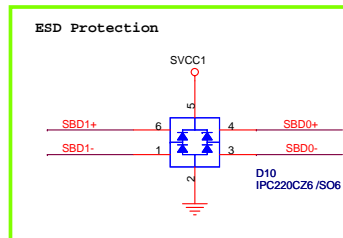
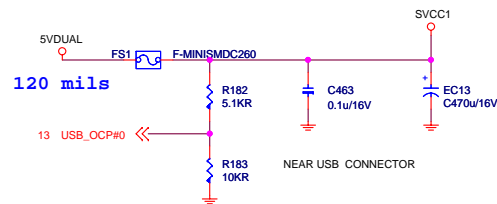
## 1394a OHCI Link Layer Controller



For Intel 1394 pinheader

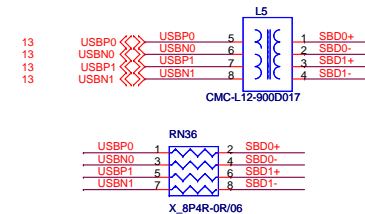
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| <b>Title</b>   | <b>1394a Link Layer Controller</b> | <b>Rev</b>  |
| <b>Document Number</b>   | <b>MS-7250</b>                     | <b>22</b>   |
| <b>MICRO-STAR INT'L CO., LTD.</b><br>No. 69, Li-Dde St, Jung-He City,<br>Taipei Hsien, Taiwan<br><a href="http://www.msi.com.tw">http://www.msi.com.tw</a> |                                    | <b>Last Revision Date:</b><br><b>Thursday, October 12, 2006</b><br><b>Sheet</b> 22 <b>of</b> 36 |

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



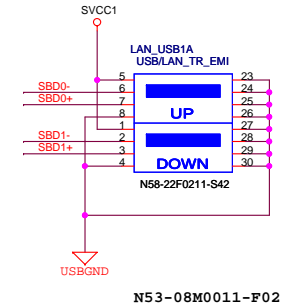
## REAR PANEL USB CONNECTOR FOR USB PORT 0,1

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

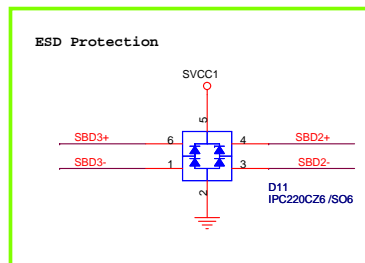


### NEAR USB CONNECTOR

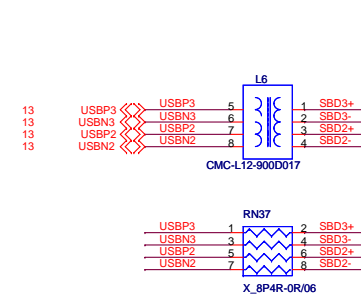
22 / 7.5 / 7.5 / 7.5 / 22 / 7.5 / 7.5 / 7.5 / 22



## EMI TEST

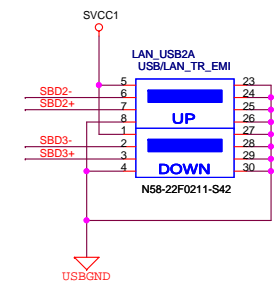


## REAR PANEL USB CONNECTOR FOR USB PORT 2,3



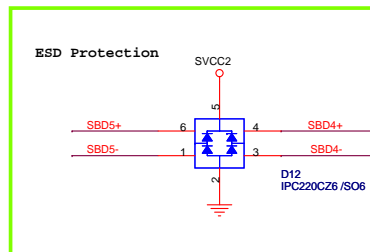
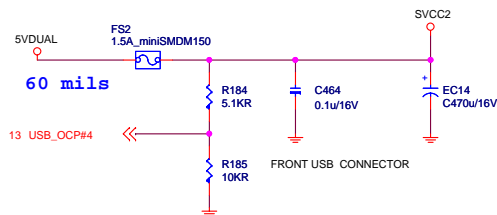
### NEAR USB CONNECTOR

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

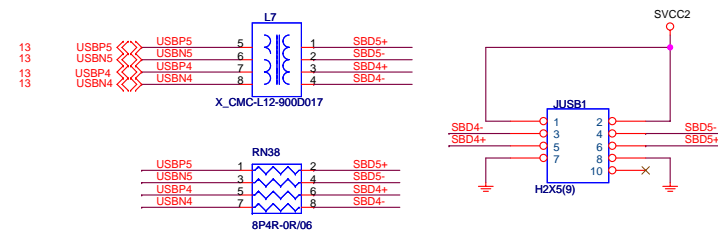


| Micro Star Restricted Secret   |                |   |
|--|----------------|---|
| Title  | REAR USB PORTS | Rev   |
| Document Number  | MS-7250        | 22  |
| MICRO-STAR INT'L CO., LTD.<br>No. 69, Li-De St, Jung-He City,<br>Taipei Hsien, Taiwan<br><a href="http://www.msi.com.tw">http://www.msi.com.tw</a> |                | Last Revision Date:<br>Thursday, October 12, 2006 |
|  |                | Sheet 23 of 36                                    |

### POWER CIRCUIT FOR USB PORT 4,5



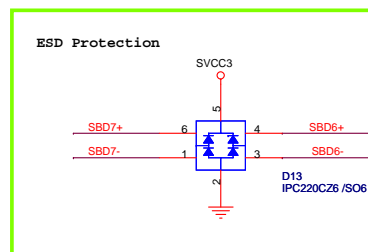
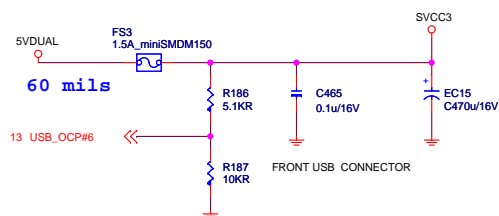
### FRONT PANEL USB CONNECTOR FOR USB PORT 4,5



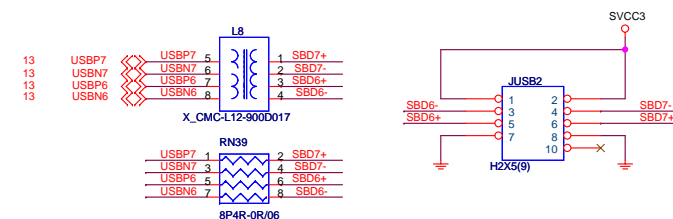
### NEAR USB CONNECTOR

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

### POWER CIRCUIT FOR USB PORT 6,7



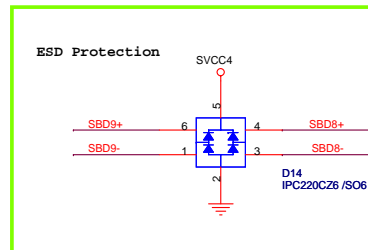
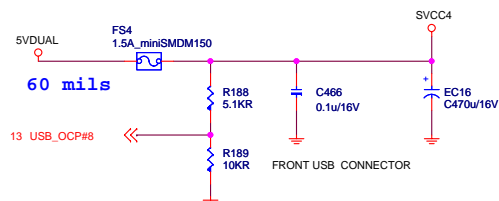
### FRONT PANEL USB CONNECTOR FOR USB PORT 6,7



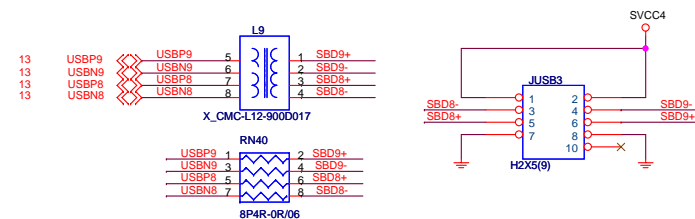
### NEAR USB CONNECTOR

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



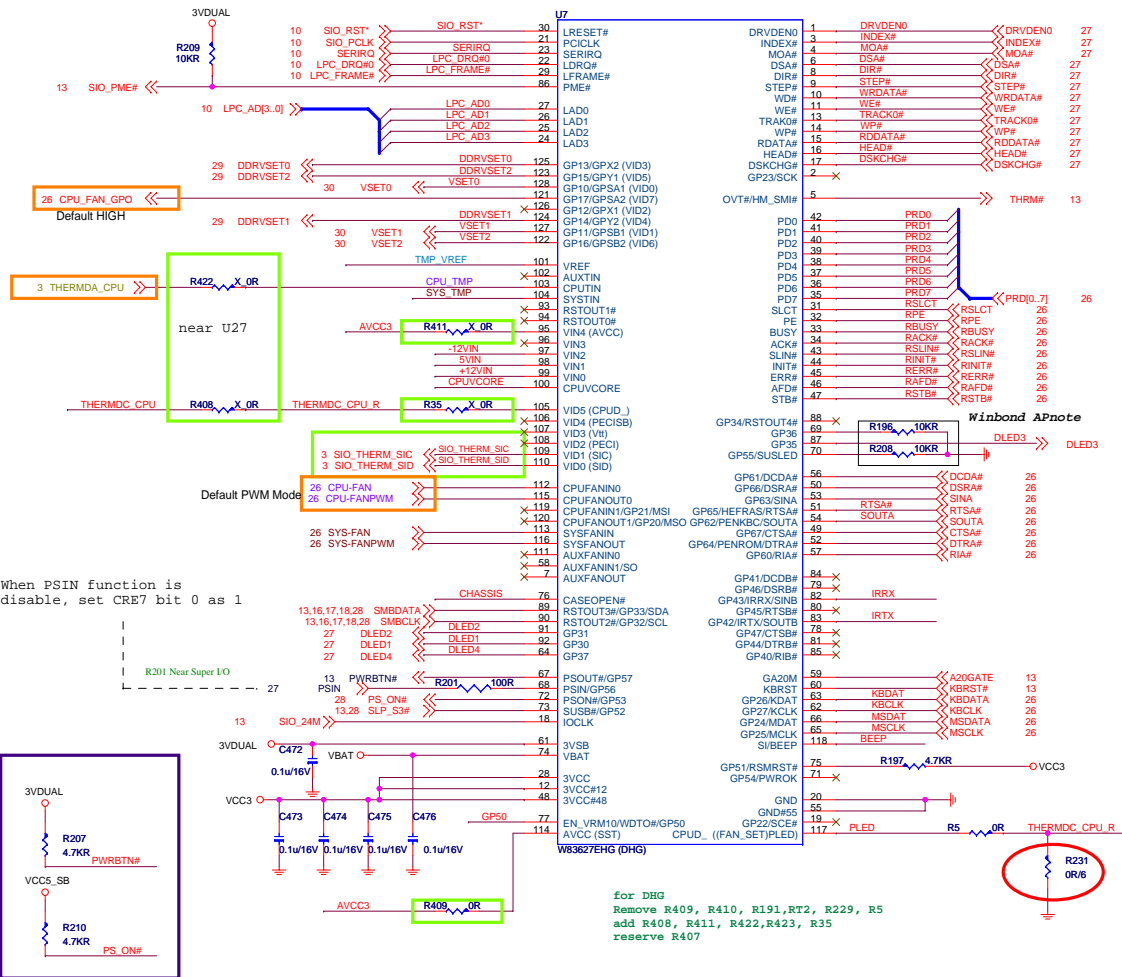
### NEAR USB CONNECTOR

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        | 22                         |
| 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:  |                | Thursday, October 12, 2006 |
| Sheet  |                | 24 of 36                   |



## Super I/O



VBAT

C468

X\_100p/50V

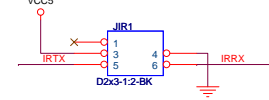
C467

2200p/16V

CPU\_TMP

THERMDC\_CPU\_R

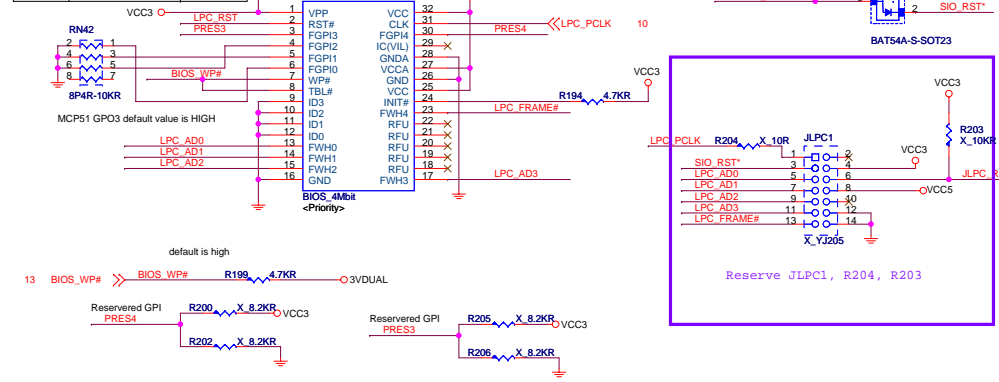
## Intel Front IR Header



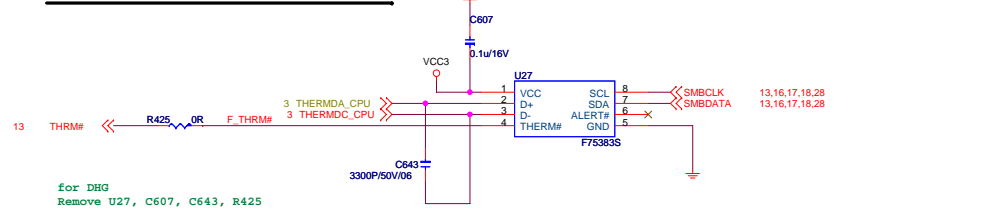
## BIOS PROTECT BLOCK

### BIOS Update Config.

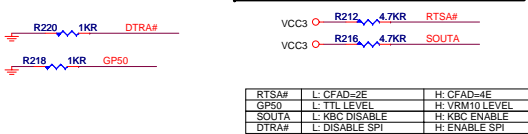
|      | Un_protected | Default |
|------|--------------|---------|
| HIGH |              |         |
| LOW  | Protected    |         |



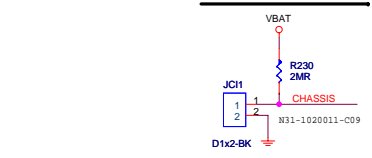
## CPU TEMPERATURE SENSOR



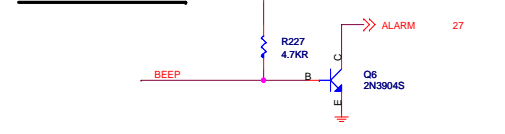
## LPC I/O STRAPPING RESISTOR



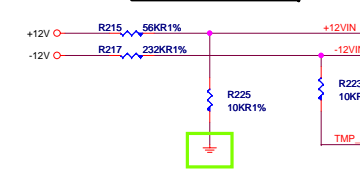
## Chassis Intrusion



## SPEAKER BLOCK

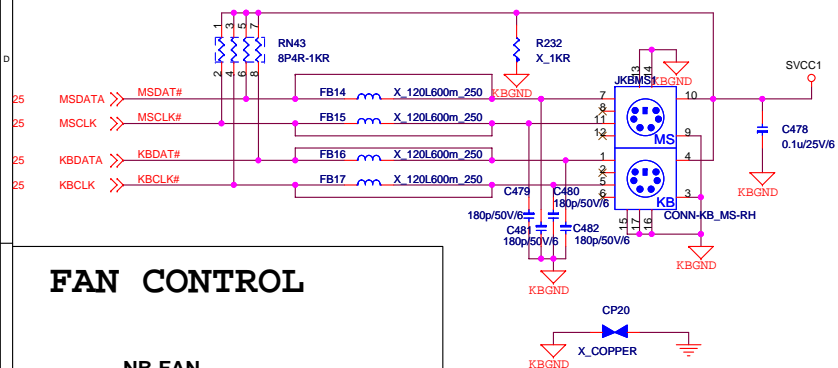


## Thermal Resistor

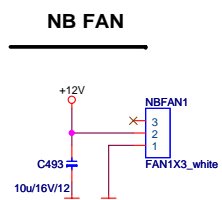


|   |                             |
|---|-----------------------------|
| <b>Micro Star Restricted Secret</b>   |                             |
| <b>Title</b>  | <b>SIO-W83627EHG,IR,LPC</b> |
| <b>Document Number</b>  | <b>MS-7250</b>              |
| MICRO-STAR INT'L CO.,LTD.<br>No. 69, Li-De St, Jung-Ho City,<br>Taipei Hsien, Taiwan<br><a href="http://www.msi.com.tw">http://www.msi.com.tw</a> |                             |
| Last Revision Date:<br>Thursday, October 12, 2006   |                             |
| Sheet   | 25 of 36                    |

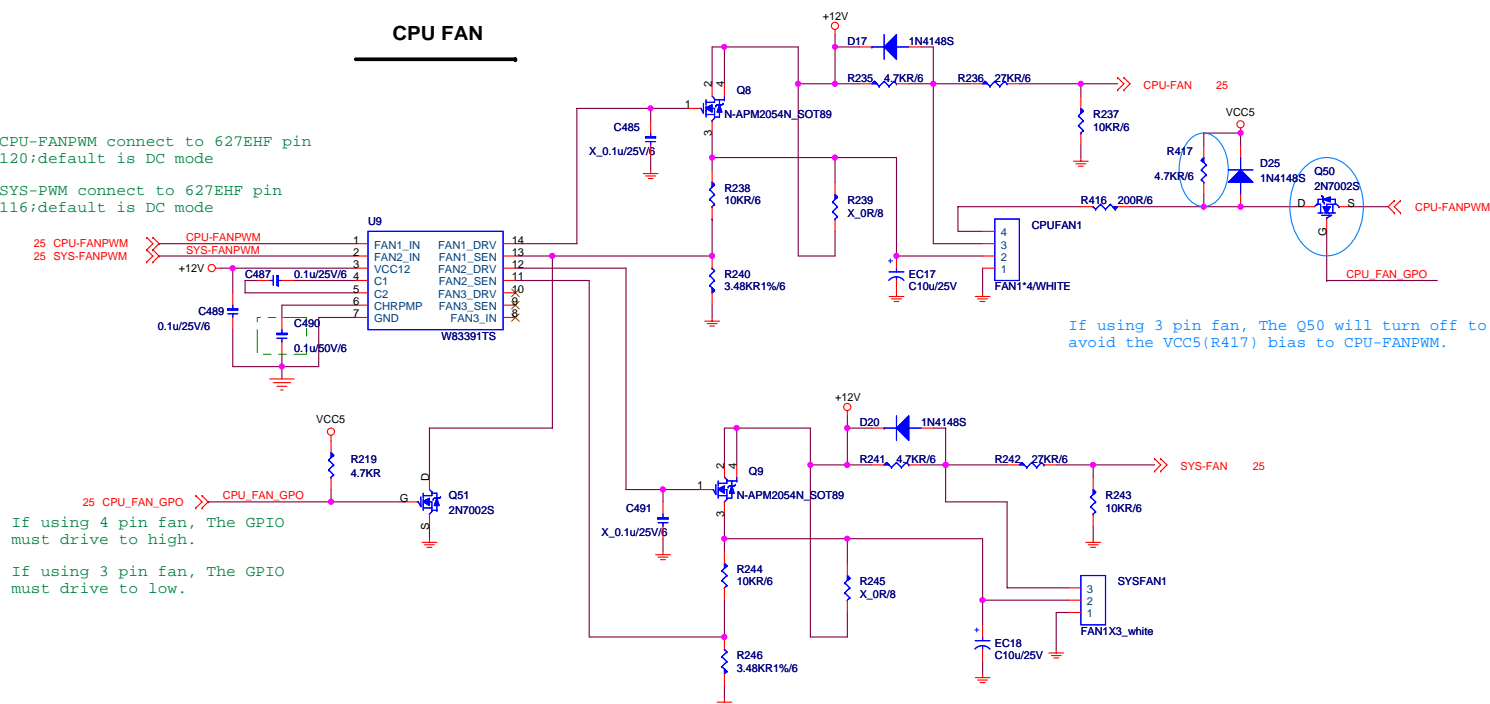
## PS2 KEYBOARD & MOUSE CONNECTOR



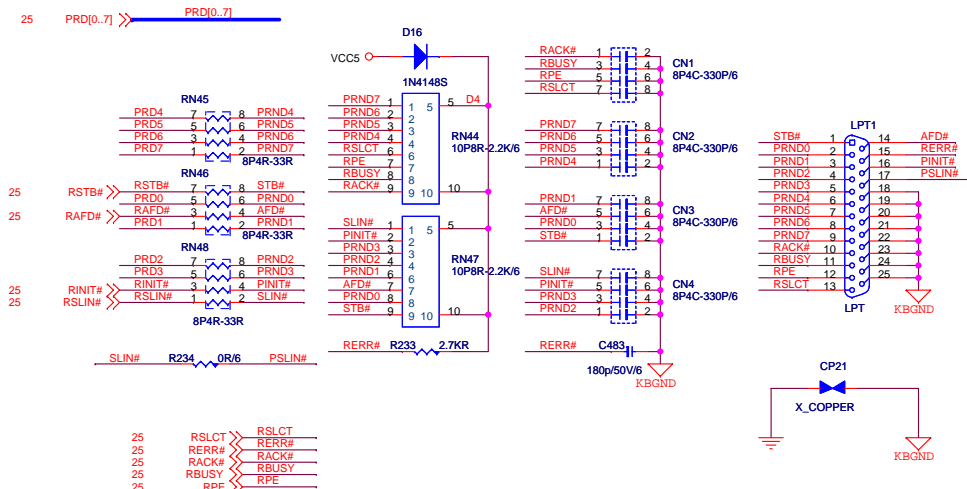
## FAN CONTROL



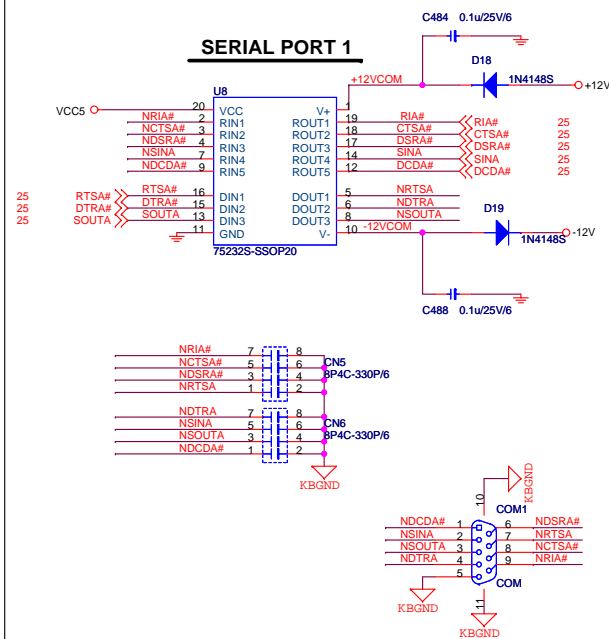
**CPU FAN**



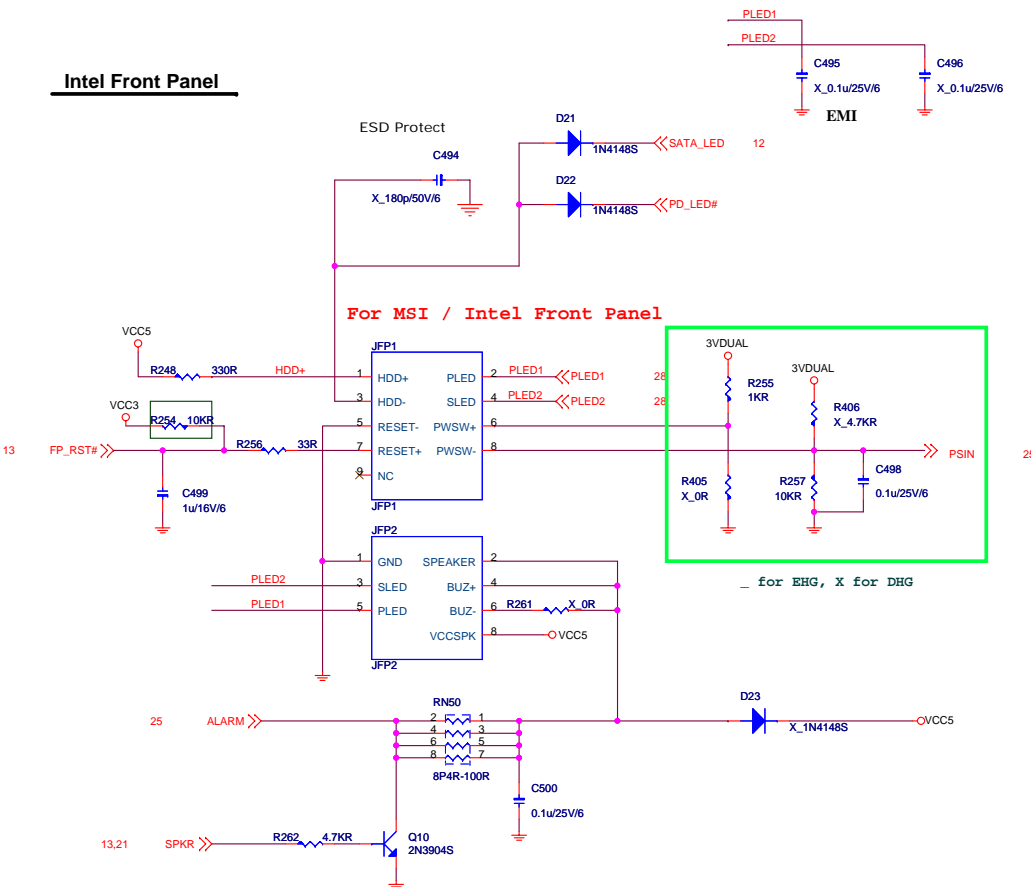
## PARALLAL PORT



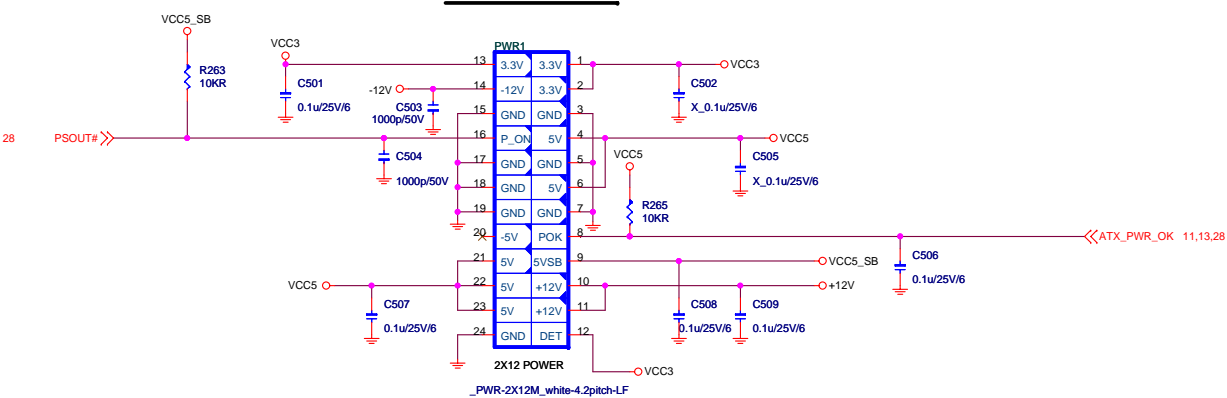
## SERIAL PORT 1



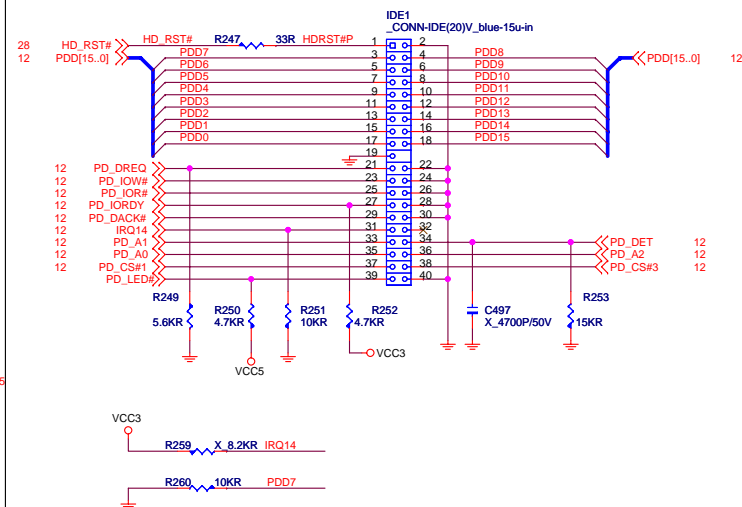
## Intel Front Panel



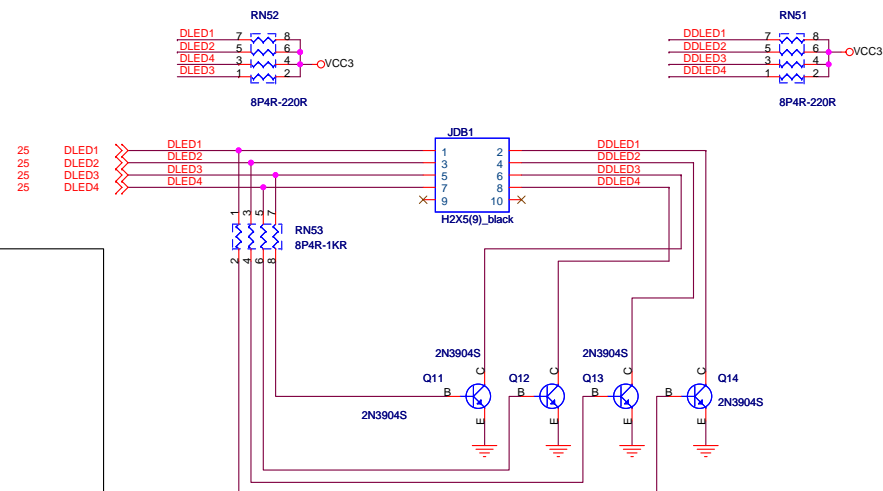
## ATX Connector



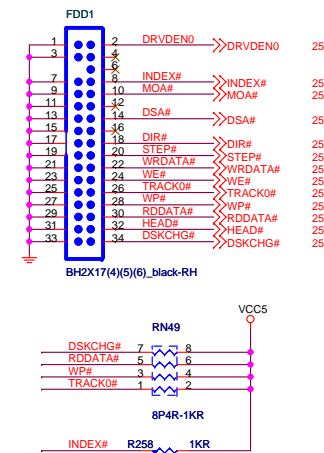
IDE 1



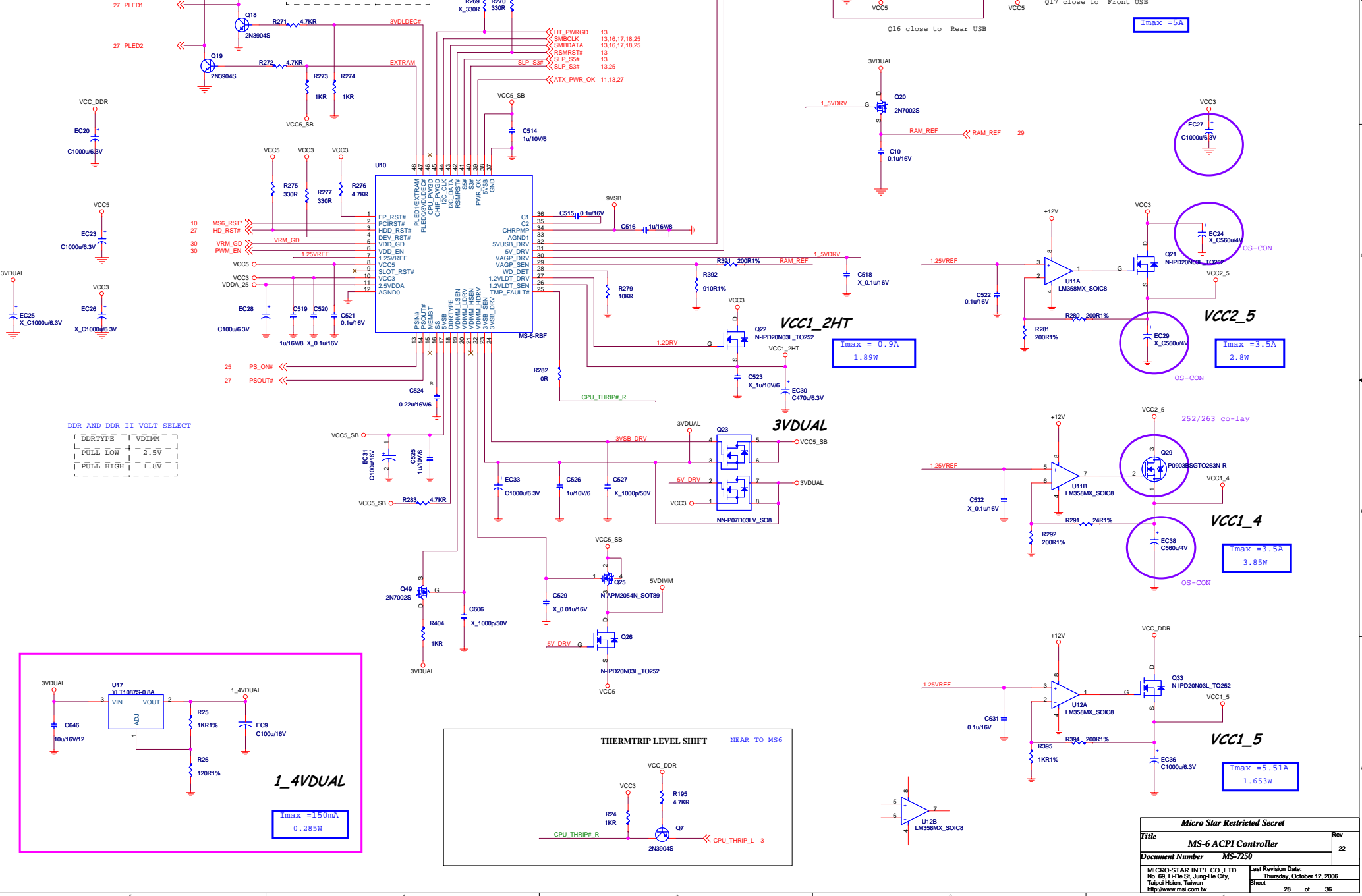
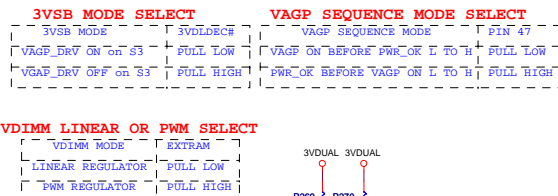
### D-Bracket



Floppy

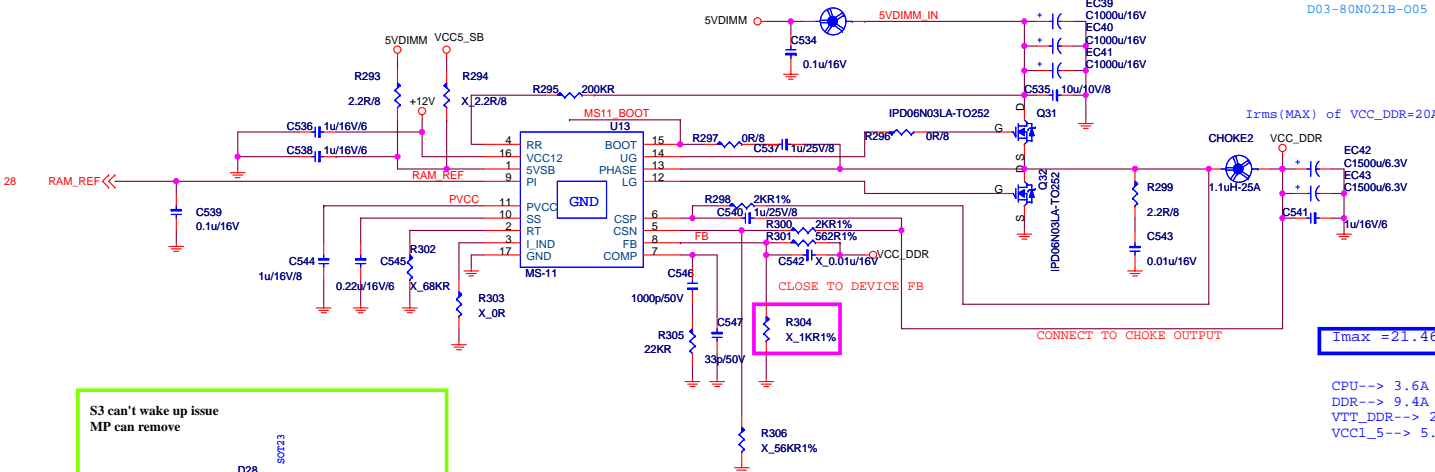


# ACPI Controller

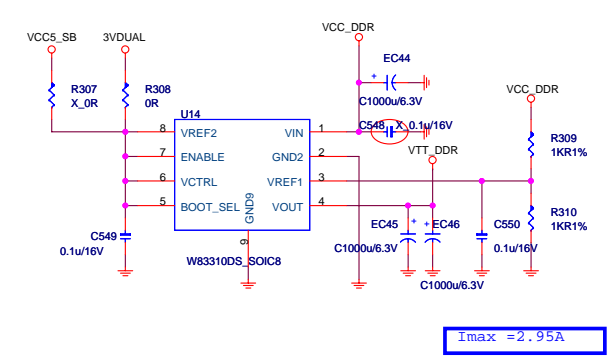


|  |                      |       |
|--|----------------------|-------|
| Micro Star Restricted Secret   |                      |       |
| Title  | MS-6 ACPI Controller | Rev   |
| Document Number  | MS-7250              | 22    |
| MICRO-STAR INT'L CO. LTD.<br>No. 88, Li-Der St, Jung-Ho City,<br>Taipai Hsien, Taiwan<br>http://www.msi.com.tw |                      |       |
| Last Revision Date:<br>Thursday, October 12, 2006  |                      |       |
| Sheet  | 28                   | of 36 |

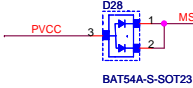
## DDR II 1.8V POWER



## DDR II VTT POWER

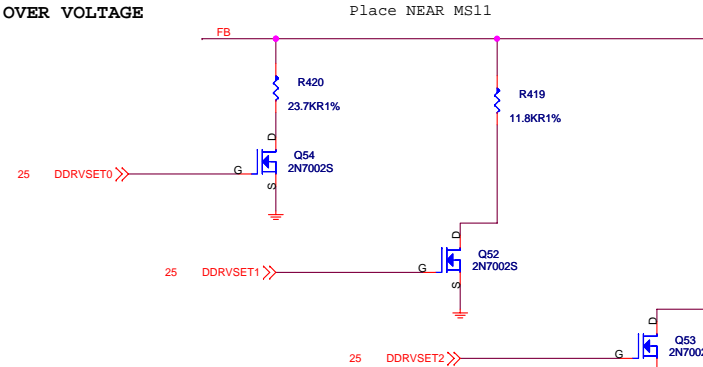


S3 can't wake up issue  
MP can remove



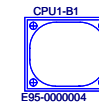
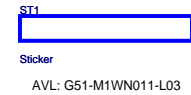
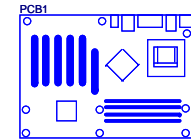
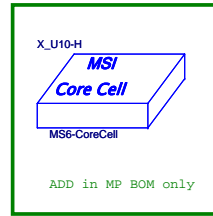
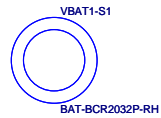
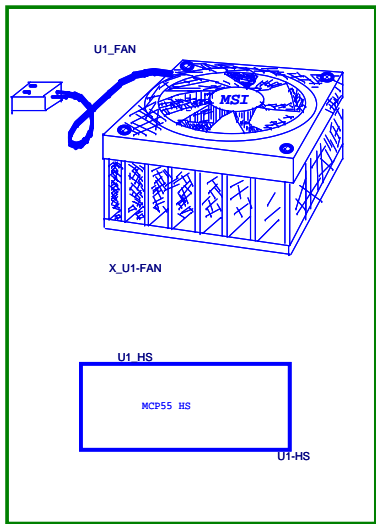
For EMI

## DDR OVER VOLTAGE

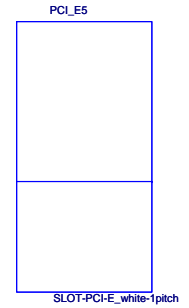


| Micro Star Restricted Secret   |                  |   |
|--|------------------|---|
| Title  | MS-11 DDR2 Power | Rev   |
| Document Number  | MS-7250          | 22  |
| MICRO-STAR INT'L CO., LTD.<br>No. 69, Li-De St, Jung-He City,<br>Taipei Hsien, Taiwan<br><a href="http://www.msi.com.tw">http://www.msi.com.tw</a> |                  | Last Revision Date:<br>Thursday, October 12, 2006<br>Sheet 29 of 36 |

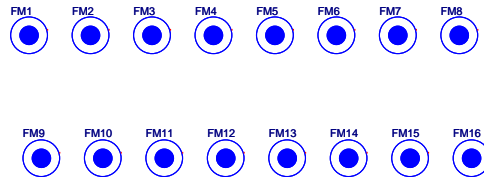




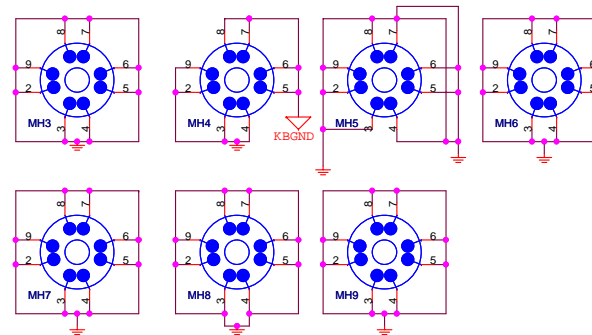
20: E95-0000003-H06  
10: E95-0000004-A21



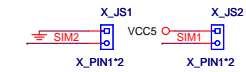
### Optics Orientation Holes



### Mounting 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 |