



# MS-7250 Ver: 10

## 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:

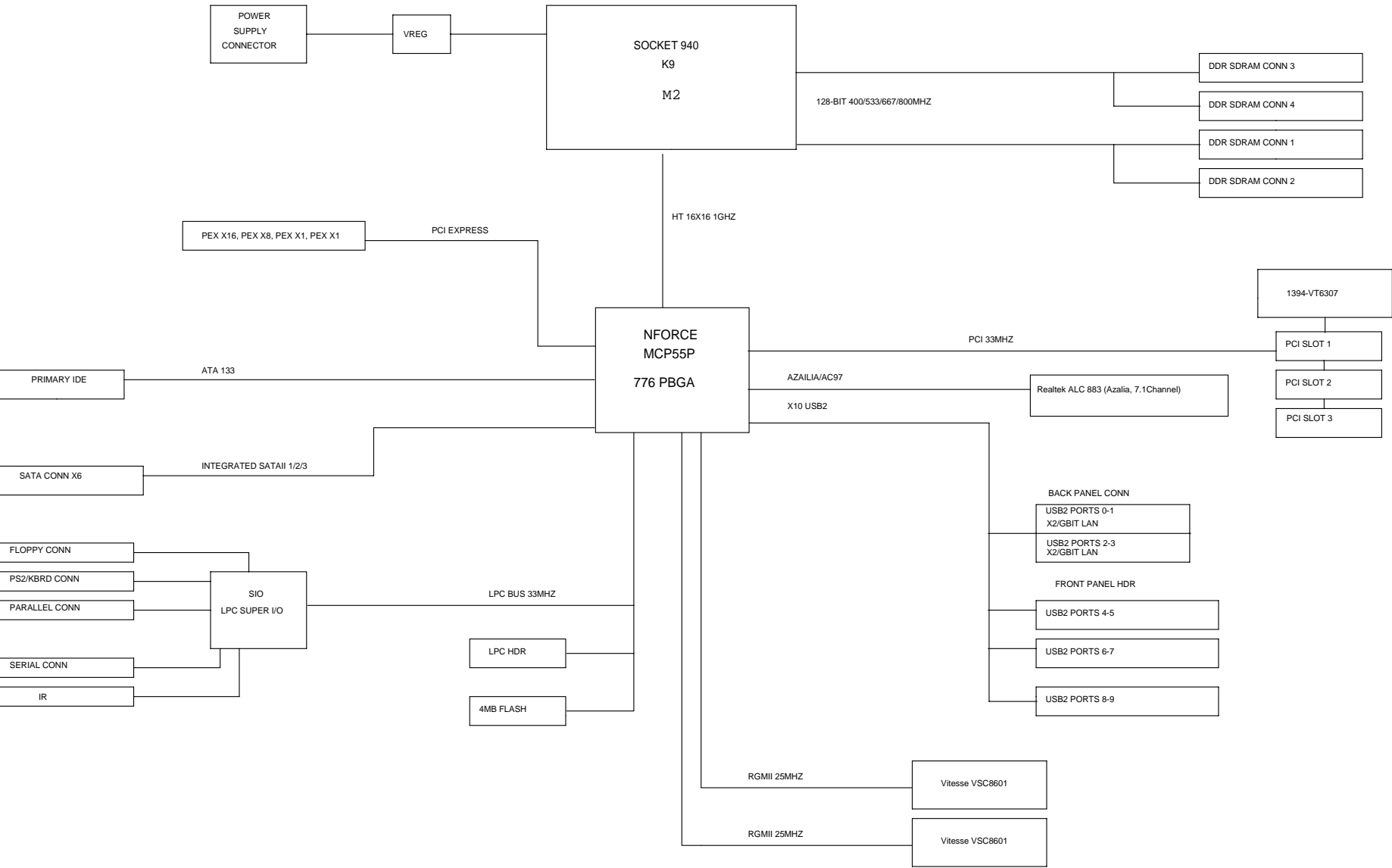
PCI-E X 16 \*2  
PCI-E X1 \*2  
PCI 2.2 Slot \* 3

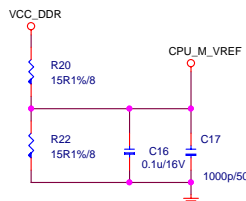
## PWM:

Controller--Intersil ISL6566CR 3 Phase

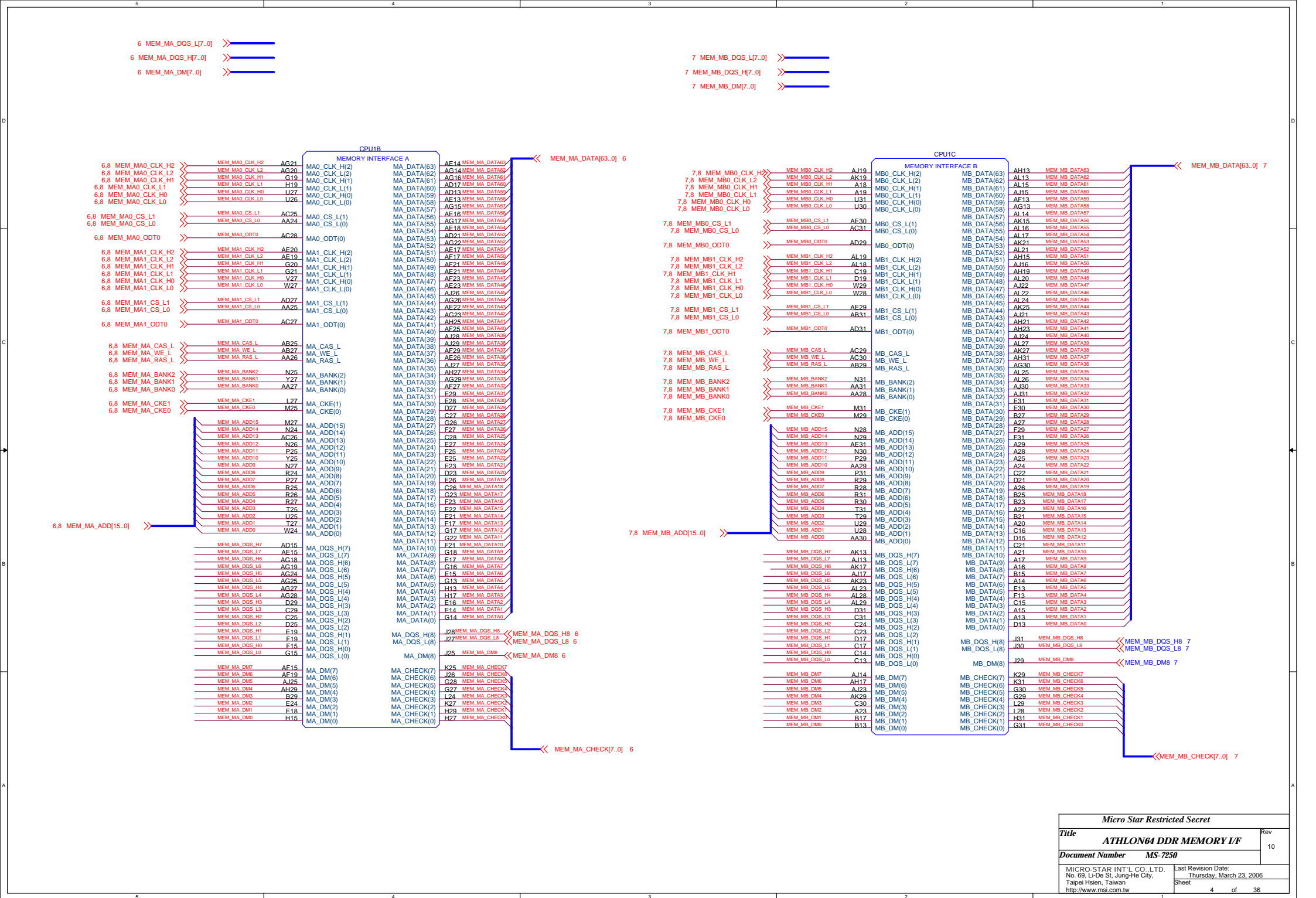
Title	Page
Cover Sheet	1
Block Diagram	2
AMD M2 940	3,4,5
System Memory	6,7
DDR Terminations	8
MCP55P	9-15
PCI Slot 1,2 &3	16
PCI-Express X 16 , X1 Slot	17-18
PCI-Express X 16 , X1 Slot & MDC	17
LAN - VSC8601	19-20
Azalia Codec ALC883/885/888	21
1394 Controller-VT6307	22
Rear / Front USB connectors	23-24
SIO-W83627EHG / LPC /IR	25
PS2 KB/MS, LPT. COM & FAN	26
ATX conn / FP /IDE/FDD/ D-LED	27
MS-6 ACPI Control	28
DDR2 Power- MS11	29
PWM - ISL6566CR	30
MANUAL PARTS	31
GPIO SPEC	32
POWER OK MAP	33
POWER MAP	34
RESET MAP	35
History	36

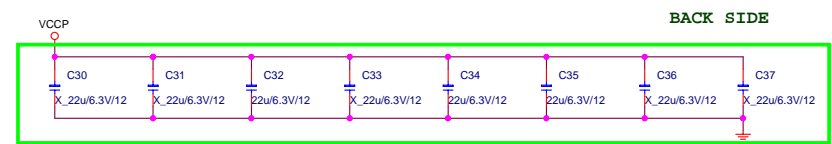
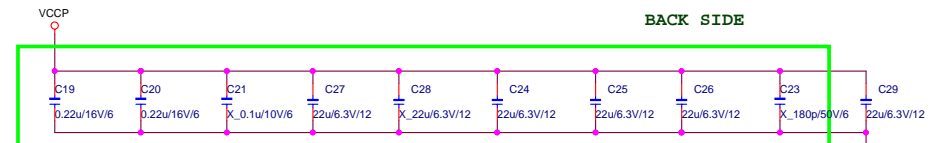
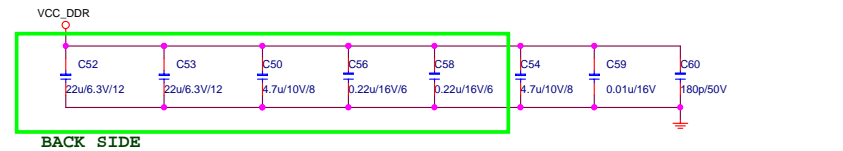
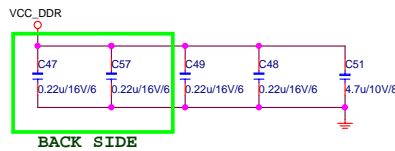
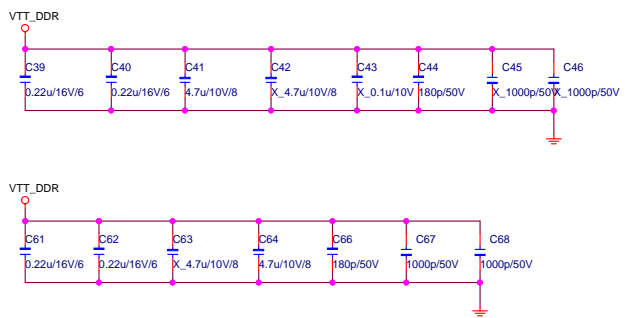
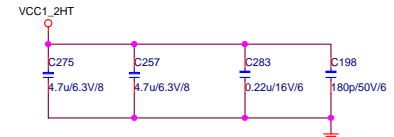
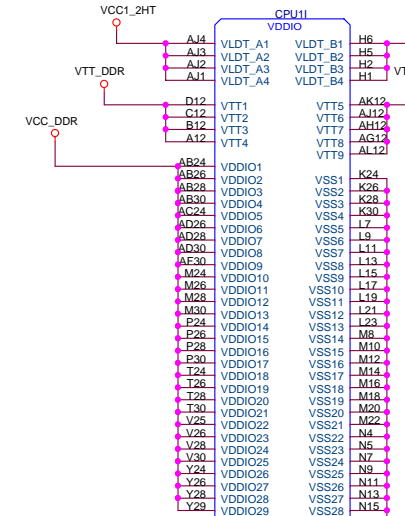
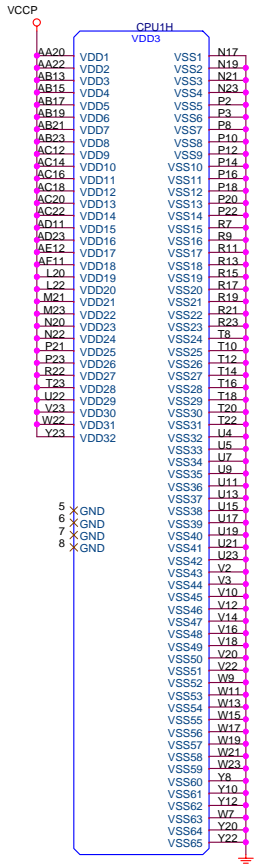
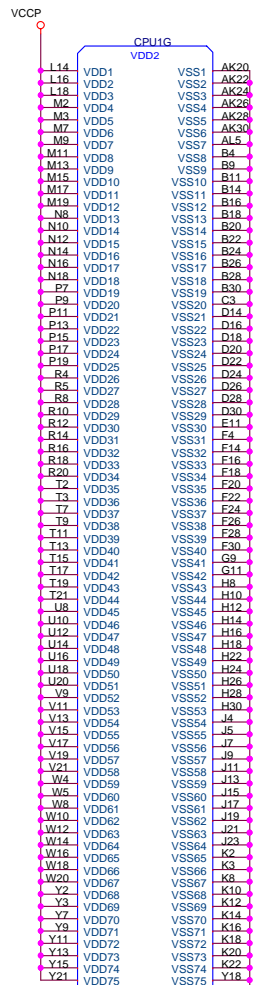
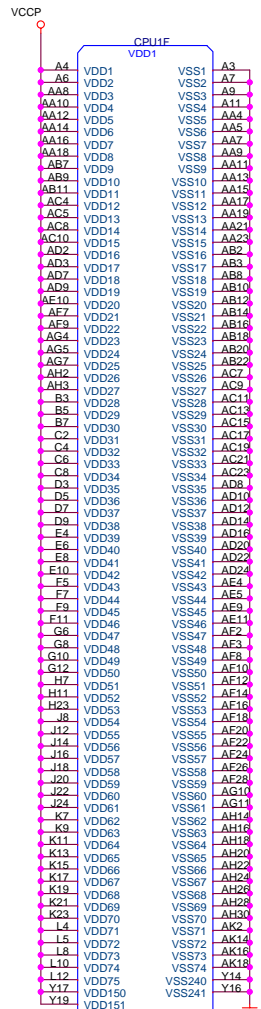
BLOCK DIAGRAM

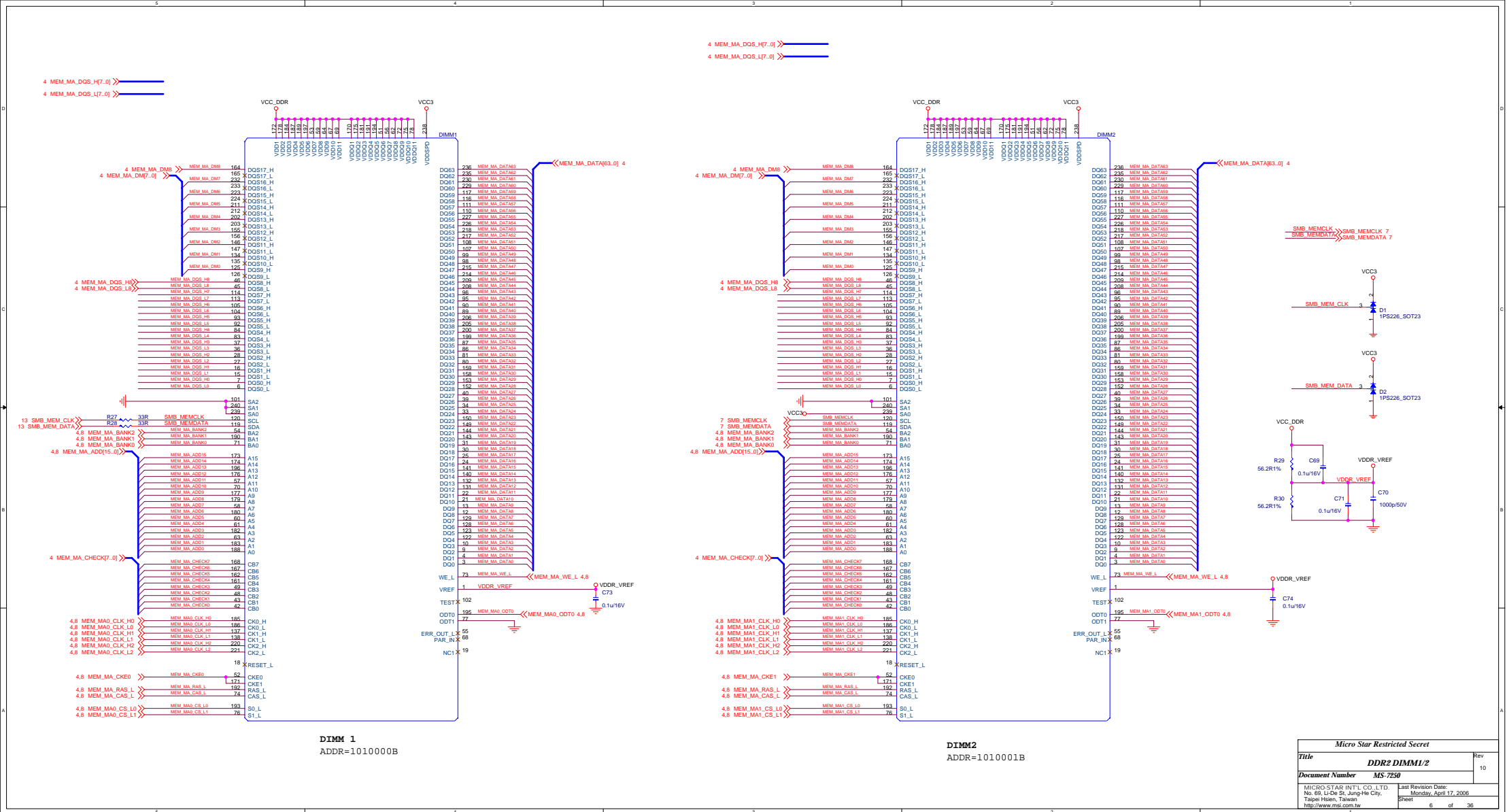




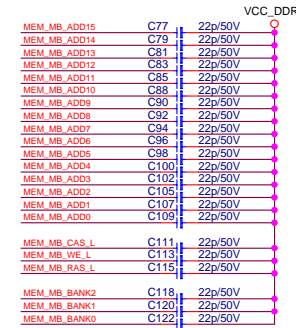
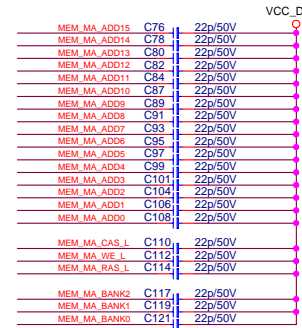
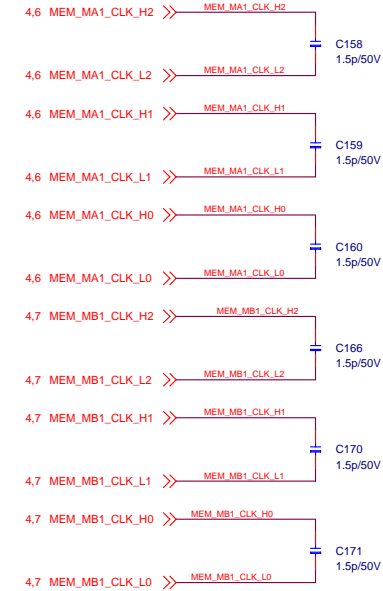
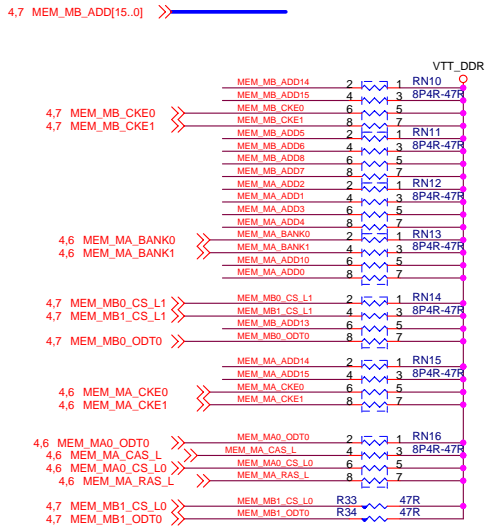
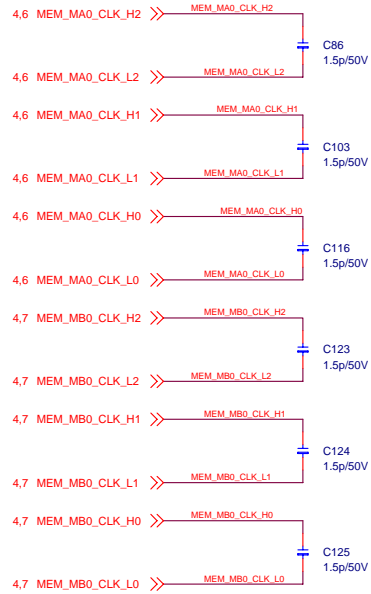
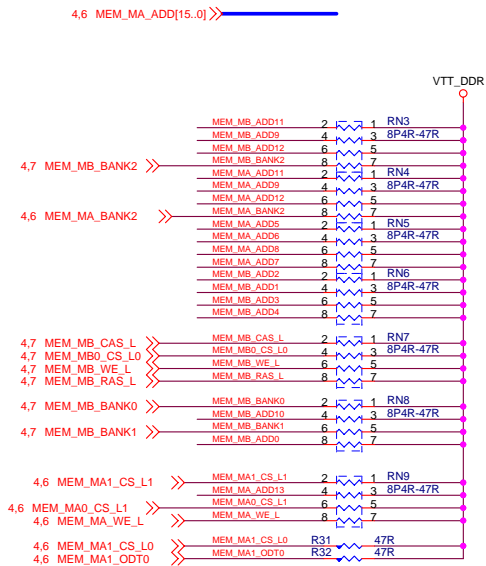
The diagram shows two signals: MCP\_THERM\_SIC (pin 13) and SIO\_THERM\_SIC (pin 25). MCP\_THERM\_SIC is a square wave with a period of 100ns and a pulse width of 50ns. SIO\_THERM\_SIC is a square wave with a period of 100ns and a pulse width of 50ns. The signals are connected to R412 (0R) and R414 (X 0R) respectively. The output is THERM\_SIC.





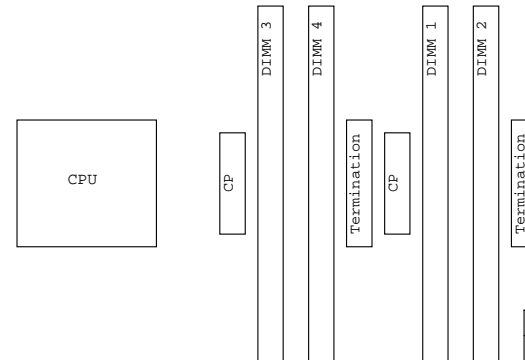
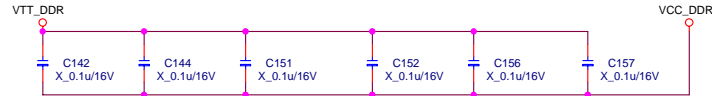
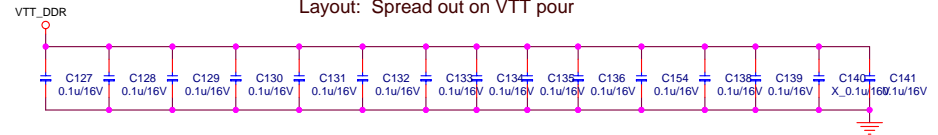






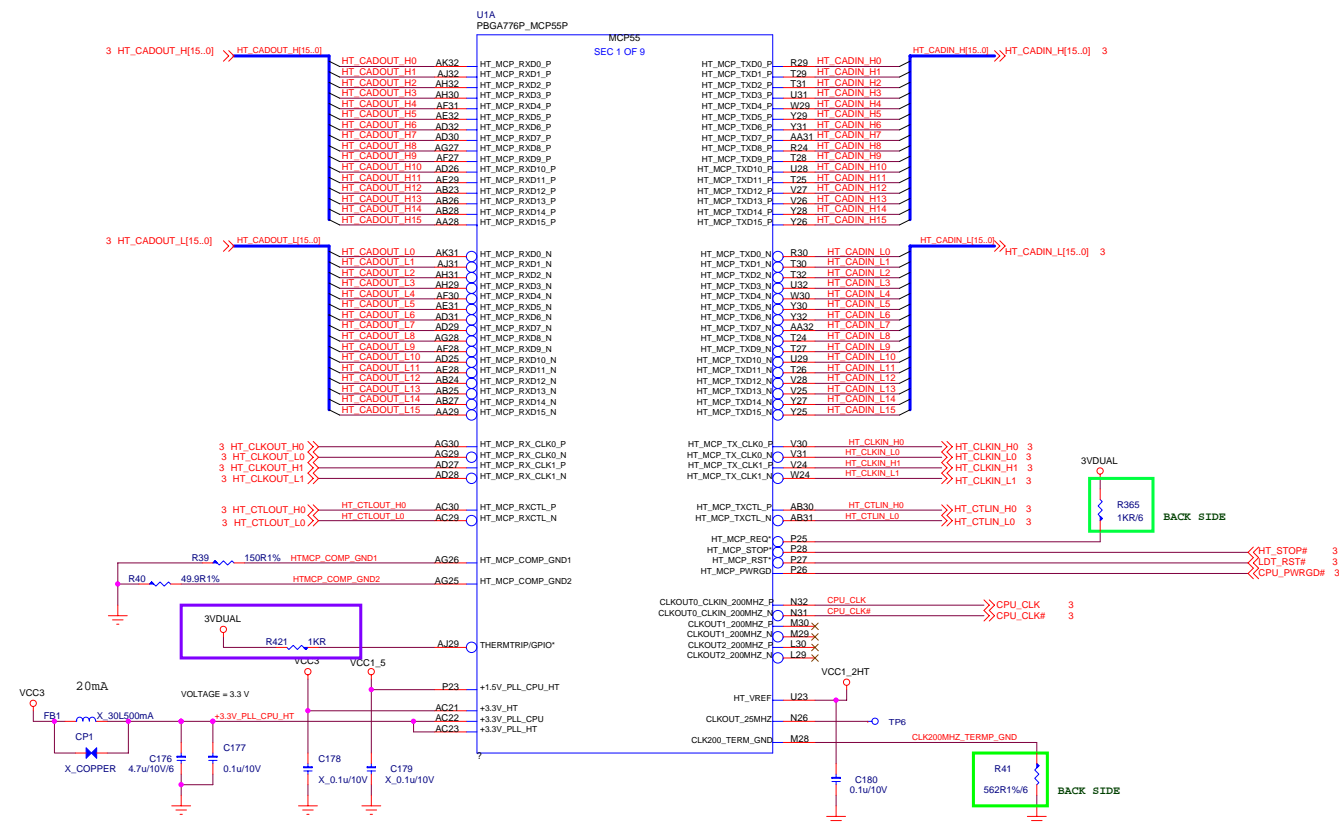
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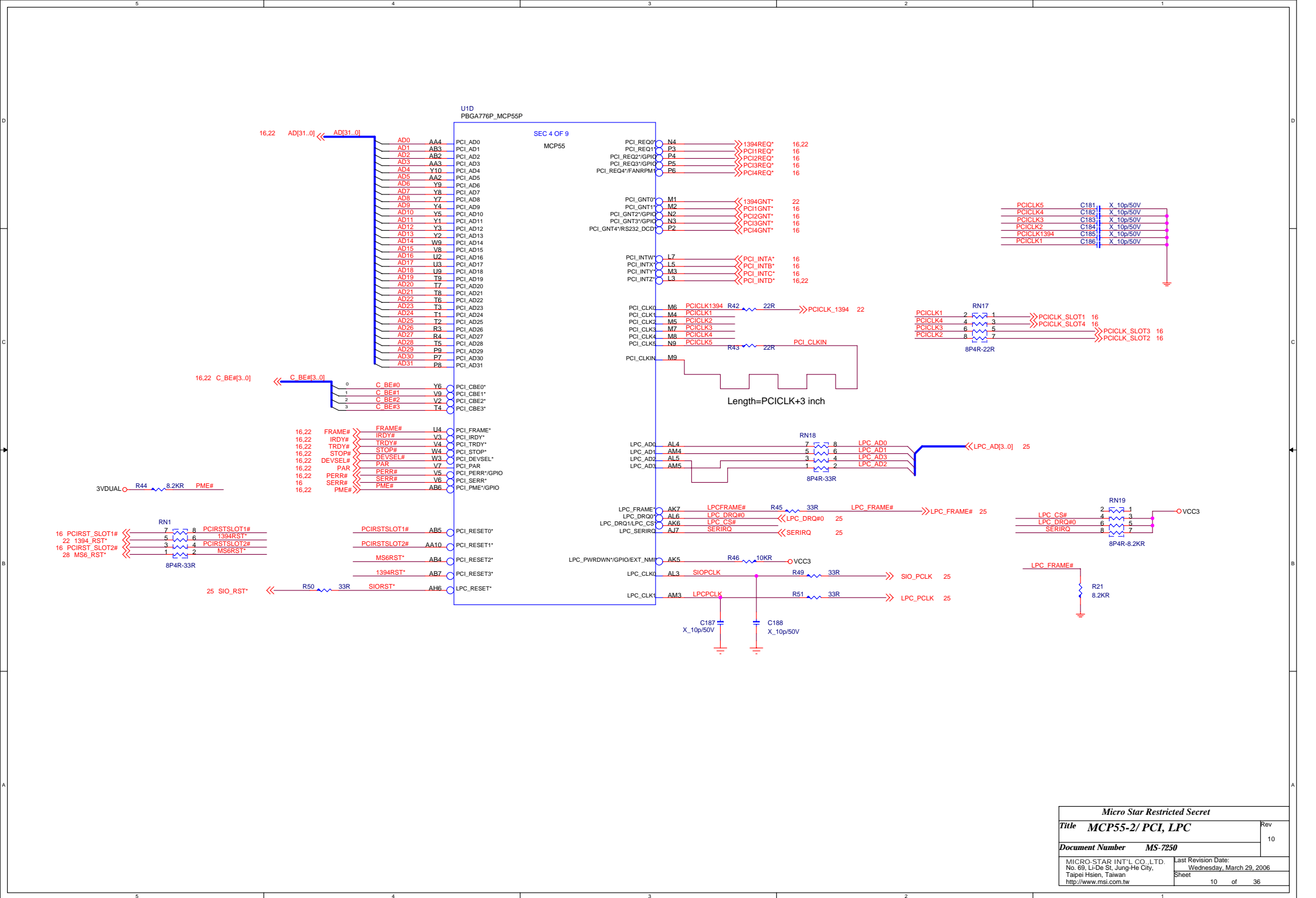
Layout: Spread out on VTT pour

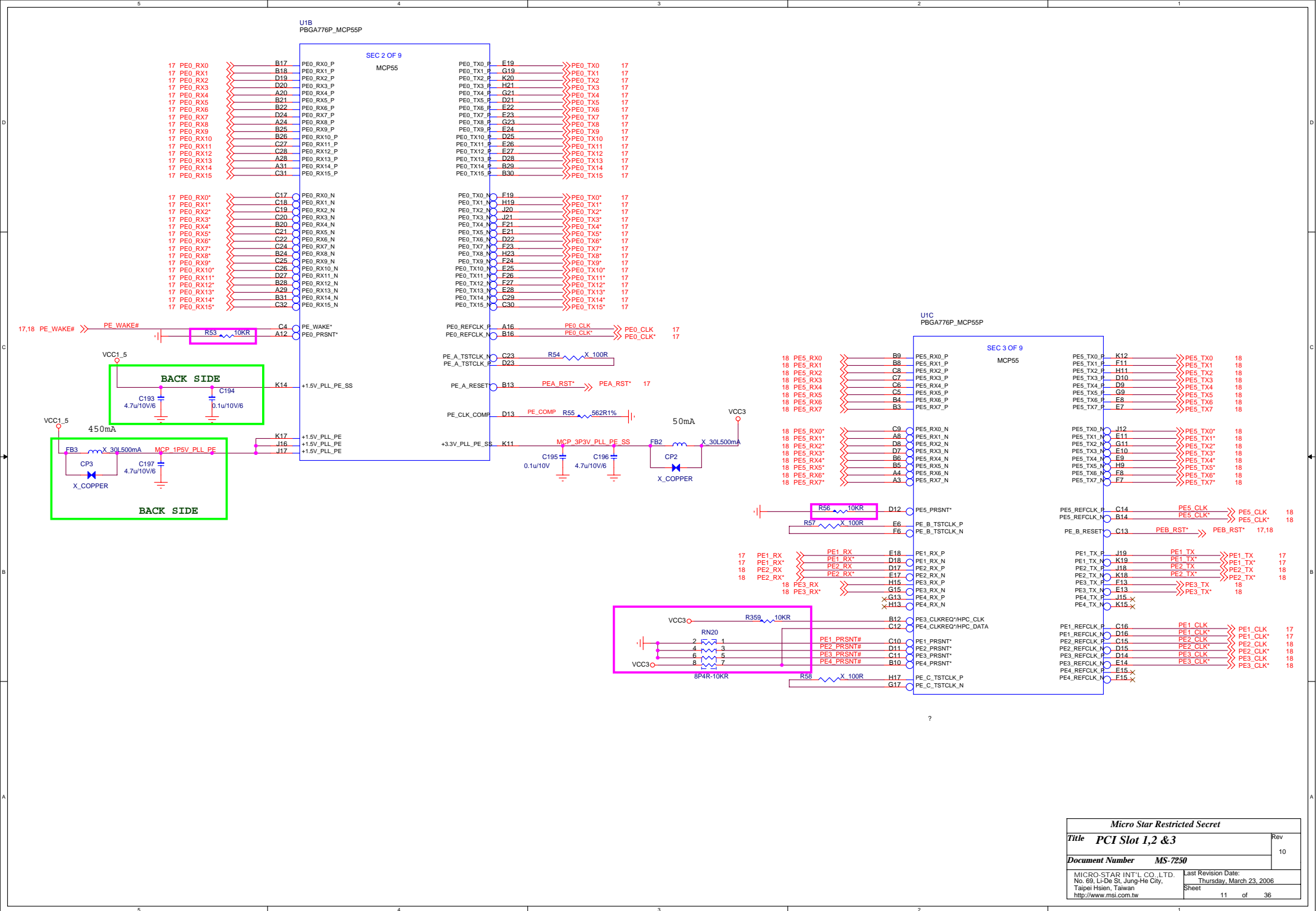


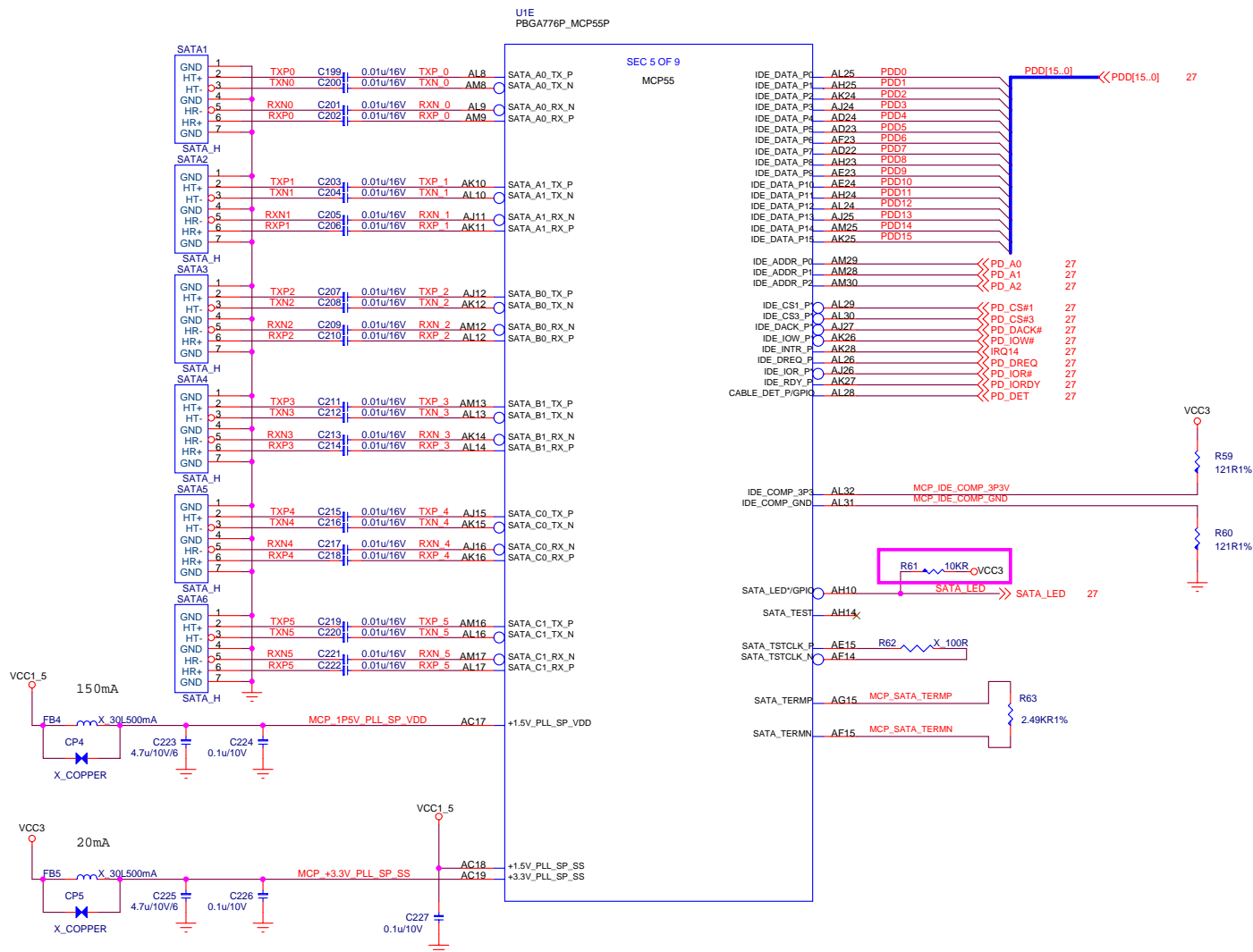
Micro Star Restricted Secret		
Title	DDR Termination	Rev
Document Number	MS-7250	10
MICRO-STAR INT'L CO., LTD. No. 69, Li-De St., Jung-He City, Taipei Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Wednesday, March 29, 2006 Sheet 8 of 36

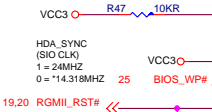
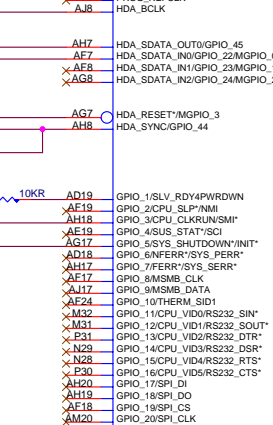
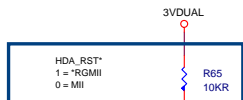




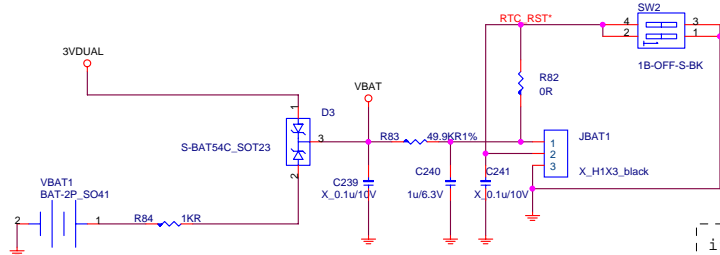
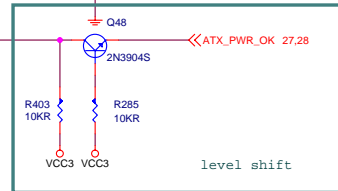
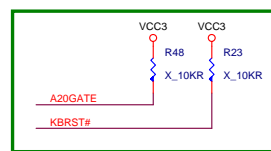
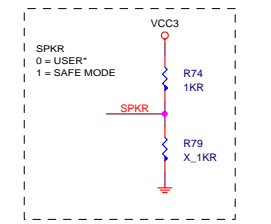
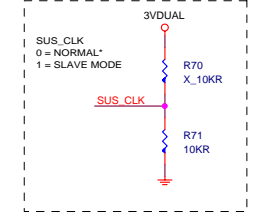
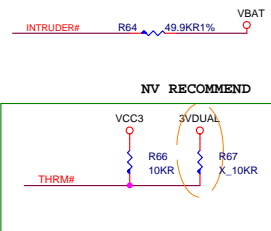
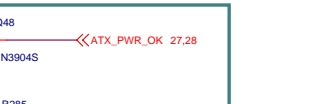
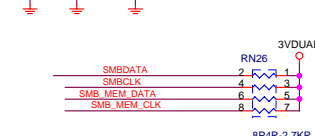
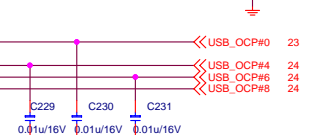
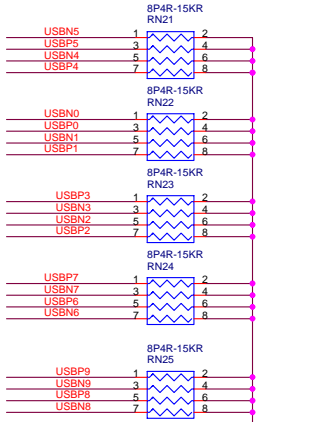
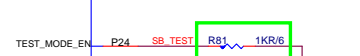
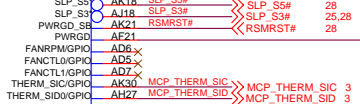
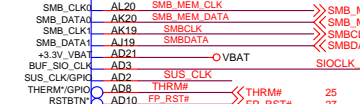
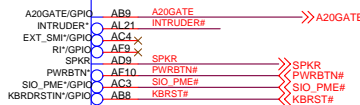
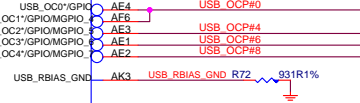
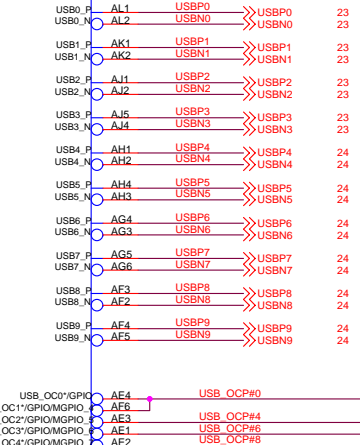
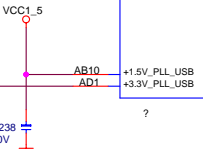
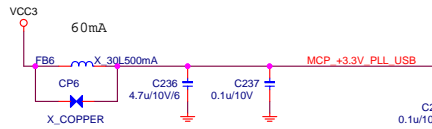
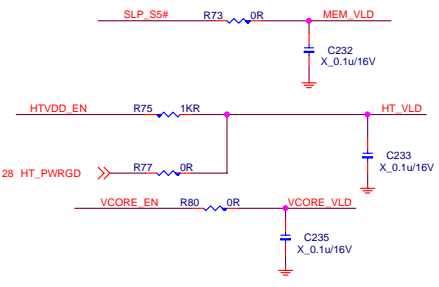








### POWER SEQUENCE



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

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

Micro Star Restricted Secret		
Title	MCP55-5/ Audio, USB, GPIO	Rev 10
Document Number	MS-7250	
MICRO-STAR INT'L CO., LTD. No. 69, Li-De St, Jung-He City, Taipei Hsien, Taiwan		Last Revision Date: Monday, April 17, 2006
http://www.msi.com.tw		Sheet 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"

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  
PBGAT76P\_MCP55P

SEC 7 OF 9

MCP55

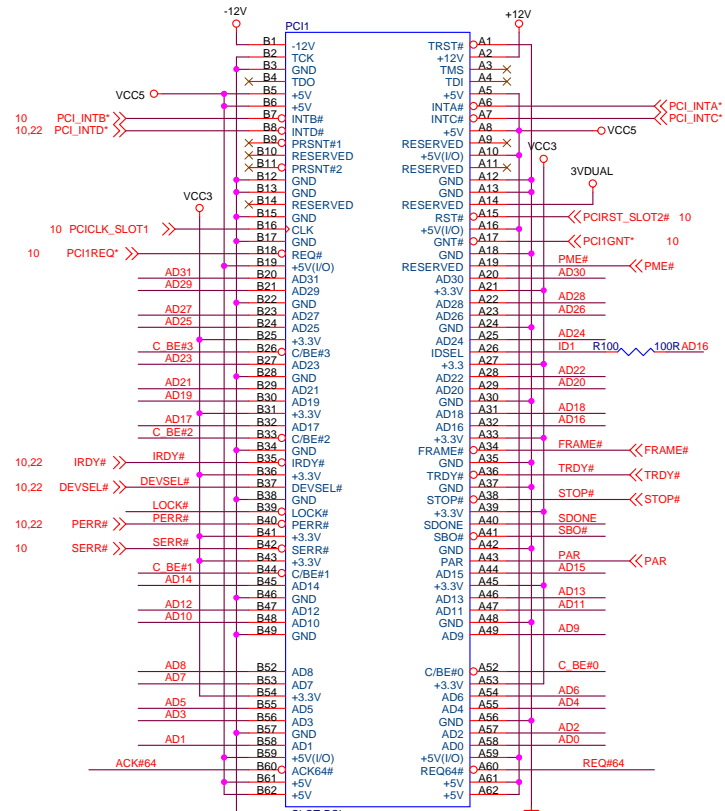
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Micro Star Restricted Secret		
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Document Number	MS-7250	
MICRO-STAR INT'L CO., LTD. No. 69, Li-De St, Jung-Hsi City, Tapei Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Monday, April 17, 2006 Sheet 14 of 36



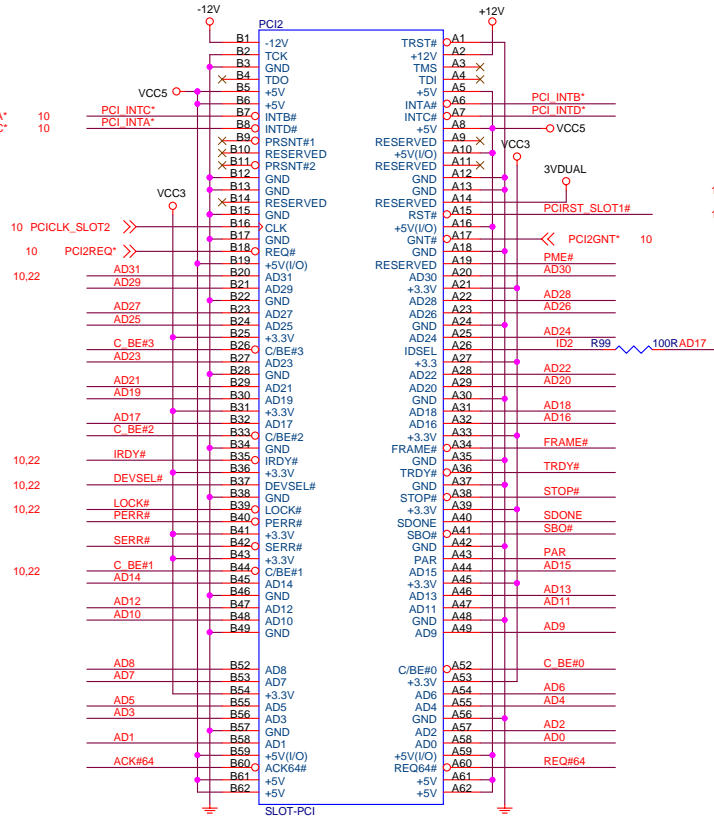
10.22 AD[31..0] >> AD[31..0]  
10.22 C\_BE#[3..0] >> C\_BE#[3..0]

### PCI SLOT 1 (PCI VER: 2.2 COMPLY)



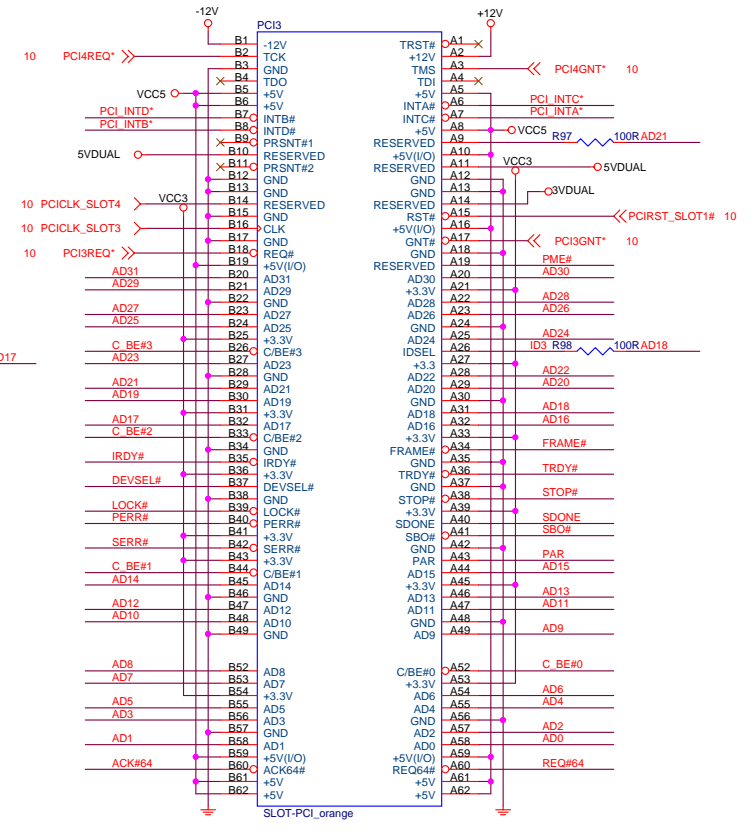
IDSEL = AD16  
MASTER = PCI1REQ\*  
PCI1GNT\*

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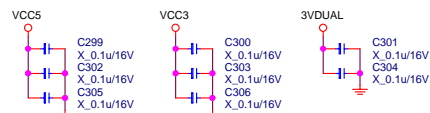
IDSEL = AD17  
MASTER = PCI2REQ\*  
PCI2GNT\*

### PCI SLOT 3 (PCI VER: 2.2 COMPLY)

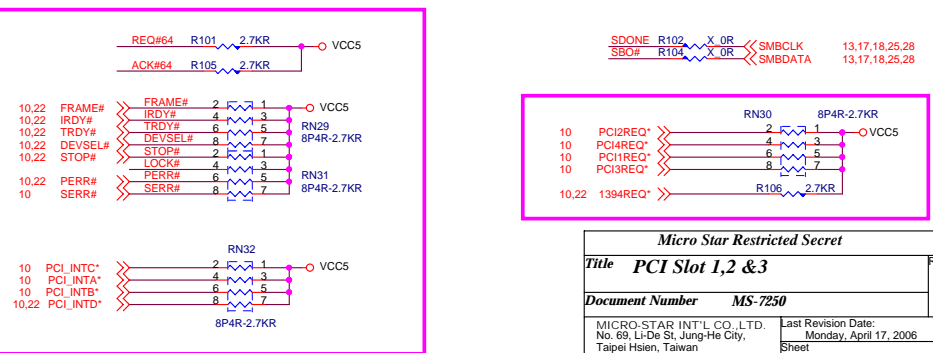


IDSEL = AD21  
MASTER = PCI3REQ\*  
PCI3GNT\*

### PCI SLOT DECOUPLING CAPACITORS

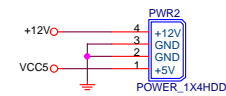
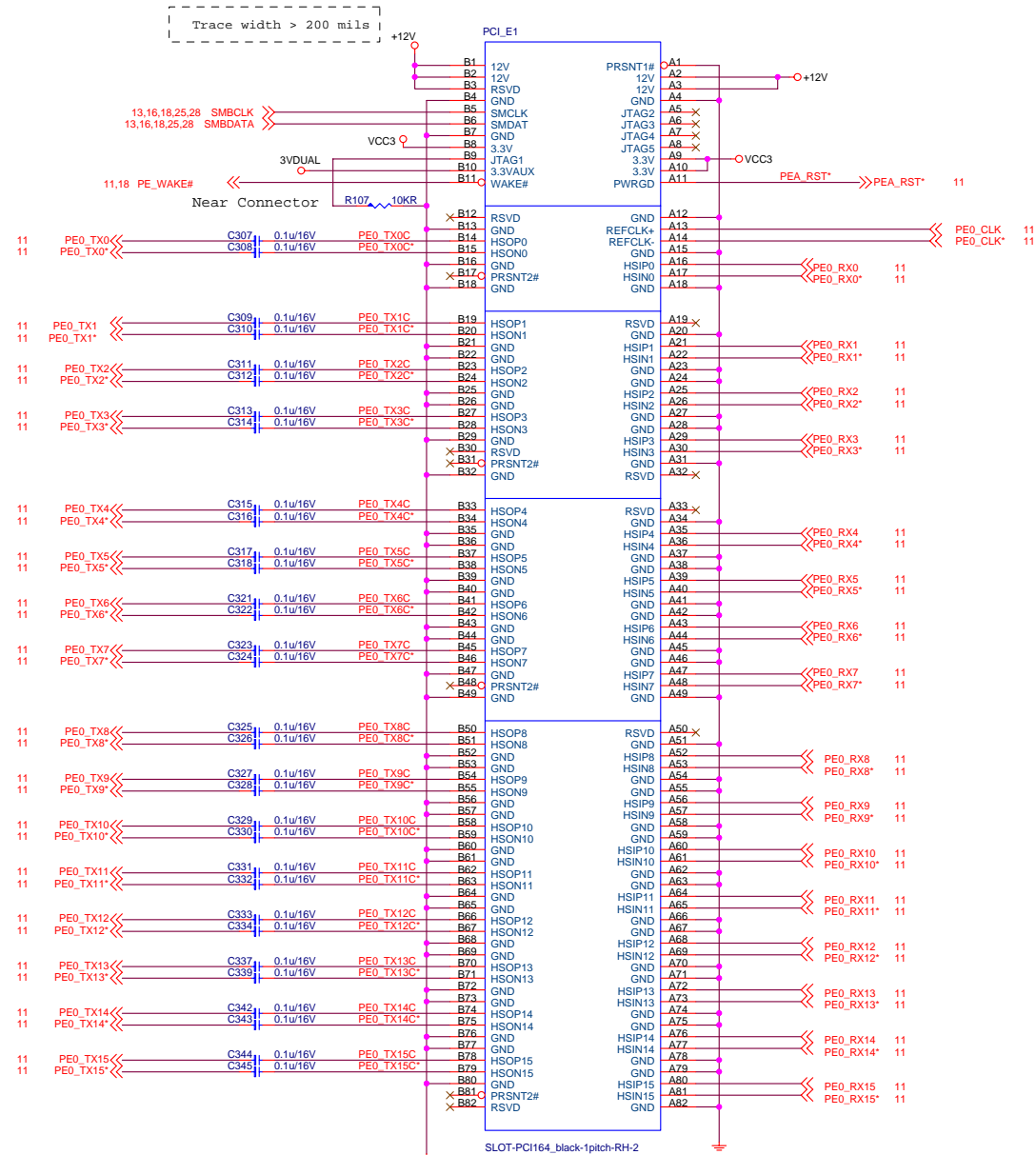


### PCI PULL-UP / DOWN RESISTORS

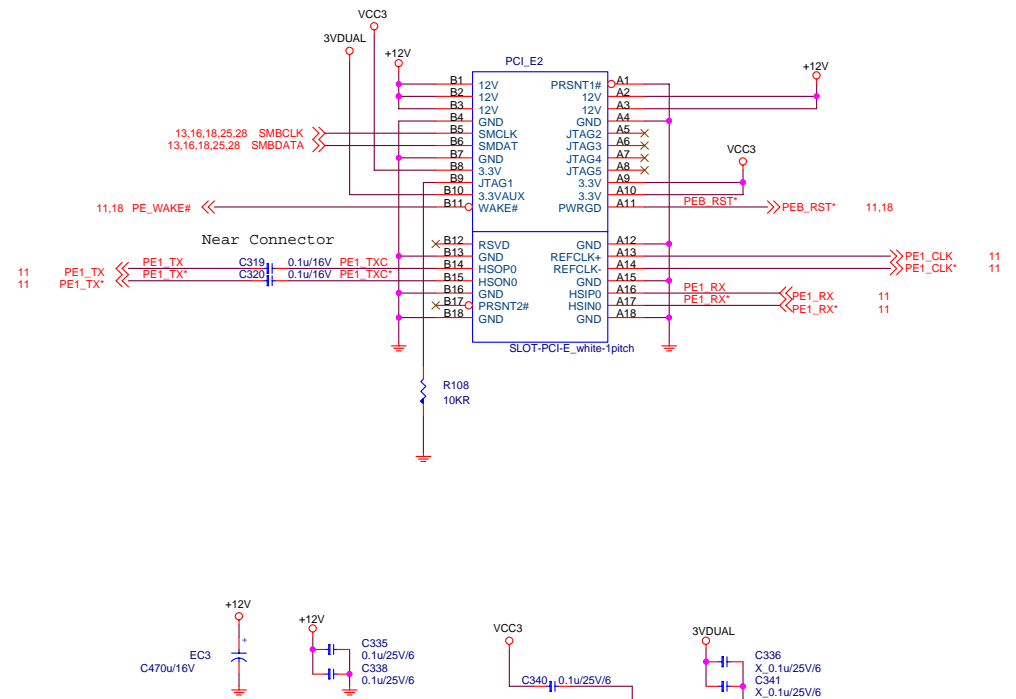


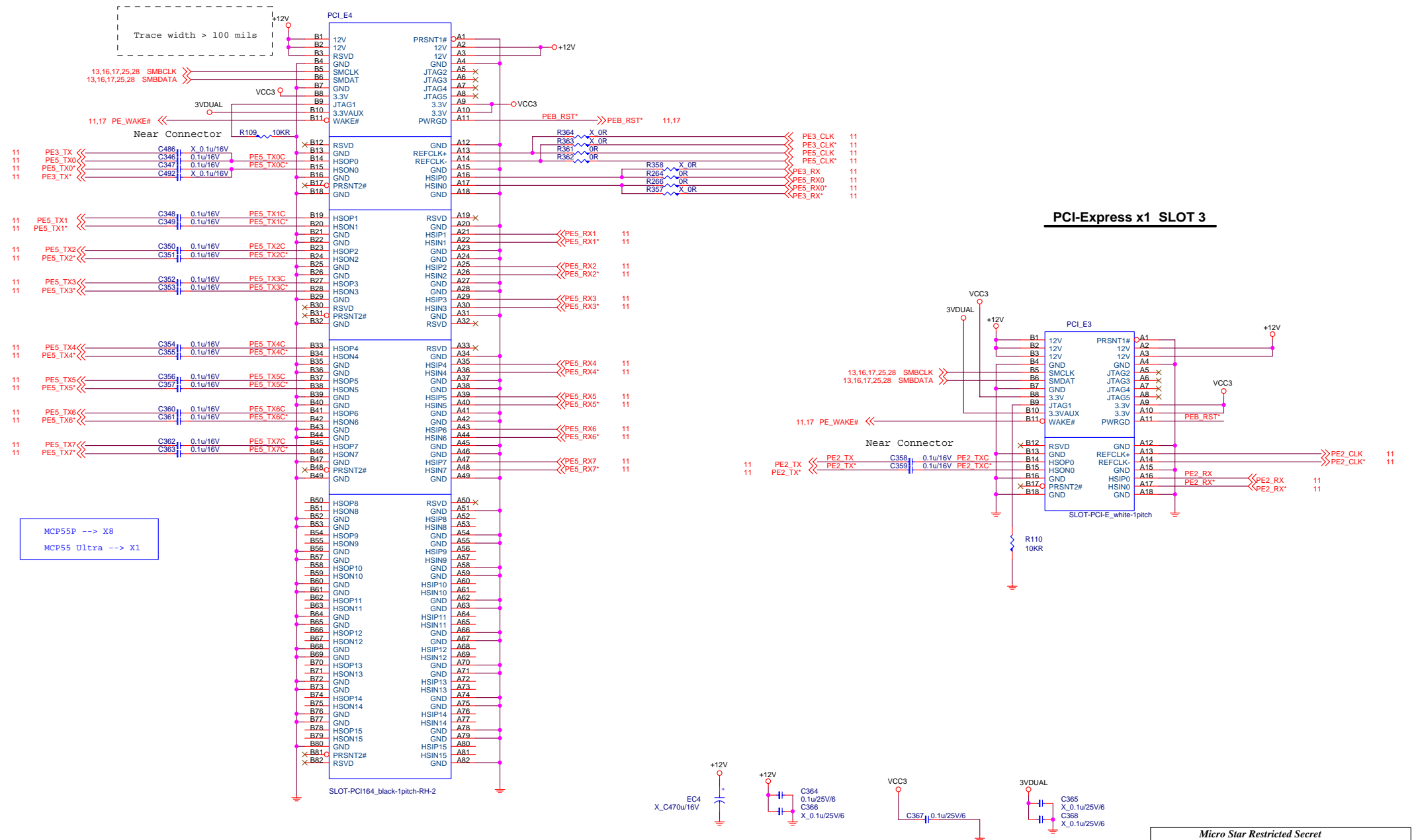


## PCI EXPRESS\_16



**PCI-Express x1 SLOT 1**



**PCI EXPRESS\_16**

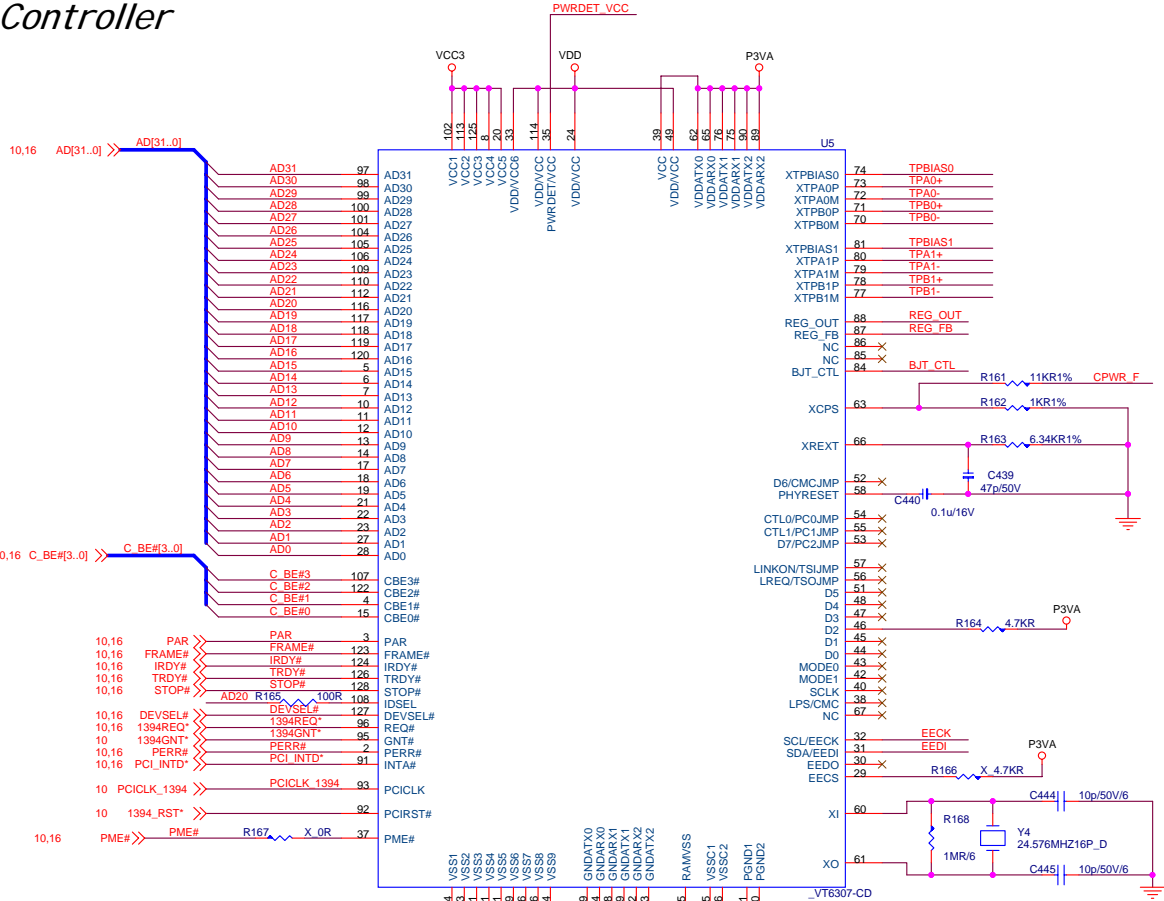
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<b><i>Title</i></b> <i>PCI-E X16, X1 Slot-2</i>			<b><i>Rev</i></b> 10
<b><i>Document Number</i></b> <i>MS-7250</i>			
MICRO-STAR INT'L CO., LTD. No. 68, Li-De St., Jung-Hsue City, Taipei Hsien, Taiwan <a href="http://www.msi.com.tw">http://www.msi.com.tw</a>		Last Revision Date: Monday, April 17, 2006 Sheet 18 of 36	



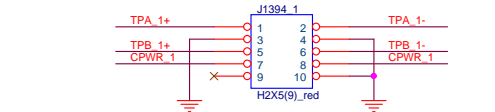
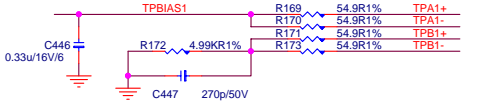
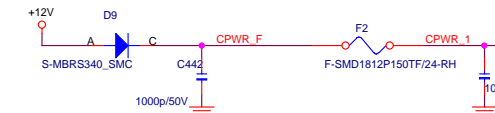
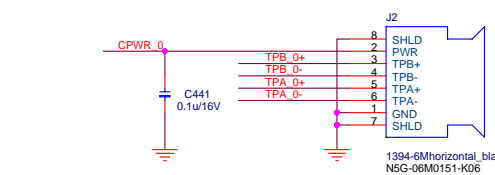
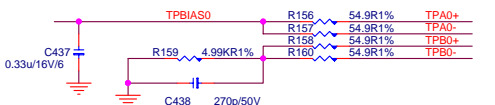
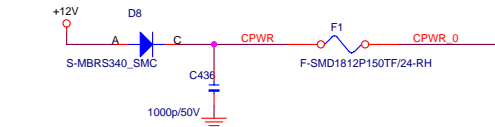
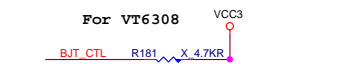
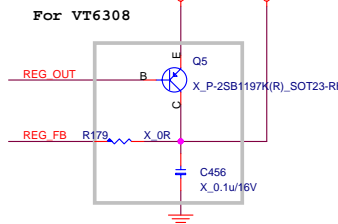
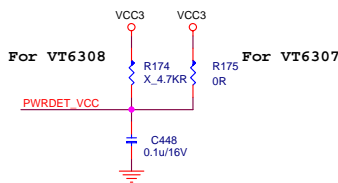
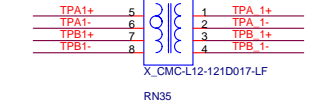
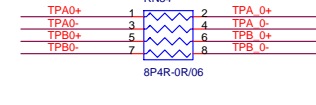
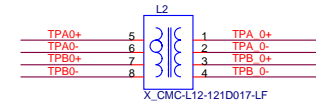
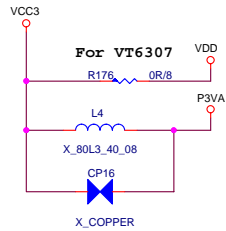
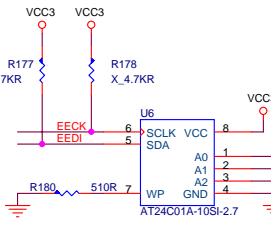
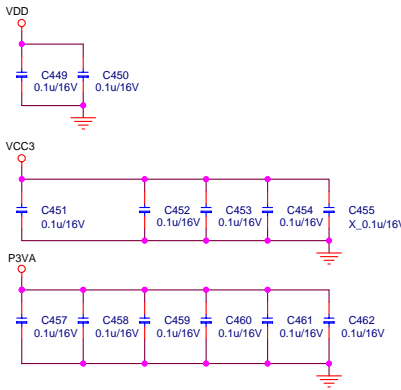




1394a OHCI Link Layer Controller



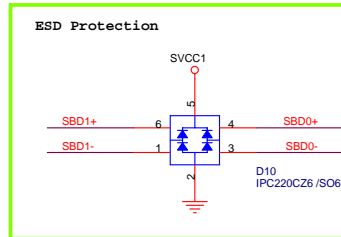
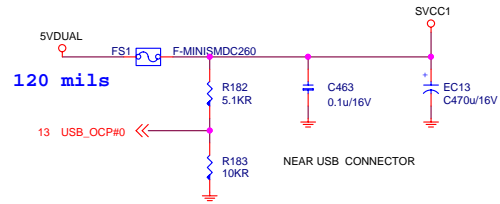
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MASTER = 1394REQ\*  
1394GNT\*



For Intel 1394 pinheader

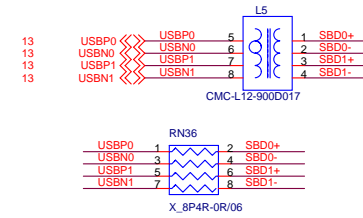
Micro Star Restricted Secret		
Title	1394a Link Layer Controller	Rev
Document Number	MS-7250	10
MICRO-STAR INT'L CO., LTD. No. 69, Li-De St, Jung-He City, Taipei Hsien, Taiwan		
Last Revision Date: Monday, April 03, 2006		
Sheet 22 of 36		

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



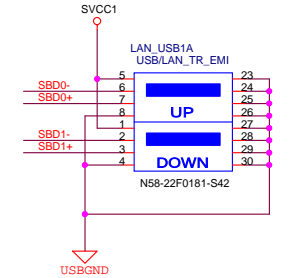
### REAR PANEL USB CONNECTOR FOR USB PORT 0,1

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

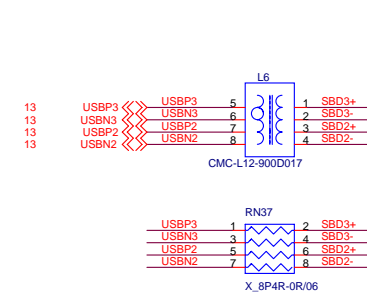


#### NEAR USB CONNECTOR

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

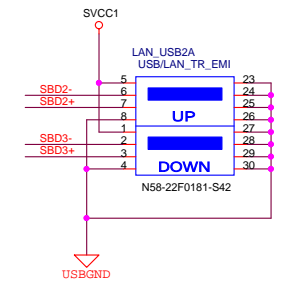


### REAR PANEL USB CONNECTOR FOR USB PORT 2,3



#### NEAR USB CONNECTOR

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

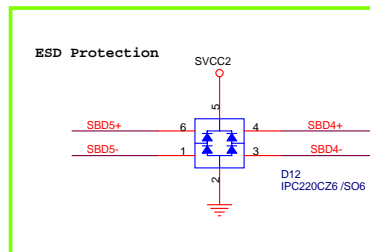
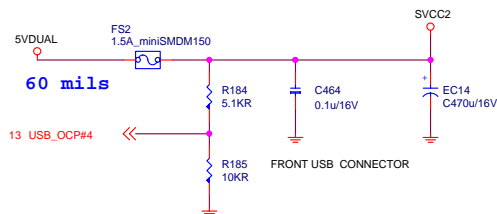


### EMI TEST

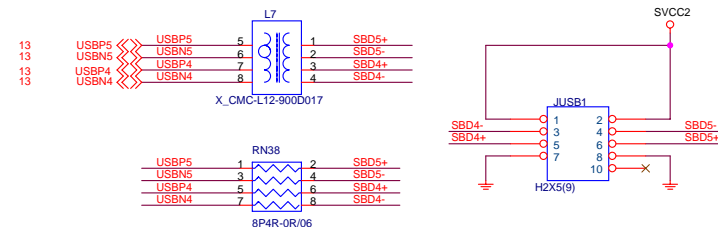


Micro Star Restricted Secret		
Title	REAR USB PORTS	Rev
Document Number	MS-7250	10
MICRO-STAR INT'L CO.,LTD. No. 69, Li-De St, Jung-Ho City, Taipei Hsien, Taiwan <a href="http://www.msi.com.tw">http://www.msi.com.tw</a>		Last Revision Date: Monday, April 17, 2006 Sheet 23 of 36

### POWER CIRCUIT FOR USB PORT 4,5



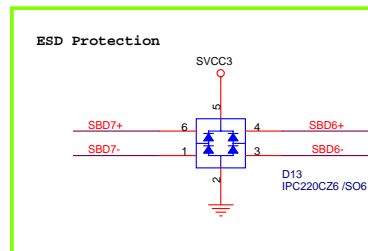
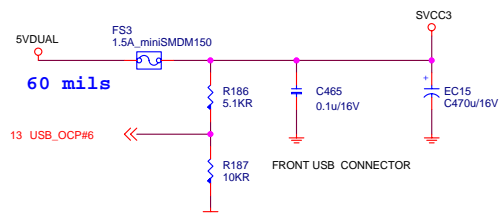
### FRONT PANEL USB CONNECTOR FOR USB PORT 4,5



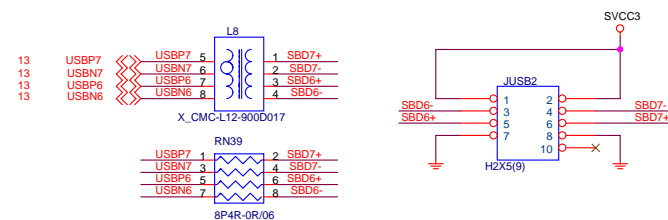
### NEAR USB CONNECTOR

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

### POWER CIRCUIT FOR USB PORT 6,7



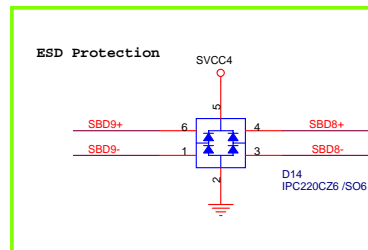
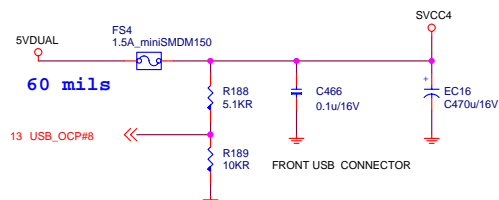
### FRONT PANEL USB CONNECTOR FOR USB PORT 6,7



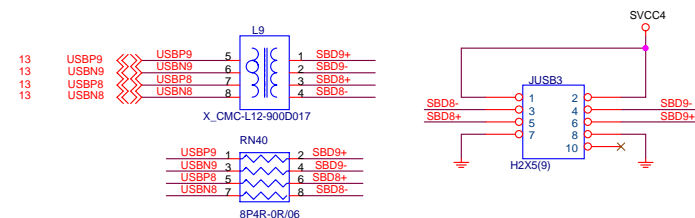
### NEAR USB CONNECTOR

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

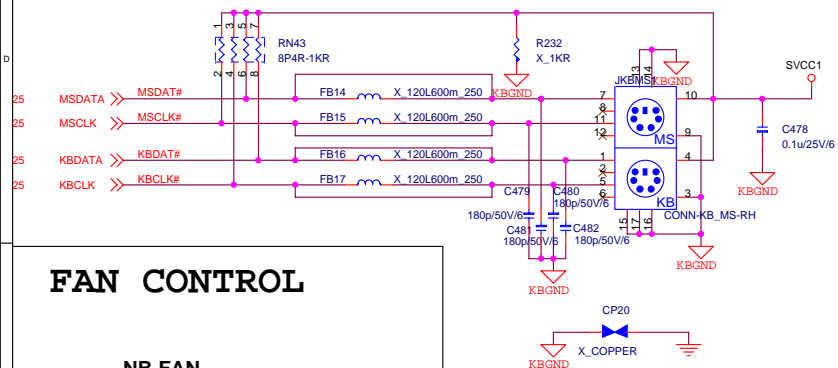
22 / 7.5 / 7.5 / 7.5 / 22 / 7.5 / 7.5 / 7.5 / 22

Micro Star Restricted Secret		
Title	FRONT USB PORT	Rev
Document Number	MS-7250	10
MICRO-STAR INT'L CO., LTD. No. 69, Li-De St, Jung-Ho City, Taipei Hsien, Taiwan		Last Revision Date: Thursday, March 23, 2006
http://www.msi.com.tw		Sheet 24 of 36

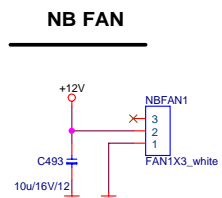




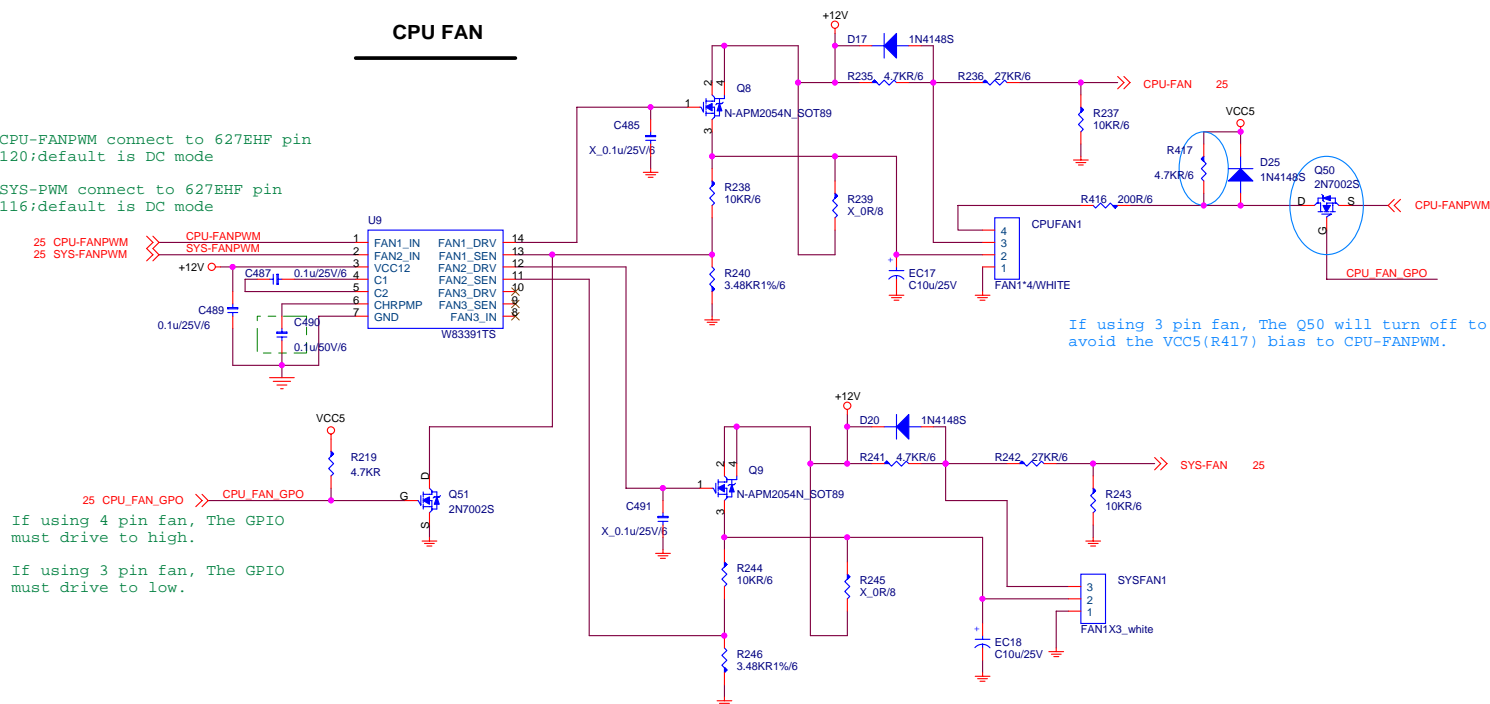
## PS2 KEYBOARD & MOUSE CONNECTOR



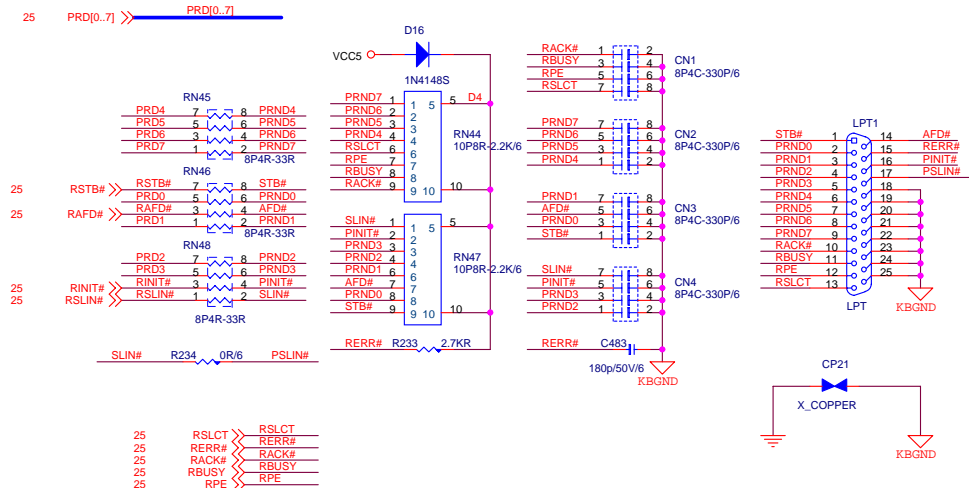
## FAN CONTROL



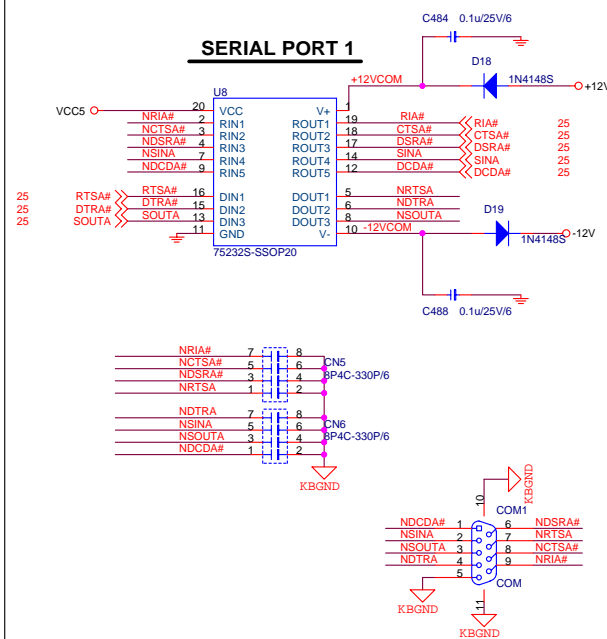
**CPU FAN**



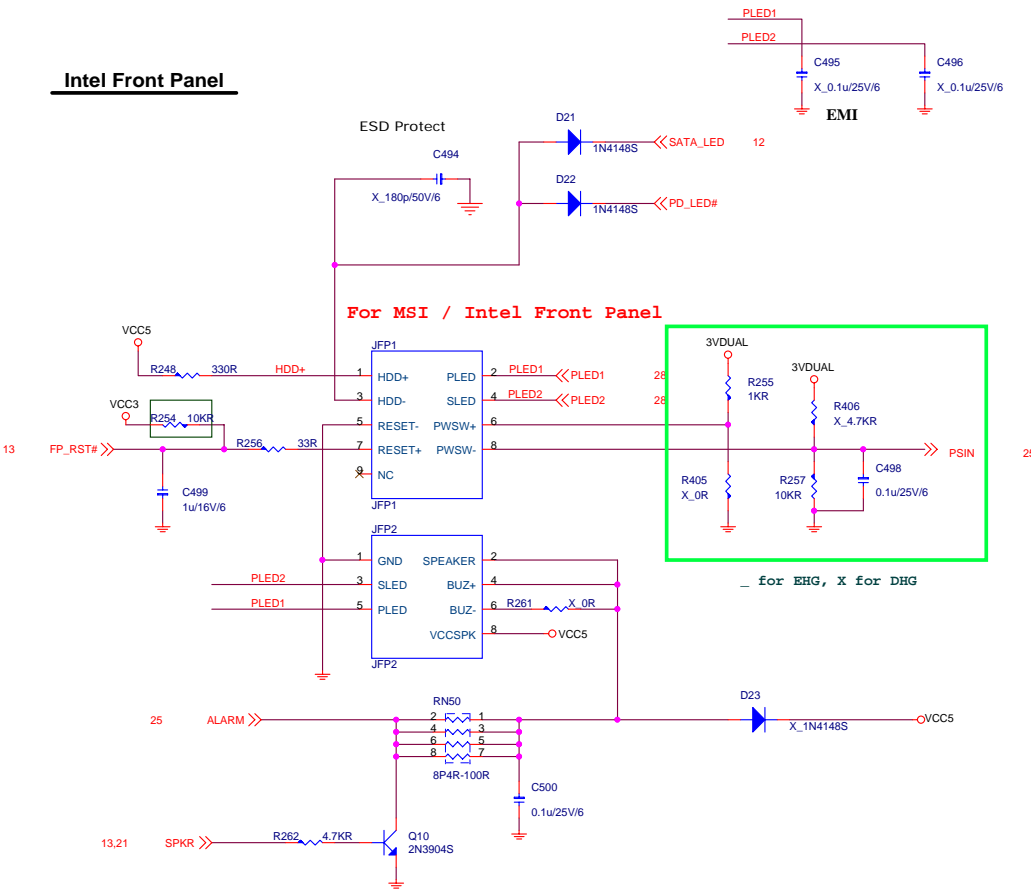
## PARALLAL PORT



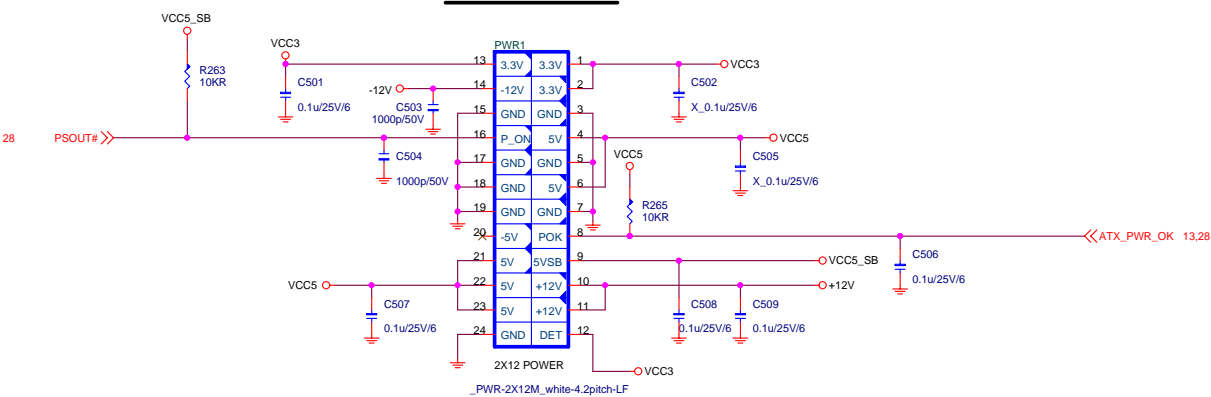
## SERIAL PORT 1



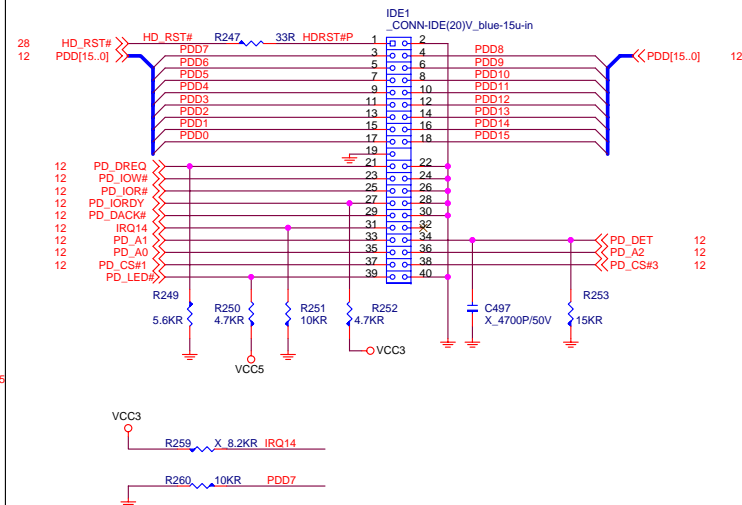
## Intel Front Panel



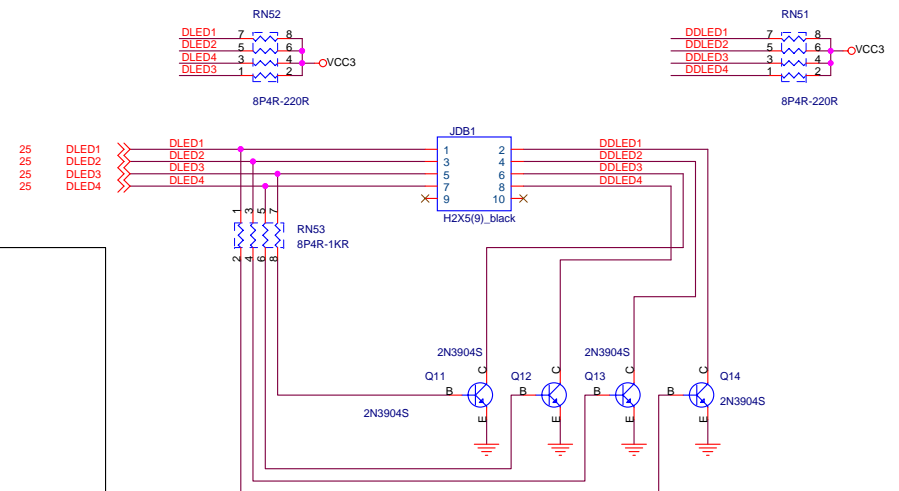
## ATX Connector



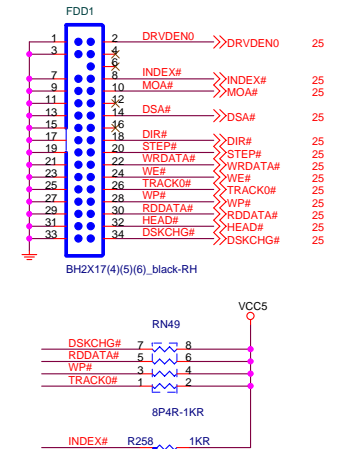
IDE 1



### D-Bracket



Floppy



*Micro Star Restricted Secret*

<b>Title</b> <i><b>ATX conn / FP /IDE/FDD/ D-LED</b></i>		<b>Rev</b>  10
<b>Document Number</b> <i><b>MS-7250</b></i>		
MICRO-STAR INT'L CO.,LTD. No. 69, Li-De St, Jung-Ho City, Taipei Hsien, Taiwan <a href="http://www.msi.com.tw">http://www.msi.com.tw</a>		Last Revision Date: Wednesday, April 12, 2006 Sheet 27 of 36

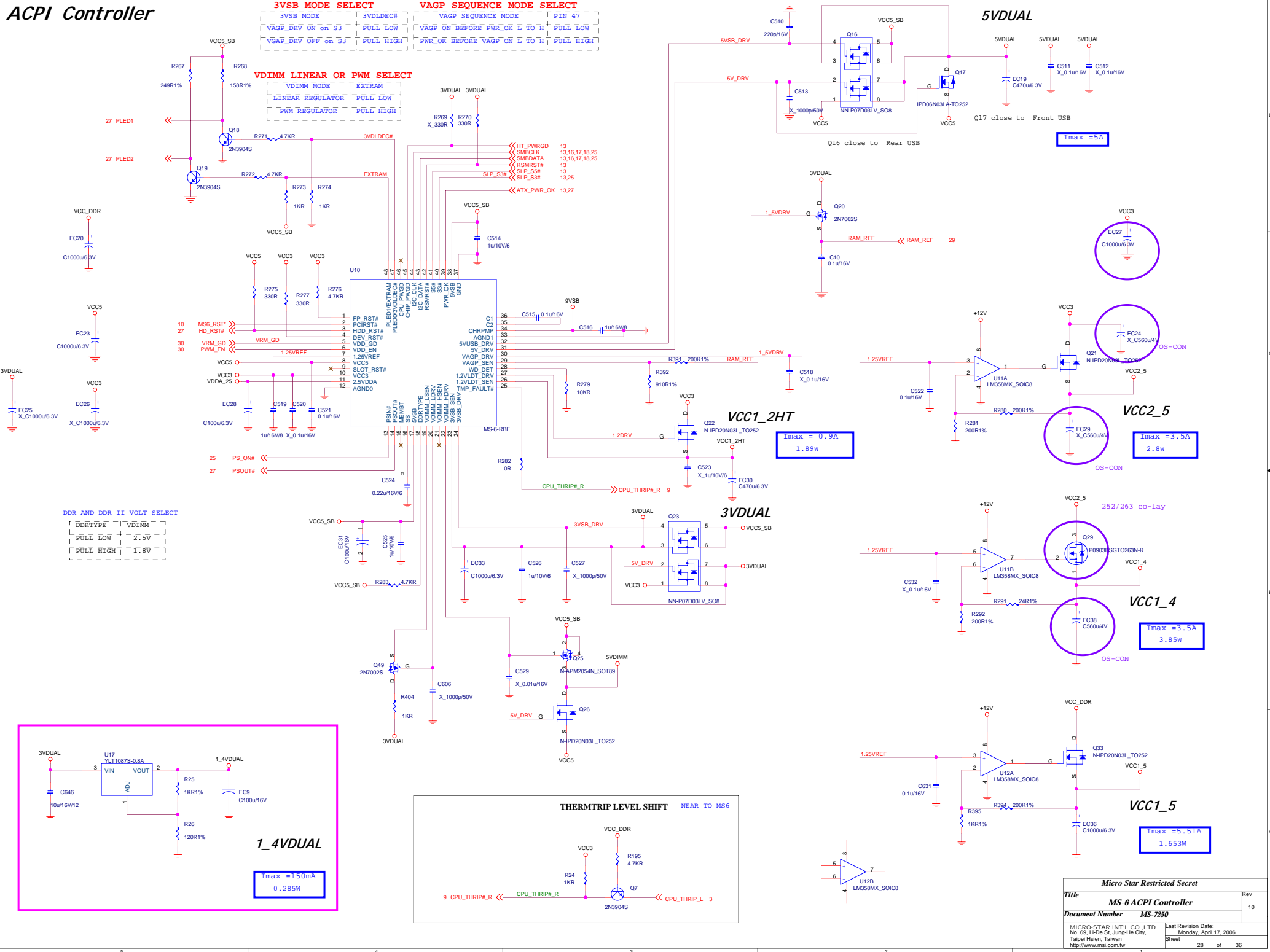
# ACPI Controller

**3VSB MODE SELECT**

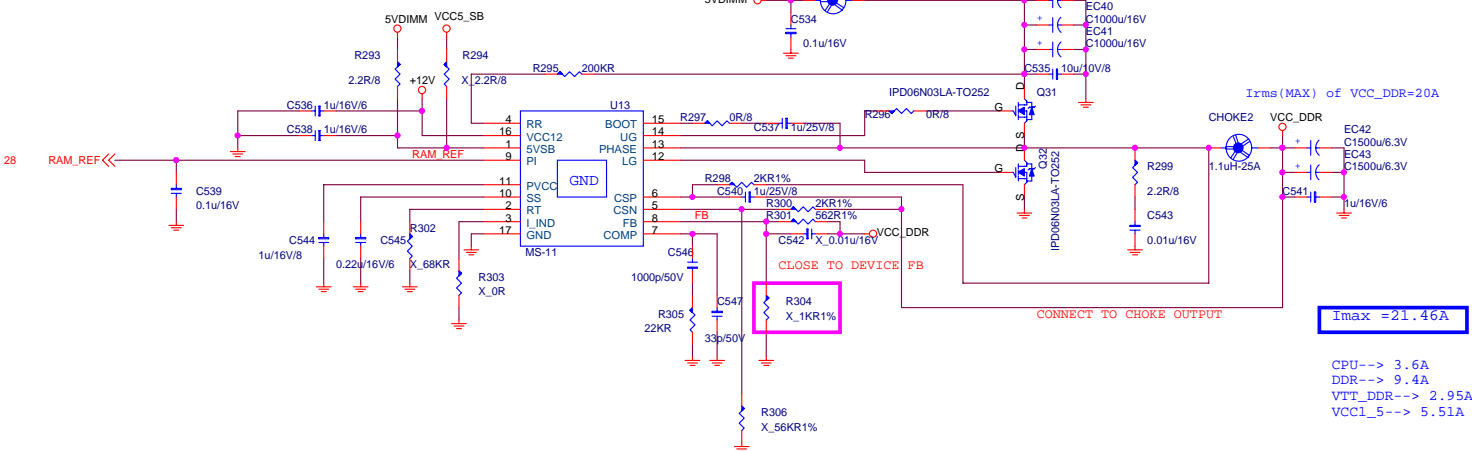
3VSB MODE	3VSB MODE	VAGP SEQUENCE MODE SELECT	VAGP SEQUENCE MODE SELECT
VAGP_Drv ON on S3	PULL LOW	VAGP ON BEFORE PWR_OK L TO H	PULL LOW
VAGP_Drv OFF on S3	PULL HIGH	PWR_OK BEFORE VAGP ON L TO H	PULL HIGH

**VDIMM LINEAR OR PWM SELECT**

VDIMM MODE	EXTRAM
LINEAR REGULATOR	PULL LOW
PWM REGULATOR	PULL HIGH



## DDR II 1.8V POWER



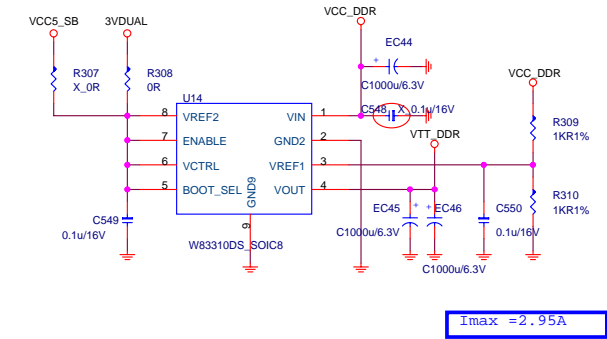
High-side MOS AVL(RoHS):  
D03-75N022B-N03  
D03-06N030B-I14  
D03-80N021B-005

Low-side MOS AVL(RoHS):  
D03-75N022B-N03  
D03-06N030B-I14  
D03-80N021B-O05

```
L/DCR=R*C
Rcsp >= (1.1uH/2.3m ohm)/1uF
      >= 478 ohm
```

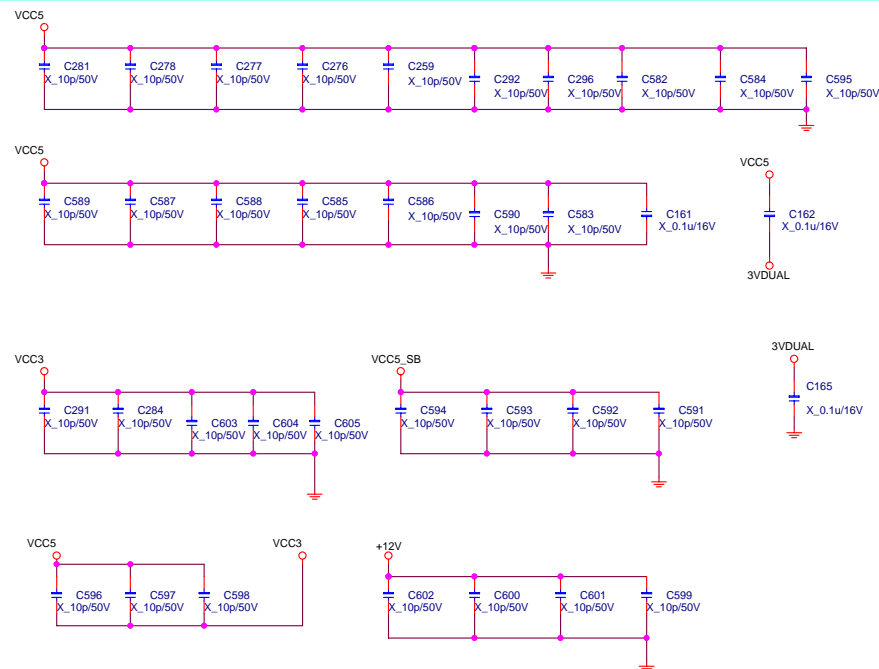
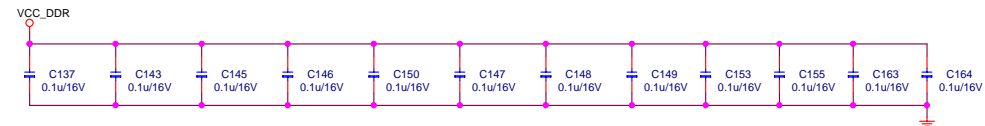
```
Iocp* DCR_max = Ix*Rcsn
Rcsn >= (40amp * 3 m ohm)/80uA
      >= 1.5K
```

## DDR II VTT POWER



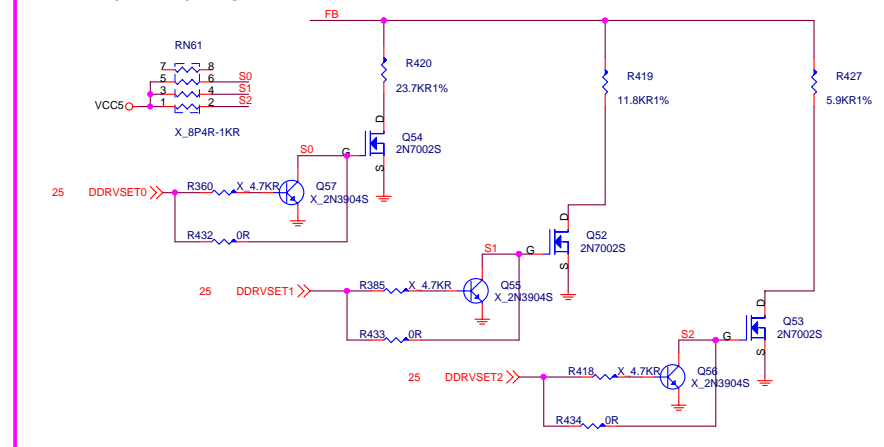
For EMI

de- VCC\_DDR high frequency noise.



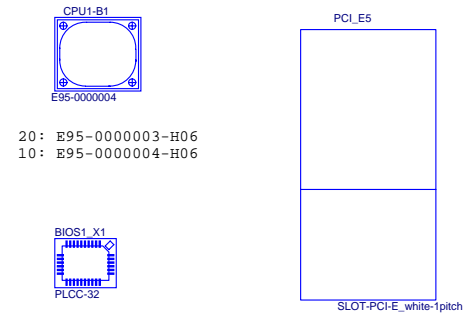
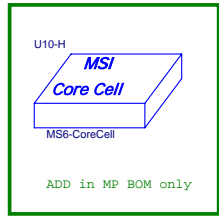
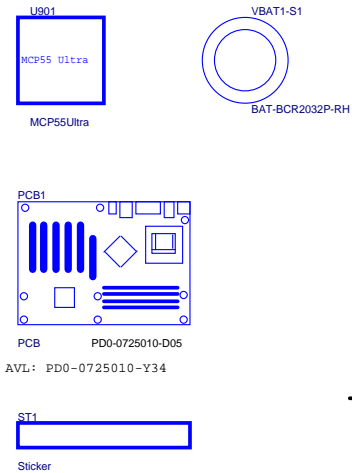
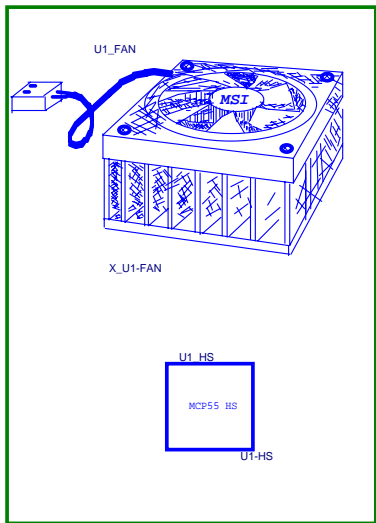
## DDR OVER VOLTAGE

Place NEAR MS11

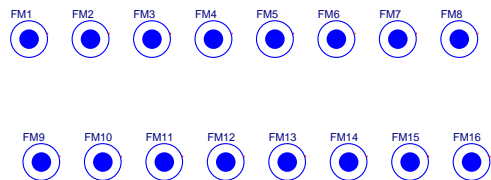


<b>Micro Star Restricted Secret</b>			
<b>Title</b>	<b>MS-11 DDR2 Power</b>		Rev
<b>Document Number</b>	<b>MS-7250</b>		10
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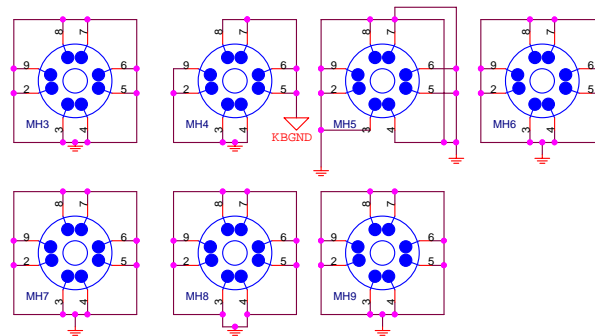




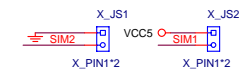
### Optics Orientation Holes



### Mounting Holes



### Simulation



Model option table

Model type	Function	BOM Config	ERP BOM No.
MS-7250	MCP55P / VSC6801x2/ ALC883/ VT6307/ W83627EHG/ ISL6566CR	Cfg-A	601-7250-xxx
MS-7250	MCP55 Ultra/ VSC6801x2/ ALC883/ VT6307/ W83627EHG/ ISL6566CR	Cfg-B	601-7250-xxx